Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 10:55
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0208	**Units:**	ng/Kg
Lab Code:	E1801096-008	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**3.07**	0.129	0.575	1	1	3.07
1,2,3,7,8-PeCDD	**0.373**	0.0476	2.88	1	1	0.373
1,2,3,4,7,8-HxCDD	**0.386**	0.0945	2.88	1	0.1	0.0386
1,2,3,6,7,8-HxCDD	**0.621**	0.108	2.88	1	0.1	0.0621
1,2,3,7,8,9-HxCDD	**1.35**	0.0938	2.88	1	0.1	0.135
1,2,3,4,6,7,8-HpCDD	**16.4**	0.236	2.88	1	0.01	0.164
OCDD	**541**	0.300	5.75	1	0.0003	0.162
2,3,7,8-TCDF	**5.71**	0.0525	0.575	1	0.1	0.571
1,2,3,7,8-PeCDF	**0.246**	0.0830	2.88	1	0.03	0.00738
2,3,4,7,8-PeCDF	**0.151**	0.0388	2.88	1	0.3	0.0453
1,2,3,4,7,8-HxCDF	**0.243**	0.0157	2.88	1	0.1	0.0243
1,2,3,6,7,8-HxCDF	**0.149**	0.0155	2.88	1	0.1	0.0149
1,2,3,7,8,9-HxCDF	**0.148**	0.0168	2.88	1	0.1	0.0148
2,3,4,6,7,8-HxCDF	**0.0534**	0.0163	2.88	1	0.1	0.00534
1,2,3,4,6,7,8-HpCDF	**0.235**	0.0222	2.88	1	0.01	0.00235
1,2,3,4,7,8,9-HpCDF	**0.0715**	0.0252	2.88	1	0.01	0.000715
OCDF	**0.716**	0.0770	5.75	1	0.0003	0.000215
		Total TEQ				4.69

2005 WHO TEFs, ND = 0

90054679

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 10:55
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0208	**Units:**	Percent
Lab Code:	E1801096-008	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	6.516g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	81.2		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 11:00
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0209	**Units:**	ng/Kg
Lab Code:	E1801096-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/19/18 22:54
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.064g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519503	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519494

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	2.25		0.657	0.657	0.83	1.001	1
1,2,3,7,8-PeCDD	0.542**JK**		0.282	3.15	1.88	1.001	1
1,2,3,4,7,8-HxCDD	ND	U	0.457	3.15			1
1,2,3,6,7,8-HxCDD	1.18**J**		0.507	3.15	1.15	1.000	1
1,2,3,7,8,9-HxCDD	1.21**JK**		0.470	3.15	0.85	1.007	1
1,2,3,4,6,7,8-HpCDD	22.7		0.222	3.15	0.95	1.000	1
OCDD	653		1.14	6.30	0.88	1.000	1
2,3,7,8-TCDF	4.37		0.363	0.630	0.75	1.001	1
1,2,3,7,8-PeCDF	ND	U	0.283	3.15			1
2,3,4,7,8-PeCDF	ND	U	0.316	3.15			1
1,2,3,4,7,8-HxCDF	0.213**J**		0.131	3.15	1.33	1.000	1
1,2,3,6,7,8-HxCDF	0.220**J**		0.129	3.15	1.21	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.192	3.15			1
2,3,4,6,7,8-HxCDF	ND	U	0.145	3.15			1
1,2,3,4,6,7,8-HpCDF	ND	U	0.210	3.15			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.331	3.15			1
OCDF	ND	U	1.10	6.30			1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 11:00
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0209	**Units:**	ng/Kg
Lab Code:	E1801096-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/19/18 22:54
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.064g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519503	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519494

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	7.71		0.657	0.657	0.77		1
Total Penta-Dioxins	3.10**J**		0.282	3.15	1.64		1
Total Hexa-Dioxins	37.9		0.478	3.15	1.12		1
Total Hepta-Dioxins	85.5		0.222	3.15	1.14		1
Total Tetra-Furans	5.70		0.363	0.630	0.82		1
Total Penta-Furans	ND	U	0.298	3.15			1
Total Hexa-Furans	0.433**J**		0.146	3.15	1.33		1
Total Hepta-Furans	ND	U	0.262	3.15			1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 11:00
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0209	**Units:**	Percent
Lab Code:	E1801096-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/19/18 22:54
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.064g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519503	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519494

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	879.877	44		25-164	0.79	1.024
13C-1,2,3,7,8-PeCDD	2000	1248.781	62		25-181	1.61	1.209
13C-1,2,3,4,7,8-HxCDD	2000	1443.017	72		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1339.023	67		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1263.282	63		23-140	1.03	1.073
13C-OCDD	4000	1513.931	38		17-157	0.98	1.154
13C-2,3,7,8-TCDF	2000	1191.995	60		24-169	0.79	0.991
13C-1,2,3,7,8-PeCDF	2000	1260.233	63		24-185	1.60	1.162
13C-2,3,4,7,8-PeCDF	2000	1119.011	56		21-178	1.60	1.198
13C-1,2,3,4,7,8-HxCDF	2000	1250.893	63		26-152	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1339.533	67		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1179.463	59		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1297.969	65		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1006.706	50		28-143	0.43	1.046
13C-1,2,3,4,7,8,9-HpCDF	2000	941.378	47		26-138	0.44	1.086
37Cl-2,3,7,8-TCDD	800	514.863	64		35-197	NA	1.025

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 11:00
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0209	**Units:**	ng/Kg
Lab Code:	E1801096-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**2.25**	0.657	0.657	1	1	2.25
1,2,3,7,8-PeCDD	**0.542**	0.282	3.15	1	1	0.542
1,2,3,4,7,8-HxCDD	ND	0.457	3.15	1	0.1	
1,2,3,6,7,8-HxCDD	**1.18**	0.507	3.15	1	0.1	0.118
1,2,3,7,8,9-HxCDD	**1.21**	0.470	3.15	1	0.1	0.121
1,2,3,4,6,7,8-HpCDD	**22.7**	0.222	3.15	1	0.01	0.227
OCDD	**653**	1.14	6.30	1	0.0003	0.196
2,3,7,8-TCDF	**4.37**	0.363	0.630	1	0.1	0.437
1,2,3,7,8-PeCDF	ND	0.283	3.15	1	0.03	
2,3,4,7,8-PeCDF	ND	0.316	3.15	1	0.3	
1,2,3,4,7,8-HxCDF	**0.213**	0.131	3.15	1	0.1	0.0213
1,2,3,6,7,8-HxCDF	**0.220**	0.129	3.15	1	0.1	0.0220
1,2,3,7,8,9-HxCDF	ND	0.192	3.15	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.145	3.15	1	0.1	
1,2,3,4,6,7,8-HpCDF	ND	0.210	3.15	1	0.01	
1,2,3,4,7,8,9-HpCDF	ND	0.331	3.15	1	0.01	
OCDF	ND	1.10	6.30	1	0.0003	
		Total TEQ				3.93

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 11:00
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0209	**Units:**	Percent
Lab Code:	E1801096-009	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	6.223g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	78.9		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 11:05
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0210	**Units:**	ng/Kg
Lab Code:	E1801096-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/19/18 23:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.149g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519504	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519494

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	3.01**K**		0.610	0.650	1.00	1.002	1
1,2,3,7,8-PeCDD	0.817**J**		0.306	3.25	1.43	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.953	3.25			1
1,2,3,6,7,8-HxCDD	ND	U	1.08	3.25			1
1,2,3,7,8,9-HxCDD	1.58**JK**		0.993	3.25	1.60	1.007	1
1,2,3,4,6,7,8-HpCDD	18.4		0.396	3.25	0.90	1.000	1
OCDD	472		1.10	6.50	0.88	1.000	1
2,3,7,8-TCDF	6.85		0.407	0.650	0.89	1.001	1
1,2,3,7,8-PeCDF	ND	U	0.423	3.25			1
2,3,4,7,8-PeCDF	ND	U	0.453	3.25			1
1,2,3,4,7,8-HxCDF	0.229**JK**		0.203	3.25	1.66	1.000	1
1,2,3,6,7,8-HxCDF	ND	U	0.192	3.25			1
1,2,3,7,8,9-HxCDF	ND	U	0.294	3.25			1
2,3,4,6,7,8-HxCDF	ND	U	0.207	3.25			1
1,2,3,4,6,7,8-HpCDF	ND	U	0.345	3.25			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.551	3.25			1
OCDF	ND	U	1.28	6.50			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 11:05
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0210	**Units:**	ng/Kg
Lab Code:	E1801096-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/19/18 23:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.149g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519504	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519494

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	5.71		0.610	0.650	0.76		1
Total Penta-Dioxins	0.817**J**		0.306	3.25	1.43		1
Total Hexa-Dioxins	23.0		1.01	3.25	1.35		1
Total Hepta-Dioxins	62.5		0.396	3.25	1.05		1
Total Tetra-Furans	8.42		0.407	0.650	0.75		1
Total Penta-Furans	ND	U	0.437	3.25			1
Total Hexa-Furans	ND	U	0.218	3.25			1
Total Hepta-Furans	ND	U	0.430	3.25			1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 11:05
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0210	**Units:**	Percent
Lab Code:	E1801096-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/19/18 23:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.149g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519504	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519494

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	618.306	31		25-164	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	1006.518	50		25-181	1.60	1.209
13C-1,2,3,4,7,8-HxCDD	2000	1240.645	62		32-141	1.41	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1224.288	61		28-130	1.18	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1198.631	60		23-140	1.12	1.073
13C-OCDD	4000	1392.861	35		17-157	0.90	1.154
13C-2,3,7,8-TCDF	2000	813.546	41		24-169	0.79	0.991
13C-1,2,3,7,8-PeCDF	2000	999.114	50		24-185	1.64	1.162
13C-2,3,4,7,8-PeCDF	2000	908.246	45		21-178	1.60	1.198
13C-1,2,3,4,7,8-HxCDF	2000	1091.478	55		26-152	0.51	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1198.456	60		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1022.514	51		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1189.955	59		28-136	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	945.293	47		28-143	0.47	1.046
13C-1,2,3,4,7,8,9-HpCDF	2000	829.757	41		26-138	0.46	1.086
37Cl-2,3,7,8-TCDD	800	371.796	46		35-197	NA	1.025

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 11:05
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0210	**Units:**	ng/Kg
Lab Code:	E1801096-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**3.01**	0.610	0.650	1	1	3.01
1,2,3,7,8-PeCDD	**0.817**	0.306	3.25	1	1	0.817
1,2,3,4,7,8-HxCDD	ND	0.953	3.25	1	0.1	
1,2,3,6,7,8-HxCDD	ND	1.08	3.25	1	0.1	
1,2,3,7,8,9-HxCDD	**1.58**	0.993	3.25	1	0.1	0.158
1,2,3,4,6,7,8-HpCDD	**18.4**	0.396	3.25	1	0.01	0.184
OCDD	**472**	1.10	6.50	1	0.0003	0.142
2,3,7,8-TCDF	**6.85**	0.407	0.650	1	0.1	0.685
1,2,3,7,8-PeCDF	ND	0.423	3.25	1	0.03	
2,3,4,7,8-PeCDF	ND	0.453	3.25	1	0.3	
1,2,3,4,7,8-HxCDF	**0.229**	0.203	3.25	1	0.1	0.0229
1,2,3,6,7,8-HxCDF	ND	0.192	3.25	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.294	3.25	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.207	3.25	1	0.1	
1,2,3,4,6,7,8-HpCDF	ND	0.345	3.25	1	0.01	
1,2,3,4,7,8,9-HpCDF	ND	0.551	3.25	1	0.01	
OCDF	ND	1.28	6.50	1	0.0003	
		Total TEQ				5.02

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/15/18 11:05
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0210	**Units:**	Percent
Lab Code:	E1801096-010	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	6.456g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	75.8		-	1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:00
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0066	**Units:**	ng/Kg
Lab Code:	E1801096-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/21/18 10:38
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.084g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519542	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519532

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	26.3		3.11	3.11	0.67	1.001	1
1,2,3,7,8-PeCDD	14.5		0.332	2.86	1.46	1.001	1
1,2,3,4,7,8-HxCDD	0.754	**JK**	0.491	2.86	0.78	1.000	1
1,2,3,6,7,8-HxCDD	4.27		0.553	2.86	1.20	1.000	1
1,2,3,7,8,9-HxCDD	3.06	**K**	0.510	2.86	1.55	1.007	1
1,2,3,4,6,7,8-HpCDD	121		0.638	2.86	1.00	1.000	1
OCDD	2230		1.32	5.71	0.90	1.000	1
2,3,7,8-TCDF	71.3		2.73	2.73	0.77	1.001	1
1,2,3,7,8-PeCDF	159		0.793	2.86	1.56	1.001	1
2,3,4,7,8-PeCDF	121		0.873	2.86	1.59	1.001	1
1,2,3,4,7,8-HxCDF	274		0.468	2.86	1.30	1.000	1
1,2,3,6,7,8-HxCDF	63.5		0.456	2.86	1.29	1.000	1
1,2,3,7,8,9-HxCDF	21.0		0.720	2.86	1.20	1.001	1
2,3,4,6,7,8-HxCDF	13.4		0.499	2.86	1.06	1.000	1
1,2,3,4,6,7,8-HpCDF	82.3		0.285	2.86	0.98	1.000	1
1,2,3,4,7,8,9-HpCDF	28.4	**K**	0.507	2.86	1.21	1.000	1
OCDF	72.8		1.44	5.71	0.76	1.004	1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:00
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0066	**Units:**	ng/Kg
Lab Code:	E1801096-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/21/18 10:38
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.084g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519542	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519532

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	2230		0.562	0.571	0.78		1
Total Penta-Dioxins	23.1		0.332	2.86	1.52		1
Total Hexa-Dioxins	64.7		0.518	2.86	1.32		1
Total Hepta-Dioxins	300		0.638	2.86	1.09		1
Total Tetra-Furans	7420		0.233	0.571	0.74		1
Total Penta-Furans	454		0.0716	2.86	1.61		1
Total Hexa-Furans	431		0.520	2.86	1.14		1
Total Hepta-Furans	133		0.375	2.86	0.98		1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:00
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0066	**Units:**	Percent
Lab Code:	E1801096-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 00:32
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.084g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519505	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519494

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1047.404	52		25-164	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	1316.423	66		25-181	1.60	1.208
13C-1,2,3,4,7,8-HxCDD	2000	1561.881	78		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1594.625	80		28-130	1.30	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1196.155	60		23-140	1.07	1.073
13C-OCDD	4000	1289.404	32		17-157	0.85	1.154
13C-2,3,7,8-TCDF	2000	1479.641	74		24-169	0.80	0.990
13C-1,2,3,7,8-PeCDF	2000	1358.532	68		24-185	1.62	1.161
13C-2,3,4,7,8-PeCDF	2000	1234.118	62		21-178	1.59	1.197
13C-1,2,3,4,7,8-HxCDF	2000	1524.619	76		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1600.465	80		26-123	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1307.488	65		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1536.633	77		28-136	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	968.601	48		28-143	0.41	1.046
13C-1,2,3,4,7,8,9-HpCDF	2000	829.819	41		26-138	0.45	1.086
37Cl-2,3,7,8-TCDD	800	670.897	84		35-197	NA	1.024

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:00
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0066	**Units:**	ng/Kg
Lab Code:	E1801096-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**26.3**	3.11	3.11	1	1	26.3
1,2,3,7,8-PeCDD	**14.5**	0.332	2.86	1	1	14.5
1,2,3,4,7,8-HxCDD	**0.754**	0.491	2.86	1	0.1	0.0754
1,2,3,6,7,8-HxCDD	**4.27**	0.553	2.86	1	0.1	0.427
1,2,3,7,8,9-HxCDD	**3.06**	0.510	2.86	1	0.1	0.306
1,2,3,4,6,7,8-HpCDD	**121**	0.638	2.86	1	0.01	1.21
OCDD	**2230**	1.32	5.71	1	0.0003	0.669
2,3,7,8-TCDF	**71.3**	2.73	2.73	1	0.1	7.13
1,2,3,7,8-PeCDF	**159**	0.793	2.86	1	0.03	4.77
2,3,4,7,8-PeCDF	**121**	0.873	2.86	1	0.3	36.3
1,2,3,4,7,8-HxCDF	**274**	0.468	2.86	1	0.1	27.4
1,2,3,6,7,8-HxCDF	**63.5**	0.456	2.86	1	0.1	6.35
1,2,3,7,8,9-HxCDF	**21.0**	0.720	2.86	1	0.1	2.10
2,3,4,6,7,8-HxCDF	**13.4**	0.499	2.86	1	0.1	1.34
1,2,3,4,6,7,8-HpCDF	**82.3**	0.285	2.86	1	0.01	0.823
1,2,3,4,7,8,9-HpCDF	**28.4**	0.507	2.86	1	0.01	0.284
OCDF	**72.8**	1.44	5.71	1	0.0003	0.0218
		Total TEQ				130

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:00
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0066	**Units:**	Percent
Lab Code:	E1801096-011	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	5.739g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	86.8		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:05
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0067	**Units:**	ng/Kg
Lab Code:	E1801096-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/21/18 11:26
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.141g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519543	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519532

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	55.3		2.52	2.52	0.75	1.001	1
1,2,3,7,8-PeCDD	64.0		0.248	3.27	1.52	1.001	1
1,2,3,4,7,8-HxCDD	1.01	**JK**	0.685	3.27	1.92	1.000	1
1,2,3,6,7,8-HxCDD	5.69	**K**	0.742	3.27	1.44	1.000	1
1,2,3,7,8,9-HxCDD	3.36		0.697	3.27	1.16	1.007	1
1,2,3,4,6,7,8-HpCDD	188		0.497	3.27	1.04	1.000	1
OCDD	3930		1.86	6.54	0.88	1.000	1
2,3,7,8-TCDF	134		1.25	1.25	0.80	1.001	1
1,2,3,7,8-PeCDF	650		0.831	3.27	1.53	1.001	1
2,3,4,7,8-PeCDF	508		0.969	3.27	1.51	1.001	1
1,2,3,4,7,8-HxCDF	1270		0.516	3.27	1.24	1.000	1
1,2,3,6,7,8-HxCDF	302		0.490	3.27	1.22	1.000	1
1,2,3,7,8,9-HxCDF	91.9		0.786	3.27	1.25	1.001	1
2,3,4,6,7,8-HxCDF	46.0	**K**	0.545	3.27	1.53	1.000	1
1,2,3,4,6,7,8-HpCDF	292		0.292	3.27	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	125		0.525	3.27	1.00	1.000	1
OCDF	165		1.79	6.54	0.87	1.004	1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:05
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0067	**Units:**	ng/Kg
Lab Code:	E1801096-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/21/18 11:26
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.141g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519543	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519532

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	11000		0.783	0.783	0.77		1
Total Penta-Dioxins	89.3		0.248	3.27	1.71		1
Total Hexa-Dioxins	84.6		0.708	3.27	1.38		1
Total Hepta-Dioxins	420		0.497	3.27	1.03		1
Total Tetra-Furans	37700		0.374	0.654	0.75		1
Total Penta-Furans	1790		0.0819	3.27	1.41		1
Total Hexa-Furans	1830		0.567	3.27	1.32		1
Total Hepta-Furans	528		0.384	3.27	1.00		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:05
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0067	**Units:**	Percent
Lab Code:	E1801096-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 01:20
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.141g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519506	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519494

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1054.235	53		25-164	0.82	1.023
13C-1,2,3,7,8-PeCDD	2000	1256.504	63		25-181	1.58	1.206
13C-1,2,3,4,7,8-HxCDD	2000	1405.255	70		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1422.138	71		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1020.641	51		23-140	1.05	1.073
13C-OCDD	4000	1081.816	27		17-157	0.95	1.155
13C-2,3,7,8-TCDF	2000	1462.465	73		24-169	0.80	0.990
13C-1,2,3,7,8-PeCDF	2000	1295.658	65		24-185	1.59	1.160
13C-2,3,4,7,8-PeCDF	2000	1144.285	57		21-178	1.55	1.195
13C-1,2,3,4,7,8-HxCDF	2000	1399.702	70		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1437.092	72		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1175.395	59		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1408.499	70		28-136	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	886.705	44		28-143	0.46	1.046
13C-1,2,3,4,7,8,9-HpCDF	2000	711.809	36		26-138	0.43	1.086
37Cl-2,3,7,8-TCDD	800	787.190	98		35-197	NA	1.023

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:05
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0067	**Units:**	ng/Kg
Lab Code:	E1801096-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**55.3**	2.52	2.52	1	1	55.3
1,2,3,7,8-PeCDD	**64.0**	0.248	3.27	1	1	64.0
1,2,3,4,7,8-HxCDD	**1.01**	0.685	3.27	1	0.1	0.101
1,2,3,6,7,8-HxCDD	**5.69**	0.742	3.27	1	0.1	0.569
1,2,3,7,8,9-HxCDD	**3.36**	0.697	3.27	1	0.1	0.336
1,2,3,4,6,7,8-HpCDD	**188**	0.497	3.27	1	0.01	1.88
OCDD	**3930**	1.86	6.54	1	0.0003	1.18
2,3,7,8-TCDF	**134**	1.25	1.25	1	0.1	13.4
1,2,3,7,8-PeCDF	**650**	0.831	3.27	1	0.03	19.5
2,3,4,7,8-PeCDF	**508**	0.969	3.27	1	0.3	152
1,2,3,4,7,8-HxCDF	**1270**	0.516	3.27	1	0.1	127
1,2,3,6,7,8-HxCDF	**302**	0.490	3.27	1	0.1	30.2
1,2,3,7,8,9-HxCDF	**91.9**	0.786	3.27	1	0.1	9.19
2,3,4,6,7,8-HxCDF	**46.0**	0.545	3.27	1	0.1	4.60
1,2,3,4,6,7,8-HpCDF	**292**	0.292	3.27	1	0.01	2.92
1,2,3,4,7,8,9-HpCDF	**125**	0.525	3.27	1	0.01	1.25
OCDF	**165**	1.79	6.54	1	0.0003	0.0495
		Total TEQ				483

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:05
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0067	**Units:**	Percent
Lab Code:	E1801096-012	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	5.228g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	75.4		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:10
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0068	**Units:**	ng/Kg
Lab Code:	E1801096-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/25/18 02:23
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.742g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519608	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519603

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	235		1.70	1.70	0.82	1.001	1
1,2,3,7,8-PeCDD	203		0.296	3.54	1.64	1.001	1
1,2,3,4,7,8-HxCDD	4.29		0.519	3.54	1.05	1.000	1
1,2,3,6,7,8-HxCDD	21.7		0.599	3.54	1.37	1.000	1
1,2,3,7,8,9-HxCDD	7.37		0.519	3.54	1.28	1.007	1
1,2,3,4,6,7,8-HpCDD	511		0.855	3.54	1.07	1.000	1
OCDD	62.8		0.846	7.08	0.79	1.001	1
2,3,7,8-TCDF	459		0.696	0.708	0.73	1.001	1
1,2,3,7,8-PeCDF	1400		2.42	3.54	1.58	1.001	1
2,3,4,7,8-PeCDF	1090		3.10	3.54	1.58	1.001	1
1,2,3,4,7,8-HxCDF	2760		0.776	3.54	1.26	1.000	1
1,2,3,6,7,8-HxCDF	651		0.793	3.54	1.25	1.000	1
1,2,3,7,8,9-HxCDF	204		0.801	3.54	1.26	1.001	1
2,3,4,6,7,8-HxCDF	122		0.842	3.54	1.26	1.000	1
1,2,3,4,6,7,8-HpCDF	826		0.744	3.54	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	294		0.900	3.54	1.10	1.000	1
OCDF	2690		0.493	7.08	0.91	1.005	1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:10
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0068	**Units:**	ng/Kg
Lab Code:	E1801096-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/25/18 02:23
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.742g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519608	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519603

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	29600		2.07	2.07	0.81		1
Total Penta-Dioxins	254		0.296	3.54	1.57		1
Total Hexa-Dioxins	182		0.544	3.54	1.30		1
Total Hepta-Dioxins	1040		0.855	3.54	1.06		1
Total Tetra-Furans	89000		1.19	1.19	0.79		1
Total Penta-Furans	3730		2.72	3.54	1.77		1
Total Hexa-Furans	4090		0.803	3.54	1.29		1
Total Hepta-Furans	1450		0.816	3.54	1.06		1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:10
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0068	**Units:**	Percent
Lab Code:	E1801096-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 15:32
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.742g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616144	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	939.408	47		25-164	0.80	1.024
13C-1,2,3,7,8-PeCDD	2000	1496.142	75		25-181	1.55	1.209
13C-1,2,3,4,7,8-HxCDD	2000	1579.798	79		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1472.848	74		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1731.243	87		23-140	1.05	1.067
13C-OCDD	4000	1734.897	43		17-157	0.92	1.137
13C-2,3,7,8-TCDF	2000	1411.642	71		24-169	0.80	0.990
13C-1,2,3,7,8-PeCDF	2000	1566.328	78		24-185	1.60	1.163
13C-2,3,4,7,8-PeCDF	2000	1294.154	65		21-178	1.61	1.200
13C-1,2,3,4,7,8-HxCDF	2000	1463.728	73		26-152	0.53	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1401.112	70		26-123	0.54	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1519.395	76		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1418.314	71		28-136	0.55	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1288.278	64		28-143	0.46	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1336.920	67		26-138	0.45	1.079
37Cl-2,3,7,8-TCDD	800	945.864	118		35-197	NA	1.025

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:10
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0068	**Units:**	ng/Kg
Lab Code:	E1801096-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**235**	1.70	1.70	1	1	235
1,2,3,7,8-PeCDD	**203**	0.296	3.54	1	1	203
1,2,3,4,7,8-HxCDD	**4.29**	0.519	3.54	1	0.1	0.429
1,2,3,6,7,8-HxCDD	**21.7**	0.599	3.54	1	0.1	2.17
1,2,3,7,8,9-HxCDD	**7.37**	0.519	3.54	1	0.1	0.737
1,2,3,4,6,7,8-HpCDD	**511**	0.855	3.54	1	0.01	5.11
OCDD	**62.8**	0.846	7.08	1	0.0003	0.0188
2,3,7,8-TCDF	**459**	0.696	0.708	1	0.1	45.9
1,2,3,7,8-PeCDF	**1400**	2.42	3.54	1	0.03	42.0
2,3,4,7,8-PeCDF	**1090**	3.10	3.54	1	0.3	327
1,2,3,4,7,8-HxCDF	**2760**	0.776	3.54	1	0.1	276
1,2,3,6,7,8-HxCDF	**651**	0.793	3.54	1	0.1	65.1
1,2,3,7,8,9-HxCDF	**204**	0.801	3.54	1	0.1	20.4
2,3,4,6,7,8-HxCDF	**122**	0.842	3.54	1	0.1	12.2
1,2,3,4,6,7,8-HpCDF	**826**	0.744	3.54	1	0.01	8.26
1,2,3,4,7,8,9-HpCDF	**294**	0.900	3.54	1	0.01	2.94
OCDF	**2690**	0.493	7.08	1	0.0003	0.807
		Total TEQ				1250

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:10
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0068	**Units:**	Percent
Lab Code:	E1801096-013	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	6.38g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	65.7		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:15
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0069	**Units:**	ng/Kg
Lab Code:	E1801096-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/25/18 03:11
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.618g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519609	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519603

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	131		1.44	1.44	0.74	1.001	1
1,2,3,7,8-PeCDD	8.72		0.489	3.38	1.66	1.000	1
1,2,3,4,7,8-HxCDD	1.94	**JK**	0.444	3.38	1.48	1.000	1
1,2,3,6,7,8-HxCDD	9.75		0.491	3.38	1.22	1.000	1
1,2,3,7,8,9-HxCDD	5.58		0.434	3.38	1.08	1.007	1
1,2,3,4,6,7,8-HpCDD	171		1.23	3.38	1.06	1.000	1
OCDD	3950		0.341	6.76	0.90	1.000	1
2,3,7,8-TCDF	297		0.550	0.676	0.76	1.000	1
1,2,3,7,8-PeCDF	47.2		0.397	3.38	1.52	1.001	1
2,3,4,7,8-PeCDF	45.2		0.406	3.38	1.62	1.001	1
1,2,3,4,7,8-HxCDF	80.1		0.461	3.38	1.25	1.000	1
1,2,3,6,7,8-HxCDF	21.2		0.460	3.38	1.28	1.000	1
1,2,3,7,8,9-HxCDF	7.61		0.510	3.38	1.25	1.001	1
2,3,4,6,7,8-HxCDF	7.10		0.492	3.38	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	114		0.741	3.38	1.12	1.000	1
1,2,3,4,7,8,9-HpCDF	15.1		0.933	3.38	0.91	1.000	1
OCDF	3760		0.450	6.76	0.90	1.005	1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:15
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0069	**Units:**	ng/Kg
Lab Code:	E1801096-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/25/18 03:11
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.618g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519609	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519603

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	1110		1.28	1.28	0.83		1
Total Penta-Dioxins	28.6		0.489	3.38	1.74		1
Total Hexa-Dioxins	113		0.455	3.38	1.27		1
Total Hepta-Dioxins	463		1.23	3.38	1.07		1
Total Tetra-Furans	3500		0.551	0.676	0.73		1
Total Penta-Furans	187		0.365	3.38	1.49		1
Total Hexa-Furans	185		0.480	3.38	1.31		1
Total Hepta-Furans	226		0.828	3.38	1.12		1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:15
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0069	**Units:**	Percent
Lab Code:	E1801096-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 16:21
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.618g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616145	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1033.207	52		25-164	0.77	1.026
13C-1,2,3,7,8-PeCDD	2000	1500.011	75		25-181	1.56	1.219
13C-1,2,3,4,7,8-HxCDD	2000	1576.111	79		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1462.726	73		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1791.592	90		23-140	1.06	1.068
13C-OCDD	4000	1943.887	49		17-157	0.92	1.138
13C-2,3,7,8-TCDF	2000	1536.303	77		24-169	0.81	0.992
13C-1,2,3,7,8-PeCDF	2000	1530.579	77		24-185	1.60	1.170
13C-2,3,4,7,8-PeCDF	2000	1494.925	75		21-178	1.62	1.207
13C-1,2,3,4,7,8-HxCDF	2000	1491.379	75		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1424.239	71		26-123	0.53	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1478.041	74		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1434.884	72		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1366.541	68		28-143	0.46	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1351.359	68		26-138	0.47	1.080
37Cl-2,3,7,8-TCDD	800	580.727	73		35-197	NA	1.027

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:15
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0069	**Units:**	ng/Kg
Lab Code:	E1801096-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**131**	1.44	1.44	1	1	131
1,2,3,7,8-PeCDD	**8.72**	0.489	3.38	1	1	8.72
1,2,3,4,7,8-HxCDD	**1.94**	0.444	3.38	1	0.1	0.194
1,2,3,6,7,8-HxCDD	**9.75**	0.491	3.38	1	0.1	0.975
1,2,3,7,8,9-HxCDD	**5.58**	0.434	3.38	1	0.1	0.558
1,2,3,4,6,7,8-HpCDD	**171**	1.23	3.38	1	0.01	1.71
OCDD	**3950**	0.341	6.76	1	0.0003	1.19
2,3,7,8-TCDF	**297**	0.550	0.676	1	0.1	29.7
1,2,3,7,8-PeCDF	**47.2**	0.397	3.38	1	0.03	1.42
2,3,4,7,8-PeCDF	**45.2**	0.406	3.38	1	0.3	13.6
1,2,3,4,7,8-HxCDF	**80.1**	0.461	3.38	1	0.1	8.01
1,2,3,6,7,8-HxCDF	**21.2**	0.460	3.38	1	0.1	2.12
1,2,3,7,8,9-HxCDF	**7.61**	0.510	3.38	1	0.1	0.761
2,3,4,6,7,8-HxCDF	**7.10**	0.492	3.38	1	0.1	0.710
1,2,3,4,6,7,8-HpCDF	**114**	0.741	3.38	1	0.01	1.14
1,2,3,4,7,8,9-HpCDF	**15.1**	0.933	3.38	1	0.01	0.151
OCDF	**3760**	0.450	6.76	1	0.0003	1.13
		Total TEQ				203

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:15
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0069	**Units:**	Percent
Lab Code:	E1801096-014	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	5.747g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	69.7		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:20
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0070	**Units:**	ng/Kg
Lab Code:	E1801096-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 17:10
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.656g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616146	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	8.87		1.25	1.25	0.84	1.001	1
1,2,3,7,8-PeCDD	0.353**JK**		0.170	3.08	3.07	1.001	1
1,2,3,4,7,8-HxCDD	0.530**JK**		0.158	3.08	0.89	1.000	1
1,2,3,6,7,8-HxCDD	1.06**JK**		0.171	3.08	1.02	1.000	1
1,2,3,7,8,9-HxCDD	1.44**JK**		0.153	3.08	1.48	1.007	1
1,2,3,4,6,7,8-HpCDD	19.3		0.426	3.08	1.11	1.000	1
OCDD	554		0.136	6.16	0.91	1.000	1
2,3,7,8-TCDF	16.6		0.501	0.616	0.78	1.001	1
1,2,3,7,8-PeCDF	0.569**J**		0.179	3.08	1.50	1.001	1
2,3,4,7,8-PeCDF	0.533**J**		0.178	3.08	1.53	1.000	1
1,2,3,4,7,8-HxCDF	0.526**JK**		0.117	3.08	1.60	1.000	1
1,2,3,6,7,8-HxCDF	0.176**JK**		0.112	3.08	1.51	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.127	3.08			1
2,3,4,6,7,8-HxCDF	ND	U	0.119	3.08			1
1,2,3,4,6,7,8-HpCDF	0.349**J**		0.0919	3.08	0.96	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.111	3.08			1
OCDF	2.15**J**		0.287	6.16	0.90	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:20
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0070	**Units:**	ng/Kg
Lab Code:	E1801096-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 17:10
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.656g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616146	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	18.5		1.25	1.25	0.85		1
Total Penta-Dioxins	4.15		0.170	3.08	1.66		1
Total Hexa-Dioxins	24.5		0.160	3.08	1.20		1
Total Hepta-Dioxins	64.8		0.426	3.08	1.08		1
Total Tetra-Furans	25.9		0.501	0.616	0.73		1
Total Penta-Furans	1.10**J**		0.178	3.08	1.50		1
Total Hexa-Furans	ND	U	0.118	3.08			1
Total Hepta-Furans	0.349**J**		0.101	3.08	0.96		1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:20
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0070	**Units:**	Percent
Lab Code:	E1801096-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 17:10
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.656g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616146	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	739.764	37		25-164	0.81	1.026
13C-1,2,3,7,8-PeCDD	2000	1379.533	69		25-181	1.57	1.219
13C-1,2,3,4,7,8-HxCDD	2000	1482.248	74		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1402.209	70		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1897.089	95		23-140	1.08	1.068
13C-OCDD	4000	2454.349	61		17-157	0.90	1.138
13C-2,3,7,8-TCDF	2000	1046.748	52		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	1372.266	69		24-185	1.58	1.170
13C-2,3,4,7,8-PeCDF	2000	1359.123	68		21-178	1.59	1.207
13C-1,2,3,4,7,8-HxCDF	2000	1367.016	68		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1335.353	67		26-123	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1365.351	68		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1343.954	67		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1388.717	69		28-143	0.46	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1396.328	70		26-138	0.46	1.080
37Cl-2,3,7,8-TCDD	800	422.603	53		35-197	NA	1.027

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:20
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0070	**Units:**	ng/Kg
Lab Code:	E1801096-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**8.87**	1.25	1.25	1	1	8.87
1,2,3,7,8-PeCDD	**0.353**	0.170	3.08	1	1	0.353
1,2,3,4,7,8-HxCDD	**0.530**	0.158	3.08	1	0.1	0.0530
1,2,3,6,7,8-HxCDD	**1.06**	0.171	3.08	1	0.1	0.106
1,2,3,7,8,9-HxCDD	**1.44**	0.153	3.08	1	0.1	0.144
1,2,3,4,6,7,8-HpCDD	**19.3**	0.426	3.08	1	0.01	0.193
OCDD	**554**	0.136	6.16	1	0.0003	0.166
2,3,7,8-TCDF	**16.6**	0.501	0.616	1	0.1	1.66
1,2,3,7,8-PeCDF	**0.569**	0.179	3.08	1	0.03	0.0171
2,3,4,7,8-PeCDF	**0.533**	0.178	3.08	1	0.3	0.160
1,2,3,4,7,8-HxCDF	**0.526**	0.117	3.08	1	0.1	0.0526
1,2,3,6,7,8-HxCDF	**0.176**	0.112	3.08	1	0.1	0.0176
1,2,3,7,8,9-HxCDF	ND	0.127	3.08	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.119	3.08	1	0.1	
1,2,3,4,6,7,8-HpCDF	**0.349**	0.0919	3.08	1	0.01	0.00349
1,2,3,4,7,8,9-HpCDF	ND	0.111	3.08	1	0.01	
OCDF	**2.15**	0.287	6.16	1	0.0003	0.000645
		Total TEQ				11.8

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/06/18 09:20
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0070	**Units:**	Percent
Lab Code:	E1801096-015	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	6.573g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	76.2		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:25
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0233	**Units:**	ng/Kg
Lab Code:	E1801096-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 17:59
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.000g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616147	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	87.7		0.659	0.659	0.78	1.001	1
1,2,3,7,8-PeCDD	1.53**J**		0.155	3.00	1.43	1.001	1
1,2,3,4,7,8-HxCDD	0.900**J**		0.113	3.00	1.23	1.000	1
1,2,3,6,7,8-HxCDD	2.90**J**		0.126	3.00	1.34	1.000	1
1,2,3,7,8,9-HxCDD	1.82**J**		0.111	3.00	1.40	1.007	1
1,2,3,4,6,7,8-HpCDD	63.7		0.750	3.00	1.05	1.000	1
OCDD	1220		0.102	6.01	0.90	1.000	1
2,3,7,8-TCDF	167		0.439	0.601	0.80	1.001	1
1,2,3,7,8-PeCDF	5.46		0.241	3.00	1.56	1.000	1
2,3,4,7,8-PeCDF	5.10		0.242	3.00	1.47	1.000	1
1,2,3,4,7,8-HxCDF	10.1		0.172	3.00	1.22	1.000	1
1,2,3,6,7,8-HxCDF	2.88**JP**		0.175	3.00	1.20	1.000	1
1,2,3,7,8,9-HxCDF	0.699**JK**		0.197	3.00	0.82	1.001	1
2,3,4,6,7,8-HxCDF	1.12**J**		0.184	3.00	1.37	1.000	1
1,2,3,4,6,7,8-HpCDF	14.3		0.168	3.00	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	1.71**JK**		0.206	3.00	1.38	1.000	1
OCDF	39.6		0.267	6.01	0.91	1.004	1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:25
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0233	**Units:**	ng/Kg
Lab Code:	E1801096-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 17:59
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.000g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616147	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	96.8		0.659	0.659	0.75		1
Total Penta-Dioxins	3.43		0.155	3.00	1.53		1
Total Hexa-Dioxins	29.1		0.117	3.00	1.22		1
Total Hepta-Dioxins	140		0.750	3.00	1.04		1
Total Tetra-Furans	300		0.439	0.601	0.87		1
Total Penta-Furans	16.7		0.242	3.00	1.65		1
Total Hexa-Furans	25.7		0.182	3.00	1.13		1
Total Hepta-Furans	38.4		0.185	3.00	1.00		1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:25
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0233	**Units:**	Percent
Lab Code:	E1801096-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 17:59
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.000g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616147	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	866.851	43		25-164	0.77	1.026
13C-1,2,3,7,8-PeCDD	2000	1446.288	72		25-181	1.55	1.219
13C-1,2,3,4,7,8-HxCDD	2000	1510.933	76		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1458.460	73		28-130	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1796.177	90		23-140	1.07	1.068
13C-OCDD	4000	2064.661	52		17-157	0.93	1.138
13C-2,3,7,8-TCDF	2000	1243.913	62		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	1461.858	73		24-185	1.60	1.170
13C-2,3,4,7,8-PeCDF	2000	1428.094	71		21-178	1.63	1.208
13C-1,2,3,4,7,8-HxCDF	2000	1437.402	72		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1406.370	70		26-123	0.54	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1449.865	72		29-147	0.53	1.009
13C-2,3,4,6,7,8-HxCDF	2000	1404.642	70		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1347.390	67		28-143	0.47	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1342.445	67		26-138	0.46	1.080
37Cl-2,3,7,8-TCDD	800	475.895	59		35-197	NA	1.028

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:25
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0233	**Units:**	ng/Kg
Lab Code:	E1801096-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**87.7**	0.659	0.659	1	1	87.7
1,2,3,7,8-PeCDD	**1.53**	0.155	3.00	1	1	1.53
1,2,3,4,7,8-HxCDD	**0.900**	0.113	3.00	1	0.1	0.0900
1,2,3,6,7,8-HxCDD	**2.90**	0.126	3.00	1	0.1	0.290
1,2,3,7,8,9-HxCDD	**1.82**	0.111	3.00	1	0.1	0.182
1,2,3,4,6,7,8-HpCDD	**63.7**	0.750	3.00	1	0.01	0.637
OCDD	**1220**	0.102	6.01	1	0.0003	0.366
2,3,7,8-TCDF	**167**	0.439	0.601	1	0.1	16.7
1,2,3,7,8-PeCDF	**5.46**	0.241	3.00	1	0.03	0.164
2,3,4,7,8-PeCDF	**5.10**	0.242	3.00	1	0.3	1.53
1,2,3,4,7,8-HxCDF	**10.1**	0.172	3.00	1	0.1	1.01
1,2,3,6,7,8-HxCDF	**2.88**	0.175	3.00	1	0.1	0.288
1,2,3,7,8,9-HxCDF	**0.699**	0.197	3.00	1	0.1	0.0699
2,3,4,6,7,8-HxCDF	**1.12**	0.184	3.00	1	0.1	0.112
1,2,3,4,6,7,8-HpCDF	**14.3**	0.168	3.00	1	0.01	0.143
1,2,3,4,7,8,9-HpCDF	**1.71**	0.206	3.00	1	0.01	0.0171
OCDF	**39.6**	0.267	6.01	1	0.0003	0.0119
		Total TEQ				111

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:25
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0233	**Units:**	Percent
Lab Code:	E1801096-016	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	6.367g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	83.2		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:30
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0234	**Units:**	ng/Kg
Lab Code:	E1801096-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 18:49
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.074g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616148	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	209		1.23	1.23	0.81	1.001	1
1,2,3,7,8-PeCDD	2.29	**J**	0.161	3.09	1.52	1.001	1
1,2,3,4,7,8-HxCDD	0.973	**J**	0.229	3.09	1.35	1.000	1
1,2,3,6,7,8-HxCDD	1.59	**JK**	0.255	3.09	1.58	1.000	1
1,2,3,7,8,9-HxCDD	3.92		0.225	3.09	1.09	1.007	1
1,2,3,4,6,7,8-HpCDD	49.1		1.12	3.09	1.07	1.000	1
OCDD	1970		0.203	6.17	0.90	1.000	1
2,3,7,8-TCDF	403		0.584	0.617	0.73	1.001	1
1,2,3,7,8-PeCDF	13.6		0.275	3.09	1.61	1.001	1
2,3,4,7,8-PeCDF	10.8		0.274	3.09	1.66	1.001	1
1,2,3,4,7,8-HxCDF	21.2		0.0856	3.09	1.33	1.000	1
1,2,3,6,7,8-HxCDF	5.32		0.0872	3.09	1.16	1.000	1
1,2,3,7,8,9-HxCDF	2.13	**J**	0.103	3.09	1.41	1.001	1
2,3,4,6,7,8-HxCDF	1.26	**J**	0.0926	3.09	1.35	1.000	1
1,2,3,4,6,7,8-HpCDF	6.16		0.0899	3.09	1.09	1.000	1
1,2,3,4,7,8,9-HpCDF	2.06	**J**	0.107	3.09	0.91	1.000	1
OCDF	5.33	**J**	0.367	6.17	0.90	1.005	1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:30
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0234	**Units:**	ng/Kg
Lab Code:	E1801096-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 18:49
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.074g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616148	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	230		1.23	1.23	0.81		1
Total Penta-Dioxins	11.1		0.161	3.09	1.60		1
Total Hexa-Dioxins	72.9		0.236	3.09	1.29		1
Total Hepta-Dioxins	155		1.12	3.09	1.05		1
Total Tetra-Furans	703		0.584	0.617	0.77		1
Total Penta-Furans	33.1		0.275	3.09	1.38		1
Total Hexa-Furans	33.1		0.0917	3.09	1.42		1
Total Hepta-Furans	11.5		0.0977	3.09	1.09		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:30
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0234	**Units:**	Percent
Lab Code:	E1801096-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 18:49
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.074g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616148	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	596.842	30		25-164	0.82	1.026
13C-1,2,3,7,8-PeCDD	2000	1146.044	57		25-181	1.58	1.219
13C-1,2,3,4,7,8-HxCDD	2000	1290.852	65		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1251.693	63		28-130	1.29	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1407.763	70		23-140	1.09	1.068
13C-OCDD	4000	1483.932	37		17-157	0.93	1.138
13C-2,3,7,8-TCDF	2000	814.944	41		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	1141.780	57		24-185	1.63	1.170
13C-2,3,4,7,8-PeCDF	2000	1147.320	57		21-178	1.63	1.208
13C-1,2,3,4,7,8-HxCDF	2000	1229.696	61		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1211.547	61		26-123	0.54	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1192.769	60		29-147	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1177.145	59		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1063.518	53		28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1108.863	55		26-138	0.46	1.080
37Cl-2,3,7,8-TCDD	800	329.374	41		35-197	NA	1.028

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:30
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0234	**Units:**	ng/Kg
Lab Code:	E1801096-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**209**	1.23	1.23	1	1	209
1,2,3,7,8-PeCDD	**2.29**	0.161	3.09	1	1	2.29
1,2,3,4,7,8-HxCDD	**0.973**	0.229	3.09	1	0.1	0.0973
1,2,3,6,7,8-HxCDD	**1.59**	0.255	3.09	1	0.1	0.159
1,2,3,7,8,9-HxCDD	**3.92**	0.225	3.09	1	0.1	0.392
1,2,3,4,6,7,8-HpCDD	**49.1**	1.12	3.09	1	0.01	0.491
OCDD	**1970**	0.203	6.17	1	0.0003	0.591
2,3,7,8-TCDF	**403**	0.584	0.617	1	0.1	40.3
1,2,3,7,8-PeCDF	**13.6**	0.275	3.09	1	0.03	0.408
2,3,4,7,8-PeCDF	**10.8**	0.274	3.09	1	0.3	3.24
1,2,3,4,7,8-HxCDF	**21.2**	0.0856	3.09	1	0.1	2.12
1,2,3,6,7,8-HxCDF	**5.32**	0.0872	3.09	1	0.1	0.532
1,2,3,7,8,9-HxCDF	**2.13**	0.103	3.09	1	0.1	0.213
2,3,4,6,7,8-HxCDF	**1.26**	0.0926	3.09	1	0.1	0.126
1,2,3,4,6,7,8-HpCDF	**6.16**	0.0899	3.09	1	0.01	0.0616
1,2,3,4,7,8,9-HpCDF	**2.06**	0.107	3.09	1	0.01	0.0206
OCDF	**5.33**	0.367	6.17	1	0.0003	0.00160
		Total TEQ				260

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:30
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0234	**Units:**	Percent
Lab Code:	E1801096-017	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	5.706g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	80.4		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:35
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0235	**Units:**	ng/Kg
Lab Code:	E1801096-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 19:38
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.645g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616149	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	6.77		0.869	0.869	0.86	1.001	1
1,2,3,7,8-PeCDD	0.685	**JK**	0.153	3.11	1.23	1.001	1
1,2,3,4,7,8-HxCDD	0.775	**JK**	0.202	3.11	1.44	1.000	1
1,2,3,6,7,8-HxCDD	1.45	**J**	0.227	3.11	1.14	1.001	1
1,2,3,7,8,9-HxCDD	2.51	**JK**	0.199	3.11	1.01	1.007	1
1,2,3,4,6,7,8-HpCDD	30.6		0.411	3.11	1.07	1.000	1
OCDD	744		0.184	6.22	0.90	1.000	1
2,3,7,8-TCDF	13.4		0.507	0.622	0.76	1.001	1
1,2,3,7,8-PeCDF	0.747	**J**	0.169	3.11	1.46	1.001	1
2,3,4,7,8-PeCDF	0.603	**JK**	0.174	3.11	1.11	1.001	1
1,2,3,4,7,8-HxCDF	1.35	**J**	0.0804	3.11	1.17	1.000	1
1,2,3,6,7,8-HxCDF	0.353	**JK**	0.0835	3.11	0.97	1.000	1
1,2,3,7,8,9-HxCDF	0.203	**JK**	0.0911	3.11	0.98	1.000	1
2,3,4,6,7,8-HxCDF	0.129	**JK**	0.0833	3.11	1.00	1.000	1
1,2,3,4,6,7,8-HpCDF	2.37	**J**	0.0639	3.11	1.09	1.000	1
1,2,3,4,7,8,9-HpCDF	0.158	**J**	0.0759	3.11	0.98	1.000	1
OCDF	5.07	**J**	0.239	6.22	0.92	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:35
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0235	**Units:**	ng/Kg
Lab Code:	E1801096-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 19:38
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.645g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616149	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	6.77		0.869	0.869	0.86		1
Total Penta-Dioxins	7.17		0.153	3.11	1.57		1
Total Hexa-Dioxins	35.6		0.208	3.11	1.31		1
Total Hepta-Dioxins	99.7		0.411	3.11	1.07		1
Total Tetra-Furans	29.0		0.507	0.622	0.68		1
Total Penta-Furans	1.76	**J**	0.171	3.11	1.39		1
Total Hexa-Furans	2.07	**J**	0.0845	3.11	1.09		1
Total Hepta-Furans	3.42		0.0695	3.11	1.09		1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:35
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0235	**Units:**	Percent
Lab Code:	E1801096-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 19:38
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.645g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616149	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	720.044	36		25-164	0.77	1.026
13C-1,2,3,7,8-PeCDD	2000	1282.522	64		25-181	1.58	1.219
13C-1,2,3,4,7,8-HxCDD	2000	1451.441	73		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1299.272	65		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1720.086	86		23-140	1.06	1.068
13C-OCDD	4000	2034.132	51		17-157	0.92	1.138
13C-2,3,7,8-TCDF	2000	1016.904	51		24-169	0.79	0.991
13C-1,2,3,7,8-PeCDF	2000	1321.734	66		24-185	1.62	1.170
13C-2,3,4,7,8-PeCDF	2000	1271.198	64		21-178	1.60	1.208
13C-1,2,3,4,7,8-HxCDF	2000	1308.414	65		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1276.816	64		26-123	0.53	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1307.677	65		29-147	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1271.951	64		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1258.719	63		28-143	0.46	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1310.102	66		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	433.179	54		35-197	NA	1.028

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:35
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0235	**Units:**	ng/Kg
Lab Code:	E1801096-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**6.77**	0.869	0.869	1	1	6.77
1,2,3,7,8-PeCDD	**0.685**	0.153	3.11	1	1	0.685
1,2,3,4,7,8-HxCDD	**0.775**	0.202	3.11	1	0.1	0.0775
1,2,3,6,7,8-HxCDD	**1.45**	0.227	3.11	1	0.1	0.145
1,2,3,7,8,9-HxCDD	**2.51**	0.199	3.11	1	0.1	0.251
1,2,3,4,6,7,8-HpCDD	**30.6**	0.411	3.11	1	0.01	0.306
OCDD	**744**	0.184	6.22	1	0.0003	0.223
2,3,7,8-TCDF	**13.4**	0.507	0.622	1	0.1	1.34
1,2,3,7,8-PeCDF	**0.747**	0.169	3.11	1	0.03	0.0224
2,3,4,7,8-PeCDF	**0.603**	0.174	3.11	1	0.3	0.181
1,2,3,4,7,8-HxCDF	**1.35**	0.0804	3.11	1	0.1	0.135
1,2,3,6,7,8-HxCDF	**0.353**	0.0835	3.11	1	0.1	0.0353
1,2,3,7,8,9-HxCDF	**0.203**	0.0911	3.11	1	0.1	0.0203
2,3,4,6,7,8-HxCDF	**0.129**	0.0833	3.11	1	0.1	0.0129
1,2,3,4,6,7,8-HpCDF	**2.37**	0.0639	3.11	1	0.01	0.0237
1,2,3,4,7,8,9-HpCDF	**0.158**	0.0759	3.11	1	0.01	0.00158
OCDF	**5.07**	0.239	6.22	1	0.0003	0.00152
		Total TEQ				10.2

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:35
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0235	**Units:**	Percent
Lab Code:	E1801096-018	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	5.239g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	75.5		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:40
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0236	**Units:**	ng/Kg
Lab Code:	E1801096-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 20:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.295g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616150	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	4.87		0.756	0.756	0.77	1.001	1
1,2,3,7,8-PeCDD	0.576	**JK**	0.112	3.28	0.80	1.000	1
1,2,3,4,7,8-HxCDD	0.522	**JK**	0.146	3.28	1.72	1.000	1
1,2,3,6,7,8-HxCDD	0.887	**J**	0.159	3.28	1.43	1.001	1
1,2,3,7,8,9-HxCDD	1.43	**J**	0.142	3.28	1.21	1.007	1
1,2,3,4,6,7,8-HpCDD	16.4		0.300	3.28	1.03	1.000	1
OCDD	464		0.148	6.55	0.89	1.000	1
2,3,7,8-TCDF	8.39		0.425	0.655	0.71	1.001	1
1,2,3,7,8-PeCDF	0.396	**JK**	0.213	3.28	1.26	1.001	1
2,3,4,7,8-PeCDF	0.426	**J**	0.220	3.28	1.56	1.001	1
1,2,3,4,7,8-HxCDF	1.50	**J**	0.0740	3.28	1.41	1.000	1
1,2,3,6,7,8-HxCDF	0.345	**J**	0.0724	3.28	1.05	1.001	1
1,2,3,7,8,9-HxCDF	0.159	**J**	0.0838	3.28	1.31	1.000	1
2,3,4,6,7,8-HxCDF	0.168	**JK**	0.0771	3.28	1.45	1.000	1
1,2,3,4,6,7,8-HpCDF	3.99		0.0623	3.28	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	0.183	**J**	0.0744	3.28	0.94	1.000	1
OCDF	5.55	**JK**	0.180	6.55	1.06	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:40
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0236	**Units:**	ng/Kg
Lab Code:	E1801096-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 20:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.295g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616150	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	16.2		0.756	0.756	0.85		1
Total Penta-Dioxins	5.51		0.112	3.28	1.59		1
Total Hexa-Dioxins	34.3		0.149	3.28	1.21		1
Total Hepta-Dioxins	73.2		0.300	3.28	1.07		1
Total Tetra-Furans	14.8		0.425	0.655	0.71		1
Total Penta-Furans	0.426**J**		0.216	3.28	1.56		1
Total Hexa-Furans	2.74**J**		0.0766	3.28	1.23		1
Total Hepta-Furans	4.17		0.0678	3.28	1.01		1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:40
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0236	**Units:**	Percent
Lab Code:	E1801096-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 20:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.295g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616150	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	753.745	38		25-164	0.77	1.026
13C-1,2,3,7,8-PeCDD	2000	1340.258	67		25-181	1.56	1.219
13C-1,2,3,4,7,8-HxCDD	2000	1434.341	72		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1404.077	70		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1690.039	85		23-140	1.06	1.069
13C-OCDD	4000	2189.937	55		17-157	0.90	1.138
13C-2,3,7,8-TCDF	2000	1061.573	53		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	1362.959	68		24-185	1.62	1.170
13C-2,3,4,7,8-PeCDF	2000	1302.272	65		21-178	1.61	1.208
13C-1,2,3,4,7,8-HxCDF	2000	1358.898	68		26-152	0.54	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1345.791	67		26-123	0.53	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1360.182	68		29-147	0.54	1.009
13C-2,3,4,6,7,8-HxCDF	2000	1336.496	67		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1241.664	62		28-143	0.46	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1267.598	63		26-138	0.46	1.081
37Cl-2,3,7,8-TCDD	800	433.135	54		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:40
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0236	**Units:**	ng/Kg
Lab Code:	E1801096-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**4.87**	0.756	0.756	1	1	4.87
1,2,3,7,8-PeCDD	**0.576**	0.112	3.28	1	1	0.576
1,2,3,4,7,8-HxCDD	**0.522**	0.146	3.28	1	0.1	0.0522
1,2,3,6,7,8-HxCDD	**0.887**	0.159	3.28	1	0.1	0.0887
1,2,3,7,8,9-HxCDD	**1.43**	0.142	3.28	1	0.1	0.143
1,2,3,4,6,7,8-HpCDD	**16.4**	0.300	3.28	1	0.01	0.164
OCDD	**464**	0.148	6.55	1	0.0003	0.139
2,3,7,8-TCDF	**8.39**	0.425	0.655	1	0.1	0.839
1,2,3,7,8-PeCDF	**0.396**	0.213	3.28	1	0.03	0.0119
2,3,4,7,8-PeCDF	**0.426**	0.220	3.28	1	0.3	0.128
1,2,3,4,7,8-HxCDF	**1.50**	0.0740	3.28	1	0.1	0.150
1,2,3,6,7,8-HxCDF	**0.345**	0.0724	3.28	1	0.1	0.0345
1,2,3,7,8,9-HxCDF	**0.159**	0.0838	3.28	1	0.1	0.0159
2,3,4,6,7,8-HxCDF	**0.168**	0.0771	3.28	1	0.1	0.0168
1,2,3,4,6,7,8-HpCDF	**3.99**	0.0623	3.28	1	0.01	0.0399
1,2,3,4,7,8,9-HpCDF	**0.183**	0.0744	3.28	1	0.01	0.00183
OCDF	**5.55**	0.180	6.55	1	0.0003	0.00167
		Total TEQ				7.27

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:40
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0236	**Units:**	Percent
Lab Code:	E1801096-019	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	6.463g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	74.1		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:45
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0237	**Units:**	ng/Kg
Lab Code:	E1801096-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 21:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.167g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616151	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	8.81		1.36	1.36	0.68	1.001	1
1,2,3,7,8-PeCDD	0.346**JK**		0.160	3.24	1.27	1.001	1
1,2,3,4,7,8-HxCDD	0.258**JK**		0.122	3.24	1.91	1.000	1
1,2,3,6,7,8-HxCDD	0.558**JK**		0.135	3.24	1.03	1.000	1
1,2,3,7,8,9-HxCDD	0.799**JK**		0.119	3.24	1.61	1.007	1
1,2,3,4,6,7,8-HpCDD	10.4		0.232	3.24	0.97	1.000	1
OCDD	351		0.115	6.49	0.90	1.000	1
2,3,7,8-TCDF	14.4**K**		0.922	0.922	0.92	1.001	1
1,2,3,7,8-PeCDF	0.519**J**		0.186	3.24	1.70	1.001	1
2,3,4,7,8-PeCDF	0.297**J**		0.168	3.24	1.50	1.000	1
1,2,3,4,7,8-HxCDF	0.517**J**		0.102	3.24	1.33	1.000	1
1,2,3,6,7,8-HxCDF	0.215**JK**		0.0981	3.24	0.97	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.110	3.24			1
2,3,4,6,7,8-HxCDF	ND	U	0.104	3.24			1
1,2,3,4,6,7,8-HpCDF	0.554**JK**		0.0626	3.24	1.39	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0751	3.24			1
OCDF	1.57**J**		0.206	6.49	0.90	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:45
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0237	**Units:**	ng/Kg
Lab Code:	E1801096-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 21:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.167g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616151	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	23.4		1.36	1.36	0.82		1
Total Penta-Dioxins	6.70		0.160	3.24	1.39		1
Total Hexa-Dioxins	33.3		0.125	3.24	1.26		1
Total Hepta-Dioxins	58.2		0.232	3.24	1.08		1
Total Tetra-Furans	8.70		0.922	0.922	0.73		1
Total Penta-Furans	0.882**J**		0.177	3.24	1.70		1
Total Hexa-Furans	0.517**J**		0.104	3.24	1.33		1
Total Hepta-Furans	ND	U	0.0683	3.24			1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:45
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0237	**Units:**	Percent
Lab Code:	E1801096-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 21:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.167g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616151	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616141

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	400.981	20	**Y**	25-164	0.79	1.026
13C-1,2,3,7,8-PeCDD	2000	1092.765	55		25-181	1.53	1.219
13C-1,2,3,4,7,8-HxCDD	2000	1271.822	64		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1206.115	60		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1534.816	77		23-140	1.06	1.068
13C-OCDD	4000	1822.287	46		17-157	0.91	1.138
13C-2,3,7,8-TCDF	2000	527.262	26		24-169	0.76	0.992
13C-1,2,3,7,8-PeCDF	2000	962.186	48		24-185	1.59	1.170
13C-2,3,4,7,8-PeCDF	2000	1056.458	53		21-178	1.59	1.208
13C-1,2,3,4,7,8-HxCDF	2000	1154.055	58		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1137.744	57		26-123	0.53	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1169.980	58		29-147	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1155.307	58		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1146.125	57		28-143	0.46	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1152.584	58		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	233.475	29	**Y**	35-197	NA	1.028

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:45
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0237	**Units:**	ng/Kg
Lab Code:	E1801096-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**8.81**	1.36	1.36	1	1	8.81
1,2,3,7,8-PeCDD	**0.346**	0.160	3.24	1	1	0.346
1,2,3,4,7,8-HxCDD	**0.258**	0.122	3.24	1	0.1	0.0258
1,2,3,6,7,8-HxCDD	**0.558**	0.135	3.24	1	0.1	0.0558
1,2,3,7,8,9-HxCDD	**0.799**	0.119	3.24	1	0.1	0.0799
1,2,3,4,6,7,8-HpCDD	**10.4**	0.232	3.24	1	0.01	0.104
OCDD	**351**	0.115	6.49	1	0.0003	0.105
2,3,7,8-TCDF	**14.4**	0.922	0.922	1	0.1	1.44
1,2,3,7,8-PeCDF	**0.519**	0.186	3.24	1	0.03	0.0156
2,3,4,7,8-PeCDF	**0.297**	0.168	3.24	1	0.3	0.0891
1,2,3,4,7,8-HxCDF	**0.517**	0.102	3.24	1	0.1	0.0517
1,2,3,6,7,8-HxCDF	**0.215**	0.0981	3.24	1	0.1	0.0215
1,2,3,7,8,9-HxCDF	ND	0.110	3.24	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.104	3.24	1	0.1	
1,2,3,4,6,7,8-HpCDF	**0.554**	0.0626	3.24	1	0.01	0.00554
1,2,3,4,7,8,9-HpCDF	ND	0.0751	3.24	1	0.01	
OCDF	**1.57**	0.206	6.49	1	0.0003	0.000471
		Total TEQ				11.2

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	11/16/18 08:45
Sample Matrix:	Sediment	**Date Received:**	12/07/18 12:51
Sample Name:	SL0237	**Units:**	Percent
Lab Code:	E1801096-020	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/14/18 15:22
	5.787g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	75.8		-	1

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1800512-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/24/18 11:25
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.302g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519590	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519587

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.847	0.847			1
1,2,3,7,8-PeCDD	ND	U	0.224	2.43			1
1,2,3,4,7,8-HxCDD	ND	U	0.131	2.43			1
1,2,3,6,7,8-HxCDD	ND	U	0.140	2.43			1
1,2,3,7,8,9-HxCDD	ND	U	0.133	2.43			1
1,2,3,4,6,7,8-HpCDD	ND	U	0.154	2.43			1
OCDD	ND	U	0.357	4.85			1
2,3,7,8-TCDF	ND	U	0.577	0.577			1
1,2,3,7,8-PeCDF	ND	U	0.125	2.43			1
2,3,4,7,8-PeCDF	ND	U	0.121	2.43			1
1,2,3,4,7,8-HxCDF	ND	U	0.139	2.43			1
1,2,3,6,7,8-HxCDF	ND	U	0.134	2.43			1
1,2,3,7,8,9-HxCDF	ND	U	0.176	2.43			1
2,3,4,6,7,8-HxCDF	ND	U	0.143	2.43			1
1,2,3,4,6,7,8-HpCDF	ND	U	0.102	2.43			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.164	2.43			1
OCDF	ND	U	0.577	4.85			1

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1800512-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/24/18 11:25
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.302g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519590	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519587

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.847	0.847			1
Total Penta-Dioxins	ND	U	0.224	2.43			1
Total Hexa-Dioxins	ND	U	0.135	2.43			1
Total Hepta-Dioxins	ND	U	0.154	2.43			1
Total Tetra-Furans	ND	U	0.577	0.577			1
Total Penta-Furans	ND	U	0.123	2.43			1
Total Hexa-Furans	ND	U	0.147	2.43			1
Total Hepta-Furans	ND	U	0.129	2.43			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1800512-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/24/18 11:25
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.302g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519590	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519587

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	602.909	30		25-164	0.78	1.025
13C-1,2,3,7,8-PeCDD	2000	1408.978	70		25-181	1.63	1.220
13C-1,2,3,4,7,8-HxCDD	2000	1351.834	68		32-141	1.29	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1576.707	79		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1946.919	97		23-140	1.11	1.074
13C-OCDD	4000	3471.984	87		17-157	0.88	1.154
13C-2,3,7,8-TCDF	2000	761.907	38		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	1197.540	60		24-185	1.62	1.171
13C-2,3,4,7,8-PeCDF	2000	1254.402	63		21-178	1.58	1.208
13C-1,2,3,4,7,8-HxCDF	2000	1176.681	59		26-152	0.49	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1291.885	65		26-123	0.51	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1300.869	65		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1296.734	65		28-136	0.50	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1445.178	72		28-143	0.45	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	1449.756	72		26-138	0.43	1.087
37Cl-2,3,7,8-TCDD	800	313.229	39		35-197	NA	1.026

Accuracy & Precision

ALS Environmental - Houston HRMS
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QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Analyzed:**	12/20/18 - 12/24/18
Sample Matrix:	Sediment	**Date Extracted:**	12/13/18

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	Dry
		Analysis Lot:	619877

	Lab Control Sample EQ1800512-02			Duplicate Lab Control Sample EQ1800512-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	68.6	95.6	72	75.4	98.7	76	70-140	9	50
1,2,3,4,7,8-HxCDD	87.7	95.6	92	91.5	98.7	93	70-164	4	50
1,2,3,6,7,8-HxCDD	96.1	95.6	101	102	98.7	103	76-134	6	50
1,2,3,7,8,9-HxCDD	89.3	95.6	93	96.3	98.7	98	64-162	7	50
1,2,3,7,8-PeCDD	97.6	95.6	102	99.8	98.7	101	70-142	2	50
2,3,7,8-TCDD	28.1	19.1	147	29.4	19.7	149	67-158	5	50
OCDD	199	191	104	199	197	101	78-144	<1	50
1,2,3,4,6,7,8-HpCDF	87.3	95.6	91	94.5	98.7	96	82-122	8	50
1,2,3,4,7,8,9-HpCDF	87.4	95.6	91	101	98.7	102	78-138	14	50
1,2,3,4,7,8-HxCDF	84.5	95.6	88	99.4	98.7	101	72-134	16	50
1,2,3,6,7,8-HxCDF	85.7	95.6	90	99.8	98.7	101	84-130	15	50
1,2,3,7,8,9-HxCDF	85.7	95.6	90	95.4	98.7	97	78-130	11	50
1,2,3,7,8-PeCDF	86.2	95.6	90	92.5	98.7	94	80-134	7	50
2,3,4,6,7,8-HxCDF	89.0	95.6	93	102	98.7	104	70-156	14	50
2,3,4,7,8-PeCDF	88.9	95.6	93	99.9	98.7	101	68-160	12	50
2,3,7,8-TCDF	19.3	19.1	101	20.5	19.7	104	75-158	6	50
OCDF	184	191	96	260	197	132	63-170	34	50

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800512-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 02:56
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.462g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616139	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616127

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	28.1		0.0698	0.478	0.78	1.001	1
1,2,3,7,8-PeCDD	97.6		0.0387	2.39	1.52	1.001	1
1,2,3,4,7,8-HxCDD	87.7		0.0329	2.39	1.26	1.000	1
1,2,3,6,7,8-HxCDD	96.1		0.0376	2.39	1.27	1.000	1
1,2,3,7,8,9-HxCDD	89.3		0.0326	2.39	1.24	1.007	1
1,2,3,4,6,7,8-HpCDD	68.6		0.0695	2.39	1.05	1.000	1
OCDD	199		0.164	4.78	0.89	1.000	1
2,3,7,8-TCDF	19.3		0.0203	0.478	0.79	1.001	1
1,2,3,7,8-PeCDF	86.2		0.0349	2.39	1.56	1.002	1
2,3,4,7,8-PeCDF	88.9		0.0542	2.39	1.57	1.001	1
1,2,3,4,7,8-HxCDF	84.5		0.0205	2.39	1.25	1.000	1
1,2,3,6,7,8-HxCDF	85.7		0.0200	2.39	1.25	1.000	1
1,2,3,7,8,9-HxCDF	85.7		0.0215	2.39	1.25	1.000	1
2,3,4,6,7,8-HxCDF	89.0		0.0212	2.39	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	87.3		0.130	2.39	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	87.4		0.144	2.39	1.04	1.000	1
OCDF	184		0.0433	4.78	0.93	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800512-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 02:56
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.462g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616139	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616127

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	28.2		0.0698	0.478	0.78		1
Total Penta-Dioxins	97.6		0.0387	2.39	1.52		1
Total Hexa-Dioxins	273		0.0343	2.39	1.26		1
Total Hepta-Dioxins	68.6		0.0695	2.39	1.05		1
Total Tetra-Furans	20.2		0.0203	0.478	0.77		1
Total Penta-Furans	177		0.0429	2.39	1.55		1
Total Hexa-Furans	345		0.0208	2.39	1.25		1
Total Hepta-Furans	175		0.137	2.39	1.04		1

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1800512-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/20/18 02:56
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.462g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616139	**Blank File Name:**	P519590
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616127

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	865.396	43		25-164	0.78	1.026
13C-1,2,3,7,8-PeCDD	2000	981.193	49		25-181	1.61	1.219
13C-1,2,3,4,7,8-HxCDD	2000	1578.247	79		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1400.076	70		28-130	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1963.081	98		23-140	1.05	1.068
13C-OCDD	4000	2688.575	67		17-157	0.90	1.138
13C-2,3,7,8-TCDF	2000	1150.993	58		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	672.642	34		24-185	1.57	1.169
13C-2,3,4,7,8-PeCDF	2000	483.746	24		21-178	1.55	1.207
13C-1,2,3,4,7,8-HxCDF	2000	1339.857	67		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1286.632	64		26-123	0.53	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1366.146	68		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1291.227	65		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1312.176	66		28-143	0.46	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1394.781	70		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	471.774	59		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800512-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/24/18 20:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.133g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519601	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519587

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	29.4		0.880	0.880	0.78	1.001	1
1,2,3,7,8-PeCDD	99.8		0.182	2.47	1.57	1.001	1
1,2,3,4,7,8-HxCDD	91.5		0.149	2.47	1.41	1.000	1
1,2,3,6,7,8-HxCDD	102		0.162	2.47	1.16	1.001	1
1,2,3,7,8,9-HxCDD	96.3		0.152	2.47	1.25	1.007	1
1,2,3,4,6,7,8-HpCDD	75.4		0.189	2.47	1.07	1.000	1
OCDD	199		0.477	4.93	0.94	1.000	1
2,3,7,8-TCDF	20.5		0.433	0.493	0.77	1.001	1
1,2,3,7,8-PeCDF	92.5		0.277	2.47	1.57	1.001	1
2,3,4,7,8-PeCDF	99.9		0.292	2.47	1.52	1.001	1
1,2,3,4,7,8-HxCDF	99.4		0.131	2.47	1.19	1.000	1
1,2,3,6,7,8-HxCDF	99.8		0.129	2.47	1.23	1.000	1
1,2,3,7,8,9-HxCDF	95.4		0.171	2.47	1.25	1.000	1
2,3,4,6,7,8-HxCDF	102		0.138	2.47	1.24	1.000	1
1,2,3,4,6,7,8-HpCDF	94.5		0.125	2.47	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	101		0.193	2.47	1.02	1.000	1
OCDF	260		0.960	4.93	0.90	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800512-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/24/18 20:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.133g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519601	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519587

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	29.4		0.880	0.880	0.78		1
Total Penta-Dioxins	99.8		0.182	2.47	1.57		1
Total Hexa-Dioxins	290		0.154	2.47	1.41		1
Total Hepta-Dioxins	75.4		0.189	2.47	1.07		1
Total Tetra-Furans	21.6		0.433	0.493	0.71		1
Total Penta-Furans	192		0.285	2.47	1.57		1
Total Hexa-Furans	398		0.141	2.47	1.19		1
Total Hepta-Furans	196		0.155	2.47	1.00		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801096
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1800512-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/24/18 20:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/13/18
Sample Amount:	10.133g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519601	**Blank File Name:**	P519590
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519587

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	846.942	42		25-164	0.75	1.024
13C-1,2,3,7,8-PeCDD	2000	1485.644	74		25-181	1.54	1.220
13C-1,2,3,4,7,8-HxCDD	2000	1235.057	62		32-141	1.40	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1319.191	66		28-130	1.19	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1618.858	81		23-140	1.04	1.074
13C-OCDD	4000	2001.464	50		17-157	0.88	1.154
13C-2,3,7,8-TCDF	2000	1109.105	55		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	1438.489	72		24-185	1.58	1.171
13C-2,3,4,7,8-PeCDF	2000	1368.090	68		21-178	1.60	1.208
13C-1,2,3,4,7,8-HxCDF	2000	1106.347	55		26-152	0.50	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1220.346	61		26-123	0.52	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1201.415	60		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1175.169	59		28-136	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1251.517	63		28-143	0.44	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	1279.311	64		26-138	0.45	1.087
37Cl-2,3,7,8-TCDD	800	503.722	63		35-197	NA	1.026

Chromatograms and Selected Ion Monitoring

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Sample Response Summary

CLIENT ID.
SL0059

Run #11 Filename P616131 Samp: 1 Inj: 1 Acquired: 19-DEC-18 20:23:09
Processed: 20-DEC-18 15:56:41 Sample ID: E1801096-001

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:18	1.810e+04	2.369e+04	0.76	yes	yes	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	1.605e+03	1.012e+03	1.59	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	1.225e+03	8.179e+02	1.50	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:48	2.633e+03	2.050e+03	1.28	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:55	8.300e+02	5.953e+02	1.39	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	3.313e+02	2.200e+02	1.51	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:14	2.663e+02	1.879e+02	1.42	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:28	2.291e+03	2.303e+03	0.99	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:47	3.093e+02	2.506e+02	1.23	no	no	1.463
10	Unk	OCDF	41:03	4.184e+03	4.531e+03	0.92	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:14	4.449e+03	5.560e+03	0.80	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:19	2.505e+02	2.723e+02	0.92	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	2.416e+02	2.001e+02	1.21	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:40	4.641e+02	3.618e+02	1.28	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	4.512e+02	4.042e+02	1.12	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	1.841e+04	1.719e+04	1.07	yes	no	1.112
17	Unk	OCDD	40:52	1.332e+06	1.488e+06	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:16	6.120e+04	7.786e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:00	9.877e+04	6.224e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	9.047e+04	5.685e+04	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	4.445e+04	8.510e+04	0.52	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:54	5.185e+04	9.692e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	4.568e+04	8.621e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	4.294e+04	8.197e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:27	3.220e+04	7.127e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	2.943e+04	6.543e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:12	3.159e+04	3.991e+04	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:18	7.034e+04	4.473e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:34	6.484e+04	4.968e+04	1.31	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:40	5.735e+04	4.702e+04	1.22	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	6.425e+04	6.065e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:51	6.338e+04	7.033e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:30	6.950e+04	8.789e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	9.670e+04	7.707e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	4.367e+04				no	1.086

$$\text{OCDD} = \frac{(1.332e+06 + 1.488e+06) \times 4000\ \text{pg} \times 1}{(6.338e+04 + 7.033e+04) \times 10.007\ \text{g} \times 79.9 / 100 \times 1.157} = 9120\ \text{ng/kg}$$

KW 12/24/18

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058785

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0059

Run #11 Filename P616131 Samp: 1 Inj: 1 Acquired: 19-DEC-18 20:23:09
Processed: 20-DEC-18 15:56:41 LAB. ID: E1801096-001

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.77e+06	6.84e+02	4.0e+03	3.60e+06	8.36e+02	4.3e+03
2	1,2,3,7,8-PeCDF	2.99e+05	3.01e+03	9.9e+01	1.84e+05	1.69e+03	1.1e+02
3	2,3,4,7,8-PeCDF	2.08e+05	3.01e+03	6.9e+01	1.37e+05	1.69e+03	8.1e+01
4	1,2,3,4,7,8-HxCDF	5.81e+05	1.06e+03	5.5e+02	4.48e+05	1.92e+03	2.3e+02
5	1,2,3,6,7,8-HxCDF	1.69e+05	1.06e+03	1.6e+02	1.27e+05	1.92e+03	6.6e+01
6	2,3,4,6,7,8-HxCDF	7.25e+04	1.06e+03	6.8e+01	4.92e+04	1.92e+03	2.6e+01
7	1,2,3,7,8,9-HxCDF	4.95e+04	1.06e+03	4.6e+01	3.79e+04	1.92e+03	2.0e+01
8	1,2,3,4,6,7,8-HpCDF	5.31e+05	1.63e+03	3.3e+02	5.39e+05	1.76e+03	3.1e+02
9	1,2,3,4,7,8,9-HpCDF	6.87e+04	1.63e+03	4.2e+01	5.96e+04	1.76e+03	3.4e+01
10	OCDF	8.71e+05	3.52e+02	2.5e+03	9.29e+05	1.06e+03	8.8e+02
11	2,3,7,8-TCDD	7.50e+05	2.31e+03	3.2e+02	9.34e+05	7.52e+02	1.2e+03
12	1,2,3,7,8-PeCDD	4.52e+04	9.08e+02	5.0e+01	3.20e+04	1.14e+03	2.8e+01
13	1,2,3,4,7,8-HxCDD	5.25e+04	9.04e+02	5.8e+01	4.52e+04	1.24e+03	3.6e+01
14	1,2,3,6,7,8-HxCDD	1.07e+05	9.04e+02	1.2e+02	7.69e+04	1.24e+03	6.2e+01
15	1,2,3,7,8,9-HxCDD	1.00e+05	9.04e+02	1.1e+02	9.01e+04	1.24e+03	7.3e+01
16	1,2,3,4,6,7,8-HpCDD	4.33e+06	1.75e+04	2.5e+02	4.11e+06	6.11e+04	6.7e+01
17	OCDD	2.80e+08	3.84e+02	7.3e+05	3.14e+08	2.21e+03	1.4e+05
18	13C-2,3,7,8-TCDF	9.58e+06	6.82e+03	1.4e+03	1.23e+07	3.76e+03	3.3e+03
19	13C-1,2,3,7,8-PeCDF	1.81e+07	1.60e+03	1.1e+04	1.15e+07	4.84e+02	2.4e+04
20	13C-2,3,4,7,8-PeCDF	1.74e+07	1.60e+03	1.1e+04	1.09e+07	4.84e+02	2.2e+04
21	13C-1,2,3,4,7,8-HxCDF	9.87e+06	1.04e+03	9.5e+03	1.88e+07	1.86e+03	1.0e+04
22	13C-1,2,3,6,7,8-HxCDF	1.11e+07	1.04e+03	1.1e+04	2.11e+07	1.86e+03	1.1e+04
23	13C-2,3,4,6,7,8-HxCDF	1.06e+07	1.04e+03	1.0e+04	1.99e+07	1.86e+03	1.1e+04
24	13C-1,2,3,7,8,9-HxCDF	9.76e+06	1.04e+03	9.4e+03	1.83e+07	1.86e+03	9.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	7.58e+06	2.26e+03	3.4e+03	1.69e+07	2.86e+03	5.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.53e+06	2.26e+03	2.9e+03	1.47e+07	2.86e+03	5.2e+03
27	13C-2,3,7,8-TCDD	5.49e+06	7.82e+03	7.0e+02	7.01e+06	2.50e+03	2.8e+03
28	13C-1,2,3,7,8-PeCDD	1.41e+07	1.29e+03	1.1e+04	8.84e+06	8.76e+02	1.0e+04
29	13C-1,2,3,4,7,8-HxCDD	1.43e+07	1.75e+03	8.2e+03	1.14e+07	1.13e+03	1.0e+04
30	13C-1,2,3,6,7,8-HxCDD	1.27e+07	1.75e+03	7.2e+03	1.01e+07	1.13e+03	8.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.54e+07	9.48e+02	1.6e+04	1.45e+07	1.27e+03	1.1e+04
32	13C-OCDD	1.31e+07	8.76e+02	1.5e+04	1.46e+07	4.52e+02	3.2e+04
33	13C-1,2,3,4-TCDD	1.13e+07	7.82e+03	1.4e+03	1.43e+07	2.50e+03	5.7e+03
34	13C-1,2,3,7,8,9-HxCDD	2.16e+07	1.75e+03	1.2e+04	1.70e+07	1.13e+03	1.5e+04
35	37Cl-2,3,7,8-TCDD	7.56e+06	1.01e+03	7.5e+03			

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Peak List Summary

CLIENT ID.
SL0059

Entry: 36 Totals Name: Total Tetra-Furans

Run: 11 File: P616131 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 20:23:09 Processed: 20-DEC-18 15:56:41

Mass: 303.9020 305.8990 Tot Response: 7.73e+04 RRF: 1.081

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:33	1.75e+02	0.82	yes	3.88e+02		n	n
2	23:03	2.57e+02	0.70	yes	6.24e+02		n	y
3	23:42	2.95e+02	0.88	yes	6.32e+02		n	n
4	24:00	6.37e+02	0.72	yes	1.52e+03		n	n
5	24:23	2.15e+02	0.81	yes	4.79e+02		n	n
6	24:45	9.39e+02	0.80	yes	2.11e+03		n	n
7	25:16	7.74e+03	0.77	yes	1.78e+04		n	n
8	25:36	3.75e+02	0.69	yes	9.21e+02		n	n
9	26:04	1.48e+02	0.74	yes	3.48e+02		n	y
10	26:11	9.71e+02	0.76	yes	2.25e+03		y	y
11	26:18	1.81e+04	0.76	yes	4.18e+04	2,3,7,8-TCDF	y	y
12	26:42	1.59e+03	0.77	yes	3.66e+03		n	n
13	26:58	4.16e+02	0.75	yes	9.66e+02		n	n
14	28:25	1.65e+03	0.78	yes	3.76e+03		n	n

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Peak List Summary

CLIENT ID.
SL0059

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 11 File: P616131 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 20:23:09 Processed: 20-DEC-18 15:56:41

Mass: 319.8970 321.8940 Tot Response: 1.10e+04 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:14	4.45e+03	0.80	yes	1.00e+04	2,3,7,8-TCDD	n	n
2	27:26	1.09e+01	0.70	yes	2.64e+01		n	n
3	27:34	4.30e+02	0.75	yes	1.01e+03		n	n

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Peak List Summary

CLIENT ID.
SL0059

Entry: 38 Totals Name: Total Penta-Furans1

Run: 11 File: P616131 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 20:23:09 Processed: 20-DEC-18 15:56:41

Mass: 339.8600 341.8570 Tot Response: 9.06e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:21	5.20e+02	3.86e+02 1.35	yes	9.06e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0059

Entry: 39 Totals Name: Total Penta-Furans2

Run: 11 File: P616131 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 20:23:09 Processed: 20-DEC-18 15:56:41

Mass: 339.8600 341.8570 Tot Response: 7.78e+03 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:52	1.26e+02	7.67e+01	1.64	yes	2.02e+02	y	n
2	30:00	1.14e+03	6.94e+02	1.64	yes	1.83e+03	y	y
3	30:36	1.65e+02	1.02e+02	1.61	yes	2.67e+02	y	y
4	31:02	1.60e+03	1.01e+03	1.59	yes	2.62e+03	1,2,3,7,8-PeCDF	n	n
5	31:18	5.10e+02	3.07e+02	1.66	yes	8.17e+02	n	n
6	32:02	1.23e+03	8.18e+02	1.50	yes	2.04e+03	2,3,4,7,8-PeCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0059

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 11 File: P616131 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 20:23:09 Processed: 20-DEC-18 15:56:41

Mass: 355.8550 357.8520 Tot Response: 3.25e+02 RRF: 0.9288

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:32	1.89e+02	1.36e+02 1.40	yes	3.25e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0059

Entry: 41 Totals Name: Total Hexa-Furans

Run: 11 File: P616131 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 20:23:09 Processed: 20-DEC-18 15:56:41

Mass: 373.8210 375.8180 Tot Response: 1.04e+04 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:48	1.15e+03	9.73e+02	1.18	yes	2.12e+03		n	n
2	34:22	8.64e+02	6.92e+02	1.25	yes	1.56e+03		n	n
3	34:42	9.76e+01	7.34e+01	1.33	yes	1.71e+02		n	n
4	34:48	2.63e+03	2.05e+03	1.28	yes	4.68e+03	1,2,3,4,7,8-HxCDF	n	n
5	34:55	8.30e+02	5.95e+02	1.39	yes	1.43e+03	1,2,3,6,7,8-HxCDF	n	n
6	36:14	2.66e+02	1.88e+02	1.42	yes	4.54e+02	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0059

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 11 File: P616131 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 20:23:09 Processed: 20-DEC-18 15:56:41

Mass: 389.8160 391.8130 Tot Response: 1.15e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:12	2.88e+03	2.43e+03	1.18	yes	5.31e+03		n	n
2	34:44	3.00e+02	2.14e+02	1.40	yes	5.14e+02		n	n
3	34:58	1.96e+03	1.55e+03	1.26	yes	3.50e+03		n	y
4	35:27	1.51e+01	1.31e+01	1.15	yes	2.82e+01		n	n
5	35:35	2.42e+02	2.00e+02	1.21	yes	4.42e+02	1,2,3,4,7,8-HxCDD	n	n
6	35:40	4.64e+02	3.62e+02	1.28	yes	8.26e+02	1,2,3,6,7,8-HxCDD	n	n
7	35:55	4.51e+02	4.04e+02	1.12	yes	8.55e+02	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0059

Entry: 43 Totals Name: Total Hepta-Furans

Run: 11 File: P616131 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 20:23:09 Processed: 20-DEC-18 15:56:41

Mass: 407.7820 409.7790 Tot Response: 9.79e+03 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:28	2.29e+03	2.30e+03	0.99	yes	4.59e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:52	2.68e+03	2.52e+03	1.06	yes	5.19e+03		n	n

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Peak List Summary

CLIENT ID.
SL0059

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 11 File: P616131 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 20:23:09 Processed: 20-DEC-18 15:56:41

Mass: 423.7770 425.7740 Tot Response: 9.65e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:43	3.14e+04	2.95e+04	1.07	yes	6.09e+04		n	n
2	38:21	1.84e+04	1.72e+04	1.07	yes	3.56e+04	1,2,3,4,6,7,8-HpCDD	n	n

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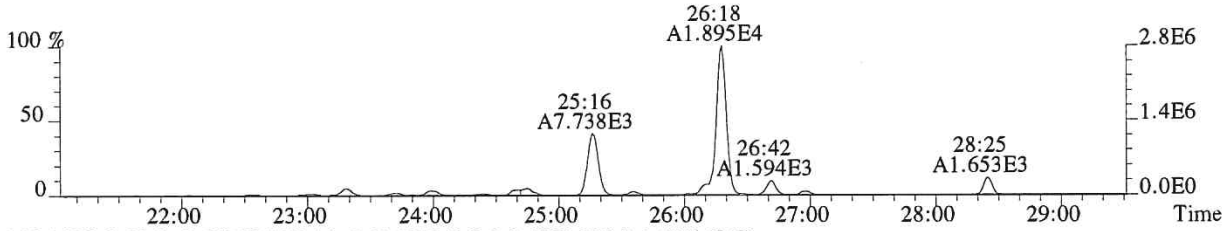
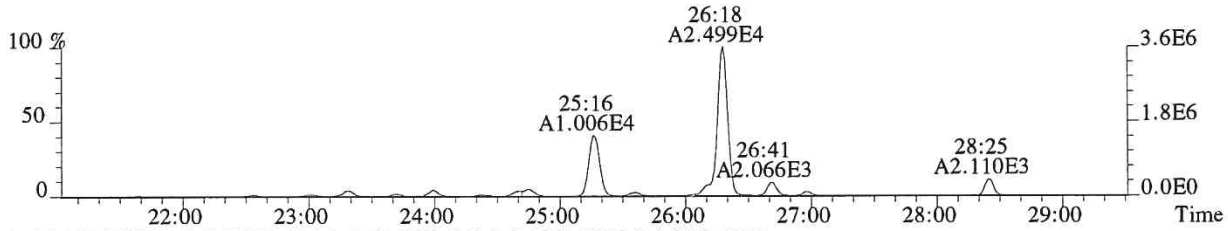
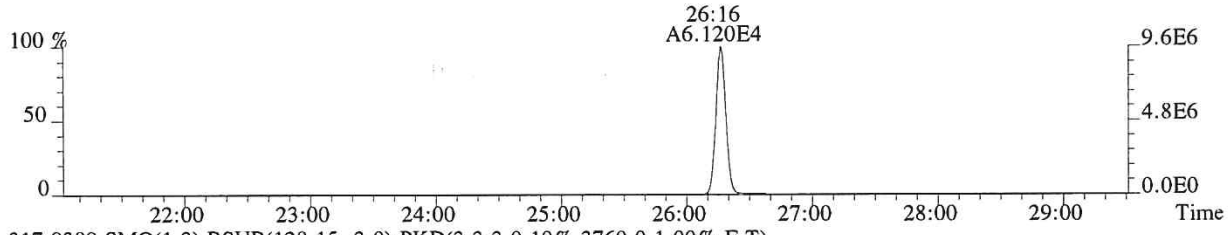
File:P616131 #1-602 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



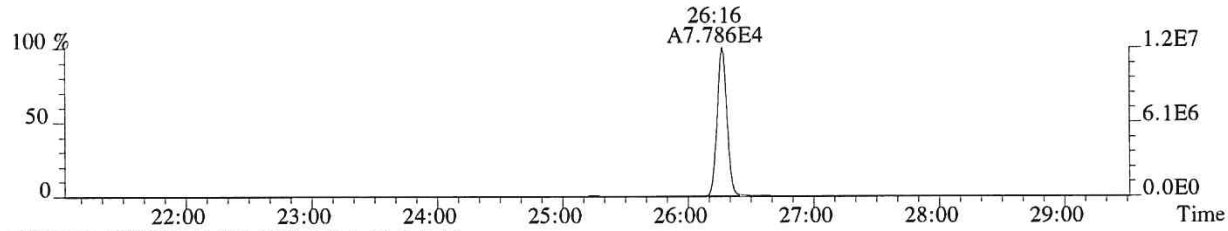
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,836.0,1.00%,F,T)



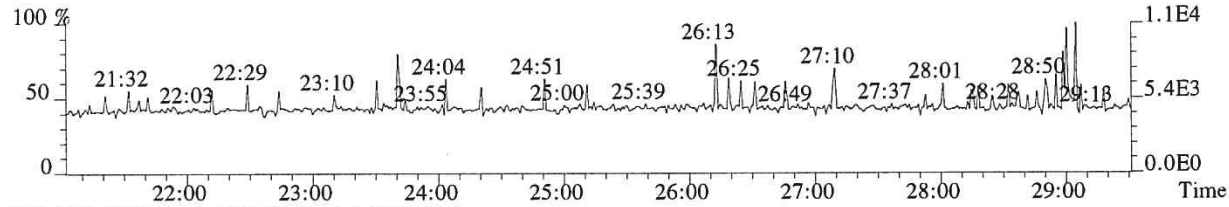
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6816.0,1.00%,F,T)



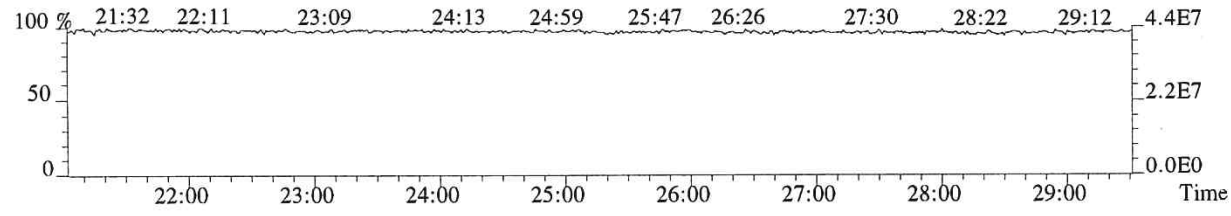
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3760.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

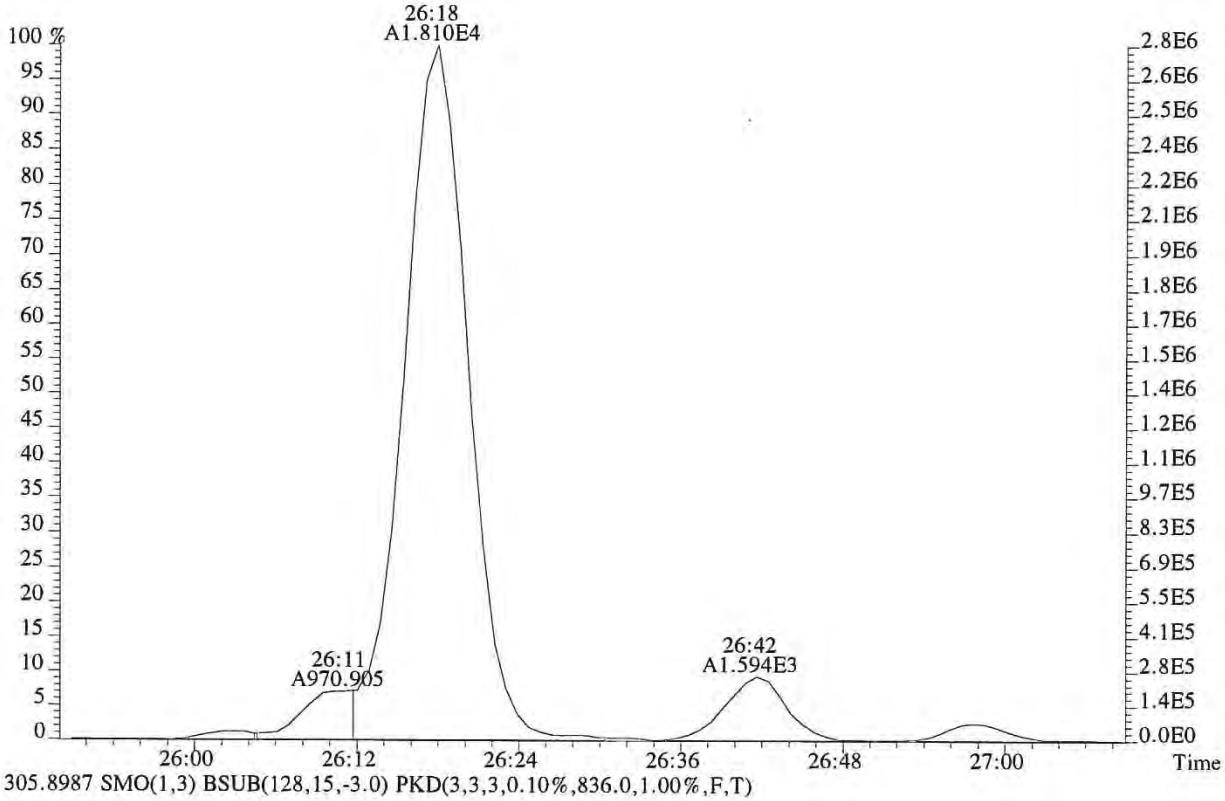


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

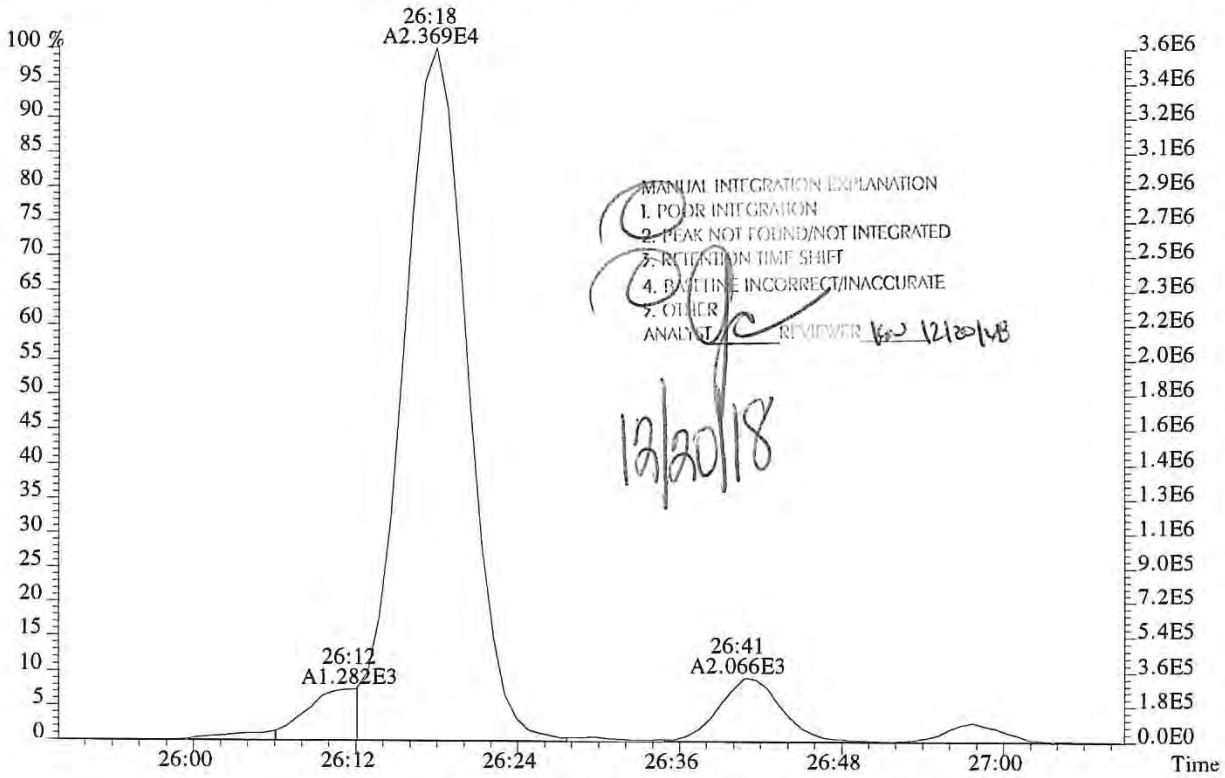


058796

File:P616131 #1-602 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)

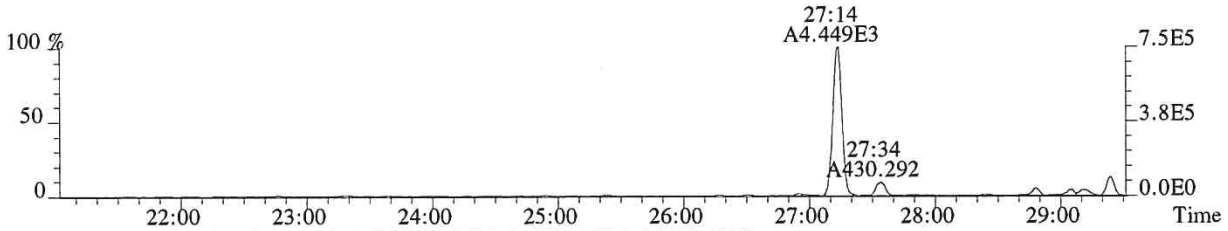


305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,836.0,1.00%,F,T)

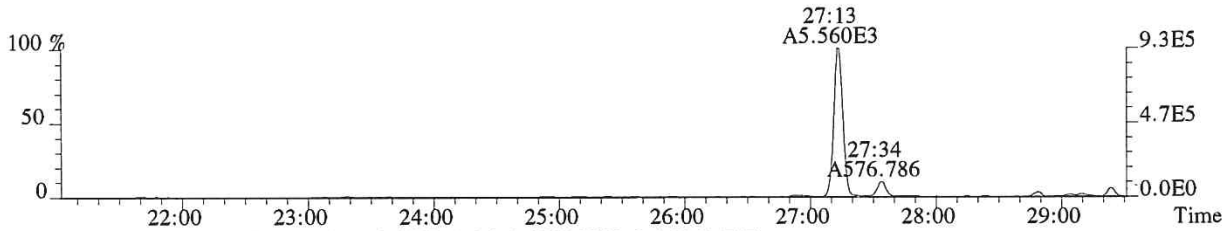


MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST REVIEWER 12/20/18
12/20/18

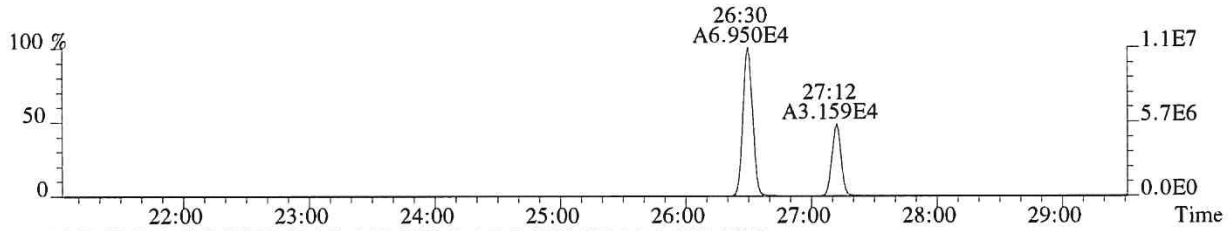
File:P616131 #1-602 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2312.0,1.00%,F,T)



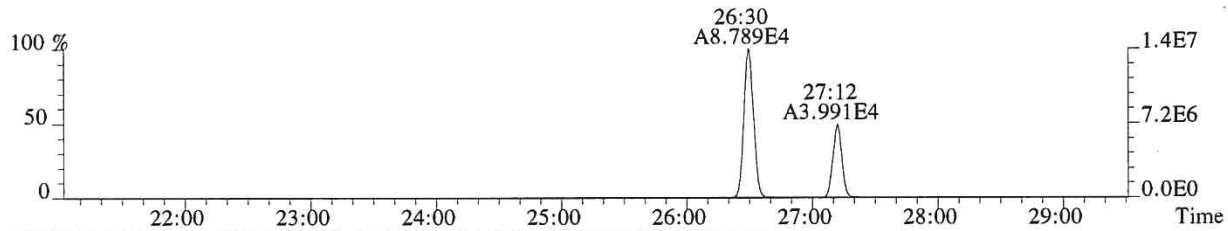
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,752.0,1.00%,F,T)



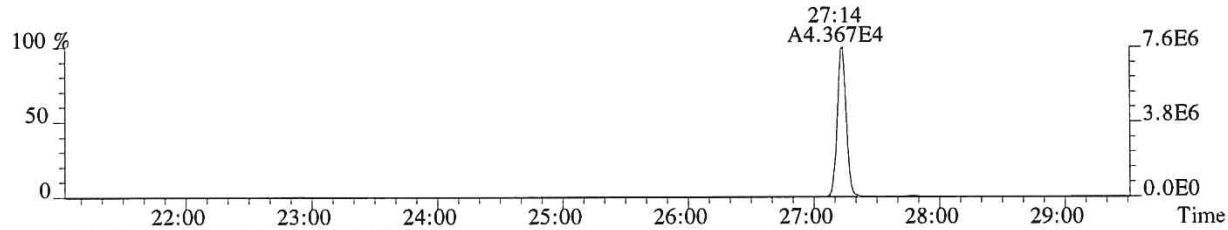
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7820.0,1.00%,F,T)



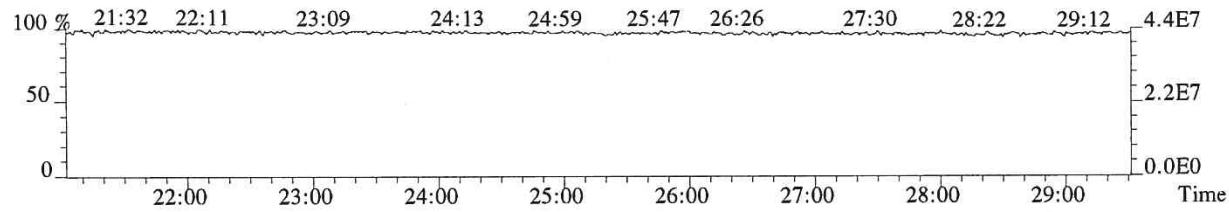
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2504.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1012.0,1.00%,F,T)

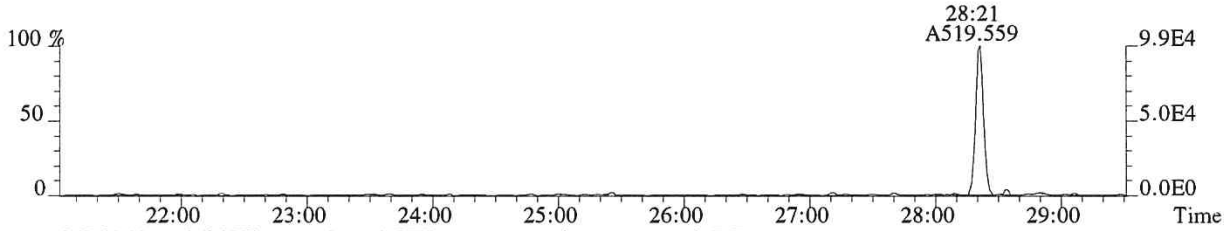


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

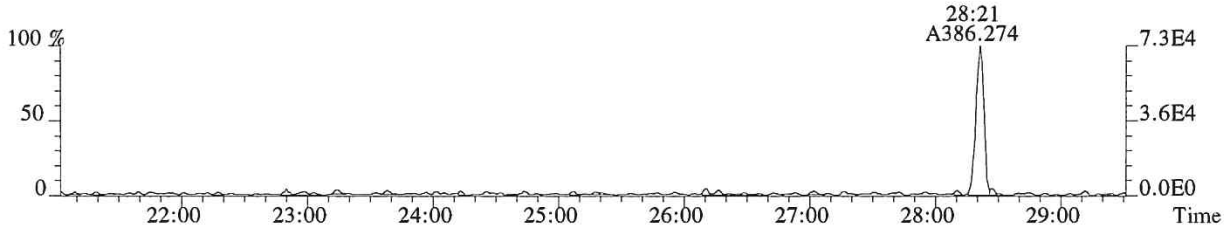


058798

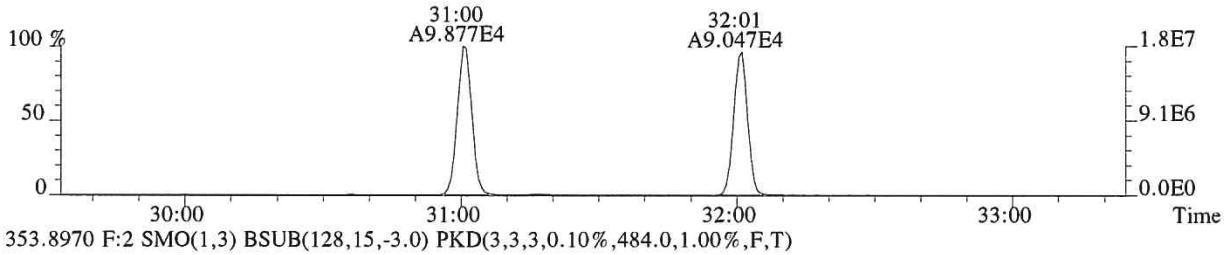
File:P616131 #1-602 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



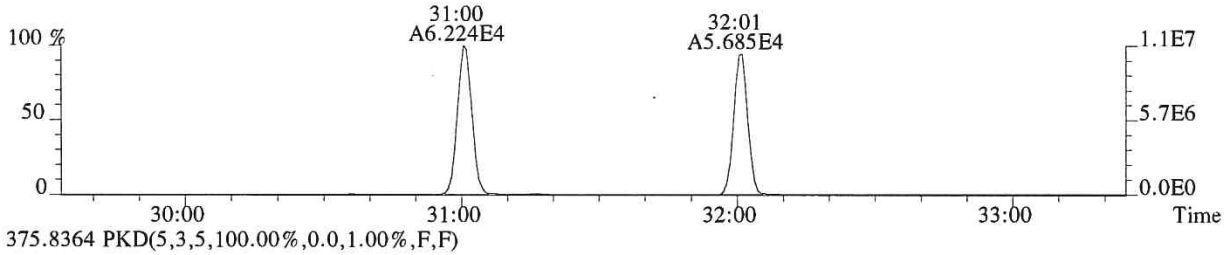
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,908.0,1.00%,F,T)



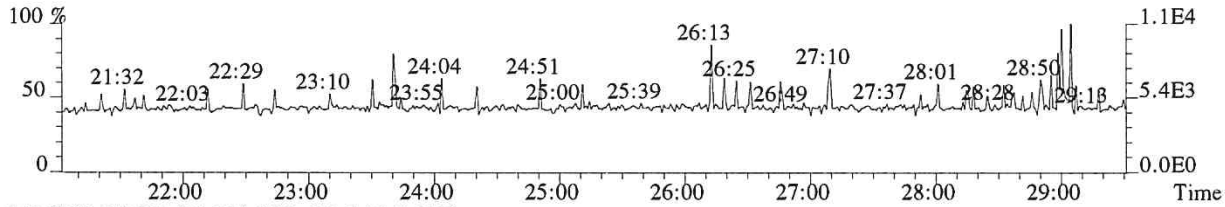
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1600.0,1.00%,F,T)



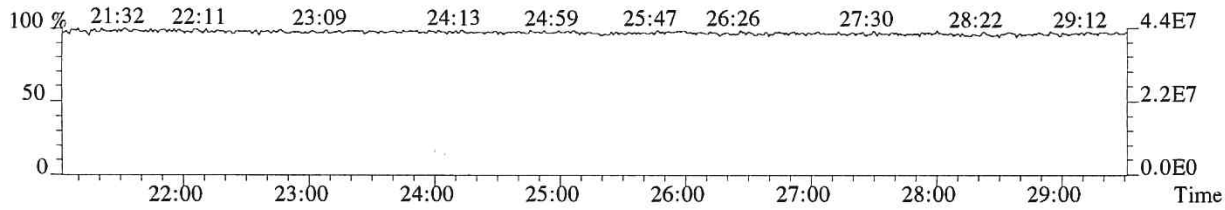
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,484.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

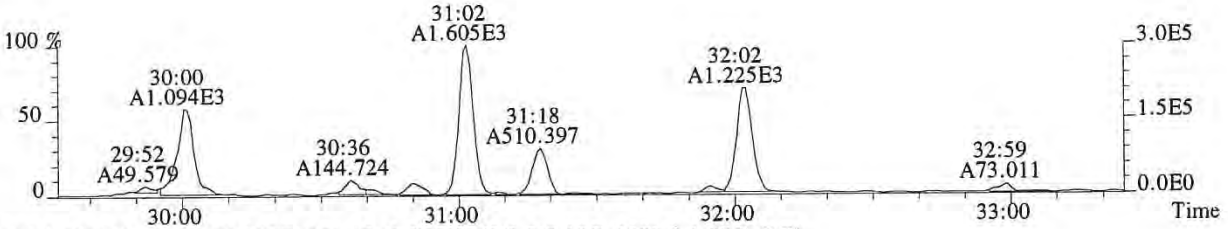


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

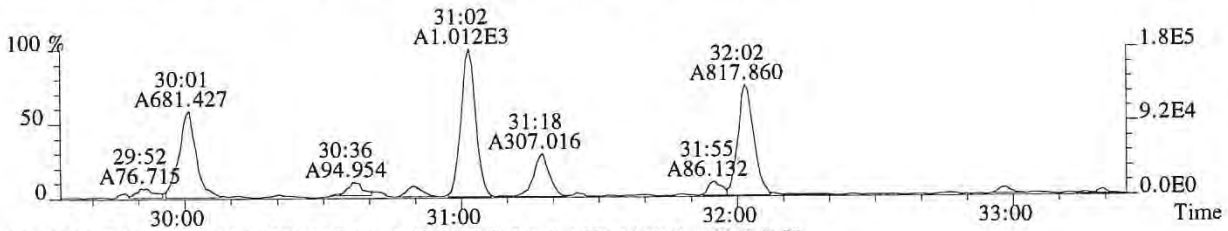


058799

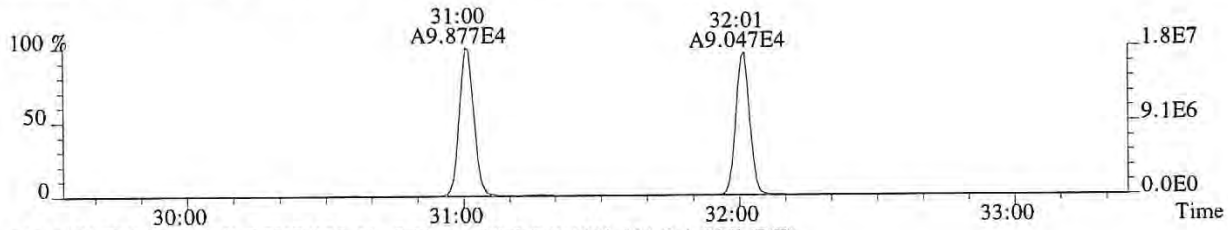
File:P616131 #1-348 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3012.0,1.00%,F,T)



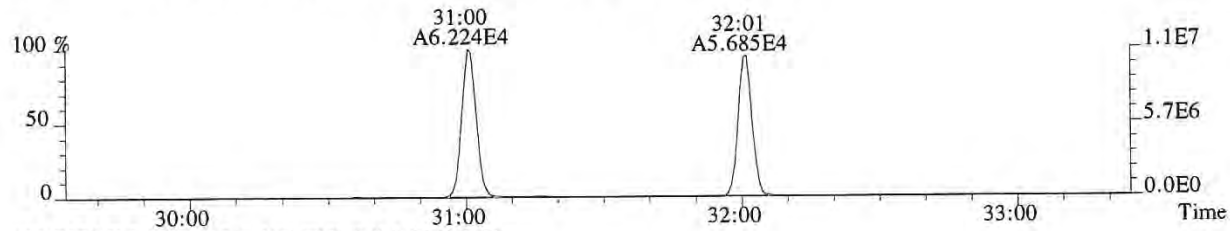
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1692.0,1.00%,F,T)



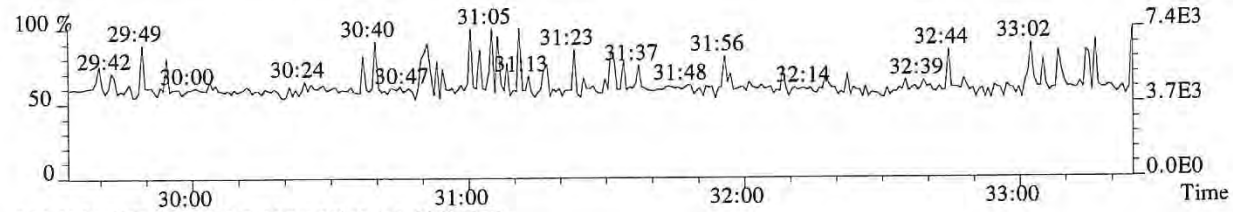
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1600.0,1.00%,F,T)



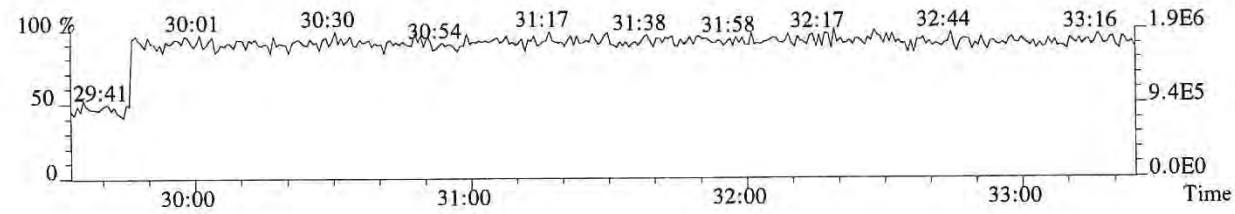
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,484.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

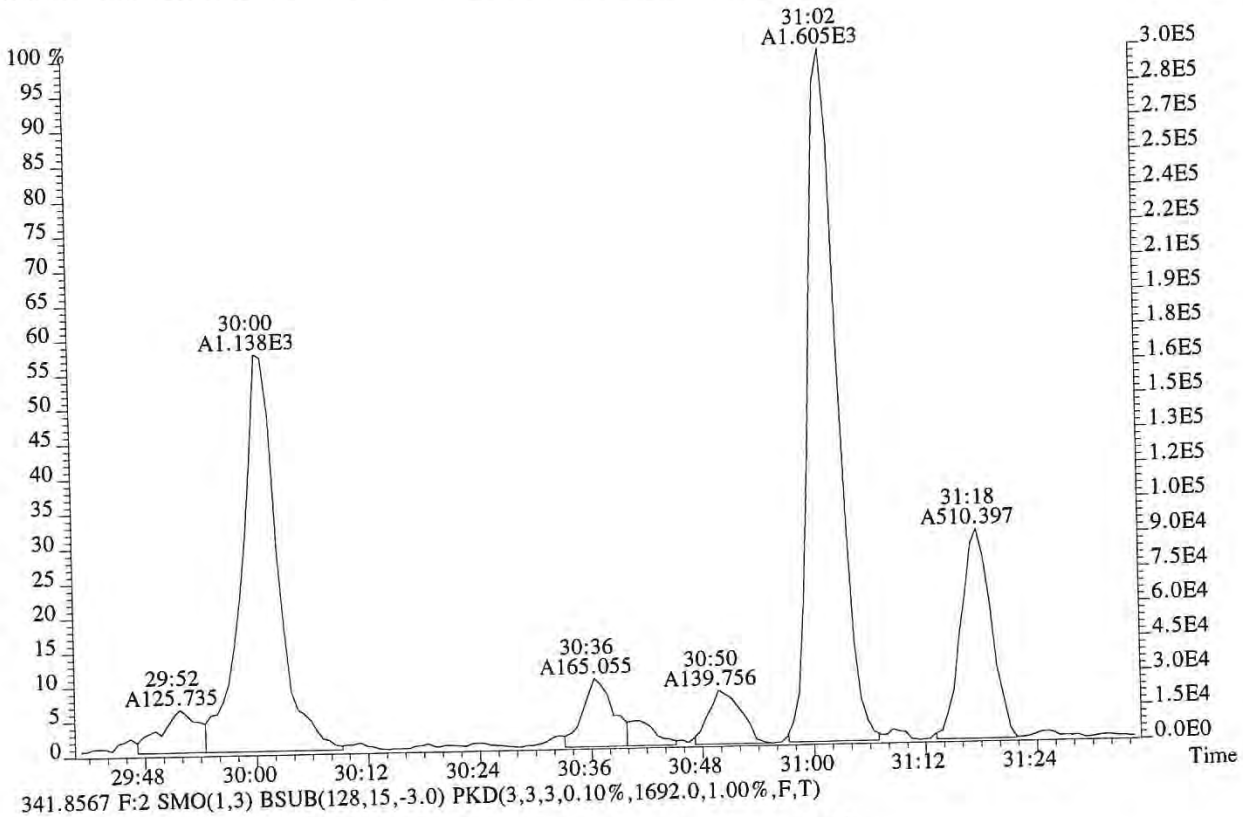


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

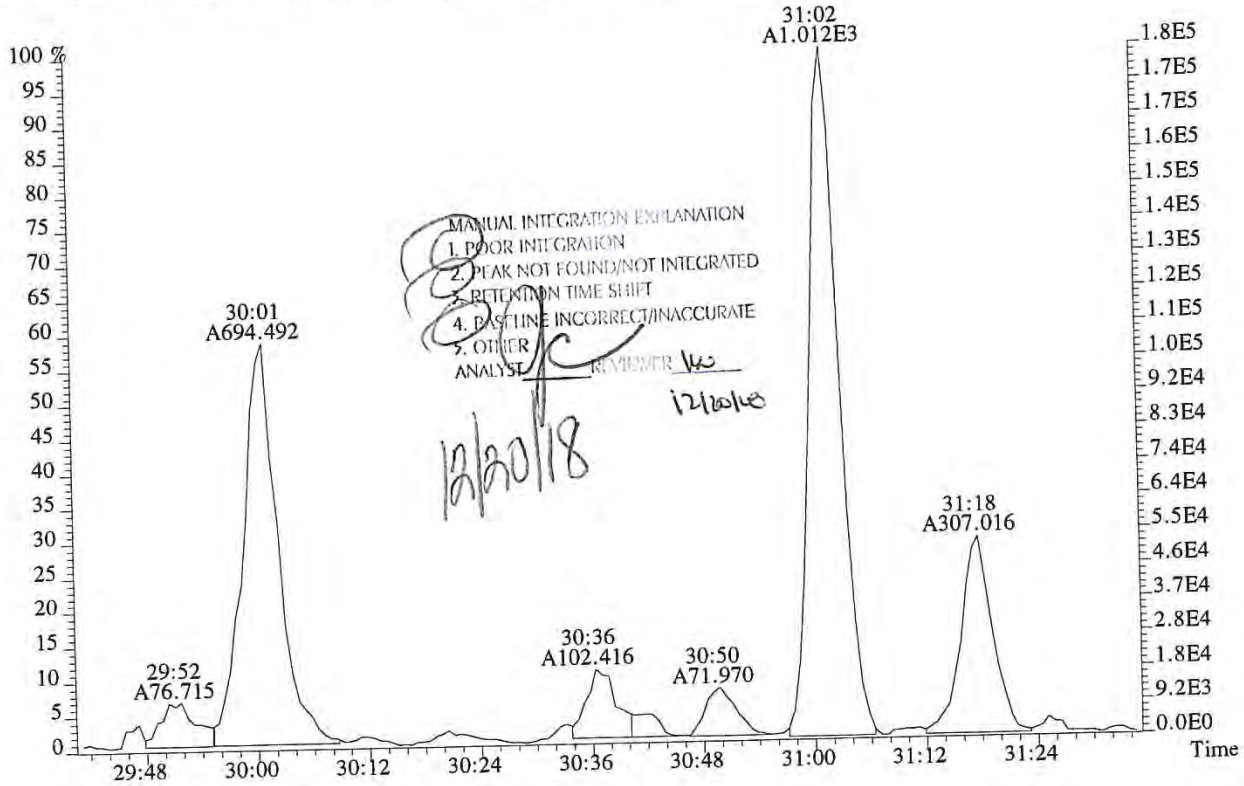


058800

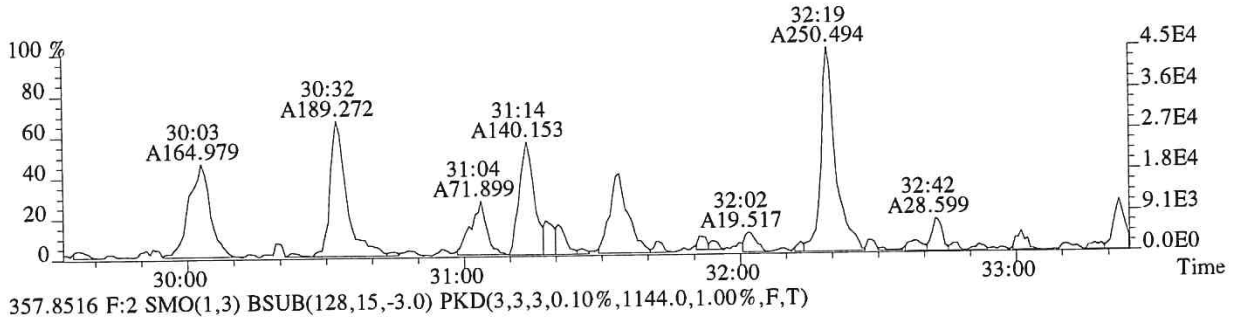
File:P616131 #1-348 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-001
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3012.0,1.00%,F,T)



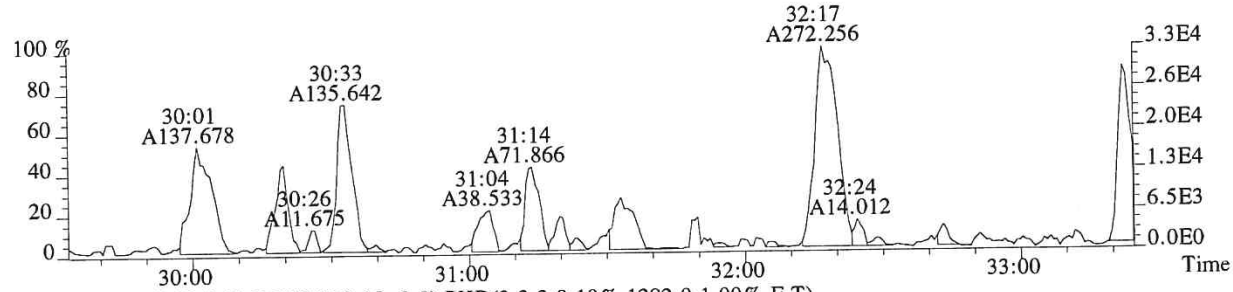
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1692.0,1.00%,F,T)



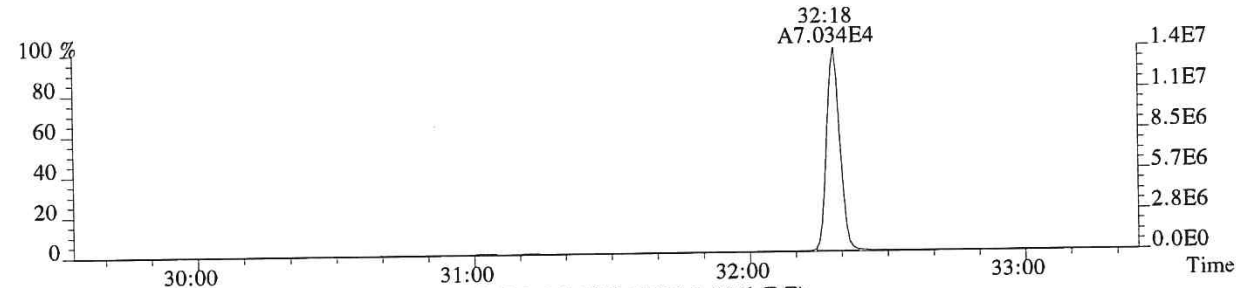
File:P616131 #1-348 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,908.0,1.00%,F,T)



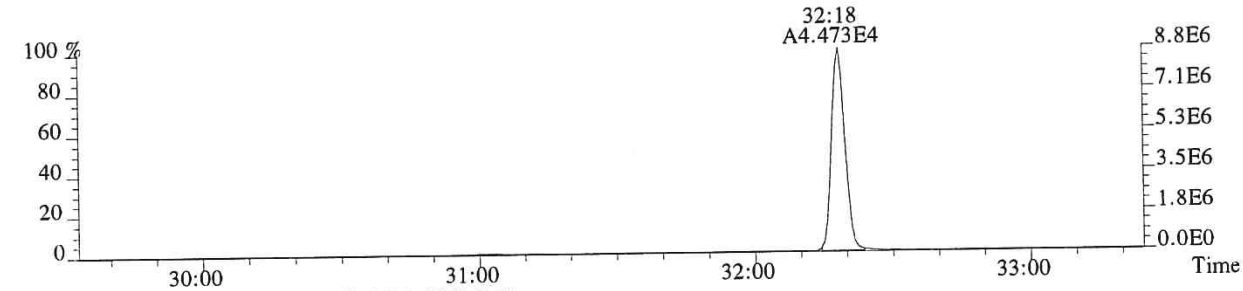
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1144.0,1.00%,F,T)



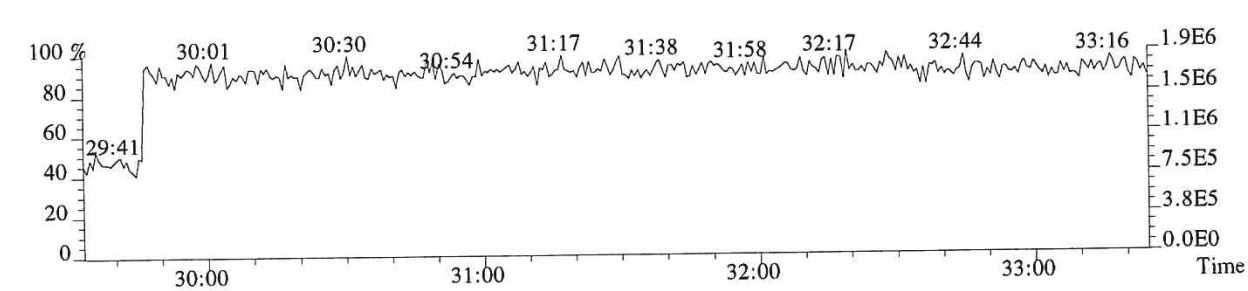
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1292.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,876.0,1.00%,F,T)

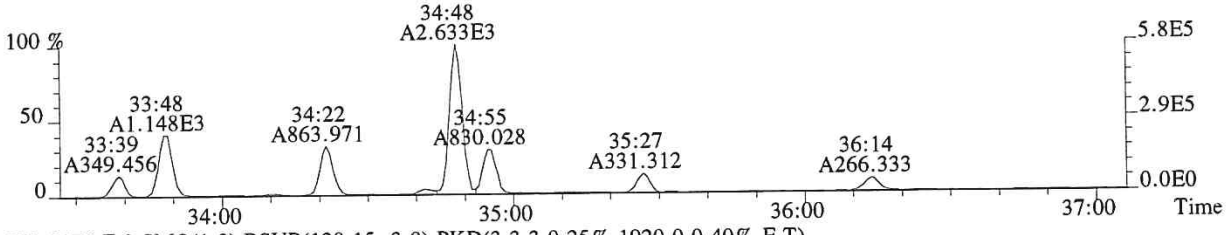


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

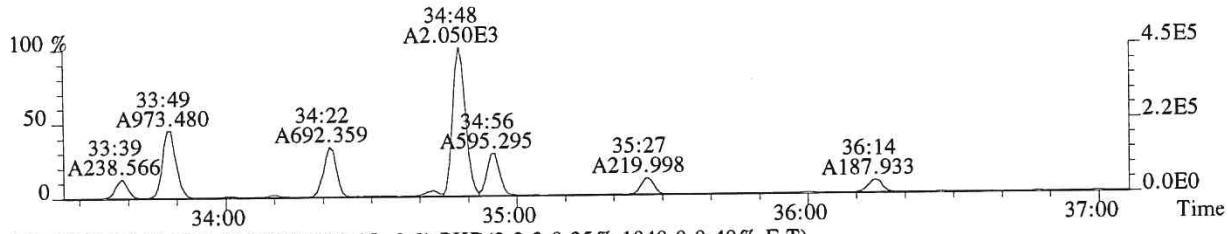


058802

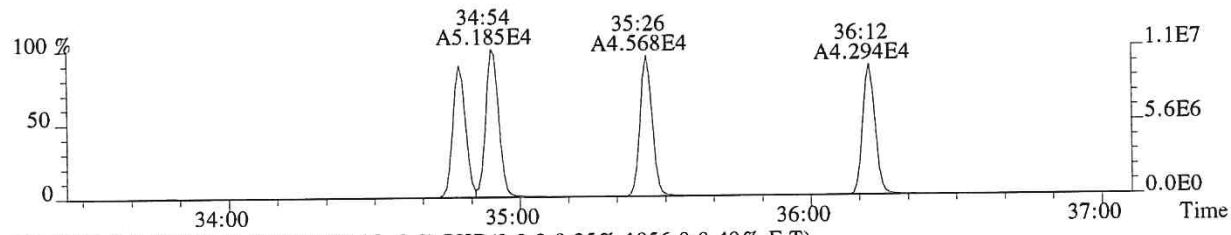
File:P616131 #1-330 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1064.0,0.40%,F,T)



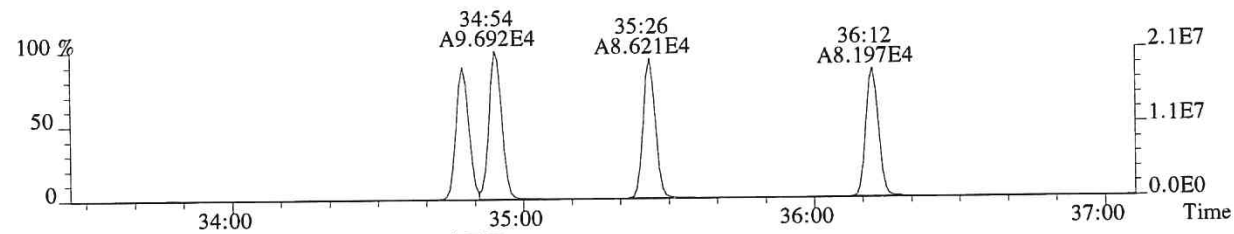
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1920.0,0.40%,F,T)



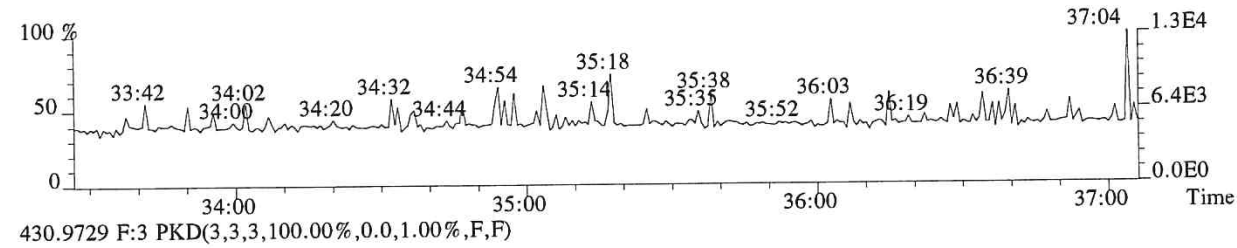
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1040.0,0.40%,F,T)



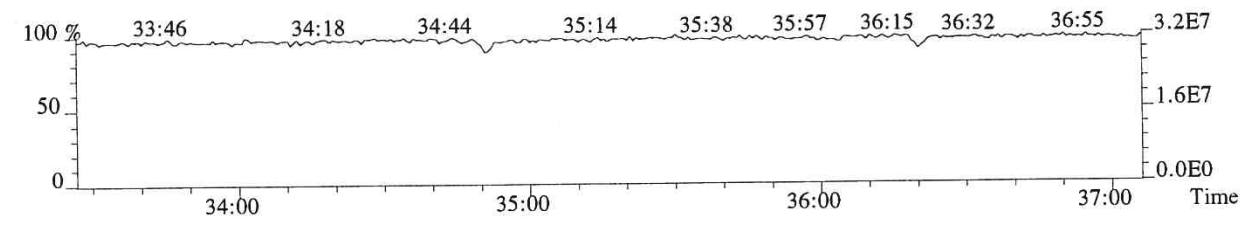
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1856.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

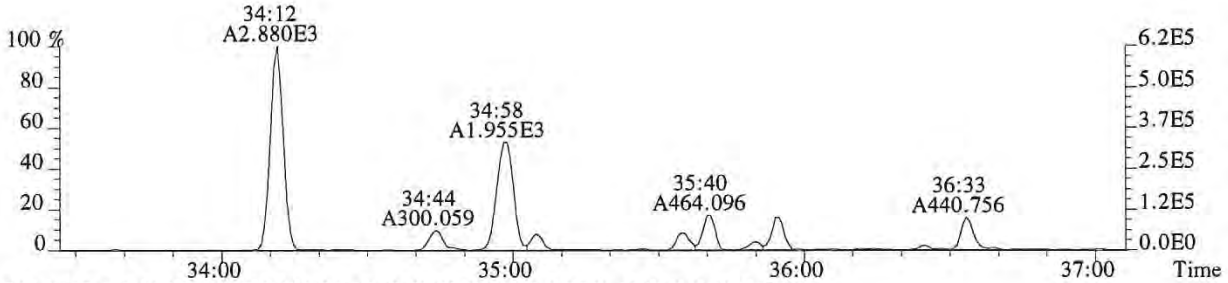


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

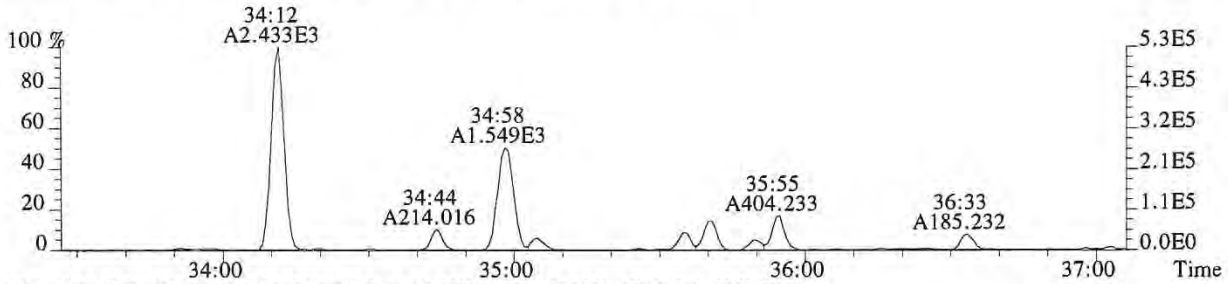


058803

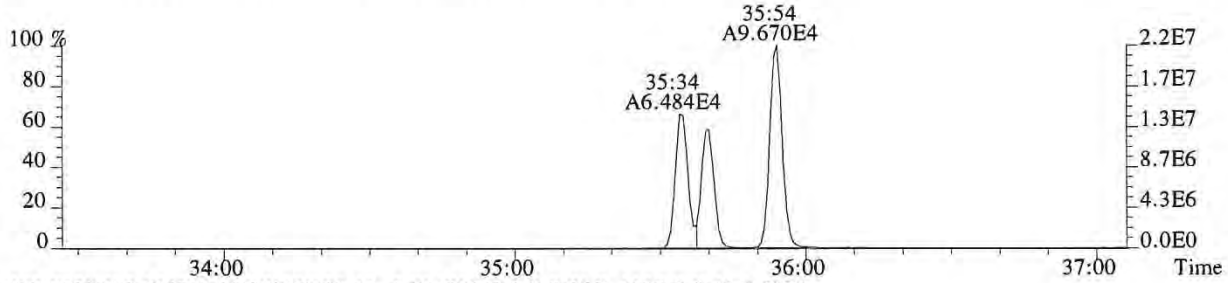
File:P616131 #1-330 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,904.0,0.40%,F,T)



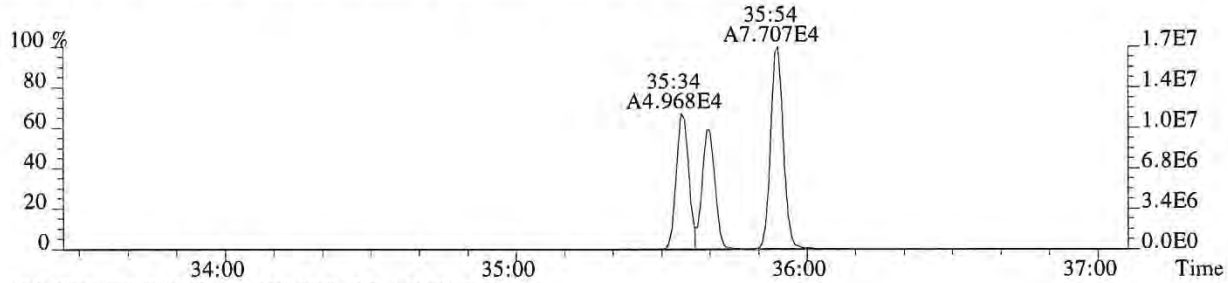
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1240.0,0.40%,F,T)



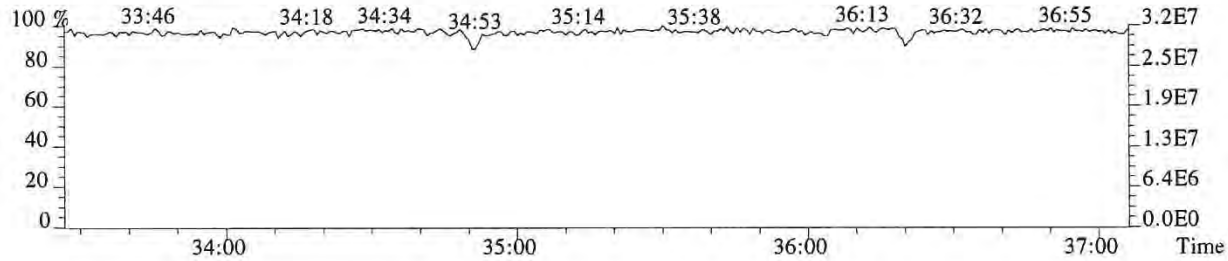
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1748.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1132.0,0.40%,F,T)

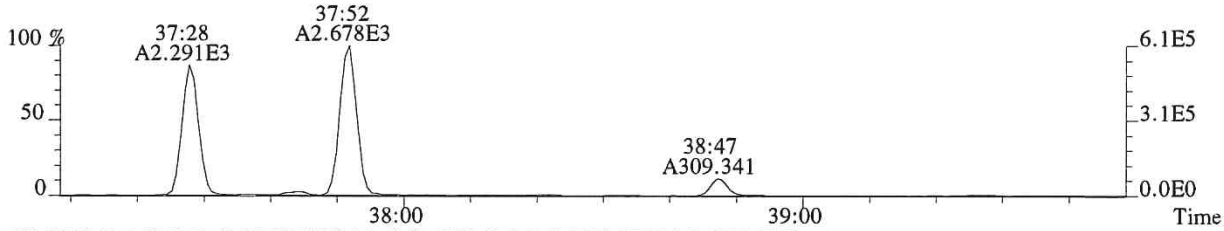


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

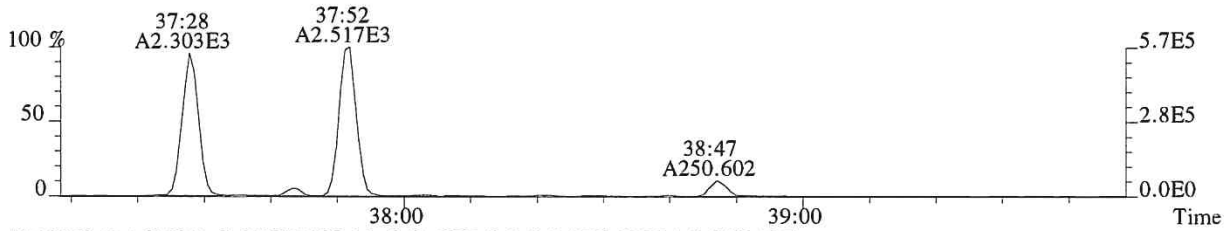


058804

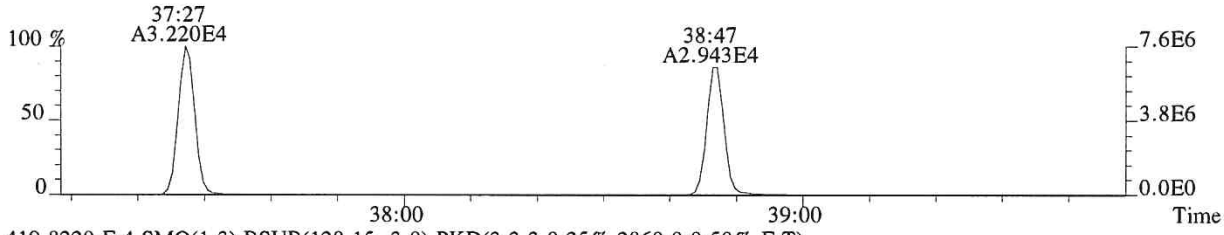
File:P616131 #1-241 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1628.0,0.50%,F,T)



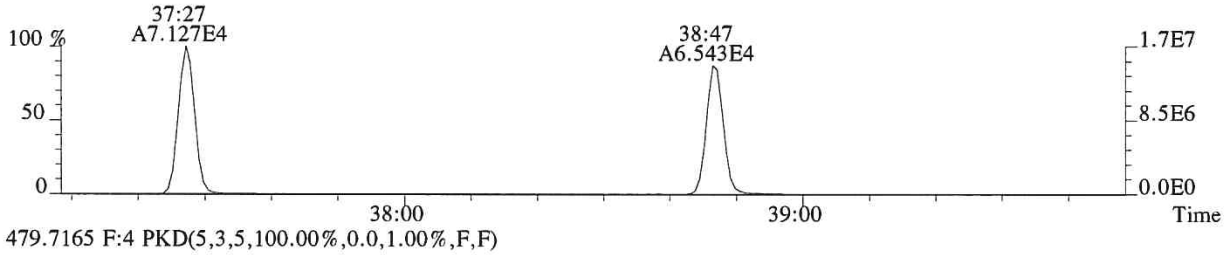
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1756.0,0.50%,F,T)



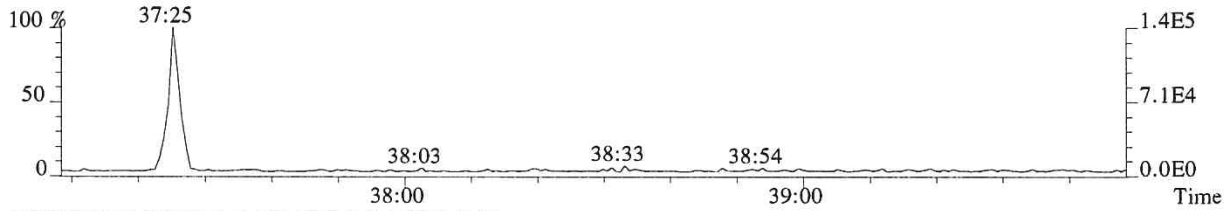
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2256.0,0.50%,F,T)



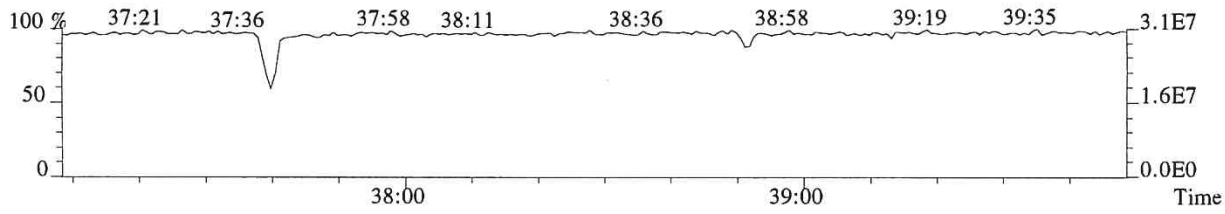
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2860.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

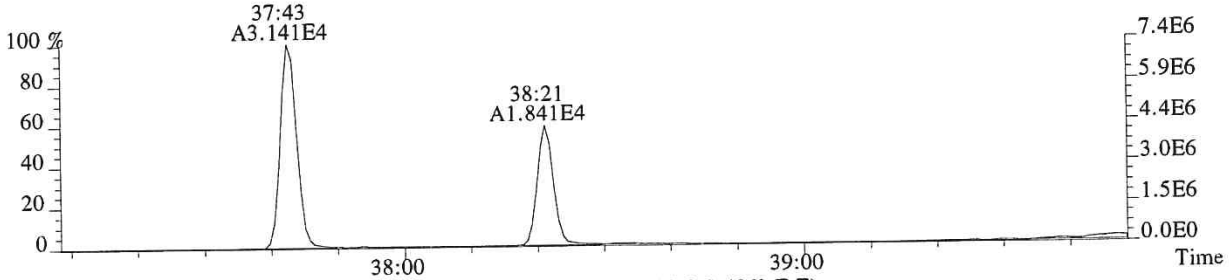


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

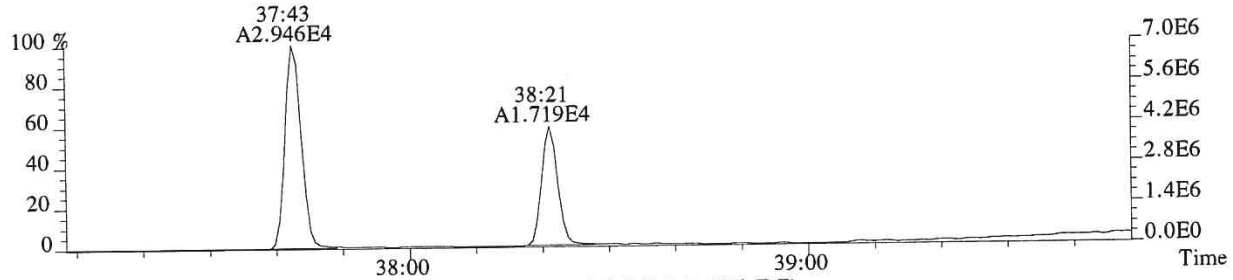


058805

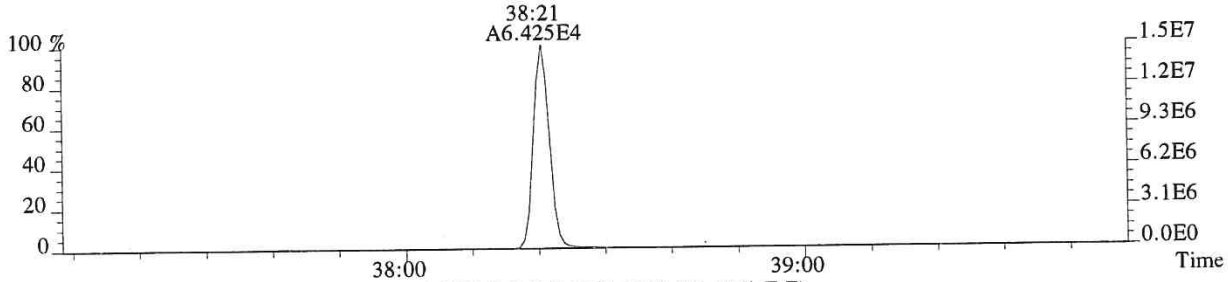
File:P616131 #1-241 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,17456.0,0.40%,F,T)



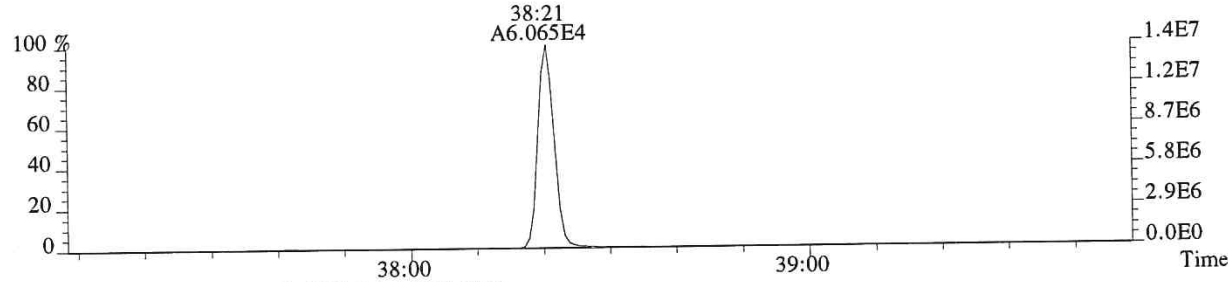
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,61128.0,0.40%,F,T)



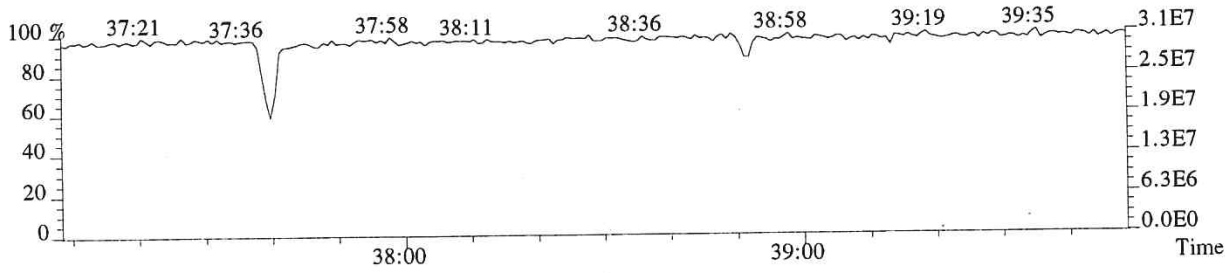
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,948.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1268.0,0.40%,F,T)

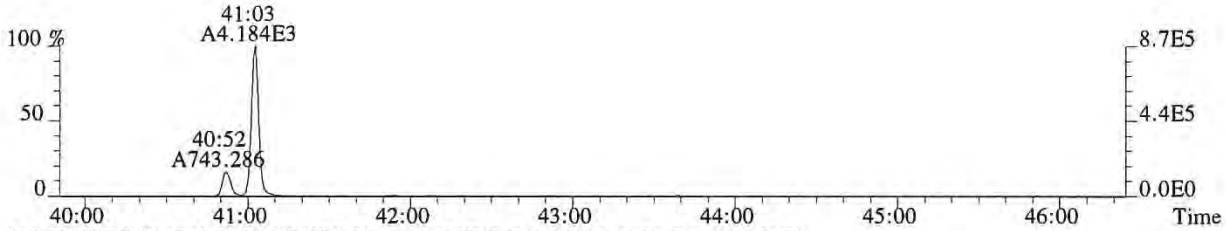


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

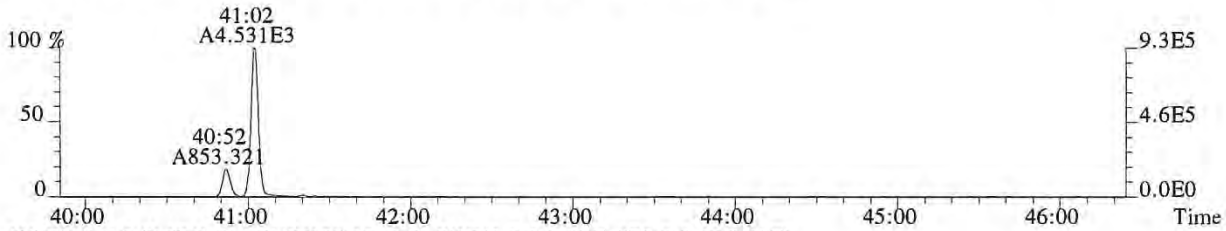


058806

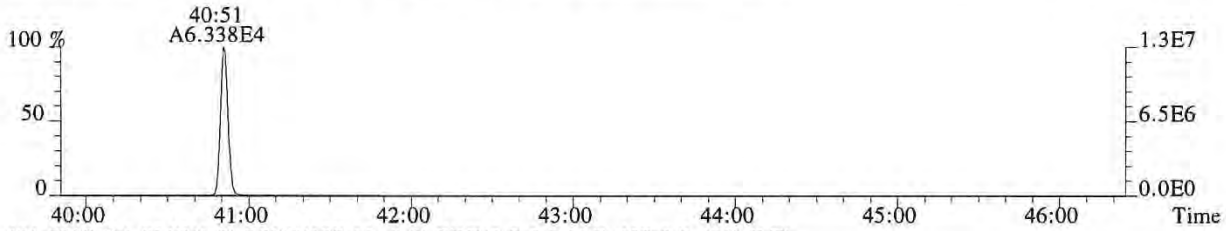
File:P616131 #1-591 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,352.0,0.40%,F,T)



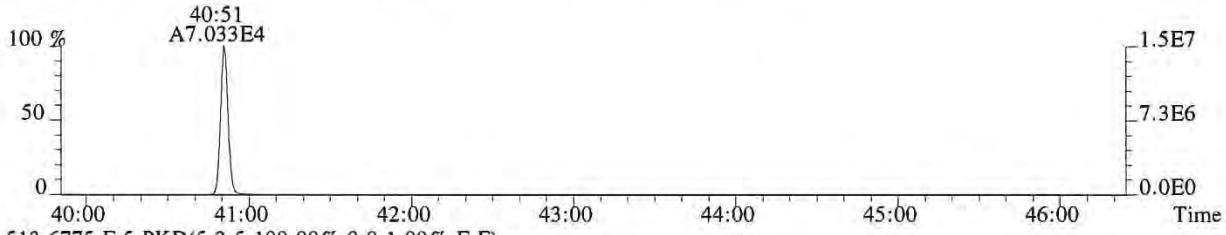
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1060.0,0.40%,F,T)



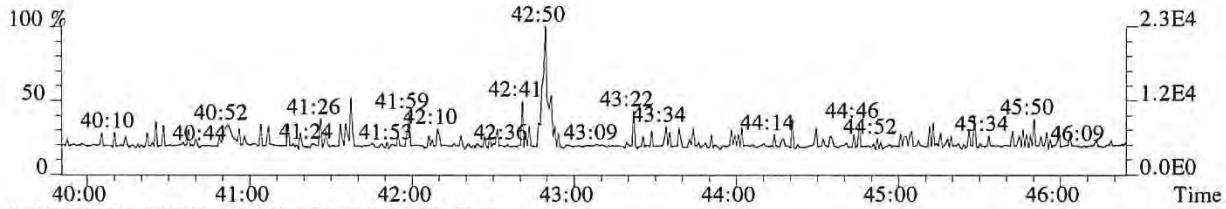
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,876.0,0.40%,F,T)



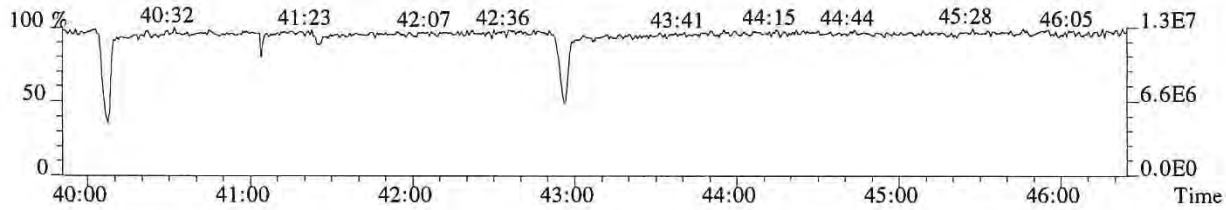
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,452.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

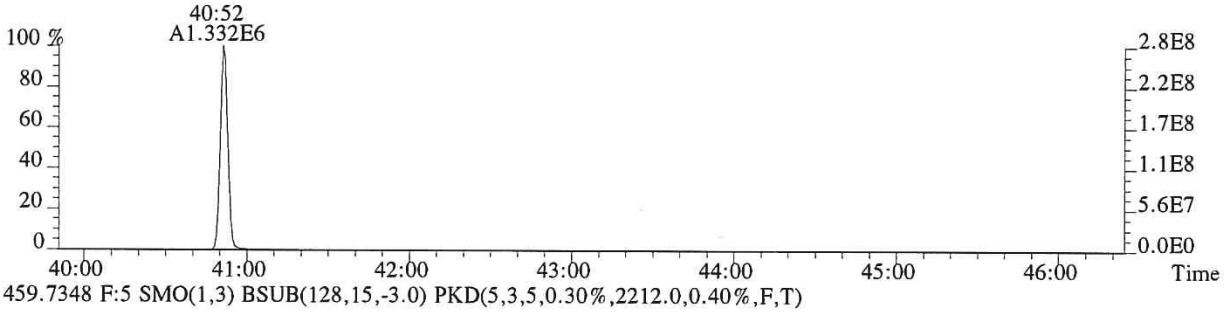


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

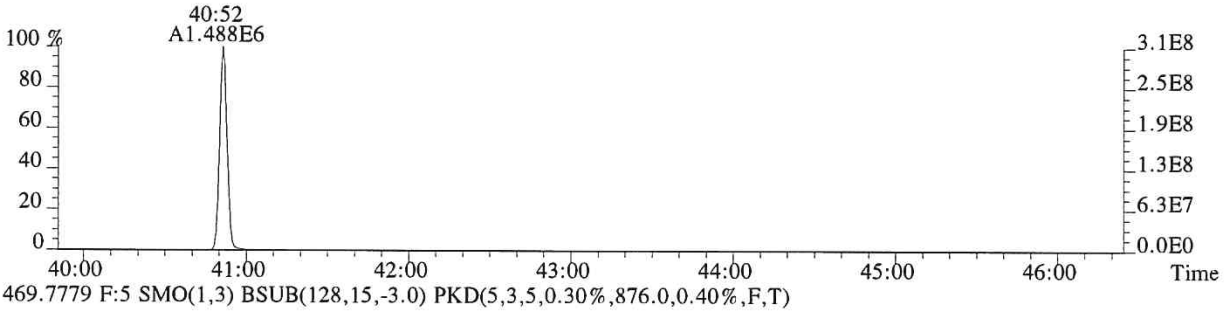


058807

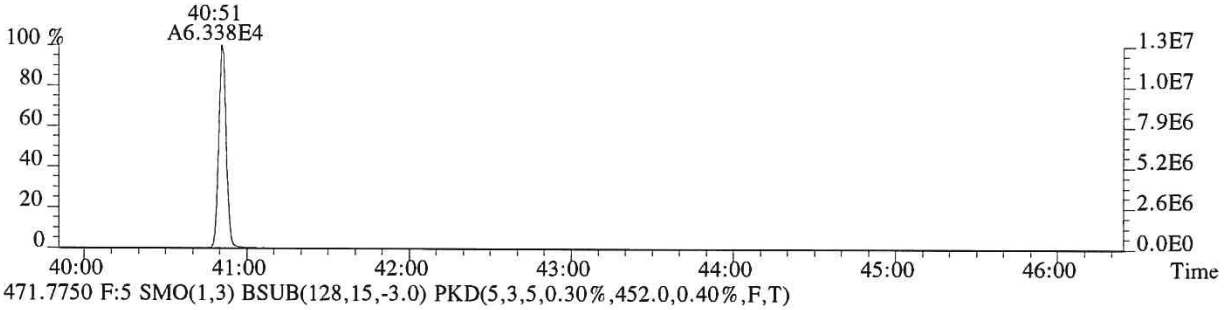
File:P616131 #1-591 Acq:19-DEC-2018 20:23:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-001
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,384.0,0.40%,F,T)



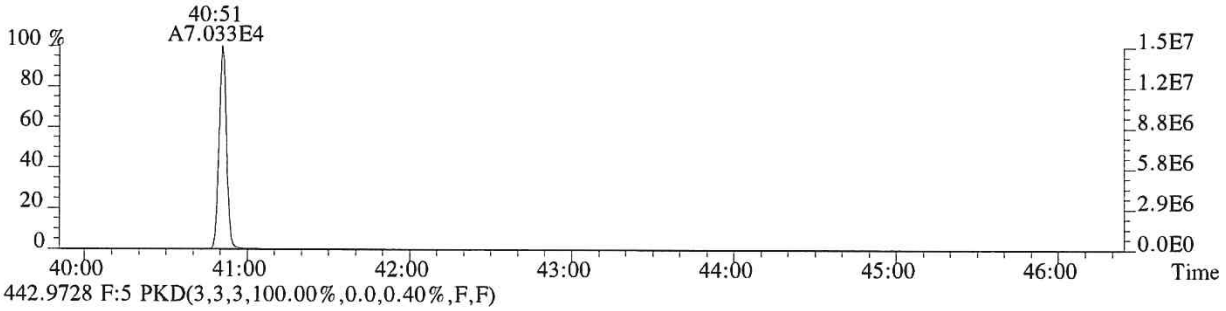
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2212.0,0.40%,F,T)



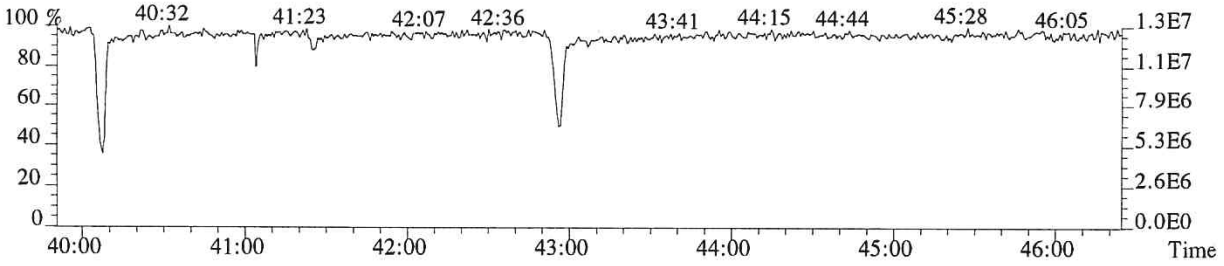
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,876.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,452.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



058808

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0060

Run #12 Filename P616132 Samp: 1 Inj: 1 Acquired: 19-DEC-18 21:12:19
Processed: 20-DEC-18 15:56:43 Sample ID: E1801096-002

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:19	9.109e+05	1.166e+06	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	6.097e+04	3.948e+04	1.54	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	4.760e+04	3.060e+04	1.56	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:48	8.426e+04	6.740e+04	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:55	2.100e+04	1.667e+04	1.26	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	4.168e+03	3.323e+03	1.25	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:13	6.023e+03	4.620e+03	1.30	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:27	2.114e+04	2.009e+04	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:47	5.985e+03	5.856e+03	1.02	yes	no	1.463
10	Unk	OCDF	41:02	1.088e+04	1.233e+04	0.88	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:14	2.449e+05	3.099e+05	0.79	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:19	3.917e+03	2.402e+03	1.63	yes	yes	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	3.129e+02	2.048e+02	1.53	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:40	9.872e+02	8.102e+02	1.22	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:54	8.643e+02	6.649e+02	1.30	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	3.344e+04	3.269e+04	1.02	yes	no	1.112
17	Unk	OCDD	40:51	1.292e+06	1.441e+06	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:17	6.498e+04	8.218e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:01	1.104e+05	6.936e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	1.043e+05	6.516e+04	1.60	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	4.806e+04	9.038e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:54	5.358e+04	9.936e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:25	4.757e+04	9.092e+04	0.52	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:11	4.541e+04	8.734e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:27	3.293e+04	7.381e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	3.043e+04	6.698e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:12	3.149e+04	4.012e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:18	7.829e+04	4.999e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:34	6.893e+04	5.366e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:39	5.991e+04	4.781e+04	1.25	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:20	6.629e+04	6.191e+04	1.07	yes	no	0.857
32	IS	13C-OCDD	40:50	6.366e+04	7.059e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:31	7.369e+04	9.120e+04	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:53	1.023e+05	8.180e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	4.713e+04				no	1.086

$$\text{OCDD} = \frac{(1.292e+06 + 1.441e+06) \times 4000\ \text{pg} \times 1}{(6.366e+04 + 7.059e+04) \times 10.784\ \text{g} \times 84\% / 100 \times 1.157} = 7720\ \text{ng/kg}$$

bw 12/24/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0060

Run #12 Filename P616132 Samp: 1 Inj: 1 Acquired: 19-DEC-18 21:12:19
Processed: 20-DEC-18 15:56:43 LAB. ID: E1801096-002

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.39e+08	1.05e+03	1.3e+05	1.77e+08	2.12e+03	8.4e+04
2	1,2,3,7,8-PeCDF	1.13e+07	7.22e+03	1.6e+03	7.38e+06	2.29e+03	3.2e+03
3	2,3,4,7,8-PeCDF	8.12e+06	7.22e+03	1.1e+03	5.18e+06	2.29e+03	2.3e+03
4	1,2,3,4,7,8-HxCDF	1.84e+07	6.56e+03	2.8e+03	1.46e+07	3.53e+03	4.1e+03
5	1,2,3,6,7,8-HxCDF	4.41e+06	6.56e+03	6.7e+02	3.56e+06	3.53e+03	1.0e+03
6	2,3,4,6,7,8-HxCDF	9.30e+05	6.56e+03	1.4e+02	7.46e+05	3.53e+03	2.1e+02
7	1,2,3,7,8,9-HxCDF	1.16e+06	6.56e+03	1.8e+02	8.86e+05	3.53e+03	2.5e+02
8	1,2,3,4,6,7,8-HpCDF	5.00e+06	1.40e+03	3.6e+03	4.75e+06	3.43e+03	1.4e+03
9	1,2,3,4,7,8,9-HpCDF	1.31e+06	1.40e+03	9.4e+02	1.32e+06	3.43e+03	3.8e+02
10	OCDF	2.22e+06	2.01e+03	1.1e+03	2.48e+06	2.38e+03	1.0e+03
11	2,3,7,8-TCDD	4.30e+07	2.18e+03	2.0e+04	5.43e+07	1.40e+03	3.9e+04
12	1,2,3,7,8-PeCDD	7.80e+05	1.33e+03	5.9e+02	4.62e+05	1.64e+03	2.8e+02
13	1,2,3,4,7,8-HxCDD	7.39e+04	2.41e+03	3.1e+01	4.38e+04	1.64e+03	2.7e+01
14	1,2,3,6,7,8-HxCDD	2.25e+05	2.41e+03	9.3e+01	1.86e+05	1.64e+03	1.1e+02
15	1,2,3,7,8,9-HxCDD	1.91e+05	2.41e+03	7.9e+01	1.37e+05	1.64e+03	8.4e+01
16	1,2,3,4,6,7,8-HpCDD	7.99e+06	7.97e+04	1.0e+02	7.78e+06	1.88e+04	4.1e+02
17	OCDD	2.72e+08	2.20e+02	1.2e+06	3.04e+08	1.52e+03	2.0e+05
18	13C-2,3,7,8-TCDF	1.05e+07	9.61e+03	1.1e+03	1.32e+07	1.15e+04	1.2e+03
19	13C-1,2,3,7,8-PeCDF	2.07e+07	5.60e+03	3.7e+03	1.29e+07	2.44e+03	5.3e+03
20	13C-2,3,4,7,8-PeCDF	2.03e+07	5.60e+03	3.6e+03	1.26e+07	2.44e+03	5.2e+03
21	13C-1,2,3,4,7,8-HxCDF	1.04e+07	3.35e+03	3.1e+03	1.93e+07	2.03e+03	9.5e+03
22	13C-1,2,3,6,7,8-HxCDF	1.17e+07	3.35e+03	3.5e+03	2.16e+07	2.03e+03	1.1e+04
23	13C-2,3,4,6,7,8-HxCDF	1.05e+07	3.35e+03	3.1e+03	2.02e+07	2.03e+03	1.0e+04
24	13C-1,2,3,7,8,9-HxCDF	1.04e+07	3.35e+03	3.1e+03	1.99e+07	2.03e+03	9.8e+03
25	13C-1,2,3,4,6,7,8-HpCDF	7.76e+06	3.06e+03	2.5e+03	1.75e+07	2.29e+03	7.6e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.79e+06	3.06e+03	2.2e+03	1.50e+07	2.29e+03	6.5e+03
27	13C-2,3,7,8-TCDD	5.54e+06	6.76e+03	8.2e+02	7.07e+06	2.43e+03	2.9e+03
28	13C-1,2,3,7,8-PeCDD	1.57e+07	4.72e+02	3.3e+04	9.99e+06	9.04e+02	1.1e+04
29	13C-1,2,3,4,7,8-HxCDD	1.55e+07	2.22e+03	7.0e+03	1.20e+07	8.76e+02	1.4e+04
30	13C-1,2,3,6,7,8-HxCDD	1.37e+07	2.22e+03	6.2e+03	1.09e+07	8.76e+02	1.2e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.60e+07	2.40e+03	6.6e+03	1.49e+07	1.52e+03	9.8e+03
32	13C-OCDD	1.32e+07	9.32e+02	1.4e+04	1.48e+07	6.72e+02	2.2e+04
33	13C-1,2,3,4-TCDD	1.21e+07	6.76e+03	1.8e+03	1.50e+07	2.43e+03	6.2e+03
34	13C-1,2,3,7,8,9-HxCDD	2.32e+07	2.22e+03	1.0e+04	1.84e+07	8.76e+02	2.1e+04
35	37Cl-2,3,7,8-TCDD	8.22e+06	2.17e+03	3.8e+03			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0060

Entry: 36 Totals Name: Total Tetra-Furans

Run: 12 File: P616132 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 21:12:19 Processed: 20-DEC-18 15:56:43

Mass: 303.9020 305.8990 Tot Response: 4.01e+06 RRF: 1.081

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:02	9.18e+03	1.14e+04	0.81	yes	2.05e+04		n	n
2	23:20	4.64e+04	5.85e+04	0.79	yes	1.05e+05		n	n
3	23:42	1.45e+04	1.89e+04	0.77	yes	3.34e+04		n	n
4	23:51	1.71e+03	2.30e+03	0.74	yes	4.01e+03		n	n
5	24:00	3.81e+04	4.91e+04	0.78	yes	8.72e+04		n	n
6	24:46	7.64e+04	9.79e+04	0.78	yes	1.74e+05		n	n
7	25:17	4.17e+05	5.35e+05	0.78	yes	9.52e+05		n	n
8	25:37	2.00e+04	2.53e+04	0.79	yes	4.52e+04		n	n
9	26:04	7.73e+03	9.61e+03	0.80	yes	1.73e+04		n	n
10	26:11	5.49e+04	7.03e+04	0.78	yes	1.25e+05		n	n
11	26:19	9.11e+05	1.17e+06	0.78	yes	2.08e+06	2,3,7,8-TCDF	n	n
12	26:42	6.87e+04	8.74e+04	0.79	yes	1.56e+05		n	n
13	26:59	1.59e+04	2.02e+04	0.79	yes	3.60e+04		n	n
14	28:26	7.66e+04	9.89e+04	0.77	yes	1.76e+05		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0060

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 12 File: P616132 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 21:12:19 Processed: 20-DEC-18 15:56:43

Mass: 319.8970 321.8940 Tot Response: 6.14e+05 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:55	3.75e+03	4.52e+03	0.83	yes	8.27e+03		n	n
2	27:14	2.45e+05	3.10e+05	0.79	yes	5.55e+05	2,3,7,8-TCDD	n	n
3	27:34	2.29e+04	2.75e+04	0.83	yes	5.05e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0060

Entry: 38 Totals Name: Total Penta-Furans1

Run: 12 File: P616132 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 21:12:19 Processed: 20-DEC-18 15:56:43

Mass: 339.8600 341.8570 Tot Response: 2.77e+03 RRF: 1.130

	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
	28:22	1.72e+03	1.05e+03	1.64	yes	2.77e+03	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0060

Entry: 39 Totals Name: Total Penta-Furans2

Run: 12 File: P616132 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 21:12:19 Processed: 20-DEC-18 15:56:43

Mass: 339.8600 341.8570 Tot Response: 2.74e+05 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:52	7.47e+02	4.64e+02	1.61	yes	1.21e+03		n	n
2	30:01	2.70e+04	1.72e+04	1.57	yes	4.42e+04		n	n
3	30:22	1.27e+02	7.84e+01	1.62	yes	2.05e+02		n	n
4	30:41	1.34e+03	8.24e+02	1.63	yes	2.17e+03		n	n
5	30:50	6.36e+03	4.04e+03	1.57	yes	1.04e+04		n	n
6	31:02	6.10e+04	3.95e+04	1.54	yes	1.00e+05	1,2,3,7,8-PeCDF	n	n
7	31:18	1.89e+04	1.23e+04	1.54	yes	3.12e+04		n	n
8	31:48	1.12e+02	8.46e+01	1.32	yes	1.97e+02		n	n
9	31:55	8.18e+02	4.86e+02	1.68	yes	1.30e+03		n	n
10	32:02	4.76e+04	3.06e+04	1.56	yes	7.82e+04	2,3,4,7,8-PeCDF	n	n
11	32:58	2.59e+03	1.64e+03	1.58	yes	4.22e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0060

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 12 File: P616132 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 21:12:19 Processed: 20-DEC-18 15:56:43

Mass: 355.8550 357.8520 Tot Response: 1.14e+04 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:03	5.23e+02	3.86e+02	1.36	yes	9.08e+02		n	n
2	30:33	8.06e+02	5.92e+02	1.36	yes	1.40e+03		n	n
3	31:04	5.96e+02	4.08e+02	1.46	yes	1.00e+03		n	n
4	31:14	3.03e+02	2.16e+02	1.40	yes	5.20e+02		n	n
5	31:19	2.38e+02	1.79e+02	1.33	yes	4.17e+02		n	n
6	31:34	3.72e+02	2.23e+02	1.67	yes	5.95e+02		n	n
7	32:19	3.92e+03	2.40e+03	1.63	yes	6.32e+03	1,2,3,7,8-PeCDD	n	y
8	32:34	2.06e+01	1.29e+01	1.60	yes	3.35e+01		n	n
9	32:43	1.25e+02	7.21e+01	1.73	yes	1.97e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0060

Entry: 41 Totals Name: Total Hexa-Furans

Run: 12 File: P616132 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 21:12:19 Processed: 20-DEC-18 15:56:43

Mass: 373.8210 375.8180 Tot Response: 2.29e+05 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:38	9.26e+02	8.15e+02	1.14	yes	1.74e+03		n	n
2	33:48	7.24e+03	5.62e+03	1.29	yes	1.29e+04		n	n
3	34:22	3.96e+03	3.25e+03	1.22	yes	7.22e+03		n	n
4	34:48	8.43e+04	6.74e+04	1.25	yes	1.52e+05	1,2,3,4,7,8-HxCDF	n	n
5	34:55	2.10e+04	1.67e+04	1.26	yes	3.77e+04	1,2,3,6,7,8-HxCDF	n	n
6	35:27	4.17e+03	3.32e+03	1.25	yes	7.49e+03	2,3,4,6,7,8-HxCDF	n	n
7	36:13	6.02e+03	4.62e+03	1.30	yes	1.06e+04	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0060

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 12 File: P616132 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 21:12:19 Processed: 20-DEC-18 15:56:43

Mass: 389.8160 391.8130 Tot Response: 2.51e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:11	7.87e+03	6.31e+03	1.25	yes	1.42e+04		n	n
2	34:44	4.55e+02	3.28e+02	1.39	yes	7.83e+02		n	n
3	34:58	3.70e+03	3.12e+03	1.19	yes	6.82e+03		n	n
4	35:40	9.87e+02	8.10e+02	1.22	yes	1.80e+03	1,2,3,6,7,8-HxCDD	n	n
5	35:54	8.64e+02	6.65e+02	1.30	yes	1.53e+03	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0060

Entry: 43 Totals Name: Total Hepta-Furans

Run: 12 File: P616132 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 21:12:19 Processed: 20-DEC-18 15:56:43

Mass: 407.7820 409.7790 Tot Response: 7.20e+04 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:27	2.11e+04	2.01e+04	1.05	yes	4.12e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	37:51	9.69e+03	9.26e+03	1.05	yes	1.90e+04		n	n
3	38:47	5.99e+03	5.86e+03	1.02	yes	1.18e+04	1,2,3,4,7,8,9-HpCDF	n	n

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10450 Stancliff Rd., Suite 115
Houston, TX 77099
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058818

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0060

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 12 File: P616132 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 21:12:19 Processed: 20-DEC-18 15:56:43

Mass: 423.7770 425.7740 Tot Response: 1.51e+05 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
								n	n
1	37:42	4.34e+04	4.15e+04	1.05	yes	8.49e+04			
2	38:21	3.34e+04	3.27e+04	1.02	yes	6.61e+04	1,2,3,4,6,7,8-HpCDD	n	n

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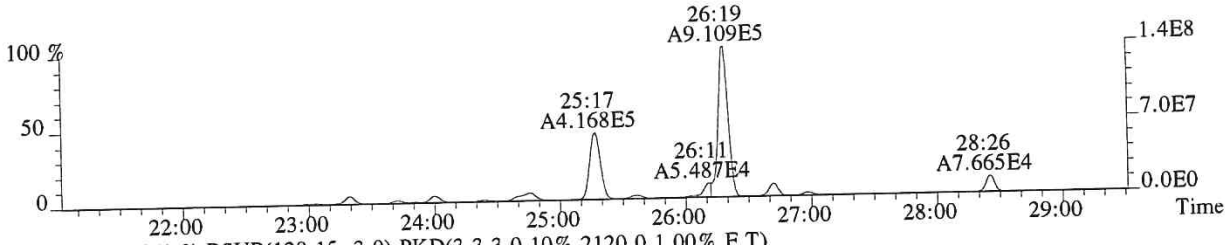
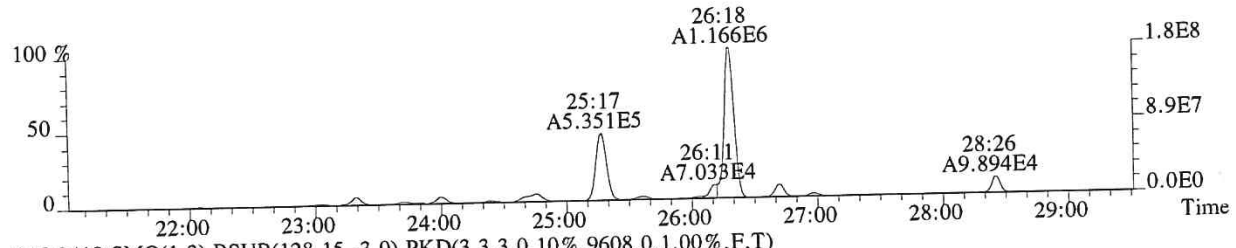
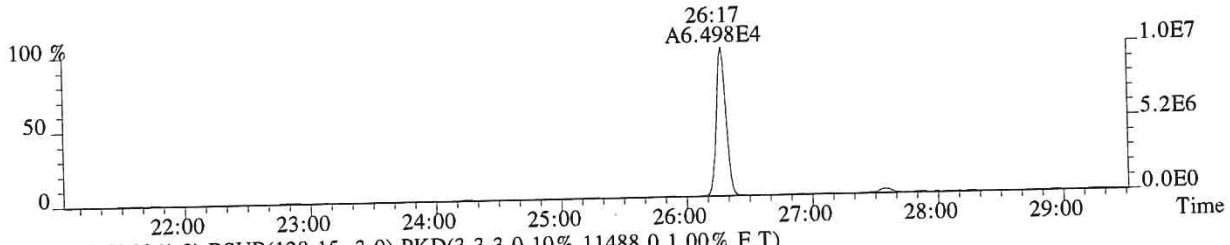
File:P616132 #1-602 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1052.0,1.00%,F,T)



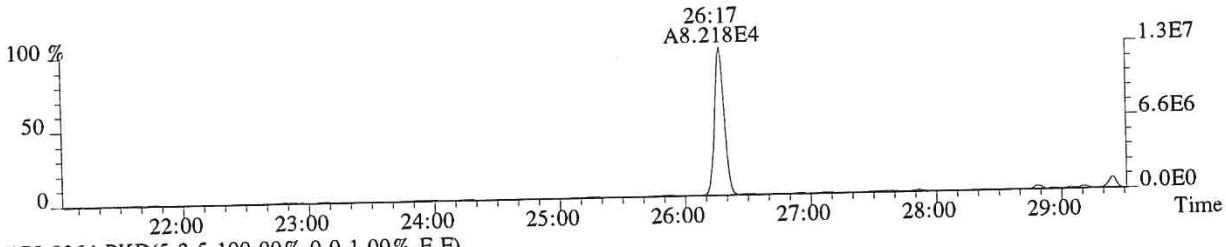
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2120.0,1.00%,F,T)



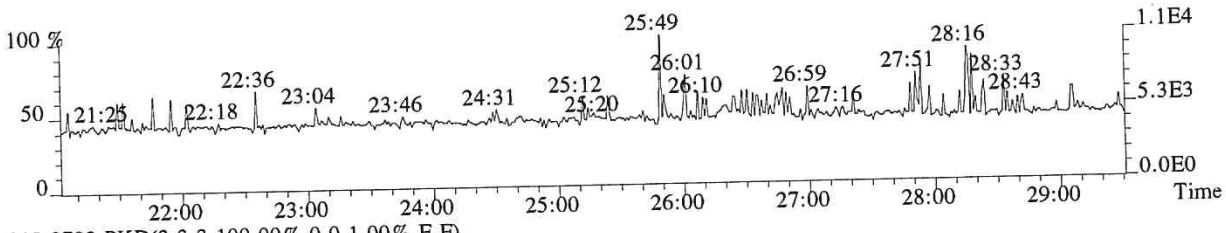
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9608.0,1.00%,F,T)



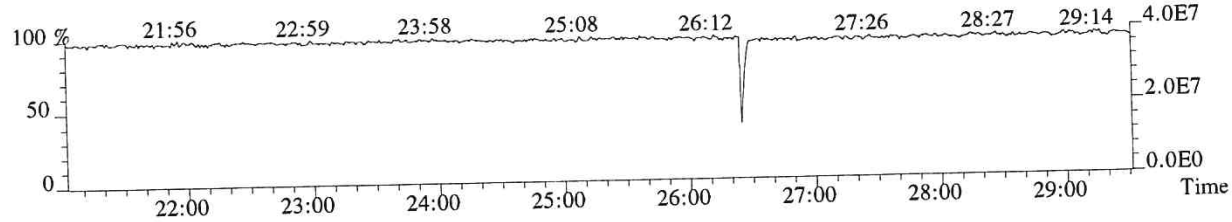
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11488.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

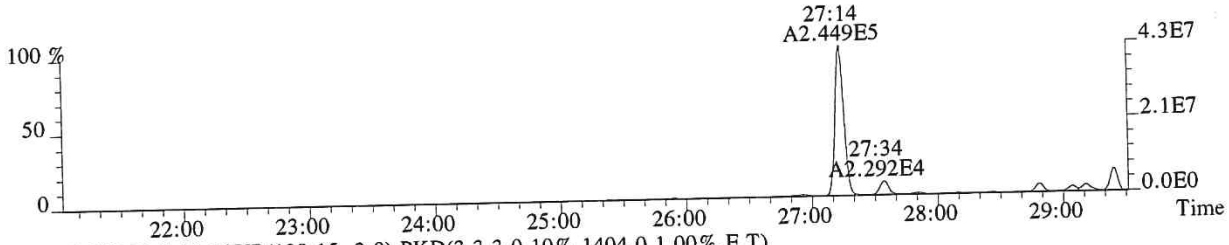


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

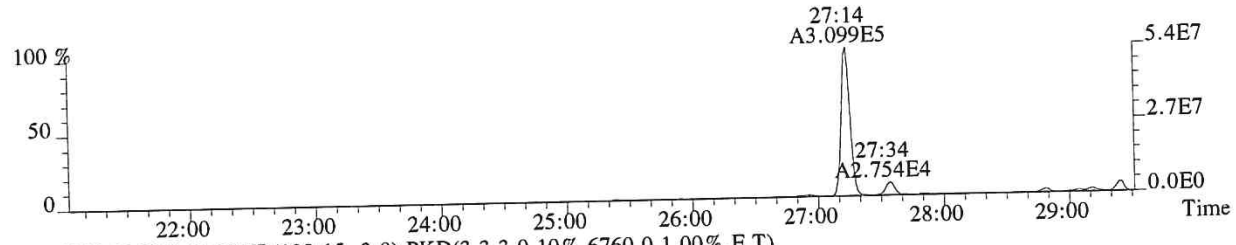


058820

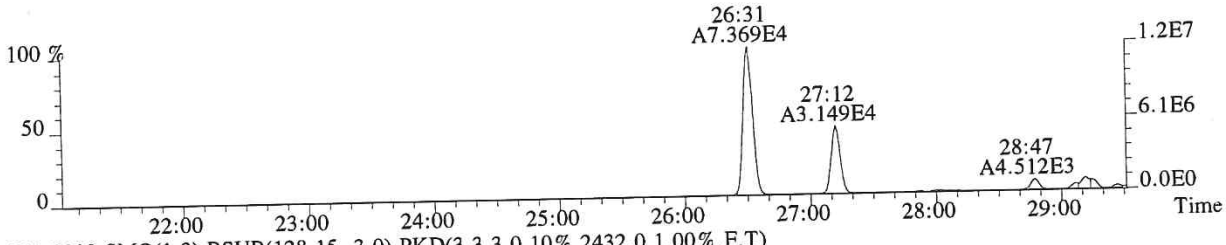
File:P616132 #1-602 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:E1801096-002
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2184.0,1.00%,F,T)



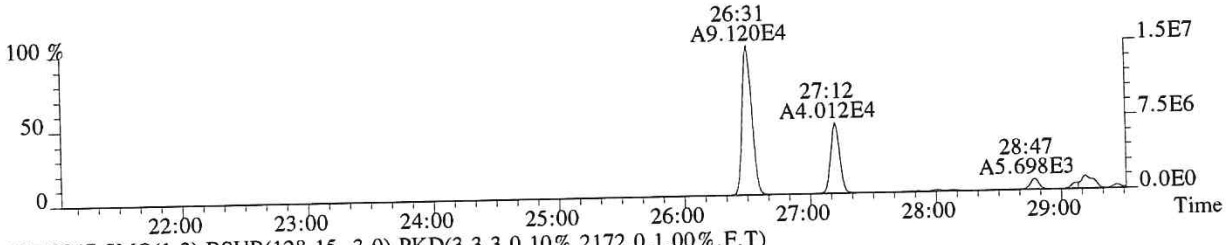
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1404.0,1.00%,F,T)



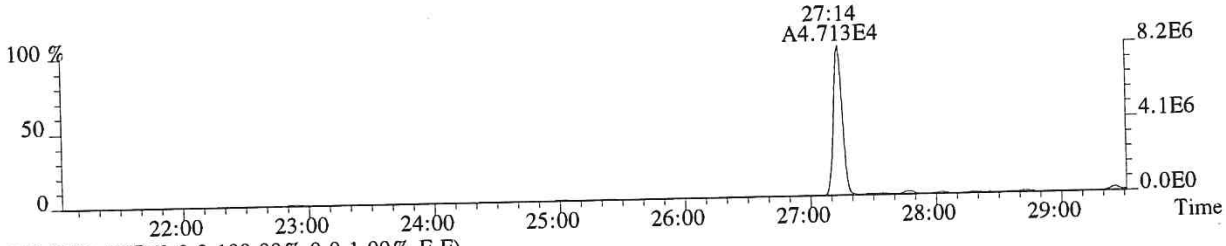
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6760.0,1.00%,F,T)



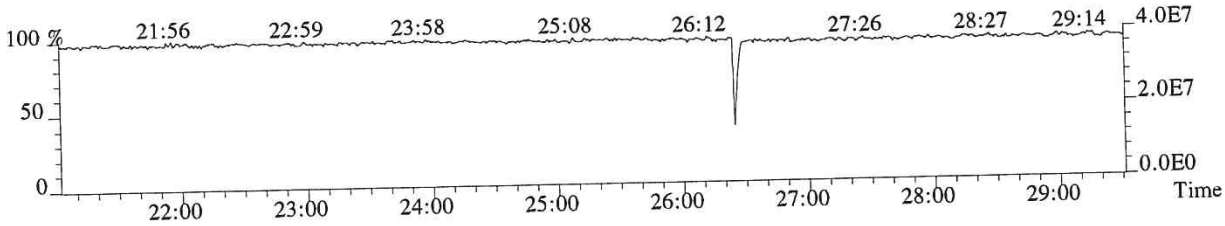
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2432.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2172.0,1.00%,F,T)

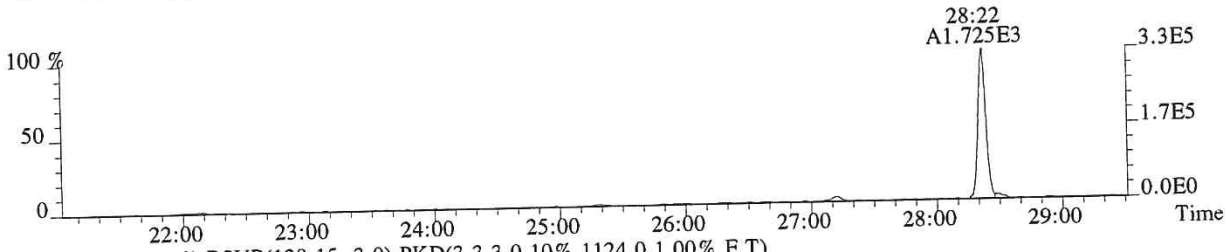


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

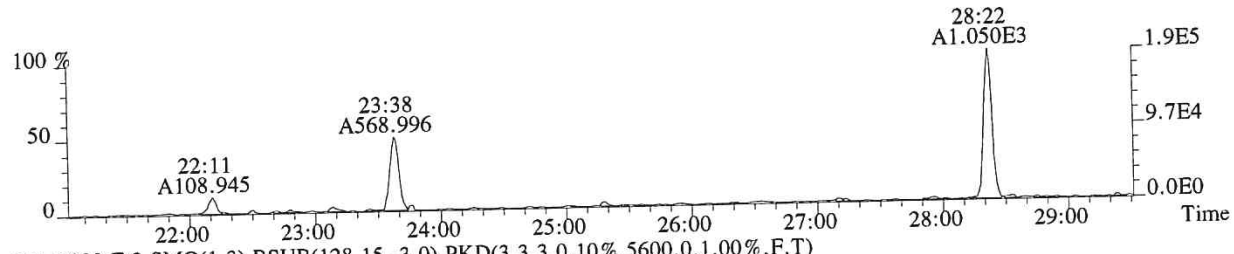


058821

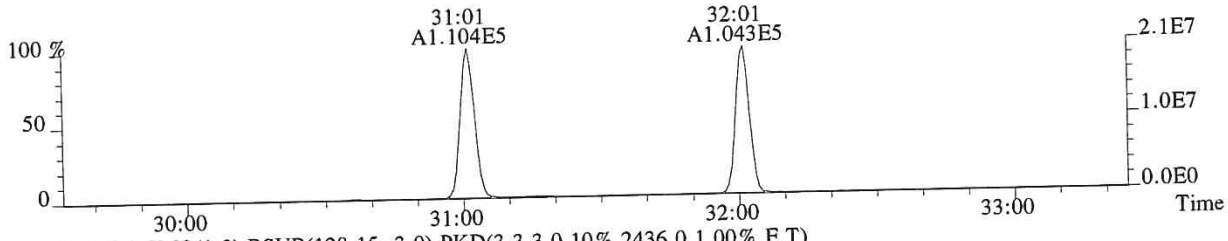
File:P616132 #1-602 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,308.0,1.00%,F,T)



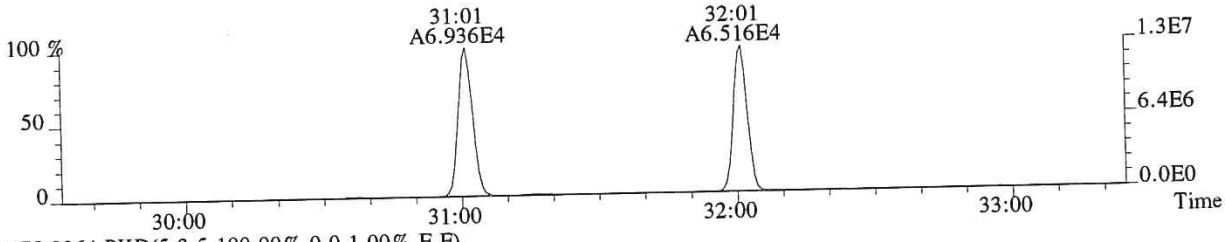
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1124.0,1.00%,F,T)



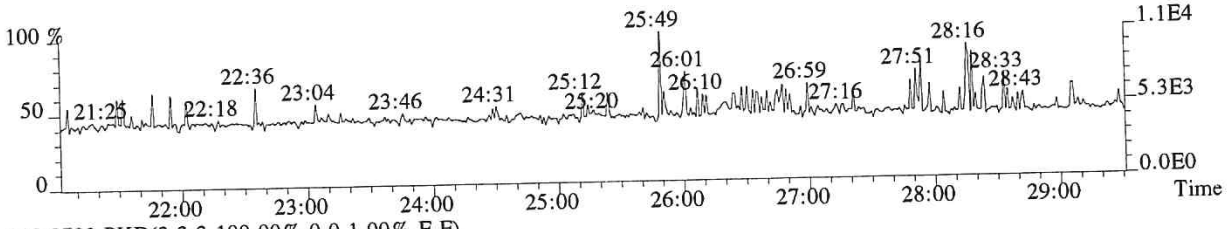
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5600.0,1.00%,F,T)



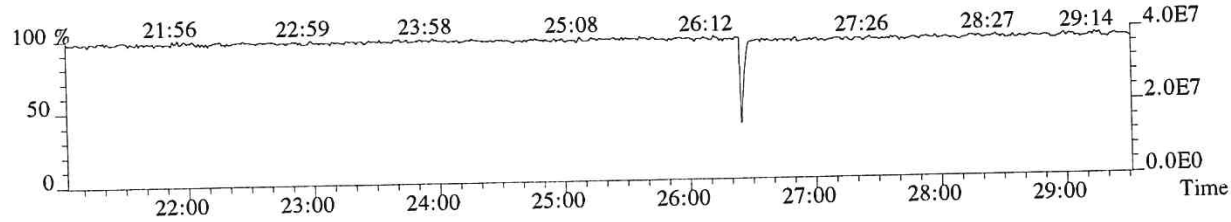
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2436.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

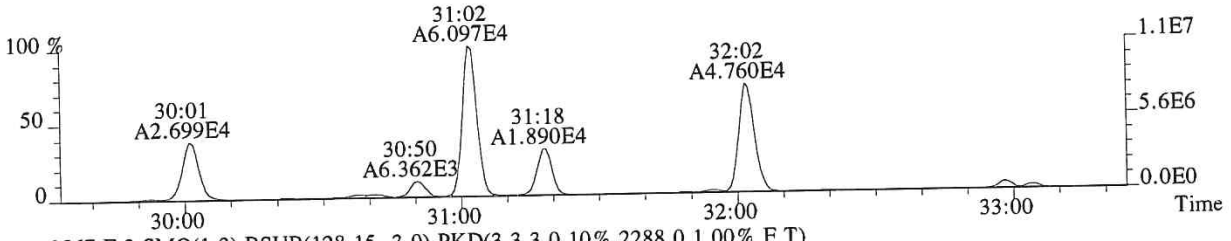


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

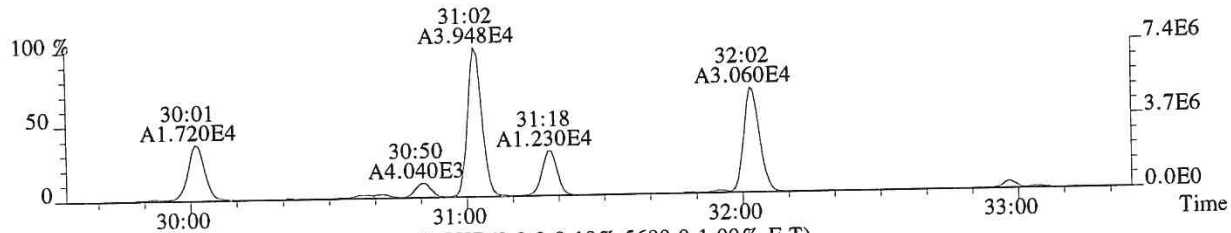


058822

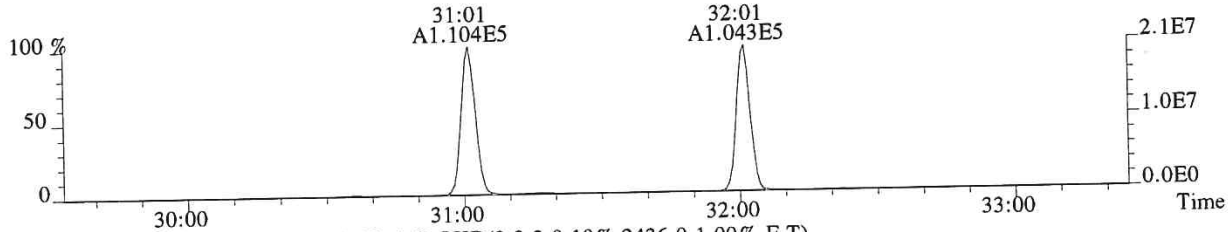
File:P616132 #1-348 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7216.0,1.00%,F,T)



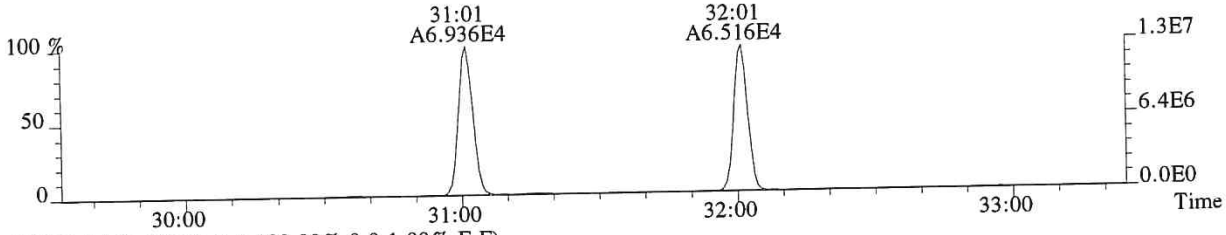
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2288.0,1.00%,F,T)



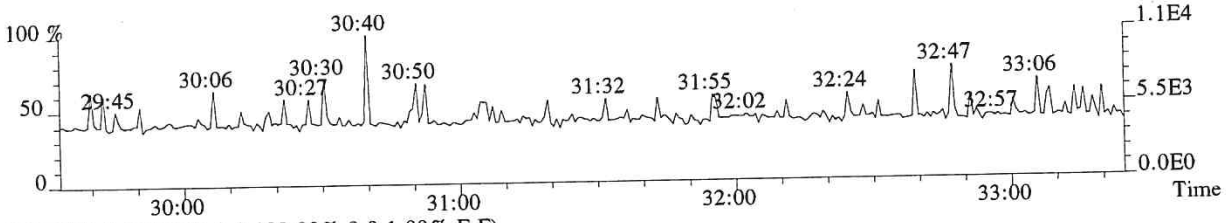
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5600.0,1.00%,F,T)



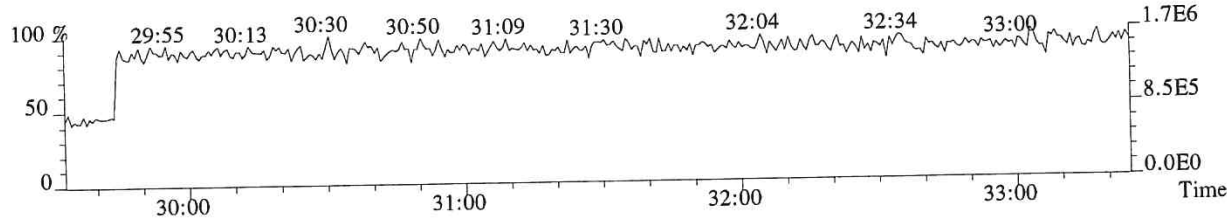
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2436.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

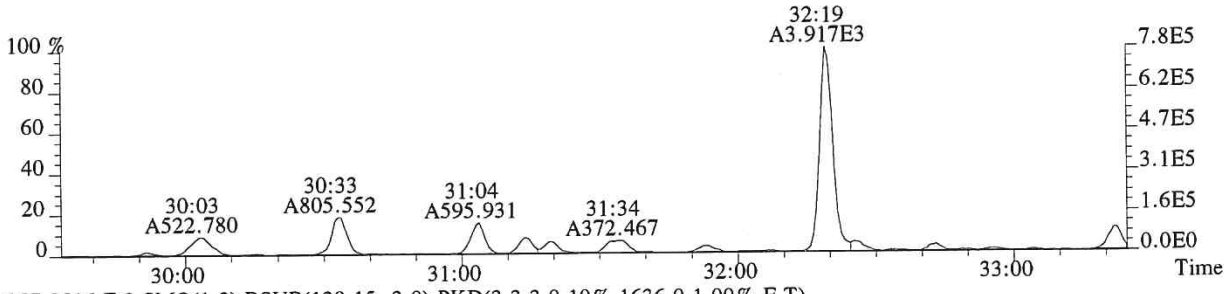


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

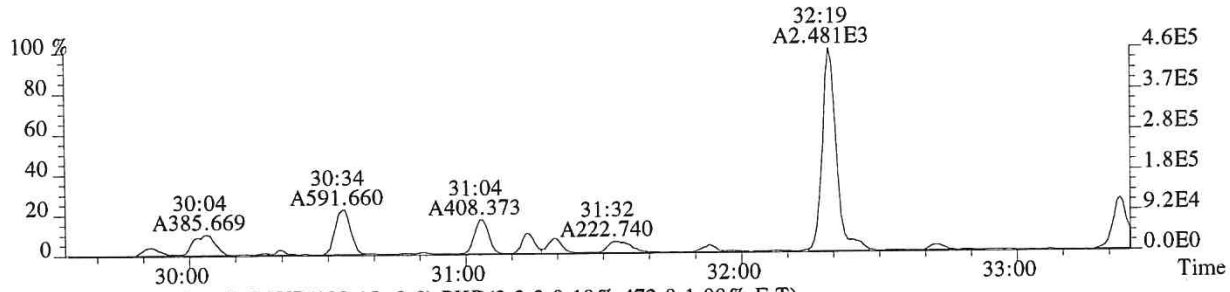


058823

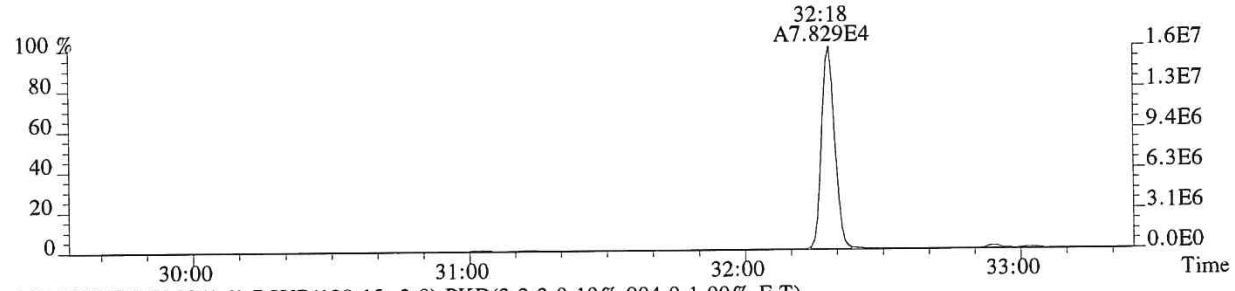
File:P616132 #1-348 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1328.0,1.00%,F,T)



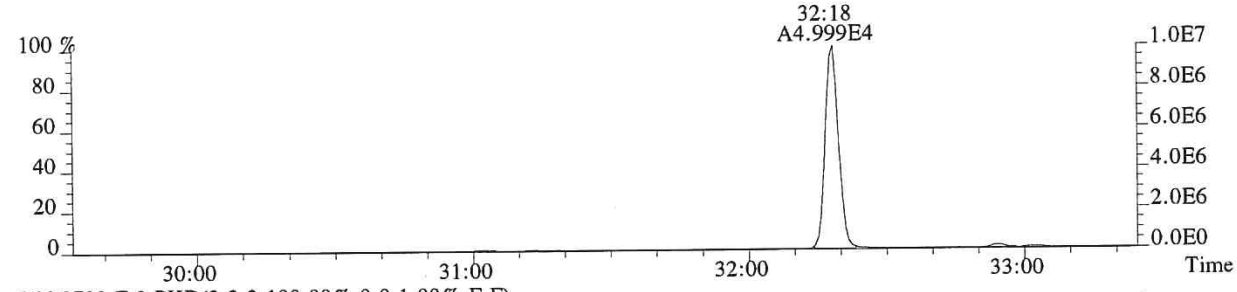
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1636.0,1.00%,F,T)



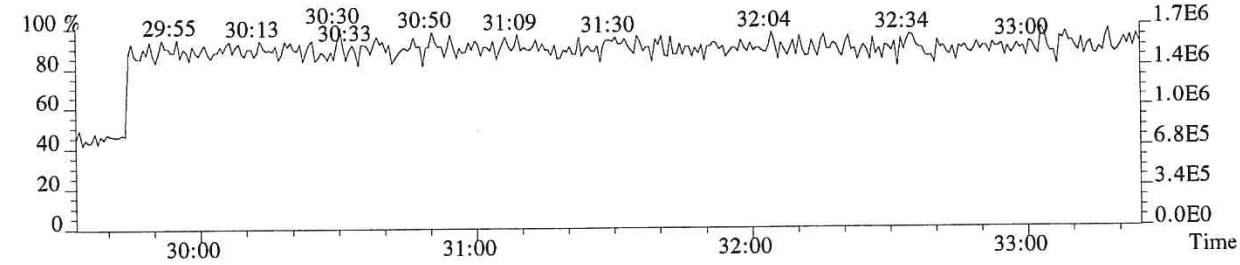
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,904.0,1.00%,F,T)

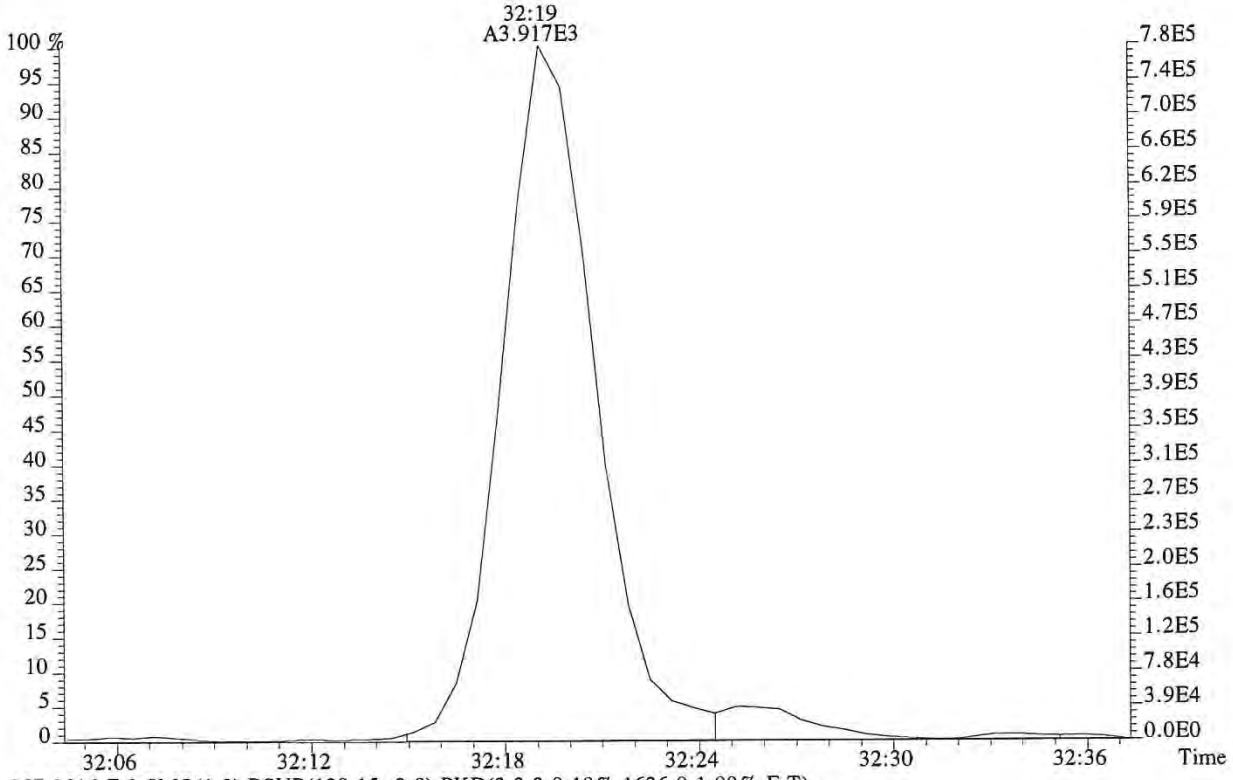


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

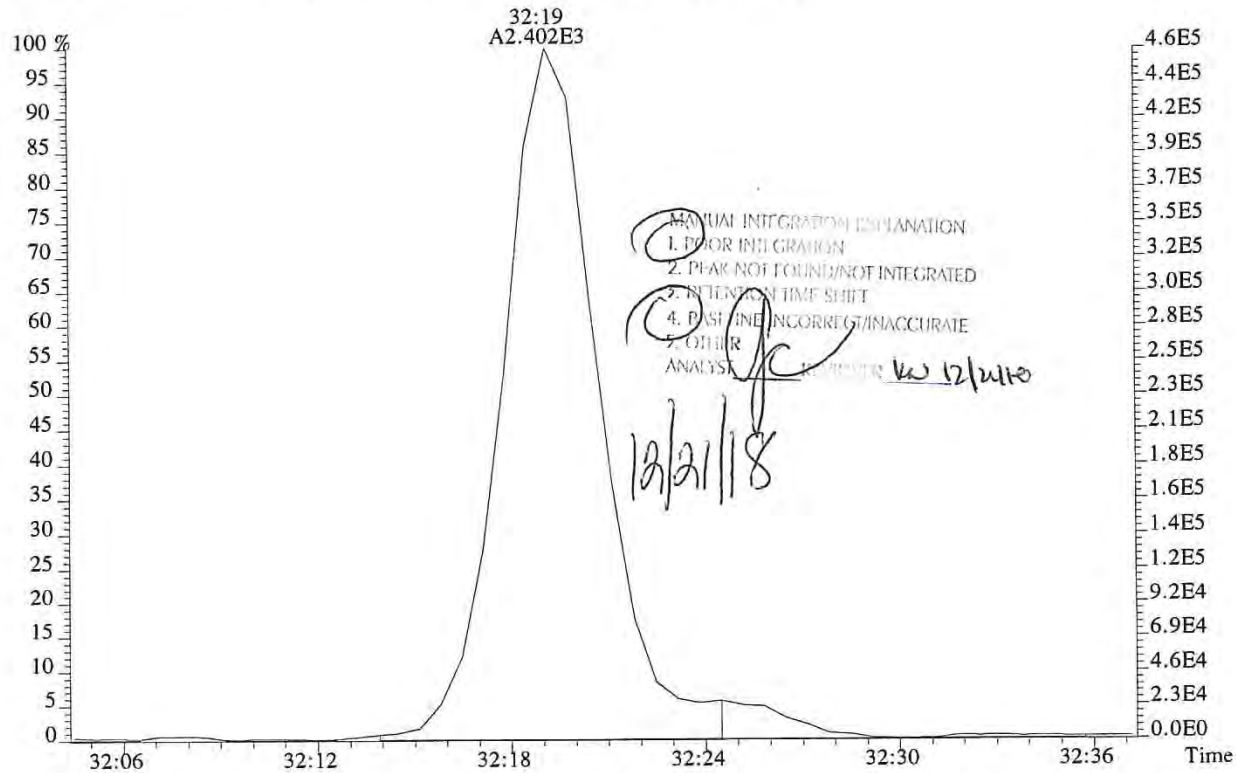


058824

File:P616132 #1-348 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-002
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1328.0,1.00%,F,T)

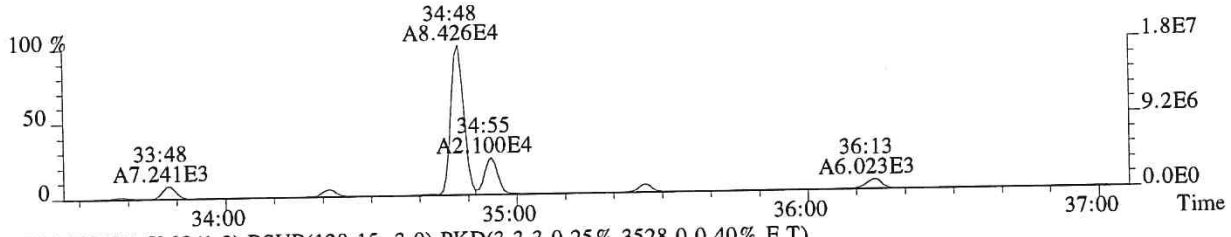


357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1636.0,1.00%,F,T)

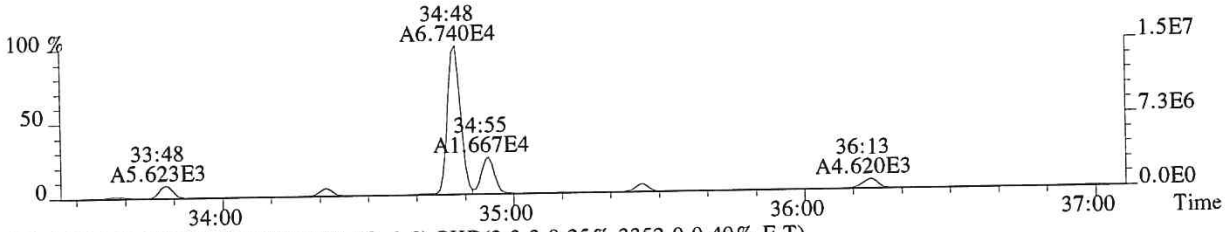


058825

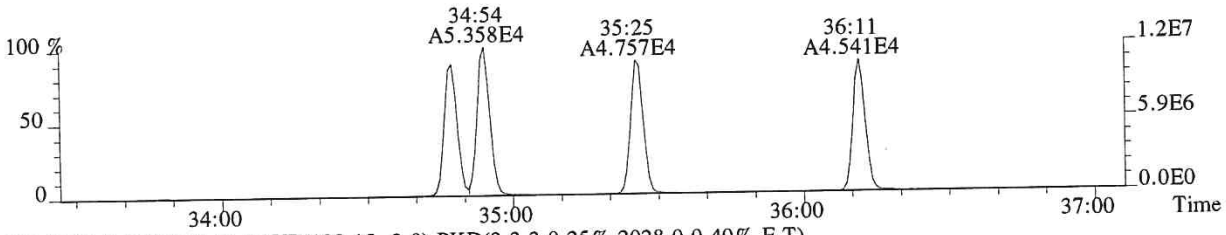
File:P616132 #1-330 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6564.0,0.40%,F,T)



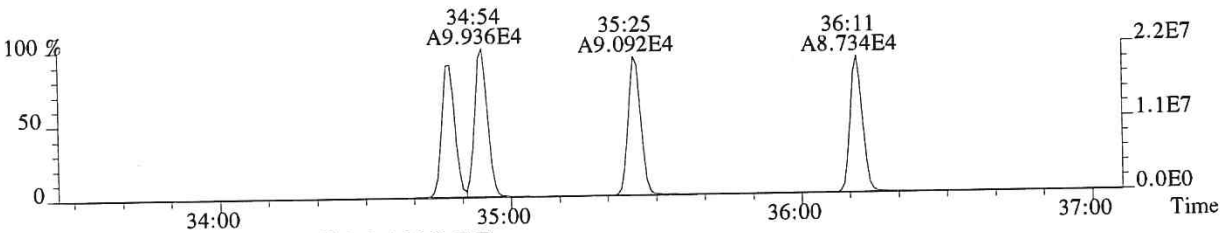
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3528.0,0.40%,F,T)



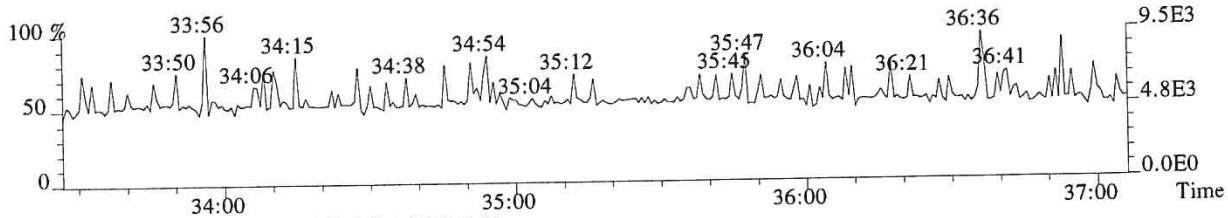
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3352.0,0.40%,F,T)



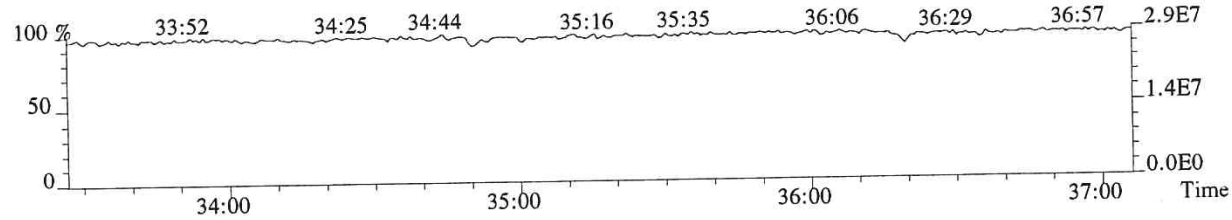
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2028.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

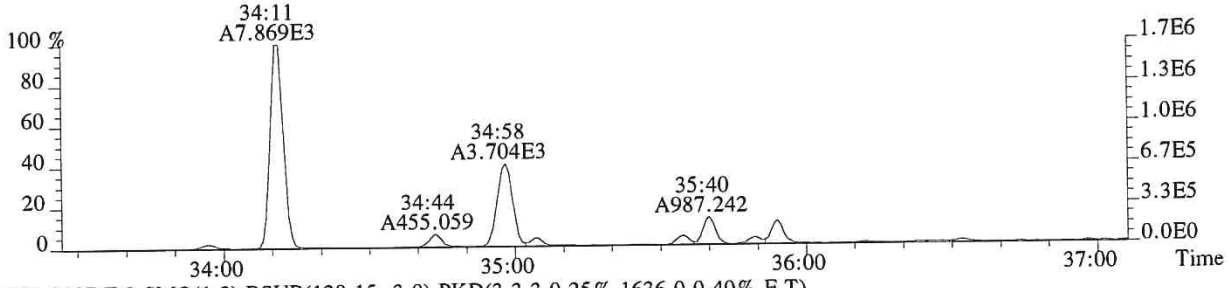


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

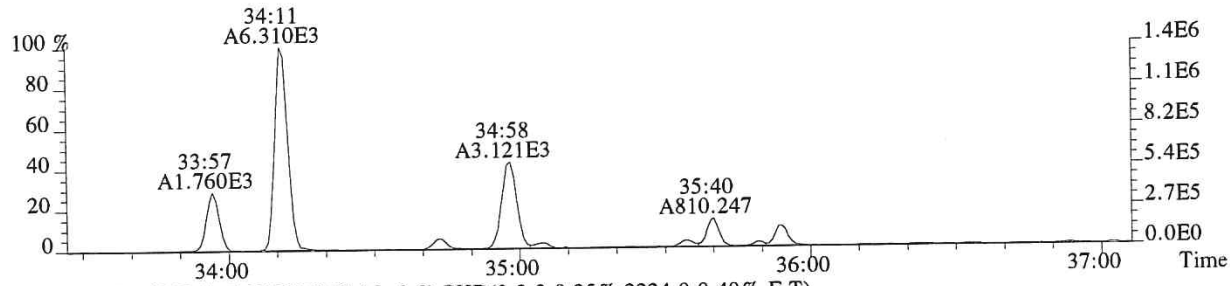


058826

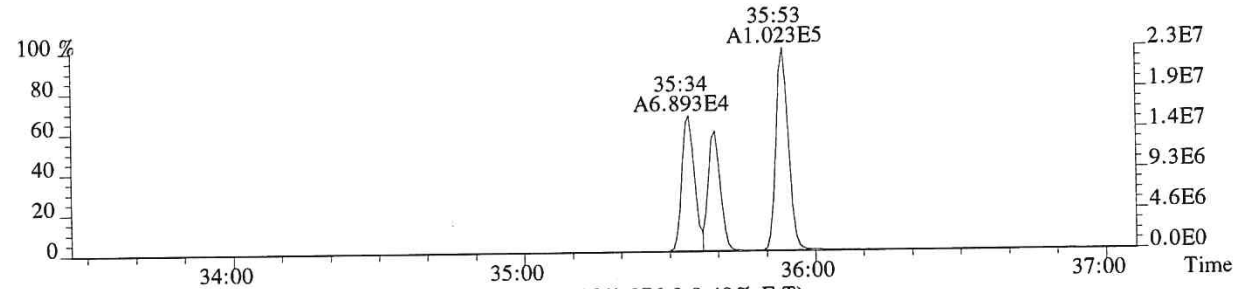
File:P616132 #1-330 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2412.0,0.40%,F,T)



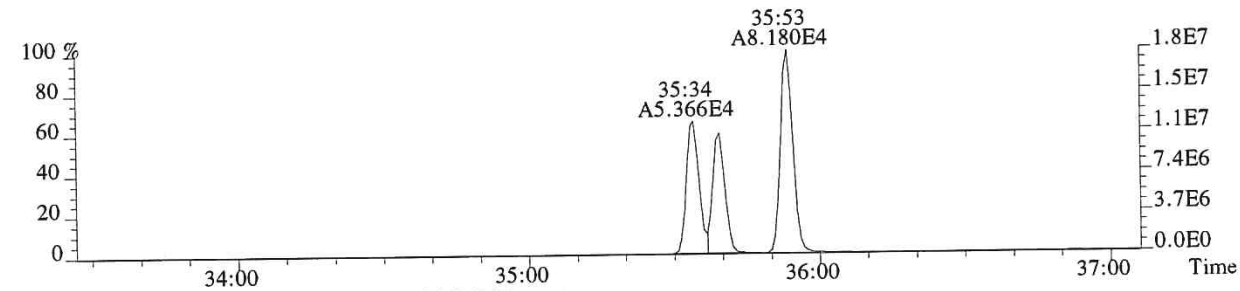
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1636.0,0.40%,F,T)



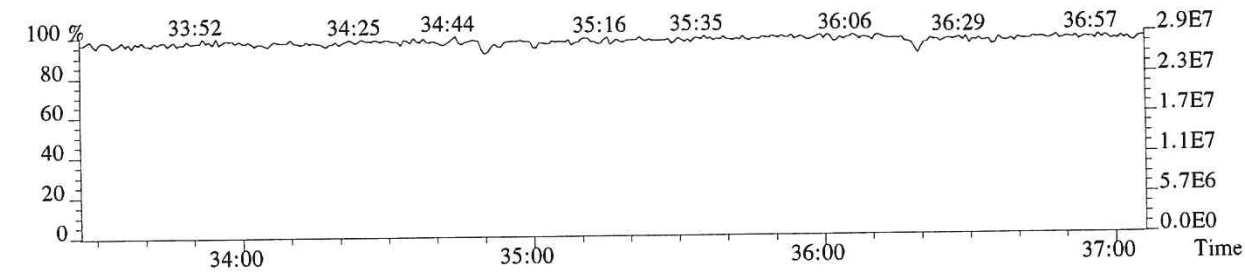
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2224.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,876.0,0.40%,F,T)

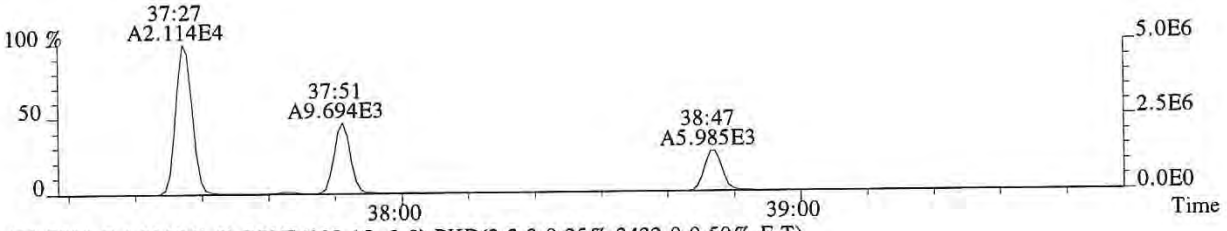


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

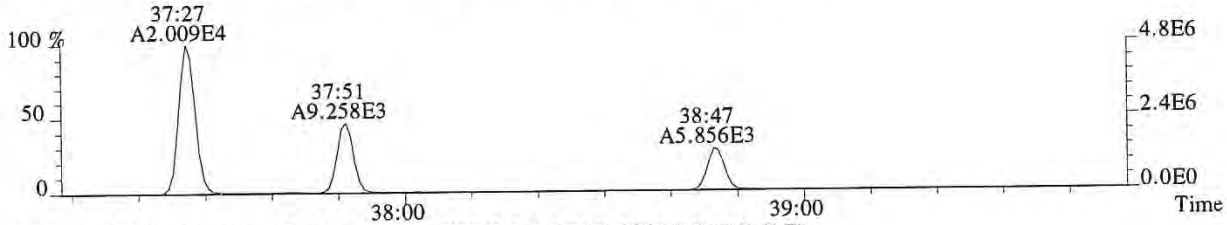


058827

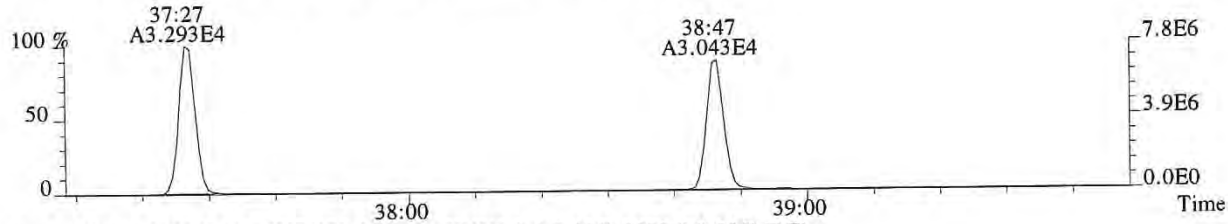
File:P616132 #1-241 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1396.0,0.50%,F,T)



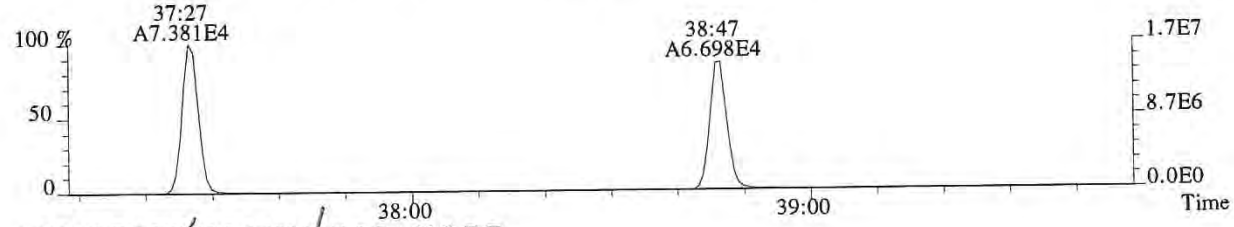
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3432.0,0.50%,F,T)



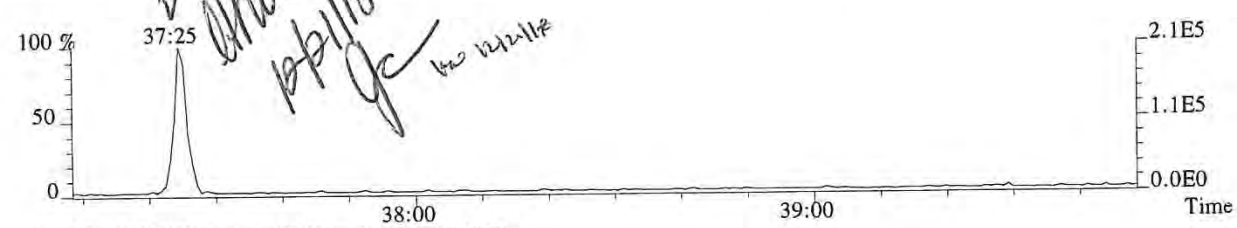
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3060.0,0.50%,F,T)



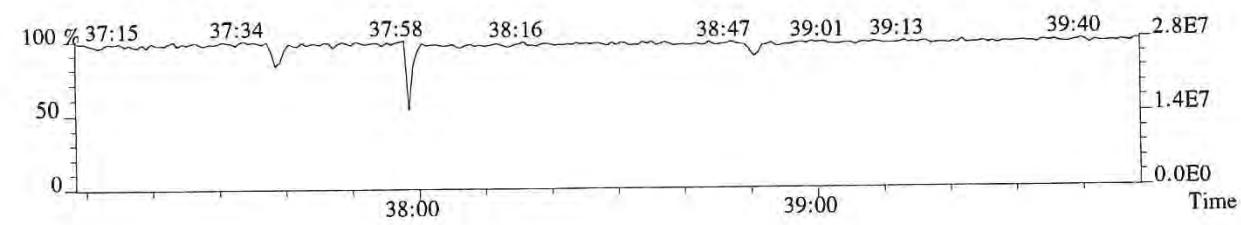
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2292.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

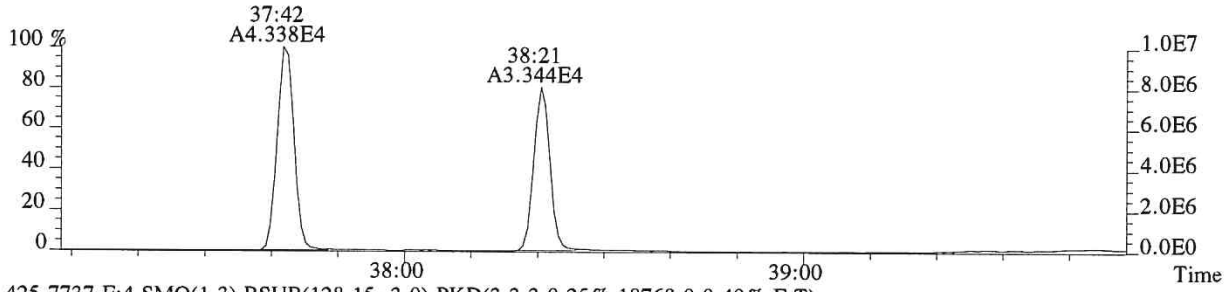


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

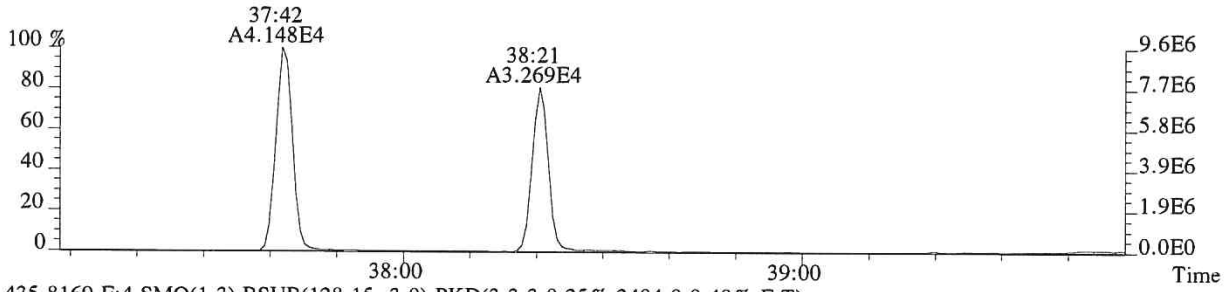


058828

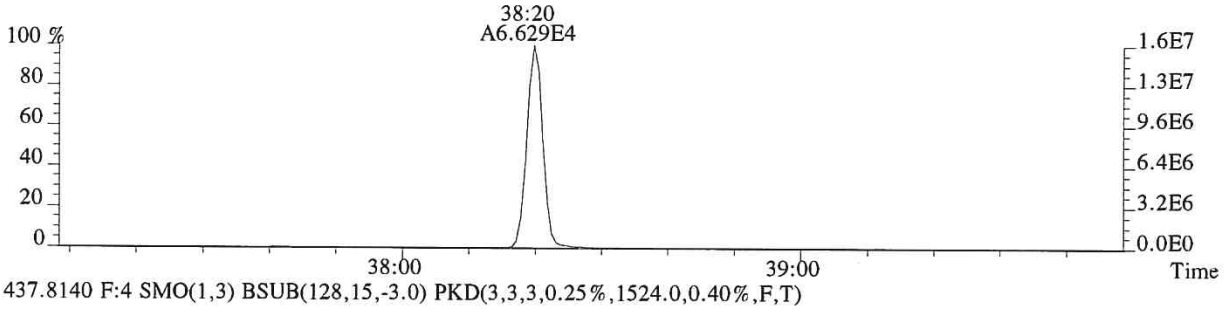
File:P616132 #1-241 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,79656.0,0.40%,F,T)



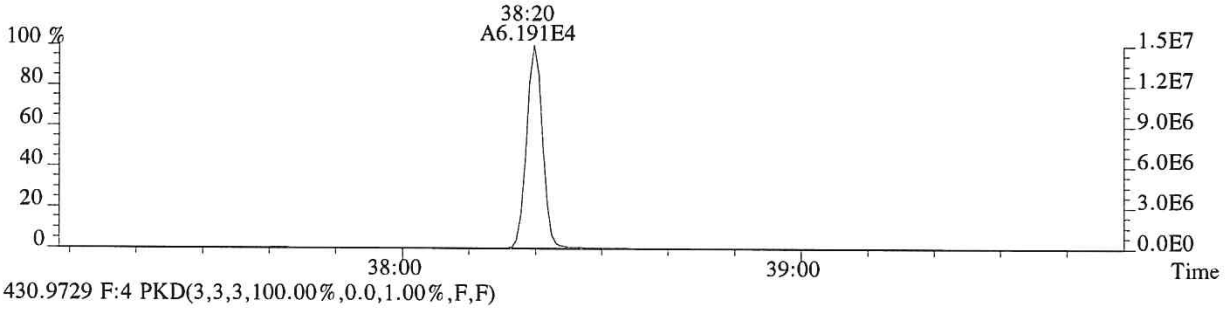
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,18768.0,0.40%,F,T)



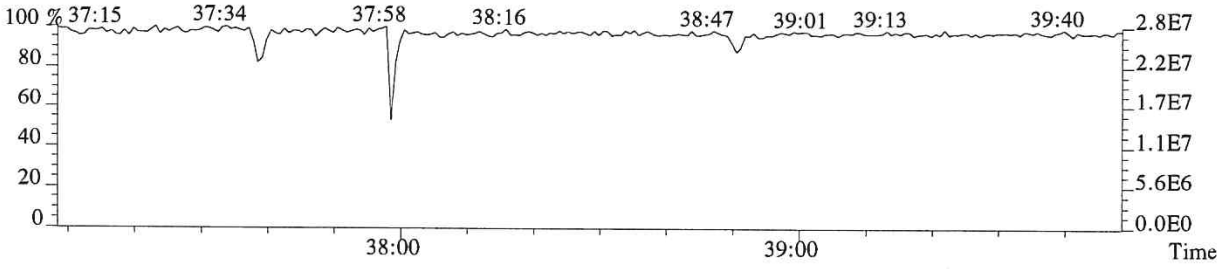
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2404.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1524.0,0.40%,F,T)

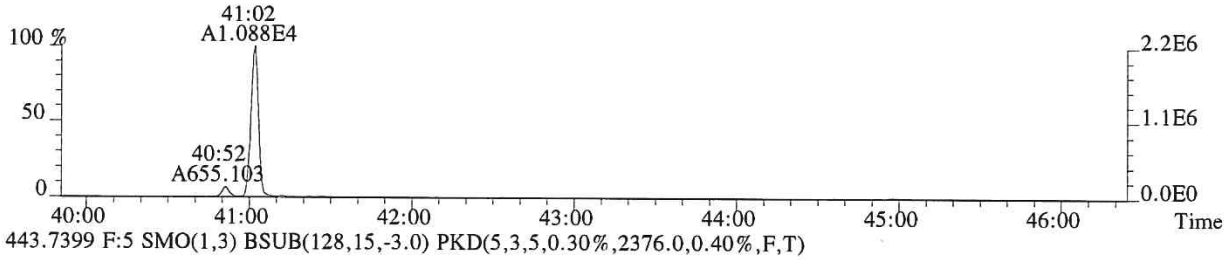


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

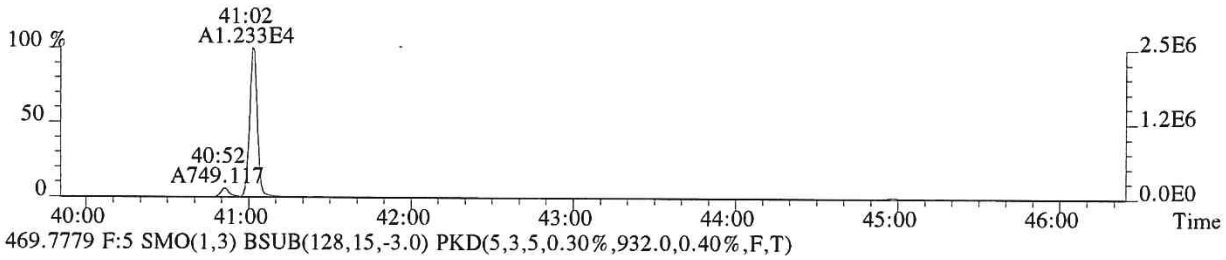


058829

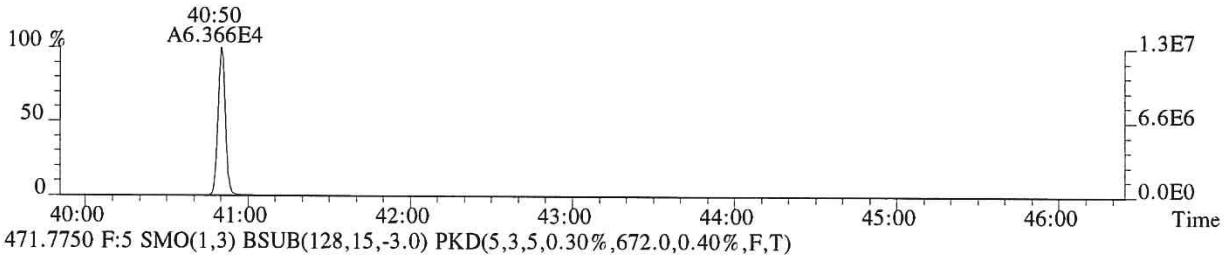
File:P616132 #1-591 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2008.0,0.40%,F,T)



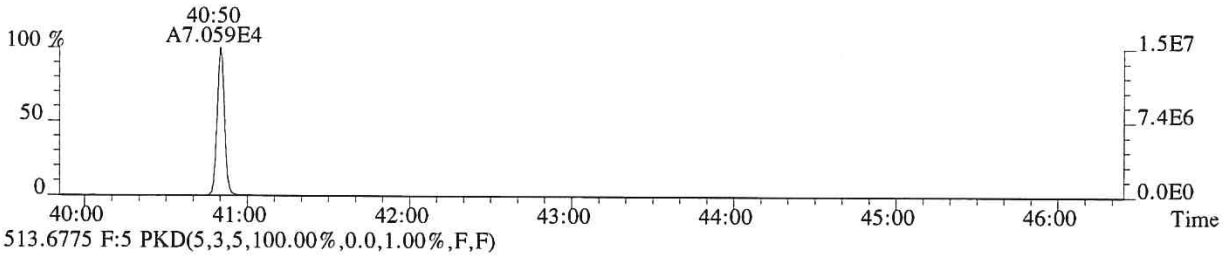
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2376.0,0.40%,F,T)



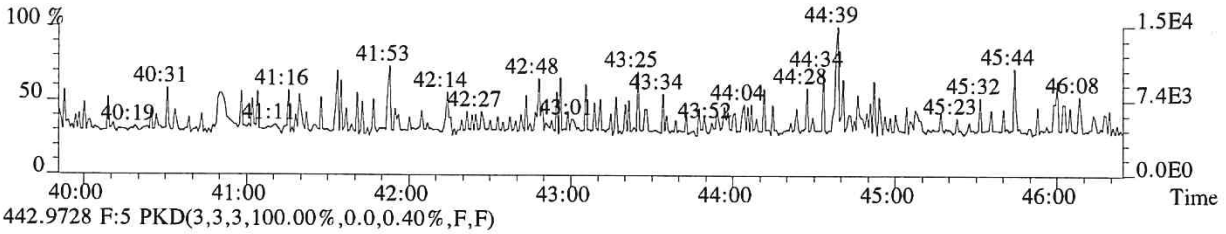
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,932.0,0.40%,F,T)



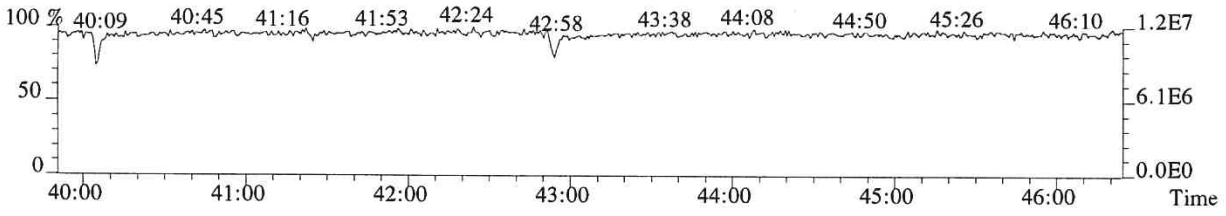
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,672.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

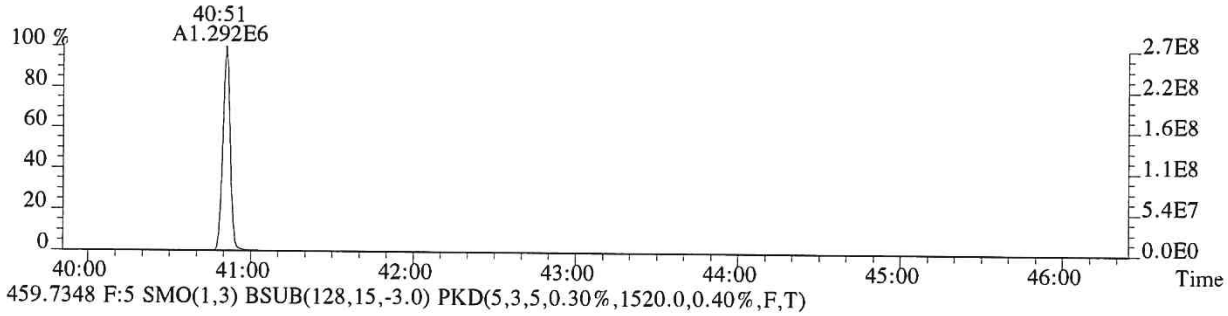


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

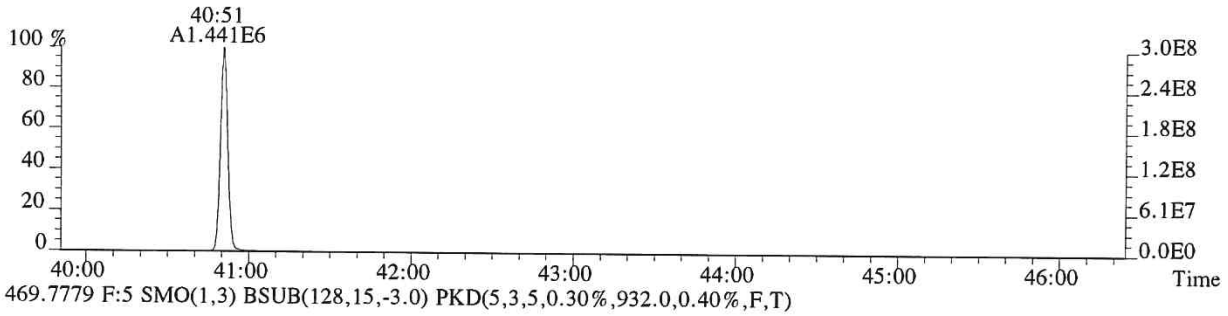


058830

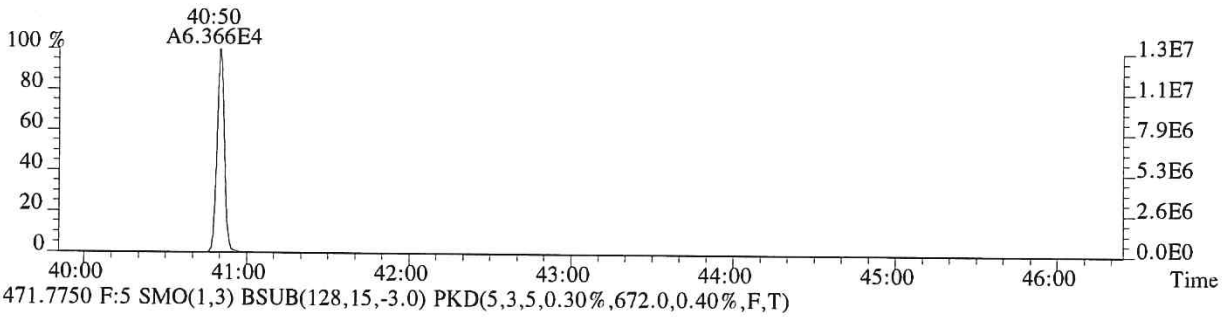
File:P616132 #1-591 Acq:19-DEC-2018 21:12:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,220.0,0.40%,F,T)



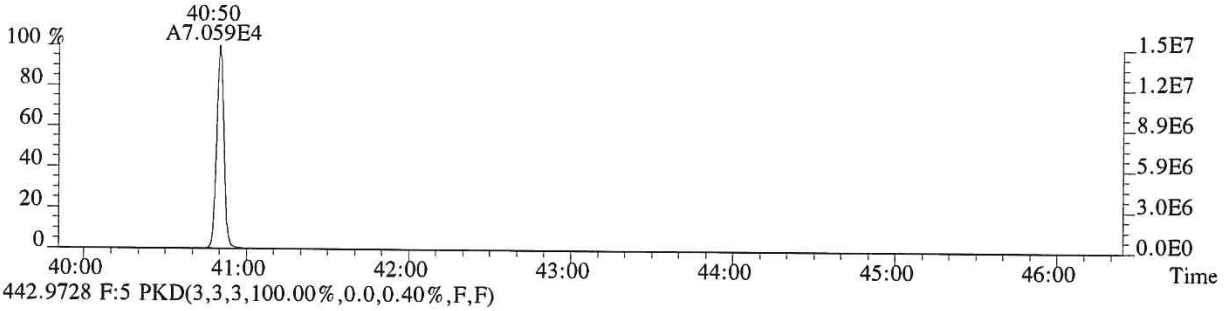
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1520.0,0.40%,F,T)



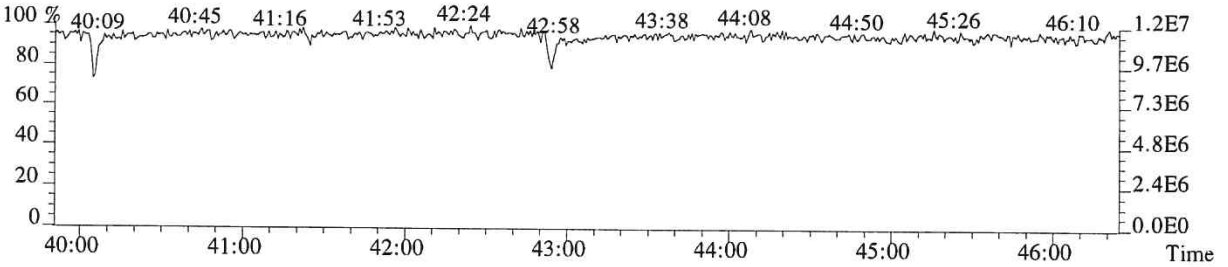
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,932.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,672.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



058831

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0060

un #10 Filename P519591 Samp: 1 Inj: 1 Acquired: 24-DEC-18 12:13:07
rocessed: 26-DEC-18 13:29:53 Sample ID: E1801096-002DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:17	3.885e+03	5.155e+03	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:06	2.480e+02	1.525e+02	1.63	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:06	1.447e+02	1.048e+02	1.38	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:59	2.750e+02	2.303e+02	1.19	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:06	7.960e+01	6.664e+01	1.19	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:39	1.991e+01	1.999e+01	1.00	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:29	1.956e+01	1.604e+01	1.22	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:50	8.894e+01	5.934e+01	1.50	no	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.258
10	Unk	OCDF	41:55	2.931e+01	4.275e+01	0.69	no	no	1.359
11	Unk	2,3,7,8-TCDD	27:14	8.991e+02	1.280e+03	0.70	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	yes	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:50	1.056e+02	8.930e+01	1.18	yes	no	1.025
17	Unk	OCDD	41:44	4.957e+03	5.604e+03	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:16	5.723e+03	7.403e+03	0.77	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:05	8.390e+03	5.419e+03	1.55	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:05	8.163e+03	4.910e+03	1.66	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:58	3.286e+03	6.211e+03	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:05	3.987e+03	7.678e+03	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:38	3.434e+03	6.469e+03	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:26	2.979e+03	5.846e+03	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:50	2.682e+03	6.038e+03	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:16	2.218e+03	4.994e+03	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:12	2.686e+03	3.433e+03	0.78	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:24	5.963e+03	3.829e+03	1.56	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:48	4.419e+03	3.338e+03	1.32	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:53	5.140e+03	3.899e+03	1.32	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:48	5.035e+03	4.688e+03	1.07	yes	no	0.858
32	IS	13C-OCDD	41:43	5.694e+03	6.344e+03	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:32	4.610e+03	5.967e+03	0.77	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:08	5.657e+03	4.382e+03	1.29	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:13	1.976e+02				no	1.014

$$\text{OCDD} = \frac{(4.957e+03 + 5.604e+03) \times 4000\ \text{pg} \times 20}{(5.694e+03 + 6.344e+03) \times 10.7\ \text{g} \times 84 / 100 \times 1.118} = 12612.1191\ \text{ng/kg}$$

LG 12/27/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0060

Run #10 Filename P519591 Samp: 1 Inj: 1 Acquired: 24-DEC-18 12:13:07
Processed: 26-DEC-18 13:29:53 LAB. ID: E1801096-002DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.43e+05	5.92e+02	9.2e+02	7.25e+05	1.56e+03	4.7e+02
2	1,2,3,7,8-PeCDF	4.10e+04	6.64e+02	6.2e+01	2.46e+04	9.16e+02	2.7e+01
3	2,3,4,7,8-PeCDF	2.40e+04	6.64e+02	3.6e+01	1.43e+04	9.16e+02	1.6e+01
4	1,2,3,4,7,8-HxCDF	4.80e+04	5.28e+02	9.1e+01	3.89e+04	5.40e+02	7.2e+01
5	1,2,3,6,7,8-HxCDF	1.56e+04	5.28e+02	3.0e+01	1.24e+04	5.40e+02	2.3e+01
6	2,3,4,6,7,8-HxCDF	3.31e+03	5.28e+02	6.3e+00	3.99e+03	5.40e+02	7.4e+00
7	1,2,3,7,8,9-HxCDF	4.04e+03	5.28e+02	7.7e+00	3.50e+03	5.40e+02	6.5e+00
8	1,2,3,4,6,7,8-HpCDF	1.38e+04	4.60e+02	3.0e+01	8.22e+03	4.28e+02	1.9e+01
9	1,2,3,4,7,8,9-HpCDF	*	4.60e+02	*	*	4.28e+02	*
10	OCDF	4.30e+03	3.20e+02	1.3e+01	5.07e+03	7.52e+02	6.7e+00
11	2,3,7,8-TCDD	1.44e+05	2.18e+03	6.6e+01	1.95e+05	6.64e+02	2.9e+02
12	1,2,3,7,8-PeCDD	*	7.20e+02	*	*	3.96e+02	*
13	1,2,3,4,7,8-HxCDD	*	5.56e+02	*	*	5.12e+02	*
14	1,2,3,6,7,8-HxCDD	*	5.56e+02	*	*	5.12e+02	*
15	1,2,3,7,8,9-HxCDD	*	5.56e+02	*	*	5.12e+02	*
16	1,2,3,4,6,7,8-HpCDD	1.33e+04	4.60e+02	2.9e+01	1.13e+04	3.16e+02	3.6e+01
17	OCDD	3.51e+05	3.04e+02	1.2e+03	4.11e+05	4.56e+02	9.0e+02
18	13C-2,3,7,8-TCDF	8.70e+05	6.81e+03	1.3e+02	1.12e+06	4.34e+03	2.6e+02
19	13C-1,2,3,7,8-PeCDF	1.37e+06	5.12e+02	2.7e+03	8.92e+05	5.36e+02	1.7e+03
20	13C-2,3,4,7,8-PeCDF	1.46e+06	5.12e+02	2.8e+03	8.44e+05	5.36e+02	1.6e+03
21	13C-1,2,3,4,7,8-HxCDF	6.12e+05	4.68e+02	1.3e+03	1.15e+06	3.20e+02	3.6e+03
22	13C-1,2,3,6,7,8-HxCDF	6.22e+05	4.68e+02	1.3e+03	1.24e+06	3.20e+02	3.9e+03
23	13C-2,3,4,6,7,8-HxCDF	5.86e+05	4.68e+02	1.3e+03	1.11e+06	3.20e+02	3.5e+03
24	13C-1,2,3,7,8,9-HxCDF	4.41e+05	4.68e+02	9.4e+02	9.06e+05	3.20e+02	2.8e+03
25	13C-1,2,3,4,6,7,8-HpCDF	3.91e+05	1.03e+03	3.8e+02	8.66e+05	1.56e+03	5.5e+02
26	13C-1,2,3,4,7,8,9-HpCDF	2.41e+05	1.03e+03	2.3e+02	5.40e+05	1.56e+03	3.5e+02
27	13C-2,3,7,8-TCDD	4.19e+05	6.04e+03	6.9e+01	5.48e+05	1.50e+03	3.7e+02
28	13C-1,2,3,7,8-PeCDD	1.00e+06	8.20e+02	1.2e+03	6.43e+05	9.68e+02	6.6e+02
29	13C-1,2,3,4,7,8-HxCDD	8.33e+05	1.08e+03	7.7e+02	6.41e+05	4.08e+02	1.6e+03
30	13C-1,2,3,6,7,8-HxCDD	8.00e+05	1.08e+03	7.4e+02	5.88e+05	4.08e+02	1.4e+03
31	13C-1,2,3,4,6,7,8-HpCDD	6.25e+05	4.80e+02	1.3e+03	5.68e+05	2.28e+02	2.5e+03
32	13C-OCDD	4.19e+05	6.04e+02	6.9e+02	4.61e+05	3.04e+02	1.5e+03
33	13C-1,2,3,4-TCDD	7.19e+05	6.04e+03	1.2e+02	9.43e+05	1.50e+03	6.3e+02
34	13C-1,2,3,7,8,9-HxCDD	8.37e+05	1.08e+03	7.8e+02	6.21e+05	4.08e+02	1.5e+03
35	37Cl-2,3,7,8-TCDD	3.12e+04	1.03e+03	3.0e+01			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.176e{+}03 + 6.640e{+}02) \times 2000}{(4.193e{+}05 + 5.477e{+}05) \times (\qquad\qquad) \times 1.085} =$$

ALS ENVIRONMENTAL
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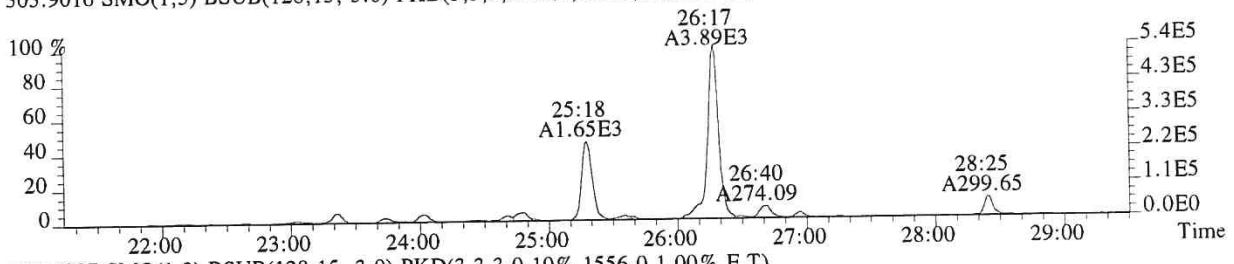
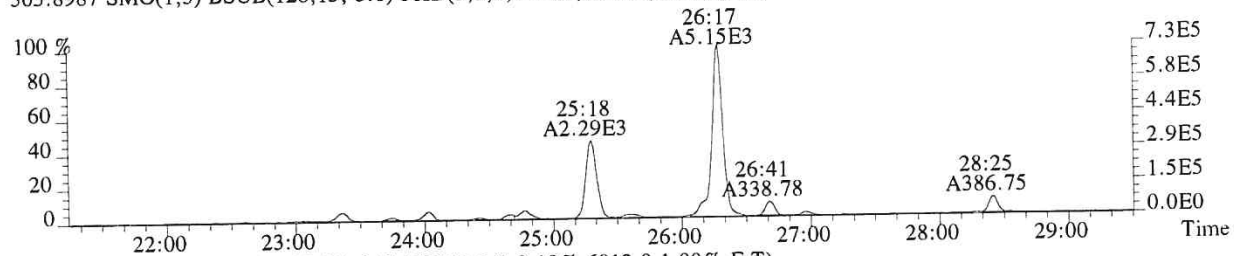
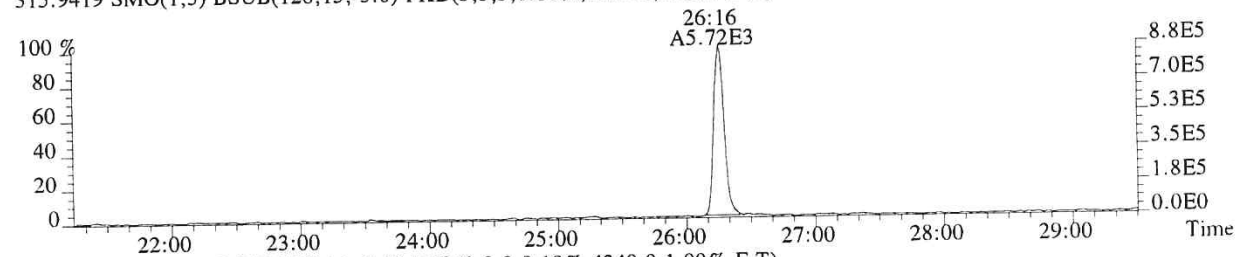
File:P519591 #1-587 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,592.0,1.00%,F,T)



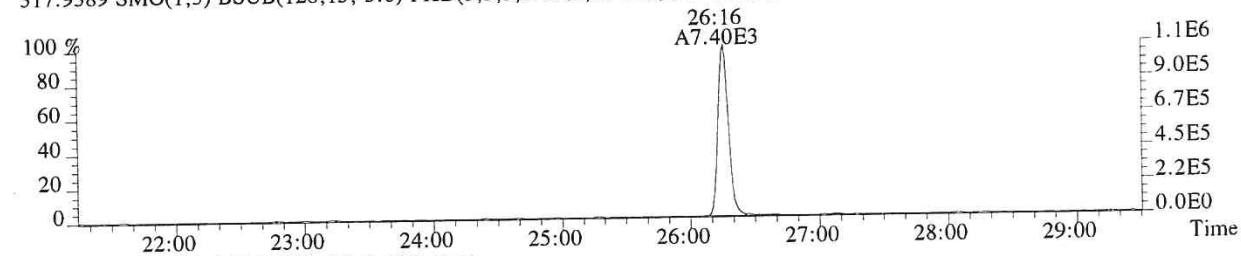
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1556.0,1.00%,F,T)



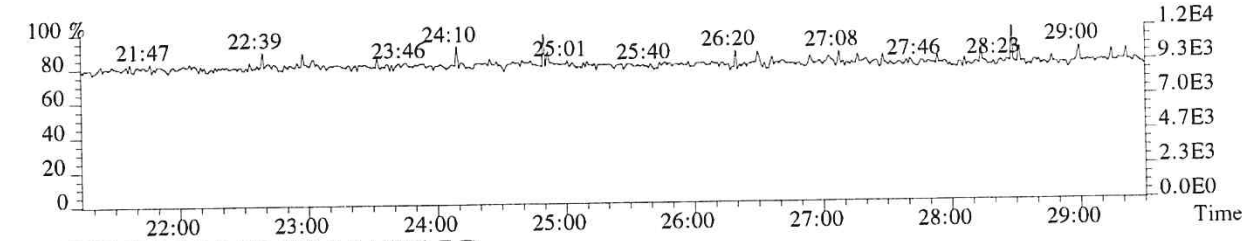
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6812.0,1.00%,F,T)



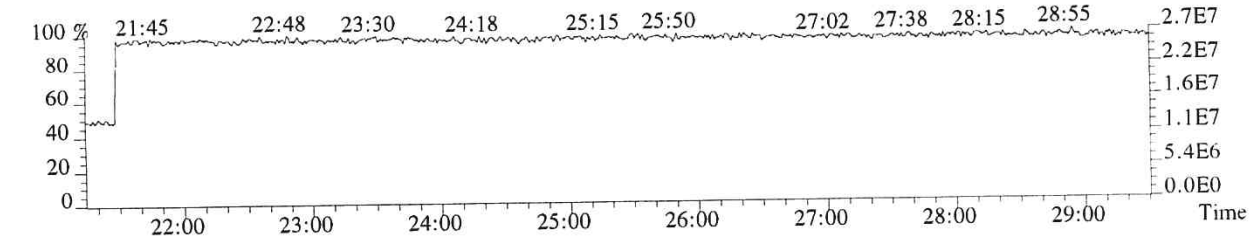
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4340.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

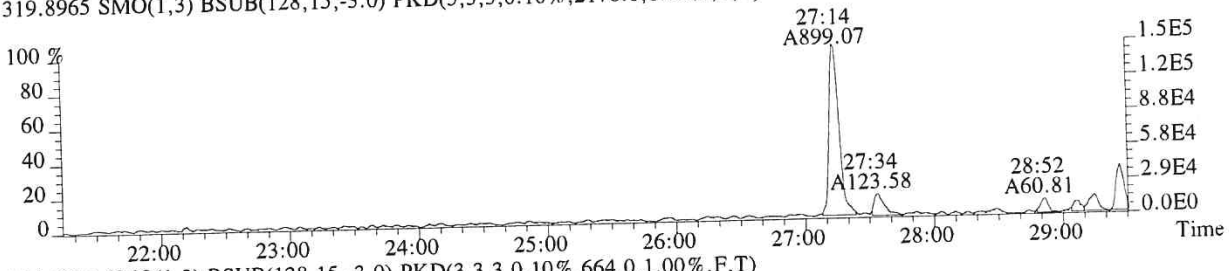


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

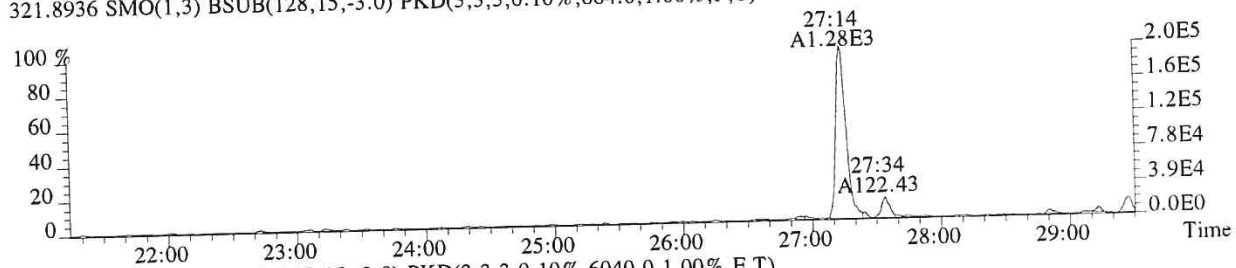


058834

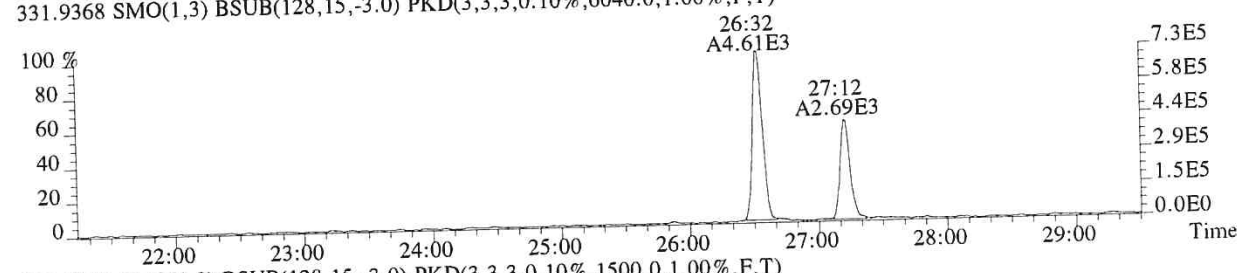
File:P519591 #1-587 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,T)



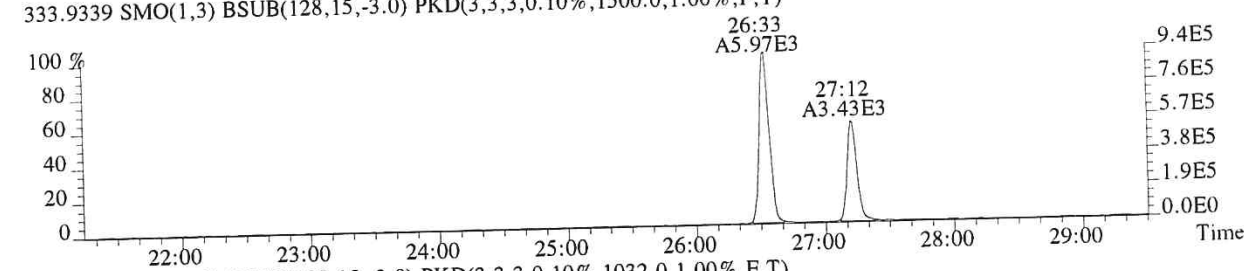
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,664.0,1.00%,F,T)



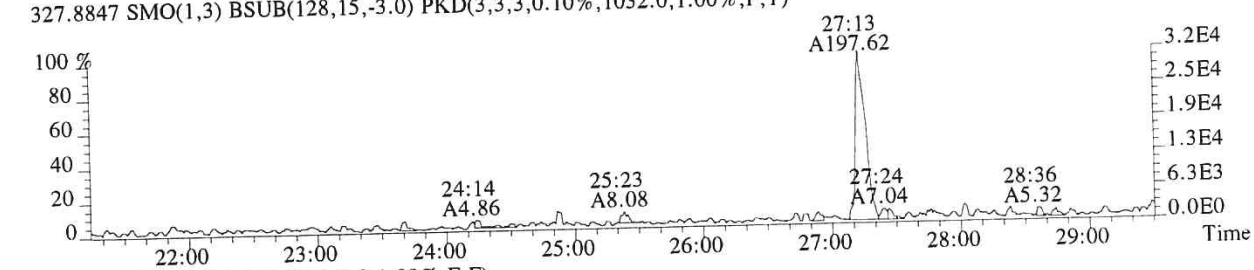
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6040.0,1.00%,F,T)



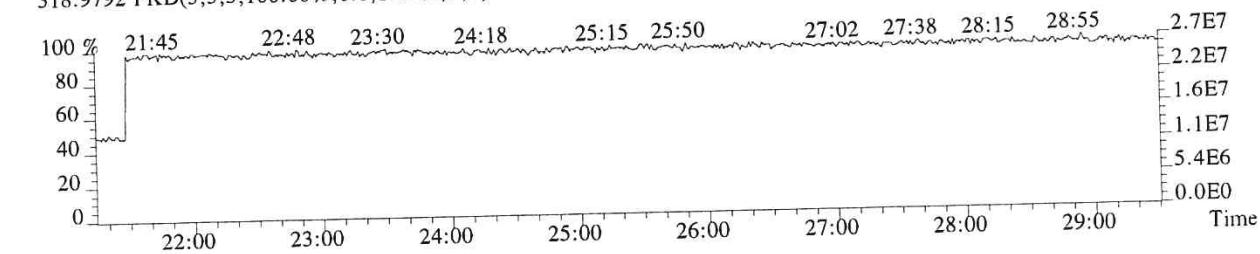
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1500.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1032.0,1.00%,F,T)

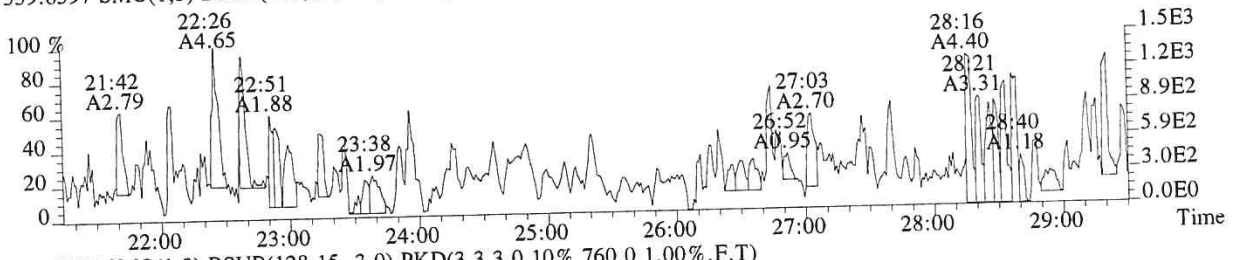


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

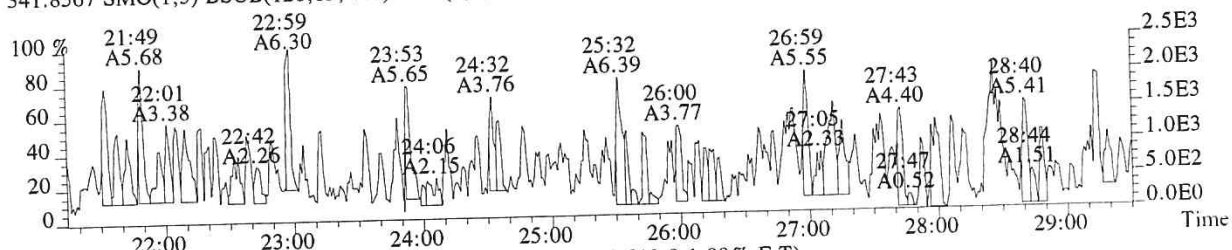


058835

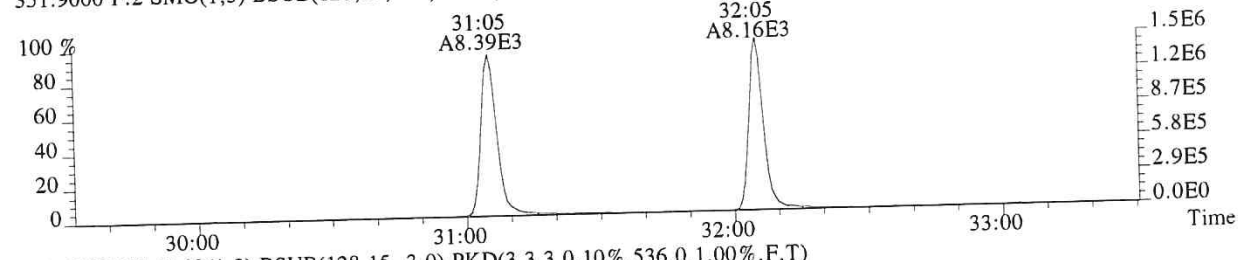
File:P519591 #1-587 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,380.0,1.00%,F,T)



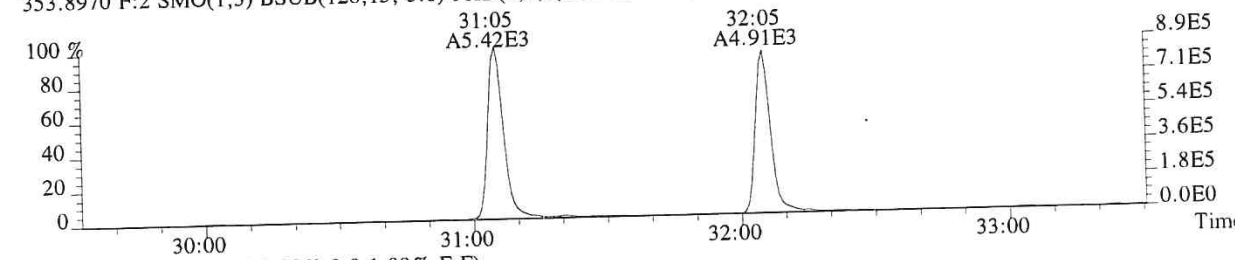
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,760.0,1.00%,F,T)



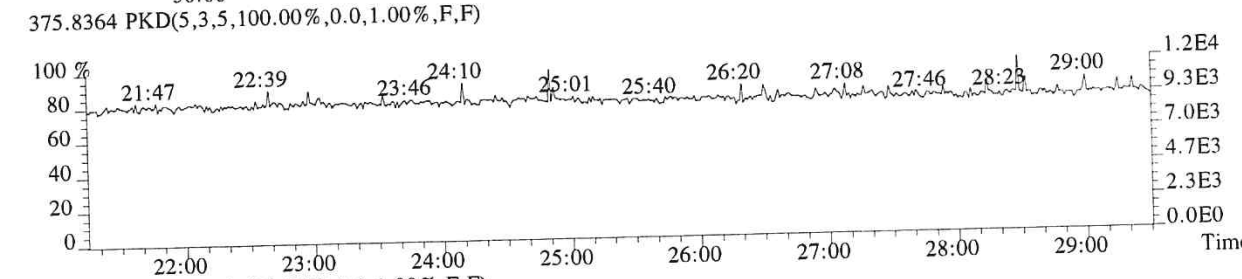
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,512.0,1.00%,F,T)



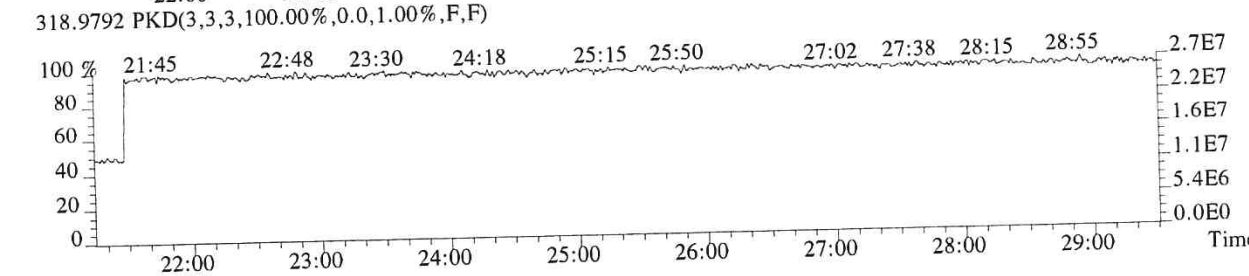
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,536.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

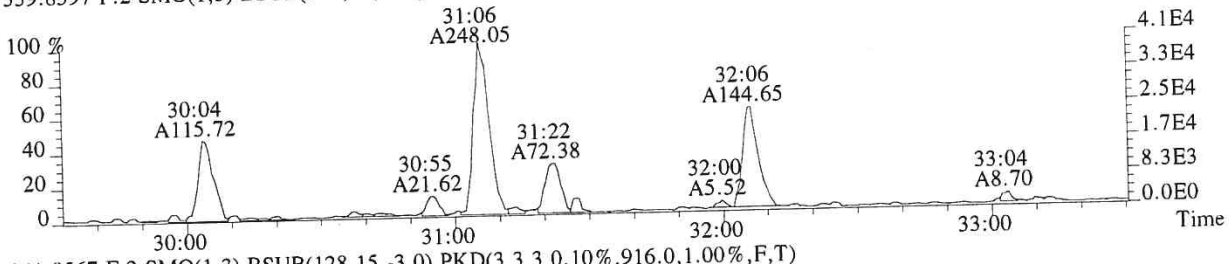


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

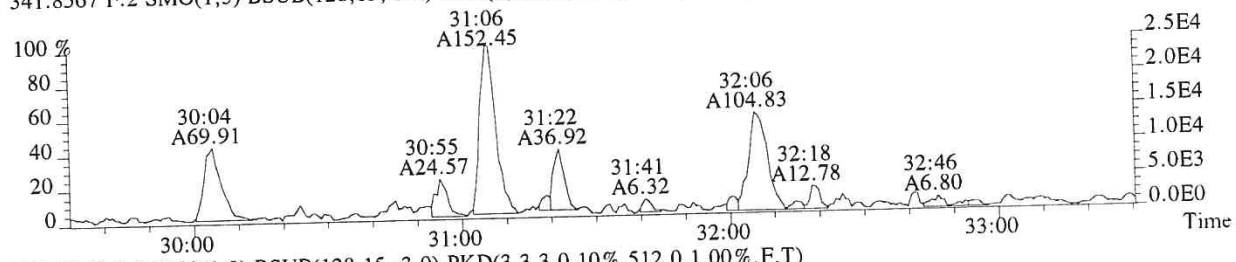


058836

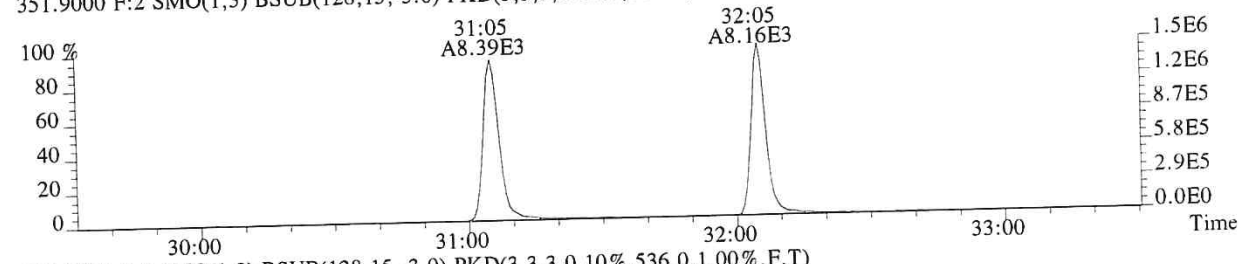
File:P519591 #1-358 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,664.0,1.00%,F,T)



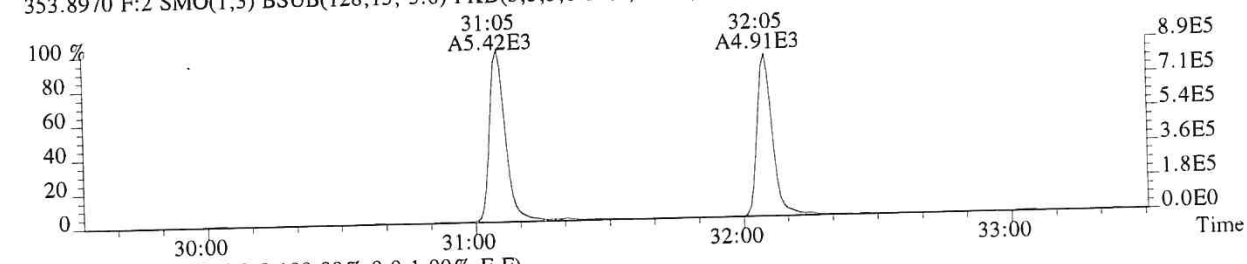
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,916.0,1.00%,F,T)



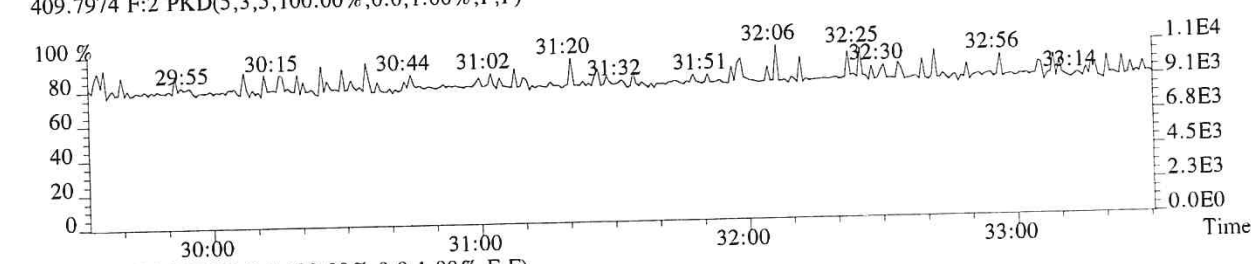
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,512.0,1.00%,F,T)



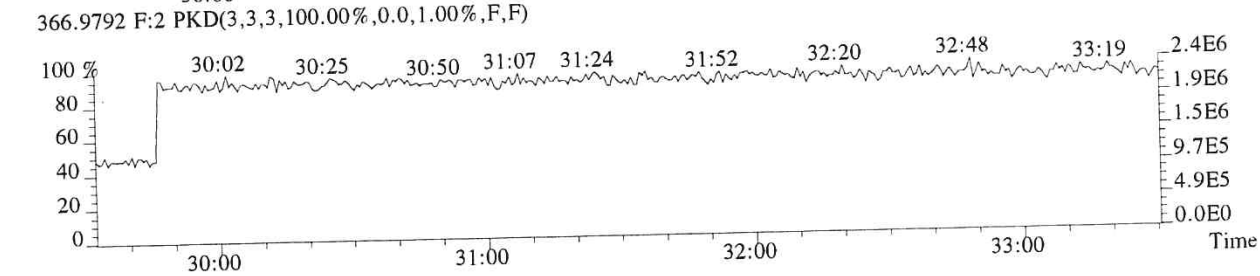
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,536.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

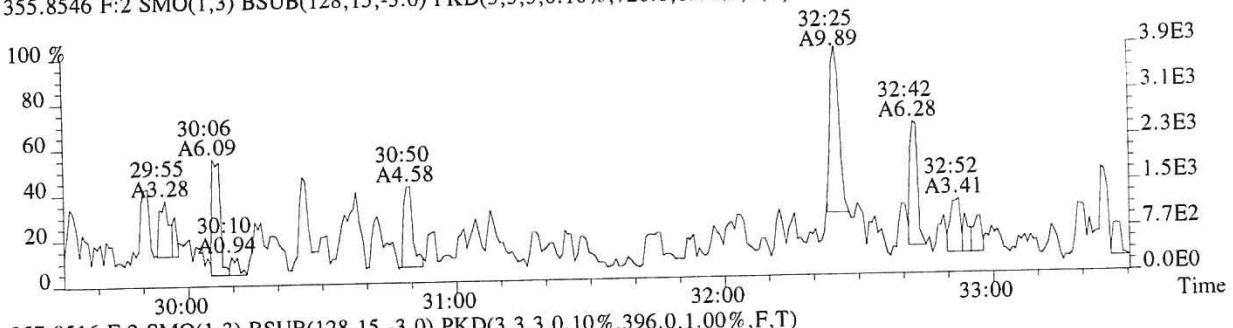


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

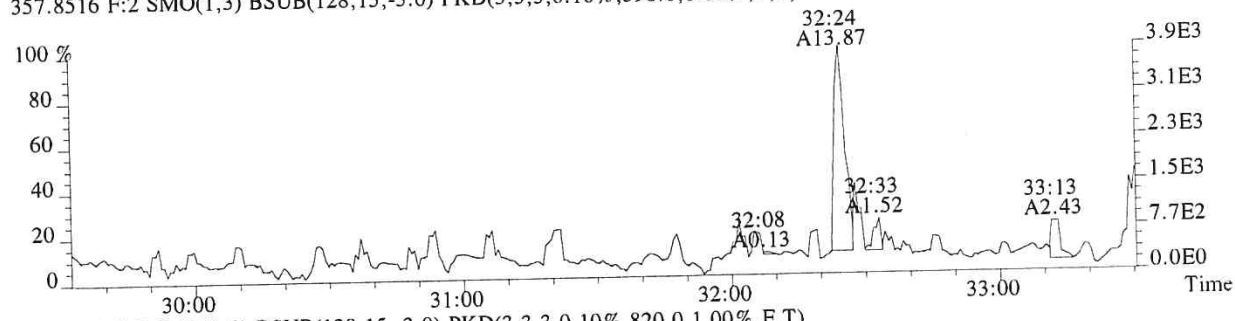


058837

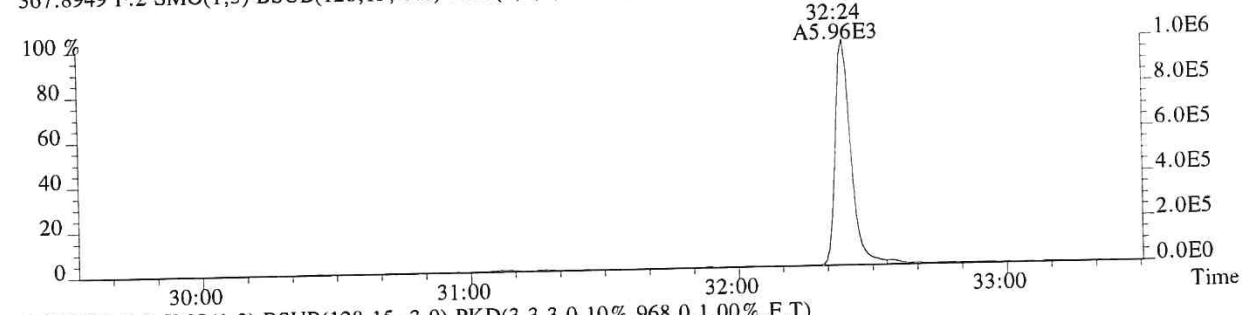
File:P519591 #1-358 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,720.0,1.00%,F,T)



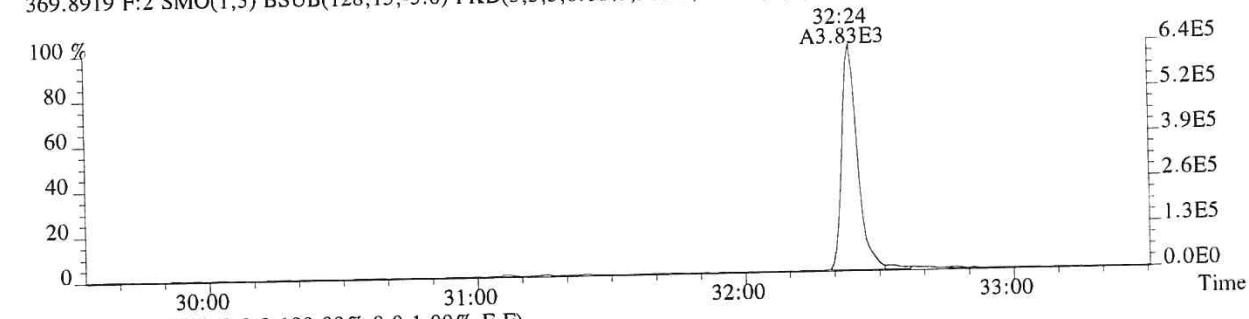
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,396.0,1.00%,F,T)



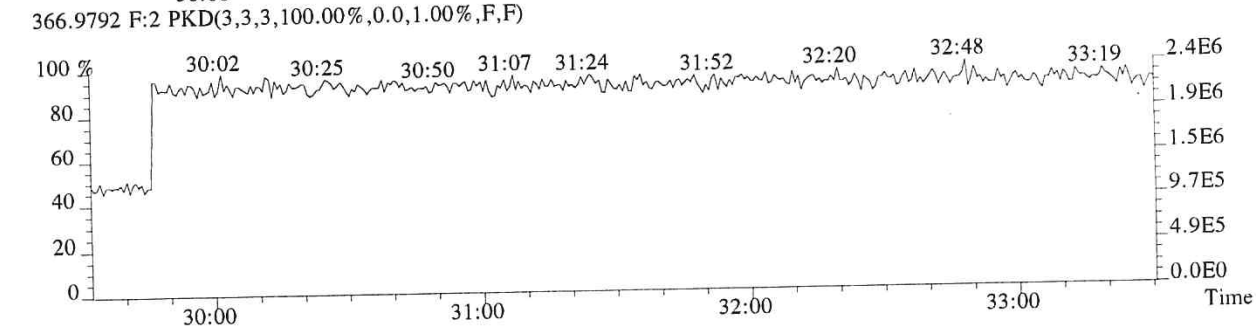
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,820.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,968.0,1.00%,F,T)

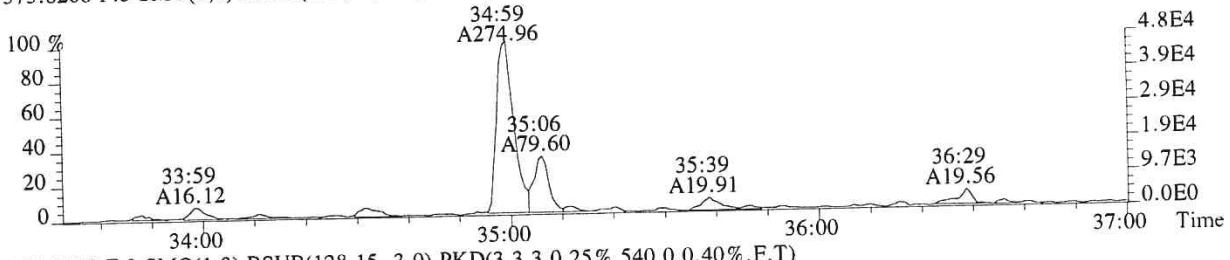


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

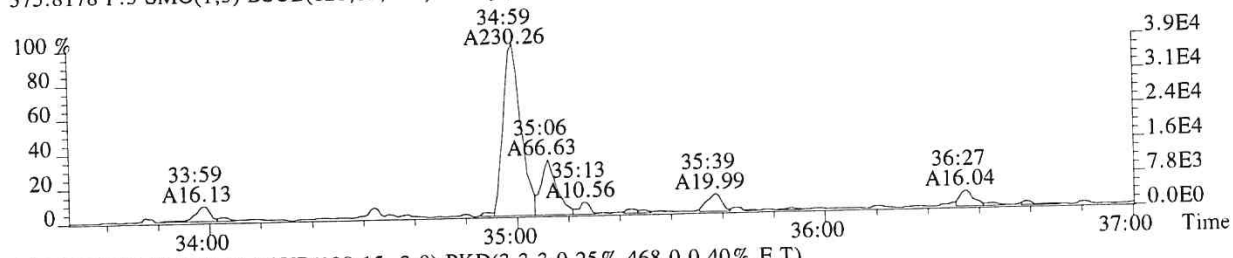


058838

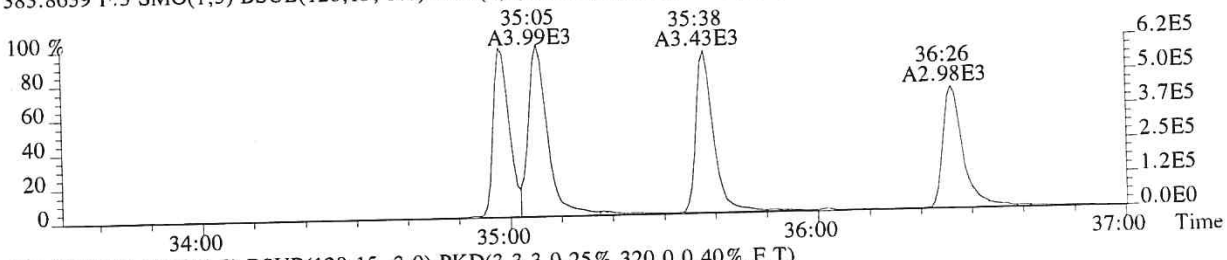
File:P519591 #1-312 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,528.0,0.40%,F,T)



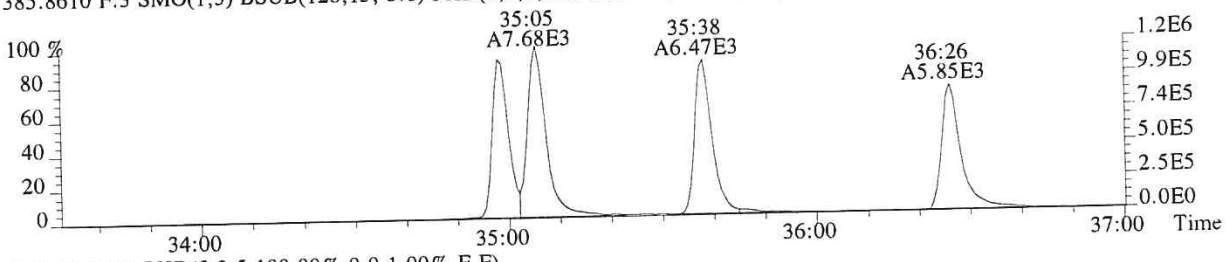
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,540.0,0.40%,F,T)



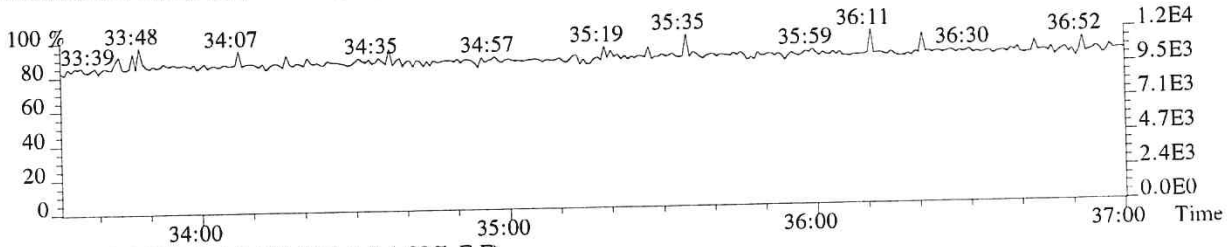
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,468.0,0.40%,F,T)



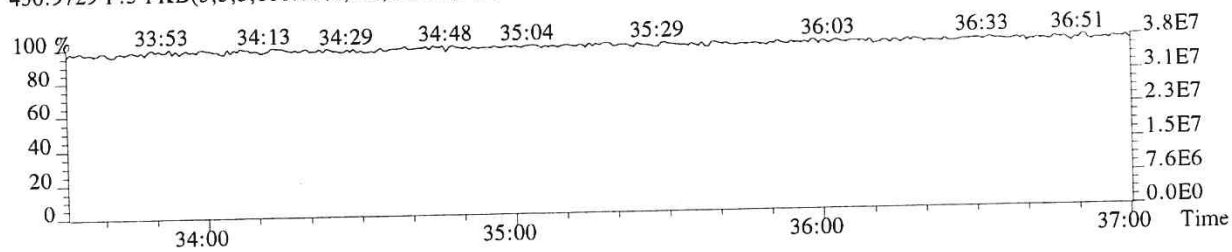
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,320.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

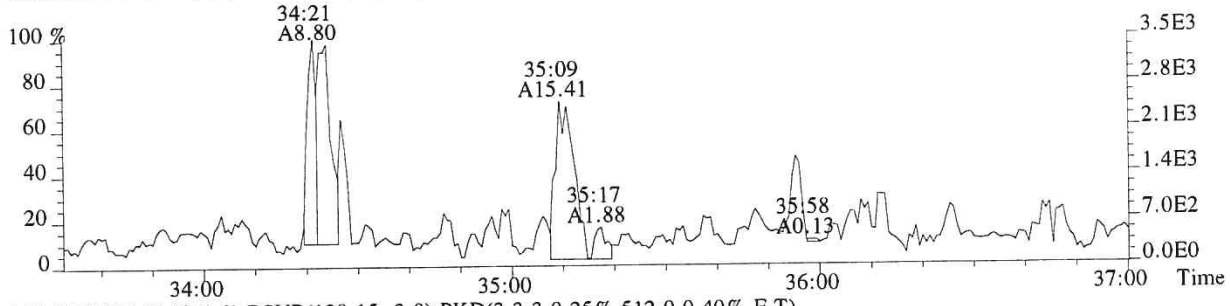


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

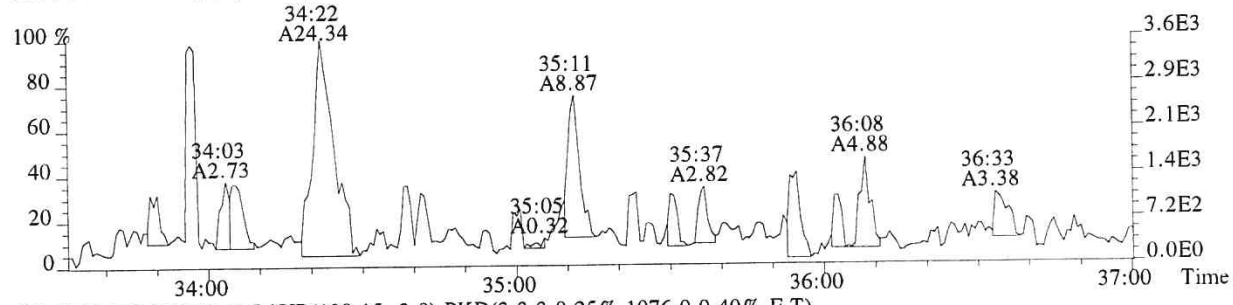


058839

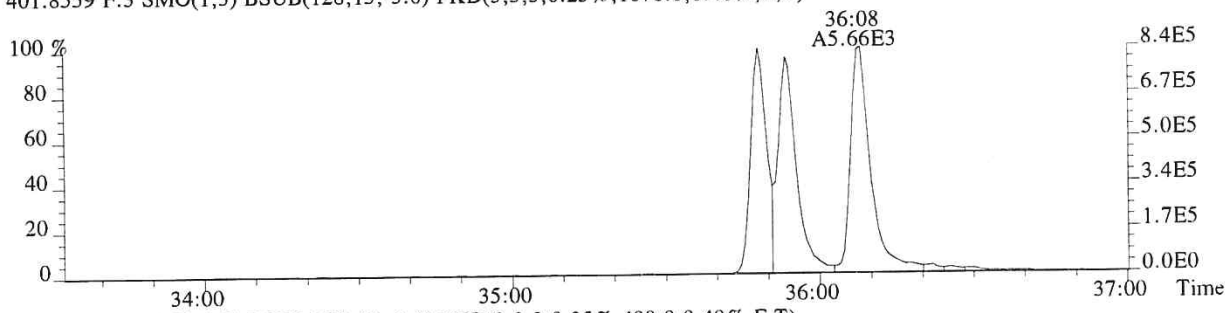
File:P519591 #1-312 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,556.0,0.40%,F,T)



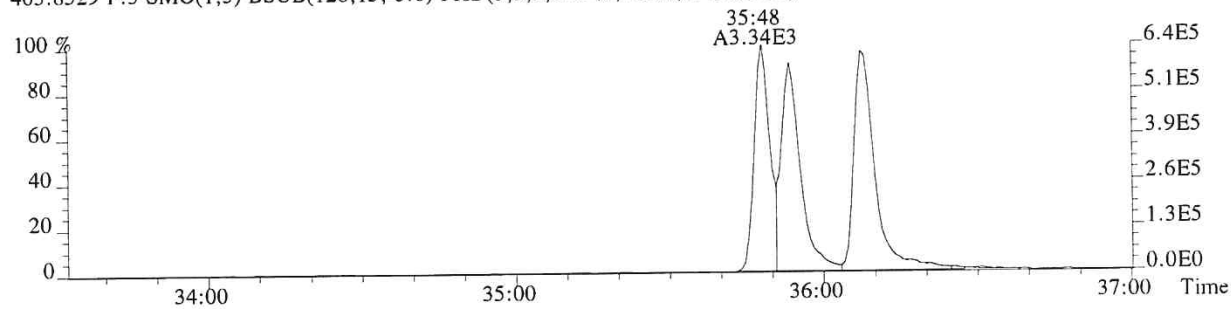
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,512.0,0.40%,F,T)



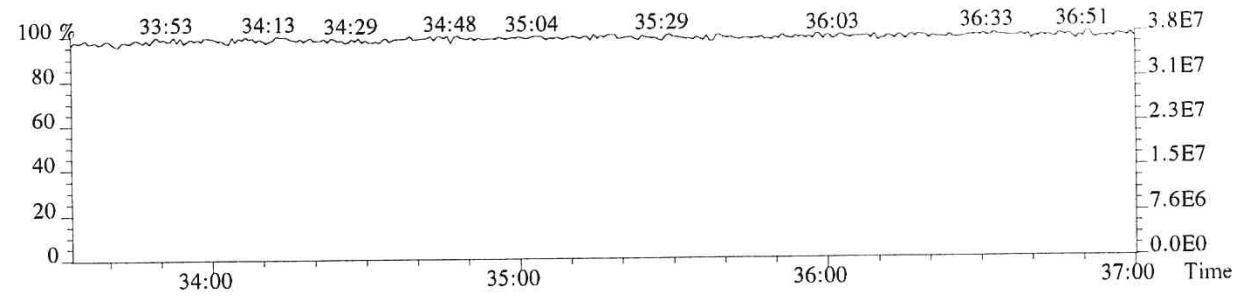
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1076.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,408.0,0.40%,F,T)

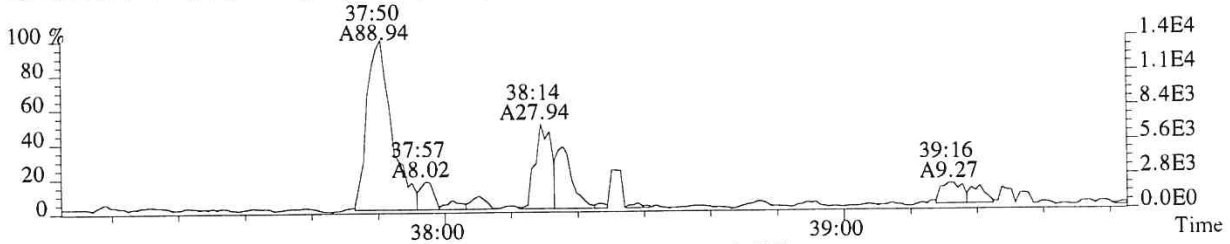


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

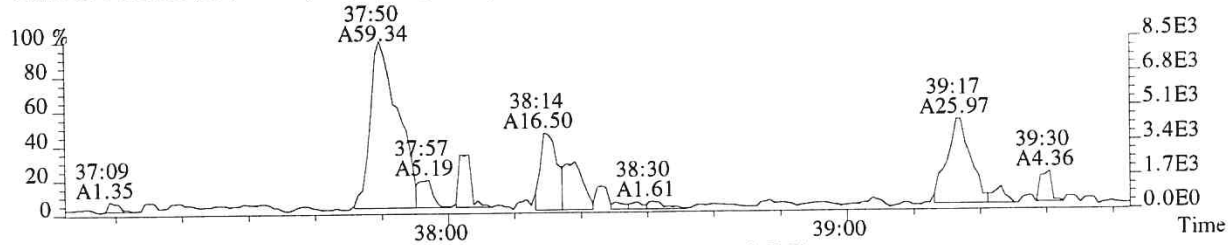


058840

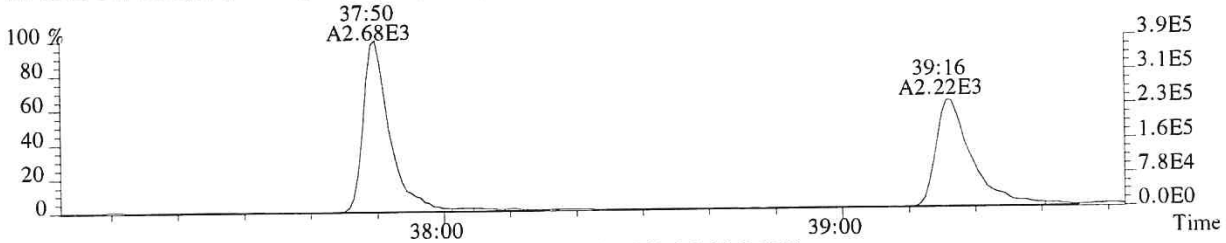
File:P519591 #1-241 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,460.0,0.50%,F,T)



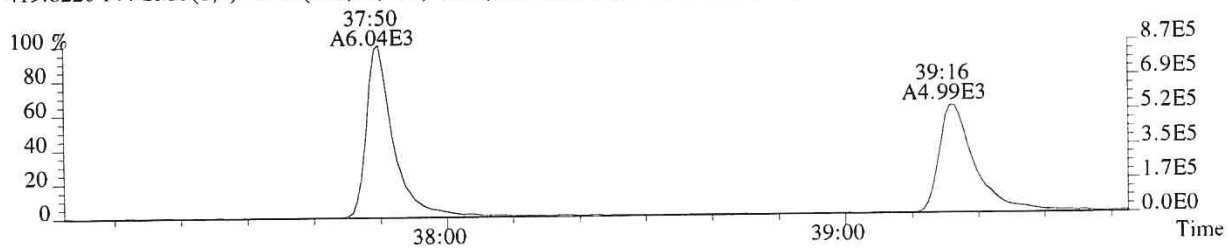
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,428.0,0.50%,F,T)



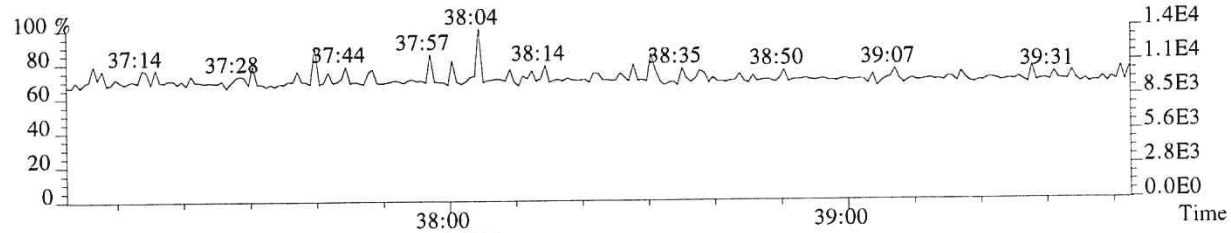
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1032.0,0.50%,F,T)



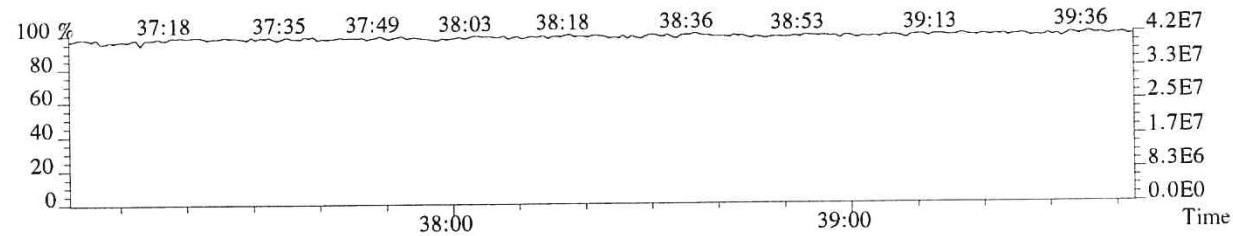
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1564.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

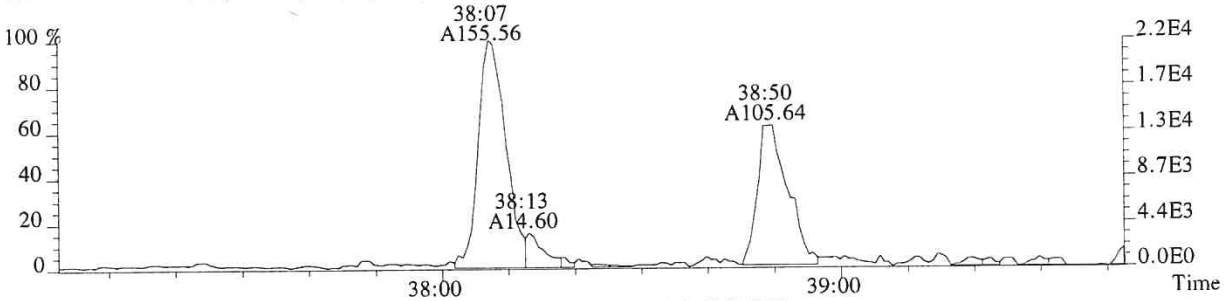


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

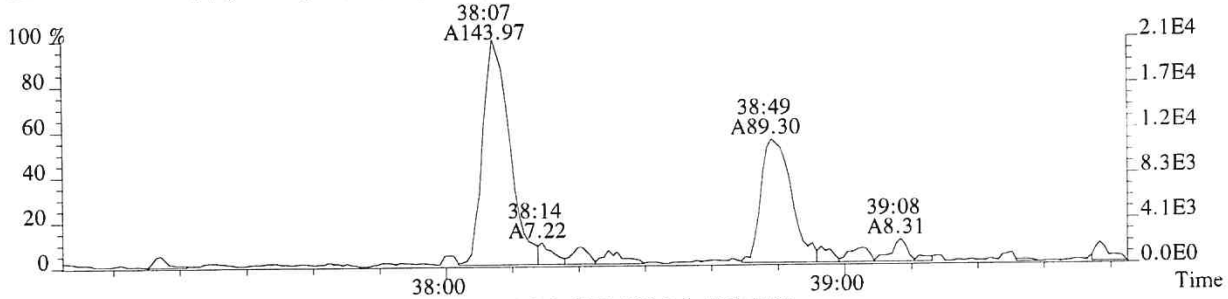


058841

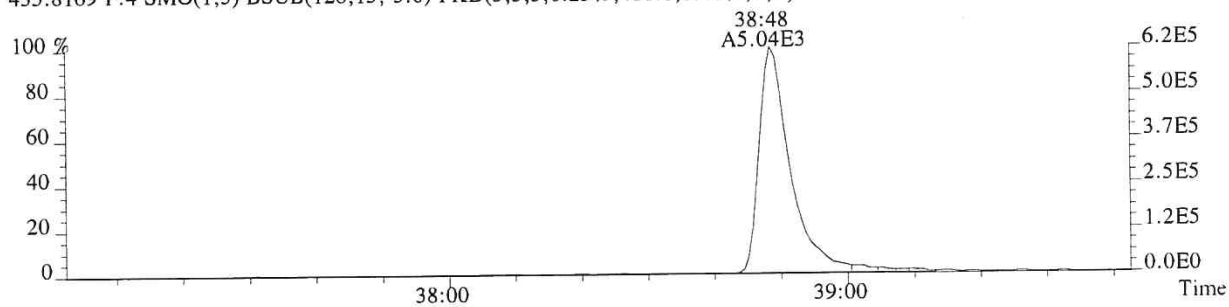
File:P519591 #1-241 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:E1801096-002DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,460.0,0.40%,F,T)



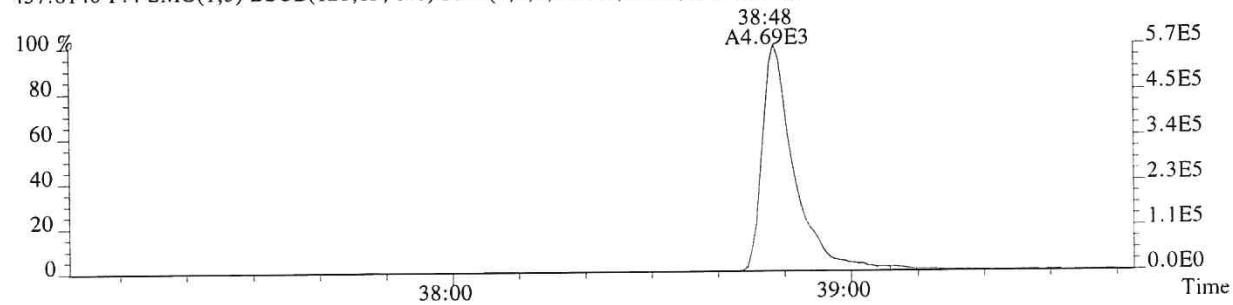
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,316.0,0.40%,F,T)



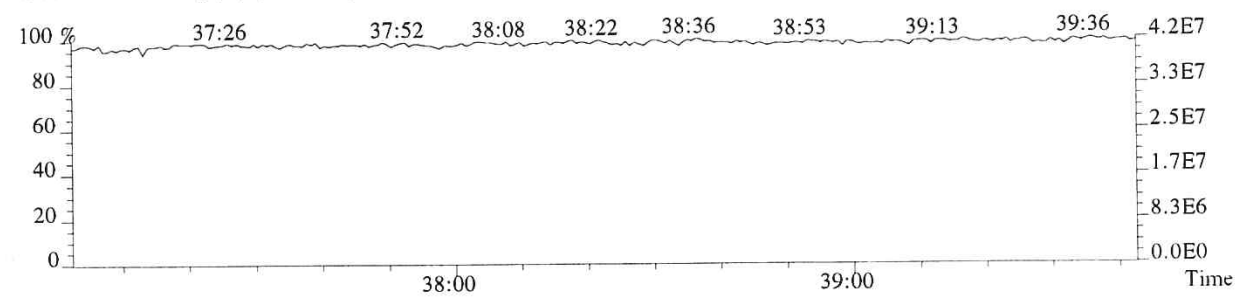
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,480.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,228.0,0.40%,F,T)

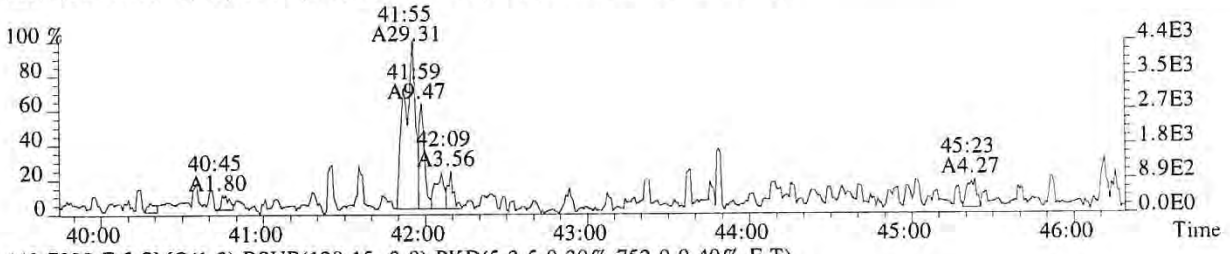


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

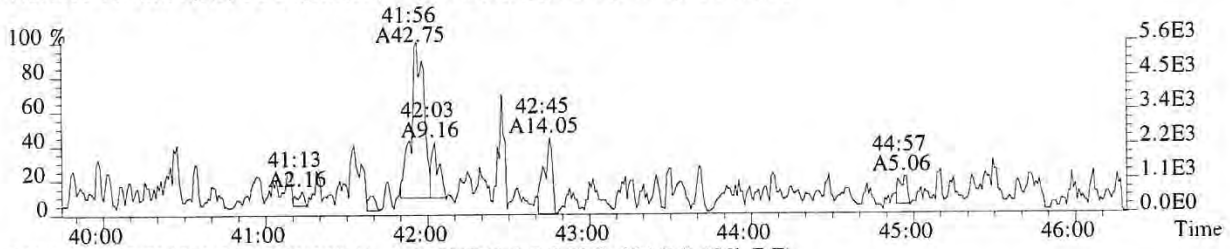


058842

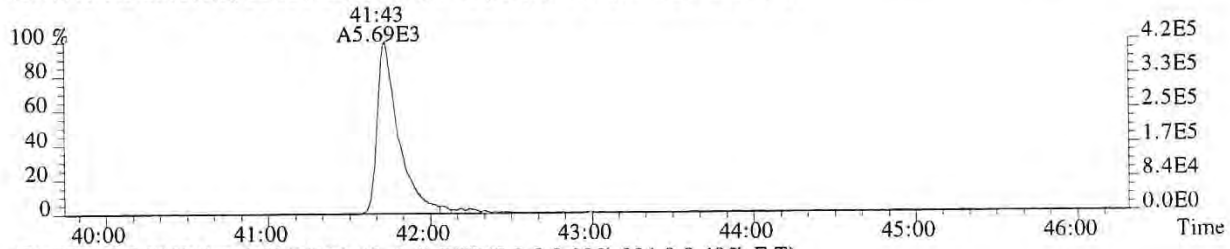
File:P519591 #1-592 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:E1801096-002DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,320.0,0.40%,F,T)



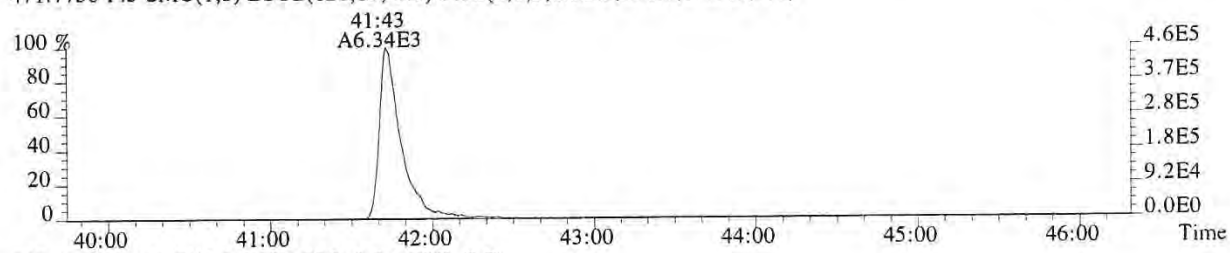
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,752.0,0.40%,F,T)



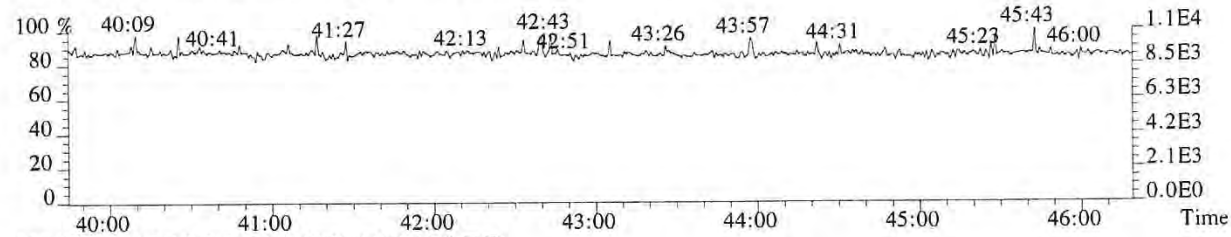
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,604.0,0.40%,F,T)



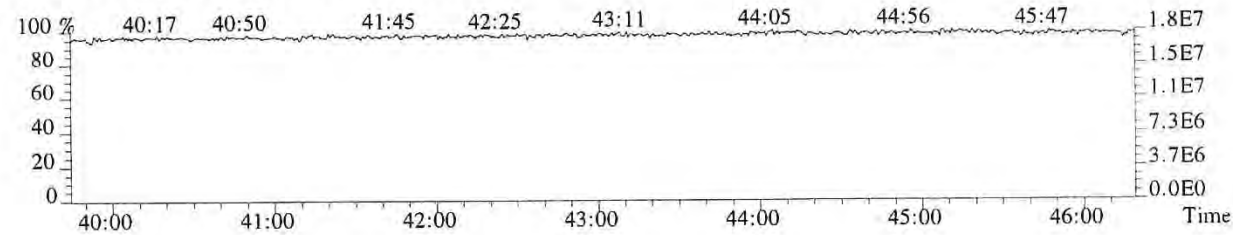
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,304.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

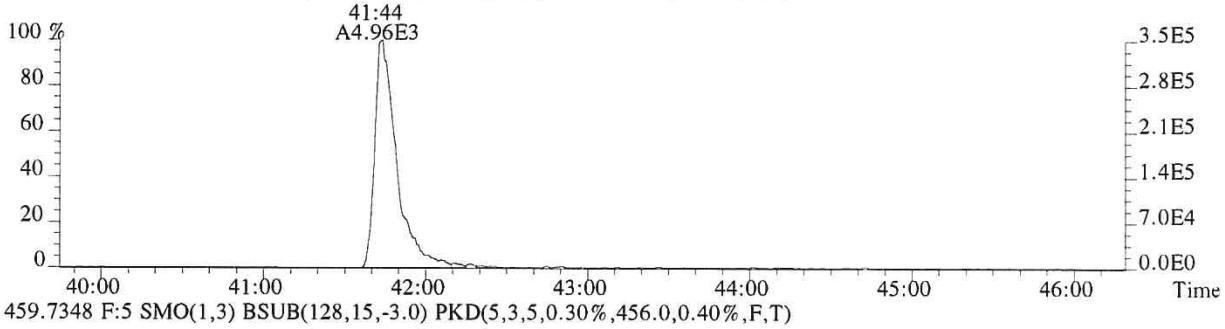


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

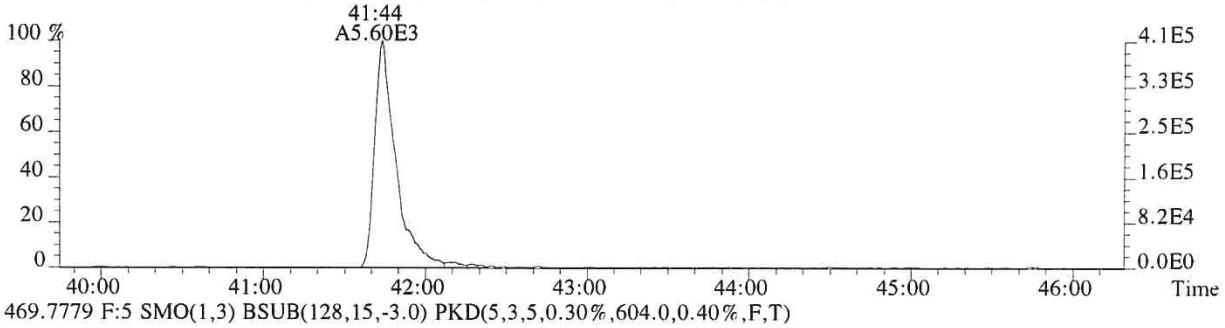


058843

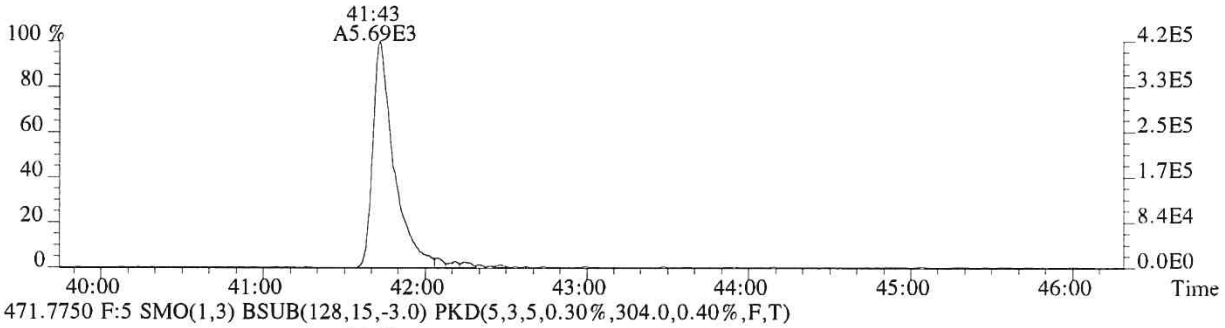
File:P519591 #1-592 Acq:24-DEC-2018 12:13:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-002DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,304.0,0.40%,F,T)



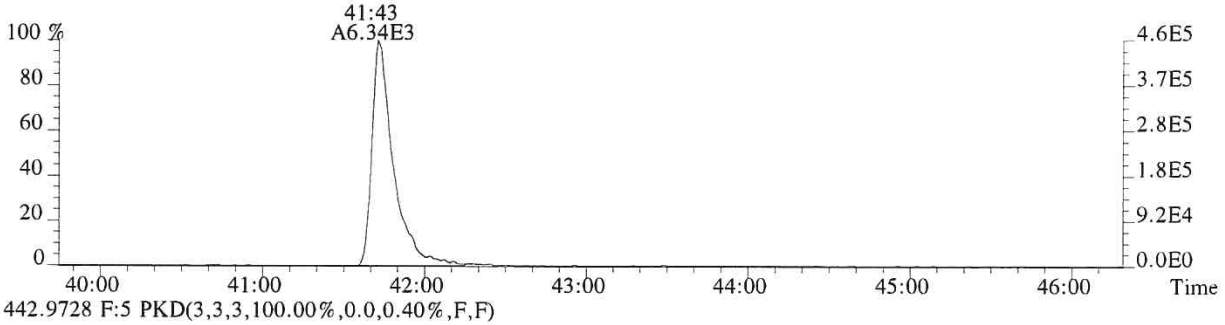
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,456.0,0.40%,F,T)



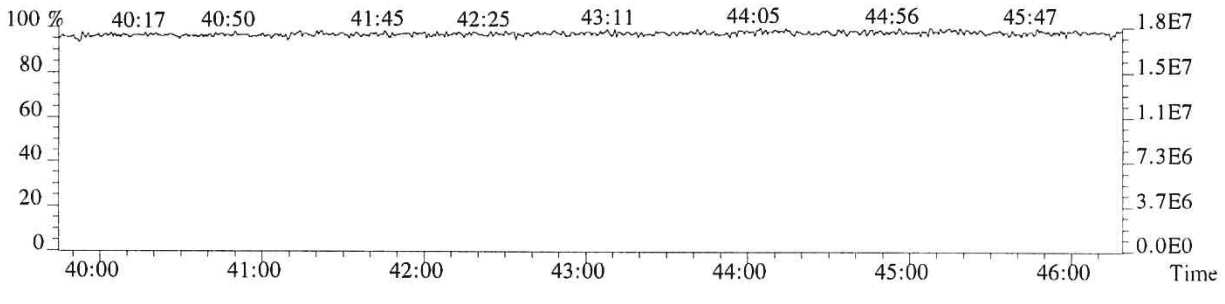
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,604.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,304.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



058844

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0061

Run #13 Filename P616133 Samp: 1 Inj: 1 Acquired: 19-DEC-18 22:01:30
Processed: 20-DEC-18 15:56:44 Sample ID: E1801096-003

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:42	1.409e+07	1.555e+07	0.91	no	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:16	1.121e+06	7.241e+05	1.55	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:12	1.181e+05	7.959e+04	1.48	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:55	1.500e+06	1.214e+06	1.24	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:02	3.535e+05	2.863e+05	1.23	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:32	7.605e+04	6.003e+04	1.27	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:18	1.153e+05	9.337e+04	1.23	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:31	3.730e+05	3.613e+05	1.03	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:49	1.107e+05	1.101e+05	1.01	yes	no	1.463
10	Unk	OCDF	41:04	1.280e+05	1.449e+05	0.88	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:32	4.273e+06	5.369e+06	0.80	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:29	6.437e+04	4.121e+04	1.56	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:40	1.139e+03	9.949e+02	1.14	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:45	1.050e+04	8.443e+03	1.24	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:59	2.969e+03	2.362e+03	1.26	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:23	3.602e+05	3.465e+05	1.04	yes	no	1.112
17	Unk	OCDD	40:54	3.364e+06	3.754e+06	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:39	6.411e+04	7.682e+04	0.83	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:15	1.010e+05	6.350e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:11	2.618e+04	1.721e+04	1.52	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:54	4.726e+04	8.824e+04	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	5.013e+04	9.430e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:31	4.867e+04	9.082e+04	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:16	4.654e+04	8.773e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:30	3.299e+04	7.253e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:49	3.078e+04	6.744e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:32	2.865e+04	3.586e+04	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:28	7.164e+04	4.491e+04	1.60	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:39	6.456e+04	5.047e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:44	5.954e+04	4.662e+04	1.28	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:23	6.436e+04	6.185e+04	1.04	yes	no	0.857
32	IS	13C-OCDD	40:53	5.570e+04	6.157e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:56	5.602e+04	7.124e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:59	9.593e+04	7.530e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:32	8.706e+04				no	1.086

$$\text{OCDD} = \frac{(3.364e{+}06 + 3.754e{+}06) \times 4000\ \text{pg} \times 1}{(5.570e{+}04 + 6.157e{+}04) \times 10.2\ \text{g} \times 67\% / 100 \times 1.157} = 29000\ \text{ng/kg}$$

KW 12/24/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0061

Run #13 Filename P616133 Samp: 1 Inj: 1 Acquired: 19-DEC-18 22:01:30
Processed: 20-DEC-18 15:56:44 LAB. ID: E1801096-003

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.07e+09	1.77e+04	6.1e+04	1.07e+09	1.34e+04	8.0e+04
2	1,2,3,7,8-PeCDF	1.70e+08	8.07e+04	2.1e+03	1.09e+08	5.30e+04	2.1e+03
3	2,3,4,7,8-PeCDF	2.50e+07	8.07e+04	3.1e+02	1.69e+07	5.30e+04	3.2e+02
4	1,2,3,4,7,8-HxCDF	3.28e+08	2.55e+04	1.3e+04	2.66e+08	3.02e+04	8.8e+03
5	1,2,3,6,7,8-HxCDF	7.52e+07	2.55e+04	3.0e+03	6.15e+07	3.02e+04	2.0e+03
6	2,3,4,6,7,8-HxCDF	1.76e+07	2.55e+04	6.9e+02	1.38e+07	3.02e+04	4.6e+02
7	1,2,3,7,8,9-HxCDF	2.40e+07	2.55e+04	9.4e+02	1.94e+07	3.02e+04	6.4e+02
8	1,2,3,4,6,7,8-HpCDF	8.77e+07	9.52e+03	9.2e+03	8.58e+07	1.22e+04	7.0e+03
9	1,2,3,4,7,8,9-HpCDF	2.61e+07	9.52e+03	2.7e+03	2.56e+07	1.22e+04	2.1e+03
10	OCDF	2.63e+07	2.04e+03	1.3e+04	3.04e+07	1.66e+03	1.8e+04
11	2,3,7,8-TCDD	7.70e+08	3.16e+04	2.4e+04	9.62e+08	7.15e+03	1.3e+05
12	1,2,3,7,8-PeCDD	1.24e+07	4.99e+03	2.5e+03	7.99e+06	1.06e+04	7.5e+02
13	1,2,3,4,7,8-HxCDD	2.85e+05	4.50e+03	6.3e+01	2.56e+05	8.33e+03	3.1e+01
14	1,2,3,6,7,8-HxCDD	2.42e+06	4.50e+03	5.4e+02	1.92e+06	8.33e+03	2.3e+02
15	1,2,3,7,8,9-HxCDD	6.99e+05	4.50e+03	1.6e+02	5.49e+05	8.33e+03	6.6e+01
16	1,2,3,4,6,7,8-HpCDD	8.73e+07	3.82e+04	2.3e+03	8.40e+07	3.82e+04	2.2e+03
17	OCDD	7.10e+08	1.82e+03	3.9e+05	7.92e+08	1.66e+03	4.8e+05
18	13C-2,3,7,8-TCDF	7.21e+06	5.68e+04	1.3e+02	8.85e+06	8.10e+04	1.1e+02
19	13C-1,2,3,7,8-PeCDF	1.59e+07	1.55e+04	1.0e+03	1.00e+07	1.04e+04	9.7e+02
20	13C-2,3,4,7,8-PeCDF	6.71e+06	1.55e+04	4.3e+02	4.36e+06	1.04e+04	4.2e+02
21	13C-1,2,3,4,7,8-HxCDF	9.98e+06	2.77e+04	3.6e+02	1.89e+07	4.49e+03	4.2e+03
22	13C-1,2,3,6,7,8-HxCDF	1.07e+07	2.77e+04	3.9e+02	2.04e+07	4.49e+03	4.5e+03
23	13C-2,3,4,6,7,8-HxCDF	1.08e+07	2.77e+04	3.9e+02	2.02e+07	4.49e+03	4.5e+03
24	13C-1,2,3,7,8,9-HxCDF	1.10e+07	2.77e+04	4.0e+02	2.06e+07	4.49e+03	4.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	7.71e+06	9.65e+03	8.0e+02	1.70e+07	8.20e+03	2.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	7.25e+06	9.65e+03	7.5e+02	1.57e+07	8.20e+03	1.9e+03
27	13C-2,3,7,8-TCDD	4.81e+06	8.37e+03	5.7e+02	6.03e+06	2.72e+03	2.2e+03
28	13C-1,2,3,7,8-PeCDD	1.48e+07	2.32e+03	6.4e+03	9.24e+06	2.29e+03	4.0e+03
29	13C-1,2,3,4,7,8-HxCDD	1.52e+07	3.17e+03	4.8e+03	1.19e+07	2.32e+03	5.1e+03
30	13C-1,2,3,6,7,8-HxCDD	1.35e+07	3.17e+03	4.3e+03	1.06e+07	2.32e+03	4.6e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.56e+07	4.44e+03	3.5e+03	1.49e+07	2.72e+03	5.5e+03
32	13C-OCDD	1.14e+07	1.45e+03	7.9e+03	1.27e+07	6.14e+03	2.1e+03
33	13C-1,2,3,4-TCDD	7.07e+06	8.37e+03	8.5e+02	8.99e+06	2.72e+03	3.3e+03
34	13C-1,2,3,7,8,9-HxCDD	2.20e+07	3.17e+03	6.9e+03	1.74e+07	2.32e+03	7.5e+03
35	37Cl-2,3,7,8-TCDD	1.55e+07	2.87e+04	5.4e+02			

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Peak List Summary

CLIENT ID.
SL0061

Entry: 36 Totals Name: Total Tetra-Furans

Run: 13 File: P616133 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 22:01:30 Processed: 20-DEC-18 15:56:44

Mass: 303.9020 305.8990 Tot Response: 3.03e+07 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:30	1.12e+04	1.46e+04	0.76	yes	2.58e+04		n	n
2	23:30	8.80e+04	1.11e+05	0.79	yes	1.99e+05		n	n
3	23:45	7.08e+05	9.05e+05	0.78	yes	1.61e+06		n	n
4	24:05	2.64e+05	3.67e+05	0.72	yes	6.31e+05		n	n
5	24:23	6.99e+05	9.13e+05	0.77	yes	1.61e+06		n	n
6	24:47	1.77e+05	2.30e+05	0.77	yes	4.07e+05		n	n
7	25:09	1.32e+06	1.69e+06	0.78	yes	3.00e+06		n	n
8	25:37	8.48e+06	1.08e+07	0.78	yes	1.93e+07		n	n
9	25:59	3.23e+05	4.10e+05	0.79	yes	7.34e+05		n	n
10	27:05	1.02e+06	1.30e+06	0.78	yes	2.31e+06		n	n
11	27:19	1.87e+05	2.39e+05	0.78	yes	4.26e+05		n	n

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SL0061

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 13 File: P616133 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 22:01:30 Processed: 20-DEC-18 15:56:44

Mass: 319.8970 321.8940 Tot Response: 1.03e+07 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:14	5.86e+04	7.24e+04	0.81	yes	1.31e+05		n	n
2	27:32	4.27e+06	5.37e+06	0.80	yes	9.64e+06	2,3,7,8-TCDD	n	n
3	27:54	2.45e+05	3.26e+05	0.75	yes	5.71e+05		n	n

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CLIENT ID.
SL0061

Entry: 38 Totals Name: Total Penta-Furans1

Run: 13 File: P616133 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 22:01:30 Processed: 20-DEC-18 15:56:44

Mass: 339.8600 341.8570 Tot Response: 2.36e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:16	1.48e+02	8.78e+01 1.69	yes	2.36e+02		n	n

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Entry: 39 Totals Name: Total Penta-Furans2

Run: 13 File: P616133 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 22:01:30 Processed: 20-DEC-18 15:56:44

Mass: 339.8600 341.8570 Tot Response: 3.24e+06 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:09	1.16e+04	7.37e+03	1.57	yes	1.89e+04		n	n
2	30:17	4.26e+05	2.72e+05	1.56	yes	6.98e+05		n	n
3	30:39	1.41e+03	1.00e+03	1.41	yes	2.41e+03		n	n
4	30:52	2.16e+04	1.38e+04	1.57	yes	3.54e+04		n	n
5	30:56	1.40e+04	8.87e+03	1.57	yes	2.28e+04		n	n
6	31:06	1.12e+05	7.24e+04	1.55	yes	1.85e+05		n	n
7	31:16	1.12e+06	7.24e+05	1.55	yes	1.85e+06	1,2,3,7,8-PeCDF	n	n
8	31:32	3.79e+04	2.53e+04	1.50	yes	6.31e+04		n	n
9	31:38	1.15e+03	8.24e+02	1.40	yes	1.98e+03		n	n
10	32:00	1.59e+03	9.35e+02	1.71	yes	2.53e+03		n	n
11	32:08	1.17e+04	7.35e+03	1.59	yes	1.91e+04		n	n
12	32:12	1.18e+05	7.96e+04	1.48	yes	1.98e+05	2,3,4,7,8-PeCDF	n	n
13	32:18	4.19e+04	2.59e+04	1.62	yes	6.79e+04		n	n
14	33:07	4.78e+04	3.05e+04	1.57	yes	7.83e+04		n	n

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SL0061

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 13 File: P616133 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 22:01:30 Processed: 20-DEC-18 15:56:44

Mass: 355.8550 357.8520 Tot Response: 1.36e+05 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:19	4.41e+03	2.75e+03	1.61	yes	7.16e+03		n	n
2	30:48	5.58e+02	3.64e+02	1.53	yes	9.22e+02		n	n
3	31:18	9.60e+03	6.13e+03	1.57	yes	1.57e+04		n	n
4	31:28	2.18e+03	1.50e+03	1.45	yes	3.68e+03		n	n
5	31:45	4.71e+02	3.20e+02	1.47	yes	7.91e+02		n	n
6	32:05	1.41e+03	1.05e+03	1.34	yes	2.46e+03		n	n
7	32:29	6.44e+04	4.12e+04	1.56	yes	1.06e+05	1,2,3,7,8-PeCDD	n	n

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Entry: 41 Totals Name: Total Hexa-Furans

Run: 13 File: P616133 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 22:01:30 Processed: 20-DEC-18 15:56:44

Mass: 373.8210 375.8180 Tot Response: 4.05e+06 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:48	1.32e+04	1.06e+04	1.24	yes	2.37e+04		n	n
2	33:58	1.11e+05	8.89e+04	1.25	yes	2.00e+05		n	n
3	34:30	6.60e+04	5.35e+04	1.23	yes	1.20e+05		n	n
4	34:50	4.34e+03	3.51e+03	1.24	yes	7.85e+03		n	n
5	34:55	1.50e+06	1.21e+06	1.24	yes	2.71e+06	1,2,3,4,7,8-HxCDF	n	n
6	35:02	3.54e+05	2.86e+05	1.23	yes	6.40e+05	1,2,3,6,7,8-HxCDF	n	n
7	35:32	7.60e+04	6.00e+04	1.27	yes	1.36e+05	2,3,4,6,7,8-HxCDF	n	n
8	36:18	1.15e+05	9.34e+04	1.23	yes	2.09e+05	1,2,3,7,8,9-HxCDF	n	n

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CLIENT ID.
SL0061

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 13 File: P616133 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 22:01:30 Processed: 20-DEC-18 15:56:44

Mass: 389.8160 391.8130 Tot Response: 1.21e+05 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:20	2.27e+04	1.80e+04	1.26	yes	4.07e+04		n	n
2	34:50	3.40e+03	2.71e+03	1.25	yes	6.11e+03		n	n
3	35:05	2.64e+04	2.10e+04	1.26	yes	4.74e+04		n	n
4	35:40	1.14e+03	9.95e+02	1.14	yes	2.13e+03	1,2,3,4,7,8-HxCDD	n	n
5	35:45	1.05e+04	8.44e+03	1.24	yes	1.89e+04	1,2,3,6,7,8-HxCDD	n	n
6	35:54	4.26e+02	3.14e+02	1.36	yes	7.40e+02		n	n
7	35:59	2.97e+03	2.36e+03	1.26	yes	5.33e+03	1,2,3,7,8,9-HxCDD	n	n

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Entry: 43 Totals Name: Total Hepta-Furans

Run: 13 File: P616133 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 22:01:30 Processed: 20-DEC-18 15:56:44

Mass: 407.7820 409.7790 Tot Response: 1.30e+06 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:31	3.73e+05	3.61e+05	1.03	yes	7.34e+05	1,2,3,4,6,7,8-HpCDF	n	n
2	37:46	2.68e+03	2.49e+03	1.07	yes	5.17e+03		n	n
3	37:54	1.72e+05	1.66e+05	1.04	yes	3.37e+05		n	n
4	38:49	1.11e+05	1.10e+05	1.01	yes	2.21e+05	1,2,3,4,7,8,9-HpCDF	n	n

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Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 13 File: P616133 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 22:01:30 Processed: 20-DEC-18 15:56:44

Mass: 423.7770 425.7740 Tot Response: 1.33e+06 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:45	3.17e+05	3.01e+05 1.05	yes	6.18e+05		n	n
2	38:23	3.60e+05	3.47e+05 1.04	yes	7.07e+05	1,2,3,4,6,7,8-HpCDD	n	n

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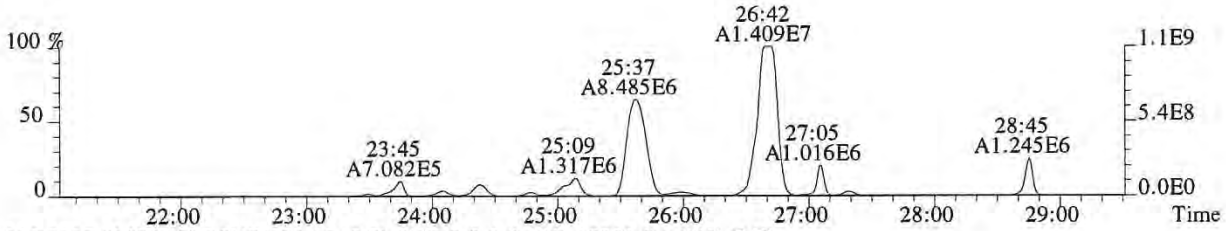
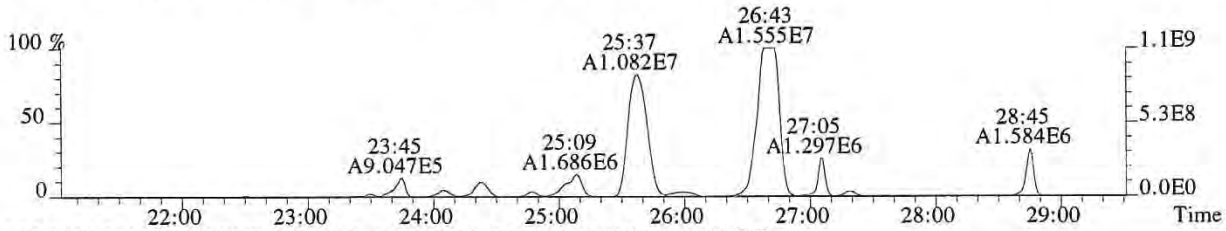
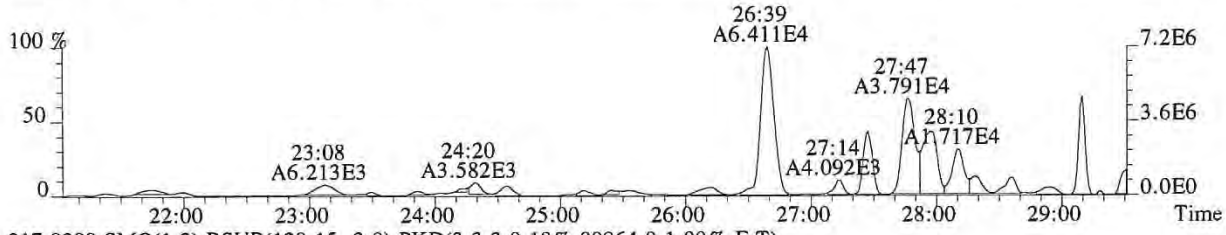
File:P616133 #1-602 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,17656.0,1.00%,F,T)



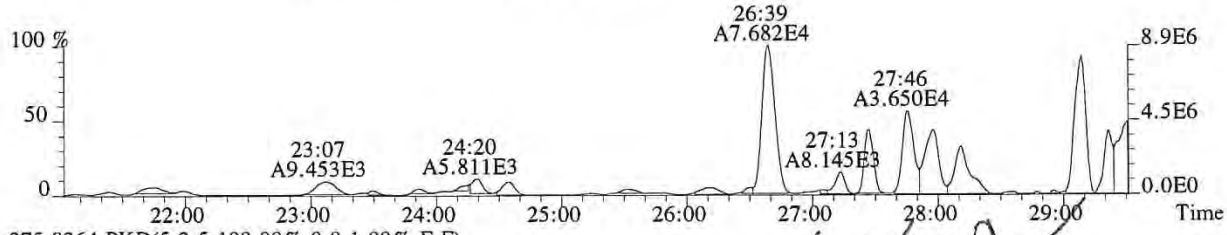
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13356.0,1.00%,F,T)



315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,56828.0,1.00%,F,T)

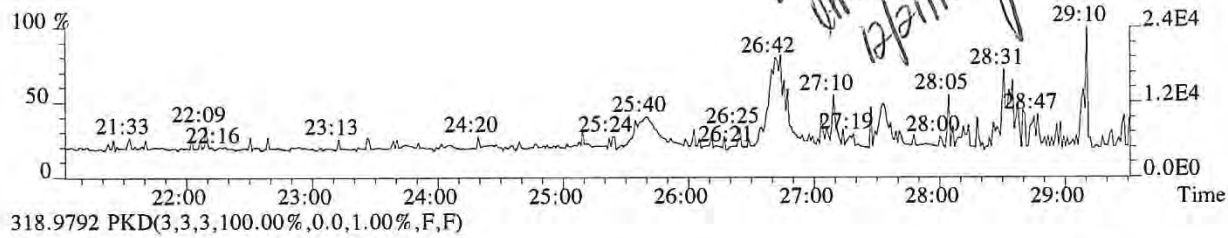


317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,80964.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

Okw 12/31/18 gc

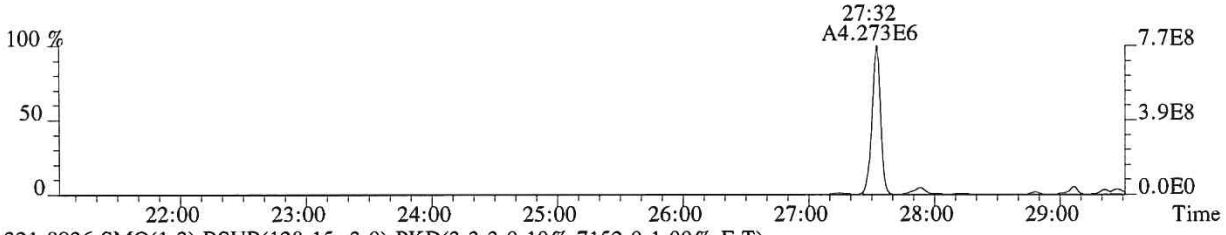


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

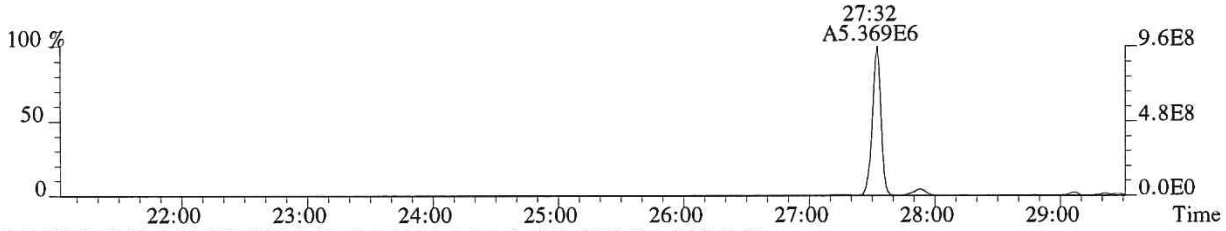


058856

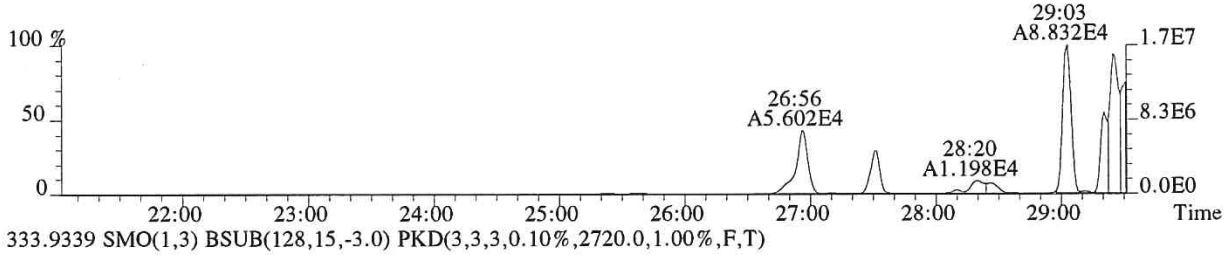
File:P616133 #1-602 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,31648.0,1.00%,F,T)



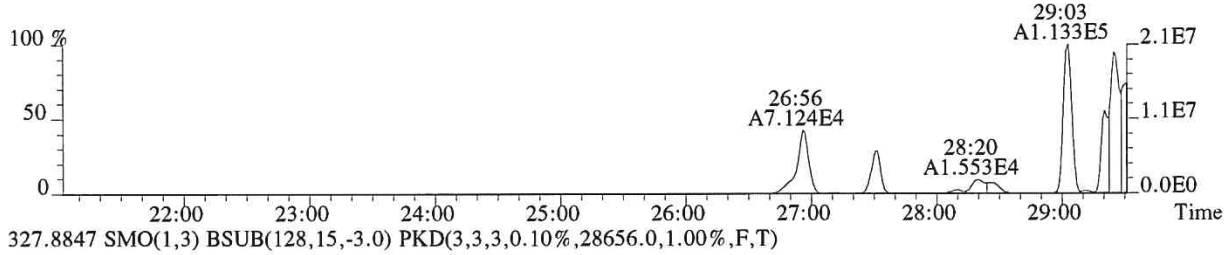
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7152.0,1.00%,F,T)



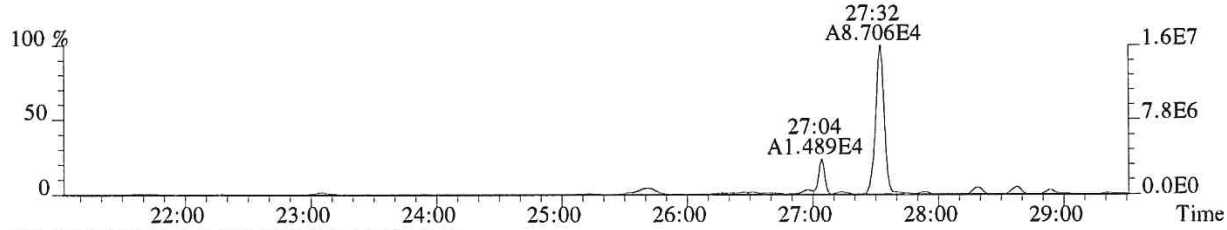
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8368.0,1.00%,F,T)



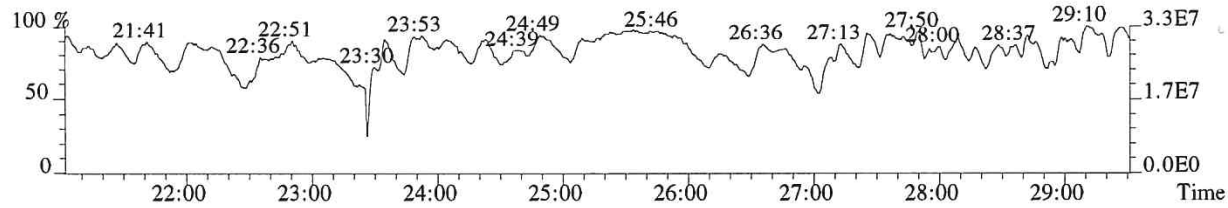
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2720.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,28656.0,1.00%,F,T)

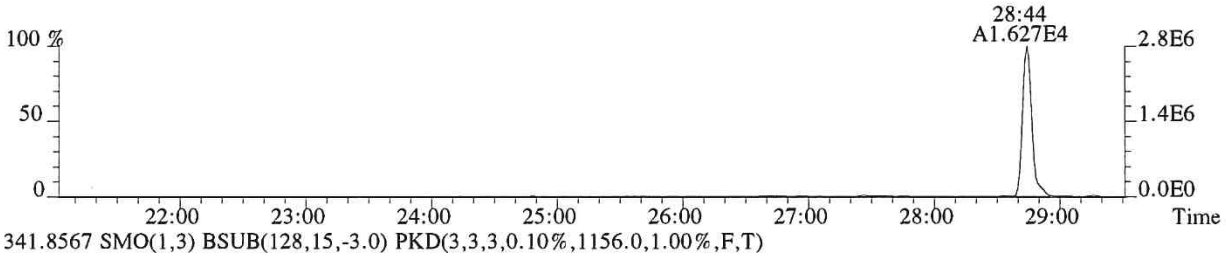


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

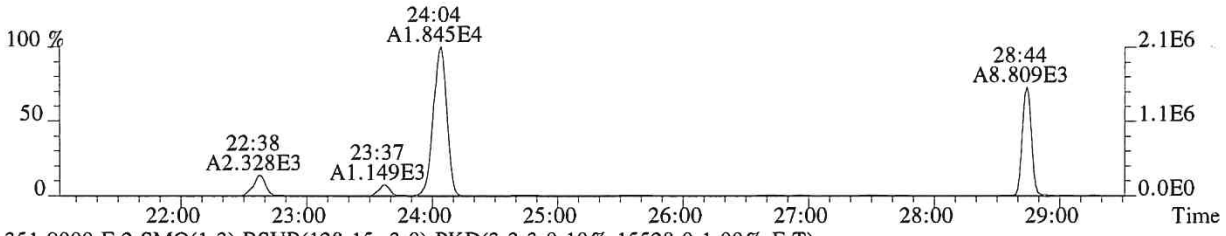


058857

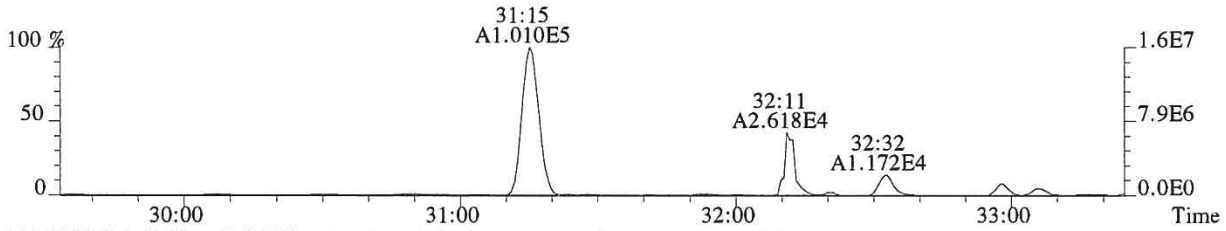
File:P616133 #1-602 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,628.0,1.00%,F,T)



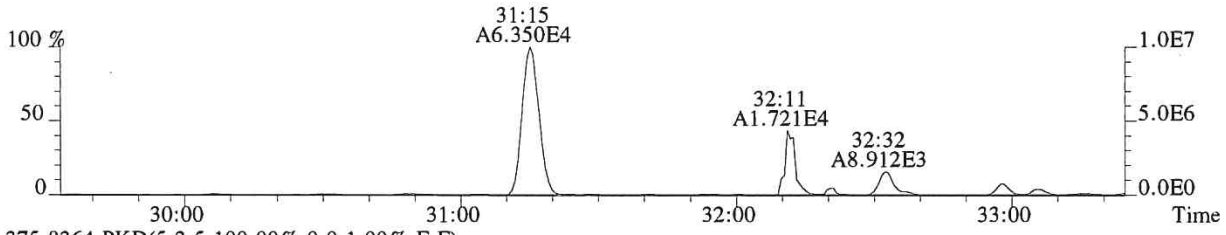
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1156.0,1.00%,F,T)



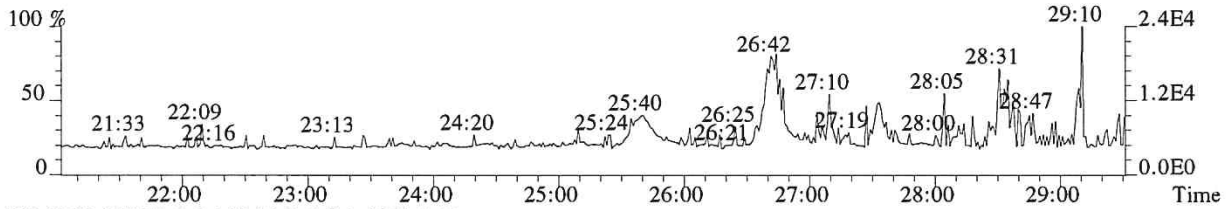
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15528.0,1.00%,F,T)



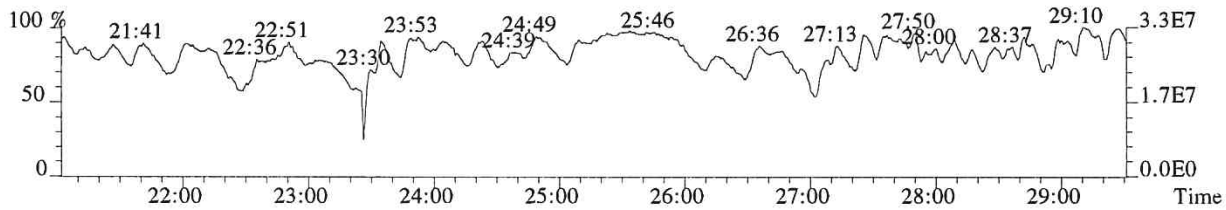
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10372.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

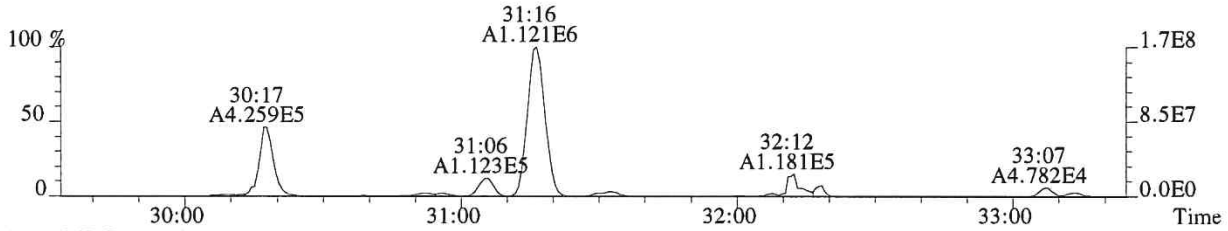


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

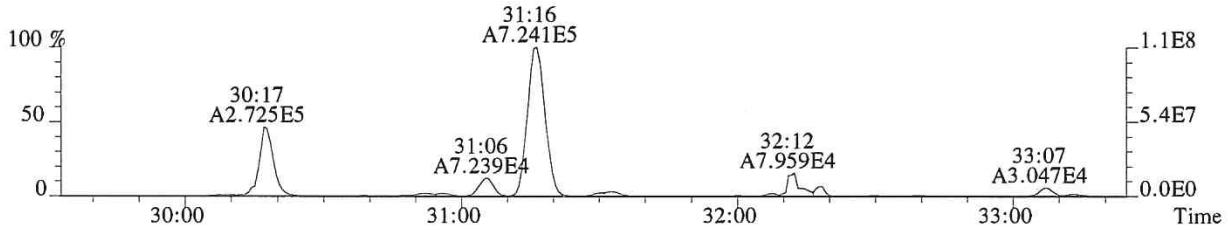


058858

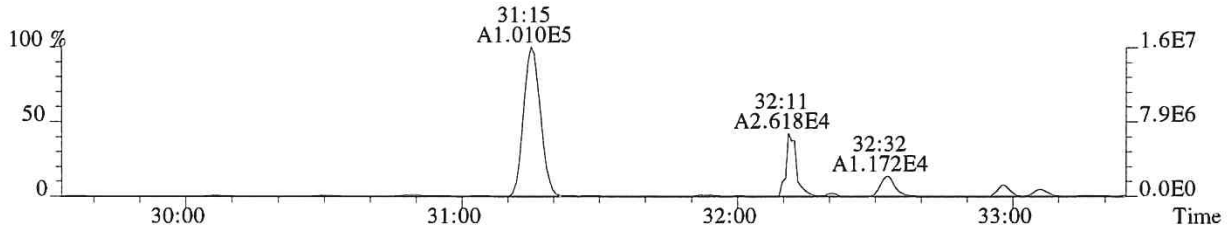
File:P616133 #1-348 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,80668.0,1.00%,F,T)



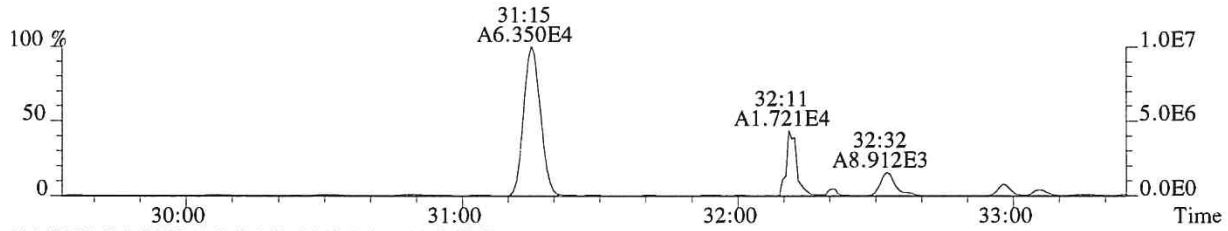
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,52980.0,1.00%,F,T)



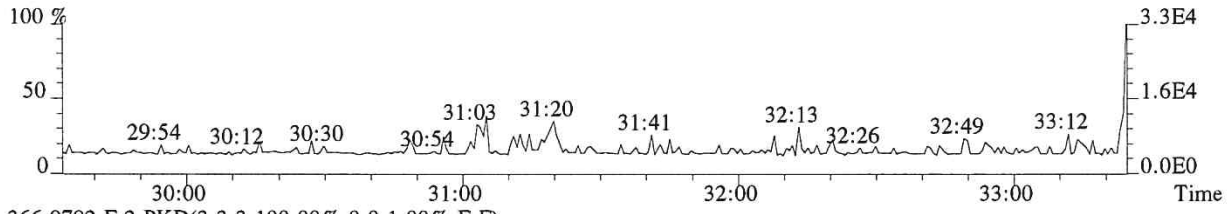
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15528.0,1.00%,F,T)



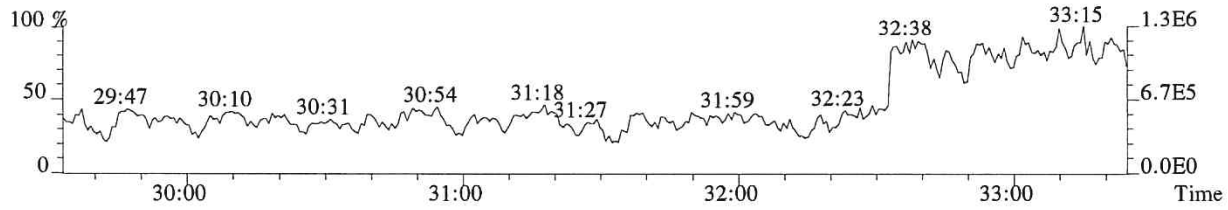
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10372.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

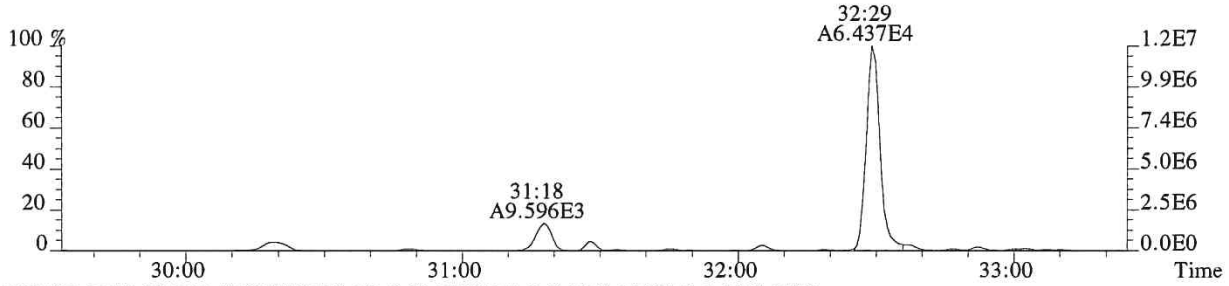


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

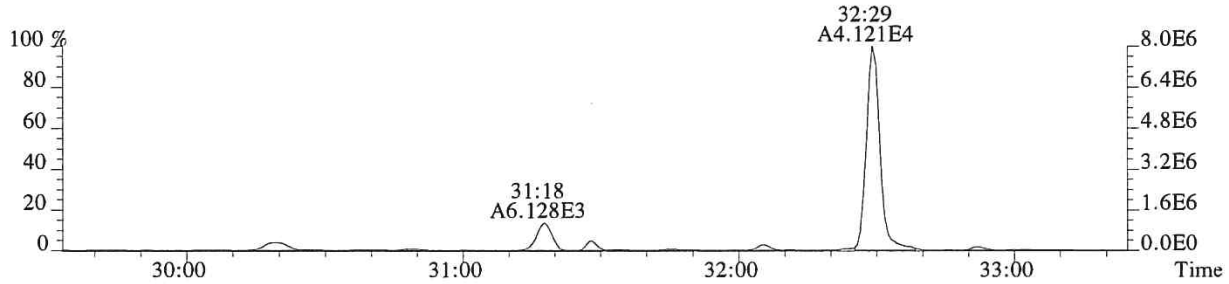


058859

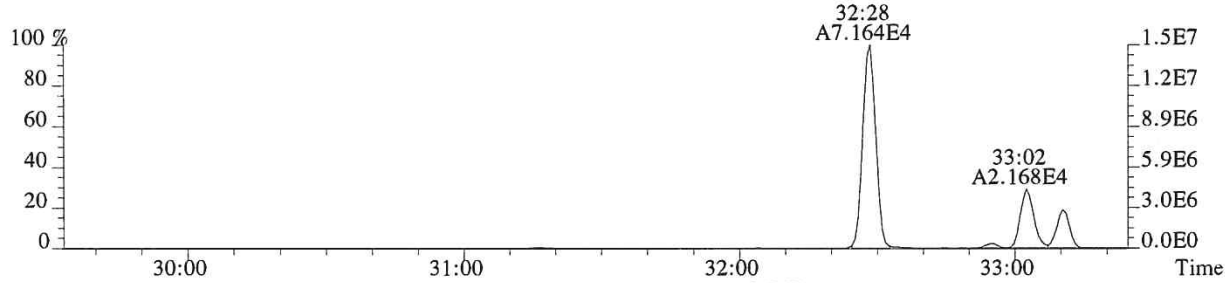
File:P616133 #1-348 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4988.0,1.00%,F,T)



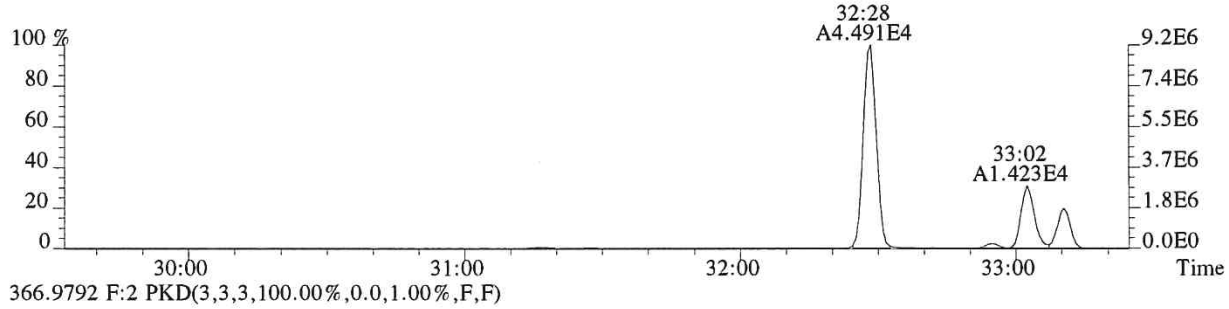
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10600.0,1.00%,F,T)



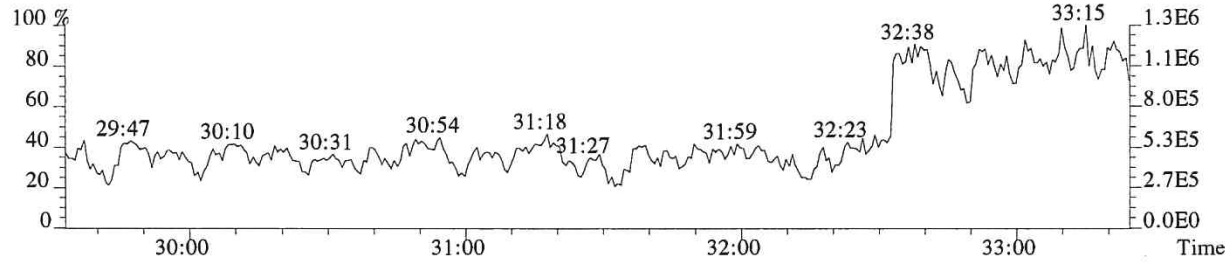
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2320.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2288.0,1.00%,F,T)

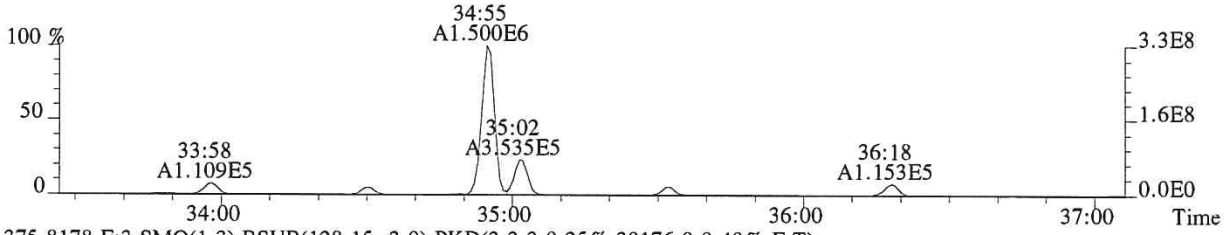


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

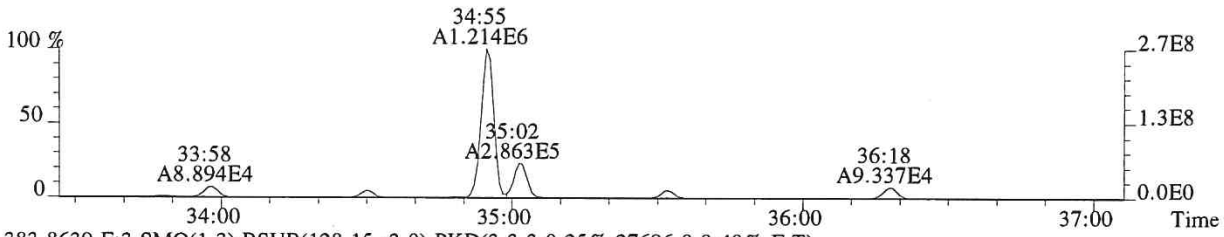


058860

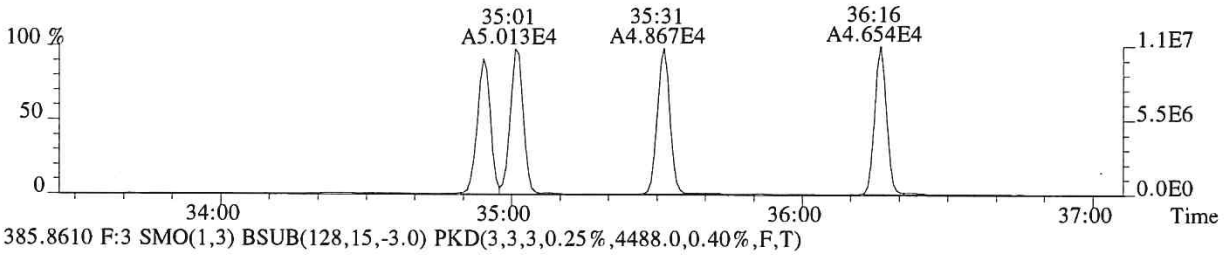
File:P616133 #1-330 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,25500.0,0.40%,F,T)



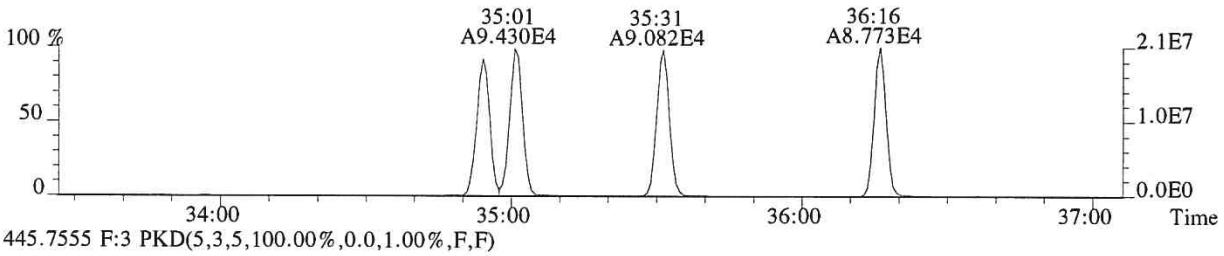
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,30176.0,0.40%,F,T)



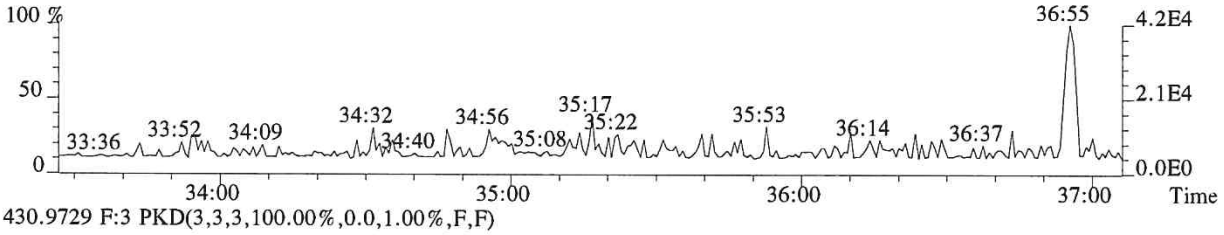
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,27696.0,0.40%,F,T)



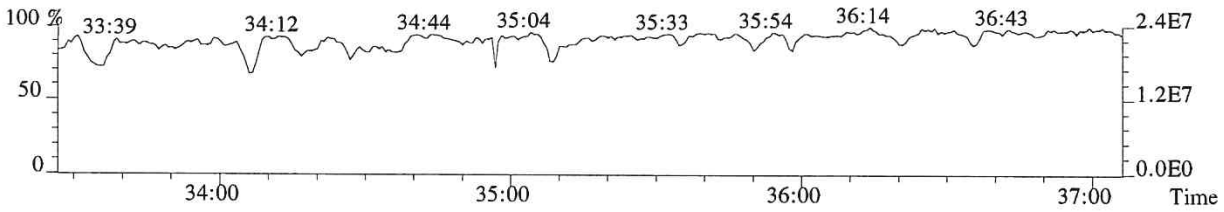
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4488.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

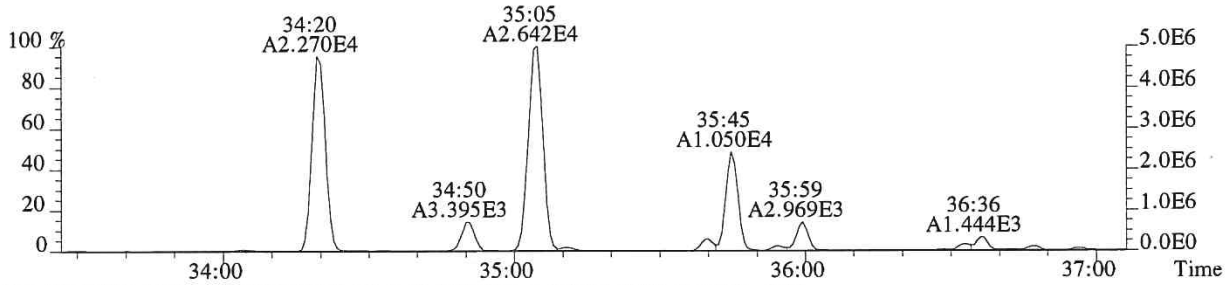


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

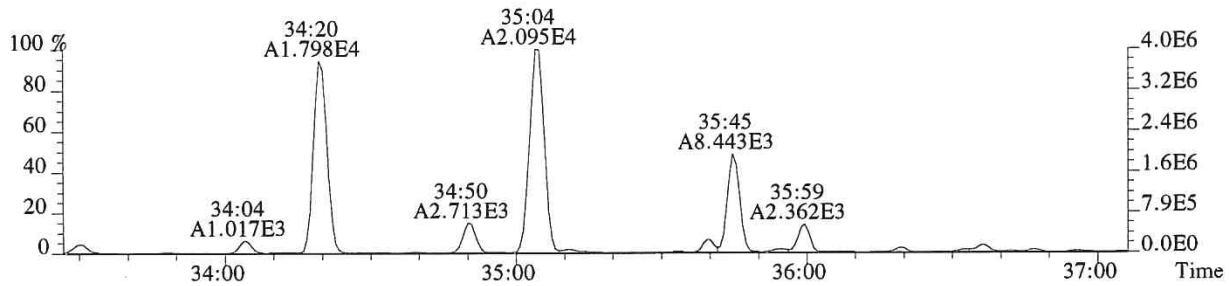


058861

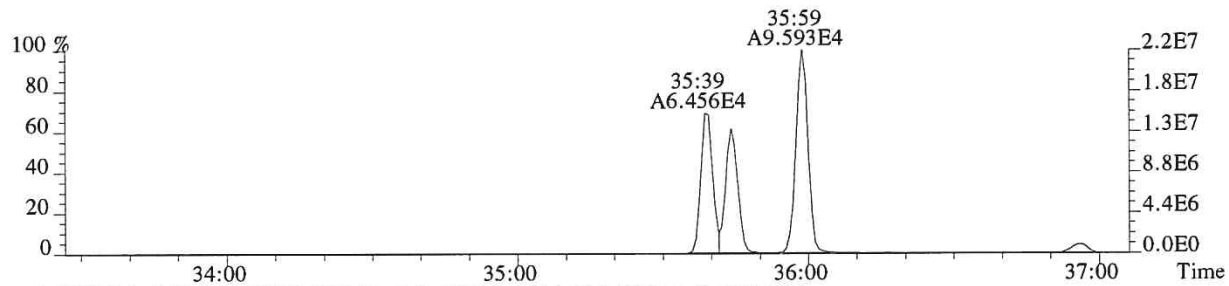
File:P616133 #1-330 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4500.0,0.40%,F,T)



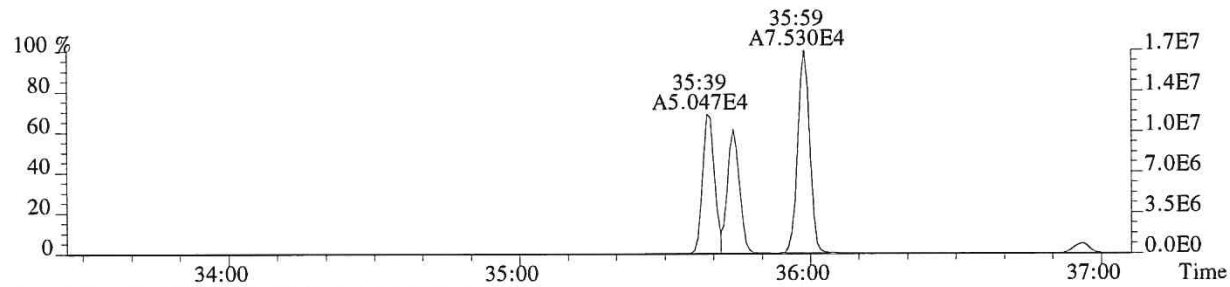
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8332.0,0.40%,F,T)



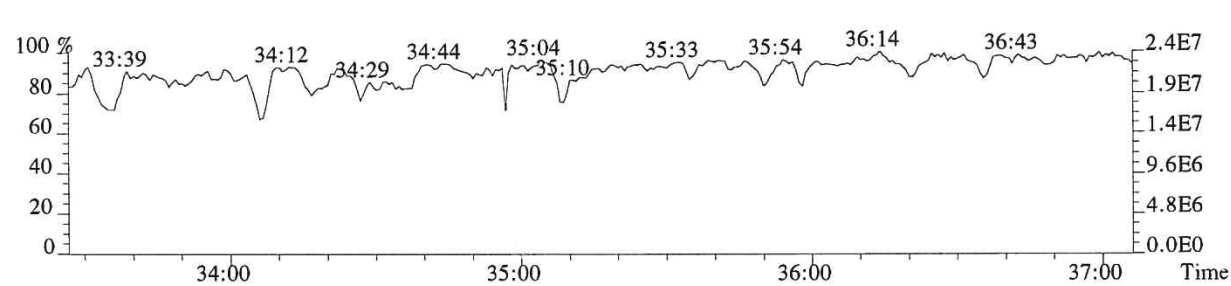
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3172.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2324.0,0.40%,F,T)

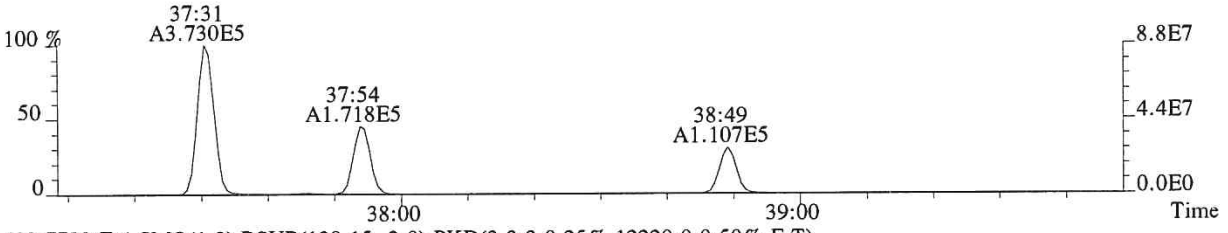


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

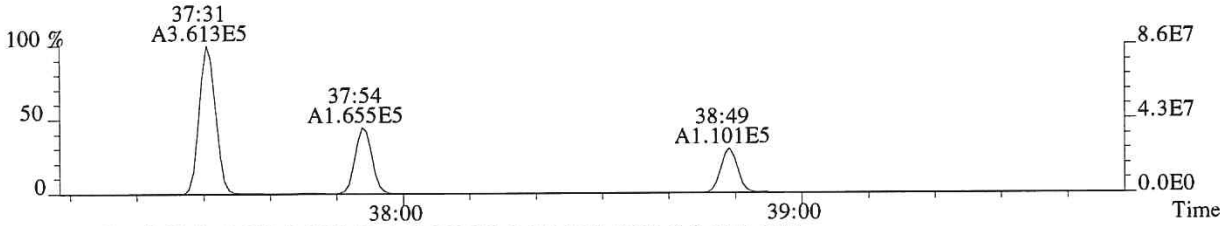


058862

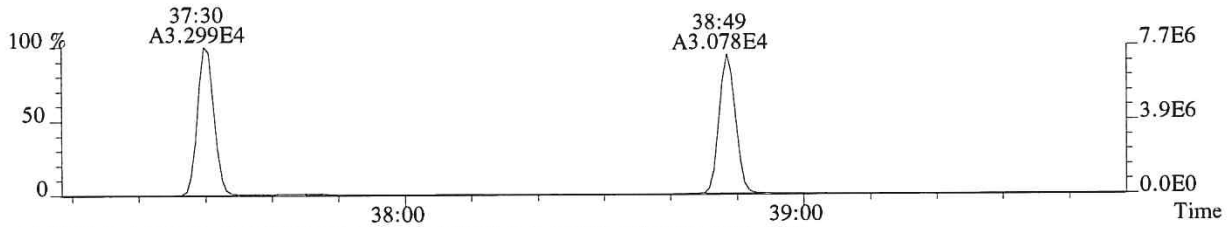
File:P616133 #1-241 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9520.0,0.50%,F,T)



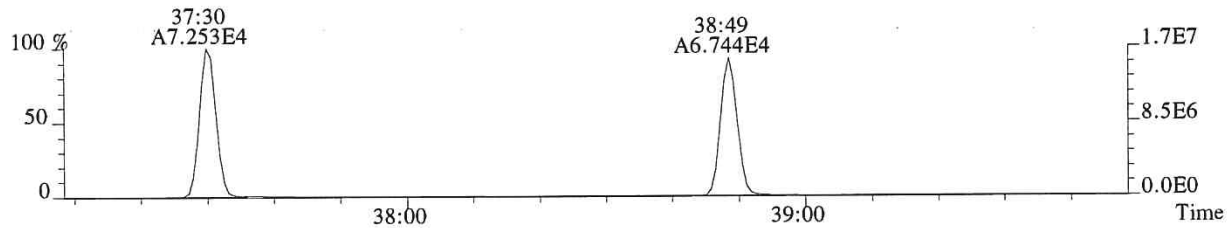
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12220.0,0.50%,F,T)



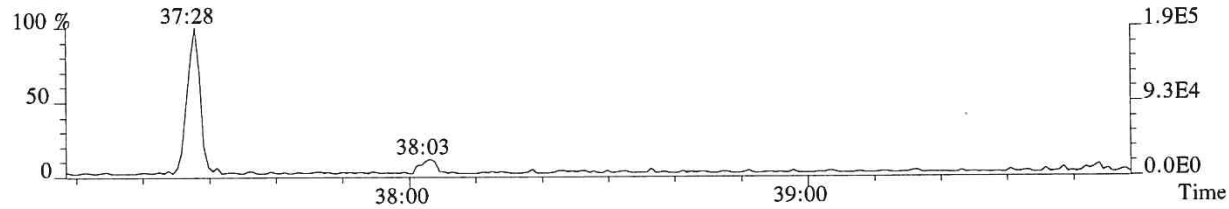
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9652.0,0.50%,F,T)



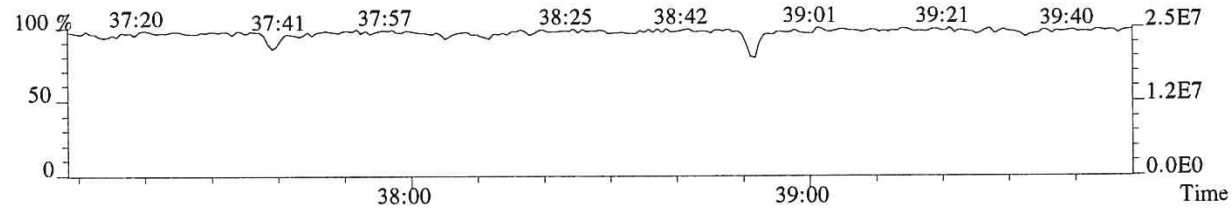
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8204.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

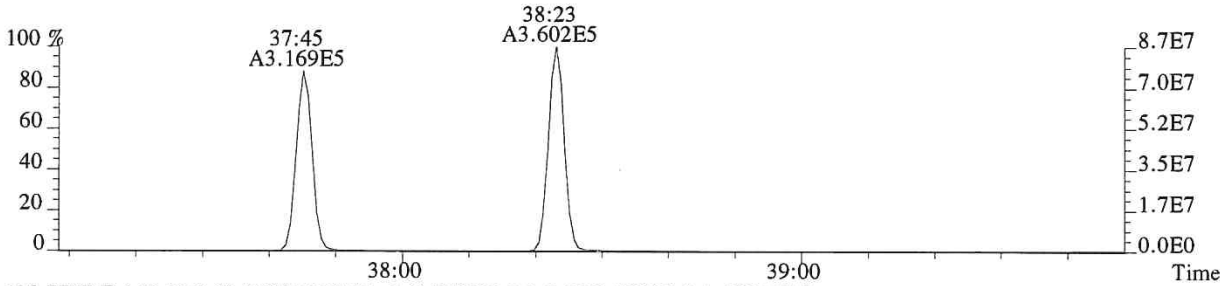


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

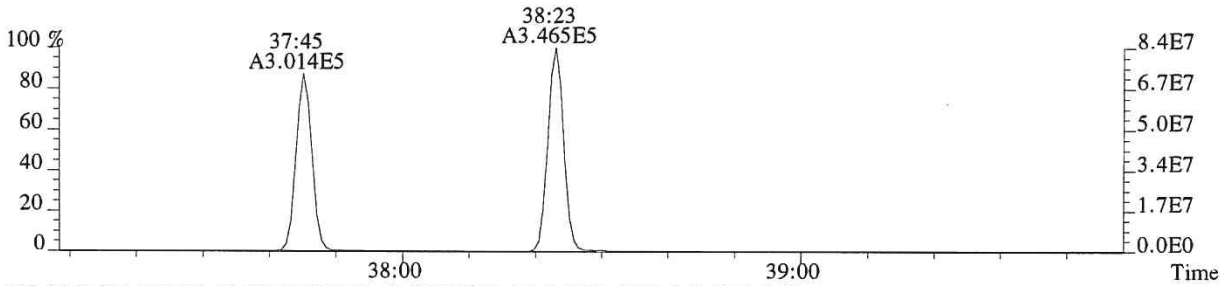


058863

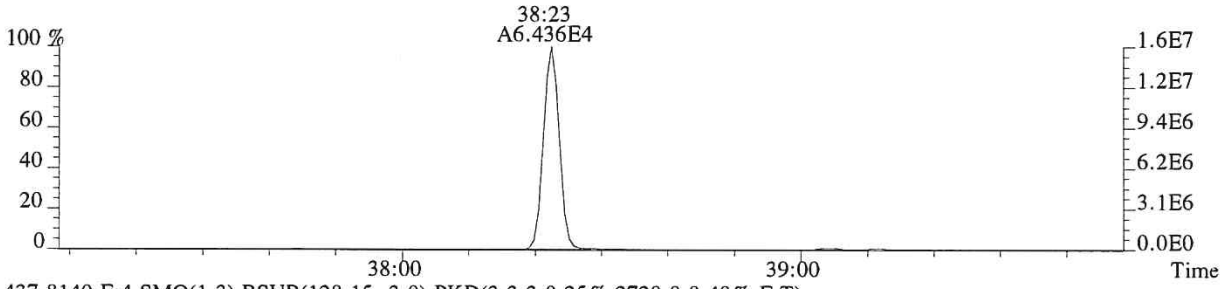
File:P616133 #1-241 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,38248.0,0.40%,F,T)



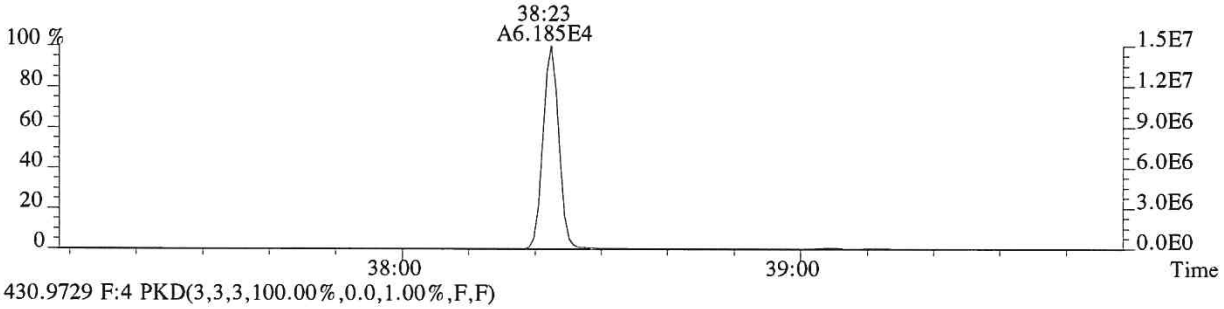
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,38196.0,0.40%,F,T)



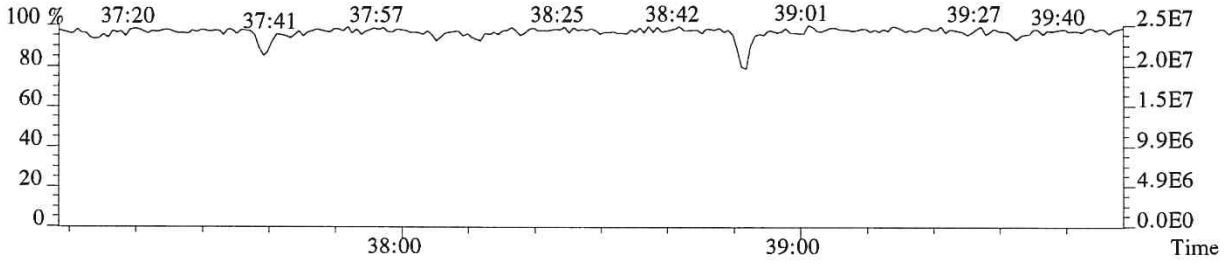
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4436.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2720.0,0.40%,F,T)

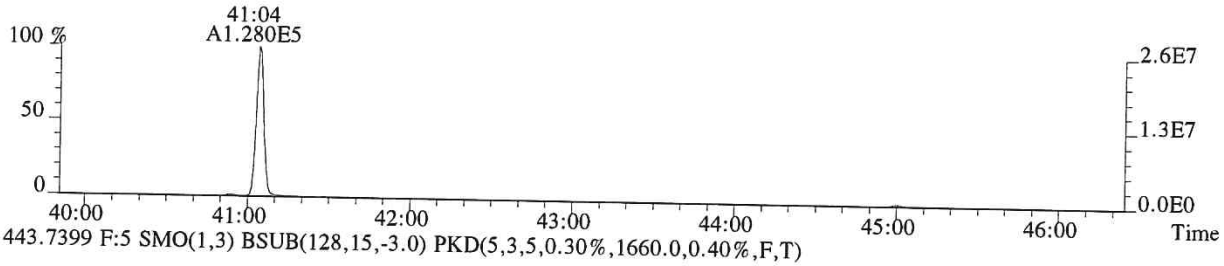


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

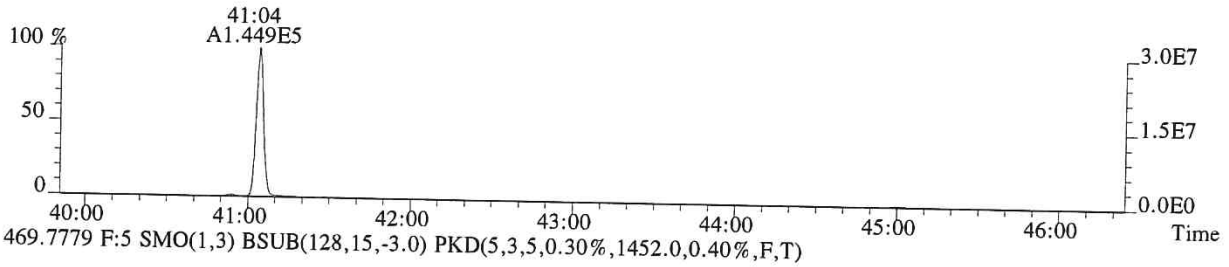


058864

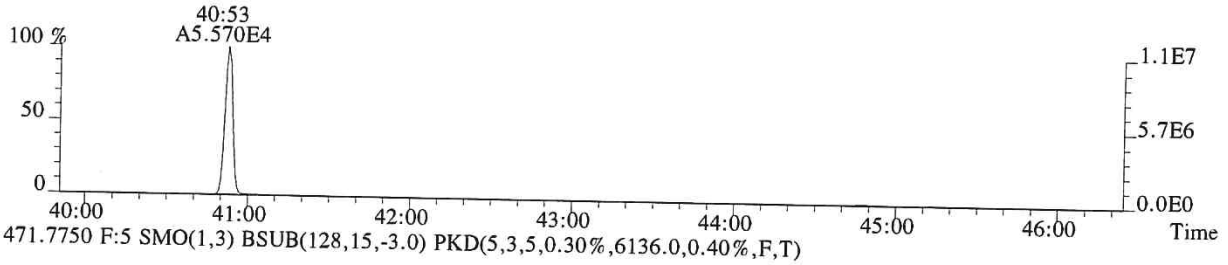
File:P616133 #1-591 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2036.0,0.40%,F,T)



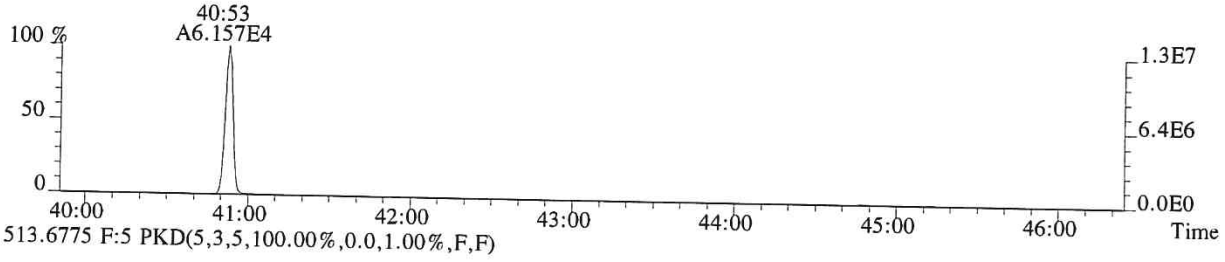
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1660.0,0.40%,F,T)



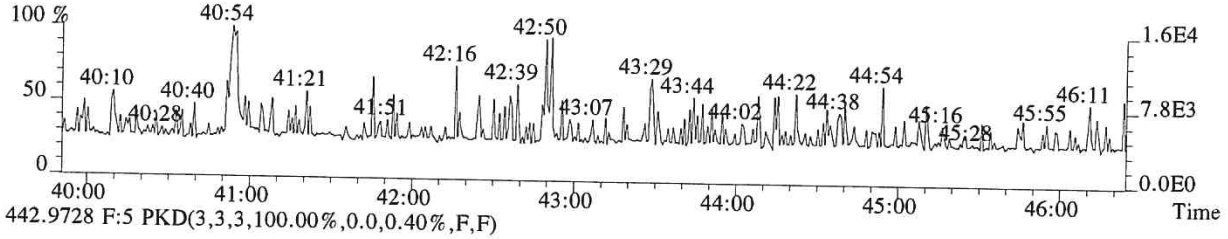
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1452.0,0.40%,F,T)



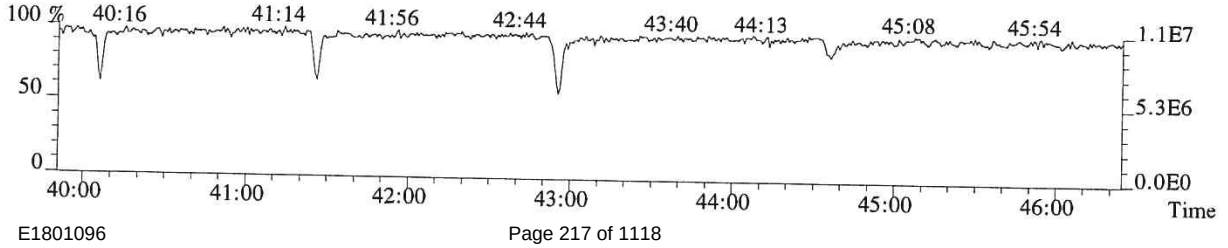
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,6136.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

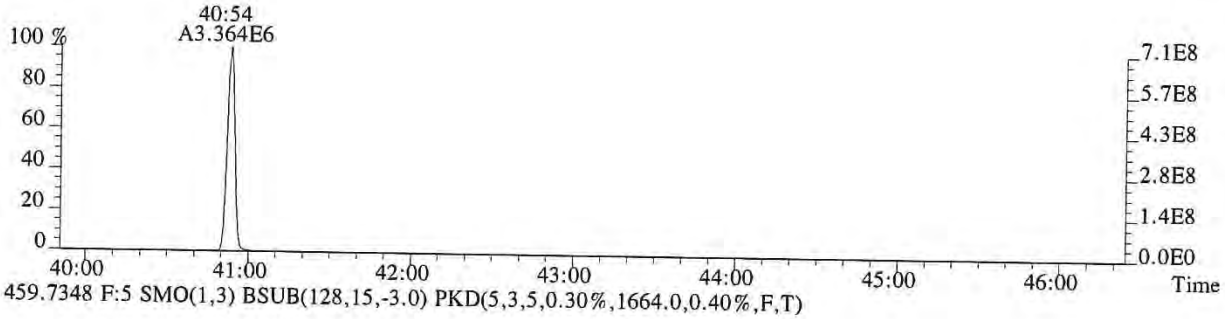


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

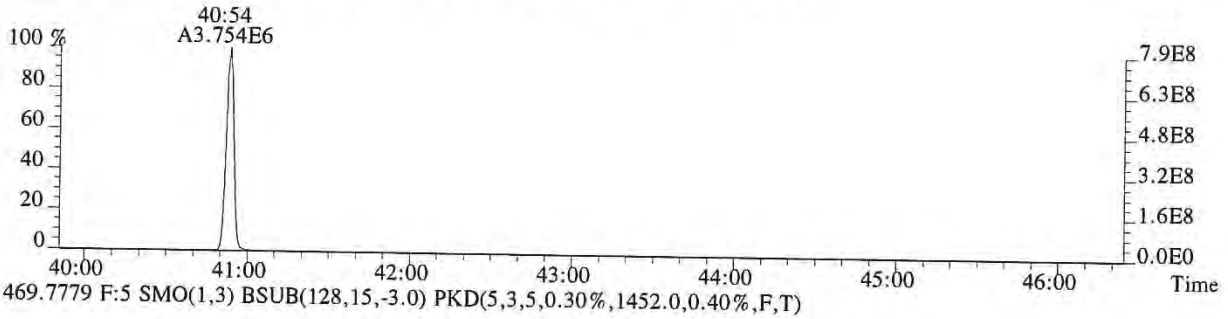


058865

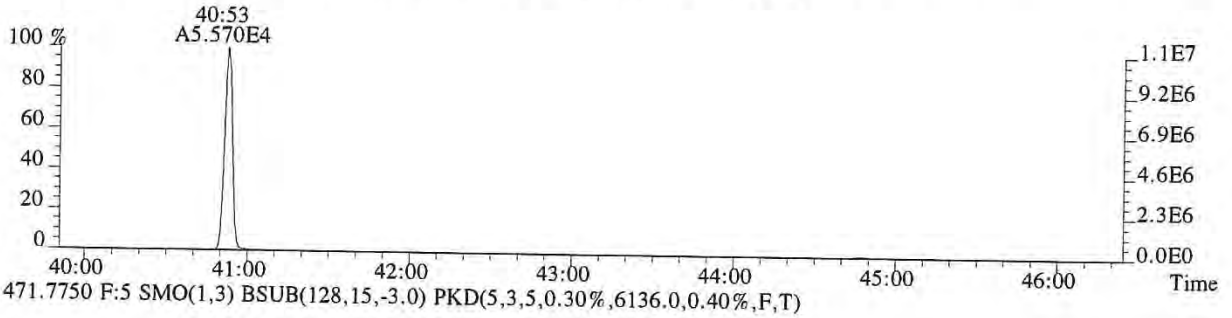
File:P616133 #1-591 Acq:19-DEC-2018 22:01:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1824.0,0.40%,F,T)



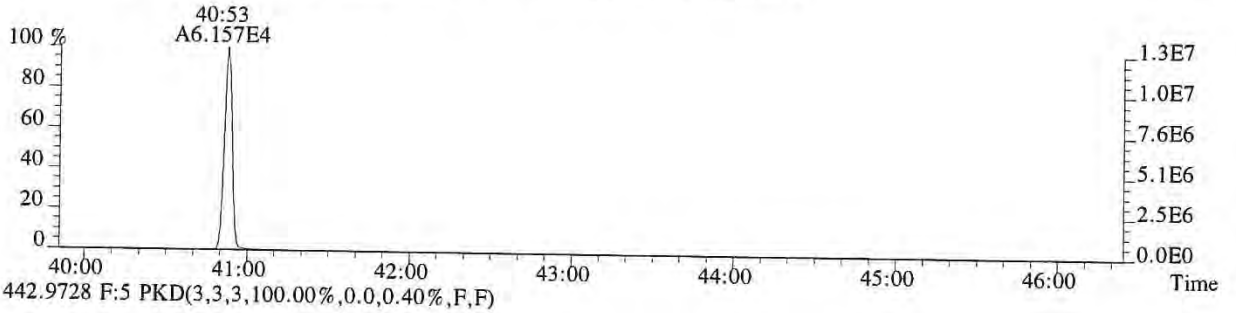
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1664.0,0.40%,F,T)



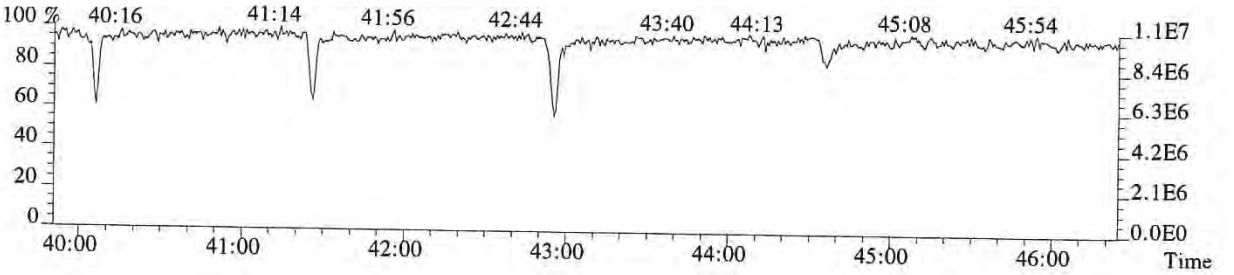
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1452.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,6136.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



058866

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0061

Run #11 Filename P519592 Samp: 1 Inj: 1 Acquired: 24-DEC-18 13:01:37
Processed: 26-DEC-18 13:31:03 Sample ID: E1801096-003DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:18	8.904e+03	1.205e+04	0.74	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:06	4.705e+02	3.327e+02	1.41	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:06	3.845e+02	2.490e+02	1.54	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:00	5.390e+02	4.328e+02	1.25	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:07	1.456e+02	1.360e+02	1.07	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:40	3.729e+01	1.641e+01	2.27	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:31	2.266e+01	3.829e+01	0.59	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:52	1.393e+02	1.380e+02	1.01	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:18	3.120e+01	4.706e+01	0.66	no	no	1.258
10	Unk	OCDF	41:54	4.132e+01	4.630e+01	0.89	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:15	2.331e+03	2.746e+03	0.85	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:25	3.413e+01	1.396e+01	2.44	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:50	1.361e+02	1.266e+02	1.07	yes	no	1.025
17	Unk	OCDD	41:47	1.557e+03	1.761e+03	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:16	6.163e+03	8.212e+03	0.75	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:06	9.520e+03	5.760e+03	1.65	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:05	8.703e+03	5.450e+03	1.60	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:00	3.538e+03	6.684e+03	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:07	4.350e+03	8.349e+03	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:39	3.838e+03	7.504e+03	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:27	3.333e+03	6.355e+03	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:51	3.043e+03	6.652e+03	0.46	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:17	2.396e+03	5.347e+03	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:14	2.773e+03	3.795e+03	0.73	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:25	6.480e+03	4.008e+03	1.62	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:49	4.893e+03	3.896e+03	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:54	5.375e+03	4.342e+03	1.24	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:50	5.601e+03	5.307e+03	1.06	yes	no	0.858
32	IS	13C-OCDD	41:45	6.318e+03	6.954e+03	0.91	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:33	4.317e+03	5.452e+03	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:09	5.285e+03	4.135e+03	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:16	4.594e+01				no	1.014

$$\text{OCDD} = \frac{(1.557e+03 + 1.761e+03) \times 4000 \text{ pg} \times 200}{(6.318e+03 + 6.954e+03) \times 10.64 \text{ g} \times 67.9 / 100 \times 1.118} = 47619.2517 \text{ ng/kg}$$

LG 12/27/18

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058867

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0061

Run #11 Filename P519592 Samp: 1 Inj: 1 Acquired: 24-DEC-18 13:01:37
Processed: 26-DEC-18 13:31:03 LAB. ID: E1801096-003DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.25e+06	6.08e+02	2.1e+03	1.72e+06	9.40e+02	1.8e+03
2	1,2,3,7,8-PeCDF	7.31e+04	5.56e+02	1.3e+02	5.36e+04	6.08e+02	8.8e+01
3	2,3,4,7,8-PeCDF	6.26e+04	5.56e+02	1.1e+02	3.70e+04	6.08e+02	6.1e+01
4	1,2,3,4,7,8-HxCDF	9.69e+04	6.68e+02	1.5e+02	7.73e+04	4.28e+02	1.8e+02
5	1,2,3,6,7,8-HxCDF	2.52e+04	6.68e+02	3.8e+01	2.14e+04	4.28e+02	5.0e+01
6	2,3,4,6,7,8-HxCDF	8.74e+03	6.68e+02	1.3e+01	3.56e+03	4.28e+02	8.3e+00
7	1,2,3,7,8,9-HxCDF	5.46e+03	6.68e+02	8.2e+00	6.32e+03	4.28e+02	1.5e+01
8	1,2,3,4,6,7,8-HpCDF	1.96e+04	3.80e+02	5.2e+01	2.12e+04	3.40e+02	6.2e+01
9	1,2,3,4,7,8,9-HpCDF	5.86e+03	3.80e+02	1.5e+01	7.33e+03	3.40e+02	2.2e+01
10	OCDF	7.14e+03	3.24e+02	2.2e+01	5.45e+03	9.92e+02	5.5e+00
11	2,3,7,8-TCDD	3.97e+05	1.64e+03	2.4e+02	4.60e+05	9.00e+02	5.1e+02
12	1,2,3,7,8-PeCDD	5.93e+03	7.32e+02	8.1e+00	4.11e+03	2.72e+02	1.5e+01
13	1,2,3,4,7,8-HxCDD	*	3.28e+02	*	*	4.96e+02	*
14	1,2,3,6,7,8-HxCDD	*	3.28e+02	*	*	4.96e+02	*
15	1,2,3,7,8,9-HxCDD	*	3.28e+02	*	*	4.96e+02	*
16	1,2,3,4,6,7,8-HpCDD	2.21e+04	2.92e+02	7.6e+01	1.86e+04	3.16e+02	5.9e+01
17	OCDD	1.02e+05	4.20e+02	2.4e+02	1.23e+05	3.92e+02	3.1e+02
18	13C-2,3,7,8-TCDF	9.68e+05	8.22e+03	1.2e+02	1.25e+06	5.00e+03	2.5e+02
19	13C-1,2,3,7,8-PeCDF	1.55e+06	6.32e+02	2.4e+03	9.20e+05	4.16e+02	2.2e+03
20	13C-2,3,4,7,8-PeCDF	1.51e+06	6.32e+02	2.4e+03	9.33e+05	4.16e+02	2.2e+03
21	13C-1,2,3,4,7,8-HxCDF	6.66e+05	4.48e+02	1.5e+03	1.22e+06	1.10e+03	1.1e+03
22	13C-1,2,3,6,7,8-HxCDF	7.79e+05	4.48e+02	1.7e+03	1.46e+06	1.10e+03	1.3e+03
23	13C-2,3,4,6,7,8-HxCDF	6.59e+05	4.48e+02	1.5e+03	1.29e+06	1.10e+03	1.2e+03
24	13C-1,2,3,7,8,9-HxCDF	5.36e+05	4.48e+02	1.2e+03	1.02e+06	1.10e+03	9.2e+02
25	13C-1,2,3,4,6,7,8-HpCDF	4.44e+05	1.20e+03	3.7e+02	9.24e+05	1.67e+03	5.5e+02
26	13C-1,2,3,4,7,8,9-HpCDF	2.67e+05	1.20e+03	2.2e+02	6.26e+05	1.67e+03	3.7e+02
27	13C-2,3,7,8-TCDD	4.74e+05	4.73e+03	1.0e+02	6.35e+05	1.31e+03	4.8e+02
28	13C-1,2,3,7,8-PeCDD	1.14e+06	6.68e+02	1.7e+03	7.03e+05	1.10e+03	6.4e+02
29	13C-1,2,3,4,7,8-HxCDD	9.70e+05	7.08e+02	1.4e+03	7.85e+05	5.28e+02	1.5e+03
30	13C-1,2,3,6,7,8-HxCDD	8.46e+05	7.08e+02	1.2e+03	6.96e+05	5.28e+02	1.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	6.64e+05	3.60e+02	1.8e+03	6.18e+05	2.96e+02	2.1e+03
32	13C-OCDD	4.47e+05	2.92e+02	1.5e+03	5.00e+05	3.68e+02	1.4e+03
33	13C-1,2,3,4-TCDD	7.21e+05	4.73e+03	1.5e+02	8.92e+05	1.31e+03	6.8e+02
34	13C-1,2,3,7,8,9-HxCDD	8.02e+05	7.08e+02	1.1e+03	6.29e+05	5.28e+02	1.2e+03
35	37Cl-2,3,7,8-TCDD	7.09e+03	6.04e+02	1.2e+01			

---Sample Calculation---

$$D/L\ TCDD = \frac{2.5 \times (1.644e+03 + 9.000e+02) \times 2000}{(4.740e+05 + 6.346e+05) \times (\qquad) \times 1.085} =$$

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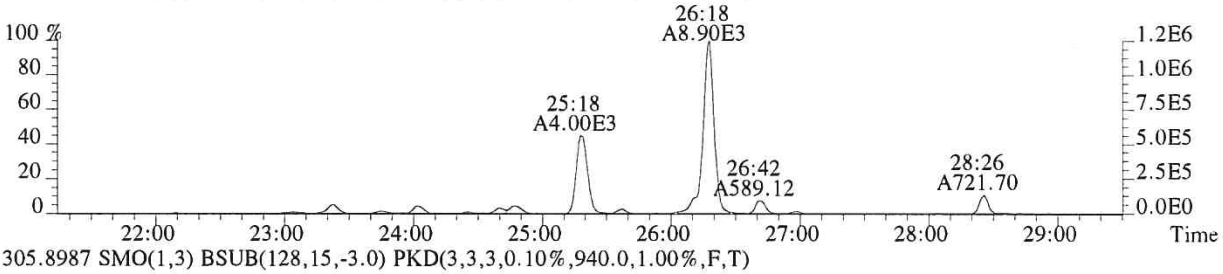
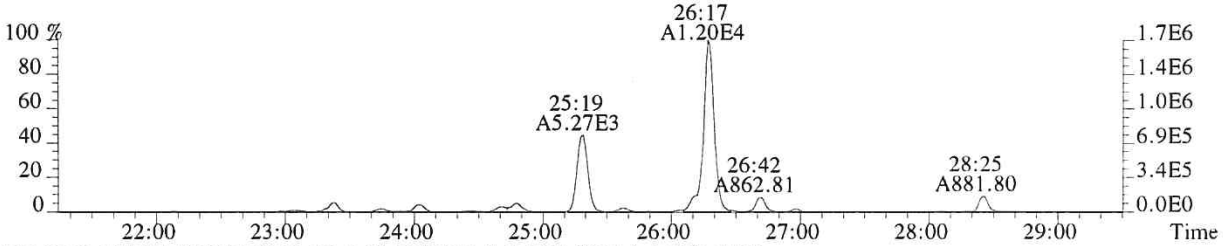
File:P519592 #1-587 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL

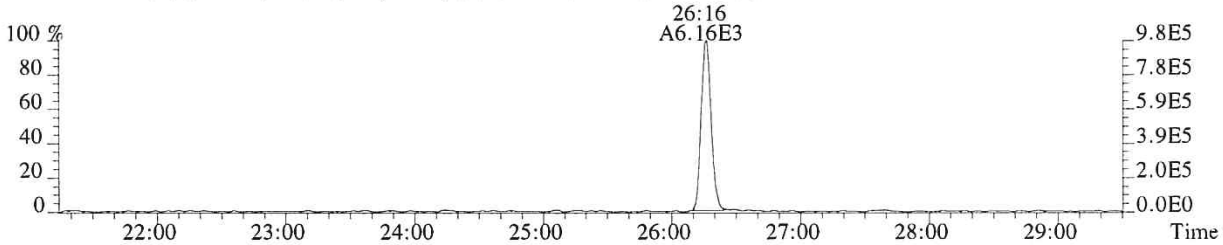
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,608.0,1.00%,F,T)



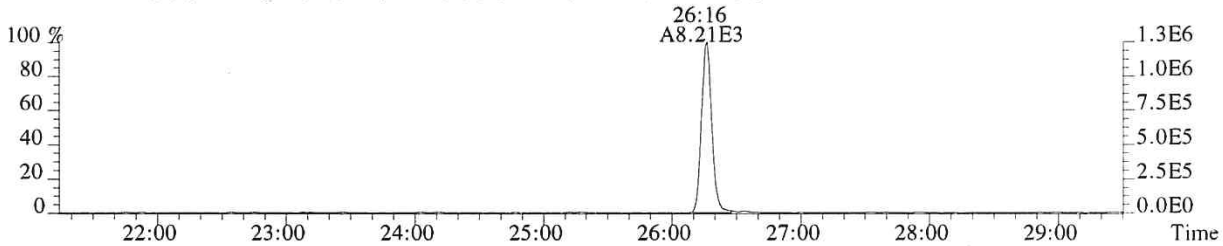
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,940.0,1.00%,F,T)



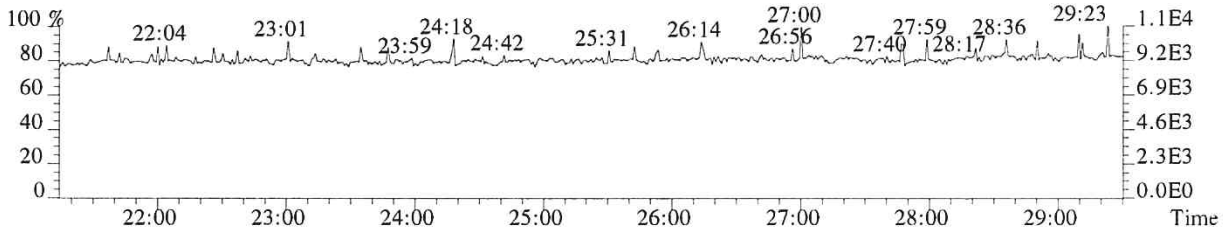
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8224.0,1.00%,F,T)



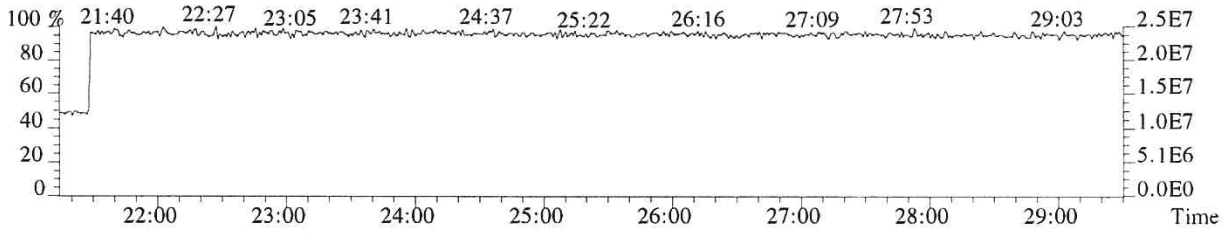
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5000.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



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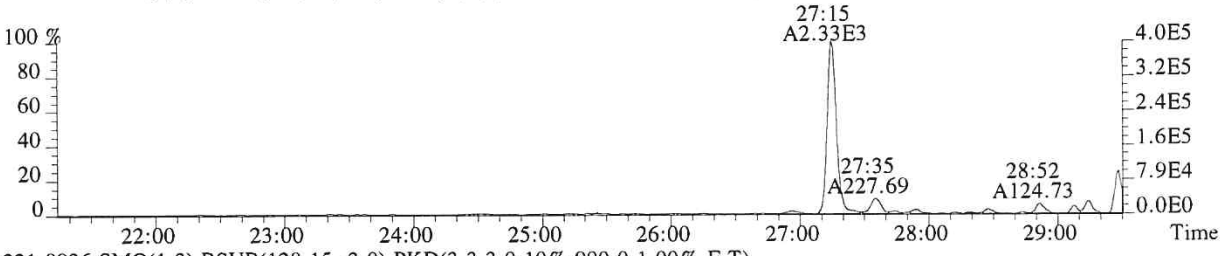
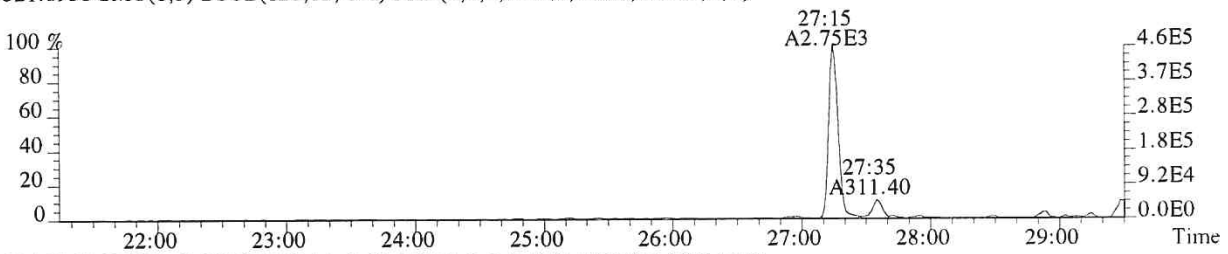
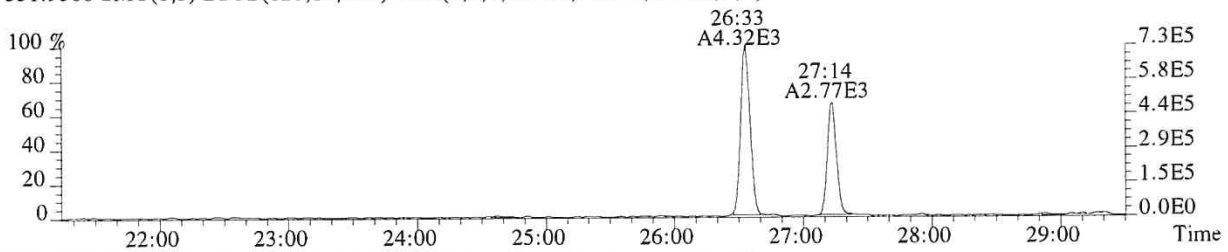
File:P519592 #1-587 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1644.0,1.00%,F,T)



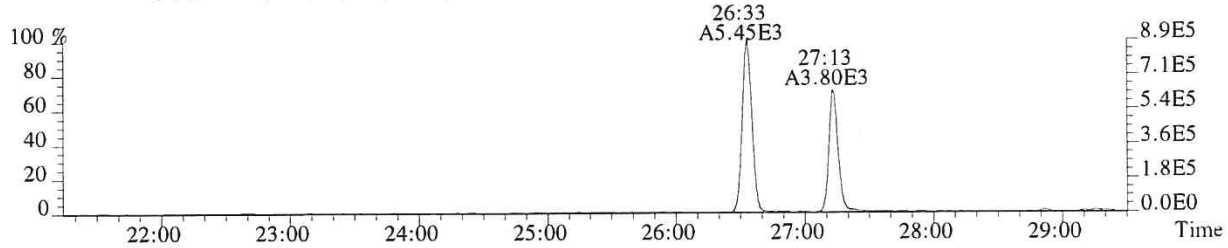
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,900.0,1.00%,F,T)



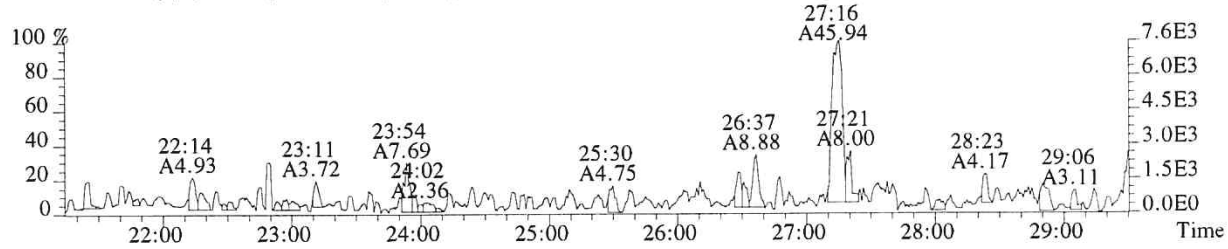
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4732.0,1.00%,F,T)



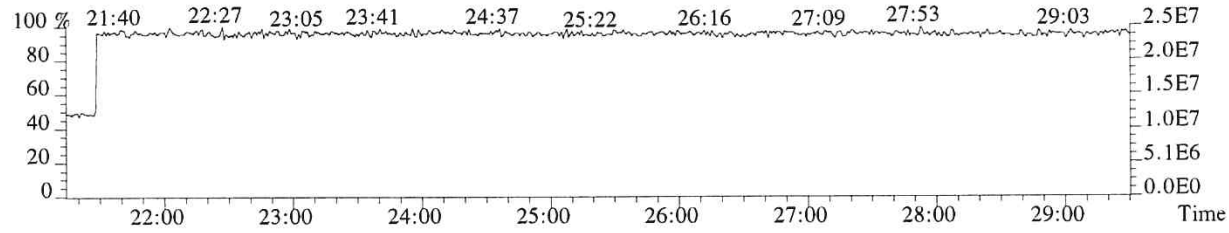
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1312.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,T)

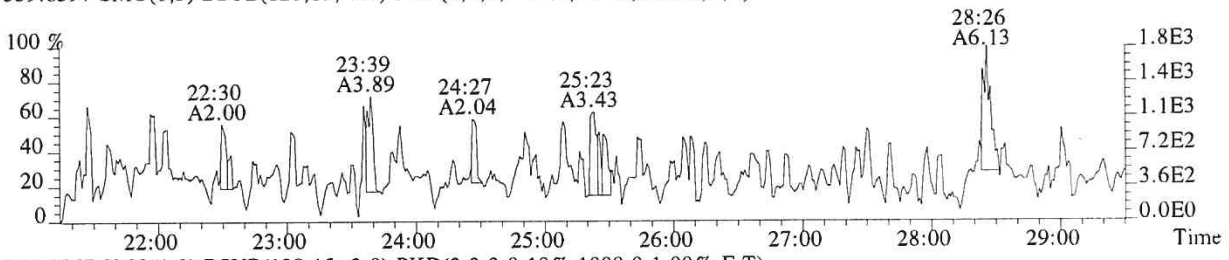


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

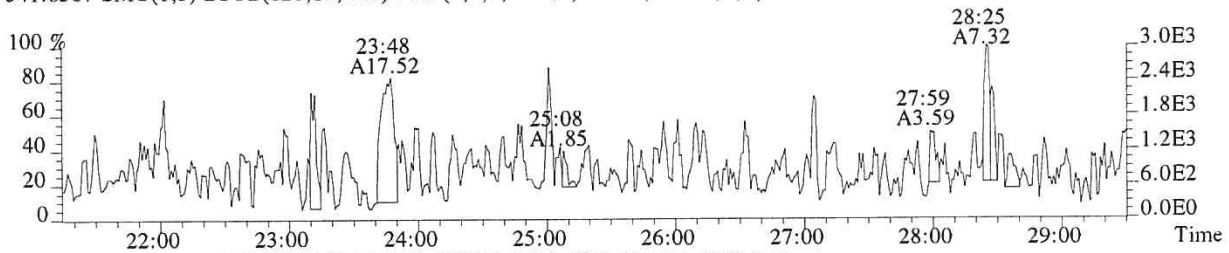


058870

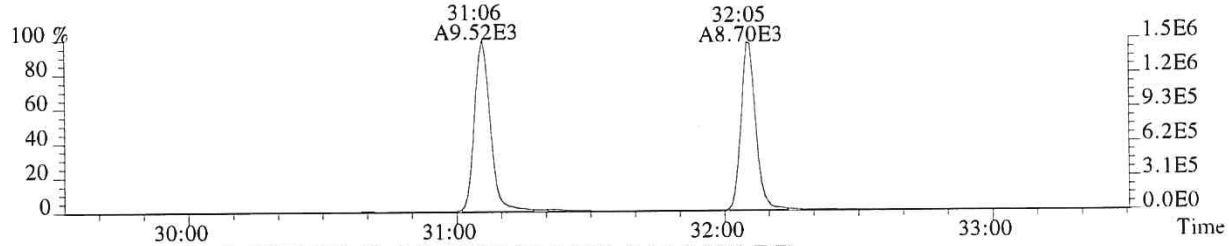
File:P519592 #1-587 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,572.0,1.00%,F,T)



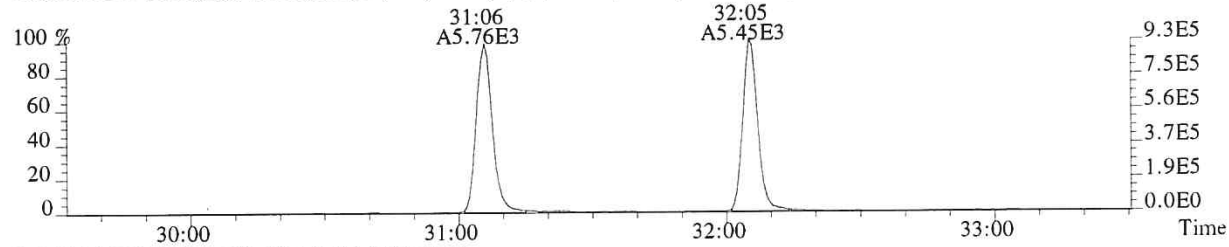
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1008.0,1.00%,F,T)



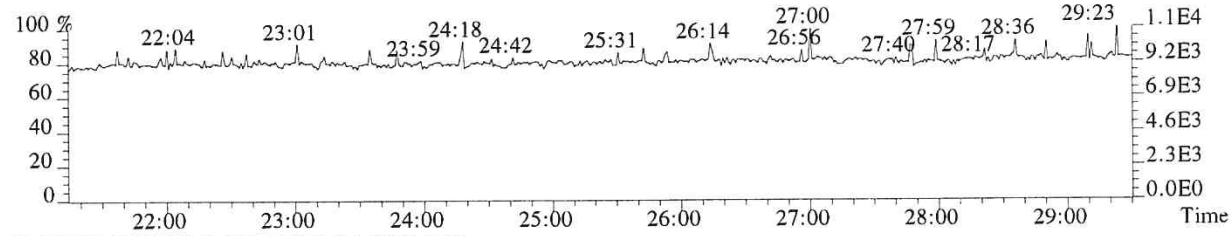
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,632.0,1.00%,F,T)



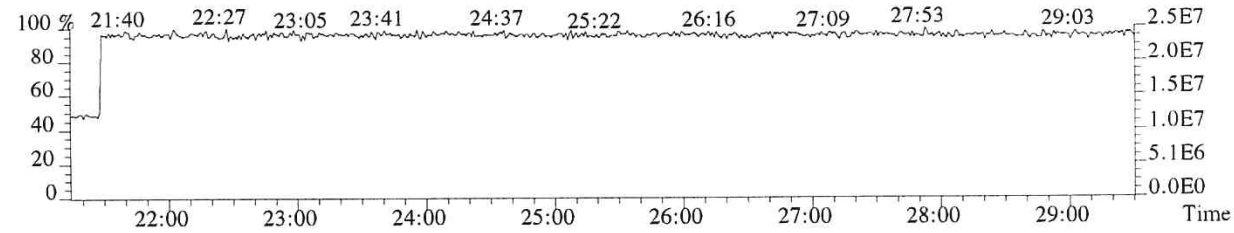
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,416.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

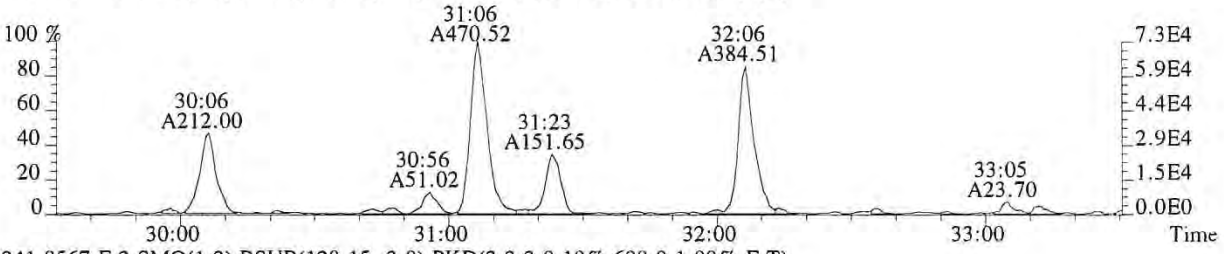


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

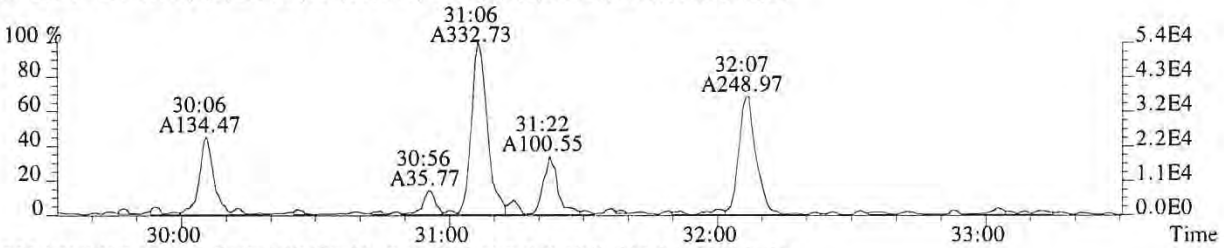


058871

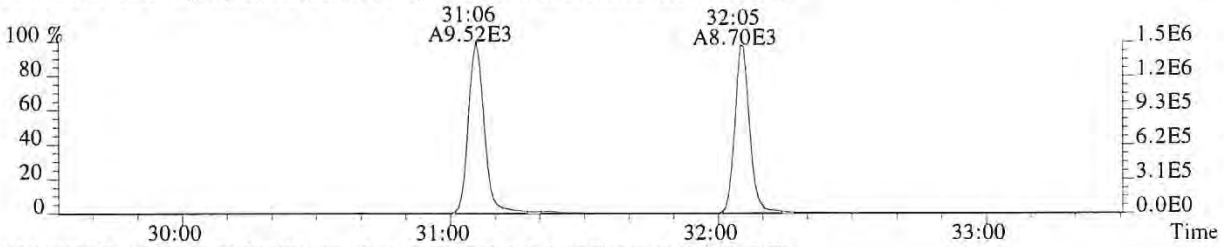
File:P519592 #1-358 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,556.0,1.00%,F,T)



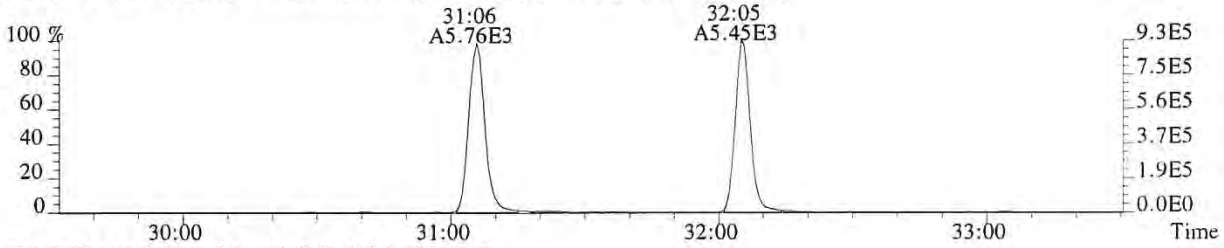
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,608.0,1.00%,F,T)



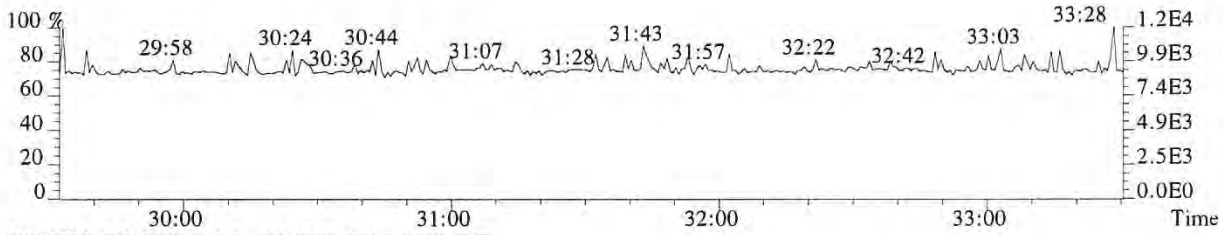
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,632.0,1.00%,F,T)



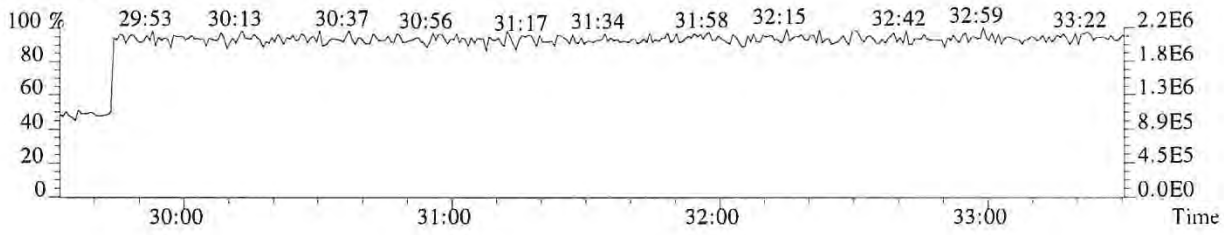
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,416.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

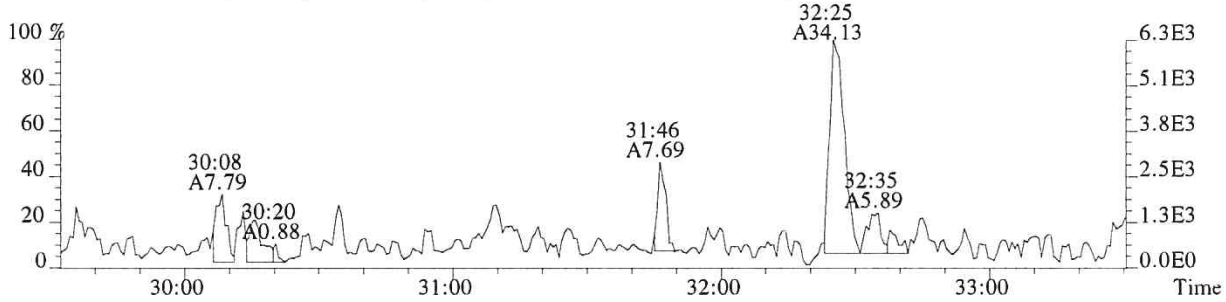


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

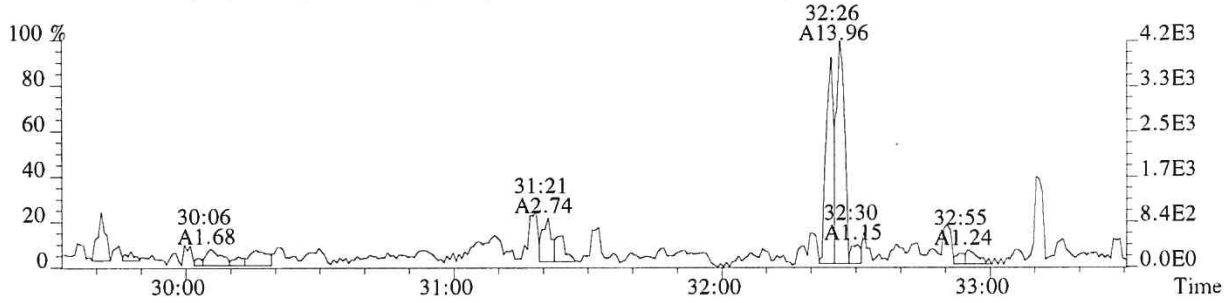


058872

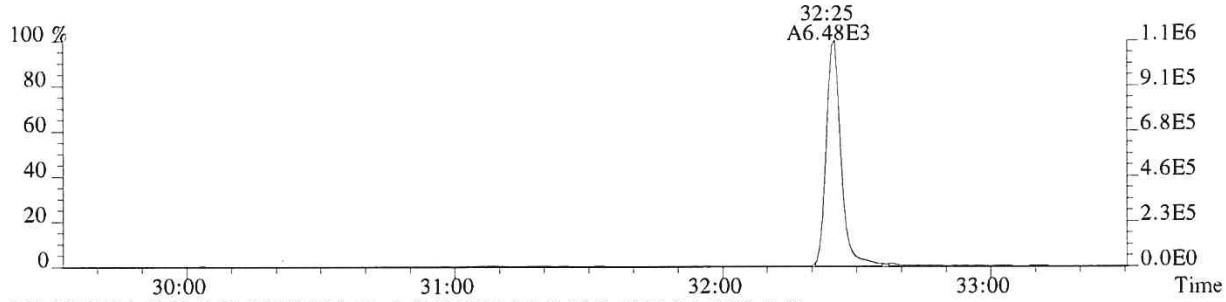
File:P519592 #1-358 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,732.0,1.00%,F,T)



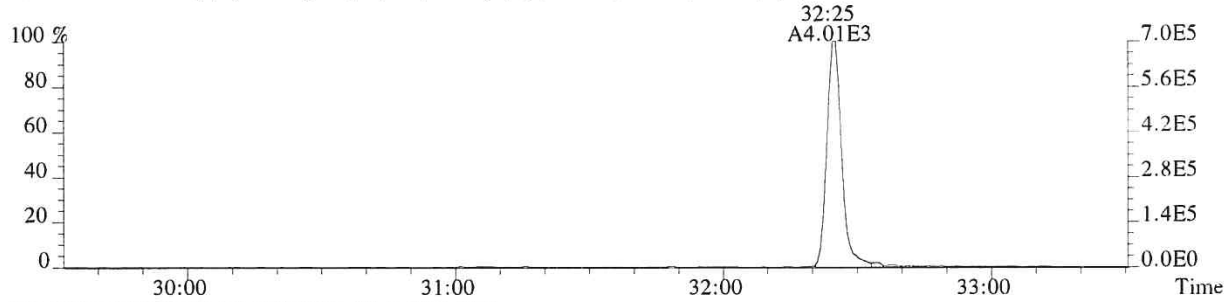
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,272.0,1.00%,F,T)



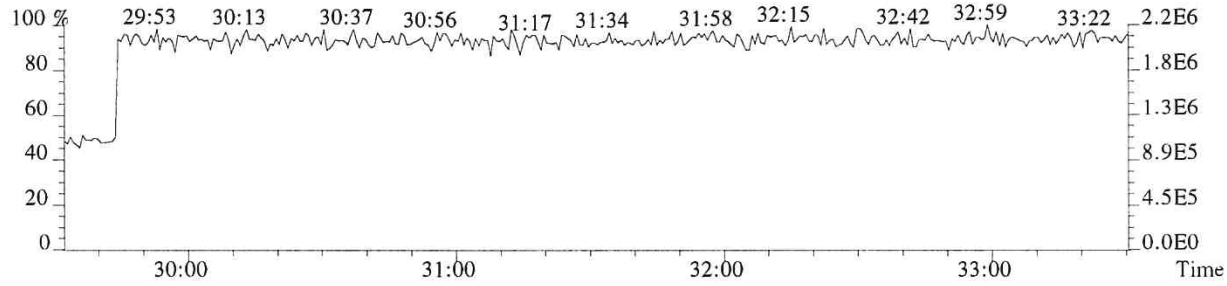
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,668.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1096.0,1.00%,F,T)

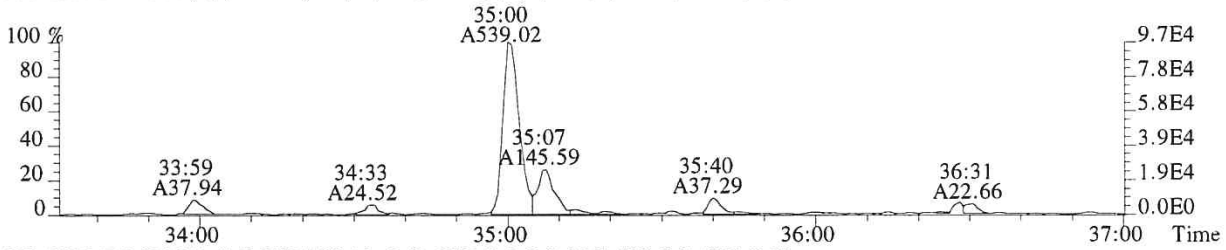


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

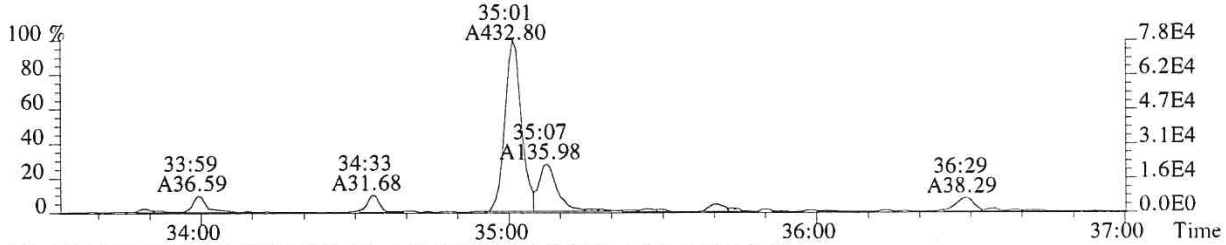


058873

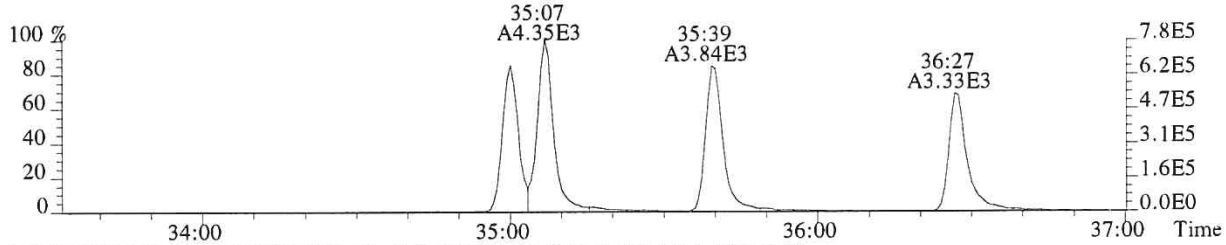
File:P519592 #1-312 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,668.0,0.40%,F,T)



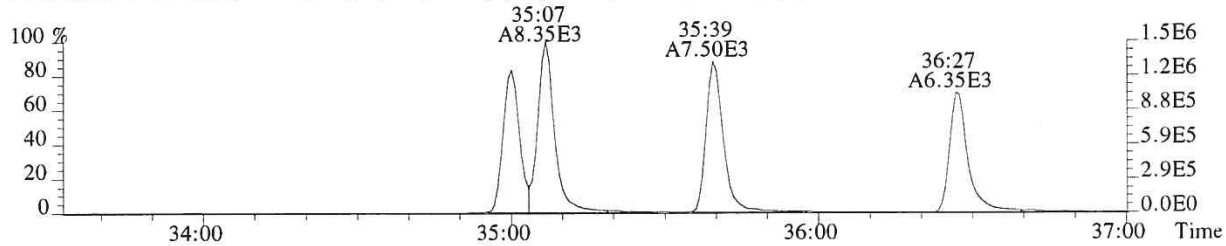
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,428.0,0.40%,F,T)



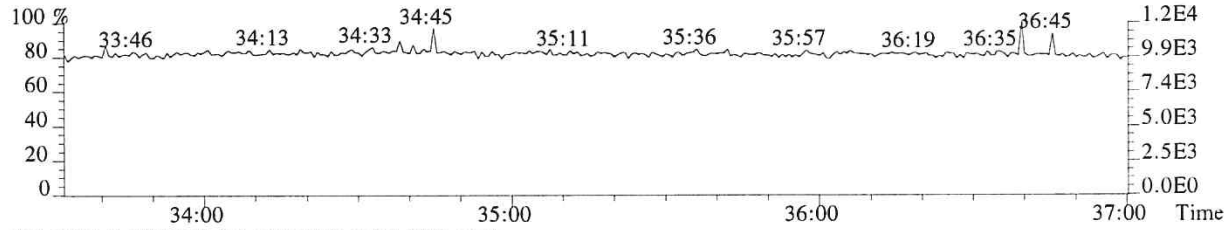
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,448.0,0.40%,F,T)



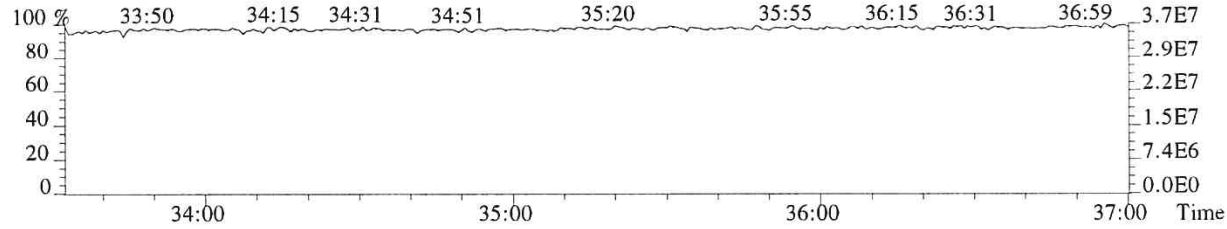
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1104.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

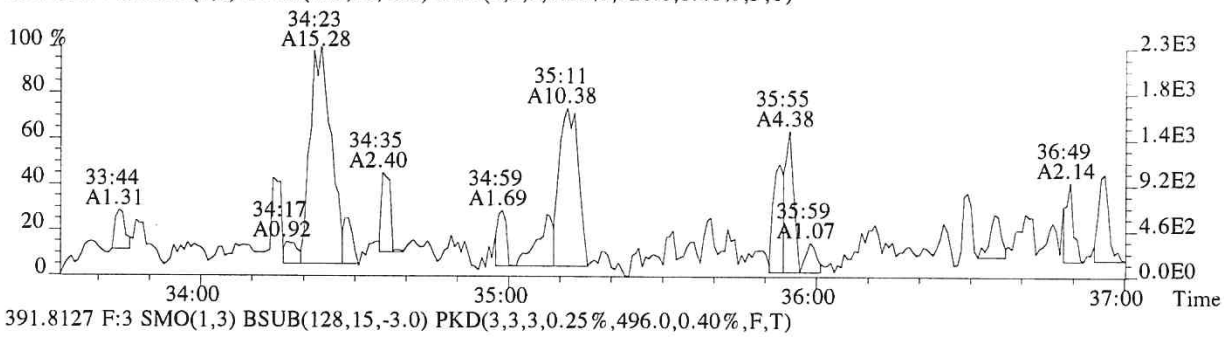


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

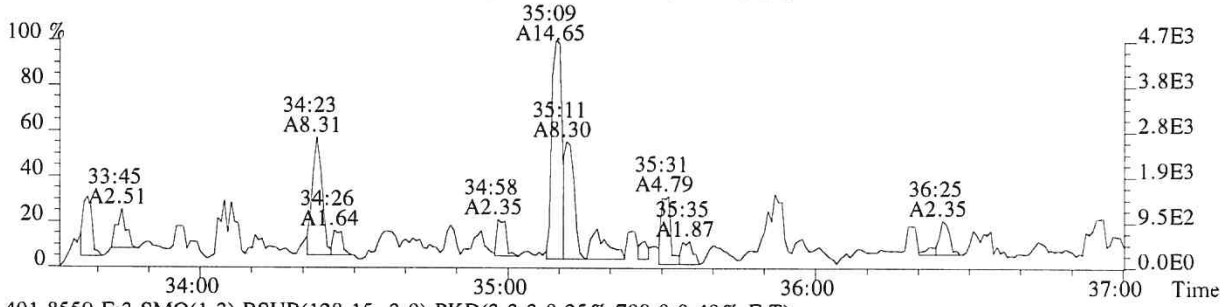


058874

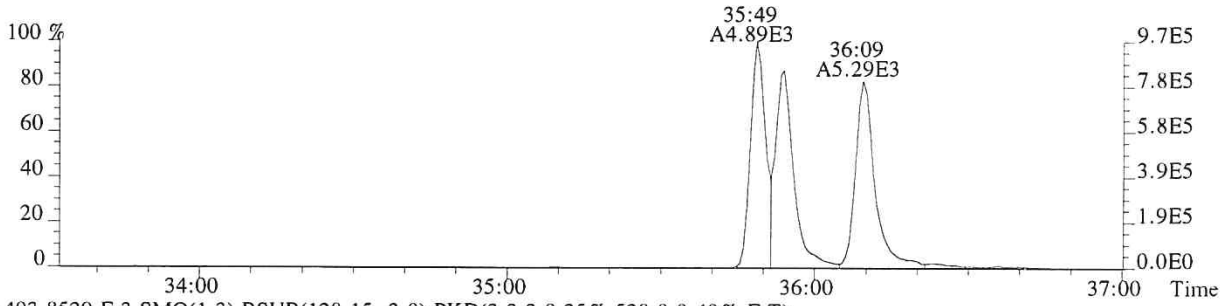
File:P519592 #1-312 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,328.0,0.40%,F,T)



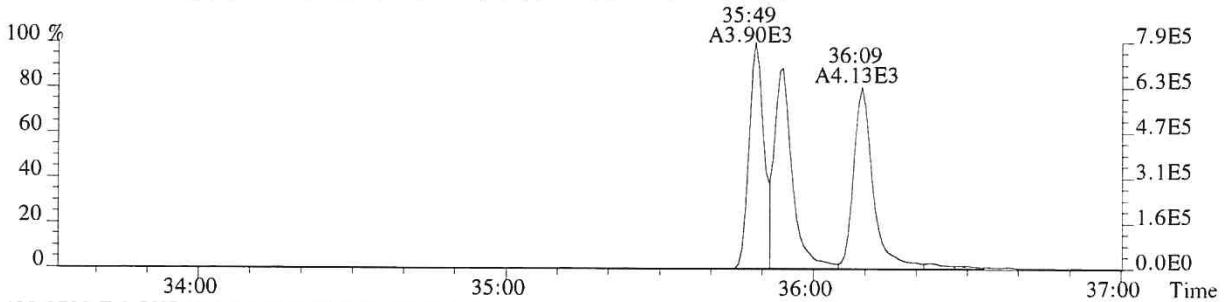
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,496.0,0.40%,F,T)



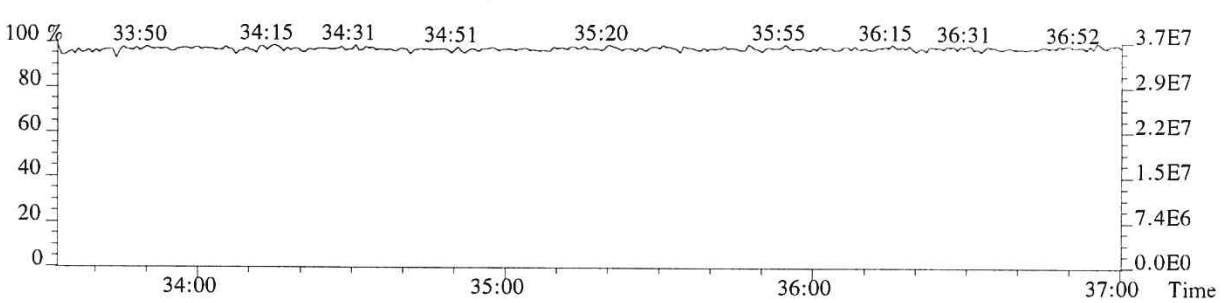
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,708.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,528.0,0.40%,F,T)



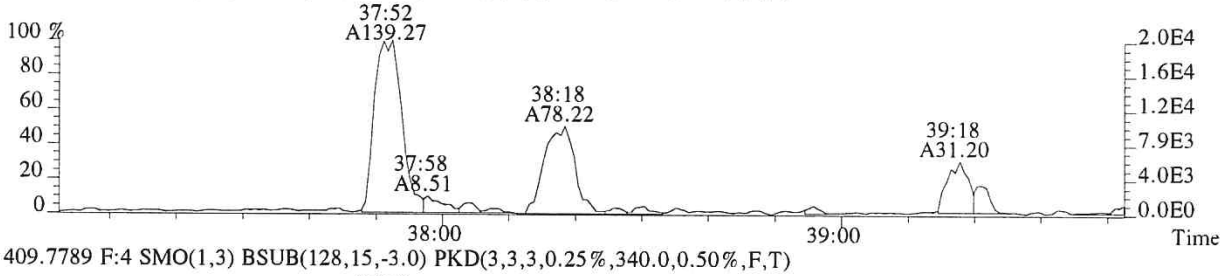
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



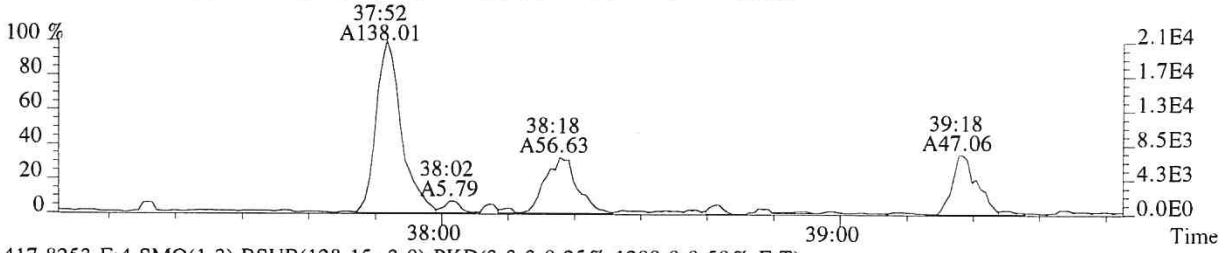
058875

File:P519592 #1-241 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL

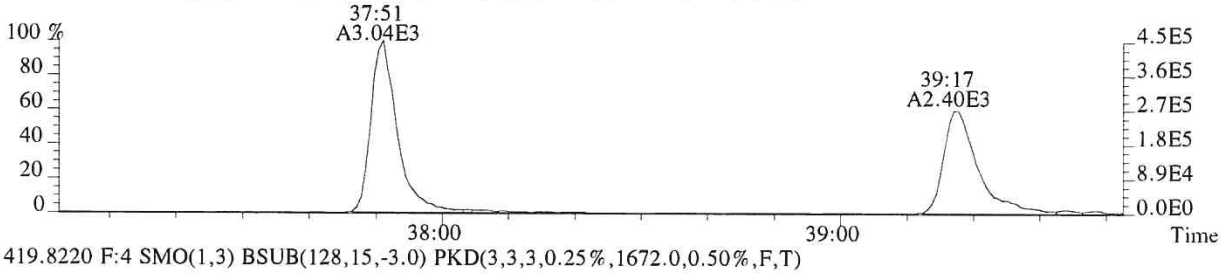
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,380.0,0.50%,F,T)



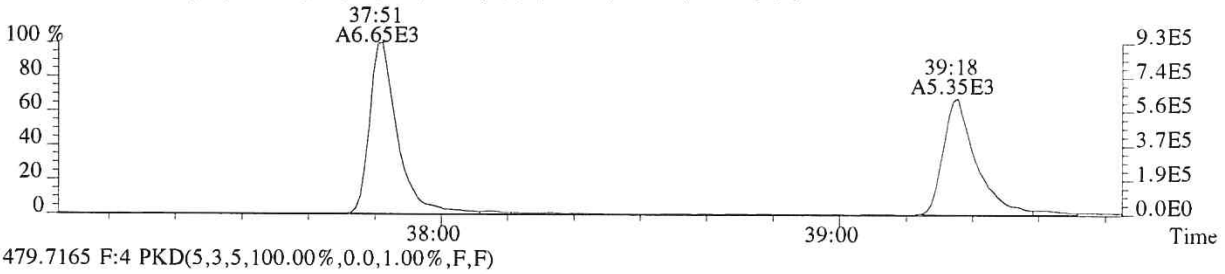
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,340.0,0.50%,F,T)



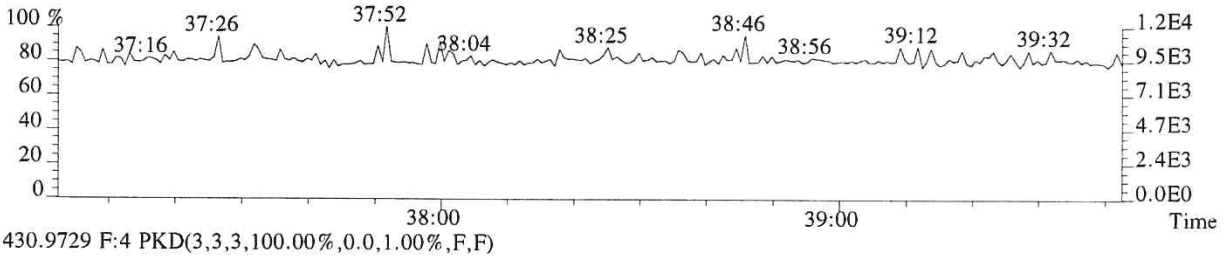
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1200.0,0.50%,F,T)



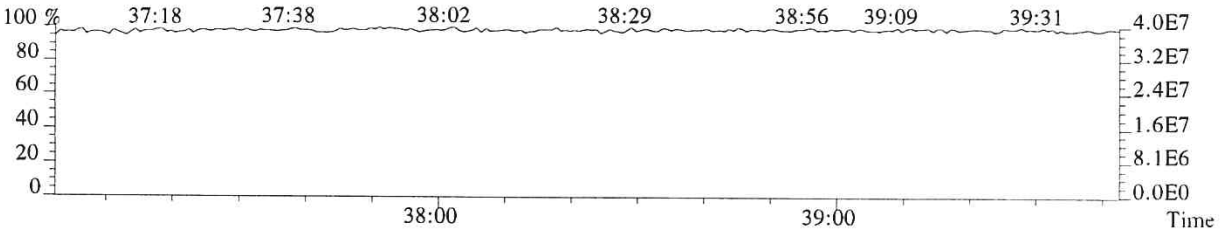
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1672.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

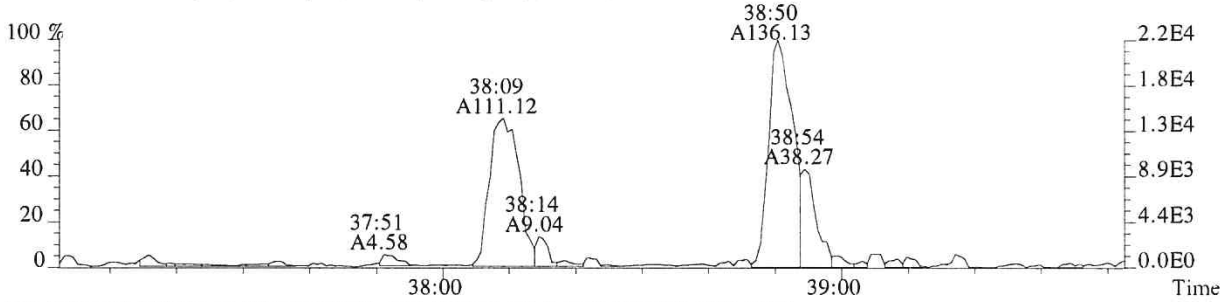


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

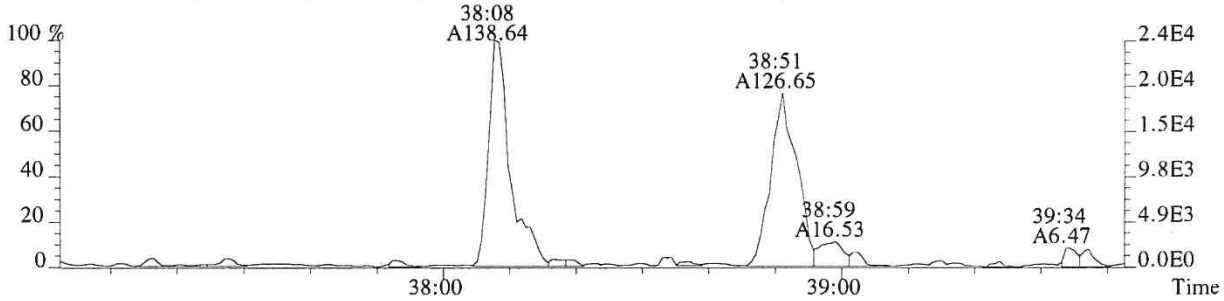


058876

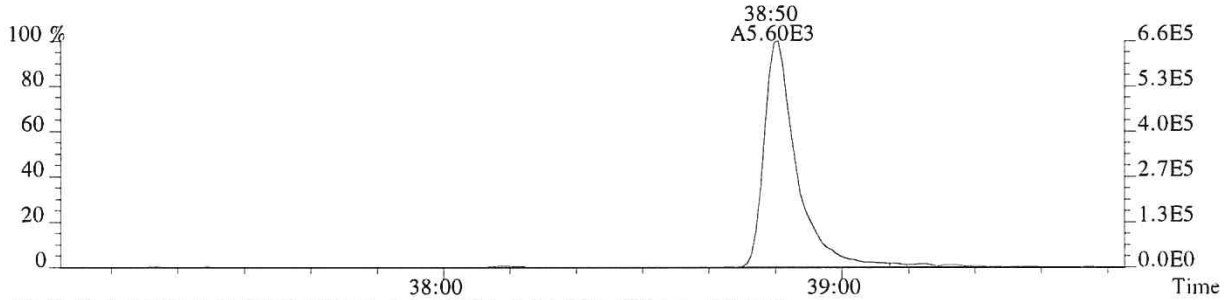
File:P519592 #1-241 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,292.0,0.40%,F,T)



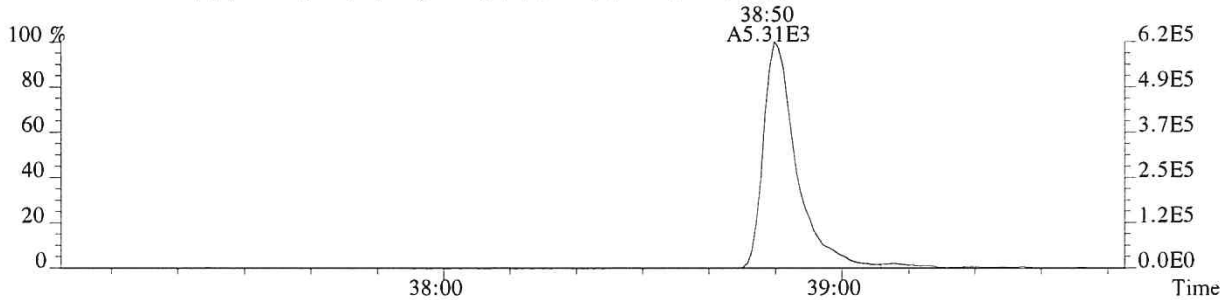
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,316.0,0.40%,F,T)



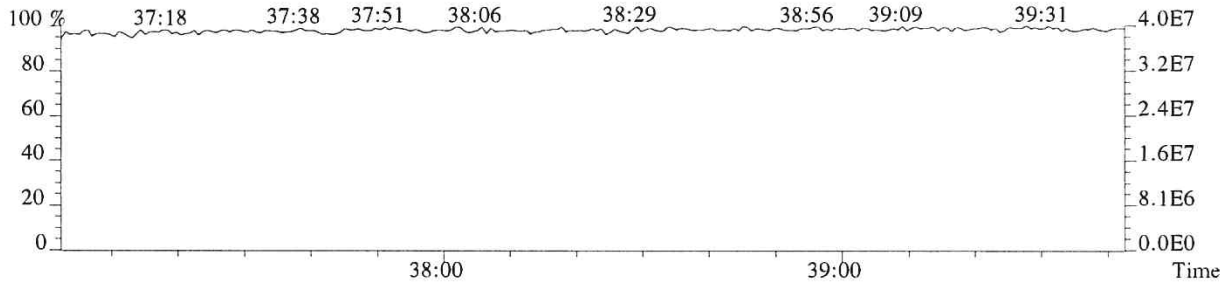
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,360.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,296.0,0.40%,F,T)

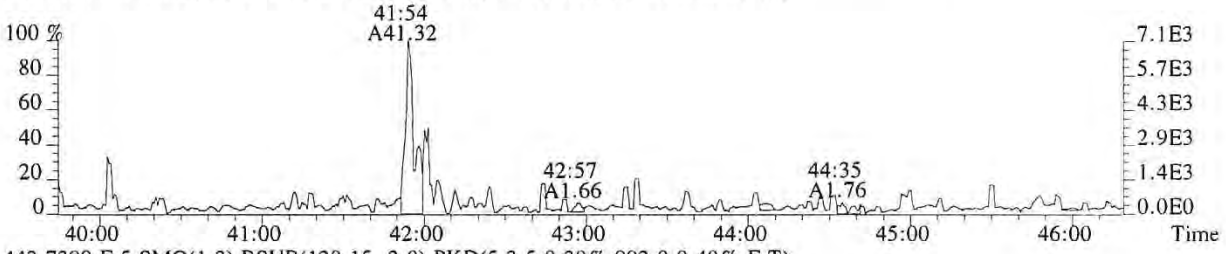


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

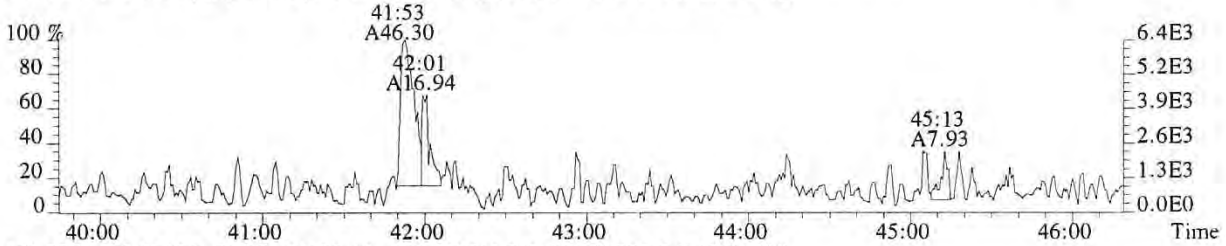


058877

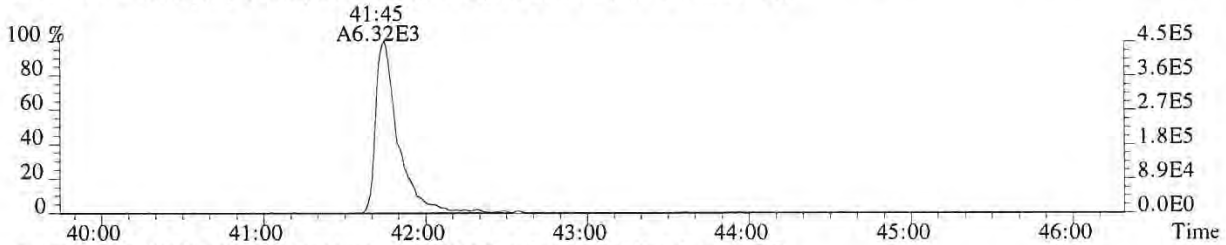
File:P519592 #1-592 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,324.0,0.40%,F,T)



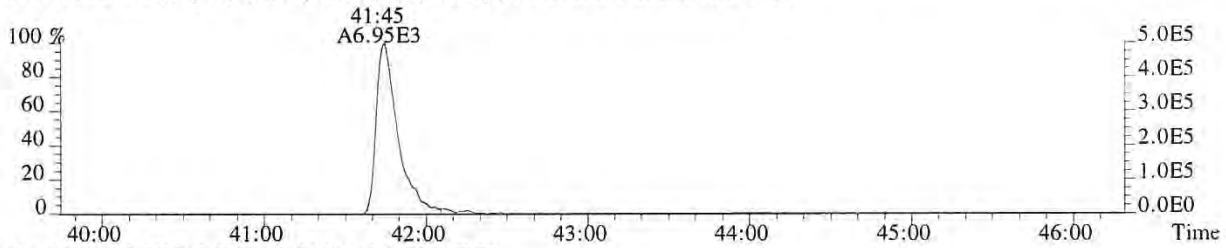
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,992.0,0.40%,F,T)



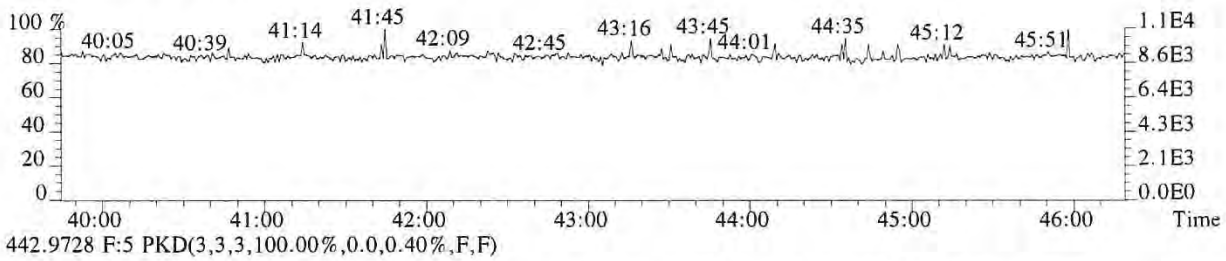
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,292.0,0.40%,F,T)



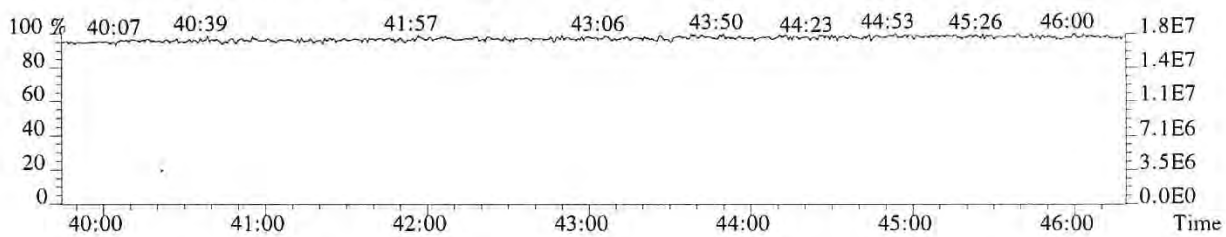
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,368.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

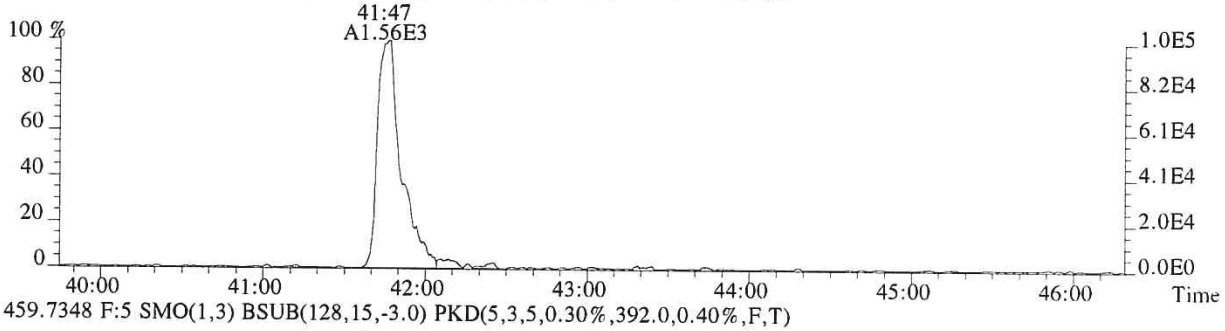


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

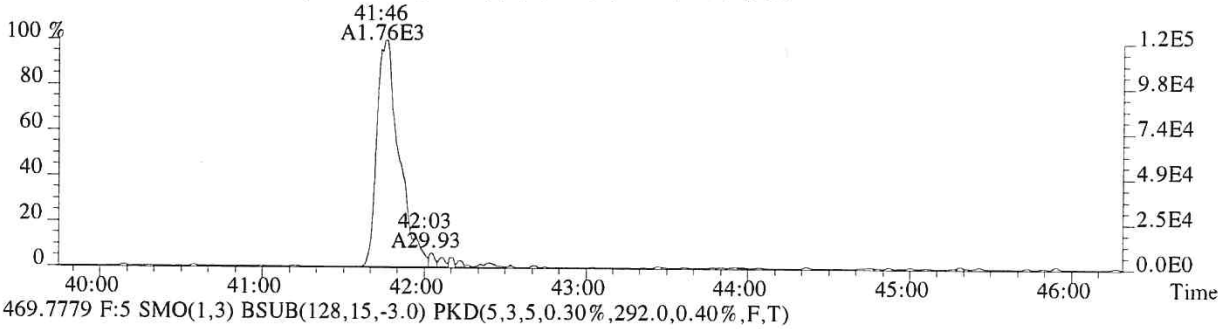


058878

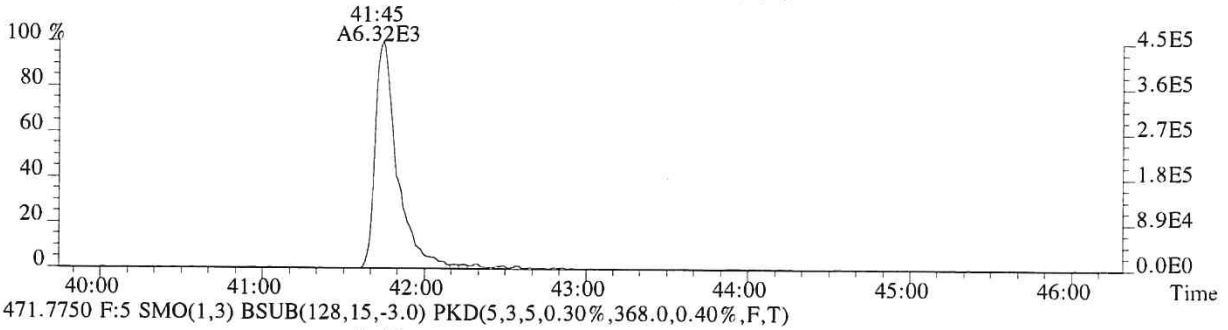
File:P519592 #1-592 Acq:24-DEC-2018 13:01:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-003DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



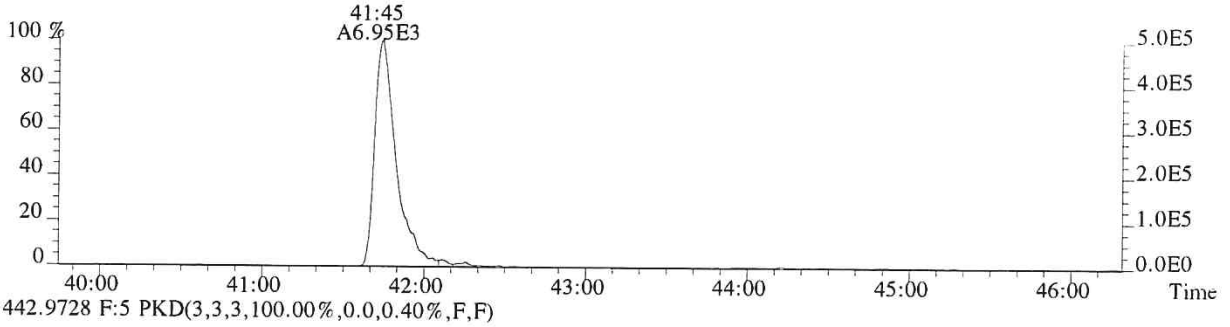
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,392.0,0.40%,F,T)



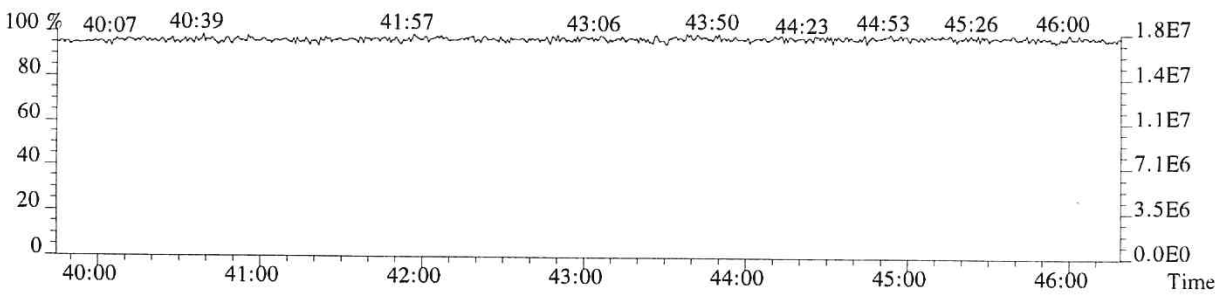
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,292.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,368.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



058879

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0062

Run #14 Filename P616134 Samp: 1 Inj: 1 Acquired: 19-DEC-18 22:50:40
Processed: 20-DEC-18 15:56:46 Sample ID: E1801096-004

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:20	2.739e+05	3.505e+05	0.78	yes	yes	1.081
2	Unk	1,2,3,7,8-PeCDF	31:03	1.268e+04	8.282e+03	1.53	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:03	1.269e+04	8.243e+03	1.54	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:50	1.741e+04	1.435e+04	1.21	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	5.180e+03	3.989e+03	1.30	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	2.730e+03	2.234e+03	1.22	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:15	1.967e+03	1.647e+03	1.19	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:29	4.056e+04	4.016e+04	1.01	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:48	4.103e+03	3.946e+03	1.04	yes	no	1.463
10	Unk	OCDF	41:04	7.720e+05	8.655e+05	0.89	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:15	6.811e+04	8.627e+04	0.79	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	1.613e+03	1.196e+03	1.35	yes	yes	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:36	9.702e+02	7.398e+02	1.31	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	3.607e+03	2.772e+03	1.30	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	2.141e+03	1.670e+03	1.28	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:22	8.216e+04	7.861e+04	1.05	yes	no	1.112
17	Unk	OCDD	40:53	7.546e+05	8.429e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:18	6.838e+04	8.610e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:02	1.072e+05	6.748e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:02	9.775e+04	6.149e+04	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	4.616e+04	8.772e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:56	4.933e+04	9.395e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:27	4.702e+04	8.851e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:13	4.524e+04	8.621e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:29	3.129e+04	6.915e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	3.034e+04	6.632e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:14	3.435e+04	4.417e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:19	7.462e+04	4.881e+04	1.53	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	6.551e+04	5.159e+04	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:41	5.708e+04	4.530e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	6.260e+04	5.943e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:52	5.302e+04	5.838e+04	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:32	7.923e+04	9.940e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:55	1.121e+05	8.801e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:15	4.857e+04				no	1.086

$$\text{OCDD} = \frac{(7.546e+05 + 8.429e+05) \times 4000\ \text{pg} \times 1}{(5.302e+04 + 5.838e+04) \times 10.241\ \text{g} \times 70.4 / 100 \times 1.157} = 6870\ \text{ng/kg}$$

6870 12/24/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0062

Run #14 Filename P616134 Samp: 1 Inj: 1 Acquired: 19-DEC-18 22:50:40
Processed: 20-DEC-18 15:56:46 LAB. ID: E1801096-004

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	4.19e+07	2.73e+03	1.5e+04	5.31e+07	2.89e+03	1.8e+04
2	1,2,3,7,8-PeCDF	2.41e+06	3.03e+04	8.0e+01	1.61e+06	5.42e+03	3.0e+02
3	2,3,4,7,8-PeCDF	2.02e+06	3.03e+04	6.7e+01	1.29e+06	5.42e+03	2.4e+02
4	1,2,3,4,7,8-HxCDF	3.70e+06	1.04e+04	3.6e+02	3.02e+06	1.24e+04	2.4e+02
5	1,2,3,6,7,8-HxCDF	1.11e+06	1.04e+04	1.1e+02	8.68e+05	1.24e+04	7.0e+01
6	2,3,4,6,7,8-HxCDF	6.04e+05	1.04e+04	5.8e+01	4.91e+05	1.24e+04	4.0e+01
7	1,2,3,7,8,9-HxCDF	4.21e+05	1.04e+04	4.0e+01	3.38e+05	1.24e+04	2.7e+01
8	1,2,3,4,6,7,8-HpCDF	9.40e+06	9.70e+03	9.7e+02	9.22e+06	2.45e+04	3.8e+02
9	1,2,3,4,7,8,9-HpCDF	9.57e+05	9.70e+03	9.9e+01	9.00e+05	2.45e+04	3.7e+01
10	OCDF	1.53e+08	2.36e+03	6.5e+04	1.75e+08	2.56e+03	6.8e+04
11	2,3,7,8-TCDD	1.21e+07	2.65e+03	4.6e+03	1.53e+07	2.01e+03	7.6e+03
12	1,2,3,7,8-PeCDD	2.92e+05	2.42e+03	1.2e+02	1.84e+05	1.39e+04	1.3e+01
13	1,2,3,4,7,8-HxCDD	2.20e+05	3.64e+03	6.0e+01	1.66e+05	3.22e+03	5.2e+01
14	1,2,3,6,7,8-HxCDD	7.89e+05	3.64e+03	2.2e+02	6.08e+05	3.22e+03	1.9e+02
15	1,2,3,7,8,9-HxCDD	4.87e+05	3.64e+03	1.3e+02	3.78e+05	3.22e+03	1.2e+02
16	1,2,3,4,6,7,8-HpCDD	2.01e+07	1.16e+04	1.7e+03	1.92e+07	3.29e+04	5.8e+02
17	OCDD	1.58e+08	2.32e+03	6.8e+04	1.77e+08	4.36e+03	4.0e+04
18	13C-2,3,7,8-TCDF	1.08e+07	6.34e+03	1.7e+03	1.35e+07	5.16e+03	2.6e+03
19	13C-1,2,3,7,8-PeCDF	2.00e+07	4.57e+04	4.4e+02	1.26e+07	2.92e+04	4.3e+02
20	13C-2,3,4,7,8-PeCDF	1.88e+07	4.57e+04	4.1e+02	1.19e+07	2.92e+04	4.1e+02
21	13C-1,2,3,4,7,8-HxCDF	9.85e+06	2.19e+03	4.5e+03	1.93e+07	1.83e+04	1.1e+03
22	13C-1,2,3,6,7,8-HxCDF	1.06e+07	2.19e+03	4.8e+03	2.01e+07	1.83e+04	1.1e+03
23	13C-2,3,4,6,7,8-HxCDF	1.07e+07	2.19e+03	4.9e+03	2.02e+07	1.83e+04	1.1e+03
24	13C-1,2,3,7,8,9-HxCDF	1.03e+07	2.19e+03	4.7e+03	1.95e+07	1.83e+04	1.1e+03
25	13C-1,2,3,4,6,7,8-HpCDF	7.12e+06	1.24e+04	5.7e+02	1.59e+07	9.06e+03	1.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.84e+06	1.24e+04	5.5e+02	1.51e+07	9.06e+03	1.7e+03
27	13C-2,3,7,8-TCDD	6.10e+06	8.82e+03	6.9e+02	7.84e+06	6.96e+03	1.1e+03
28	13C-1,2,3,7,8-PeCDD	1.43e+07	8.12e+03	1.8e+03	9.51e+06	2.32e+03	4.1e+03
29	13C-1,2,3,4,7,8-HxCDD	1.46e+07	3.74e+03	3.9e+03	1.14e+07	2.36e+03	4.8e+03
30	13C-1,2,3,6,7,8-HxCDD	1.29e+07	3.74e+03	3.4e+03	1.02e+07	2.36e+03	4.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.52e+07	5.46e+03	2.8e+03	1.45e+07	5.28e+03	2.7e+03
32	13C-OCDD	1.11e+07	4.94e+03	2.2e+03	1.22e+07	2.40e+03	5.1e+03
33	13C-1,2,3,4-TCDD	1.28e+07	8.82e+03	1.5e+03	1.62e+07	6.96e+03	2.3e+03
34	13C-1,2,3,7,8,9-HxCDD	2.56e+07	3.74e+03	6.9e+03	2.01e+07	2.36e+03	8.5e+03
35	37Cl-2,3,7,8-TCDD	8.58e+06	1.92e+03	4.5e+03			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0062

Entry: 36 Totals Name: Total Tetra-Furans

Run: 14 File: P616134 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 22:50:40 Processed: 20-DEC-18 15:56:46

Mass: 303.9020 305.8990 Tot Response: 1.18e+06 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:06	1.10e+03	1.42e+03	0.77	yes	2.52e+03		n	n
2	22:35	2.67e+03	3.41e+03	0.78	yes	6.09e+03		n	n
3	23:03	3.90e+03	5.25e+03	0.74	yes	9.15e+03		n	n
4	23:20	1.43e+04	1.81e+04	0.79	yes	3.24e+04		n	n
5	23:43	5.13e+03	7.02e+03	0.73	yes	1.22e+04		n	n
6	24:01	1.12e+04	1.43e+04	0.78	yes	2.55e+04		n	n
7	24:25	3.00e+03	3.87e+03	0.78	yes	6.88e+03		n	n
8	24:42	8.33e+03	1.11e+04	0.75	yes	1.95e+04		n	n
9	24:47	1.29e+04	1.66e+04	0.78	yes	2.95e+04		n	n
10	25:18	1.14e+05	1.45e+05	0.78	yes	2.59e+05		n	n
11	25:37	5.58e+03	7.11e+03	0.79	yes	1.27e+04		n	n
12	26:05	2.48e+03	3.18e+03	0.78	yes	5.65e+03		n	n
13	26:12	1.40e+04	1.79e+04	0.78	yes	3.18e+04		y	y
14	26:20	2.74e+05	3.51e+05	0.78	yes	6.24e+05	2,3,7,8-TCDF	y	y
15	26:43	2.12e+04	2.67e+04	0.80	yes	4.79e+04		n	n
16	26:59	3.20e+03	3.90e+03	0.82	yes	7.10e+03		n	n
17	28:27	1.96e+04	2.42e+04	0.81	yes	4.38e+04		n	n

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058882

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0062

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 14 File: P616134 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 22:50:40 Processed: 20-DEC-18 15:56:46

Mass: 319.8970 321.8940 Tot Response: 1.74e+05 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:20	9.99e+02	1.29e+03	0.78	yes	2.28e+03		n	n
2	24:55	7.15e+02	1.04e+03	0.69	yes	1.75e+03		n	n
3	25:25	3.04e+02	4.37e+02	0.69	yes	7.40e+02		n	n
4	26:57	9.84e+02	1.35e+03	0.73	yes	2.33e+03		n	n
5	27:15	6.81e+04	8.63e+04	0.79	yes	1.54e+05	2,3,7,8-TCDD	n	n
6	27:36	5.46e+03	7.29e+03	0.75	yes	1.27e+04		n	n

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Peak List Summary

CLIENT ID.
SL0062

Entry: 38 Totals Name: Total Penta-Furans1

Run: 14 File: P616134 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 22:50:40 Processed: 20-DEC-18 15:56:46

Mass: 339.8600 341.8570 Tot Response: 2.36e+04 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:23	1.44e+04	9.14e+03 1.58	yes	2.36e+04		n	n
2	29:25	3.91e+01	2.42e+01 1.62	yes	6.33e+01		n	n

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Peak List Summary

CLIENT ID.
SL0062

Entry: 39 Totals Name: Total Penta-Furans2

Run: 14 File: P616134 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 22:50:40 Processed: 20-DEC-18 15:56:46

Mass: 339.8600 341.8570 Tot Response: 8.78e+04 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:54	1.48e+03	1.10e+03	1.34	yes	2.58e+03		n	n
2	30:02	1.41e+04	9.08e+03	1.55	yes	2.32e+04		n	n
3	30:38	3.77e+03	2.77e+03	1.36	yes	6.54e+03		n	n
4	30:52	2.25e+03	1.50e+03	1.50	yes	3.76e+03		n	n
5	31:03	1.27e+04	8.28e+03	1.53	yes	2.10e+04	1,2,3,7,8-PeCDF	n	n
6	31:19	5.04e+03	3.25e+03	1.55	yes	8.29e+03		n	n
7	32:03	1.27e+04	8.24e+03	1.54	yes	2.09e+04	2,3,4,7,8-PeCDF	n	n
8	32:50	2.50e+02	1.59e+02	1.57	yes	4.08e+02		n	n
9	32:59	6.66e+02	4.68e+02	1.42	yes	1.13e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0062

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 14 File: P616134 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 22:50:40 Processed: 20-DEC-18 15:56:46

Mass: 355.8550 357.8520 Tot Response: 1.15e+04 RRF: 0.9288

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:05	2.43e+03	1.49	yes	4.05e+03		n	n
2	31:04	1.21e+03	1.43	yes	2.06e+03		n	n
3	31:15	7.76e+02	1.42	yes	1.32e+03		n	y
4	31:20	5.17e+02	1.39	yes	8.88e+02		n	y
5	32:20	1.61e+03	1.35	yes	2.81e+03	1,2,3,7,8-PeCDD	y	y
6	32:44	2.54e+02	1.52e+02	1.68	yes	4.06e+02	n	y

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Peak List Summary

CLIENT ID.
SL0062

Entry: 41 Totals Name: Total Hexa-Furans

Run: 14 File: P616134 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 22:50:40 Processed: 20-DEC-18 15:56:46

Mass: 373.8210 375.8180 Tot Response: 1.12e+05 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:40	4.36e+03	3.64e+03	1.20	yes	8.00e+03		n	n
2	33:50	1.42e+04	1.12e+04	1.26	yes	2.54e+04		n	n
3	34:12	7.07e+02	6.28e+02	1.13	yes	1.34e+03		n	n
4	34:23	1.45e+04	1.19e+04	1.22	yes	2.64e+04		n	n
5	34:50	1.74e+04	1.44e+04	1.21	yes	3.18e+04	1,2,3,4,7,8-HxCDF	n	n
6	34:56	5.18e+03	3.99e+03	1.30	yes	9.17e+03	1,2,3,6,7,8-HxCDF	n	n
7	35:12	1.01e+03	7.52e+02	1.34	yes	1.76e+03		n	n
8	35:27	2.73e+03	2.23e+03	1.22	yes	4.96e+03	2,3,4,6,7,8-HxCDF	n	n
9	36:15	1.97e+03	1.65e+03	1.19	yes	3.61e+03	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0062

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 14 File: P616134 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 22:50:40 Processed: 20-DEC-18 15:56:46

Mass: 389.8160 391.8130 Tot Response: 7.32e+04 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:12	1.65e+04	1.33e+04	1.24	yes	2.98e+04		n	n
2	34:45	3.22e+03	2.56e+03	1.26	yes	5.78e+03		n	n
3	35:00	1.22e+04	9.62e+03	1.27	yes	2.18e+04		n	n
4	35:06	1.20e+03	9.17e+02	1.31	yes	2.12e+03		n	n
5	35:36	9.70e+02	7.40e+02	1.31	yes	1.71e+03	1,2,3,4,7,8-HxCDD	n	n
6	35:41	3.61e+03	2.77e+03	1.30	yes	6.38e+03	1,2,3,6,7,8-HxCDD	n	n
7	35:51	1.01e+03	7.66e+02	1.32	yes	1.78e+03		n	n
8	35:55	2.14e+03	1.67e+03	1.28	yes	3.81e+03	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0062

Entry: 43 Totals Name: Total Hepta-Furans

Run: 14 File: P616134 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 22:50:40 Processed: 20-DEC-18 15:56:46

Mass: 407.7820 409.7790 Tot Response: 1.73e+05 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:29	4.06e+04	4.02e+04	1.01	yes	8.07e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	37:45	2.59e+03	2.48e+03	1.04	yes	5.07e+03		n	n
3	37:53	4.01e+04	3.87e+04	1.04	yes	7.88e+04		n	n
4	38:48	4.10e+03	3.95e+03	1.04	yes	8.05e+03	1,2,3,4,7,8,9-HpCDF	n	n

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Peak List Summary

CLIENT ID.
SL0062

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 14 File: P616134 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 22:50:40 Processed: 20-DEC-18 15:56:46

Mass: 423.7770 425.7740 Tot Response: 3.69e+05 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:44	1.06e+05	1.03e+05 1.03	yes	2.09e+05		n	n
2	38:22	8.22e+04	7.86e+04 1.05	yes	1.61e+05	1,2,3,4,6,7,8-HpCDD	n	n

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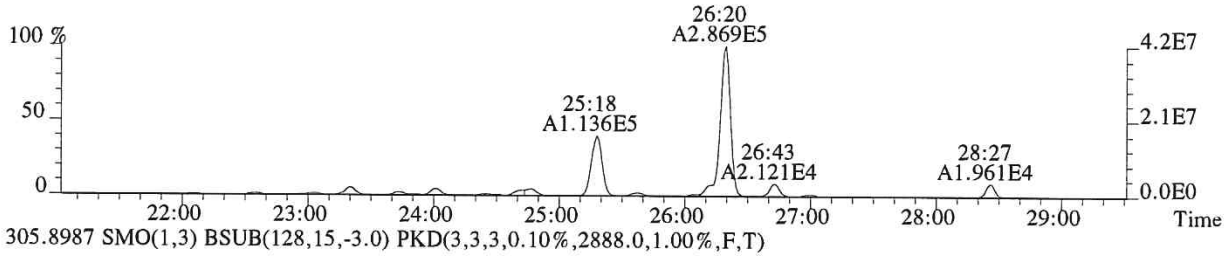
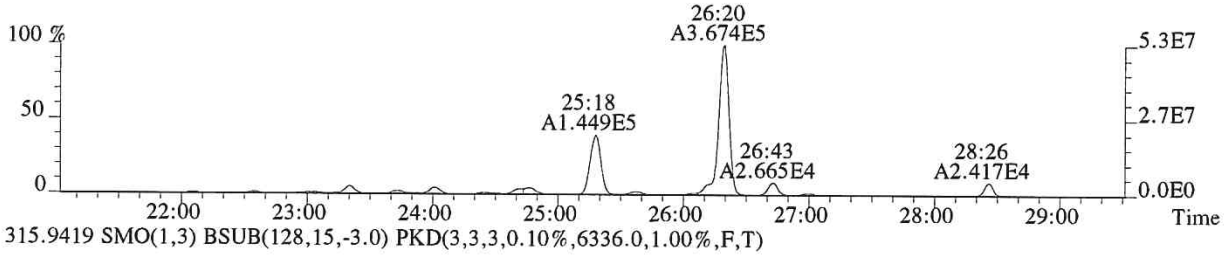
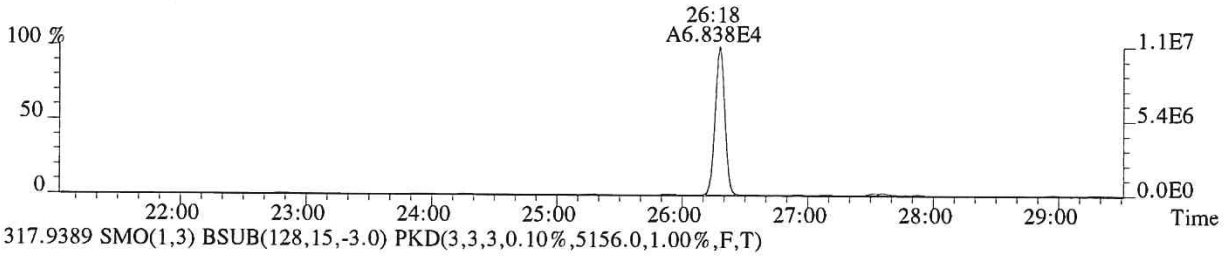
File:P616134 #1-602 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2728.0,1.00%,F,T)



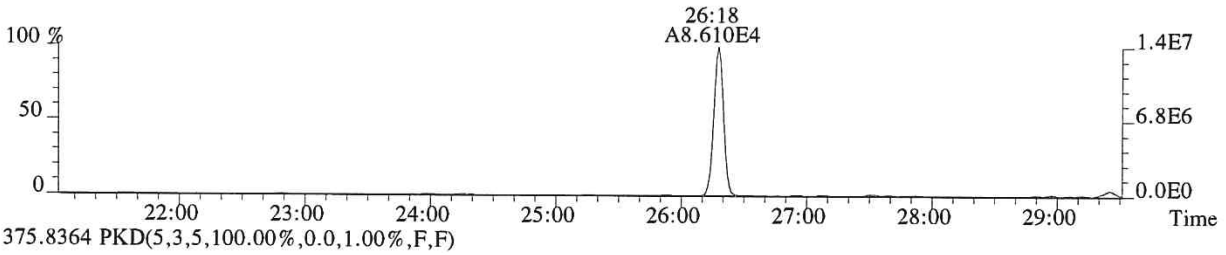
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2888.0,1.00%,F,T)



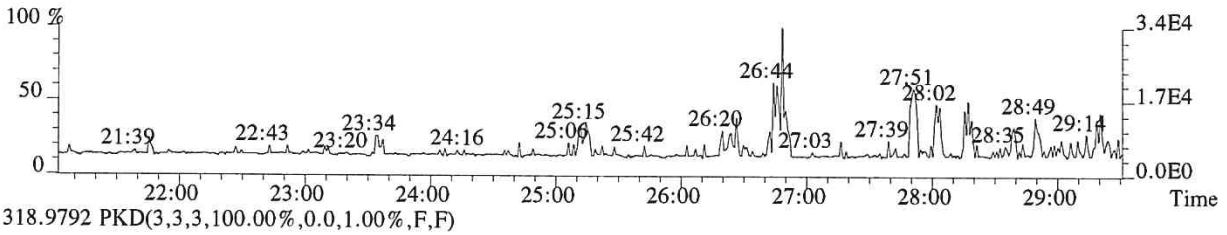
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6336.0,1.00%,F,T)



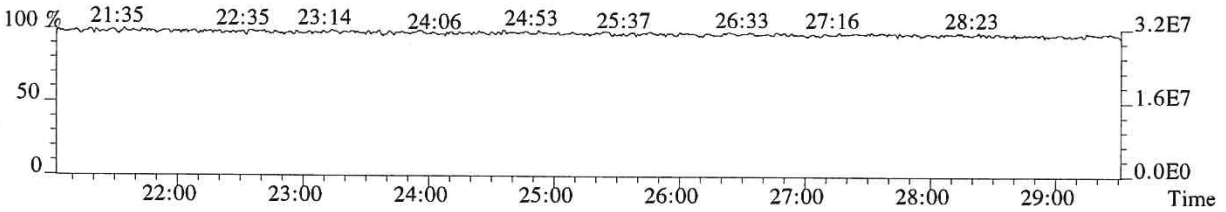
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5156.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

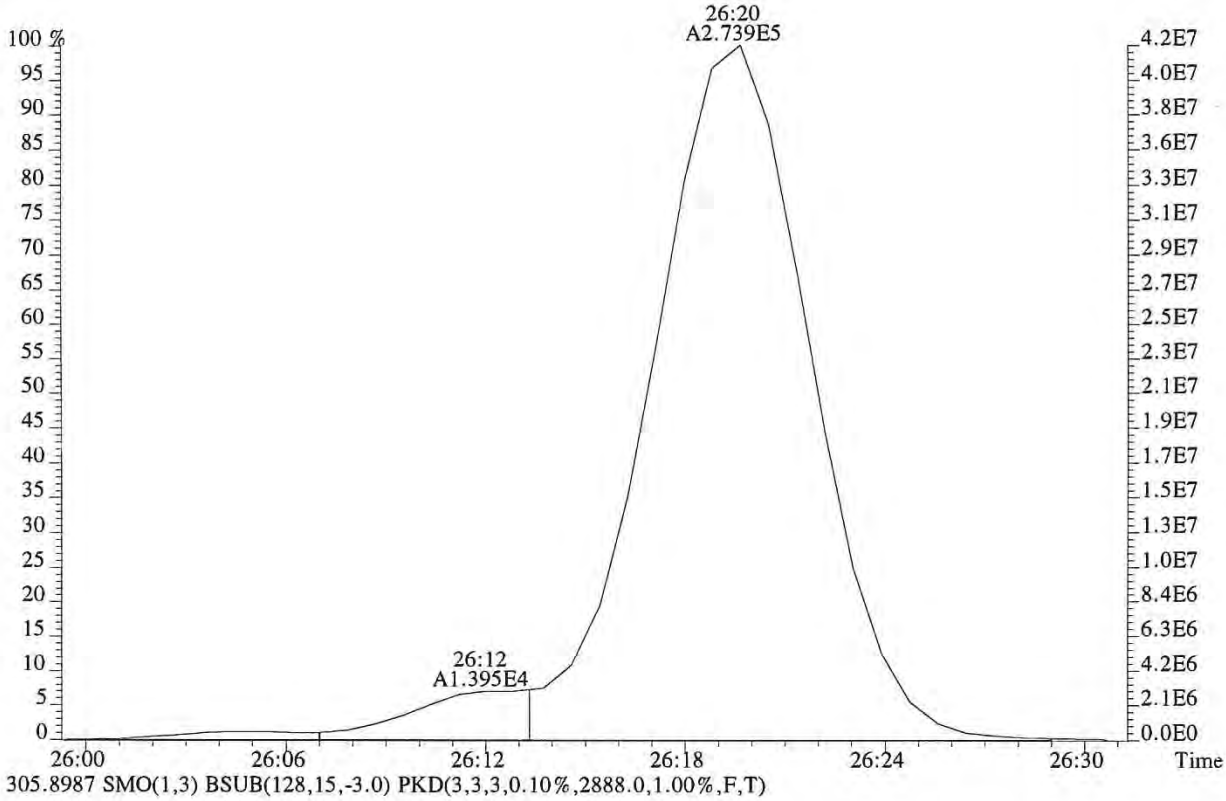


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

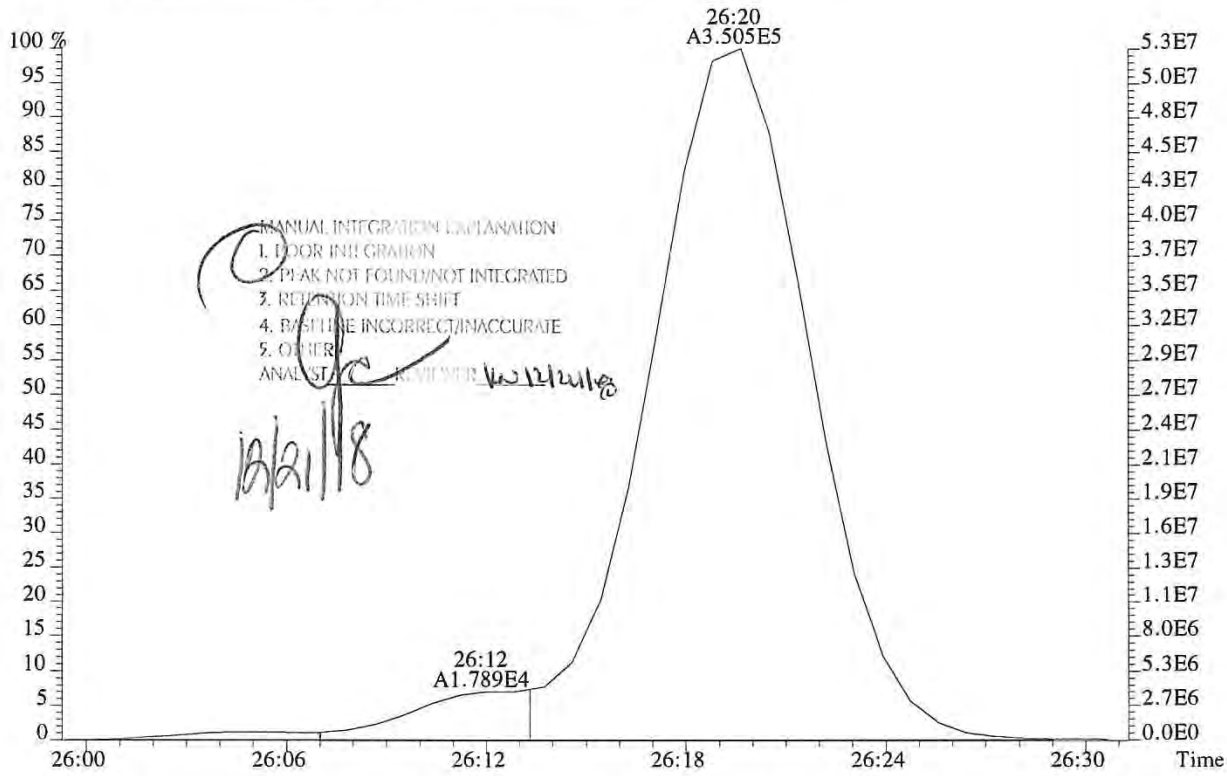


058891

File:P616134 #1-602 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2728.0,1.00%,F,T)



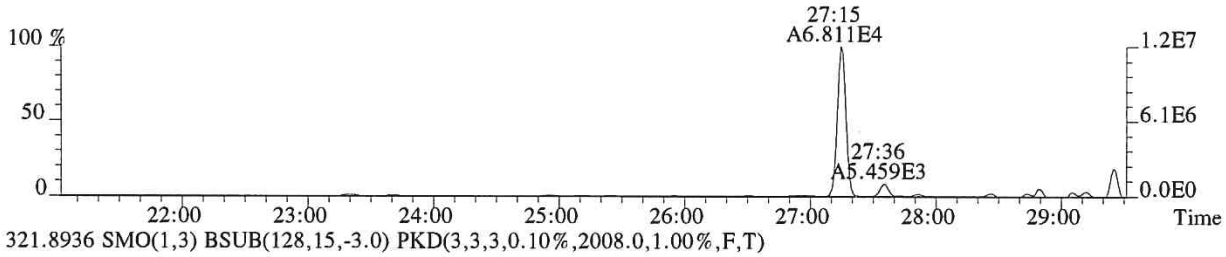
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2888.0,1.00%,F,T)



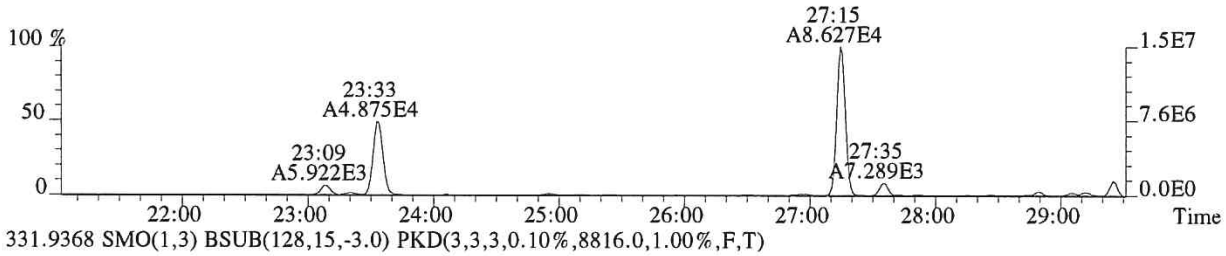
MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST
REVIEWER
12/21/18
12/21/18

058892

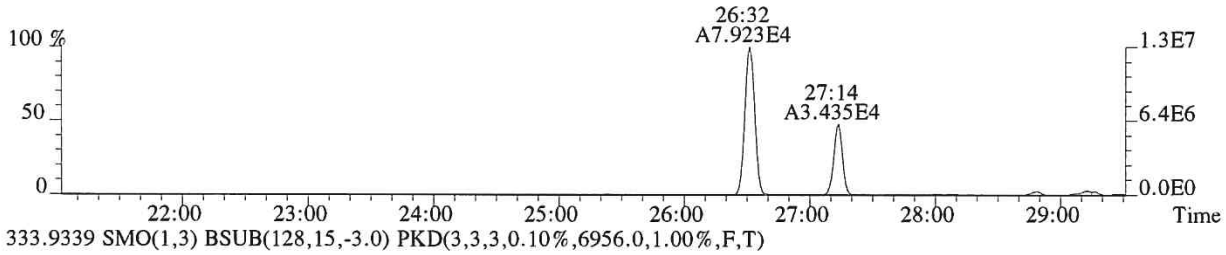
File:P616134 #1-602 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2648.0,1.00%,F,T)



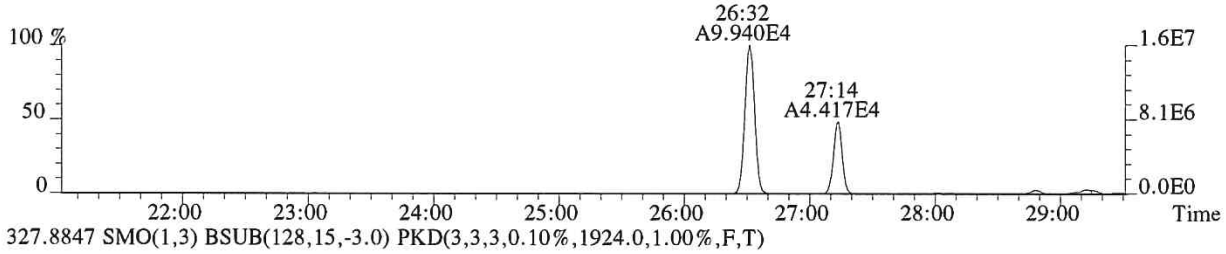
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2008.0,1.00%,F,T)



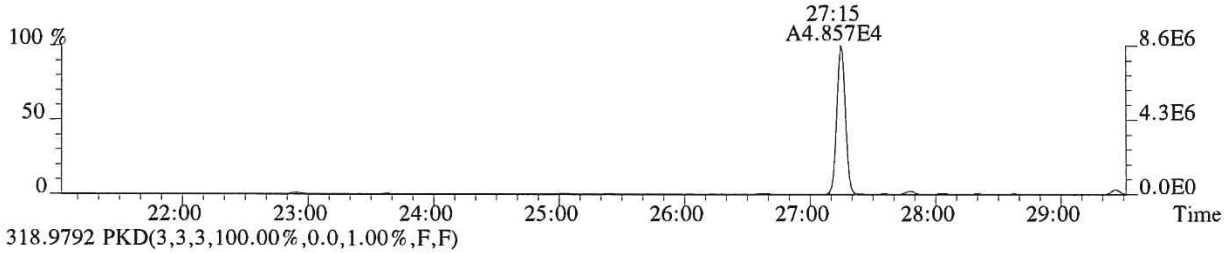
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8816.0,1.00%,F,T)



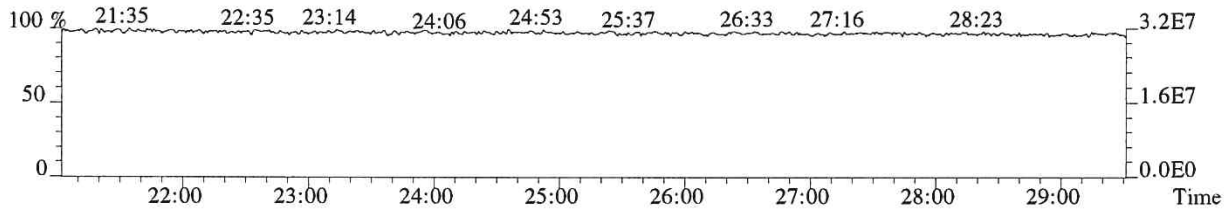
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6956.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1924.0,1.00%,F,T)

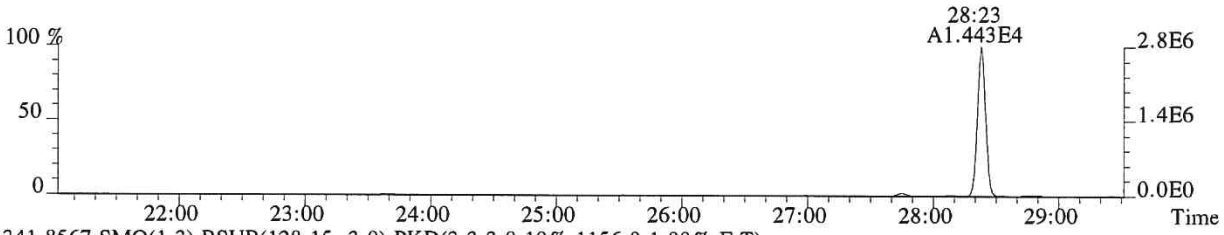


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

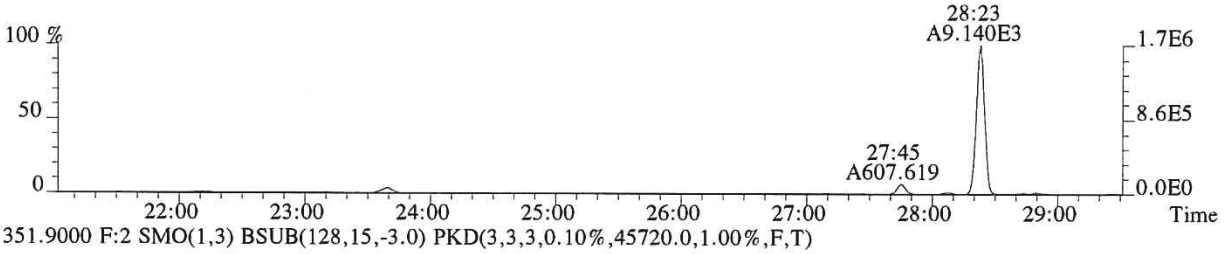


058893

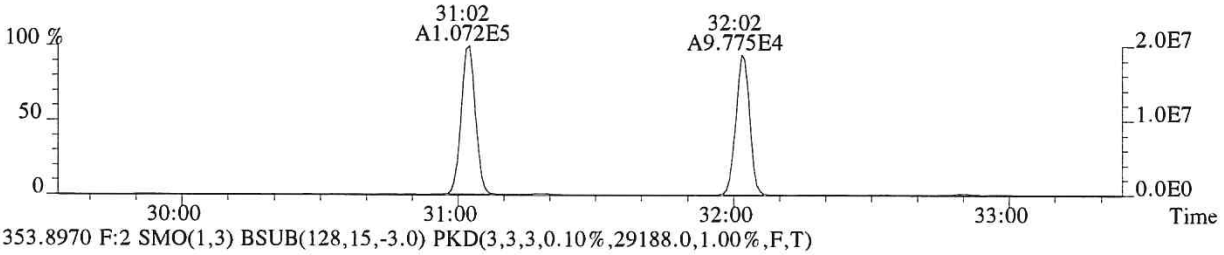
File:P616134 #1-602 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1156.0,1.00%,F,T)



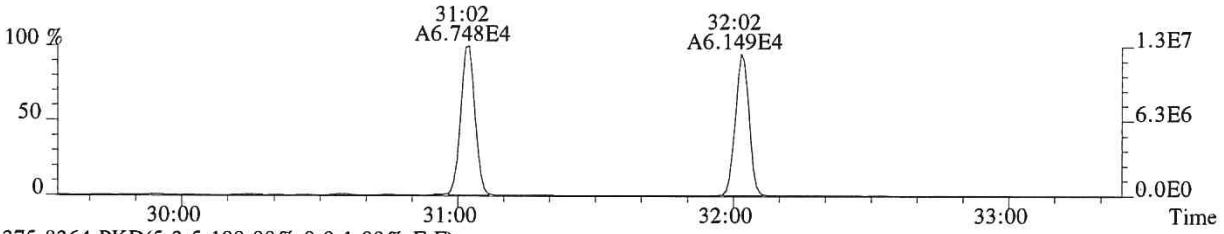
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1156.0,1.00%,F,T)



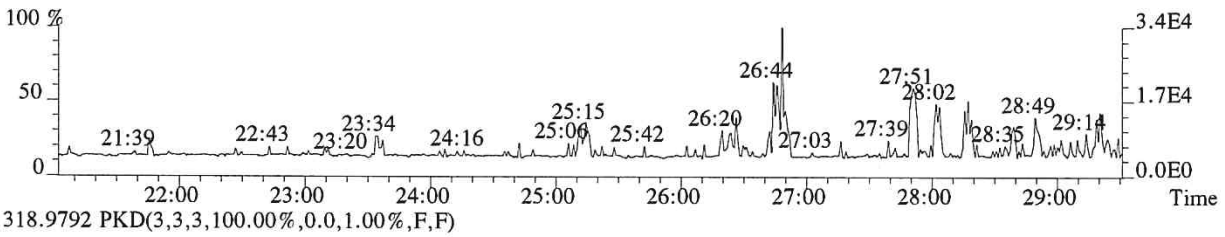
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,45720.0,1.00%,F,T)



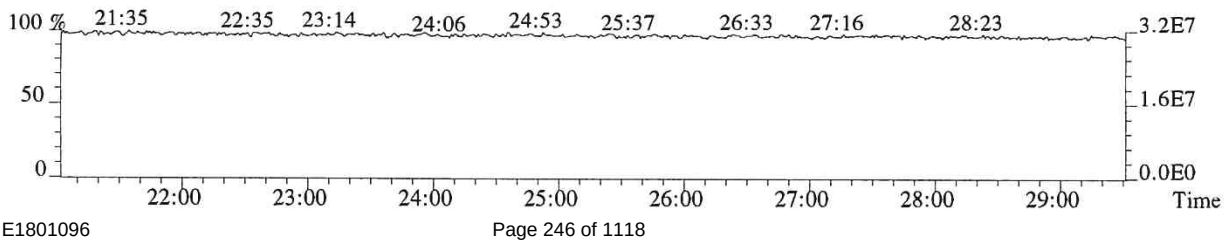
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,29188.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

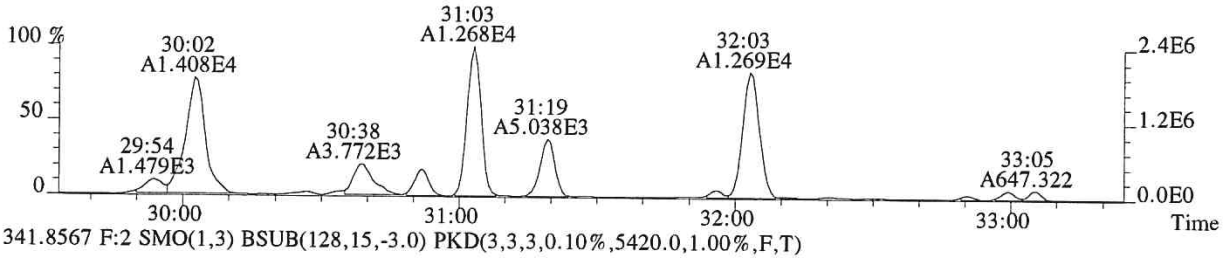


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

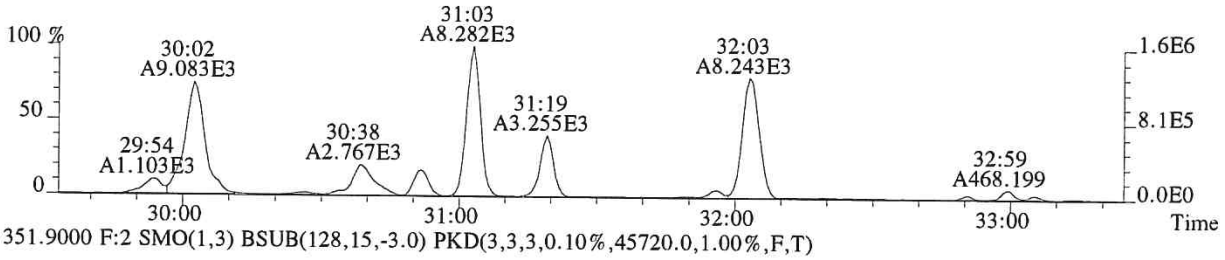


058894

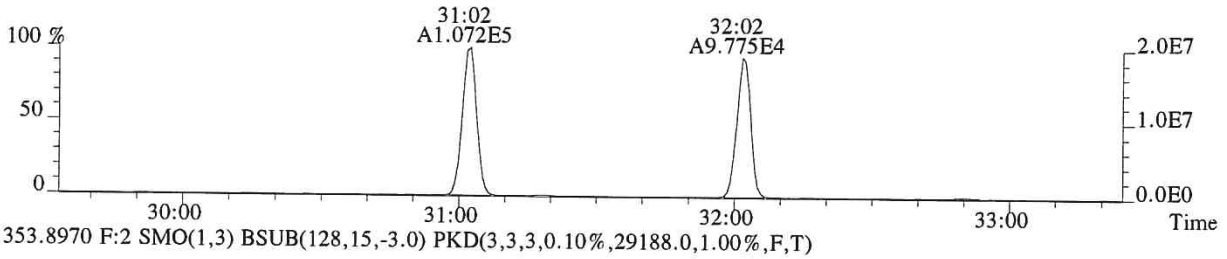
File:P616134 #1-348 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,30252.0,1.00%,F,T)



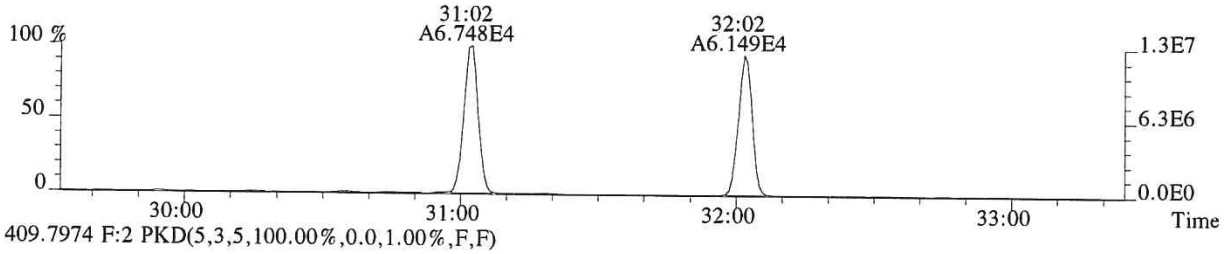
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5420.0,1.00%,F,T)



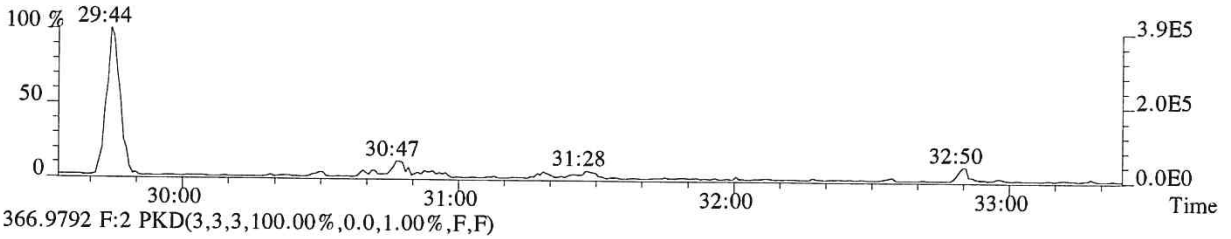
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,45720.0,1.00%,F,T)



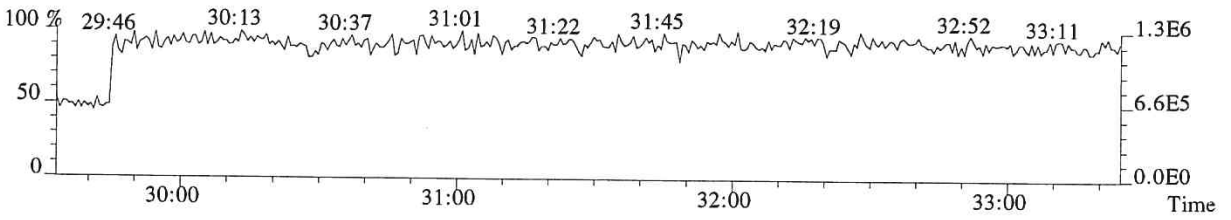
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,29188.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

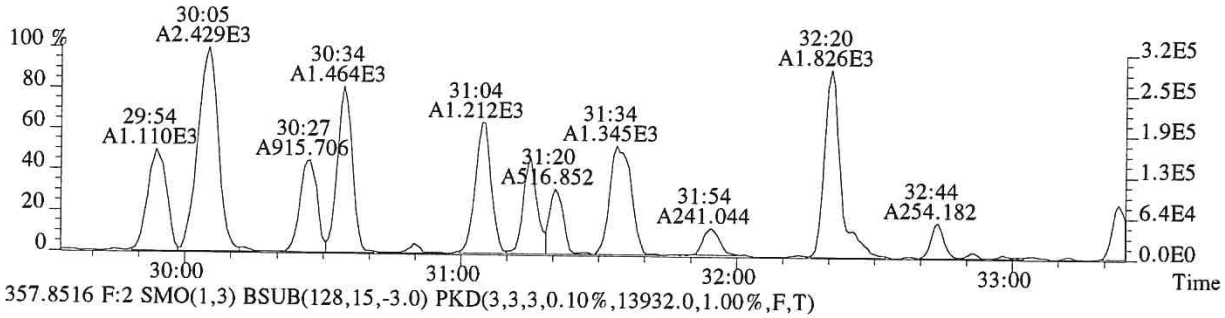


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

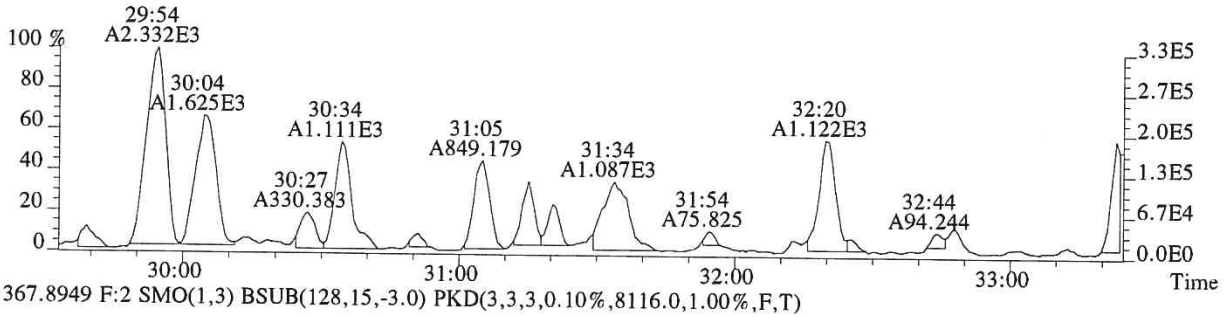


058895

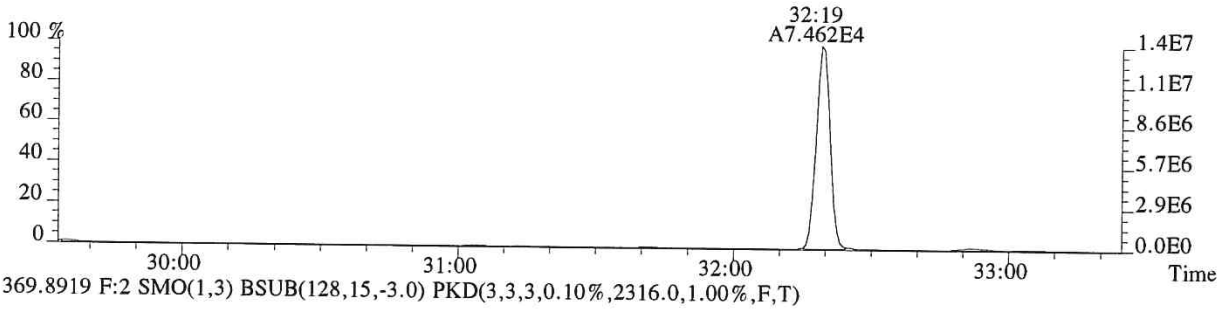
File:P616134 #1-348 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2420.0,1.00%,F,T)



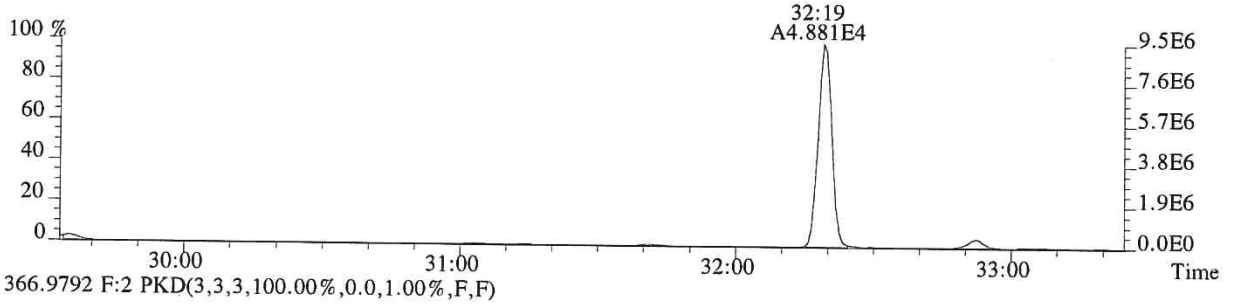
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13932.0,1.00%,F,T)



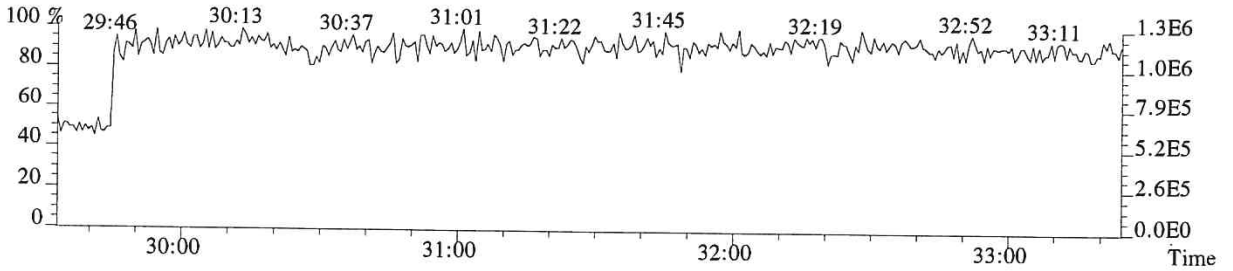
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8116.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2316.0,1.00%,F,T)

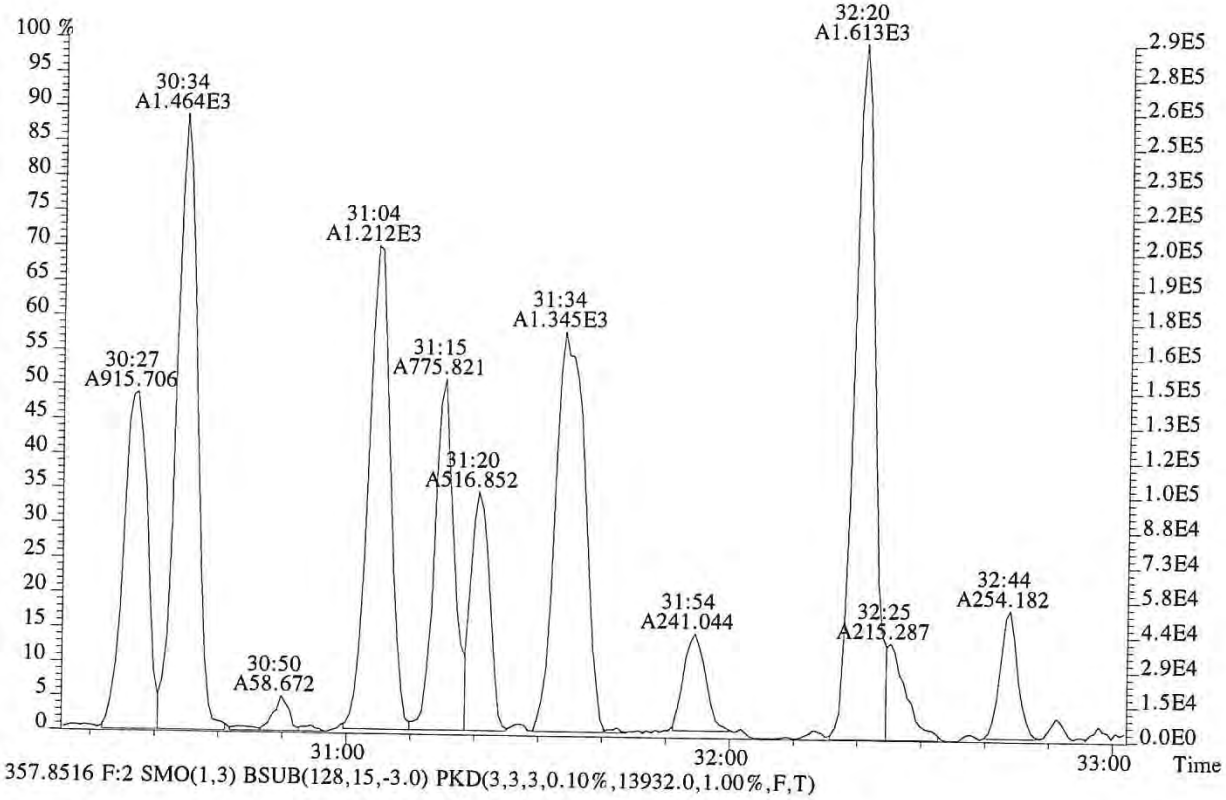


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

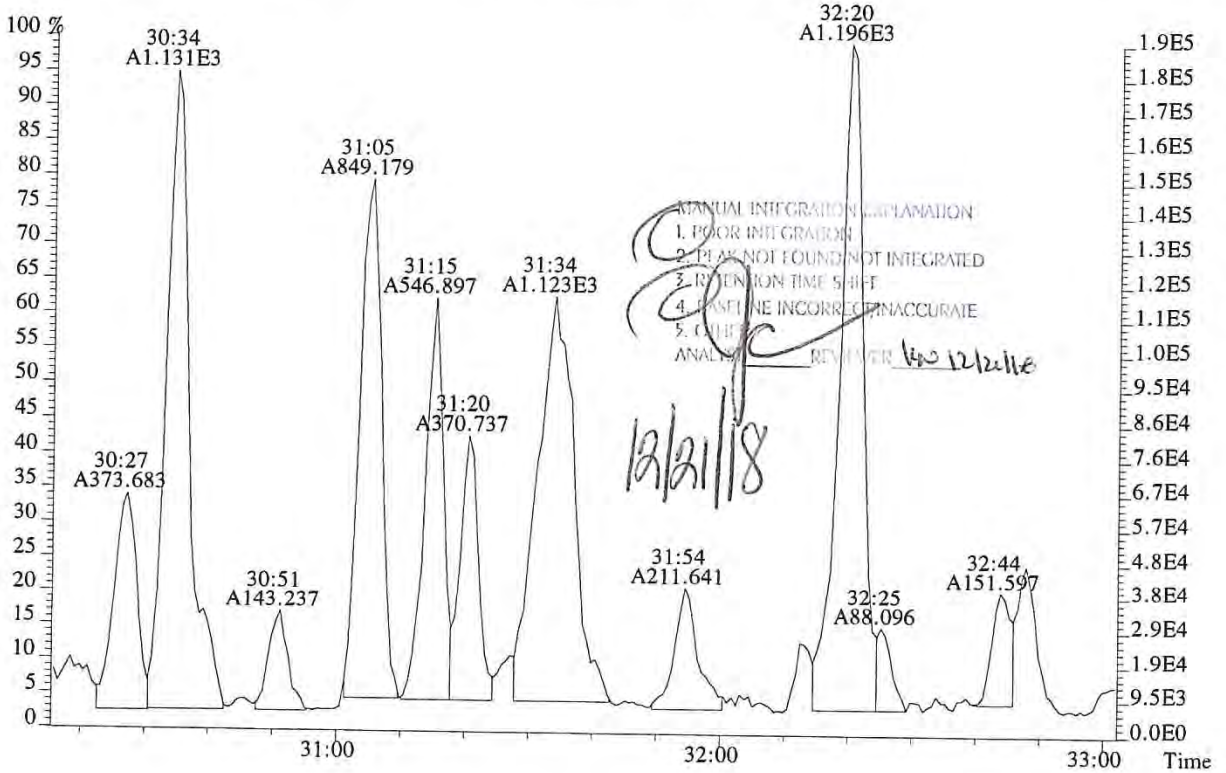


058896

File:P616134 #1-348 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2420.0,1.00%,F,T)



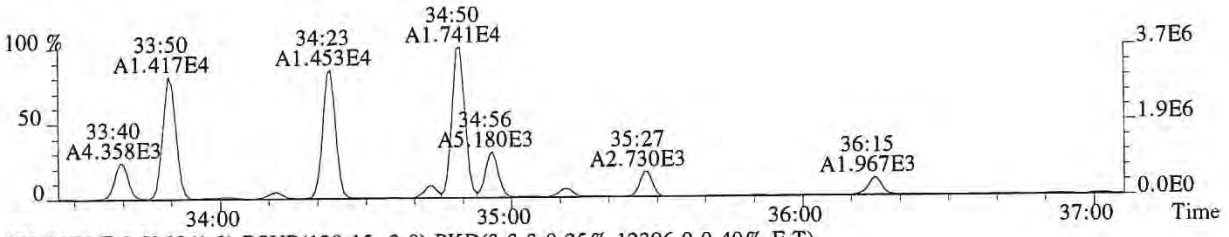
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13932.0,1.00%,F,T)



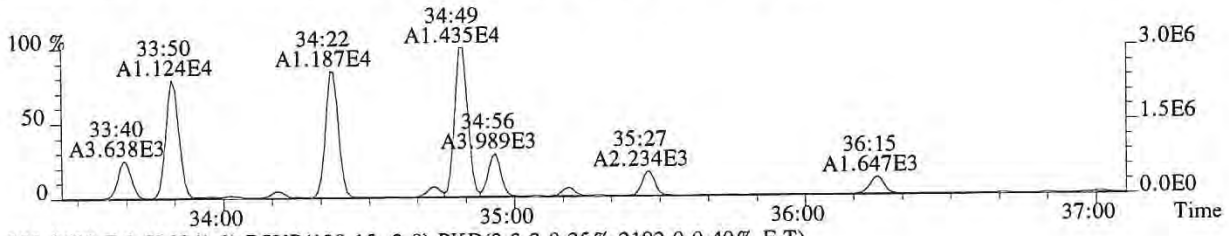
MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST REVIEWER 12/21/18
12/21/18

058897

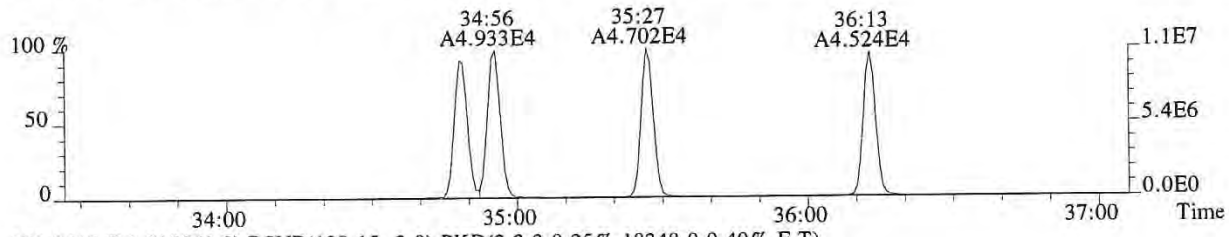
File:P616134 #1-330 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10416.0,0.40%,F,T)



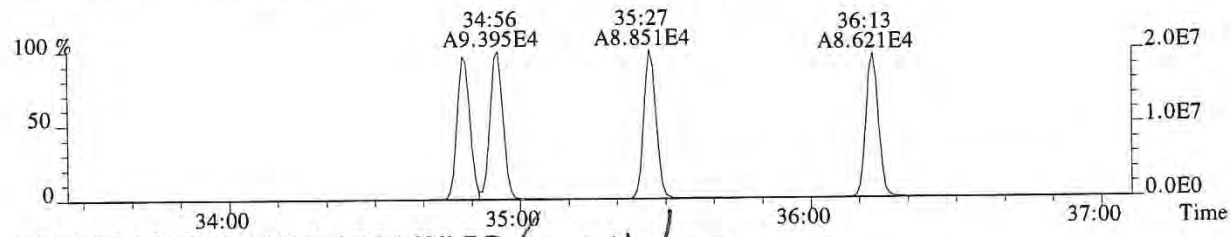
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12396.0,0.40%,F,T)



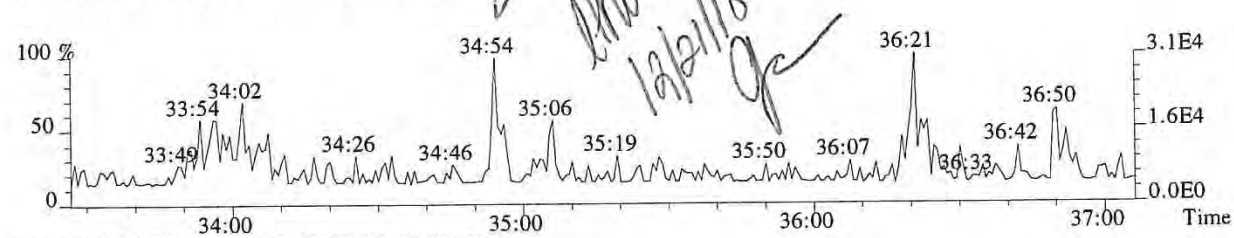
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2192.0,0.40%,F,T)



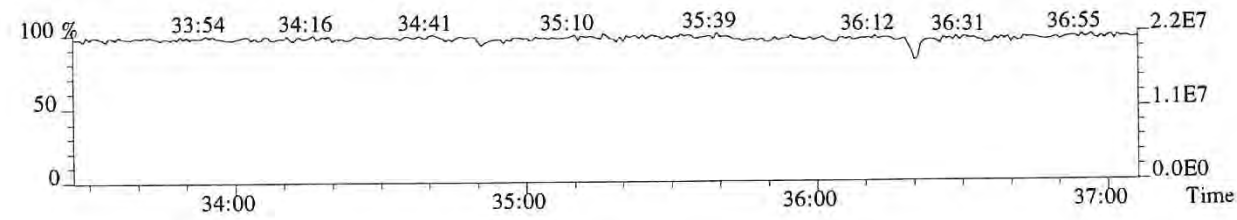
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,18348.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

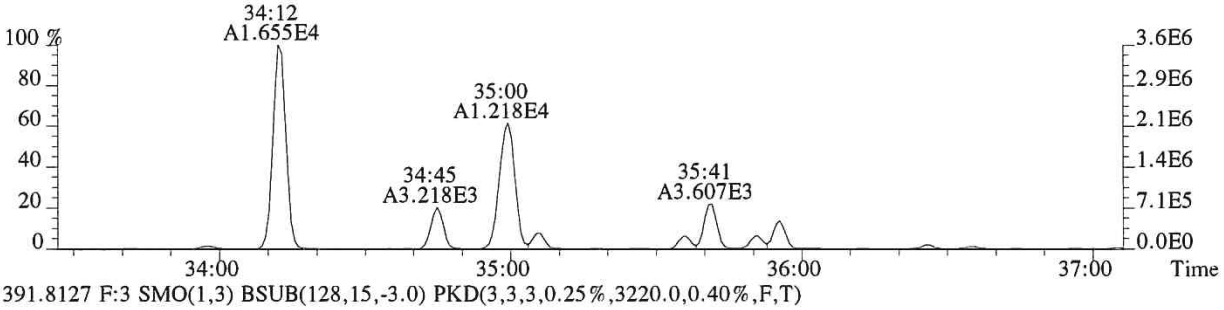


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

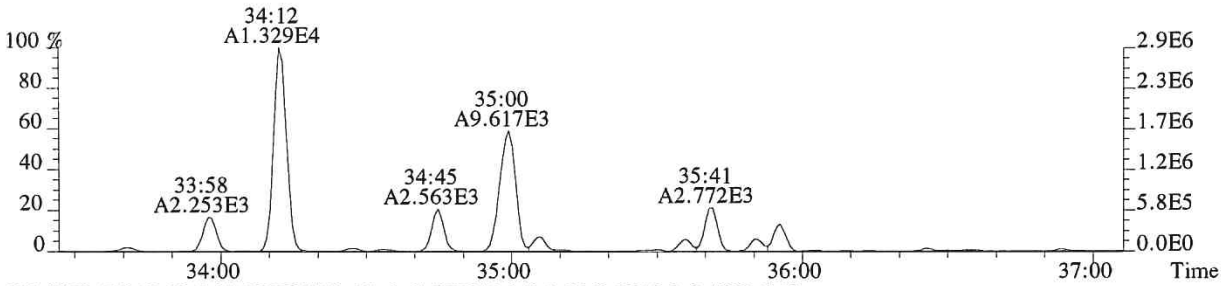


058898

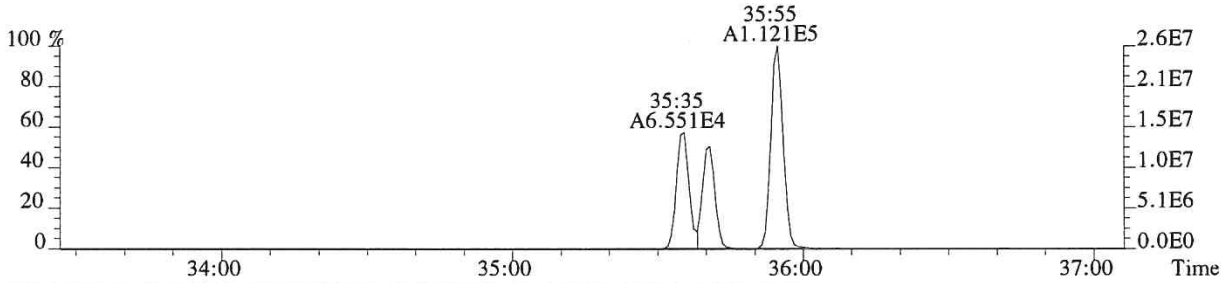
File:P616134 #1-330 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3644.0,0.40%,F,T)



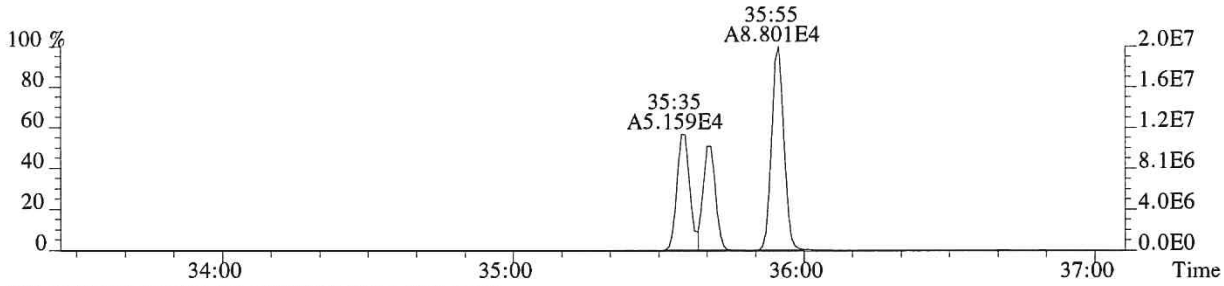
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3220.0,0.40%,F,T)



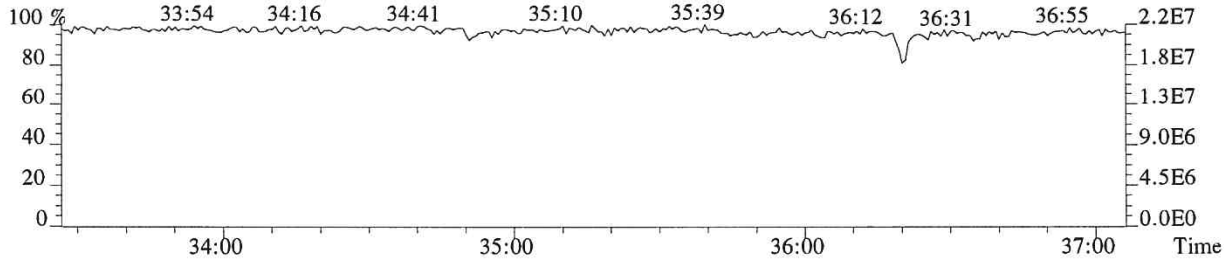
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3740.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2360.0,0.40%,F,T)

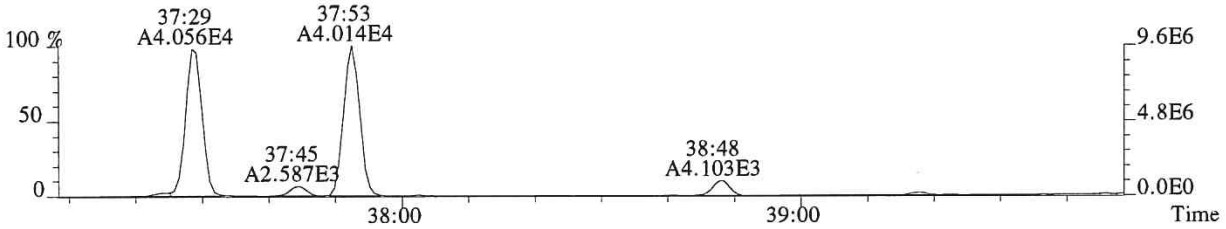


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

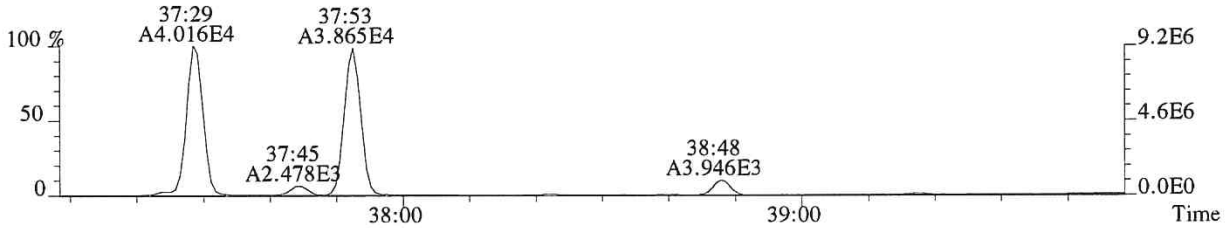


058899

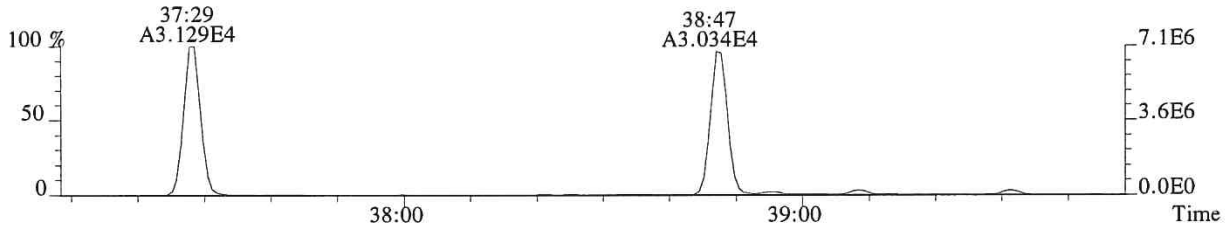
File:P616134 #1-241 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9704.0,0.50%,F,T)



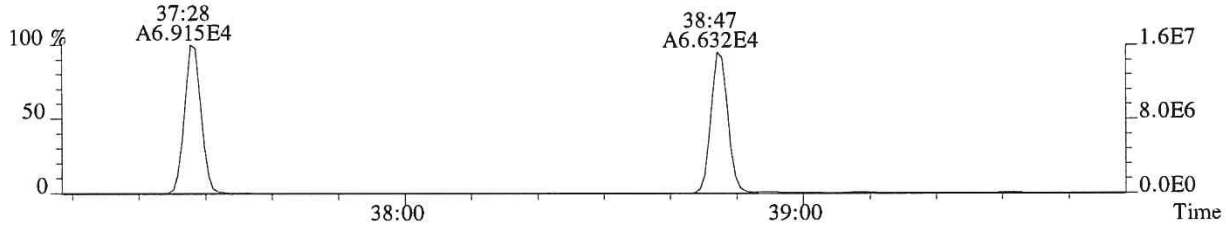
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,24524.0,0.50%,F,T)



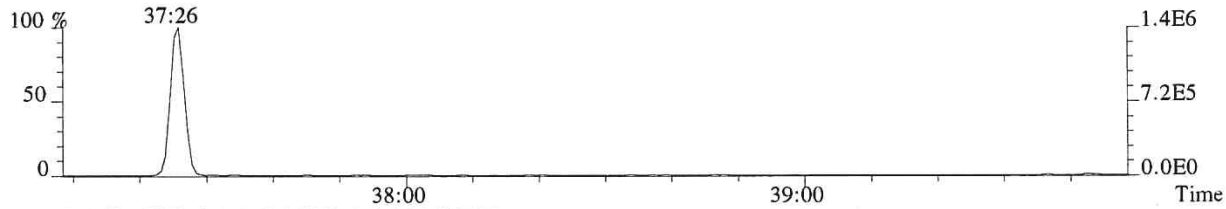
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12424.0,0.50%,F,T)



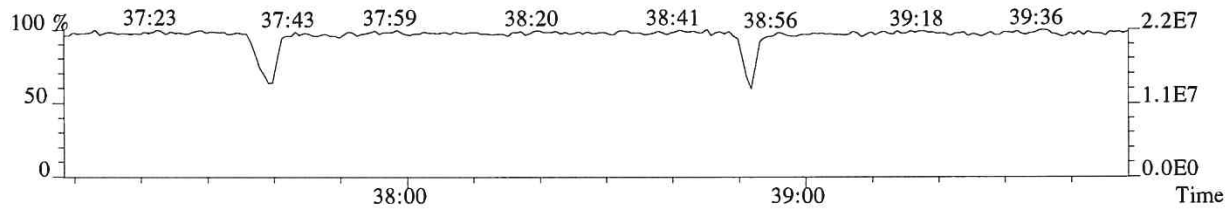
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9060.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

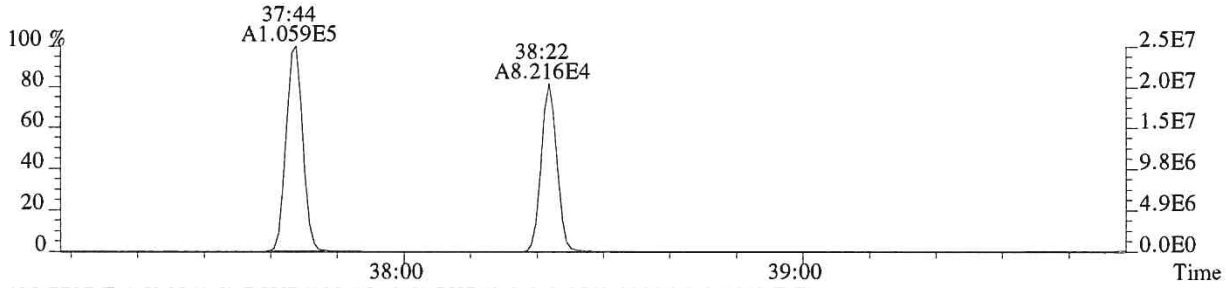


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

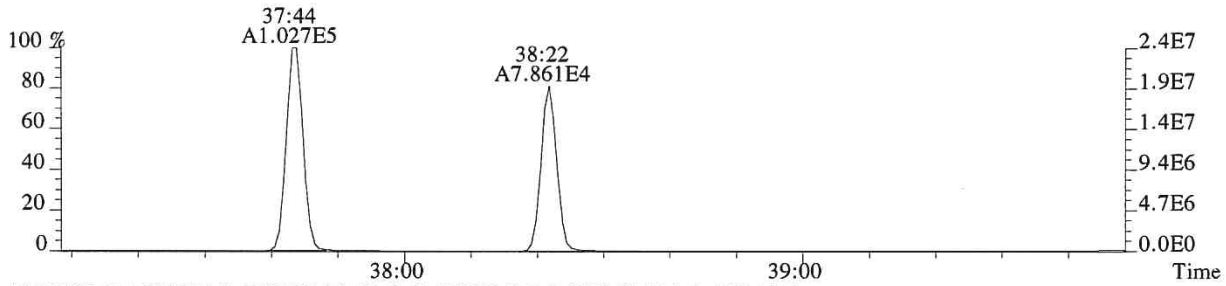


058900

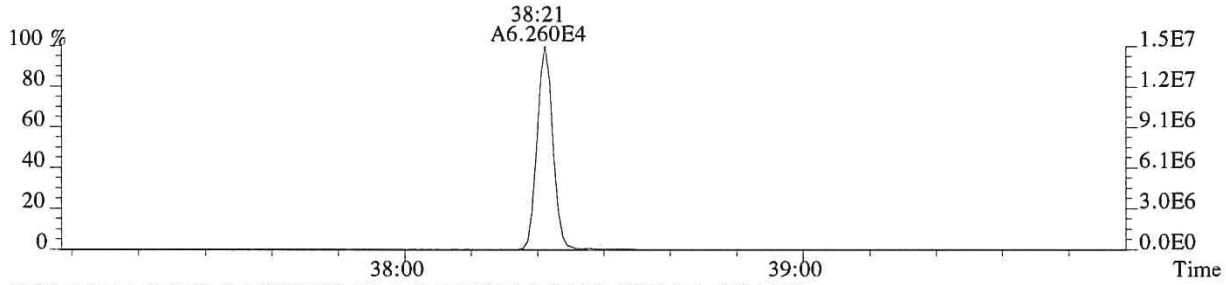
File:P616134 #1-241 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11560.0,0.40%,F,T)



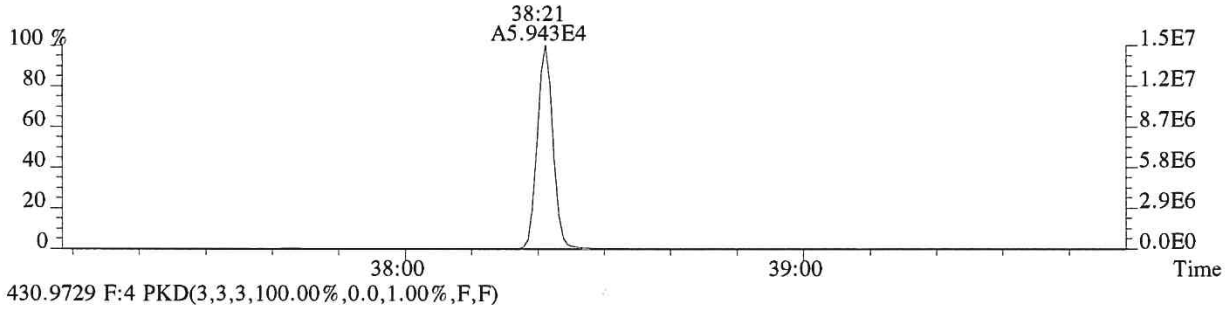
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,32936.0,0.40%,F,T)



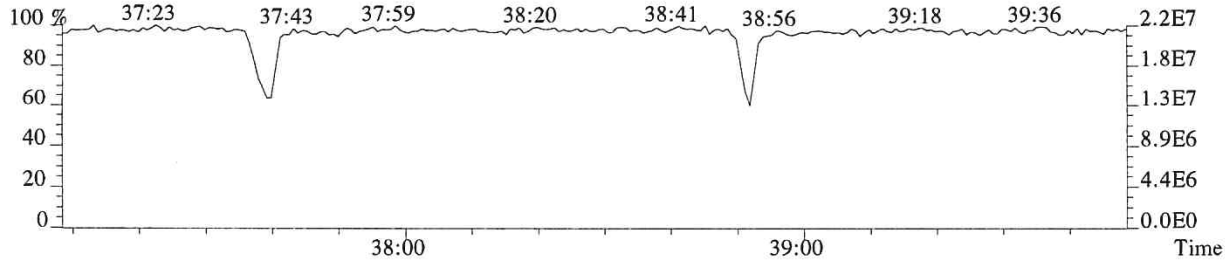
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5460.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5276.0,0.40%,F,T)

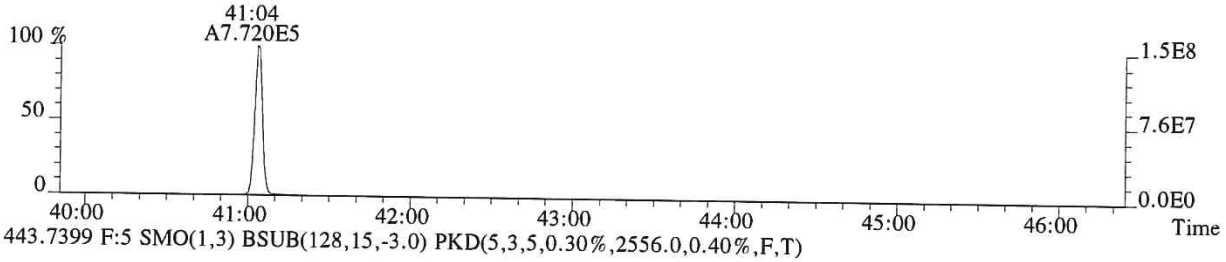


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

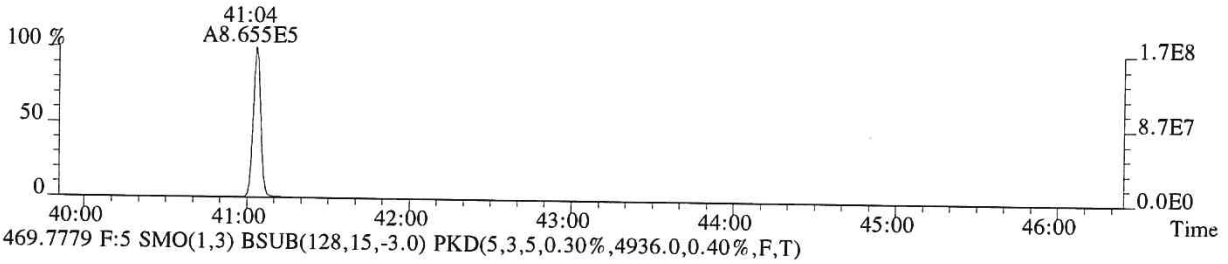


058901

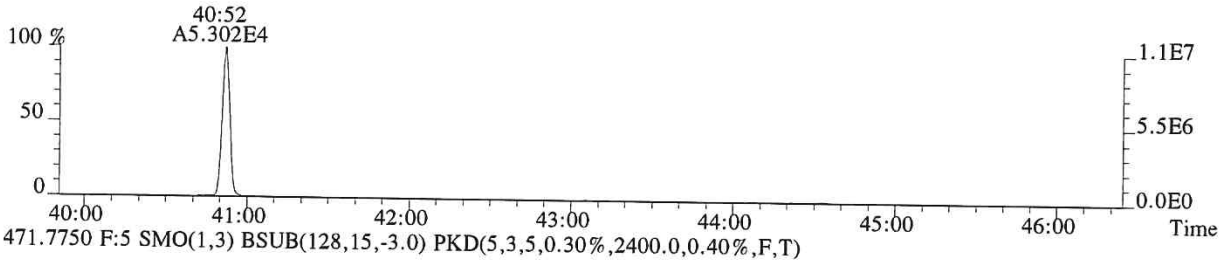
File:P616134 #1-591 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2364.0,0.40%,F,T)



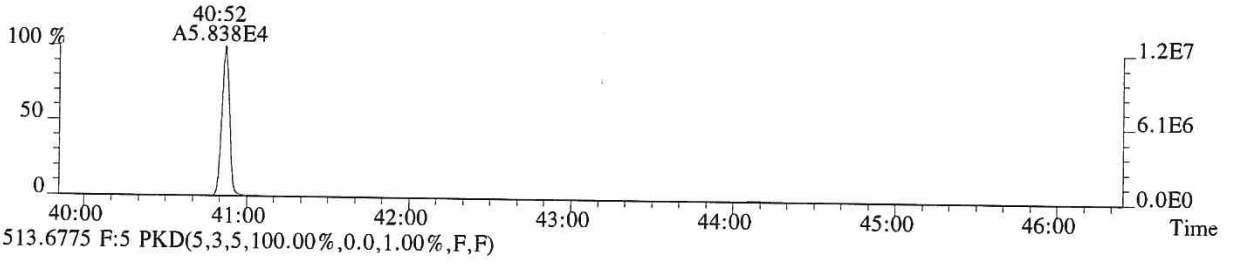
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2556.0,0.40%,F,T)



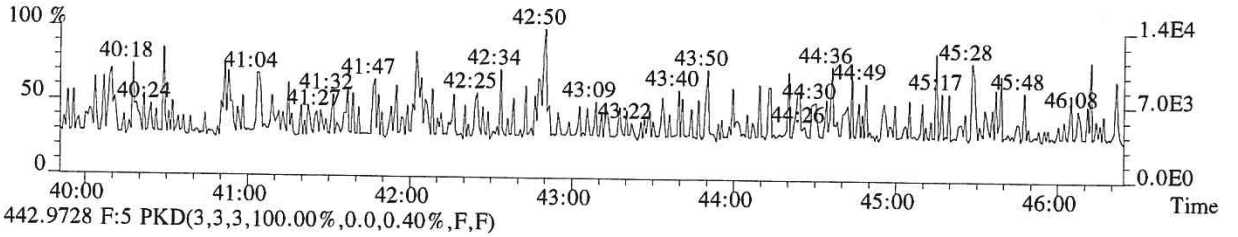
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4936.0,0.40%,F,T)



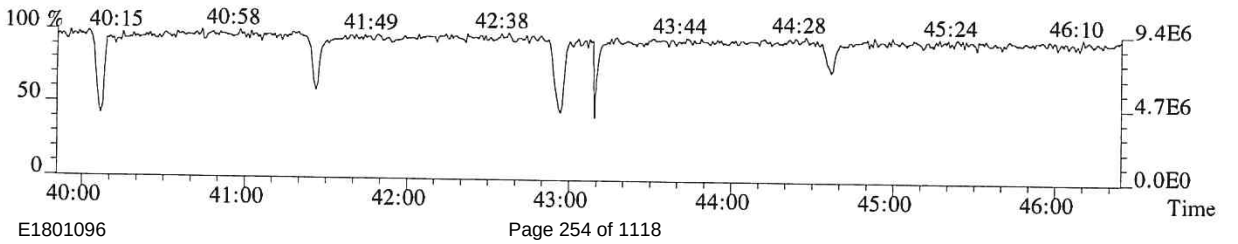
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2400.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

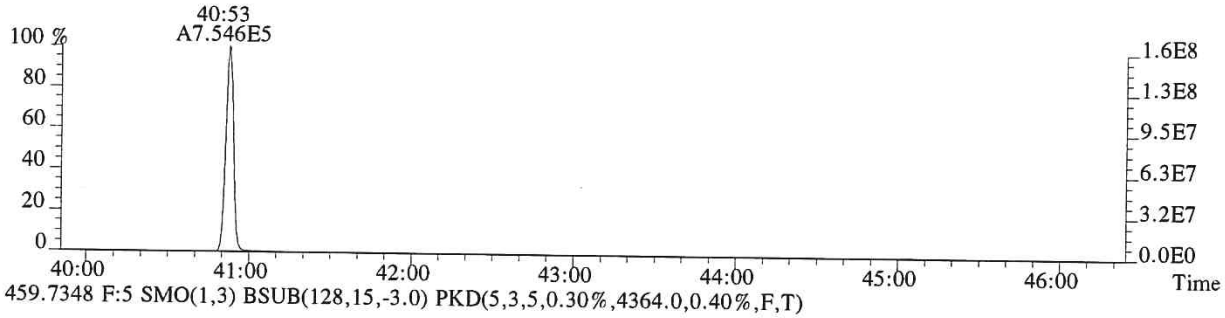


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

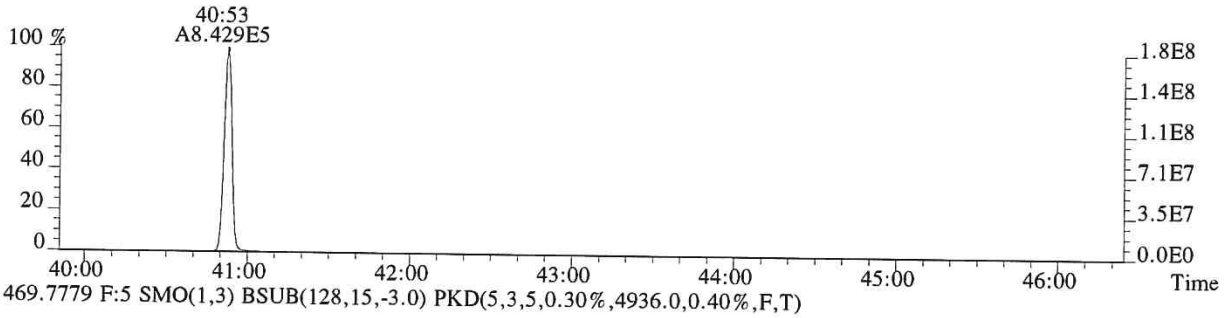


058902

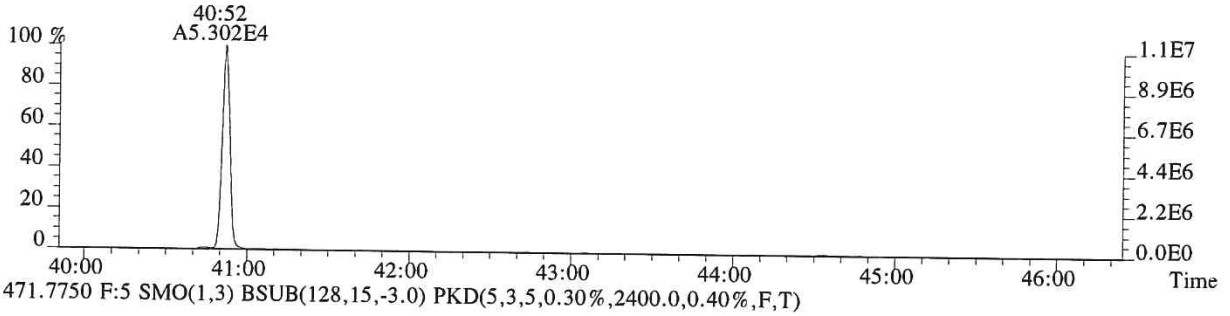
File:P616134 #1-591 Acq:19-DEC-2018 22:50:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2324.0,0.40%,F,T)



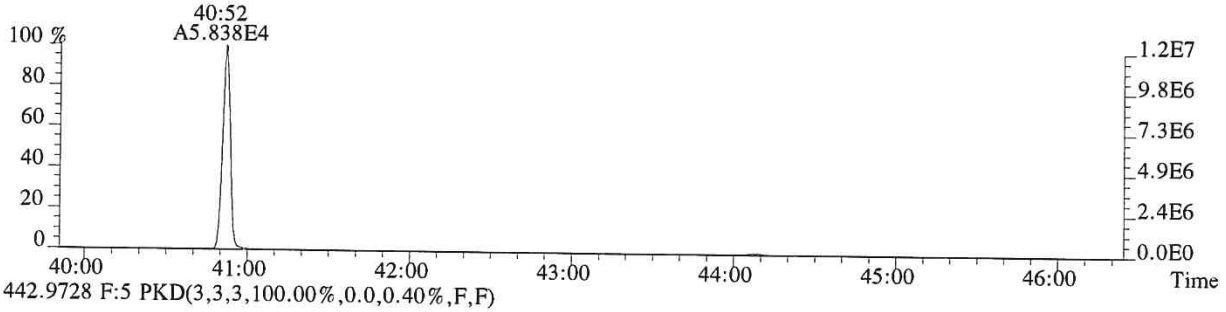
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4364.0,0.40%,F,T)



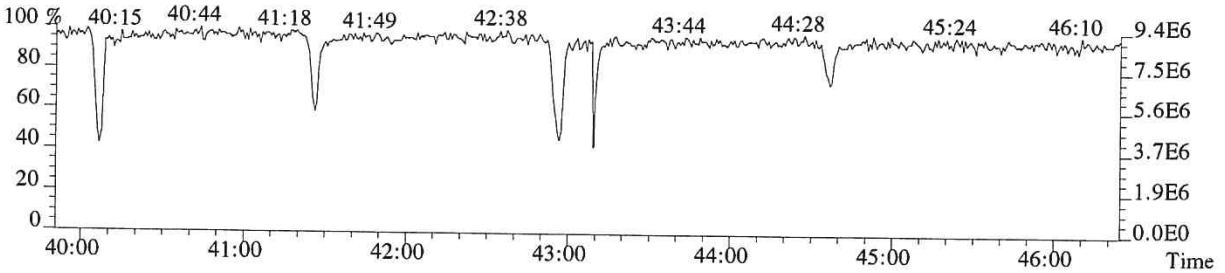
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4936.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2400.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



058903

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0062

Run #12 Filename P519593 Samp: 1 Inj: 1 Acquired: 24-DEC-18 13:50:17
Processed: 26-DEC-18 13:32:31 Sample ID: E1801096-004DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:17	1.867e+03	2.589e+03	0.72	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:06	5.390e+01	6.123e+01	0.88	no	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:05	1.041e+02	5.619e+01	1.85	no	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:00	1.007e+02	9.538e+01	1.06	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:07	3.680e+01	2.309e+01	1.59	no	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:39	1.321e+01	1.233e+01	1.07	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	yes	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:50	2.421e+02	2.395e+02	1.01	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:18	1.880e+01	2.055e+01	0.92	yes	no	1.258
10	Unk	OCDF	41:54	5.727e+03	6.643e+03	0.86	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:14	5.309e+02	6.211e+02	0.85	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:25	2.277e+01	1.116e+01	2.04	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:54	2.711e+01	1.529e+01	1.77	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:10	1.200e+01	1.746e+01	0.69	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:49	5.480e+02	4.535e+02	1.21	no	no	1.025
17	Unk	OCDD	41:44	5.891e+03	6.694e+03	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:16	6.189e+03	7.960e+03	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:05	9.257e+03	5.837e+03	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:05	9.037e+03	5.521e+03	1.64	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:59	3.707e+03	6.726e+03	0.55	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:06	4.346e+03	8.753e+03	0.50	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:38	4.133e+03	7.860e+03	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:26	3.391e+03	6.399e+03	0.53	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:50	3.102e+03	6.692e+03	0.46	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:16	2.532e+03	5.677e+03	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:13	2.885e+03	3.660e+03	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:24	6.492e+03	4.055e+03	1.60	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:48	4.966e+03	3.989e+03	1.24	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:53	5.827e+03	4.358e+03	1.34	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:48	5.935e+03	5.568e+03	1.07	yes	no	0.858
32	IS	13C-OCDD	41:43	6.542e+03	7.393e+03	0.88	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:33	4.863e+03	6.212e+03	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:09	6.193e+03	4.956e+03	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	3.321e+02				no	1.014

$$\text{OCDD} = \frac{(5.891e+03 + 6.694e+03) \times 4000\ \text{pg} \times 10}{(6.542e+03 + 7.393e+03) \times 10.241\ \text{g} \times 70.04/100 \times 1.118} = 106710.8771\ \text{pg/Kg}$$

LG 12/27/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0062

Run #12 Filename P519593 Samp: 1 Inj: 1 Acquired: 24-DEC-18 13:50:17
Processed: 26-DEC-18 13:32:31 LAB. ID: E1801096-004DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.91e+05	3.36e+02	8.7e+02	3.72e+05	1.59e+03	2.3e+02
2	1,2,3,7,8-PeCDF	1.58e+04	7.60e+02	2.1e+01	1.13e+04	8.60e+02	1.3e+01
3	2,3,4,7,8-PeCDF	1.38e+04	7.60e+02	1.8e+01	6.96e+03	8.60e+02	8.1e+00
4	1,2,3,4,7,8-HxCDF	1.94e+04	8.64e+02	2.2e+01	1.66e+04	3.52e+02	4.7e+01
5	1,2,3,6,7,8-HxCDF	6.51e+03	8.64e+02	7.5e+00	4.80e+03	3.52e+02	1.4e+01
6	2,3,4,6,7,8-HxCDF	2.40e+03	8.64e+02	2.8e+00	2.86e+03	3.52e+02	8.1e+00
7	1,2,3,7,8,9-HxCDF	*	8.64e+02	*	*	3.52e+02	*
8	1,2,3,4,6,7,8-HpCDF	3.41e+04	2.88e+02	1.2e+02	3.76e+04	5.88e+02	6.4e+01
9	1,2,3,4,7,8,9-HpCDF	5.45e+03	2.88e+02	1.9e+01	4.86e+03	5.88e+02	8.3e+00
10	OCDF	4.28e+05	4.12e+02	1.0e+03	4.75e+05	7.12e+02	6.7e+02
11	2,3,7,8-TCDD	8.09e+04	1.90e+03	4.2e+01	1.06e+05	5.72e+02	1.8e+02
12	1,2,3,7,8-PeCDD	5.37e+03	9.08e+02	5.9e+00	2.41e+03	3.88e+02	6.2e+00
13	1,2,3,4,7,8-HxCDD	*	5.20e+02	*	*	3.96e+02	*
14	1,2,3,6,7,8-HxCDD	5.64e+03	5.20e+02	1.1e+01	2.28e+03	3.96e+02	5.8e+00
15	1,2,3,7,8,9-HxCDD	2.28e+03	5.20e+02	4.4e+00	4.25e+03	3.96e+02	1.1e+01
16	1,2,3,4,6,7,8-HpCDD	7.06e+04	3.28e+02	2.2e+02	5.98e+04	4.40e+02	1.4e+02
17	OCDD	4.23e+05	3.20e+02	1.3e+03	4.84e+05	5.80e+02	8.3e+02
18	13C-2,3,7,8-TCDF	9.62e+05	6.43e+03	1.5e+02	1.23e+06	5.22e+03	2.4e+02
19	13C-1,2,3,7,8-PeCDF	1.54e+06	1.37e+03	1.1e+03	9.63e+05	6.88e+02	1.4e+03
20	13C-2,3,4,7,8-PeCDF	1.60e+06	1.37e+03	1.2e+03	9.73e+05	6.88e+02	1.4e+03
21	13C-1,2,3,4,7,8-HxCDF	6.73e+05	8.00e+02	8.4e+02	1.25e+06	8.80e+02	1.4e+03
22	13C-1,2,3,6,7,8-HxCDF	7.22e+05	8.00e+02	9.0e+02	1.38e+06	8.80e+02	1.6e+03
23	13C-2,3,4,6,7,8-HxCDF	6.85e+05	8.00e+02	8.6e+02	1.34e+06	8.80e+02	1.5e+03
24	13C-1,2,3,7,8,9-HxCDF	5.38e+05	8.00e+02	6.7e+02	1.05e+06	8.80e+02	1.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	4.30e+05	1.06e+03	4.1e+02	9.27e+05	7.96e+02	1.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.81e+05	1.06e+03	2.7e+02	6.44e+05	7.96e+02	8.1e+02
27	13C-2,3,7,8-TCDD	4.91e+05	5.63e+03	8.7e+01	6.28e+05	1.65e+03	3.8e+02
28	13C-1,2,3,7,8-PeCDD	1.11e+06	7.76e+02	1.4e+03	6.89e+05	8.56e+02	8.0e+02
29	13C-1,2,3,4,7,8-HxCDD	9.37e+05	6.28e+02	1.5e+03	7.32e+05	3.64e+02	2.0e+03
30	13C-1,2,3,6,7,8-HxCDD	9.49e+05	6.28e+02	1.5e+03	6.89e+05	3.64e+02	1.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.15e+05	3.56e+02	2.0e+03	6.77e+05	3.68e+02	1.8e+03
32	13C-OCDD	4.41e+05	5.08e+02	8.7e+02	5.38e+05	3.32e+02	1.6e+03
33	13C-1,2,3,4-TCDD	7.98e+05	5.63e+03	1.4e+02	1.00e+06	1.65e+03	6.1e+02
34	13C-1,2,3,7,8,9-HxCDD	9.18e+05	6.28e+02	1.5e+03	7.79e+05	3.64e+02	2.1e+03
35	37Cl-2,3,7,8-TCDD	5.26e+04	4.68e+02	1.1e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.904e{+}03 + 5.720e{+}02) \times 2000}{(4.913e{+}05 + 6.282e{+}05) \times (\quad) \times 1.085} =$$

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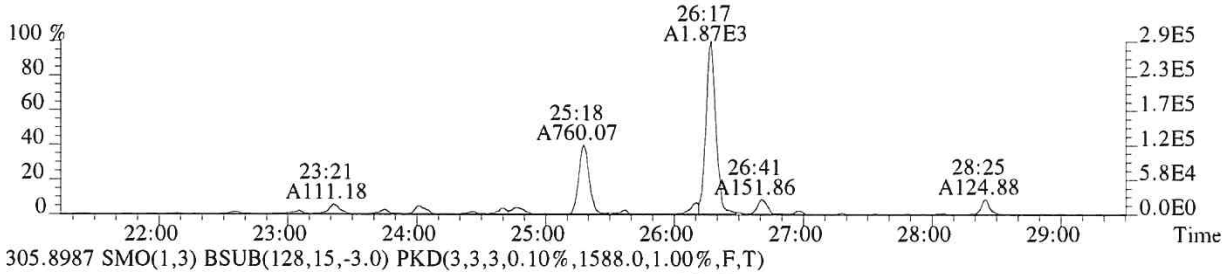
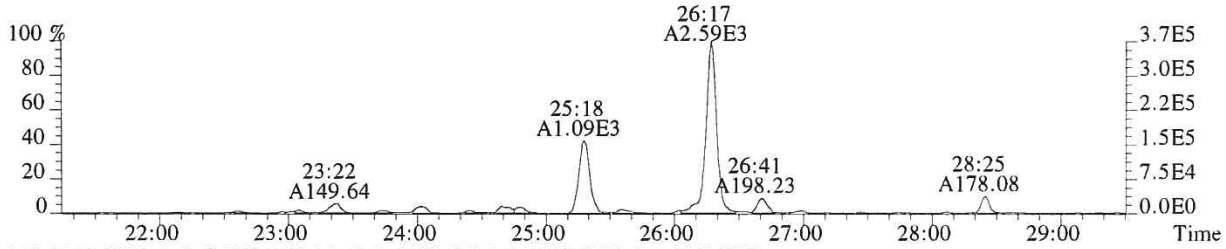
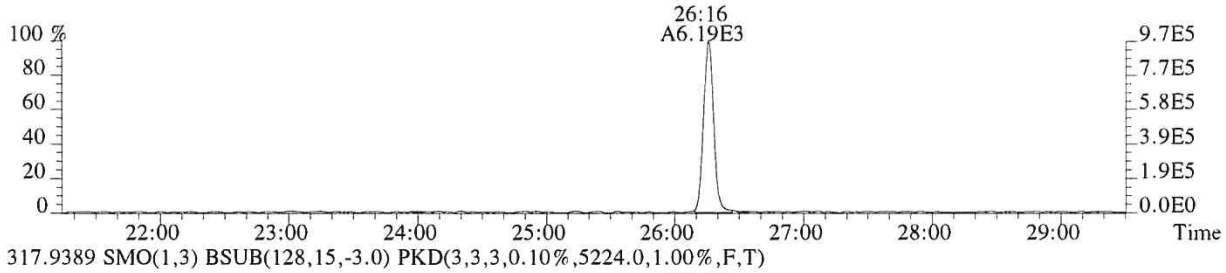
File:P519593 #1-587 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,336.0,1.00%,F,T)



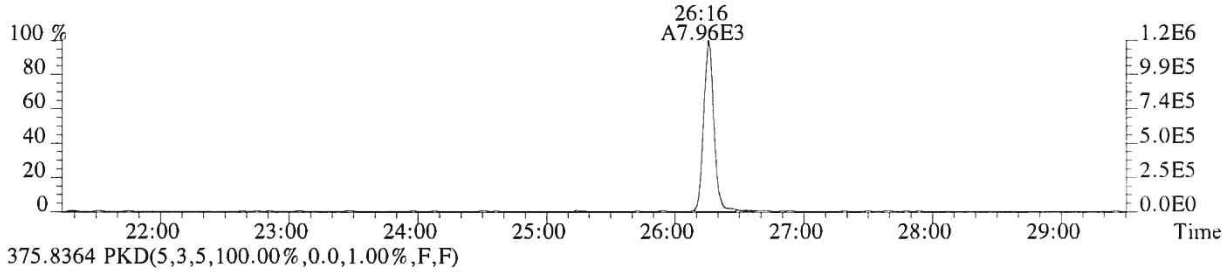
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1588.0,1.00%,F,T)



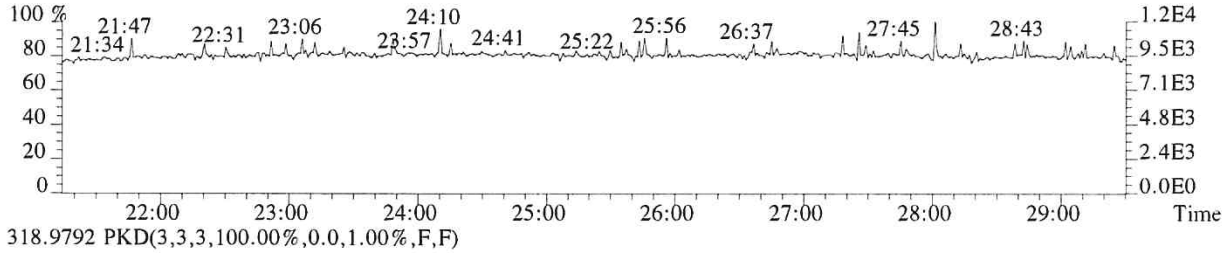
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6432.0,1.00%,F,T)



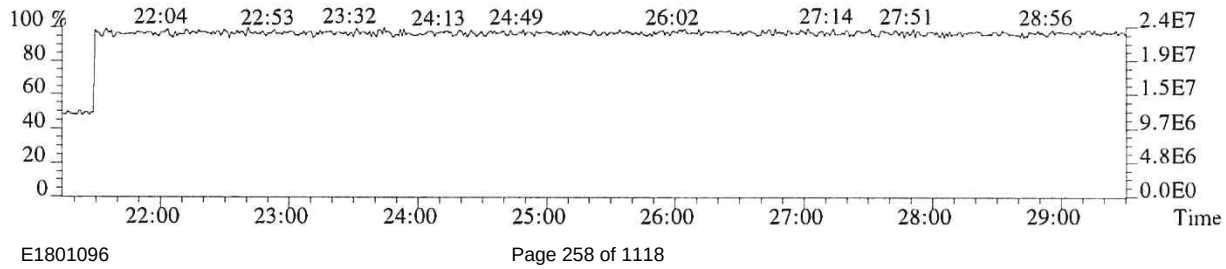
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5224.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

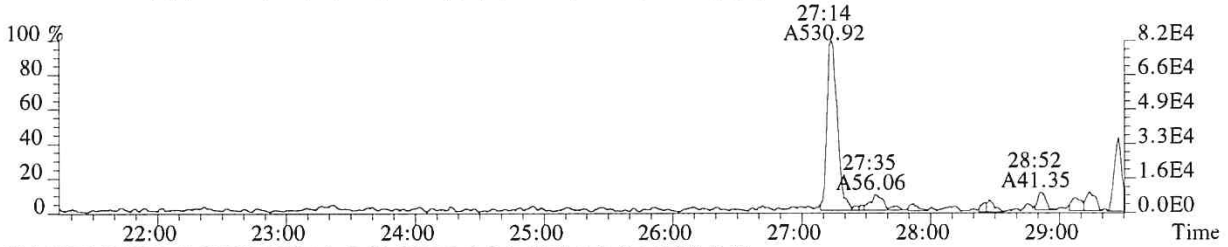


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

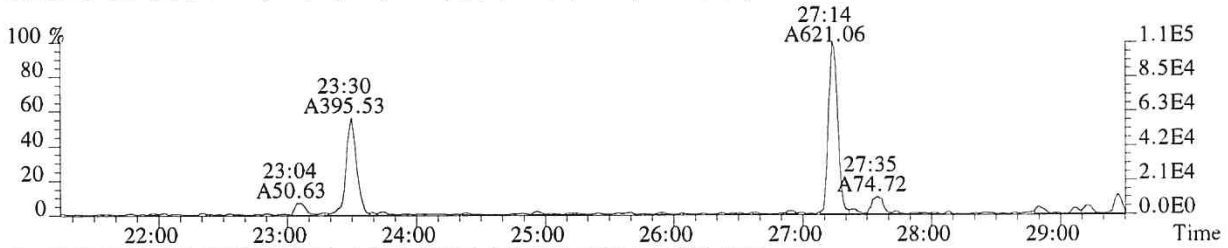


058906

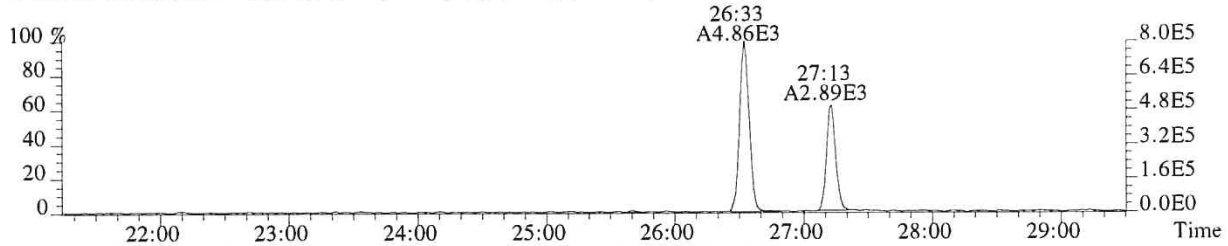
File:P519593 #1-587 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1904.0,1.00%,F,T)



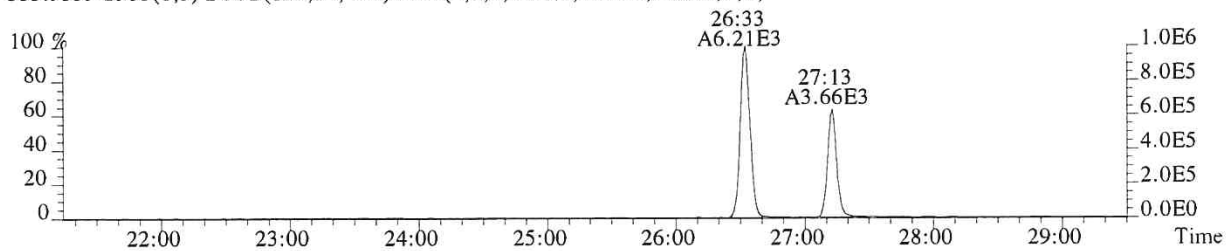
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,572.0,1.00%,F,T)



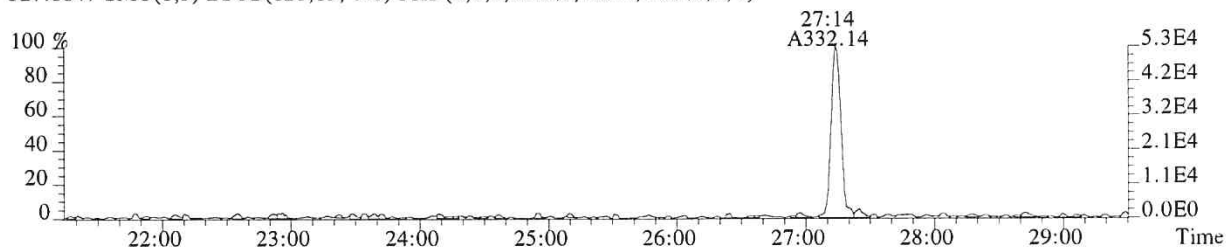
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5628.0,1.00%,F,T)



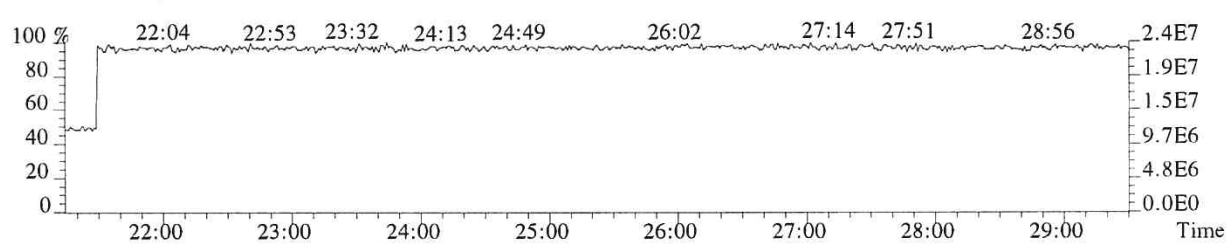
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1648.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,468.0,1.00%,F,T)

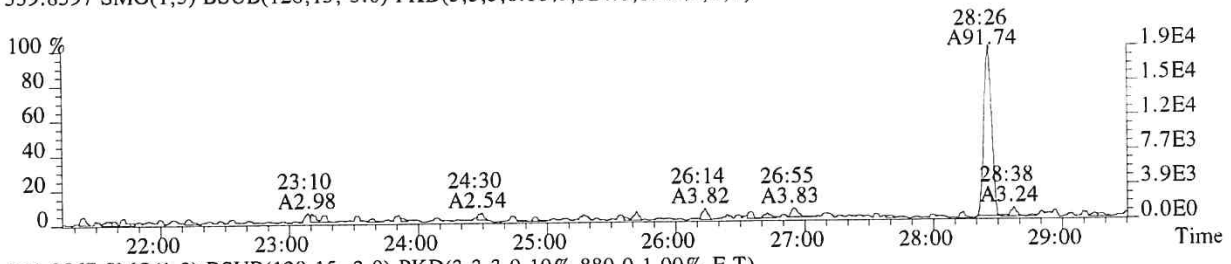


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

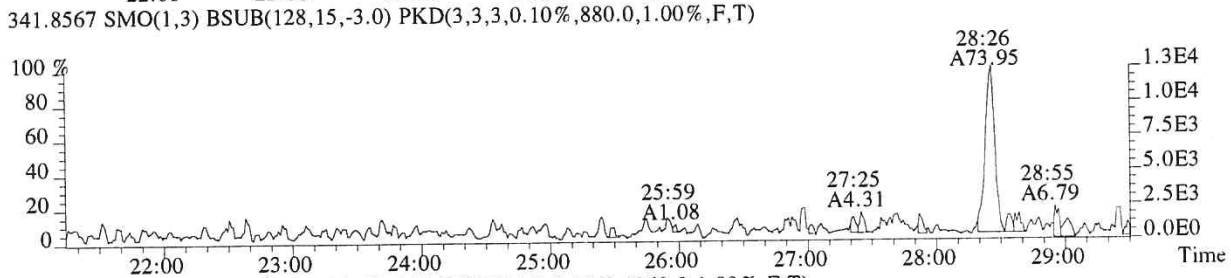


058907

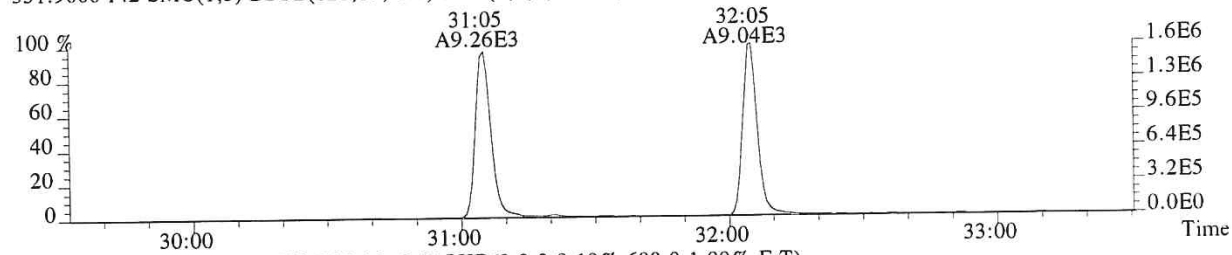
File:P519593 #1-587 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,324.0,1.00%,F,T)



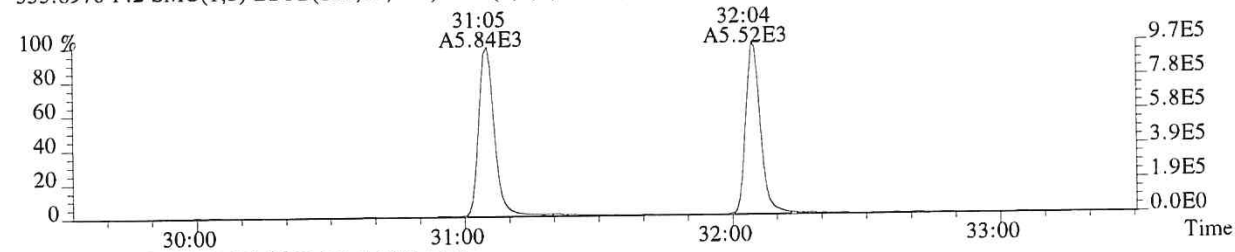
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,880.0,1.00%,F,T)



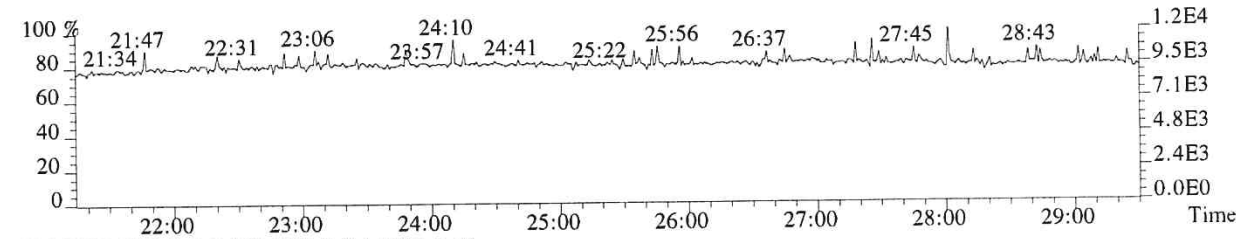
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1368.0,1.00%,F,T)



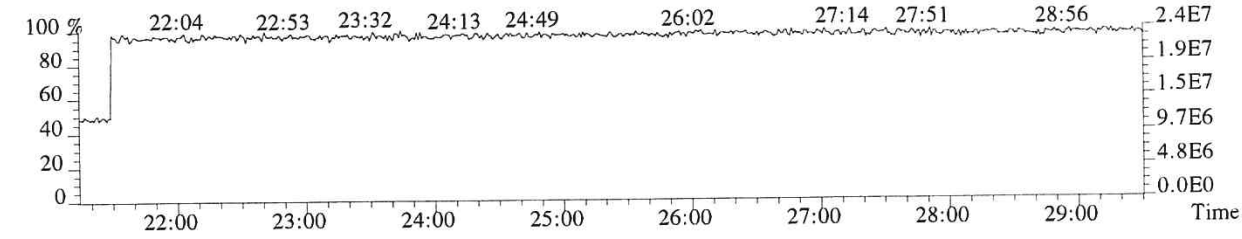
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,688.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

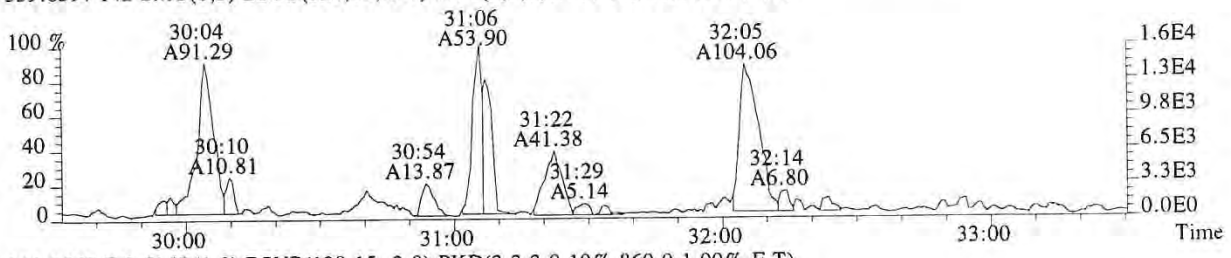


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

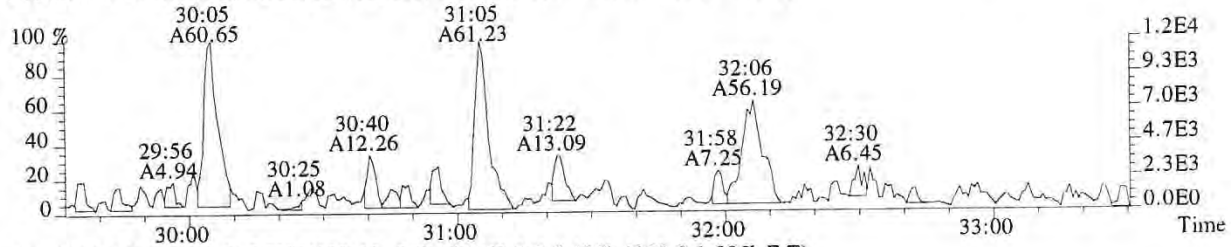


058908

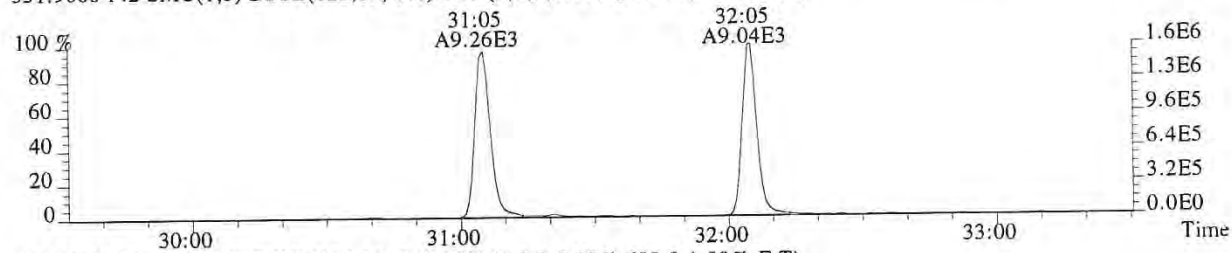
File:P519593 #1-358 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:E1801096-004DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,760.0,1.00%,F,T)



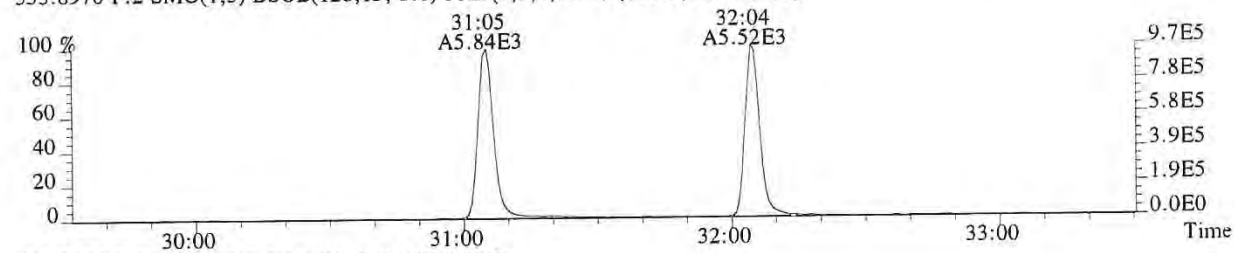
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,860.0,1.00%,F,T)



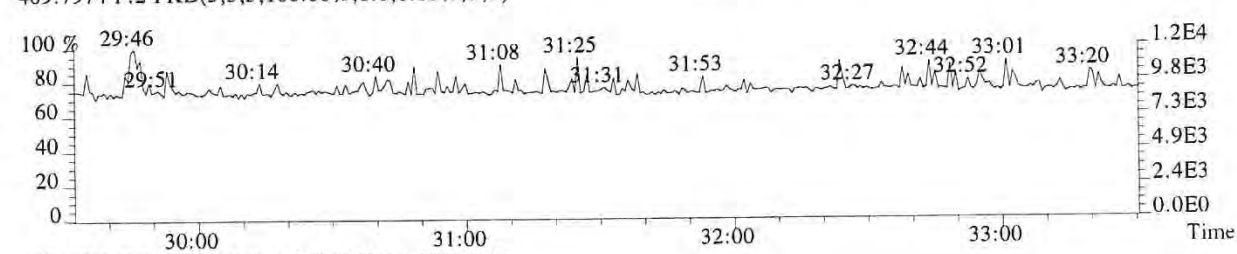
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1368.0,1.00%,F,T)



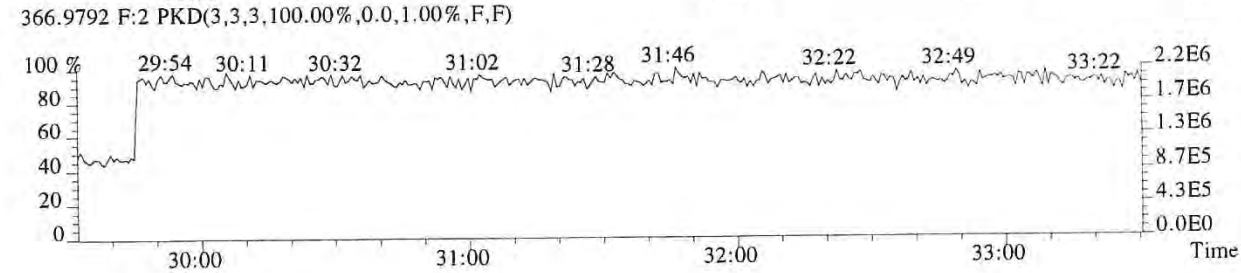
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,688.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

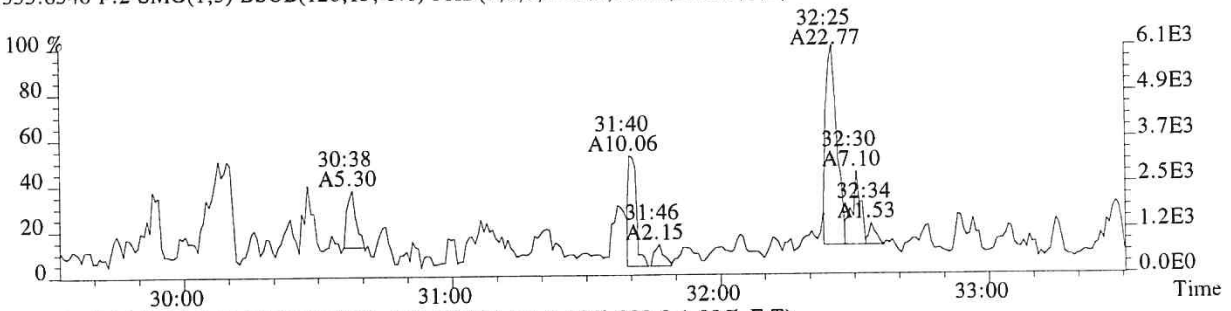


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

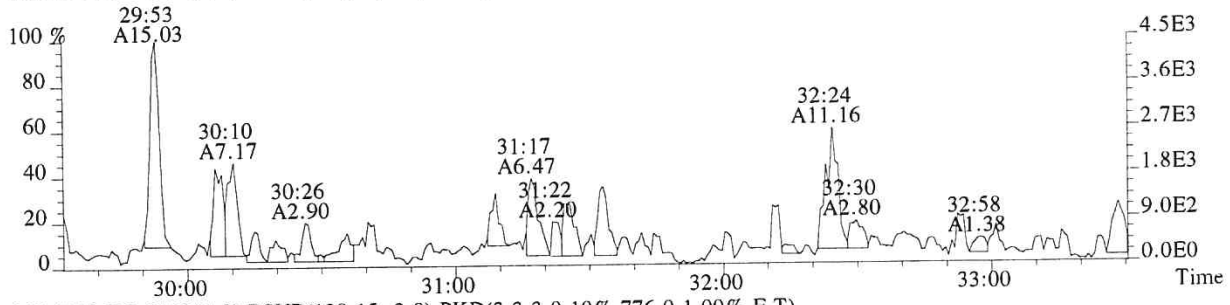


058909

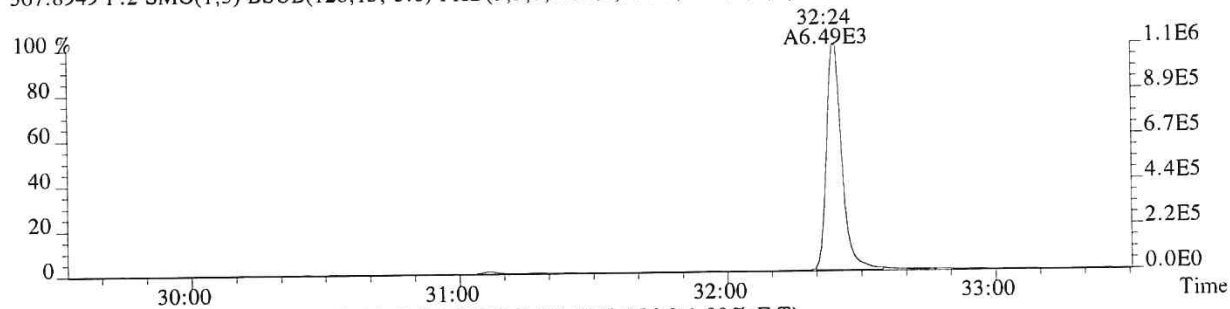
File:P519593 #1-358 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,908.0,1.00%,F,T)



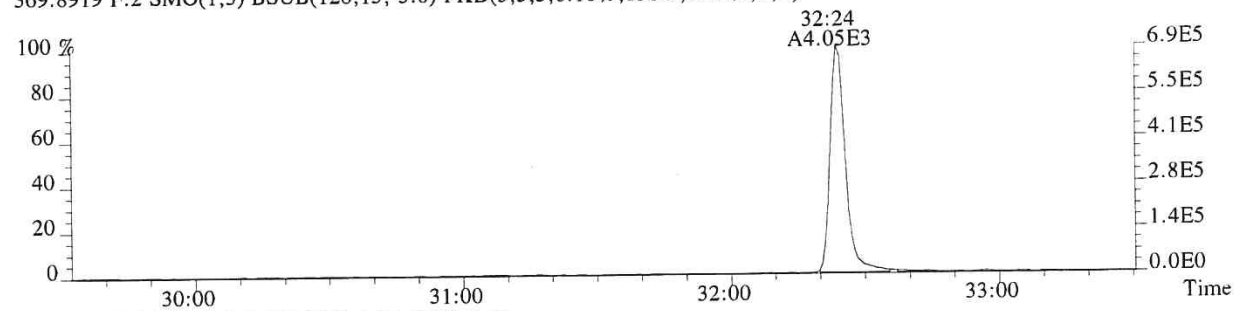
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,388.0,1.00%,F,T)



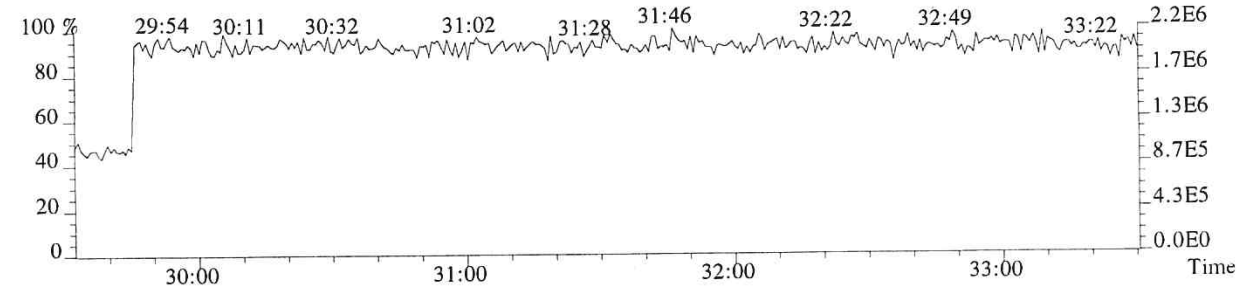
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,776.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,856.0,1.00%,F,T)

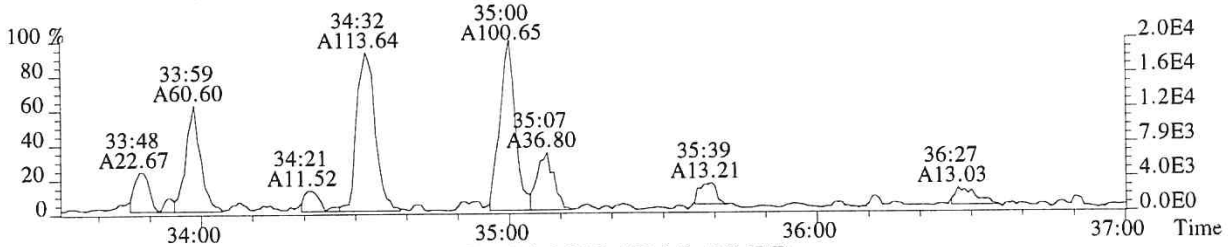


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

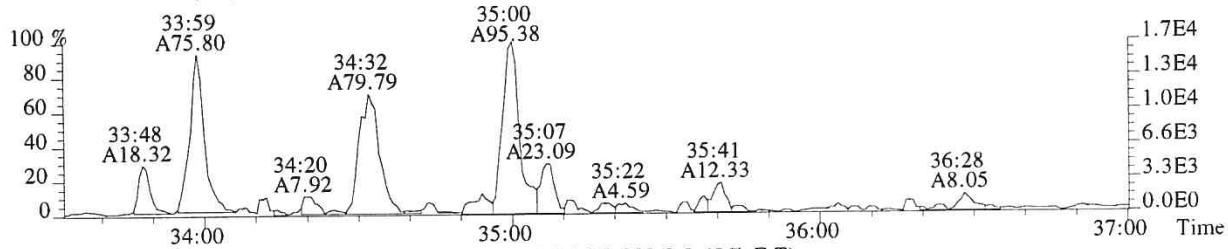


058910

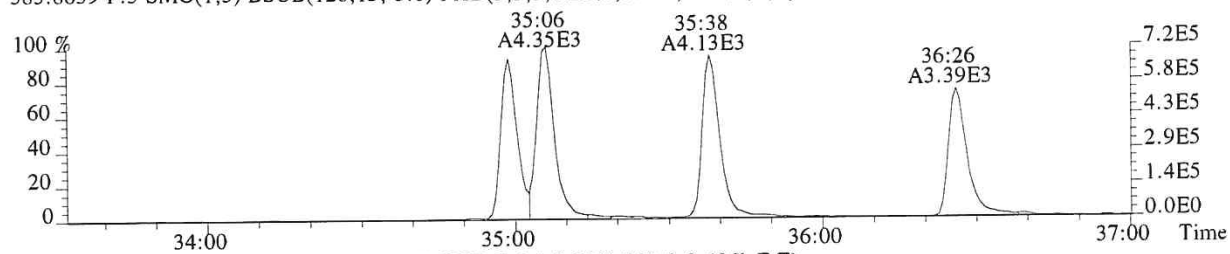
File:P519593 #1-312 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,864.0,0.40%,F,T)



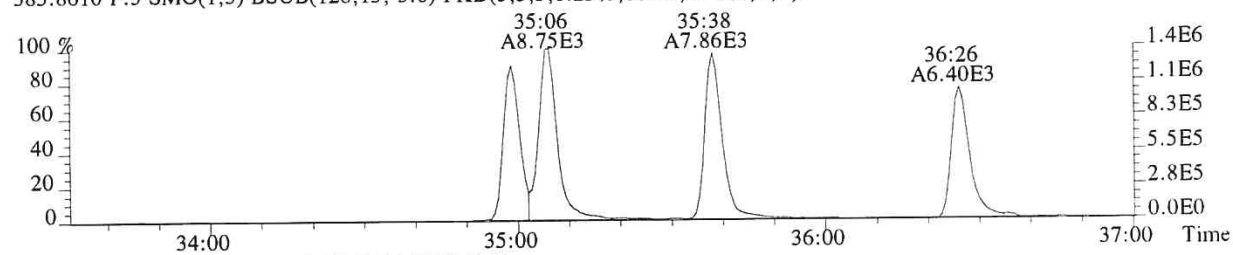
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,352.0,0.40%,F,T)



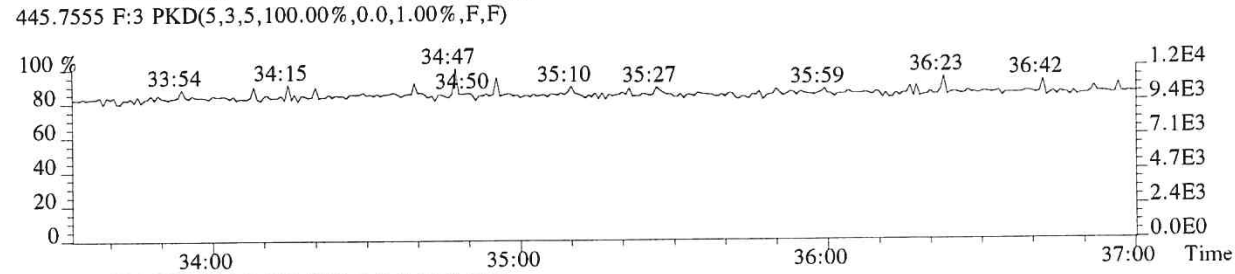
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,800.0,0.40%,F,T)



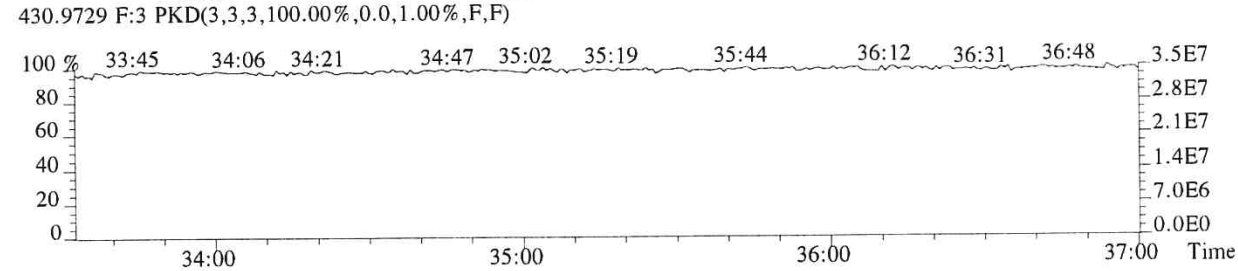
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,880.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

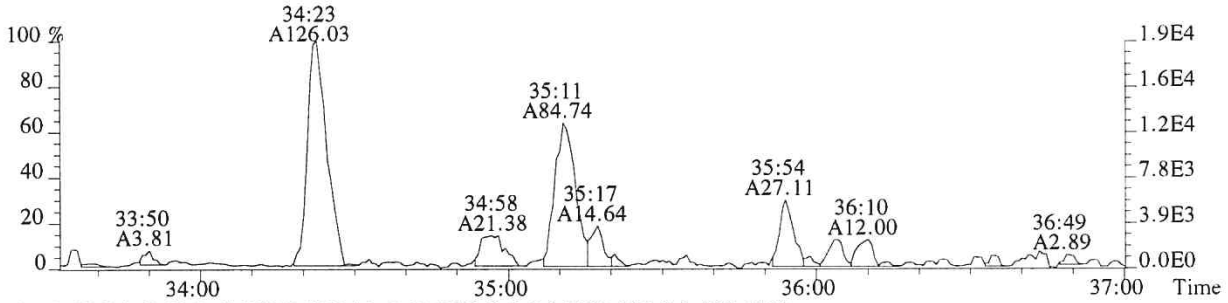


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

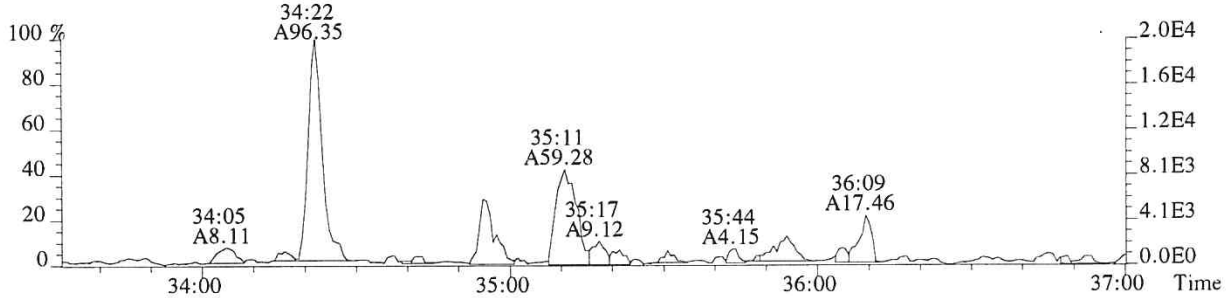


058911

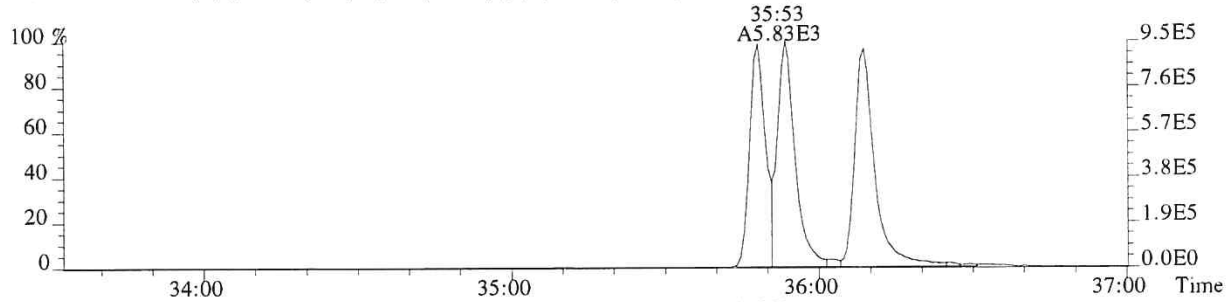
File:P519593 #1-312 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,520.0,0.40%,F,T)



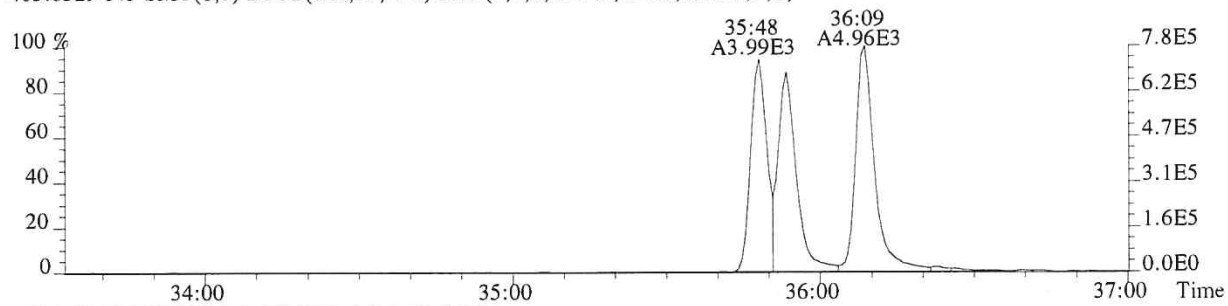
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,396.0,0.40%,F,T)



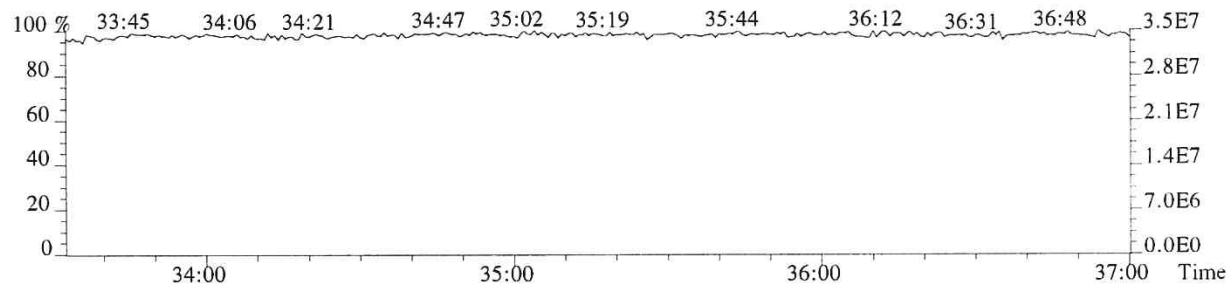
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,628.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,364.0,0.40%,F,T)

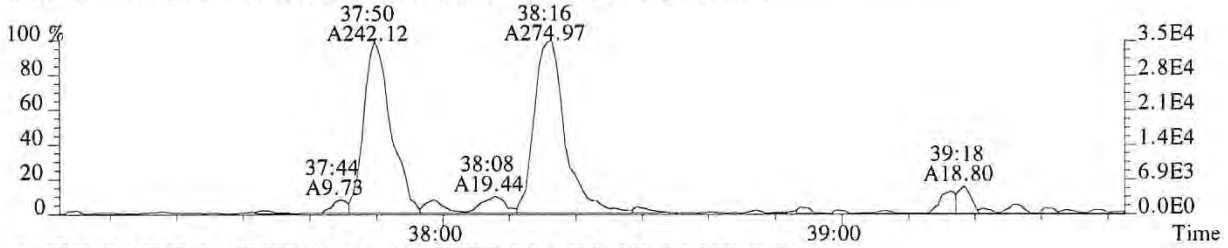


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

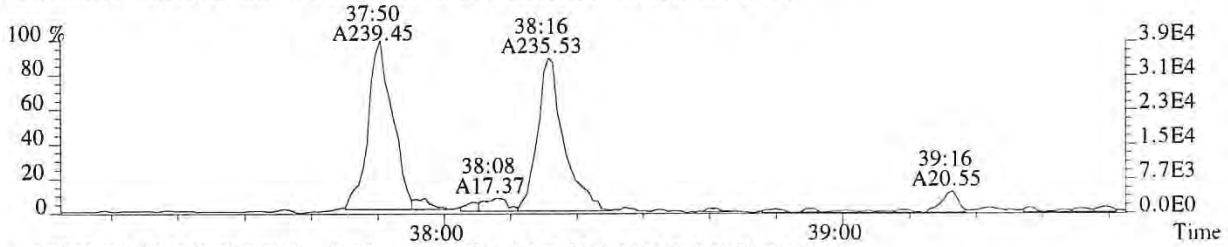


058912

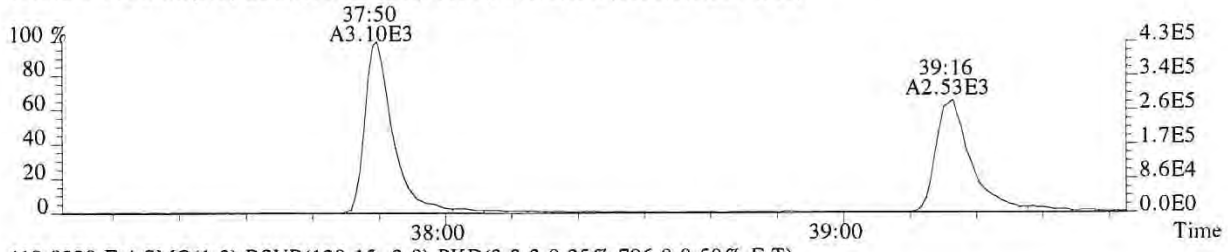
File:P519593 #1-241 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,288.0,0.50%,F,T)



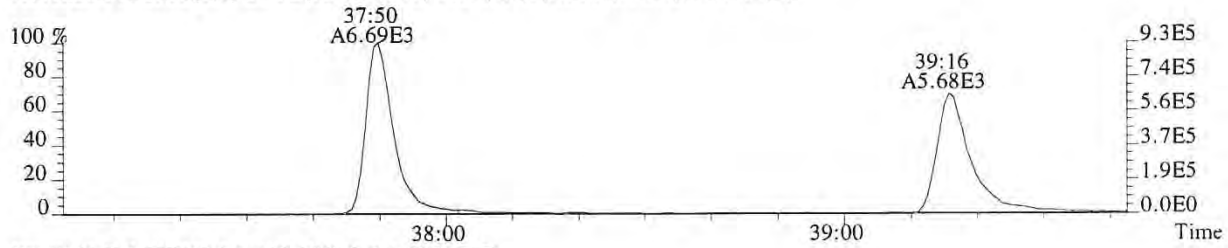
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,588.0,0.50%,F,T)



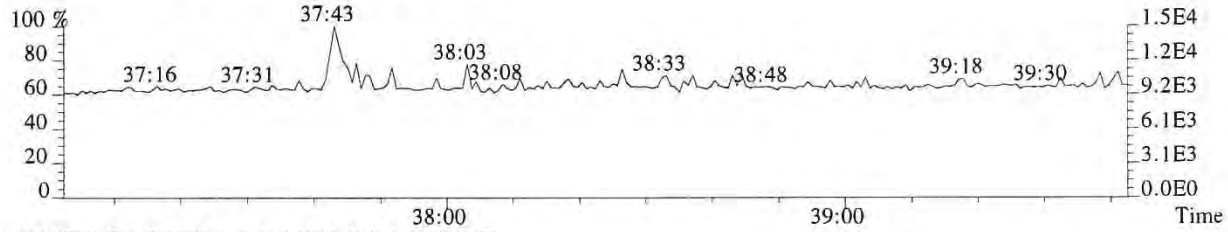
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1056.0,0.50%,F,T)



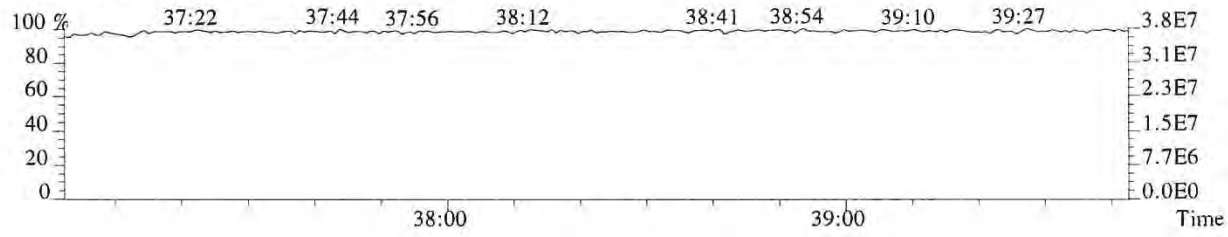
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,796.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

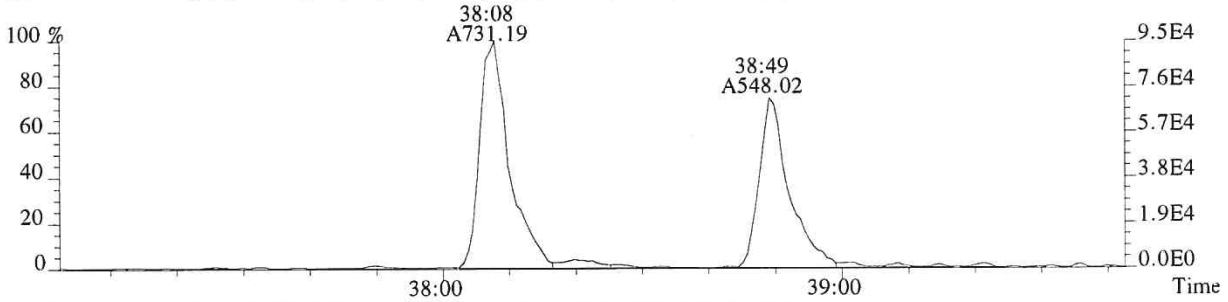


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

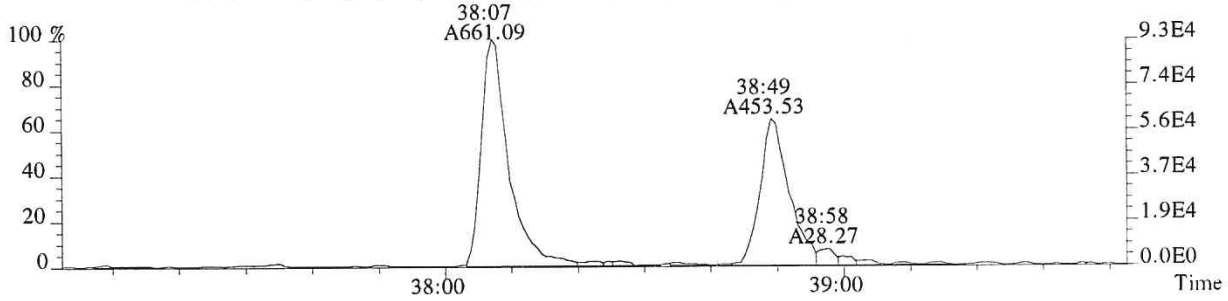


058913

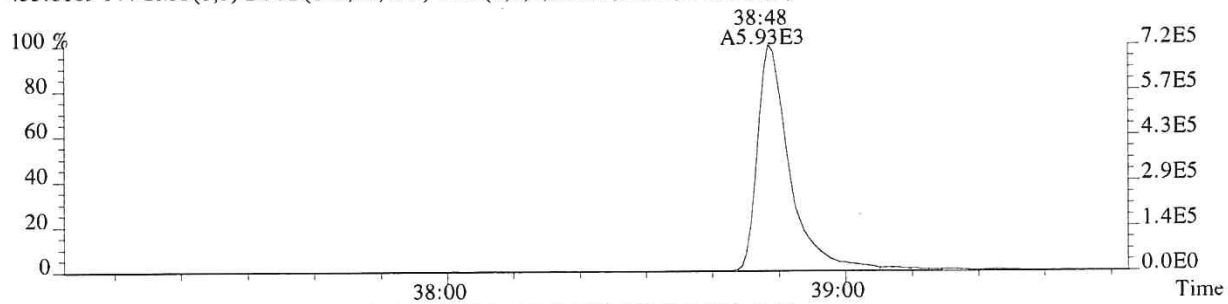
File:P519593 #1-241 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,328.0,0.40%,F,T)



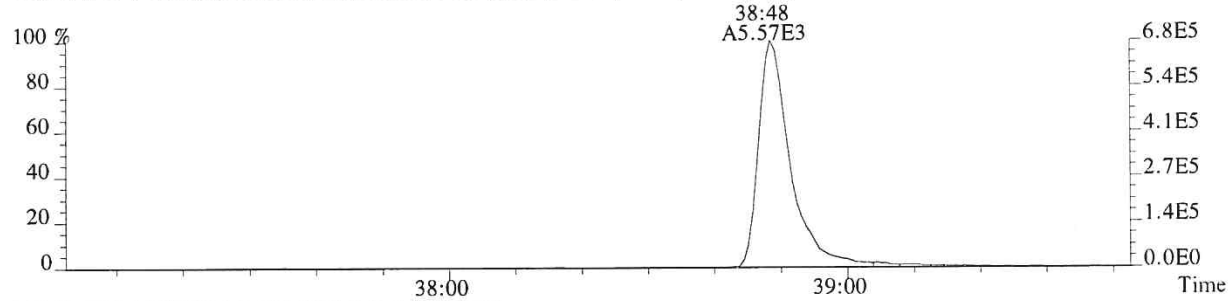
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,440.0,0.40%,F,T)



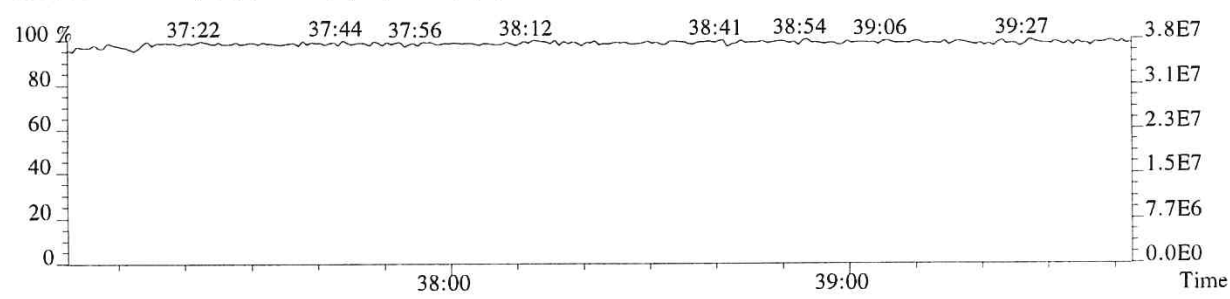
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,356.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,368.0,0.40%,F,T)

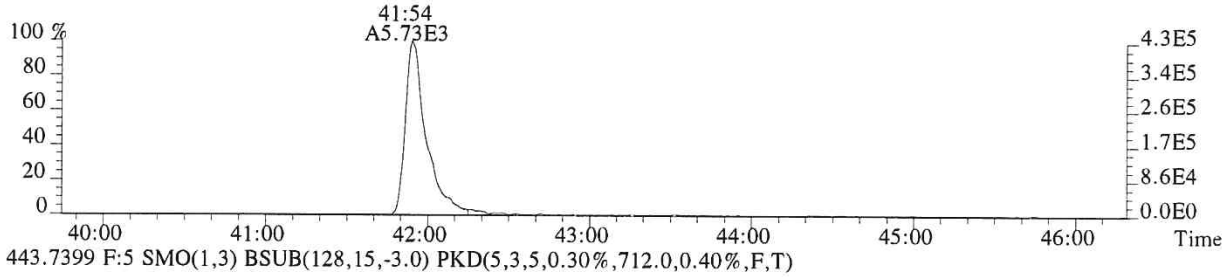


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

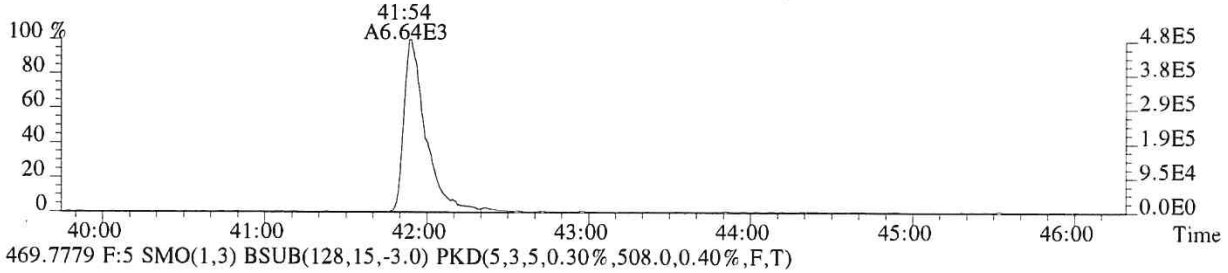


058914

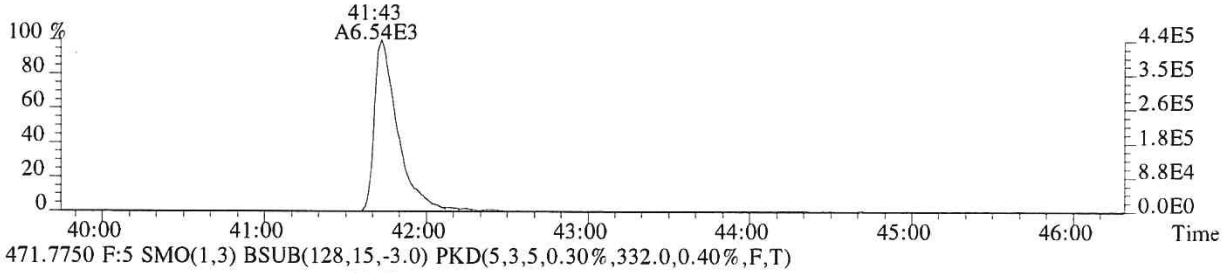
File:P519593 #1-592 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-004DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



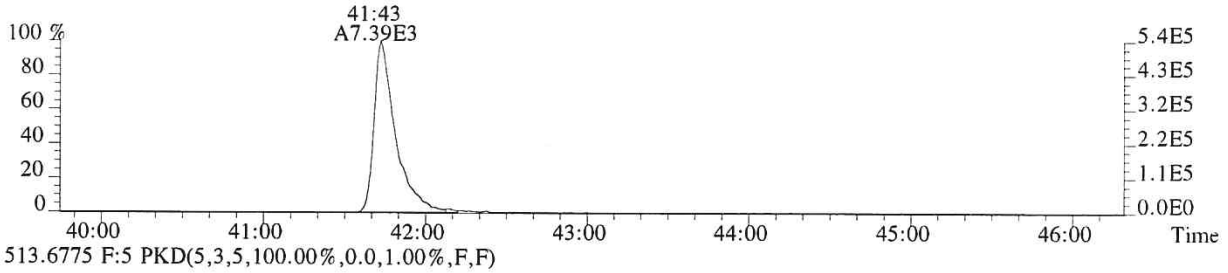
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,712.0,0.40%,F,T)



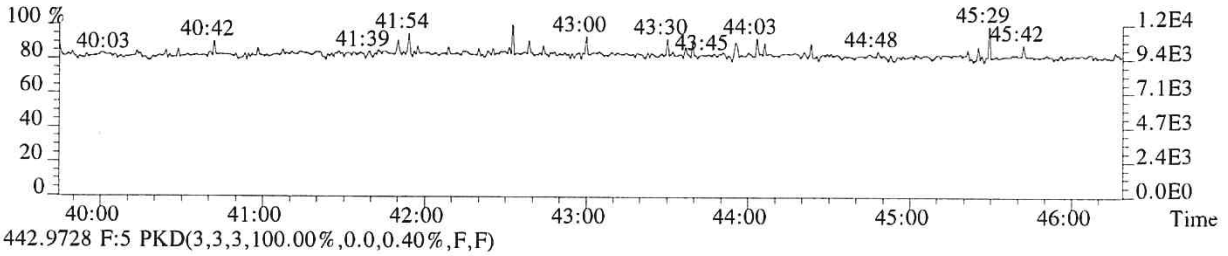
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



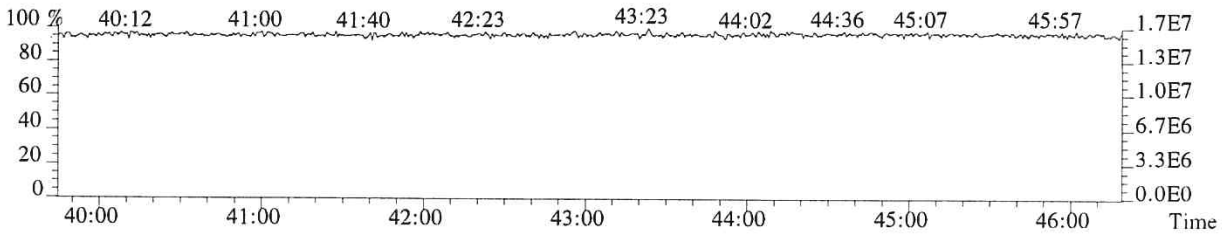
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,332.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

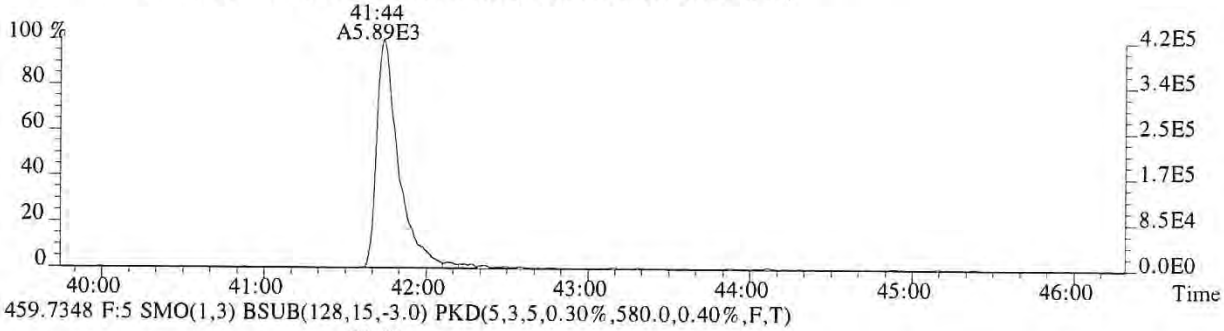


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

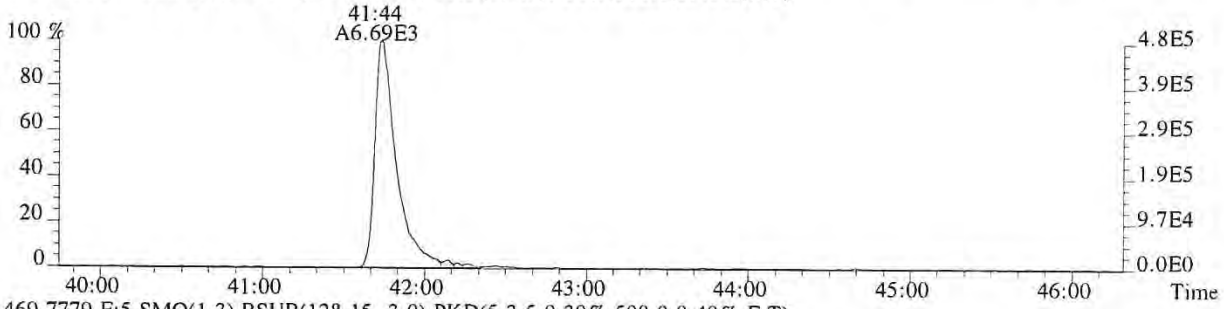


058915

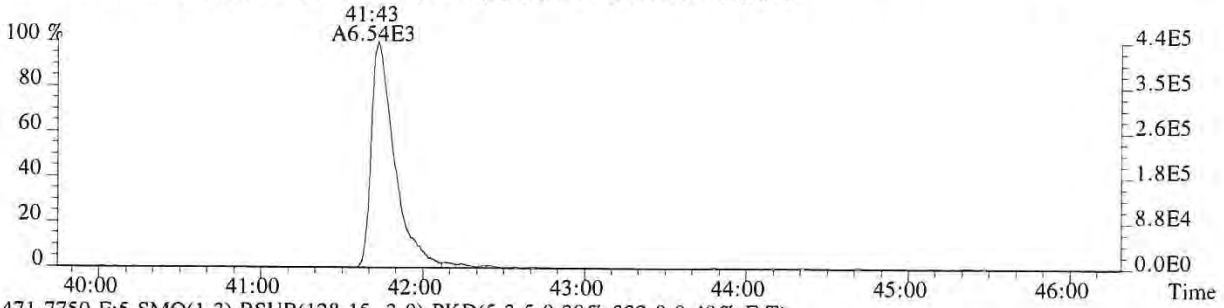
File:P519593 #1-592 Acq:24-DEC-2018 13:50:17 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-004DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,320.0,0.40%,F,T)



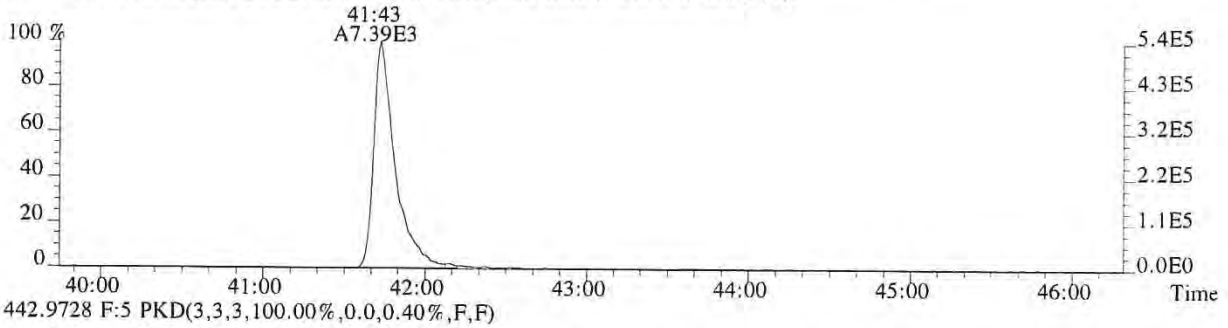
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,580.0,0.40%,F,T)



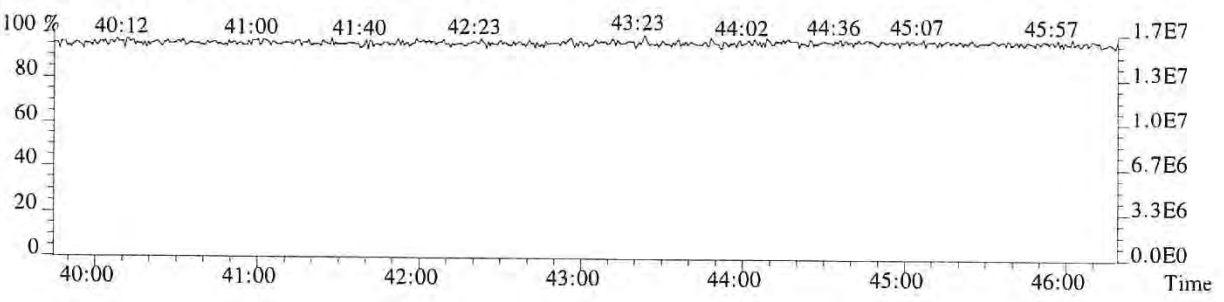
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,332.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



058916

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0063

Run #15 Filename P616135 Samp: 1 Inj: 1 Acquired: 19-DEC-18 23:39:50
Processed: 20-DEC-18 15:56:48 Sample ID: E1801096-005

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:19	1.428e+04	1.899e+04	0.75	yes	yes	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	1.034e+03	7.222e+02	1.43	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	8.131e+02	5.275e+02	1.54	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:49	1.230e+03	1.050e+03	1.17	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	3.372e+02	3.091e+02	1.09	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	8.669e+01	9.306e+01	0.93	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:14	1.430e+02	1.132e+02	1.26	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:28	7.104e+02	5.307e+02	1.34	no	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:48	1.349e+02	1.293e+02	1.04	yes	no	1.463
10	Unk	OCDF	41:03	4.419e+03	4.794e+03	0.92	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:14	3.839e+03	5.083e+03	0.76	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	1.884e+02	1.435e+02	1.31	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	1.728e+02	1.026e+02	1.68	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	3.071e+02	2.024e+02	1.52	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	4.895e+02	4.261e+02	1.15	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	6.162e+03	5.923e+03	1.04	yes	no	1.112
17	Unk	OCDD	40:52	9.064e+04	1.013e+05	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:17	6.130e+04	7.702e+04	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:01	1.082e+05	6.861e+04	1.58	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	9.875e+04	6.241e+04	1.58	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	4.949e+04	9.369e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:55	5.390e+04	1.003e+05	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	5.072e+04	9.477e+04	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	4.683e+04	9.041e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:28	3.603e+04	7.896e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	3.371e+04	7.431e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:13	3.215e+04	4.032e+04	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:18	7.810e+04	4.948e+04	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	7.152e+04	5.608e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:40	6.329e+04	4.954e+04	1.28	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	7.342e+04	6.903e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:51	6.735e+04	7.423e+04	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:31	6.927e+04	8.659e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	1.054e+05	8.322e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	4.417e+04				no	1.086

$$\text{OCDD} = \frac{(9.064e+04 + 1.013e+05) \times 4000\ \text{pg} \times 1}{(6.735e+04 + 7.423e+04) \times 10.883\ \text{g} \times 70.9 / 100 \times 1.157} = 500\ \text{ng/kg}$$

GEO 12/24/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0063

Run #15 Filename P616135 Samp: 1 Inj: 1 Acquired: 19-DEC-18 23:39:50
Processed: 20-DEC-18 15:56:48 LAB. ID: E1801096-005

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.22e+06	1.72e+03	1.3e+03	2.94e+06	1.48e+03	2.0e+03
2	1,2,3,7,8-PeCDF	1.86e+05	3.73e+03	5.0e+01	1.37e+05	1.40e+03	9.8e+01
3	2,3,4,7,8-PeCDF	1.34e+05	3.73e+03	3.6e+01	8.97e+04	1.40e+03	6.4e+01
4	1,2,3,4,7,8-HxCDF	2.66e+05	1.44e+03	1.9e+02	2.27e+05	1.60e+03	1.4e+02
5	1,2,3,6,7,8-HxCDF	7.04e+04	1.44e+03	4.9e+01	6.51e+04	1.60e+03	4.1e+01
6	2,3,4,6,7,8-HxCDF	1.81e+04	1.44e+03	1.3e+01	1.92e+04	1.60e+03	1.2e+01
7	1,2,3,7,8,9-HxCDF	2.27e+04	1.44e+03	1.6e+01	2.20e+04	1.60e+03	1.4e+01
8	1,2,3,4,6,7,8-HpCDF	1.48e+05	3.08e+03	4.8e+01	1.19e+05	2.75e+03	4.3e+01
9	1,2,3,4,7,8,9-HpCDF	3.32e+04	3.08e+03	1.1e+01	2.91e+04	2.75e+03	1.1e+01
10	OCDF	9.05e+05	2.28e+03	4.0e+02	9.79e+05	1.86e+03	5.3e+02
11	2,3,7,8-TCDD	6.64e+05	9.72e+02	6.8e+02	8.44e+05	7.76e+02	1.1e+03
12	1,2,3,7,8-PeCDD	3.89e+04	2.00e+03	1.9e+01	2.71e+04	1.64e+03	1.7e+01
13	1,2,3,4,7,8-HxCDD	3.55e+04	1.72e+03	2.1e+01	2.56e+04	2.81e+03	9.1e+00
14	1,2,3,6,7,8-HxCDD	6.86e+04	1.72e+03	4.0e+01	4.53e+04	2.81e+03	1.6e+01
15	1,2,3,7,8,9-HxCDD	1.10e+05	1.72e+03	6.4e+01	9.26e+04	2.81e+03	3.3e+01
16	1,2,3,4,6,7,8-HpCDD	1.47e+06	5.16e+03	2.8e+02	1.39e+06	4.02e+03	3.5e+02
17	OCDD	1.90e+07	1.86e+03	1.0e+04	2.12e+07	2.81e+03	7.6e+03
18	13C-2,3,7,8-TCDF	9.86e+06	4.34e+03	2.3e+03	1.23e+07	3.88e+03	3.2e+03
19	13C-1,2,3,7,8-PeCDF	2.02e+07	1.40e+03	1.4e+04	1.28e+07	9.52e+02	1.3e+04
20	13C-2,3,4,7,8-PeCDF	1.95e+07	1.40e+03	1.4e+04	1.23e+07	9.52e+02	1.3e+04
21	13C-1,2,3,4,7,8-HxCDF	1.07e+07	1.32e+03	8.1e+03	2.03e+07	2.38e+03	8.5e+03
22	13C-1,2,3,6,7,8-HxCDF	1.17e+07	1.32e+03	8.9e+03	2.18e+07	2.38e+03	9.1e+03
23	13C-2,3,4,6,7,8-HxCDF	1.15e+07	1.32e+03	8.7e+03	2.13e+07	2.38e+03	8.9e+03
24	13C-1,2,3,7,8,9-HxCDF	1.07e+07	1.32e+03	8.1e+03	2.08e+07	2.38e+03	8.7e+03
25	13C-1,2,3,4,6,7,8-HpCDF	8.41e+06	4.68e+03	1.8e+03	1.80e+07	3.99e+03	4.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	7.77e+06	4.68e+03	1.7e+03	1.72e+07	3.99e+03	4.3e+03
27	13C-2,3,7,8-TCDD	5.54e+06	7.40e+03	7.5e+02	6.92e+06	4.12e+03	1.7e+03
28	13C-1,2,3,7,8-PeCDD	1.54e+07	1.42e+03	1.1e+04	9.79e+06	1.62e+03	6.0e+03
29	13C-1,2,3,4,7,8-HxCDD	1.62e+07	2.55e+03	6.3e+03	1.26e+07	1.70e+03	7.4e+03
30	13C-1,2,3,6,7,8-HxCDD	1.44e+07	2.55e+03	5.6e+03	1.11e+07	1.70e+03	6.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.76e+07	1.80e+03	9.7e+03	1.66e+07	8.36e+02	2.0e+04
32	13C-OCDD	1.39e+07	1.18e+03	1.2e+04	1.54e+07	3.42e+03	4.5e+03
33	13C-1,2,3,4-TCDD	1.13e+07	7.40e+03	1.5e+03	1.42e+07	4.12e+03	3.4e+03
34	13C-1,2,3,7,8,9-HxCDD	2.44e+07	2.55e+03	9.6e+03	1.92e+07	1.70e+03	1.1e+04
35	37Cl-2,3,7,8-TCDD	7.60e+06	3.96e+02	1.9e+04			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0063

Entry: 36 Totals Name: Total Tetra-Furans

Run: 15 File: P616135 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 23:39:50 Processed: 20-DEC-18 15:56:48

Mass: 303.9020 305.8990 Tot Response: 6.27e+04 RRF: 1.081

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:41	9.05e+01	1.29e+02	0.70	yes	2.19e+02		n n
2	22:35	2.66e+02	3.13e+02	0.85	yes	5.79e+02		n n
3	23:02	4.24e+02	4.94e+02	0.86	yes	9.17e+02		n n
4	23:20	8.32e+02	1.10e+03	0.75	yes	1.94e+03		n n
5	23:43	2.95e+02	3.68e+02	0.80	yes	6.63e+02		n n
6	24:00	6.28e+02	7.71e+02	0.81	yes	1.40e+03		n n
7	24:23	1.89e+02	2.47e+02	0.76	yes	4.36e+02		n n
8	24:41	4.65e+02	5.40e+02	0.86	yes	1.00e+03		n n
9	25:17	6.94e+03	8.75e+03	0.79	yes	1.57e+04		n n
10	25:37	3.86e+02	4.56e+02	0.85	yes	8.42e+02		n n
11	26:19	1.43e+04	1.90e+04	0.75	yes	3.33e+04	2,3,7,8-TCDF	n y
12	26:42	1.22e+03	1.53e+03	0.80	yes	2.75e+03		n n
13	28:25	1.36e+03	1.65e+03	0.82	yes	3.01e+03		n n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0063

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 15 File: P616135 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 23:39:50 Processed: 20-DEC-18 15:56:48

Mass: 319.8970 321.8940 Tot Response: 1.48e+04 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:55	1.74e+03	2.31e+03	0.75	yes	4.05e+03		n	n
2	25:54	2.05e+01	2.69e+01	0.76	yes	4.74e+01		n	n
3	26:07	3.52e+01	5.03e+01	0.70	yes	8.54e+01		n	n
4	26:31	1.93e+02	2.74e+02	0.70	yes	4.67e+02		n	n
5	26:54	1.23e+02	1.79e+02	0.69	yes	3.03e+02		n	n
6	27:14	3.84e+03	5.08e+03	0.76	yes	8.92e+03	2,3,7,8-TCDD	n	n
7	27:34	3.67e+02	4.59e+02	0.80	yes	8.26e+02		n	n
8	27:43	2.66e+01	3.20e+01	0.83	yes	5.86e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0063

Entry: 38 Totals Name: Total Penta-Furans1

Run: 15 File: P616135 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 23:39:50 Processed: 20-DEC-18 15:56:48

Mass: 339.8600 341.8570 Tot Response: 2.42e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:22	1.49e+02	9.29e+01 1.60	yes	2.42e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0063

Entry: 39 Totals Name: Total Penta-Furans2

Run: 15 File: P616135 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 23:39:50 Processed: 20-DEC-18 15:56:48

Mass: 339.8600 341.8570 Tot Response: 5.09e+03 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:53	1.04e+02	7.11e+01	1.46	yes	1.75e+02		y	n
2	30:01	7.22e+02	4.84e+02	1.49	yes	1.21e+03		y	n
3	31:02	1.03e+03	7.22e+02	1.43	yes	1.76e+03	1,2,3,7,8-PeCDF	n	n
4	31:18	3.11e+02	2.32e+02	1.34	yes	5.43e+02		n	n
5	32:02	8.13e+02	5.28e+02	1.54	yes	1.34e+03	2,3,4,7,8-PeCDF	n	n
6	32:59	4.50e+01	2.87e+01	1.57	yes	7.38e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0063

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 15 File: P616135 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 23:39:50 Processed: 20-DEC-18 15:56:48

Mass: 355.8550 357.8520 Tot Response: 4.35e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:03	3.02e+02	2.02e+02	1.49	yes	5.04e+02		n	n
2	30:33	2.20e+03	1.37e+03	1.60	yes	3.57e+03		n	n
3	31:04	7.94e+01	5.30e+01	1.50	yes	1.32e+02		n	n
4	32:42	8.76e+01	5.24e+01	1.67	yes	1.40e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0063

Entry: 41 Totals Name: Total Hexa-Furans

Run: 15 File: P616135 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 23:39:50 Processed: 20-DEC-18 15:56:48

Mass: 373.8210 375.8180 Tot Response: 3.52e+03 RRF: 1.324

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:22	1.50e+02	1.24e+02 1.21	yes	2.74e+02		n	n
2	34:44	3.20e+01	2.67e+01 1.20	yes	5.87e+01		n	n
3	34:49	1.23e+03	1.05e+03 1.17	yes	2.28e+03	1,2,3,4,7,8-HxCDF	n	n
4	34:56	3.37e+02	3.09e+02 1.09	yes	6.46e+02	1,2,3,6,7,8-HxCDF	n	n
5	36:14	1.43e+02	1.13e+02 1.26	yes	2.56e+02	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0063

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 15 File: P616135 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 23:39:50 Processed: 20-DEC-18 15:56:48

Mass: 389.8160 391.8130 Tot Response: 2.65e+04 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:12	1.18e+04	9.52e+03	1.24	yes	2.13e+04		n n
2	34:58	1.78e+03	1.46e+03	1.22	yes	3.24e+03		n n
3	35:05	3.62e+02	3.31e+02	1.09	yes	6.93e+02		n n
4	35:50	1.84e+02	1.43e+02	1.28	yes	3.28e+02		n n
5	35:55	4.89e+02	4.26e+02	1.15	yes	9.16e+02	1,2,3,7,8,9-HxCDD	n n

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0063

Entry: 43 Totals Name: Total Hepta-Furans

Run: 15 File: P616135 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 23:39:50 Processed: 20-DEC-18 15:56:48

Mass: 407.7820 409.7790 Tot Response: 1.13e+03 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:52	4.46e+02	4.21e+02	1.06	yes	8.67e+02		n	n
2	38:48	1.35e+02	1.29e+02	1.04	yes	2.64e+02	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0063

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 15 File: P616135 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 23:39:50 Processed: 20-DEC-18 15:56:48

Mass: 423.7770 425.7740 Tot Response: 6.52e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:43	2.72e+04	2.59e+04	1.05	yes	5.31e+04		n	n
2	38:21	6.16e+03	5.92e+03	1.04	yes	1.21e+04	1,2,3,4,6,7,8-HpCDD	n	n

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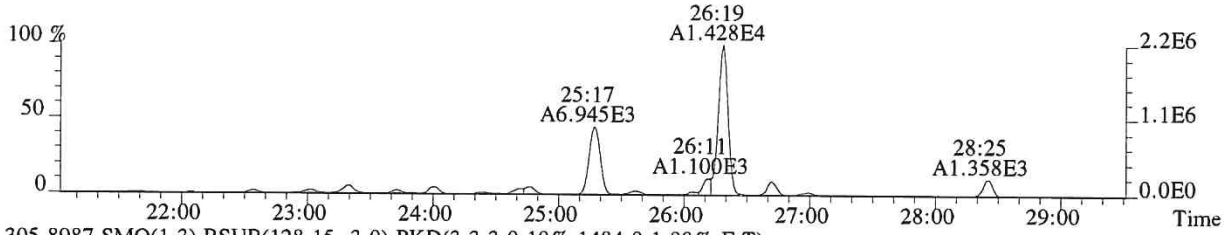
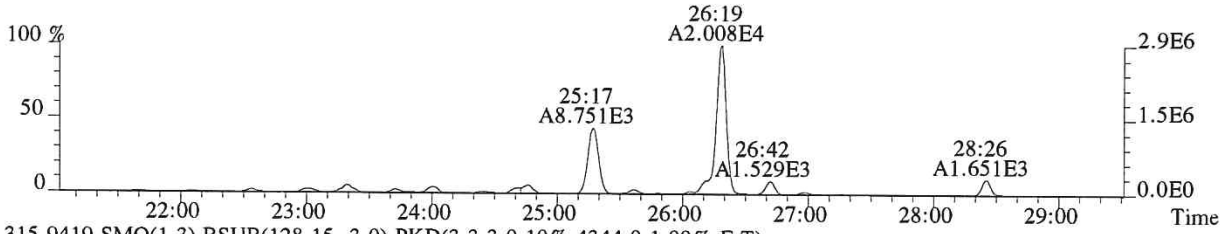
Office(281)530-5656. Fax(281)530-5887

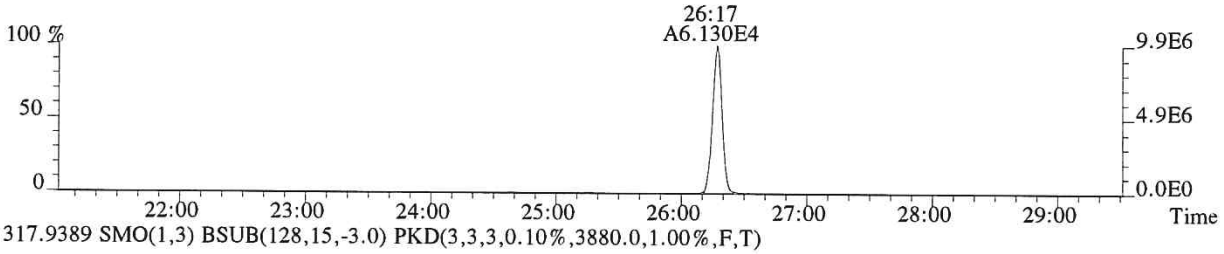
File:P616135 #1-602 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1720.0,1.00%,F,T)



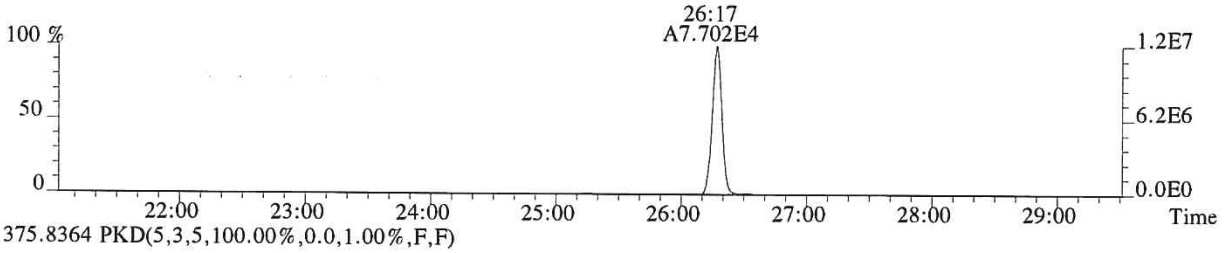
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1484.0,1.00%,F,T)



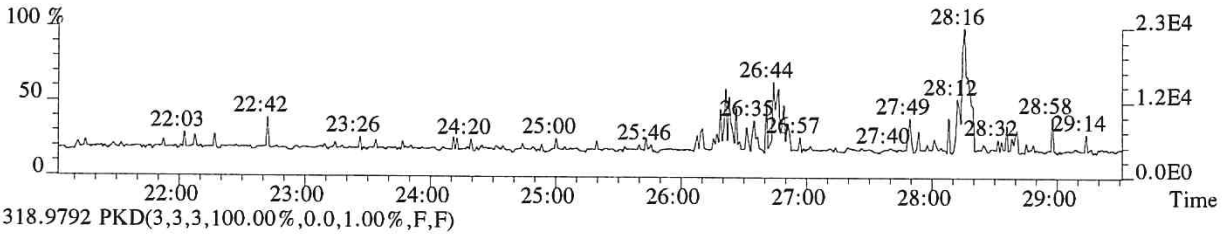
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4344.0,1.00%,F,T)



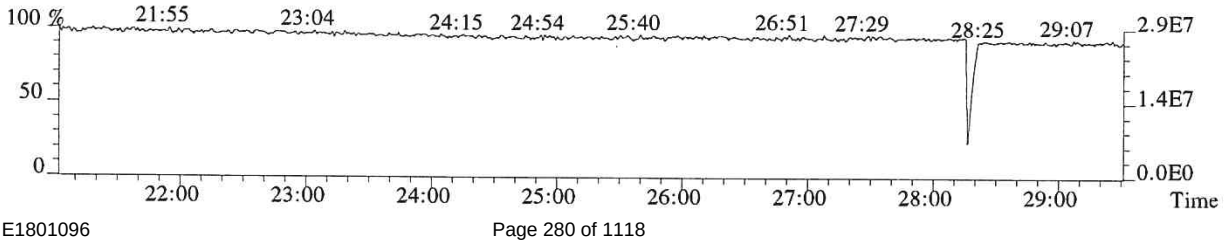
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3880.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

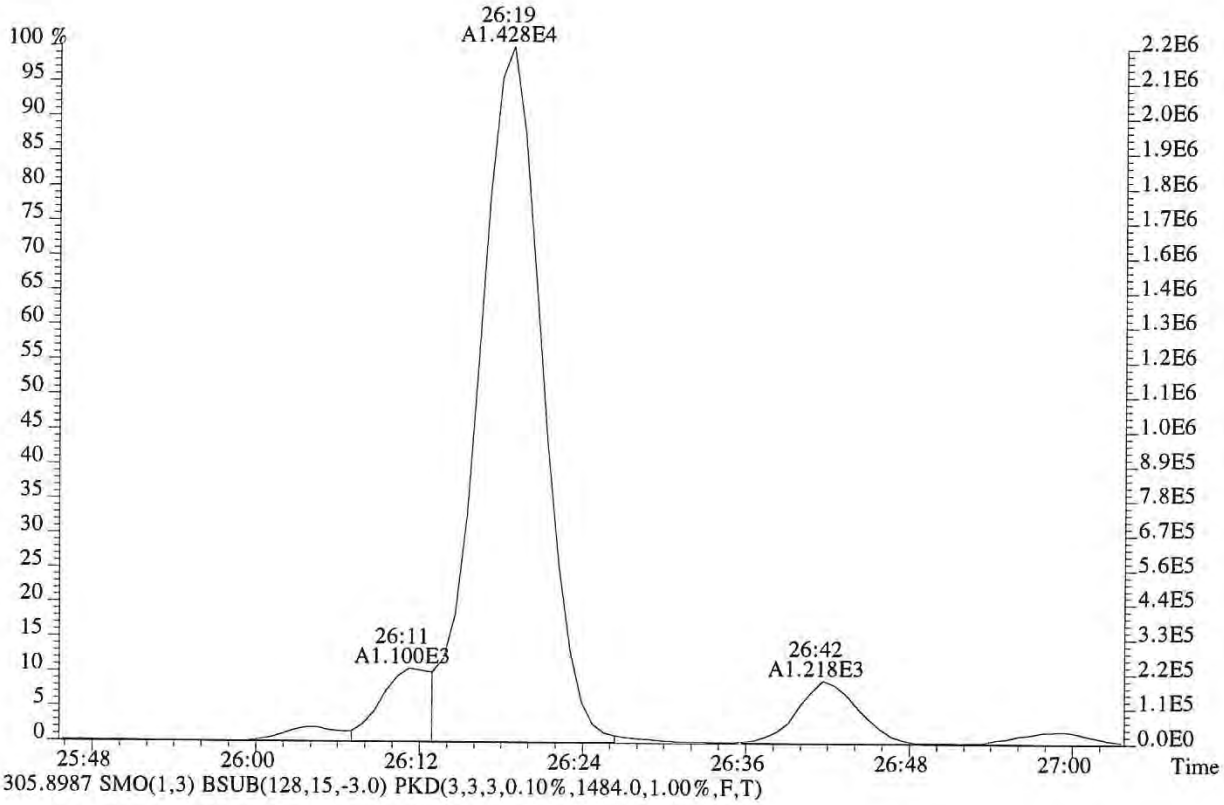


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

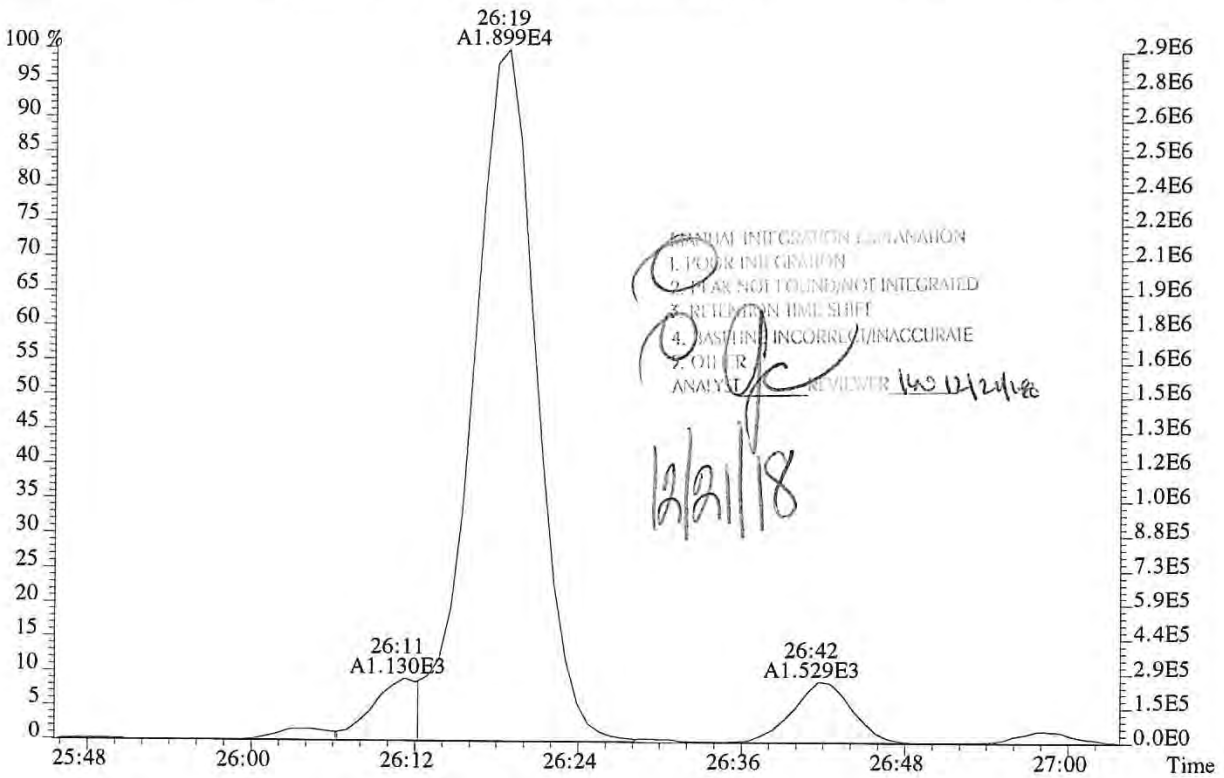


058928

File:P616135 #1-602 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1720.0,1.00%,F,T)

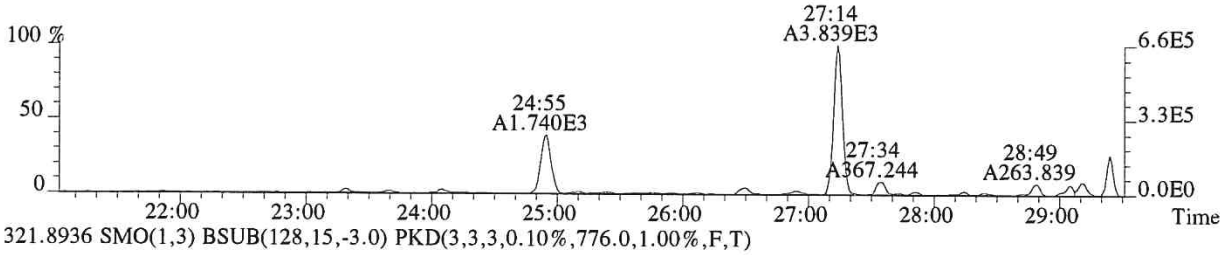


305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1484.0,1.00%,F,T)

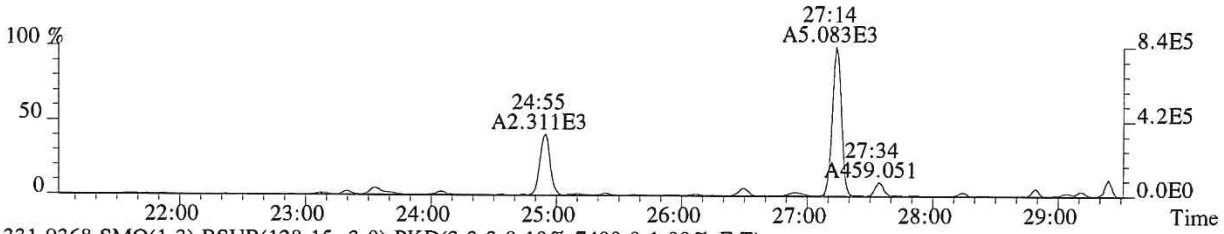


MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST [illegible] REVIEWER [illegible] 12/21/18
12/21/18

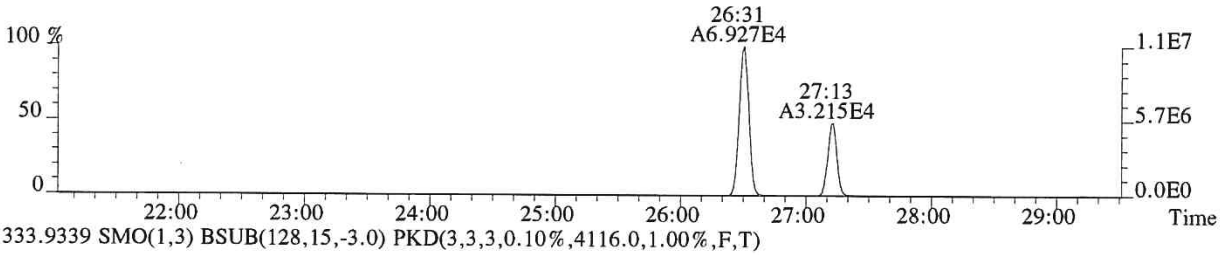
File:P616135 #1-602 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,972.0,1.00%,F,T)



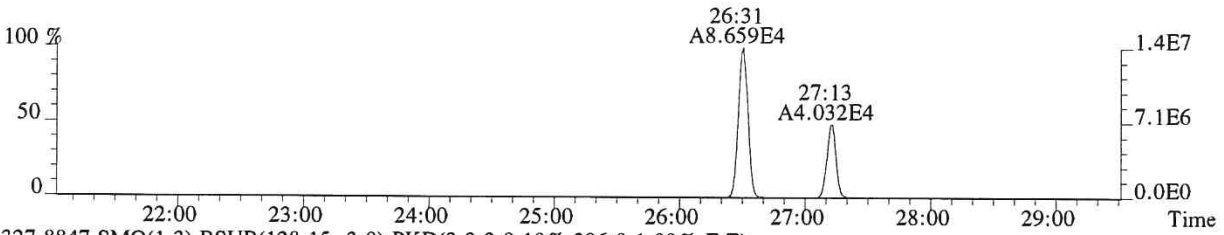
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,776.0,1.00%,F,T)



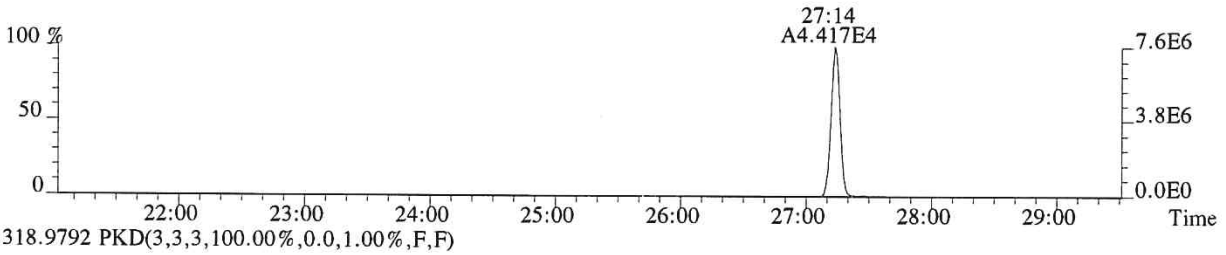
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7400.0,1.00%,F,T)



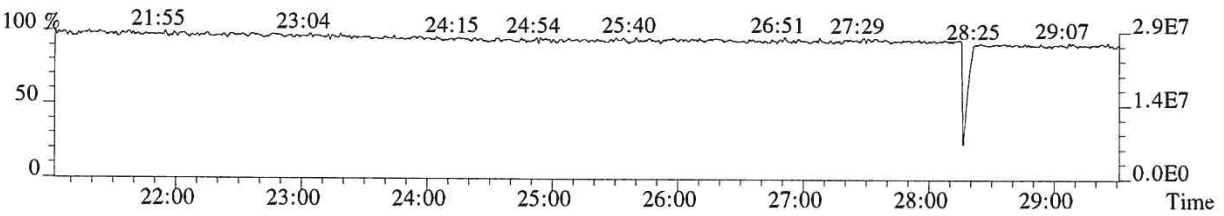
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4116.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,396.0,1.00%,F,T)

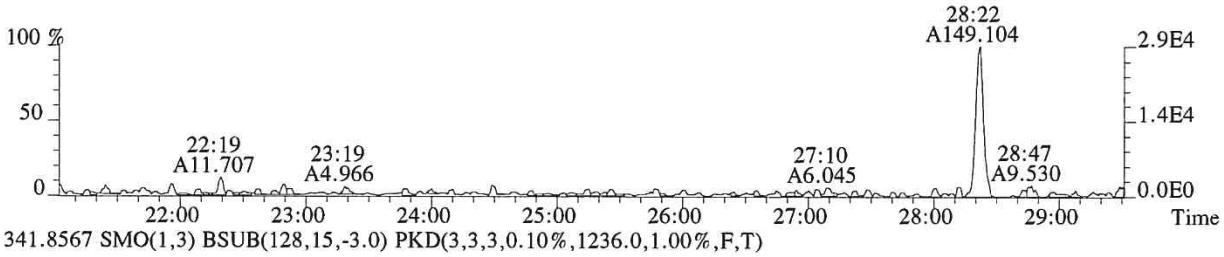


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

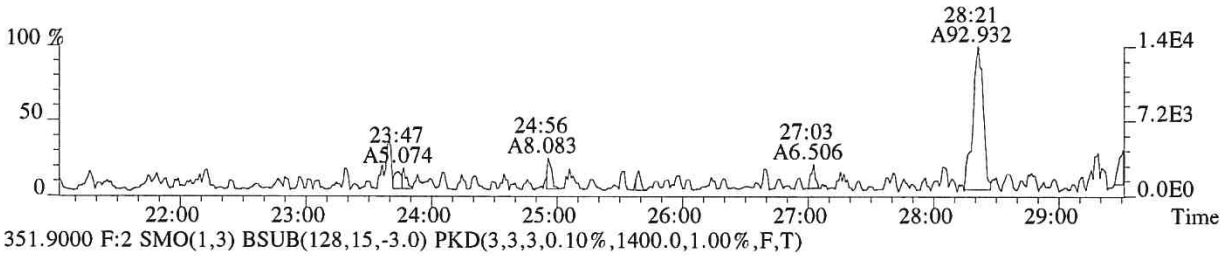


058930

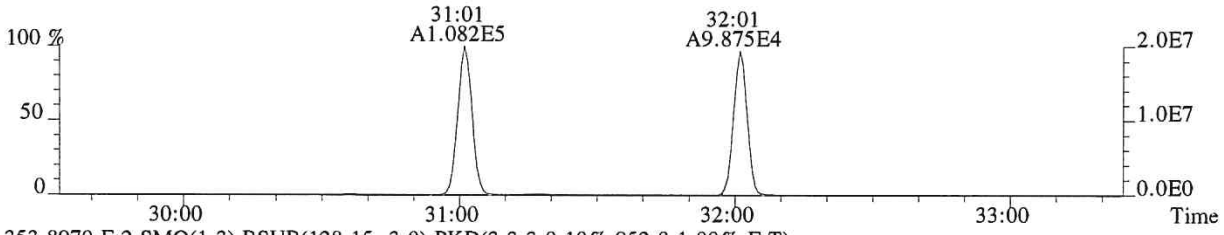
File:P616135 #1-602 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,504.0,1.00%,F,T)



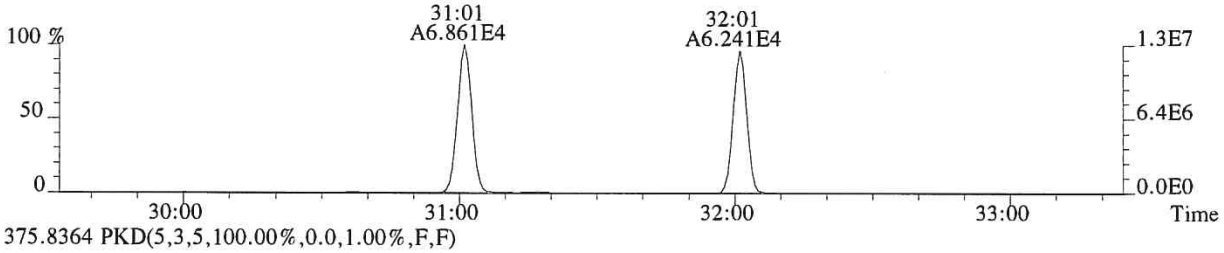
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1236.0,1.00%,F,T)



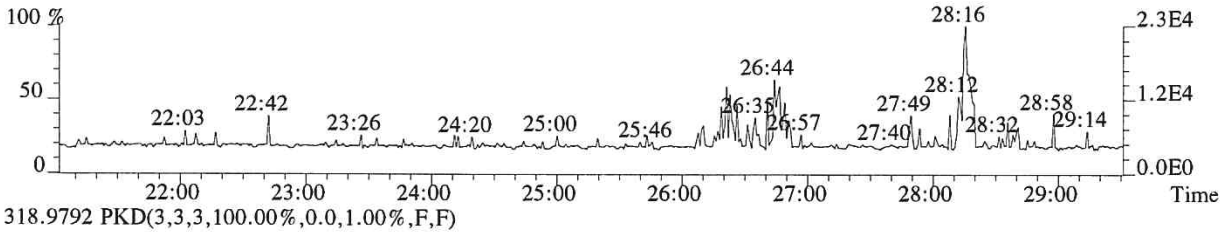
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1400.0,1.00%,F,T)



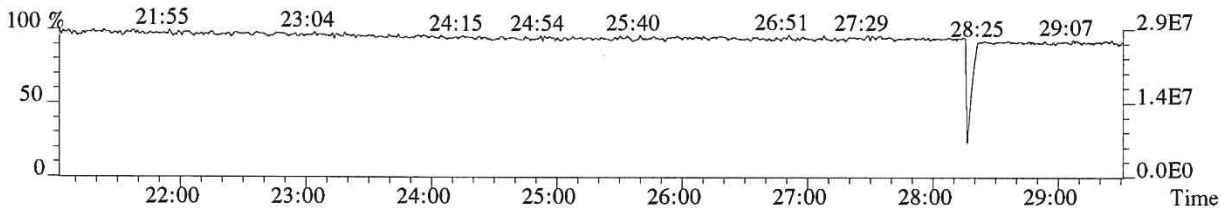
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,952.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

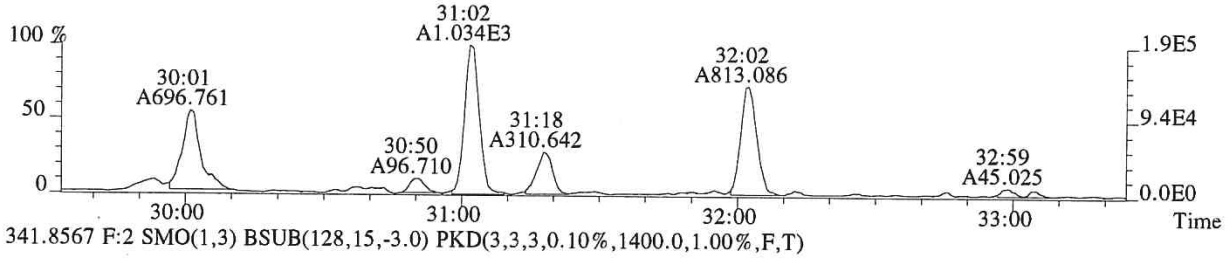


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

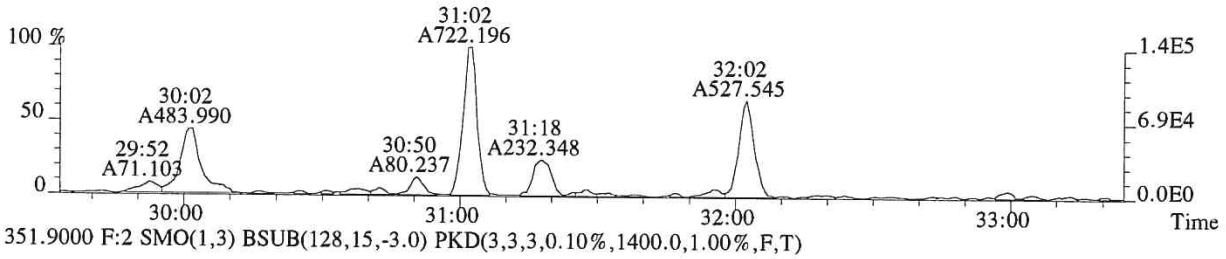


058931

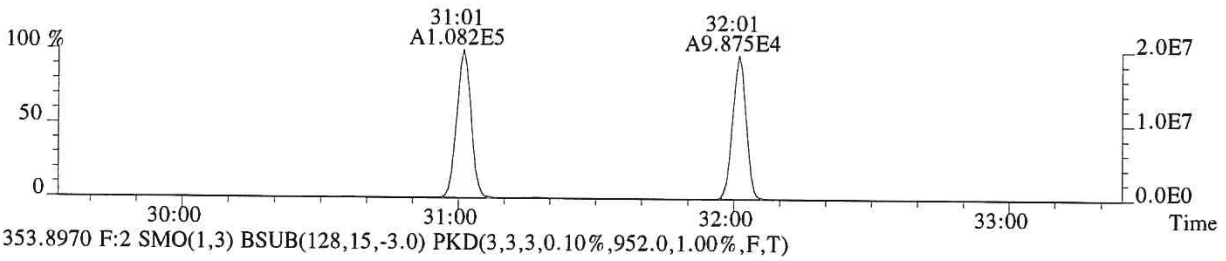
File:P616135 #1-348 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3728.0,1.00%,F,T)



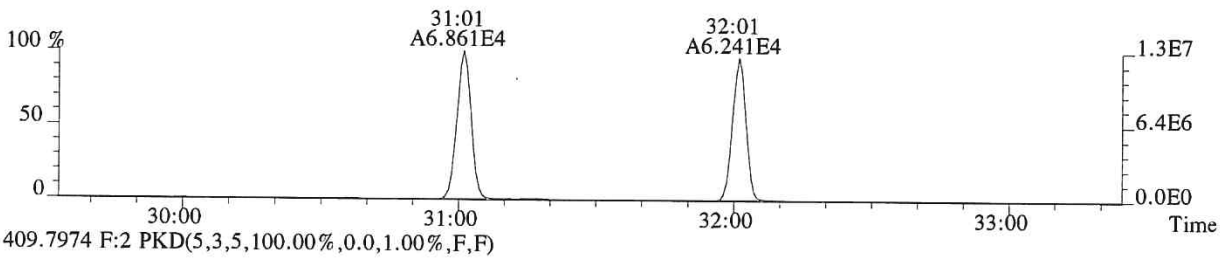
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1400.0,1.00%,F,T)



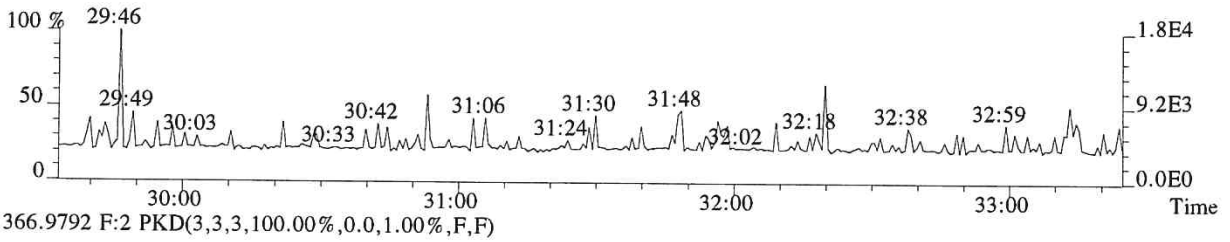
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1400.0,1.00%,F,T)



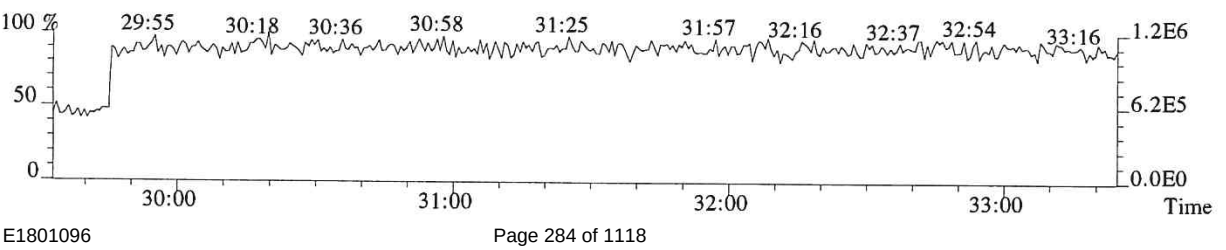
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,952.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

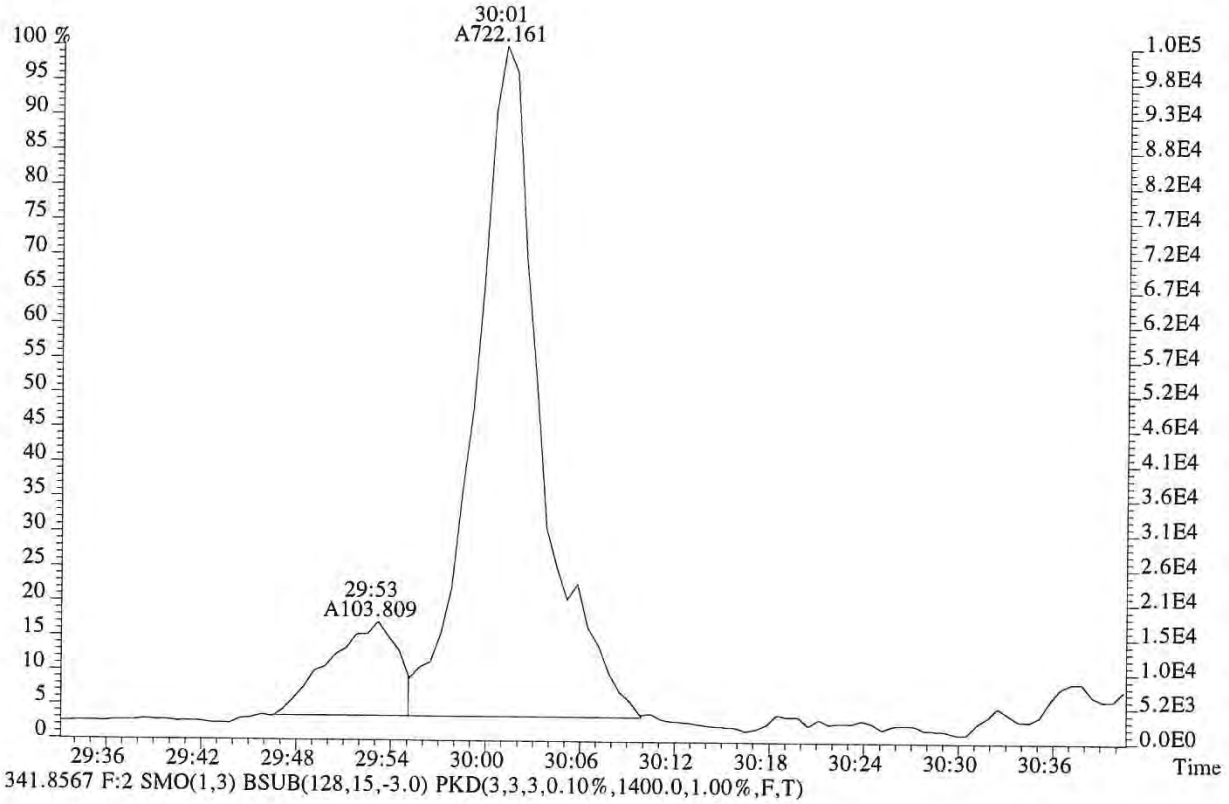


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

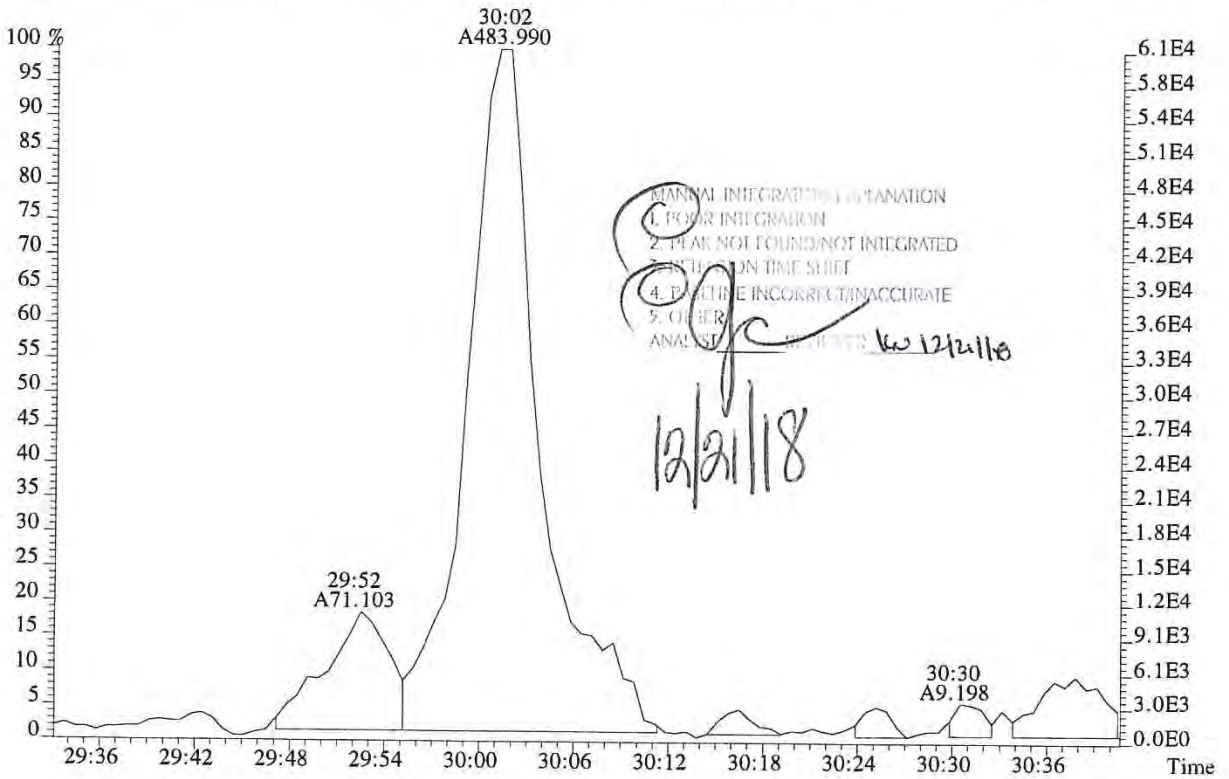


058932

File:P616135 #1-348 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3728.0,1.00%,F,T)



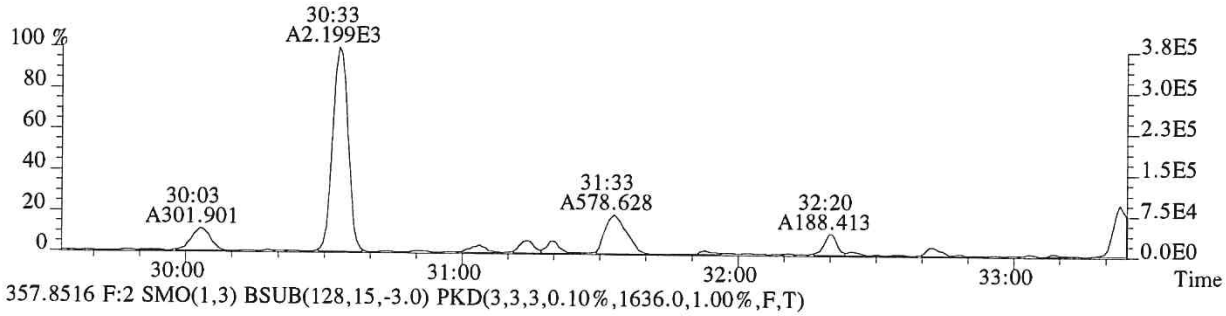
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1400.0,1.00%,F,T)



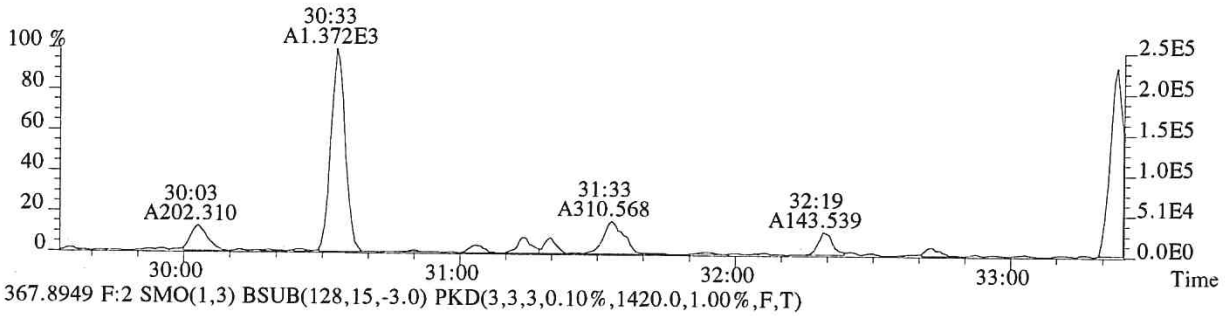
MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. INTEGRATION TIME SHIFT
4. RETENTION TIME INCORRECT/INACCURATE
5. OTHER
ANALYST INITIALS kw 12/21/18
12/21/18

058933

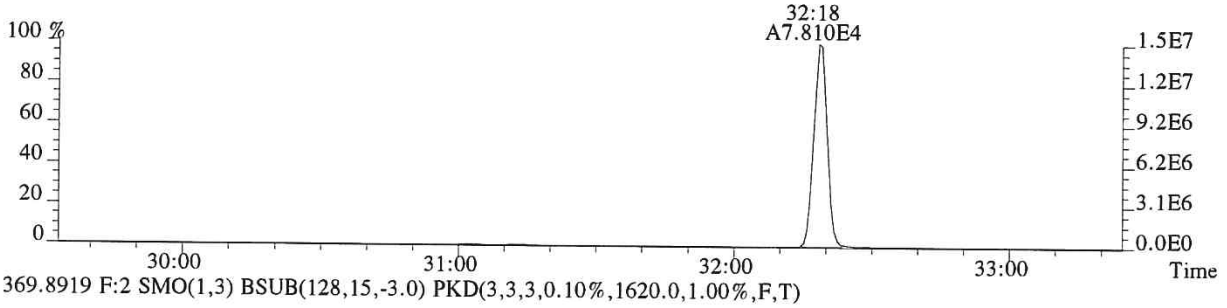
File:P616135 #1-348 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2000.0,1.00%,F,T)



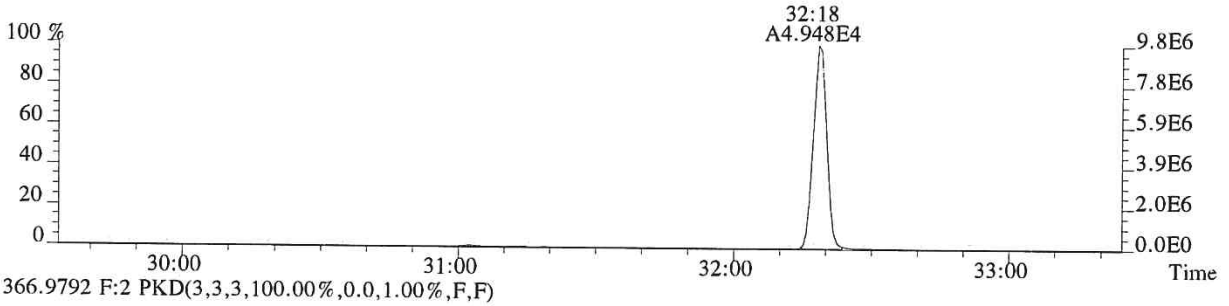
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1636.0,1.00%,F,T)



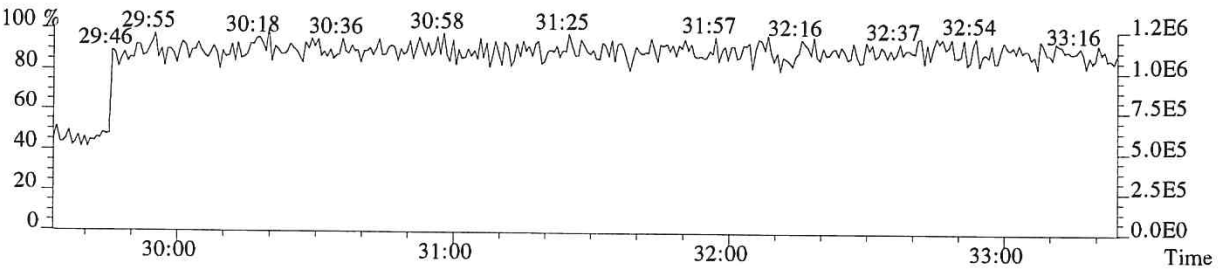
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1420.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1620.0,1.00%,F,T)

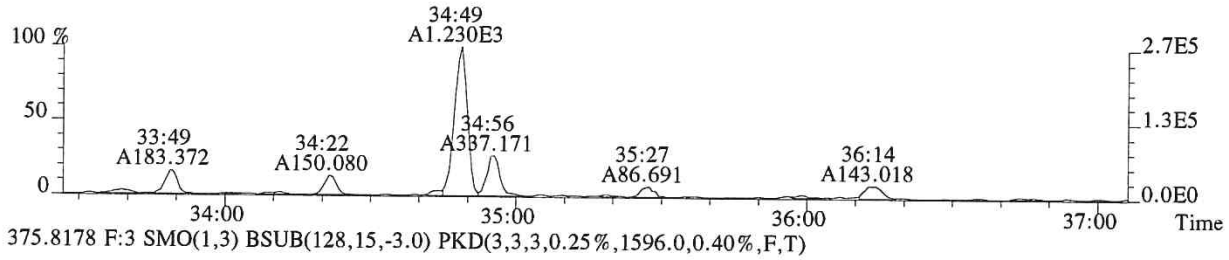


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

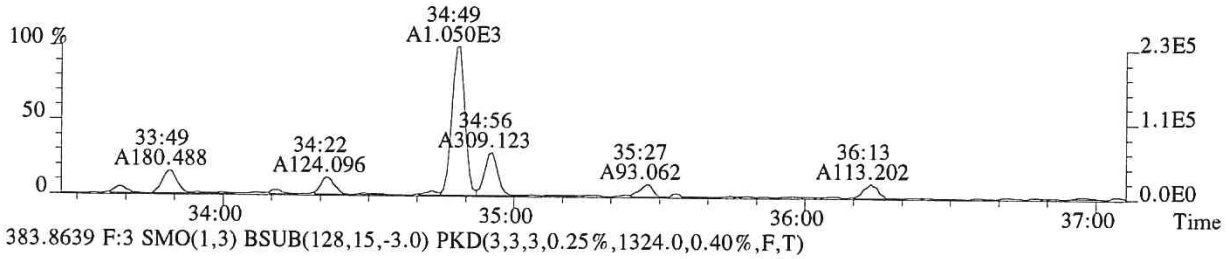


058934

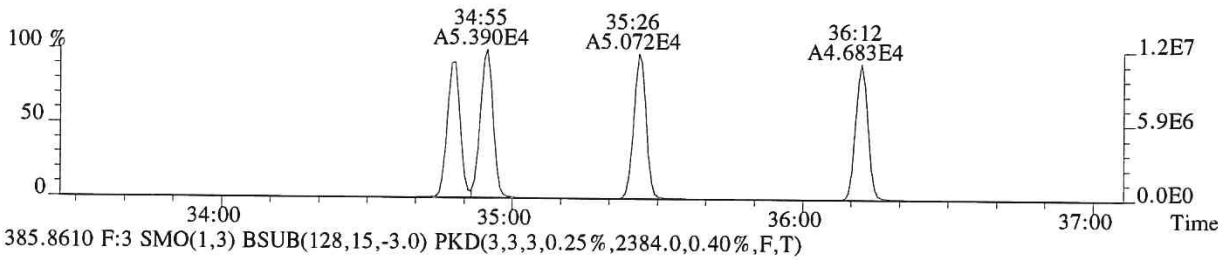
File:P616135 #1-330 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1436.0,0.40%,F,T)



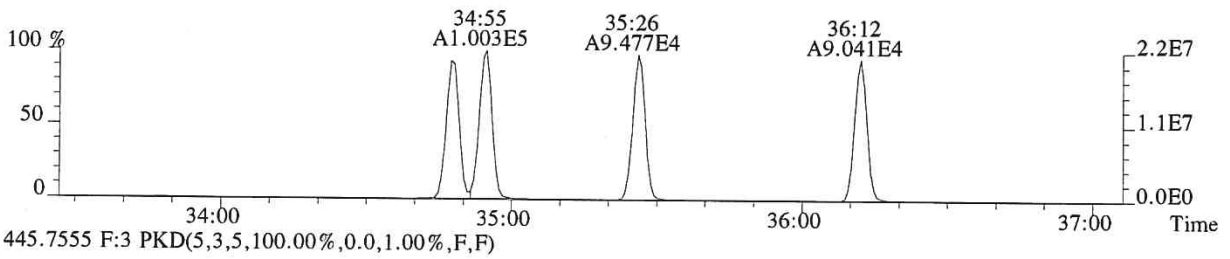
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1596.0,0.40%,F,T)



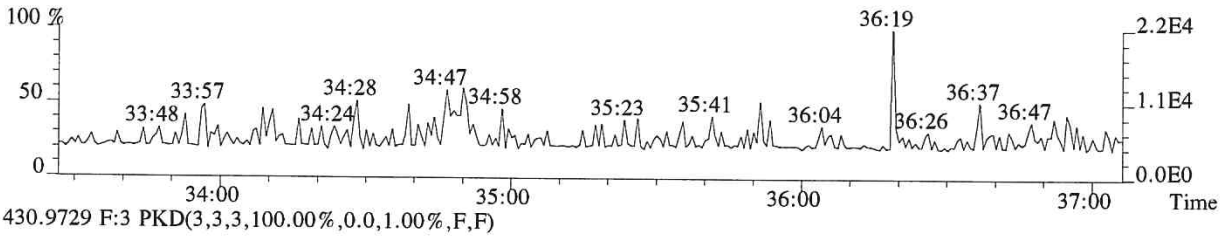
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1324.0,0.40%,F,T)



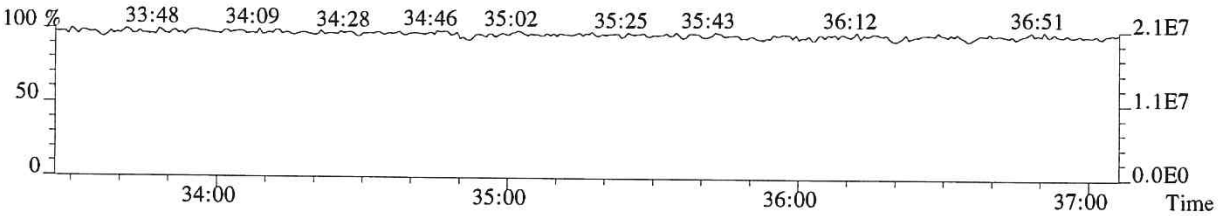
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2384.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

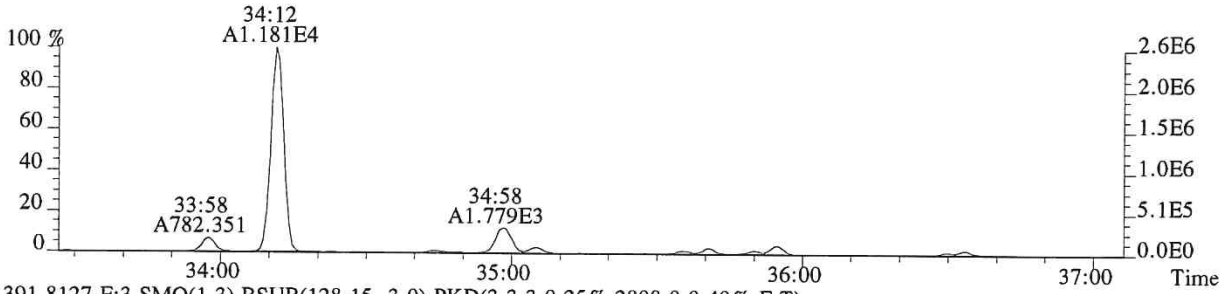


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

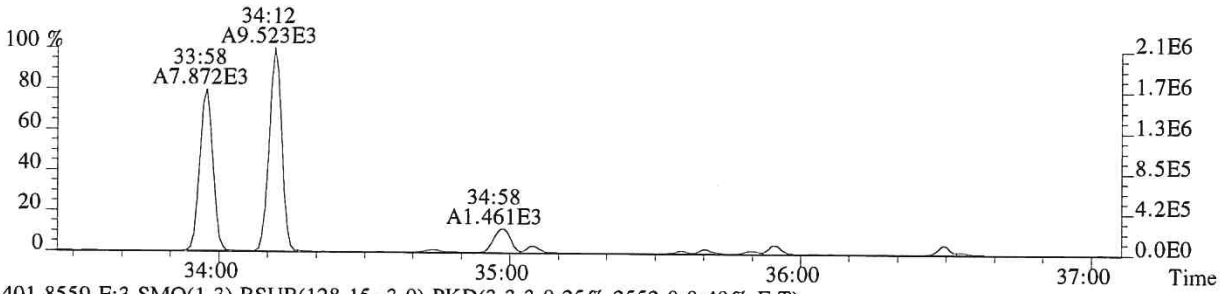


058935

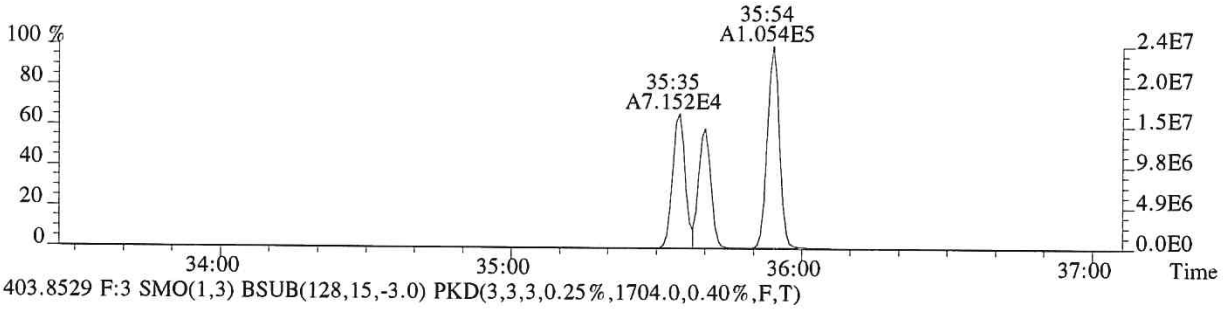
File:P616135 #1-330 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1724.0,0.40%,F,T)



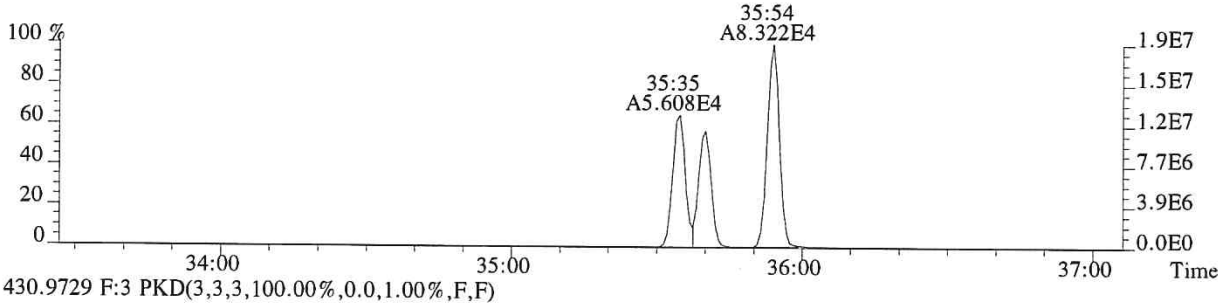
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2808.0,0.40%,F,T)



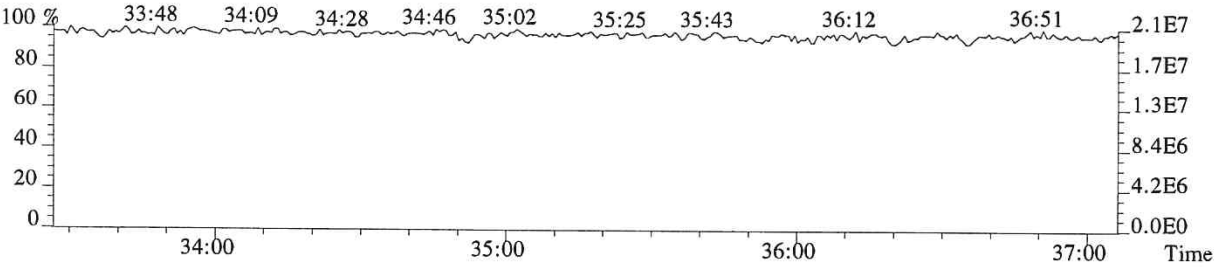
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2552.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1704.0,0.40%,F,T)

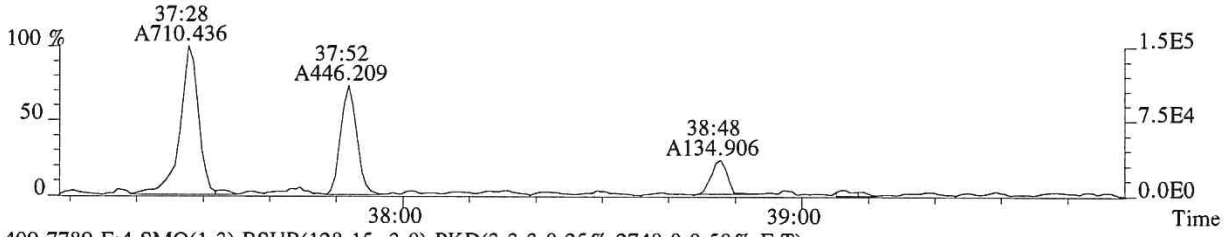


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

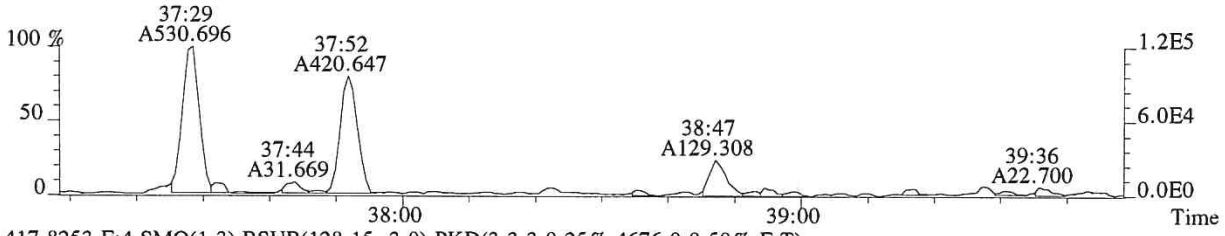


058936

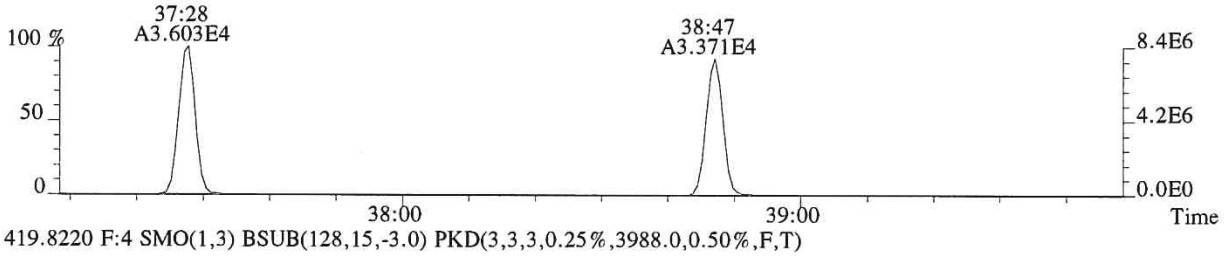
File:P616135 #1-241 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3084.0,0.50%,F,T)



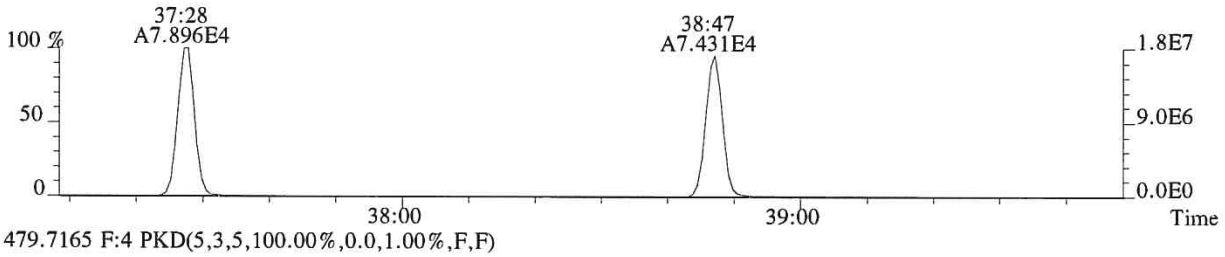
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2748.0,0.50%,F,T)



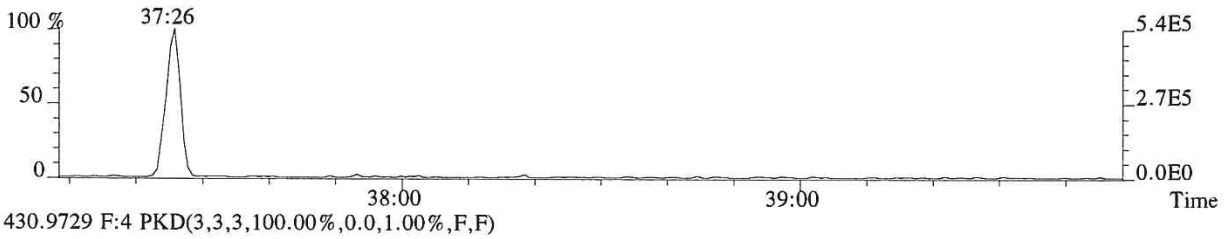
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4676.0,0.50%,F,T)



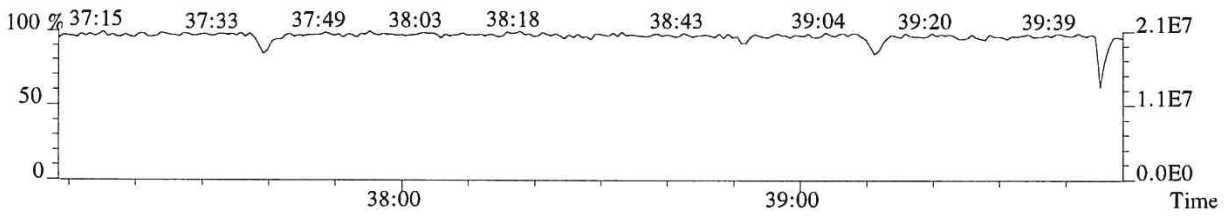
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3988.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

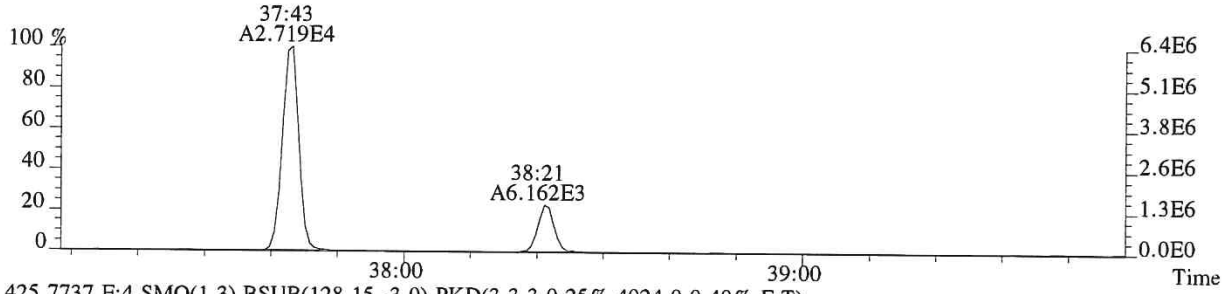


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

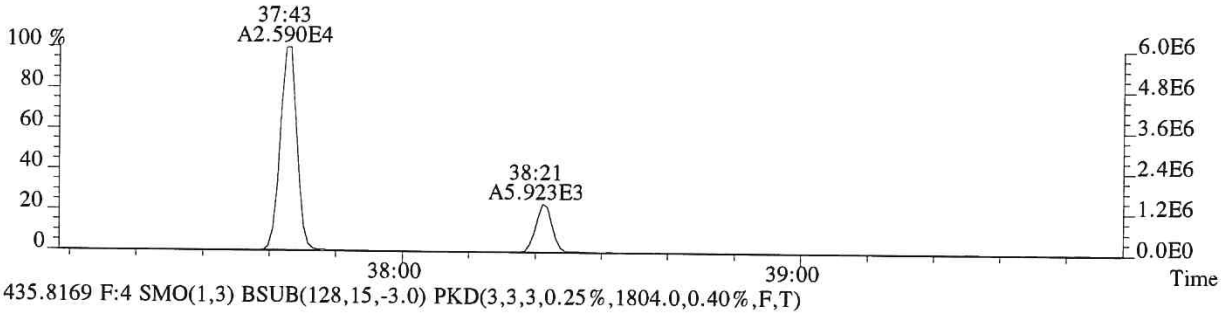


058937

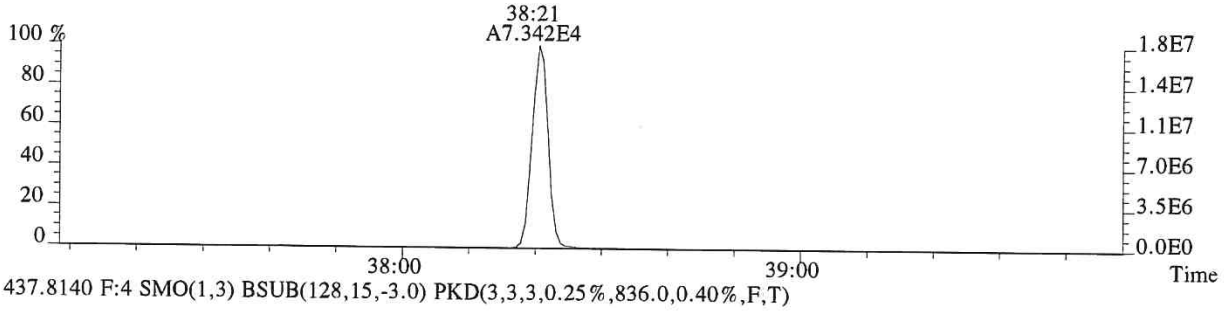
File:P616135 #1-241 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5160.0,0.40%,F,T)



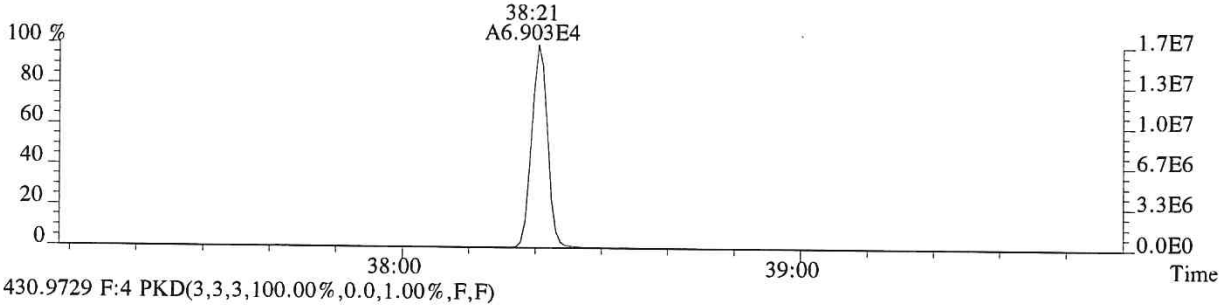
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4024.0,0.40%,F,T)



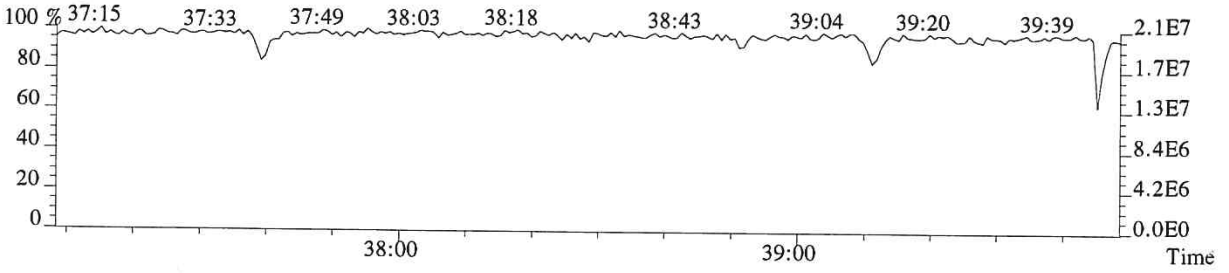
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1804.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,836.0,0.40%,F,T)

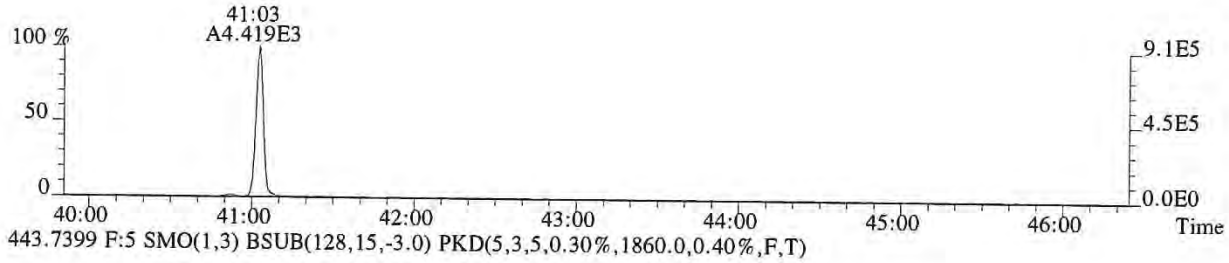


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

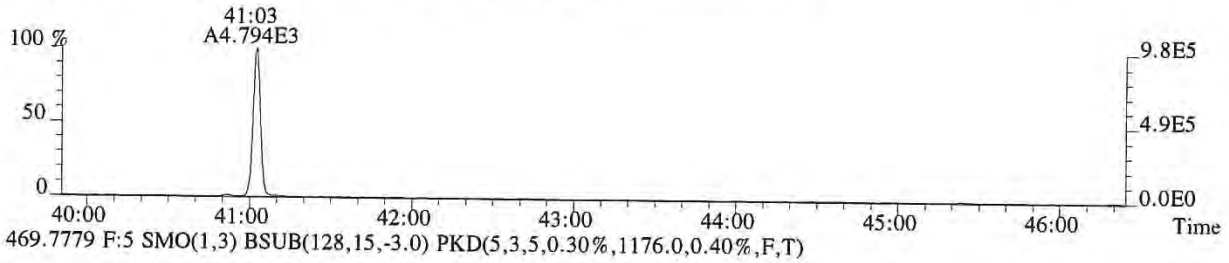


058938

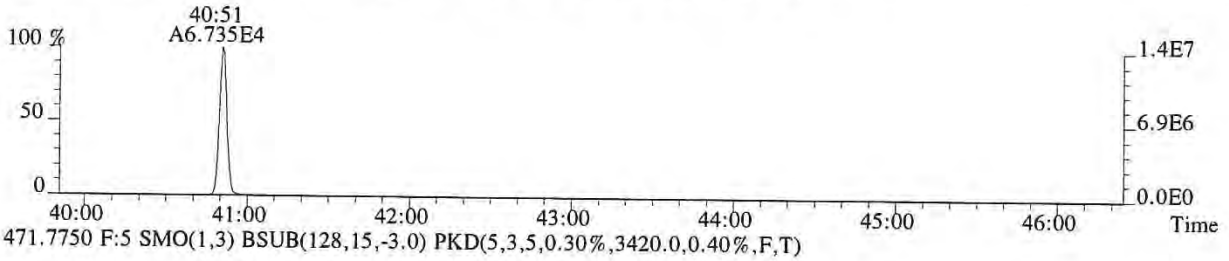
File:P616135 #1-591 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2276.0,0.40%,F,T)



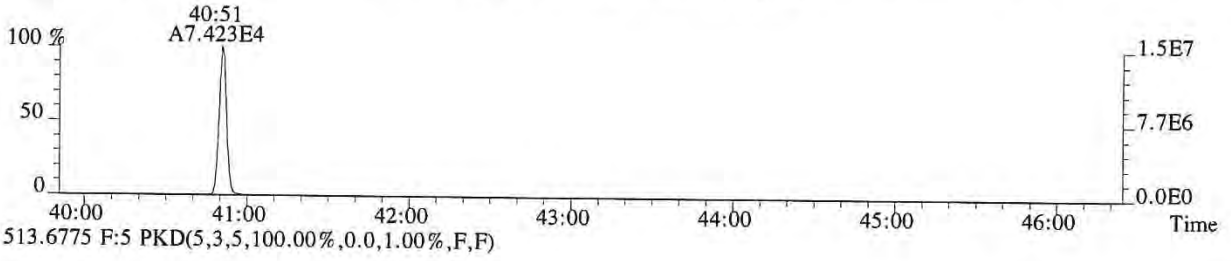
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1860.0,0.40%,F,T)



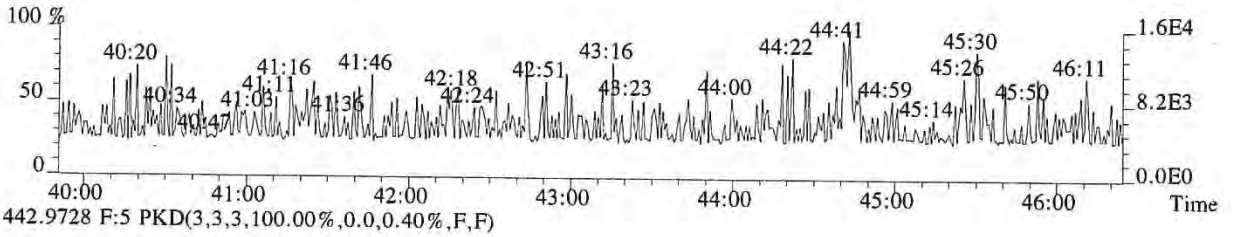
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1176.0,0.40%,F,T)



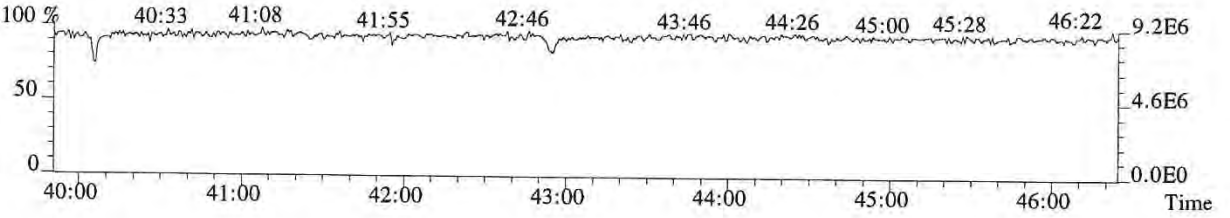
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3420.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

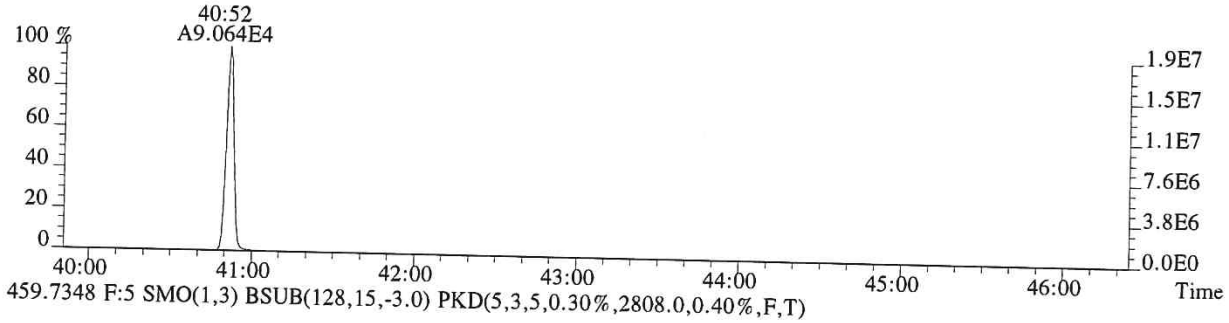


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

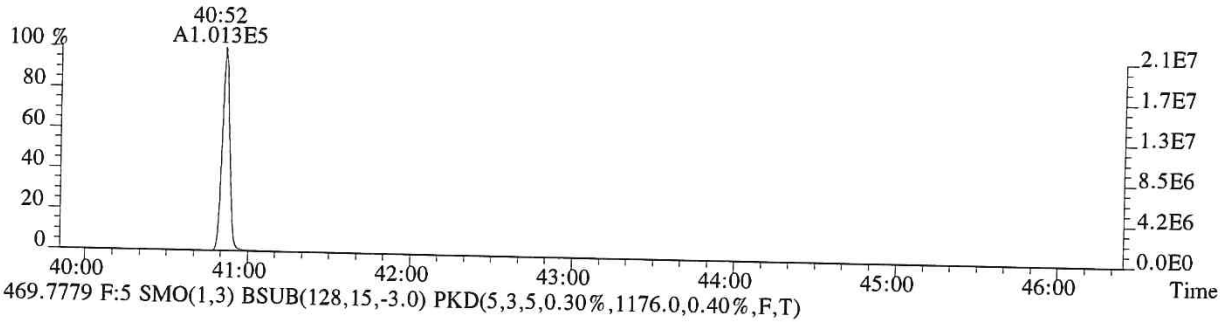


058939

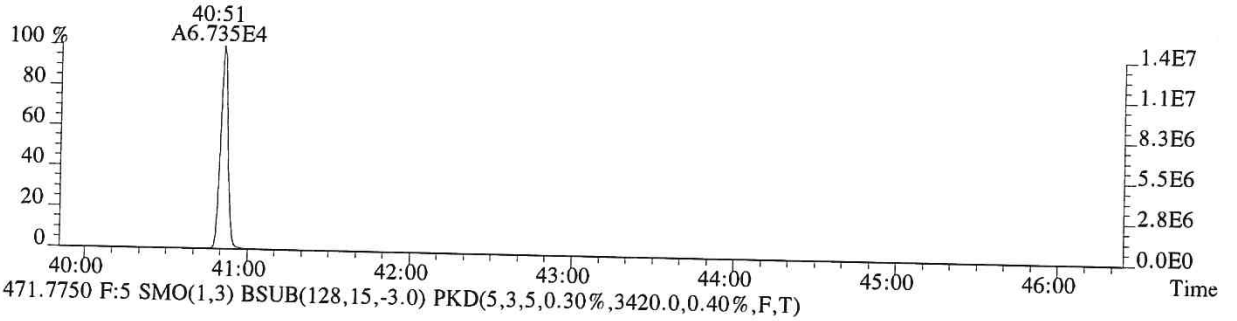
File:P616135 #1-591 Acq:19-DEC-2018 23:39:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-005
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1856.0,0.40%,F,T)



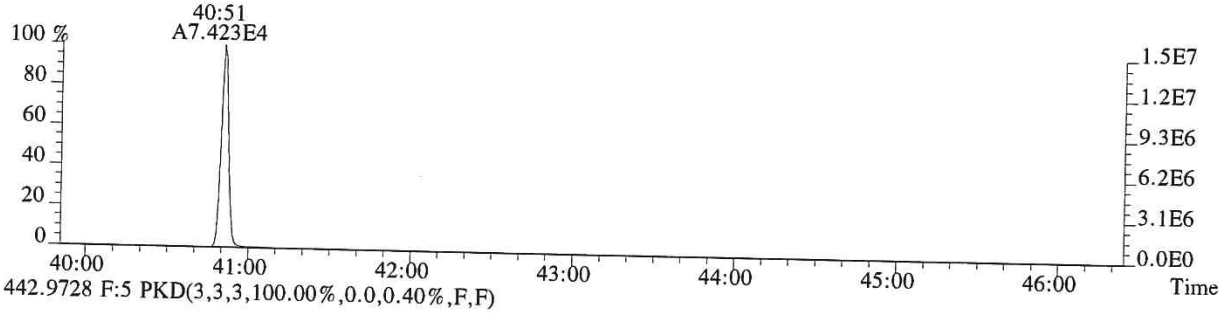
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2808.0,0.40%,F,T)



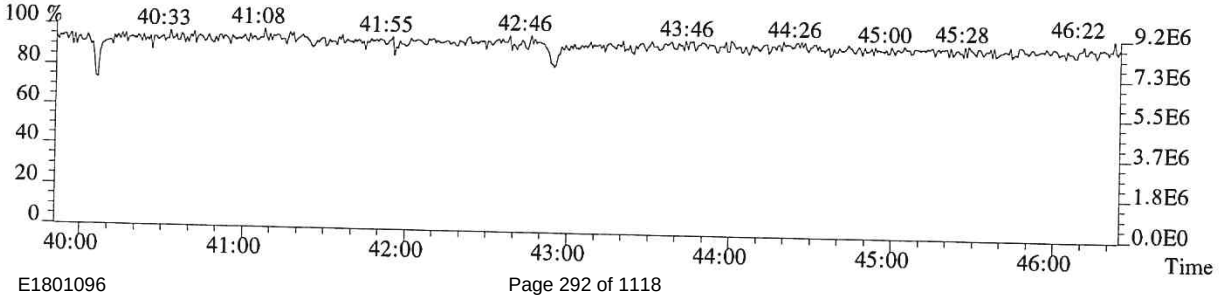
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1176.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3420.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



058940

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0206

un #16 Filename P616136 Samp: 1 Inj: 1 Acquired: 20-DEC-18 00:29:00
rocessed: 20-DEC-18 15:56:49 Sample ID: E1801096-006

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:18	5.427e+03	6.812e+03	0.80	yes	yes	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	5.307e+02	3.504e+02	1.51	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	6.106e+02	3.822e+02	1.60	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:48	1.028e+03	8.824e+02	1.17	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:55	4.305e+02	4.137e+02	1.04	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	3.370e+02	3.091e+02	1.09	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:13	1.550e+02	1.040e+02	1.49	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:28	4.734e+03	4.365e+03	1.08	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:47	3.330e+02	3.333e+02	1.00	yes	no	1.463
.0	Unk	OCDF	41:03	1.246e+04	1.401e+04	0.89	yes	no	1.571
.1	Unk	2,3,7,8-TCDD	27:14	1.467e+03	1.850e+03	0.79	yes	no	1.049
.2	Unk	1,2,3,7,8-PeCDD	32:19	2.302e+02	2.372e+02	0.97	no	no	0.929
.3	Unk	1,2,3,4,7,8-HxCDD	35:35	4.673e+02	3.771e+02	1.24	yes	no	1.071
.4	Unk	1,2,3,6,7,8-HxCDD	35:40	1.176e+03	9.541e+02	1.23	yes	no	1.060
.5	Unk	1,2,3,7,8,9-HxCDD	35:55	7.917e+02	5.977e+02	1.32	yes	no	1.145
.6	Unk	1,2,3,4,6,7,8-HpCDD	38:21	6.720e+04	6.337e+04	1.06	yes	no	1.112
.7	Unk	OCDD	40:52	2.101e+06	2.347e+06	0.90	yes	no	1.157
.8	IS	13C-2,3,7,8-TCDF	26:17	4.106e+04	5.164e+04	0.80	yes	no	1.417
.9	IS	13C-1,2,3,7,8-PeCDF	31:01	7.646e+04	4.766e+04	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	6.806e+04	4.323e+04	1.57	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	3.616e+04	6.805e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:54	4.005e+04	7.517e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	3.568e+04	6.697e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	3.586e+04	6.751e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:27	2.664e+04	5.922e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	2.520e+04	5.561e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:12	2.169e+04	2.741e+04	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:18	5.392e+04	3.429e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:34	5.089e+04	3.986e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:39	4.631e+04	3.684e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	5.354e+04	5.011e+04	1.07	yes	no	0.857
32	IS	13C-OCDD	40:51	5.313e+04	5.808e+04	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:30	6.927e+04	8.658e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:53	1.074e+05	8.464e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	2.984e+04				no	1.086

$$OCDD = \frac{(2.101e+06 + 2.347e+06) \times 4000\ pg \times 1}{(5.313e+04 + 5.808e+04) \times 10.118\ g \times 83.2 / 100 \times 1.157} =$$ Recoupling

12/21/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0206

:un #16 Filename P616136 Samp: 1 Inj: 1 Acquired: 20-DEC-18 00:29:00
'rocessed: 20-DEC-18 15:56:49 LAB. ID: E1801096-006

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
.	2,3,7,8-TCDF	8.18e+05	3.68e+02	2.2e+03	1.01e+06	1.34e+03	7.5e+02
:	1,2,3,7,8-PeCDF	1.09e+05	1.97e+03	5.5e+01	6.87e+04	2.63e+03	2.6e+01
;	2,3,4,7,8-PeCDF	9.71e+04	1.97e+03	4.9e+01	5.98e+04	2.63e+03	2.3e+01
:	1,2,3,4,7,8-HxCDF	2.24e+05	3.42e+03	6.6e+01	1.94e+05	3.25e+03	6.0e+01
;	1,2,3,6,7,8-HxCDF	9.81e+04	3.42e+03	2.9e+01	9.34e+04	3.25e+03	2.9e+01
;	2,3,4,6,7,8-HxCDF	7.19e+04	3.42e+03	2.1e+01	7.18e+04	3.25e+03	2.2e+01
'	1,2,3,7,8,9-HxCDF	2.79e+04	3.42e+03	8.2e+00	2.03e+04	3.25e+03	6.3e+00
8	1,2,3,4,6,7,8-HpCDF	1.11e+06	4.15e+03	2.7e+02	1.04e+06	4.06e+03	2.6e+02
9	1,2,3,4,7,8,9-HpCDF	7.69e+04	4.15e+03	1.9e+01	7.12e+04	4.06e+03	1.8e+01
10	OCDF	2.61e+06	1.80e+03	1.4e+03	2.89e+06	3.84e+03	7.5e+02
11	2,3,7,8-TCDD	2.61e+05	1.12e+03	2.3e+02	3.13e+05	3.88e+02	8.1e+02
12	1,2,3,7,8-PeCDD	4.71e+04	2.10e+03	2.2e+01	3.23e+04	2.30e+03	1.4e+01
13	1,2,3,4,7,8-HxCDD	1.02e+05	5.68e+03	1.8e+01	8.37e+04	1.92e+03	4.4e+01
14	1,2,3,6,7,8-HxCDD	2.63e+05	5.68e+03	4.6e+01	2.07e+05	1.92e+03	1.1e+02
15	1,2,3,7,8,9-HxCDD	1.76e+05	5.68e+03	3.1e+01	1.29e+05	1.92e+03	6.7e+01
16	1,2,3,4,6,7,8-HpCDD	1.63e+07	1.03e+05	1.6e+02	1.54e+07	9.81e+04	1.6e+02
17	OCDD	4.43e+08	2.06e+03	2.1e+05	4.99e+08	2.70e+03	1.8e+05
18	13C-2,3,7,8-TCDF	6.45e+06	3.86e+03	1.7e+03	8.14e+06	2.96e+03	2.7e+03
19	13C-1,2,3,7,8-PeCDF	1.39e+07	2.23e+03	6.2e+03	8.57e+06	9.64e+02	8.9e+03
20	13C-2,3,4,7,8-PeCDF	1.33e+07	2.23e+03	6.0e+03	8.42e+06	9.64e+02	8.7e+03
21	13C-1,2,3,4,7,8-HxCDF	8.06e+06	6.68e+02	1.2e+04	1.52e+07	2.00e+03	7.6e+03
22	13C-1,2,3,6,7,8-HxCDF	8.91e+06	6.68e+02	1.3e+04	1.68e+07	2.00e+03	8.4e+03
23	13C-2,3,4,6,7,8-HxCDF	8.10e+06	6.68e+02	1.2e+04	1.52e+07	2.00e+03	7.6e+03
24	13C-1,2,3,7,8,9-HxCDF	7.96e+06	6.68e+02	1.2e+04	1.48e+07	2.00e+03	7.4e+03
25	13C-1,2,3,4,6,7,8-HpCDF	6.38e+06	3.20e+03	2.0e+03	1.42e+07	4.96e+03	2.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	5.84e+06	3.20e+03	1.8e+03	1.30e+07	4.96e+03	2.6e+03
27	13C-2,3,7,8-TCDD	3.77e+06	5.87e+03	6.4e+02	4.83e+06	3.43e+03	1.4e+03
28	13C-1,2,3,7,8-PeCDD	1.09e+07	1.13e+03	9.6e+03	6.96e+06	5.28e+02	1.3e+04
29	13C-1,2,3,4,7,8-HxCDD	1.18e+07	2.23e+03	5.3e+03	9.25e+06	1.39e+03	6.7e+03
30	13C-1,2,3,6,7,8-HxCDD	1.03e+07	2.23e+03	4.6e+03	8.23e+06	1.39e+03	5.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.29e+07	8.60e+02	1.5e+04	1.20e+07	2.02e+03	6.0e+03
32	13C-OCDD	1.09e+07	2.28e+03	4.8e+03	1.20e+07	3.84e+03	3.1e+03
33	13C-1,2,3,4-TCDD	1.13e+07	5.87e+03	1.9e+03	1.40e+07	3.43e+03	4.1e+03
34	13C-1,2,3,7,8,9-HxCDD	2.38e+07	2.23e+03	1.1e+04	1.90e+07	1.39e+03	1.4e+04
35	37Cl-2,3,7,8-TCDD	5.20e+06	8.20e+02	6.3e+03			

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Peak List Summary

CLIENT ID.
SL0206

Entry: 36 Totals Name: Total Tetra-Furans

Run: 16 File: P616136 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 00:29:00 Processed: 20-DEC-18 15:56:49

Mass: 303.9020 305.8990 Tot Response: 2.22e+04 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:04	2.95e+01	4.13e+01	0.71	yes	7.08e+01		n	n
2	22:06	2.97e+01	4.13e+01	0.72	yes	7.09e+01		n	n
3	22:34	2.84e+02	3.85e+02	0.74	yes	6.70e+02		n	n
4	23:20	2.27e+02	2.82e+02	0.80	yes	5.09e+02		n	n
5	24:00	2.01e+02	2.42e+02	0.83	yes	4.44e+02		n	n
6	24:40	2.81e+02	3.69e+02	0.76	yes	6.50e+02		n	n
7	25:16	1.53e+03	1.99e+03	0.77	yes	3.52e+03		n	n
8	25:36	1.36e+02	1.83e+02	0.74	yes	3.18e+02		n	y
9	26:04	7.97e+01	1.07e+02	0.75	yes	1.87e+02		n	y
10	26:11	2.26e+02	2.98e+02	0.76	yes	5.24e+02		n	y
11	26:18	5.43e+03	6.81e+03	0.80	yes	1.22e+04	2,3,7,8-TCDF	n	y
12	26:42	7.95e+02	9.80e+02	0.81	yes	1.78e+03		n	n
13	26:59	1.17e+02	1.37e+02	0.86	yes	2.55e+02		n	n
14	27:51	3.79e+01	5.28e+01	0.72	yes	9.07e+01		n	y
15	28:25	3.55e+02	5.02e+02	0.71	yes	8.57e+02		n	n

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Peak List Summary

CLIENT ID.
SL0206

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 16 File: P616136 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 00:29:00 Processed: 20-DEC-18 15:56:49

Mass: 319.8970 321.8940 Tot Response: 3.65e+03 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	25:37	6.30e+00	8.21e+00	0.77	yes	1.45e+01		n	n
2	27:14	1.47e+03	1.85e+03	0.79	yes	3.32e+03	2,3,7,8-TCDD	n	n
3	27:35	1.41e+02	1.73e+02	0.82	yes	3.14e+02		n	n

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CLIENT ID.
SL0206

ntry: 38 Totals Name: Total Penta-Furans1

un: 16 File: P616136 Sample:1 Injection:1 Function:1

cquired: 20-DEC-18 00:29:00 Processed: 20-DEC-18 15:56:49

lass: 339.8600 341.8570 Tot Response: 1.83e+03 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:21	1.06e+03	7.78e+02	1.36	yes	1.83e+03	n	n

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SL0206

Entry: 39 Totals Name: Total Penta-Furans2

Run: 16 File: P616136 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 00:29:00 Processed: 20-DEC-18 15:56:49

Mass: 339.8600 341.8570 Tot Response: 3.70e+03 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:01	9.99e+02	6.66e+02 1.50	yes	1.66e+03		n	n
2	30:24	4.02e+01	2.42e+01 1.66	yes	6.44e+01		n	n
3	30:40	5.75e+01	3.68e+01 1.56	yes	9.43e+01		n	y
4	31:02	5.31e+02	3.50e+02 1.51	yes	8.81e+02	1,2,3,7,8-PeCDF	n	n
5	32:02	6.11e+02	3.82e+02 1.60	yes	9.93e+02	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.
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Entry: 40 Totals Name: Total Penta-Dioxins

Run: 16 File: P616136 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 00:29:00 Processed: 20-DEC-18 15:56:49

Mass: 355.8550 357.8520 Tot Response: 4.96e+02 RRF: 0.9288

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	31:19	8.53e+01	4.98e+01 1.71	yes	1.35e+02		n	n
2	31:32	2.16e+02	1.46e+02 1.48	yes	3.61e+02		n	n

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Peak List Summary

CLIENT ID.
SL0206

Entry: 41 Totals Name: Total Hexa-Furans

Run: 16 File: P616136 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 00:29:00 Processed: 20-DEC-18 15:56:49

Mass: 373.8210 375.8180 Tot Response: 1.08e+04 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:39	4.77e+02	3.87e+02	1.23	yes	8.64e+02		n	n
2	33:48	1.90e+03	1.51e+03	1.26	yes	3.42e+03		n	n
3	34:10	4.87e+01	4.12e+01	1.18	yes	8.99e+01		n	n
4	34:22	2.14e+03	1.75e+03	1.23	yes	3.89e+03		n	n
5	34:48	1.03e+03	8.82e+02	1.17	yes	1.91e+03	1,2,3,4,7,8-HxCDF	n	n
6	35:27	3.37e+02	3.09e+02	1.09	yes	6.46e+02	2,3,4,6,7,8-HxCDF	n	n

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Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 16 File: P616136 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 00:29:00 Processed: 20-DEC-18 15:56:49

Mass: 389.8160 391.8130 Tot Response: 5.02e+04 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
	34:12	1.37e+04	1.08e+04 1.27	yes	2.46e+04		n	n
	34:44	1.57e+03	1.21e+03 1.30	yes	2.78e+03		n	n
	34:58	7.53e+03	6.19e+03 1.22	yes	1.37e+04		n	n
	35:05	1.92e+03	1.54e+03 1.25	yes	3.47e+03		n	n
	35:35	4.67e+02	3.77e+02 1.24	yes	8.44e+02	1,2,3,4,7,8-HxCDD	n	n
	35:40	1.18e+03	9.54e+02 1.23	yes	2.13e+03	1,2,3,6,7,8-HxCDD	n	n
	35:49	6.77e+02	5.58e+02 1.21	yes	1.23e+03		n	n
	35:55	7.92e+02	5.98e+02 1.32	yes	1.39e+03	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0206

ntry: 43 Totals Name: Total Hepta-Furans

un: 16 File: P616136 Sample:1 Injection:1 Function:4

cquired: 20-DEC-18 00:29:00 Processed: 20-DEC-18 15:56:49

lass: 407.7820 409.7790 Tot Response: 3.03e+04 RRF: 1.495

	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
.	37:28	4.73e+03	4.36e+03	1.08	yes	9.10e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:43	2.13e+02	1.86e+02	1.15	yes	3.98e+02		n	n
3	37:52	1.03e+04	9.85e+03	1.04	yes	2.01e+04		n	n
4	38:47	3.33e+02	3.33e+02	1.00	yes	6.66e+02	1,2,3,4,7,8,9-HpCDF	n	n

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Peak List Summary

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SL0206

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 16 File: P616136 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 00:29:00 Processed: 20-DEC-18 15:56:49

Mass: 423.7770 425.7740 Tot Response: 5.94e+05 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:43	2.37e+05	2.27e+05	1.04	yes	4.64e+05		n	n
2	38:21	6.72e+04	6.34e+04	1.06	yes	1.31e+05	1,2,3,4,6,7,8-HpCDD	n	n

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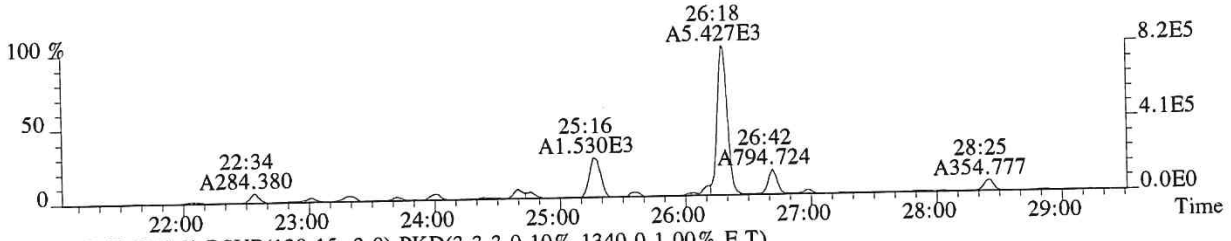
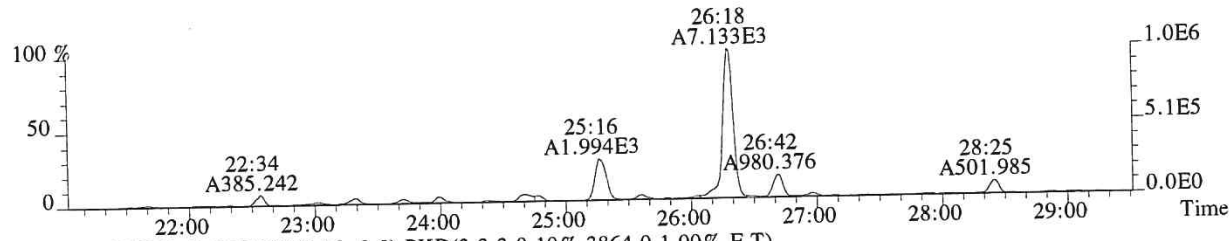
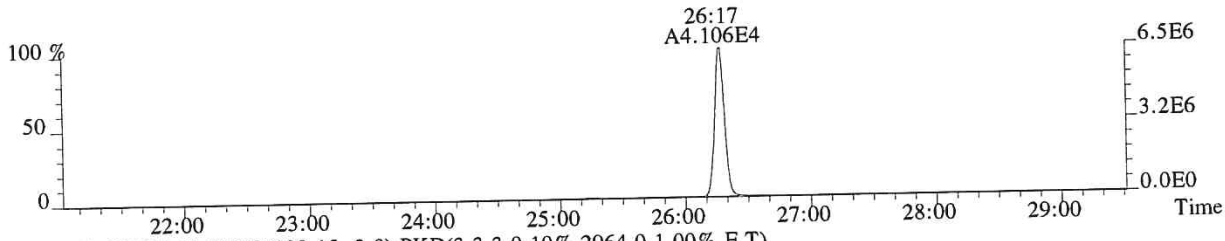
File:P616136 #1-602 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,368.0,1.00%,F,T)



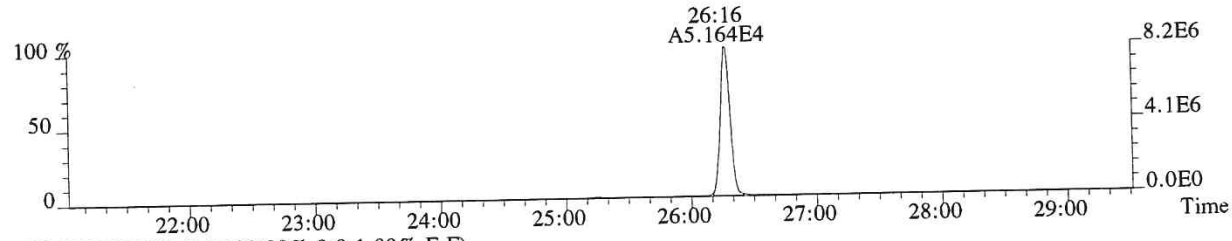
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1340.0,1.00%,F,T)



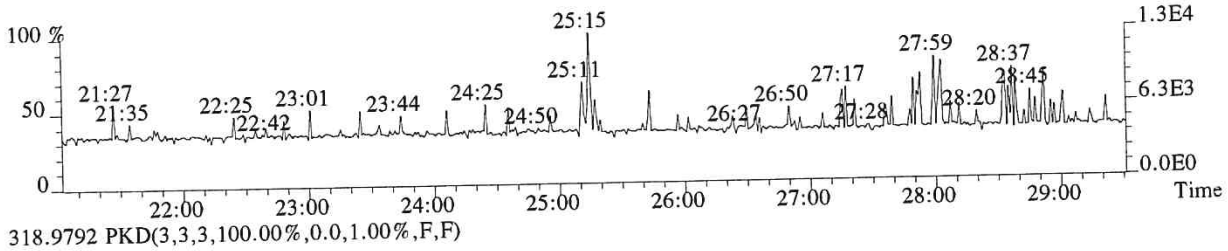
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3864.0,1.00%,F,T)



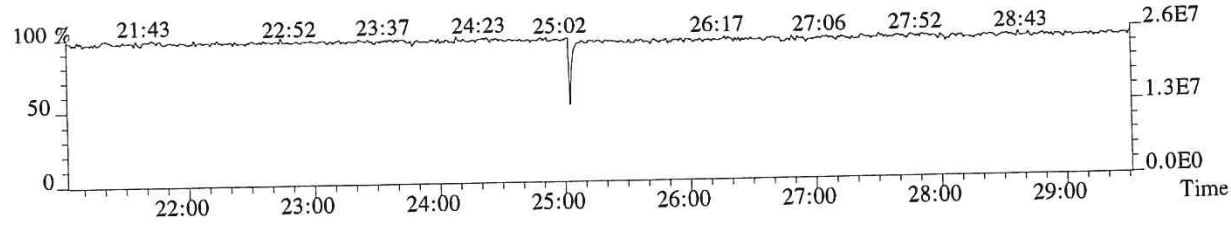
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2964.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

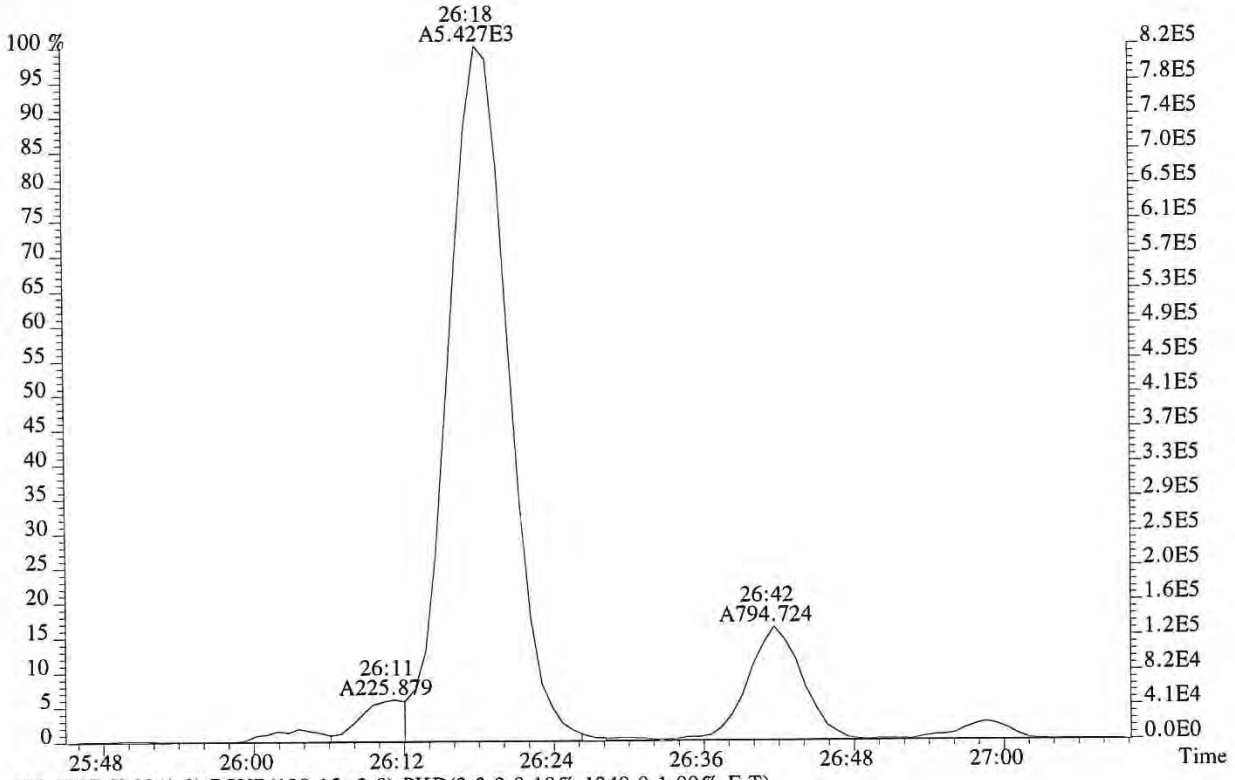


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

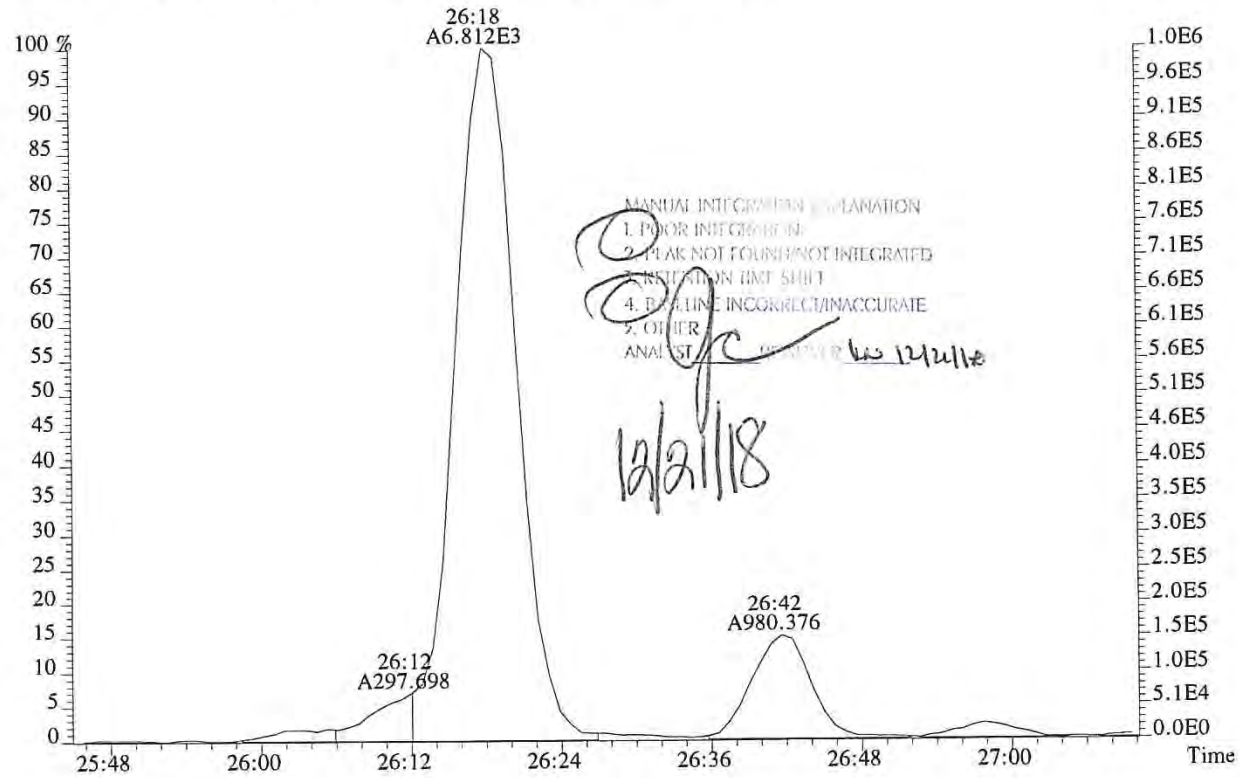


058952

File:P616136 #1-602 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,368.0,1.00%,F,T)



305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1340.0,1.00%,F,T)

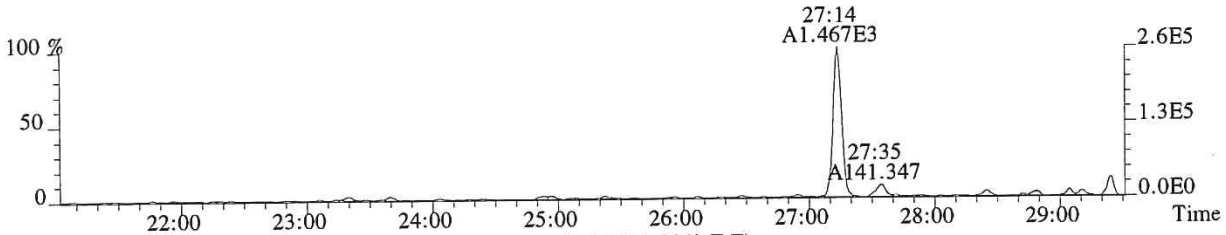


MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST

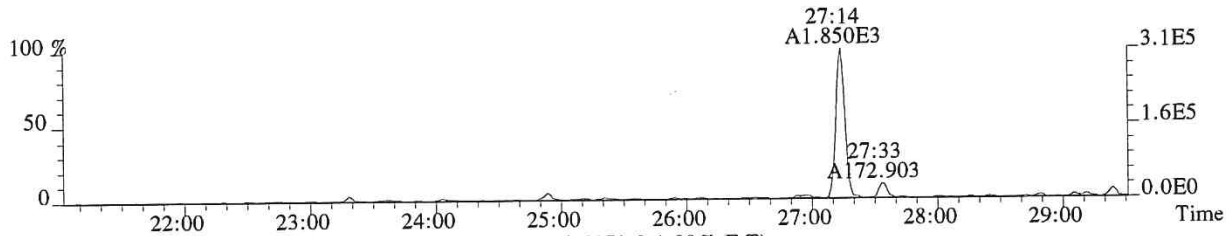
12/21/18

12/21/18

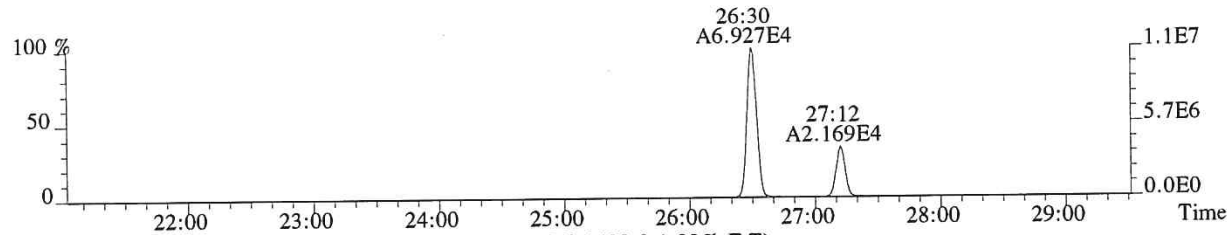
File:P616136 #1-602 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1120.0,1.00%,F,T)



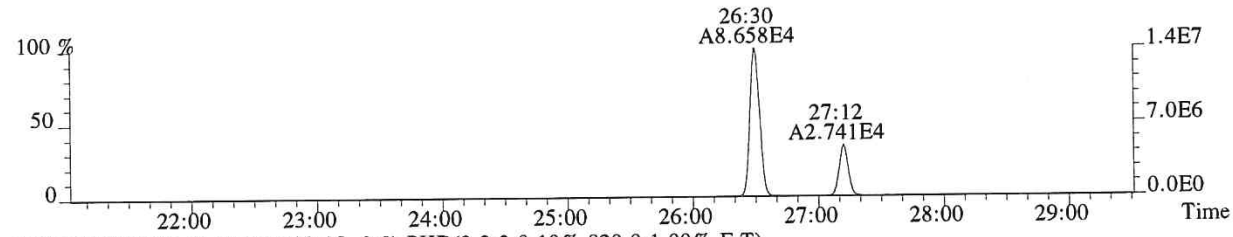
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,388.0,1.00%,F,T)



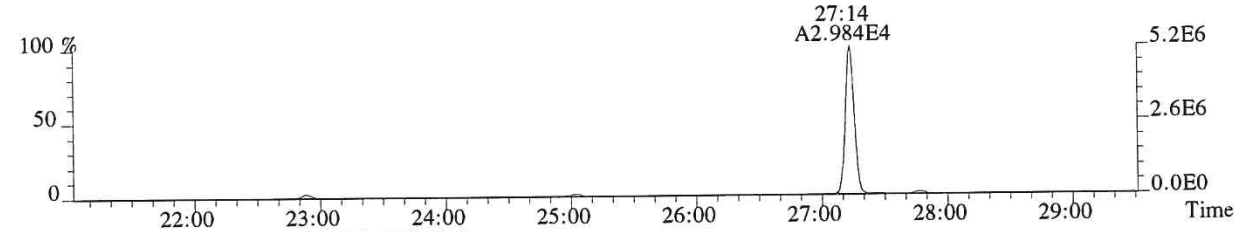
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5872.0,1.00%,F,T)



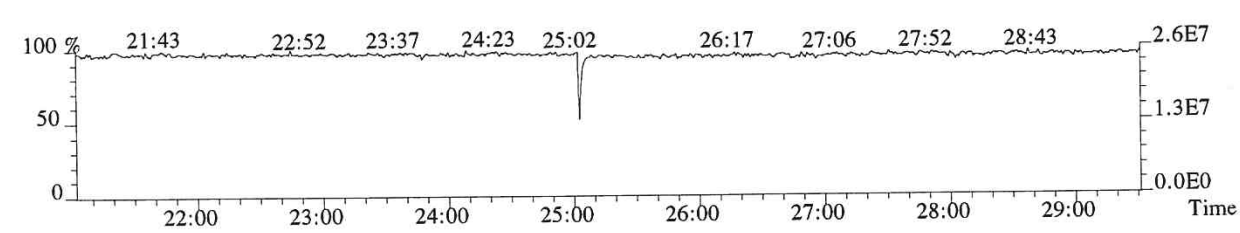
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3428.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,820.0,1.00%,F,T)

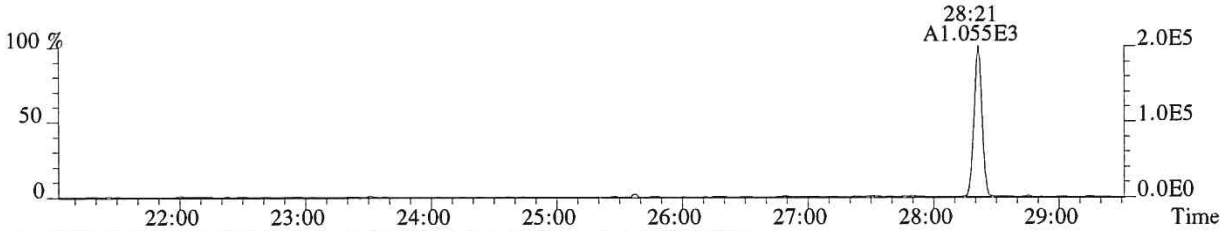


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

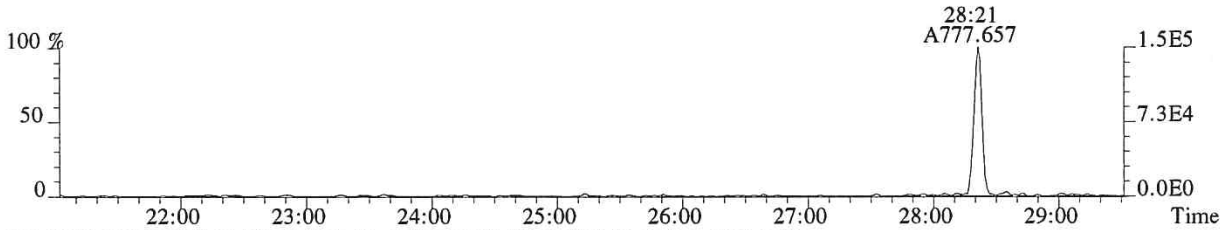


058954

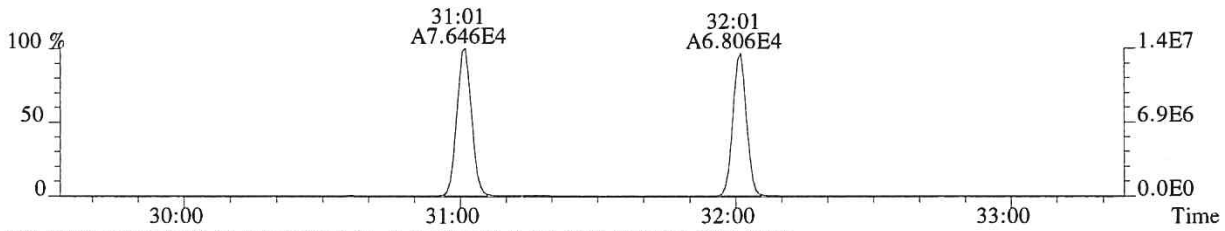
File:P616136 #1-602 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,348.0,1.00%,F,T)



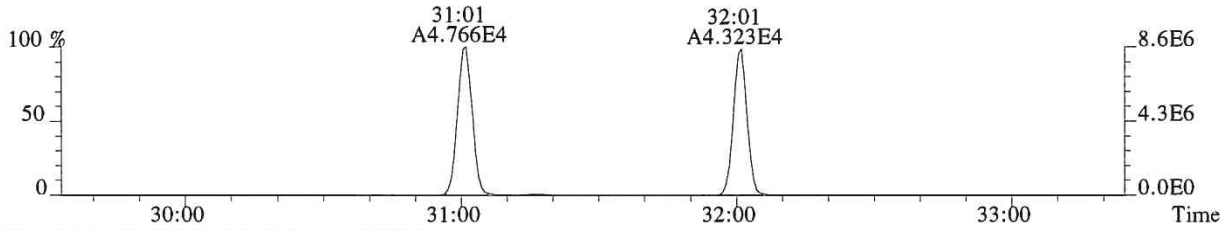
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,660.0,1.00%,F,T)



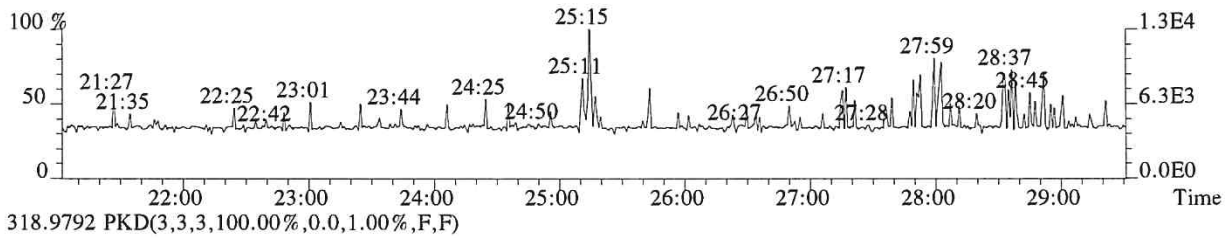
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2232.0,1.00%,F,T)



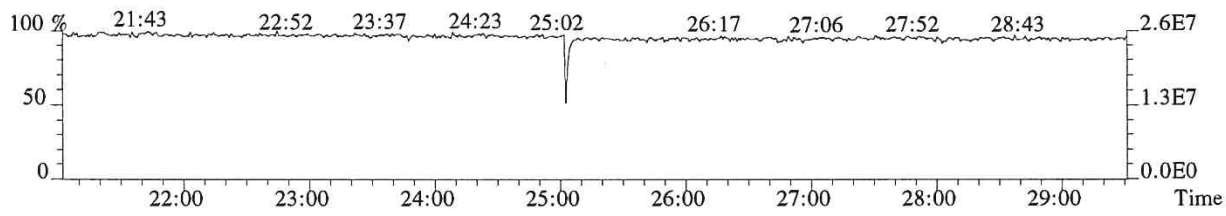
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,964.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

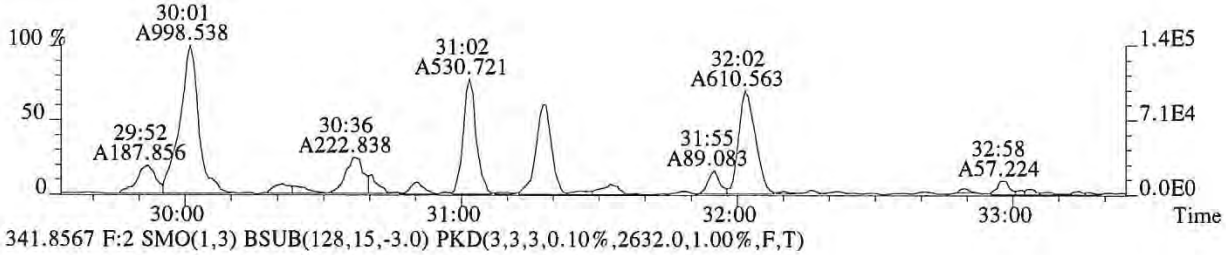


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

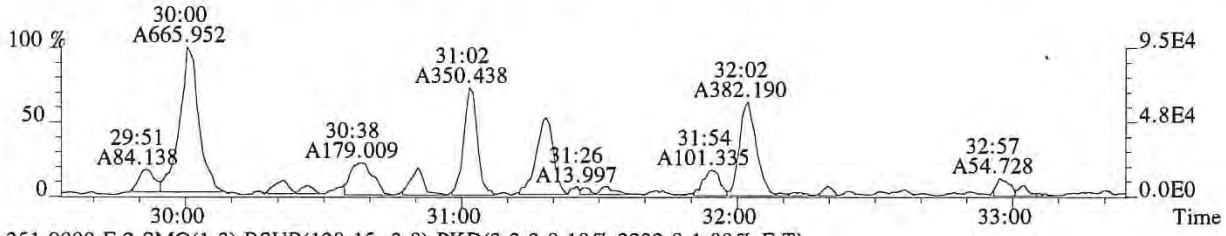


058955

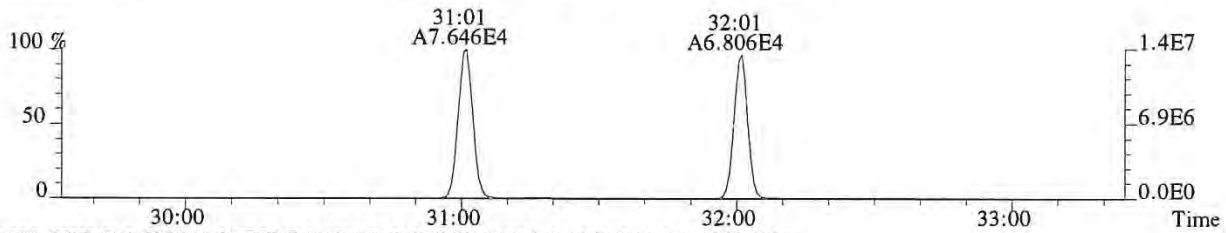
File:P616136 #1-348 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1972.0,1.00%,F,T)



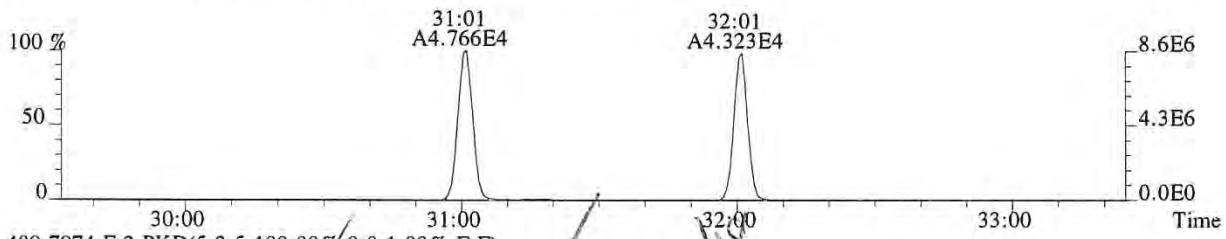
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2632.0,1.00%,F,T)



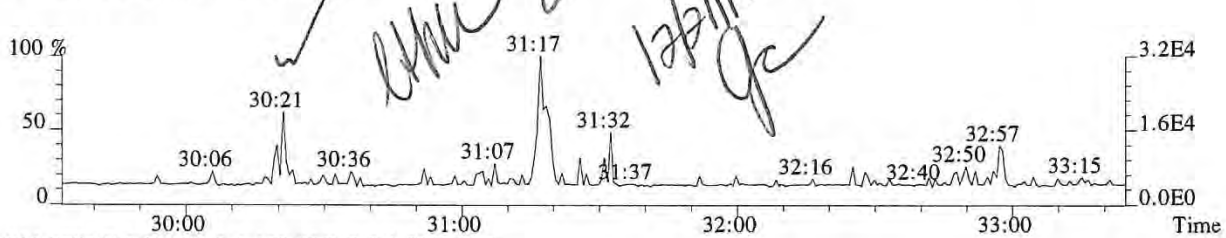
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2232.0,1.00%,F,T)



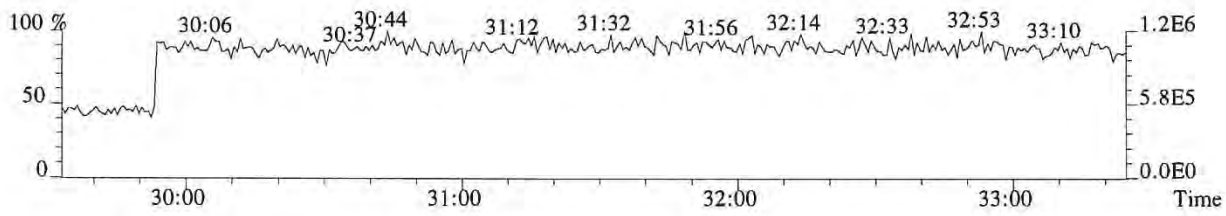
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,964.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

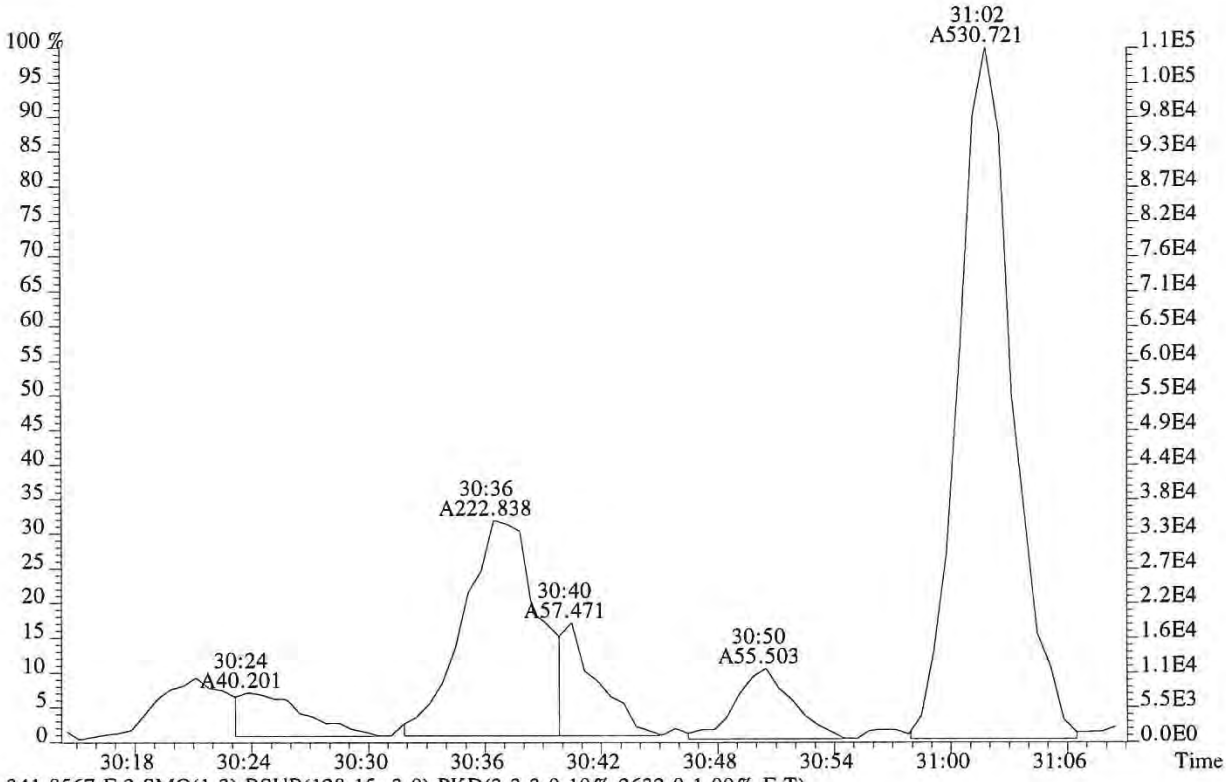


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

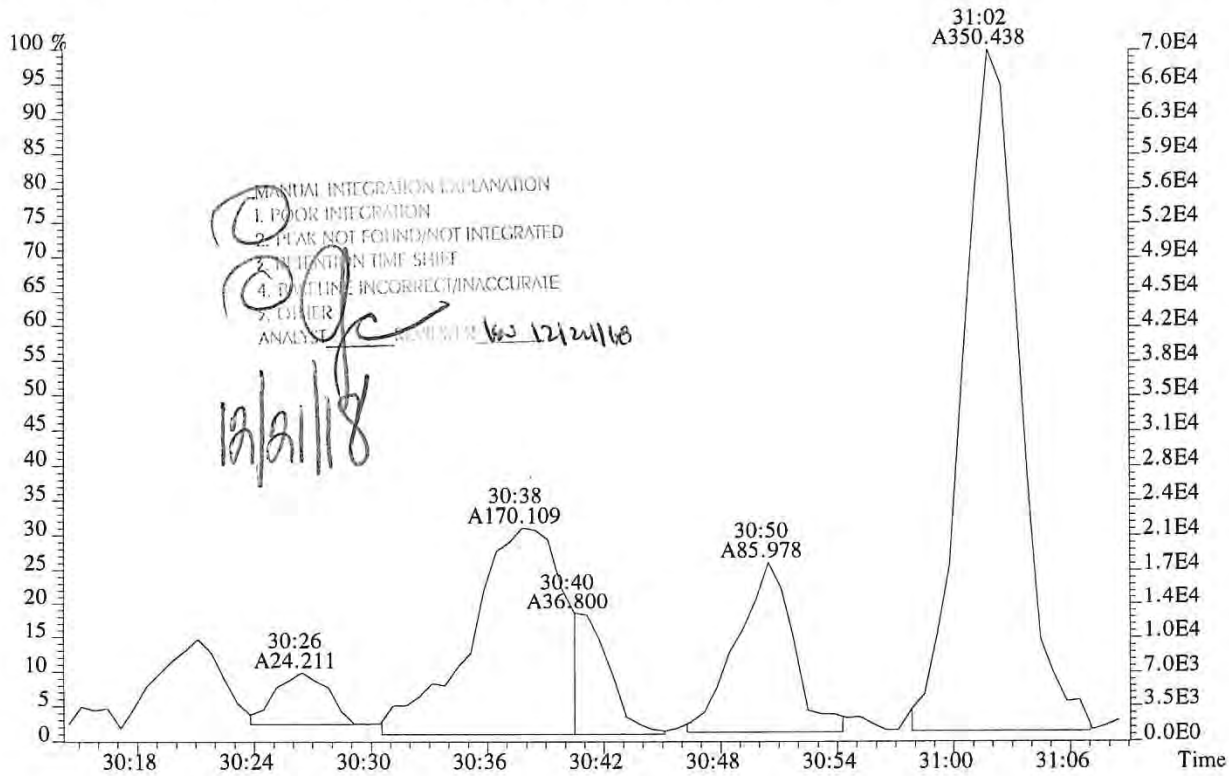


058956

File:P616136 #1-348 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1972.0,1.00%,F,T)

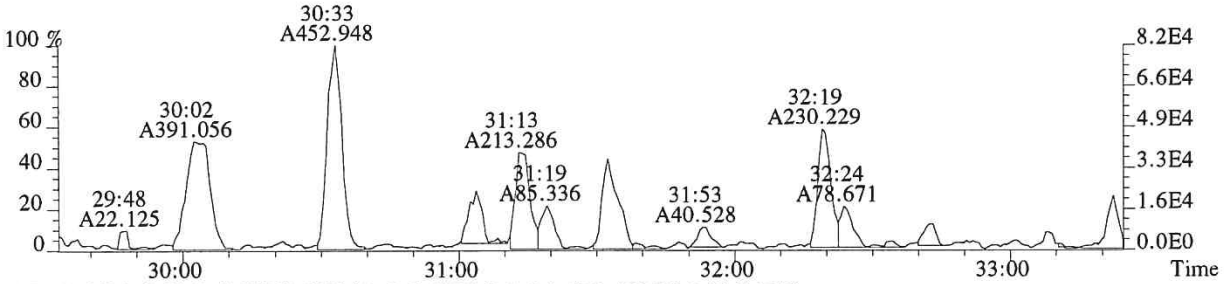


341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2632.0,1.00%,F,T)

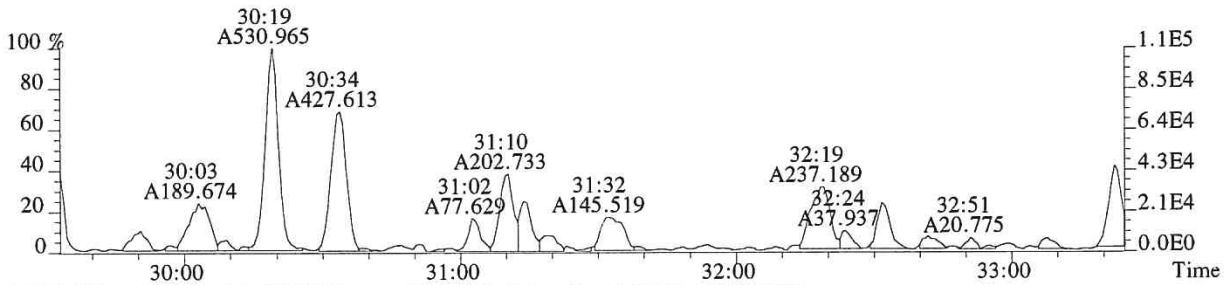


MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST [illegible] 12/21/18
12/21/18

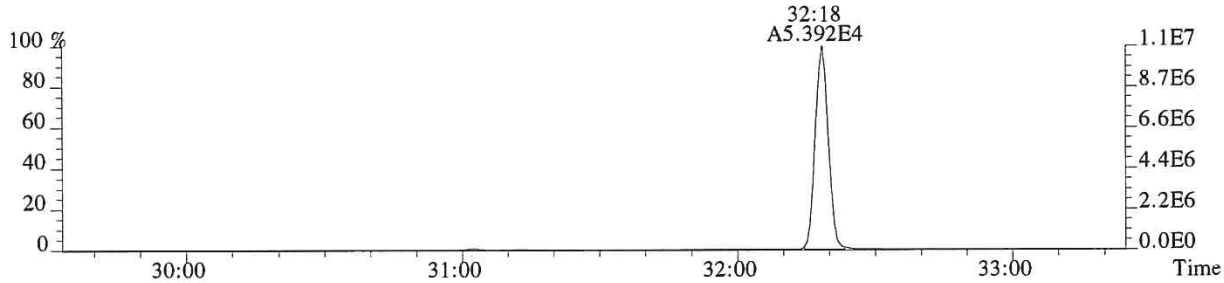
File:P616136 #1-348 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2104.0,1.00%,F,T)



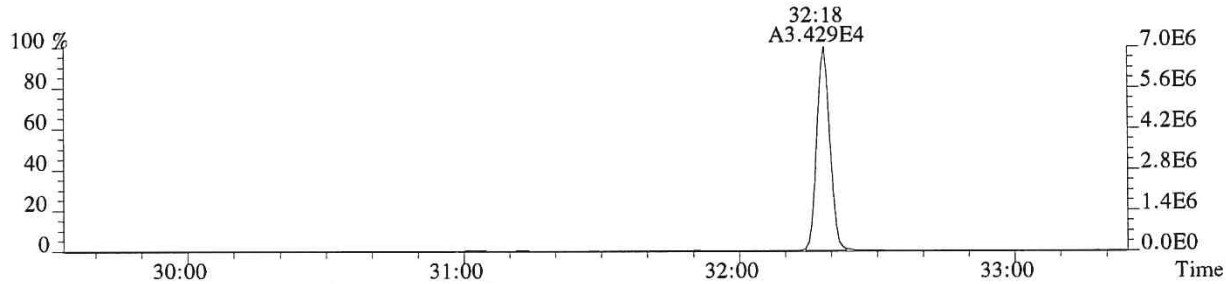
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2296.0,1.00%,F,T)



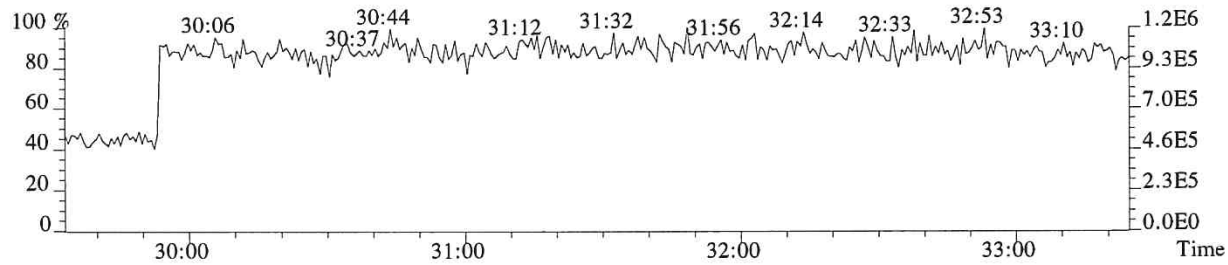
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1132.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,528.0,1.00%,F,T)

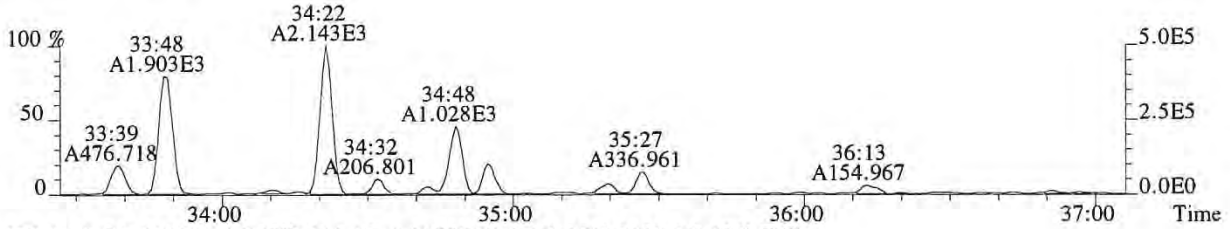


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

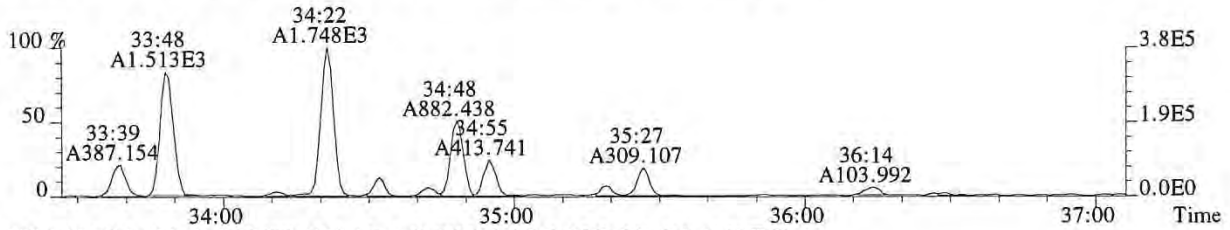


058958

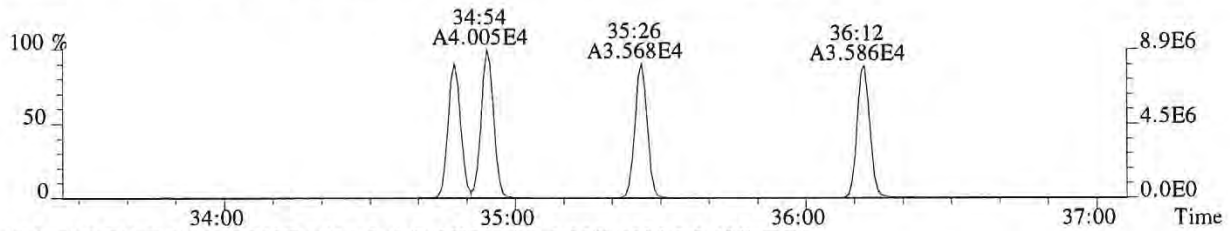
File:P616136 #1-330 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3424.0,0.40%,F,T)



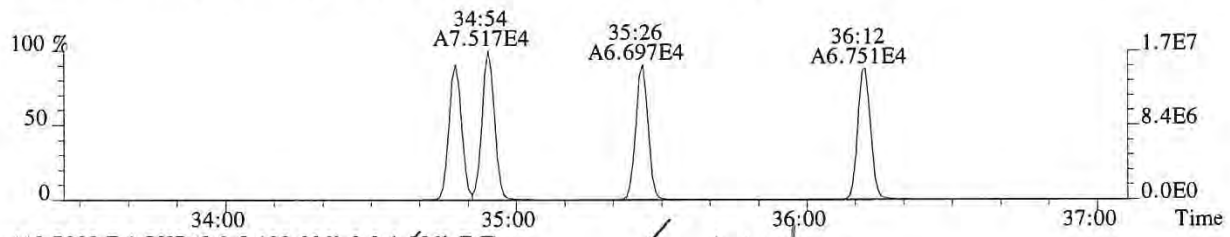
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3252.0,0.40%,F,T)



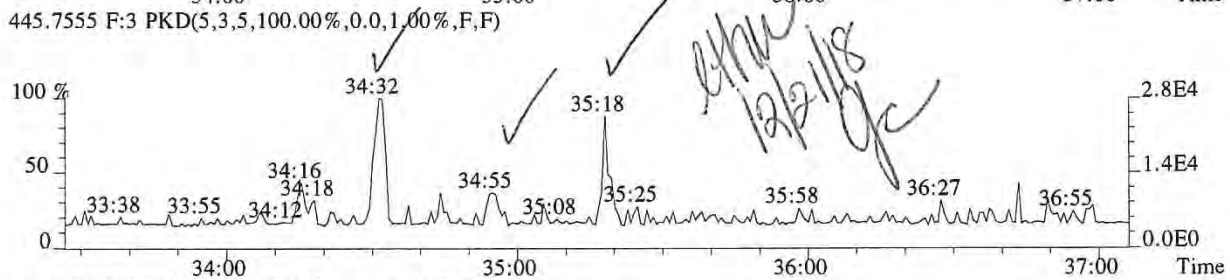
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,668.0,0.40%,F,T)



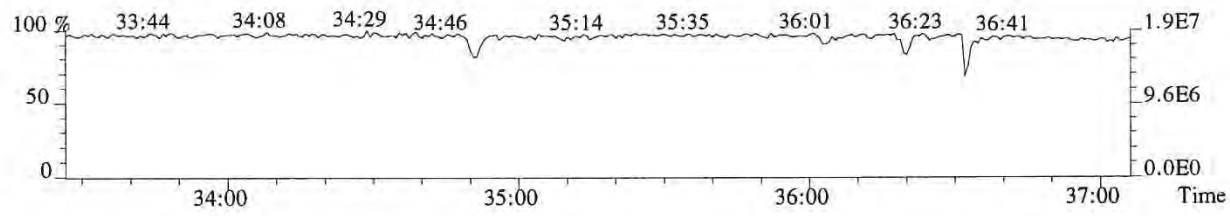
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1996.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

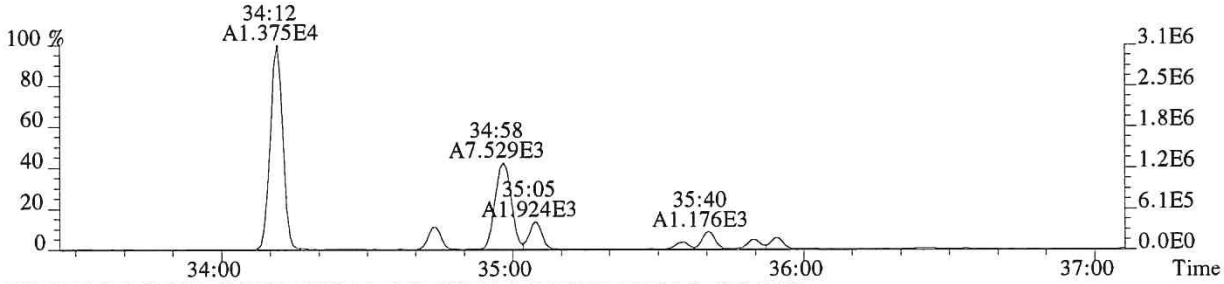


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

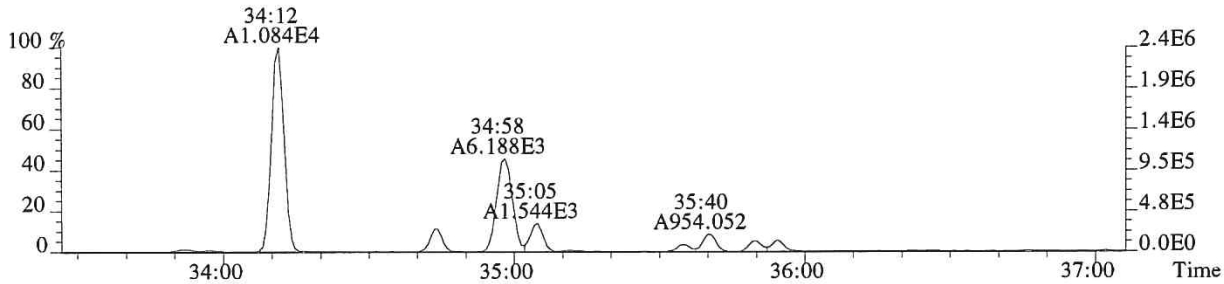


058959

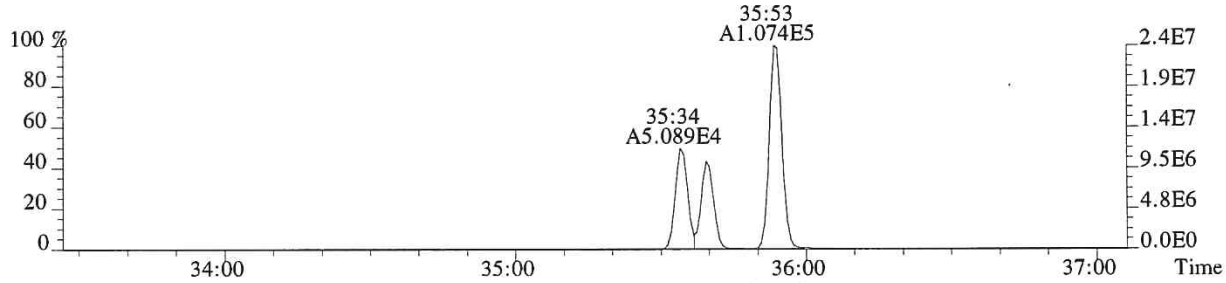
File:P616136 #1-330 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5676.0,0.40%,F,T)



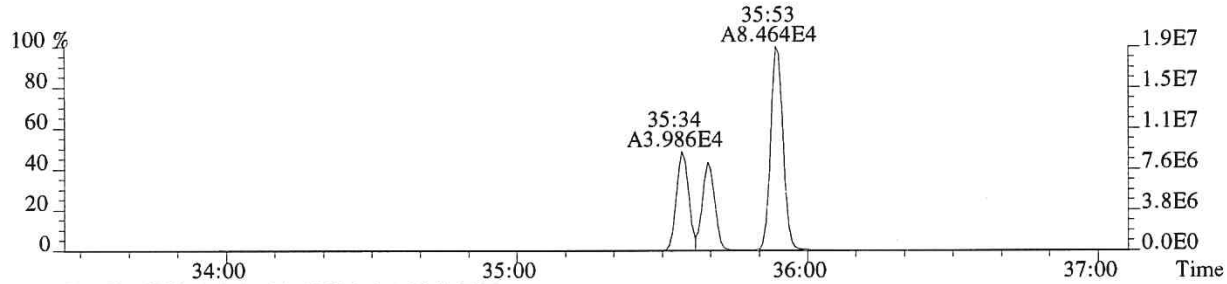
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1916.0,0.40%,F,T)



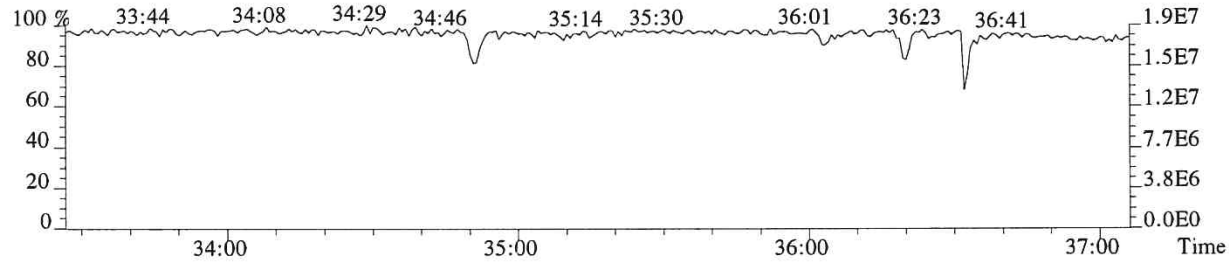
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2232.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1388.0,0.40%,F,T)

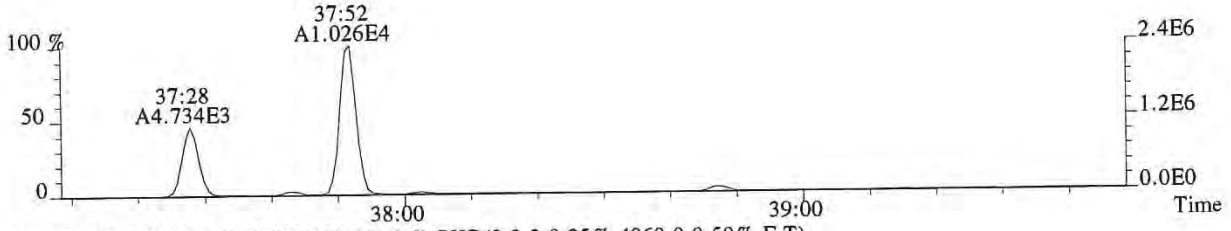


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



058960

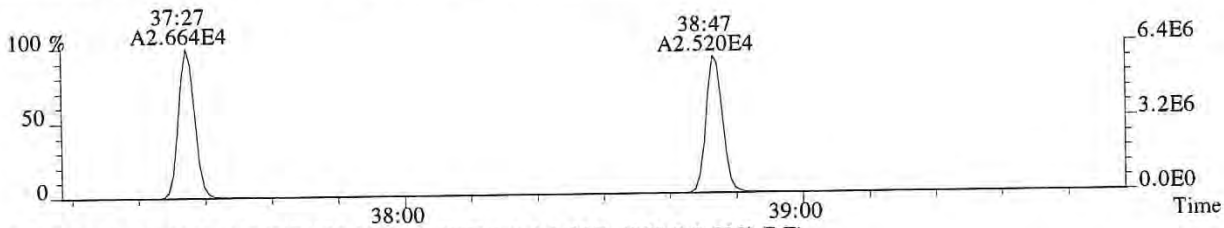
File:P616136 #1-241 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4152.0,0.50%,F,T)



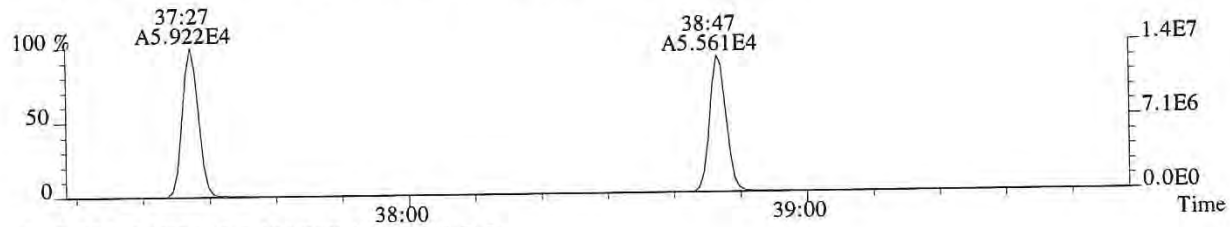
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4060.0,0.50%,F,T)



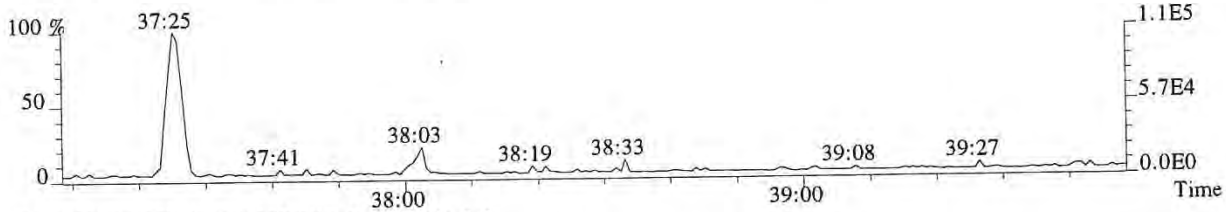
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3196.0,0.50%,F,T)



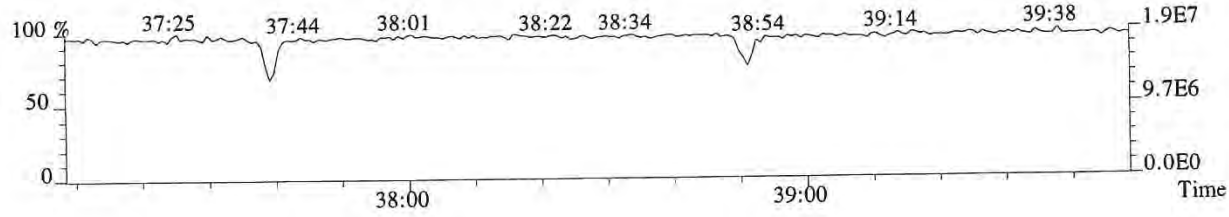
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4960.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

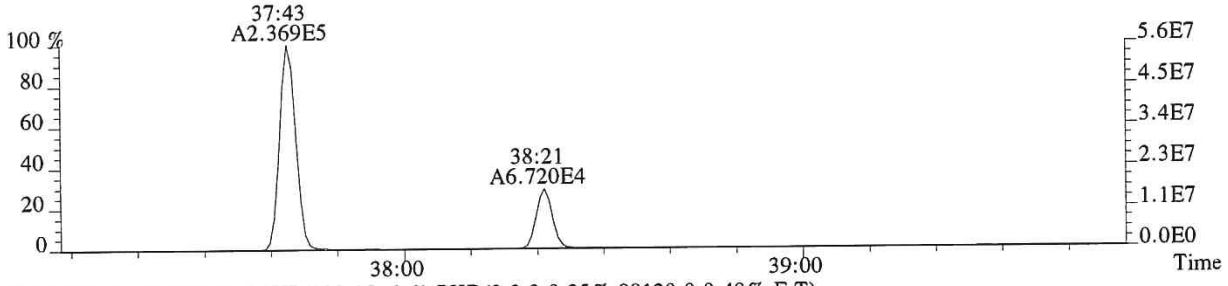


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

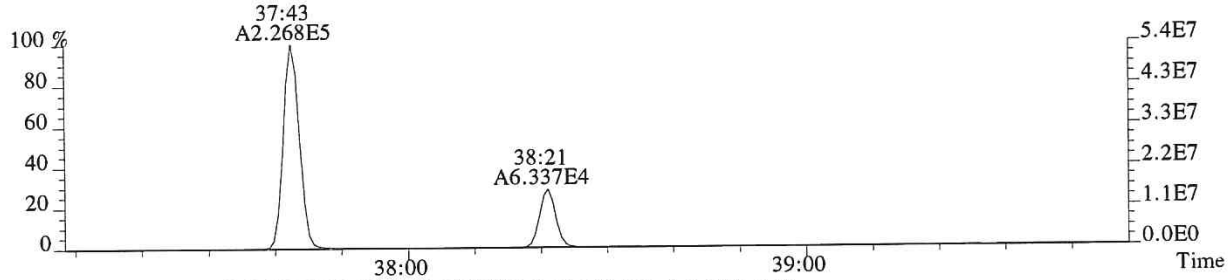


058961

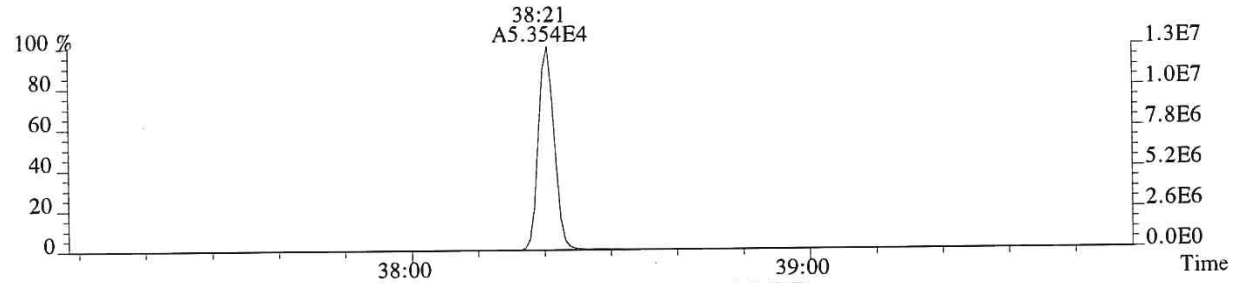
File:P616136 #1-241 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,103164.0,0.40%,F,T)



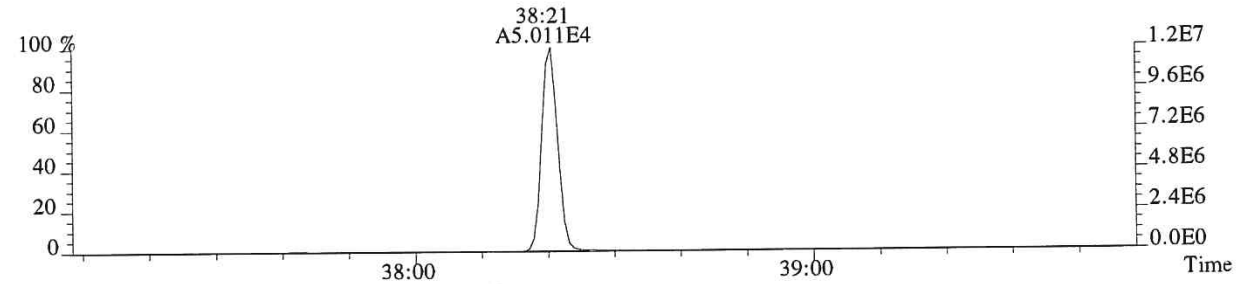
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,98120.0,0.40%,F,T)



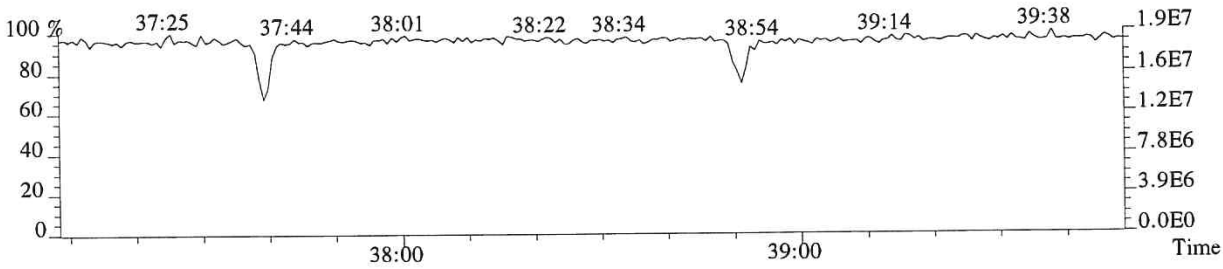
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,860.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2020.0,0.40%,F,T)

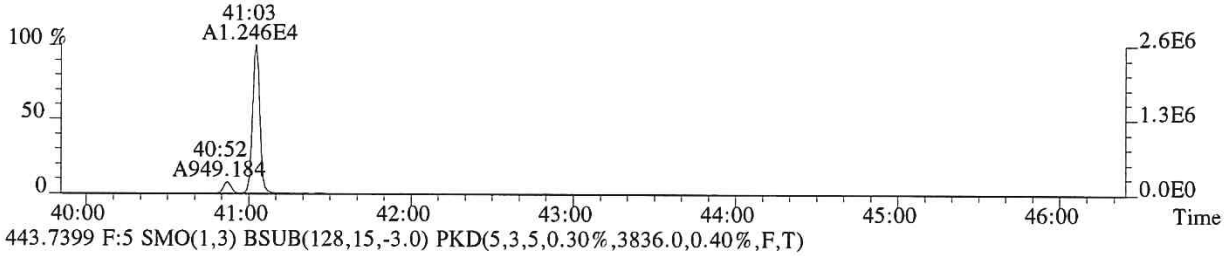


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

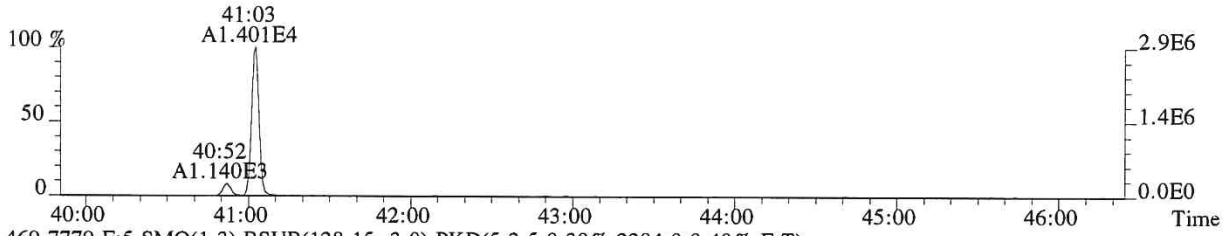


058962

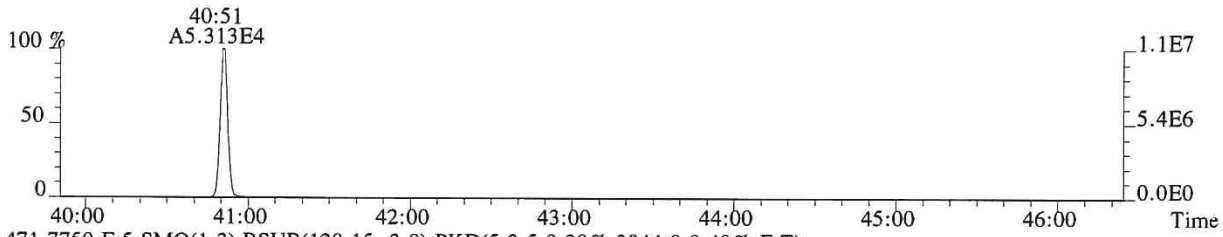
File:P616136 #1-591 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1800.0,0.40%,F,T)



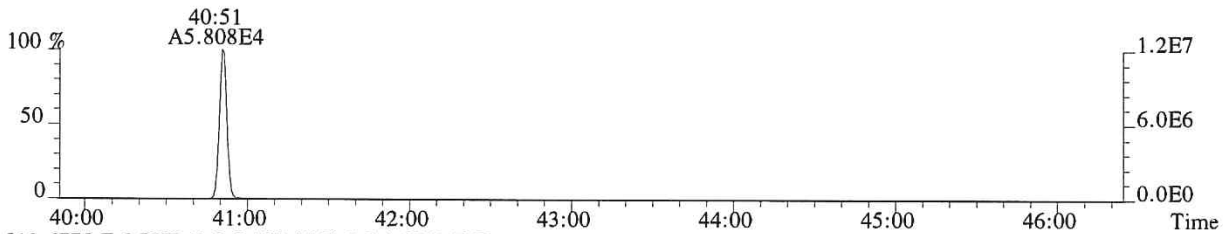
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3836.0,0.40%,F,T)



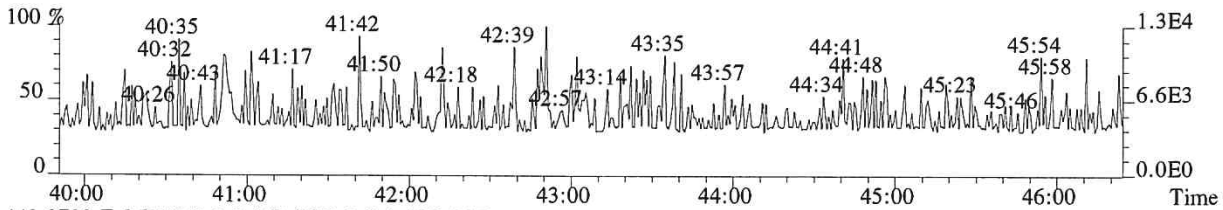
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2284.0,0.40%,F,T)



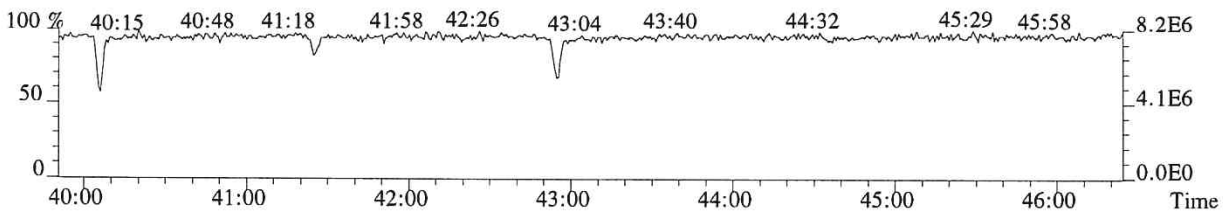
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3844.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

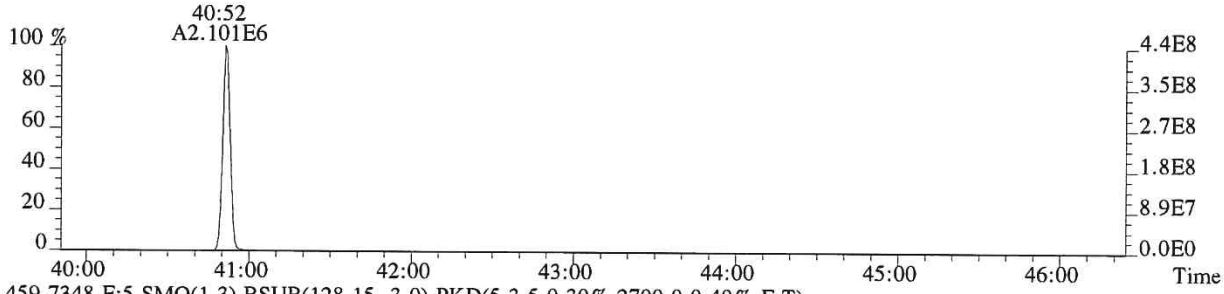


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

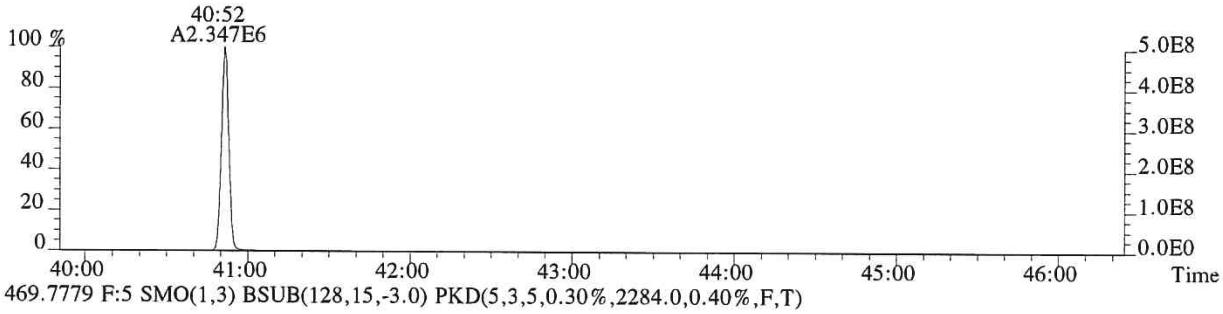


058963

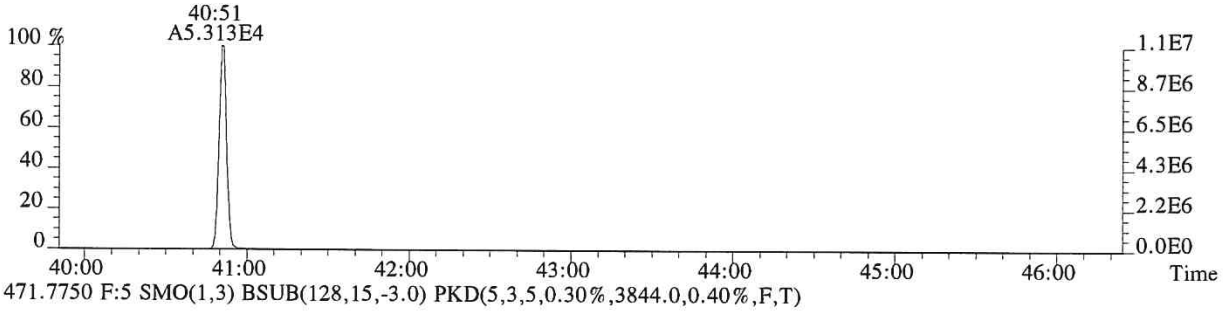
File:P616136 #1-591 Acq:20-DEC-2018 00:29:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-006
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2060.0,0.40%,F,T)



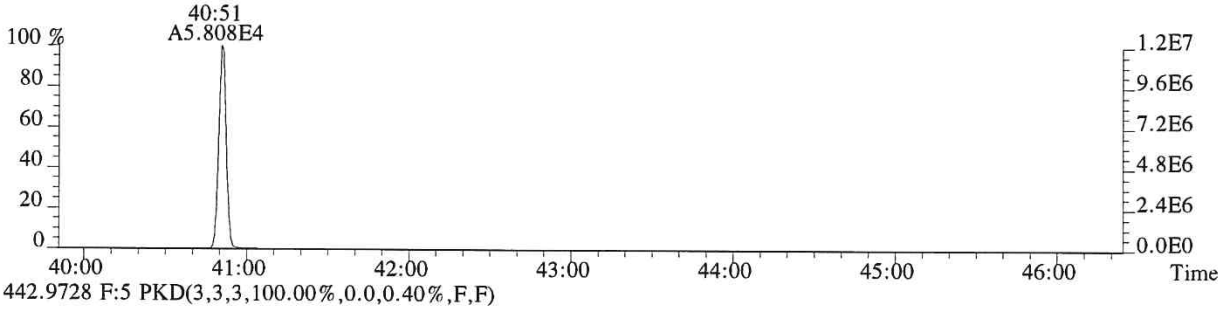
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2700.0,0.40%,F,T)



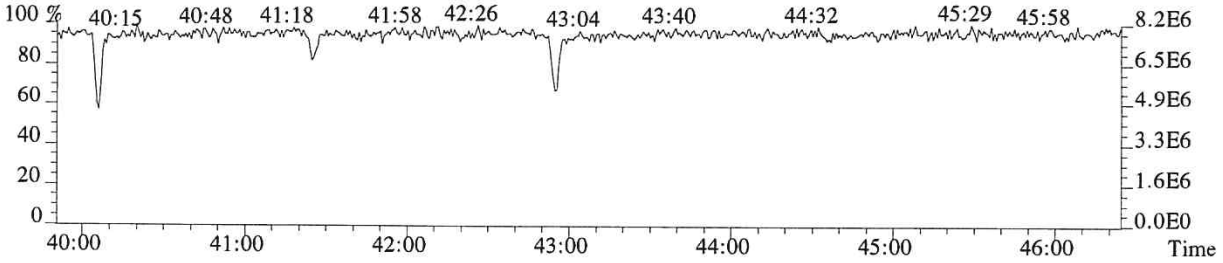
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2284.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3844.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



058964

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0207

Run #17 Filename P616137 Samp: 1 Inj: 1 Acquired: 20-DEC-18 01:18:10
Processed: 20-DEC-18 15:56:51 Sample ID: E1801096-007

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:19	4.420e+04	5.640e+04	0.78	yes	yes	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	3.252e+03	2.011e+03	1.62	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	2.440e+03	1.517e+03	1.61	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:49	6.292e+03	4.993e+03	1.26	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	1.556e+03	1.347e+03	1.16	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	2.862e+02	2.592e+02	1.10	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:14	5.258e+02	4.042e+02	1.30	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:28	1.803e+03	1.688e+03	1.07	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:48	4.949e+02	5.132e+02	0.96	yes	no	1.463
10	Unk	OCDF	41:03	9.900e+02	1.167e+03	0.85	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:14	1.271e+04	1.642e+04	0.77	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	3.204e+02	2.155e+02	1.49	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	1.335e+02	9.416e+01	1.42	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:40	1.841e+02	1.584e+02	1.16	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	3.238e+02	2.915e+02	1.11	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	6.504e+03	6.439e+03	1.01	yes	no	1.112
17	Unk	OCDD	40:52	1.850e+05	2.047e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:17	4.867e+04	6.197e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:01	9.113e+04	5.779e+04	1.58	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	8.431e+04	5.244e+04	1.61	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	4.219e+04	8.028e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:55	4.624e+04	8.775e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	4.331e+04	8.043e+04	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	4.028e+04	7.653e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:28	3.177e+04	6.998e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	2.903e+04	6.358e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:12	2.563e+04	3.235e+04	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:18	6.510e+04	4.176e+04	1.56	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	6.050e+04	4.799e+04	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:40	5.408e+04	4.291e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	6.307e+04	5.994e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:51	6.042e+04	6.573e+04	0.92	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:31	6.780e+04	8.496e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	1.047e+05	8.235e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	3.735e+04				no	1.086

$$OCDD = \frac{(1.850e+05 + 2.047e+05) \times 4000\ pg \times 1}{(6.042e+04 + 6.573e+04) \times 10.287\ g \times 81.5 / 100 \times 1.157} = 1270\ ng/kg$$

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058965

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0207

Run #17 Filename P616137 Samp: 1 Inj: 1 Acquired: 20-DEC-18 01:18:10
Processed: 20-DEC-18 15:56:51 LAB. ID: E1801096-007

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.75e+06	8.44e+02	8.0e+03	8.60e+06	4.72e+02	1.8e+04
2	1,2,3,7,8-PeCDF	5.80e+05	1.35e+03	4.3e+02	3.76e+05	2.95e+03	1.3e+02
3	2,3,4,7,8-PeCDF	4.13e+05	1.35e+03	3.1e+02	2.46e+05	2.95e+03	8.4e+01
4	1,2,3,4,7,8-HxCDF	1.39e+06	2.02e+03	6.9e+02	1.10e+06	1.02e+03	1.1e+03
5	1,2,3,6,7,8-HxCDF	3.50e+05	2.02e+03	1.7e+02	2.89e+05	1.02e+03	2.8e+02
6	2,3,4,6,7,8-HxCDF	6.73e+04	2.02e+03	3.3e+01	5.70e+04	1.02e+03	5.6e+01
7	1,2,3,7,8,9-HxCDF	9.70e+04	2.02e+03	4.8e+01	7.30e+04	1.02e+03	7.2e+01
8	1,2,3,4,6,7,8-HpCDF	4.14e+05	2.44e+03	1.7e+02	3.92e+05	1.01e+03	3.9e+02
9	1,2,3,4,7,8,9-HpCDF	1.15e+05	2.44e+03	4.7e+01	1.24e+05	1.01e+03	1.2e+02
10	OCDF	1.86e+05	2.28e+03	8.1e+01	2.23e+05	2.18e+03	1.0e+02
11	2,3,7,8-TCDD	2.18e+06	7.80e+02	2.8e+03	2.80e+06	5.88e+02	4.8e+03
12	1,2,3,7,8-PeCDD	5.59e+04	1.58e+03	3.5e+01	3.30e+04	7.12e+02	4.6e+01
13	1,2,3,4,7,8-HxCDD	3.00e+04	2.18e+03	1.4e+01	2.12e+04	1.52e+03	1.4e+01
14	1,2,3,6,7,8-HxCDD	3.44e+04	2.18e+03	1.6e+01	3.21e+04	1.52e+03	2.1e+01
15	1,2,3,7,8,9-HxCDD	8.02e+04	2.18e+03	3.7e+01	6.33e+04	1.52e+03	4.2e+01
16	1,2,3,4,6,7,8-HpCDD	1.50e+06	1.54e+04	9.7e+01	1.47e+06	7.88e+03	1.9e+02
17	OCDD	3.92e+07	1.18e+03	3.3e+04	4.33e+07	1.90e+03	2.3e+04
18	13C-2,3,7,8-TCDF	7.68e+06	6.38e+03	1.2e+03	9.90e+06	2.68e+03	3.7e+03
19	13C-1,2,3,7,8-PeCDF	1.69e+07	1.36e+03	1.2e+04	1.08e+07	7.36e+02	1.5e+04
20	13C-2,3,4,7,8-PeCDF	1.67e+07	1.36e+03	1.2e+04	1.03e+07	7.36e+02	1.4e+04
21	13C-1,2,3,4,7,8-HxCDF	9.09e+06	1.20e+03	7.6e+03	1.70e+07	1.24e+03	1.4e+04
22	13C-1,2,3,6,7,8-HxCDF	1.02e+07	1.20e+03	8.5e+03	1.92e+07	1.24e+03	1.6e+04
23	13C-2,3,4,6,7,8-HxCDF	9.52e+06	1.20e+03	7.9e+03	1.78e+07	1.24e+03	1.4e+04
24	13C-1,2,3,7,8,9-HxCDF	9.23e+06	1.20e+03	7.7e+03	1.74e+07	1.24e+03	1.4e+04
25	13C-1,2,3,4,6,7,8-HpCDF	7.39e+06	2.53e+03	2.9e+03	1.61e+07	3.01e+03	5.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.83e+06	2.53e+03	2.7e+03	1.48e+07	3.01e+03	4.9e+03
27	13C-2,3,7,8-TCDD	4.29e+06	5.60e+03	7.7e+02	5.48e+06	2.70e+03	2.0e+03
28	13C-1,2,3,7,8-PeCDD	1.29e+07	5.68e+02	2.3e+04	8.30e+06	3.32e+02	2.5e+04
29	13C-1,2,3,4,7,8-HxCDD	1.38e+07	1.74e+03	7.9e+03	1.07e+07	7.96e+02	1.3e+04
30	13C-1,2,3,6,7,8-HxCDD	1.23e+07	1.74e+03	7.1e+03	9.80e+06	7.96e+02	1.2e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.52e+07	1.70e+03	8.9e+03	1.44e+07	3.16e+02	4.5e+04
32	13C-OCDD	1.26e+07	1.38e+03	9.2e+03	1.39e+07	1.83e+03	7.6e+03
33	13C-1,2,3,4-TCDD	1.09e+07	5.60e+03	2.0e+03	1.36e+07	2.70e+03	5.0e+03
34	13C-1,2,3,7,8,9-HxCDD	2.41e+07	1.74e+03	1.4e+04	1.89e+07	7.96e+02	2.4e+04
35	37Cl-2,3,7,8-TCDD	6.37e+06	7.80e+02	8.2e+03			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0207

Entry: 36 Totals Name: Total Tetra-Furans

Run: 17 File: P616137 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 01:18:10 Processed: 20-DEC-18 15:56:51

Mass: 303.9020 305.8990 Tot Response: 2.08e+05 RRF: 1.081

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:04	1.35e+02	1.77e+02	0.76	yes	3.12e+02	n	n
2	22:34	1.49e+02	1.76e+02	0.85	yes	3.24e+02	n	n
3	23:02	6.92e+02	8.58e+02	0.81	yes	1.55e+03	n	n
4	23:20	2.30e+03	2.90e+03	0.79	yes	5.20e+03	n	n
5	23:42	6.97e+02	8.96e+02	0.78	yes	1.59e+03	n	n
6	24:00	1.89e+03	2.43e+03	0.78	yes	4.32e+03	n	n
7	24:24	5.98e+02	6.93e+02	0.86	yes	1.29e+03	n	n
8	24:41	1.07e+03	1.26e+03	0.85	yes	2.33e+03	y	y
9	24:46	3.62e+03	4.54e+03	0.80	yes	8.17e+03	y	y
10	25:17	2.10e+04	2.63e+04	0.80	yes	4.73e+04	n	n
11	25:37	1.06e+03	1.37e+03	0.78	yes	2.43e+03	n	n
12	26:04	4.67e+02	5.80e+02	0.81	yes	1.05e+03	y	n
13	26:12	2.94e+03	3.46e+03	0.85	yes	6.40e+03	y	y
14	26:19	4.42e+04	5.64e+04	0.78	yes	1.01e+05	y	y
15	26:42	3.65e+03	4.54e+03	0.81	yes	8.19e+03	n	n
16	26:59	2.00e+03	2.77e+03	0.72	yes	4.77e+03	n	n
17	27:15	1.24e+02	1.64e+02	0.75	yes	2.88e+02	n	n
18	28:26	5.47e+03	6.66e+03	0.82	yes	1.21e+04	n	n

2,3,7,8-TCDF

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Peak List Summary

CLIENT ID.
SL0207

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 17 File: P616137 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 01:18:10 Processed: 20-DEC-18 15:56:51

Mass: 319.8970 321.8940 Tot Response: 3.13e+04 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:54	6.03e+02	8.05e+02	0.75	yes	1.41e+03		n	n
2	25:10	3.30e+01	3.75e+01	0.88	yes	7.04e+01		n	n
3	26:06	1.50e+01	2.11e+01	0.71	yes	3.61e+01		n	n
4	26:31	6.42e+01	7.78e+01	0.82	yes	1.42e+02		n	n
5	26:56	2.11e+02	3.08e+02	0.68	yes	5.19e+02		n	n
6	27:14	1.27e+04	1.64e+04	0.77	yes	2.91e+04	2,3,7,8-TCDD	n	n

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Peak List Summary

CLIENT ID.
SL0207

Entry: 39 Totals Name: Total Penta-Furans2

Run: 17 File: P616137 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 01:18:10 Processed: 20-DEC-18 15:56:51

Mass: 339.8600 341.8570 Tot Response: 1.27e+04 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:52	1.19e+02	7.03e+01	1.70	yes	1.90e+02		n	n
2	30:01	1.72e+03	1.06e+03	1.63	yes	2.78e+03		n	n
3	30:50	2.91e+02	1.97e+02	1.48	yes	4.88e+02		n	n
4	31:02	3.25e+03	2.01e+03	1.62	yes	5.26e+03	1,2,3,7,8-PeCDF	n	n
5	31:28	1.10e+01	7.84e+00	1.40	yes	1.88e+01		n	n
6	32:02	2.44e+03	1.52e+03	1.61	yes	3.96e+03	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.
SL0207

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 17 File: P616137 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 01:18:10 Processed: 20-DEC-18 15:56:51

Mass: 355.8550 357.8520 Tot Response: 1.58e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:33	5.73e+02	3.97e+02	1.44	yes	9.69e+02		n	n
2	32:20	3.20e+02	2.16e+02	1.49	yes	5.36e+02	1,2,3,7,8-PeCDD	n	n
3	32:44	4.10e+01	2.90e+01	1.41	yes	7.00e+01		n	n

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Peak List Summary

CLIENT ID.
SL0207

Entry: 41 Totals Name: Total Hexa-Furans

Run: 17 File: P616137 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 01:18:10 Processed: 20-DEC-18 15:56:51

Mass: 373.8210 375.8180 Tot Response: 1.74e+04 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:49	6.18e+02	4.98e+02	1.24	yes	1.12e+03		n	n
2	34:22	3.20e+02	2.83e+02	1.13	yes	6.03e+02		n	n
3	34:49	6.29e+03	4.99e+03	1.26	yes	1.13e+04	1,2,3,4,7,8-HxCDF	n	n
4	34:56	1.56e+03	1.35e+03	1.16	yes	2.90e+03	1,2,3,6,7,8-HxCDF	n	n
5	35:27	2.86e+02	2.59e+02	1.10	yes	5.45e+02	2,3,4,6,7,8-HxCDF	n	n
6	36:14	5.26e+02	4.04e+02	1.30	yes	9.30e+02	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0207

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 17 File: P616137 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 01:18:10 Processed: 20-DEC-18 15:56:51

Mass: 389.8160 391.8130 Tot Response: 1.19e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:12	4.44e+03	3.58e+03	1.24	yes	8.02e+03		n	n
2	34:44	1.30e+02	9.13e+01	1.42	yes	2.21e+02		n	n
3	34:59	1.15e+03	9.11e+02	1.26	yes	2.06e+03		n	n
4	35:05	1.33e+02	9.42e+01	1.41	yes	2.27e+02		n	n
5	35:35	1.33e+02	9.42e+01	1.42	yes	2.28e+02	1,2,3,4,7,8-HxCDD	n	n
6	35:40	1.84e+02	1.58e+02	1.16	yes	3.42e+02	1,2,3,6,7,8-HxCDD	n	n
7	35:50	8.72e+01	7.65e+01	1.14	yes	1.64e+02		n	n
8	35:55	3.24e+02	2.92e+02	1.11	yes	6.15e+02	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

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SL0207

Entry: 43 Totals Name: Total Hepta-Furans

Run: 17 File: P616137 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 01:18:10 Processed: 20-DEC-18 15:56:51

Mass: 407.7820 409.7790 Tot Response: 5.82e+03 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:28	1.80e+03	1.69e+03	1.07	yes	3.49e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:52	6.59e+02	6.60e+02	1.00	yes	1.32e+03		n	n
3	38:48	4.95e+02	5.13e+02	0.96	yes	1.01e+03	1,2,3,4,7,8,9-HpCDF	n	n

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Peak List Summary

CLIENT ID.
SL0207

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 17 File: P616137 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 01:18:10 Processed: 20-DEC-18 15:56:51

Mass: 423.7770 425.7740 Tot Response: 4.01e+04 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:43	1.38e+04	1.33e+04 1.04	yes	2.71e+04		n	n
2	38:21	6.50e+03	6.44e+03 1.01	yes	1.29e+04	1,2,3,4,6,7,8-HpCDD	n	n

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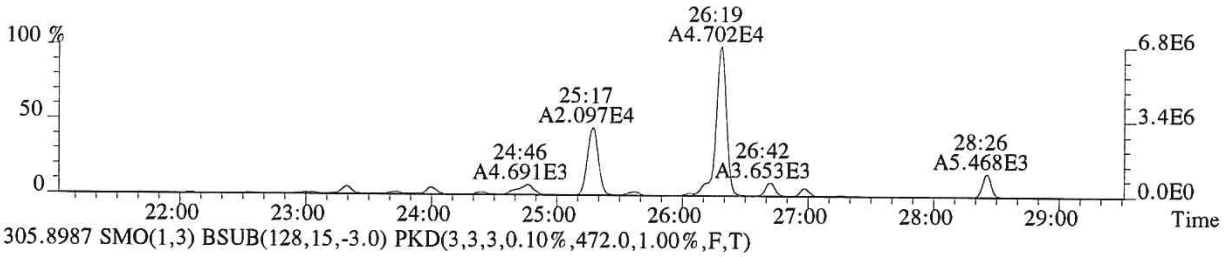
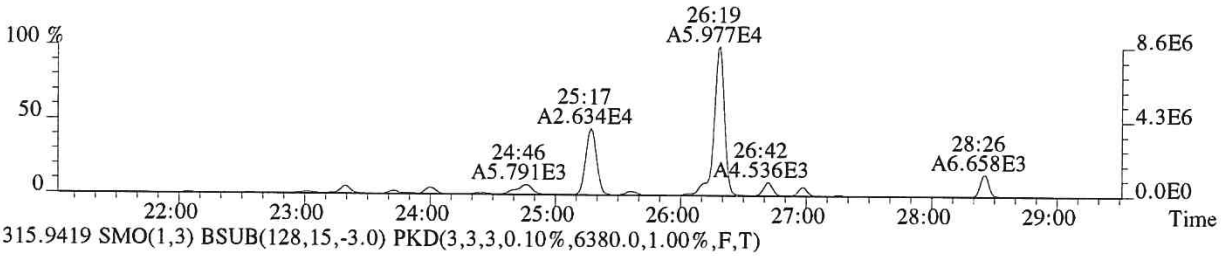
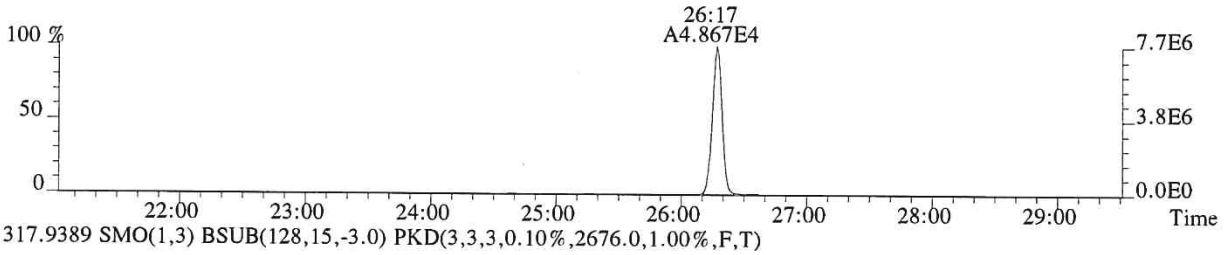
File:P616137 #1-602 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,844.0,1.00%,F,T)



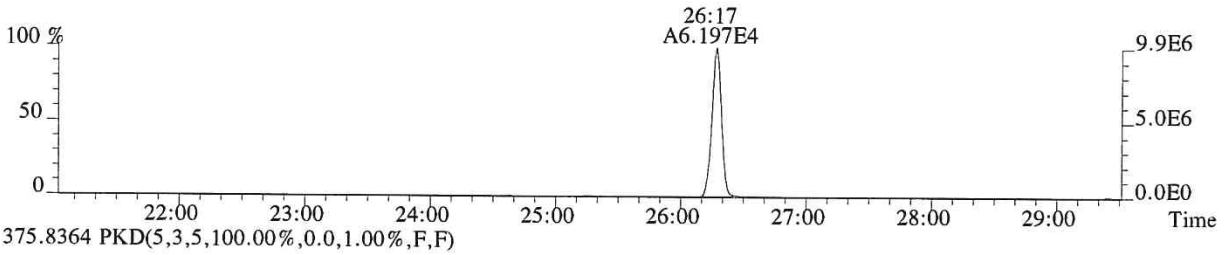
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,T)



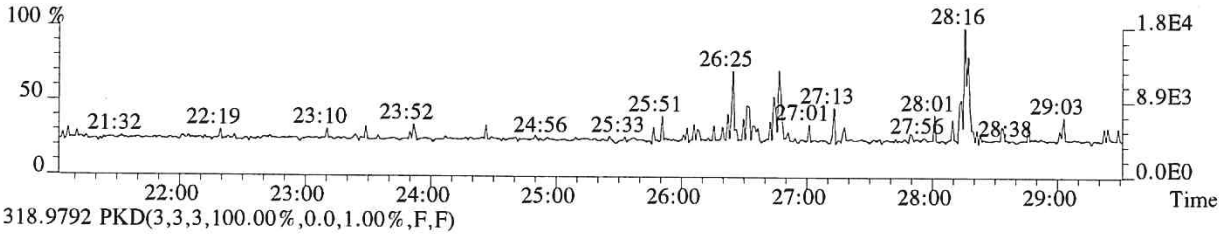
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6380.0,1.00%,F,T)



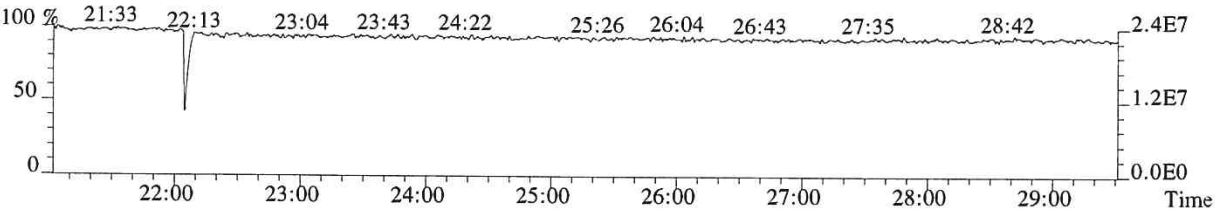
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2676.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

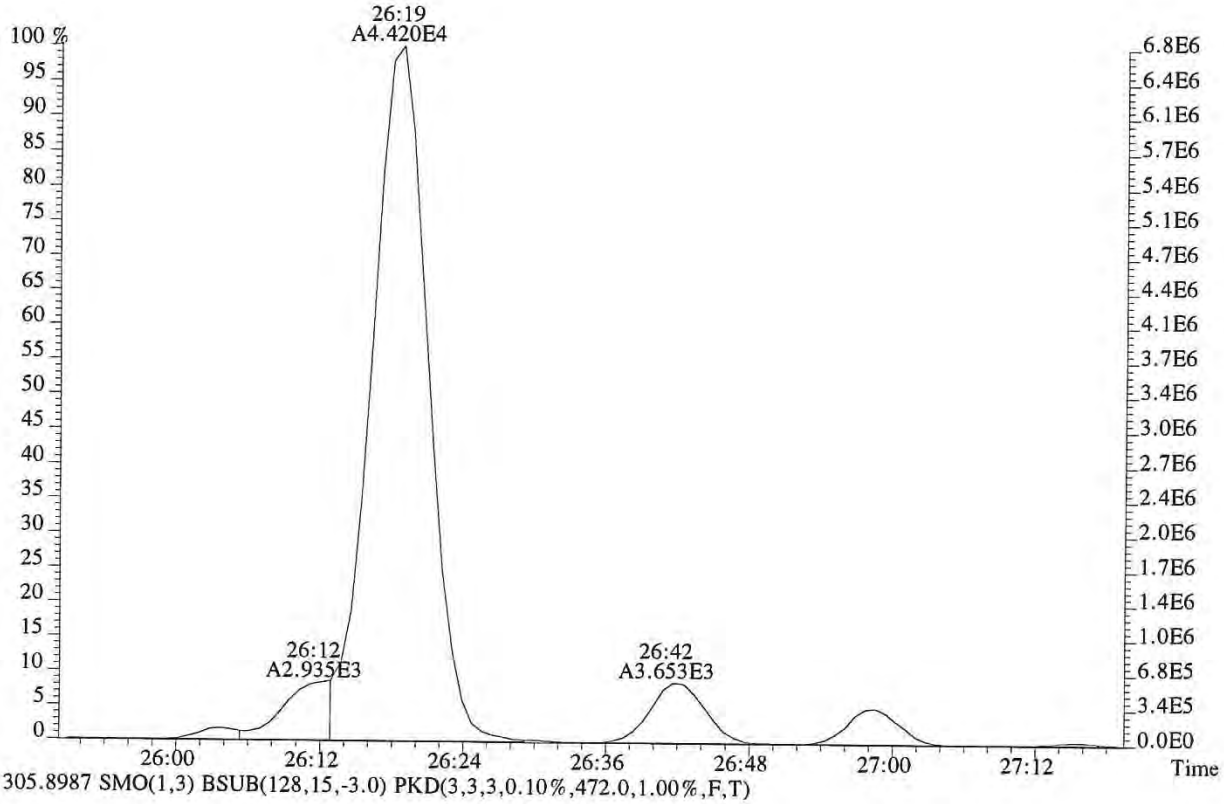


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

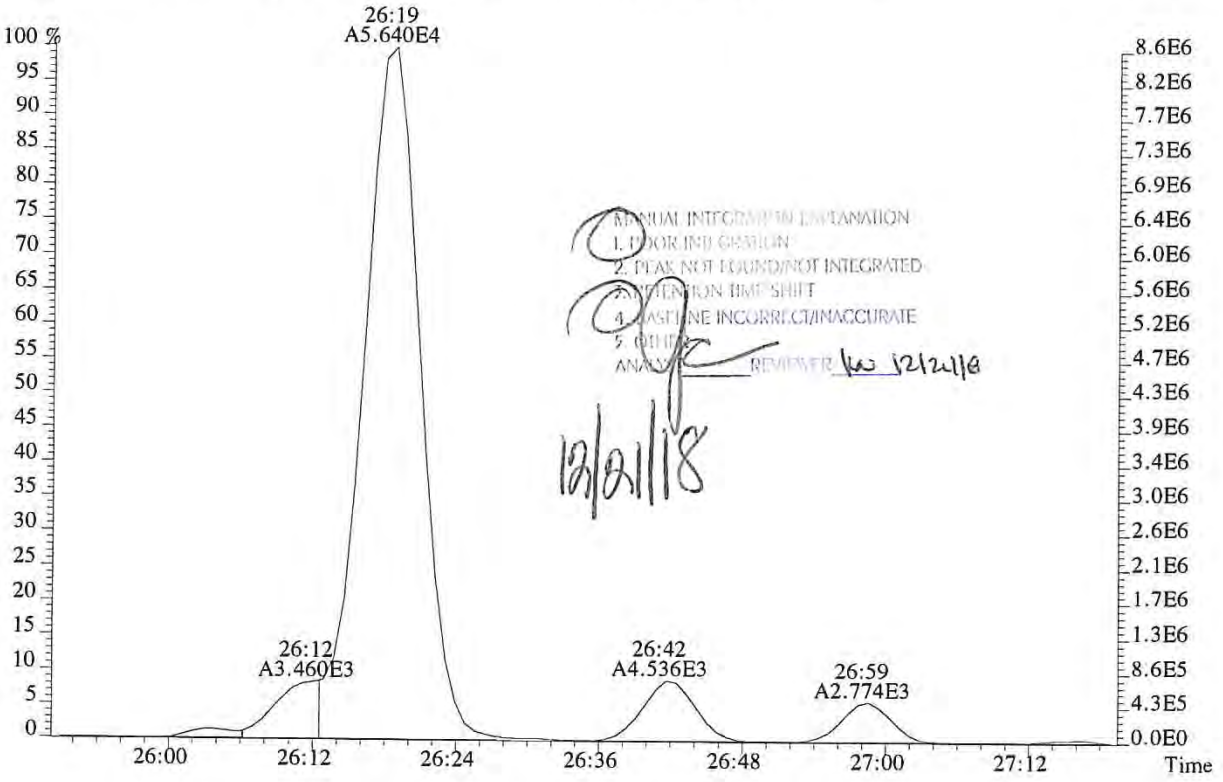


058975

File:P616137 #1-602 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,844.0,1.00%,F,T)



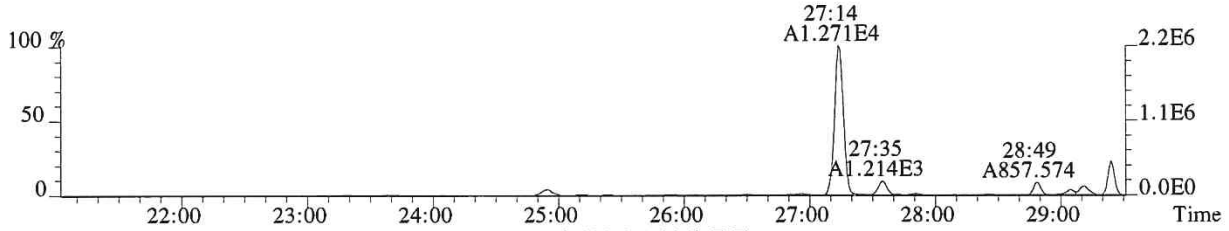
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,T)



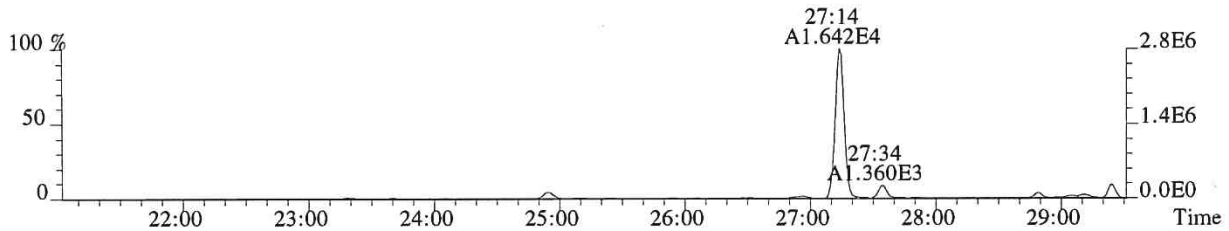
MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST
REVIEWER 12/21/18
12/21/18

058976

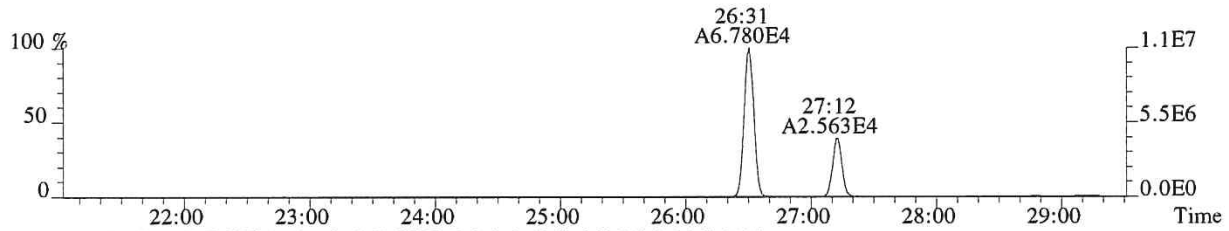
File:P616137 #1-602 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,780.0,1.00%,F,T)



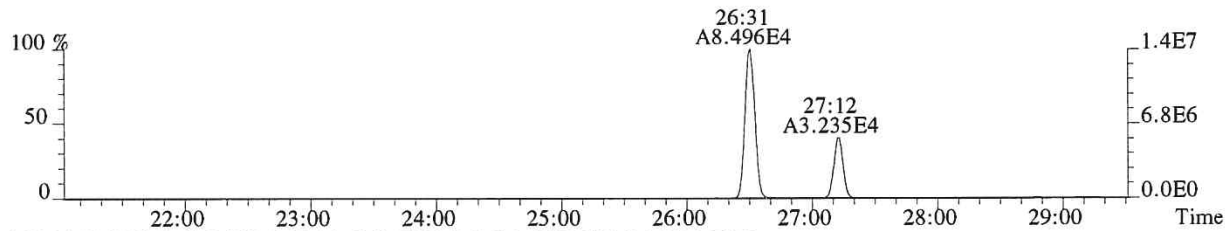
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,588.0,1.00%,F,T)



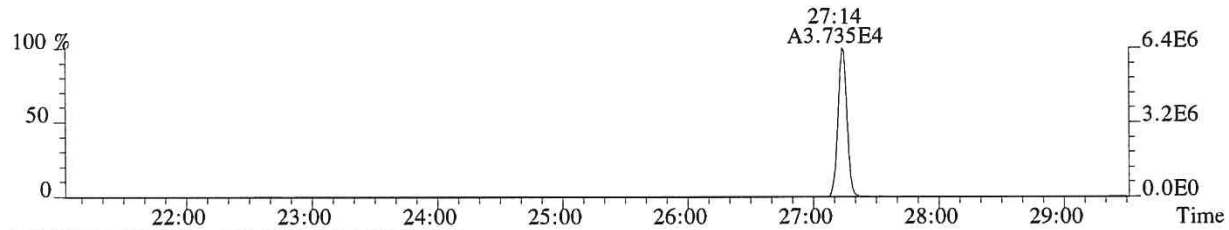
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5604.0,1.00%,F,T)



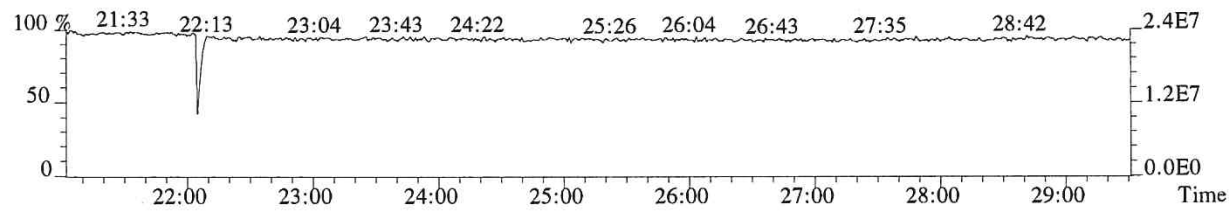
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2696.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,780.0,1.00%,F,T)

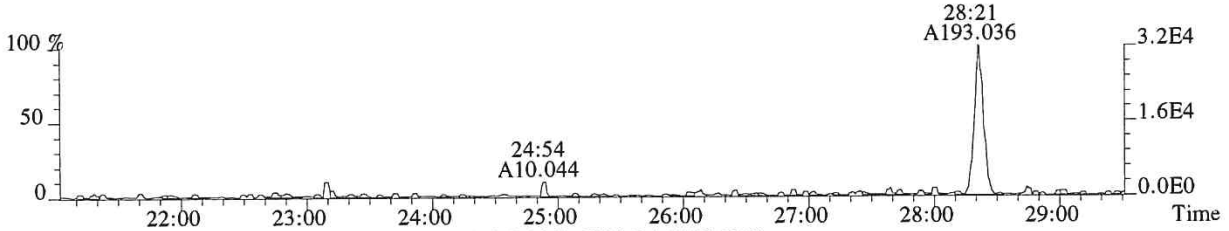


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

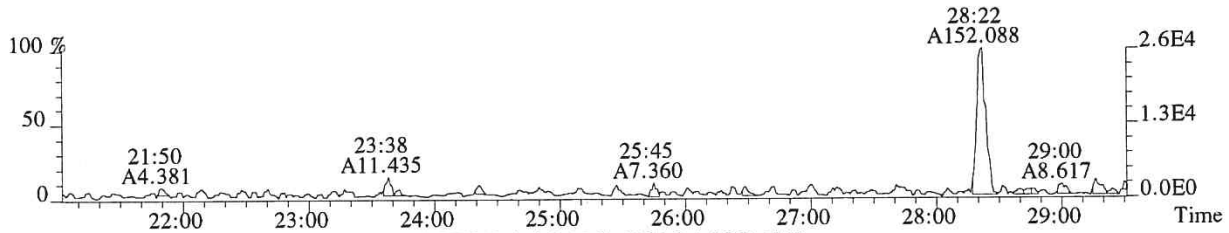


058977

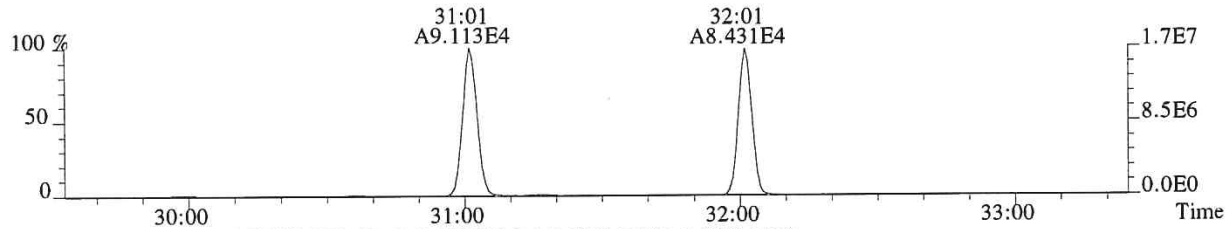
File:P616137 #1-602 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,308.0,1.00%,F,T)



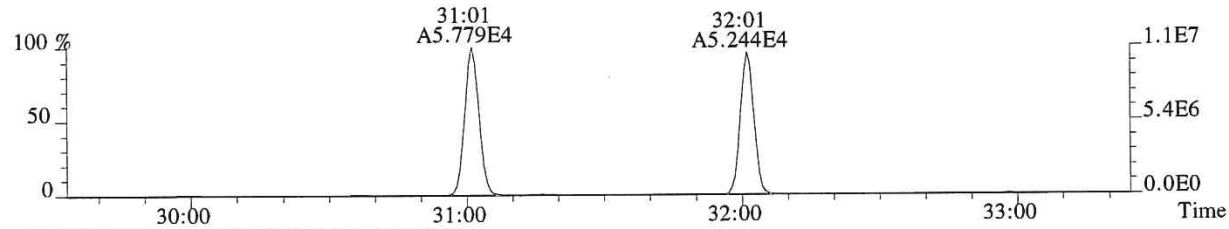
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1064.0,1.00%,F,T)



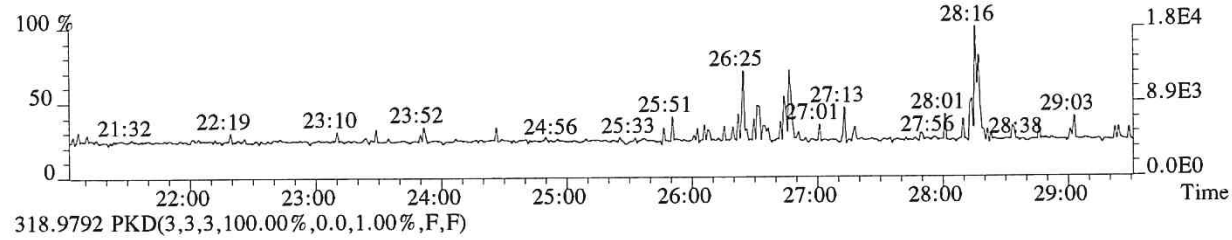
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1360.0,1.00%,F,T)



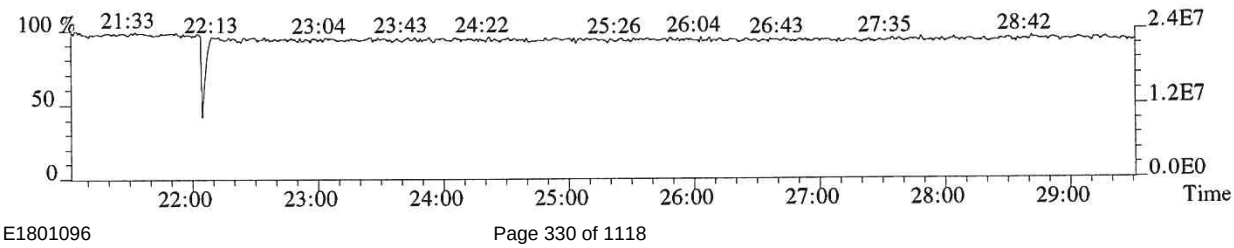
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,736.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

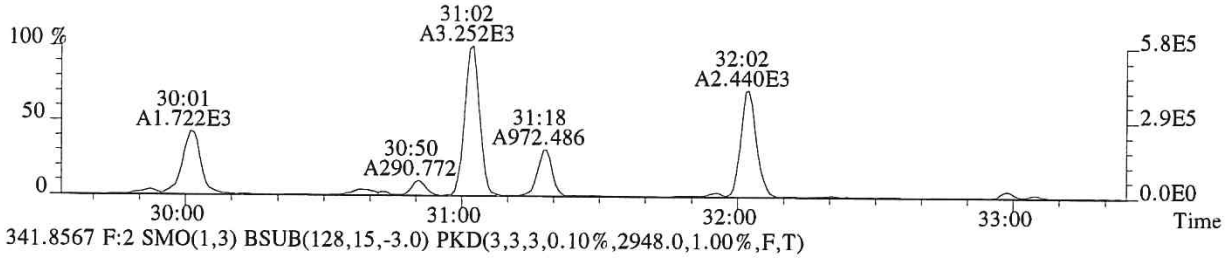


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

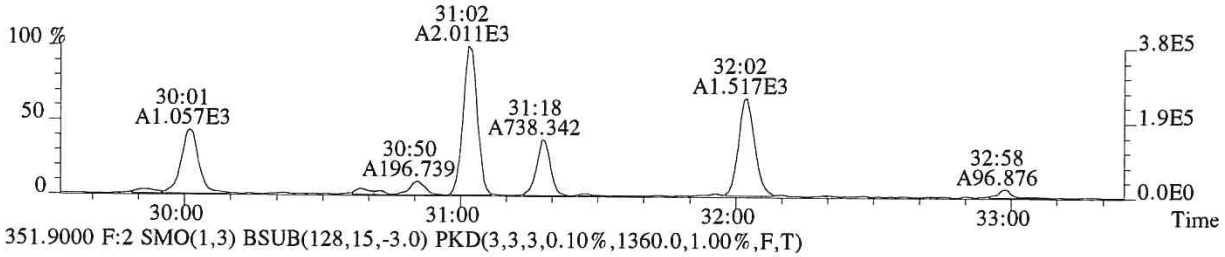


058978

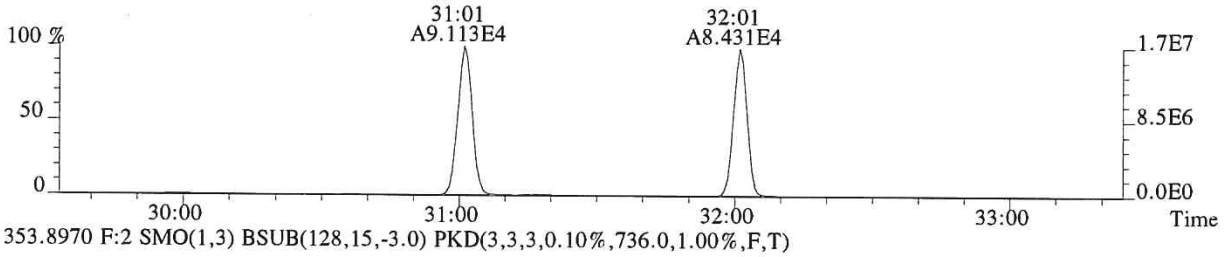
File:P616137 #1-348 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1352.0,1.00%,F,T)



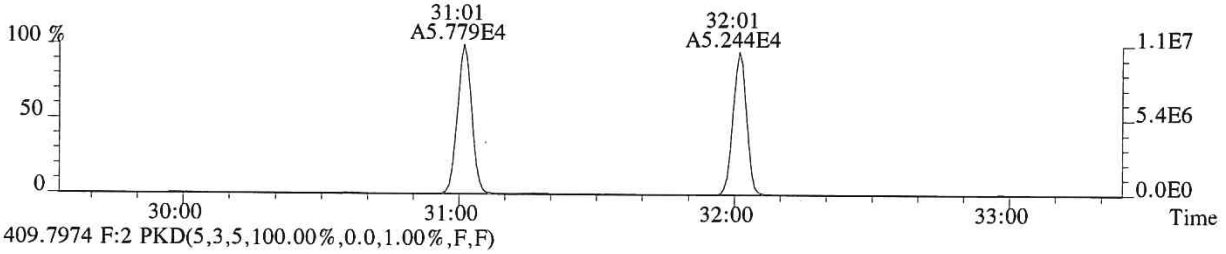
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2948.0,1.00%,F,T)



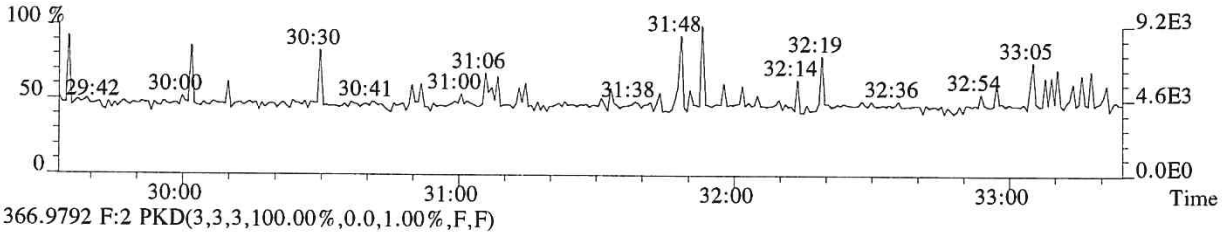
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1360.0,1.00%,F,T)



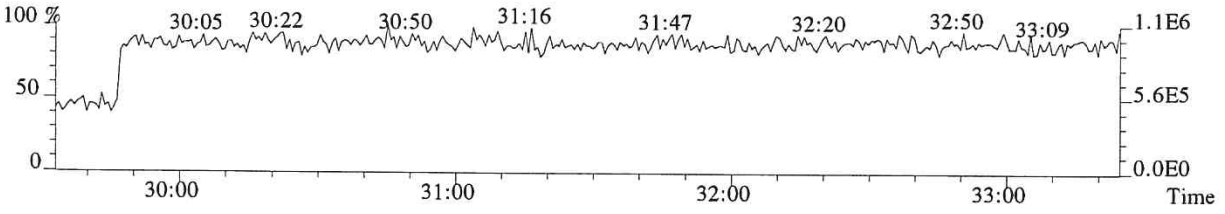
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,736.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

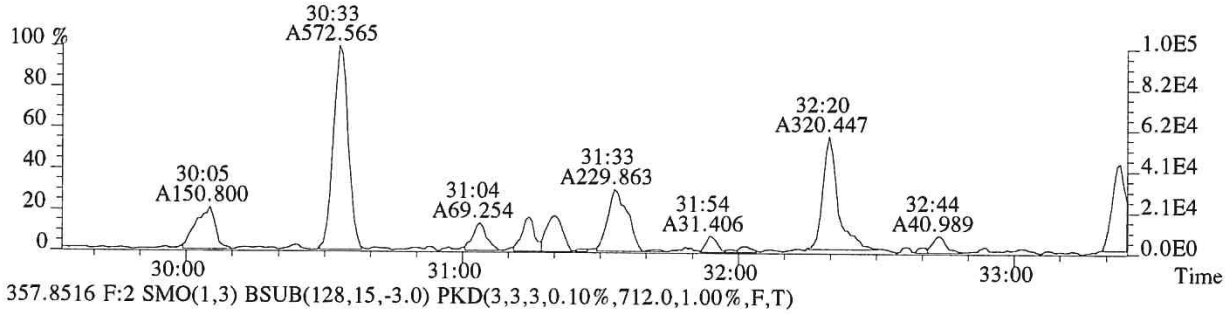


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

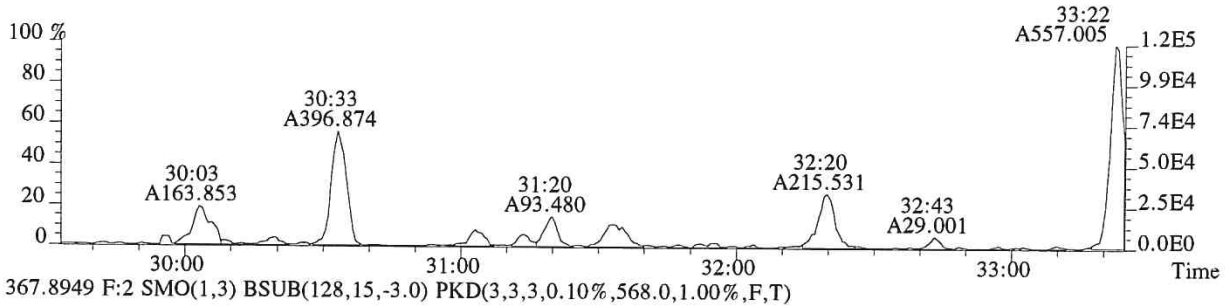


058979

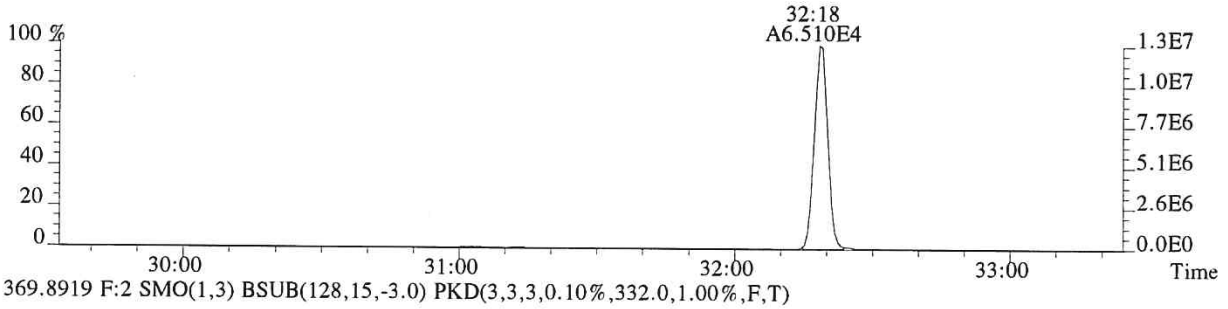
File:P616137 #1-348 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1584.0,1.00%,F,T)



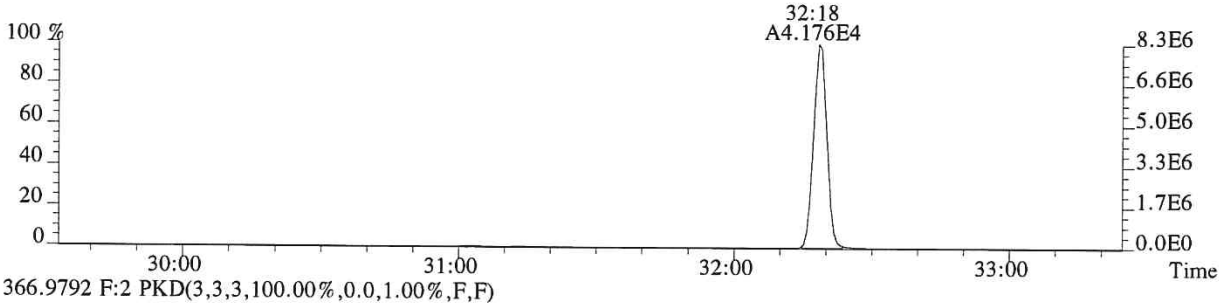
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,712.0,1.00%,F,T)



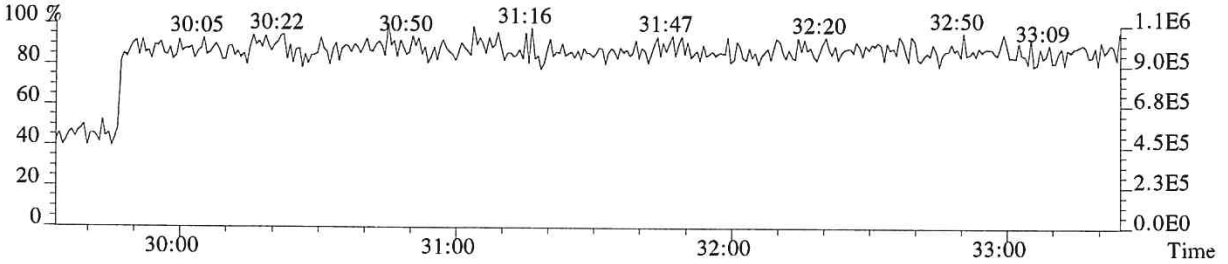
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,568.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,332.0,1.00%,F,T)

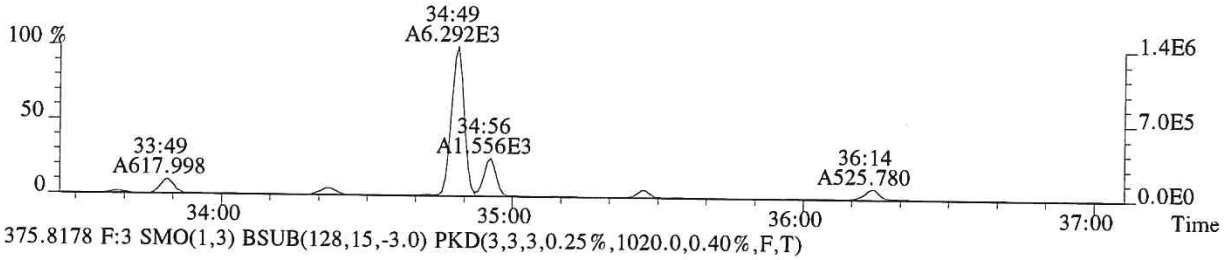


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

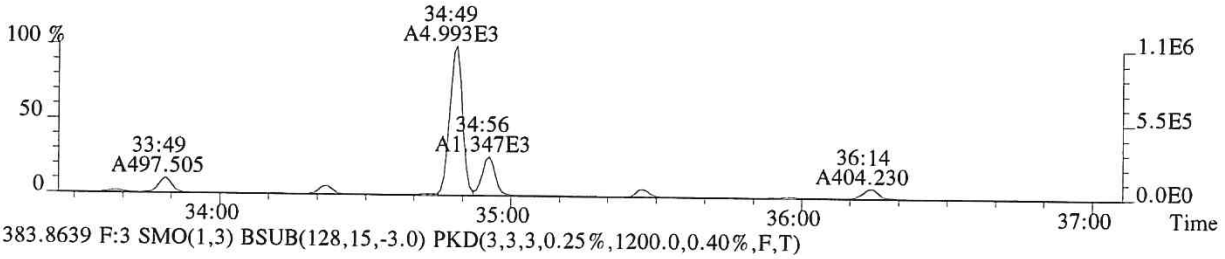


058980

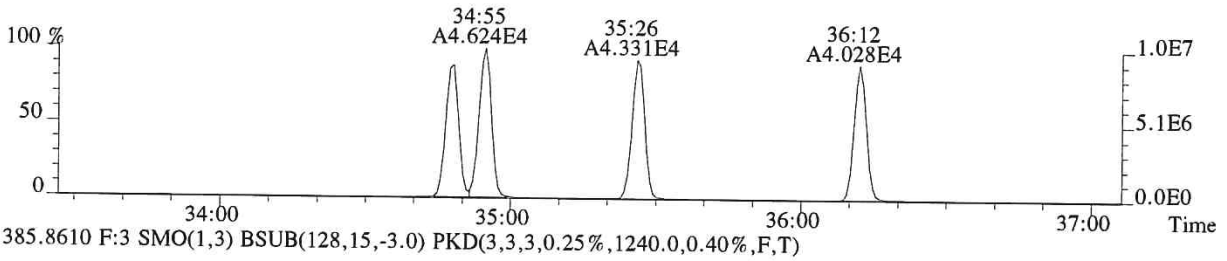
File:P616137 #1-330 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2020.0,0.40%,F,T)



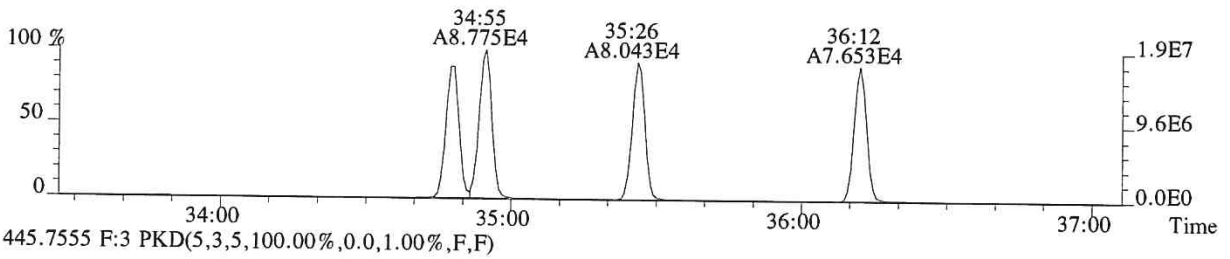
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1020.0,0.40%,F,T)



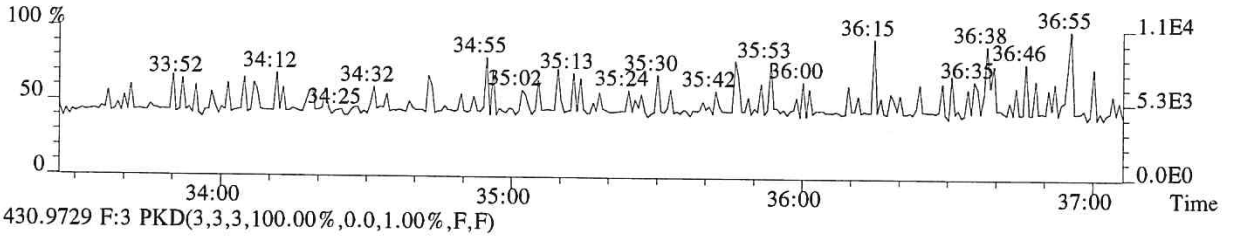
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1200.0,0.40%,F,T)



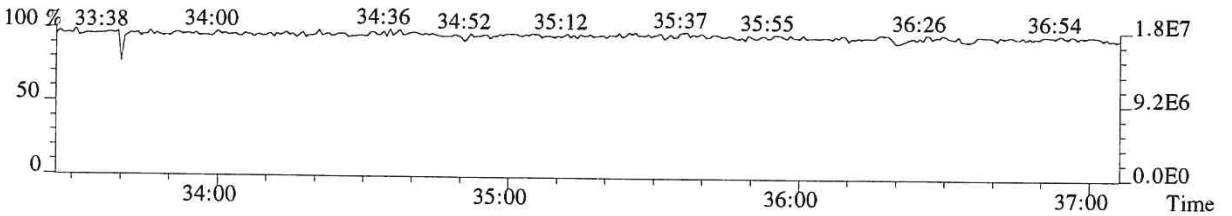
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1240.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

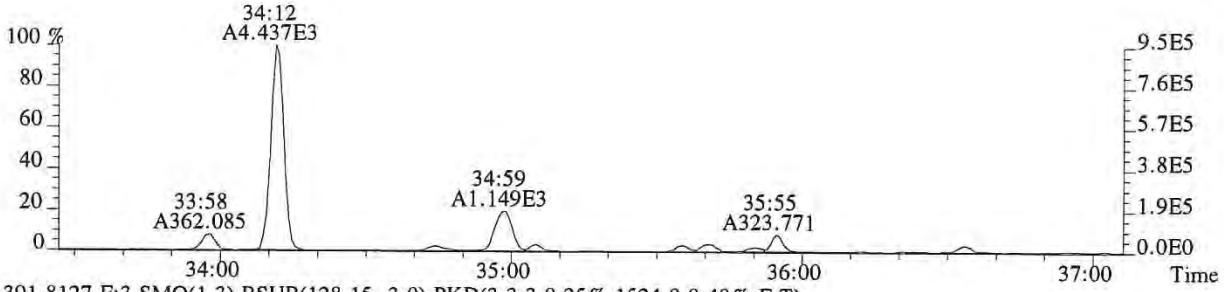


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

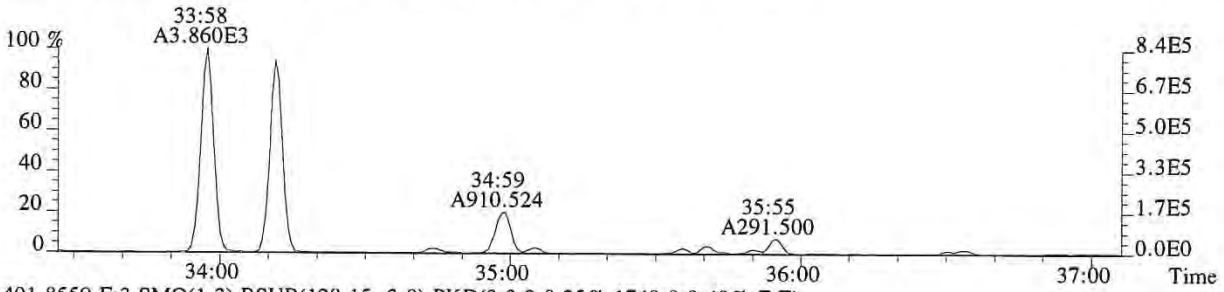


058981

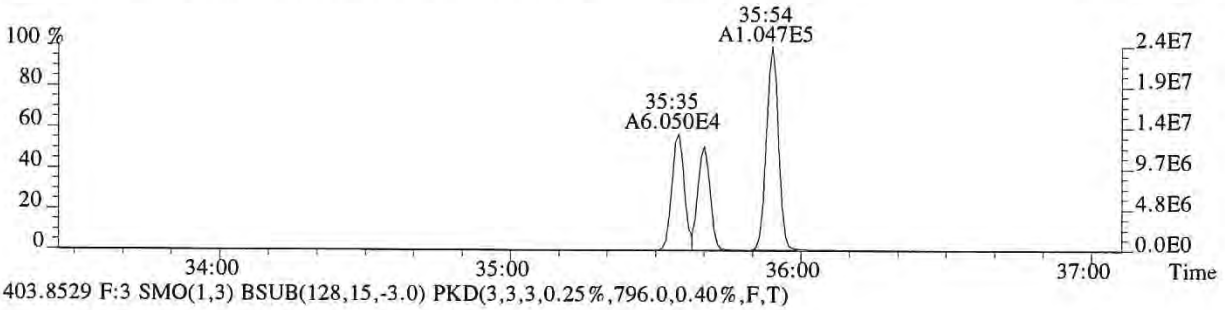
File:P616137 #1-330 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2180.0,0.40%,F,T)



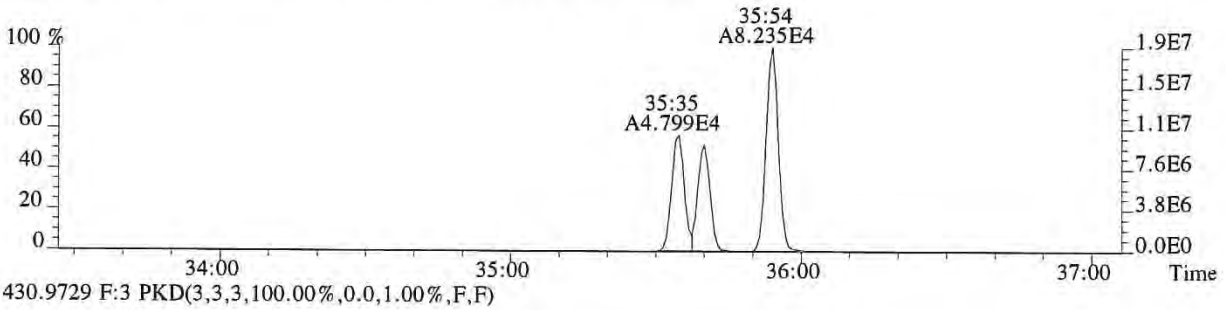
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1524.0,0.40%,F,T)



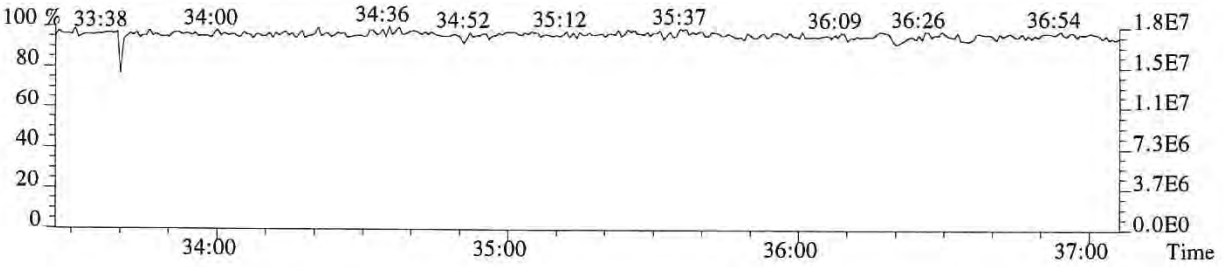
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1740.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,796.0,0.40%,F,T)

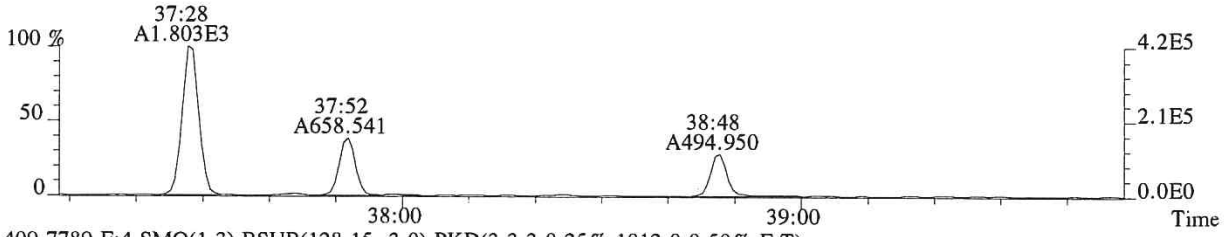


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

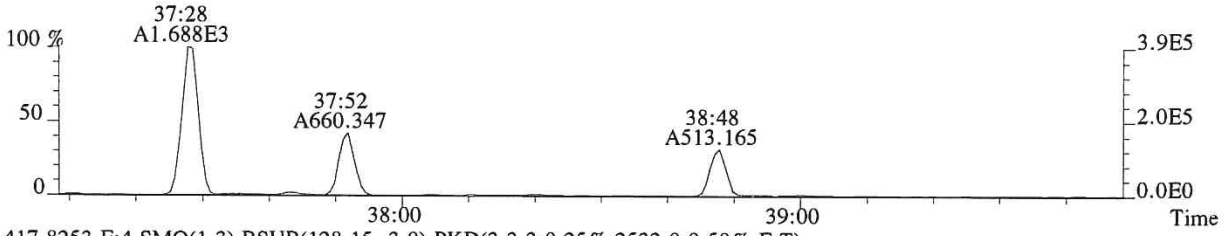


058982

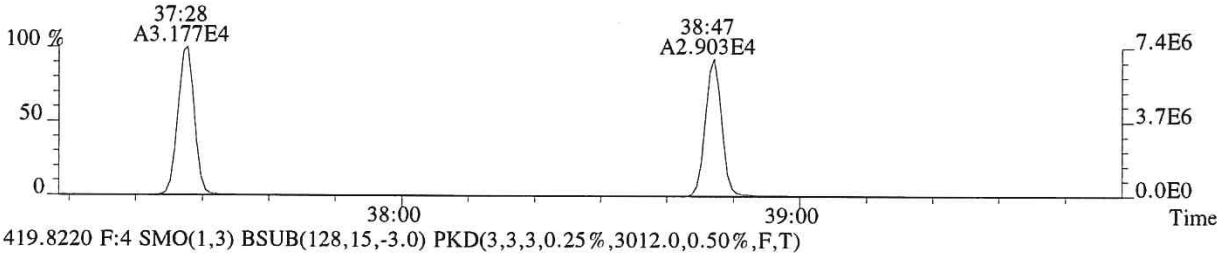
File:P616137 #1-241 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2444.0,0.50%,F,T)



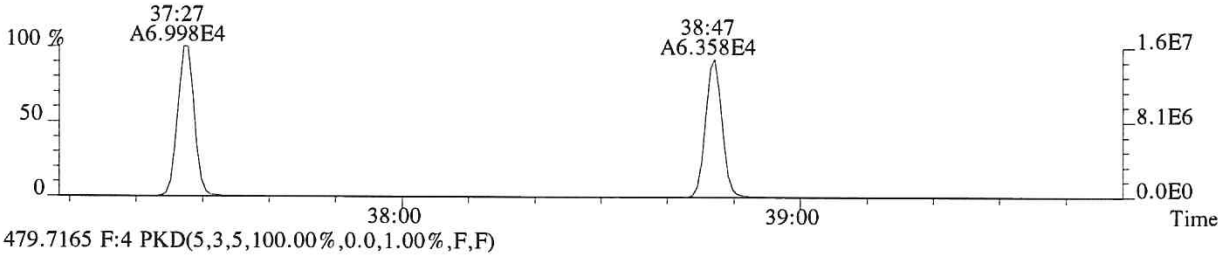
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1012.0,0.50%,F,T)



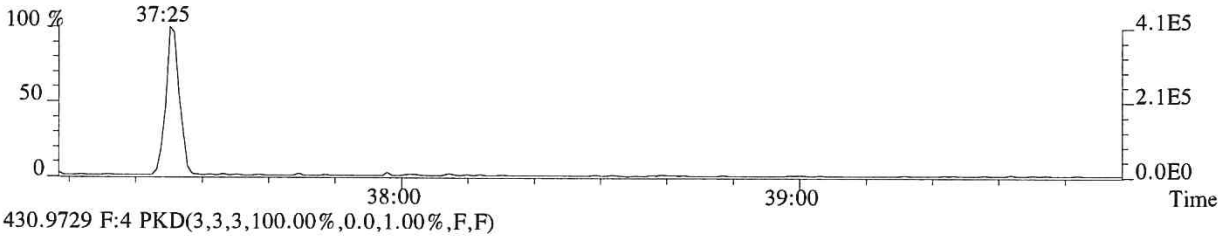
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2532.0,0.50%,F,T)



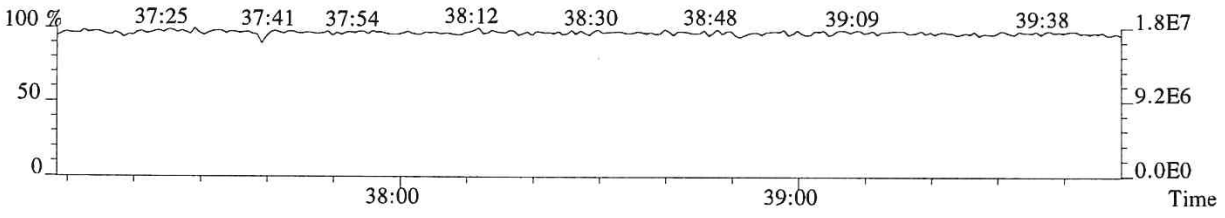
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3012.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

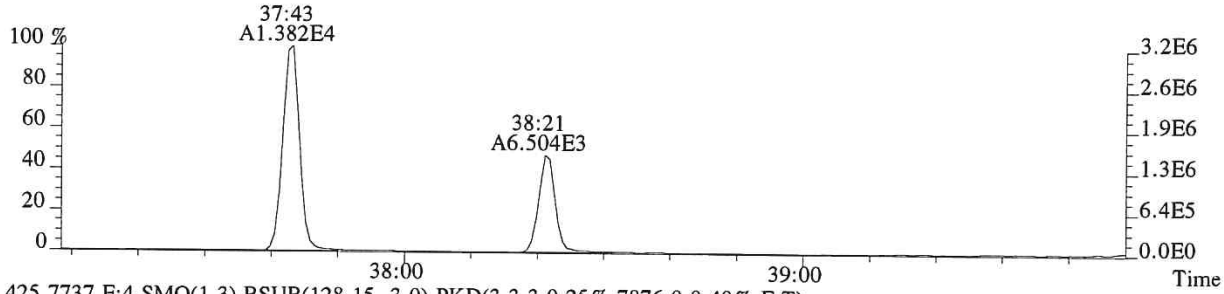


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

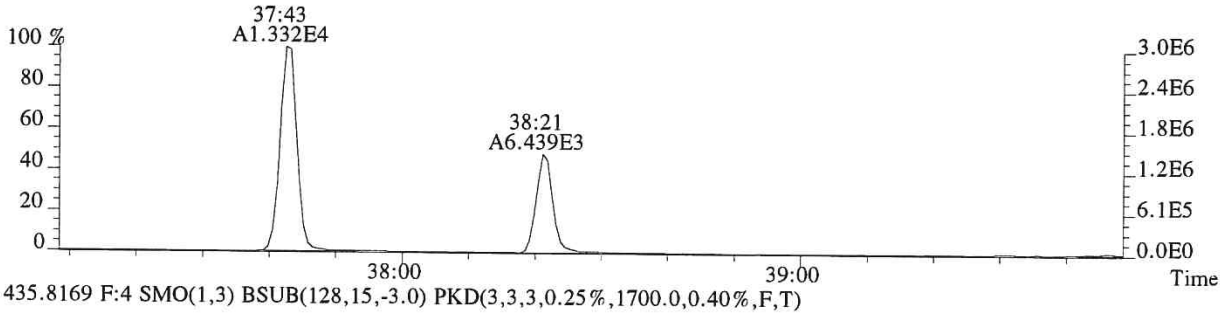


058983

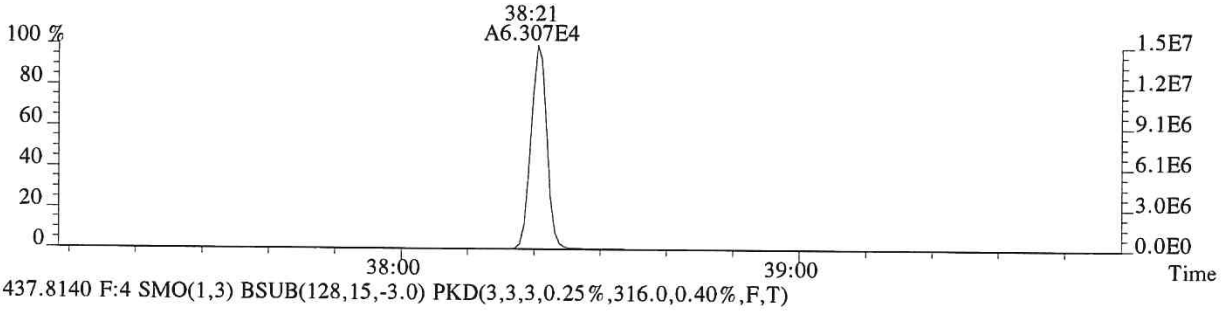
File:P616137 #1-241 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,15428.0,0.40%,F,T)



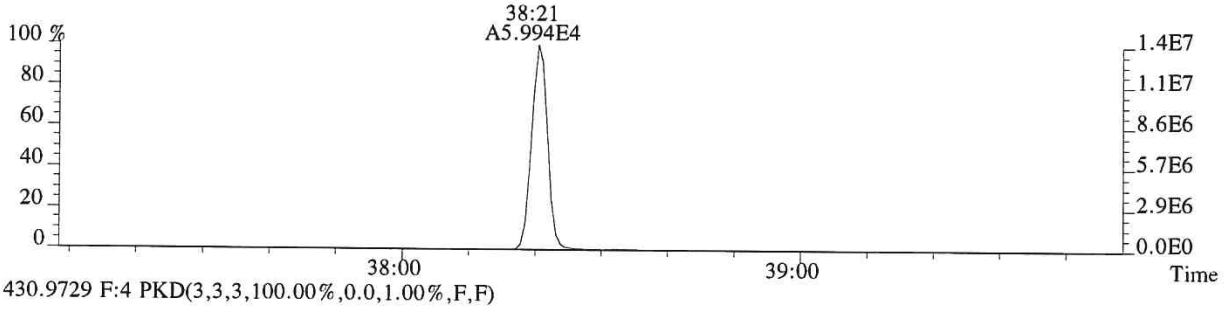
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7876.0,0.40%,F,T)



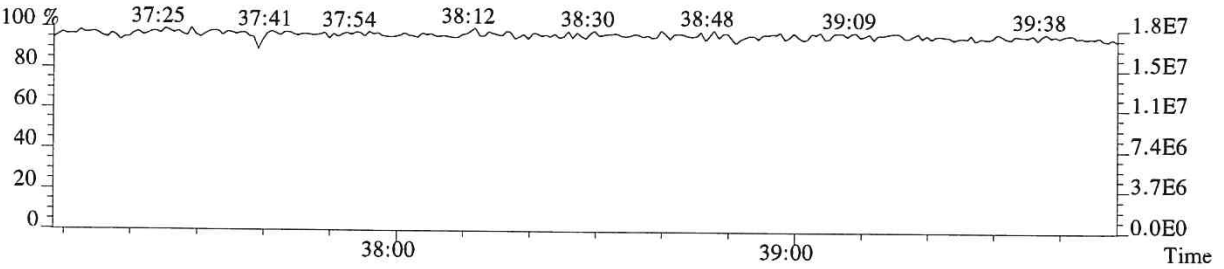
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1700.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,316.0,0.40%,F,T)

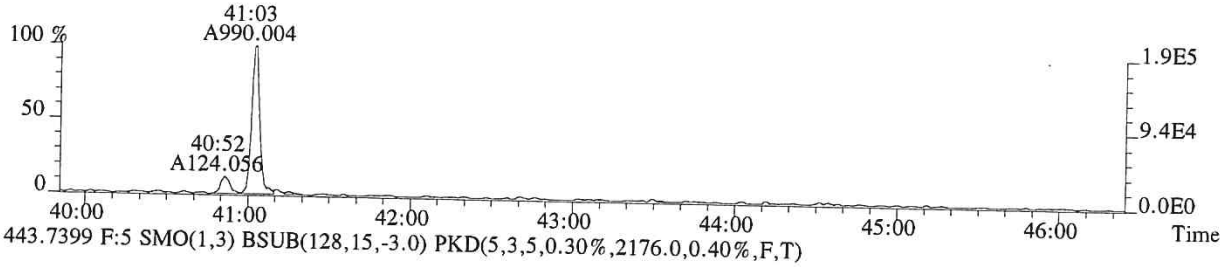


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

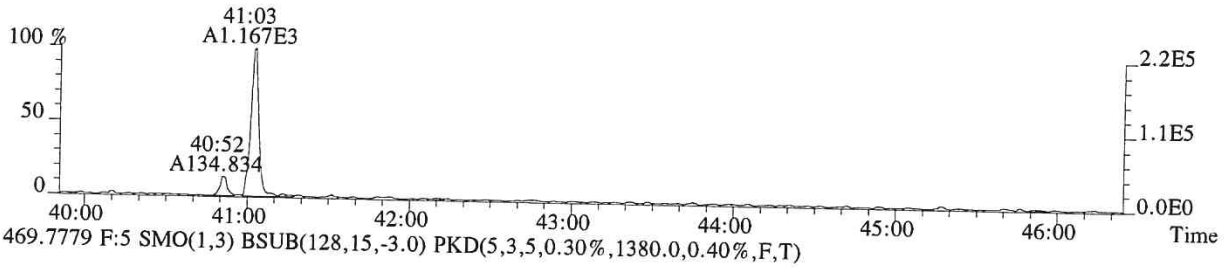


058984

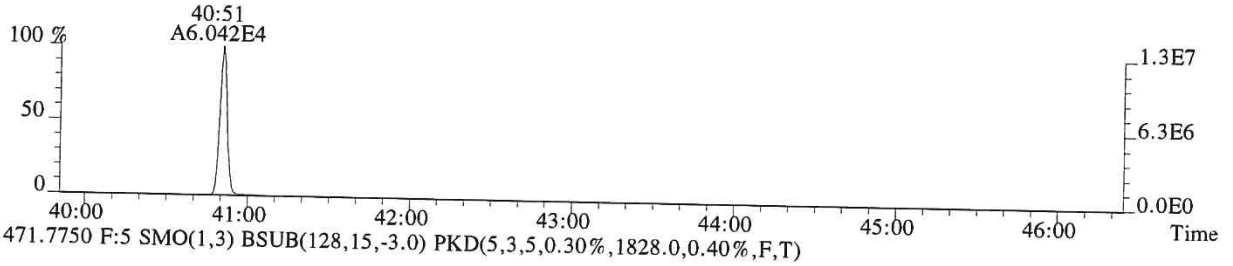
File:P616137 #1-591 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2280.0,0.40%,F,T)



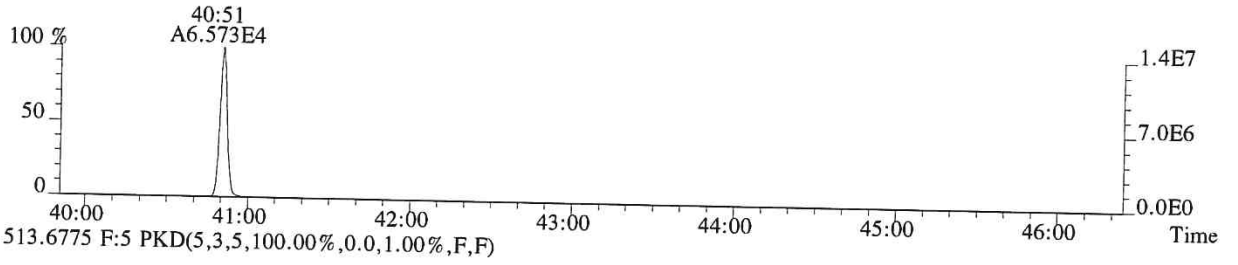
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2176.0,0.40%,F,T)



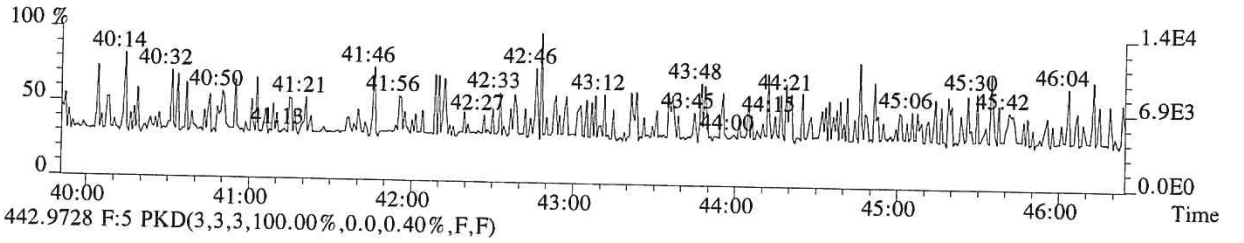
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1380.0,0.40%,F,T)



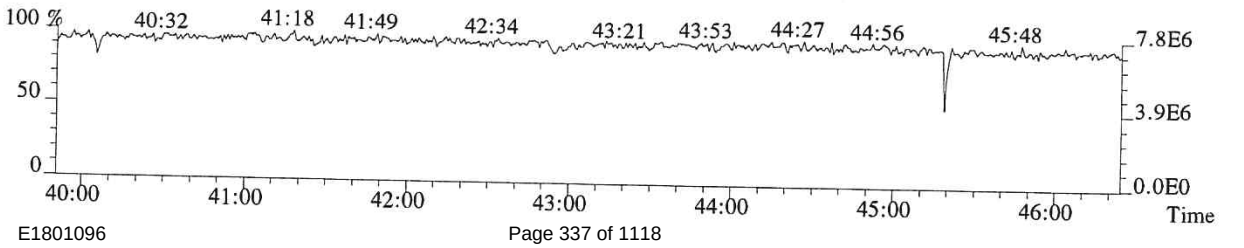
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1828.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

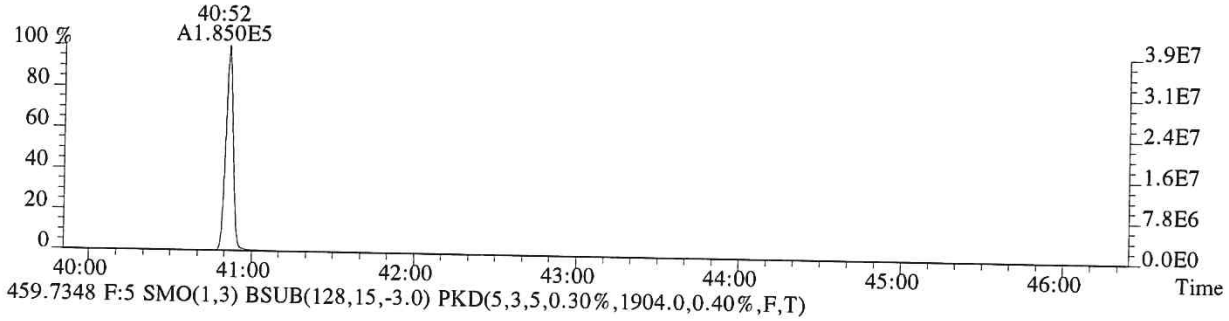


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

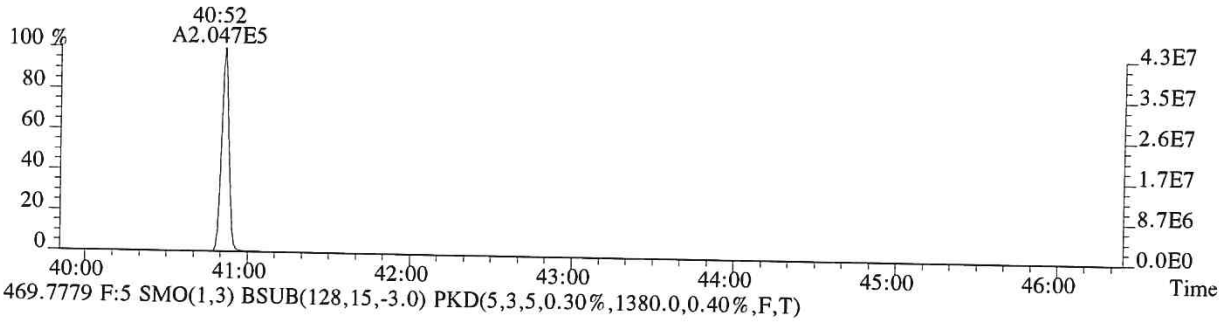


058985

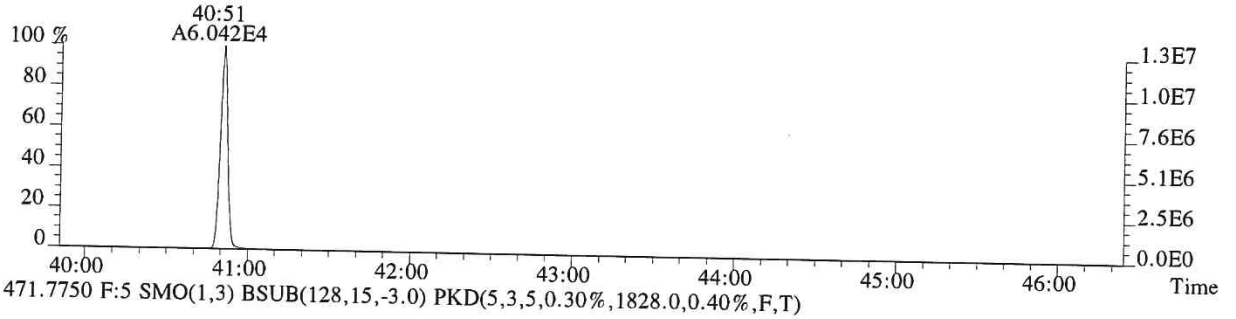
File:P616137 #1-591 Acq:20-DEC-2018 01:18:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-007
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1184.0,0.40%,F,T)



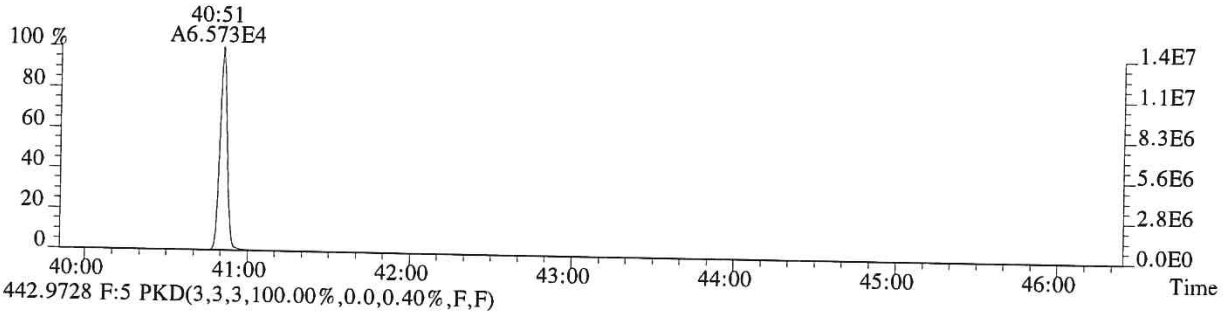
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1904.0,0.40%,F,T)



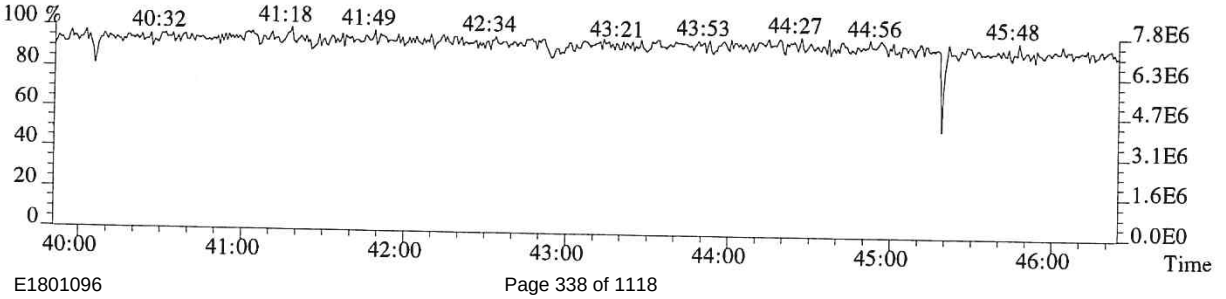
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1380.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1828.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



058986

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0208

Run #18 Filename P616138 Samp: 1 Inj: 1 Acquired: 20-DEC-18 02:07:19
Processed: 20-DEC-18 15:56:53 Sample ID: E1801096-008

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:19	1.198e+03	1.447e+03	0.83	yes	yes	1.081
2	Unk	1,2,3,7,8-PeCDF	31:03	5.053e+01	5.299e+01	0.95	no	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:03	5.163e+01	4.806e+01	1.07	no	yes	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:49	1.367e+02	8.081e+01	1.69	no	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	6.028e+01	4.874e+01	1.24	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	2.143e+01	1.523e+01	1.41	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:13	5.476e+01	4.122e+01	1.33	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:28	8.083e+01	7.332e+01	1.10	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:48	2.639e+01	2.000e+01	1.32	no	no	1.463
10	Unk	OCDF	41:02	1.470e+02	2.039e+02	0.72	no	no	1.571
11	Unk	2,3,7,8-TCDD	27:14	2.973e+02	4.221e+02	0.70	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	7.415e+01	4.118e+01	1.80	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	1.008e+02	9.024e+01	1.12	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	1.910e+02	1.199e+02	1.59	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	3.757e+02	2.946e+02	1.28	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	4.839e+03	4.802e+03	1.01	yes	no	1.112
17	Unk	OCDD	40:52	8.237e+04	9.127e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:17	4.350e+04	5.507e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:00	4.109e+04	2.616e+04	1.57	yes	yes	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	7.227e+04	4.503e+04	1.60	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	4.151e+04	7.962e+04	0.52	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:55	4.496e+04	8.556e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	4.285e+04	8.037e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	3.942e+04	7.432e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:27	3.136e+04	6.778e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	2.810e+04	6.157e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:13	2.280e+04	2.856e+04	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:19	4.308e+04	2.671e+04	1.61	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	5.970e+04	4.654e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:40	5.241e+04	4.154e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	6.301e+04	5.886e+04	1.07	yes	no	0.857
32	IS	13C-OCDD	40:51	6.081e+04	6.680e+04	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:31	7.075e+04	8.974e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	9.820e+04	7.768e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	3.286e+04				no	1.086

$$\text{OCDD} = \frac{(8.237e+04 + 9.127e+04) \times 4000\ \text{pg} \times 1}{(6.081e+04 + 6.680e+04) \times 10.707\ \text{g} \times 81.2 / 100 \times 1.157} = 541\ \text{ng/kg}$$

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0208

un #18 Filename P616138 Samp: 1 Inj: 1 Acquired: 20-DEC-18 02:07:19
rocessed: 20-DEC-18 15:56:53 LAB. ID: E1801096-008

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.84e+05	8.60e+02	2.1e+02	2.24e+05	6.72e+02	3.3e+02
2	1,2,3,7,8-PeCDF	1.20e+04	6.16e+02	1.9e+01	1.58e+04	1.22e+03	1.3e+01
3	2,3,4,7,8-PeCDF	1.12e+04	6.16e+02	1.8e+01	1.18e+04	1.22e+03	9.7e+00
4	1,2,3,4,7,8-HxCDF	2.73e+04	5.28e+02	5.2e+01	1.70e+04	4.76e+02	3.6e+01
5	1,2,3,6,7,8-HxCDF	1.57e+04	5.28e+02	3.0e+01	1.08e+04	4.76e+02	2.3e+01
6	2,3,4,6,7,8-HxCDF	4.48e+03	5.28e+02	8.5e+00	4.03e+03	4.76e+02	8.5e+00
7	1,2,3,7,8,9-HxCDF	8.83e+03	5.28e+02	1.7e+01	9.14e+03	4.76e+02	1.9e+01
8	1,2,3,4,6,7,8-HpCDF	1.90e+04	8.36e+02	2.3e+01	1.80e+04	5.12e+02	3.5e+01
9	1,2,3,4,7,8,9-HpCDF	5.73e+03	8.36e+02	6.9e+00	4.72e+03	5.12e+02	9.2e+00
10	OCDF	2.75e+04	1.45e+03	1.9e+01	3.52e+04	1.42e+03	2.5e+01
11	2,3,7,8-TCDD	4.95e+04	1.27e+03	3.9e+01	8.29e+04	8.28e+02	1.0e+02
12	1,2,3,7,8-PeCDD	1.78e+04	6.52e+02	2.7e+01	1.16e+04	8.12e+02	1.4e+01
13	1,2,3,4,7,8-HxCDD	1.99e+04	2.27e+03	8.7e+00	2.19e+04	1.96e+03	1.1e+01
14	1,2,3,6,7,8-HxCDD	4.17e+04	2.27e+03	1.8e+01	2.95e+04	1.96e+03	1.5e+01
15	1,2,3,7,8,9-HxCDD	8.10e+04	2.27e+03	3.6e+01	5.88e+04	1.96e+03	3.0e+01
16	1,2,3,4,6,7,8-HpCDD	1.17e+06	6.39e+03	1.8e+02	1.16e+06	7.21e+03	1.6e+02
17	OCDD	1.75e+07	1.51e+03	1.2e+04	1.96e+07	6.75e+03	2.9e+03
18	13C-2,3,7,8-TCDF	6.84e+06	4.24e+03	1.6e+03	8.64e+06	2.38e+03	3.6e+03
19	13C-1,2,3,7,8-PeCDF	6.56e+06	1.18e+03	5.6e+03	4.35e+06	7.08e+02	6.1e+03
20	13C-2,3,4,7,8-PeCDF	1.51e+07	1.18e+03	1.3e+04	9.46e+06	7.08e+02	1.3e+04
21	13C-1,2,3,4,7,8-HxCDF	8.96e+06	1.07e+03	8.4e+03	1.70e+07	1.44e+03	1.2e+04
22	13C-1,2,3,6,7,8-HxCDF	1.00e+07	1.07e+03	9.3e+03	1.88e+07	1.44e+03	1.3e+04
23	13C-2,3,4,6,7,8-HxCDF	9.54e+06	1.07e+03	8.9e+03	1.81e+07	1.44e+03	1.3e+04
24	13C-1,2,3,7,8,9-HxCDF	9.14e+06	1.07e+03	8.5e+03	1.69e+07	1.44e+03	1.2e+04
25	13C-1,2,3,4,6,7,8-HpCDF	7.24e+06	2.53e+03	2.9e+03	1.56e+07	1.84e+03	8.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.60e+06	2.53e+03	2.6e+03	1.43e+07	1.84e+03	7.8e+03
27	13C-2,3,7,8-TCDD	3.97e+06	5.54e+03	7.2e+02	4.94e+06	2.19e+03	2.3e+03
28	13C-1,2,3,7,8-PeCDD	1.17e+07	4.12e+02	2.8e+04	7.32e+06	7.04e+02	1.0e+04
29	13C-1,2,3,4,7,8-HxCDD	1.35e+07	1.88e+03	7.2e+03	1.05e+07	6.32e+02	1.7e+04
30	13C-1,2,3,6,7,8-HxCDD	1.18e+07	1.88e+03	6.3e+03	9.40e+06	6.32e+02	1.5e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.54e+07	9.00e+02	1.7e+04	1.44e+07	3.61e+03	4.0e+03
32	13C-OCDD	1.30e+07	9.00e+02	1.4e+04	1.43e+07	2.89e+03	4.9e+03
33	13C-1,2,3,4-TCDD	1.14e+07	5.54e+03	2.1e+03	1.45e+07	2.19e+03	6.6e+03
34	13C-1,2,3,7,8,9-HxCDD	2.27e+07	1.88e+03	1.2e+04	1.78e+07	6.32e+02	2.8e+04
35	37Cl-2,3,7,8-TCDD	5.70e+06	1.26e+03	4.5e+03			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0208

Entry: 36 Totals Name: Total Tetra-Furans

Run: 18 File: P616138 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 02:07:19 Processed: 20-DEC-18 15:56:53

Mass: 303.9020 305.8990 Tot Response: 4.21e+03 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:34	9.46e+01	1.39e+02	0.68	yes	2.33e+02		n	n
2	23:01	5.12e+01	7.12e+01	0.72	yes	1.22e+02		n	n
3	23:42	2.12e+01	2.97e+01	0.72	yes	5.09e+01		n	n
4	24:41	3.90e+01	5.41e+01	0.72	yes	9.31e+01		n	n
5	25:16	4.55e+02	6.13e+02	0.74	yes	1.07e+03		n	n
6	26:19	1.20e+03	1.45e+03	0.83	yes	2.65e+03	2,3,7,8-TCDF	y	y

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Peak List Summary

CLIENT ID.
SL0208

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 18 File: P616138 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 02:07:19 Processed: 20-DEC-18 15:56:53

Mass: 319.8970 321.8940 Tot Response: 4.12e+03 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
								n	n
1	23:38	1.79e+01	2.20e+01	0.82	yes	3.99e+01		n	n
2	24:54	1.42e+03	1.75e+03	0.81	yes	3.17e+03		n	n
3	26:30	8.95e+01	1.04e+02	0.86	yes	1.94e+02		n	n
4	27:14	2.97e+02	4.22e+02	0.70	yes	7.19e+02	2,3,7,8-TCDD		

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Peak List Summary

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Entry: 40 Totals Name: Total Penta-Dioxins

Run: 18 File: P616138 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 02:07:19 Processed: 20-DEC-18 15:56:53

Mass: 355.8550 357.8520 Tot Response: 3.20e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:33	1.46e+03	9.68e+02	1.51	yes	2.43e+03		n	n
2	31:02	4.29e+01	2.59e+01	1.66	yes	6.88e+01		n	n
3	31:14	9.41e+01	5.53e+01	1.70	yes	1.49e+02		n	n
4	31:32	2.54e+02	1.83e+02	1.39	yes	4.37e+02		n	n
5	32:25	3.14e+01	2.16e+01	1.45	yes	5.30e+01		n	n
6	32:43	3.59e+01	2.64e+01	1.36	yes	6.22e+01		n	n

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Peak List Summary

CLIENT ID.
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ntry: 41 Totals Name: Total Hexa-Furans

un: 18 File: P616138 Sample:1 Injection:1 Function:3

cquired: 20-DEC-18 02:07:19 Processed: 20-DEC-18 15:56:53

Mass: 373.8210 375.8180 Tot Response: 3.01e+02 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
								n	n
1	33:50	3.27e+01	2.66e+01	1.23	yes	5.92e+01		n	n
2	34:56	6.03e+01	4.87e+01	1.24	yes	1.09e+02	1,2,3,6,7,8-HxCDF	n	n
3	35:27	2.14e+01	1.52e+01	1.41	yes	3.67e+01	2,3,4,6,7,8-HxCDF	n	n
4	36:13	5.48e+01	4.12e+01	1.33	yes	9.60e+01	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0208

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 18 File: P616138 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 02:07:19 Processed: 20-DEC-18 15:56:53

Mass: 389.8160 391.8130 Tot Response: 1.90e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:12	8.68e+03	6.89e+03	1.26	yes	1.56e+04		n	n
2	34:44	8.69e+01	7.27e+01	1.20	yes	1.60e+02		n	n
3	34:58	1.35e+03	1.03e+03	1.31	yes	2.38e+03		n	n
4	35:35	1.01e+02	9.02e+01	1.12	yes	1.91e+02	1,2,3,4,7,8-HxCDD	n	n
5	35:55	3.76e+02	2.95e+02	1.28	yes	6.70e+02	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0208

Entry: 43 Totals Name: Total Hepta-Furans

Run: 18 File: P616138 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 02:07:19 Processed: 20-DEC-18 15:56:53

Mass: 407.7820 409.7790 Tot Response: 2.33e+02 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:28	8.08e+01	7.33e+01	1.10	yes	1.54e+02	1,2,3,4,6,7,8-HpCDF	n	n
2	37:52	3.69e+01	4.16e+01	0.89	yes	7.84e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0208

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 18 File: P616138 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 02:07:19 Processed: 20-DEC-18 15:56:53

Mass: 423.7770 425.7740 Tot Response: 4.33e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
								n	n
1	37:43	1.73e+04	1.64e+04	1.05	yes	3.37e+04			
2	38:21	4.84e+03	4.80e+03	1.01	yes	9.64e+03	1,2,3,4,6,7,8-HpCDD	n	n

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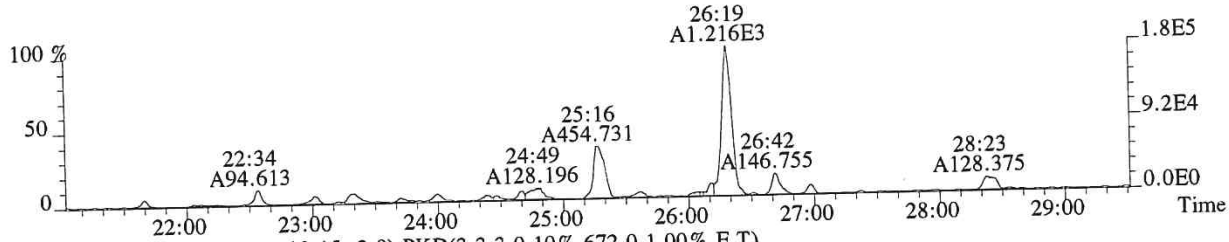
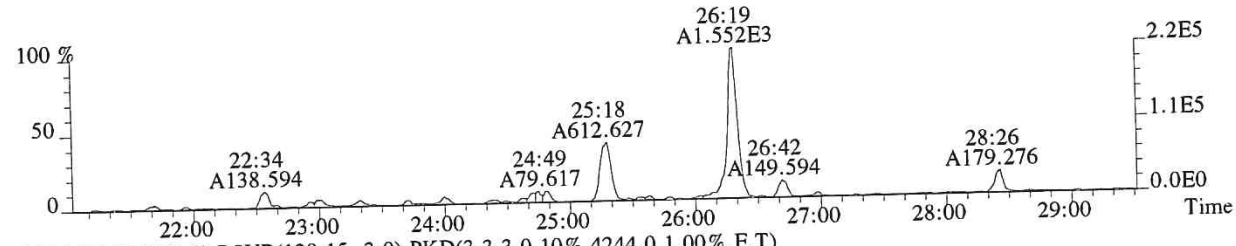
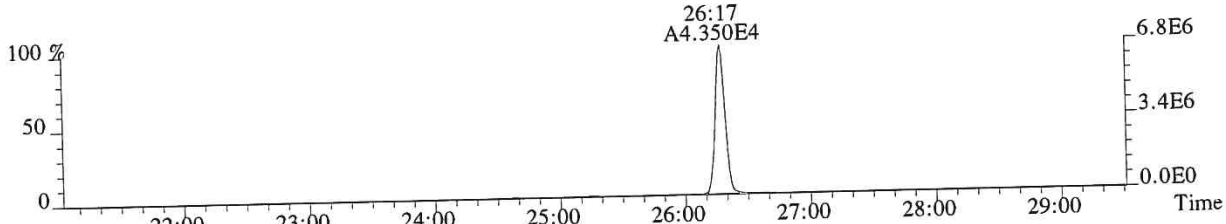
File:P616138 #1-602 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,860.0,1.00%,F,T)



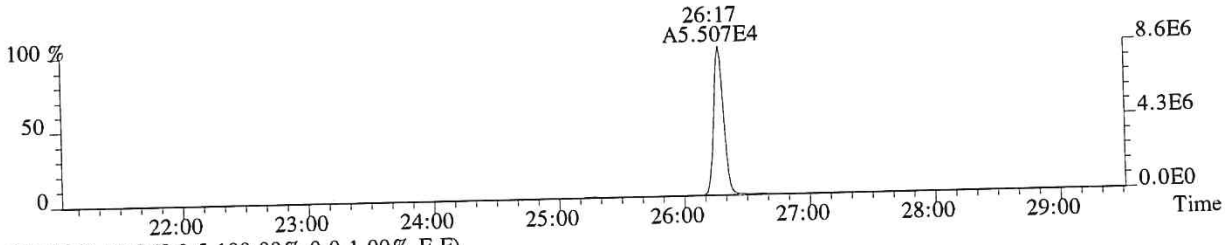
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,672.0,1.00%,F,T)



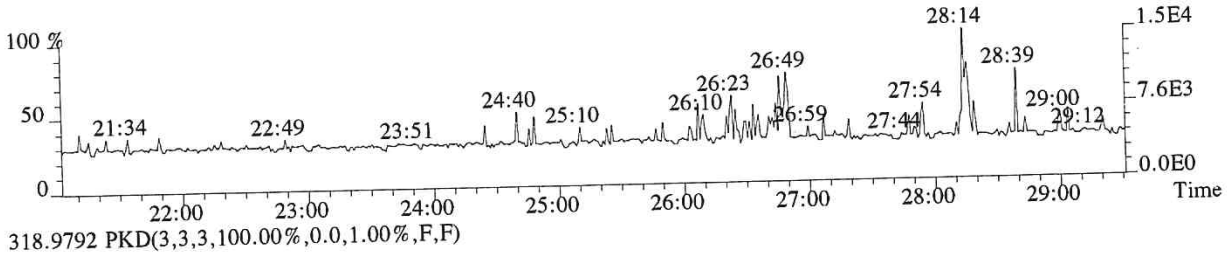
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4244.0,1.00%,F,T)



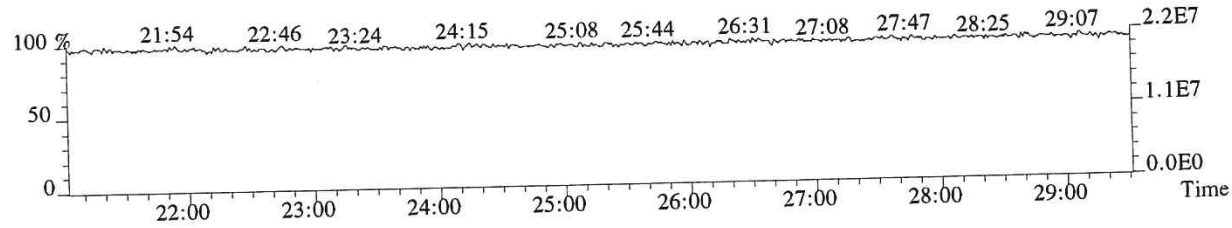
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2384.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

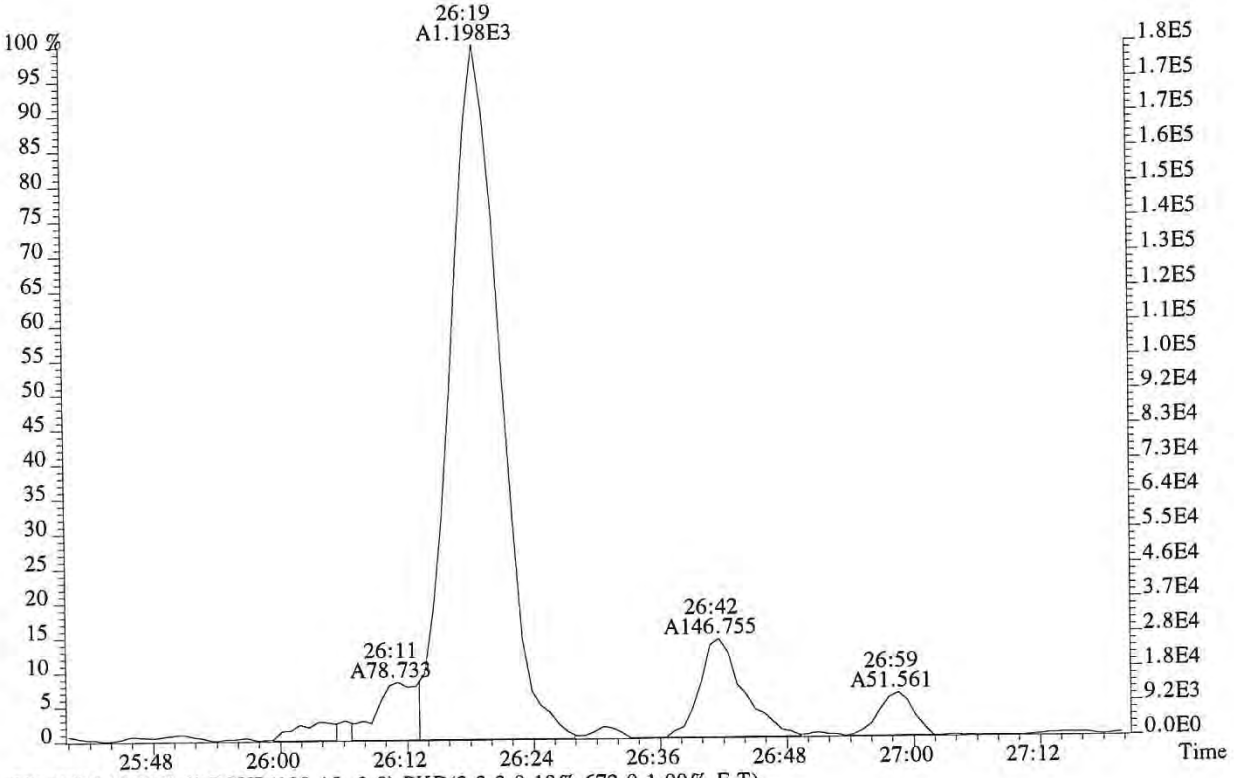


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

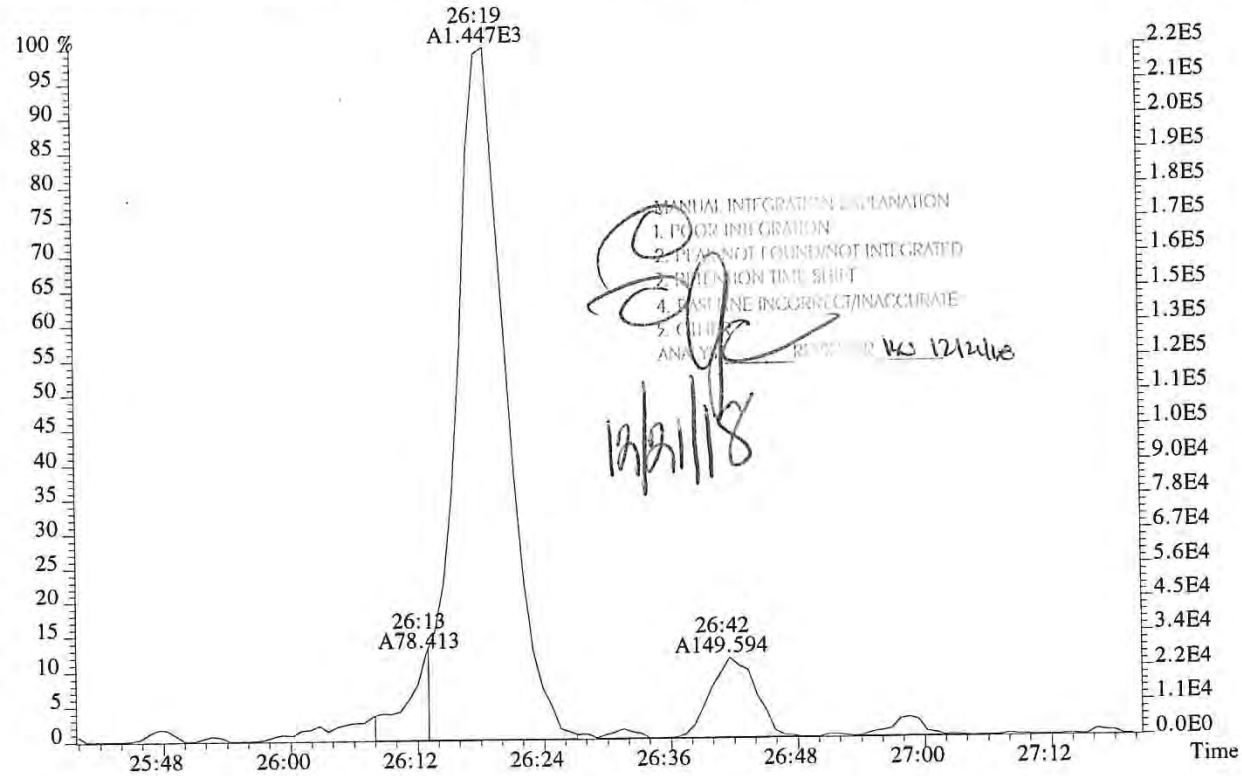


058996

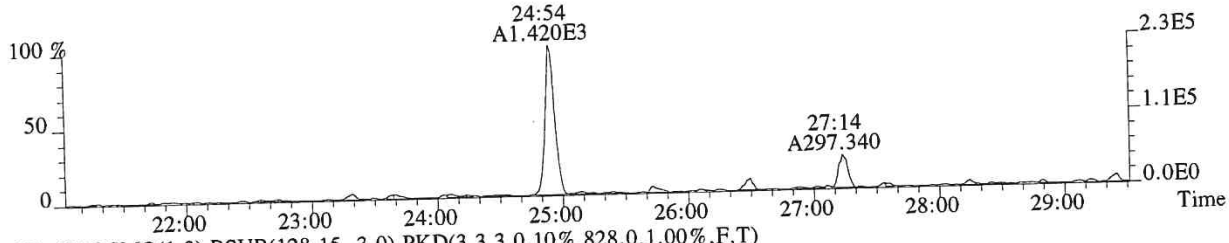
File:P616138 #1-602 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,860.0,1.00%,F,T)



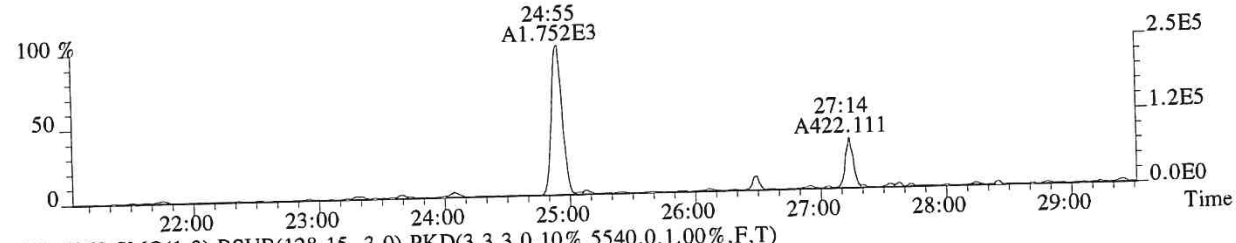
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,672.0,1.00%,F,T)



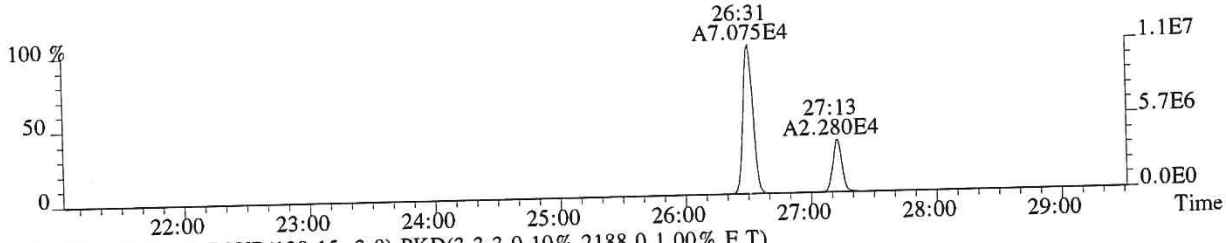
File:P616138 #1-602 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spectℓ
Sample#1 Exp:E1801096-008
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1268.0,1.00%,F,T)



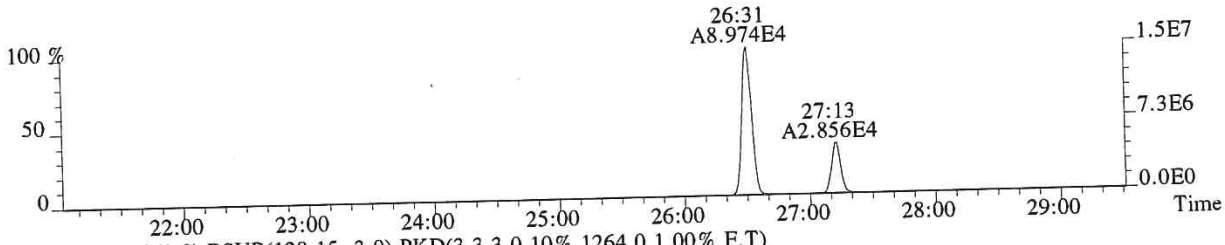
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,828.0,1.00%,F,T)



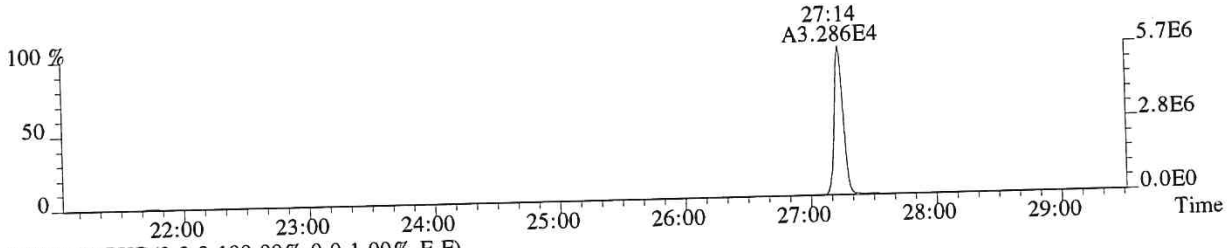
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5540.0,1.00%,F,T)



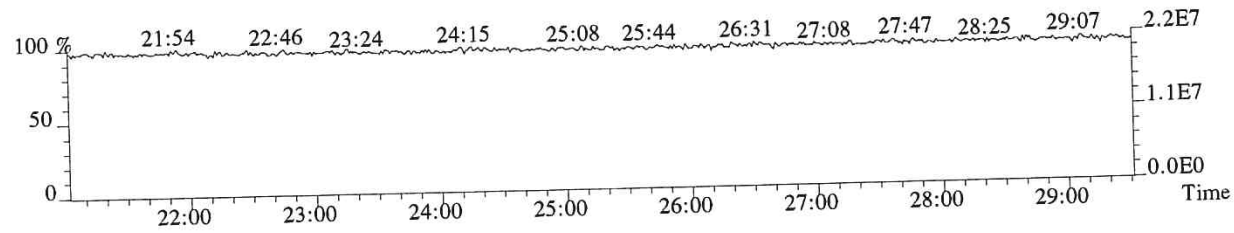
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2188.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1264.0,1.00%,F,T)

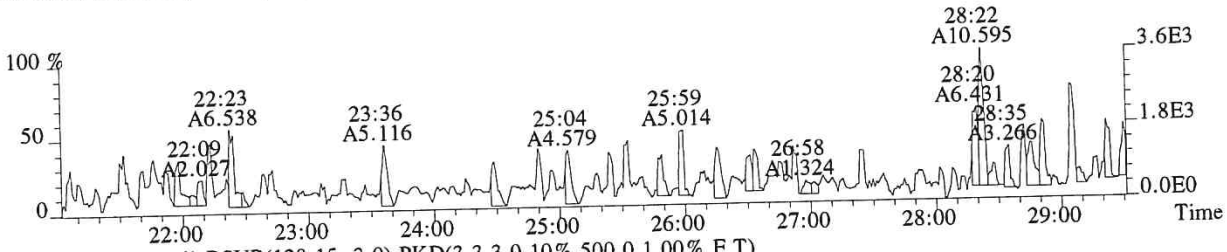


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

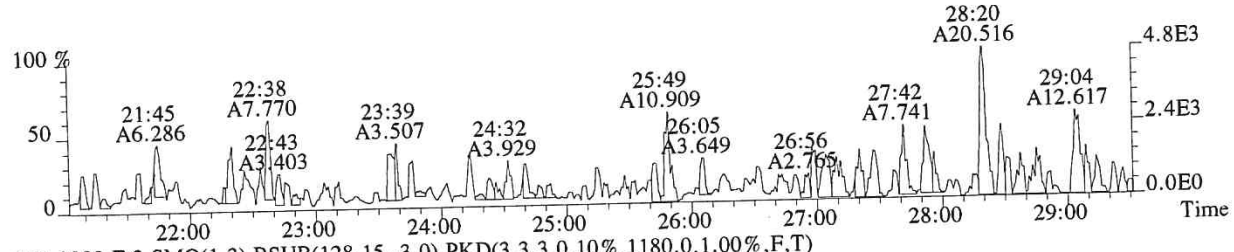


058998

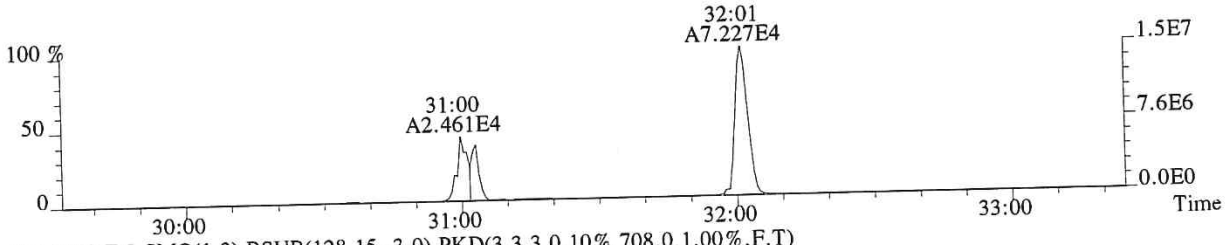
File:P616138 #1-602 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,540.0,1.00%,F,T)



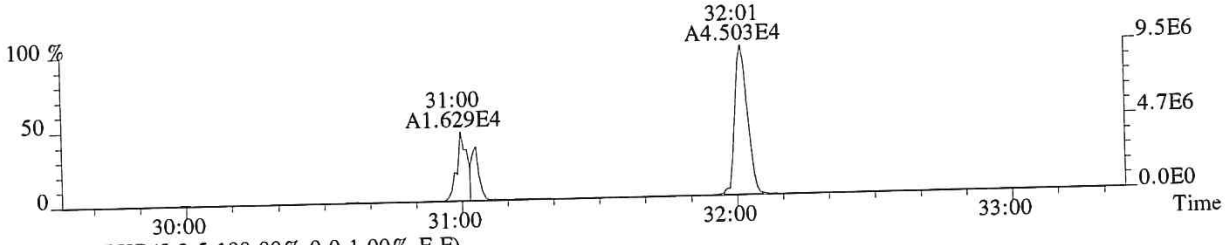
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,500.0,1.00%,F,T)



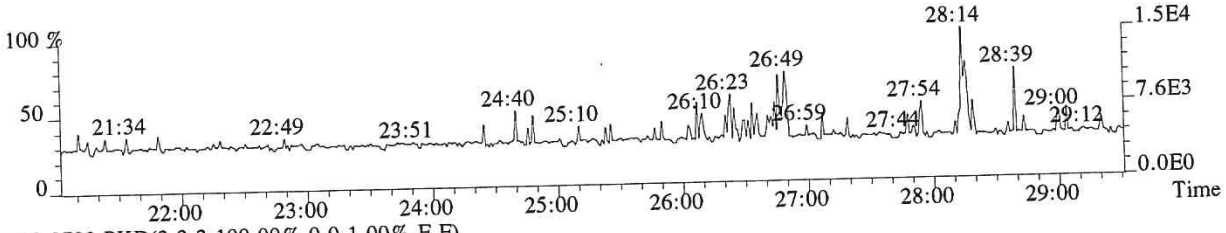
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1180.0,1.00%,F,T)



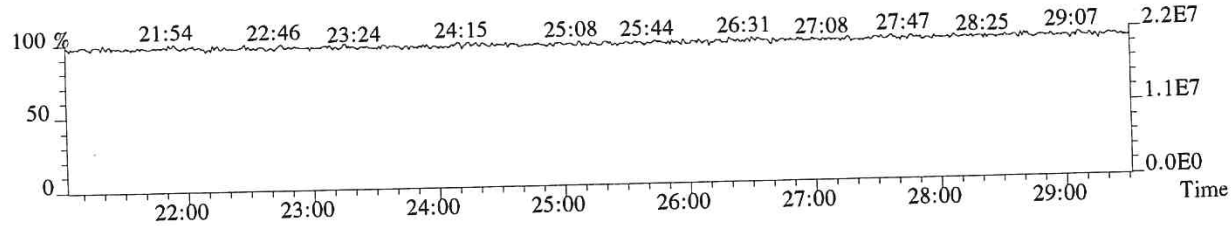
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,708.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

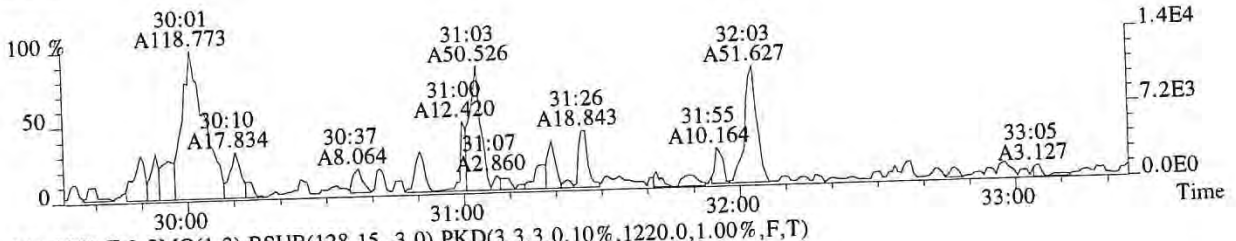


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

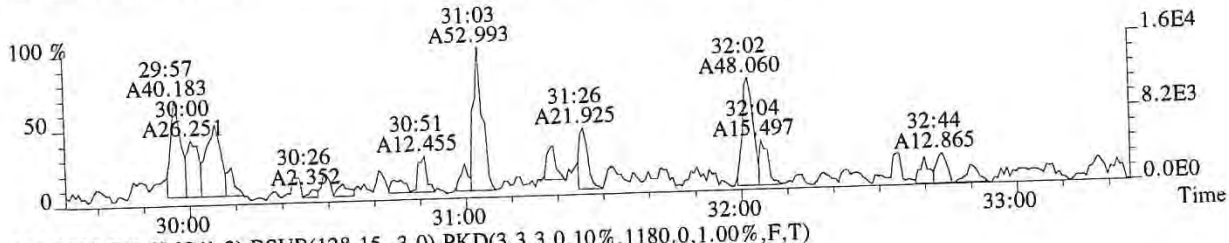


058999

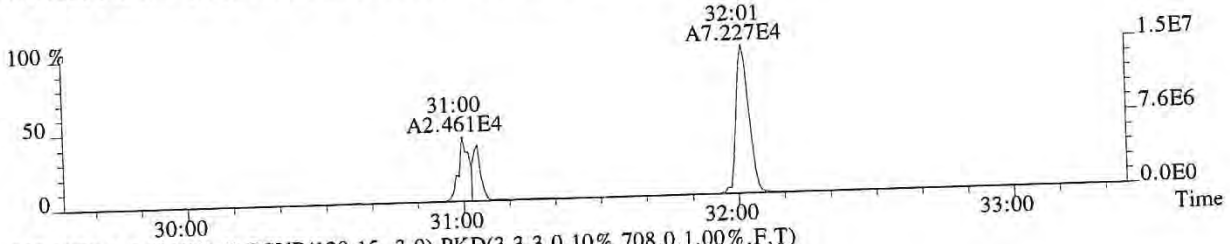
File:P616138 #1-348 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,616.0,1.00%,F,T)



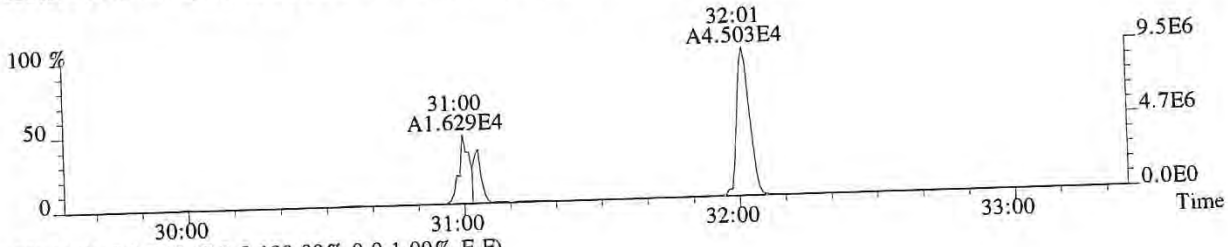
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1220.0,1.00%,F,T)



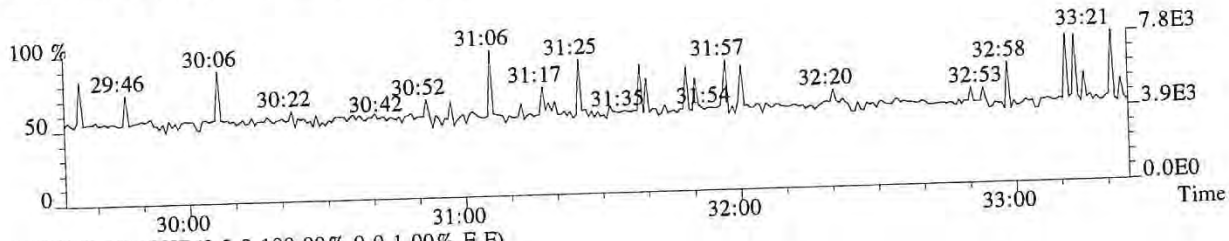
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1180.0,1.00%,F,T)



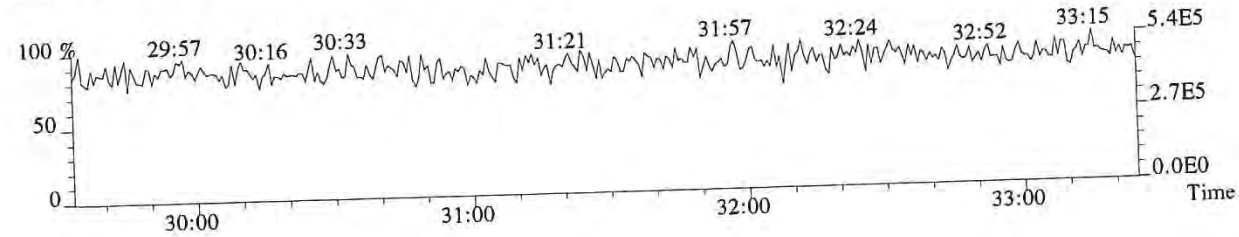
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,708.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

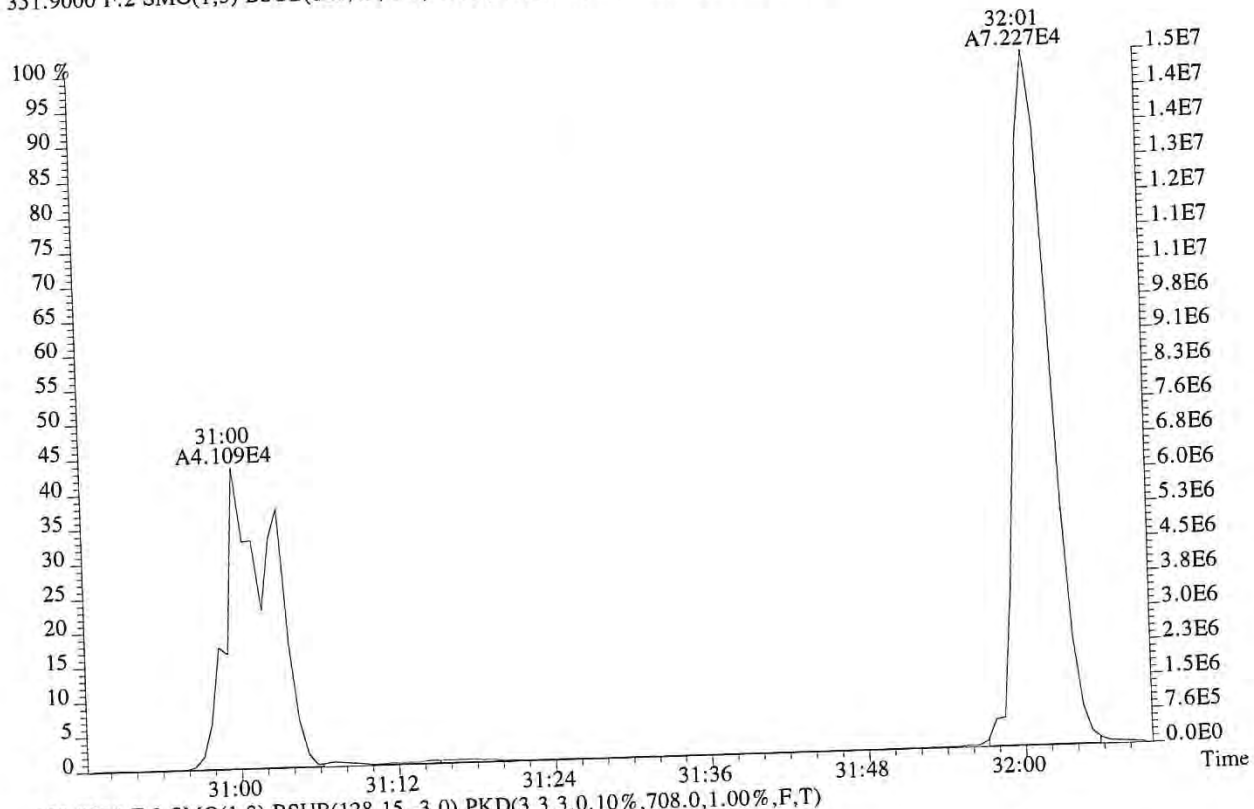


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

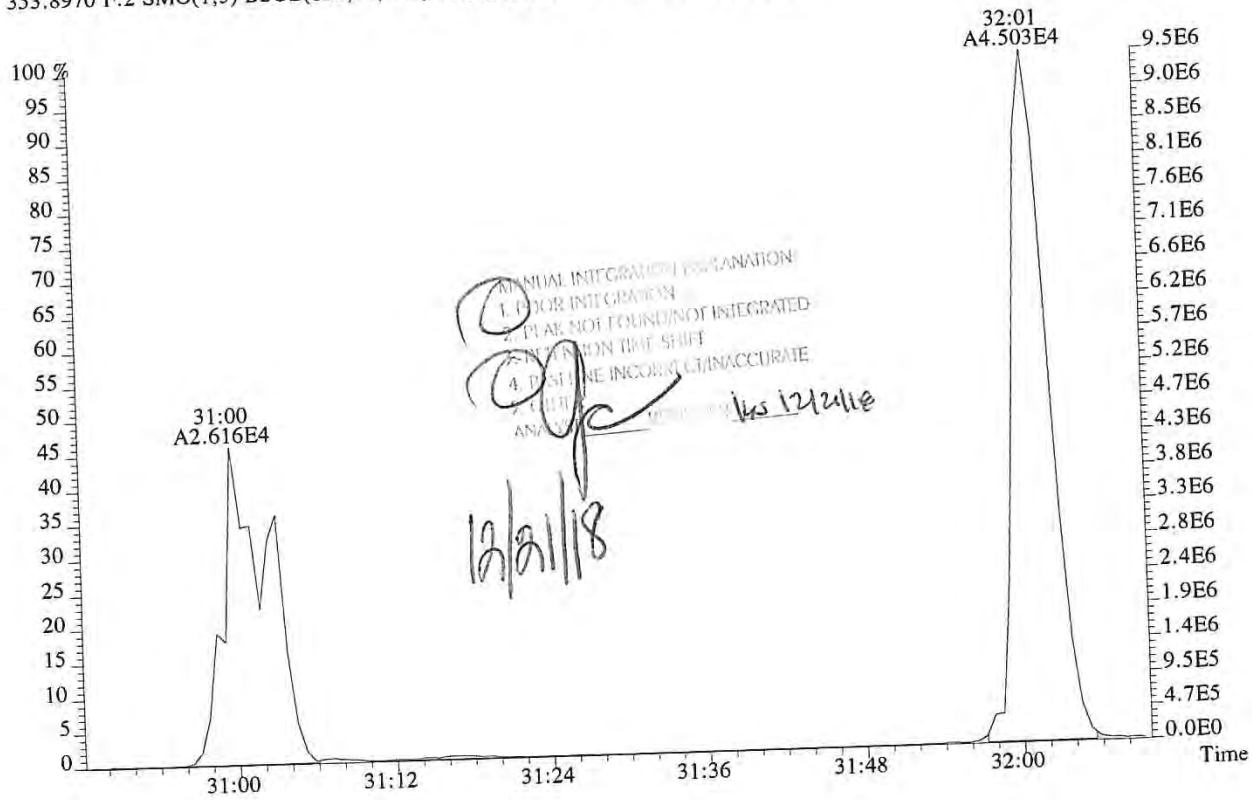


059000

File:P616138 #1-348 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1180.0,1.00%,F,T)



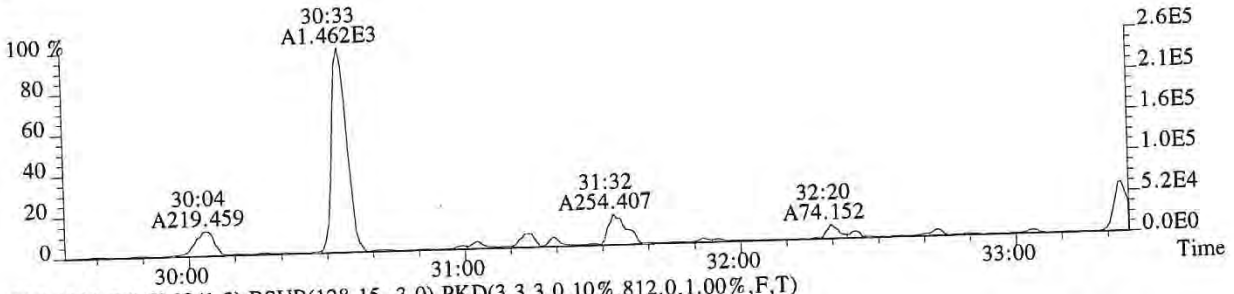
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,708.0,1.00%,F,T)



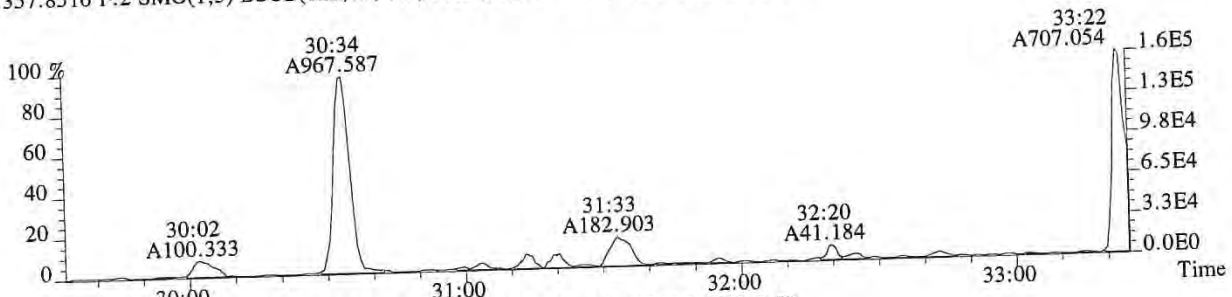
MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
ANALYST
12/21/18

059001

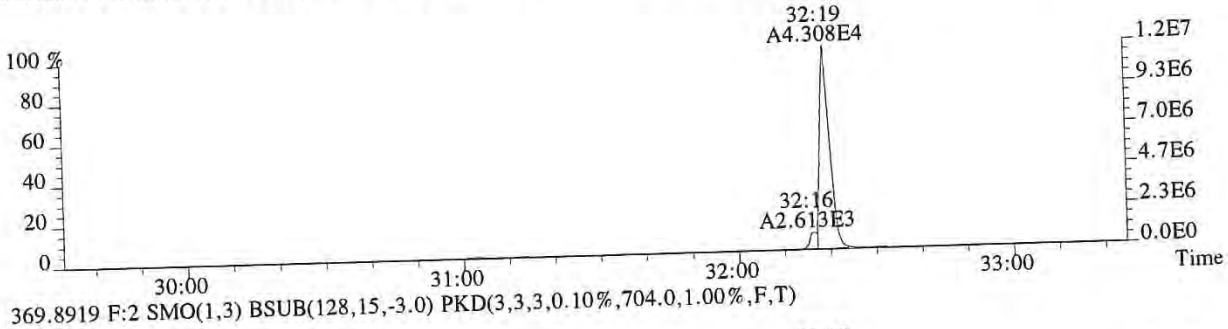
File:P616138 #1-348 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,652.0,1.00%,F,T)



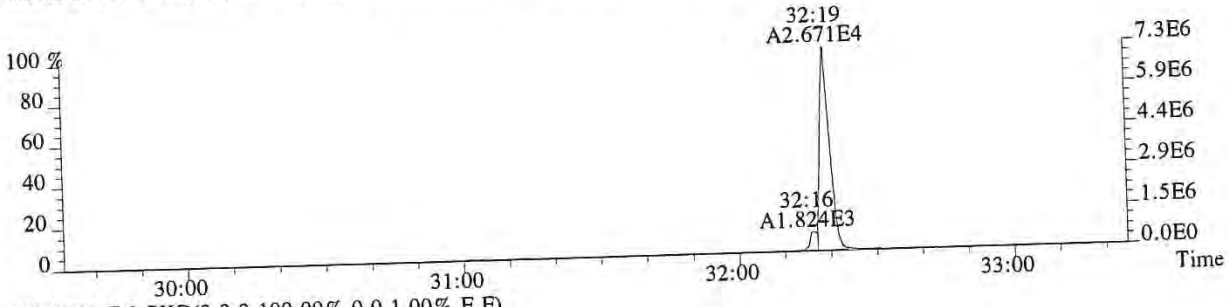
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,812.0,1.00%,F,T)



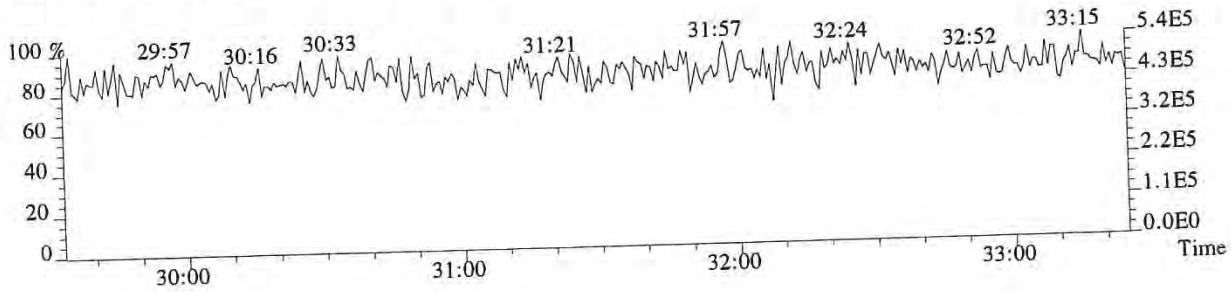
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,412.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)

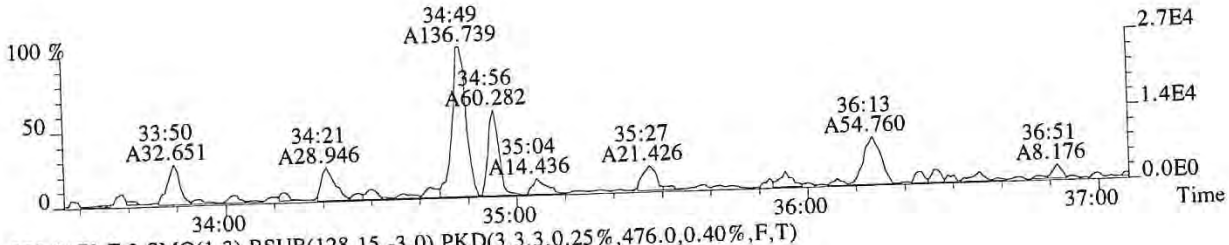


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

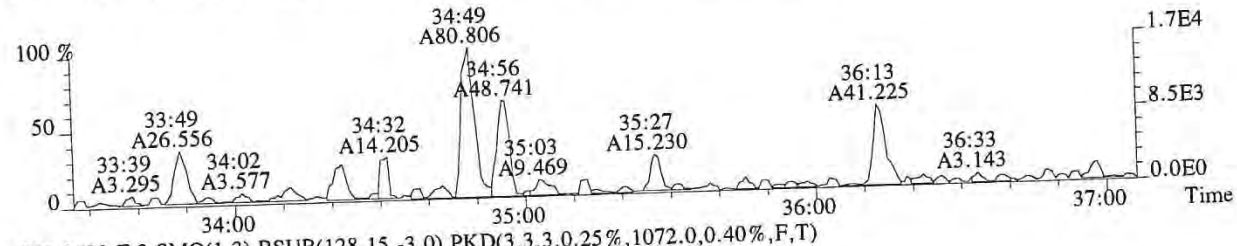


059002

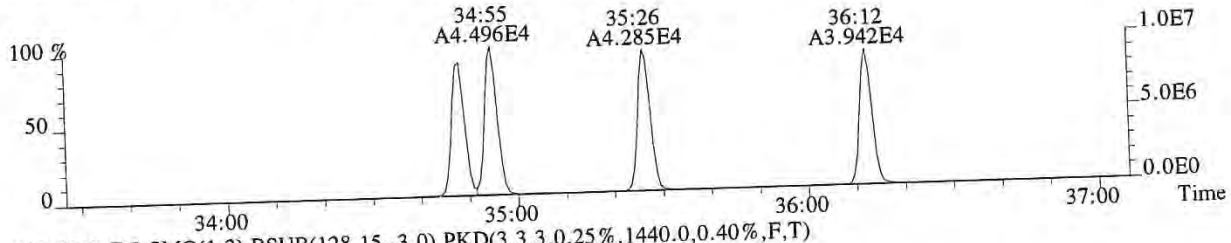
File:P616138 #1-330 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,528.0,0.40%,F,T)



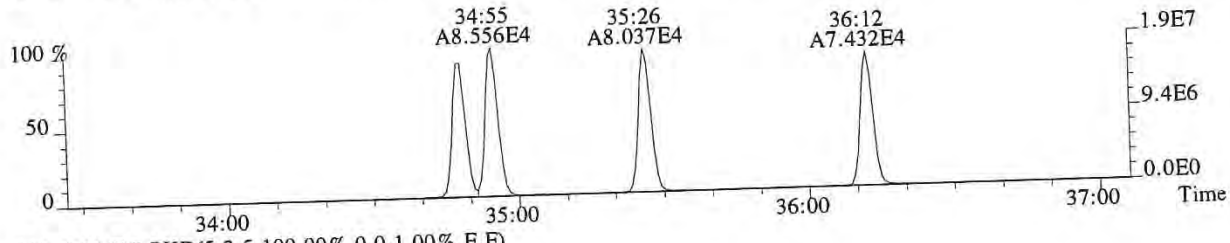
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,476.0,0.40%,F,T)



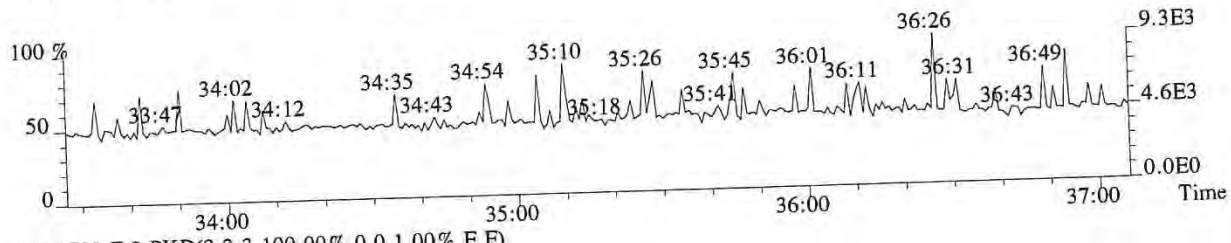
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1072.0,0.40%,F,T)



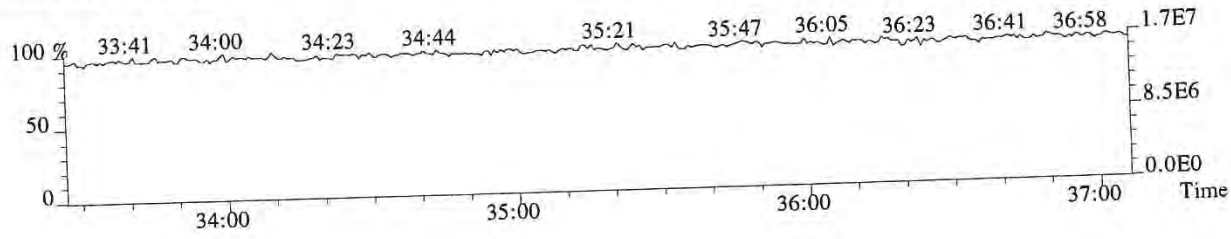
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1440.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

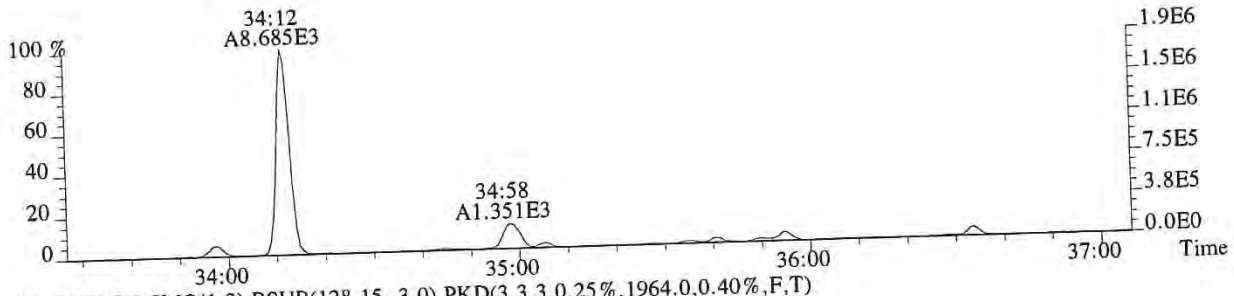


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

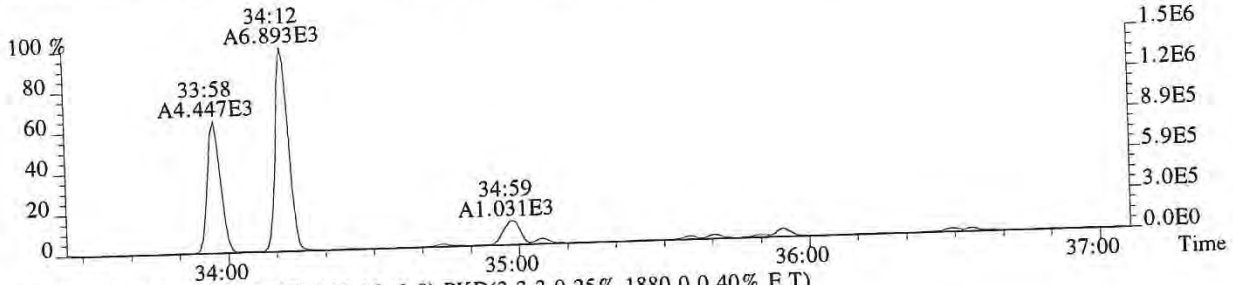


059003

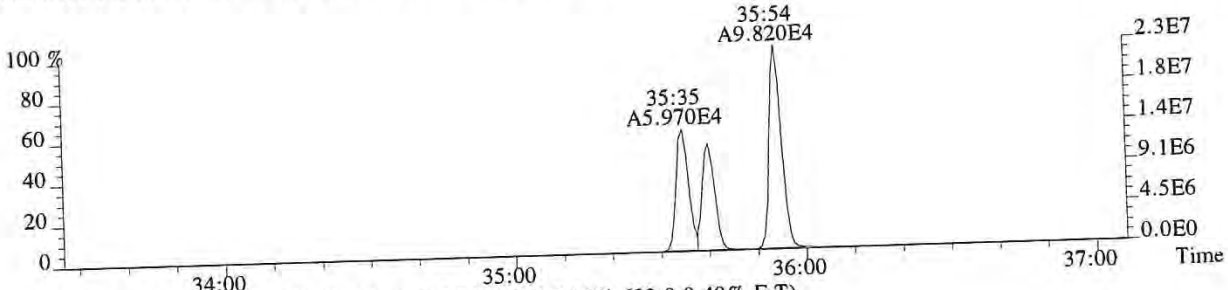
File:P616138 #1-330 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2272.0,0.40%,F,T)



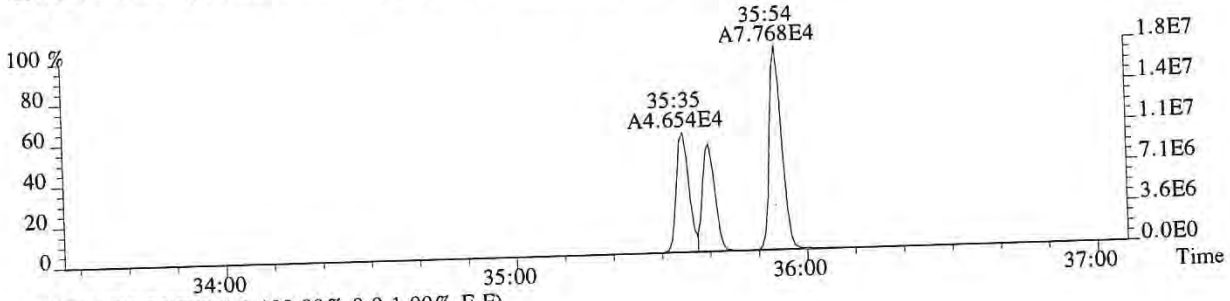
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1964.0,0.40%,F,T)



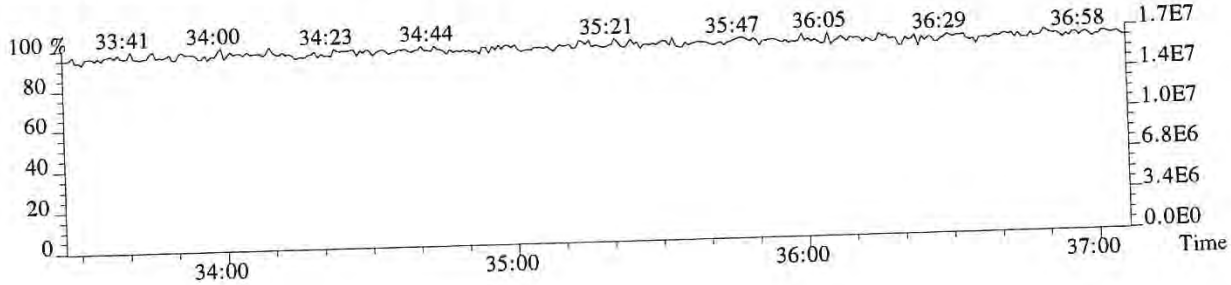
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1880.0,0.40%,F,T)



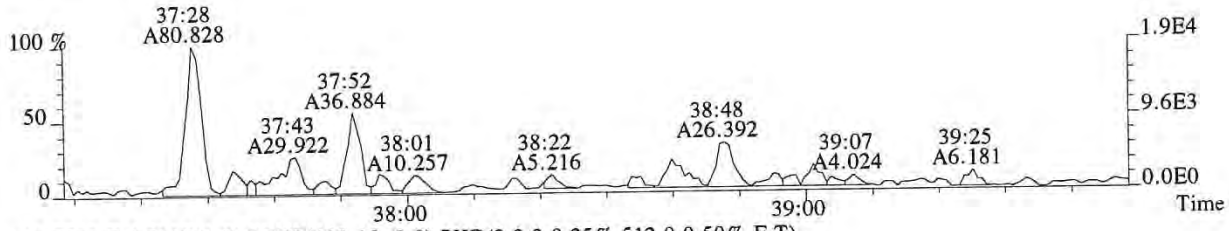
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,632.0,0.40%,F,T)



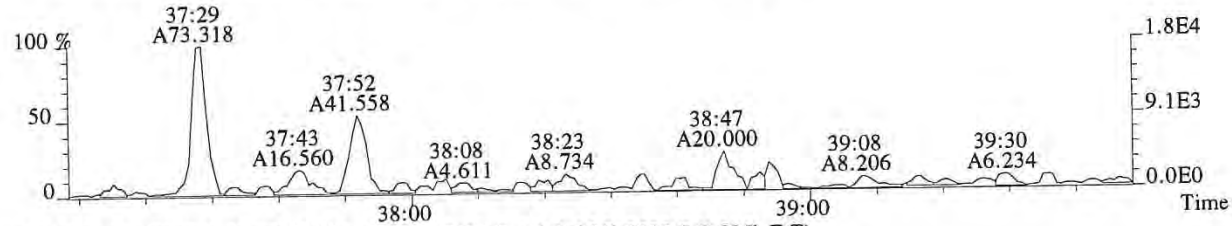
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



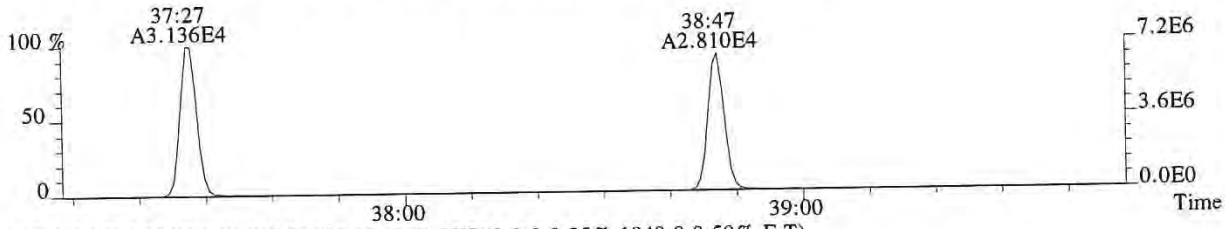
File:P616138 #1-241 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,836.0,0.50%,F,T)



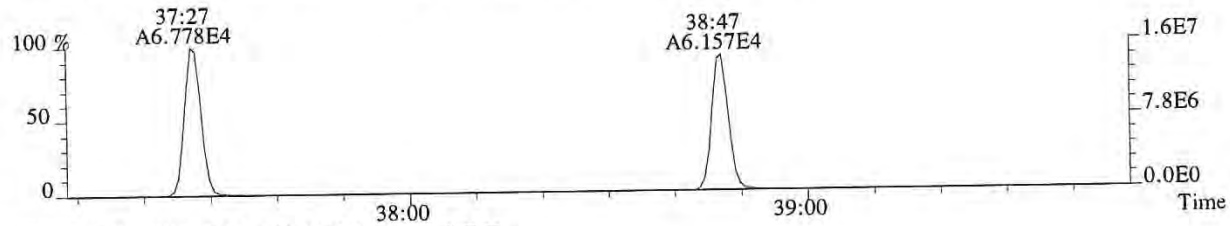
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,512.0,0.50%,F,T)



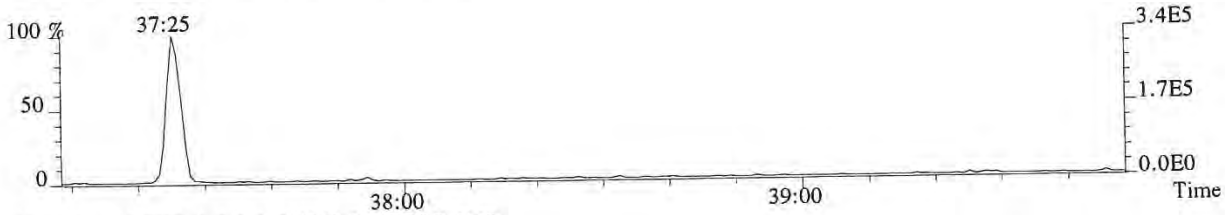
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2532.0,0.50%,F,T)



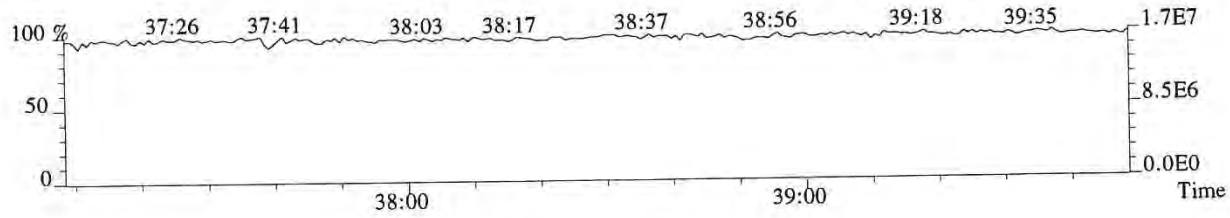
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1840.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

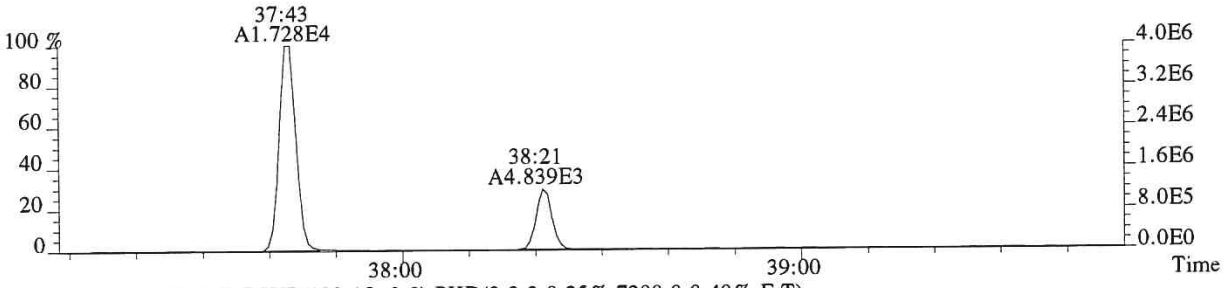


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

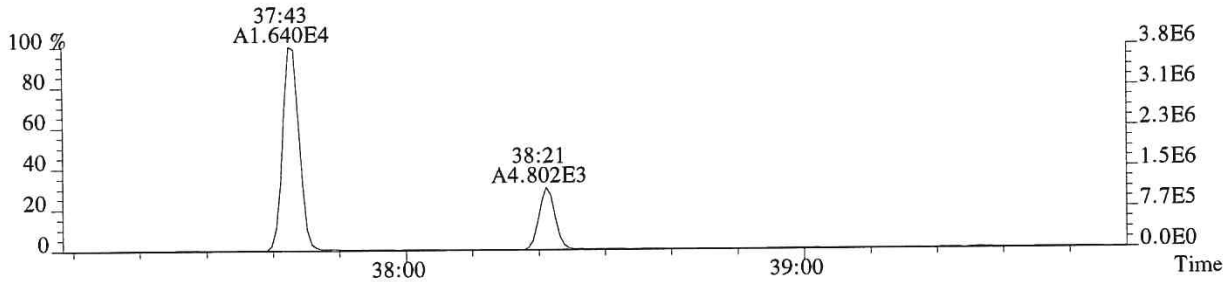


059005

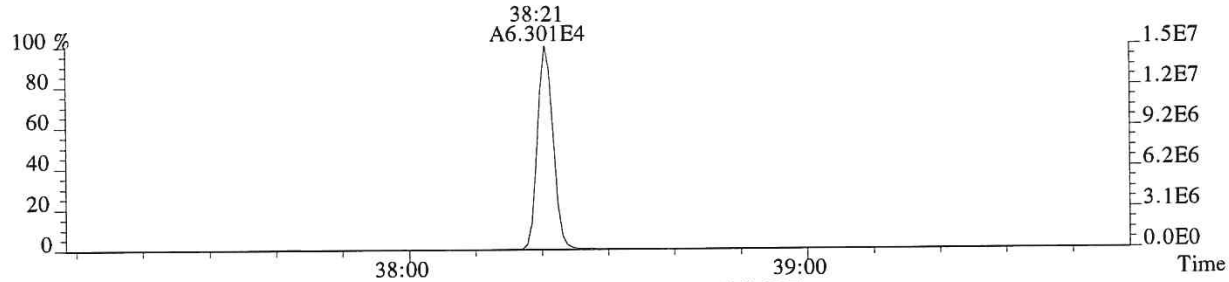
File:P616138 #1-241 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6388.0,0.40%,F,T)



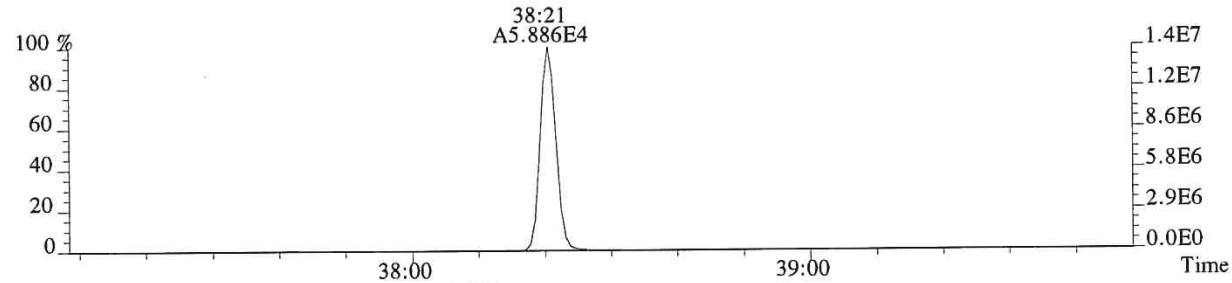
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7208.0,0.40%,F,T)



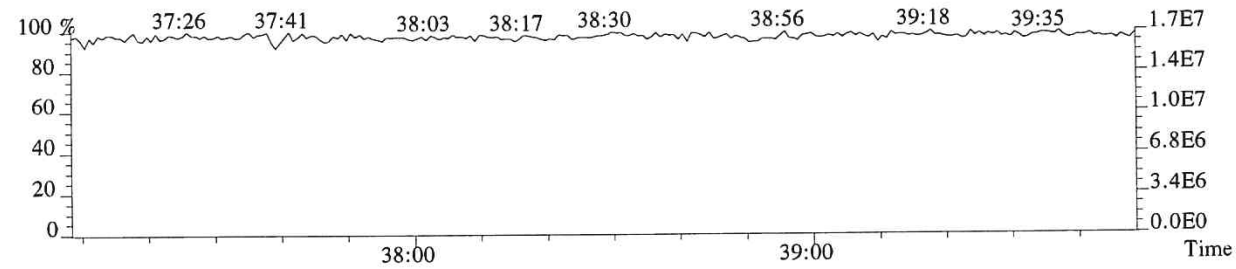
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,900.0,0.40%,F,T)



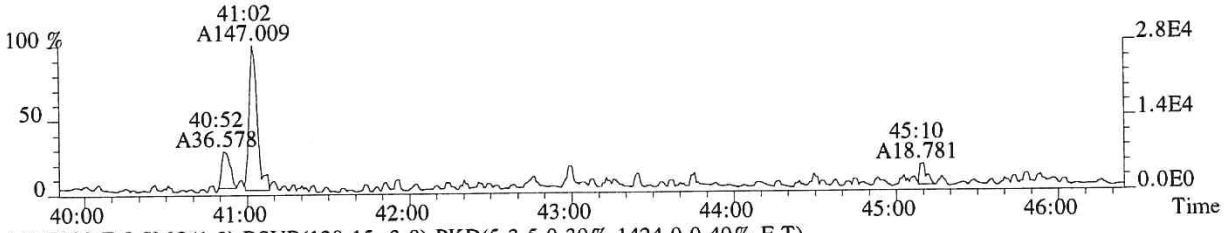
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3612.0,0.40%,F,T)



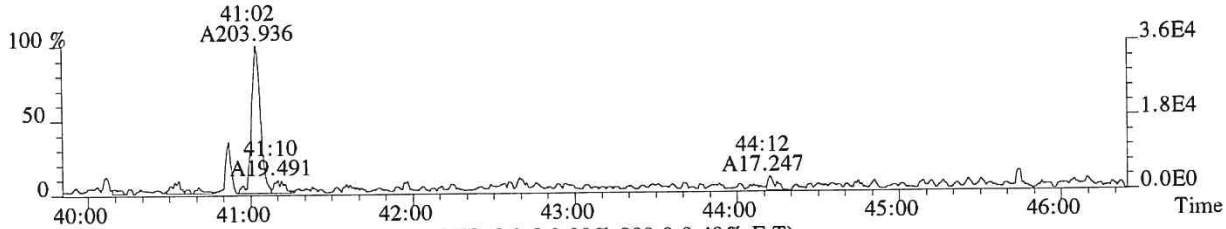
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



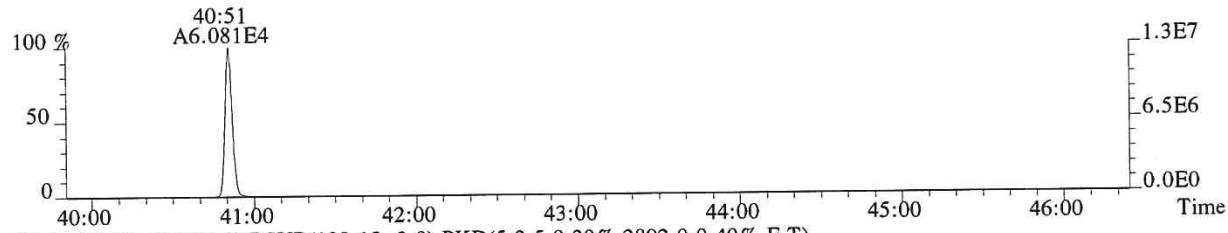
File:P616138 #1-591 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1452.0,0.40%,F,T)



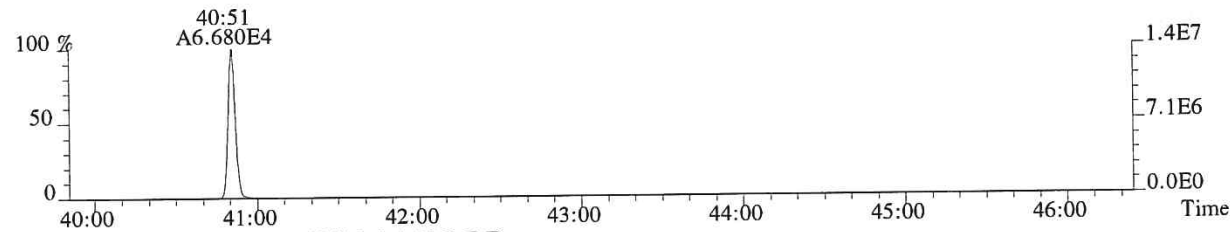
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1424.0,0.40%,F,T)



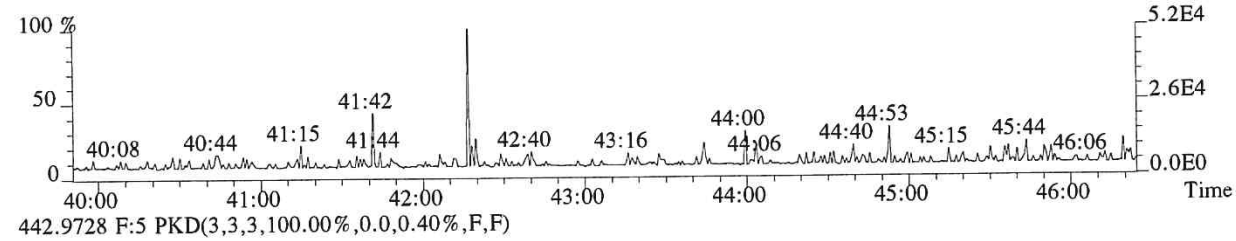
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,900.0,0.40%,F,T)



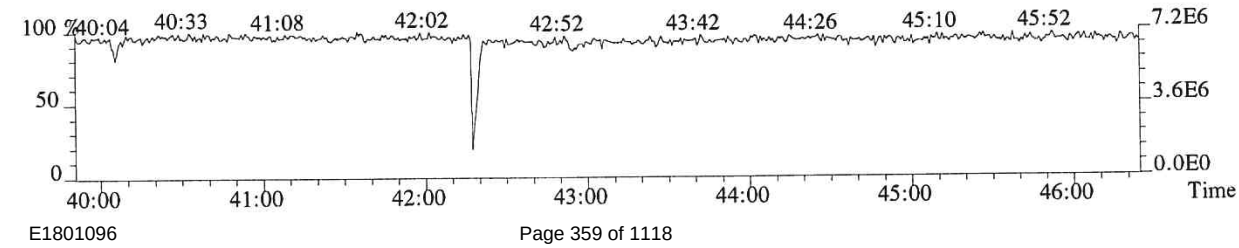
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2892.0,0.40%,F,T)



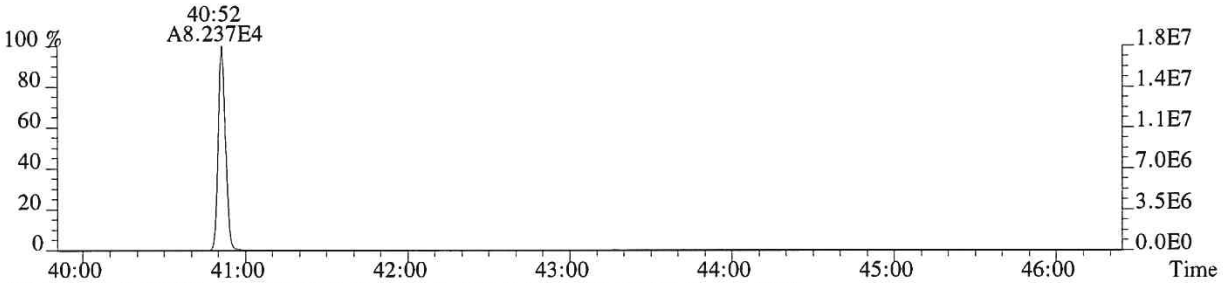
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



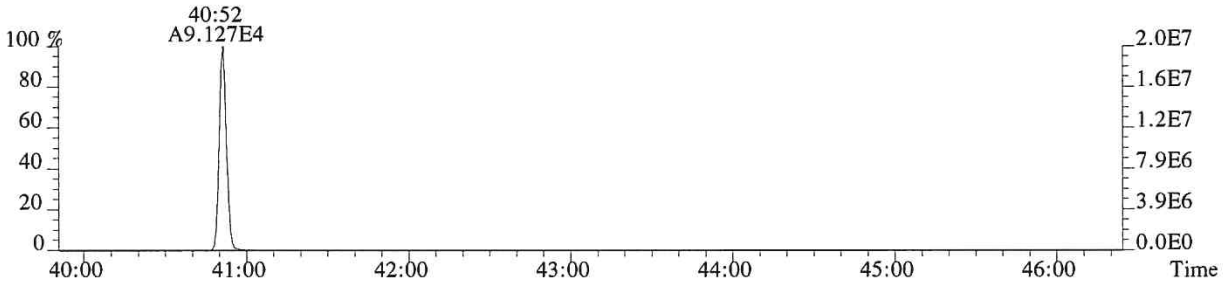
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



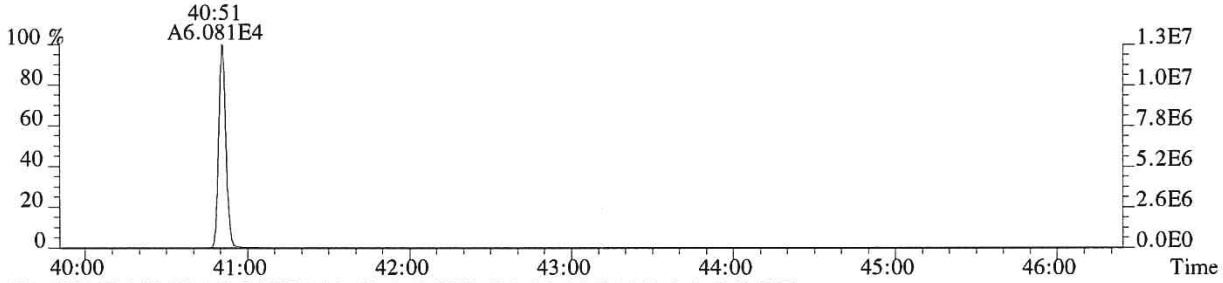
File:P616138 #1-591 Acq:20-DEC-2018 02:07:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-008
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1508.0,0.40%,F,T)



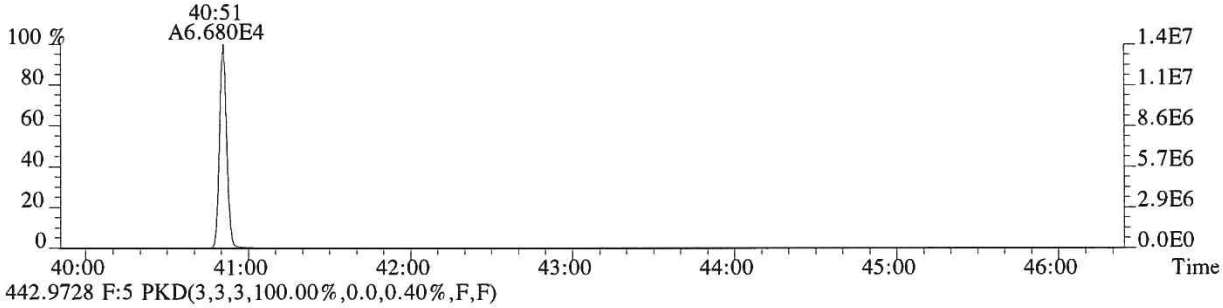
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,6748.0,0.40%,F,T)



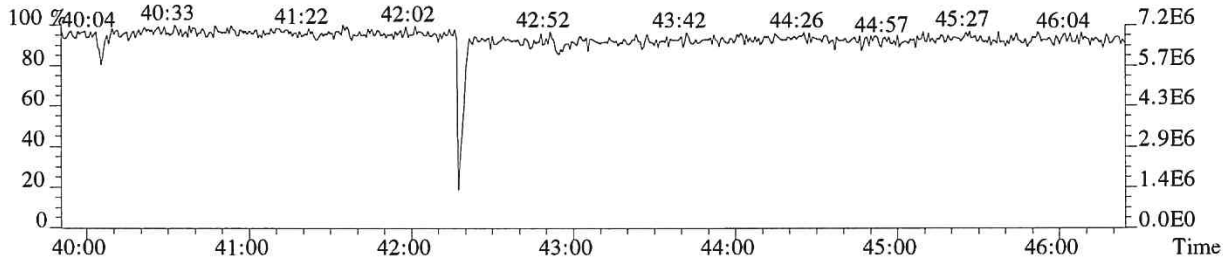
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,900.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2892.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0209

Run #15 Filename P519503 Samp: 1 Inj: 1 Acquired: 19-DEC-18 22:54:52
Processed: 20-DEC-18 11:34:30 Sample ID: E1801096-009

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:50	1.760e+02	2.338e+02	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	1.012
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:18	7.707e+00	5.790e+00	1.33	yes	yes	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:24	8.754e+00	7.262e+00	1.21	yes	yes	1.123
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.110
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	NotFnd	*	*	*	no	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.258
10	Unk	OCDF	NotFnd	*	*	*	no	no	1.359
11	Unk	2,3,7,8-TCDD	27:44	4.964e+01	6.004e+01	0.83	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:46	2.575e+01	1.367e+01	1.88	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	36:12	2.879e+01	2.509e+01	1.15	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:27	3.214e+01	3.761e+01	0.85	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:05	4.231e+02	4.469e+02	0.95	yes	no	1.025
17	Unk	OCDD	42:03	5.196e+03	5.925e+03	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:49	1.108e+04	1.399e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:27	1.586e+04	9.921e+03	1.60	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:25	1.394e+04	8.717e+03	1.60	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:17	4.635e+03	8.805e+03	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:24	5.587e+03	1.072e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:56	4.868e+03	9.331e+03	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:43	3.769e+03	7.379e+03	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:07	2.543e+03	5.925e+03	0.43	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:33	2.061e+03	4.660e+03	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:43	4.984e+03	6.316e+03	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:44	1.045e+04	6.482e+03	1.61	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:06	6.468e+03	5.147e+03	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	36:11	6.188e+03	4.874e+03	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:05	4.786e+03	4.645e+03	1.03	yes	no	0.858
32	IS	13C-OCDD	42:02	3.805e+03	3.871e+03	0.98	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	27:04	1.235e+04	1.546e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:26	9.762e+03	7.649e+03	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:44	7.257e+03				no	1.014

$$\text{OCDD} = \frac{(5.196e+03 + 5.925e+03) \times 4000\ \text{pg} \times 1}{(3.805e+03 + 3.871e+03) \times 10.004\ \text{g} \times 78.9 / 100 \times 1.118} = 605\ \text{ng/kg}$$

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0209

Run #15 Filename P519503 Samp: 1 Inj: 1 Acquired: 19-DEC-18 22:54:52
Processed: 20-DEC-18 11:34:30 LAB. ID: E1801096-009

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.84e+04	1.12e+03	2.5e+01	3.58e+04	1.05e+03	3.4e+01
2	1,2,3,7,8-PeCDF	*	7.56e+02	*	*	1.24e+03	*
3	2,3,4,7,8-PeCDF	*	7.56e+02	*	*	1.24e+03	*
4	1,2,3,4,7,8-HxCDF	2.45e+03	3.48e+02	7.0e+00	1.75e+03	3.48e+02	5.0e+00
5	1,2,3,6,7,8-HxCDF	1.88e+03	3.48e+02	5.4e+00	1.69e+03	3.48e+02	4.8e+00
6	2,3,4,6,7,8-HxCDF	*	3.48e+02	*	*	3.48e+02	*
7	1,2,3,7,8,9-HxCDF	*	3.48e+02	*	*	3.48e+02	*
8	1,2,3,4,6,7,8-HpCDF	*	3.44e+02	*	*	3.08e+02	*
9	1,2,3,4,7,8,9-HpCDF	*	3.44e+02	*	*	3.08e+02	*
10	OCDF	*	3.48e+02	*	*	6.16e+02	*
11	2,3,7,8-TCDD	6.65e+03	1.10e+03	6.1e+00	1.02e+04	1.08e+03	9.4e+00
12	1,2,3,7,8-PeCDD	4.29e+03	8.00e+02	5.4e+00	2.46e+03	4.88e+02	5.0e+00
13	1,2,3,4,7,8-HxCDD	*	6.56e+02	*	*	1.08e+03	*
14	1,2,3,6,7,8-HxCDD	6.02e+03	6.56e+02	9.2e+00	6.59e+03	1.08e+03	6.1e+00
15	1,2,3,7,8,9-HxCDD	7.11e+03	6.56e+02	1.1e+01	8.60e+03	1.08e+03	8.0e+00
16	1,2,3,4,6,7,8-HpCDD	6.82e+04	2.96e+02	2.3e+02	7.12e+04	2.56e+02	2.8e+02
17	OCDD	5.58e+05	3.84e+02	1.5e+03	6.35e+05	4.40e+02	1.4e+03
18	13C-2,3,7,8-TCDF	1.76e+06	3.89e+03	4.5e+02	2.21e+06	3.09e+03	7.2e+02
19	13C-1,2,3,7,8-PeCDF	2.75e+06	6.36e+02	4.3e+03	1.66e+06	1.05e+03	1.6e+03
20	13C-2,3,4,7,8-PeCDF	2.52e+06	6.36e+02	4.0e+03	1.61e+06	1.05e+03	1.5e+03
21	13C-1,2,3,4,7,8-HxCDF	9.97e+05	4.52e+02	2.2e+03	1.79e+06	4.88e+02	3.7e+03
22	13C-1,2,3,6,7,8-HxCDF	1.02e+06	4.52e+02	2.3e+03	2.03e+06	4.88e+02	4.2e+03
23	13C-2,3,4,6,7,8-HxCDF	9.36e+05	4.52e+02	2.1e+03	1.78e+06	4.88e+02	3.6e+03
24	13C-1,2,3,7,8,9-HxCDF	6.74e+05	4.52e+02	1.5e+03	1.32e+06	4.88e+02	2.7e+03
25	13C-1,2,3,4,6,7,8-HpCDF	4.33e+05	2.00e+03	2.2e+02	1.01e+06	2.07e+03	4.9e+02
26	13C-1,2,3,4,7,8,9-HpCDF	2.97e+05	2.00e+03	1.5e+02	6.93e+05	2.07e+03	3.4e+02
27	13C-2,3,7,8-TCDD	8.58e+05	4.62e+03	1.9e+02	1.06e+06	1.54e+03	6.9e+02
28	13C-1,2,3,7,8-PeCDD	1.83e+06	5.92e+02	3.1e+03	1.16e+06	1.01e+03	1.2e+03
29	13C-1,2,3,4,7,8-HxCDD	1.28e+06	5.80e+02	2.2e+03	1.01e+06	3.88e+02	2.6e+03
30	13C-1,2,3,6,7,8-HxCDD	1.15e+06	5.80e+02	2.0e+03	9.10e+05	3.88e+02	2.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.84e+05	3.64e+02	2.2e+03	7.45e+05	3.24e+02	2.3e+03
32	13C-OCDD	3.94e+05	3.84e+02	1.0e+03	4.17e+05	3.00e+02	1.4e+03
33	13C-1,2,3,4-TCDD	2.05e+06	4.62e+03	4.4e+02	2.55e+06	1.54e+03	1.7e+03
34	13C-1,2,3,7,8,9-HxCDD	1.76e+06	5.80e+02	3.0e+03	1.36e+06	3.88e+02	3.5e+03
35	37Cl-2,3,7,8-TCDD	1.22e+06	5.20e+02	2.4e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.096e{+}03 + 1.084e{+}03) \times 2000}{(8.577e{+}05 + 1.060e{+}06) \times (\quad) \times 1.085} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0209

Entry: 36 Totals Name: Total Tetra-Furans

Run: 15 File: P519503 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 22:54:52 Processed: 20-DEC-18 11:34:30

Mass: 303.9020 305.8990 Tot Response: 5.35e+02 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:14	1.35e+01	1.65e+01	0.82	yes	3.01e+01		n	n
2	26:50	1.76e+02	2.34e+02	0.75	yes	4.10e+02	2,3,7,8-TCDF	n	n
3	27:12	2.47e+01	3.57e+01	0.69	yes	6.04e+01		n	n
4	28:51	1.59e+01	1.84e+01	0.86	yes	3.43e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0209

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 15 File: P519503 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 22:54:52 Processed: 20-DEC-18 11:34:30

Mass: 319.8970 321.8940 Tot Response: 3.75e+02 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	25:34	1.15e+02	1.50e+02 0.77	yes	2.66e+02		n	n
2	27:44	4.96e+01	6.00e+01 0.83	yes	1.10e+02	2,3,7,8-TCDD	n	n

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Peak List Summary

CLIENT ID.
SL0209

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 15 File: P519503 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 22:54:52 Processed: 20-DEC-18 11:34:30

Mass: 355.8550 357.8520 Tot Response: 1.99e+02 RRF: 0.9565

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	31:00	1.24e+02	7.57e+01	1.64	yes	1.99e+02	n	n

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Peak List Summary

CLIENT ID.
SL0209

Entry: 41 Totals Name: Total Hexa-Furans

Run: 15 File: P519503 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 22:54:52 Processed: 20-DEC-18 11:34:30

Mass: 373.8210 375.8180 Tot Response: 2.95e+01 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	35:18	7.71e+00	5.79e+00	1.33	yes	1.35e+01	1,2,3,4,7,8-HxCDF	n	y
2	35:24	8.75e+00	7.26e+00	1.21	yes	1.60e+01	1,2,3,6,7,8-HxCDF	n	y

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Peak List Summary

CLIENT ID.
SL0209

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 15 File: P519503 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 22:54:52 Processed: 20-DEC-18 11:34:30

Mass: 389.8160 391.8130 Tot Response: 1.79e+03 RRF: 1.047

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:41	6.91e+02	6.16e+02	1.12	yes	1.31e+03		n	n
2	35:29	1.74e+02	1.39e+02	1.25	yes	3.13e+02		n	n
3	35:34	1.96e+01	1.47e+01	1.34	yes	3.43e+01		n	n
4	35:36	1.98e+01	1.47e+01	1.35	yes	3.45e+01		n	n
5	36:12	2.88e+01	2.51e+01	1.15	yes	5.39e+01	1,2,3,6,7,8-HxCDD	n	n
6	36:21	2.32e+01	1.93e+01	1.20	yes	4.25e+01		n	n

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Peak List Summary

CLIENT ID.
SL0209

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 15 File: P519503 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 22:54:52 Processed: 20-DEC-18 11:34:30

Mass: 423.7770 425.7740 Tot Response: 3.28e+03 RRF: 1.025

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:24	1.29e+03	1.13e+03 1.14	yes	2.41e+03		n	n
2	39:05	4.23e+02	4.47e+02 0.95	yes	8.70e+02	1,2,3,4,6,7,8-HpCDD	n	n

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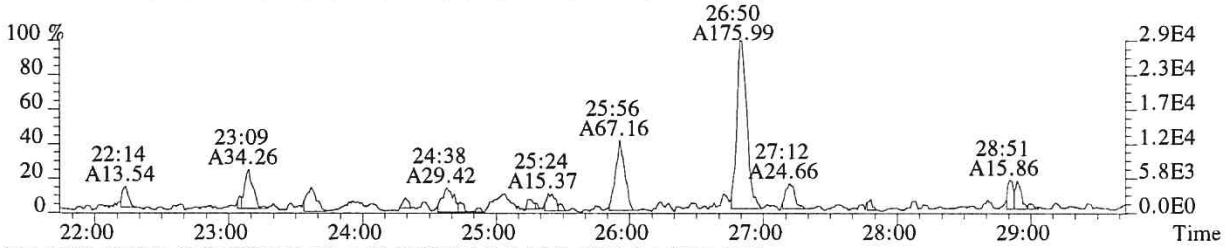
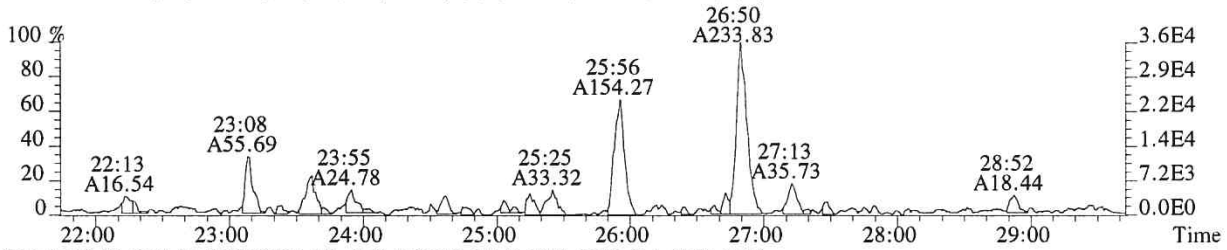
File:P519503 #1-566 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009

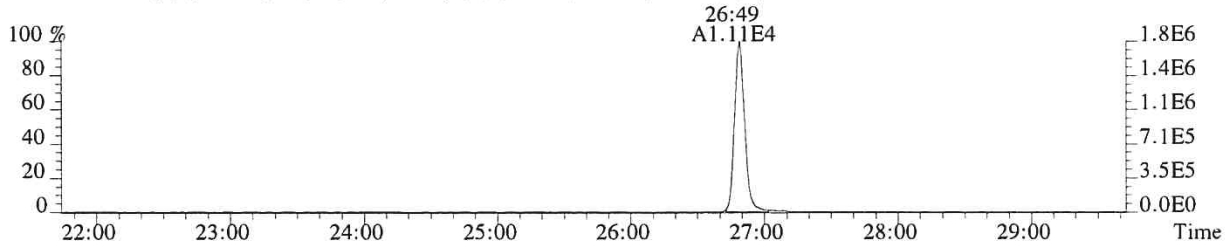
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1116.0,1.00%,F,T)



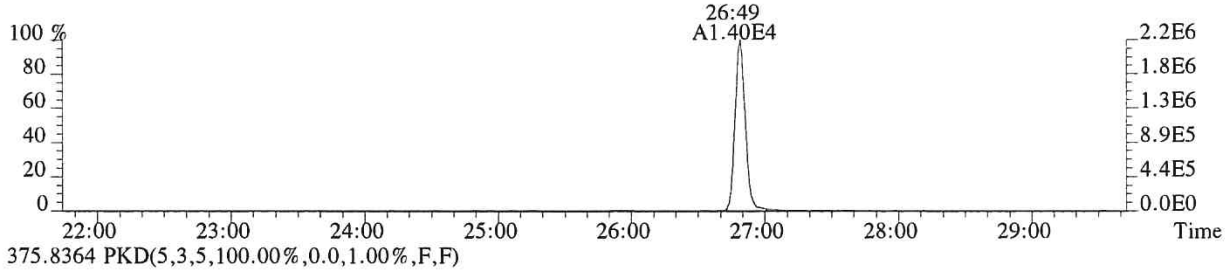
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,T)



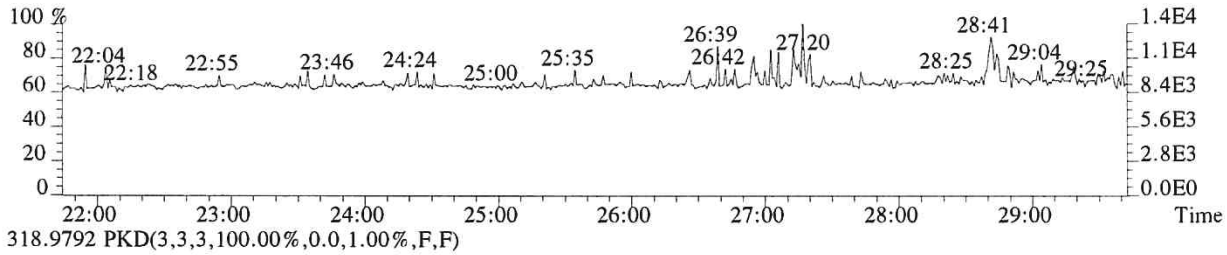
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3892.0,1.00%,F,T)



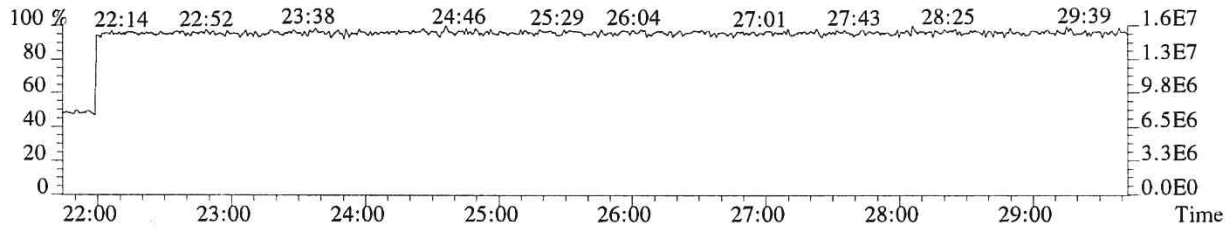
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3088.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

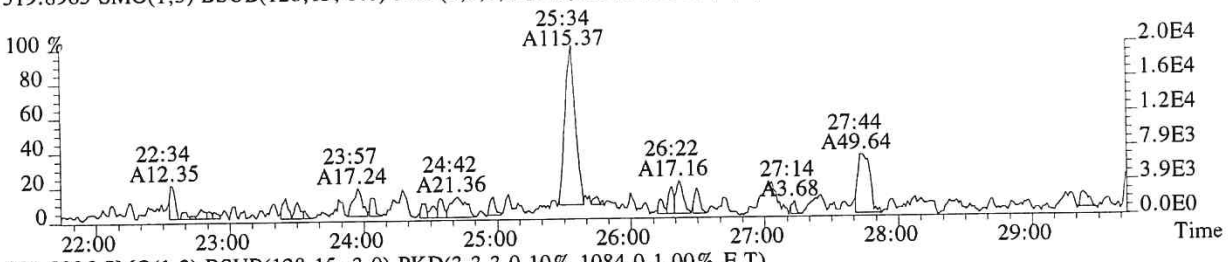


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

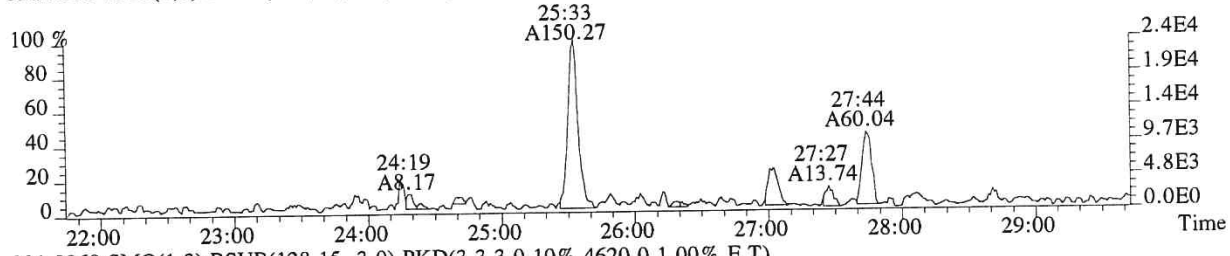


059017

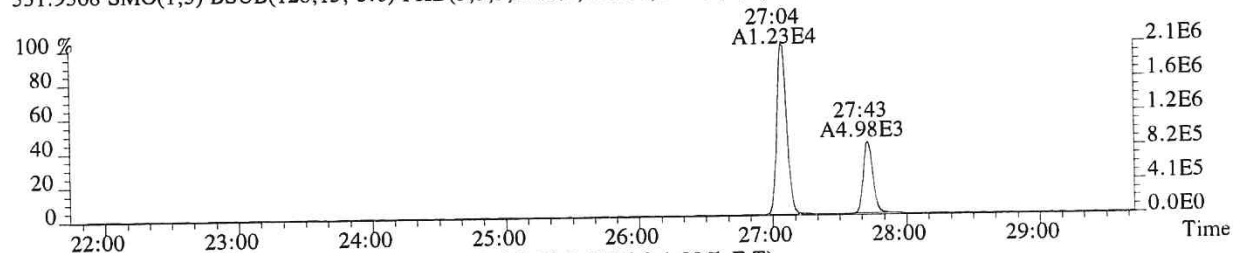
File:P519503 #1-566 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1096.0,1.00%,F,T)



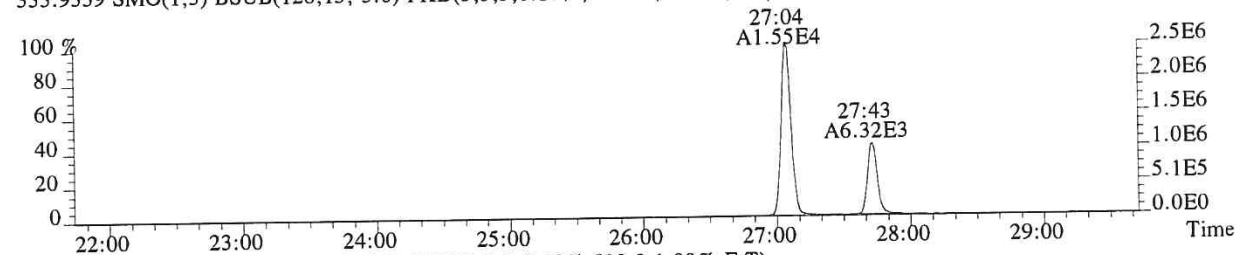
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1084.0,1.00%,F,T)



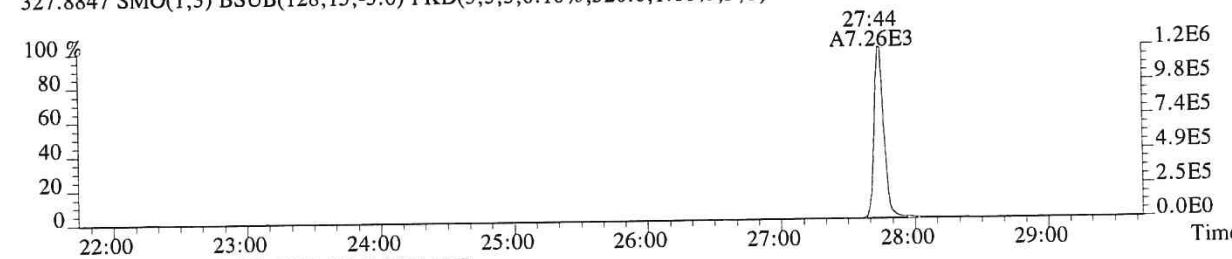
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4620.0,1.00%,F,T)



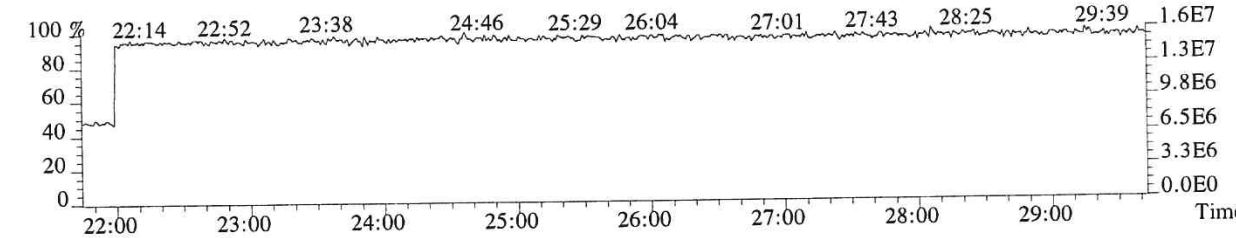
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1536.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,T)

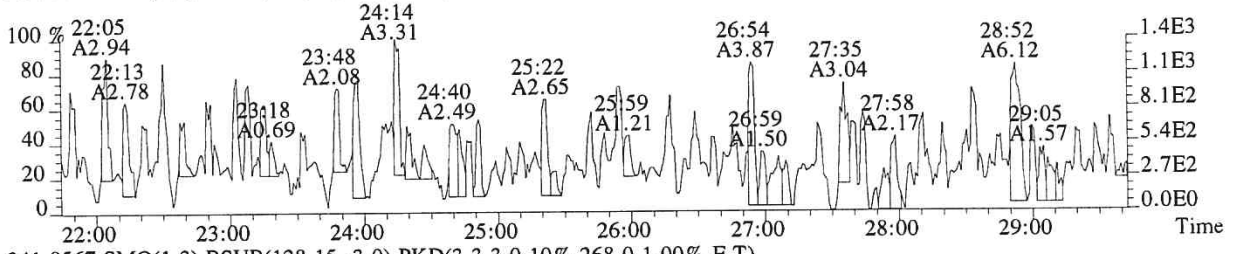


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

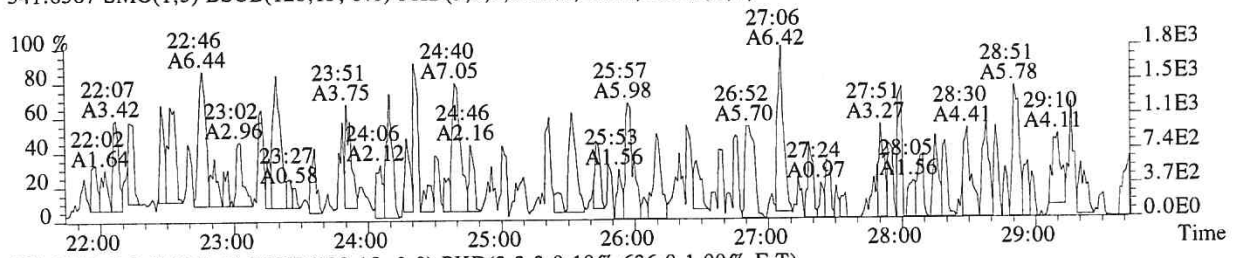


059018

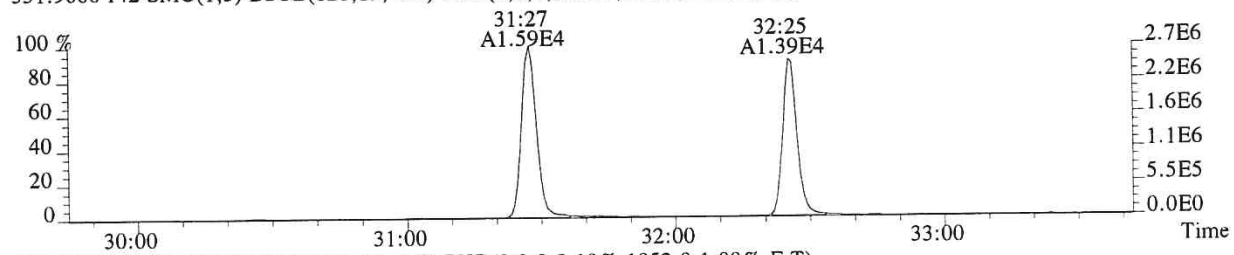
File:P519503 #1-566 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-009
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,436.0,1.00%,F,T)



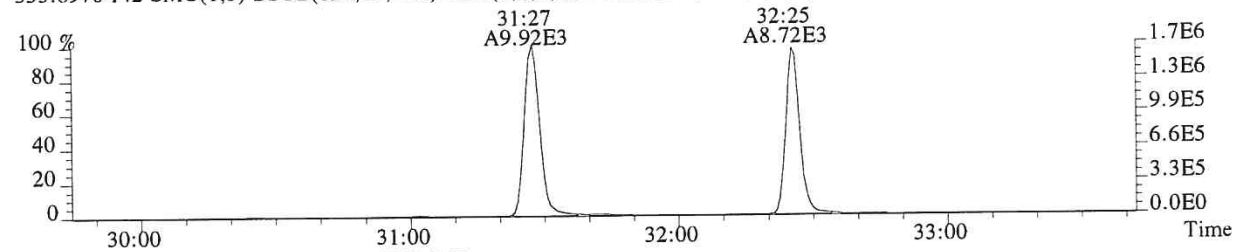
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,268.0,1.00%,F,T)



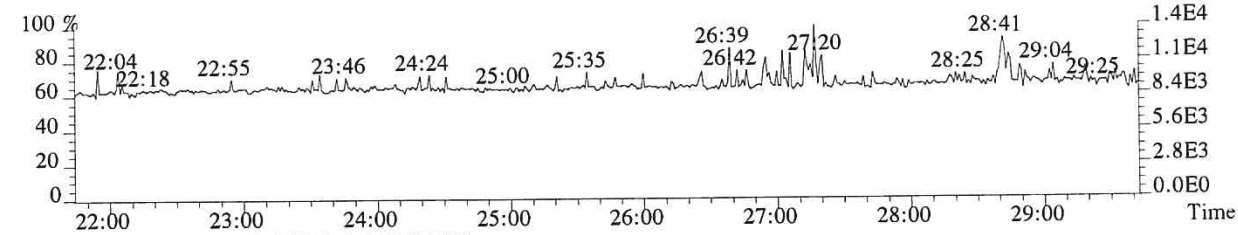
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,636.0,1.00%,F,T)



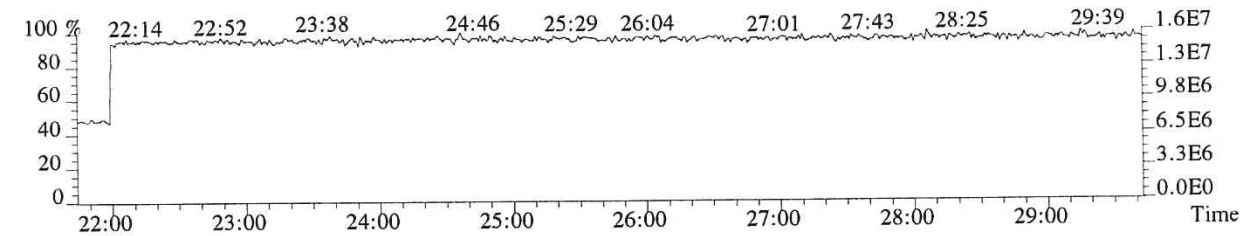
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1052.0,1.00%,F,T)



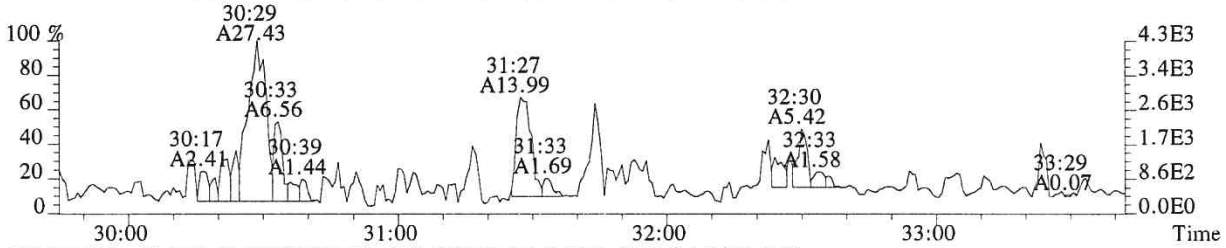
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



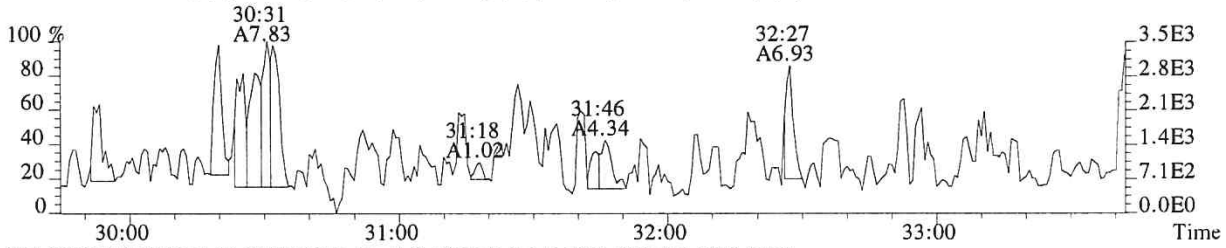
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



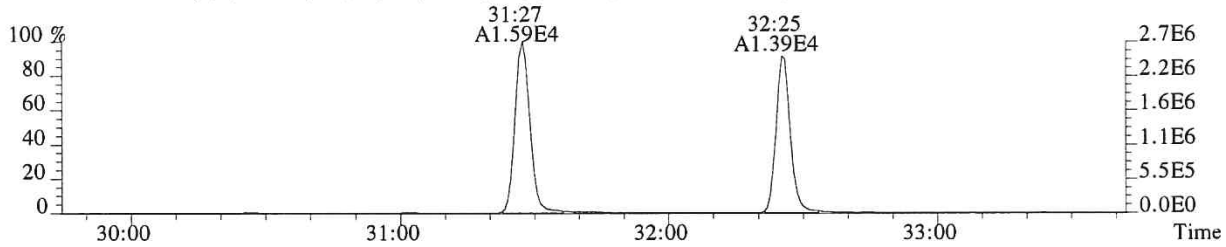
File:P519503 #1-357 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,756.0,1.00%,F,T)



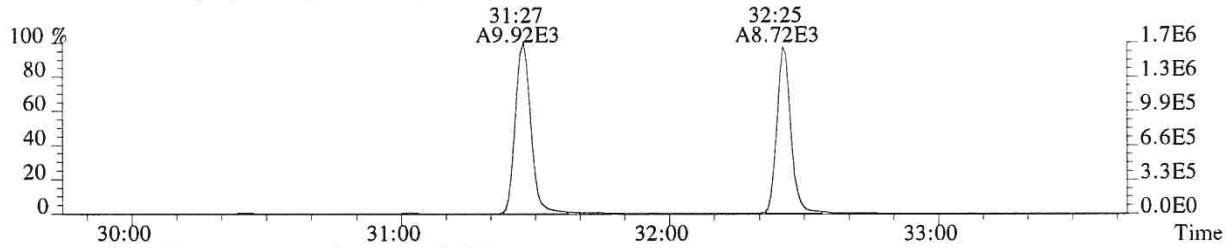
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1240.0,1.00%,F,T)



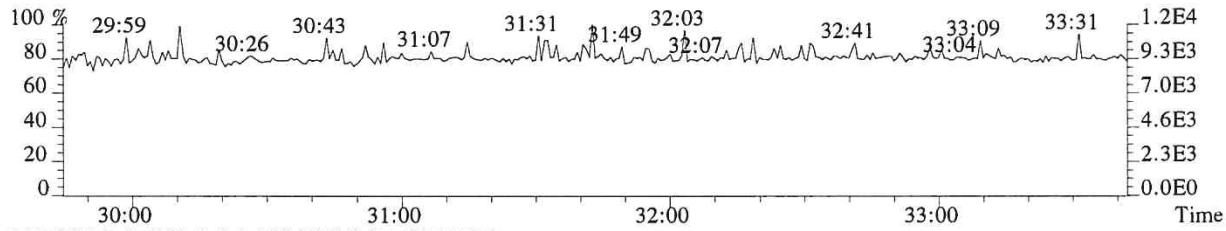
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,636.0,1.00%,F,T)



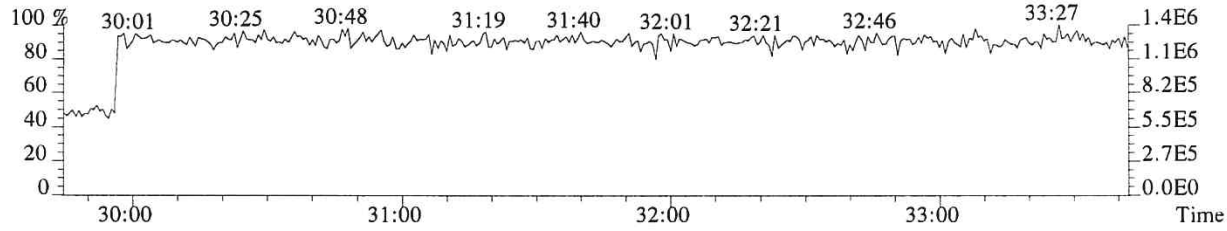
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1052.0,1.00%,F,T)



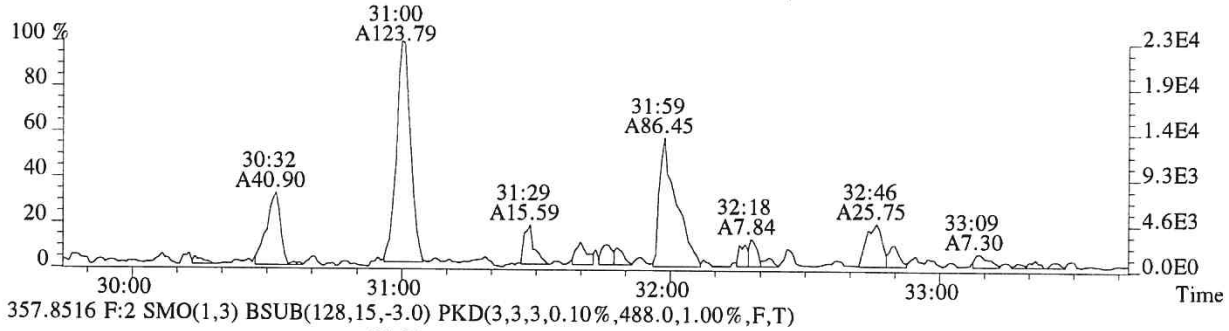
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



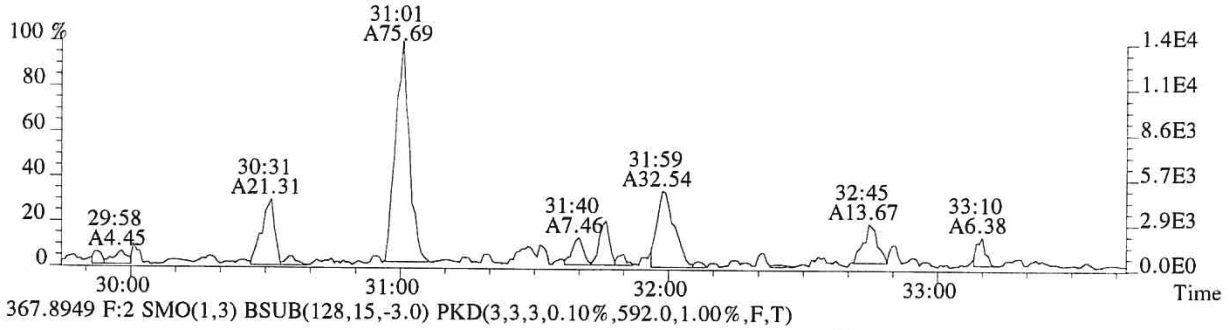
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



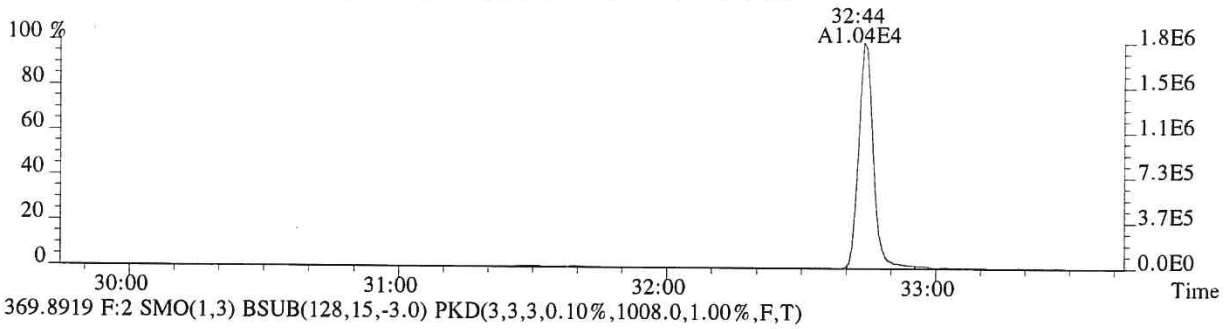
File:P519503 #1-357 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,800.0,1.00%,F,T)



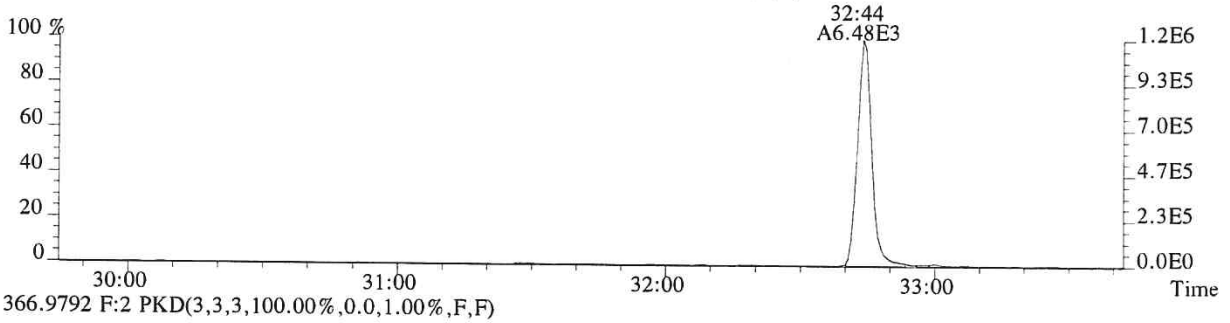
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,488.0,1.00%,F,T)



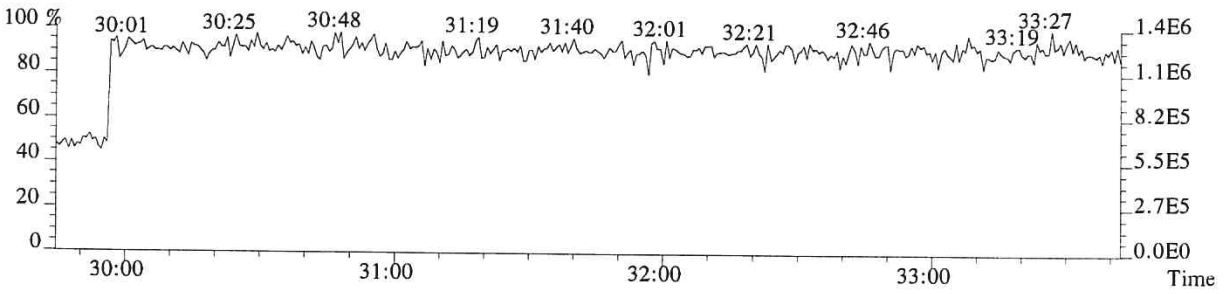
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,592.0,1.00%,F,T)



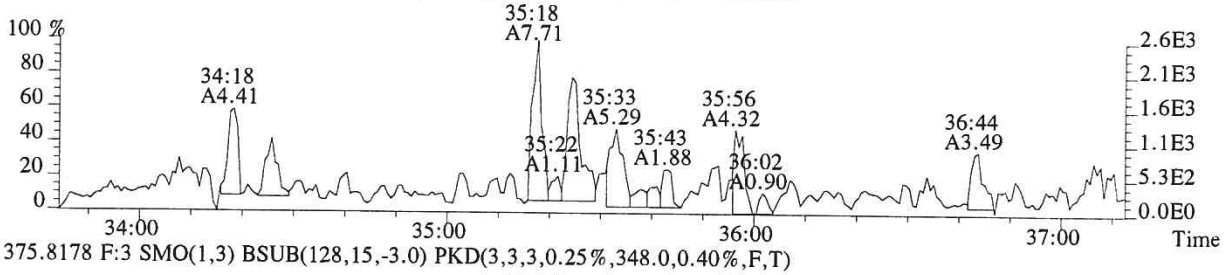
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1008.0,1.00%,F,T)



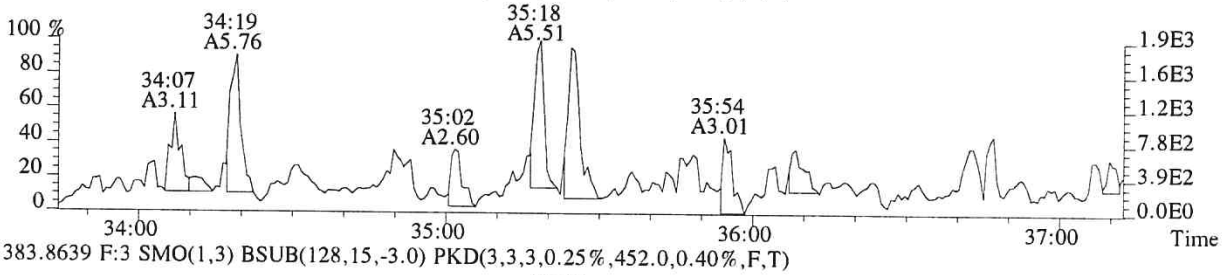
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



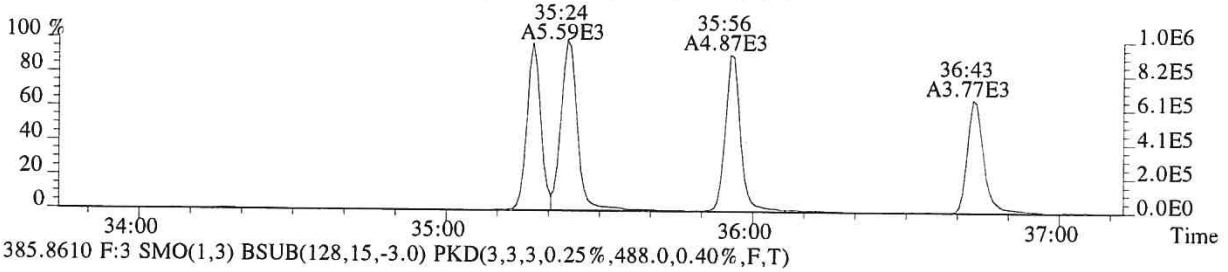
File:P519503 #1-313 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,348.0,0.40%,F,T)



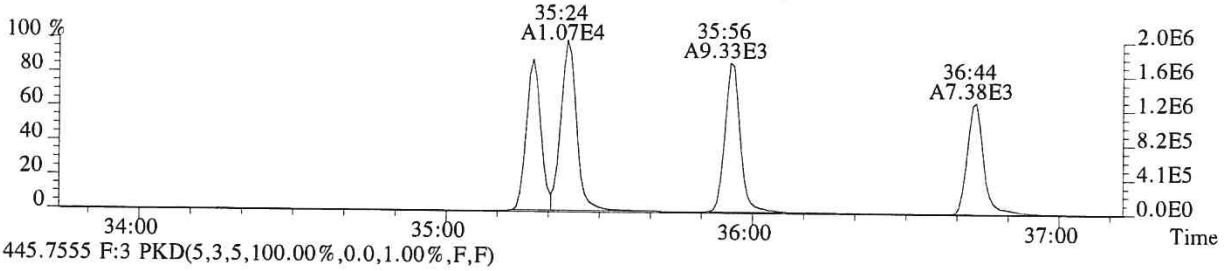
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,348.0,0.40%,F,T)



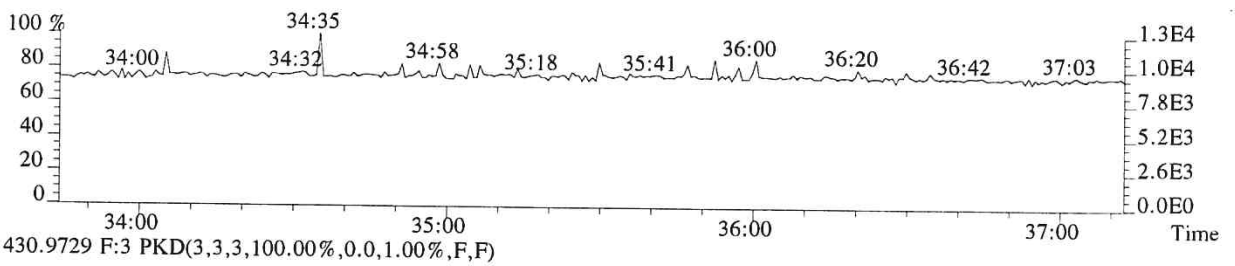
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,452.0,0.40%,F,T)



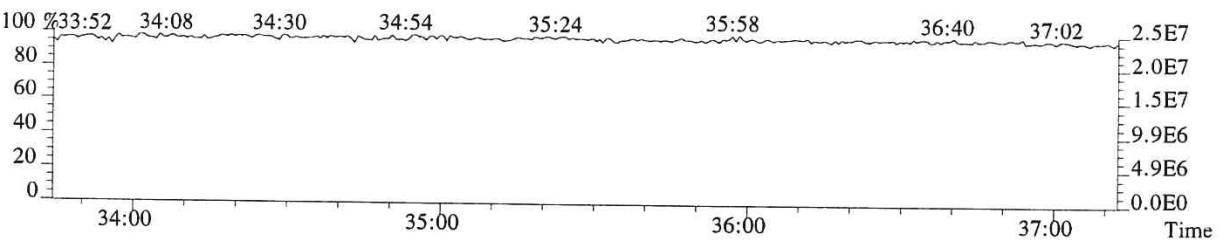
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,488.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

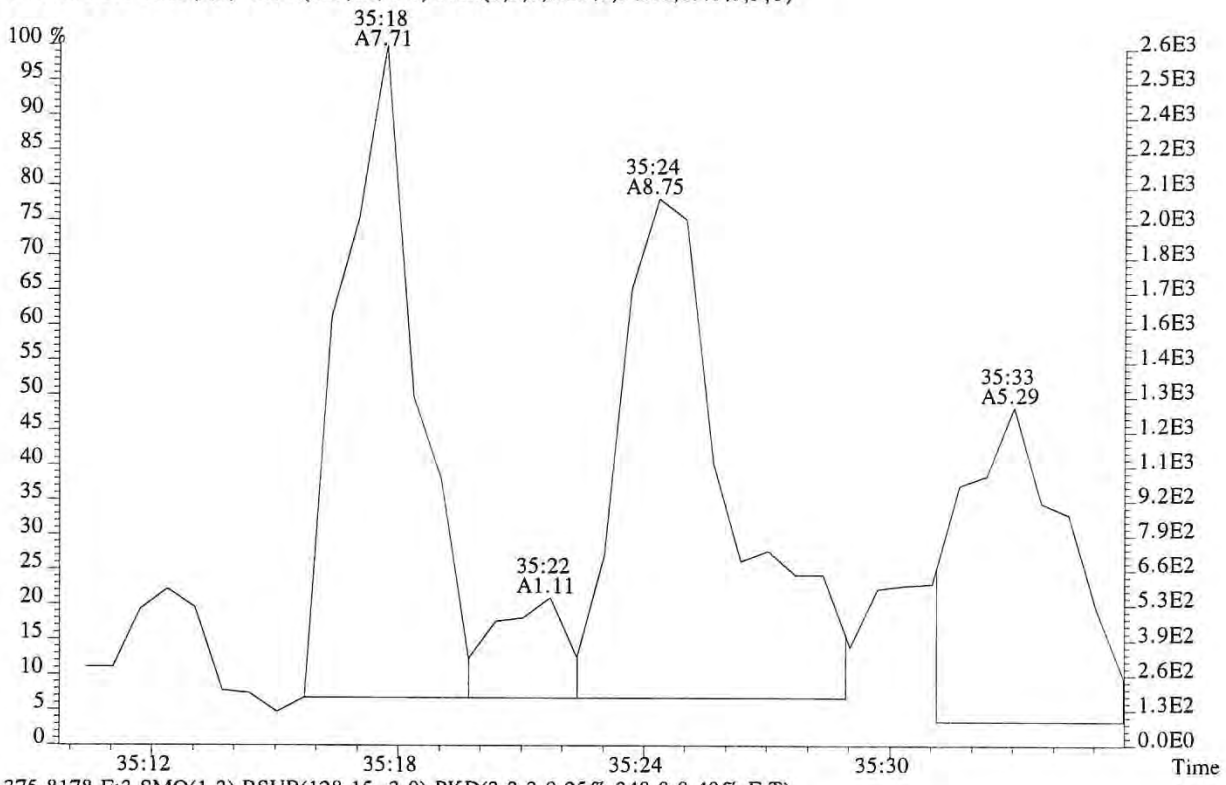


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

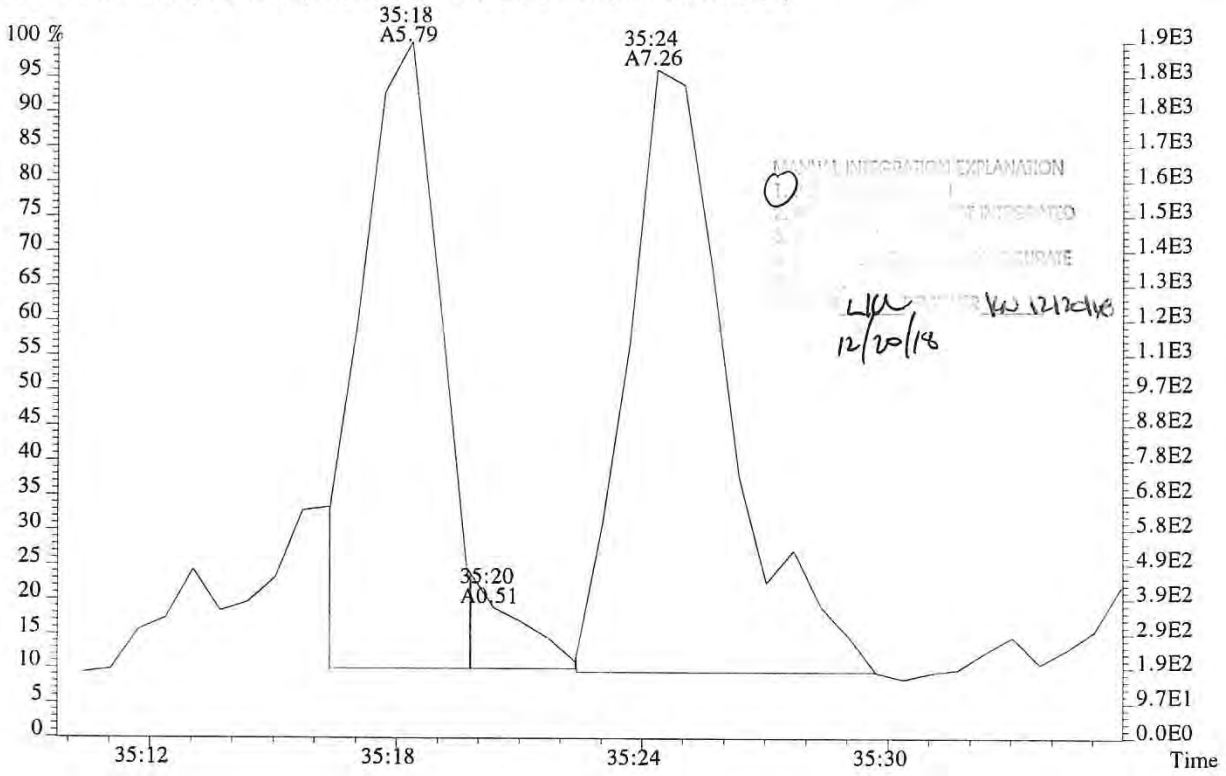


059022

File:P519503 #1-313 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,348.0,0.40%,F,T)



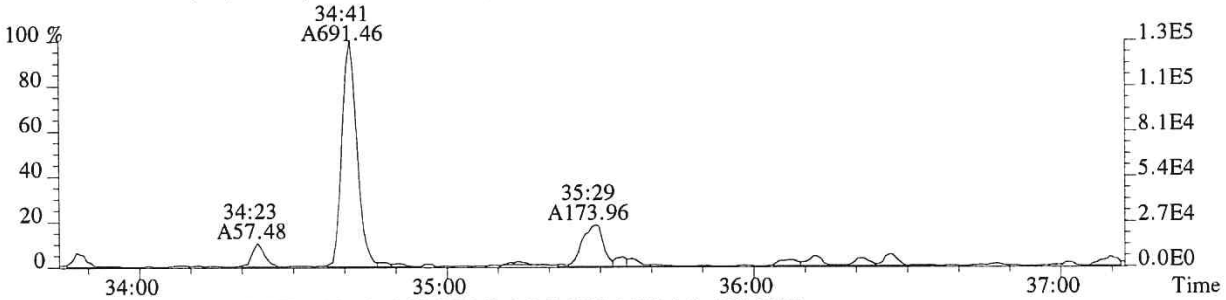
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,348.0,0.40%,F,T)



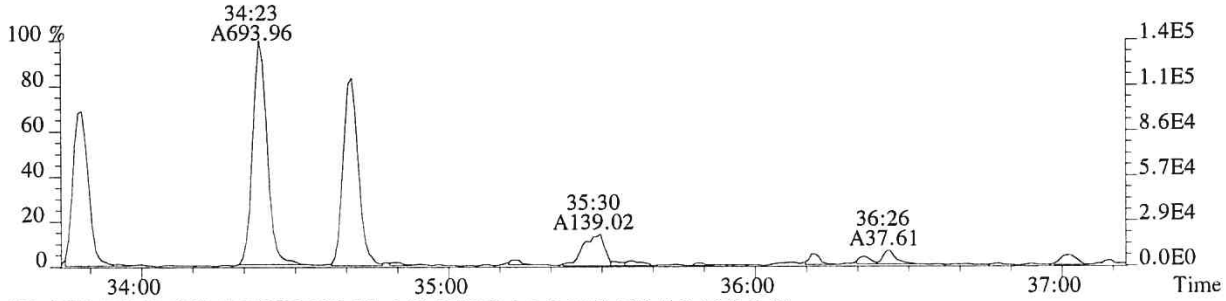
MANUAL INTEGRATION EXPLANATION
12/20/18

059023

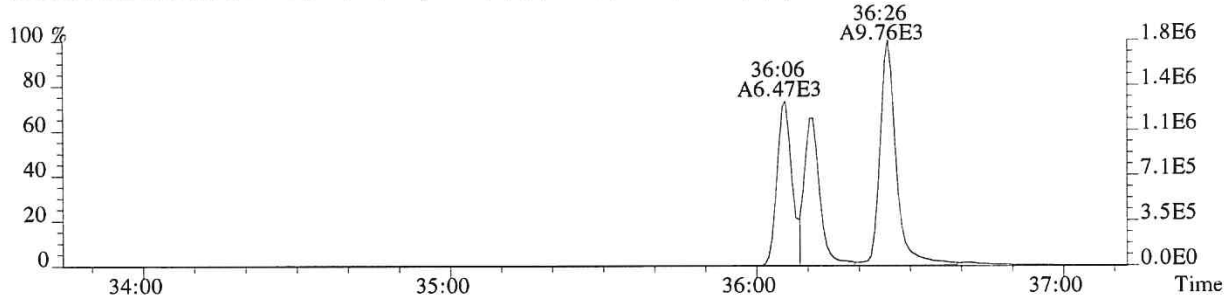
File:P519503 #1-313 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,656.0,0.40%,F,T)



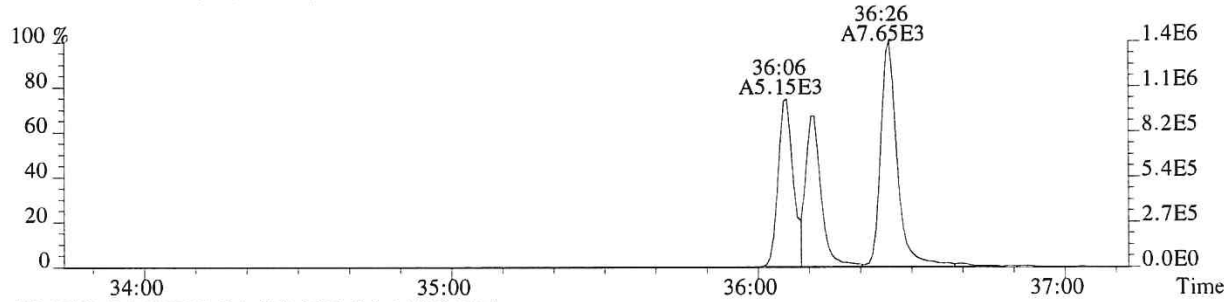
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1076.0,0.40%,F,T)



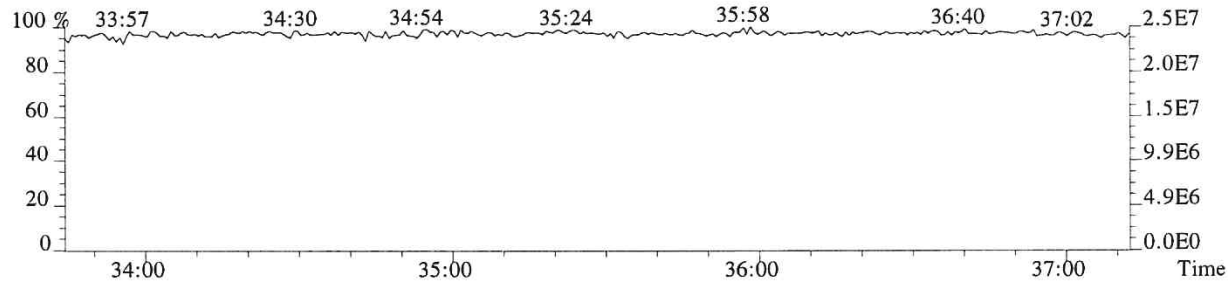
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,580.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,388.0,0.40%,F,T)



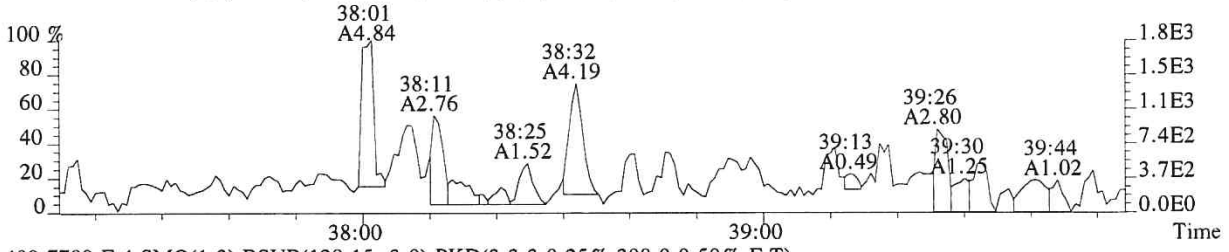
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



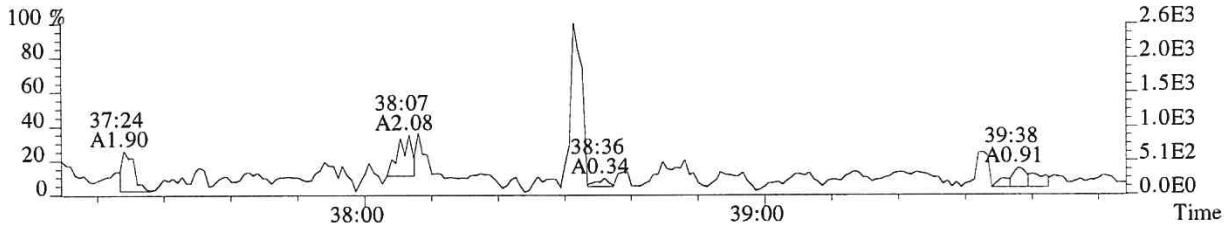
059024

File:P519503 #1-240 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009

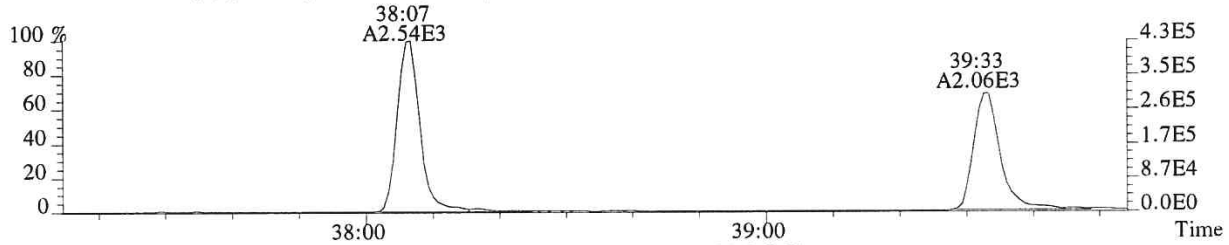
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,344.0,0.50%,F,T)



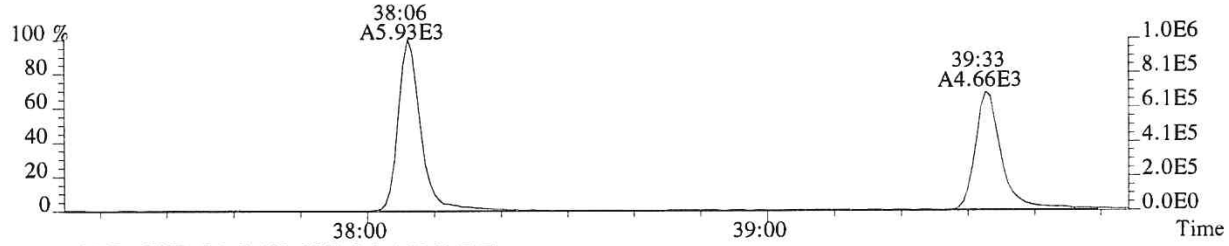
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,308.0,0.50%,F,T)



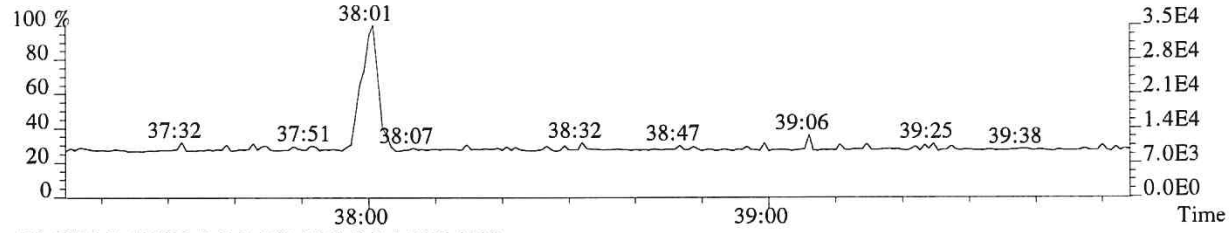
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2004.0,0.50%,F,T)



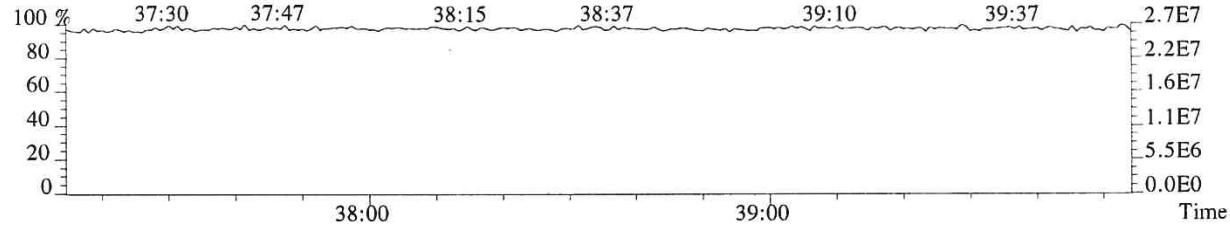
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2068.0,0.50%,F,T)



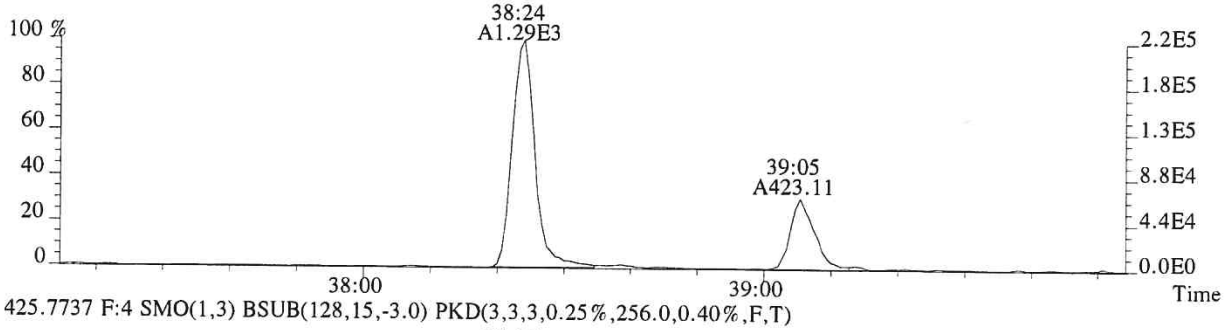
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



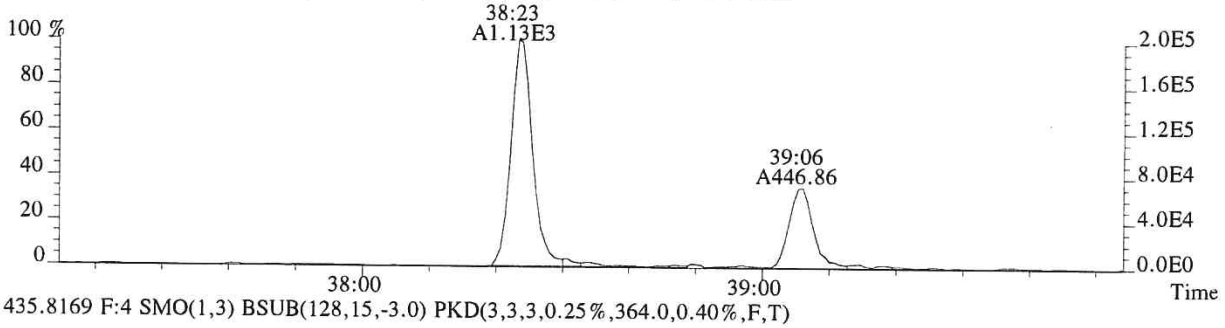
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



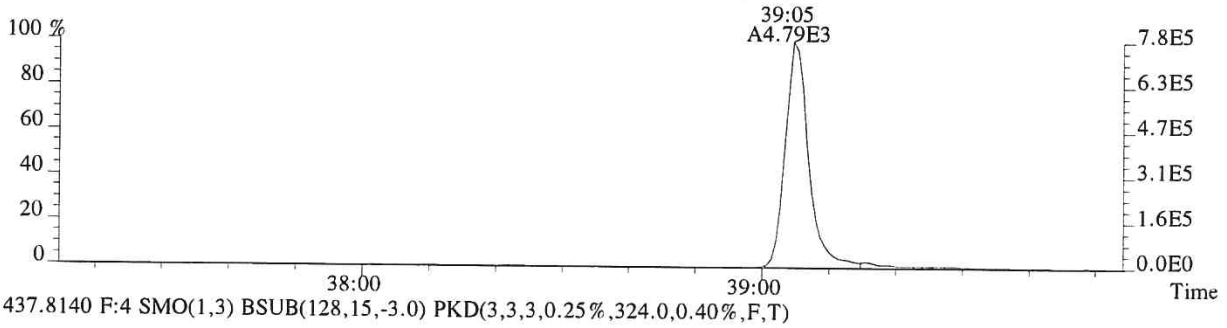
File:P519503 #1-240 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,296.0,0.40%,F,T)



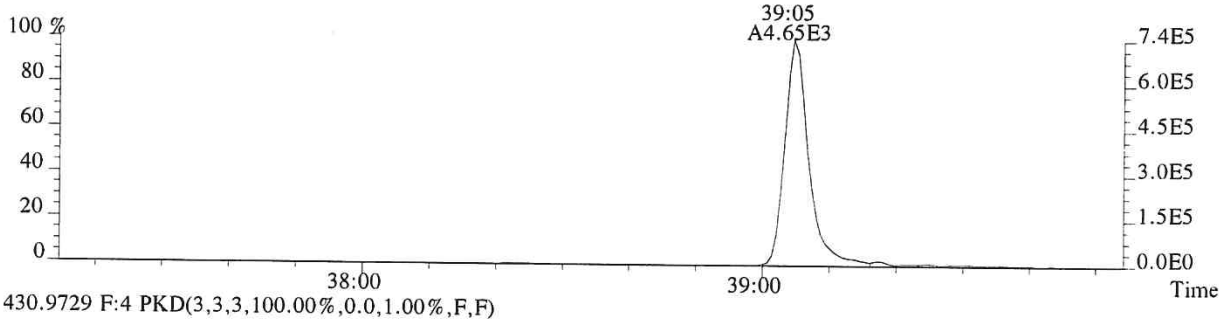
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,256.0,0.40%,F,T)



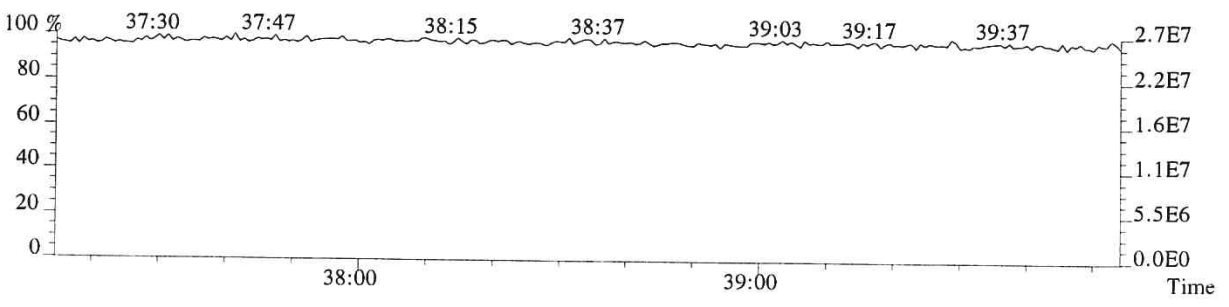
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,364.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,324.0,0.40%,F,T)



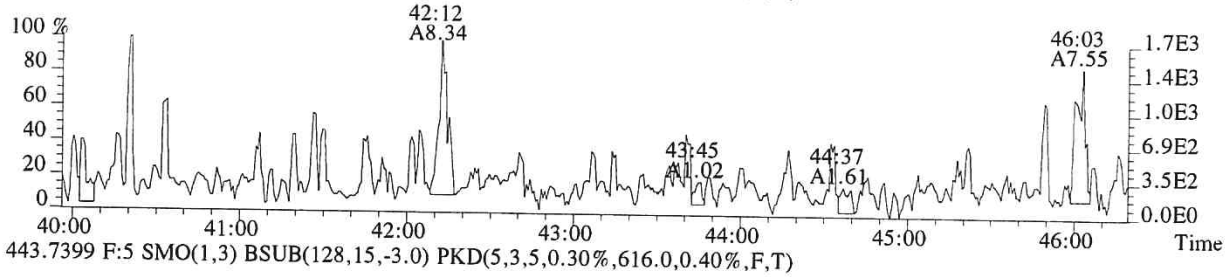
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



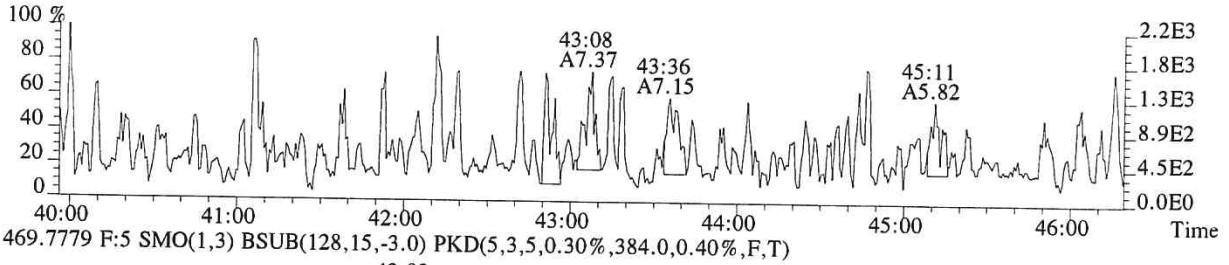
059026

File:P519503 #1-575 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009

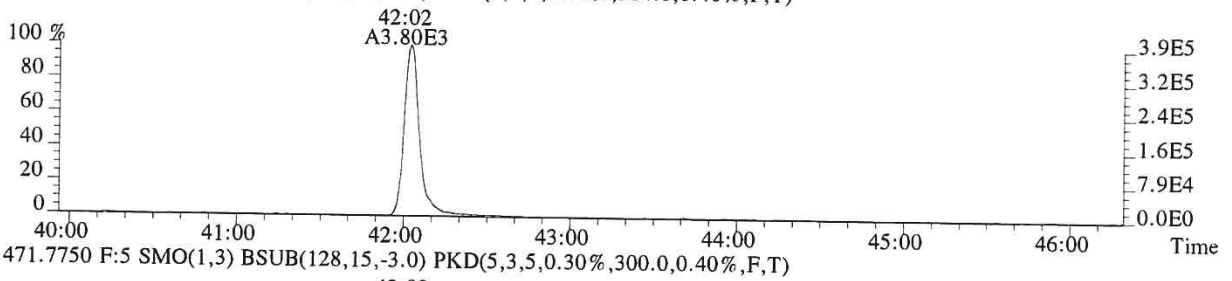
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,348.0,0.40%,F,T)



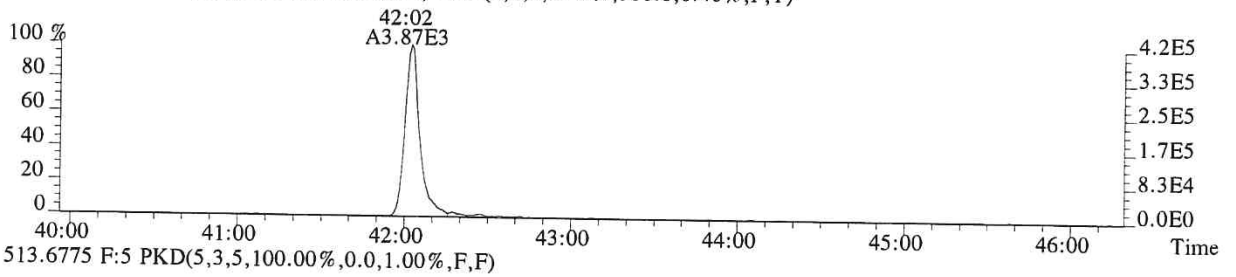
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,616.0,0.40%,F,T)



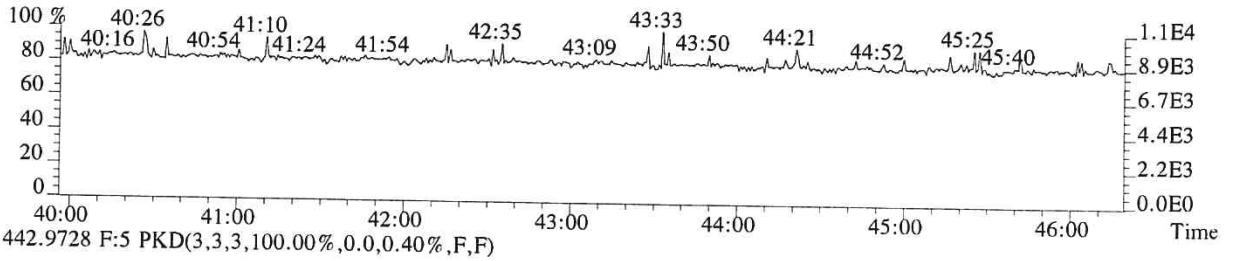
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,384.0,0.40%,F,T)



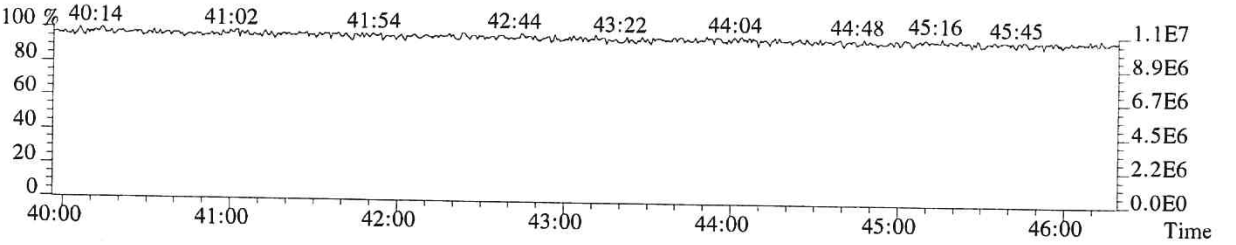
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,300.0,0.40%,F,T)



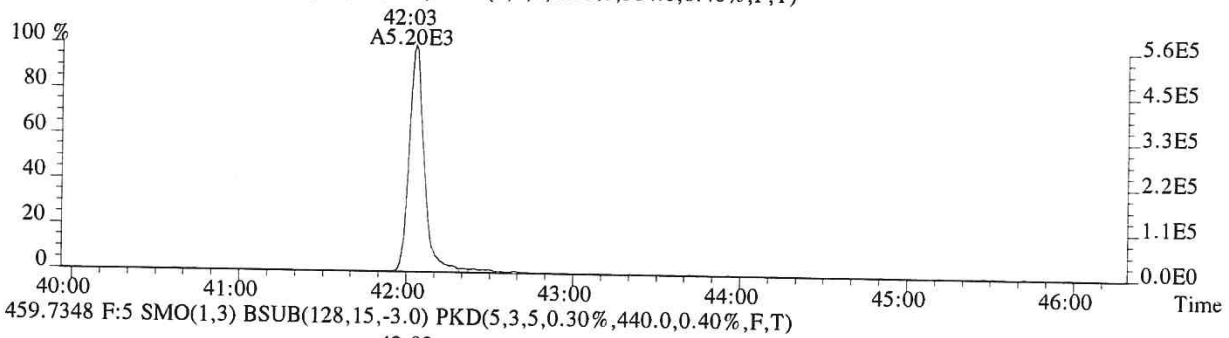
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



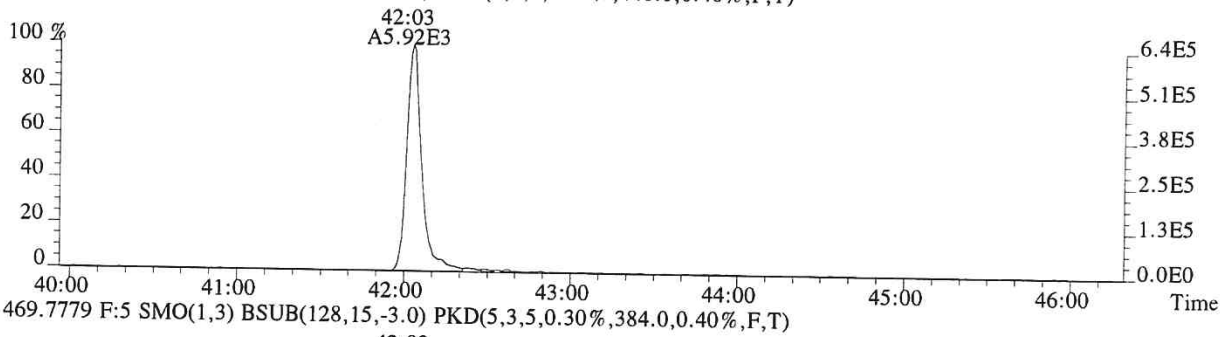
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



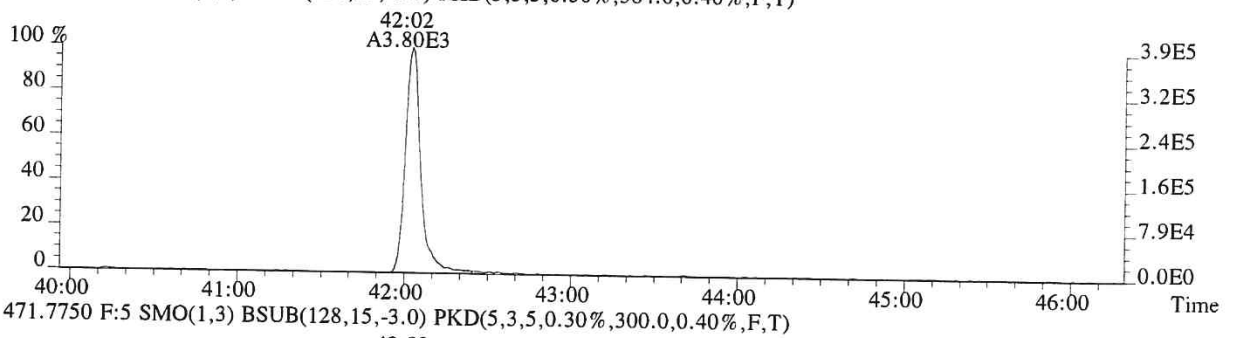
File:P519503 #1-575 Acq:19-DEC-2018 22:54:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-009
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,384.0,0.40%,F,T)



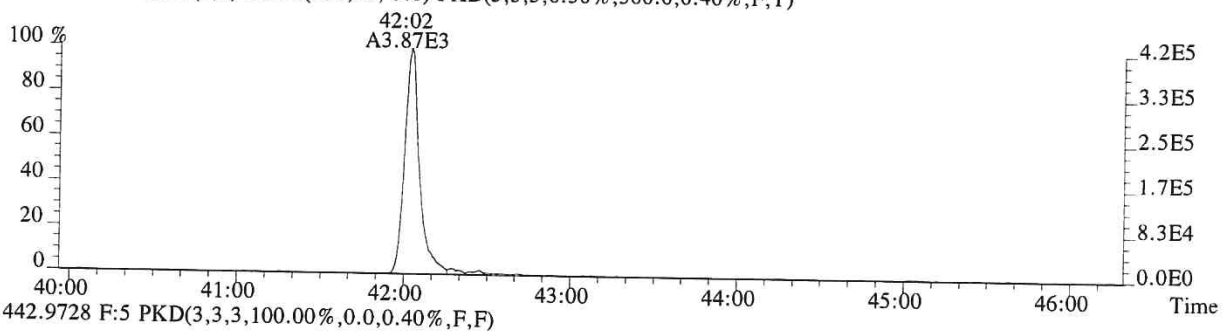
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,440.0,0.40%,F,T)



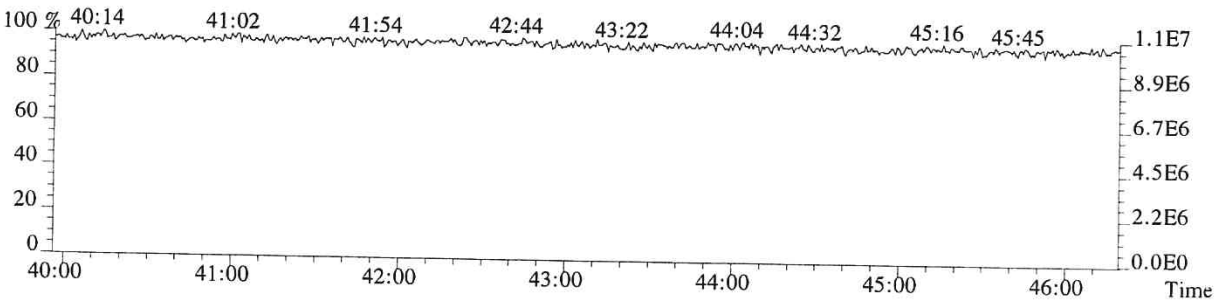
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,384.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,300.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0210

Run #16 Filename P519504 Samp: 1 Inj: 1 Acquired: 19-DEC-18 23:43:31
Processed: 20-DEC-18 11:35:34 Sample ID: E1801096-010

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:51	1.966e+02	2.220e+02	0.89	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	1.012
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:18	8.507e+00	5.120e+00	1.66	no	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	NotFnd	*	*	*	no	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	NotFnd	*	*	*	no	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	no	1.258
10	Unk	OCDF	NotFnd	*	*	*	no	no	1.359
11	Unk	2,3,7,8-TCDD	27:46	5.584e+01	5.569e+01	1.00	no	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:45	2.381e+01	1.664e+01	1.43	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:27	4.345e+01	2.707e+01	1.60	no	yes	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:06	2.864e+02	3.198e+02	0.90	yes	no	1.025
17	Unk	OCDD	42:04	3.133e+03	3.556e+03	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:50	7.437e+03	9.443e+03	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:28	1.253e+04	7.622e+03	1.64	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:26	1.116e+04	6.977e+03	1.60	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:18	3.676e+03	7.264e+03	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:24	4.669e+03	8.945e+03	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:56	4.220e+03	7.924e+03	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:44	3.064e+03	5.952e+03	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:07	2.363e+03	5.055e+03	0.47	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:33	1.739e+03	3.788e+03	0.46	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:43	3.482e+03	4.350e+03	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:45	8.278e+03	5.180e+03	1.60	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:06	5.445e+03	3.871e+03	1.41	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	36:11	5.104e+03	4.332e+03	1.18	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:05	4.414e+03	3.934e+03	1.12	yes	no	0.858
32	IS	13C-OCDD	42:03	3.117e+03	3.472e+03	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	27:05	1.226e+04	1.517e+04	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:26	8.821e+03	7.421e+03	1.19	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:45	5.168e+03				no	1.014

$$OCDD = \frac{(3.133e+03 + 3.556e+03) \times 4000\ pg \times 1}{(3.117e+03 + 3.472e+03) \times 10.49\ g \times 75.8 / 100 \times 1.118} = 472\ ng/kg$$

Rev 12/26/18

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Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0210

Run #16 Filename P519504 Samp: 1 Inj: 1 Acquired: 19-DEC-18 23:43:31
Processed: 20-DEC-18 11:35:34 LAB. ID: E1801096-010

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.75e+04	6.12e+02	4.5e+01	2.95e+04	9.24e+02	3.2e+01
2	1,2,3,7,8-PeCDF	*	1.22e+03	*	*	1.00e+03	*
3	2,3,4,7,8-PeCDF	*	1.22e+03	*	*	1.00e+03	*
4	1,2,3,4,7,8-HxCDF	2.07e+03	3.76e+02	5.5e+00	1.29e+03	4.40e+02	2.9e+00
5	1,2,3,6,7,8-HxCDF	*	3.76e+02	*	*	4.40e+02	*
6	2,3,4,6,7,8-HxCDF	*	3.76e+02	*	*	4.40e+02	*
7	1,2,3,7,8,9-HxCDF	*	3.76e+02	*	*	4.40e+02	*
8	1,2,3,4,6,7,8-HpCDF	*	6.00e+02	*	*	3.16e+02	*
9	1,2,3,4,7,8,9-HpCDF	*	6.00e+02	*	*	3.16e+02	*
10	OCDF	*	3.48e+02	*	*	5.52e+02	*
11	2,3,7,8-TCDD	1.13e+04	8.60e+02	1.3e+01	9.28e+03	4.76e+02	2.0e+01
12	1,2,3,7,8-PeCDD	4.11e+03	7.24e+02	5.7e+00	3.58e+03	3.40e+02	1.1e+01
13	1,2,3,4,7,8-HxCDD	*	9.56e+02	*	*	1.94e+03	*
14	1,2,3,6,7,8-HxCDD	*	9.56e+02	*	*	1.94e+03	*
15	1,2,3,7,8,9-HxCDD	7.20e+03	9.56e+02	7.5e+00	4.95e+03	1.94e+03	2.5e+00
16	1,2,3,4,6,7,8-HpCDD	4.77e+04	4.04e+02	1.2e+02	5.08e+04	4.28e+02	1.2e+02
17	OCDD	3.31e+05	4.08e+02	8.1e+02	3.67e+05	2.28e+02	1.6e+03
18	13C-2,3,7,8-TCDF	1.15e+06	5.42e+03	2.1e+02	1.45e+06	2.86e+03	5.1e+02
19	13C-1,2,3,7,8-PeCDF	2.09e+06	8.76e+02	2.4e+03	1.27e+06	5.72e+02	2.2e+03
20	13C-2,3,4,7,8-PeCDF	2.03e+06	8.76e+02	2.3e+03	1.28e+06	5.72e+02	2.2e+03
21	13C-1,2,3,4,7,8-HxCDF	7.39e+05	5.16e+02	1.4e+03	1.46e+06	7.52e+02	1.9e+03
22	13C-1,2,3,6,7,8-HxCDF	8.32e+05	5.16e+02	1.6e+03	1.64e+06	7.52e+02	2.2e+03
23	13C-2,3,4,6,7,8-HxCDF	7.88e+05	5.16e+02	1.5e+03	1.52e+06	7.52e+02	2.0e+03
24	13C-1,2,3,7,8,9-HxCDF	5.34e+05	5.16e+02	1.0e+03	1.04e+06	7.52e+02	1.4e+03
25	13C-1,2,3,4,6,7,8-HpCDF	4.00e+05	1.16e+03	3.4e+02	8.78e+05	1.08e+03	8.2e+02
26	13C-1,2,3,4,7,8,9-HpCDF	2.70e+05	1.16e+03	2.3e+02	5.87e+05	1.08e+03	5.5e+02
27	13C-2,3,7,8-TCDD	5.89e+05	3.34e+03	1.8e+02	7.16e+05	1.66e+03	4.3e+02
28	13C-1,2,3,7,8-PeCDD	1.46e+06	4.84e+02	3.0e+03	9.05e+05	4.32e+02	2.1e+03
29	13C-1,2,3,4,7,8-HxCDD	1.06e+06	9.64e+02	1.1e+03	8.25e+05	7.96e+02	1.0e+03
30	13C-1,2,3,6,7,8-HxCDD	9.24e+05	9.64e+02	9.6e+02	7.55e+05	7.96e+02	9.5e+02
31	13C-1,2,3,4,6,7,8-HpCDD	6.92e+05	5.00e+02	1.4e+03	6.35e+05	4.44e+02	1.4e+03
32	13C-OCDD	3.20e+05	3.52e+02	9.1e+02	3.53e+05	3.28e+02	1.1e+03
33	13C-1,2,3,4-TCDD	2.10e+06	3.34e+03	6.3e+02	2.52e+06	1.66e+03	1.5e+03
34	13C-1,2,3,7,8,9-HxCDD	1.53e+06	9.64e+02	1.6e+03	1.26e+06	7.96e+02	1.6e+03
35	37Cl-2,3,7,8-TCDD	8.64e+05	9.52e+02	9.1e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (8.600e{+}02 + 4.760e{+}02) \times 2000}{(5.892e{+}05 + 7.159e{+}05) \times (\quad) \times 1.085} =$$

ALS ENVIRONMENTAL
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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0210

Entry: 36 Totals Name: Total Tetra-Furans

Run: 16 File: P519504 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 23:43:31 Processed: 20-DEC-18 11:35:34

Mass: 303.9020 305.8990 Tot Response: 5.15e+02 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:08	4.12e+01	5.51e+01	0.75	yes	9.63e+01		n	n
2	26:51	1.97e+02	2.22e+02	0.89	yes	4.19e+02	2,3,7,8-TCDF	n	n

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Peak List Summary

CLIENT ID.
SL0210

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 16 File: P519504 Sample:1 Injection:1 Function:1

Acquired: 19-DEC-18 23:43:31 Processed: 20-DEC-18 11:35:34

Mass: 319.8970 321.8940 Tot Response: 1.87e+02 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	25:34	6.62e+01	8.71e+01 0.76	yes	1.53e+02		n	n
2	27:03	1.53e+01	1.79e+01 0.86	yes	3.32e+01		n	n

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Peak List Summary

CLIENT ID.
SL0210

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 16 File: P519504 Sample:1 Injection:1 Function:2

Acquired: 19-DEC-18 23:43:31 Processed: 20-DEC-18 11:35:34

Mass: 355.8550 357.8520 Tot Response: 4.05e+01 RRF: 0.9565

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	32:45	2.38e+01	1.66e+01 1.43	yes	4.05e+01	1,2,3,7,8-PeCDD	n	n

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Peak List Summary

CLIENT ID.
SL0210

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 16 File: P519504 Sample:1 Injection:1 Function:3

Acquired: 19-DEC-18 23:43:31 Processed: 20-DEC-18 11:35:34

Mass: 389.8160 391.8130 Tot Response: 8.68e+02 RRF: 1.047

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:42	3.87e+02	1.35	yes	6.73e+02		n	n
2	35:29	1.02e+02	1.10	yes	1.95e+02		n	n

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Peak List Summary

CLIENT ID.
SL0210

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 16 File: P519504 Sample:1 Injection:1 Function:4

Acquired: 19-DEC-18 23:43:31 Processed: 20-DEC-18 11:35:34

Mass: 423.7770 425.7740 Tot Response: 2.06e+03 RRF: 1.025

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:24	7.42e+02	7.07e+02 1.05	yes	1.45e+03		n	n
2	39:06	2.86e+02	3.20e+02 0.90	yes	6.06e+02	1,2,3,4,6,7,8-HpCDD	n	n

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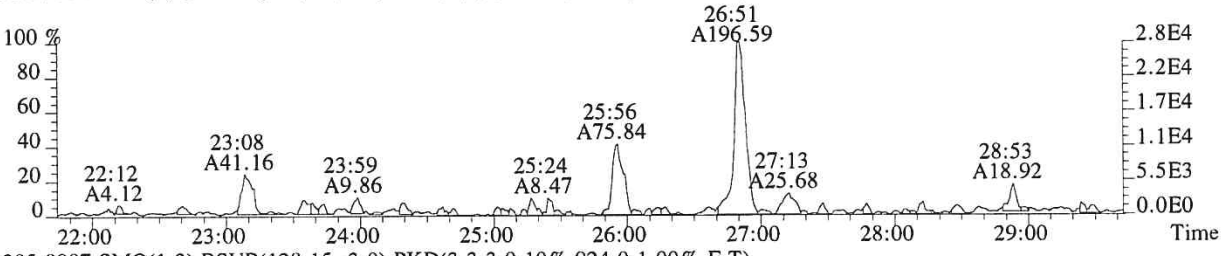
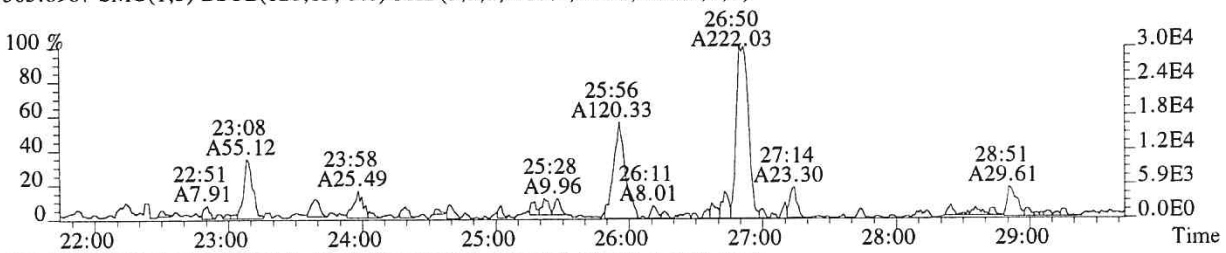
File:P519504 #1-566 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010

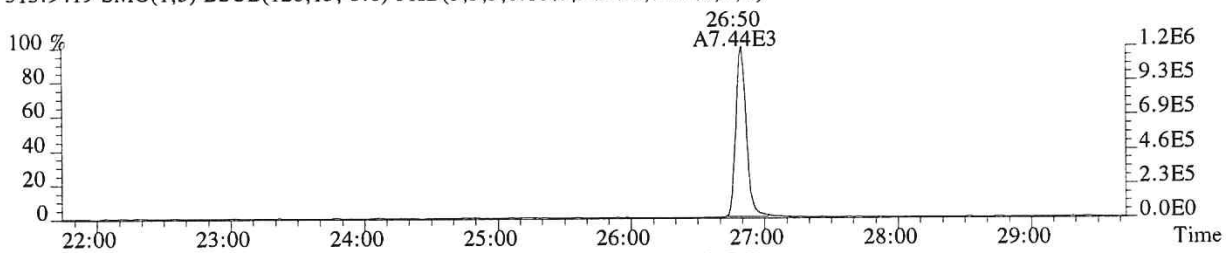
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,612.0,1.00%,F,T)



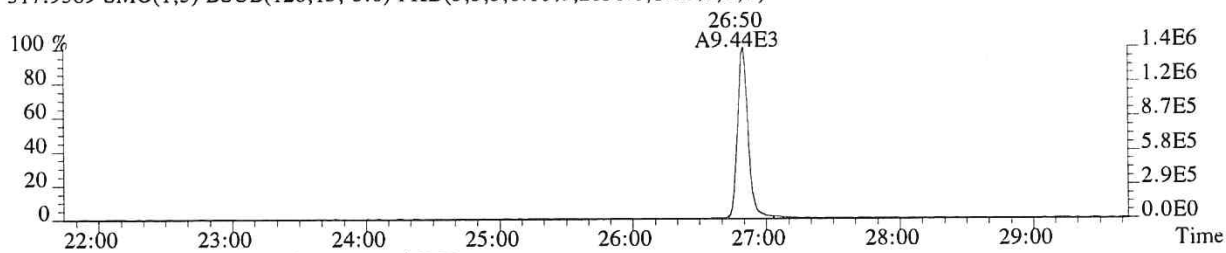
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,924.0,1.00%,F,T)



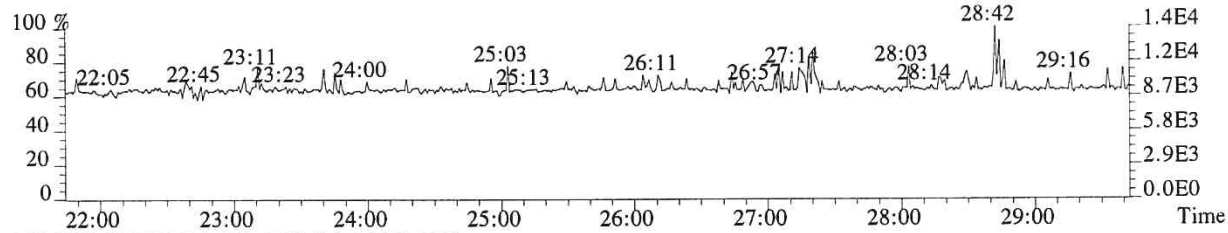
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5424.0,1.00%,F,T)



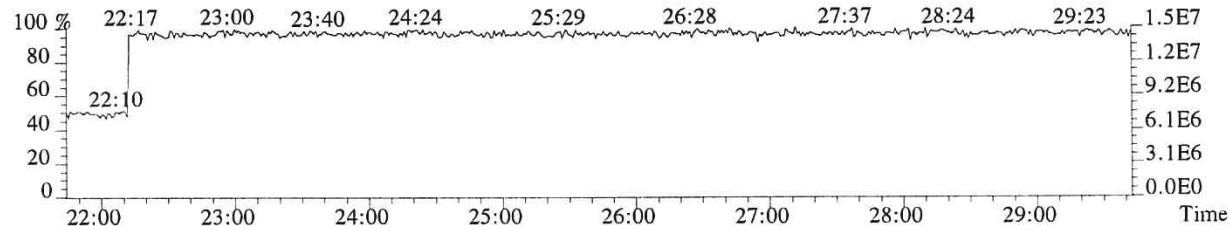
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2856.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

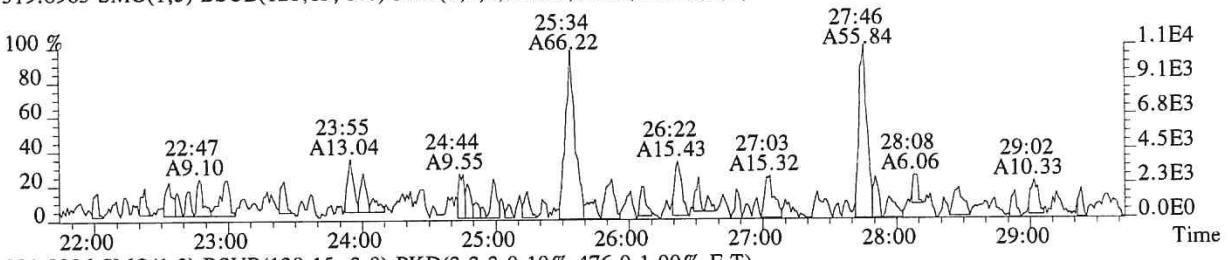


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

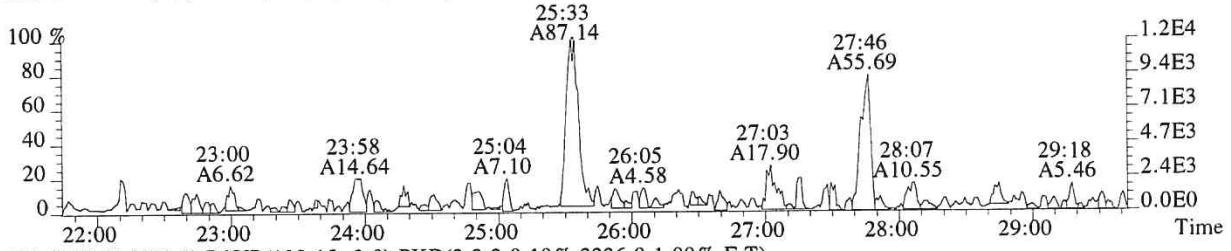


059036

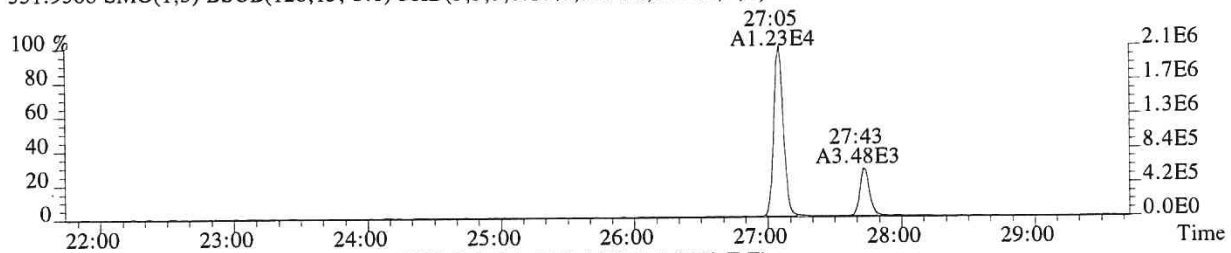
File:P519504 #1-566 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,860.0,1.00%,F,T)



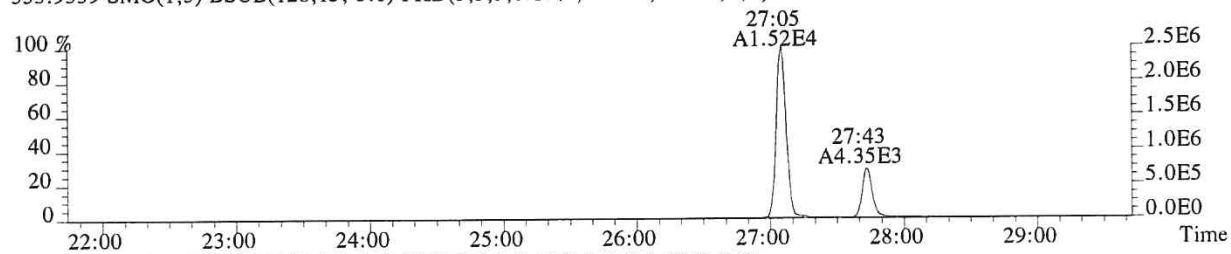
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,476.0,1.00%,F,T)



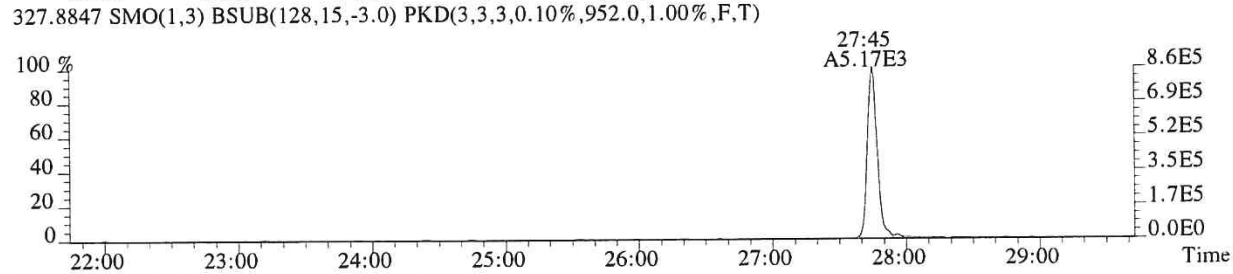
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3336.0,1.00%,F,T)



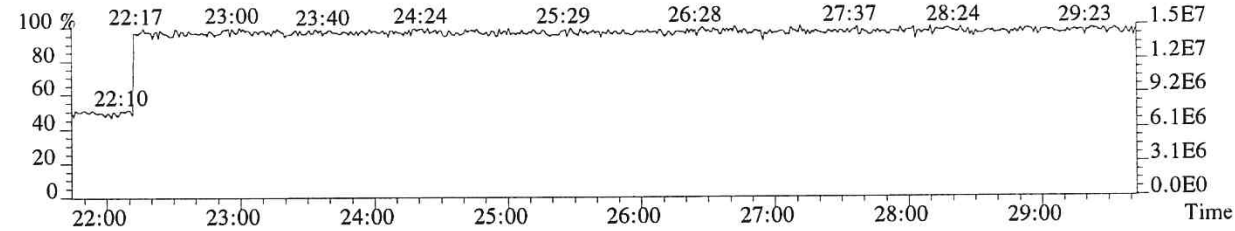
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1660.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,952.0,1.00%,F,T)

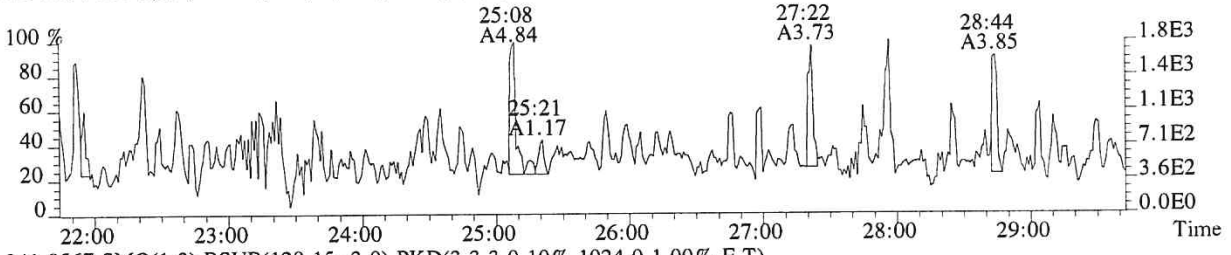


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

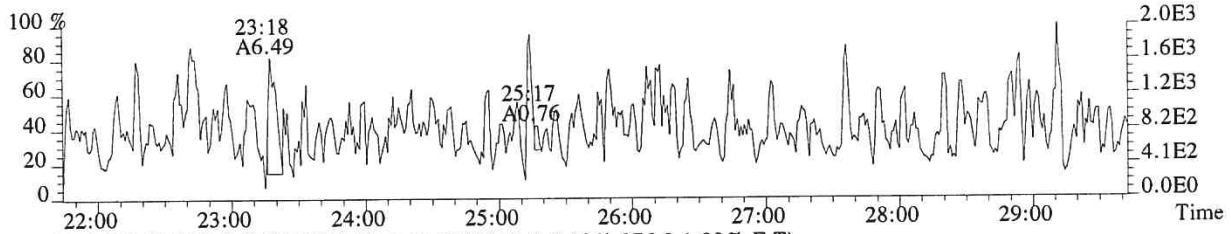


059037

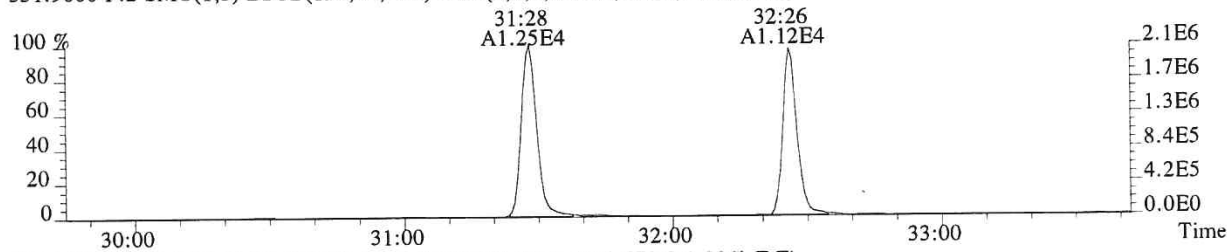
File:P519504 #1-566 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,724.0,1.00%,F,T)



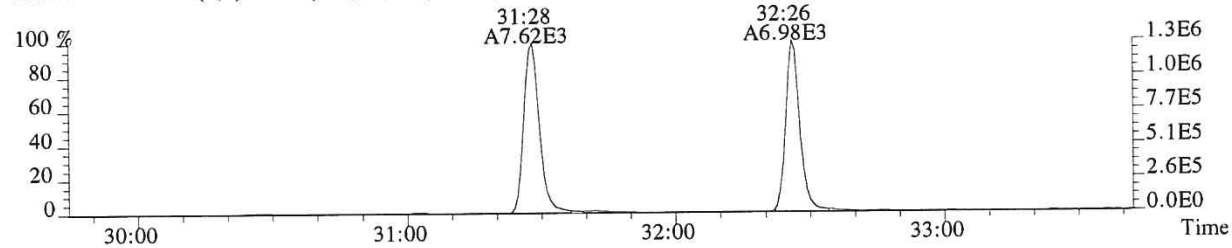
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1024.0,1.00%,F,T)



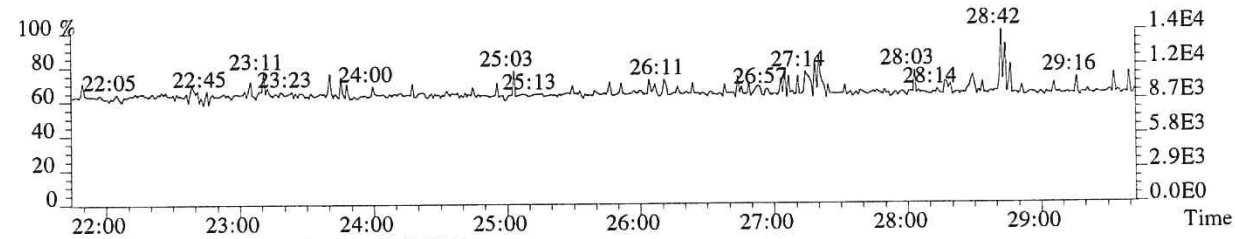
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,876.0,1.00%,F,T)



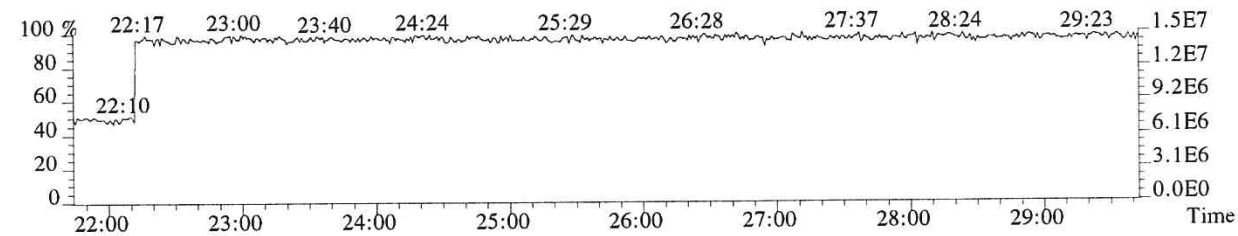
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,572.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

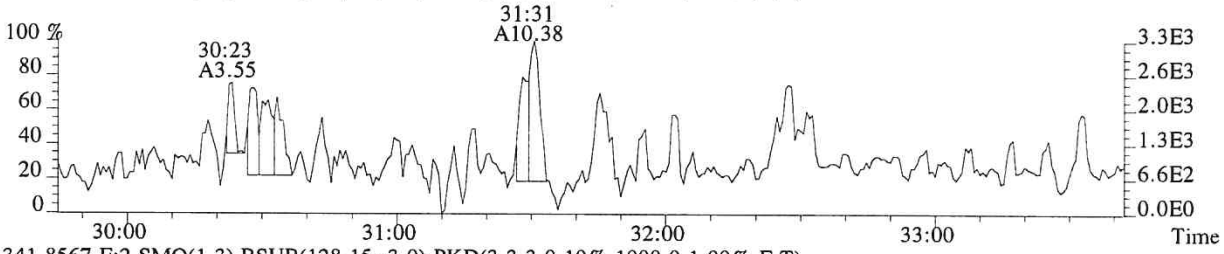


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

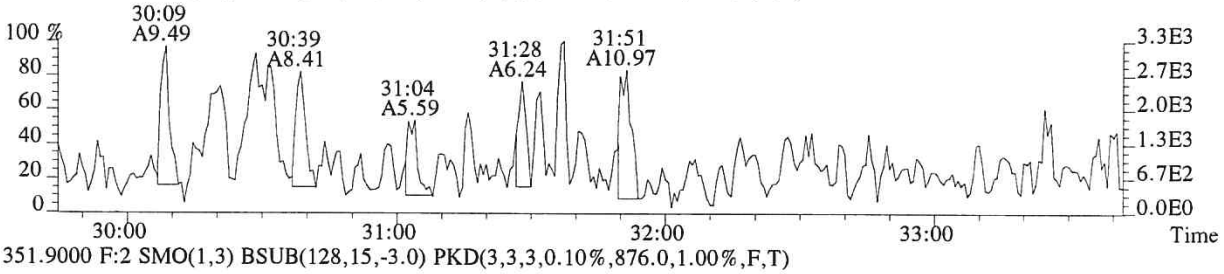


059038

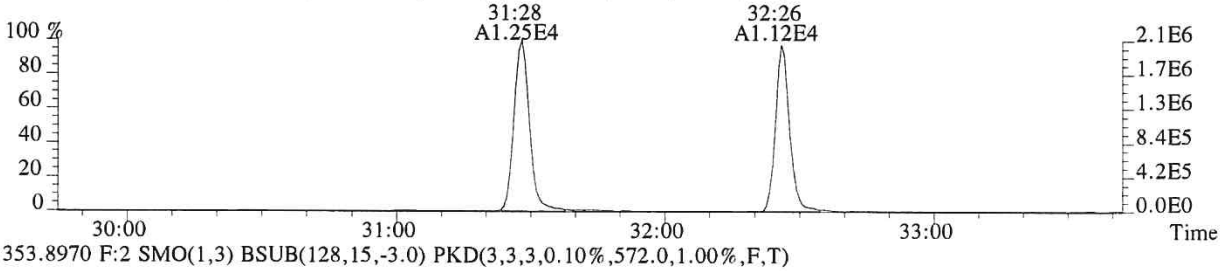
File:P519504 #1-357 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1220.0,1.00%,F,T)



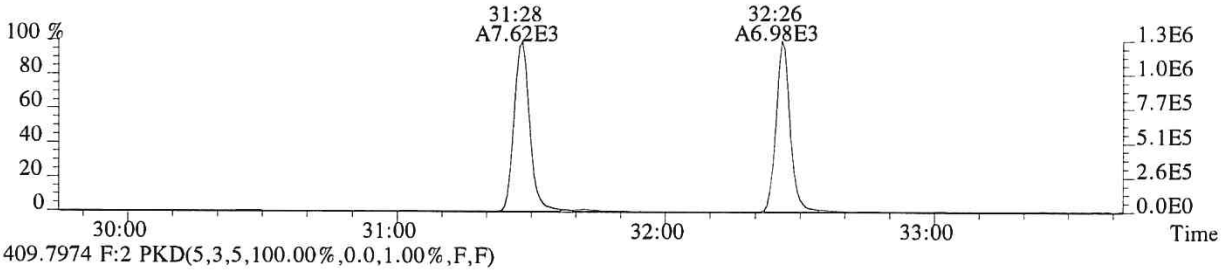
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1000.0,1.00%,F,T)



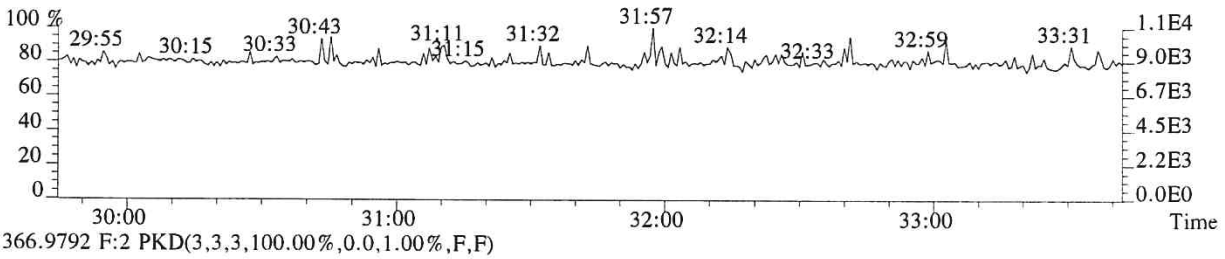
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,876.0,1.00%,F,T)



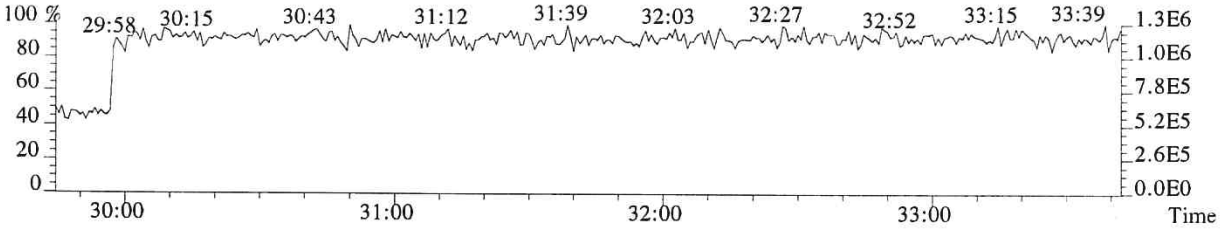
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,572.0,1.00%,F,T)



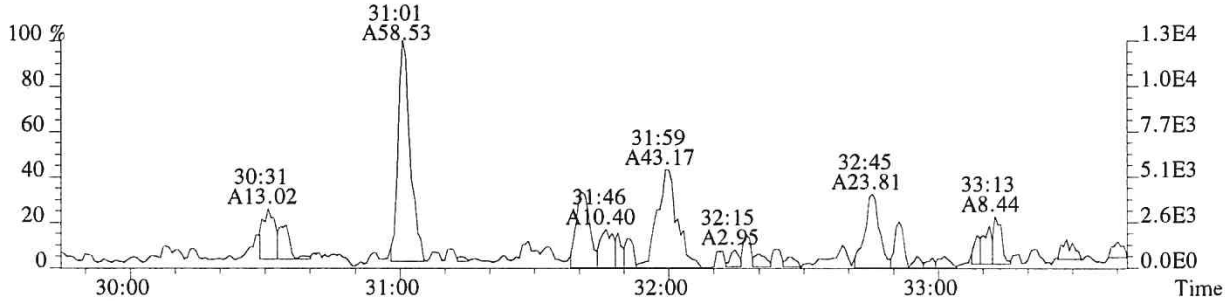
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



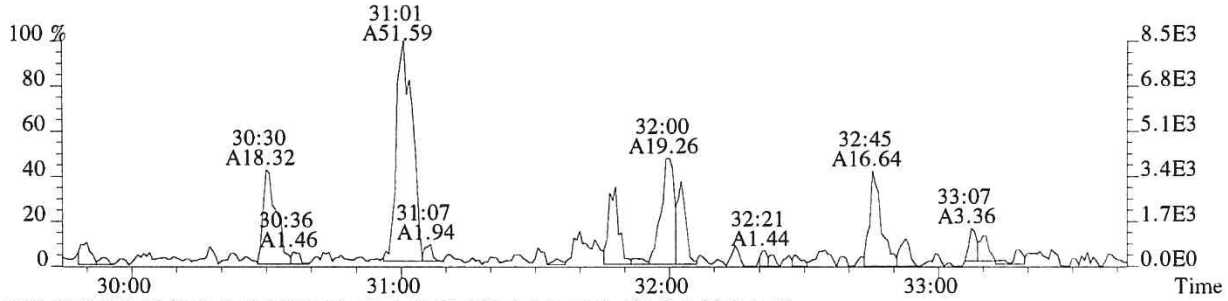
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



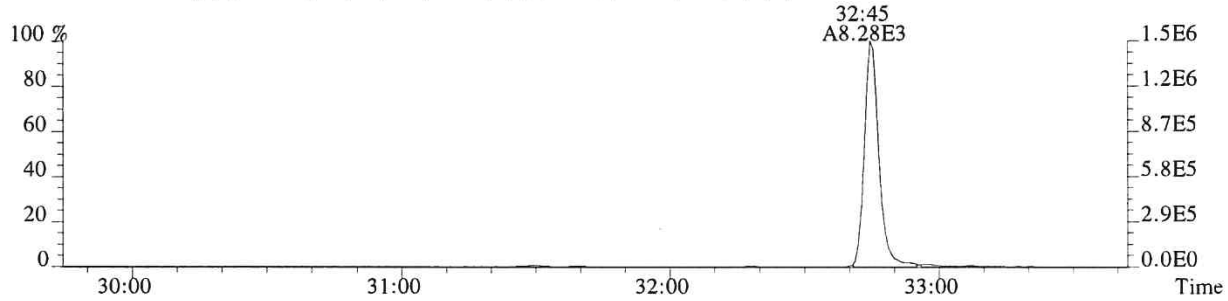
File:P519504 #1-357 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,724.0,1.00%,F,T)



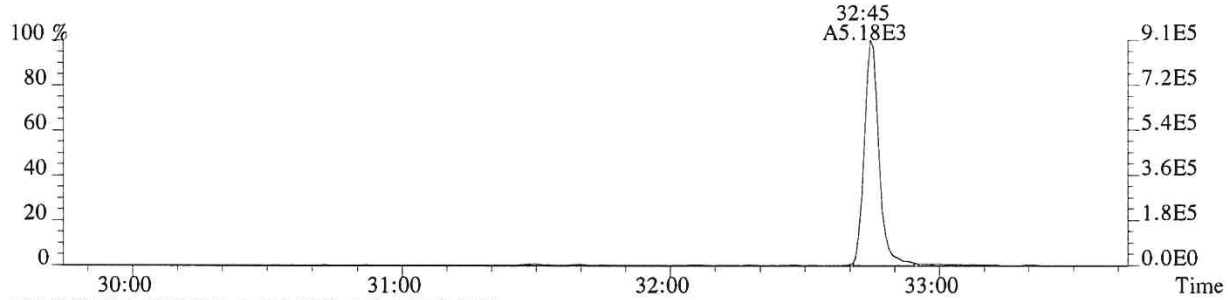
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,340.0,1.00%,F,T)



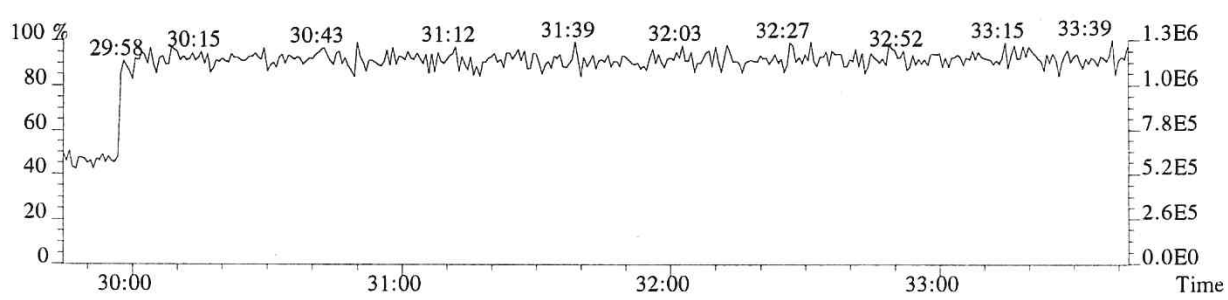
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,484.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,432.0,1.00%,F,T)

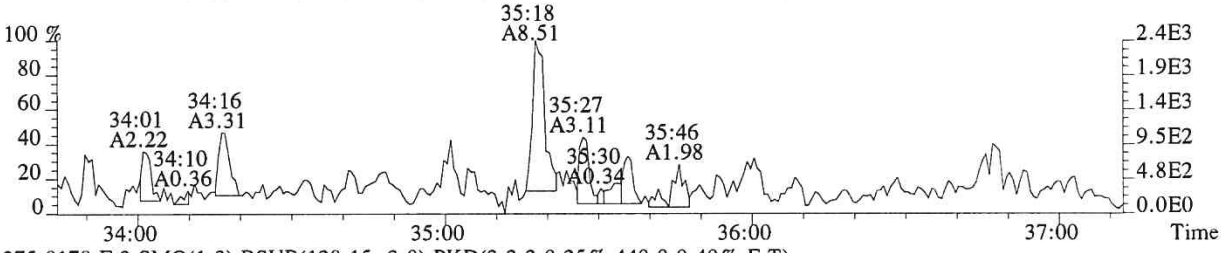


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

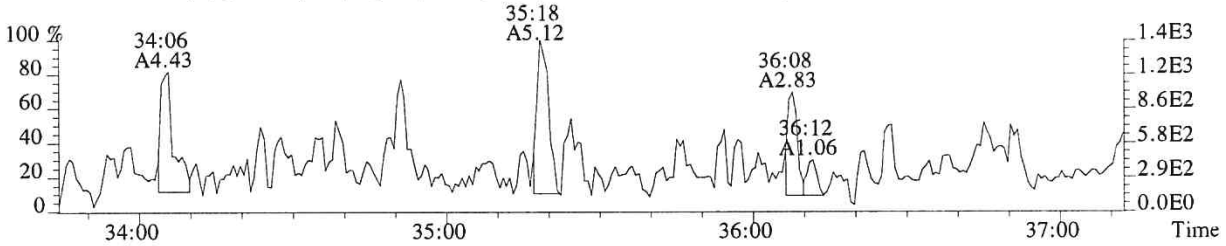


059040

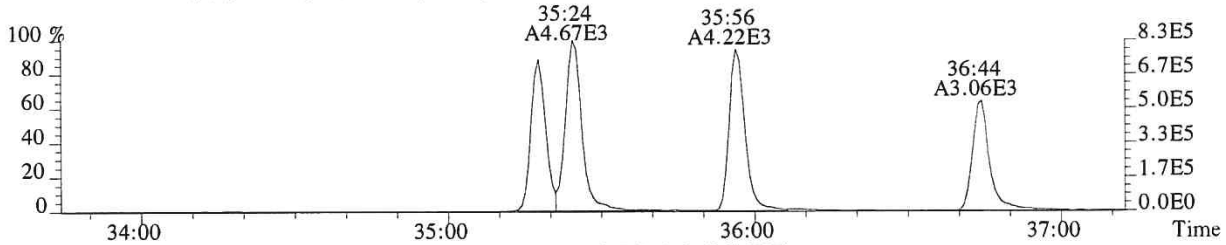
File:P519504 #1-313 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,376.0,0.40%,F,T)



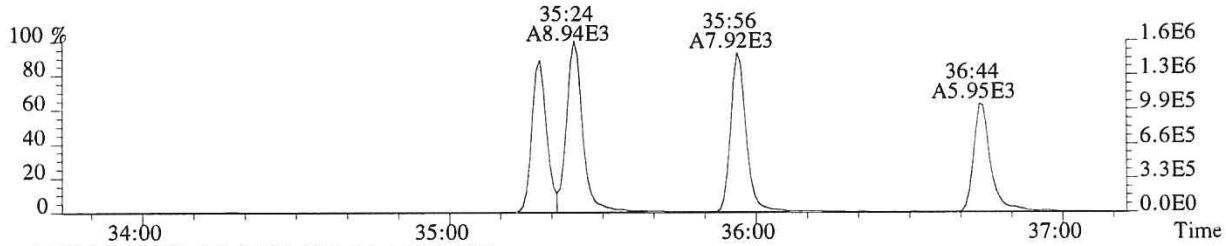
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,440.0,0.40%,F,T)



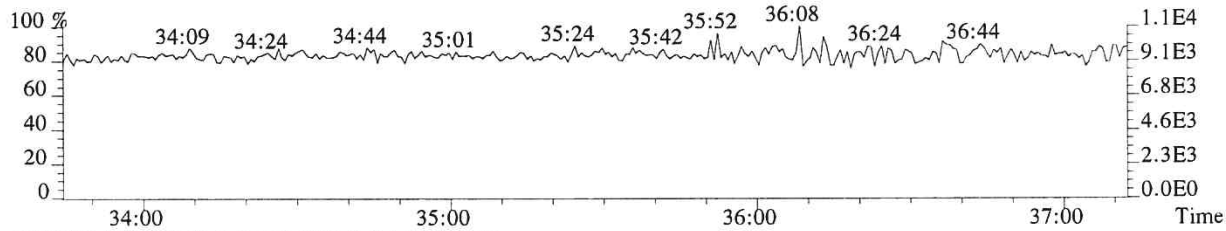
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,516.0,0.40%,F,T)



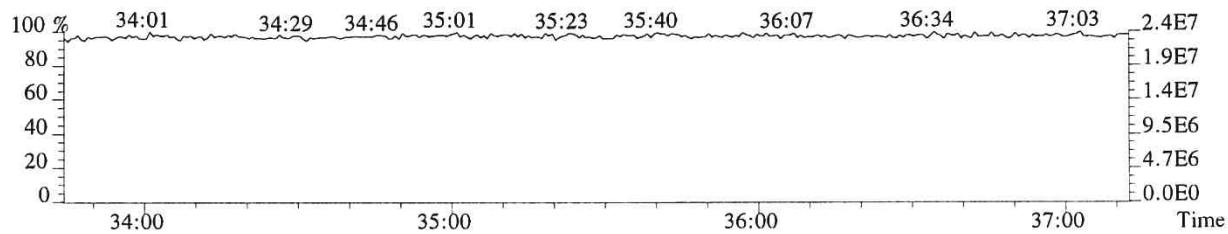
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,752.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

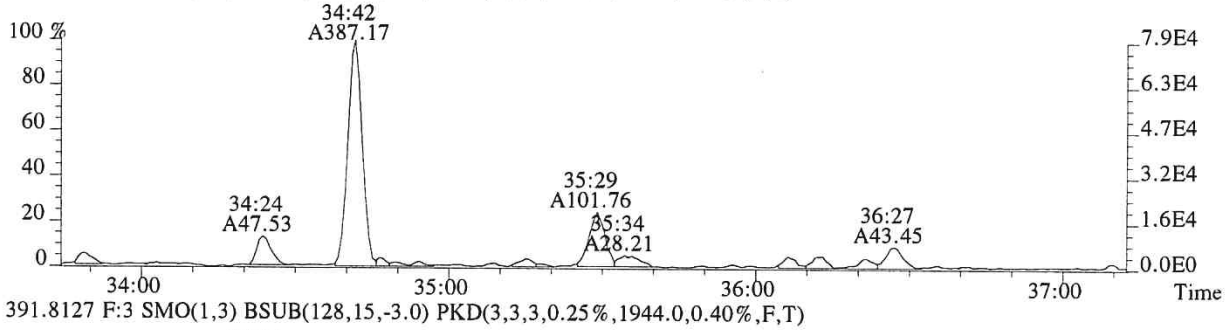


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

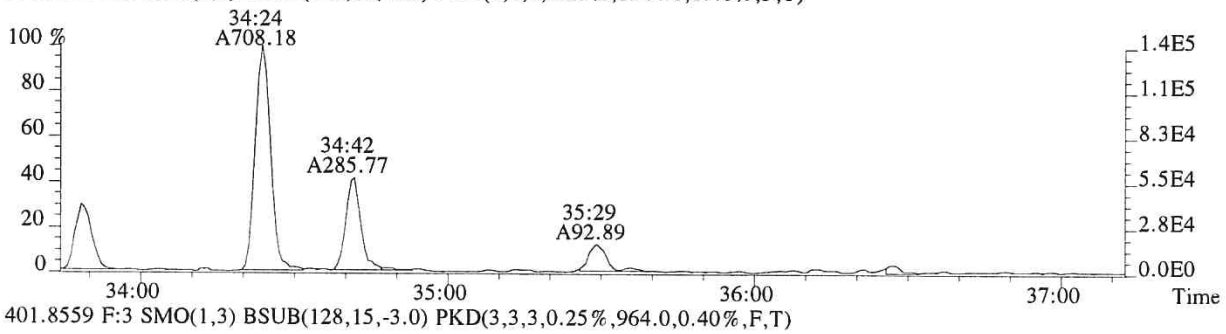


059041

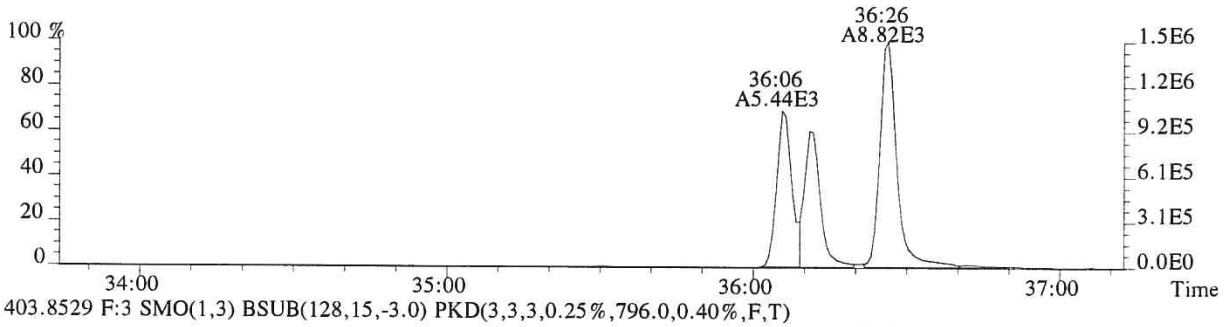
File:P519504 #1-313 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,956.0,0.40%,F,T)



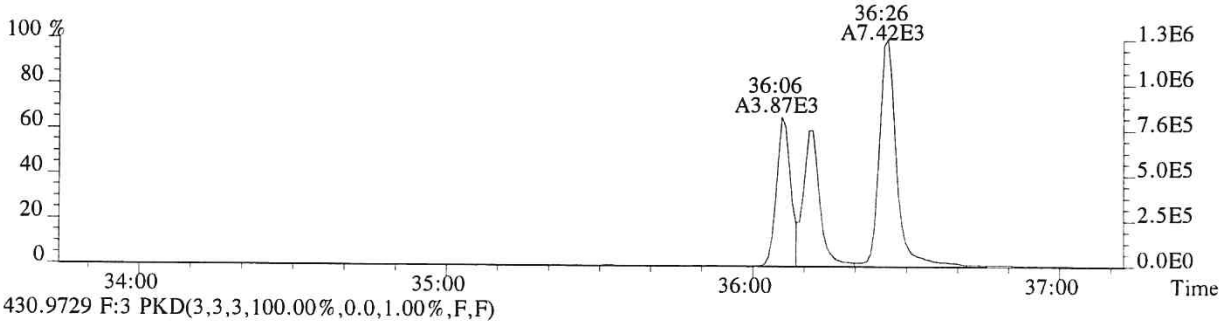
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1944.0,0.40%,F,T)



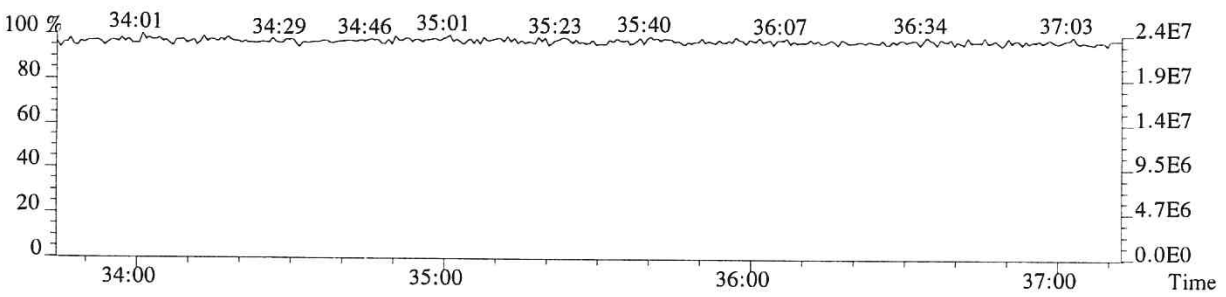
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,964.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,796.0,0.40%,F,T)

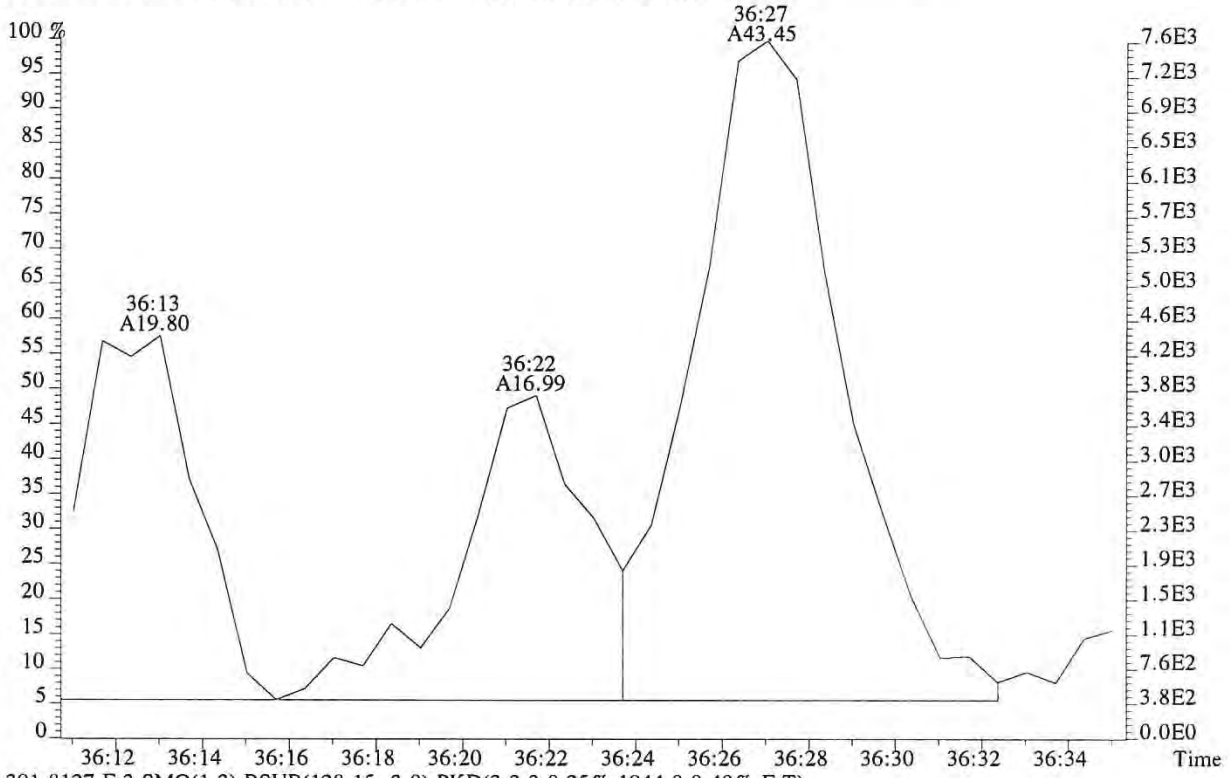


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



059042

File:P519504 #1-313 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:E1801096-010
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,956.0,0.40%,F,T)

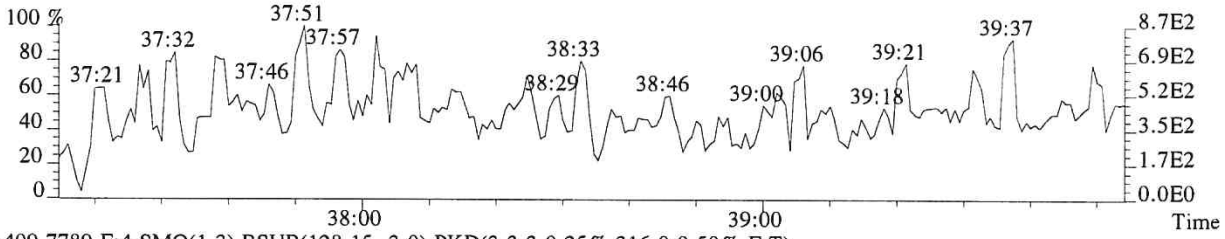


391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1944.0,0.40%,F,T)

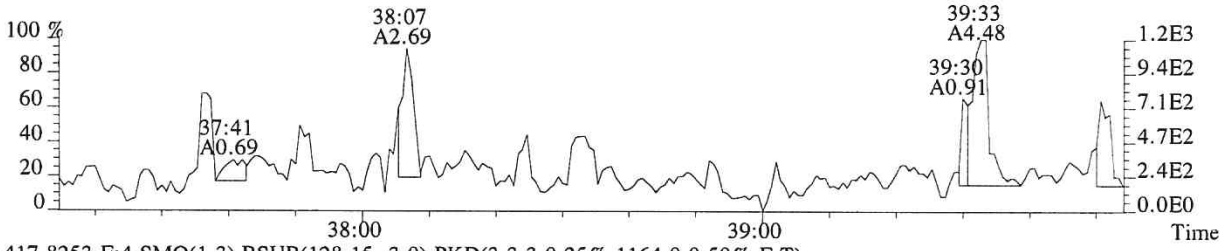


059043

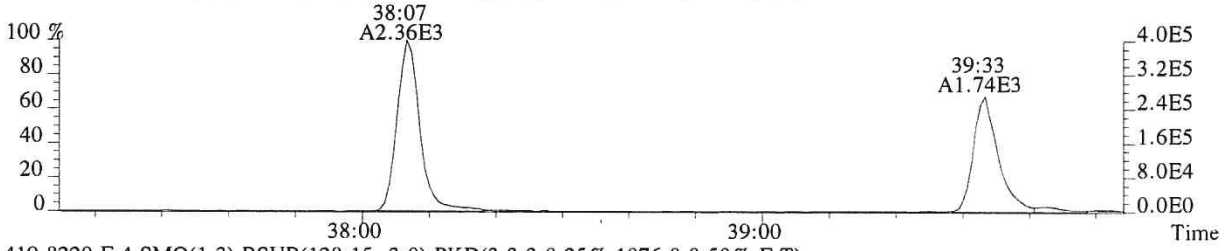
File:P519504 #1-240 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.50%,F,T)



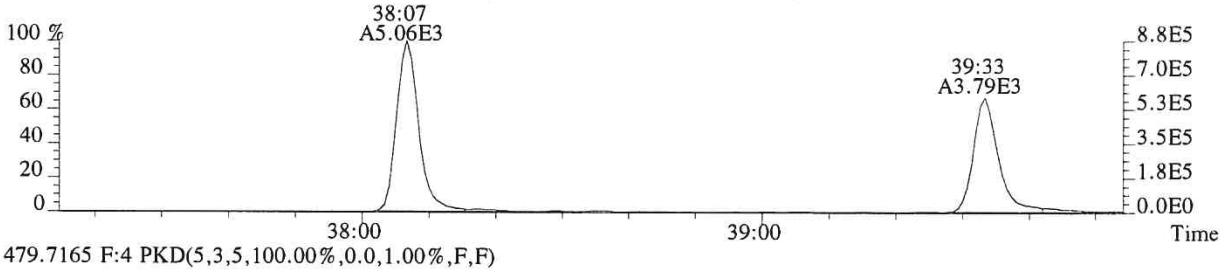
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,316.0,0.50%,F,T)



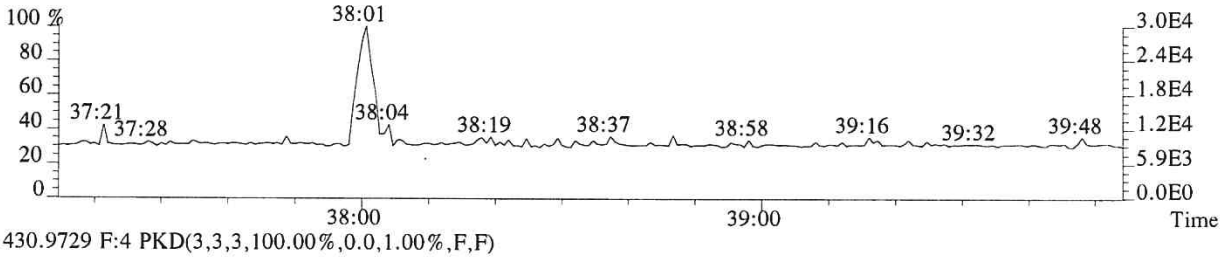
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1164.0,0.50%,F,T)



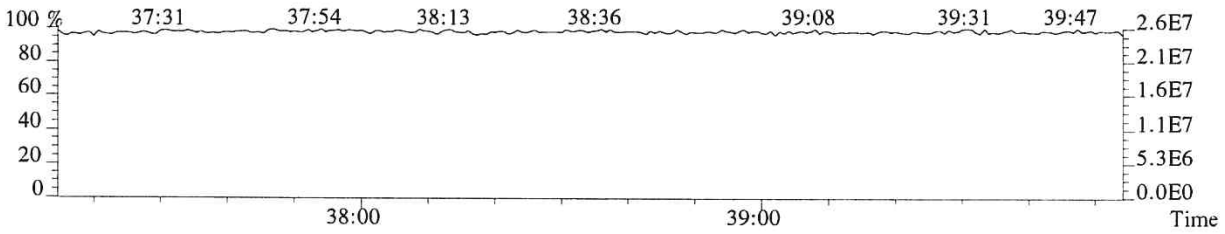
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1076.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

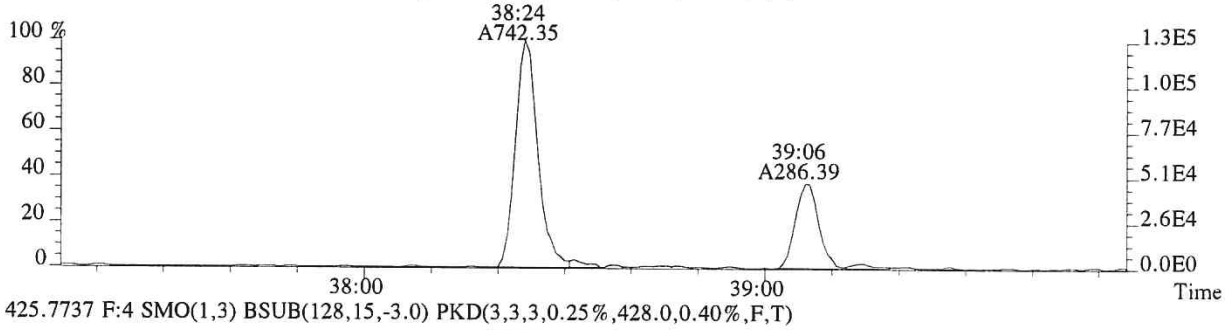


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

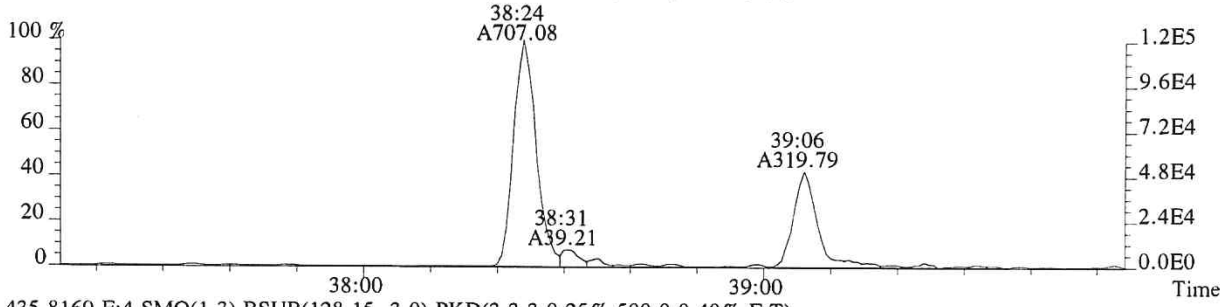


059044

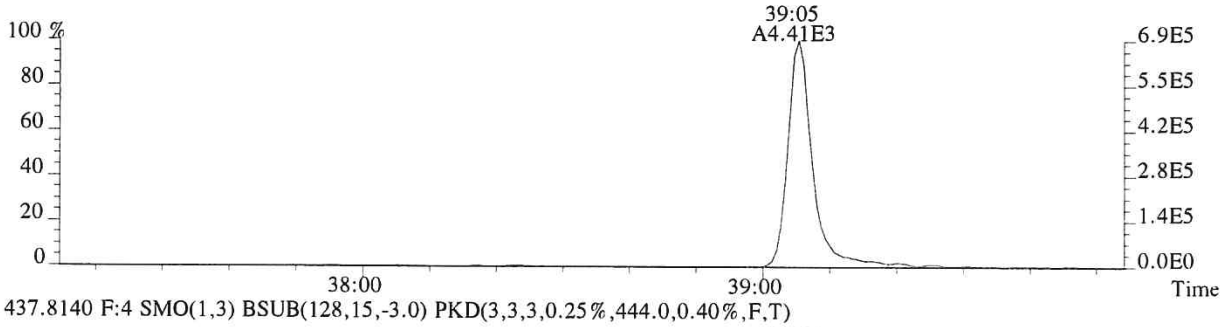
File:P519504 #1-240 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,404.0,0.40%,F,T)



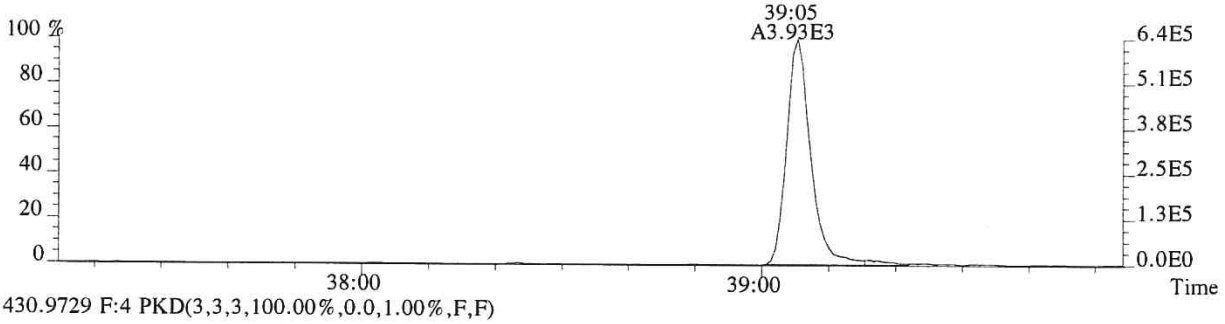
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,428.0,0.40%,F,T)



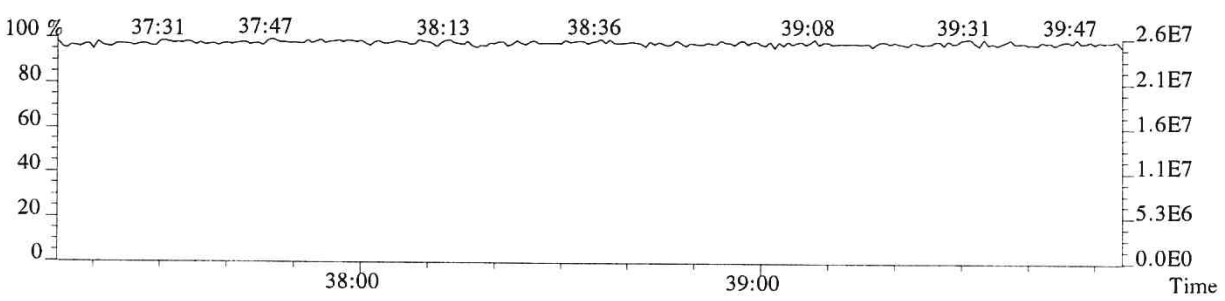
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,500.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,444.0,0.40%,F,T)

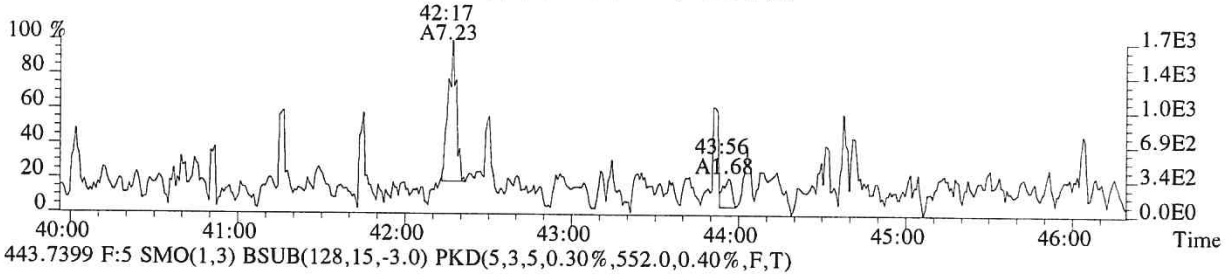


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

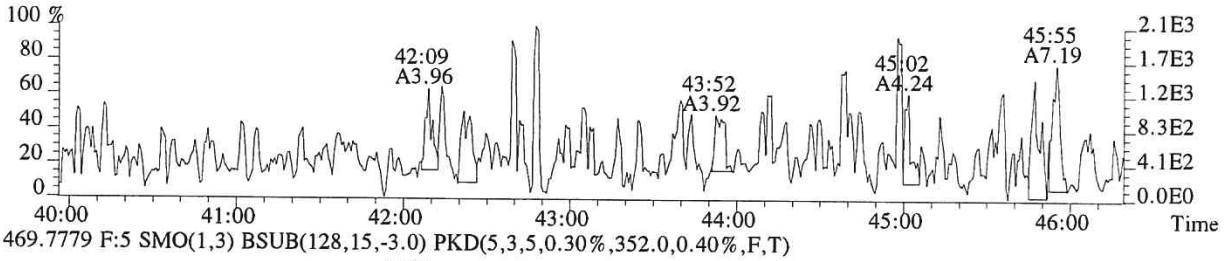


059045

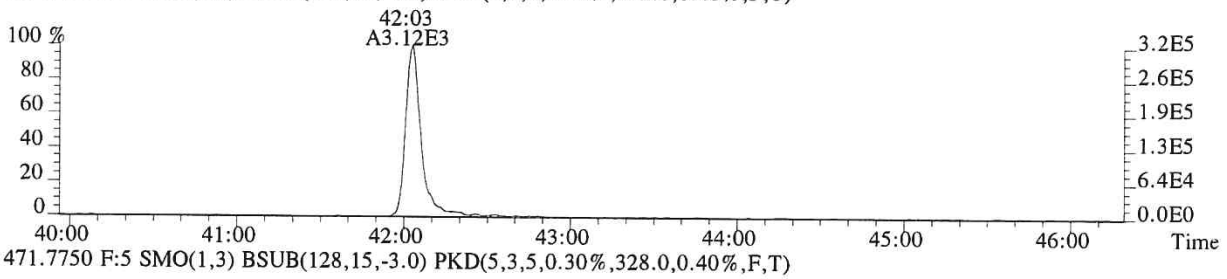
File:P519504 #1-575 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,348.0,0.40%,F,T)



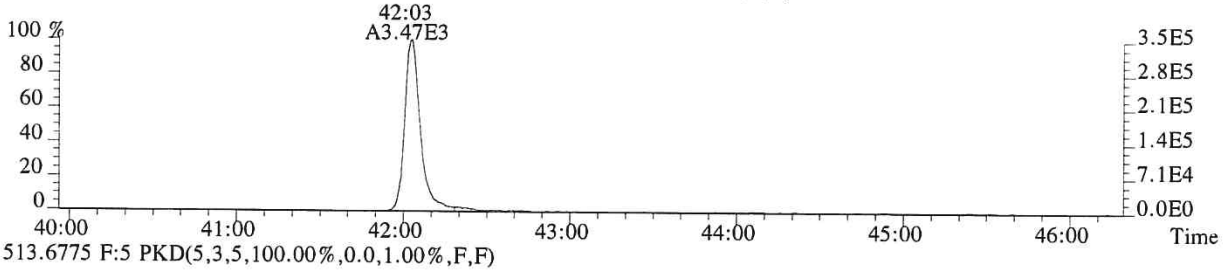
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,552.0,0.40%,F,T)



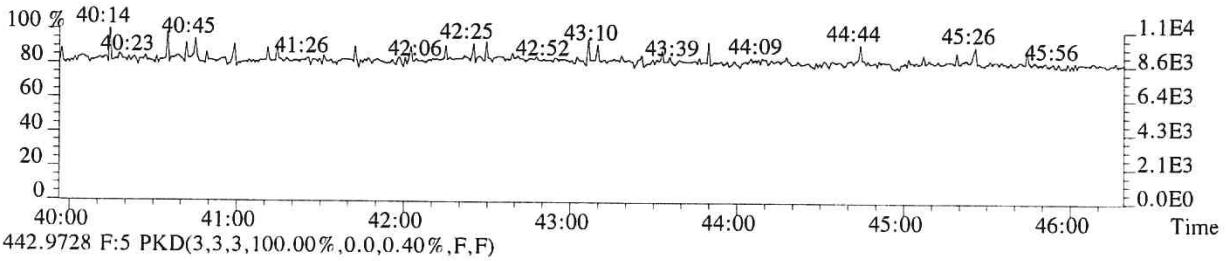
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,352.0,0.40%,F,T)



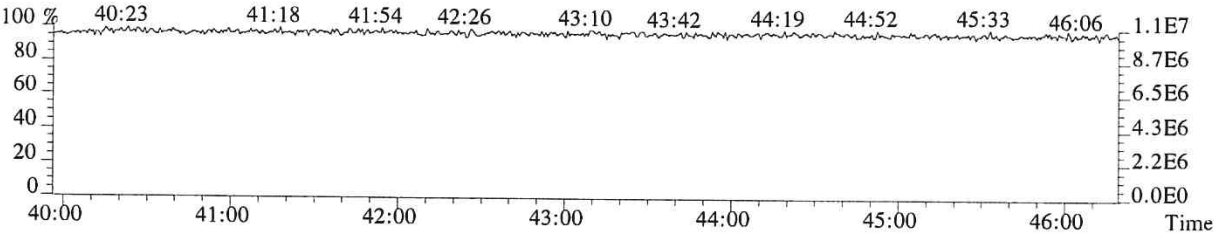
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,328.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

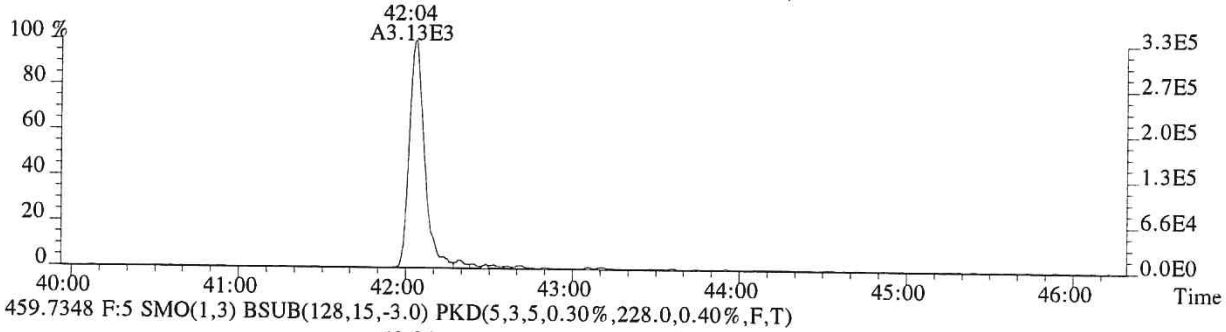


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

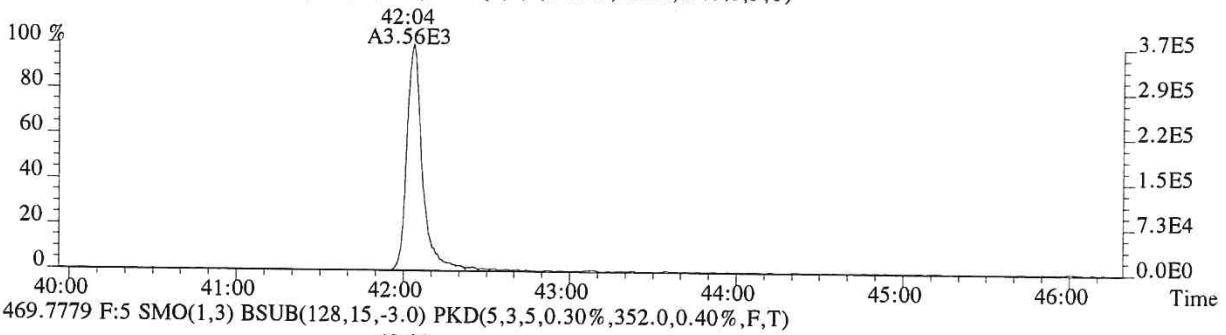


059046

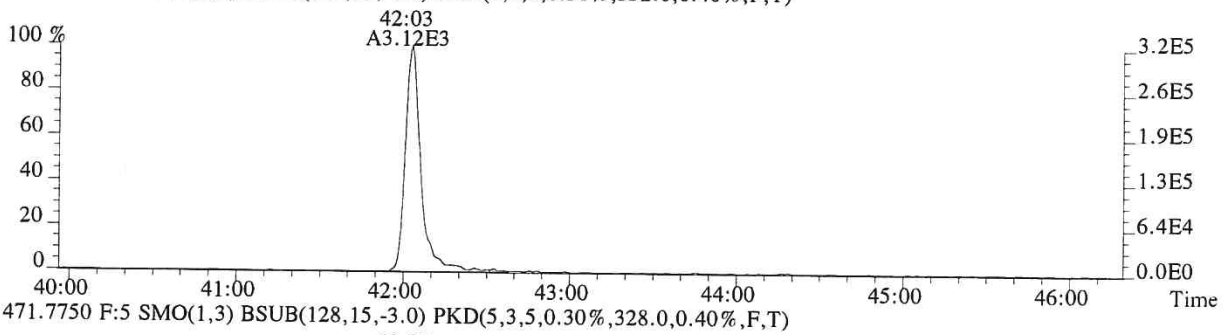
File:P519504 #1-575 Acq:19-DEC-2018 23:43:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-010
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,408.0,0.40%,F,T)



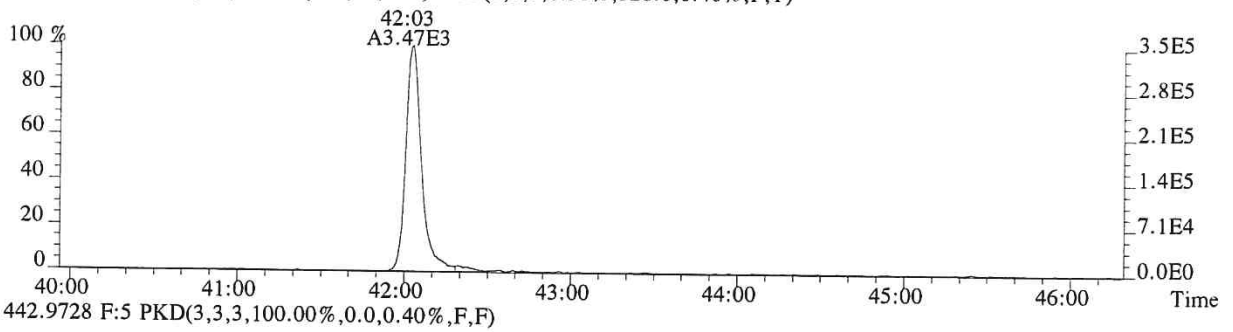
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,228.0,0.40%,F,T)



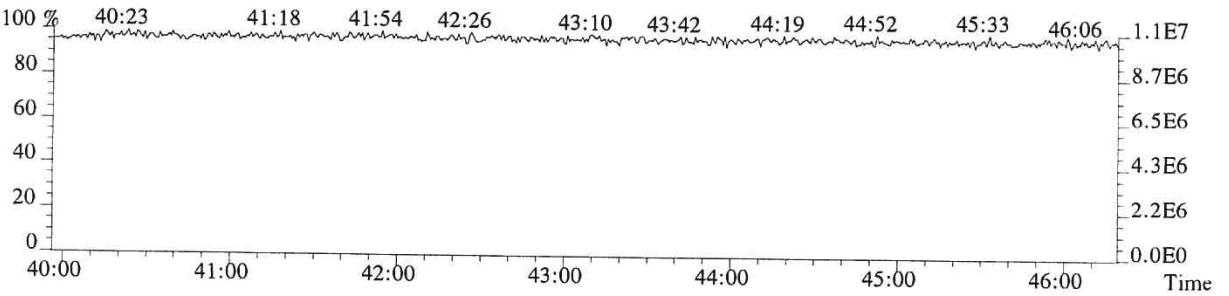
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,352.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,328.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0066

Run #17 Filename P519505 Samp: 1 Inj: 1 Acquired: 20-DEC-18 00:32:08
Processed: 20-DEC-18 11:36:41 Sample ID: E1801096-011

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:51	2.334e+05	3.056e+05	0.76	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:29	1.199e+04	7.704e+03	1.56	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:27	7.822e+03	4.922e+03	1.59	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:18	9.973e+03	7.697e+03	1.30	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:25	2.583e+03	2.008e+03	1.29	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:57	4.242e+02	3.994e+02	1.06	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:46	5.345e+02	4.470e+02	1.20	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:07	1.479e+03	1.513e+03	0.98	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:34	4.150e+02	3.428e+02	1.21	no	no	1.258
10	Unk	OCDF	42:14	4.616e+02	6.075e+02	0.76	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:45	5.675e+04	7.148e+04	0.79	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:46	6.447e+02	4.419e+02	1.46	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:07	1.799e+01	2.322e+01	0.78	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	36:12	1.053e+02	8.779e+01	1.20	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:26	9.557e+01	6.170e+01	1.55	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:06	1.835e+03	1.829e+03	1.00	yes	no	1.025
17	Unk	OCDD	42:04	1.277e+04	1.416e+04	0.90	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:50	1.385e+04	1.740e+04	0.80	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:28	1.726e+04	1.064e+04	1.62	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:26	1.540e+04	9.695e+03	1.59	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:18	4.241e+03	8.128e+03	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:24	5.126e+03	9.589e+03	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:56	4.413e+03	8.280e+03	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:44	3.149e+03	6.183e+03	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:07	1.790e+03	4.363e+03	0.41	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:33	1.382e+03	3.092e+03	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:44	5.985e+03	7.522e+03	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:45	1.103e+04	6.894e+03	1.60	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:06	5.373e+03	4.120e+03	1.30	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	36:11	5.622e+03	4.325e+03	1.30	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:05	3.478e+03	3.265e+03	1.07	yes	no	0.858
32	IS	13C-OCDD	42:03	2.265e+03	2.672e+03	0.85	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	27:06	1.253e+04	1.539e+04	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:26	7.468e+03	5.679e+03	1.32	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:45	9.495e+03				no	1.014

$$\text{OCDD} = \frac{(1.277e+04 + 1.416e+04) \times 4000\ \text{pg} \times 1}{(2.265e+03 + 2.672e+03) \times 10.00\ \text{g} \times 80.9 / 100 \times 1.118} = 2230\ \text{ng/kg}$$

bw 12/21/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0066

Run #17 Filename P519505 Samp: 1 Inj: 1 Acquired: 20-DEC-18 00:32:08
Processed: 20-DEC-18 11:36:41 LAB. ID: E1801096-011

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.59e+07	1.27e+03	2.8e+04	4.70e+07	7.72e+02	6.1e+04
2	1,2,3,7,8-PeCDF	2.10e+06	3.57e+03	5.9e+02	1.35e+06	3.49e+03	3.9e+02
3	2,3,4,7,8-PeCDF	1.23e+06	3.57e+03	3.4e+02	7.81e+05	3.49e+03	2.2e+02
4	1,2,3,4,7,8-HxCDF	2.04e+06	1.53e+03	1.3e+03	1.54e+06	9.52e+02	1.6e+03
5	1,2,3,6,7,8-HxCDF	4.65e+05	1.53e+03	3.0e+02	3.81e+05	9.52e+02	4.0e+02
6	2,3,4,6,7,8-HxCDF	8.38e+04	1.53e+03	5.5e+01	7.50e+04	9.52e+02	7.9e+01
7	1,2,3,7,8,9-HxCDF	9.86e+04	1.53e+03	6.4e+01	8.07e+04	9.52e+02	8.5e+01
8	1,2,3,4,6,7,8-HpCDF	2.58e+05	4.24e+02	6.1e+02	2.72e+05	3.28e+02	8.3e+02
9	1,2,3,4,7,8,9-HpCDF	6.69e+04	4.24e+02	1.6e+02	5.34e+04	3.28e+02	1.6e+02
10	OCDF	5.10e+04	3.92e+02	1.3e+02	6.45e+04	5.08e+02	1.3e+02
11	2,3,7,8-TCDD	1.01e+07	1.57e+03	6.4e+03	1.26e+07	9.64e+02	1.3e+04
12	1,2,3,7,8-PeCDD	1.04e+05	1.05e+03	9.9e+01	6.76e+04	8.36e+02	8.1e+01
13	1,2,3,4,7,8-HxCDD	4.45e+03	7.04e+02	6.3e+00	5.45e+03	1.11e+03	4.9e+00
14	1,2,3,6,7,8-HxCDD	1.60e+04	7.04e+02	2.3e+01	1.42e+04	1.11e+03	1.3e+01
15	1,2,3,7,8,9-HxCDD	1.76e+04	7.04e+02	2.5e+01	1.29e+04	1.11e+03	1.2e+01
16	1,2,3,4,6,7,8-HpCDD	3.12e+05	4.80e+02	6.5e+02	2.95e+05	7.60e+02	3.9e+02
17	OCDD	1.33e+06	3.32e+02	4.0e+03	1.49e+06	3.48e+02	4.3e+03
18	13C-2,3,7,8-TCDF	2.34e+06	7.50e+03	3.1e+02	2.96e+06	3.40e+03	8.7e+02
19	13C-1,2,3,7,8-PeCDF	3.12e+06	1.27e+03	2.5e+03	1.90e+06	1.26e+03	1.5e+03
20	13C-2,3,4,7,8-PeCDF	2.90e+06	1.27e+03	2.3e+03	1.88e+06	1.26e+03	1.5e+03
21	13C-1,2,3,4,7,8-HxCDF	8.68e+05	6.60e+02	1.3e+03	1.67e+06	8.20e+02	2.0e+03
22	13C-1,2,3,6,7,8-HxCDF	9.38e+05	6.60e+02	1.4e+03	1.85e+06	8.20e+02	2.3e+03
23	13C-2,3,4,6,7,8-HxCDF	8.85e+05	6.60e+02	1.3e+03	1.67e+06	8.20e+02	2.0e+03
24	13C-1,2,3,7,8,9-HxCDF	5.79e+05	6.60e+02	8.8e+02	1.14e+06	8.20e+02	1.4e+03
25	13C-1,2,3,4,6,7,8-HpCDF	3.30e+05	1.22e+03	2.7e+02	7.76e+05	9.64e+02	8.1e+02
26	13C-1,2,3,4,7,8,9-HpCDF	2.05e+05	1.22e+03	1.7e+02	4.71e+05	9.64e+02	4.9e+02
27	13C-2,3,7,8-TCDD	1.06e+06	3.44e+03	3.1e+02	1.30e+06	1.47e+03	8.9e+02
28	13C-1,2,3,7,8-PeCDD	2.06e+06	6.84e+02	3.0e+03	1.32e+06	8.76e+02	1.5e+03
29	13C-1,2,3,4,7,8-HxCDD	1.16e+06	7.72e+02	1.5e+03	8.72e+05	1.16e+03	7.5e+02
30	13C-1,2,3,6,7,8-HxCDD	1.01e+06	7.72e+02	1.3e+03	7.89e+05	1.16e+03	6.8e+02
31	13C-1,2,3,4,6,7,8-HpCDD	5.51e+05	3.96e+02	1.4e+03	5.29e+05	2.76e+02	1.9e+03
32	13C-OCDD	2.48e+05	3.32e+02	7.5e+02	2.77e+05	3.12e+02	8.9e+02
33	13C-1,2,3,4-TCDD	2.07e+06	3.44e+03	6.0e+02	2.62e+06	1.47e+03	1.8e+03
34	13C-1,2,3,7,8,9-HxCDD	1.34e+06	7.72e+02	1.7e+03	1.05e+06	1.16e+03	9.0e+02
35	37Cl-2,3,7,8-TCDD	1.66e+06	9.40e+02	1.8e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.572e{+}03 + 9.640e{+}02) \times 2000}{(1.062e{+}06 + 1.304e{+}06) \times (\quad) \times 1.085} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0066

Entry: 36 Totals Name: Total Tetra-Furans

Run: 17 File: P519505 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 00:32:08 Processed: 20-DEC-18 11:36:41

Mass: 303.9020 305.8990 Tot Response: 9.56e+05 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:40	1.98e+03	2.68e+03	0.74	yes	4.66e+03		n	n
2	23:57	1.10e+04	1.47e+04	0.75	yes	2.57e+04		n	n
3	24:20	2.90e+03	4.28e+03	0.68	yes	7.18e+03		n	n
4	24:38	8.51e+03	1.15e+04	0.74	yes	2.01e+04		n	n
5	25:02	1.50e+03	2.17e+03	0.69	yes	3.67e+03		n	n
6	25:25	1.06e+04	1.38e+04	0.77	yes	2.44e+04		n	n
7	25:56	1.03e+05	1.34e+05	0.77	yes	2.37e+05		n	n
8	26:13	4.71e+03	5.95e+03	0.79	yes	1.07e+04		n	n
9	26:51	2.33e+05	3.06e+05	0.76	yes	5.39e+05	2,3,7,8-TCDF	n	n
10	27:14	1.71e+04	2.25e+04	0.76	yes	3.96e+04		n	n
11	27:30	2.60e+03	3.43e+03	0.76	yes	6.03e+03		n	n
12	28:52	1.63e+04	2.13e+04	0.76	yes	3.77e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0066

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 17 File: P519505 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 00:32:08 Processed: 20-DEC-18 11:36:41

Mass: 319.8970 321.8940 Tot Response: 1.43e+05 RRF: 1.085

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:02	1.11e+02	1.44e+02	0.78	yes	2.55e+02		n	n
2	27:27	8.31e+02	1.05e+03	0.79	yes	1.88e+03		n	n
3	27:45	5.67e+04	7.15e+04	0.79	yes	1.28e+05	2,3,7,8-TCDD	n	n
4	28:04	5.69e+03	6.88e+03	0.83	yes	1.26e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0066

Entry: 38 Totals Name: Total Penta-Furans1

Run: 17 File: P519505 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 00:32:08 Processed: 20-DEC-18 11:36:41

Mass: 339.8600 341.8570 Tot Response: 1.05e+03 RRF: 0.9857

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:54	6.41e+02	4.04e+02	1.59	yes	1.05e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0066

Entry: 39 Totals Name: Total Penta-Furans2

Run: 17 File: P519505 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 00:32:08 Processed: 20-DEC-18 11:36:41

Mass: 339.8600 341.8570 Tot Response: 5.12e+04 RRF: 0.9857

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:29	5.92e+03	3.68e+03	1.61	yes	9.60e+03		n	n
2	31:04	2.52e+02	1.61e+02	1.57	yes	4.13e+02		n	n
3	31:09	1.84e+02	1.16e+02	1.59	yes	3.00e+02		n	n
4	31:18	1.13e+03	7.12e+02	1.59	yes	1.84e+03		n	n
5	31:29	1.20e+04	7.70e+03	1.56	yes	1.97e+04	1,2,3,7,8-PeCDF	n	n
6	31:45	3.58e+03	2.28e+03	1.57	yes	5.86e+03		n	n
7	32:21	1.30e+02	7.49e+01	1.74	yes	2.05e+02		n	n
8	32:27	7.82e+03	4.92e+03	1.59	yes	1.27e+04	2,3,4,7,8-PeCDF	n	n
9	33:24	3.60e+02	2.28e+02	1.58	yes	5.88e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0066

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 17 File: P519505 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 00:32:08 Processed: 20-DEC-18 11:36:41

Mass: 355.8550 357.8520 Tot Response: 1.73e+03 RRF: 0.9565

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:33	1.27e+02	8.35e+01	1.52	yes	2.10e+02		n	n
2	31:01	1.91e+02	1.30e+02	1.47	yes	3.21e+02		n	n
3	31:31	7.30e+01	4.36e+01	1.68	yes	1.17e+02		n	n
4	32:46	6.45e+02	4.42e+02	1.46	yes	1.09e+03	1,2,3,7,8-PeCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0066

Entry: 41 Totals Name: Total Hexa-Furans

Run: 17 File: P519505 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 00:32:08 Processed: 20-DEC-18 11:36:41

Mass: 373.8210 375.8180 Tot Response: 2.76e+04 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:18	1.28e+03	1.12e+03	1.14	yes	2.40e+03		n	n
2	34:51	6.29e+02	5.47e+02	1.15	yes	1.18e+03		n	n
3	35:18	9.97e+03	7.70e+03	1.30	yes	1.77e+04	1,2,3,4,7,8-HxCDF	n	n
4	35:25	2.58e+03	2.01e+03	1.29	yes	4.59e+03	1,2,3,6,7,8-HxCDF	n	n
5	35:57	4.24e+02	3.99e+02	1.06	yes	8.24e+02	2,3,4,6,7,8-HxCDF	n	n
6	36:46	5.34e+02	4.47e+02	1.20	yes	9.81e+02	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0066

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 17 File: P519505 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 00:32:08 Processed: 20-DEC-18 11:36:41

Mass: 389.8160 391.8130 Tot Response: 2.88e+03 RRF: 1.047

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:42	9.89e+02	7.49e+02	1.32	yes	1.74e+03		n	n
2	34:50	1.41e+01	1.05e+01	1.35	yes	2.45e+01		n	n
3	35:14	5.78e+01	5.04e+01	1.15	yes	1.08e+02		n	n
4	35:30	4.16e+02	3.11e+02	1.34	yes	7.27e+02		n	n
5	35:35	4.98e+01	4.34e+01	1.15	yes	9.31e+01		n	n
6	36:12	1.05e+02	8.78e+01	1.20	yes	1.93e+02	1,2,3,6,7,8-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0066

Entry: 43 Totals Name: Total Hepta-Furans

Run: 17 File: P519505 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 00:32:08 Processed: 20-DEC-18 11:36:41

Mass: 407.7820 409.7790 Tot Response: 4.53e+03 RRF: 1.308

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:07	1.48e+03	1.51e+03	0.98	yes	2.99e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	38:33	7.79e+02	7.57e+02	1.03	yes	1.54e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0066

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 17 File: P519505 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 00:32:08 Processed: 20-DEC-18 11:36:41

Mass: 423.7770 425.7740 Tot Response: 9.07e+03 RRF: 1.025

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
							n	n
1	38:24	2.82e+03	2.59e+03 1.09	yes	5.41e+03			
2	39:06	1.84e+03	1.83e+03 1.00	yes	3.66e+03	1,2,3,4,6,7,8-HpCDD	n	n

ALS ENVIRONMENTAL
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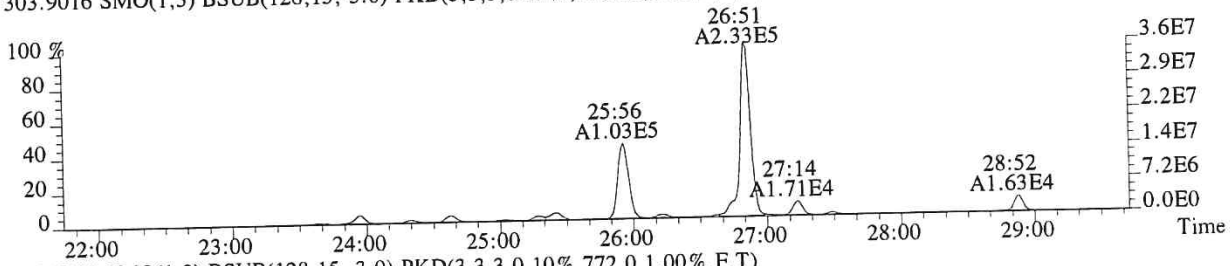
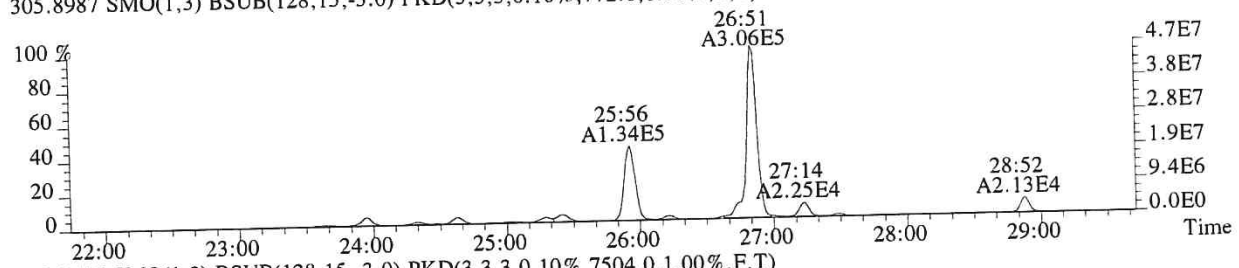
File:P519505 #1-566 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011

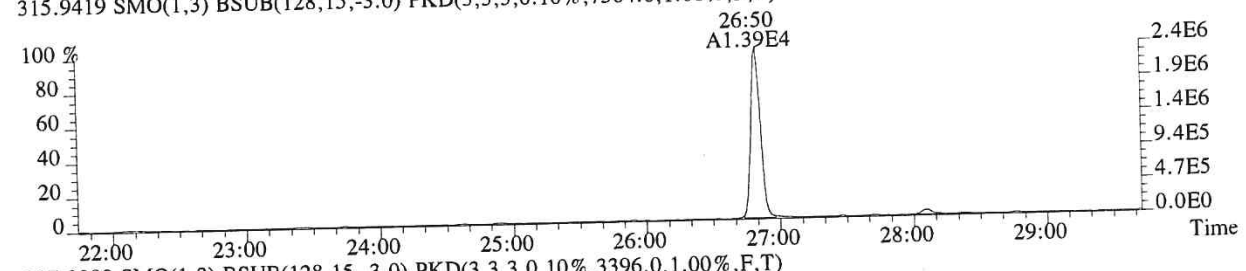
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1268.0,1.00%,F,T)



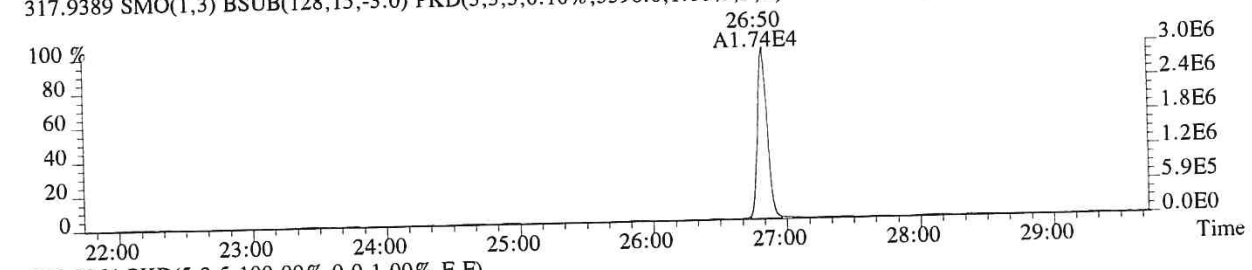
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,772.0,1.00%,F,T)



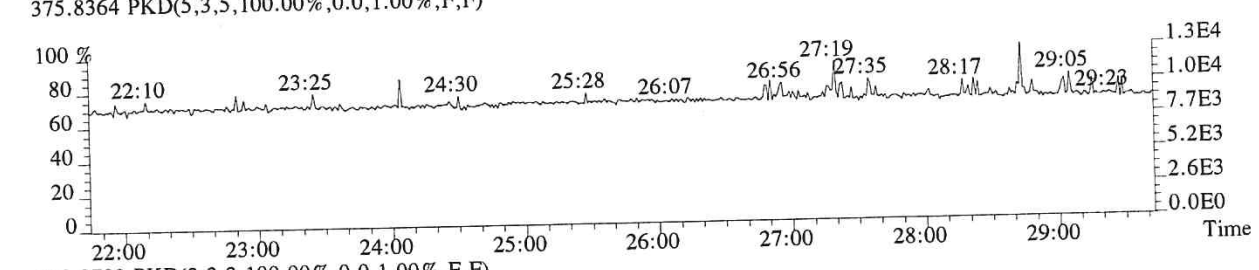
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7504.0,1.00%,F,T)



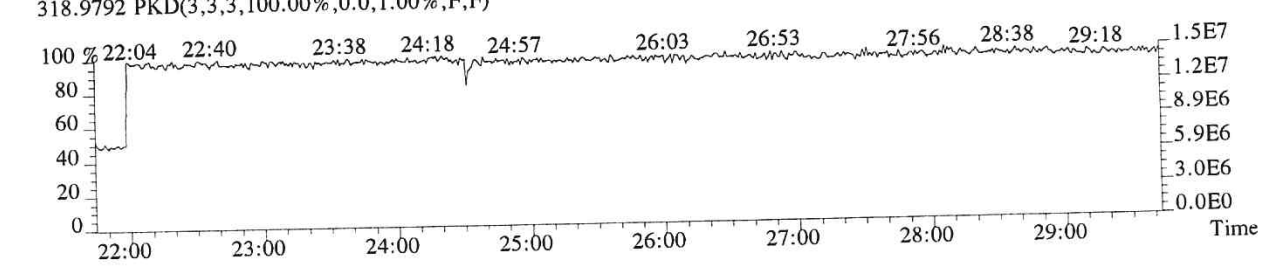
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3396.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

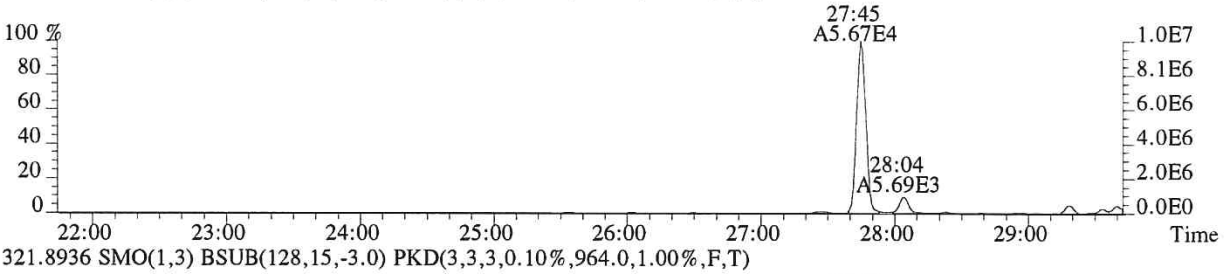


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

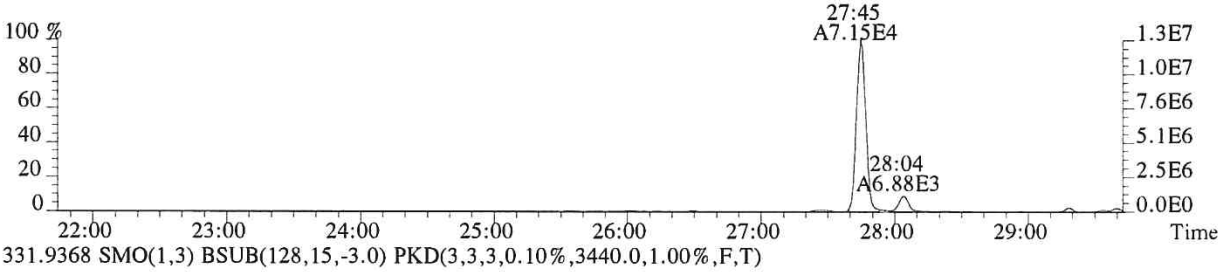


059059

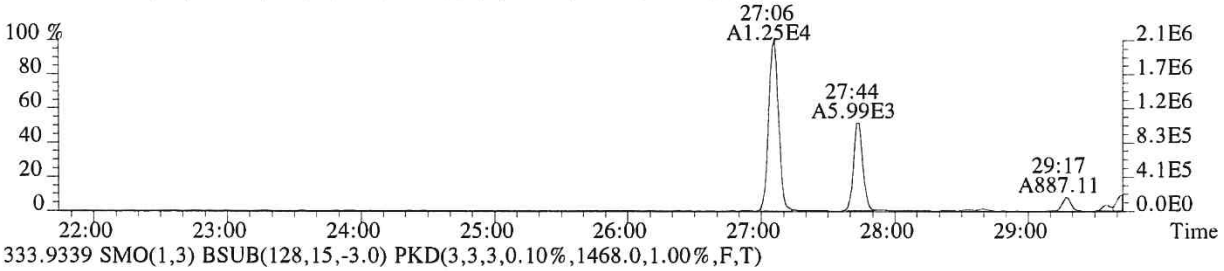
File:P519505 #1-566 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1572.0,1.00%,F,T)



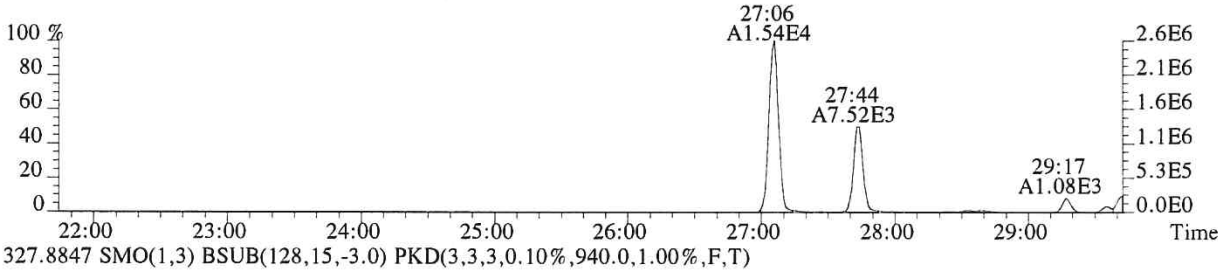
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,964.0,1.00%,F,T)



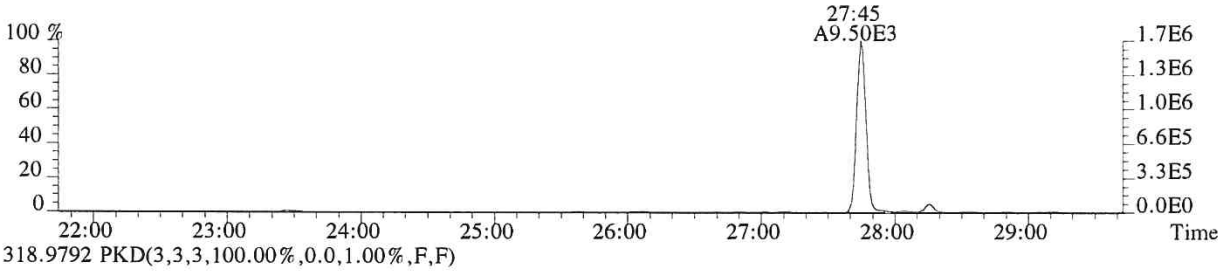
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3440.0,1.00%,F,T)



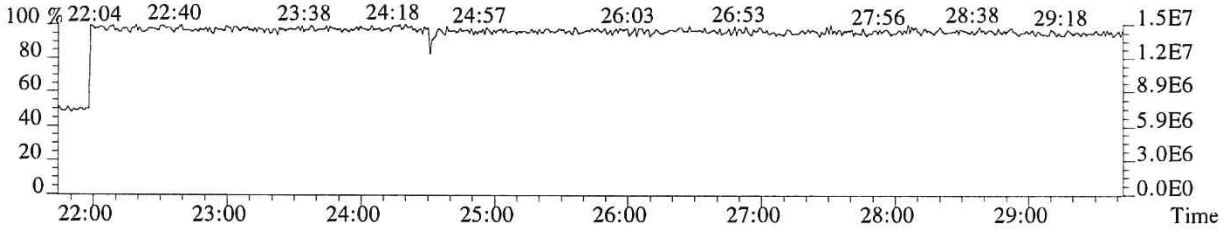
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1468.0,1.00%,F,T)



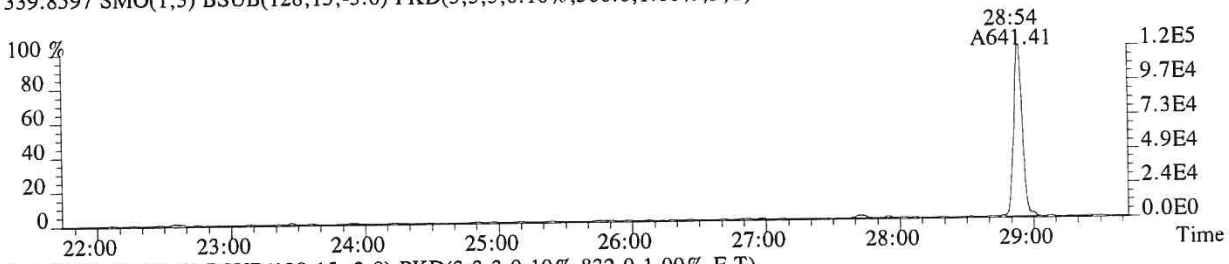
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,940.0,1.00%,F,T)



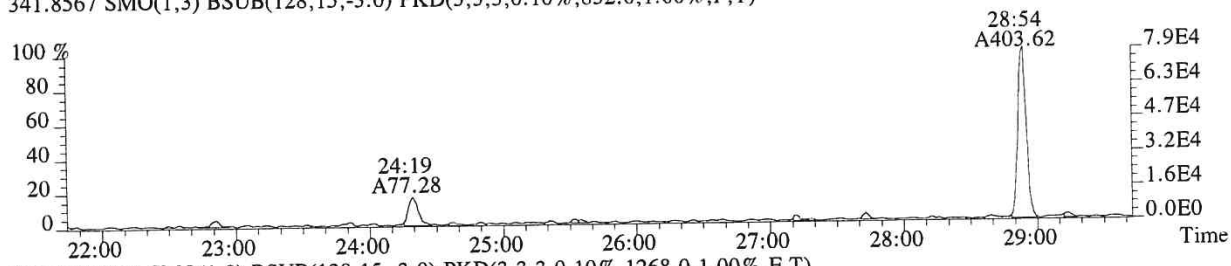
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



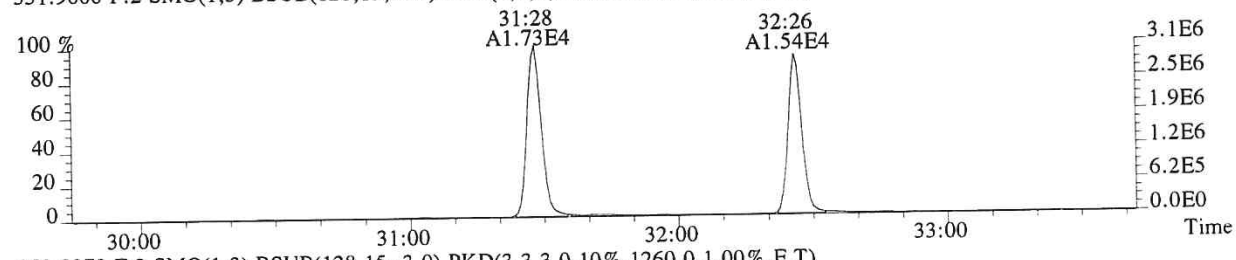
File:P519505 #1-566 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,500.0,1.00%,F,T)



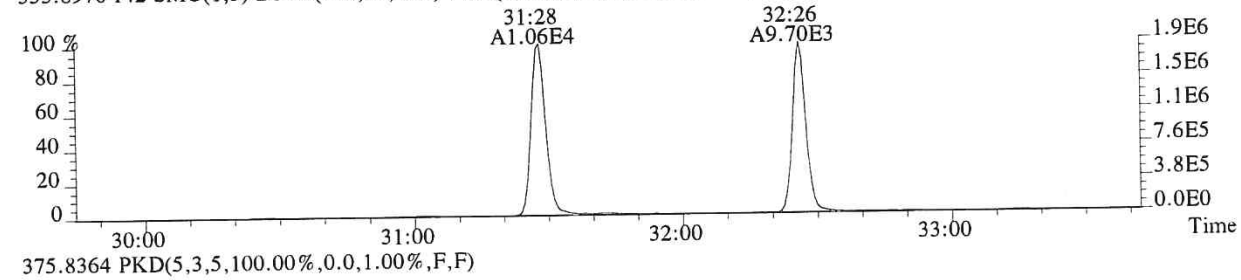
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,832.0,1.00%,F,T)



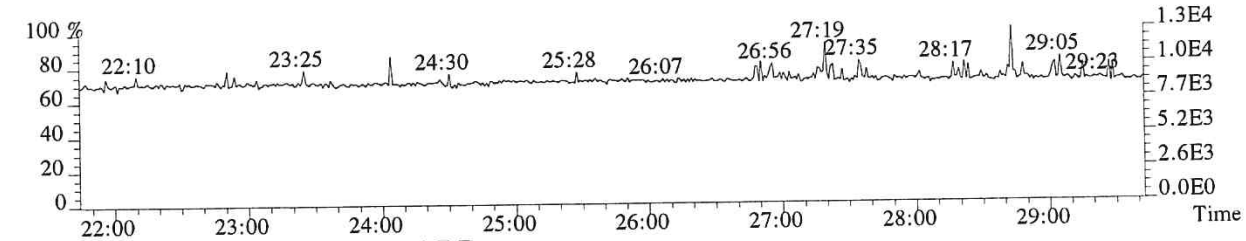
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1268.0,1.00%,F,T)



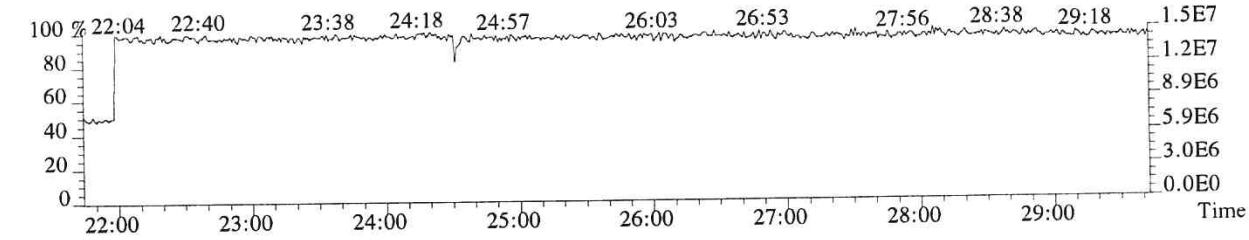
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1260.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



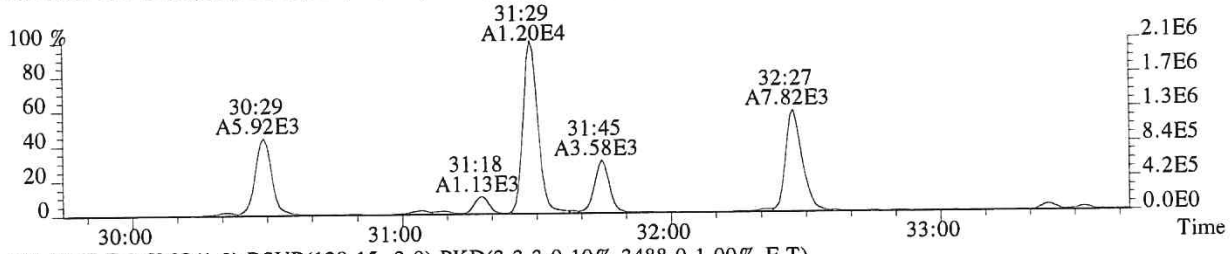
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



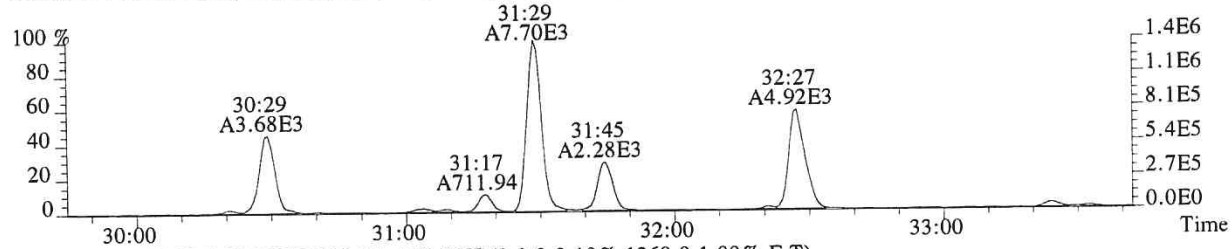
059061

File:P519505 #1-357 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011

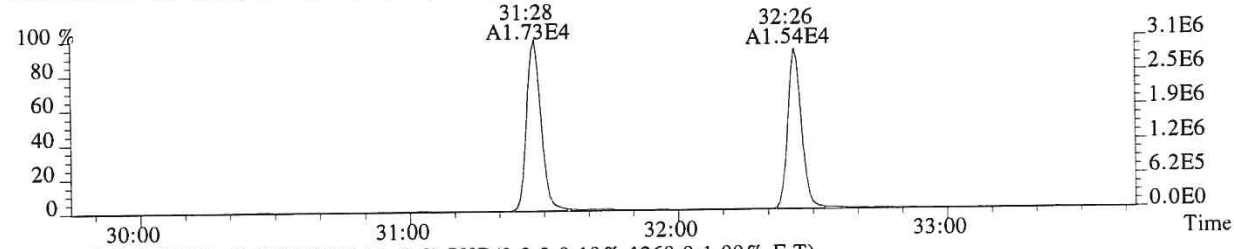
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3572.0,1.00%,F,T)



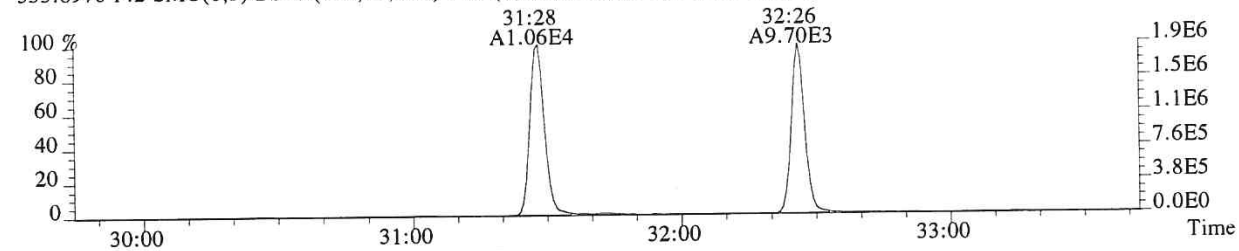
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3488.0,1.00%,F,T)



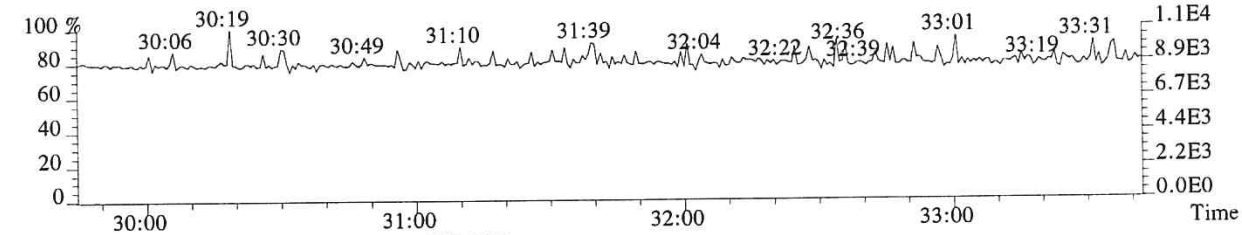
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1268.0,1.00%,F,T)



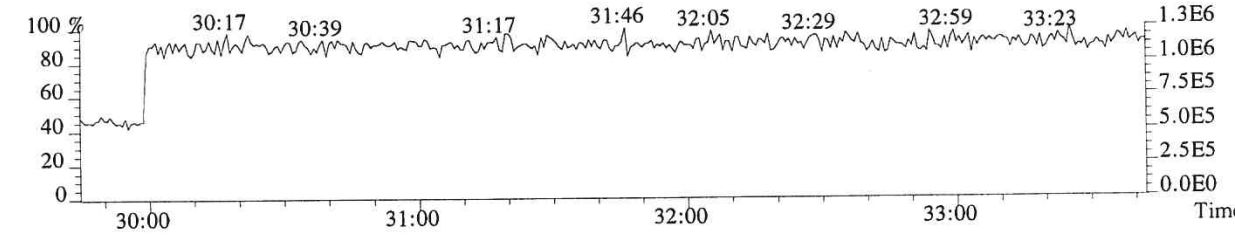
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1260.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

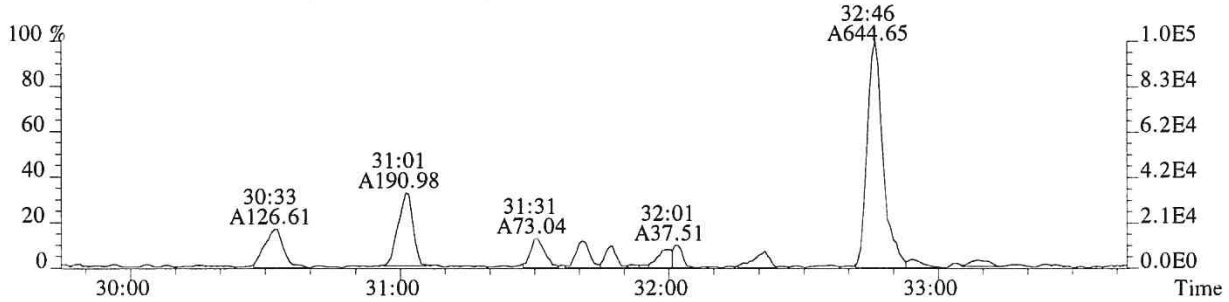


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

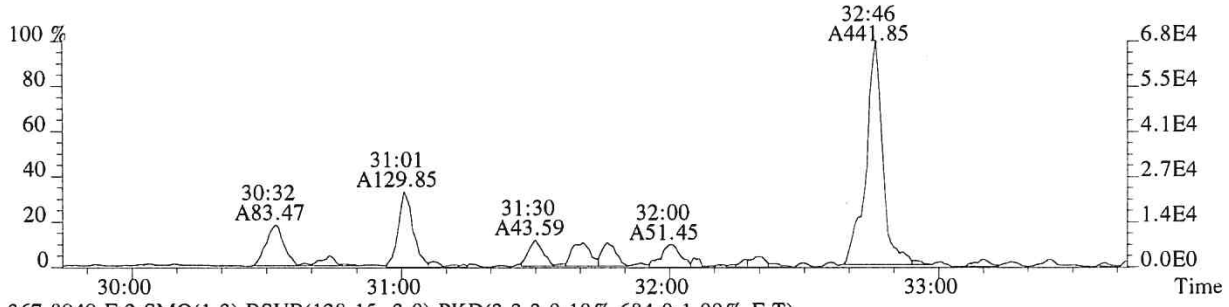


059062

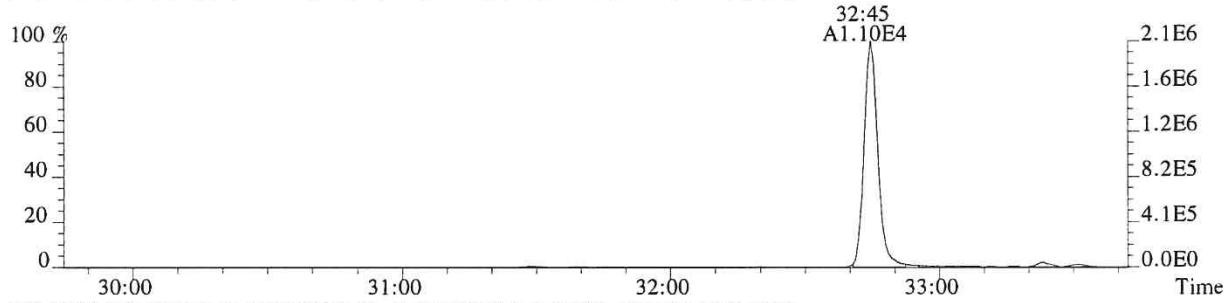
File:P519505 #1-357 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1052.0,1.00%,F,T)



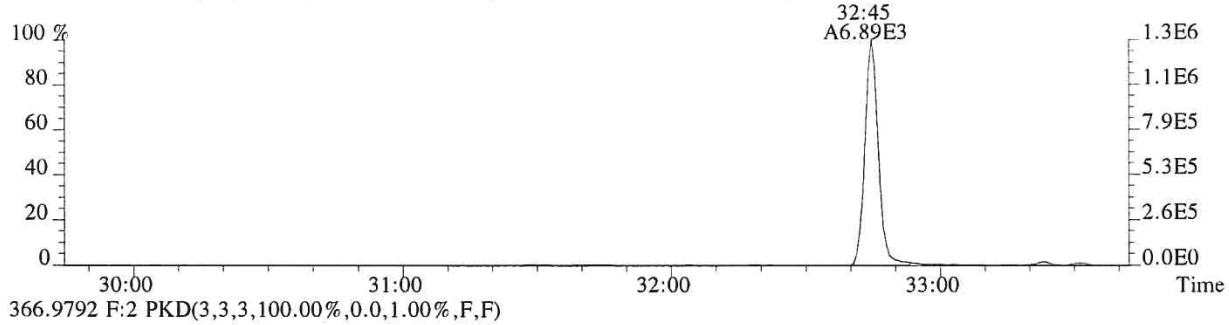
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,836.0,1.00%,F,T)



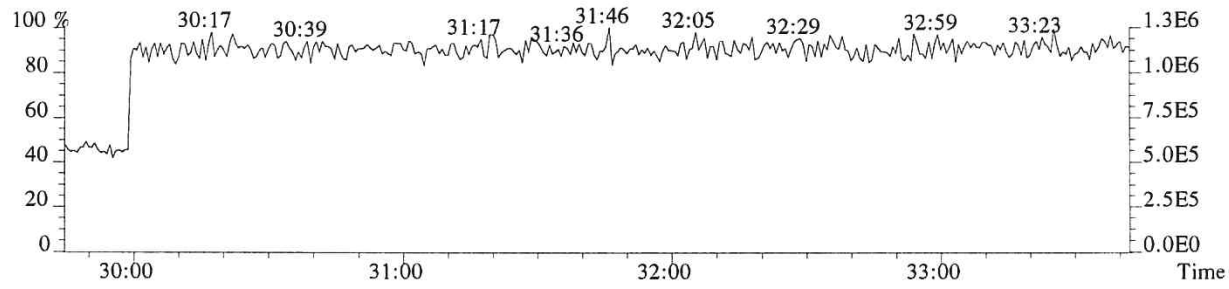
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,876.0,1.00%,F,T)

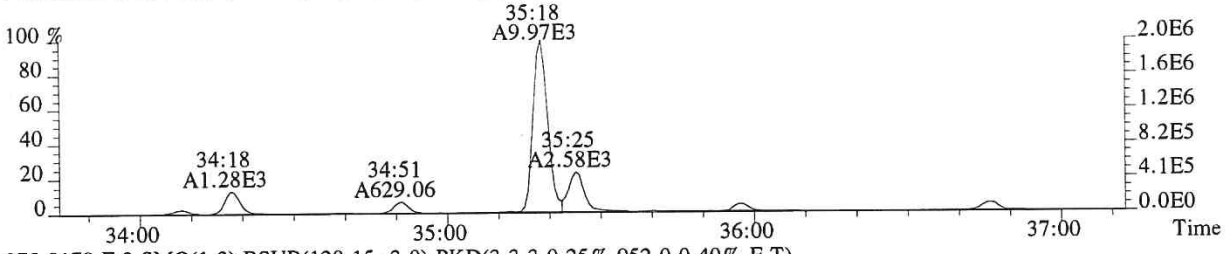


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

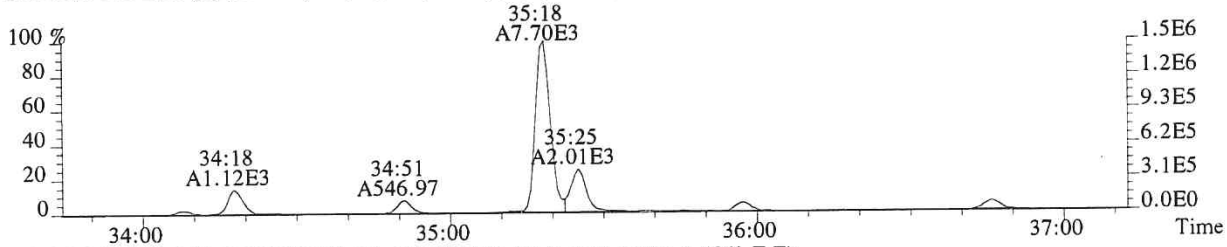


059063

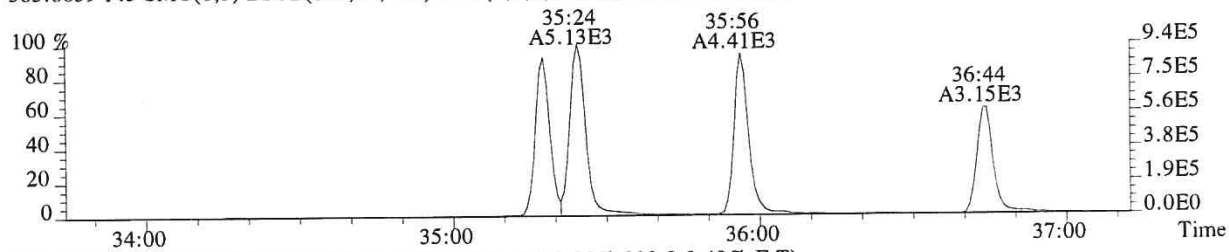
File:P519505 #1-313 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1532.0,0.40%,F,T)



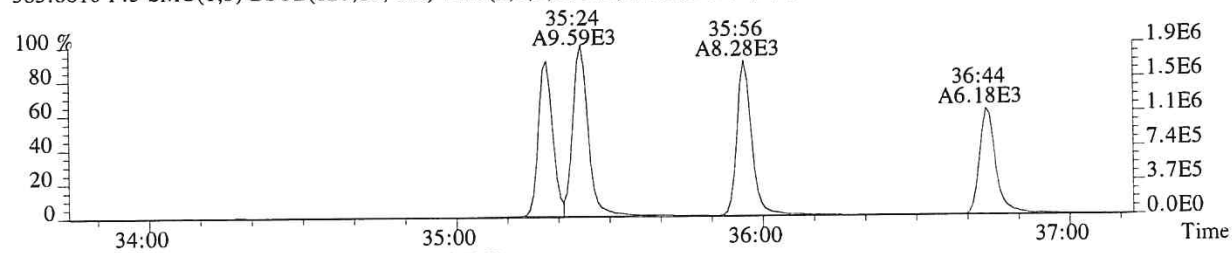
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,952.0,0.40%,F,T)



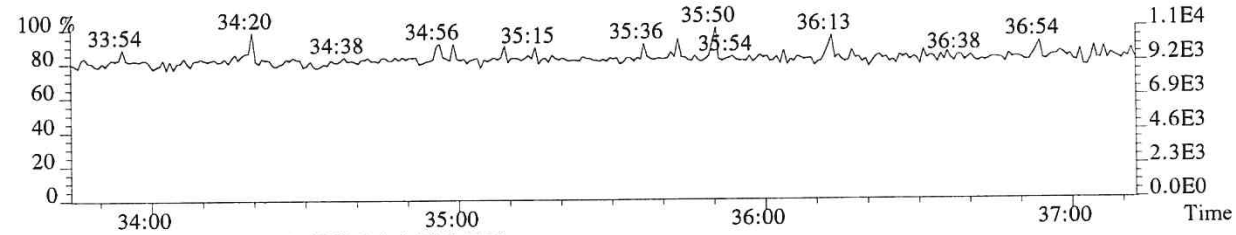
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,660.0,0.40%,F,T)



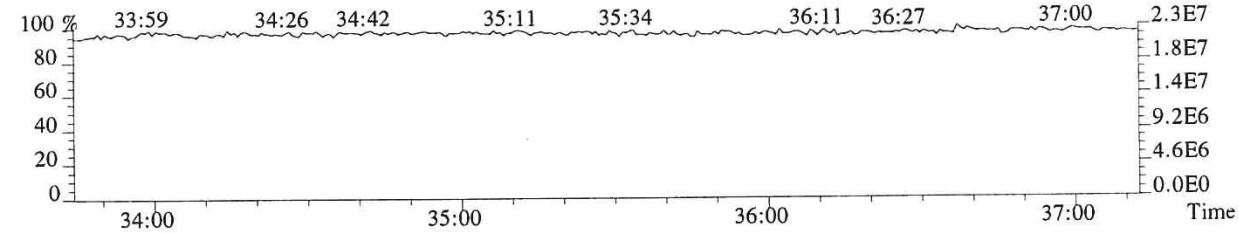
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,820.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

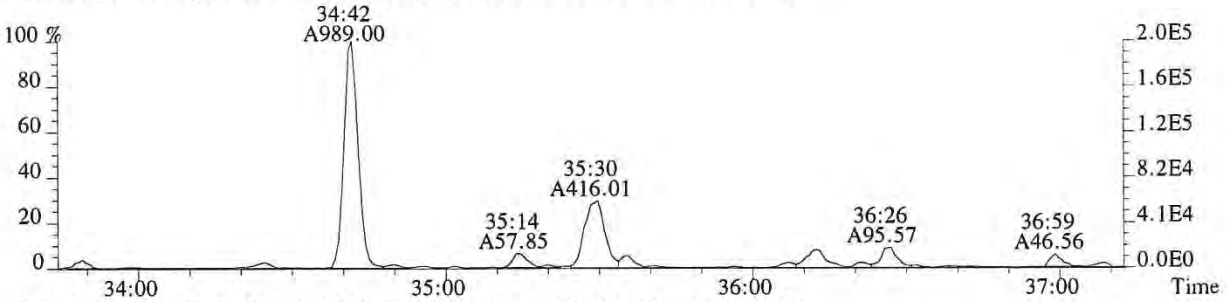


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

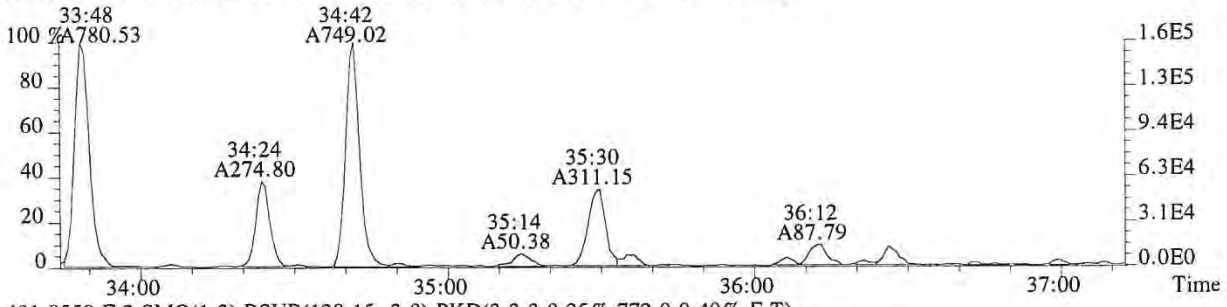


059064

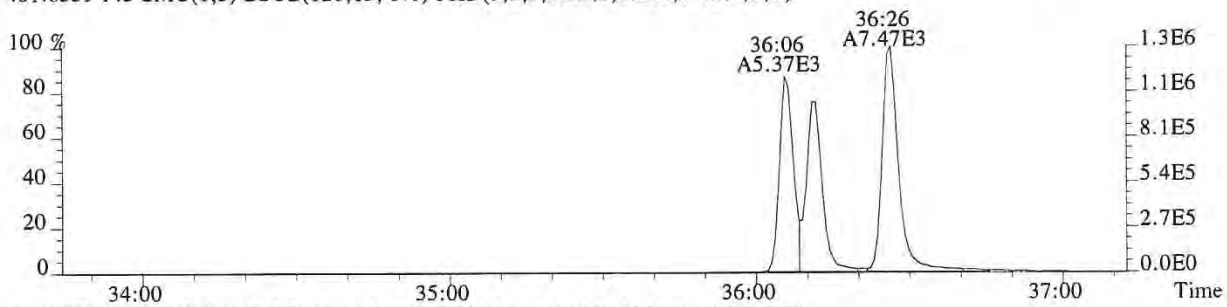
File:P519505 #1-313 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,704.0,0.40%,F,T)



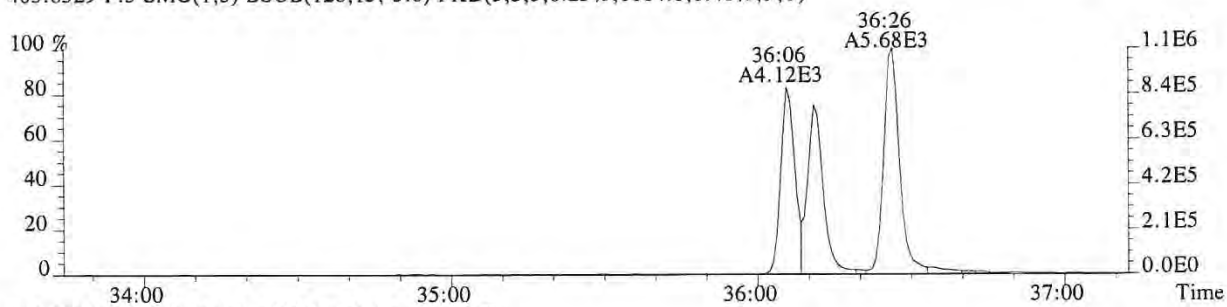
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1112.0,0.40%,F,T)



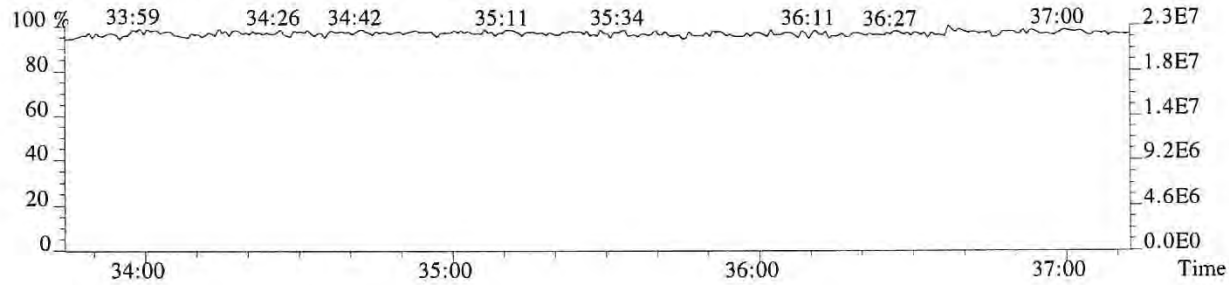
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,772.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1164.0,0.40%,F,T)



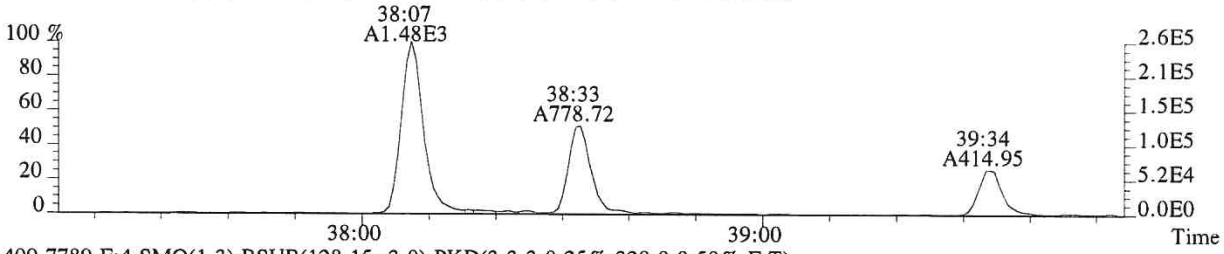
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



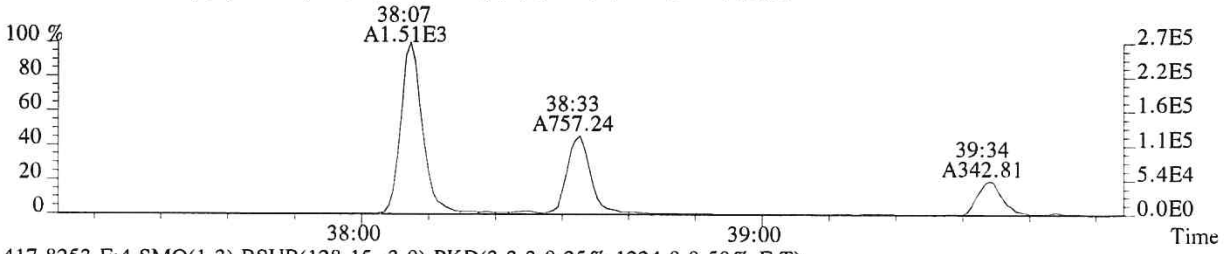
059065

File:P519505 #1-240 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011

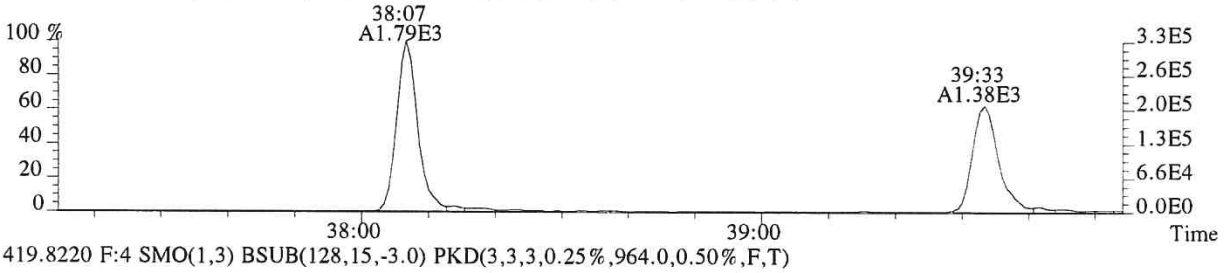
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,424.0,0.50%,F,T)



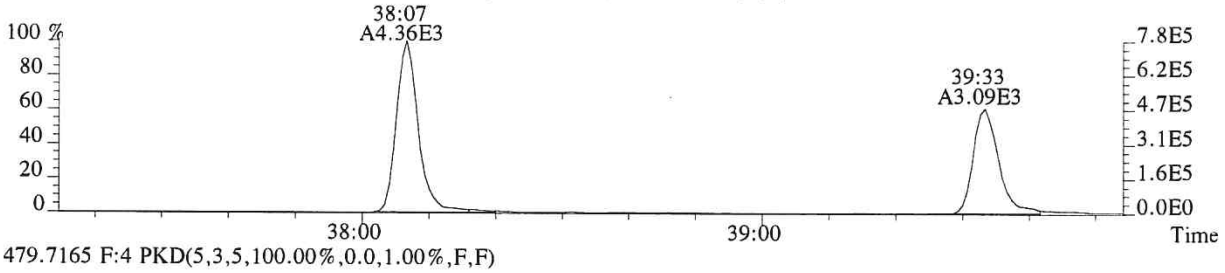
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,328.0,0.50%,F,T)



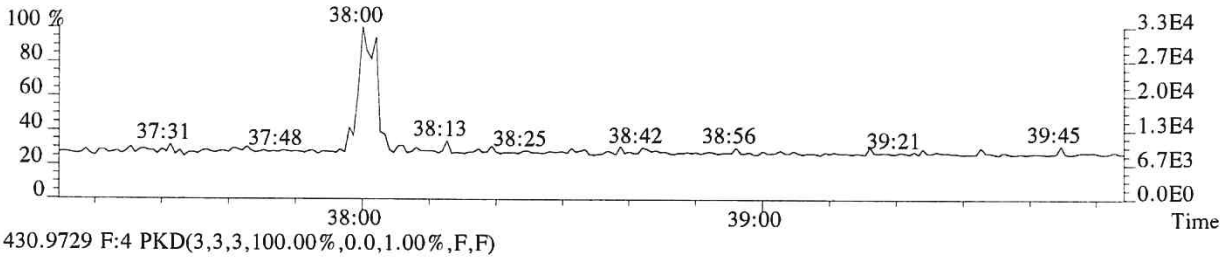
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1224.0,0.50%,F,T)



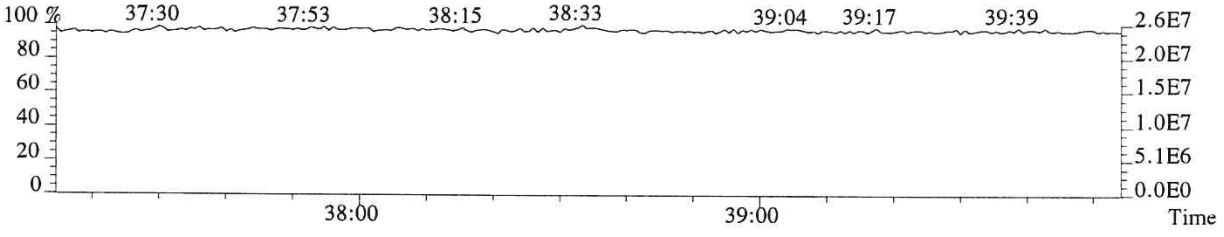
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,964.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

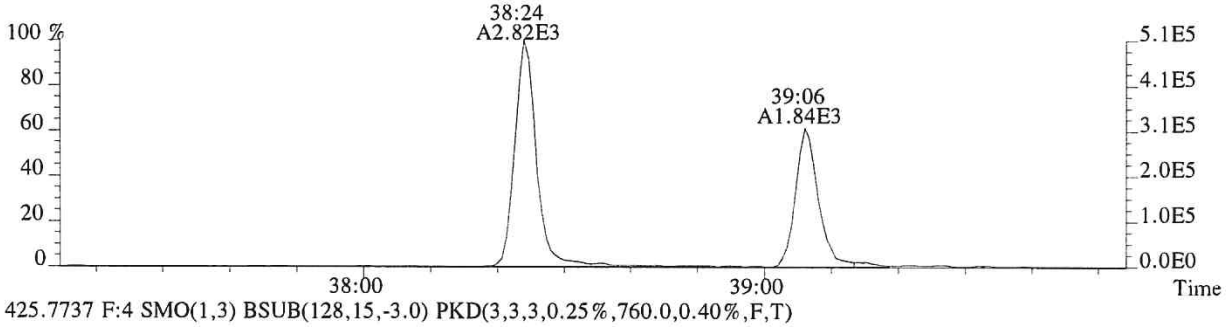


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

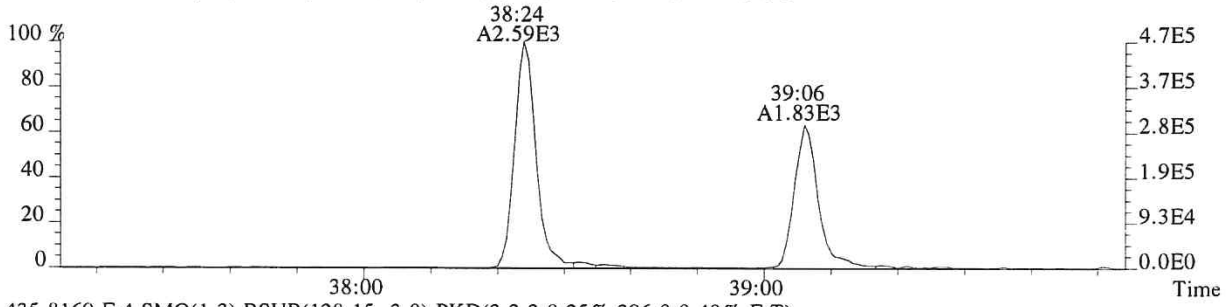


059066

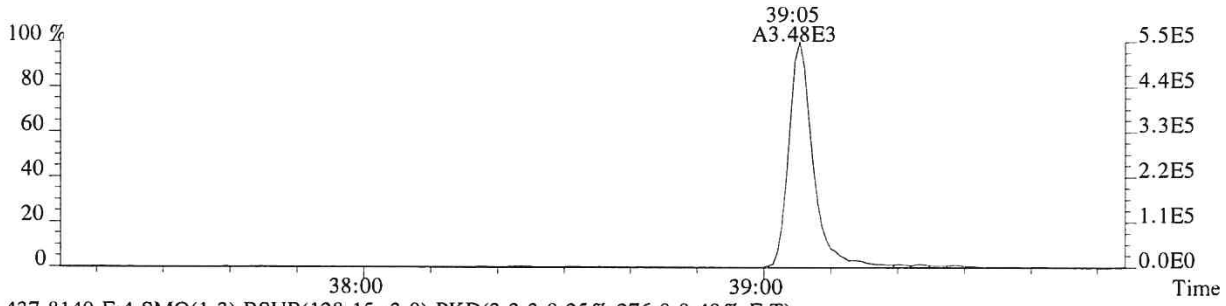
File:P519505 #1-240 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,480.0,0.40%,F,T)



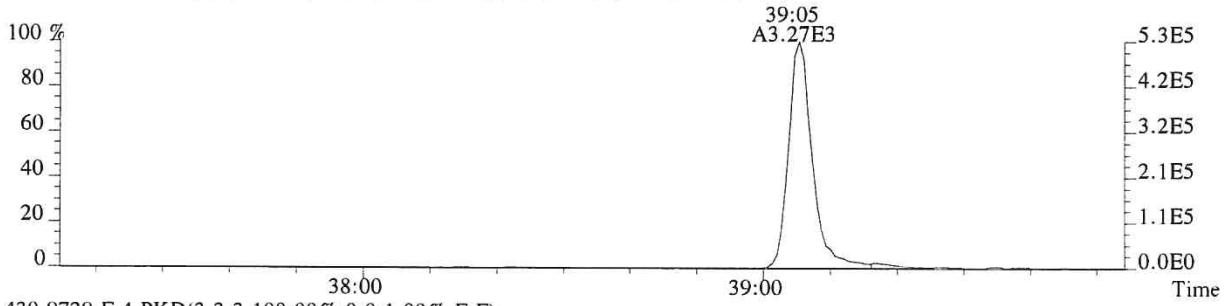
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,760.0,0.40%,F,T)



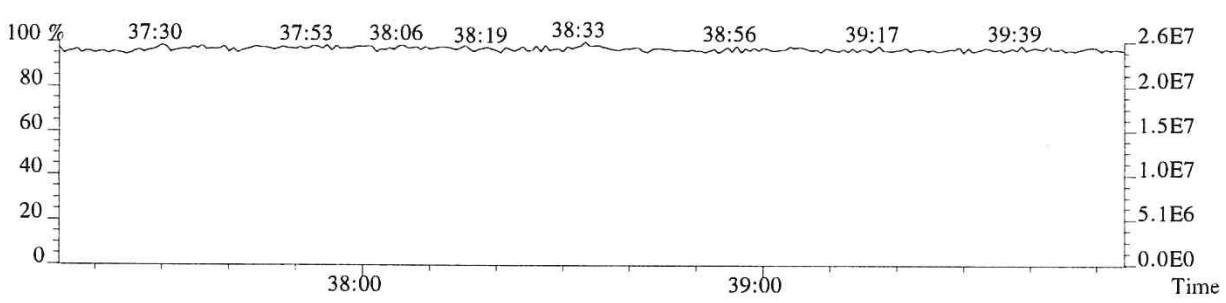
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,396.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,276.0,0.40%,F,T)

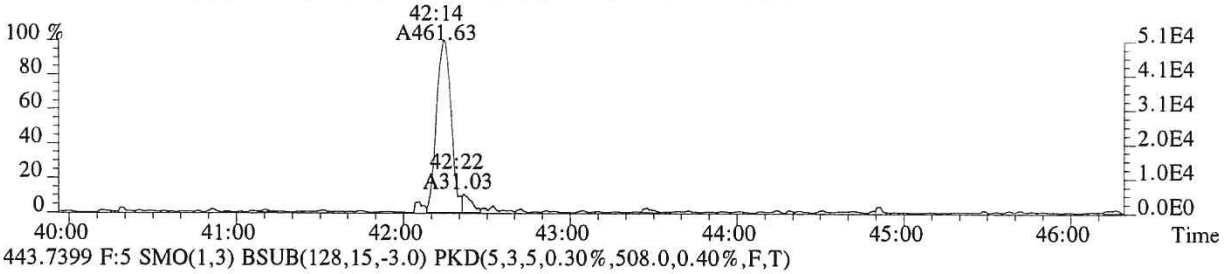


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

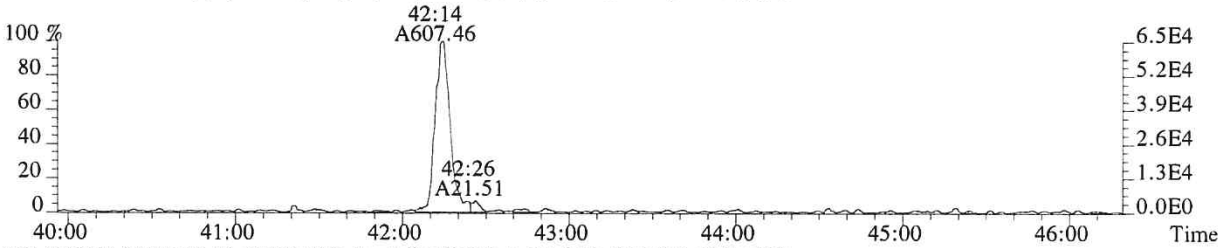


059067

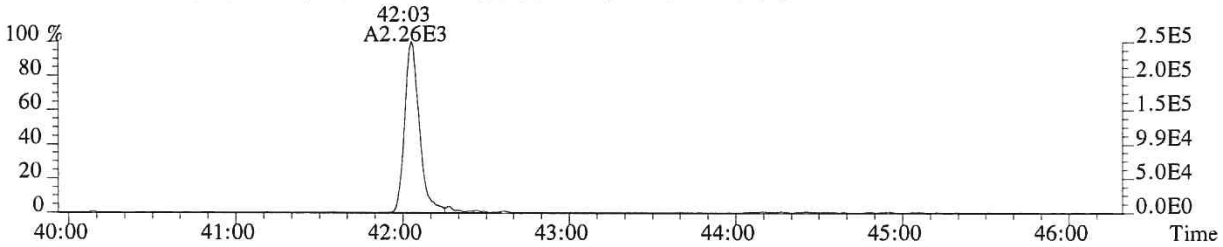
File:P519505 #1-575 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,392.0,0.40%,F,T)



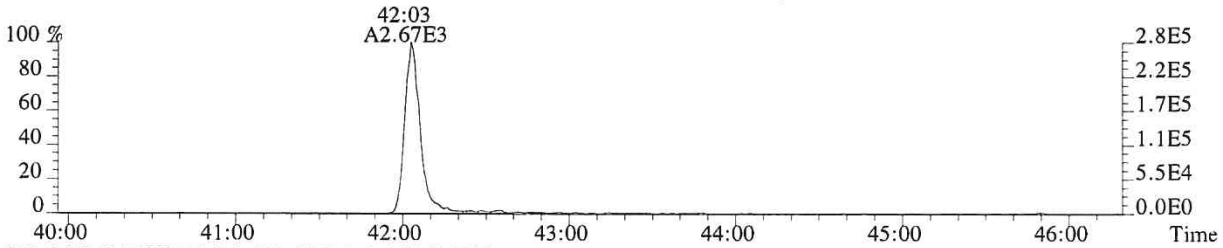
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



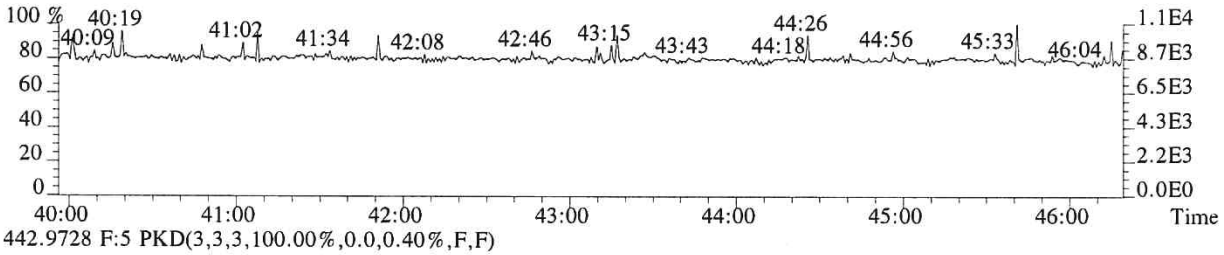
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,332.0,0.40%,F,T)



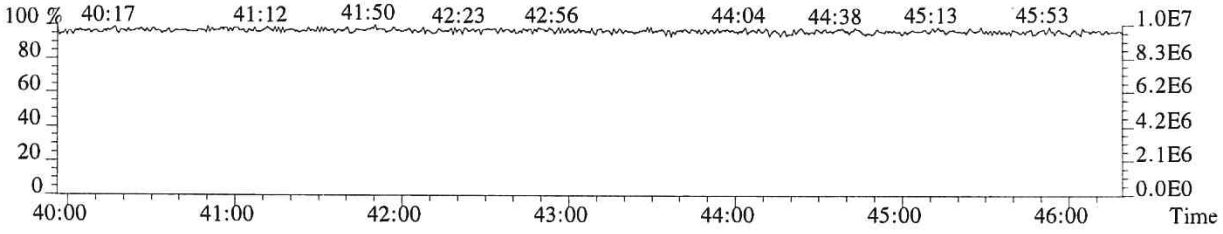
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,312.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

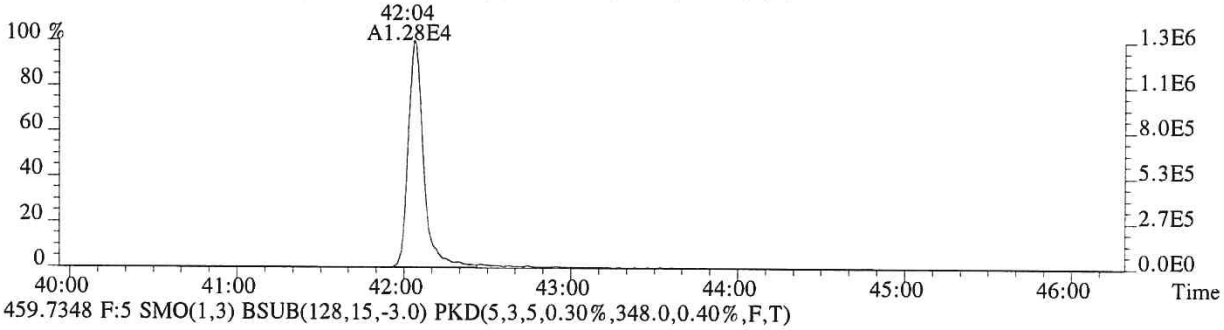


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

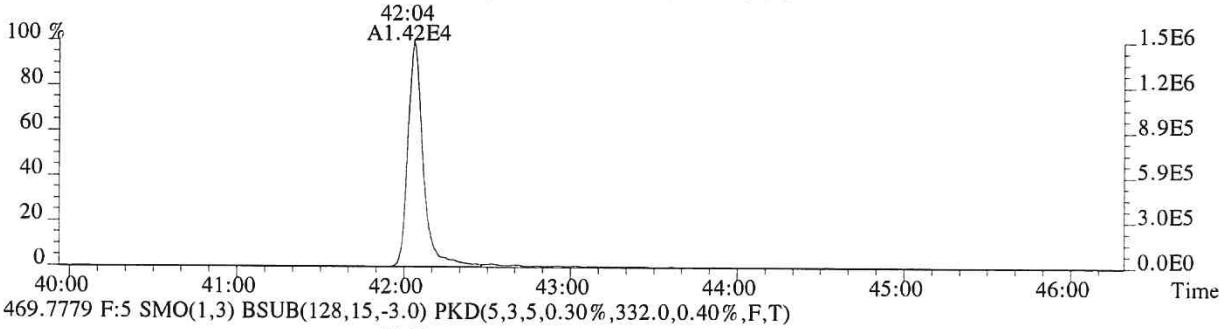


059068

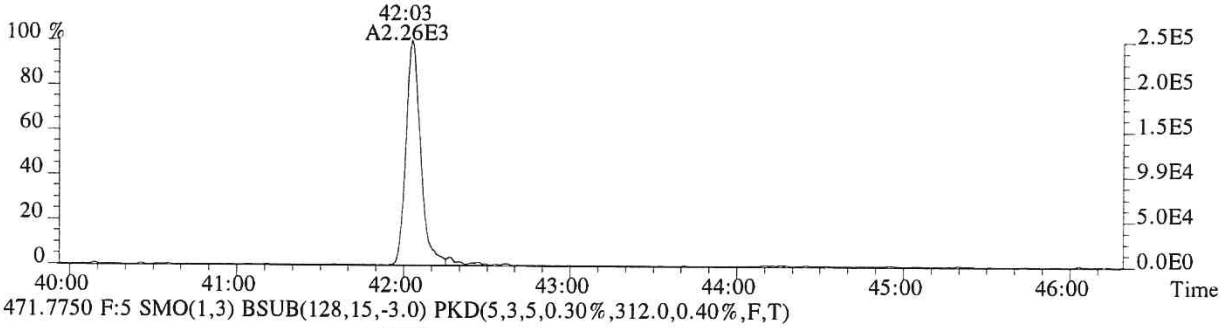
File:P519505 #1-575 Acq:20-DEC-2018 00:32:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,332.0,0.40%,F,T)



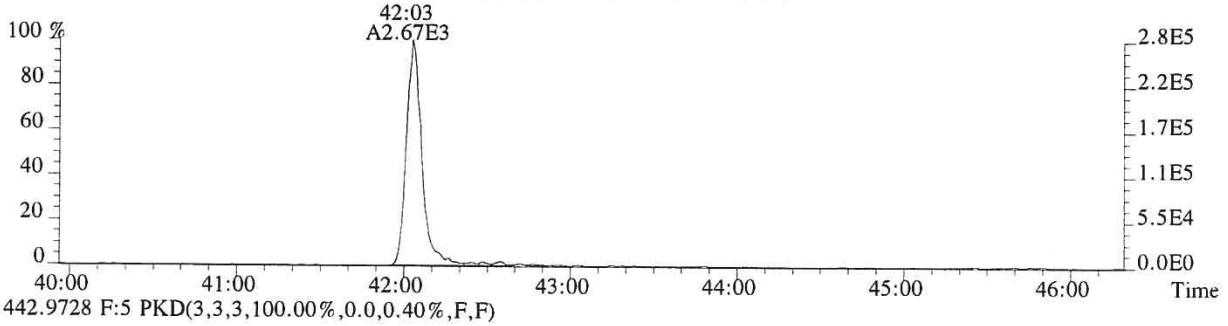
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,348.0,0.40%,F,T)



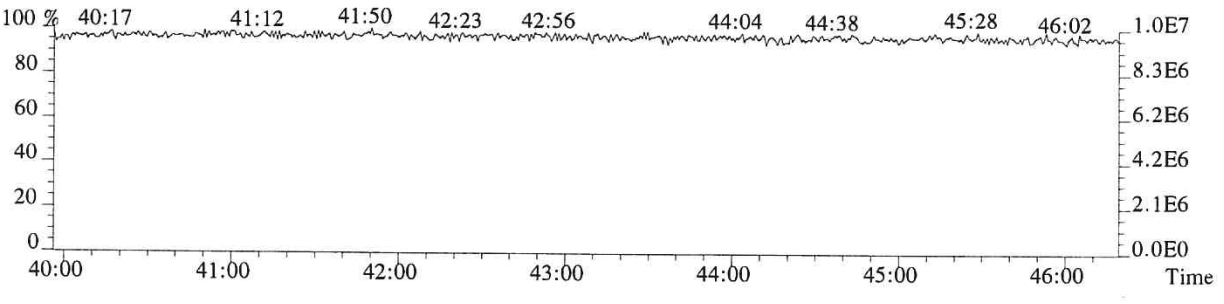
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,332.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,312.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0066

un #16 Filename P519542 Samp: 1 Inj: 1 Acquired: 21-DEC-18 10:38:15
rocessed: 24-DEC-18 08:18:38 Sample ID: E1801096-011DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:50	1.337e+03	1.731e+03	0.77	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:27	8.961e+01	3.001e+01	2.99	no	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:27	4.927e+01	1.941e+01	2.54	no	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:18	9.984e+01	8.321e+01	1.20	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:24	3.123e+01	3.250e+01	0.96	no	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.110
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	yes	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:08	1.412e+01	2.314e+01	0.61	no	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	no	1.258
10	Unk	OCDF	NotFnd	*	*	*	no	no	1.359
11	Unk	2,3,7,8-TCDD	27:43	2.640e+02	3.922e+02	0.67	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:07	4.354e+01	2.628e+01	1.66	no	no	1.025
17	Unk	OCDD	42:06	3.903e+02	3.703e+02	1.05	no	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:48	4.703e+03	5.740e+03	0.82	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:27	7.854e+03	4.876e+03	1.61	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:25	7.096e+03	4.305e+03	1.65	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:17	2.716e+03	5.294e+03	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:24	3.728e+03	7.438e+03	0.50	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:56	3.200e+03	6.008e+03	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:44	2.551e+03	4.646e+03	0.55	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:07	2.235e+03	5.268e+03	0.42	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:35	1.845e+03	4.192e+03	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:42	2.184e+03	3.061e+03	0.71	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:44	5.208e+03	3.207e+03	1.62	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:05	3.555e+03	2.732e+03	1.30	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	36:10	4.893e+03	3.419e+03	1.43	no	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:07	4.086e+03	3.829e+03	1.07	yes	no	0.858
32	IS	13C-OCDD	42:06	4.315e+03	4.984e+03	0.87	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	27:03	4.014e+03	5.084e+03	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:26	4.770e+03	3.565e+03	1.34	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:44	5.820e+01				no	1.014

$$\text{OCDD} = \frac{(3.903e+02 + 3.703e+02) \times 4000\ \text{pg} \times 50}{(4.315e+03 + 4.984e+03) \times 10.084\text{g} \times 86.8 / 100 \times 1.118} = 4807.1248\ \text{ng/kg}$$

LG 12/24/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0066

Run #16 Filename P519542 Samp: 1 Inj: 1 Acquired: 21-DEC-18 10:38:15
Processed: 24-DEC-18 08:18:38 LAB. ID: E1801096-011DL

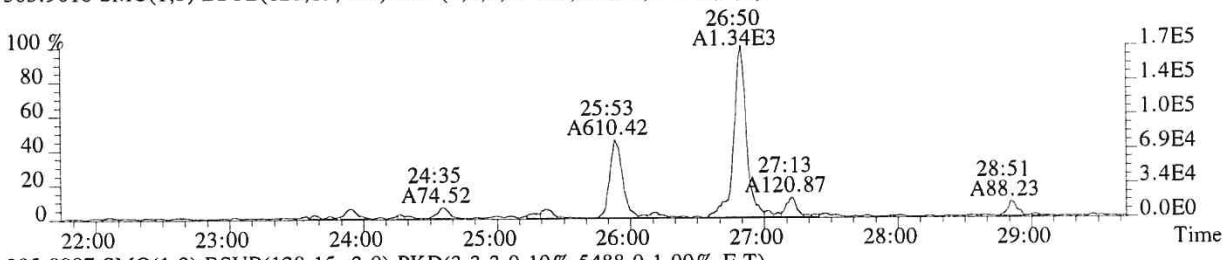
	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.72e+05	1.29e+03	1.3e+02	2.24e+05	5.49e+03	4.1e+01
2	1,2,3,7,8-PeCDF	1.30e+04	1.09e+03	1.2e+01	8.63e+03	1.70e+03	5.1e+00
3	2,3,4,7,8-PeCDF	7.84e+03	1.09e+03	7.2e+00	5.63e+03	1.70e+03	3.3e+00
4	1,2,3,4,7,8-HxCDF	1.84e+04	9.04e+02	2.0e+01	1.76e+04	8.44e+02	2.1e+01
5	1,2,3,6,7,8-HxCDF	5.51e+03	9.04e+02	6.1e+00	6.55e+03	8.44e+02	7.8e+00
6	2,3,4,6,7,8-HxCDF	*	9.04e+02	*	*	8.44e+02	*
7	1,2,3,7,8,9-HxCDF	*	9.04e+02	*	*	8.44e+02	*
8	1,2,3,4,6,7,8-HpCDF	4.33e+03	8.28e+02	5.2e+00	4.06e+03	5.16e+02	7.9e+00
9	1,2,3,4,7,8,9-HpCDF	*	8.28e+02	*	*	5.16e+02	*
10	OCDF	*	5.28e+02	*	*	2.11e+03	*
11	2,3,7,8-TCDD	4.62e+04	3.42e+03	1.3e+01	5.70e+04	1.32e+03	4.3e+01
12	1,2,3,7,8-PeCDD	*	1.42e+03	*	*	4.08e+02	*
13	1,2,3,4,7,8-HxCDD	*	1.07e+03	*	*	6.56e+02	*
14	1,2,3,6,7,8-HxCDD	*	1.07e+03	*	*	6.56e+02	*
15	1,2,3,7,8,9-HxCDD	*	1.07e+03	*	*	6.56e+02	*
16	1,2,3,4,6,7,8-HpCDD	6.73e+03	8.04e+02	8.4e+00	6.89e+03	7.72e+02	8.9e+00
17	OCDD	4.06e+04	4.20e+02	9.7e+01	3.91e+04	4.32e+02	9.1e+01
18	13C-2,3,7,8-TCDF	6.76e+05	1.33e+04	5.1e+01	8.29e+05	1.04e+04	8.0e+01
19	13C-1,2,3,7,8-PeCDF	1.11e+06	7.04e+02	1.6e+03	7.15e+05	5.68e+02	1.3e+03
20	13C-2,3,4,7,8-PeCDF	1.18e+06	7.04e+02	1.7e+03	6.90e+05	5.68e+02	1.2e+03
21	13C-1,2,3,4,7,8-HxCDF	5.31e+05	1.22e+03	4.3e+02	1.06e+06	1.08e+03	9.8e+02
22	13C-1,2,3,6,7,8-HxCDF	5.75e+05	1.22e+03	4.7e+02	1.12e+06	1.08e+03	1.0e+03
23	13C-2,3,4,6,7,8-HxCDF	5.31e+05	1.22e+03	4.4e+02	9.70e+05	1.08e+03	9.0e+02
24	13C-1,2,3,7,8,9-HxCDF	3.54e+05	1.22e+03	2.9e+02	6.51e+05	1.08e+03	6.0e+02
25	13C-1,2,3,4,6,7,8-HpCDF	3.23e+05	1.29e+03	2.5e+02	8.15e+05	2.27e+03	3.6e+02
26	13C-1,2,3,4,7,8,9-HpCDF	2.19e+05	1.29e+03	1.7e+02	4.78e+05	2.27e+03	2.1e+02
27	13C-2,3,7,8-TCDD	3.35e+05	8.97e+03	3.7e+01	4.65e+05	2.59e+03	1.8e+02
28	13C-1,2,3,7,8-PeCDD	7.65e+05	9.92e+02	7.7e+02	4.89e+05	3.06e+03	1.6e+02
29	13C-1,2,3,4,7,8-HxCDD	7.40e+05	1.87e+03	4.0e+02	5.55e+05	8.96e+02	6.2e+02
30	13C-1,2,3,6,7,8-HxCDD	7.46e+05	1.87e+03	4.0e+02	5.07e+05	8.96e+02	5.7e+02
31	13C-1,2,3,4,6,7,8-HpCDD	4.89e+05	7.48e+02	6.5e+02	5.07e+05	9.12e+02	5.6e+02
32	13C-OCDD	3.97e+05	1.48e+03	2.7e+02	4.24e+05	5.44e+02	7.8e+02
33	13C-1,2,3,4-TCDD	6.25e+05	8.97e+03	7.0e+01	7.96e+05	2.59e+03	3.1e+02
34	13C-1,2,3,7,8,9-HxCDD	6.36e+05	1.87e+03	3.4e+02	4.82e+05	8.96e+02	5.4e+02
35	37Cl-2,3,7,8-TCDD	9.37e+03	2.63e+03	3.6e+00			

---Sample Calculation---

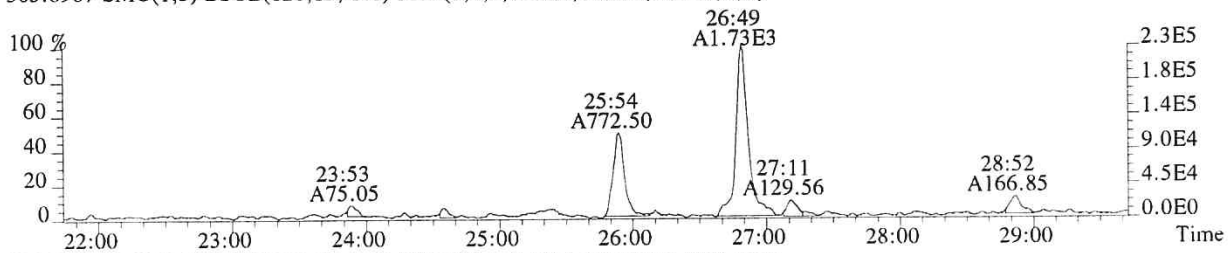
$$\text{D/L TCDD} = \frac{2.5 \times (3.424e{+}03 + 1.324e{+}03) \times 2000}{(3.346e{+}05 + 4.652e{+}05) \times (\quad) \times 1.085} =$$

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office:(281)530-5656. Fax:(281)530-5887

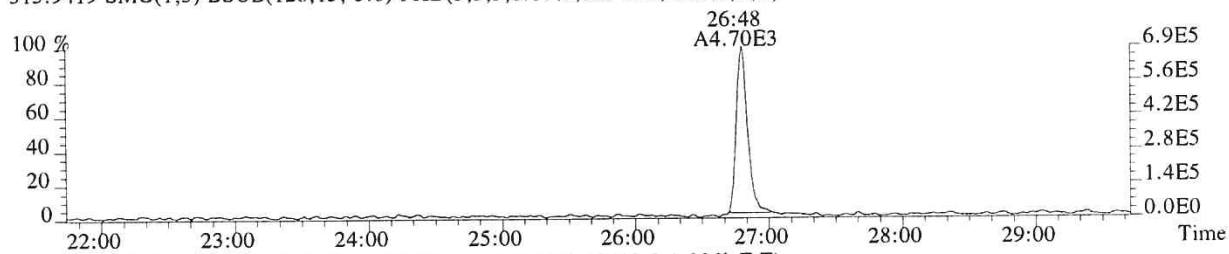
File:P519542 #1-566 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1288.0,1.00%,F,T)



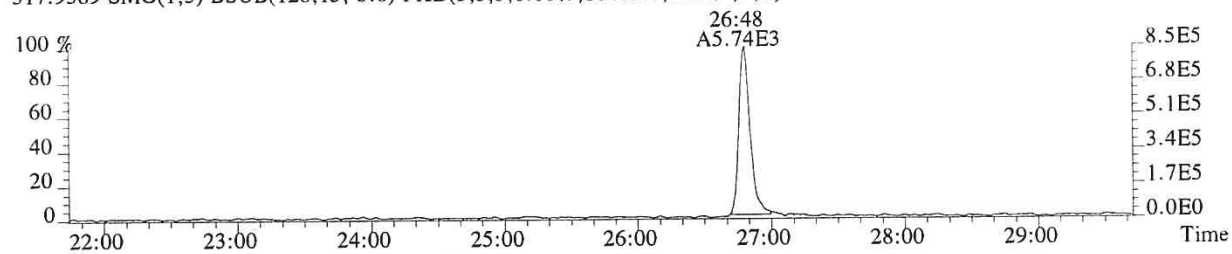
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5488.0,1.00%,F,T)



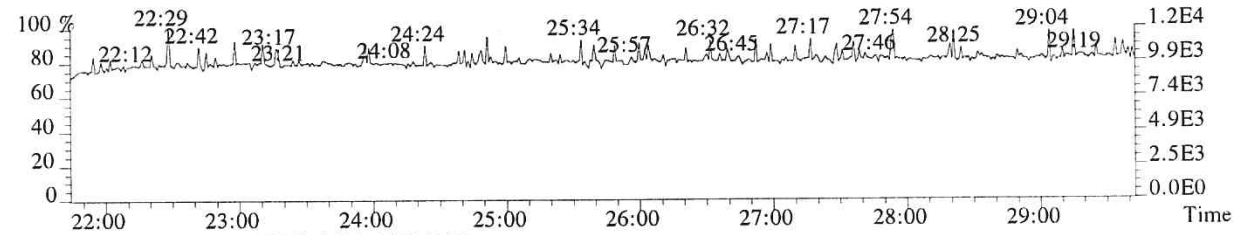
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13348.0,1.00%,F,T)



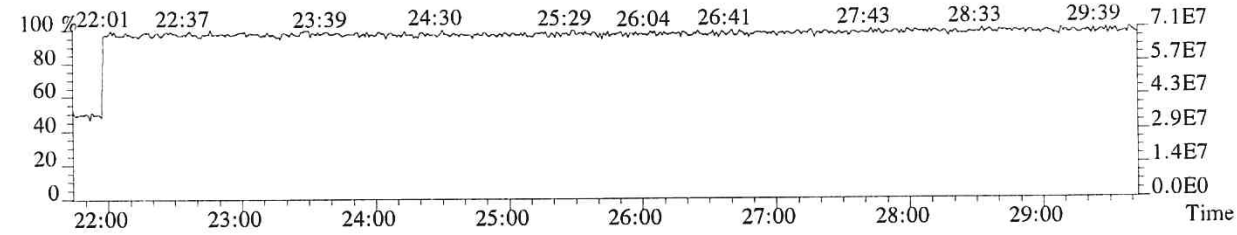
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10412.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

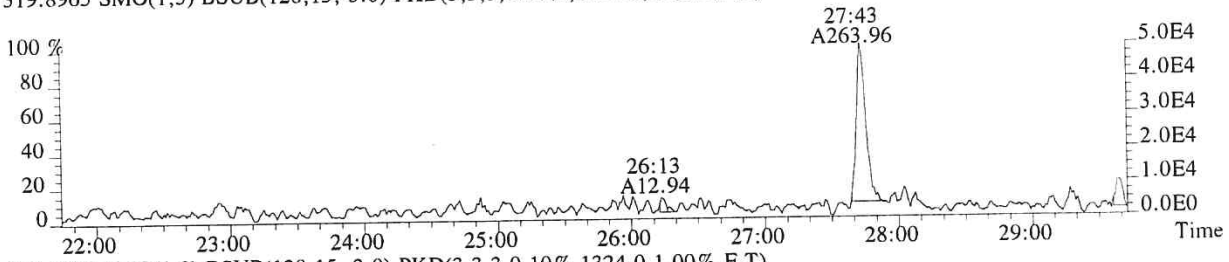


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

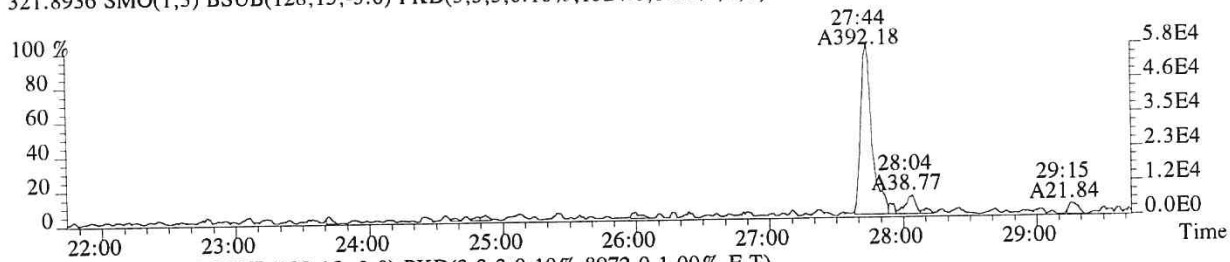


059072

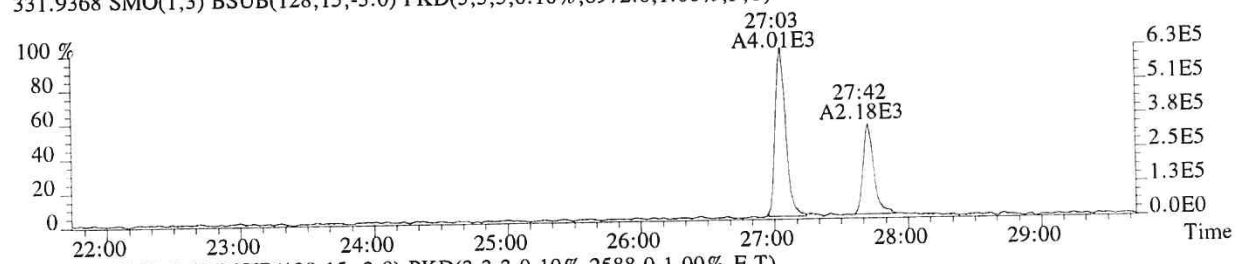
File:P519542 #1-566 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3424.0,1.00%,F,T)



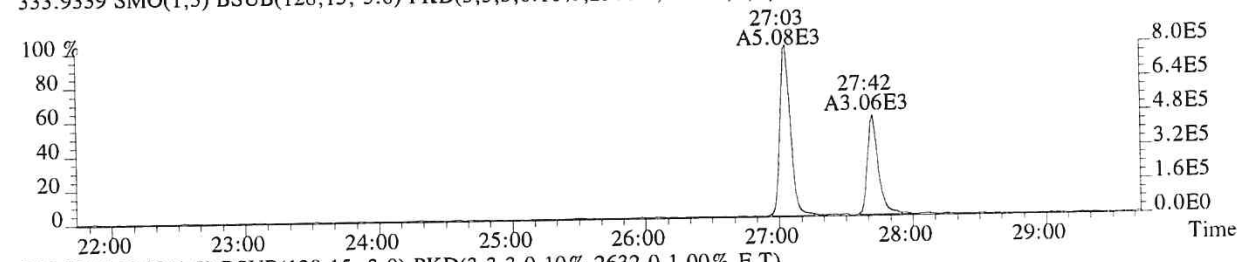
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1324.0,1.00%,F,T)



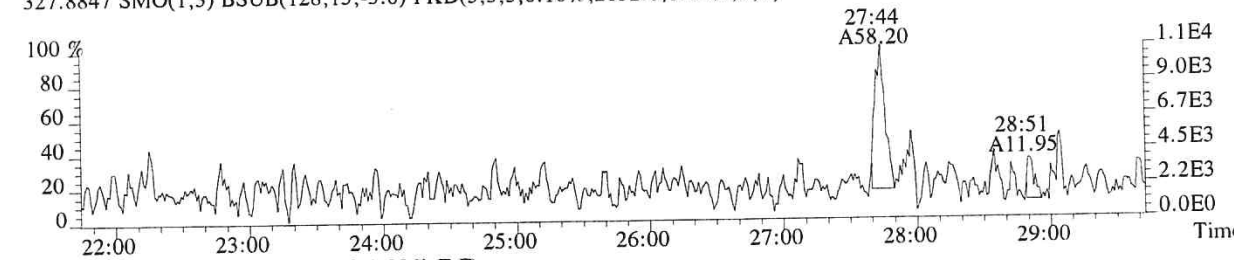
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8972.0,1.00%,F,T)



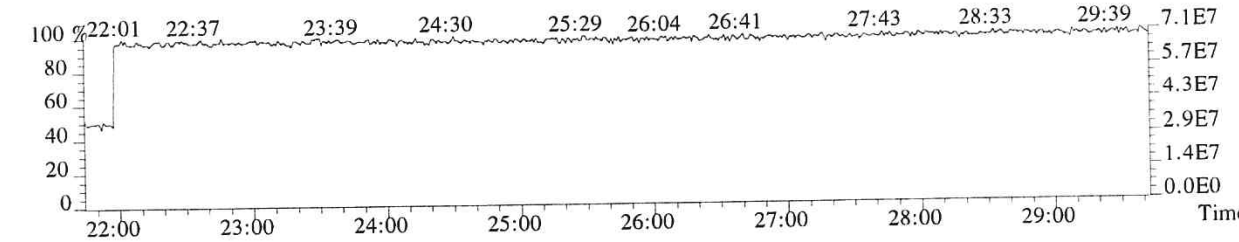
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2588.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2632.0,1.00%,F,T)

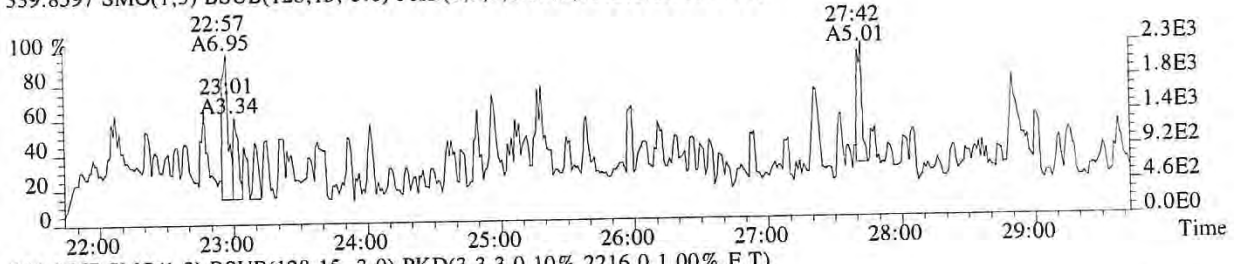


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

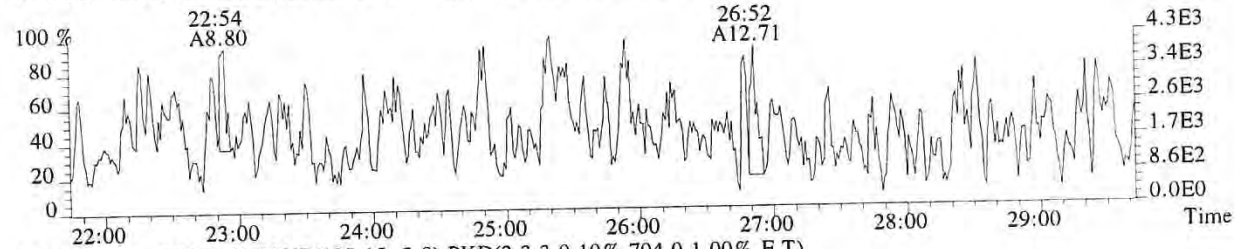


059073

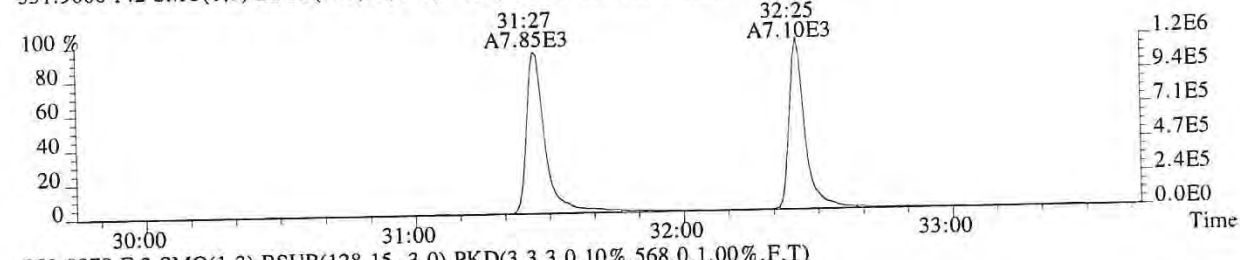
File:P519542 #1-566 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1012.0,1.00%,F,T)



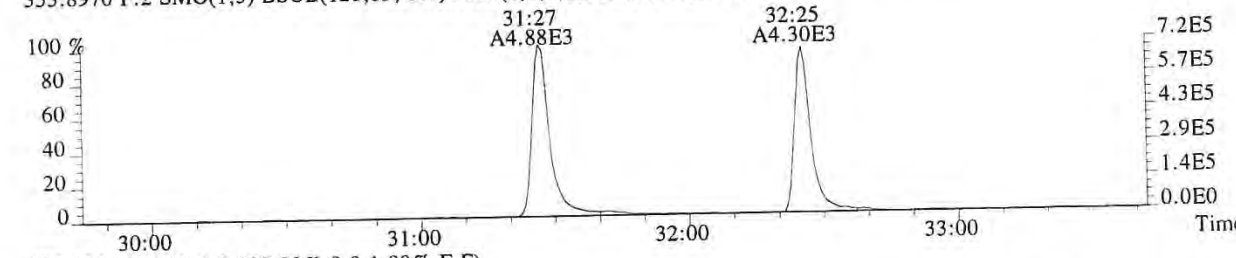
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2216.0,1.00%,F,T)



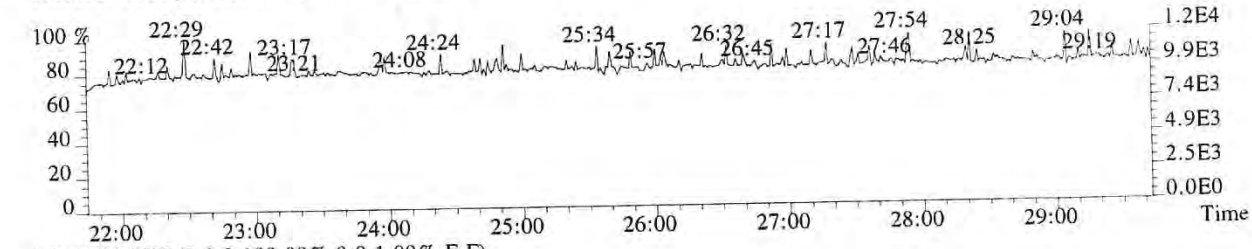
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)



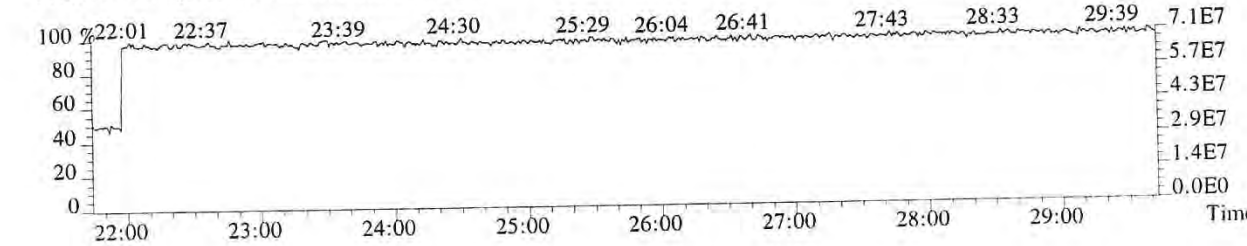
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,568.0,1.00%,F,T)



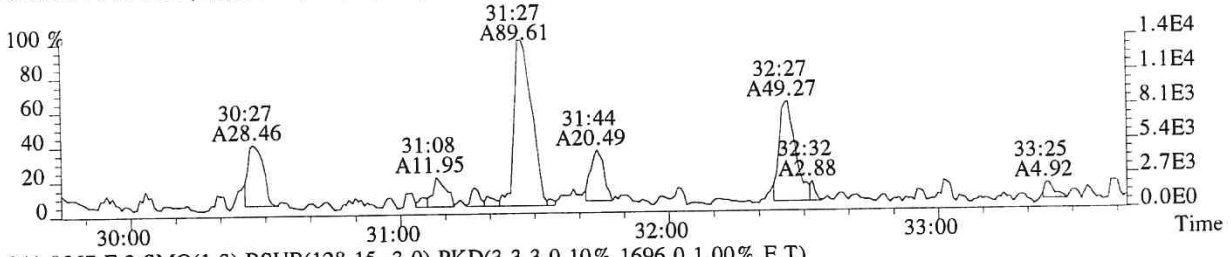
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



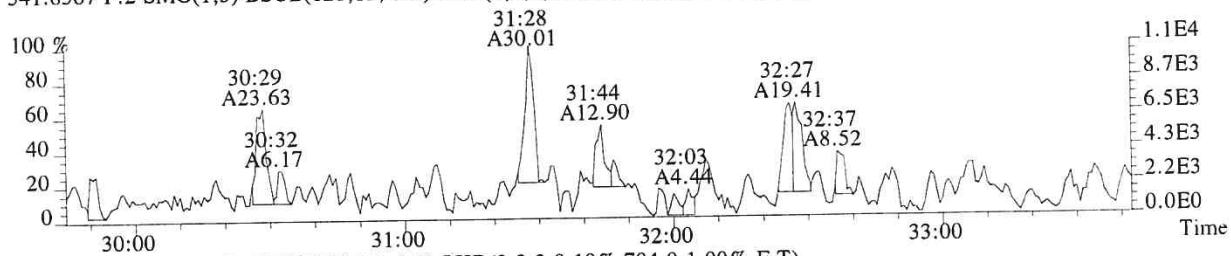
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



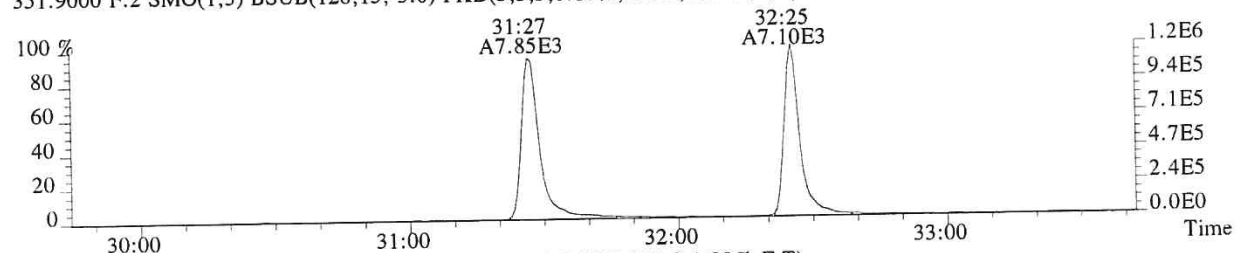
File:P519542 #1-357 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1092.0,1.00%,F,T)



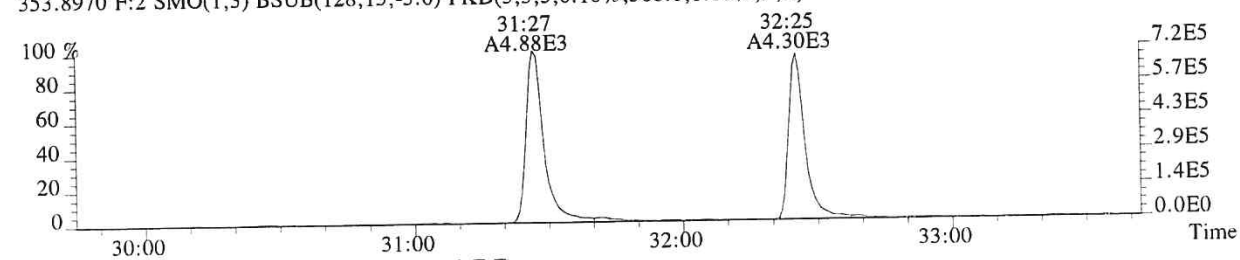
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1696.0,1.00%,F,T)



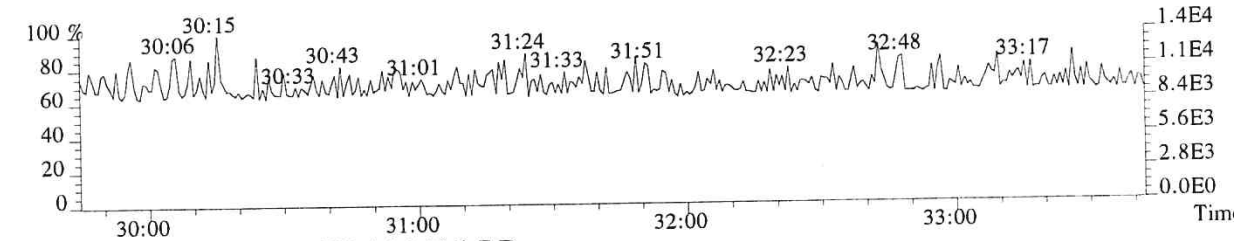
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)



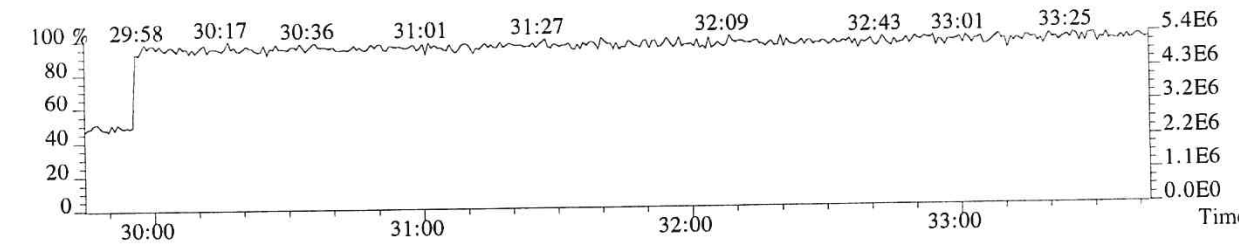
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,568.0,1.00%,F,T)



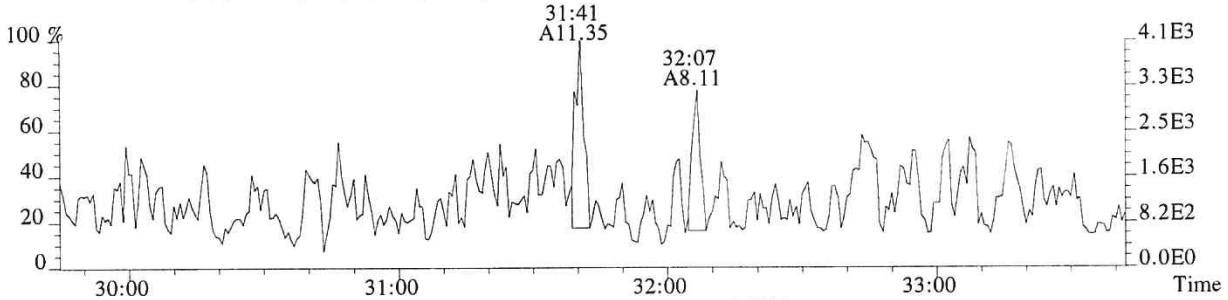
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



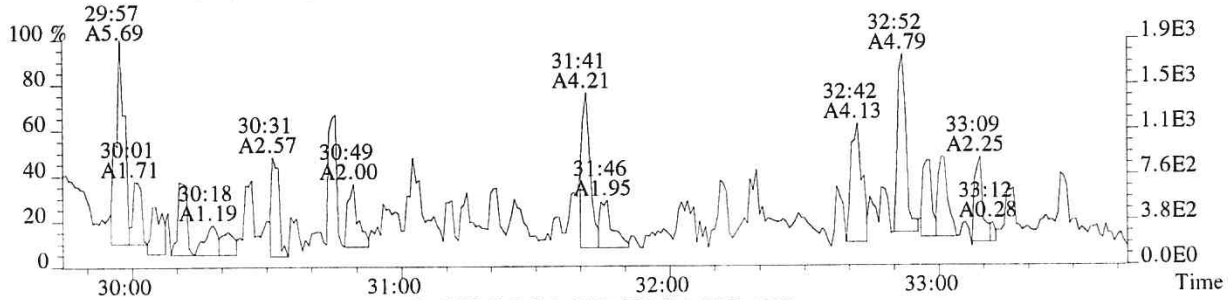
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



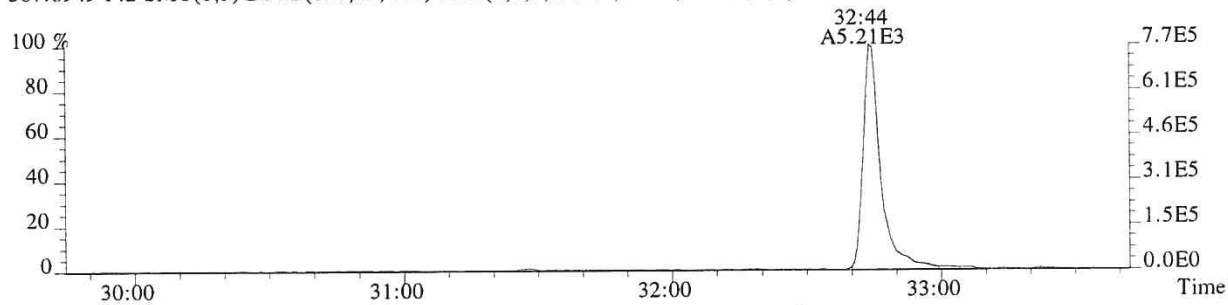
File:P519542 #1-357 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1424.0,1.00%,F,T)



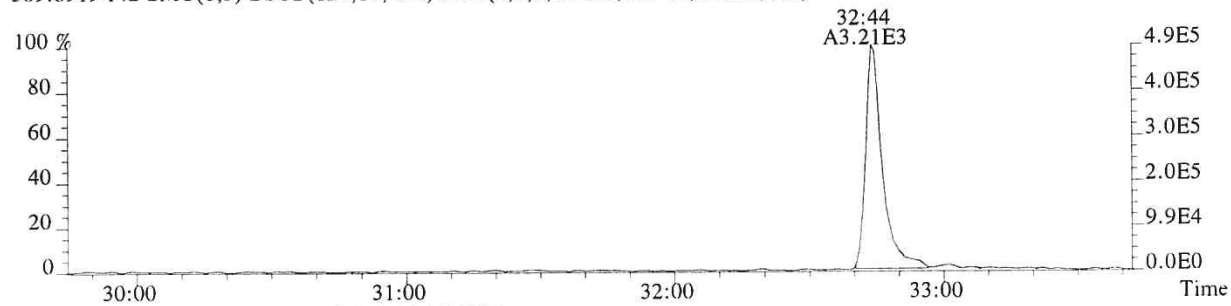
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,408.0,1.00%,F,T)



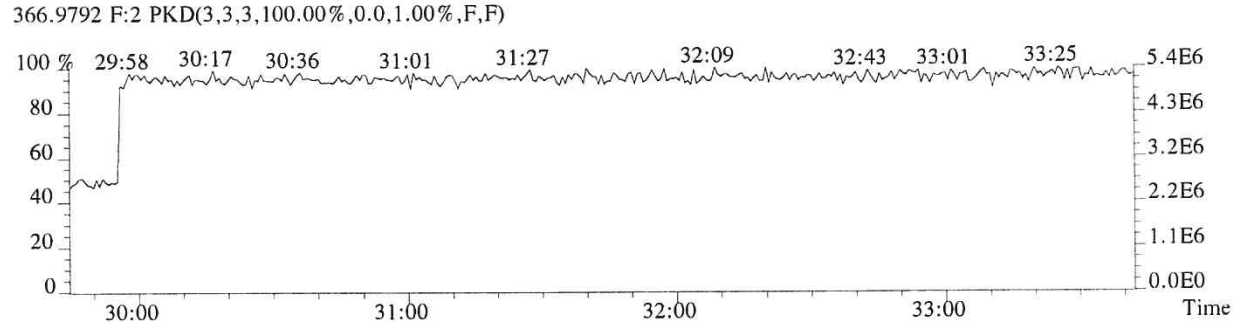
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,992.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3064.0,1.00%,F,T)

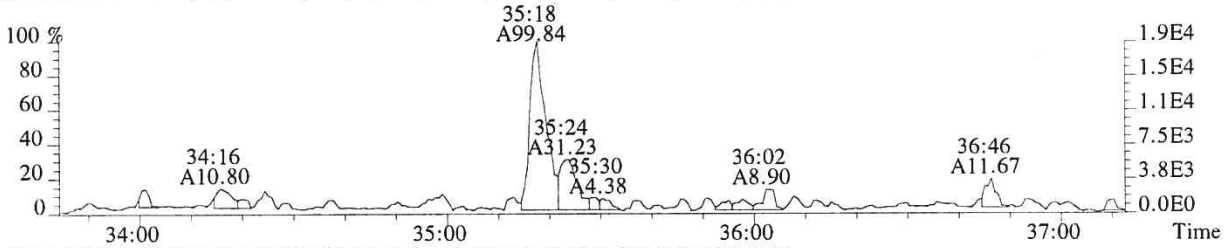


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

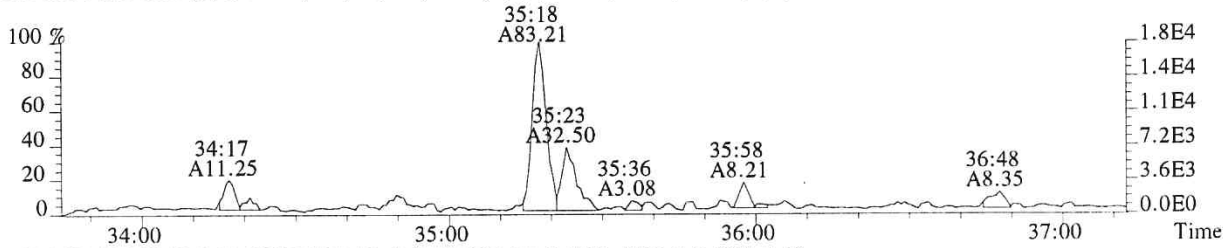


059076

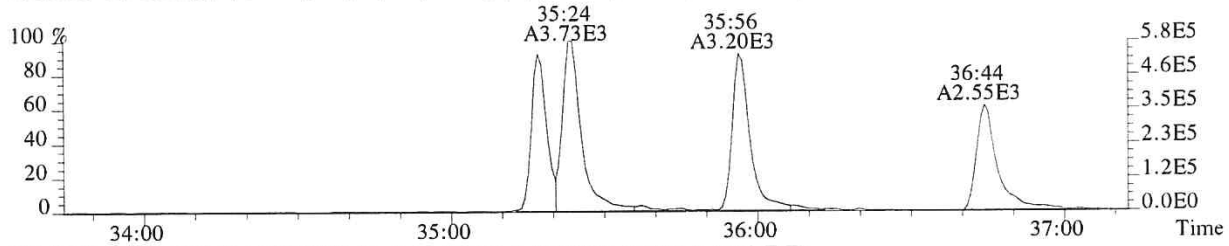
File:P519542 #1-313 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,904.0,0.40%,F,T)



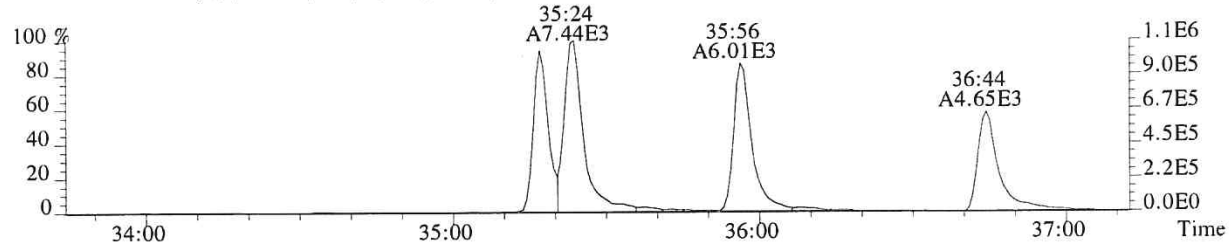
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,844.0,0.40%,F,T)



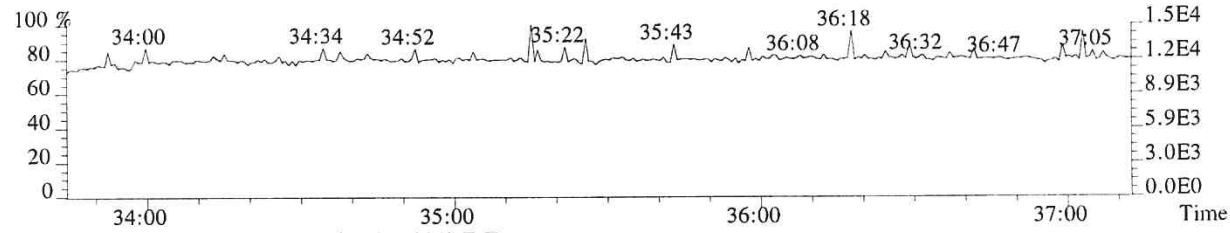
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1220.0,0.40%,F,T)



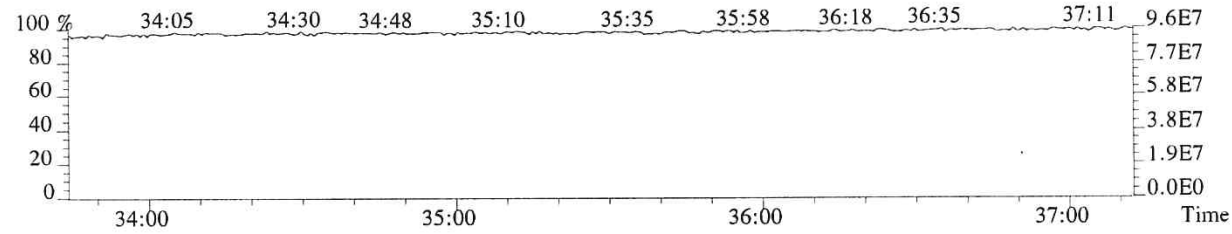
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1080.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

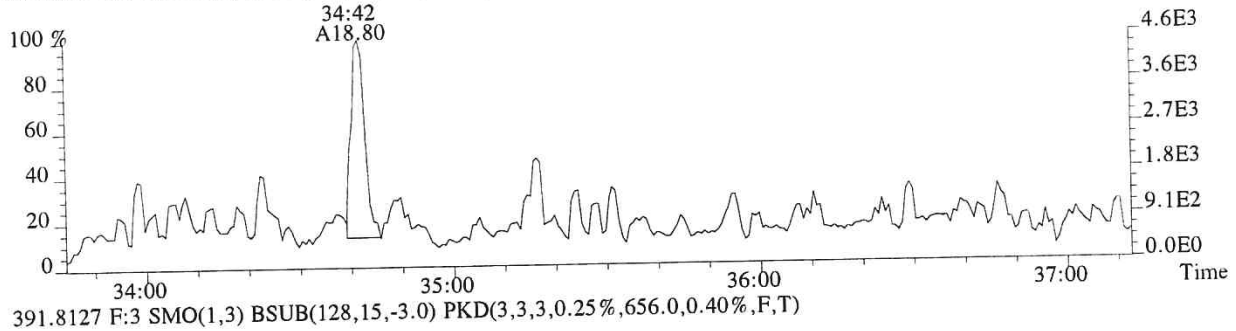


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

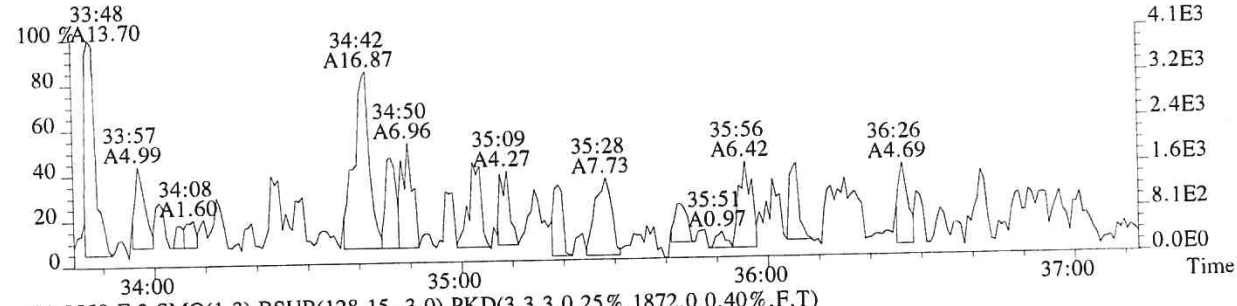


059077

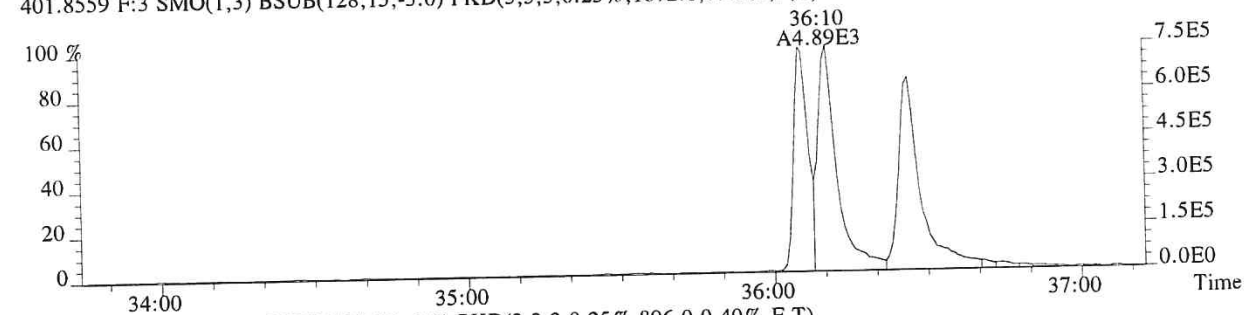
File:P519542 #1-313 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1072.0,0.40%,F,T)



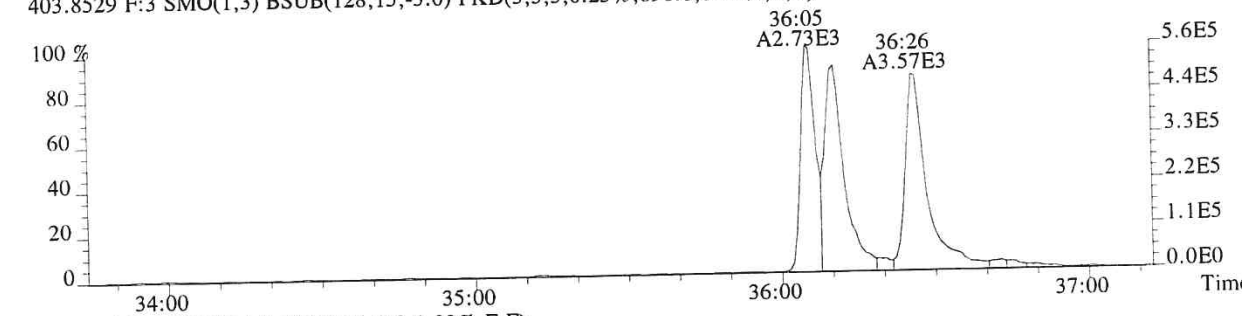
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,656.0,0.40%,F,T)



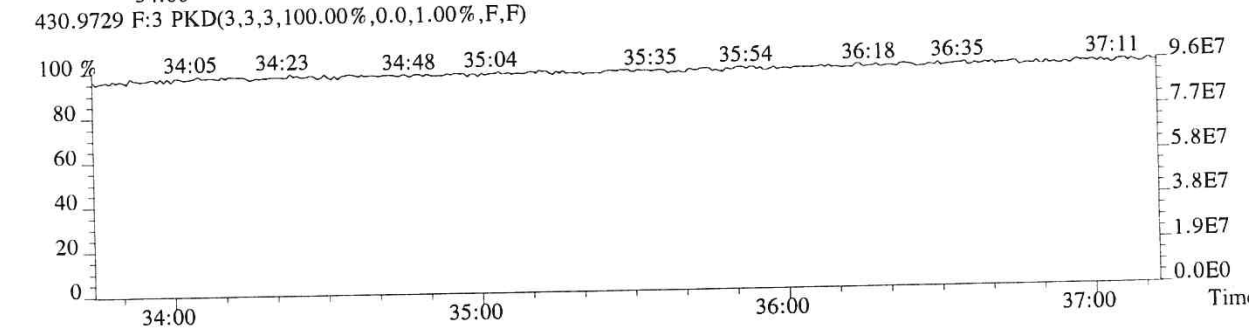
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1872.0,0.40%,F,T)



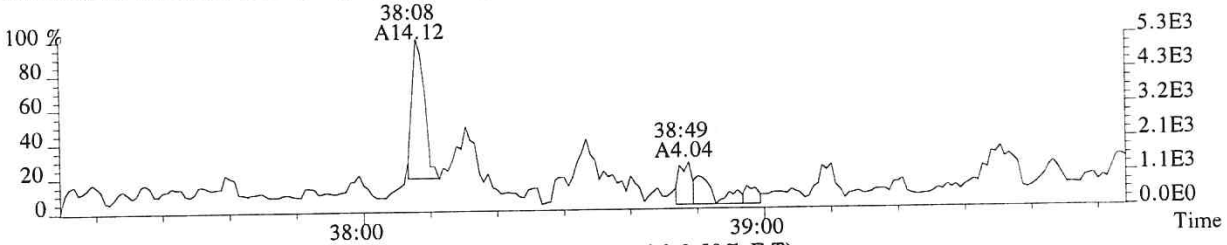
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,896.0,0.40%,F,T)



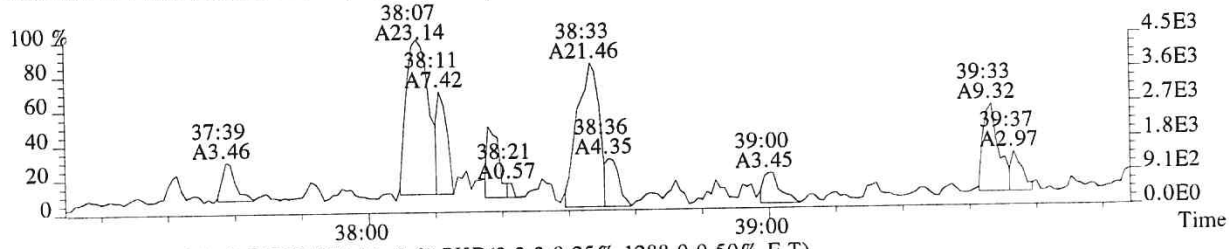
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



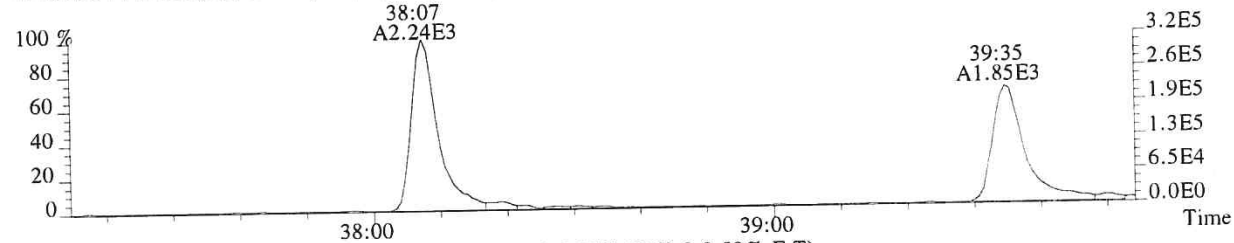
File:P519542 #1-240 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,828.0,0.50%,F,T)



409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,516.0,0.50%,F,T)



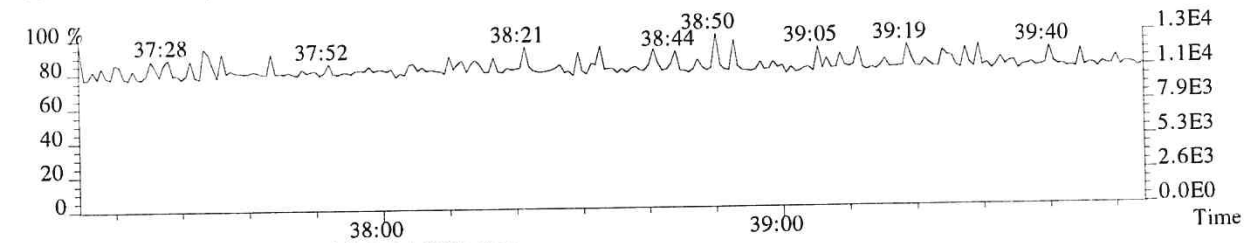
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1288.0,0.50%,F,T)



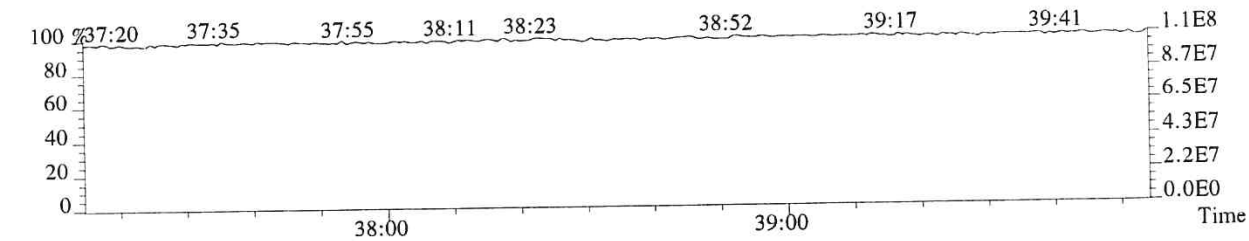
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2268.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

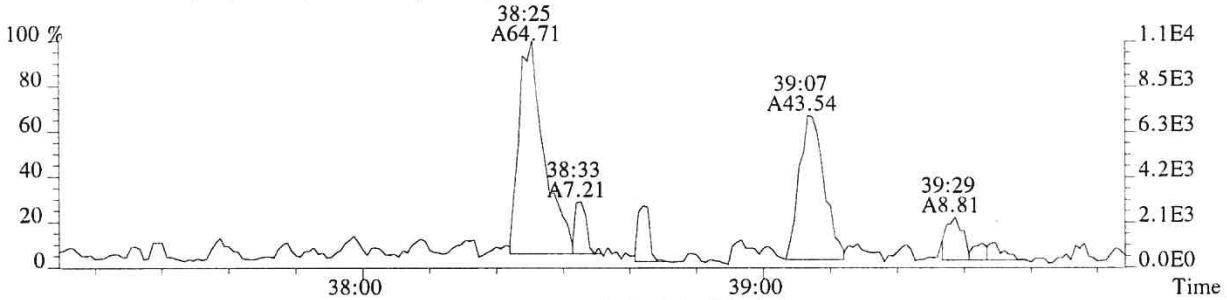


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

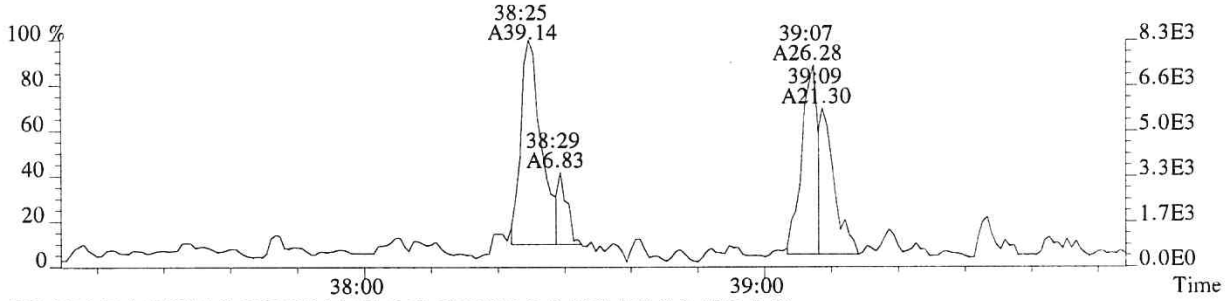


059079

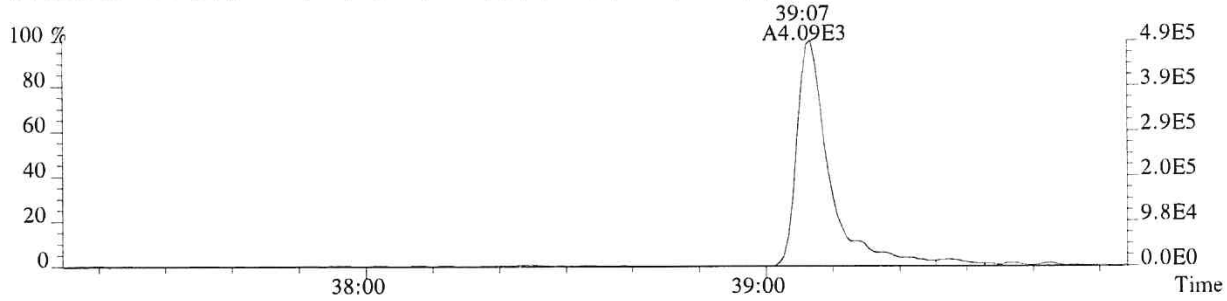
File:P519542 #1-240 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,804.0,0.40%,F,T)



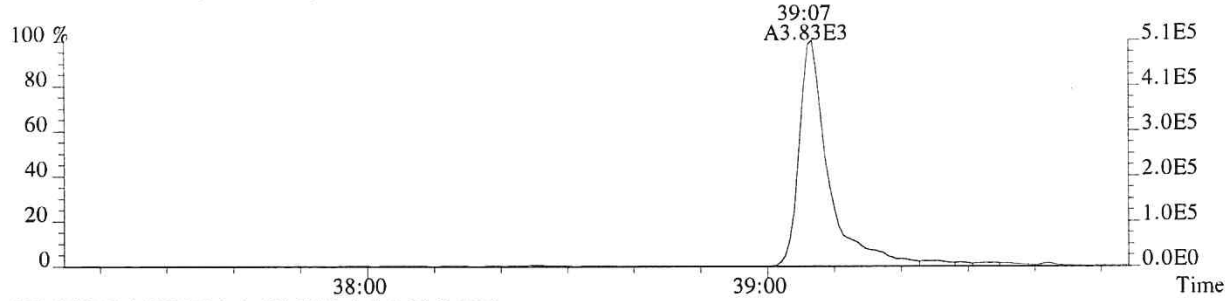
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,772.0,0.40%,F,T)



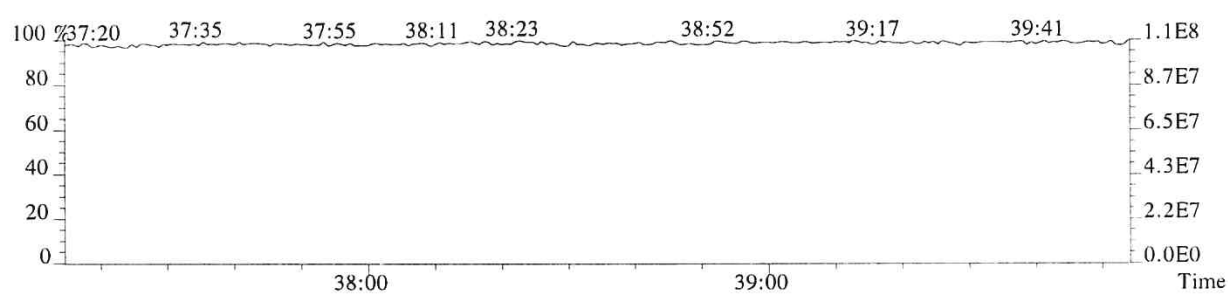
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,748.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,912.0,0.40%,F,T)

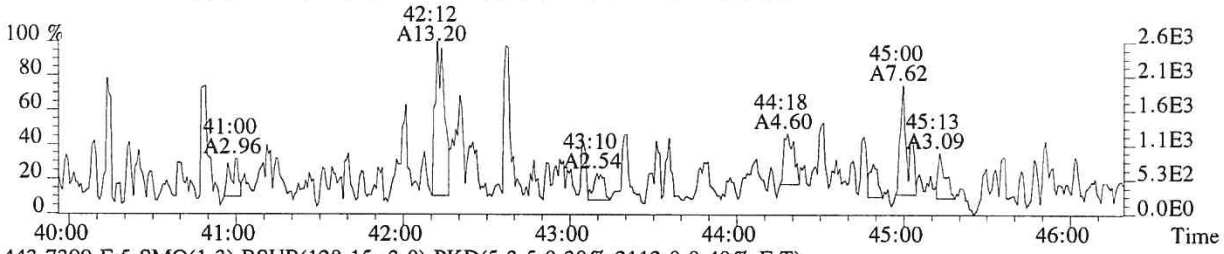


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

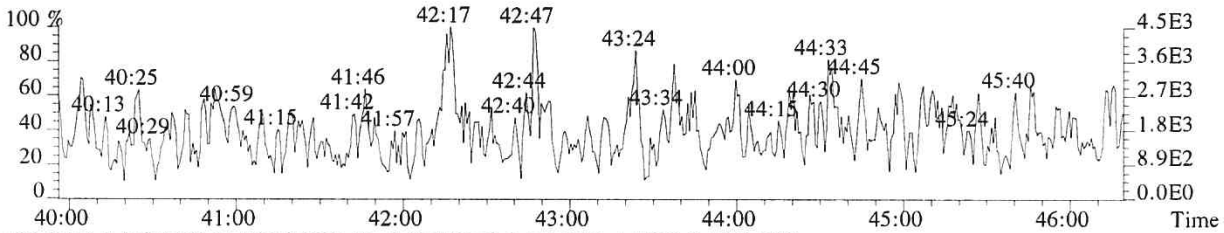


059080

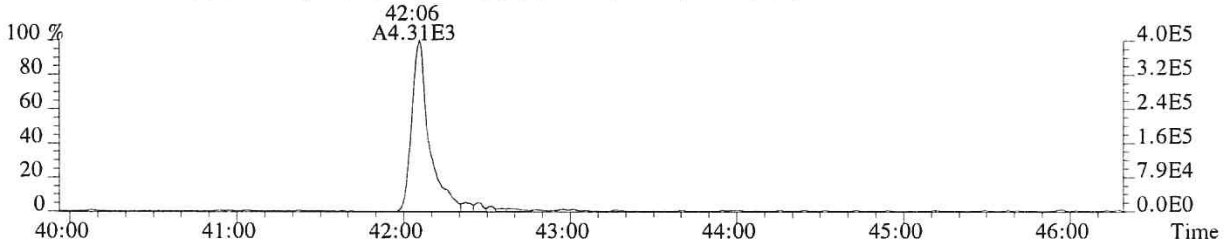
File:P519542 #1-575 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,528.0,0.40%,F,T)



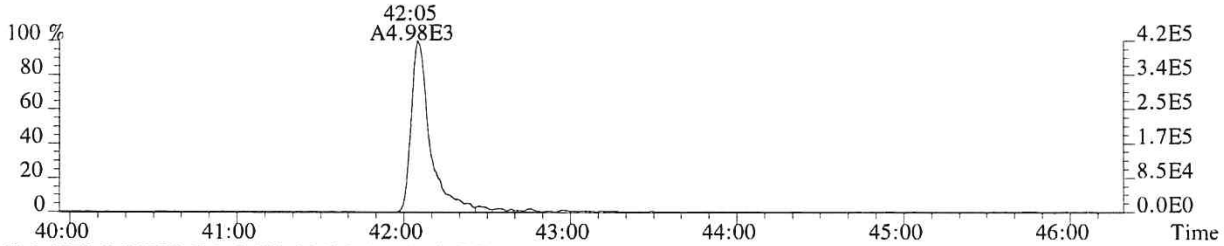
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2112.0,0.40%,F,T)



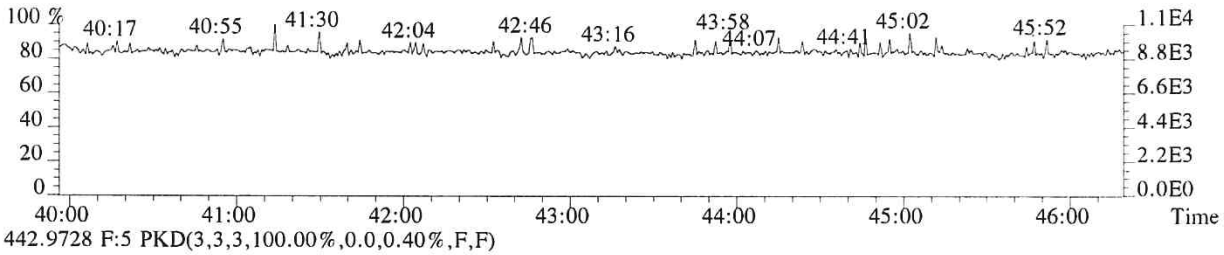
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1476.0,0.40%,F,T)



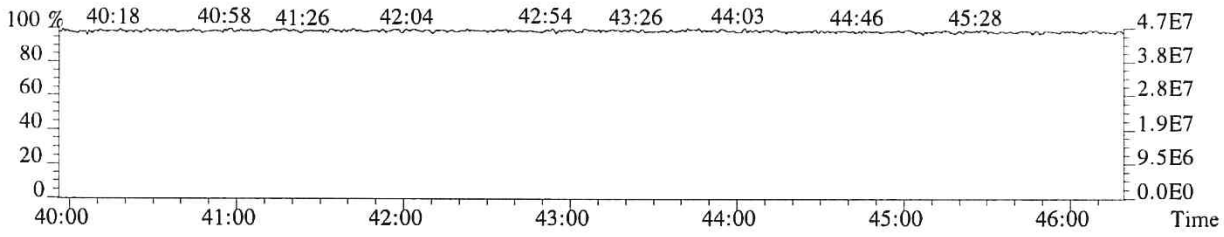
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,544.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

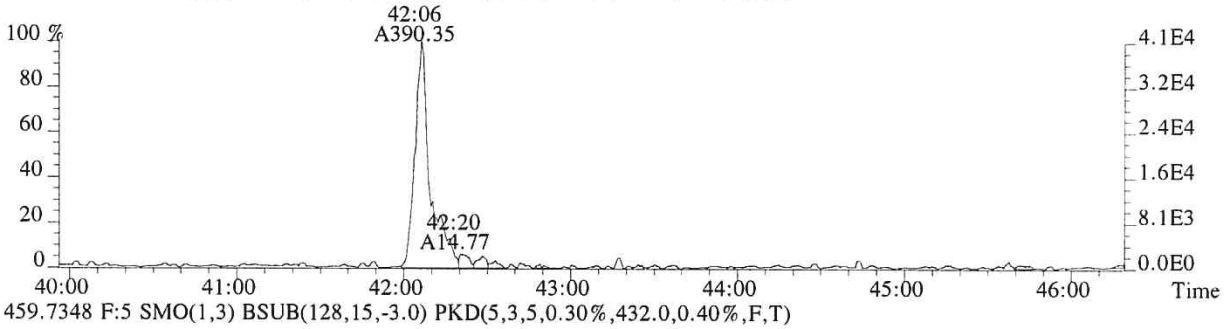


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

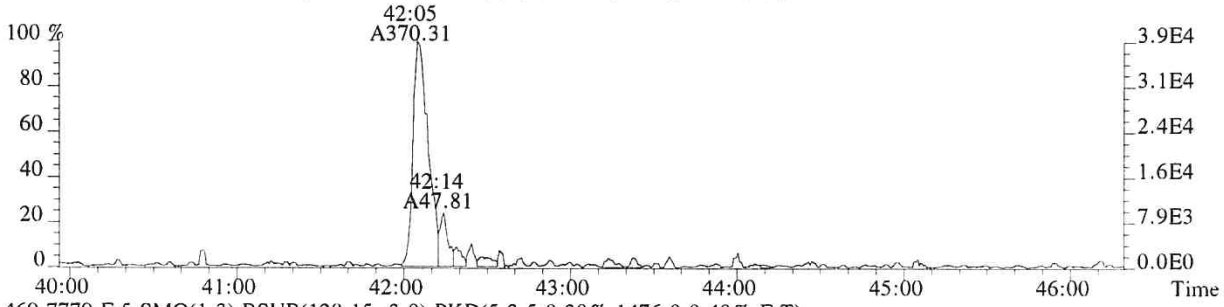


059081

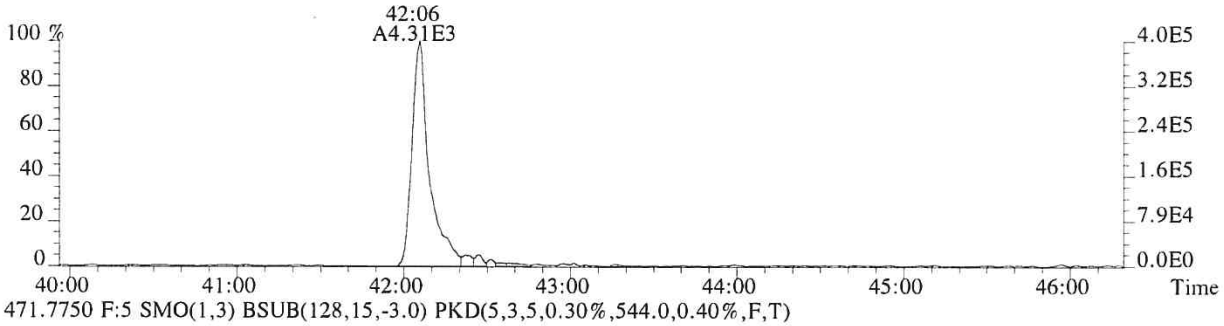
File:P519542 #1-575 Acq:21-DEC-2018 10:38:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-011DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



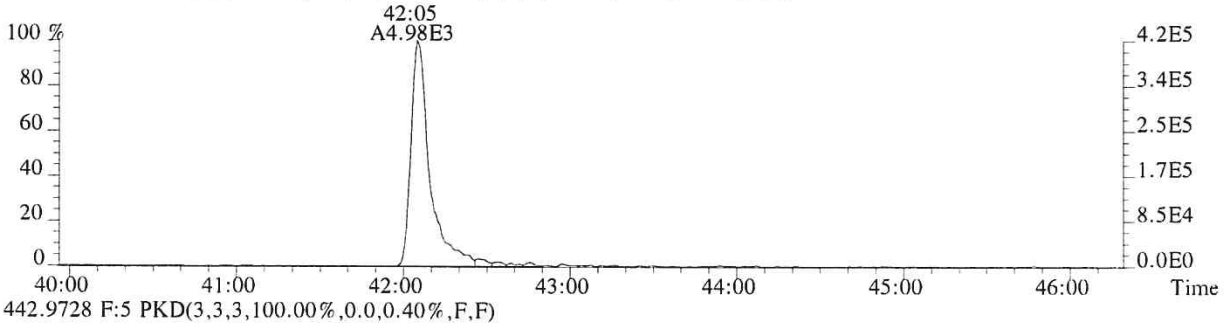
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,432.0,0.40%,F,T)



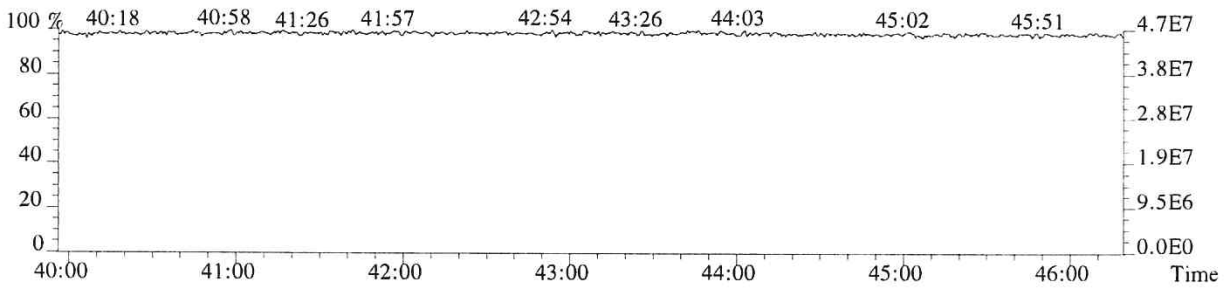
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1476.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,544.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059082

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0067

Run #18 Filename P519506 Samp: 1 Inj: 1 Acquired: 20-DEC-18 01:20:46
Processed: 20-DEC-18 11:49:17 Sample ID: E1801096-012

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:54	9.796e+05	1.257e+06	0.78	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:31	3.946e+04	2.586e+04	1.53	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:28	2.544e+04	1.683e+04	1.51	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:18	3.580e+04	2.898e+04	1.24	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:25	9.290e+03	7.594e+03	1.22	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:57	1.531e+03	1.000e+03	1.53	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:46	1.848e+03	1.475e+03	1.25	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:07	4.190e+03	4.171e+03	1.00	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:33	1.135e+03	1.131e+03	1.00	yes	no	1.258
10	Unk	OCDF	42:14	8.104e+02	9.351e+02	0.87	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:47	2.406e+05	3.048e+05	0.79	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:47	2.356e+03	1.552e+03	1.52	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:06	2.913e+01	1.513e+01	1.92	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	36:12	1.267e+02	8.820e+01	1.44	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:27	6.298e+01	5.415e+01	1.16	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:06	2.125e+03	2.053e+03	1.04	yes	no	1.025
17	Unk	OCDD	42:04	1.604e+04	1.826e+04	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:53	1.343e+04	1.671e+04	0.80	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:29	1.592e+04	1.004e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:27	1.381e+04	8.891e+03	1.55	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:18	3.834e+03	7.357e+03	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:24	4.462e+03	8.558e+03	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:56	3.991e+03	7.475e+03	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:44	2.802e+03	5.465e+03	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:07	1.741e+03	3.810e+03	0.46	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:33	1.138e+03	2.644e+03	0.43	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:46	5.974e+03	7.289e+03	0.82	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:45	1.023e+04	6.457e+03	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:06	4.715e+03	3.702e+03	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	36:11	4.883e+03	3.859e+03	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:05	2.908e+03	2.762e+03	1.05	yes	no	0.858
32	IS	13C-OCDD	42:04	1.992e+03	2.089e+03	0.95	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	27:09	1.214e+04	1.510e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:26	7.227e+03	5.729e+03	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:47	1.087e+04				no	1.014

$$\text{OCDD} = \frac{(1.604e+04 + 1.826e+04) \times 4000\ \text{pg} \times 1}{(1.992e+03 + 2.089e+03) \times 10.41\ \text{g} \times 75.1 / 100 \times 1.118} = 3930\ \text{ng/kg}$$

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Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

lw 12/21/18

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0067

Run #18 Filename P519506 Samp: 1 Inj: 1 Acquired: 20-DEC-18 01:20:46
Processed: 20-DEC-18 11:49:17 LAB. ID: E1801096-012

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.49e+08	1.39e+03	1.1e+05	1.90e+08	1.24e+03	1.5e+05
2	1,2,3,7,8-PeCDF	7.27e+06	4.28e+03	1.7e+03	4.68e+06	1.85e+03	2.5e+03
3	2,3,4,7,8-PeCDF	3.88e+06	4.28e+03	9.1e+02	2.53e+06	1.85e+03	1.4e+03
4	1,2,3,4,7,8-HxCDF	7.37e+06	7.96e+02	9.3e+03	5.92e+06	1.34e+03	4.4e+03
5	1,2,3,6,7,8-HxCDF	1.71e+06	7.96e+02	2.2e+03	1.39e+06	1.34e+03	1.0e+03
6	2,3,4,6,7,8-HxCDF	2.80e+05	7.96e+02	3.5e+02	2.01e+05	1.34e+03	1.5e+02
7	1,2,3,7,8,9-HxCDF	3.40e+05	7.96e+02	4.3e+02	2.51e+05	1.34e+03	1.9e+02
8	1,2,3,4,6,7,8-HpCDF	7.71e+05	3.72e+02	2.1e+03	7.62e+05	2.24e+02	3.4e+03
9	1,2,3,4,7,8,9-HpCDF	1.69e+05	3.72e+02	4.6e+02	1.60e+05	2.24e+02	7.1e+02
10	OCDF	8.55e+04	3.92e+02	2.2e+02	9.96e+04	4.32e+02	2.3e+02
11	2,3,7,8-TCDD	4.35e+07	1.87e+03	2.3e+04	5.49e+07	1.30e+03	4.2e+04
12	1,2,3,7,8-PeCDD	4.18e+05	7.40e+02	5.6e+02	2.81e+05	4.20e+02	6.7e+02
13	1,2,3,4,7,8-HxCDD	6.91e+03	7.88e+02	8.8e+00	4.37e+03	1.14e+03	3.8e+00
14	1,2,3,6,7,8-HxCDD	2.39e+04	7.88e+02	3.0e+01	1.65e+04	1.14e+03	1.5e+01
15	1,2,3,7,8,9-HxCDD	1.13e+04	7.88e+02	1.4e+01	8.09e+03	1.14e+03	7.1e+00
16	1,2,3,4,6,7,8-HpCDD	3.33e+05	3.36e+02	9.9e+02	3.36e+05	3.68e+02	9.1e+02
17	OCDD	1.67e+06	2.84e+02	5.9e+03	1.92e+06	4.20e+02	4.6e+03
18	13C-2,3,7,8-TCDF	2.16e+06	5.07e+03	4.3e+02	2.70e+06	6.77e+03	4.0e+02
19	13C-1,2,3,7,8-PeCDF	2.92e+06	8.60e+02	3.4e+03	1.83e+06	1.38e+03	1.3e+03
20	13C-2,3,4,7,8-PeCDF	2.61e+06	8.60e+02	3.0e+03	1.69e+06	1.38e+03	1.2e+03
21	13C-1,2,3,4,7,8-HxCDF	7.69e+05	4.40e+02	1.7e+03	1.51e+06	1.17e+03	1.3e+03
22	13C-1,2,3,6,7,8-HxCDF	8.79e+05	4.40e+02	2.0e+03	1.64e+06	1.17e+03	1.4e+03
23	13C-2,3,4,6,7,8-HxCDF	8.05e+05	4.40e+02	1.8e+03	1.49e+06	1.17e+03	1.3e+03
24	13C-1,2,3,7,8,9-HxCDF	5.25e+05	4.40e+02	1.2e+03	1.02e+06	1.17e+03	8.7e+02
25	13C-1,2,3,4,6,7,8-HpCDF	3.16e+05	1.06e+03	3.0e+02	6.60e+05	1.18e+03	5.6e+02
26	13C-1,2,3,4,7,8,9-HpCDF	1.79e+05	1.06e+03	1.7e+02	4.06e+05	1.18e+03	3.4e+02
27	13C-2,3,7,8-TCDD	1.08e+06	3.31e+03	3.3e+02	1.35e+06	2.29e+03	5.9e+02
28	13C-1,2,3,7,8-PeCDD	1.98e+06	4.84e+02	4.1e+03	1.23e+06	8.28e+02	1.5e+03
29	13C-1,2,3,4,7,8-HxCDD	9.83e+05	6.08e+02	1.6e+03	7.80e+05	5.32e+02	1.5e+03
30	13C-1,2,3,6,7,8-HxCDD	9.02e+05	6.08e+02	1.5e+03	7.24e+05	5.32e+02	1.4e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.58e+05	3.16e+02	1.4e+03	4.43e+05	3.20e+02	1.4e+03
32	13C-OCDD	2.16e+05	3.56e+02	6.1e+02	2.26e+05	3.40e+02	6.7e+02
33	13C-1,2,3,4-TCDD	2.12e+06	3.31e+03	6.4e+02	2.62e+06	2.29e+03	1.1e+03
34	13C-1,2,3,7,8,9-HxCDD	1.32e+06	6.08e+02	2.2e+03	1.08e+06	5.32e+02	2.0e+03
35	37Cl-2,3,7,8-TCDD	1.94e+06	1.14e+03	1.7e+03			

---Sample Calculation---

$$\text{pg/L TCDD} = \frac{2.5 \times (1.872e{+}03 + 1.296e{+}03) \times 2000}{(1.084e{+}06 + 1.348e{+}06) \times (\qquad) \times 1.085} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0067

Entry: 36 Totals Name: Total Tetra-Furans

Run: 18 File: P519506 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 01:20:46 Processed: 20-DEC-18 11:49:17

Mass: 303.9020 305.8990 Tot Response: 4.09e+06 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:44	8.13e+03	1.08e+04	0.75	yes	1.89e+04		n	n
2	24:02	4.67e+04	6.06e+04	0.77	yes	1.07e+05		n	n
3	24:24	1.27e+04	1.85e+04	0.68	yes	3.12e+04		n	n
4	24:41	3.90e+04	5.15e+04	0.76	yes	9.05e+04		n	n
5	25:06	8.35e+03	1.08e+04	0.77	yes	1.92e+04		n	n
6	25:20	2.62e+04	3.51e+04	0.75	yes	6.13e+04		n	n
7	25:29	4.49e+04	5.89e+04	0.76	yes	1.04e+05		n	n
8	25:58	4.44e+05	5.75e+05	0.77	yes	1.02e+06		n	n
9	26:16	2.10e+04	2.74e+04	0.77	yes	4.84e+04		n	n
10	26:54	9.80e+05	1.26e+06	0.78	yes	2.24e+06	2,3,7,8-TCDF	n	n
11	27:18	7.08e+04	9.31e+04	0.76	yes	1.64e+05		n	n
12	27:32	1.22e+04	1.60e+04	0.76	yes	2.82e+04		n	n
13	28:56	7.22e+04	9.25e+04	0.78	yes	1.65e+05		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0067

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 18 File: P519506 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 01:20:46 Processed: 20-DEC-18 11:49:17

Mass: 319.8970 321.8940 Tot Response: 6.07e+05 RRF: 1.085

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:30	3.28e+03	4.29e+03	0.77	yes	7.57e+03		n	n
2	27:47	2.41e+05	3.05e+05	0.79	yes	5.45e+05	2,3,7,8-TCDD	n	n
3	28:07	2.30e+04	3.07e+04	0.75	yes	5.36e+04		n	n

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Peak List Summary

CLIENT ID.
SL0067

Entry: 39 Totals Name: Total Penta-Furans2

Run: 18 File: P519506 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 01:20:46 Processed: 20-DEC-18 11:49:17

Mass: 339.8600 341.8570 Tot Response: 1.65e+05 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:23	3.01e+02	2.14e+02	1.41	yes	5.14e+02		n	n
2	30:31	1.75e+04	1.13e+04	1.54	yes	2.89e+04		n	n
3	31:05	5.65e+02	3.56e+02	1.59	yes	9.21e+02		n	n
4	31:11	5.94e+02	4.39e+02	1.35	yes	1.03e+03		n	n
5	31:19	3.24e+03	2.14e+03	1.52	yes	5.37e+03		n	n
6	31:31	3.95e+04	2.59e+04	1.53	yes	6.53e+04	1,2,3,7,8-PeCDF	n	n
7	31:46	1.13e+04	7.35e+03	1.53	yes	1.86e+04		n	n
8	32:22	3.14e+02	2.14e+02	1.47	yes	5.27e+02		n	n
9	32:28	2.54e+04	1.68e+04	1.51	yes	4.23e+04	2,3,4,7,8-PeCDF	n	n
10	33:25	1.22e+03	7.57e+02	1.61	yes	1.98e+03		n	n

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Peak List Summary

CLIENT ID.
SL0067

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 18 File: P519506 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 01:20:46 Processed: 20-DEC-18 11:49:17

Mass: 355.8550 357.8520 Tot Response: 5.45e+03 RRF: 0.9565

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
.	30:34	1.83e+02	1.07e+02	1.71	yes	2.90e+02		n	n
2	31:03	2.42e+02	1.80e+02	1.34	yes	4.22e+02		n	n
3	31:31	2.06e+02	1.55e+02	1.33	yes	3.61e+02		n	n
4	31:42	1.54e+02	8.86e+01	1.74	yes	2.43e+02		n	n
5	31:48	8.41e+01	5.50e+01	1.53	yes	1.39e+02		n	n
6	32:04	3.74e+01	2.11e+01	1.78	yes	5.85e+01		n	n
7	32:47	2.36e+03	1.55e+03	1.52	yes	3.91e+03	1,2,3,7,8-PeCDD	n	n
8	33:05	1.84e+01	1.11e+01	1.65	yes	2.95e+01		n	n

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Peak List Summary

CLIENT ID.
SL0067

Entry: 41 Totals Name: Total Hexa-Furans

Run: 18 File: P519506 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 01:20:46 Processed: 20-DEC-18 11:49:17

Mass: 373.8210 375.8180 Tot Response: 9.29e+04 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:08	2.67e+02	2.02e+02	1.32	yes	4.69e+02		n	n
2	34:18	2.84e+03	2.16e+03	1.32	yes	5.00e+03		n	n
3	34:51	1.32e+03	1.14e+03	1.16	yes	2.47e+03		n	n
4	35:18	3.58e+04	2.90e+04	1.24	yes	6.48e+04	1,2,3,4,7,8-HxCDF	n	n
5	35:25	9.29e+03	7.59e+03	1.22	yes	1.69e+04	1,2,3,6,7,8-HxCDF	n	n
6	36:46	1.85e+03	1.47e+03	1.25	yes	3.32e+03	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0067

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 18 File: P519506 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 01:20:46 Processed: 20-DEC-18 11:49:17

Mass: 389.8160 391.8130 Tot Response: 2.91e+03 RRF: 1.047

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:42	1.11e+03	8.04e+02	1.38	yes	1.91e+03		n	n
2	35:14	6.38e+01	5.12e+01	1.25	yes	1.15e+02		n	n
3	35:28	3.82e+02	3.45e+02	1.11	yes	7.27e+02		n	n
4	36:22	1.96e+01	1.65e+01	1.18	yes	3.61e+01		n	n
5	36:27	6.30e+01	5.41e+01	1.16	yes	1.17e+02	1,2,3,7,8,9-HxCDD	n	n

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SL0067

Entry: 43 Totals Name: Total Hepta-Furans

Run: 18 File: P519506 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 01:20:46 Processed: 20-DEC-18 11:49:17

Mass: 407.7820 409.7790 Tot Response: 1.32e+04 RRF: 1.308

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:07	4.19e+03	4.17e+03	1.00	yes	8.36e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	38:32	1.32e+03	1.28e+03	1.03	yes	2.60e+03		n	n
3	39:33	1.14e+03	1.13e+03	1.00	yes	2.27e+03	1,2,3,4,7,8,9-HpCDF	n	n

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SL0067

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 18 File: P519506 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 01:20:46 Processed: 20-DEC-18 11:49:17

Mass: 423.7770 425.7740 Tot Response: 9.32e+03 RRF: 1.025

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:24	2.61e+03	2.53e+03 1.03	yes	5.14e+03		n	n
2	39:06	2.13e+03	2.05e+03 1.04	yes	4.18e+03	1,2,3,4,6,7,8-HpCDD	n	n

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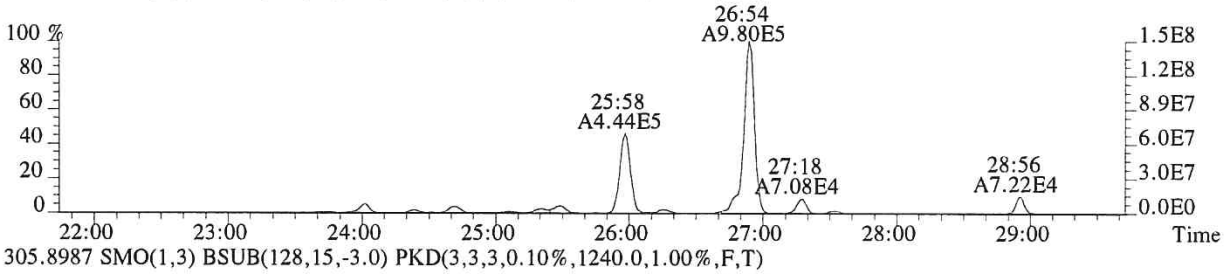
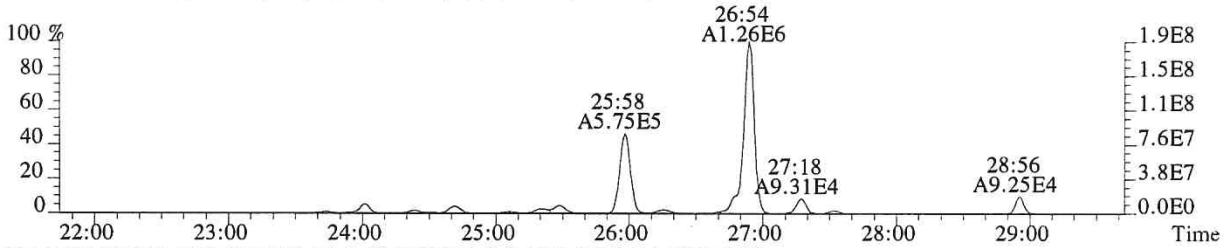
File:P519506 #1-566 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012

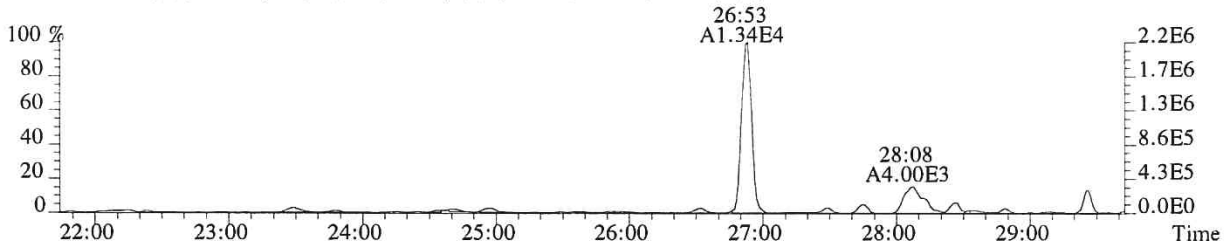
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1388.0,1.00%,F,T)



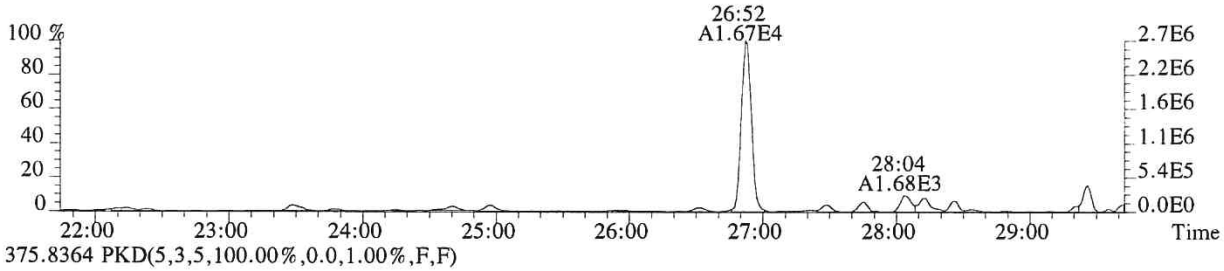
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1240.0,1.00%,F,T)



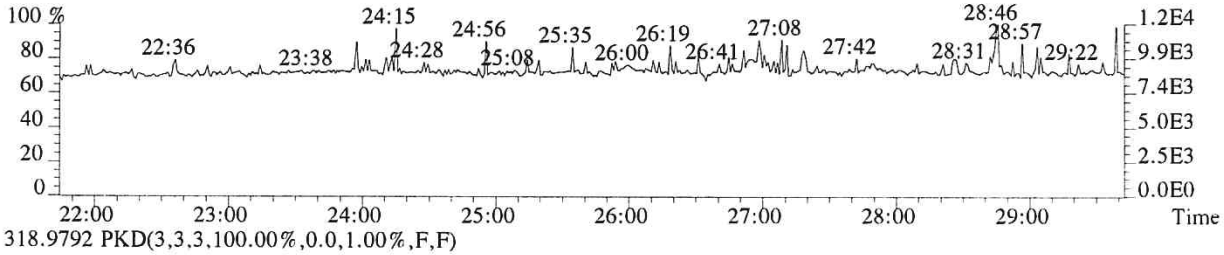
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5072.0,1.00%,F,T)



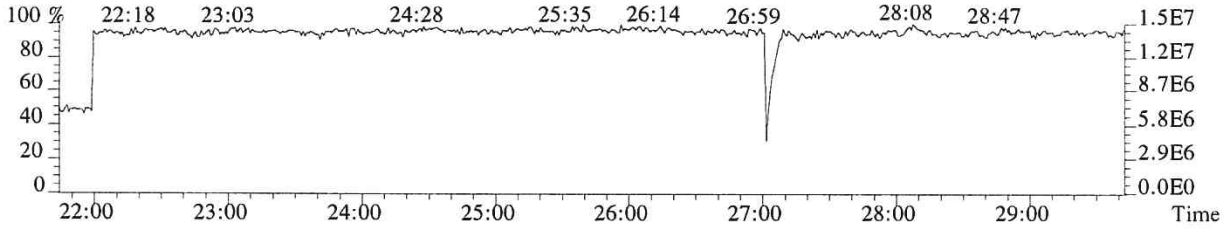
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6768.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

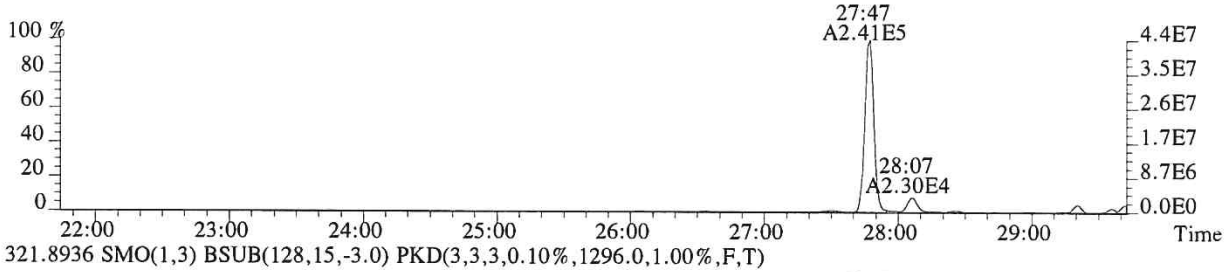


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

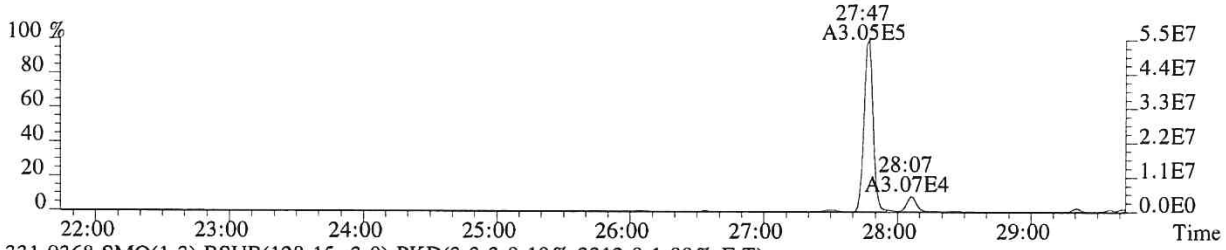


059093

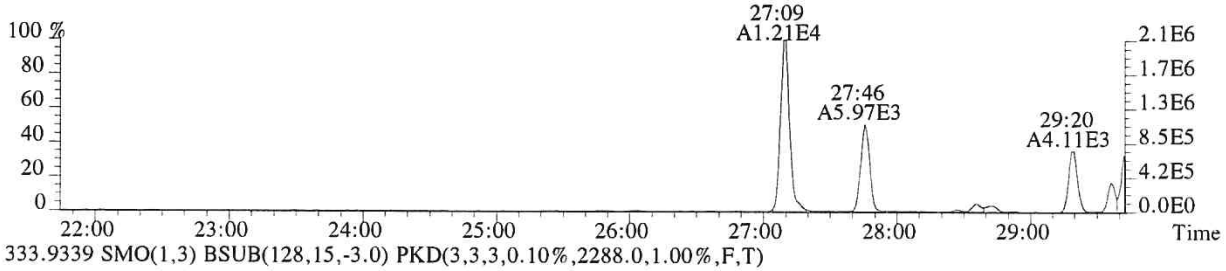
File:P519506 #1-566 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1872.0,1.00%,F,T)



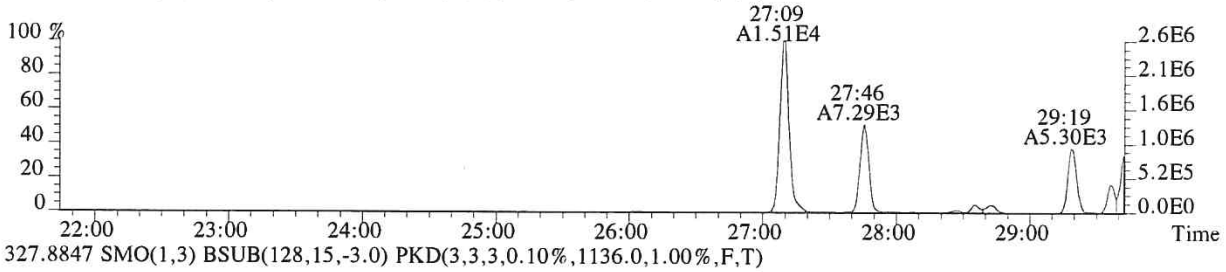
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1296.0,1.00%,F,T)



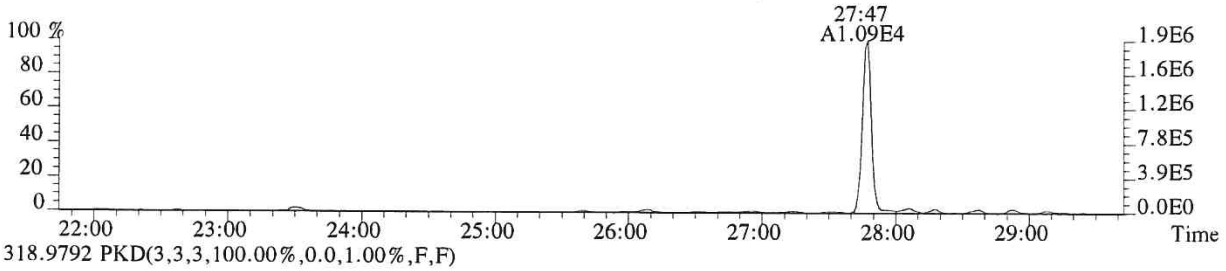
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3312.0,1.00%,F,T)



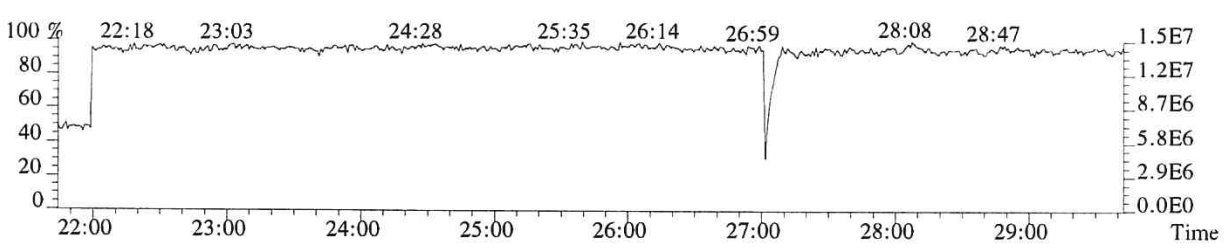
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2288.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1136.0,1.00%,F,T)

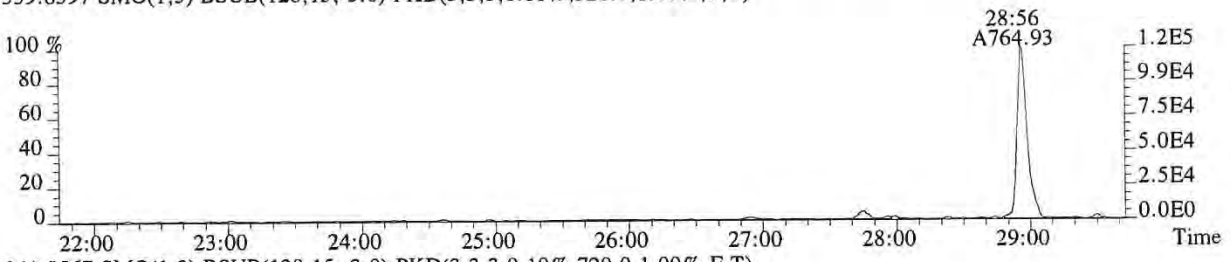


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

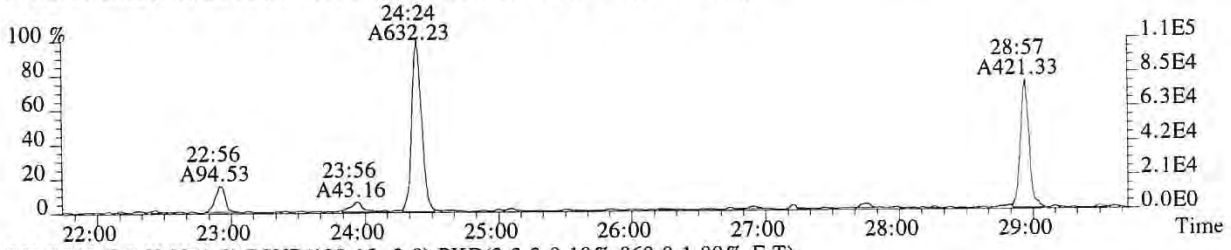


059094

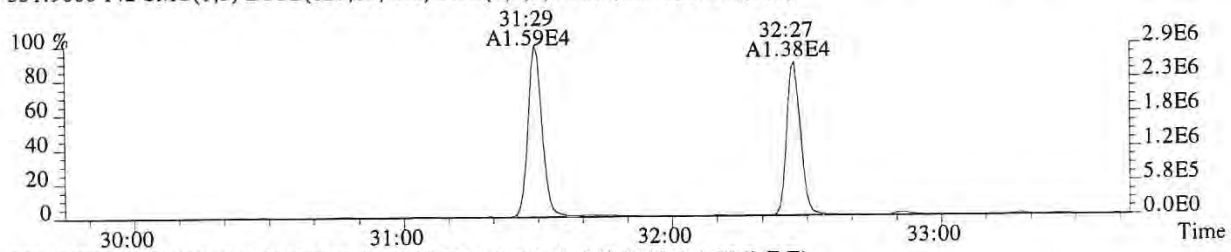
File:P519506 #1-566 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,328.0,1.00%,F,T)



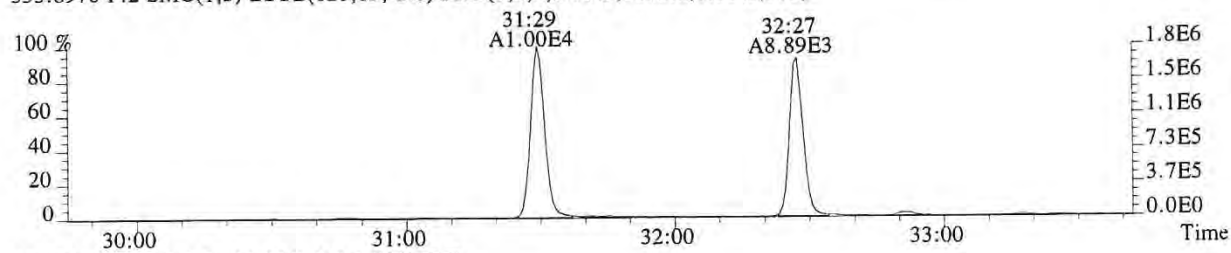
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,720.0,1.00%,F,T)



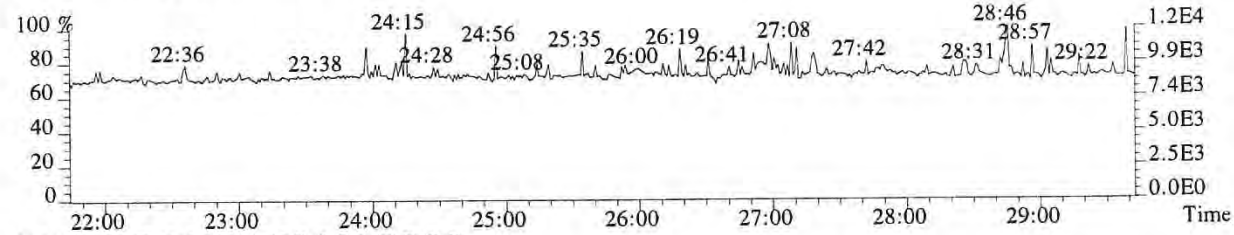
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,860.0,1.00%,F,T)



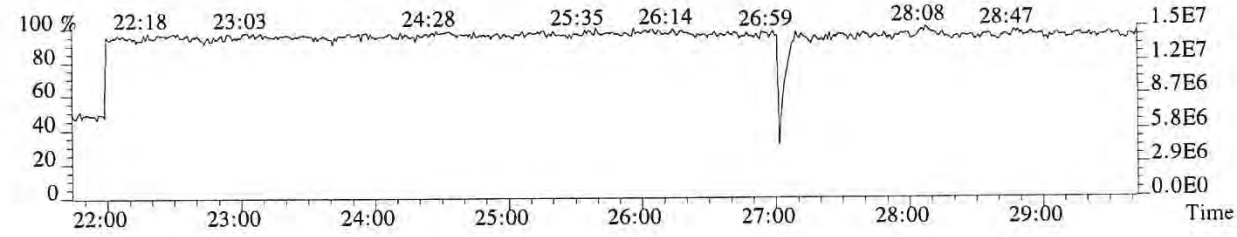
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1380.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

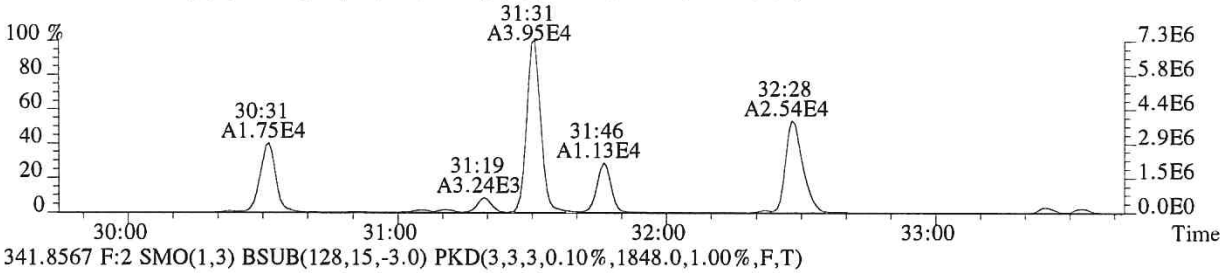


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

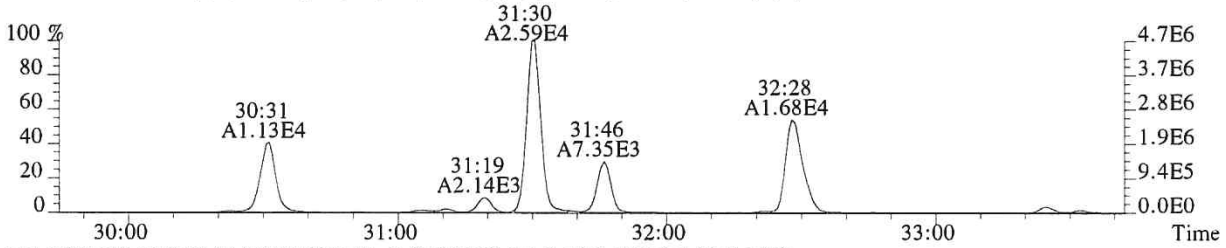


059095

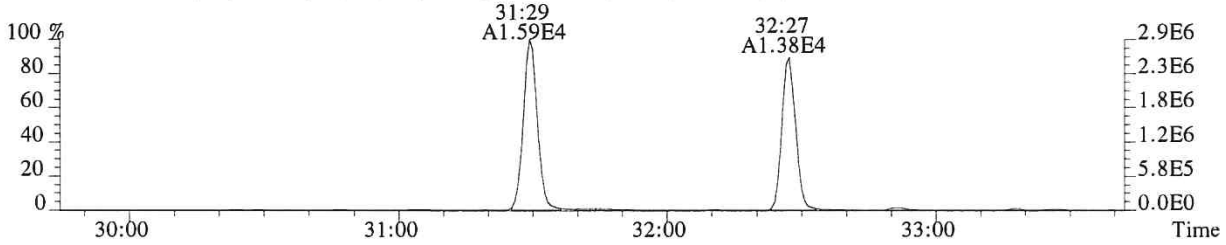
File:P519506 #1-357 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4280.0,1.00%,F,T)



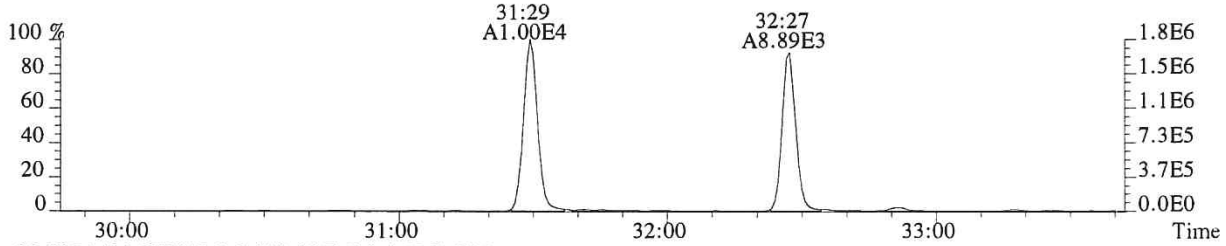
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1848.0,1.00%,F,T)



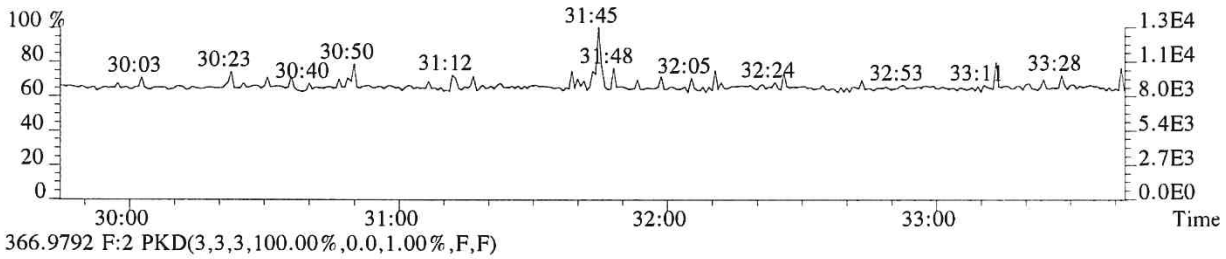
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,860.0,1.00%,F,T)



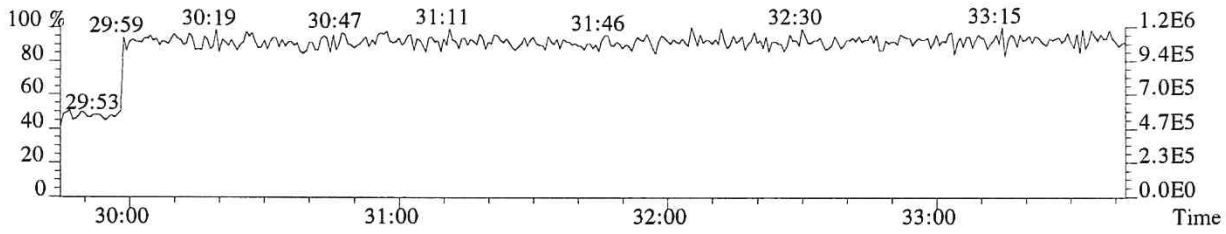
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1380.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

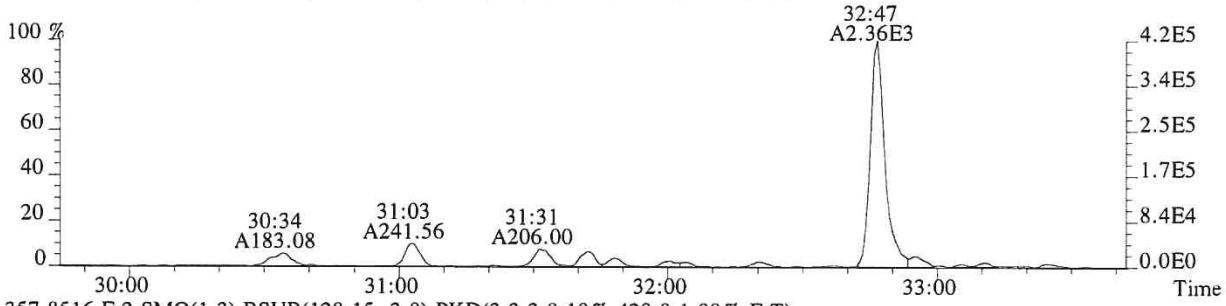


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

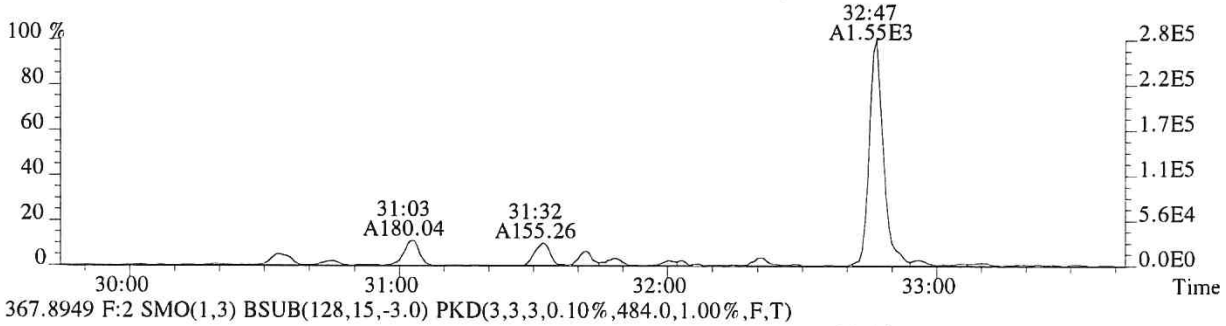


059096

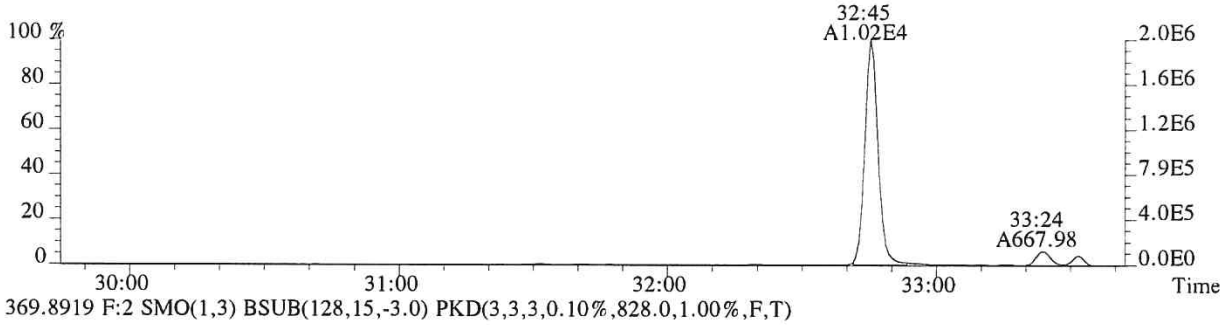
File:P519506 #1-357 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,740.0,1.00%,F,T)



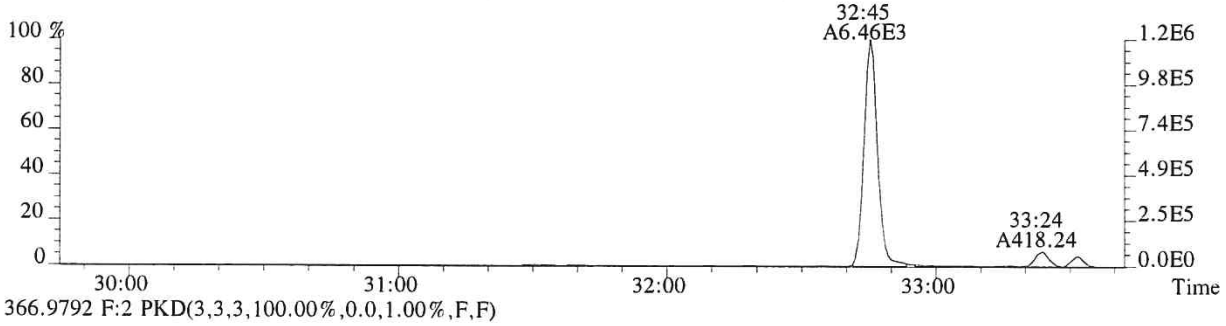
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,420.0,1.00%,F,T)



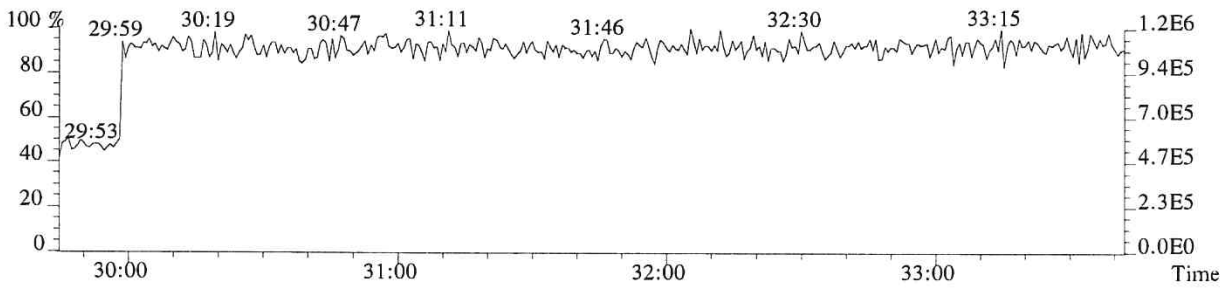
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,484.0,1.00%,F,T)



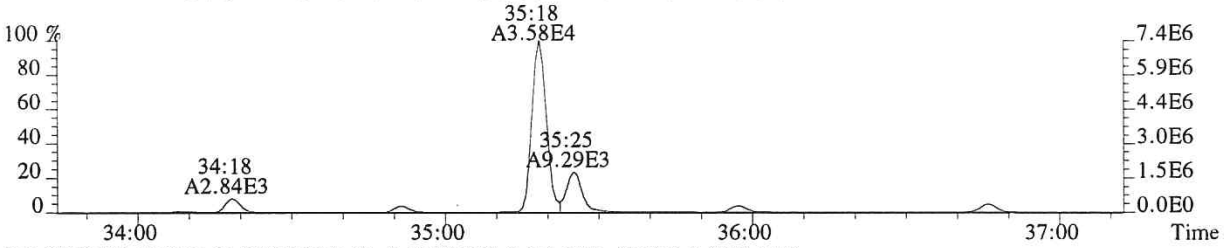
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,828.0,1.00%,F,T)



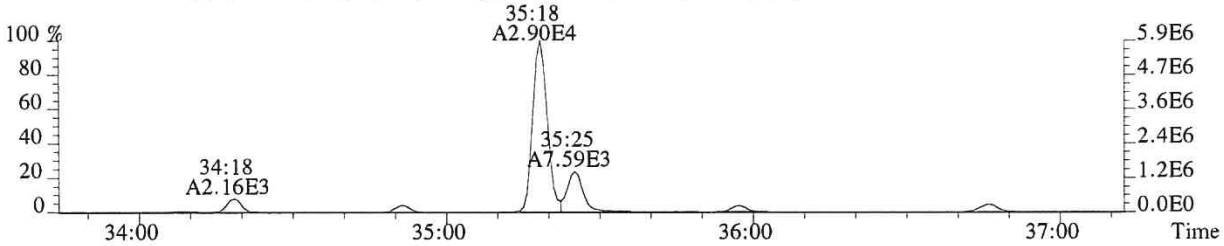
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



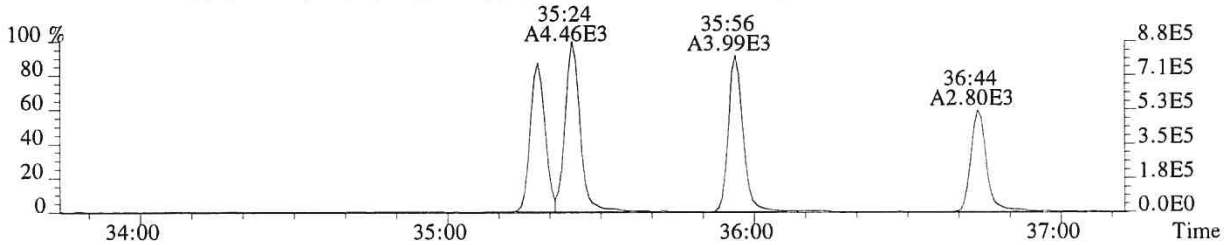
File:P519506 #1-313 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,796.0,0.40%,F,T)



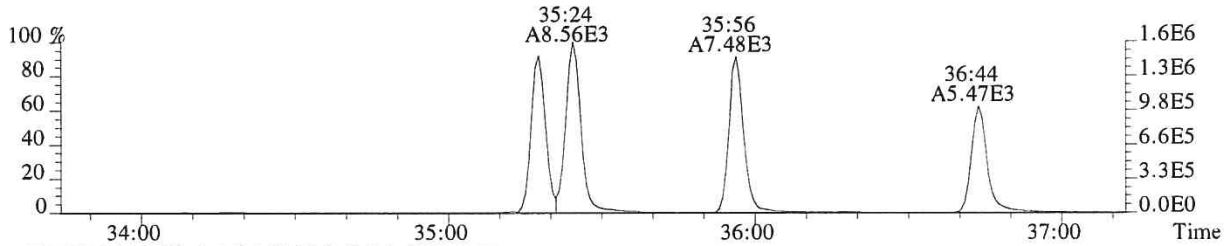
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1340.0,0.40%,F,T)



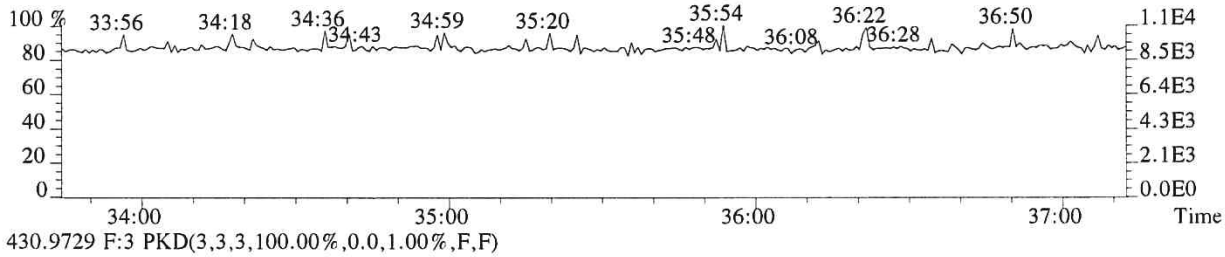
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,440.0,0.40%,F,T)



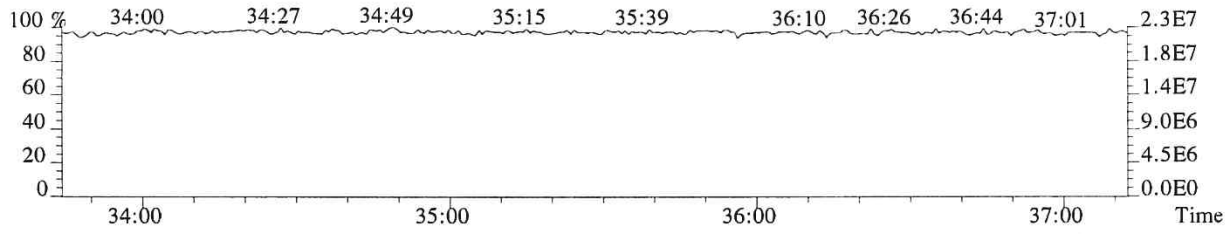
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1168.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

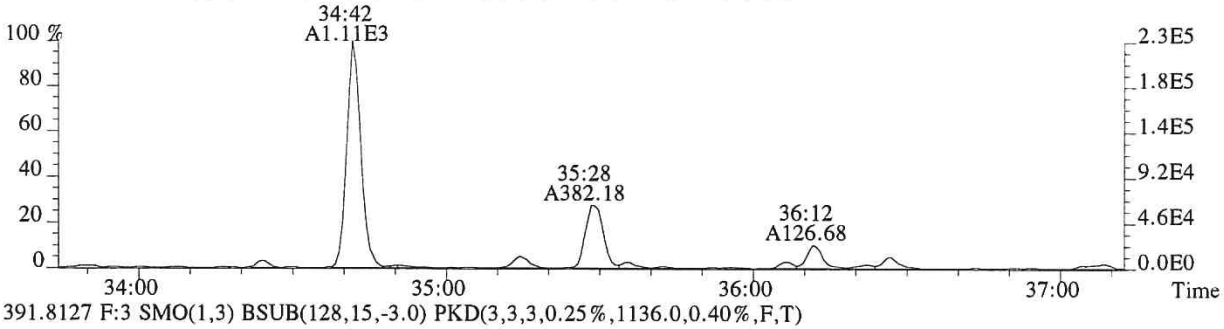


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

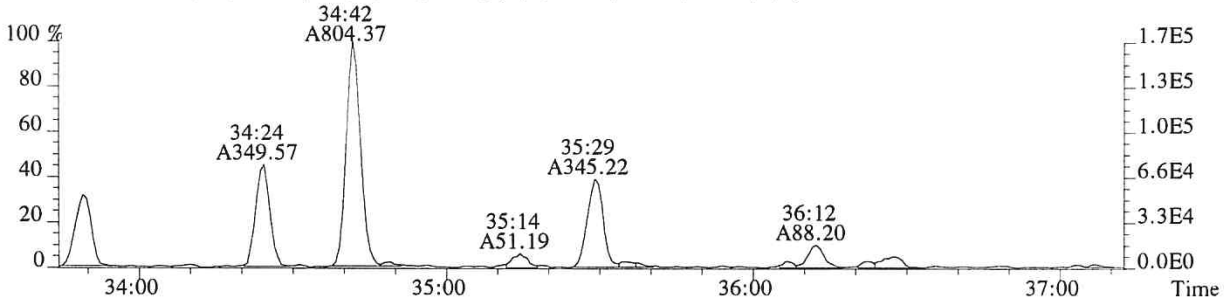


059098

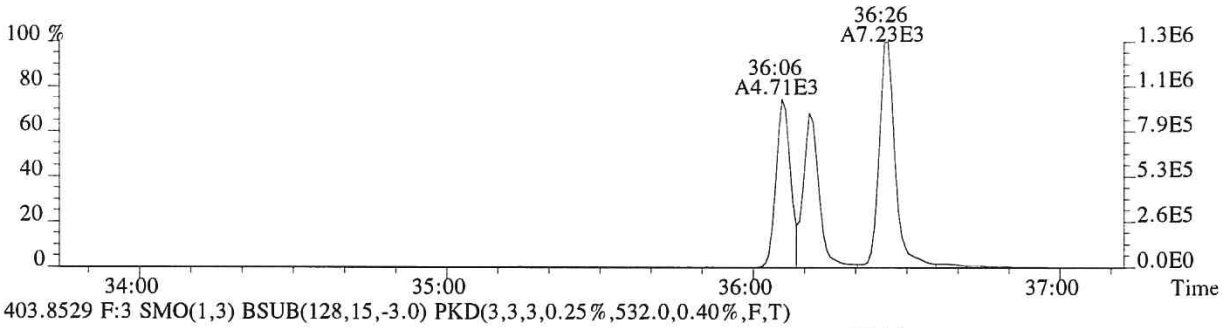
File:P519506 #1-313 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,788.0,0.40%,F,T)



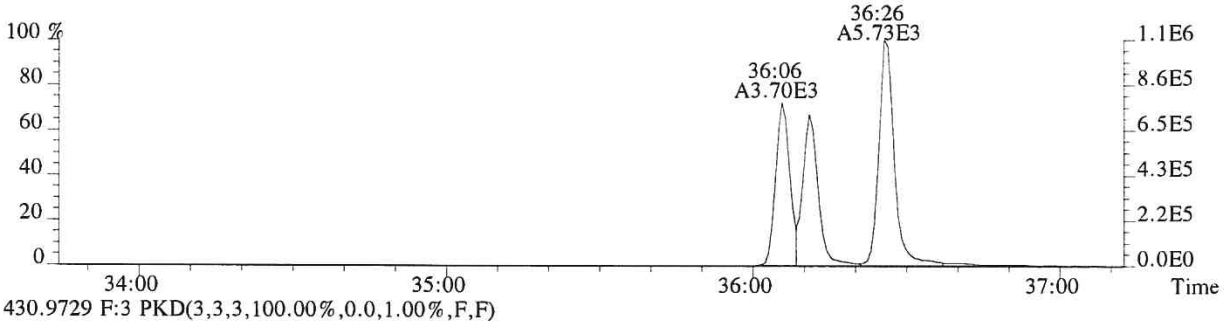
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1136.0,0.40%,F,T)



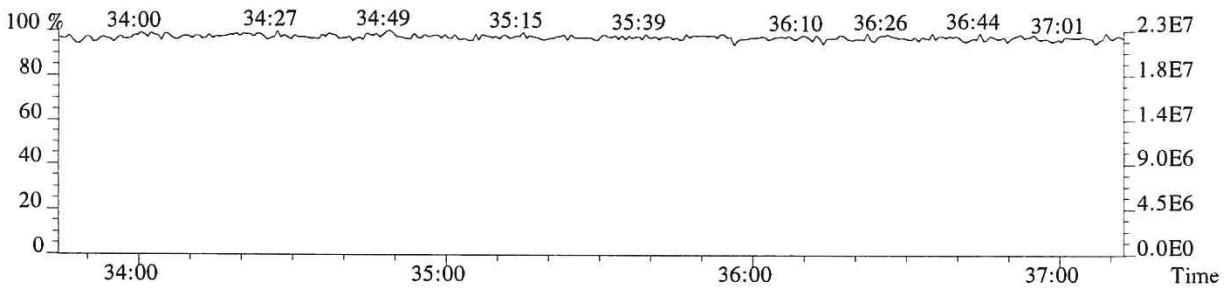
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,608.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,532.0,0.40%,F,T)



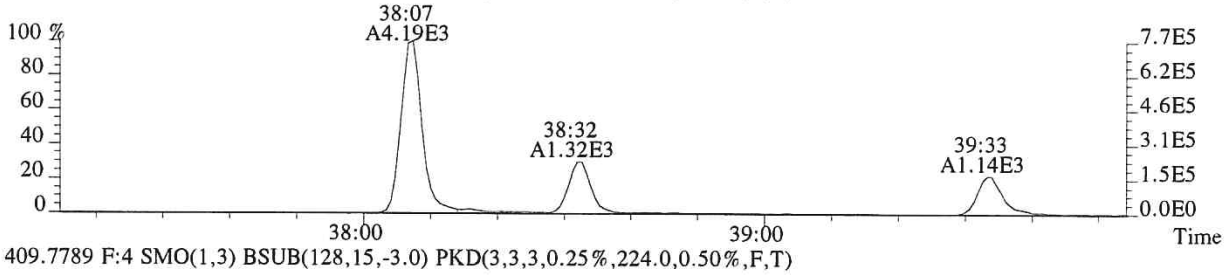
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



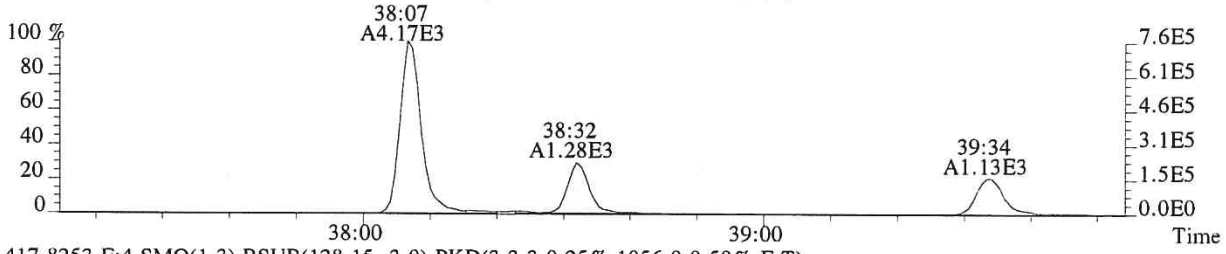
059099

File:P519506 #1-240 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012

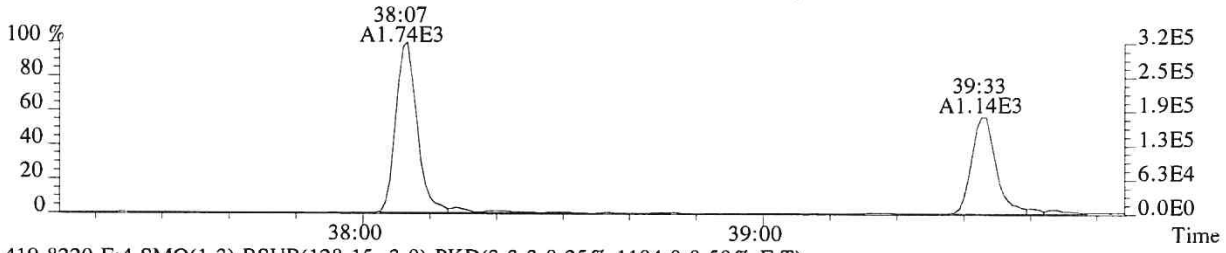
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,372.0,0.50%,F,T)



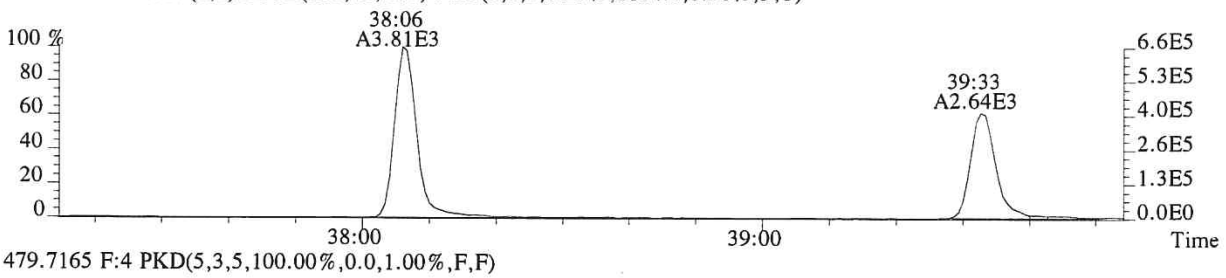
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,224.0,0.50%,F,T)



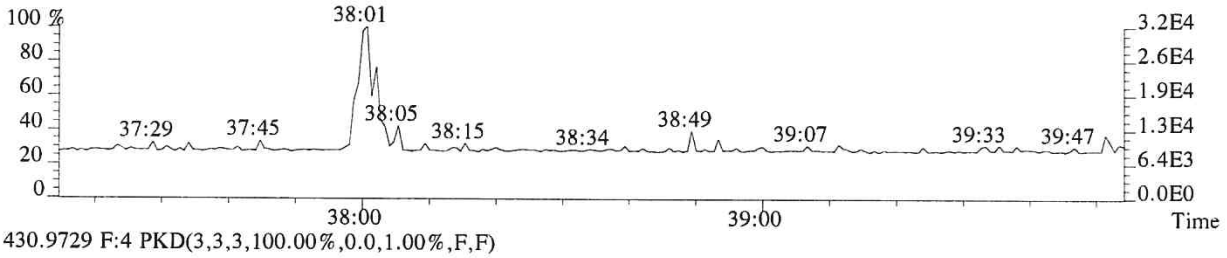
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1056.0,0.50%,F,T)



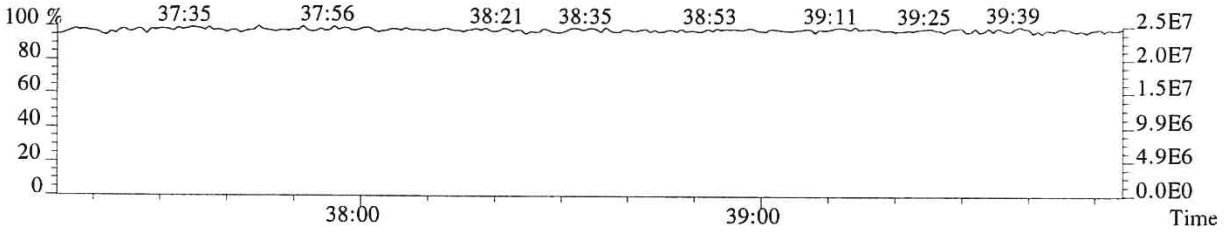
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1184.0,0.50%,F,T)



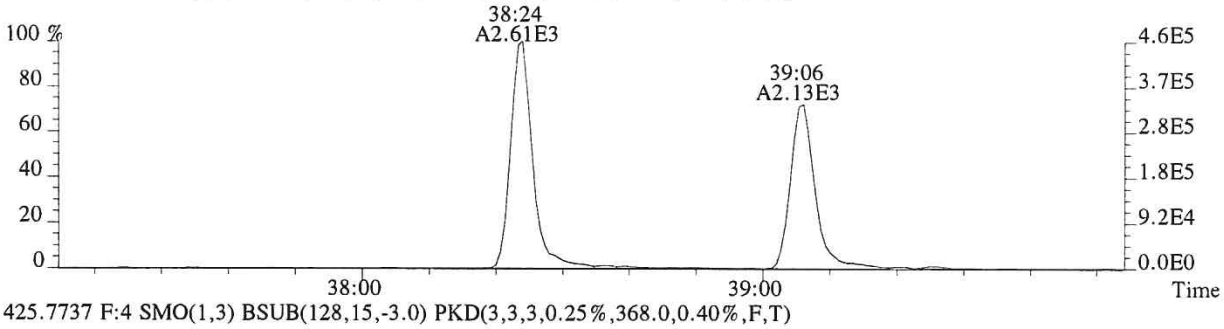
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



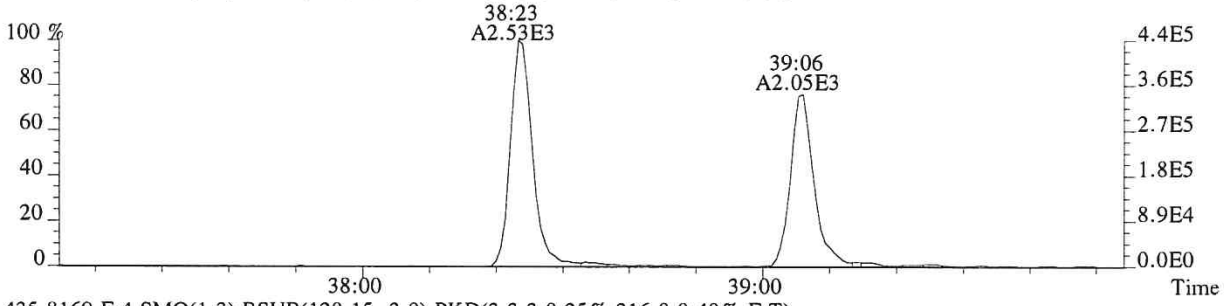
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



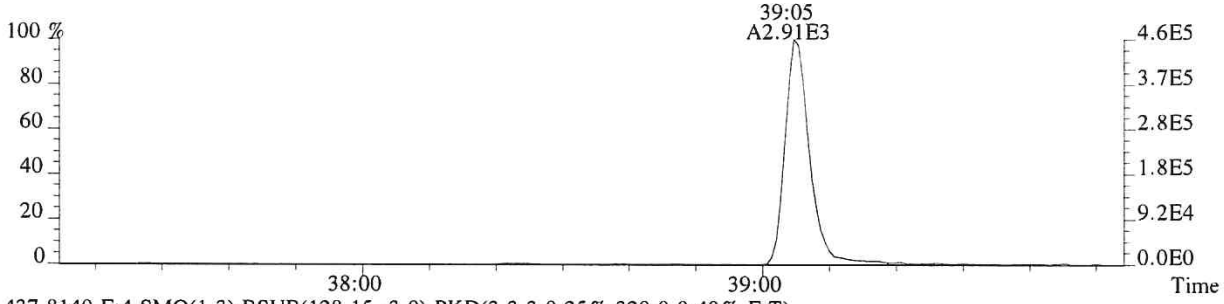
File:P519506 #1-240 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,336.0,0.40%,F,T)



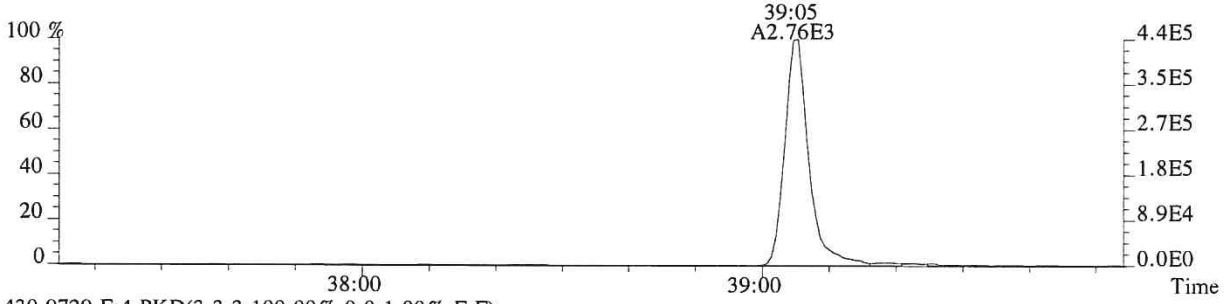
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,368.0,0.40%,F,T)



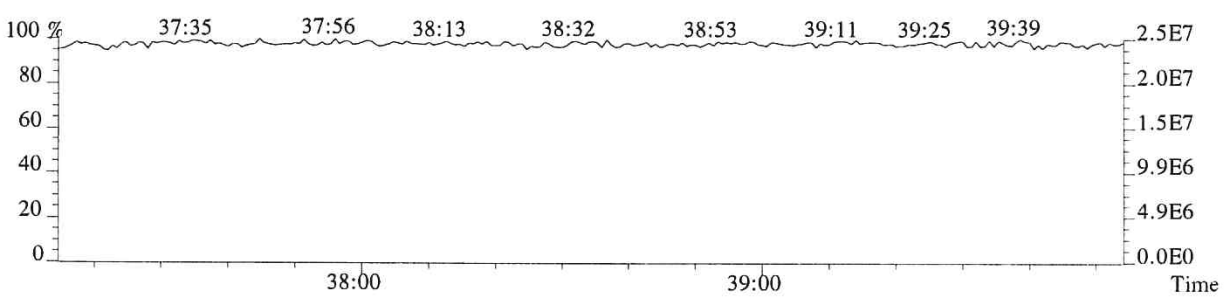
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,316.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,320.0,0.40%,F,T)

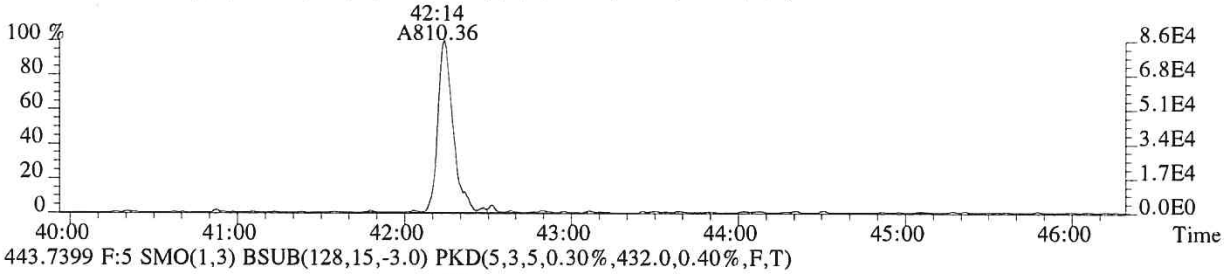


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P519506 #1-575 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012

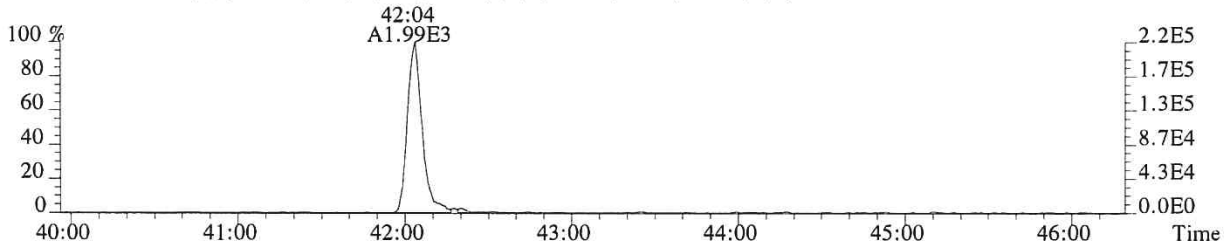
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,392.0,0.40%,F,T)



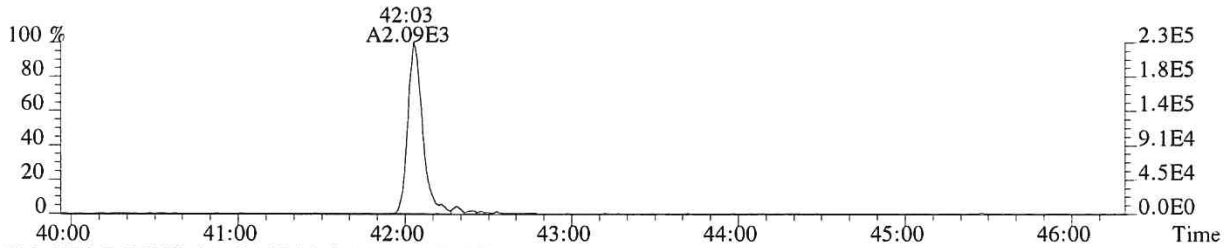
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,432.0,0.40%,F,T)



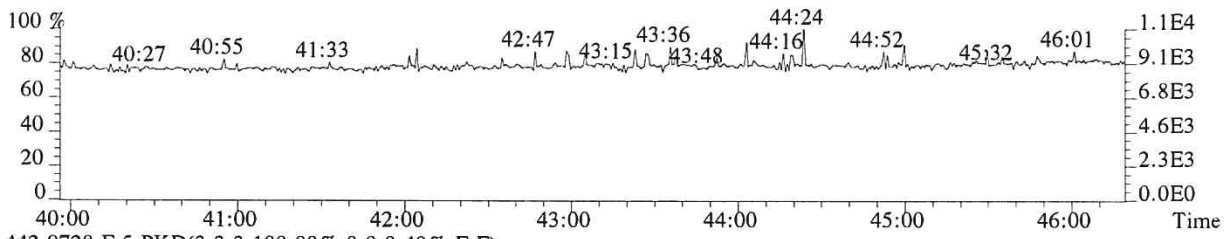
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,356.0,0.40%,F,T)



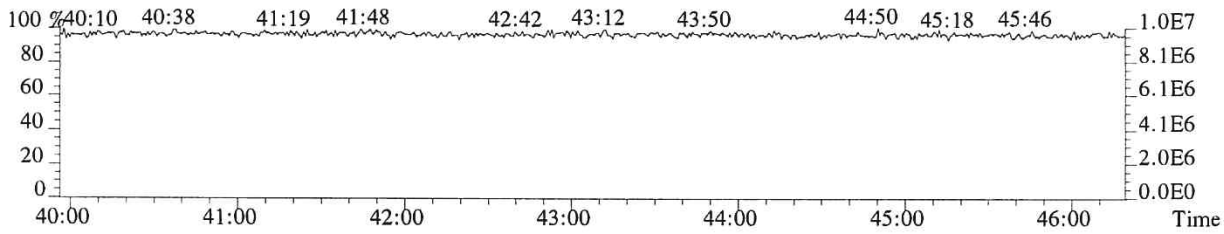
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,340.0,0.40%,F,T)



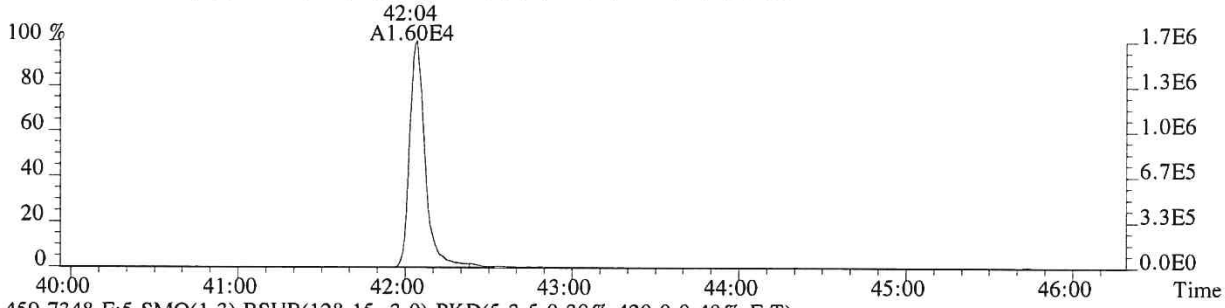
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



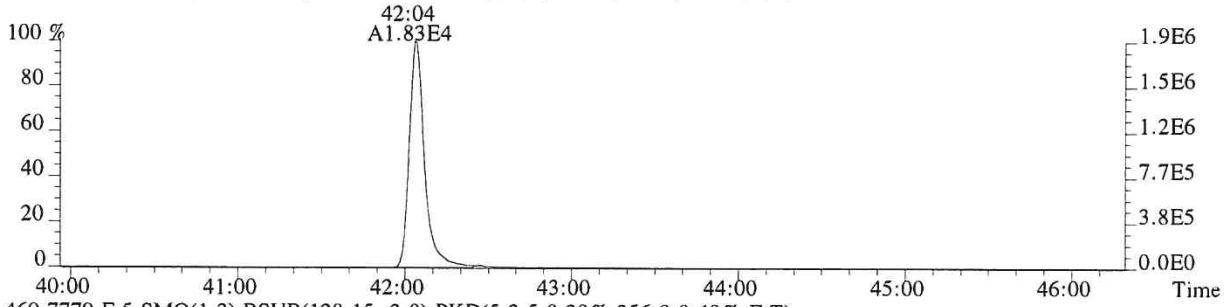
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



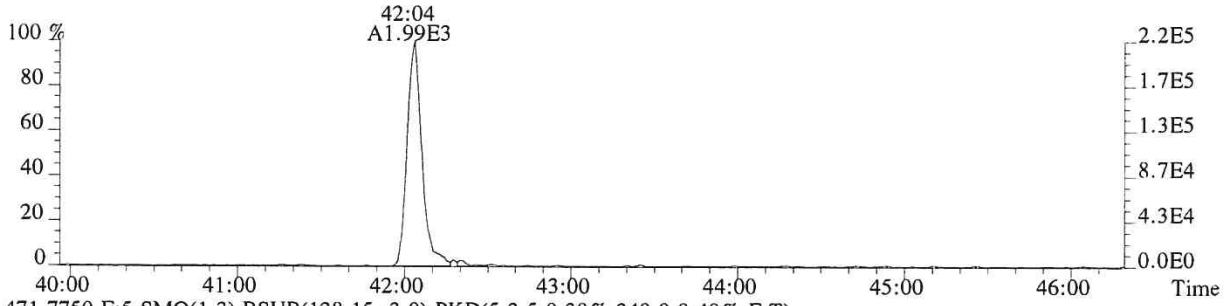
File:P519506 #1-575 Acq:20-DEC-2018 01:20:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,284.0,0.40%,F,T)



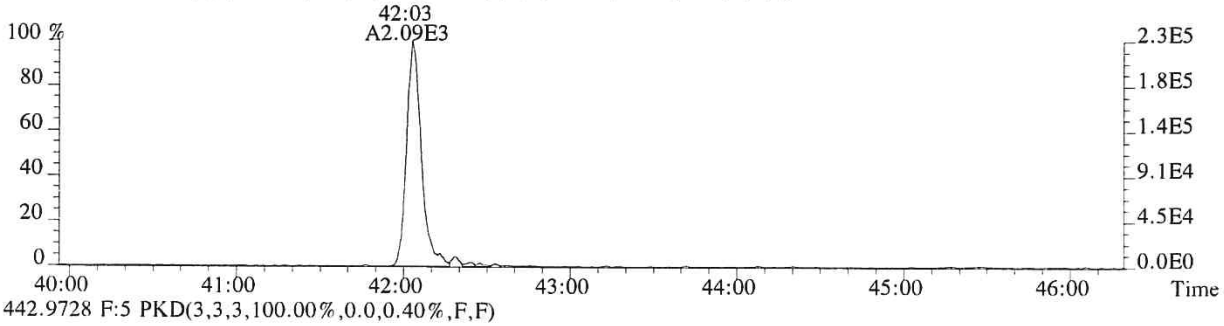
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



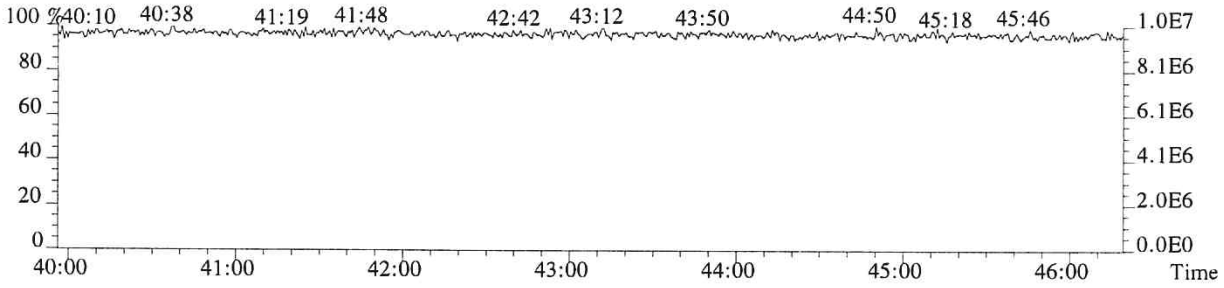
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,356.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,340.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0067

Run #17 Filename P519543 Samp: 1 Inj: 1 Acquired: 21-DEC-18 11:26:53
Processed: 24-DEC-18 08:19:58 Sample ID: E1801096-012DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:48	3.207e+03	4.021e+03	0.80	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:27	1.545e+02	1.152e+02	1.34	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:26	1.112e+02	7.209e+01	1.54	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:16	2.373e+02	1.620e+02	1.46	no	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:23	7.777e+01	4.600e+01	1.69	no	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:46	1.097e+01	1.542e+01	0.71	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:07	4.871e+01	4.515e+01	1.08	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	no	1.258
10	Unk	OCDF	NotFnd	*	*	*	no	no	1.359
11	Unk	2,3,7,8-TCDD	27:43	7.341e+02	9.812e+02	0.75	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:05	2.006e+01	2.782e+01	0.72	no	no	1.025
17	Unk	OCDD	42:05	2.383e+02	3.244e+02	0.73	no	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:47	6.695e+03	8.333e+03	0.80	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:26	1.028e+04	6.451e+03	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:25	9.885e+03	6.116e+03	1.62	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:16	3.900e+03	7.282e+03	0.54	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:23	4.998e+03	1.006e+04	0.50	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:55	4.382e+03	8.645e+03	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:43	3.585e+03	6.728e+03	0.53	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:07	3.232e+03	7.747e+03	0.42	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:33	2.542e+03	6.175e+03	0.41	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:41	3.246e+03	4.227e+03	0.77	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:43	6.943e+03	4.366e+03	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:05	5.082e+03	4.183e+03	1.21	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	36:10	5.844e+03	4.811e+03	1.21	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:05	5.413e+03	5.236e+03	1.03	yes	no	0.858
32	IS	13C-OCDD	42:04	6.457e+03	6.896e+03	0.94	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	27:03	4.789e+03	5.983e+03	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:24	5.839e+03	4.651e+03	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	NotFnd	*				no	1.014

$$OCDD = \frac{(2.383e+02 + 3.244e+02) \times 4000\ pg \times 100}{(6.457e+03 + 6.896e+03) \times 10.141\ g \times 75.4/100 \times 1.118} = 6568.4029\ ng/kg$$

LG 12/21/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0067

Run #17 Filename P519543 Samp: 1 Inj: 1 Acquired: 21-DEC-18 11:26:53
Processed: 24-DEC-18 08:19:58 LAB. ID: E1801096-012DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	4.55e+05	1.05e+03	4.3e+02	5.75e+05	3.13e+03	1.8e+02
2	1,2,3,7,8-PeCDF	2.34e+04	5.96e+02	3.9e+01	1.94e+04	1.42e+03	1.4e+01
3	2,3,4,7,8-PeCDF	1.19e+04	5.96e+02	2.0e+01	1.04e+04	1.42e+03	7.3e+00
4	1,2,3,4,7,8-HxCDF	4.12e+04	1.15e+03	3.6e+01	2.78e+04	9.92e+02	2.8e+01
5	1,2,3,6,7,8-HxCDF	1.13e+04	1.15e+03	9.8e+00	7.25e+03	9.92e+02	7.3e+00
6	2,3,4,6,7,8-HxCDF	*	1.15e+03	*	*	9.92e+02	*
7	1,2,3,7,8,9-HxCDF	3.54e+03	1.15e+03	3.1e+00	2.70e+03	9.92e+02	2.7e+00
8	1,2,3,4,6,7,8-HpCDF	1.04e+04	6.24e+02	1.7e+01	6.74e+03	4.40e+02	1.5e+01
9	1,2,3,4,7,8,9-HpCDF	*	6.24e+02	*	*	4.40e+02	*
10	OCDF	*	4.48e+02	*	*	1.82e+03	*
11	2,3,7,8-TCDD	1.14e+05	3.85e+03	3.0e+01	1.56e+05	1.29e+03	1.2e+02
12	1,2,3,7,8-PeCDD	*	1.30e+03	*	*	4.24e+02	*
13	1,2,3,4,7,8-HxCDD	*	9.12e+02	*	*	8.72e+02	*
14	1,2,3,6,7,8-HxCDD	*	9.12e+02	*	*	8.72e+02	*
15	1,2,3,7,8,9-HxCDD	*	9.12e+02	*	*	8.72e+02	*
16	1,2,3,4,6,7,8-HpCDD	4.13e+03	1.15e+03	3.6e+00	4.54e+03	5.84e+02	7.8e+00
17	OCDD	2.56e+04	4.56e+02	5.6e+01	3.72e+04	5.04e+02	7.4e+01
18	13C-2,3,7,8-TCDF	1.05e+06	1.29e+04	8.2e+01	1.26e+06	1.01e+04	1.3e+02
19	13C-1,2,3,7,8-PeCDF	1.59e+06	7.88e+02	2.0e+03	9.84e+05	1.05e+03	9.4e+02
20	13C-2,3,4,7,8-PeCDF	1.58e+06	7.88e+02	2.0e+03	9.88e+05	1.05e+03	9.4e+02
21	13C-1,2,3,4,7,8-HxCDF	6.88e+05	1.15e+03	6.0e+02	1.36e+06	1.67e+03	8.2e+02
22	13C-1,2,3,6,7,8-HxCDF	7.74e+05	1.15e+03	6.7e+02	1.53e+06	1.67e+03	9.2e+02
23	13C-2,3,4,6,7,8-HxCDF	6.93e+05	1.15e+03	6.0e+02	1.43e+06	1.67e+03	8.6e+02
24	13C-1,2,3,7,8,9-HxCDF	5.17e+05	1.15e+03	4.5e+02	1.03e+06	1.67e+03	6.2e+02
25	13C-1,2,3,4,6,7,8-HpCDF	4.91e+05	1.79e+03	2.7e+02	1.16e+06	3.90e+03	3.0e+02
26	13C-1,2,3,4,7,8,9-HpCDF	3.38e+05	1.79e+03	1.9e+02	7.66e+05	3.90e+03	2.0e+02
27	13C-2,3,7,8-TCDD	5.45e+05	8.02e+03	6.8e+01	6.79e+05	2.66e+03	2.6e+02
28	13C-1,2,3,7,8-PeCDD	1.10e+06	1.54e+03	7.2e+02	6.92e+05	1.65e+03	4.2e+02
29	13C-1,2,3,4,7,8-HxCDD	9.68e+05	1.30e+03	7.5e+02	8.00e+05	1.34e+03	6.0e+02
30	13C-1,2,3,6,7,8-HxCDD	9.54e+05	1.30e+03	7.4e+02	7.81e+05	1.34e+03	5.8e+02
31	13C-1,2,3,4,6,7,8-HpCDD	7.49e+05	1.02e+03	7.4e+02	7.14e+05	5.96e+02	1.2e+03
32	13C-OCDD	5.93e+05	1.01e+03	5.9e+02	6.35e+05	3.04e+02	2.1e+03
33	13C-1,2,3,4-TCDD	8.02e+05	8.02e+03	1.0e+02	1.01e+06	2.66e+03	3.8e+02
34	13C-1,2,3,7,8,9-HxCDD	8.51e+05	1.30e+03	6.6e+02	6.60e+05	1.34e+03	4.9e+02
35	37Cl-2,3,7,8-TCDD	*	2.08e+03	*			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.852e{+}03 + 1.292e{+}03) \times 2000}{(5.452e{+}05 + 6.793e{+}05) \times (\quad) \times 1.085}$$

ALS ENVIRONMENTAL
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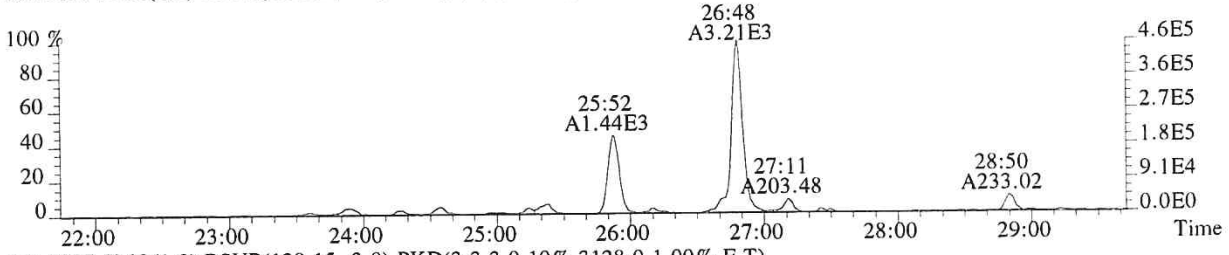
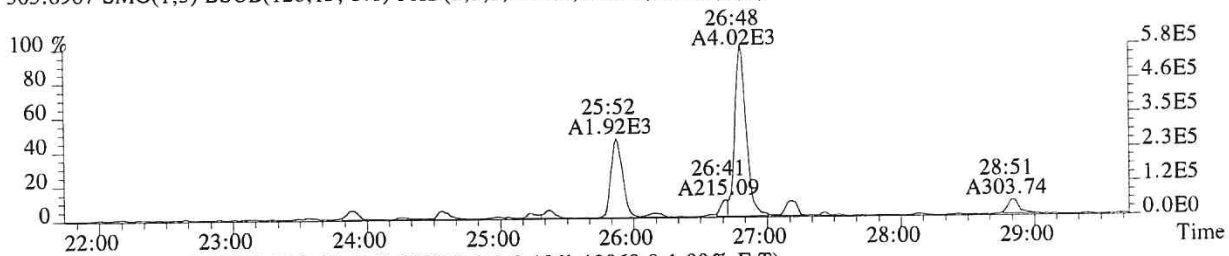
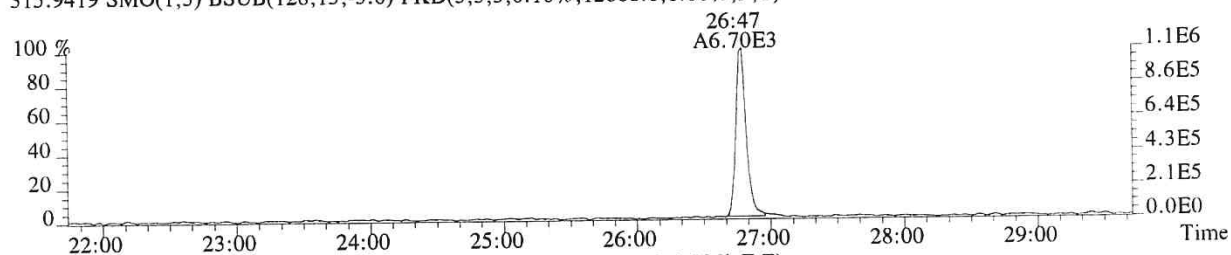
File:P519543 #1-566 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,T)



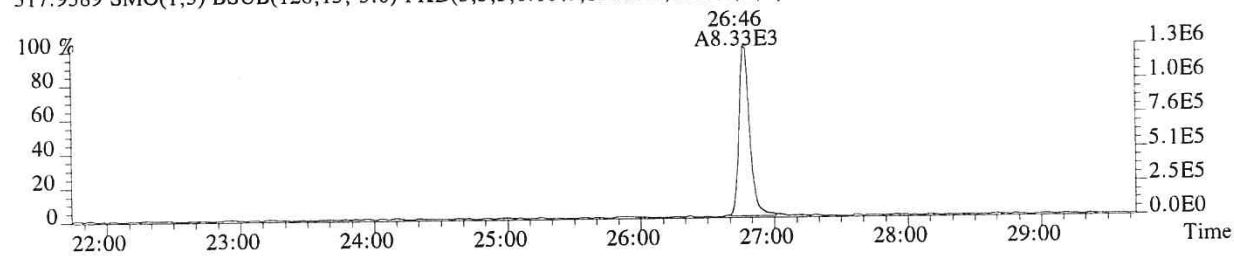
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3128.0,1.00%,F,T)



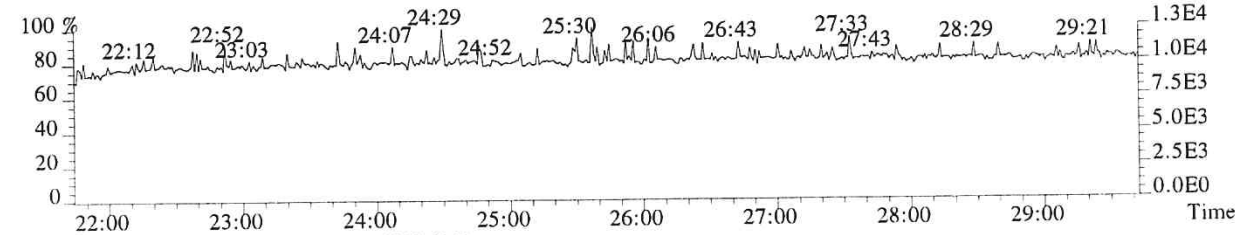
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12868.0,1.00%,F,T)



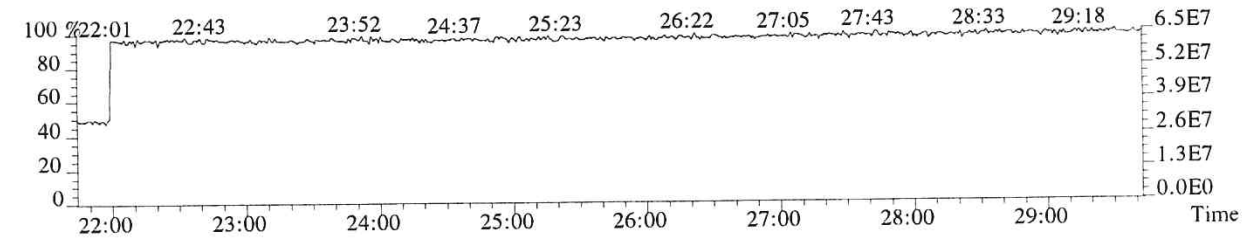
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10064.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

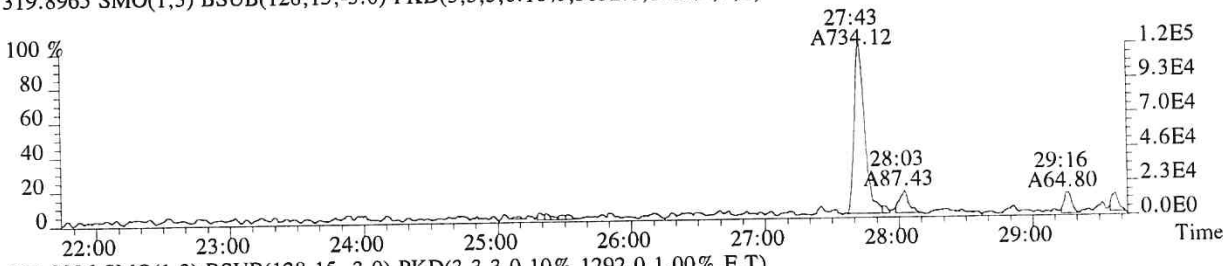


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

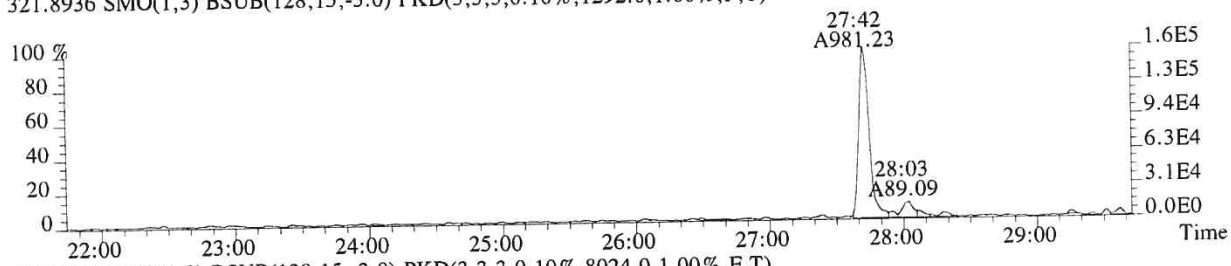


059106

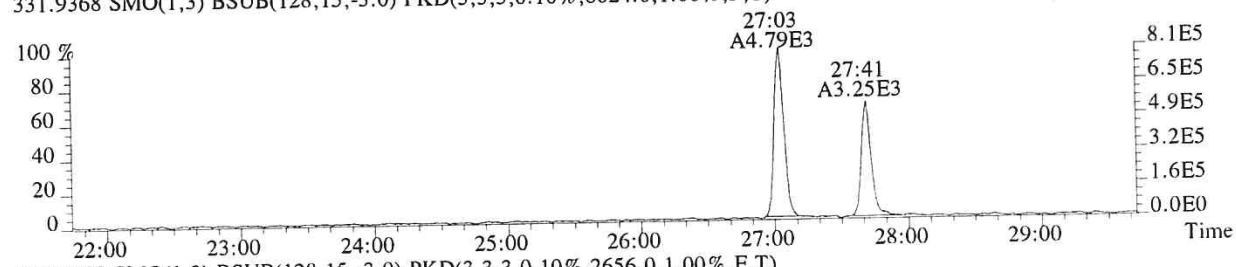
File:P519543 #1-566 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3852.0,1.00%,F,T)



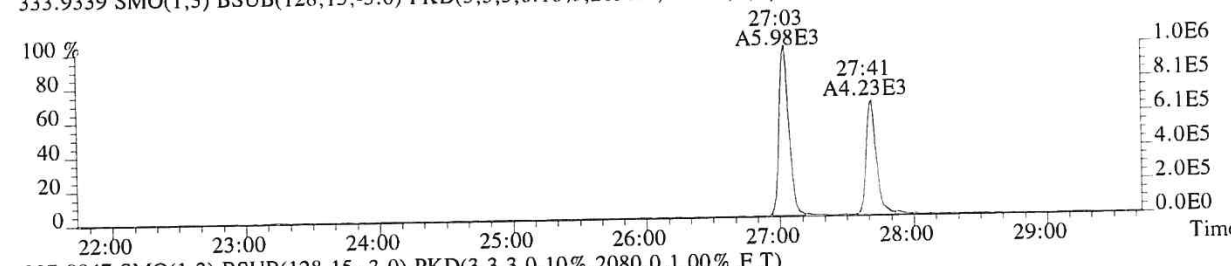
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1292.0,1.00%,F,T)



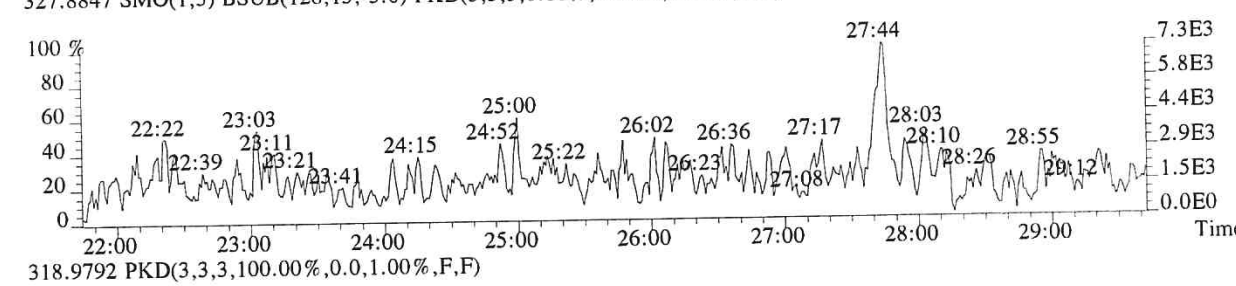
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8024.0,1.00%,F,T)



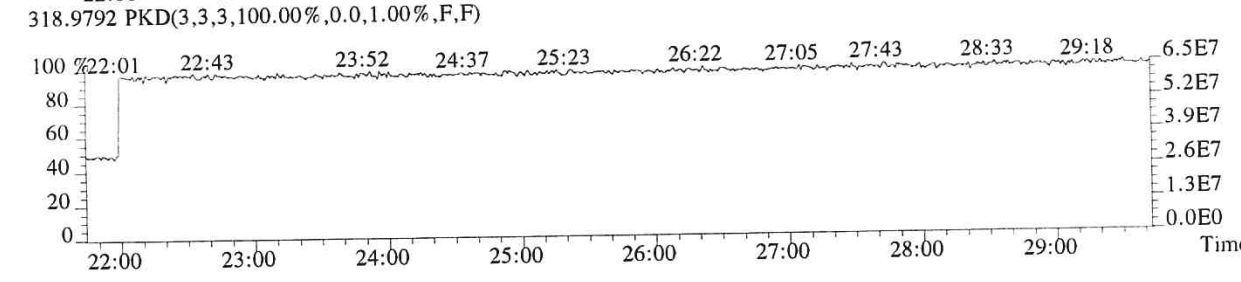
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2656.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2080.0,1.00%,F,T)

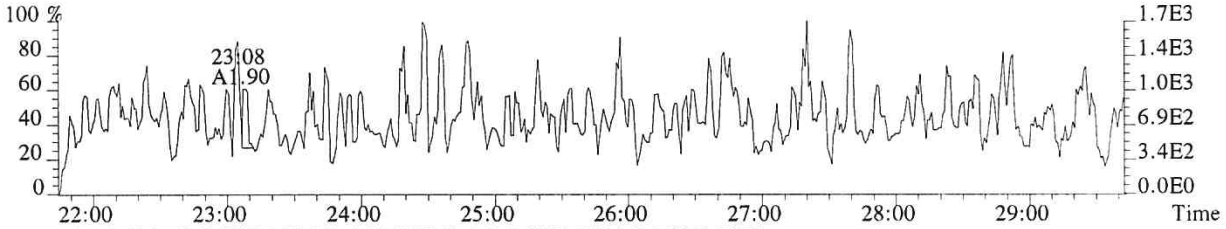


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

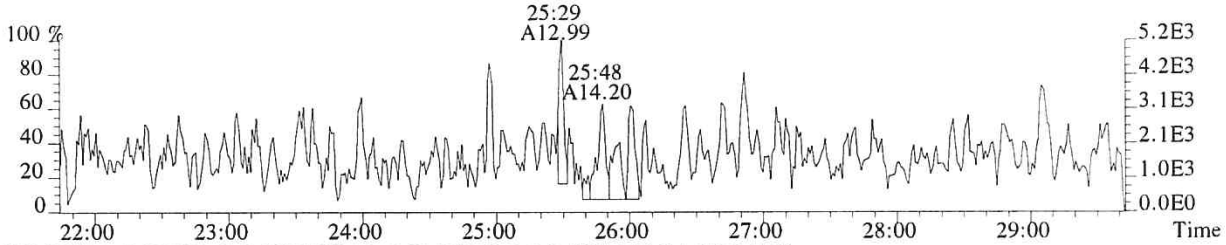


059107

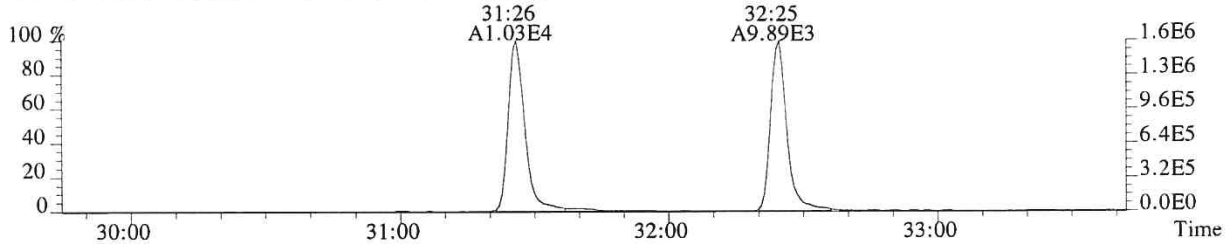
File:P519543 #1-566 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,956.0,1.00%,F,T)



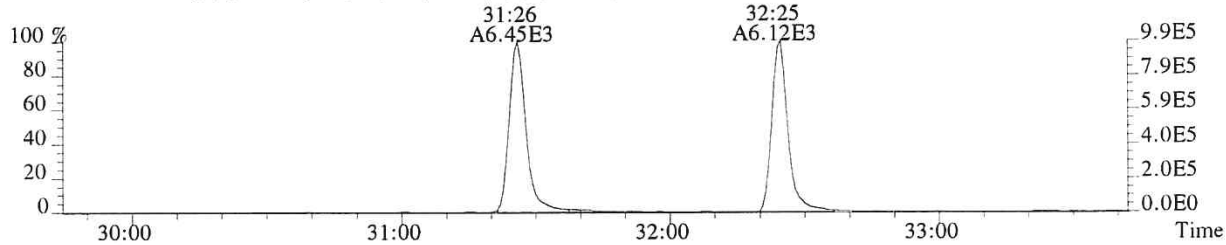
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2204.0,1.00%,F,T)



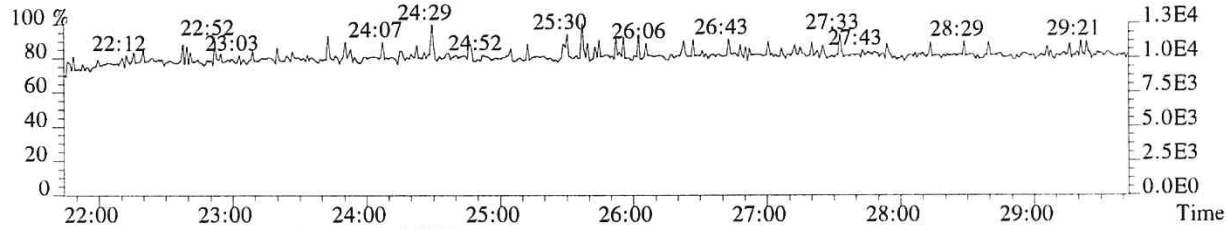
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



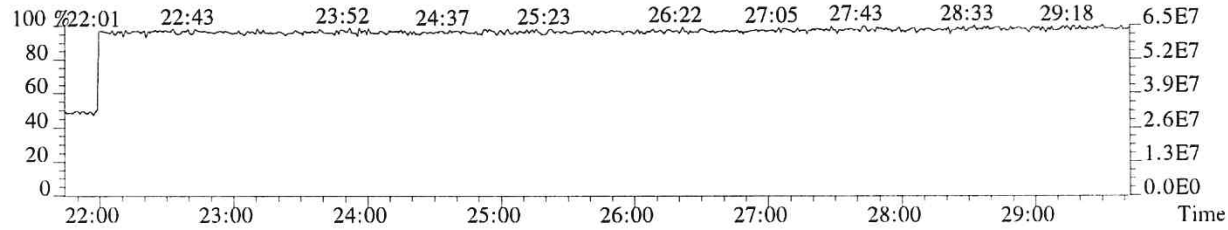
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

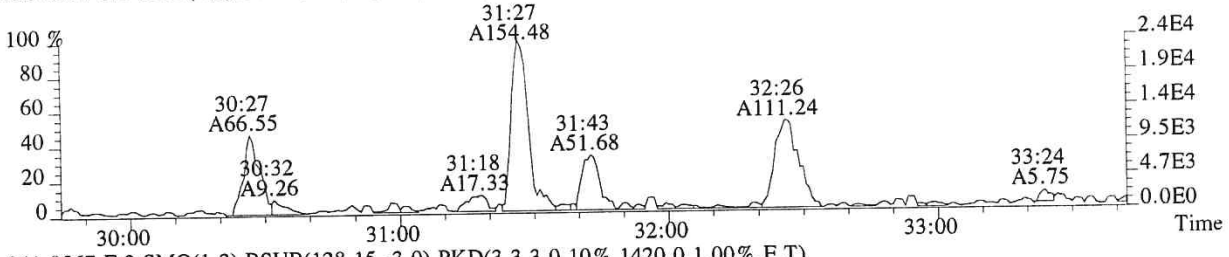


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

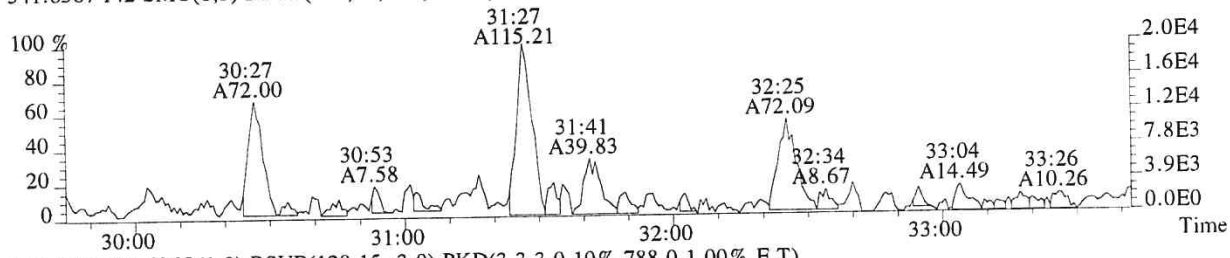


059108

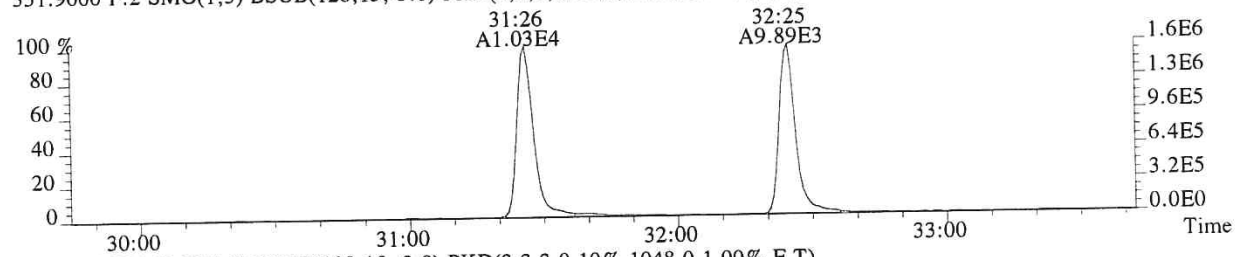
File:P519543 #1-357 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,596.0,1.00%,F,T)



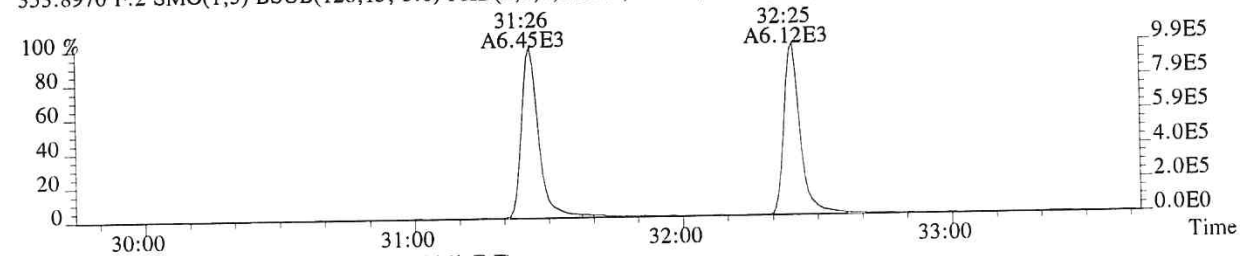
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1420.0,1.00%,F,T)



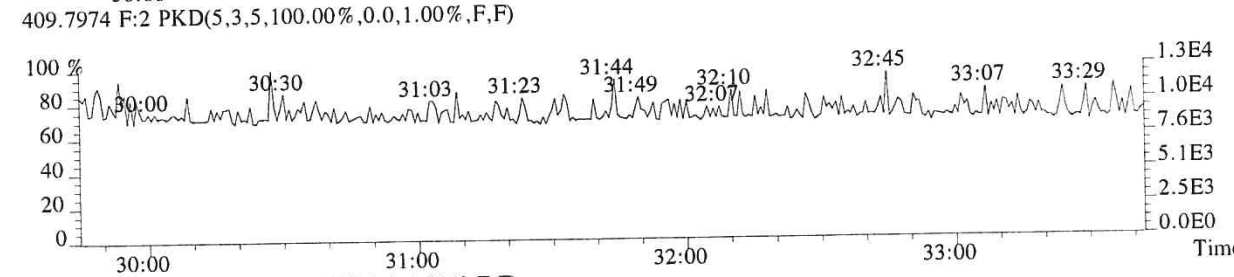
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



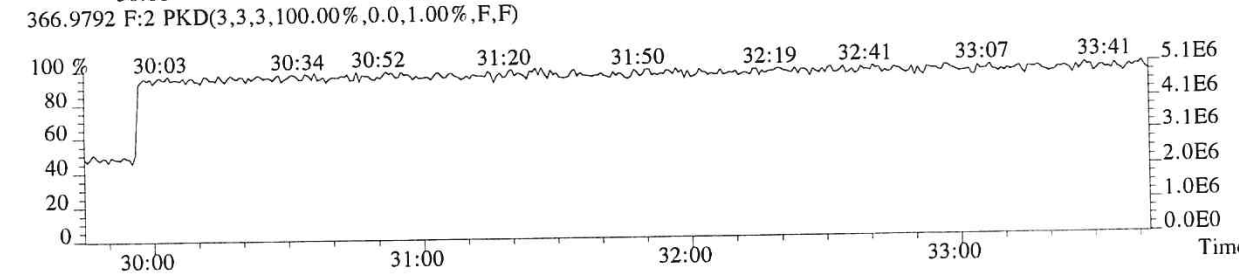
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,T)



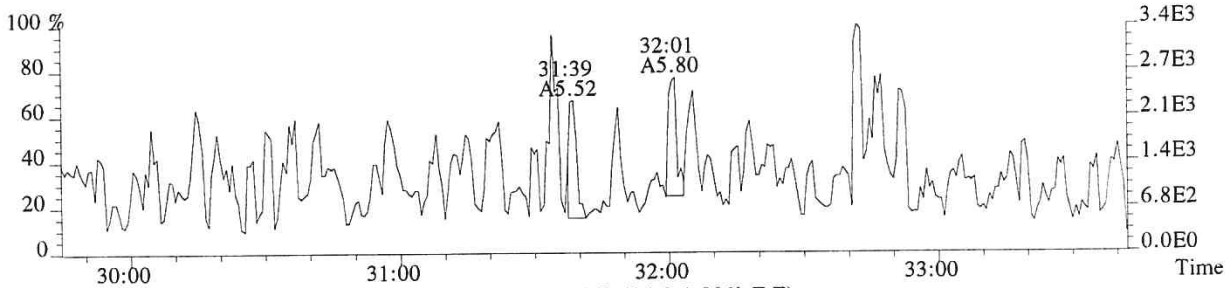
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



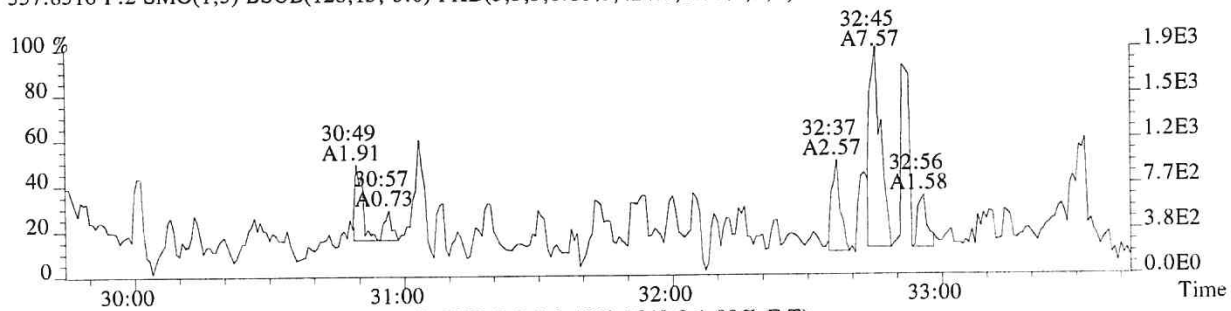
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



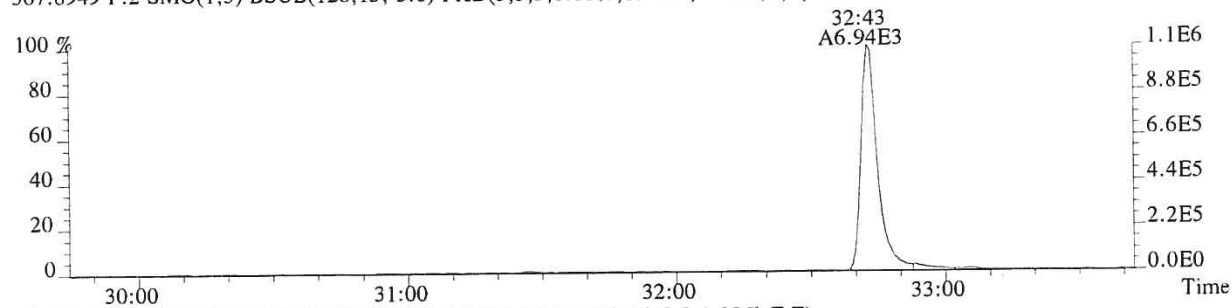
File:P519543 #1-357 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1300.0,1.00%,F,T)



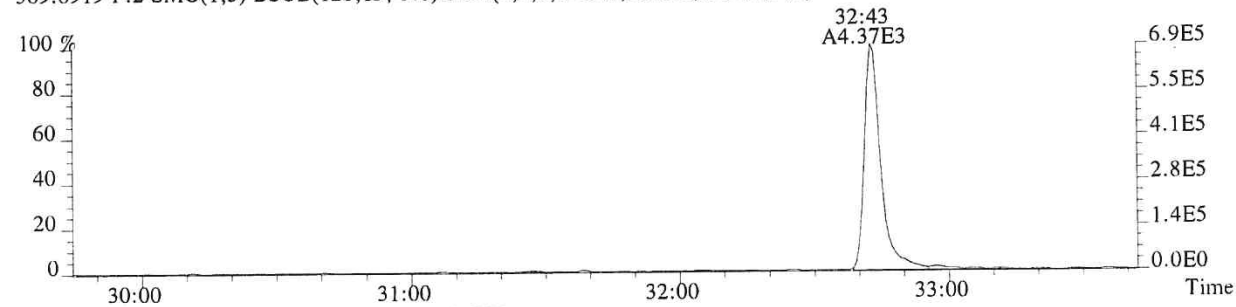
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,424.0,1.00%,F,T)



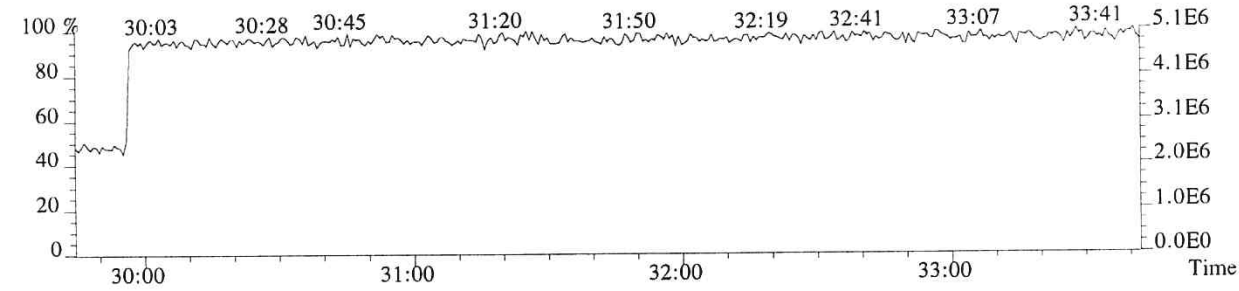
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1540.0,1.00%,F,T)



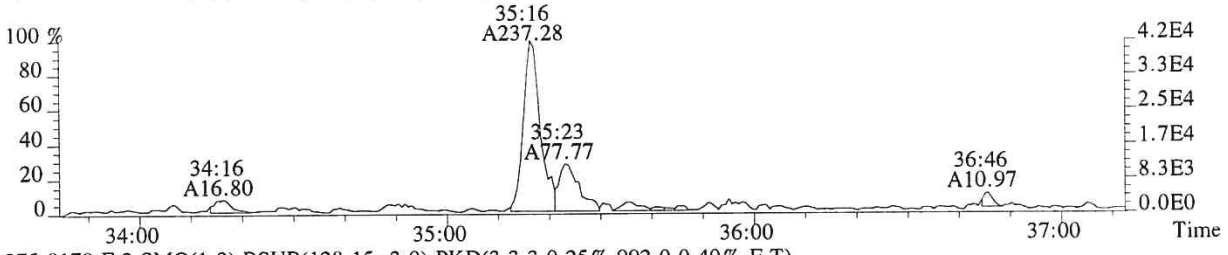
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1648.0,1.00%,F,T)



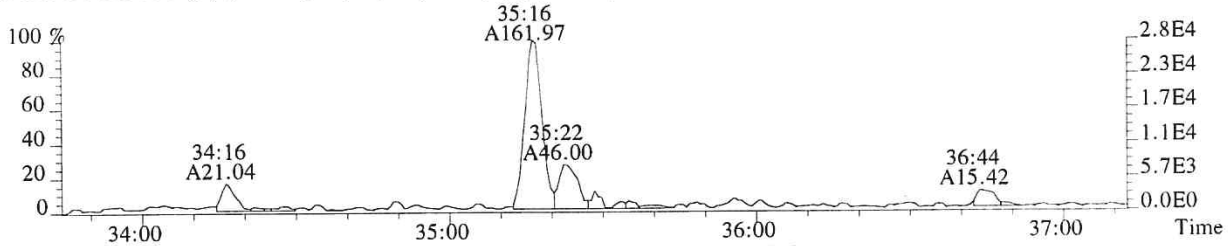
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



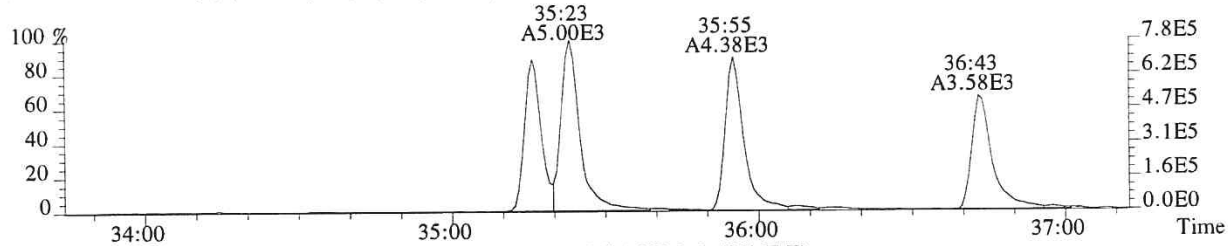
File:P519543 #1-313 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1152.0,0.40%,F,T)



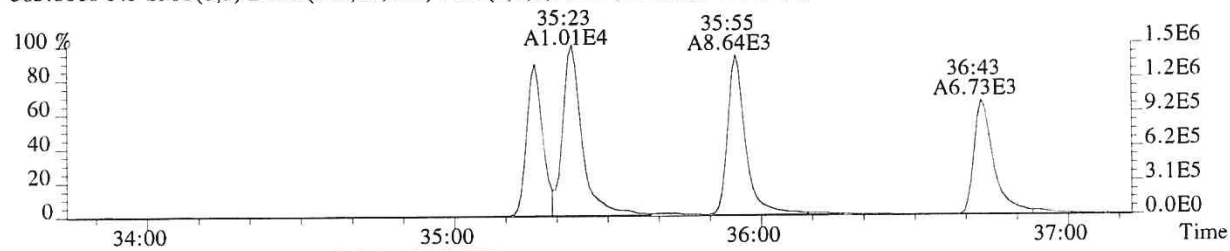
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,992.0,0.40%,F,T)



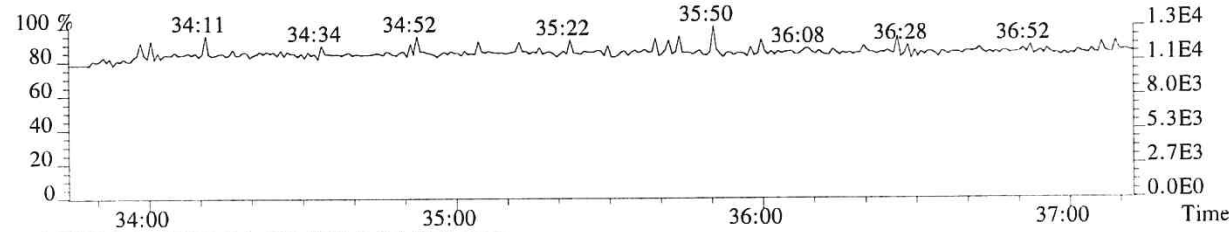
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1148.0,0.40%,F,T)



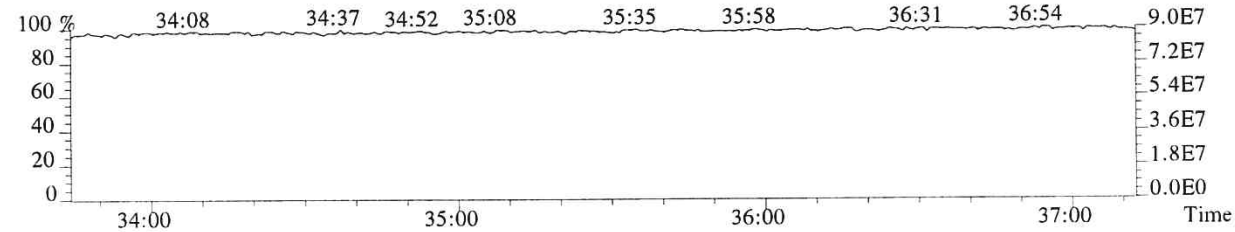
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1668.0,0.40%,F,T)



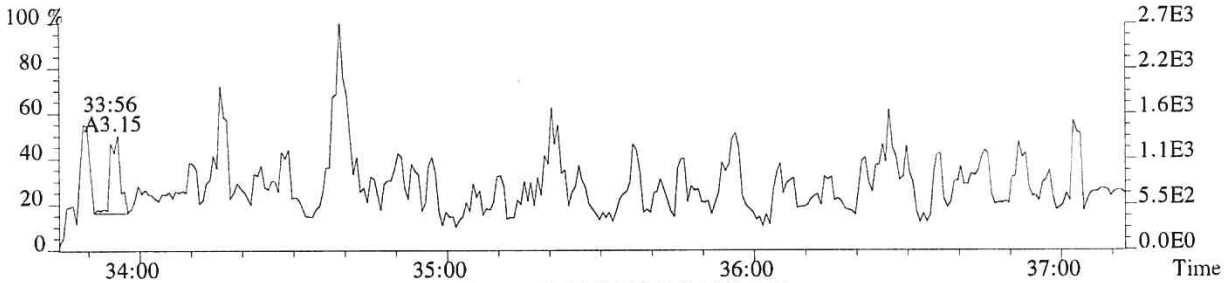
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



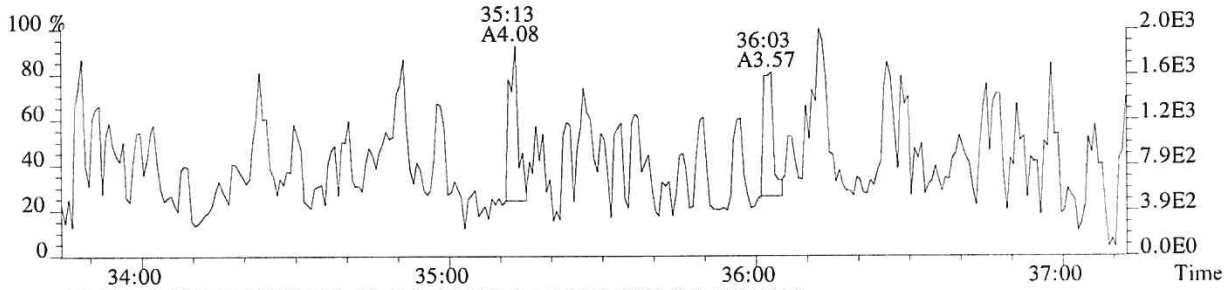
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



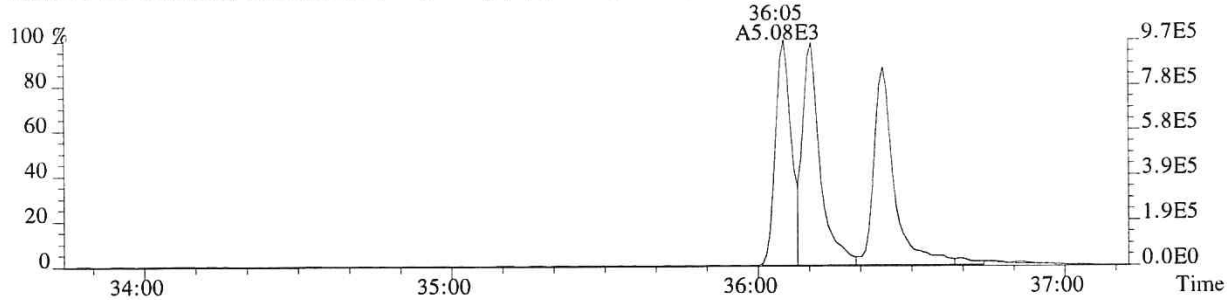
File:P519543 #1-313 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,912.0,0.40%,F,T)



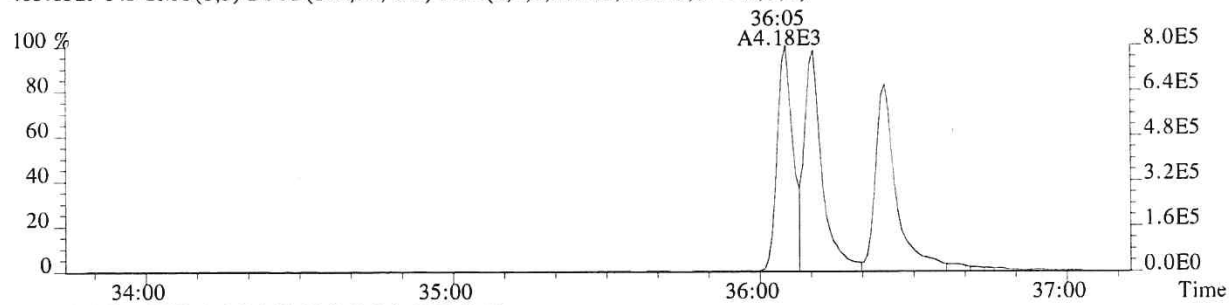
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,872.0,0.40%,F,T)



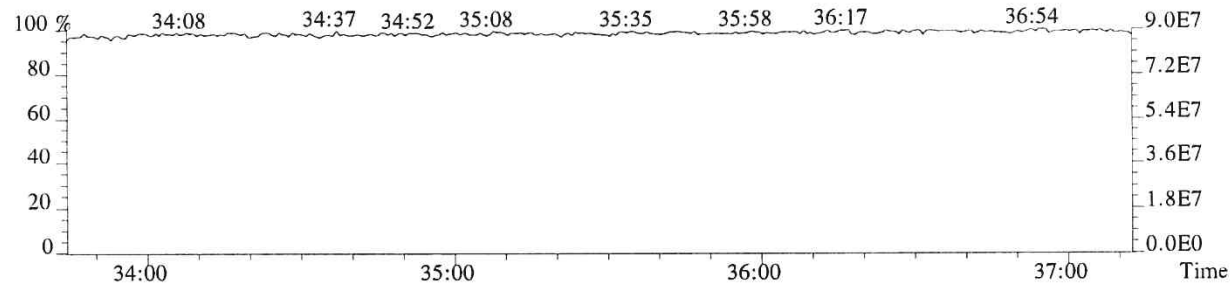
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1296.0,0.40%,F,T)



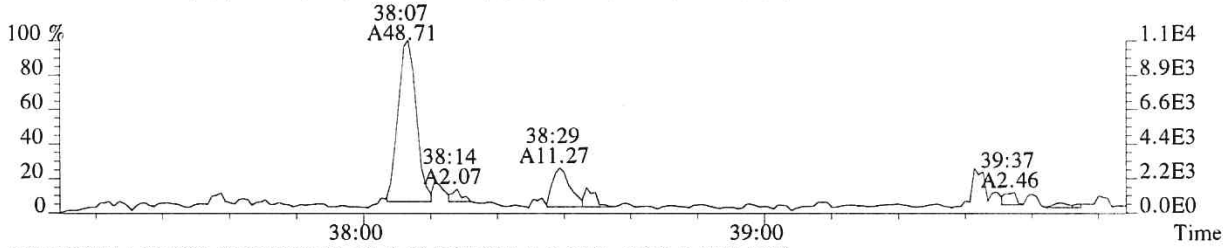
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1336.0,0.40%,F,T)



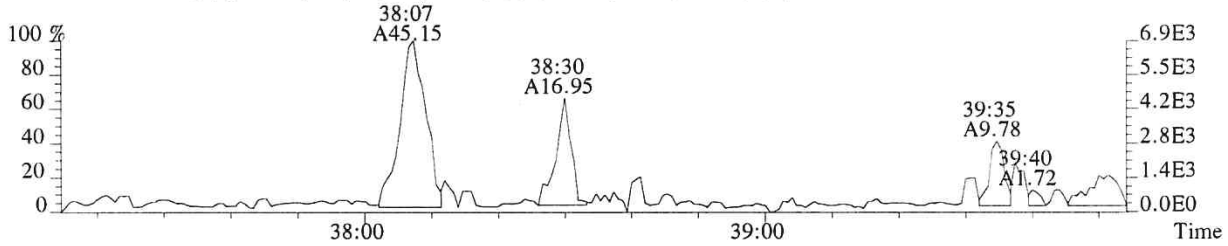
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P519543 #1-240 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,624.0,0.50%,F,T)



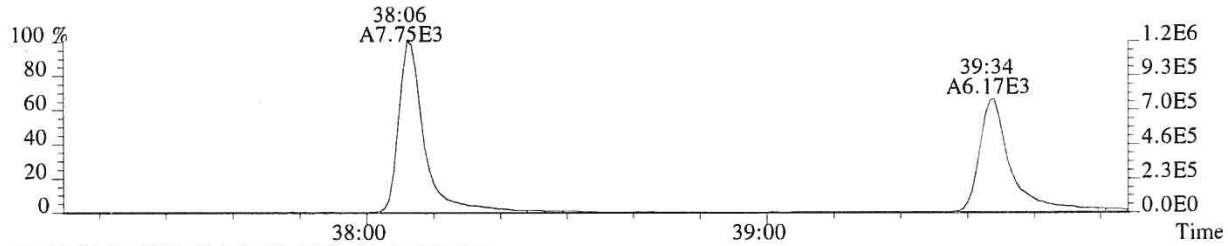
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,440.0,0.50%,F,T)



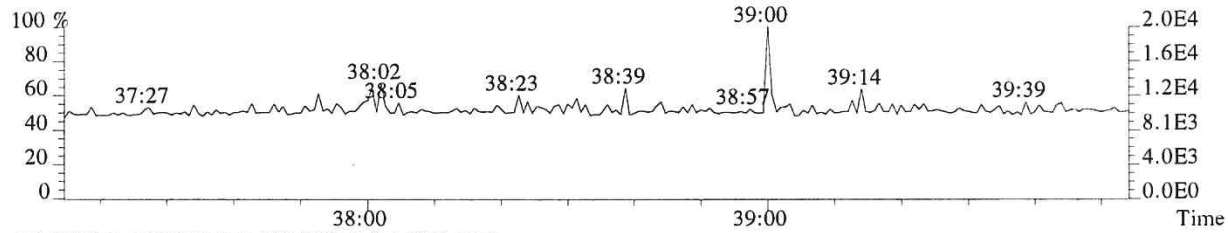
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1788.0,0.50%,F,T)



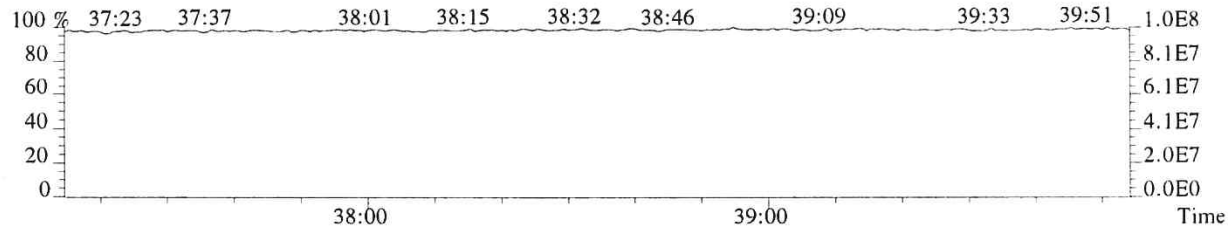
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3896.0,0.50%,F,T)



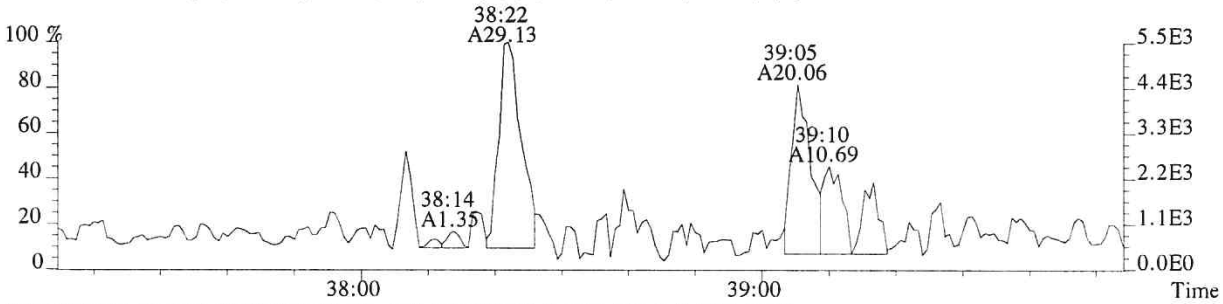
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



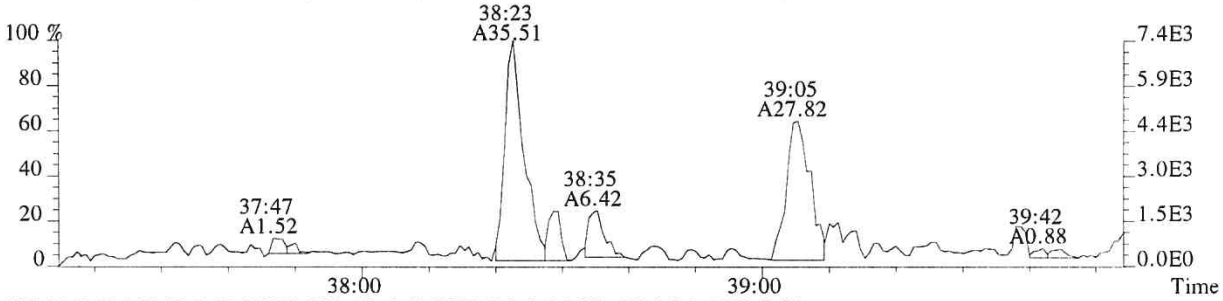
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



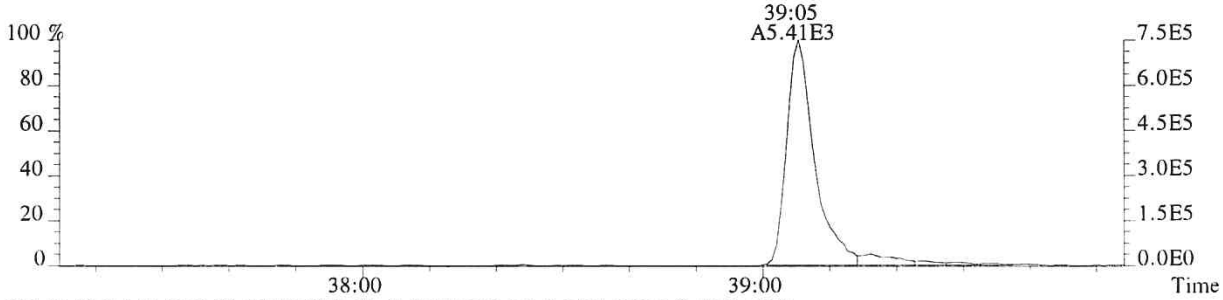
File:P519543 #1-240 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1152.0,0.40%,F,T)



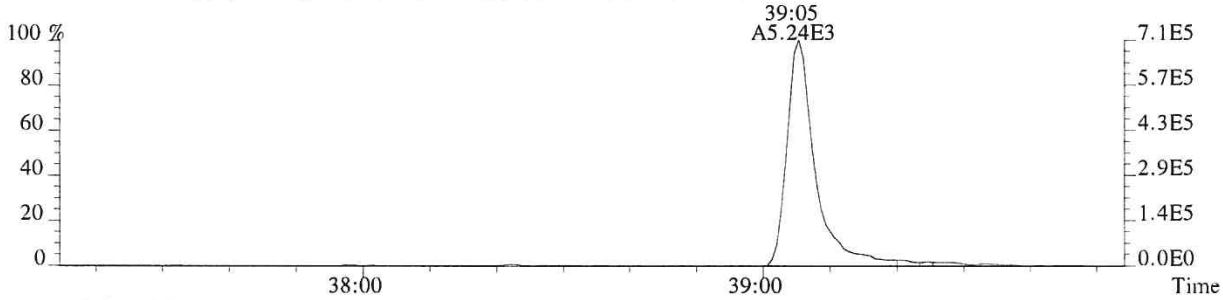
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,584.0,0.40%,F,T)



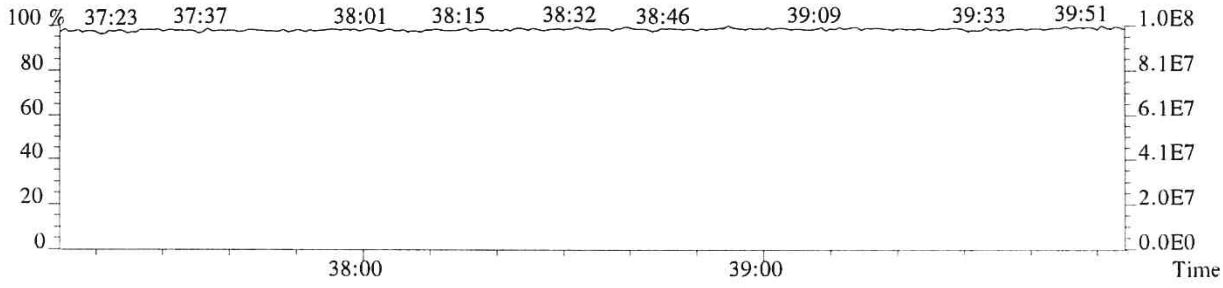
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1016.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,596.0,0.40%,F,T)

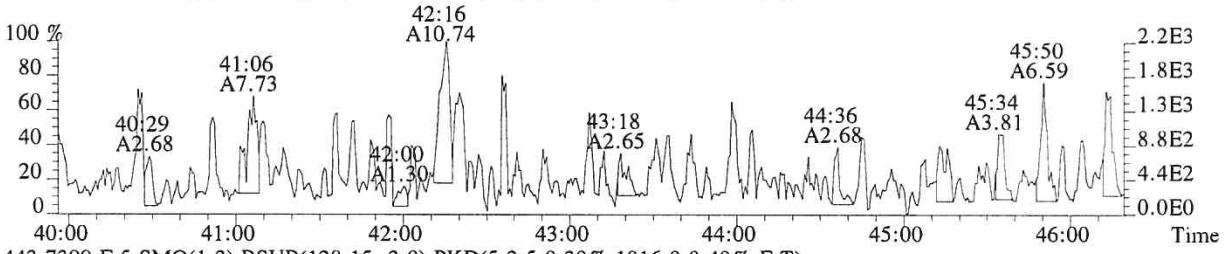


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

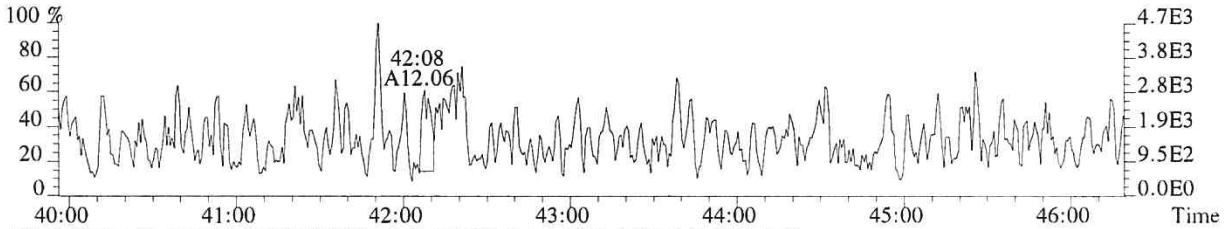


059114

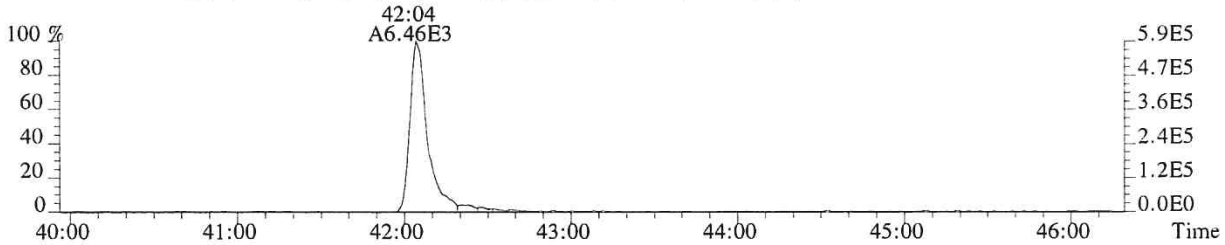
File:P519543 #1-575 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,448.0,0.40%,F,T)



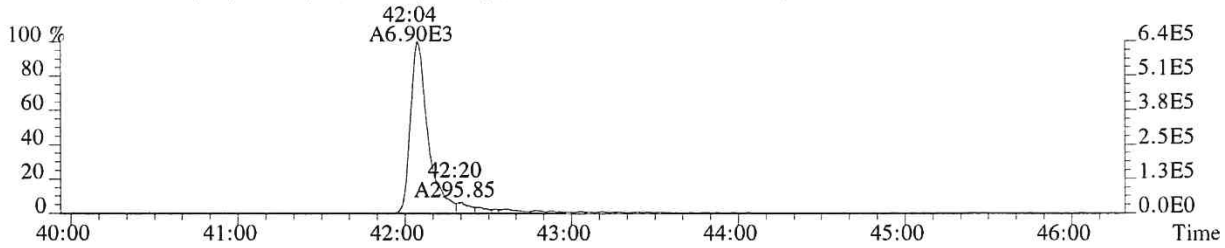
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1816.0,0.40%,F,T)



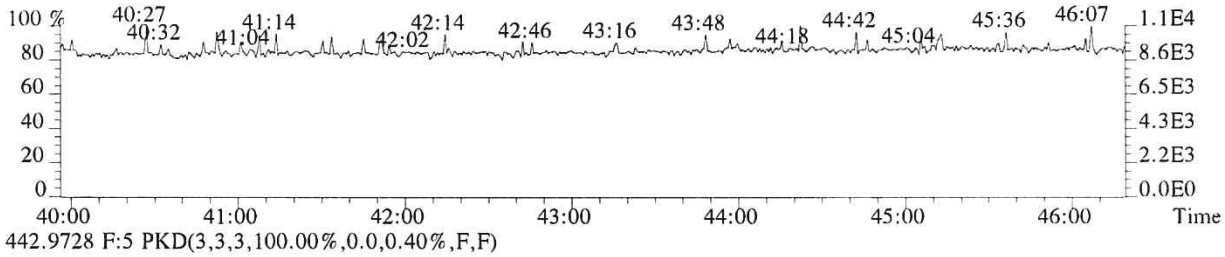
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1008.0,0.40%,F,T)



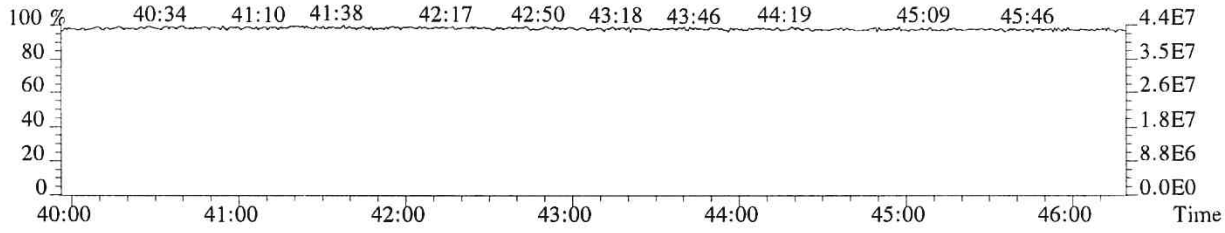
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,304.0,0.40%,F,T)



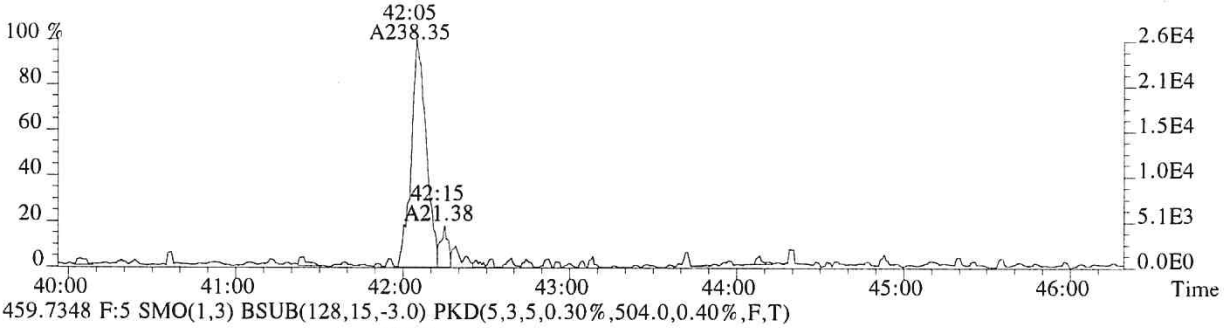
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



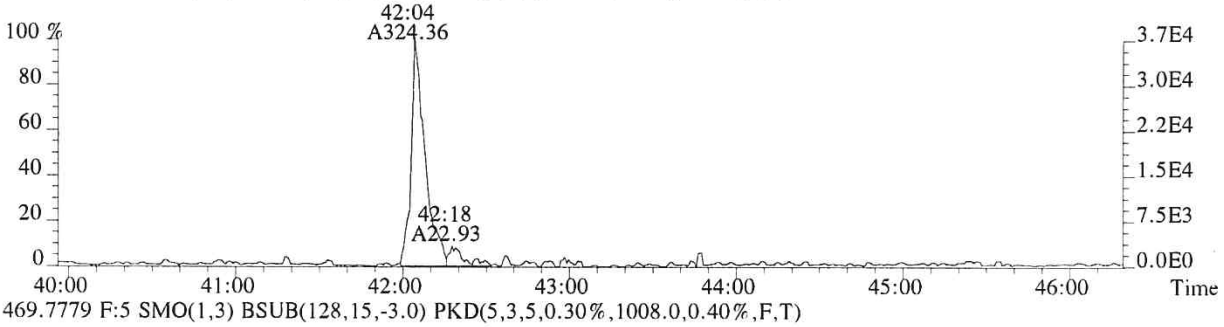
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



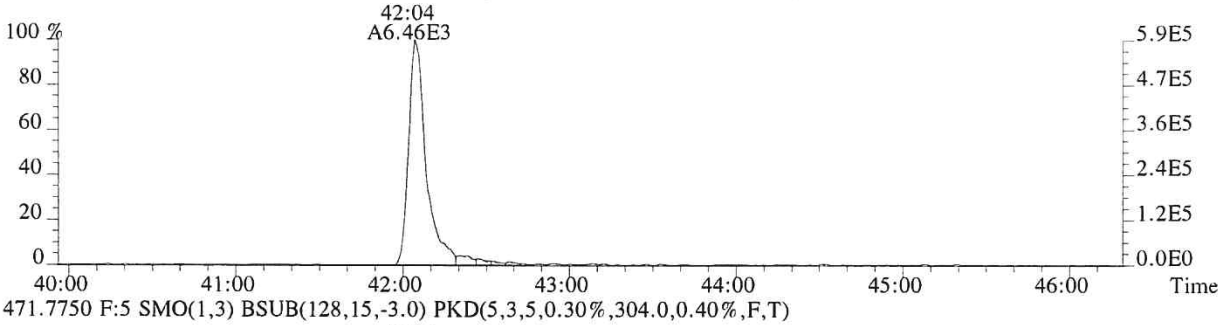
File:P519543 #1-575 Acq:21-DEC-2018 11:26:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-012DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,456.0,0.40%,F,T)



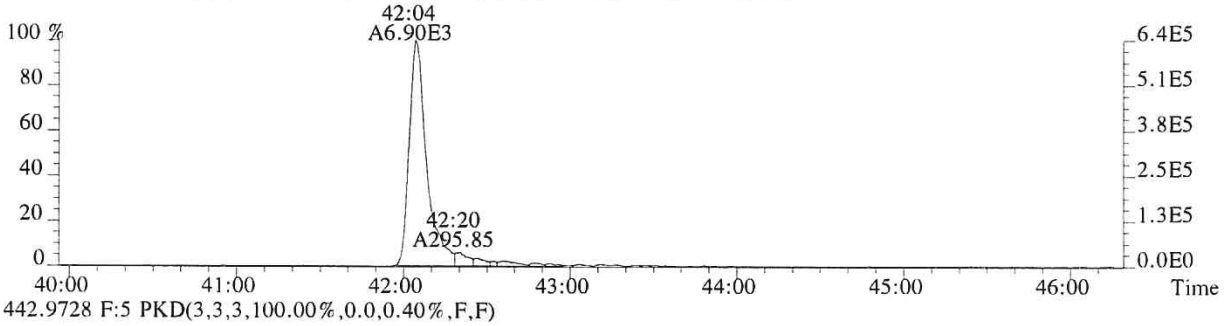
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,504.0,0.40%,F,T)



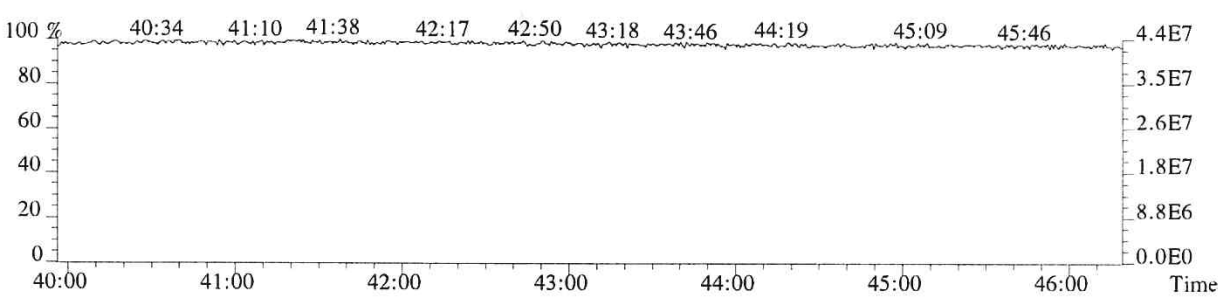
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1008.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,304.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0068

Run #9 Filename P616144 Samp: 1 Inj: 1 Acquired: 20-DEC-18 15:32:20
Processed: 24-DEC-18 10:48:07 Sample ID: E1801096-013

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:35	5.422e+06	6.816e+06	0.80	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:13	2.853e+05	1.808e+05	1.58	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:11	1.725e+05	1.092e+05	1.58	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:54	4.946e+05	3.929e+05	1.26	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:01	1.169e+05	9.356e+04	1.25	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:31	2.068e+04	1.640e+04	1.26	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:17	3.427e+04	2.723e+04	1.26	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:31	1.146e+05	1.085e+05	1.06	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:49	3.651e+04	3.320e+04	1.10	yes	no	1.463
10	Unk	OCDF	41:05	1.537e+05	1.694e+05	0.91	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:29	1.328e+06	1.665e+06	0.80	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:27	2.261e+04	1.381e+04	1.64	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:39	4.849e+02	4.613e+02	1.05	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:44	2.360e+03	1.727e+03	1.37	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:59	8.740e+02	6.818e+02	1.28	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:23	5.842e+04	5.453e+04	1.07	yes	no	1.112
17	Unk	OCDD	40:54	4.123e+05	4.545e+05	0.91	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:33	2.890e+04	3.631e+04	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:12	5.011e+04	3.137e+04	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:10	4.089e+04	2.538e+04	1.61	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:53	2.236e+04	4.200e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:60	2.476e+04	4.617e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:31	2.376e+04	4.343e+04	0.55	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:15	2.239e+04	4.278e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:30	1.578e+04	3.448e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:49	1.435e+04	3.160e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:28	1.333e+04	1.676e+04	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:26	3.332e+04	2.154e+04	1.55	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:38	3.048e+04	2.359e+04	1.29	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:43	2.833e+04	2.210e+04	1.28	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:23	2.885e+04	2.742e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:53	2.076e+04	2.256e+04	0.92	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:49	2.892e+04	3.628e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:58	4.261e+04	3.321e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:29	3.350e+04				no	1.086

$$\text{OCDD} = \frac{(4.123e+05 + 4.545e+05) \times 4000\ \text{pg} \times 1}{(2.076e+04 + 2.256e+04) \times 10.742\text{g} \times 65.7 / 100 \times 1.157} = 9801.8165\ \text{ng/Kg}$$

LG
12/26/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0068

Run #9 Filename P616144 Samp: 1 Inj: 1 Acquired: 20-DEC-18 15:32:20
Processed: 24-DEC-18 10:48:07 LAB. ID: E1801096-013

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.82e+08	8.54e+03	6.8e+04	7.28e+08	5.57e+03	1.3e+05
2	1,2,3,7,8-PeCDF	4.88e+07	1.32e+04	3.7e+03	3.12e+07	4.33e+04	7.2e+02
3	2,3,4,7,8-PeCDF	2.40e+07	1.32e+04	1.8e+03	1.51e+07	4.33e+04	3.5e+02
4	1,2,3,4,7,8-HxCDF	1.06e+08	1.53e+04	6.9e+03	8.45e+07	6.15e+03	1.4e+04
5	1,2,3,6,7,8-HxCDF	2.46e+07	1.53e+04	1.6e+03	1.97e+07	6.15e+03	3.2e+03
6	2,3,4,6,7,8-HxCDF	4.66e+06	1.53e+04	3.0e+02	3.62e+06	6.15e+03	5.9e+02
7	1,2,3,7,8,9-HxCDF	7.07e+06	1.53e+04	4.6e+02	5.58e+06	6.15e+03	9.1e+02
8	1,2,3,4,6,7,8-HpCDF	2.66e+07	1.19e+04	2.2e+03	2.53e+07	6.75e+03	3.8e+03
9	1,2,3,4,7,8,9-HpCDF	8.22e+06	1.19e+04	6.9e+02	7.59e+06	6.75e+03	1.1e+03
10	OCDF	2.94e+07	1.03e+03	2.9e+04	3.31e+07	3.81e+03	8.7e+03
11	2,3,7,8-TCDD	2.52e+08	1.23e+04	2.0e+04	3.17e+08	3.64e+03	8.7e+04
12	1,2,3,7,8-PeCDD	3.99e+06	2.16e+03	1.8e+03	2.48e+06	1.98e+03	1.3e+03
13	1,2,3,4,7,8-HxCDD	1.05e+05	2.53e+03	4.2e+01	1.04e+05	7.23e+03	1.4e+01
14	1,2,3,6,7,8-HxCDD	5.20e+05	2.53e+03	2.1e+02	3.98e+05	7.23e+03	5.5e+01
15	1,2,3,7,8,9-HxCDD	1.97e+05	2.53e+03	7.8e+01	1.49e+05	7.23e+03	2.1e+01
16	1,2,3,4,6,7,8-HpCDD	1.36e+07	6.91e+03	2.0e+03	1.27e+07	1.07e+04	1.2e+03
17	OCDD	8.30e+07	1.13e+03	7.4e+04	9.09e+07	1.62e+03	5.6e+04
18	13C-2,3,7,8-TCDF	3.43e+06	3.67e+04	9.3e+01	4.33e+06	4.53e+04	9.5e+01
19	13C-1,2,3,7,8-PeCDF	8.75e+06	1.28e+04	6.8e+02	5.53e+06	1.89e+04	2.9e+02
20	13C-2,3,4,7,8-PeCDF	7.20e+06	1.28e+04	5.6e+02	4.48e+06	1.89e+04	2.4e+02
21	13C-1,2,3,4,7,8-HxCDF	4.77e+06	6.80e+03	7.0e+02	9.06e+06	1.35e+04	6.7e+02
22	13C-1,2,3,6,7,8-HxCDF	5.10e+06	6.80e+03	7.5e+02	9.75e+06	1.35e+04	7.2e+02
23	13C-2,3,4,6,7,8-HxCDF	4.88e+06	6.80e+03	7.2e+02	9.25e+06	1.35e+04	6.8e+02
24	13C-1,2,3,7,8,9-HxCDF	4.97e+06	6.80e+03	7.3e+02	9.43e+06	1.35e+04	7.0e+02
25	13C-1,2,3,4,6,7,8-HpCDF	3.67e+06	5.52e+03	6.6e+02	7.96e+06	5.70e+03	1.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.10e+06	5.52e+03	5.6e+02	6.94e+06	5.70e+03	1.2e+03
27	13C-2,3,7,8-TCDD	2.31e+06	2.28e+04	1.0e+02	2.90e+06	6.78e+03	4.3e+02
28	13C-1,2,3,7,8-PeCDD	6.47e+06	4.35e+03	1.5e+03	4.16e+06	5.50e+03	7.6e+02
29	13C-1,2,3,4,7,8-HxCDD	6.94e+06	2.54e+03	2.7e+03	5.45e+06	2.48e+03	2.2e+03
30	13C-1,2,3,6,7,8-HxCDD	6.06e+06	2.54e+03	2.4e+03	4.80e+06	2.48e+03	1.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	6.70e+06	3.38e+03	2.0e+03	6.35e+06	1.94e+03	3.3e+03
32	13C-OCDD	4.22e+06	3.64e+03	1.2e+03	4.59e+06	3.18e+03	1.4e+03
33	13C-1,2,3,4-TCDD	3.71e+06	2.28e+04	1.6e+02	4.63e+06	6.78e+03	6.8e+02
34	13C-1,2,3,7,8,9-HxCDD	9.46e+06	2.54e+03	3.7e+03	7.25e+06	2.48e+03	2.9e+03
35	37Cl-2,3,7,8-TCDD	6.28e+06	6.30e+03	1.0e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.234e{+}04 + 3.640e{+}03) \times 2000}{(2.309e{+}06 + 2.903e{+}06) \times (\quad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0068

Entry: 36 Totals Name: Total Tetra-Furans

Run: 9 File: P616144 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 15:32:20 Processed: 24-DEC-18 10:48:07

Mass: 303.9020 305.8990 Tot Response: 2.21e+07 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:20	3.63e+04	4.57e+04	0.79	yes	8.20e+04		n	n
2	23:37	1.97e+05	2.51e+05	0.78	yes	4.49e+05		n	n
3	23:58	5.99e+04	8.28e+04	0.72	yes	1.43e+05		n	n
4	24:17	1.85e+05	2.35e+05	0.79	yes	4.20e+05		n	n
5	24:42	4.43e+04	5.49e+04	0.81	yes	9.91e+04		n	n
6	25:03	3.61e+05	4.57e+05	0.79	yes	8.18e+05		n	n
7	25:32	2.56e+06	3.22e+06	0.79	yes	5.77e+06		n	n
8	25:53	1.11e+05	1.40e+05	0.79	yes	2.50e+05		n	n
9	26:35	5.42e+06	6.82e+06	0.80	yes	1.22e+07	2,3,7,8-TCDF	n	n
10	26:59	3.47e+05	4.38e+05	0.79	yes	7.85e+05		n	n
11	27:15	5.06e+04	6.92e+04	0.73	yes	1.20e+05		n	n
12	28:40	4.27e+05	5.34e+05	0.80	yes	9.60e+05		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0068

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 9 File: P616144 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 15:32:20 Processed: 24-DEC-18 10:48:07

Mass: 319.8970 321.8940 Tot Response: 3.29e+06 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:10	1.74e+04	2.15e+04	0.81	yes	3.89e+04		n	n
2	27:29	1.33e+06	1.67e+06	0.80	yes	2.99e+06	2,3,7,8-TCDD	n	n
3	27:48	1.14e+05	1.47e+05	0.78	yes	2.61e+05		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0068

Entry: 39 Totals Name: Total Penta-Furans2

Run: 9 File: P616144 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 15:32:20 Processed: 24-DEC-18 10:48:07

Mass: 339.8600 341.8570 Tot Response: 1.11e+06 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:05	2.92e+03	1.65e+03	1.77	yes	4.57e+03		n	n
2	30:14	1.15e+05	7.32e+04	1.57	yes	1.88e+05		n	n
3	30:54	4.95e+03	3.02e+03	1.64	yes	7.97e+03		n	n
4	31:02	2.48e+04	1.60e+04	1.55	yes	4.07e+04		n	n
5	31:13	2.85e+05	1.81e+05	1.58	yes	4.66e+05	1,2,3,7,8-PeCDF	n	n
6	31:30	6.09e+04	3.99e+04	1.53	yes	1.01e+05		n	n
7	32:04	3.03e+03	1.94e+03	1.56	yes	4.96e+03		n	n
8	32:11	1.73e+05	1.09e+05	1.58	yes	2.82e+05	2,3,4,7,8-PeCDF	n	n
9	33:06	1.09e+04	7.09e+03	1.53	yes	1.80e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0068

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 9 File: P616144 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 15:32:20 Processed: 24-DEC-18 10:48:07

Mass: 355.8550 357.8520 Tot Response: 4.56e+04 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:15	1.40e+03	8.91e+02	1.57	yes	2.29e+03		n	n
2	30:46	6.34e+02	4.12e+02	1.54	yes	1.05e+03		n	n
3	31:14	1.98e+03	1.26e+03	1.58	yes	3.24e+03		n	n
4	31:25	1.12e+03	7.49e+02	1.50	yes	1.87e+03		n	n
5	31:30	4.73e+02	2.88e+02	1.64	yes	7.62e+02		n	n
6	32:27	2.26e+04	1.38e+04	1.64	yes	3.64e+04	1,2,3,7,8-PeCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0068

Entry: 41 Totals Name: Total Hexa-Furans

Run: 9 File: P616144 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 15:32:20 Processed: 24-DEC-18 10:48:07

Mass: 373.8210 375.8180 Tot Response: 1.31e+06 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:46	4.20e+03	3.26e+03	1.29	yes	7.46e+03		n	n
2	33:56	3.58e+04	2.85e+04	1.25	yes	6.43e+04		n	n
3	34:28	2.10e+04	1.67e+04	1.26	yes	3.77e+04		n	n
4	34:54	4.95e+05	3.93e+05	1.26	yes	8.88e+05	1,2,3,4,7,8-HxCDF	n	n
5	35:01	1.17e+05	9.36e+04	1.25	yes	2.11e+05	1,2,3,6,7,8-HxCDF	n	n
6	35:31	2.07e+04	1.64e+04	1.26	yes	3.71e+04	2,3,4,6,7,8-HxCDF	n	n
7	36:17	3.43e+04	2.72e+04	1.26	yes	6.15e+04	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0068

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 9 File: P616144 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 15:32:20 Processed: 24-DEC-18 10:48:07

Mass: 389.8160 391.8130 Tot Response: 3.64e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:18	9.06e+03	7.00e+03	1.30	yes	1.61e+04		n	n
2	34:50	9.75e+02	7.22e+02	1.35	yes	1.70e+03		n	n
3	35:04	7.08e+03	5.43e+03	1.30	yes	1.25e+04		n	n
4	35:44	2.36e+03	1.73e+03	1.37	yes	4.09e+03	1,2,3,6,7,8-HxCDD	n	n
5	35:53	2.77e+02	2.12e+02	1.31	yes	4.89e+02		n	n
6	35:59	8.74e+02	6.82e+02	1.28	yes	1.56e+03	1,2,3,7,8,9-HxCDD	n	n
7	36:07	1.95e+01	1.55e+01	1.26	yes	3.50e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0068

Entry: 43 Totals Name: Total Hepta-Furans

Run: 9 File: P616144 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 15:32:20 Processed: 24-DEC-18 10:48:07

Mass: 407.7820 409.7790 Tot Response: 3.78e+05 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:31	1.15e+05	1.08e+05	1.06	yes	2.23e+05	1,2,3,4,6,7,8-HpCDF	n	n
2	37:47	1.23e+03	1.06e+03	1.16	yes	2.29e+03		n	n
3	37:54	4.24e+04	4.03e+04	1.05	yes	8.27e+04		n	n
4	38:49	3.65e+04	3.32e+04	1.10	yes	6.97e+04	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0068

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 9 File: P616144 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 15:32:20 Processed: 24-DEC-18 10:48:07

Mass: 423.7770 425.7740 Tot Response: 2.31e+05 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:45	6.04e+04	5.72e+04	1.06	yes	1.18e+05		n	n
2	38:23	5.84e+04	5.45e+04	1.07	yes	1.13e+05	1,2,3,4,6,7,8-HpCDD	n	n

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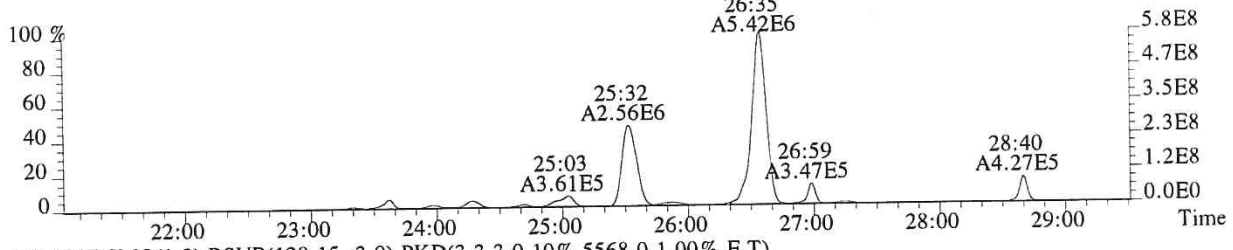
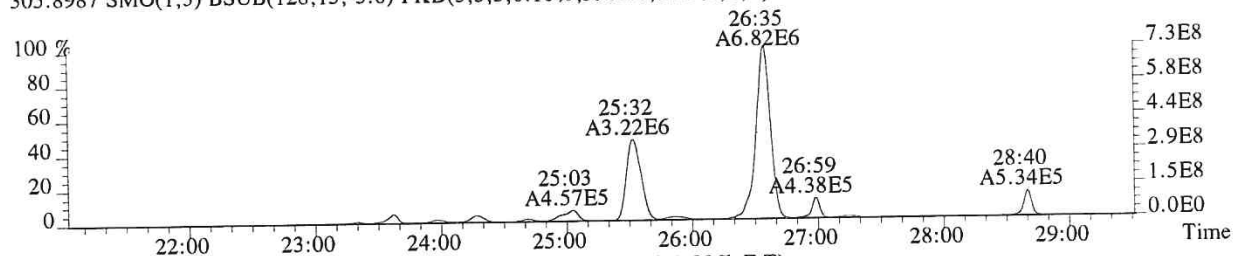
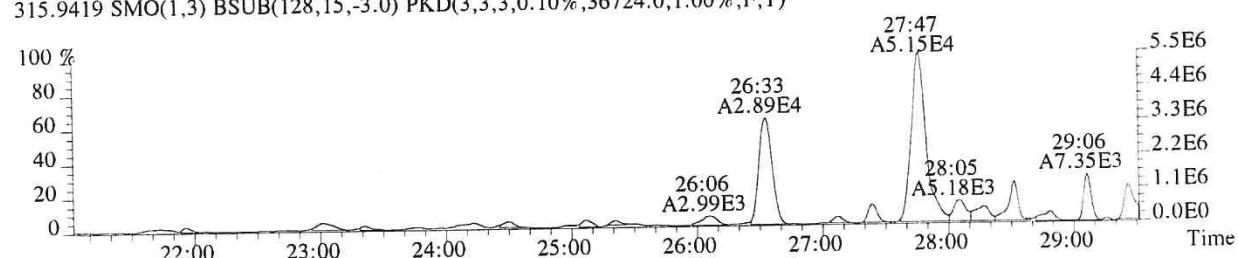
File:P616144 #1-602 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-013
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8544.0,1.00%,F,T)



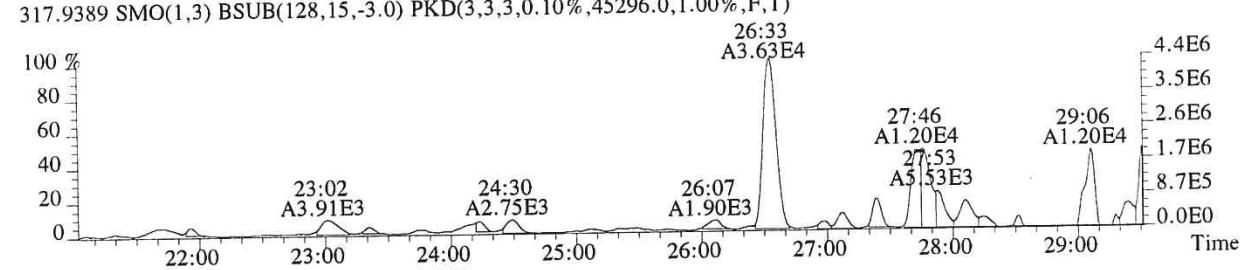
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5568.0,1.00%,F,T)



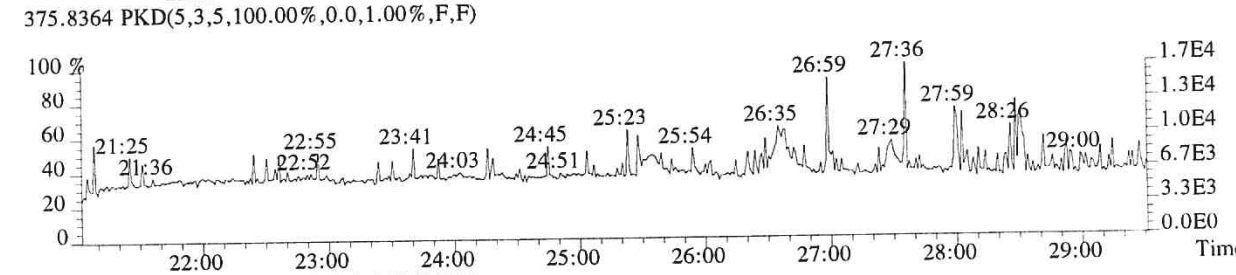
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,36724.0,1.00%,F,T)



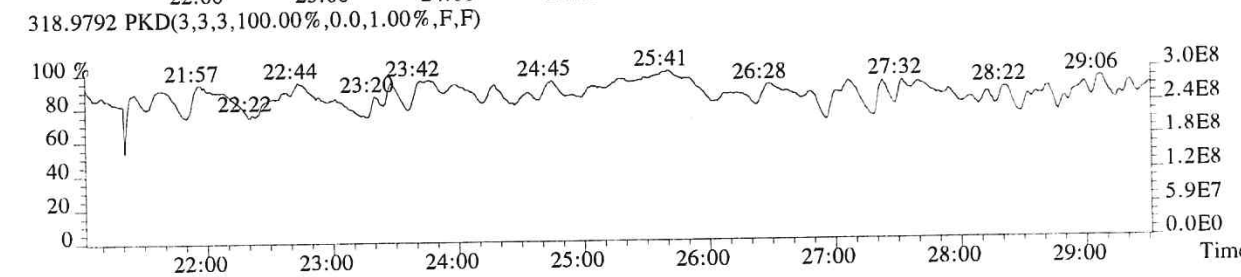
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,45296.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

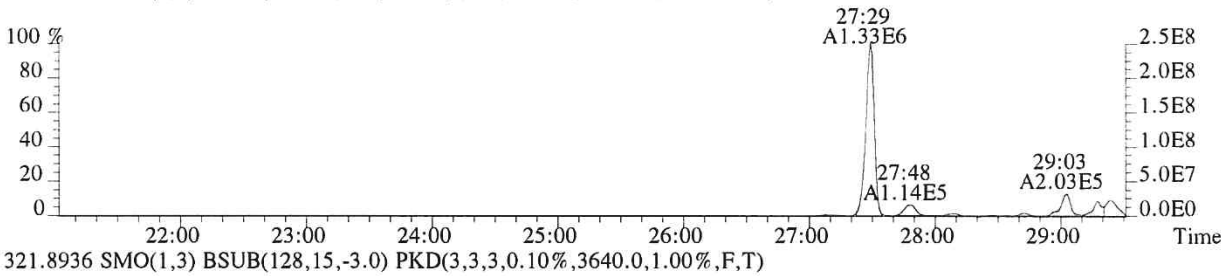


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

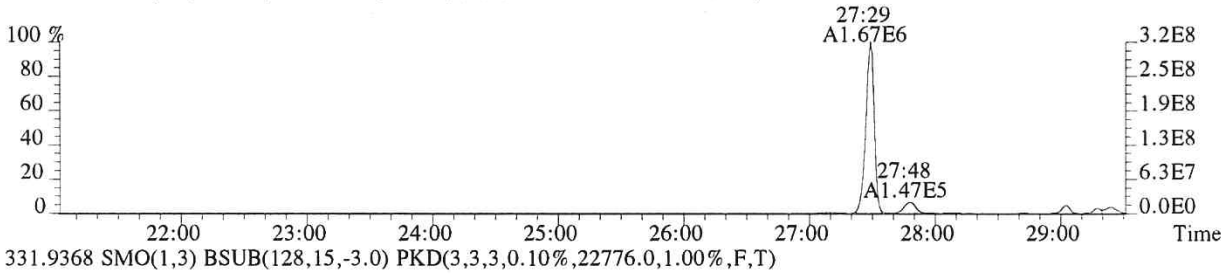


059127

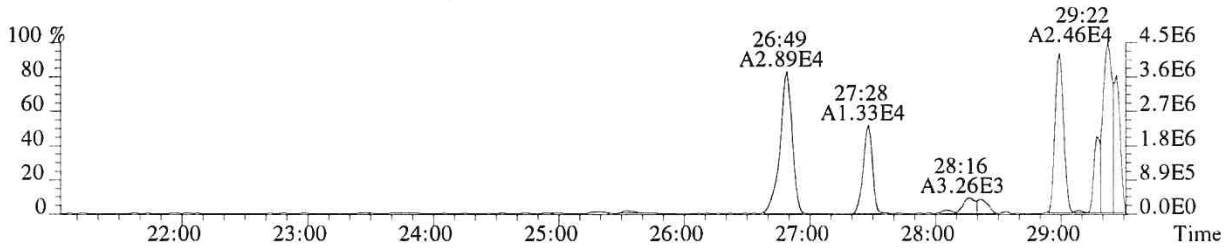
File:P616144 #1-602 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12340.0,1.00%,F,T)



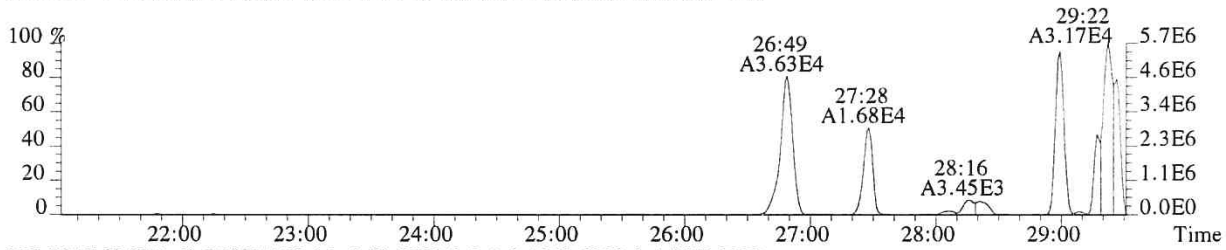
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3640.0,1.00%,F,T)



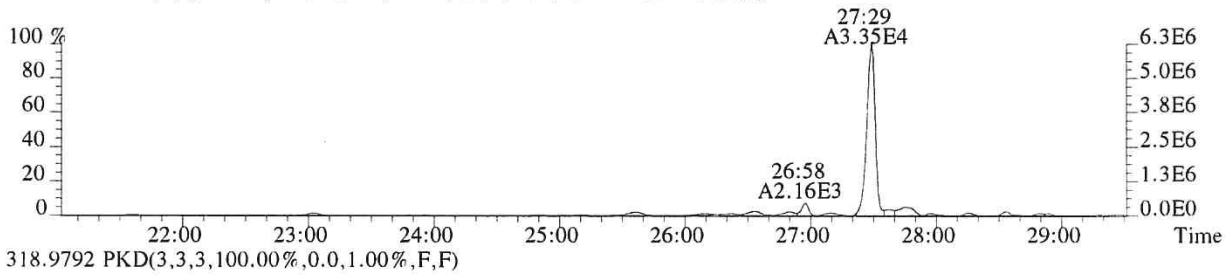
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,22776.0,1.00%,F,T)



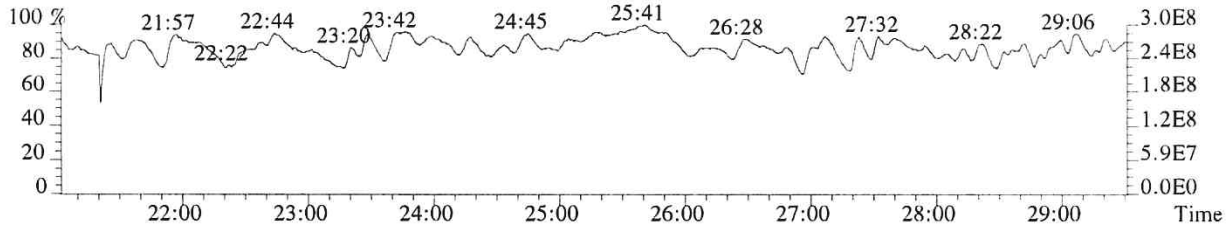
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6784.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6300.0,1.00%,F,T)

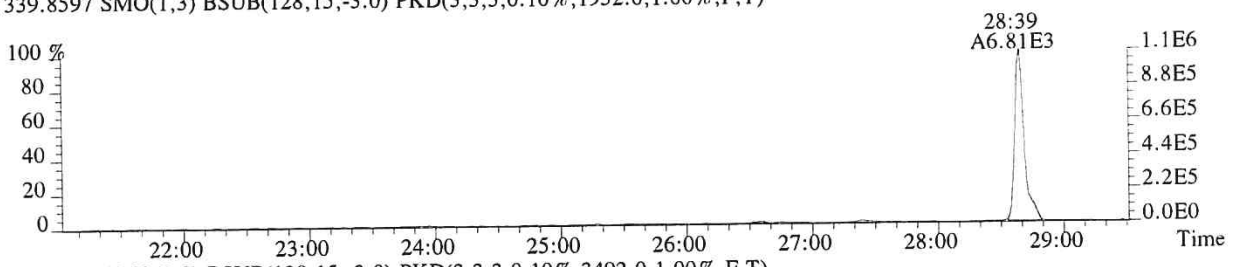


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

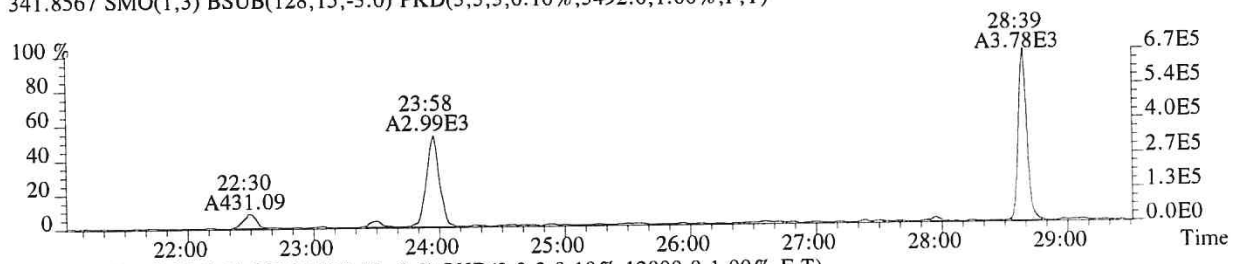


059128

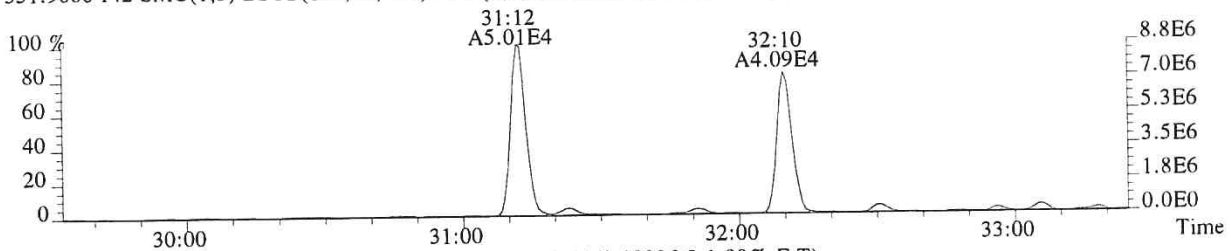
File:P616144 #1-602 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1952.0,1.00%,F,T)



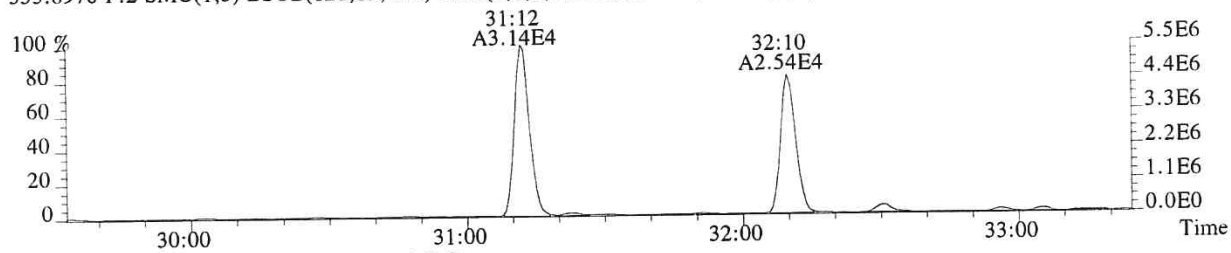
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3492.0,1.00%,F,T)



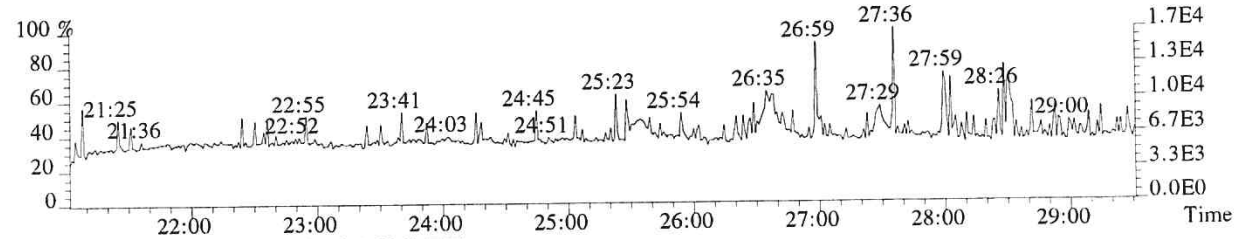
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12800.0,1.00%,F,T)



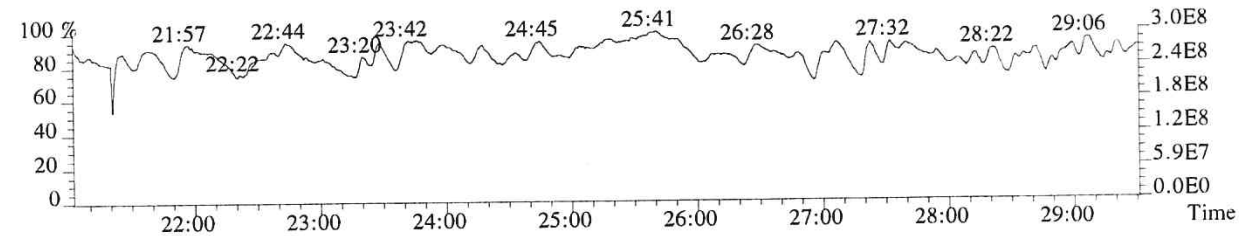
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18936.0,1.00%,F,T)



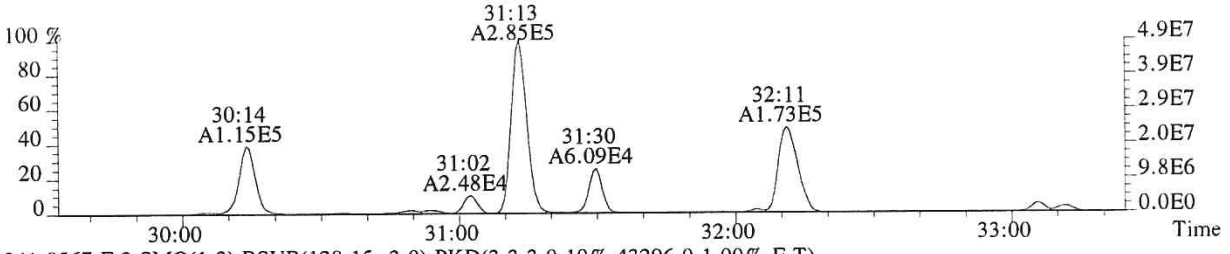
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



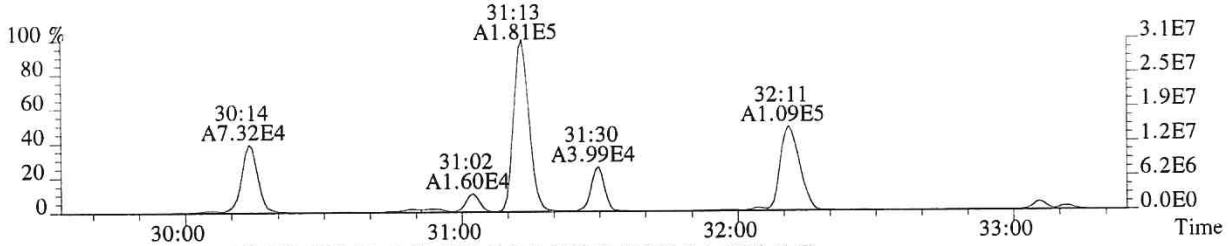
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



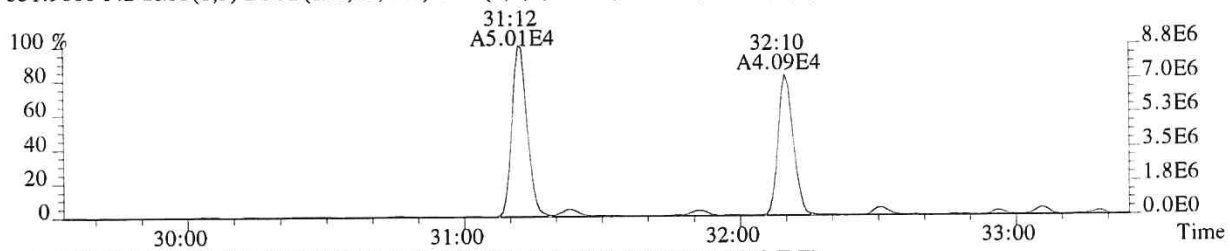
File:P616144 #1-348 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13216.0,1.00%,F,T)



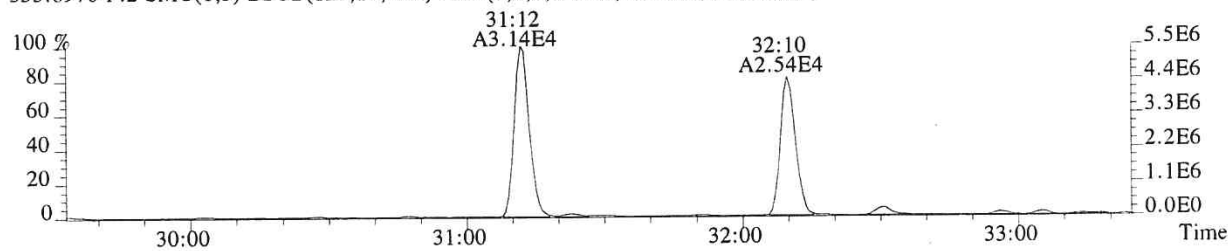
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,43296.0,1.00%,F,T)



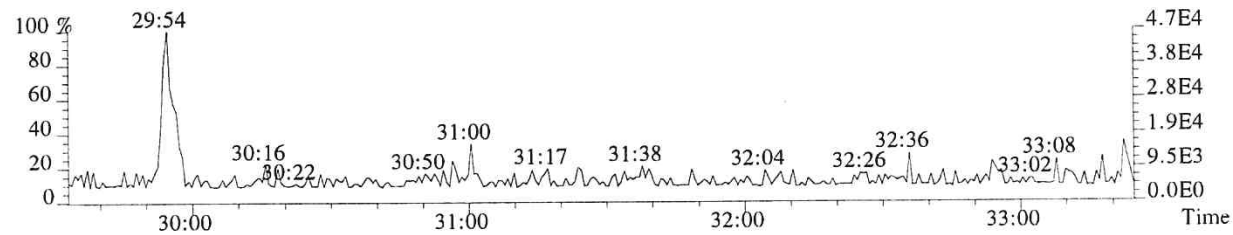
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12800.0,1.00%,F,T)



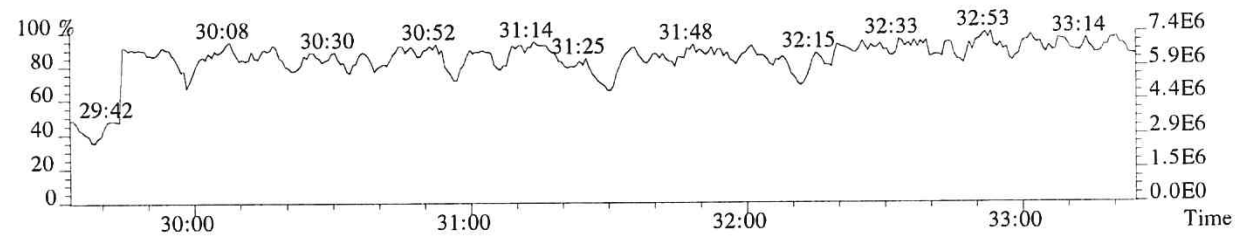
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18936.0,1.00%,F,T)



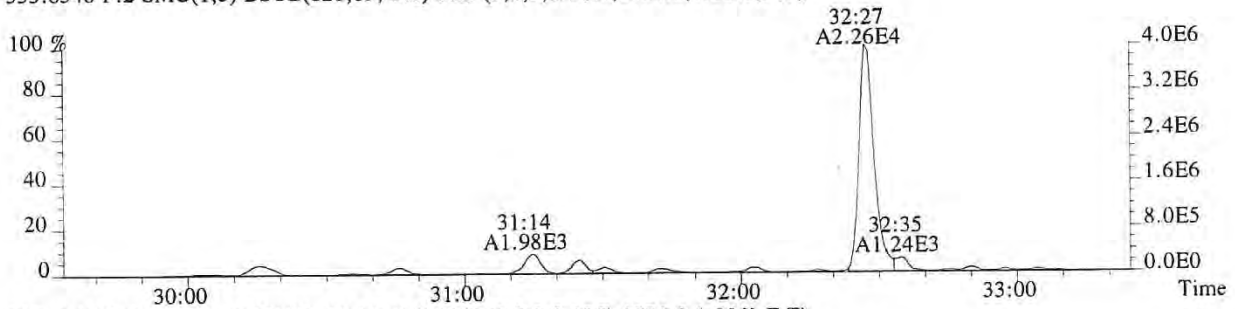
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



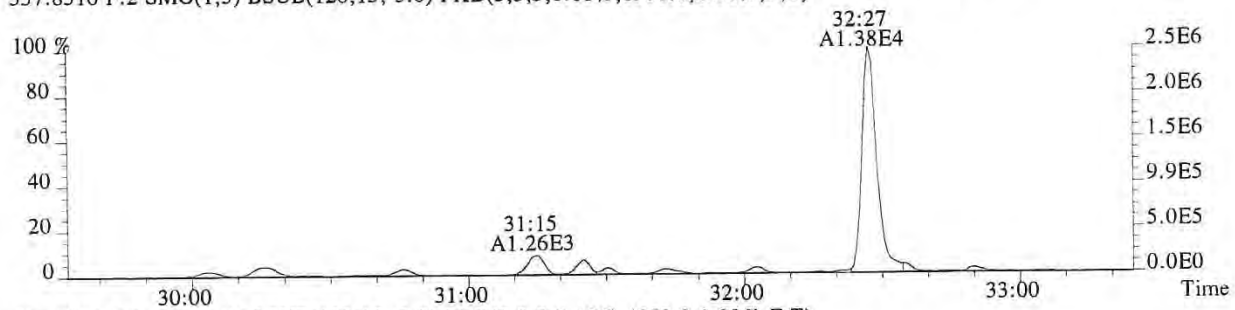
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



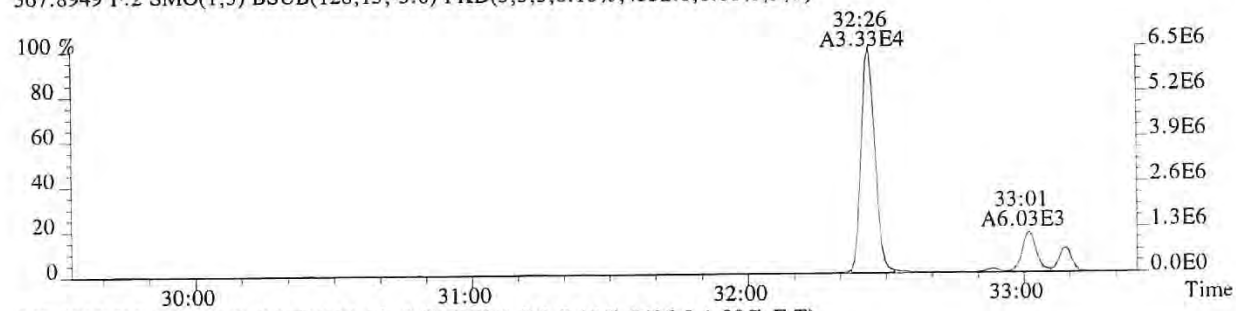
File:P616144 #1-348 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2164.0,1.00%,F,T)



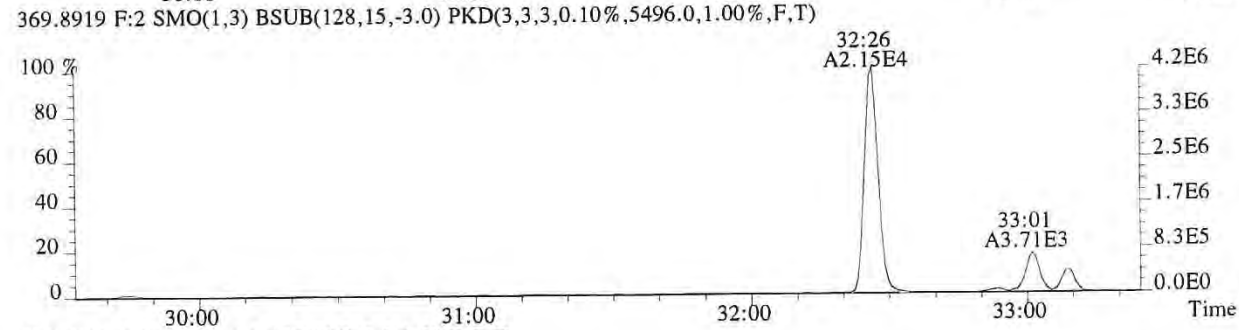
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1976.0,1.00%,F,T)



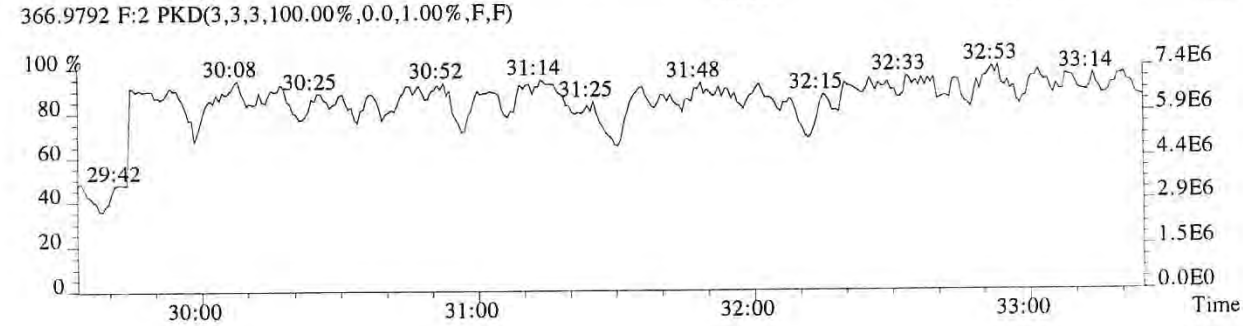
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4352.0,1.00%,F,T)



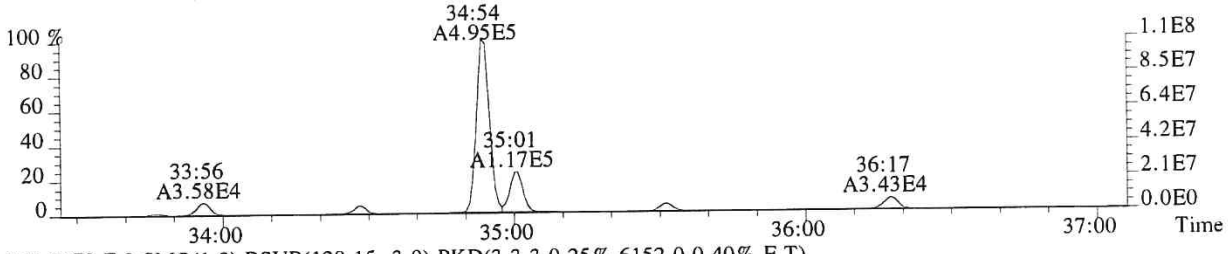
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5496.0,1.00%,F,T)



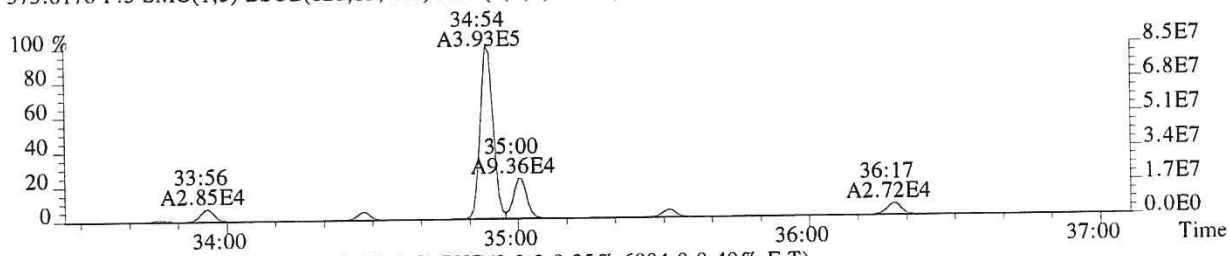
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



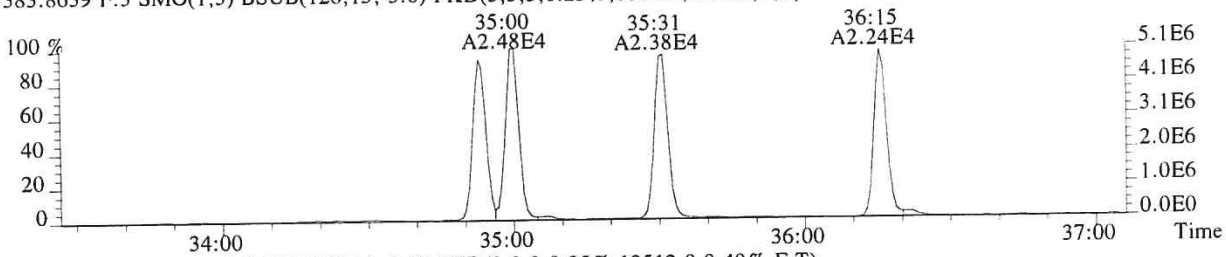
File:P616144 #1-330 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,15316.0,0.40%,F,T)



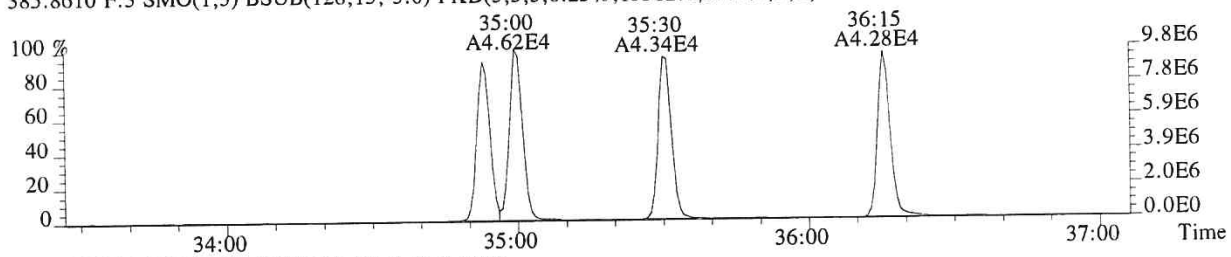
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6152.0,0.40%,F,T)



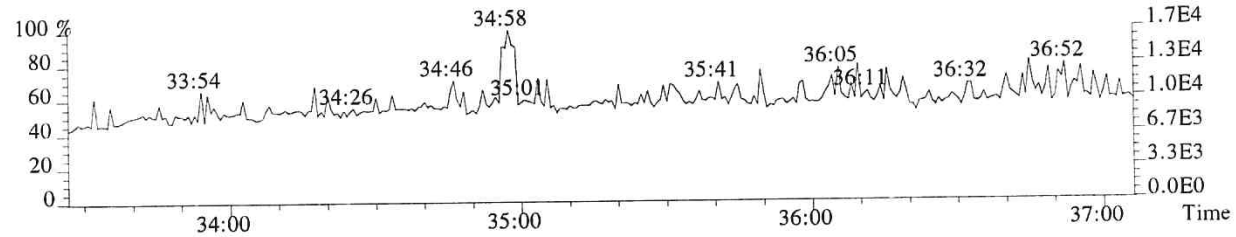
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6804.0,0.40%,F,T)



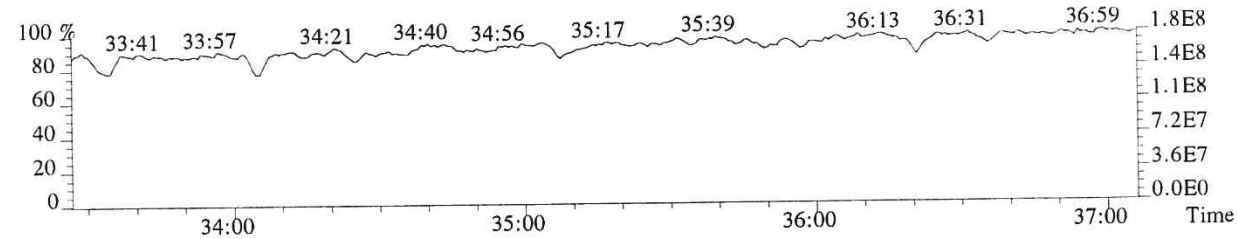
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,13512.0,0.40%,F,T)



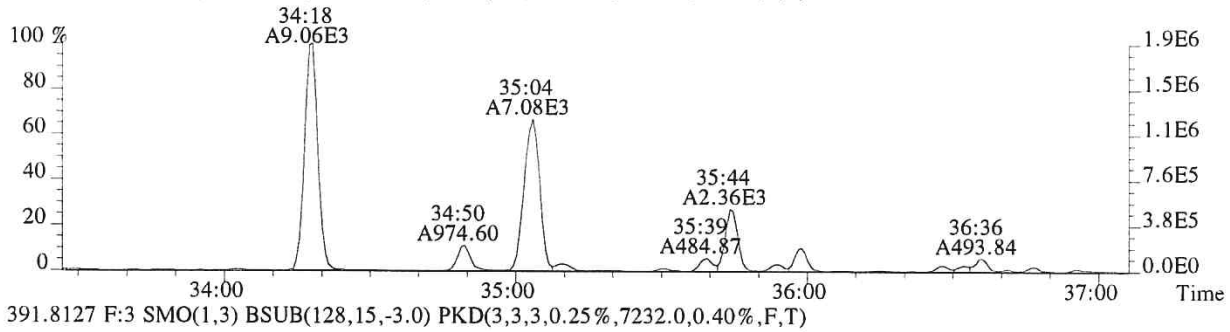
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



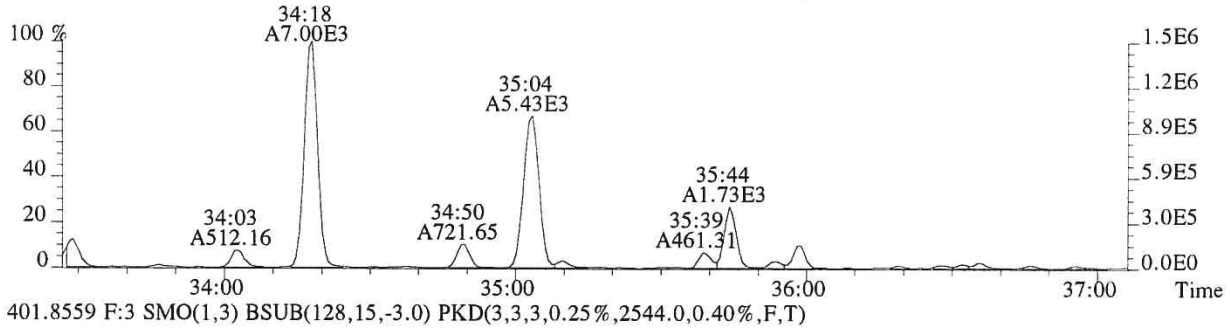
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



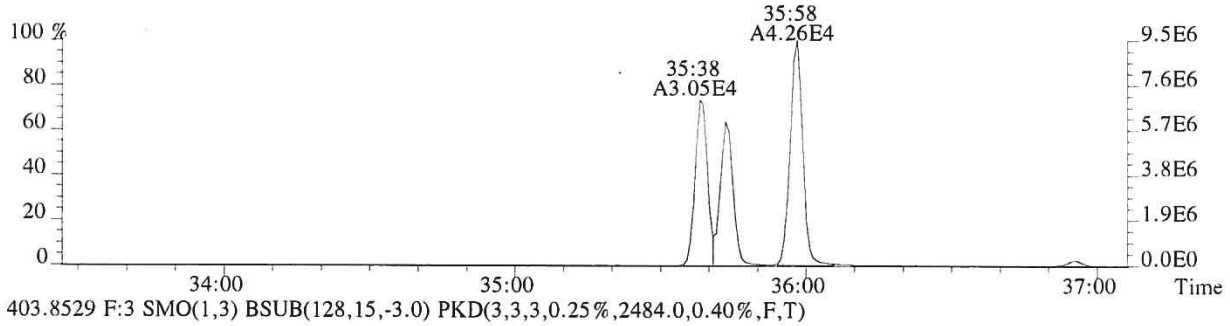
File:P616144 #1-330 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2532.0,0.40%,F,T)



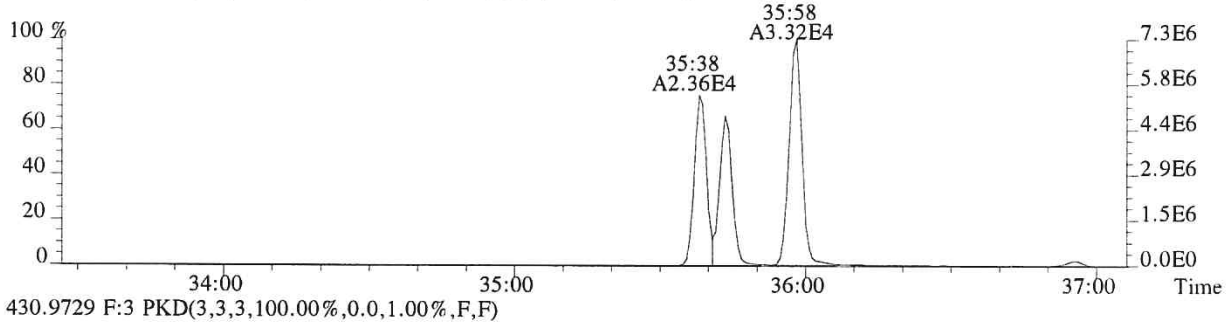
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7232.0,0.40%,F,T)



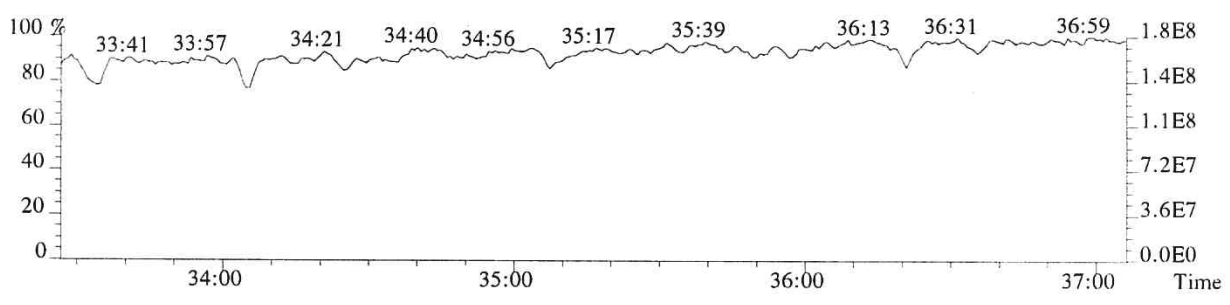
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2544.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2484.0,0.40%,F,T)

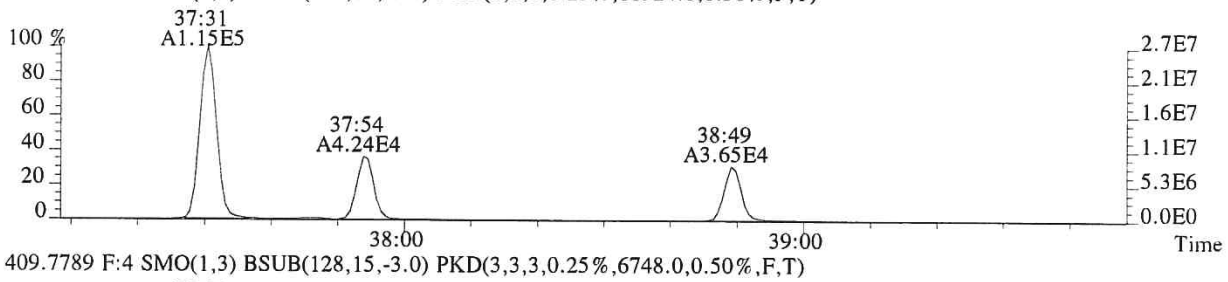


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

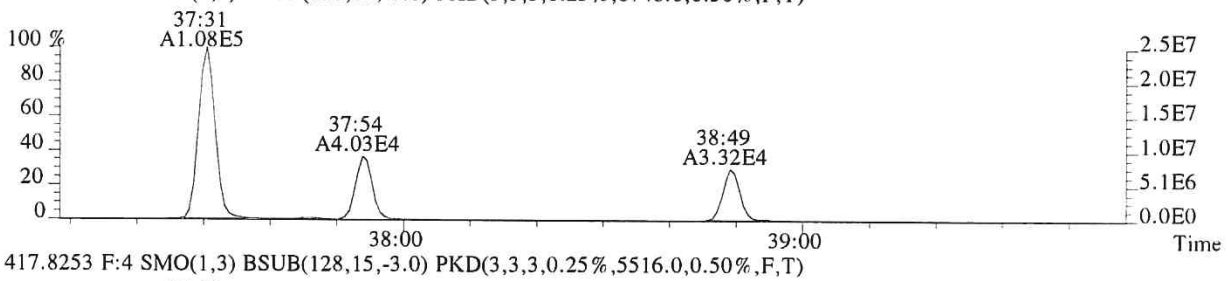


File:P616144 #1-241 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013

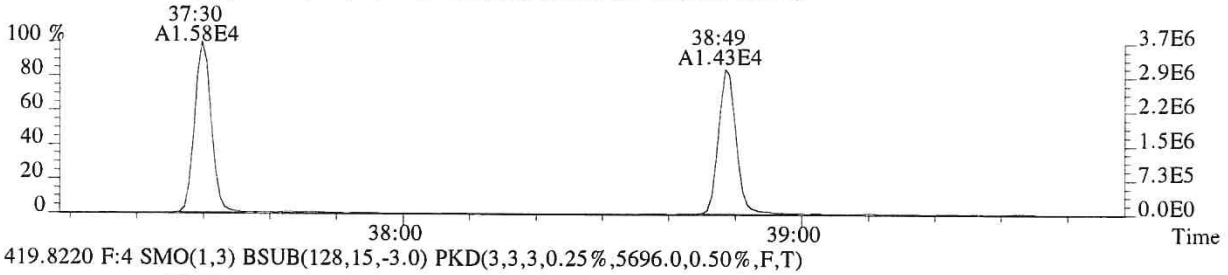
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11924.0,0.50%,F,T)



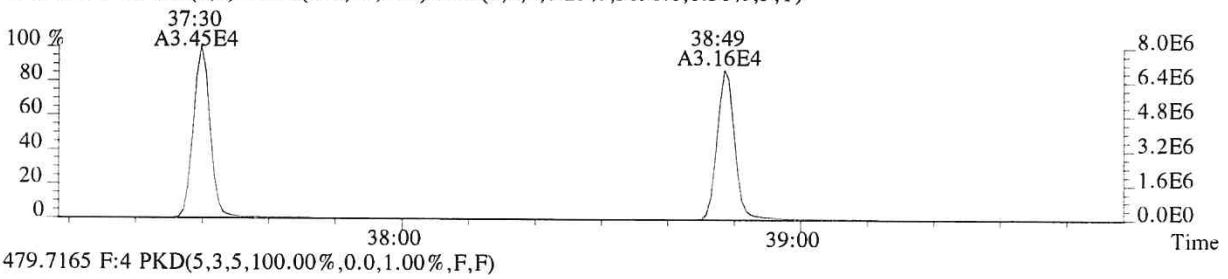
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6748.0,0.50%,F,T)



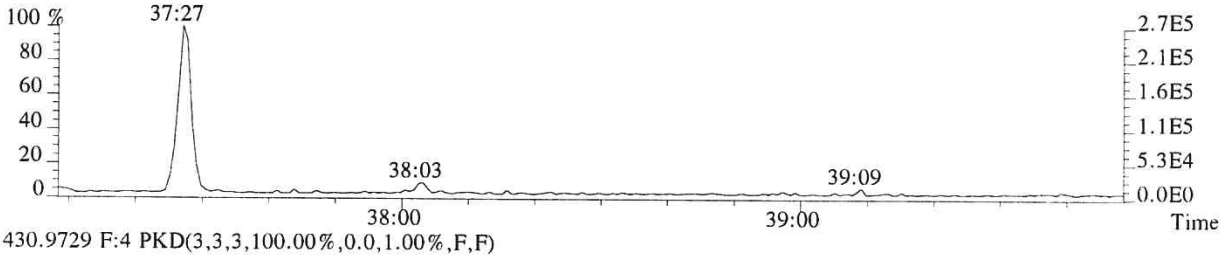
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5516.0,0.50%,F,T)



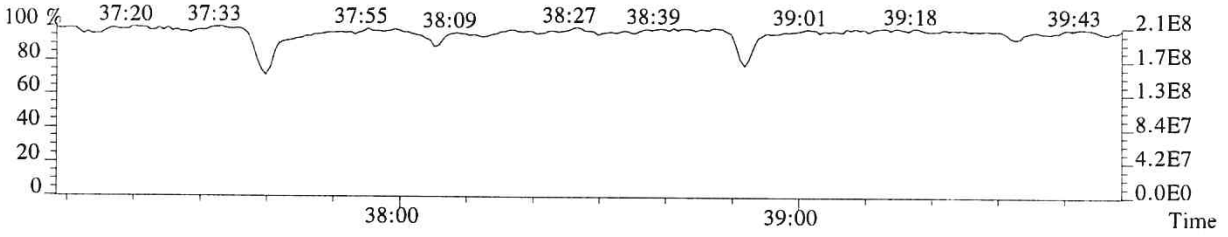
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5696.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

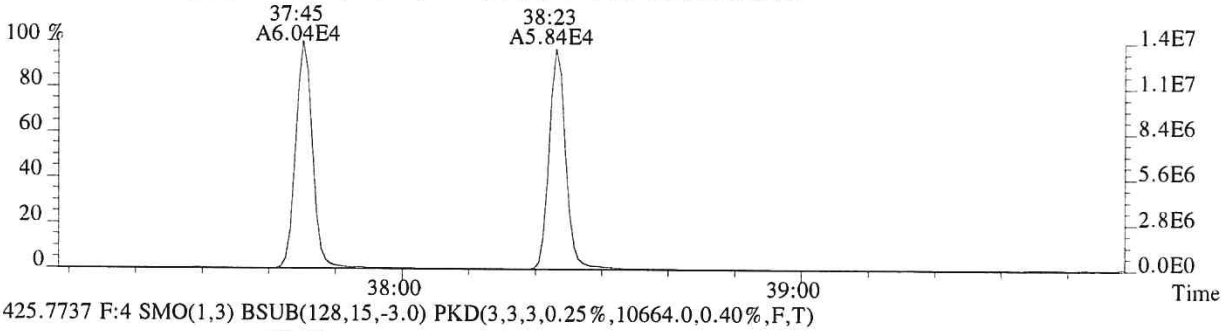


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

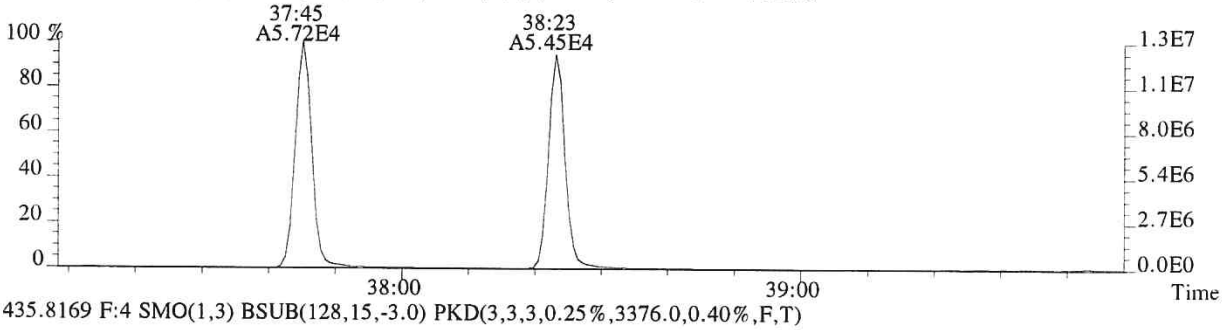


059134

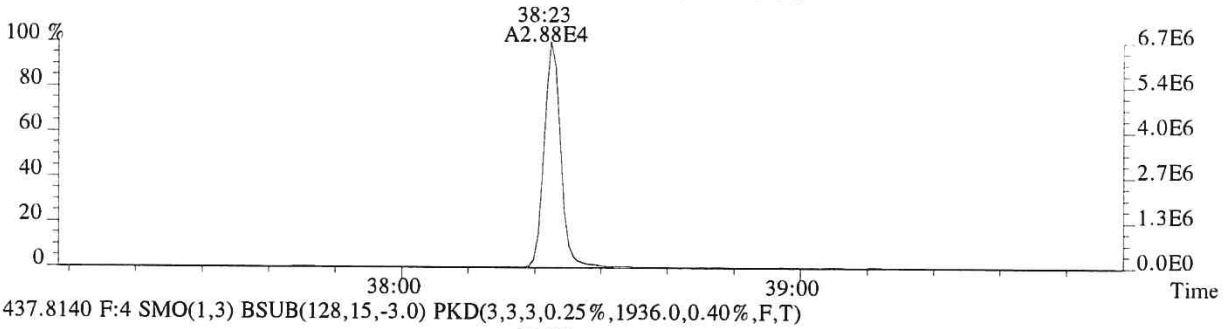
File:P616144 #1-241 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6912.0,0.40%,F,T)



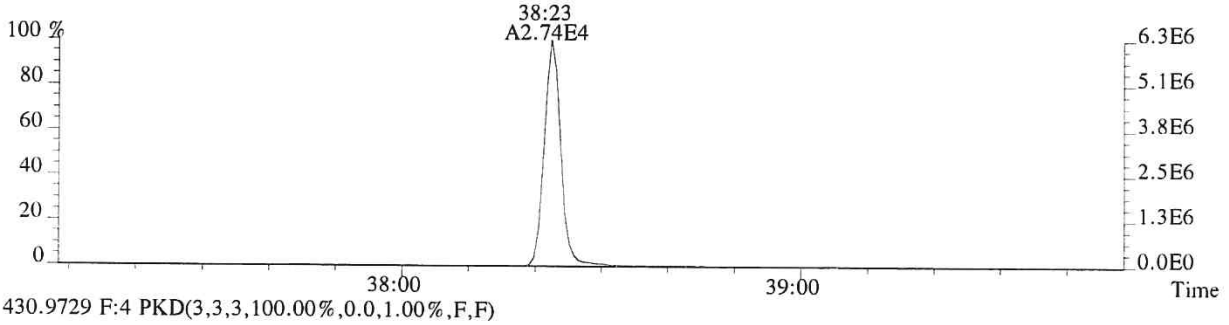
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10664.0,0.40%,F,T)



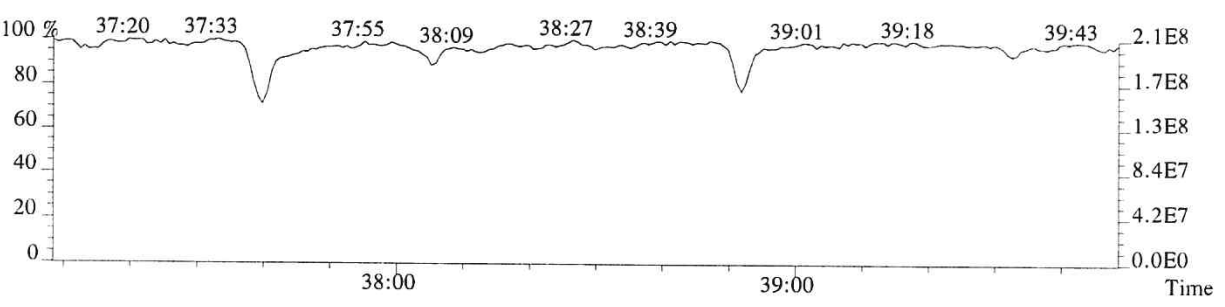
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3376.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1936.0,0.40%,F,T)

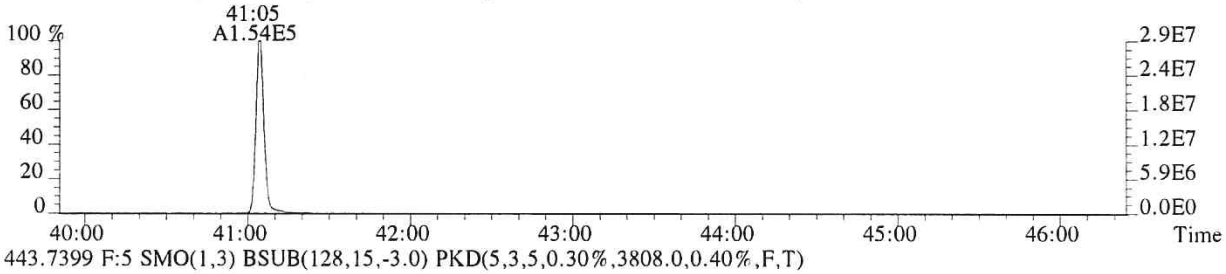


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

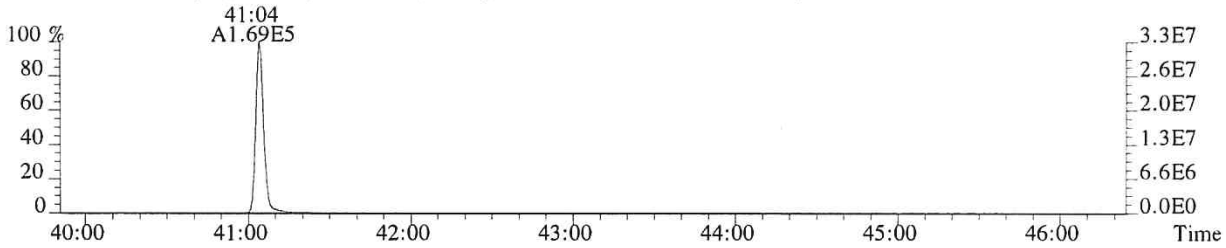


File:P616144 #1-591 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013

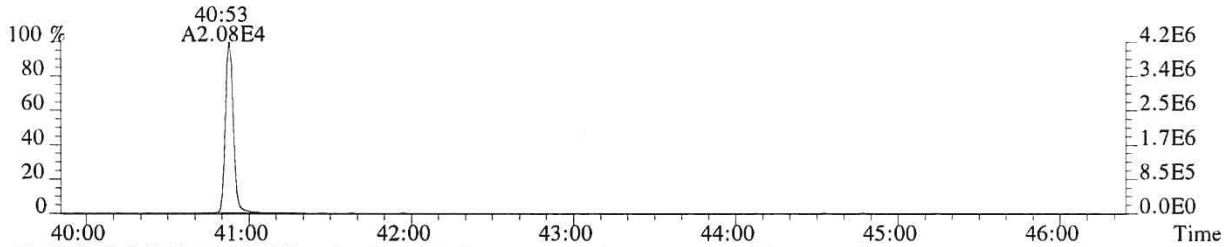
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1028.0,0.40%,F,T)



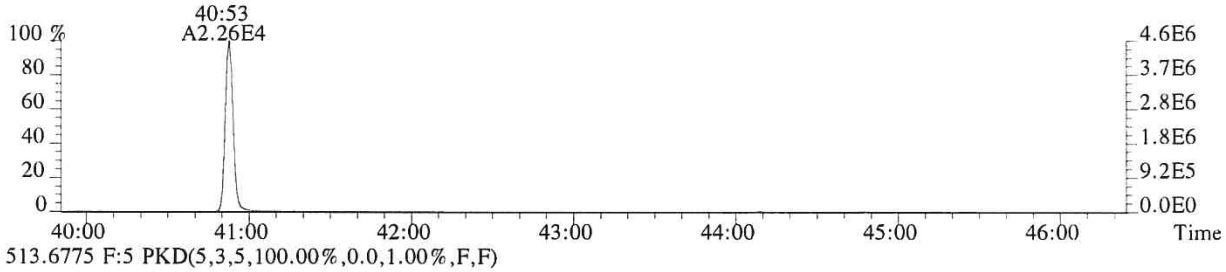
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3808.0,0.40%,F,T)



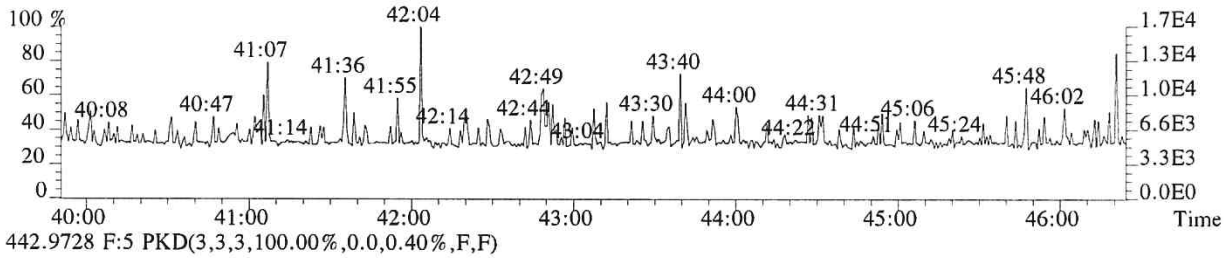
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3636.0,0.40%,F,T)



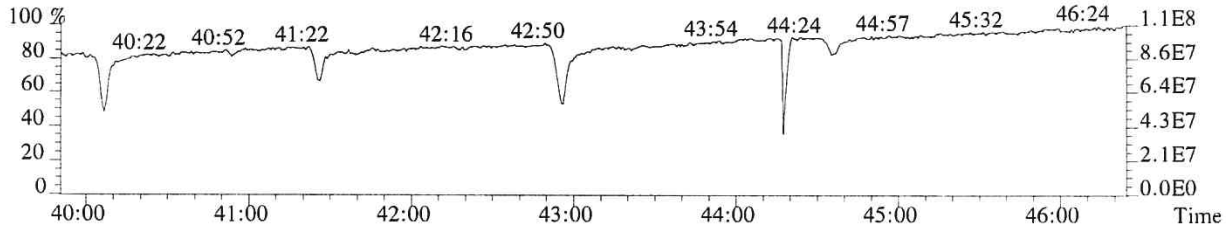
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3180.0,0.40%,F,T)



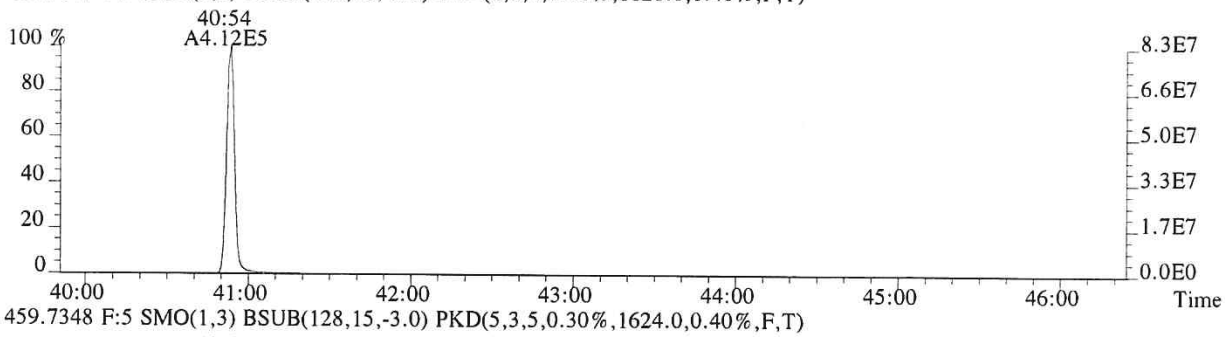
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



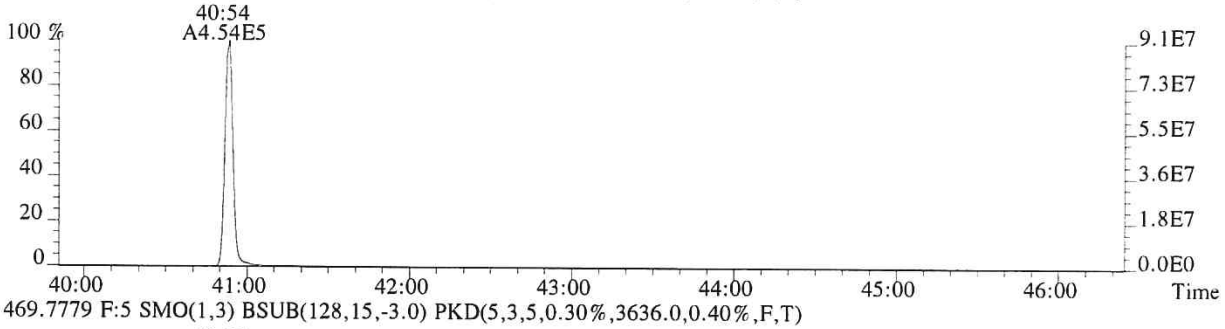
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



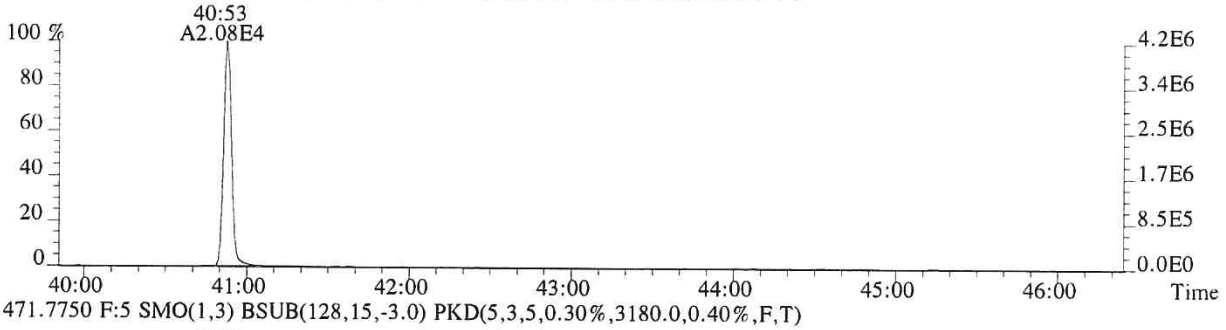
File:P616144 #1-591 Acq:20-DEC-2018 15:32:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1128.0,0.40%,F,T)



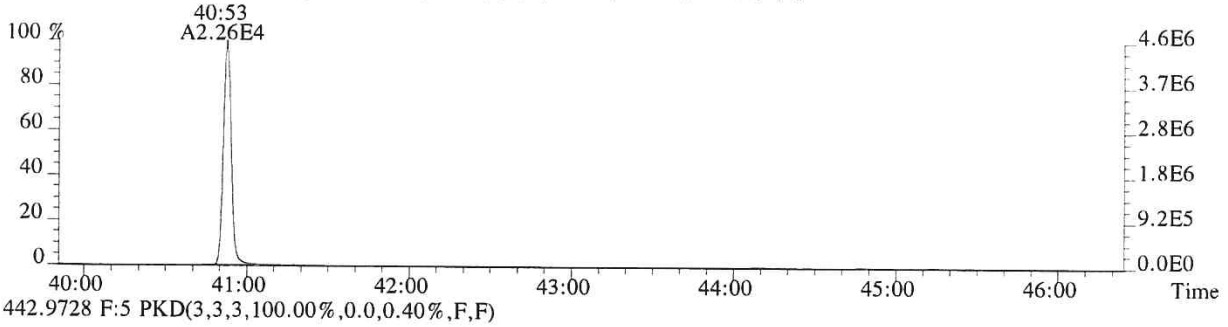
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1624.0,0.40%,F,T)



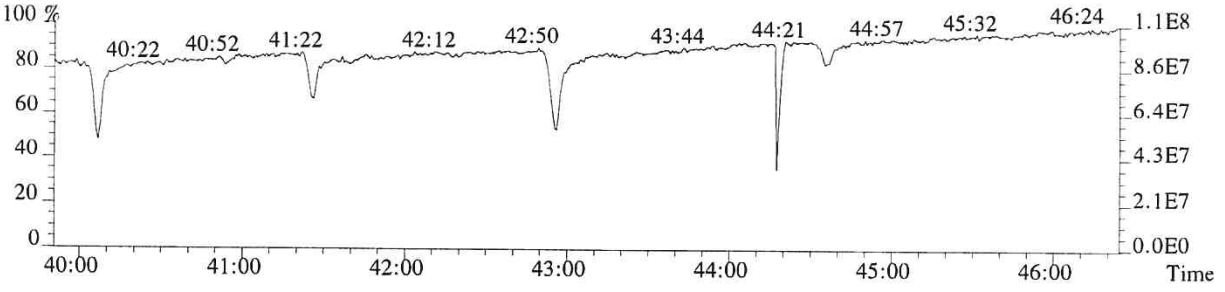
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3636.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3180.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059137

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0068

Run #12 Filename P519608 Samp: 1 Inj: 1 Acquired: 25-DEC-18 02:23:03
Processed: 26-DEC-18 09:55:26 LAB. ID: E1801096-013DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.48e+06	5.80e+02	2.5e+03	1.97e+06	1.75e+03	1.1e+03
2	1,2,3,7,8-PeCDF	7.78e+04	3.04e+02	2.6e+02	6.64e+04	1.73e+03	3.8e+01
3	2,3,4,7,8-PeCDF	4.61e+04	3.04e+02	1.5e+02	3.26e+04	1.73e+03	1.9e+01
4	1,2,3,4,7,8-HxCDF	1.36e+05	6.96e+02	2.0e+02	1.17e+05	6.72e+02	1.7e+02
5	1,2,3,6,7,8-HxCDF	3.58e+04	6.96e+02	5.1e+01	2.98e+04	6.72e+02	4.4e+01
6	2,3,4,6,7,8-HxCDF	4.07e+03	6.96e+02	5.8e+00	4.31e+03	6.72e+02	6.4e+00
7	1,2,3,7,8,9-HxCDF	8.32e+03	6.96e+02	1.2e+01	5.76e+03	6.72e+02	8.6e+00
8	1,2,3,4,6,7,8-HpCDF	2.39e+04	6.00e+02	4.0e+01	2.20e+04	1.03e+03	2.1e+01
9	1,2,3,4,7,8,9-HpCDF	7.32e+03	6.00e+02	1.2e+01	6.80e+03	1.03e+03	6.6e+00
10	OCDF	2.10e+04	4.20e+02	5.0e+01	2.89e+04	8.96e+02	3.2e+01
11	2,3,7,8-TCDD	4.87e+05	1.84e+03	2.6e+02	6.04e+05	1.22e+03	4.9e+02
12	1,2,3,7,8-PeCDD	6.06e+03	8.16e+02	7.4e+00	2.75e+03	3.56e+02	7.7e+00
13	1,2,3,4,7,8-HxCDD	*	4.36e+02	*	*	4.72e+02	*
14	1,2,3,6,7,8-HxCDD	*	4.36e+02	*	*	4.72e+02	*
15	1,2,3,7,8,9-HxCDD	*	4.36e+02	*	*	4.72e+02	*
16	1,2,3,4,6,7,8-HpCDD	1.14e+04	1.17e+03	9.7e+00	1.33e+04	4.16e+02	3.2e+01
17	OCDD	7.09e+04	3.12e+02	2.3e+02	8.49e+04	4.16e+02	2.0e+02
18	13C-2,3,7,8-TCDF	1.10e+06	7.22e+03	1.5e+02	1.40e+06	3.57e+03	3.9e+02
19	13C-1,2,3,7,8-PeCDF	1.72e+06	4.92e+02	3.5e+03	1.08e+06	4.68e+02	2.3e+03
20	13C-2,3,4,7,8-PeCDF	1.77e+06	4.92e+02	3.6e+03	1.08e+06	4.68e+02	2.3e+03
21	13C-1,2,3,4,7,8-HxCDF	7.29e+05	4.72e+02	1.5e+03	1.45e+06	6.12e+02	2.4e+03
22	13C-1,2,3,6,7,8-HxCDF	7.71e+05	4.72e+02	1.6e+03	1.53e+06	6.12e+02	2.5e+03
23	13C-2,3,4,6,7,8-HxCDF	7.22e+05	4.72e+02	1.5e+03	1.43e+06	6.12e+02	2.3e+03
24	13C-1,2,3,7,8,9-HxCDF	5.89e+05	4.72e+02	1.2e+03	1.11e+06	6.12e+02	1.8e+03
25	13C-1,2,3,4,6,7,8-HpCDF	4.77e+05	1.90e+03	2.5e+02	1.08e+06	1.54e+03	7.1e+02
26	13C-1,2,3,4,7,8,9-HpCDF	2.92e+05	1.90e+03	1.5e+02	6.94e+05	1.54e+03	4.5e+02
27	13C-2,3,7,8-TCDD	5.27e+05	4.55e+03	1.2e+02	6.47e+05	1.52e+03	4.3e+02
28	13C-1,2,3,7,8-PeCDD	1.23e+06	6.40e+02	1.9e+03	7.53e+05	9.40e+02	8.0e+02
29	13C-1,2,3,4,7,8-HxCDD	1.04e+06	9.88e+02	1.1e+03	8.07e+05	7.16e+02	1.1e+03
30	13C-1,2,3,6,7,8-HxCDD	9.61e+05	9.88e+02	9.7e+02	7.75e+05	7.16e+02	1.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.43e+05	8.40e+02	8.8e+02	6.89e+05	5.96e+02	1.2e+03
32	13C-OCDD	5.06e+05	4.20e+02	1.2e+03	5.81e+05	4.00e+02	1.5e+03
33	13C-1,2,3,4-TCDD	8.43e+05	4.55e+03	1.9e+02	1.03e+06	1.52e+03	6.8e+02
34	13C-1,2,3,7,8,9-HxCDD	9.44e+05	9.88e+02	9.6e+02	7.33e+05	7.16e+02	1.0e+03
35	37Cl-2,3,7,8-TCDD	1.37e+04	7.16e+02	1.9e+01			

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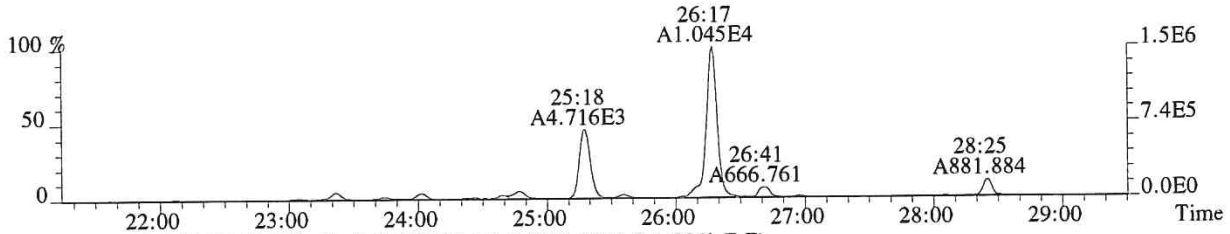
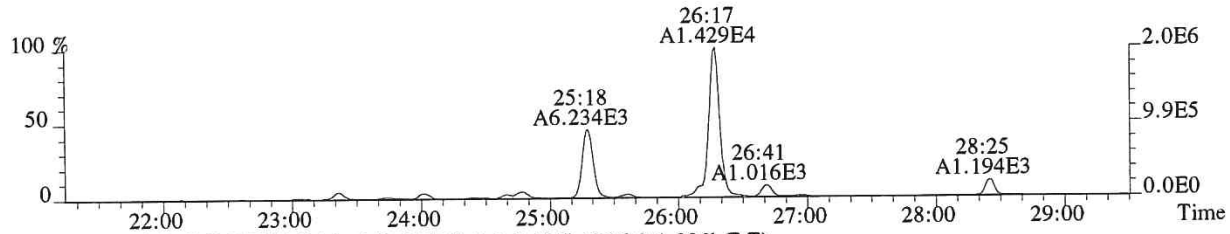
www.alsglobal.com

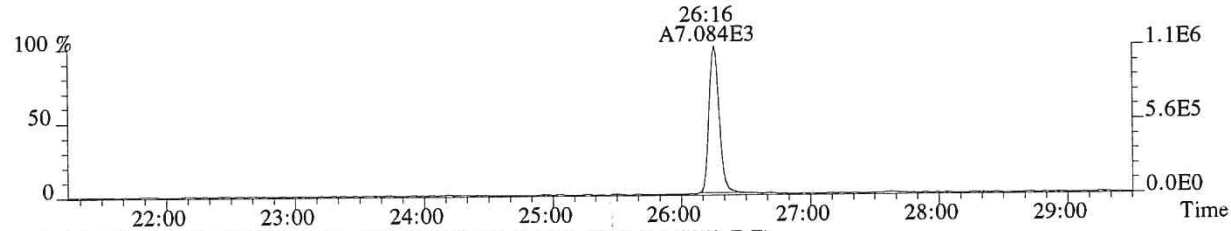
File:P519608 #1-587 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,580.0,1.00%,F,T)



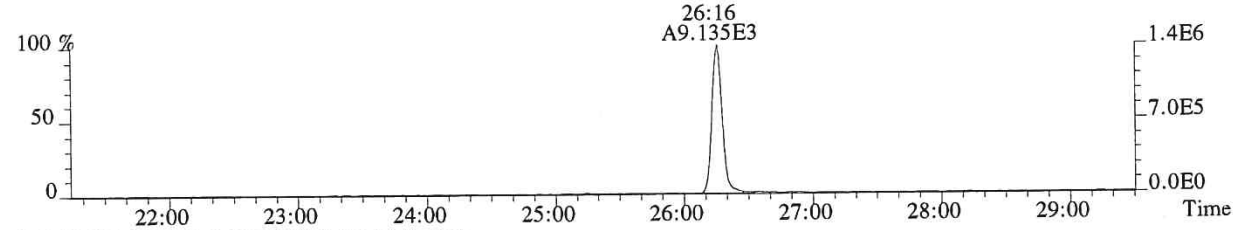
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1748.0,1.00%,F,T)



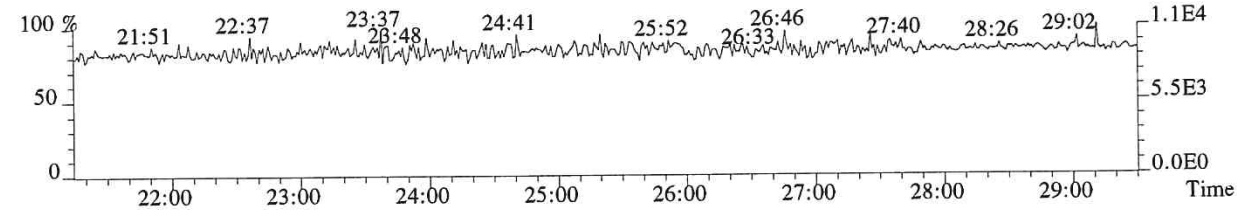
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7216.0,1.00%,F,T)



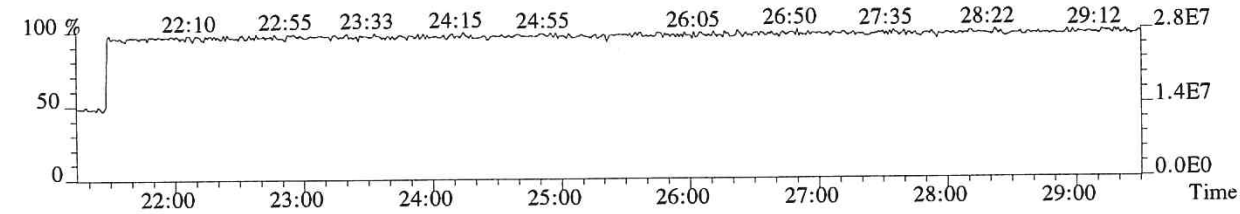
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3572.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

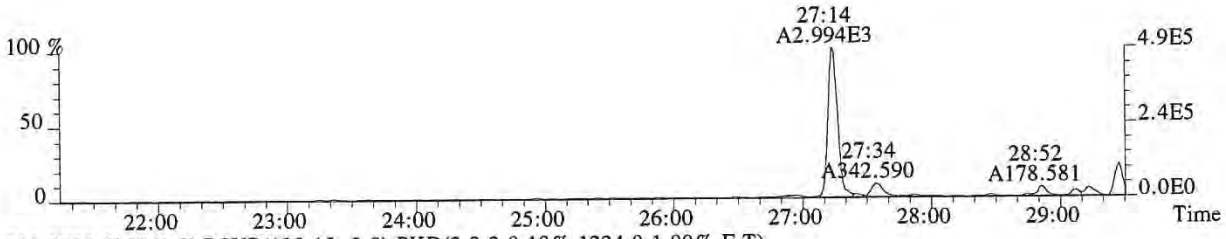


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

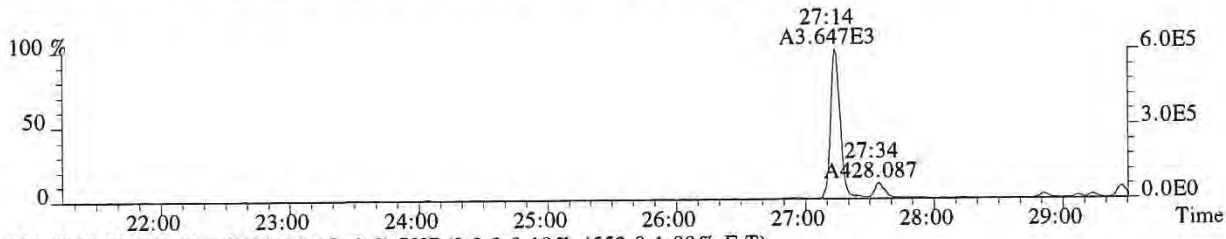


059139

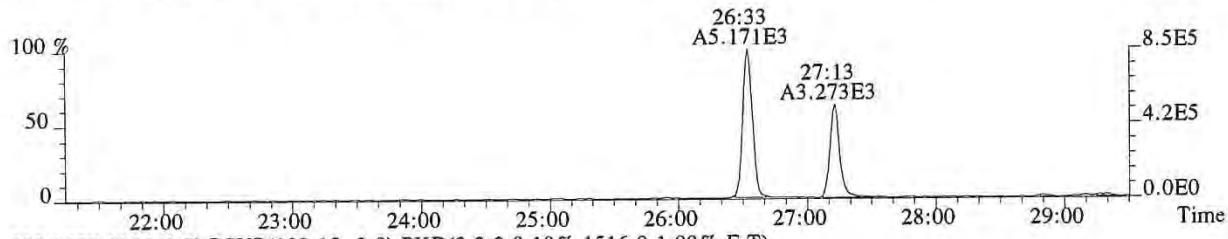
File:P519608 #1-587 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1840.0,1.00%,F,T)



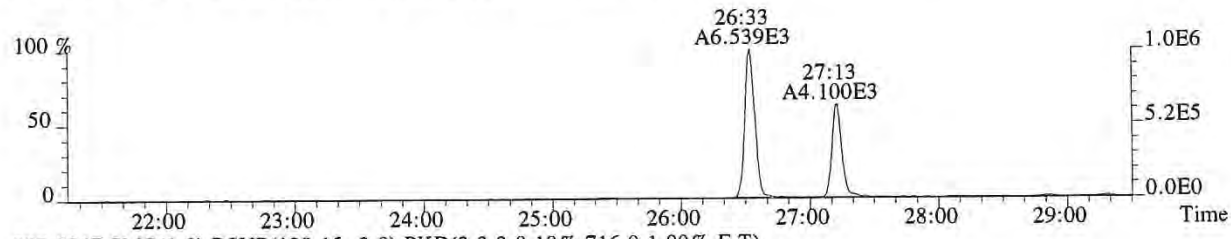
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1224.0,1.00%,F,T)



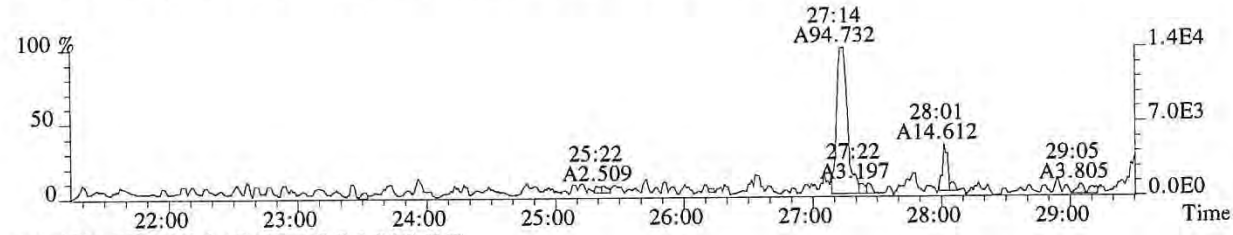
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4552.0,1.00%,F,T)



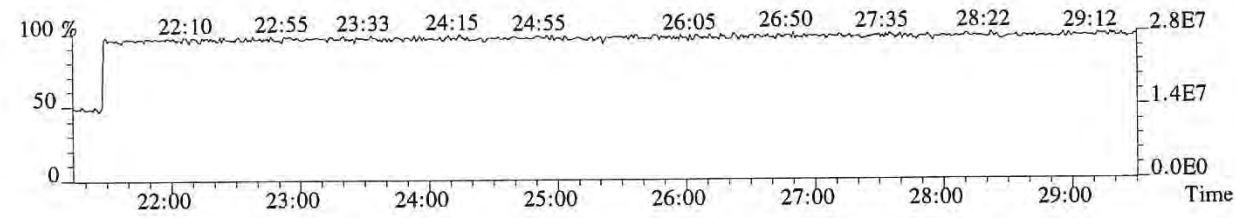
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1516.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,716.0,1.00%,F,T)

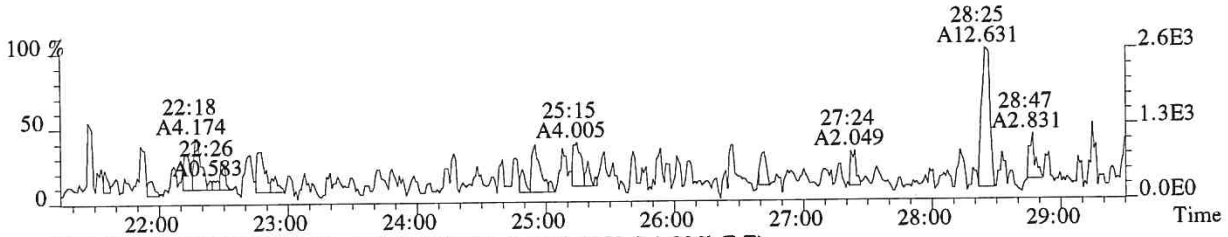


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

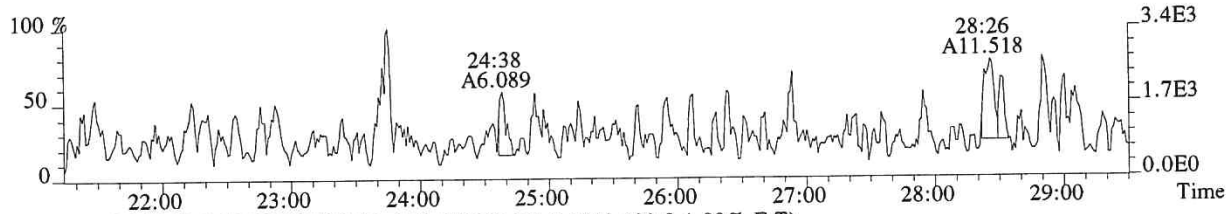


059140

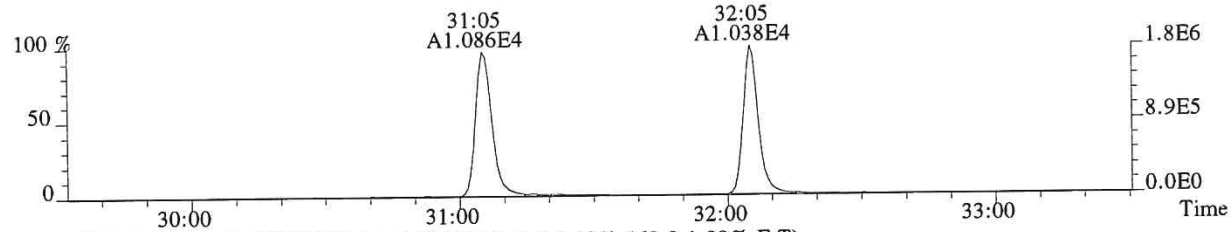
File:P519608 #1-587 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-013DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,428.0,1.00%,F,T)



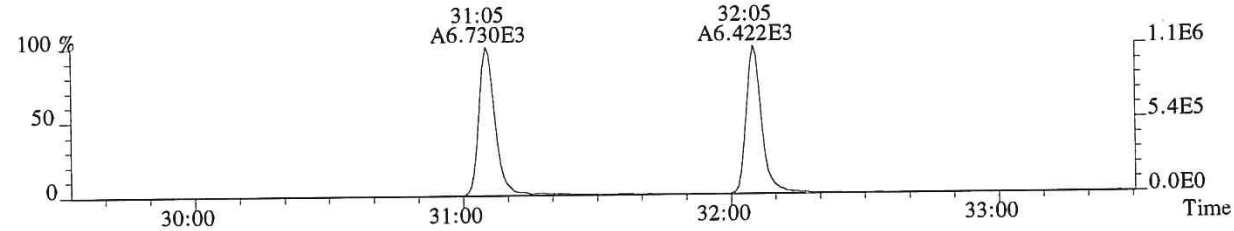
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1152.0,1.00%,F,T)



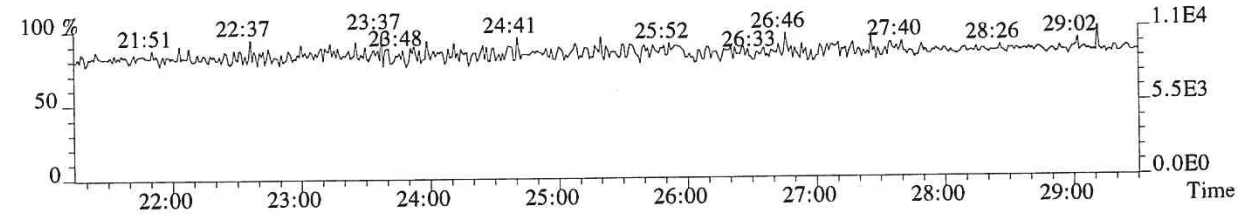
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,492.0,1.00%,F,T)



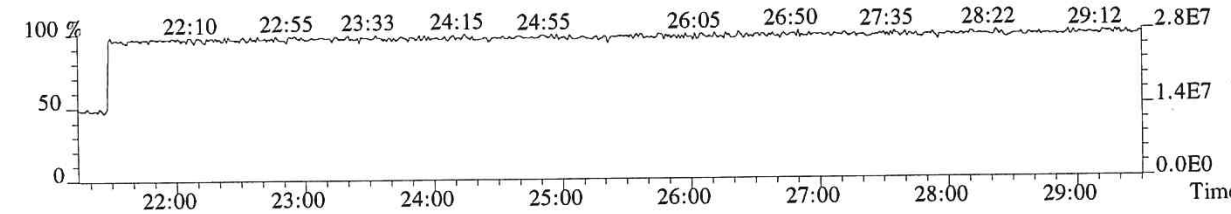
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,468.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

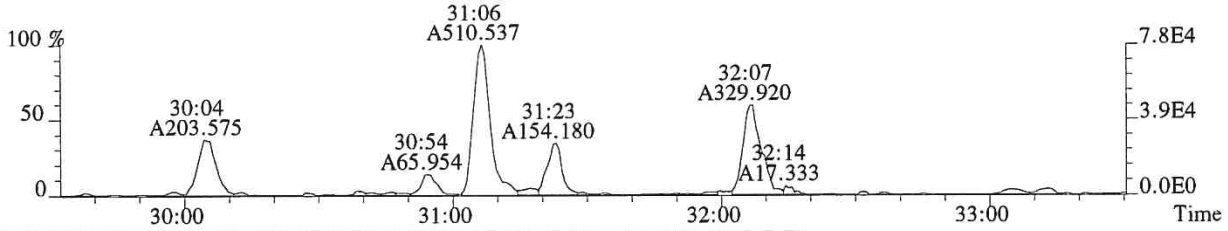


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

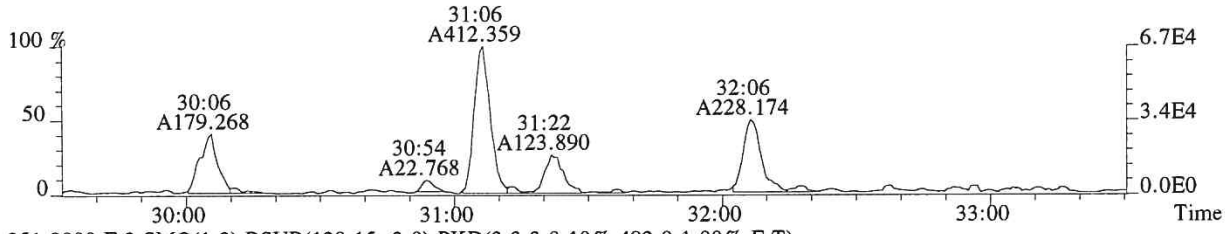


059141

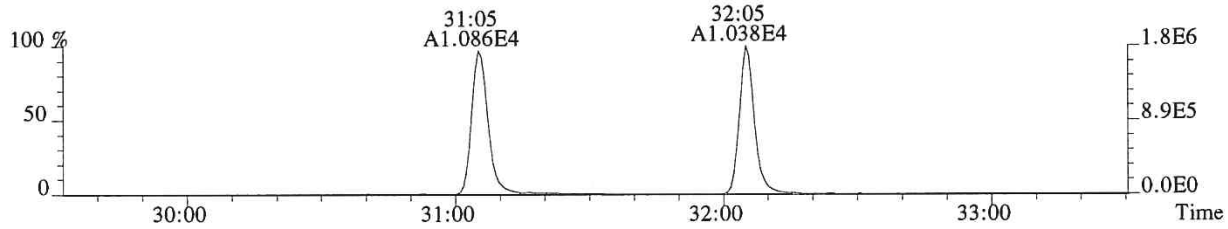
File:P519608 #1-358 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,304.0,1.00%,F,T)



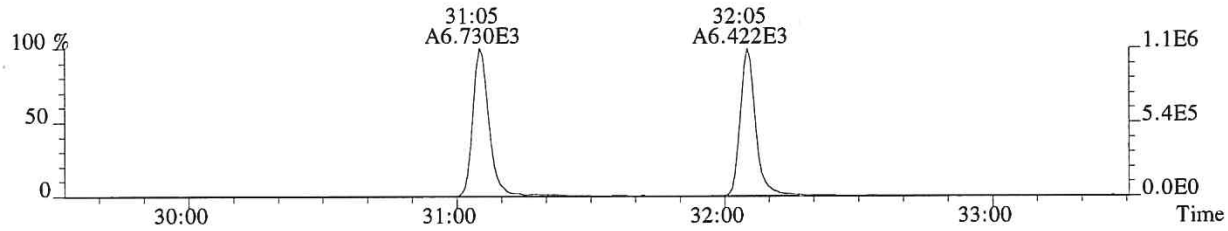
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1728.0,1.00%,F,T)



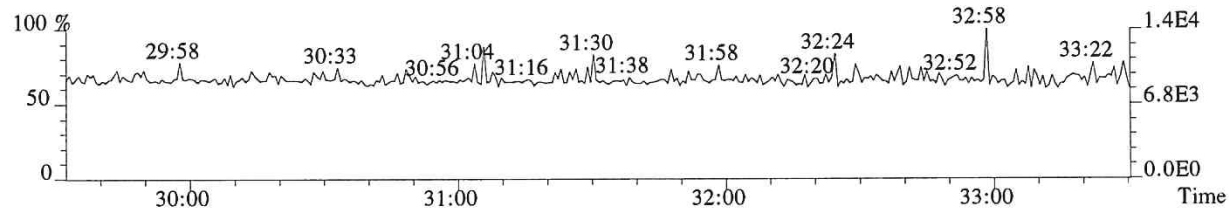
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,492.0,1.00%,F,T)



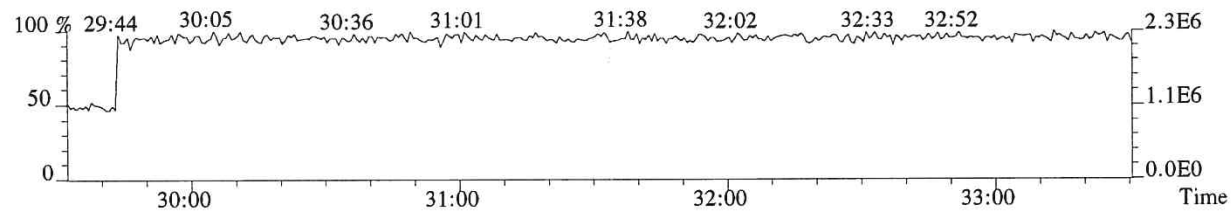
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,468.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

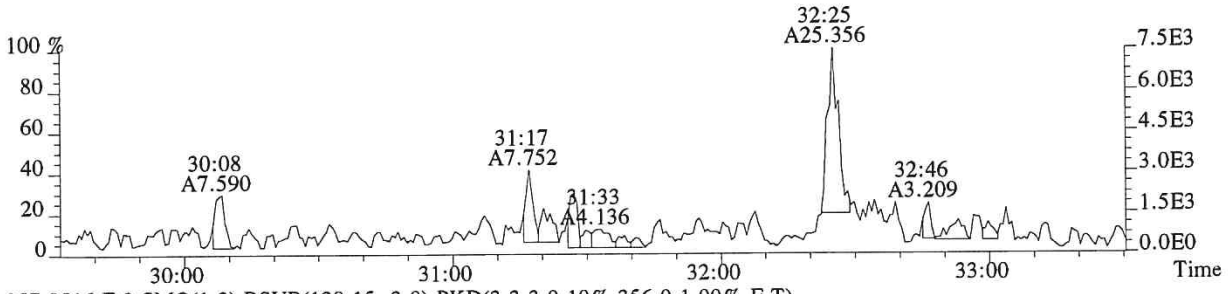


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

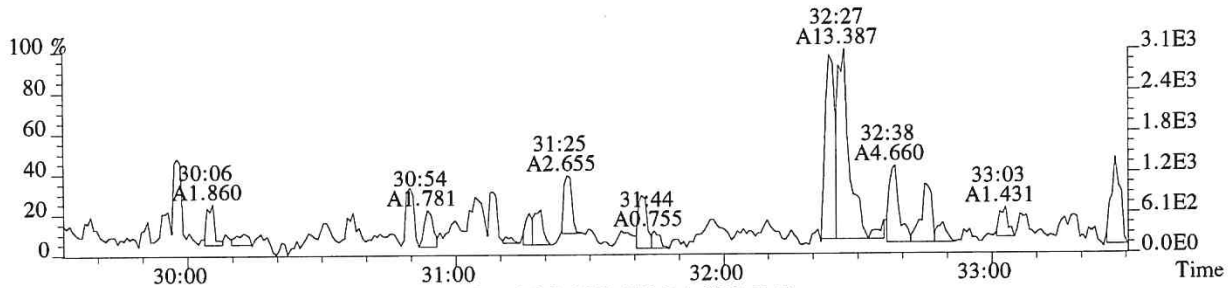


059142

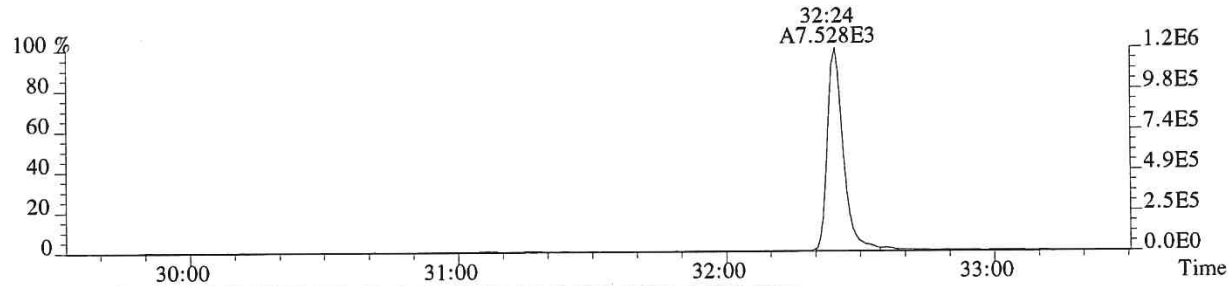
File:P519608 #1-358 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,816.0,1.00%,F,T)



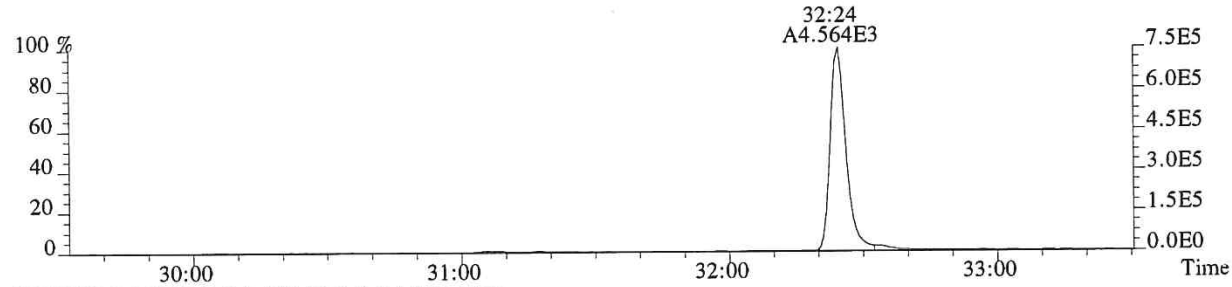
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,356.0,1.00%,F,T)



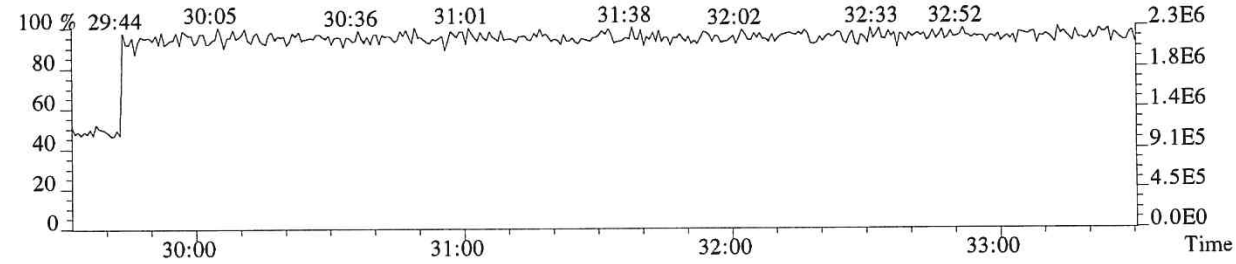
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,640.0,1.00%,F,T)



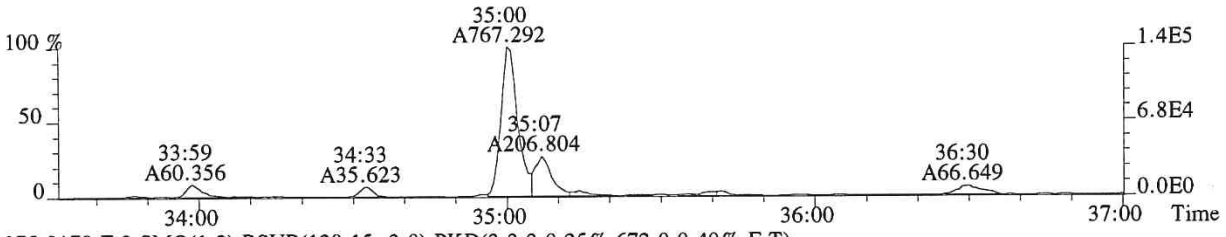
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,940.0,1.00%,F,T)



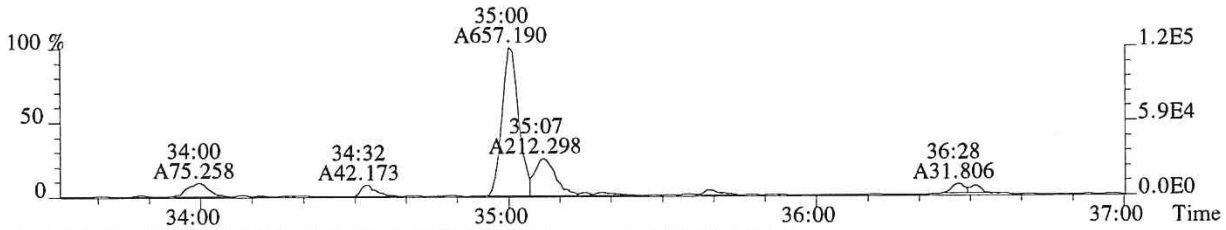
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



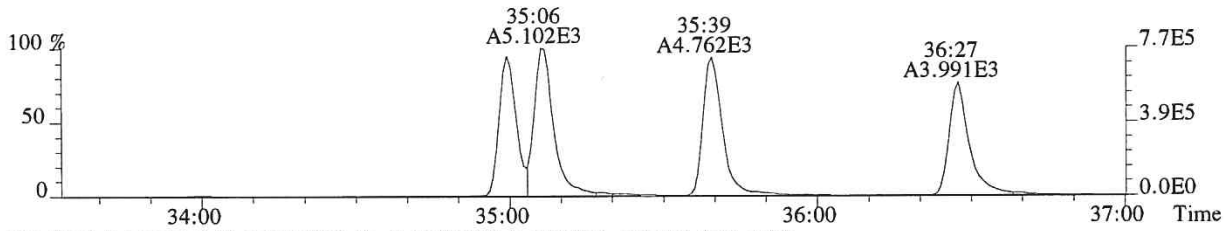
File:P519608 #1-312 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,696.0,0.40%,F,T)



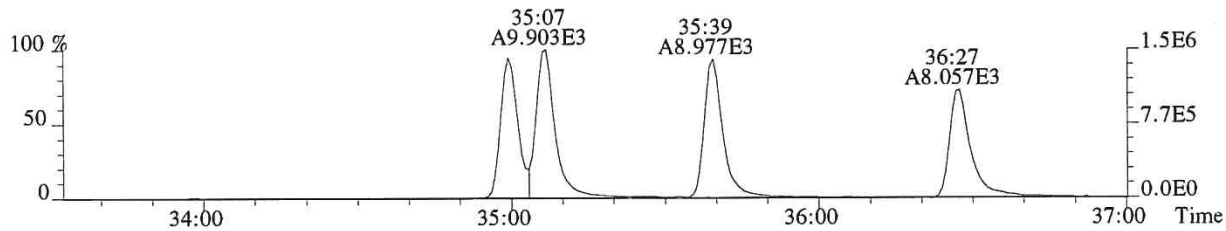
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,672.0,0.40%,F,T)



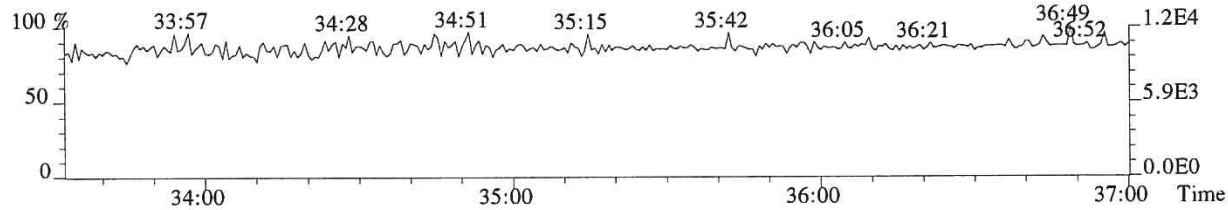
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,472.0,0.40%,F,T)



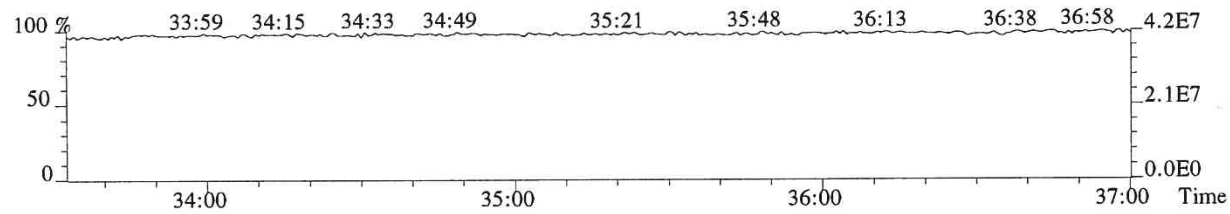
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,612.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

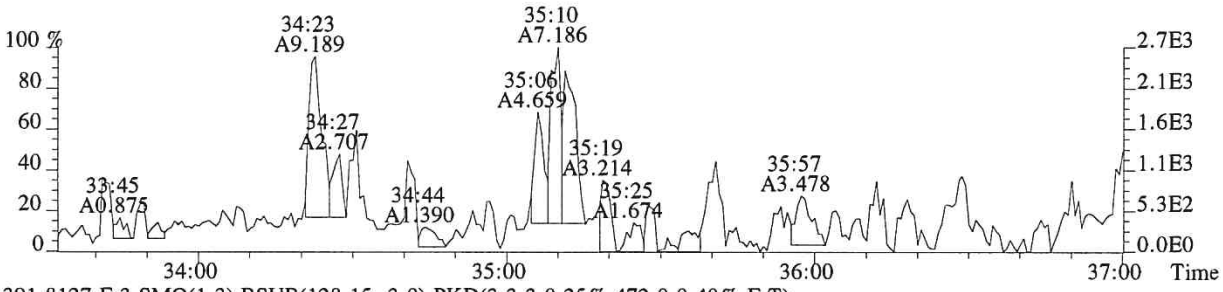


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

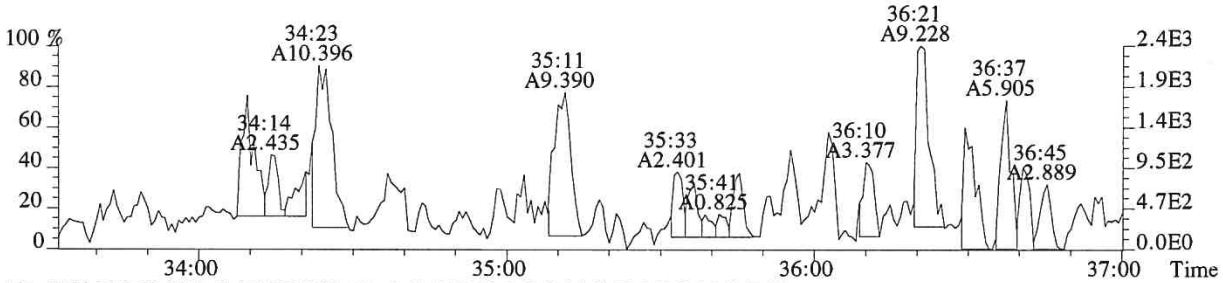


059144

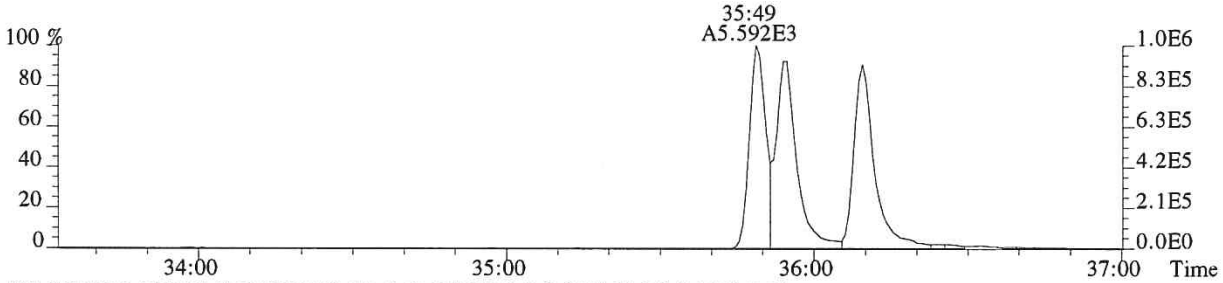
File:P519608 #1-312 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,436.0,0.40%,F,T)



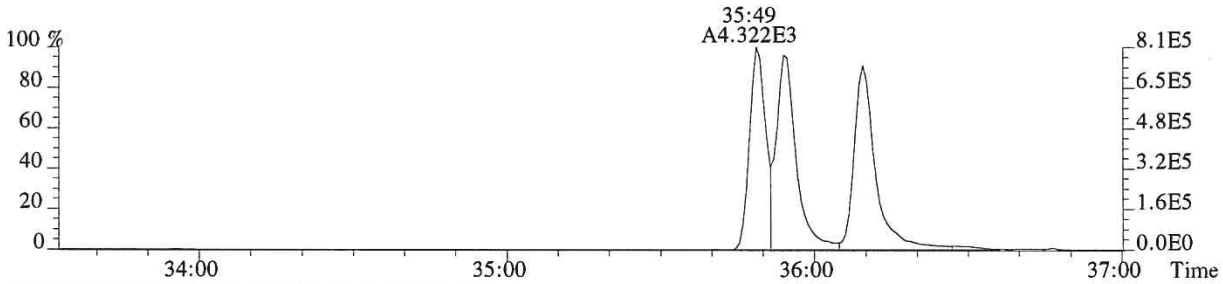
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,472.0,0.40%,F,T)



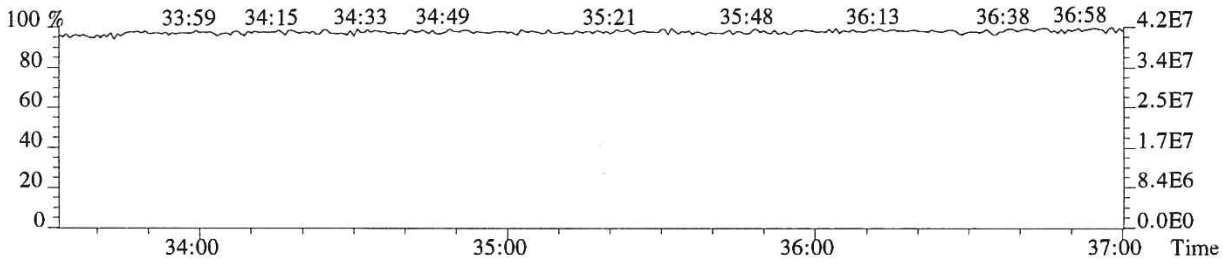
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,988.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,716.0,0.40%,F,T)

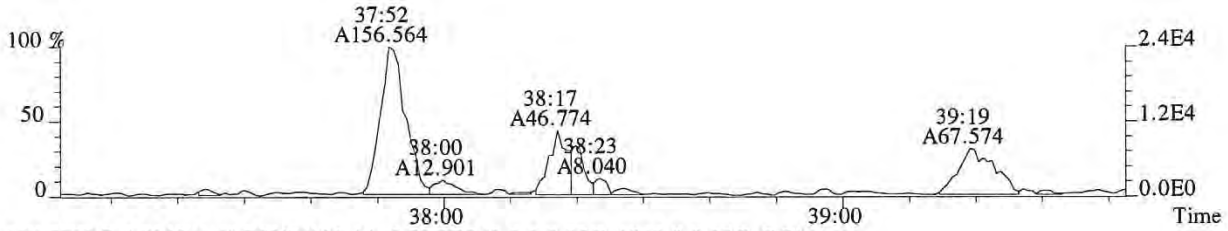


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

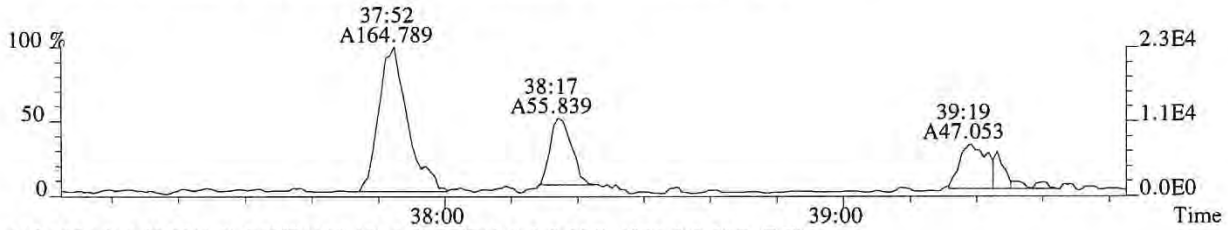


059145

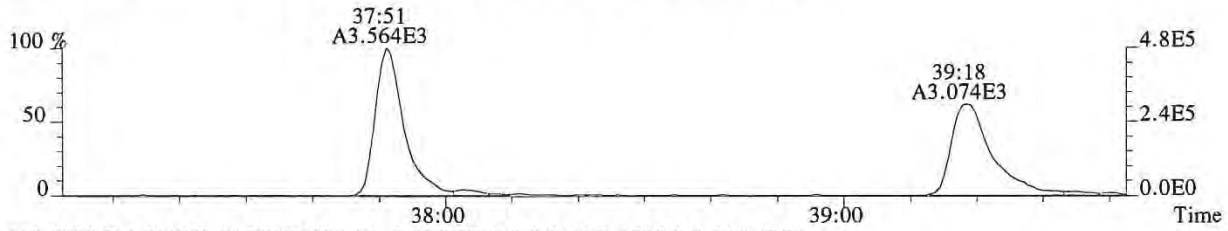
File:P519608 #1-241 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.50%,F,T)



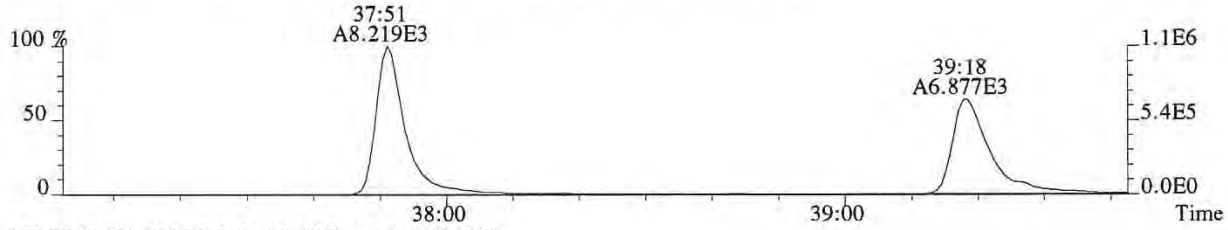
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1032.0,0.50%,F,T)



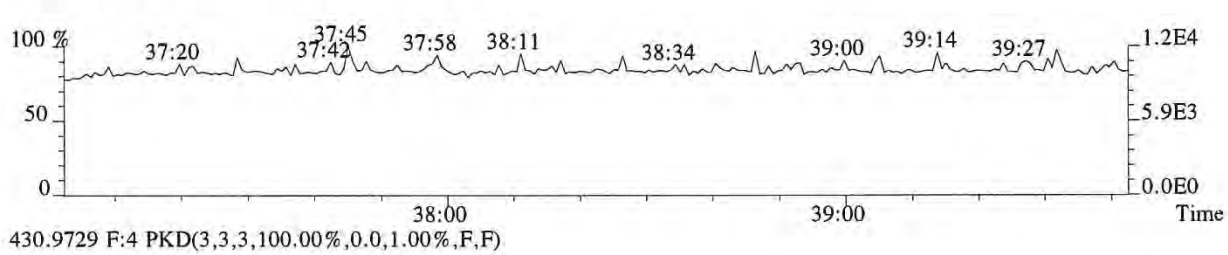
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1900.0,0.50%,F,T)



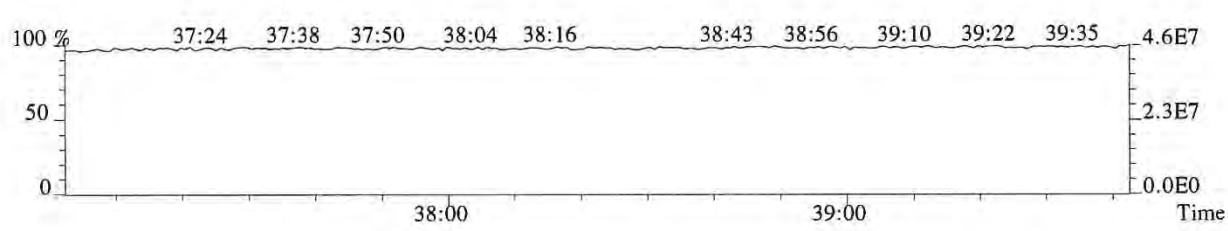
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1536.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

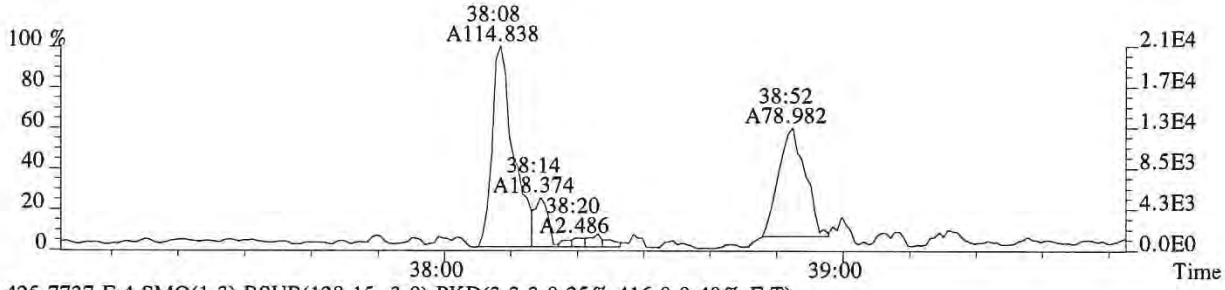


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

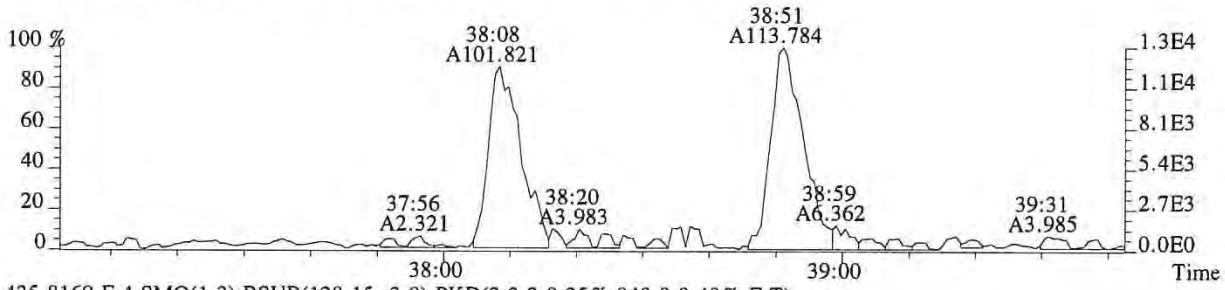


059146

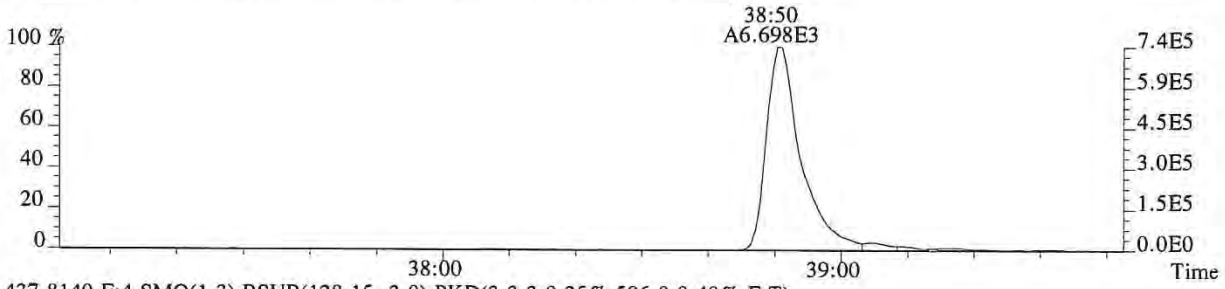
File:P519608 #1-241 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1168.0,0.40%,F,T)



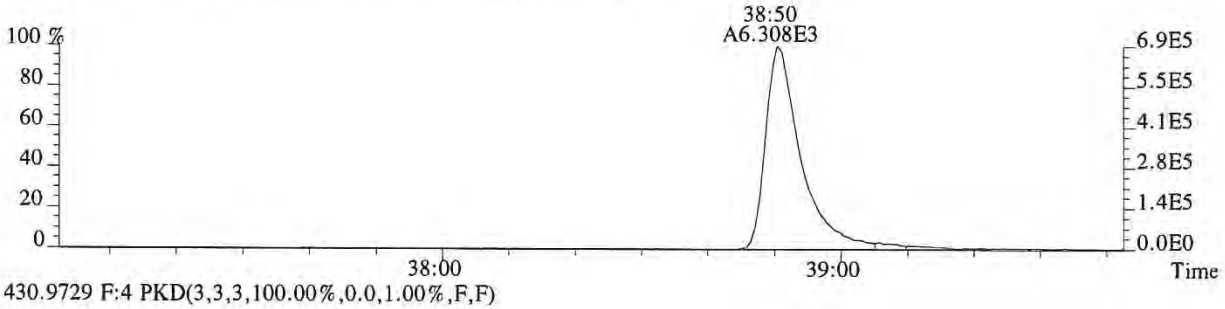
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,416.0,0.40%,F,T)



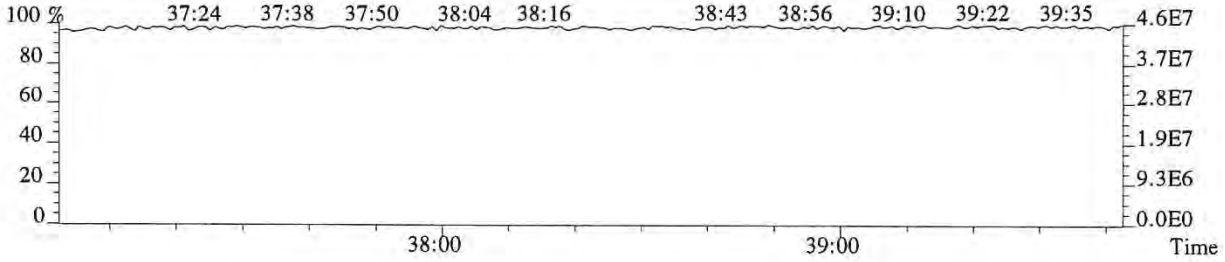
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,840.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,596.0,0.40%,F,T)

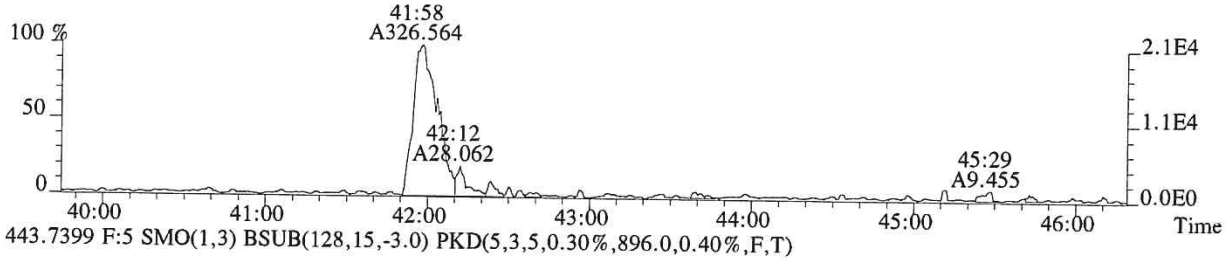


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

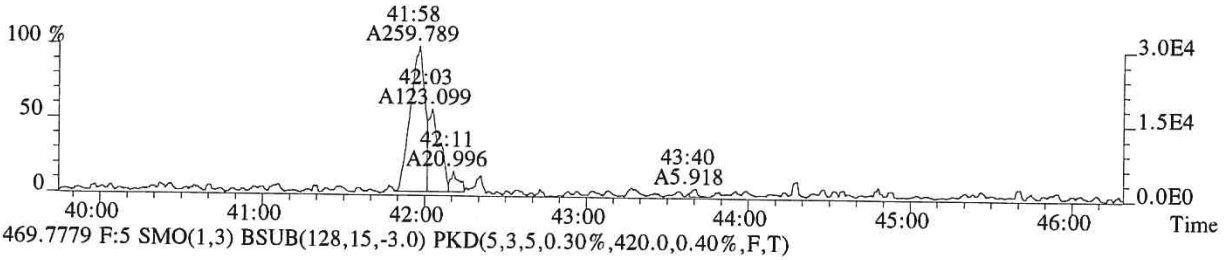


059147

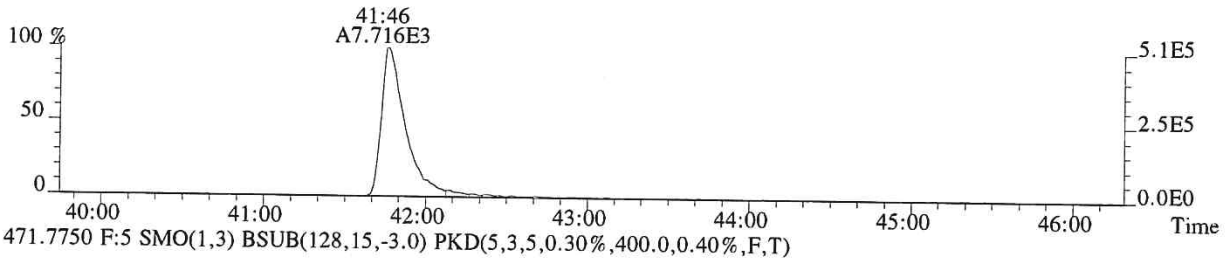
File:P519608 #1-592 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



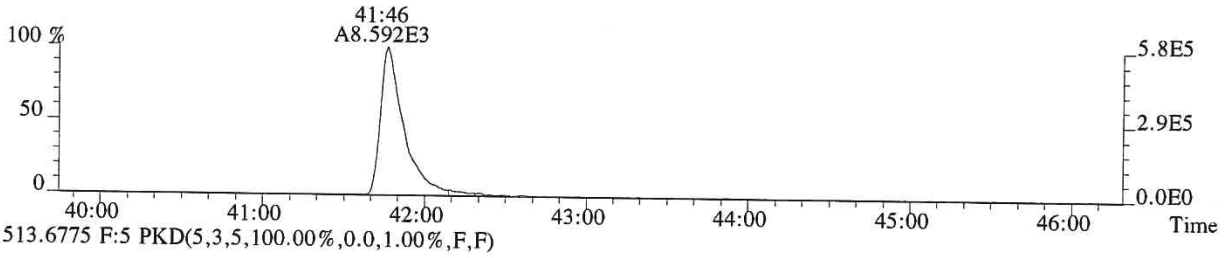
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,896.0,0.40%,F,T)



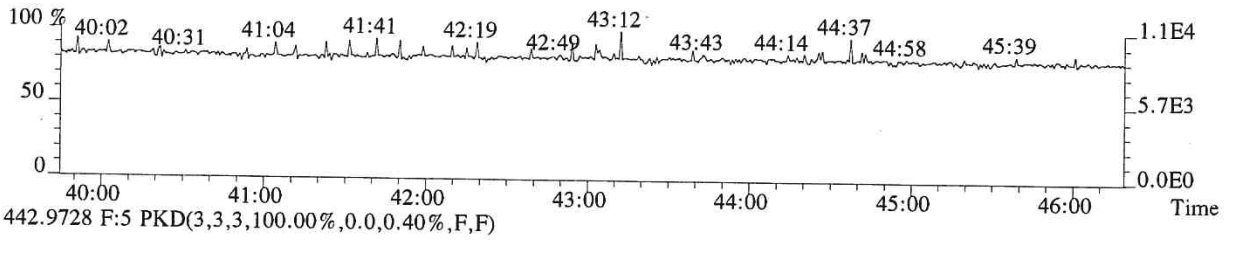
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



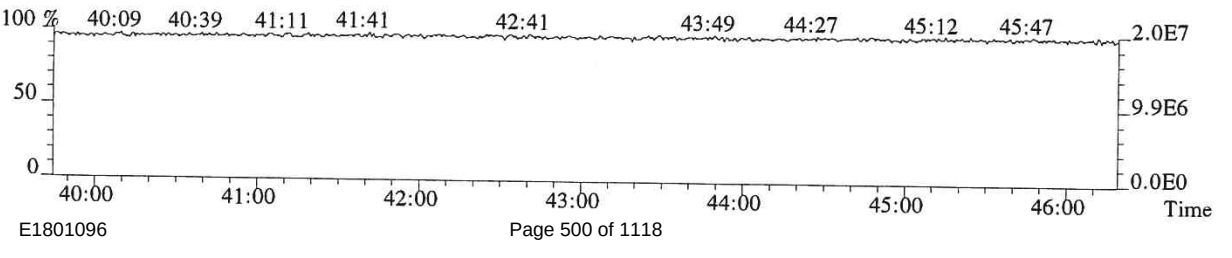
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,400.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

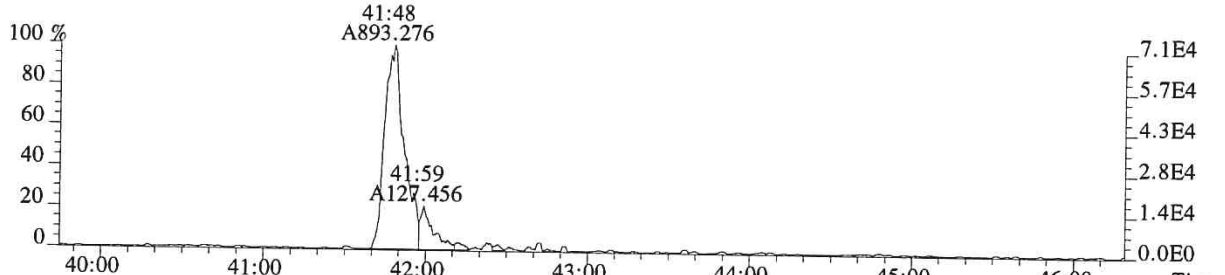


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

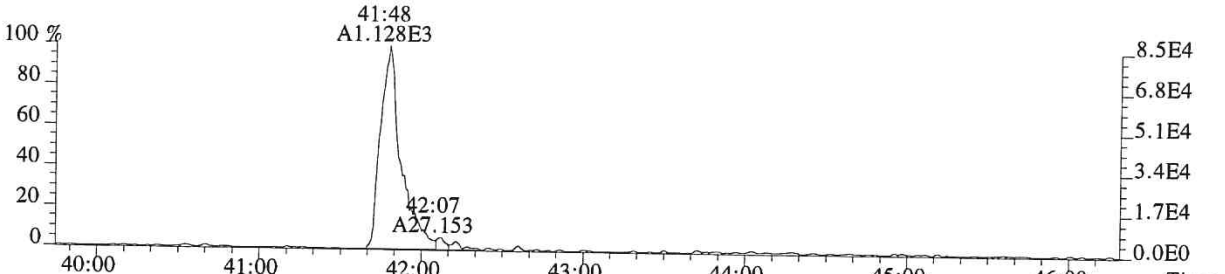


059148

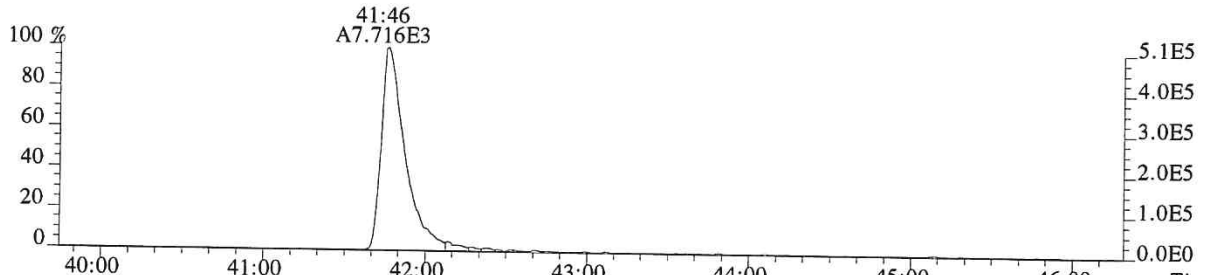
File:P519608 #1-592 Acq:25-DEC-2018 02:23:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-013DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,312.0,0.40%,F,T)



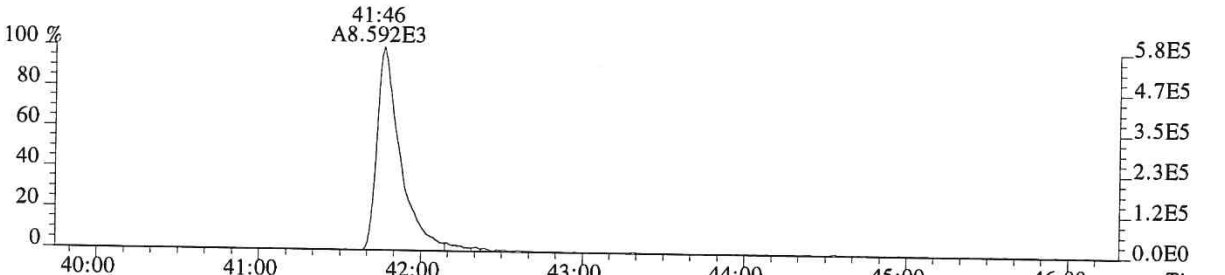
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,416.0,0.40%,F,T)



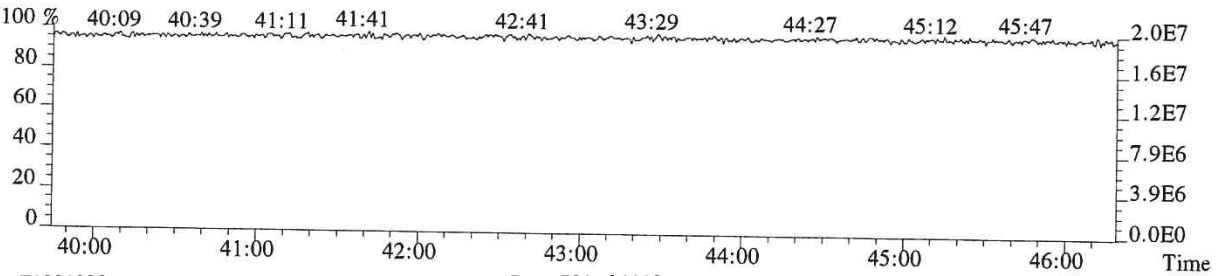
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,400.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059149

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0069

Run #10 Filename P616145 Samp: 1 Inj: 1 Acquired: 20-DEC-18 16:21:31
Processed: 24-DEC-18 10:49:37 Sample ID: E1801096-014

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:20	3.098e+05	3.895e+05	0.80	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:04	1.189e+04	7.844e+03	1.52	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:04	1.073e+04	6.638e+03	1.62	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:50	1.830e+04	1.465e+04	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	4.912e+03	3.851e+03	1.28	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:28	1.504e+03	1.237e+03	1.22	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:15	1.562e+03	1.246e+03	1.25	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:29	2.168e+04	1.937e+04	1.12	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:49	2.168e+03	2.374e+03	0.91	yes	no	1.463
10	Unk	OCDF	41:04	3.021e+05	3.343e+05	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:15	6.949e+04	8.696e+04	0.80	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	1.264e+03	7.596e+02	1.66	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:36	3.282e+02	2.222e+02	1.48	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	1.259e+03	1.034e+03	1.22	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	7.664e+02	7.065e+02	1.08	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:22	2.529e+04	2.393e+04	1.06	yes	no	1.112
17	Unk	OCDD	40:52	2.338e+05	2.584e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:19	3.890e+04	4.825e+04	0.81	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:02	6.018e+04	3.761e+04	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:02	5.813e+04	3.587e+04	1.62	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:49	2.735e+04	5.122e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:56	3.010e+04	5.630e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:27	2.851e+04	5.294e+04	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:13	2.634e+04	4.962e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:29	2.001e+04	4.387e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:48	1.788e+04	3.778e+04	0.47	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:14	1.771e+04	2.293e+04	0.77	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:20	4.114e+04	2.641e+04	1.56	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	3.647e+04	2.817e+04	1.29	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:41	3.354e+04	2.647e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	3.585e+04	3.393e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:52	2.781e+04	3.035e+04	0.92	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:32	3.557e+04	4.450e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:55	5.112e+04	3.973e+04	1.29	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:15	2.526e+04				no	1.086

$$OCDD = \frac{(2.338e+05 + 2.584e+05) \times 4000\ pg \times 1}{(2.781e+04 + 3.035e+04) \times 10.618\ g \times 69.7/100 \times 1.157} = 3953.378\ ng/kg$$

LG 12/26/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0069

Run #10 Filename P616145 Samp: 1 Inj: 1 Acquired: 20-DEC-18 16:21:31
Processed: 24-DEC-18 10:49:37 LAB. ID: E1801096-014

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	4.35e+07	3.38e+03	1.3e+04	5.52e+07	8.65e+03	6.4e+03
2	1,2,3,7,8-PeCDF	2.16e+06	5.64e+03	3.8e+02	1.43e+06	6.55e+03	2.2e+02
3	2,3,4,7,8-PeCDF	1.74e+06	5.64e+03	3.1e+02	1.09e+06	6.55e+03	1.7e+02
4	1,2,3,4,7,8-HxCDF	3.96e+06	1.28e+04	3.1e+02	3.07e+06	3.57e+03	8.6e+02
5	1,2,3,6,7,8-HxCDF	1.03e+06	1.28e+04	8.0e+01	8.31e+05	3.57e+03	2.3e+02
6	2,3,4,6,7,8-HxCDF	3.23e+05	1.28e+04	2.5e+01	2.60e+05	3.57e+03	7.3e+01
7	1,2,3,7,8,9-HxCDF	3.00e+05	1.28e+04	2.3e+01	2.39e+05	3.57e+03	6.7e+01
8	1,2,3,4,6,7,8-HpCDF	4.72e+06	1.12e+04	4.2e+02	4.39e+06	1.32e+04	3.3e+02
9	1,2,3,4,7,8,9-HpCDF	4.78e+05	1.12e+04	4.3e+01	5.18e+05	1.32e+04	3.9e+01
10	OCDF	6.06e+07	1.75e+03	3.5e+04	6.73e+07	4.16e+03	1.6e+04
11	2,3,7,8-TCDD	1.24e+07	9.24e+03	1.3e+03	1.54e+07	4.81e+03	3.2e+03
12	1,2,3,7,8-PeCDD	2.24e+05	3.09e+03	7.3e+01	1.33e+05	5.78e+03	2.3e+01
13	1,2,3,4,7,8-HxCDD	8.03e+04	3.52e+03	2.3e+01	5.77e+04	6.80e+03	8.5e+00
14	1,2,3,6,7,8-HxCDD	2.91e+05	3.52e+03	8.3e+01	2.28e+05	6.80e+03	3.3e+01
15	1,2,3,7,8,9-HxCDD	1.75e+05	3.52e+03	5.0e+01	1.51e+05	6.80e+03	2.2e+01
16	1,2,3,4,6,7,8-HpCDD	5.78e+06	1.56e+04	3.7e+02	5.44e+06	1.68e+04	3.2e+02
17	OCDD	4.53e+07	1.14e+03	4.0e+04	5.07e+07	2.16e+03	2.3e+04
18	13C-2,3,7,8-TCDF	6.09e+06	2.00e+04	3.0e+02	7.50e+06	1.55e+04	4.8e+02
19	13C-1,2,3,7,8-PeCDF	1.11e+07	2.31e+04	4.8e+02	6.83e+06	2.83e+04	2.4e+02
20	13C-2,3,4,7,8-PeCDF	1.13e+07	2.31e+04	4.9e+02	7.00e+06	2.83e+04	2.5e+02
21	13C-1,2,3,4,7,8-HxCDF	5.89e+06	2.98e+03	2.0e+03	1.11e+07	8.87e+03	1.2e+03
22	13C-1,2,3,6,7,8-HxCDF	6.54e+06	2.98e+03	2.2e+03	1.20e+07	8.87e+03	1.4e+03
23	13C-2,3,4,6,7,8-HxCDF	6.07e+06	2.98e+03	2.0e+03	1.15e+07	8.87e+03	1.3e+03
24	13C-1,2,3,7,8,9-HxCDF	5.68e+06	2.98e+03	1.9e+03	1.08e+07	8.87e+03	1.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	4.57e+06	6.69e+03	6.8e+02	9.93e+06	8.96e+03	1.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.83e+06	6.69e+03	5.7e+02	8.22e+06	8.96e+03	9.2e+02
27	13C-2,3,7,8-TCDD	3.09e+06	1.86e+04	1.7e+02	3.97e+06	6.97e+03	5.7e+02
28	13C-1,2,3,7,8-PeCDD	8.03e+06	5.88e+03	1.4e+03	5.12e+06	6.36e+03	8.0e+02
29	13C-1,2,3,4,7,8-HxCDD	8.30e+06	3.35e+03	2.5e+03	6.34e+06	2.06e+03	3.1e+03
30	13C-1,2,3,6,7,8-HxCDD	7.46e+06	3.35e+03	2.2e+03	5.91e+06	2.06e+03	2.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	8.16e+06	1.98e+03	4.1e+03	7.79e+06	1.60e+03	4.9e+03
32	13C-OCDD	5.38e+06	3.34e+03	1.6e+03	5.88e+06	1.08e+03	5.4e+03
33	13C-1,2,3,4-TCDD	5.66e+06	1.86e+04	3.0e+02	7.10e+06	6.97e+03	1.0e+03
34	13C-1,2,3,7,8,9-HxCDD	1.12e+07	3.35e+03	3.4e+03	8.77e+06	2.06e+03	4.3e+03
35	37Cl-2,3,7,8-TCDD	4.53e+06	5.01e+03	9.0e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (9.240e+03 + 4.808e+03) \times 2000}{(3.091e+06 + 3.971e+06) \times (\quad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0069

Entry: 36 Totals Name: Total Tetra-Furans

Run: 10 File: P616145 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 16:21:31 Processed: 24-DEC-18 10:49:37

Mass: 303.9020 305.8990 Tot Response: 1.22e+06 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:07	6.90e+02	9.47e+02	0.73	yes	1.64e+03		n	n
2	22:36	1.31e+03	1.78e+03	0.73	yes	3.09e+03		n	n
3	23:03	3.22e+03	4.43e+03	0.73	yes	7.64e+03		n	n
4	23:21	1.52e+04	1.97e+04	0.77	yes	3.49e+04		n	n
5	23:44	5.11e+03	6.58e+03	0.78	yes	1.17e+04		n	n
6	24:02	1.31e+04	1.62e+04	0.81	yes	2.93e+04		n	n
7	24:26	2.82e+03	3.70e+03	0.76	yes	6.53e+03		n	n
8	25:19	1.33e+05	1.67e+05	0.79	yes	3.00e+05		n	n
9	25:38	6.44e+03	8.05e+03	0.80	yes	1.45e+04		n	n
10	26:20	3.10e+05	3.89e+05	0.80	yes	6.99e+05	2,3,7,8-TCDF	n	n
11	26:43	2.26e+04	2.84e+04	0.80	yes	5.10e+04		n	n
12	27:00	3.70e+03	4.75e+03	0.78	yes	8.44e+03		n	n
13	28:27	2.32e+04	2.84e+04	0.82	yes	5.16e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0069

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 10 File: P616145 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 16:21:31 Processed: 24-DEC-18 10:49:37

Mass: 319.8970 321.8940 Tot Response: 1.75e+05 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	25:25	2.63e+02	3.17e+02 0.83	yes	5.80e+02		n	n
2	26:57	1.09e+03	1.38e+03 0.79	yes	2.47e+03		n	n
3	27:15	6.95e+04	8.70e+04 0.80	yes	1.56e+05	2,3,7,8-TCDD	n	n
4	27:36	6.78e+03	8.40e+03 0.81	yes	1.52e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0069

Entry: 38 Totals Name: Total Penta-Furans1

Run: 10 File: P616145 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 16:21:31 Processed: 24-DEC-18 10:49:37

Mass: 339.8600 341.8570 Tot Response: 8.39e+03 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:24	5.15e+03	3.24e+03 1.59	yes	8.39e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0069

Entry: 39 Totals Name: Total Penta-Furans2

Run: 10 File: P616145 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 16:21:31 Processed: 24-DEC-18 10:49:37

Mass: 339.8600 341.8570 Tot Response: 6.65e+04 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:54	7.28e+02	4.88e+02	1.49	yes	1.22e+03		n	n
2	30:03	8.98e+03	5.72e+03	1.57	yes	1.47e+04		n	n
3	30:39	1.81e+03	1.13e+03	1.61	yes	2.94e+03		n	n
4	30:52	1.46e+03	9.23e+02	1.58	yes	2.38e+03		n	n
5	31:04	1.19e+04	7.84e+03	1.52	yes	1.97e+04	1,2,3,7,8-PeCDF	n	n
6	31:20	4.01e+03	2.63e+03	1.52	yes	6.65e+03		n	n
7	31:56	3.16e+02	2.16e+02	1.46	yes	5.32e+02		n	n
8	32:04	1.07e+04	6.64e+03	1.62	yes	1.74e+04	2,3,4,7,8-PeCDF	n	n
9	32:60	5.69e+02	4.13e+02	1.38	yes	9.82e+02		n	n

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Peak List Summary

CLIENT ID.
SL0069

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 10 File: P616145 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 16:21:31 Processed: 24-DEC-18 10:49:37

Mass: 355.8550 357.8520 Tot Response: 6.64e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:06	9.36e+02	5.38e+02	1.74	yes	1.47e+03		n	n
2	30:35	7.95e+02	4.76e+02	1.67	yes	1.27e+03		n	n
3	31:06	5.14e+02	3.13e+02	1.64	yes	8.27e+02		n	n
4	31:34	6.40e+02	4.05e+02	1.58	yes	1.05e+03		n	n
5	32:20	1.26e+03	7.60e+02	1.66	yes	2.02e+03	1,2,3,7,8-PeCDD	n	n

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Peak List Summary

CLIENT ID.
SL0069

Entry: 41 Totals Name: Total Hexa-Furans

Run: 10 File: P616145 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 16:21:31 Processed: 24-DEC-18 10:49:37

Mass: 373.8210 375.8180 Tot Response: 7.45e+04 RRF: 1.324

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:40	1.78e+03	1.31	yes	3.15e+03		n	n
2	33:50	6.35e+03	1.26	yes	1.14e+04		n	n
3	34:12	2.62e+02	1.19	yes	4.83e+02		n	n
4	34:23	5.93e+03	1.24	yes	1.07e+04		n	n
5	34:44	4.37e+02	1.26	yes	7.85e+02		n	n
6	34:50	1.83e+04	1.25	yes	3.30e+04	1,2,3,4,7,8-HxCDF	n	n
7	34:56	4.91e+03	1.28	yes	8.76e+03	1,2,3,6,7,8-HxCDF	n	n
8	35:12	4.15e+02	1.29	yes	7.36e+02		n	n
9	35:28	1.50e+03	1.22	yes	2.74e+03	2,3,4,6,7,8-HxCDF	n	n
10	36:15	1.56e+03	1.25	yes	2.81e+03	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0069

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 10 File: P616145 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 16:21:31 Processed: 24-DEC-18 10:49:37

Mass: 389.8160 391.8130 Tot Response: 2.84e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:13	7.85e+03	6.17e+03	1.27	yes	1.40e+04		n	n
2	34:45	9.59e+02	7.05e+02	1.36	yes	1.66e+03		n	n
3	34:60	4.70e+03	3.68e+03	1.28	yes	8.39e+03		n	n
4	35:41	1.26e+03	1.03e+03	1.22	yes	2.29e+03	1,2,3,6,7,8-HxCDD	n	n
5	35:50	2.71e+02	2.44e+02	1.11	yes	5.16e+02		n	n
6	35:55	7.66e+02	7.06e+02	1.08	yes	1.47e+03	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0069

Entry: 43 Totals Name: Total Hepta-Furans

Run: 10 File: P616145 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 16:21:31 Processed: 24-DEC-18 10:49:37

Mass: 407.7820 409.7790 Tot Response: 7.75e+04 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:29	2.17e+04	1.94e+04	1.12	yes	4.10e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	37:45	1.02e+03	1.01e+03	1.00	yes	2.03e+03		n	n
3	37:53	1.54e+04	1.45e+04	1.06	yes	2.98e+04		n	n
4	38:49	2.17e+03	2.37e+03	0.91	yes	4.54e+03	1,2,3,4,7,8,9-HpCDF	n	n

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Peak List Summary

CLIENT ID.
SL0069

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 10 File: P616145 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 16:21:31 Processed: 24-DEC-18 10:49:37

Mass: 423.7770 425.7740 Tot Response: 1.33e+05 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:44	4.34e+04	4.04e+04 1.07	yes	8.37e+04		n	n
2	38:22	2.53e+04	2.39e+04 1.06	yes	4.92e+04	1,2,3,4,6,7,8-HpCDD	n	n

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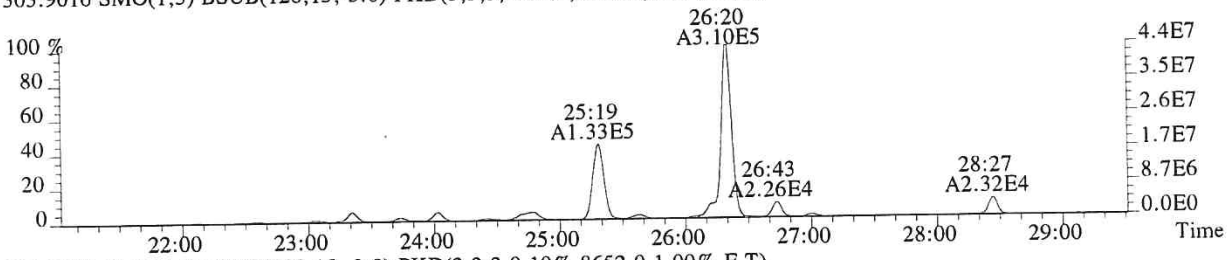
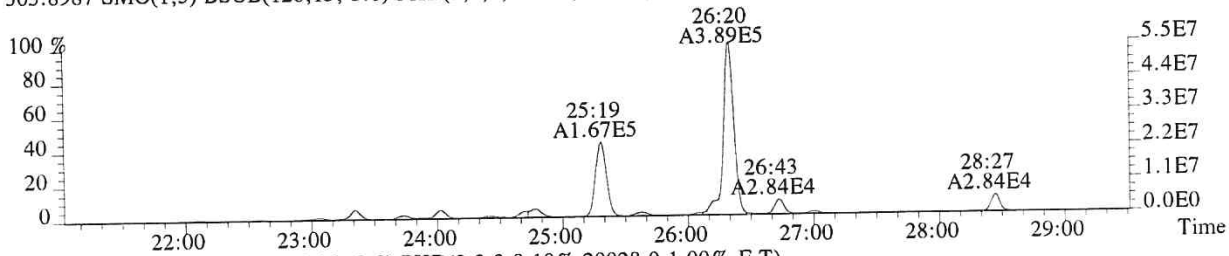
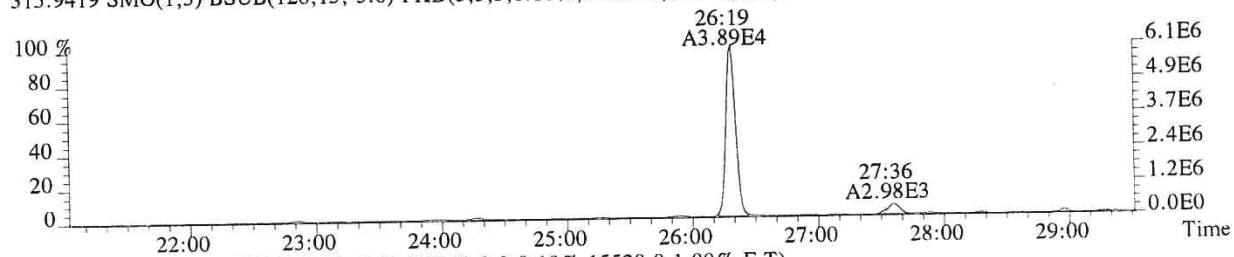
File:P616145 #1-602 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3376.0,1.00%,F,T)



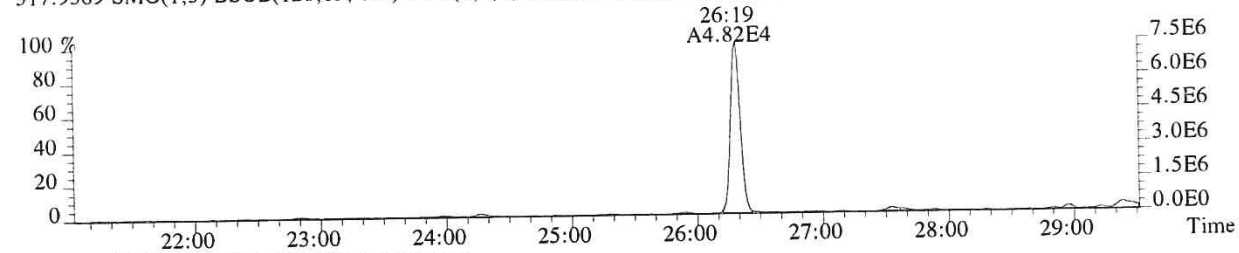
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8652.0,1.00%,F,T)



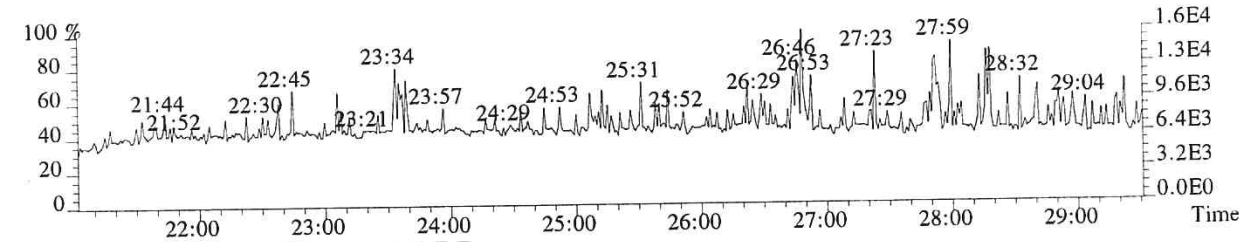
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,20028.0,1.00%,F,T)



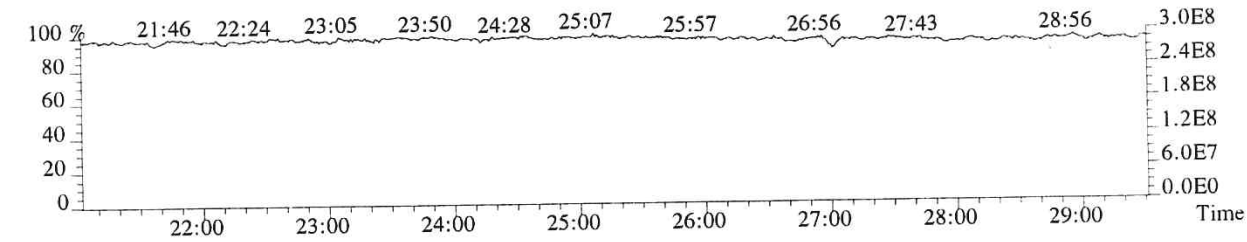
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15528.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

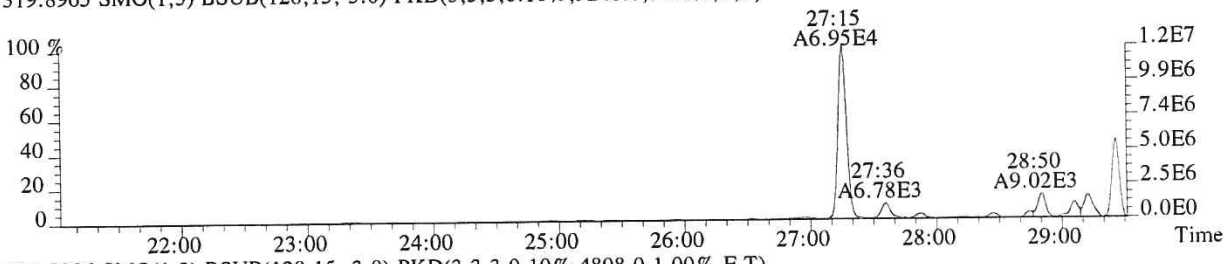


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

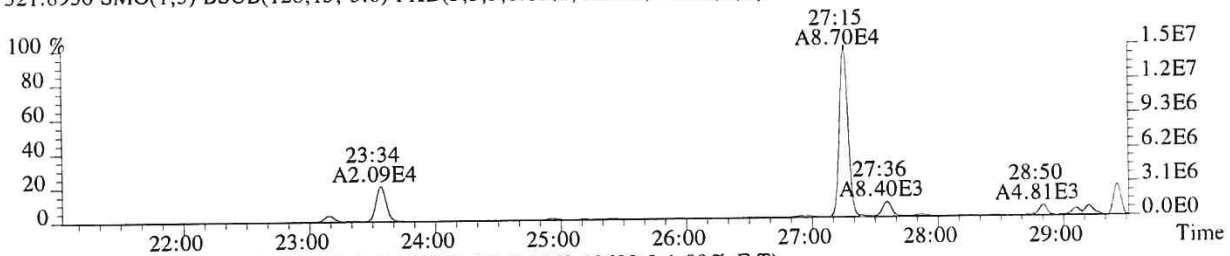


059161

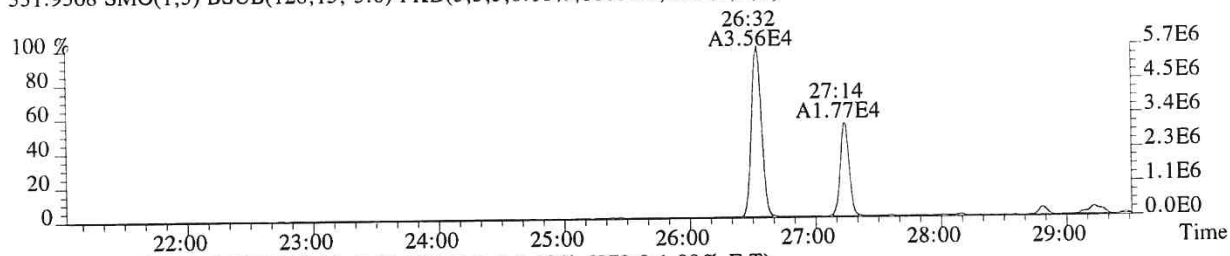
File:P616145 #1-602 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9240.0,1.00%,F,T)



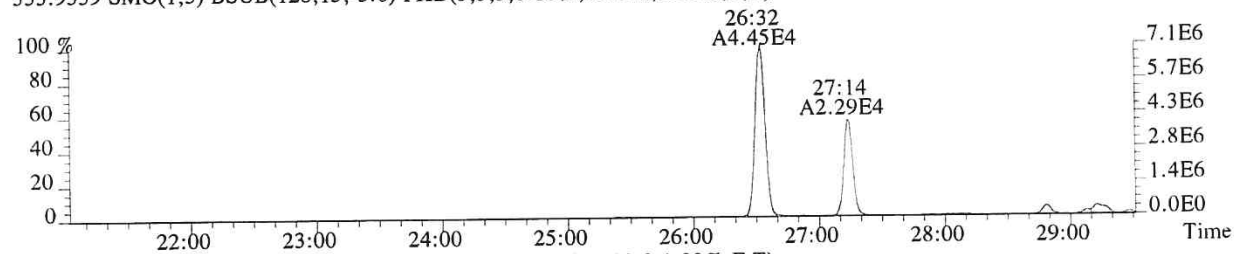
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4808.0,1.00%,F,T)



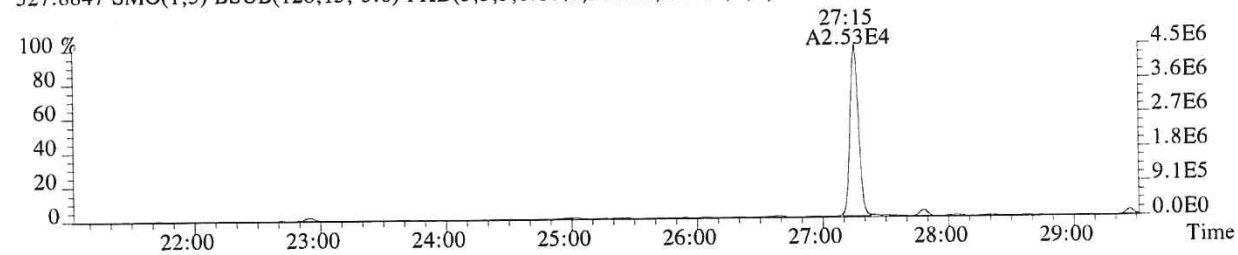
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18600.0,1.00%,F,T)



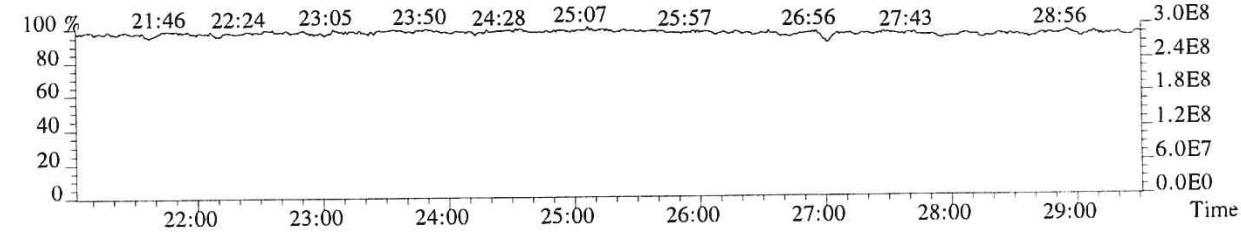
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6972.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5008.0,1.00%,F,T)

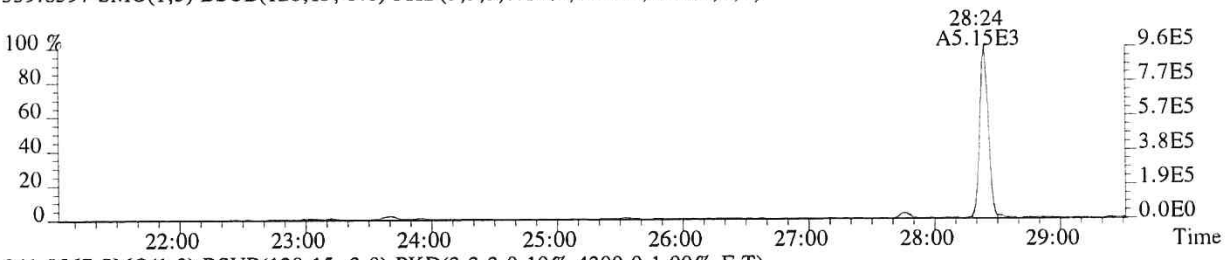


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

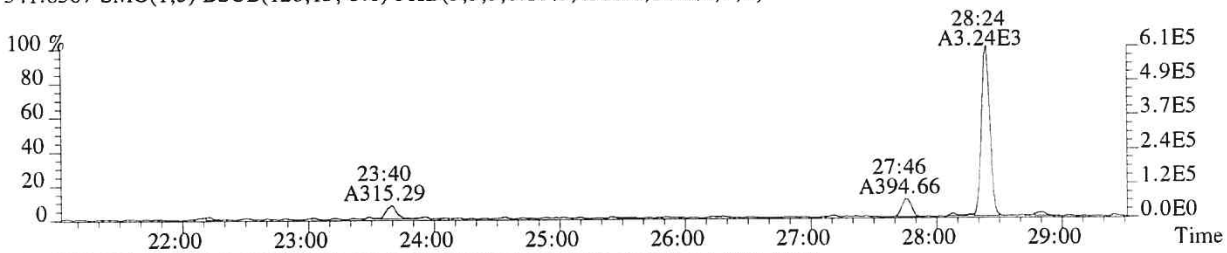


059162

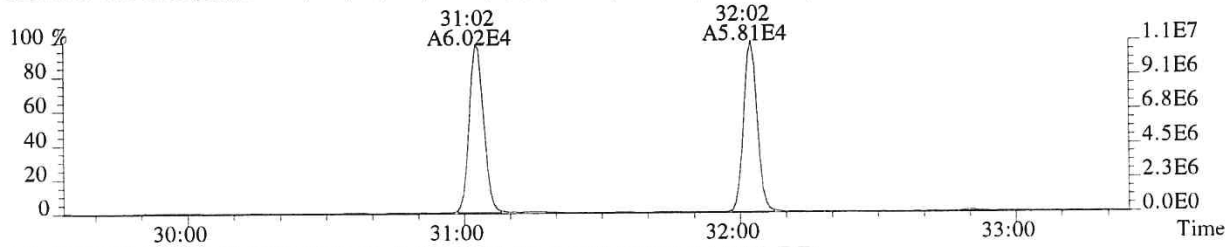
File:P616145 #1-602 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1996.0,1.00%,F,T)



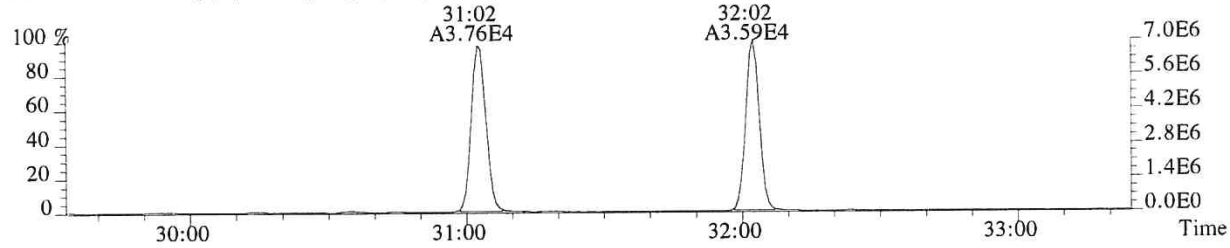
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4300.0,1.00%,F,T)



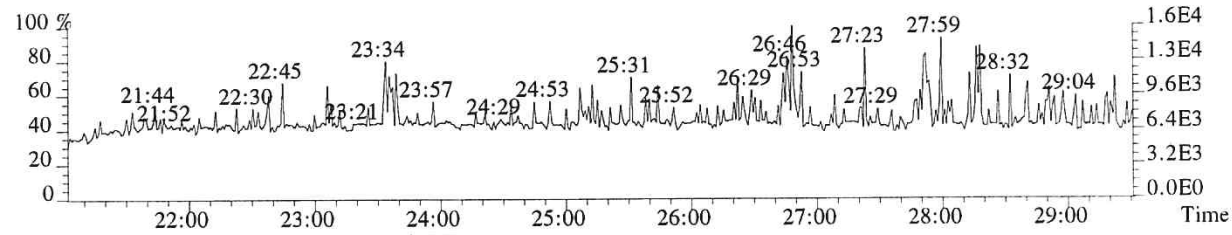
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,23112.0,1.00%,F,T)



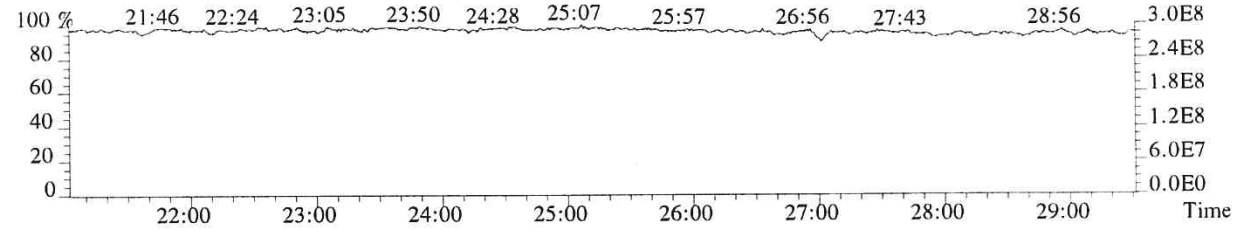
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,28316.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

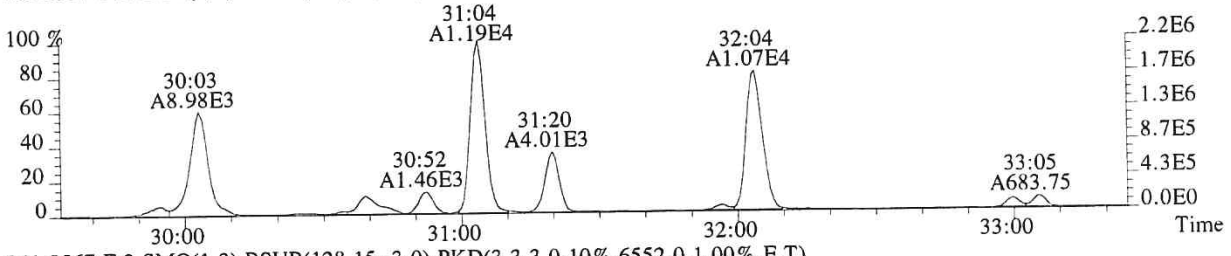


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

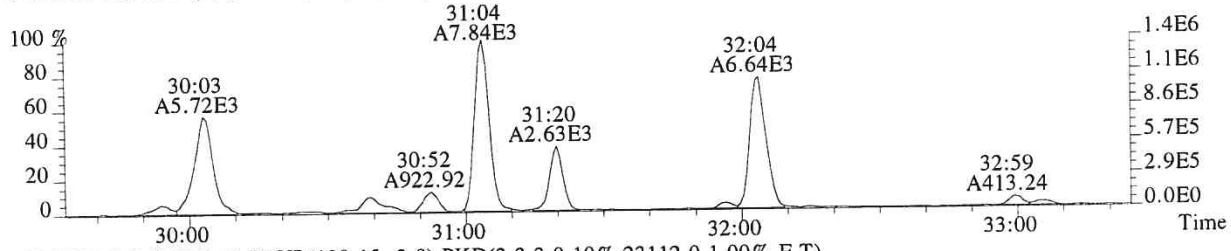


059163

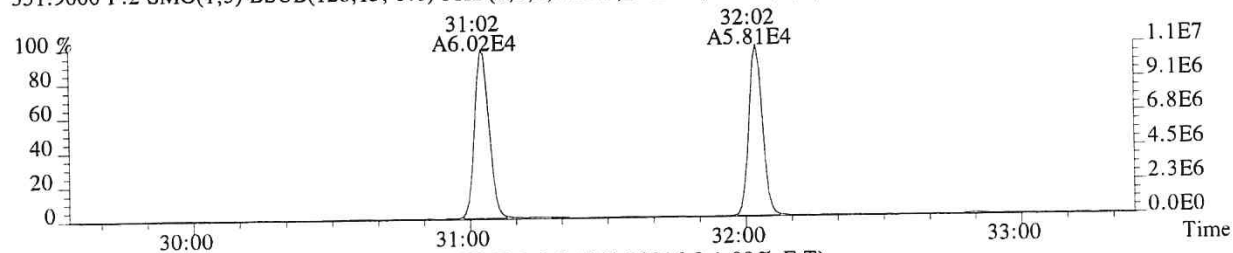
File:P616145 #1-348 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5640.0,1.00%,F,T)



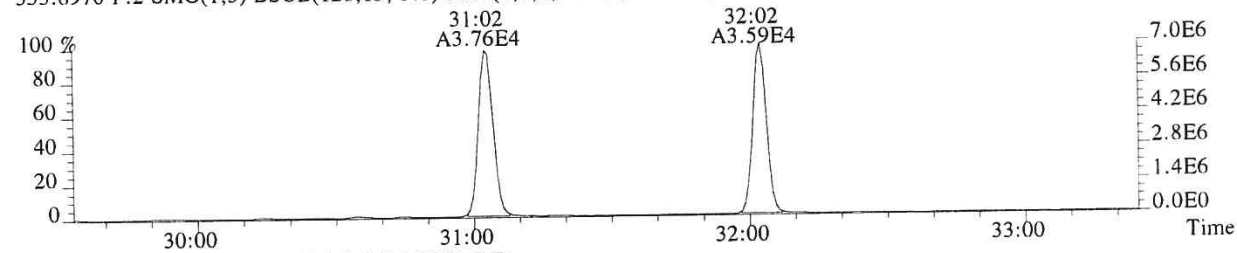
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6552.0,1.00%,F,T)



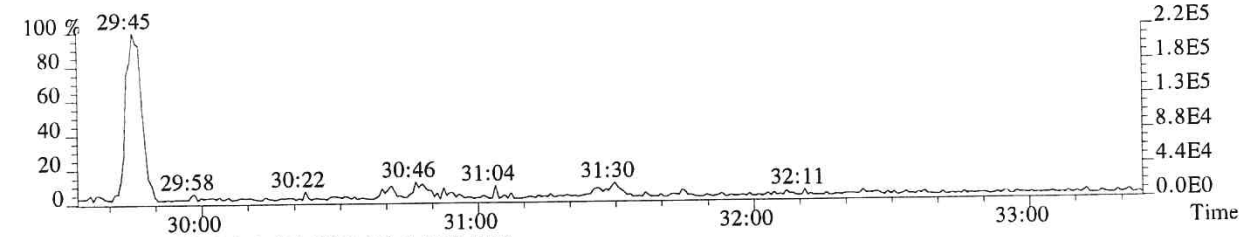
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,23112.0,1.00%,F,T)



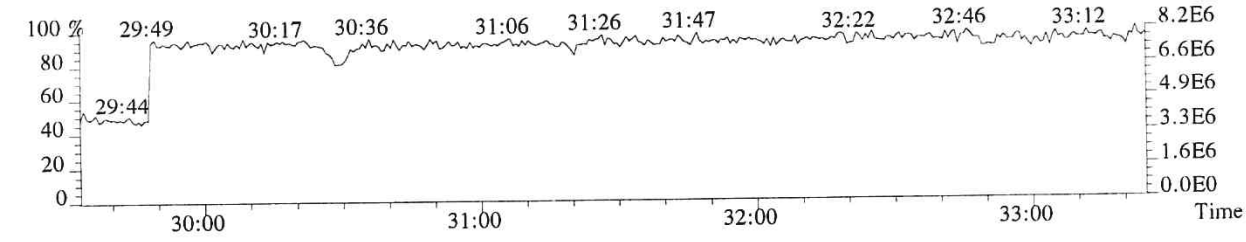
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,28316.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

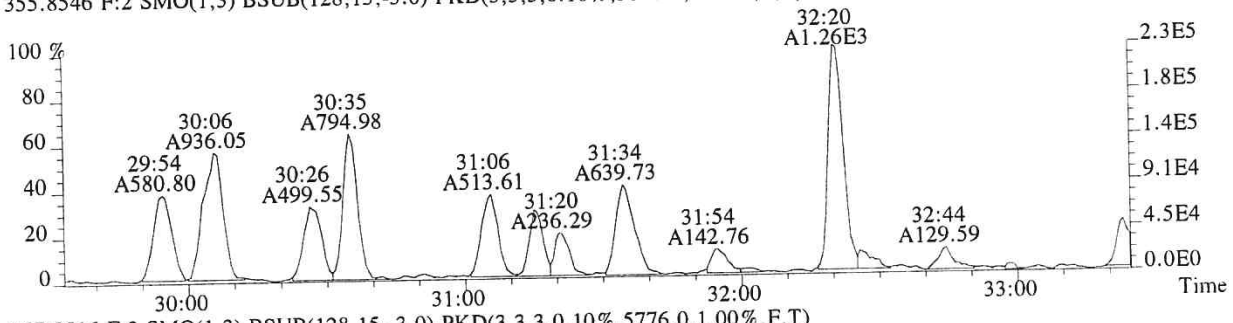


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

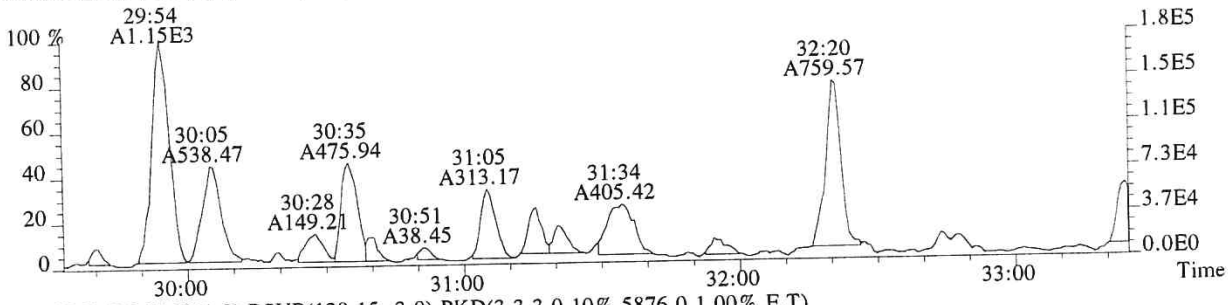


059164

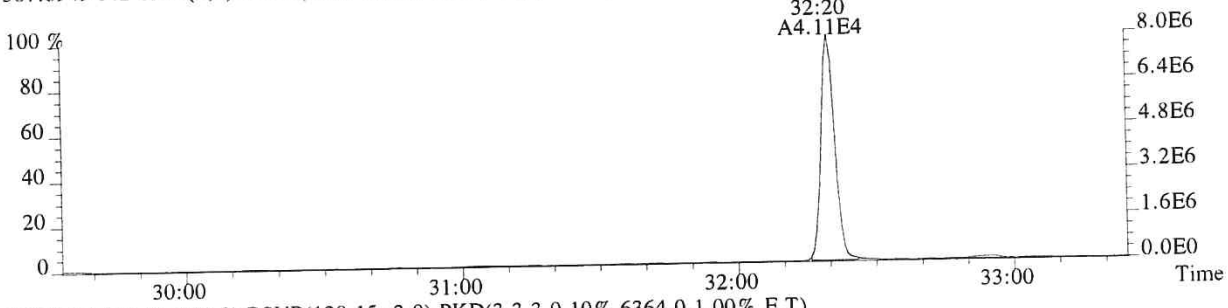
File:P616145 #1-348 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3088.0,1.00%,F,T)



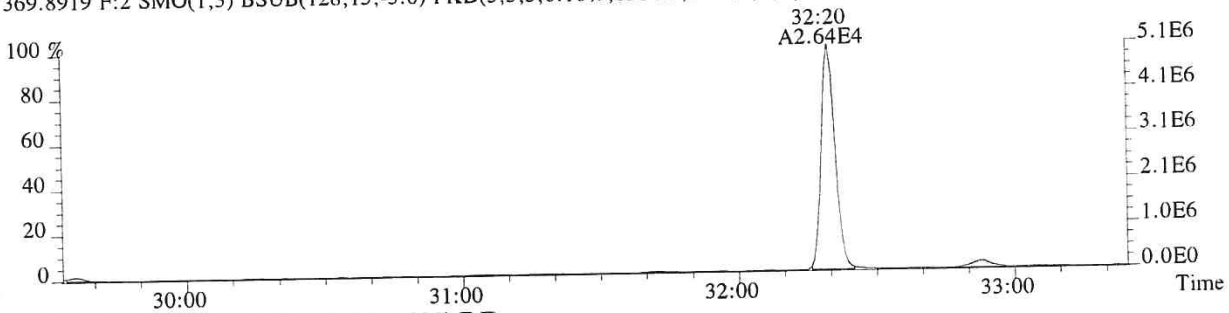
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5776.0,1.00%,F,T)



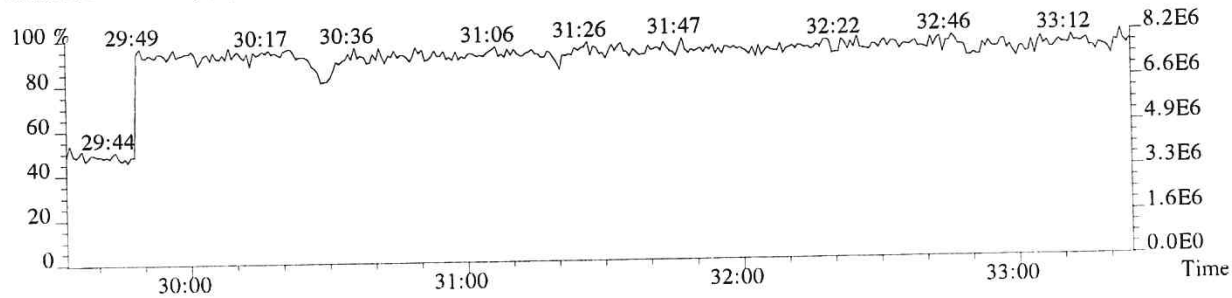
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5876.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6364.0,1.00%,F,T)

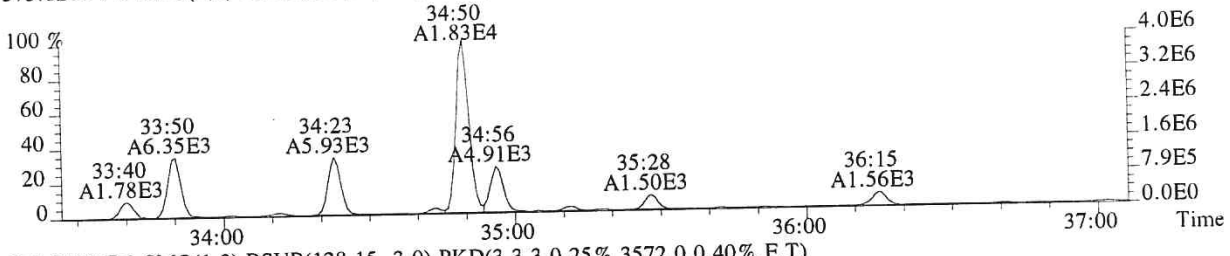


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

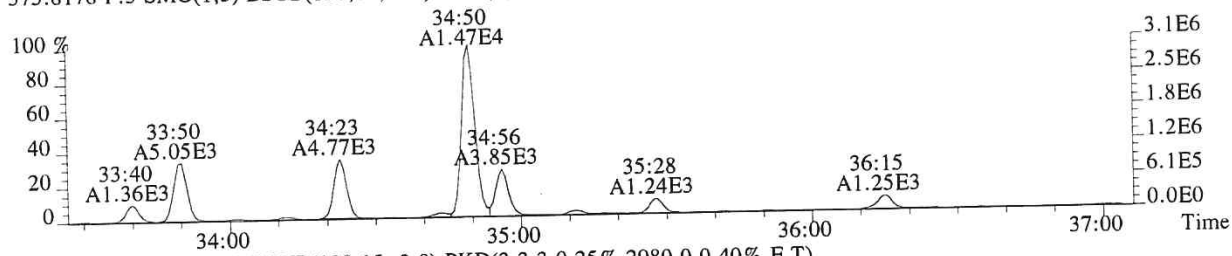


059165

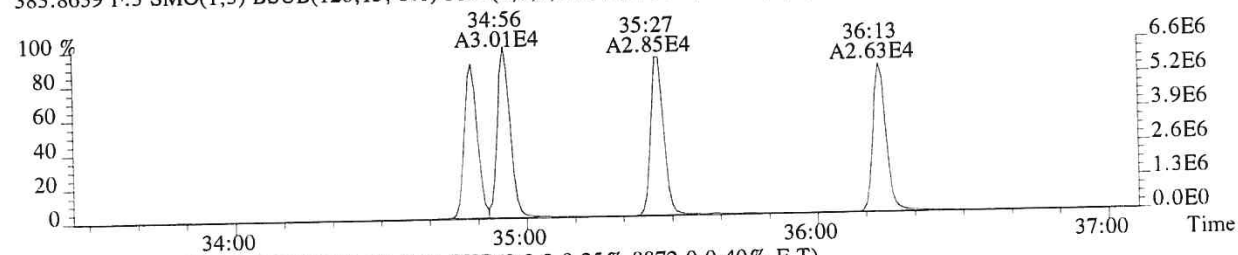
File:P616145 #1-330 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12832.0,0.40%,F,T)



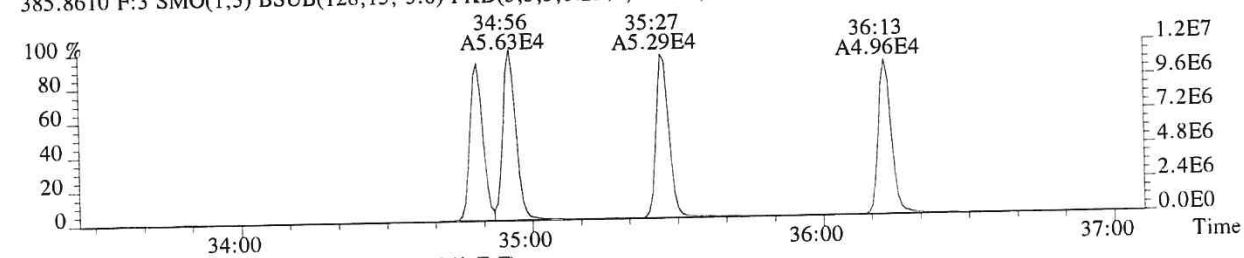
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3572.0,0.40%,F,T)



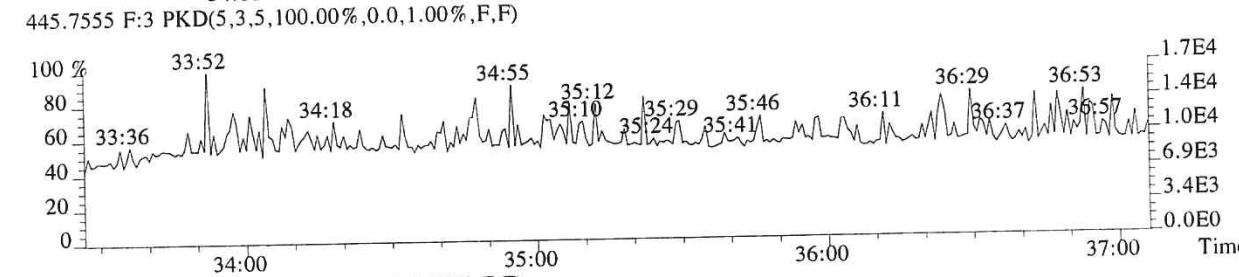
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2980.0,0.40%,F,T)



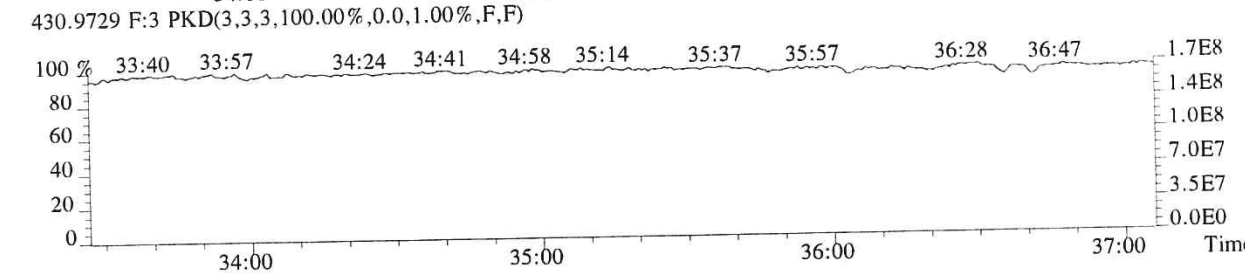
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8872.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

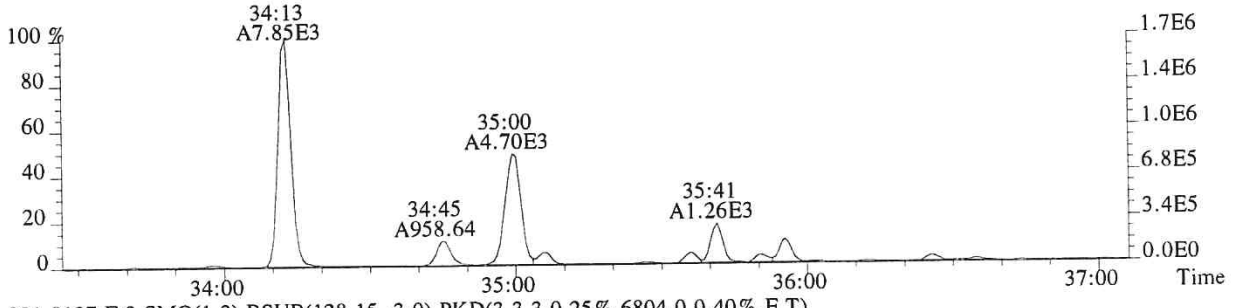


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

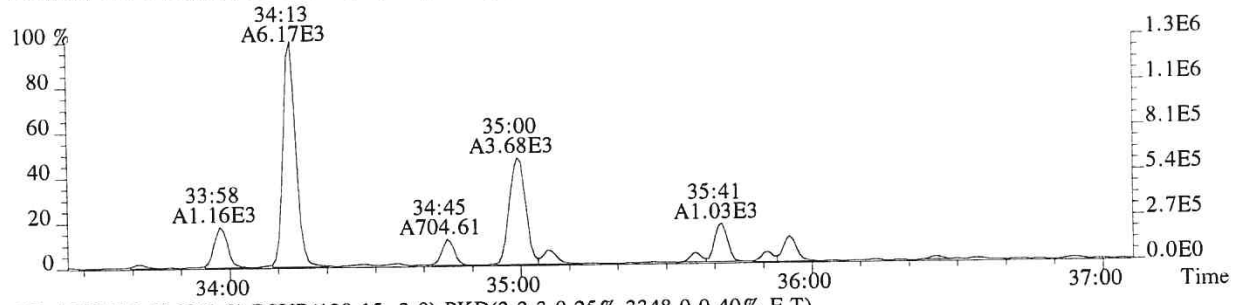


059166

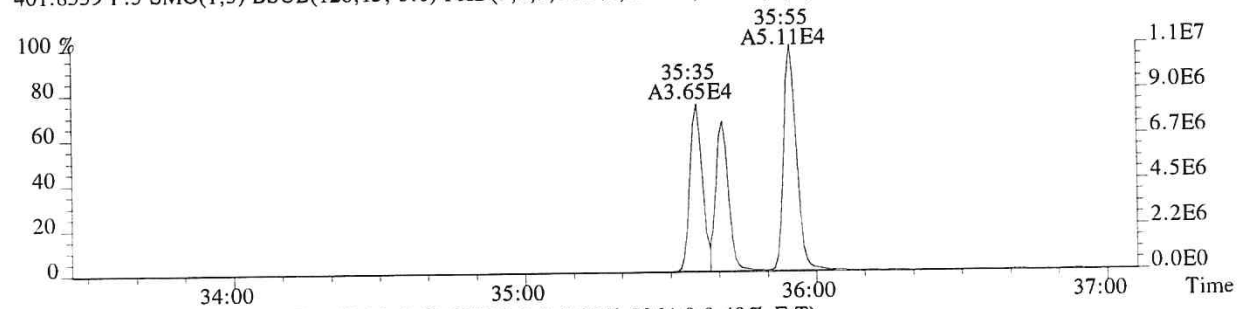
File:P616145 #1-330 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3520.0,0.40%,F,T)



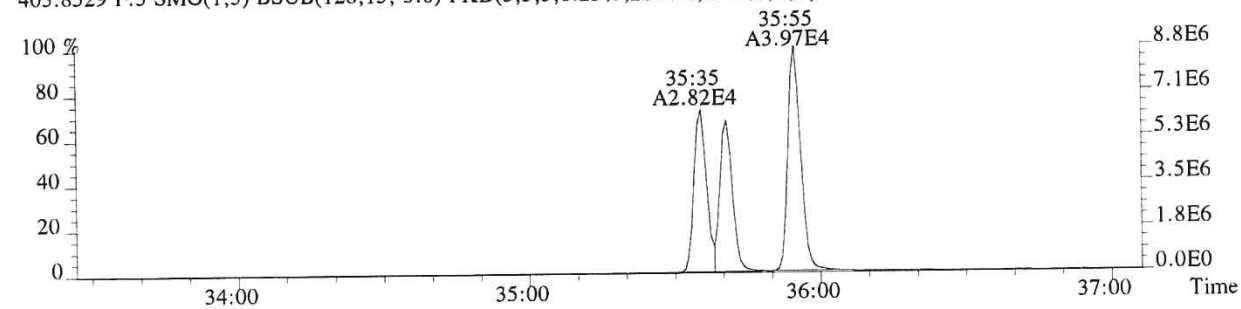
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6804.0,0.40%,F,T)



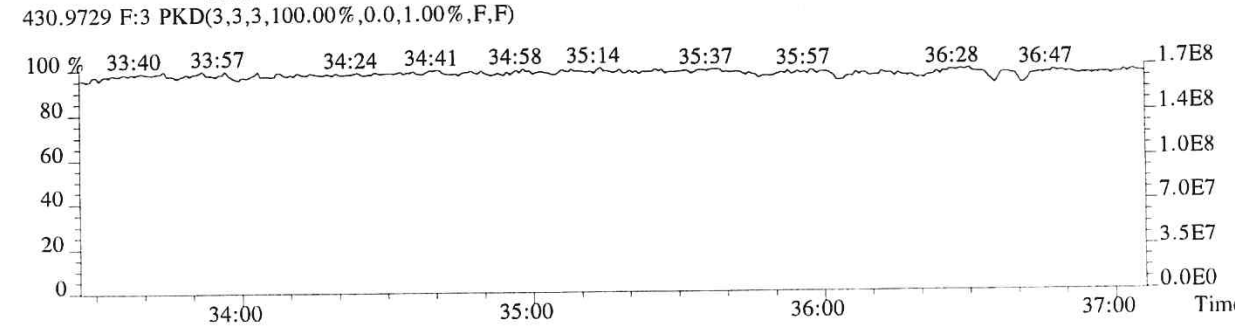
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3348.0,0.40%,F,T)



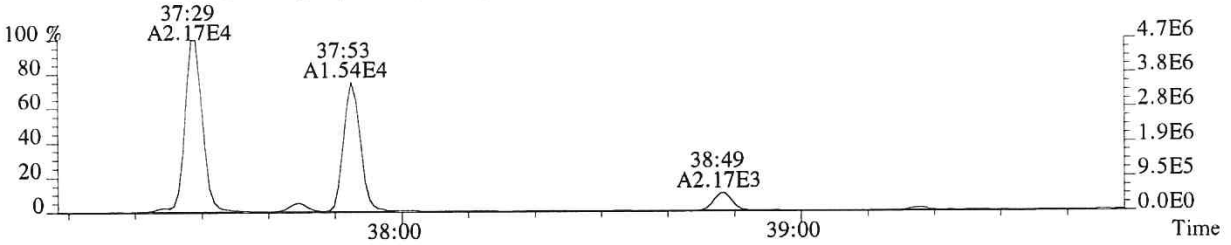
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2064.0,0.40%,F,T)



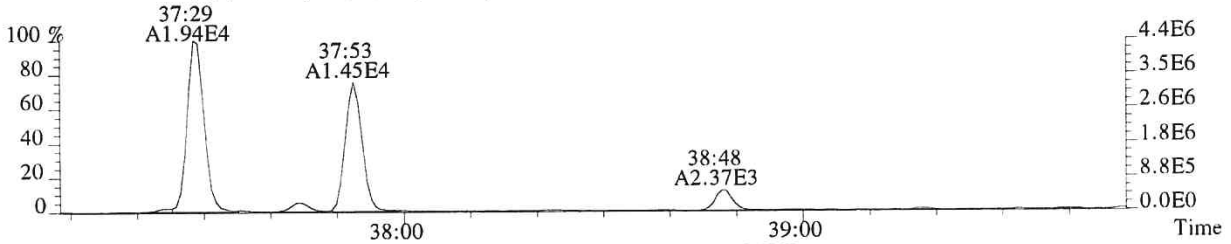
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



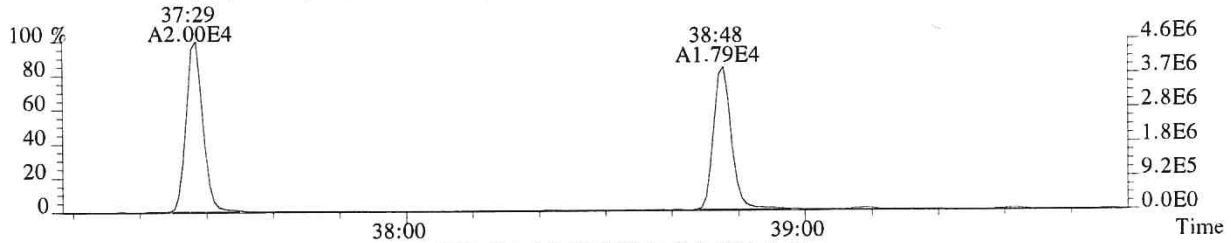
File:P616145 #1-241 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11176.0,0.50%,F,T)



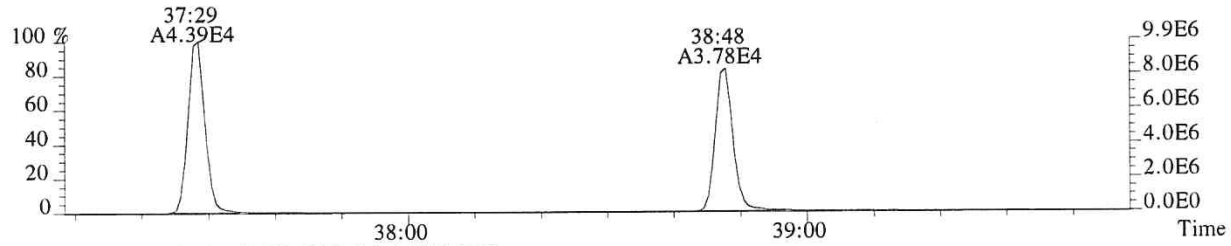
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,13164.0,0.50%,F,T)



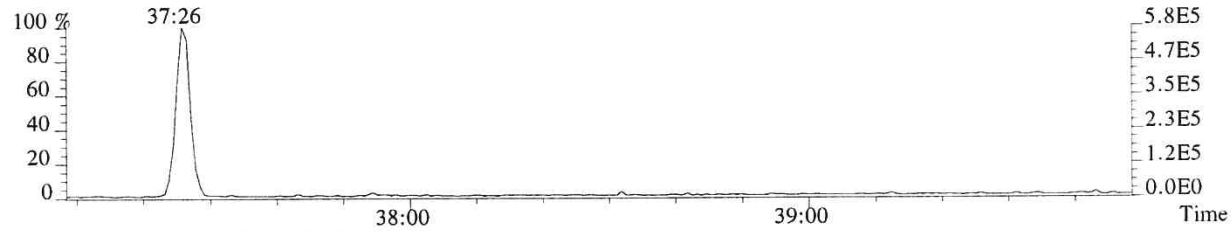
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6692.0,0.50%,F,T)



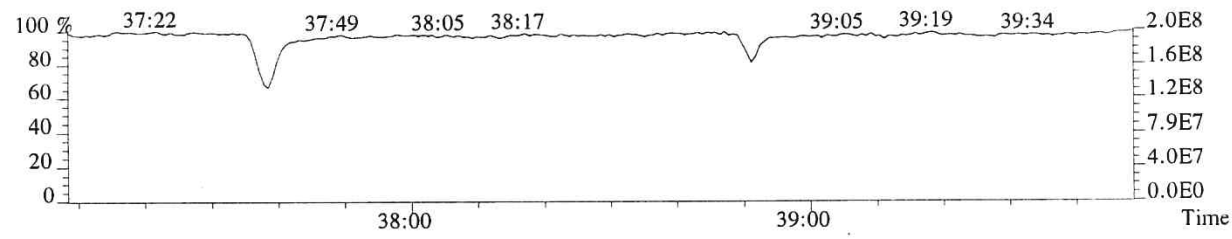
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8956.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

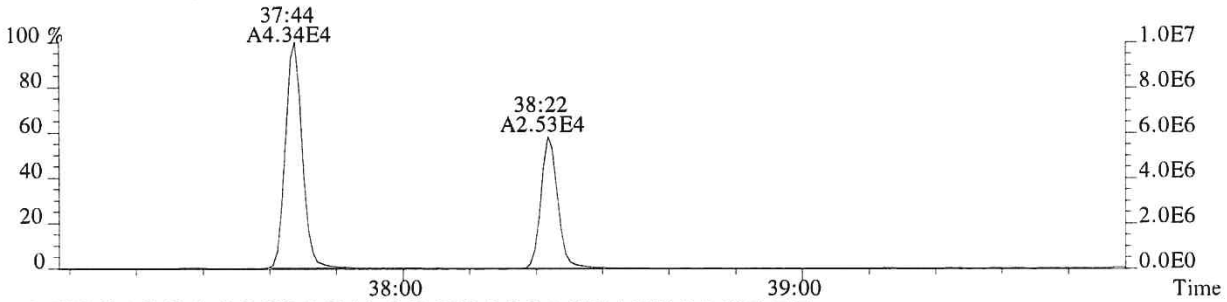


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

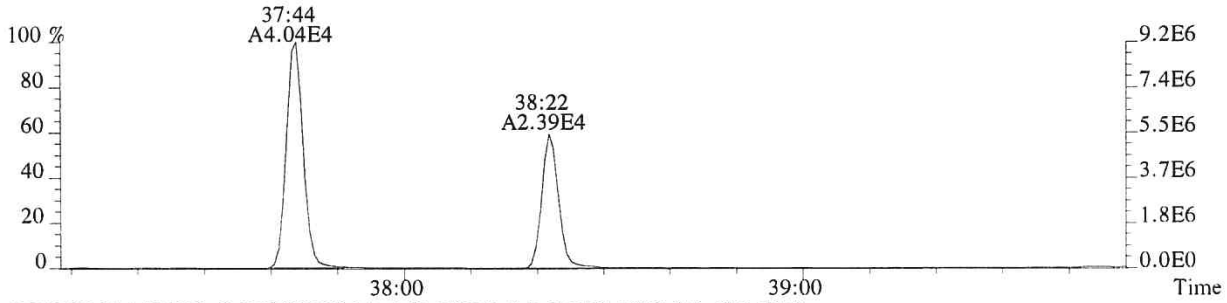


059168

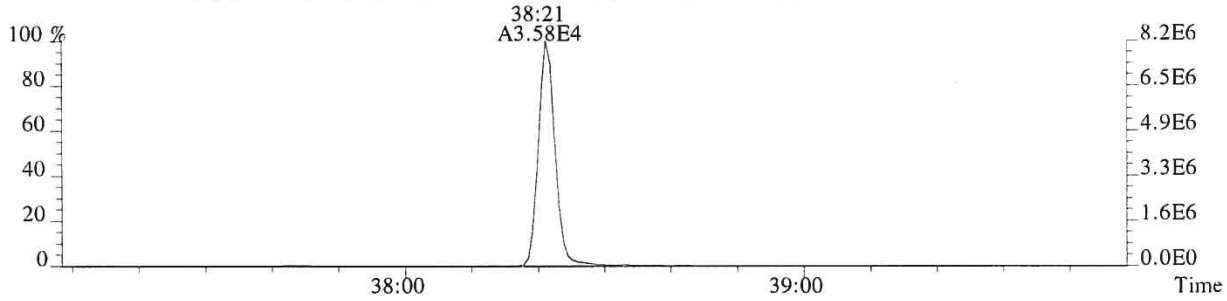
File:P616145 #1-241 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,15636.0,0.40%,F,T)



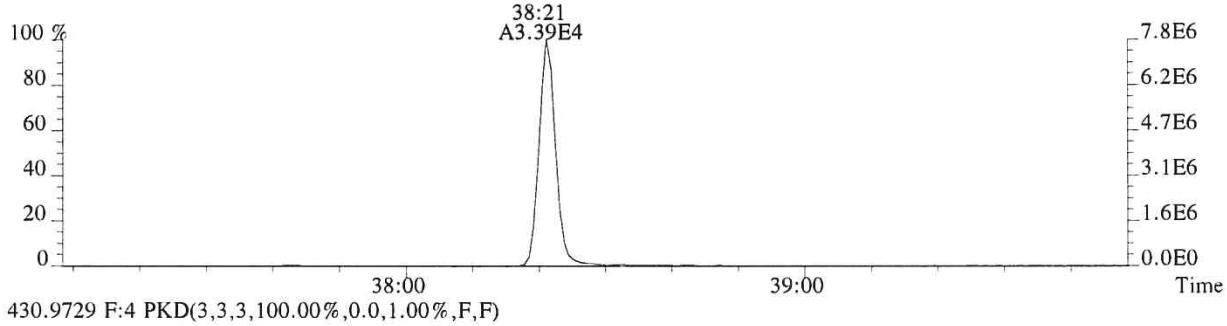
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,16788.0,0.40%,F,T)



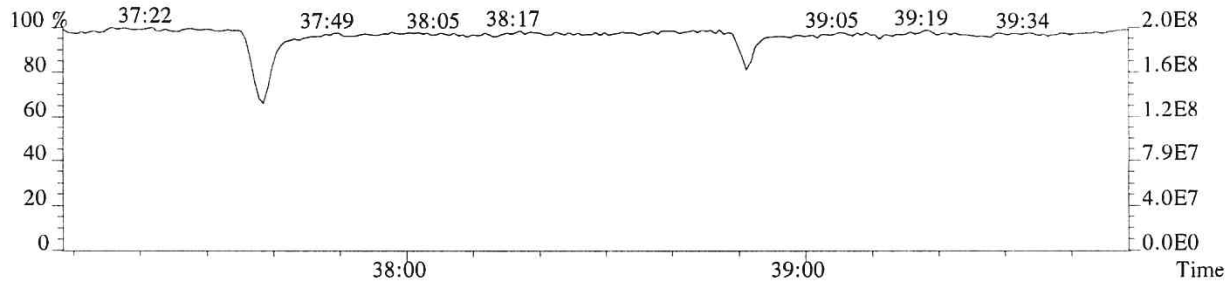
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1980.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1604.0,0.40%,F,T)



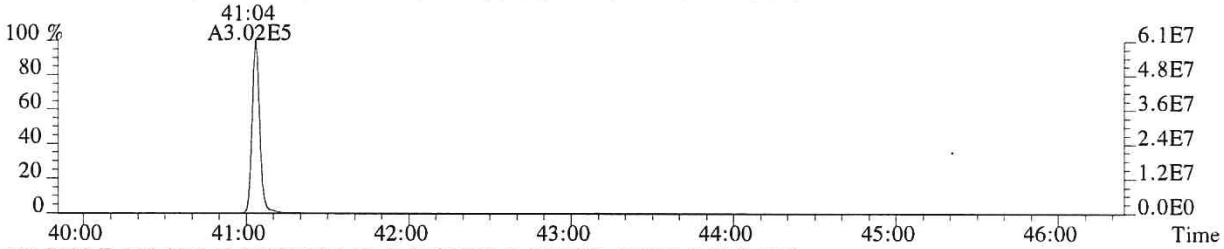
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



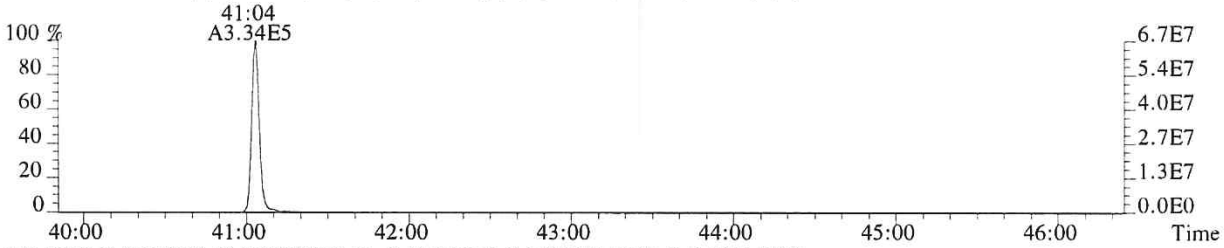
059169

File:P616145 #1-591 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014

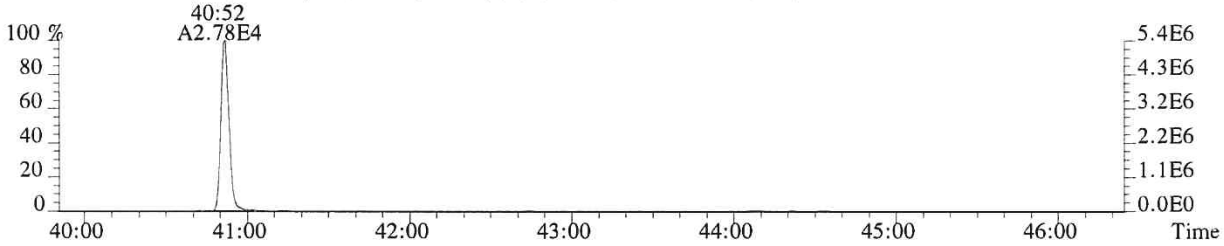
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1748.0,0.40%,F,T)



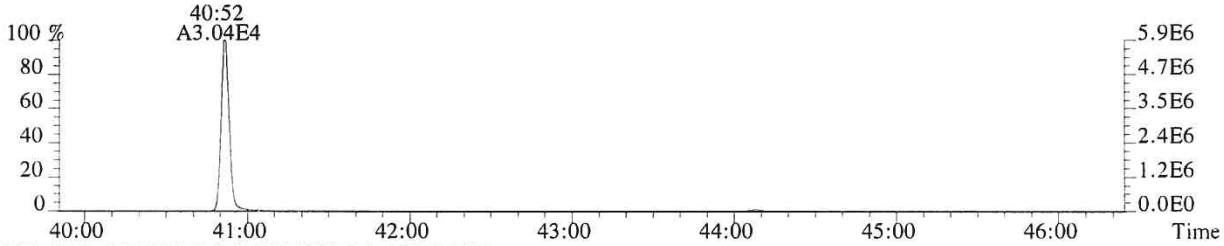
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4156.0,0.40%,F,T)



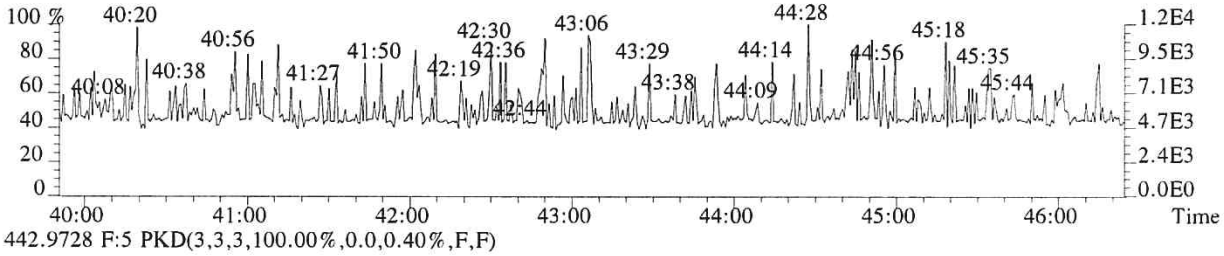
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3344.0,0.40%,F,T)



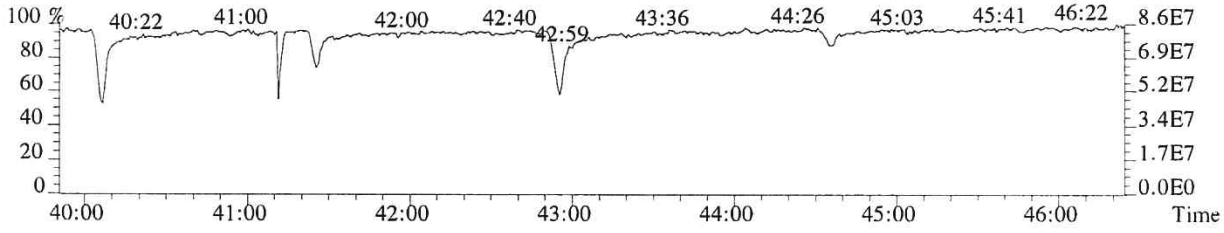
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1080.0,0.40%,F,T)



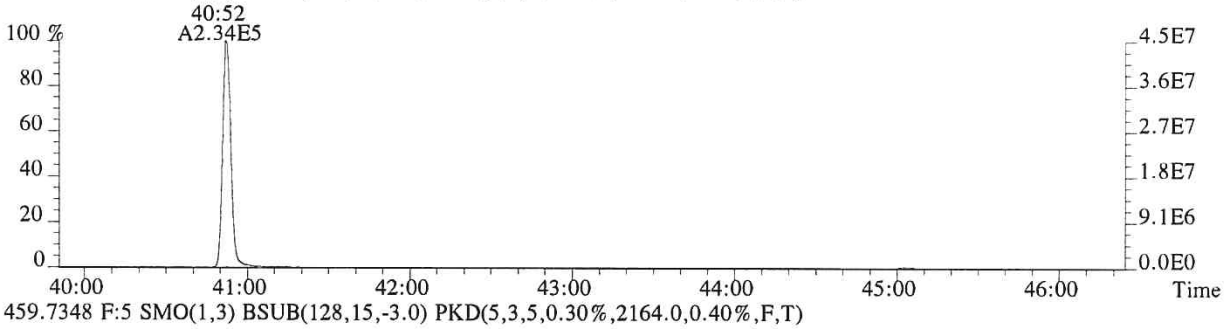
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



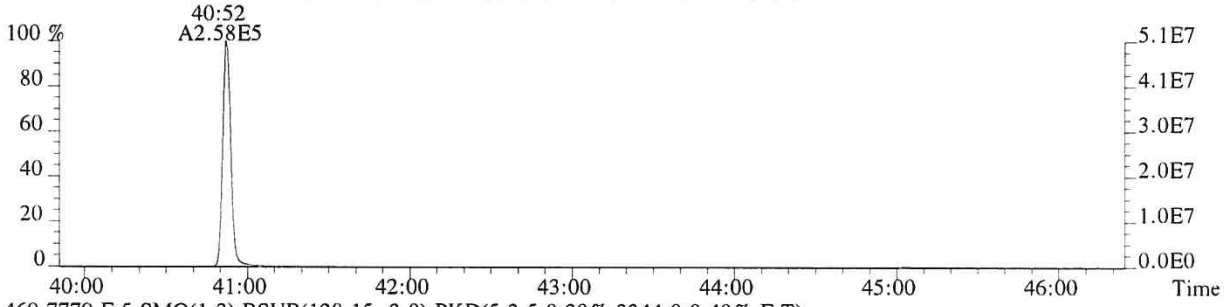
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



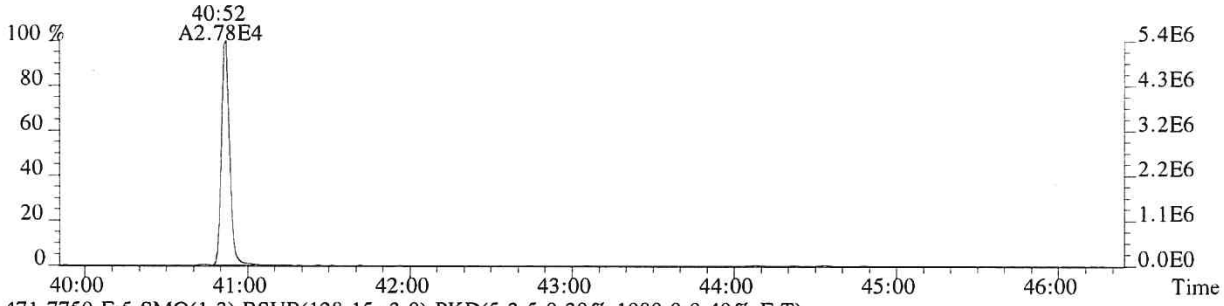
File:P616145 #1-591 Acq:20-DEC-2018 16:21:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1136.0,0.40%,F,T)



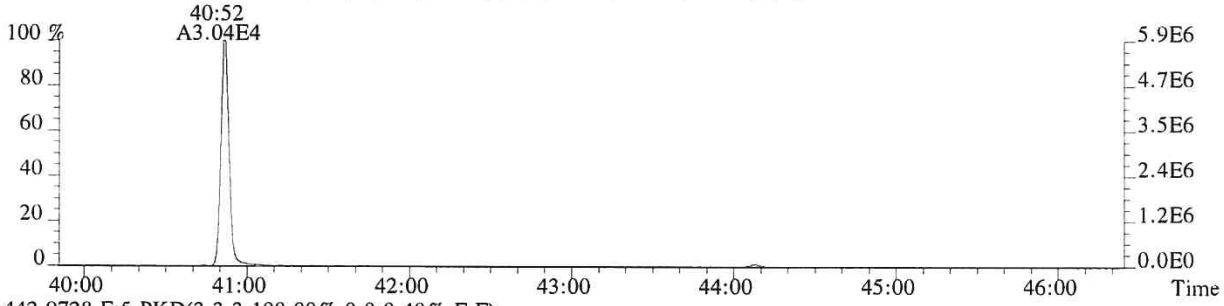
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2164.0,0.40%,F,T)



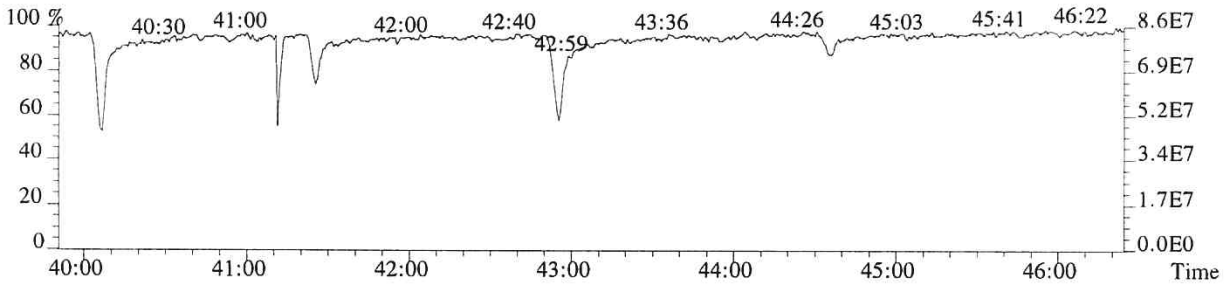
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3344.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1080.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0069

Run #13 Filename P519609 Samp: 1 Inj: 1 Acquired: 25-DEC-18 03:11:42
Processed: 26-DEC-18 09:55:27 Sample ID: E1801096-014DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:16	7.799e+03	1.032e+04	0.76	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:06	2.696e+02	2.050e+02	1.31	no	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:06	2.317e+02	1.510e+02	1.53	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:59	4.310e+02	3.227e+02	1.34	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:07	1.134e+02	1.161e+02	0.98	no	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:39	3.314e+01	3.144e+01	1.05	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:29	4.030e+01	3.750e+01	1.07	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:52	4.841e+02	4.447e+02	1.09	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	no	1.258
10	Unk	OCDF	41:55	9.685e+03	1.140e+04	0.85	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:14	1.794e+03	2.418e+03	0.74	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:26	3.388e+01	3.138e+01	1.08	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:54	3.062e+01	2.572e+01	1.19	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:11	1.132e+01	2.786e+00	4.07	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:50	7.120e+02	5.966e+02	1.19	yes	no	1.025
17	Unk	OCDD	41:45	7.988e+03	9.086e+03	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:16	7.651e+03	9.836e+03	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:05	1.174e+04	7.318e+03	1.60	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:05	1.109e+04	6.917e+03	1.60	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:59	4.621e+03	8.824e+03	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:06	5.606e+03	1.083e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:39	5.059e+03	9.668e+03	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:26	4.600e+03	8.577e+03	0.54	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:50	3.885e+03	8.658e+03	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:17	3.269e+03	7.524e+03	0.43	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:12	3.587e+03	4.437e+03	0.81	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:24	8.095e+03	5.039e+03	1.61	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:48	6.410e+03	4.965e+03	1.29	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:53	7.133e+03	5.358e+03	1.33	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:49	7.549e+03	6.862e+03	1.10	yes	no	0.858
32	IS	13C-OCDD	41:45	8.167e+03	9.341e+03	0.87	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:32	6.466e+03	7.942e+03	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:09	8.376e+03	6.399e+03	1.31	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	6.674e+02				no	1.014

$$\text{OCDD} = \frac{(7.988e+03 + 9.086e+03) \times 4000\ \text{pg} \times 1 \times 10}{(8.167e+03 + 9.341e+03) \times 10.618\ \text{g} \times 69.7 / 100 \times 1.118} = 4621.5528\ \text{ng/kg}$$

LG 12/27/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0069

Run #13 Filename P519609 Samp: 1 Inj: 1 Acquired: 25-DEC-18 03:11:42
Processed: 26-DEC-18 09:55:27 LAB. ID: E1801096-014DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.07e+06	4.16e+02	2.6e+03	1.42e+06	1.64e+03	8.7e+02
2	1,2,3,7,8-PeCDF	3.99e+04	1.26e+03	3.2e+01	3.35e+04	9.36e+02	3.6e+01
3	2,3,4,7,8-PeCDF	3.30e+04	1.26e+03	2.6e+01	2.13e+04	9.36e+02	2.3e+01
4	1,2,3,4,7,8-HxCDF	7.18e+04	1.02e+03	7.0e+01	5.55e+04	3.92e+02	1.4e+02
5	1,2,3,6,7,8-HxCDF	1.93e+04	1.02e+03	1.9e+01	1.87e+04	3.92e+02	4.8e+01
6	2,3,4,6,7,8-HxCDF	5.52e+03	1.02e+03	5.4e+00	6.87e+03	3.92e+02	1.8e+01
7	1,2,3,7,8,9-HxCDF	6.32e+03	1.02e+03	6.2e+00	5.78e+03	3.92e+02	1.5e+01
8	1,2,3,4,6,7,8-HpCDF	5.46e+04	2.42e+03	2.3e+01	5.50e+04	6.20e+02	8.9e+01
9	1,2,3,4,7,8,9-HpCDF	*	2.42e+03	*	*	6.20e+02	*
10	OCDF	6.46e+05	5.88e+02	1.1e+03	7.27e+05	1.13e+03	6.4e+02
11	2,3,7,8-TCDD	2.85e+05	2.16e+03	1.3e+02	3.79e+05	8.48e+02	4.5e+02
12	1,2,3,7,8-PeCDD	4.93e+03	6.84e+02	7.2e+00	5.14e+03	3.12e+02	1.6e+01
13	1,2,3,4,7,8-HxCDD	*	8.12e+02	*	*	1.11e+03	*
14	1,2,3,6,7,8-HxCDD	6.51e+03	8.12e+02	8.0e+00	5.47e+03	1.11e+03	4.9e+00
15	1,2,3,7,8,9-HxCDD	2.08e+03	8.12e+02	2.6e+00	9.45e+02	1.11e+03	8.5e-01
16	1,2,3,4,6,7,8-HpCDD	7.94e+04	3.32e+02	2.4e+02	6.96e+04	3.28e+02	2.1e+02
17	OCDD	5.41e+05	3.24e+02	1.7e+03	5.98e+05	3.88e+02	1.5e+03
18	13C-2,3,7,8-TCDF	1.20e+06	5.94e+03	2.0e+02	1.47e+06	3.94e+03	3.7e+02
19	13C-1,2,3,7,8-PeCDF	1.91e+06	1.48e+03	1.3e+03	1.17e+06	1.21e+03	9.7e+02
20	13C-2,3,4,7,8-PeCDF	1.86e+06	1.48e+03	1.3e+03	1.14e+06	1.21e+03	9.5e+02
21	13C-1,2,3,4,7,8-HxCDF	8.25e+05	3.84e+02	2.1e+03	1.56e+06	1.18e+03	1.3e+03
22	13C-1,2,3,6,7,8-HxCDF	8.87e+05	3.84e+02	2.3e+03	1.68e+06	1.18e+03	1.4e+03
23	13C-2,3,4,6,7,8-HxCDF	8.29e+05	3.84e+02	2.2e+03	1.58e+06	1.18e+03	1.3e+03
24	13C-1,2,3,7,8,9-HxCDF	6.58e+05	3.84e+02	1.7e+03	1.25e+06	1.18e+03	1.1e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.00e+05	1.26e+03	4.0e+02	1.11e+06	9.28e+02	1.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.52e+05	1.26e+03	2.8e+02	7.56e+05	9.28e+02	8.1e+02
27	13C-2,3,7,8-TCDD	5.69e+05	5.38e+03	1.1e+02	7.33e+05	1.97e+03	3.7e+02
28	13C-1,2,3,7,8-PeCDD	1.30e+06	5.80e+02	2.2e+03	8.21e+05	8.04e+02	1.0e+03
29	13C-1,2,3,4,7,8-HxCDD	1.11e+06	7.76e+02	1.4e+03	8.70e+05	7.16e+02	1.2e+03
30	13C-1,2,3,6,7,8-HxCDD	1.07e+06	7.76e+02	1.4e+03	8.28e+05	7.16e+02	1.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	8.43e+05	5.76e+02	1.5e+03	7.69e+05	4.16e+02	1.8e+03
32	13C-OCDD	5.49e+05	4.32e+02	1.3e+03	6.10e+05	3.64e+02	1.7e+03
33	13C-1,2,3,4-TCDD	1.04e+06	5.38e+03	1.9e+02	1.28e+06	1.97e+03	6.5e+02
34	13C-1,2,3,7,8,9-HxCDD	1.20e+06	7.76e+02	1.5e+03	9.27e+05	7.16e+02	1.3e+03
35	37Cl-2,3,7,8-TCDD	1.04e+05	7.72e+02	1.3e+02			

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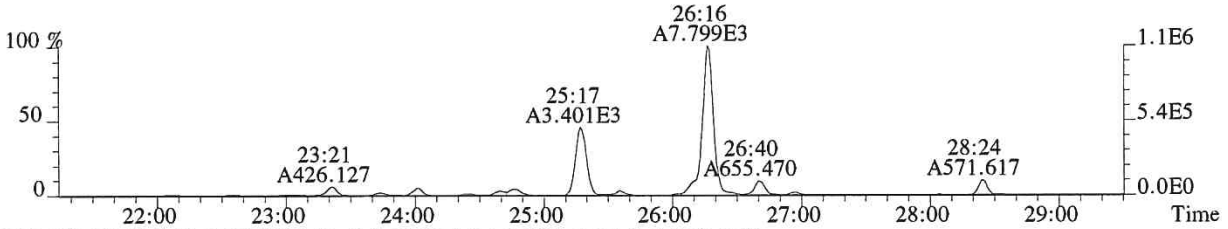
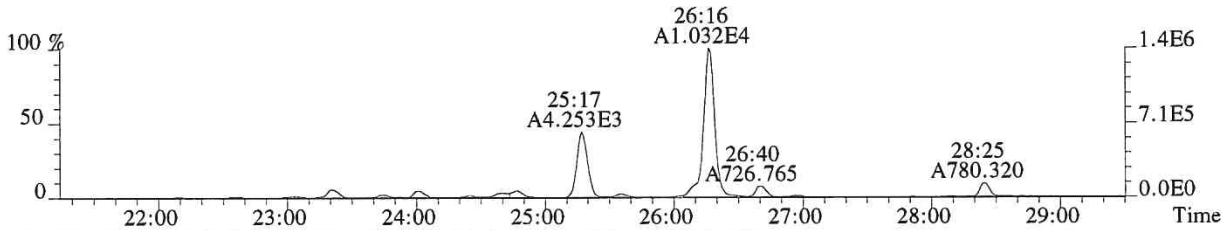
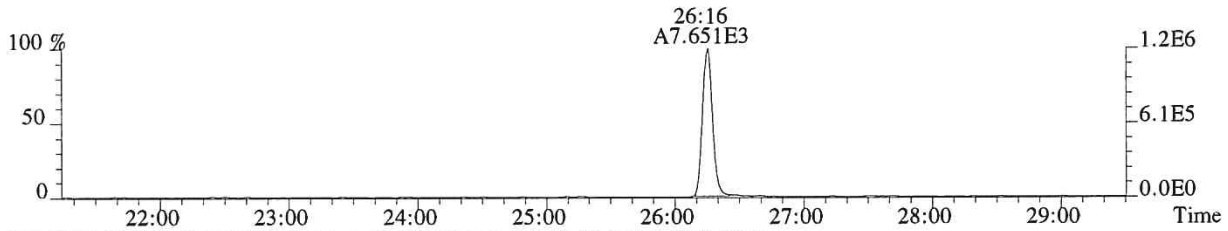
File:P519609 #1-587 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,416.0,1.00%,F,T)



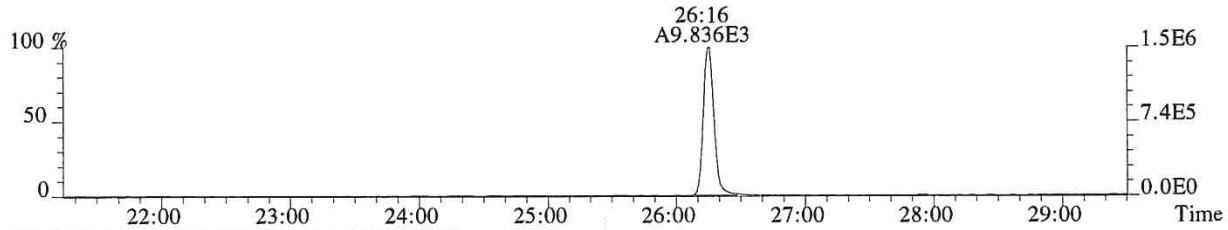
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1644.0,1.00%,F,T)



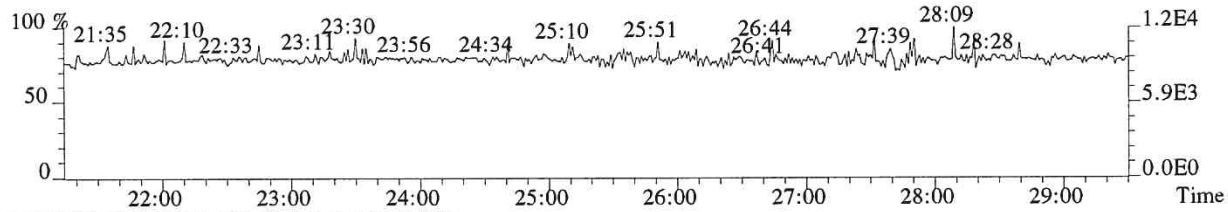
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5944.0,1.00%,F,T)



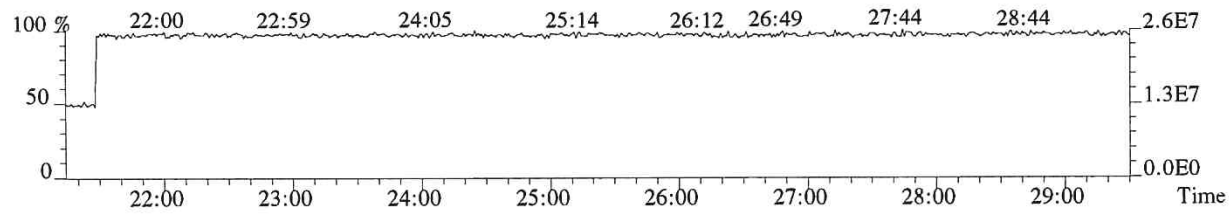
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3944.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

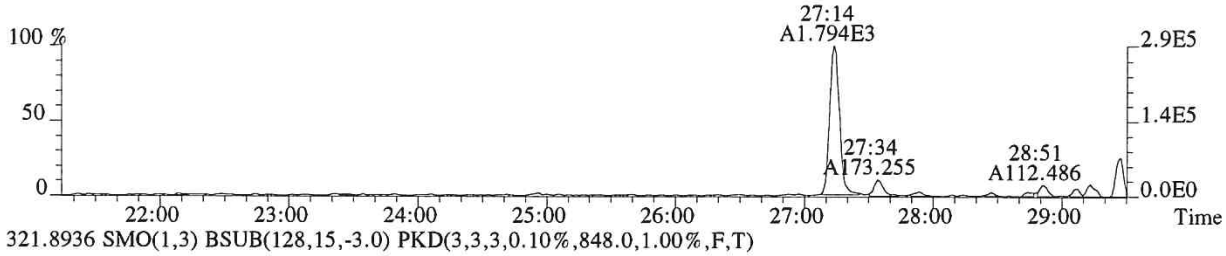


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

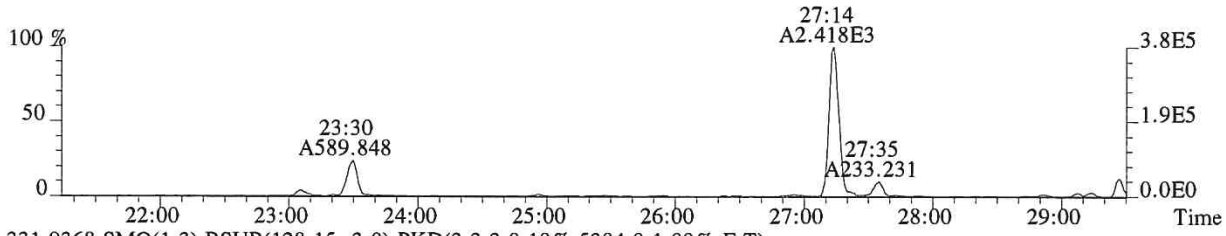


059174

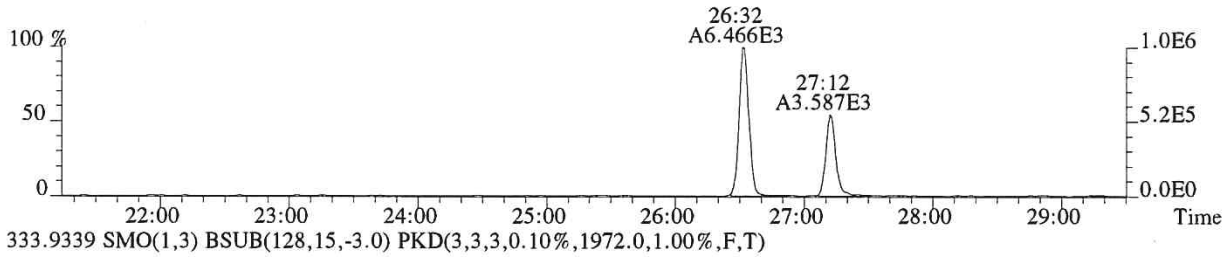
File:P519609 #1-587 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2164.0,1.00%,F,T)



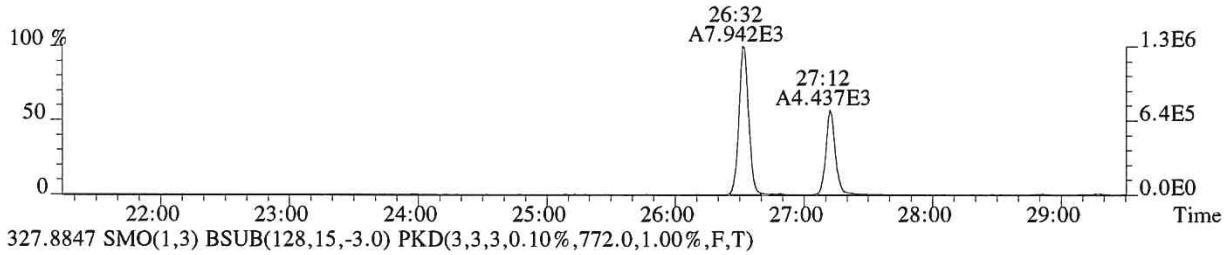
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,848.0,1.00%,F,T)



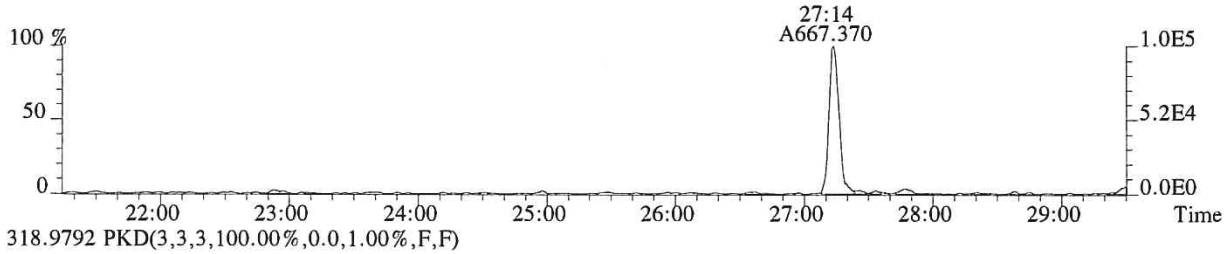
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5384.0,1.00%,F,T)



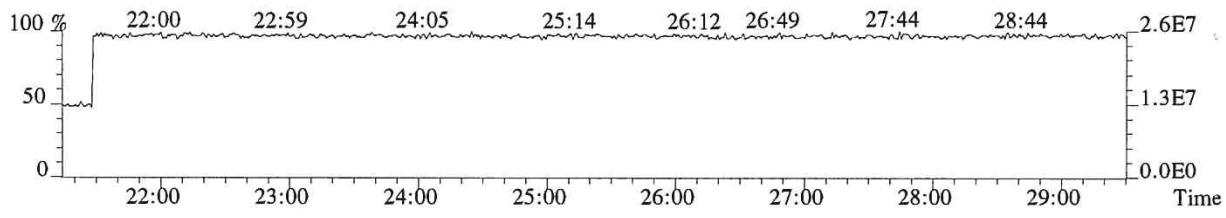
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1972.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,772.0,1.00%,F,T)

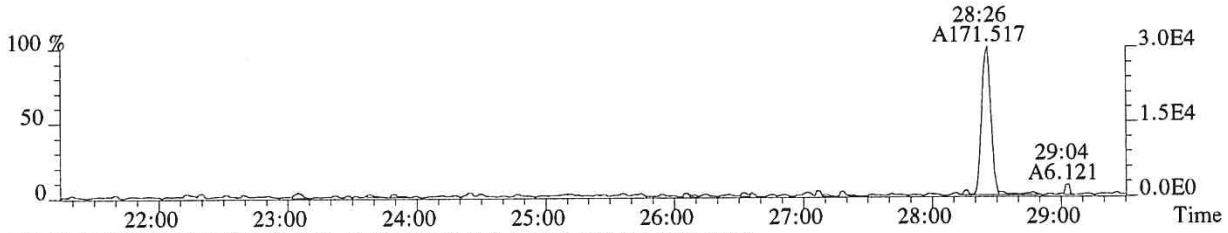


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

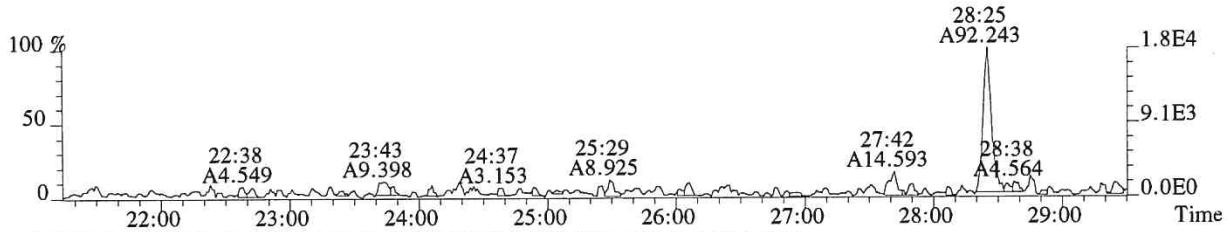


059175

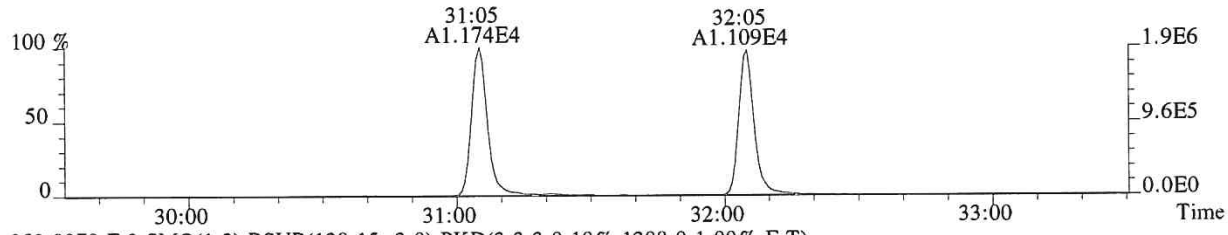
File:P519609 #1-587 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,468.0,1.00%,F,T)



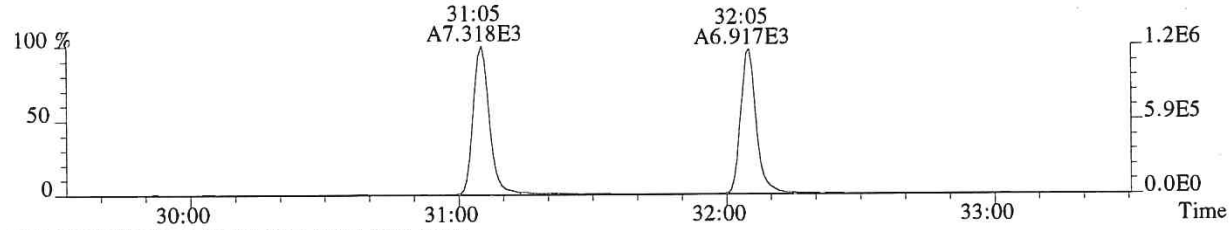
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,652.0,1.00%,F,T)



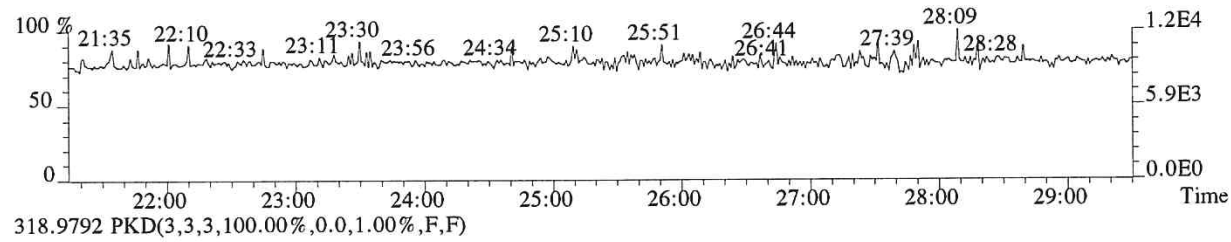
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1476.0,1.00%,F,T)



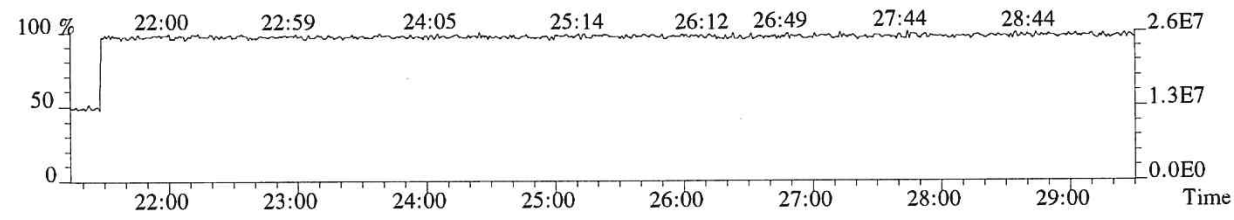
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1208.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

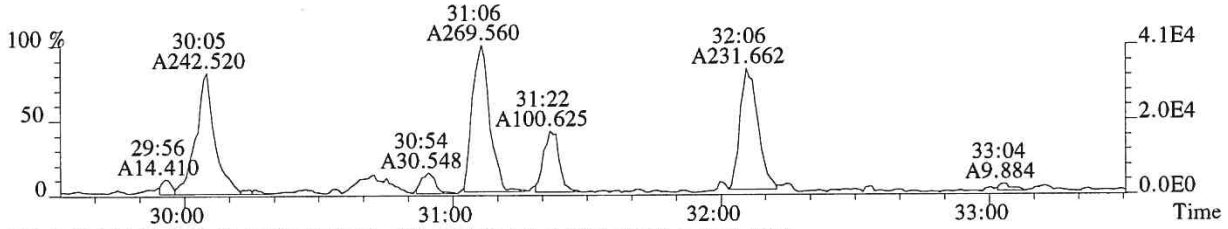


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

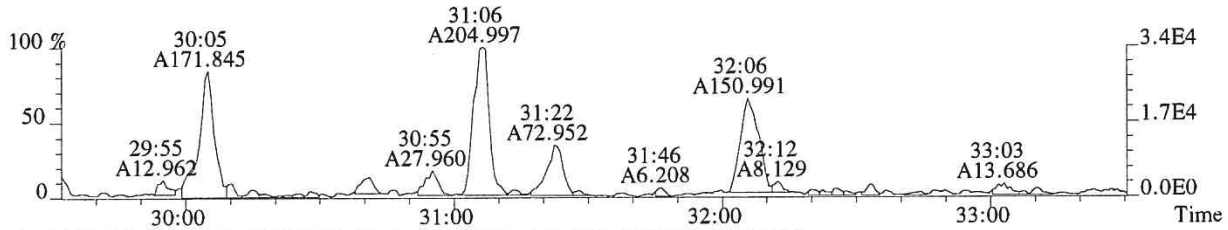


059176

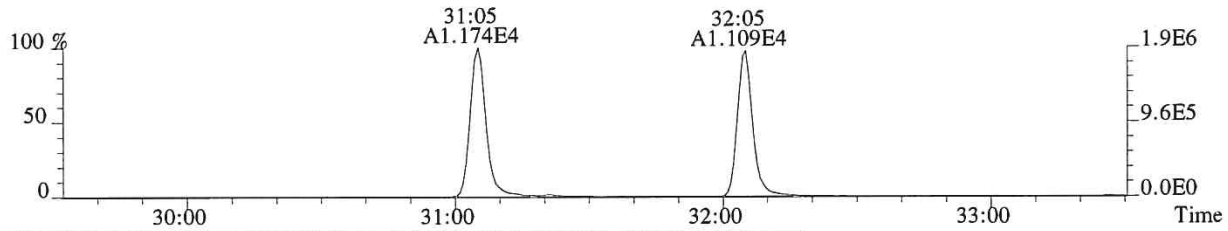
File:P519609 #1-358 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1264.0,1.00%,F,T)



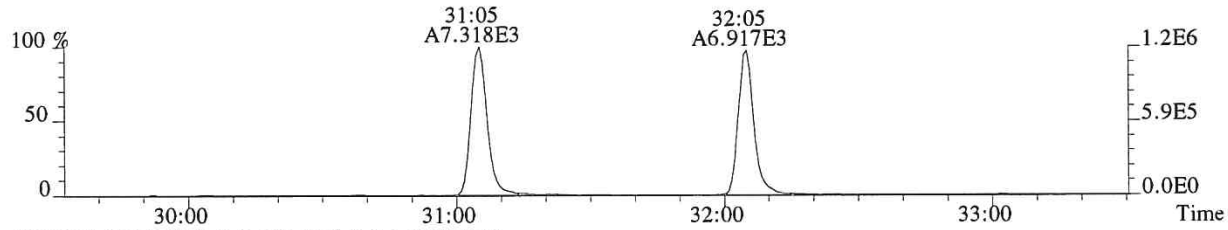
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,936.0,1.00%,F,T)



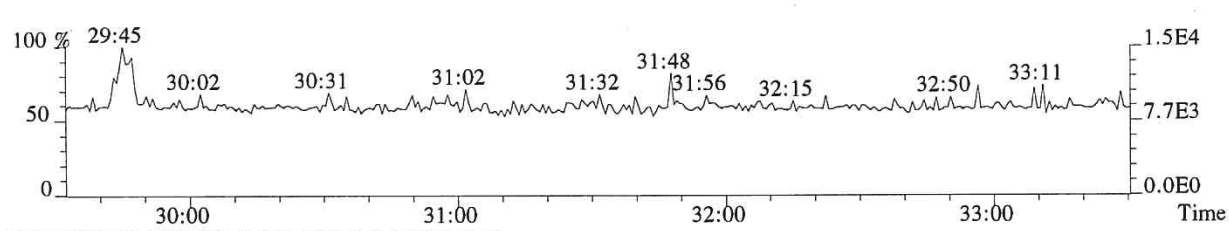
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1476.0,1.00%,F,T)



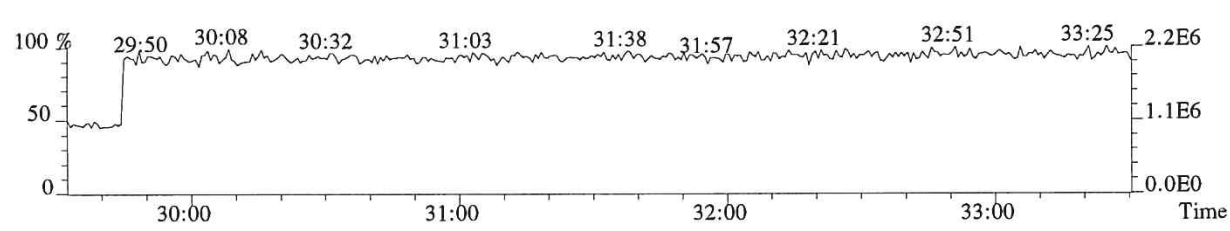
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1208.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

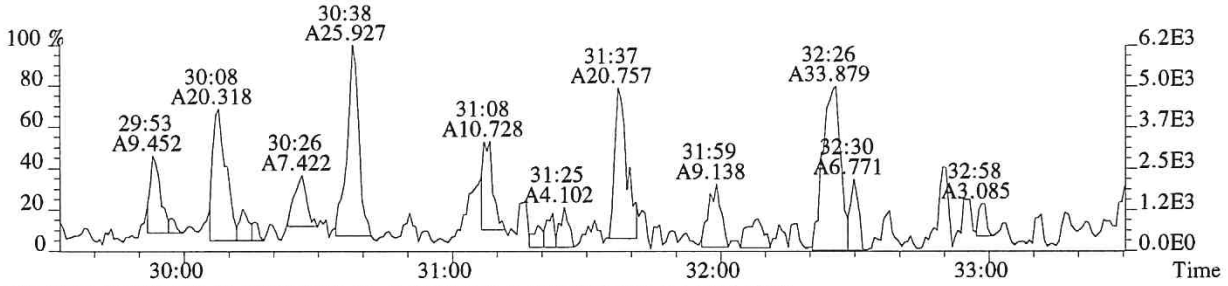


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

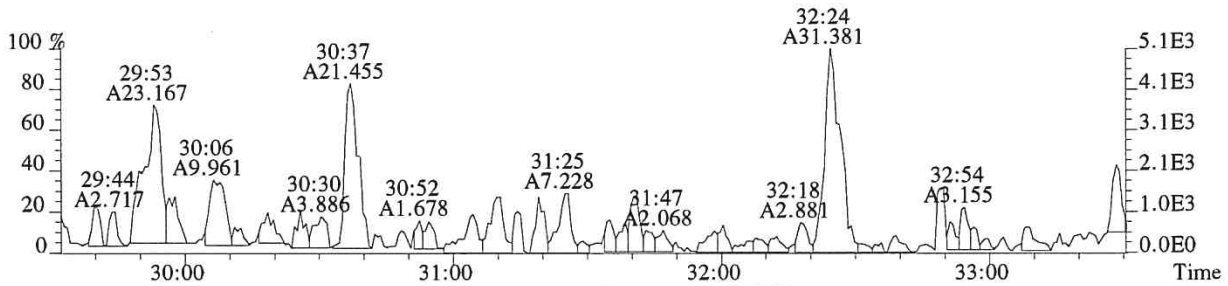


059177

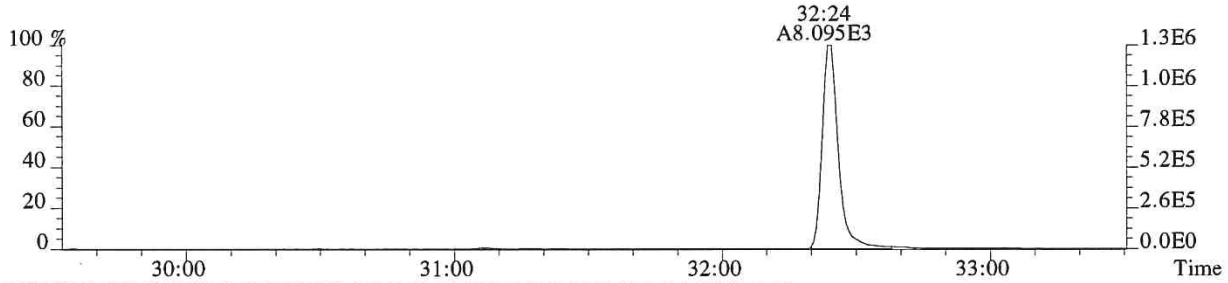
File:P519609 #1-358 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



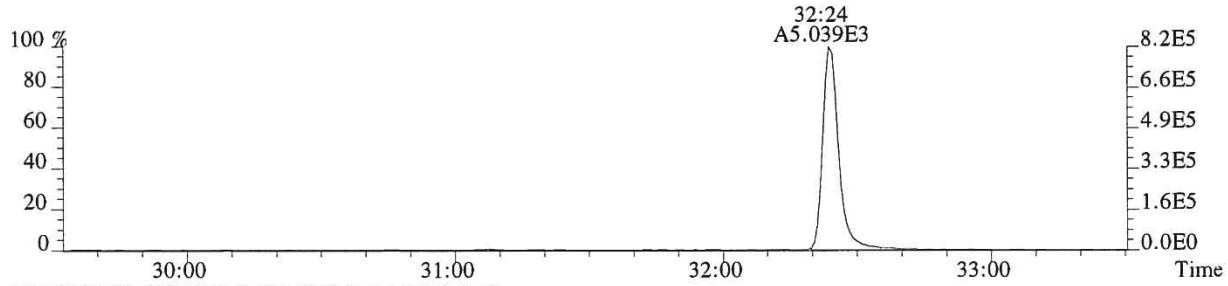
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,312.0,1.00%,F,T)



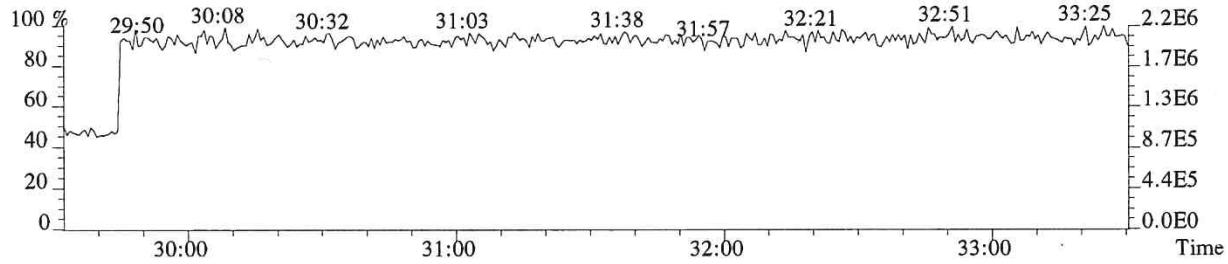
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,580.0,1.00%,F,T)



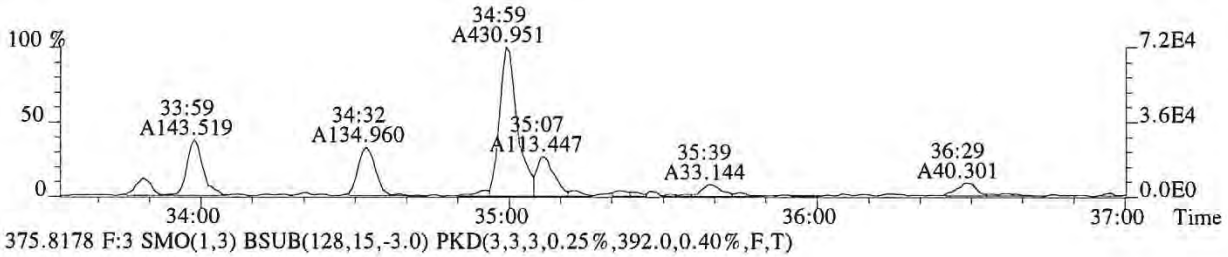
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,804.0,1.00%,F,T)



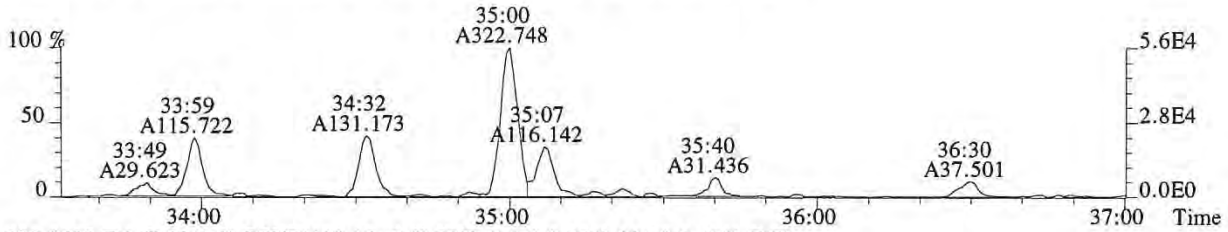
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



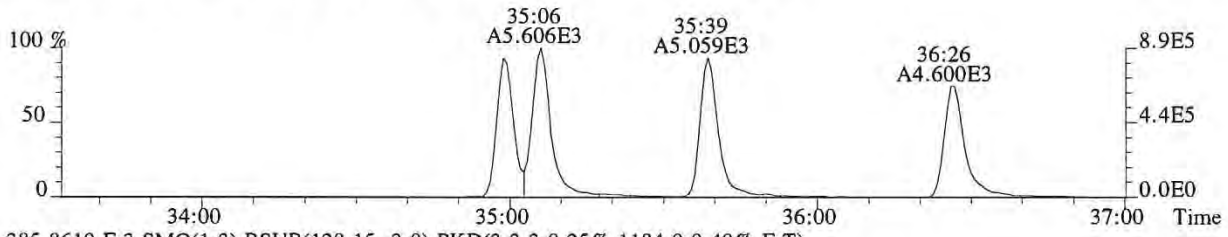
File:P519609 #1-312 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1020.0,0.40%,F,T)



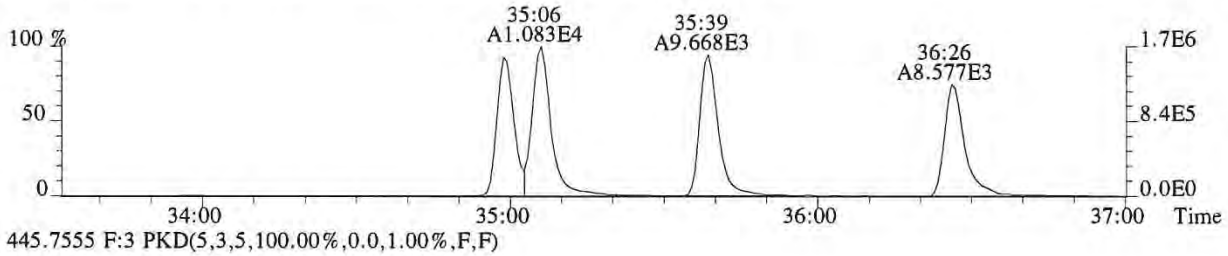
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,392.0,0.40%,F,T)



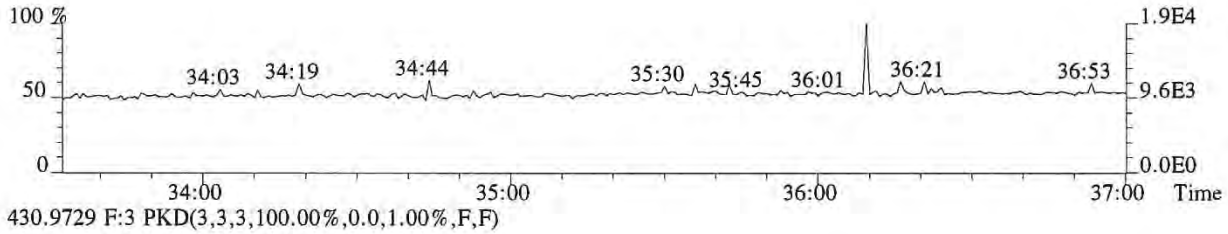
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,384.0,0.40%,F,T)



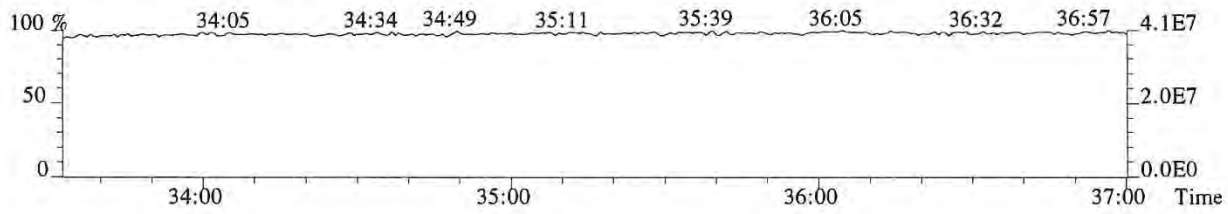
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1184.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

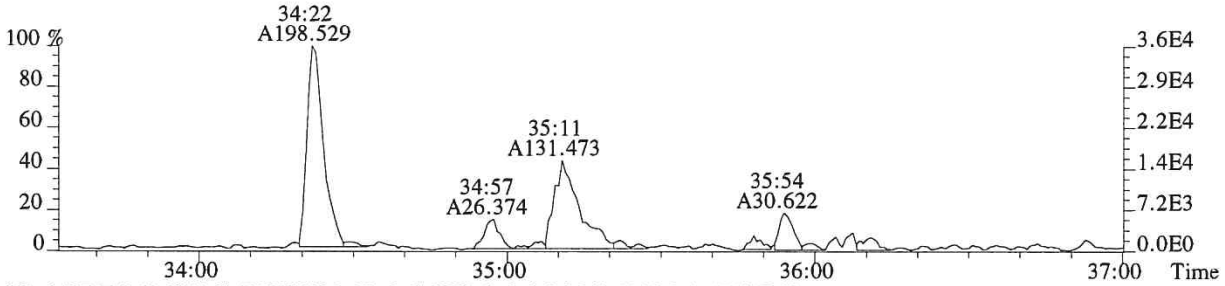


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

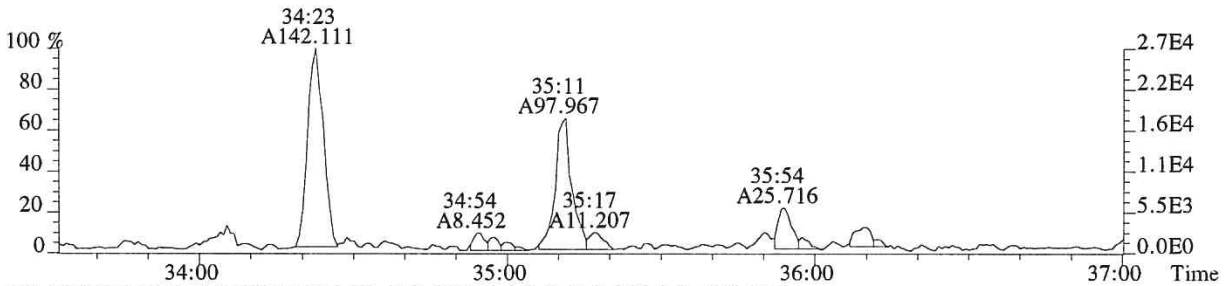


059179

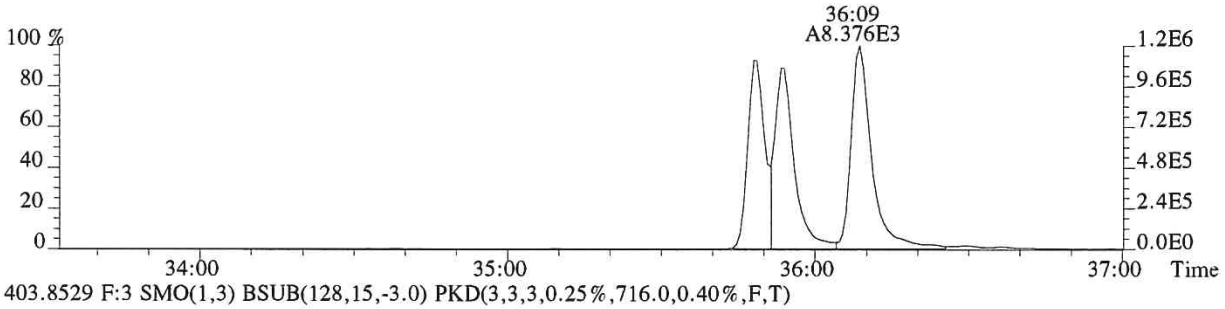
File:P519609 #1-312 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,812.0,0.40%,F,T)



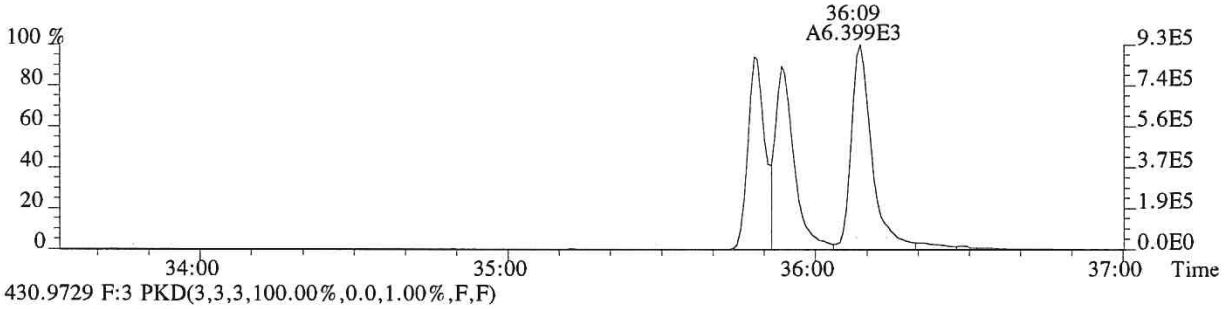
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1108.0,0.40%,F,T)



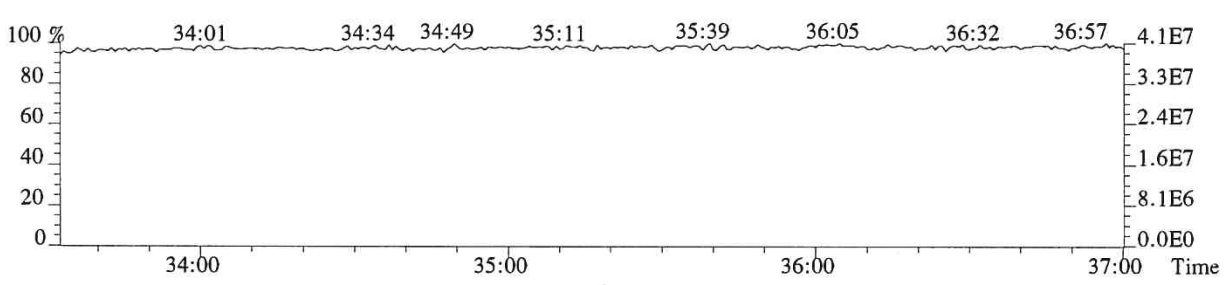
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,776.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,716.0,0.40%,F,T)

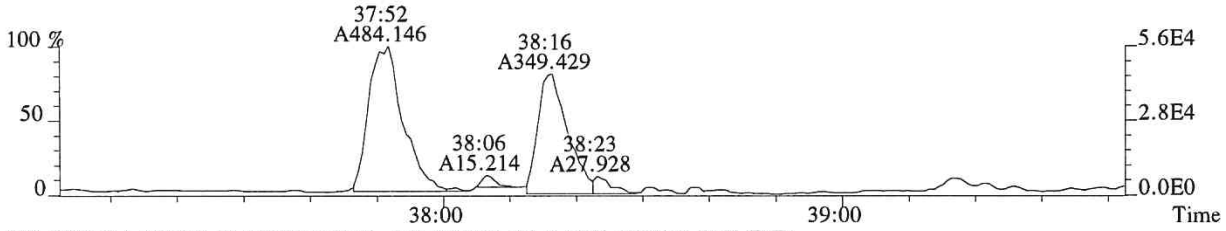


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

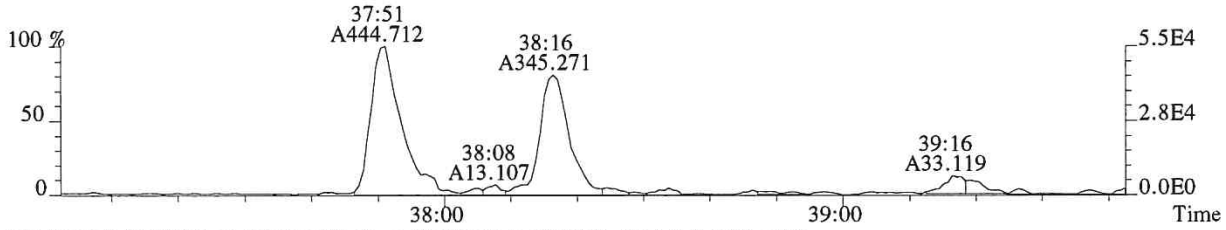


059180

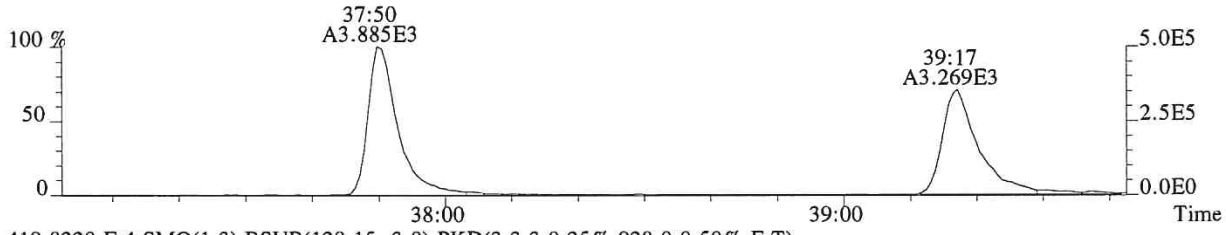
File:P519609 #1-241 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2424.0,0.50%,F,T)



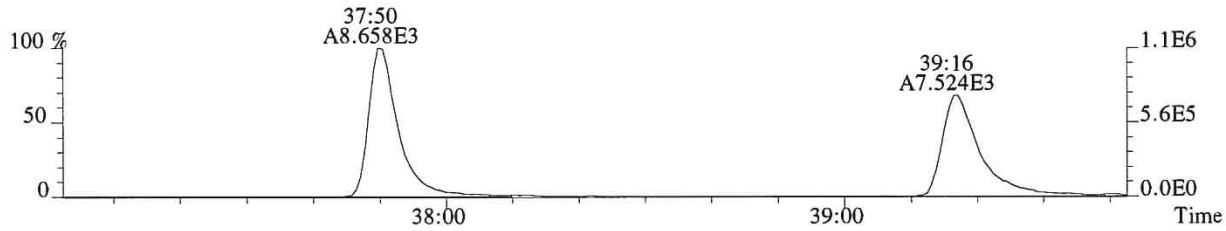
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,620.0,0.50%,F,T)



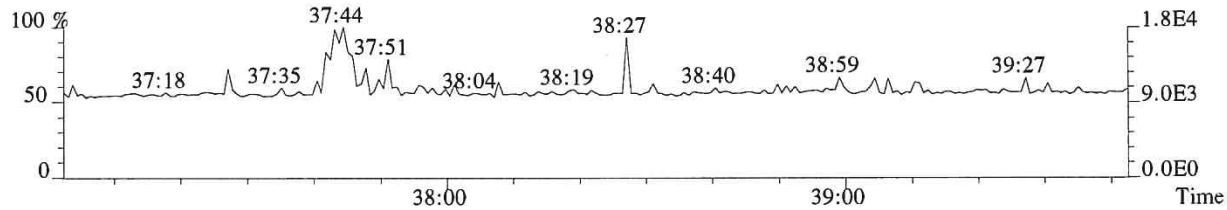
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1264.0,0.50%,F,T)



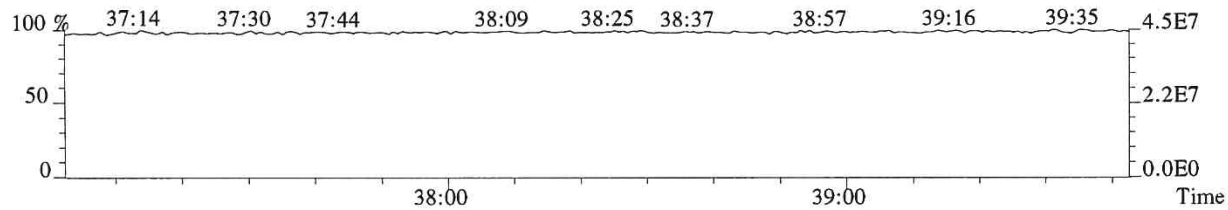
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,928.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

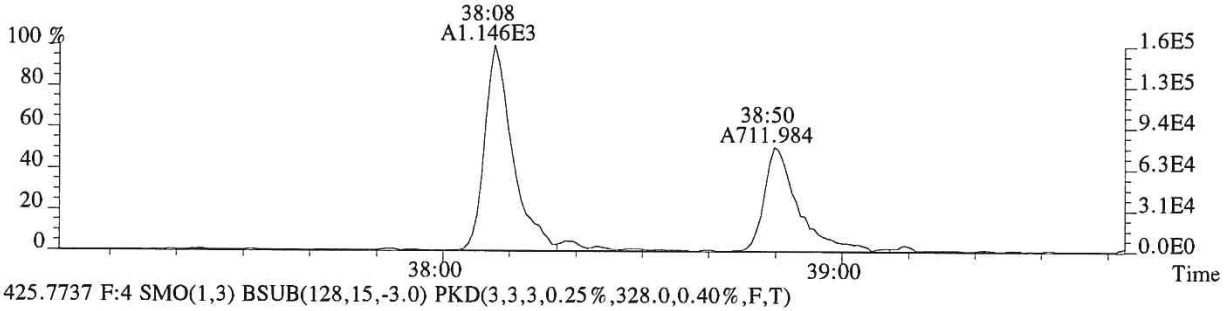


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

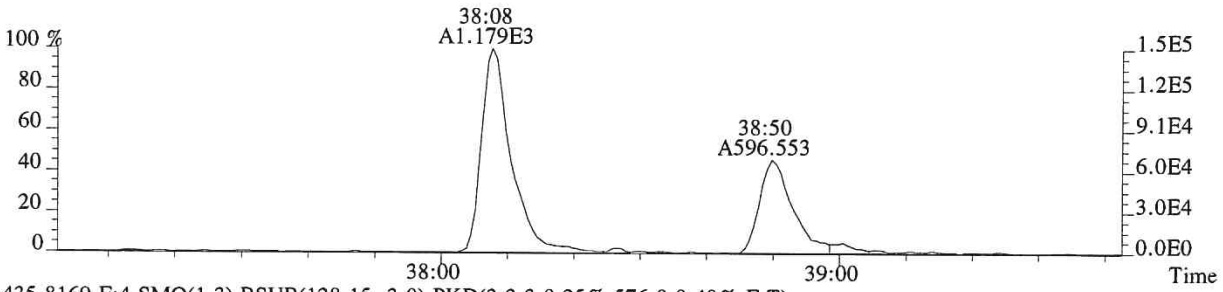


059181

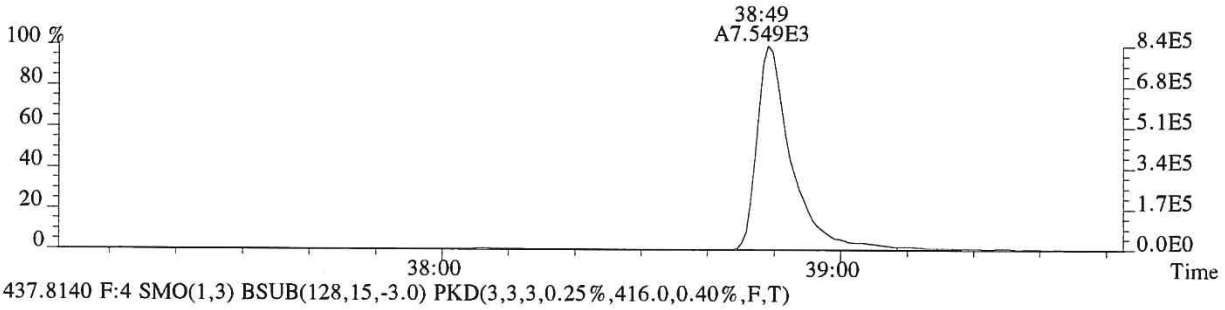
File:P519609 #1-241 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,332.0,0.40%,F,T)



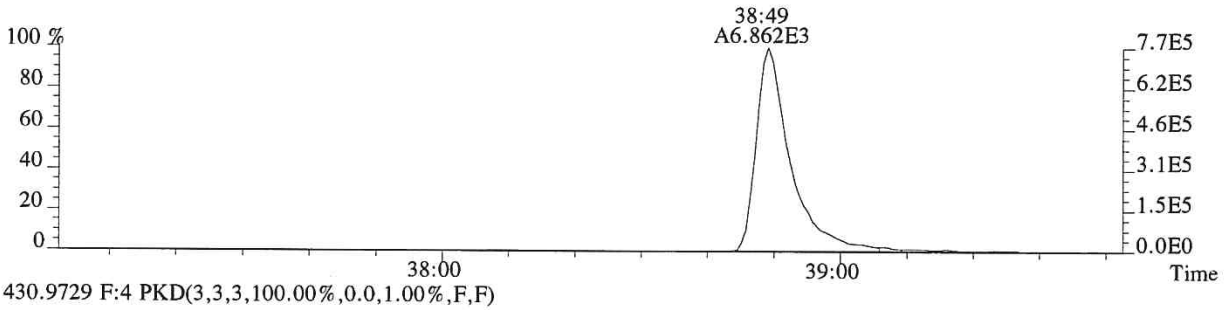
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,328.0,0.40%,F,T)



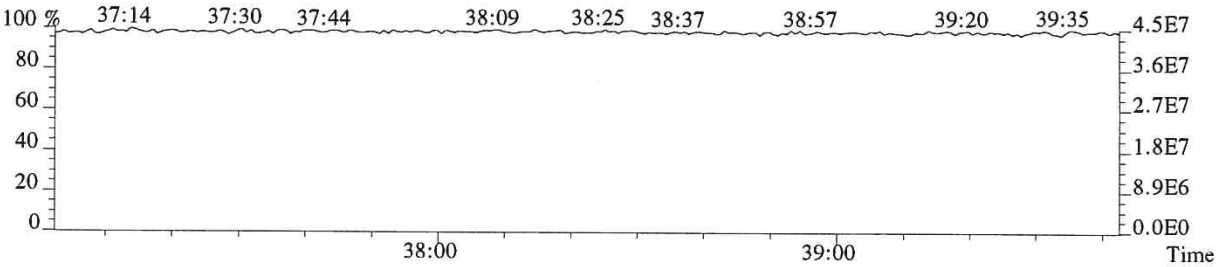
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,576.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,416.0,0.40%,F,T)

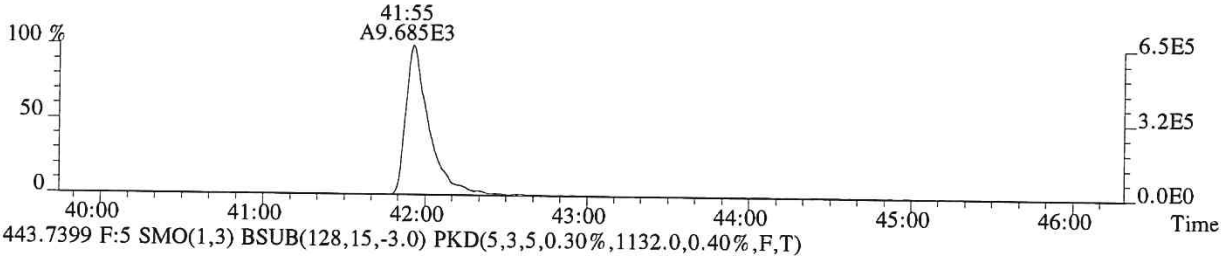


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

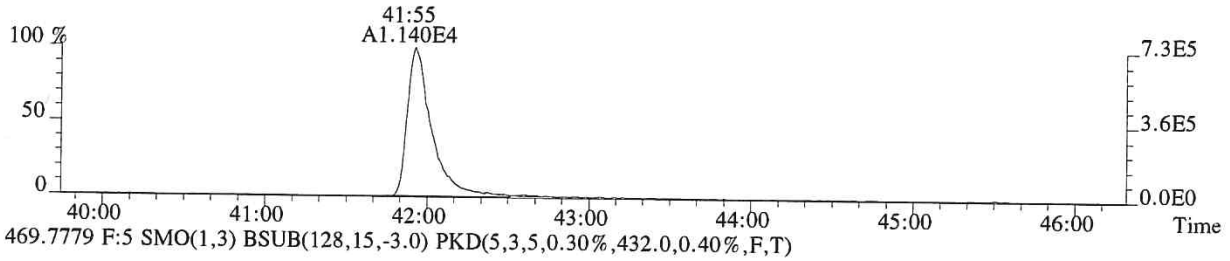


059182

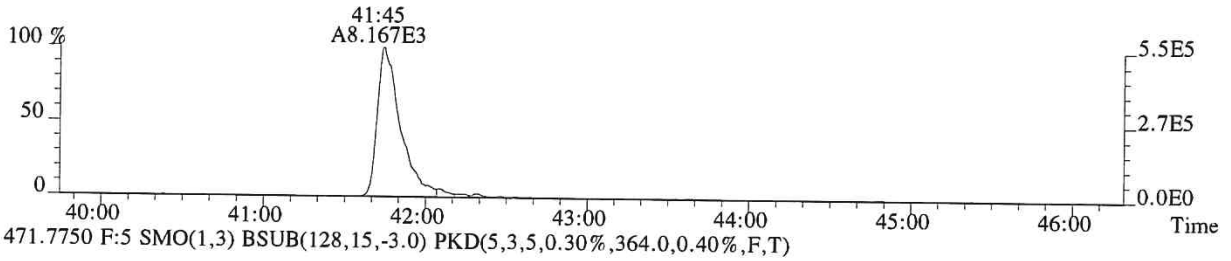
File:P519609 #1-592 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,588.0,0.40%,F,T)



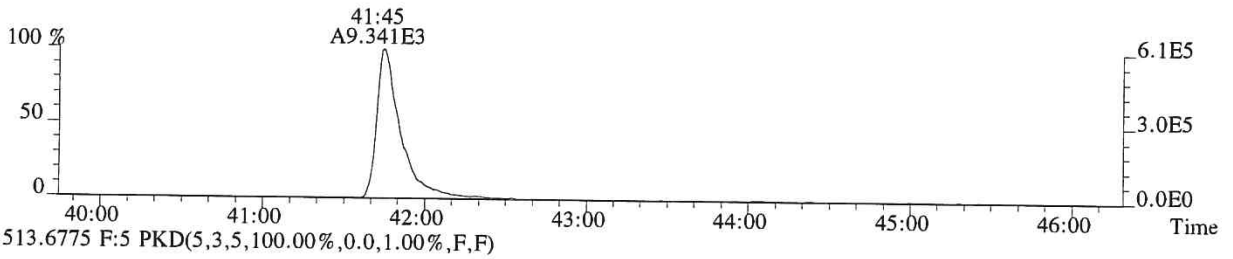
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1132.0,0.40%,F,T)



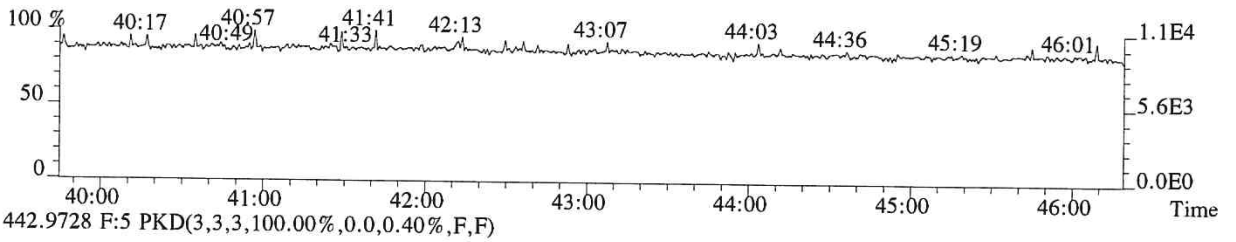
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,432.0,0.40%,F,T)



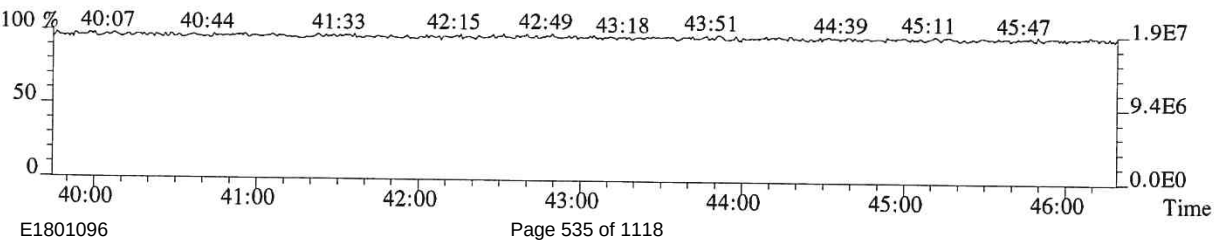
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,364.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

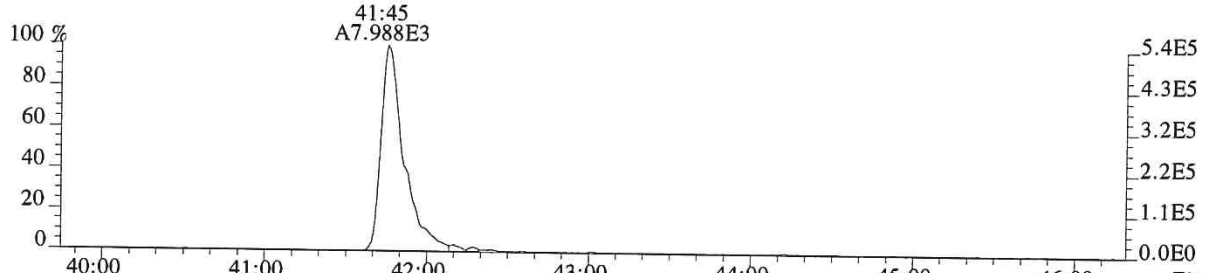


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

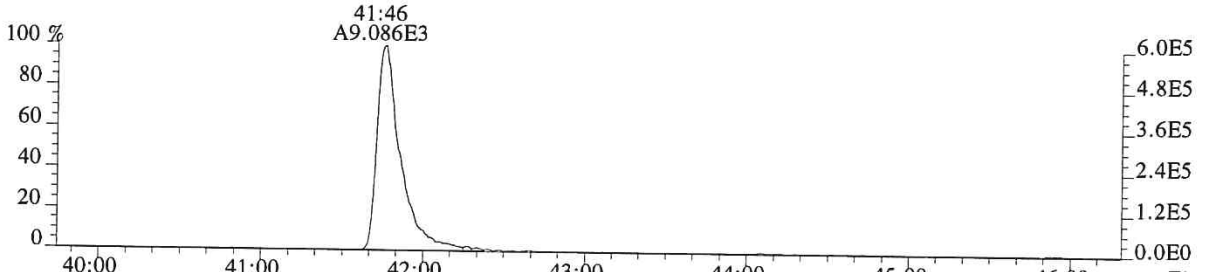


059183

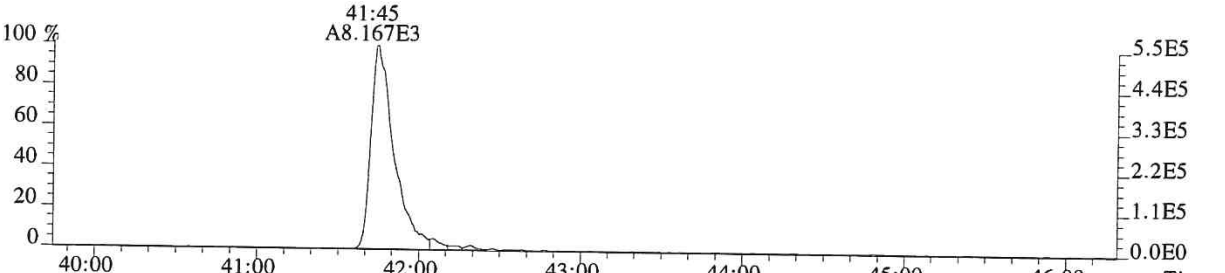
File:P519609 #1-592 Acq:25-DEC-2018 03:11:42 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-014DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,324.0,0.40%,F,T)



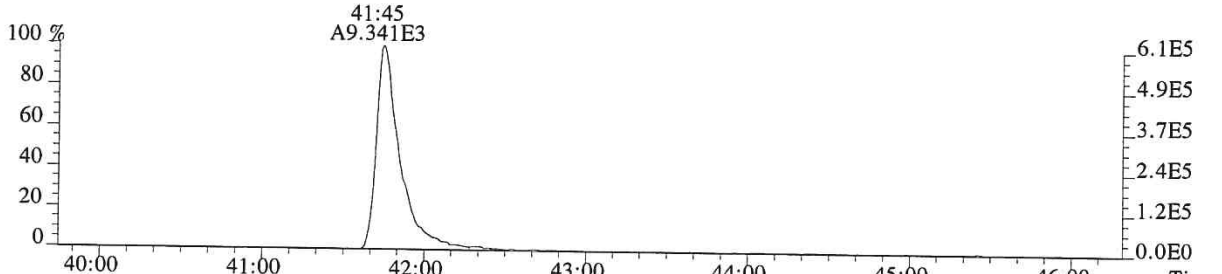
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,388.0,0.40%,F,T)



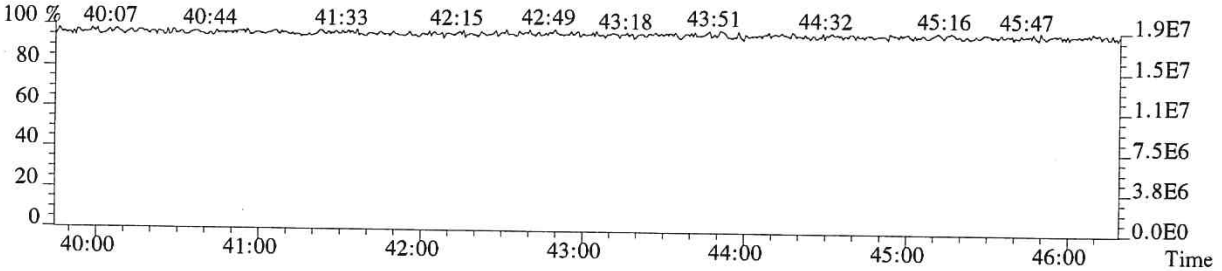
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,432.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,364.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059184

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0070

Run #11 Filename P616146 Samp: 1 Inj: 1 Acquired: 20-DEC-18 17:10:41
Processed: 24-DEC-18 10:51:21 Sample ID: E1801096-015

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:19	1.858e+03	2.376e+03	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	1.376e+02	9.198e+01	1.50	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:01	1.210e+02	7.884e+01	1.53	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:49	1.647e+02	1.032e+02	1.60	no	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	5.385e+01	3.555e+01	1.51	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:29	7.279e+01	7.594e+01	0.96	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.463
10	Unk	OCDF	41:04	2.537e+02	2.810e+02	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:15	4.917e+02	5.858e+02	0.84	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	9.762e+01	3.177e+01	3.07	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	8.234e+01	9.201e+01	0.89	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	1.544e+02	1.508e+02	1.02	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	2.770e+02	1.878e+02	1.48	no	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	3.606e+03	3.244e+03	1.11	yes	no	1.112
17	Unk	OCDD	40:52	4.822e+04	5.326e+04	0.91	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:17	2.579e+04	3.237e+04	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:01	5.256e+04	3.331e+04	1.58	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	5.144e+04	3.227e+04	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	2.653e+04	4.992e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:55	2.956e+04	5.644e+04	0.52	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	2.812e+04	5.288e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	2.590e+04	4.859e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:28	2.162e+04	4.729e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	1.918e+04	4.187e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:13	1.278e+04	1.572e+04	0.81	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:19	3.715e+04	2.370e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	3.601e+04	2.852e+04	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:40	3.422e+04	2.685e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	4.077e+04	3.766e+04	1.08	yes	no	0.857
32	IS	13C-OCDD	40:51	3.695e+04	4.102e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:31	3.441e+04	4.402e+04	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	5.368e+04	4.276e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	1.800e+04				no	1.086

$$OCDD = \frac{(4.822e+04 + 5.326e+04) \times 4000\ pg \times 1}{(3.695e+04 + 4.102e+04) \times 10.65g \times 76.2 / 100 \times 1.157} = 554.\ 1539.\ ng/kg$$

LG 12/26/18

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059185

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0070

un #11 Filename P616146 Samp: 1 Inj: 1 Acquired: 20-DEC-18 17:10:41
rocessed: 24-DEC-18 10:51:21 LAB. ID: E1801096-015

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
	2,3,7,8-TCDF	2.87e+05	2.34e+03	1.2e+02	3.55e+05	5.64e+03	6.3e+01
	1,2,3,7,8-PeCDF	1.85e+04	6.44e+02	2.9e+01	2.18e+04	4.41e+03	4.9e+00
	2,3,4,7,8-PeCDF	1.79e+04	6.44e+02	2.8e+01	1.43e+04	4.41e+03	3.2e+00
	1,2,3,4,7,8-HxCDF	2.89e+04	2.47e+03	1.2e+01	1.96e+04	1.80e+03	1.1e+01
	1,2,3,6,7,8-HxCDF	1.44e+04	2.47e+03	5.8e+00	6.51e+03	1.80e+03	3.6e+00
	2,3,4,6,7,8-HxCDF	*	2.47e+03	*	*	1.80e+03	*
	1,2,3,7,8,9-HxCDF	*	2.47e+03	*	*	1.80e+03	*
	1,2,3,4,6,7,8-HpCDF	1.35e+04	1.97e+03	6.9e+00	1.34e+04	1.53e+03	8.7e+00
	1,2,3,4,7,8,9-HpCDF	*	1.97e+03	*	*	1.53e+03	*
0	OCDF	4.40e+04	1.50e+03	2.9e+01	5.42e+04	3.95e+03	1.4e+01
1	2,3,7,8-TCDD	7.40e+04	6.38e+03	1.2e+01	9.15e+04	3.64e+03	2.5e+01
2	1,2,3,7,8-PeCDD	2.04e+04	2.08e+03	9.8e+00	7.36e+03	8.48e+02	8.7e+00
3	1,2,3,4,7,8-HxCDD	1.86e+04	1.78e+03	1.0e+01	2.15e+04	2.14e+03	1.0e+01
4	1,2,3,6,7,8-HxCDD	3.71e+04	1.78e+03	2.1e+01	2.87e+04	2.14e+03	1.3e+01
5	1,2,3,7,8,9-HxCDD	5.75e+04	1.78e+03	3.2e+01	3.81e+04	2.14e+03	1.8e+01
6	1,2,3,4,6,7,8-HpCDD	8.09e+05	7.45e+03	1.1e+02	7.45e+05	5.98e+03	1.2e+02
7	OCDD	9.25e+06	5.60e+02	1.7e+04	1.04e+07	1.34e+03	7.8e+03
8	13C-2,3,7,8-TCDF	4.05e+06	2.20e+04	1.8e+02	5.00e+06	8.02e+03	6.2e+02
9	13C-1,2,3,7,8-PeCDF	9.14e+06	1.34e+03	6.8e+03	5.86e+06	2.00e+03	2.9e+03
0	13C-2,3,4,7,8-PeCDF	9.71e+06	1.34e+03	7.3e+03	6.11e+06	2.00e+03	3.1e+03
1	13C-1,2,3,4,7,8-HxCDF	5.55e+06	2.06e+03	2.7e+03	1.04e+07	2.73e+03	3.8e+03
2	13C-1,2,3,6,7,8-HxCDF	6.28e+06	2.06e+03	3.0e+03	1.19e+07	2.73e+03	4.3e+03
3	13C-2,3,4,6,7,8-HxCDF	6.00e+06	2.06e+03	2.9e+03	1.13e+07	2.73e+03	4.1e+03
4	13C-1,2,3,7,8,9-HxCDF	5.48e+06	2.06e+03	2.7e+03	1.03e+07	2.73e+03	3.8e+03
5	13C-1,2,3,4,6,7,8-HpCDF	4.84e+06	3.30e+03	1.5e+03	1.05e+07	4.28e+03	2.4e+03
6	13C-1,2,3,4,7,8,9-HpCDF	4.17e+06	3.30e+03	1.3e+03	9.19e+06	4.28e+03	2.1e+03
7	13C-2,3,7,8-TCDD	2.13e+06	2.01e+04	1.1e+02	2.59e+06	8.20e+03	3.2e+02
8	13C-1,2,3,7,8-PeCDD	6.98e+06	2.74e+03	2.5e+03	4.42e+06	3.29e+03	1.3e+03
9	13C-1,2,3,4,7,8-HxCDD	8.07e+06	3.31e+03	2.4e+03	6.27e+06	2.46e+03	2.5e+03
0	13C-1,2,3,6,7,8-HxCDD	7.42e+06	3.31e+03	2.2e+03	5.88e+06	2.46e+03	2.4e+03
1	13C-1,2,3,4,6,7,8-HpCDD	8.98e+06	3.22e+03	2.8e+03	8.42e+06	2.42e+03	3.5e+03
2	13C-OCDD	7.03e+06	2.08e+03	3.4e+03	7.81e+06	1.15e+03	6.8e+03
3	13C-1,2,3,4-TCDD	5.71e+06	2.01e+04	2.8e+02	7.27e+06	8.20e+03	8.9e+02
4	13C-1,2,3,7,8,9-HxCDD	1.16e+07	3.31e+03	3.5e+03	9.25e+06	2.46e+03	3.8e+03
5	37Cl-2,3,7,8-TCDD	3.00e+06	4.15e+03	7.2e+02			

---Sample Calculation---

$$\text{)/L TCDD} = \frac{2.5 \times (6.384e+03 + 3.644e+03\ ) \times 2000}{(2.134e+06 + 2.587e+06\ ) \times (\qquad\qquad\qquad

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0070

Entry: 36 Totals Name: Total Tetra-Furans

Run: 11 File: P616146 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 17:10:41 Processed: 24-DEC-18 10:51:21

Mass: 303.9020 305.8990 Tot Response: 6.61e+03 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
	22:35	1.21e+02	1.65e+02	0.73	yes	2.87e+02		n	n
	24:00	7.72e+01	1.04e+02	0.74	yes	1.81e+02		n	n
	25:18	8.29e+02	1.07e+03	0.77	yes	1.90e+03		n	n
	26:19	1.86e+03	2.38e+03	0.78	yes	4.23e+03	2,3,7,8-TCDF	n	n

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Peak List Summary

CLIENT ID.
SL0070

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 11 File: P616146 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 17:10:41 Processed: 24-DEC-18 10:51:21

Mass: 319.8970 321.8940 Tot Response: 2.24e+03 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:54	5.34e+02	6.31e+02	0.85	yes	1.17e+03		n	n
2	27:15	4.92e+02	5.86e+02	0.84	yes	1.08e+03	2,3,7,8-TCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0070

Entry: 39 Totals Name: Total Penta-Furans2

Run: 11 File: P616146 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 17:10:41 Processed: 24-DEC-18 10:51:21

Mass: 339.8600 341.8570 Tot Response: 4.29e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	31:02	1.38e+02	9.20e+01 1.50	yes	2.30e+02	1,2,3,7,8-PeCDF	n	n
2	32:01	1.21e+02	7.88e+01 1.53	yes	2.00e+02	2,3,4,7,8-PeCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0070

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 11 File: P616146 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 17:10:41 Processed: 24-DEC-18 10:51:21

Mass: 355.8550 357.8520 Tot Response: 9.52e+02 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:34	5.75e+02	3.47e+02	1.66	yes	9.22e+02		n	n
2	32:24	1.88e+01	1.15e+01	1.63	yes	3.04e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0070

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 11 File: P616146 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 17:10:41 Processed: 24-DEC-18 10:51:21

Mass: 389.8160 391.8130 Tot Response: 6.82e+03 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:12	3.62e+03	3.00e+03 1.20	yes	6.62e+03		n	n
2	35:51	1.03e+02	9.34e+01 1.10	yes	1.96e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0070

Entry: 43 Totals Name: Total Hepta-Furans

Run: 11 File: P616146 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 17:10:41 Processed: 24-DEC-18 10:51:21

Mass: 407.7820 409.7790 Tot Response: 1.49e+02 RRF: 1.495

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:29	7.28e+01	7.59e+01 0.96	yes	1.49e+02	1,2,3,4,6,7,8-HpCDF	n	n

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Peak List Summary

CLIENT ID.
SL0070

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 11 File: P616146 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 17:10:41 Processed: 24-DEC-18 10:51:21

Mass: 423.7770 425.7740 Tot Response: 2.30e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:43	8.36e+03	7.75e+03	1.08	yes	1.61e+04		n	n
2	38:21	3.61e+03	3.24e+03	1.11	yes	6.85e+03	1,2,3,4,6,7,8-HpCDD	n	n

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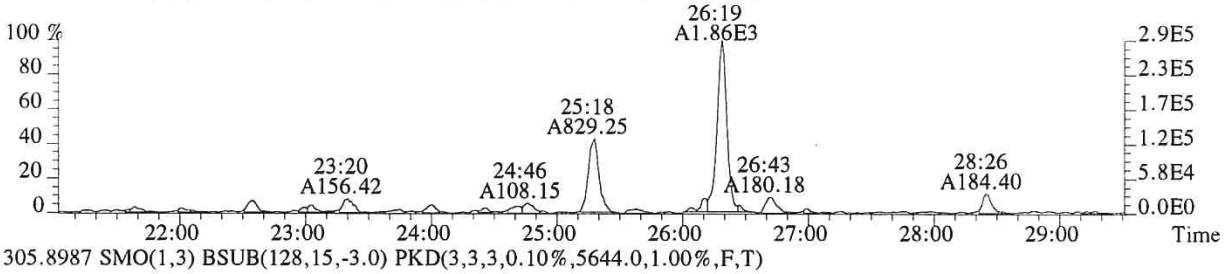
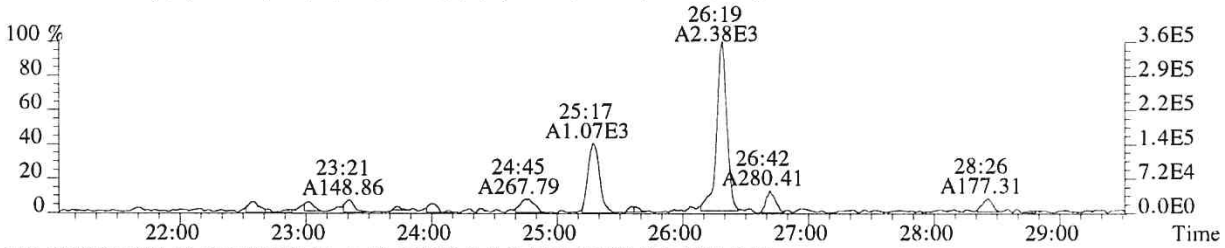
File:P616146 #1-602 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-015

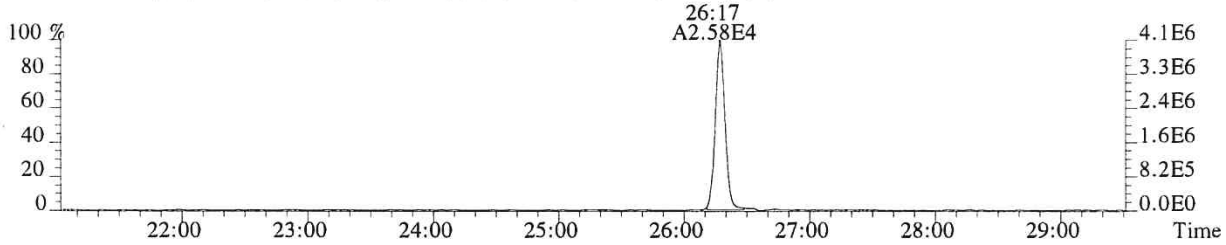
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2344.0,1.00%,F,T)



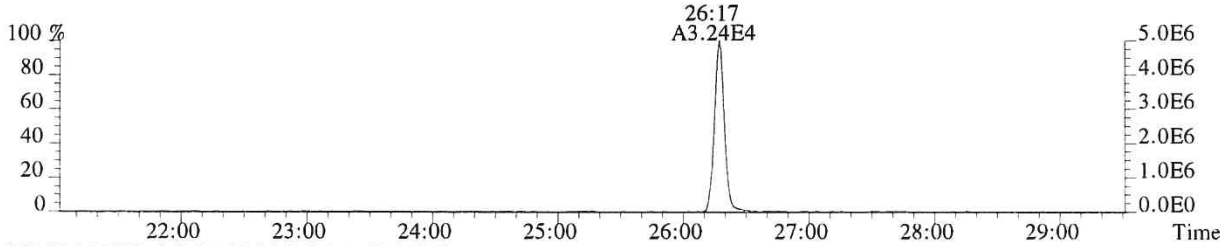
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5644.0,1.00%,F,T)



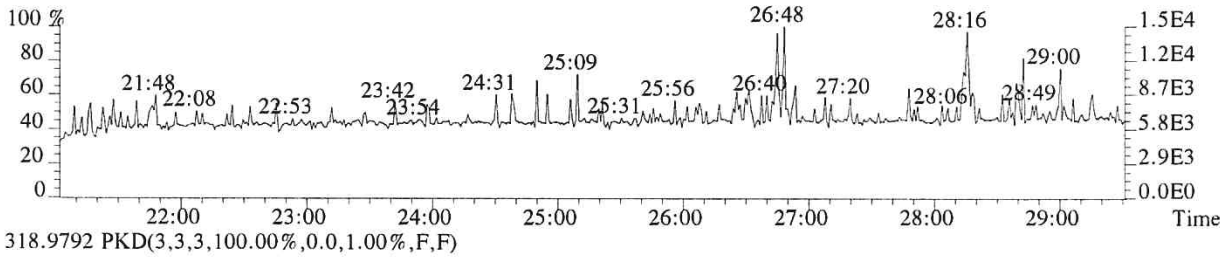
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,22004.0,1.00%,F,T)



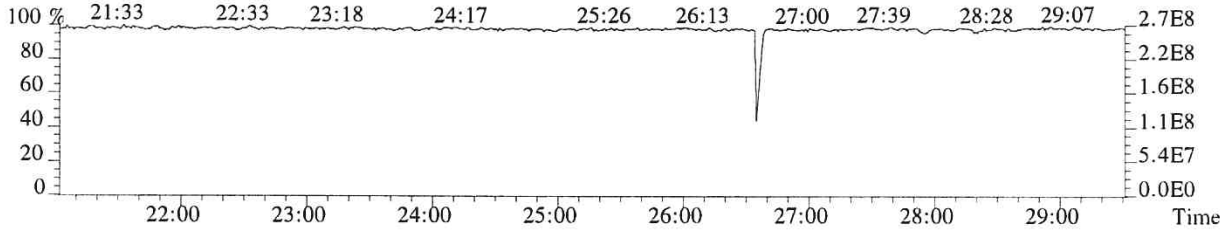
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8020.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

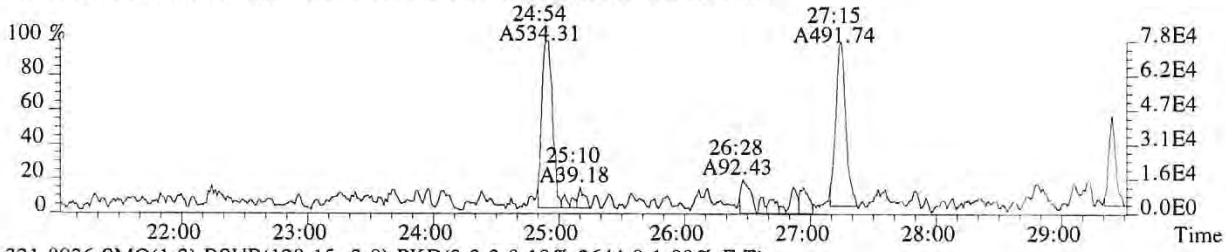


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

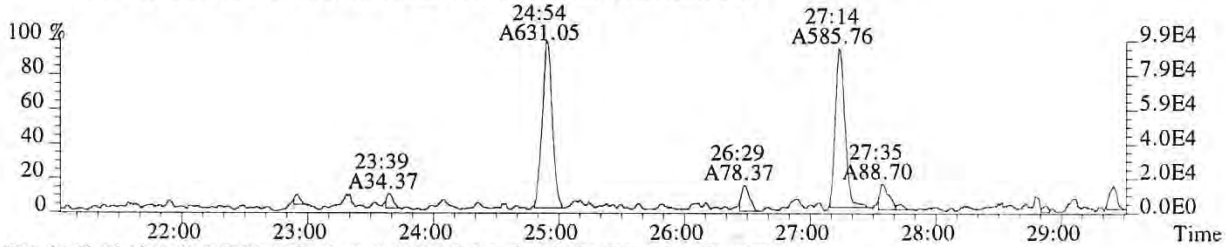


059194

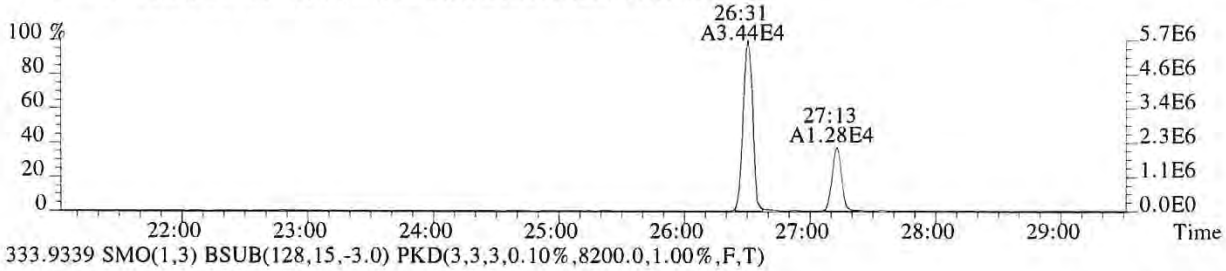
File:P616146 #1-602 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-015
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6384.0,1.00%,F,T)



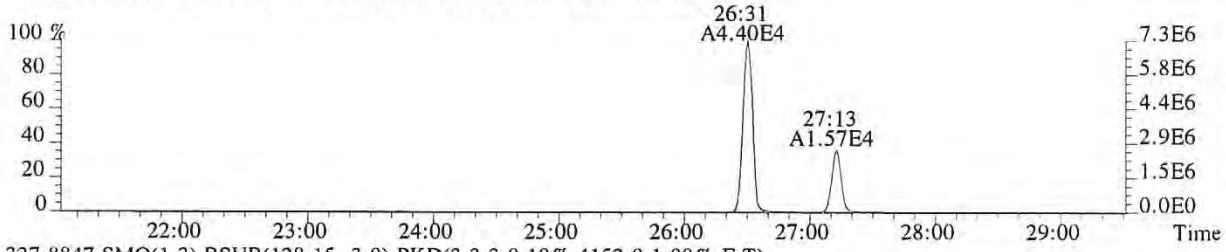
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3644.0,1.00%,F,T)



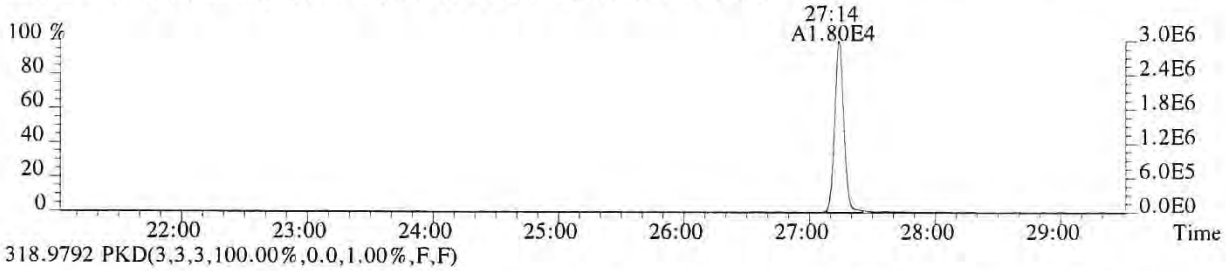
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,20092.0,1.00%,F,T)



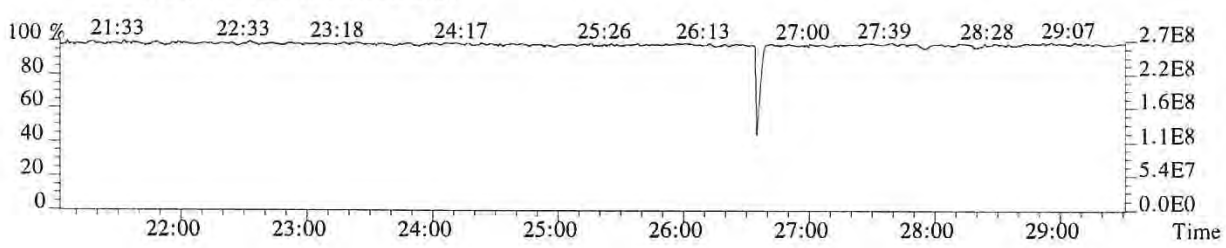
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8200.0,1.00%,F,T)



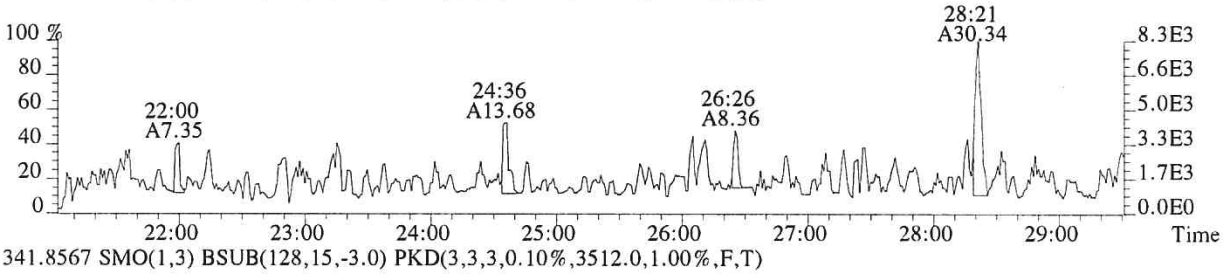
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4152.0,1.00%,F,T)



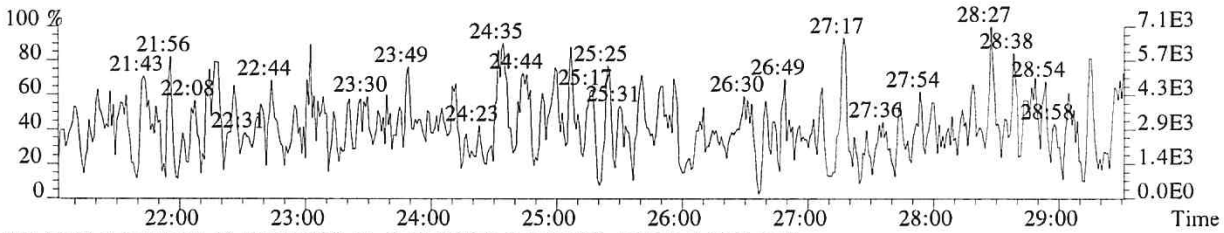
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



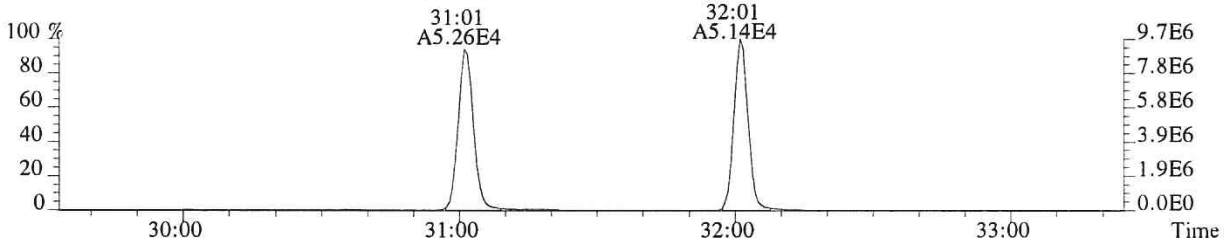
File:P616146 #1-602 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-015
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1856.0,1.00%,F,T)



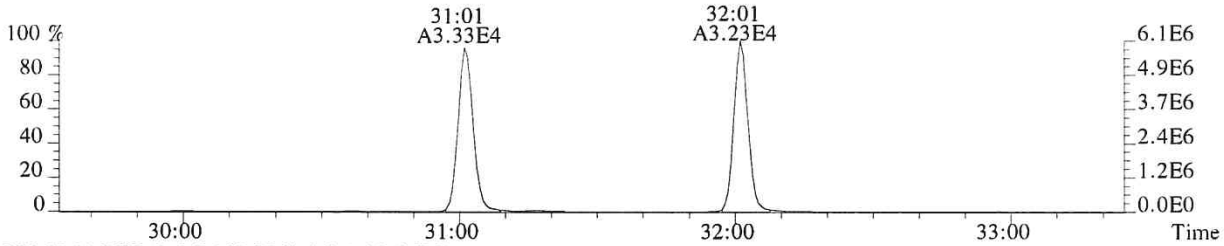
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3512.0,1.00%,F,T)



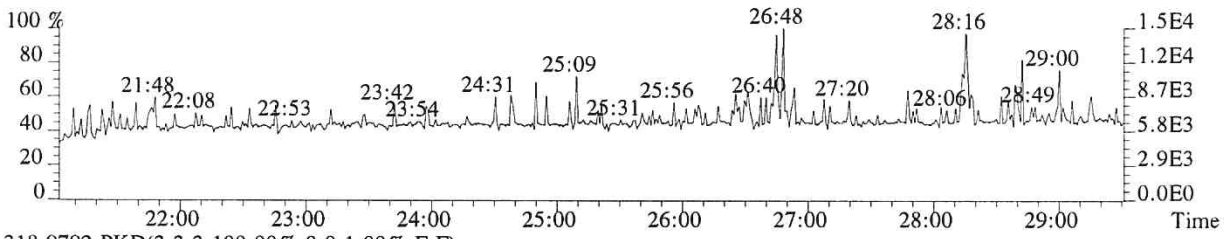
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1336.0,1.00%,F,T)



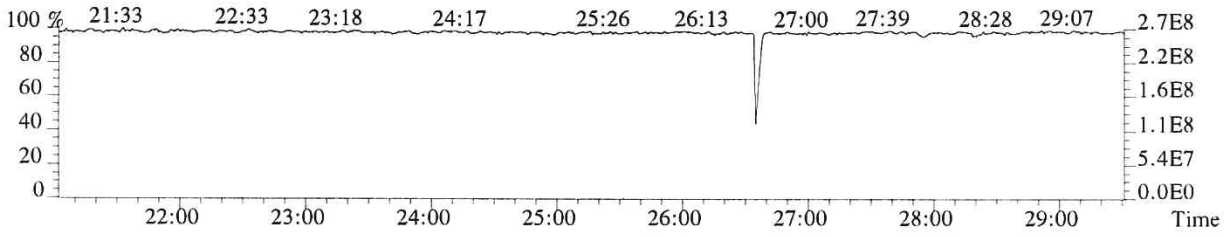
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2000.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

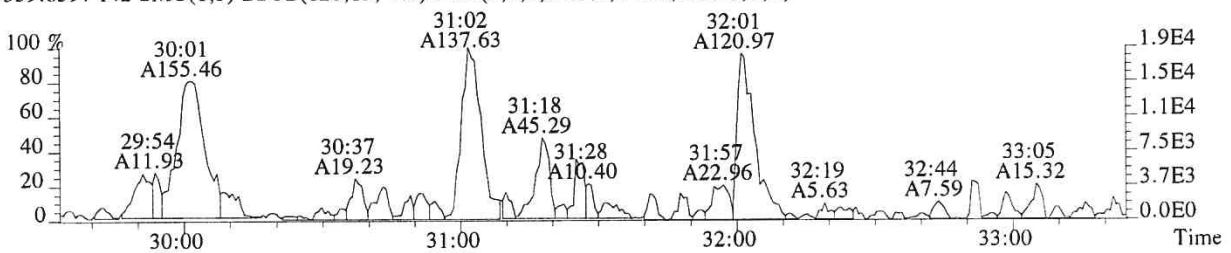


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

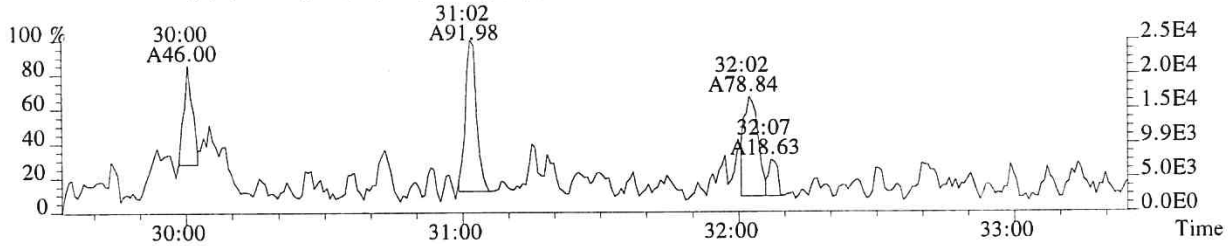


059196

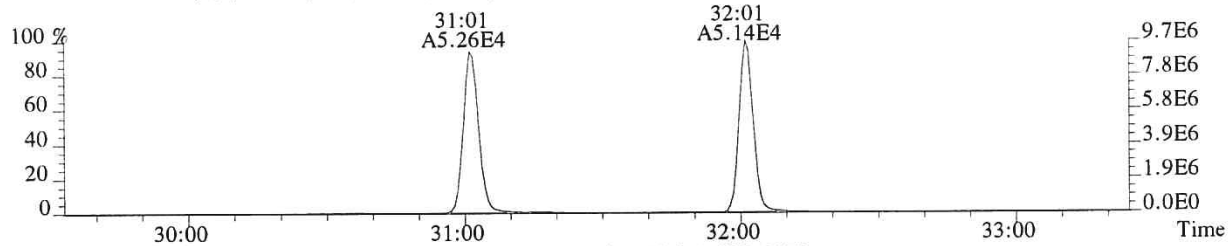
File:P616146 #1-348 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-015
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,644.0,1.00%,F,T)



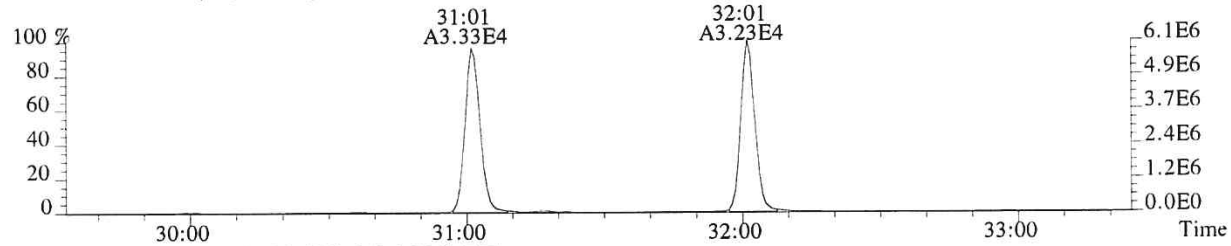
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4408.0,1.00%,F,T)



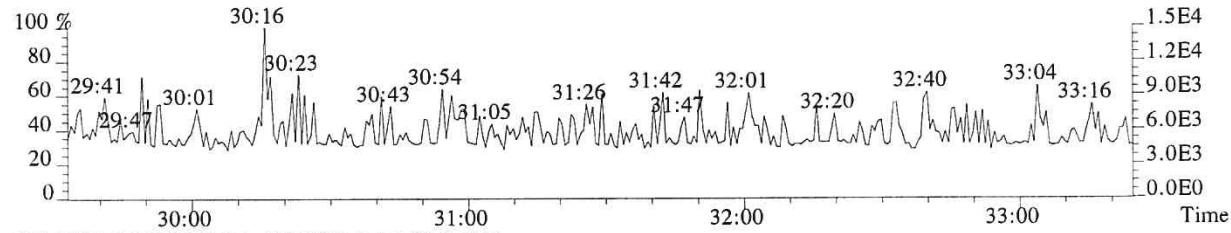
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1336.0,1.00%,F,T)



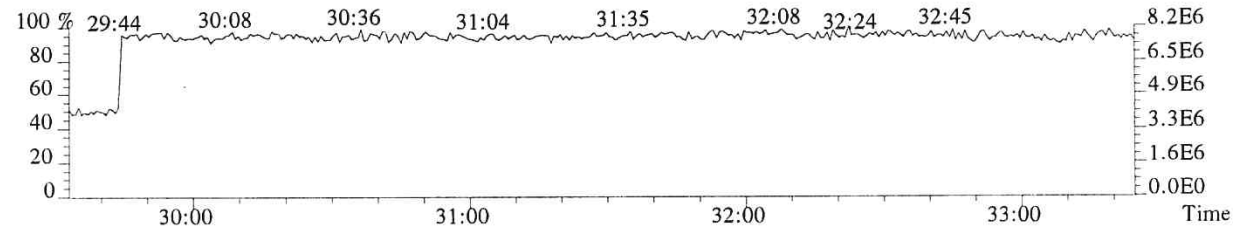
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2000.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

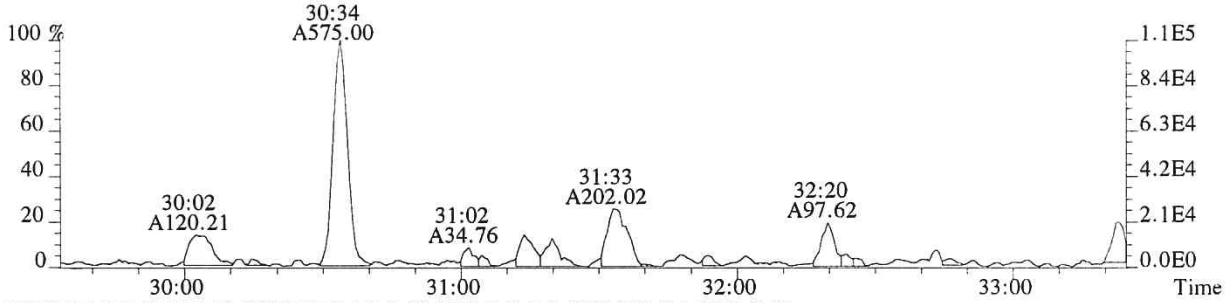


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

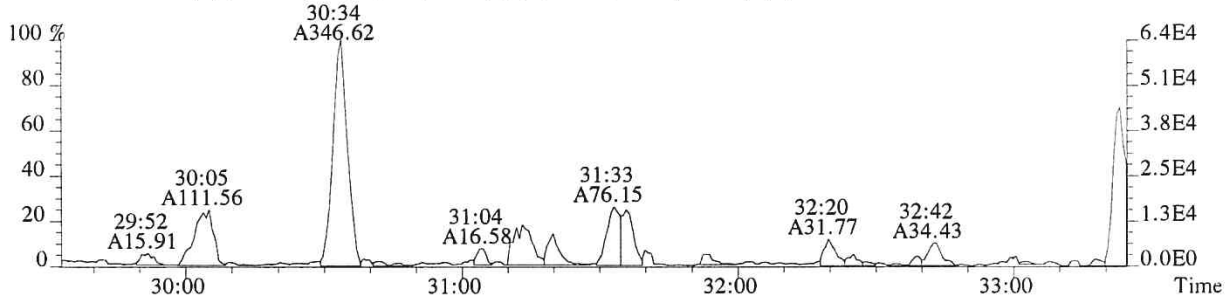


059197

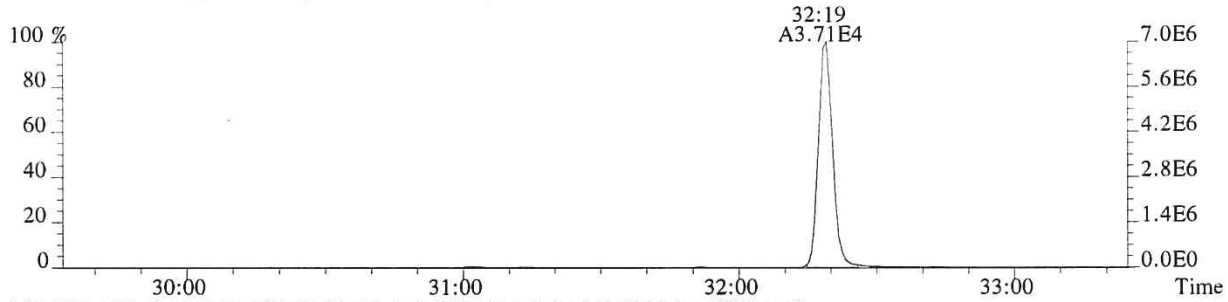
File:P616146 #1-348 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-015
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2076.0,1.00%,F,T)



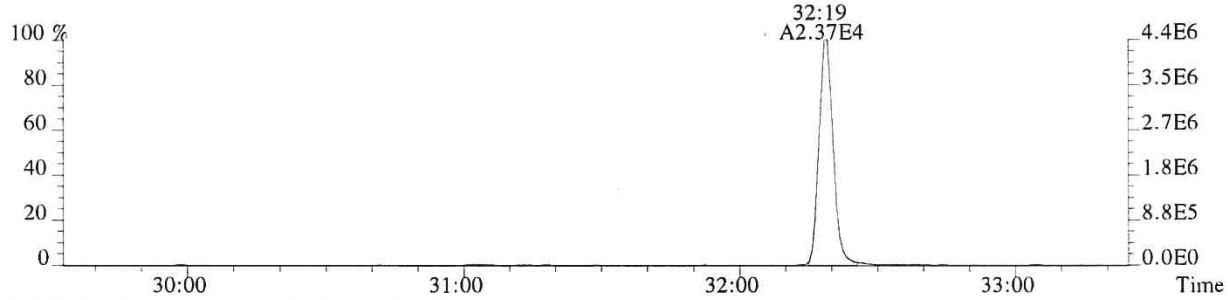
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,848.0,1.00%,F,T)



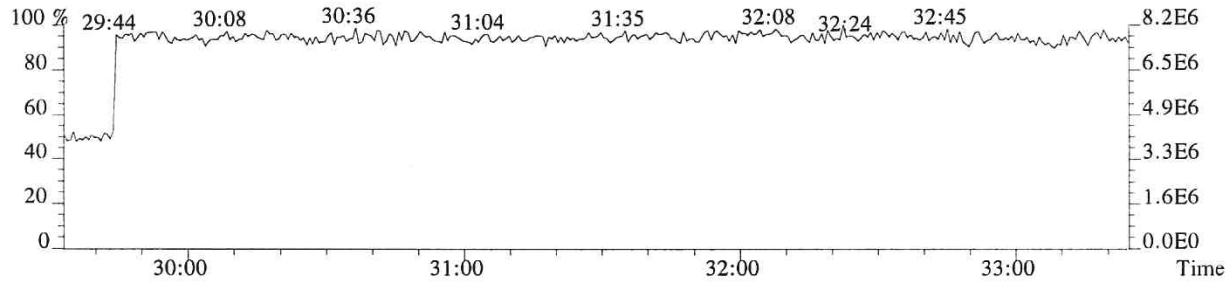
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2744.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3292.0,1.00%,F,T)

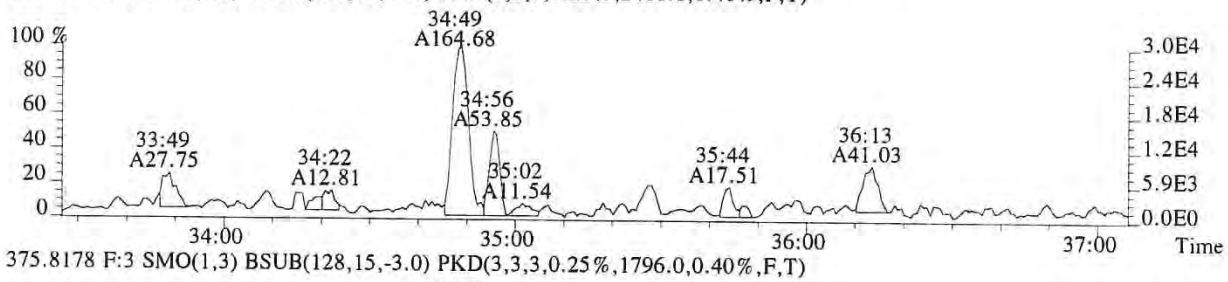


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

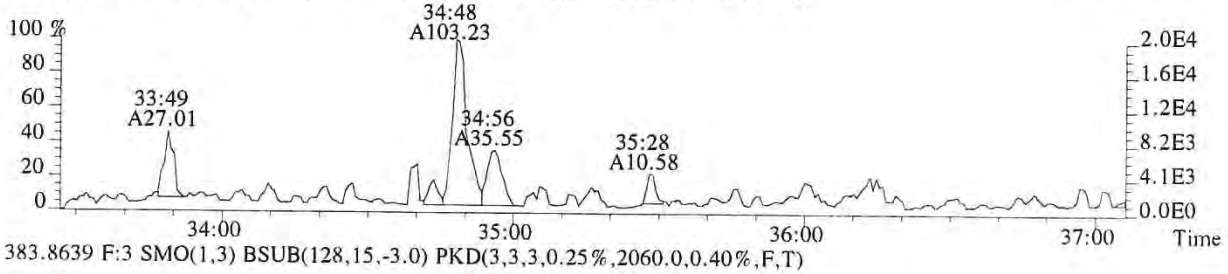


059198

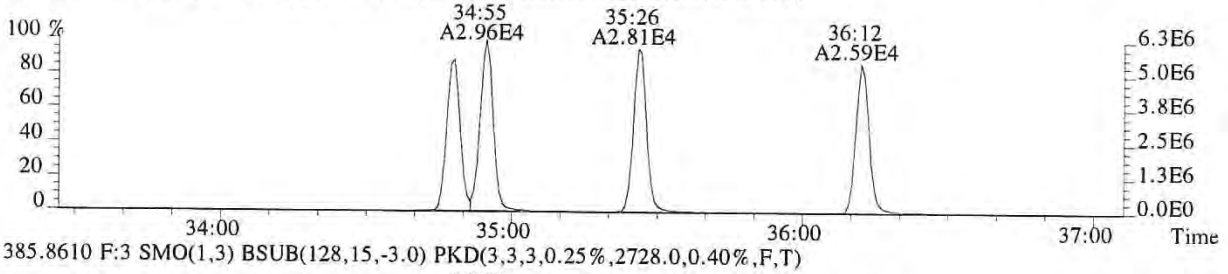
File:P616146 #1-330 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-015
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2468.0,0.40%,F,T)



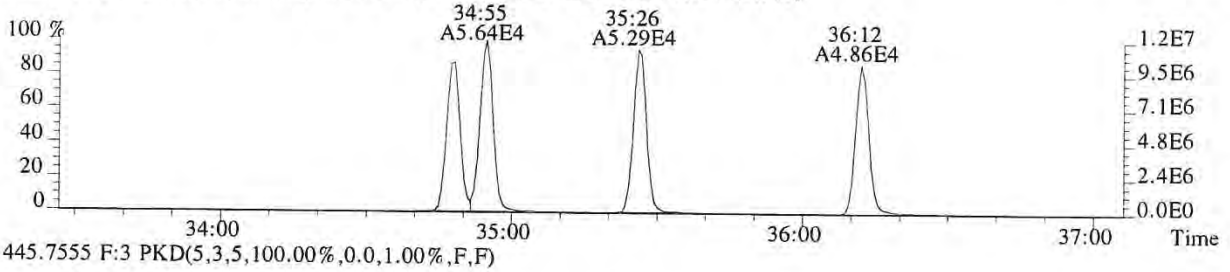
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1796.0,0.40%,F,T)



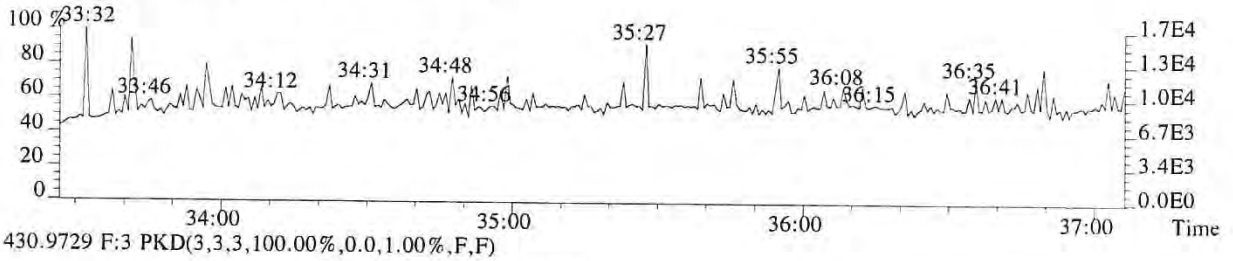
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2060.0,0.40%,F,T)



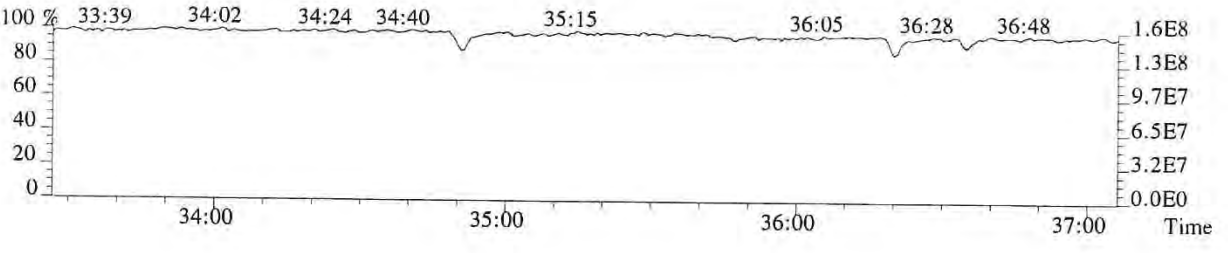
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2728.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

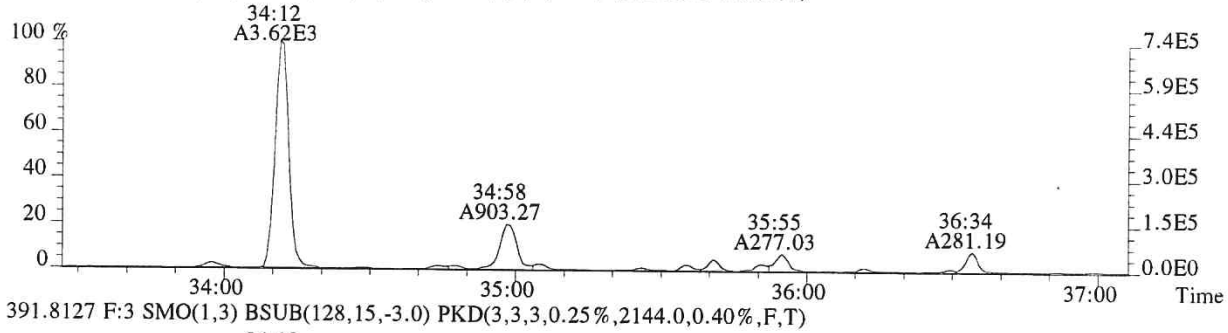


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

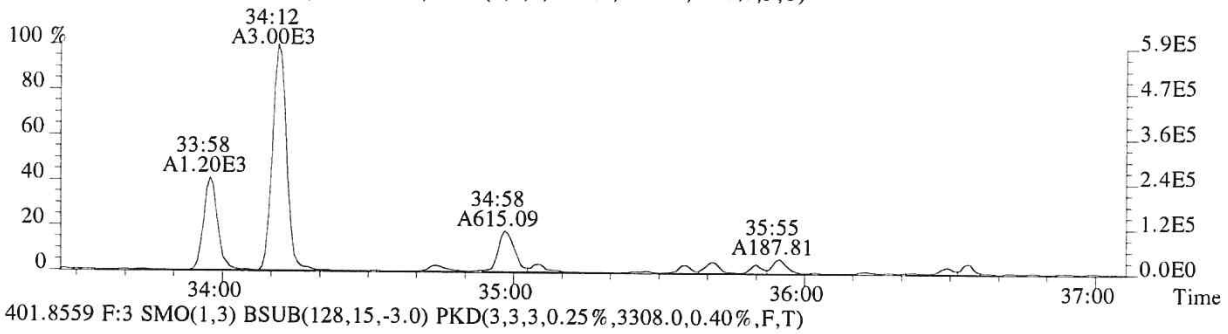


059199

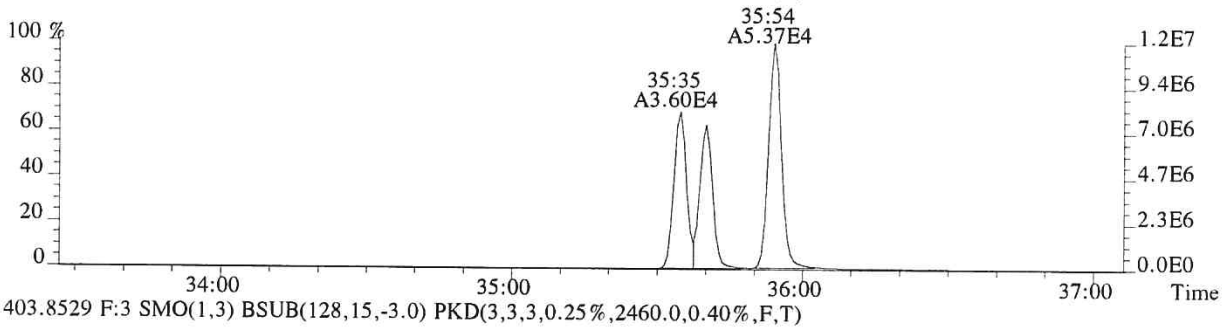
File:P616146 #1-330 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-015
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1784.0,0.40%,F,T)



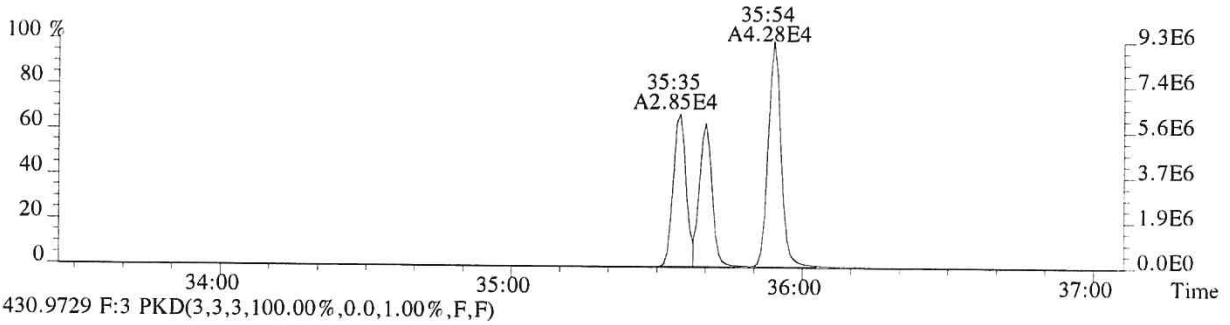
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2144.0,0.40%,F,T)



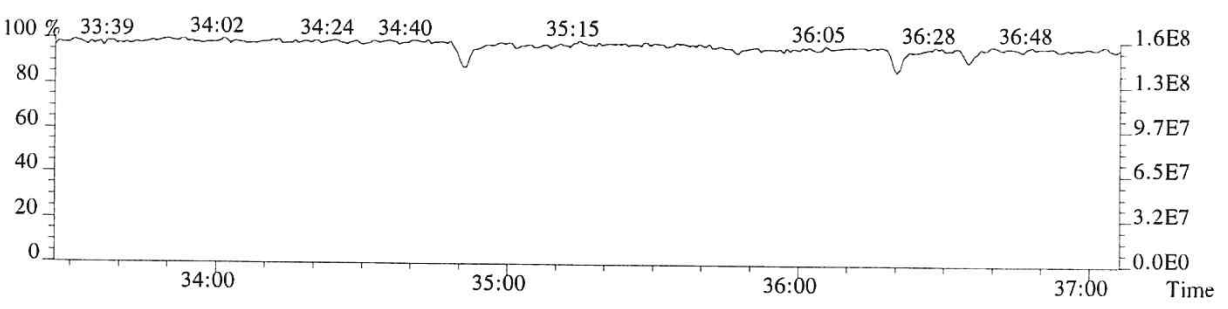
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3308.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2460.0,0.40%,F,T)



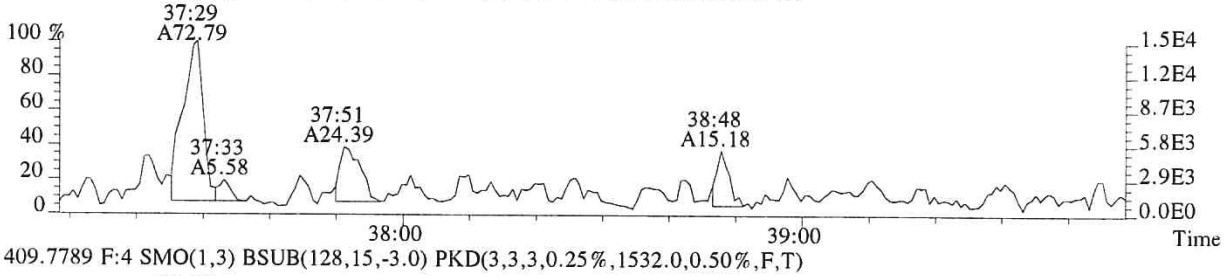
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



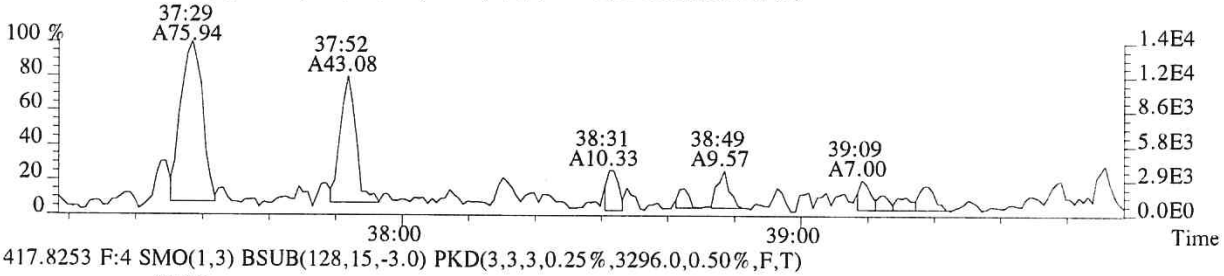
059200

File:P616146 #1-241 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-015

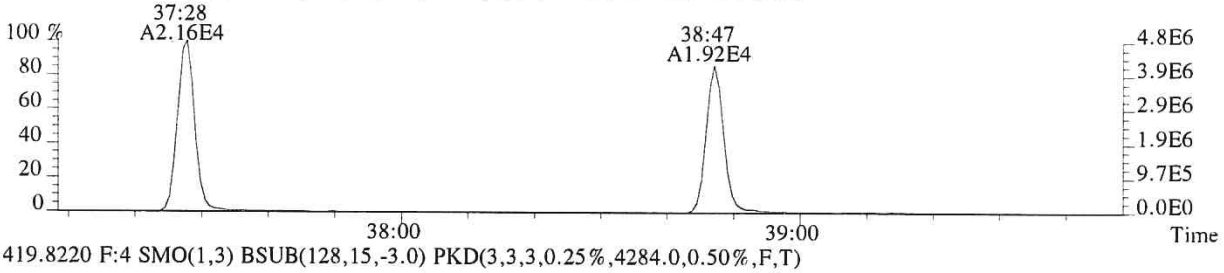
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1968.0,0.50%,F,T)



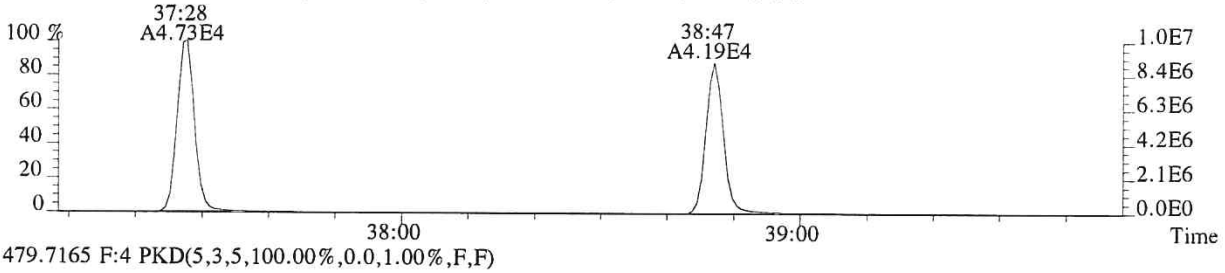
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1532.0,0.50%,F,T)



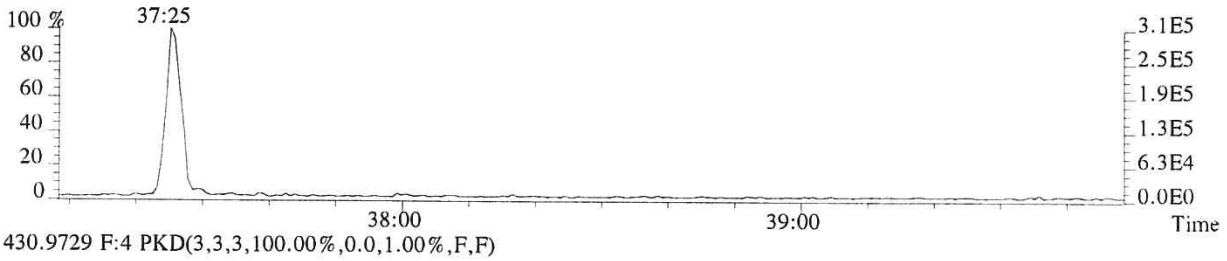
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3296.0,0.50%,F,T)



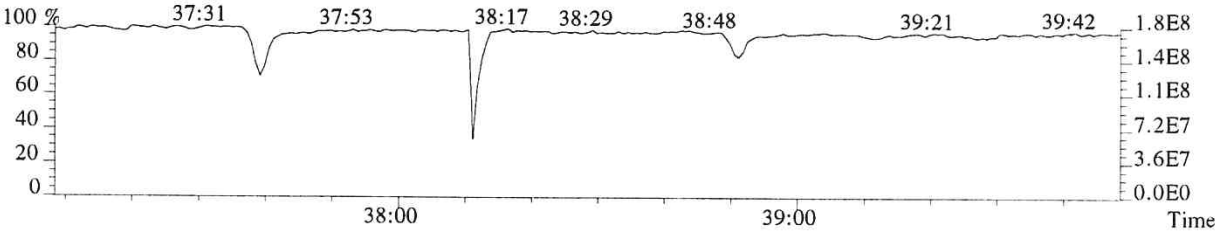
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4284.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

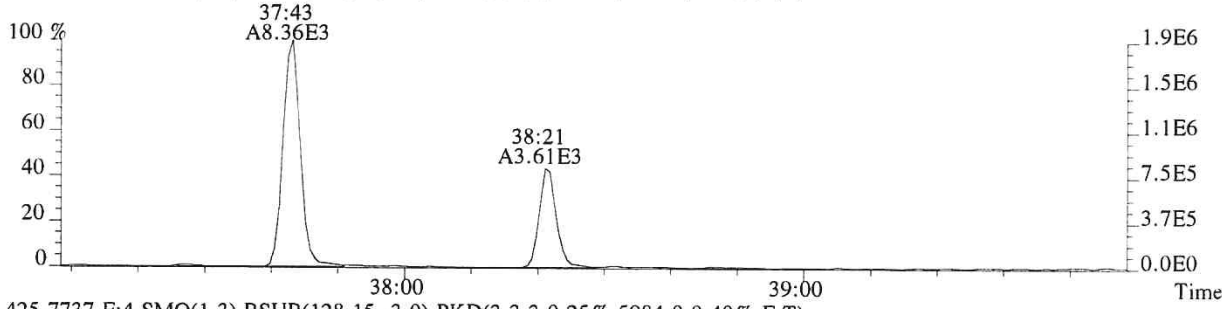


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

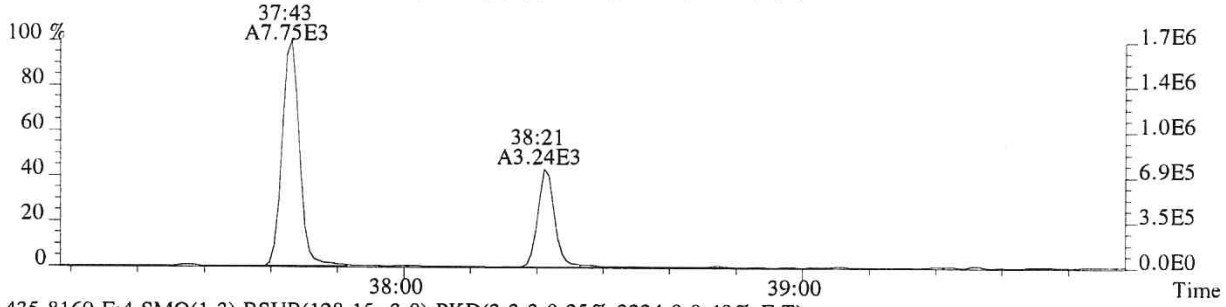


059201

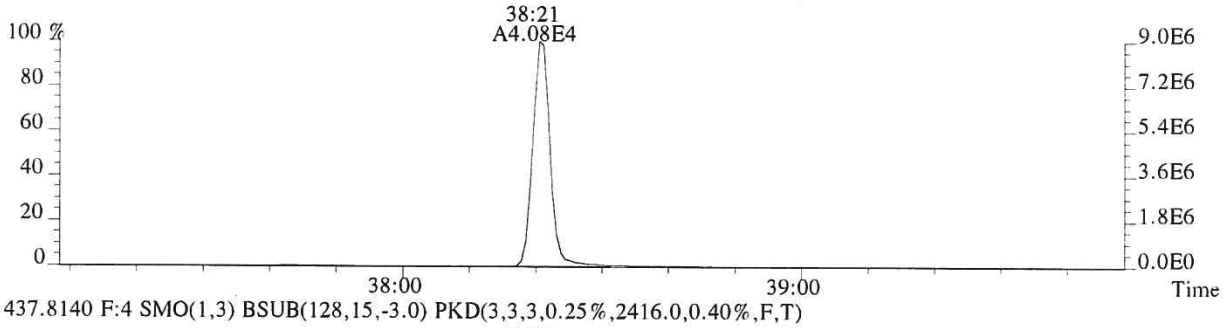
File:P616146 #1-241 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-015
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7452.0,0.40%,F,T)



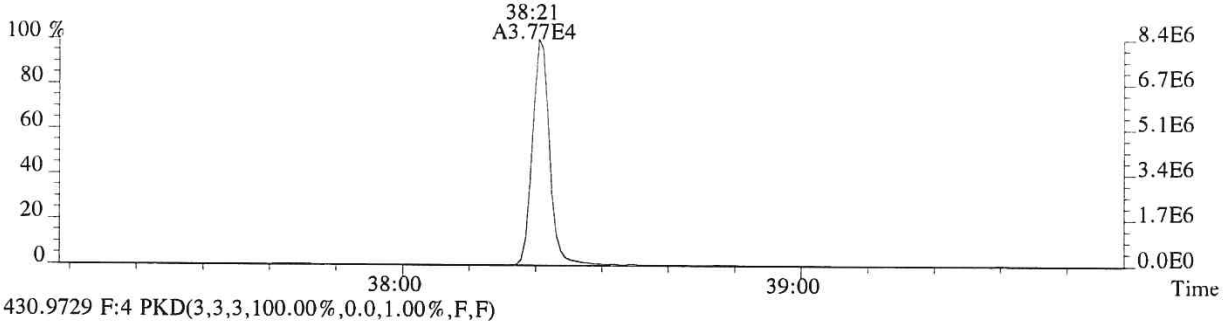
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5984.0,0.40%,F,T)



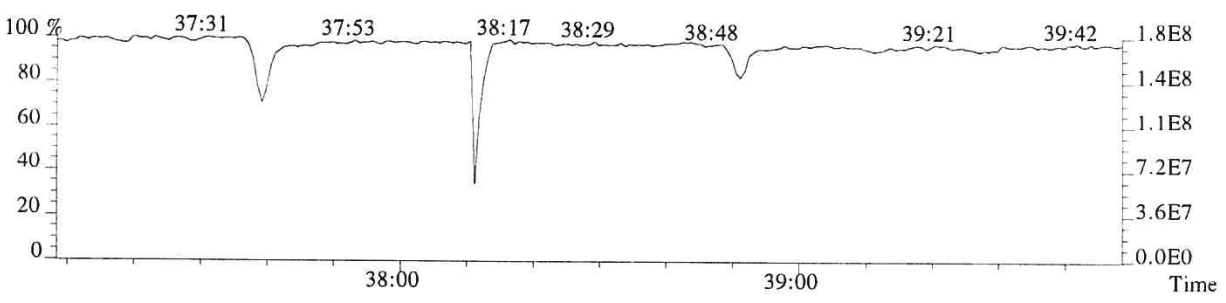
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3224.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2416.0,0.40%,F,T)



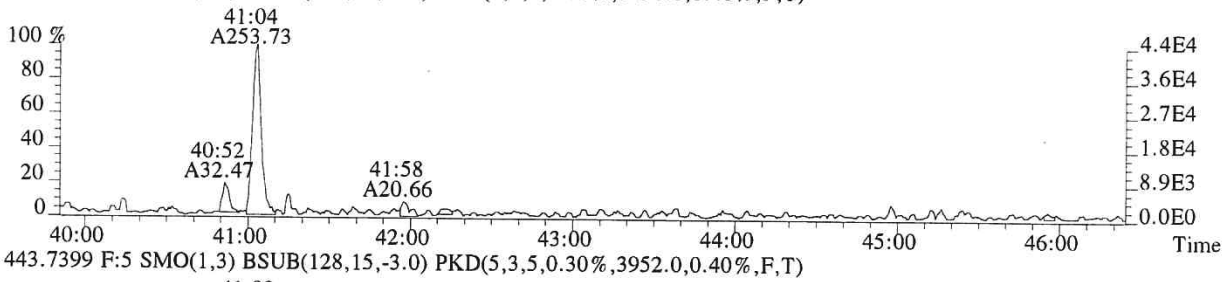
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



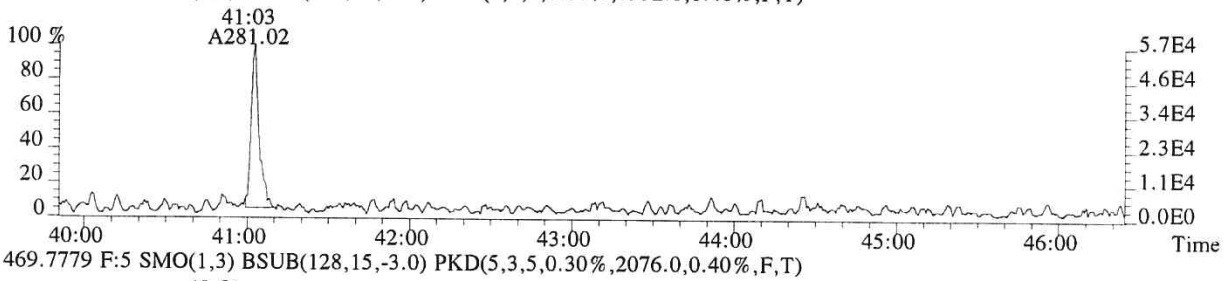
059202

File:P616146 #1-591 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-015

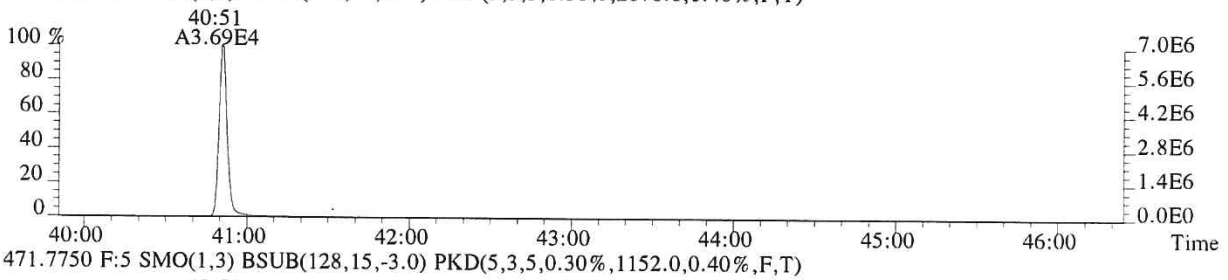
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1496.0,0.40%,F,T)



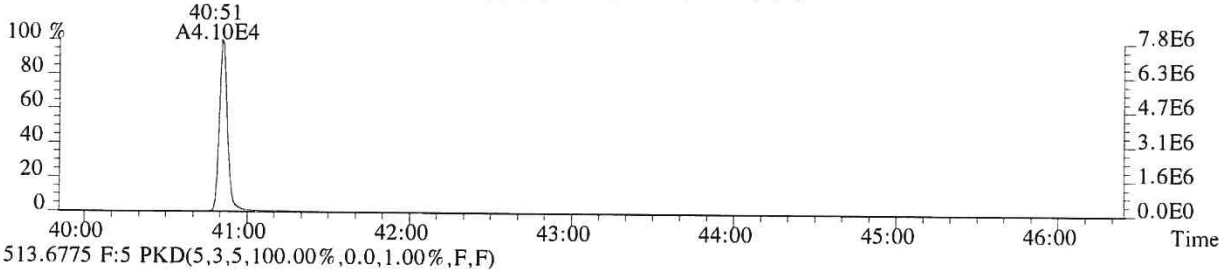
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3952.0,0.40%,F,T)



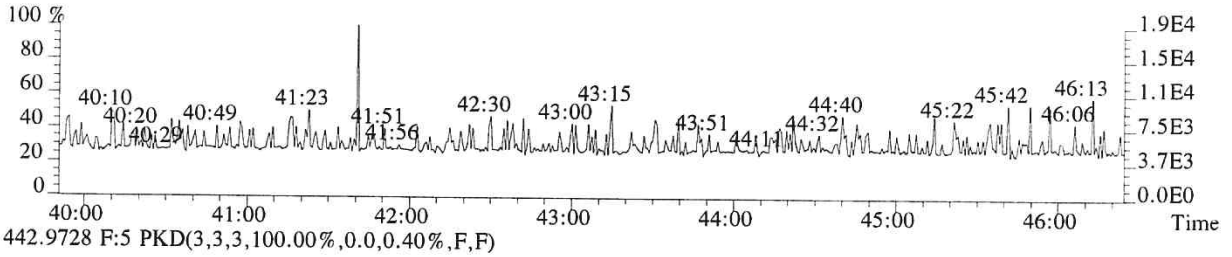
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2076.0,0.40%,F,T)



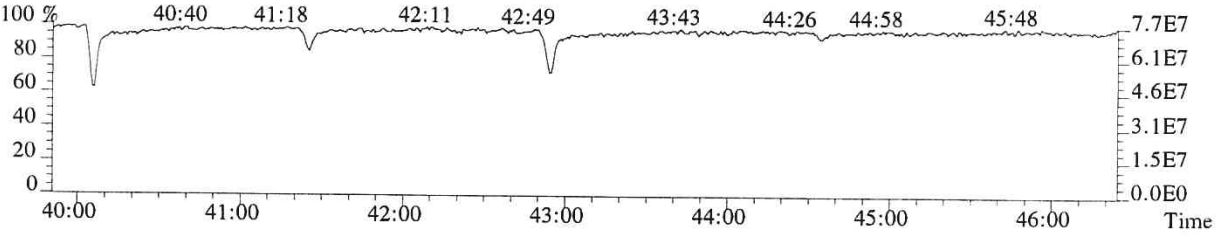
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1152.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

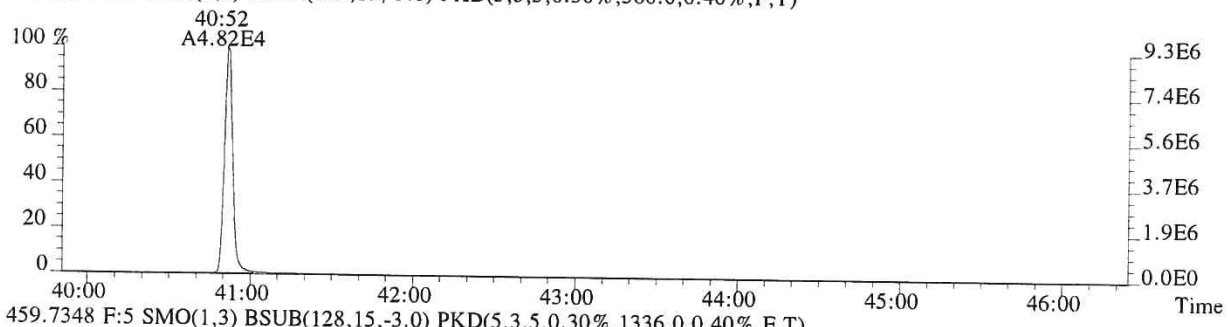


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

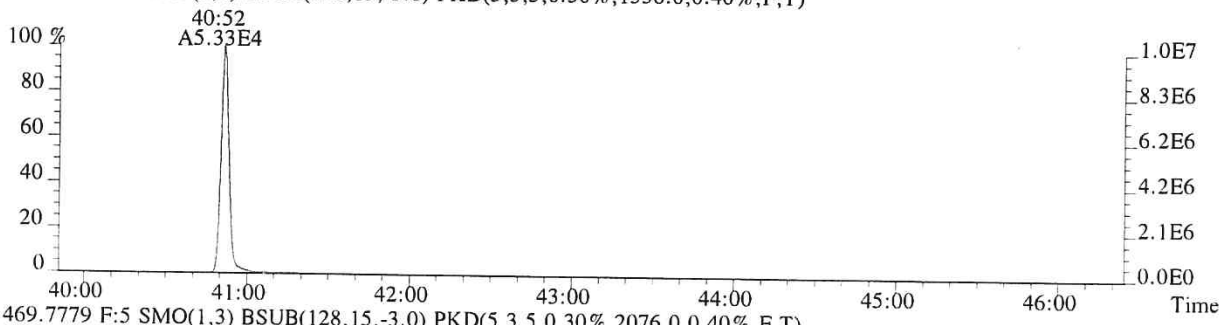


059203

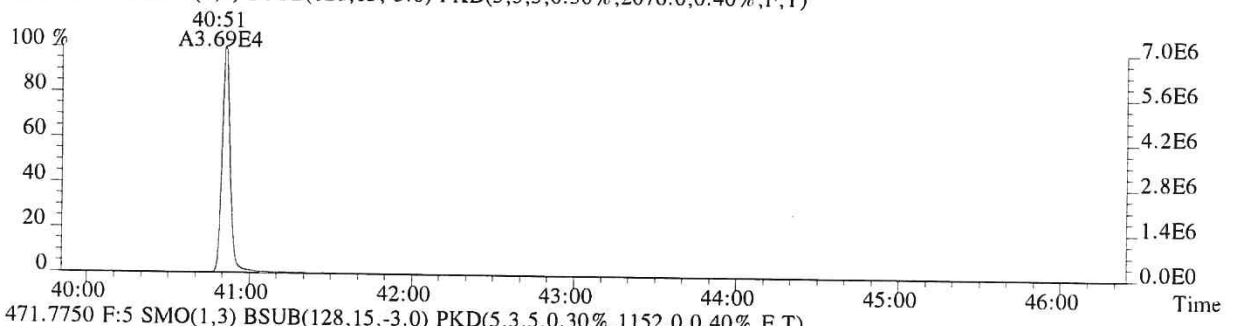
File:P616146 #1-591 Acq:20-DEC-2018 17:10:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-015
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,560.0,0.40%,F,T)



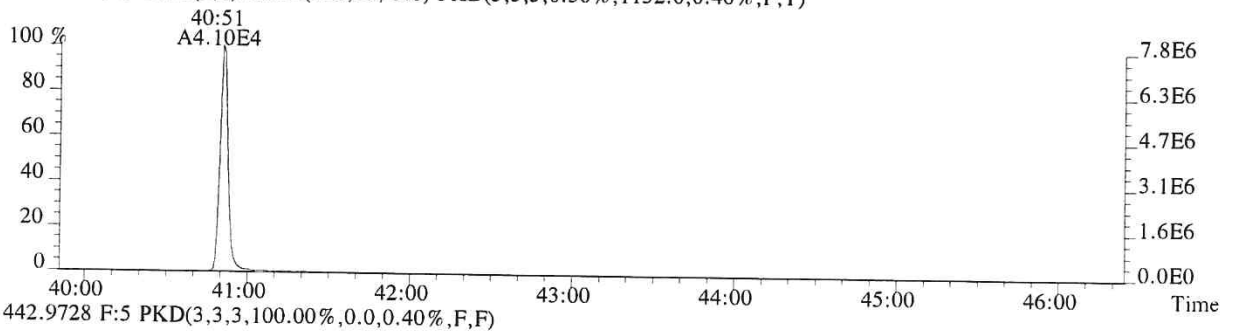
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1336.0,0.40%,F,T)



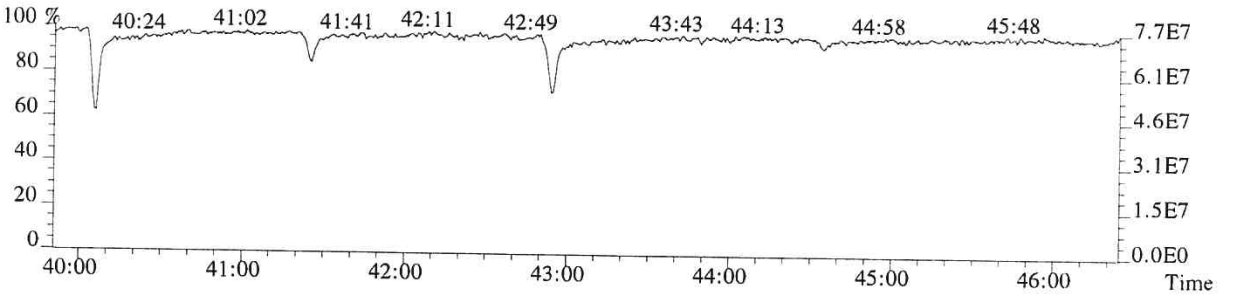
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2076.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1152.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0233

Run #12 Filename P616147 Samp: 1 Inj: 1 Acquired: 20-DEC-18 17:59:51
Processed: 24-DEC-18 10:52:14 Sample ID: E1801096-016

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:19	2.713e+04	3.388e+04	0.80	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	1.721e+03	1.100e+03	1.56	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	1.440e+03	9.793e+02	1.47	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:49	2.863e+03	2.353e+03	1.22	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	8.343e+02	6.927e+02	1.20	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	3.182e+02	2.325e+02	1.37	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:15	1.822e+02	2.227e+02	0.82	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:29	3.294e+03	3.306e+03	1.00	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:48	4.480e+02	3.256e+02	1.38	no	no	1.463
10	Unk	OCDF	41:03	4.403e+03	4.845e+03	0.91	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:15	6.603e+03	8.417e+03	0.78	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	2.598e+02	1.816e+02	1.43	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	1.584e+02	1.289e+02	1.23	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	5.079e+02	3.777e+02	1.34	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	3.559e+02	2.550e+02	1.40	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:22	1.221e+04	1.166e+04	1.05	yes	no	1.112
17	Unk	OCDD	40:52	9.951e+04	1.102e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:17	3.605e+04	4.510e+04	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:02	6.608e+04	4.133e+04	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:02	6.397e+04	3.931e+04	1.63	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	3.039e+04	5.721e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:55	3.468e+04	6.401e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:27	3.181e+04	6.043e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:13	2.988e+04	5.631e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:28	2.320e+04	4.966e+04	0.47	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	2.013e+04	4.383e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:13	1.706e+04	2.215e+04	0.77	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:19	4.559e+04	2.932e+04	1.55	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	4.029e+04	3.139e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:40	3.882e+04	3.040e+04	1.28	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	4.175e+04	3.917e+04	1.07	yes	no	0.857
32	IS	13C-OCDD	40:52	3.436e+04	3.710e+04	0.93	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:31	4.098e+04	5.111e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	5.922e+04	4.586e+04	1.29	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:15	2.380e+04				no	1.086

$$\text{OCDD} = \frac{(9.951e+04 + 1.102e+05) \times 4000\ \text{pg} \times 1}{(3.436e+04 + 3.710e+04) \times 10\ \text{g} \times 83.2/100 \times 1.157} = 1219.4372\ \text{ng/kg}$$

LG 12/20/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0233

Run #12 Filename P616147 Samp: 1 Inj: 1 Acquired: 20-DEC-18 17:59:51
Processed: 24-DEC-18 10:52:14 LAB. ID: E1801096-016

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.89e+06	1.49e+03	2.6e+03	4.90e+06	8.32e+03	5.9e+02
2	1,2,3,7,8-PeCDF	2.90e+05	2.70e+03	1.1e+02	1.96e+05	6.02e+03	3.2e+01
3	2,3,4,7,8-PeCDF	2.41e+05	2.70e+03	8.9e+01	1.64e+05	6.02e+03	2.7e+01
4	1,2,3,4,7,8-HxCDF	6.30e+05	4.42e+03	1.4e+02	5.07e+05	3.40e+03	1.5e+02
5	1,2,3,6,7,8-HxCDF	1.73e+05	4.42e+03	3.9e+01	1.43e+05	3.40e+03	4.2e+01
6	2,3,4,6,7,8-HxCDF	6.26e+04	4.42e+03	1.4e+01	5.21e+04	3.40e+03	1.5e+01
7	1,2,3,7,8,9-HxCDF	3.12e+04	4.42e+03	7.0e+00	4.48e+04	3.40e+03	1.3e+01
8	1,2,3,4,6,7,8-HpCDF	7.69e+05	4.31e+03	1.8e+02	7.58e+05	2.83e+03	2.7e+02
9	1,2,3,4,7,8,9-HpCDF	9.28e+04	4.31e+03	2.2e+01	7.31e+04	2.83e+03	2.6e+01
10	OCDF	8.09e+05	1.12e+03	7.2e+02	9.12e+05	3.90e+03	2.3e+02
11	2,3,7,8-TCDD	1.10e+06	5.33e+03	2.1e+02	1.39e+06	2.34e+03	5.9e+02
12	1,2,3,7,8-PeCDD	5.03e+04	2.47e+03	2.0e+01	2.74e+04	9.92e+02	2.8e+01
13	1,2,3,4,7,8-HxCDD	3.84e+04	1.60e+03	2.4e+01	2.57e+04	1.67e+03	1.5e+01
14	1,2,3,6,7,8-HxCDD	1.15e+05	1.60e+03	7.2e+01	8.27e+04	1.67e+03	5.0e+01
15	1,2,3,7,8,9-HxCDD	7.43e+04	1.60e+03	4.7e+01	5.44e+04	1.67e+03	3.3e+01
16	1,2,3,4,6,7,8-HpCDD	2.79e+06	1.24e+04	2.3e+02	2.64e+06	1.31e+04	2.0e+02
17	OCDD	1.98e+07	6.40e+02	3.1e+04	2.19e+07	7.68e+02	2.9e+04
18	13C-2,3,7,8-TCDF	5.45e+06	1.83e+04	3.0e+02	6.95e+06	1.08e+04	6.4e+02
19	13C-1,2,3,7,8-PeCDF	1.15e+07	1.47e+03	7.8e+03	7.22e+06	1.72e+03	4.2e+03
20	13C-2,3,4,7,8-PeCDF	1.22e+07	1.47e+03	8.3e+03	7.42e+06	1.72e+03	4.3e+03
21	13C-1,2,3,4,7,8-HxCDF	6.73e+06	2.22e+03	3.0e+03	1.25e+07	3.55e+03	3.5e+03
22	13C-1,2,3,6,7,8-HxCDF	7.34e+06	2.22e+03	3.3e+03	1.33e+07	3.55e+03	3.8e+03
23	13C-2,3,4,6,7,8-HxCDF	6.84e+06	2.22e+03	3.1e+03	1.31e+07	3.55e+03	3.7e+03
24	13C-1,2,3,7,8,9-HxCDF	6.34e+06	2.22e+03	2.9e+03	1.18e+07	3.55e+03	3.3e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.34e+06	2.45e+03	2.2e+03	1.14e+07	4.61e+03	2.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.47e+06	2.45e+03	1.8e+03	9.74e+06	4.61e+03	2.1e+03
27	13C-2,3,7,8-TCDD	2.92e+06	1.86e+04	1.6e+02	3.72e+06	6.82e+03	5.5e+02
28	13C-1,2,3,7,8-PeCDD	8.83e+06	1.84e+03	4.8e+03	5.60e+06	3.51e+03	1.6e+03
29	13C-1,2,3,4,7,8-HxCDD	9.10e+06	3.44e+03	2.6e+03	7.07e+06	2.18e+03	3.2e+03
30	13C-1,2,3,6,7,8-HxCDD	8.18e+06	3.44e+03	2.4e+03	6.51e+06	2.18e+03	3.0e+03
31	13C-1,2,3,4,6,7,8-HpCDD	9.56e+06	2.61e+03	3.7e+03	8.77e+06	1.02e+03	8.6e+03
32	13C-OCDD	6.86e+06	1.48e+03	4.6e+03	7.51e+06	1.19e+03	6.3e+03
33	13C-1,2,3,4-TCDD	6.68e+06	1.86e+04	3.6e+02	8.38e+06	6.82e+03	1.2e+03
34	13C-1,2,3,7,8,9-HxCDD	1.25e+07	3.44e+03	3.6e+03	9.87e+06	2.18e+03	4.5e+03
35	37Cl-2,3,7,8-TCDD	4.02e+06	3.78e+03	1.1e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (5.328e{+}03 + 2.340e{+}03) \times 2000}{(2.919e{+}06 + 3.722e{+}06) \times (\quad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0233

Entry: 36 Totals Name: Total Tetra-Furans

Run: 12 File: P616147 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 17:59:51 Processed: 24-DEC-18 10:52:14

Mass: 303.9020 305.8990 Tot Response: 1.10e+05 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:34	2.43e+02	2.80e+02	0.87	yes	5.23e+02		n	n
2	23:03	2.97e+02	3.51e+02	0.85	yes	6.48e+02		n	n
3	23:19	1.12e+03	1.50e+03	0.75	yes	2.62e+03		n	n
4	24:01	9.82e+02	1.28e+03	0.77	yes	2.26e+03		n	n
5	24:46	1.98e+03	2.66e+03	0.75	yes	4.64e+03		n	n
6	25:17	1.11e+04	1.43e+04	0.78	yes	2.54e+04		n	n
7	25:37	5.45e+02	7.71e+02	0.71	yes	1.32e+03		n	n
8	26:04	2.37e+02	2.69e+02	0.88	yes	5.06e+02		n	n
9	26:19	2.71e+04	3.39e+04	0.80	yes	6.10e+04	2,3,7,8-TCDF	n	n
10	26:42	2.21e+03	2.70e+03	0.82	yes	4.90e+03		n	n
11	26:59	3.94e+02	4.57e+02	0.86	yes	8.51e+02		n	n
12	28:26	2.24e+03	2.62e+03	0.86	yes	4.86e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0233

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 12 File: P616147 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 17:59:51 Processed: 24-DEC-18 10:52:14

Mass: 319.8970 321.8940 Tot Response: 1.66e+04 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:54	7.25e+01	9.68e+01	0.75	yes	1.69e+02		n	n
2	27:15	6.60e+03	8.42e+03	0.78	yes	1.50e+04	2,3,7,8-TCDD	n	n
3	27:35	6.31e+02	7.56e+02	0.83	yes	1.39e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0233

ntry: 39 Totals Name: Total Penta-Furans2

un: 12 File: P616147 Sample:1 Injection:1 Function:2

cquired: 20-DEC-18 17:59:51 Processed: 24-DEC-18 10:52:14

Mass: 339.8600 341.8570 Tot Response: 8.26e+03 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
								n	n
1	30:02	1.09e+03	6.59e+02	1.65	yes	1.75e+03		n	n
2	30:51	1.88e+02	1.12e+02	1.69	yes	3.00e+02		n	n
3	31:02	1.72e+03	1.10e+03	1.56	yes	2.82e+03	1,2,3,7,8-PeCDF	n	n
4	31:18	5.64e+02	4.05e+02	1.39	yes	9.69e+02		n	n
5	32:02	1.44e+03	9.79e+02	1.47	yes	2.42e+03	2,3,4,7,8-PeCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0233

ntry: 40 Totals Name: Total Penta-Dioxins

un: 12 File: P616147 Sample:1 Injection:1 Function:2

cquired: 20-DEC-18 17:59:51 Processed: 24-DEC-18 10:52:14

lass: 355.8550 357.8520 Tot Response: 9.91e+02 RRF: 0.9288

	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
	30:03	2.00e+02	1.31e+02	1.53	yes	3.31e+02		n	n
	31:14	1.31e+02	8.81e+01	1.48	yes	2.19e+02		n	n
	32:20	2.60e+02	1.82e+02	1.43	yes	4.41e+02	1,2,3,7,8-PeCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0233

Entry: 41 Totals Name: Total Hexa-Furans

Run: 12 File: P616147 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 17:59:51 Processed: 24-DEC-18 10:52:14

Mass: 373.8210 375.8180 Tot Response: 1.31e+04 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:39	3.44e+02	3.06e+02	1.13	yes	6.50e+02		n	n
2	33:50	1.44e+03	1.16e+03	1.23	yes	2.60e+03		n	n
3	34:22	1.37e+03	1.20e+03	1.14	yes	2.57e+03		n	n
4	34:49	2.86e+03	2.35e+03	1.22	yes	5.22e+03	1,2,3,4,7,8-HxCDF	n	n
5	34:56	8.34e+02	6.93e+02	1.20	yes	1.53e+03	1,2,3,6,7,8-HxCDF	n	n
6	35:27	3.18e+02	2.33e+02	1.37	yes	5.51e+02	2,3,4,6,7,8-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0233

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 12 File: P616147 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 17:59:51 Processed: 24-DEC-18 10:52:14

Mass: 389.8160 391.8130 Tot Response: 9.29e+03 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:12	2.29e+03	1.88e+03	1.22	yes	4.17e+03		n	n
2	34:59	1.58e+03	1.36e+03	1.16	yes	2.94e+03		n	n
3	35:05	1.27e+02	1.14e+02	1.11	yes	2.40e+02		n	n
4	35:35	1.58e+02	1.29e+02	1.23	yes	2.87e+02	1,2,3,4,7,8-HxCDD	n	n
5	35:41	5.08e+02	3.78e+02	1.34	yes	8.86e+02	1,2,3,6,7,8-HxCDD	n	n
6	35:51	8.52e+01	7.09e+01	1.20	yes	1.56e+02		n	n
7	35:55	3.56e+02	2.55e+02	1.40	yes	6.11e+02	1,2,3,7,8,9-HxCDD	n	n

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
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Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0233

Entry: 43 Totals Name: Total Hepta-Furans

Run: 12 File: P616147 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 17:59:51 Processed: 24-DEC-18 10:52:14

Mass: 407.7820 409.7790 Tot Response: 1.69e+04 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:29	3.29e+03	3.31e+03	1.00	yes	6.60e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:44	6.01e+01	5.03e+01	1.19	yes	1.10e+02		n	n
3	37:52	5.20e+03	4.96e+03	1.05	yes	1.02e+04		n	n

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Peak List Summary

CLIENT ID.
SL0233

ntry: 44 Totals Name: Total Hepta-Dioxins

un: 12 File: P616147 Sample:1 Injection:1 Function:4

cquired: 20-DEC-18 17:59:51 Processed: 24-DEC-18 10:52:14

lass: 423.7770 425.7740 Tot Response: 5.25e+04 RRF: 1.112

	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
	37:43	1.46e+04	1.40e+04 1.04	yes	2.86e+04		n	n
2	38:22	1.22e+04	1.17e+04 1.05	yes	2.39e+04	1,2,3,4,6,7,8-HpCDD	n	n

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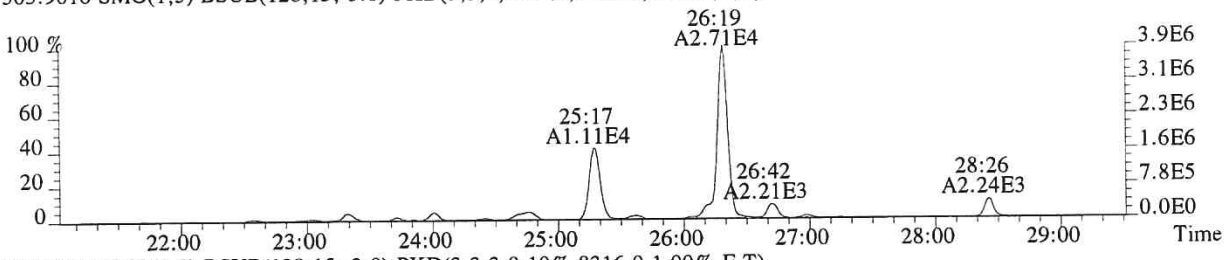
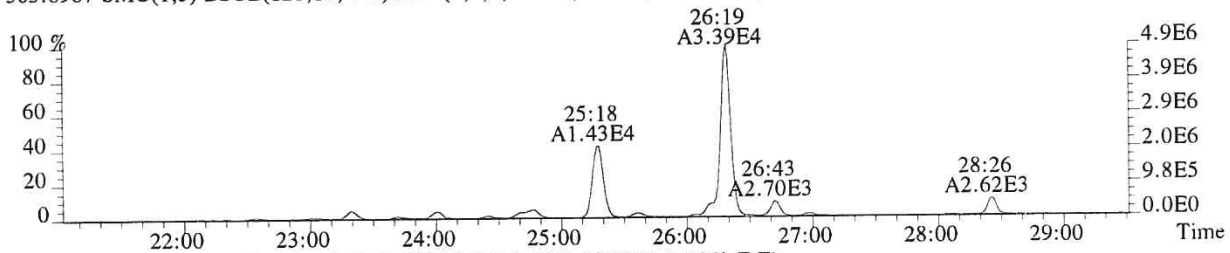
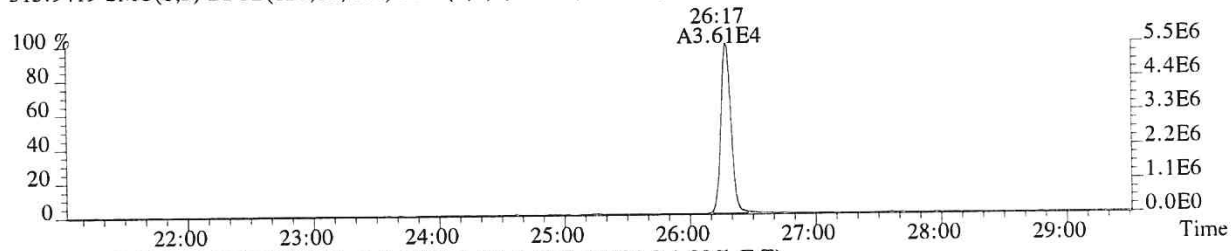
File:P616147 #1-602 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1492.0,1.00%,F,T)



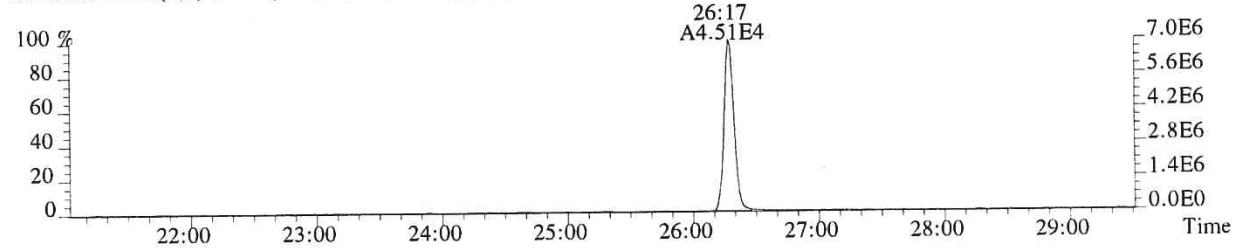
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8316.0,1.00%,F,T)



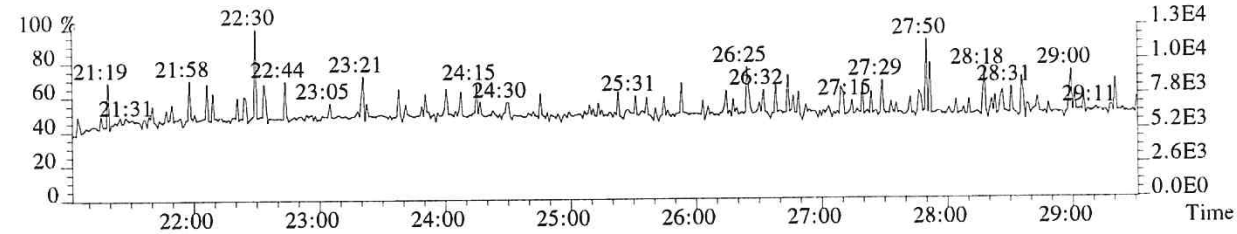
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18276.0,1.00%,F,T)



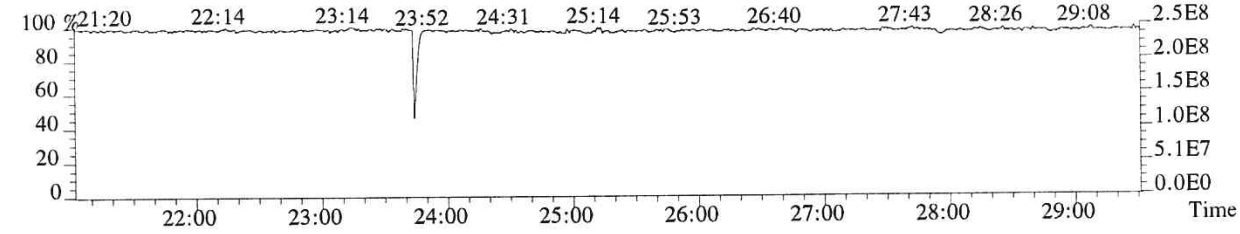
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10804.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

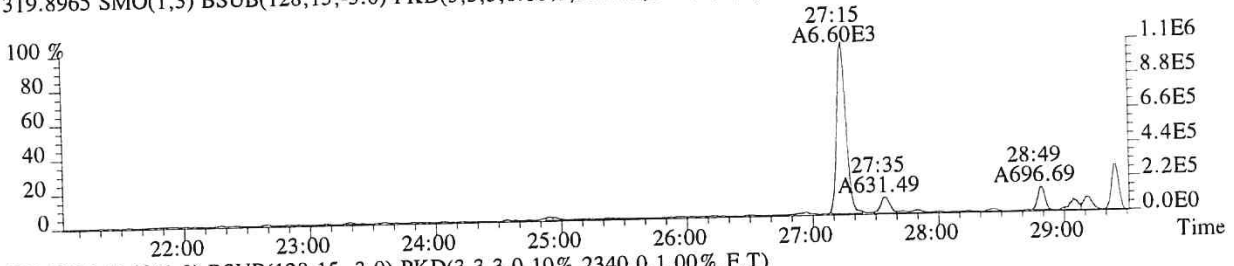


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

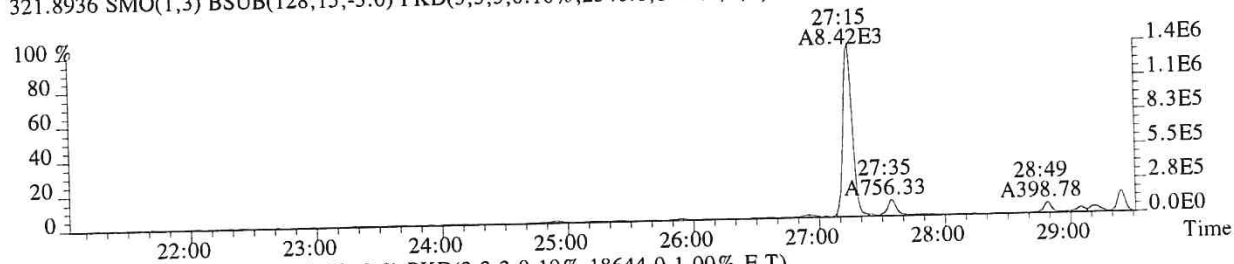


059215

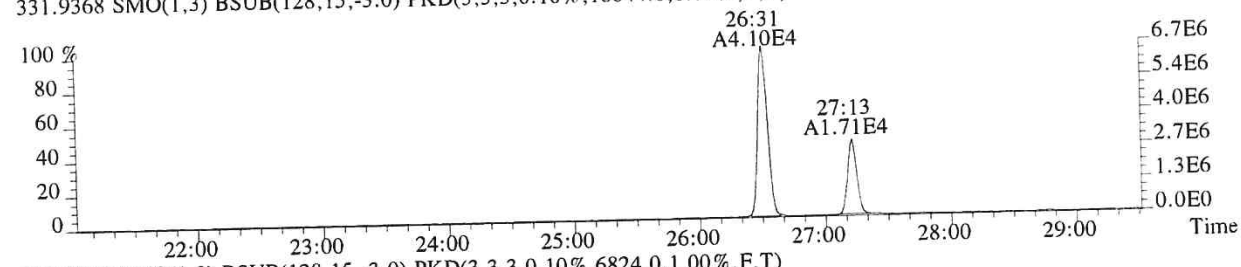
File:P616147 #1-602 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5328.0,1.00%,F,T)



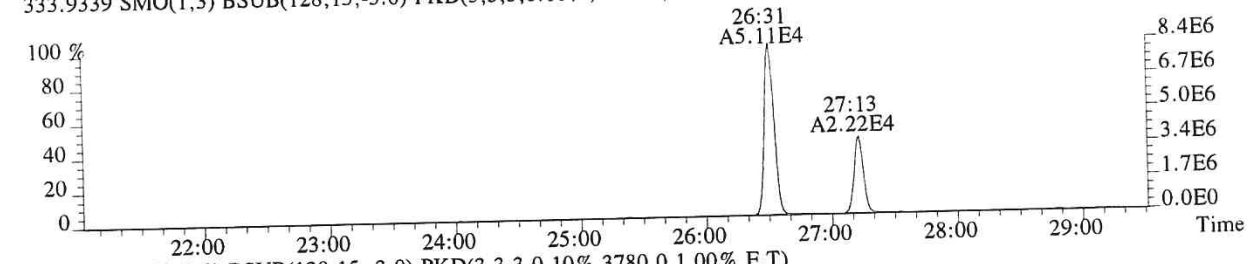
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2340.0,1.00%,F,T)



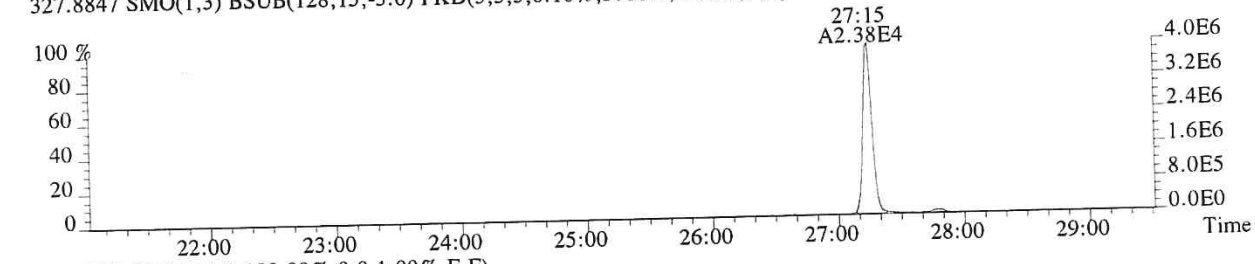
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18644.0,1.00%,F,T)



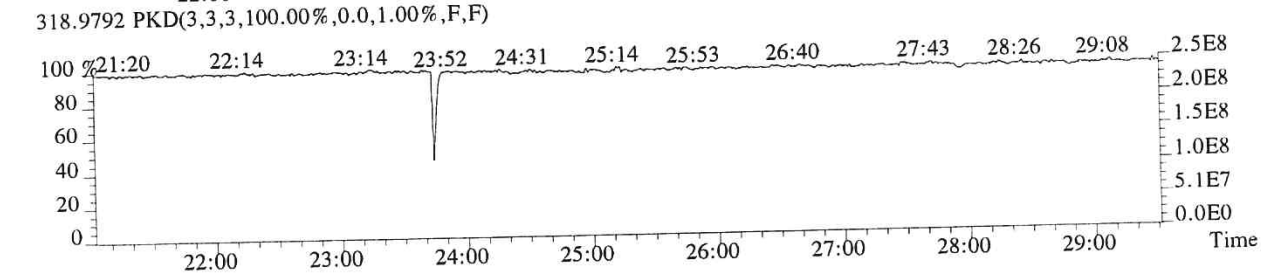
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6824.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3780.0,1.00%,F,T)

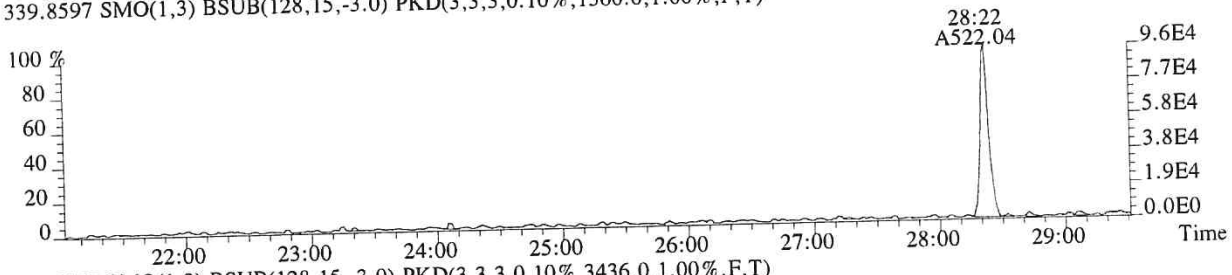


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

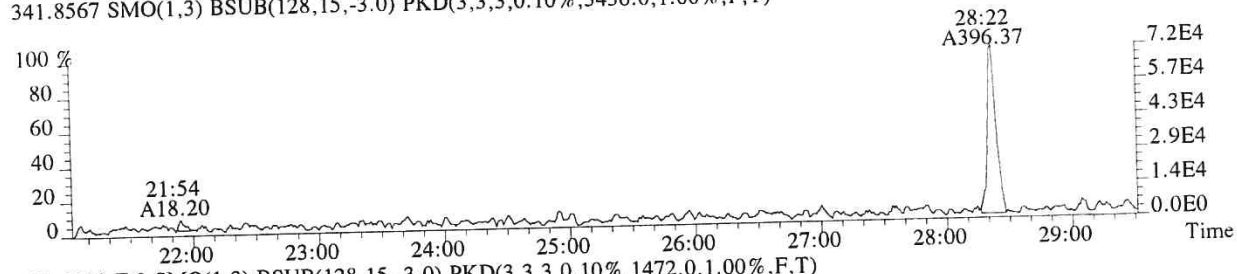


059216

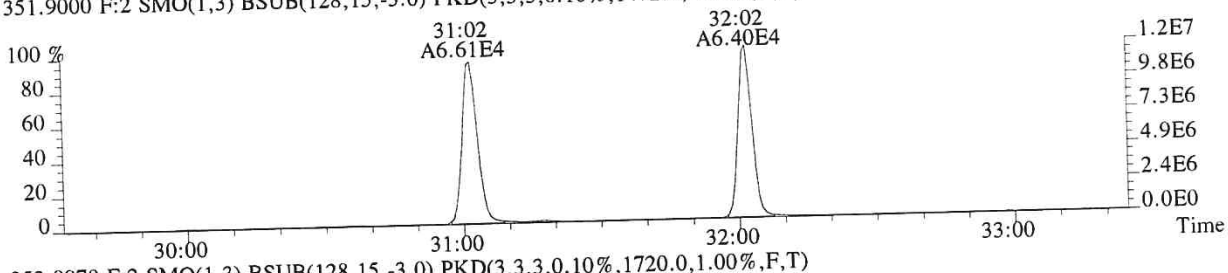
File:P616147 #1-602 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1360.0,1.00%,F,T)



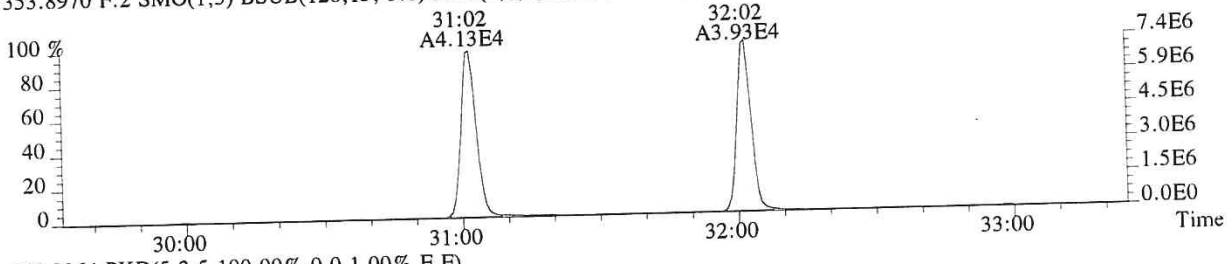
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3436.0,1.00%,F,T)



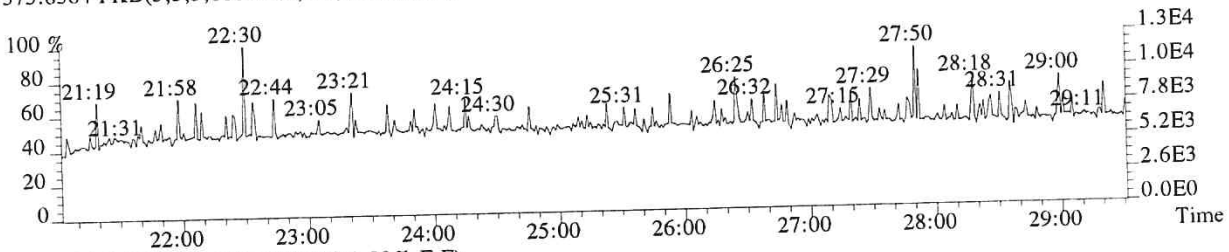
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1472.0,1.00%,F,T)



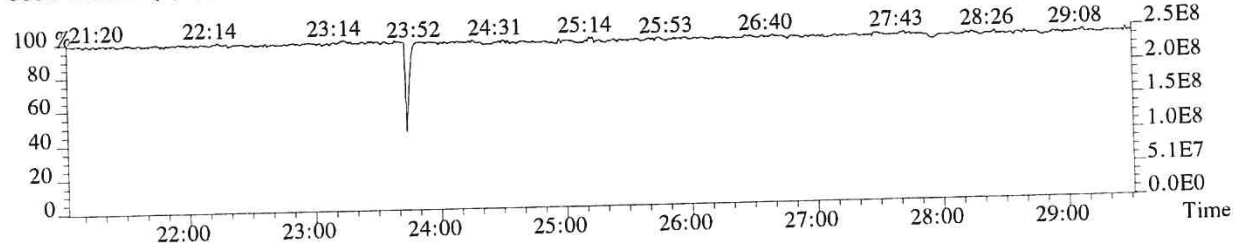
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1720.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

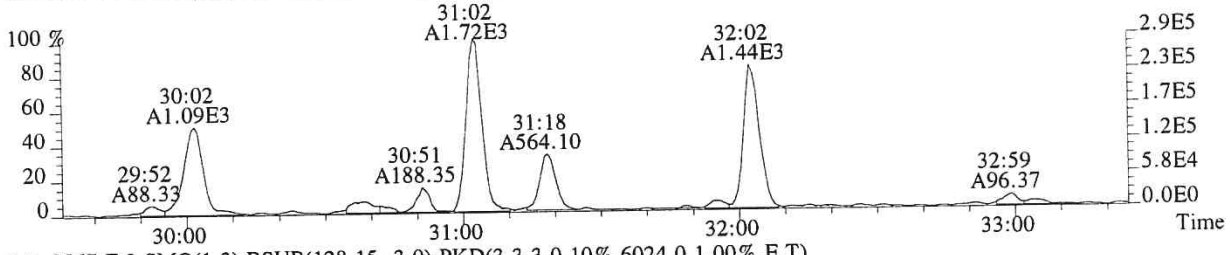


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

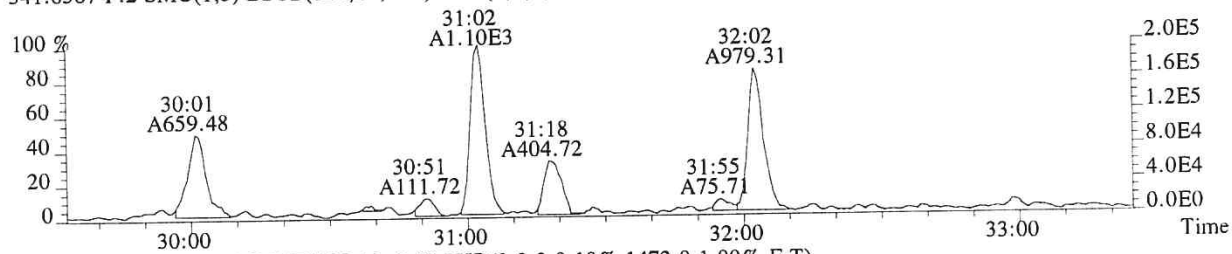


059217

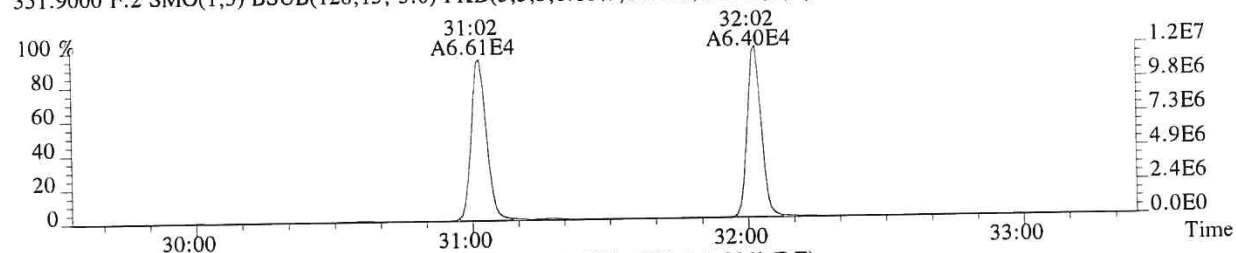
File:P616147 #1-348 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2696.0,1.00%,F,T)



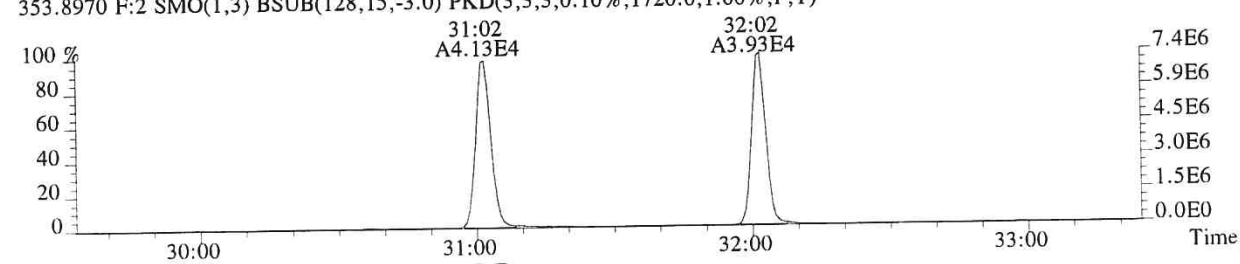
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6024.0,1.00%,F,T)



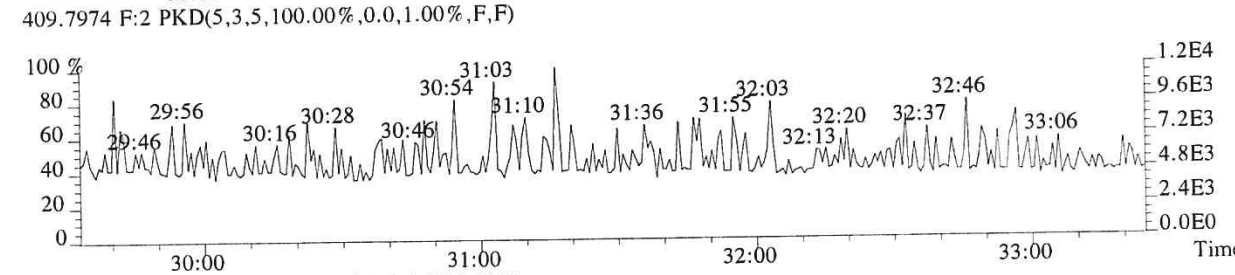
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1472.0,1.00%,F,T)



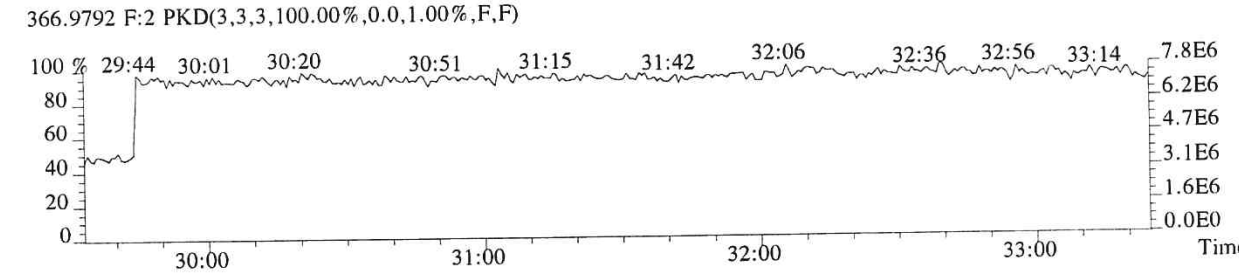
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1720.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

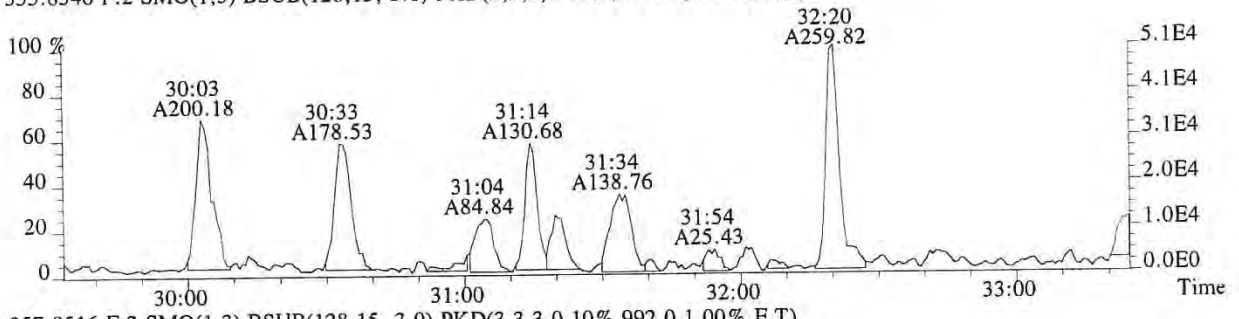


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

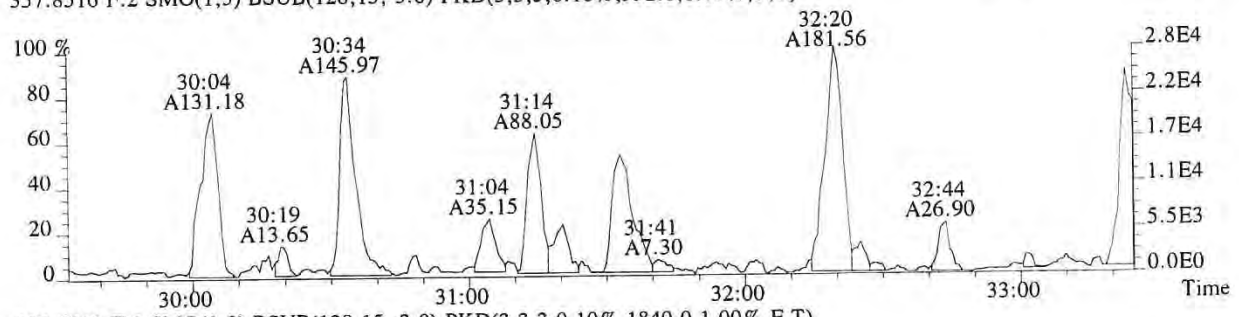


059218

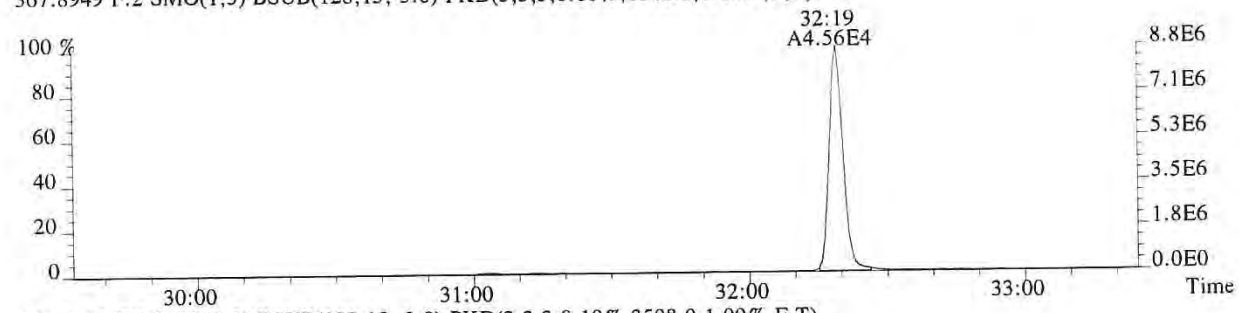
File:P616147 #1-348 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2472.0,1.00%,F,T)



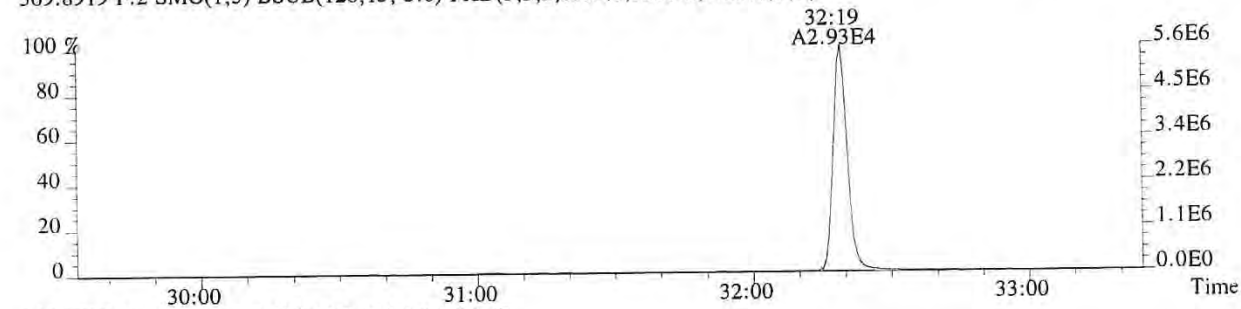
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,992.0,1.00%,F,T)



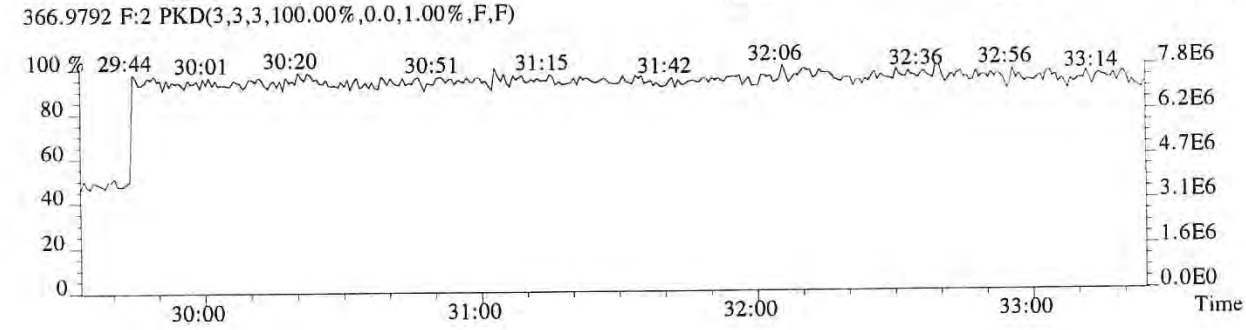
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1840.0,1.00%,F,T)



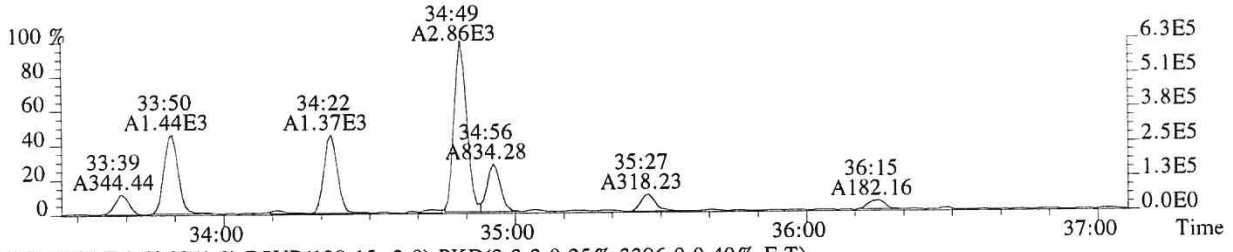
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3508.0,1.00%,F,T)



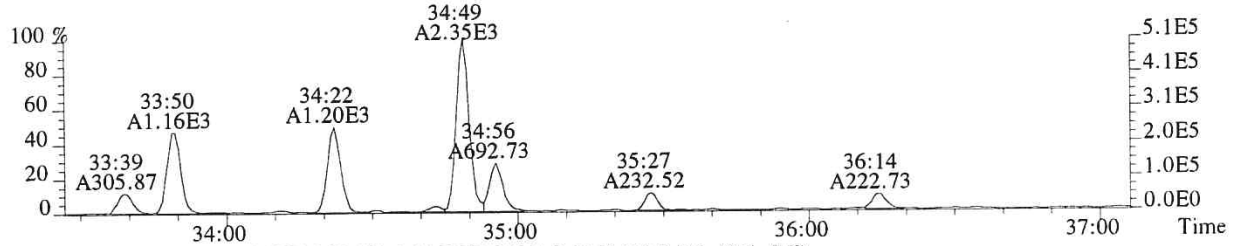
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



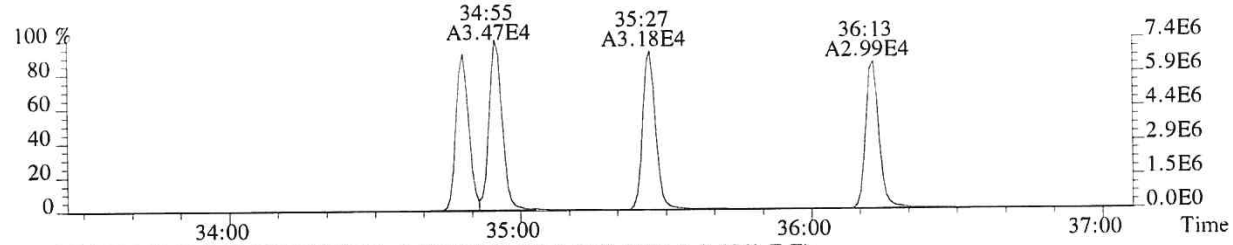
File:P616147 #1-330 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4420.0,0.40%,F,T)



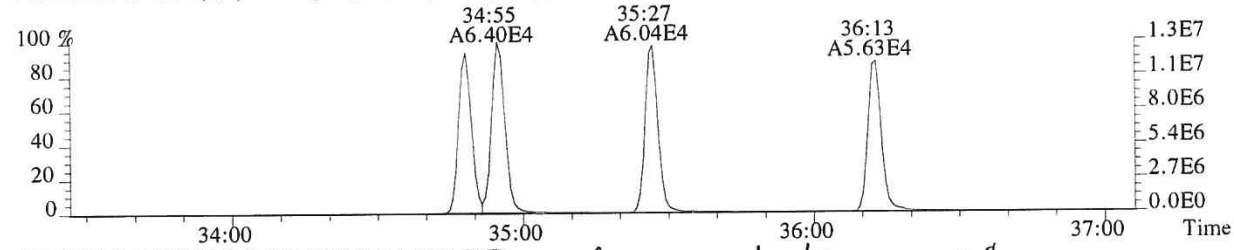
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3396.0,0.40%,F,T)



383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2220.0,0.40%,F,T)

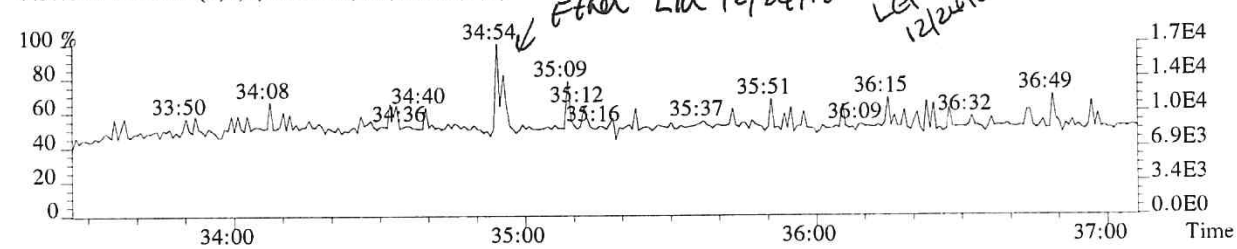


385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3552.0,0.40%,F,T)

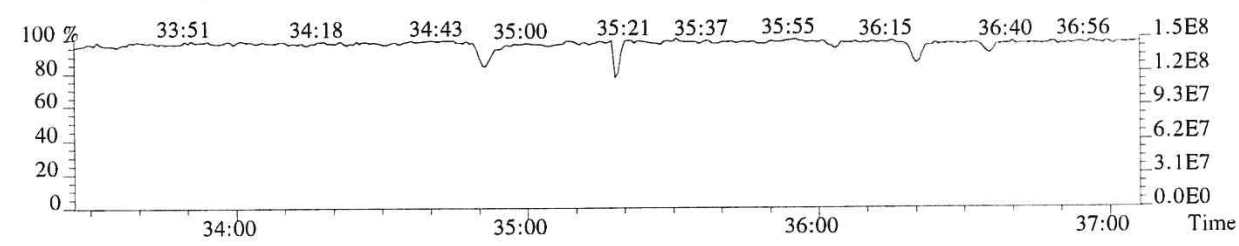


445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

Ether LLM 12/24/18 LG 12/24/18

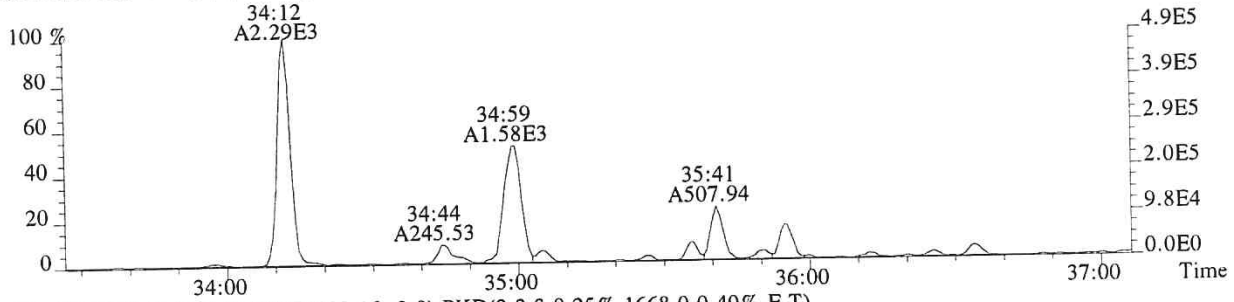


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

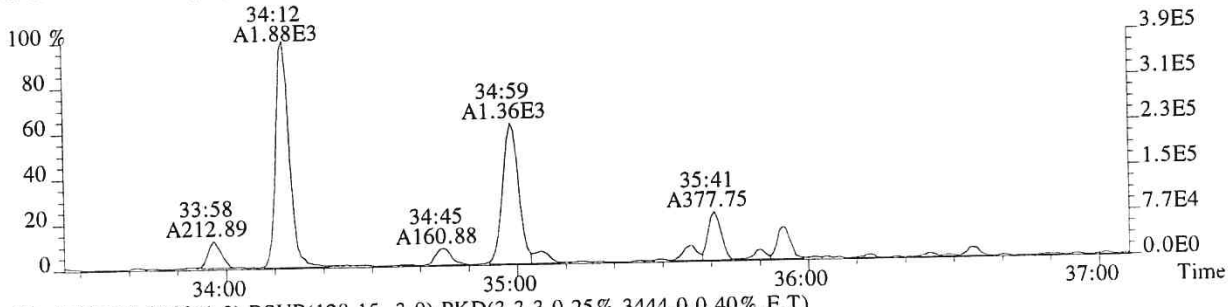


059220

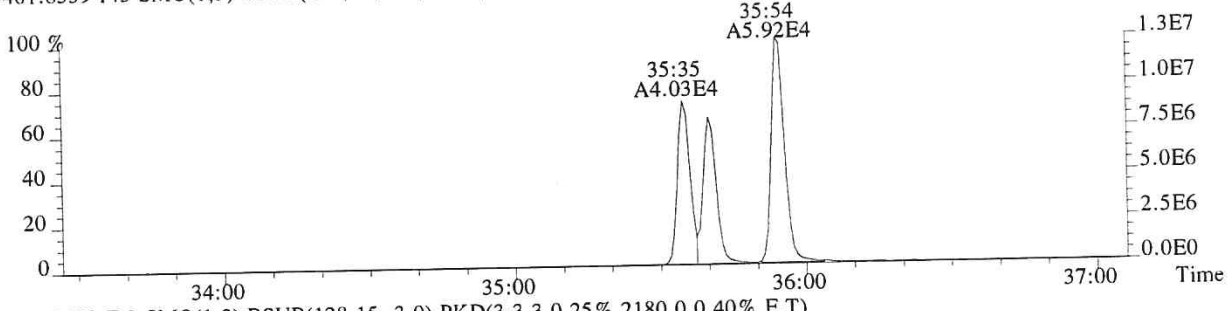
File:P616147 #1-330 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1596.0,0.40%,F,T)



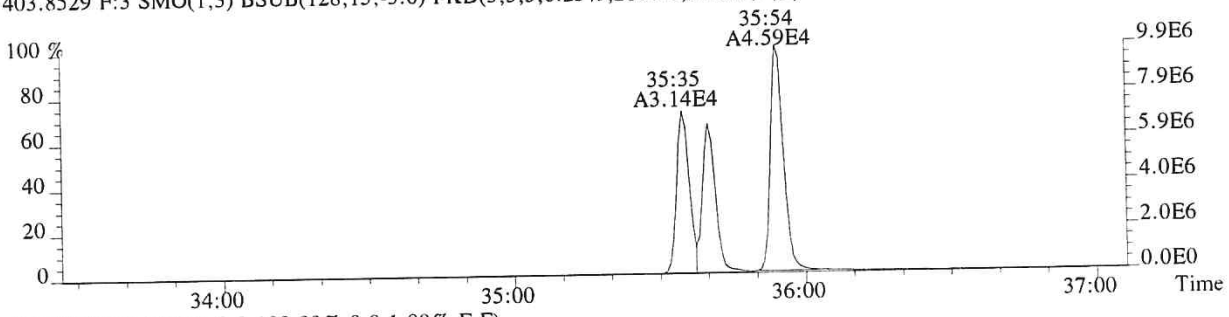
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1668.0,0.40%,F,T)



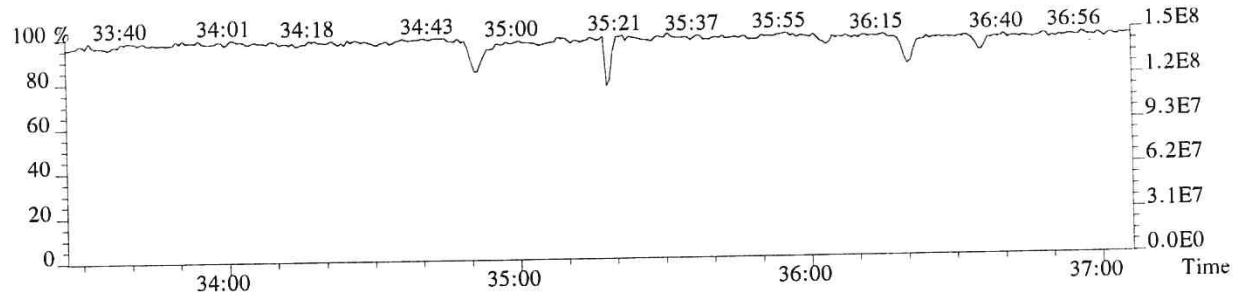
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3444.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2180.0,0.40%,F,T)

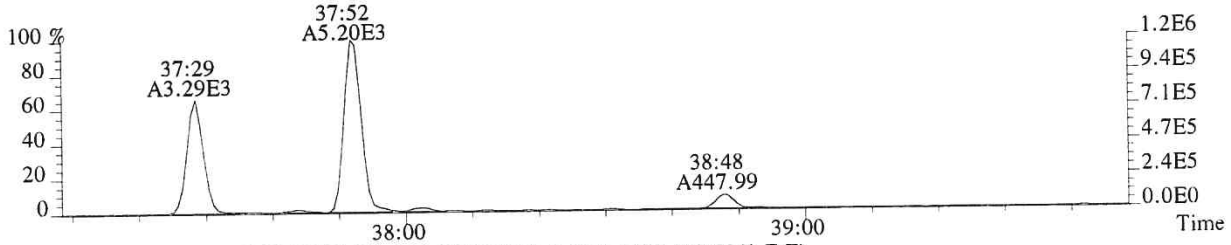


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

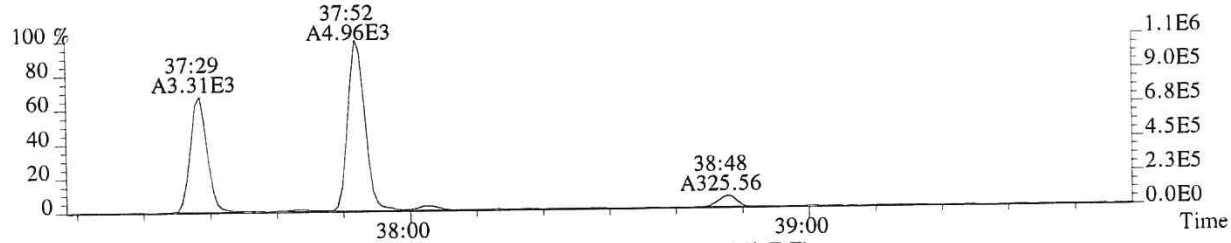


059221

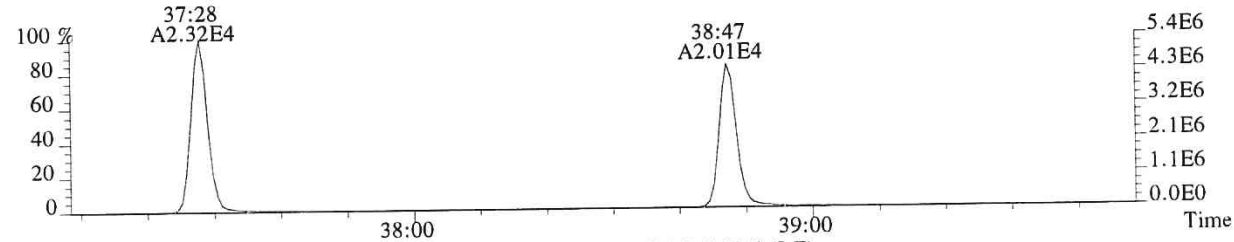
File:P616147 #1-241 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4312.0,0.50%,F,T)



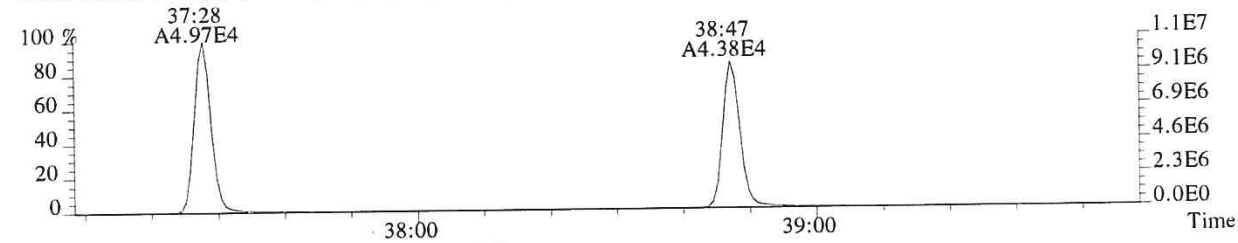
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2832.0,0.50%,F,T)



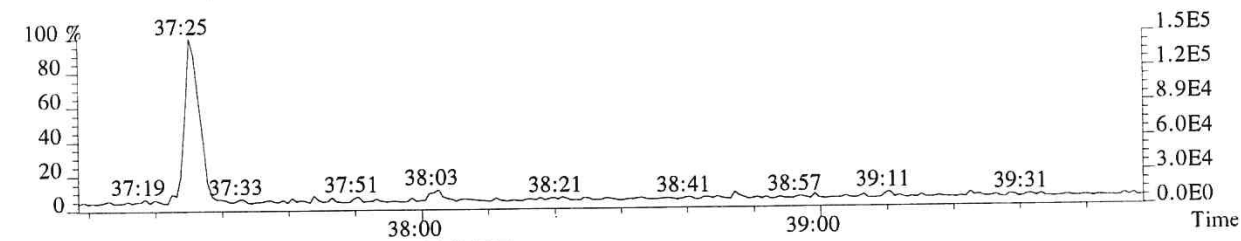
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2448.0,0.50%,F,T)



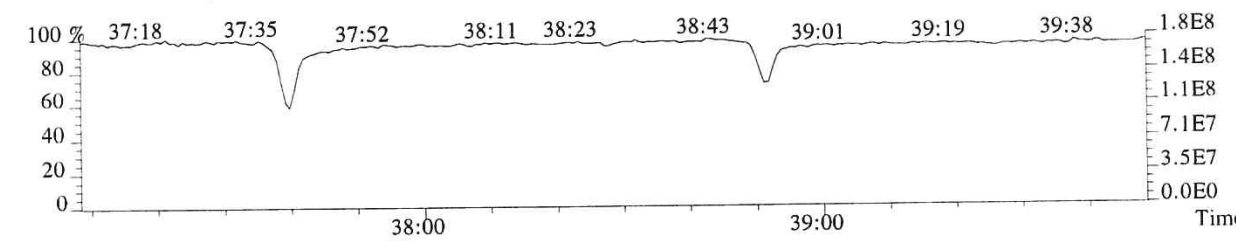
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4608.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

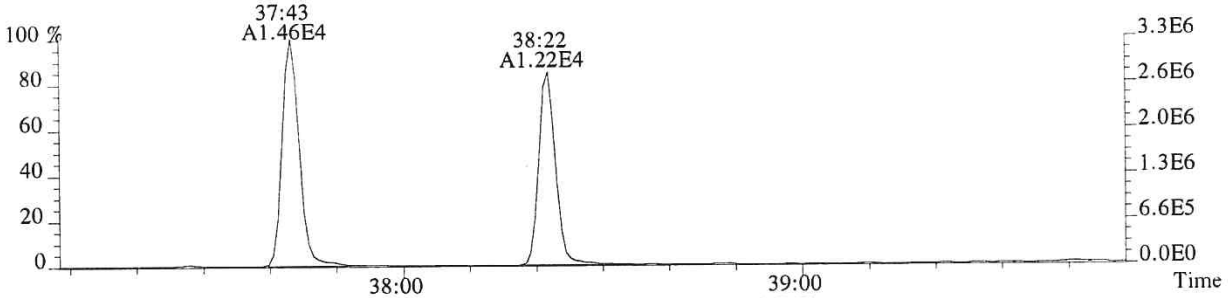


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

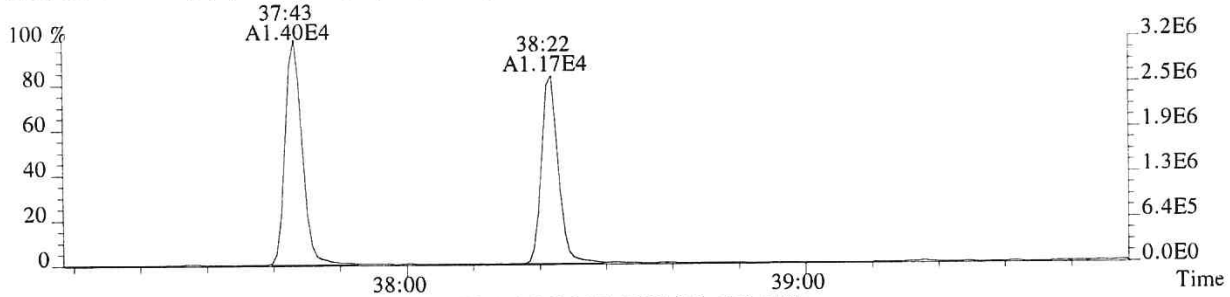


059222

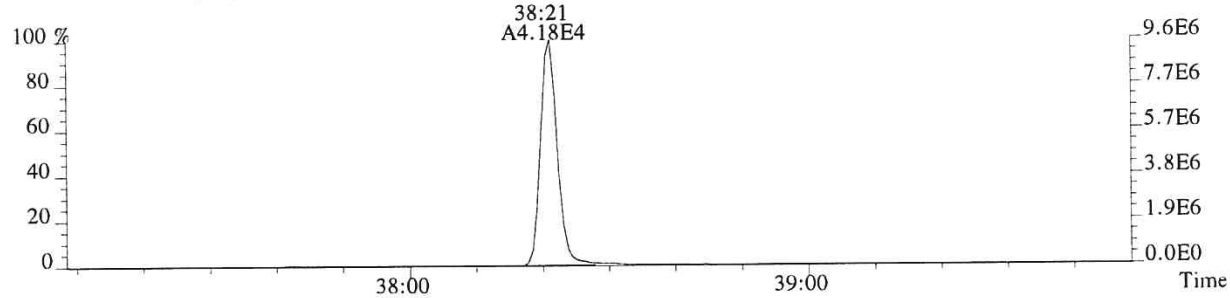
File:P616147 #1-241 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12384.0,0.40%,F,T)



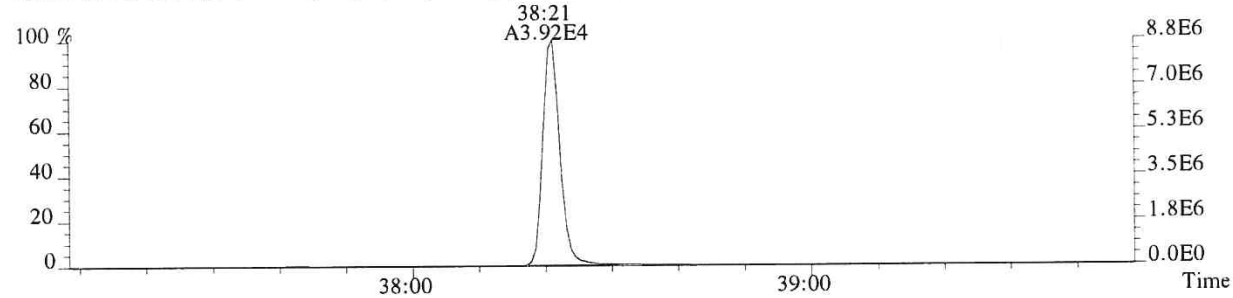
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,13148.0,0.40%,F,T)



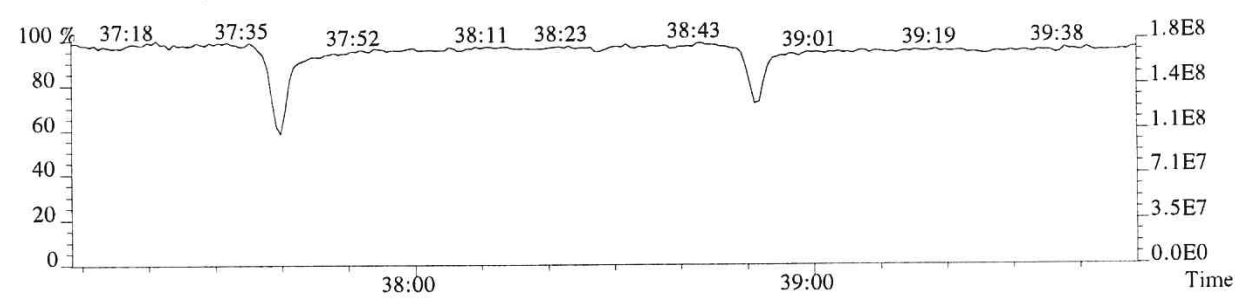
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2608.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1020.0,0.40%,F,T)



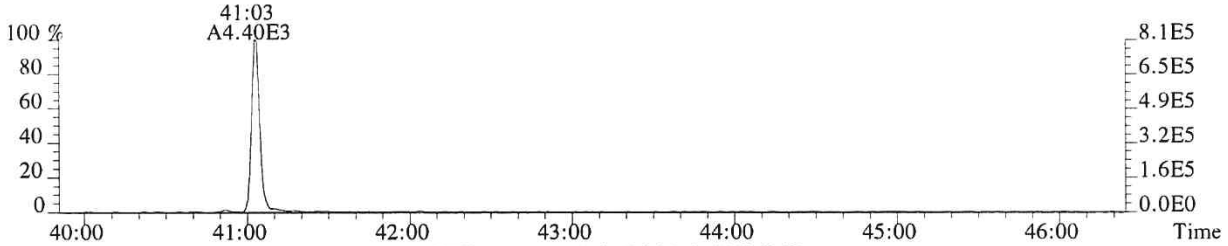
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



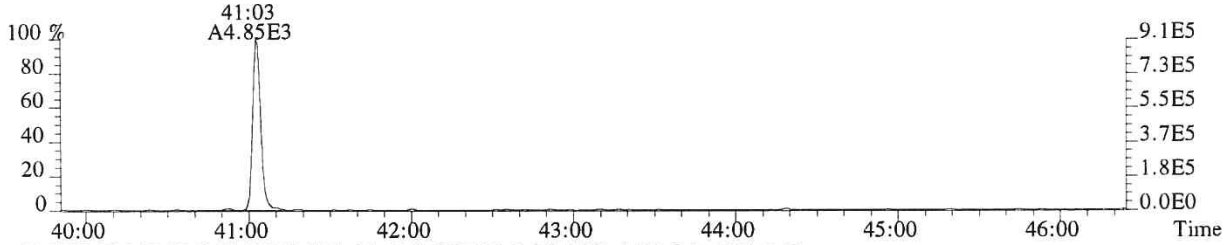
059223

File:P616147 #1-591 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016

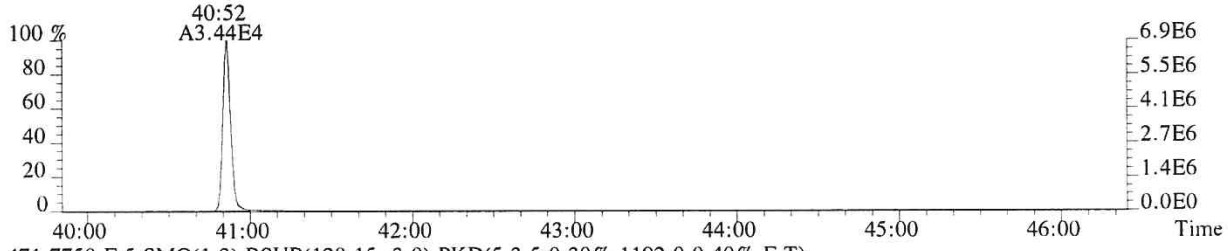
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1120.0,0.40%,F,T)



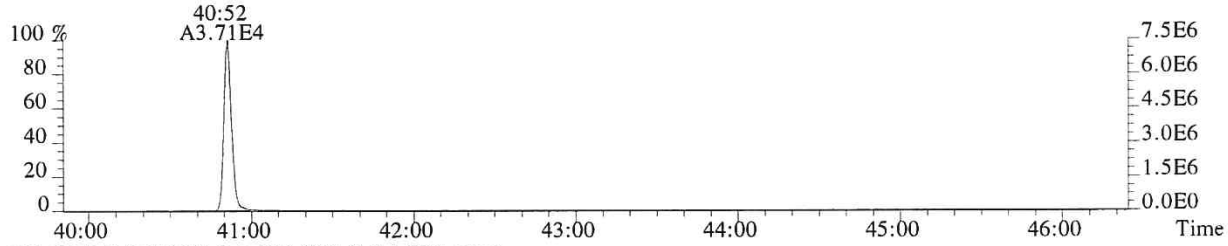
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3896.0,0.40%,F,T)



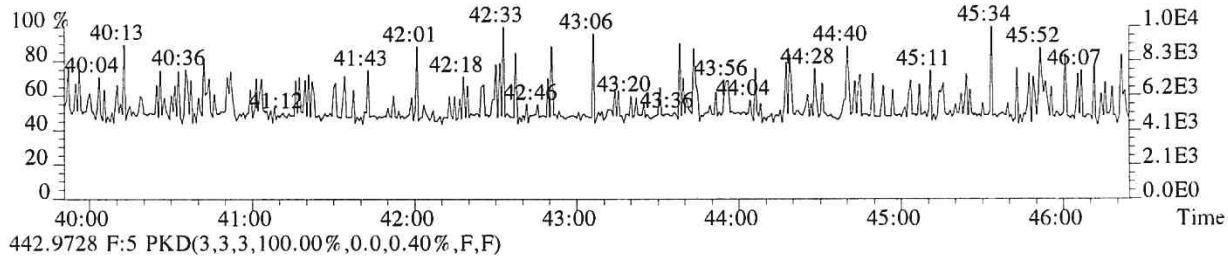
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1480.0,0.40%,F,T)



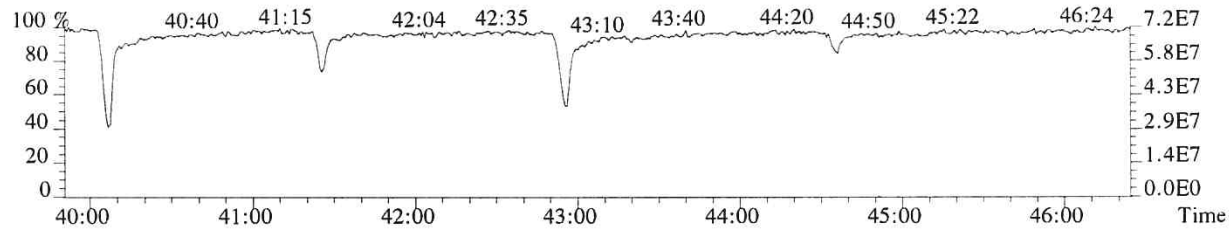
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1192.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

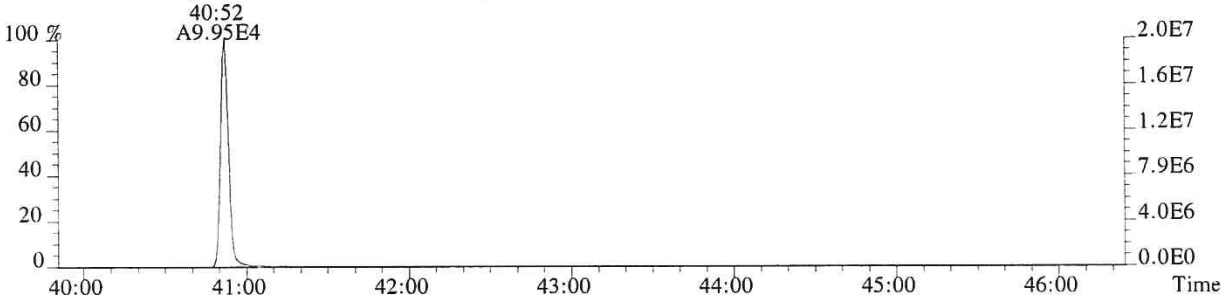


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

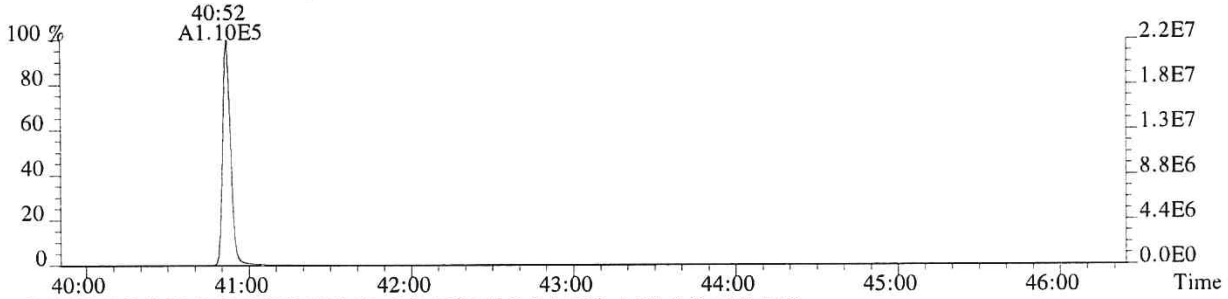


059224

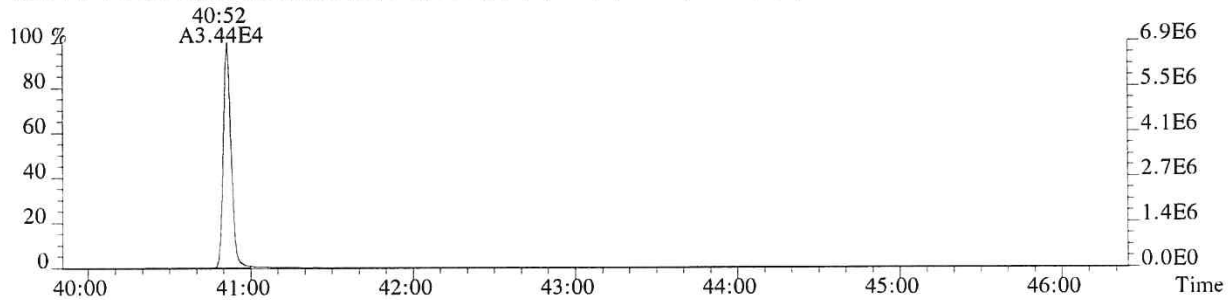
File:P616147 #1-591 Acq:20-DEC-2018 17:59:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-016
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,640.0,0.40%,F,T)



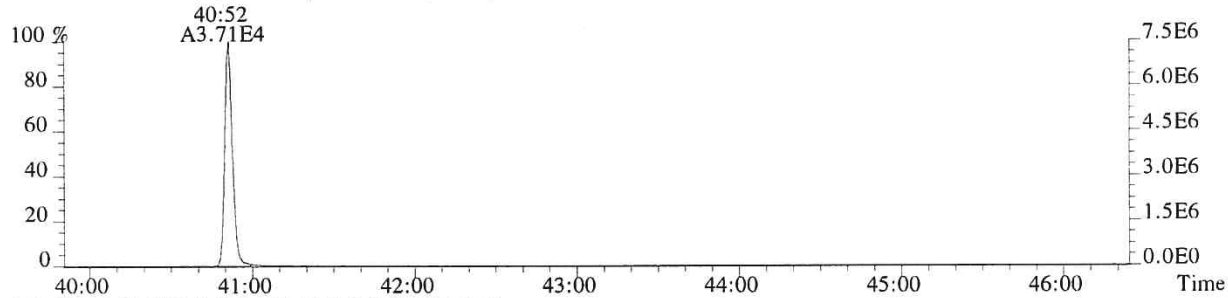
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,768.0,0.40%,F,T)



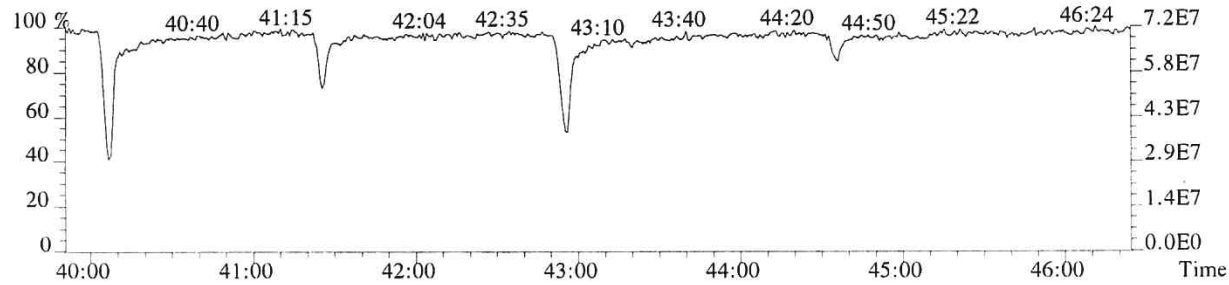
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1480.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1192.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059225

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0234

Run #13 Filename P616148 Samp: 1 Inj: 1 Acquired: 20-DEC-18 18:49:02
Processed: 24-DEC-18 10:53:11 Sample ID: E1801096-017

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:18	4.125e+04	5.620e+04	0.73	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	3.433e+03	2.129e+03	1.61	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	2.591e+03	1.558e+03	1.66	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:48	5.138e+03	3.869e+03	1.33	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:55	1.253e+03	1.083e+03	1.16	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	2.862e+02	2.122e+02	1.35	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:14	4.632e+02	3.289e+02	1.41	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:28	1.125e+03	1.030e+03	1.09	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:47	3.030e+02	3.319e+02	0.91	yes	no	1.463
10	Unk	OCDF	41:03	4.071e+02	4.524e+02	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:14	1.119e+04	1.375e+04	0.81	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	3.206e+02	2.103e+02	1.52	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	1.466e+02	1.085e+02	1.35	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:40	2.819e+02	1.788e+02	1.58	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:54	5.643e+02	5.165e+02	1.09	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	7.142e+03	6.685e+03	1.07	yes	no	1.112
17	Unk	OCDD	40:52	1.109e+05	1.236e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:16	2.447e+04	3.071e+04	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:01	5.391e+04	3.315e+04	1.63	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	5.332e+04	3.279e+04	1.63	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	2.539e+04	4.854e+04	0.52	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:54	2.924e+04	5.464e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	2.665e+04	4.962e+04	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	2.450e+04	4.546e+04	0.54	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:27	1.770e+04	3.904e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	1.654e+04	3.558e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:12	1.263e+04	1.540e+04	0.82	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:18	3.773e+04	2.388e+04	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:34	3.381e+04	2.661e+04	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:39	3.302e+04	2.559e+04	1.29	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	3.266e+04	2.991e+04	1.09	yes	no	0.857
32	IS	13C-OCDD	40:51	2.441e+04	2.626e+04	0.93	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:30	4.227e+04	5.330e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	5.791e+04	4.577e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	1.710e+04				no	1.086

$$\text{OCDD} = \frac{(1.109e+05 + 1.236e+05) \times 4000 \text{ pg} \times 1}{(2.441e+04 + 2.626e+04) \times 10.074 \text{ g} \times 80.4 / 100 \times 1.157} = 1975.425 \text{ ng/kg}$$

LG 12/26/18

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Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

059226

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0234

Run #13 Filename P616148 Samp: 1 Inj: 1 Acquired: 20-DEC-18 18:49:02
Processed: 24-DEC-18 10:53:11 LAB. ID: E1801096-017

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.28e+06	2.60e+03	2.4e+03	8.10e+06	6.00e+03	1.4e+03
2	1,2,3,7,8-PeCDF	6.09e+05	1.39e+03	4.4e+02	3.72e+05	6.52e+03	5.7e+01
3	2,3,4,7,8-PeCDF	4.26e+05	1.39e+03	3.1e+02	2.72e+05	6.52e+03	4.2e+01
4	1,2,3,4,7,8-HxCDF	1.08e+06	2.08e+03	5.2e+02	8.53e+05	1.09e+03	7.8e+02
5	1,2,3,6,7,8-HxCDF	2.53e+05	2.08e+03	1.2e+02	2.33e+05	1.09e+03	2.1e+02
6	2,3,4,6,7,8-HxCDF	5.90e+04	2.08e+03	2.8e+01	4.39e+04	1.09e+03	4.0e+01
7	1,2,3,7,8,9-HxCDF	8.66e+04	2.08e+03	4.2e+01	5.95e+04	1.09e+03	5.4e+01
8	1,2,3,4,6,7,8-HpCDF	2.50e+05	1.58e+03	1.6e+02	2.39e+05	1.32e+03	1.8e+02
9	1,2,3,4,7,8,9-HpCDF	7.17e+04	1.58e+03	4.5e+01	7.69e+04	1.32e+03	5.8e+01
10	OCDF	7.69e+04	1.32e+03	5.8e+01	7.67e+04	3.20e+03	2.4e+01
11	2,3,7,8-TCDD	1.89e+06	6.54e+03	2.9e+02	2.26e+06	3.28e+03	6.9e+02
12	1,2,3,7,8-PeCDD	4.97e+04	1.79e+03	2.8e+01	3.59e+04	1.07e+03	3.4e+01
13	1,2,3,4,7,8-HxCDD	3.32e+04	1.38e+03	2.4e+01	2.82e+04	3.95e+03	7.1e+00
14	1,2,3,6,7,8-HxCDD	6.44e+04	1.38e+03	4.7e+01	4.00e+04	3.95e+03	1.0e+01
15	1,2,3,7,8,9-HxCDD	1.25e+05	1.38e+03	9.0e+01	1.02e+05	3.95e+03	2.6e+01
16	1,2,3,4,6,7,8-HpCDD	1.63e+06	1.54e+04	1.1e+02	1.49e+06	1.30e+04	1.1e+02
17	OCDD	2.15e+07	6.84e+02	3.1e+04	2.40e+07	1.16e+03	2.1e+04
18	13C-2,3,7,8-TCDF	3.70e+06	1.68e+04	2.2e+02	4.68e+06	1.10e+04	4.3e+02
19	13C-1,2,3,7,8-PeCDF	9.51e+06	1.31e+03	7.3e+03	5.80e+06	1.90e+03	3.1e+03
20	13C-2,3,4,7,8-PeCDF	9.98e+06	1.31e+03	7.6e+03	6.10e+06	1.90e+03	3.2e+03
21	13C-1,2,3,4,7,8-HxCDF	5.55e+06	1.79e+03	3.1e+03	1.06e+07	1.64e+03	6.4e+03
22	13C-1,2,3,6,7,8-HxCDF	6.04e+06	1.79e+03	3.4e+03	1.13e+07	1.64e+03	6.9e+03
23	13C-2,3,4,6,7,8-HxCDF	5.78e+06	1.79e+03	3.2e+03	1.06e+07	1.64e+03	6.5e+03
24	13C-1,2,3,7,8,9-HxCDF	5.16e+06	1.79e+03	2.9e+03	9.26e+06	1.64e+03	5.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	4.05e+06	3.72e+03	1.1e+03	8.95e+06	2.14e+03	4.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.63e+06	3.72e+03	9.7e+02	7.75e+06	2.14e+03	3.6e+03
27	13C-2,3,7,8-TCDD	2.11e+06	1.59e+04	1.3e+02	2.59e+06	8.75e+03	3.0e+02
28	13C-1,2,3,7,8-PeCDD	7.22e+06	2.10e+03	3.4e+03	4.55e+06	3.10e+03	1.5e+03
29	13C-1,2,3,4,7,8-HxCDD	7.47e+06	1.94e+03	3.9e+03	5.92e+06	2.18e+03	2.7e+03
30	13C-1,2,3,6,7,8-HxCDD	6.82e+06	1.94e+03	3.5e+03	5.32e+06	2.18e+03	2.4e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.34e+06	2.87e+03	2.6e+03	6.67e+06	1.44e+03	4.6e+03
32	13C-OCDD	4.67e+06	4.63e+03	1.0e+03	4.99e+06	5.60e+02	8.9e+03
33	13C-1,2,3,4-TCDD	6.78e+06	1.59e+04	4.3e+02	8.68e+06	8.75e+03	9.9e+02
34	13C-1,2,3,7,8,9-HxCDD	1.21e+07	1.94e+03	6.2e+03	9.70e+06	2.18e+03	4.4e+03
35	37Cl-2,3,7,8-TCDD	2.82e+06	4.04e+03	7.0e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (6.544e{+}03 + 3.276e{+}03) \times 2000}{(2.106e{+}06 + 2.588e{+}06) \times (\quad) \times 1.049} =$$

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Peak List Summary

CLIENT ID.
SL0234

Entry: 36 Totals Name: Total Tetra-Furans

Run: 13 File: P616148 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 18:49:02 Processed: 24-DEC-18 10:53:11

Mass: 303.9020 305.8990 Tot Response: 1.70e+05 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:01	3.90e+02	5.06e+02	0.77	yes	8.96e+02		n	n
2	23:20	1.73e+03	2.24e+03	0.77	yes	3.97e+03		n	n
3	23:59	1.49e+03	1.88e+03	0.79	yes	3.36e+03		n	n
4	24:40	9.92e+02	1.32e+03	0.75	yes	2.31e+03		n	n
5	24:45	2.10e+03	2.54e+03	0.83	yes	4.64e+03		n	n
6	25:17	1.77e+04	2.25e+04	0.79	yes	4.03e+04		n	n
7	26:04	3.13e+02	4.39e+02	0.71	yes	7.51e+02		n	n
8	26:18	4.12e+04	5.62e+04	0.73	yes	9.74e+04	2,3,7,8-TCDF	n	n
9	26:42	3.30e+03	4.27e+03	0.77	yes	7.57e+03		n	n
10	28:25	3.84e+03	4.70e+03	0.82	yes	8.54e+03		n	n

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Peak List Summary

CLIENT ID.
SL0234

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 13 File: P616148 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 18:49:02 Processed: 24-DEC-18 10:53:11

Mass: 319.8970 321.8940 Tot Response: 2.74e+04 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:14	1.12e+04	1.38e+04 0.81	yes	2.49e+04	2,3,7,8-TCDD	n	n
2	27:34	1.16e+03	1.34e+03 0.87	yes	2.50e+03		n	n

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Peak List Summary

CLIENT ID.
SL0234

Entry: 38 Totals Name: Total Penta-Furans1

Run: 13 File: P616148 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 18:49:02 Processed: 24-DEC-18 10:53:11

Mass: 339.8600 341.8570 Tot Response: 1.32e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:21	8.30e+01	4.90e+01 1.70	yes	1.32e+02		n	n

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CLIENT ID.
SL0234

Entry: 39 Totals Name: Total Penta-Furans2

Run: 13 File: P616148 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 18:49:02 Processed: 24-DEC-18 10:53:11

Mass: 339.8600 341.8570 Tot Response: 1.30e+04 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:01	1.53e+03	1.11e+03	1.38	yes	2.64e+03		n	n
2	30:50	3.62e+02	2.04e+02	1.77	yes	5.66e+02		n	n
3	31:02	3.43e+03	2.13e+03	1.61	yes	5.56e+03	1,2,3,7,8-PeCDF	n	n
4	31:55	6.14e+01	4.16e+01	1.48	yes	1.03e+02		n	n
5	32:02	2.59e+03	1.56e+03	1.66	yes	4.15e+03	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.
SL0234

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 13 File: P616148 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 18:49:02 Processed: 24-DEC-18 10:53:11

Mass: 355.8550 357.8520 Tot Response: 2.56e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:33	8.20e+02	5.14e+02	1.60	yes	1.33e+03		n	n
2	31:34	4.23e+02	2.70e+02	1.56	yes	6.93e+02		n	n
3	32:20	3.21e+02	2.10e+02	1.52	yes	5.31e+02	1,2,3,7,8-PeCDD	n	n

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Entry: 41 Totals Name: Total Hexa-Furans

Run: 13 File: P616148 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 18:49:02 Processed: 24-DEC-18 10:53:11

Mass: 373.8210 375.8180 Tot Response: 1.39e+04 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:38	6.63e+01	4.68e+01	1.42	yes	1.13e+02		n	n
2	33:48	3.95e+02	3.52e+02	1.12	yes	7.47e+02		n	n
3	34:22	2.34e+02	1.84e+02	1.27	yes	4.18e+02		n	n
4	34:48	5.14e+03	3.87e+03	1.33	yes	9.01e+03	1,2,3,4,7,8-HxCDF	n	n
5	34:55	1.25e+03	1.08e+03	1.16	yes	2.34e+03	1,2,3,6,7,8-HxCDF	n	n
6	35:27	2.86e+02	2.12e+02	1.35	yes	4.98e+02	2,3,4,6,7,8-HxCDF	n	n
7	36:14	4.63e+02	3.29e+02	1.41	yes	7.92e+02	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
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Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 13 File: P616148 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 18:49:02 Processed: 24-DEC-18 10:53:11

Mass: 389.8160 391.8130 Tot Response: 1.92e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:12	7.69e+03	5.95e+03	1.29	yes	1.36e+04		n	n
2	34:44	1.74e+02	1.31e+02	1.33	yes	3.05e+02		n	n
3	34:58	1.90e+03	1.39e+03	1.36	yes	3.29e+03		n	n
4	35:05	2.10e+02	1.56e+02	1.34	yes	3.66e+02		n	n
5	35:35	1.47e+02	1.08e+02	1.35	yes	2.55e+02	1,2,3,4,7,8-HxCDD	n	n
6	35:50	1.51e+02	1.39e+02	1.08	yes	2.90e+02		n	n
7	35:54	5.64e+02	5.17e+02	1.09	yes	1.08e+03	1,2,3,7,8,9-HxCDD	n	n

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Entry: 43 Totals Name: Total Hepta-Furans

Run: 13 File: P616148 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 18:49:02 Processed: 24-DEC-18 10:53:11

Mass: 407.7820 409.7790 Tot Response: 3.86e+03 RRF: 1.495

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:28	1.12e+03	1.03e+03	1.09	yes	2.15e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:43	1.72e+01	1.94e+01	0.89	yes	3.66e+01		n	n
3	37:51	5.33e+02	5.05e+02	1.06	yes	1.04e+03		n	n
4	38:47	3.03e+02	3.32e+02	0.91	yes	6.35e+02	1,2,3,4,7,8,9-HpCDF	n	n

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Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 13 File: P616148 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 18:49:02 Processed: 24-DEC-18 10:53:11

Mass: 423.7770 425.7740 Tot Response: 4.36e+04 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:43	1.52e+04	1.46e+04 1.05	yes	2.98e+04		n	n
2	38:21	7.14e+03	6.68e+03 1.07	yes	1.38e+04	1,2,3,4,6,7,8-HpCDD	n	n

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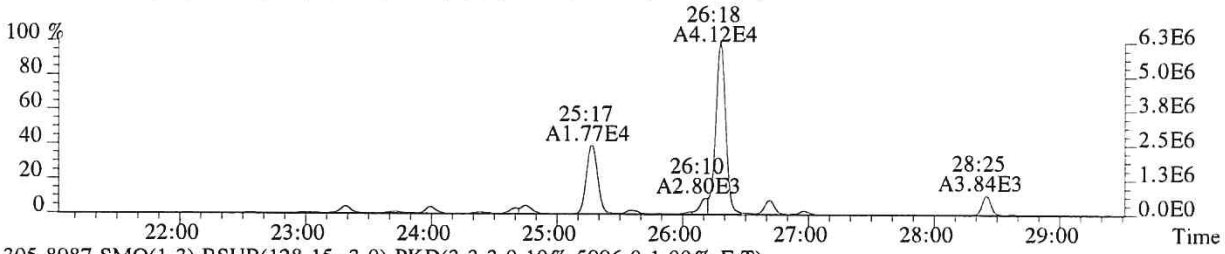
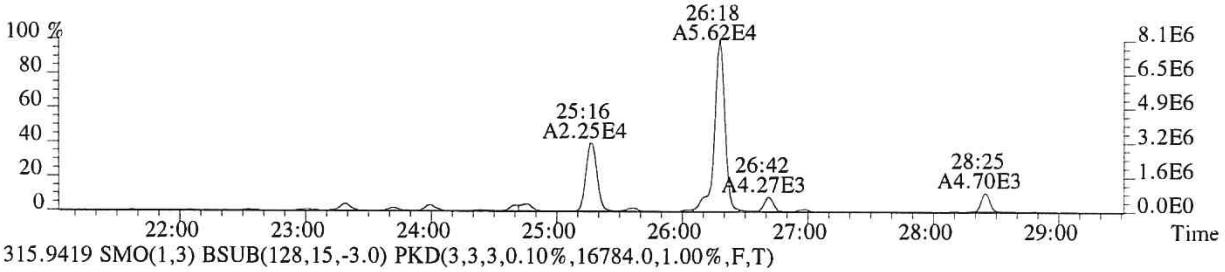
File:P616148 #1-602 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017

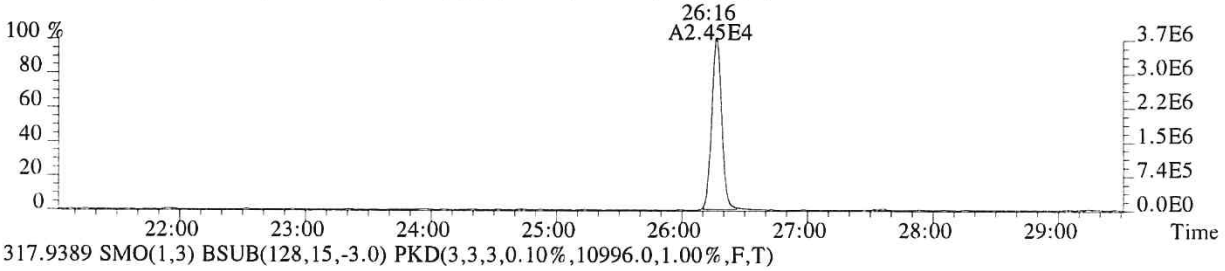
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2596.0,1.00%,F,T)



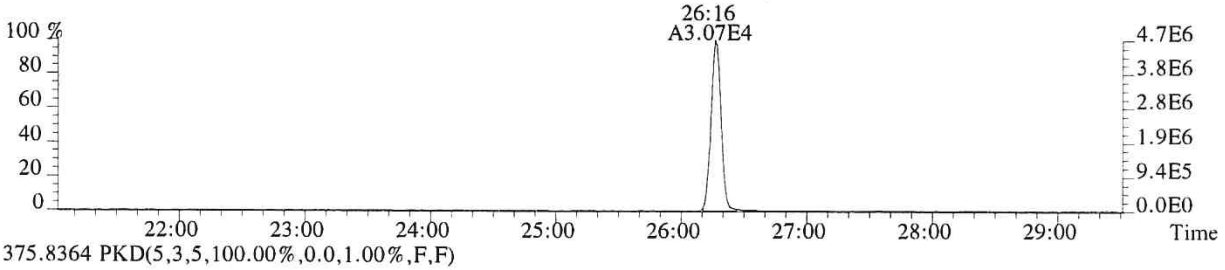
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5996.0,1.00%,F,T)



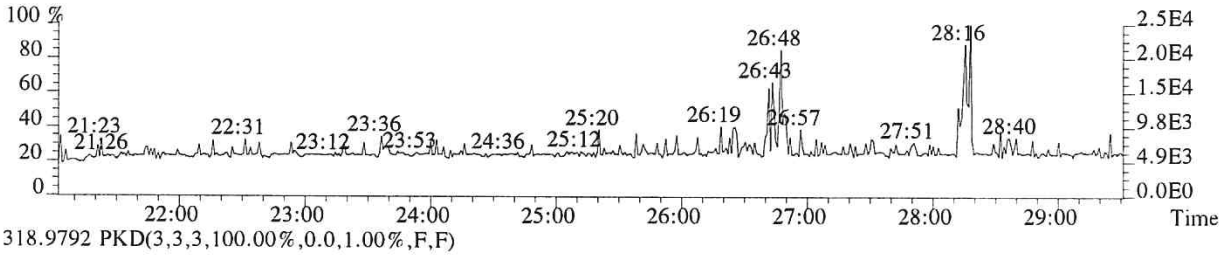
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16784.0,1.00%,F,T)



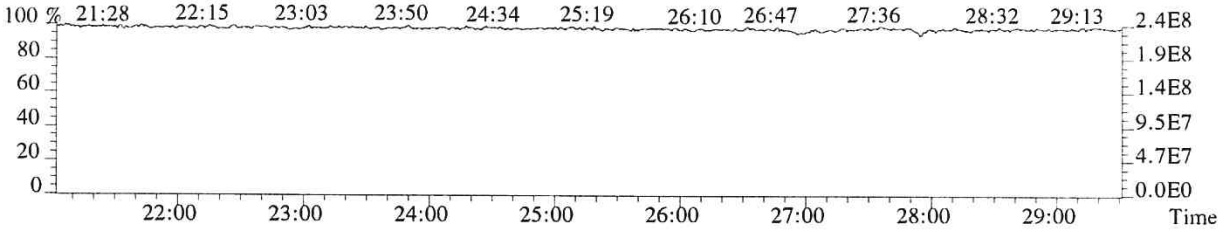
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10996.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

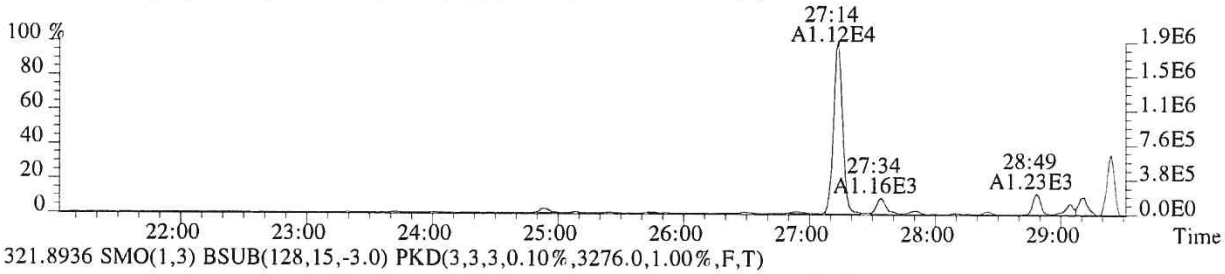


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

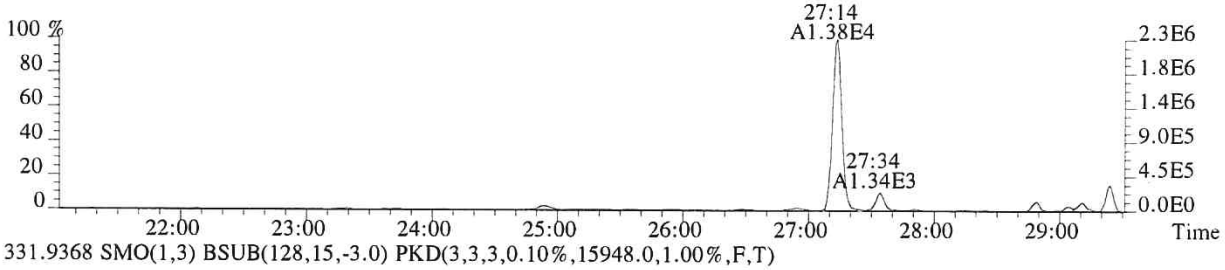


059237

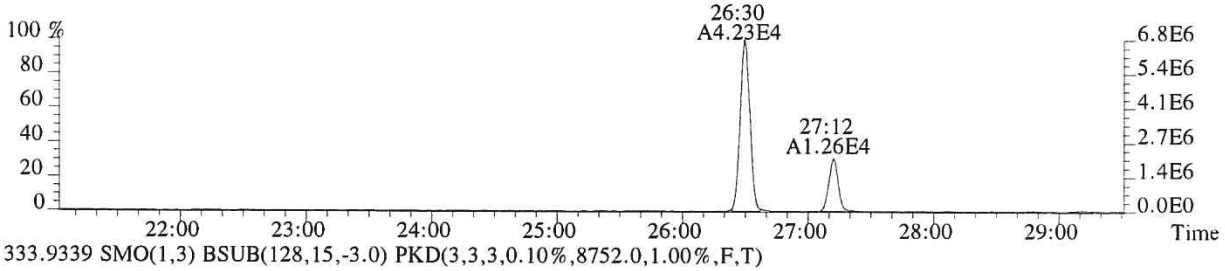
File:P616148 #1-602 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6544.0,1.00%,F,T)



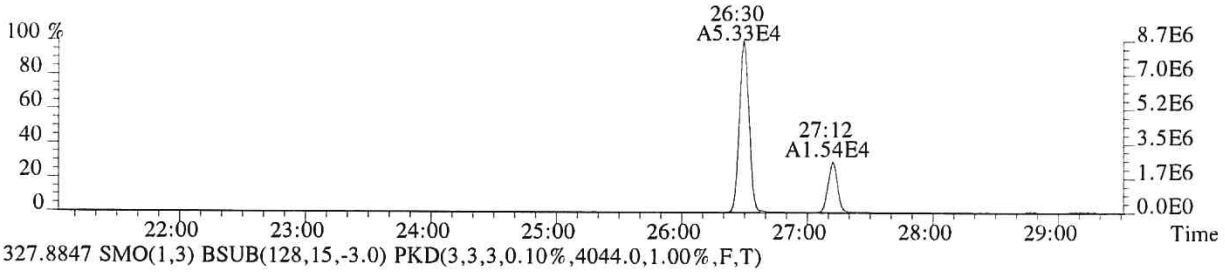
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3276.0,1.00%,F,T)



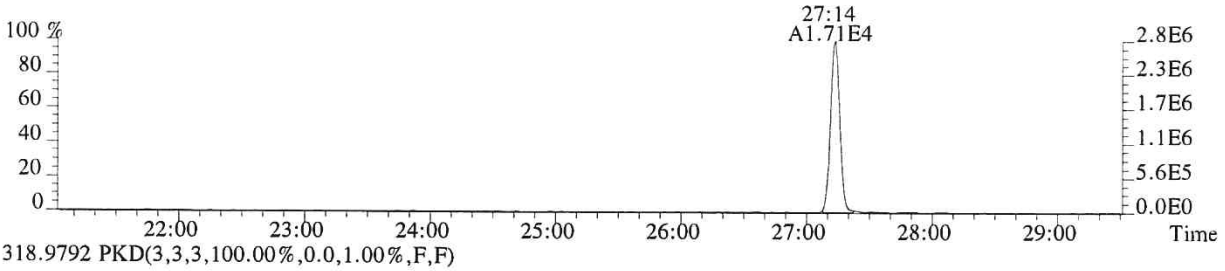
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15948.0,1.00%,F,T)



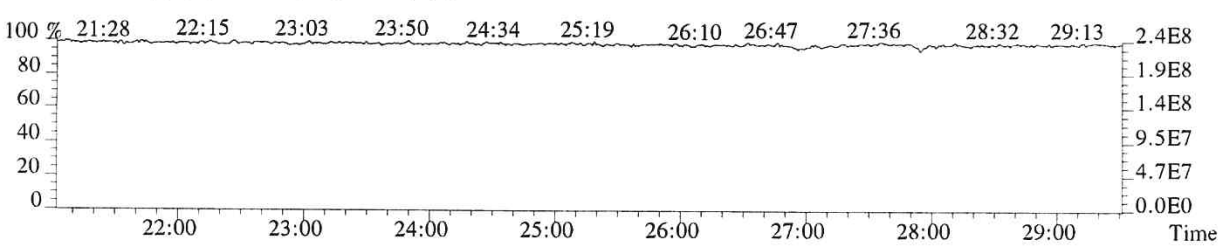
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8752.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4044.0,1.00%,F,T)

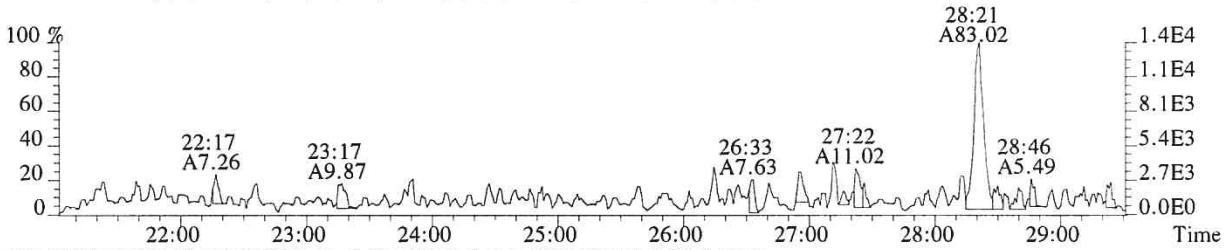


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

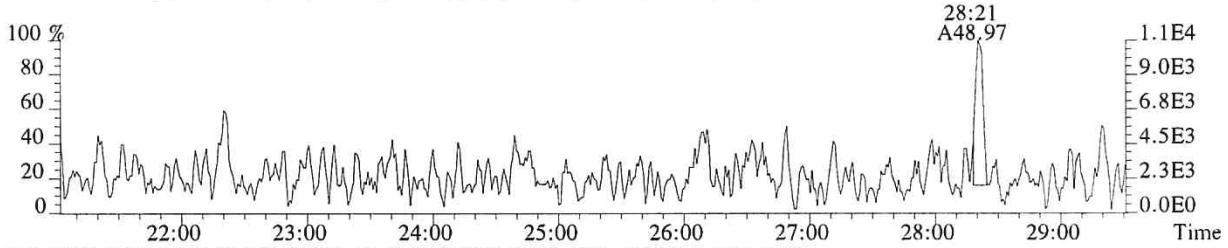


059238

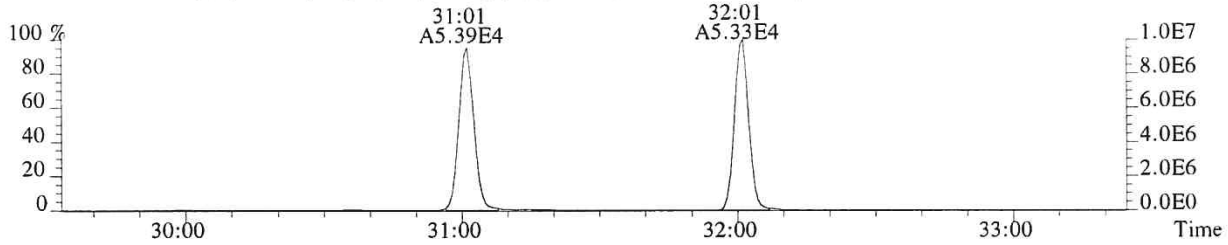
File:P616148 #1-602 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1352.0,1.00%,F,T)



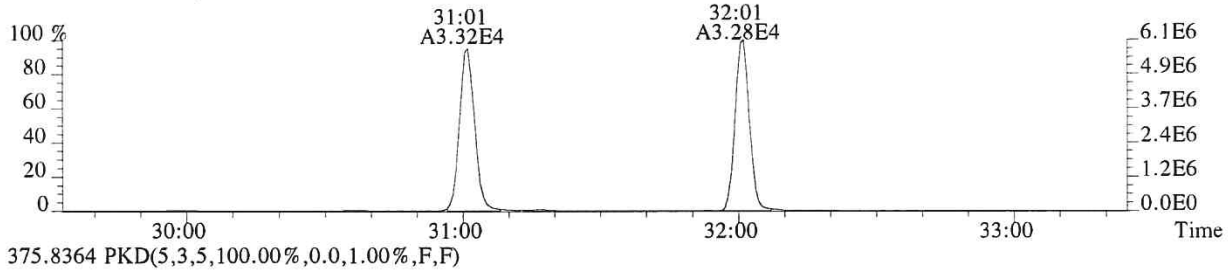
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2964.0,1.00%,F,T)



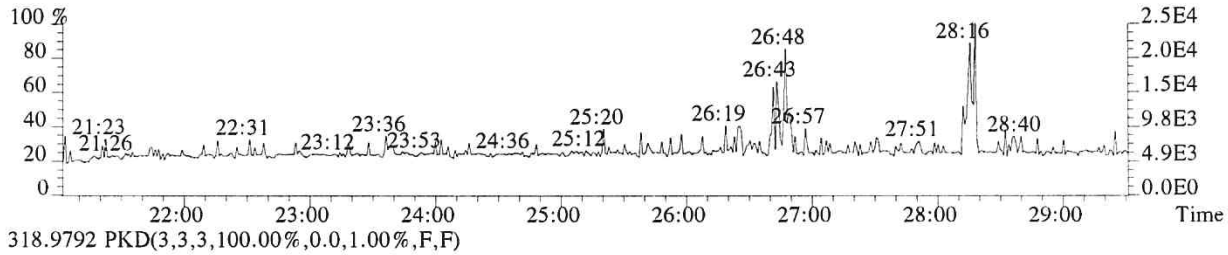
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1308.0,1.00%,F,T)



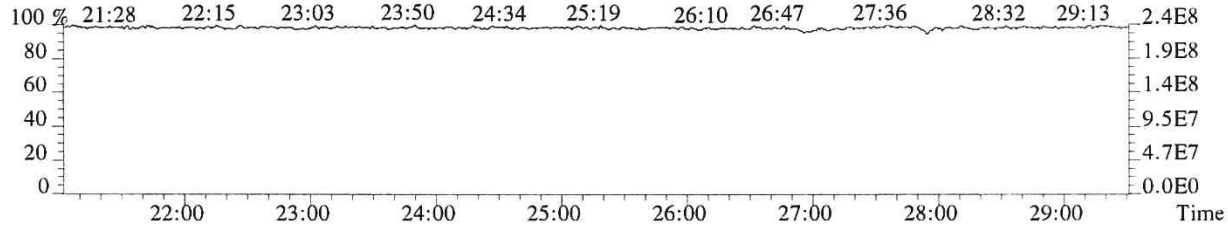
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1896.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



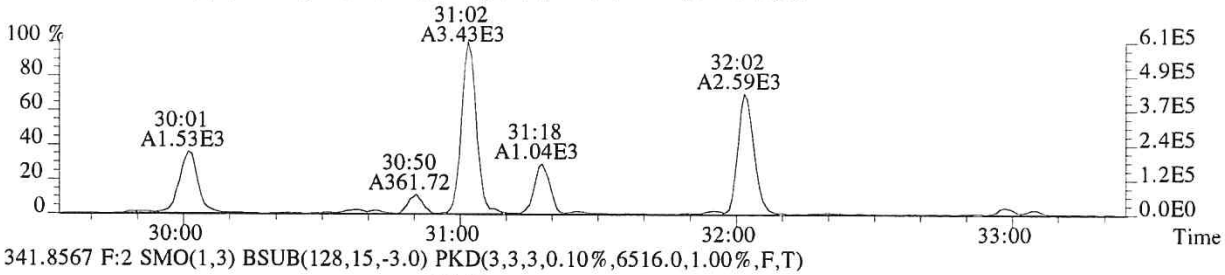
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



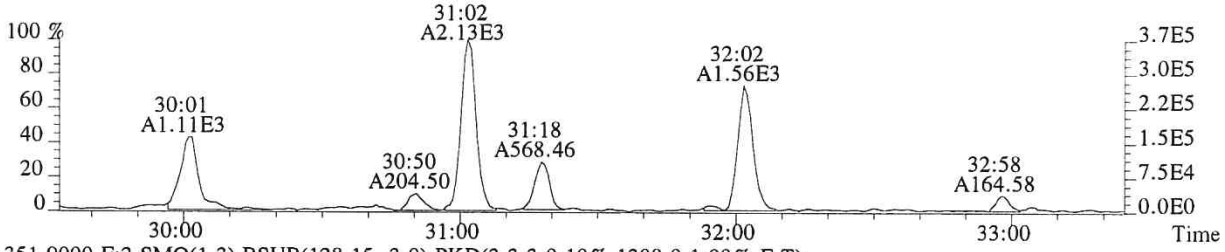
059239

File:P616148 #1-348 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017

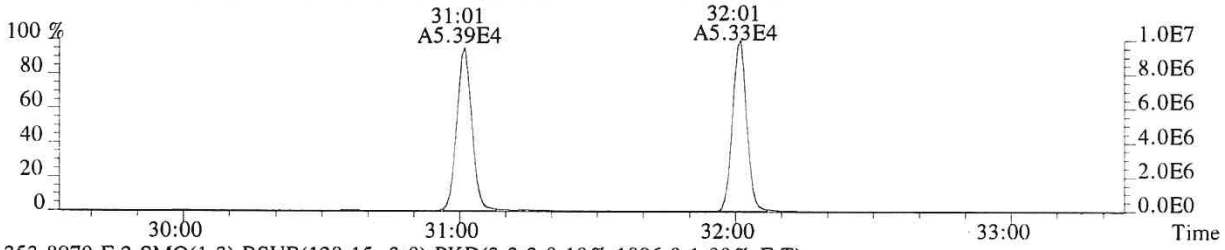
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1388.0,1.00%,F,T)



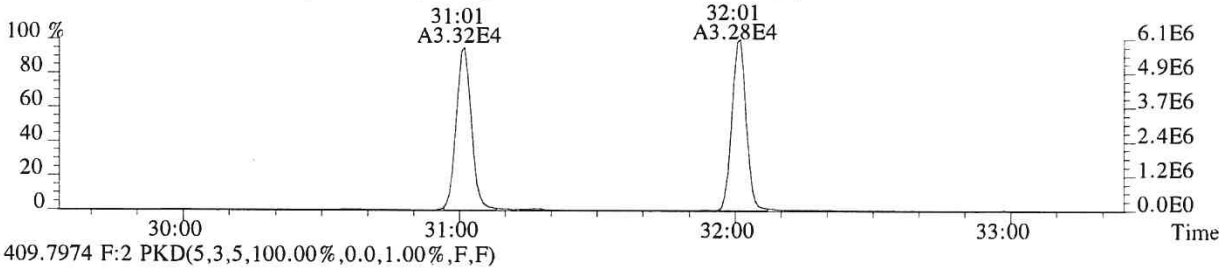
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6516.0,1.00%,F,T)



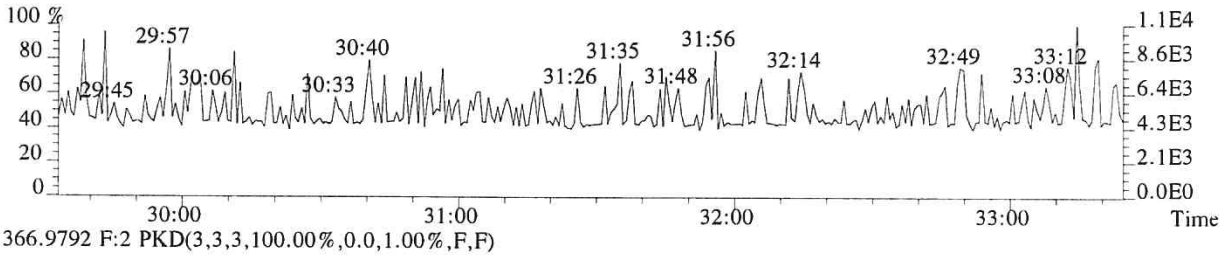
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1308.0,1.00%,F,T)



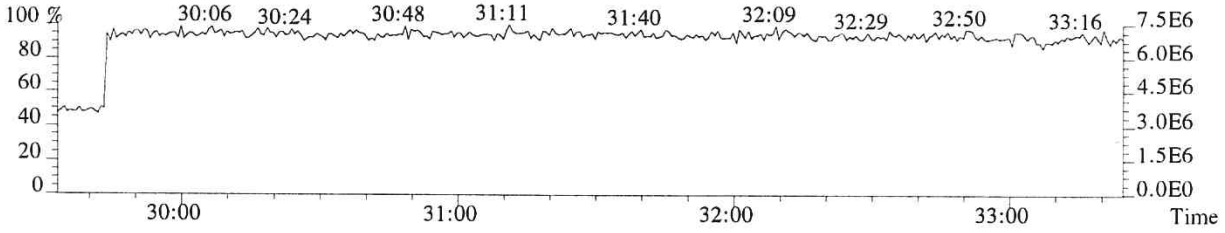
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1896.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

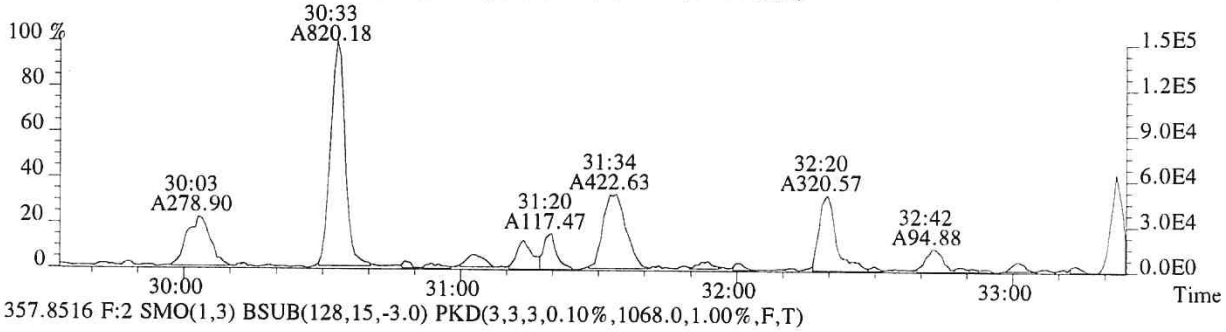


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

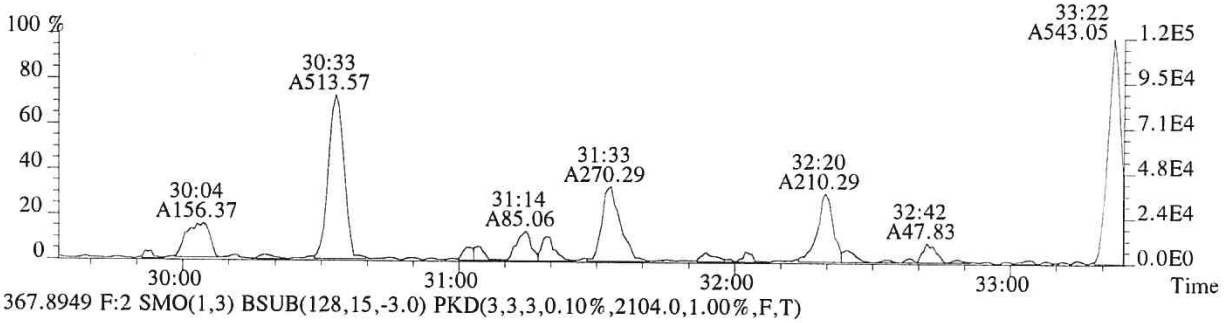


059240

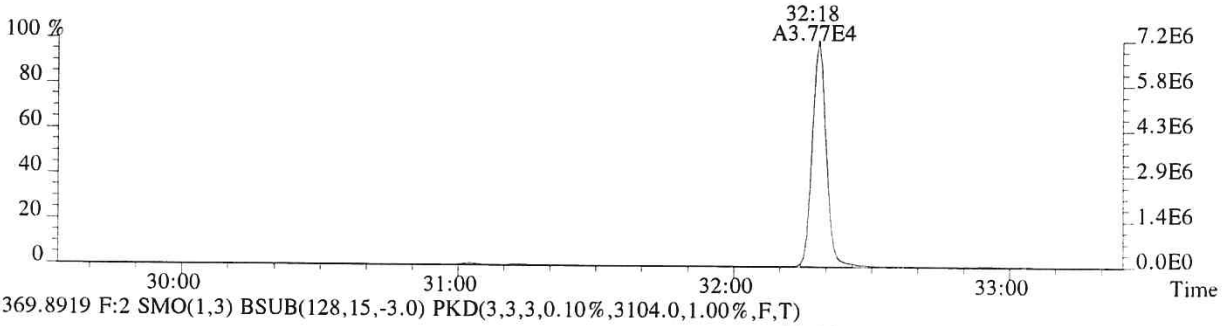
File:P616148 #1-348 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1788.0,1.00%,F,T)



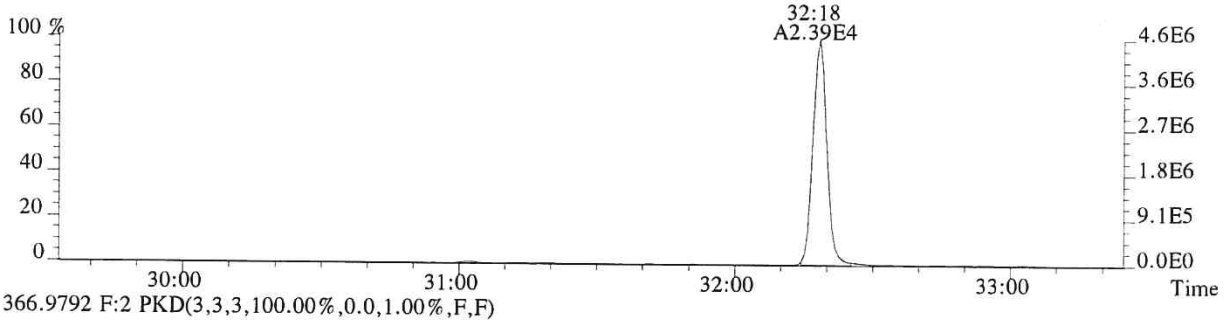
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1068.0,1.00%,F,T)



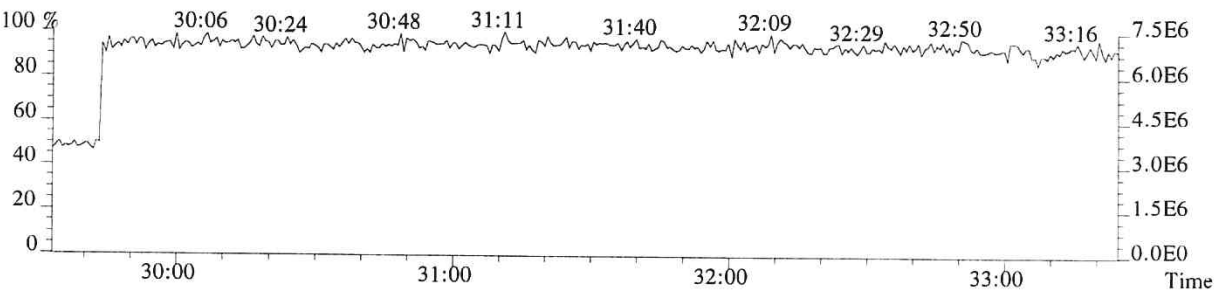
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2104.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3104.0,1.00%,F,T)



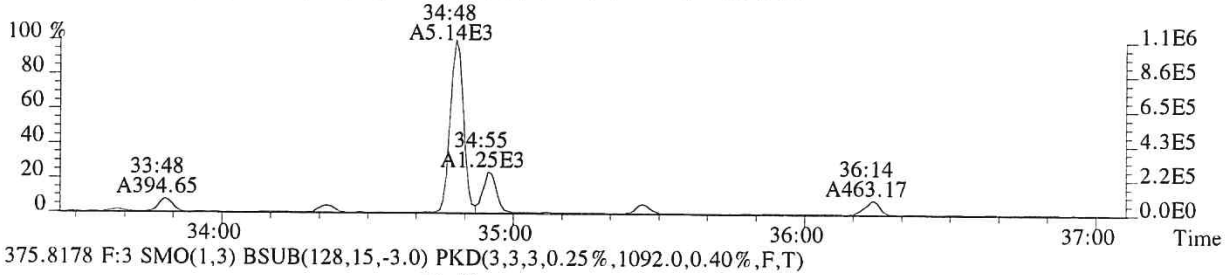
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



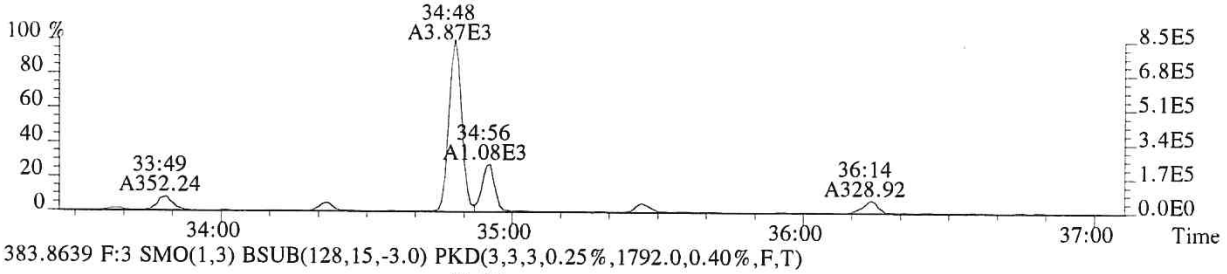
059241

File:P616148 #1-330 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017

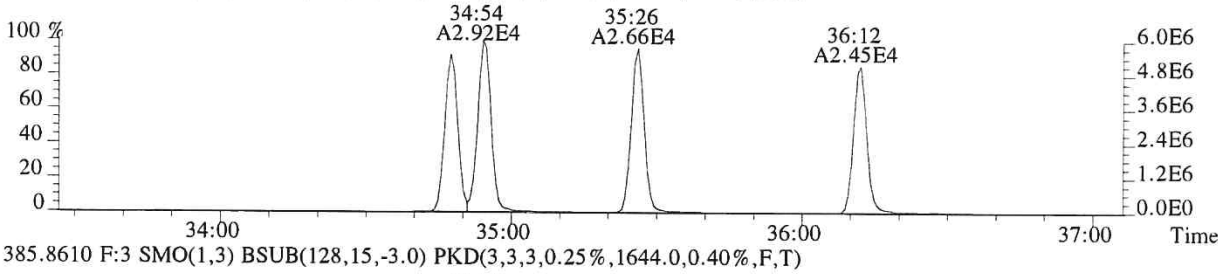
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2084.0,0.40%,F,T)



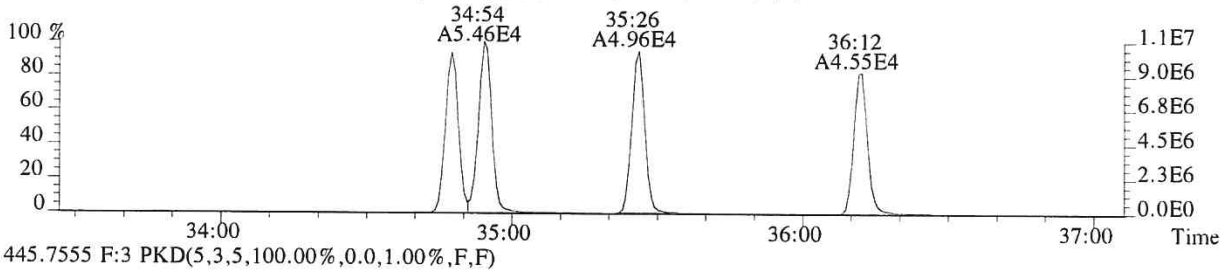
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1092.0,0.40%,F,T)



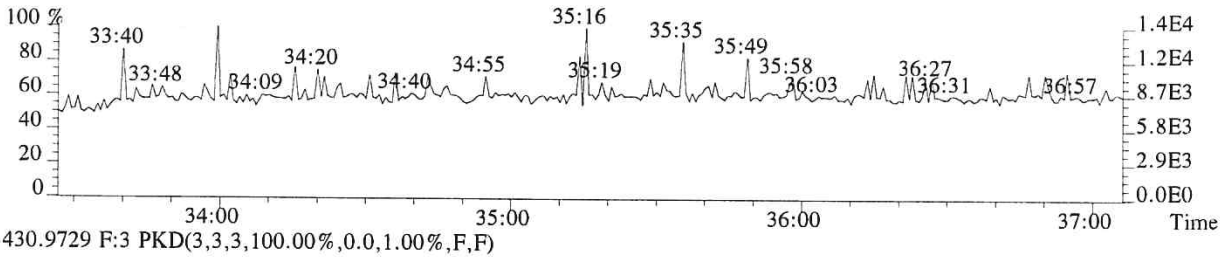
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1792.0,0.40%,F,T)



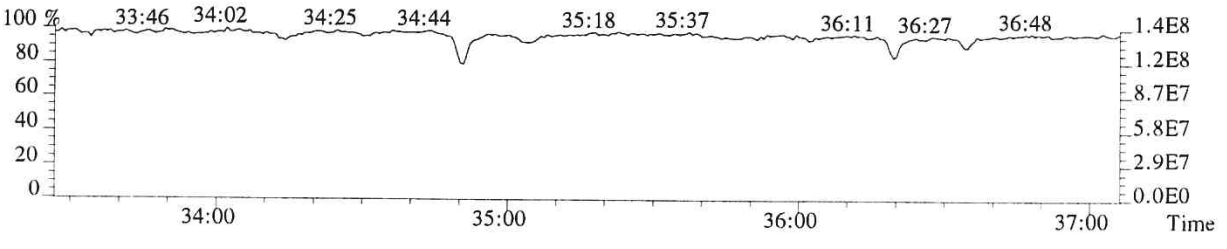
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1644.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

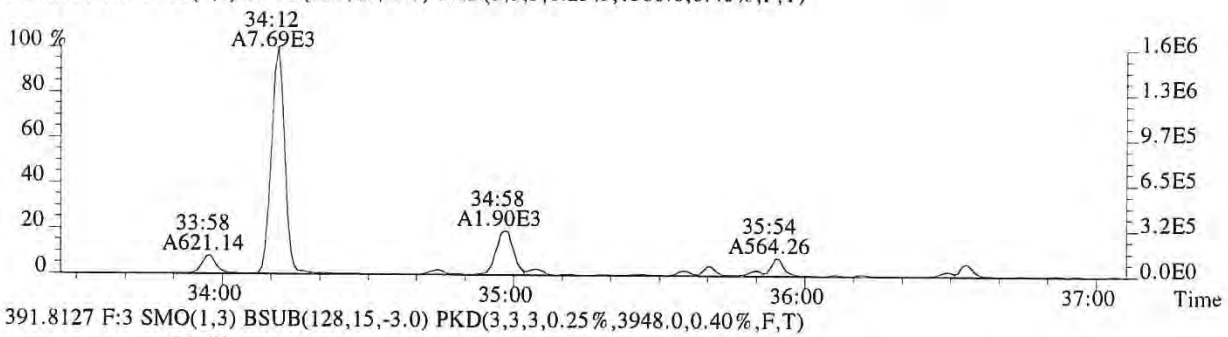


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

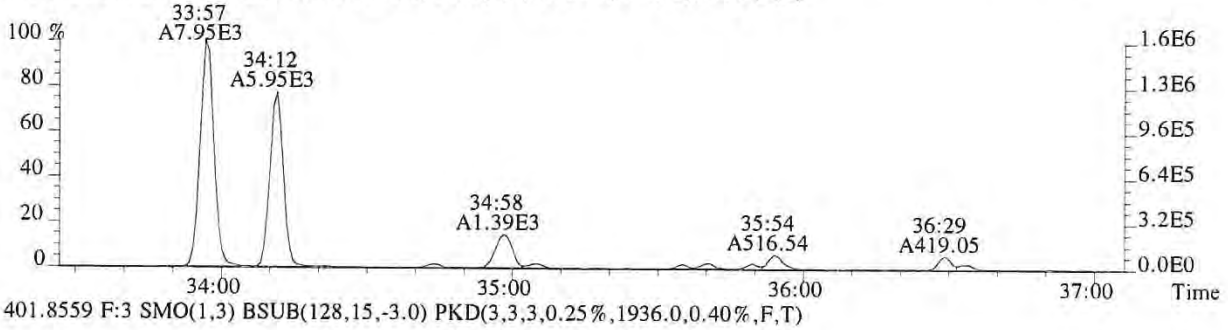


059242

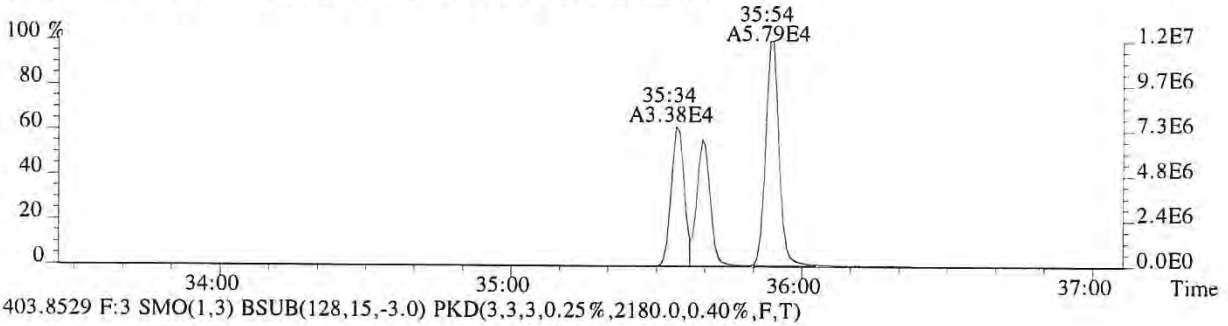
File:P616148 #1-330 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1380.0,0.40%,F,T)



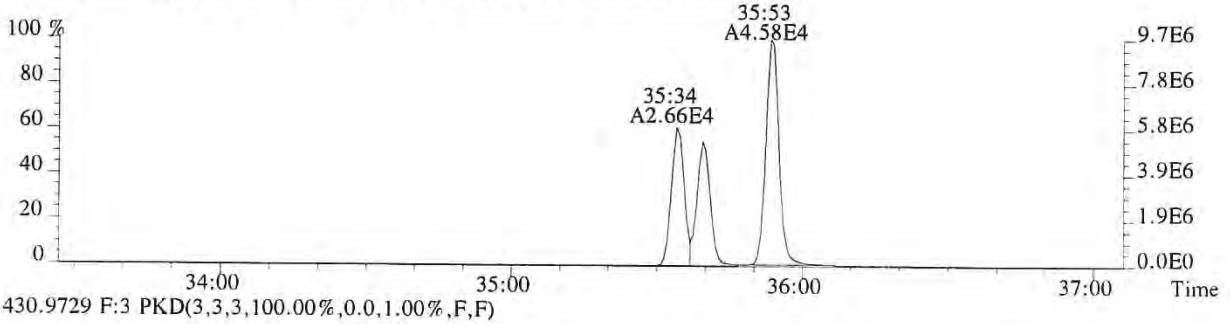
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3948.0,0.40%,F,T)



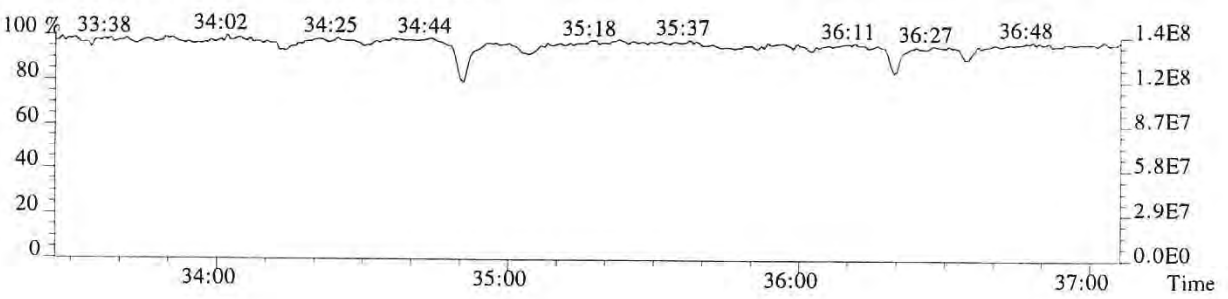
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1936.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2180.0,0.40%,F,T)



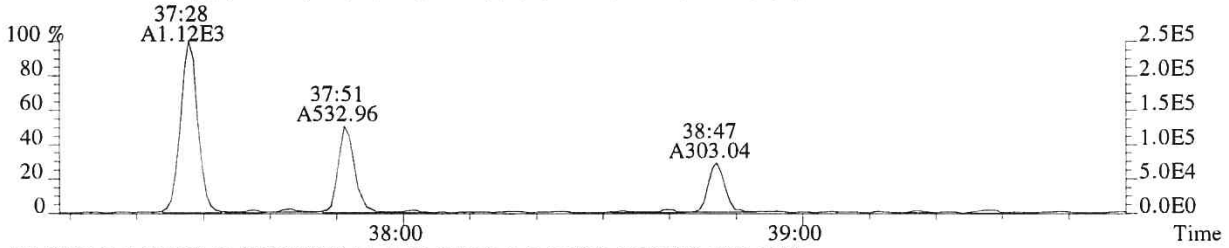
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



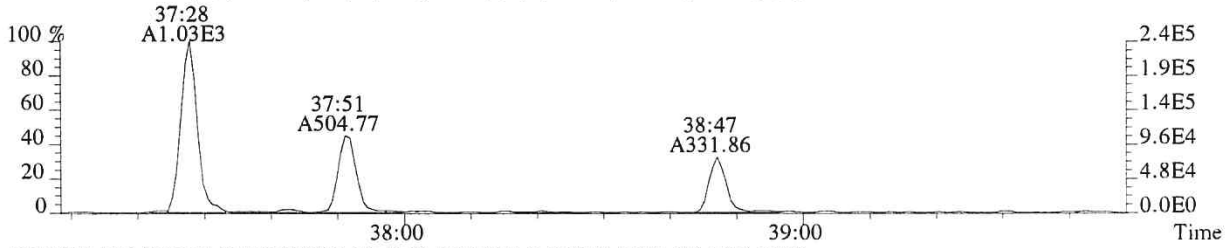
059243

File:P616148 #1-241 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017

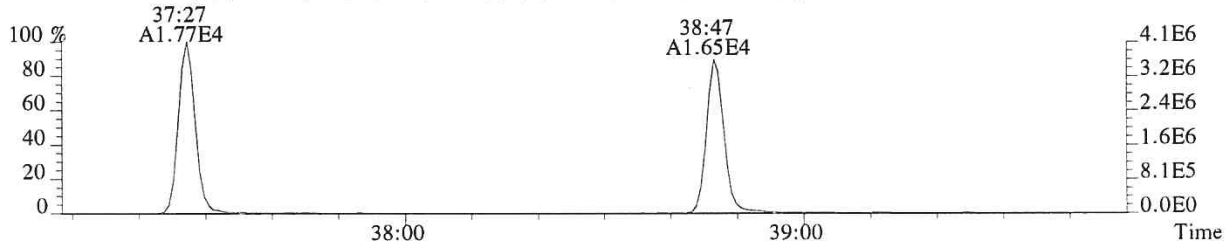
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1576.0,0.50%,F,T)



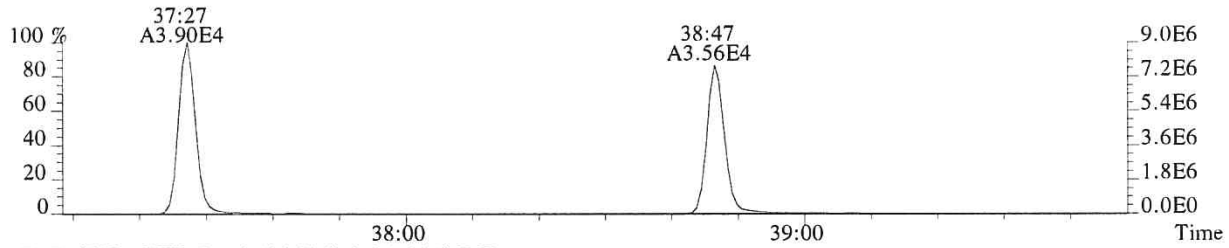
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1316.0,0.50%,F,T)



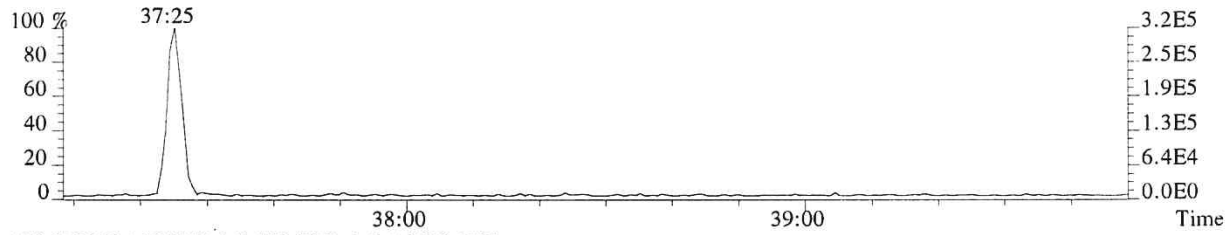
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3724.0,0.50%,F,T)



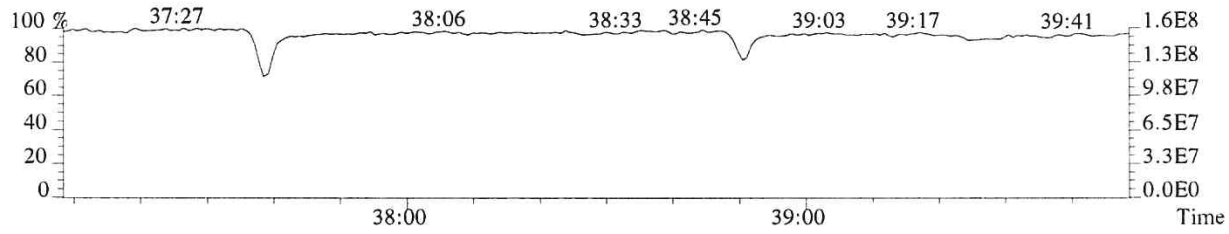
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2144.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

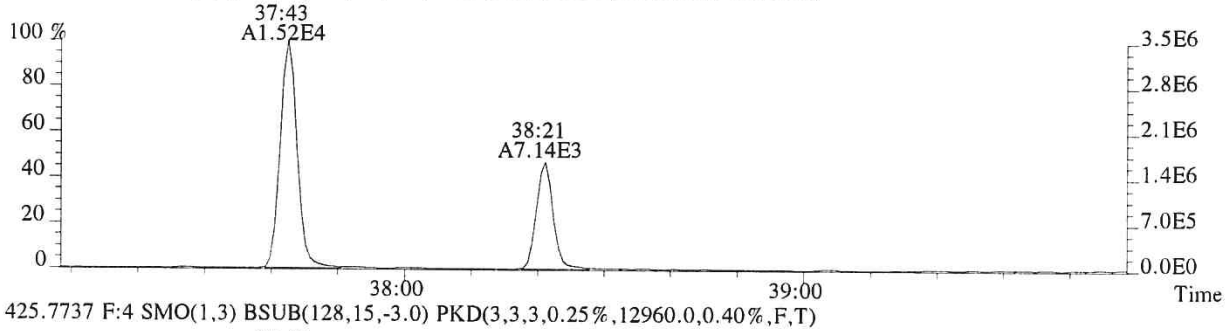


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

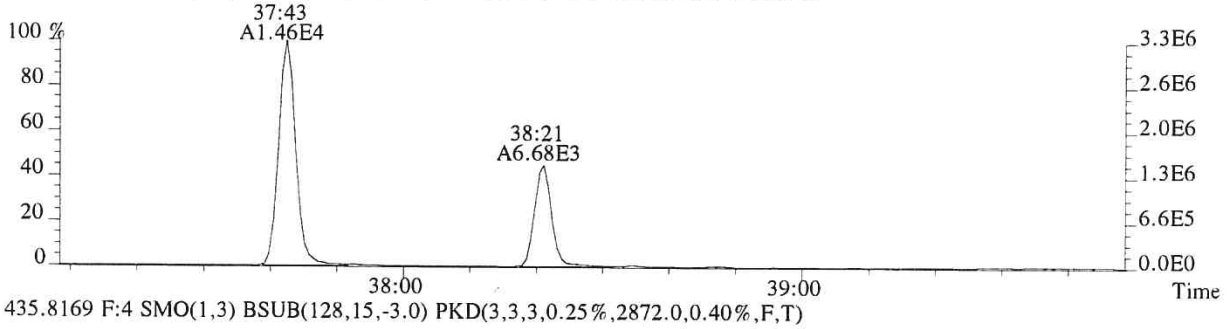


059244

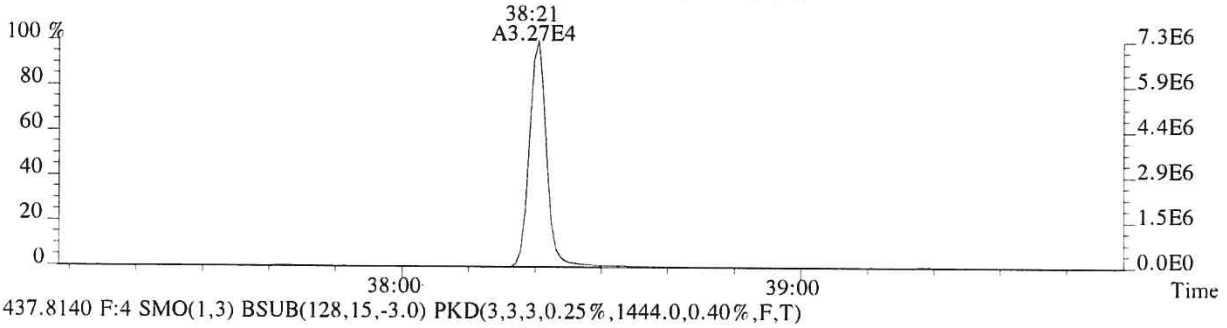
File:P616148 #1-241 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,15392.0,0.40%,F,T)



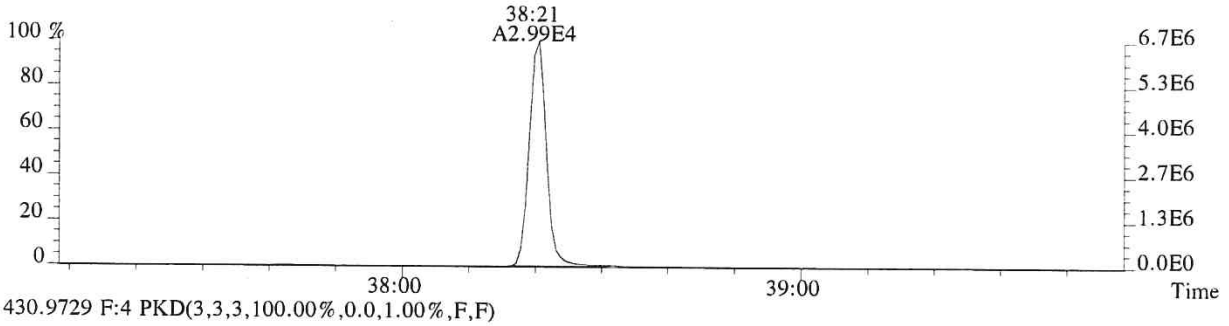
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12960.0,0.40%,F,T)



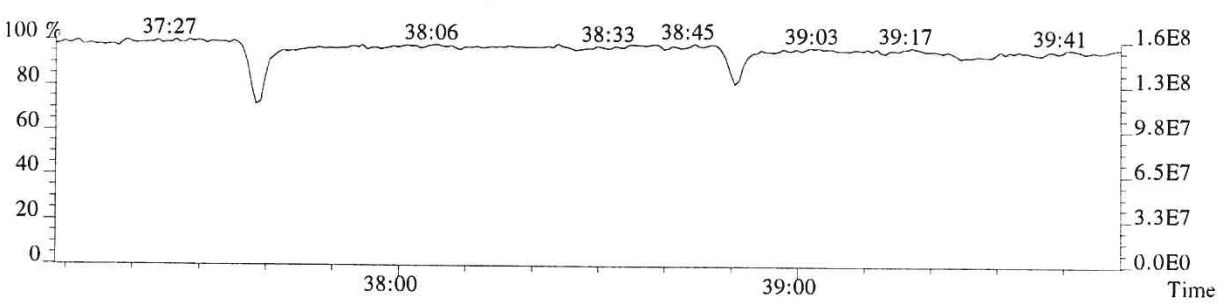
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2872.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1444.0,0.40%,F,T)



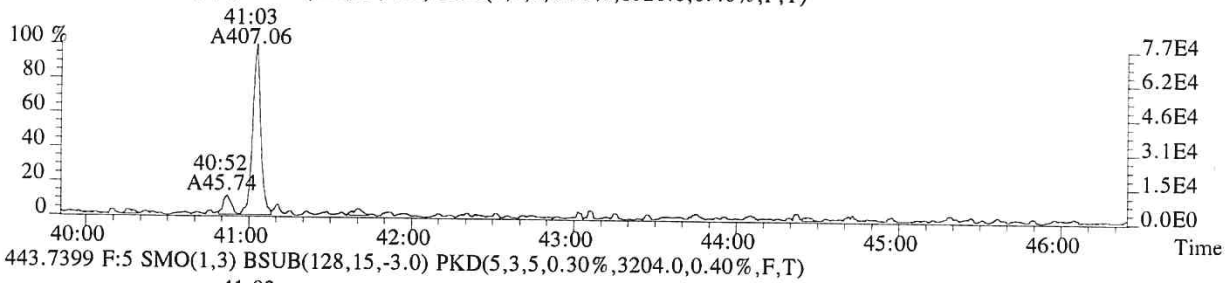
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



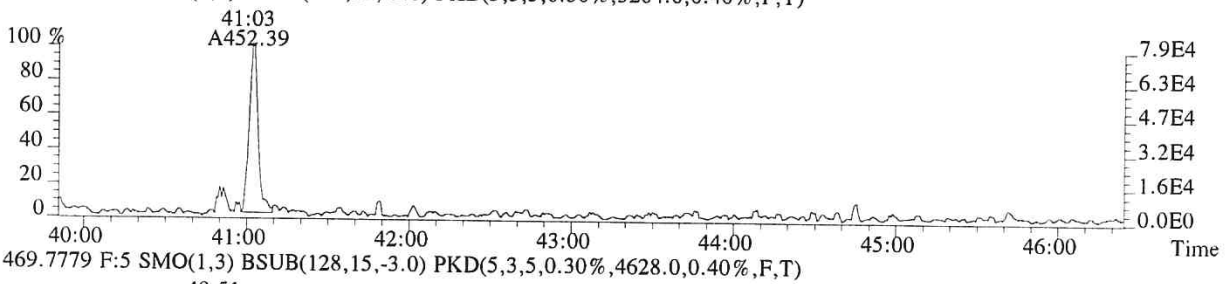
059245

File:P616148 #1-591 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017

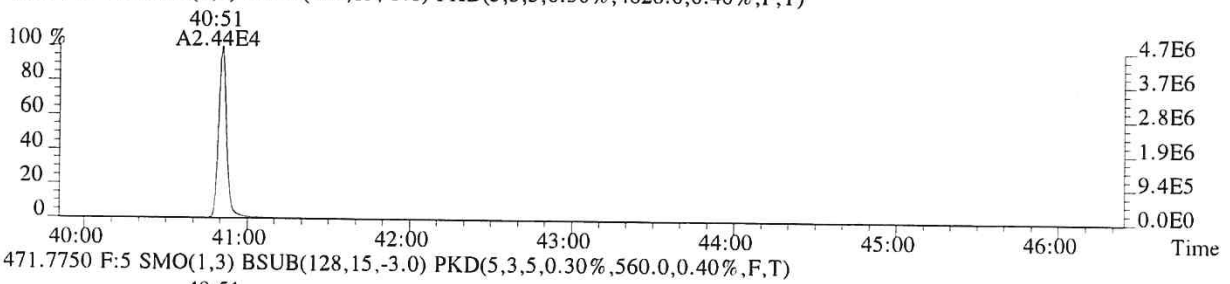
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1320.0,0.40%,F,T)



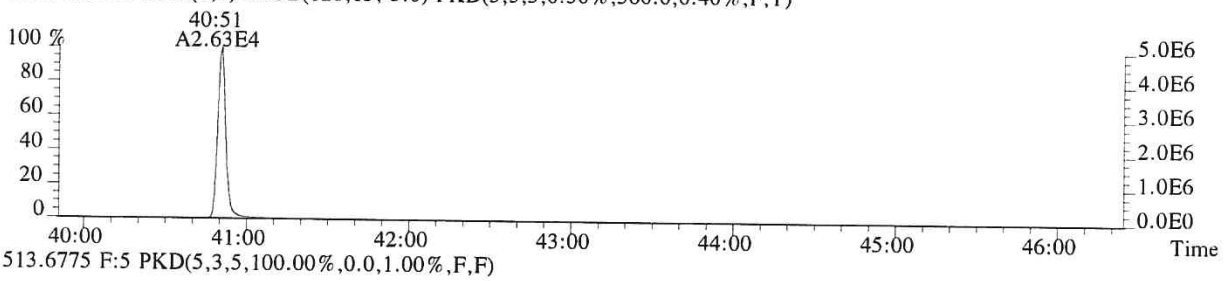
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3204.0,0.40%,F,T)



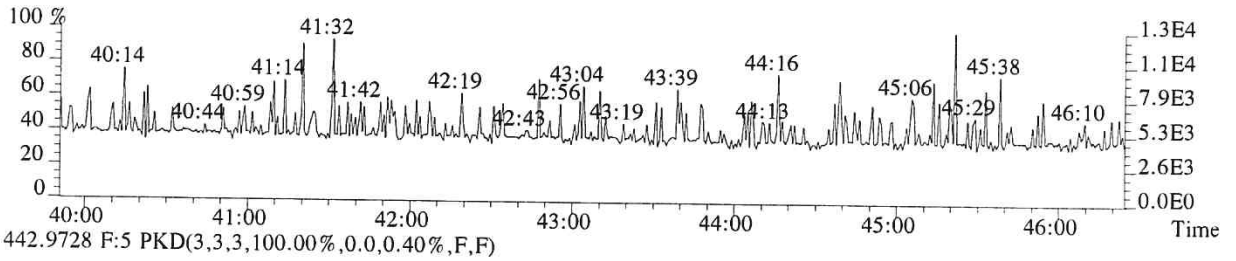
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4628.0,0.40%,F,T)



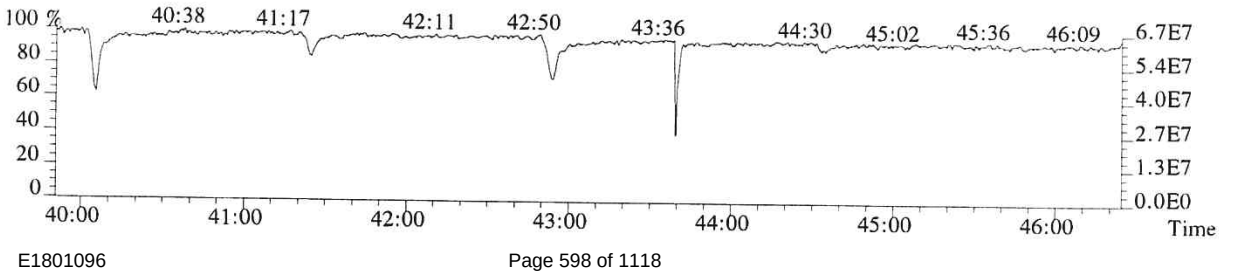
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,560.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

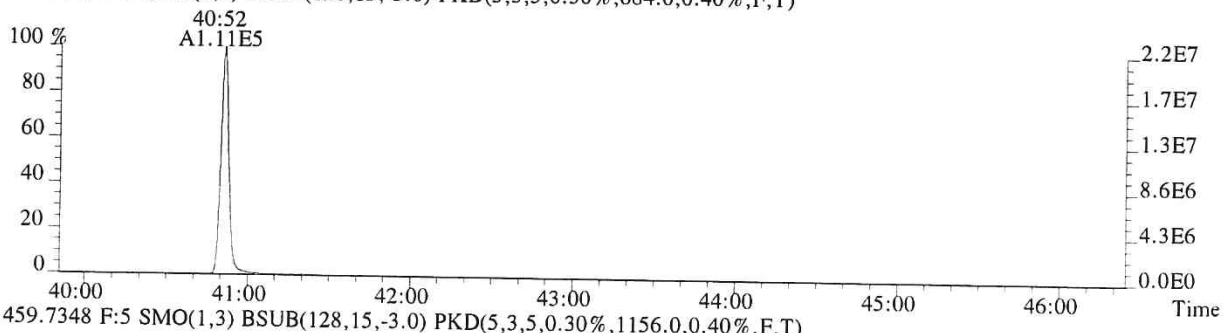


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

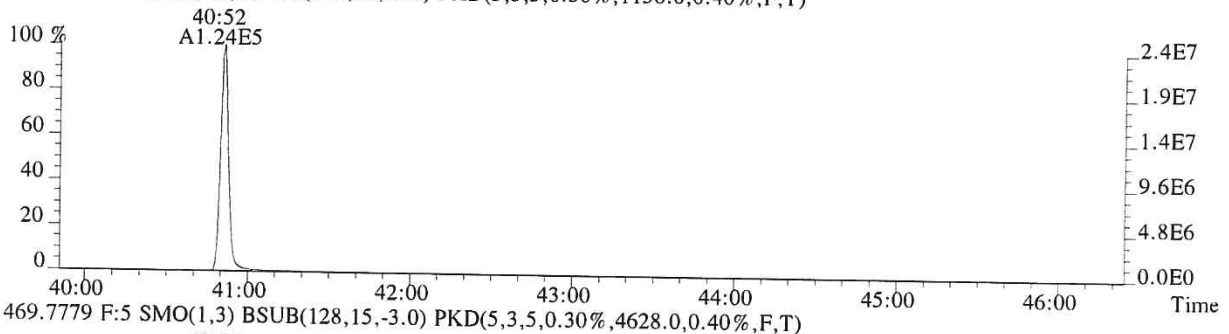


059246

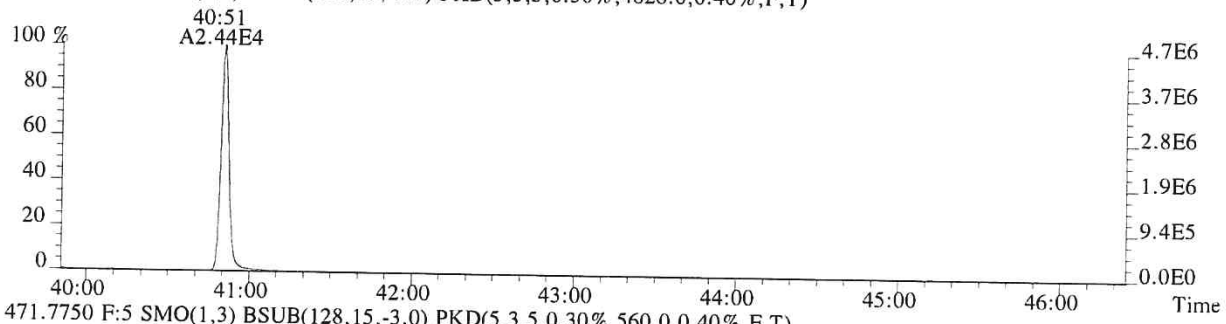
File:P616148 #1-591 Acq:20-DEC-2018 18:49:02 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-017
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,684.0,0.40%,F,T)



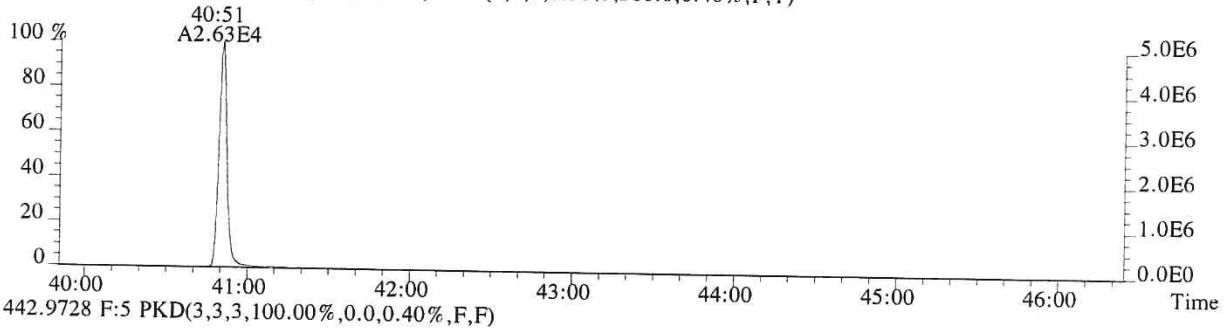
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1156.0,0.40%,F,T)



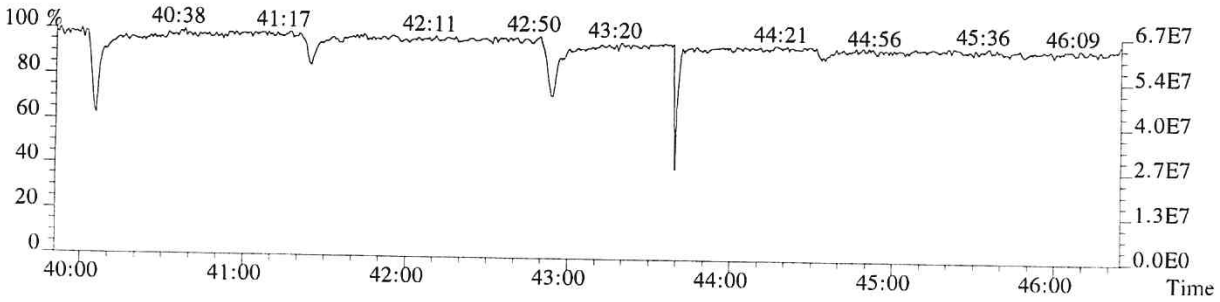
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4628.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,560.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0235

Run #14 Filename P616149 Samp: 1 Inj: 1 Acquired: 20-DEC-18 19:38:12
Processed: 24-DEC-18 10:54:07 Sample ID: E1801096-018

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:18	1.676e+03	2.201e+03	0.76	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	2.013e+02	1.382e+02	1.46	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	1.506e+02	1.362e+02	1.11	no	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:48	3.554e+02	3.029e+02	1.17	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:55	9.776e+01	1.007e+02	0.97	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:26	3.309e+01	3.314e+01	1.00	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:11	4.959e+01	5.039e+01	0.98	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:28	5.524e+02	5.071e+02	1.09	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:47	3.077e+01	3.142e+01	0.98	yes	no	1.463
10	Unk	OCDF	41:03	5.798e+02	6.326e+02	0.92	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:14	4.340e+02	5.023e+02	0.86	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	1.040e+02	8.455e+01	1.23	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	1.592e+02	1.103e+02	1.44	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	2.184e+02	1.914e+02	1.14	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	4.480e+02	4.416e+02	1.01	no	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	5.890e+03	5.501e+03	1.07	yes	no	1.112
17	Unk	OCDD	40:52	6.205e+04	6.903e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:16	2.957e+04	3.728e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:01	6.048e+04	3.738e+04	1.62	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	5.696e+04	3.567e+04	1.60	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	2.978e+04	5.596e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:55	3.354e+04	6.281e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	3.153e+04	5.830e+04	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	2.927e+04	5.433e+04	0.54	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:27	2.290e+04	5.029e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	2.092e+04	4.620e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:12	1.428e+04	1.855e+04	0.77	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:18	4.097e+04	2.596e+04	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	4.138e+04	3.267e+04	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:39	3.711e+04	2.919e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	4.289e+04	4.044e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:51	3.631e+04	3.941e+04	0.92	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:30	4.137e+04	5.143e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	6.358e+04	4.943e+04	1.29	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	2.183e+04				no	1.086

$$\text{OCDD} = \frac{(6.205e{+}04 + 6.903e{+}04) \times 4000\ \text{pg} \times 1}{(3.631e{+}04 + 3.941e{+}04) \times 10645\ \text{g} \times 75.5 / 100 \times 1.157} = 7422.66631\ \text{ng/Kg}$$

LG 12/26/18

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059248

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0235

Run #14 Filename P616149 Samp: 1 Inj: 1 Acquired: 20-DEC-18 19:38:12
Processed: 24-DEC-18 10:54:07 LAB. ID: E1801096-018

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.46e+05	1.88e+03	1.3e+02	3.25e+05	7.06e+03	4.6e+01
2	1,2,3,7,8-PeCDF	3.88e+04	2.53e+03	1.5e+01	2.31e+04	2.74e+03	8.4e+00
3	2,3,4,7,8-PeCDF	2.61e+04	2.53e+03	1.0e+01	2.15e+04	2.74e+03	7.9e+00
4	1,2,3,4,7,8-HxCDF	7.22e+04	2.04e+03	3.5e+01	6.81e+04	1.35e+03	5.0e+01
5	1,2,3,6,7,8-HxCDF	1.72e+04	2.04e+03	8.4e+00	2.23e+04	1.35e+03	1.7e+01
6	2,3,4,6,7,8-HxCDF	8.45e+03	2.04e+03	4.1e+00	7.01e+03	1.35e+03	5.2e+00
7	1,2,3,7,8,9-HxCDF	8.82e+03	2.04e+03	4.3e+00	8.61e+03	1.35e+03	6.4e+00
8	1,2,3,4,6,7,8-HpCDF	1.16e+05	1.51e+03	7.7e+01	1.08e+05	1.14e+03	9.5e+01
9	1,2,3,4,7,8,9-HpCDF	7.64e+03	1.51e+03	5.1e+00	6.48e+03	1.14e+03	5.7e+00
10	OCDF	1.16e+05	6.84e+02	1.7e+02	1.22e+05	3.86e+03	3.1e+01
11	2,3,7,8-TCDD	6.87e+04	5.32e+03	1.3e+01	8.19e+04	2.79e+03	2.9e+01
12	1,2,3,7,8-PeCDD	1.91e+04	2.09e+03	9.1e+00	1.23e+04	8.16e+02	1.5e+01
13	1,2,3,4,7,8-HxCDD	3.81e+04	2.29e+03	1.7e+01	2.78e+04	3.17e+03	8.8e+00
14	1,2,3,6,7,8-HxCDD	4.76e+04	2.29e+03	2.1e+01	4.30e+04	3.17e+03	1.4e+01
15	1,2,3,7,8,9-HxCDD	9.47e+04	2.29e+03	4.1e+01	8.48e+04	3.17e+03	2.7e+01
16	1,2,3,4,6,7,8-HpCDD	1.37e+06	5.37e+03	2.6e+02	1.25e+06	8.63e+03	1.4e+02
17	OCDD	1.24e+07	8.88e+02	1.4e+04	1.37e+07	1.69e+03	8.1e+03
18	13C-2,3,7,8-TCDF	4.47e+06	1.34e+04	3.3e+02	5.65e+06	8.55e+03	6.6e+02
19	13C-1,2,3,7,8-PeCDF	1.05e+07	1.50e+03	7.0e+03	6.34e+06	9.12e+02	7.0e+03
20	13C-2,3,4,7,8-PeCDF	1.05e+07	1.50e+03	7.0e+03	6.55e+06	9.12e+02	7.2e+03
21	13C-1,2,3,4,7,8-HxCDF	6.36e+06	1.37e+03	4.6e+03	1.21e+07	1.72e+03	7.1e+03
22	13C-1,2,3,6,7,8-HxCDF	6.76e+06	1.37e+03	4.9e+03	1.27e+07	1.72e+03	7.4e+03
23	13C-2,3,4,6,7,8-HxCDF	6.93e+06	1.37e+03	5.1e+03	1.27e+07	1.72e+03	7.4e+03
24	13C-1,2,3,7,8,9-HxCDF	6.14e+06	1.37e+03	4.5e+03	1.14e+07	1.72e+03	6.7e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.29e+06	4.38e+03	1.2e+03	1.16e+07	3.55e+03	3.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.55e+06	4.38e+03	1.0e+03	1.03e+07	3.55e+03	2.9e+03
27	13C-2,3,7,8-TCDD	2.39e+06	1.79e+04	1.3e+02	3.13e+06	5.67e+03	5.5e+02
28	13C-1,2,3,7,8-PeCDD	7.79e+06	2.44e+03	3.2e+03	4.93e+06	2.78e+03	1.8e+03
29	13C-1,2,3,4,7,8-HxCDD	8.76e+06	3.96e+03	2.2e+03	6.92e+06	1.50e+03	4.6e+03
30	13C-1,2,3,6,7,8-HxCDD	7.87e+06	3.96e+03	2.0e+03	6.25e+06	1.50e+03	4.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	9.80e+06	1.98e+03	4.9e+03	9.20e+06	1.66e+03	5.6e+03
32	13C-OCDD	7.23e+06	3.05e+03	2.4e+03	7.80e+06	3.88e+02	2.0e+04
33	13C-1,2,3,4-TCDD	6.50e+06	1.79e+04	3.6e+02	8.15e+06	5.67e+03	1.4e+03
34	13C-1,2,3,7,8,9-HxCDD	1.33e+07	3.96e+03	3.4e+03	1.03e+07	1.50e+03	6.9e+03
35	37Cl-2,3,7,8-TCDD	3.58e+06	5.67e+03	6.3e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (5.316e{+}03 + 2.792e{+}03) \times 2000}{(2.386e{+}06 + 3.130e{+}06) \times (\quad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0235

ntry: 36 Totals Name: Total Tetra-Furans

un: 14 File: P616149 Sample:1 Injection:1 Function:1

cquired: 20-DEC-18 19:38:12 Processed: 24-DEC-18 10:54:07

lass: 303.9020 305.8990 Tot Response: 8.41e+03 RRF: 1.081

	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
.	21:39	1.03e+02	1.51e+02	0.68	yes	2.53e+02		n	n
2	22:33	3.64e+02	4.72e+02	0.77	yes	8.37e+02		n	n
3	23:19	1.88e+02	2.84e+02	0.66	yes	4.73e+02		n	n
4	23:59	6.70e+01	7.81e+01	0.86	yes	1.45e+02		n	n
5	24:40	9.98e+01	1.41e+02	0.71	yes	2.41e+02		n	n
6	24:47	1.78e+02	2.41e+02	0.74	yes	4.19e+02		n	n
7	25:16	7.42e+02	9.38e+02	0.79	yes	1.68e+03		n	n
8	25:37	1.05e+02	1.45e+02	0.72	yes	2.49e+02		n	n
9	26:10	1.02e+02	1.35e+02	0.76	yes	2.37e+02		n	n
10	26:18	1.68e+03	2.20e+03	0.76	yes	3.88e+03	2,3,7,8-TCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0235

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 14 File: P616149 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 19:38:12 Processed: 24-DEC-18 10:54:07

Mass: 319.8970 321.8940 Tot Response: 9.36e+02 RRF: 1.049

	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
.	27:14	4.34e+02	5.02e+02 0.86	yes	9.36e+02	2,3,7,8-TCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0235

Entry: 39 Totals Name: Total Penta-Furans2

Run: 14 File: P616149 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 19:38:12 Processed: 24-DEC-18 10:54:07

Mass: 339.8600 341.8570 Tot Response: 7.77e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:00	2.55e+02	1.83e+02 1.39	yes	4.37e+02		n	n
2	31:02	2.01e+02	1.38e+02 1.46	yes	3.39e+02	1,2,3,7,8-PeCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0235

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 14 File: P616149 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 19:38:12 Processed: 24-DEC-18 10:54:07

Mass: 355.8550 357.8520 Tot Response: 1.79e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:02	2.59e+02	1.65e+02	1.57	yes	4.24e+02		n	n
2	30:32	4.03e+02	2.64e+02	1.53	yes	6.67e+02		n	n
3	31:14	8.96e+01	5.69e+01	1.57	yes	1.47e+02		n	n
4	31:32	2.89e+02	1.66e+02	1.74	yes	4.55e+02		n	n
5	31:53	3.46e+01	2.20e+01	1.57	yes	5.67e+01		n	n
6	32:24	2.47e+01	1.81e+01	1.37	yes	4.28e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0235

ntry: 41 Totals Name: Total Hexa-Furans

un: 14 File: P616149 Sample:1 Injection:1 Function:3

cquired: 20-DEC-18 19:38:12 Processed: 24-DEC-18 10:54:07

ass: 373.8210 375.8180 Tot Response: 9.97e+02 RRF: 1.324

RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
33:49	1.10e+02	1.01e+02	1.09	yes	2.11e+02		n	n
34:21	7.30e+01	5.45e+01	1.34	yes	1.28e+02		n	n
34:48	3.55e+02	3.03e+02	1.17	yes	6.58e+02	1,2,3,4,7,8-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0235

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 14 File: P616149 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 19:38:12 Processed: 24-DEC-18 10:54:07

Mass: 389.8160 391.8130 Tot Response: 1.09e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:12	4.16e+03	3.18e+03	1.31	yes	7.34e+03		n	n
2	34:58	1.64e+03	1.19e+03	1.37	yes	2.83e+03		n	n
3	35:05	1.83e+02	1.50e+02	1.22	yes	3.32e+02		n	n
4	35:41	2.18e+02	1.91e+02	1.14	yes	4.10e+02	1,2,3,6,7,8-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0235

Entry: 43 Totals Name: Total Hepta-Furans

Run: 14 File: P616149 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 19:38:12 Processed: 24-DEC-18 10:54:07

Mass: 407.7820 409.7790 Tot Response: 1.50e+03 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:28	5.52e+02	5.07e+02	1.09	yes	1.06e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:51	2.01e+02	1.75e+02	1.15	yes	3.76e+02		n	n
3	38:47	3.08e+01	3.14e+01	0.98	yes	6.22e+01	1,2,3,4,7,8,9-HpCDF	n	n

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0235

ntry: 44 Totals Name: Total Hepta-Dioxins

un: 14 File: P616149 Sample:1 Injection:1 Function:4

cquired: 20-DEC-18 19:38:12 Processed: 24-DEC-18 10:54:07

ass: 423.7770 425.7740 Tot Response: 3.71e+04 RRF: 1.112

RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
37:43	1.33e+04	1.25e+04	1.07	yes	2.57e+04		n	n
38:21	5.89e+03	5.50e+03	1.07	yes	1.14e+04	1,2,3,4,6,7,8-HpCDD	n	n

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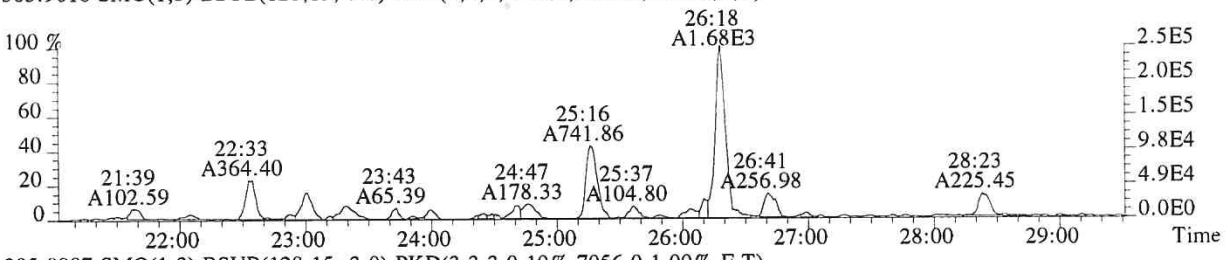
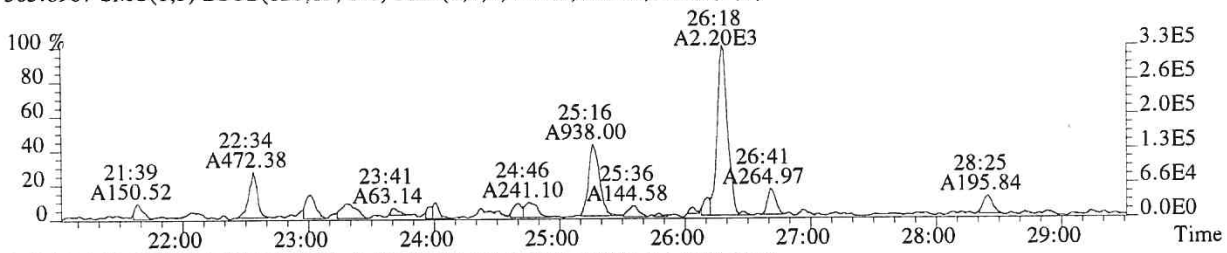
Office(281)530-5656. Fax(281)530-5887

File:P616149 #1-602 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-018

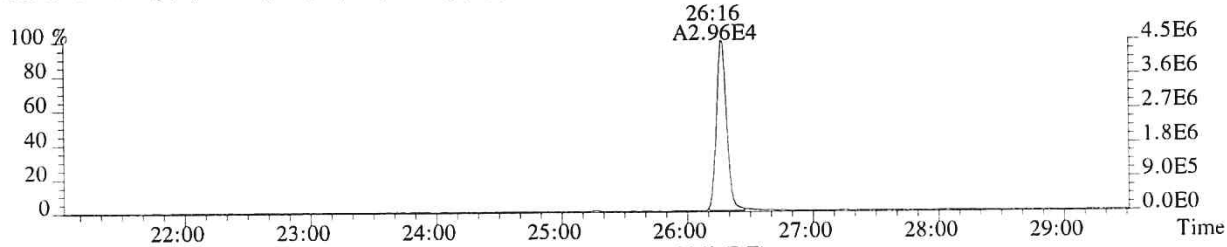
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1880.0,1.00%,F,T)



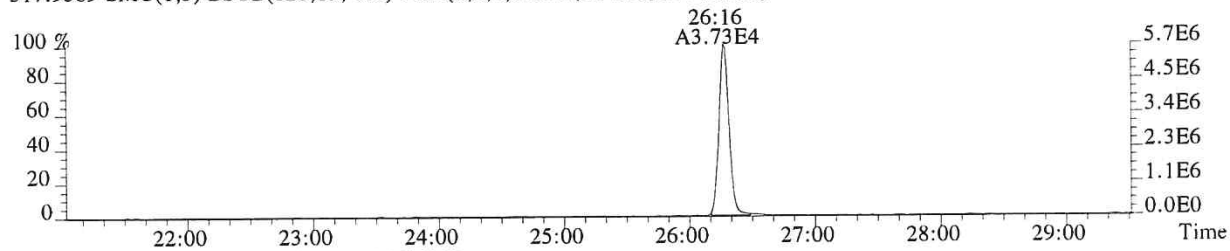
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7056.0,1.00%,F,T)



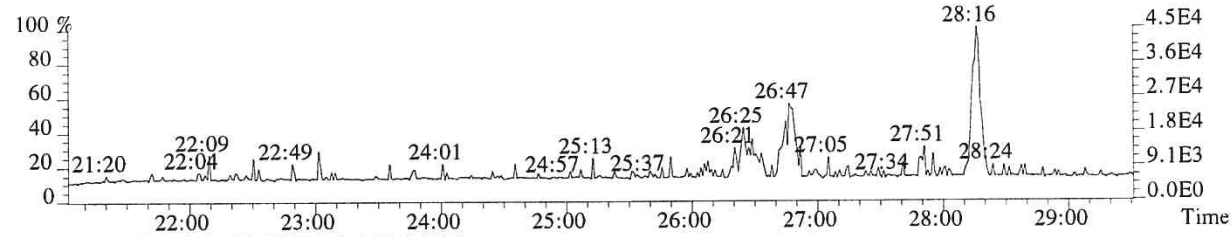
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13408.0,1.00%,F,T)



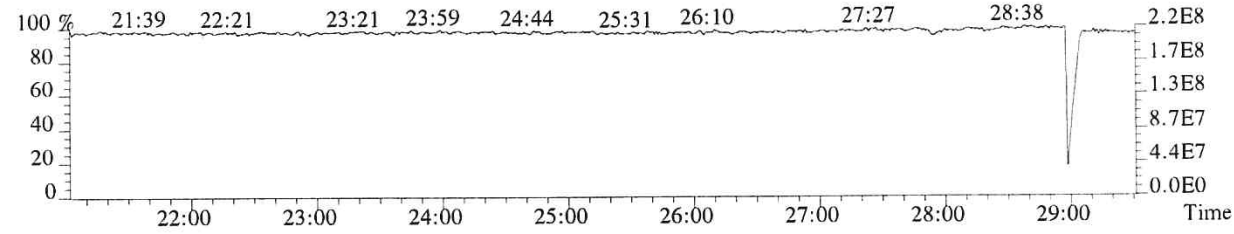
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8548.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



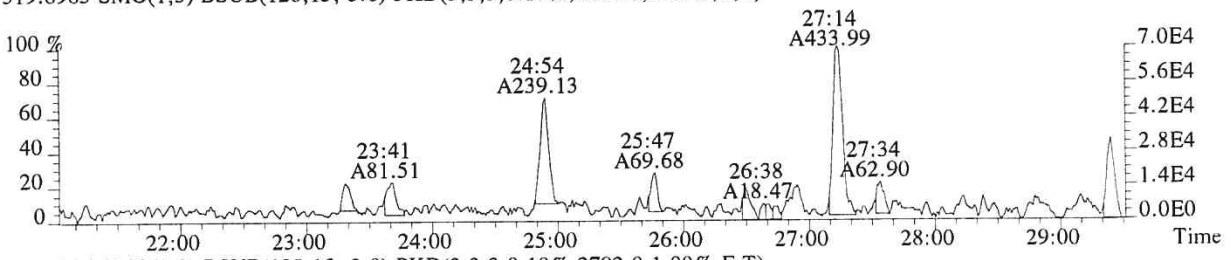
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



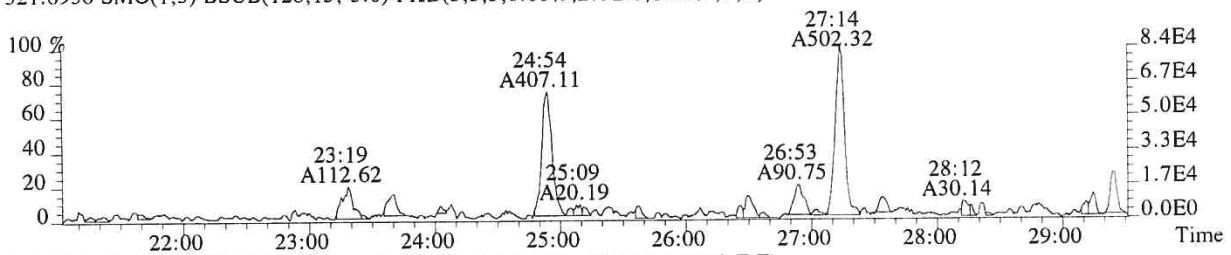
059258

File:P616149 #1-602 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-018

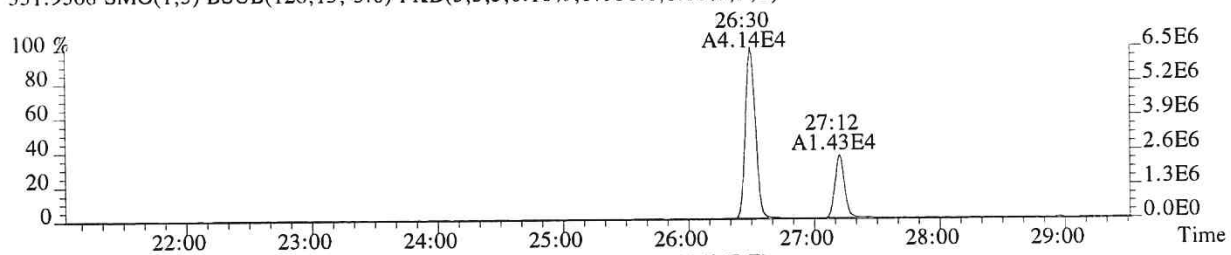
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5316.0,1.00%,F,T)



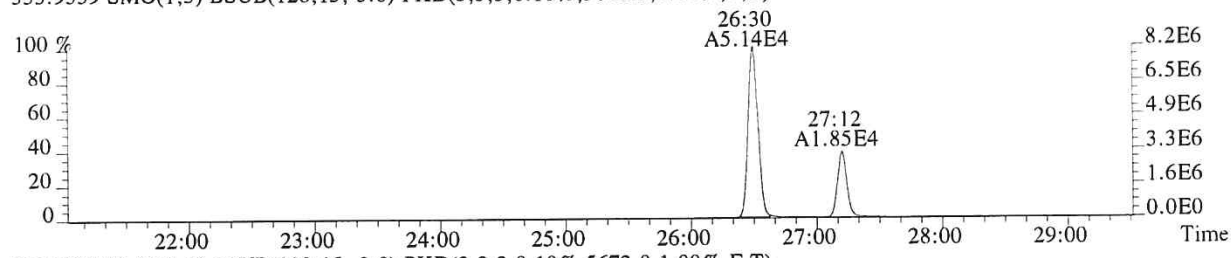
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2792.0,1.00%,F,T)



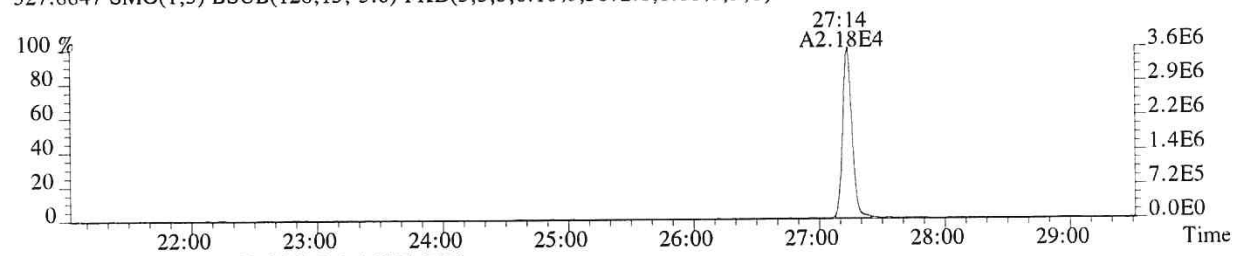
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,17936.0,1.00%,F,T)



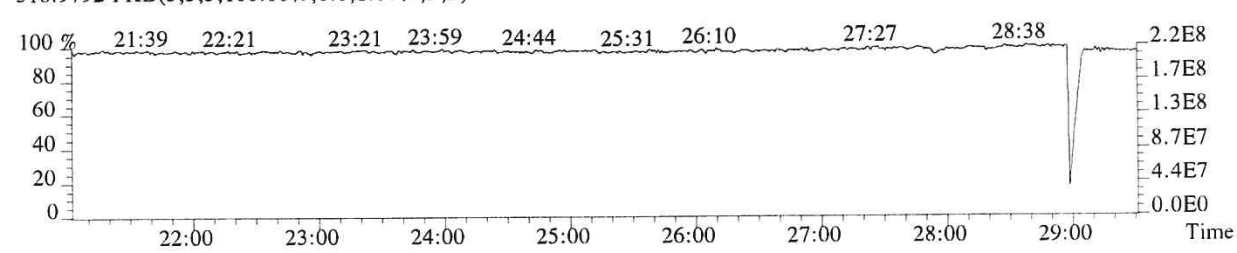
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5668.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5672.0,1.00%,F,T)

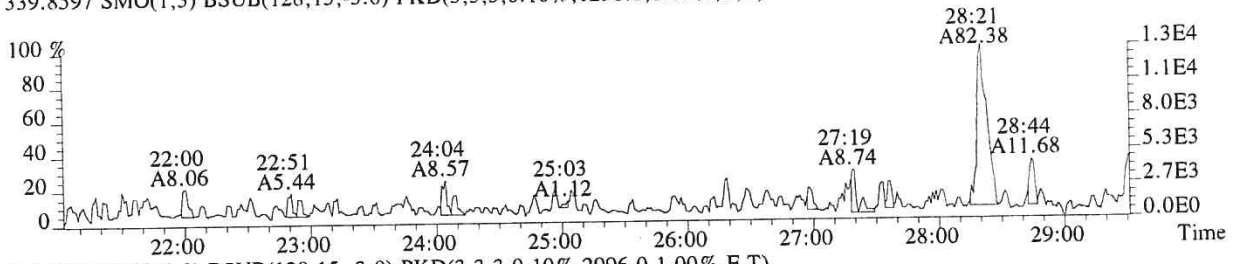


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

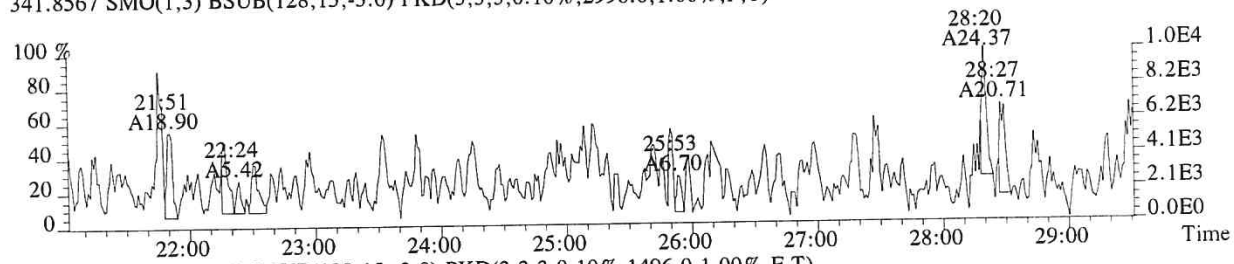


059259

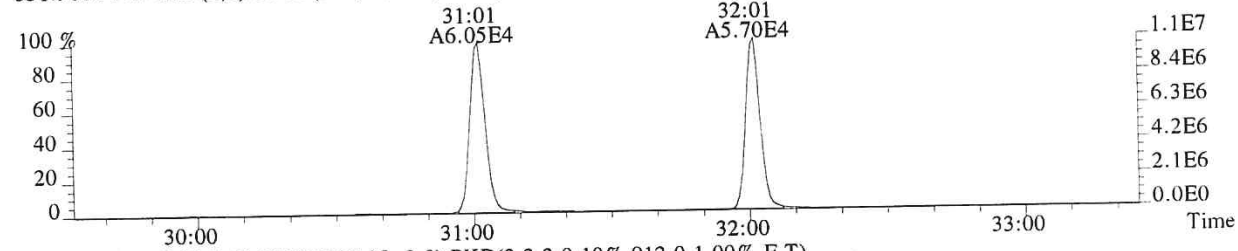
File:P616149 #1-602 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-018
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1296.0,1.00%,F,T)



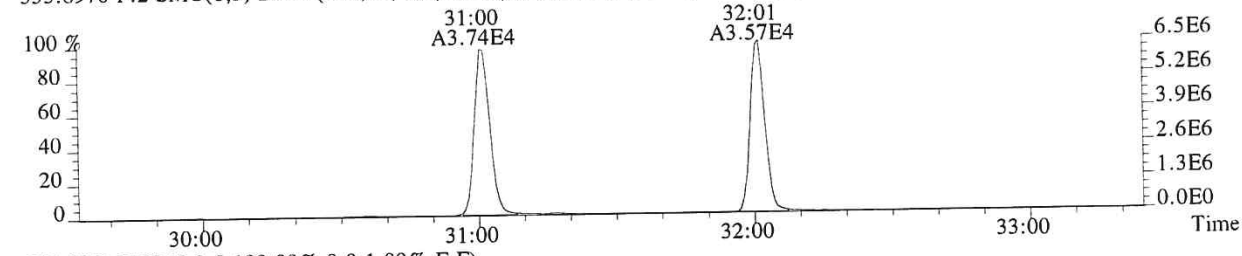
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2996.0,1.00%,F,T)



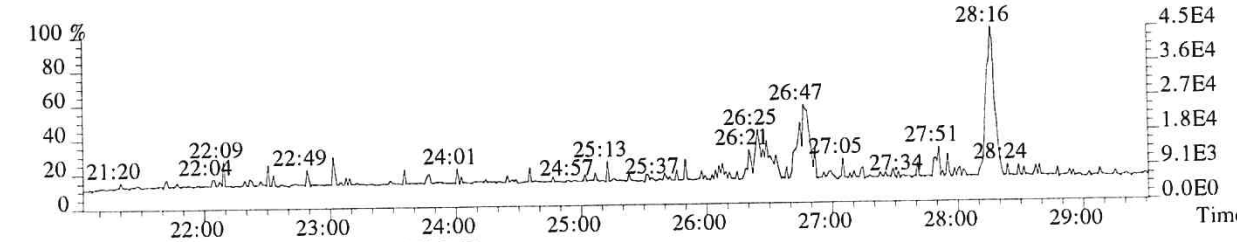
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1496.0,1.00%,F,T)



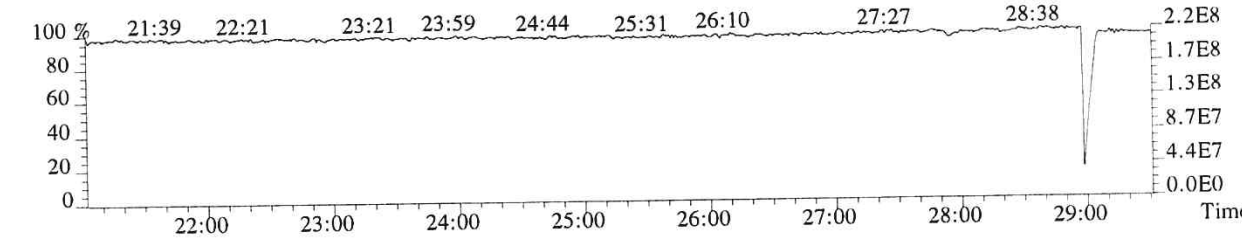
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,912.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

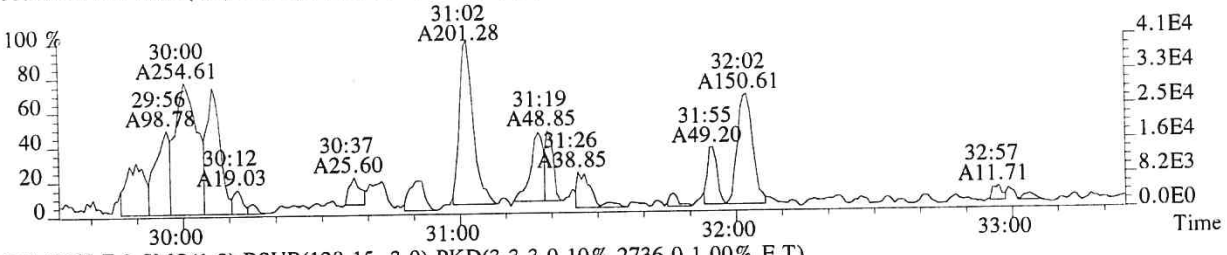


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

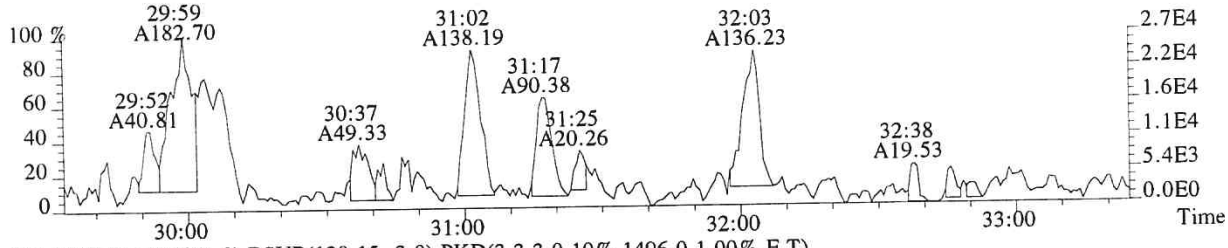


059260

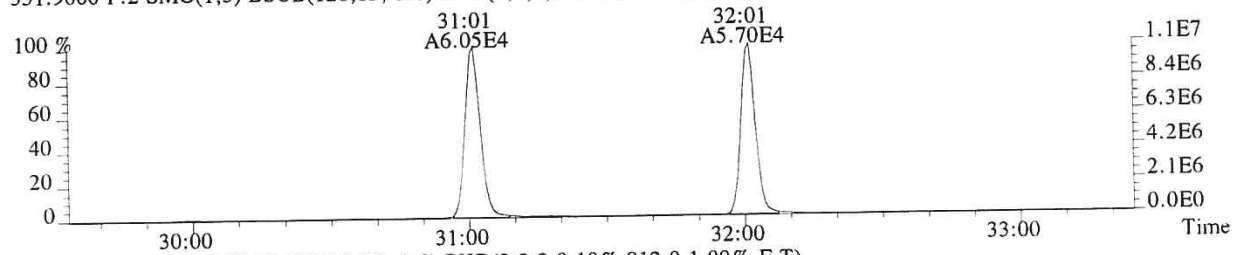
File:P616149 #1-348 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-018
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2528.0,1.00%,F,T)



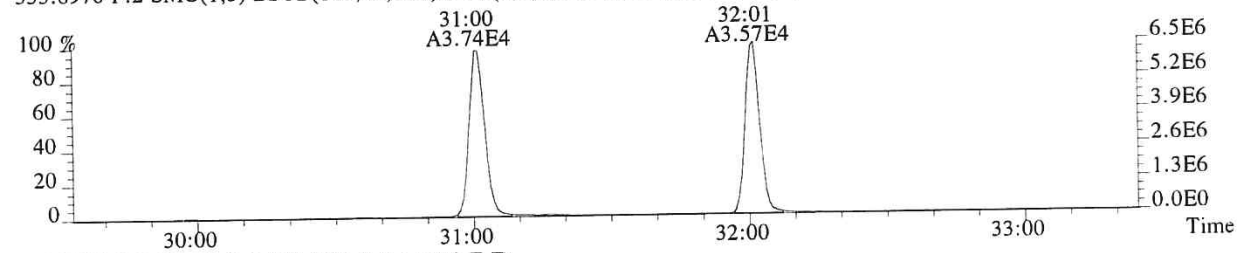
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2736.0,1.00%,F,T)



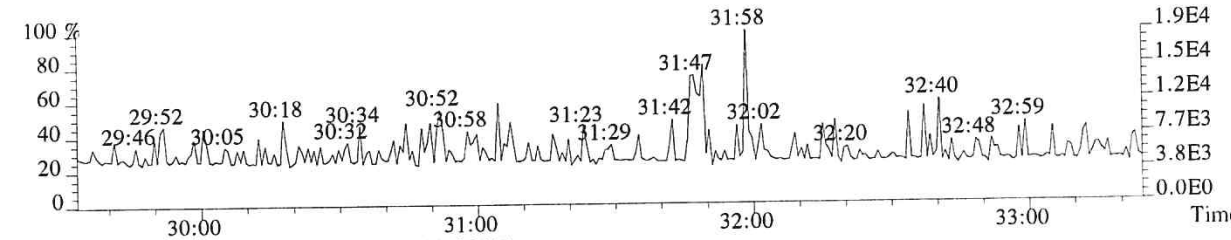
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1496.0,1.00%,F,T)



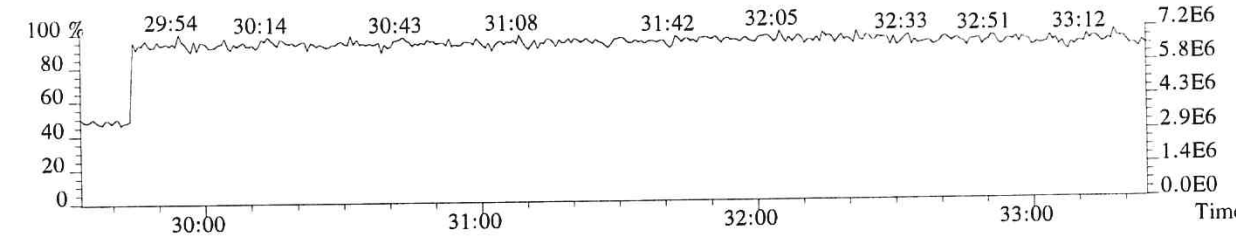
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,912.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

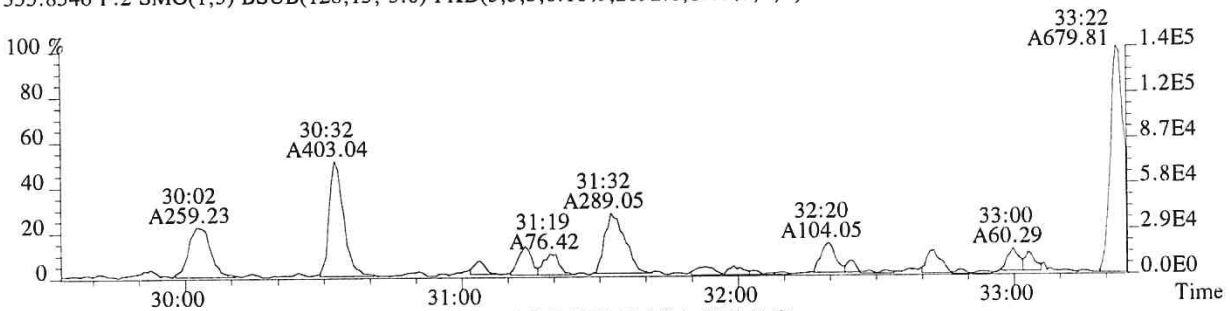


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

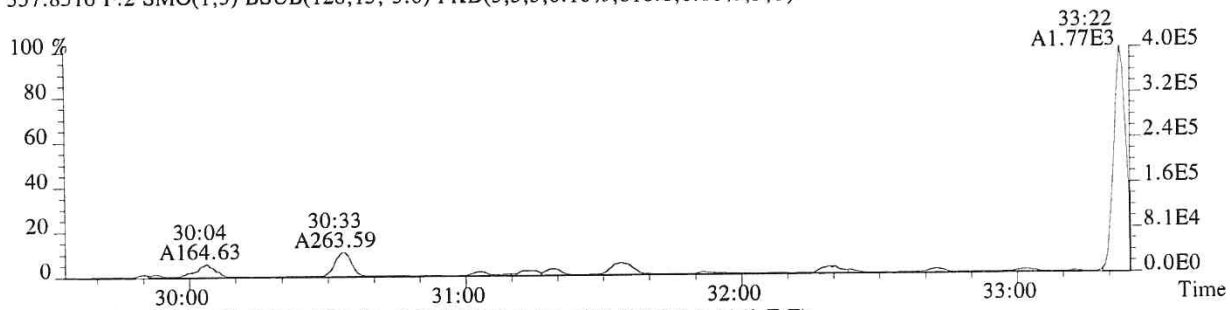


059261

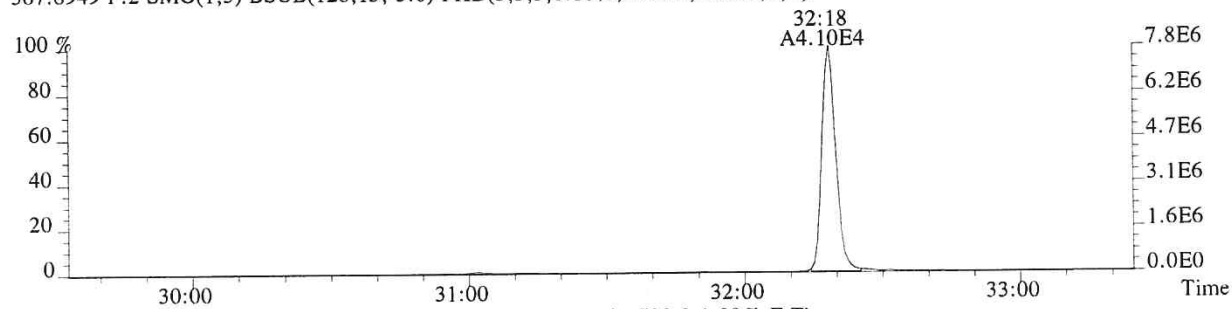
File:P616149 #1-348 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-018
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2092.0,1.00%,F,T)



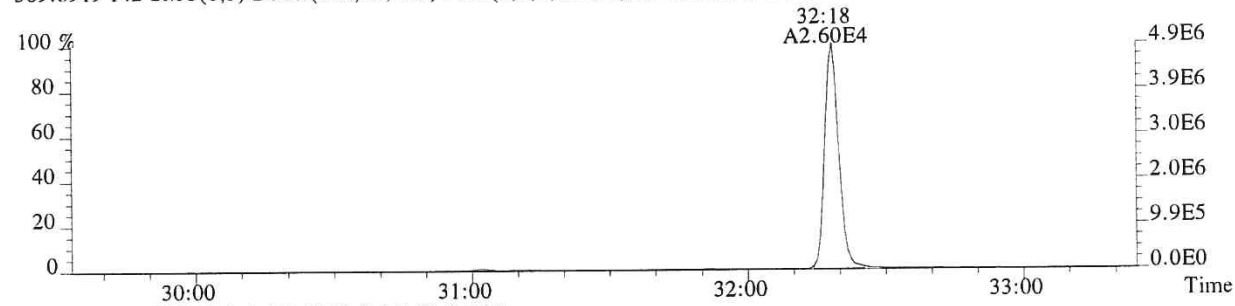
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,816.0,1.00%,F,T)



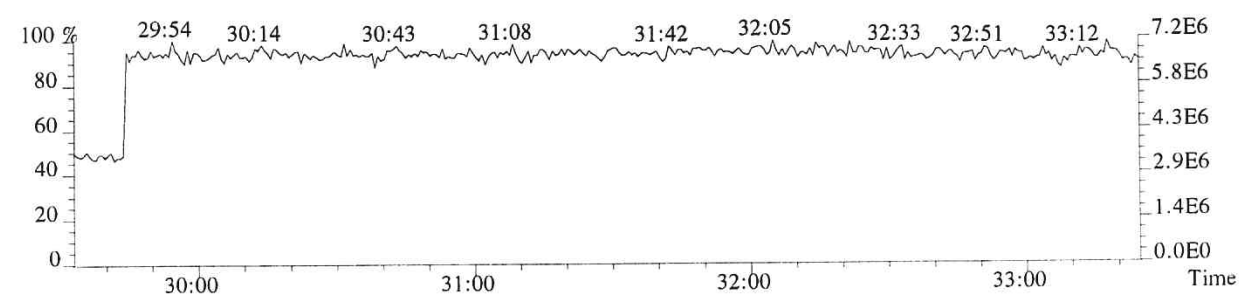
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2440.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2780.0,1.00%,F,T)



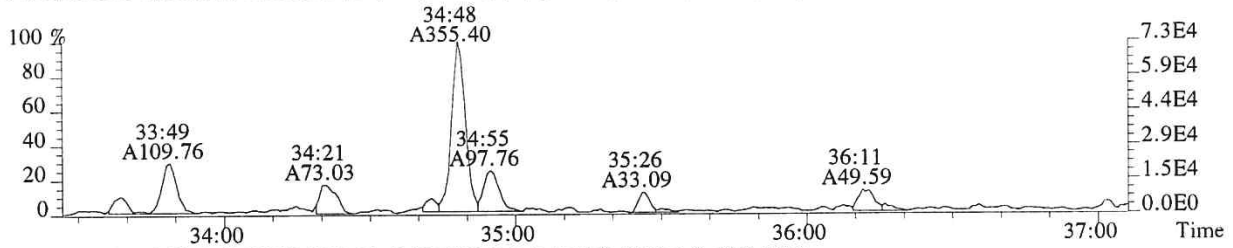
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



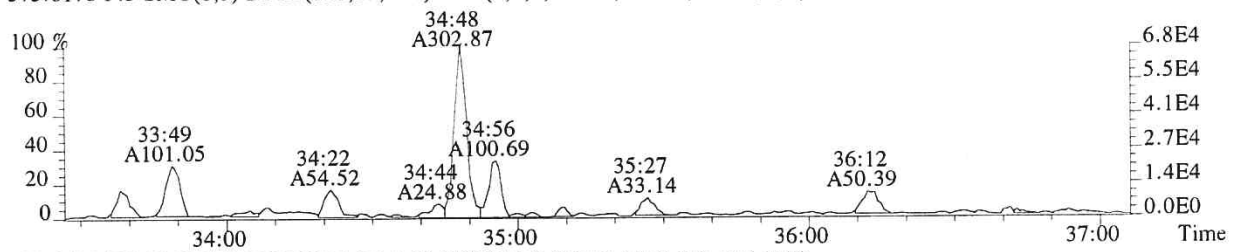
059262

File:P616149 #1-330 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-018

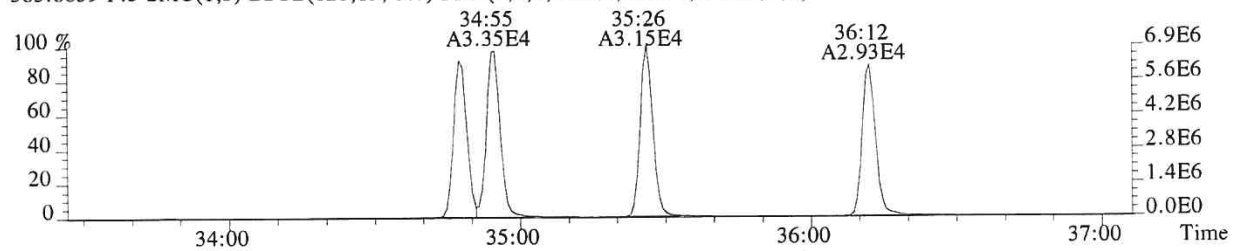
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2040.0,0.40%,F,T)



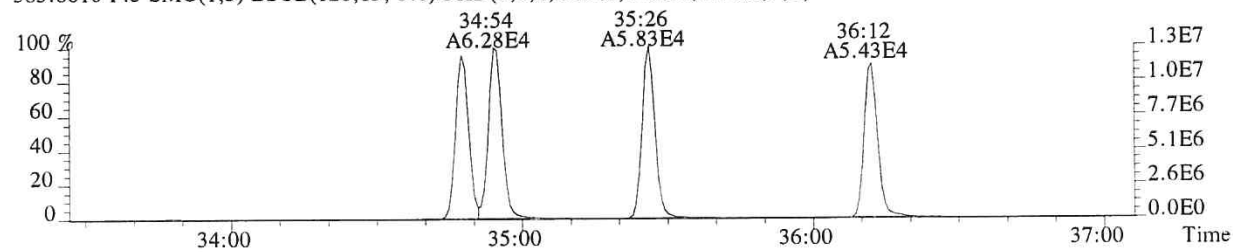
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1348.0,0.40%,F,T)



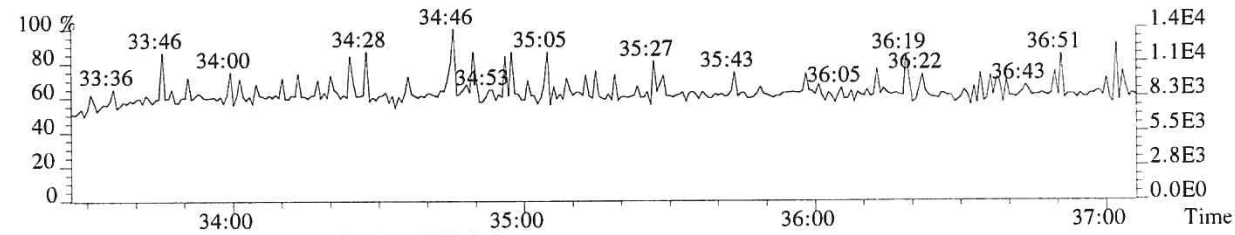
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1368.0,0.40%,F,T)



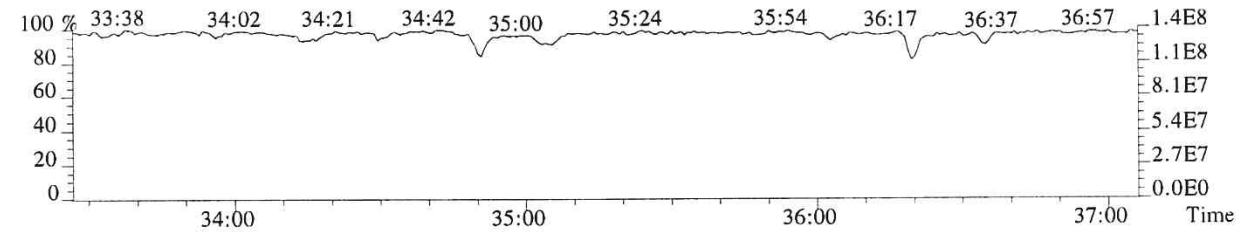
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1716.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

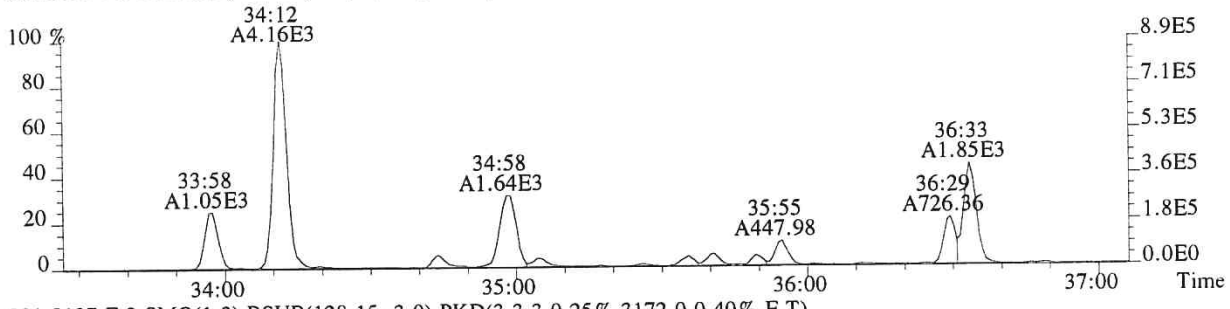


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

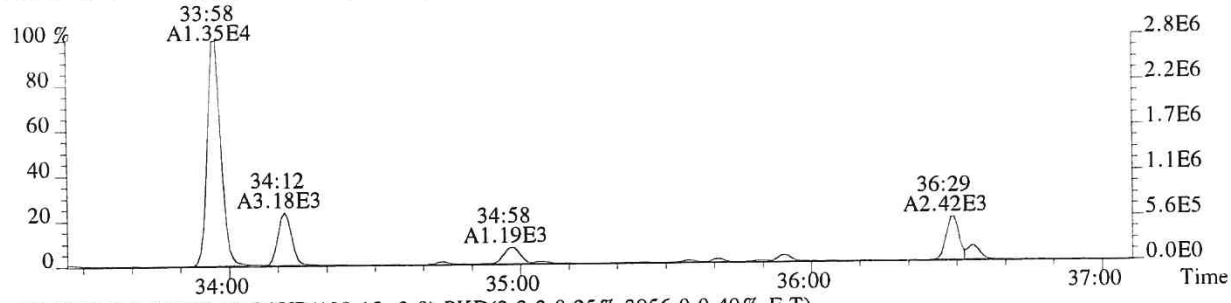


059263

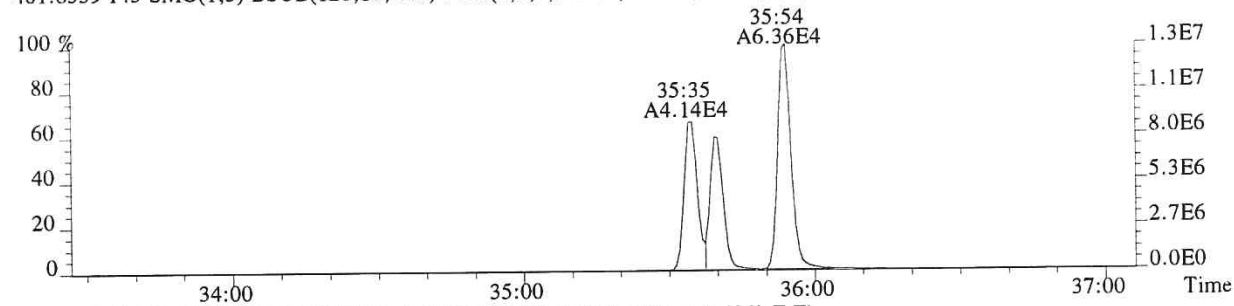
File:P616149 #1-330 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-018
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2292.0,0.40%,F,T)



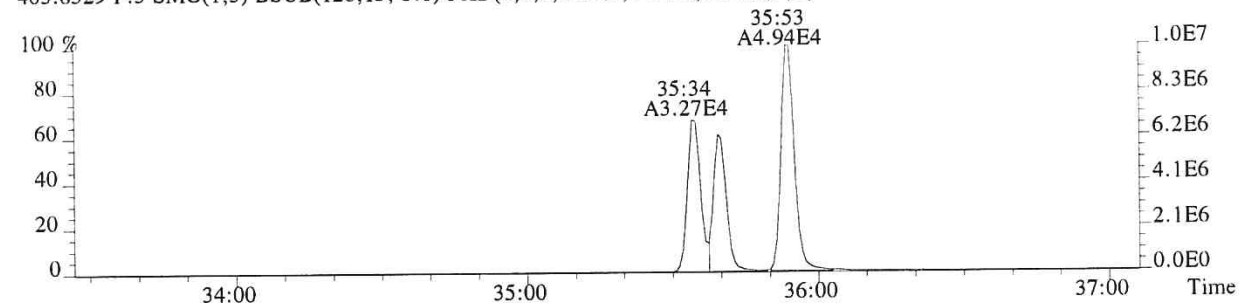
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3172.0,0.40%,F,T)



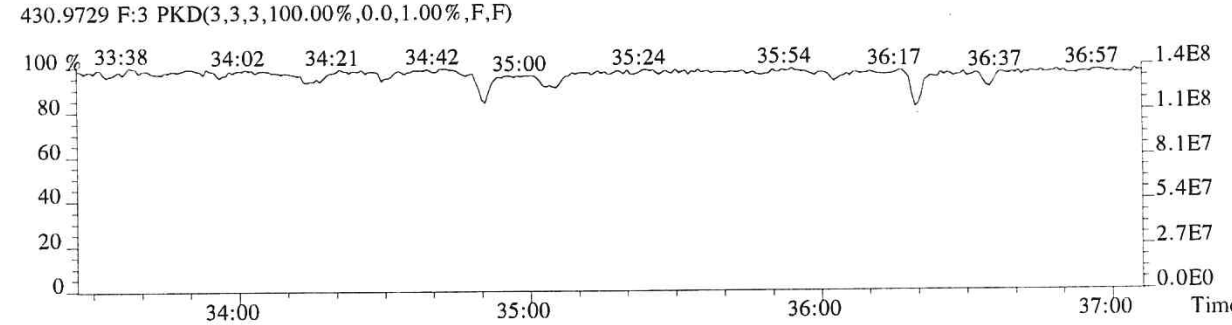
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3956.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1496.0,0.40%,F,T)



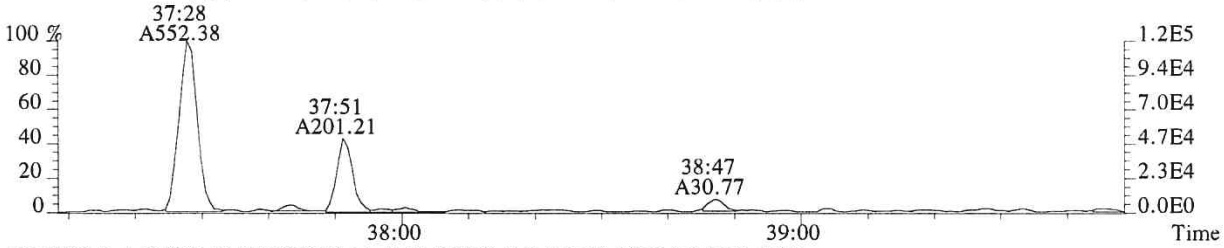
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



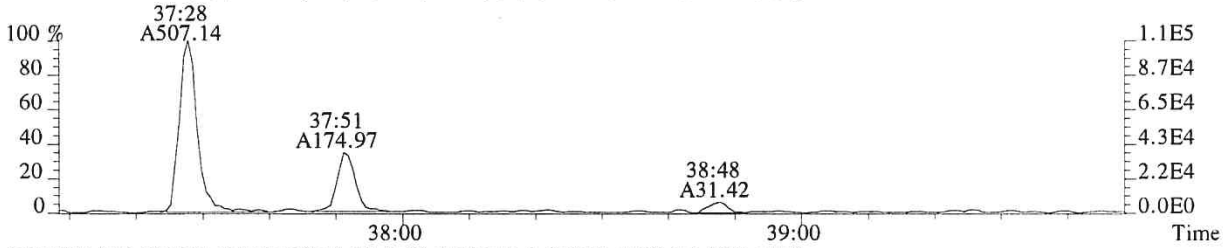
059264

File:P616149 #1-241 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-018

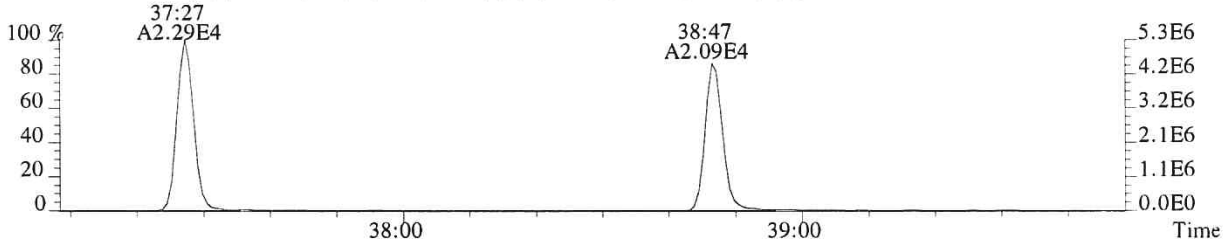
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1512.0,0.50%,F,T)



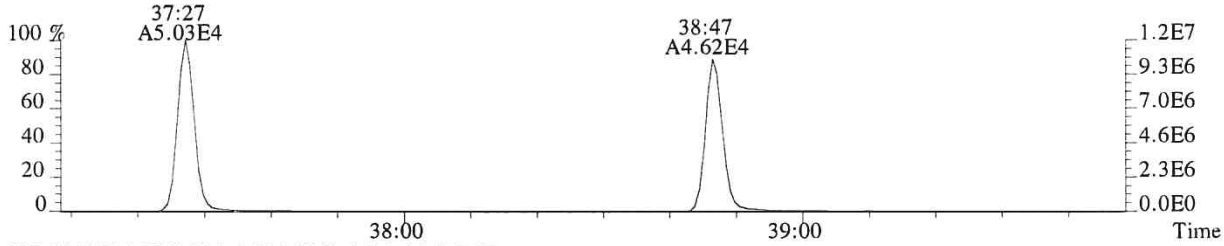
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1136.0,0.50%,F,T)



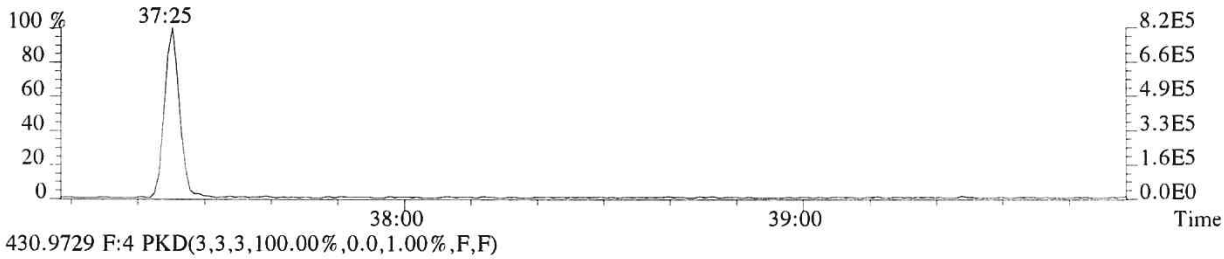
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4380.0,0.50%,F,T)



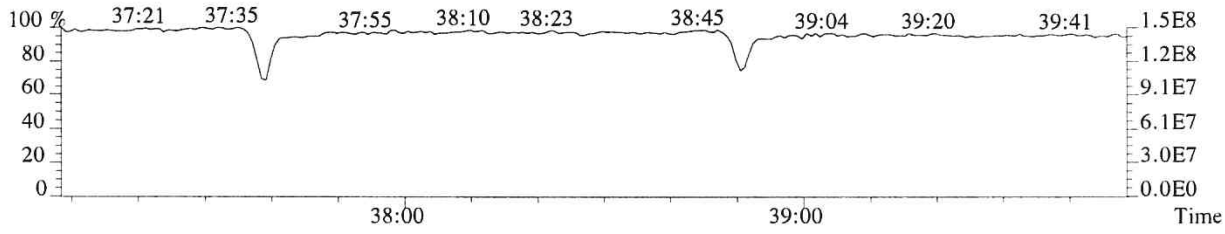
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3548.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

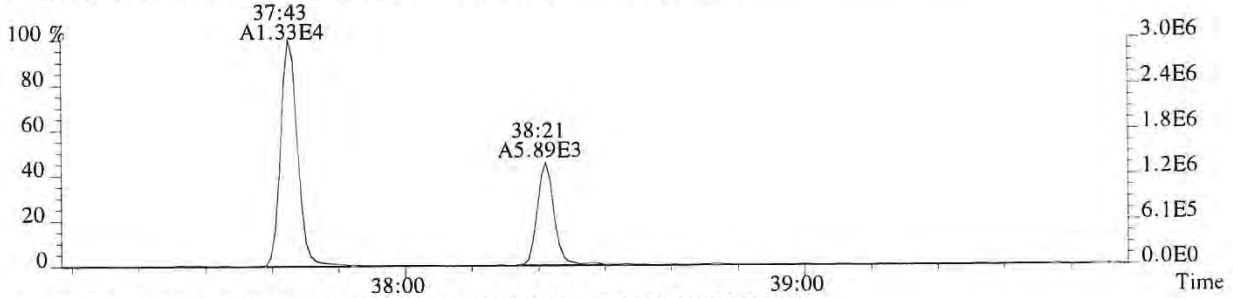


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

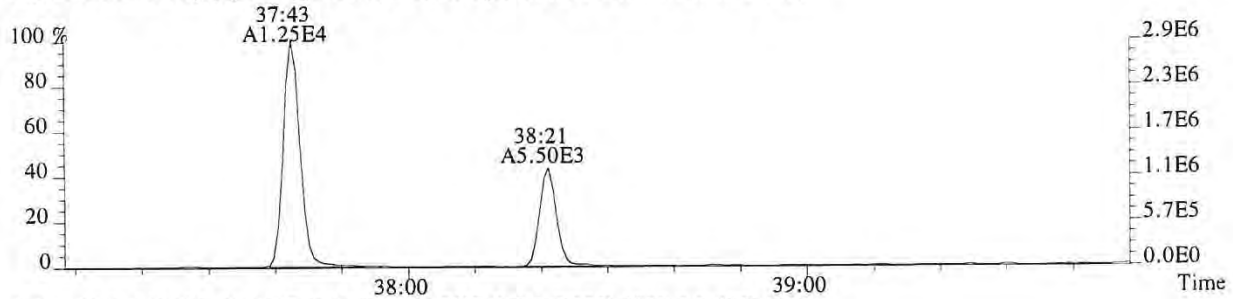


059265

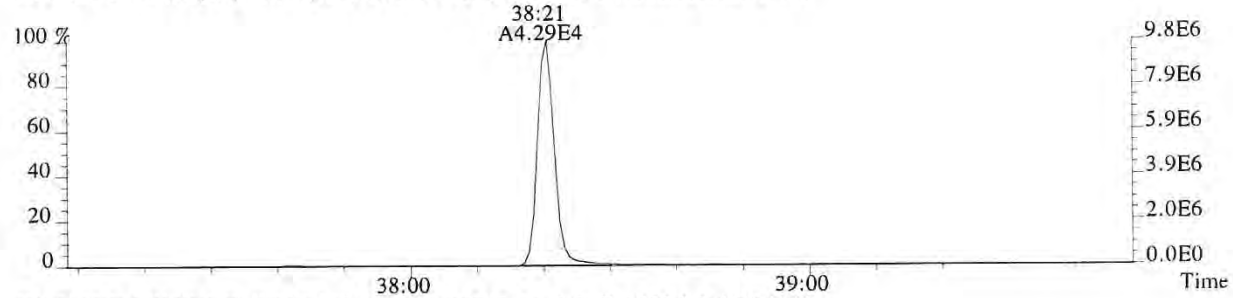
File:P616149 #1-241 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-018
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5368.0,0.40%,F,T)



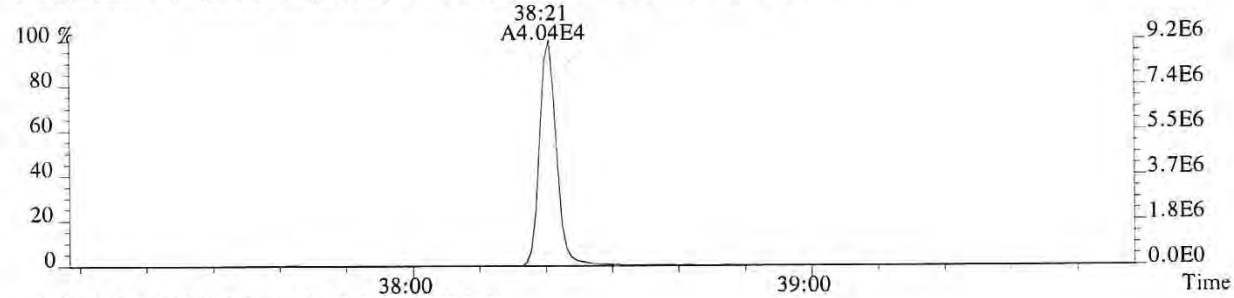
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8632.0,0.40%,F,T)



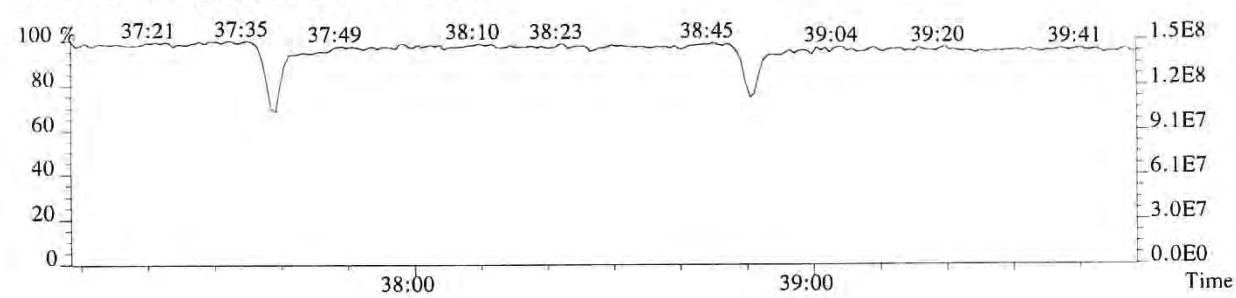
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1980.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1656.0,0.40%,F,T)



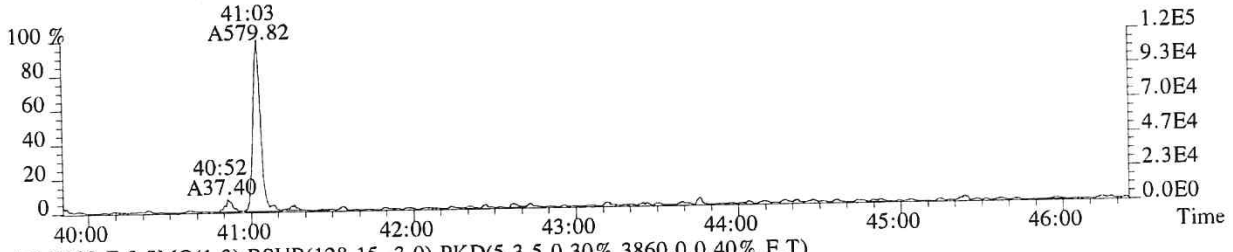
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



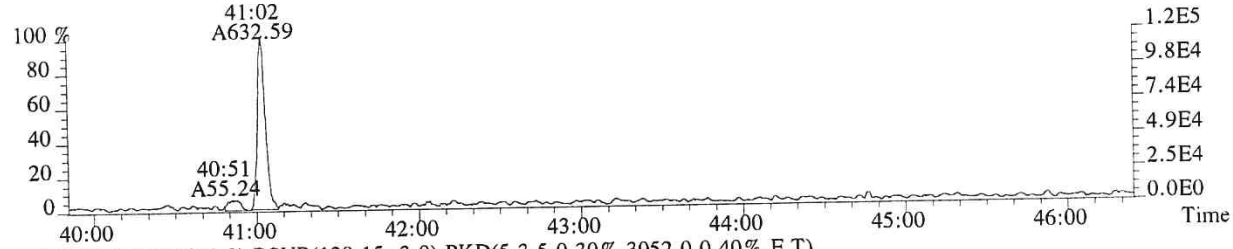
059266

File:P616149 #1-591 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-018

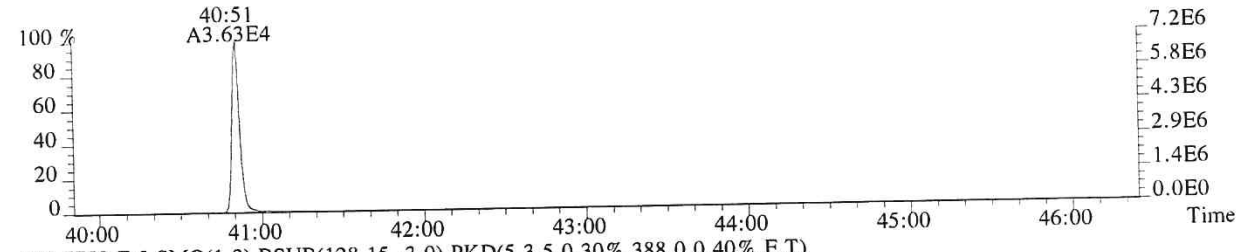
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,684.0,0.40%,F,T)



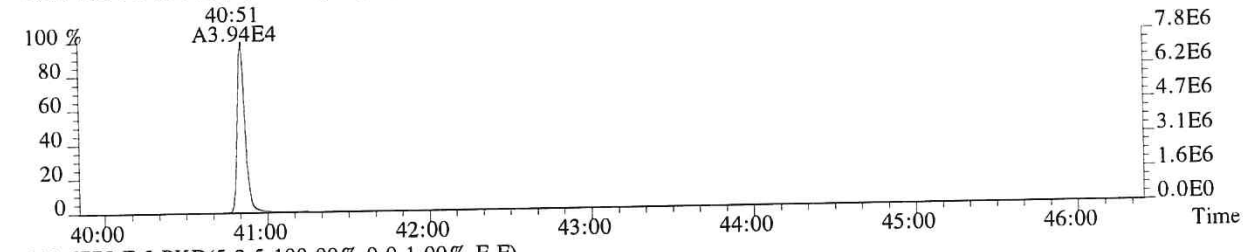
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3860.0,0.40%,F,T)



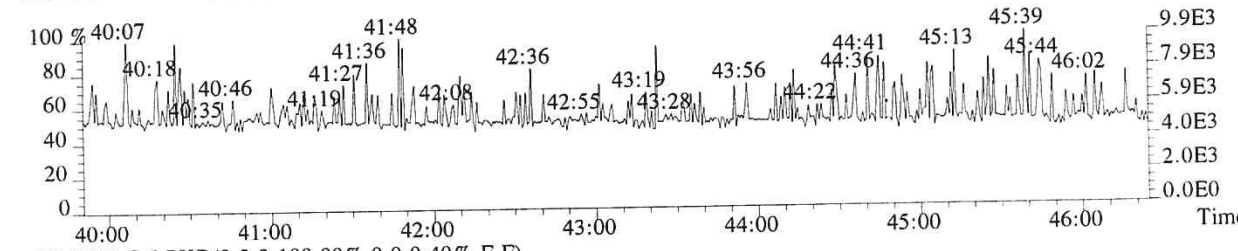
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3052.0,0.40%,F,T)



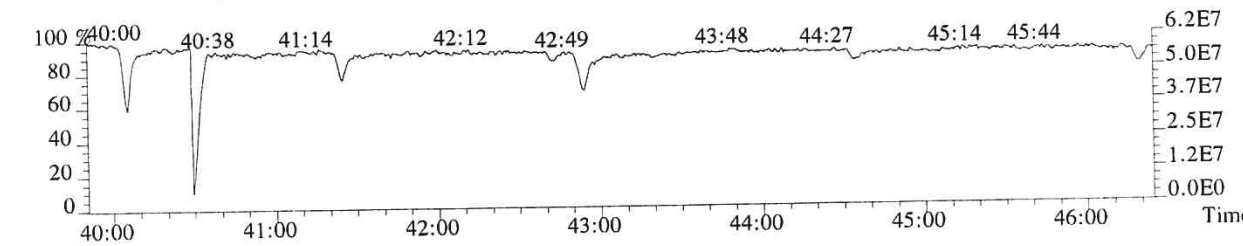
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,388.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

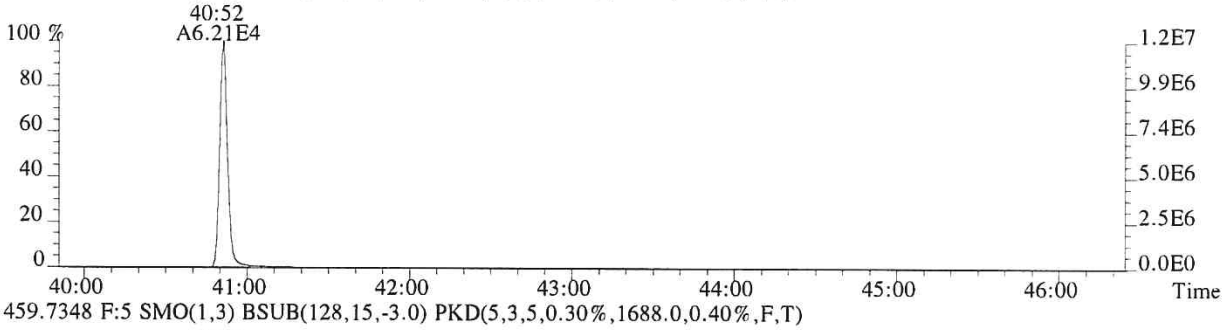


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

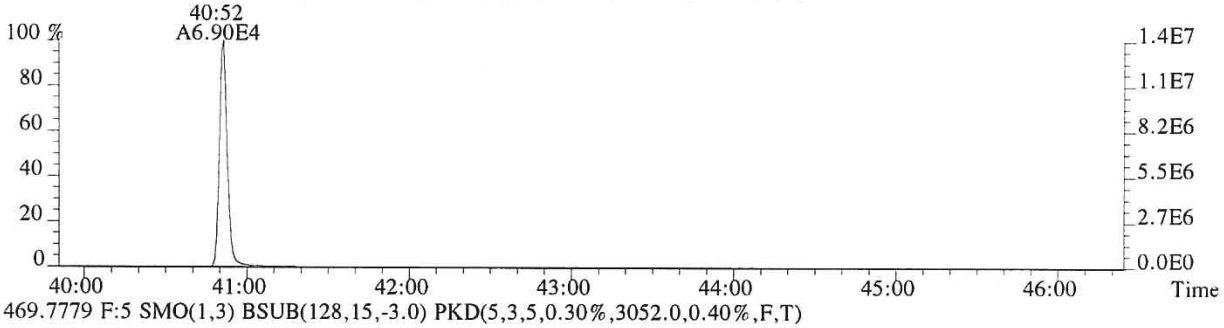


059267

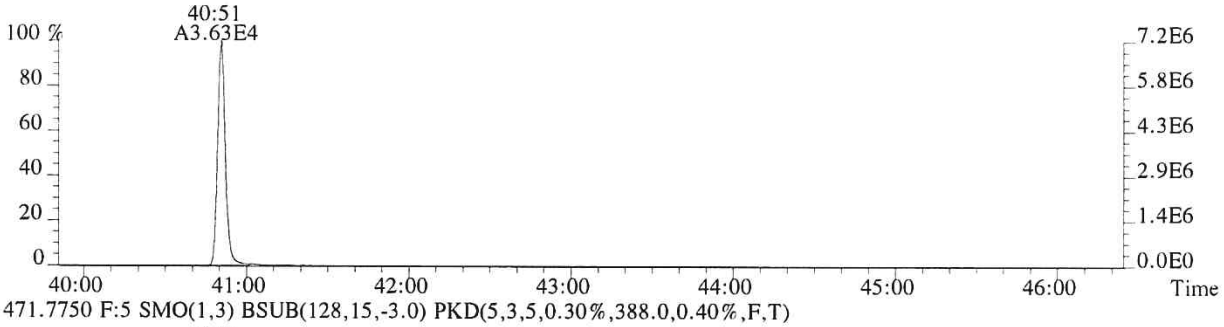
File:P616149 #1-591 Acq:20-DEC-2018 19:38:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-018
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,888.0,0.40%,F,T)



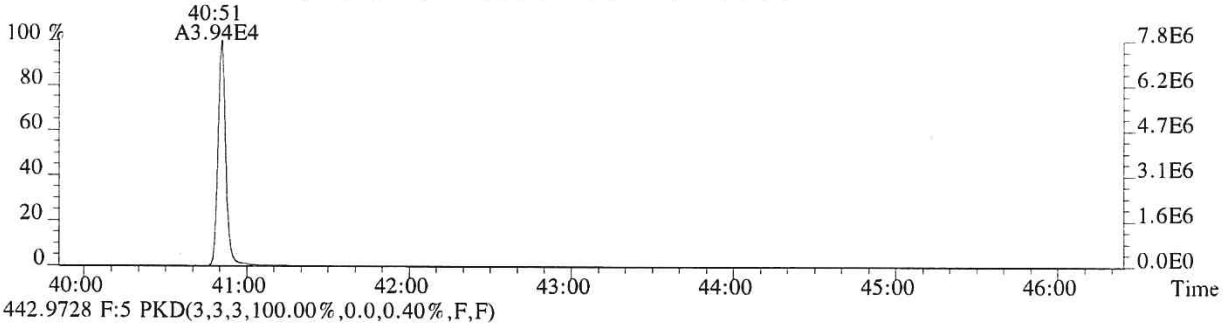
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1688.0,0.40%,F,T)



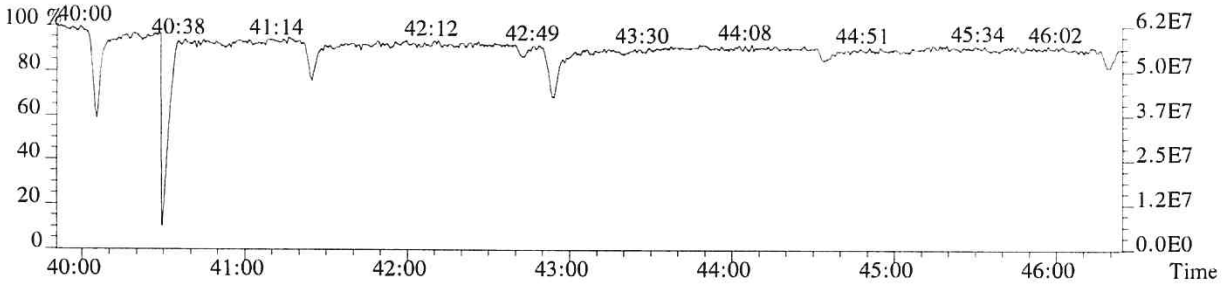
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3052.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,388.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059268

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0236

Run #15 Filename P616150 Samp: 1 Inj: 1 Acquired: 20-DEC-18 20:27:22
Processed: 24-DEC-18 10:54:56 Sample ID: E1801096-019

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:17	1.094e+03	1.543e+03	0.71	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	1.169e+02	9.280e+01	1.26	no	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	1.133e+02	7.256e+01	1.56	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:48	4.433e+02	3.153e+02	1.41	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	1.004e+02	9.585e+01	1.05	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	5.282e+01	3.633e+01	1.45	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:13	4.109e+01	3.149e+01	1.31	yes	yes	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:28	8.812e+02	8.737e+02	1.01	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:47	3.374e+01	3.599e+01	0.94	yes	no	1.463
10	Unk	OCDF	41:02	7.953e+02	7.522e+02	1.06	no	no	1.571
11	Unk	2,3,7,8-TCDD	27:14	3.192e+02	4.123e+02	0.77	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:18	9.463e+01	1.184e+02	0.80	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	1.255e+02	7.316e+01	1.72	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	1.724e+02	1.203e+02	1.43	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:54	2.594e+02	2.149e+02	1.21	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	3.033e+03	2.932e+03	1.03	yes	no	1.112
17	Unk	OCDD	40:52	4.134e+04	4.620e+04	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:16	3.380e+04	4.238e+04	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:00	6.811e+04	4.204e+04	1.62	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:00	6.395e+04	3.964e+04	1.61	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	3.261e+04	6.083e+04	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:54	3.696e+04	6.960e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	3.456e+04	6.447e+04	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	3.194e+04	5.930e+04	0.54	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:27	2.393e+04	5.182e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	2.146e+04	4.668e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:12	1.634e+04	2.117e+04	0.77	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:18	4.653e+04	2.982e+04	1.56	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:34	4.307e+04	3.371e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:39	4.219e+04	3.299e+04	1.28	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	4.421e+04	4.170e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:51	4.042e+04	4.510e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:30	4.516e+04	5.612e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:53	6.645e+04	5.212e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:13	2.383e+04				no	1.086

$$\text{OCDD} = \frac{(4.134e{+}04 + 4.620e{+}04) \times 4000\ \text{pg} \times 1}{(4.042e{+}04 + 4.510e{+}04) \times 10.295\ \text{g} \times 74.1 / 100 \times 1.157} = 463.8963\ \text{ng/kg}$$

LG 12/26/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0236

un #15 Filename P616150 Samp: 1 Inj: 1 Acquired: 20-DEC-18 20:27:22
rocessed: 24-DEC-18 10:54:56 LAB. ID: E1801096-019

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
	2,3,7,8-TCDF	1.76e+05	2.30e+03	7.6e+01	2.23e+05	5.90e+03	3.8e+01
	1,2,3,7,8-PeCDF	2.18e+04	3.26e+03	6.7e+00	1.93e+04	4.01e+03	4.8e+00
	2,3,4,7,8-PeCDF	2.06e+04	3.26e+03	6.3e+00	1.08e+04	4.01e+03	2.7e+00
	1,2,3,4,7,8-HxCDF	8.43e+04	1.47e+03	5.7e+01	6.68e+04	1.73e+03	3.9e+01
	1,2,3,6,7,8-HxCDF	1.57e+04	1.47e+03	1.1e+01	2.10e+04	1.73e+03	1.2e+01
	2,3,4,6,7,8-HxCDF	1.20e+04	1.47e+03	8.2e+00	7.95e+03	1.73e+03	4.6e+00
	1,2,3,7,8,9-HxCDF	9.50e+03	1.47e+03	6.5e+00	5.73e+03	1.73e+03	3.3e+00
	1,2,3,4,6,7,8-HpCDF	1.96e+05	7.60e+02	2.6e+02	2.05e+05	1.76e+03	1.2e+02
	1,2,3,4,7,8,9-HpCDF	7.32e+03	7.60e+02	9.6e+00	8.60e+03	1.76e+03	4.9e+00
.0	OCDF	1.51e+05	1.31e+03	1.2e+02	1.50e+05	2.23e+03	6.7e+01
.1	2,3,7,8-TCDD	5.63e+04	4.68e+03	1.2e+01	6.74e+04	2.76e+03	2.4e+01
.2	1,2,3,7,8-PeCDD	1.87e+04	1.83e+03	1.0e+01	1.98e+04	4.16e+02	4.8e+01
.3	1,2,3,4,7,8-HxCDD	3.27e+04	1.63e+03	2.0e+01	1.54e+04	2.48e+03	6.2e+00
.4	1,2,3,6,7,8-HxCDD	3.96e+04	1.63e+03	2.4e+01	2.62e+04	2.48e+03	1.1e+01
.5	1,2,3,7,8,9-HxCDD	5.59e+04	1.63e+03	3.4e+01	4.56e+04	2.48e+03	1.8e+01
.6	1,2,3,4,6,7,8-HpCDD	6.88e+05	6.08e+03	1.1e+02	6.78e+05	3.69e+03	1.8e+02
.7	OCDD	7.81e+06	1.19e+03	6.6e+03	8.74e+06	9.56e+02	9.1e+03
18	13C-2,3,7,8-TCDF	5.25e+06	1.60e+04	3.3e+02	6.42e+06	9.40e+03	6.8e+02
19	13C-1,2,3,7,8-PeCDF	1.19e+07	1.10e+03	1.1e+04	7.37e+06	2.40e+03	3.1e+03
20	13C-2,3,4,7,8-PeCDF	1.20e+07	1.10e+03	1.1e+04	7.52e+06	2.40e+03	3.1e+03
21	13C-1,2,3,4,7,8-HxCDF	6.94e+06	1.70e+03	4.1e+03	1.30e+07	1.63e+03	8.0e+03
22	13C-1,2,3,6,7,8-HxCDF	7.69e+06	1.70e+03	4.5e+03	1.46e+07	1.63e+03	9.0e+03
23	13C-2,3,4,6,7,8-HxCDF	7.43e+06	1.70e+03	4.4e+03	1.36e+07	1.63e+03	8.4e+03
24	13C-1,2,3,7,8,9-HxCDF	6.63e+06	1.70e+03	3.9e+03	1.24e+07	1.63e+03	7.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.50e+06	4.68e+03	1.2e+03	1.18e+07	3.32e+03	3.6e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.75e+06	4.68e+03	1.0e+03	1.04e+07	3.32e+03	3.1e+03
27	13C-2,3,7,8-TCDD	2.69e+06	1.61e+04	1.7e+02	3.44e+06	6.96e+03	4.9e+02
28	13C-1,2,3,7,8-PeCDD	8.73e+06	1.15e+03	7.6e+03	5.52e+06	3.58e+03	1.5e+03
29	13C-1,2,3,4,7,8-HxCDD	9.62e+06	2.63e+03	3.7e+03	7.55e+06	1.48e+03	5.1e+03
30	13C-1,2,3,6,7,8-HxCDD	8.94e+06	2.63e+03	3.4e+03	7.03e+06	1.48e+03	4.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	9.82e+06	1.93e+03	5.1e+03	9.30e+06	1.60e+03	5.8e+03
32	13C-OCDD	7.79e+06	1.36e+03	5.7e+03	8.60e+06	1.71e+03	5.0e+03
33	13C-1,2,3,4-TCDD	7.40e+06	1.61e+04	4.6e+02	9.02e+06	6.96e+03	1.3e+03
34	13C-1,2,3,7,8,9-HxCDD	1.39e+07	2.63e+03	5.3e+03	1.10e+07	1.48e+03	7.4e+03
35	37Cl-2,3,7,8-TCDD	3.88e+06	3.75e+03	1.0e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (4.680e{+}03 + 2.756e{+}03) \times 2000}{(2.686e{+}06 + 3.437e{+}06) \times (\quad) \times 1.049} =$$

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Peak List Summary

CLIENT ID.
SL0236

Entry: 36 Totals Name: Total Tetra-Furans

Run: 15 File: P616150 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 20:27:22 Processed: 24-DEC-18 10:54:56

Mass: 303.9020 305.8990 Tot Response: 4.66e+03 RRF: 1.081

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:01	1.09e+02	0.71	yes	2.62e+02		n	n
2	23:59	6.25e+01	0.77	yes	1.44e+02		n	n
3	25:17	5.55e+02	0.87	yes	1.19e+03		n	n
4	25:36	5.05e+01	0.76	yes	1.17e+02		n	n
5	26:17	1.09e+03	0.71	yes	2.64e+03	2,3,7,8-TCDF	n	n
6	26:41	1.32e+02	0.77	yes	3.04e+02		n	n

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Peak List Summary

CLIENT ID.
SL0236

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 15 File: P616150 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 20:27:22 Processed: 24-DEC-18 10:54:56

Mass: 319.8970 321.8940 Tot Response: 2.43e+03 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:53	7.82e+02	9.17e+02	0.85	yes	1.70e+03		n	n
2	27:14	3.19e+02	4.12e+02	0.77	yes	7.32e+02	2,3,7,8-TCDD	n	n

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Peak List Summary

CLIENT ID.
SL0236

ntry: 39 Totals Name: Total Penta-Furans2

un: 15 File: P616150 Sample:1 Injection:1 Function:2

cquired: 20-DEC-18 20:27:22 Processed: 24-DEC-18 10:54:56

ass: 339.8600 341.8570 Tot Response: 1.86e+02 RRF: 1.130

RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
32:02	1.13e+02	7.26e+01	1.56	yes	1.86e+02	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.
SL0236

ntry: 40 Totals Name: Total Penta-Dioxins

un: 15 File: P616150 Sample:1 Injection:1 Function:2

cquired: 20-DEC-18 20:27:22 Processed: 24-DEC-18 10:54:56

lass: 355.8550 357.8520 Tot Response: 1.47e+03 RRF: 0.9288

	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
	30:33	8.29e+02	4.99e+02	1.66	yes	1.33e+03		n	n
	31:03	4.84e+01	2.91e+01	1.66	yes	7.75e+01		n	n
	32:42	3.89e+01	2.74e+01	1.42	yes	6.62e+01		n	n

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Peak List Summary

CLIENT ID.
SL0236

ntry: 41 Totals Name: Total Hexa-Furans

un: 15 File: P616150 Sample:1 Injection:1 Function:3

cquired: 20-DEC-18 20:27:22 Processed: 24-DEC-18 10:54:56

ass: 373.8210 375.8180 Tot Response: 1.36e+03 RRF: 1.324

RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
33:38	4.36e+01	3.55e+01	1.23	yes	7.91e+01		n	n
33:48	2.15e+02	1.74e+02	1.24	yes	3.89e+02		n	n
34:22	3.25e+01	2.99e+01	1.09	yes	6.24e+01		n	n
34:48	4.43e+02	3.15e+02	1.41	yes	7.59e+02	1,2,3,4,7,8-HxCDF	n	n
36:13	4.11e+01	3.15e+01	1.31	yes	7.26e+01	1,2,3,7,8,9-HxCDF	n	y

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Peak List Summary

CLIENT ID.
SL0236

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 15 File: P616150 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 20:27:22 Processed: 24-DEC-18 10:54:56

Mass: 389.8160 391.8130 Tot Response: 1.09e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:12	4.53e+03	3.75e+03	1.21	yes	8.27e+03		n	n
2	34:58	1.03e+03	7.70e+02	1.33	yes	1.80e+03		n	n
3	35:05	1.81e+02	1.61e+02	1.13	yes	3.42e+02		n	n
4	35:54	2.59e+02	2.15e+02	1.21	yes	4.74e+02	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0236

Entry: 43 Totals Name: Total Hepta-Furans

Run: 15 File: P616150 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 20:27:22 Processed: 24-DEC-18 10:54:56

Mass: 407.7820 409.7790 Tot Response: 1.82e+03 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:28	8.81e+02	8.74e+02	1.01	yes	1.75e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	38:47	3.37e+01	3.60e+01	0.94	yes	6.97e+01	1,2,3,4,7,8,9-HpCDF	n	n

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Peak List Summary

CLIENT ID.
SL0236

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 15 File: P616150 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 20:27:22 Processed: 24-DEC-18 10:54:56

Mass: 423.7770 425.7740 Tot Response: 2.67e+04 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:43	1.07e+04	1.00e+04 1.07	yes	2.07e+04		n	n
2	38:21	3.03e+03	2.93e+03 1.03	yes	5.97e+03	1,2,3,4,6,7,8-HpCDD	n	n

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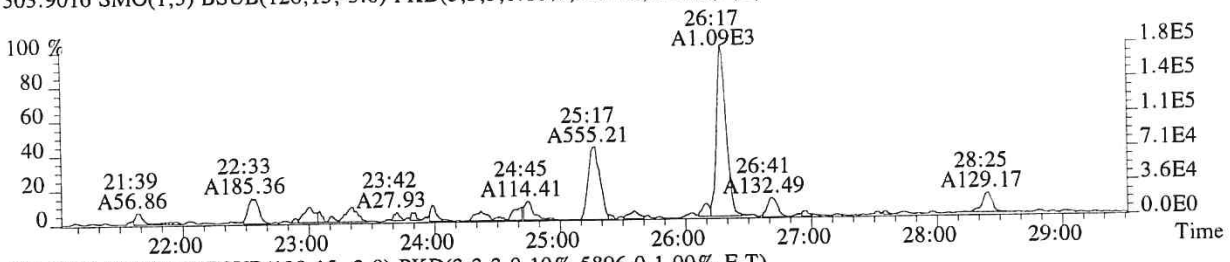
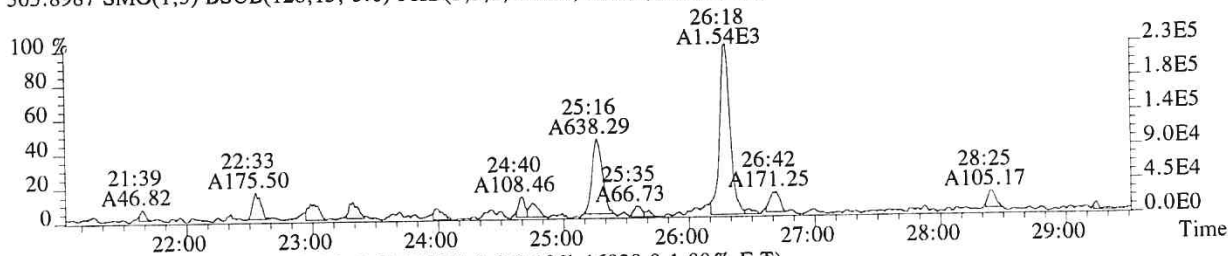
File:P616150 #1-602 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019

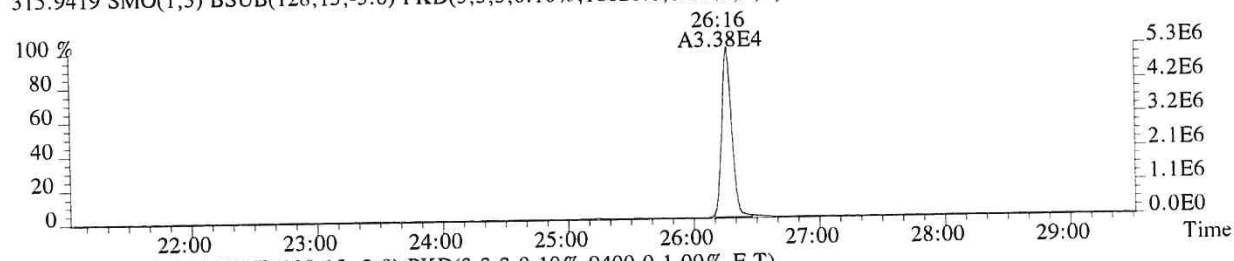
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2304.0,1.00%,F,T)



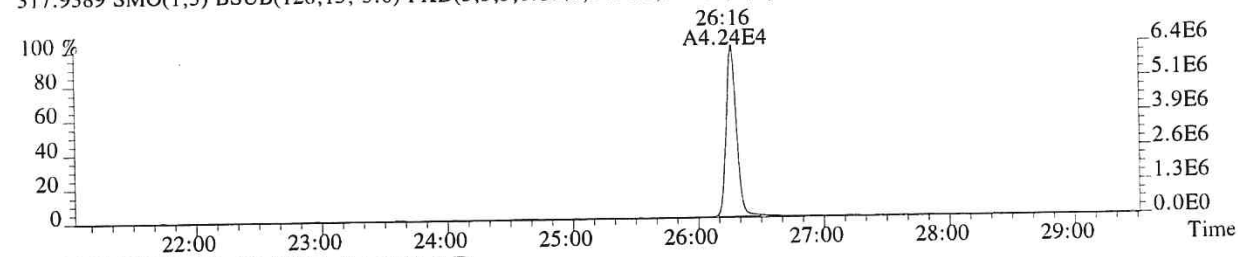
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5896.0,1.00%,F,T)



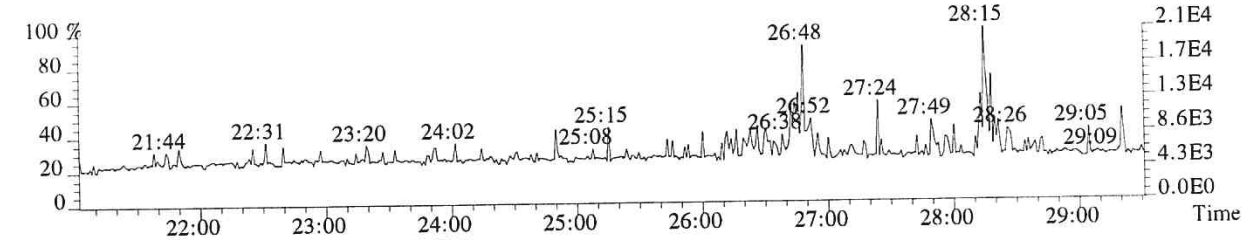
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16020.0,1.00%,F,T)



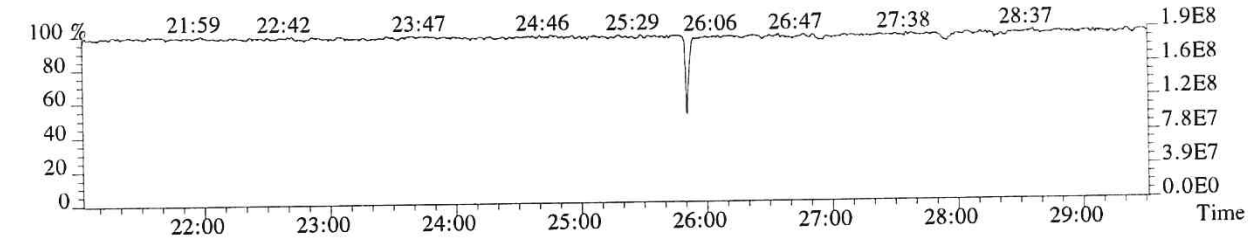
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9400.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

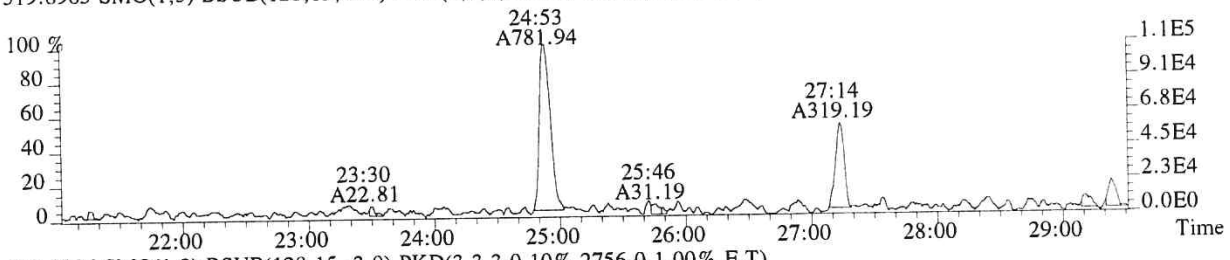


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

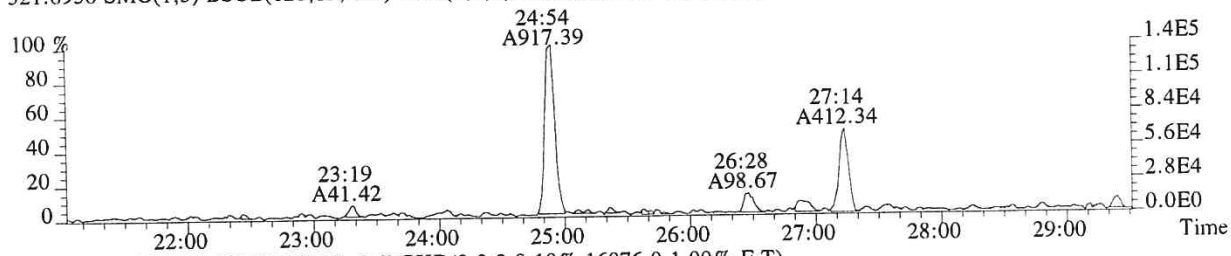


059279

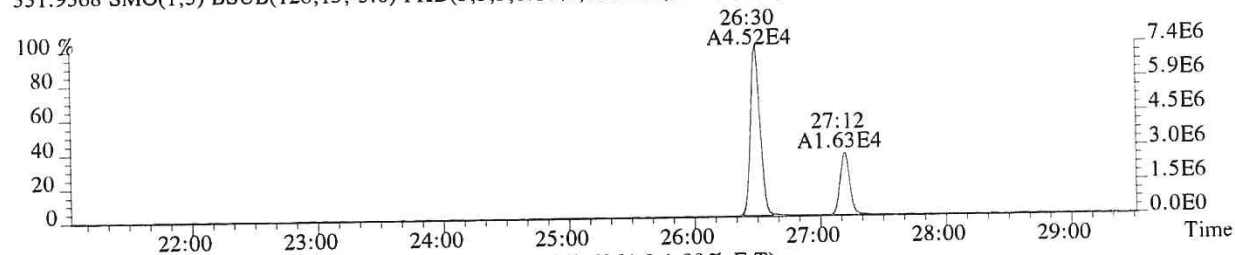
File:P616150 #1-602 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4680.0,1.00%,F,T)



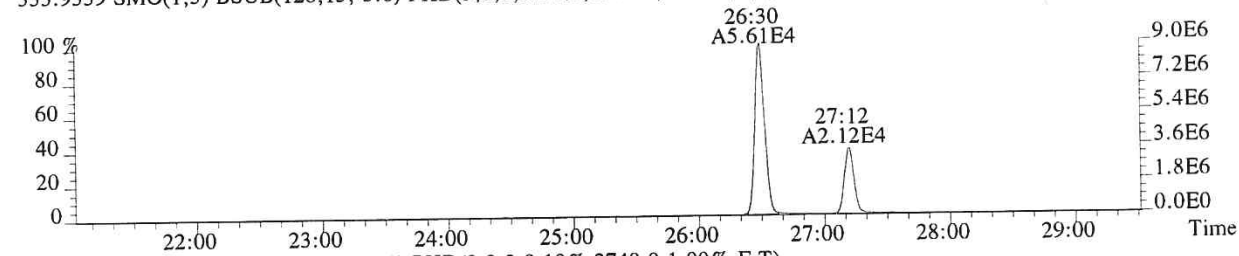
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2756.0,1.00%,F,T)



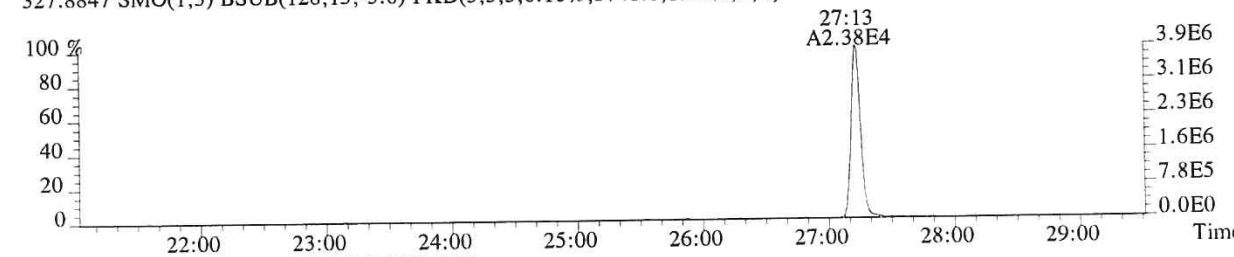
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16076.0,1.00%,F,T)



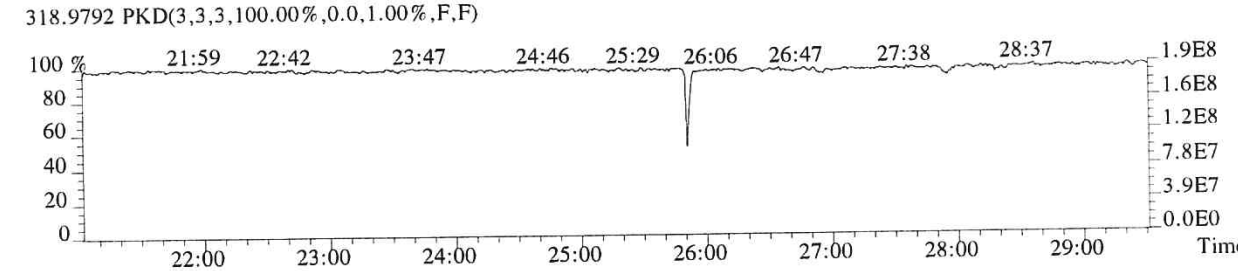
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6964.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3748.0,1.00%,F,T)

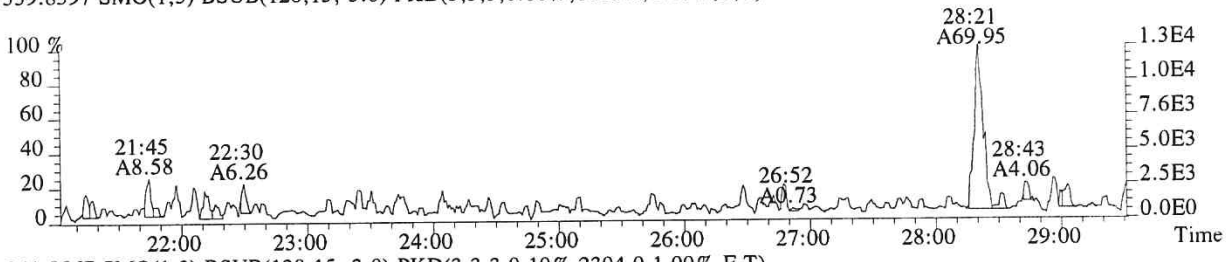


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

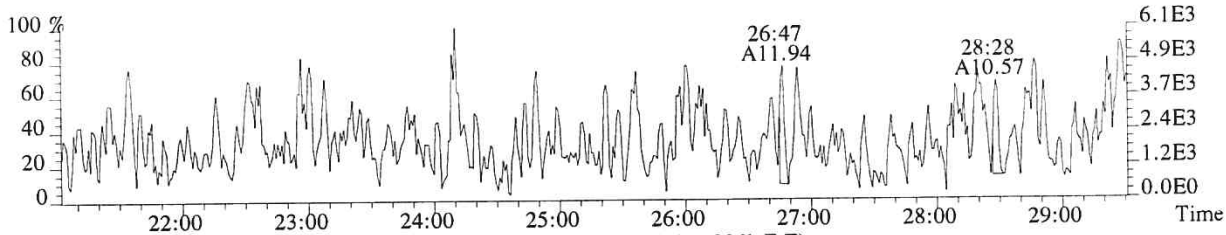


059280

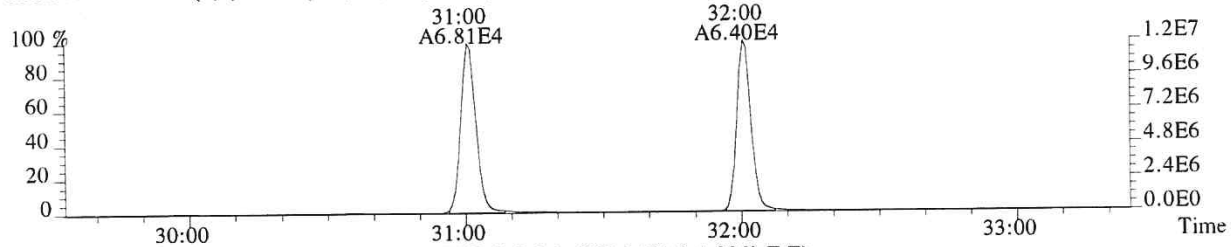
File:P616150 #1-602 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1016.0,1.00%,F,T)



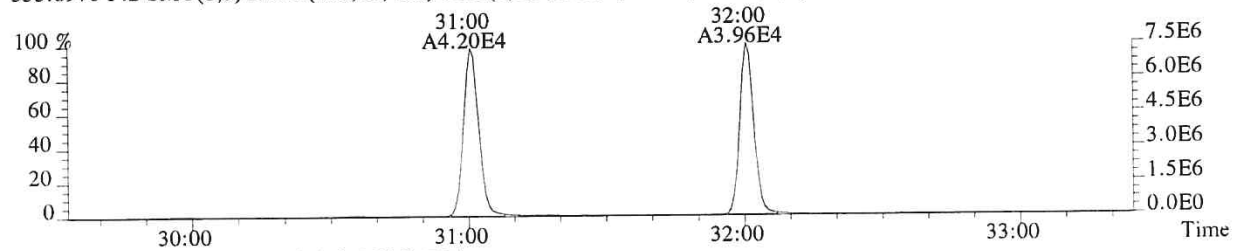
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2304.0,1.00%,F,T)



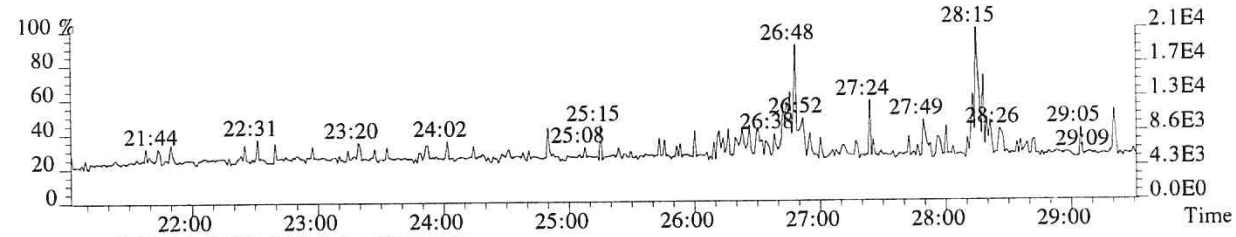
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1100.0,1.00%,F,T)



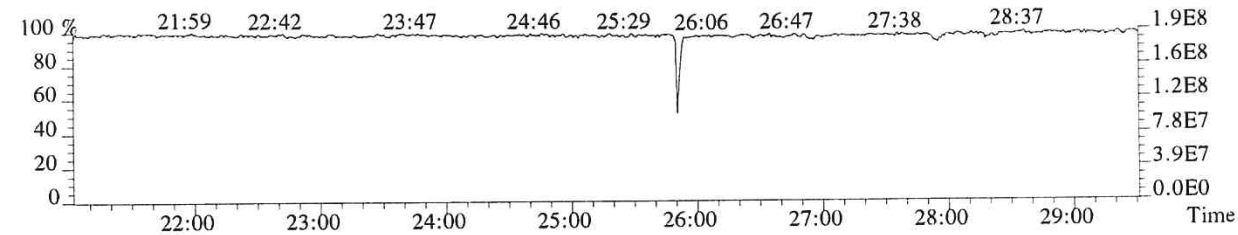
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2404.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

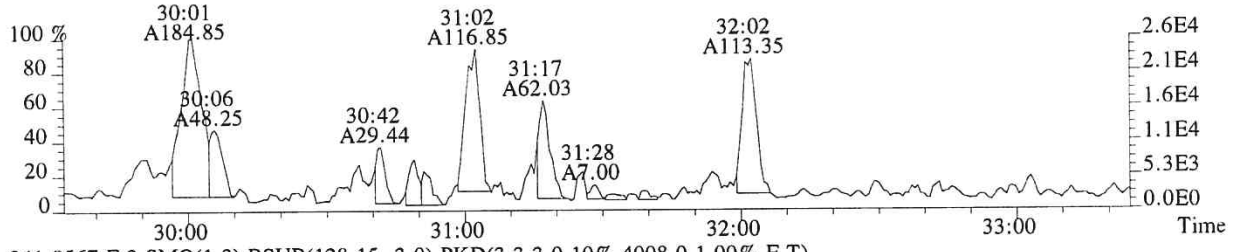


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

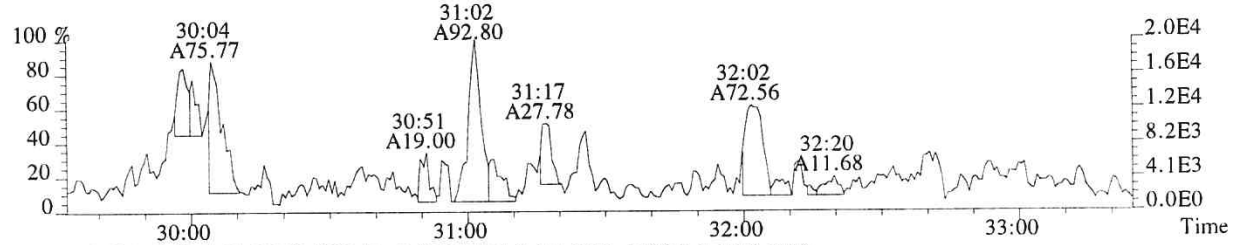


059281

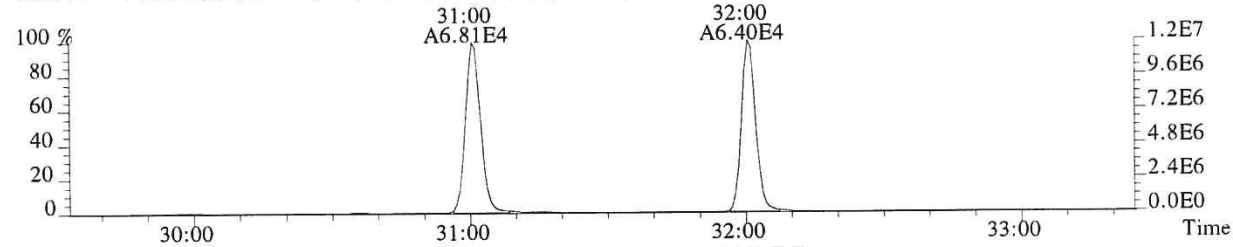
File:P616150 #1-348 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3256.0,1.00%,F,T)



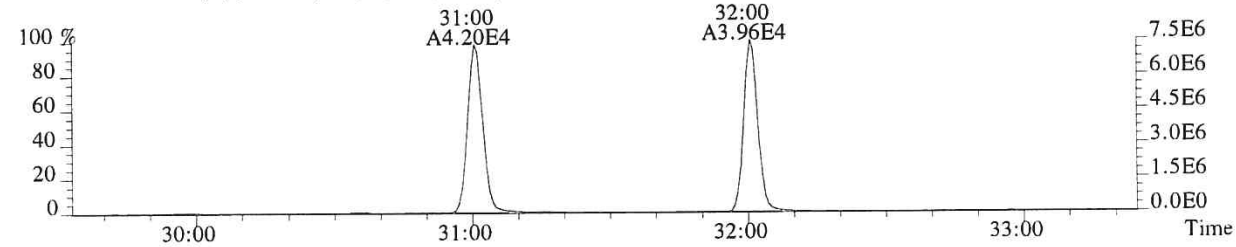
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4008.0,1.00%,F,T)



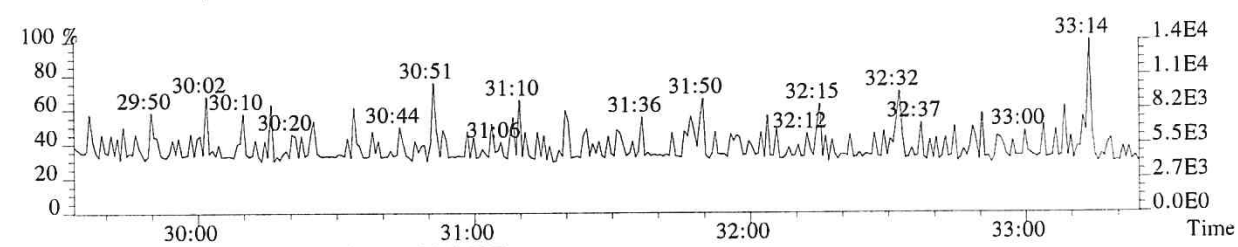
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1100.0,1.00%,F,T)



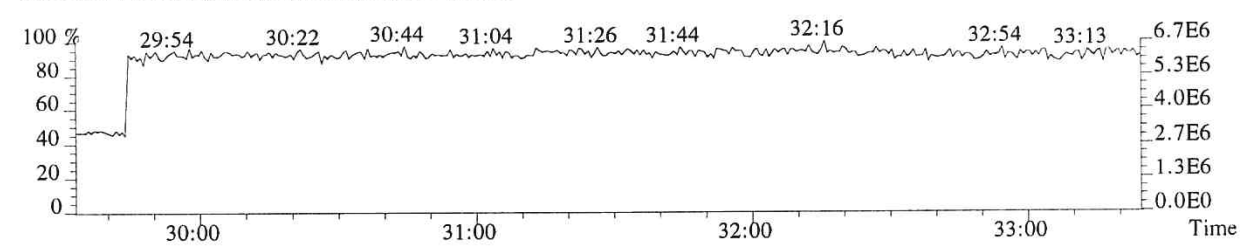
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2404.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

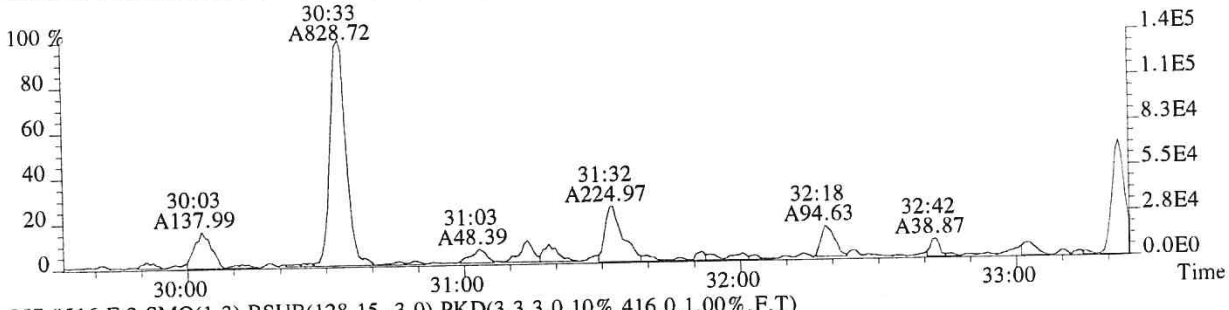


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

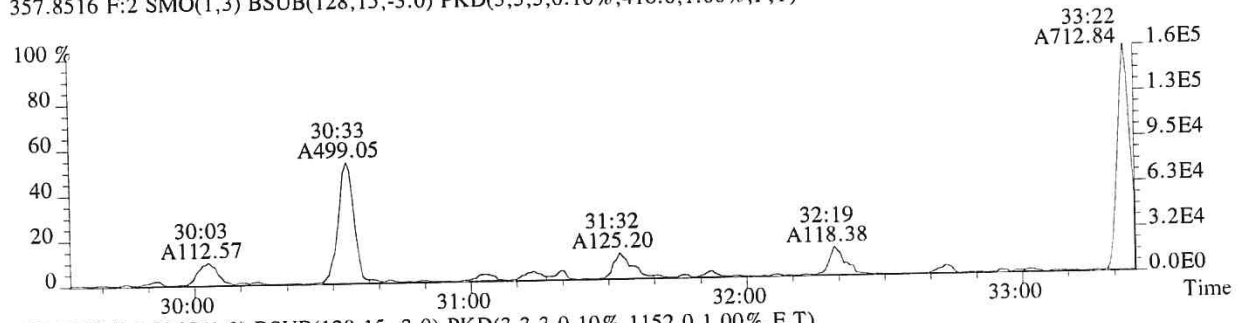


059282

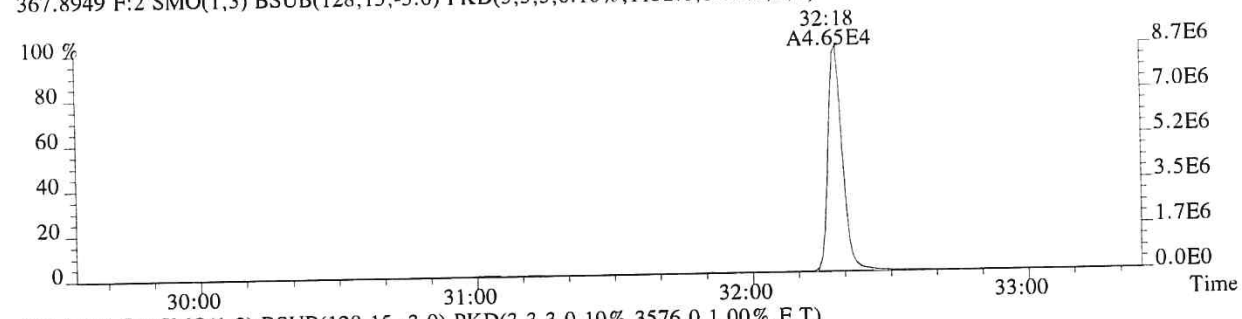
File:P616150 #1-348 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1832.0,1.00%,F,T)



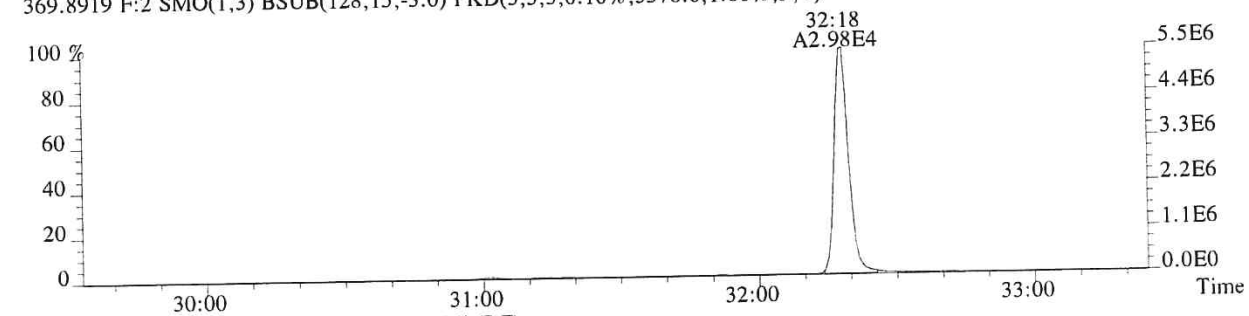
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,416.0,1.00%,F,T)



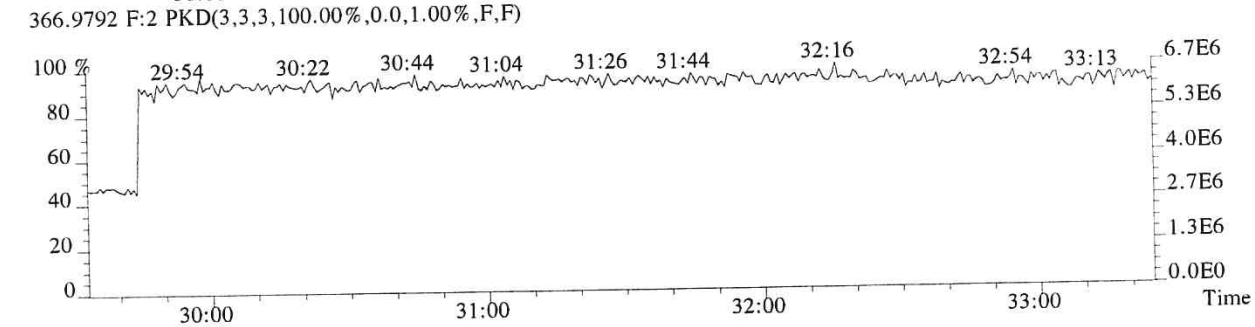
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1152.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3576.0,1.00%,F,T)

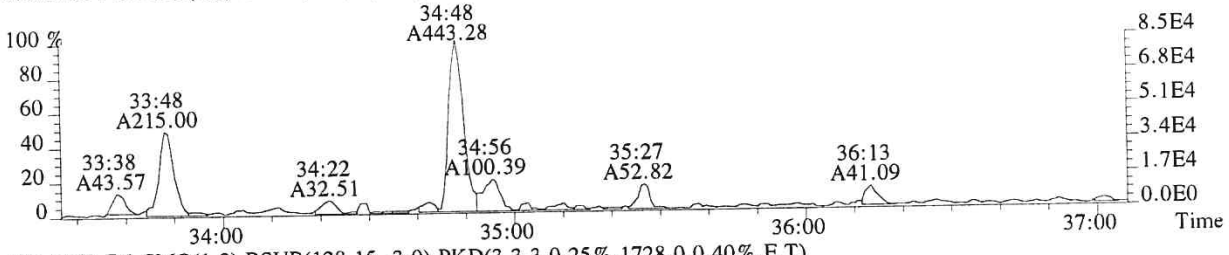


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

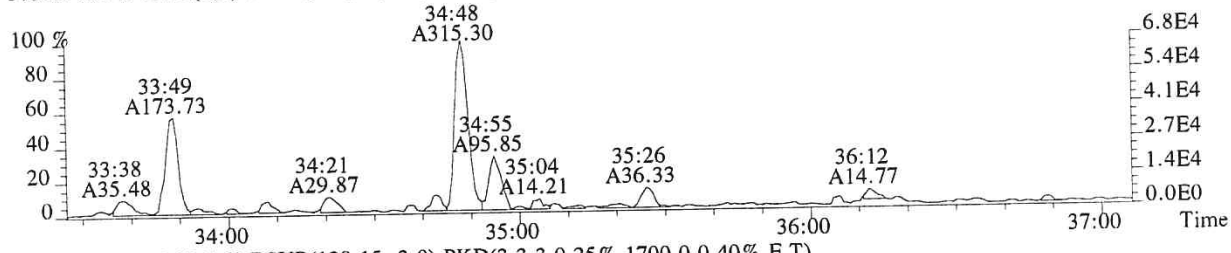


059283

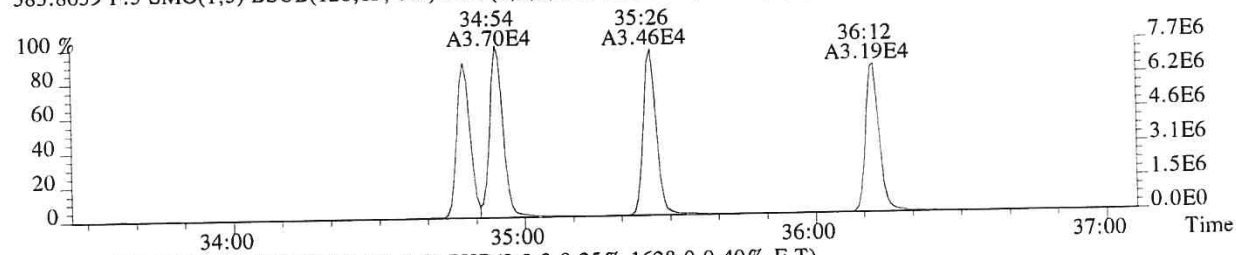
File:P616150 #1-330 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1468.0,0.40%,F,T)



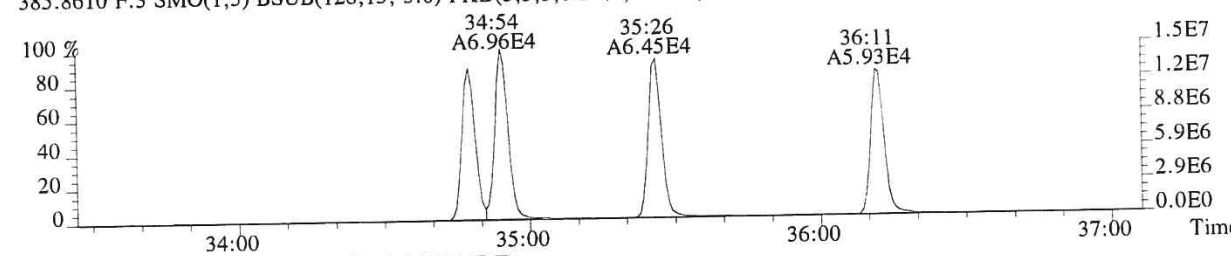
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1728.0,0.40%,F,T)



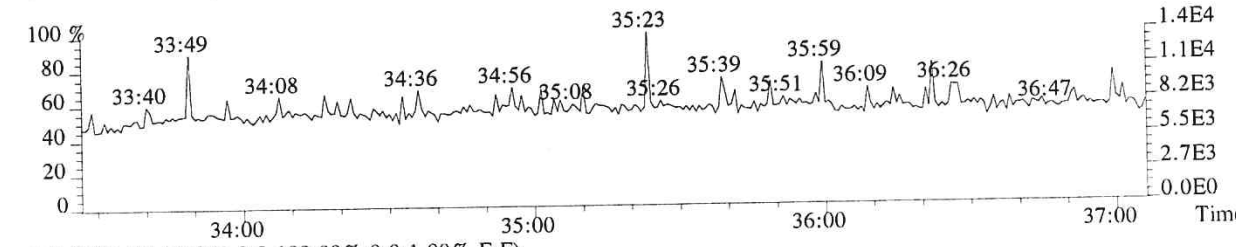
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1700.0,0.40%,F,T)



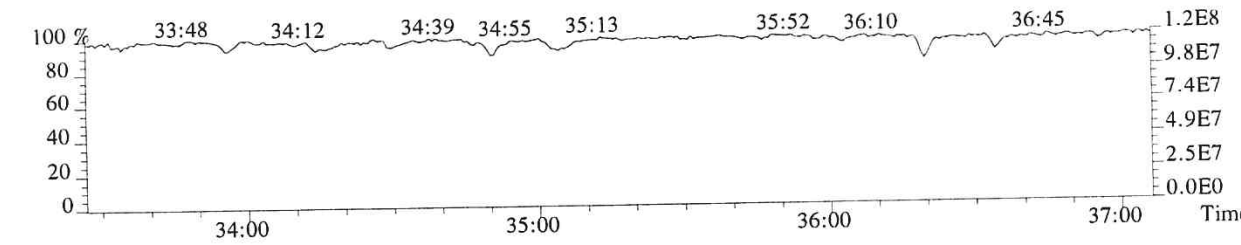
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1628.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

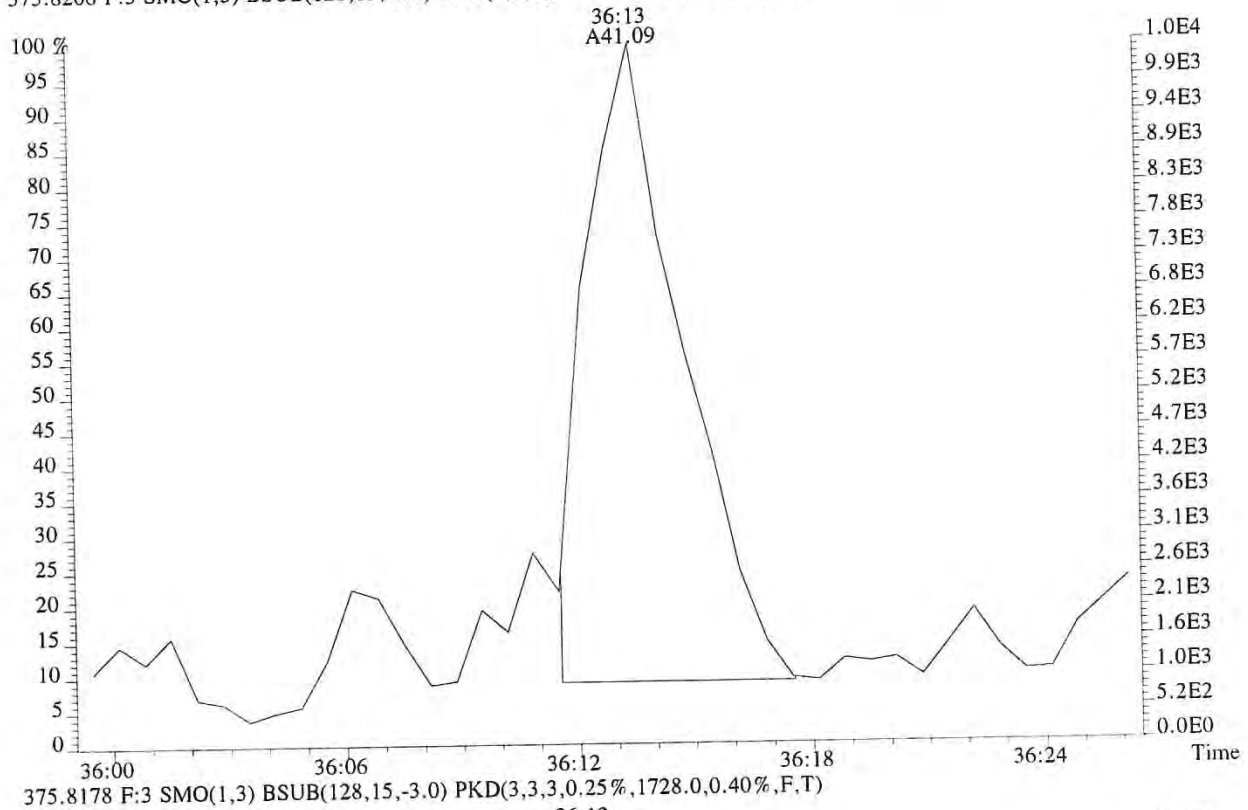


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

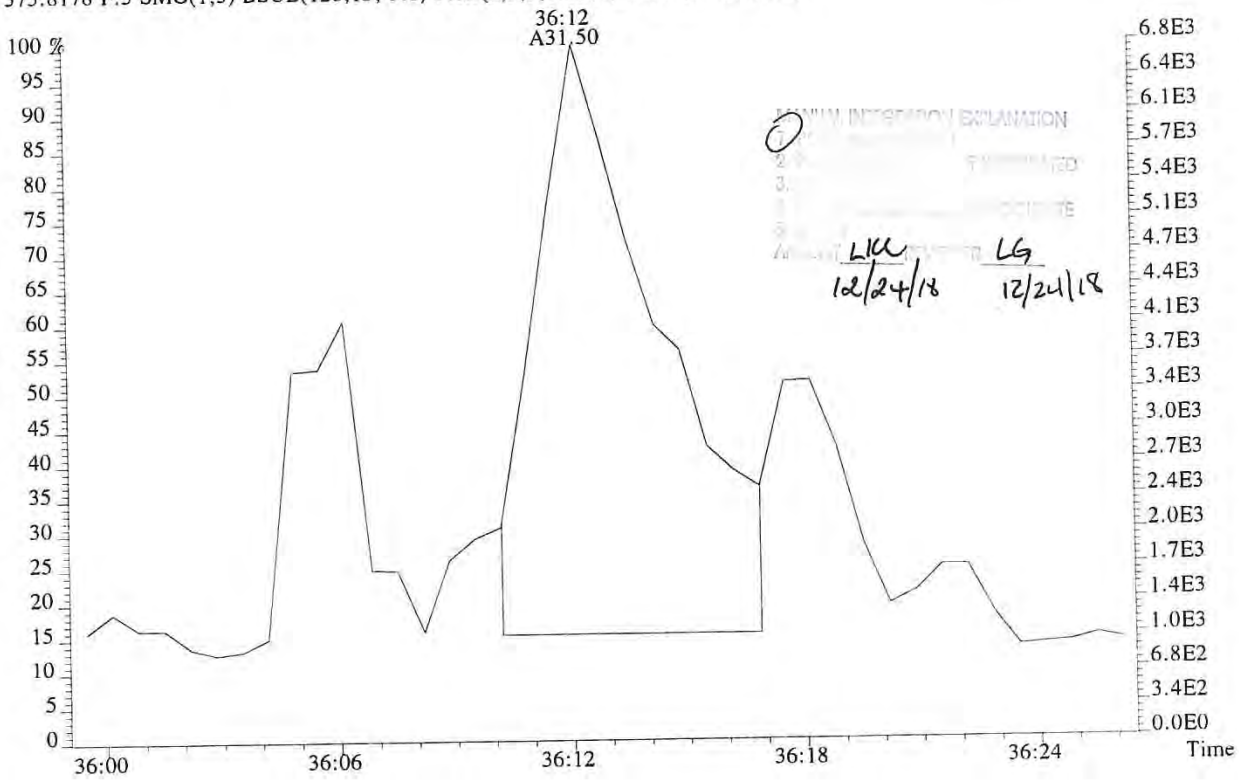


059284

File:P616150 #1-330 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1468.0,0.40%,F,T)



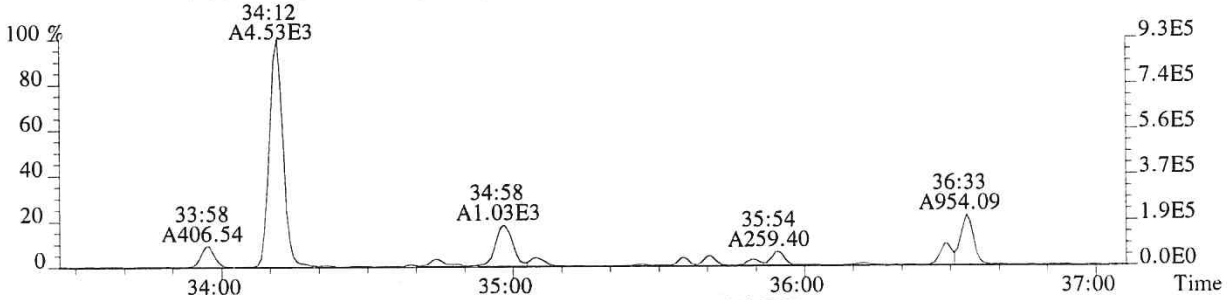
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1728.0,0.40%,F,T)



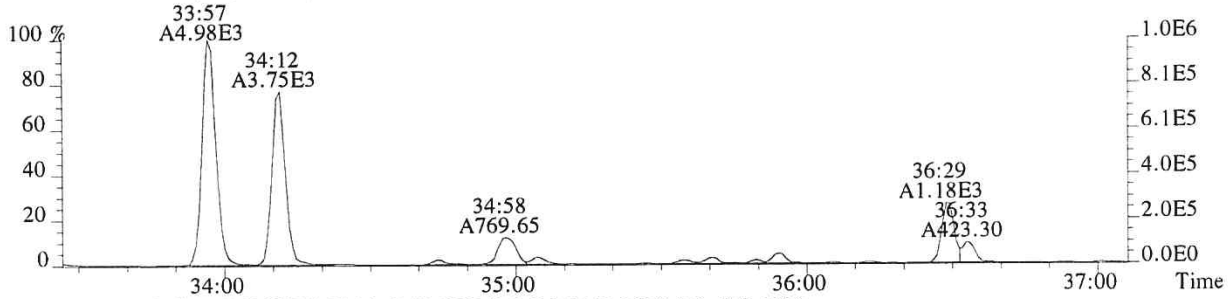
LLL 12/24/18 LG 12/24/18

059285

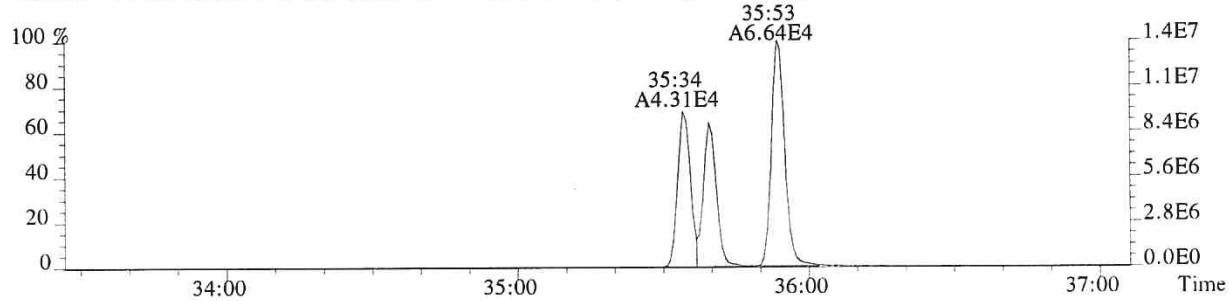
File:P616150 #1-330 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1632.0,0.40%,F,T)



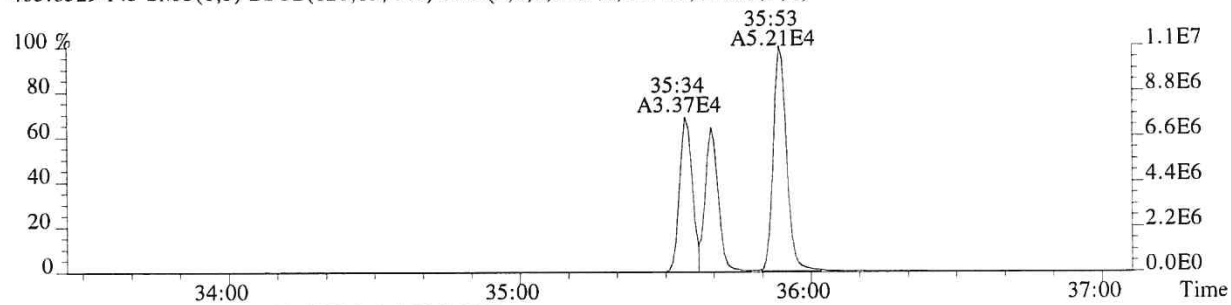
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2480.0,0.40%,F,T)



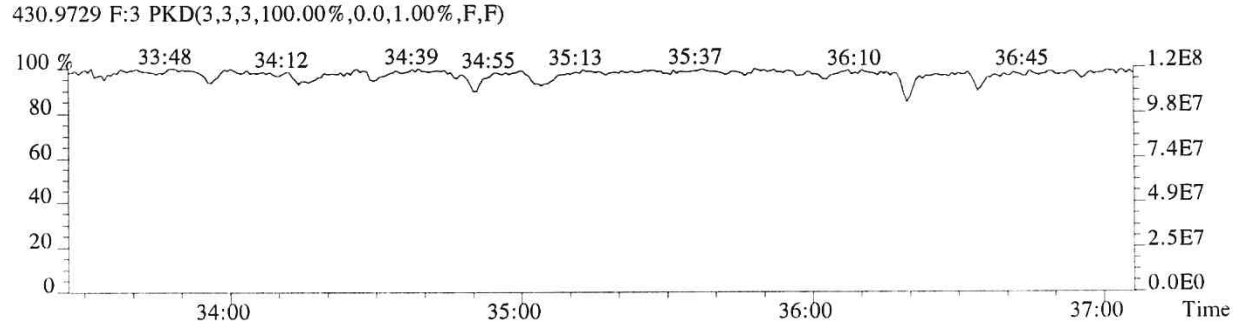
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2628.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1484.0,0.40%,F,T)

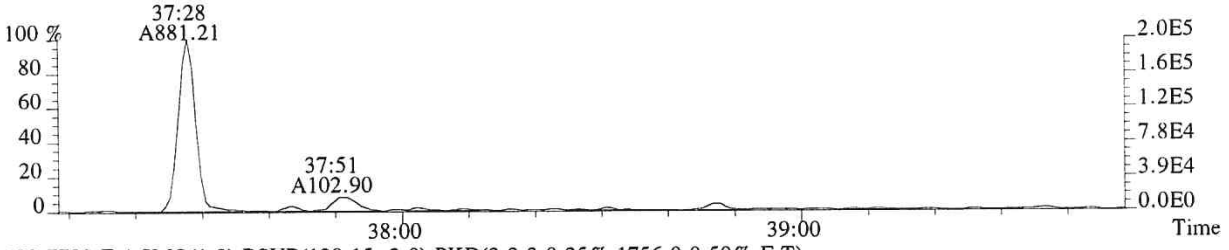


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

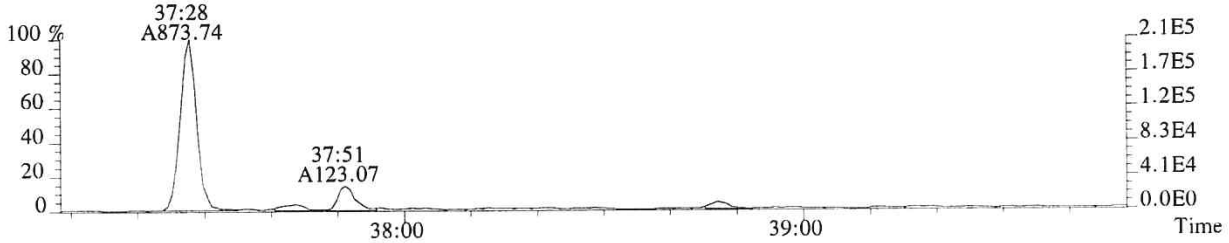


059286

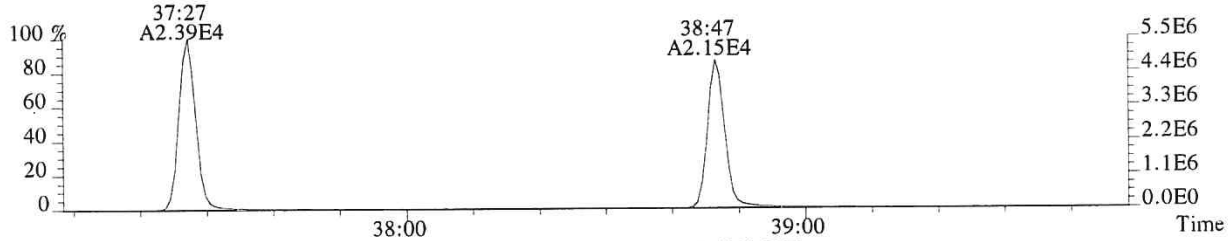
File:P616150 #1-241 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,760.0,0.50%,F,T)



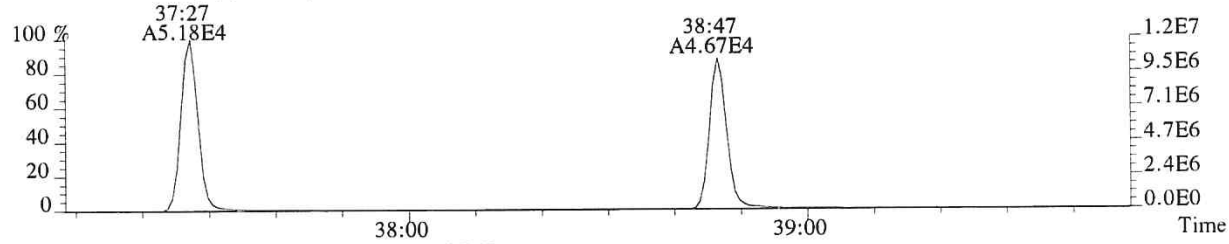
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1756.0,0.50%,F,T)



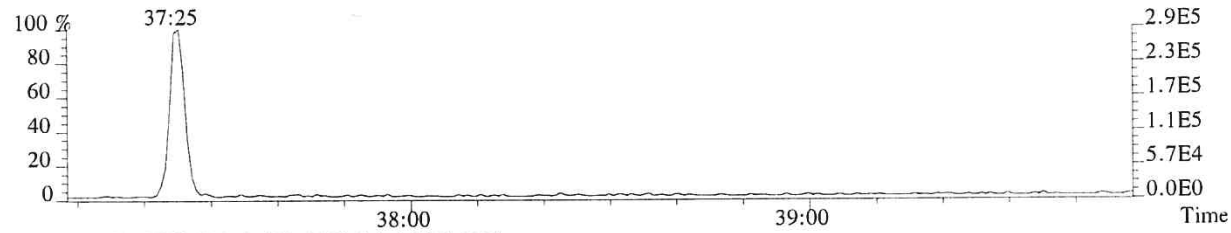
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4680.0,0.50%,F,T)



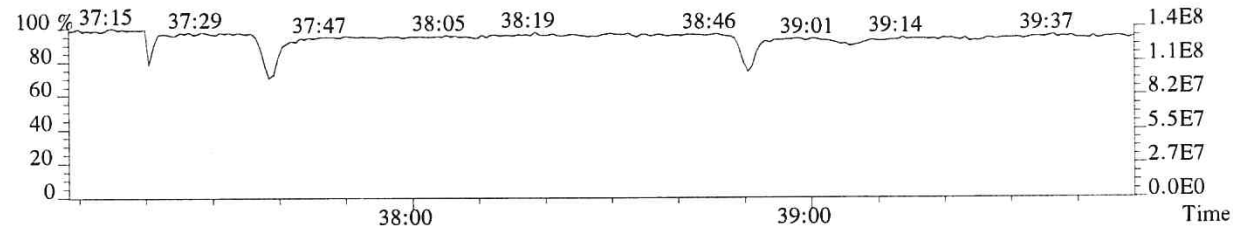
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3324.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

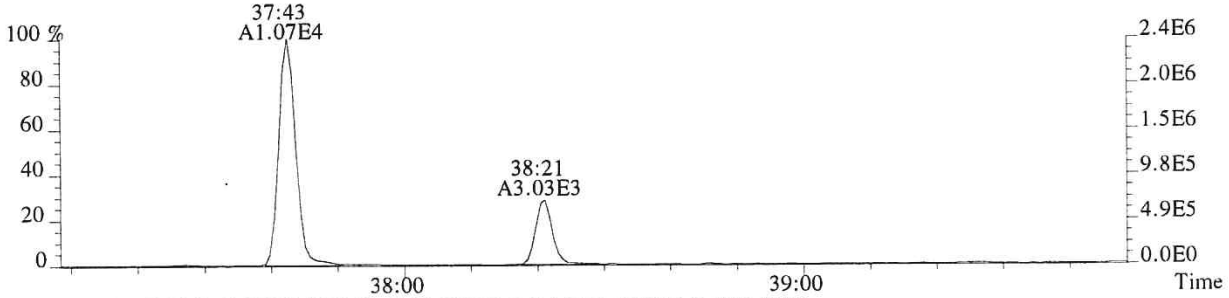


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

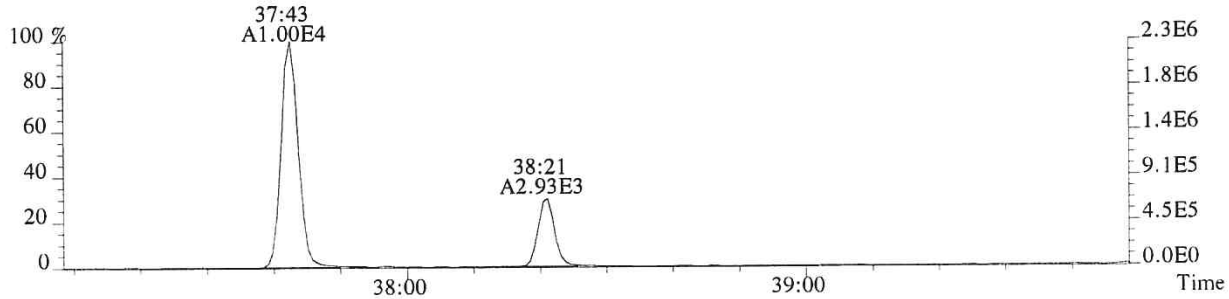


059287

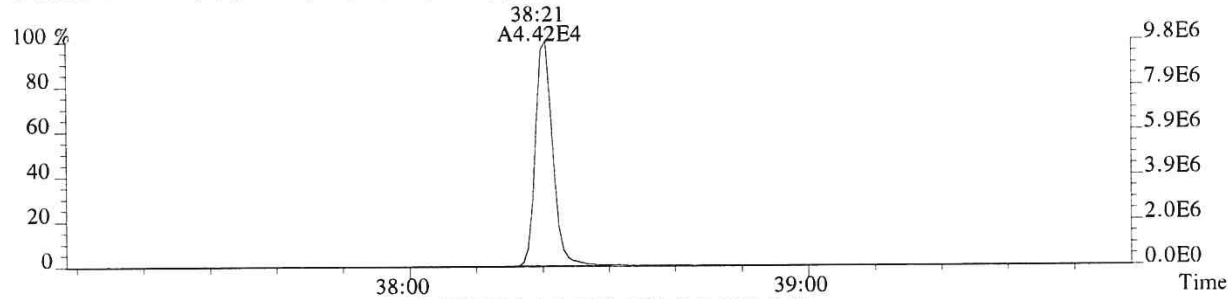
File:P616150 #1-241 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6076.0,0.40%,F,T)



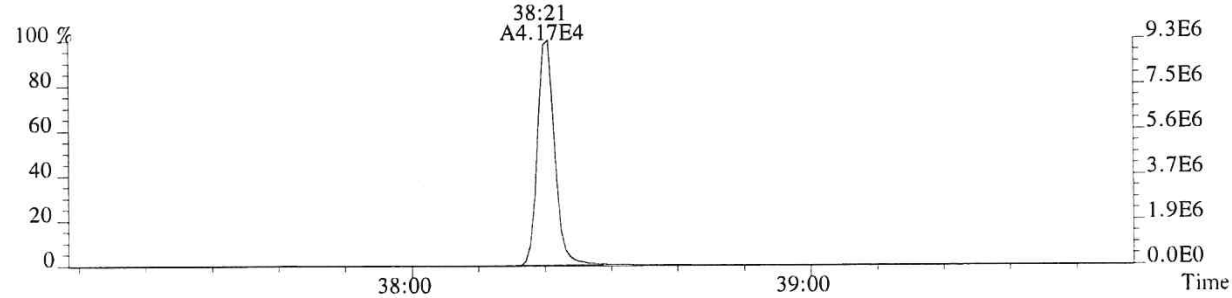
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3688.0,0.40%,F,T)



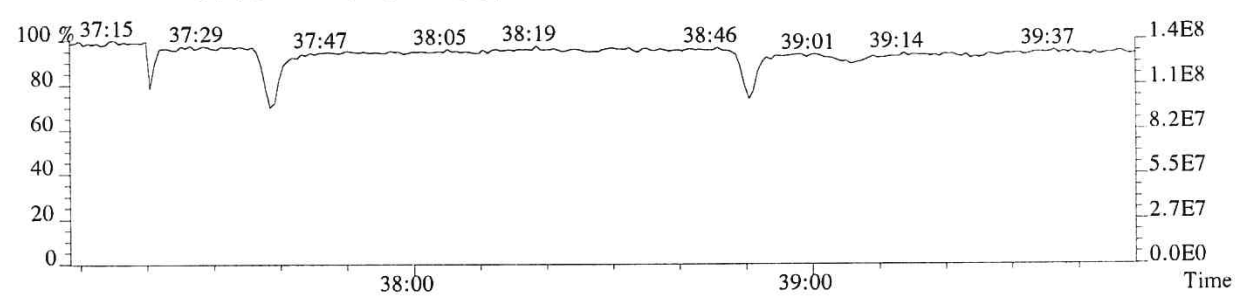
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1928.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1604.0,0.40%,F,T)



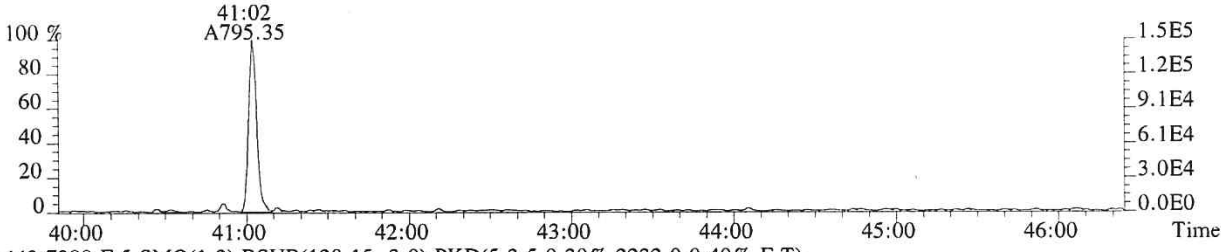
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



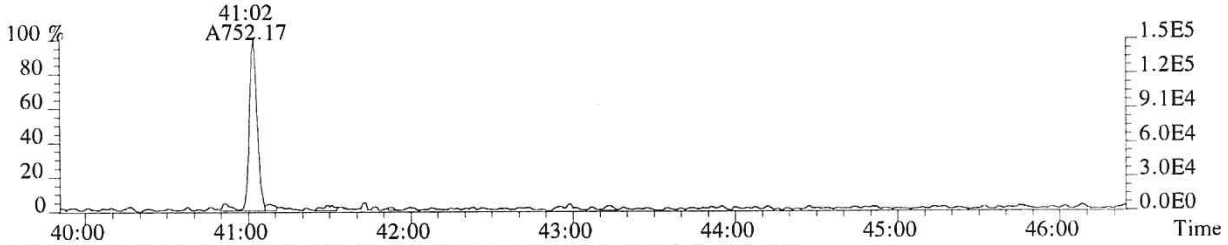
059288

File:P616150 #1-591 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019

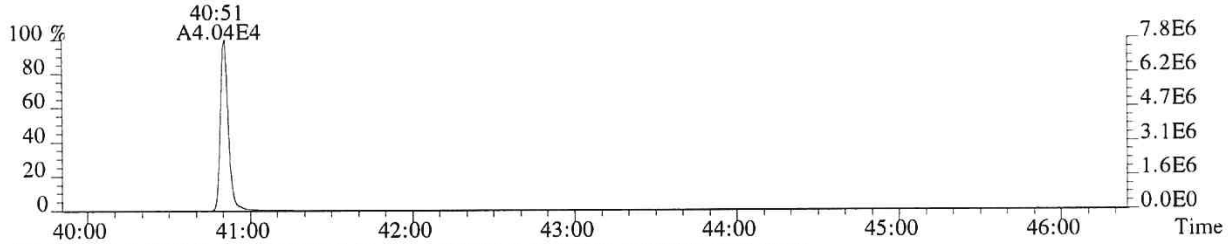
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1308.0,0.40%,F,T)



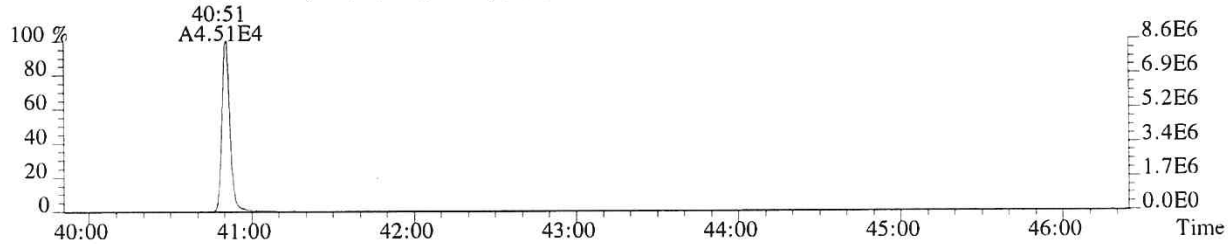
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2232.0,0.40%,F,T)



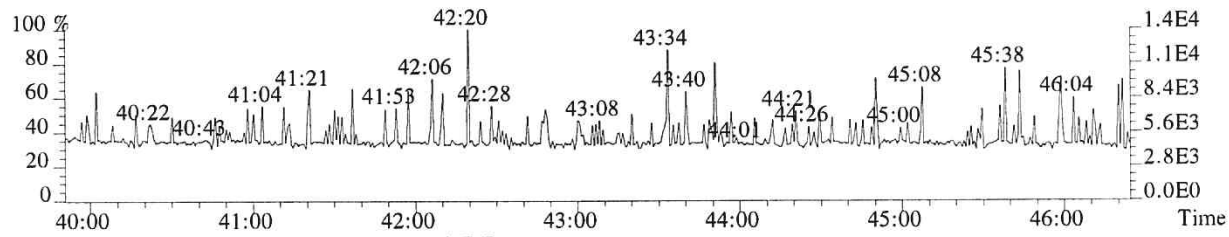
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1356.0,0.40%,F,T)



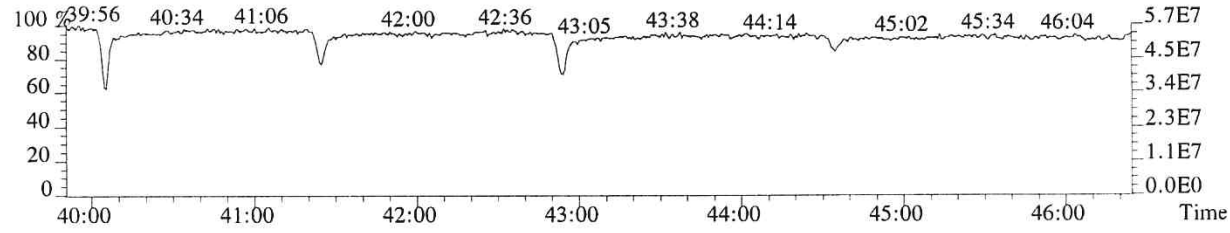
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1708.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

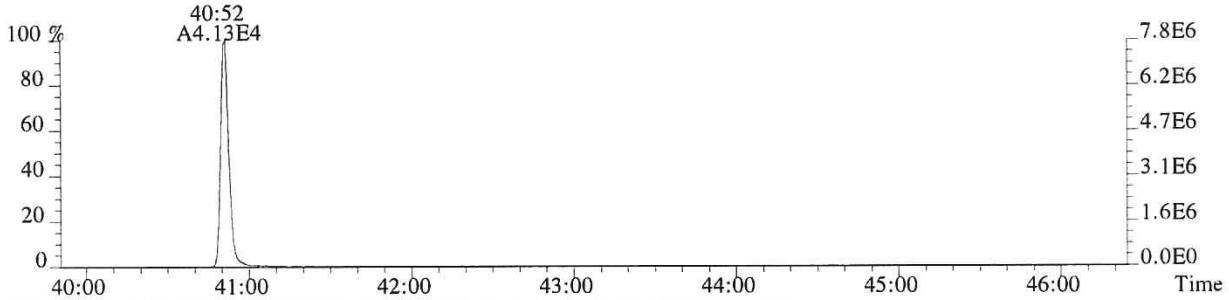


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

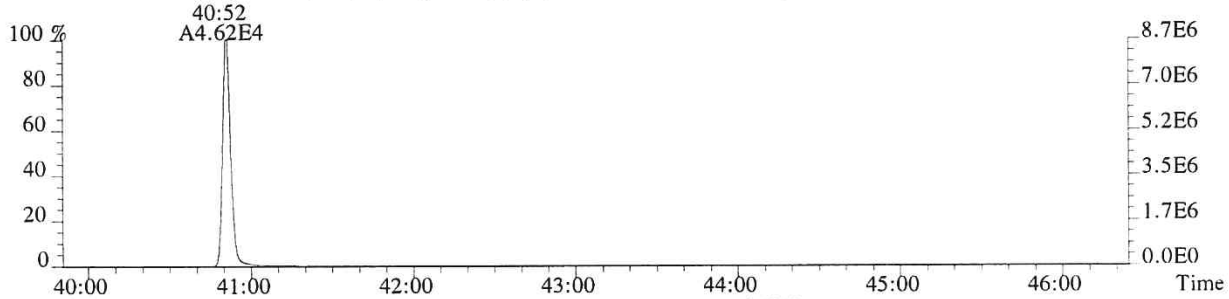


059289

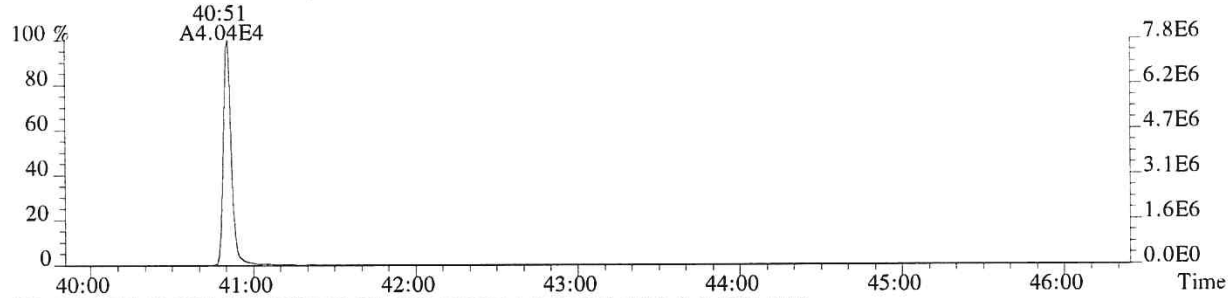
File:P616150 #1-591 Acq:20-DEC-2018 20:27:22 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-019
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1192.0,0.40%,F,T)



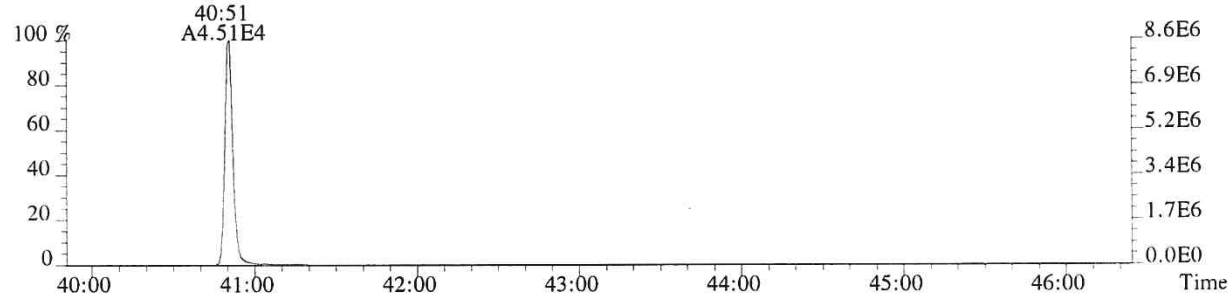
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,956.0,0.40%,F,T)



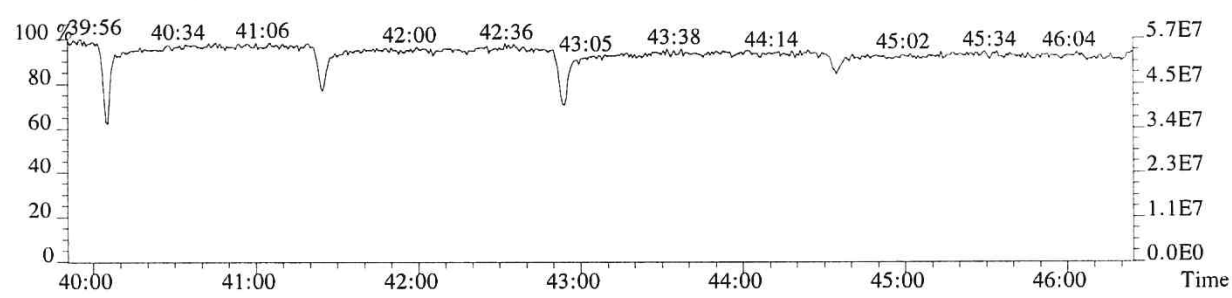
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1356.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1708.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059290

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0237

Run #16 Filename P616151 Samp: 1 Inj: 1 Acquired: 20-DEC-18 21:16:33
Processed: 24-DEC-18 10:55:49 Sample ID: E1801096-020

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:19	1.180e+03	1.289e+03	0.92	no	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	1.141e+02	6.719e+01	1.70	yes	yes	1.156
3	Unk	2,3,4,7,8-PeCDF	32:01	6.421e+01	4.275e+01	1.50	yes	yes	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:49	1.280e+02	9.620e+01	1.33	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:55	5.355e+01	5.501e+01	0.97	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:29	1.557e+02	1.118e+02	1.39	no	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.463
10	Unk	OCDF	41:03	1.606e+02	1.777e+02	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:14	2.902e+02	4.262e+02	0.68	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	4.725e+01	3.706e+01	1.27	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	6.199e+01	3.246e+01	1.91	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	8.161e+01	7.911e+01	1.03	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	1.680e+02	1.047e+02	1.61	no	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	1.726e+03	1.772e+03	0.97	yes	no	1.112
17	Unk	OCDD	40:52	2.642e+04	2.934e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:17	1.648e+04	2.165e+04	0.76	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:01	4.814e+04	3.023e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	5.198e+04	3.271e+04	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	2.755e+04	5.198e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:55	3.142e+04	5.886e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	2.994e+04	5.585e+04	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	2.760e+04	5.105e+04	0.54	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:28	2.222e+04	4.786e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	1.929e+04	4.280e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:12	8.876e+03	1.123e+04	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:19	3.795e+04	2.479e+04	1.53	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	3.832e+04	2.990e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:40	3.624e+04	2.848e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	4.032e+04	3.787e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:51	3.402e+04	3.731e+04	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:30	4.460e+04	5.748e+04	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	6.666e+04	5.217e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	1.295e+04				no	1.086

$$\text{OCDD} = \frac{(2.642e+04 + 2.934e+04) \times 4000\ \text{pg} \times 1}{(3.402e+04 + 3.731e+04) \times 10.167\ \text{g} \times 75.8 / 100 \times 1.157} = 350.6833\ \text{ng/kg}$$

LG 12/26/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0237

Run #16 Filename P616151 Samp: 1 Inj: 1 Acquired: 20-DEC-18 21:16:33
Processed: 24-DEC-18 10:55:49 LAB. ID: E1801096-020

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.72e+05	2.42e+03	7.1e+01	2.01e+05	6.48e+03	3.1e+01
2	1,2,3,7,8-PeCDF	2.11e+04	1.74e+03	1.2e+01	1.16e+04	2.80e+03	4.1e+00
3	2,3,4,7,8-PeCDF	1.09e+04	1.74e+03	6.3e+00	9.98e+03	2.80e+03	3.6e+00
4	1,2,3,4,7,8-HxCDF	2.87e+04	2.23e+03	1.3e+01	2.33e+04	1.46e+03	1.6e+01
5	1,2,3,6,7,8-HxCDF	1.14e+04	2.23e+03	5.1e+00	1.10e+04	1.46e+03	7.5e+00
6	2,3,4,6,7,8-HxCDF	*	2.23e+03	*	*	1.46e+03	*
7	1,2,3,7,8,9-HxCDF	*	2.23e+03	*	*	1.46e+03	*
8	1,2,3,4,6,7,8-HpCDF	3.71e+04	1.54e+03	2.4e+01	2.65e+04	7.52e+02	3.5e+01
9	1,2,3,4,7,8,9-HpCDF	*	1.54e+03	*	*	7.52e+02	*
10	OCDF	3.08e+04	1.25e+03	2.5e+01	3.03e+04	2.19e+03	1.4e+01
11	2,3,7,8-TCDD	5.13e+04	4.87e+03	1.1e+01	6.24e+04	2.36e+03	2.6e+01
12	1,2,3,7,8-PeCDD	9.01e+03	2.02e+03	4.5e+00	5.75e+03	6.16e+02	9.3e+00
13	1,2,3,4,7,8-HxCDD	1.32e+04	1.23e+03	1.1e+01	6.40e+03	1.84e+03	3.5e+00
14	1,2,3,6,7,8-HxCDD	1.68e+04	1.23e+03	1.4e+01	1.60e+04	1.84e+03	8.7e+00
15	1,2,3,7,8,9-HxCDD	3.63e+04	1.23e+03	2.9e+01	2.00e+04	1.84e+03	1.1e+01
16	1,2,3,4,6,7,8-HpCDD	3.89e+05	3.10e+03	1.3e+02	3.96e+05	3.80e+03	1.0e+02
17	OCDD	5.13e+06	4.40e+02	1.2e+04	5.75e+06	9.76e+02	5.9e+03
18	13C-2,3,7,8-TCDF	2.53e+06	2.23e+04	1.1e+02	3.23e+06	7.12e+03	4.5e+02
19	13C-1,2,3,7,8-PeCDF	8.37e+06	1.90e+03	4.4e+03	5.28e+06	2.10e+03	2.5e+03
20	13C-2,3,4,7,8-PeCDF	9.71e+06	1.90e+03	5.1e+03	6.14e+06	2.10e+03	2.9e+03
21	13C-1,2,3,4,7,8-HxCDF	5.78e+06	1.22e+03	4.8e+03	1.08e+07	2.21e+03	4.9e+03
22	13C-1,2,3,6,7,8-HxCDF	6.57e+06	1.22e+03	5.4e+03	1.22e+07	2.21e+03	5.5e+03
23	13C-2,3,4,6,7,8-HxCDF	6.26e+06	1.22e+03	5.1e+03	1.18e+07	2.21e+03	5.4e+03
24	13C-1,2,3,7,8,9-HxCDF	5.83e+06	1.22e+03	4.8e+03	1.07e+07	2.21e+03	4.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.03e+06	2.22e+03	2.3e+03	1.05e+07	2.74e+03	3.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.21e+06	2.22e+03	1.9e+03	9.32e+06	2.74e+03	3.4e+03
27	13C-2,3,7,8-TCDD	1.45e+06	1.76e+04	8.2e+01	1.83e+06	6.62e+03	2.8e+02
28	13C-1,2,3,7,8-PeCDD	6.97e+06	1.91e+03	3.7e+03	4.52e+06	1.93e+03	2.3e+03
29	13C-1,2,3,4,7,8-HxCDD	8.58e+06	2.60e+03	3.3e+03	6.69e+06	1.97e+03	3.4e+03
30	13C-1,2,3,6,7,8-HxCDD	7.73e+06	2.60e+03	3.0e+03	6.13e+06	1.97e+03	3.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	8.86e+06	2.82e+03	3.1e+03	8.44e+06	1.31e+03	6.4e+03
32	13C-OCDD	6.62e+06	1.62e+03	4.1e+03	7.14e+06	7.40e+02	9.7e+03
33	13C-1,2,3,4-TCDD	6.92e+06	1.76e+04	3.9e+02	8.97e+06	6.62e+03	1.4e+03
34	13C-1,2,3,7,8,9-HxCDD	1.44e+07	2.60e+03	5.5e+03	1.13e+07	1.97e+03	5.7e+03
35	37Cl-2,3,7,8-TCDD	2.09e+06	4.31e+03	4.9e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (4.868e{+}03 + 2.360e{+}03\ ) \times 2000}{(1.446e{+}06 + 1.832e{+}06\ ) \times (\qquad\qquad\qquad\qquad\qquad\qquad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0237

Entry: 36 Totals Name: Total Tetra-Furans

Run: 16 File: P616151 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 21:16:33 Processed: 24-DEC-18 10:55:49

Mass: 303.9020 305.8990 Tot Response: 1.38e+03 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:58	5.56e+01	7.62e+01	0.73	yes	1.32e+02		n	n
2	25:17	5.78e+02	6.72e+02	0.86	yes	1.25e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0237

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 16 File: P616151 Sample:1 Injection:1 Function:1

Acquired: 20-DEC-18 21:16:33 Processed: 24-DEC-18 10:55:49

Mass: 319.8970 321.8940 Tot Response: 1.91e+03 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:55	5.37e+02	6.53e+02 0.82	yes	1.19e+03		n	n
2	27:14	2.90e+02	4.26e+02 0.68	yes	7.16e+02	2,3,7,8-TCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0237

Entry: 39 Totals Name: Total Penta-Furans2

Run: 16 File: P616151 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 21:16:33 Processed: 24-DEC-18 10:55:49

Mass: 339.8600 341.8570 Tot Response: 3.12e+02 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	31:02	1.14e+02	6.72e+01	1.70	yes	1.81e+02	1,2,3,7,8-PeCDF	n	y
2	31:56	1.34e+01	1.01e+01	1.33	yes	2.35e+01		y	y
3	32:01	6.42e+01	4.27e+01	1.50	yes	1.07e+02	2,3,4,7,8-PeCDF	y	y

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0237

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 16 File: P616151 Sample:1 Injection:1 Function:2

Acquired: 20-DEC-18 21:16:33 Processed: 24-DEC-18 10:55:49

Mass: 355.8550 357.8520 Tot Response: 1.51e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:33	7.07e+02	5.07e+02	1.39	yes	1.21e+03		n	n
2	31:33	1.37e+02	9.47e+01	1.45	yes	2.32e+02		n	n
3	32:42	3.56e+01	2.39e+01	1.49	yes	5.95e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0237

Entry: 41 Totals Name: Total Hexa-Furans

Run: 16 File: P616151 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 21:16:33 Processed: 24-DEC-18 10:55:49

Mass: 373.8210 375.8180 Tot Response: 2.24e+02 RRF: 1.324

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:49	1.28e+02	9.62e+01 1.33	yes	2.24e+02	1,2,3,4,7,8-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0237

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 16 File: P616151 Sample:1 Injection:1 Function:3

Acquired: 20-DEC-18 21:16:33 Processed: 24-DEC-18 10:55:49

Mass: 389.8160 391.8130 Tot Response: 9.31e+03 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:11	4.60e+03	3.65e+03 1.26	yes	8.25e+03		n	n
2	34:59	5.84e+02	4.70e+02 1.24	yes	1.05e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0237

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 16 File: P616151 Sample:1 Injection:1 Function:4

Acquired: 20-DEC-18 21:16:33 Processed: 24-DEC-18 10:55:49

Mass: 423.7770 425.7740 Tot Response: 1.95e+04 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:43	8.30e+03	7.70e+03 1.08	yes	1.60e+04		n	n
2	38:21	1.73e+03	1.77e+03 0.97	yes	3.50e+03	1,2,3,4,6,7,8-HpCDD	n	n

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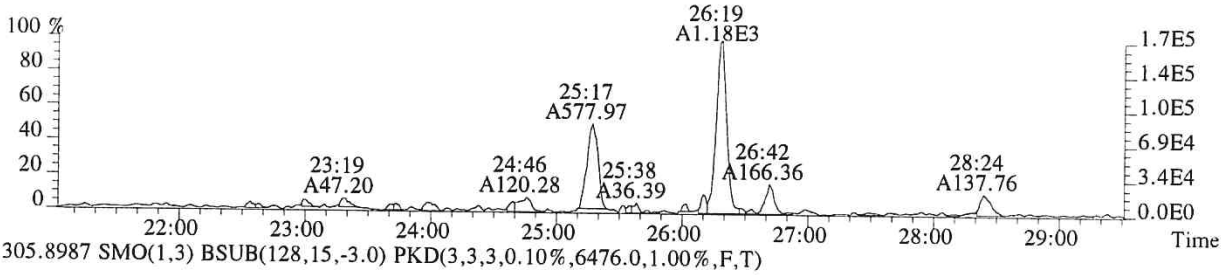
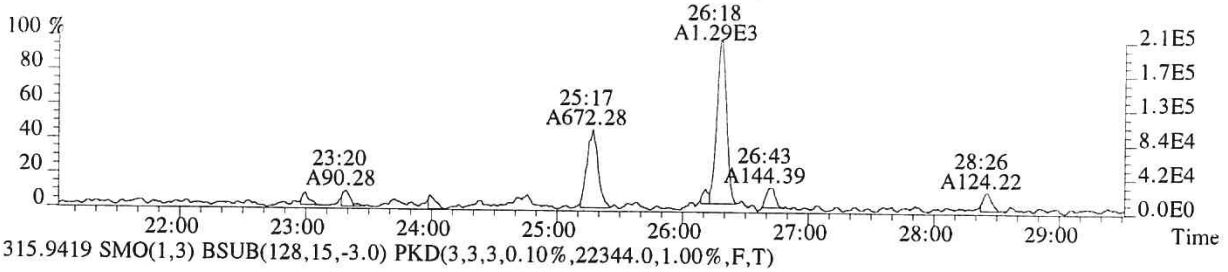
File:P616151 #1-602 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-020

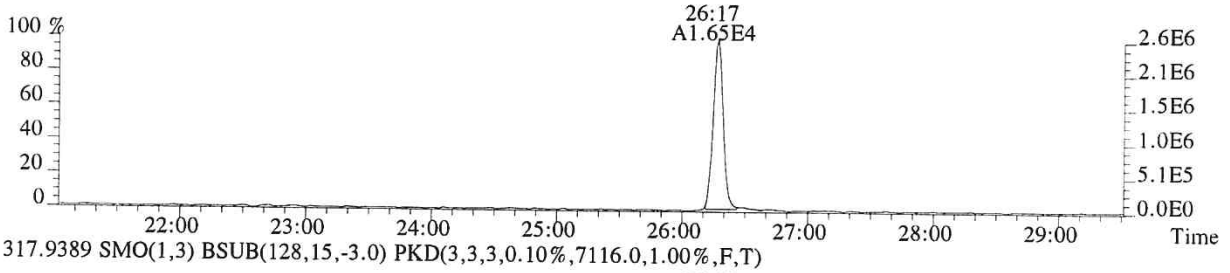
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2416.0,1.00%,F,T)



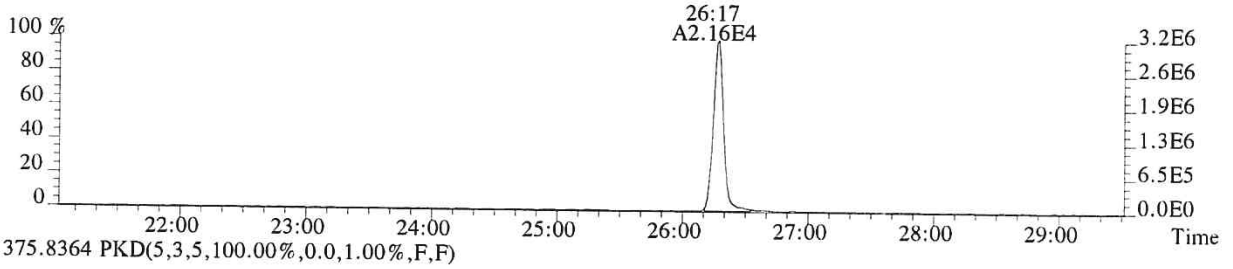
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6476.0,1.00%,F,T)



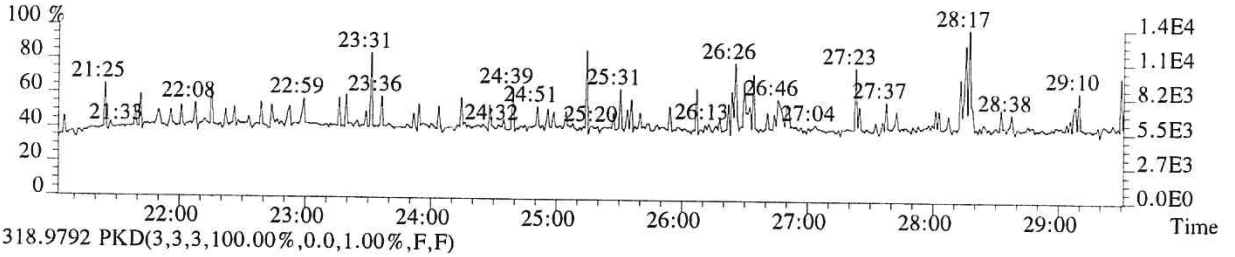
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,22344.0,1.00%,F,T)



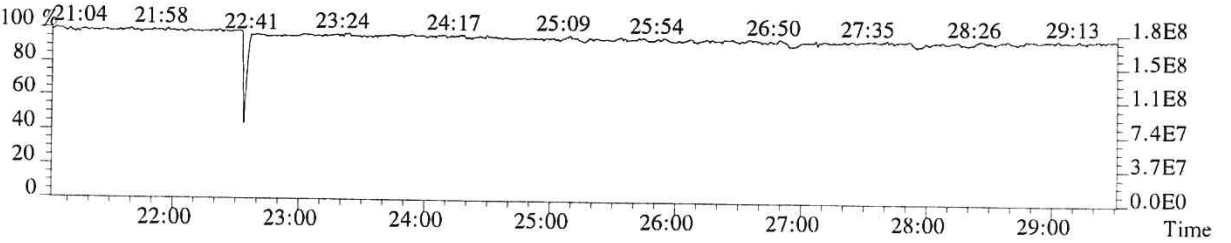
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7116.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

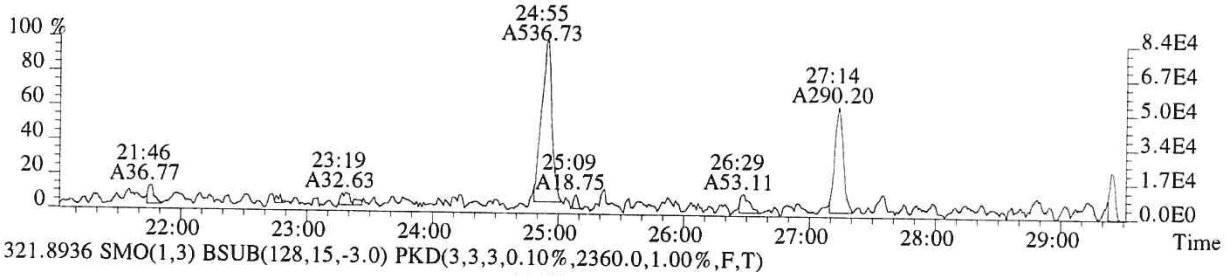


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

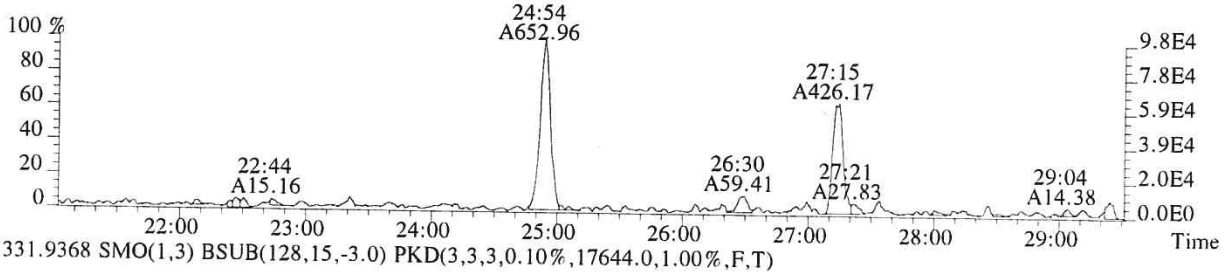


059300

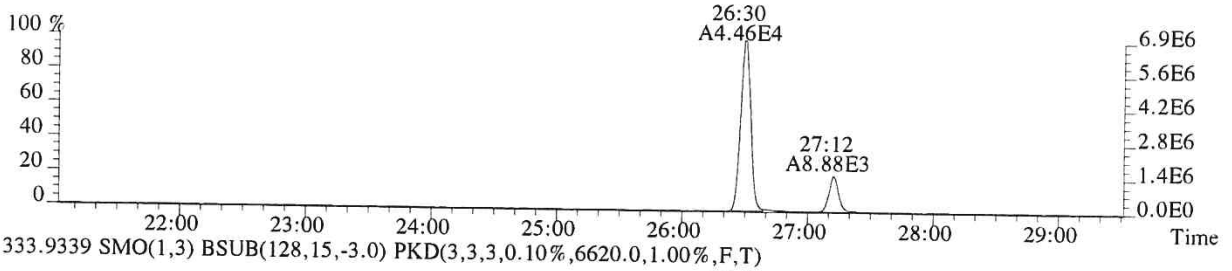
File:P616151 #1-602 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-020
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4868.0,1.00%,F,T)



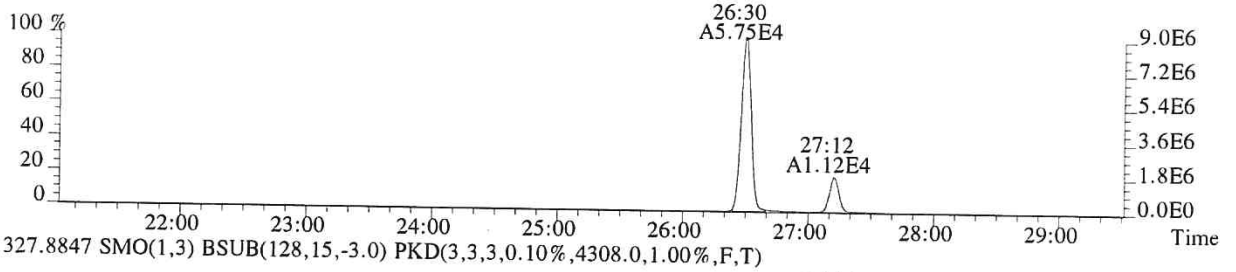
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2360.0,1.00%,F,T)



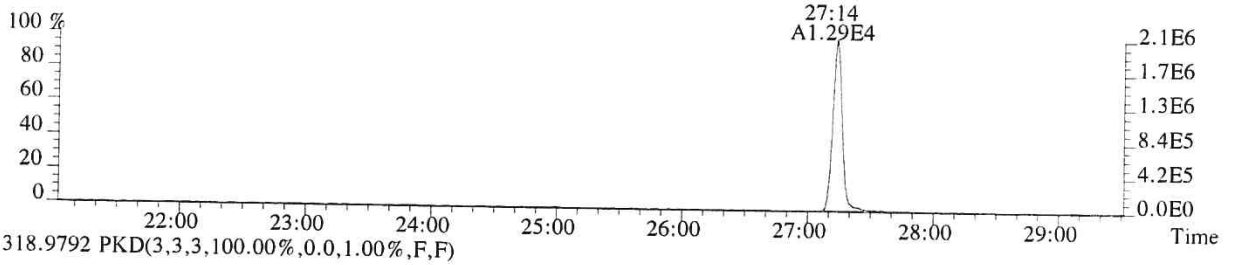
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,17644.0,1.00%,F,T)



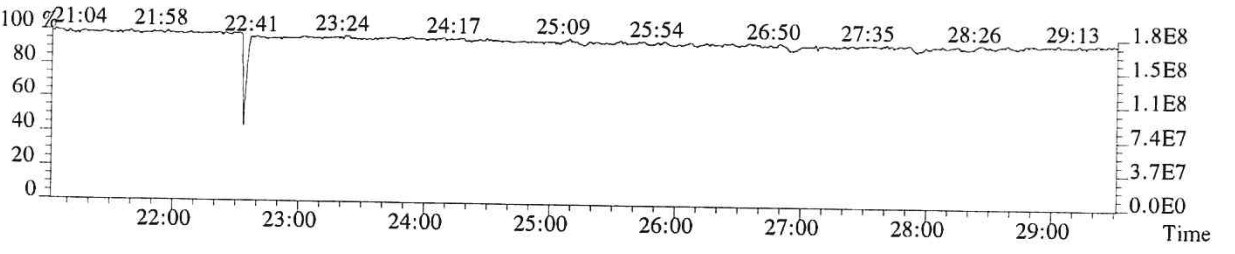
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6620.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4308.0,1.00%,F,T)

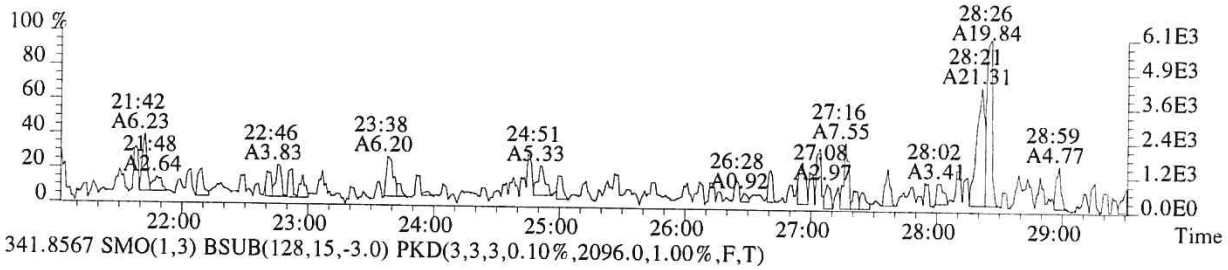


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

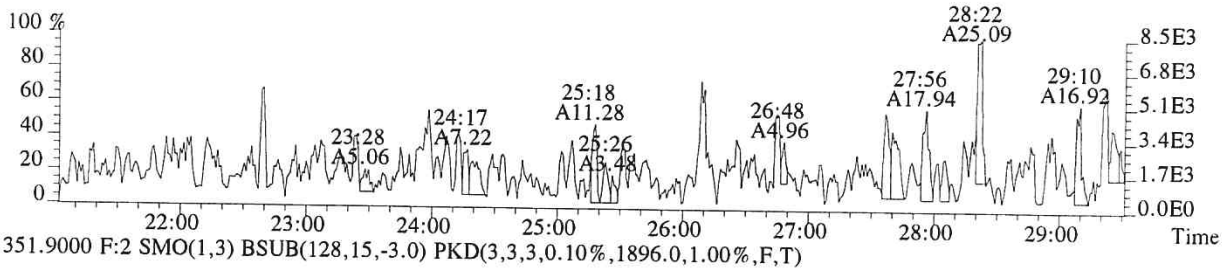


059301

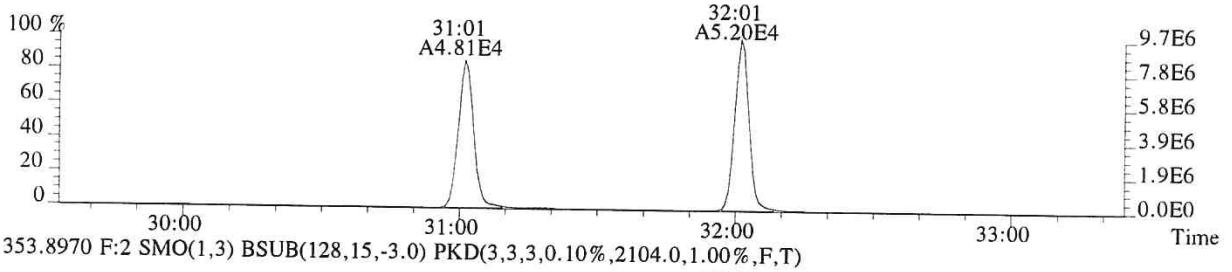
File:P616151 #1-602 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-020
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,564.0,1.00%,F,T)



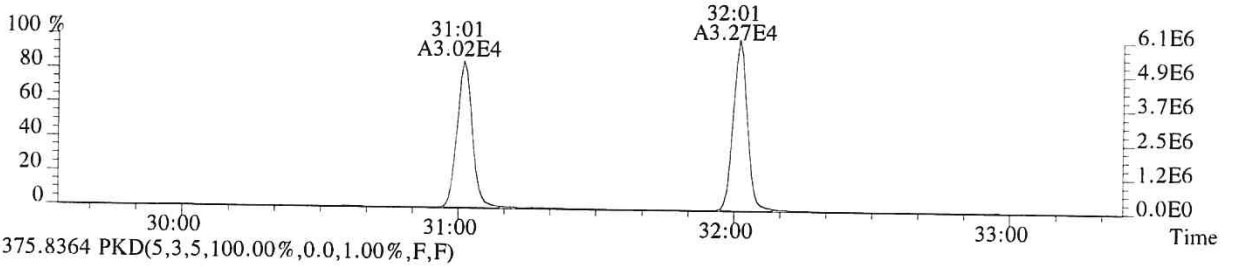
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2096.0,1.00%,F,T)



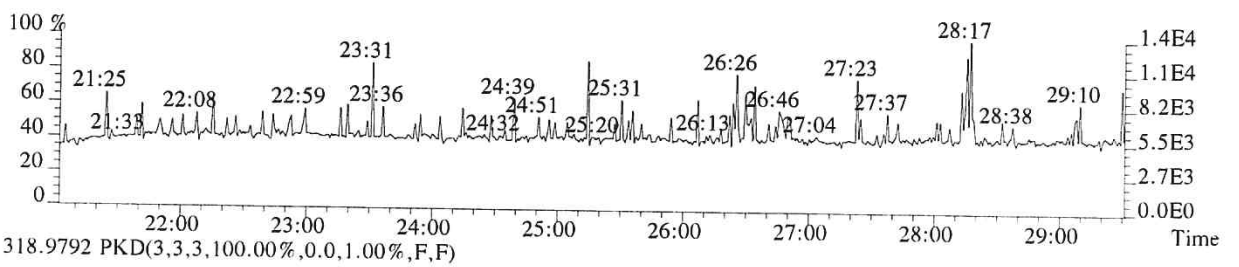
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1896.0,1.00%,F,T)



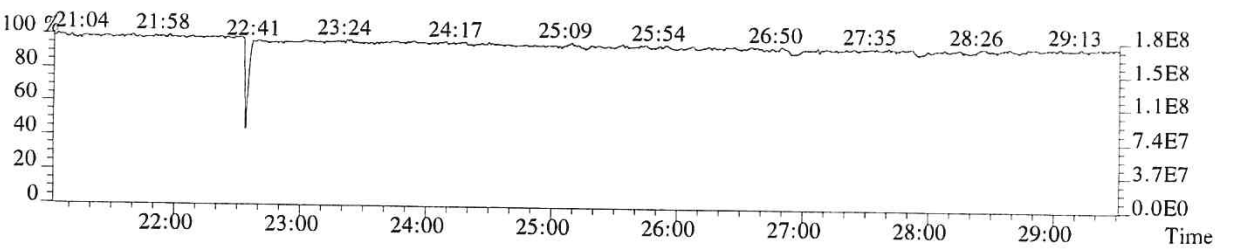
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2104.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

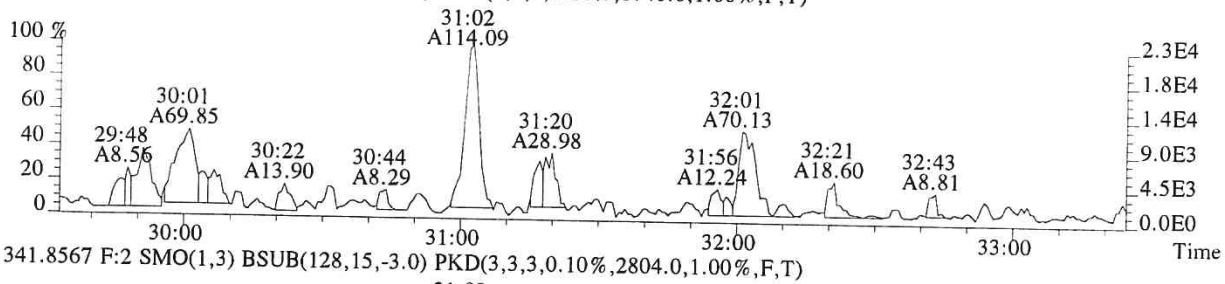


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

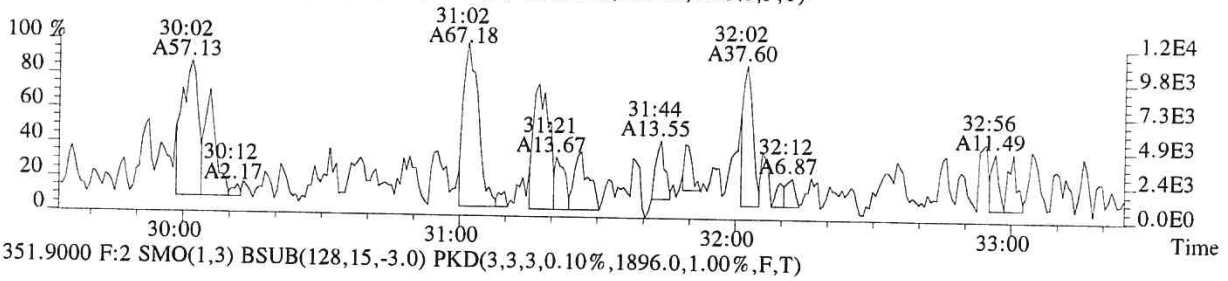


059302

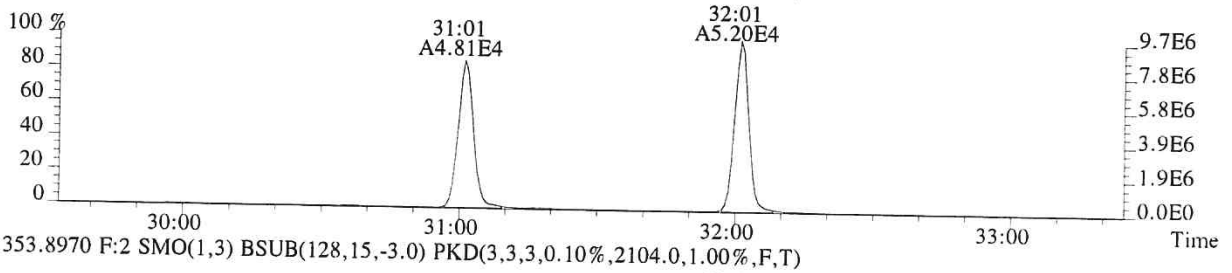
File:P616151 #1-348 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-020
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1740.0,1.00%,F,T)



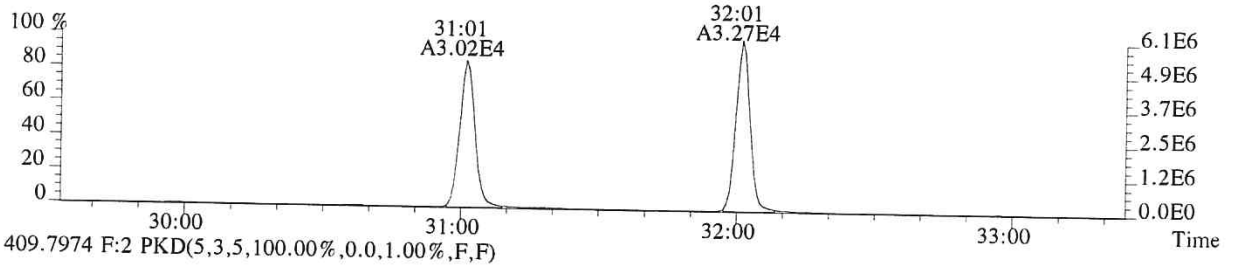
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2804.0,1.00%,F,T)



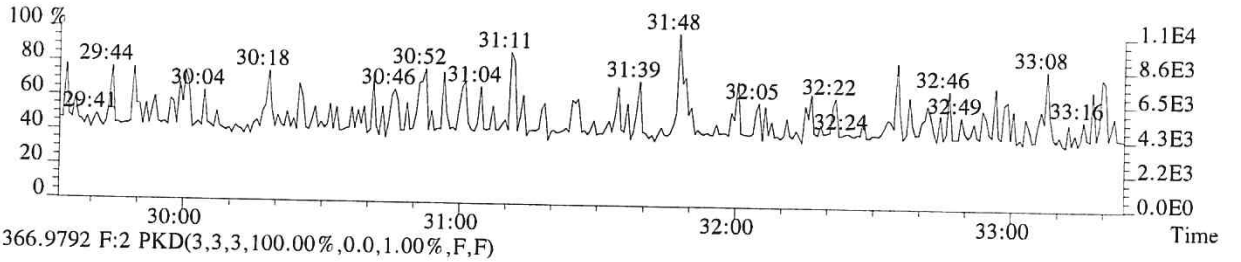
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1896.0,1.00%,F,T)



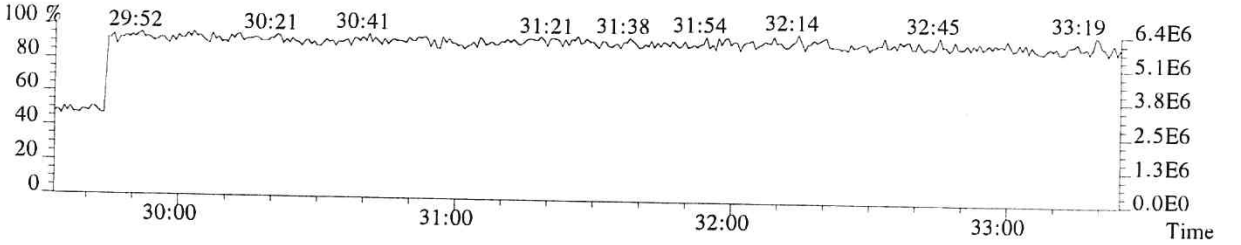
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2104.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

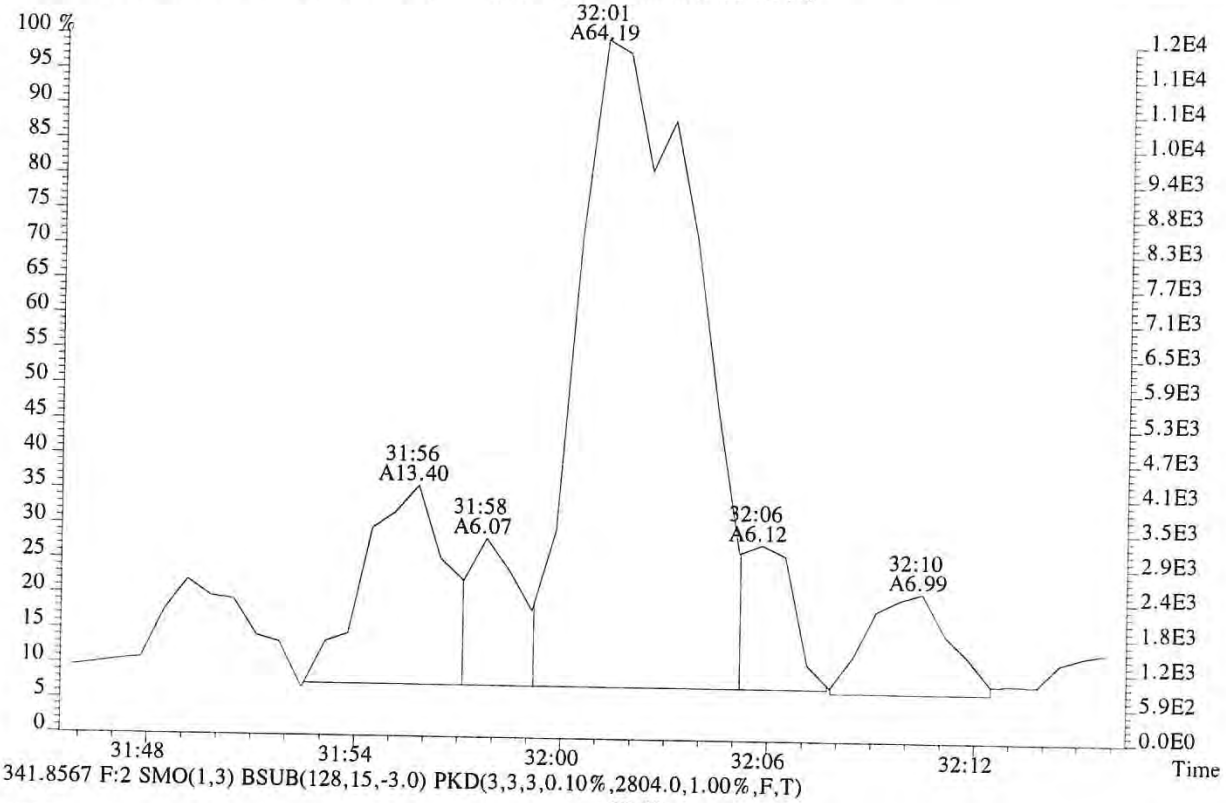


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

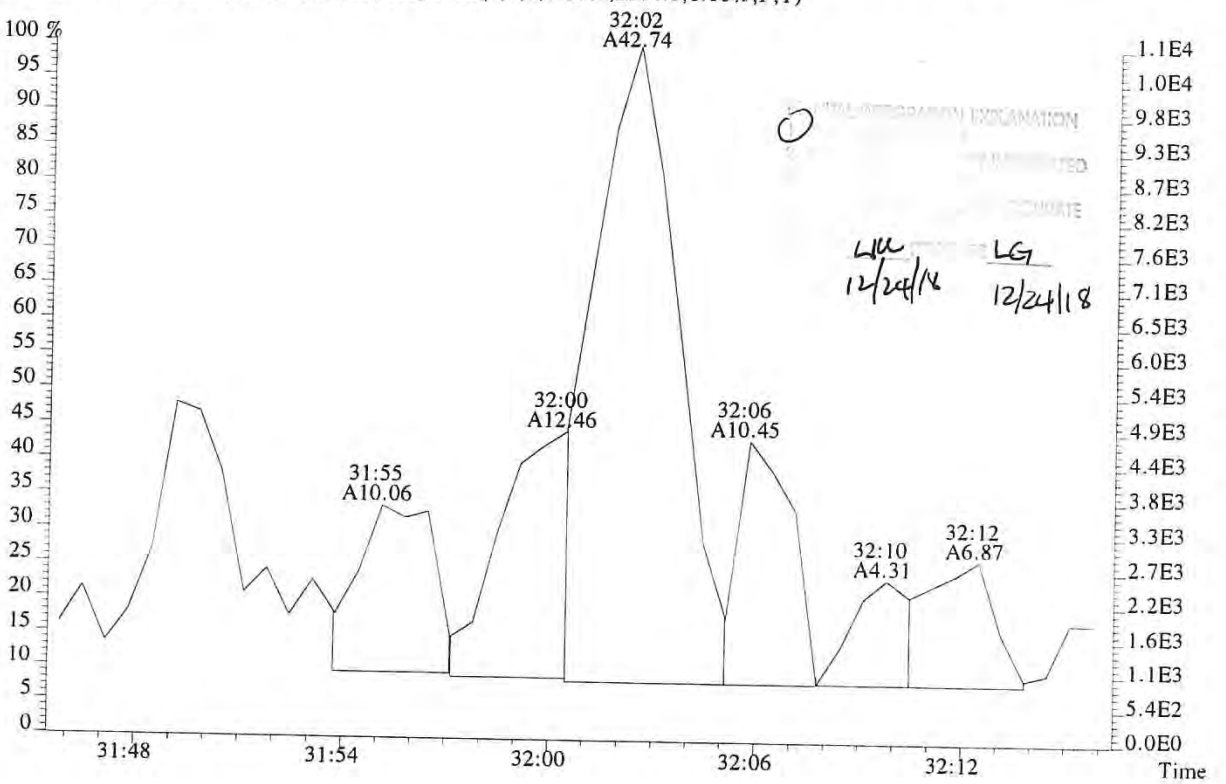


059303

File:P616151 #1-348 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-020
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1740.0,1.00%,F,T)

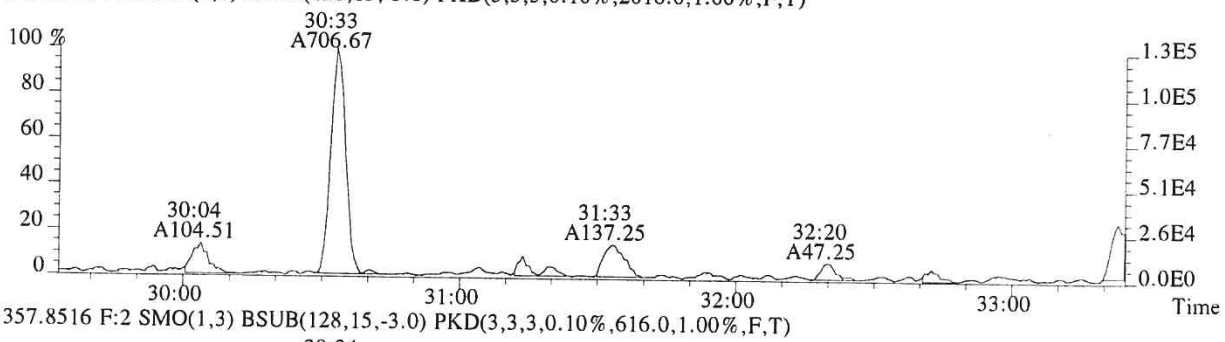


341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2804.0,1.00%,F,T)

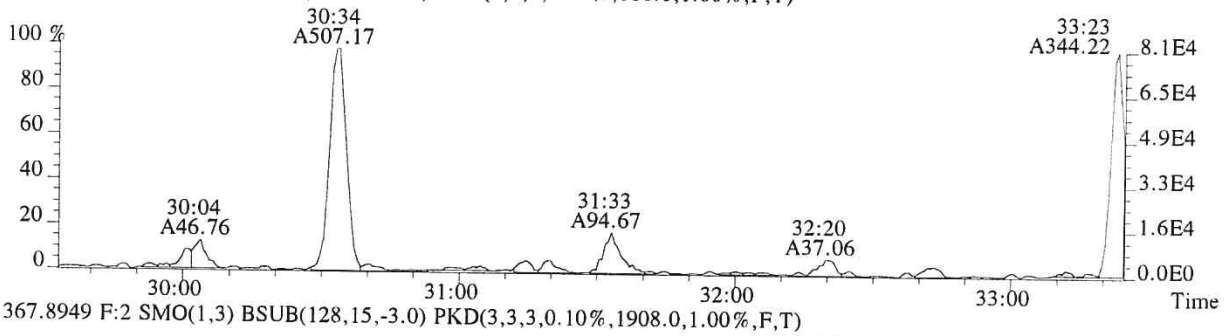


LW 12/24/18 LG 12/24/18

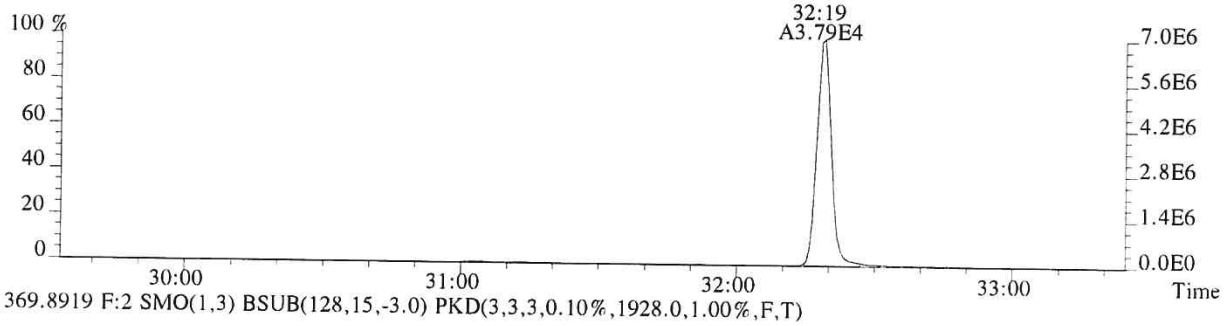
File:P616151 #1-348 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-020
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2016.0,1.00%,F,T)



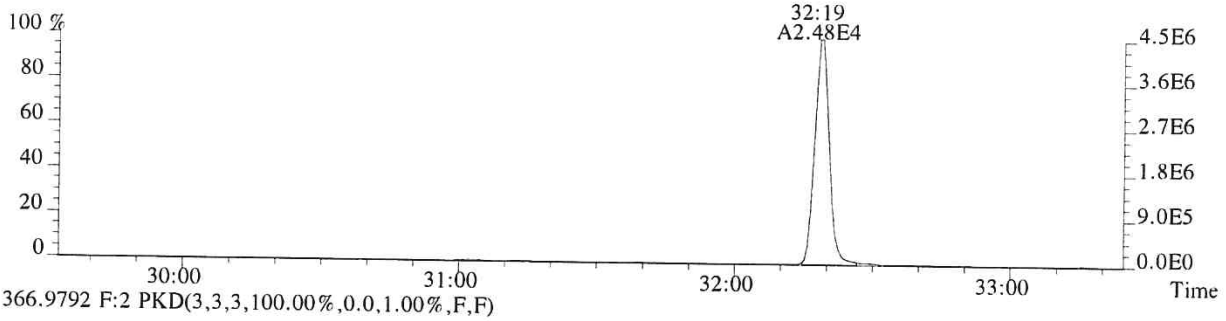
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,616.0,1.00%,F,T)



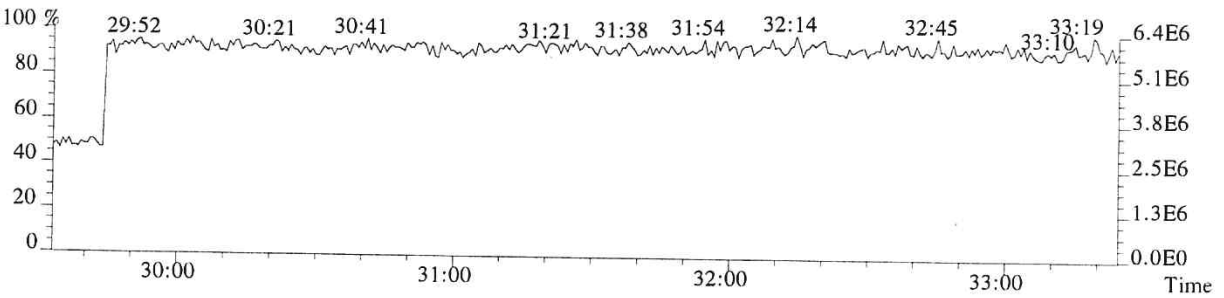
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1908.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1928.0,1.00%,F,T)

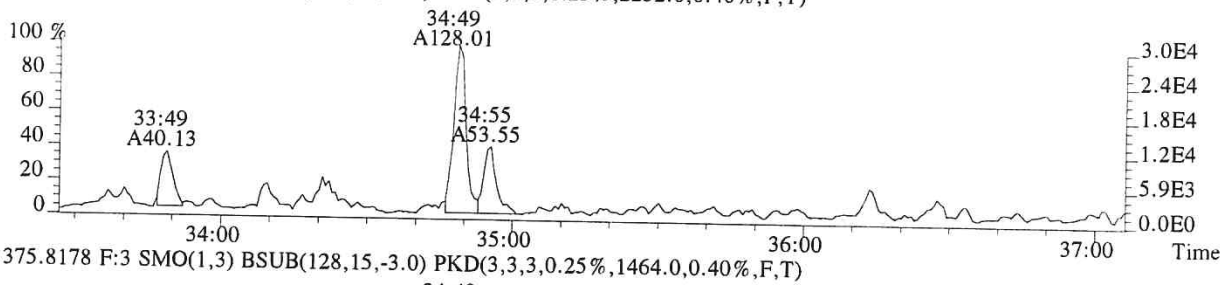


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

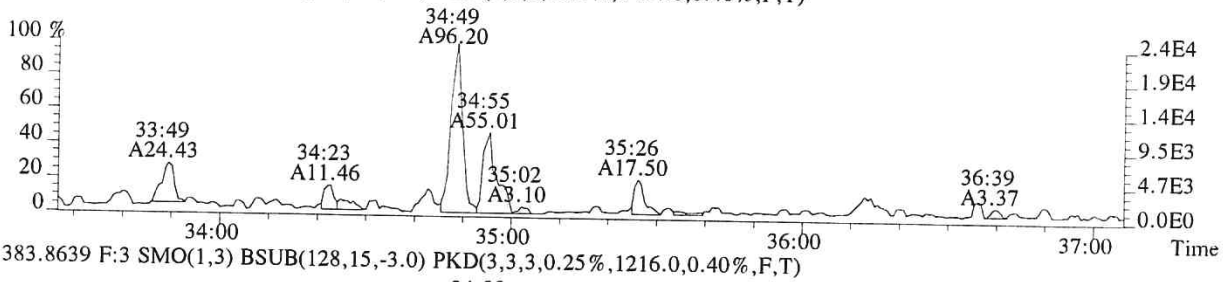


File:P616151 #1-330 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-020

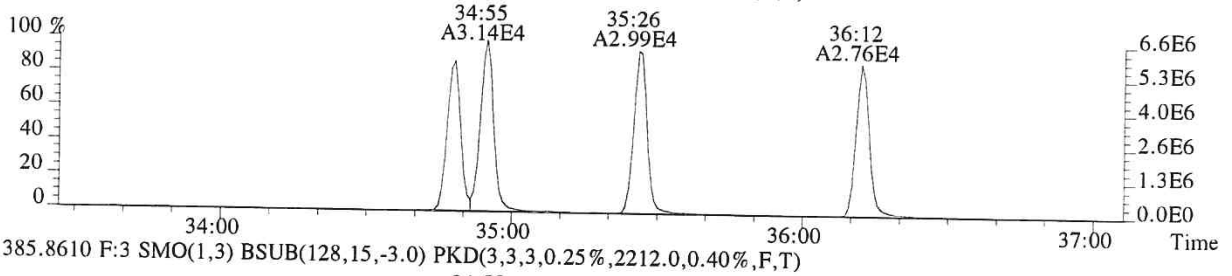
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2232.0,0.40%,F,T)



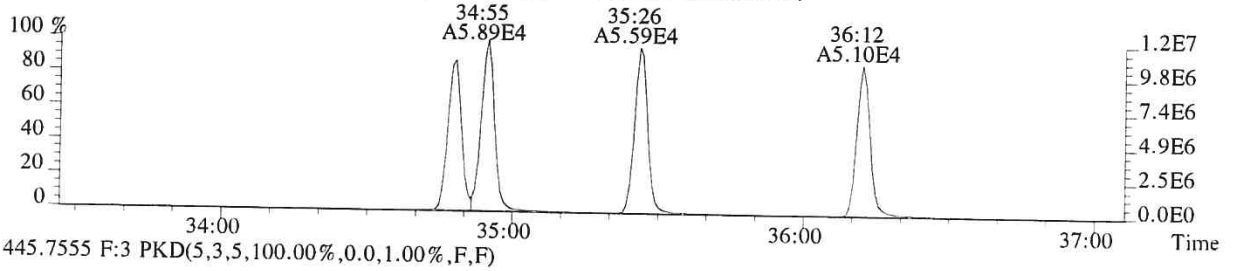
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1464.0,0.40%,F,T)



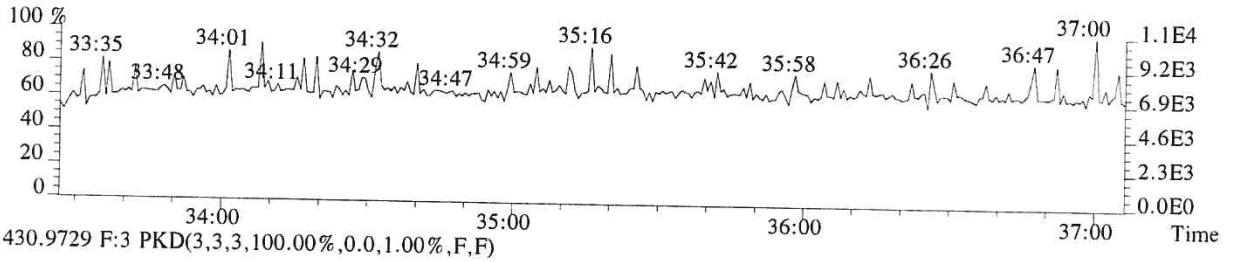
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1216.0,0.40%,F,T)



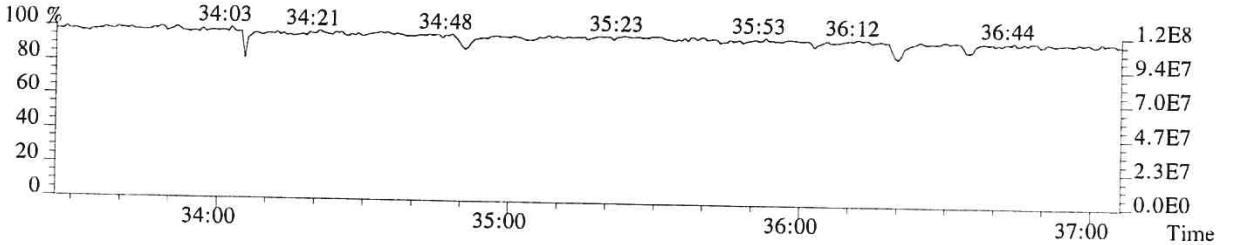
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2212.0,0.40%,F,T)



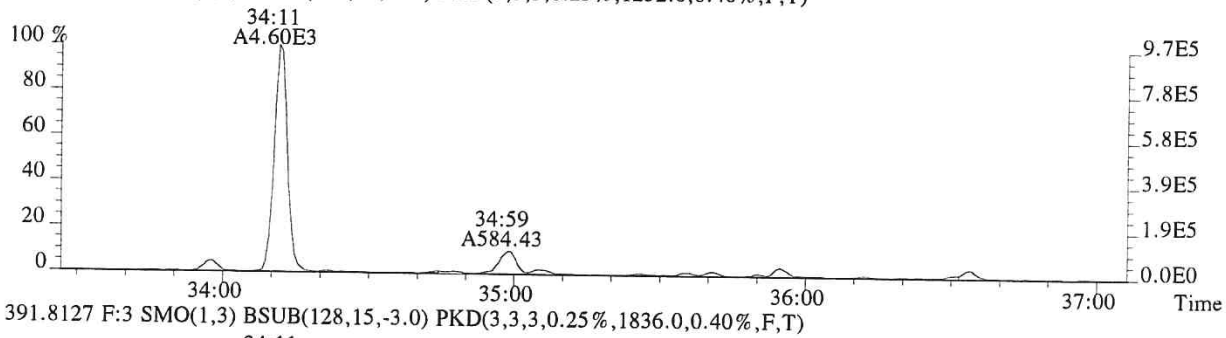
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



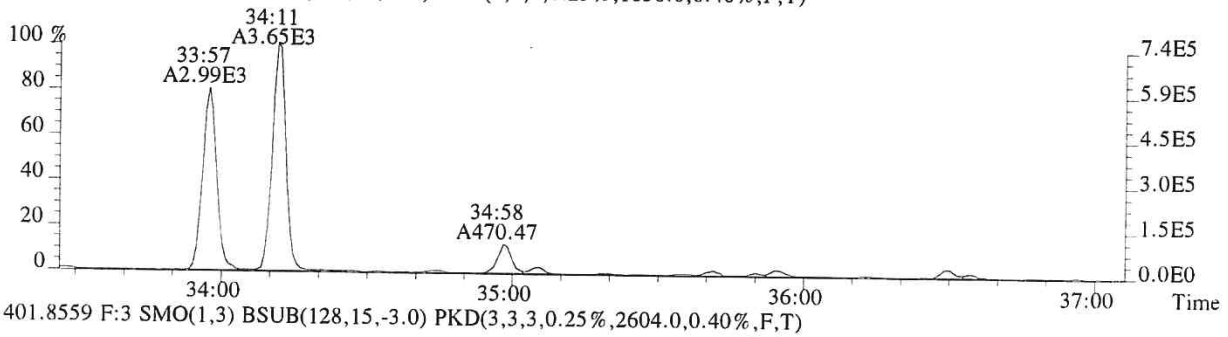
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



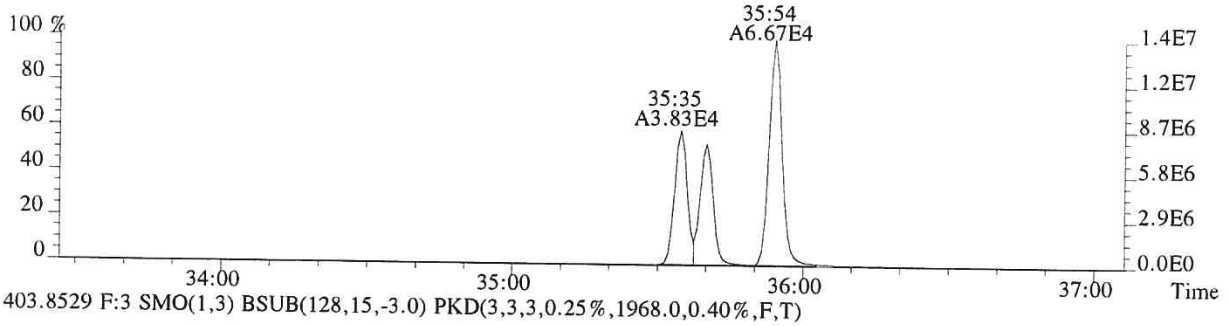
File:P616151 #1-330 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-020
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1232.0,0.40%,F,T)



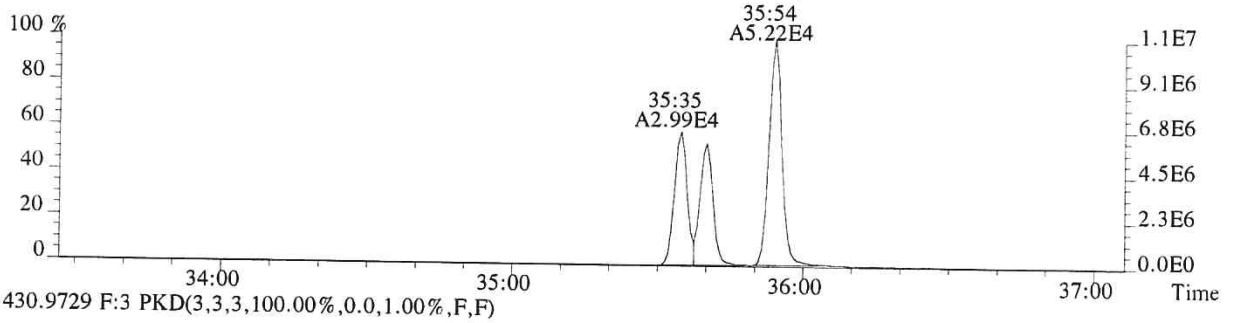
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1836.0,0.40%,F,T)



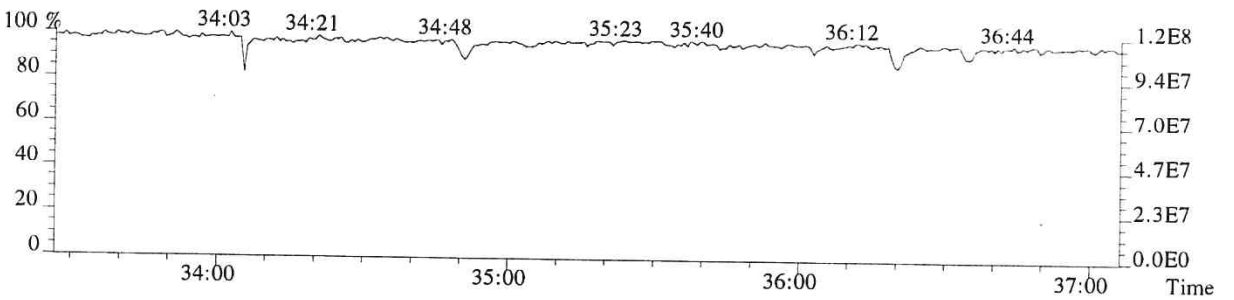
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2604.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1968.0,0.40%,F,T)

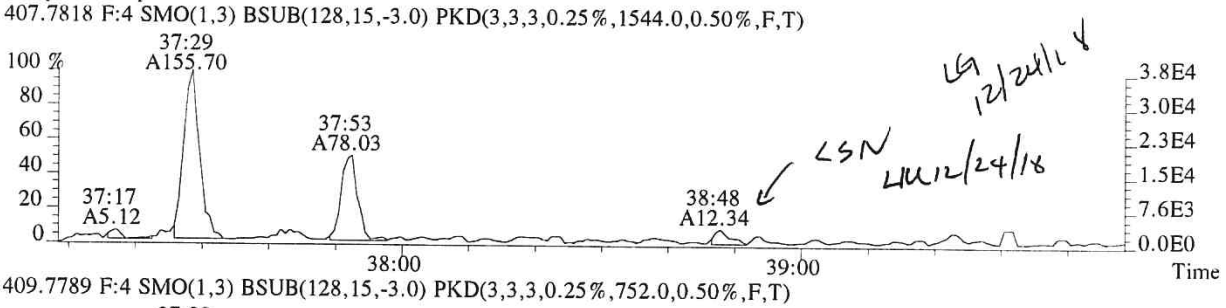


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

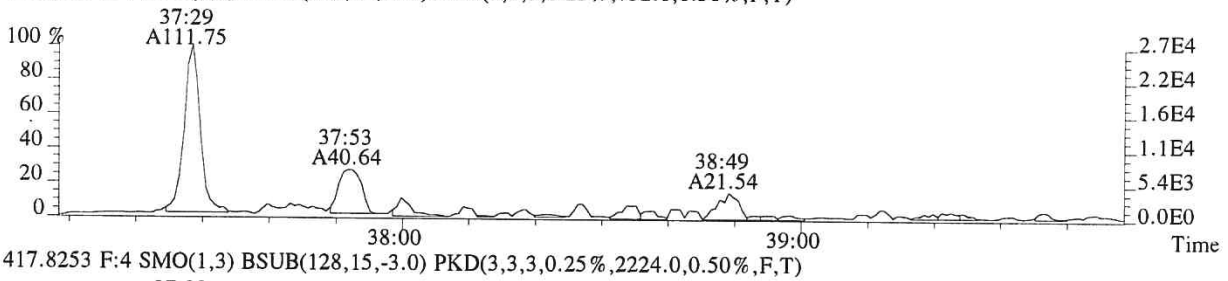


File:P616151 #1-241 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-020

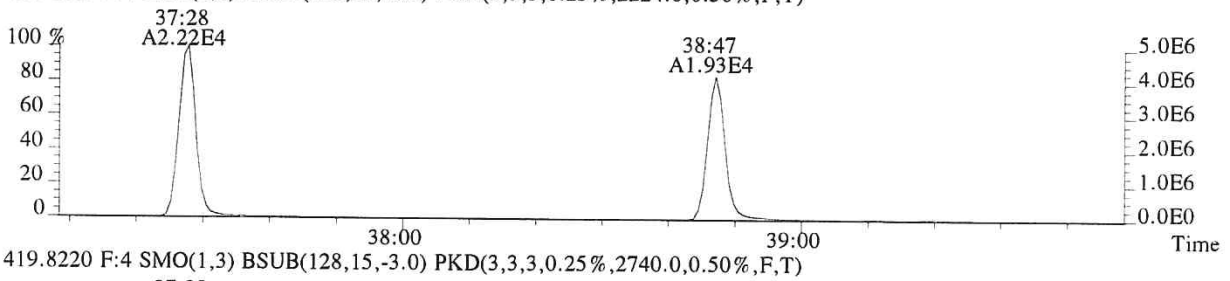
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1544.0,0.50%,F,T)



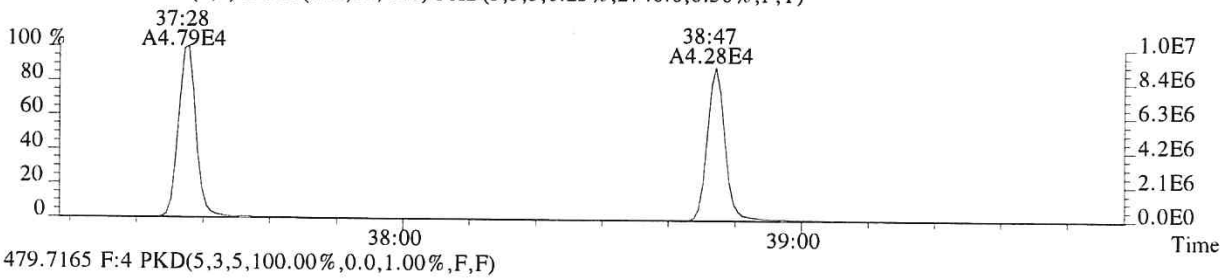
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,752.0,0.50%,F,T)



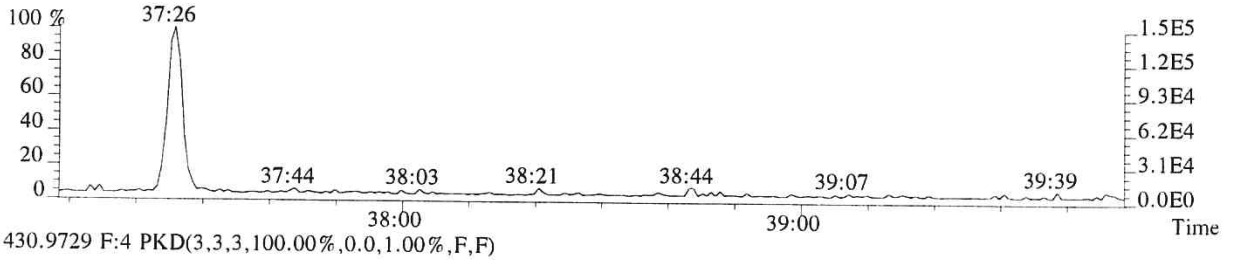
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2224.0,0.50%,F,T)



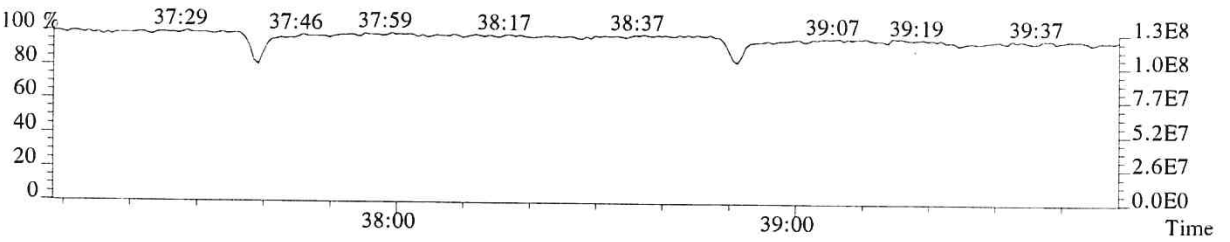
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2740.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

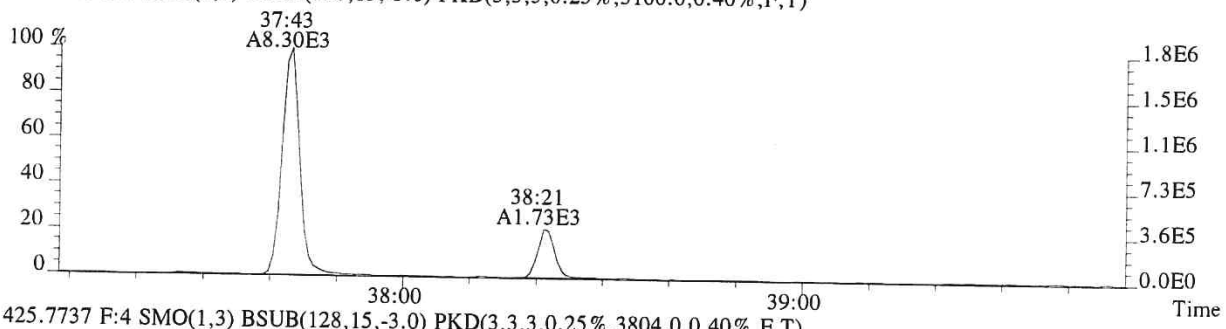


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

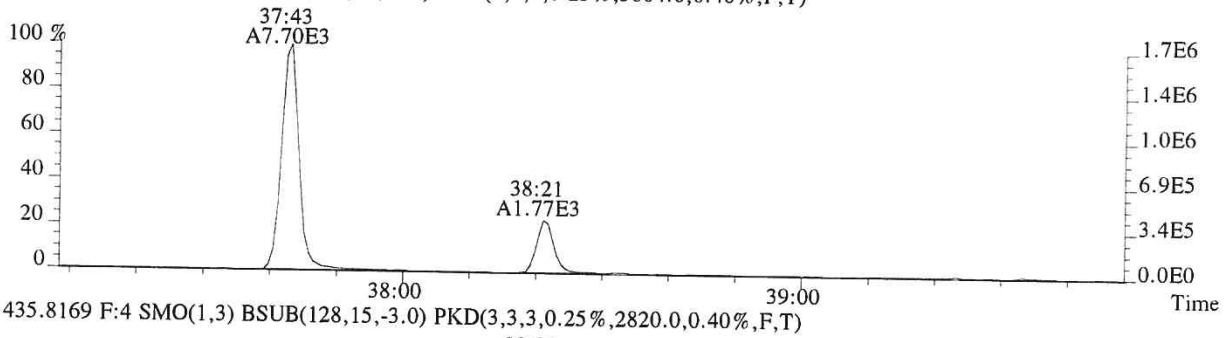


059308

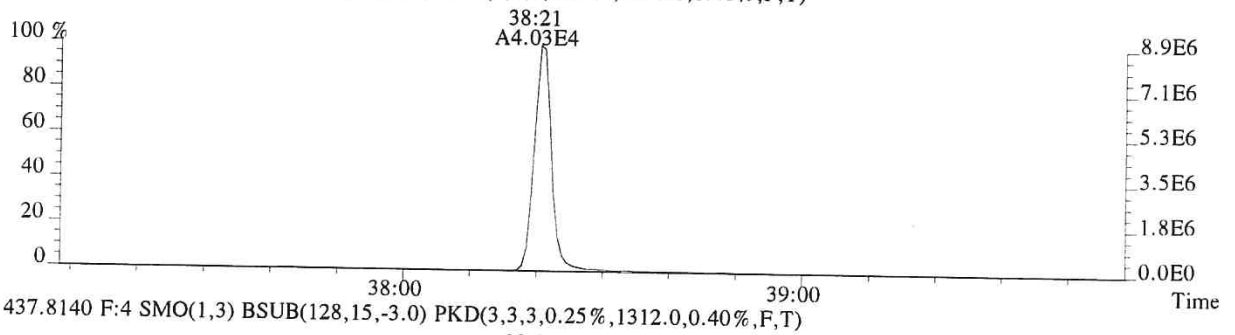
File:P616151 #1-241 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-020
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3100.0,0.40%,F,T)



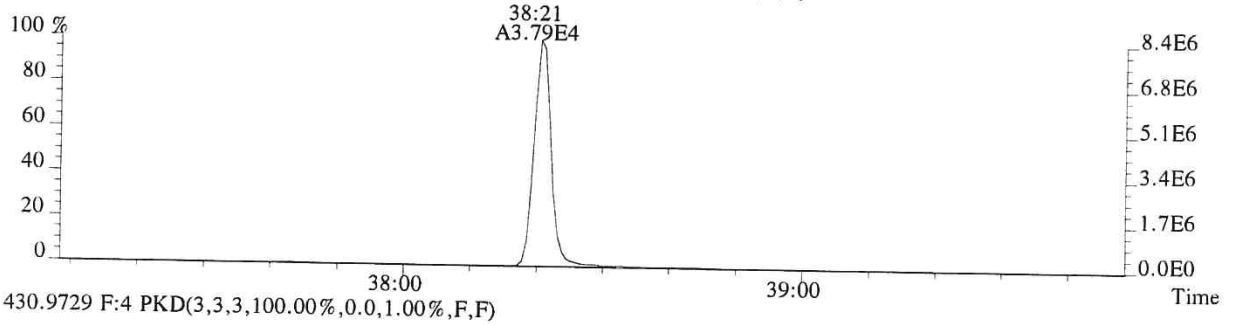
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3804.0,0.40%,F,T)



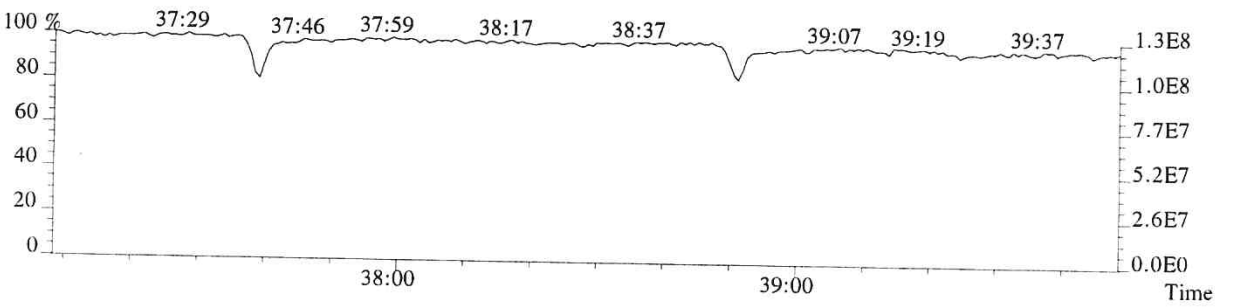
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2820.0,0.40%,F,T)



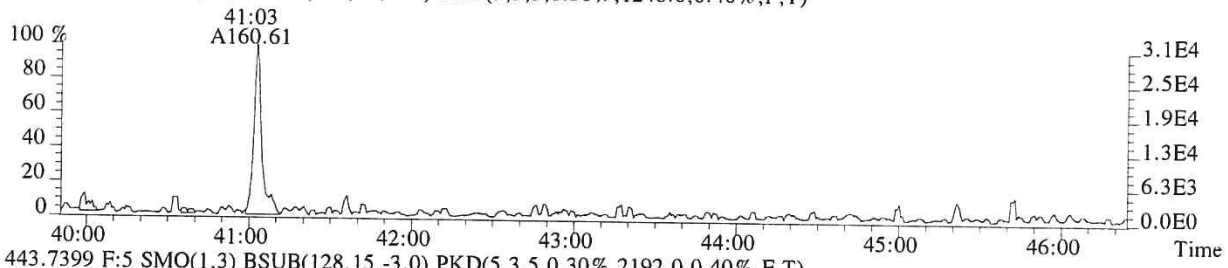
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1312.0,0.40%,F,T)



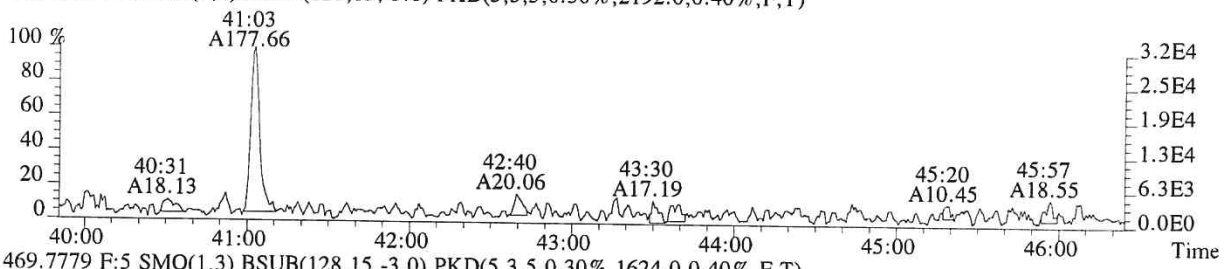
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



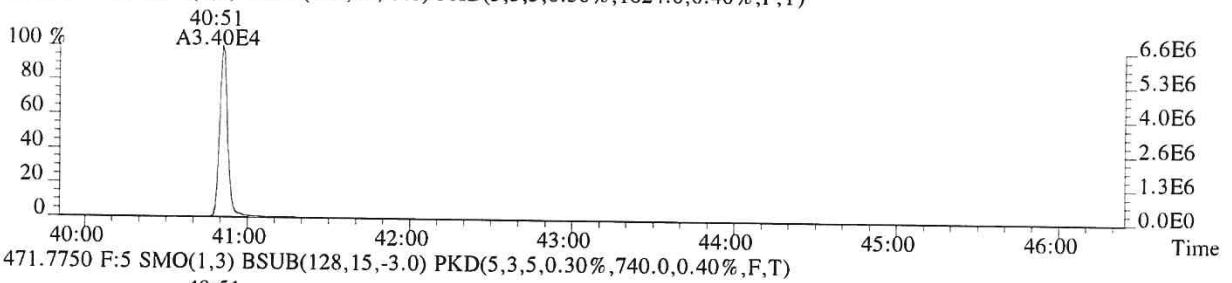
File:P616151 #1-591 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801096-020
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1248.0,0.40%,F,T)



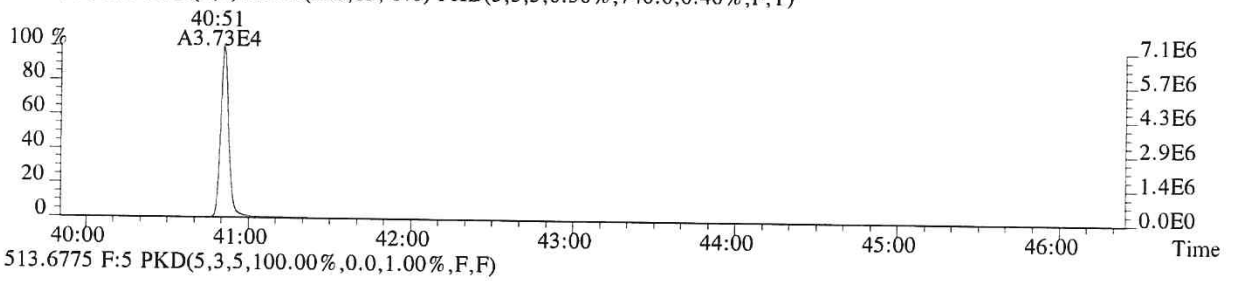
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2192.0,0.40%,F,T)



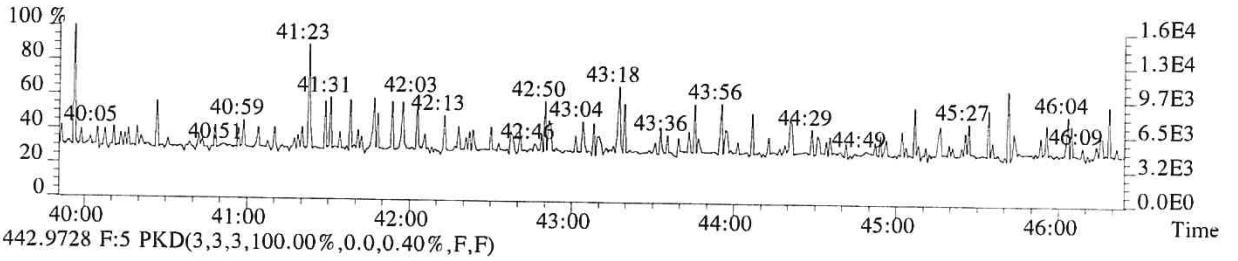
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1624.0,0.40%,F,T)



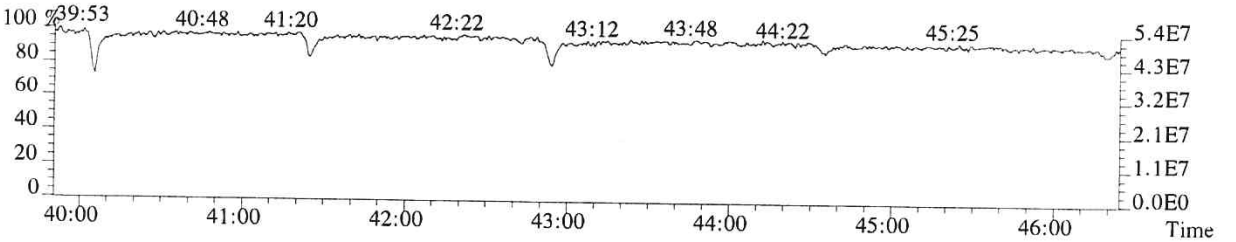
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,740.0,0.40%,F,T)



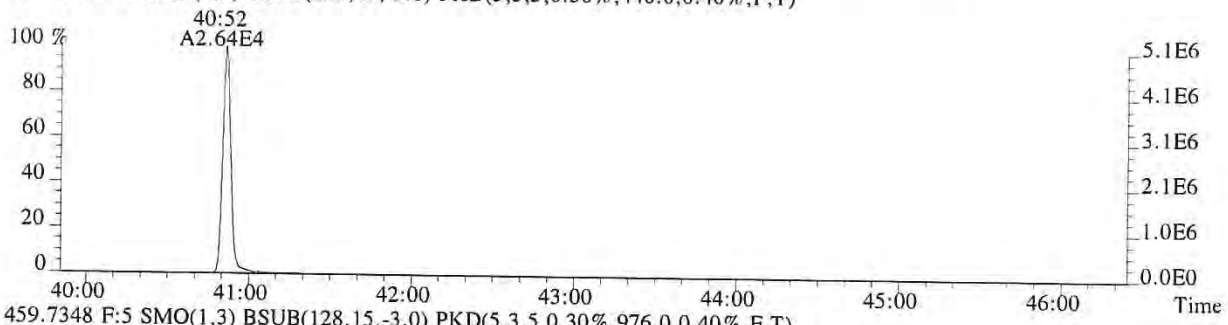
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



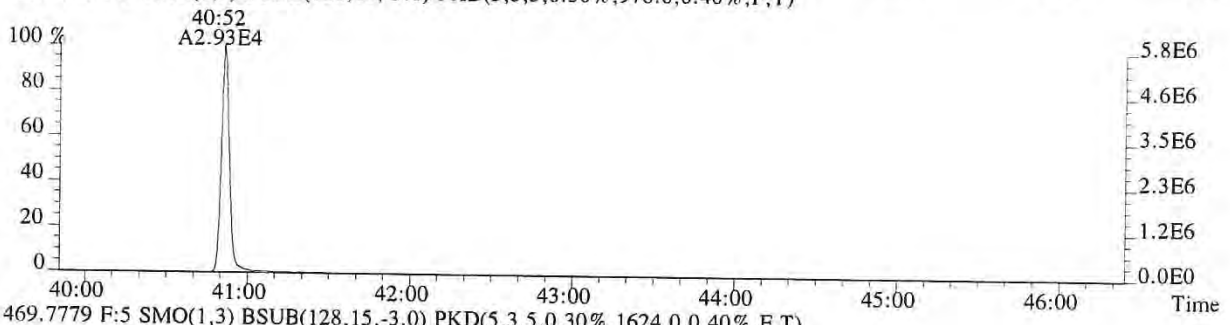
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



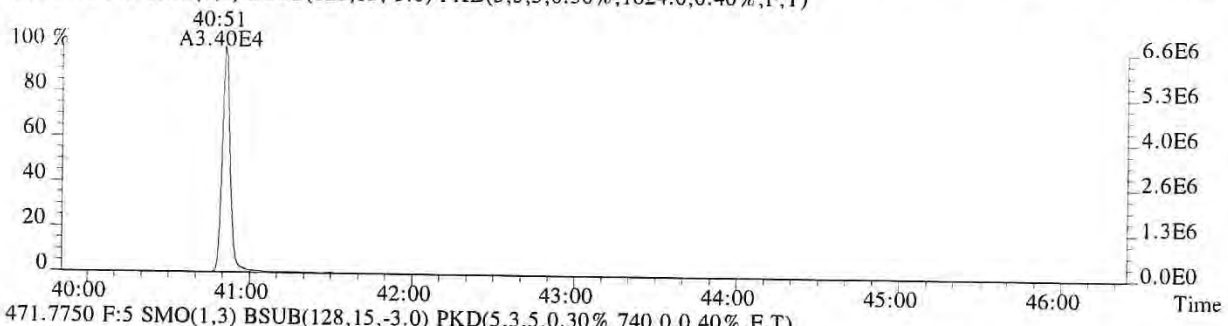
File:P616151 #1-591 Acq:20-DEC-2018 21:16:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801096-020
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,440.0,0.40%,F,T)



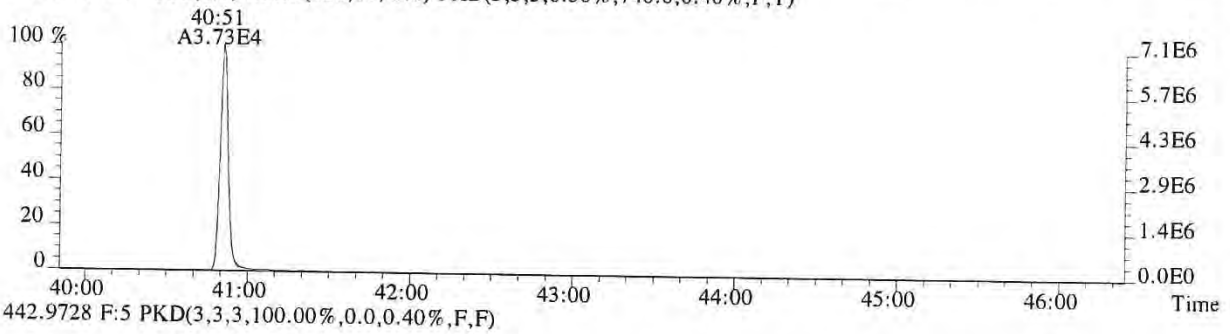
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,976.0,0.40%,F,T)



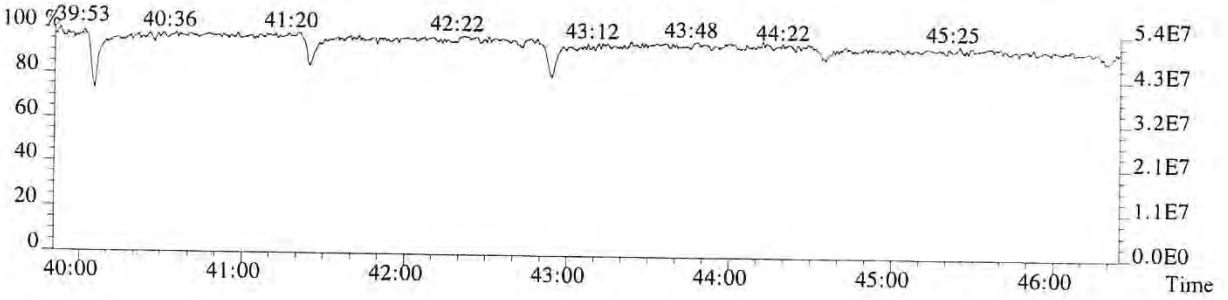
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1624.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,740.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
METHOD BLANK

Run #9 Filename P519590 Samp: 1 Inj: 1 Acquired: 24-DEC-18 11:25:10
Processed: 26-DEC-18 13:28:50 Sample ID: EQ1800512-01

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	0.942
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	1.012
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	yes	0.959
4	Unk	1,2,3,4,7,8-HxCDF	NotFnd	*	*	*	no	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	NotFnd	*	*	*	no	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	NotFnd	*	*	*	no	yes	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	no	1.258
10	Unk	OCDF	NotFnd	*	*	*	no	no	1.359
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	yes	1.085
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	NotFnd	*	*	*	no	no	1.025
17	Unk	OCDD	NotFnd	*	*	*	no	yes	1.118
18	IS	13C-2,3,7,8-TCDF	26:17	5.725e+03	7.328e+03	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:06	1.233e+04	7.614e+03	1.62	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:06	1.266e+04	8.023e+03	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:00	5.318e+03	1.091e+04	0.49	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:07	6.852e+03	1.335e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:40	6.102e+03	1.211e+04	0.50	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:27	5.392e+03	1.040e+04	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:52	4.816e+03	1.079e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:18	4.007e+03	9.284e+03	0.43	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:14	2.761e+03	3.545e+03	0.78	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:24	9.651e+03	5.904e+03	1.63	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:49	7.858e+03	6.113e+03	1.29	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:55	9.372e+03	7.353e+03	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:50	9.813e+03	8.851e+03	1.11	yes	no	0.858
32	IS	13C-OCDD	41:45	1.061e+04	1.199e+04	0.88	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:34	9.975e+03	1.267e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:10	1.253e+04	9.828e+03	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:16	3.595e+03				no	1.014

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
METHOD BLANK

Run #9 Filename P519590 Samp: 1 Inj: 1 Acquired: 24-DEC-18 11:25:10
Processed: 26-DEC-18 13:28:50 LAB. ID: EQ1800512-01

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	6.76e+02	*	*	1.62e+03	*
2	1,2,3,7,8-PeCDF	*	3.08e+02	*	*	5.36e+02	*
3	2,3,4,7,8-PeCDF	*	3.08e+02	*	*	5.36e+02	*
4	1,2,3,4,7,8-HxCDF	*	6.00e+02	*	*	4.04e+02	*
5	1,2,3,6,7,8-HxCDF	*	6.00e+02	*	*	4.04e+02	*
6	2,3,4,6,7,8-HxCDF	*	6.00e+02	*	*	4.04e+02	*
7	1,2,3,7,8,9-HxCDF	*	6.00e+02	*	*	4.04e+02	*
8	1,2,3,4,6,7,8-HpCDF	*	2.80e+02	*	*	3.40e+02	*
9	1,2,3,4,7,8,9-HpCDF	*	2.80e+02	*	*	3.40e+02	*
10	OCDF	*	2.84e+02	*	*	1.02e+03	*
11	2,3,7,8-TCDD	*	1.43e+03	*	*	4.74e+02	*
12	1,2,3,7,8-PeCDD	*	8.08e+02	*	*	3.76e+02	*
13	1,2,3,4,7,8-HxCDD	*	4.28e+02	*	*	3.28e+02	*
14	1,2,3,6,7,8-HxCDD	*	4.28e+02	*	*	3.28e+02	*
15	1,2,3,7,8,9-HxCDD	*	4.28e+02	*	*	3.28e+02	*
16	1,2,3,4,6,7,8-HpCDD	*	4.08e+02	*	*	3.12e+02	*
17	OCDD	*	3.00e+02	*	*	3.64e+02	*
18	13C-2,3,7,8-TCDF	9.04e+05	8.76e+03	1.0e+02	1.14e+06	6.20e+03	1.8e+02
19	13C-1,2,3,7,8-PeCDF	1.97e+06	6.84e+02	2.9e+03	1.26e+06	3.16e+02	4.0e+03
20	13C-2,3,4,7,8-PeCDF	2.16e+06	6.84e+02	3.2e+03	1.37e+06	3.16e+02	4.3e+03
21	13C-1,2,3,4,7,8-HxCDF	9.50e+05	4.64e+02	2.0e+03	2.02e+06	4.76e+02	4.2e+03
22	13C-1,2,3,6,7,8-HxCDF	1.10e+06	4.64e+02	2.4e+03	2.13e+06	4.76e+02	4.5e+03
23	13C-2,3,4,6,7,8-HxCDF	1.01e+06	4.64e+02	2.2e+03	2.08e+06	4.76e+02	4.4e+03
24	13C-1,2,3,7,8,9-HxCDF	8.07e+05	4.64e+02	1.7e+03	1.63e+06	4.76e+02	3.4e+03
25	13C-1,2,3,4,6,7,8-HpCDF	6.73e+05	1.25e+03	5.4e+02	1.52e+06	1.64e+03	9.2e+02
26	13C-1,2,3,4,7,8,9-HpCDF	4.37e+05	1.25e+03	3.5e+02	1.03e+06	1.64e+03	6.3e+02
27	13C-2,3,7,8-TCDD	4.47e+05	4.83e+03	9.3e+01	5.52e+05	1.88e+03	2.9e+02
28	13C-1,2,3,7,8-PeCDD	1.65e+06	8.80e+02	1.9e+03	1.02e+06	1.15e+03	8.9e+02
29	13C-1,2,3,4,7,8-HxCDD	1.54e+06	8.08e+02	1.9e+03	1.17e+06	3.76e+02	3.1e+03
30	13C-1,2,3,6,7,8-HxCDD	1.42e+06	8.08e+02	1.8e+03	1.10e+06	3.76e+02	2.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.16e+06	4.84e+02	2.4e+03	1.05e+06	3.00e+02	3.5e+03
32	13C-OCDD	7.71e+05	4.84e+02	1.6e+03	8.36e+05	2.72e+02	3.1e+03
33	13C-1,2,3,4-TCDD	1.58e+06	4.83e+03	3.3e+02	1.97e+06	1.88e+03	1.0e+03
34	13C-1,2,3,7,8,9-HxCDD	1.85e+06	8.08e+02	2.3e+03	1.46e+06	3.76e+02	3.9e+03
35	37Cl-2,3,7,8-TCDD	5.78e+05	8.48e+02	6.8e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.429e{+}03 + 4.740e{+}02) \times 2000}{(4.474e{+}05 + 5.520e{+}05) \times (\quad) \times 1.085} =$$

ALS ENVIRONMENTAL
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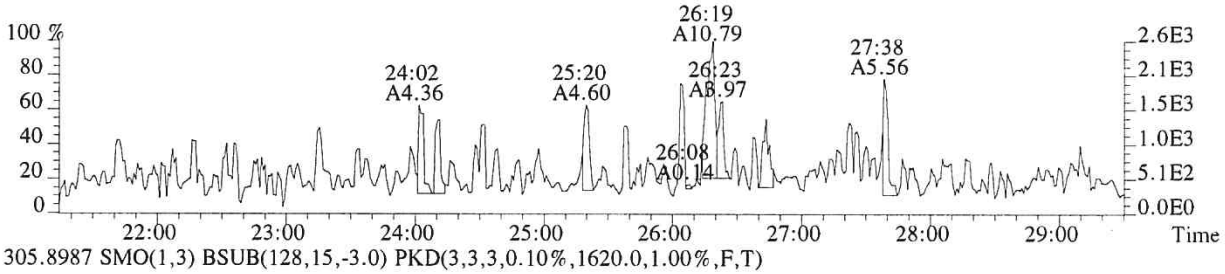
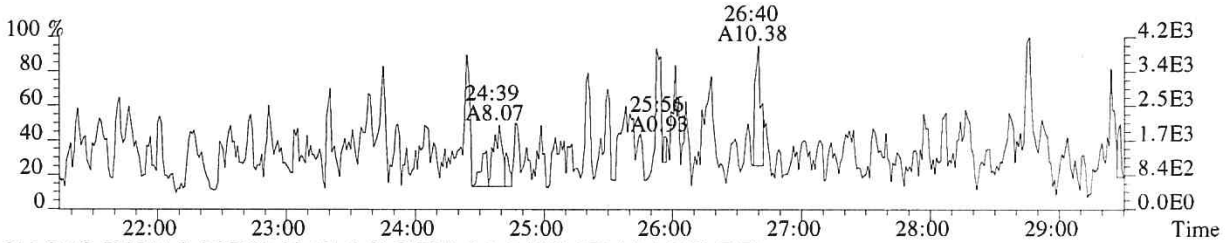
File:P519590 #1-587 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01

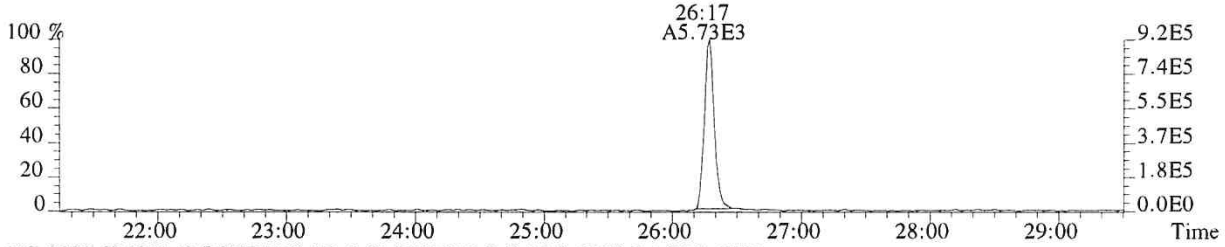
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,676.0,1.00%,F,T)



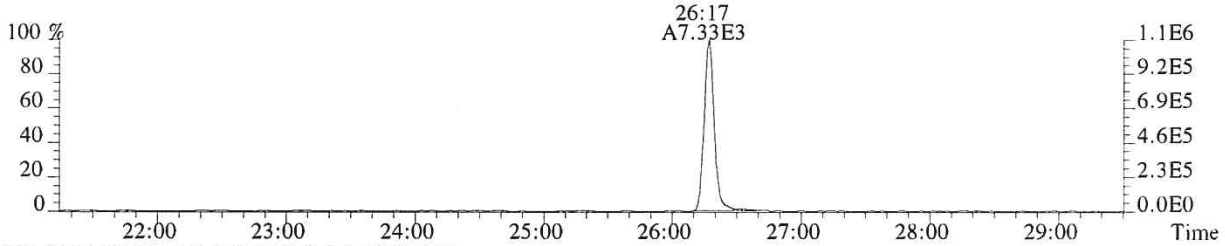
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1620.0,1.00%,F,T)



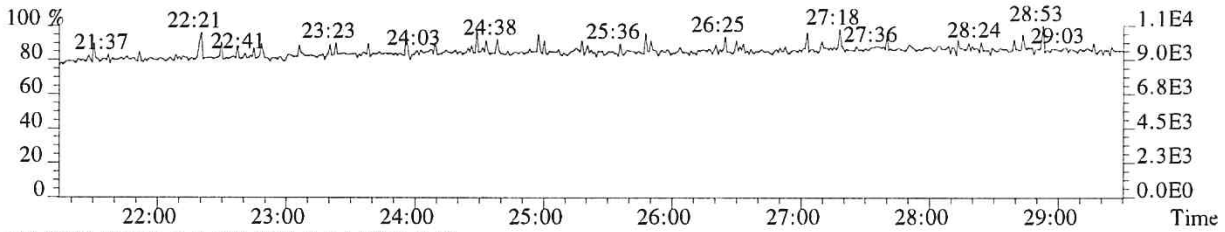
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8764.0,1.00%,F,T)



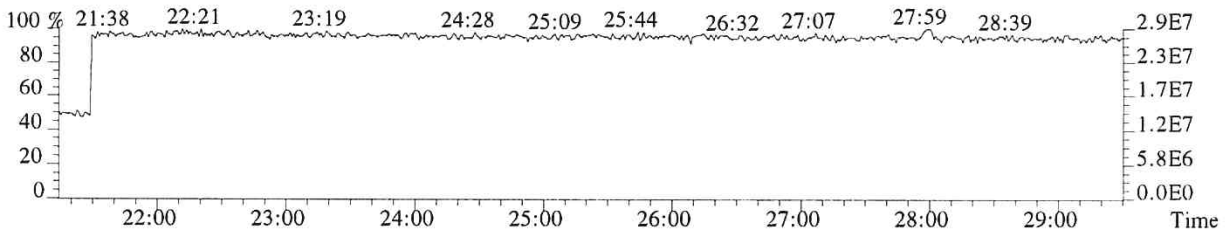
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6200.0,1.00%,F,T)



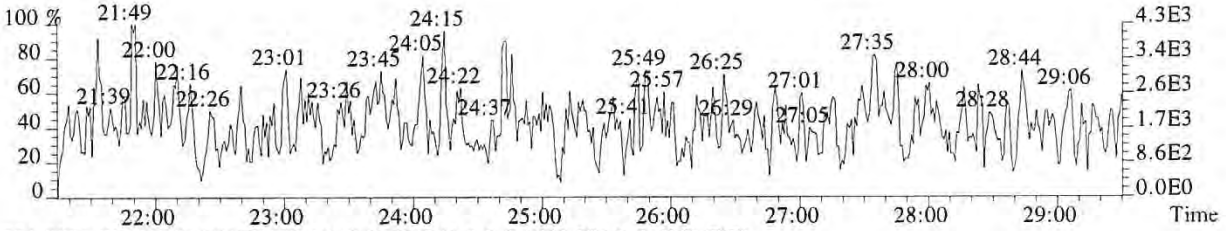
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



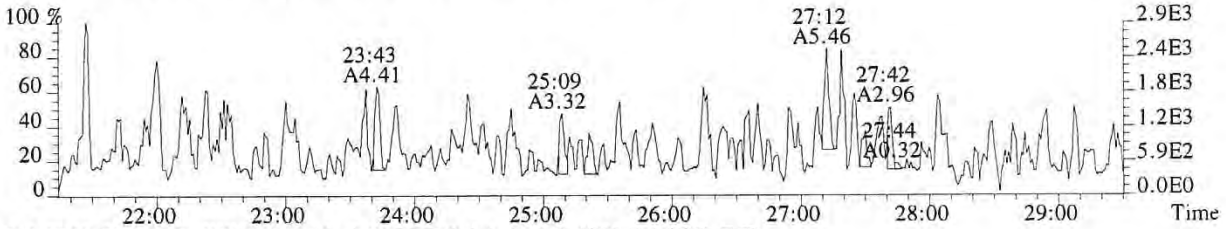
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



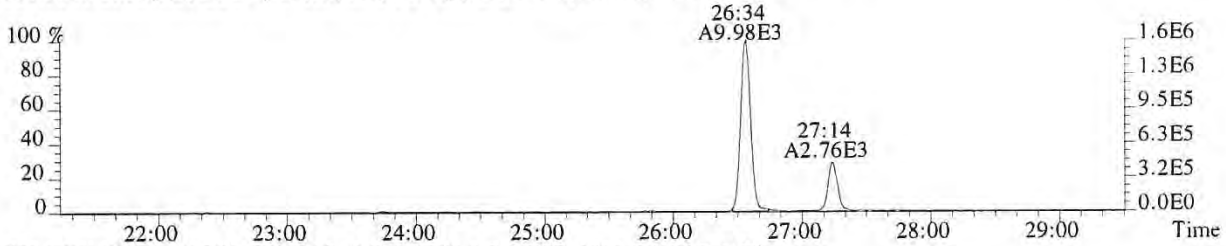
File:P519590 #1-587 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2288.0,1.00%,F,T)



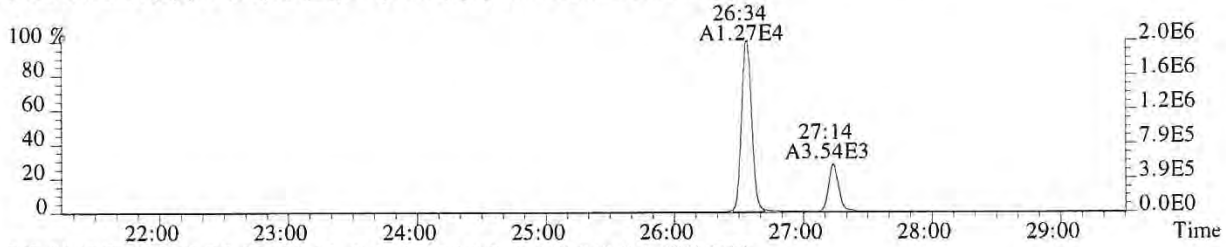
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,784.0,1.00%,F,T)



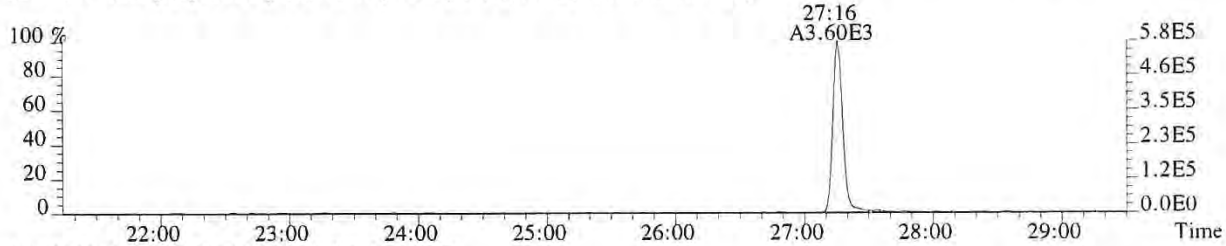
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4828.0,1.00%,F,T)



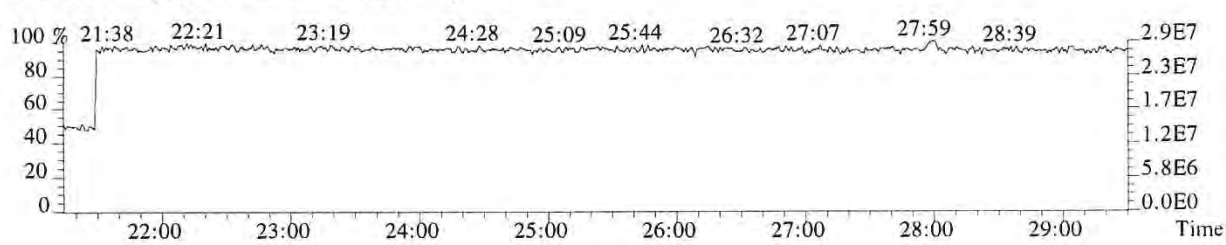
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1884.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,848.0,1.00%,F,T)

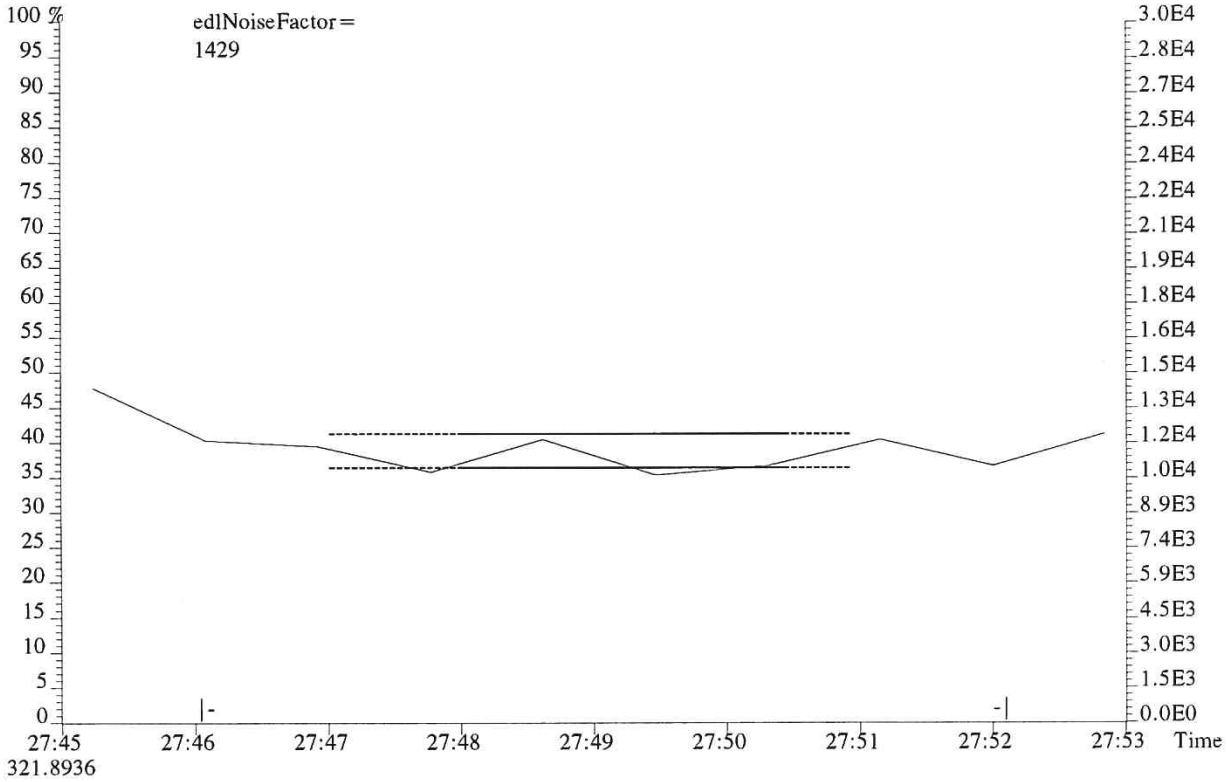


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

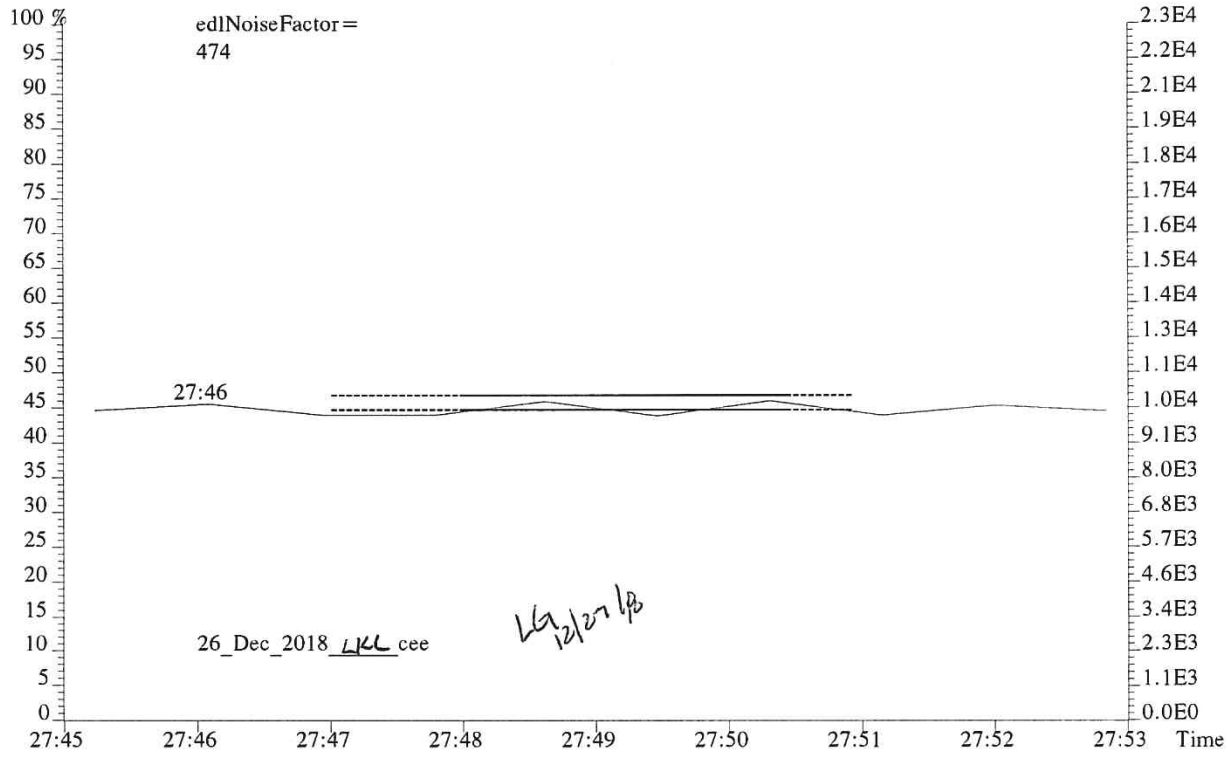


059315

File:P519590 #1-587 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
319.8965

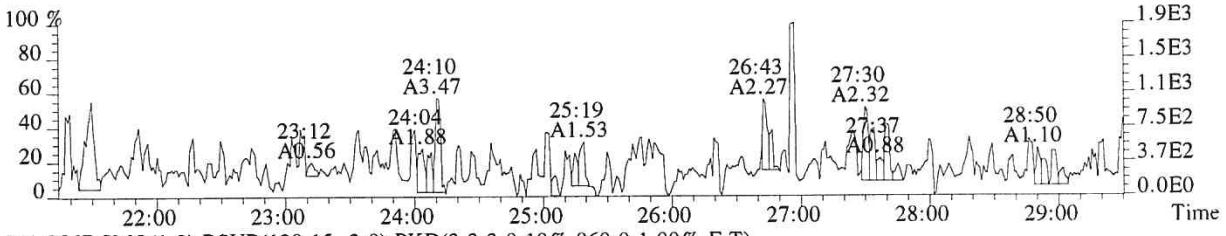


321.8936

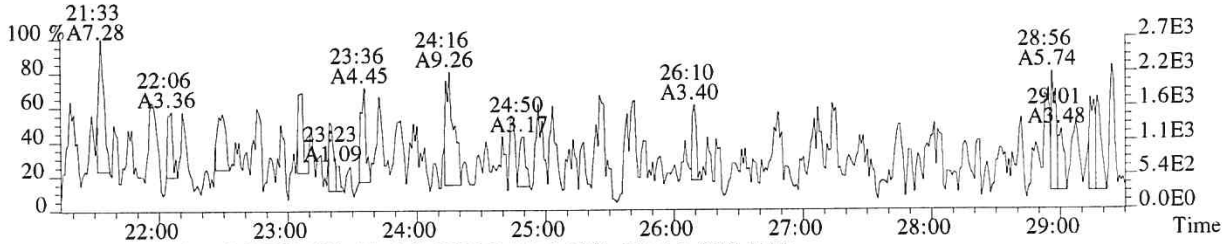


059316

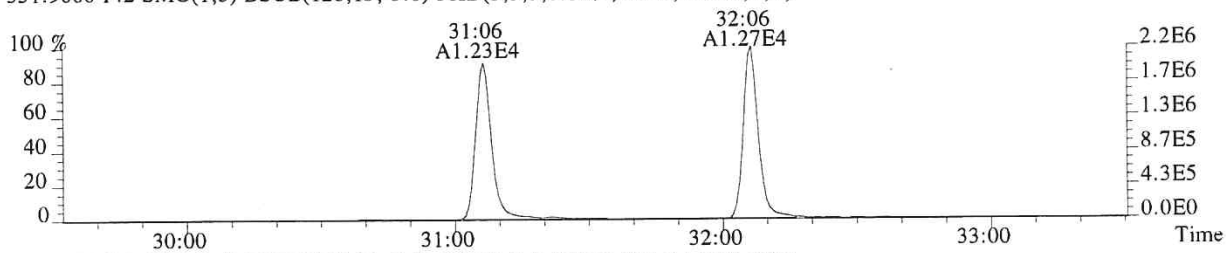
File:P519590 #1-587 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,348.0,1.00%,F,T)



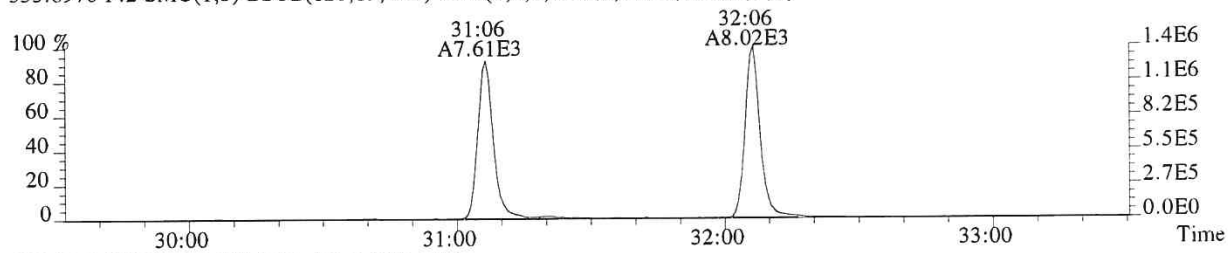
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,860.0,1.00%,F,T)



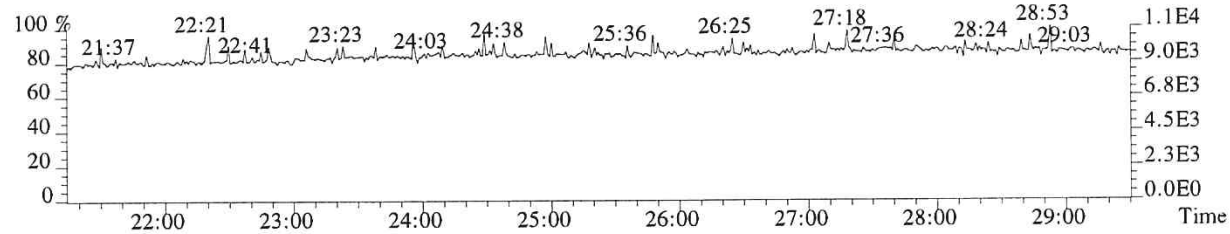
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



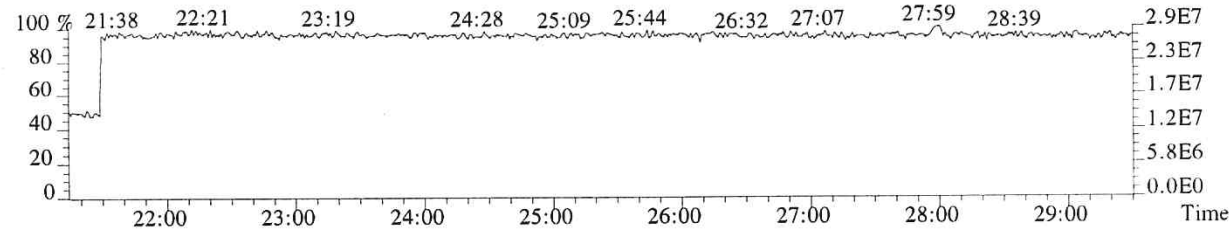
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,316.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

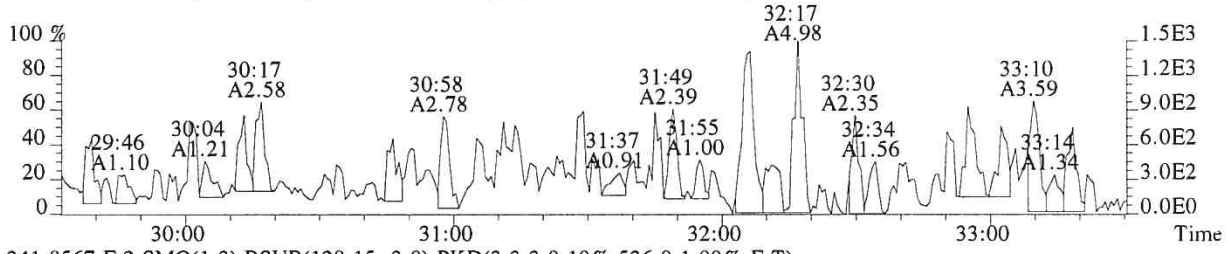


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

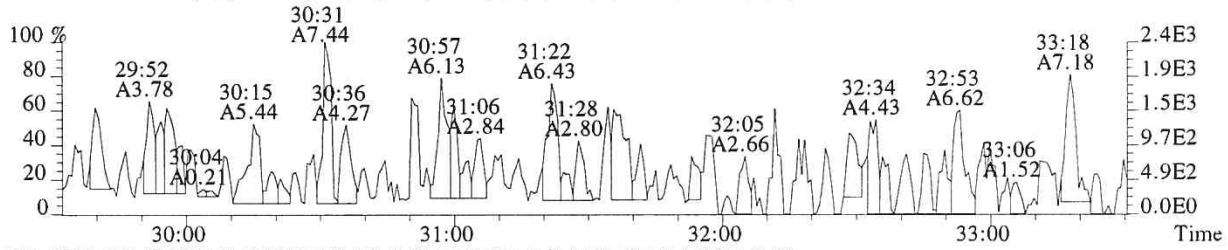


059317

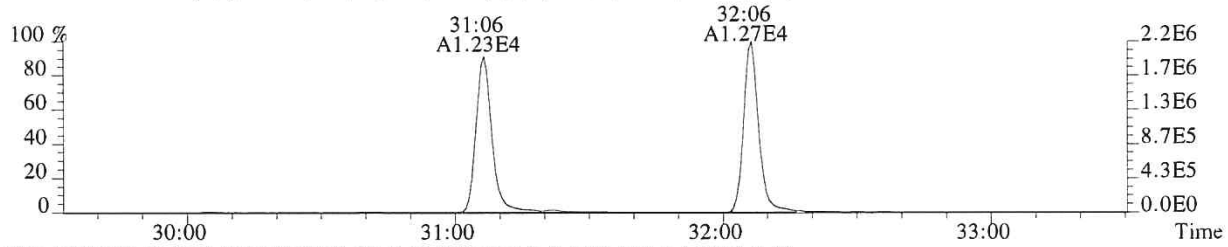
File:P519590 #1-358 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,308.0,1.00%,F,T)



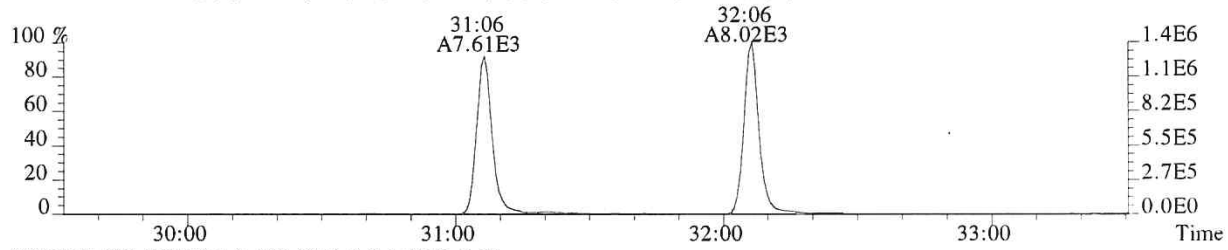
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,536.0,1.00%,F,T)



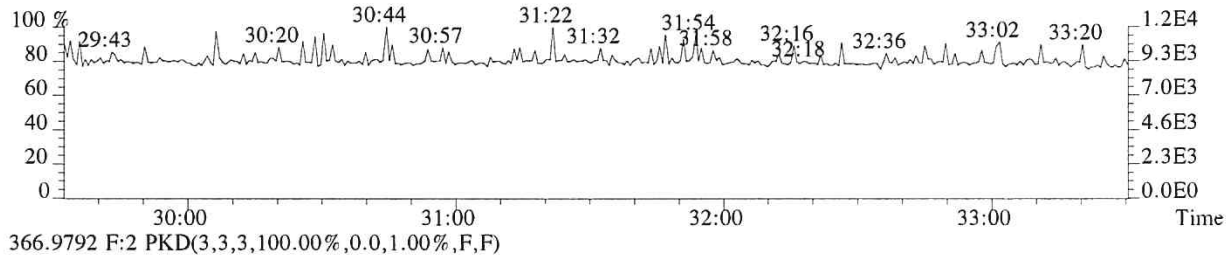
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



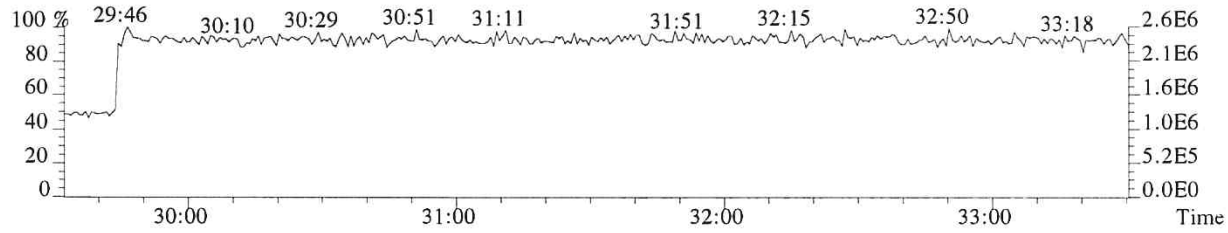
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,316.0,1.00%,F,T)



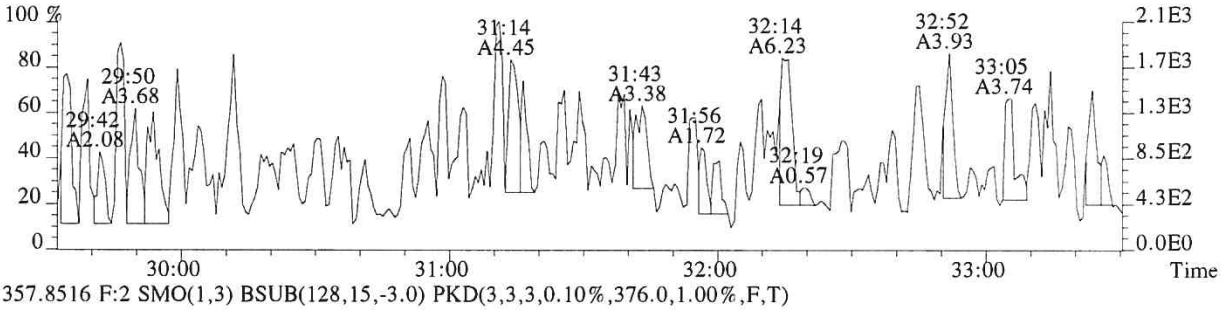
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



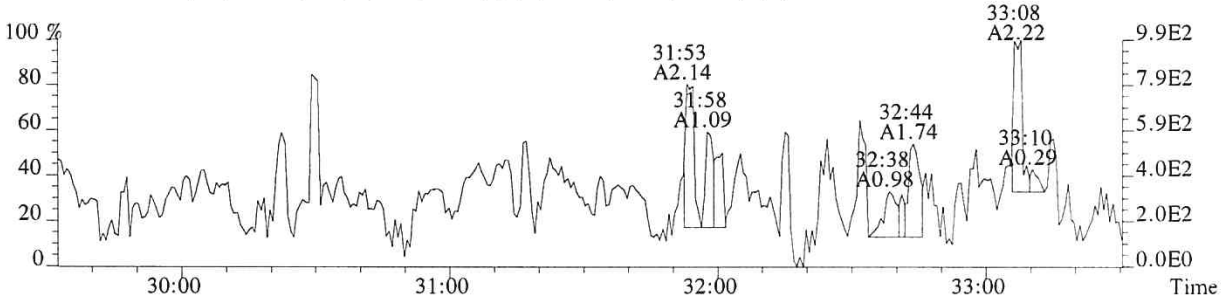
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



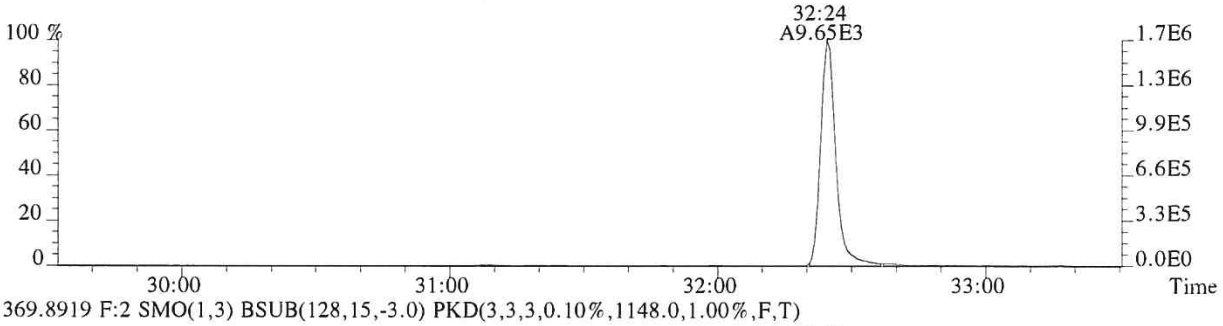
File:P519590 #1-358 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,808.0,1.00%,F,T)



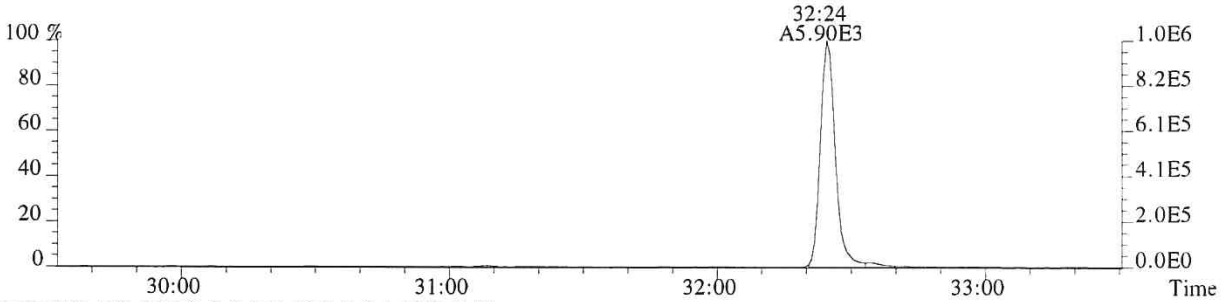
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,376.0,1.00%,F,T)



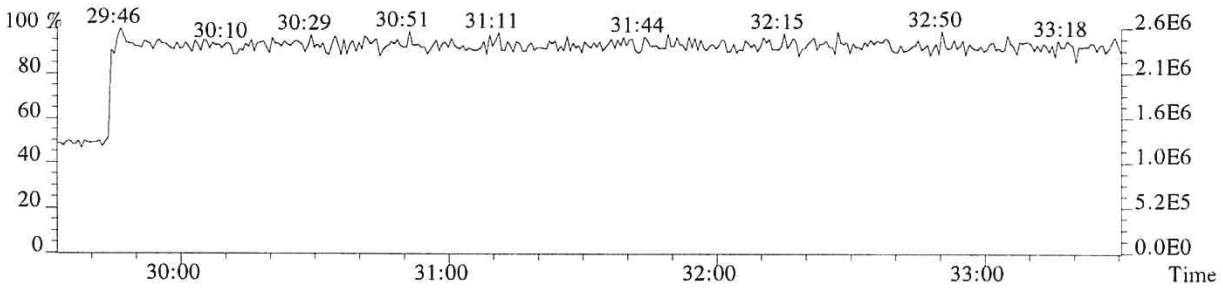
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,880.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1148.0,1.00%,F,T)

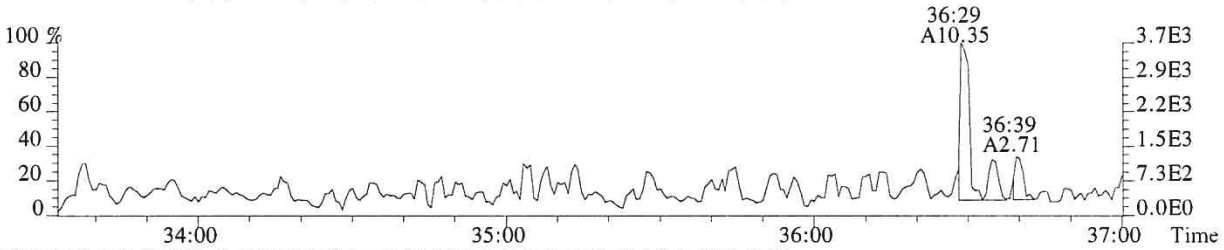


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

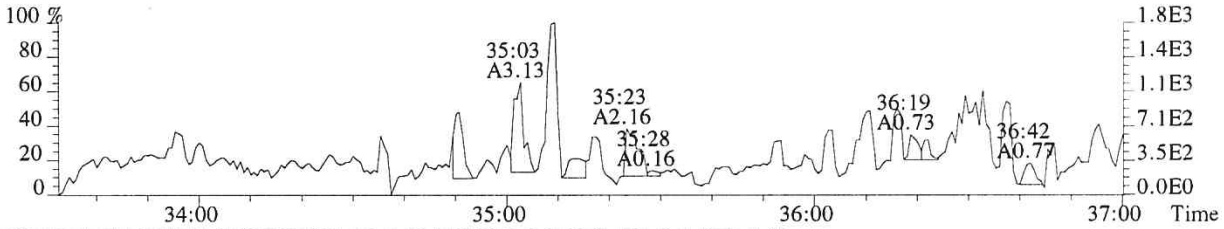


059319

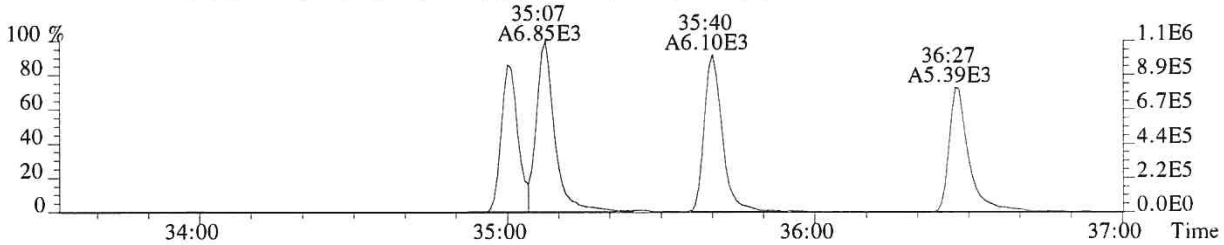
File:P519590 #1-312 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.40%,F,T)



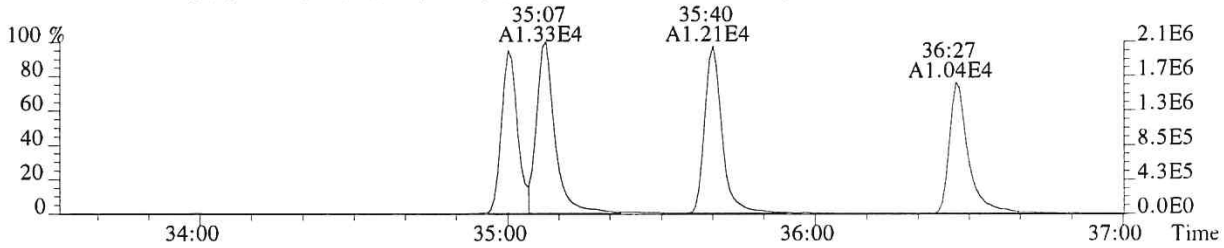
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,404.0,0.40%,F,T)



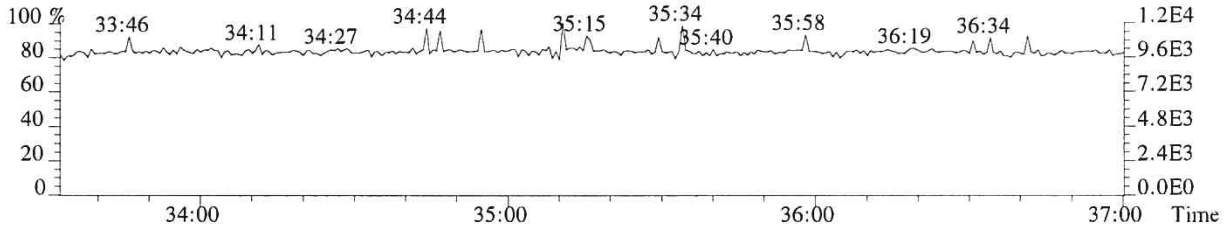
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,464.0,0.40%,F,T)



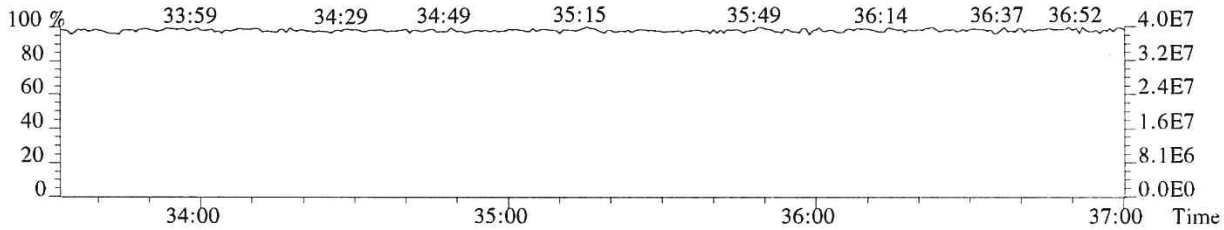
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,476.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

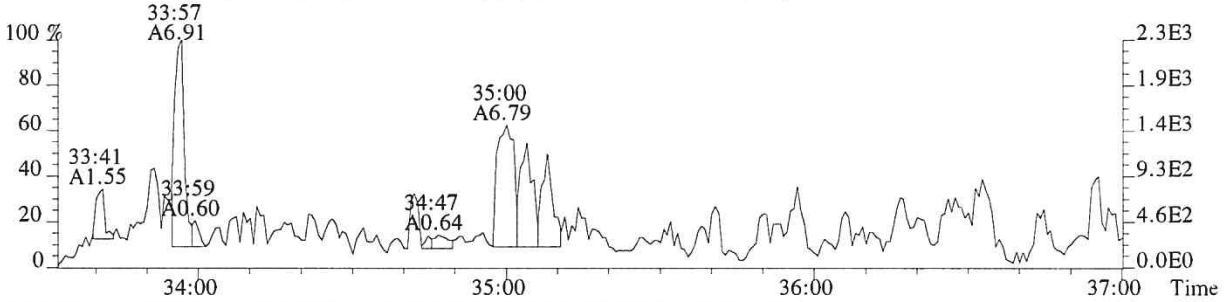


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

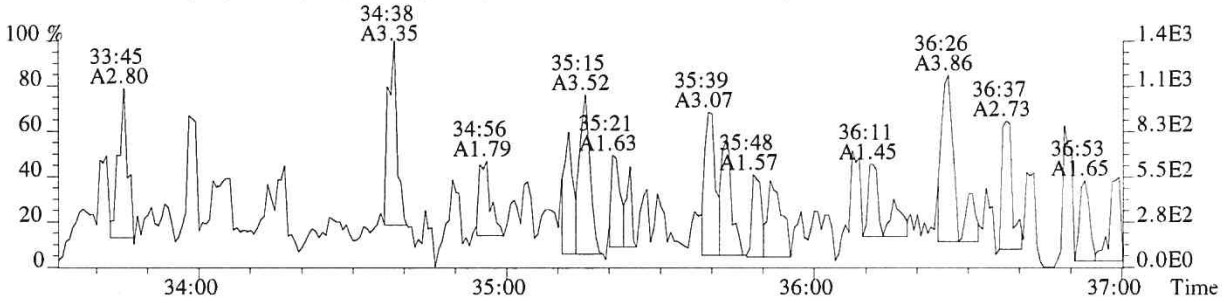


059320

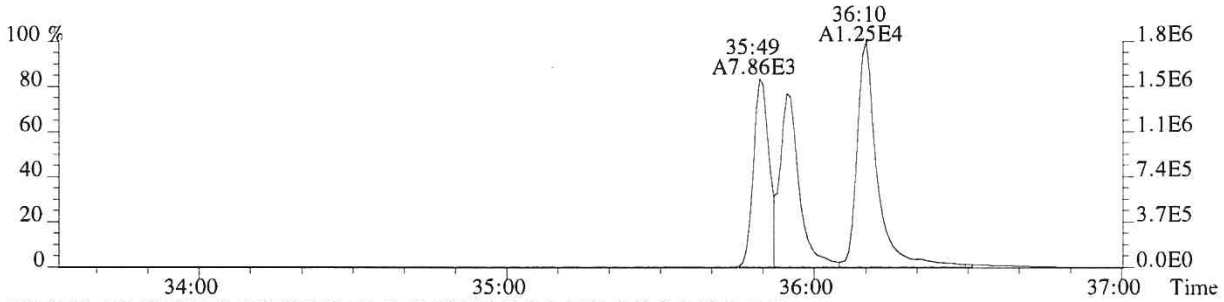
File:P519590 #1-312 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,428.0,0.40%,F,T)



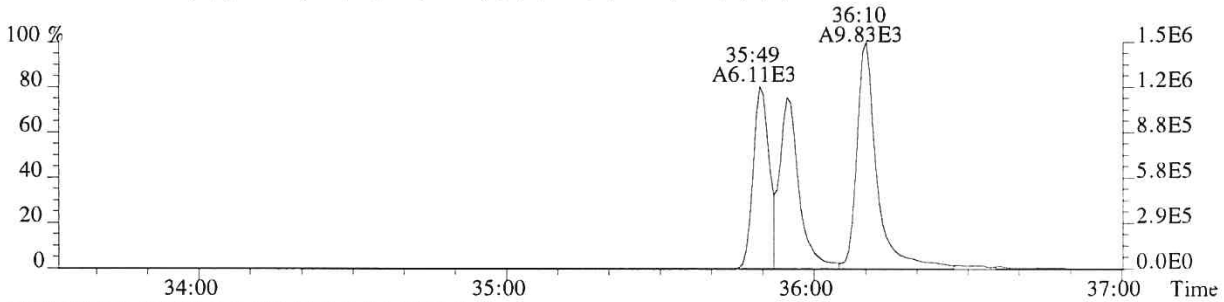
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,328.0,0.40%,F,T)



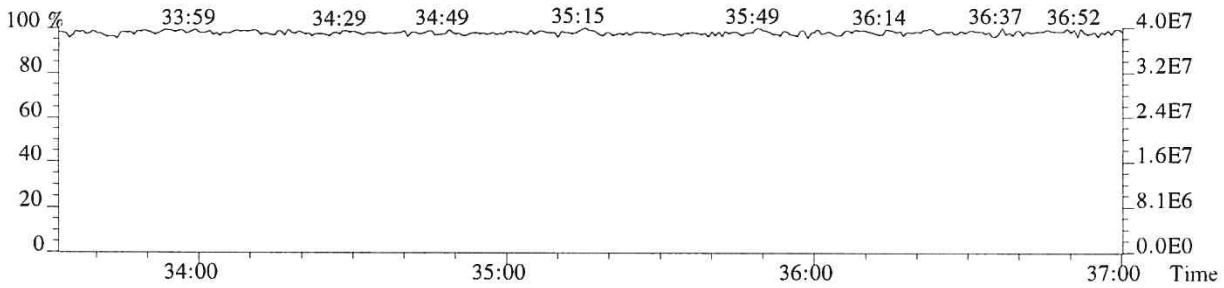
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,808.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,376.0,0.40%,F,T)

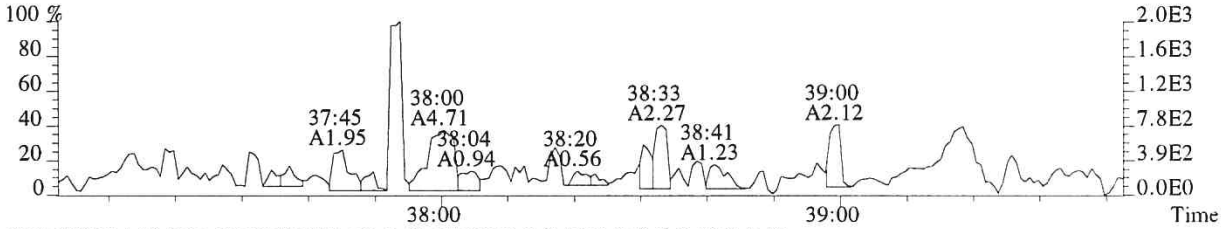


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

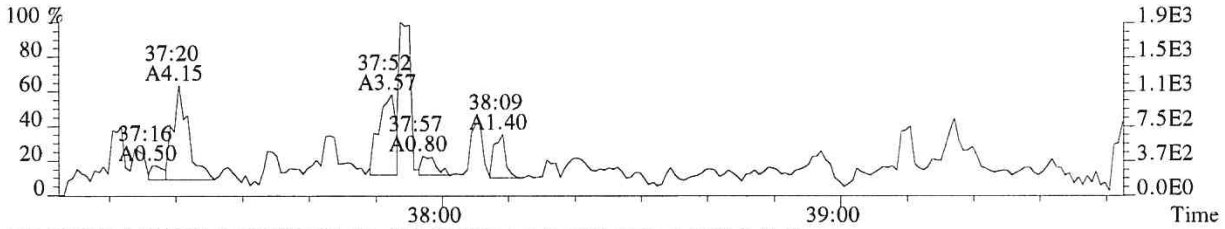


059321

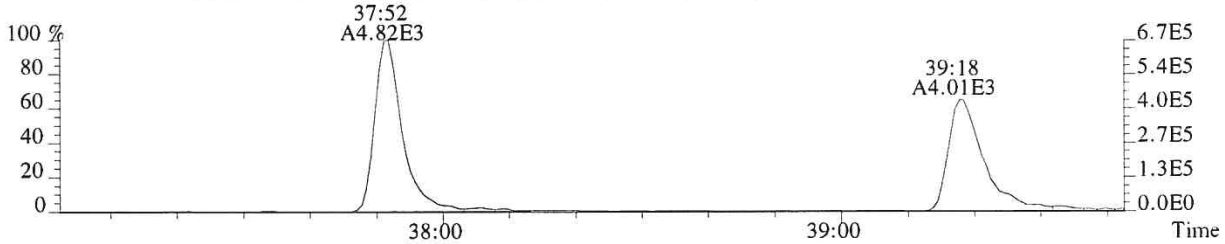
File:P519590 #1-241 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,280.0,0.50%,F,T)



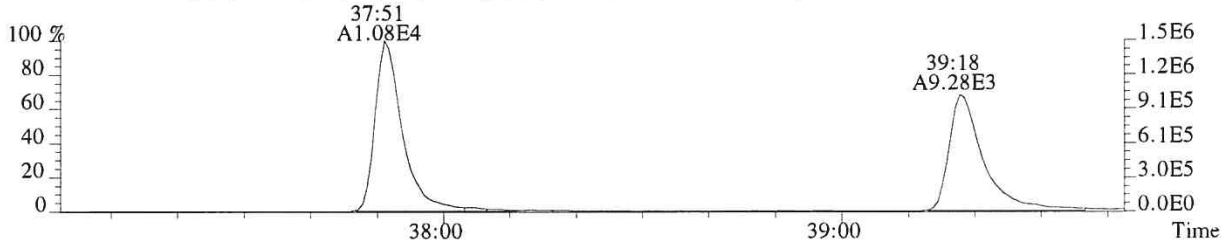
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,340.0,0.50%,F,T)



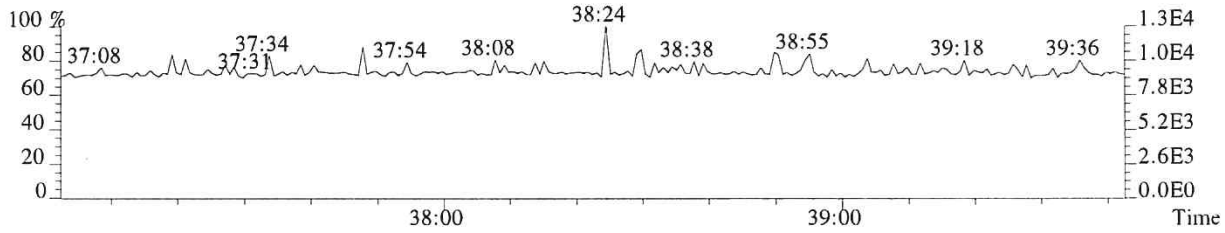
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1252.0,0.50%,F,T)



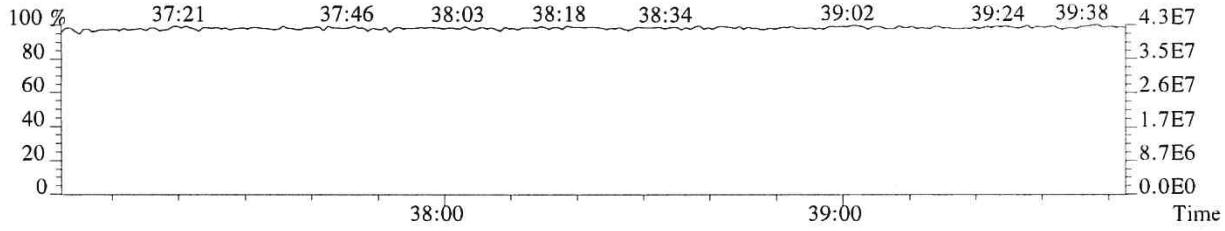
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1644.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

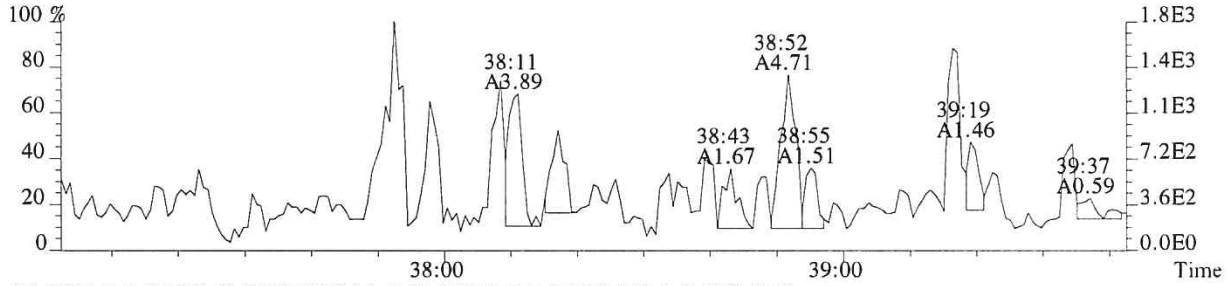


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

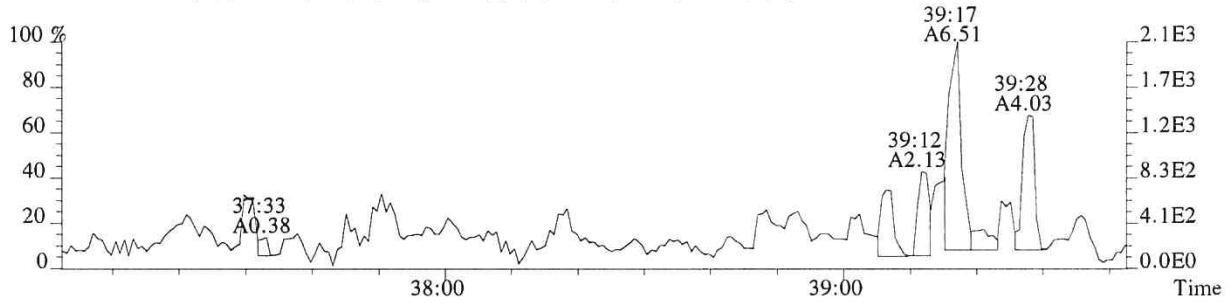


059322

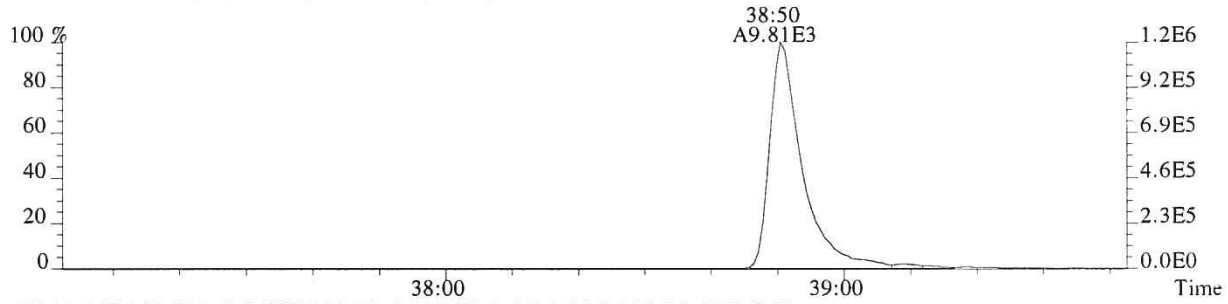
File:P519590 #1-241 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,408.0,0.40%,F,T)



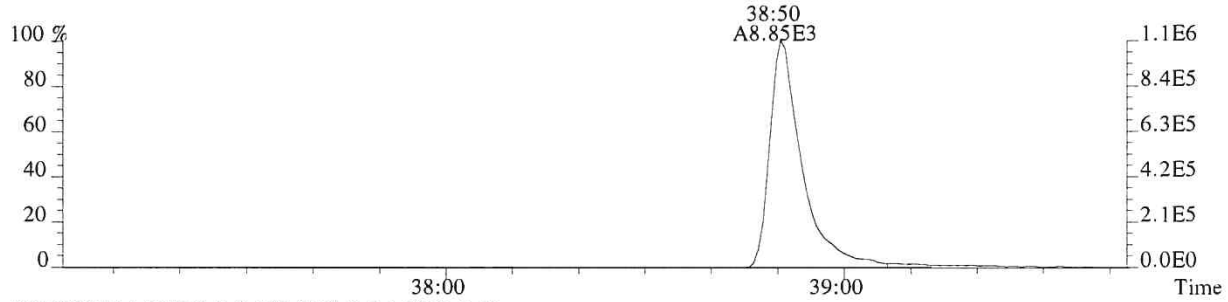
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,312.0,0.40%,F,T)



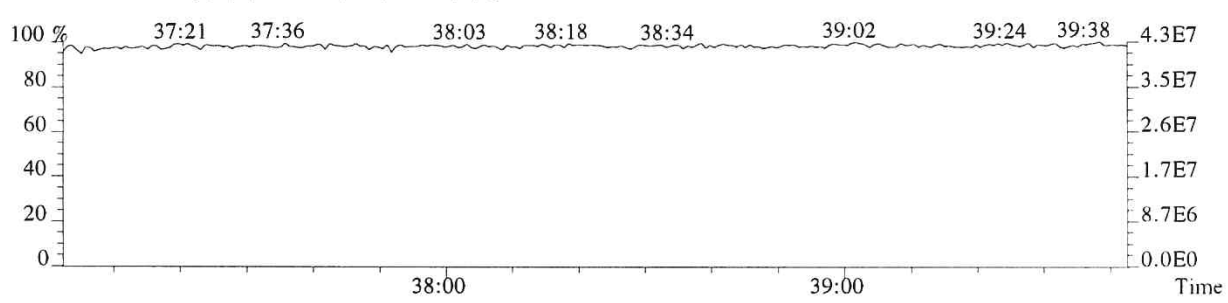
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,484.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,300.0,0.40%,F,T)

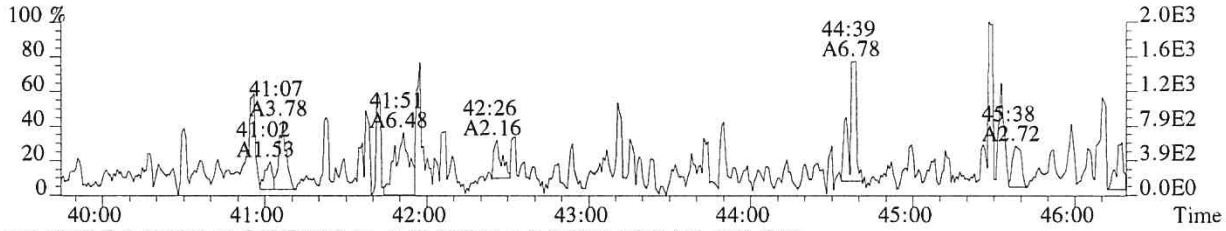


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

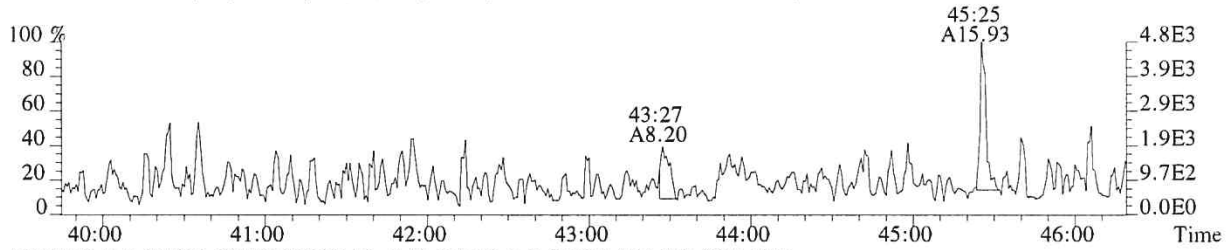


059323

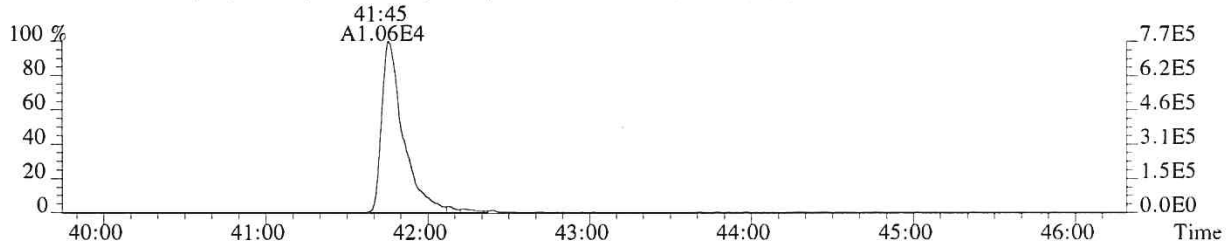
File:P519590 #1-592 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,284.0,0.40%,F,T)



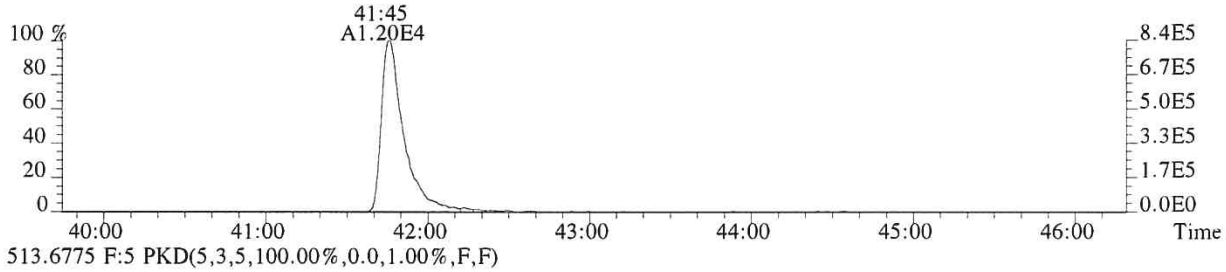
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1020.0,0.40%,F,T)



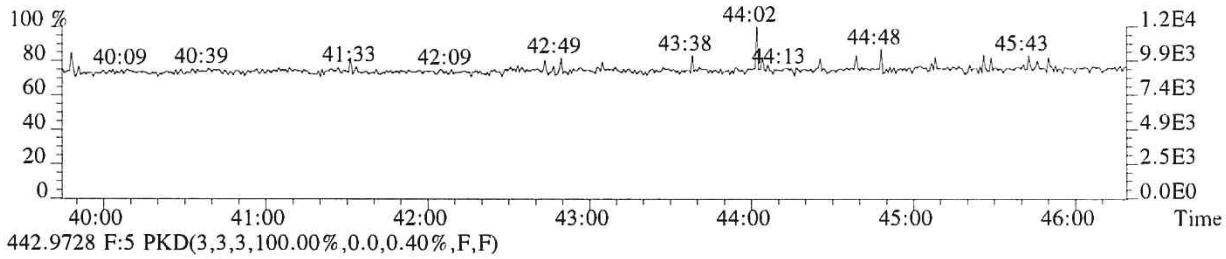
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,484.0,0.40%,F,T)



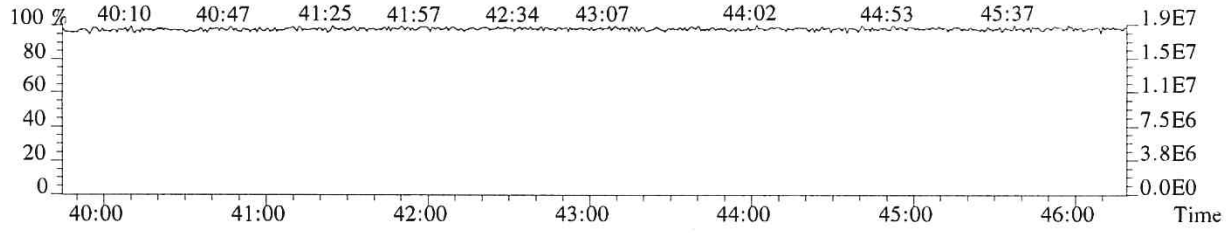
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,272.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

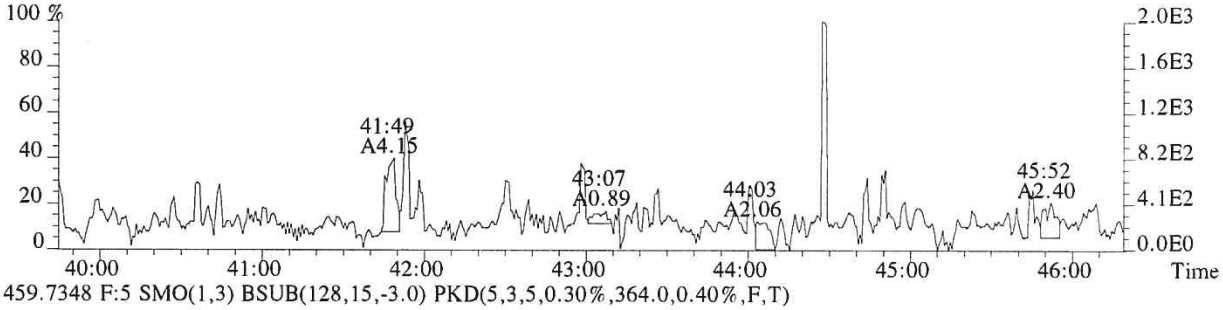


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

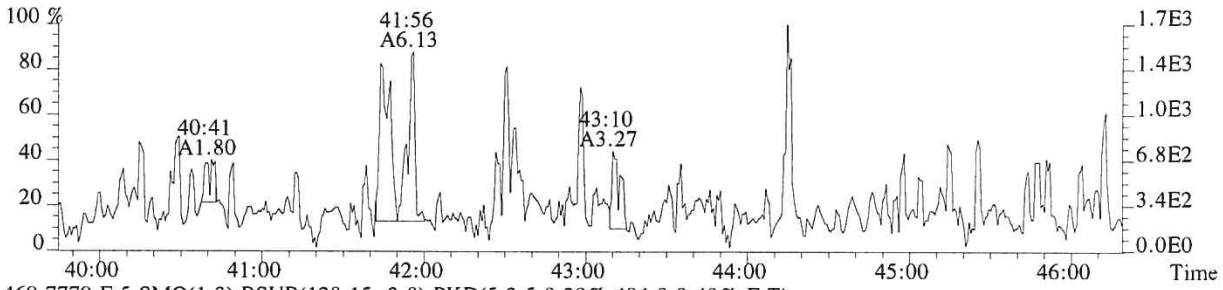


059324

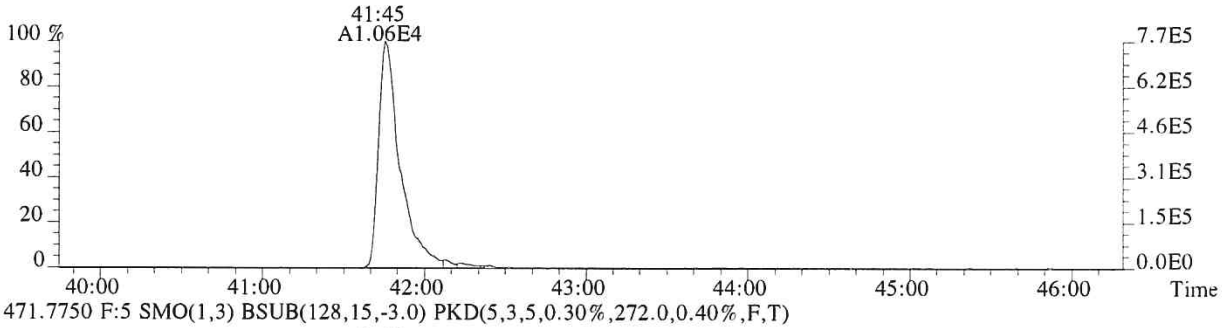
File:P519590 #1-592 Acq:24-DEC-2018 11:25:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-01
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,300.0,0.40%,F,T)



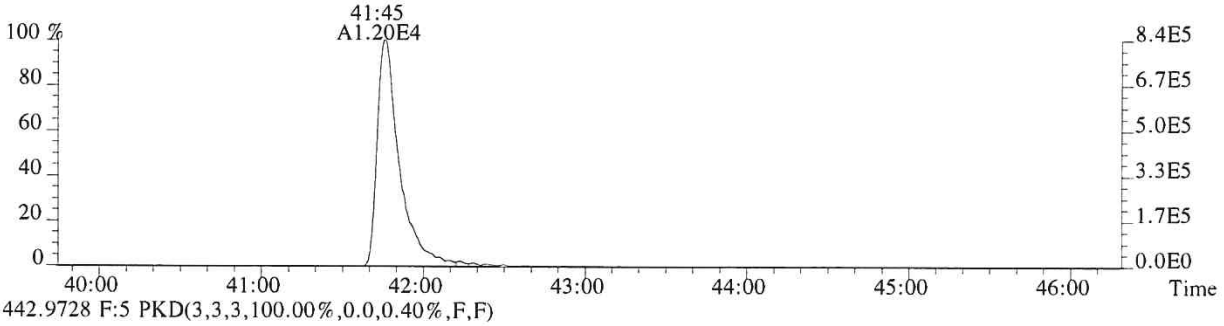
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,364.0,0.40%,F,T)



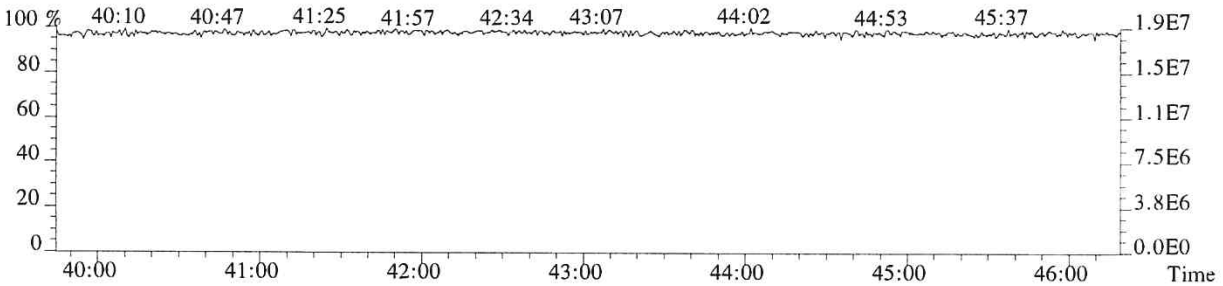
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,484.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,272.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059325

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
LCS

Run #19 Filename P616139 Samp: 1 Inj: 1 Acquired: 20-DEC-18 02:56:30
Processed: 20-DEC-18 15:56:54 Sample ID: EQ1800512-02

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:18	5.456e+03	6.873e+03	0.79	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:03	2.369e+04	1.517e+04	1.56	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	1.652e+04	1.053e+04	1.57	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:49	4.536e+04	3.643e+04	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	4.653e+04	3.722e+04	1.25	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	4.473e+04	3.622e+04	1.23	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:13	4.256e+04	3.395e+04	1.25	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:29	4.026e+04	3.877e+04	1.04	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:48	3.632e+04	3.480e+04	1.04	yes	no	1.463
10	Unk	OCDF	41:03	5.429e+04	5.856e+04	0.93	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:14	3.998e+03	5.096e+03	0.78	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	2.191e+04	1.440e+04	1.52	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	3.285e+04	2.602e+04	1.26	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	3.168e+04	2.495e+04	1.27	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	3.352e+04	2.699e+04	1.24	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	2.895e+04	2.758e+04	1.05	yes	no	1.112
17	Unk	OCDD	40:52	4.219e+04	4.736e+04	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:17	5.037e+04	6.281e+04	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:00	4.553e+04	2.896e+04	1.57	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:00	3.204e+04	2.069e+04	1.55	yes	yes	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	4.540e+04	8.530e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:55	5.023e+04	9.429e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	4.688e+04	8.884e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	4.524e+04	8.476e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:28	3.565e+04	7.793e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	3.321e+04	7.316e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:13	2.592e+04	3.309e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:19	4.730e+04	2.930e+04	1.61	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	6.673e+04	5.311e+04	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:40	5.928e+04	4.708e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	7.257e+04	6.899e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:51	7.053e+04	7.843e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:31	6.134e+04	7.746e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	9.376e+04	7.445e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	3.557e+04				no	1.086

$$\text{OCDD} = \frac{(4.219e+04 + 4.736e+04) \times 4000\ \text{pg} \times 1}{(7.053e+04 + 7.843e+04) \times \quad \text{g} \times \quad / 100 \times 1.157} =$$

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059326

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
LCS

Run #19 Filename P616139 Samp: 1 Inj: 1 Acquired: 20-DEC-18 02:56:30
Processed: 20-DEC-18 15:56:54 LAB. ID: EQ1800512-02

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	8.38e+05	5.32e+02	1.6e+03	1.07e+06	2.92e+02	3.7e+03
2	1,2,3,7,8-PeCDF	4.65e+06	4.12e+02	1.1e+04	2.89e+06	6.80e+02	4.3e+03
3	2,3,4,7,8-PeCDF	3.33e+06	4.12e+02	8.1e+03	2.08e+06	6.80e+02	3.1e+03
4	1,2,3,4,7,8-HxCDF	9.97e+06	1.39e+03	7.2e+03	7.97e+06	3.48e+02	2.3e+04
5	1,2,3,6,7,8-HxCDF	1.02e+07	1.39e+03	7.4e+03	8.11e+06	3.48e+02	2.3e+04
6	2,3,4,6,7,8-HxCDF	9.88e+06	1.39e+03	7.1e+03	8.07e+06	3.48e+02	2.3e+04
7	1,2,3,7,8,9-HxCDF	9.68e+06	1.39e+03	7.0e+03	7.62e+06	3.48e+02	2.2e+04
8	1,2,3,4,6,7,8-HpCDF	9.27e+06	5.71e+03	1.6e+03	8.88e+06	5.34e+03	1.7e+03
9	1,2,3,4,7,8,9-HpCDF	8.58e+06	5.71e+03	1.5e+03	8.03e+06	5.34e+03	1.5e+03
10	OCDF	1.13e+07	1.22e+03	9.3e+03	1.21e+07	1.00e+03	1.2e+04
11	2,3,7,8-TCDD	6.91e+05	1.16e+03	5.9e+02	8.72e+05	3.96e+02	2.2e+03
12	1,2,3,7,8-PeCDD	4.41e+06	5.44e+02	8.1e+03	2.89e+06	6.00e+02	4.8e+03
13	1,2,3,4,7,8-HxCDD	7.65e+06	6.48e+02	1.2e+04	6.00e+06	1.40e+03	4.3e+03
14	1,2,3,6,7,8-HxCDD	7.29e+06	6.48e+02	1.1e+04	5.69e+06	1.40e+03	4.1e+03
15	1,2,3,7,8,9-HxCDD	7.65e+06	6.48e+02	1.2e+04	6.17e+06	1.40e+03	4.4e+03
16	1,2,3,4,6,7,8-HpCDD	6.86e+06	2.39e+03	2.9e+03	6.66e+06	3.14e+03	2.1e+03
17	OCDD	8.93e+06	3.76e+03	2.4e+03	9.99e+06	2.43e+03	4.1e+03
18	13C-2,3,7,8-TCDF	7.99e+06	3.38e+03	2.4e+03	9.92e+06	2.40e+03	4.1e+03
19	13C-1,2,3,7,8-PeCDF	7.82e+06	7.52e+02	1.0e+04	5.04e+06	5.80e+02	8.7e+03
20	13C-2,3,4,7,8-PeCDF	5.20e+06	7.52e+02	6.9e+03	3.46e+06	5.80e+02	6.0e+03
21	13C-1,2,3,4,7,8-HxCDF	9.90e+06	1.01e+03	9.8e+03	1.86e+07	8.56e+02	2.2e+04
22	13C-1,2,3,6,7,8-HxCDF	1.12e+07	1.01e+03	1.1e+04	2.08e+07	8.56e+02	2.4e+04
23	13C-2,3,4,6,7,8-HxCDF	1.05e+07	1.01e+03	1.0e+04	2.01e+07	8.56e+02	2.3e+04
24	13C-1,2,3,7,8,9-HxCDF	1.02e+07	1.01e+03	1.0e+04	1.92e+07	8.56e+02	2.2e+04
25	13C-1,2,3,4,6,7,8-HpCDF	8.37e+06	3.04e+03	2.8e+03	1.82e+07	9.48e+02	1.9e+04
26	13C-1,2,3,4,7,8,9-HpCDF	7.82e+06	3.04e+03	2.6e+03	1.72e+07	9.48e+02	1.8e+04
27	13C-2,3,7,8-TCDD	4.46e+06	5.56e+03	8.0e+02	5.68e+06	1.88e+03	3.0e+03
28	13C-1,2,3,7,8-PeCDD	9.26e+06	2.88e+02	3.2e+04	5.89e+06	3.08e+02	1.9e+04
29	13C-1,2,3,4,7,8-HxCDD	1.54e+07	1.83e+03	8.4e+03	1.23e+07	9.80e+02	1.3e+04
30	13C-1,2,3,6,7,8-HxCDD	1.37e+07	1.83e+03	7.5e+03	1.08e+07	9.80e+02	1.1e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.74e+07	1.64e+03	1.1e+04	1.66e+07	2.70e+03	6.2e+03
32	13C-OCDD	1.48e+07	2.16e+02	6.9e+04	1.64e+07	3.64e+02	4.5e+04
33	13C-1,2,3,4-TCDD	9.85e+06	5.56e+03	1.8e+03	1.23e+07	1.88e+03	6.5e+03
34	13C-1,2,3,7,8,9-HxCDD	2.14e+07	1.83e+03	1.2e+04	1.70e+07	9.80e+02	1.7e+04
35	37Cl-2,3,7,8-TCDD	6.06e+06	7.32e+02	8.3e+03			

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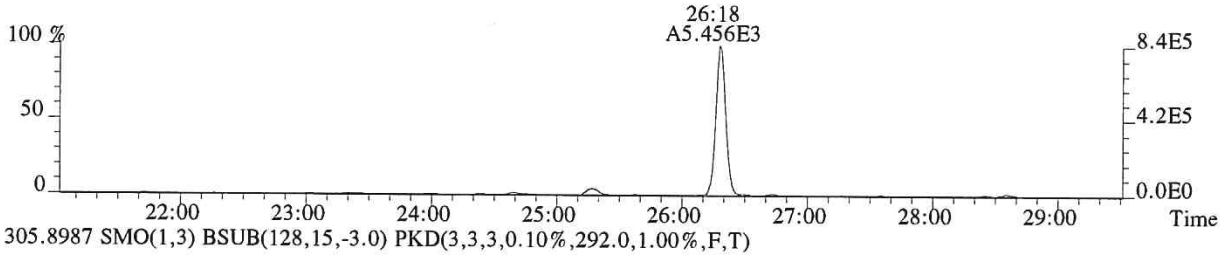
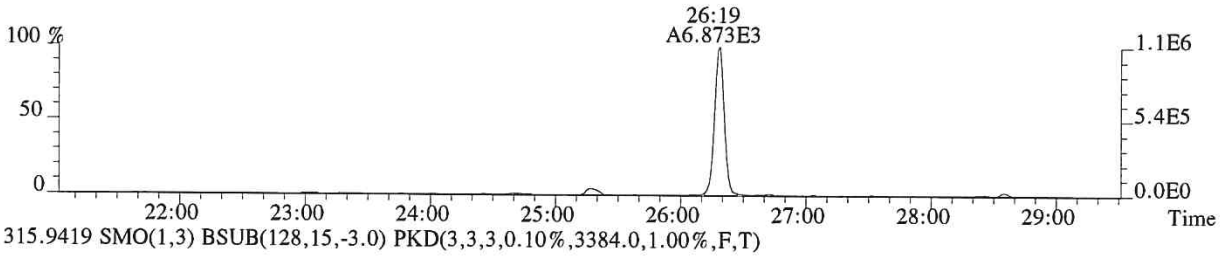
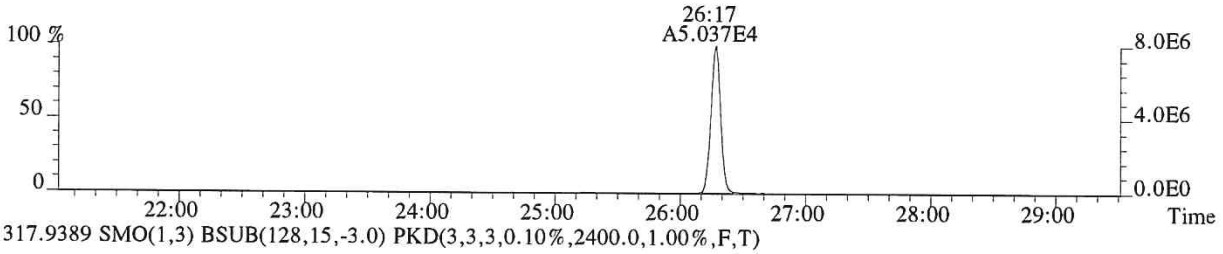
File:P616139 #1-602 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,532.0,1.00%,F,T)



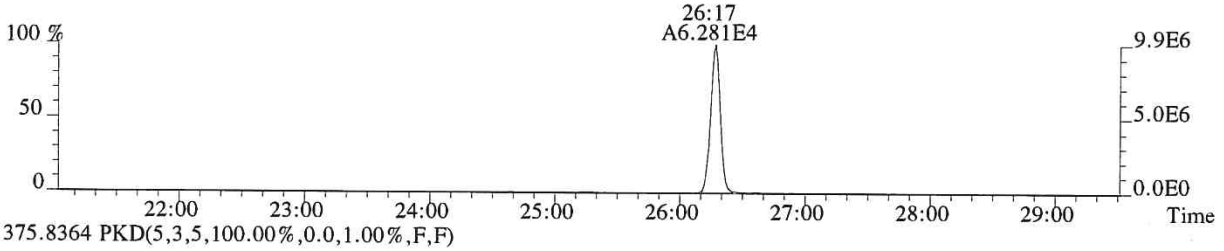
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,292.0,1.00%,F,T)



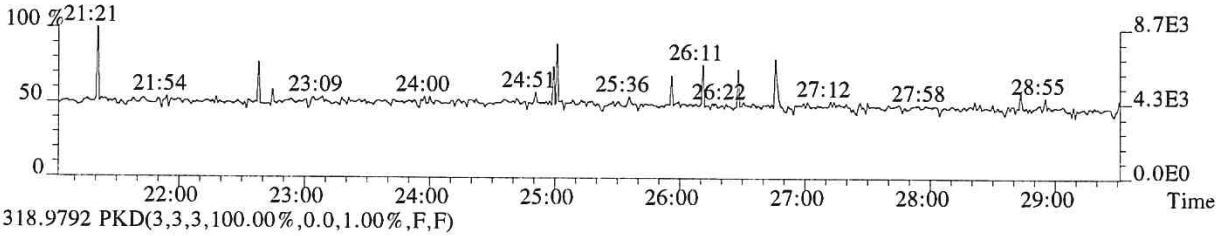
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3384.0,1.00%,F,T)



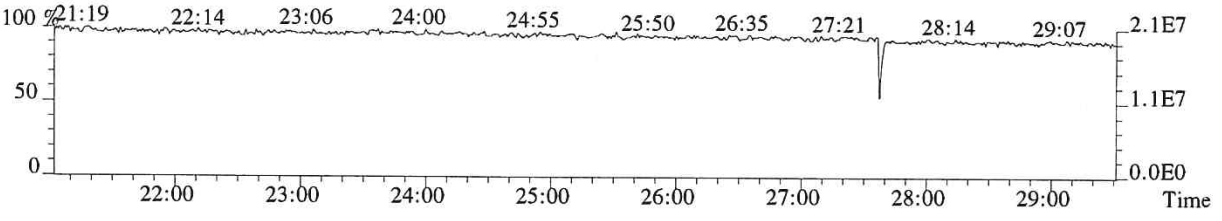
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2400.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

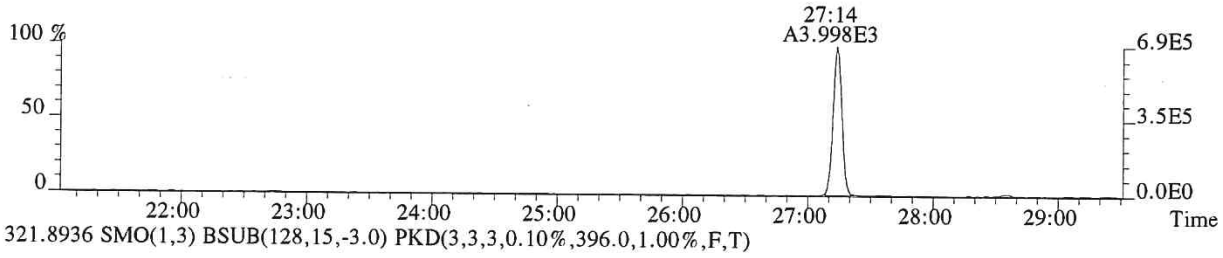


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

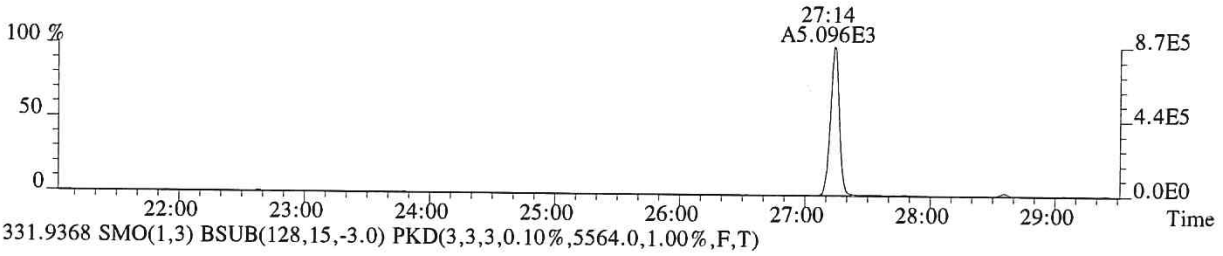


059328

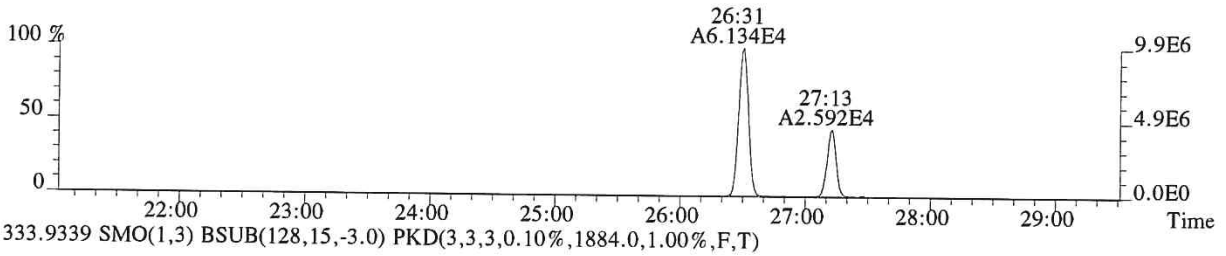
File:P616139 #1-602 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1164.0,1.00%,F,T)



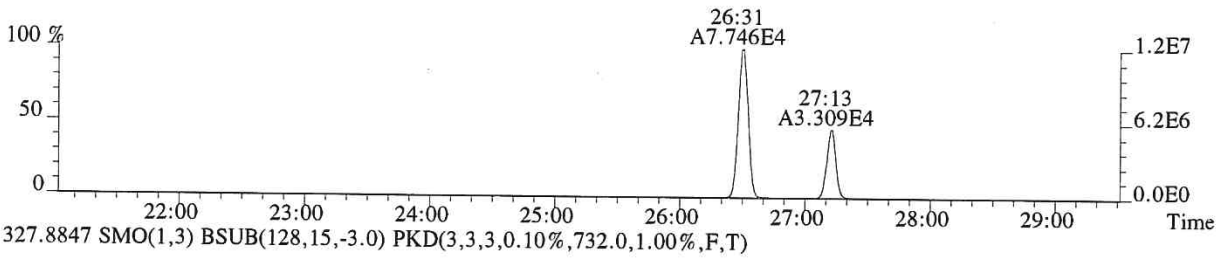
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,396.0,1.00%,F,T)



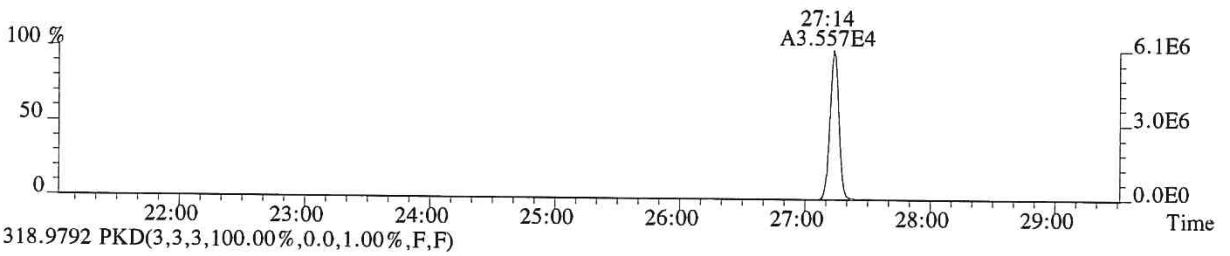
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5564.0,1.00%,F,T)



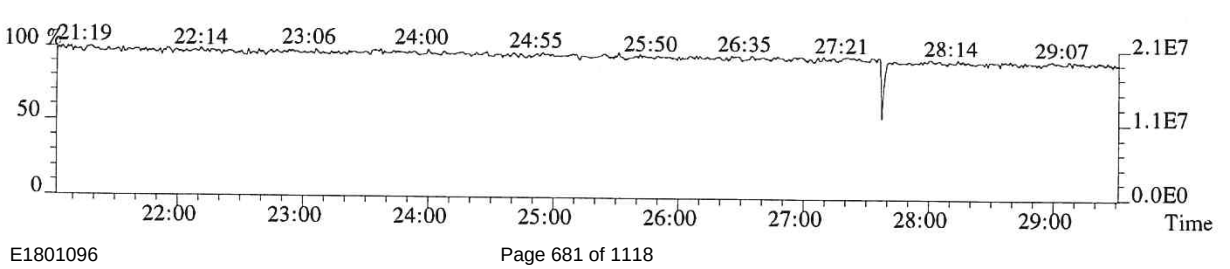
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1884.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,732.0,1.00%,F,T)

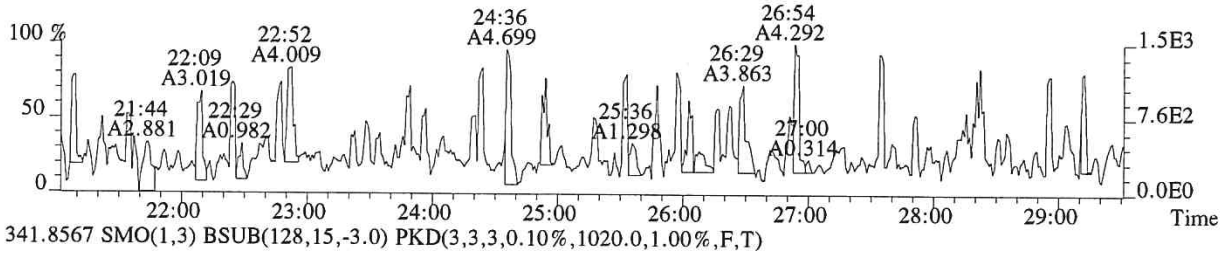


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

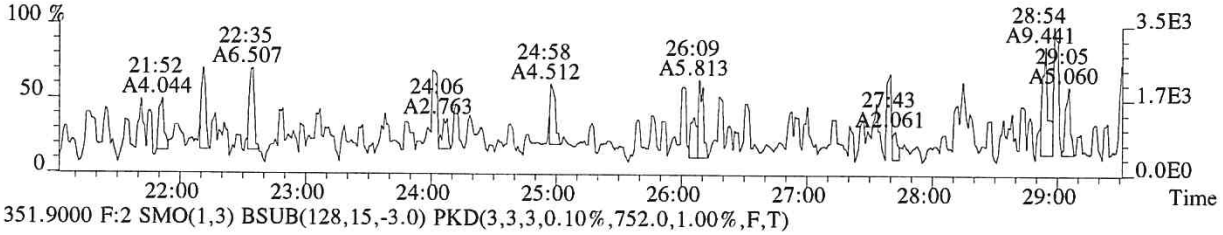


059329

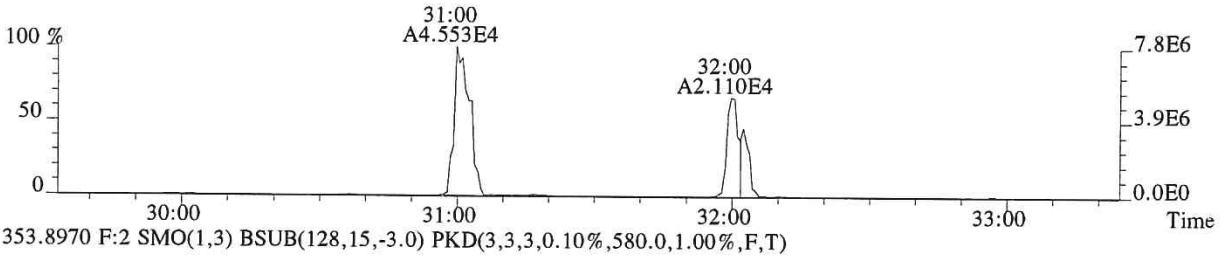
File:P616139 #1-602 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,440.0,1.00%,F,T)



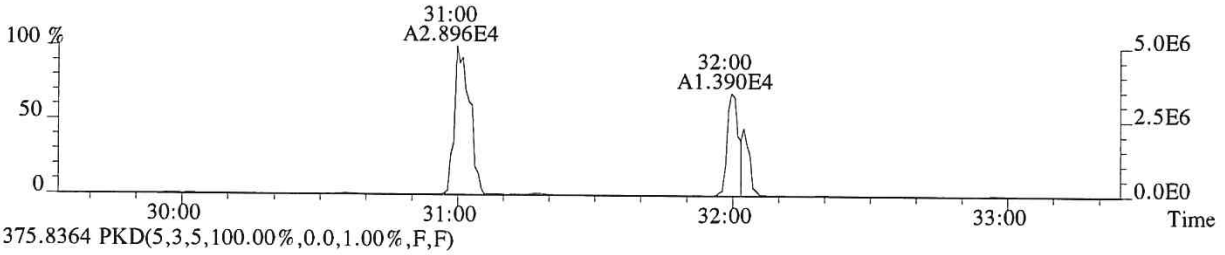
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1020.0,1.00%,F,T)



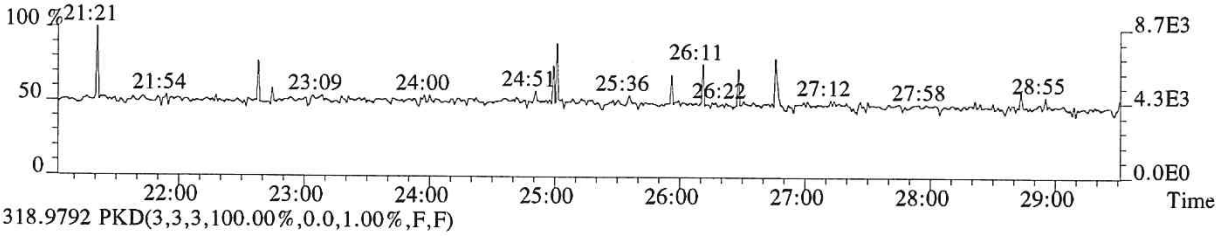
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,752.0,1.00%,F,T)



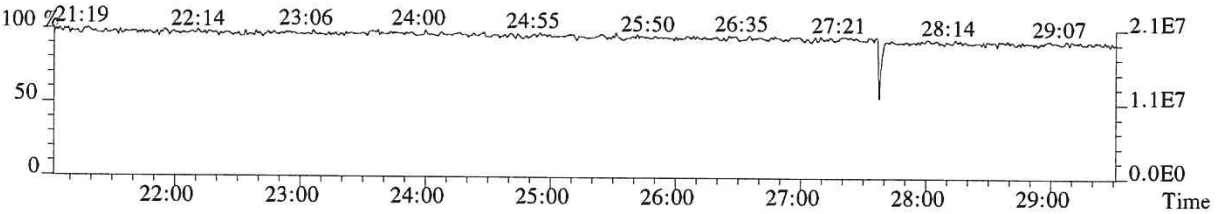
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,580.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

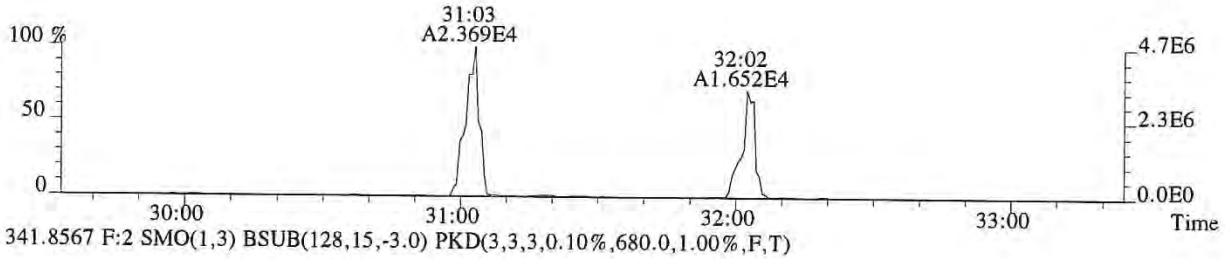


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

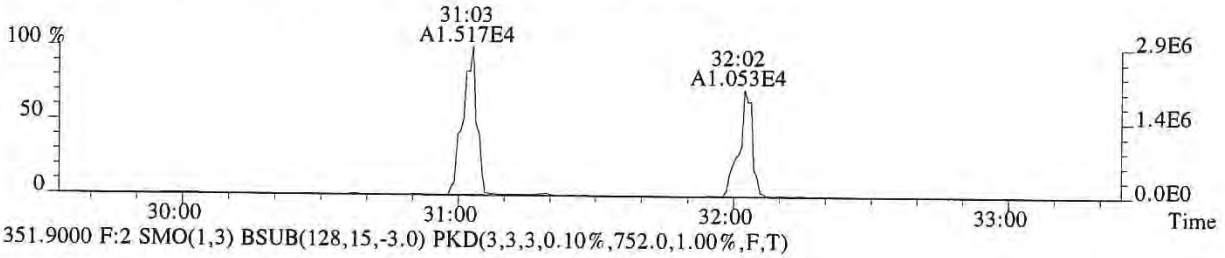


059330

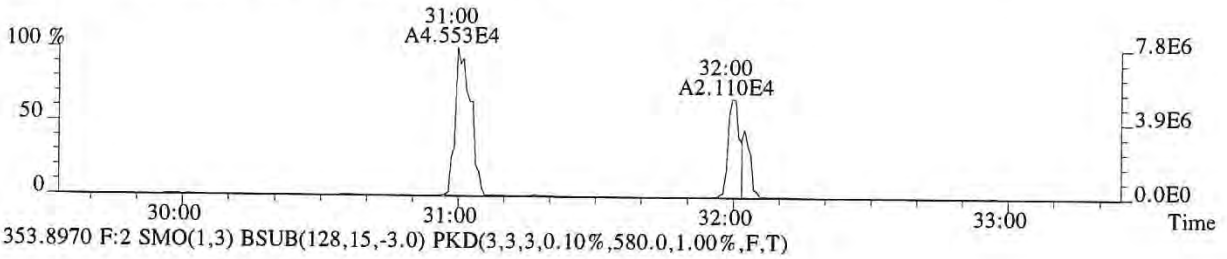
File:P616139 #1-348 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,412.0,1.00%,F,T)



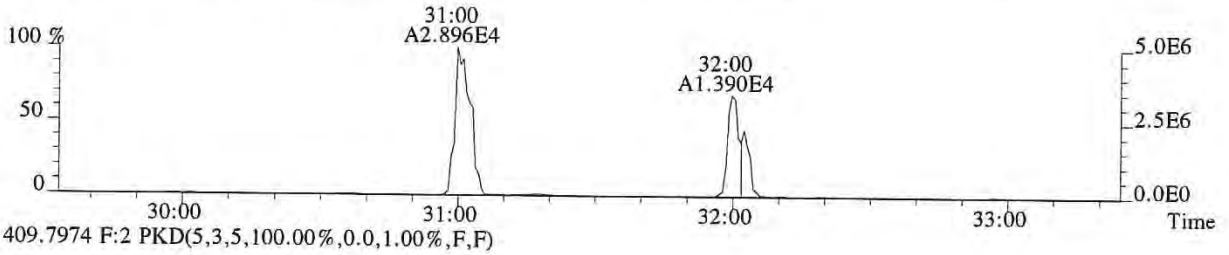
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,680.0,1.00%,F,T)



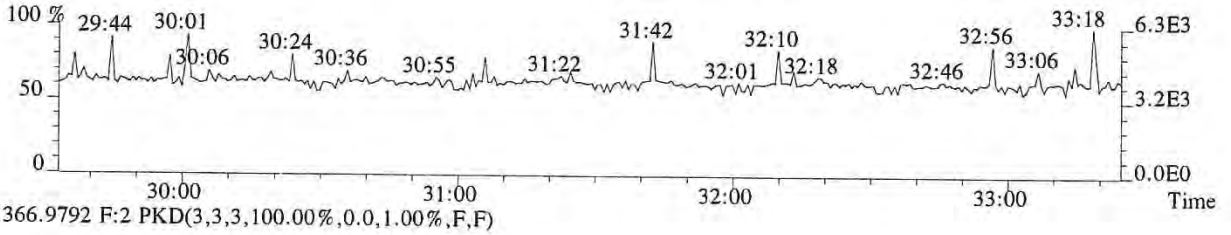
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,752.0,1.00%,F,T)



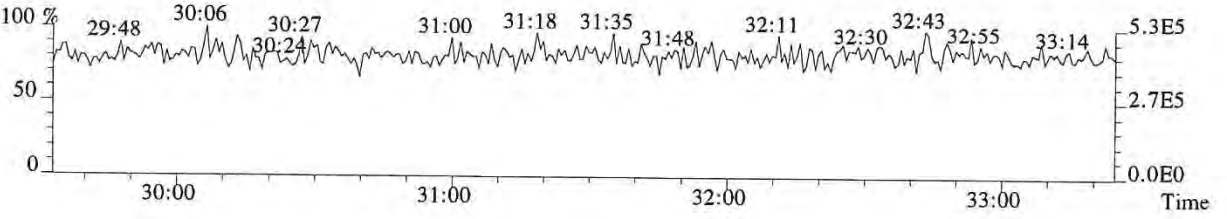
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,580.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

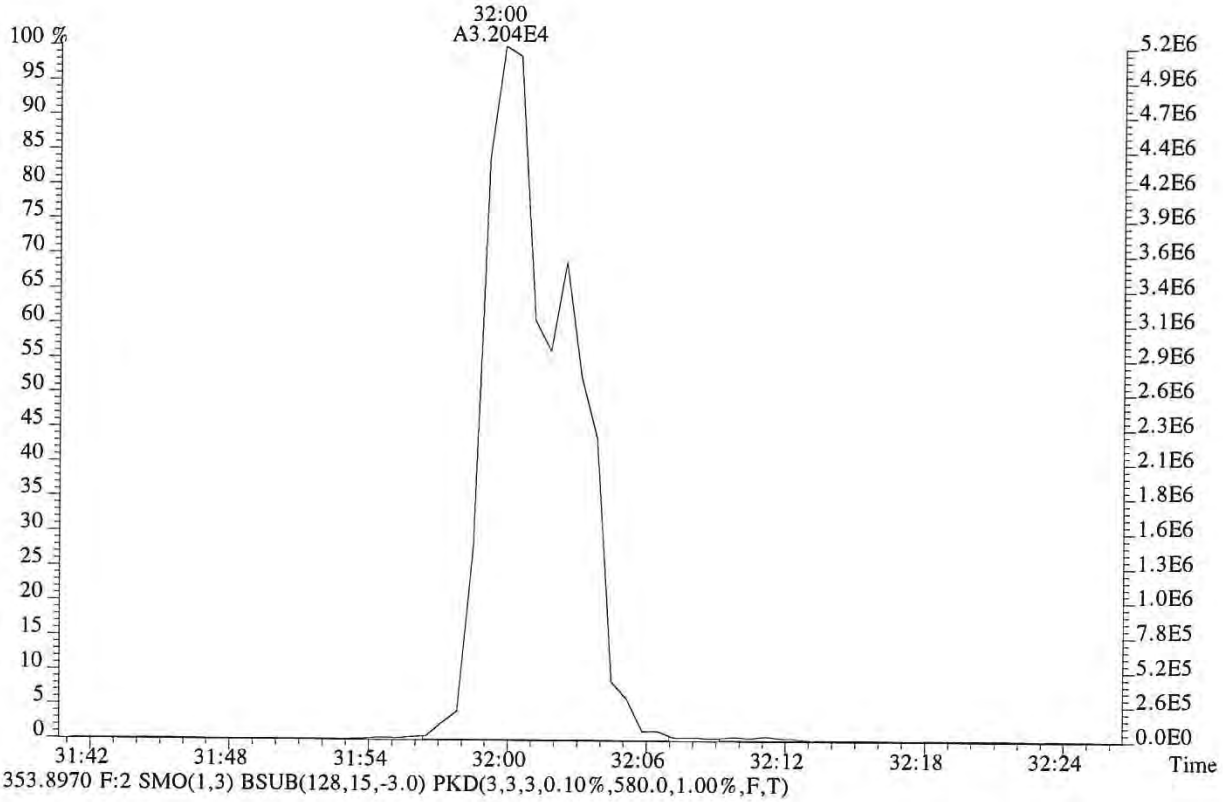


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

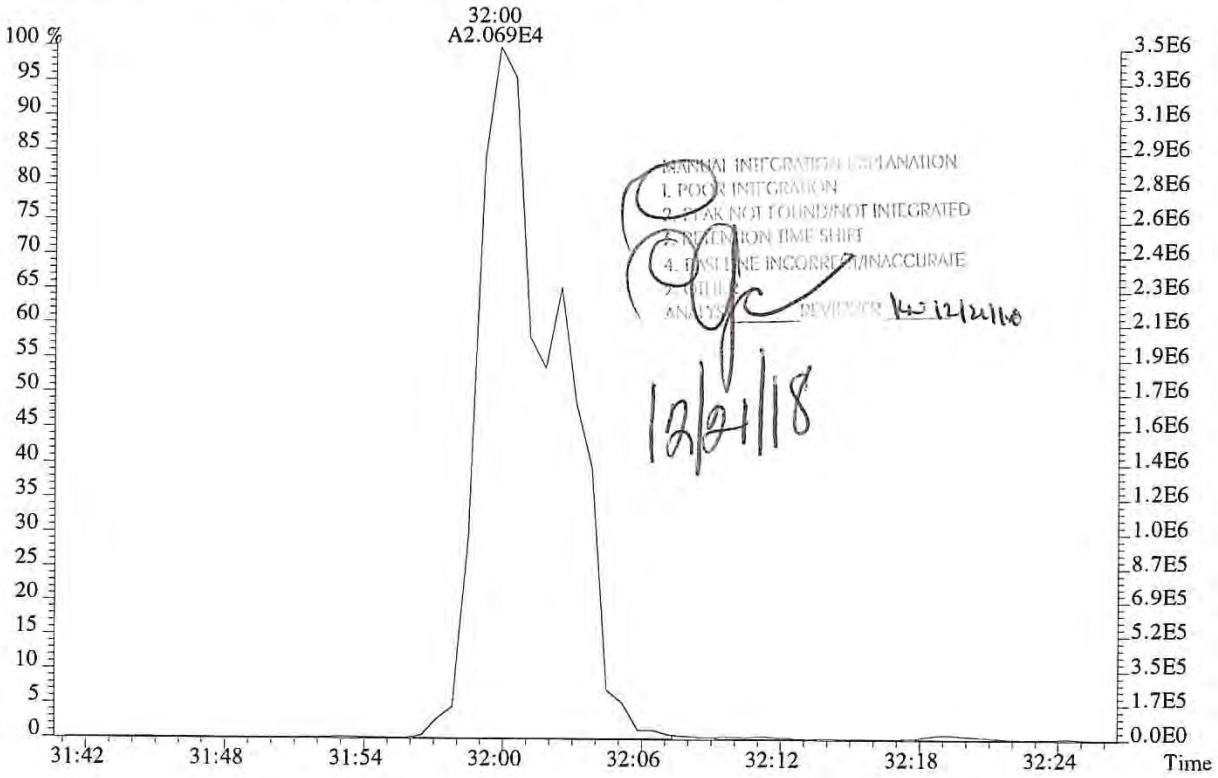


059331

File:P616139 #1-348 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,752.0,1.00%,F,T)



353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,580.0,1.00%,F,T)

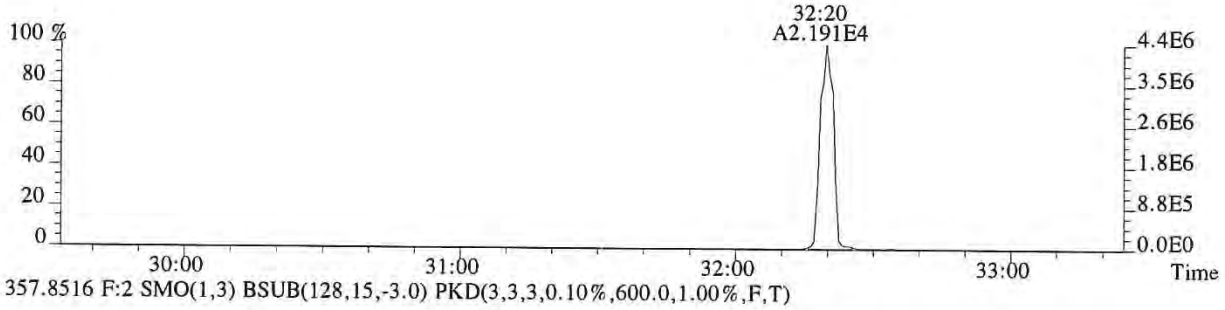


MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST REVIEWER KW 12/21/18

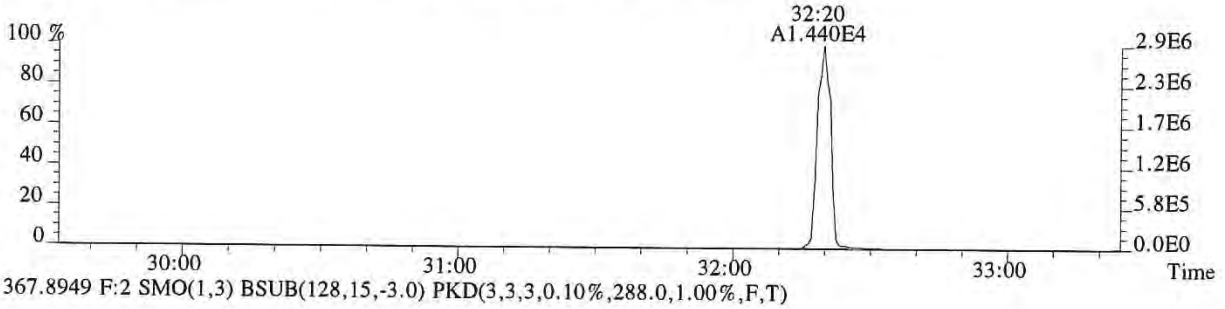
12/21/18

059332

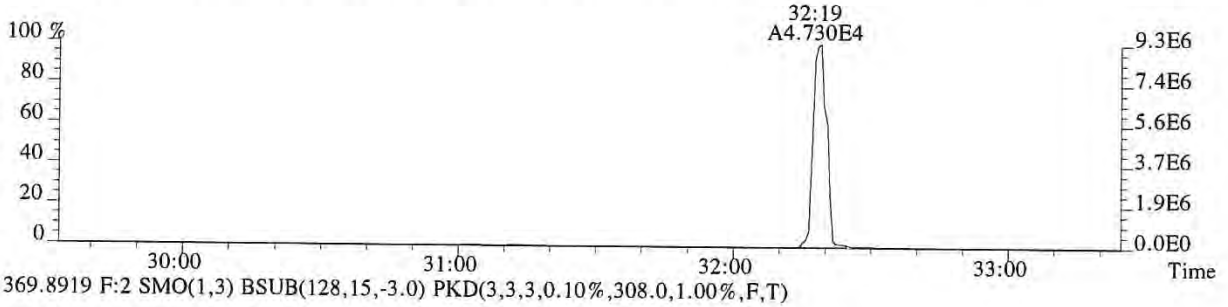
File:P616139 #1-348 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,544.0,1.00%,F,T)



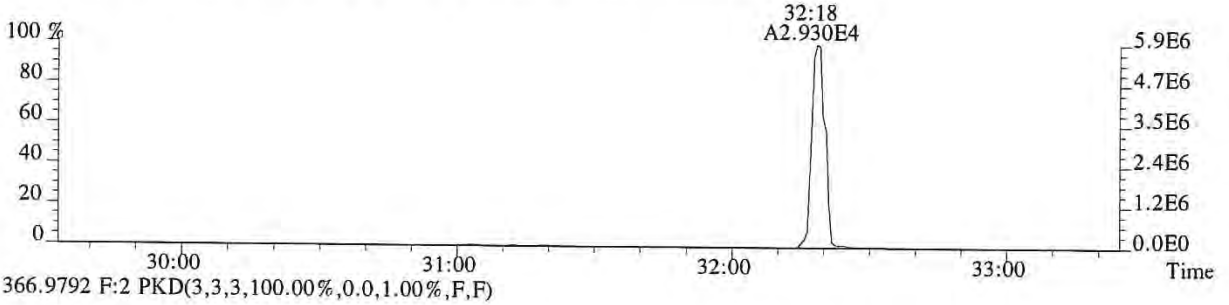
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,600.0,1.00%,F,T)



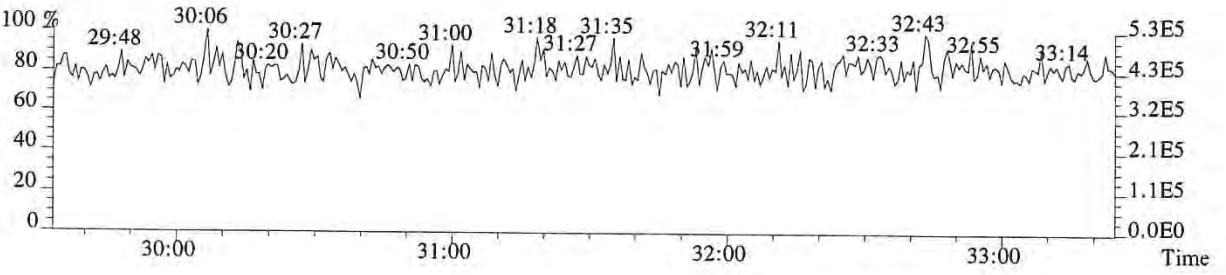
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,288.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,308.0,1.00%,F,T)

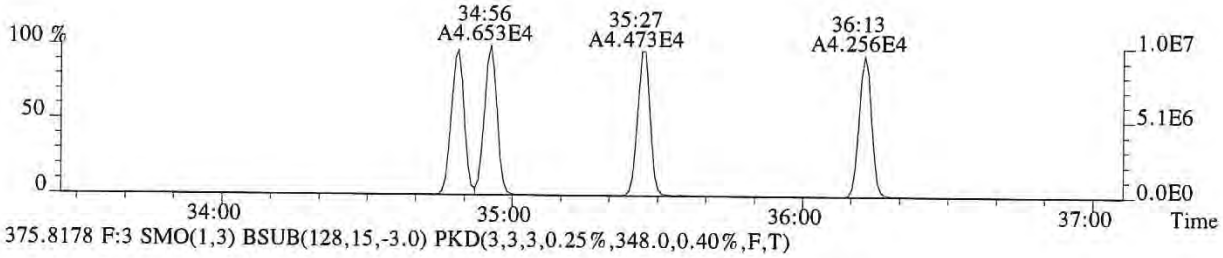


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

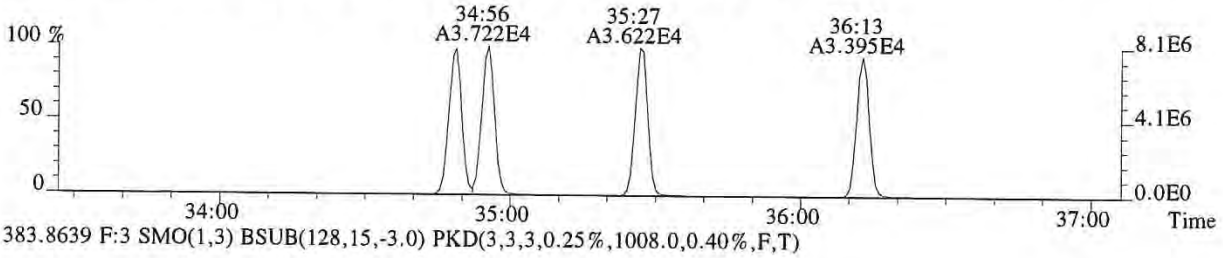


059333

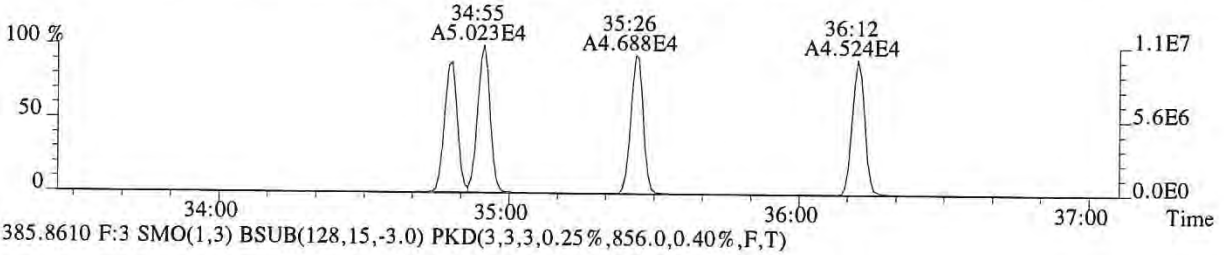
File:P616139 #1-330 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spectℓ
Sample#1 Exp:LCS
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1388.0,0.40%,F,T)



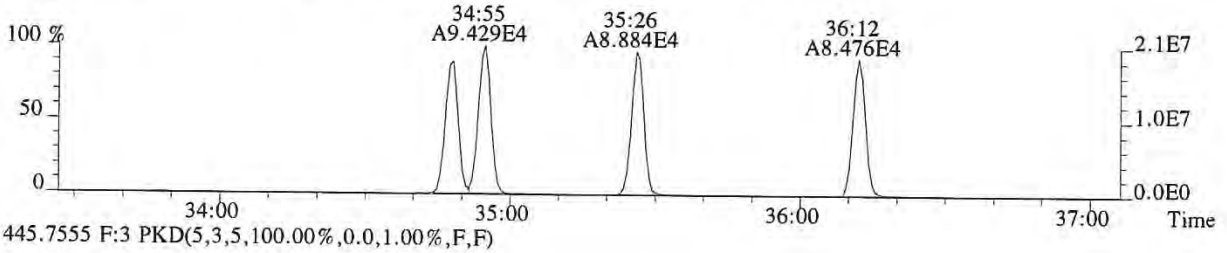
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,348.0,0.40%,F,T)



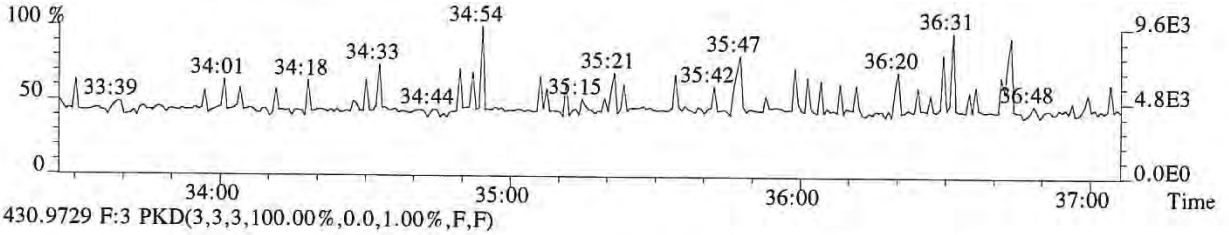
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1008.0,0.40%,F,T)



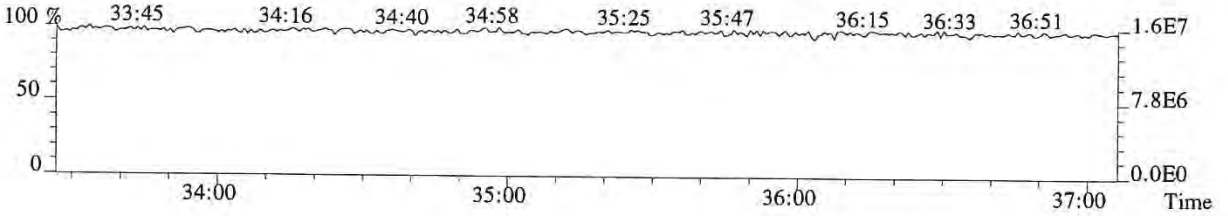
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,856.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

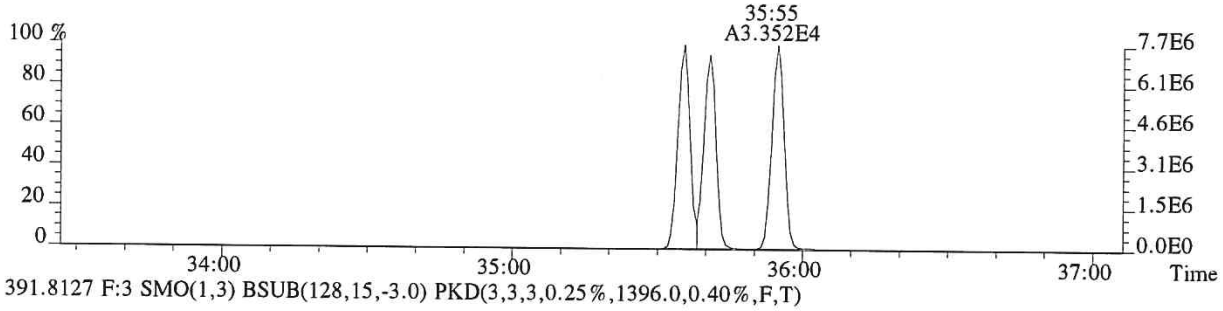


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

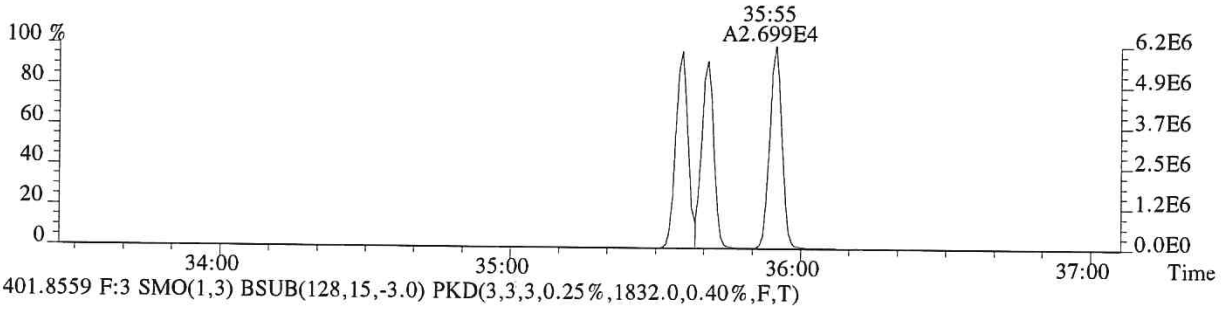


059334

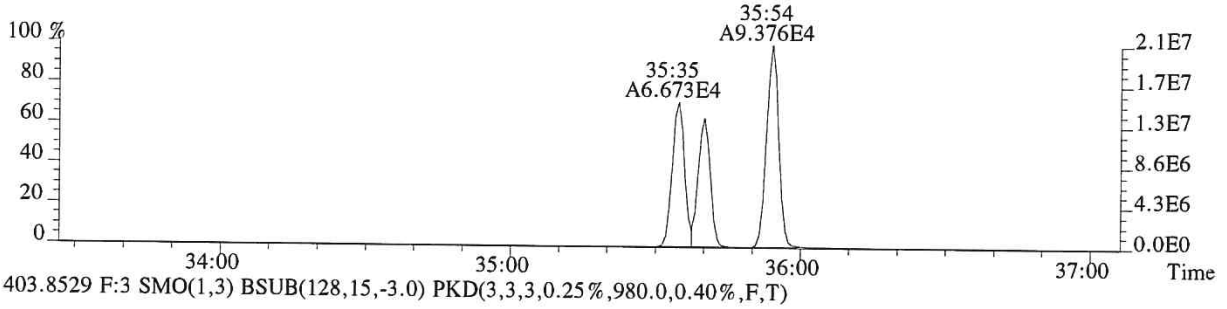
File:P616139 #1-330 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,648.0,0.40%,F,T)



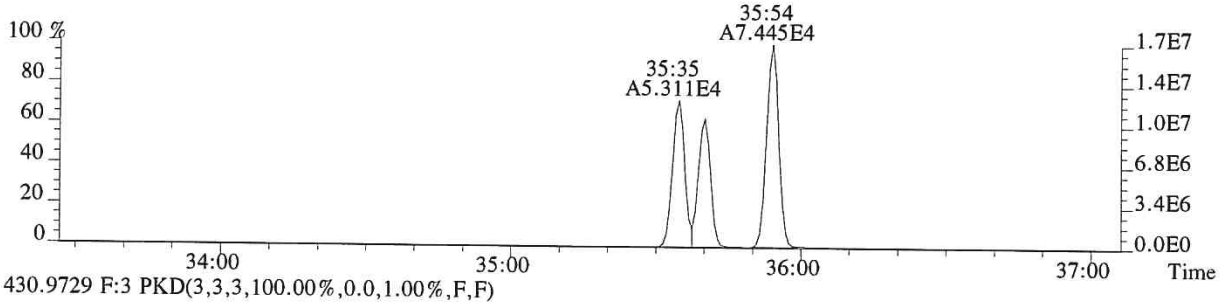
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1396.0,0.40%,F,T)



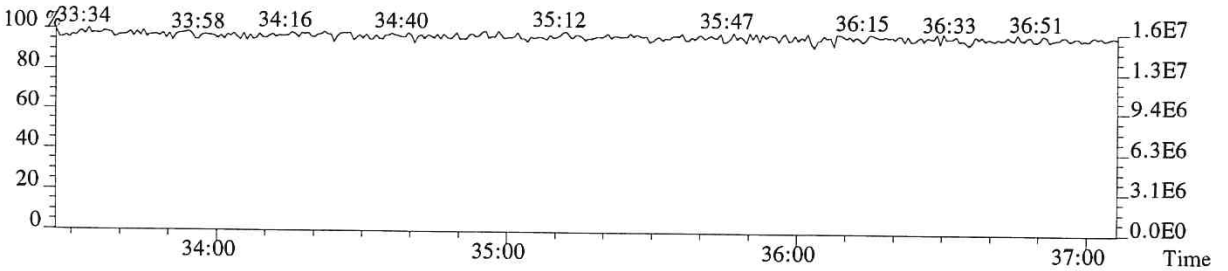
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1832.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,980.0,0.40%,F,T)

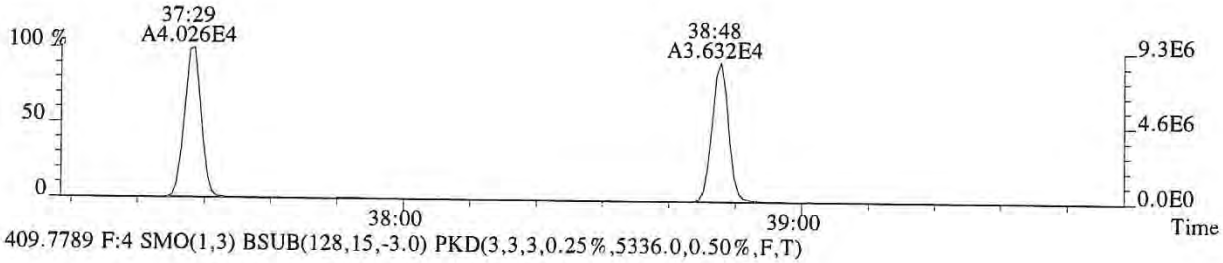


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

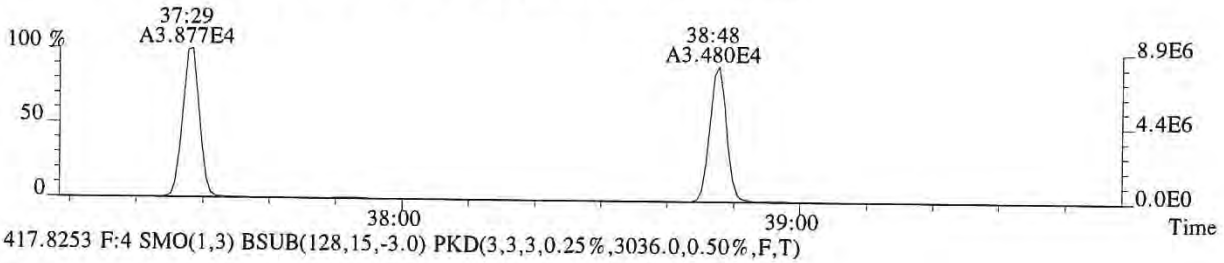


059335

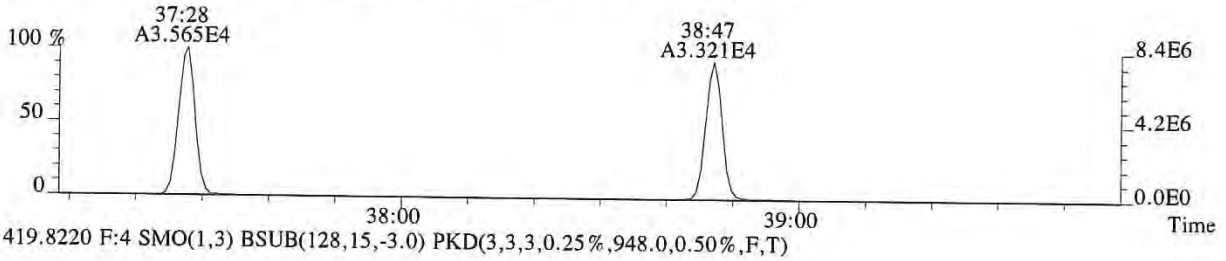
File:P616139 #1-241 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5708.0,0.50%,F,T)



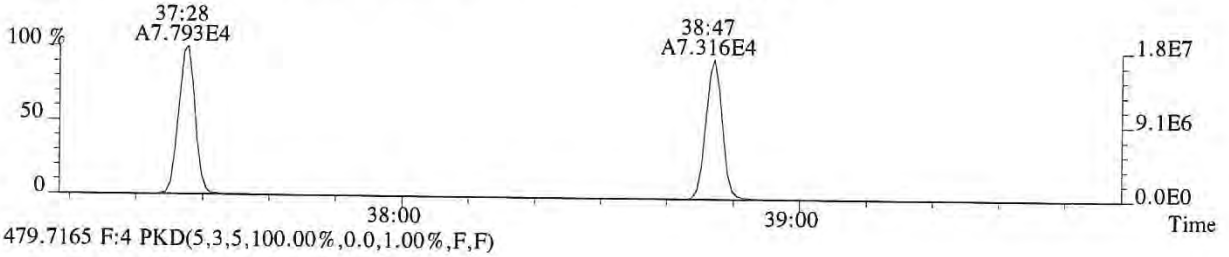
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5336.0,0.50%,F,T)



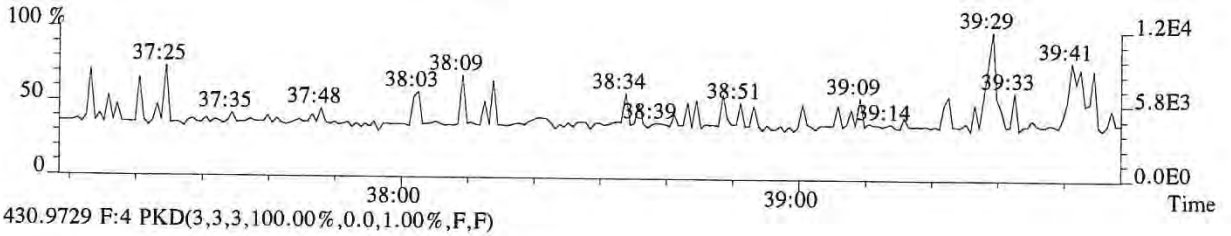
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3036.0,0.50%,F,T)



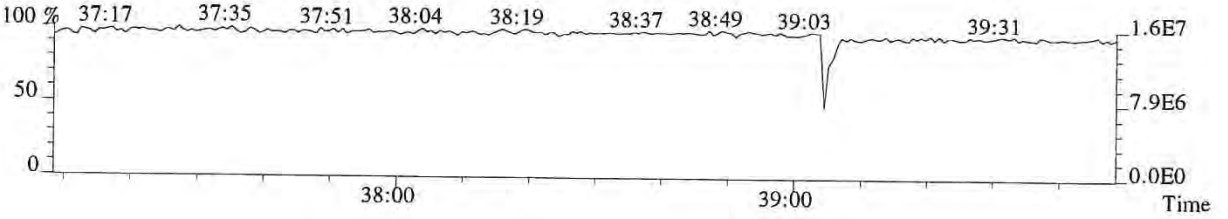
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,948.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

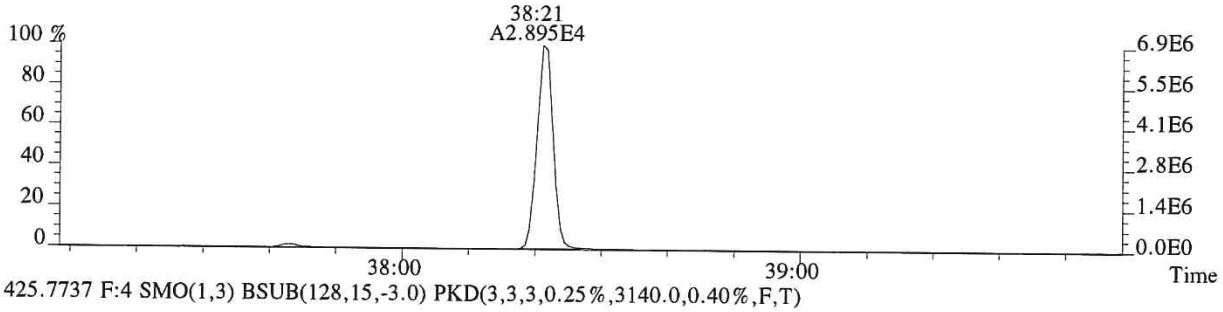


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

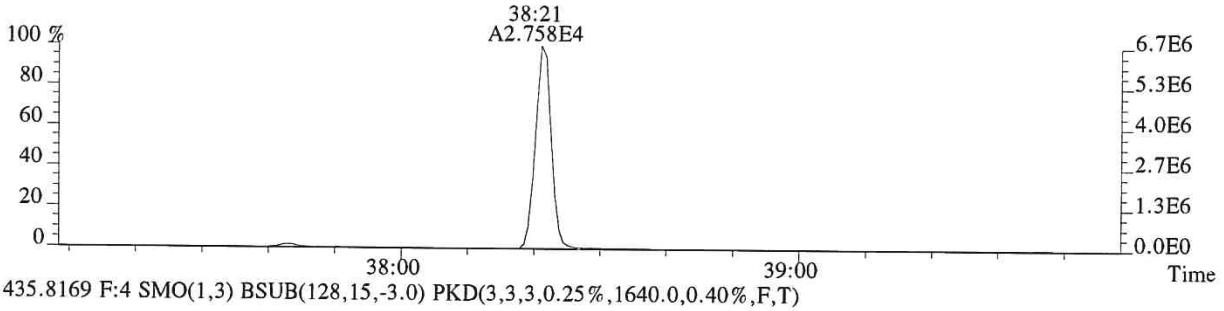


059336

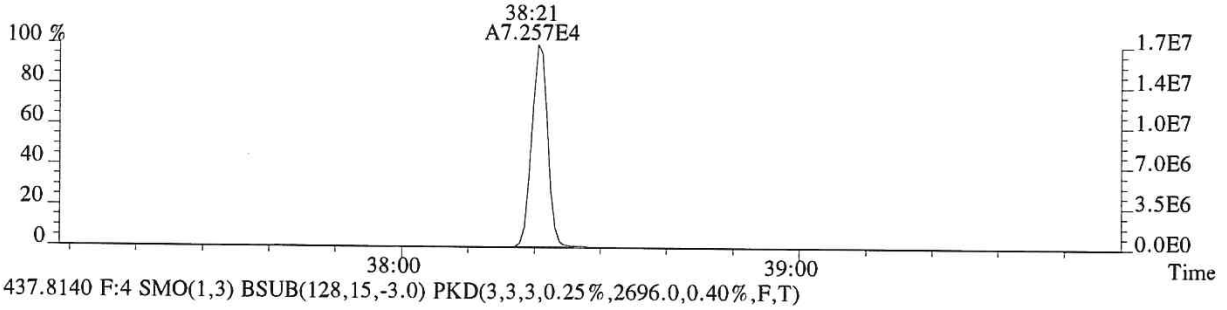
File:P616139 #1-241 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2388.0,0.40%,F,T)



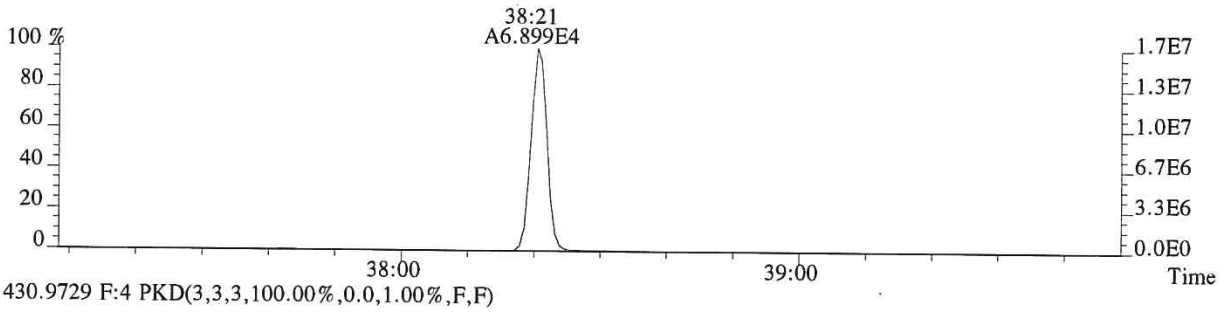
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3140.0,0.40%,F,T)



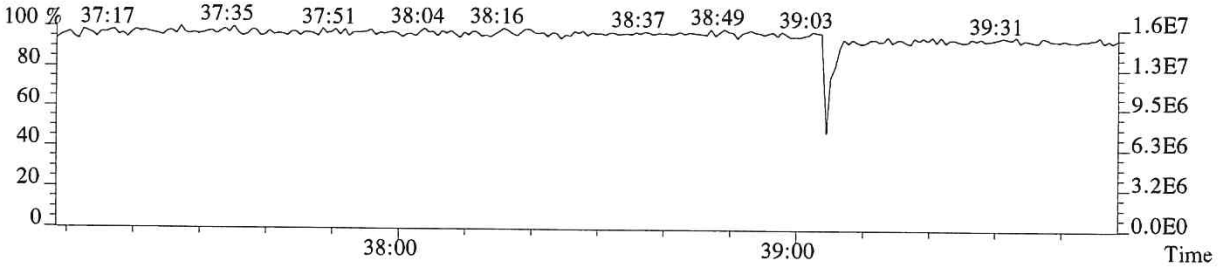
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1640.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2696.0,0.40%,F,T)

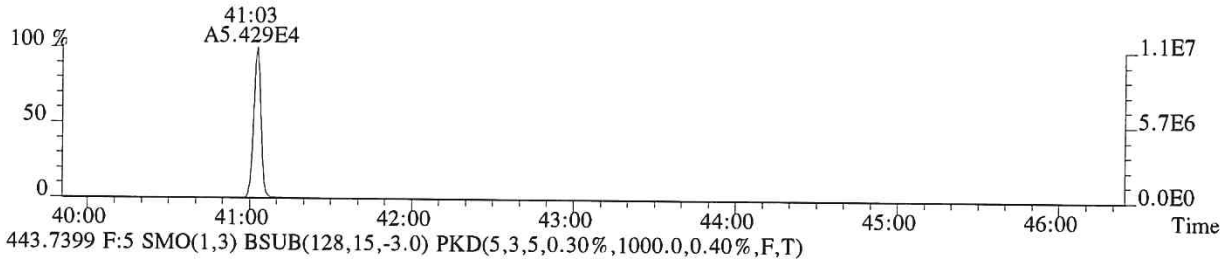


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

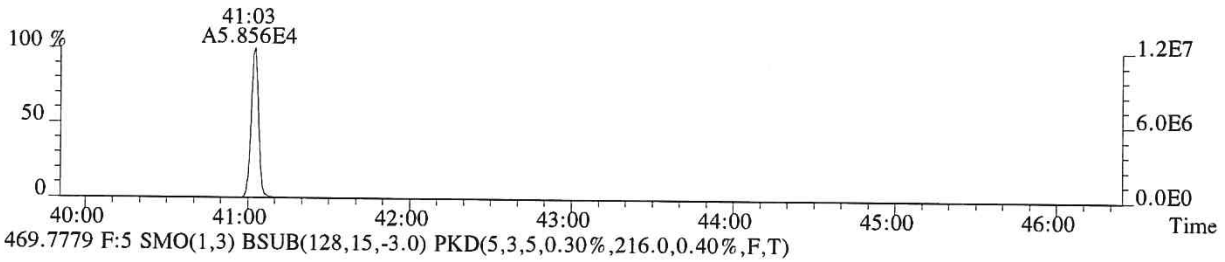


059337

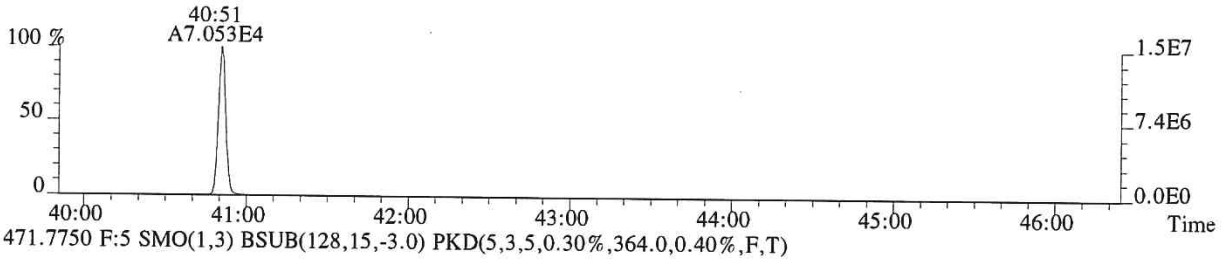
File:P616139 #1-591 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1224.0,0.40%,F,T)



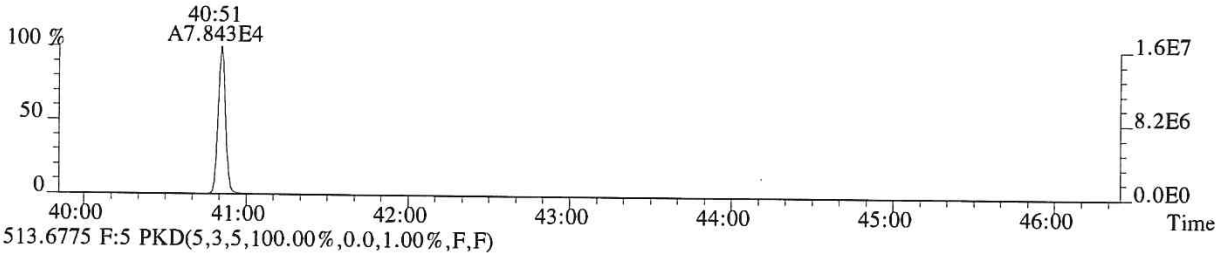
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1000.0,0.40%,F,T)



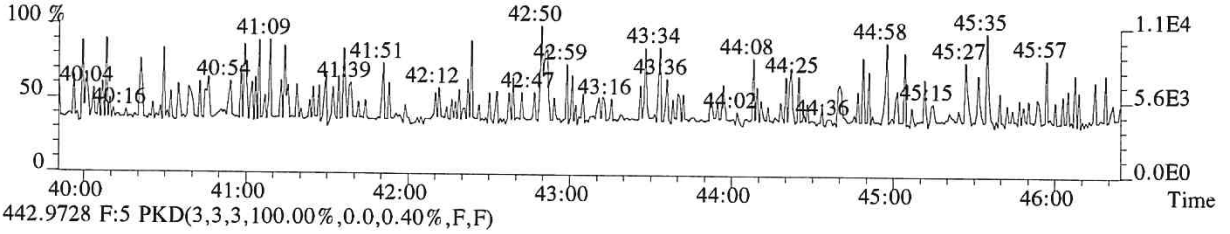
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,216.0,0.40%,F,T)



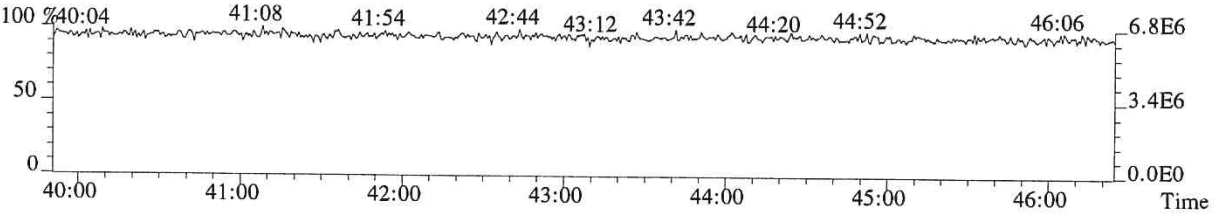
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,364.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

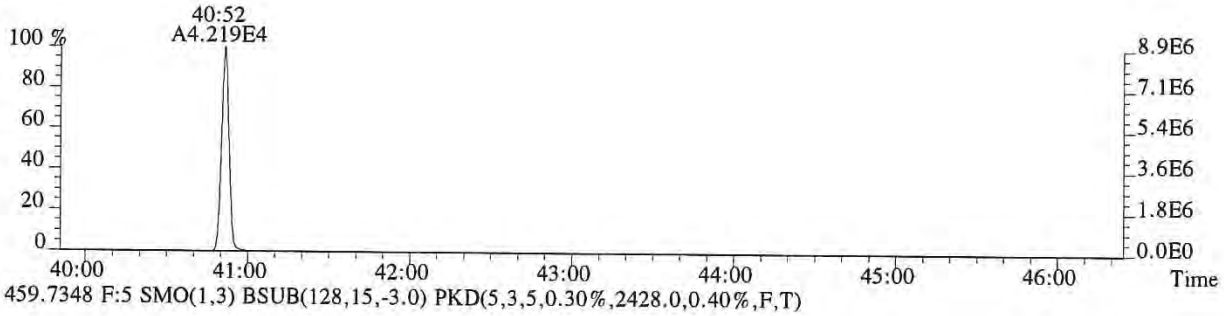


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

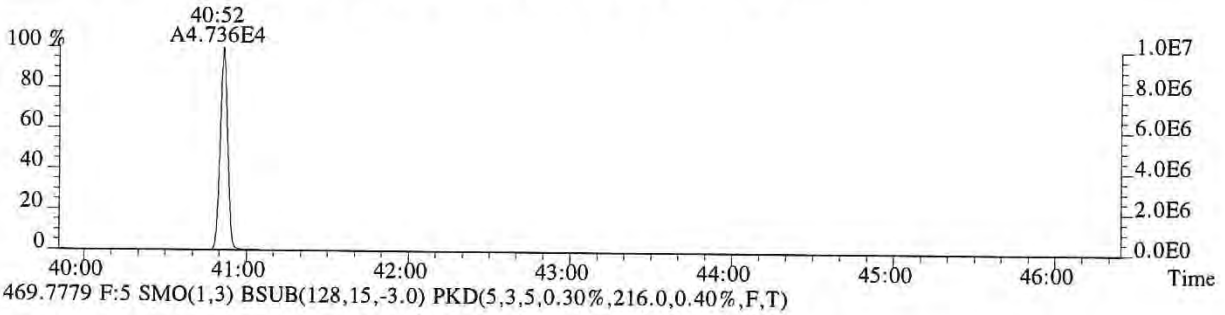


059338

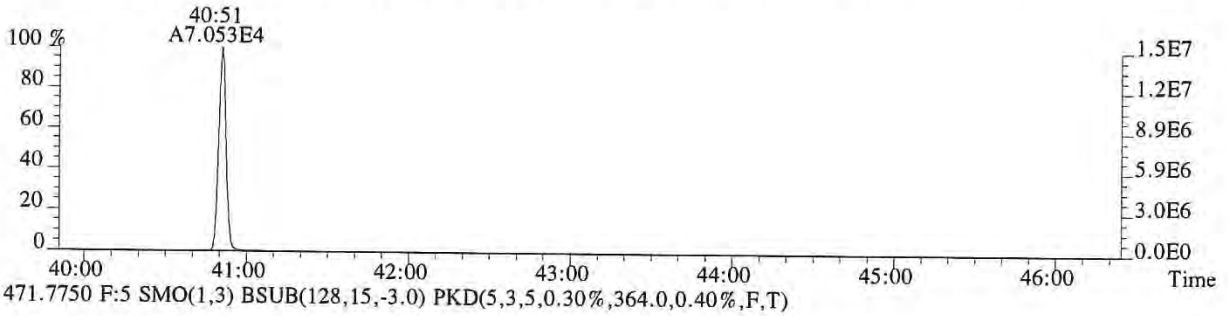
File:P616139 #1-591 Acq:20-DEC-2018 02:56:30 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3760.0,0.40%,F,T)



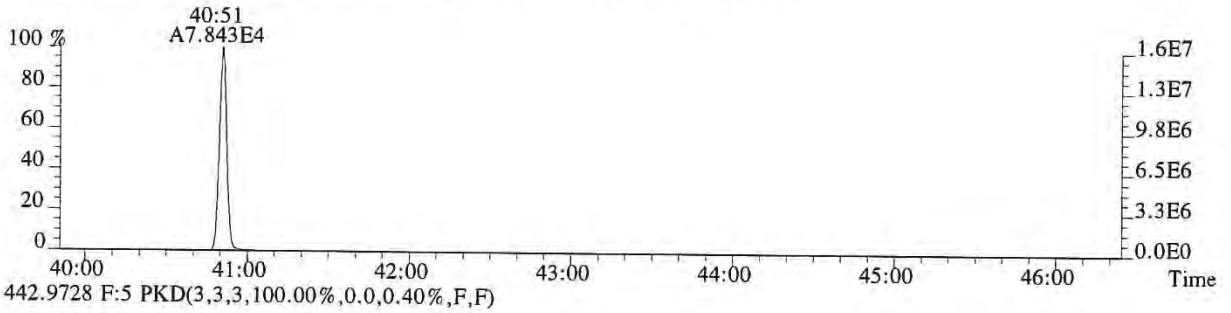
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2428.0,0.40%,F,T)



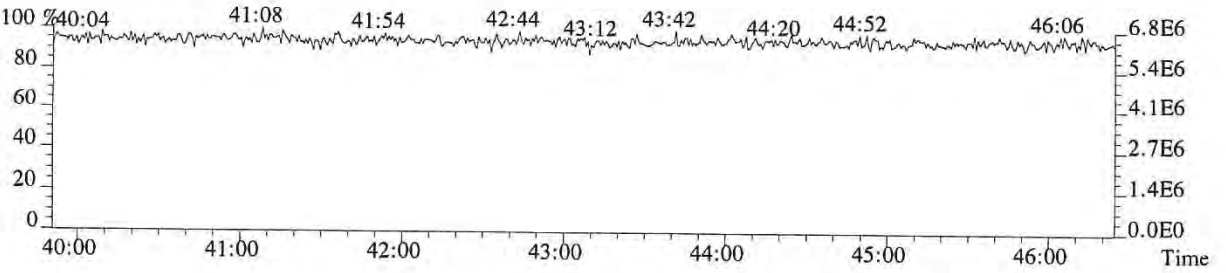
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,216.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,364.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059339

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
LCS

Run #20 Filename P519601 Samp: 1 Inj: 1 Acquired: 24-DEC-18 20:27:40
Processed: 26-DEC-18 13:43:20 Sample ID: EQ1800512-03

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:17	9.801e+02	1.273e+03	0.77	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:06	8.401e+03	5.362e+03	1.57	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:06	7.997e+03	5.255e+03	1.52	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:59	7.070e+03	5.918e+03	1.19	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:07	8.473e+03	6.908e+03	1.23	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:39	7.470e+03	6.031e+03	1.24	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:27	6.356e+03	5.087e+03	1.25	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:51	6.214e+03	6.198e+03	1.00	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:18	5.379e+03	5.283e+03	1.02	yes	no	1.258
10	Unk	OCDF	41:56	7.818e+03	8.734e+03	0.90	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:14	7.609e+02	9.743e+02	0.78	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:25	5.870e+03	3.733e+03	1.57	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:49	5.101e+03	3.621e+03	1.41	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:55	5.713e+03	4.913e+03	1.16	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:09	5.470e+03	4.377e+03	1.25	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:50	4.447e+03	4.169e+03	1.07	yes	no	1.025
17	Unk	OCDD	41:45	5.038e+03	5.371e+03	0.94	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:16	1.021e+04	1.280e+04	0.80	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:05	1.777e+04	1.125e+04	1.58	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:05	1.682e+04	1.050e+04	1.60	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:59	7.230e+03	1.443e+04	0.50	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:06	9.238e+03	1.784e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:39	8.149e+03	1.528e+04	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:27	6.941e+03	1.375e+04	0.50	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:50	5.829e+03	1.336e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:17	5.183e+03	1.146e+04	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:12	4.599e+03	6.128e+03	0.75	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:24	1.205e+04	7.810e+03	1.54	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:48	1.056e+04	7.551e+03	1.40	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:53	1.080e+04	9.058e+03	1.19	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:50	1.125e+04	1.077e+04	1.04	yes	no	0.858
32	IS	13C-OCDD	41:44	8.650e+03	9.843e+03	0.88	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:33	1.217e+04	1.525e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:09	1.778e+04	1.395e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:14	7.002e+03				no	1.014

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
LCS

Run #20 Filename P519601 Samp: 1 Inj: 1 Acquired: 24-DEC-18 20:27:40
Processed: 26-DEC-18 13:43:20 LAB. ID: EQ1800512-03

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.50e+05	7.80e+02	1.9e+02	2.00e+05	2.13e+03	9.4e+01
2	1,2,3,7,8-PeCDF	1.32e+06	4.12e+02	3.2e+03	8.72e+05	2.25e+03	3.9e+02
3	2,3,4,7,8-PeCDF	1.43e+06	4.12e+02	3.5e+03	9.16e+05	2.25e+03	4.1e+02
4	1,2,3,4,7,8-HxCDF	1.28e+06	8.48e+02	1.5e+03	1.06e+06	3.88e+02	2.7e+03
5	1,2,3,6,7,8-HxCDF	1.31e+06	8.48e+02	1.5e+03	1.10e+06	3.88e+02	2.8e+03
6	2,3,4,6,7,8-HxCDF	1.26e+06	8.48e+02	1.5e+03	1.01e+06	3.88e+02	2.6e+03
7	1,2,3,7,8,9-HxCDF	9.82e+05	8.48e+02	1.2e+03	7.49e+05	3.88e+02	1.9e+03
8	1,2,3,4,6,7,8-HpCDF	8.23e+05	3.00e+02	2.7e+03	8.36e+05	5.80e+02	1.4e+03
9	1,2,3,4,7,8,9-HpCDF	5.94e+05	3.00e+02	2.0e+03	5.44e+05	5.80e+02	9.4e+02
10	OCDF	5.10e+05	5.12e+02	1.0e+03	5.94e+05	1.11e+03	5.3e+02
11	2,3,7,8-TCDD	1.26e+05	2.47e+03	5.1e+01	1.52e+05	9.72e+02	1.6e+02
12	1,2,3,7,8-PeCDD	9.91e+05	8.40e+02	1.2e+03	6.37e+05	3.56e+02	1.8e+03
13	1,2,3,4,7,8-HxCDD	9.09e+05	5.16e+02	1.8e+03	6.92e+05	5.20e+02	1.3e+03
14	1,2,3,6,7,8-HxCDD	8.76e+05	5.16e+02	1.7e+03	6.86e+05	5.20e+02	1.3e+03
15	1,2,3,7,8,9-HxCDD	8.24e+05	5.16e+02	1.6e+03	6.78e+05	5.20e+02	1.3e+03
16	1,2,3,4,6,7,8-HpCDD	5.05e+05	5.44e+02	9.3e+02	4.85e+05	4.44e+02	1.1e+03
17	OCDD	3.23e+05	3.68e+02	8.8e+02	3.75e+05	2.96e+02	1.3e+03
18	13C-2,3,7,8-TCDF	1.55e+06	1.04e+04	1.5e+02	1.97e+06	5.84e+03	3.4e+02
19	13C-1,2,3,7,8-PeCDF	2.87e+06	2.80e+02	1.0e+04	1.80e+06	9.88e+02	1.8e+03
20	13C-2,3,4,7,8-PeCDF	2.90e+06	2.80e+02	1.0e+04	1.78e+06	9.88e+02	1.8e+03
21	13C-1,2,3,4,7,8-HxCDF	1.31e+06	4.48e+02	2.9e+03	2.58e+06	1.10e+03	2.3e+03
22	13C-1,2,3,6,7,8-HxCDF	1.44e+06	4.48e+02	3.2e+03	2.77e+06	1.10e+03	2.5e+03
23	13C-2,3,4,6,7,8-HxCDF	1.38e+06	4.48e+02	3.1e+03	2.60e+06	1.10e+03	2.4e+03
24	13C-1,2,3,7,8,9-HxCDF	1.07e+06	4.48e+02	2.4e+03	2.04e+06	1.10e+03	1.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	7.84e+05	1.04e+03	7.5e+02	1.78e+06	9.84e+02	1.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	5.45e+05	1.04e+03	5.2e+02	1.25e+06	9.84e+02	1.3e+03
27	13C-2,3,7,8-TCDD	7.55e+05	6.56e+03	1.2e+02	1.02e+06	1.73e+03	5.9e+02
28	13C-1,2,3,7,8-PeCDD	2.06e+06	1.17e+03	1.8e+03	1.33e+06	1.42e+03	9.4e+02
29	13C-1,2,3,4,7,8-HxCDD	1.85e+06	6.64e+02	2.8e+03	1.44e+06	8.12e+02	1.8e+03
30	13C-1,2,3,6,7,8-HxCDD	1.69e+06	6.64e+02	2.5e+03	1.36e+06	8.12e+02	1.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.28e+06	4.92e+02	2.6e+03	1.23e+06	4.32e+02	2.8e+03
32	13C-OCDD	5.79e+05	5.76e+02	1.0e+03	6.45e+05	4.08e+02	1.6e+03
33	13C-1,2,3,4-TCDD	1.94e+06	6.56e+03	3.0e+02	2.42e+06	1.73e+03	1.4e+03
34	13C-1,2,3,7,8,9-HxCDD	2.57e+06	6.64e+02	3.9e+03	2.03e+06	8.12e+02	2.5e+03
35	37Cl-2,3,7,8-TCDD	1.13e+06	1.21e+03	9.4e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.468e{+}03 + 9.720e{+}02) \times 2000}{(7.547e{+}05 + 1.018e{+}06) \times (\quad) \times 1.085} =$$

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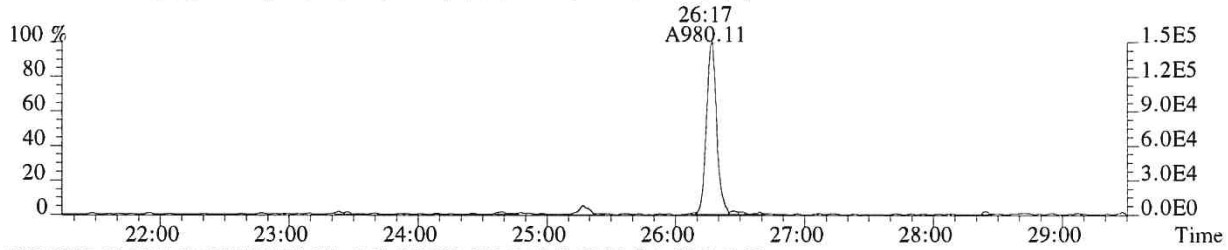
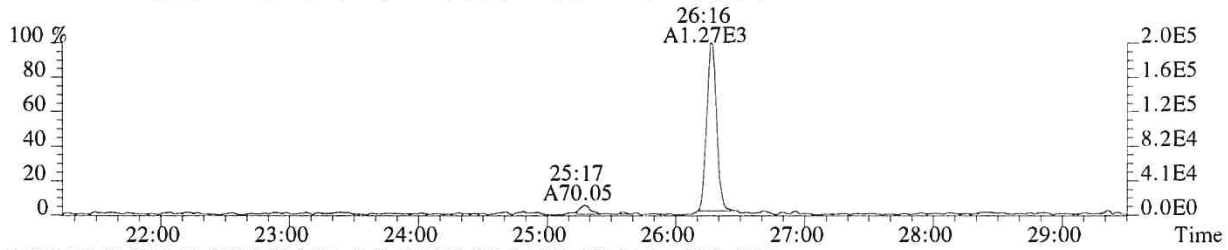
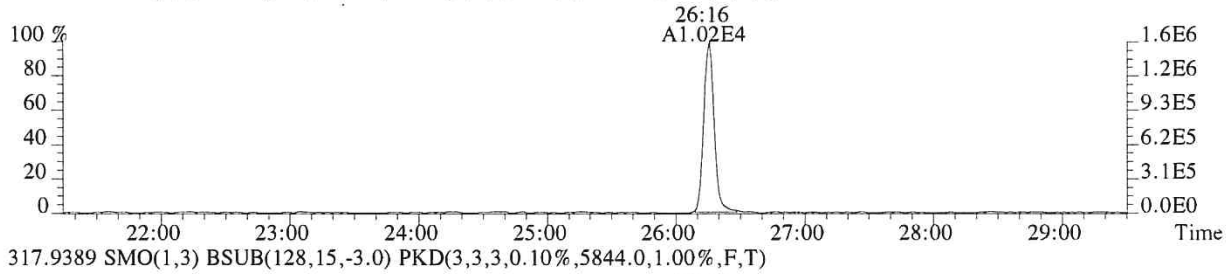
File:P519601 #1-587 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,780.0,1.00%,F,T)



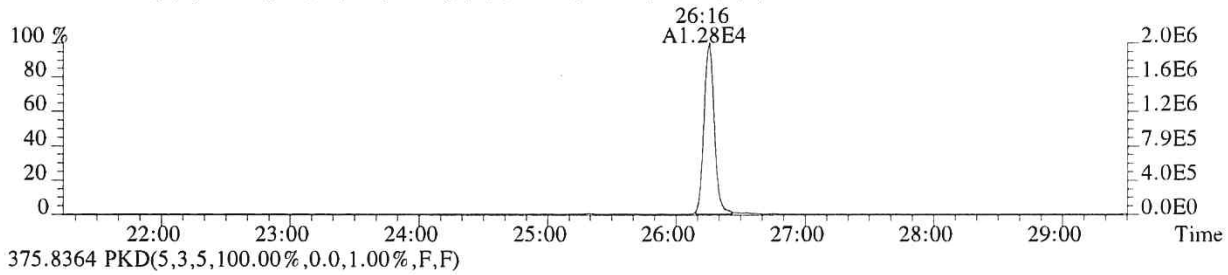
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2132.0,1.00%,F,T)



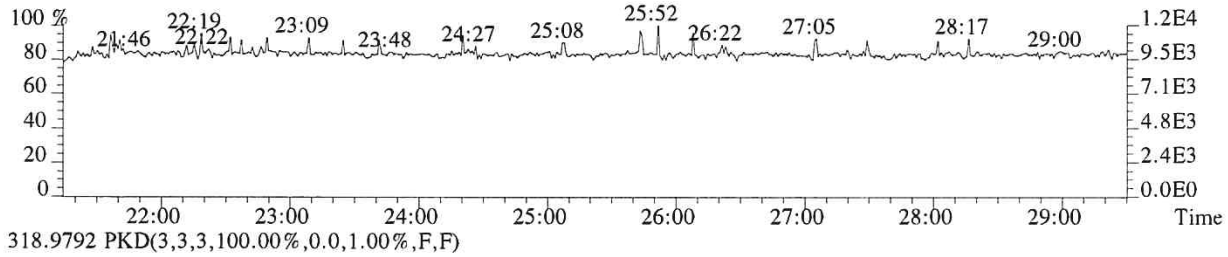
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10364.0,1.00%,F,T)



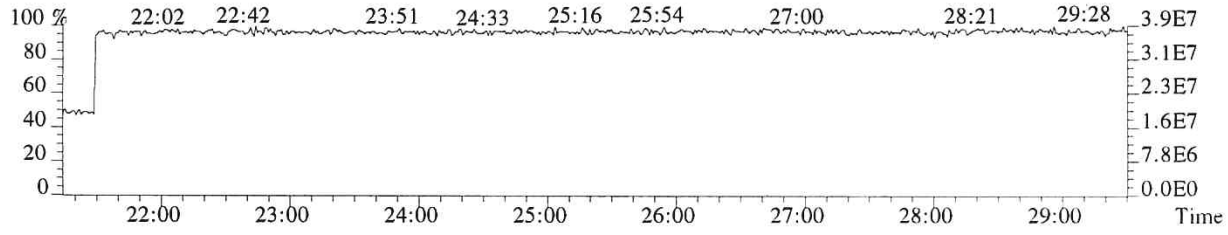
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5844.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

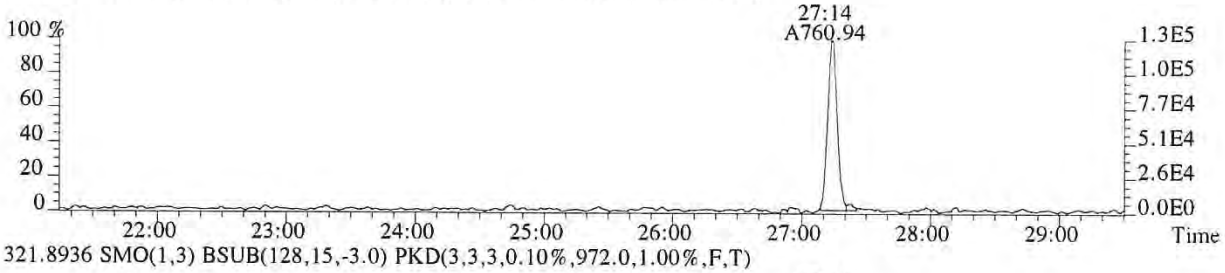


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

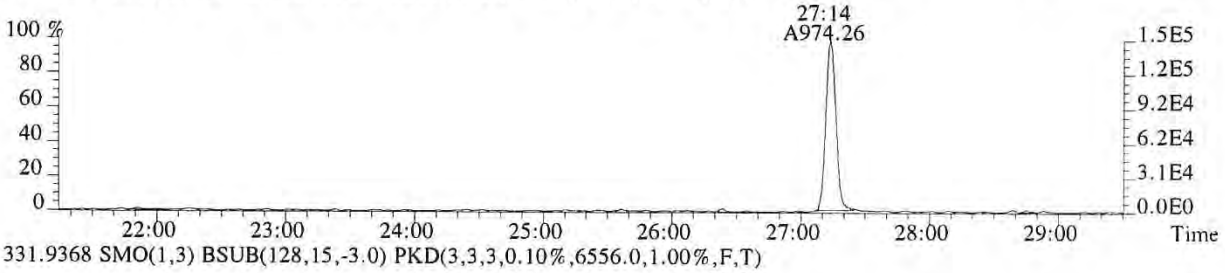


059342

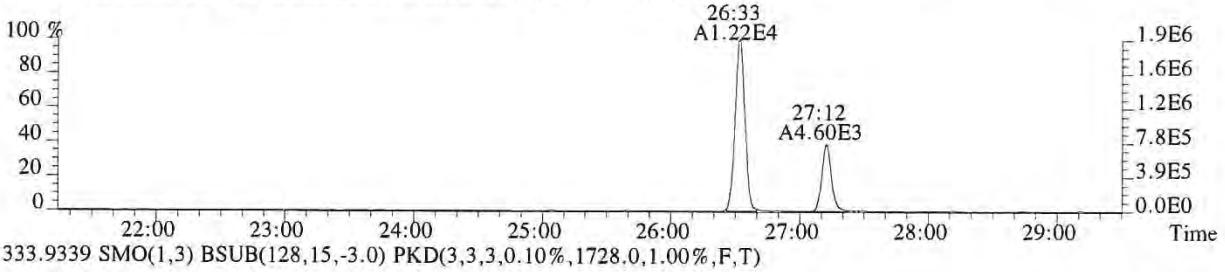
File:P519601 #1-587 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2468.0,1.00%,F,T)



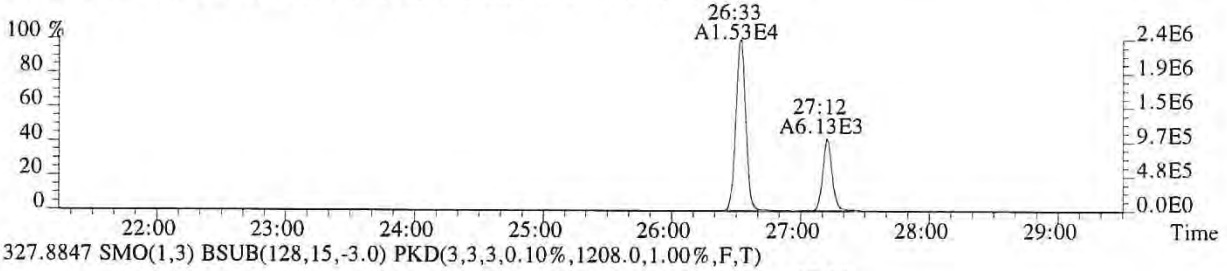
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,972.0,1.00%,F,T)



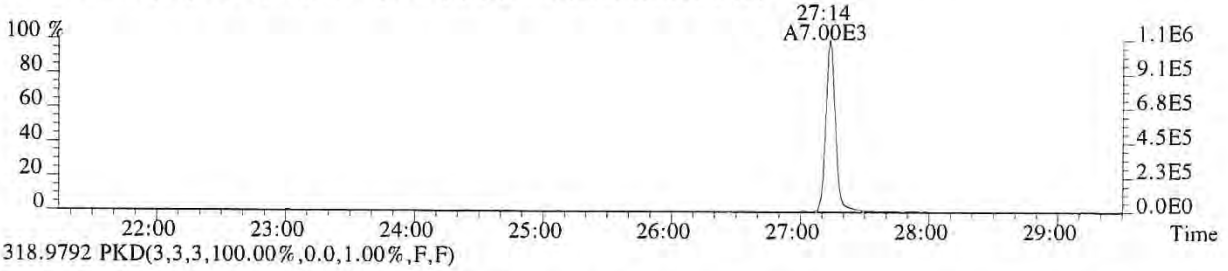
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6556.0,1.00%,F,T)



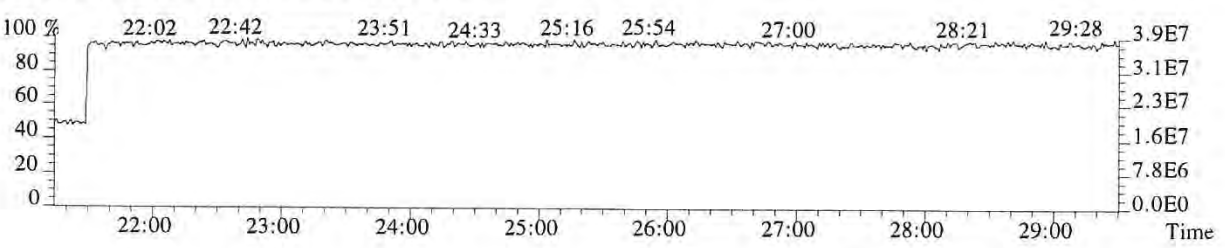
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1728.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1208.0,1.00%,F,T)

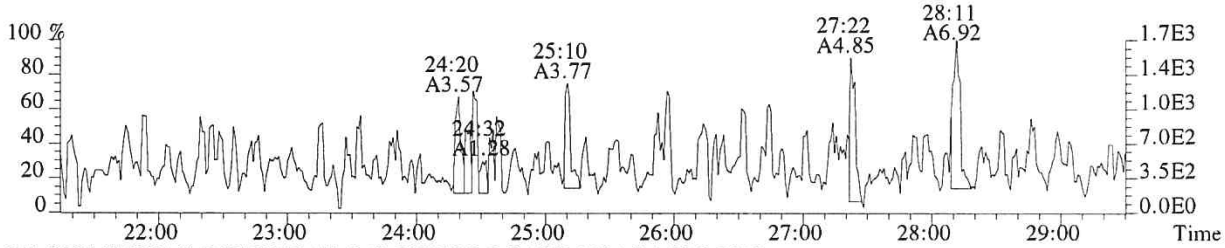


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

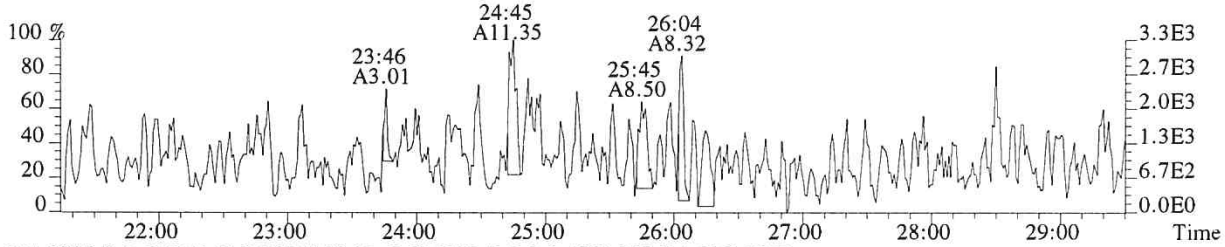


059343

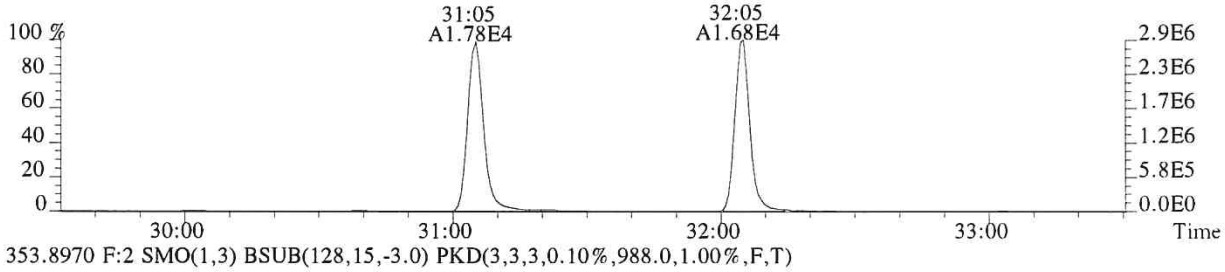
File:P519601 #1-587 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,572.0,1.00%,F,T)



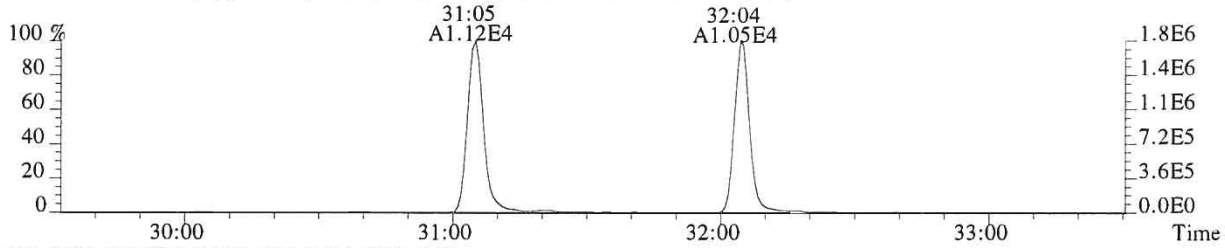
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1184.0,1.00%,F,T)



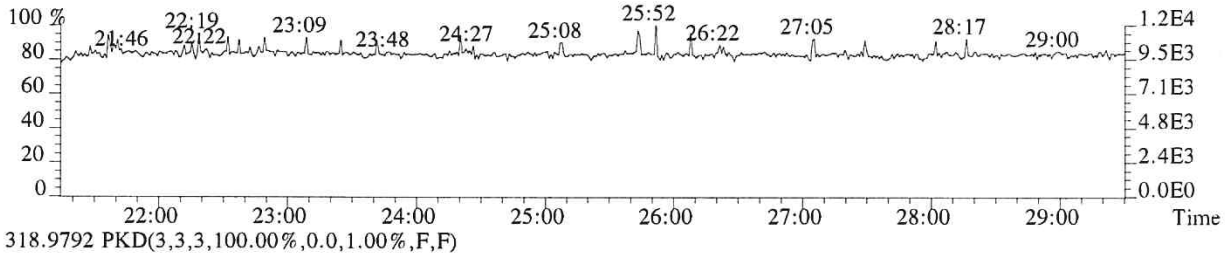
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,280.0,1.00%,F,T)



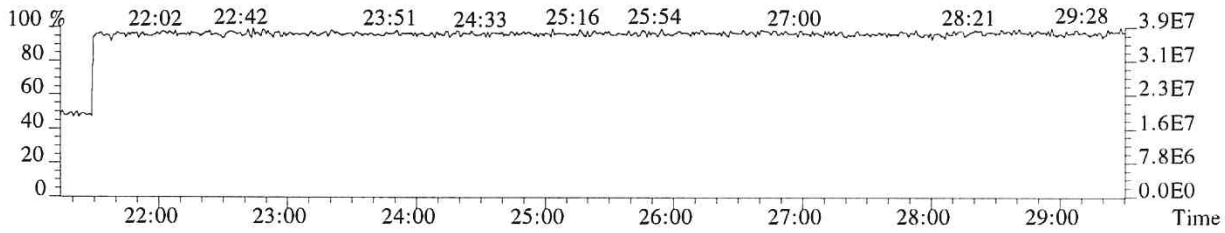
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,988.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

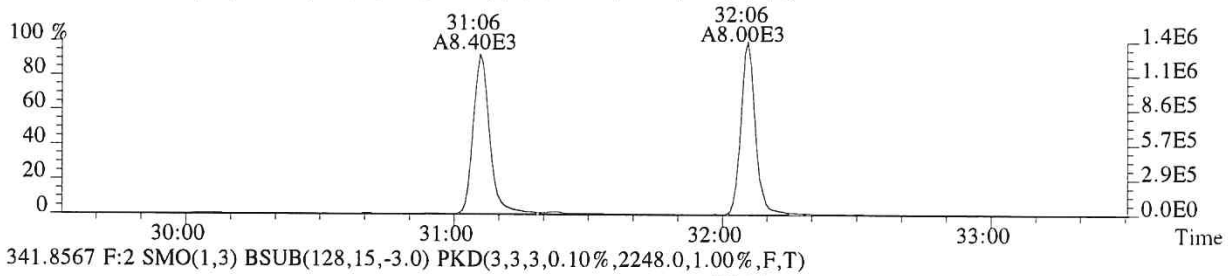


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

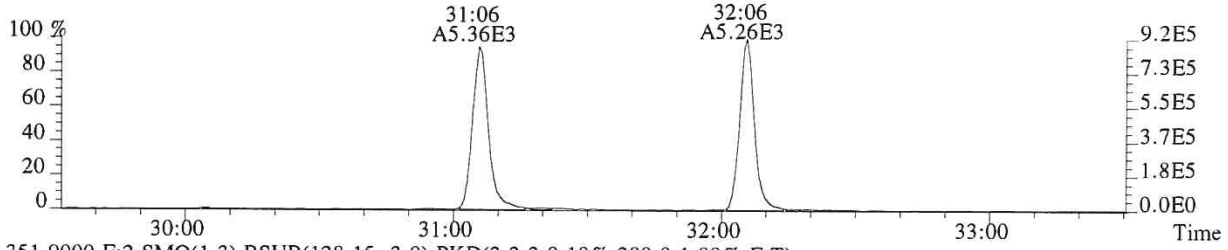


059344

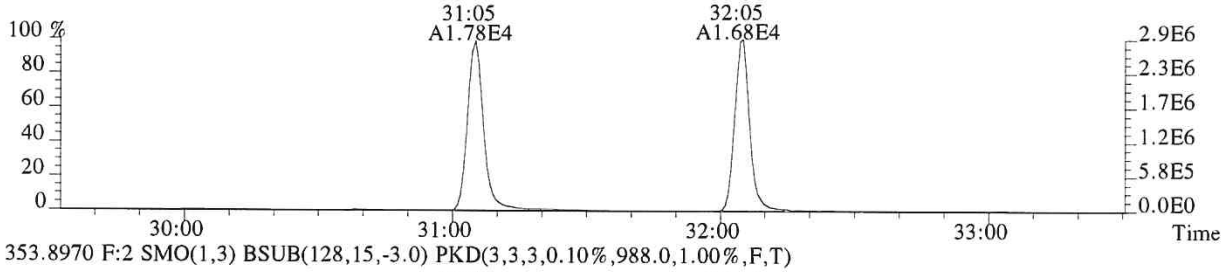
File:P519601 #1-358 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,412.0,1.00%,F,T)



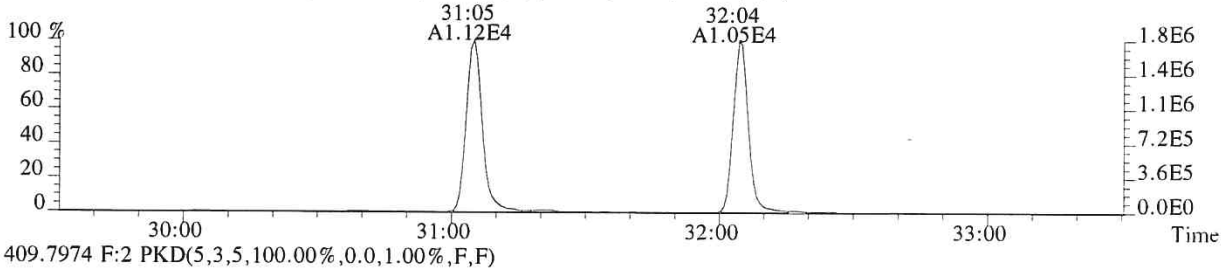
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2248.0,1.00%,F,T)



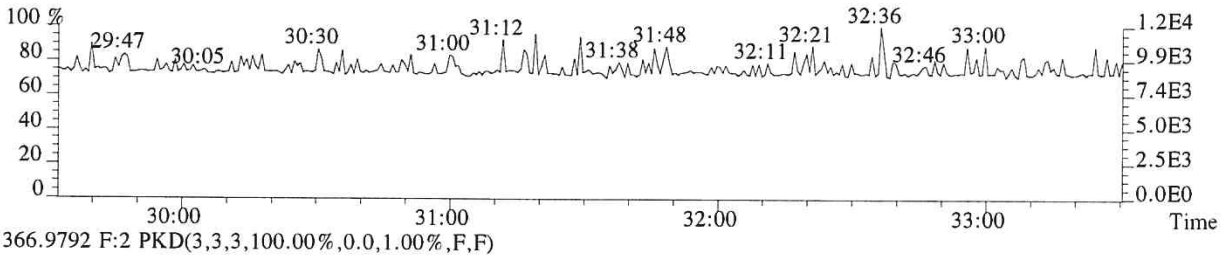
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,280.0,1.00%,F,T)



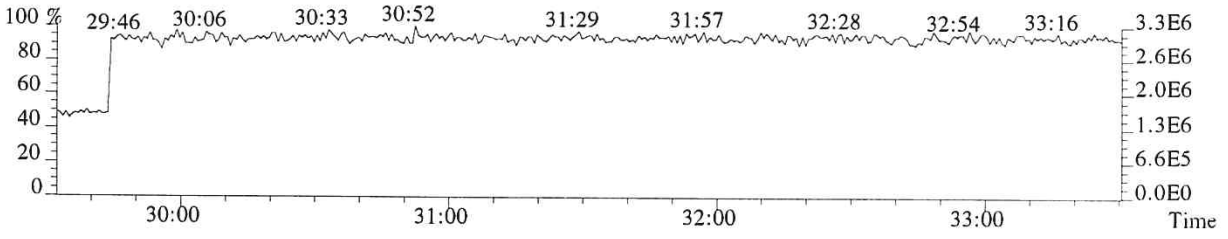
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,988.0,1.00%,F,T)



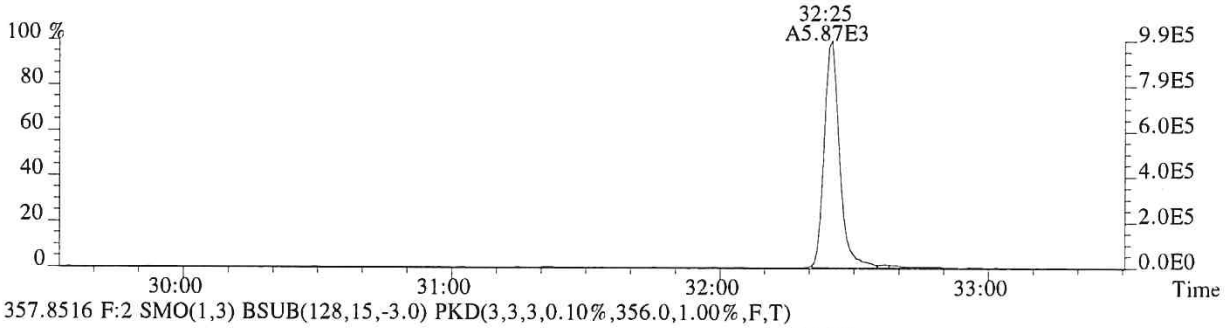
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



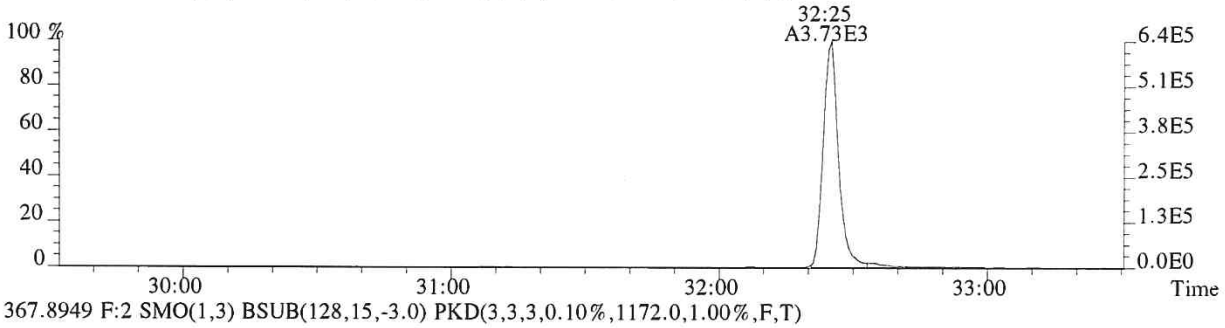
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



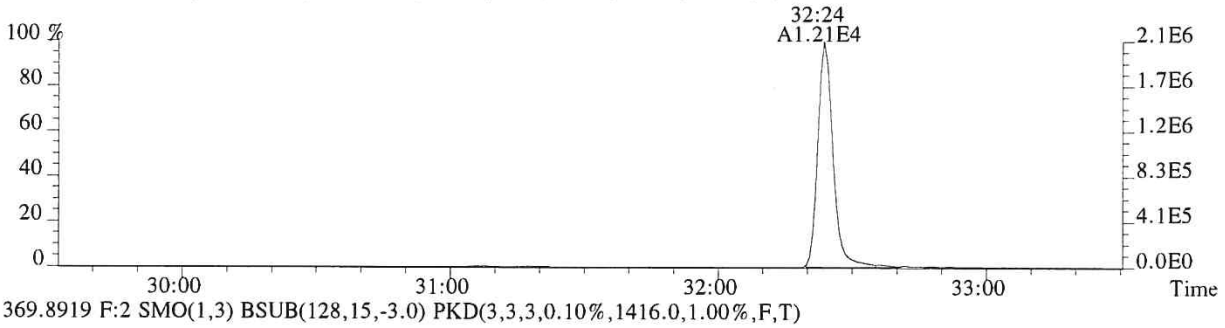
File:P519601 #1-358 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,840.0,1.00%,F,T)



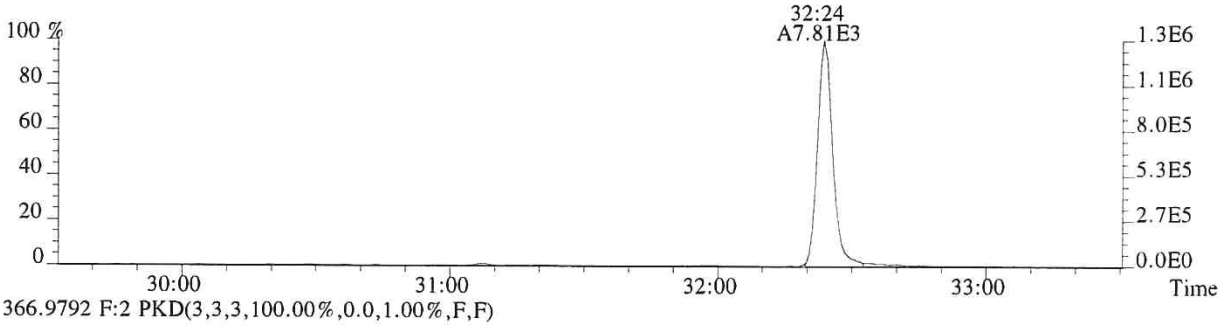
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,356.0,1.00%,F,T)



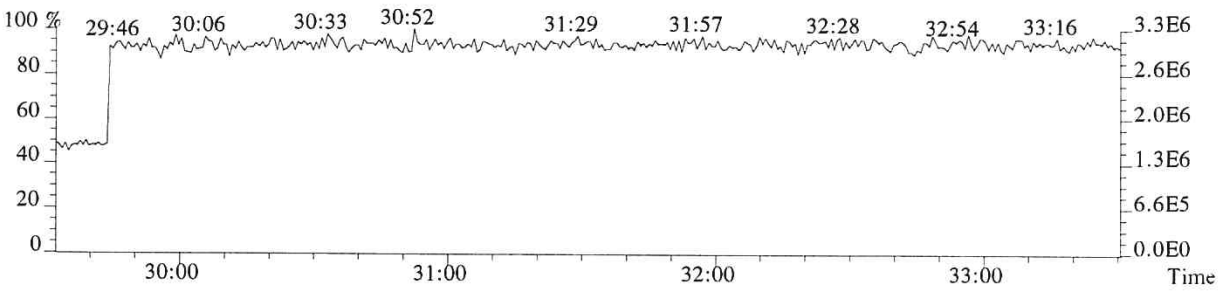
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1172.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1416.0,1.00%,F,T)

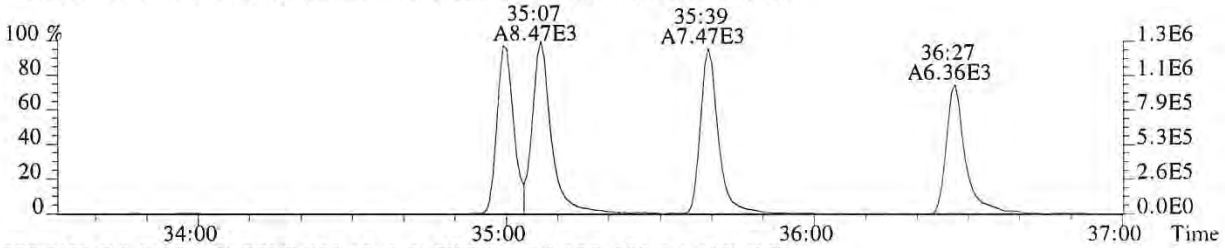


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

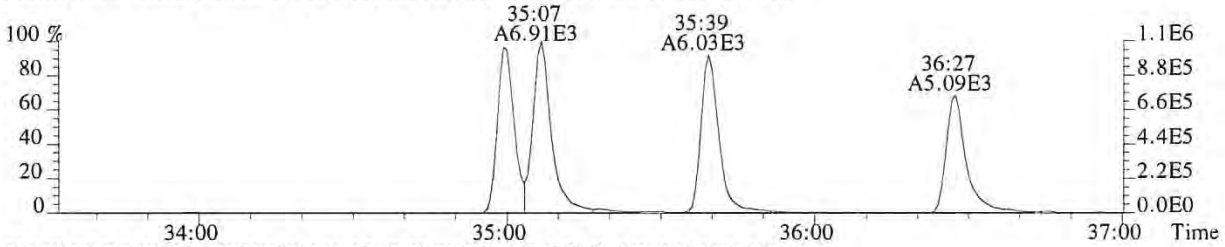


059346

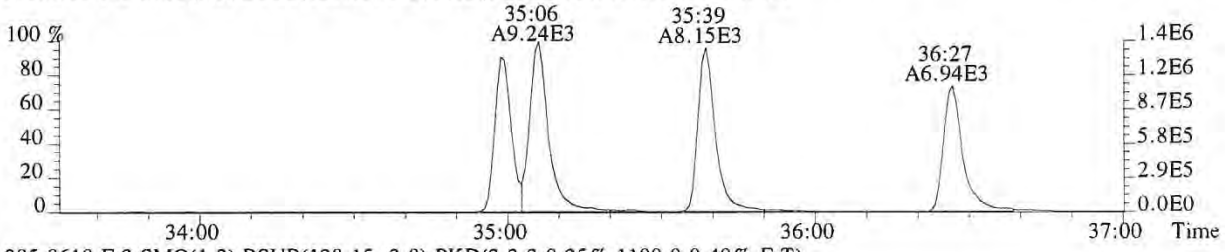
File:P519601 #1-312 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,848.0,0.40%,F,T)



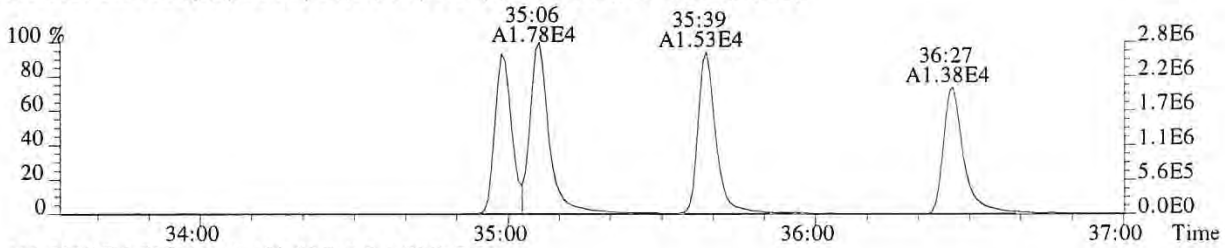
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,388.0,0.40%,F,T)



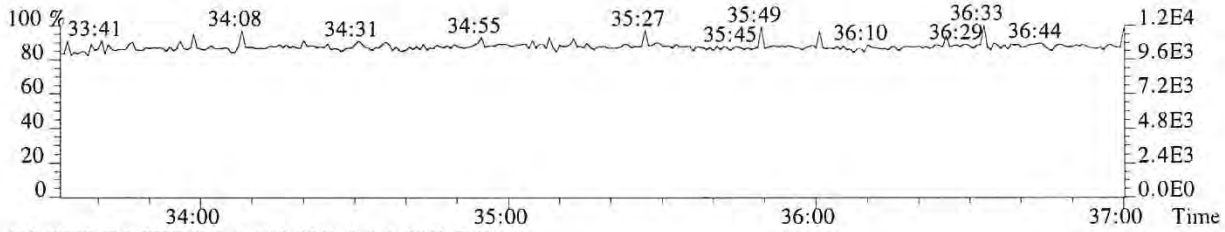
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,448.0,0.40%,F,T)



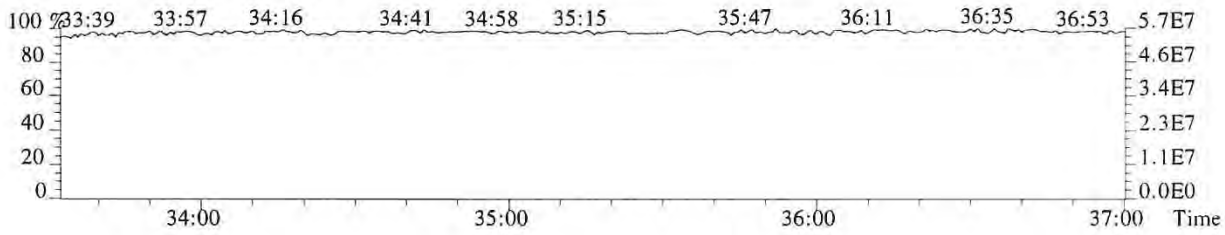
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1100.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

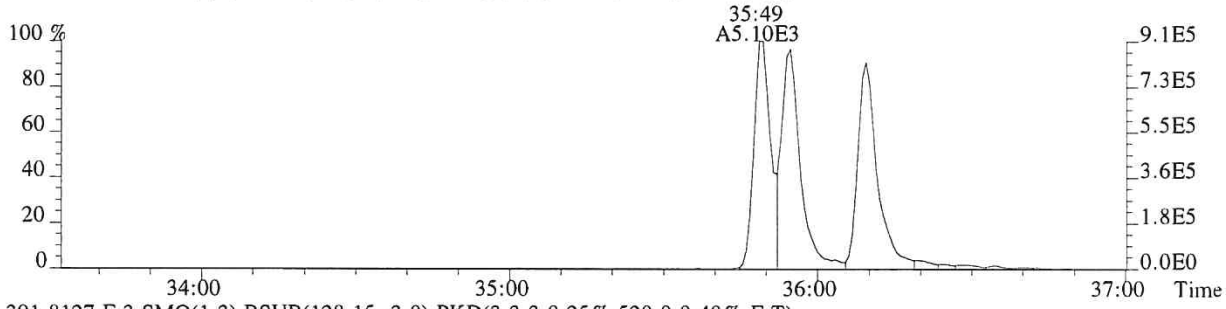


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

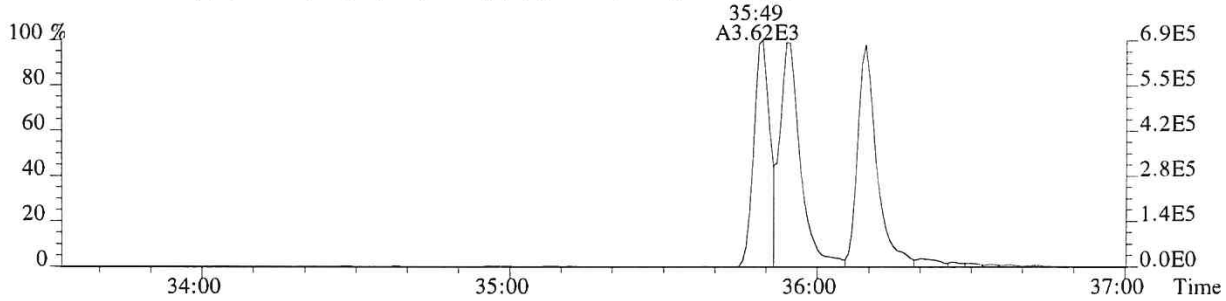


059347

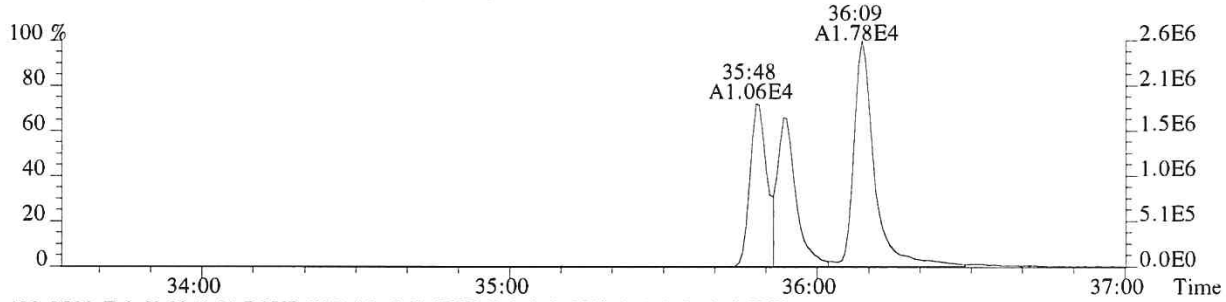
File:P519601 #1-312 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,516.0,0.40%,F,T)



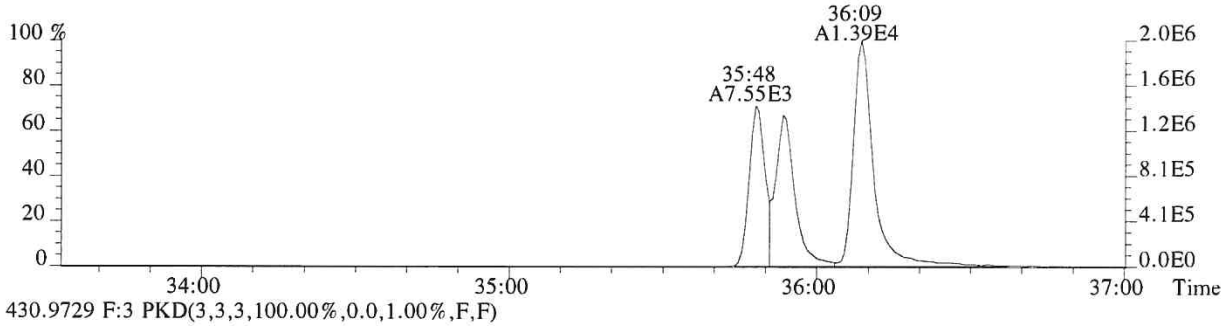
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,520.0,0.40%,F,T)



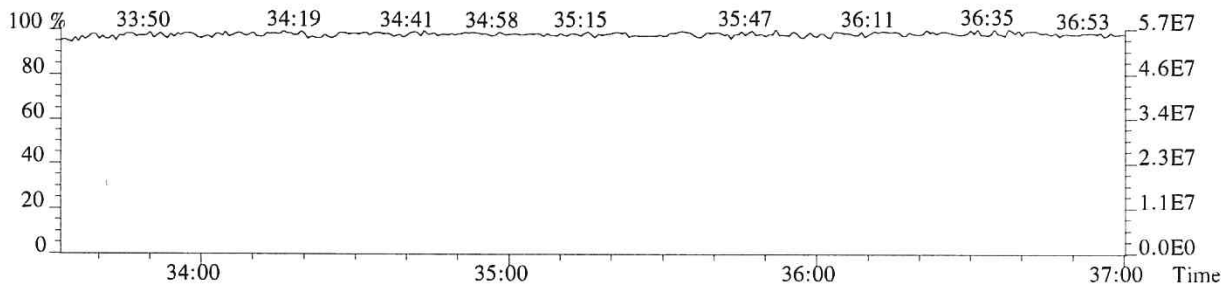
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,664.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,812.0,0.40%,F,T)



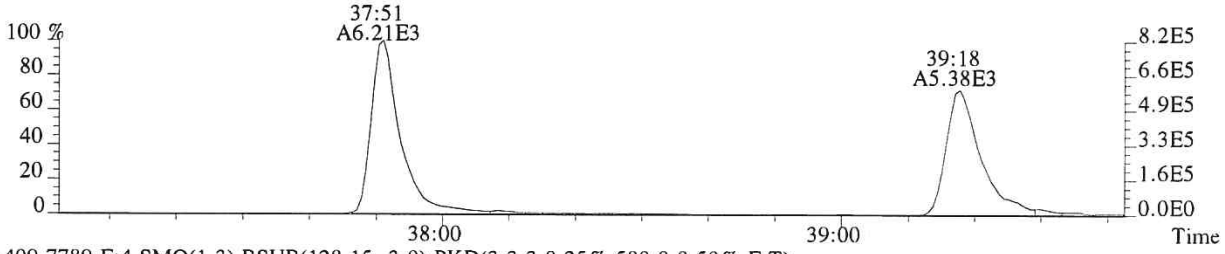
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



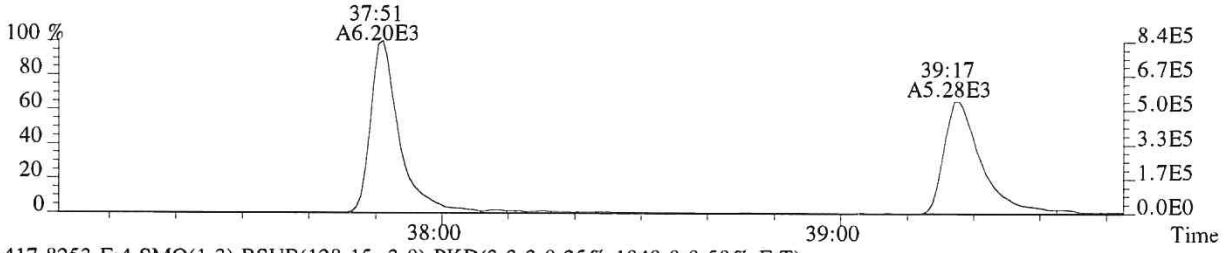
059348

File:P519601 #1-241 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03

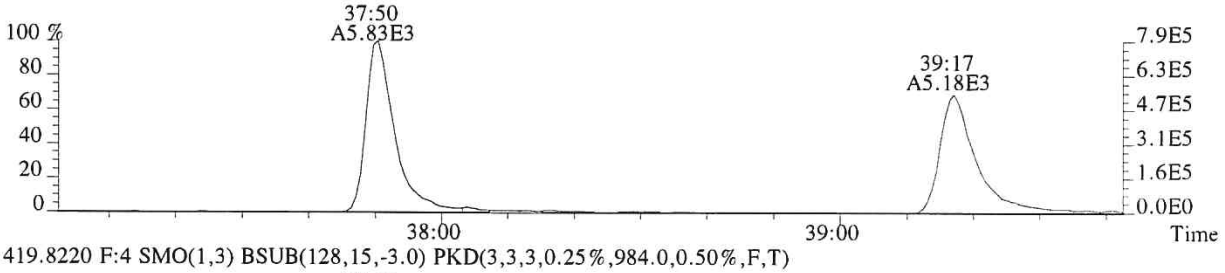
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,300.0,0.50%,F,T)



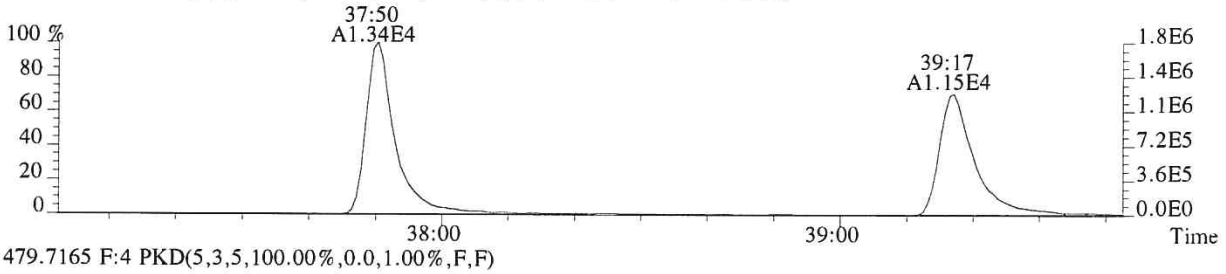
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,580.0,0.50%,F,T)



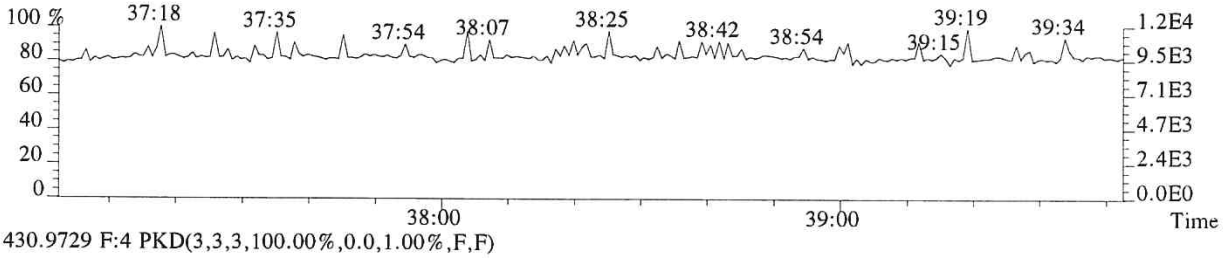
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1040.0,0.50%,F,T)



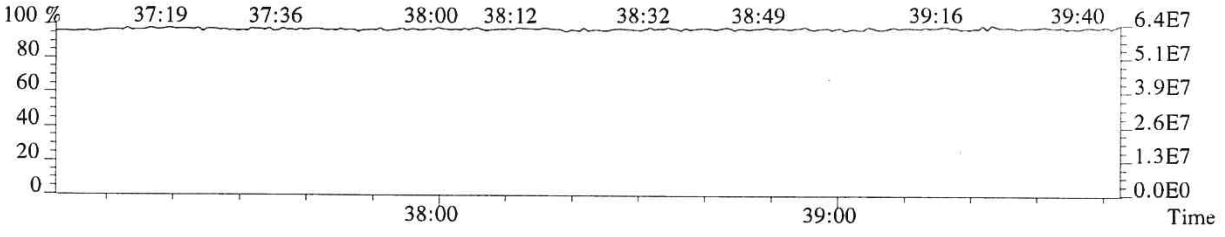
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,984.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

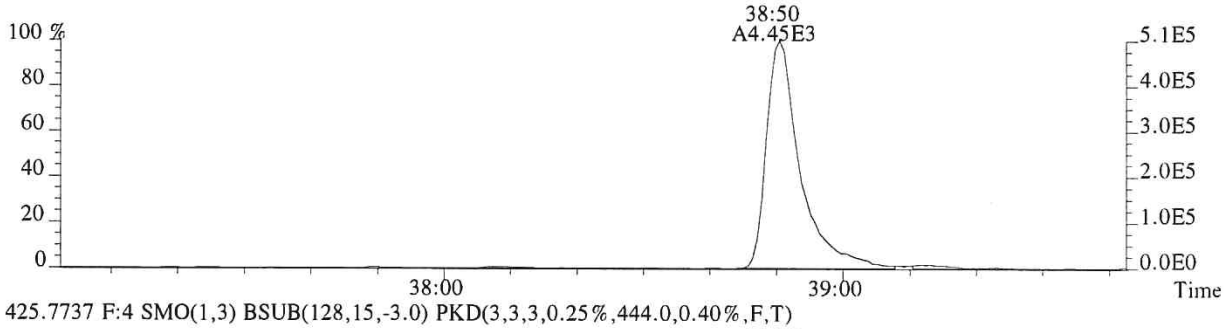


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

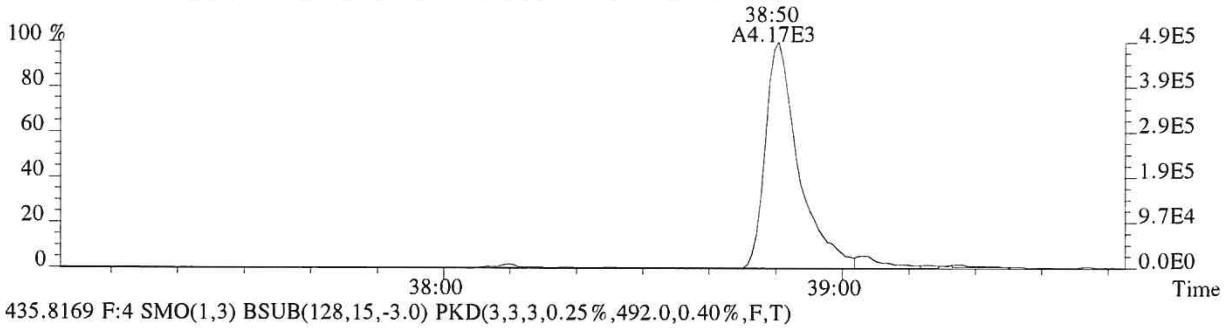


059349

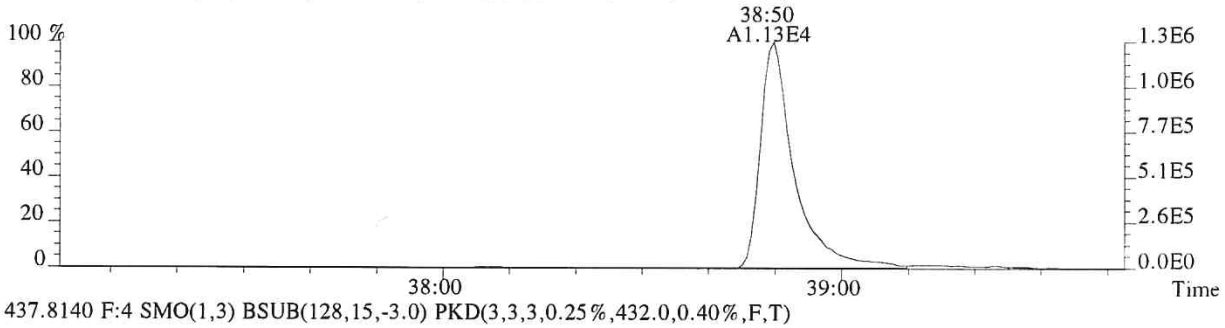
File:P519601 #1-241 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,544.0,0.40%,F,T)



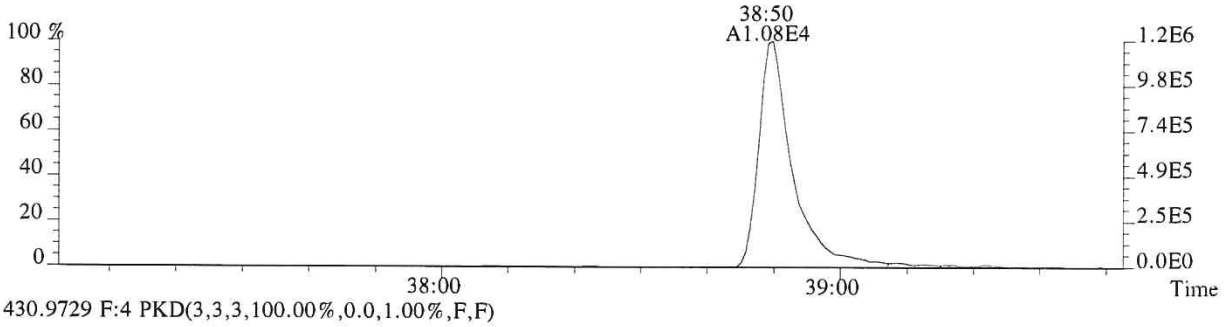
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,444.0,0.40%,F,T)



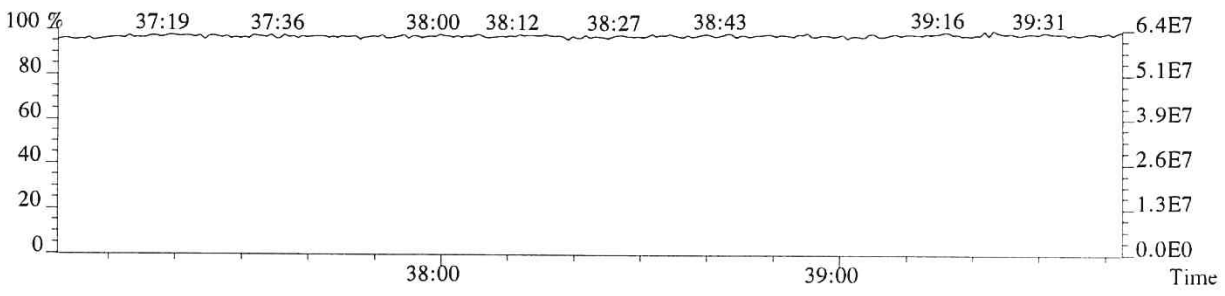
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,492.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,432.0,0.40%,F,T)

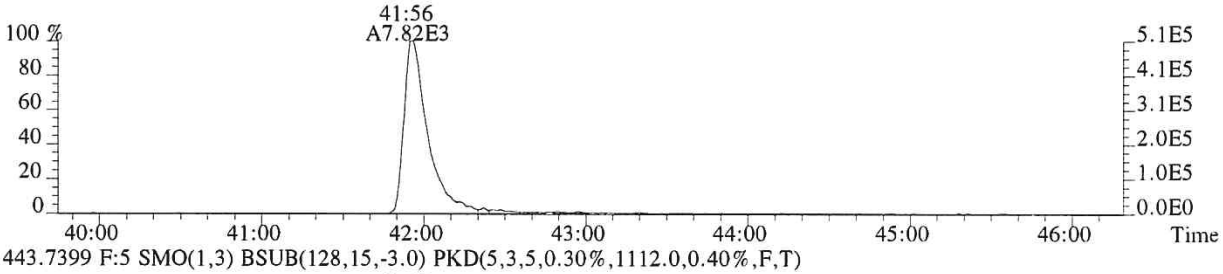


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

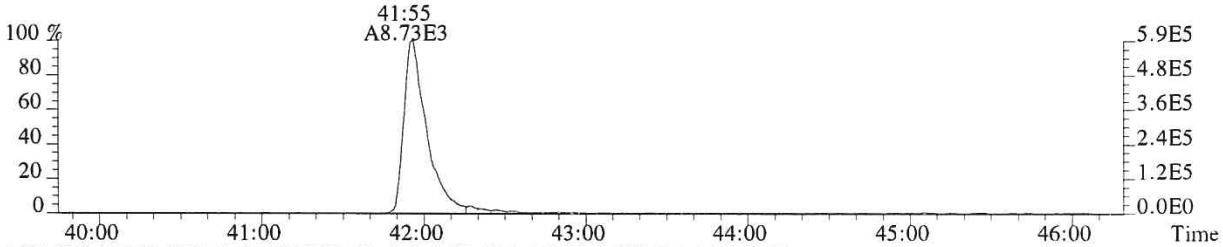


059350

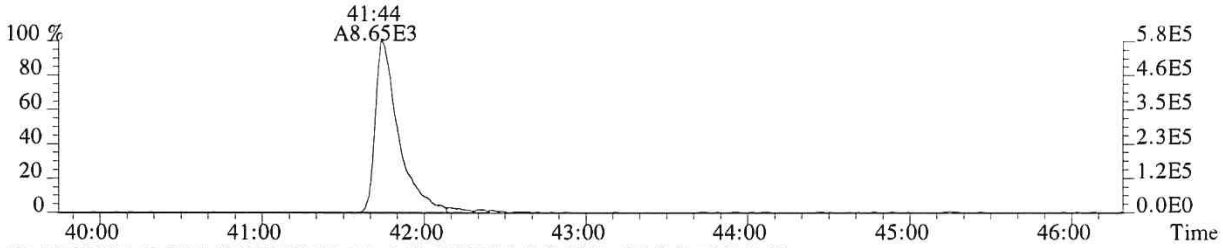
File:P519601 #1-592 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,512.0,0.40%,F,T)



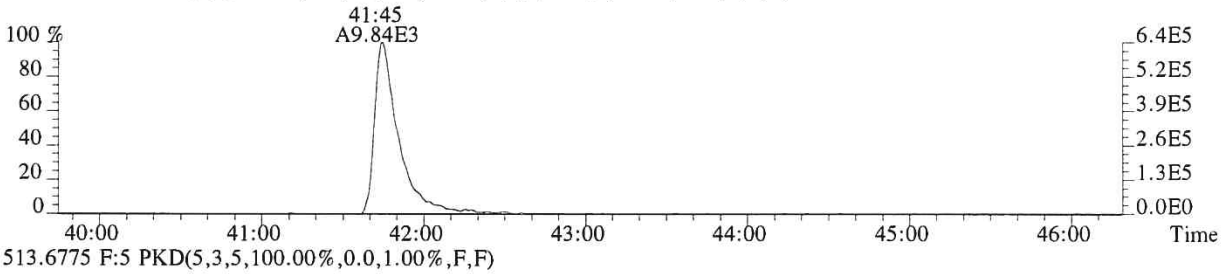
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1112.0,0.40%,F,T)



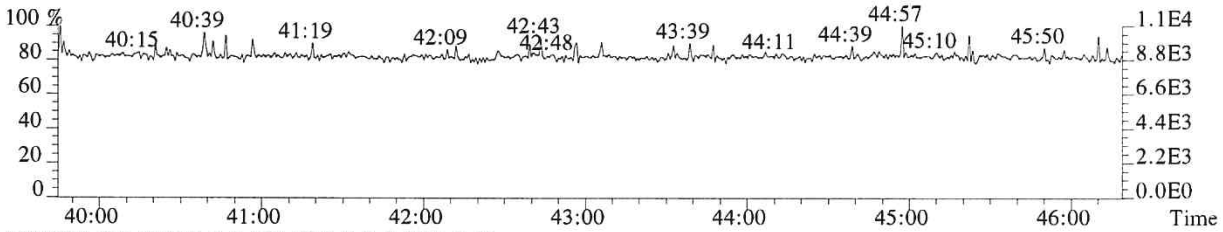
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,576.0,0.40%,F,T)



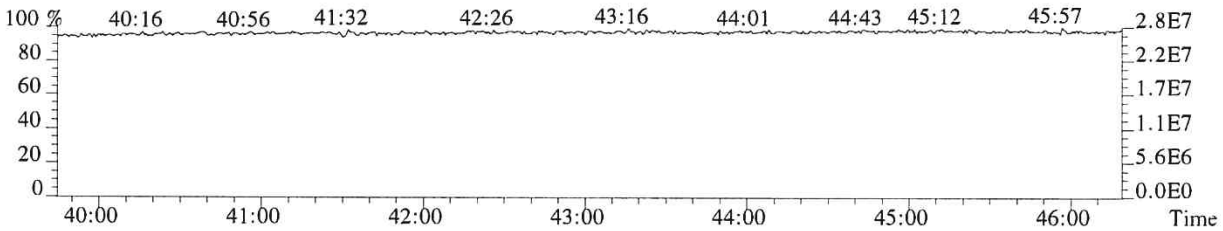
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,408.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

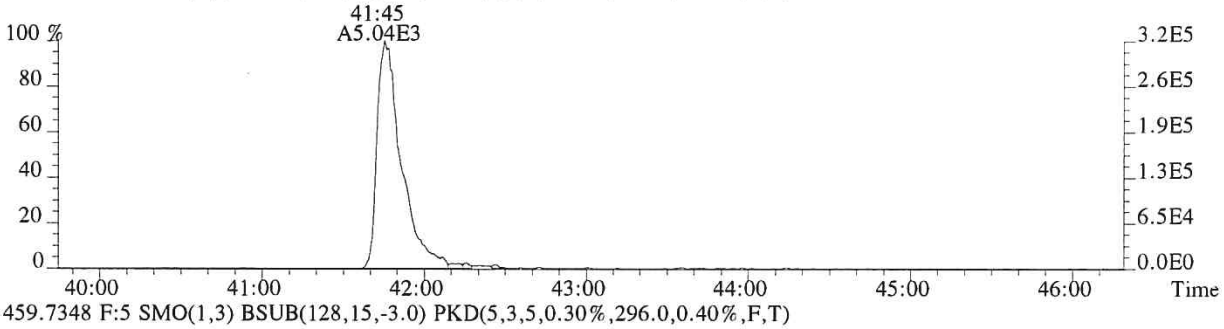


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

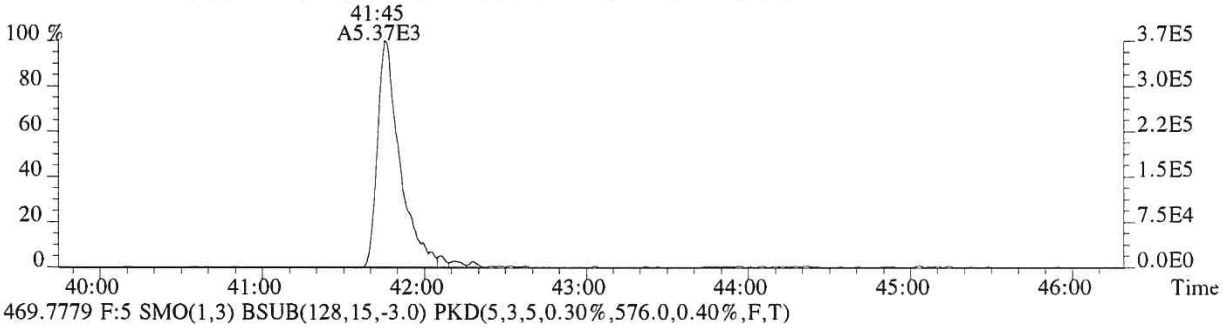


059351

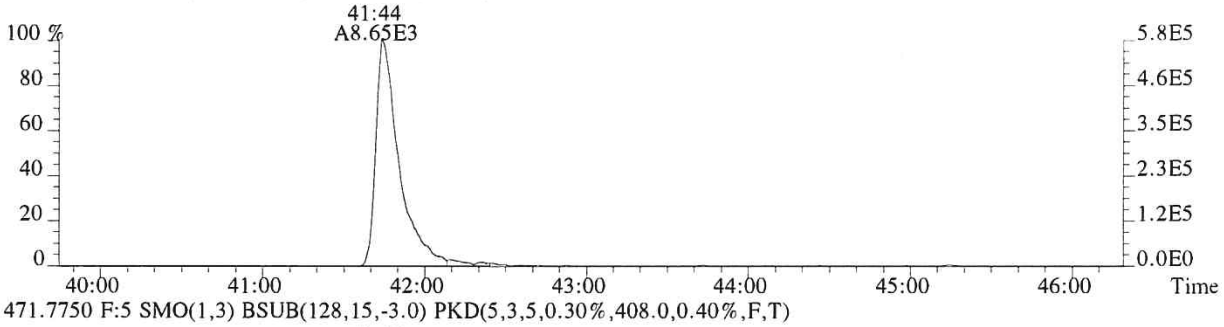
File:P519601 #1-592 Acq:24-DEC-2018 20:27:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800512-03
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,368.0,0.40%,F,T)



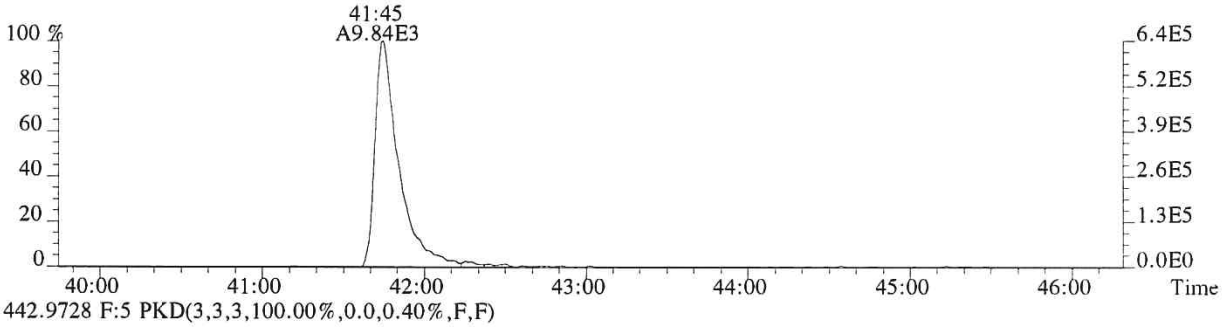
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,296.0,0.40%,F,T)



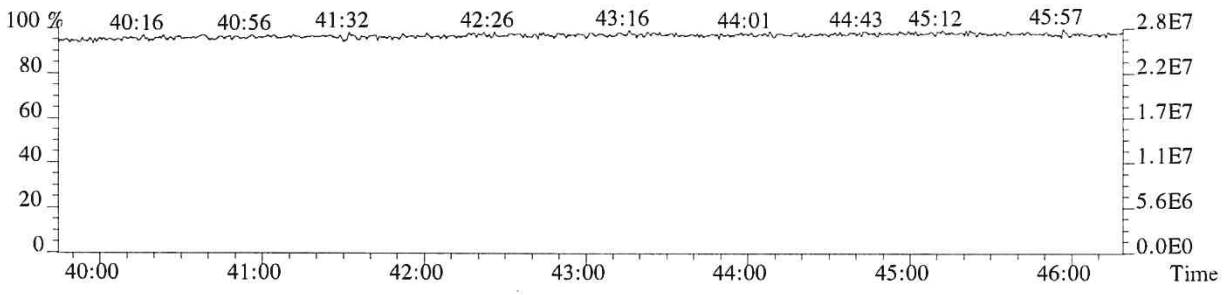
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,576.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,408.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059352

Continuing Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: 1519494

Date: 12/19 - 12/20/18

Circle one: (Beginning) / Ending

Method: (1613) / 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: LKL

Second QC: WW

ccalqc.xls 07/17/12

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 01/24/18

Init. Calib.Times: 11:44

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P519495	19-DEC-18	16:26:45
194503	CS3	P519494	19-DEC-18	15:32:52
METHOD BLANK	EQ1800507-01	P519496	19-DEC-18	17:14:34
METHOD BLANK	EQ1800510-01	P519497	19-DEC-18	18:03:10
SL0023	E1801093-006	P519498	19-DEC-18	18:51:45
SL001	E1801093-016	P519499	19-DEC-18	19:40:23
SL0035	E1801094-006	P519500	19-DEC-18	20:28:59
SL0015	E1801094-019	P519501	19-DEC-18	21:17:37
SL0016	E1801094-020	P519502	19-DEC-18	22:06:15
SL0209	E1801096-009	P519503	19-DEC-18	22:54:52
SL0210	E1801096-010	P519504	19-DEC-18	23:43:31
SL0066	E1801096-011	P519505	20-DEC-18	00:32:08
SL0067	E1801096-012	P519506	20-DEC-18	01:20:46
DLCS	EQ1800510-03	P519507	20-DEC-18	02:09:25

Sample List Report — **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS07.PRO\SampleDB\20181219C.SPL
Last Modified: Thursday, December 20, 2018 08:45:54 Central Standard Time
Printed: Thursday, December 20, 2018 08:45:55 Central Standard Time

OPUS 5 NET: P519494 RES

	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/19/18	15:32	P519494	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2	LKL	#RMS check 15:27
2		16:26	P519495	WINDOWDEFINE	192977	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		17:14	P519496	MB	EQ1800507-01	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4		18:03	P519497	MB	EQ1800510-01	EPA1613_ALS	Dioxin_ALS	Tray1:4		
5		18:51	P519498	E1801093-006	E1801093-006	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		19:40	P519499	E1801093-016	E1801093-016	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		20:28	P519500	E1801094-006	E1801094-006	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		21:17	P519501	E1801094-019	E1801094-019	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		22:06	P519502	E1801094-020	E1801094-020	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		22:54	P519503	E1801096-009	E1801096-009	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		23:43	P519504	E1801096-010	E1801096-010	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12	12/20/18	00:32	P519505	E1801096-011	E1801096-011	EPA1613_ALS	Dioxin_ALS	Tray1:12		
13		01:20	P519506	E1801096-012	E1801096-012	EPA1613_ALS	Dioxin_ALS	Tray1:13		
14		02:09	P519507	DLCS	EQ1800510-03	EPA1613_ALS	Dioxin_ALS	Tray1:14		
15		03:06	P519508	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2		#RMS check 03:06
16			---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2		
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:18	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---
20	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:20	---	---
21	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:21	---	---
22	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---
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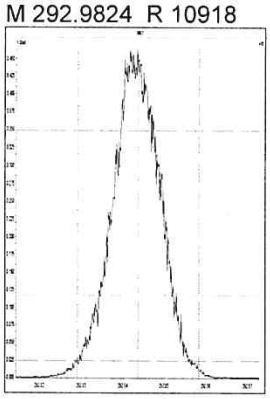
37	---	---	---	---	---	---	---	---	---	---
38	---	---	---	---	---	---	---	---	---	---
39	---	---	---	---	---	---	---	---	---	---

LKL 12/20/18

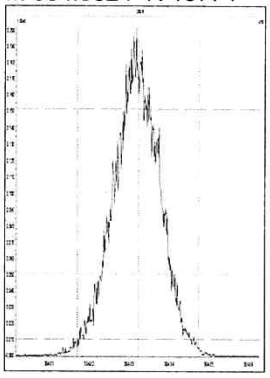
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, December 19, 2018 15:27:44 Central Standard Time

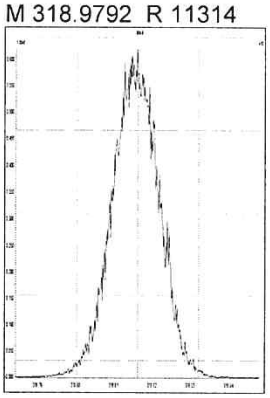
M 292.9824 R 10918



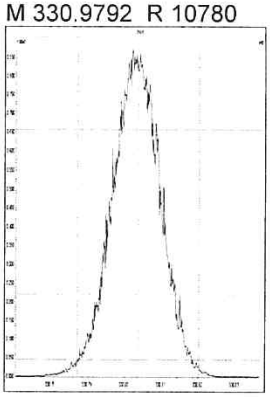
M 304.9824 R 10774



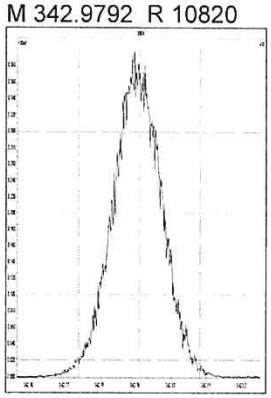
M 318.9792 R 11314



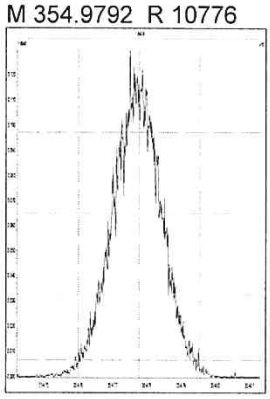
M 330.9792 R 10780



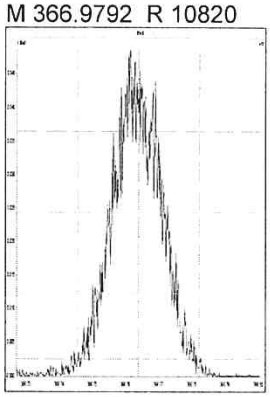
M 342.9792 R 10820



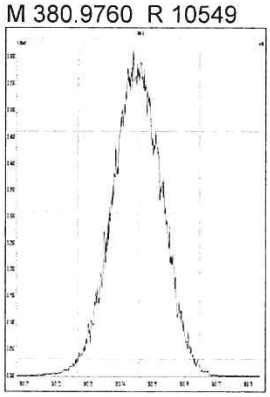
M 354.9792 R 10776



M 366.9792 R 10820



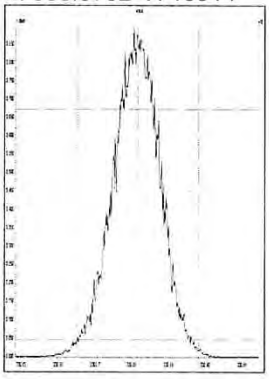
M 380.9760 R 10549



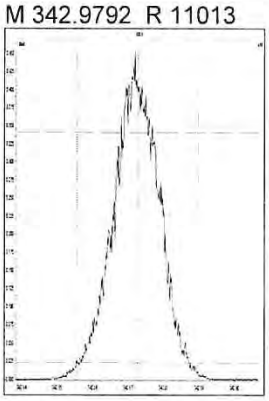
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, December 19, 2018 15:28:49 Central Standard Time

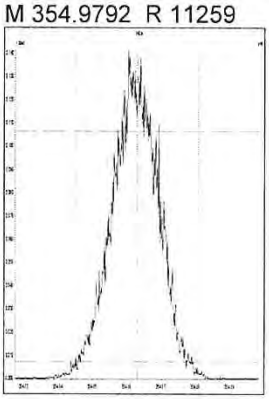
M 330.9792 R 10914



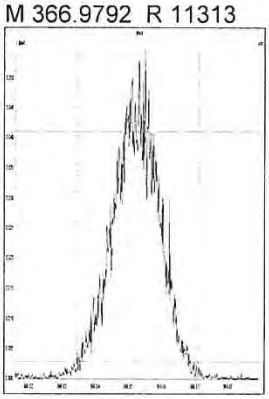
M 342.9792 R 11013



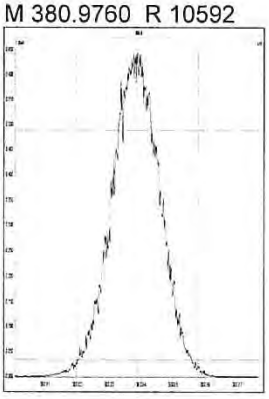
M 354.9792 R 11259



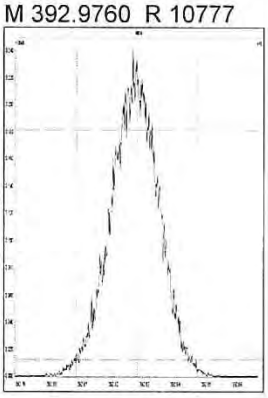
M 366.9792 R 11313



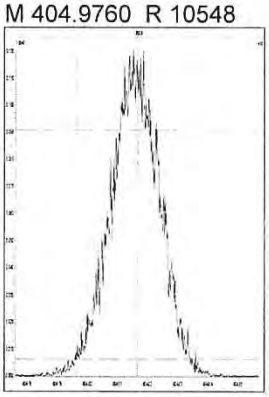
M 380.9760 R 10592



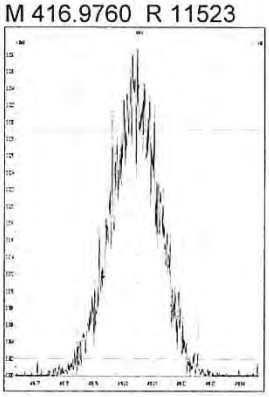
M 392.9760 R 10777



M 404.9760 R 10548



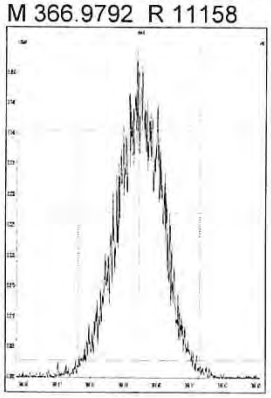
M 416.9760 R 11523



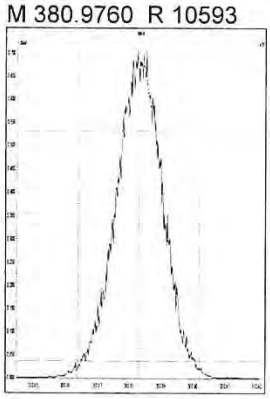
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, December 19, 2018 15:29:53 Central Standard Time

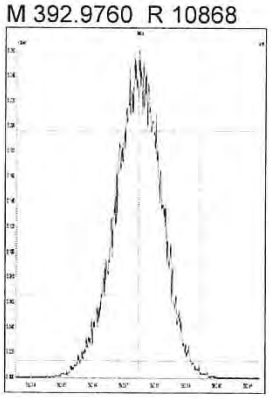
M 366.9792 R 11158



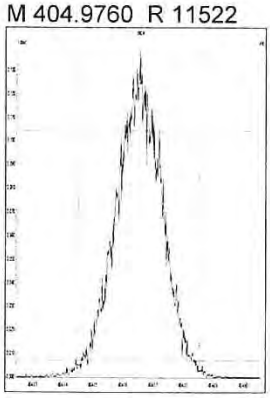
M 380.9760 R 10593



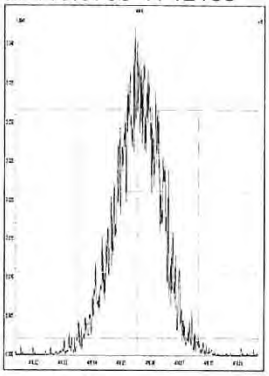
M 392.9760 R 10868



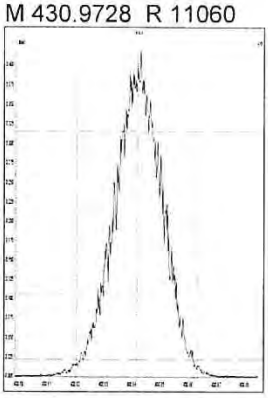
M 404.9760 R 11522



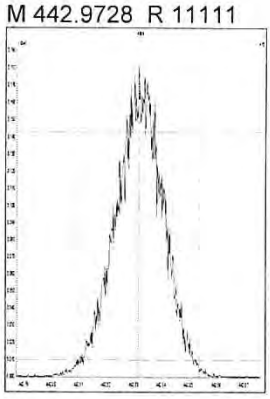
M 416.9760 R 12135



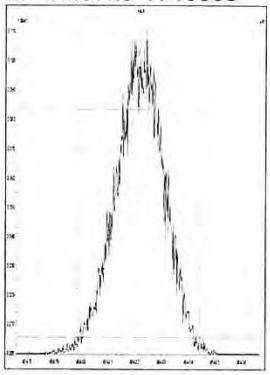
M 430.9728 R 11060



M 442.9728 R 11111



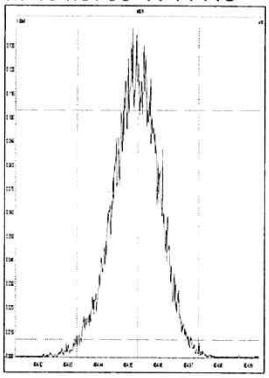
M 454.9728 R 10868



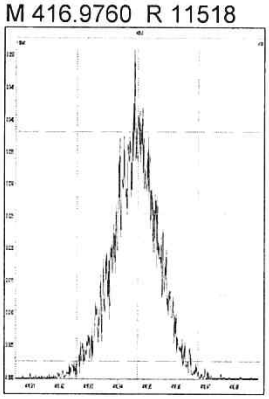
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, December 19, 2018 15:31:00 Central Standard Time

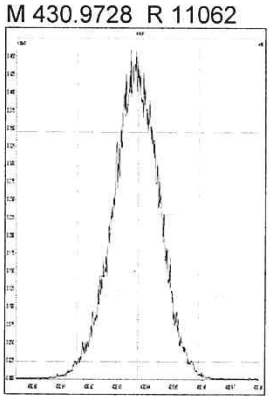
M 404.9760 R 11415



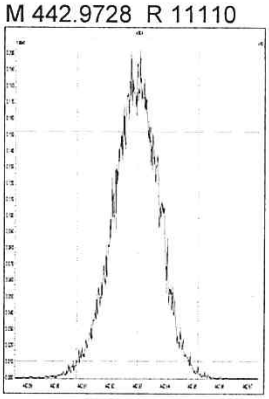
M 416.9760 R 11518



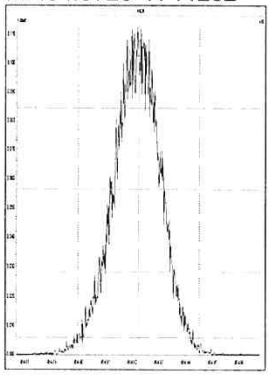
M 430.9728 R 11062



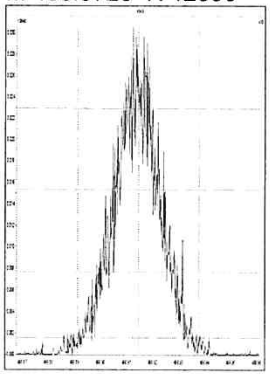
M 442.9728 R 11110



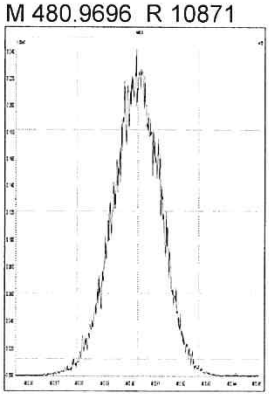
M 454.9728 R 11262



M 466.9728 R 12690



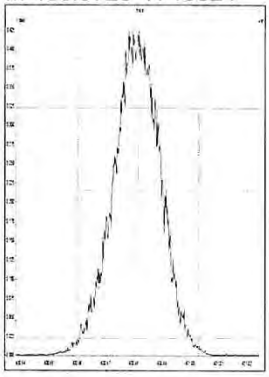
M 480.9696 R 10871



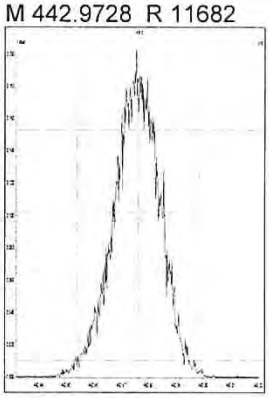
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, December 19, 2018 15:32:06 Central Standard Time

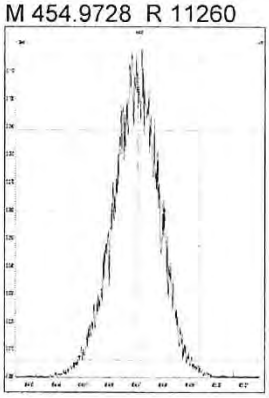
M 430.9728 R 10824



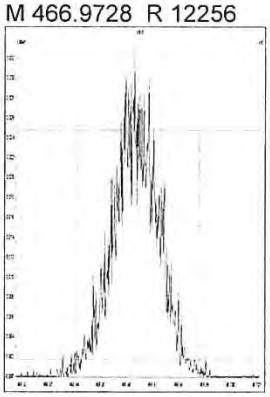
M 442.9728 R 11682



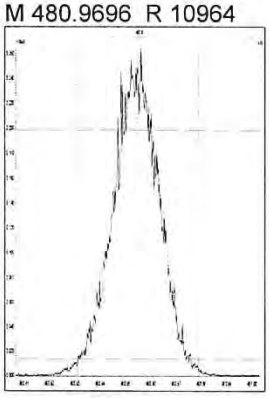
M 454.9728 R 11260



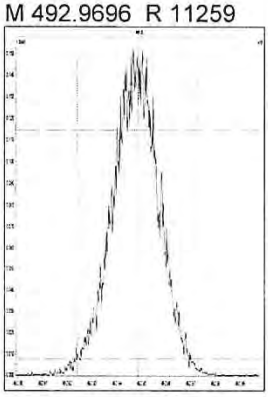
M 466.9728 R 12256



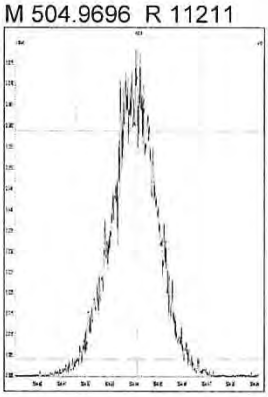
M 480.9696 R 10964



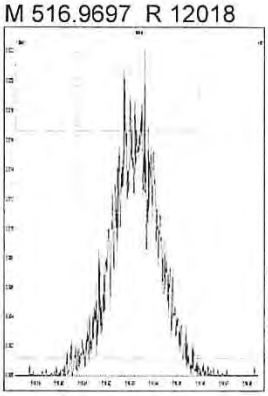
M 492.9696 R 11259



M 504.9696 R 11211

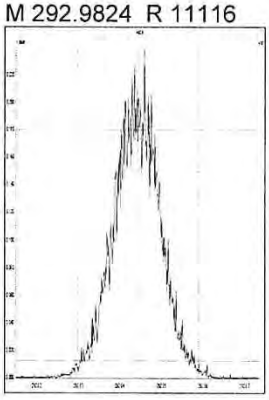


M 516.9697 R 12018

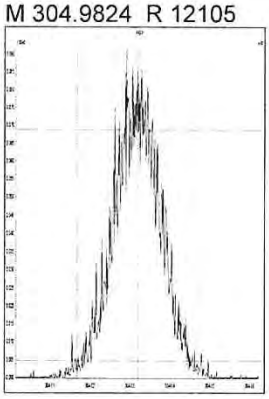


Printed: Thursday, December 20, 2018 03:06:15 Central Standard Time

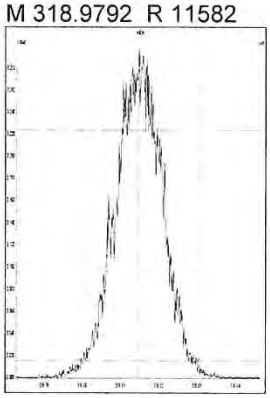
M 292.9824 R 11116



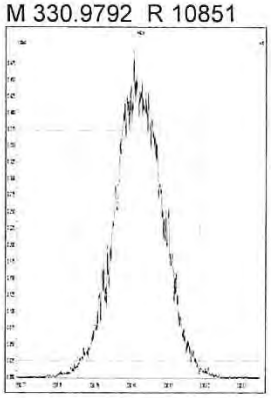
M 304.9824 R 12105



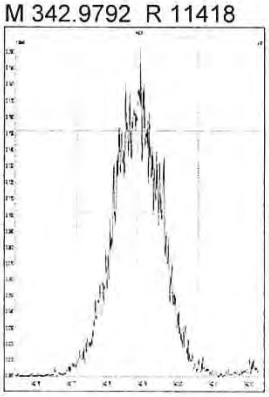
M 318.9792 R 11582



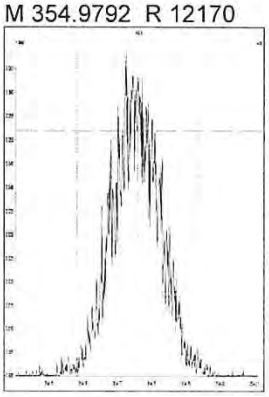
M 330.9792 R 10851



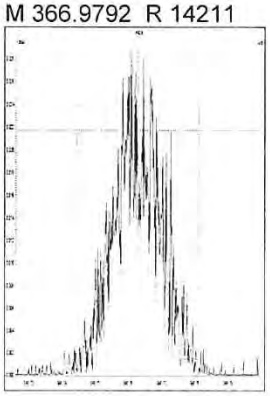
M 342.9792 R 11418



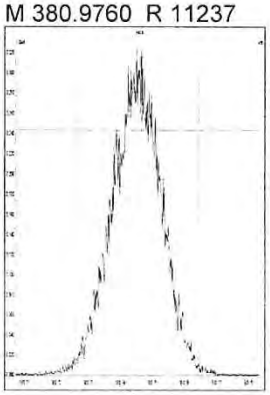
M 354.9792 R 12170



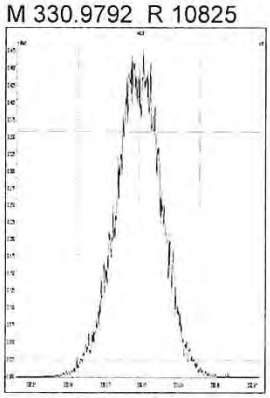
M 366.9792 R 14211



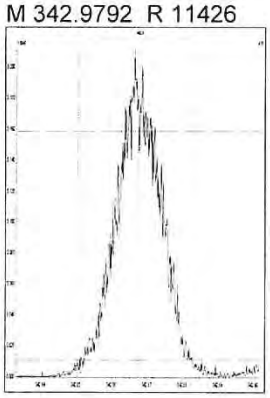
M 380.9760 R 11237



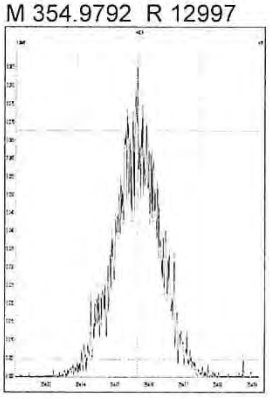
M 330.9792 R 10825



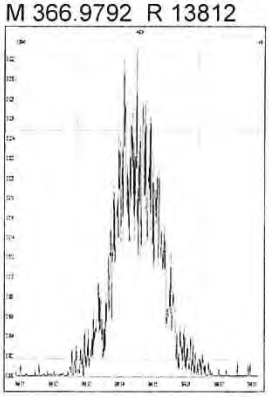
M 342.9792 R 11426



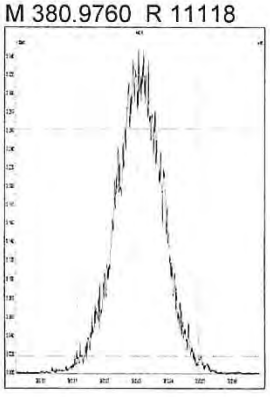
M 354.9792 R 12997



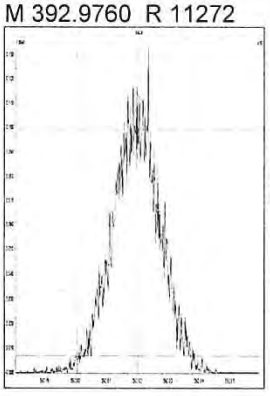
M 366.9792 R 13812



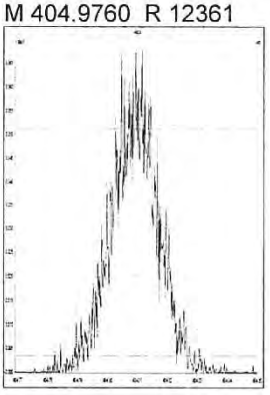
M 380.9760 R 11118



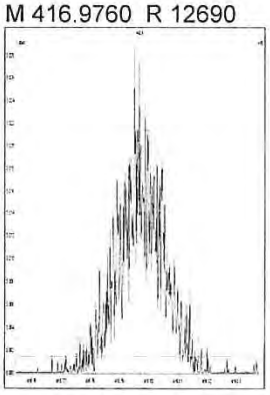
M 392.9760 R 11272



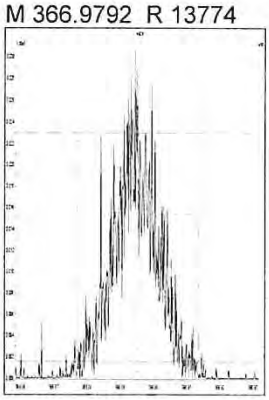
M 404.9760 R 12361



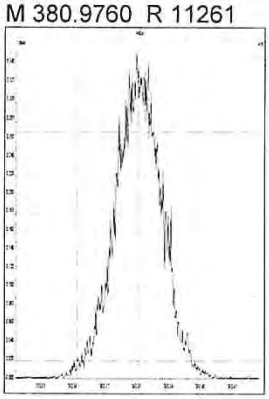
M 416.9760 R 12690



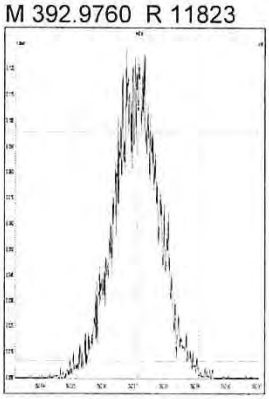
M 366.9792 R 13774



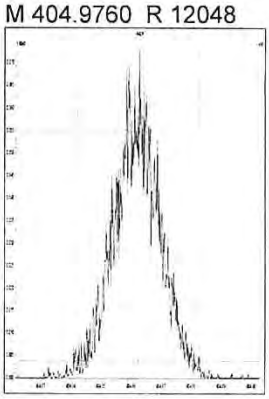
M 380.9760 R 11261



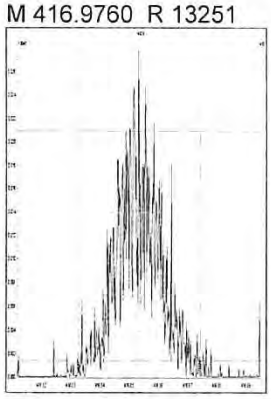
M 392.9760 R 11823



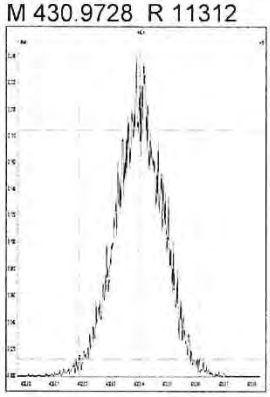
M 404.9760 R 12048



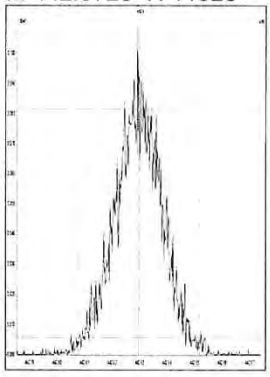
M 416.9760 R 13251



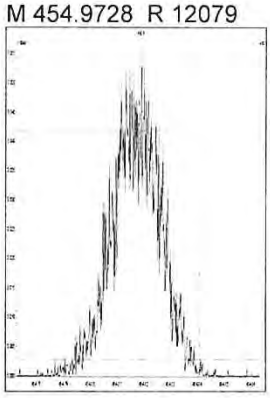
M 430.9728 R 11312



M 442.9728 R 11628



M 454.9728 R 12079



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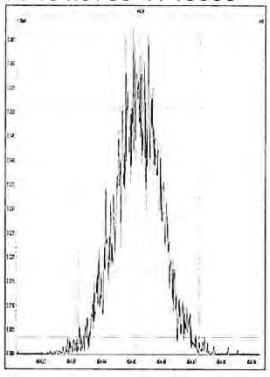
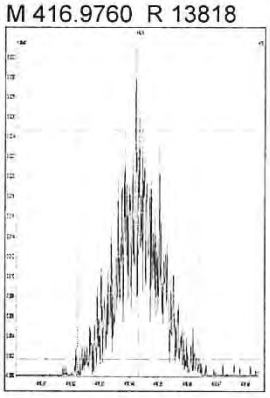
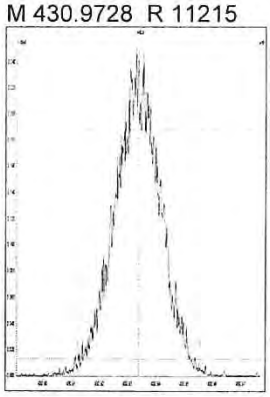


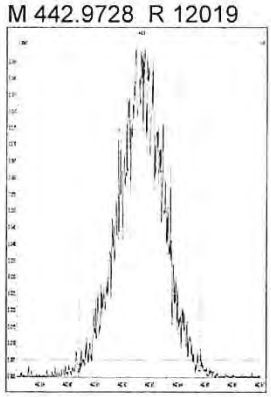
M 416.9760 R 13818



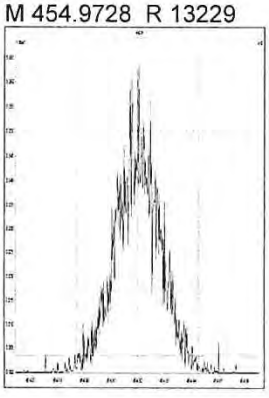
M 430.9728 R 11215



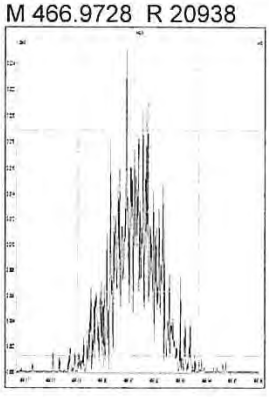
M 442.9728 R 12019



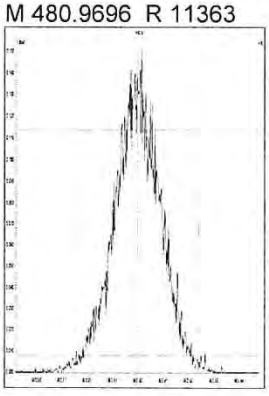
M 454.9728 R 13229



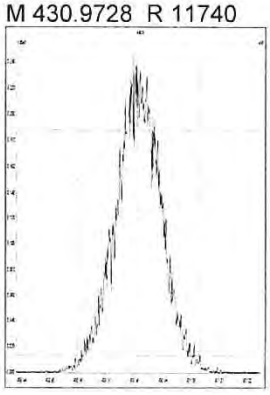
M 466.9728 R 20938



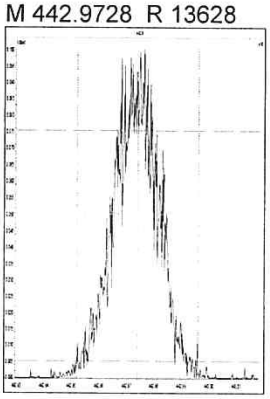
M 480.9696 R 11363



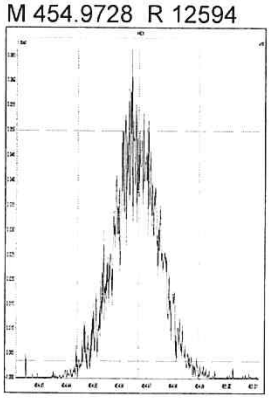
M 430.9728 R 11740



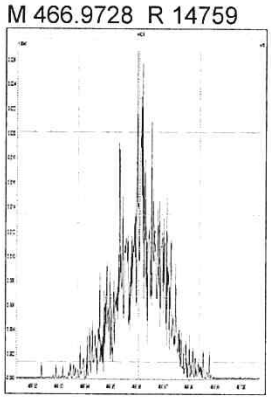
M 442.9728 R 13628



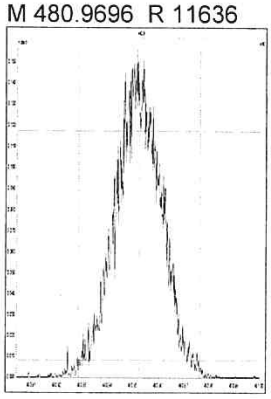
M 454.9728 R 12594



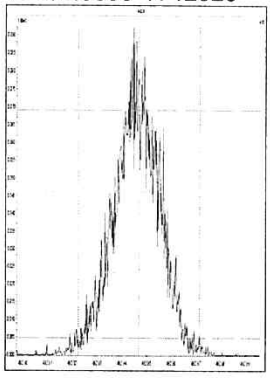
M 466.9728 R 14759



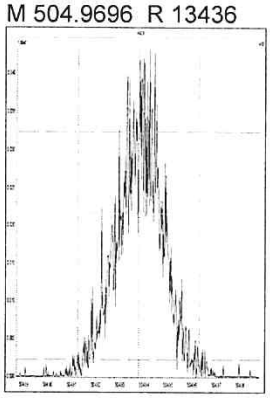
M 480.9696 R 11636



M 492.9696 R 12926



M 504.9696 R 13436



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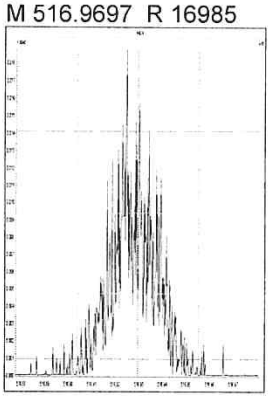


WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

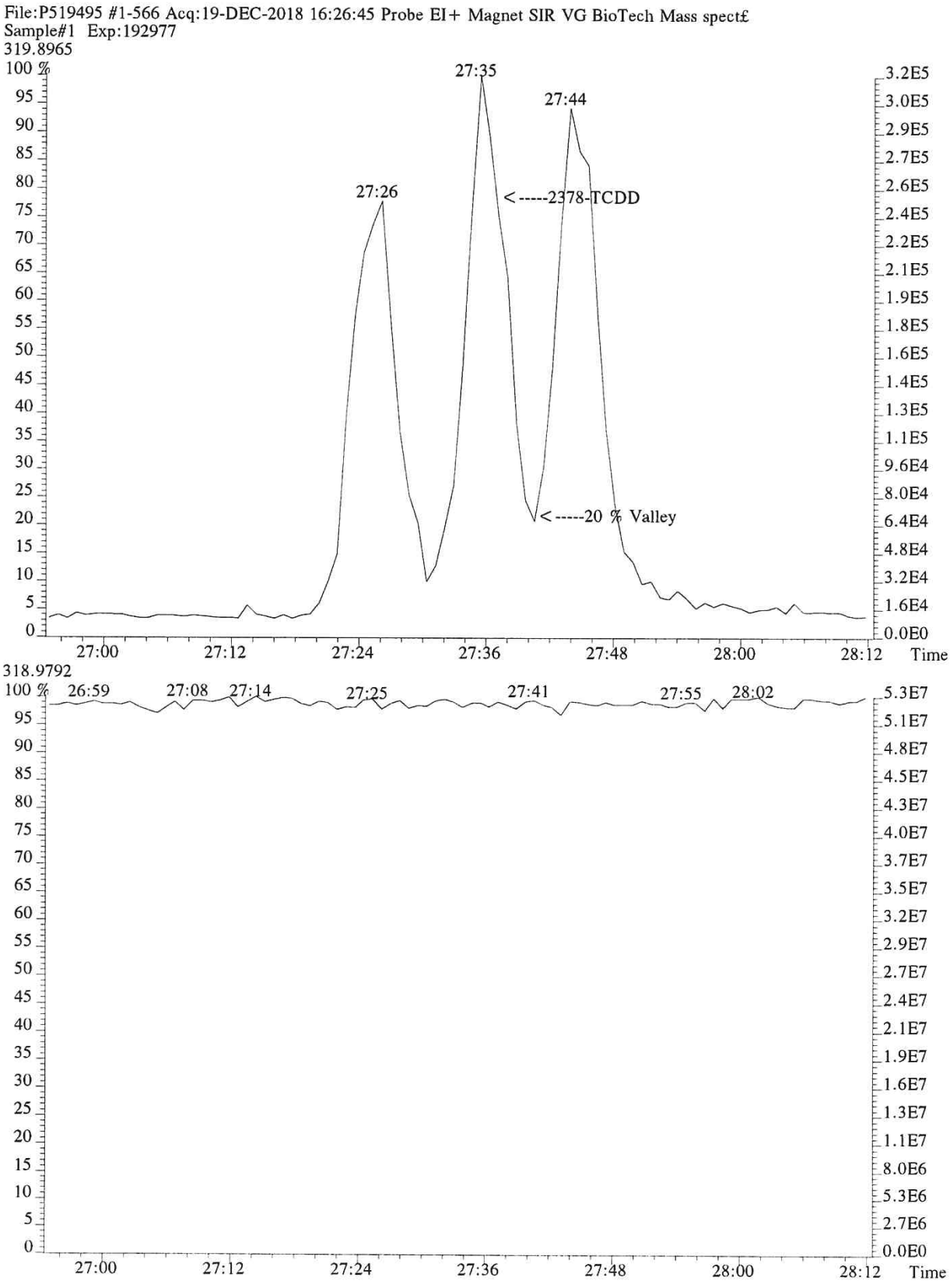
Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

Case No.: _____ SDG No.:
ID: 0.25 (mm) Lab File ID: P519495
Date Analyzed: 19-DEC-18
Time Analyzed: 16:26:45

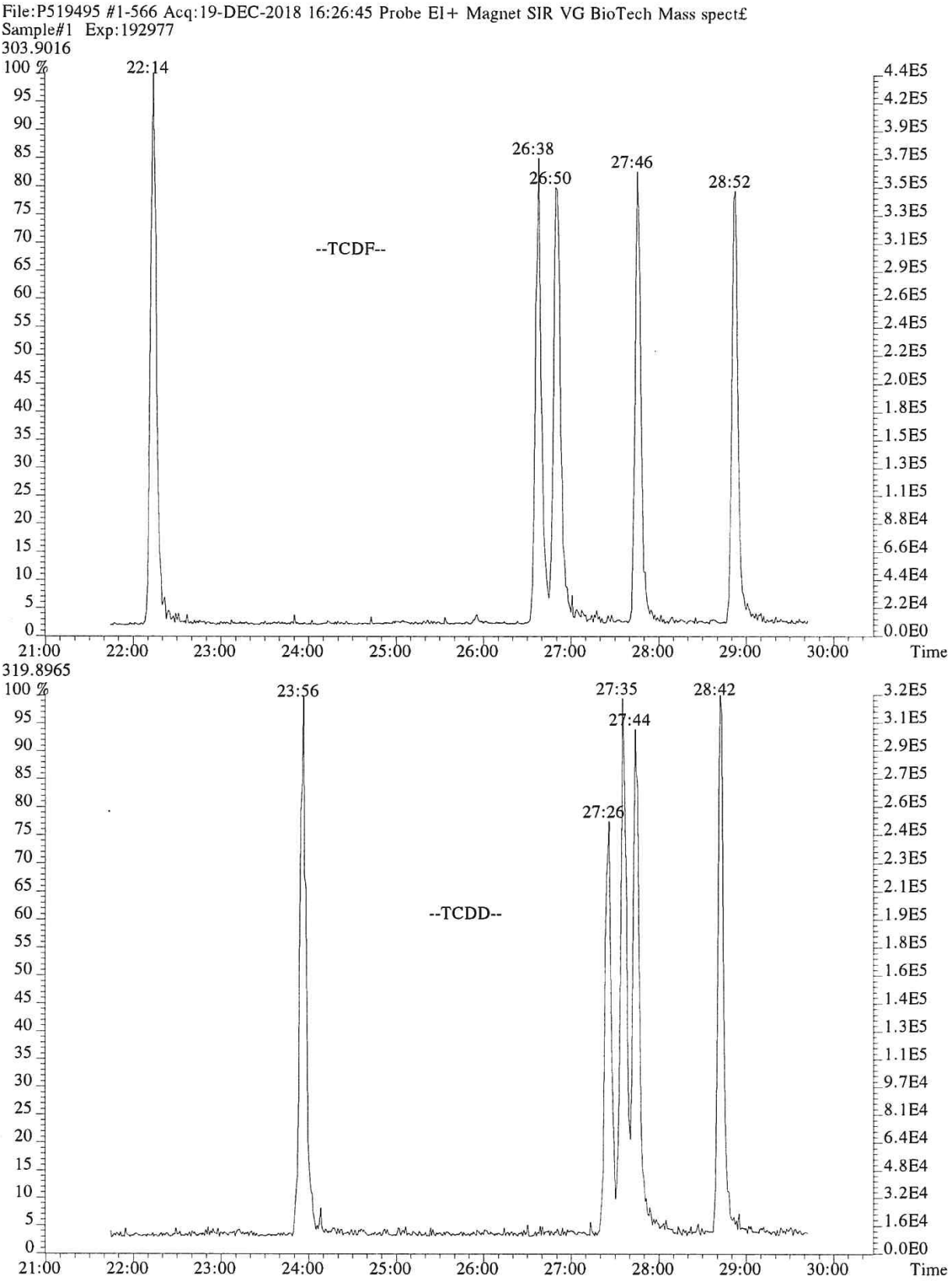
Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	22:14	28:52
TCDD	23:56	28:42
PeCDF	28:51	33:24
PeCDD	30:31	33:08
HxCDF	34:07	36:45
HxCDD	34:40	36:20
HpCDF	38:05	39:31
HpCDD	38:22	39:04

% Valley 2378-TCDD: 20 %

059365

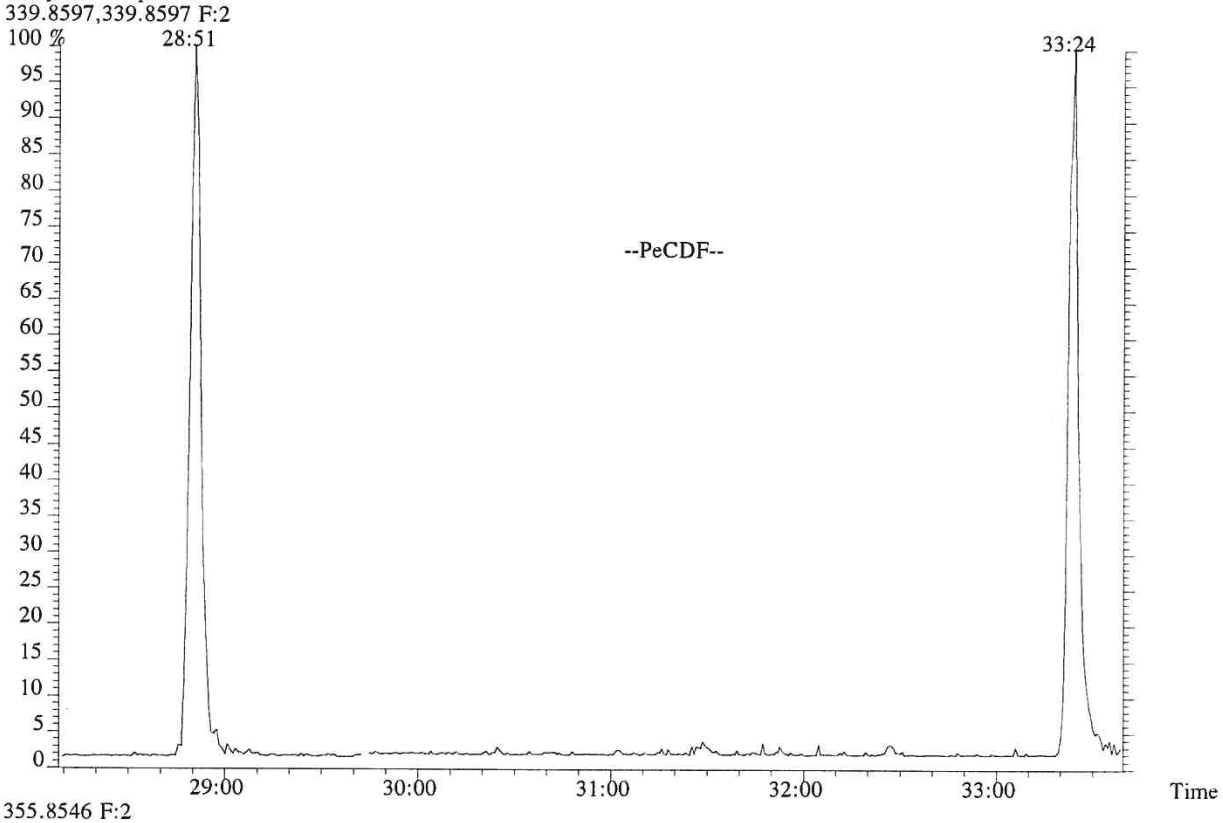

File:P519495 #1-566 Acq:19-DEC-2018 16:26:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
319.8965
27:35
27:44
27:26
<-----2378-TCDD
<-----20 % Valley
Time
318.9792
26:59
27:08
27:14
27:25
27:41
27:55
28:02
Time

059366

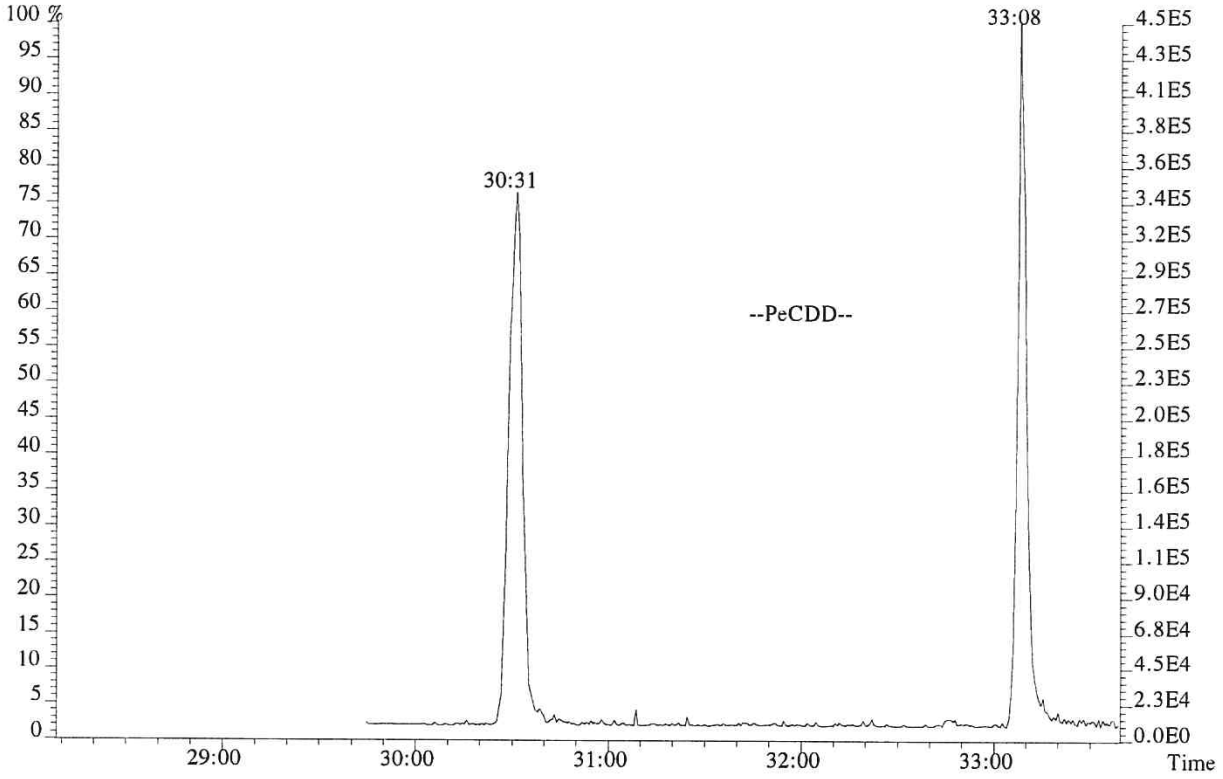

File:P519495 #1-566 Acq:19-DEC-2018 16:26:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
303.9016
22:14
26:38
26:50
27:46
28:52
--TCDF--
319.8965
23:56
27:26
27:35
27:44
28:42
--TCDD--
Time

059367

File:P519495 #1-566 Acq:19-DEC-2018 16:26:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
339.8597,339.8597 F:2



355.8546 F:2



059368

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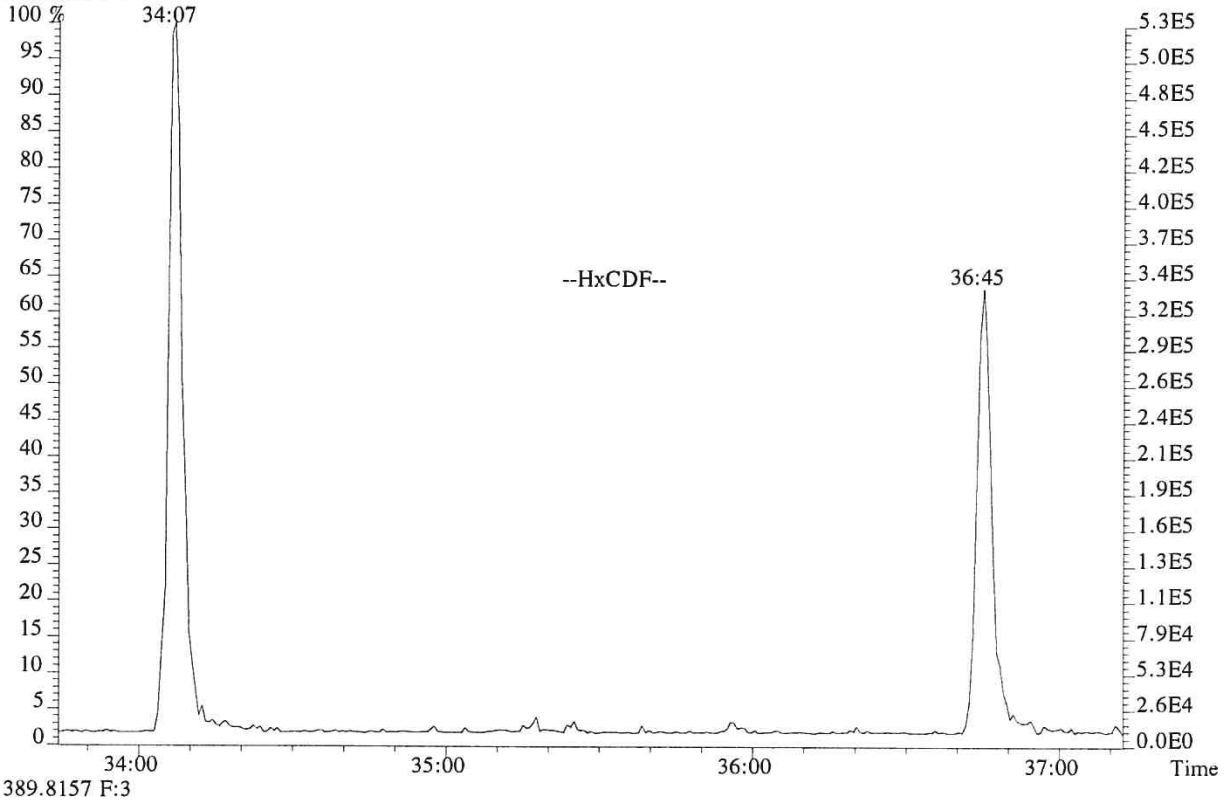
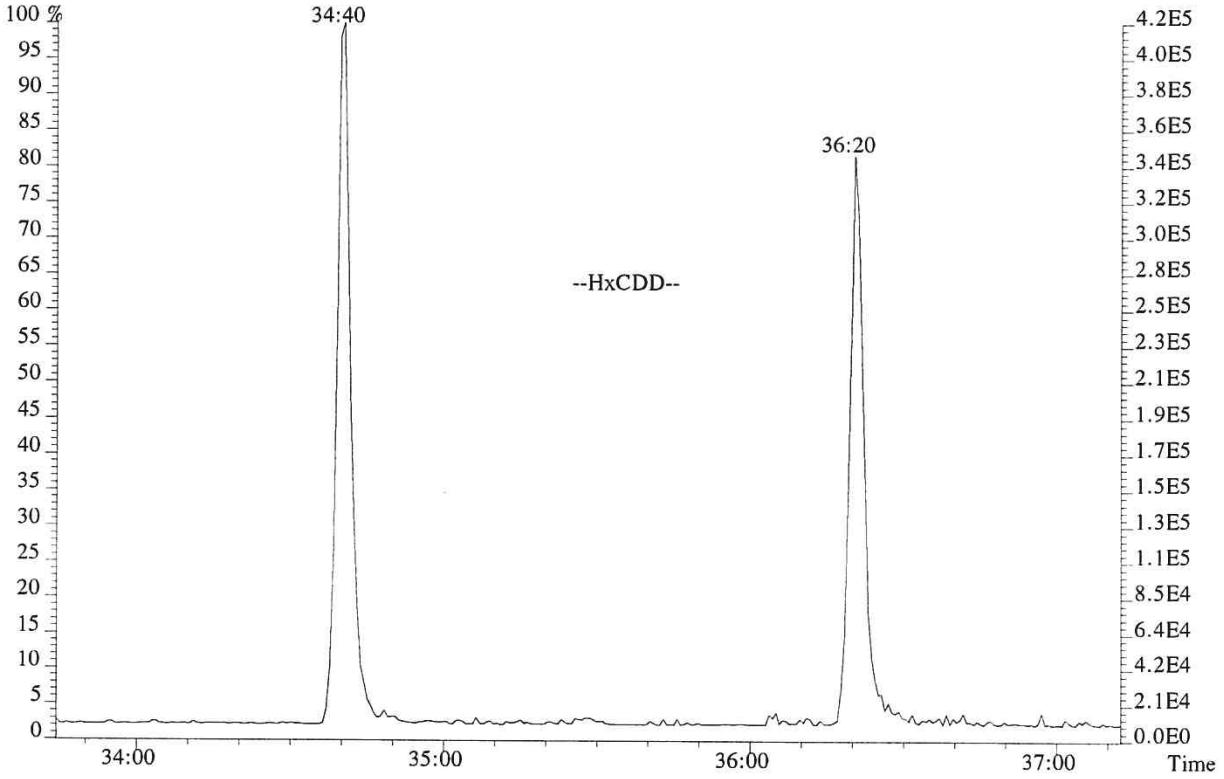
Sample#1 Exp:192977
373.8208 F:3



389.8157 F:3



059369

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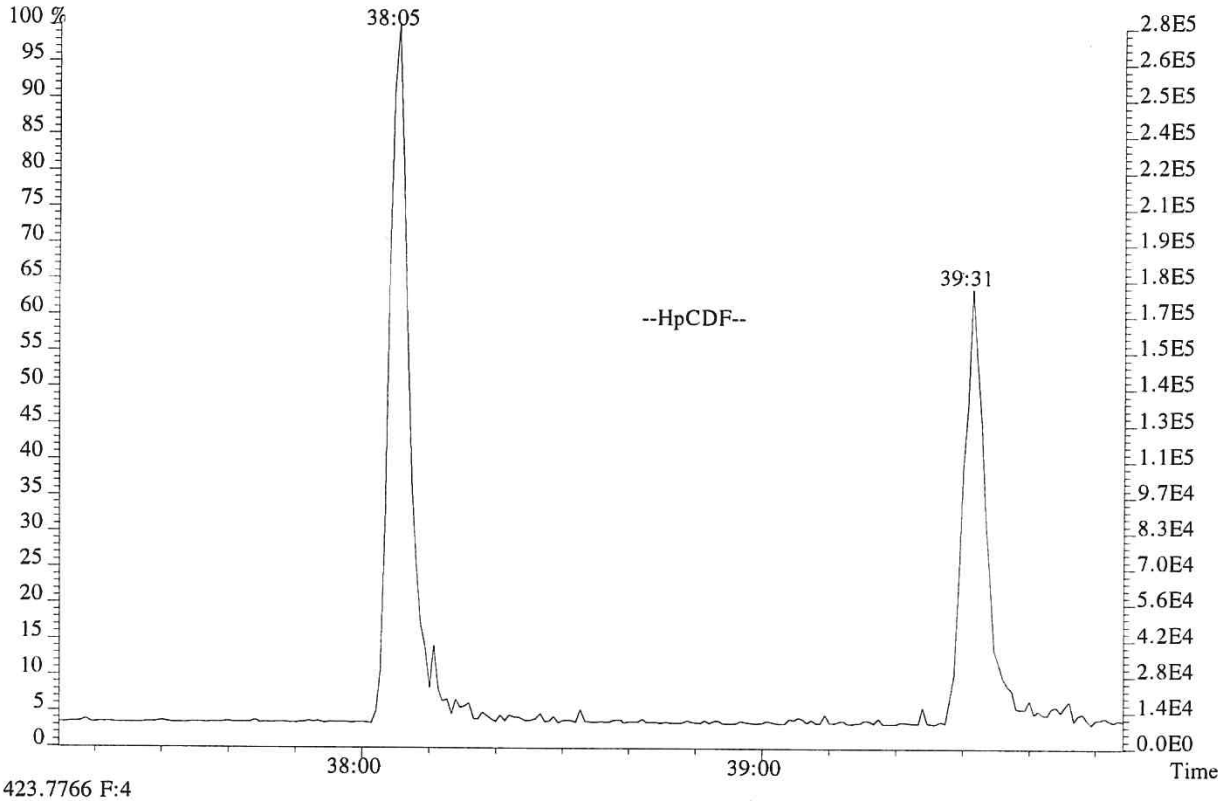
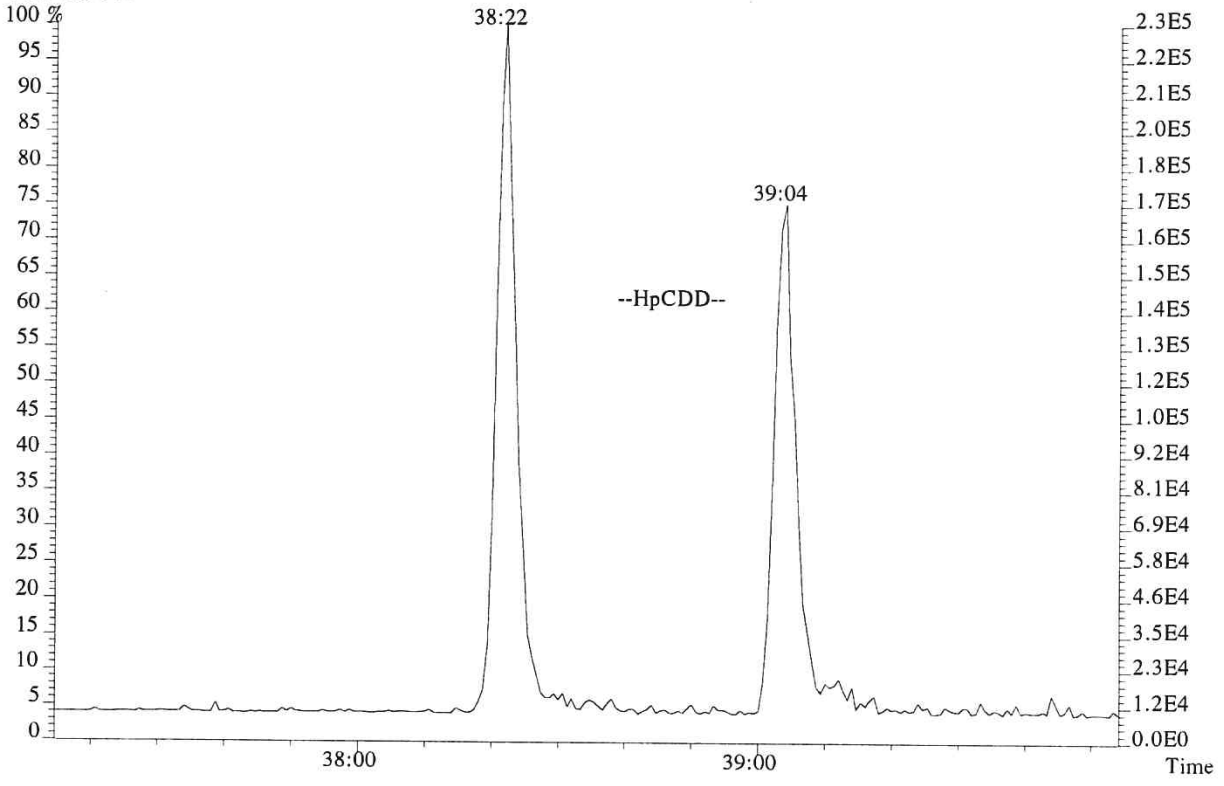
Sample#1 Exp:192977
407.7818 F:4



423.7766 F:4



059370

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519494 Analysis Date: 19-DEC-18 Time: 15:32:52

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	10.5	7.8 - 12.9	4.6
1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32-1.78	51	39 - 65	1.9
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	49	39 - 64	-2.7
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	51	39 - 64	1.6
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	52	41 - 61	5.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	51	43 - 58	1.1
OCDD	M+2/M+4	0.87	0.76-1.02	101	79 - 126	0.9
2,3,7,8-TCDF	M/M+2	0.75	0.65-0.89	10.8	8.4 - 12.0	8.0
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	50	41 - 60	-0.7
2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32-1.78	50	41 - 61	-0.3
1,2,3,4,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	51	45 - 56	2.8
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	50	44 - 57	-0.8
1,2,3,7,8,9-HxCDF	M+2/M+4	1.30	1.05-1.43	51	45 - 56	1.3
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	51	44 - 57	2.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88-1.20	48	45 - 55	-3.5
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88-1.20	51	43 - 58	1.3
OCDF	M+2/M+4	0.86	0.76-1.02	95	63 - 159	-5.0

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519494 Analysis Date: 19-DEC-18 Time: 15:32:52

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	98	82 - 121	-2.3
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	112	62 - 160	12.1
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	97	85 - 117	-2.7
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	101	85 - 118	0.5
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	91	72 - 138	-9.4
13C-OCDD	M+2/M+4	0.91	0.76-1.02	173	96 - 415	-13.4
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	89	71 - 140	-11.2
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	108	76 - 130	8.1
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	109	77 - 130	9.4
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	90	76 - 131	-9.9
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	96	70 - 143	-4.1
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	90	74 - 135	-9.8
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	97	73 - 137	-2.9
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.43	0.37-0.51	92	78 - 129	-8.0
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.42	0.37-0.51	86	77 - 129	-14.3
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			9.5	7.8 - 12.7	-5.0

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
194503

Run #7 Filename P519494 Samp: 1 Inj: 1 Acquired: 19-DEC-18 15:32:52
Processed: 20-DEC-18 10:33:29 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:51	1.254e+03	1.663e+03	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:28	1.038e+04	6.690e+03	1.55	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:26	9.828e+03	6.445e+03	1.53	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:17	8.047e+03	6.535e+03	1.23	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:24	8.781e+03	7.222e+03	1.22	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:56	8.144e+03	6.651e+03	1.22	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:43	6.863e+03	5.288e+03	1.30	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:05	6.388e+03	6.031e+03	1.06	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:31	4.823e+03	4.768e+03	1.01	yes	no	1.258
10	Unk	OCDF	42:09	6.432e+03	7.515e+03	0.86	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:44	9.688e+02	1.218e+03	0.80	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:45	6.988e+03	4.384e+03	1.59	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:05	5.396e+03	4.341e+03	1.24	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	36:10	6.019e+03	4.766e+03	1.26	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:25	6.211e+03	4.874e+03	1.27	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:03	4.370e+03	4.260e+03	1.03	yes	no	1.025
17	Unk	OCDD	41:59	5.680e+03	6.513e+03	0.87	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:49	1.269e+04	1.599e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:27	2.093e+04	1.302e+04	1.61	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:25	2.075e+04	1.329e+04	1.56	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:16	8.045e+03	1.580e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:23	9.835e+03	1.890e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:55	8.915e+03	1.723e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:42	7.083e+03	1.390e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:05	5.770e+03	1.329e+04	0.43	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:30	4.492e+03	1.057e+04	0.42	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:43	8.479e+03	1.079e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:44	1.441e+04	8.931e+03	1.61	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:04	1.082e+04	8.466e+03	1.28	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	36:10	1.157e+04	8.876e+03	1.30	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:03	8.627e+03	8.025e+03	1.08	yes	no	0.858
32	IS	13C-OCDD	41:58	1.031e+04	1.131e+04	0.91	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	27:04	9.528e+03	1.183e+04	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:24	1.192e+04	9.513e+03	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:44	2.057e+03				no	1.014

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
194503

Run #7 Filename P519494 Samp: 1 Inj: 1 Acquired: 19-DEC-18 15:32:52
Processed: 20-DEC-18 10:33:29 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.87e+05	7.92e+02	2.4e+02	2.57e+05	1.80e+03	1.4e+02
2	1,2,3,7,8-PeCDF	1.78e+06	6.84e+02	2.6e+03	1.13e+06	1.04e+03	1.1e+03
3	2,3,4,7,8-PeCDF	1.80e+06	6.84e+02	2.6e+03	1.15e+06	1.04e+03	1.1e+03
4	1,2,3,4,7,8-HxCDF	1.62e+06	6.28e+02	2.6e+03	1.31e+06	5.52e+02	2.4e+03
5	1,2,3,6,7,8-HxCDF	1.67e+06	6.28e+02	2.7e+03	1.39e+06	5.52e+02	2.5e+03
6	2,3,4,6,7,8-HxCDF	1.58e+06	6.28e+02	2.5e+03	1.31e+06	5.52e+02	2.4e+03
7	1,2,3,7,8,9-HxCDF	1.24e+06	6.28e+02	2.0e+03	9.77e+05	5.52e+02	1.8e+03
8	1,2,3,4,6,7,8-HpCDF	1.15e+06	6.96e+02	1.7e+03	1.12e+06	3.76e+02	3.0e+03
9	1,2,3,4,7,8,9-HpCDF	7.75e+05	6.96e+02	1.1e+03	7.46e+05	3.76e+02	2.0e+03
10	OCDF	7.22e+05	4.24e+02	1.7e+03	8.51e+05	1.08e+03	7.9e+02
11	2,3,7,8-TCDD	1.56e+05	2.02e+03	7.7e+01	1.88e+05	6.72e+02	2.8e+02
12	1,2,3,7,8-PeCDD	1.24e+06	3.00e+02	4.1e+03	7.94e+05	4.60e+02	1.7e+03
13	1,2,3,4,7,8-HxCDD	1.13e+06	3.48e+02	3.3e+03	8.86e+05	7.84e+02	1.1e+03
14	1,2,3,6,7,8-HxCDD	1.14e+06	3.48e+02	3.3e+03	9.13e+05	7.84e+02	1.2e+03
15	1,2,3,7,8,9-HxCDD	1.16e+06	3.48e+02	3.3e+03	9.30e+05	7.84e+02	1.2e+03
16	1,2,3,4,6,7,8-HpCDD	7.27e+05	5.32e+02	1.4e+03	7.05e+05	3.88e+02	1.8e+03
17	OCDD	6.65e+05	3.84e+02	1.7e+03	7.62e+05	6.72e+02	1.1e+03
18	13C-2,3,7,8-TCDF	1.97e+06	7.67e+03	2.6e+02	2.43e+06	5.20e+03	4.7e+02
19	13C-1,2,3,7,8-PeCDF	3.51e+06	5.84e+02	6.0e+03	2.19e+06	6.16e+02	3.6e+03
20	13C-2,3,4,7,8-PeCDF	3.69e+06	5.84e+02	6.3e+03	2.35e+06	6.16e+02	3.8e+03
21	13C-1,2,3,4,7,8-HxCDF	1.59e+06	9.12e+02	1.7e+03	3.11e+06	9.56e+02	3.3e+03
22	13C-1,2,3,6,7,8-HxCDF	1.90e+06	9.12e+02	2.1e+03	3.60e+06	9.56e+02	3.8e+03
23	13C-2,3,4,6,7,8-HxCDF	1.69e+06	9.12e+02	1.9e+03	3.32e+06	9.56e+02	3.5e+03
24	13C-1,2,3,7,8,9-HxCDF	1.30e+06	9.12e+02	1.4e+03	2.50e+06	9.56e+02	2.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.03e+06	1.15e+03	8.9e+02	2.33e+06	2.88e+03	8.1e+02
26	13C-1,2,3,4,7,8,9-HpCDF	7.21e+05	1.15e+03	6.3e+02	1.61e+06	2.88e+03	5.6e+02
27	13C-2,3,7,8-TCDD	1.39e+06	5.33e+03	2.6e+02	1.72e+06	2.48e+03	6.9e+02
28	13C-1,2,3,7,8-PeCDD	2.57e+06	1.00e+03	2.6e+03	1.56e+06	7.52e+02	2.1e+03
29	13C-1,2,3,4,7,8-HxCDD	2.27e+06	6.68e+02	3.4e+03	1.75e+06	7.84e+02	2.2e+03
30	13C-1,2,3,6,7,8-HxCDD	2.20e+06	6.68e+02	3.3e+03	1.71e+06	7.84e+02	2.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.38e+06	5.32e+02	2.6e+03	1.32e+06	4.48e+02	2.9e+03
32	13C-OCDD	1.15e+06	6.64e+02	1.7e+03	1.28e+06	4.68e+02	2.7e+03
33	13C-1,2,3,4-TCDD	1.52e+06	5.33e+03	2.9e+02	1.91e+06	2.48e+03	7.7e+02
34	13C-1,2,3,7,8,9-HxCDD	2.29e+06	6.68e+02	3.4e+03	1.73e+06	7.84e+02	2.2e+03
35	37Cl-2,3,7,8-TCDD	3.28e+05	9.12e+02	3.6e+02			

---Sample Calculation---

$$D/L\ TCDD = \frac{2.5 \times (2.024e+03 + 6.720e+02) \times 100}{(1.389e+06 + 1.724e+06) \times (\quad) \times 1.085} =$$

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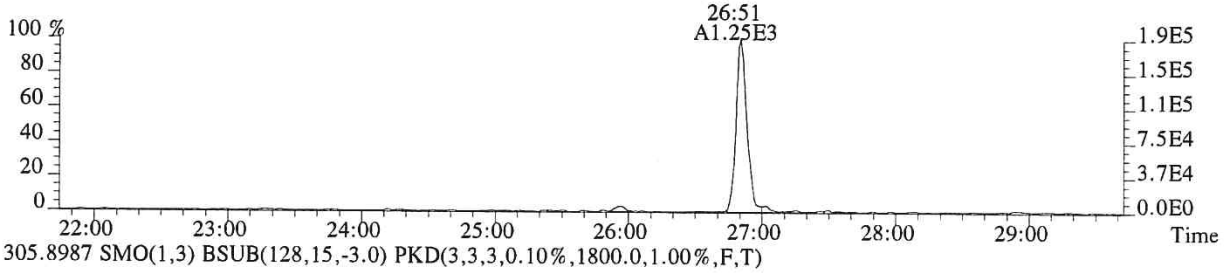
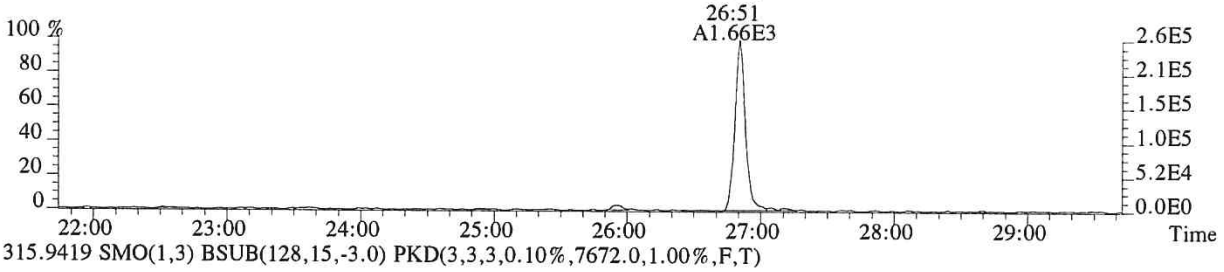
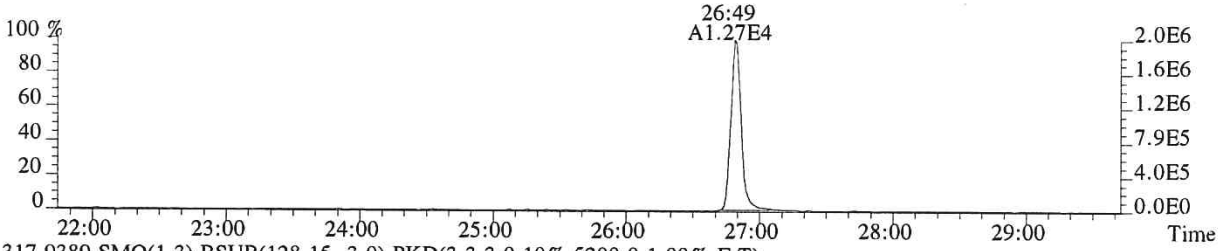
File:P519494 #1-566 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,792.0,1.00%,F,T)



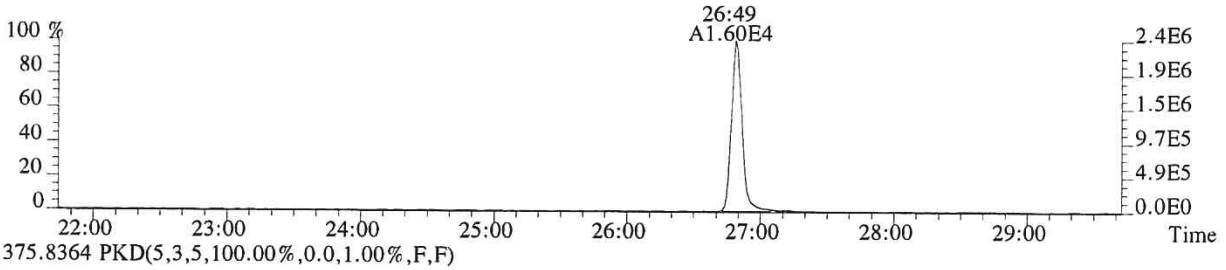
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1800.0,1.00%,F,T)



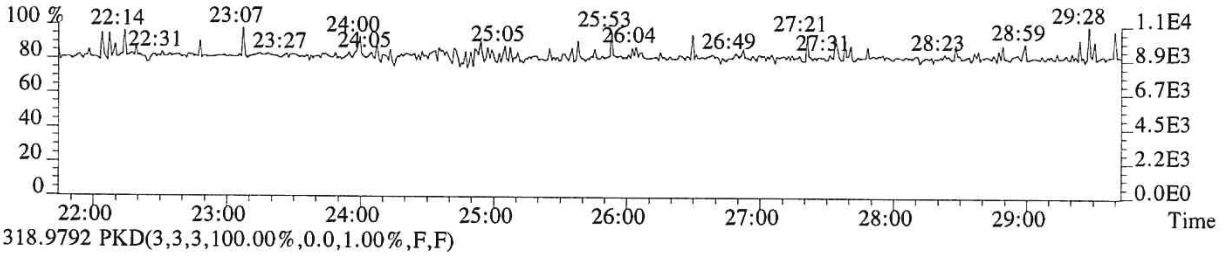
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7672.0,1.00%,F,T)



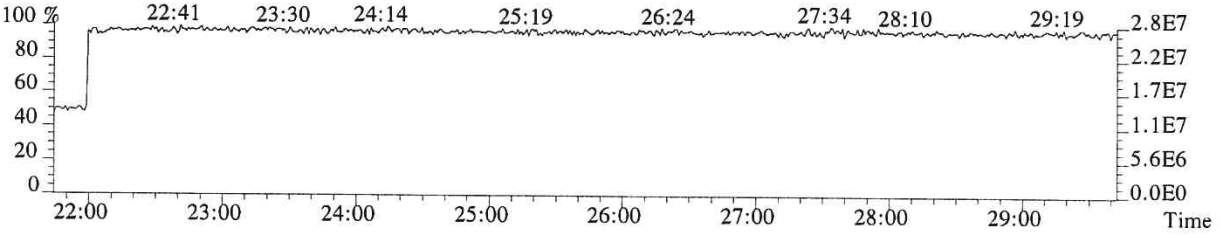
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5200.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

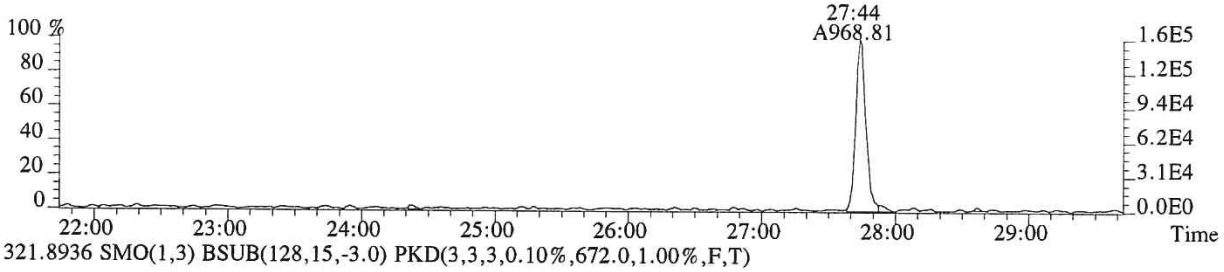


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

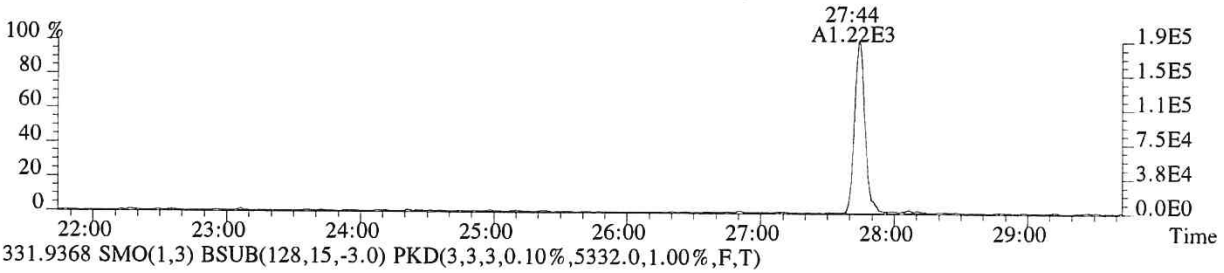


059375

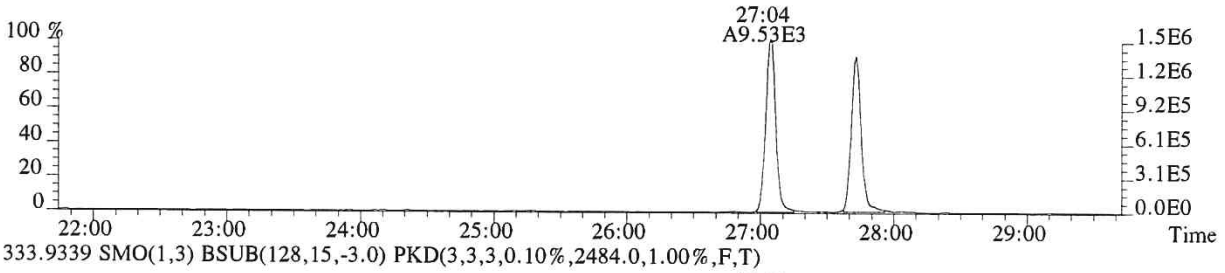
File:P519494 #1-566 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2024.0,1.00%,F,T)



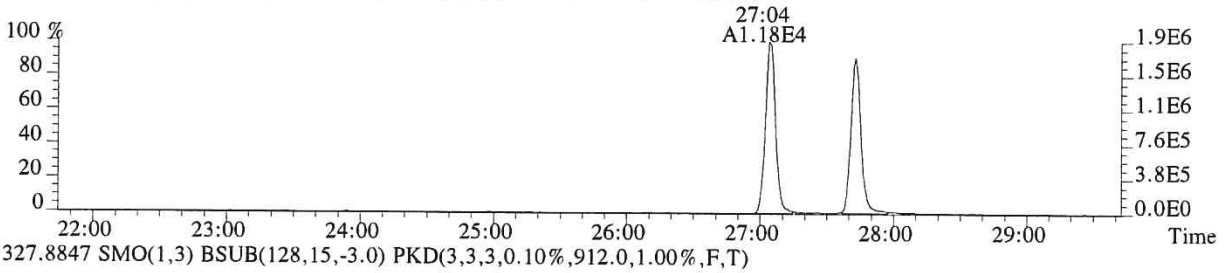
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,672.0,1.00%,F,T)



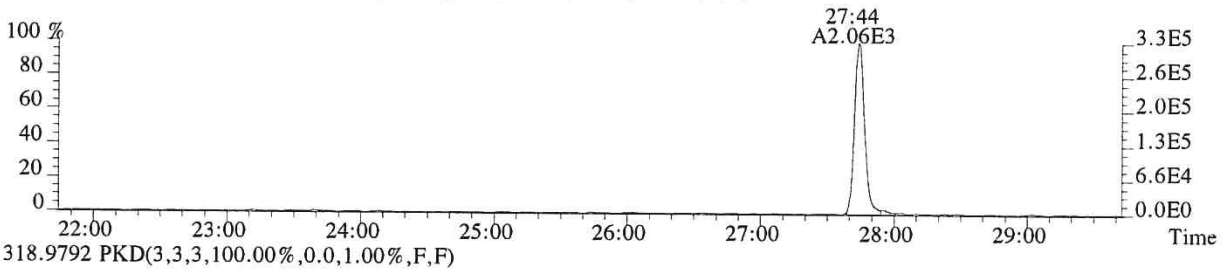
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5332.0,1.00%,F,T)



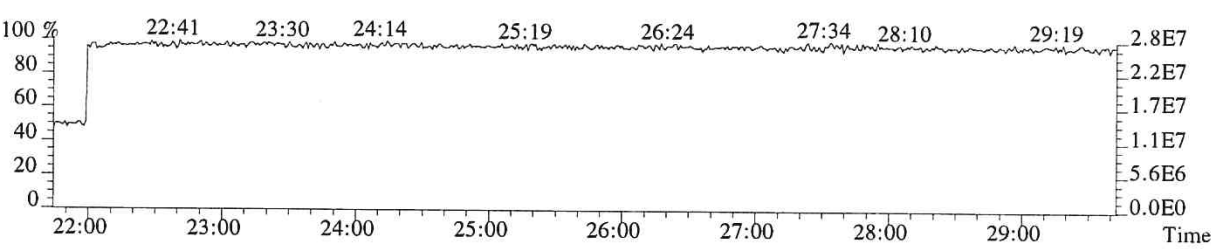
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2484.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,912.0,1.00%,F,T)

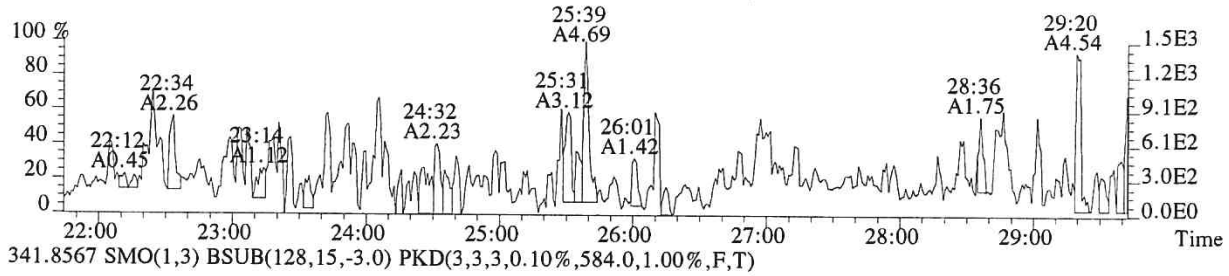


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

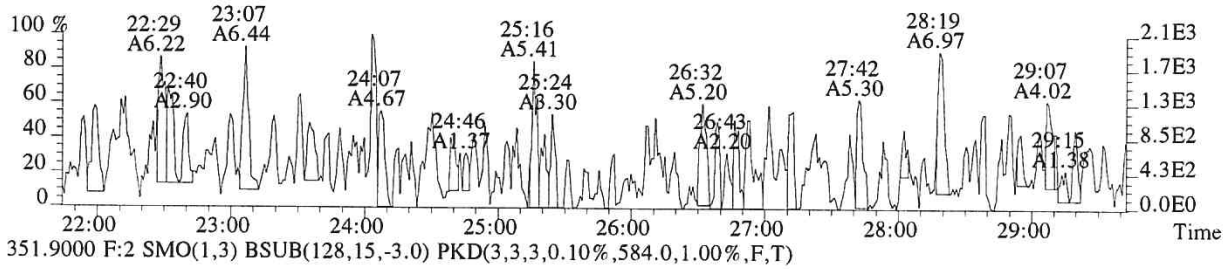


059376

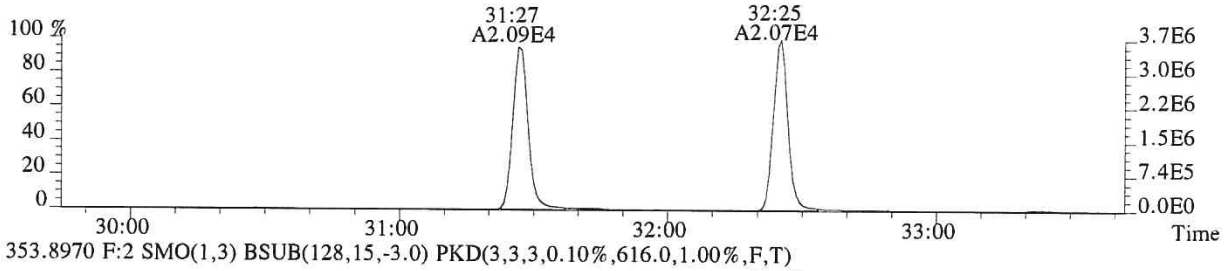
File:P519494 #1-566 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,356.0,1.00%,F,T)



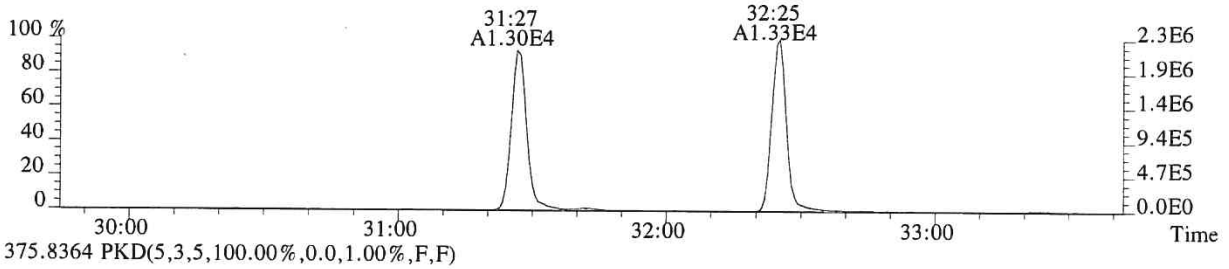
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,584.0,1.00%,F,T)



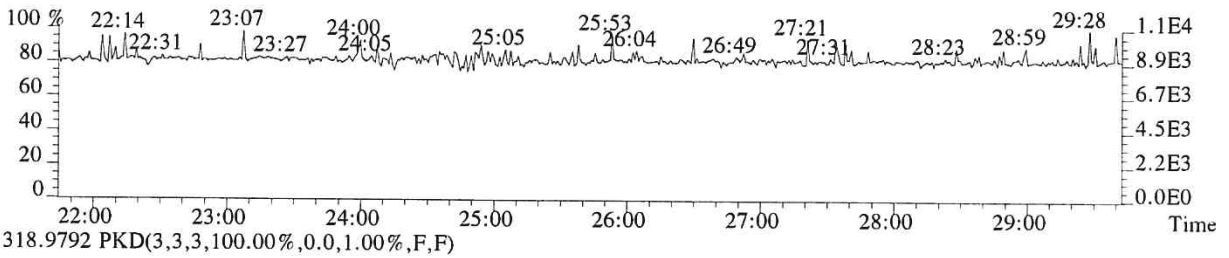
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,584.0,1.00%,F,T)



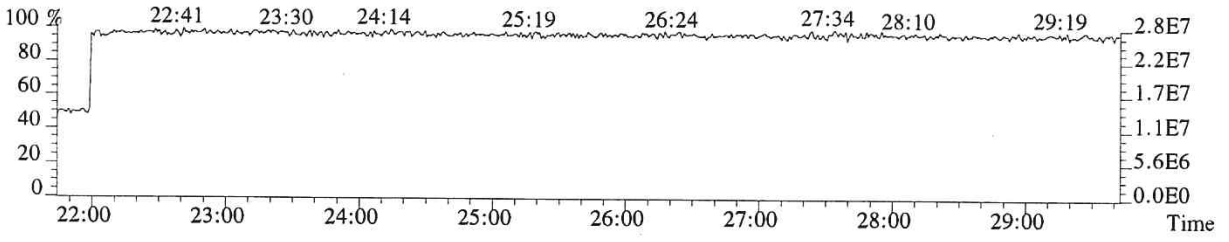
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,616.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

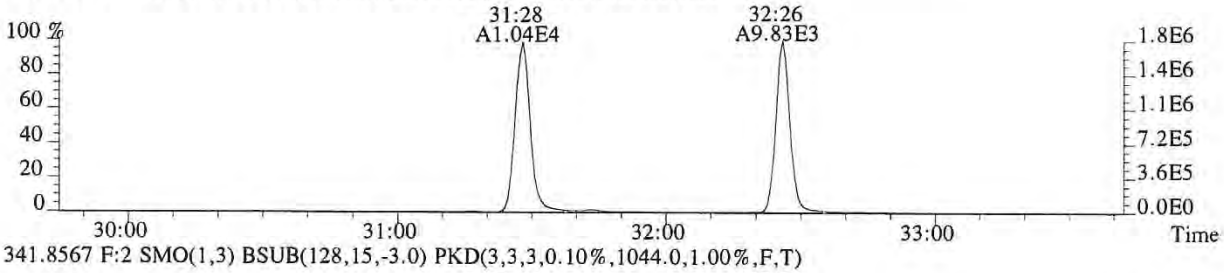


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

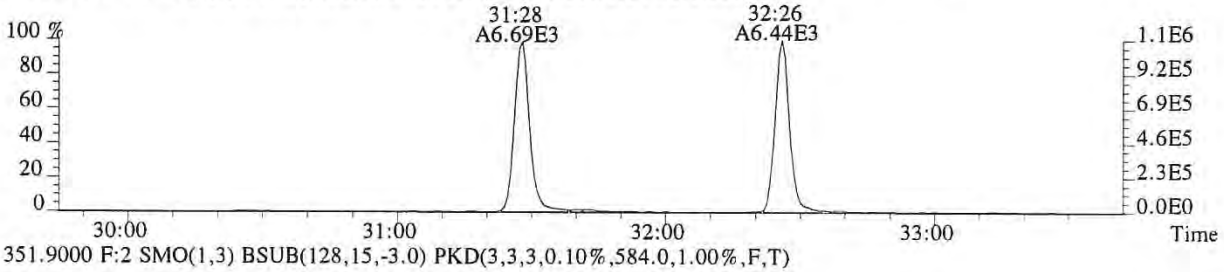


059377

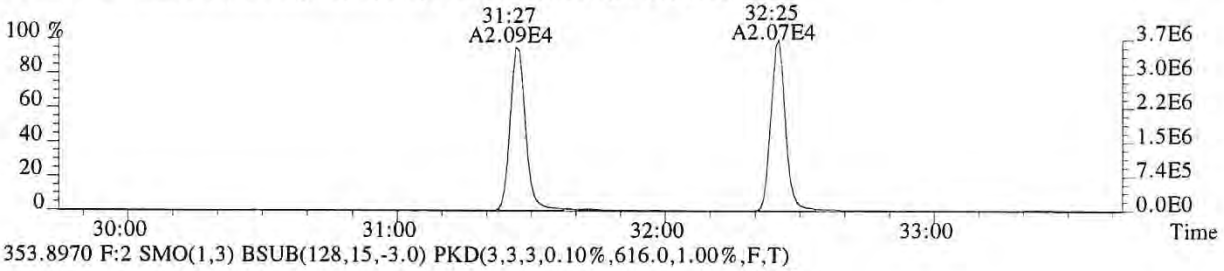
File:P519494 #1-357 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



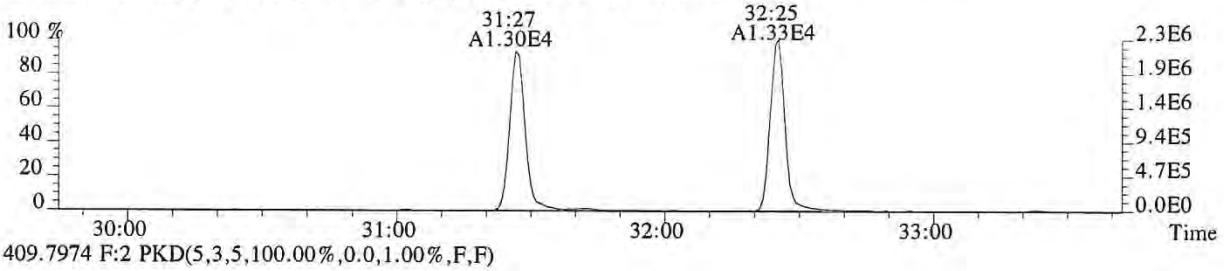
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1044.0,1.00%,F,T)



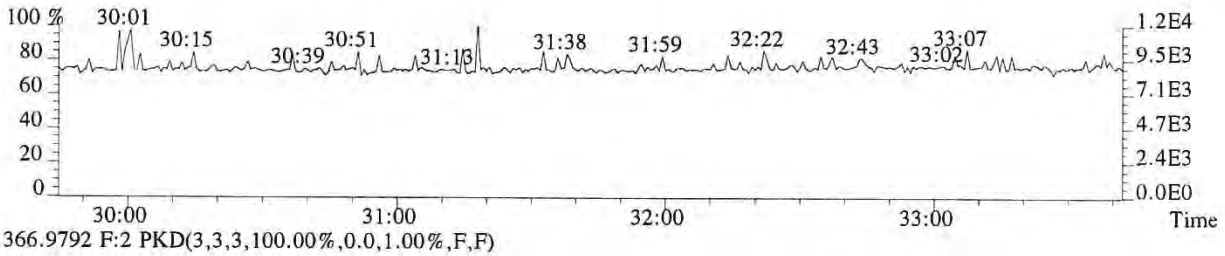
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,584.0,1.00%,F,T)



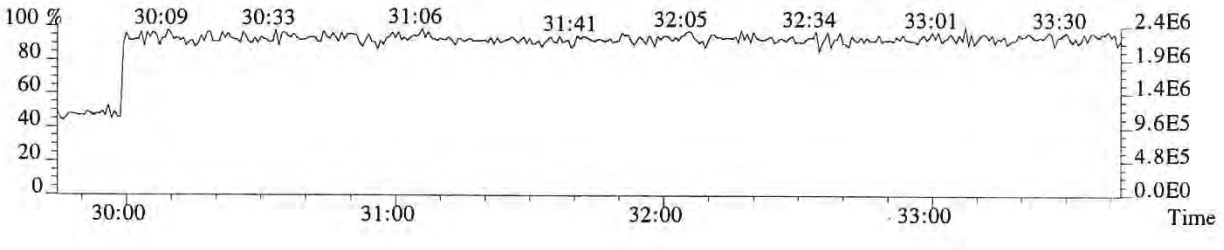
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,616.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

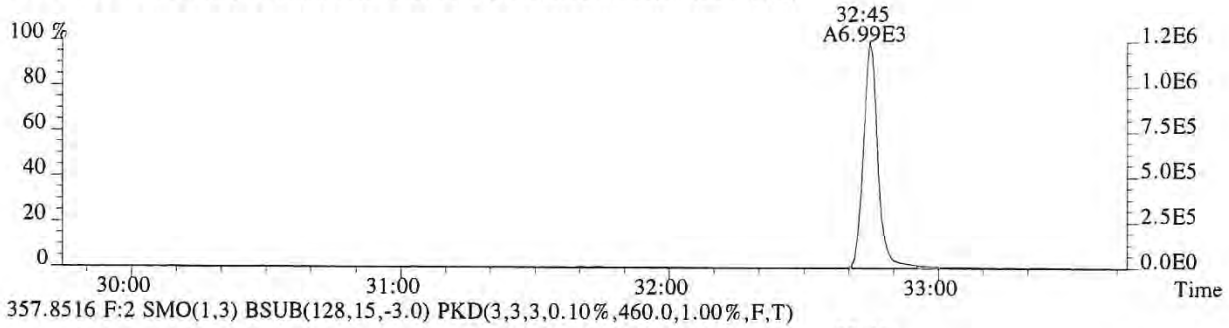


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

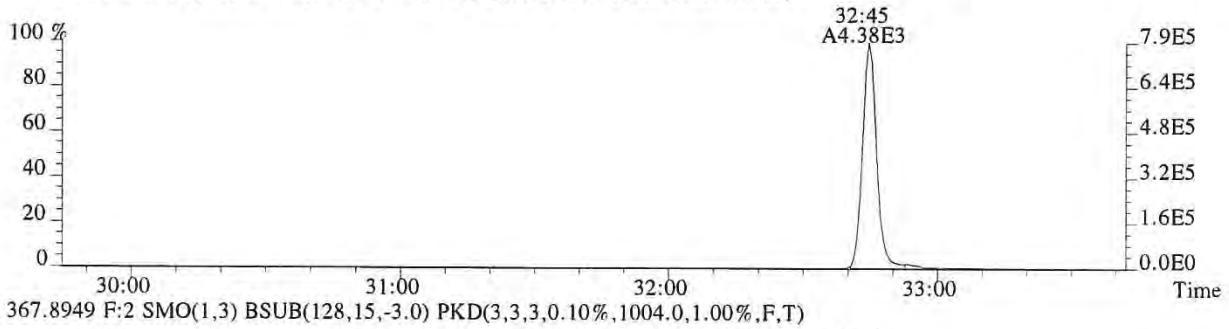


059378

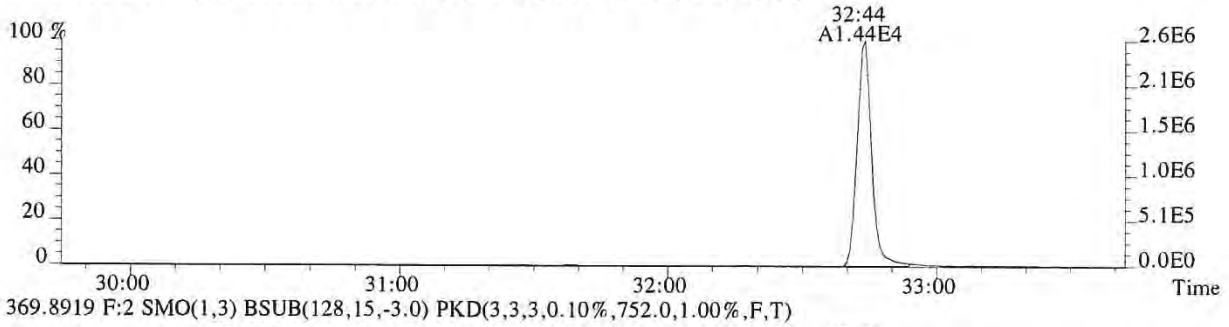
File:P519494 #1-357 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,300.0,1.00%,F,T)



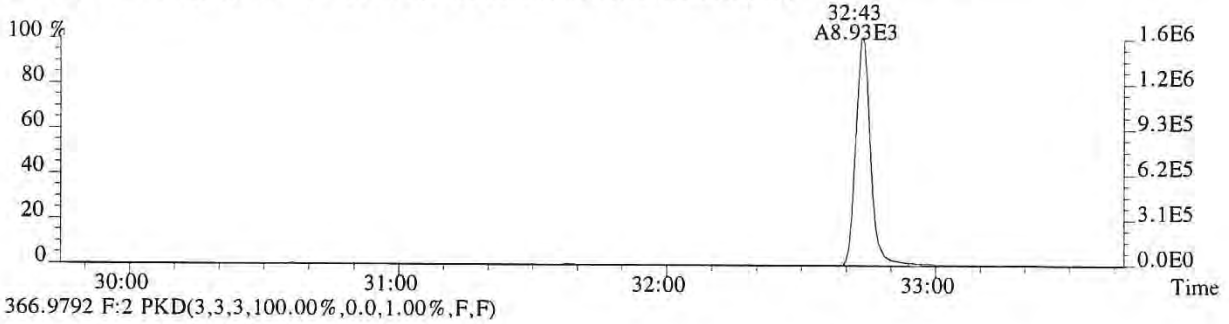
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,460.0,1.00%,F,T)



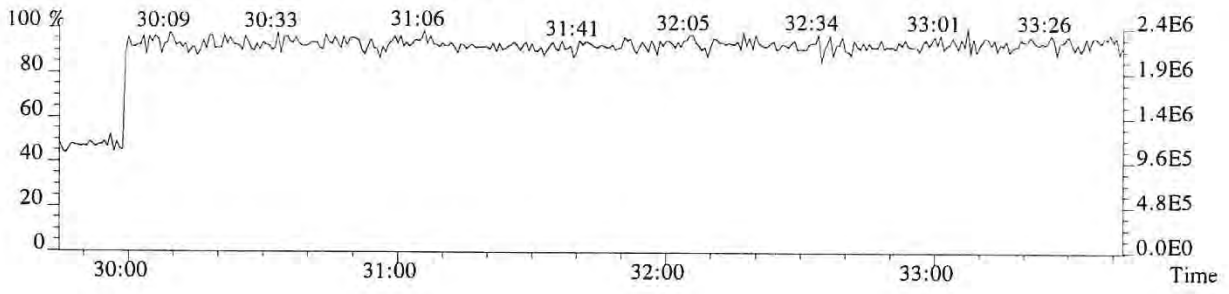
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1004.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,752.0,1.00%,F,T)

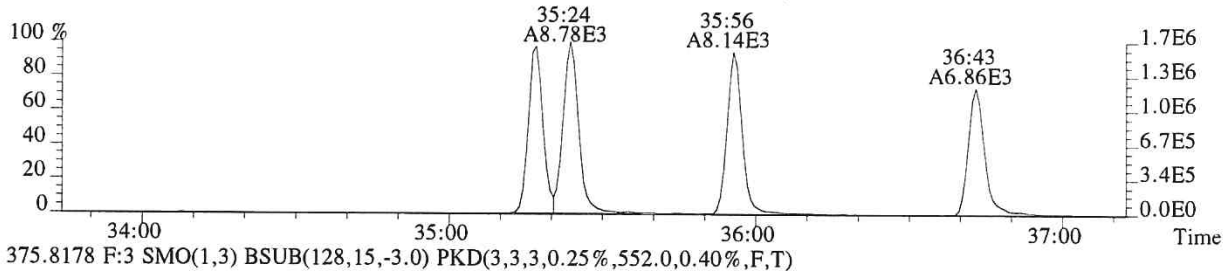


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

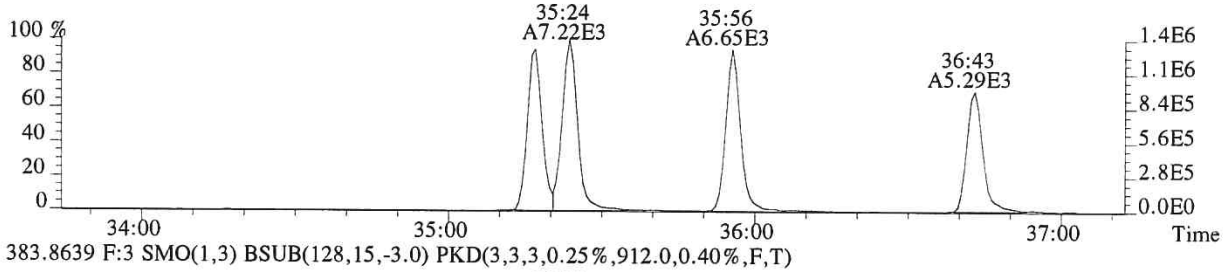


059379

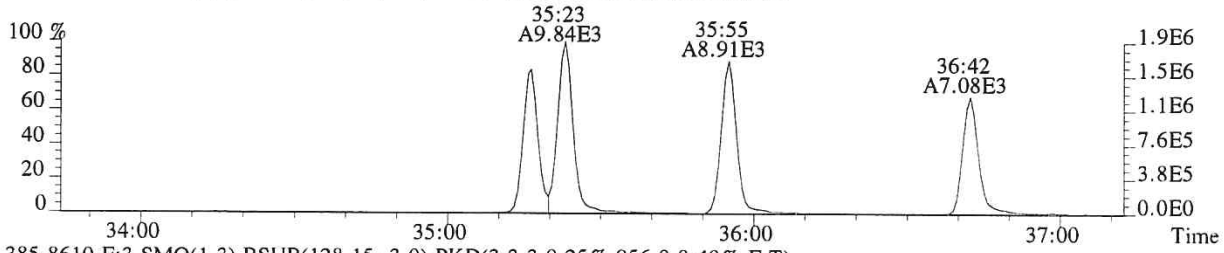
File:P519494 #1-313 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,628.0,0.40%,F,T)



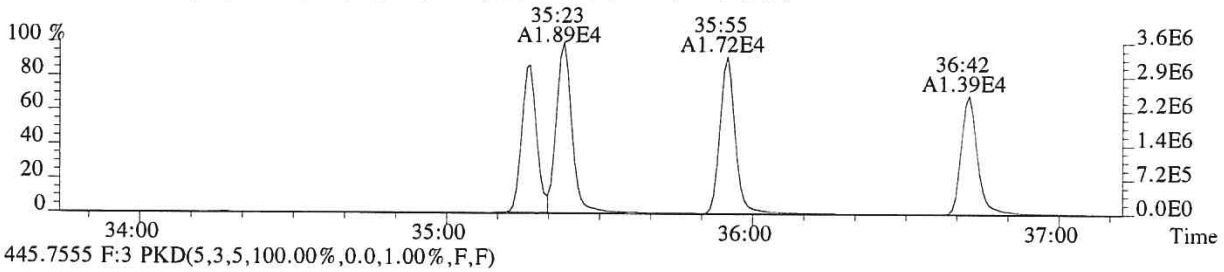
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,552.0,0.40%,F,T)



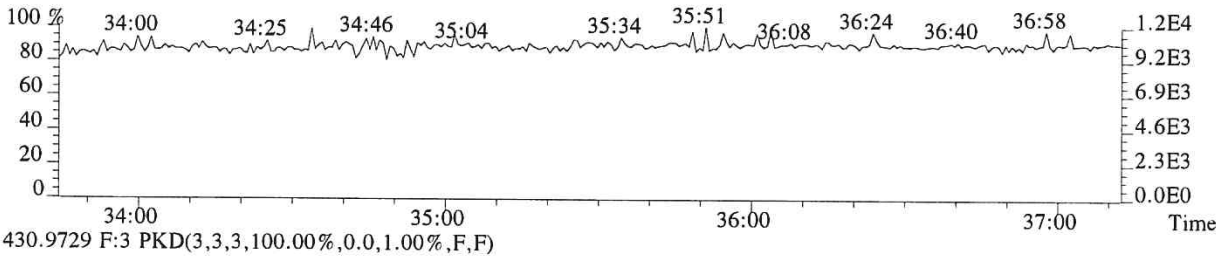
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,912.0,0.40%,F,T)



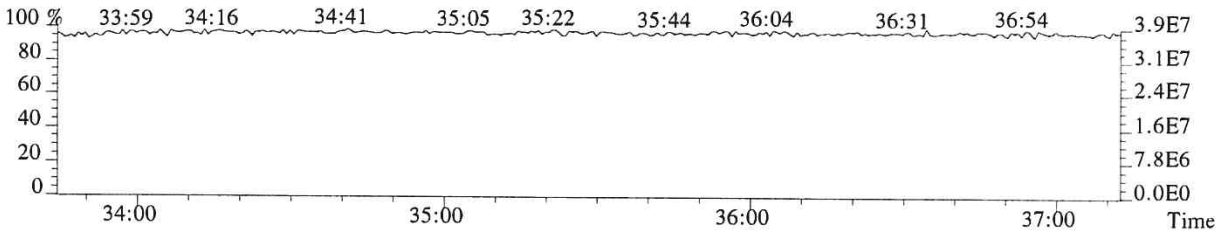
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,956.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

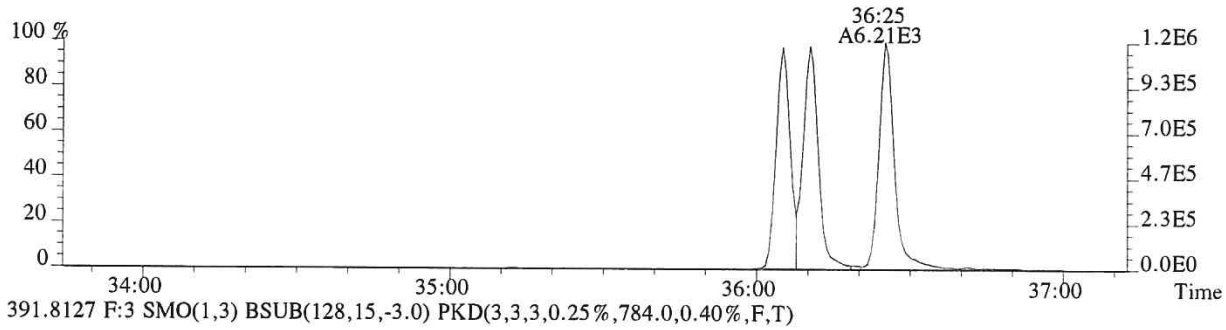


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

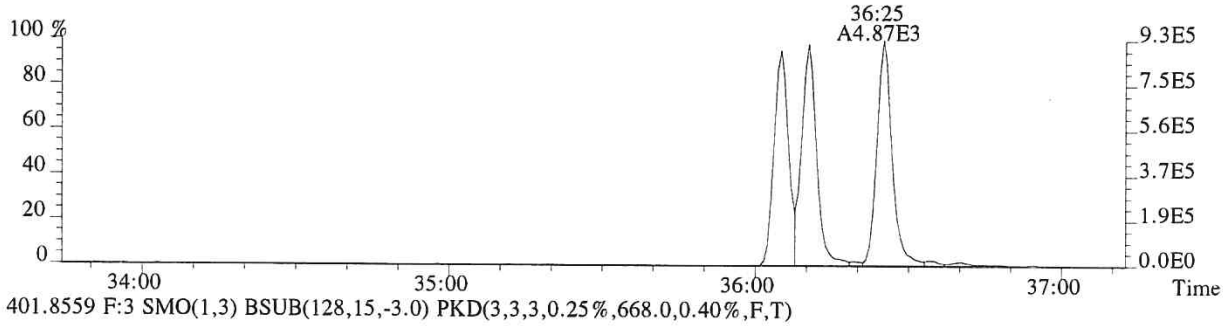


059380

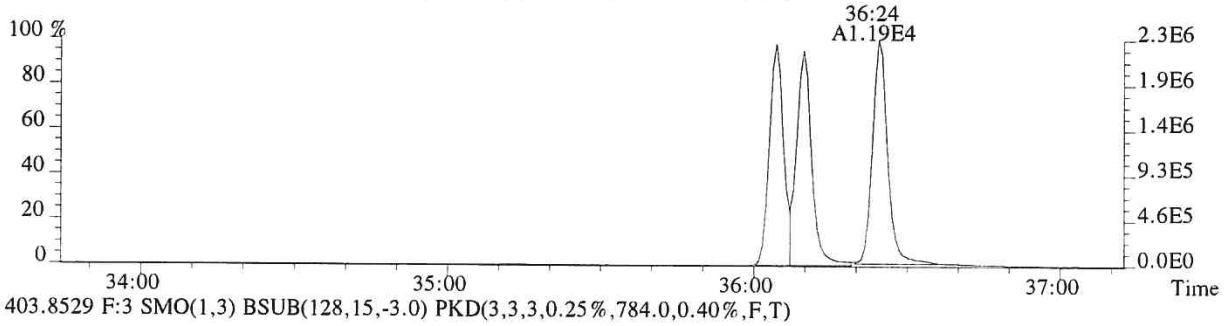
File:P519494 #1-313 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,348.0,0.40%,F,T)



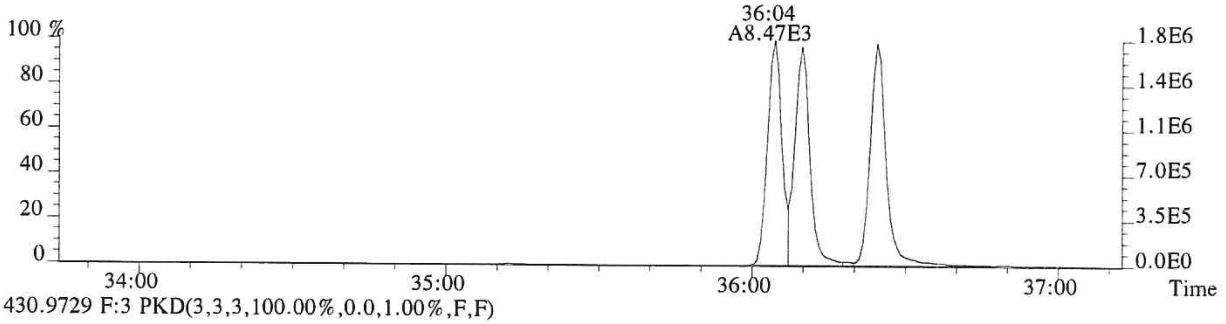
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,784.0,0.40%,F,T)



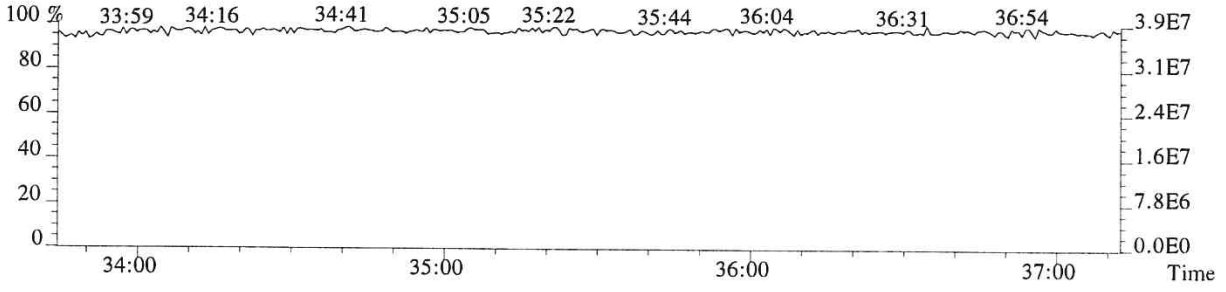
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,668.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,784.0,0.40%,F,T)



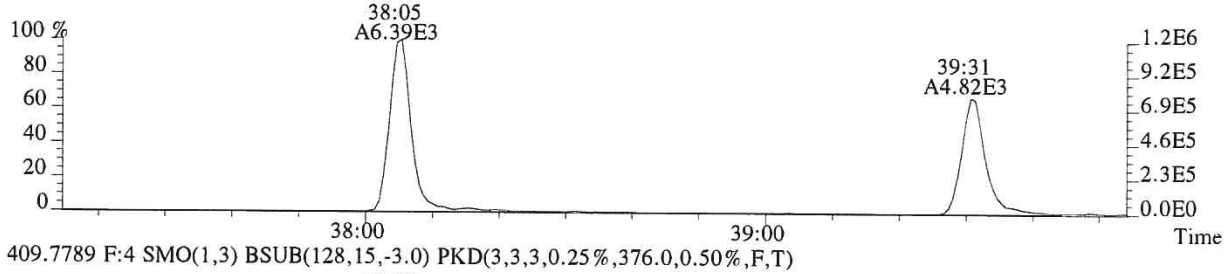
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



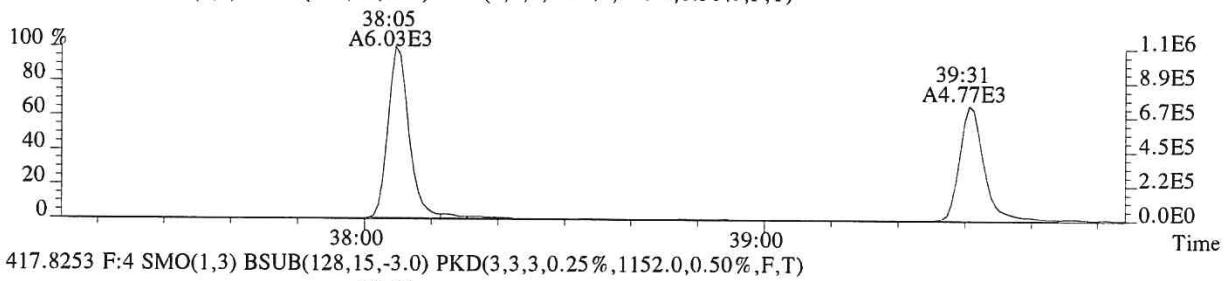
059381

File:P519494 #1-240 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

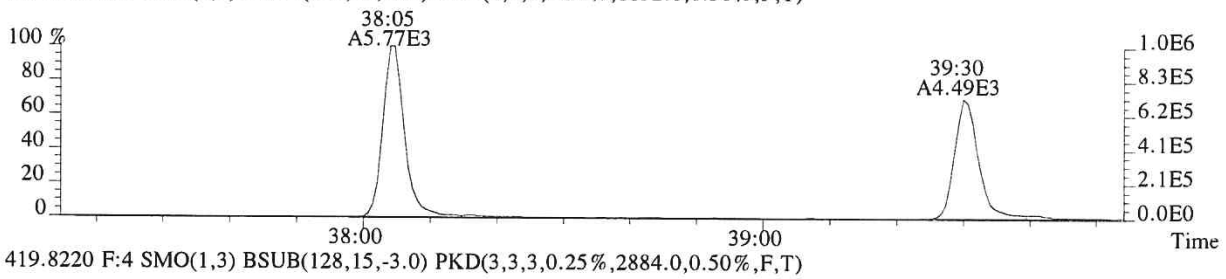
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,696.0,0.50%,F,T)



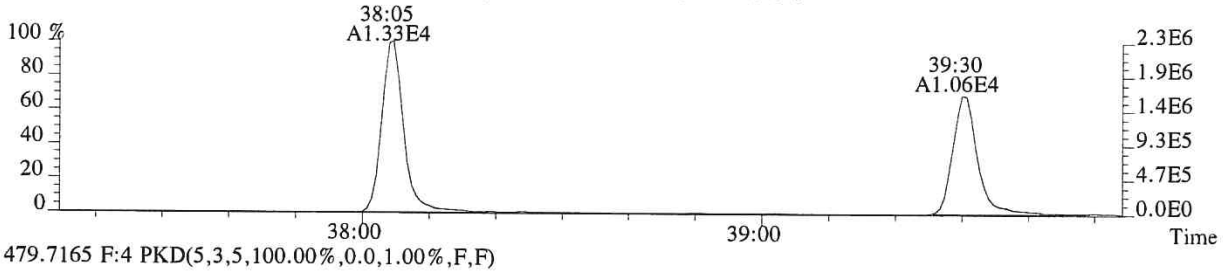
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,376.0,0.50%,F,T)



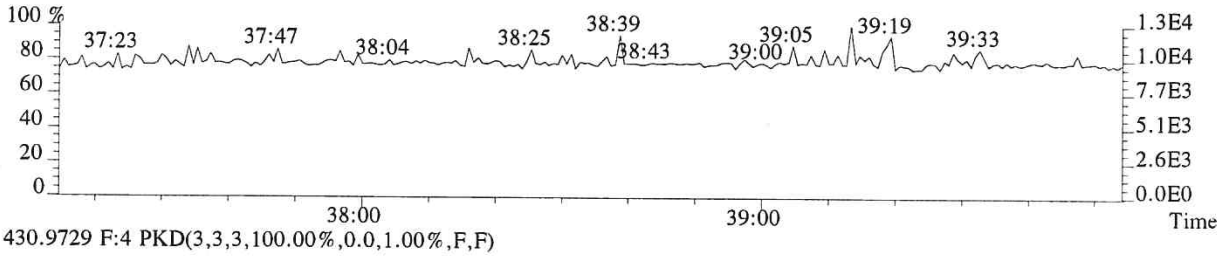
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1152.0,0.50%,F,T)



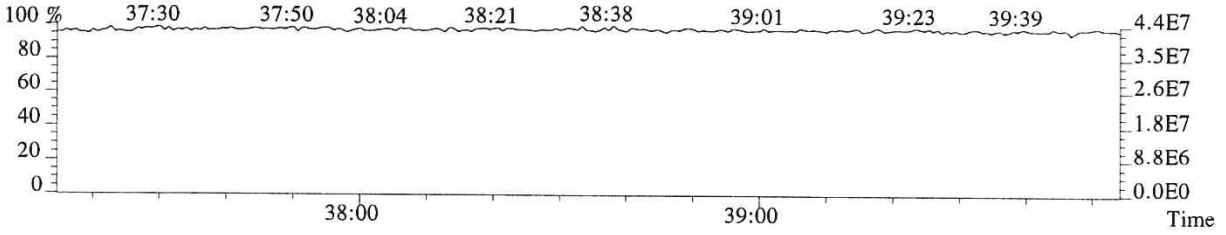
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2884.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

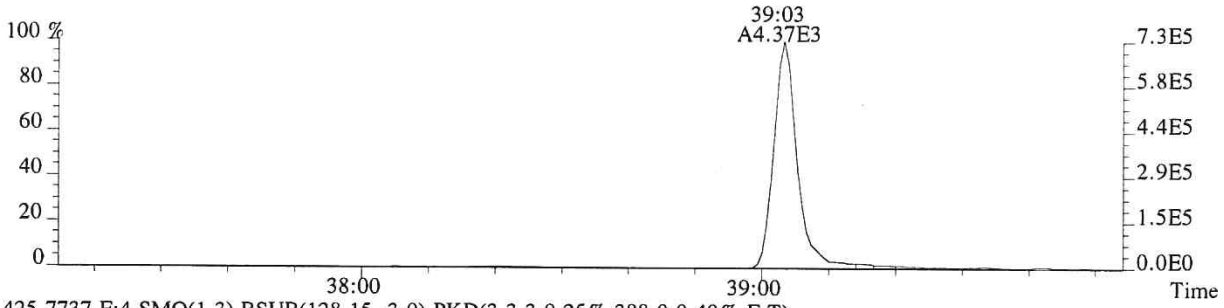


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

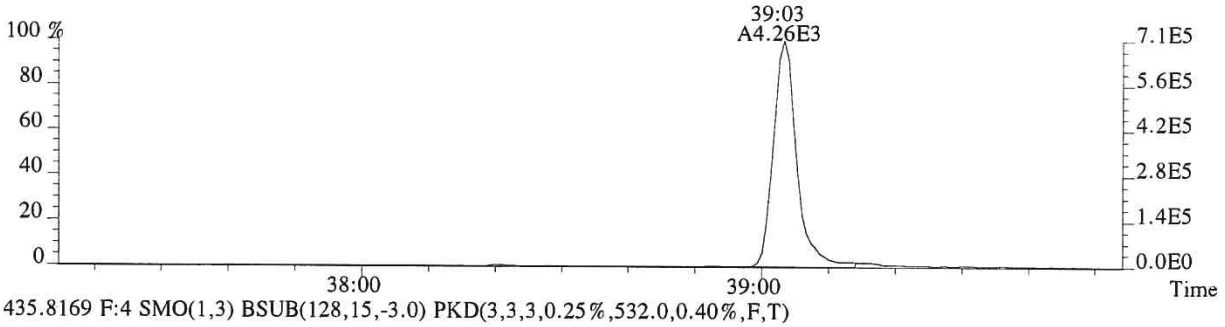


059382

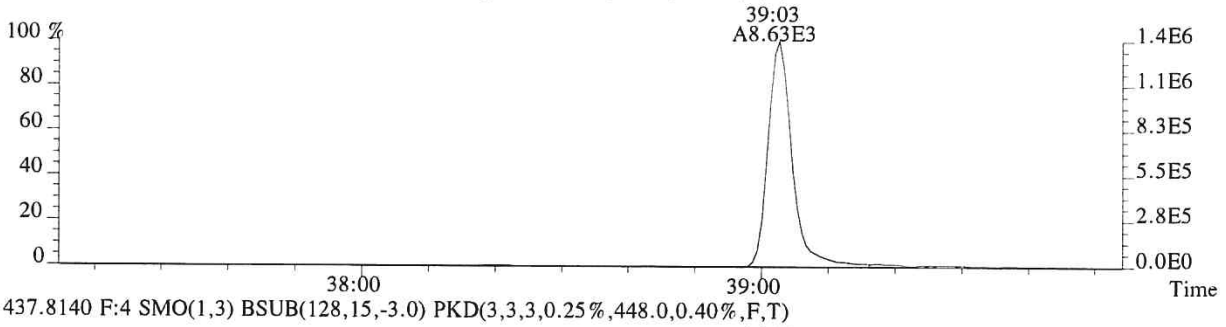
File:P519494 #1-240 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,532.0,0.40%,F,T)



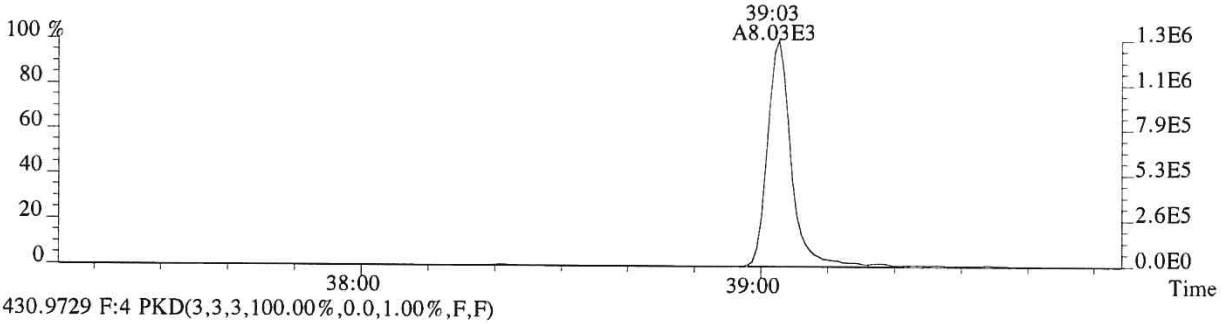
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,388.0,0.40%,F,T)



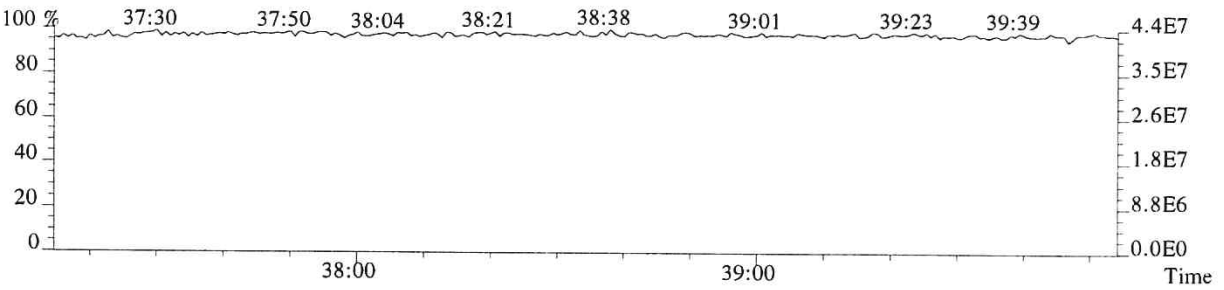
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,532.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,448.0,0.40%,F,T)



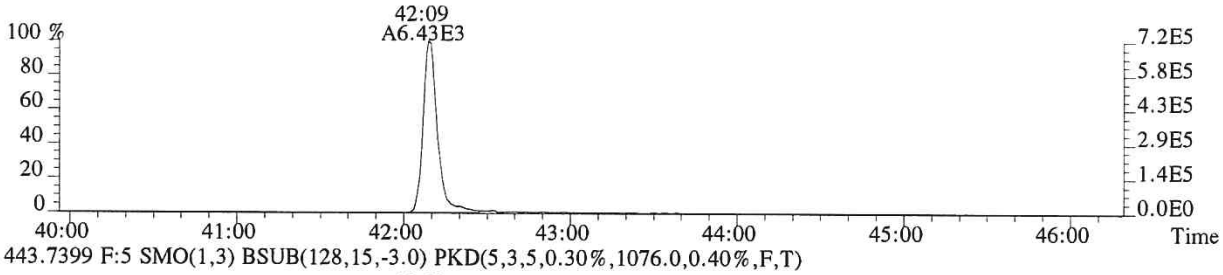
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



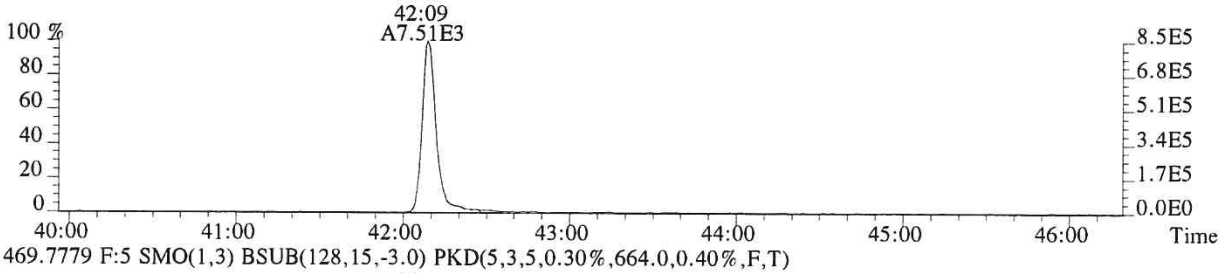
059383

File:P519494 #1-575 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

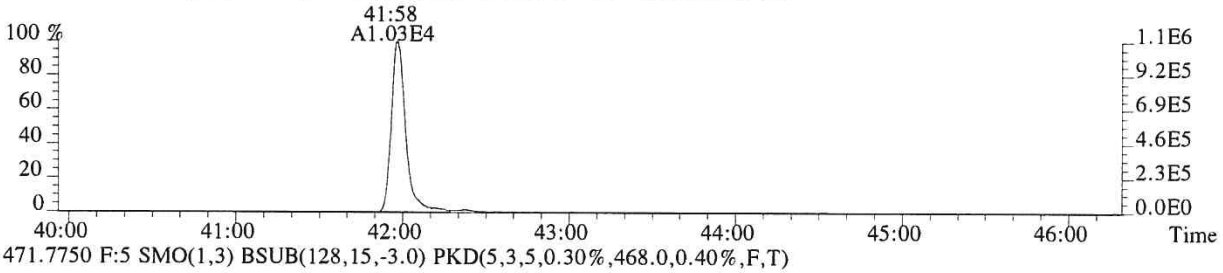
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,424.0,0.40%,F,T)



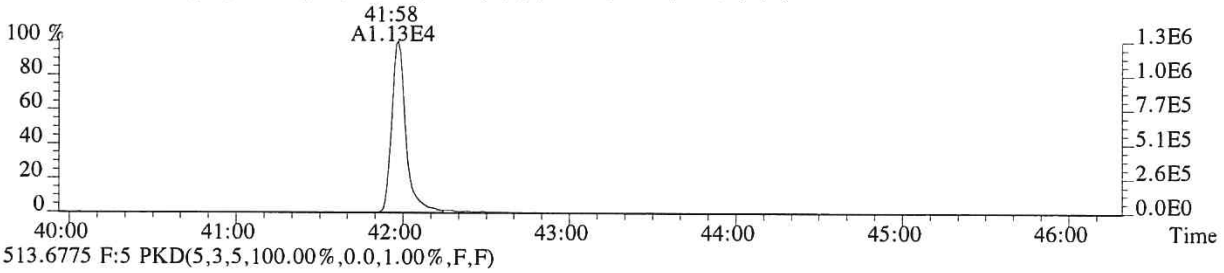
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1076.0,0.40%,F,T)



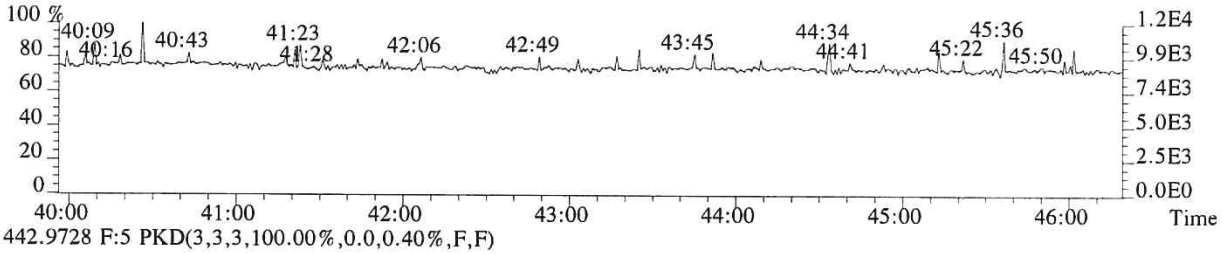
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,664.0,0.40%,F,T)



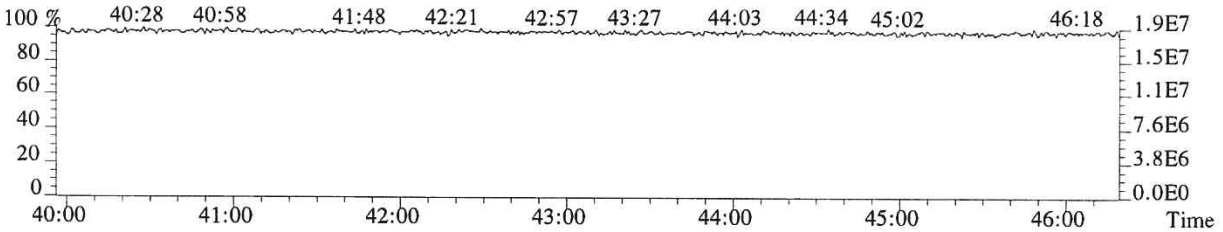
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,468.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

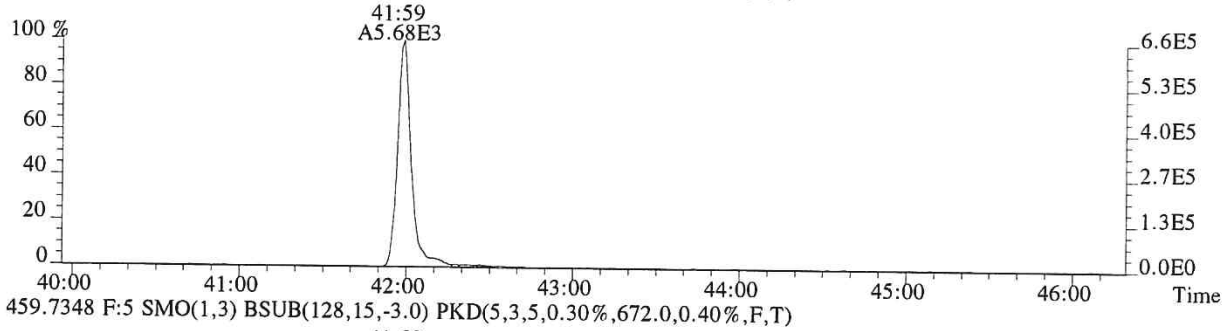


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

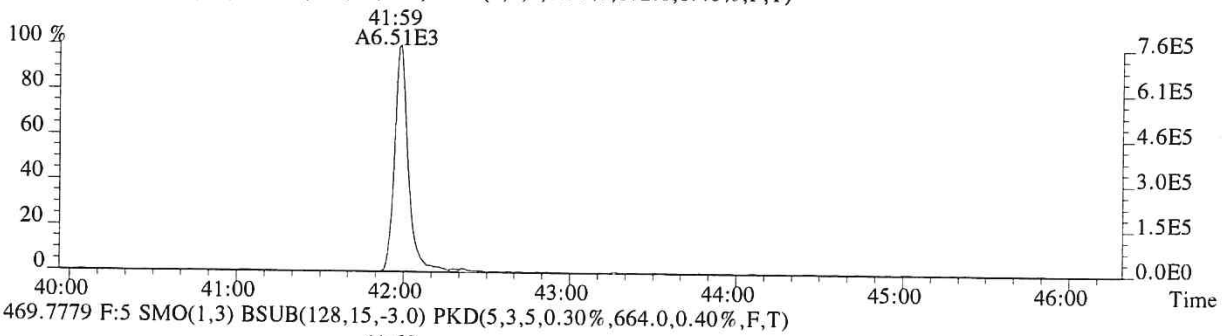


059384

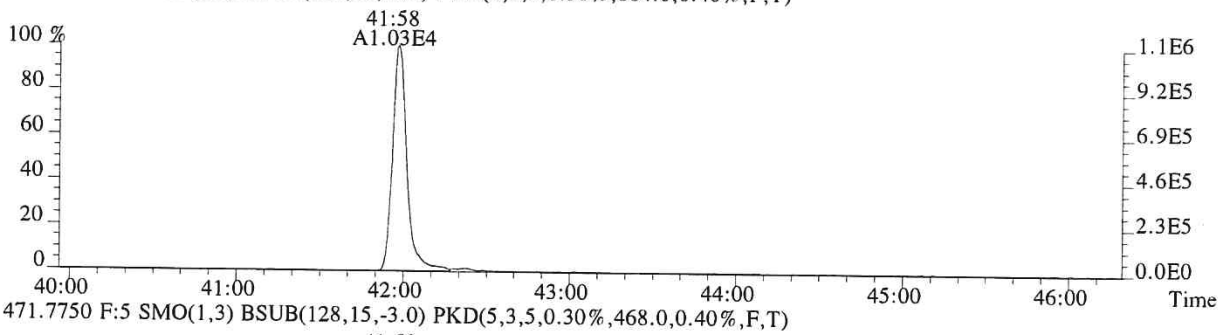
File:P519494 #1-575 Acq:19-DEC-2018 15:32:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,384.0,0.40%,F,T)



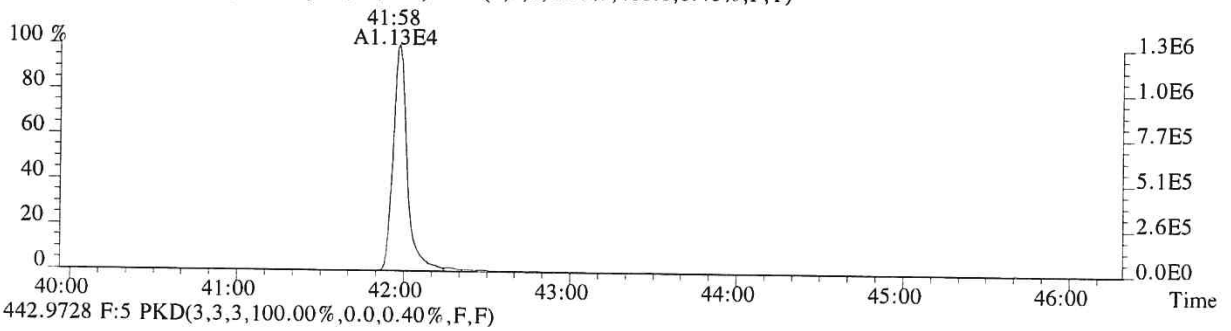
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,672.0,0.40%,F,T)



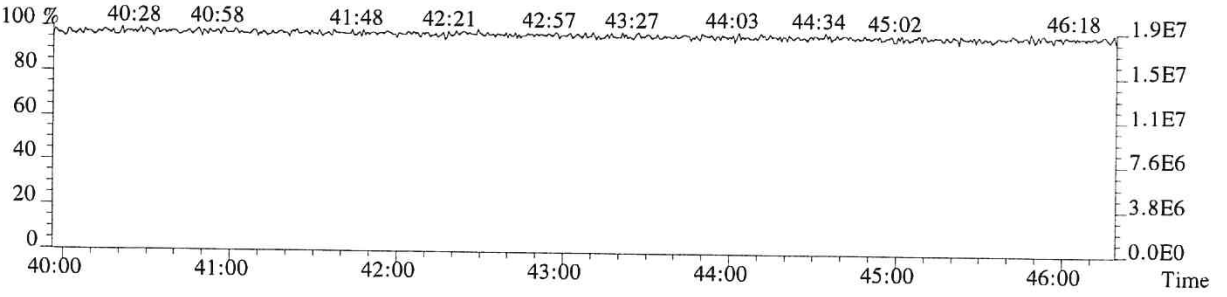
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,664.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,468.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059385

CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: P519532

Date: 12/21/18

Circle one: (Beginning) / Ending

Method: (1613) / 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: LKL Second QC: LG

ccalqc.xls 07/17/12

059386

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 01/24/18

Init. Calib.Times: 11:44

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P519533	21-DEC-18	03:20:28
194503	CS3	P519532	21-DEC-18	02:32:41
METHOD BLANK	EQ1800510-01	P519534	21-DEC-18	04:09:06
SL0008	E1801093-013DL	P519535	21-DEC-18	04:57:52
SL0009	E1801093-014DL	P519536	21-DEC-18	05:46:29
SL0010	E1801093-015DL	P519537	21-DEC-18	06:35:07
SL0001	E1801093-016DL	P519538	21-DEC-18	07:23:44
SL0029	E1801094-002DL	P519539	21-DEC-18	08:12:22
SL0030	E1801094-003DL	P519540	21-DEC-18	09:00:59
SL0030	E1801094-004DL	P519541	21-DEC-18	09:49:36
SL0066	E1801096-011DL	P519542	21-DEC-18	10:38:15
SL0067	E1801096-012DL	P519543	21-DEC-18	11:26:53

E1801096

Sample List Report **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS07.PRO\SampleDB\20181221A.SPL
Last Modified: Friday, December 21, 2018 08:23:10 Central Standard Time
Printed: Friday, December 21, 2018 08:23:42 Central Standard Time

Page Position (1, 1)

OPUS 5 NET: P519532 RES

	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/21/18	02:32	P519532	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2	T	HRMS CHECK 02:32
2		03:20	P519533	WINDOWDEFINE	192977	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		04:09	P519534	MB	EQ1800510-01	EPA1613_ALS	Dioxin_ALS	Tray1:16		
4		04:57	P519535	E1801093-013DL	E1801093-013DL	EPA1613_ALS	Dioxin_ALS	Tray1:17		
5		05:46	P519536	E1801093-014DL	E1801093-014DL	EPA1613_ALS	Dioxin_ALS	Tray1:18		
6		06:35	P519537	E1801093-015DL	E1801093-015DL	EPA1613_ALS	Dioxin_ALS	Tray1:19		
7		07:23	P519538	E1801093-016DL	E1801093-016DL	EPA1613_ALS	Dioxin_ALS	Tray1:20		
8		08:12	P519539	E1801094-002DL	E1801094-002DL	EPA1613_ALS	Dioxin_ALS	Tray1:21		
9		09:00	P519540	E1801094-003DL	E1801094-003DL	EPA1613_ALS	Dioxin_ALS	Tray1:22		
10		09:49	P519541	E1801094-004DL	E1801094-004DL	EPA1613_ALS	Dioxin_ALS	Tray1:23		
11		10:38	P519542	E1801096-011DL	E1801096-011DL	EPA1613_ALS	Dioxin_ALS	Tray1:24		
12		11:26	P519543	E1801096-012DL	E1801096-012DL	EPA1613_ALS	Dioxin_ALS	Tray1:25		
13		12:23	P519544	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2		HRMS CHECK 12:23

LKL 12/24/18

Printed: Friday, December 21, 2018 02:32:40 Central Standard Time

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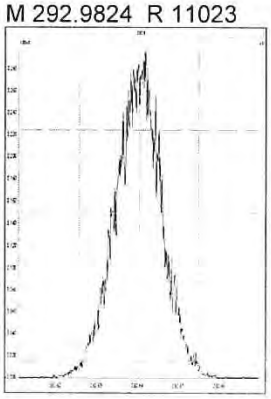

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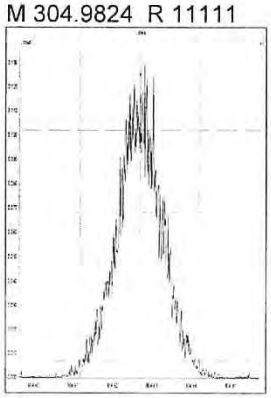

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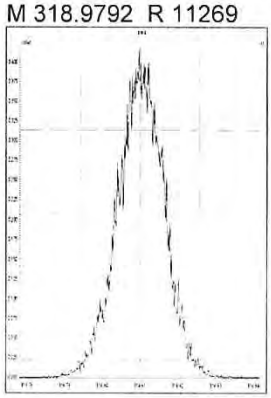

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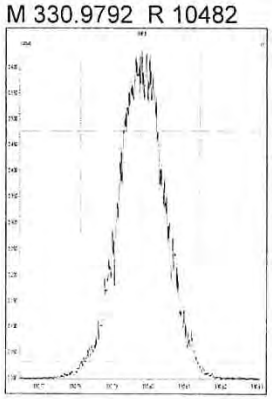

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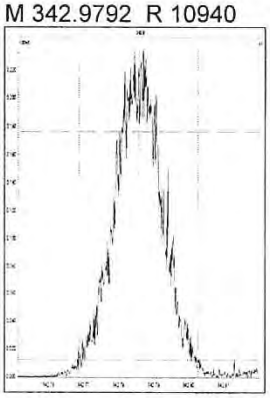

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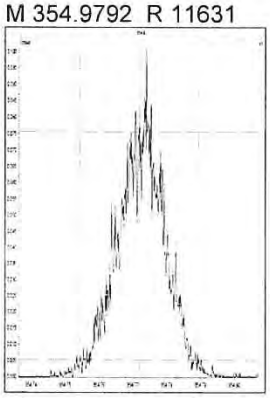

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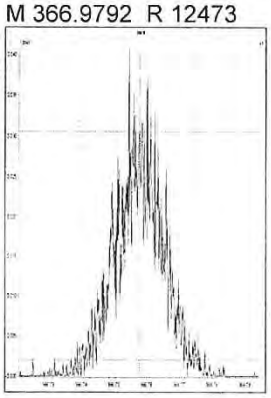

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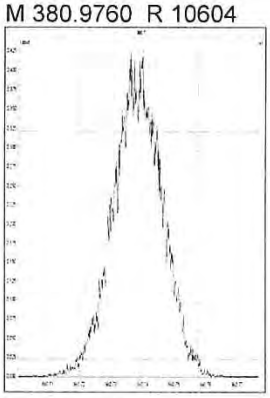

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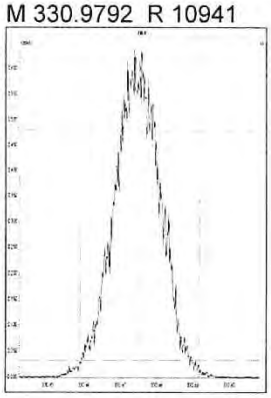

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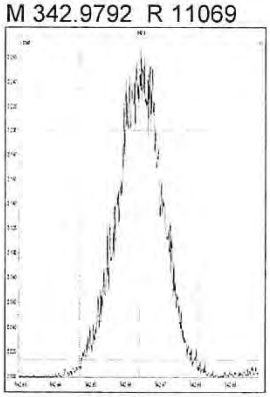

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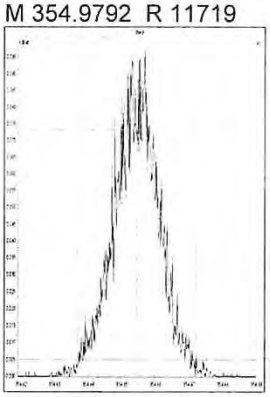

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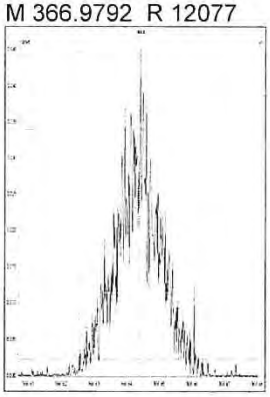

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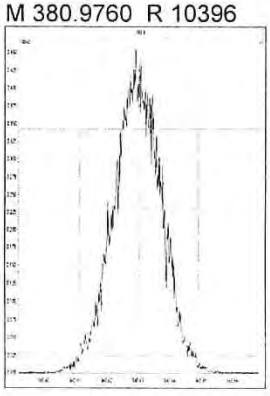

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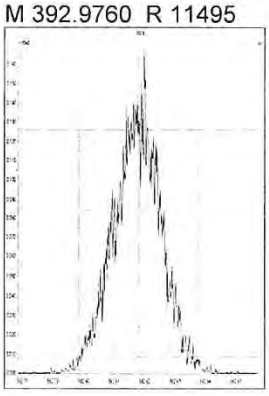

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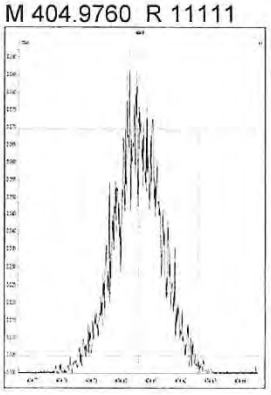

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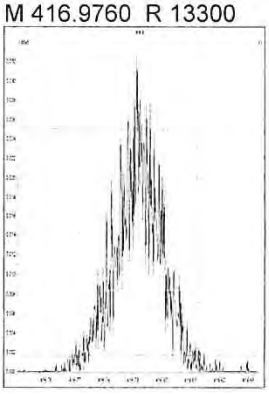

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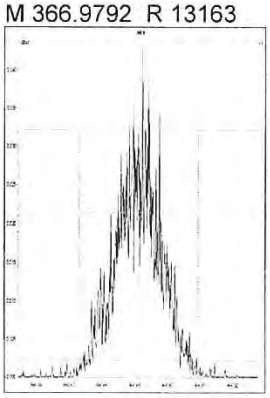

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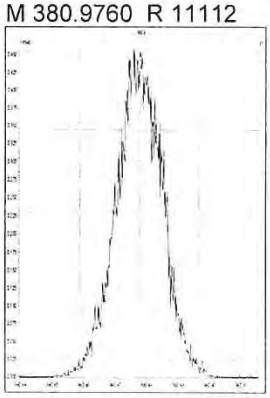

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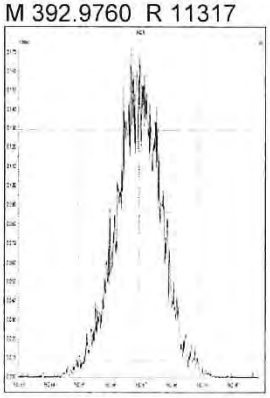

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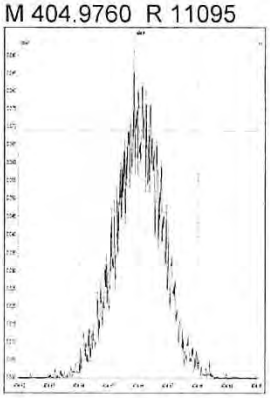

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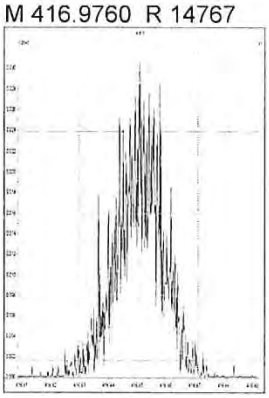

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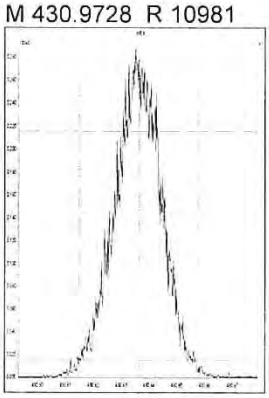

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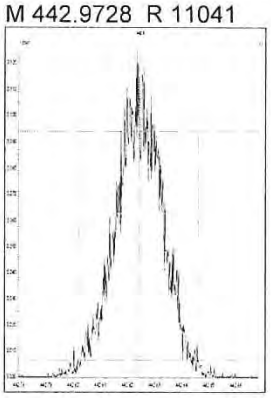

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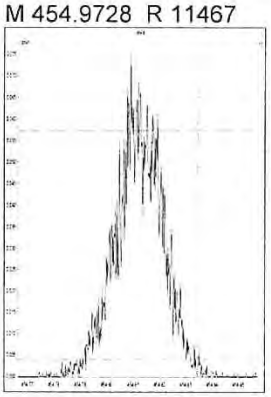

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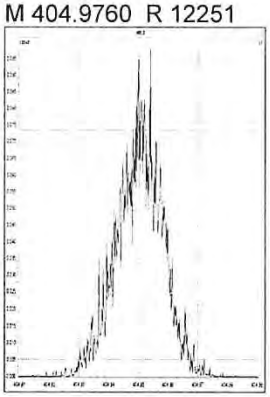

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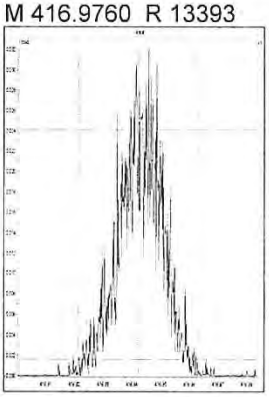

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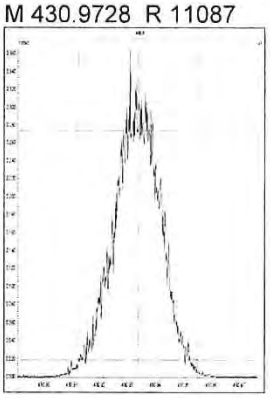

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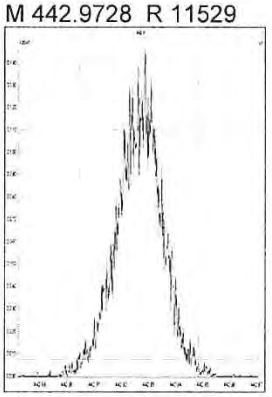

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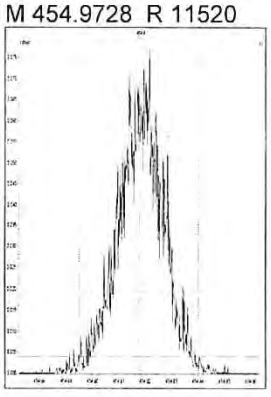

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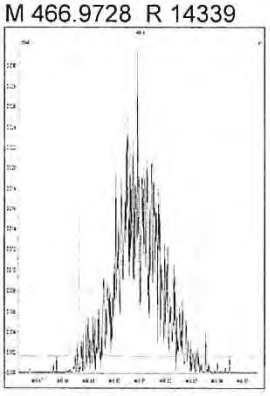

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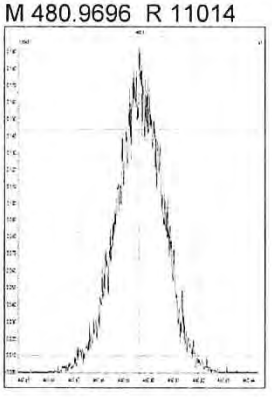

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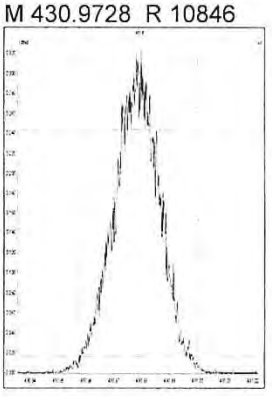

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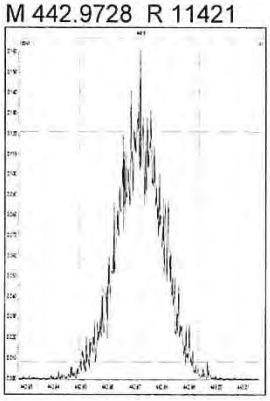

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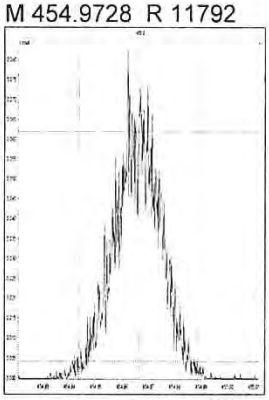

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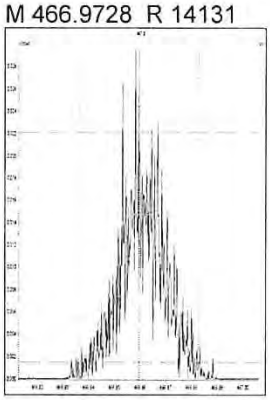

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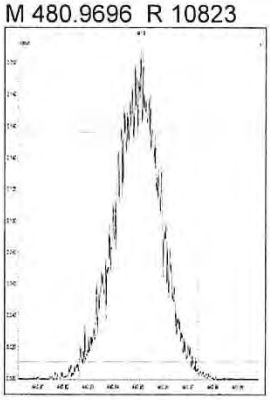

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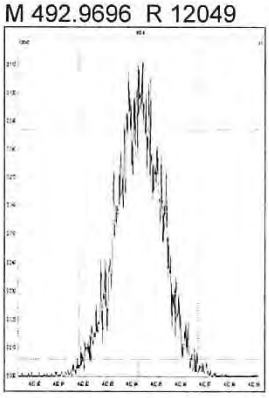

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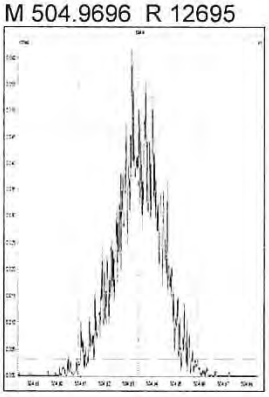

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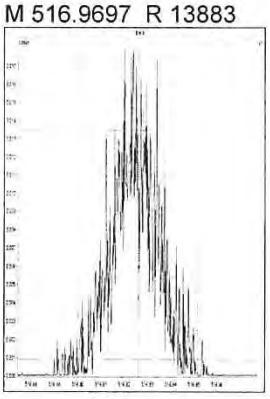

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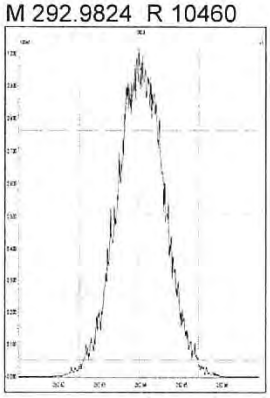

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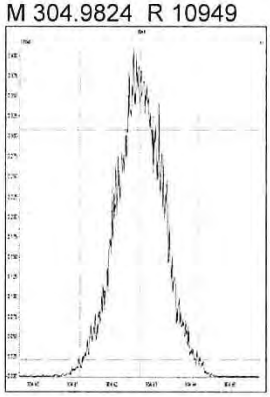

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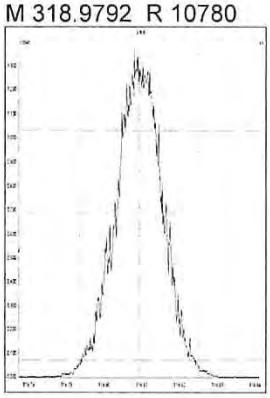

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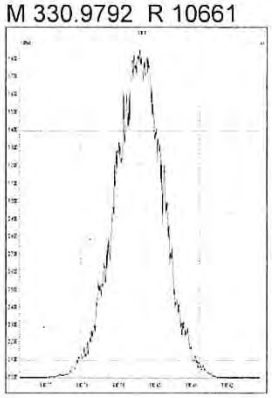

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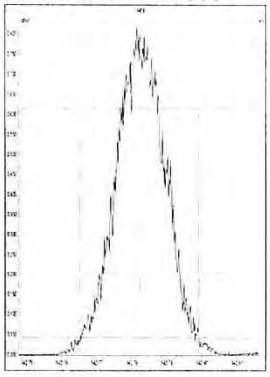

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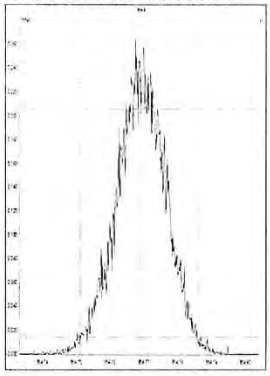

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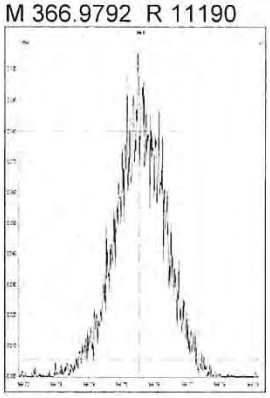

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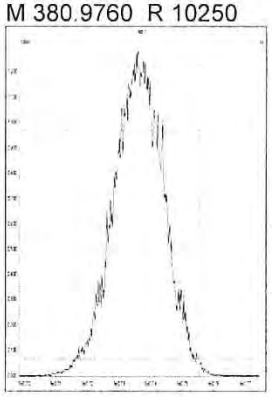

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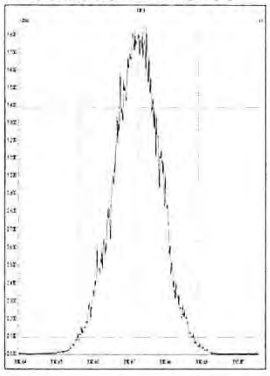

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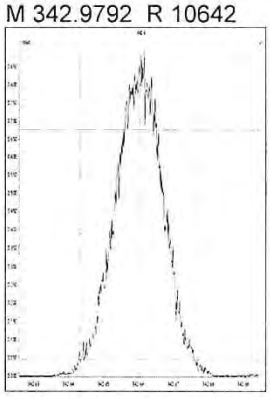

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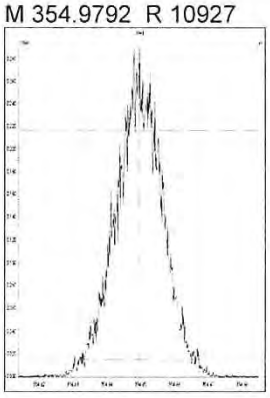

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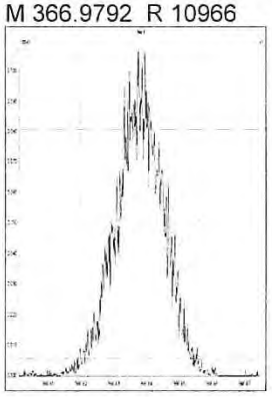

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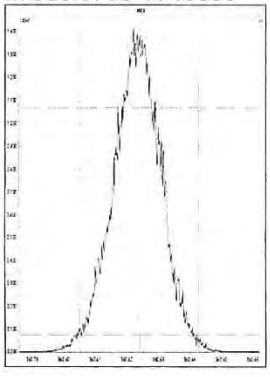

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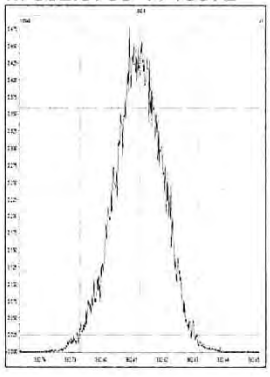

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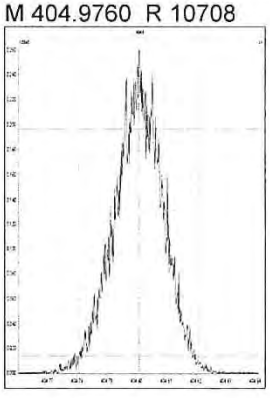

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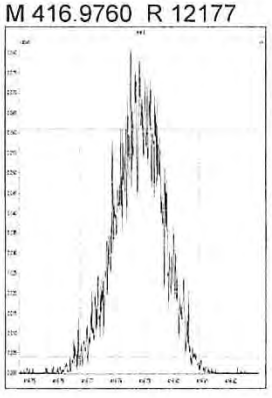

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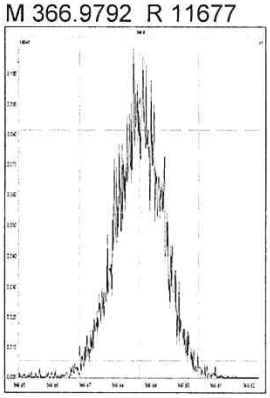
M 366.9792 R 11677



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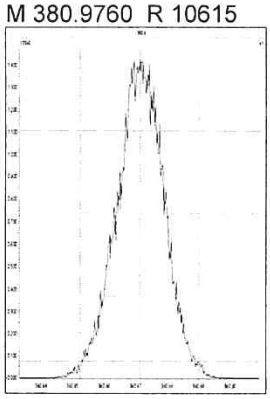

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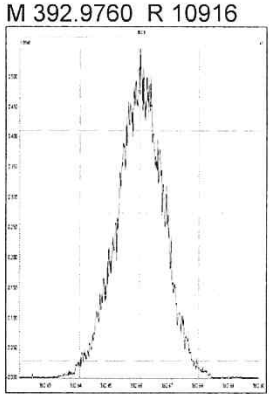

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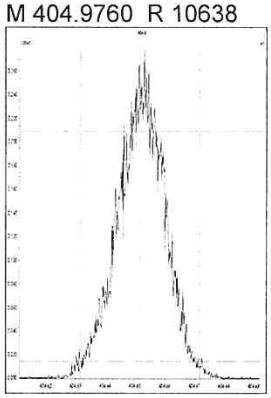

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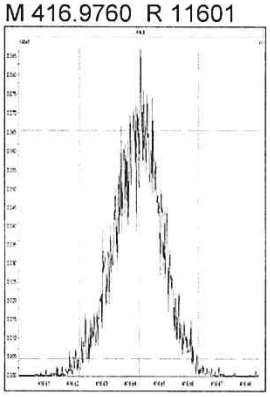

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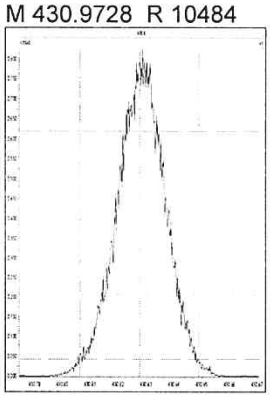

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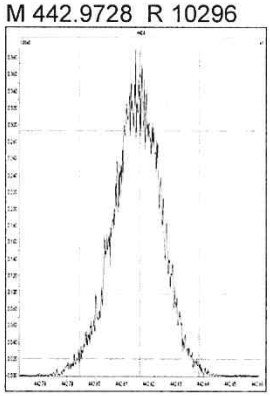

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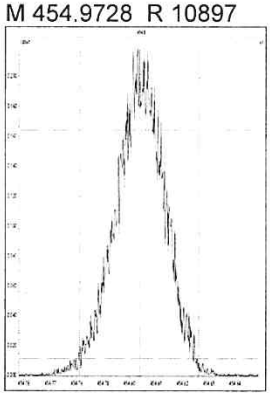

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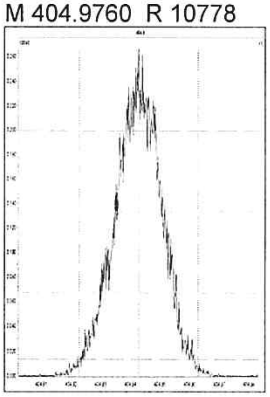

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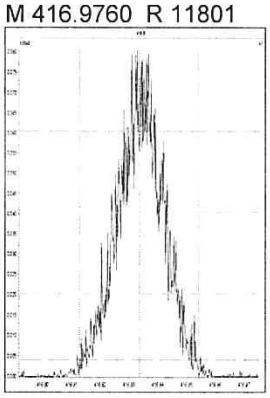

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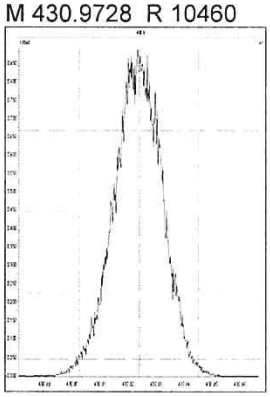

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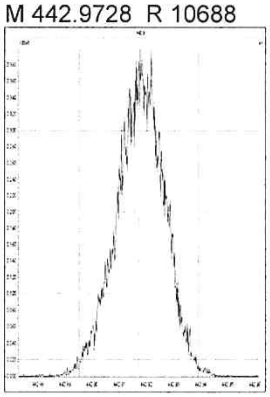

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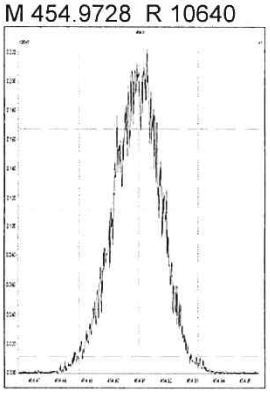

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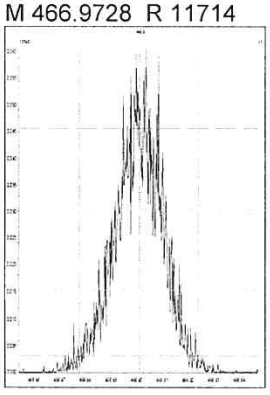

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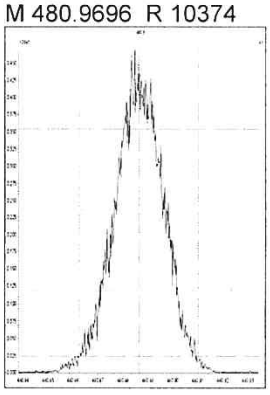
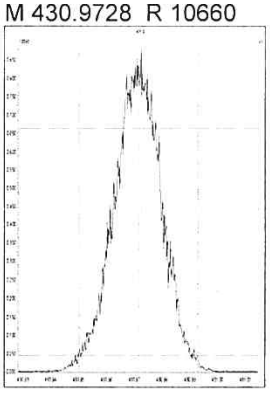


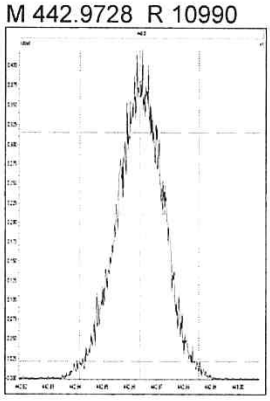
M 430.9728 R 10660



059393

Printed: Friday, December 21, 2018 12:23:41 Central Standard Time

M 442.9728 R 10990



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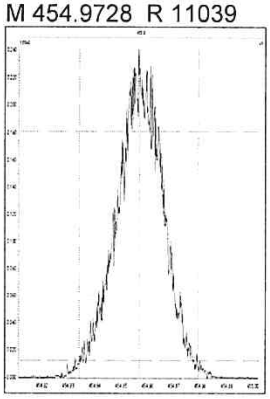

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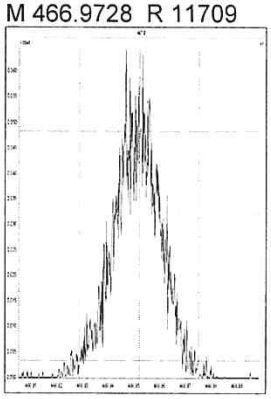

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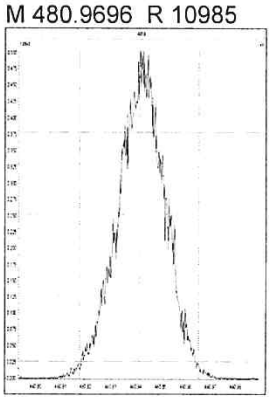

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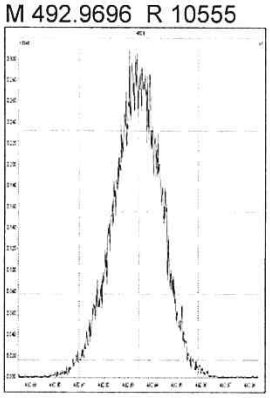

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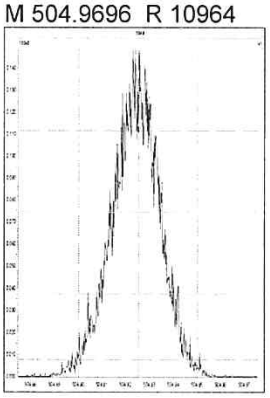

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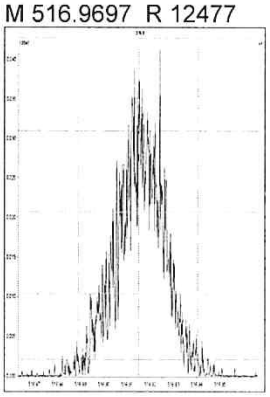


WINDOW DEFINING MIX SUMMARY

CLIENT ID:

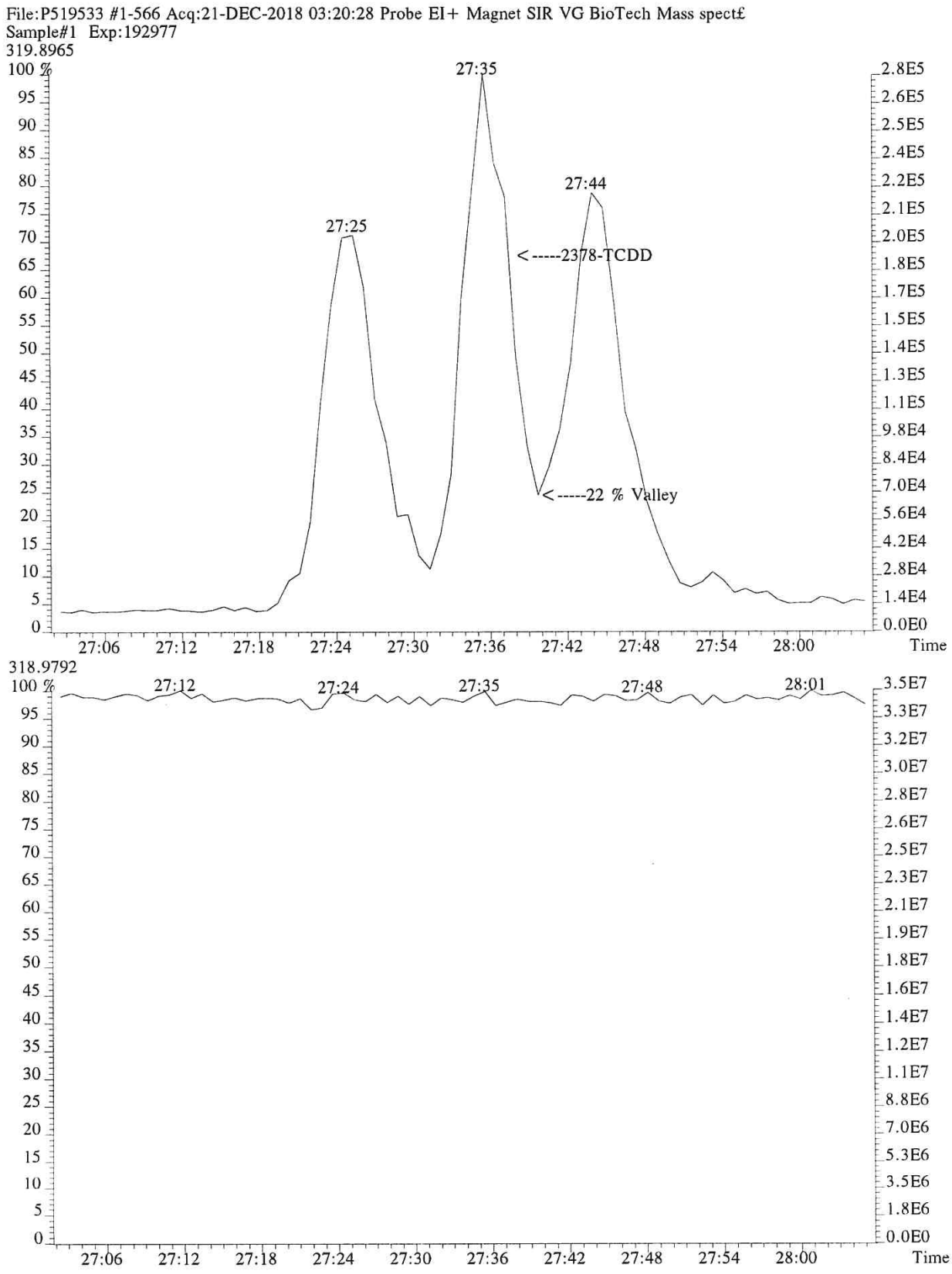
WDM

Lab Name: ALS Environmental
Lab Code: ALSTX Case No.: _____ SDG No.:
GC Column: DB-5MSUI ID: 0.25 (mm) Lab File ID: P519533
Date Analyzed: 21-DEC-18
Time Analyzed: 03:20:28

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	22:14	28:52
TCDD	23:55	28:43
PeCDF	28:51	33:24
PeCDD	30:32	33:09
HxCDF	34:08	36:47
HxCDD	34:42	36:23
HpCDF	38:09	39:36
HpCDD	38:26	39:08

% Valley 2378-TCDD: 22 %

059395


File:P519533 #1-566 Acq:21-DEC-2018 03:20:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
319.8965
100 %
27:35
27:44
27:25
<-----2378-TCDD
<-----22 % Valley
Time
318.9792
100 %
27:12
27:24
27:35
27:48
28:01
Time

059396

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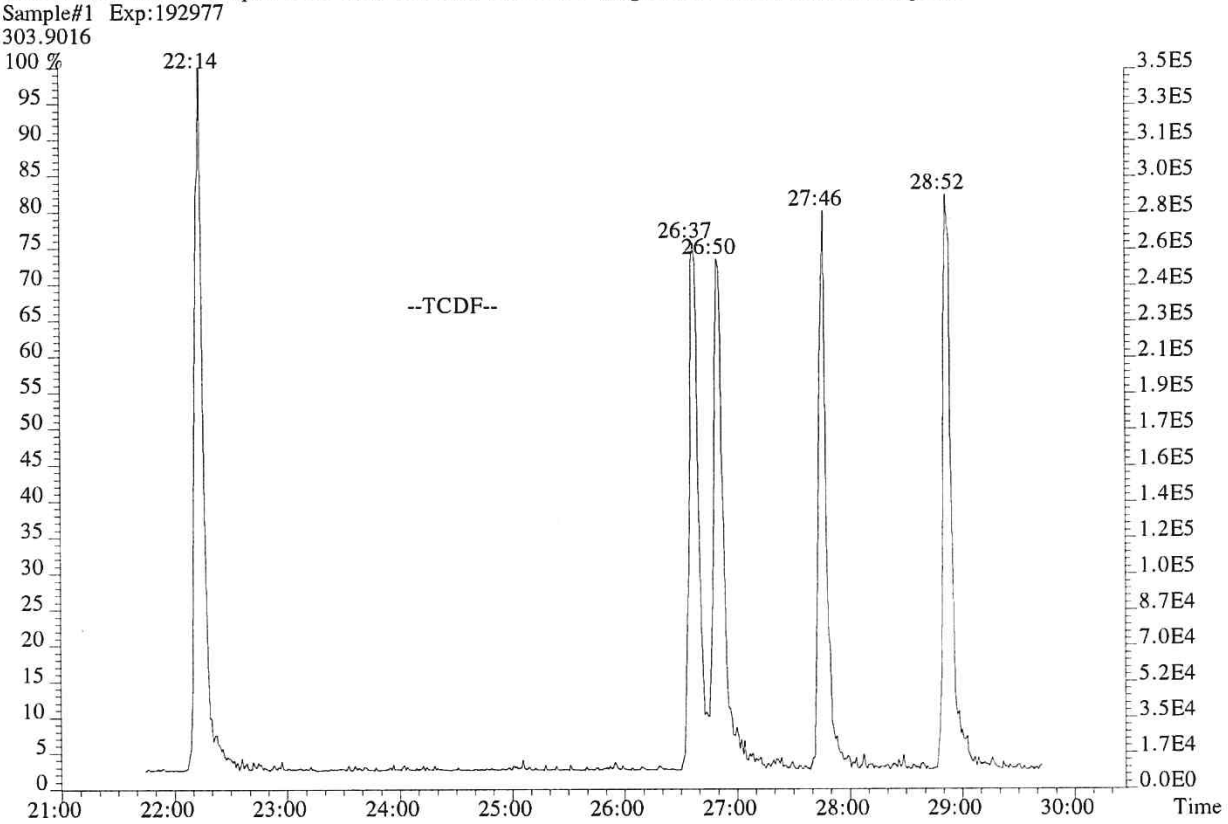

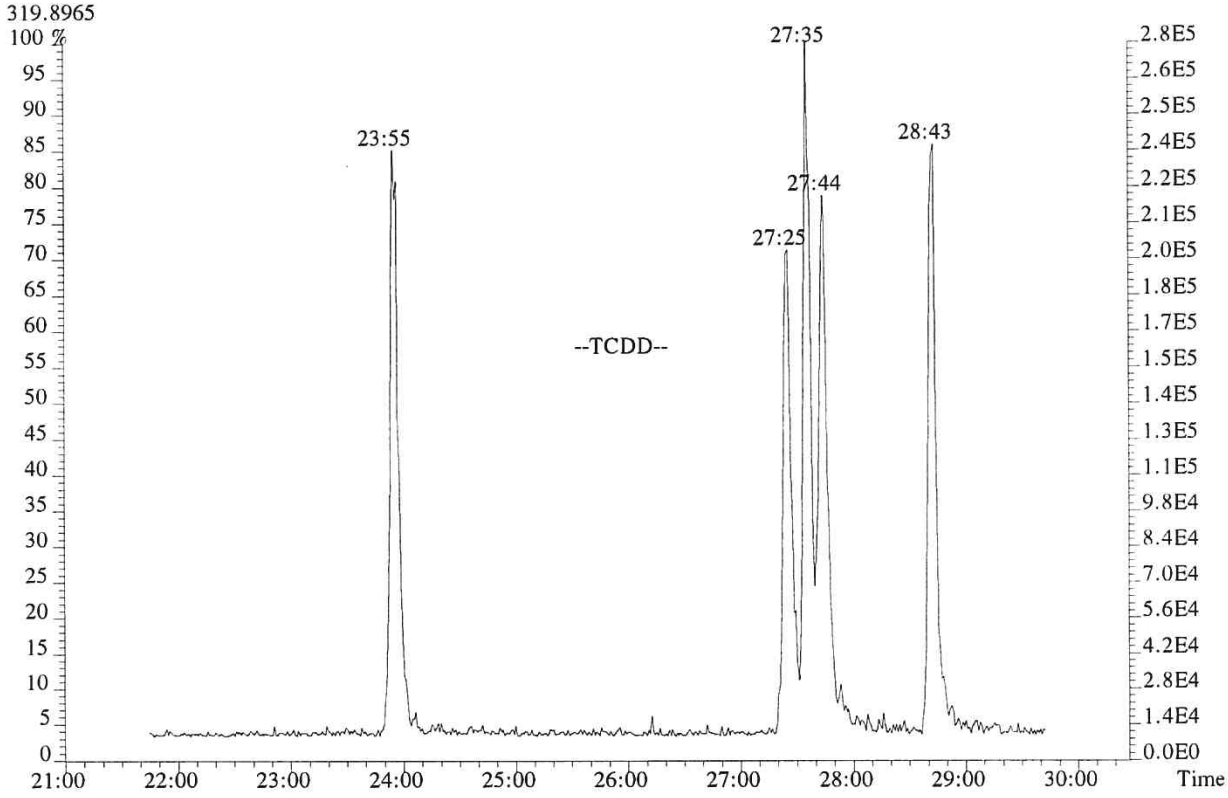

059397

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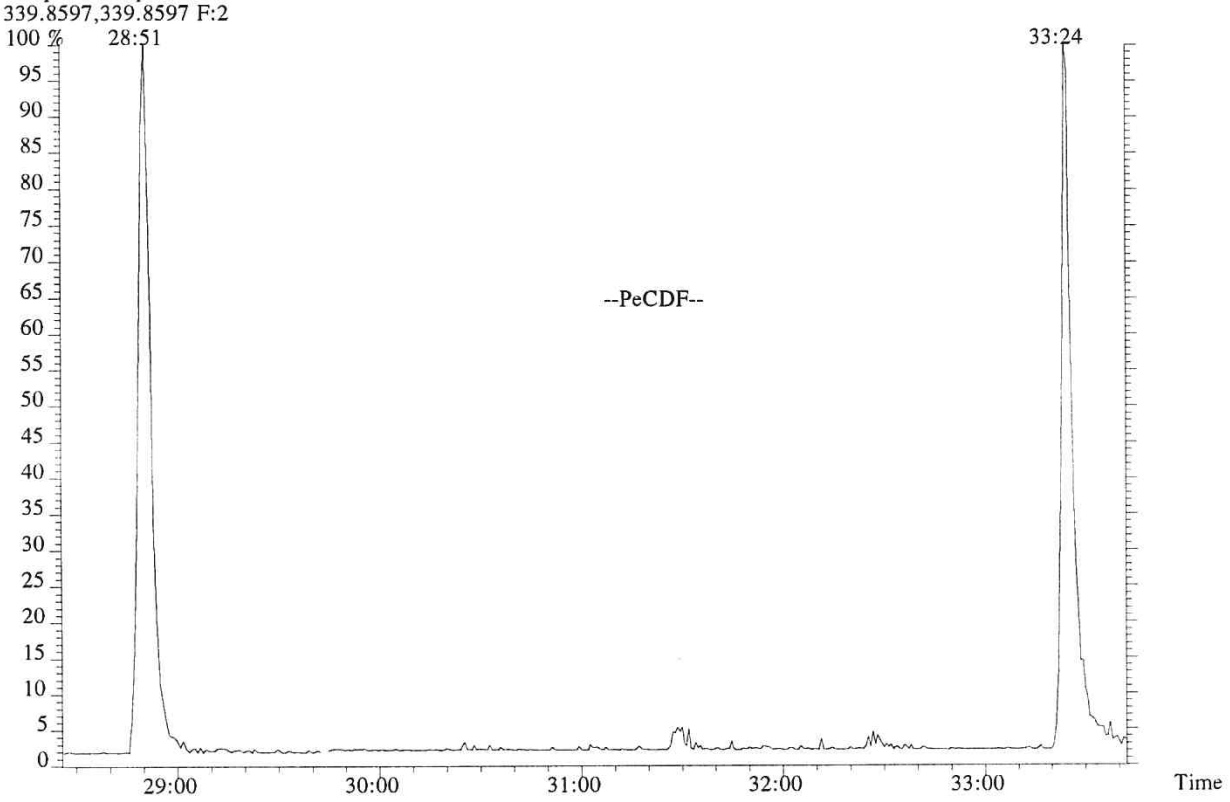
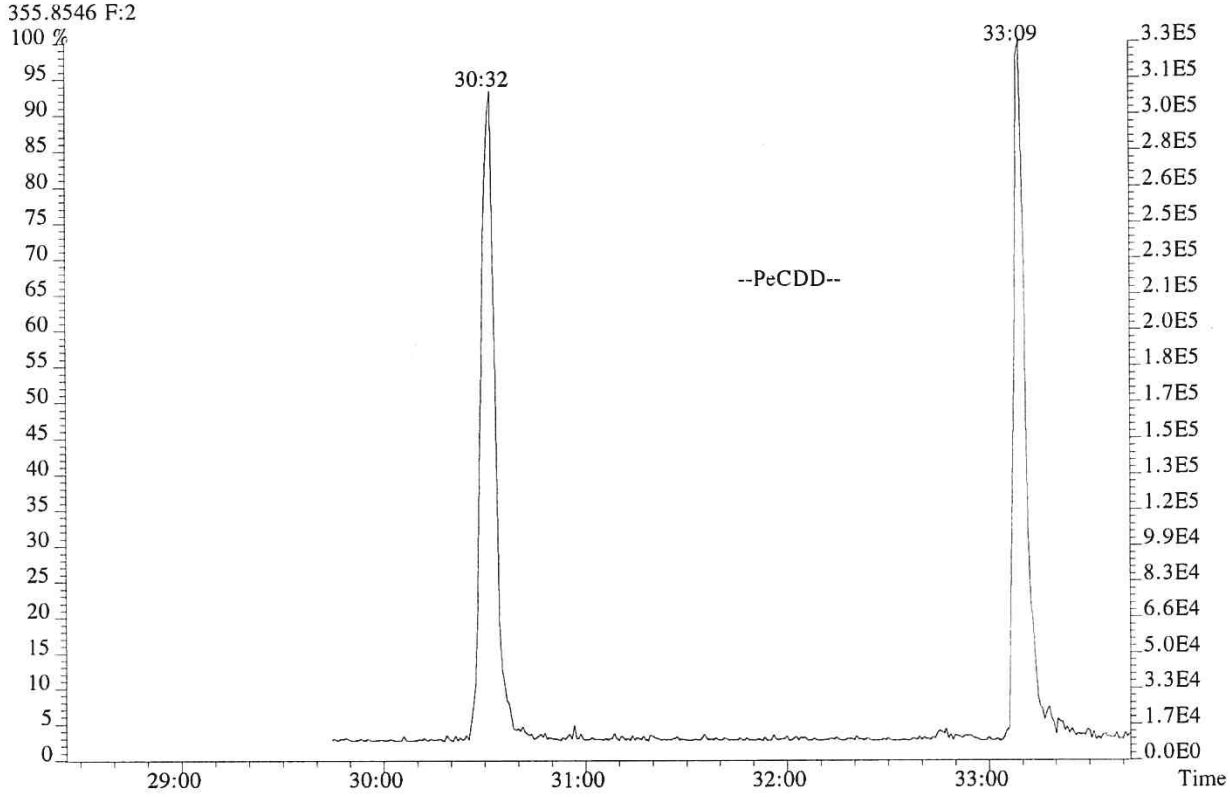


355.8546 F:2



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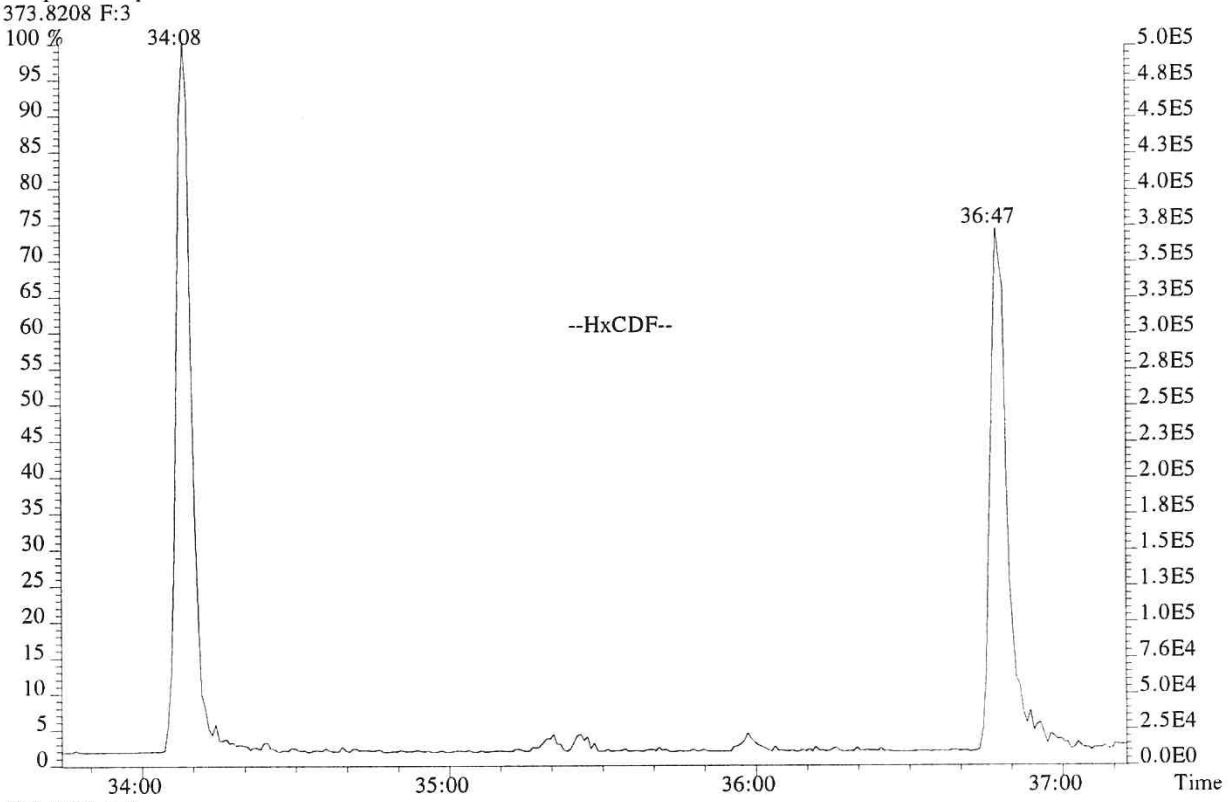
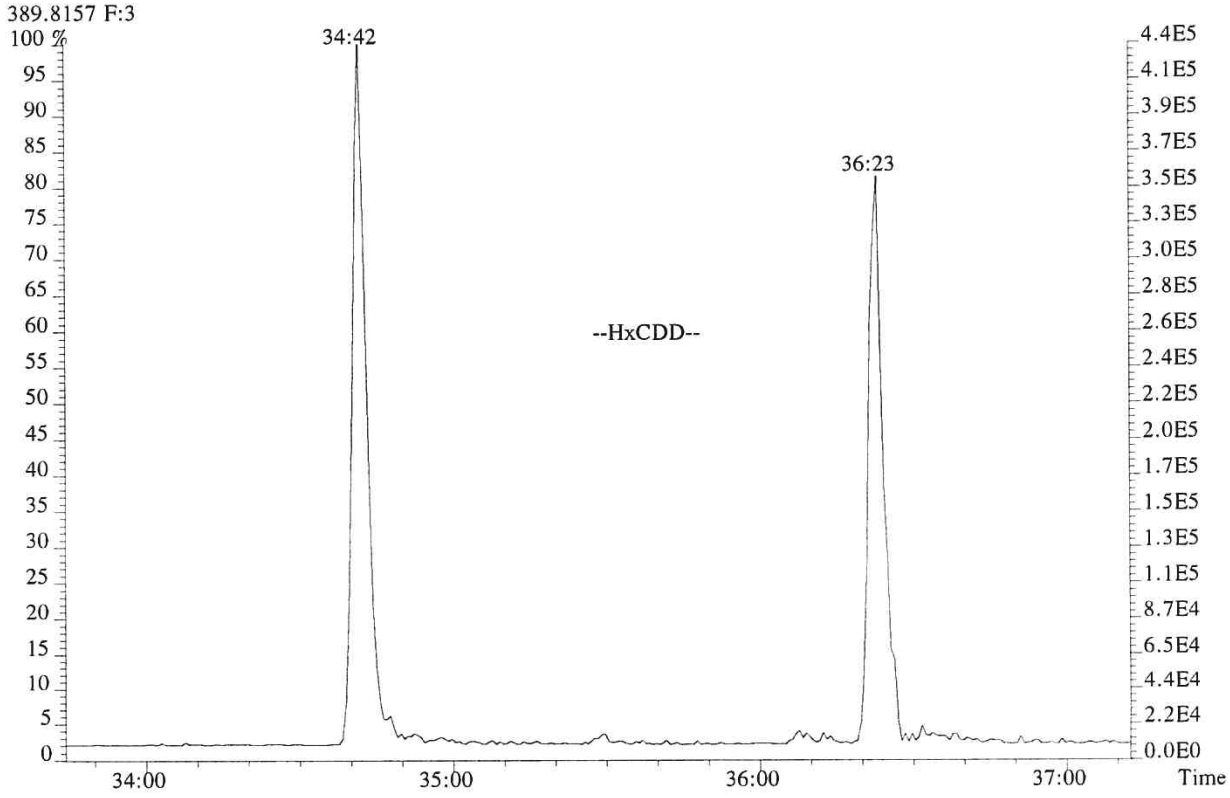
Sample#1 Exp:192977
373.8208 F:3



389.8157 F:3



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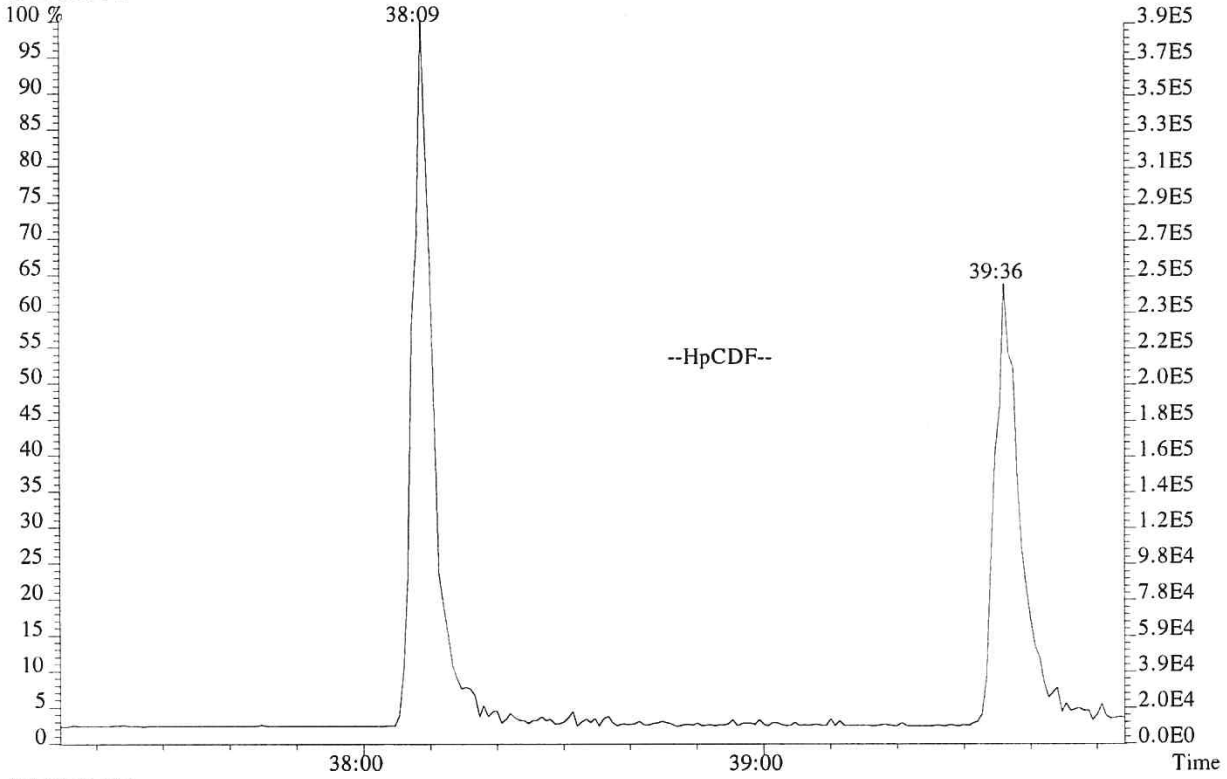
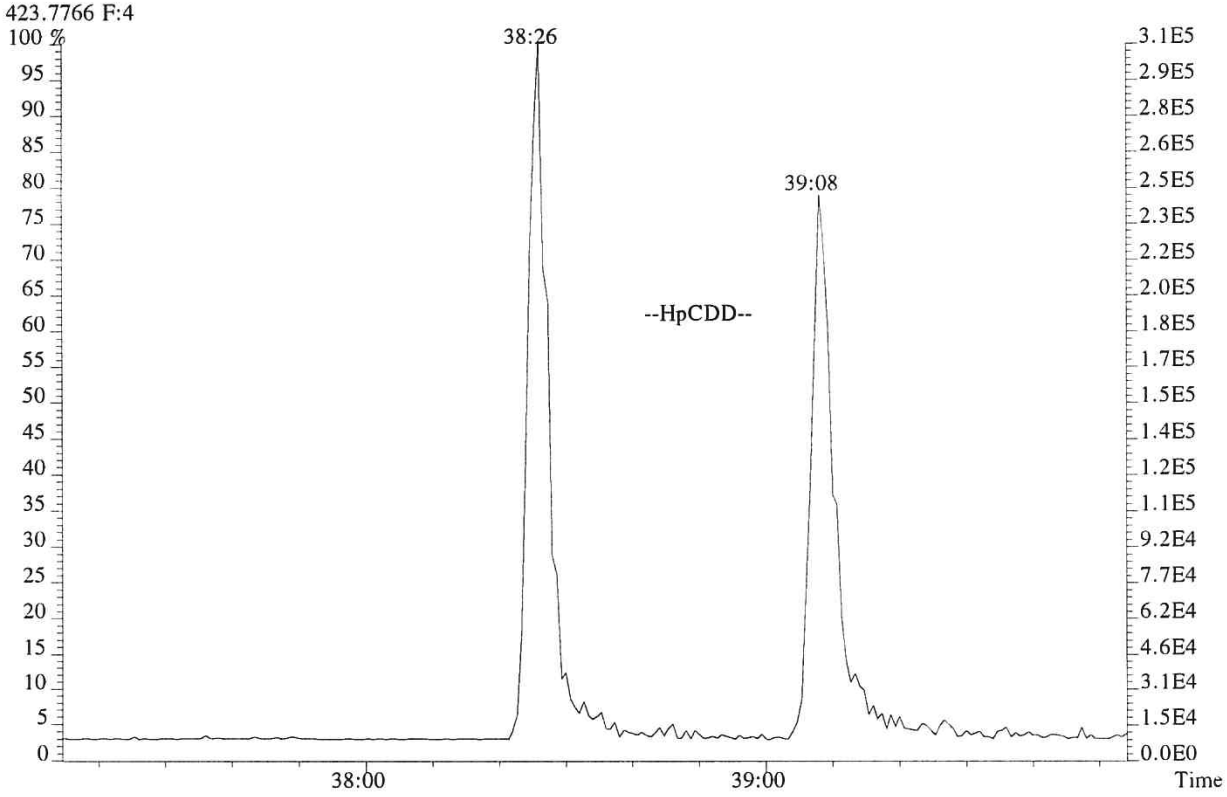


423.7766 F:4



059400

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519532 Analysis Date: 21-DEC-18 Time: 02:32:41

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.82	0.65-0.89	9.9	7.8 - 12.9	-1.3
1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	51	39 - 65	2.4
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	52	39 - 64	4.9
1,2,3,6,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	49	39 - 64	-2.9
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	52	41 - 61	4.4
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	49	43 - 58	-1.5
OCDD	M+2/M+4	0.88	0.76-1.02	100	79 - 126	-0.1
2,3,7,8-TCDF	M/M+2	0.76	0.65-0.89	10.1	8.4 - 12.0	0.8
1,2,3,7,8-PeCDF	M+2/M+4	1.49	1.32-1.78	51	41 - 60	1.8
2,3,4,7,8-PeCDF	M+2/M+4	1.49	1.32-1.78	50	41 - 61	-0.2
1,2,3,4,7,8-HxCDF	M+2/M+4	1.19	1.05-1.43	52	45 - 56	5.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	51	44 - 57	2.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	50	45 - 56	1.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	51	44 - 57	1.7
1,2,3,4,6,7,8-HpCDF	M+2/M+4	0.99	0.88-1.20	51	45 - 55	1.2
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88-1.20	50	43 - 58	-0.3
OCDF	M+2/M+4	0.88	0.76-1.02	98	63 - 159	-2.5

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519532 Analysis Date: 21-DEC-18 Time: 02:32:41

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	98	82 - 121	-2.5
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32-1.78	109	62 - 160	8.8
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	93	85 - 117	-7.3
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	102	85 - 118	1.9
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.09	0.88-1.20	105	72 - 138	4.8
13C-OCDD	M+2/M+4	0.90	0.76-1.02	253	96 - 415	26.6
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	90	71 - 140	-10.1
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	105	76 - 130	5.1
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	108	77 - 130	7.7
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	87	76 - 131	-12.7
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	96	70 - 143	-3.6
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	92	74 - 135	-7.8
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	96	73 - 137	-4.3
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	101	78 - 129	1.5
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	102	77 - 129	1.7
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			10.1	7.8 - 12.7	1.2

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
194503

Run #7 Filename P519532 Samp: 1 Inj: 1 Acquired: 21-DEC-18 02:32:41
Processed: 24-DEC-18 07:59:54 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:50	1.617e+03	2.136e+03	0.76	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:29	1.386e+04	9.286e+03	1.49	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:27	1.303e+04	8.762e+03	1.49	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:18	1.129e+04	9.472e+03	1.19	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:25	1.309e+04	1.071e+04	1.22	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:56	1.162e+04	9.309e+03	1.25	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:45	9.906e+03	7.933e+03	1.25	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:08	1.030e+04	1.039e+04	0.99	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:35	8.112e+03	8.009e+03	1.01	yes	no	1.258
10	Unk	OCDF	42:18	1.410e+04	1.605e+04	0.88	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:44	1.262e+03	1.540e+03	0.82	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:45	9.314e+03	5.771e+03	1.61	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:06	8.032e+03	6.373e+03	1.26	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	36:12	8.519e+03	6.524e+03	1.31	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:27	8.646e+03	6.977e+03	1.24	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:07	7.143e+03	6.850e+03	1.04	yes	no	1.025
17	Unk	OCDD	42:07	1.189e+04	1.352e+04	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:49	1.722e+04	2.231e+04	0.77	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:27	2.747e+04	1.743e+04	1.58	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:26	2.800e+04	1.756e+04	1.59	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:18	1.126e+04	2.198e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:24	1.400e+04	2.758e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:56	1.248e+04	2.461e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:44	1.045e+04	2.043e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:07	9.352e+03	2.090e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:35	7.883e+03	1.784e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:42	1.153e+04	1.464e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:44	1.897e+04	1.185e+04	1.60	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:05	1.480e+04	1.164e+04	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	36:11	1.676e+04	1.308e+04	1.28	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:07	1.449e+04	1.323e+04	1.09	yes	no	0.858
32	IS	13C-OCDD	42:06	2.159e+04	2.392e+04	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	27:04	1.283e+04	1.622e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:26	1.723e+04	1.362e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:44	2.979e+03				no	1.014

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
194503

Run #7 Filename P519532 Samp: 1 Inj: 1 Acquired: 21-DEC-18 02:32:41
Processed: 24-DEC-18 07:59:54 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.51e+05	5.00e+02	5.0e+02	3.28e+05	1.02e+03	3.2e+02
2	1,2,3,7,8-PeCDF	2.22e+06	3.80e+02	5.8e+03	1.49e+06	5.88e+02	2.5e+03
3	2,3,4,7,8-PeCDF	2.46e+06	3.80e+02	6.5e+03	1.60e+06	5.88e+02	2.7e+03
4	1,2,3,4,7,8-HxCDF	2.28e+06	3.88e+02	5.9e+03	1.92e+06	2.28e+02	8.4e+03
5	1,2,3,6,7,8-HxCDF	2.38e+06	3.88e+02	6.1e+03	1.94e+06	2.28e+02	8.5e+03
6	2,3,4,6,7,8-HxCDF	2.28e+06	3.88e+02	5.9e+03	1.80e+06	2.28e+02	7.9e+03
7	1,2,3,7,8,9-HxCDF	1.70e+06	3.88e+02	4.4e+03	1.37e+06	2.28e+02	6.0e+03
8	1,2,3,4,6,7,8-HpCDF	1.73e+06	4.84e+02	3.6e+03	1.76e+06	2.52e+02	7.0e+03
9	1,2,3,4,7,8,9-HpCDF	1.16e+06	4.84e+02	2.4e+03	1.14e+06	2.52e+02	4.5e+03
10	OCDF	1.42e+06	4.08e+02	3.5e+03	1.65e+06	5.92e+02	2.8e+03
11	2,3,7,8-TCDD	2.20e+05	1.64e+03	1.3e+02	2.50e+05	3.84e+02	6.5e+02
12	1,2,3,7,8-PeCDD	1.61e+06	4.52e+02	3.6e+03	9.97e+05	2.96e+02	3.4e+03
13	1,2,3,4,7,8-HxCDD	1.56e+06	4.08e+02	3.8e+03	1.27e+06	2.84e+02	4.5e+03
14	1,2,3,6,7,8-HxCDD	1.55e+06	4.08e+02	3.8e+03	1.17e+06	2.84e+02	4.1e+03
15	1,2,3,7,8,9-HxCDD	1.53e+06	4.08e+02	3.8e+03	1.21e+06	2.84e+02	4.3e+03
16	1,2,3,4,6,7,8-HpCDD	1.09e+06	2.44e+02	4.5e+03	1.03e+06	2.88e+02	3.6e+03
17	OCDD	1.20e+06	4.72e+02	2.5e+03	1.36e+06	2.76e+02	4.9e+03
18	13C-2,3,7,8-TCDF	2.58e+06	3.56e+03	7.3e+02	3.36e+06	2.49e+03	1.4e+03
19	13C-1,2,3,7,8-PeCDF	4.45e+06	5.20e+02	8.6e+03	2.87e+06	8.52e+02	3.4e+03
20	13C-2,3,4,7,8-PeCDF	5.13e+06	5.20e+02	9.9e+03	3.21e+06	8.52e+02	3.8e+03
21	13C-1,2,3,4,7,8-HxCDF	2.24e+06	4.16e+02	5.4e+03	4.41e+06	3.08e+02	1.4e+04
22	13C-1,2,3,6,7,8-HxCDF	2.57e+06	4.16e+02	6.2e+03	5.00e+06	3.08e+02	1.6e+04
23	13C-2,3,4,6,7,8-HxCDF	2.49e+06	4.16e+02	6.0e+03	4.88e+06	3.08e+02	1.6e+04
24	13C-1,2,3,7,8,9-HxCDF	1.81e+06	4.16e+02	4.4e+03	3.61e+06	3.08e+02	1.2e+04
25	13C-1,2,3,4,6,7,8-HpCDF	1.58e+06	2.80e+02	5.6e+03	3.53e+06	3.96e+03	8.9e+02
26	13C-1,2,3,4,7,8,9-HpCDF	1.12e+06	2.80e+02	4.0e+03	2.52e+06	3.96e+03	6.4e+02
27	13C-2,3,7,8-TCDD	1.90e+06	3.69e+03	5.1e+02	2.40e+06	1.27e+03	1.9e+03
28	13C-1,2,3,7,8-PeCDD	3.27e+06	3.16e+02	1.0e+04	2.04e+06	5.92e+02	3.4e+03
29	13C-1,2,3,4,7,8-HxCDD	3.01e+06	5.84e+02	5.2e+03	2.40e+06	4.44e+02	5.4e+03
30	13C-1,2,3,6,7,8-HxCDD	2.84e+06	5.84e+02	4.9e+03	2.22e+06	4.44e+02	5.0e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.20e+06	4.12e+02	5.3e+03	2.04e+06	3.20e+02	6.4e+03
32	13C-OCDD	2.10e+06	4.92e+02	4.3e+03	2.37e+06	3.76e+02	6.3e+03
33	13C-1,2,3,4-TCDD	2.14e+06	3.69e+03	5.8e+02	2.71e+06	1.27e+03	2.1e+03
34	13C-1,2,3,7,8,9-HxCDD	3.00e+06	5.84e+02	5.1e+03	2.34e+06	4.44e+02	5.3e+03
35	37Cl-2,3,7,8-TCDD	4.82e+05	5.04e+02	9.6e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.636e{+}03 + 3.840e{+}02) \times 100}{(1.898e{+}06 + 2.399e{+}06) \times (\quad) \times 1.085} =$$

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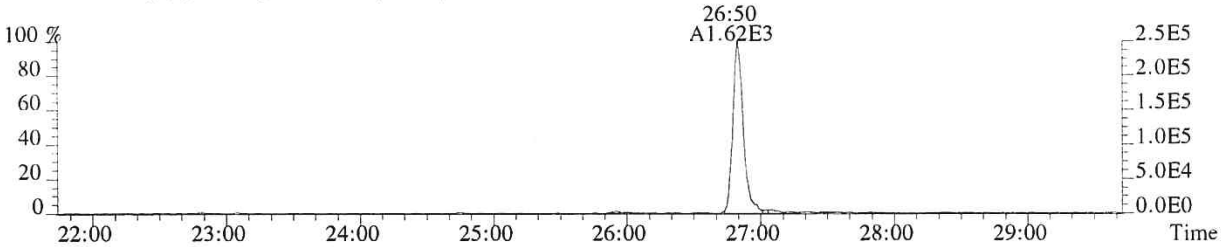
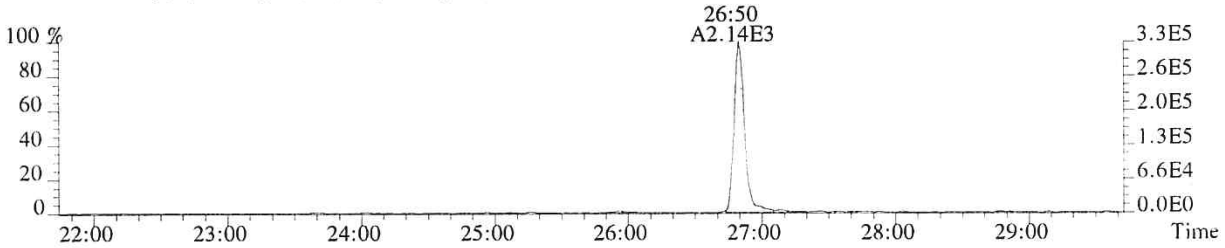
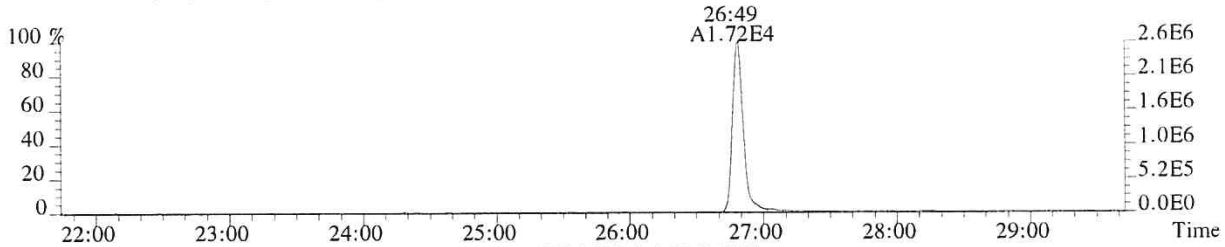
File:P519532 #1-566 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,500.0,1.00%,F,T)



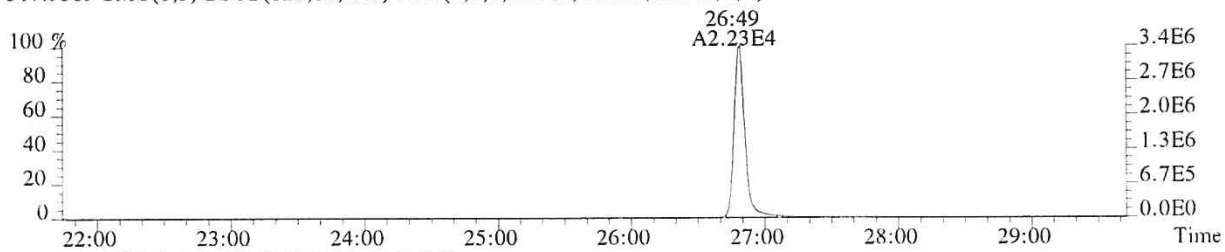
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1024.0,1.00%,F,T)



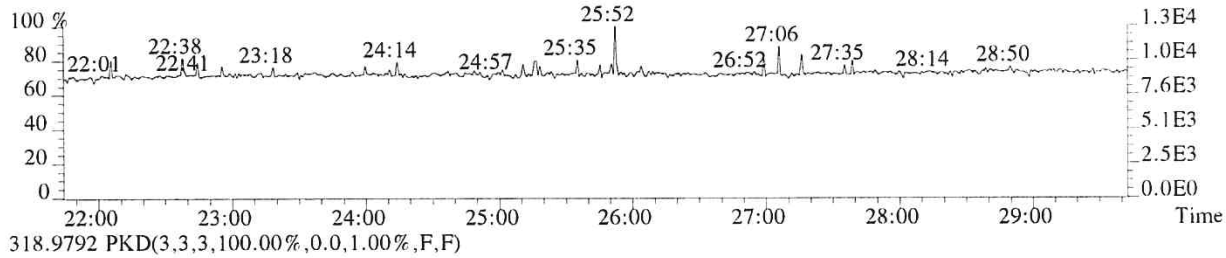
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3556.0,1.00%,F,T)



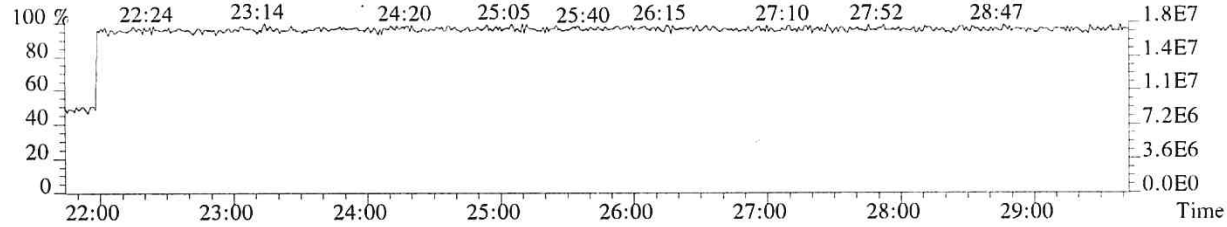
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2488.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

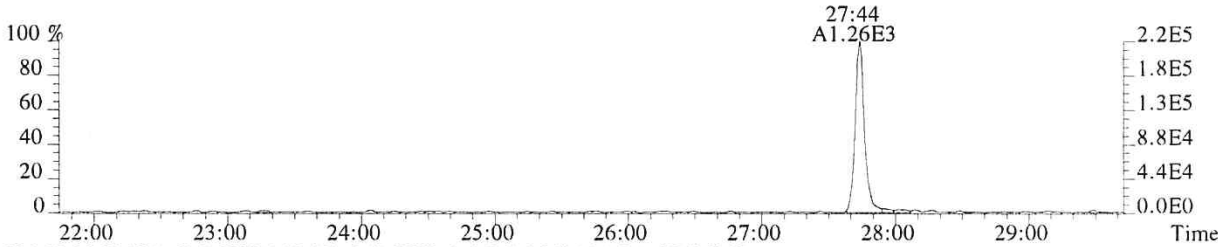


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

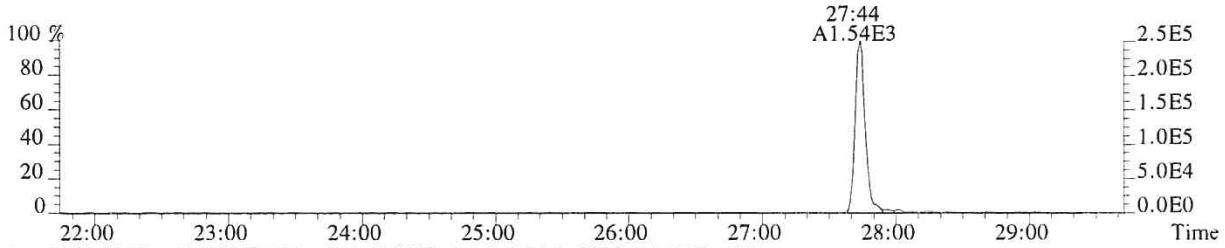


059405

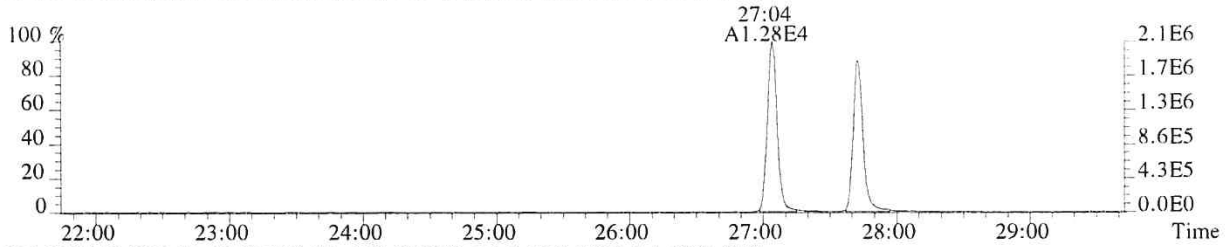
File:P519532 #1-566 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1636.0,1.00%,F,T)



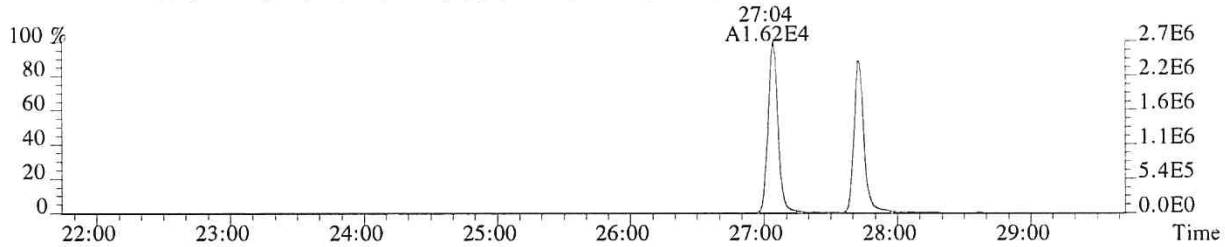
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,384.0,1.00%,F,T)



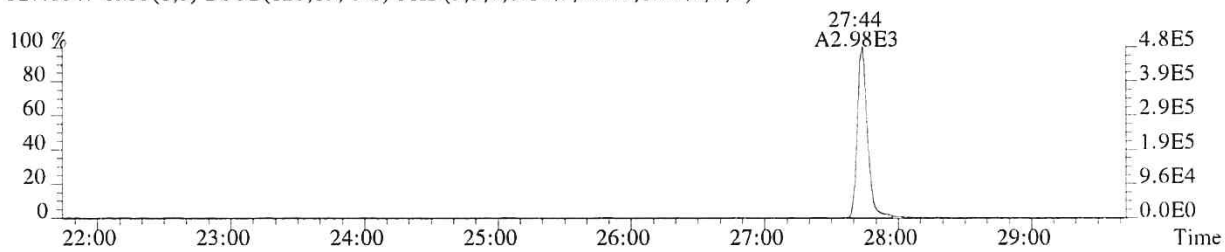
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3692.0,1.00%,F,T)



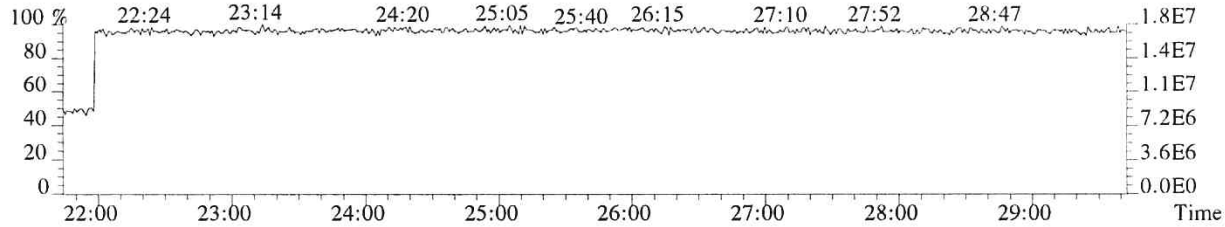
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1268.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,504.0,1.00%,F,T)

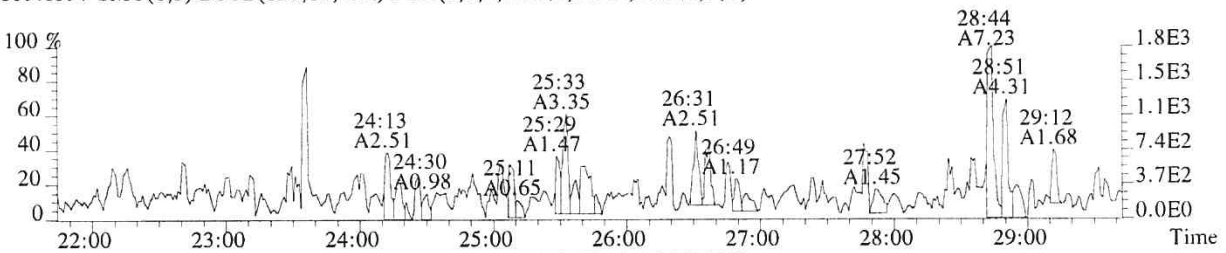


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

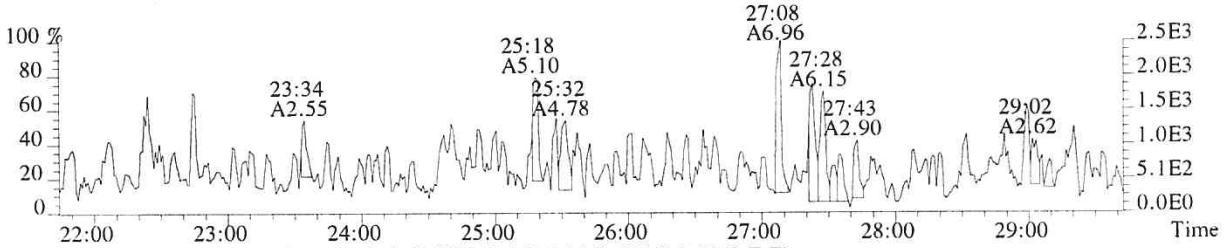


059406

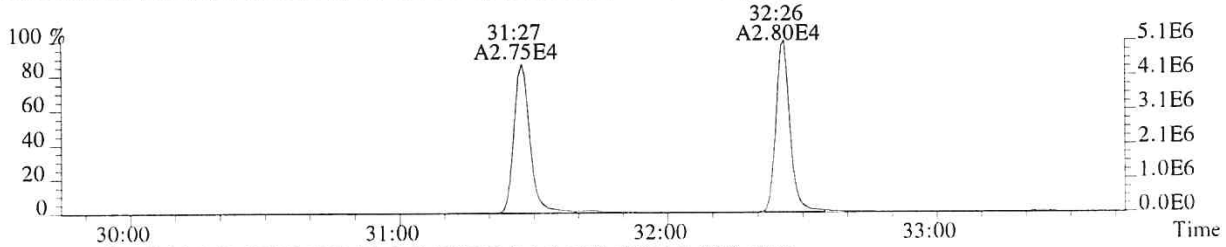
File:P519532 #1-566 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:194503
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,288.0,1.00%,F,T)



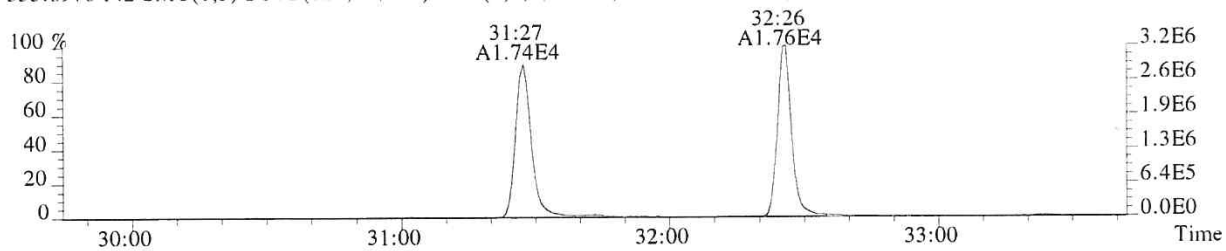
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,772.0,1.00%,F,T)



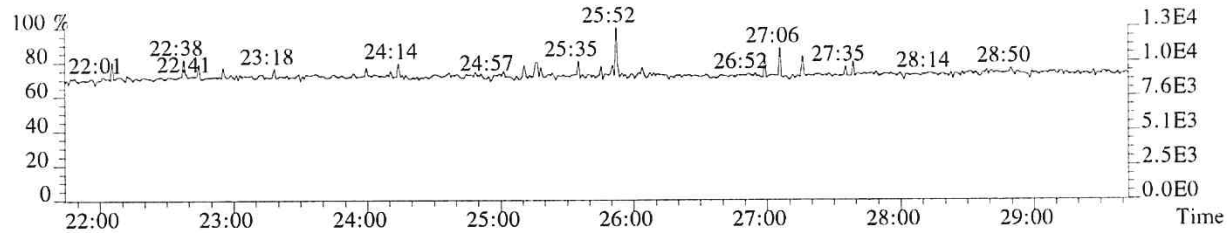
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,T)



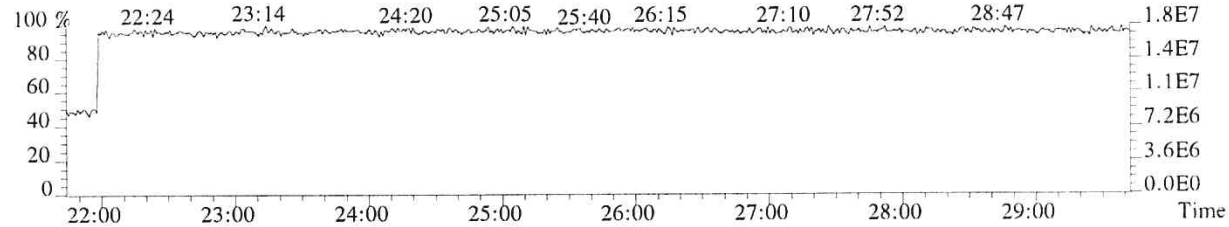
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,852.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

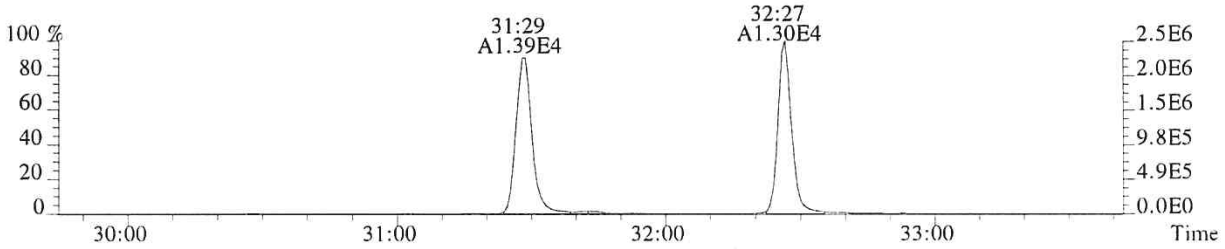


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

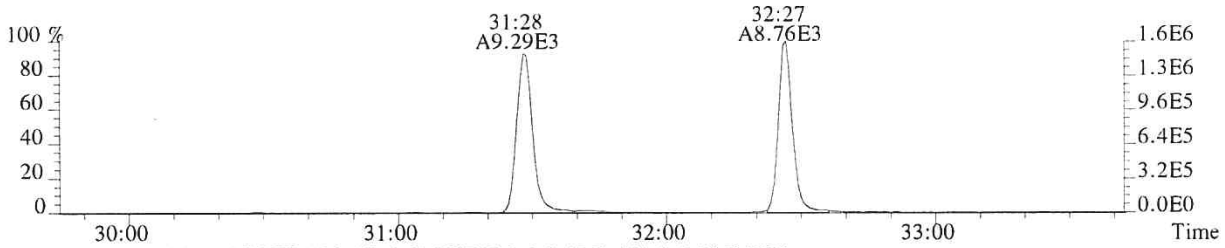


059407

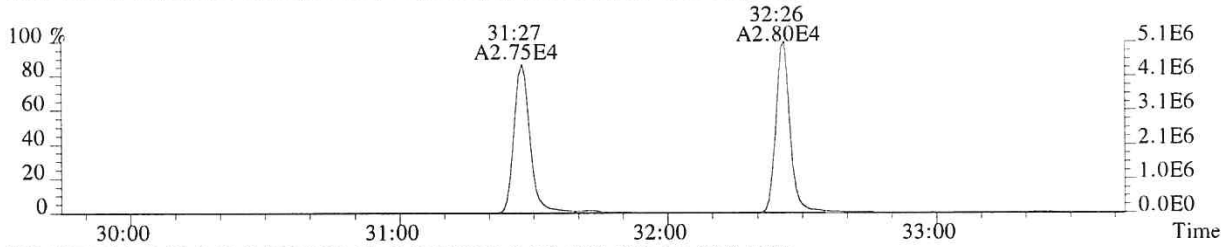
File:P519532 #1-357 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,380.0,1.00%,F,T)



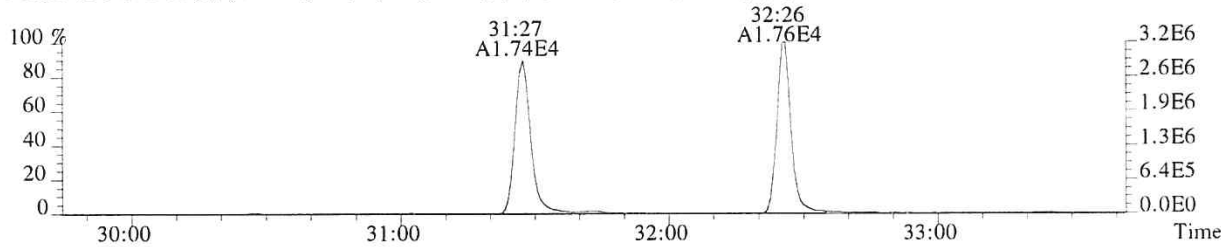
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,588.0,1.00%,F,T)



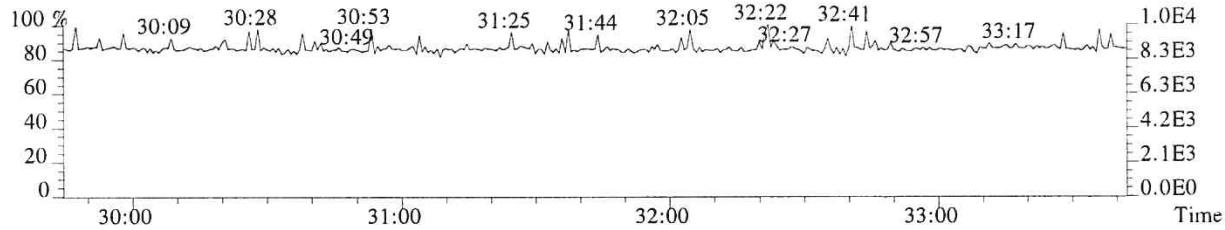
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,T)



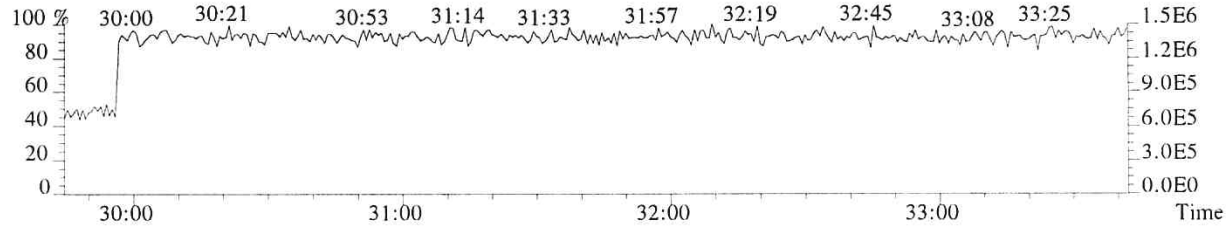
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,852.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

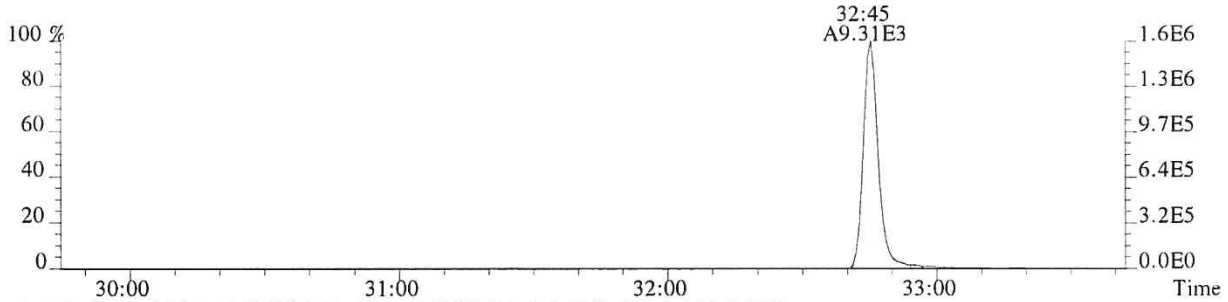


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

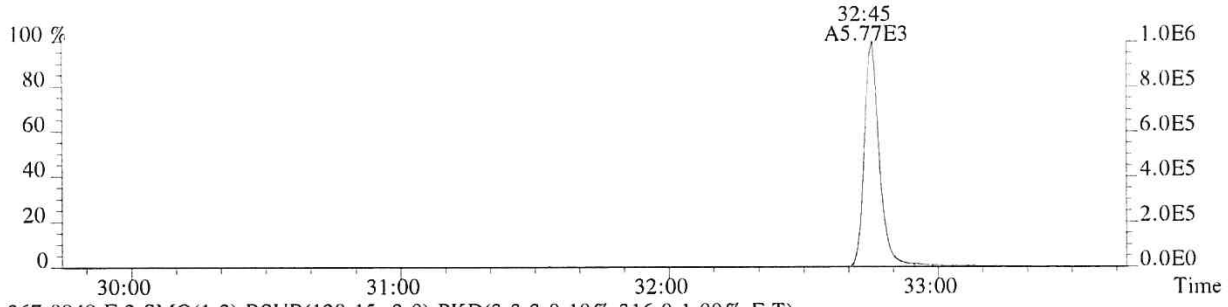


059408

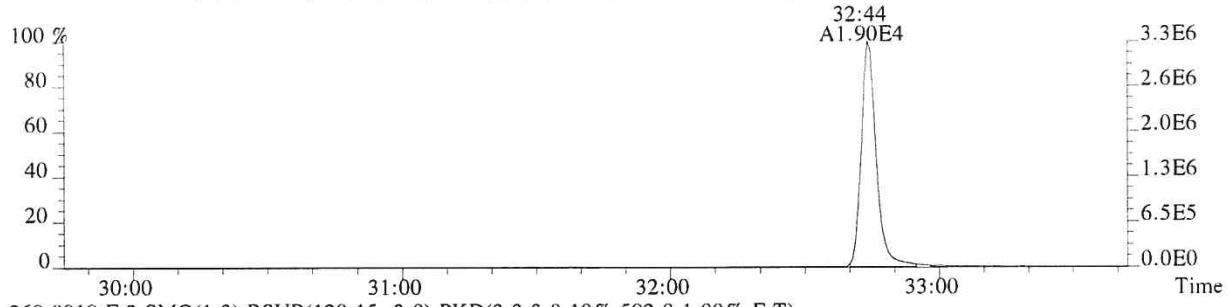
File:P519532 #1-357 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,452.0,1.00%,F,T)



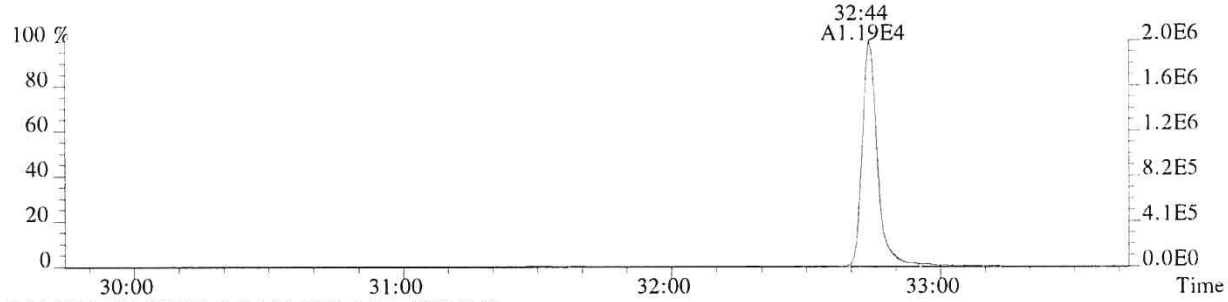
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,296.0,1.00%,F,T)



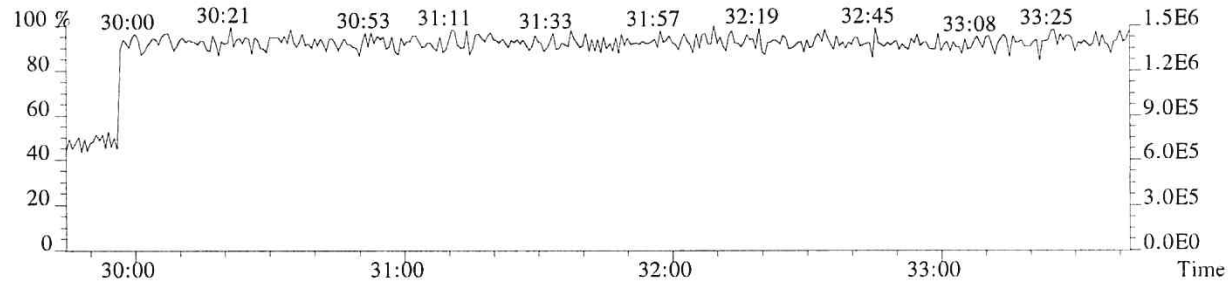
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,316.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,592.0,1.00%,F,T)



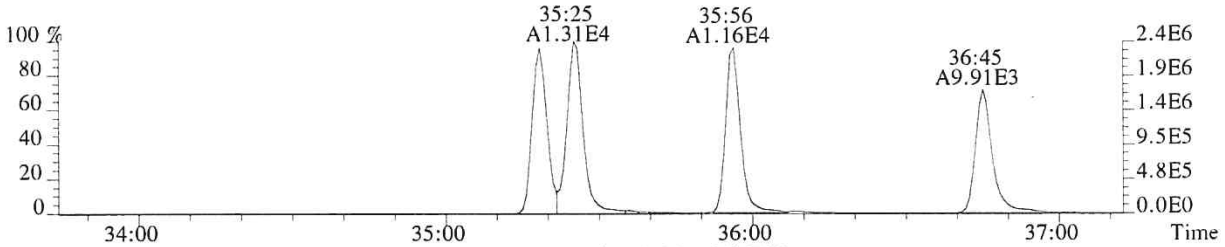
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



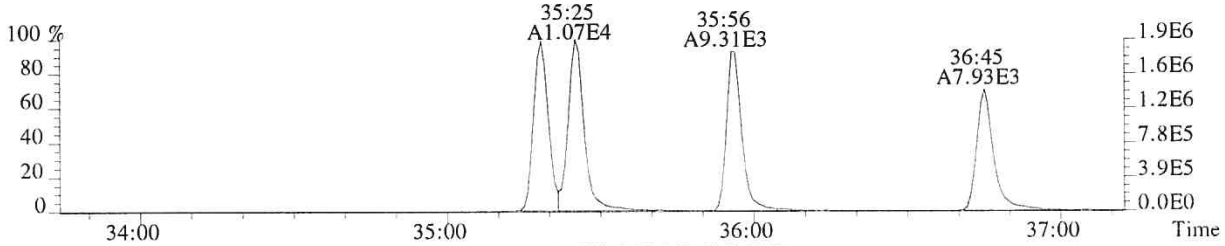
059409

File:P519532 #1-313 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

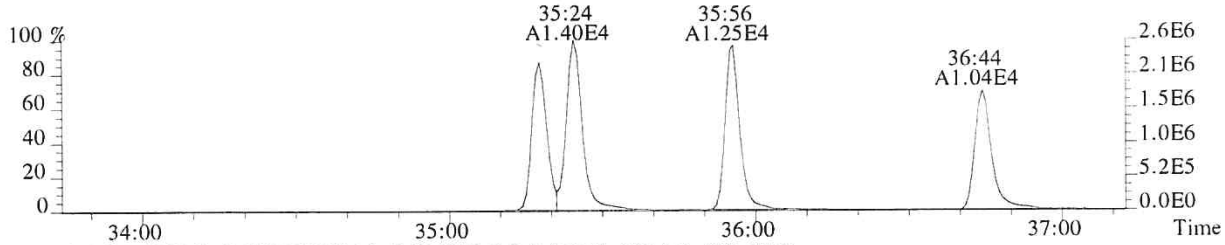
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,388.0,0.40%,F,T)



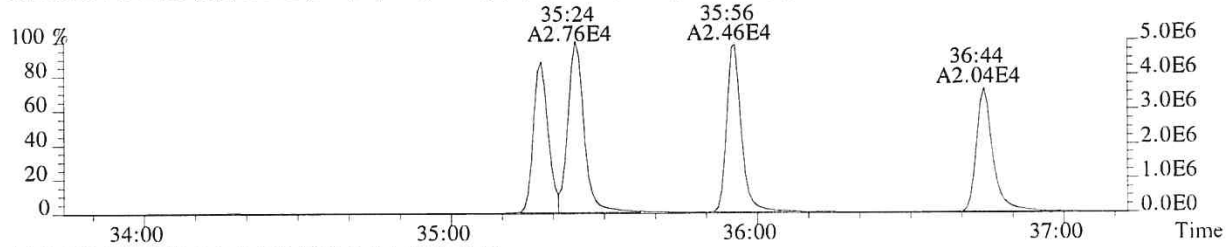
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,228.0,0.40%,F,T)



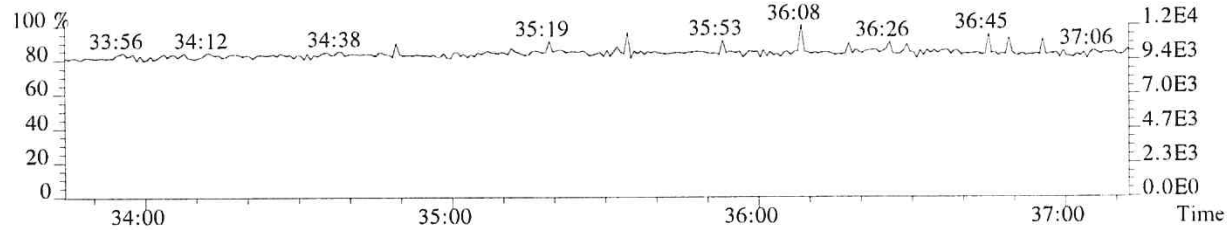
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,416.0,0.40%,F,T)



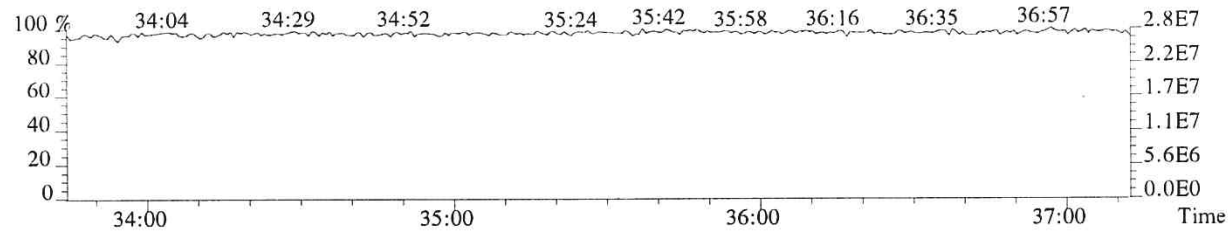
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,308.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

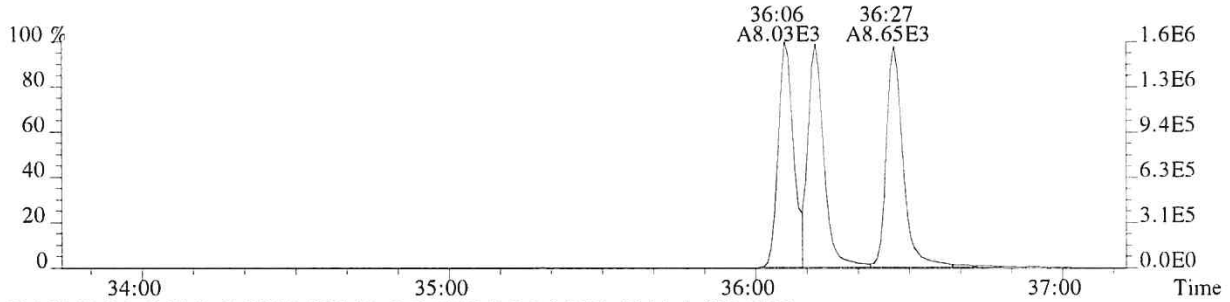


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

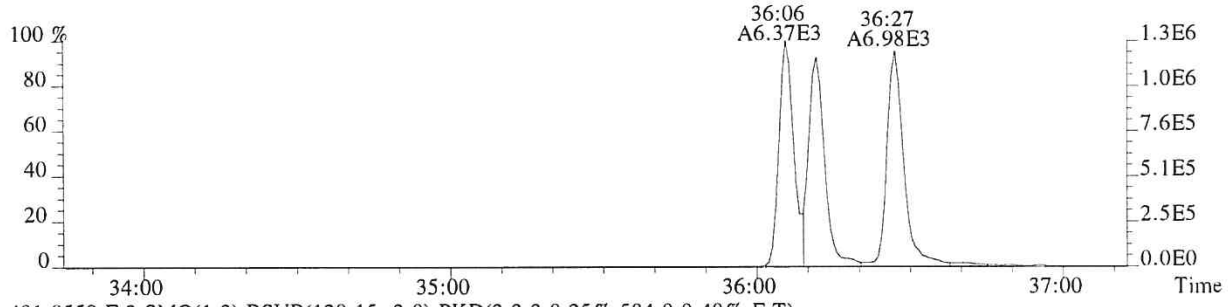


059410

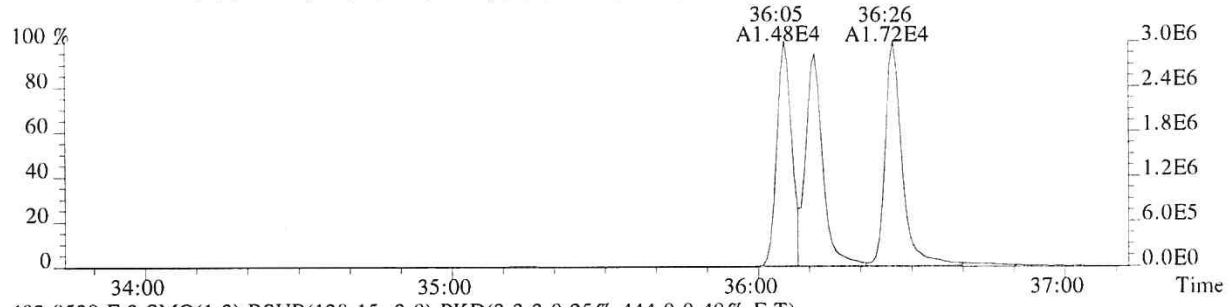
File:P519532 #1-313 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,408.0,0.40%,F,T)



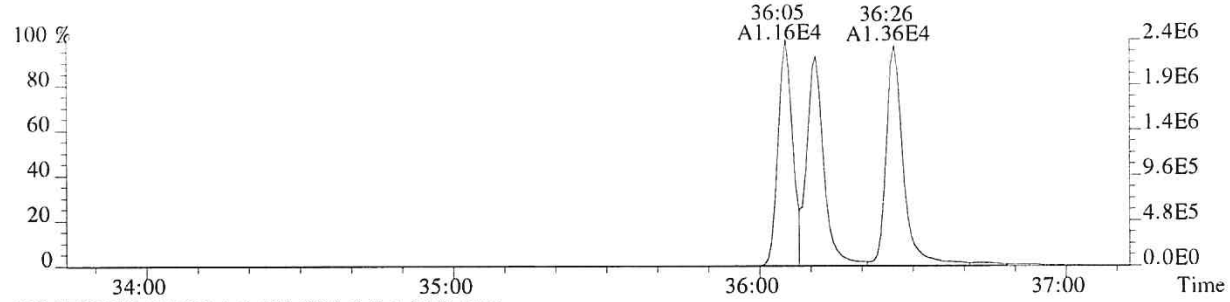
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,284.0,0.40%,F,T)



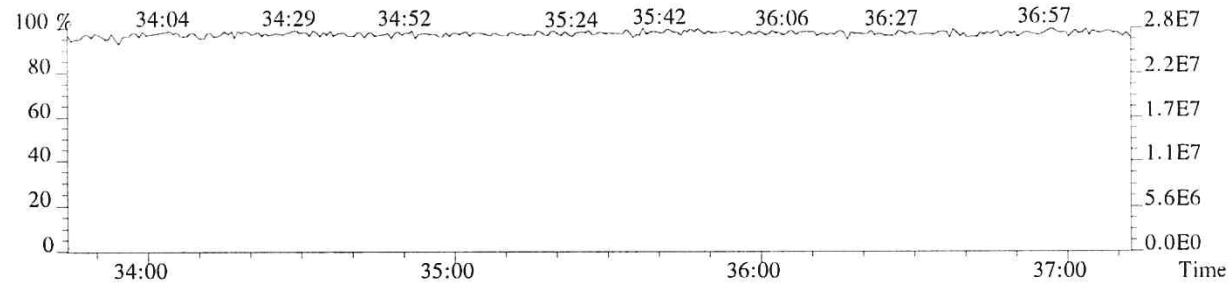
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,584.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,444.0,0.40%,F,T)

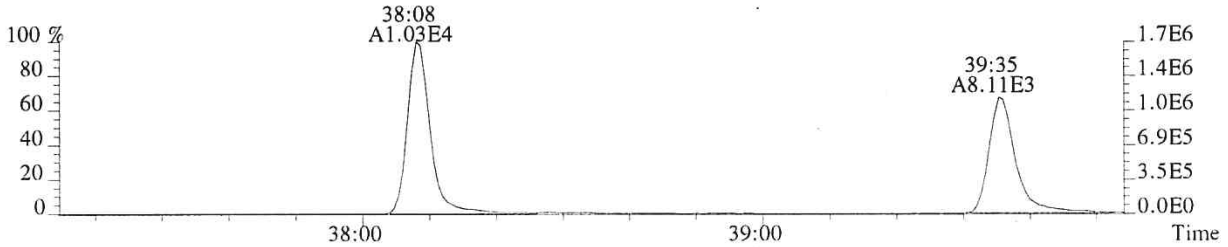


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

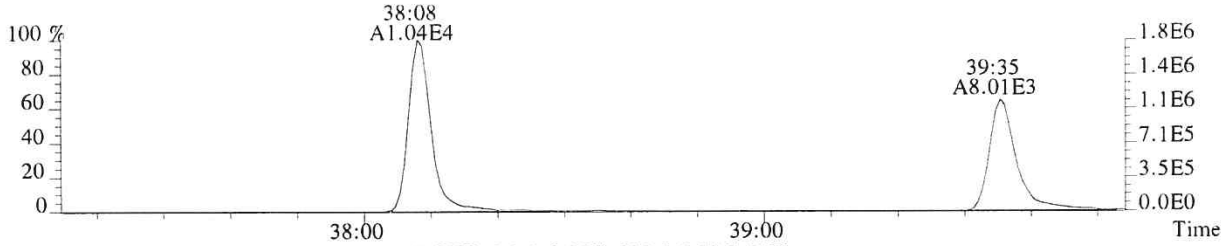


059411

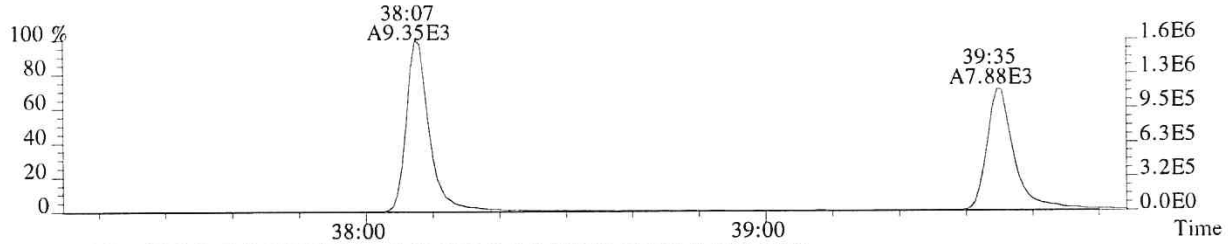
File:P519532 #1-240 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,484.0,0.50%,F,T)



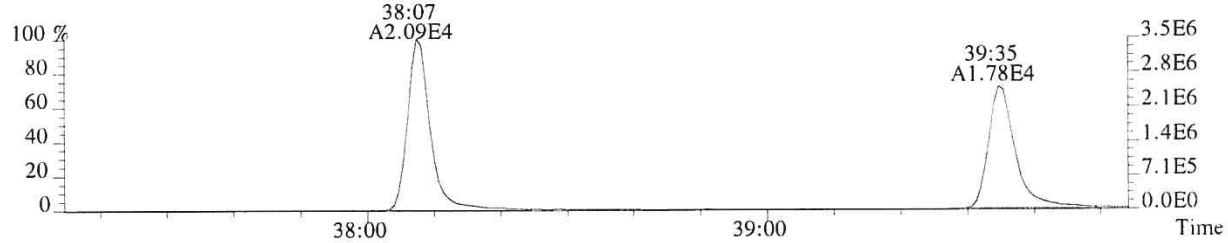
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,252.0,0.50%,F,T)



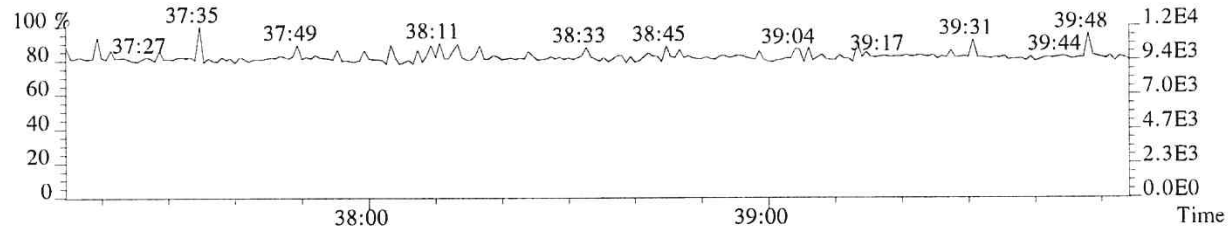
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,280.0,0.50%,F,T)



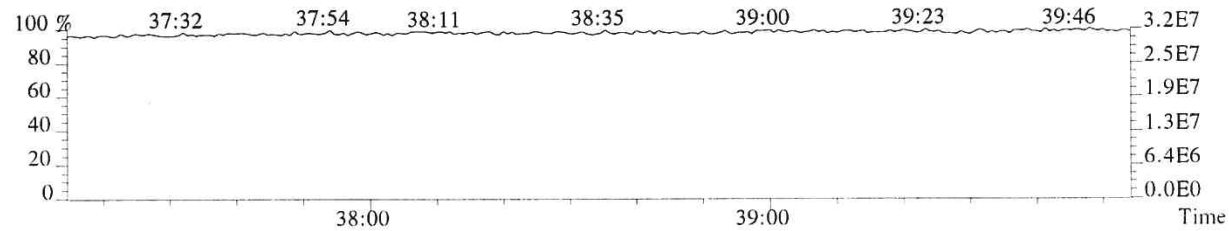
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3956.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

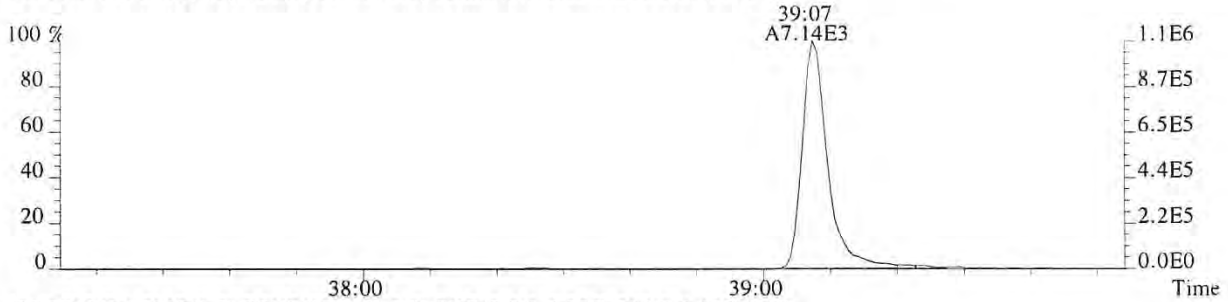


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

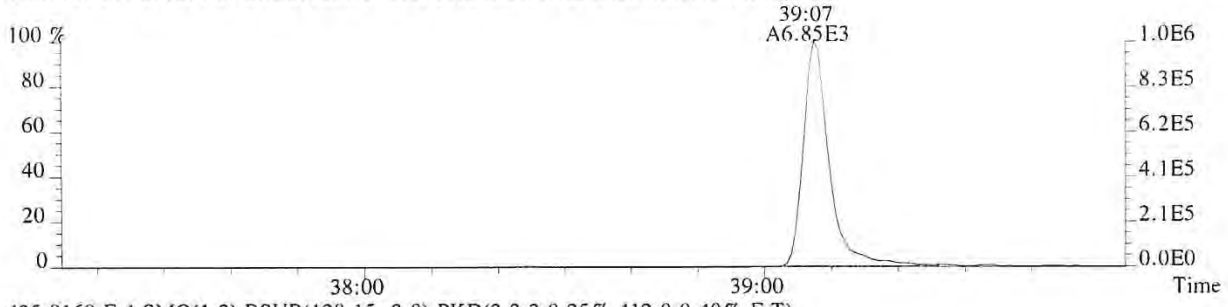


059412

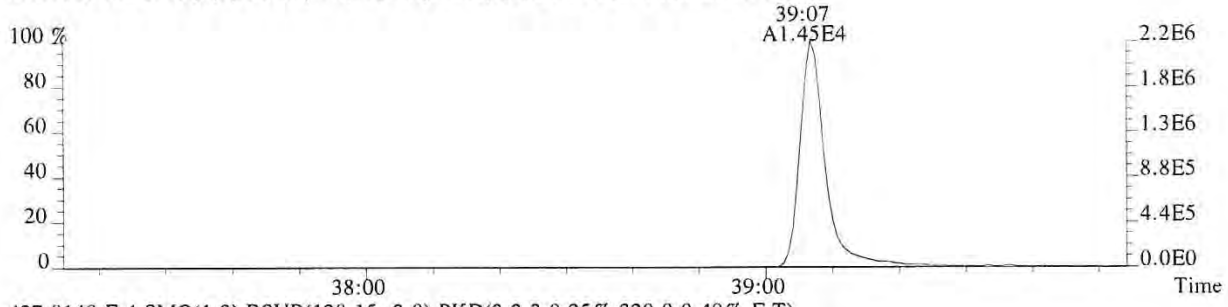
File:P519532 #1-240 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,244.0,0.40%,F,T)



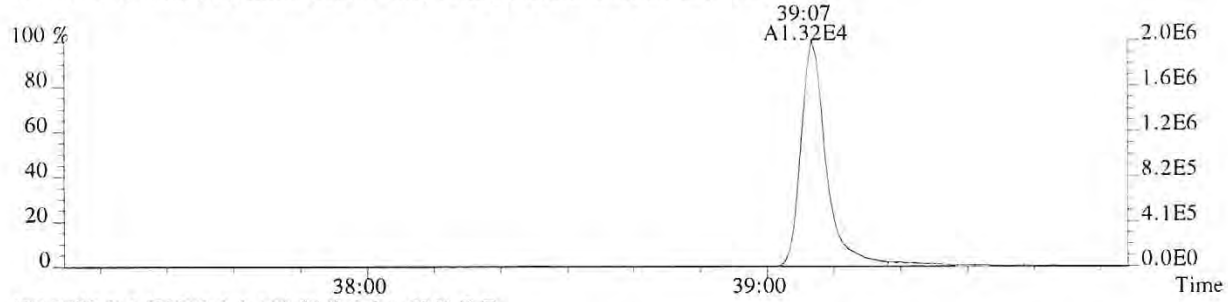
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,288.0,0.40%,F,T)



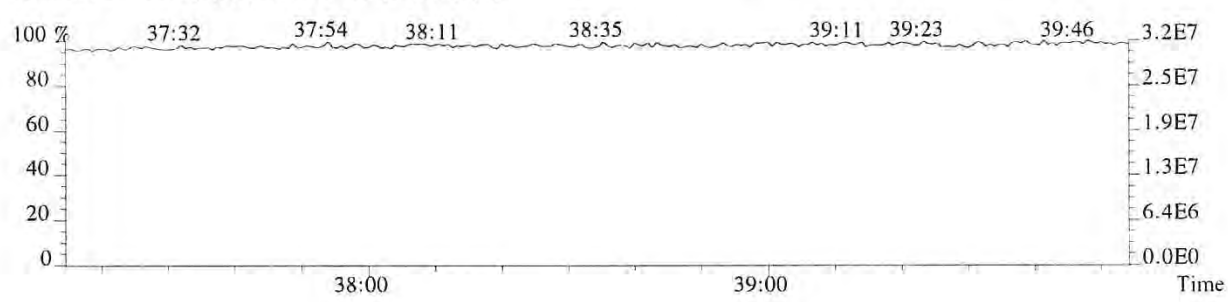
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,412.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,320.0,0.40%,F,T)

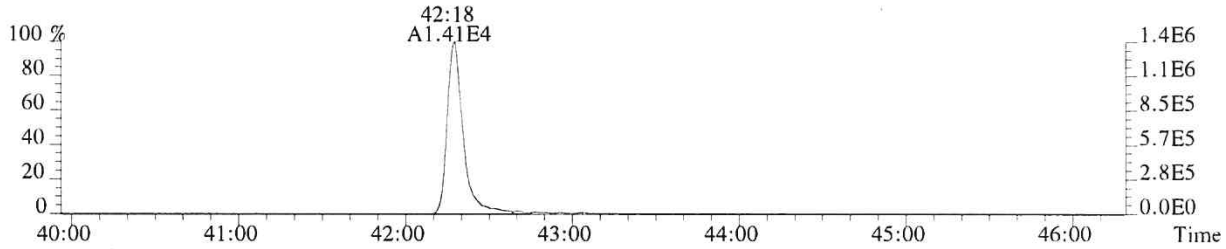


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

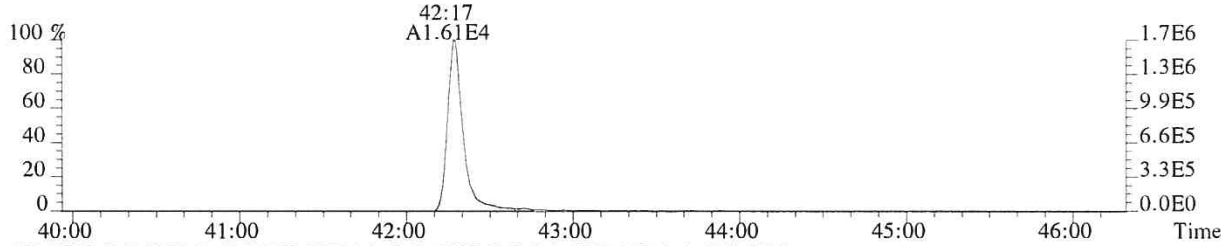


File:P519532 #1-575 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

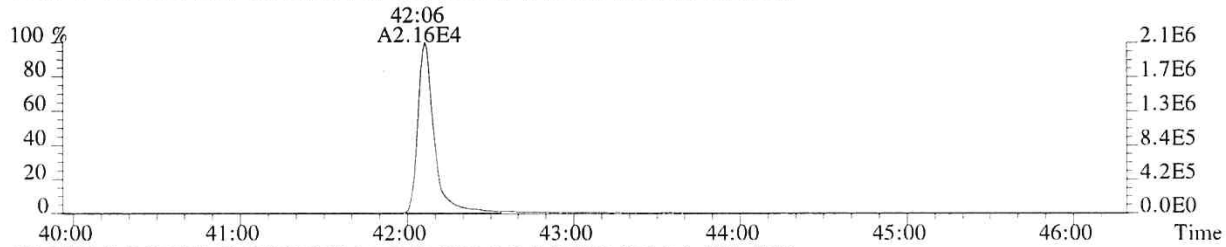
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,408.0,0.40%,F,T)



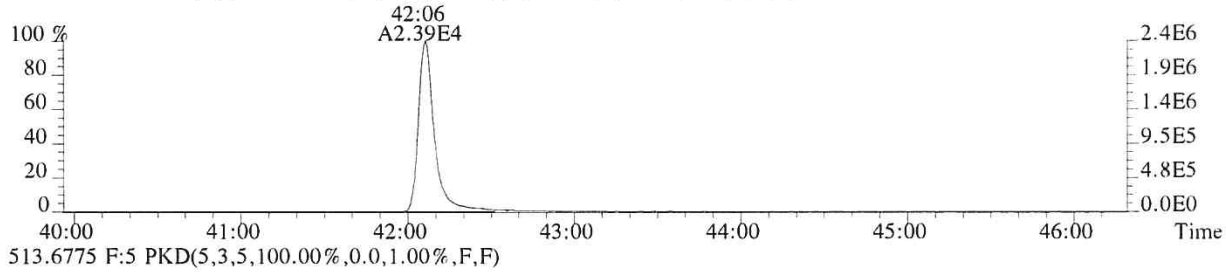
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,592.0,0.40%,F,T)



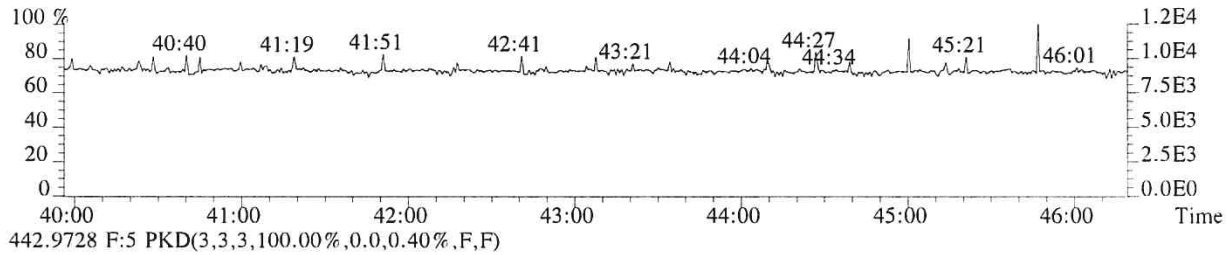
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,492.0,0.40%,F,T)



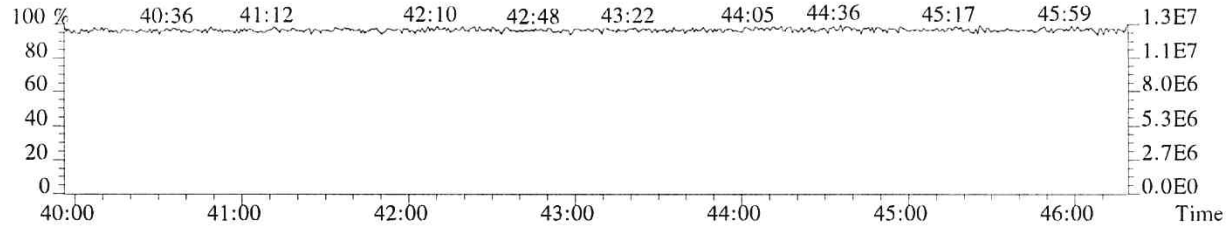
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,376.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

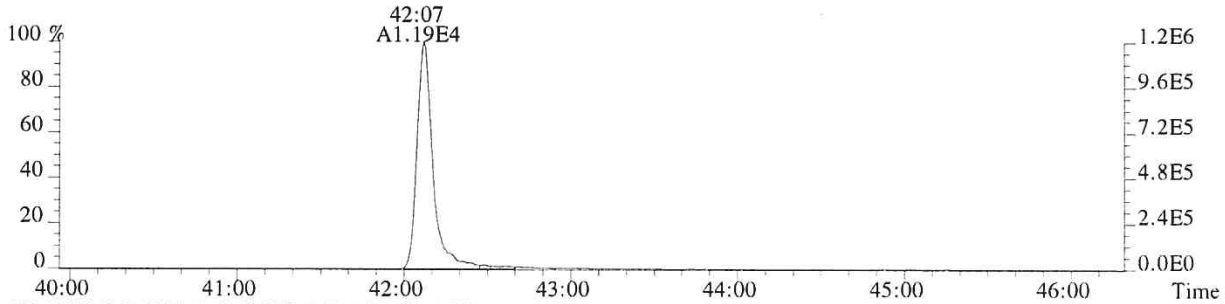


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

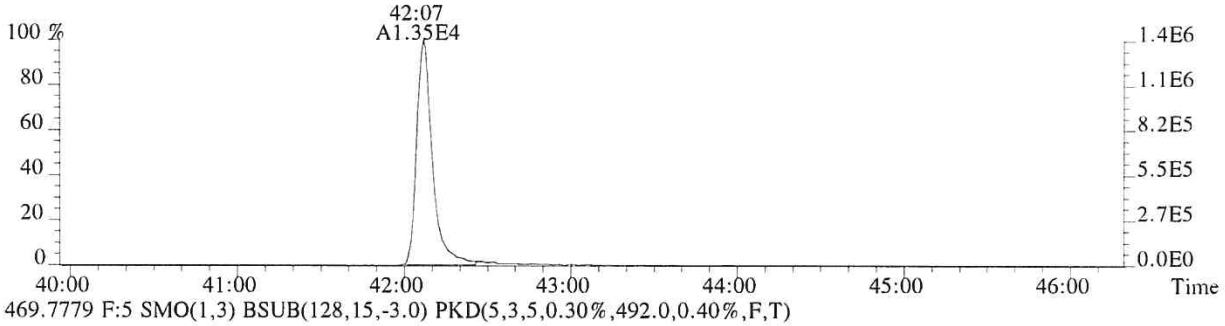


059414

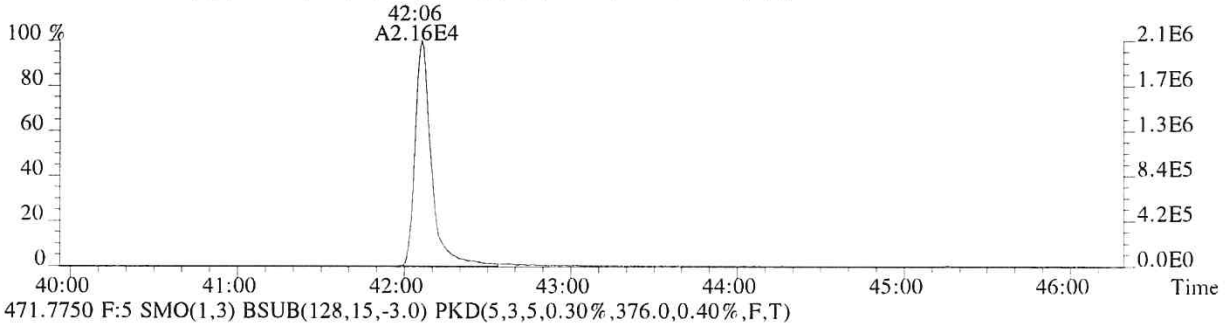
File:P519532 #1-575 Acq:21-DEC-2018 02:32:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,472.0,0.40%,F,T)



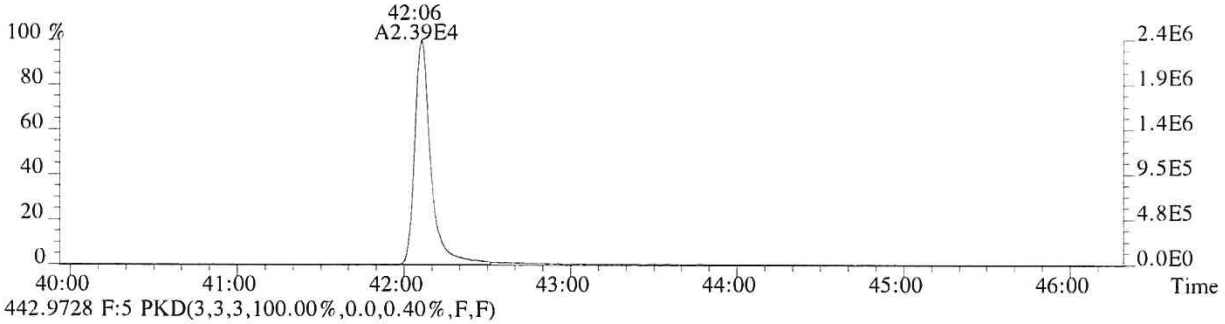
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,276.0,0.40%,F,T)



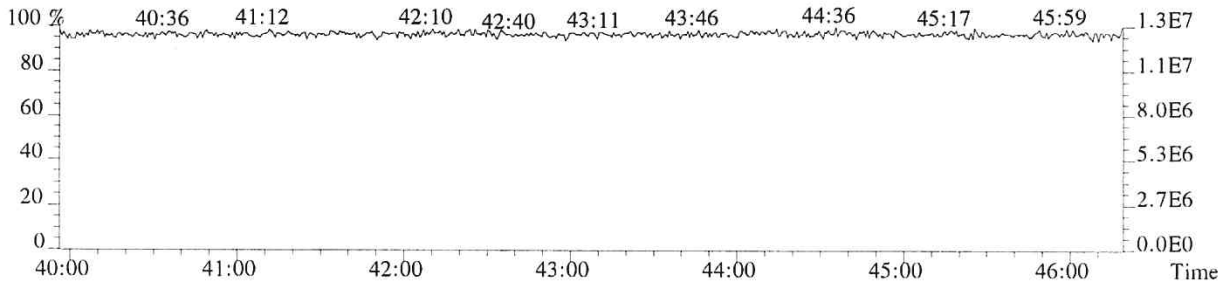
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,492.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,376.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: P519587

Date: 12/24/18

Circle one: (Beginning) / Ending

Method: (1613) 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: LKL

Second QC: _____

ccalqc.xls 07/17/12

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 01/24/18

Init. Calib.Times: 11:44

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P519588	24-DEC-18	09:43:57
194503	CS3	P519587	24-DEC-18	08:52:29
METHOD BLANK	EQ1800508-01	P519589	24-DEC-18	10:32:52
METHOD BLANK	EQ1800512-01	P519590	24-DEC-18	11:25:10
SL0060	E1801096-002DL	P519591	24-DEC-18	12:13:07
SL0061	E1801096-003DL	P519592	24-DEC-18	13:01:37
SL0062	E1801096-004DL	P519593	24-DEC-18	13:50:17
SL0054	E1801094-012DL	P519594	24-DEC-18	14:47:58
SL0056	E1801094-014DL	P519595	24-DEC-18	15:35:46
SL0057	E1801094-015DL	P519596	24-DEC-18	16:24:25
SL0014	E1801094-018DL	P519597	24-DEC-18	17:13:04
SL0038	E1801094-009	P519598	24-DEC-18	18:01:43
19-01413	E1801097-001	P519599	24-DEC-18	18:50:23
19-01413	E1801097-002	P519600	24-DEC-18	19:39:03
LCS	EQ1800512-03	P519601	24-DEC-18	20:27:40

E1801096

Sample List Report — **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS07.PRO\SampleDB\20181224A.SPL
Last Modified: Wednesday, December 26, 2018 07:45:31 Central Standard Time
Printed: Wednesday, December 26, 2018 07:45:32 Central Standard Time

Page Position (1, 1)

OPUS5NET: P519587 RES

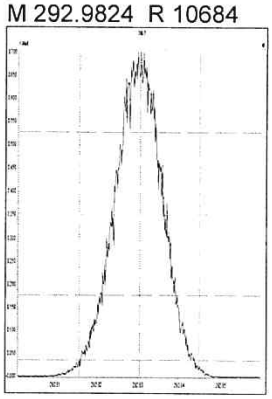
	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/24/18	08:52	P519587	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2	LG	HRMS check 08:49
2		09:43	P519588	WINDOWDEFINE	192977	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		10:32	P519589	MB	EQ1800508-01	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4		11:25	P519590	MB	EQ1800512-01	EPA1613_ALS	Dioxin_ALS	Tray1:4		
5		12:13	P519591	E1801096-002DL	E1801096-002DL	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		13:01	P519592	E1801096-003DL	E1801096-003DL	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		13:50	P519593	E1801096-004DL	E1801096-004DL	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		14:47	P519594	E1801094-012DL	E1801094-012DL	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		15:35	P519595	E1801094-014DL	E1801094-014DL	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		16:24	P519596	E1801094-015DL	E1801094-015DL	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		17:13	P519597	E1801094-018DL	E1801094-018DL	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12		18:01	P519598	E1801094-009	E1801094-009	EPA1613_ALS	Dioxin_ALS	Tray1:12		Needs Reinjection
13		18:50	P519599	E1801097-001	E1801097-001	EPA1613_ALS	Dioxin_ALS	Tray1:13		
14		19:39	P519600	E1801097-002	E1801097-002	EPA1613_ALS	Dioxin_ALS	Tray1:14		
15		20:27	P519601	DLCS	EQ1800512-03	EPA1613_ALS	Dioxin_ALS	Tray1:15		
16	↓	21:24	P519602	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2	↓	HRMS check 21:24
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---
20	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:20	---	---
21	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:21	---	---

LKL 12/26/18

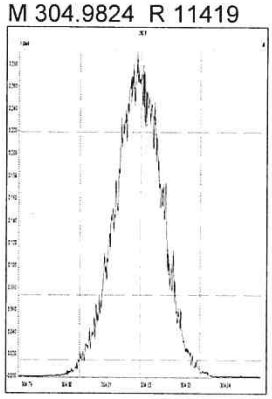
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Monday, December 24, 2018 08:49:04 Central Standard Time

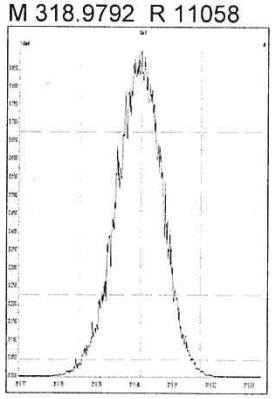
M 292.9824 R 10684



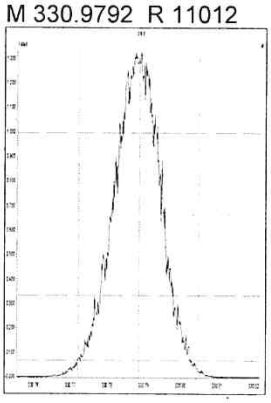
M 304.9824 R 11419



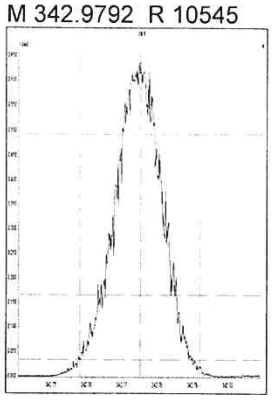
M 318.9792 R 11058



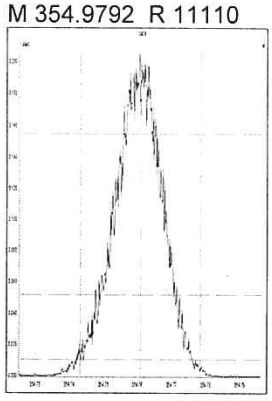
M 330.9792 R 11012



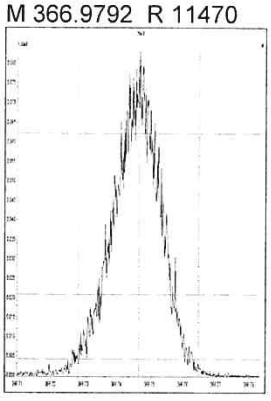
M 342.9792 R 10545



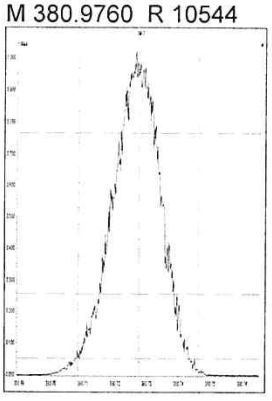
M 354.9792 R 11110



M 366.9792 R 11470



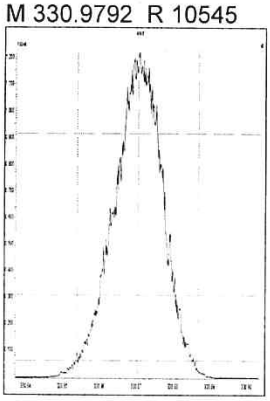
M 380.9760 R 10544



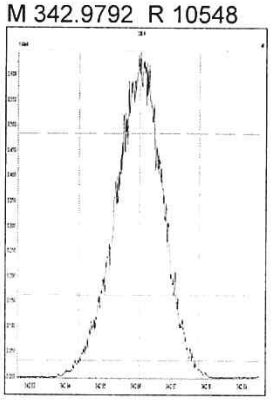
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Monday, December 24, 2018 08:49:43 Central Standard Time

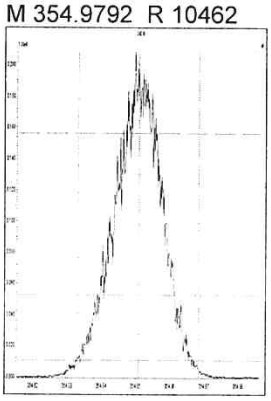
M 330.9792 R 10545



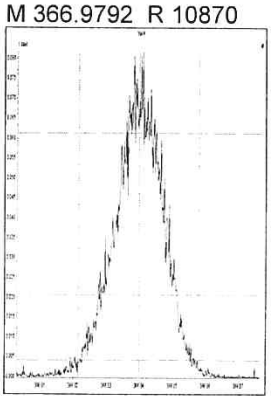
M 342.9792 R 10548



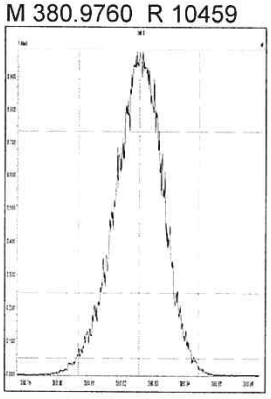
M 354.9792 R 10462



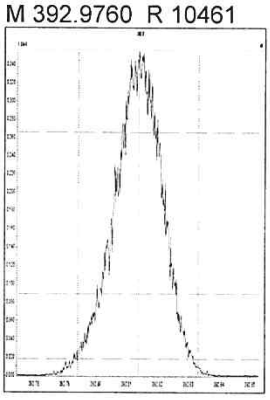
M 366.9792 R 10870



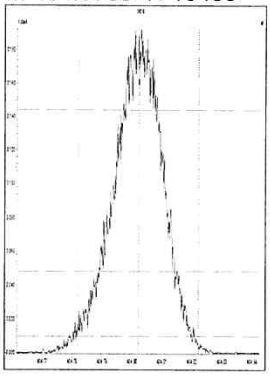
M 380.9760 R 10459



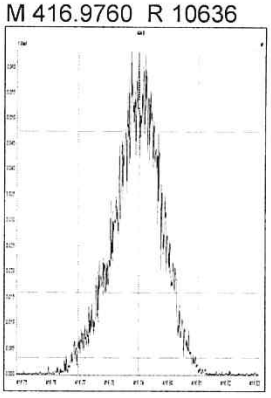
M 392.9760 R 10461



M 404.9760 R 10459



M 416.9760 R 10636

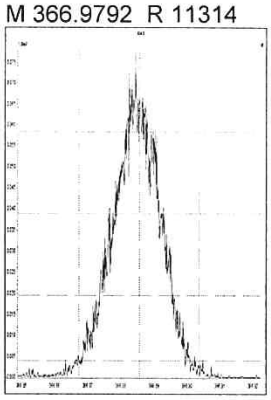


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

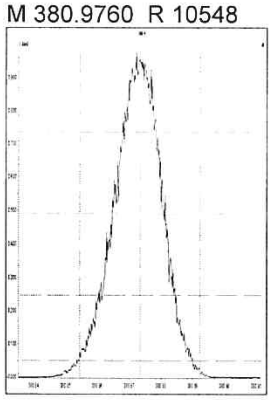
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Monday, December 24, 2018 08:50:27 Central Standard Time

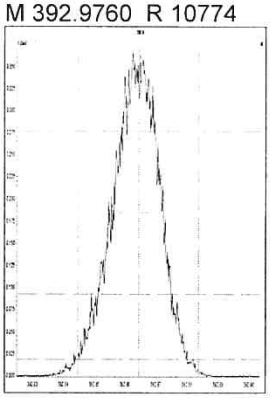
M 366.9792 R 11314



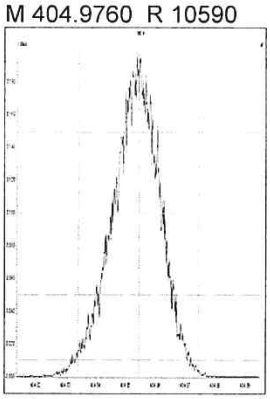
M 380.9760 R 10548



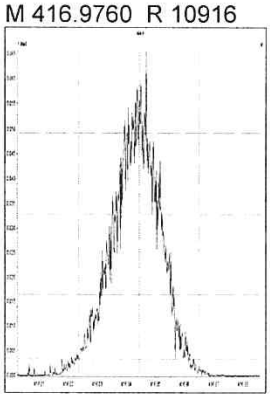
M 392.9760 R 10774



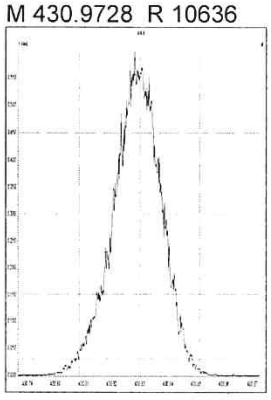
M 404.9760 R 10590



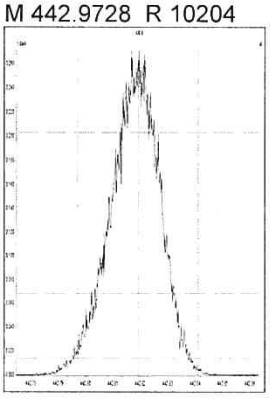
M 416.9760 R 10916



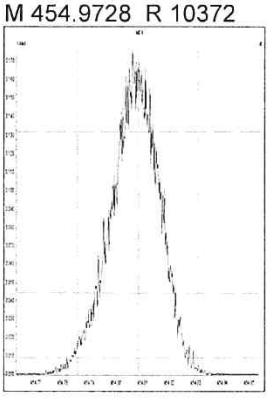
M 430.9728 R 10636



M 442.9728 R 10204



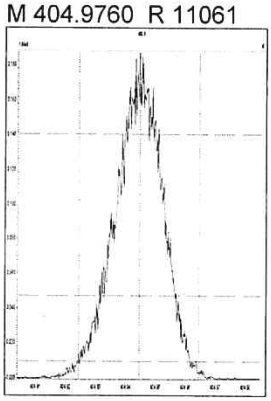
M 454.9728 R 10372



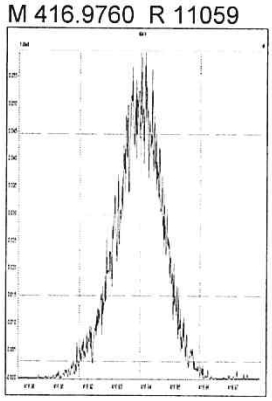
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Monday, December 24, 2018 08:51:11 Central Standard Time

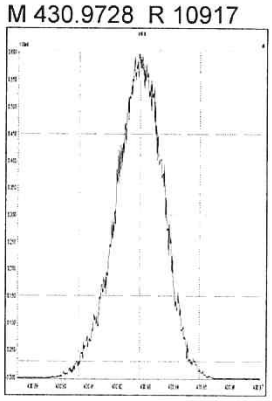
M 404.9760 R 11061



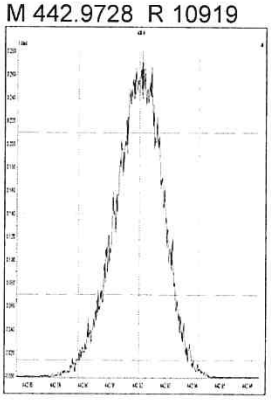
M 416.9760 R 11059



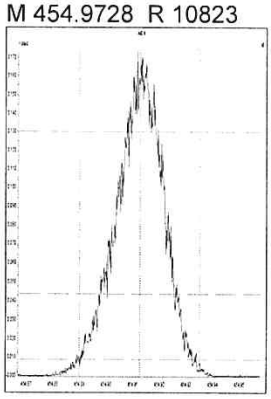
M 430.9728 R 10917



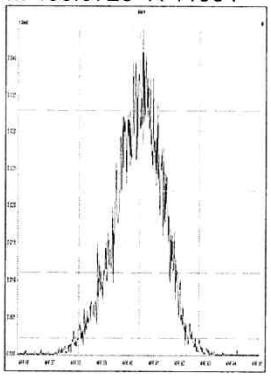
M 442.9728 R 10919



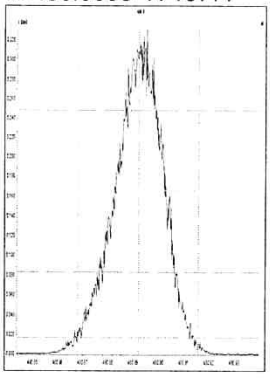
M 454.9728 R 10823



M 466.9728 R 11904



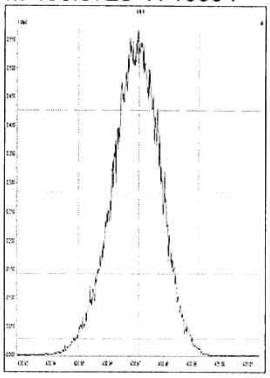
M 480.9696 R 10777



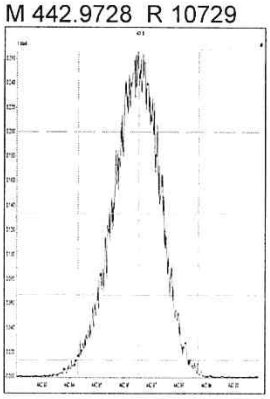
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Monday, December 24, 2018 08:51:50 Central Standard Time

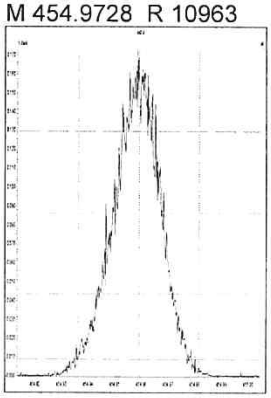
M 430.9728 R 10594



M 442.9728 R 10729



M 454.9728 R 10963



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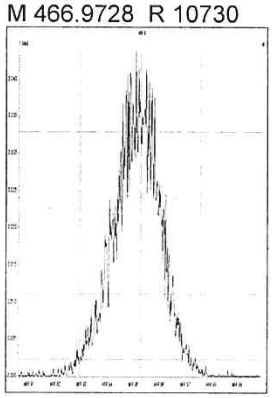

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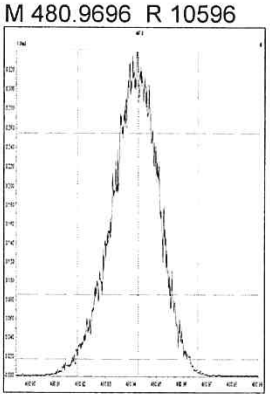

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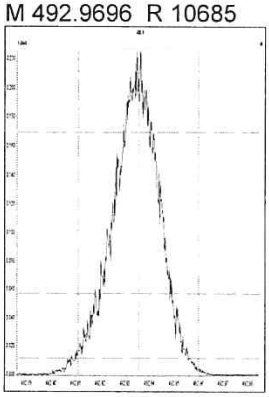
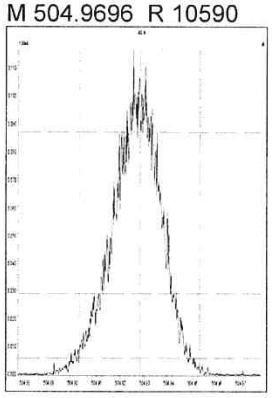
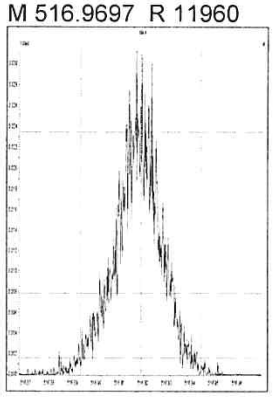


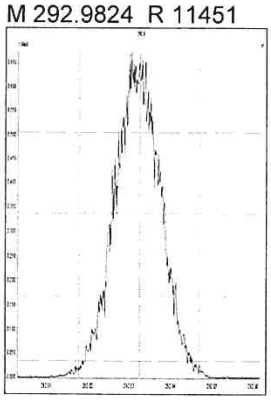
M 504.9696 R 10590



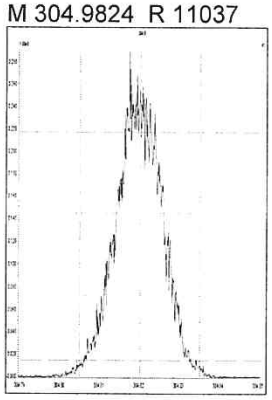
M 516.9697 R 11960



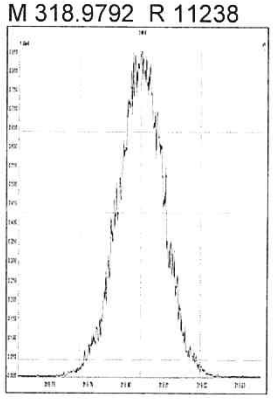
M 292.9824 R 11451



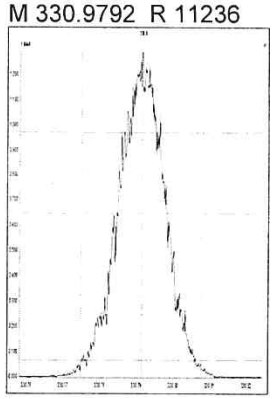
M 304.9824 R 11037



M 318.9792 R 11238



M 330.9792 R 11236



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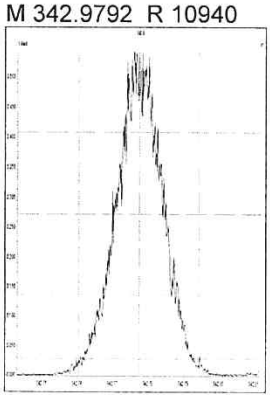

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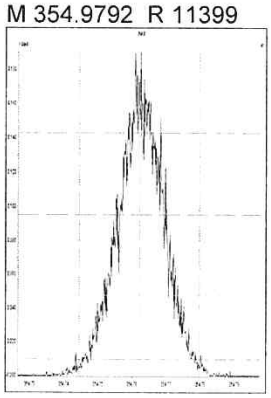

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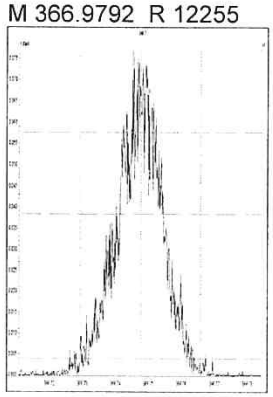

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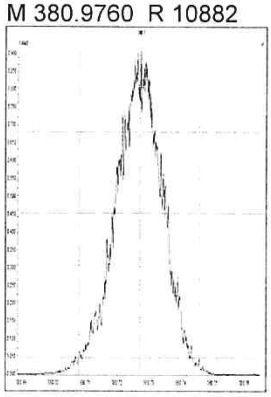

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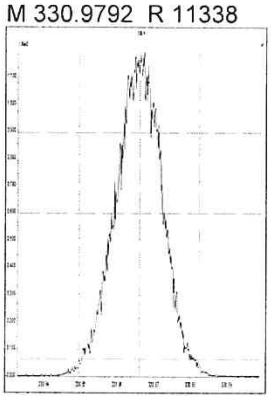

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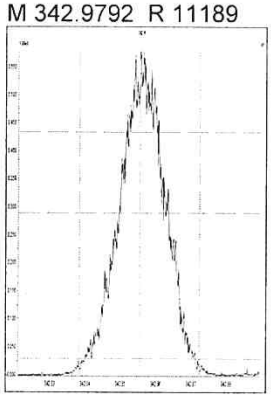

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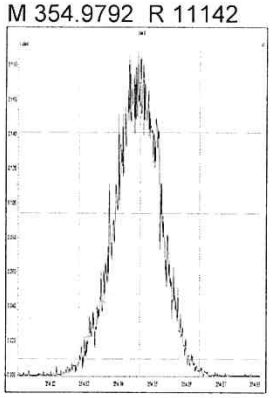

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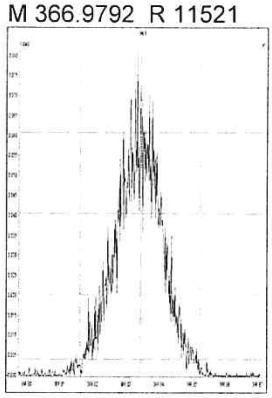

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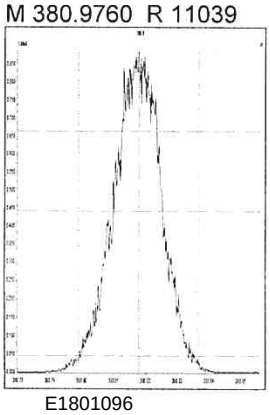

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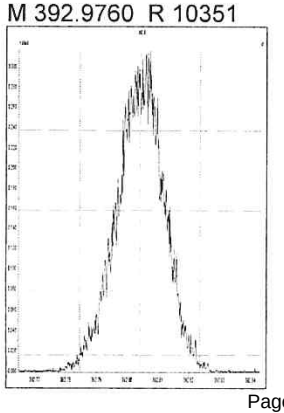

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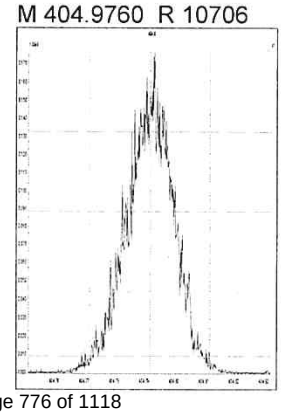
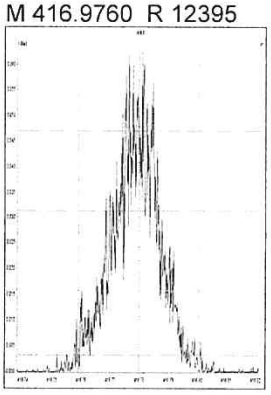
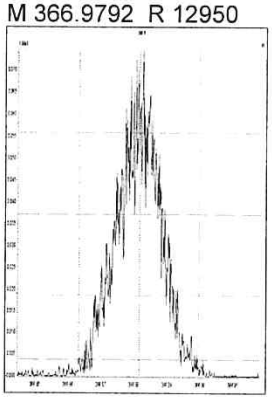


M 416.9760 R 12395



M 366.9792 R 12950



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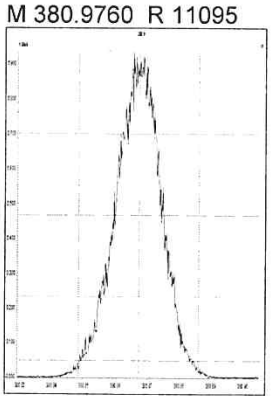

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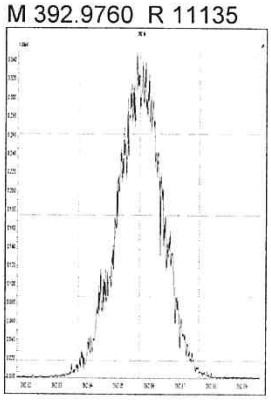

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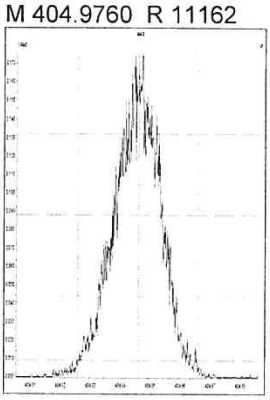

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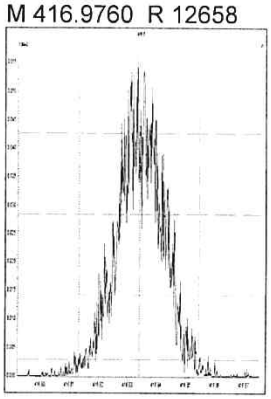

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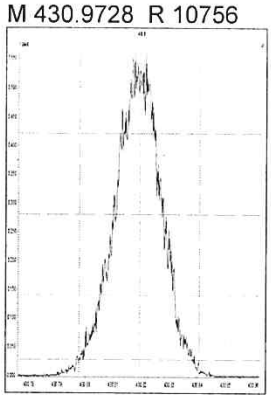

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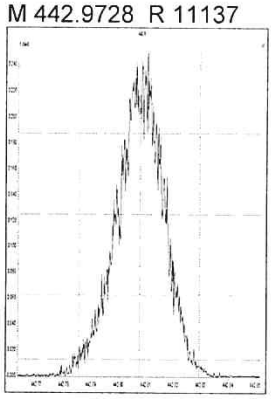

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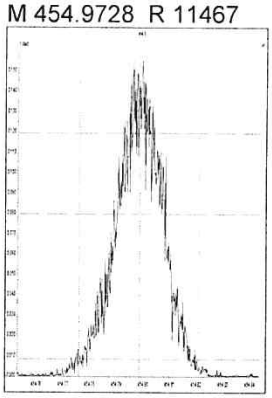

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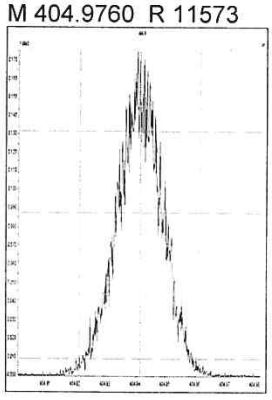

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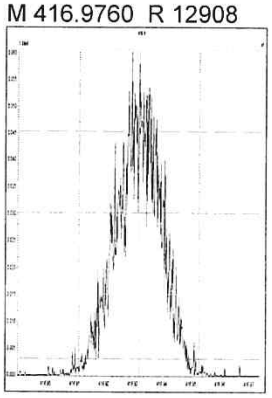

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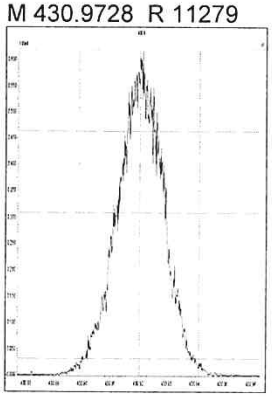

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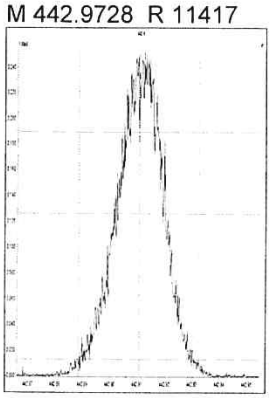

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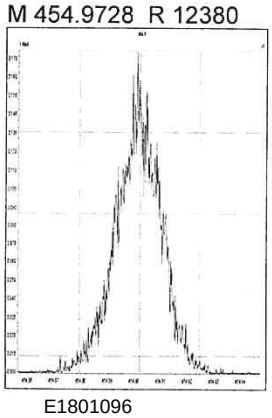

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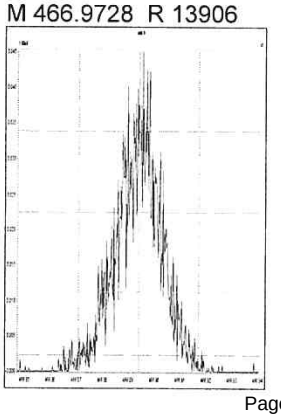
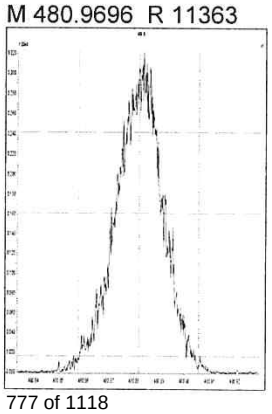


M 480.9696 R 11363



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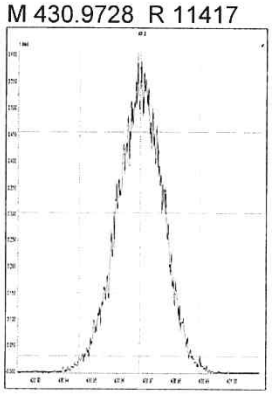

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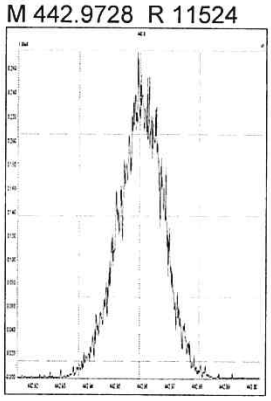

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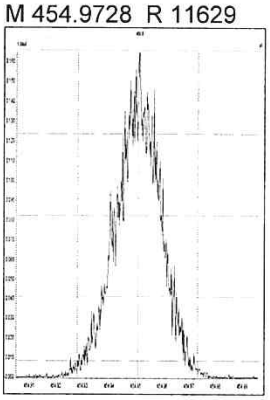

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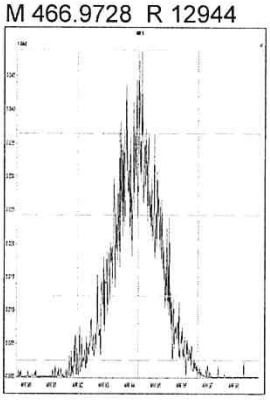
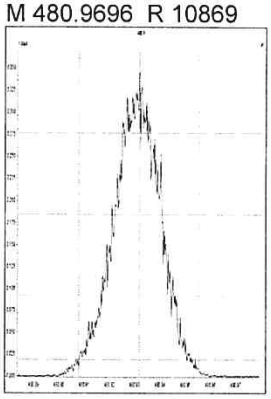


M 480.9696 R 10869



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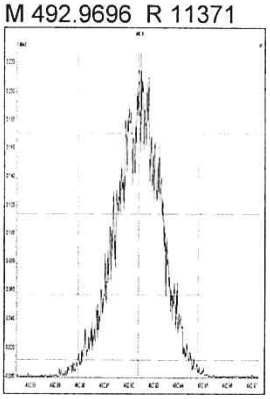

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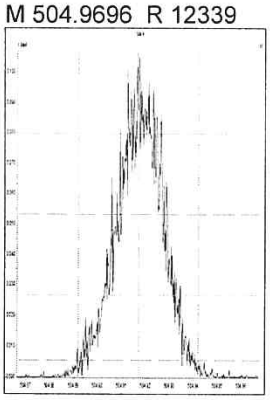
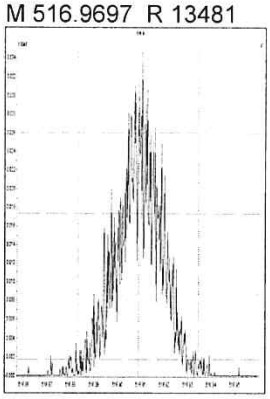


M 516.9697 R 13481



WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

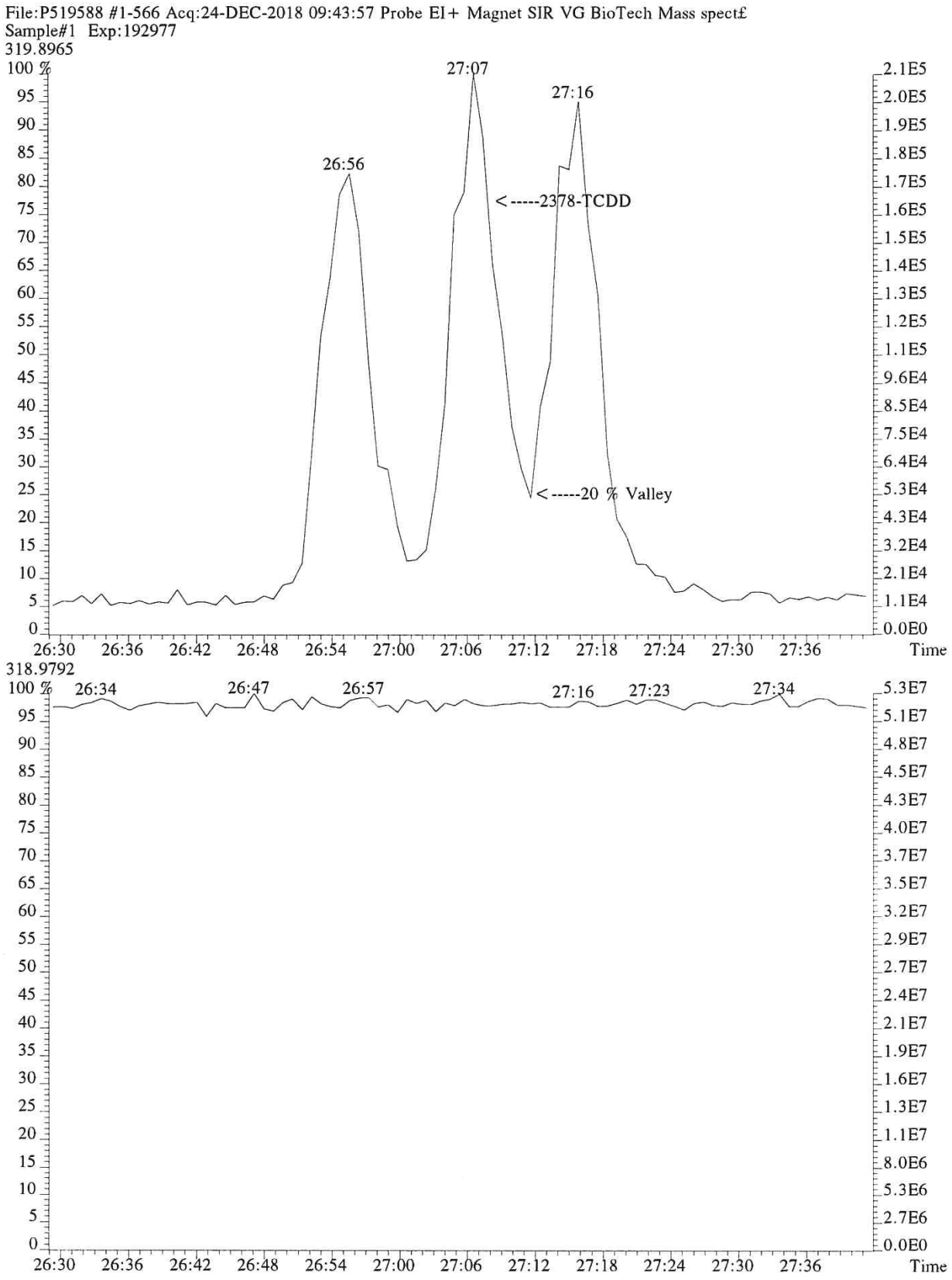
Case No.: _____ SDG No.:
ID: 0.25 (mm)

Lab File ID: P519588
Date Analyzed: 24-DEC-18
Time Analyzed: 09:43:57

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	21:44	28:26
TCDD	23:22	28:16
PeCDF	28:24	33:05
PeCDD	30:09	32:50
HxCDF	33:49	36:30
HxCDD	34:24	36:06
HpCDF	37:52	39:18
HpCDD	38:09	38:51

% Valley 2378-TCDD: 20 %

059427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Sample#1 Exp:192977
319.8965
100 %
27:07
27:16
26:56
<-----2378-TCDD
<-----20 % Valley
26:30 26:36 26:42 26:48 26:54 27:00 27:06 27:12 27:18 27:24 27:30 27:36 Time
318.9792
100 %
26:34
26:47
26:57
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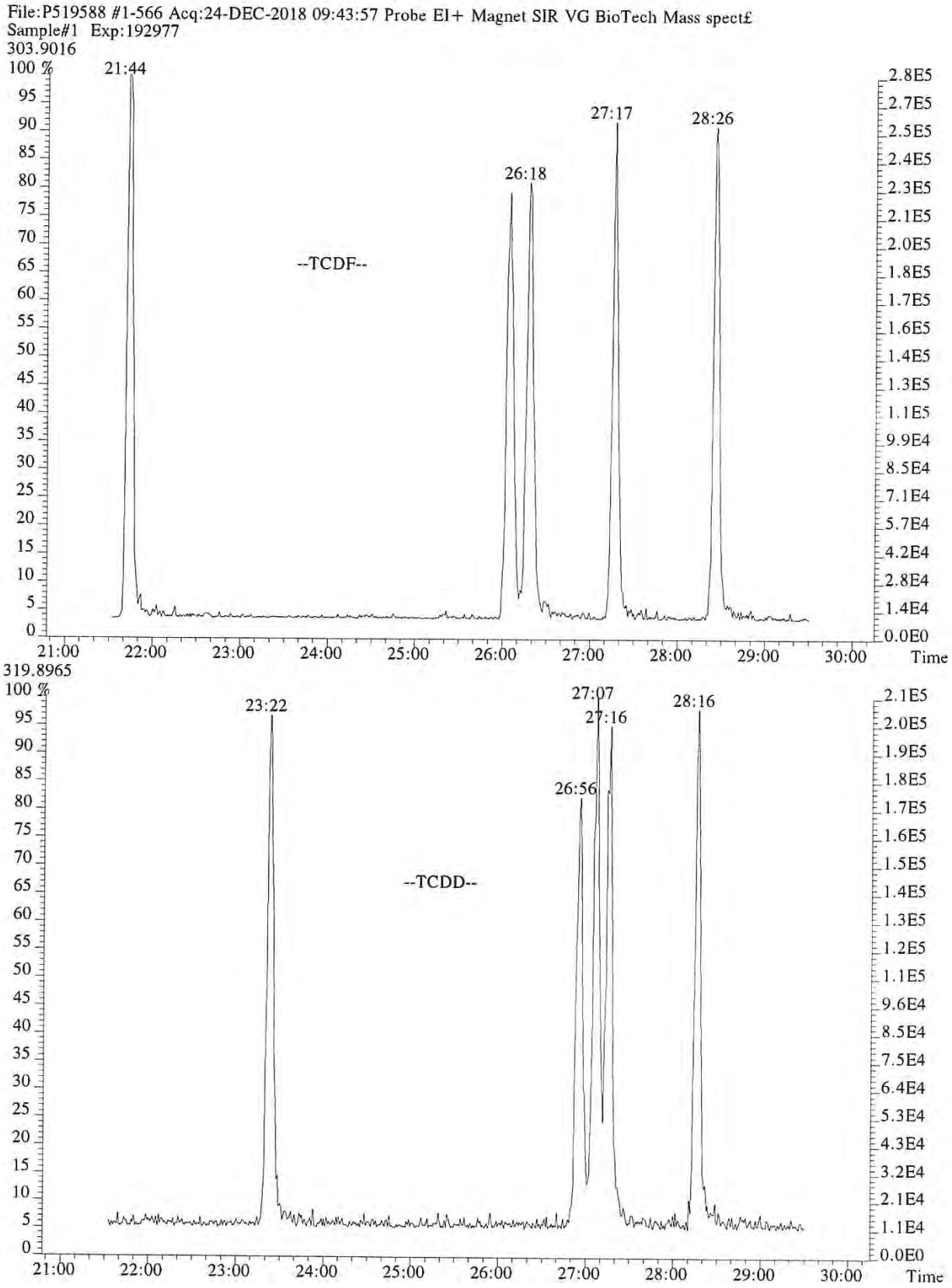
059428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Sample#1 Exp:192977
303.9016
100 %
21:44
26:18
27:17
28:26
--TCDF--
2.8E5
2.7E5
2.5E5
2.4E5
2.3E5
2.1E5
2.0E5
1.8E5
1.7E5
1.6E5
1.4E5
1.3E5
1.1E5
9.9E4
8.5E4
7.1E4
5.7E4
4.2E4
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21:00
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23:00
24:00
25:00
26:00
27:00
28:00
29:00
30:00
Time
319.8965
100 %
23:22
26:56
27:07
27:16
28:16
--TCDD--
2.1E5
2.0E5
1.9E5
1.8E5
1.7E5
1.6E5
1.5E5
1.4E5
1.3E5
1.2E5
1.1E5
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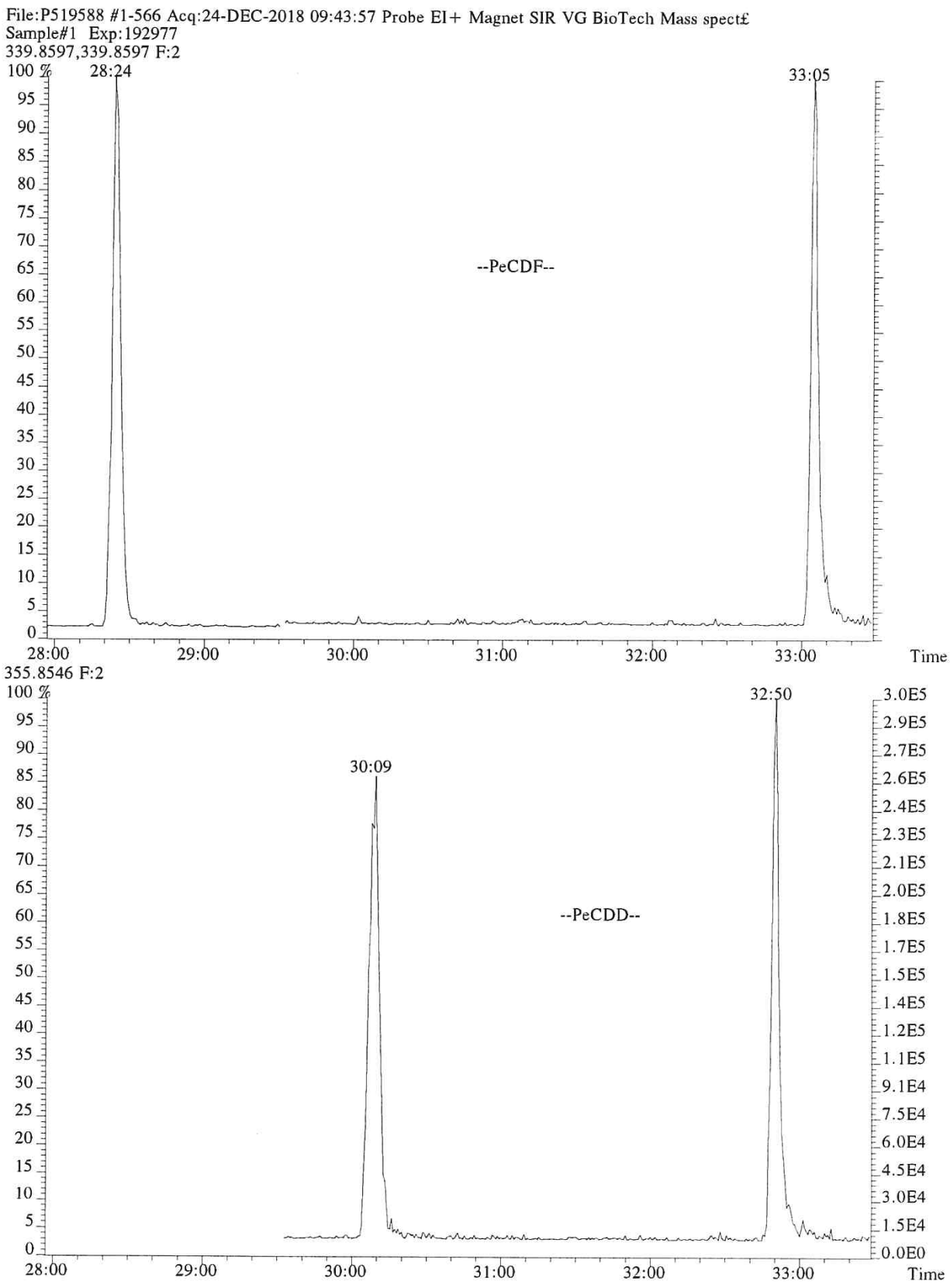
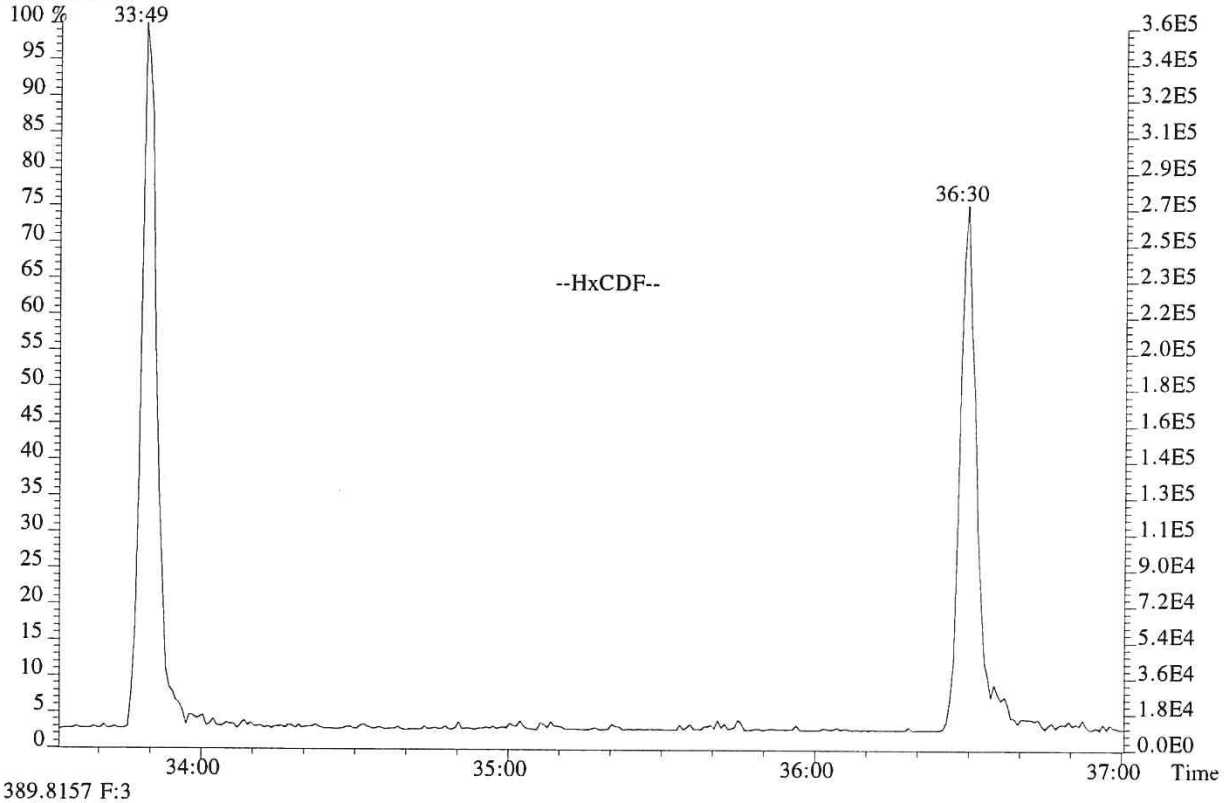
25:00
26:00
27:00
28:00
29:00
30:00
Time

059429

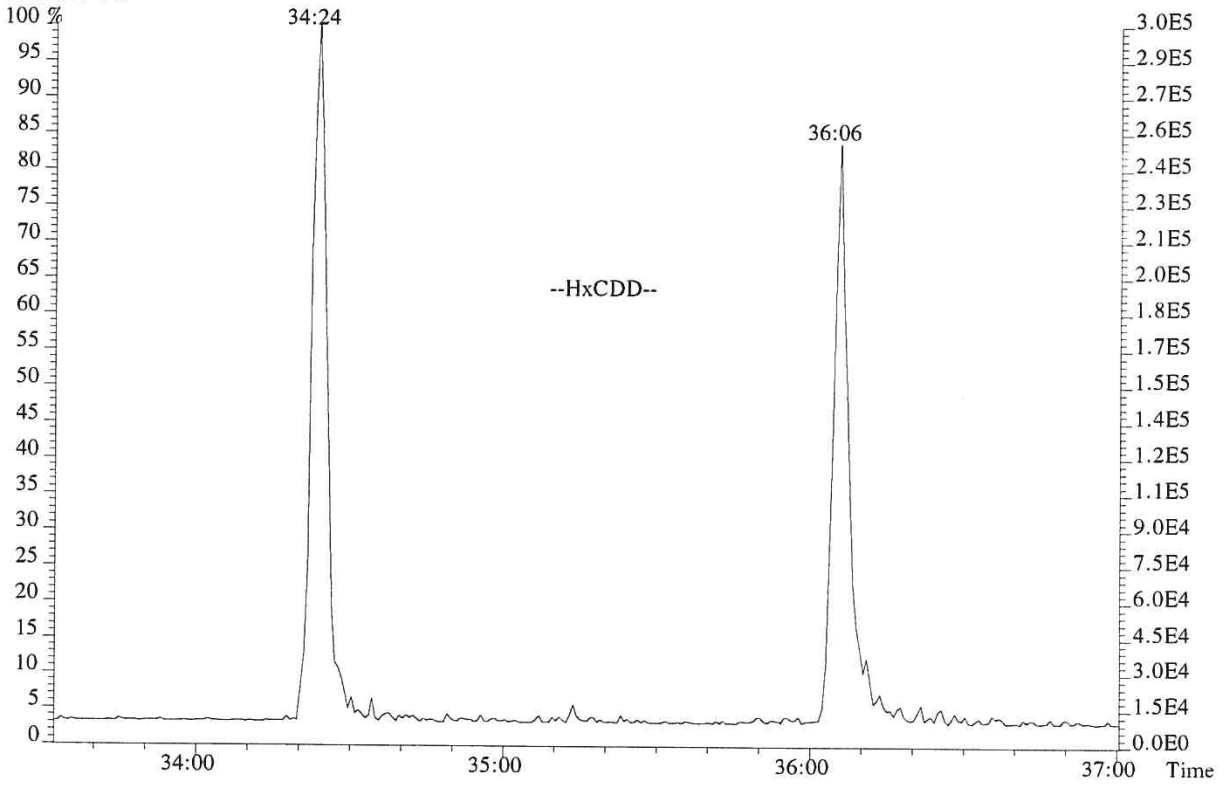

File:P519588 #1-566 Acq:24-DEC-2018 09:43:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
339.8597,339.8597 F:2
100 %
28:24
33:05
--PeCDF--
28:00
29:00
30:00
31:00
32:00
33:00
Time
355.8546 F:2
100 %
30:09
32:50
--PeCDD--
3.0E5
2.9E5
2.7E5
2.6E5
2.4E5
2.3E5
2.1E5
2.0E5
1.8E5
1.7E5
1.5E5
1.4E5
1.2E5
1.1E5
9.1E4
7.5E4
6.0E4
4.5E4
3.0E4
1.5E4
0.0E0
28:00
29:00
30:00
31:00
32:00
33:00
Time

059430

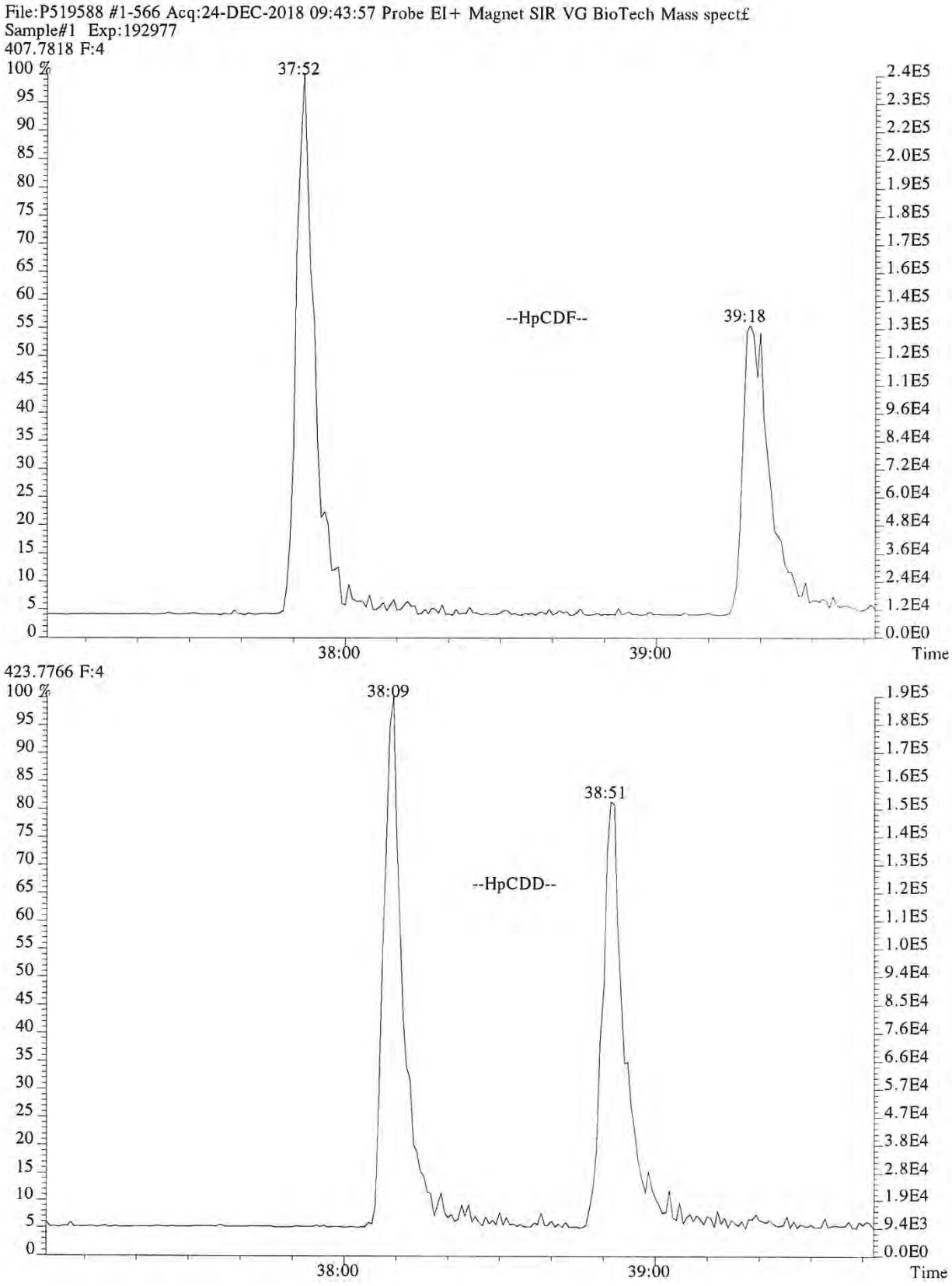
File:P519588 #1-566 Acq:24-DEC-2018 09:43:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
373.8208 F:3



389.8157 F:3



059431


File:P519588 #1-566 Acq:24-DEC-2018 09:43:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
407.7818 F:4
37:52
--HpCDF--
39:18
38:00
39:00
Time
423.7766 F:4
38:09
38:51
--HpCDD--
38:00
39:00
Time

059432

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519587 Analysis Date: 24-DEC-18 Time: 08:52:29

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.84	0.65-0.89	9.1	7.8 - 12.9	-9.2
1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	50	39 - 65	-0.9
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	48	39 - 64	-3.7
1,2,3,6,7,8-HxCDD	M+2/M+4	1.20	1.05-1.43	49	39 - 64	-3.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.21	1.05-1.43	49	41 - 61	-1.1
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	50	43 - 58	0.7
OCDD	M+2/M+4	0.86	0.76-1.02	100	79 - 126	-0.4
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.4	8.4 - 12.0	-6.4
1,2,3,7,8-PeCDF	M+2/M+4	1.50	1.32-1.78	48	41 - 60	-3.8
2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	49	41 - 61	-1.8
1,2,3,4,7,8-HxCDF	M+2/M+4	1.21	1.05-1.43	52	45 - 56	4.1
1,2,3,6,7,8-HxCDF	M+2/M+4	1.16	1.05-1.43	49	44 - 57	-1.4
1,2,3,7,8,9-HxCDF	M+2/M+4	1.18	1.05-1.43	49	45 - 56	-1.4
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	50	44 - 57	-0.6
1,2,3,4,6,7,8-HpCDF	M+2/M+4	0.98	0.88-1.20	50	45 - 55	-0.2
1,2,3,4,7,8,9-HpCDF	M+2/M+4	0.98	0.88-1.20	52	43 - 58	3.6
OCDF	M+2/M+4	0.88	0.76-1.02	100	63 - 159	0.0

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519587 Analysis Date: 24-DEC-18 Time: 08:52:29

LABELED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
13C-2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	100	82 - 121	-0.4
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32-1.78	96	62 - 160	-3.6
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	91	85 - 117	-9.3
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	109	85 - 118	9.1
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88-1.20	91	72 - 138	-8.9
13C-OCDD	M+2/M+4	0.95	0.76-1.02	200	96 - 415	0.1
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	86	71 - 140	-13.9
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	92	76 - 130	-7.9
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	92	77 - 130	-8.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	82	76 - 131	-17.8
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	98	70 - 143	-1.7
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	84	74 - 135	-15.6
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.50	0.43-0.59	94	73 - 137	-5.5
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.43	0.37-0.51	93	78 - 129	-7.0
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.43	0.37-0.51	83	77 - 129	-16.9
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			9.5	7.8 - 12.7	-4.6

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
194503

Run #7 Filename P519587 Samp: 1 Inj: 1 Acquired: 24-DEC-18 08:52:29
Processed: 26-DEC-18 13:22:34 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:18	7.974e+02	1.030e+03	0.77	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:07	6.291e+03	4.207e+03	1.50	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:06	6.075e+03	3.958e+03	1.54	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:00	4.488e+03	3.707e+03	1.21	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:07	5.326e+03	4.603e+03	1.16	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:39	4.765e+03	3.776e+03	1.26	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:26	3.649e+03	3.095e+03	1.18	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:51	3.906e+03	3.995e+03	0.98	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:15	2.873e+03	2.921e+03	0.98	yes	no	1.258
10	Unk	OCDF	41:53	4.841e+03	5.489e+03	0.88	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:16	6.599e+02	7.837e+02	0.84	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:25	4.374e+03	2.711e+03	1.61	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:50	3.075e+03	2.393e+03	1.28	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:55	3.711e+03	3.088e+03	1.20	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:10	3.517e+03	2.909e+03	1.21	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:51	2.661e+03	2.598e+03	1.02	yes	no	1.025
17	Unk	OCDD	41:44	3.920e+03	4.552e+03	0.86	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:17	9.092e+03	1.165e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:05	1.321e+04	8.341e+03	1.58	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:05	1.307e+04	8.245e+03	1.59	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:60	4.492e+03	8.741e+03	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:06	6.145e+03	1.180e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:38	5.146e+03	1.034e+04	0.50	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:26	4.137e+03	7.817e+03	0.53	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:50	3.521e+03	8.199e+03	0.43	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	2.690e+03	6.203e+03	0.43	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:14	6.372e+03	8.271e+03	0.77	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:24	9.337e+03	5.618e+03	1.66	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:48	6.149e+03	4.789e+03	1.28	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:54	7.499e+03	6.000e+03	1.25	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:50	5.266e+03	4.925e+03	1.07	yes	no	0.858
32	IS	13C-OCDD	41:43	7.393e+03	7.818e+03	0.95	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:34	6.983e+03	8.929e+03	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:09	7.364e+03	5.679e+03	1.30	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:16	1.538e+03				no	1.014

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
194503

Run #7 Filename P519587 Samp: 1 Inj: 1 Acquired: 24-DEC-18 08:52:29
Processed: 26-DEC-18 13:22:34 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.12e+05	6.96e+02	1.6e+02	1.51e+05	2.39e+03	6.3e+01
2	1,2,3,7,8-PeCDF	9.46e+05	5.80e+02	1.6e+03	6.30e+05	1.67e+03	3.8e+02
3	2,3,4,7,8-PeCDF	1.04e+06	5.80e+02	1.8e+03	6.91e+05	1.67e+03	4.1e+02
4	1,2,3,4,7,8-HxCDF	7.90e+05	6.32e+02	1.3e+03	6.64e+05	3.92e+02	1.7e+03
5	1,2,3,6,7,8-HxCDF	7.89e+05	6.32e+02	1.2e+03	6.78e+05	3.92e+02	1.7e+03
6	2,3,4,6,7,8-HxCDF	7.22e+05	6.32e+02	1.1e+03	5.71e+05	3.92e+02	1.5e+03
7	1,2,3,7,8,9-HxCDF	5.09e+05	6.32e+02	8.1e+02	4.17e+05	3.92e+02	1.1e+03
8	1,2,3,4,6,7,8-HpCDF	5.68e+05	2.56e+02	2.2e+03	5.63e+05	4.32e+02	1.3e+03
9	1,2,3,4,7,8,9-HpCDF	3.32e+05	2.56e+02	1.3e+03	3.46e+05	4.32e+02	8.0e+02
10	OCDF	3.52e+05	3.76e+02	9.4e+02	4.21e+05	6.08e+02	6.9e+02
11	2,3,7,8-TCDD	9.83e+04	2.09e+03	4.7e+01	1.11e+05	1.08e+03	1.0e+02
12	1,2,3,7,8-PeCDD	6.78e+05	6.60e+02	1.0e+03	4.32e+05	2.56e+02	1.7e+03
13	1,2,3,4,7,8-HxCDD	5.39e+05	3.60e+02	1.5e+03	4.21e+05	5.56e+02	7.6e+02
14	1,2,3,6,7,8-HxCDD	5.60e+05	3.60e+02	1.6e+03	4.63e+05	5.56e+02	8.3e+02
15	1,2,3,7,8,9-HxCDD	5.37e+05	3.60e+02	1.5e+03	4.07e+05	5.56e+02	7.3e+02
16	1,2,3,4,6,7,8-HpCDD	3.30e+05	6.00e+02	5.5e+02	3.33e+05	3.64e+02	9.1e+02
17	OCDD	3.10e+05	3.00e+02	1.0e+03	3.53e+05	2.92e+02	1.2e+03
18	13C-2,3,7,8-TCDF	1.32e+06	6.77e+03	2.0e+02	1.69e+06	6.71e+03	2.5e+02
19	13C-1,2,3,7,8-PeCDF	1.99e+06	8.20e+02	2.4e+03	1.27e+06	5.20e+02	2.4e+03
20	13C-2,3,4,7,8-PeCDF	2.29e+06	8.20e+02	2.8e+03	1.45e+06	5.20e+02	2.8e+03
21	13C-1,2,3,4,7,8-HxCDF	8.13e+05	8.16e+02	1.0e+03	1.58e+06	1.56e+03	1.0e+03
22	13C-1,2,3,6,7,8-HxCDF	9.22e+05	8.16e+02	1.1e+03	1.74e+06	1.56e+03	1.1e+03
23	13C-2,3,4,6,7,8-HxCDF	8.31e+05	8.16e+02	1.0e+03	1.64e+06	1.56e+03	1.0e+03
24	13C-1,2,3,7,8,9-HxCDF	5.88e+05	8.16e+02	7.2e+02	1.10e+06	1.56e+03	7.1e+02
25	13C-1,2,3,4,6,7,8-HpCDF	4.99e+05	9.84e+02	5.1e+02	1.16e+06	2.02e+03	5.7e+02
26	13C-1,2,3,4,7,8,9-HpCDF	3.15e+05	9.84e+02	3.2e+02	7.02e+05	2.02e+03	3.5e+02
27	13C-2,3,7,8-TCDD	1.02e+06	8.42e+03	1.2e+02	1.24e+06	2.46e+03	5.0e+02
28	13C-1,2,3,7,8-PeCDD	1.44e+06	9.32e+02	1.5e+03	8.75e+05	9.48e+02	9.2e+02
29	13C-1,2,3,4,7,8-HxCDD	1.09e+06	1.10e+03	9.9e+02	8.25e+05	3.96e+02	2.1e+03
30	13C-1,2,3,6,7,8-HxCDD	1.11e+06	1.10e+03	1.0e+03	8.85e+05	3.96e+02	2.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	6.15e+05	5.60e+02	1.1e+03	5.80e+05	5.00e+02	1.2e+03
32	13C-OCDD	5.52e+05	4.88e+02	1.1e+03	6.04e+05	3.64e+02	1.7e+03
33	13C-1,2,3,4-TCDD	1.10e+06	8.42e+03	1.3e+02	1.41e+06	2.46e+03	5.7e+02
34	13C-1,2,3,7,8,9-HxCDD	1.10e+06	1.10e+03	1.0e+03	8.82e+05	3.96e+02	2.2e+03
35	37Cl-2,3,7,8-TCDD	2.36e+05	1.33e+03	1.8e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.088e+03 + 1.076e+03) \times 100}{(1.021e+06 + 1.236e+06) \times (\quad) \times 1.085} =$$

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
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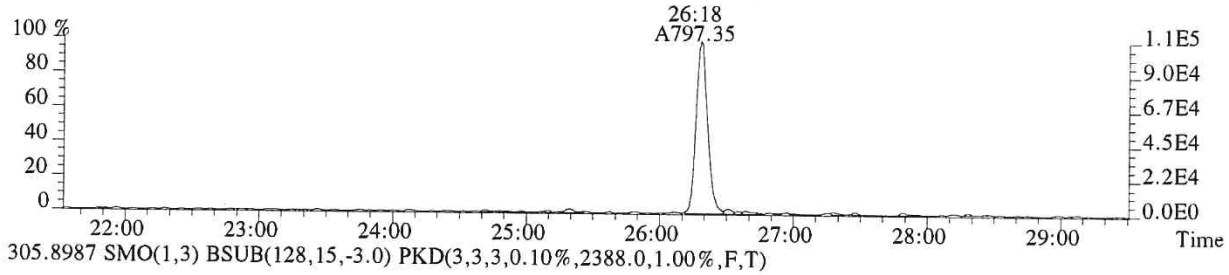
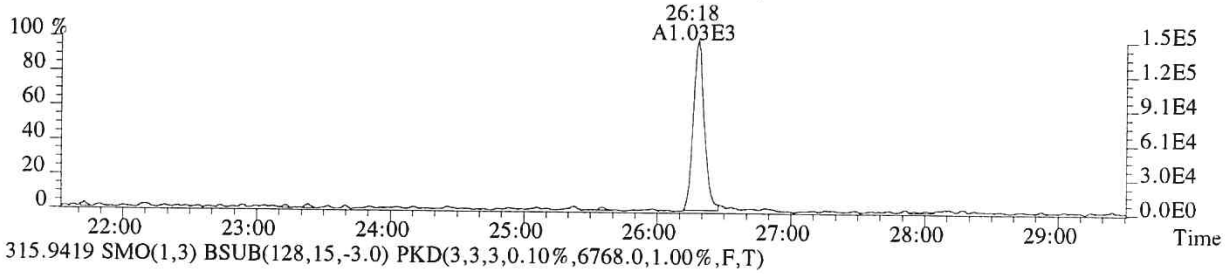
059436

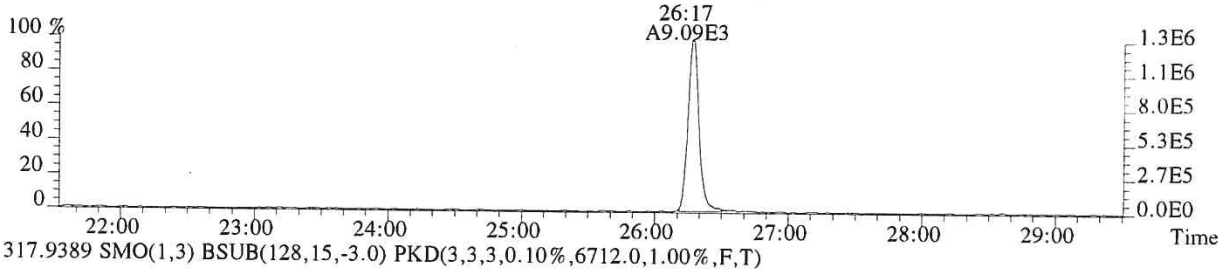
File:P519587 #1-566 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,696.0,1.00%,F,T)



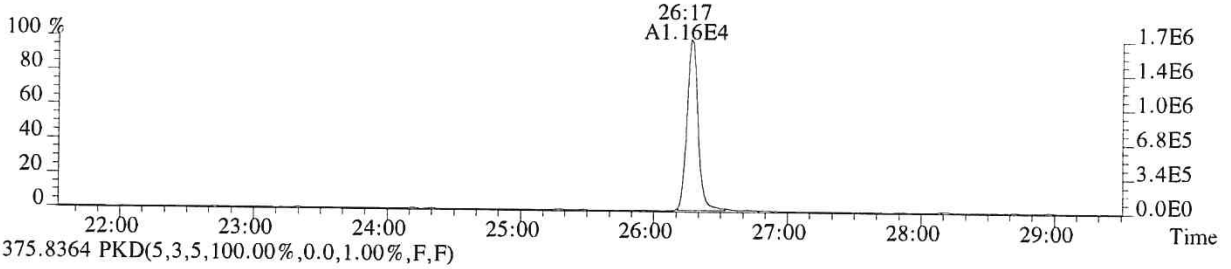
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2388.0,1.00%,F,T)



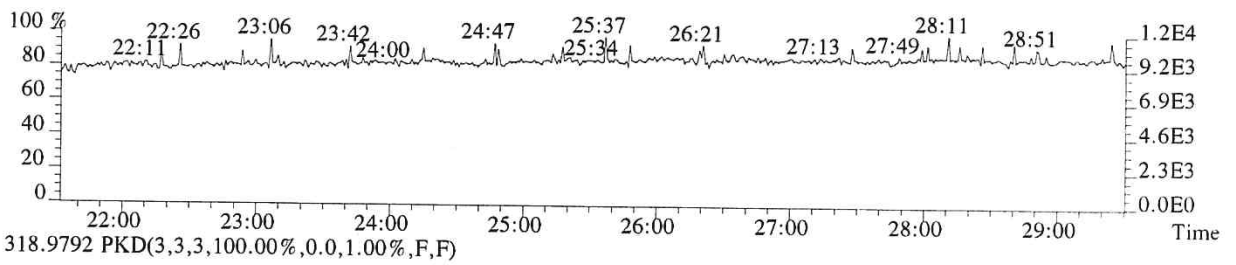
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6768.0,1.00%,F,T)



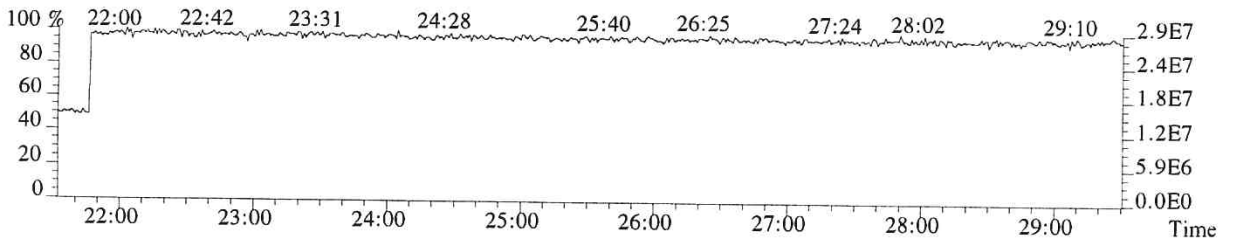
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6712.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

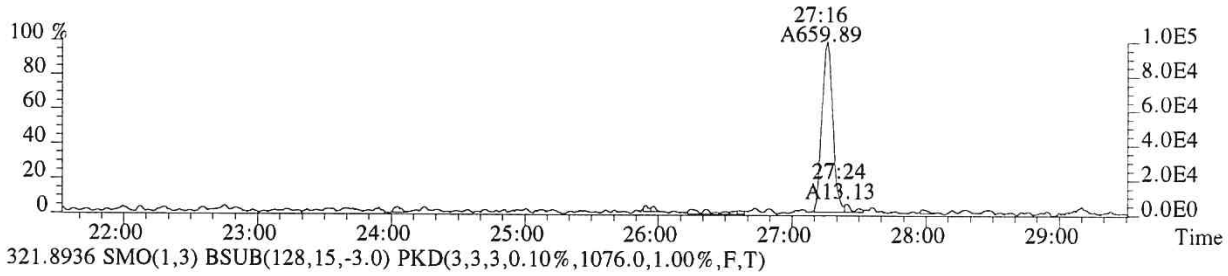


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

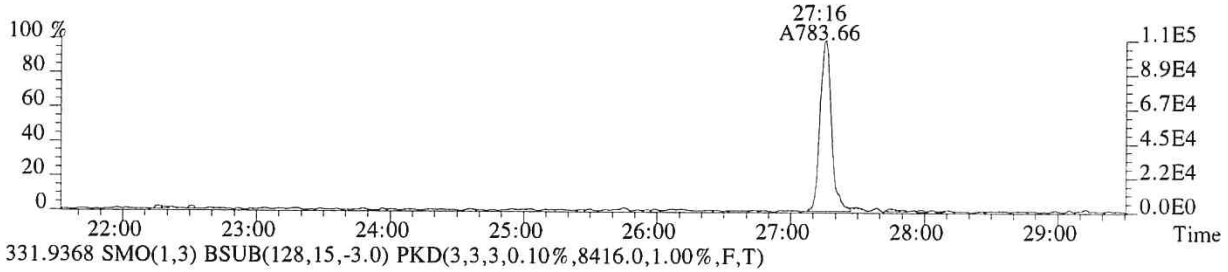


059437

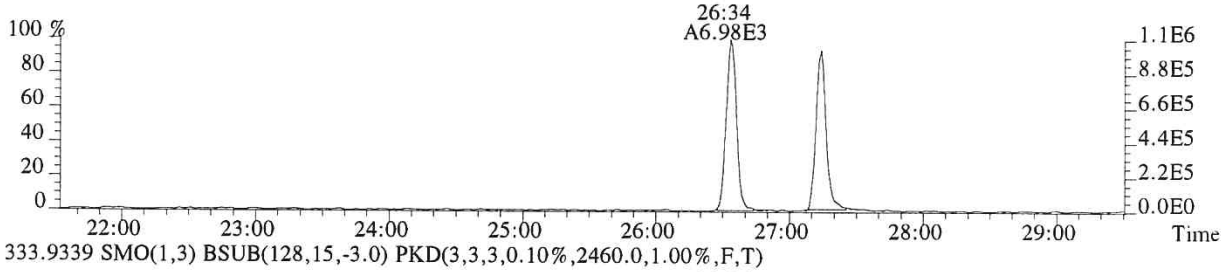
File:P519587 #1-566 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2088.0,1.00%,F,T)



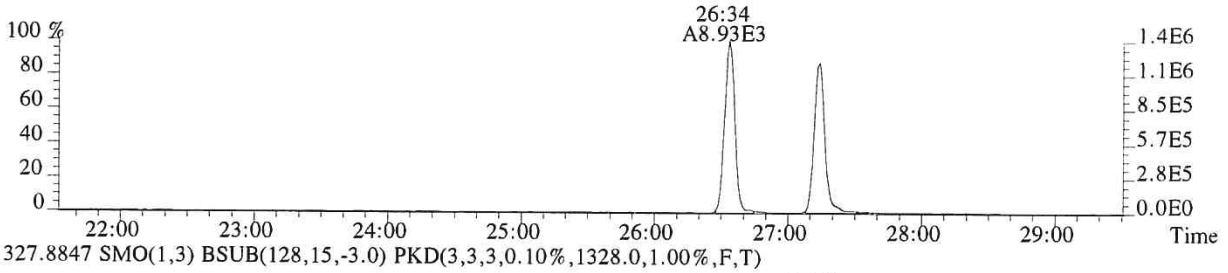
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1076.0,1.00%,F,T)



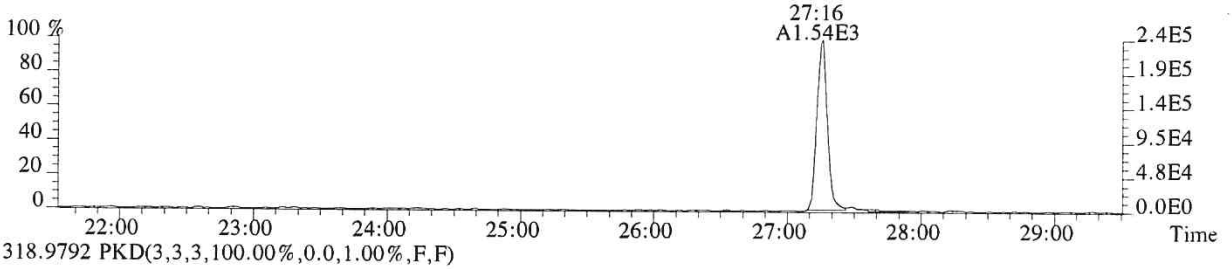
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8416.0,1.00%,F,T)



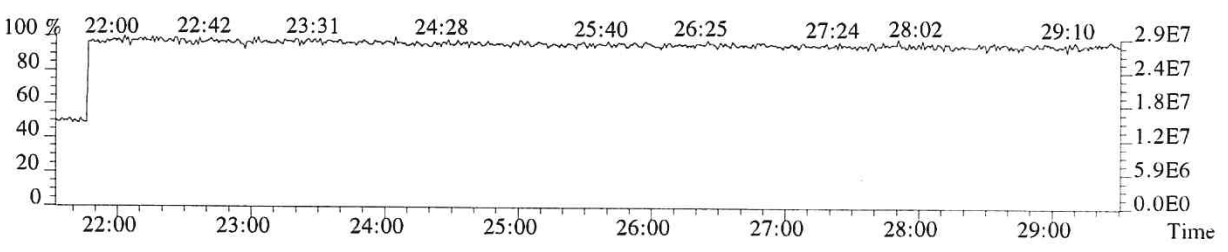
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2460.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1328.0,1.00%,F,T)

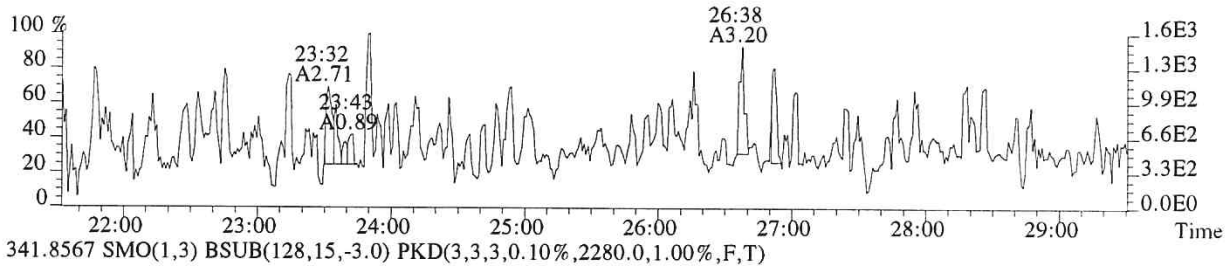


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

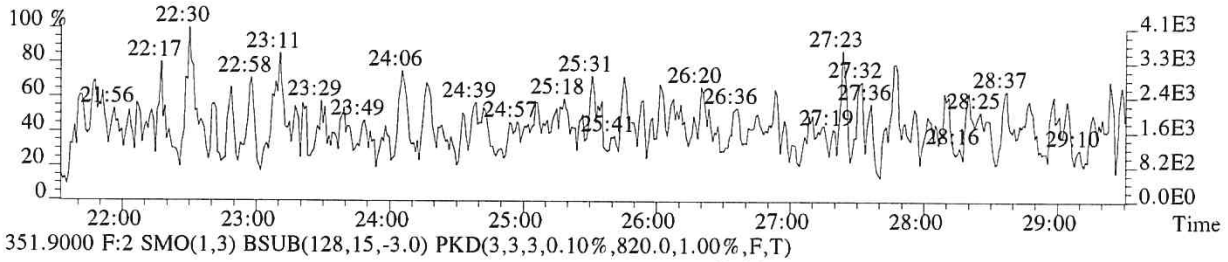


059438

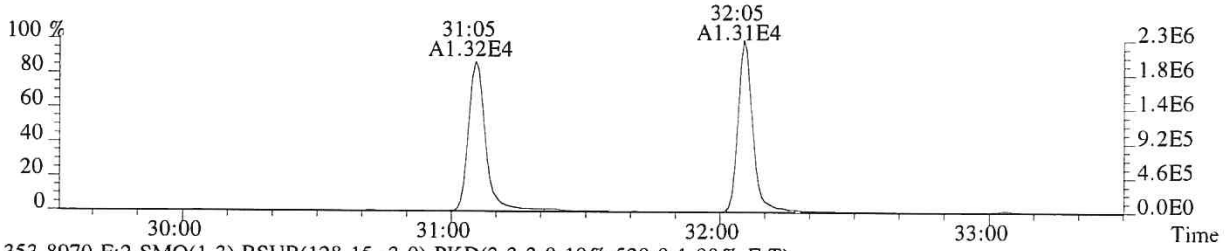
File:P519587 #1-566 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,696.0,1.00%,F,T)



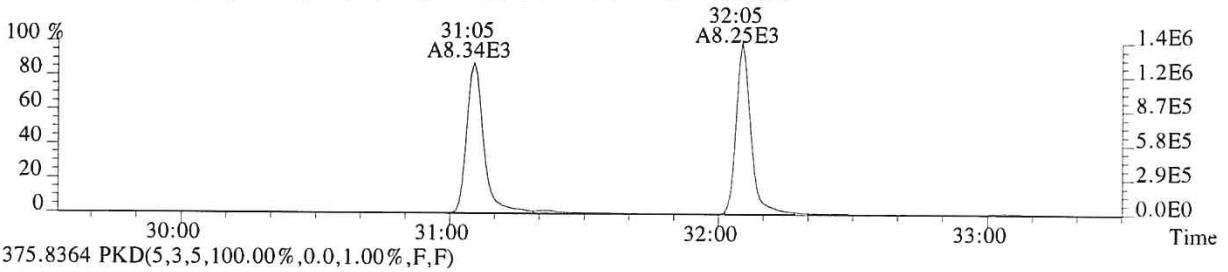
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2280.0,1.00%,F,T)



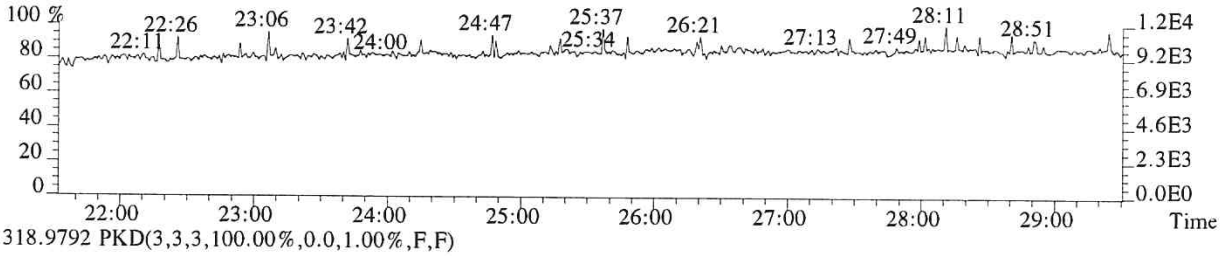
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,820.0,1.00%,F,T)



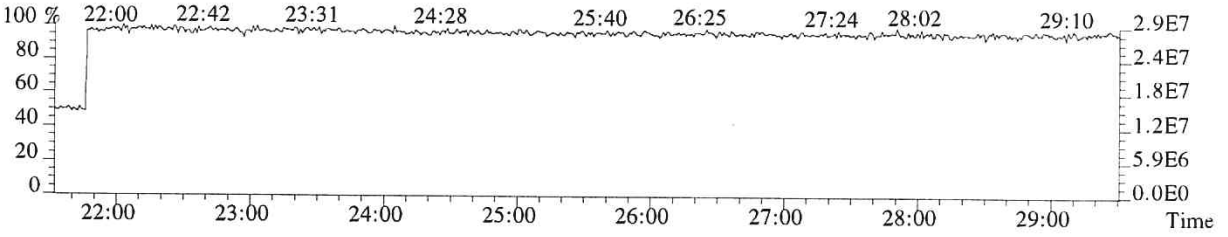
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



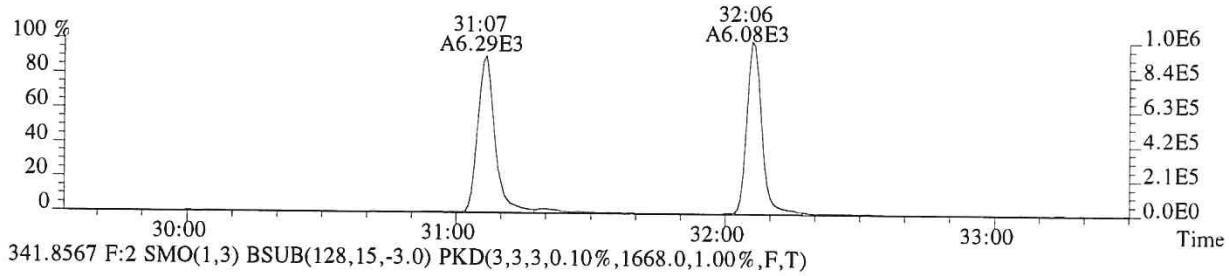
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



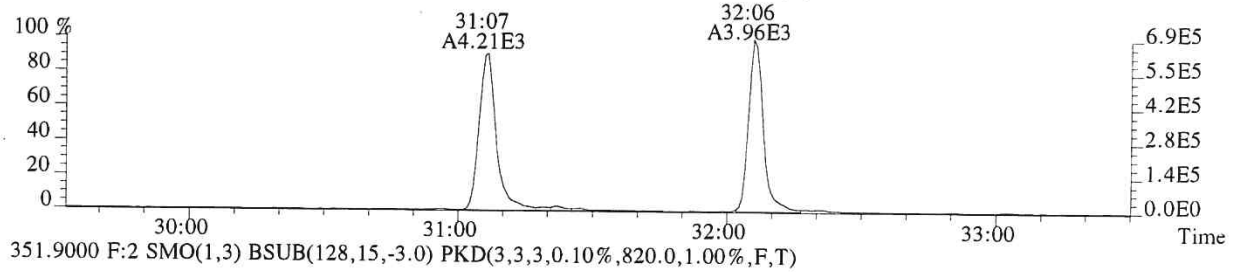
059439

File:P519587 #1-357 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

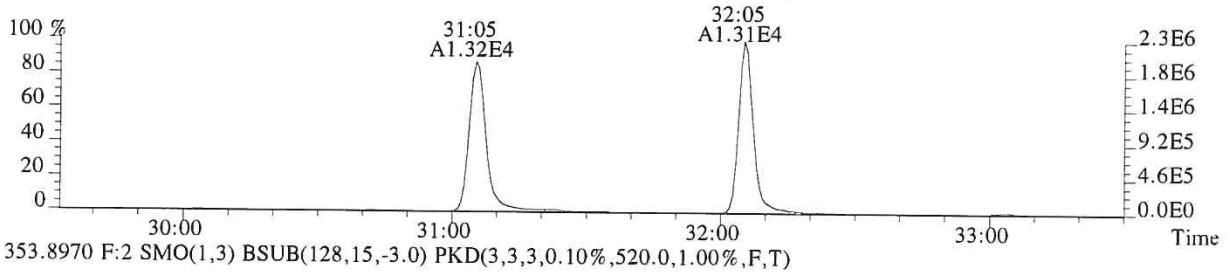
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,580.0,1.00%,F,T)



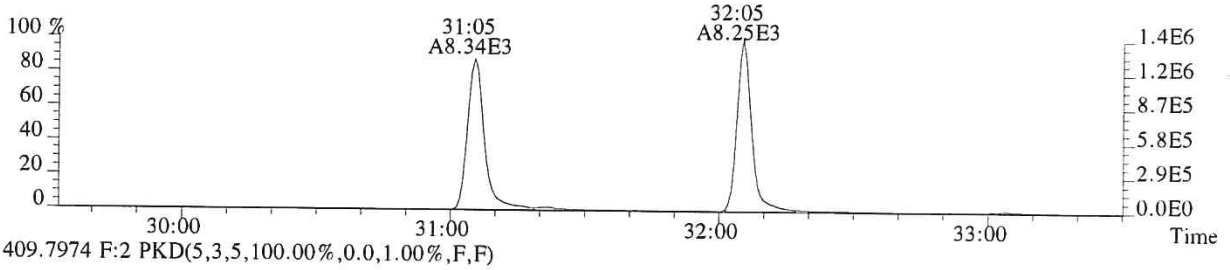
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1668.0,1.00%,F,T)



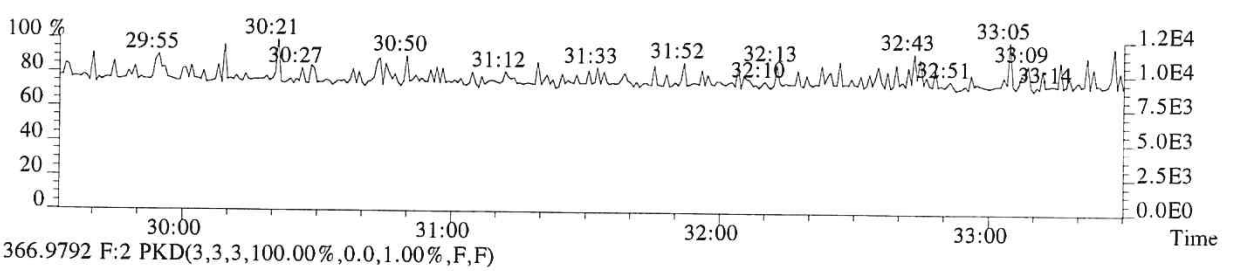
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,820.0,1.00%,F,T)



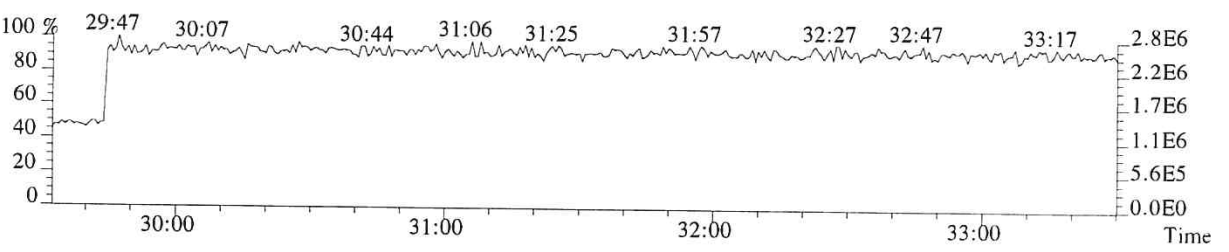
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

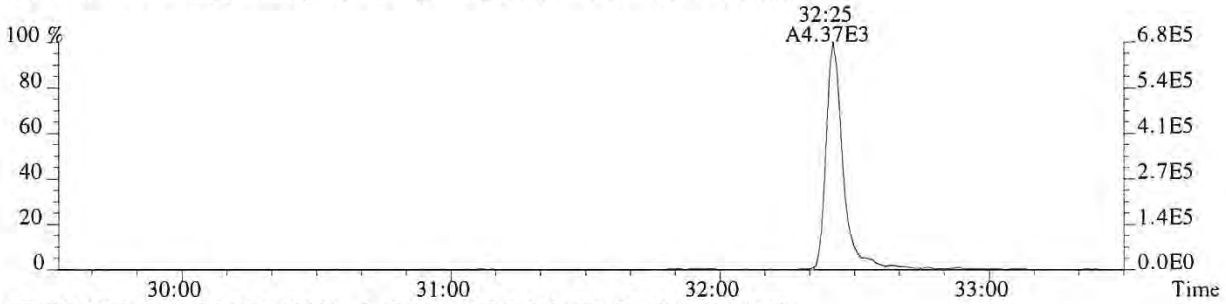


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

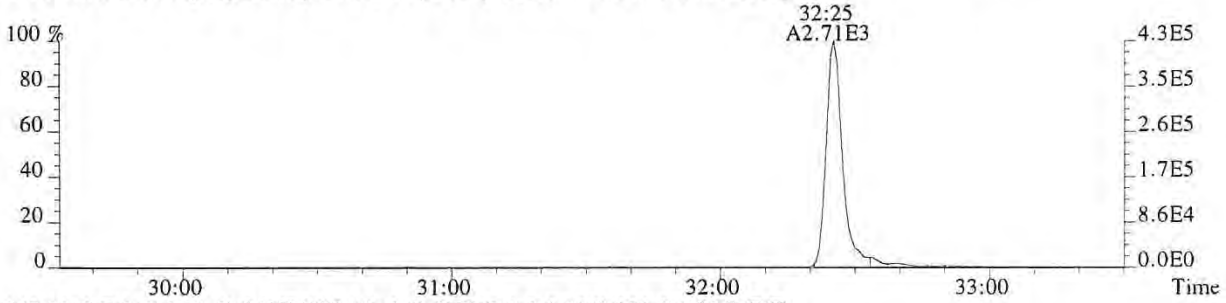


059440

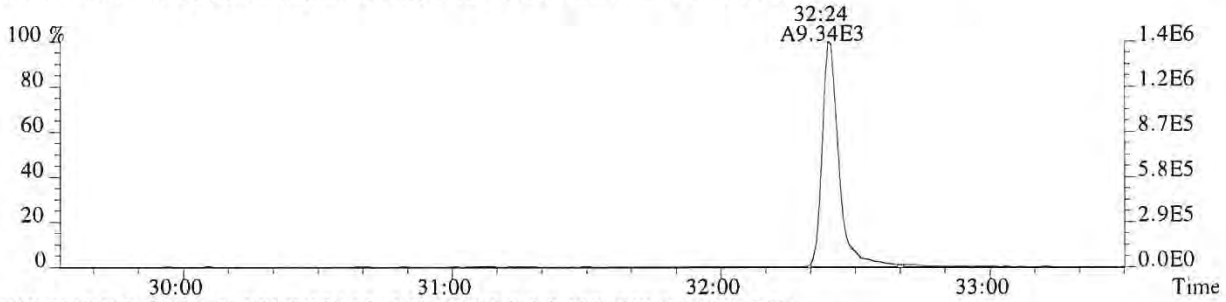
File:P519587 #1-357 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,660.0,1.00%,F,T)



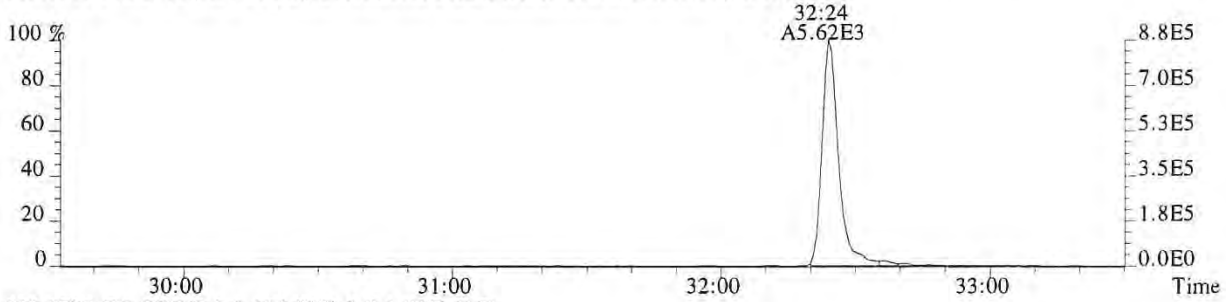
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,256.0,1.00%,F,T)



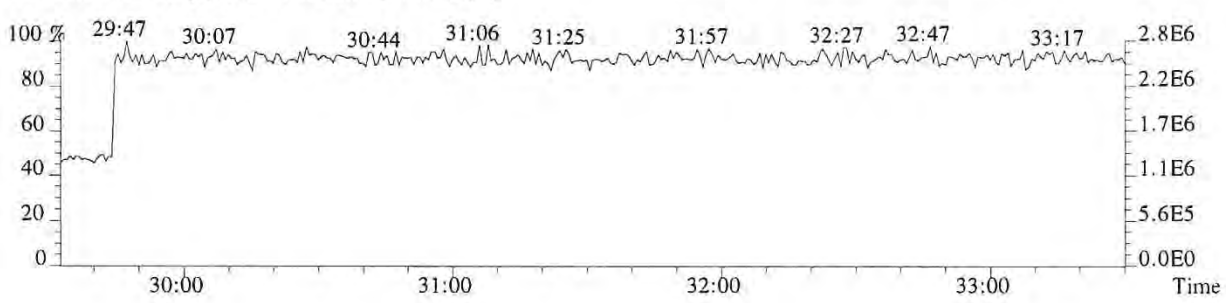
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,932.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,948.0,1.00%,F,T)

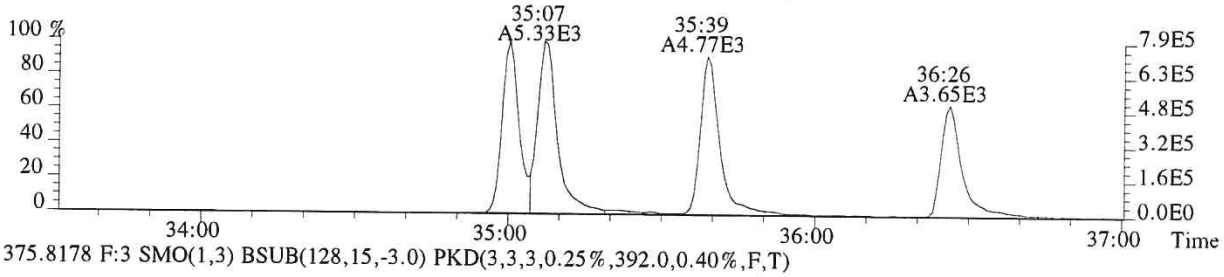


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

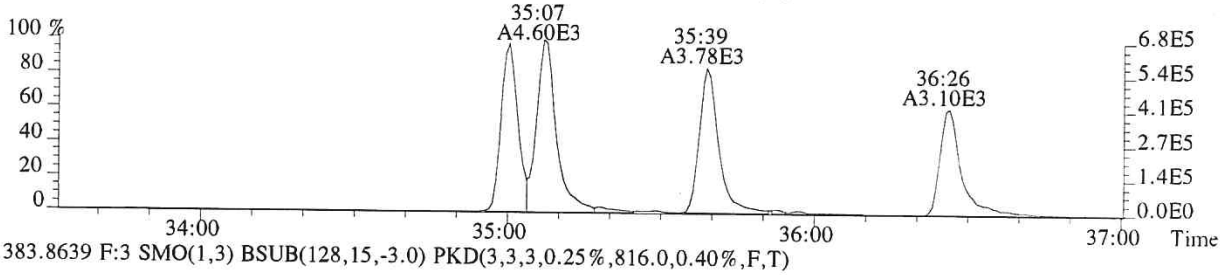


059441

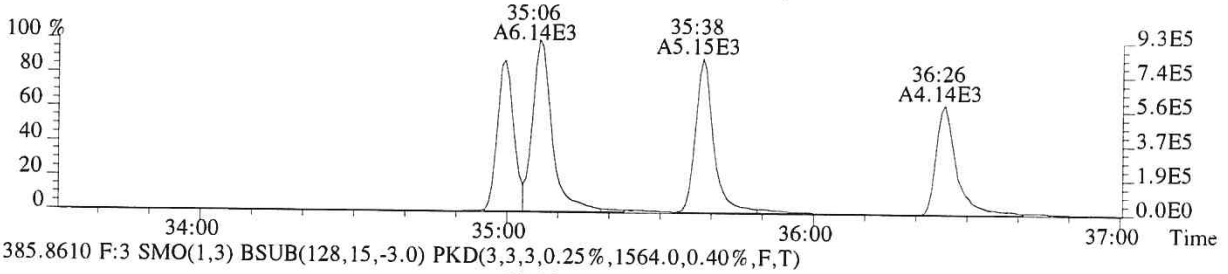
File:P519587 #1-313 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,632.0,0.40%,F,T)



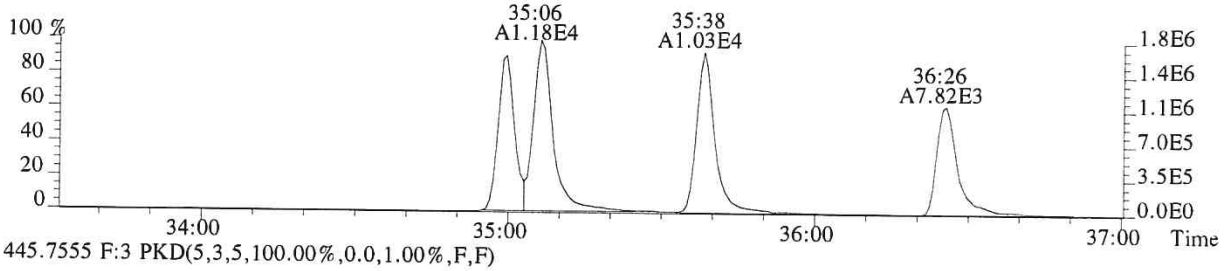
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,392.0,0.40%,F,T)



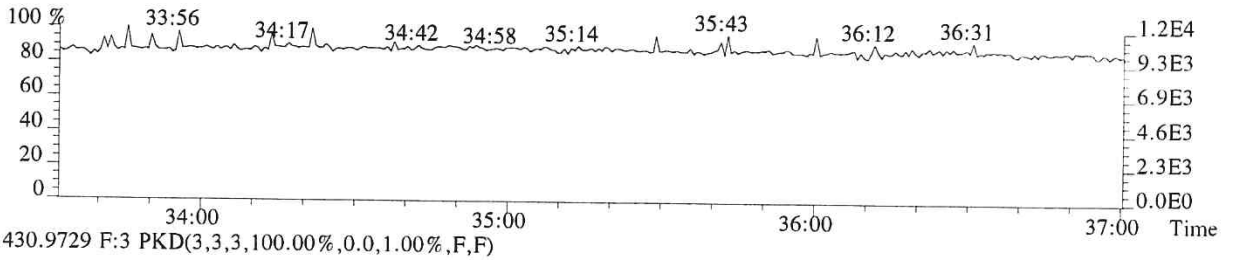
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,816.0,0.40%,F,T)



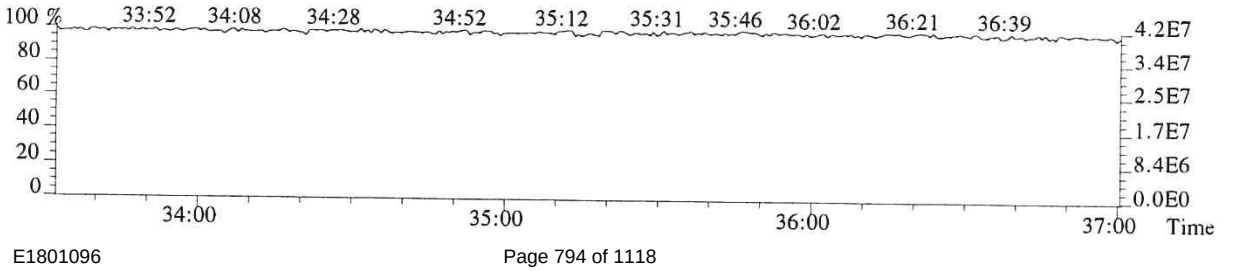
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1564.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

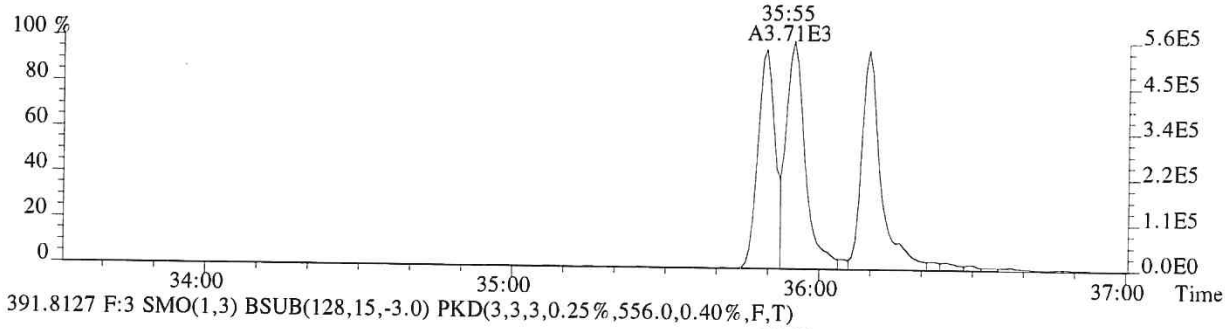


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

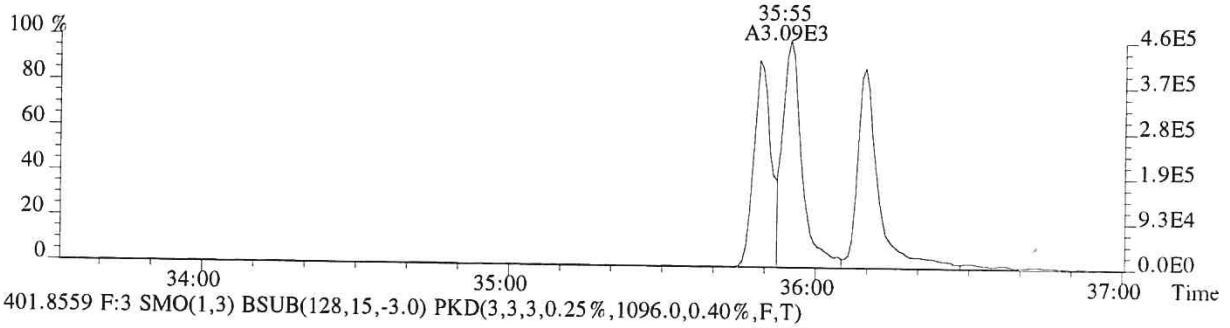


059442

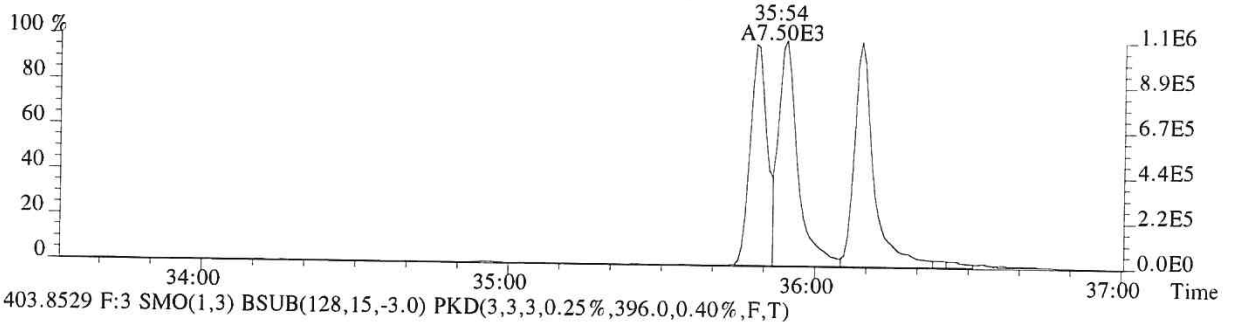
File:P519587 #1-313 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,360.0,0.40%,F,T)



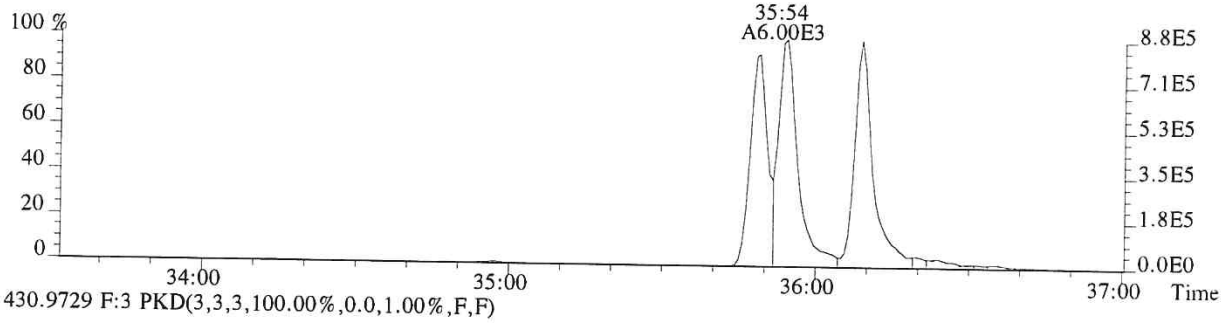
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,556.0,0.40%,F,T)



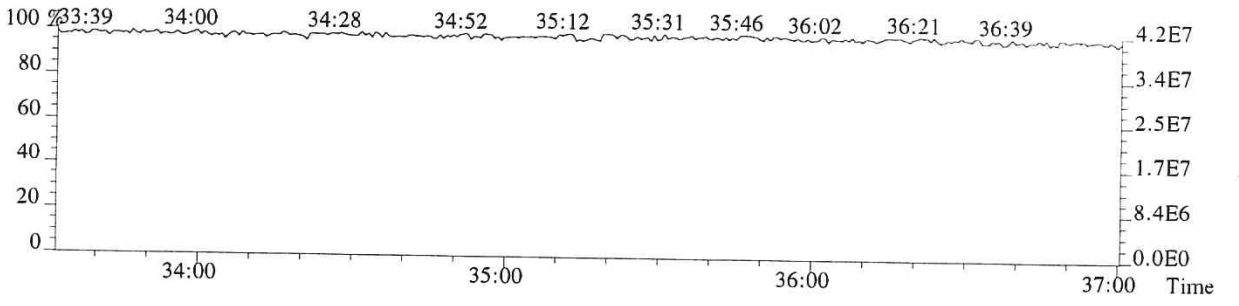
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1096.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,396.0,0.40%,F,T)

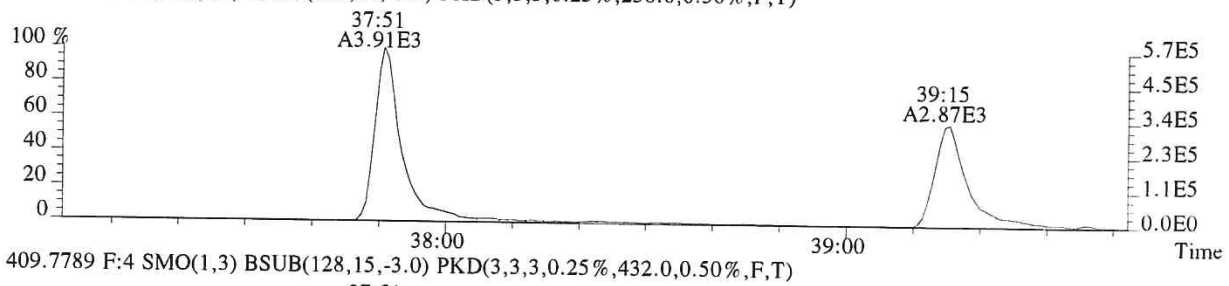


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

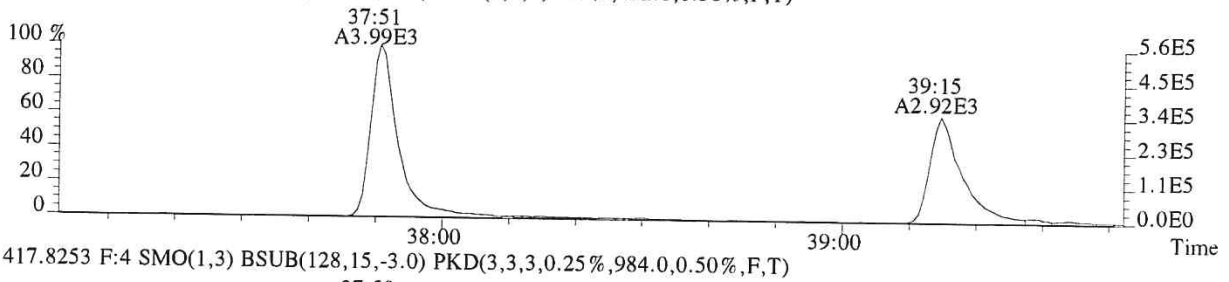


059443

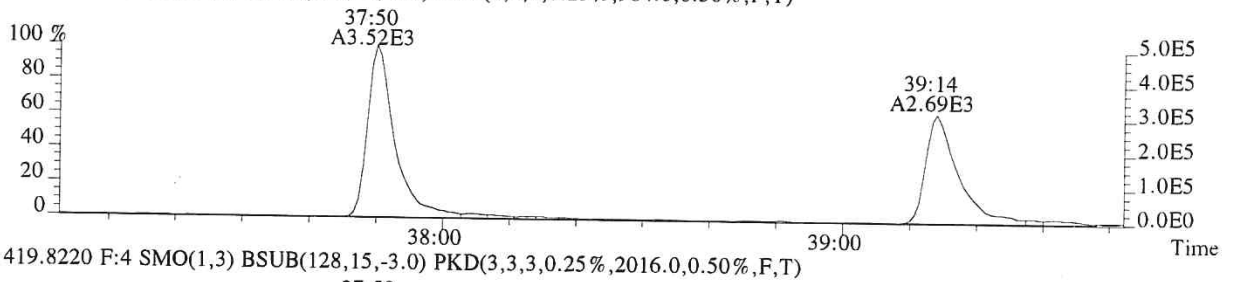
File:P519587 #1-240 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,256.0,0.50%,F,T)



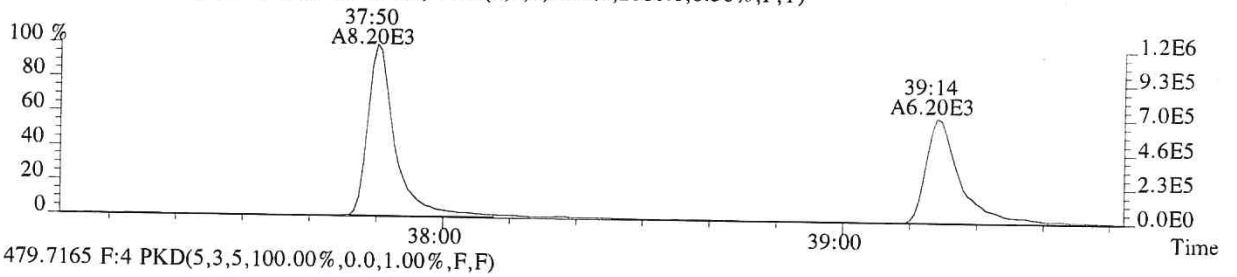
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,432.0,0.50%,F,T)



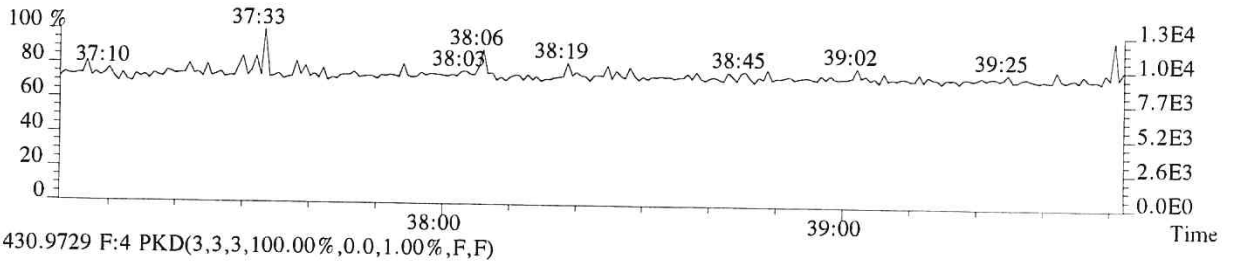
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,984.0,0.50%,F,T)



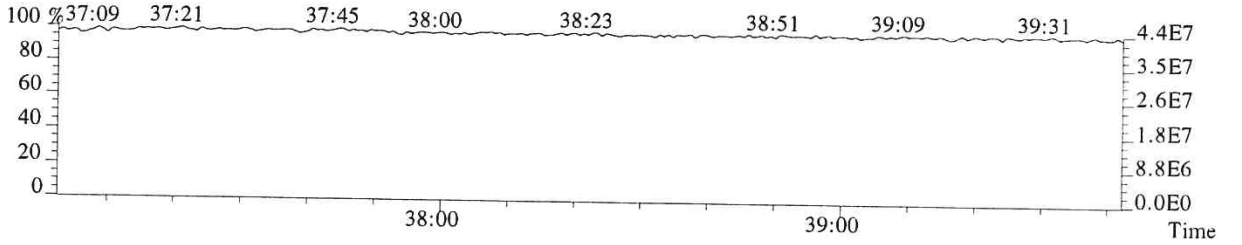
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2016.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

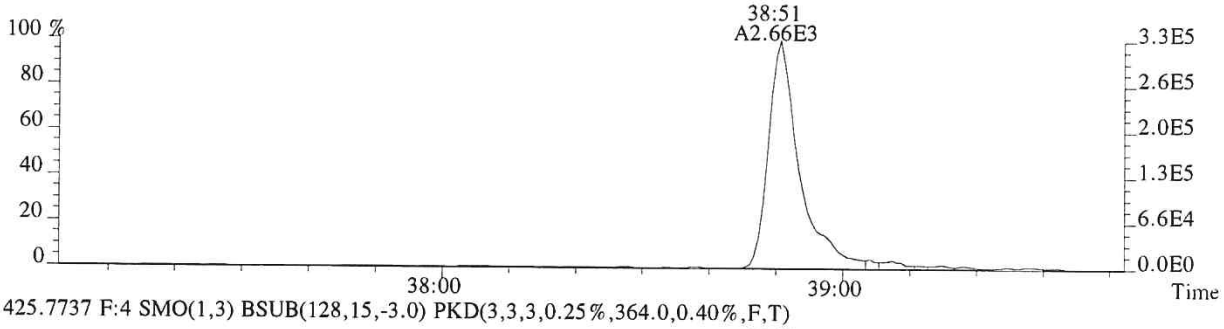


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

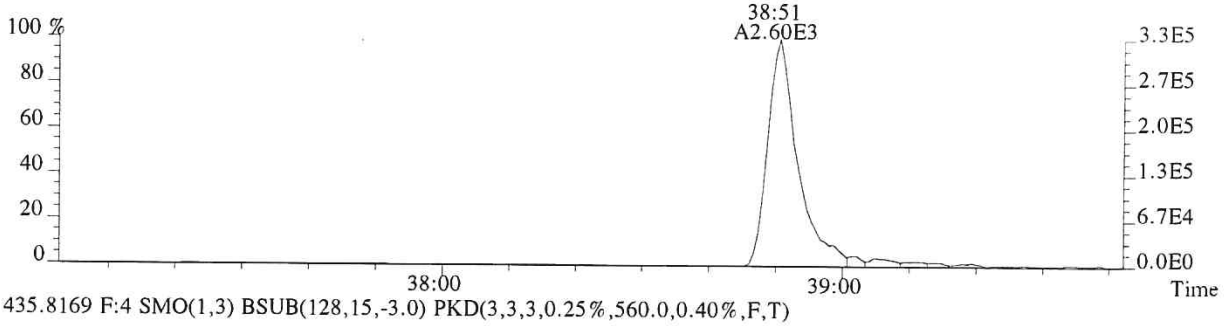


059444

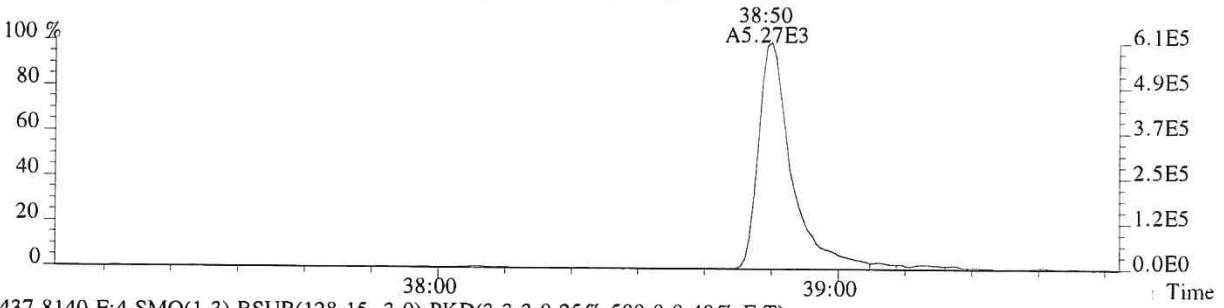
File:P519587 #1-240 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.40%,F,T)



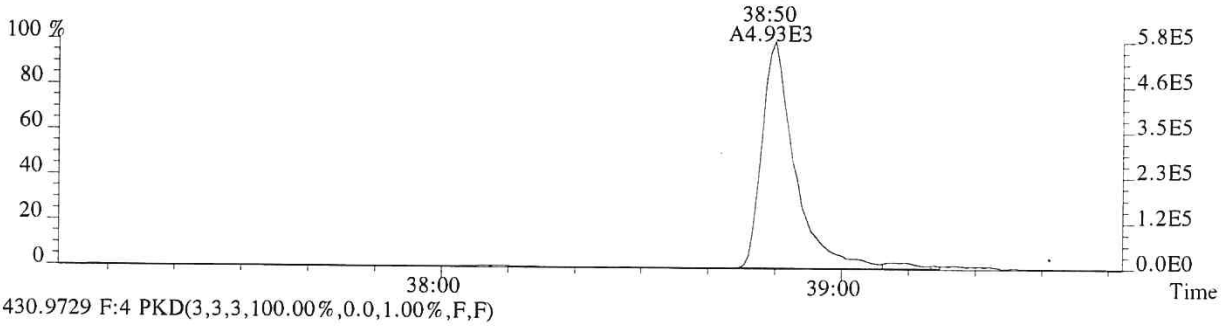
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,364.0,0.40%,F,T)



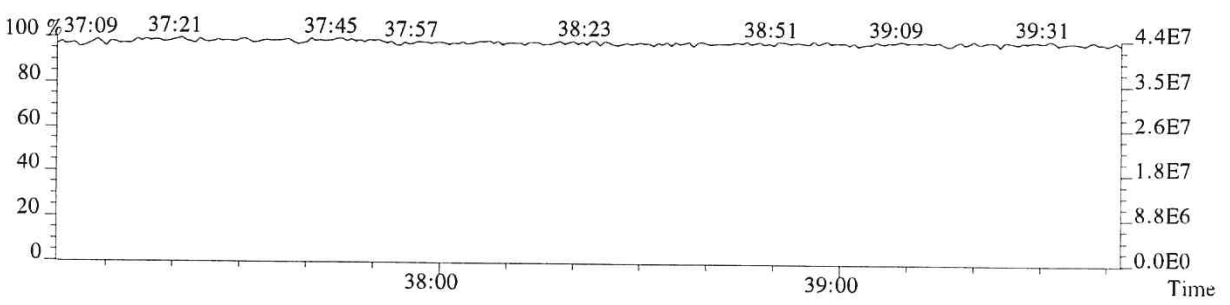
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,560.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,500.0,0.40%,F,T)

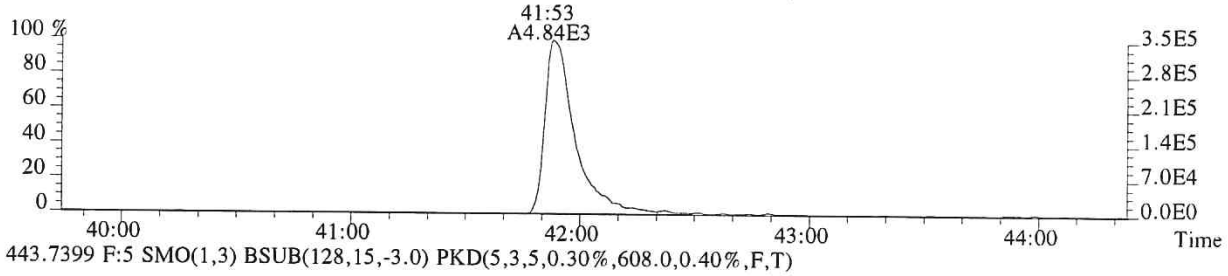


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

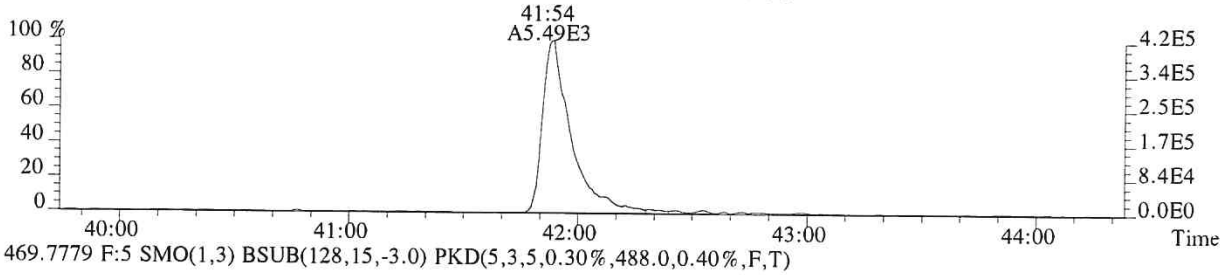


059445

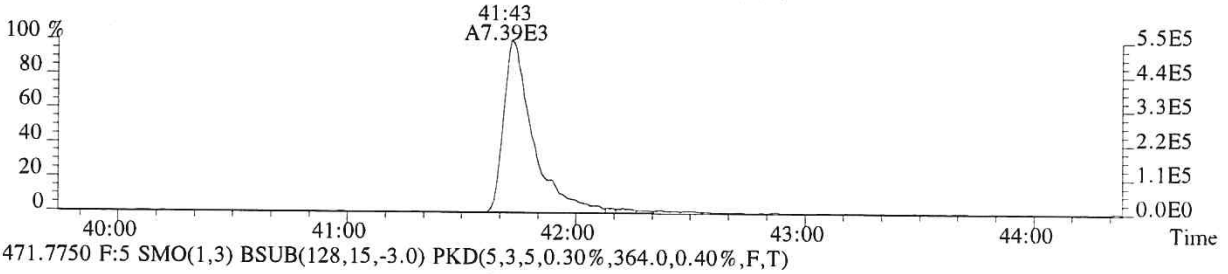
File:P519587 #1-419 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,376.0,0.40%,F,T)



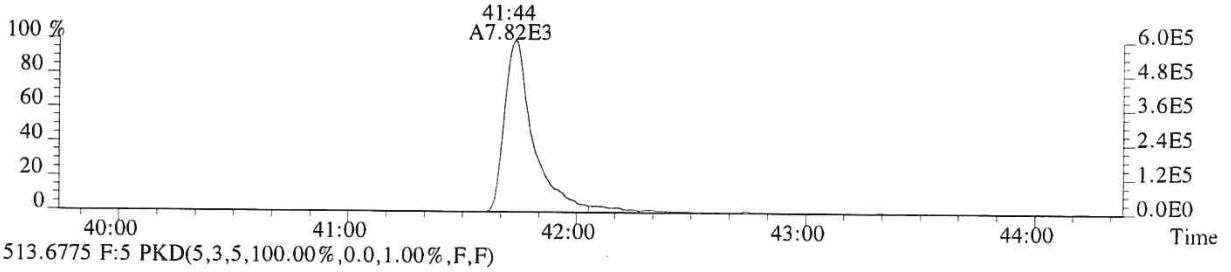
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,608.0,0.40%,F,T)



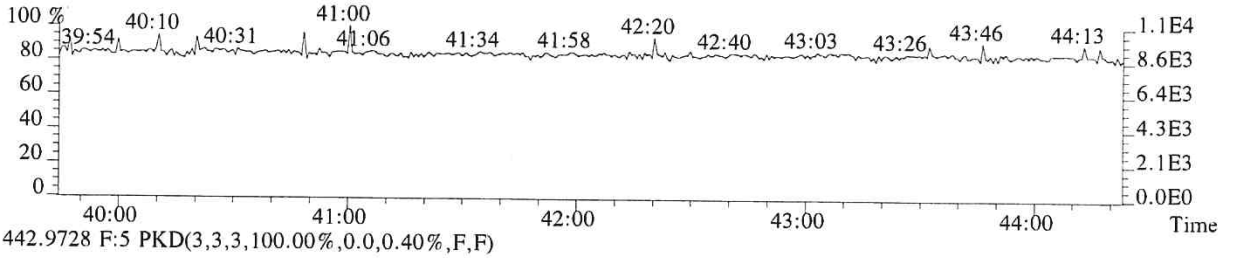
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,488.0,0.40%,F,T)



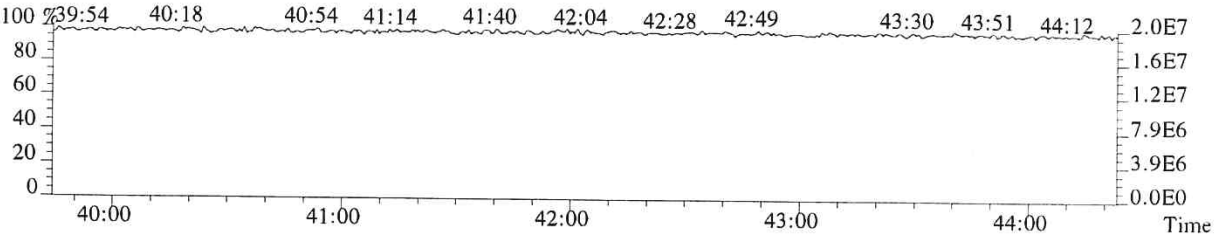
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,364.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

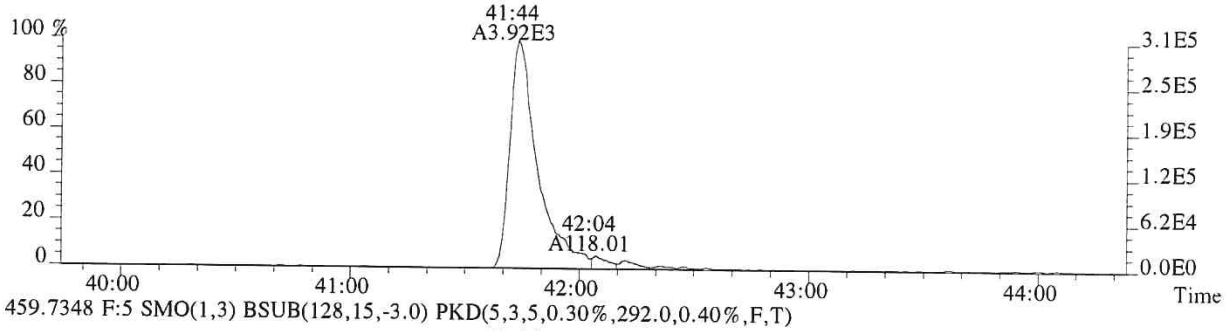


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

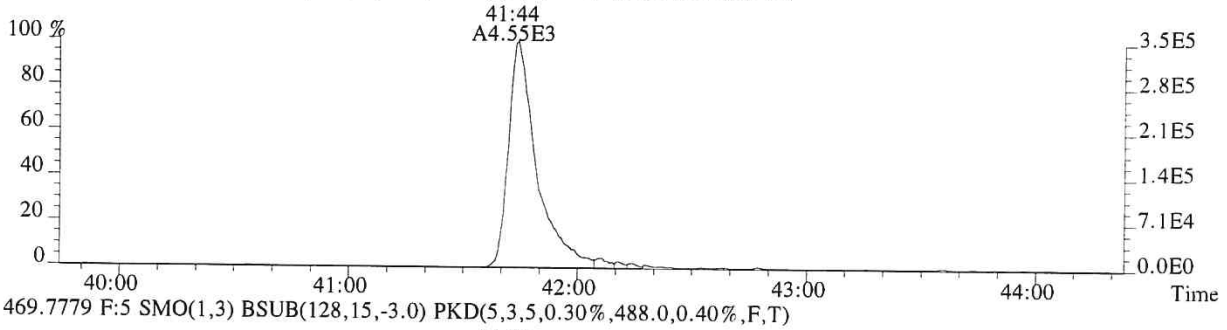


059446

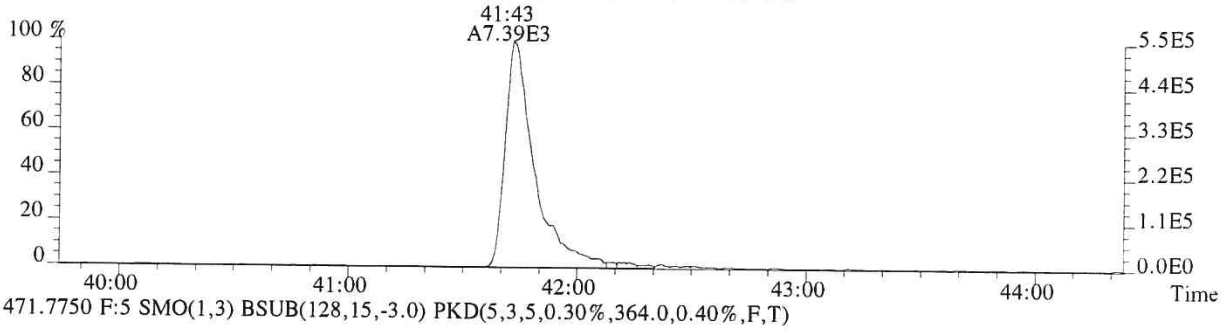
File:P519587 #1-419 Acq:24-DEC-2018 08:52:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,300.0,0.40%,F,T)



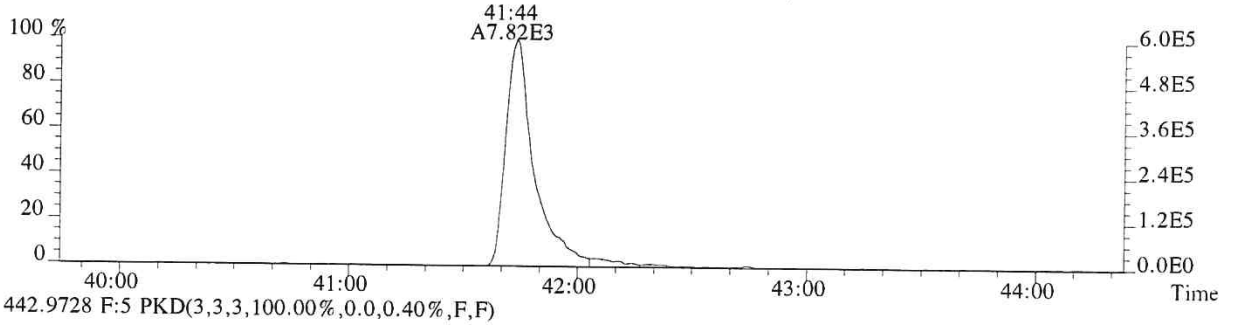
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,292.0,0.40%,F,T)



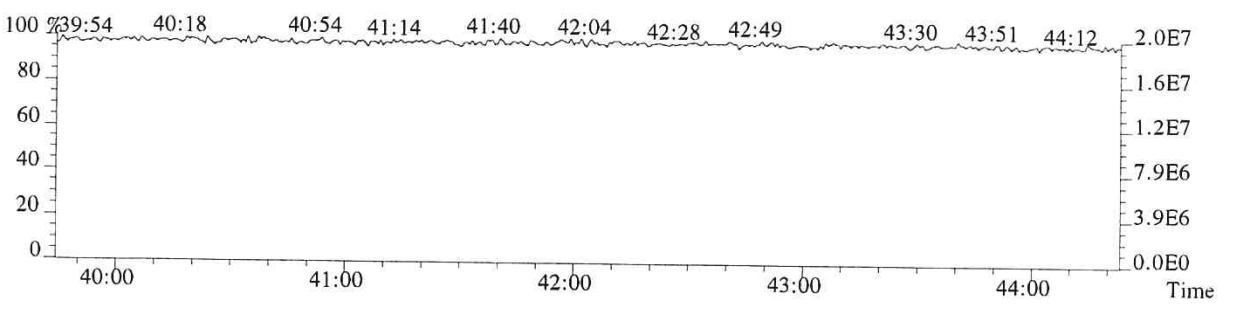
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,488.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,364.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059447

CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: P5191603

Date: 12/24/18 – 12/25/18 (Beginning) / Ending

Method: (1613) / 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: _____ Second QC: LG

ccalqc.xls 07/17/12

059448

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 01/24/18

Init. Calib.Times: 11:44

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
194503	CS3	P519603	24-DEC-18	22:20:36
192977	WINDOW DEFINE	P519604	24-DEC-18	23:08:23
METHOD BLANK	EQ1800516-01	P519605	24-DEC-18	23:57:04
METHOD BLANK	EQ1800512-01	P519606	25-DEC-18	00:45:43
METHOD BLANK	EQ1800513-01	P519607	25-DEC-18	01:34:22
SL0068	E1801096-013DL	P519608	25-DEC-18	02:23:03
SL0069	E1801096-014DL	P519609	25-DEC-18	03:11:42
19-01415	E1801097-003	P519610	25-DEC-18	04:00:22
19-01416	E1801097-004	P519611	25-DEC-18	04:49:02
19-01417	E1801097-005	P519612	25-DEC-18	05:37:42
SLUDGE-NOVEMBER 20	E1801098-001	P519613	25-DEC-18	06:26:22
B3 ASH 4Q18	E1801110-001	P519614	25-DEC-18	07:15:03
41787 ABERDEEN	E1801111-001	P519615	25-DEC-18	08:03:43
RHGN 41596	E1801111-002	P519616	25-DEC-18	08:52:23

E1801096

Sample List Report — **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS07.PRO\SampleDB\20181224B.SPL
Last Modified: Wednesday, December 26, 2018 07:46:30 Central Standard Time
Printed: Wednesday, December 26, 2018 07:46:32 Central Standard Time

Page Position (1, 1)

OPUS 4: P519603res

	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/24/18	22:20	P519603	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2	LG	1+RRS check 21:24
2		23:08	P519604	WINDOWDEFINE	192977	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		23:57	P519605	MB	EQ1800516-01	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4	12/25/18	00:45	P519606	MB	EQ1800512-01	EPA1613_ALS	Dioxin_ALS	Tray1:4		needs reinjection
5		01:34	P519607	MB	EQ1800513-01	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		02:23	P519608	E1801096-013DL	E1801096-013DL	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		03:11	P519609	E1801096-014DL	E1801096-014DL	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		04:00	P519610	E1801097-003	E1801097-003	EPA1613_ALS	Dioxin_ALS	Tray1:8		needs reinjection
9		04:49	P519611	E1801097-004	E1801097-004	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		05:37	P519612	E1801097-005	E1801097-005	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		06:26	P519613	E1801098-001	E1801098-001	EPA1613_ALS	Dioxin_ALS	Tray1:11		needs reinjection
12		07:15	P519614	E1801110-001	E1801110-001	EPA1613_ALS	Dioxin_ALS	Tray1:12		
13		08:03	P519615	E1801111-001	E1801111-001	EPA1613_ALS	Dioxin_ALS	Tray1:13		
14		08:52	P519616	E1801111-002	E1801111-002	EPA1613_ALS	Dioxin_ALS	Tray1:14		
15		09:49	P519617	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:15		1+RRS check 09:49
16	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2	---	---
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---
20	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:20	---	---
21	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:21	---	---

GC 12/26/18

5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

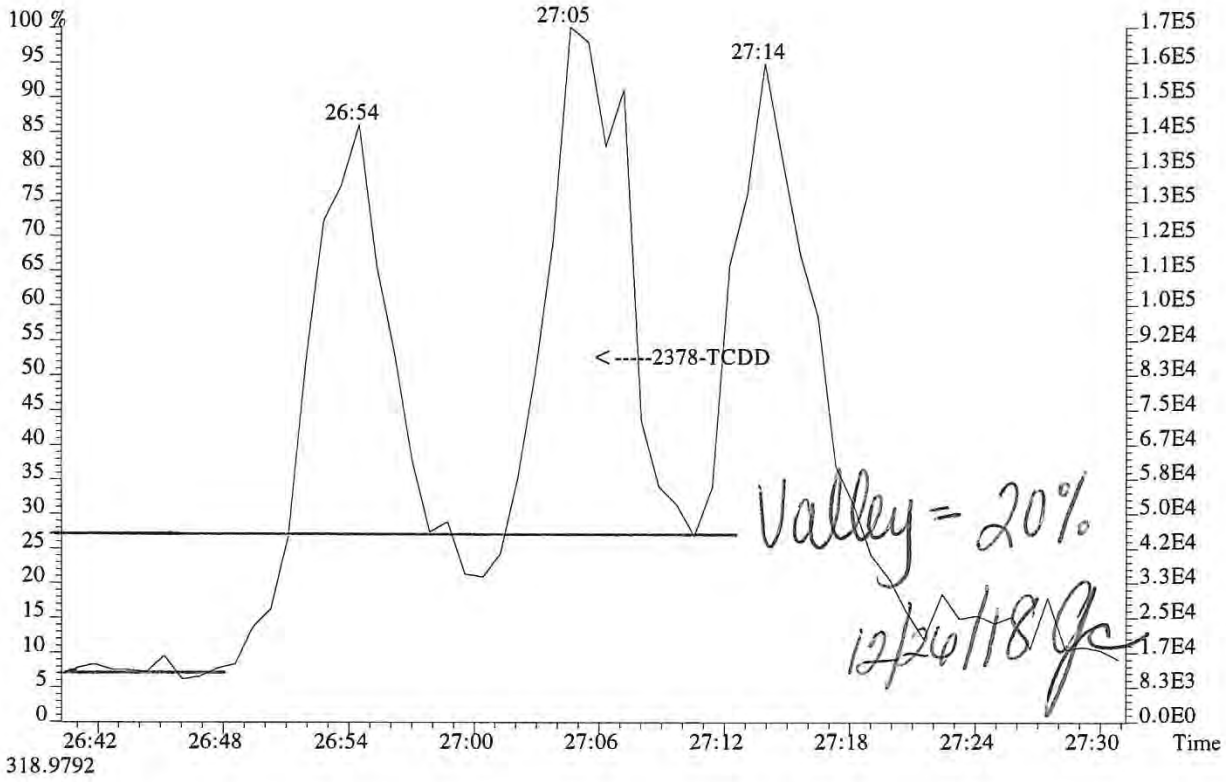
Case No.: _____ SDG No.:
ID: 0.25 (mm) Lab File ID: P519604
Date Analyzed: 24-DEC-2018
Time Analyzed: 23:08:23

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	21:43	28:25
TCDD	23:22	28:15
PeCDF	28:24	33:04
PeCDD	30:08	32:49
HxCDF	33:49	36:29
HxCDD	34:22	36:05
HpCDF	37:51	39:17
HpCDD	38:08	38:50

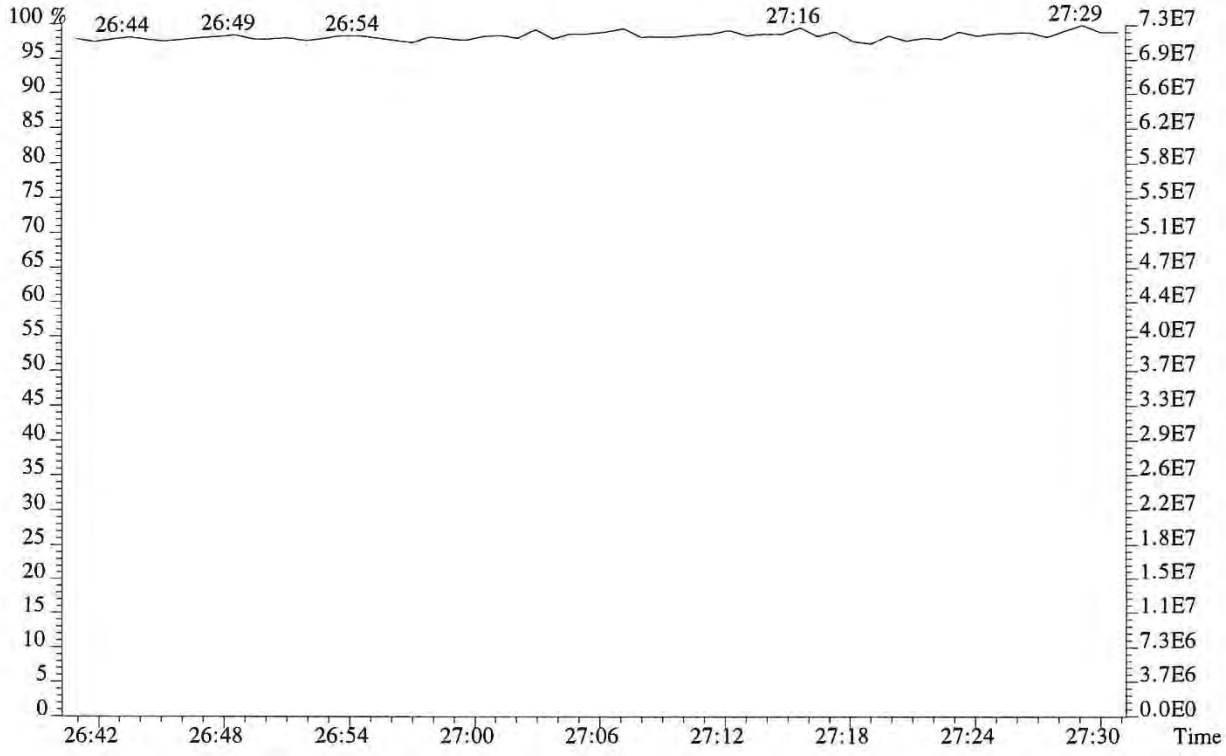
% Valley 2378-TCDD: 20 %

059451

File:P519604 #1-587 Acq:24-DEC-2018 23:08:23 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
319.8965

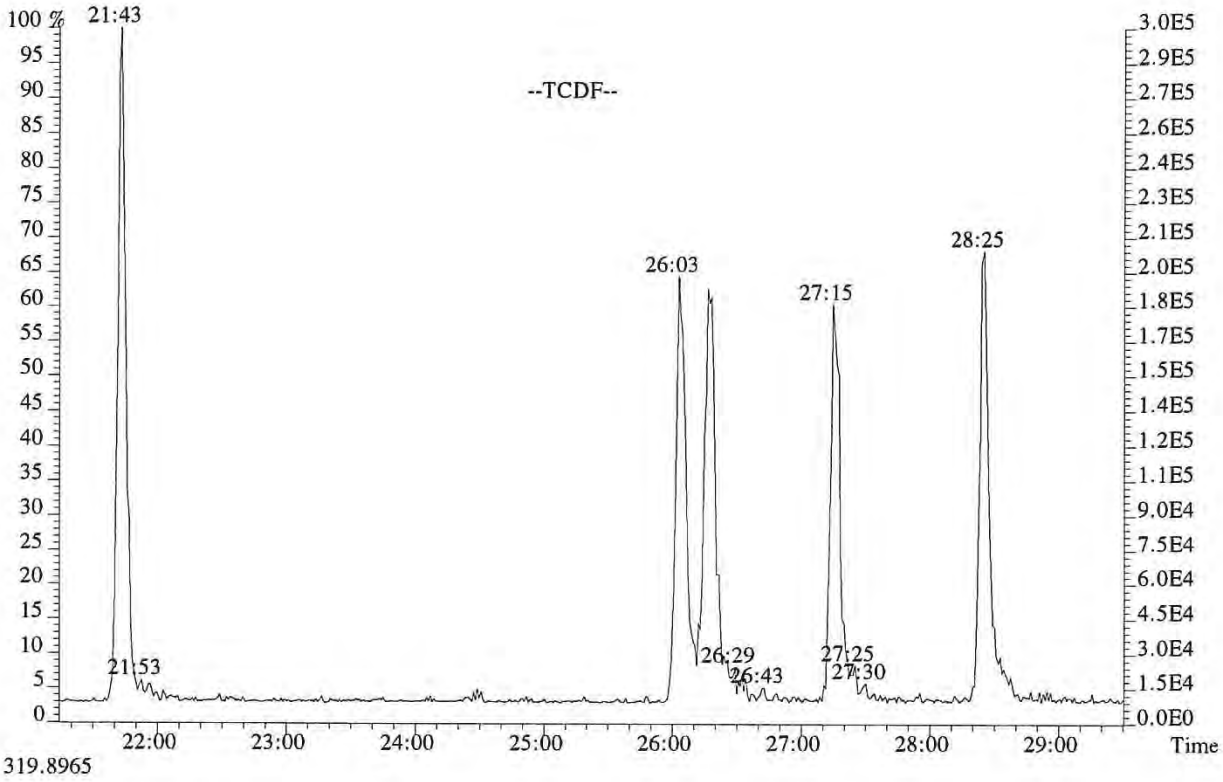


318.9792

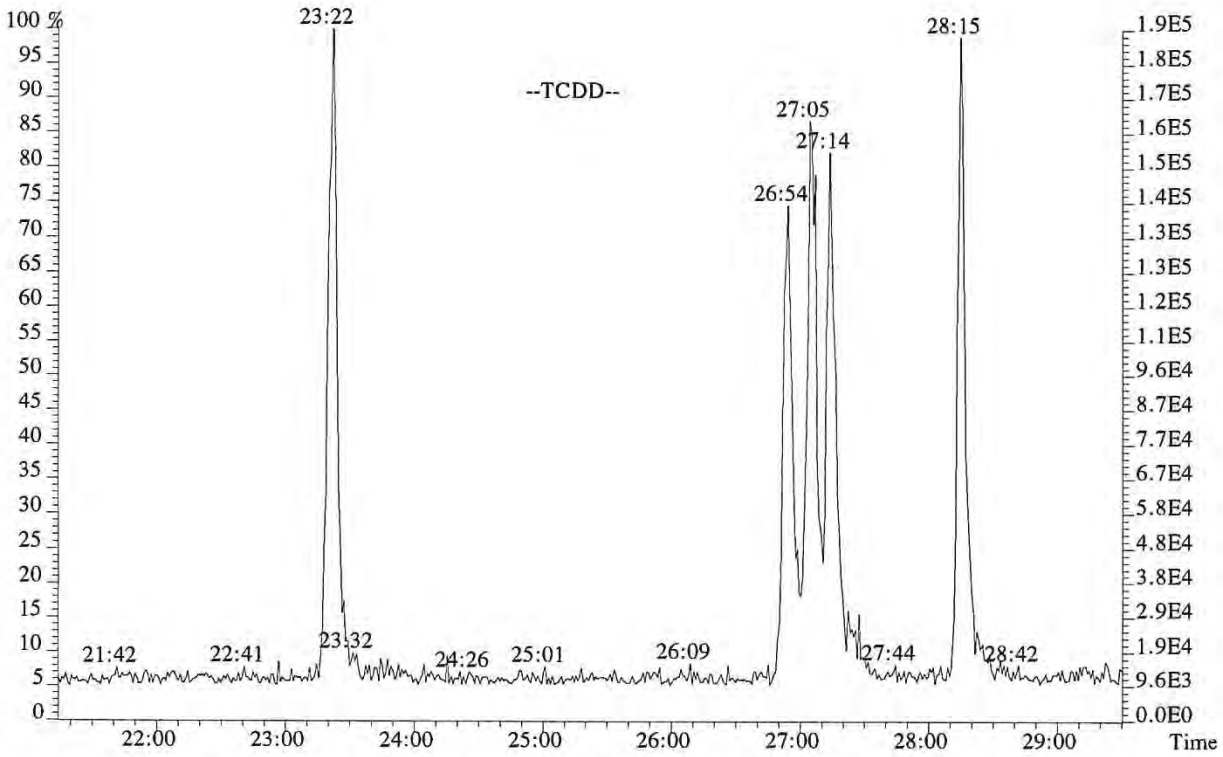


059452

File:P519604 #1-587 Acq:24-DEC-2018 23:08:23 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
303.9016

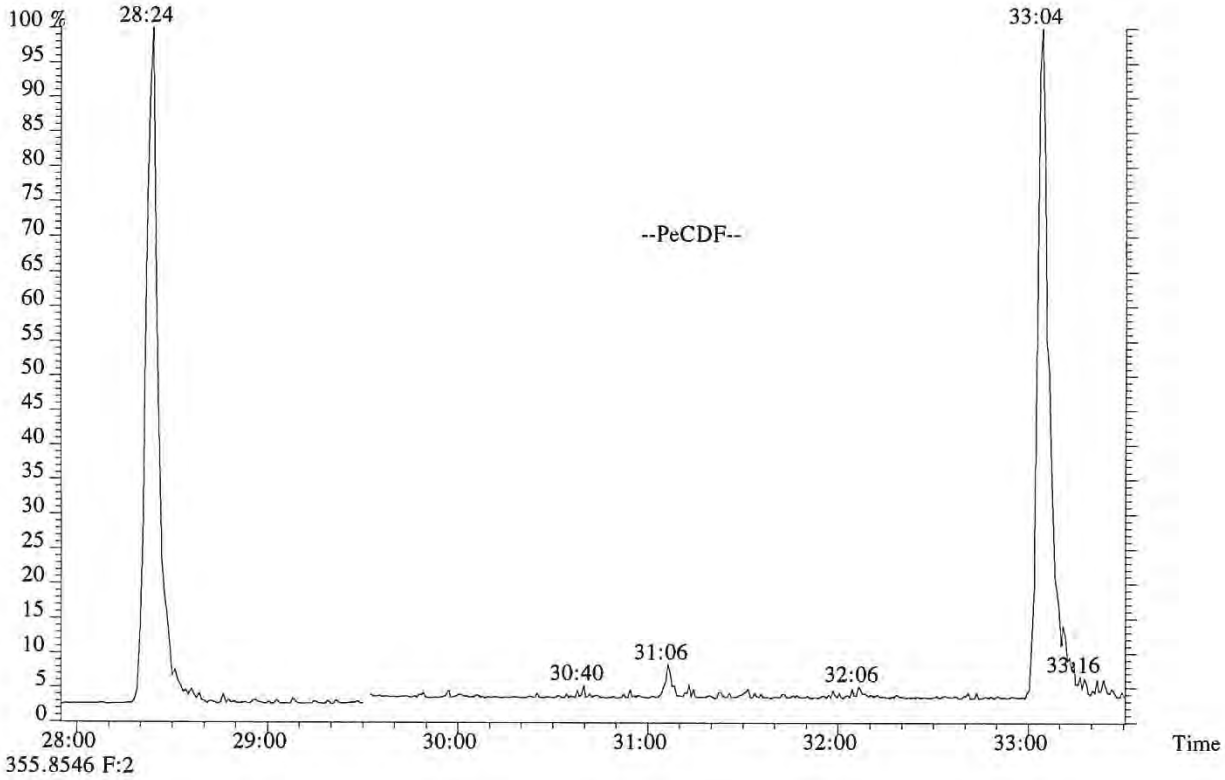


319.8965

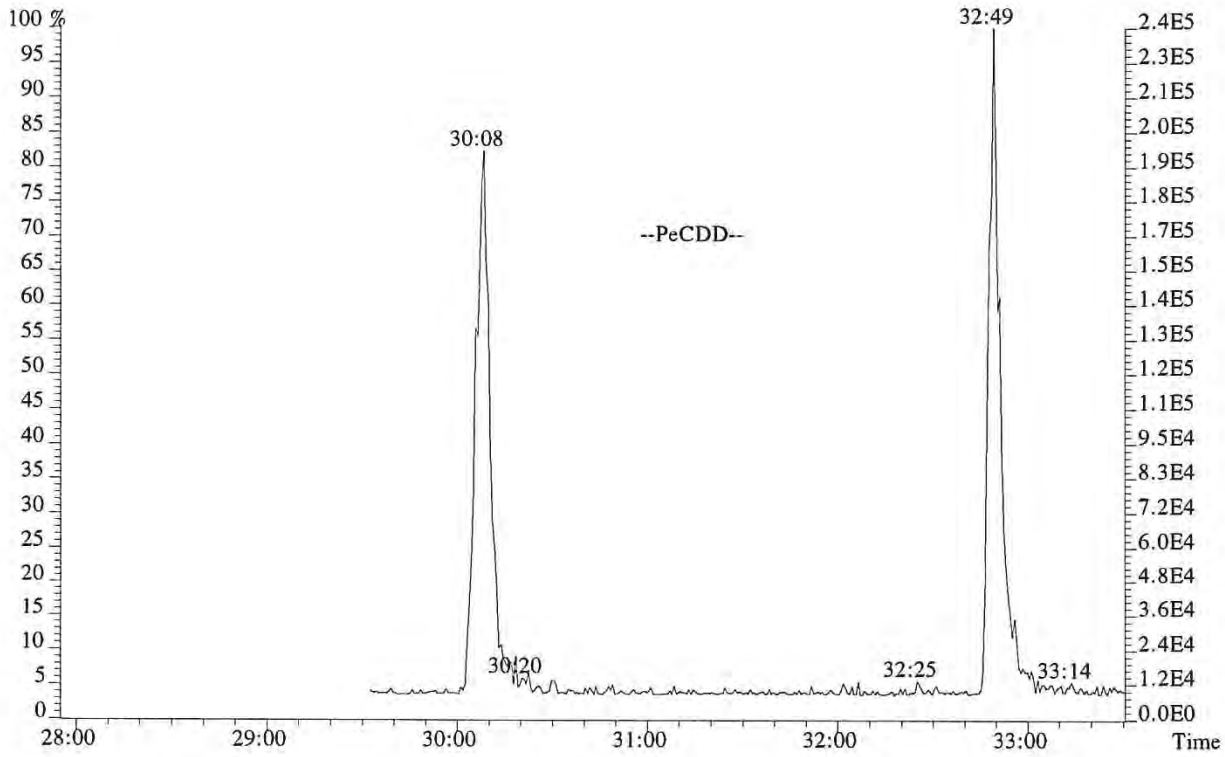


059453

File:P519604 #1-587 Acq:24-DEC-2018 23:08:23 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
339.8597,339.8597 F:2

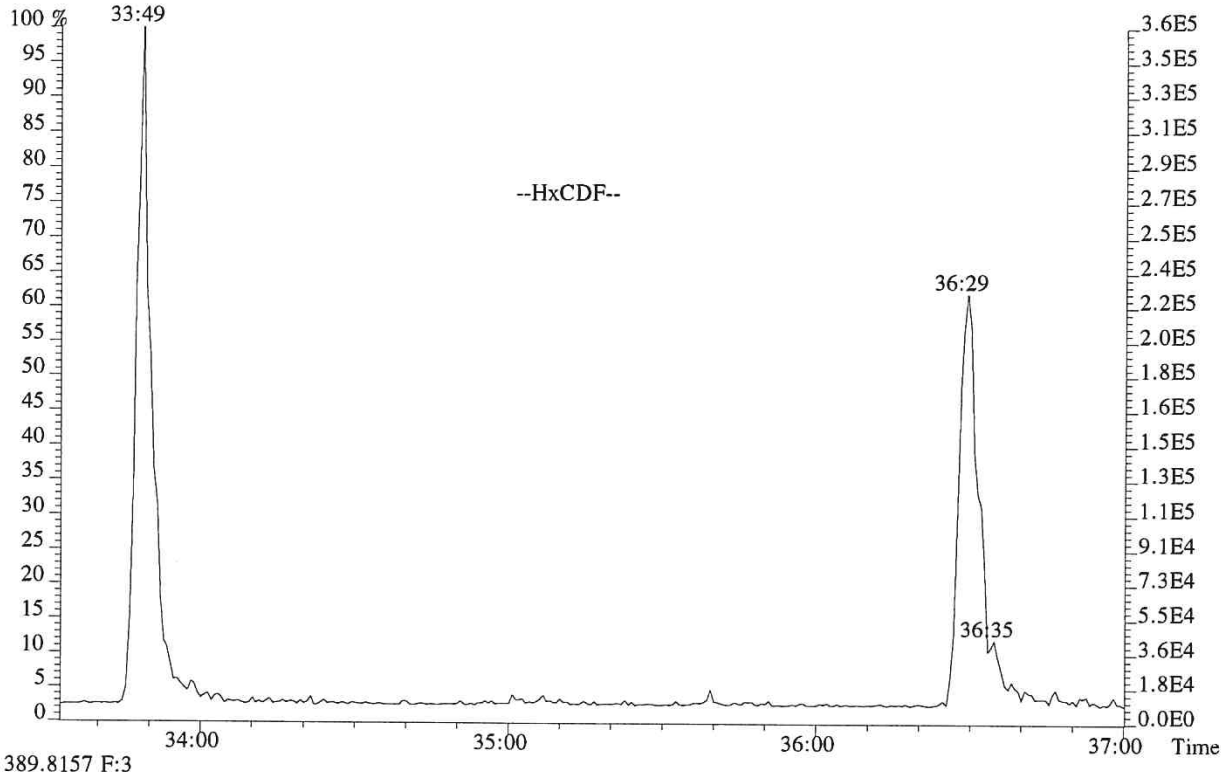


355.8546 F:2

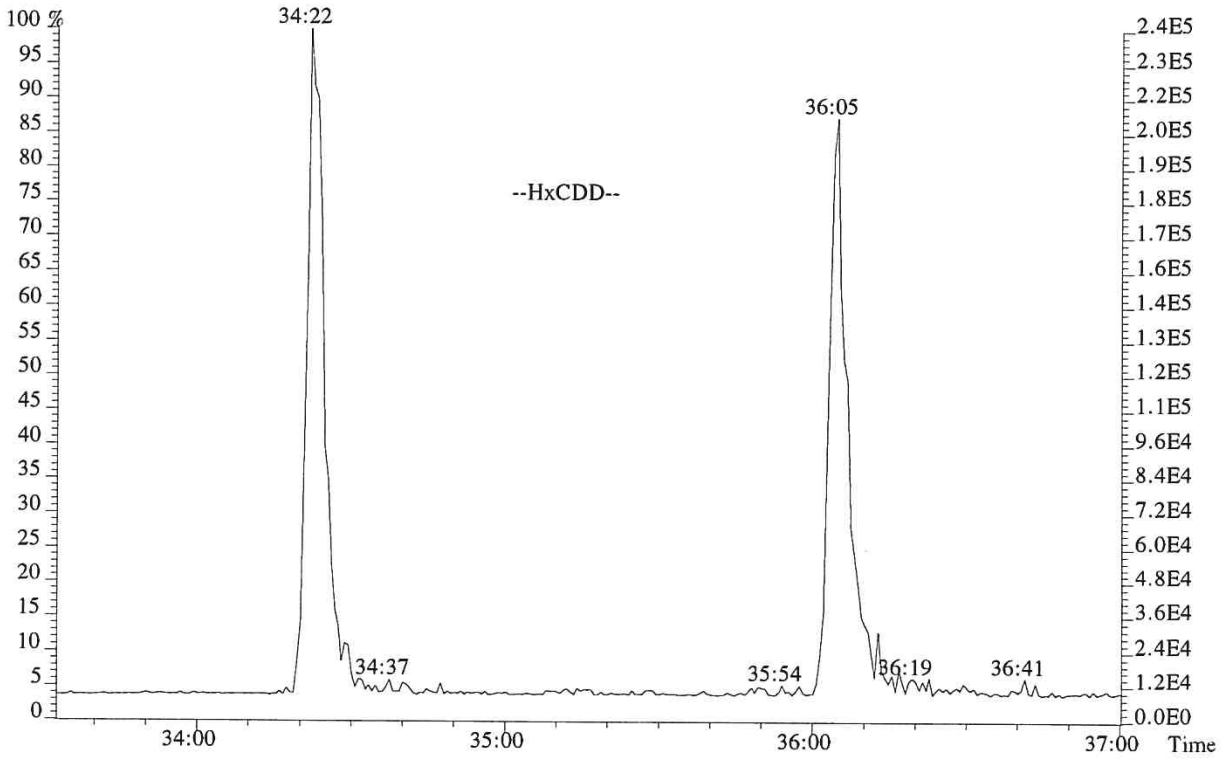


059454

File:P519604 #1-312 Acq:24-DEC-2018 23:08:23 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
373.8208 F:3

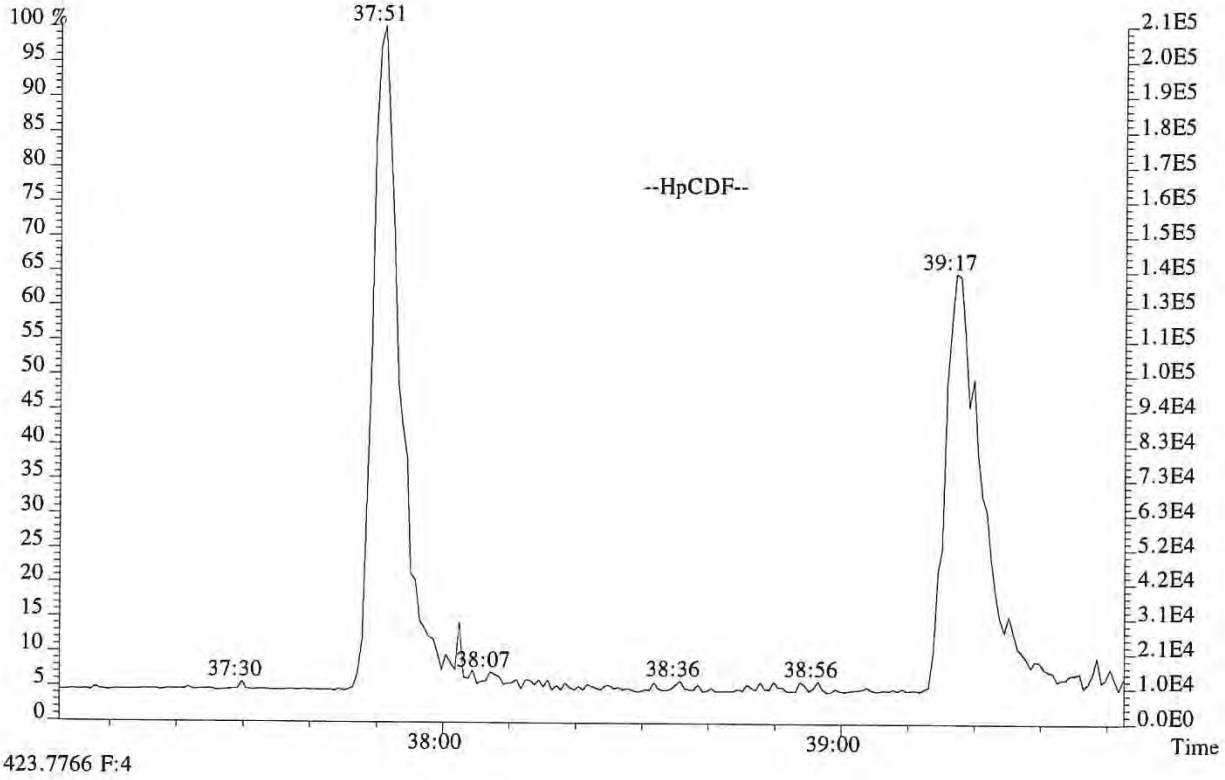


389.8157 F:3

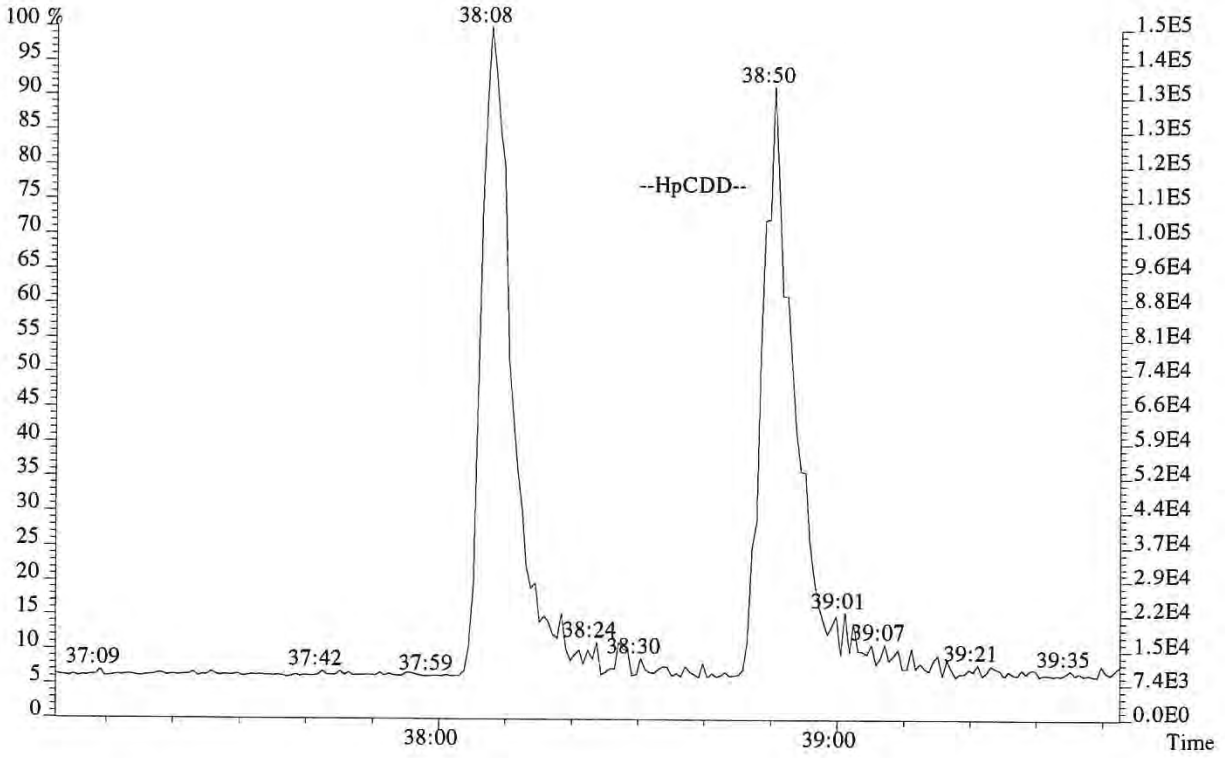


059455

File:P519604 #1-241 Acq:24-DEC-2018 23:08:23 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
407.7818 F:4

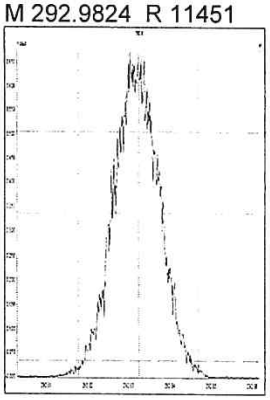


423.7766 F:4

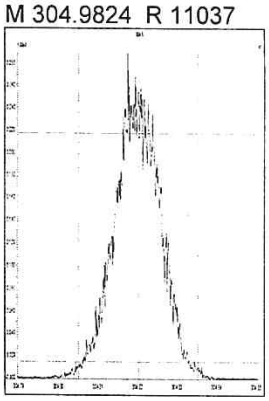


059456

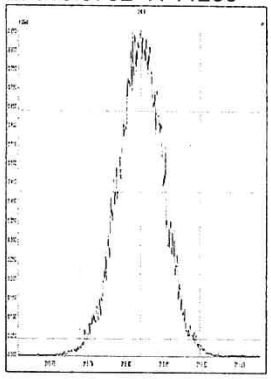
M 292.9824 R 11451



M 304.9824 R 11037



M 318.9792 R 11238



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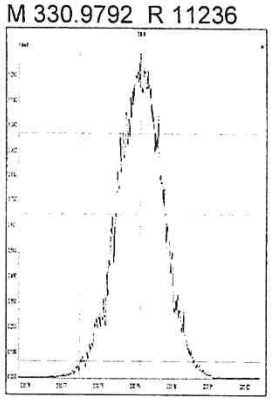
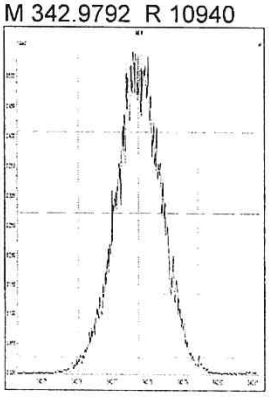


M 342.9792 R 10940



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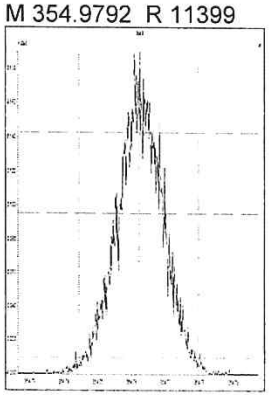

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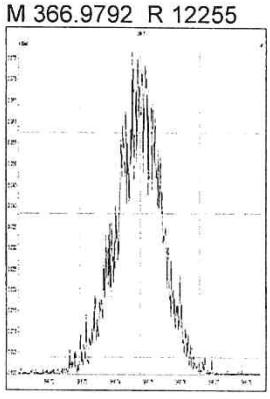

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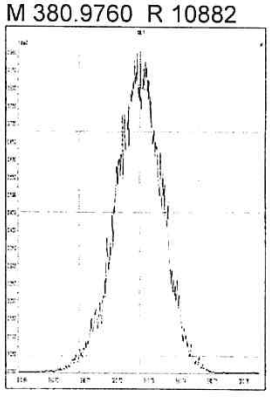

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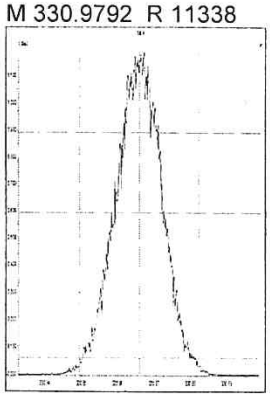

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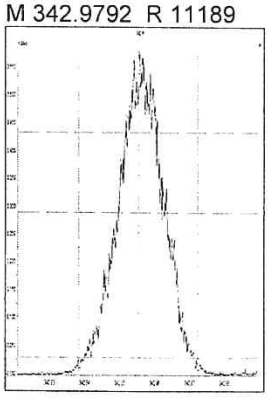

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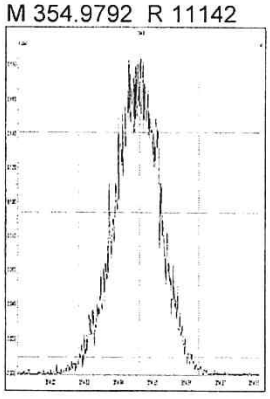

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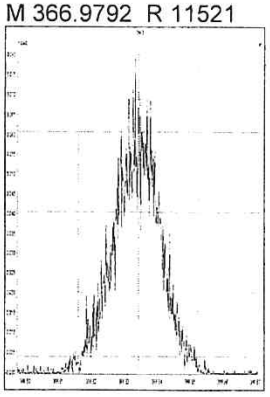

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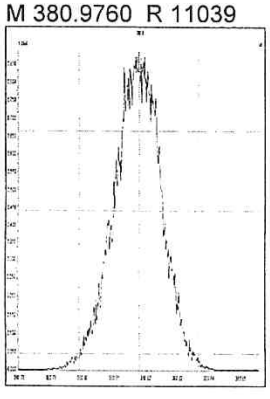

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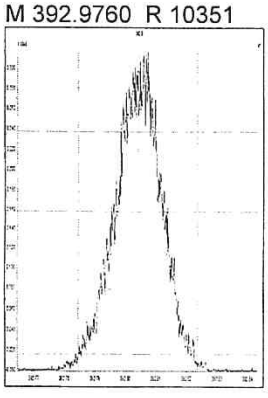

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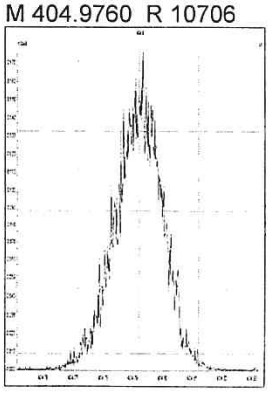
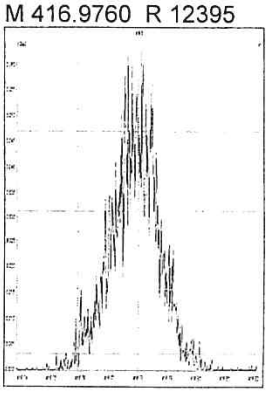
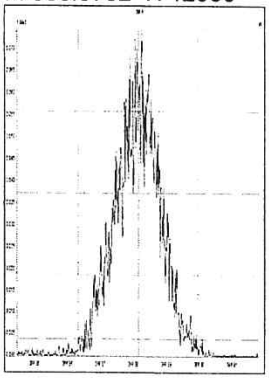


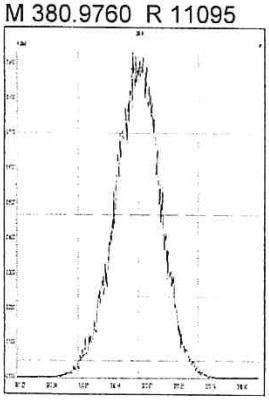
M 416.9760 R 12395



M 366.9792 R 12950



M 380.9760 R 11095



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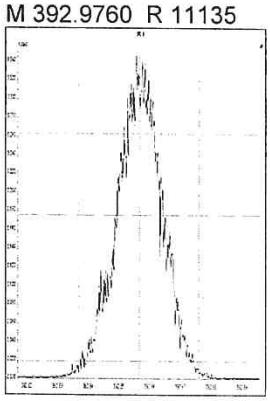

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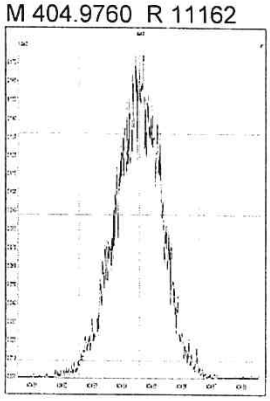

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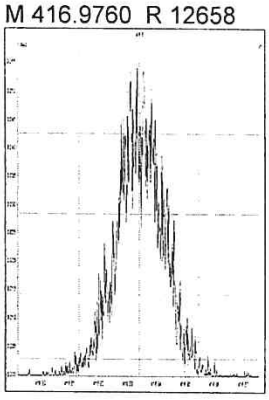

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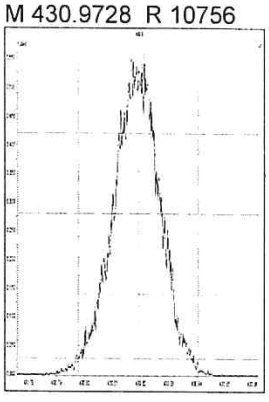

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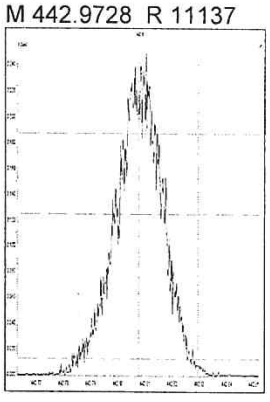

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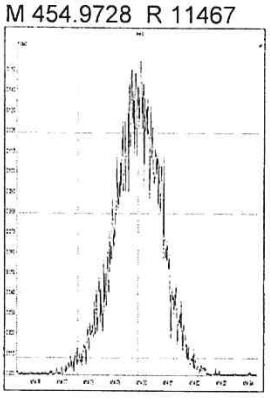
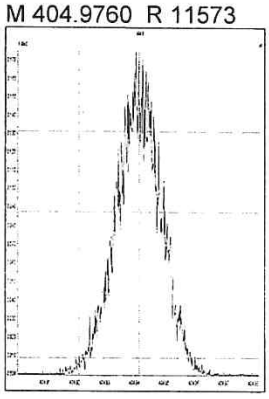


M 404.9760 R 11573



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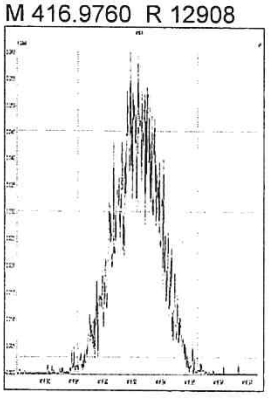
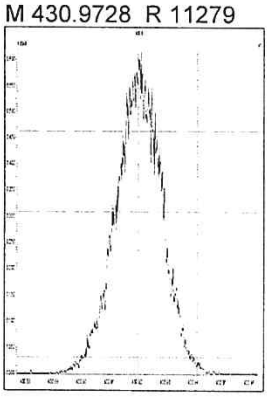
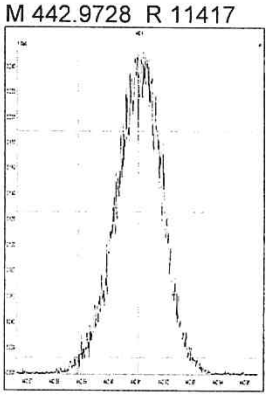


M 430.9728 R 11279



M 442.9728 R 11417



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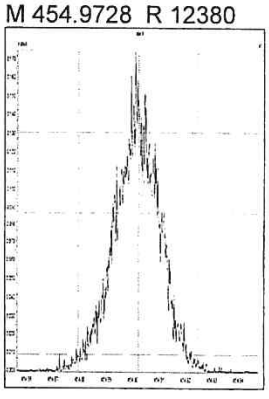

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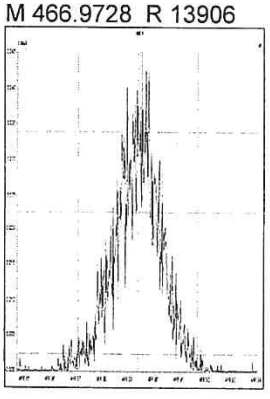
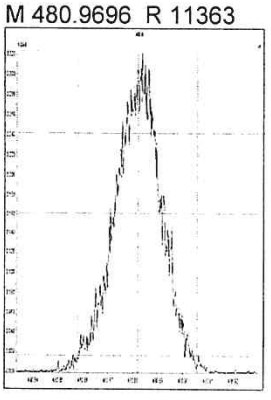


M 480.9696 R 11363



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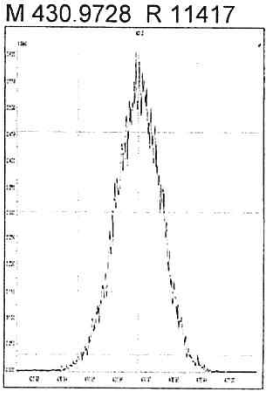

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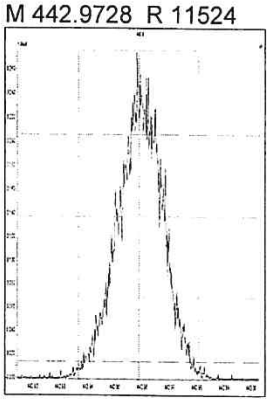

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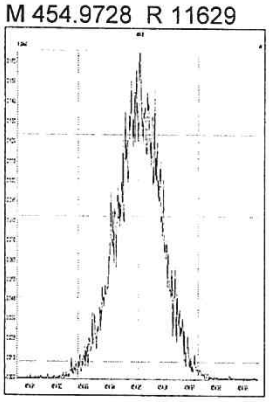

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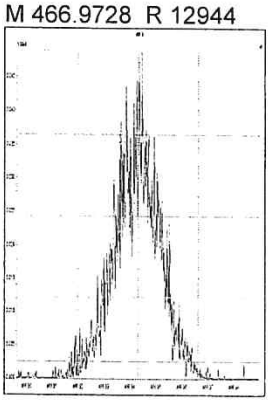
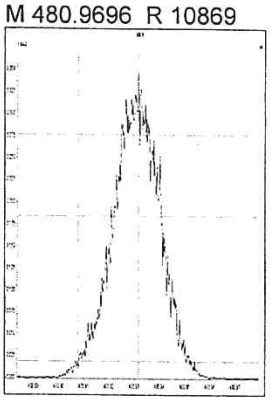


M 480.9696 R 10869



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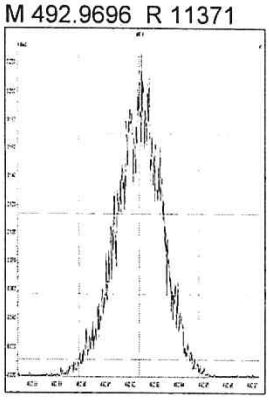

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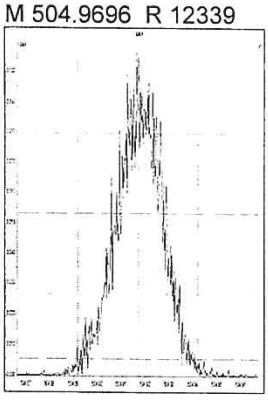

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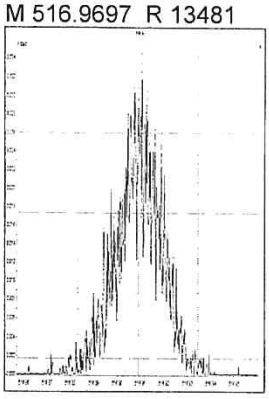

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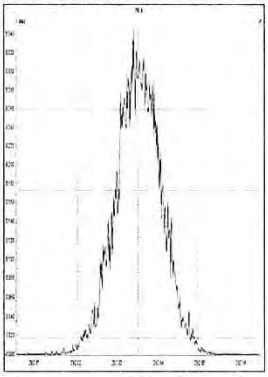

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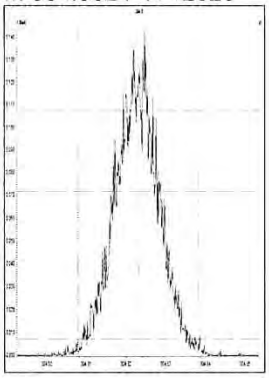

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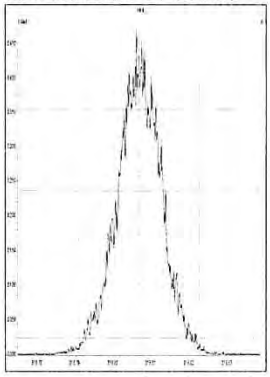

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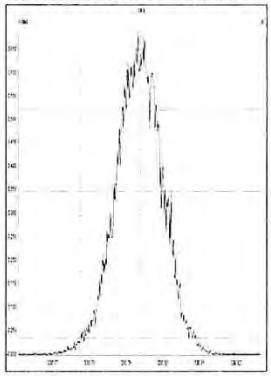

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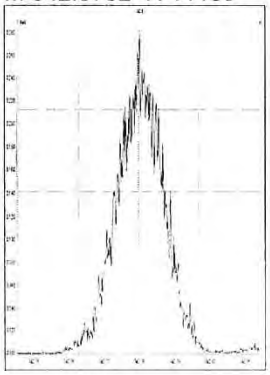

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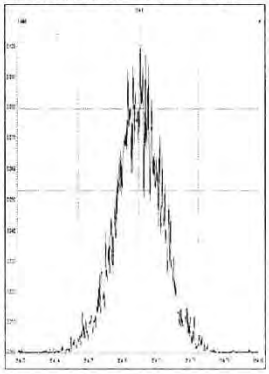

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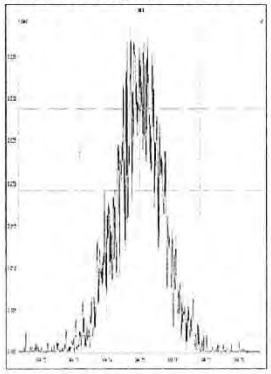
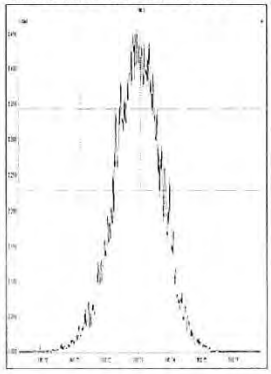


M 380.9760 R 10969



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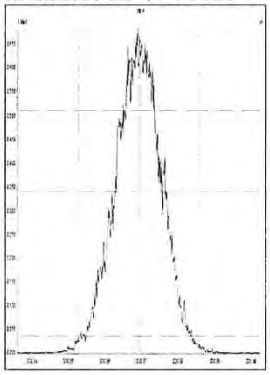
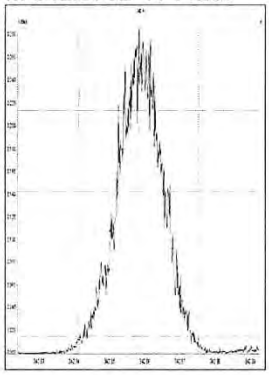


M 342.9792 R 11237



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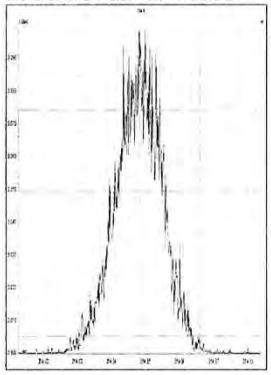

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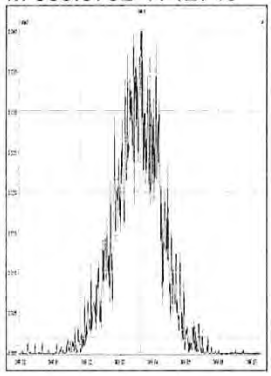

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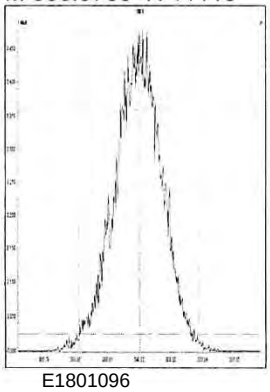

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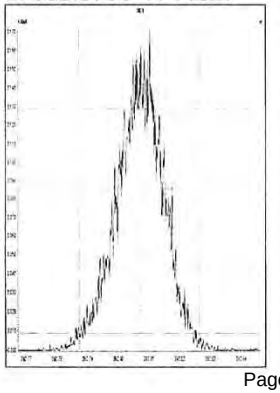

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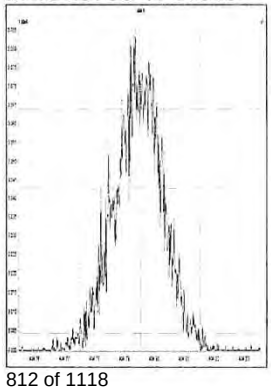

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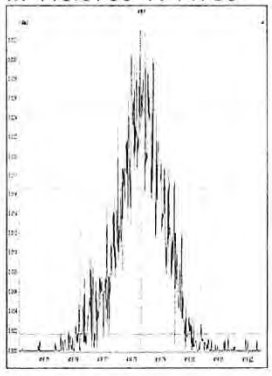

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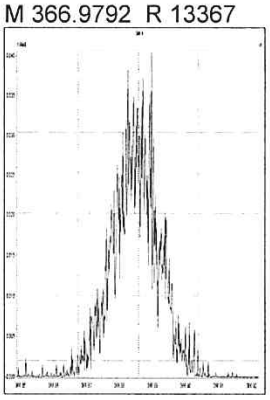
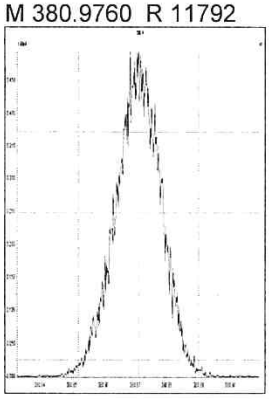
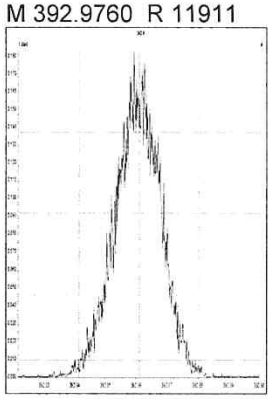


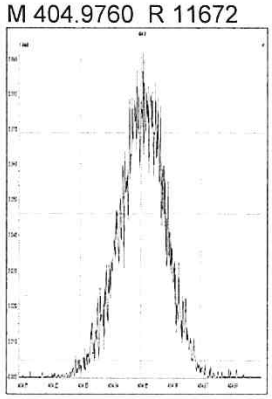
M 380.9760 R 11792



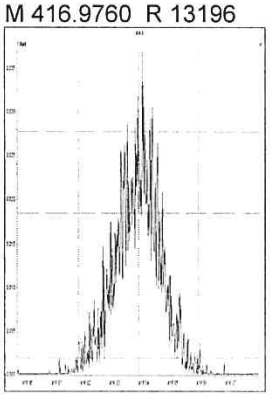
M 392.9760 R 11911



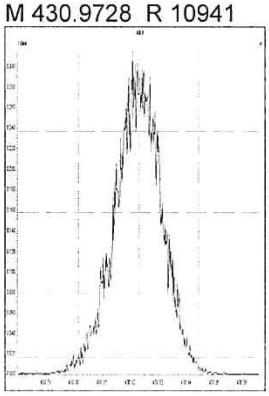
M 404.9760 R 11672



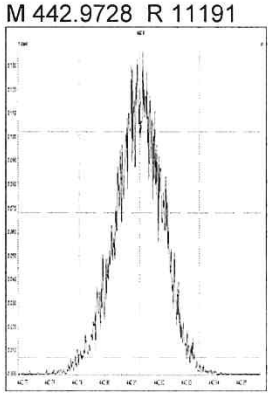
M 416.9760 R 13196



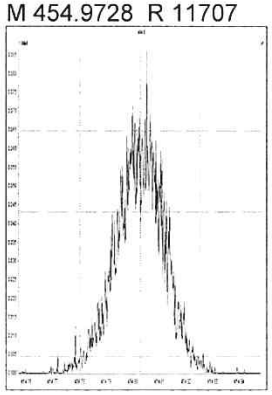
M 430.9728 R 10941



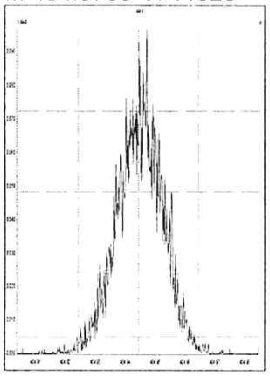
M 442.9728 R 11191



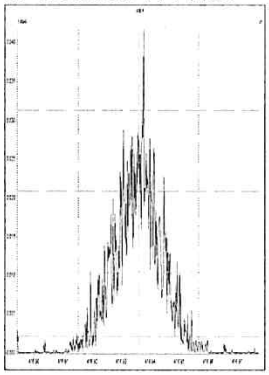
M 454.9728 R 11707



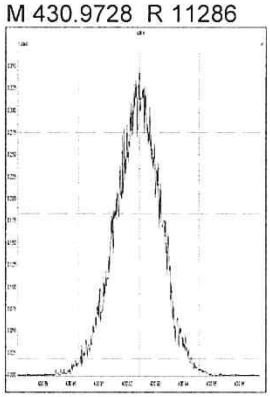
M 404.9760 R 11926



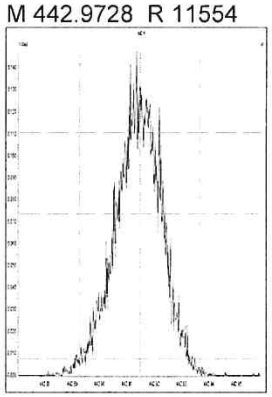
M 416.9760 R 14124



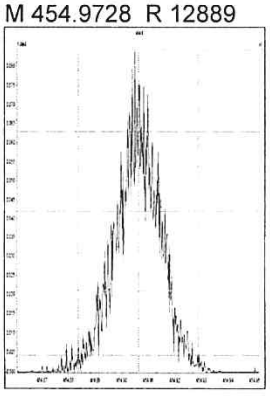
M 430.9728 R 11286



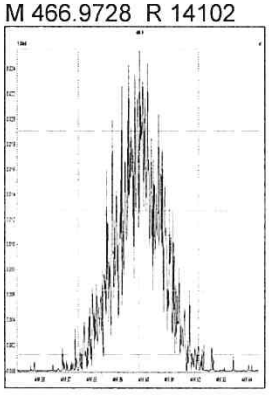
M 442.9728 R 11554



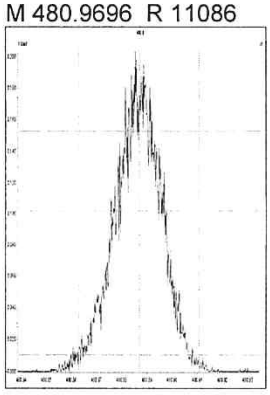
M 454.9728 R 12889



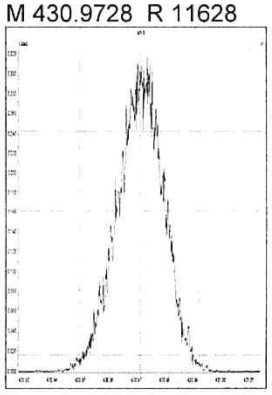
M 466.9728 R 14102



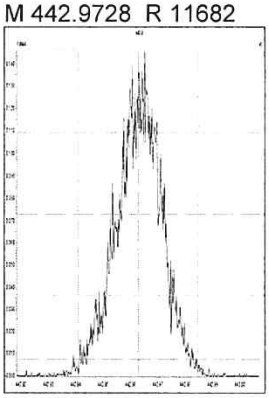
M 480.9696 R 11086



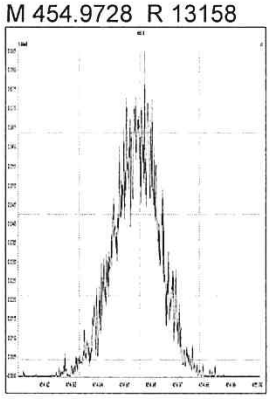
M 430.9728 R 11628



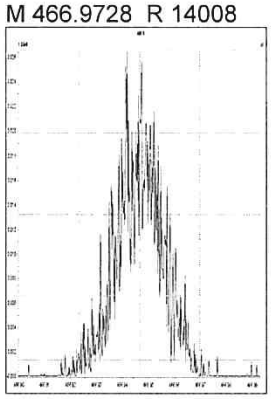
M 442.9728 R 11682



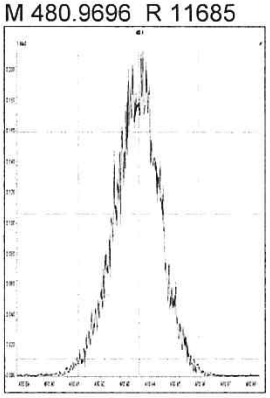
M 454.9728 R 13158



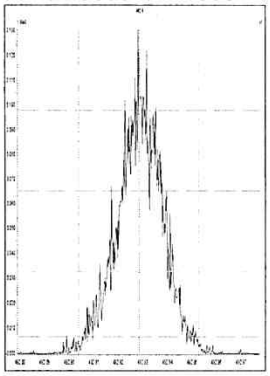
M 466.9728 R 14008



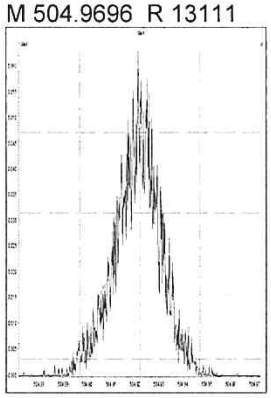
M 480.9696 R 11685



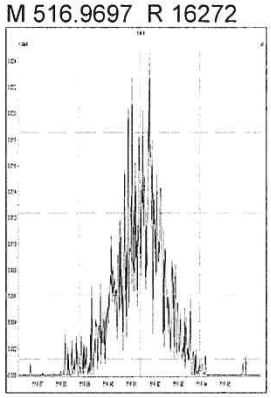
M 492.9696 R 11808



M 504.9696 R 13111



M 516.9697 R 16272



USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519603 Analysis Date: 24-DEC-18 Time: 22:20:36

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.72	0.65-0.89	10.0	7.8 - 12.9	-0.5
1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	49	39 - 65	-2.1
1,2,3,4,7,8-HxCDD	M+2/M+4	1.18	1.05-1.43	49	39 - 64	-1.3
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	50	39 - 64	-0.8
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	52	41 - 61	4.2
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	52	43 - 58	3.9
OCDD	M+2/M+4	0.88	0.76-1.02	100	79 - 126	0.3
2,3,7,8-TCDF	M/M+2	0.75	0.65-0.89	9.7	8.4 - 12.0	-2.8
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	49	41 - 60	-1.8
2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	49	41 - 61	-1.5
1,2,3,4,7,8-HxCDF	M+2/M+4	1.19	1.05-1.43	52	45 - 56	4.4
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	51	44 - 57	1.7
1,2,3,7,8,9-HxCDF	M+2/M+4	1.22	1.05-1.43	50	45 - 56	-1.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	51	44 - 57	1.2
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	50	45 - 55	0.5
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.00	0.88-1.20	50	43 - 58	-0.1
OCDF	M+2/M+4	0.87	0.76-1.02	98	63 - 159	-2.4

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519603 Analysis Date: 24-DEC-18 Time: 22:20:36

LABELED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	101	82 - 121	0.9
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32-1.78	107	62 - 160	6.7
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.32	1.05-1.43	87	85 - 117	-13.4
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	104	85 - 118	3.9
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	99	72 - 138	-1.4
13C-OCDD	M+2/M+4	0.91	0.76-1.02	240	96 - 415	20.1
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	92	71 - 140	-7.5
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	104	76 - 130	4.4
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	104	77 - 130	4.4
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	79	76 - 131	-20.8
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	97	70 - 143	-3.5
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	89	74 - 135	-11.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	93	73 - 137	-7.2
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	97	78 - 129	-2.6
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	98	77 - 129	-1.7
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				9.6	7.8 - 12.7	-3.7

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
194503

Run #7 Filename P519603 Samp: 1 Inj: 1 Acquired: 24-DEC-18 22:20:36
Processed: 26-DEC-18 09:55:22 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:18	1.146e+03	1.534e+03	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:07	9.731e+03	6.241e+03	1.56	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:07	9.141e+03	5.882e+03	1.55	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	35:01	7.222e+03	6.080e+03	1.19	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:07	9.445e+03	7.447e+03	1.27	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:40	7.913e+03	6.434e+03	1.23	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:28	6.601e+03	5.398e+03	1.22	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:52	7.172e+03	6.829e+03	1.05	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:18	5.539e+03	5.556e+03	1.00	yes	no	1.258
10	Unk	OCDF	41:55	9.440e+03	1.088e+04	0.87	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:15	8.808e+02	1.227e+03	0.72	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:26	6.282e+03	3.910e+03	1.61	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:50	4.868e+03	4.117e+03	1.18	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:55	6.233e+03	4.890e+03	1.27	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:10	6.014e+03	4.832e+03	1.24	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:51	5.009e+03	4.851e+03	1.03	yes	no	1.025
17	Unk	OCDD	41:45	8.059e+03	9.126e+03	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:17	1.280e+04	1.648e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	31:06	1.975e+04	1.238e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:06	1.946e+04	1.235e+04	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	35:00	7.390e+03	1.403e+04	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:07	9.934e+03	1.964e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:39	8.846e+03	1.671e+04	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:27	7.373e+03	1.381e+04	0.53	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:51	6.385e+03	1.424e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:17	5.553e+03	1.211e+04	0.46	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:14	8.554e+03	1.096e+04	0.78	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:25	1.335e+04	8.414e+03	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:49	9.980e+03	7.555e+03	1.32	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:55	1.225e+04	9.364e+03	1.31	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:50	9.529e+03	8.998e+03	1.06	yes	no	0.858
32	IS	13C-OCDD	41:45	1.457e+04	1.608e+04	0.91	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:33	9.287e+03	1.164e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:09	1.238e+04	9.531e+03	1.30	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:16	2.042e+03				no	1.014

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www.alsglobal.com

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
194503

Run #7 Filename P519603 Samp: 1 Inj: 1 Acquired: 24-DEC-18 22:20:36
Processed: 26-DEC-18 09:55:22 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.73e+05	6.48e+02	2.7e+02	2.22e+05	2.31e+03	9.6e+01
2	1,2,3,7,8-PeCDF	1.48e+06	6.88e+02	2.1e+03	9.26e+05	1.35e+03	6.9e+02
3	2,3,4,7,8-PeCDF	1.44e+06	6.88e+02	2.1e+03	9.36e+05	1.35e+03	6.9e+02
4	1,2,3,4,7,8-HxCDF	1.28e+06	8.12e+02	1.6e+03	1.07e+06	6.24e+02	1.7e+03
5	1,2,3,6,7,8-HxCDF	1.37e+06	8.12e+02	1.7e+03	1.11e+06	6.24e+02	1.8e+03
6	2,3,4,6,7,8-HxCDF	1.24e+06	8.12e+02	1.5e+03	1.01e+06	6.24e+02	1.6e+03
7	1,2,3,7,8,9-HxCDF	9.07e+05	8.12e+02	1.1e+03	7.52e+05	6.24e+02	1.2e+03
8	1,2,3,4,6,7,8-HpCDF	9.16e+05	1.81e+03	5.1e+02	9.07e+05	6.48e+02	1.4e+03
9	1,2,3,4,7,8,9-HpCDF	5.67e+05	1.81e+03	3.1e+02	5.73e+05	6.48e+02	8.8e+02
10	OCDF	6.21e+05	2.72e+02	2.3e+03	7.55e+05	1.24e+03	6.1e+02
11	2,3,7,8-TCDD	1.35e+05	2.03e+03	6.6e+01	1.83e+05	1.05e+03	1.7e+02
12	1,2,3,7,8-PeCDD	9.62e+05	7.08e+02	1.4e+03	5.90e+05	4.56e+02	1.3e+03
13	1,2,3,4,7,8-HxCDD	8.85e+05	6.84e+02	1.3e+03	7.25e+05	4.24e+02	1.7e+03
14	1,2,3,6,7,8-HxCDD	9.28e+05	6.84e+02	1.4e+03	7.07e+05	4.24e+02	1.7e+03
15	1,2,3,7,8,9-HxCDD	8.21e+05	6.84e+02	1.2e+03	6.50e+05	4.24e+02	1.5e+03
16	1,2,3,4,6,7,8-HpCDD	5.36e+05	7.56e+02	7.1e+02	5.31e+05	3.80e+02	1.4e+03
17	OCDD	5.13e+05	3.52e+02	1.5e+03	5.94e+05	4.08e+02	1.5e+03
18	13C-2,3,7,8-TCDF	1.80e+06	8.89e+03	2.0e+02	2.31e+06	6.41e+03	3.6e+02
19	13C-1,2,3,7,8-PeCDF	2.88e+06	6.28e+02	4.6e+03	1.79e+06	7.88e+02	2.3e+03
20	13C-2,3,4,7,8-PeCDF	3.04e+06	6.28e+02	4.8e+03	1.95e+06	7.88e+02	2.5e+03
21	13C-1,2,3,4,7,8-HxCDF	1.32e+06	4.28e+02	3.1e+03	2.48e+06	6.96e+02	3.6e+03
22	13C-1,2,3,6,7,8-HxCDF	1.49e+06	4.28e+02	3.5e+03	2.97e+06	6.96e+02	4.3e+03
23	13C-2,3,4,6,7,8-HxCDF	1.37e+06	4.28e+02	3.2e+03	2.64e+06	6.96e+02	3.8e+03
24	13C-1,2,3,7,8,9-HxCDF	1.00e+06	4.28e+02	2.3e+03	1.94e+06	6.96e+02	2.8e+03
25	13C-1,2,3,4,6,7,8-HpCDF	8.66e+05	2.04e+03	4.2e+02	1.84e+06	4.30e+03	4.3e+02
26	13C-1,2,3,4,7,8,9-HpCDF	5.57e+05	2.04e+03	2.7e+02	1.25e+06	4.30e+03	2.9e+02
27	13C-2,3,7,8-TCDD	1.30e+06	6.63e+03	2.0e+02	1.68e+06	2.30e+03	7.3e+02
28	13C-1,2,3,7,8-PeCDD	2.05e+06	4.88e+02	4.2e+03	1.30e+06	1.15e+03	1.1e+03
29	13C-1,2,3,4,7,8-HxCDD	1.78e+06	1.10e+03	1.6e+03	1.37e+06	9.40e+02	1.5e+03
30	13C-1,2,3,6,7,8-HxCDD	1.77e+06	1.10e+03	1.6e+03	1.41e+06	9.40e+02	1.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.08e+06	6.52e+02	1.7e+03	9.98e+05	3.96e+02	2.5e+03
32	13C-OCDD	9.46e+05	4.76e+02	2.0e+03	1.05e+06	3.40e+02	3.1e+03
33	13C-1,2,3,4-TCDD	1.40e+06	6.63e+03	2.1e+02	1.79e+06	2.30e+03	7.8e+02
34	13C-1,2,3,7,8,9-HxCDD	1.68e+06	1.10e+03	1.5e+03	1.31e+06	9.40e+02	1.4e+03
35	37Cl-2,3,7,8-TCDD	3.07e+05	1.09e+03	2.8e+02			

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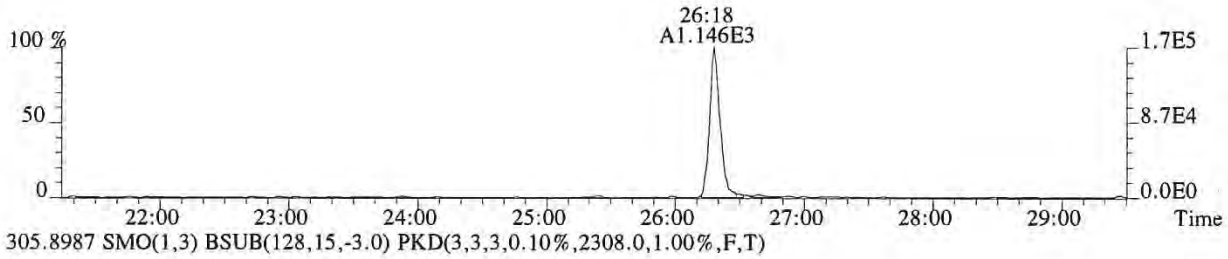
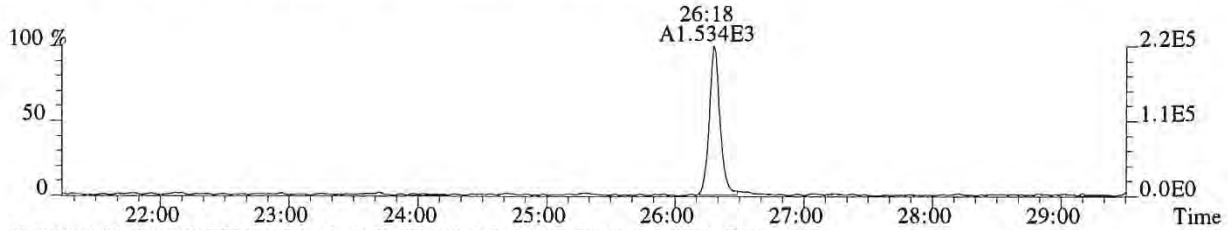
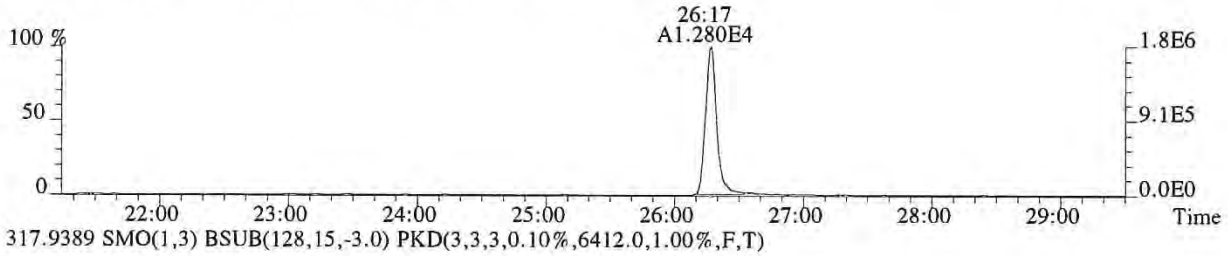
File:P519603 #1-587 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,648.0,1.00%,F,T)



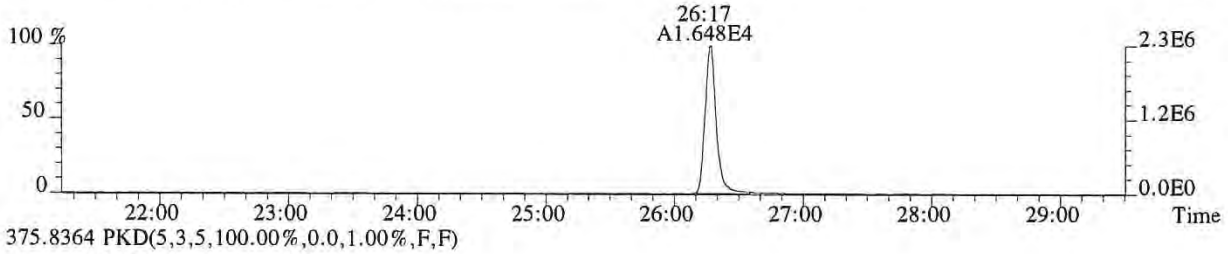
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2308.0,1.00%,F,T)



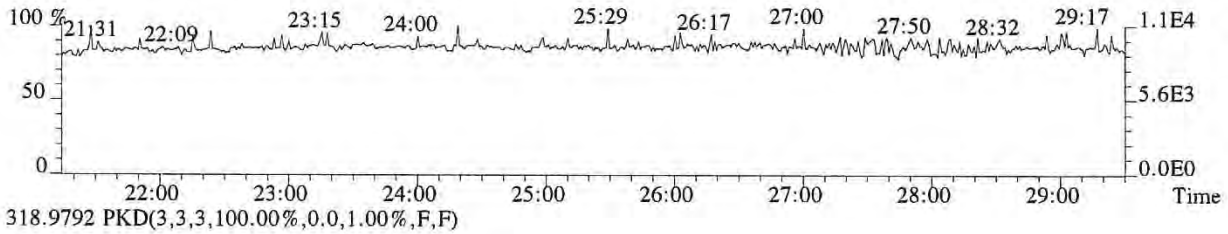
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8892.0,1.00%,F,T)



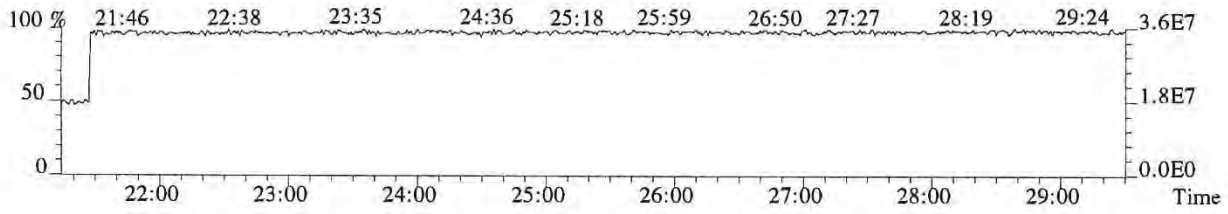
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6412.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

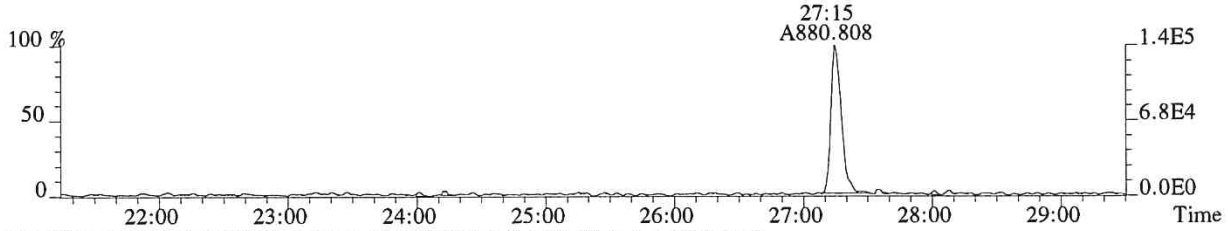


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

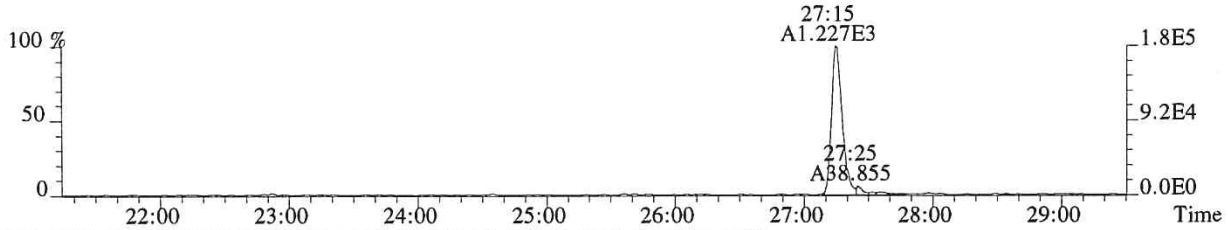


059467

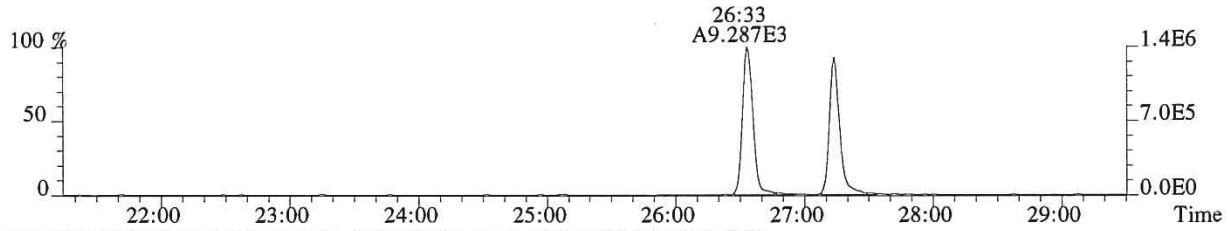
File:P519603 #1-587 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2032.0,1.00%,F,T)



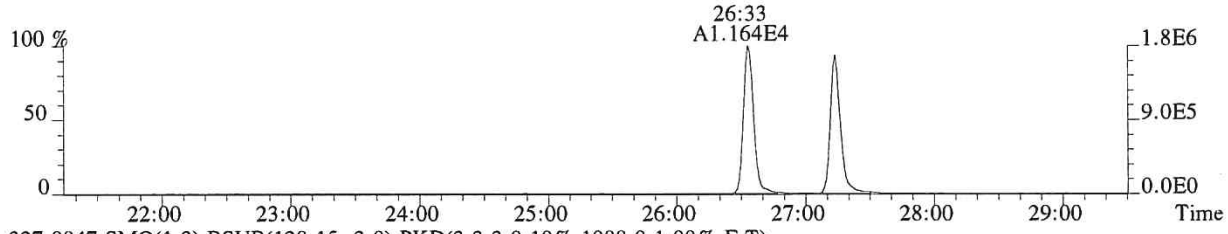
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1052.0,1.00%,F,T)



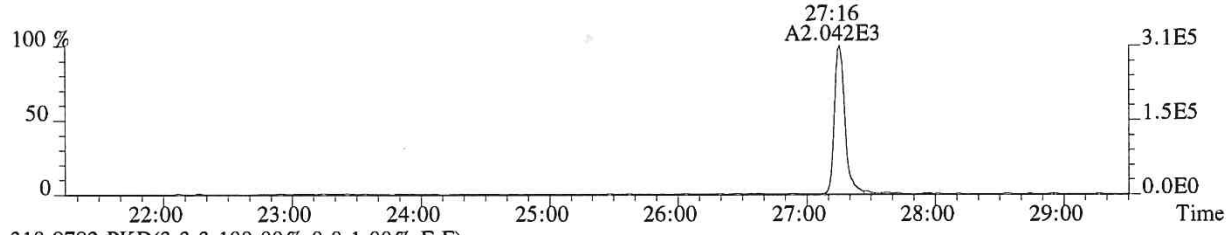
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6628.0,1.00%,F,T)



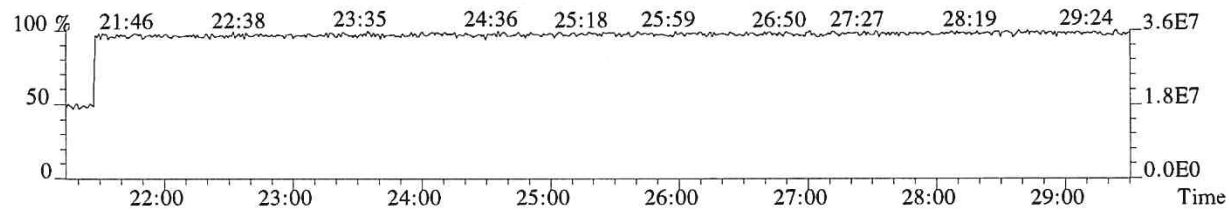
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2300.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1088.0,1.00%,F,T)

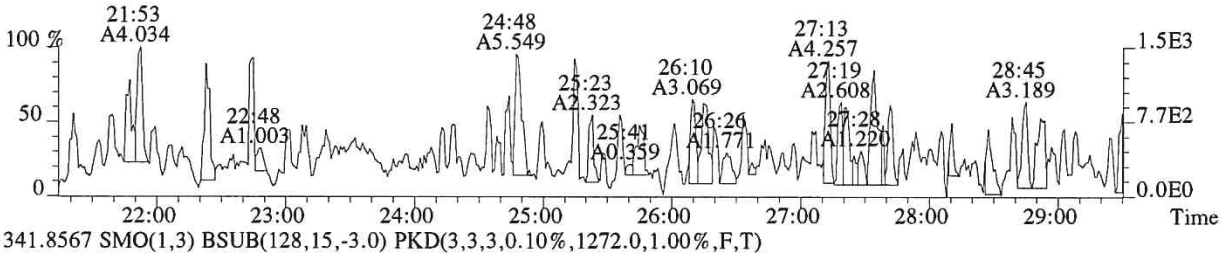


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

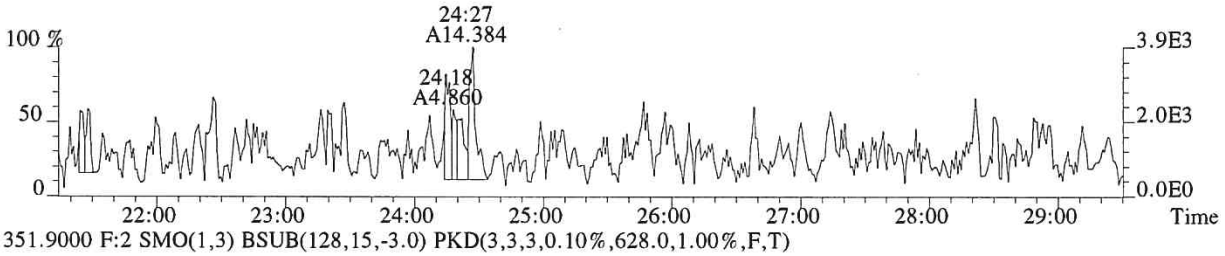


059468

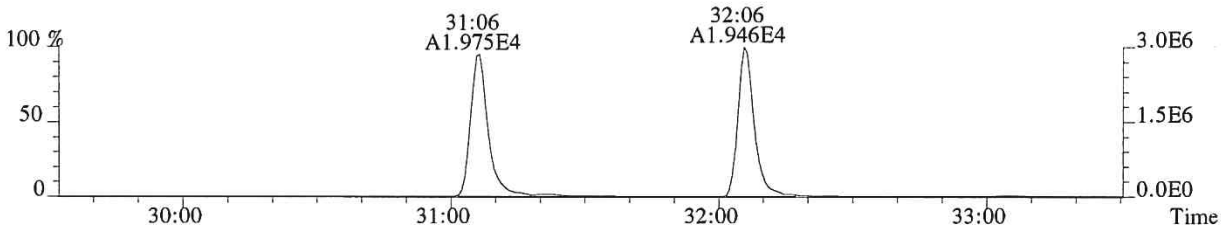
File:P519603 #1-587 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,432.0,1.00%,F,T)



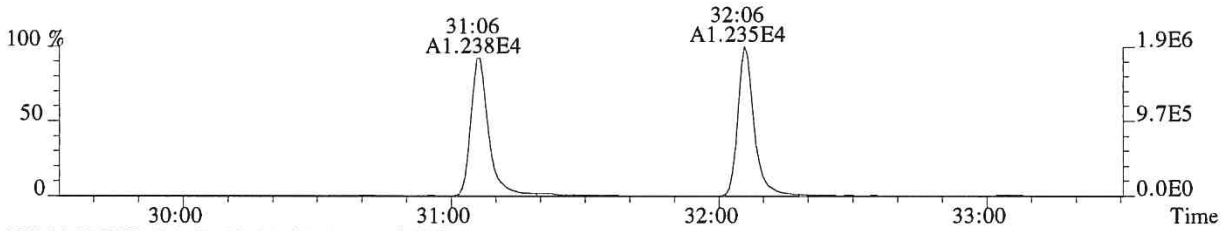
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1272.0,1.00%,F,T)



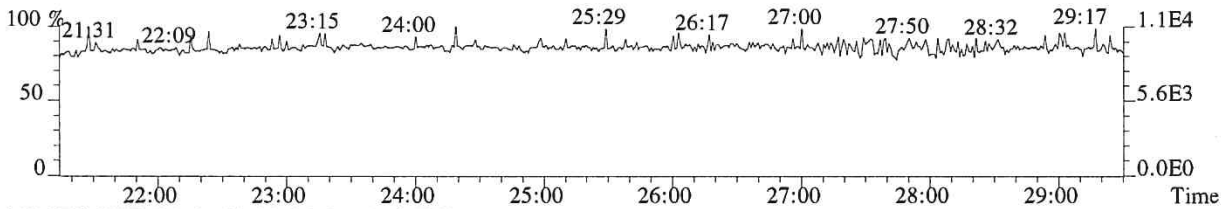
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,628.0,1.00%,F,T)



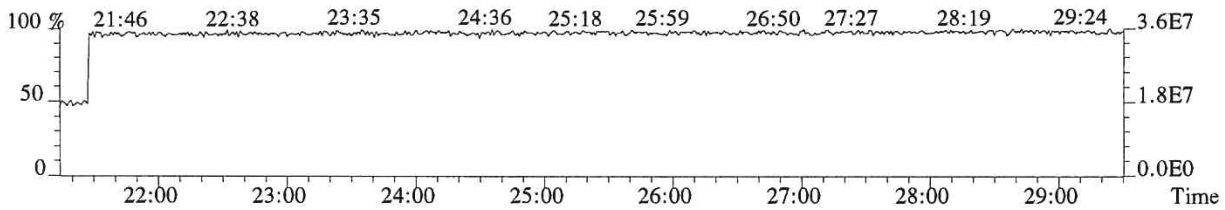
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

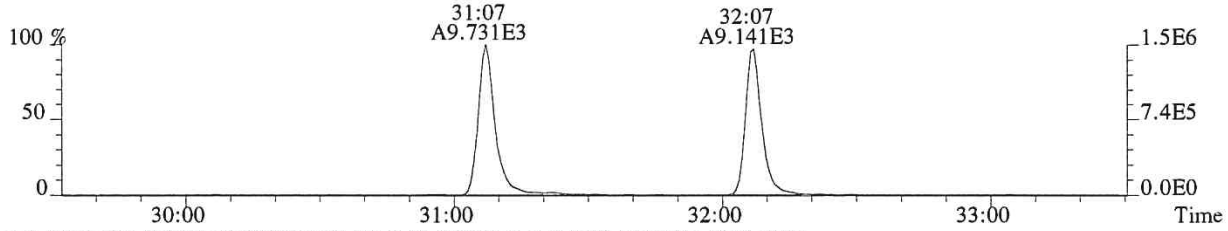


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

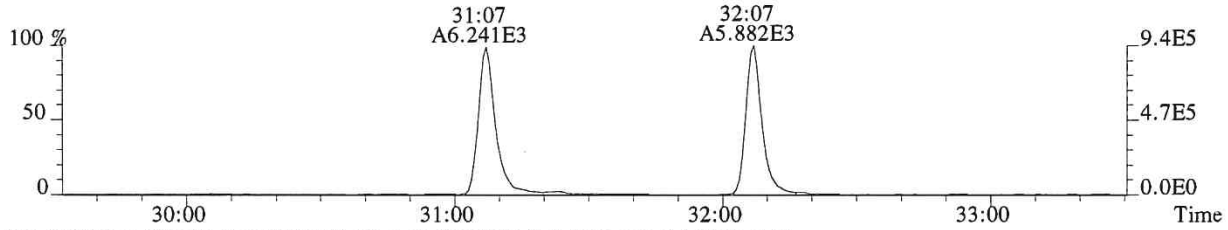


059469

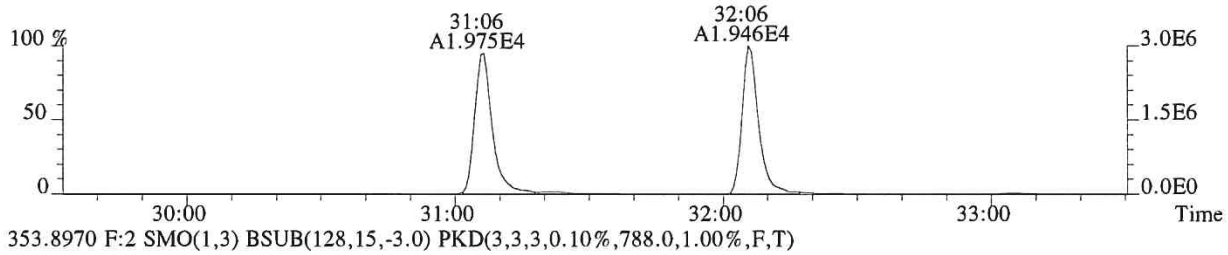
File:P519603 #1-358 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,688.0,1.00%,F,T)



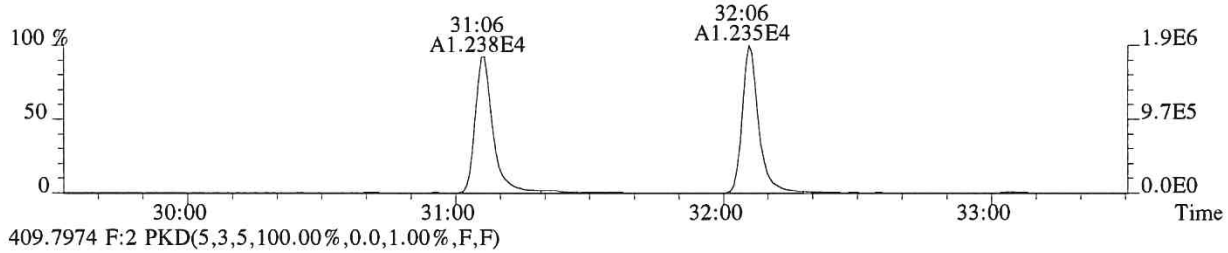
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1348.0,1.00%,F,T)



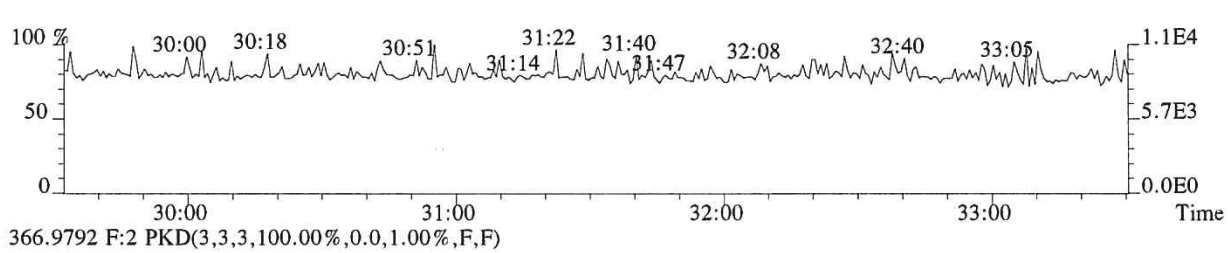
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,628.0,1.00%,F,T)



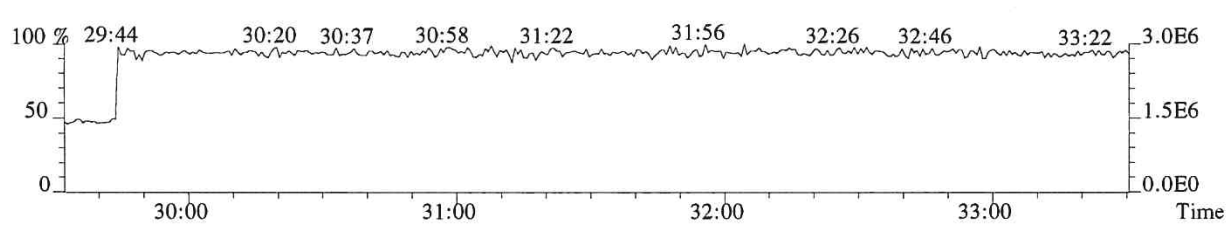
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

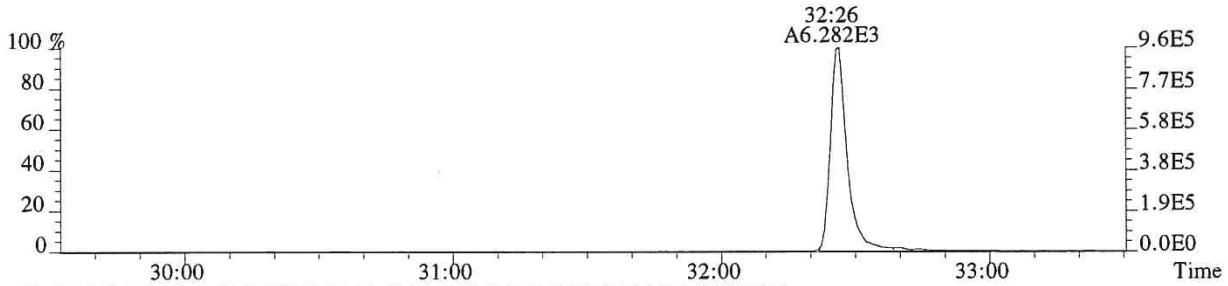


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

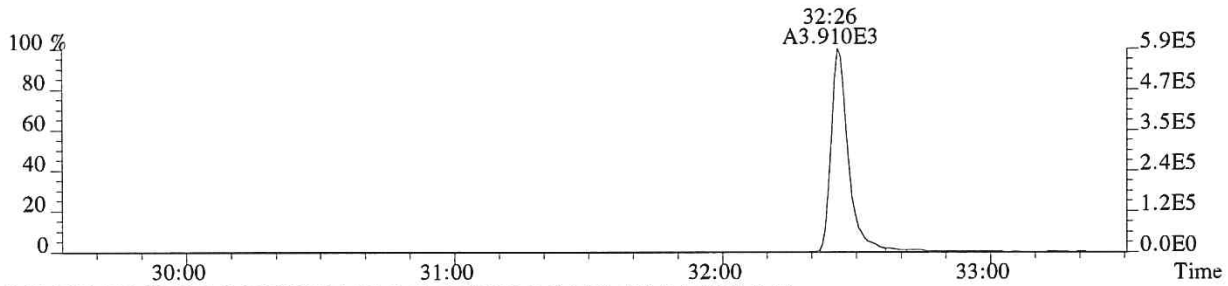


059470

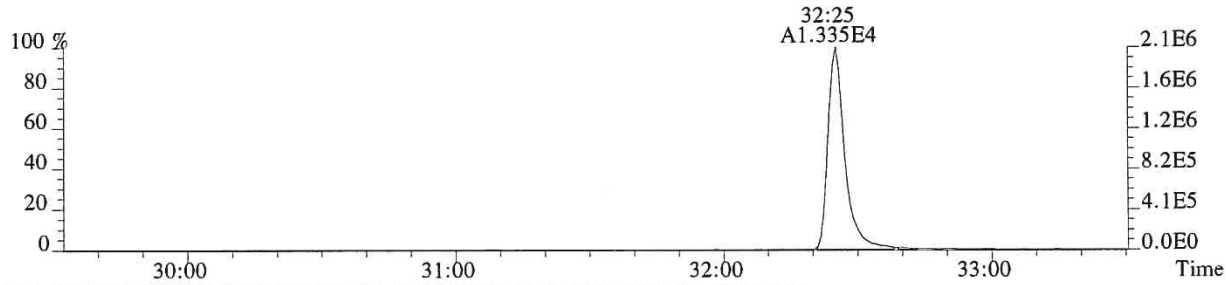
File:P519603 #1-358 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,708.0,1.00%,F,T)



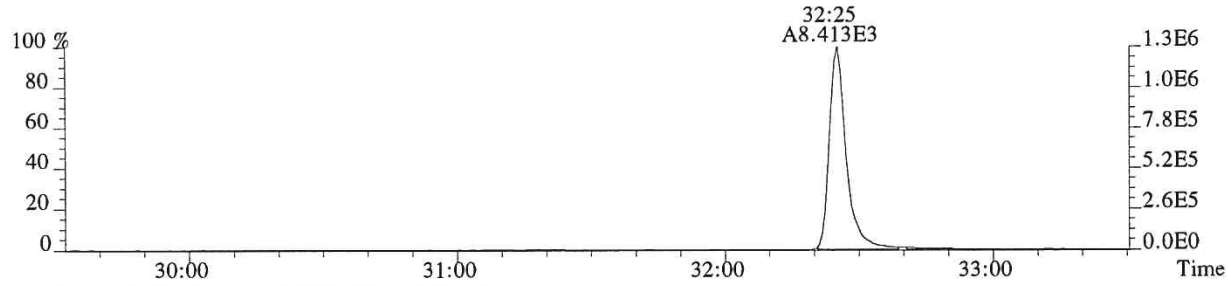
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,456.0,1.00%,F,T)



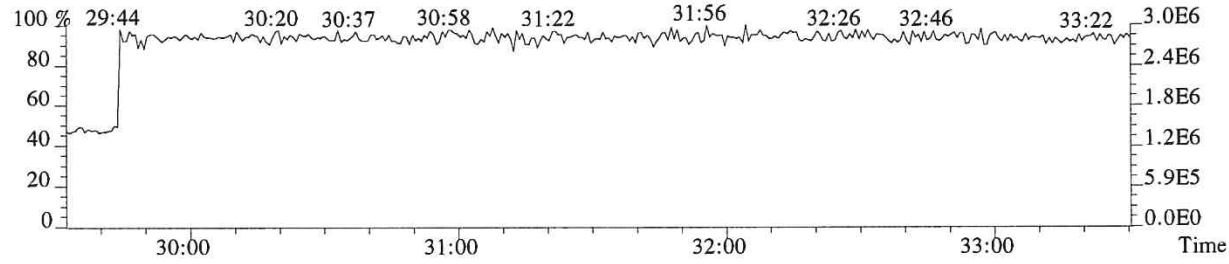
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,488.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1152.0,1.00%,F,T)

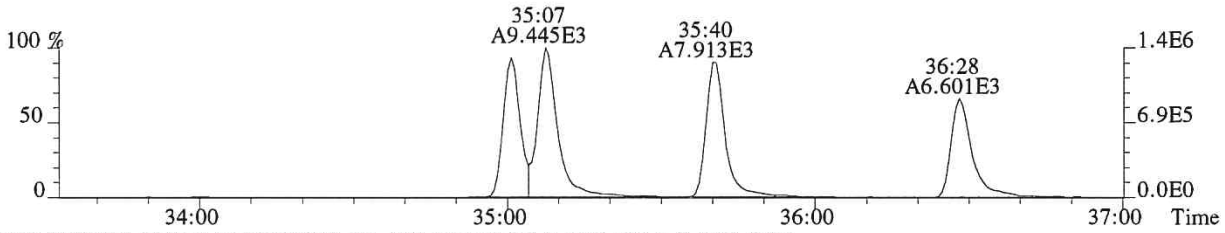


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

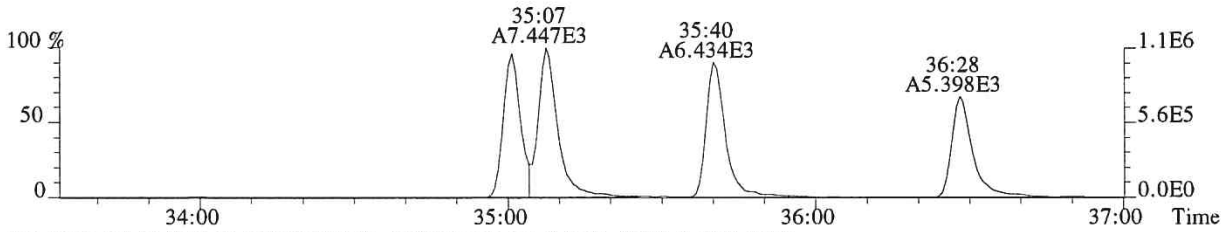


059471

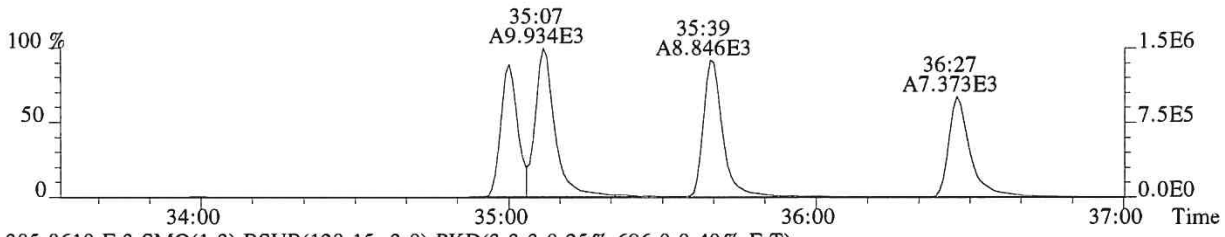
File:P519603 #1-312 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,812.0,0.40%,F,T)



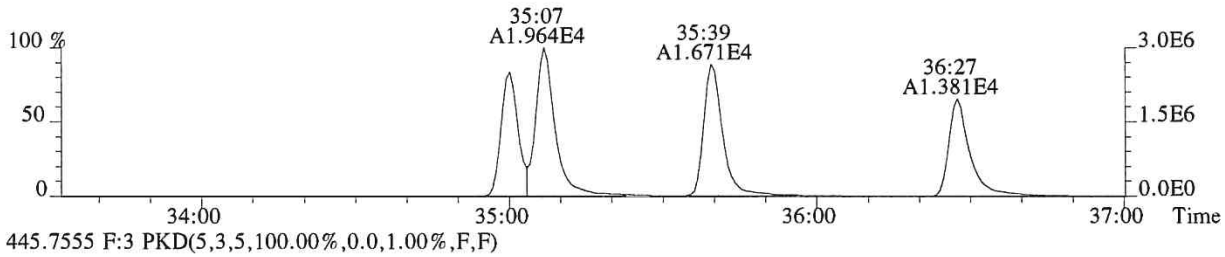
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,624.0,0.40%,F,T)



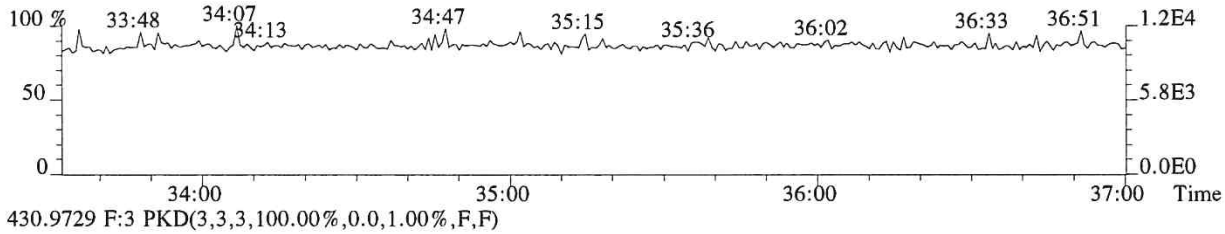
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,428.0,0.40%,F,T)



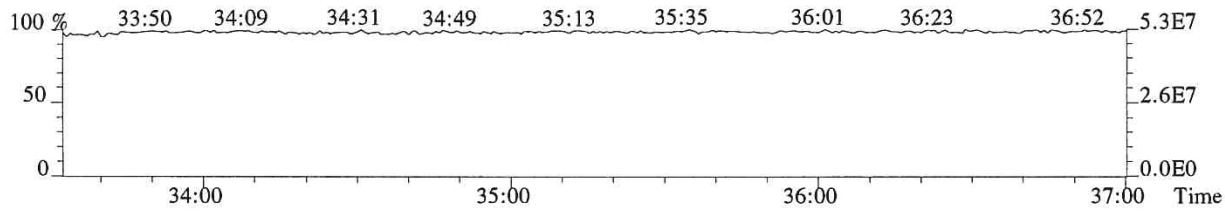
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,696.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

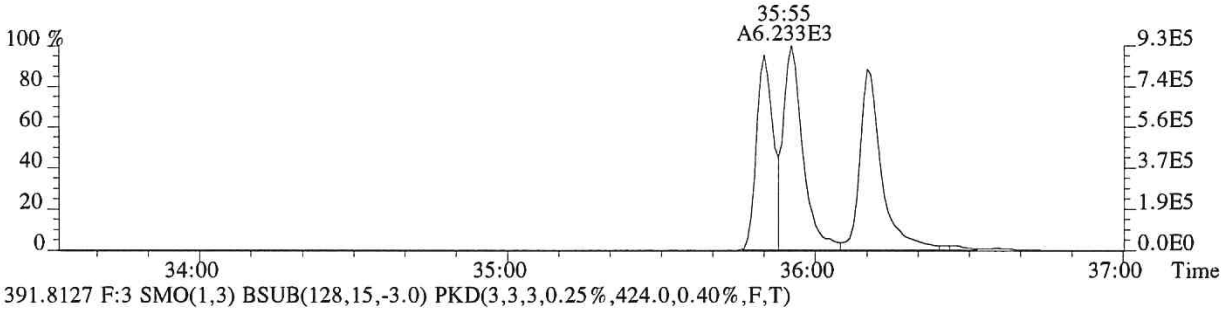


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

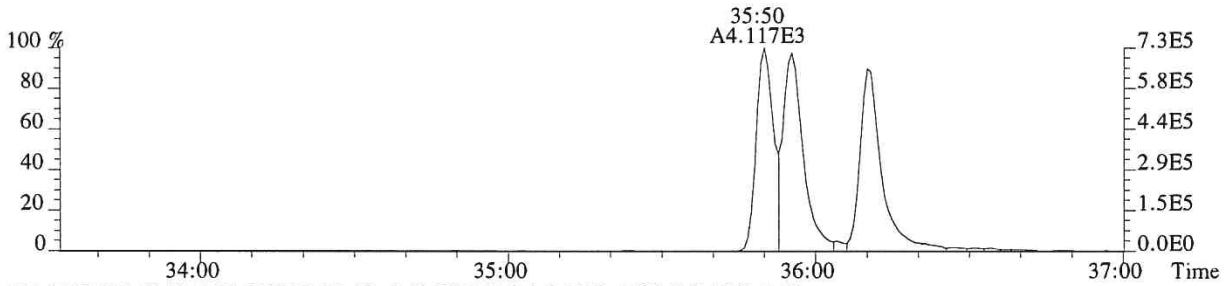


059472

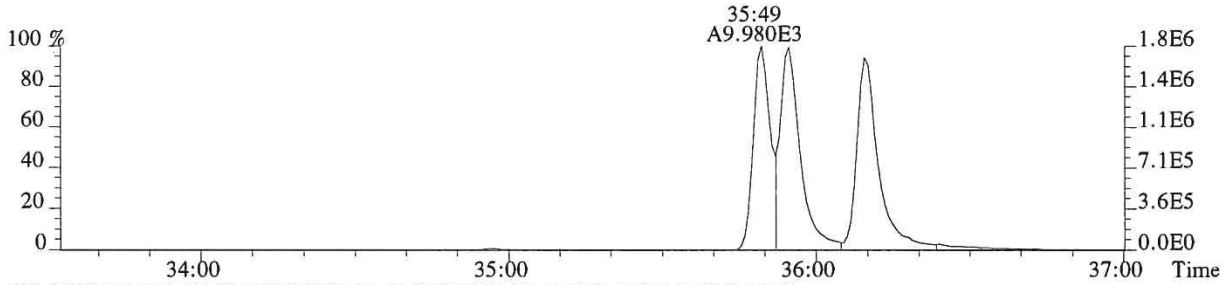
File:P519603 #1-312 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,684.0,0.40%,F,T)



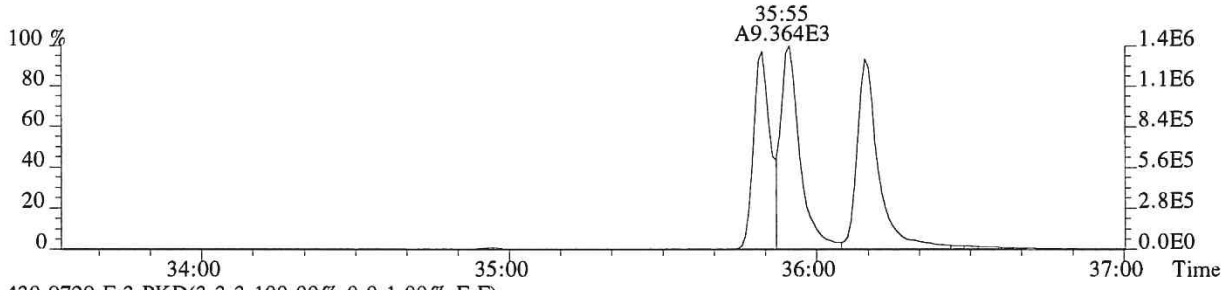
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,424.0,0.40%,F,T)



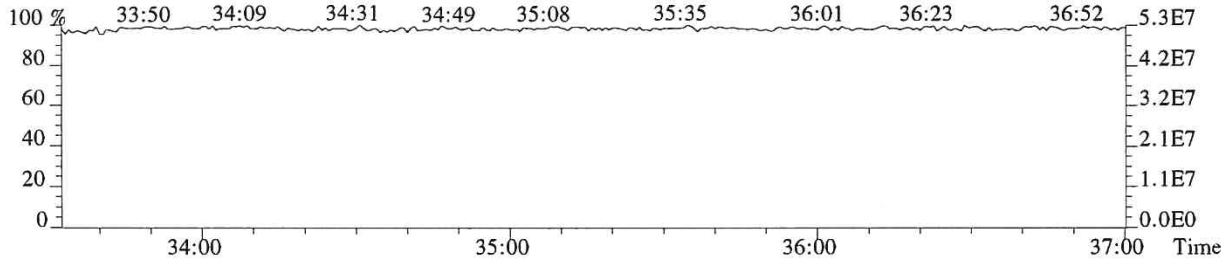
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1100.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,940.0,0.40%,F,T)

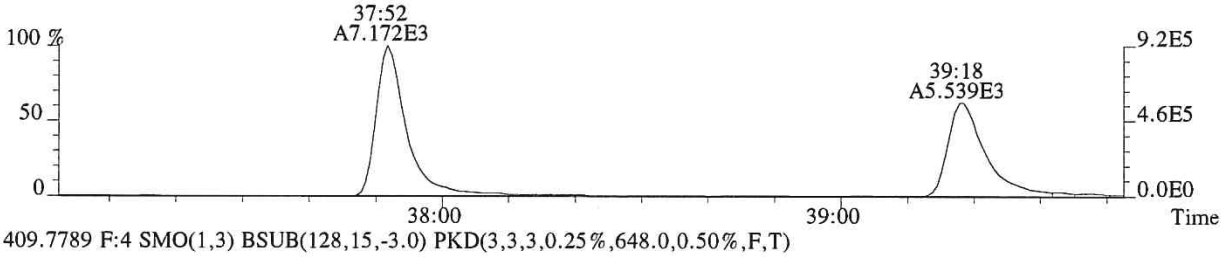


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

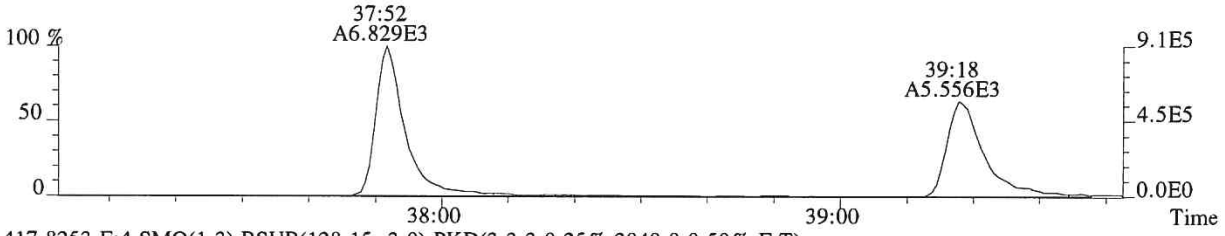


059473

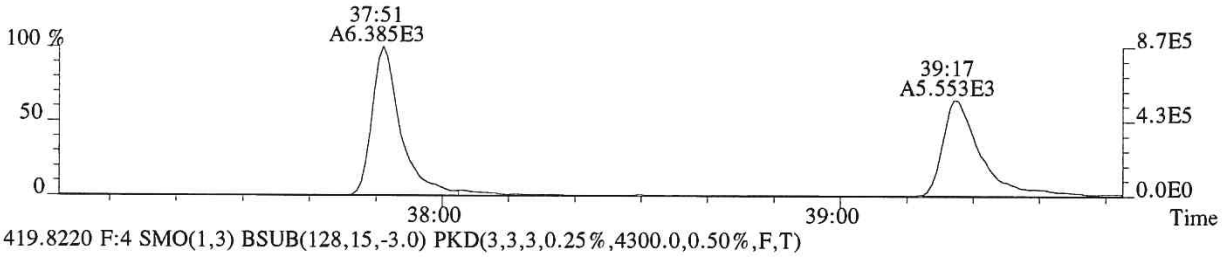
File:P519603 #1-241 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1812.0,0.50%,F,T)



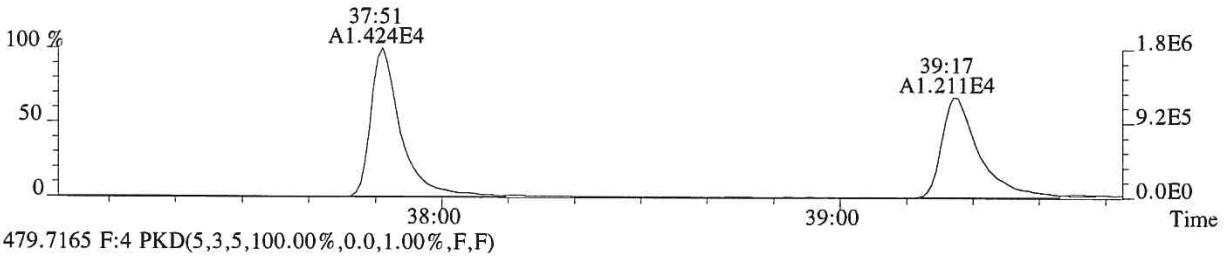
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,648.0,0.50%,F,T)



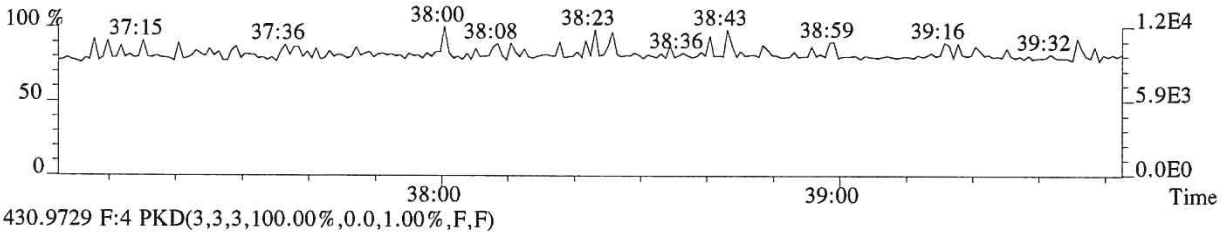
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2040.0,0.50%,F,T)



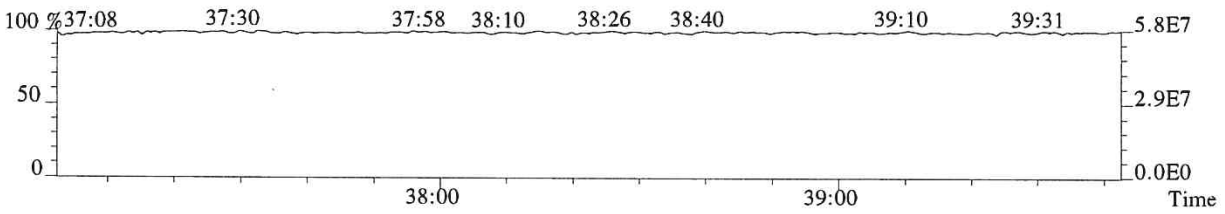
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4300.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

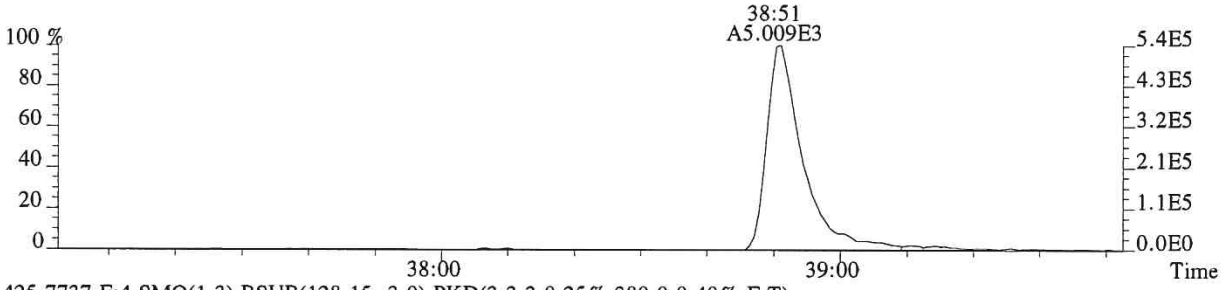


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

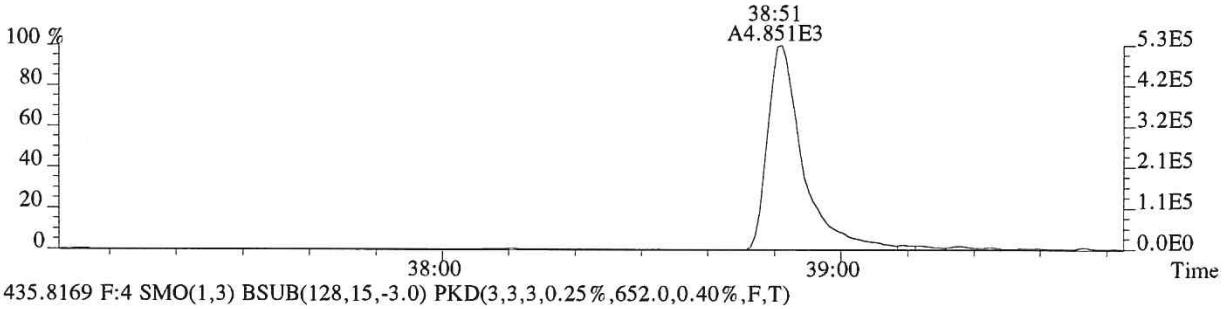


059474

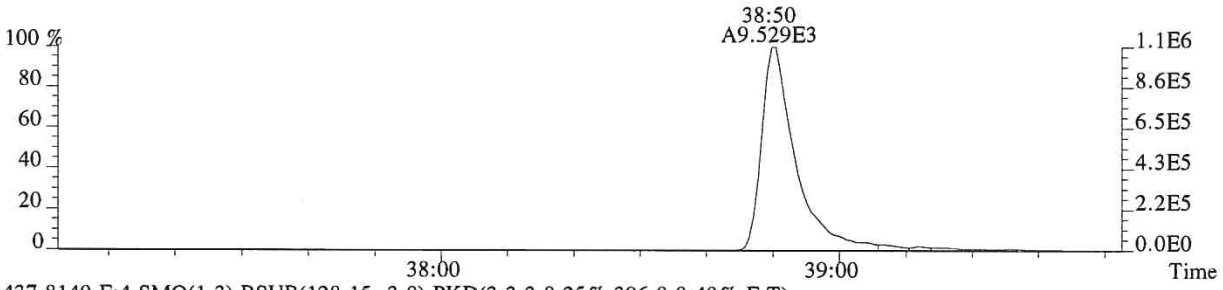
File:P519603 #1-241 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,756.0,0.40%,F,T)



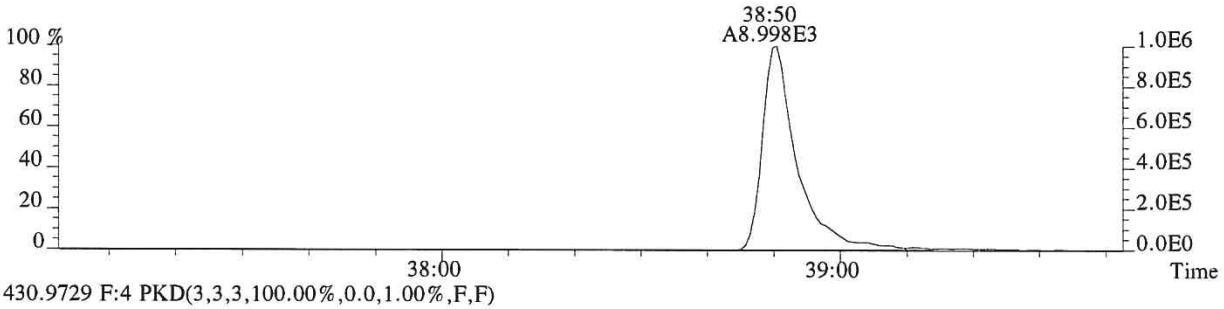
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,380.0,0.40%,F,T)



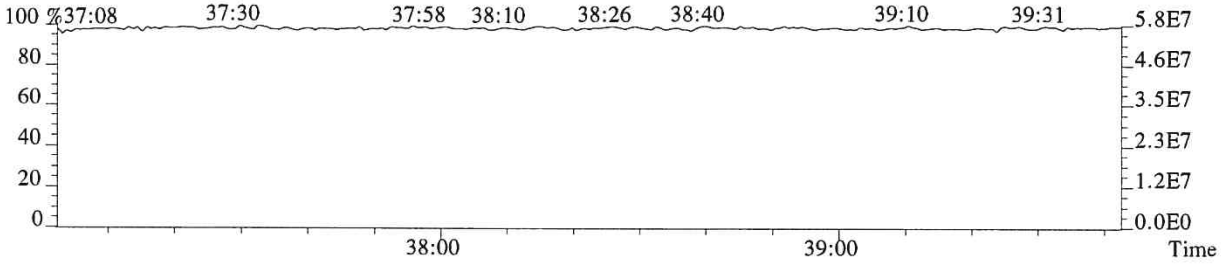
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,652.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,396.0,0.40%,F,T)

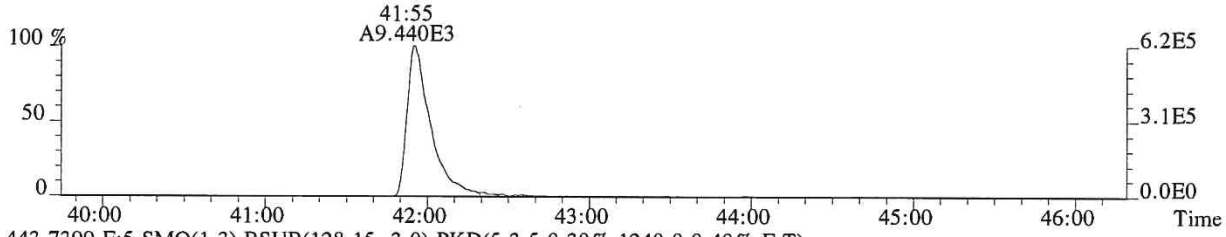


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

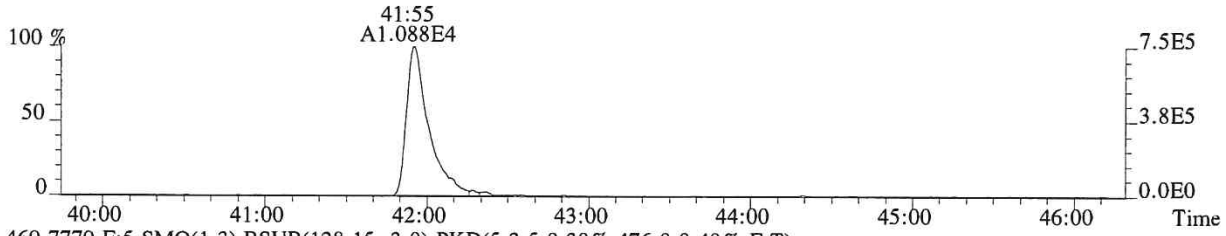


059475

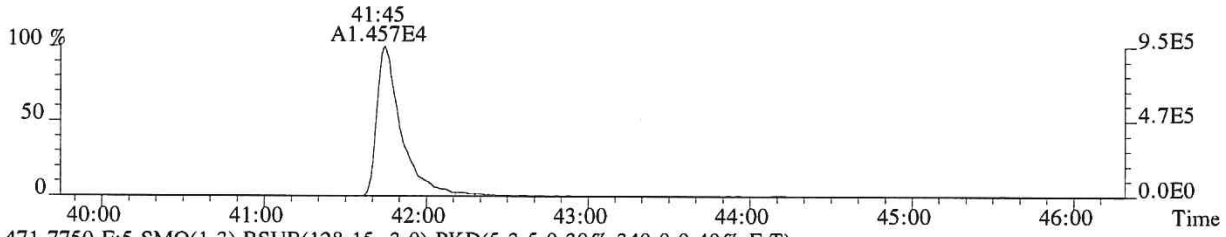
File:P519603 #1-592 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,272.0,0.40%,F,T)



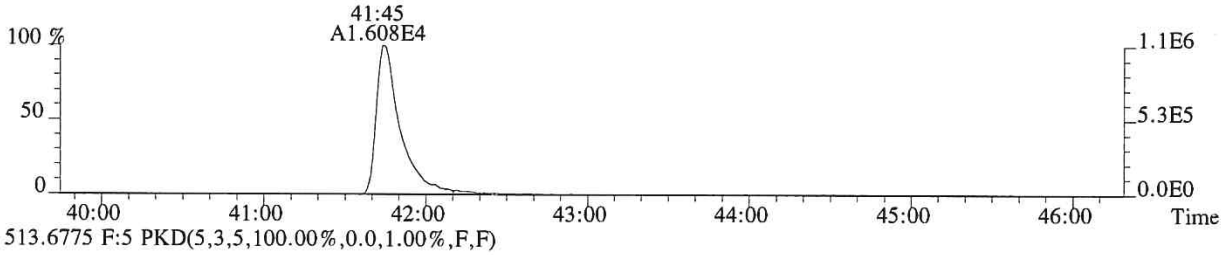
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1240.0,0.40%,F,T)



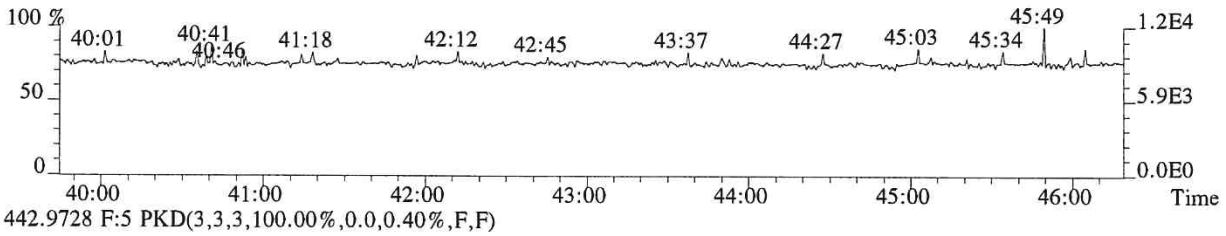
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,476.0,0.40%,F,T)



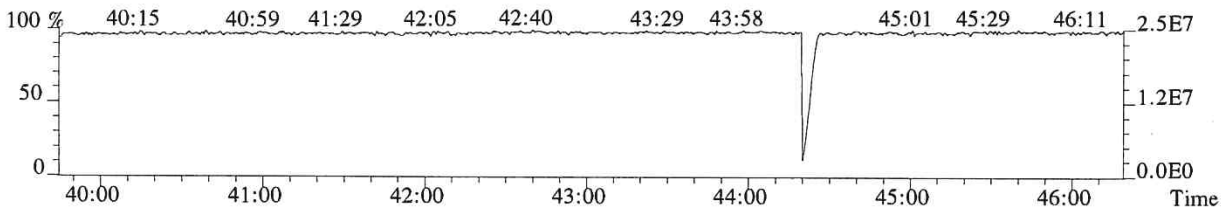
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,340.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

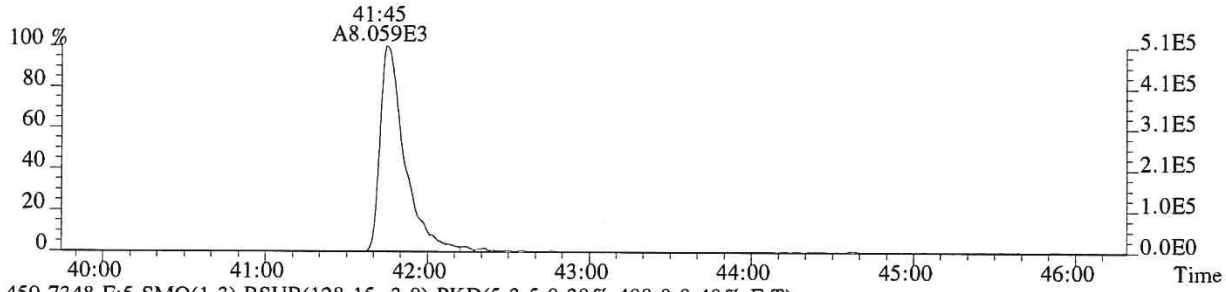


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

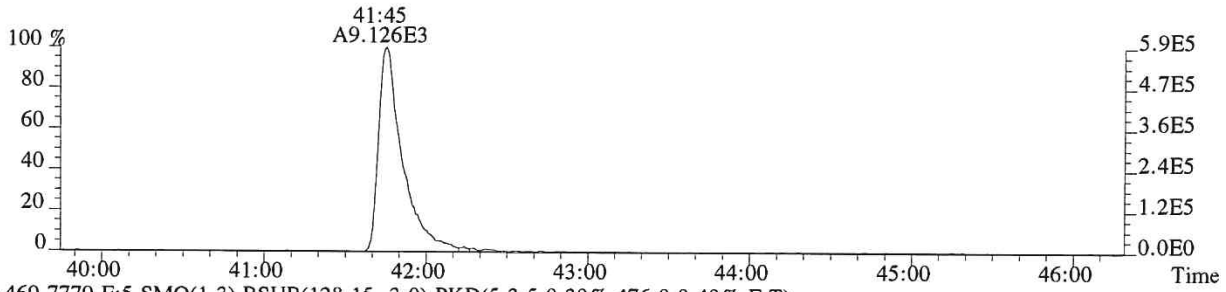


059476

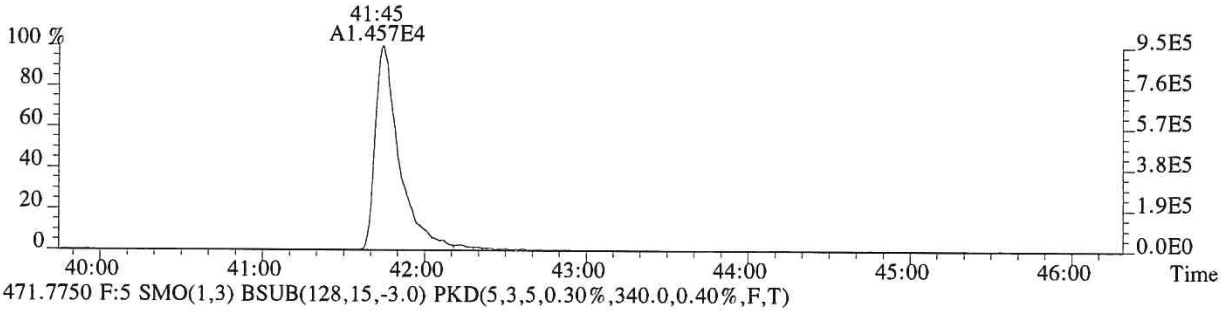
File:P519603 #1-592 Acq:24-DEC-2018 22:20:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,352.0,0.40%,F,T)



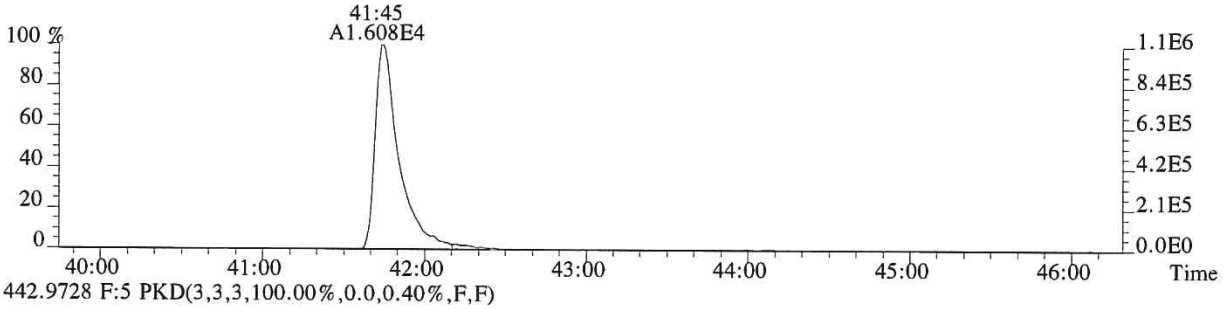
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,408.0,0.40%,F,T)



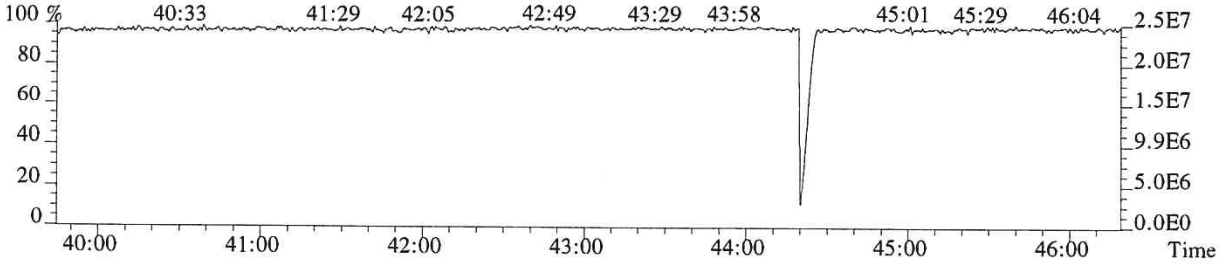
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,476.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,340.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059477

CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: P[illegible]127

Date: 12/19/18-12/20/18

Circle one: Beginning / Ending

Method: 1613 / 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: _____ Second QC: _____

ccalqc.xls 07/17/12

059478

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 09/25/18

Init. Calib.Times: 12:13

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
194503	CS3	P616127	19-DEC-18	16:59:59
192977	WINDOW DEFINE	P616128	19-DEC-18	17:56:31
METHOD BLANK	EQ1800507-01	P616129	19-DEC-18	18:44:50
METHOD BLANK	EQ1800512-01	P616130	19-DEC-18	19:34:00
SL0059	E1801096-001	P616131	19-DEC-18	20:23:09
SL0060	E1801096-002	P616132	19-DEC-18	21:12:19
SL0061	E1801096-003	P616133	19-DEC-18	22:01:30
SL0062	E1801096-004	P616134	19-DEC-18	22:50:40
SL0063	E1801096-005	P616135	19-DEC-18	23:39:50
SL0206	E1801096-006	P616136	20-DEC-18	00:29:00
SL0207	E1801096-007	P616137	20-DEC-18	01:18:10
SL0208	E1801096-008	P616138	20-DEC-18	02:07:19
LCS	EQ1800512-02	P616139	20-DEC-18	02:56:30
DLCS	EQ1800512-03	P616140	20-DEC-18	03:45:39

Sample List Report — **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20181219A.SPL
Last Modified: Thursday, December 20, 2018 09:14:28 Central Standard Time
Printed: Thursday, December 20, 2018 09:15:05 Central Standard Time

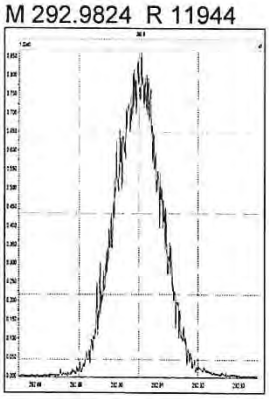
Page Position (1, 1)

Opus 4: P616127Tres

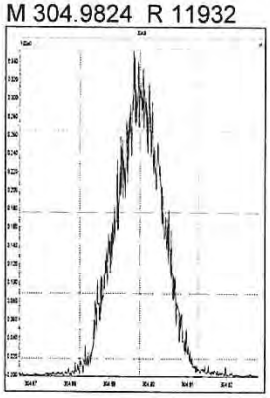
	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/19/18	16:59	P616127	194503	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:2	JC	#RMS CHECK 16:02
2		17:50	P616128	192977	WINDOW DEFINE	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		18:44	P616129	EQ1800507-01	MB	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4		19:34	P616130	EQ1800512-01	MB	EPA1613_ALS	Dioxin_ALS	Tray1:4		
5		20:23	P616131	E1801096-001	E1801096-001	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		21:12	P616132	E1801096-002	E1801096-002	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		22:01	P616133	E1801096-003	E1801096-003	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		22:50	P616134	E1801096-004	E1801096-004	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		23:39	P616135	E1801096-005	E1801096-005	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10	12/20/18	00:29	P616136	E1801096-006	E1801096-006	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		01:18	P616137	E1801096-007	E1801096-007	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12		02:07	P616138	E1801096-008	E1801096-008	EPA1613_ALS	Dioxin_ALS	Tray1:12		
13		05:30	P616139	EQ1800512-02	LCS	EPA1613_ALS	Dioxin_ALS	Tray1:13		
14		03:45	P616140	EQ1800512-03	DLCS	EPA1613_ALS	Dioxin_ALS	Tray1:14		HRMS CHECK 04:42

JC 12/21/18

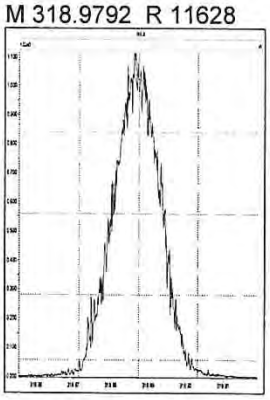
M 292.9824 R 11944



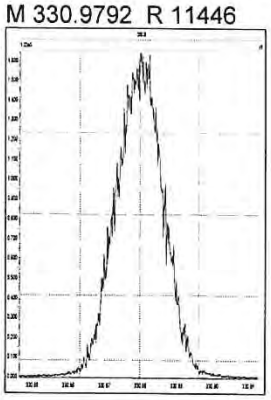
M 304.9824 R 11932



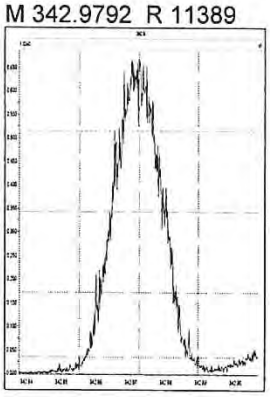
M 318.9792 R 11628



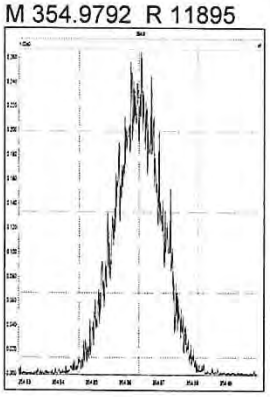
M 330.9792 R 11446



M 342.9792 R 11389



M 354.9792 R 11895



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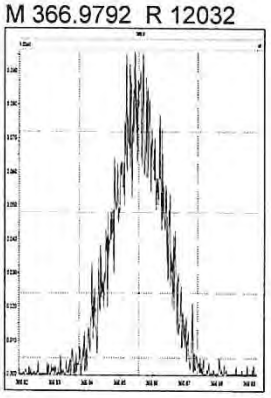

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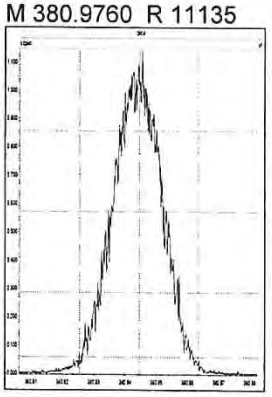

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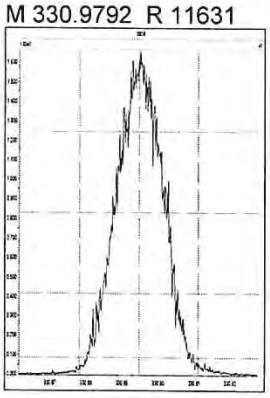

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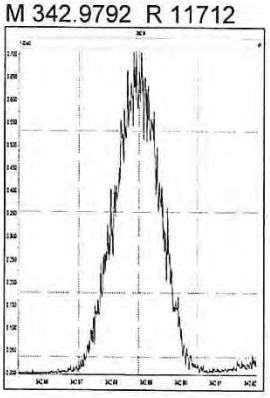

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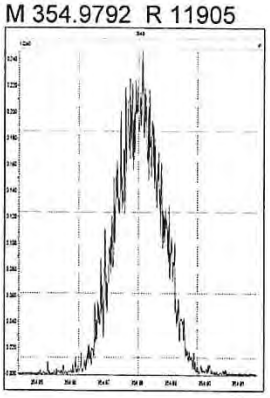
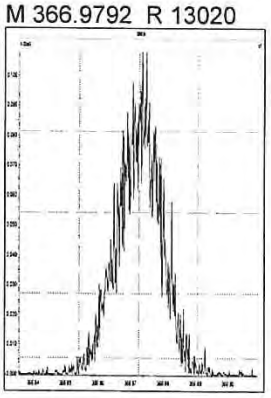
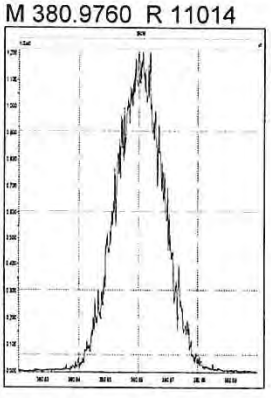


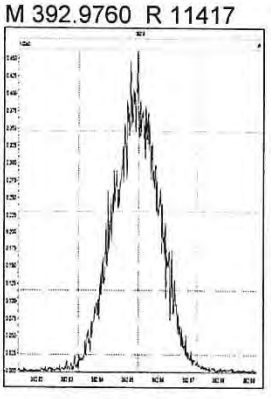
M 366.9792 R 13020



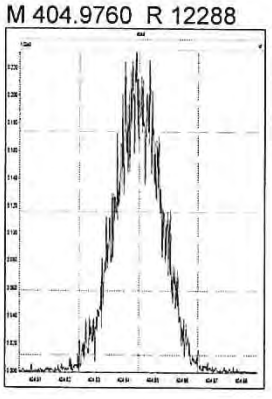
M 380.9760 R 11014



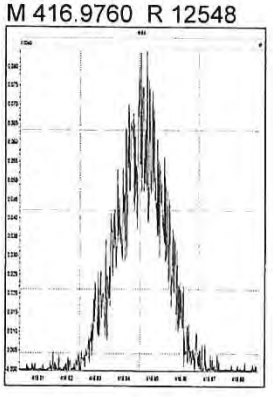
M 392.9760 R 11417



M 404.9760 R 12288



M 416.9760 R 12548



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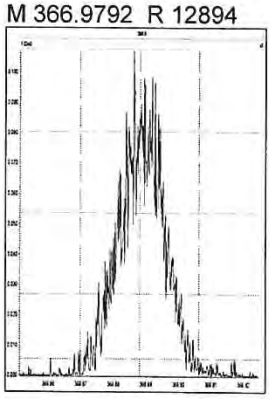
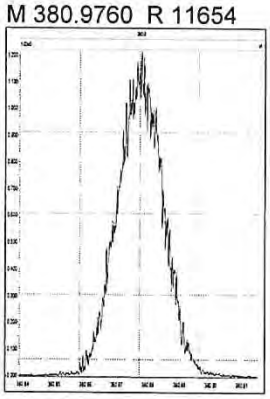
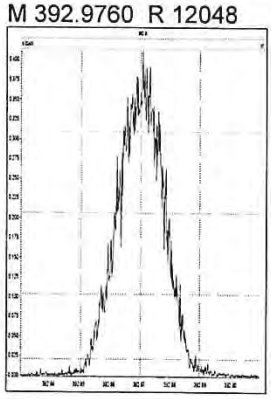


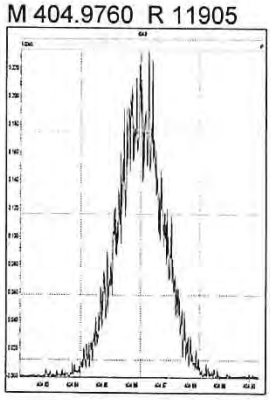
M 380.9760 R 11654



M 392.9760 R 12048



M 404.9760 R 11905



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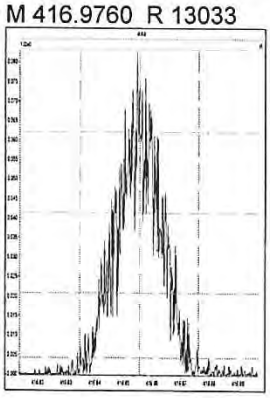
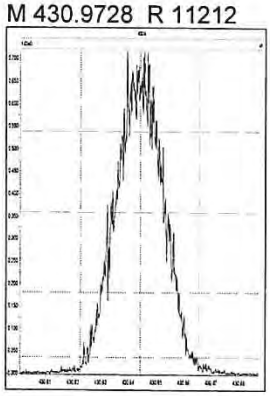
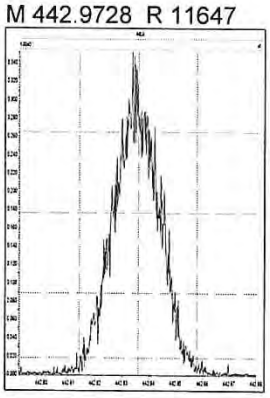


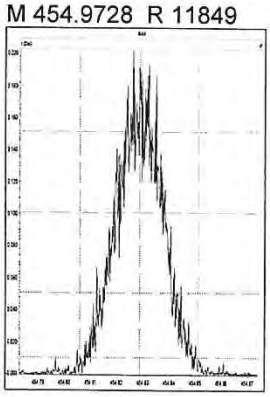
M 430.9728 R 11212



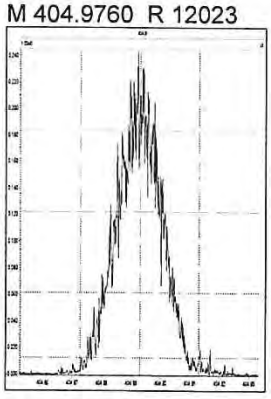
M 442.9728 R 11647



M 454.9728 R 11849



M 404.9760 R 12023



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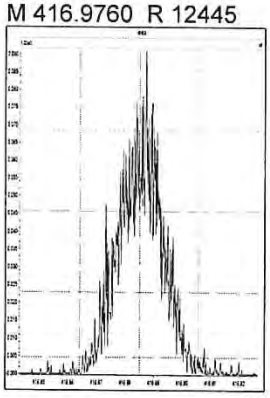
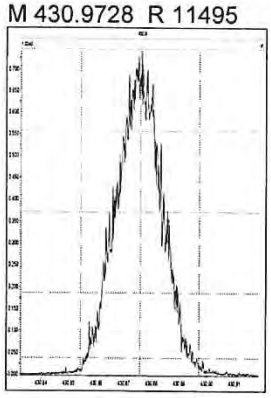
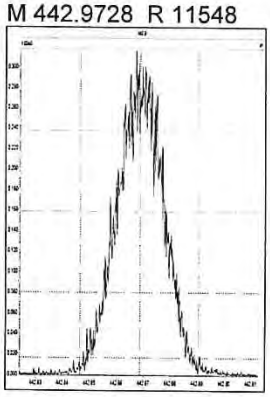


M 430.9728 R 11495



M 442.9728 R 11548



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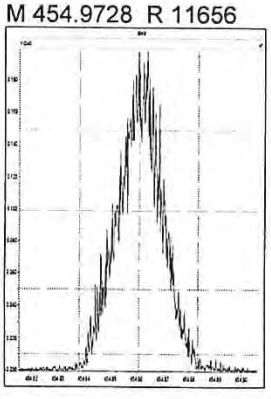
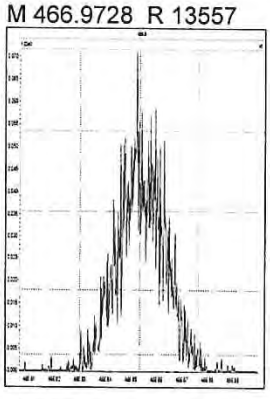


M 466.9728 R 13557



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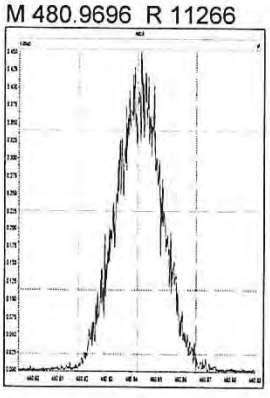
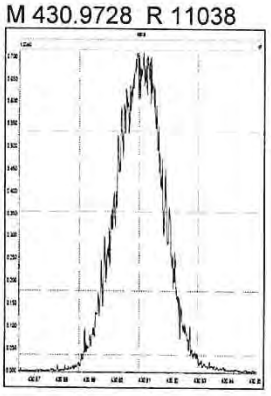


M 430.9728 R 11038



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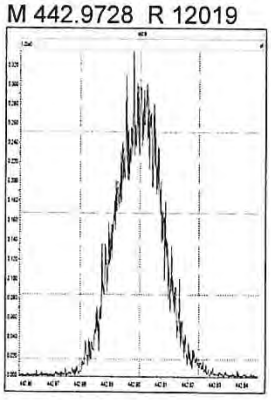
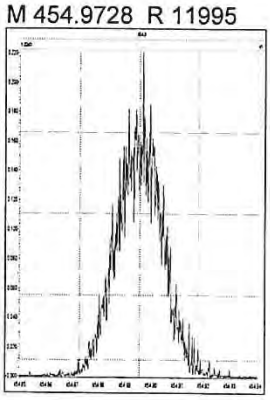
M 442.9728 R 12019



M 454.9728 R 11995



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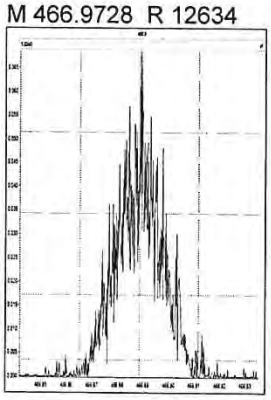
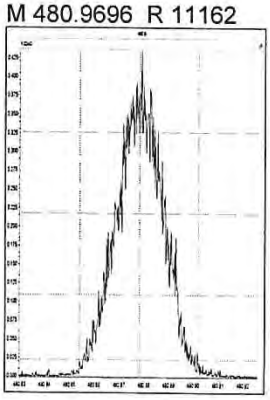
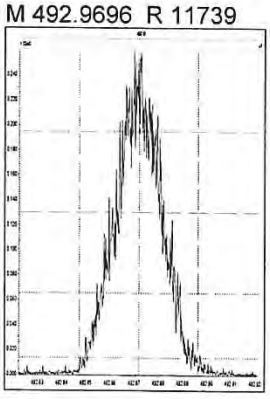


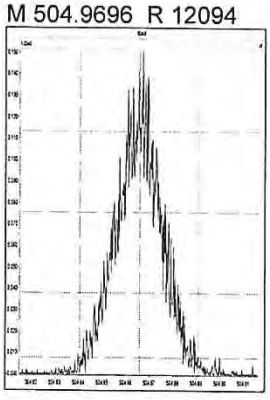
M 480.9696 R 11162



M 492.9696 R 11739



M 504.9696 R 12094



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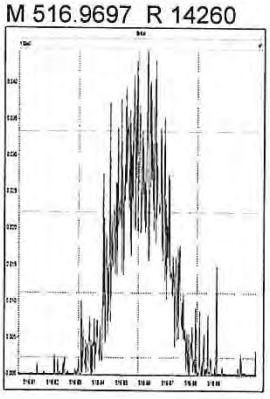

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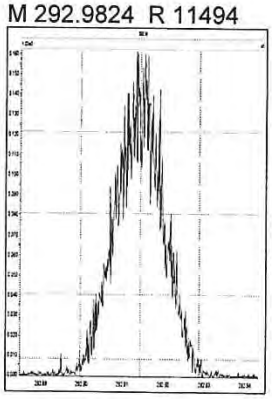
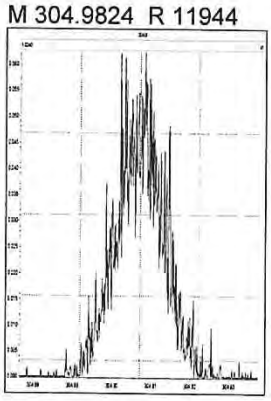
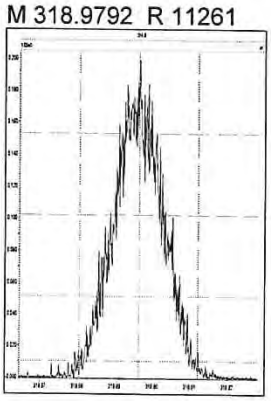
M 292.9824 R 11494



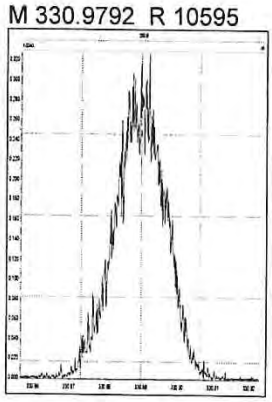
M 304.9824 R 11944



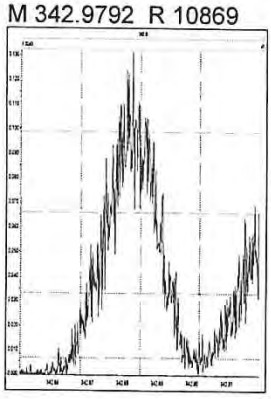
M 318.9792 R 11261



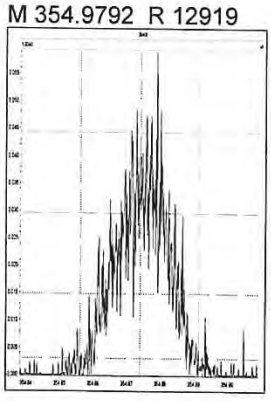
M 330.9792 R 10595



M 342.9792 R 10869



M 354.9792 R 12919



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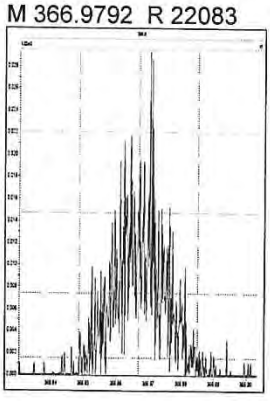
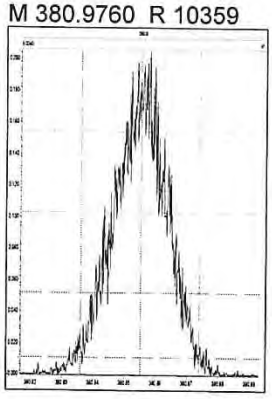


M 380.9760 R 10359



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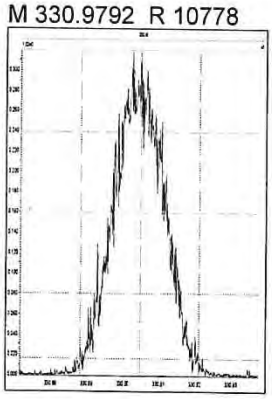
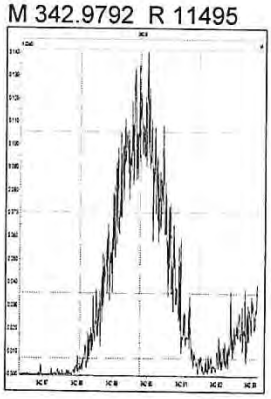
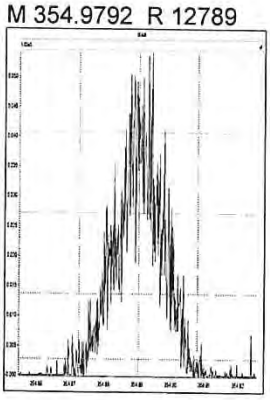


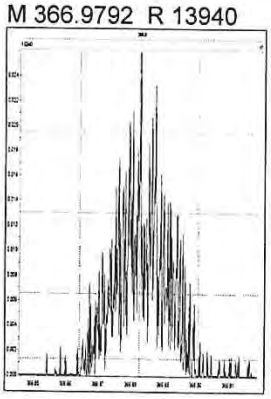
M 342.9792 R 11495



M 354.9792 R 12789



M 366.9792 R 13940



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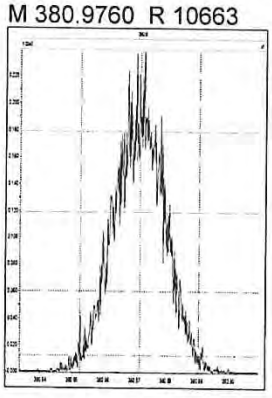
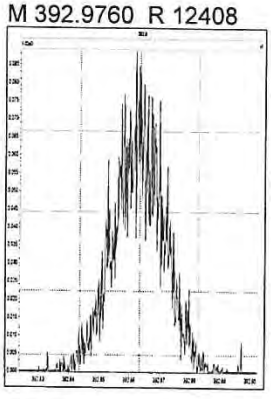
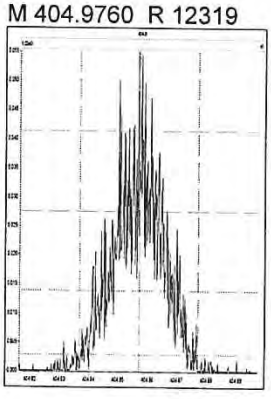


M 392.9760 R 12408



M 404.9760 R 12319



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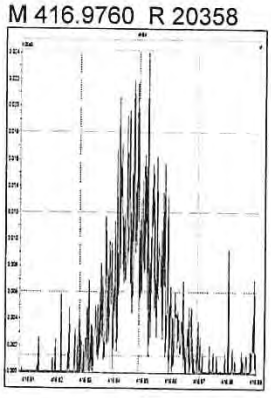

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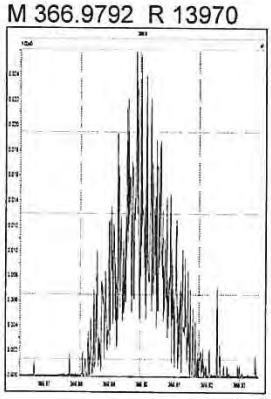
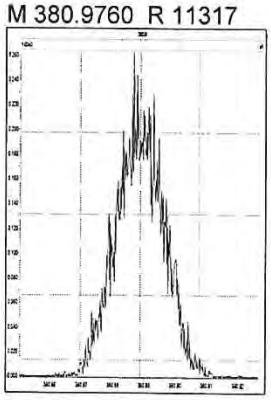
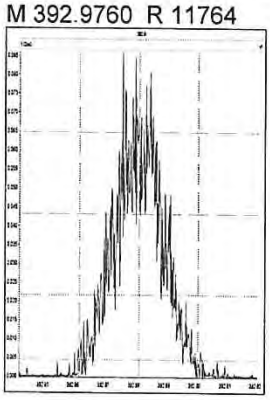
M 366.9792 R 13970



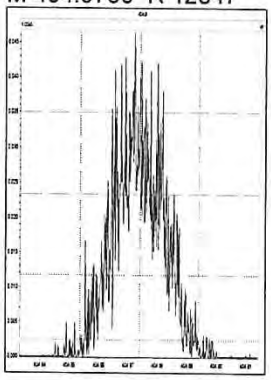
M 380.9760 R 11317



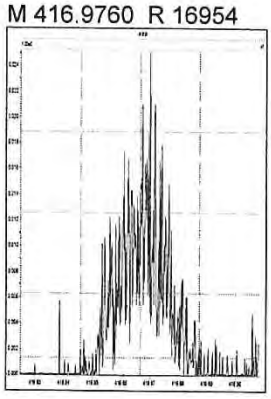
M 392.9760 R 11764



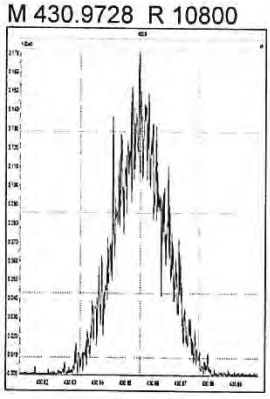
M 404.9760 R 12847



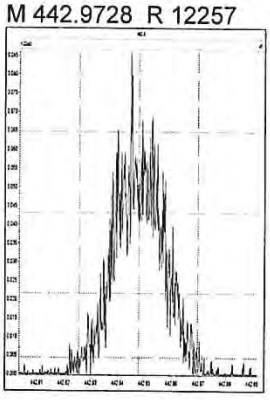
M 416.9760 R 16954



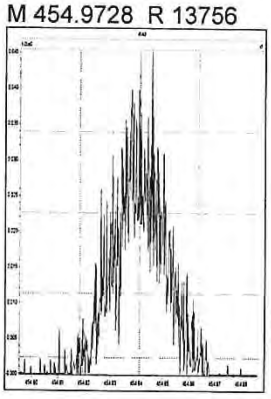
M 430.9728 R 10800



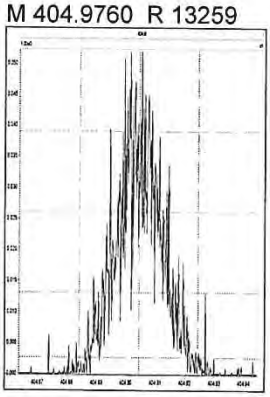
M 442.9728 R 12257



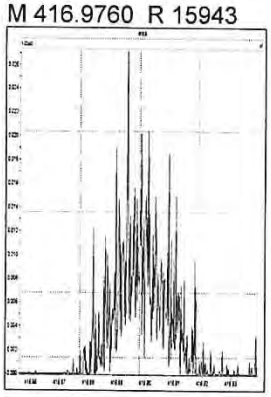
M 454.9728 R 13756



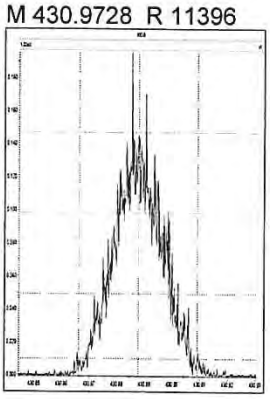
M 404.9760 R 13259



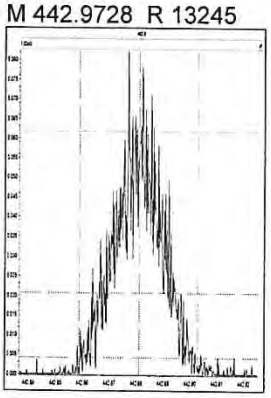
M 416.9760 R 15943



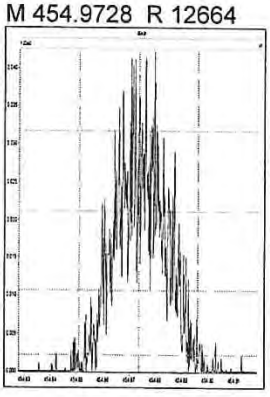
M 430.9728 R 11396



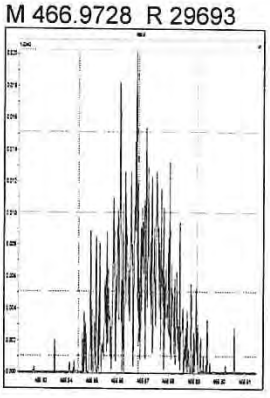
M 442.9728 R 13245



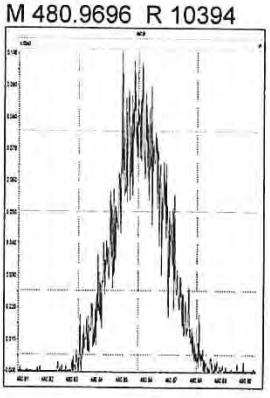
M 454.9728 R 12664



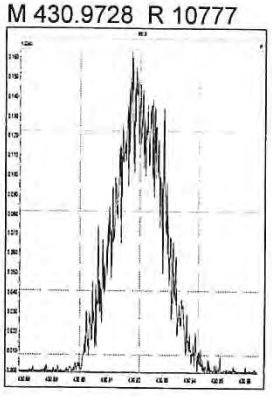
M 466.9728 R 29693



M 480.9696 R 10394

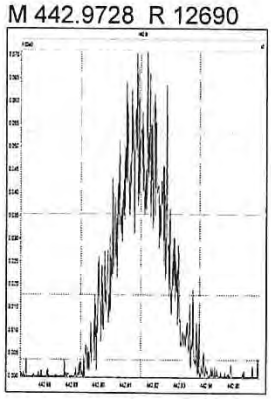


M 430.9728 R 10777

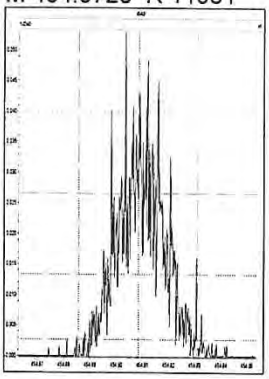


059485

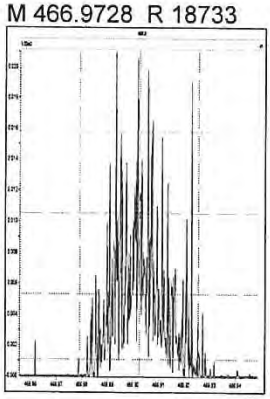
M 442.9728 R 12690



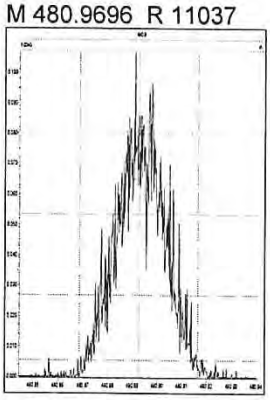
M 454.9728 R 11961



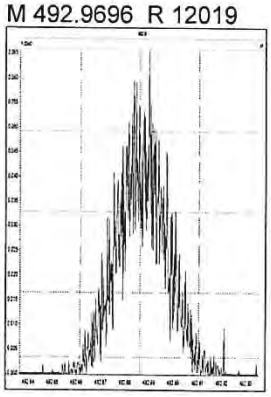
M 466.9728 R 18733



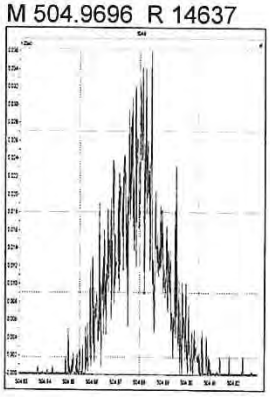
M 480.9696 R 11037



M 492.9696 R 12019



M 504.9696 R 14637



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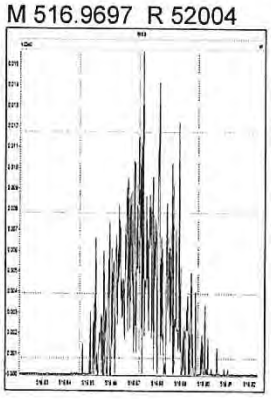


059486

5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

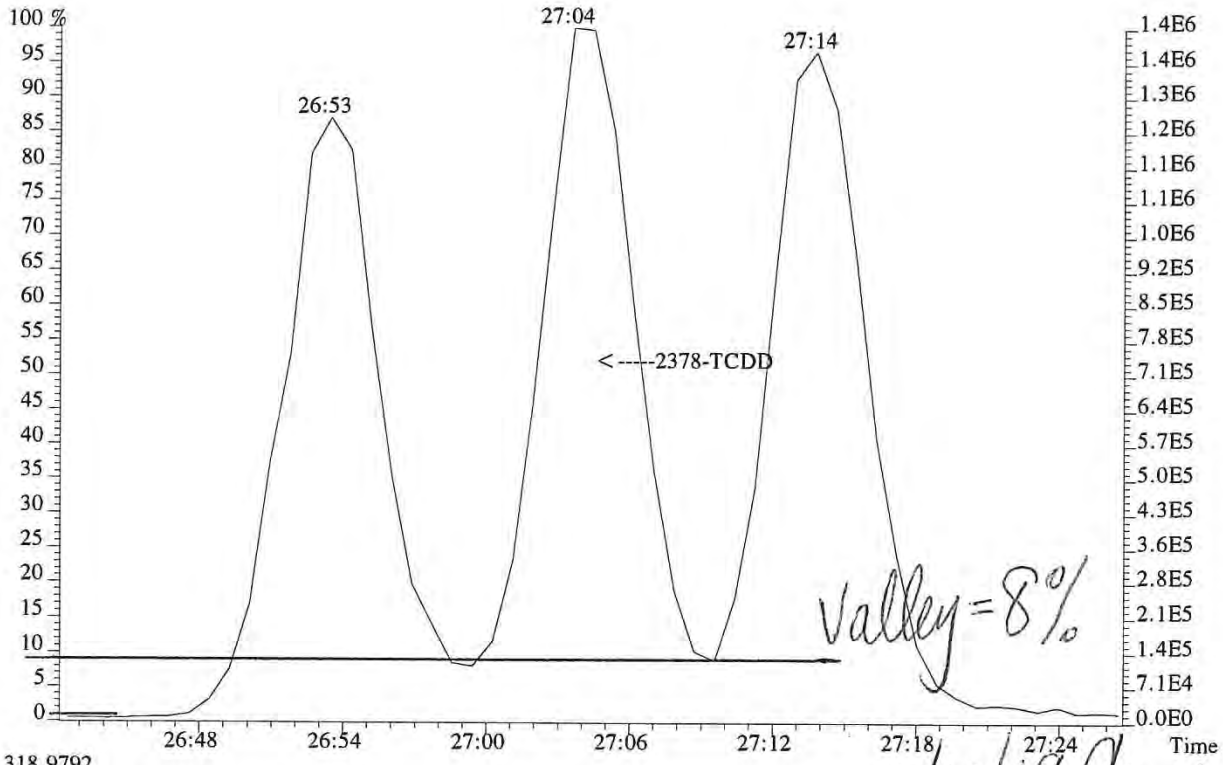
Case No.: _____ SDG No.:
ID: 0.25 (mm) Lab File ID: P616128
Date Analyzed: 19-DEC-18
Time Analyzed: 17:56:31

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	21:40	28:26
TCDD	23:19	28:14
PeCDF	28:20	32:58
PeCDD	30:04	32:42
HxCDF	33:39	36:14
HxCDD	34:12	35:50
HpCDF	37:28	38:47
HpCDD	37:43	38:21

% Valley 2378-TCDD: 8 %

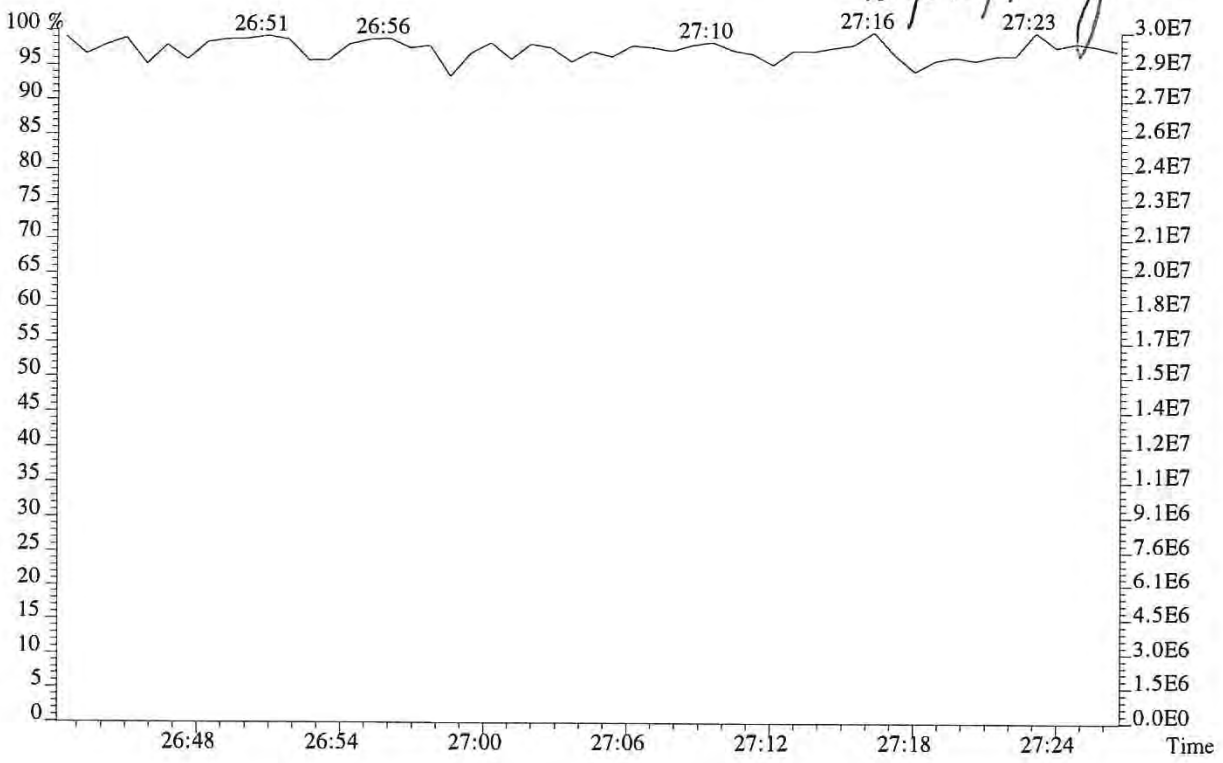
059487

File:P616128 #1-602 Acq:19-DEC-2018 17:56:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
319.8965



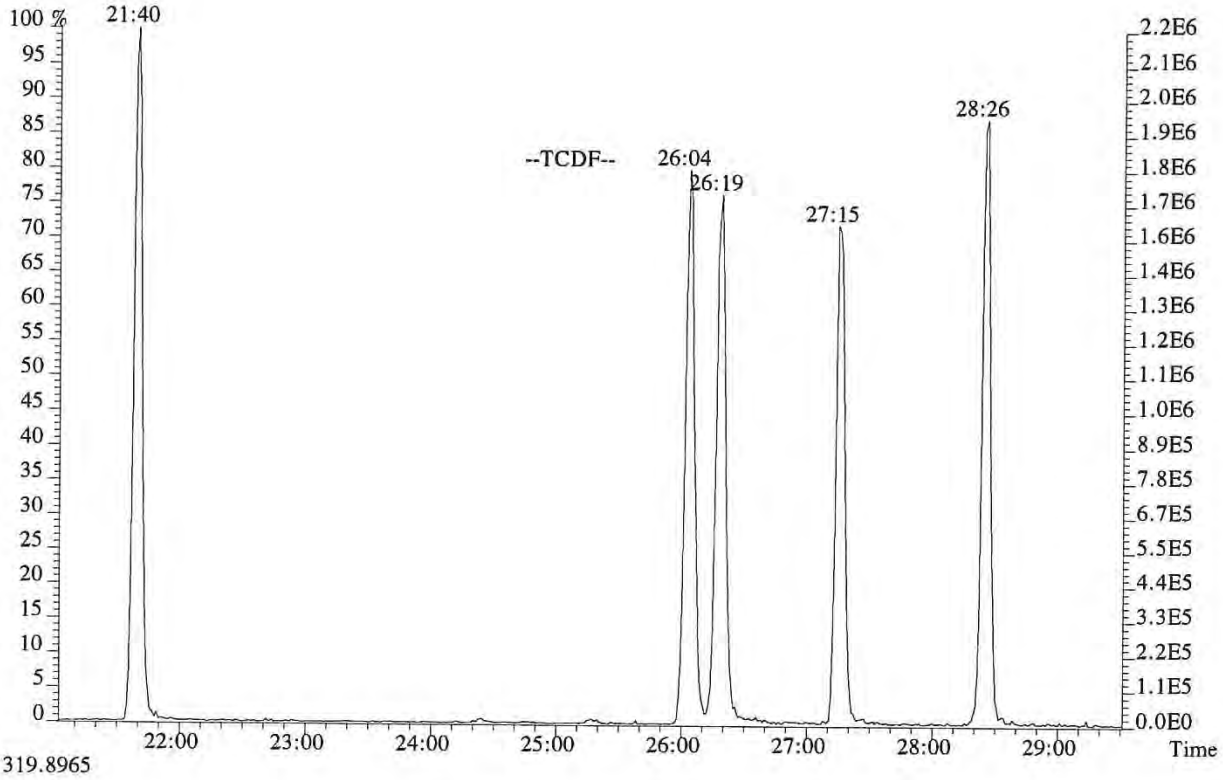
318.9792

12/20/18 JC

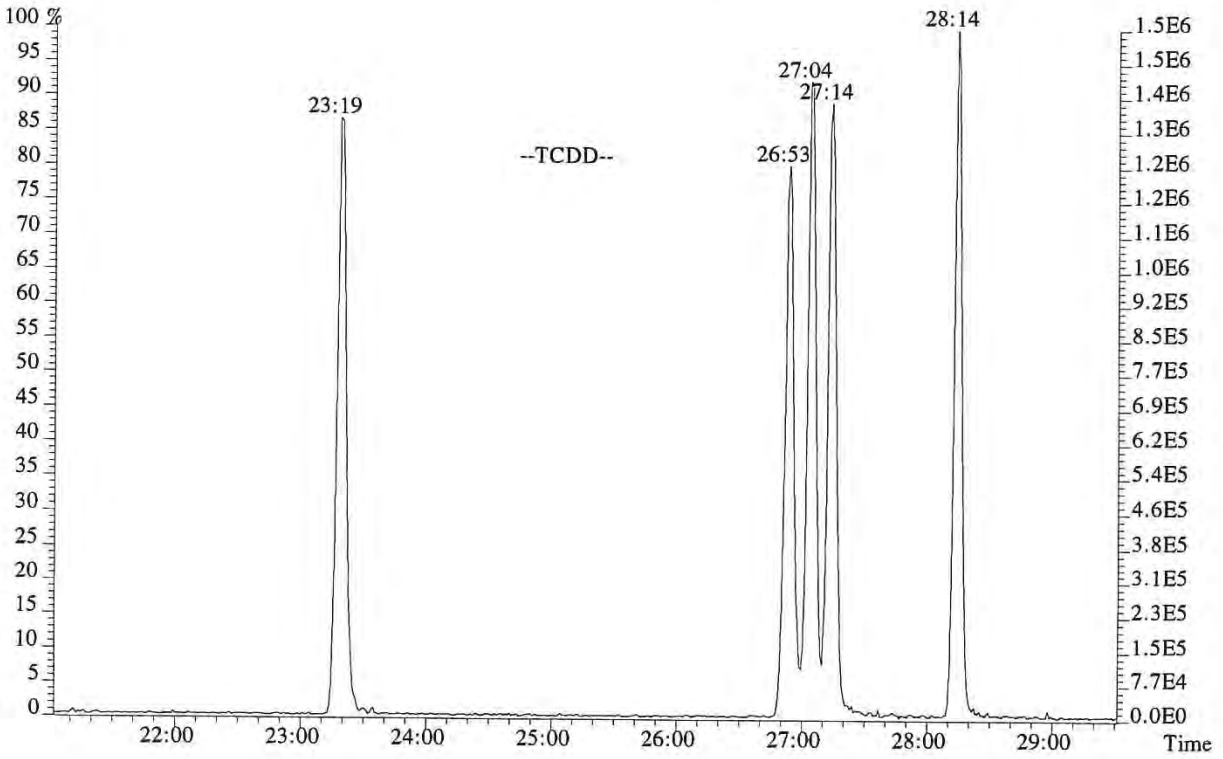


059488

File:P616128 #1-602 Acq:19-DEC-2018 17:56:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
303.9016

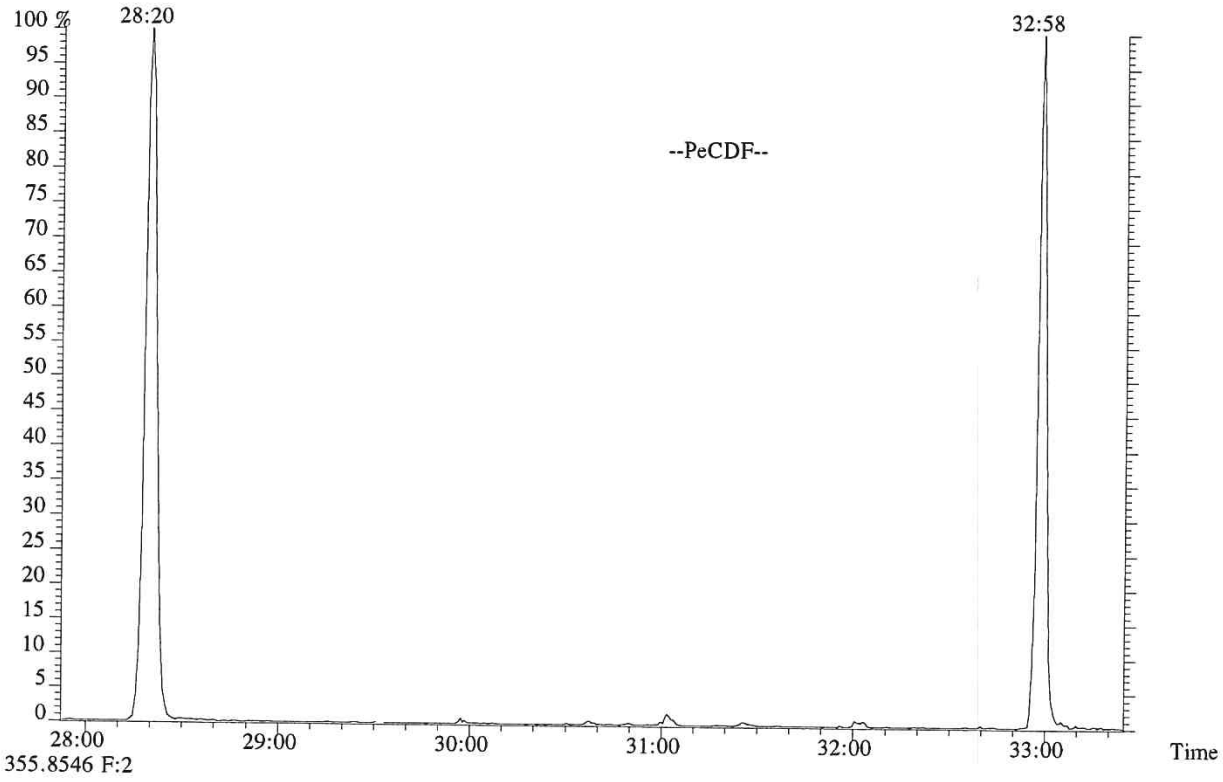


319.8965

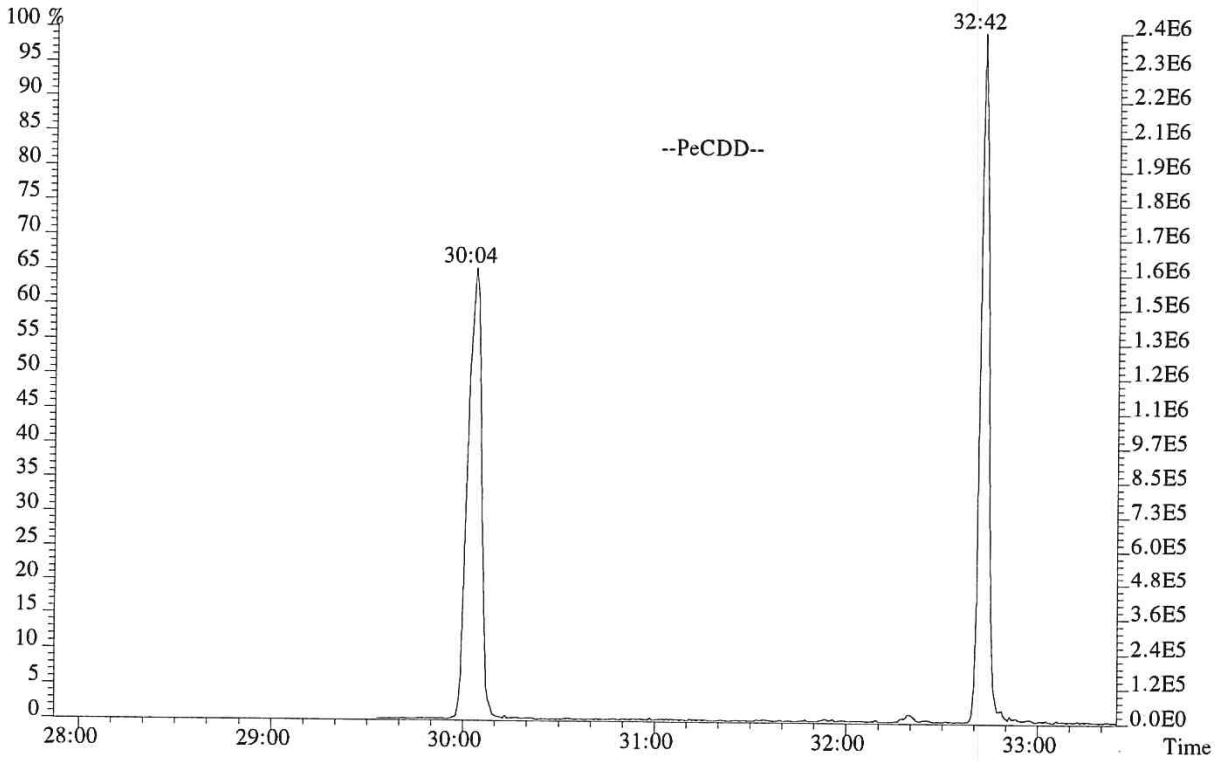


059489

File:P616128 #1-602 Acq:19-DEC-2018 17:56:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
339.8597,339.8597 F:2

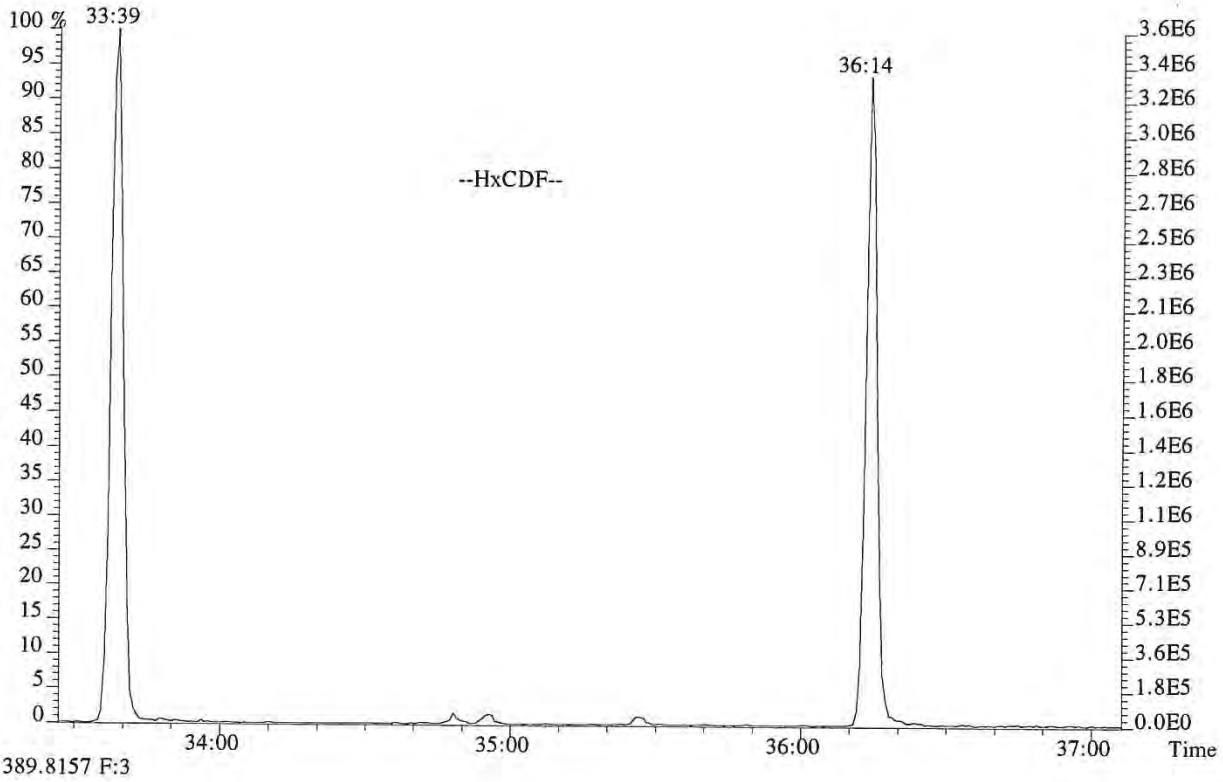


355.8546 F:2

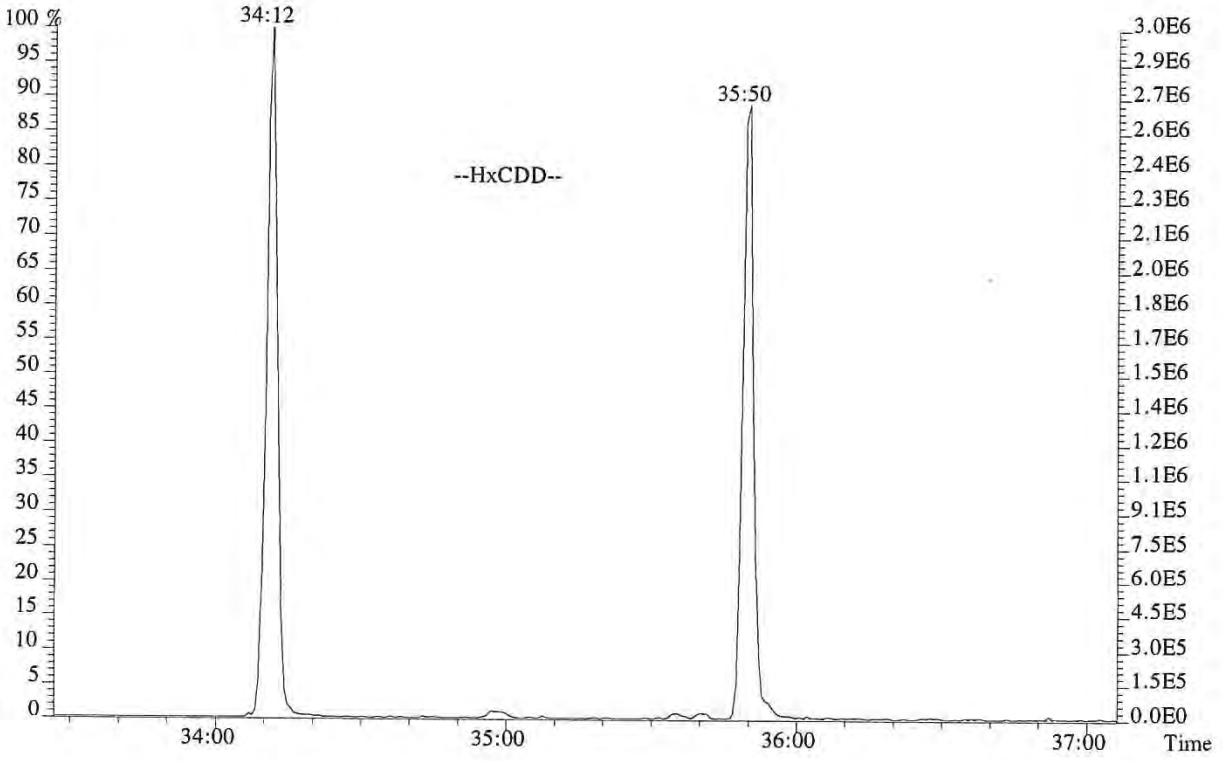


059490

File:P616128 #1-330 Acq:19-DEC-2018 17:56:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
373.8208 F:3

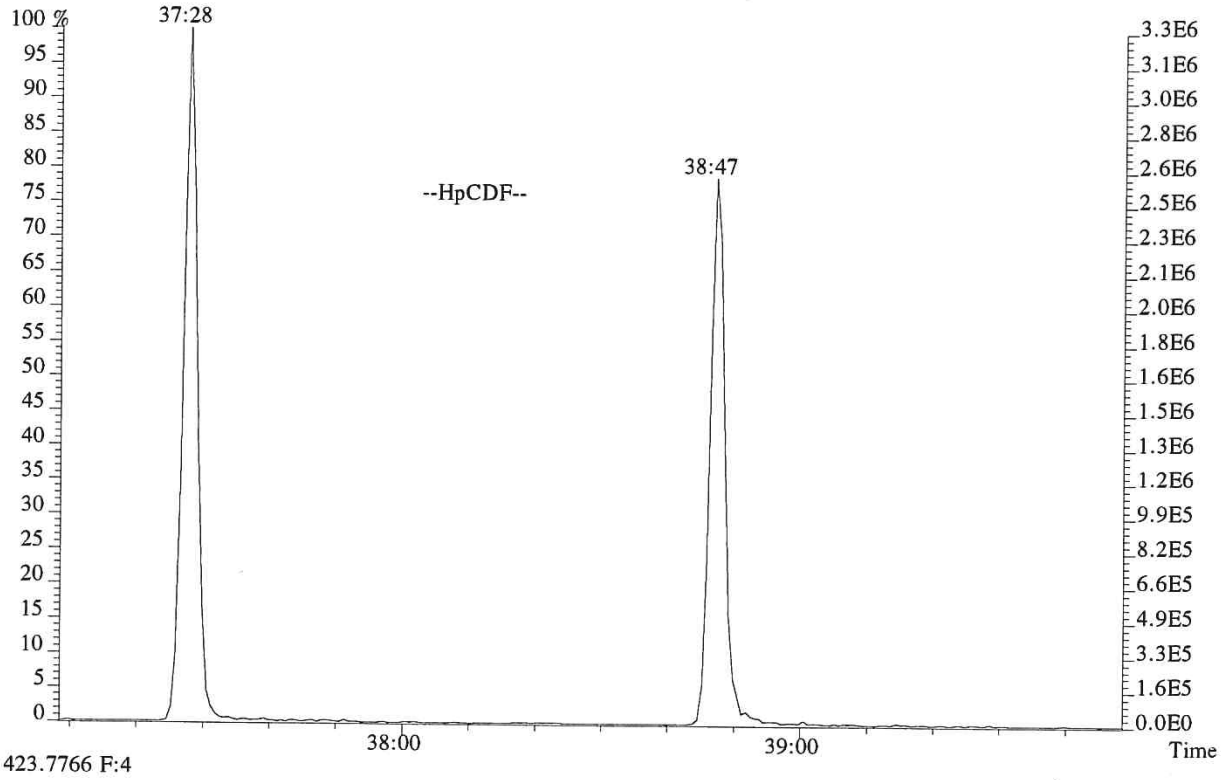


389.8157 F:3

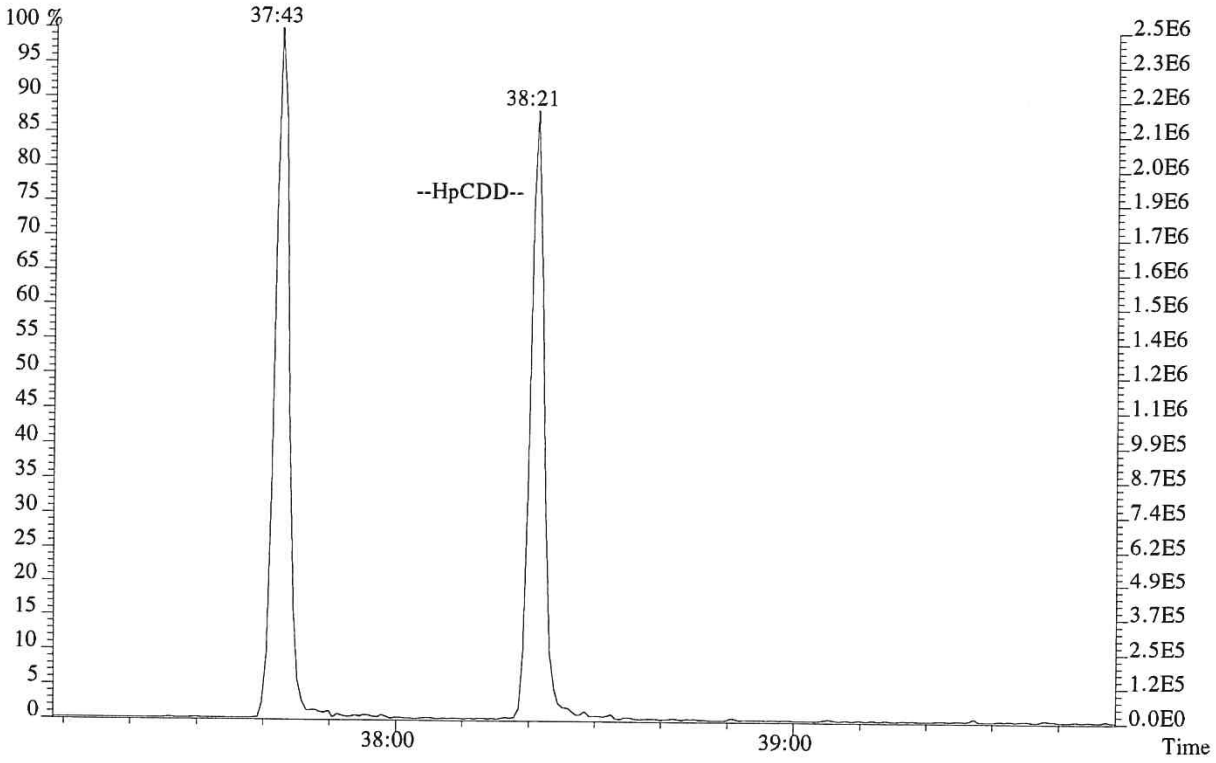


059491

File:P616128 #1-241 Acq:19-DEC-2018 17:56:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
407.7818 F:4



423.7766 F:4



059492

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P616127 Analysis Date: 19-DEC-18 Time: 16:59:59

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	9.8	7.8 - 12.9	-1.5
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	50	39 - 65	0.4
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	49	39 - 64	-2.2
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	49	39 - 64	-1.1
1,2,3,7,8,9-HxCDD	M+2/M+4	1.28	1.05-1.43	46	41 - 61	-7.6
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	48	43 - 58	-4.4
OCDD	M+2/M+4	0.90	0.76-1.02	98	79 - 126	-2.2
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.2	8.4 - 12.0	-8.4
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	46	41 - 60	-7.8
2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32-1.78	46	41 - 61	-7.3
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	45	45 - 56	-9.7
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	46	44 - 57	-7.7
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05-1.43	46	45 - 56	-8.6
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	47	44 - 57	-6.5
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	47	45 - 55	-5.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	47	43 - 58	-6.6
OCDF	M+2/M+4	0.90	0.76-1.02	88	63 - 159	-12.4

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P616127 Analysis Date: 19-DEC-18 Time: 16:59:59

LABELED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	94	82 - 121	-6.1
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	85	62 - 160	-15.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	106	85 - 117	6.4
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	107	85 - 118	6.7
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	96	72 - 138	-4.2
13C-OCDD	M+2/M+4	0.90	0.76-1.02	177	96 - 415	-11.4
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	89	71 - 140	-10.6
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	86	76 - 130	-13.7
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	84	77 - 130	-16.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	104	76 - 131	3.8
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	102	70 - 143	1.8
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	88	74 - 135	-12.3
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	96	73 - 137	-3.6
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	93	78 - 129	-7.4
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	81	77 - 129	-19.0
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				9.1	7.8 - 12.7	-9.2

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
194503

Run #7 Filename P616127 Samp: 1 Inj: 1 Acquired: 19-DEC-18 16:59:59
Processed: 20-DEC-18 15:56:34 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:19	6.407e+03	8.336e+03	0.77	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	5.271e+04	3.364e+04	1.57	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	4.795e+04	3.139e+04	1.53	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:49	4.213e+04	3.365e+04	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	4.450e+04	3.536e+04	1.26	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	3.912e+04	3.198e+04	1.22	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:13	3.287e+04	2.576e+04	1.28	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:28	3.446e+04	3.339e+04	1.03	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:48	2.529e+04	2.408e+04	1.05	yes	no	1.463
10	Unk	OCDF	41:03	3.748e+04	4.163e+04	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:15	4.910e+03	6.305e+03	0.78	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	3.198e+04	2.045e+04	1.56	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	2.747e+04	2.207e+04	1.24	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	2.756e+04	2.216e+04	1.24	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	2.818e+04	2.194e+04	1.28	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:21	2.216e+04	2.084e+04	1.06	yes	no	1.112
17	Unk	OCDD	40:52	3.089e+04	3.414e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:17	6.547e+04	8.348e+04	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:01	9.990e+04	6.211e+04	1.61	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:01	9.504e+04	6.004e+04	1.58	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	4.074e+04	7.775e+04	0.52	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:55	4.624e+04	8.763e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:26	4.094e+04	7.769e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:12	3.350e+04	6.424e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:28	2.955e+04	6.423e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:47	2.266e+04	4.965e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:13	4.751e+04	6.100e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:19	6.850e+04	4.390e+04	1.56	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	5.272e+04	4.189e+04	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:40	5.308e+04	4.180e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	4.164e+04	3.919e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:51	5.456e+04	6.040e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:31	5.216e+04	6.542e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:54	5.448e+04	4.397e+04	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:15	1.160e+04				no	1.086

$$\text{OCDD} = \frac{(3.089e+04 + 3.414e+04) \times 4000\ \text{pg} \times 1}{(5.456e+04 + 6.040e+04) \times \quad \text{g} \times \quad / 100 \times 1.157} =$$

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059495

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
194503

Run #7 Filename P616127 Samp: 1 Inj: 1 Acquired: 19-DEC-18 16:59:59
Processed: 20-DEC-18 15:56:34 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	9.70e+05	8.20e+02	1.2e+03	1.26e+06	1.43e+03	8.8e+02
2	1,2,3,7,8-PeCDF	9.36e+06	7.00e+02	1.3e+04	5.99e+06	1.77e+03	3.4e+03
3	2,3,4,7,8-PeCDF	9.09e+06	7.00e+02	1.3e+04	5.99e+06	1.77e+03	3.4e+03
4	1,2,3,4,7,8-HxCDF	8.99e+06	3.44e+02	2.6e+04	7.06e+06	3.76e+02	1.9e+04
5	1,2,3,6,7,8-HxCDF	9.42e+06	3.44e+02	2.7e+04	7.42e+06	3.76e+02	2.0e+04
6	2,3,4,6,7,8-HxCDF	8.43e+06	3.44e+02	2.5e+04	6.88e+06	3.76e+02	1.8e+04
7	1,2,3,7,8,9-HxCDF	6.88e+06	3.44e+02	2.0e+04	5.50e+06	3.76e+02	1.5e+04
8	1,2,3,4,6,7,8-HpCDF	7.48e+06	4.36e+03	1.7e+03	7.41e+06	2.62e+03	2.8e+03
9	1,2,3,4,7,8,9-HpCDF	5.43e+06	4.36e+03	1.2e+03	5.09e+06	2.62e+03	1.9e+03
10	OCDF	7.15e+06	5.08e+02	1.4e+04	8.03e+06	1.88e+03	4.3e+03
11	2,3,7,8-TCDD	8.03e+05	2.53e+03	3.2e+02	1.03e+06	3.64e+02	2.8e+03
12	1,2,3,7,8-PeCDD	6.24e+06	1.25e+03	5.0e+03	3.94e+06	3.88e+02	1.0e+04
13	1,2,3,4,7,8-HxCDD	6.20e+06	3.64e+02	1.7e+04	4.91e+06	5.08e+02	9.7e+03
14	1,2,3,6,7,8-HxCDD	5.94e+06	3.64e+02	1.6e+04	4.73e+06	5.08e+02	9.3e+03
15	1,2,3,7,8,9-HxCDD	6.12e+06	3.64e+02	1.7e+04	4.78e+06	5.08e+02	9.4e+03
16	1,2,3,4,6,7,8-HpCDD	4.90e+06	8.32e+02	5.9e+03	4.72e+06	3.76e+02	1.3e+04
17	OCDD	5.90e+06	8.36e+02	7.1e+03	6.57e+06	1.26e+03	5.2e+03
18	13C-2,3,7,8-TCDF	1.01e+07	8.34e+03	1.2e+03	1.28e+07	6.63e+03	1.9e+03
19	13C-1,2,3,7,8-PeCDF	1.82e+07	1.44e+03	1.3e+04	1.12e+07	1.05e+03	1.1e+04
20	13C-2,3,4,7,8-PeCDF	1.82e+07	1.44e+03	1.3e+04	1.16e+07	1.05e+03	1.1e+04
21	13C-1,2,3,4,7,8-HxCDF	8.66e+06	1.04e+03	8.3e+03	1.64e+07	9.68e+02	1.7e+04
22	13C-1,2,3,6,7,8-HxCDF	9.77e+06	1.04e+03	9.4e+03	1.85e+07	9.68e+02	1.9e+04
23	13C-2,3,4,6,7,8-HxCDF	8.78e+06	1.04e+03	8.4e+03	1.67e+07	9.68e+02	1.7e+04
24	13C-1,2,3,7,8,9-HxCDF	7.09e+06	1.04e+03	6.8e+03	1.35e+07	9.68e+02	1.4e+04
25	13C-1,2,3,4,6,7,8-HpCDF	6.45e+06	3.43e+03	1.9e+03	1.41e+07	2.55e+03	5.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.95e+06	3.43e+03	1.4e+03	1.07e+07	2.55e+03	4.2e+03
27	13C-2,3,7,8-TCDD	8.13e+06	9.06e+03	9.0e+02	1.04e+07	2.34e+03	4.4e+03
28	13C-1,2,3,7,8-PeCDD	1.29e+07	9.40e+02	1.4e+04	8.21e+06	1.04e+03	7.9e+03
29	13C-1,2,3,4,7,8-HxCDD	1.18e+07	1.14e+03	1.0e+04	9.26e+06	9.12e+02	1.0e+04
30	13C-1,2,3,6,7,8-HxCDD	1.14e+07	1.14e+03	1.0e+04	8.85e+06	9.12e+02	9.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	9.35e+06	1.99e+03	4.7e+03	8.88e+06	1.01e+03	8.8e+03
32	13C-OCDD	1.05e+07	9.84e+02	1.1e+04	1.17e+07	4.48e+02	2.6e+04
33	13C-1,2,3,4-TCDD	8.44e+06	9.06e+03	9.3e+02	1.06e+07	2.34e+03	4.5e+03
34	13C-1,2,3,7,8,9-HxCDD	1.19e+07	1.14e+03	1.0e+04	9.58e+06	9.12e+02	1.1e+04
35	37Cl-2,3,7,8-TCDD	1.95e+06	1.64e+03	1.2e+03			

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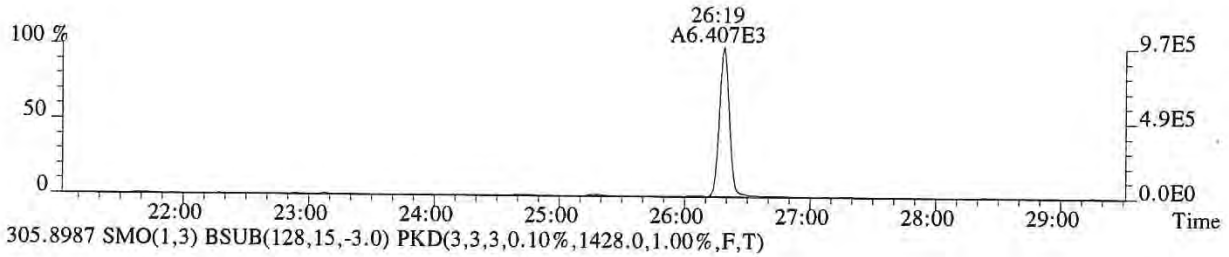
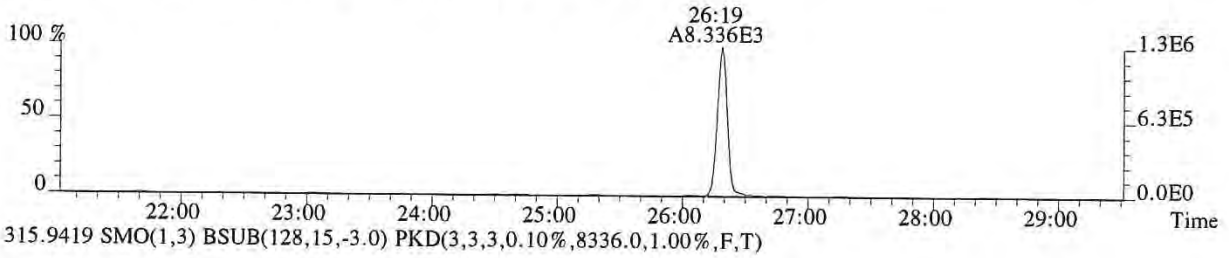
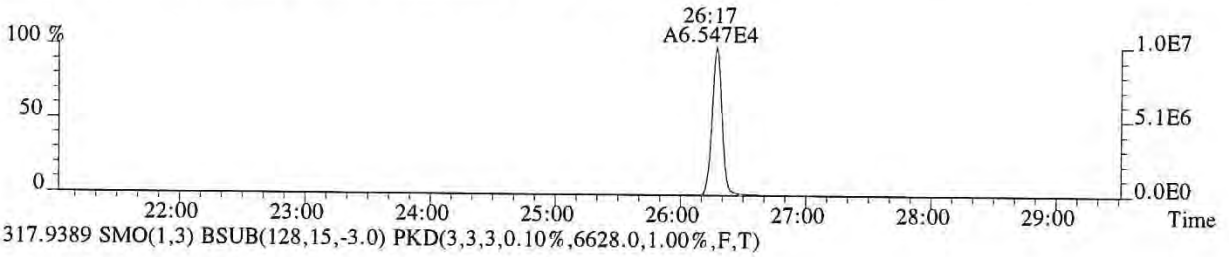
File:P616127 #1-602 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,820.0,1.00%,F,T)



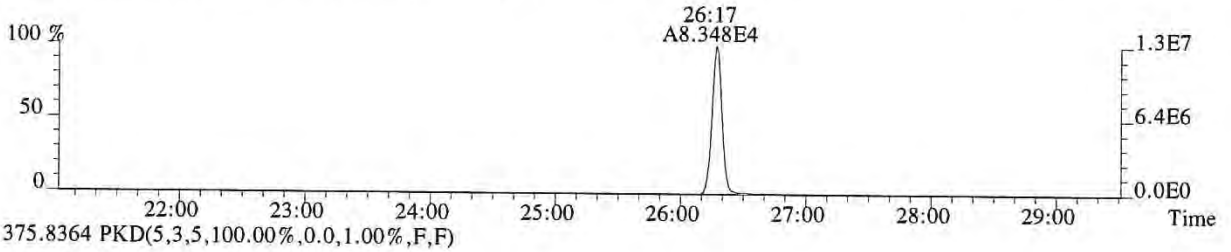
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1428.0,1.00%,F,T)



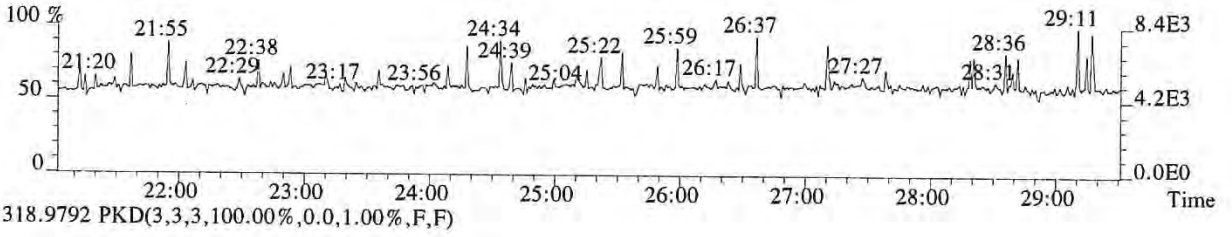
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8336.0,1.00%,F,T)



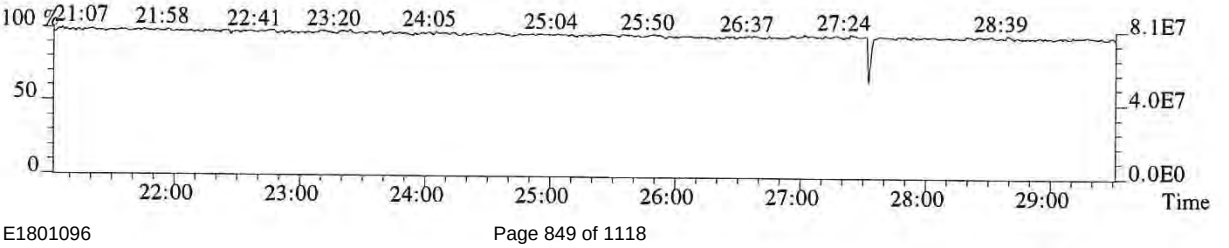
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6628.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

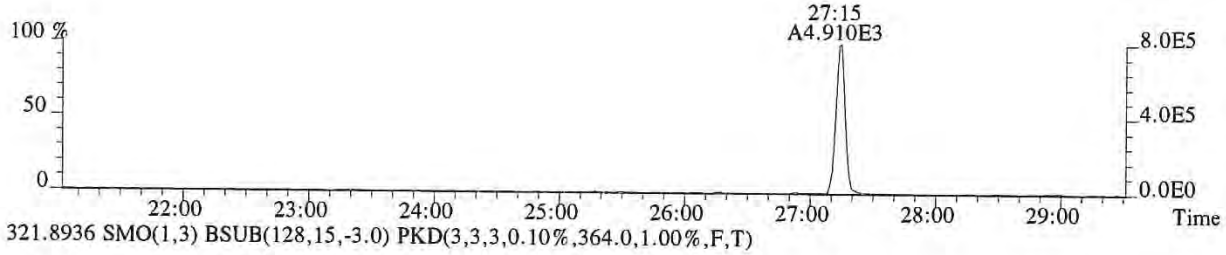


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

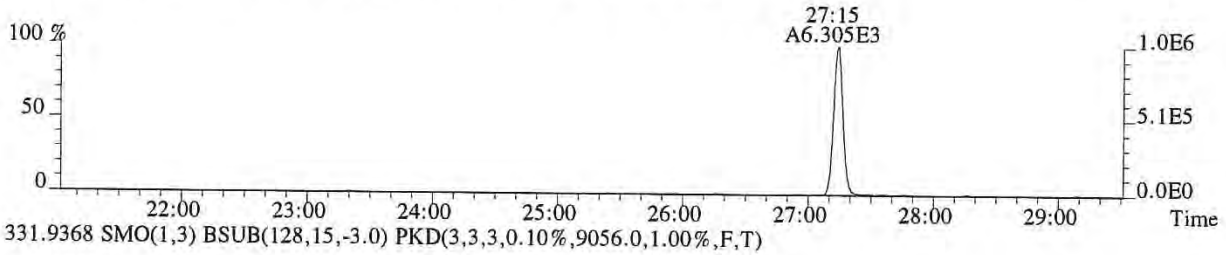


059497

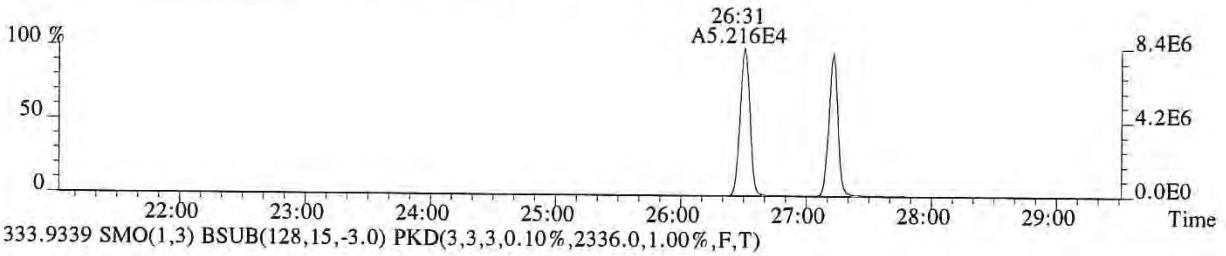
File:P616127 #1-602 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2532.0,1.00%,F,T)



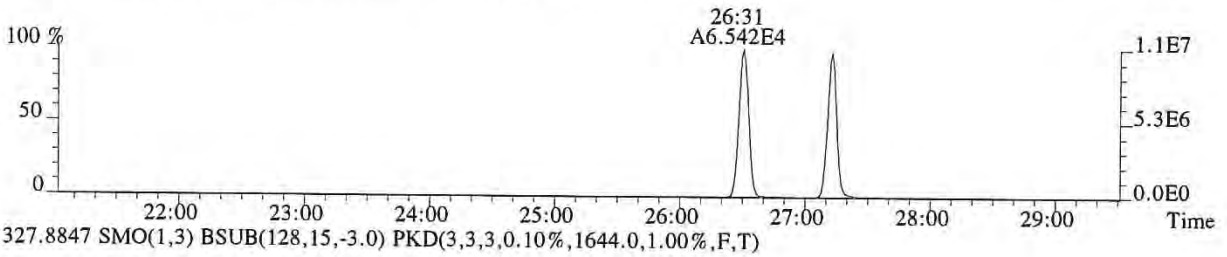
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,364.0,1.00%,F,T)



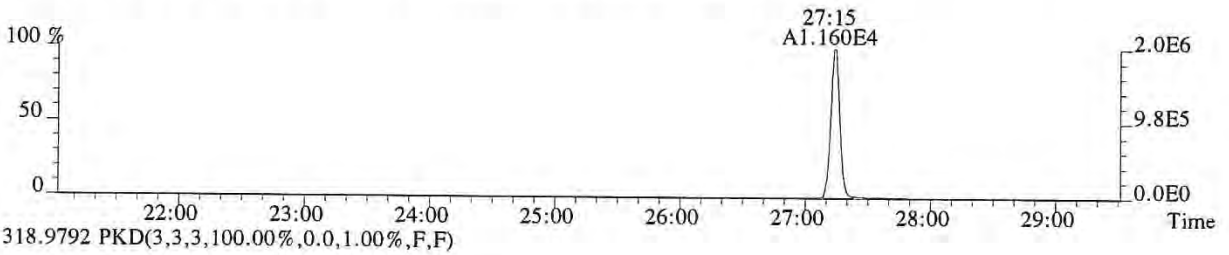
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9056.0,1.00%,F,T)



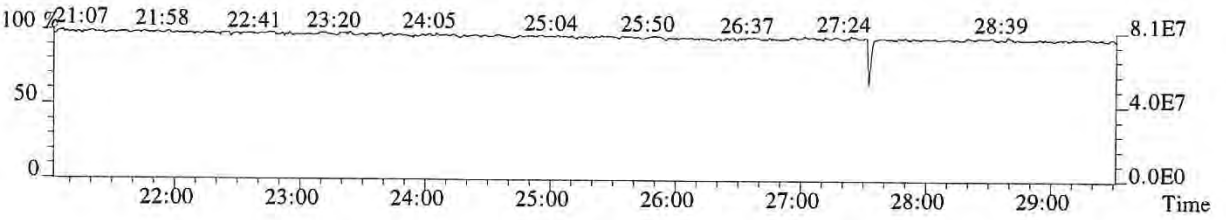
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2336.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1644.0,1.00%,F,T)

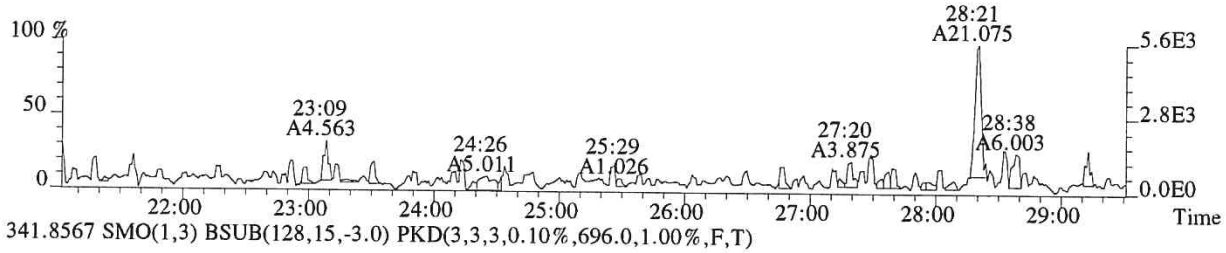


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

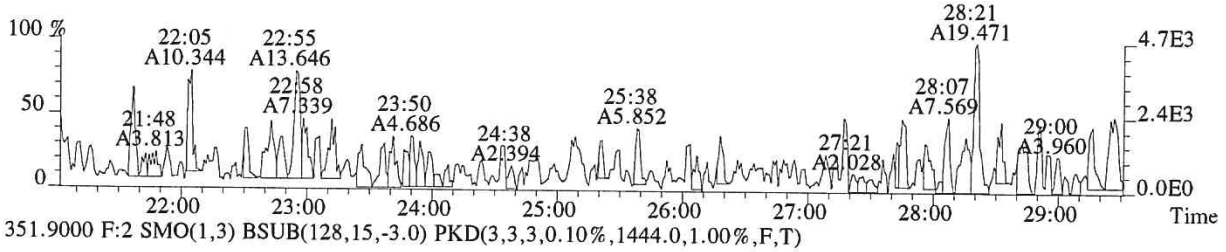


059498

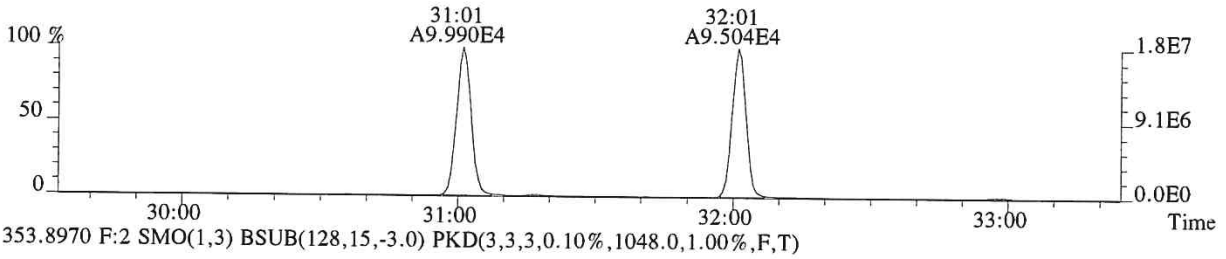
File:P616127 #1-602 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,468.0,1.00%,F,T)



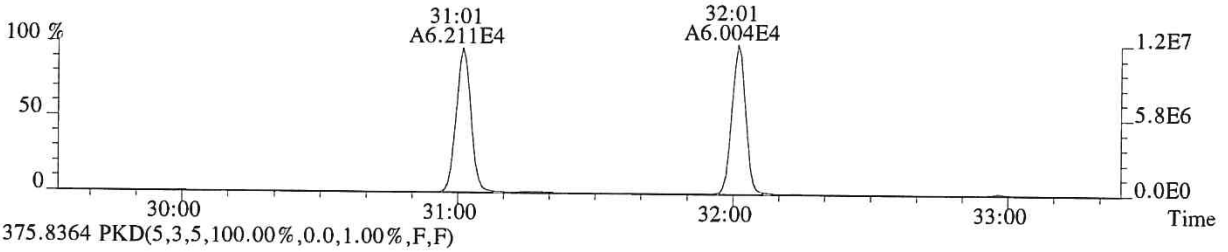
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,696.0,1.00%,F,T)



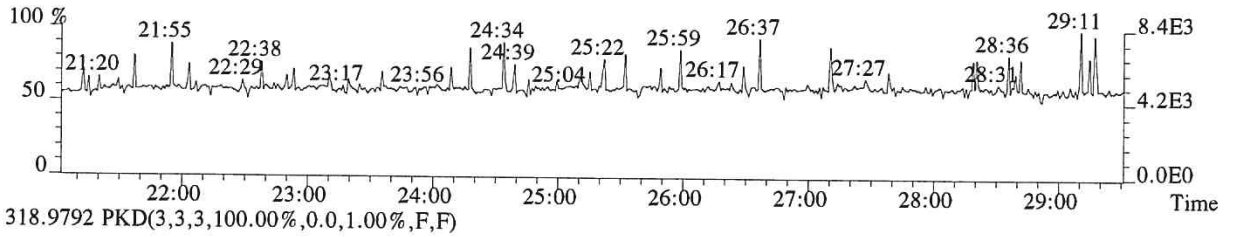
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1444.0,1.00%,F,T)



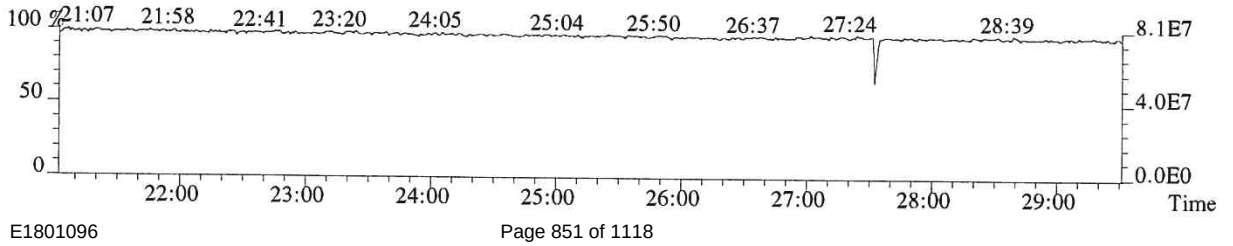
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

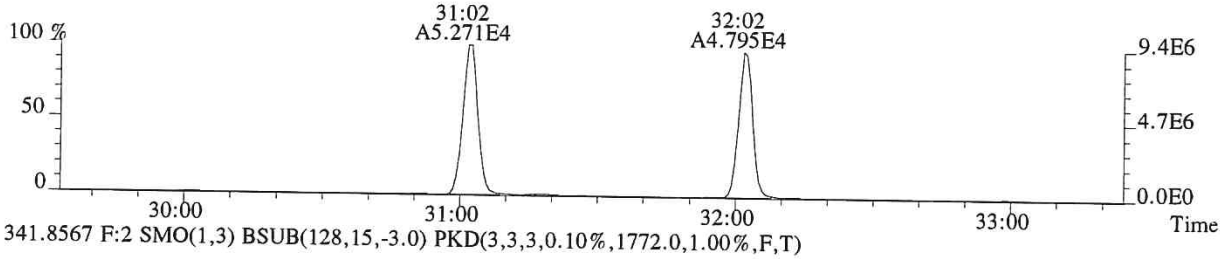


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

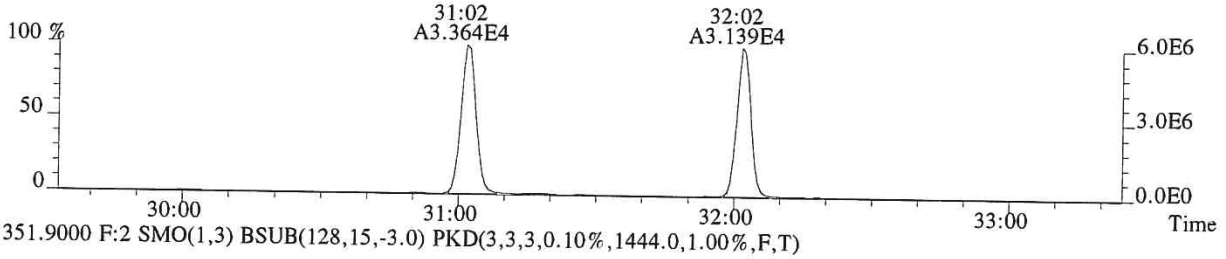


059499

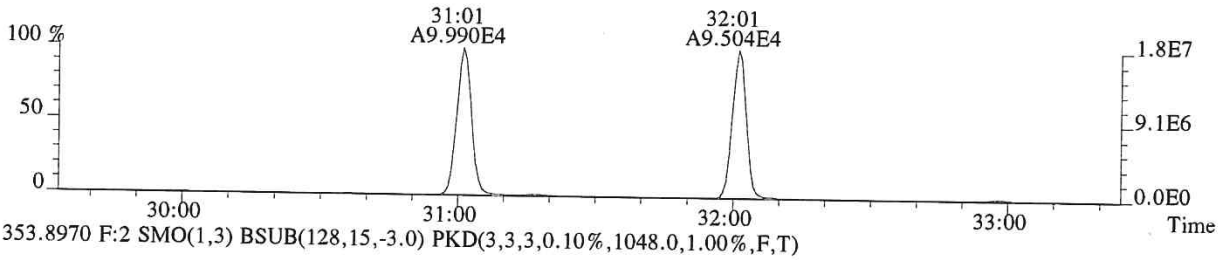
File:P616127 #1-348 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,700.0,1.00%,F,T)



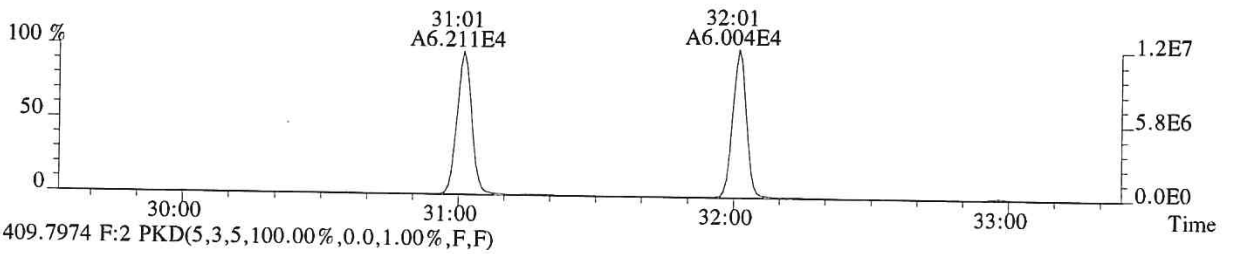
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1772.0,1.00%,F,T)



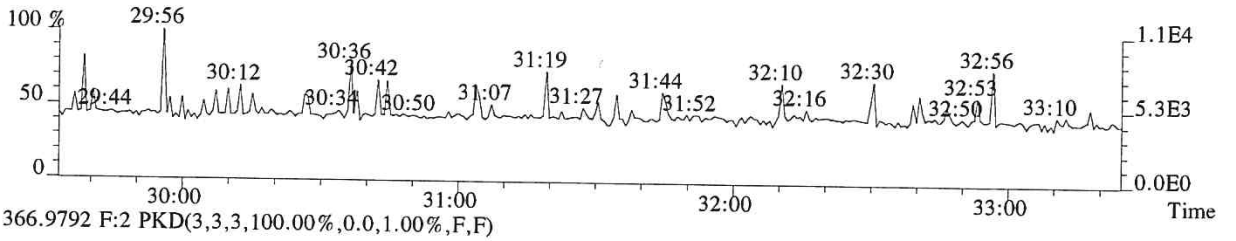
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1444.0,1.00%,F,T)



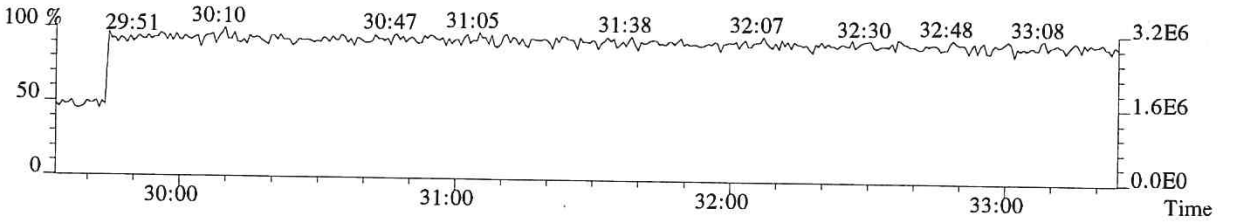
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,T)



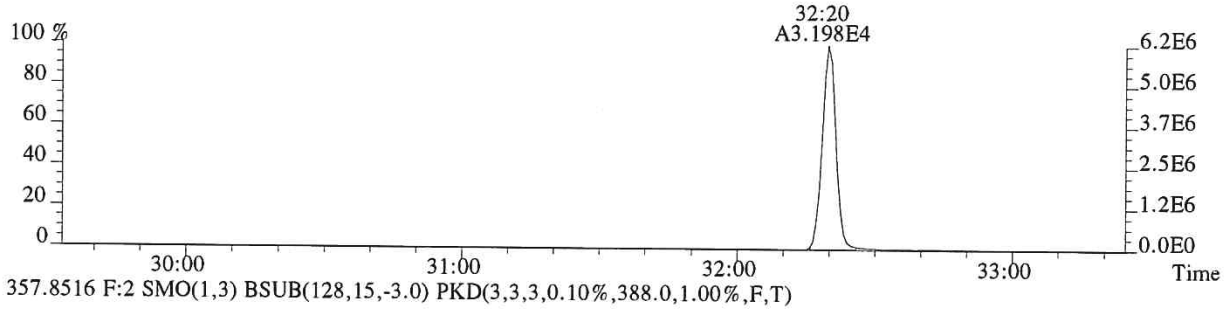
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



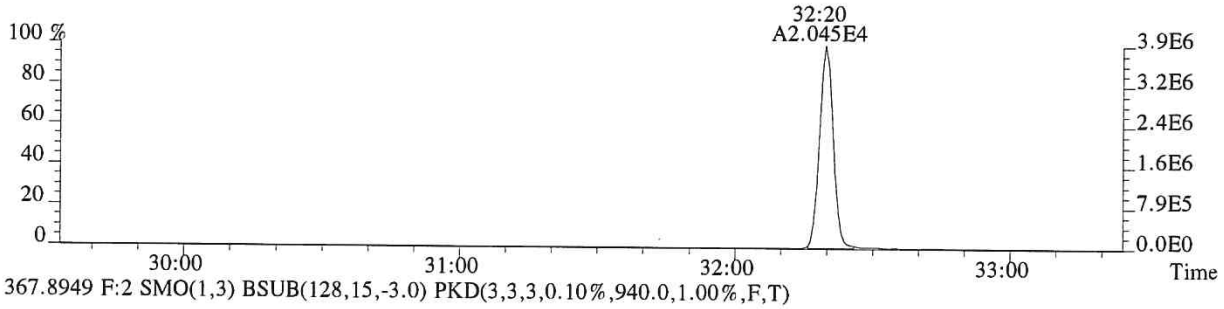
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



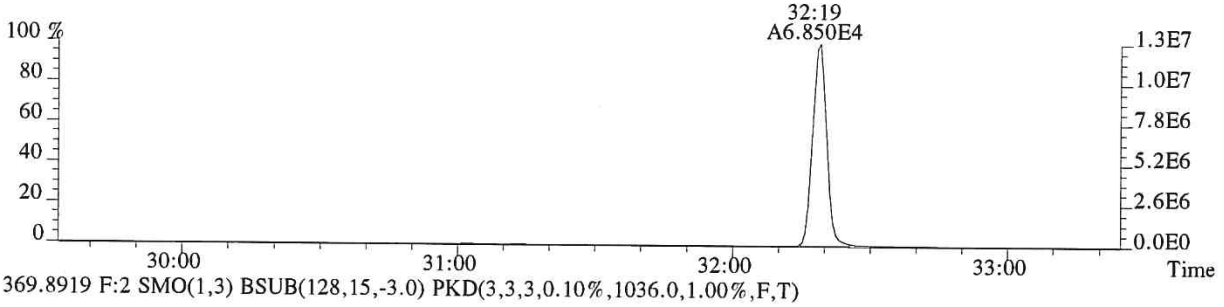
File:P616127 #1-348 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1252.0,1.00%,F,T)



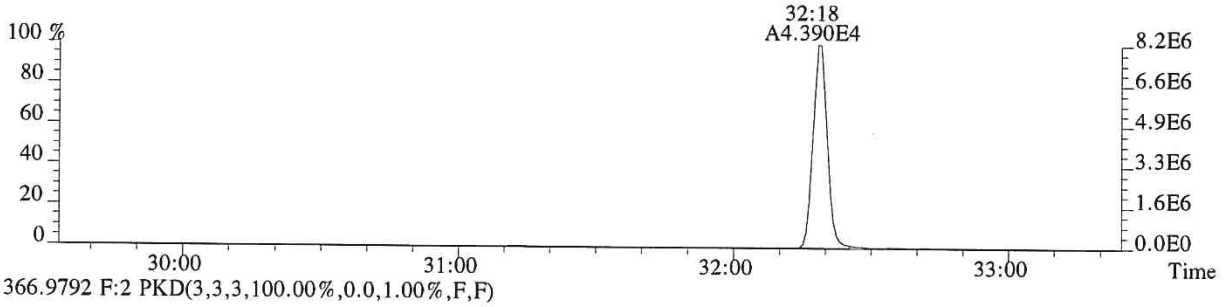
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,388.0,1.00%,F,T)



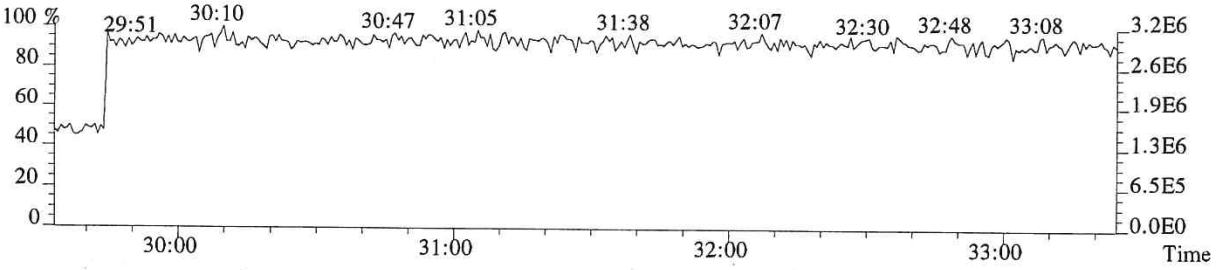
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,940.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1036.0,1.00%,F,T)

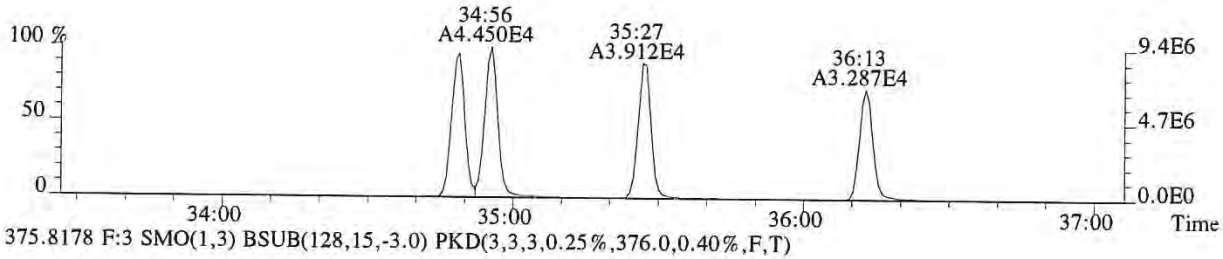


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

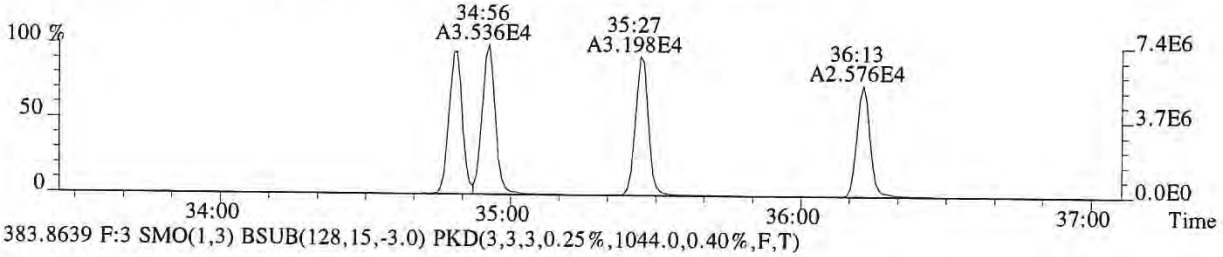


059501

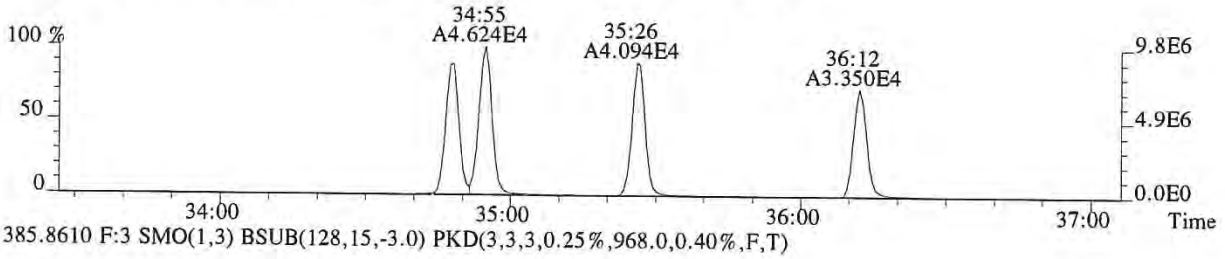
File:P616127 #1-330 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,344.0,0.40%,F,T)



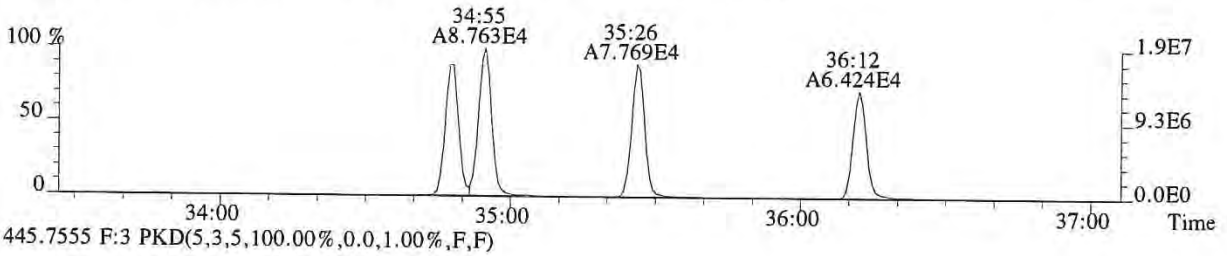
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,376.0,0.40%,F,T)



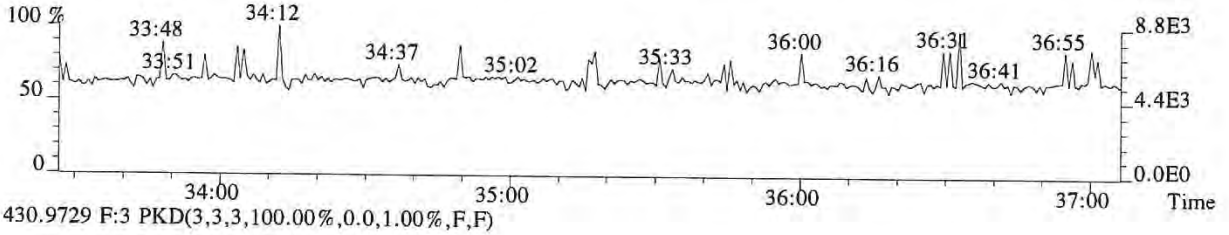
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1044.0,0.40%,F,T)



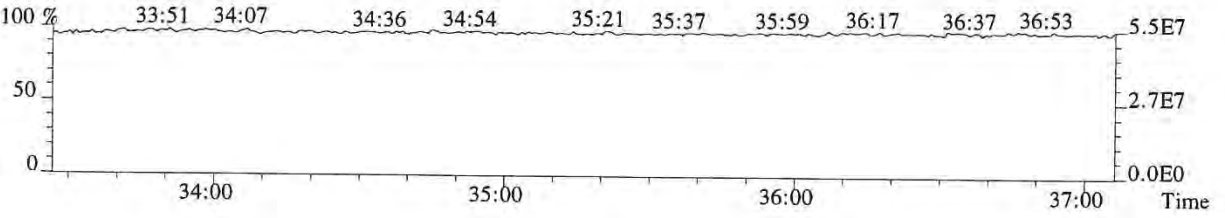
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,968.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

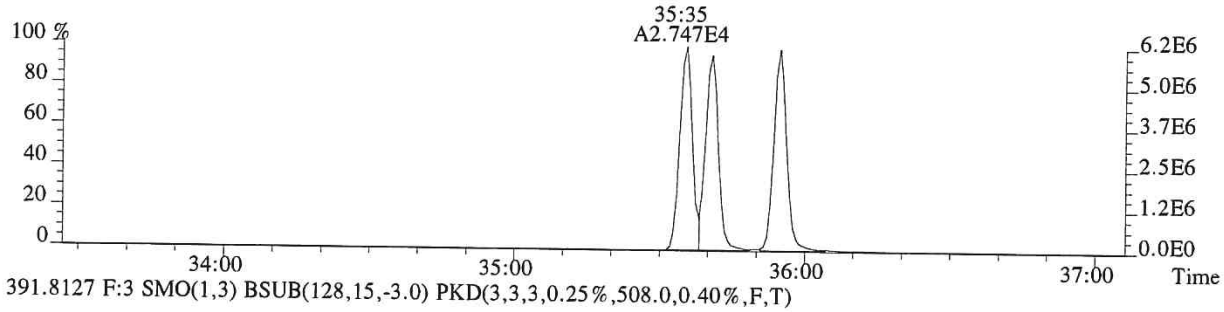


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

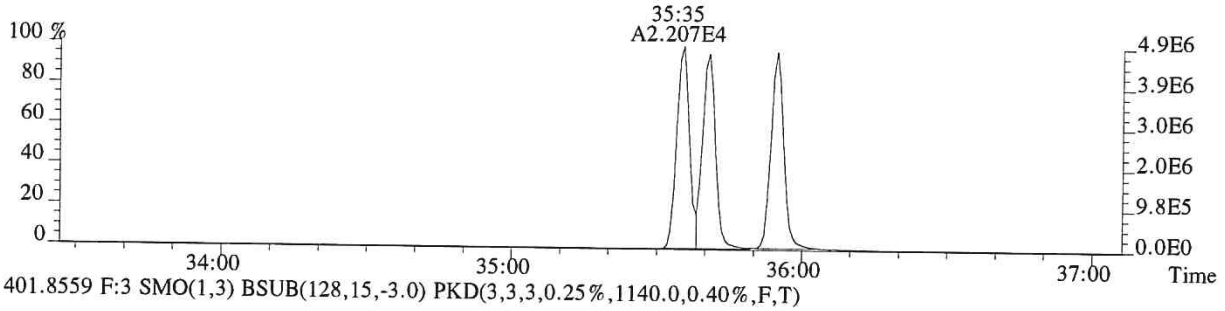


059502

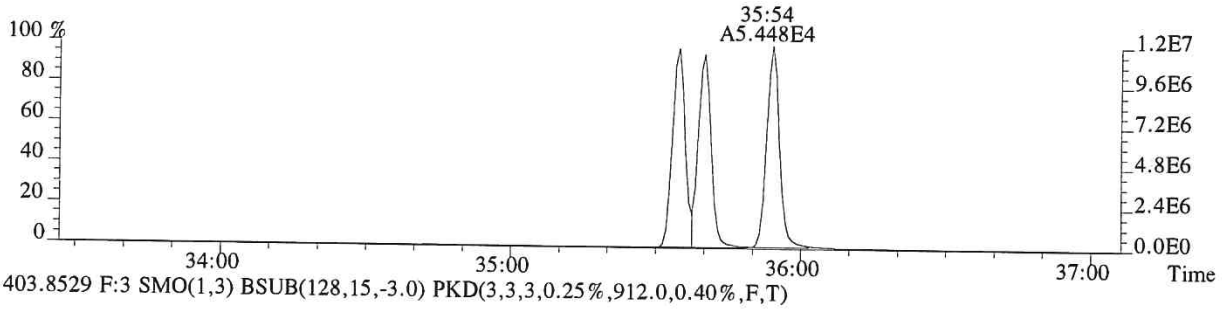
File:P616127 #1-330 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,364.0,0.40%,F,T)



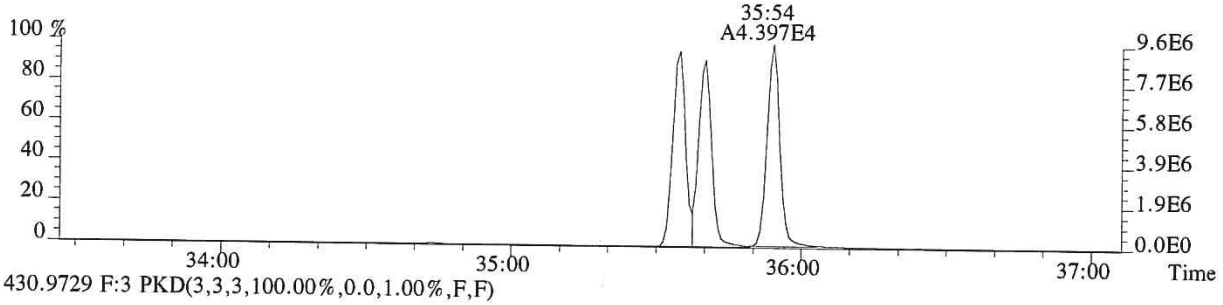
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,508.0,0.40%,F,T)



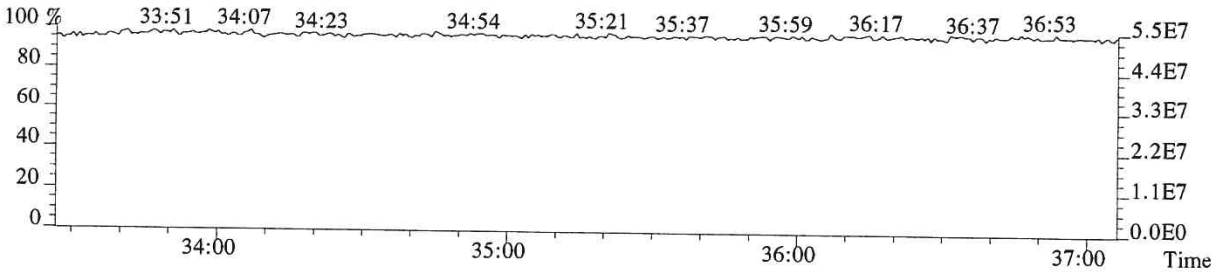
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1140.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,912.0,0.40%,F,T)

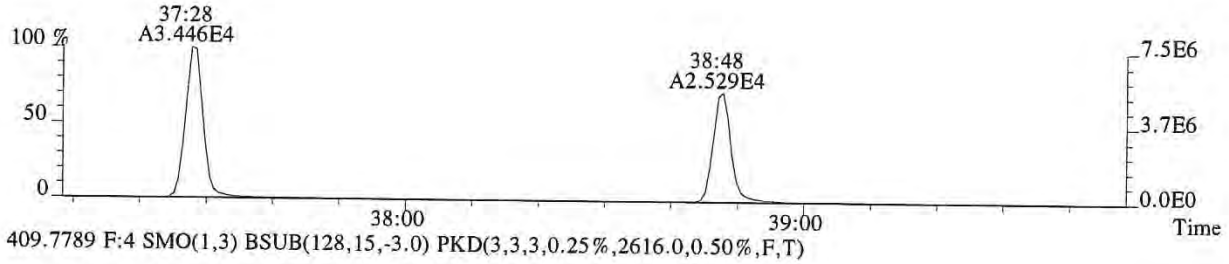


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

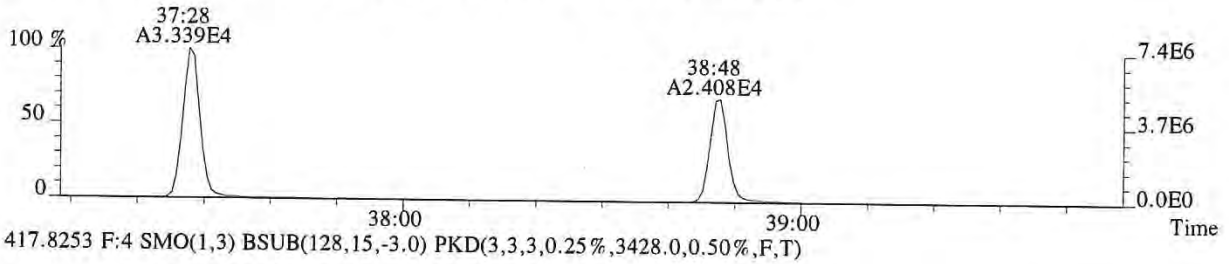


059503

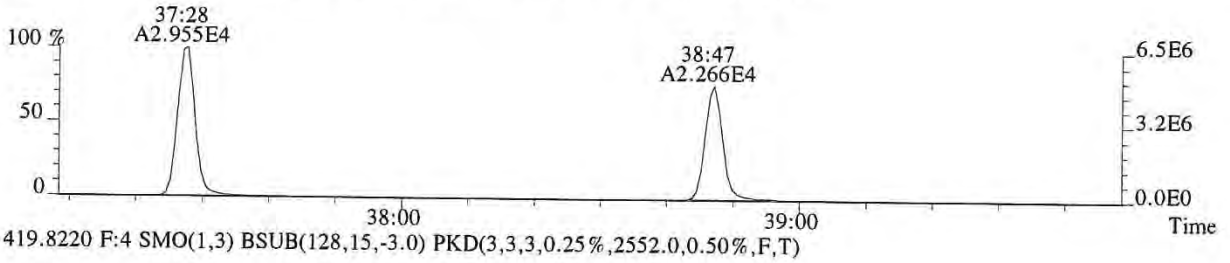
File:P616127 #1-241 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4364.0,0.50%,F,T)



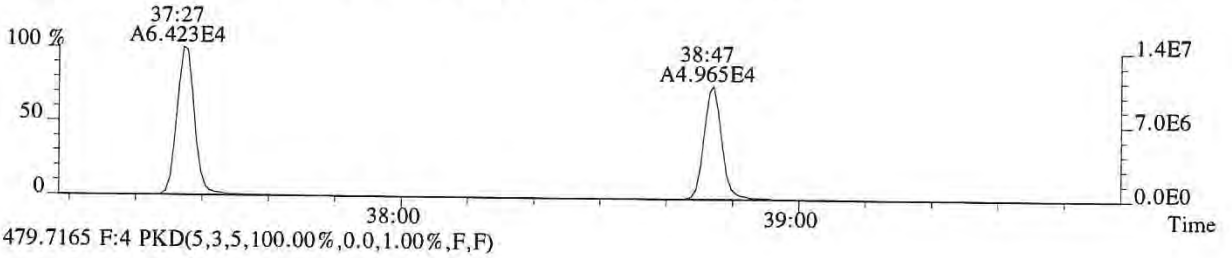
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2616.0,0.50%,F,T)



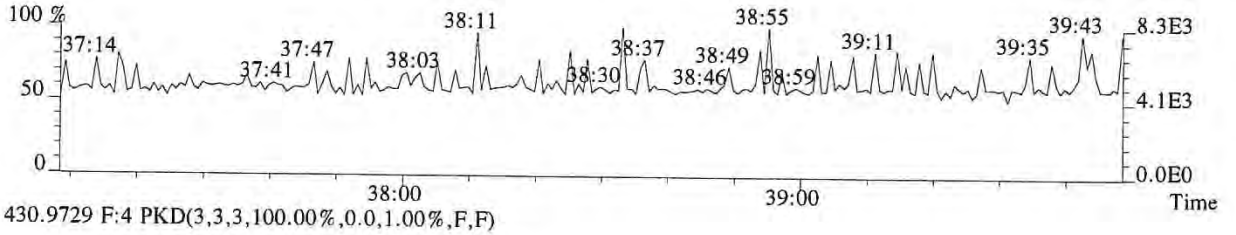
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3428.0,0.50%,F,T)



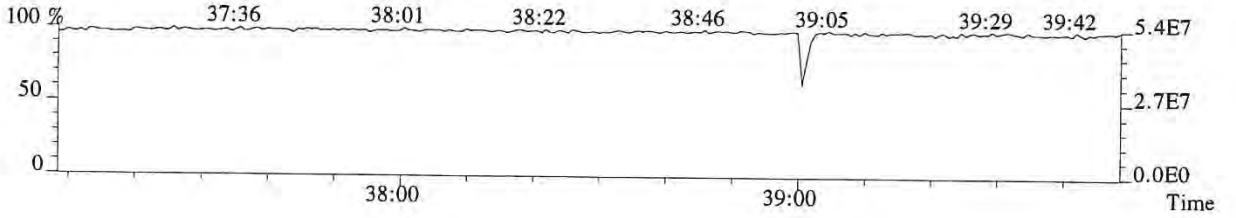
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2552.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

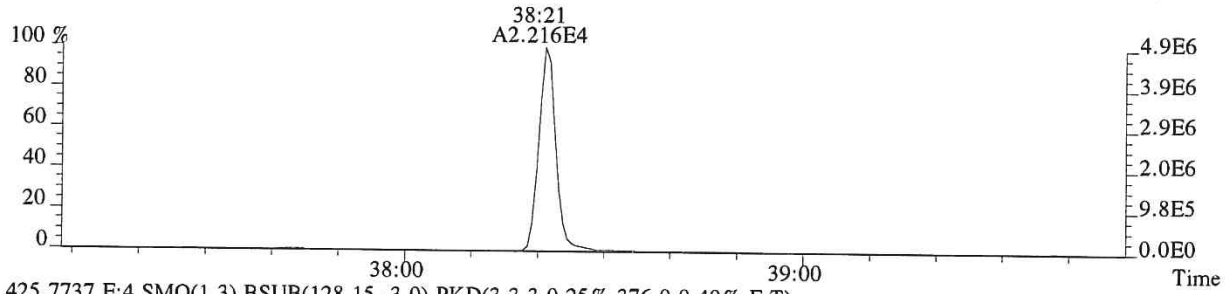


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

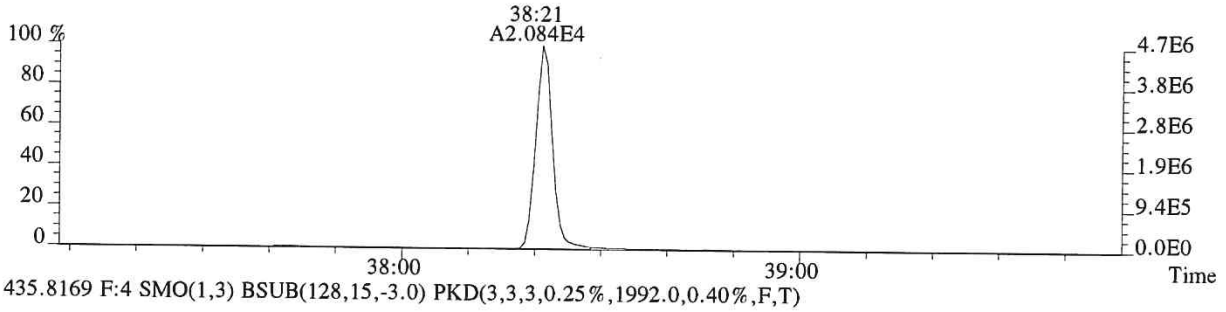


059504

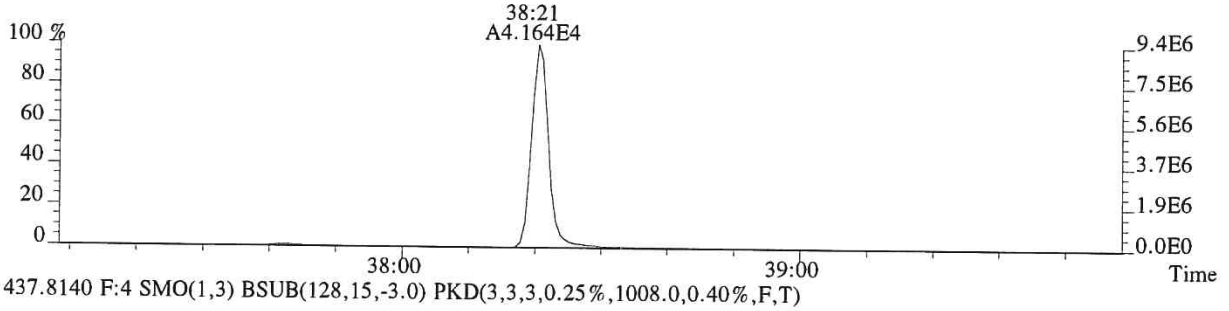
File:P616127 #1-241 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,832.0,0.40%,F,T)



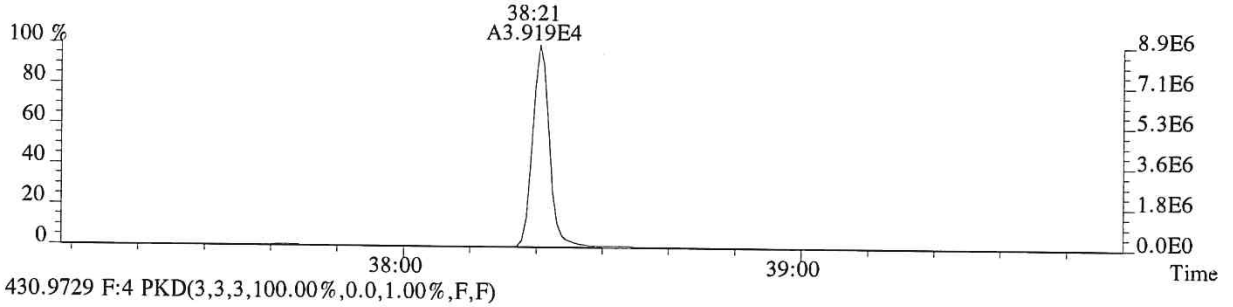
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,376.0,0.40%,F,T)



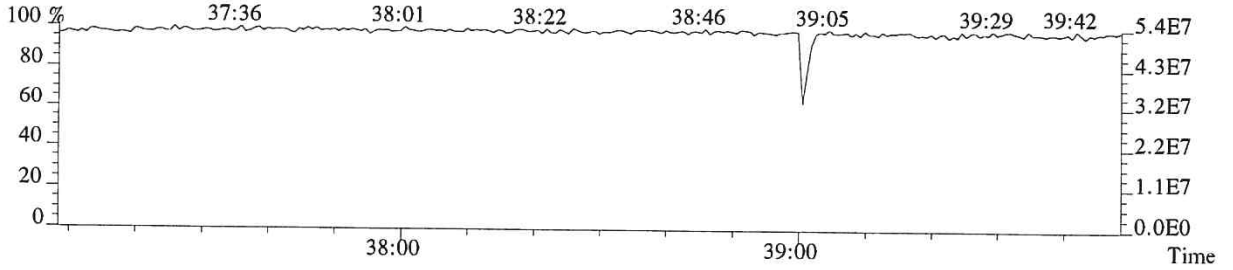
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1992.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1008.0,0.40%,F,T)

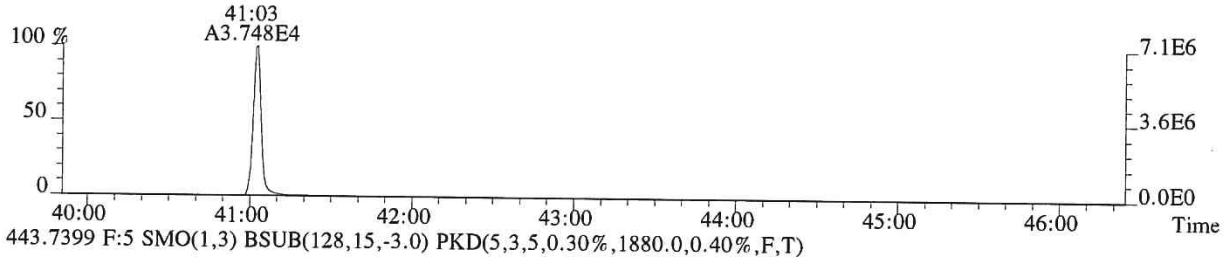


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

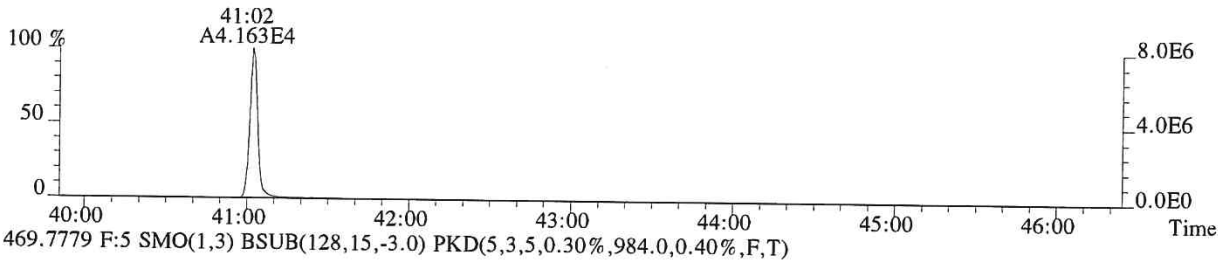


059505

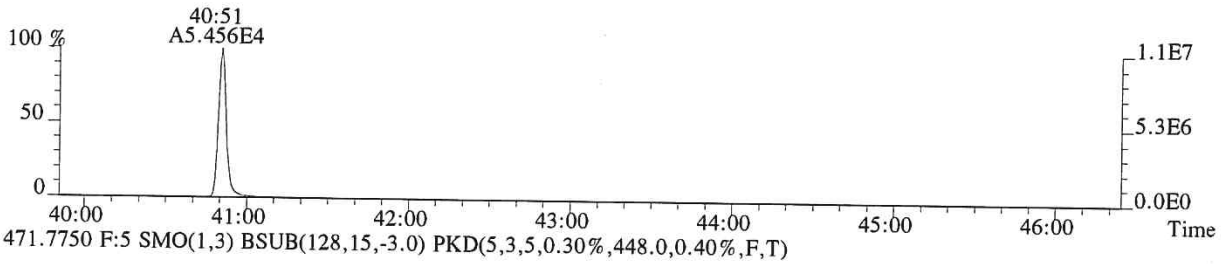
File:P616127 #1-591 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



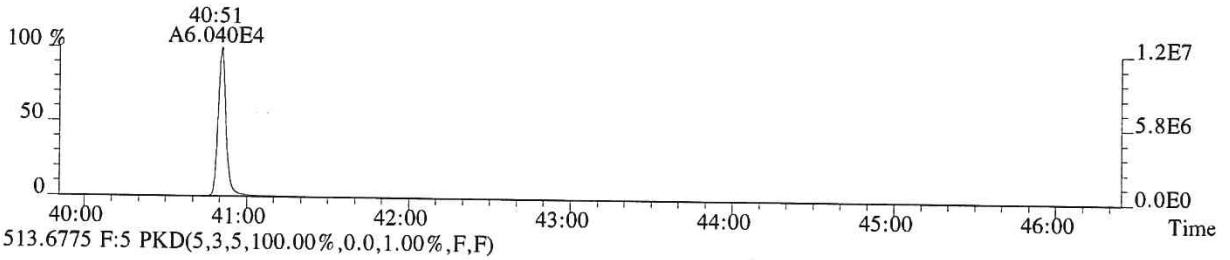
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1880.0,0.40%,F,T)



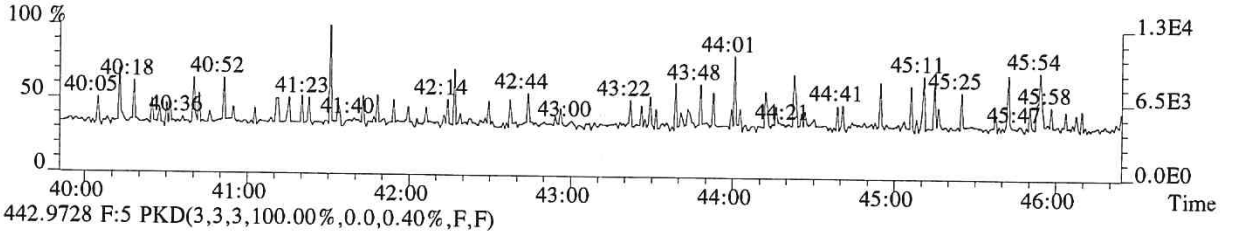
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,984.0,0.40%,F,T)



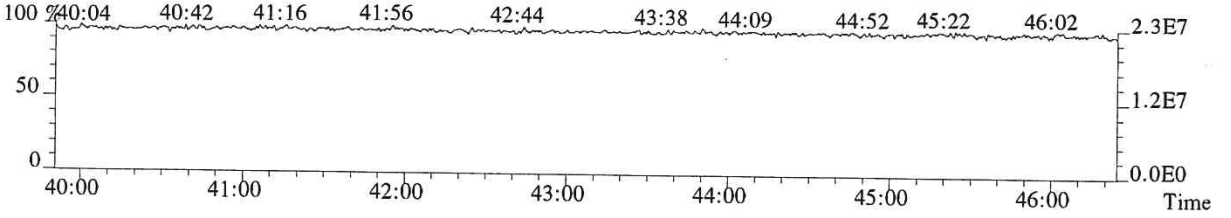
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,448.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

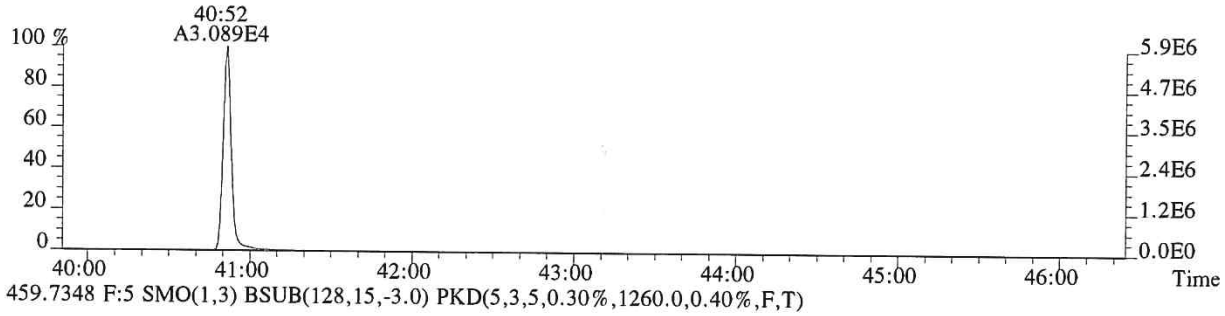


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

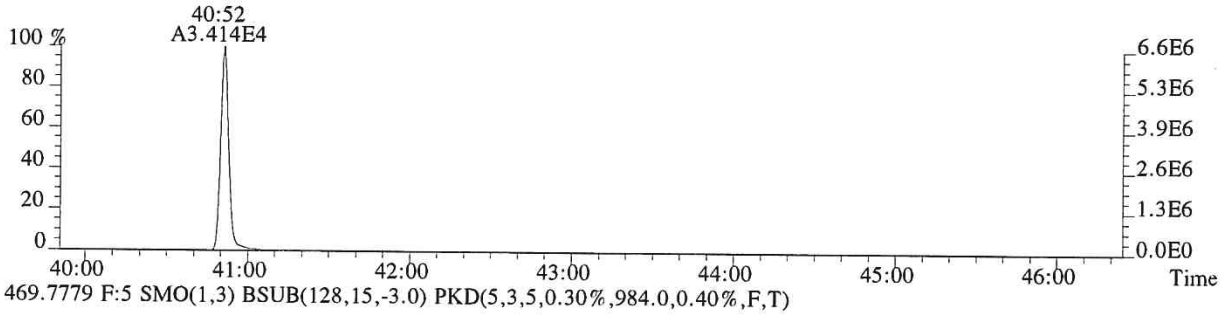


059506

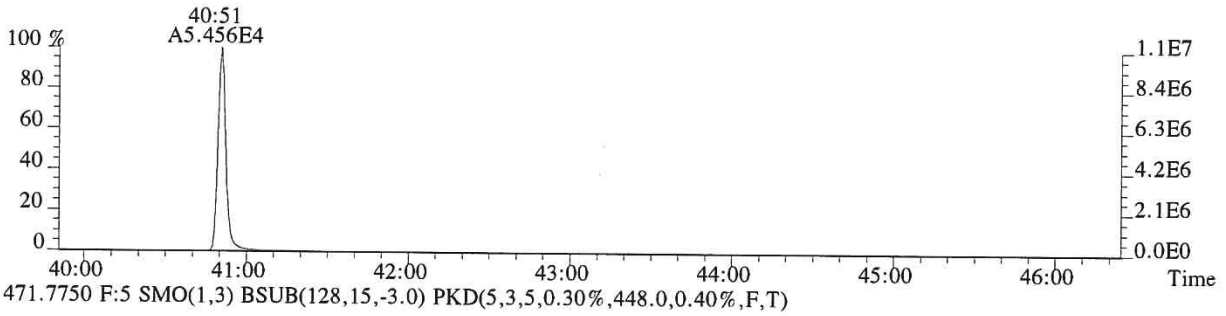
File:P616127 #1-591 Acq:19-DEC-2018 16:59:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,836.0,0.40%,F,T)



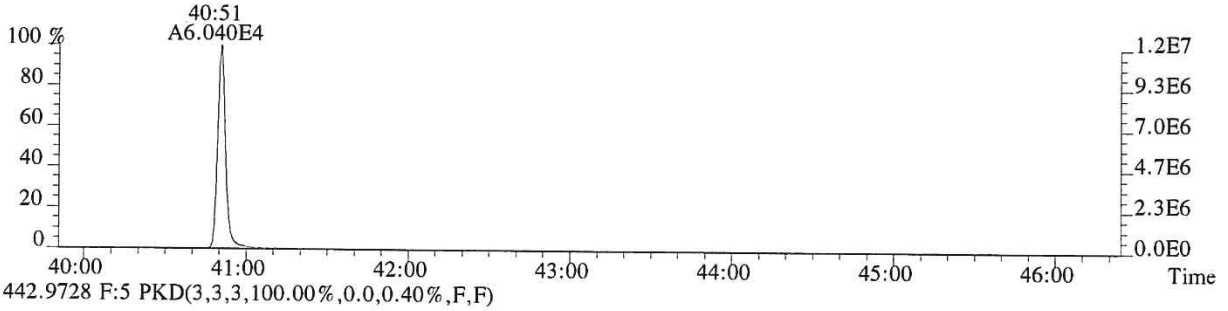
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1260.0,0.40%,F,T)



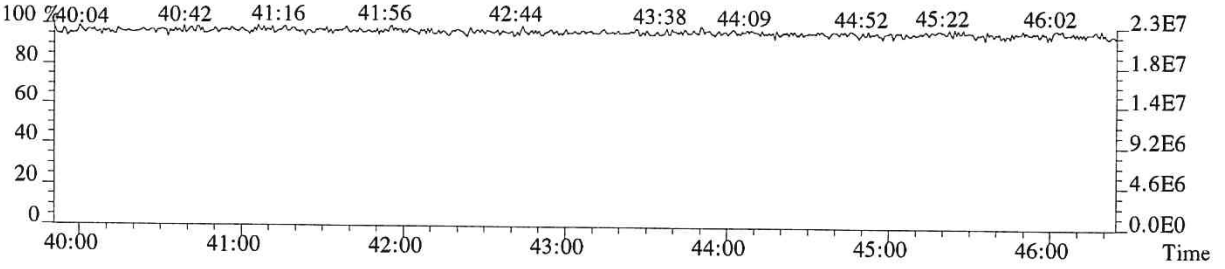
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,984.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,448.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059507

CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: P6161411

Date: 12/20/18

Circle one: (Beginning) / Ending

Method: (1613) / 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: LKL Second QC: LG

ccalqc.xls 07/17/12

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 09/25/18

Init. Calib.Times: 09/25/18

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P616142	20-DEC-18	13:54:53
194503	CS3	P616141	20-DEC-18	12:57:50
METHOD BLANK	EQ1800500-01	P616143	20-DEC-18	14:43:12
SL0068	E1801096-013	P616144	20-DEC-18	15:32:20
SL0069	E1801096-014	P616145	20-DEC-18	16:21:31
SL0070	E1801096-015	P616146	20-DEC-18	17:10:41
SL0233	E1801096-016	P616147	20-DEC-18	17:59:51
SL0234	E1801096-017	P616148	20-DEC-18	18:49:02
SL0235	E1801096-018	P616149	20-DEC-18	19:38:12
SL0236	E1801096-019	P616150	20-DEC-18	20:27:22
SL0237	E1801096-020	P616151	20-DEC-18	21:16:33

Sample List Report **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20181220A.SPL
Last Modified: Friday, December 21, 2018 08:30:36 Central Standard Time
Printed: Friday, December 21, 2018 08:33:30 Central Standard Time

Page Position (1, 1)

OPUS 5 NET. P616141 RES

	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/20/18	12:57	P616141	194503	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:2	JC	HRMS CHECK 12:52
2		13:54	P616142	192977	WINDOW DEFINE	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		14:43	P616143	EQ1800500-01	MB	EPA1613_ALS	Dioxin_ALS	Tray1:18		
4		15:32	P616144	E1801096-013	E1801096-013	EPA1613_ALS	Dioxin_ALS	Tray1:19		
5		16:21	P616145	E1801096-014	E1801096-014	EPA1613_ALS	Dioxin_ALS	Tray1:20		
6		17:10	P616146	E1801096-015	E1801096-015	EPA1613_ALS	Dioxin_ALS	Tray1:21		
7		17:59	P616147	E1801096-016	E1801096-016	EPA1613_ALS	Dioxin_ALS	Tray1:22		
8		18:49	P616148	E1801096-017	E1801096-017	EPA1613_ALS	Dioxin_ALS	Tray1:23		
9		19:38	P616149	E1801096-018	E1801096-018	EPA1613_ALS	Dioxin_ALS	Tray1:24		
10		20:27	P616150	E1801096-019	E1801096-019	EPA1613_ALS	Dioxin_ALS	Tray1:25		
11		21:16	P616151	E1801096-020	E1801096-020	EPA1613_ALS	Dioxin_ALS	Tray1:26		
12		22:05	P616152	194503	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:2		HRMS CHECK 00:49

LKL 12/24/18

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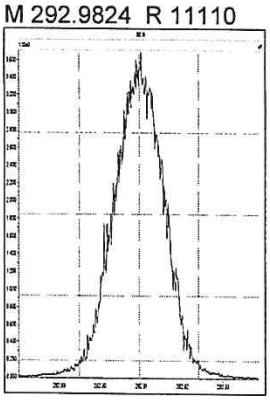

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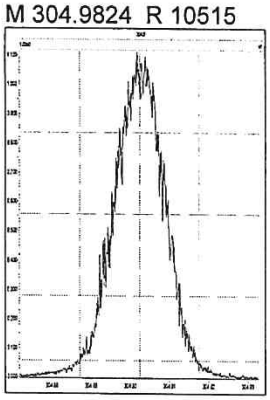

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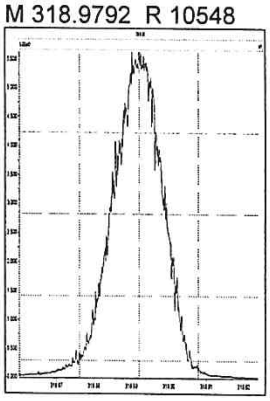

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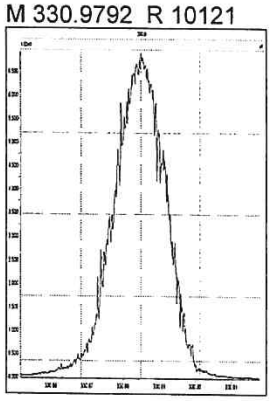

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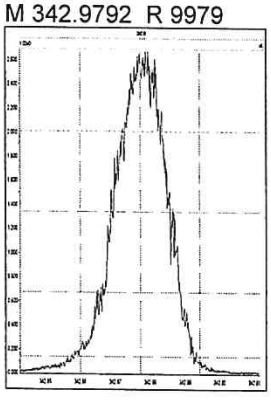

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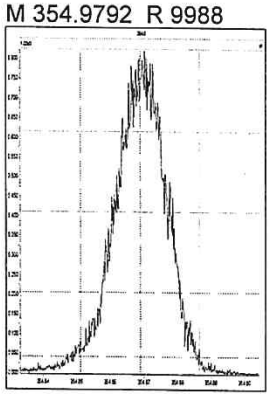

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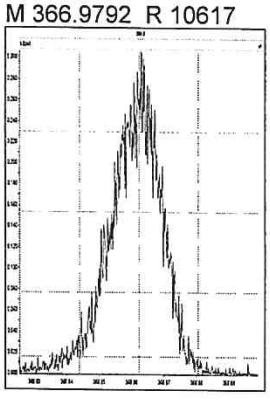

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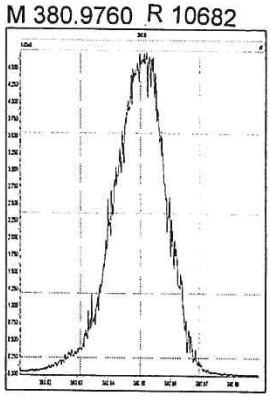

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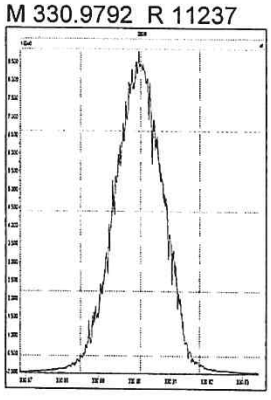

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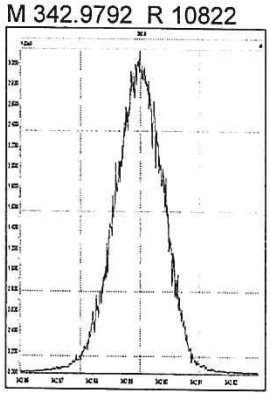

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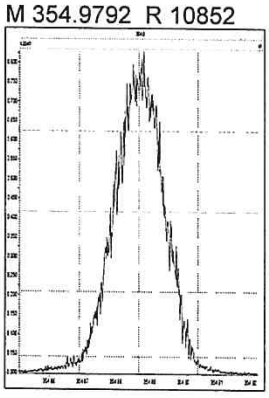

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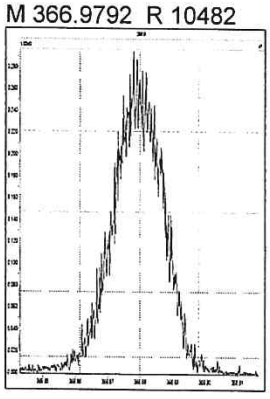

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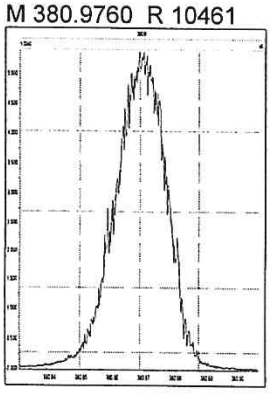

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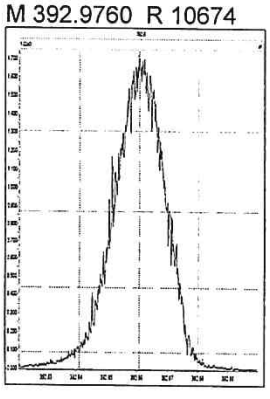

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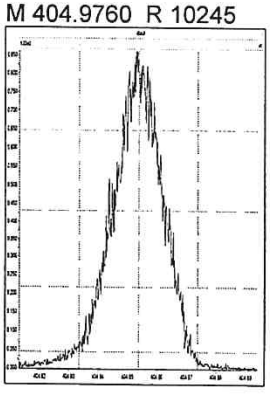

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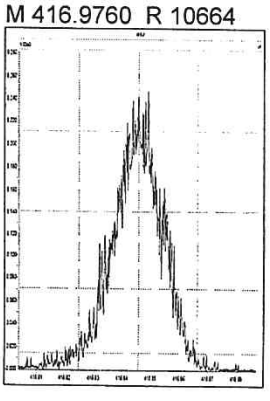

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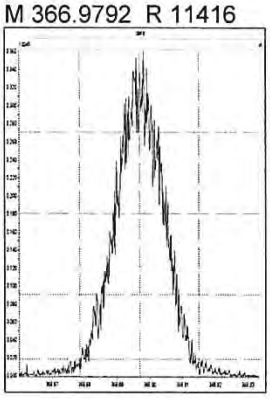

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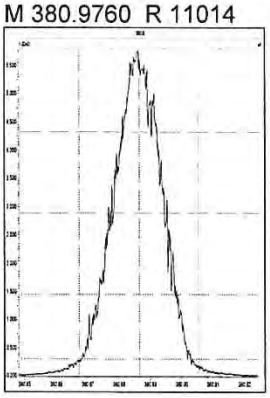

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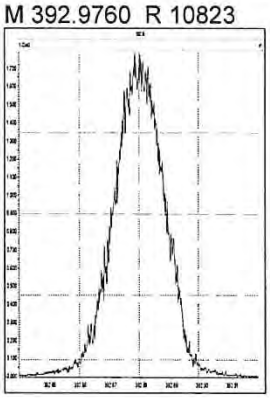

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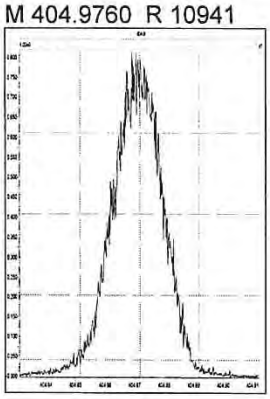

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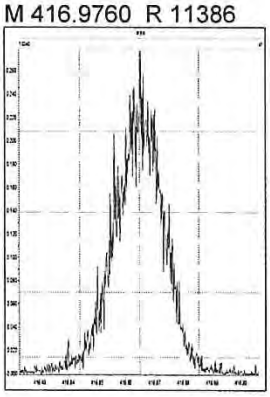

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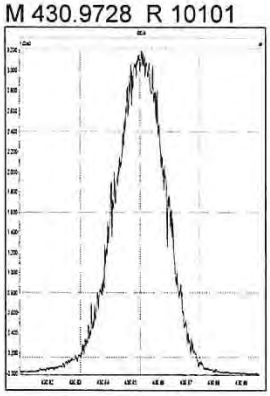

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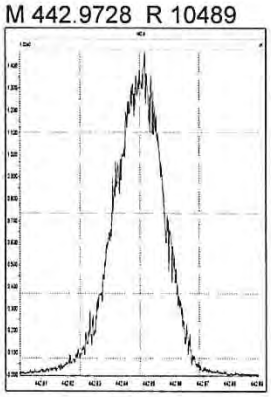

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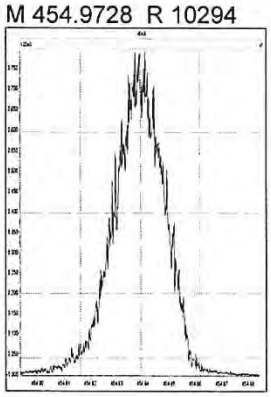

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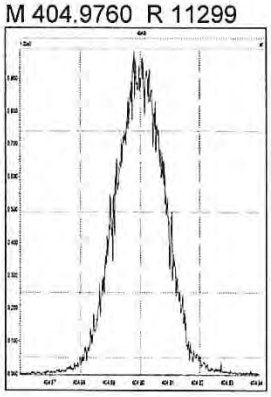

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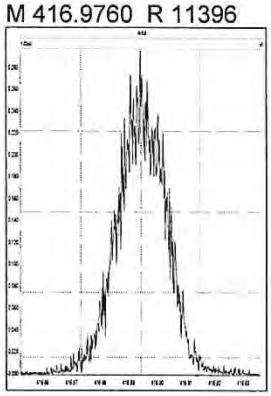

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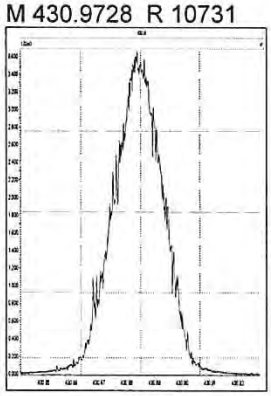

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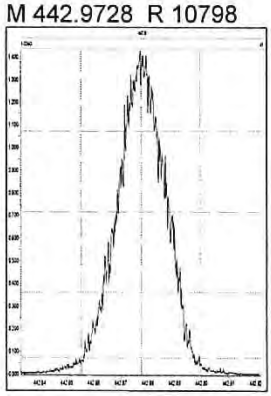

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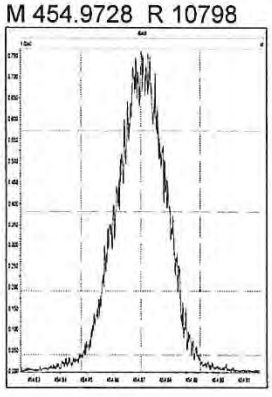

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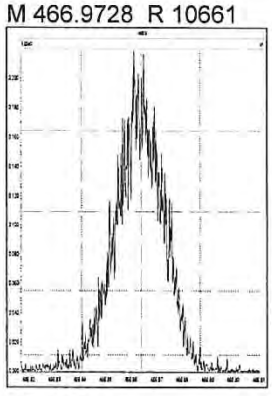

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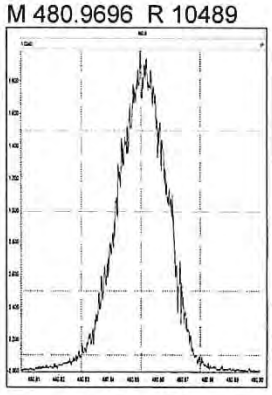

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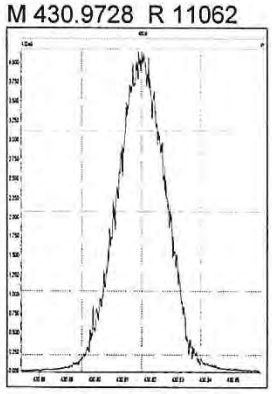

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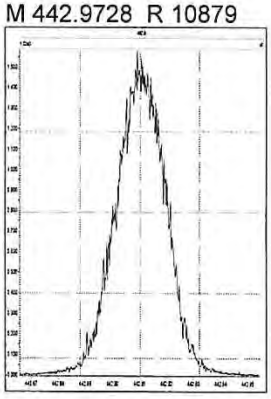

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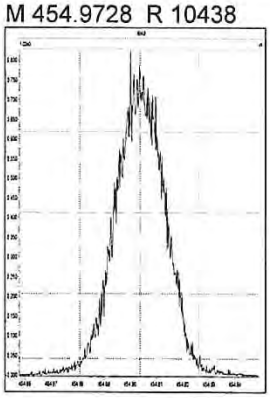

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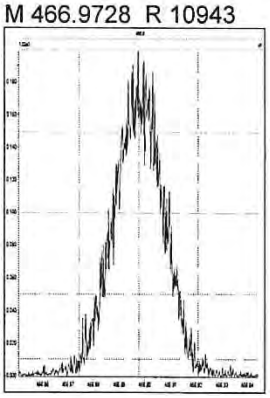

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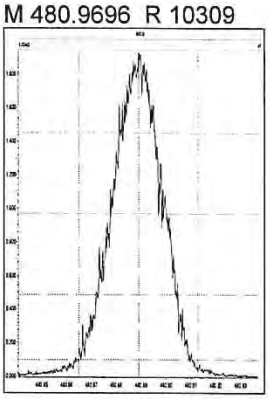

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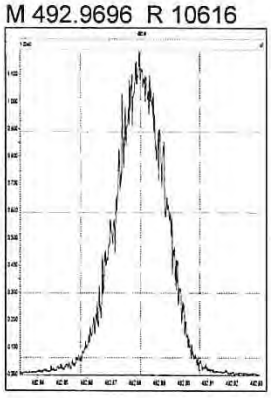

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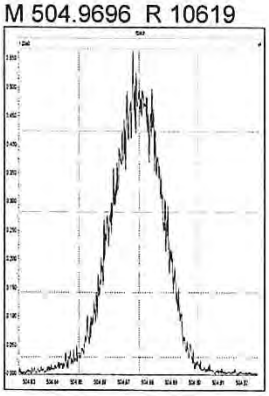

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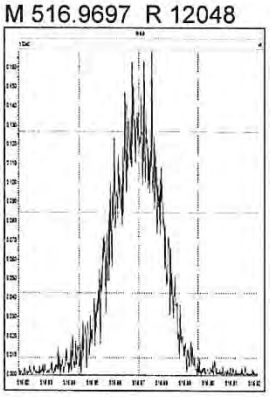

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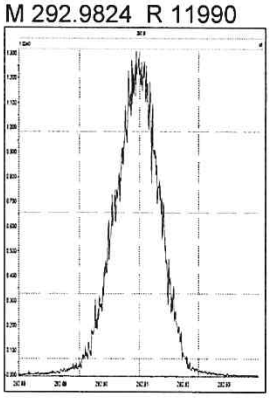

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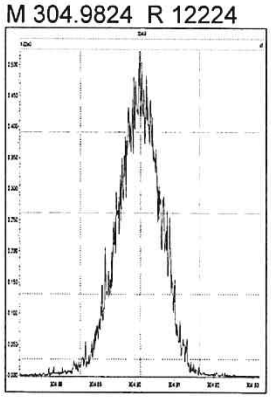

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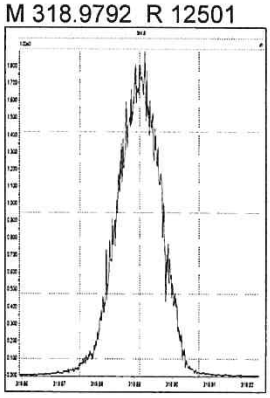

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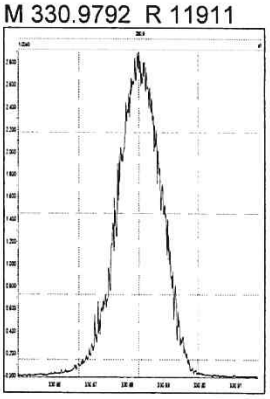

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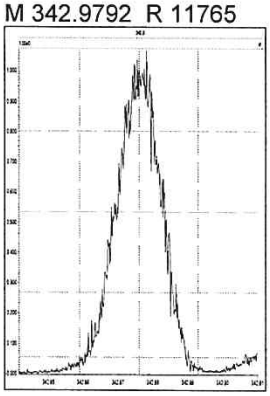

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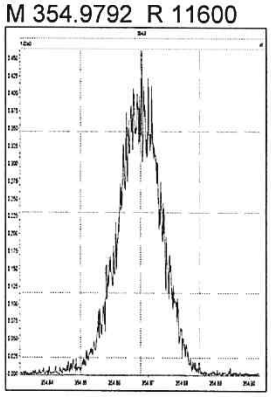

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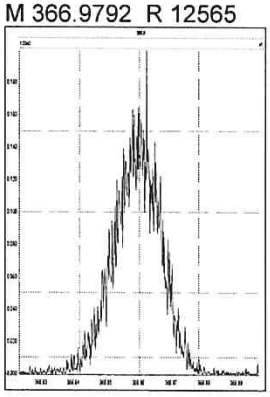

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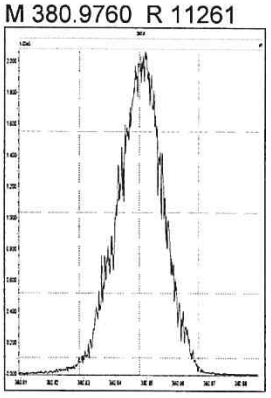

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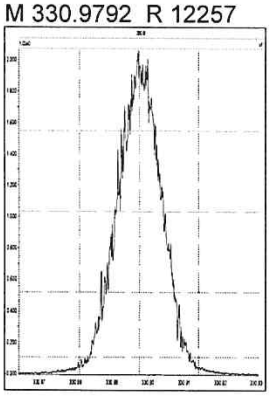
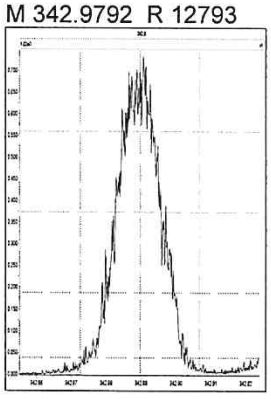
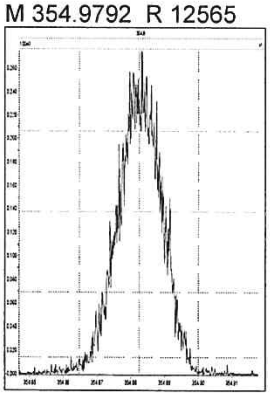


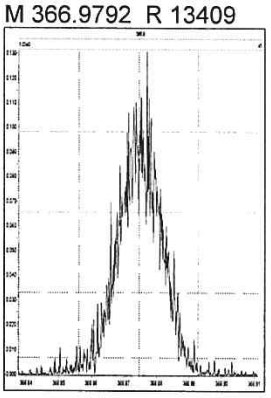
M 342.9792 R 12793



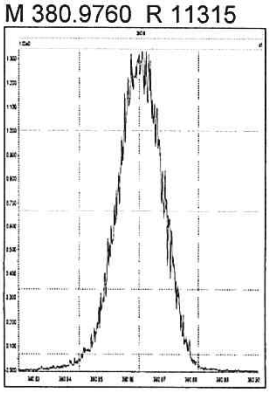
M 354.9792 R 12565



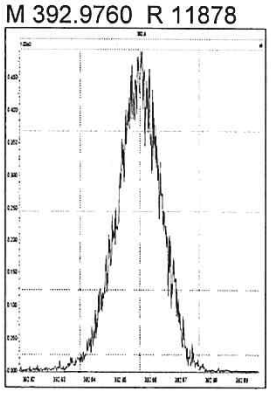
M 366.9792 R 13409



M 380.9760 R 11315



M 392.9760 R 11878



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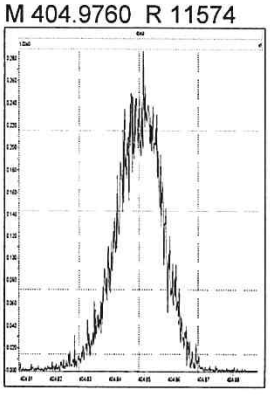

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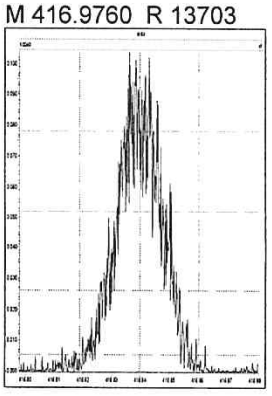
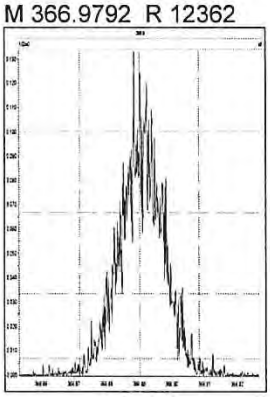
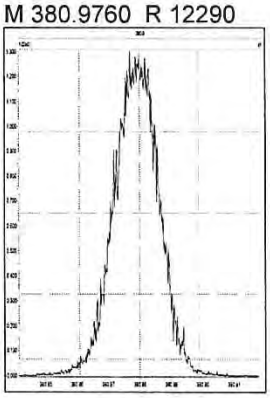


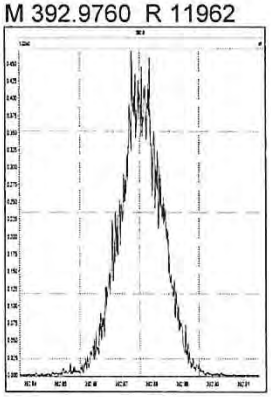
M 366.9792 R 12362



M 380.9760 R 12290



M 392.9760 R 11962



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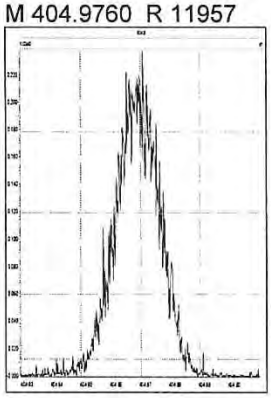
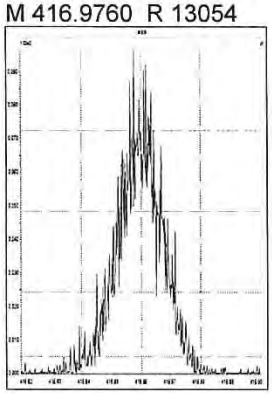
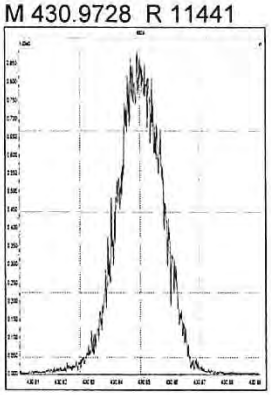


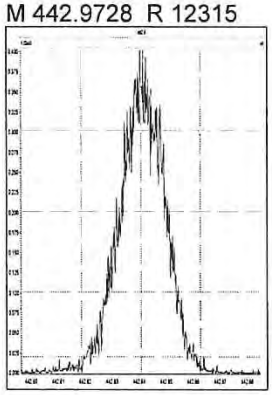
M 416.9760 R 13054



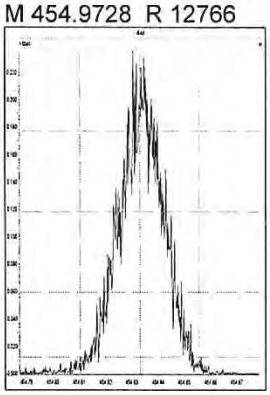
M 430.9728 R 11441



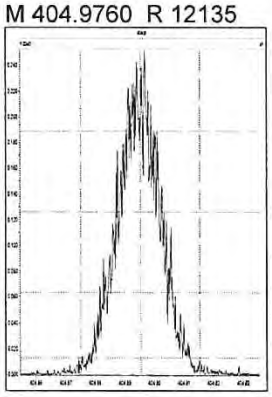
M 442.9728 R 12315



M 454.9728 R 12766



M 404.9760 R 12135



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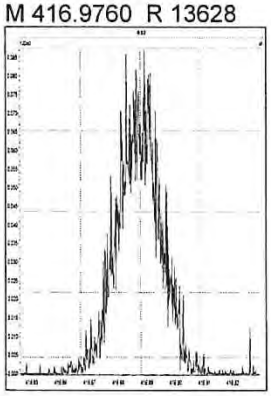

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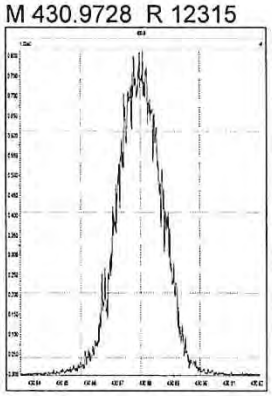

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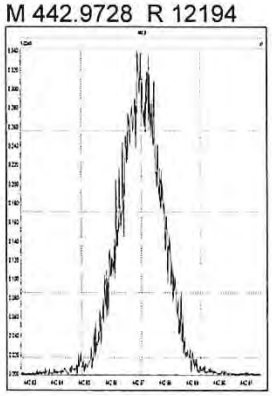

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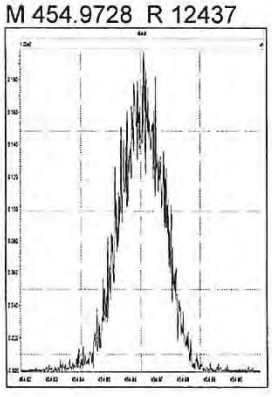

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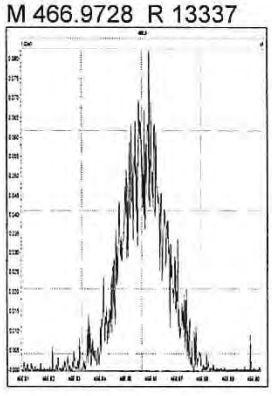
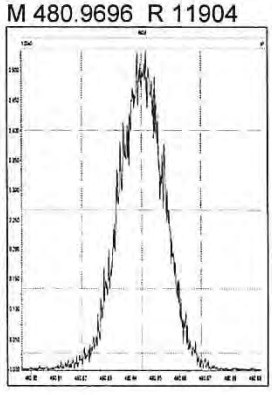
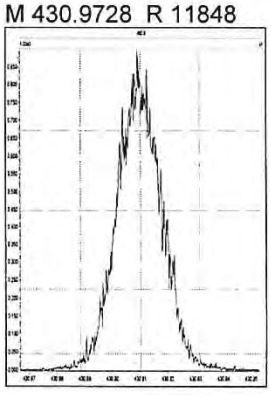


M 480.9696 R 11904

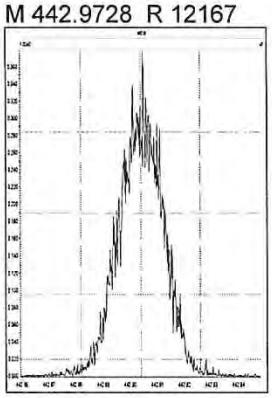


M 430.9728 R 11848

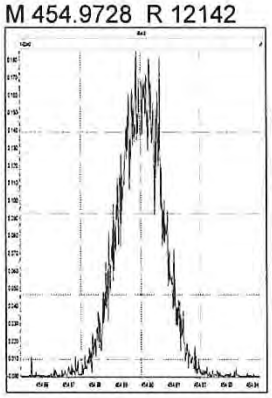


059515

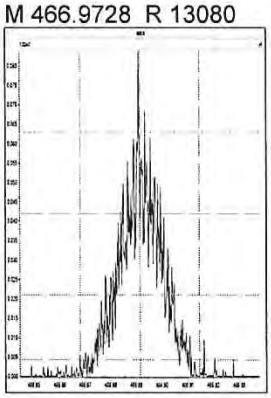
M 442.9728 R 12167



M 454.9728 R 12142



M 466.9728 R 13080



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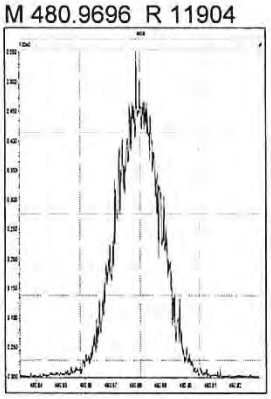

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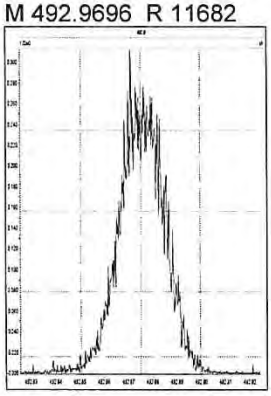

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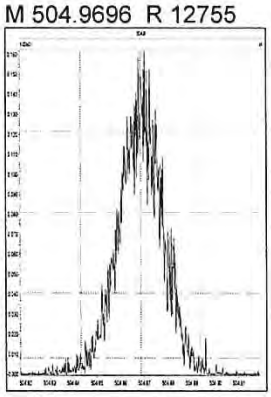
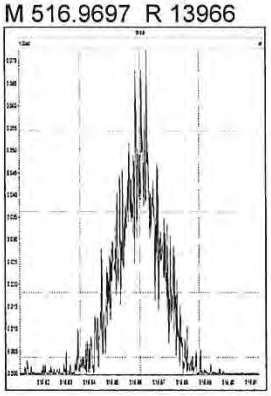


M 516.9697 R 13966



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

Case No.: _____ SDG No.:
ID: 0.25 (mm)

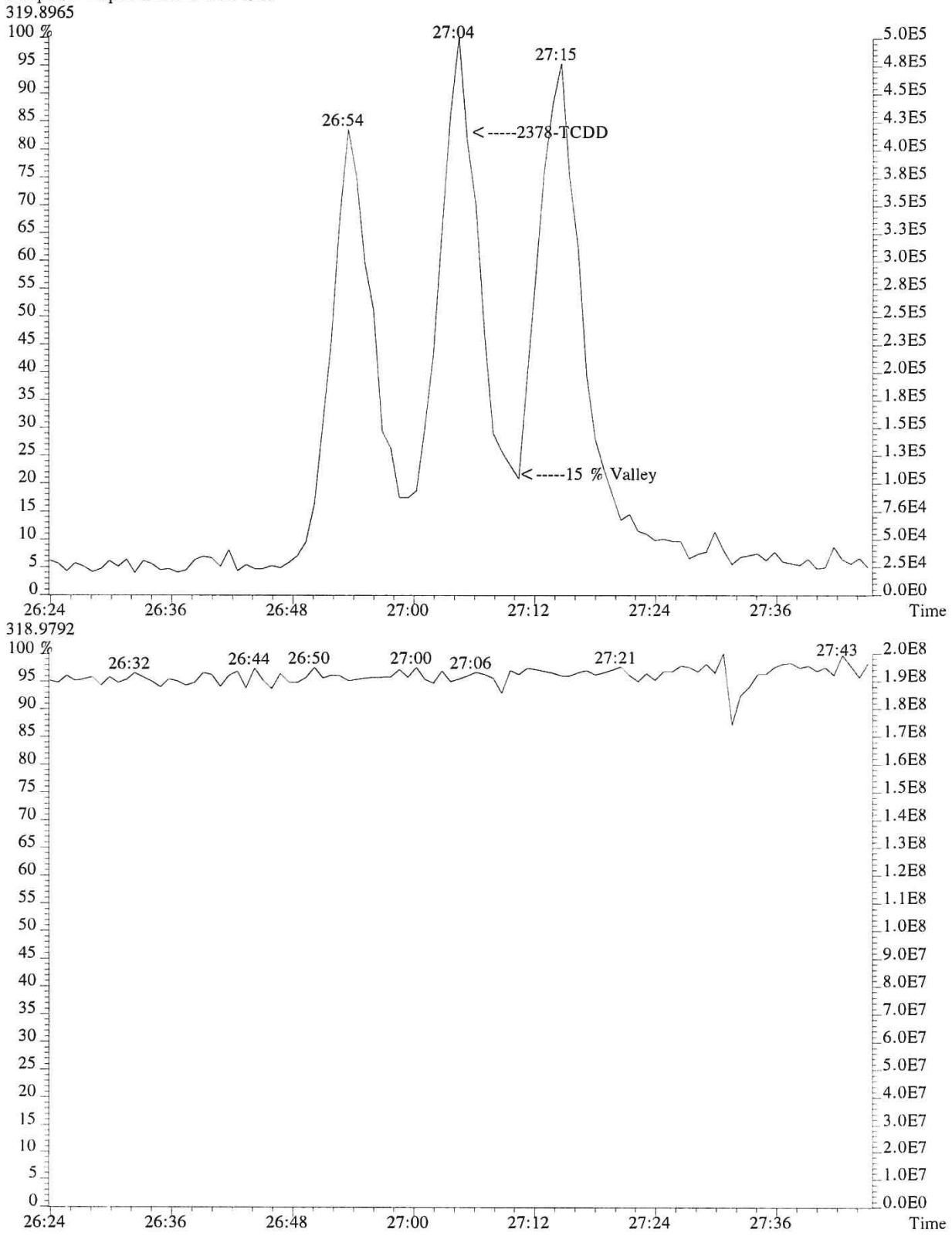
Lab File ID: P616142
Date Analyzed: 20-DEC-18
Time Analyzed: 13:54:53

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	21:40	28:25
TCDD	23:20	28:14
PeCDF	28:20	32:58
PeCDD	30:04	32:43
HxCDF	33:39	36:15
HxCDD	34:12	35:50
HpCDF	37:28	38:48
HpCDD	37:43	38:21

% Valley 2378-TCDD: 15 %

059517

File:P616142 #1-602 Acq:20-DEC-2018 13:54:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE



059518

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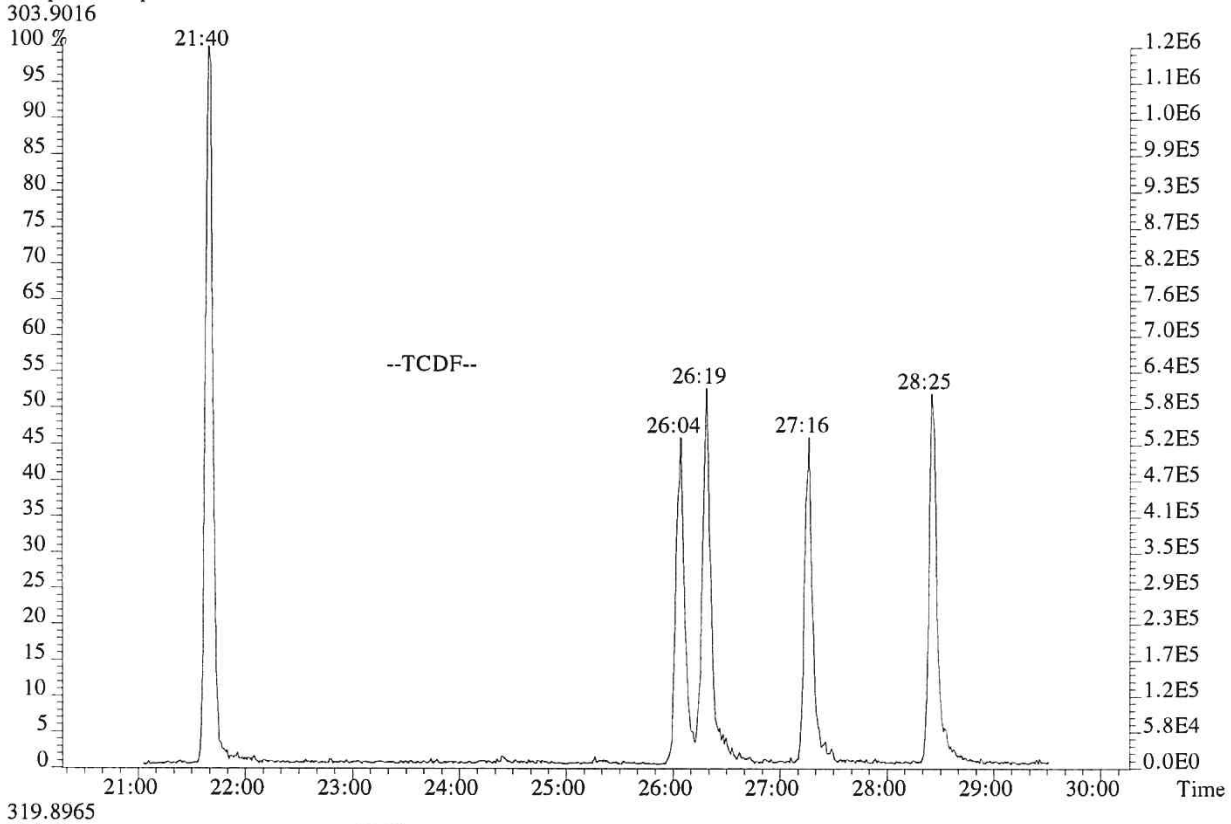
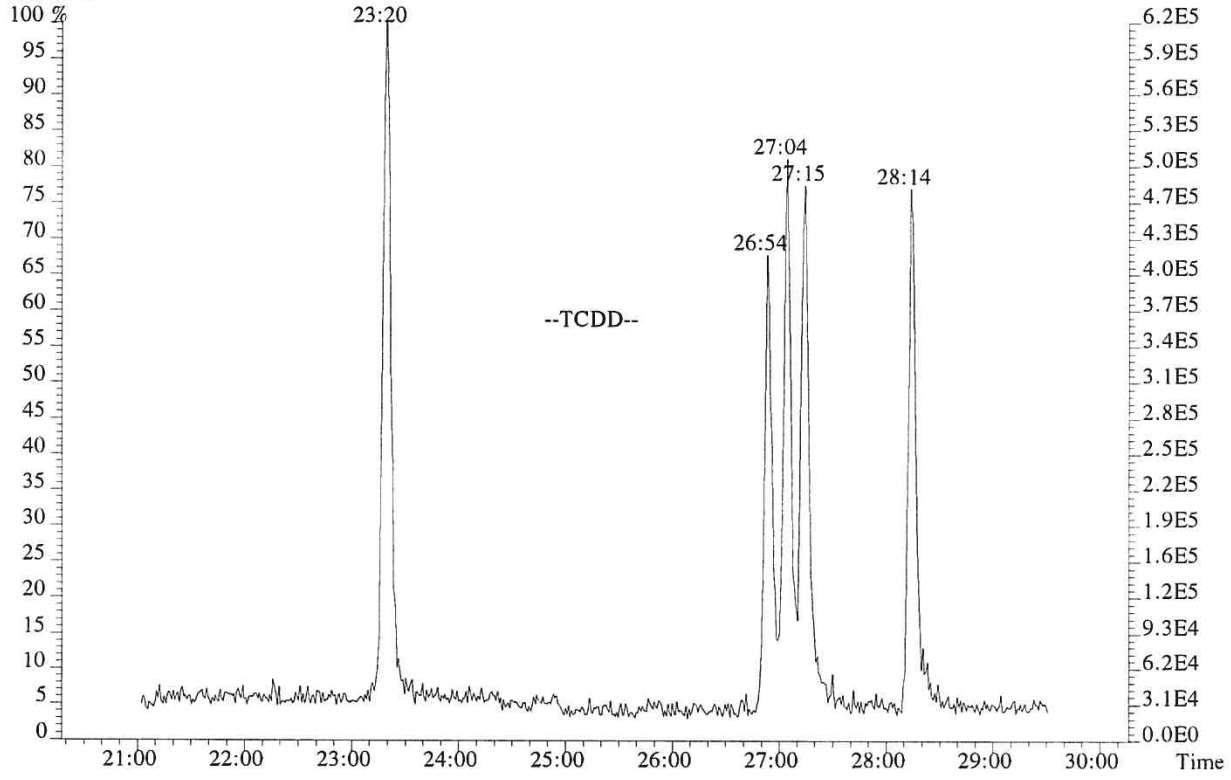
Sample#1 Exp:WINDOW DEFINE

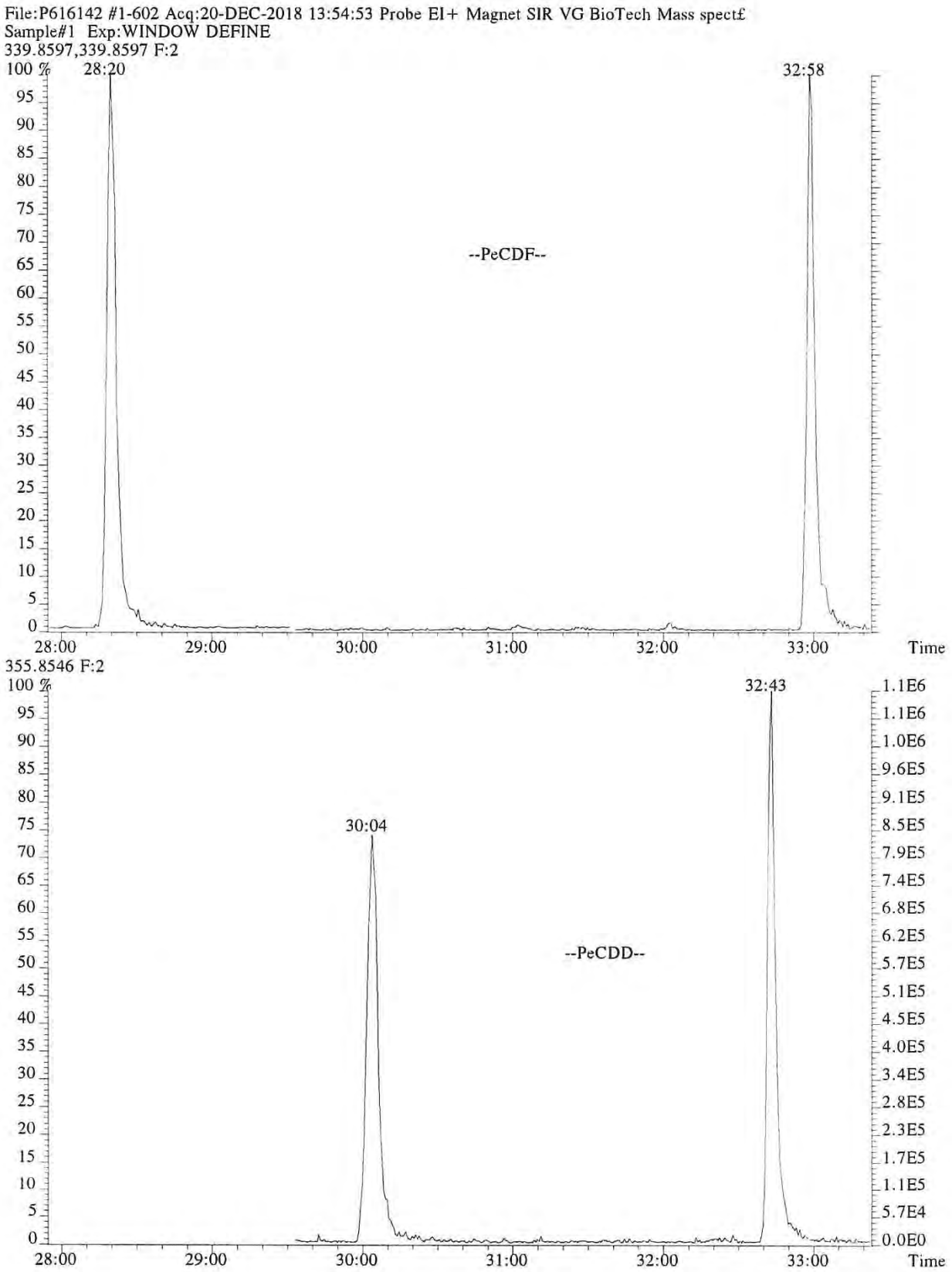
303.9016



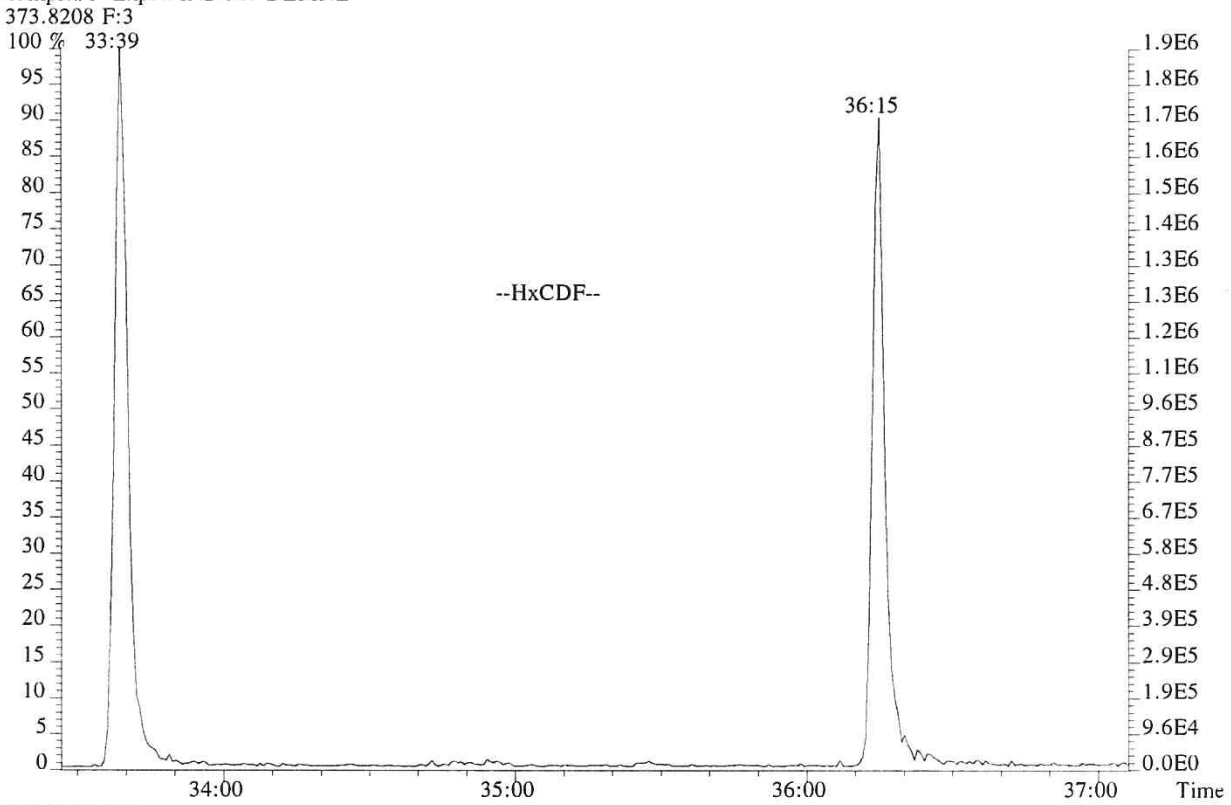
319.8965

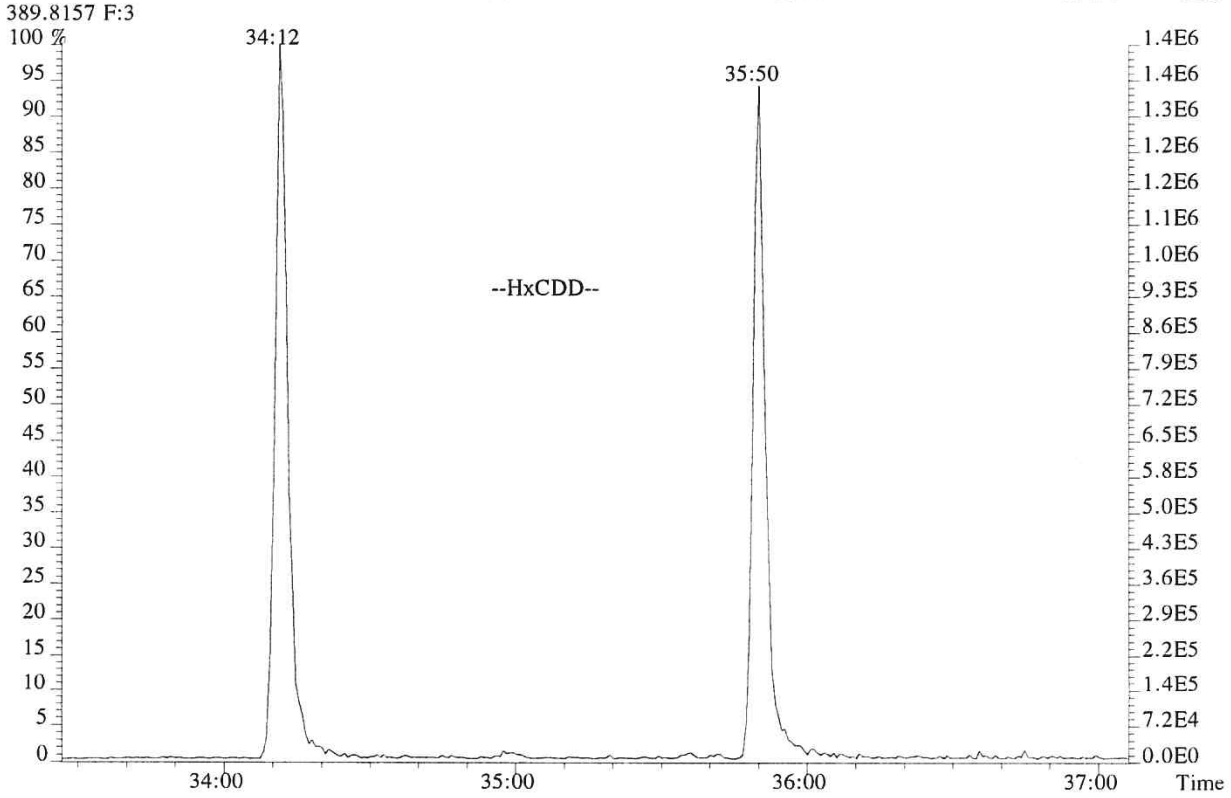


059519


File:P616142 #1-602 Acq:20-DEC-2018 13:54:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
339.8597,339.8597 F:2
100 %
28:20
32:58
--PeCDF--
28:00
29:00
30:00
31:00
32:00
33:00
Time
355.8546 F:2
100 %
32:43
30:04
--PeCDD--
1.1E6
1.1E6
1.0E6
9.6E5
9.1E5
8.5E5
7.9E5
7.4E5
6.8E5
6.2E5
5.7E5
5.1E5
4.5E5
4.0E5
3.4E5
2.8E5
2.3E5
1.7E5
1.1E5
5.7E4
0.0E0
28:00
29:00
30:00
31:00
32:00
33:00
Time

File:P616142 #1-602 Acq:20-DEC-2018 13:54:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE





059521

File:P616142 #1-602 Acq:20-DEC-2018 13:54:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
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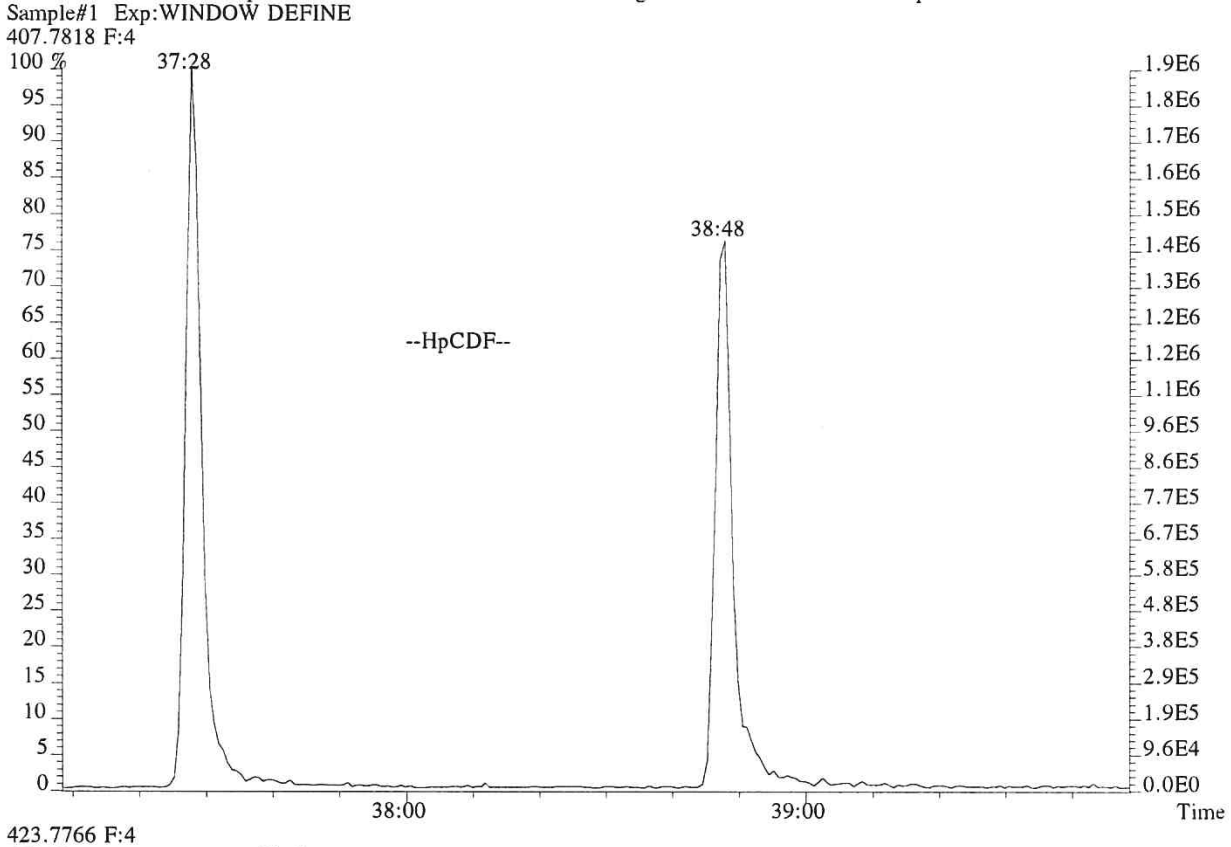

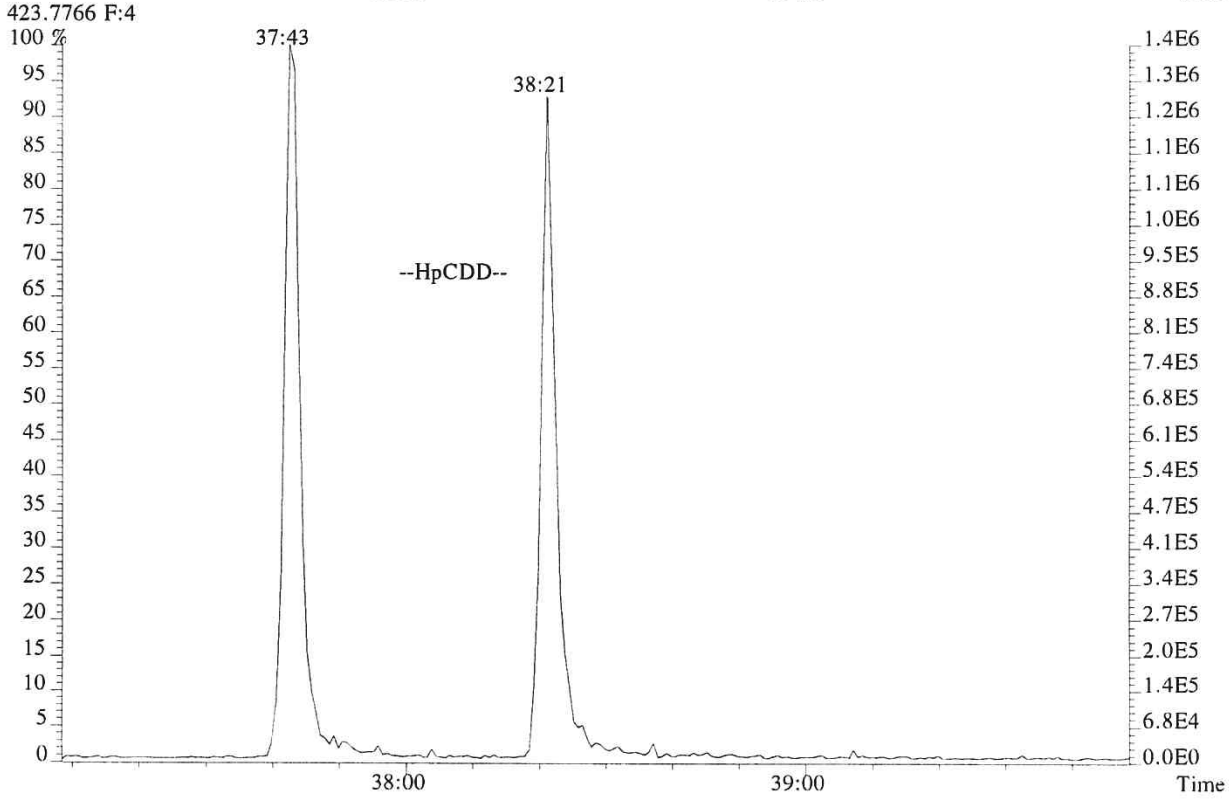

059522

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P616141 Analysis Date: 20-DEC-18 Time: 12:57:50

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	10.3	7.8 - 12.9	2.6
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32-1.78	54	39 - 65	7.4
1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	53	39 - 64	6.5
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	53	39 - 64	5.1
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	52	41 - 61	3.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.09	0.88-1.20	49	43 - 58	-1.6
OCDD	M+2/M+4	0.90	0.76-1.02	101	79 - 126	0.5
2,3,7,8-TCDF	M/M+2	0.81	0.65-0.89	9.8	8.4 - 12.0	-2.0
1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	48	41 - 60	-3.6
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	48	41 - 61	-3.7
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	48	45 - 56	-4.8
1,2,3,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	49	44 - 57	-2.4
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	49	45 - 56	-2.5
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	49	44 - 57	-2.5
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	49	45 - 55	-1.5
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.09	0.88-1.20	53	43 - 58	6.5
OCDF	M+2/M+4	0.92	0.76-1.02	94	63 - 159	-6.2

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P616141 Analysis Date: 20-DEC-18 Time: 12:57:50

LABELED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
13C-2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	99	82 - 121	-1.1
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32-1.78	102	62 - 160	1.7
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	94	85 - 117	-5.5
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	105	85 - 118	4.8
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	107	72 - 138	6.8
13C-OCDD	M+2/M+4	0.92	0.76-1.02	221	96 - 415	10.7
13C-2,3,7,8-TCDF	M/M+2	0.81	0.65-0.89	99	71 - 140	-0.6
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	107	76 - 130	7.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.63	1.32-1.78	107	77 - 130	7.4
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	97	76 - 131	-3.2
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43-0.59	102	70 - 143	2.1
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	95	74 - 135	-5.3
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	98	73 - 137	-1.9
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	102	78 - 129	1.5
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.47	0.37-0.51	78	77 - 129	-22.1
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			10.0	7.8 - 12.7	0.1

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

059524

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76557

Run #7 Filename P616141 Samp: 1 Inj: 1 Acquired: 20-DEC-18 12:57:50
Processed: 24-DEC-18 10:12:01 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:19	3.729e+03	4.613e+03	0.81	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	31:02	3.282e+04	2.039e+04	1.61	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	32:02	3.069e+04	1.944e+04	1.58	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:49	2.726e+04	2.203e+04	1.24	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:56	3.099e+04	2.508e+04	1.24	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:27	2.764e+04	2.225e+04	1.24	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	36:13	2.483e+04	1.984e+04	1.25	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:29	2.619e+04	2.489e+04	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:48	1.871e+04	1.712e+04	1.09	yes	no	1.463
10	Unk	OCDF	41:03	3.350e+04	3.652e+04	0.92	yes	no	1.571
11	Unk	2,3,7,8-TCDD	27:15	2.599e+03	3.251e+03	0.80	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	32:20	1.934e+04	1.259e+04	1.54	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:35	1.785e+04	1.387e+04	1.29	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:41	1.903e+04	1.531e+04	1.24	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:55	1.932e+04	1.526e+04	1.27	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:22	1.705e+04	1.560e+04	1.09	yes	no	1.112
17	Unk	OCDD	40:52	2.616e+04	2.912e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	26:18	3.525e+04	4.349e+04	0.81	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	31:02	5.905e+04	3.644e+04	1.62	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	32:02	5.846e+04	3.587e+04	1.63	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:48	2.521e+04	4.796e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:55	3.119e+04	5.764e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:27	2.752e+04	5.236e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	36:13	2.432e+04	4.549e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:28	2.130e+04	4.677e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:48	1.464e+04	3.136e+04	0.47	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	27:13	2.358e+04	3.077e+04	0.77	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	32:19	3.926e+04	2.475e+04	1.59	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:35	3.140e+04	2.418e+04	1.30	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:40	3.455e+04	2.715e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:21	3.051e+04	2.914e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:52	4.560e+04	4.941e+04	0.92	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	26:32	2.469e+04	3.124e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:55	3.695e+04	2.821e+04	1.31	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:15	6.081e+03				no	1.086

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76557

Run #7 Filename P616141 Samp: 1 Inj: 1 Acquired: 20-DEC-18 12:57:50
Processed: 24-DEC-18 10:12:01 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.22e+05	2.66e+03	2.0e+02	6.82e+05	4.96e+03	1.4e+02
2	1,2,3,7,8-PeCDF	5.22e+06	5.52e+02	9.4e+03	3.25e+06	2.94e+03	1.1e+03
3	2,3,4,7,8-PeCDF	5.24e+06	5.52e+02	9.5e+03	3.37e+06	2.94e+03	1.1e+03
4	1,2,3,4,7,8-HxCDF	5.56e+06	5.23e+03	1.1e+03	4.55e+06	2.51e+03	1.8e+03
5	1,2,3,6,7,8-HxCDF	5.74e+06	5.23e+03	1.1e+03	4.73e+06	2.51e+03	1.9e+03
6	2,3,4,6,7,8-HxCDF	5.48e+06	5.23e+03	1.0e+03	4.44e+06	2.51e+03	1.8e+03
7	1,2,3,7,8,9-HxCDF	4.61e+06	5.23e+03	8.8e+02	3.75e+06	2.51e+03	1.5e+03
8	1,2,3,4,6,7,8-HpCDF	5.64e+06	3.46e+03	1.6e+03	5.40e+06	5.64e+03	9.6e+02
9	1,2,3,4,7,8,9-HpCDF	3.73e+06	3.46e+03	1.1e+03	3.33e+06	5.64e+03	5.9e+02
10	OCDF	6.10e+06	1.43e+03	4.3e+03	6.53e+06	5.11e+03	1.3e+03
11	2,3,7,8-TCDD	4.34e+05	1.05e+04	4.1e+01	5.29e+05	4.72e+03	1.1e+02
12	1,2,3,7,8-PeCDD	3.37e+06	2.24e+03	1.5e+03	2.16e+06	5.60e+02	3.9e+03
13	1,2,3,4,7,8-HxCDD	3.88e+06	1.84e+03	2.1e+03	3.00e+06	2.14e+03	1.4e+03
14	1,2,3,6,7,8-HxCDD	3.66e+06	1.84e+03	2.0e+03	2.98e+06	2.14e+03	1.4e+03
15	1,2,3,7,8,9-HxCDD	3.64e+06	1.84e+03	2.0e+03	2.87e+06	2.14e+03	1.3e+03
16	1,2,3,4,6,7,8-HpCDD	3.65e+06	3.06e+03	1.2e+03	3.28e+06	1.77e+03	1.9e+03
17	OCDD	4.57e+06	8.44e+02	5.4e+03	5.21e+06	1.22e+03	4.3e+03
18	13C-2,3,7,8-TCDF	5.05e+06	2.67e+04	1.9e+02	6.16e+06	1.71e+04	3.6e+02
19	13C-1,2,3,7,8-PeCDF	9.42e+06	2.16e+03	4.4e+03	5.79e+06	2.42e+03	2.4e+03
20	13C-2,3,4,7,8-PeCDF	1.01e+07	2.16e+03	4.7e+03	6.16e+06	2.42e+03	2.6e+03
21	13C-1,2,3,4,7,8-HxCDF	5.14e+06	3.85e+03	1.3e+03	9.83e+06	2.45e+03	4.0e+03
22	13C-1,2,3,6,7,8-HxCDF	5.84e+06	3.85e+03	1.5e+03	1.12e+07	2.45e+03	4.6e+03
23	13C-2,3,4,6,7,8-HxCDF	5.43e+06	3.85e+03	1.4e+03	1.05e+07	2.45e+03	4.3e+03
24	13C-1,2,3,7,8,9-HxCDF	4.66e+06	3.85e+03	1.2e+03	8.63e+06	2.45e+03	3.5e+03
25	13C-1,2,3,4,6,7,8-HpCDF	4.52e+06	3.43e+03	1.3e+03	1.01e+07	8.93e+03	1.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.65e+06	3.43e+03	7.7e+02	5.54e+06	8.93e+03	6.2e+02
27	13C-2,3,7,8-TCDD	3.76e+06	2.86e+04	1.3e+02	4.80e+06	6.78e+03	7.1e+02
28	13C-1,2,3,7,8-PeCDD	6.88e+06	3.27e+03	2.1e+03	4.37e+06	5.96e+03	7.3e+02
29	13C-1,2,3,4,7,8-HxCDD	6.71e+06	1.27e+03	5.3e+03	5.18e+06	1.90e+03	2.7e+03
30	13C-1,2,3,6,7,8-HxCDD	6.63e+06	1.27e+03	5.2e+03	5.29e+06	1.90e+03	2.8e+03
31	13C-1,2,3,4,6,7,8-HpCDD	6.33e+06	4.44e+03	1.4e+03	6.05e+06	2.82e+03	2.1e+03
32	13C-OCDD	8.12e+06	3.95e+03	2.1e+03	8.79e+06	1.04e+03	8.5e+03
33	13C-1,2,3,4-TCDD	3.75e+06	2.86e+04	1.3e+02	4.67e+06	6.78e+03	6.9e+02
34	13C-1,2,3,7,8,9-HxCDD	6.88e+06	1.27e+03	5.4e+03	5.36e+06	1.90e+03	2.8e+03
35	37Cl-2,3,7,8-TCDD	9.46e+05	3.62e+03	2.6e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.053e{+}04 + 4.716e{+}03) \times 100}{(3.762e{+}06 + 4.804e{+}06) \times (\quad) \times 1.049} =$$

ALS ENVIRONMENTAL
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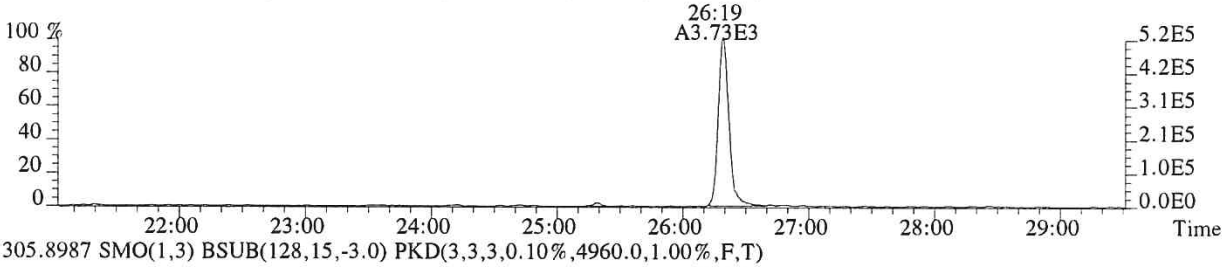
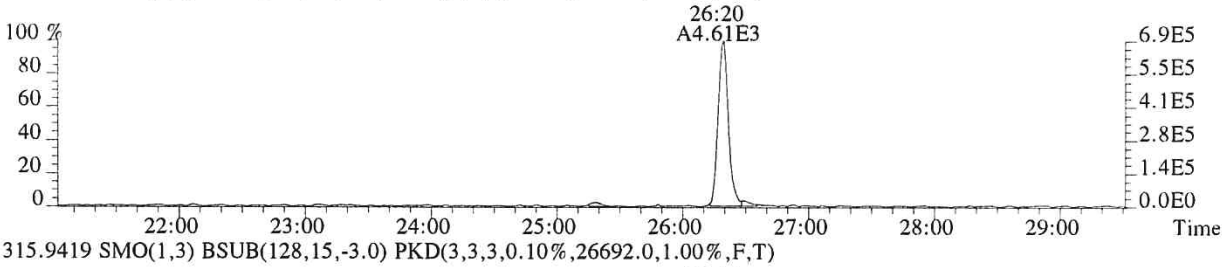
File:P616141 #1-602 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

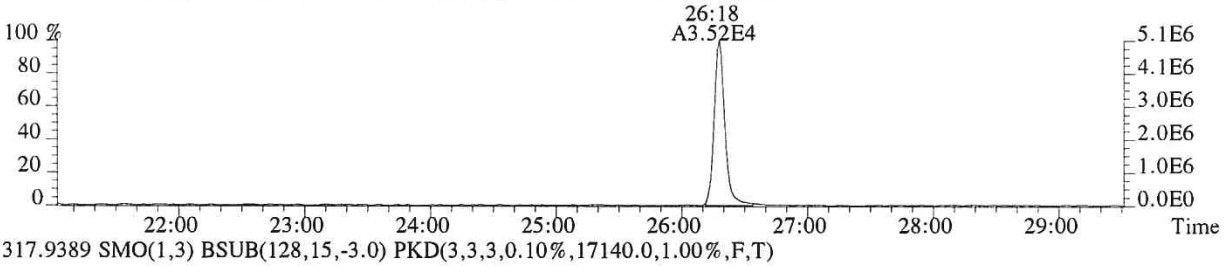
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2656.0,1.00%,F,T)



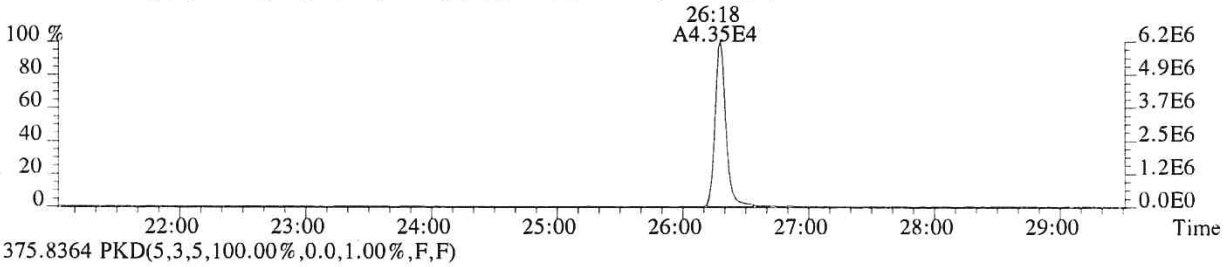
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4960.0,1.00%,F,T)



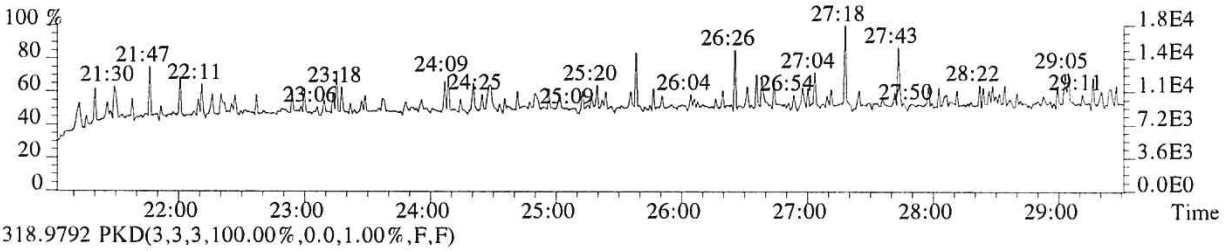
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,26692.0,1.00%,F,T)



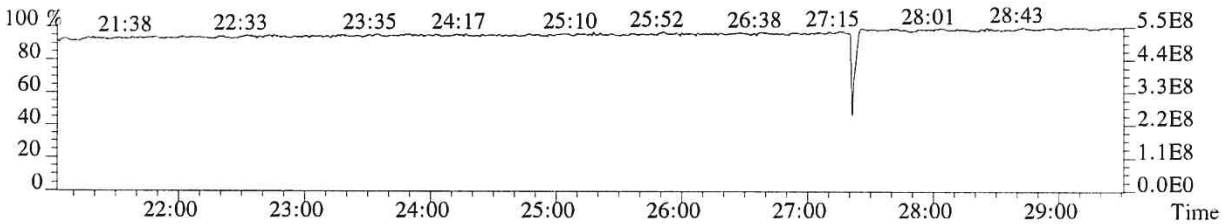
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,17140.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



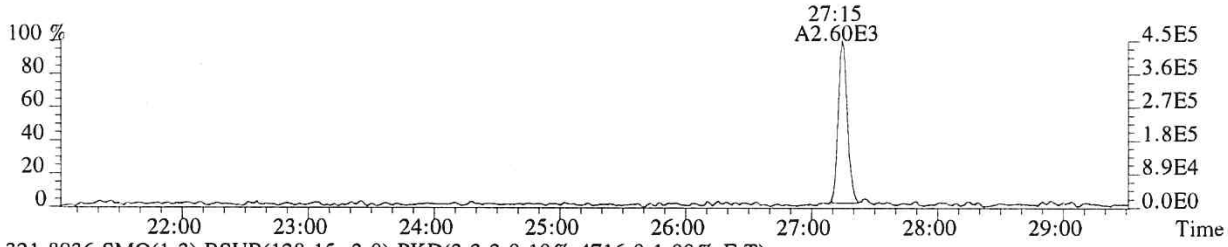
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



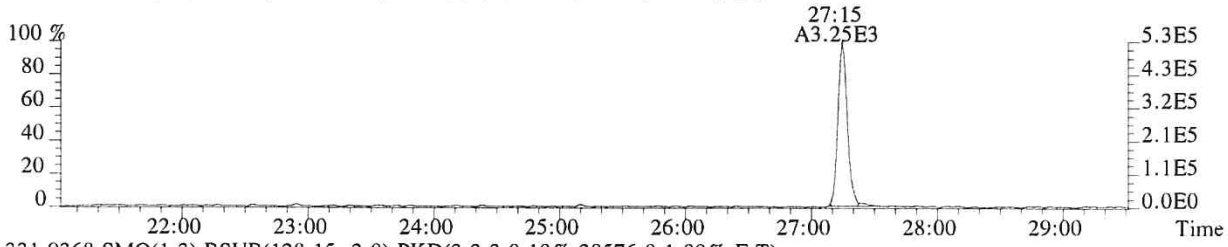
059527

File:P616141 #1-602 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

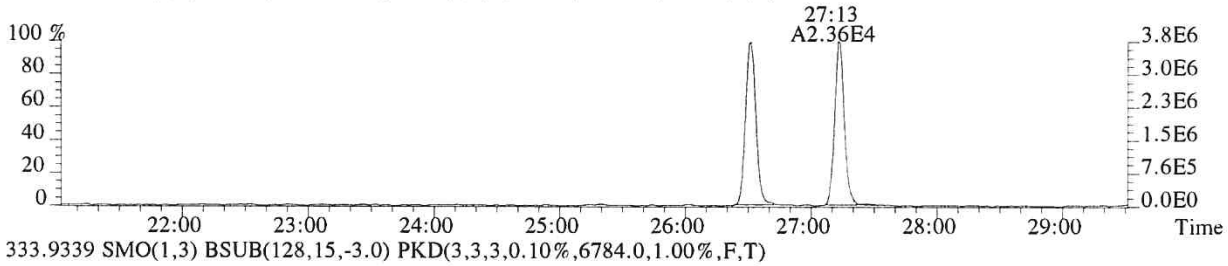
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10532.0,1.00%,F,T)



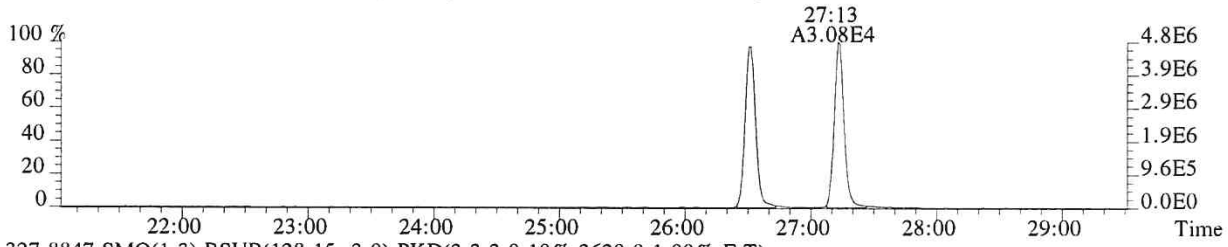
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4716.0,1.00%,F,T)



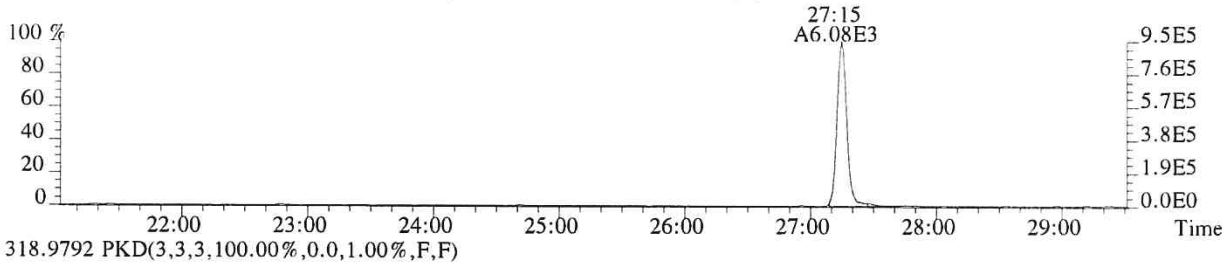
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,28576.0,1.00%,F,T)



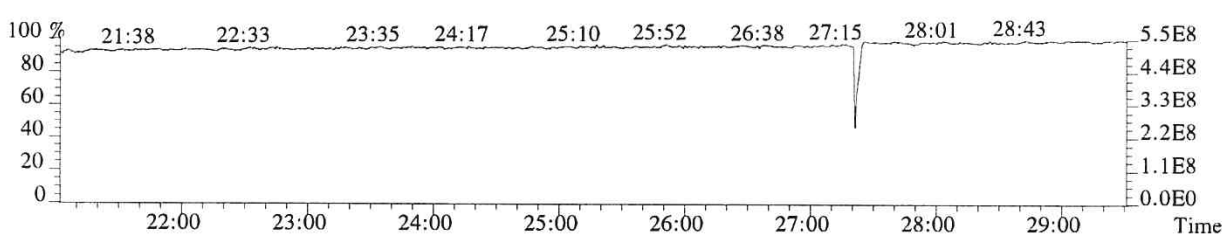
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6784.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3620.0,1.00%,F,T)

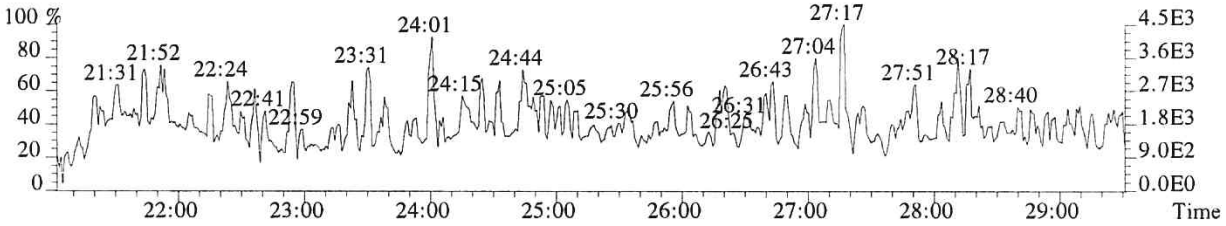


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

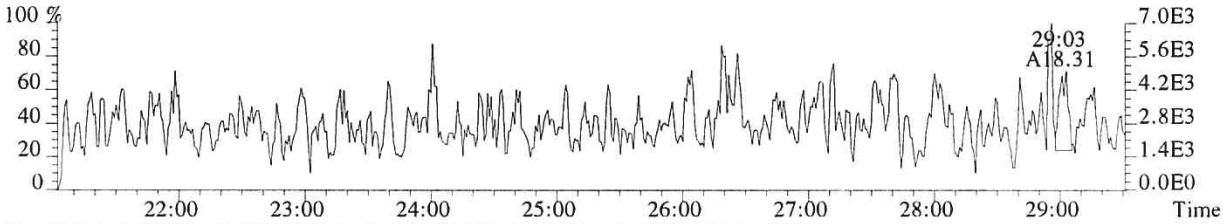


059528

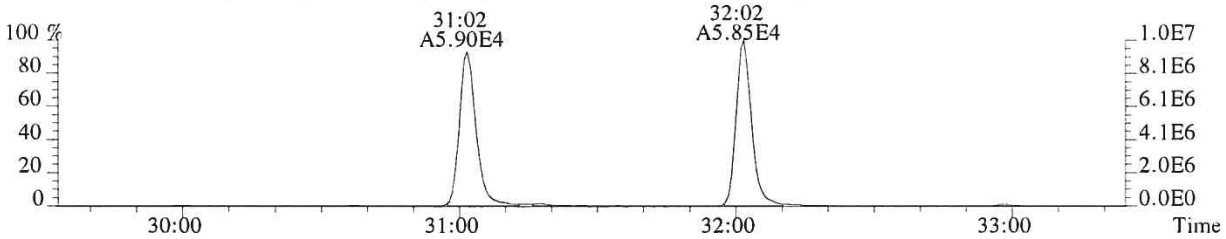
File:P616141 #1-602 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2312.0,1.00%,F,T)



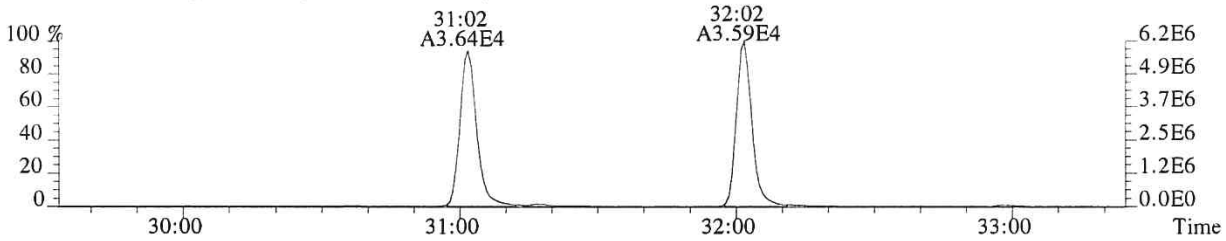
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3540.0,1.00%,F,T)



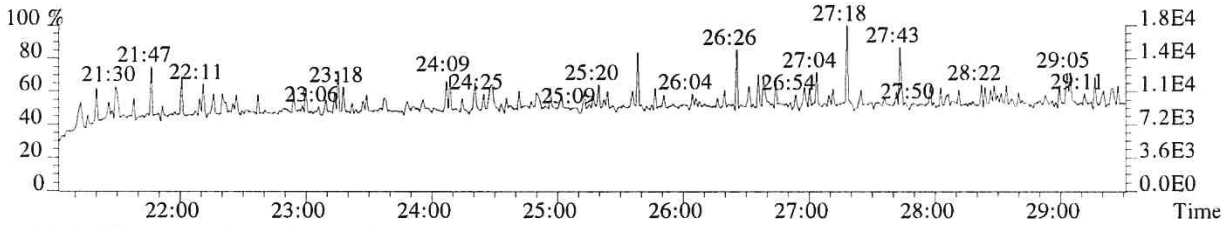
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2156.0,1.00%,F,T)



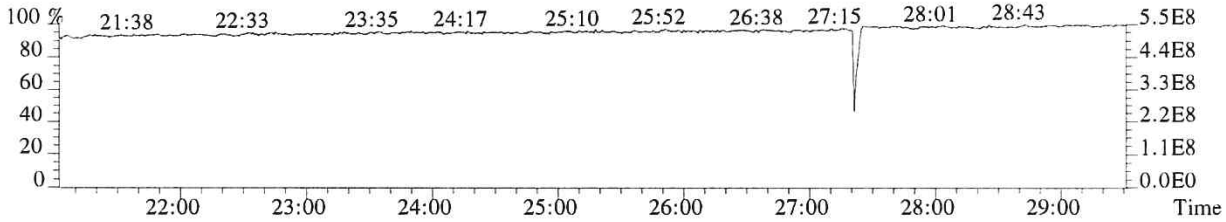
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2416.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



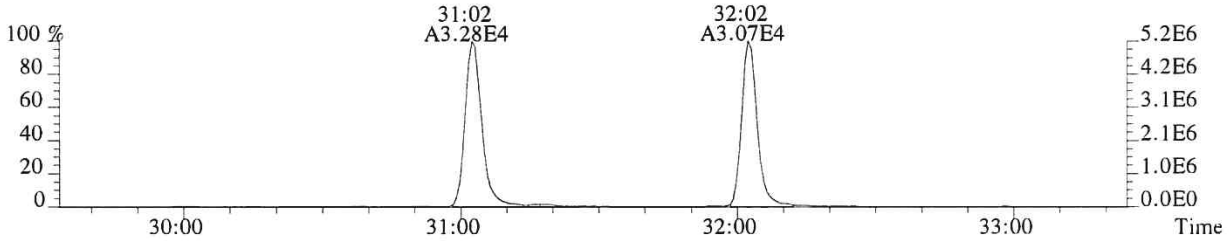
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



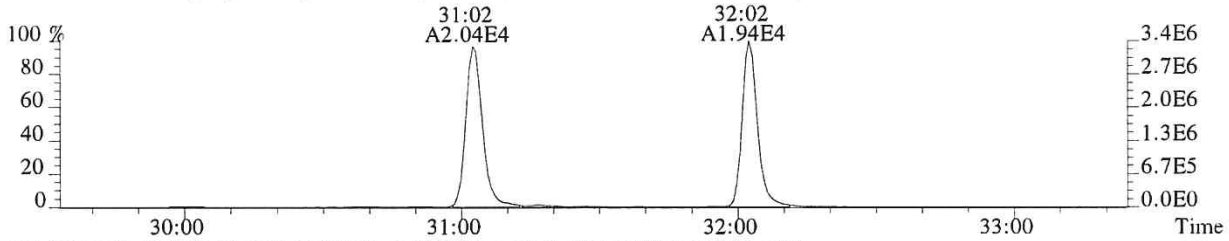
059529

File:P616141 #1-348 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

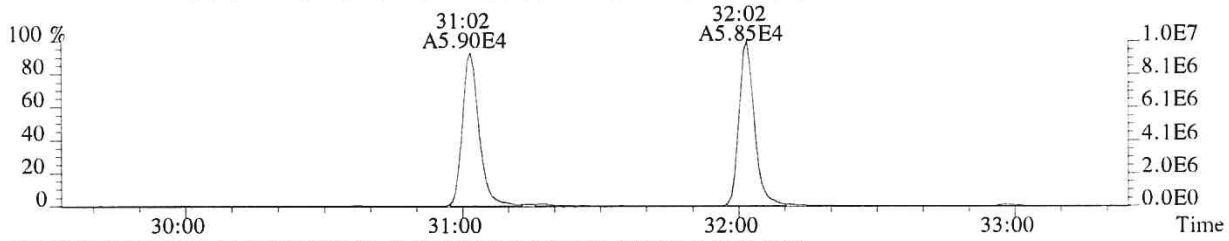
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,552.0,1.00%,F,T)



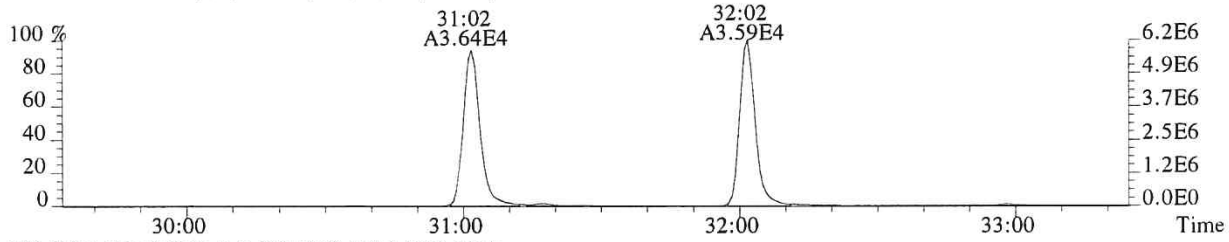
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2944.0,1.00%,F,T)



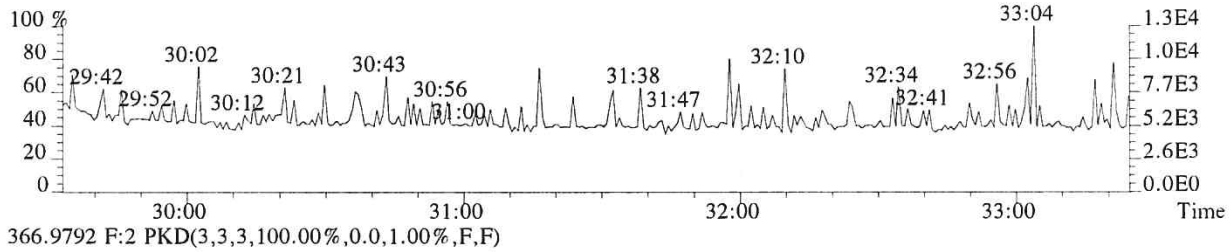
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2156.0,1.00%,F,T)



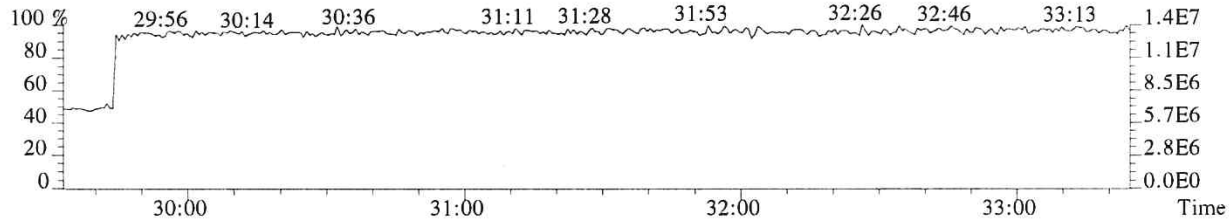
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2416.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

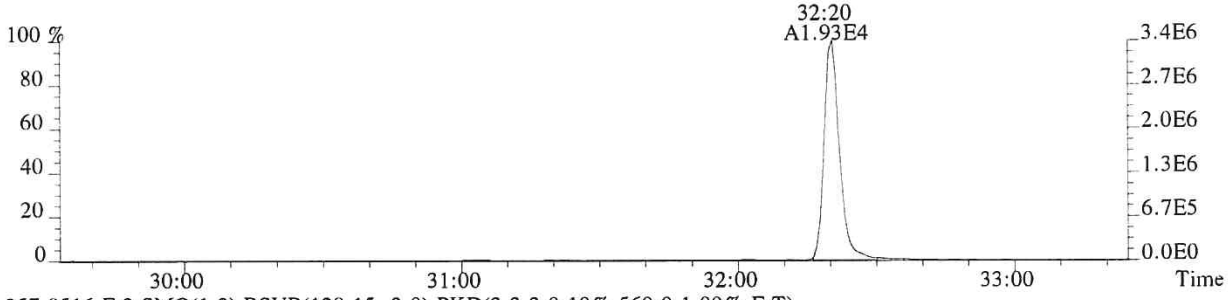


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

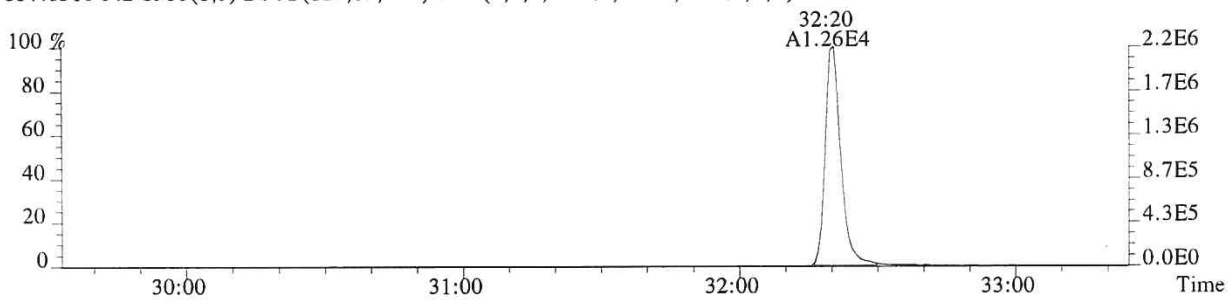


059530

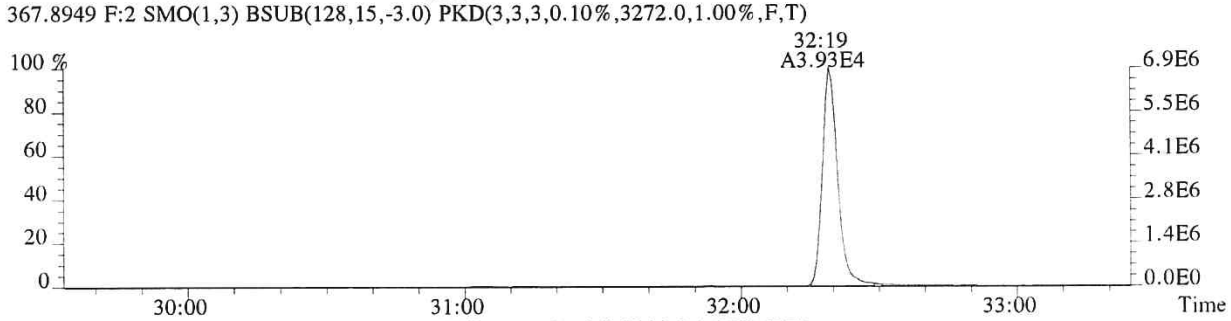
File:P616141 #1-348 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2240.0,1.00%,F,T)



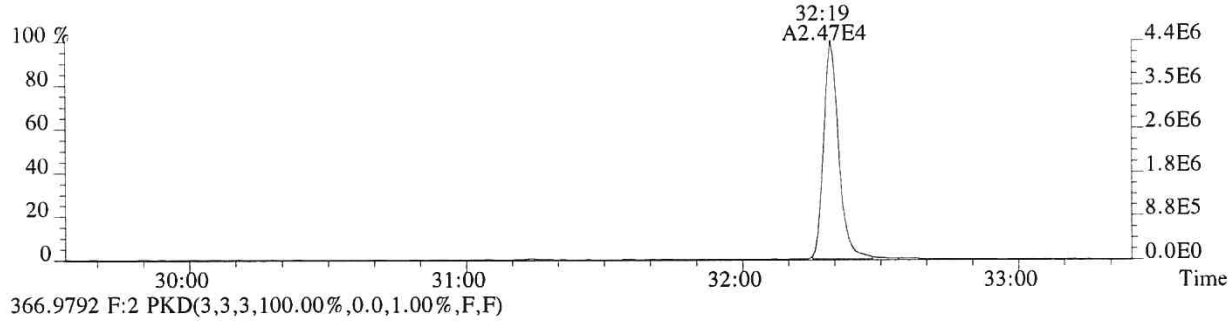
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,560.0,1.00%,F,T)



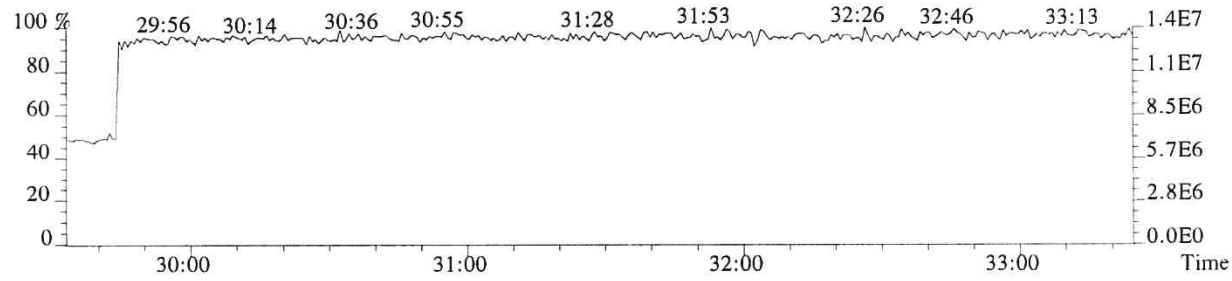
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3272.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5956.0,1.00%,F,T)



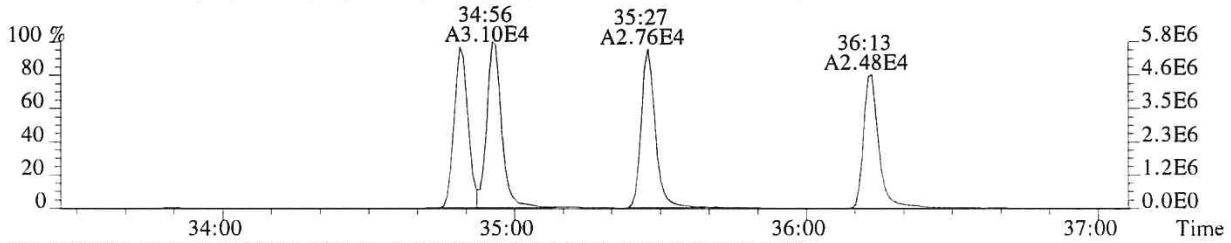
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



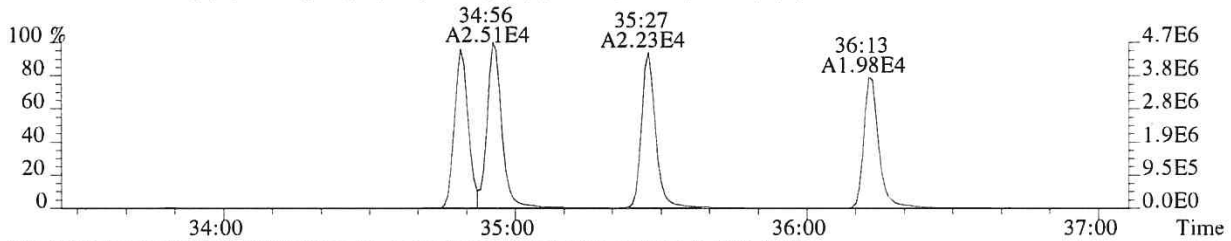
059531

File:P616141 #1-330 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

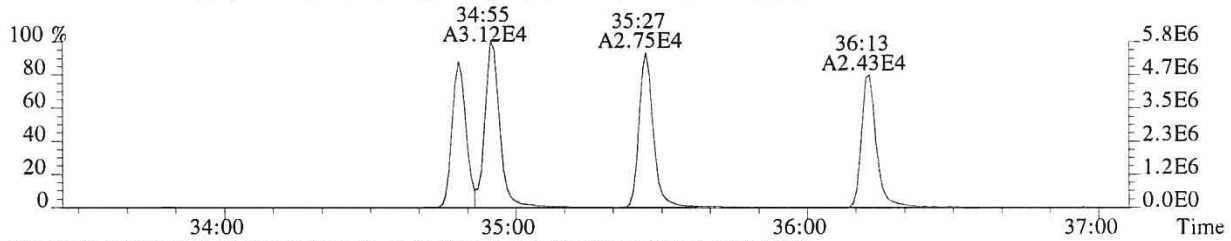
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5232.0,0.40%,F,T)



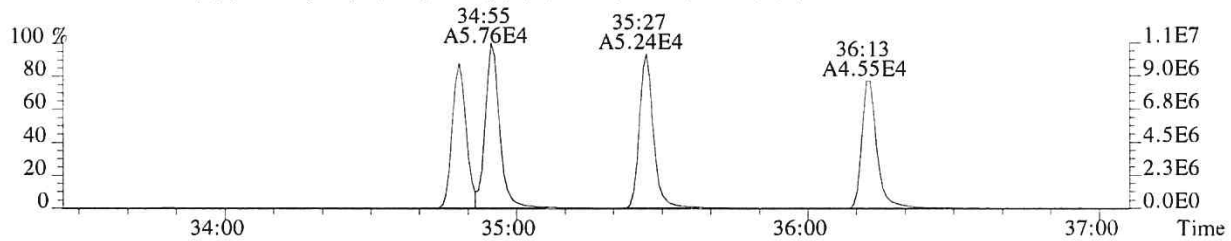
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2508.0,0.40%,F,T)



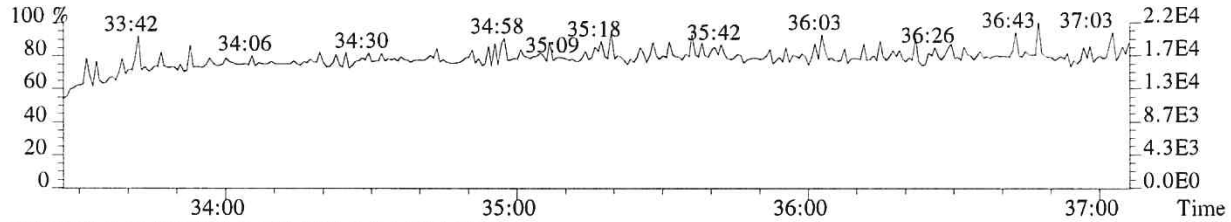
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3852.0,0.40%,F,T)



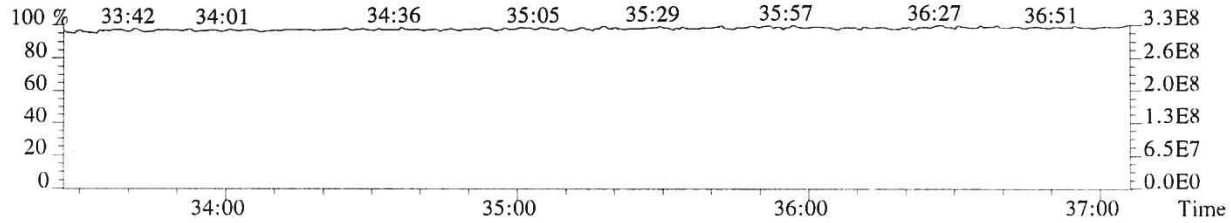
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2448.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

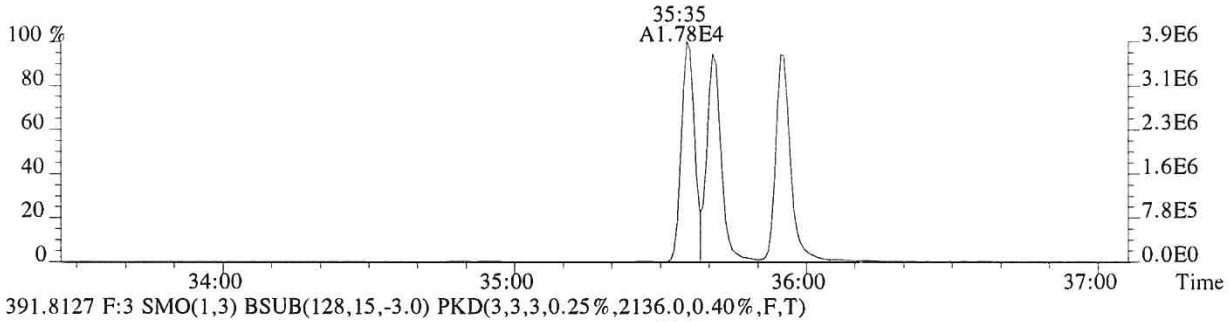


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

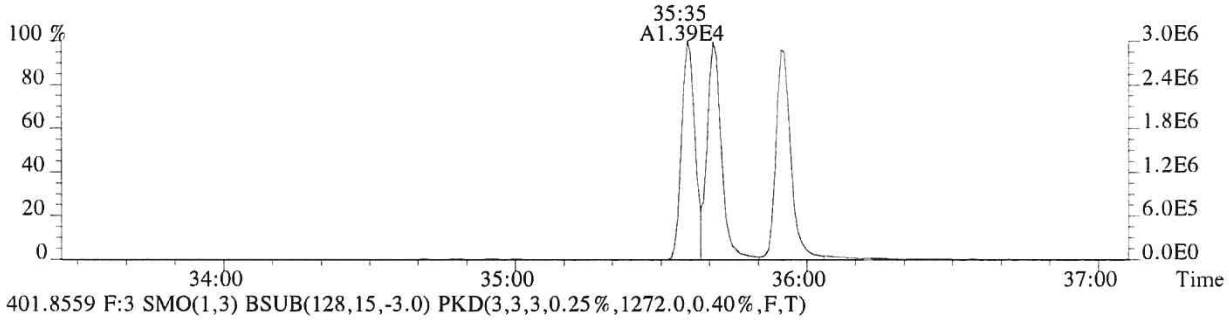


059532

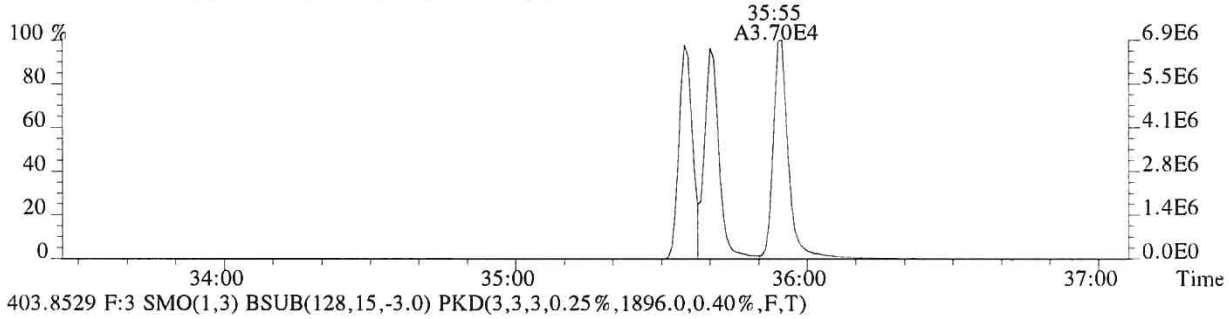
File:P616141 #1-330 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1836.0,0.40%,F,T)



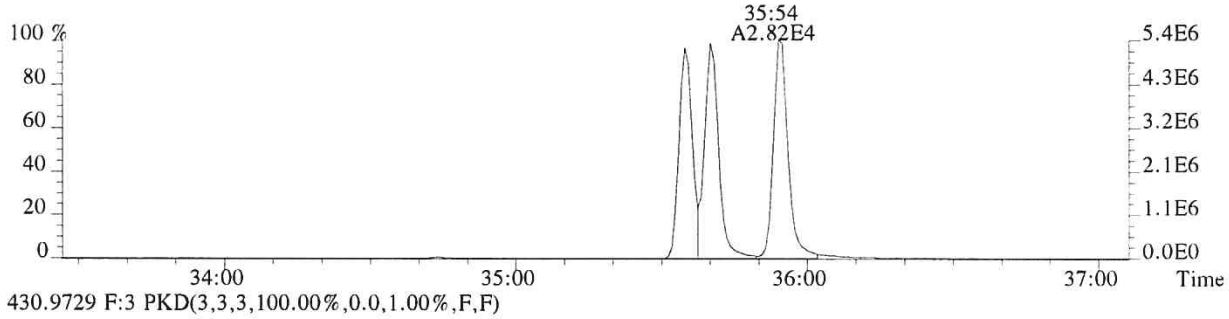
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2136.0,0.40%,F,T)



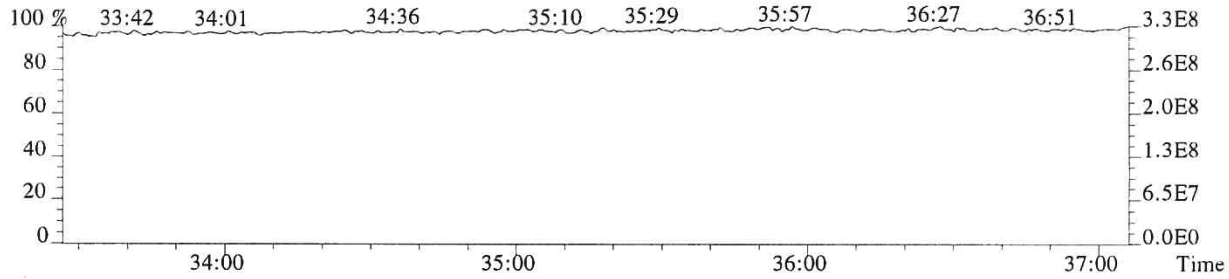
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1272.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1896.0,0.40%,F,T)



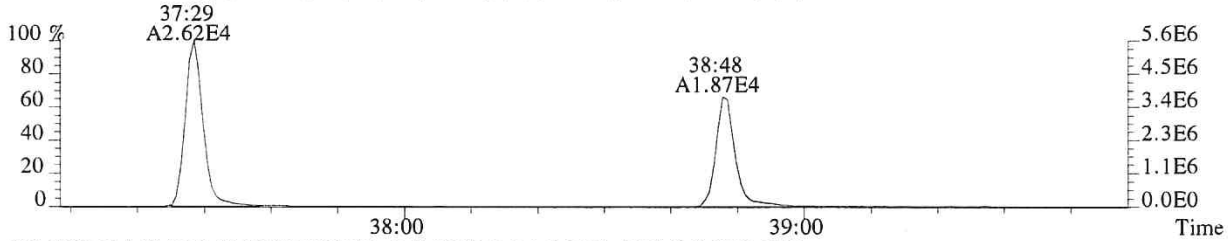
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



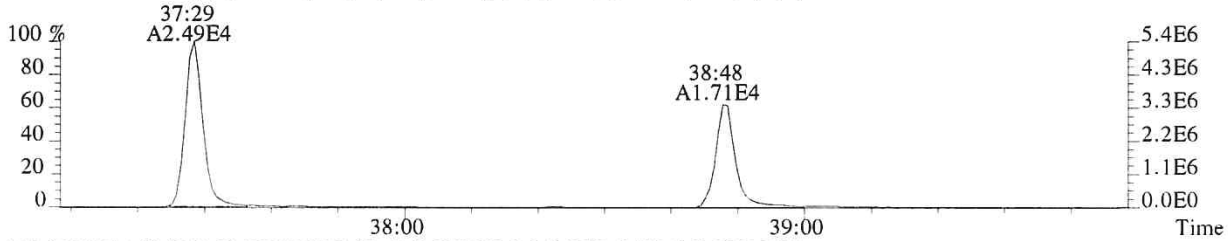
059533

File:P616141 #1-241 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

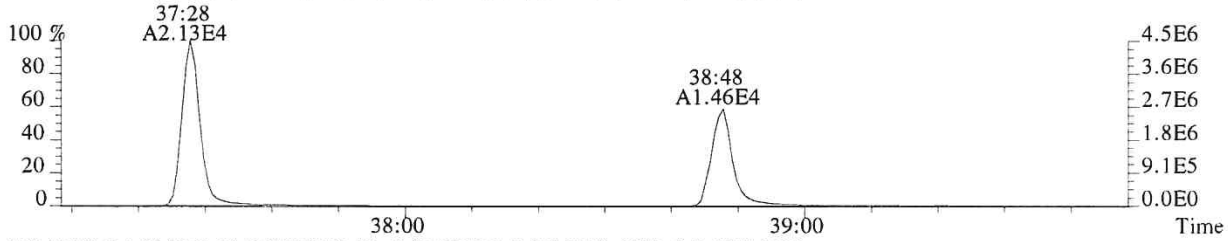
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3464.0,0.50%,F,T)



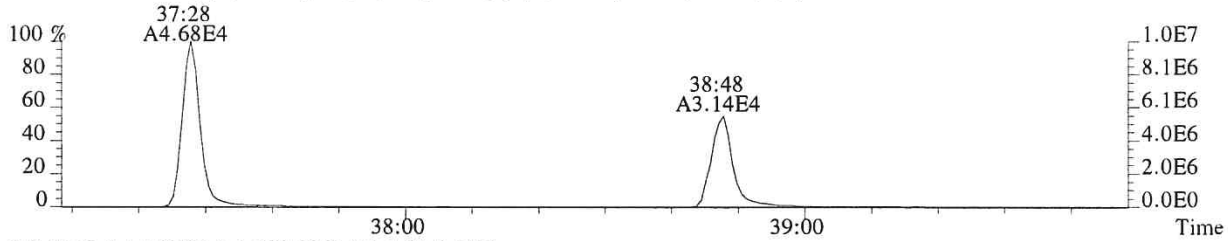
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5644.0,0.50%,F,T)



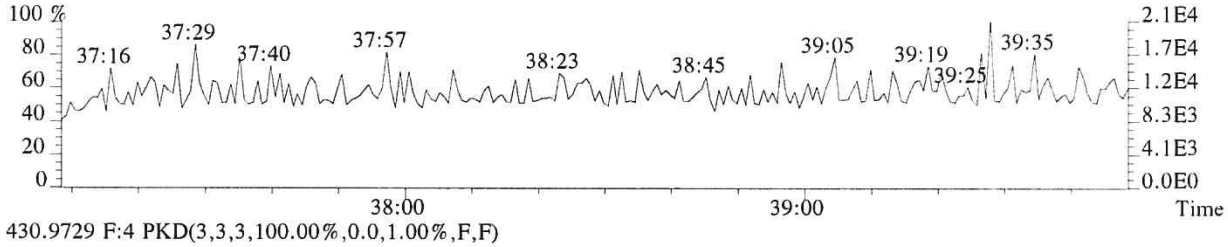
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3432.0,0.50%,F,T)



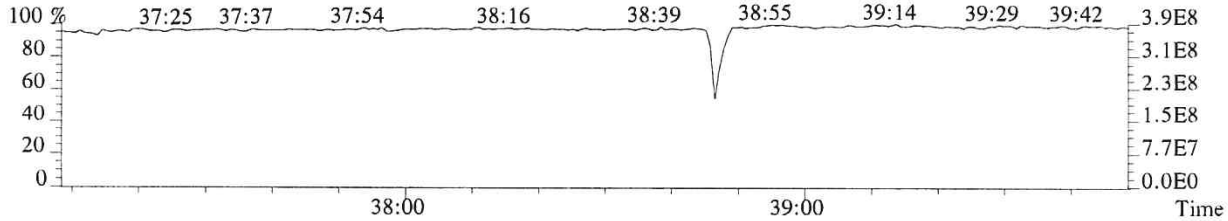
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8932.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



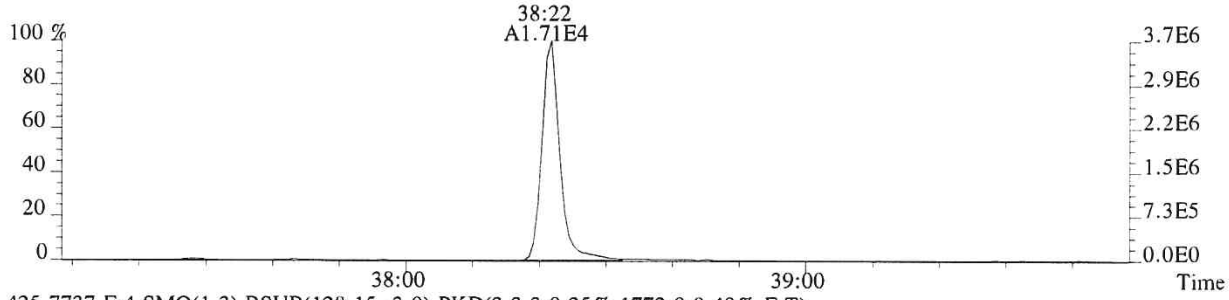
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



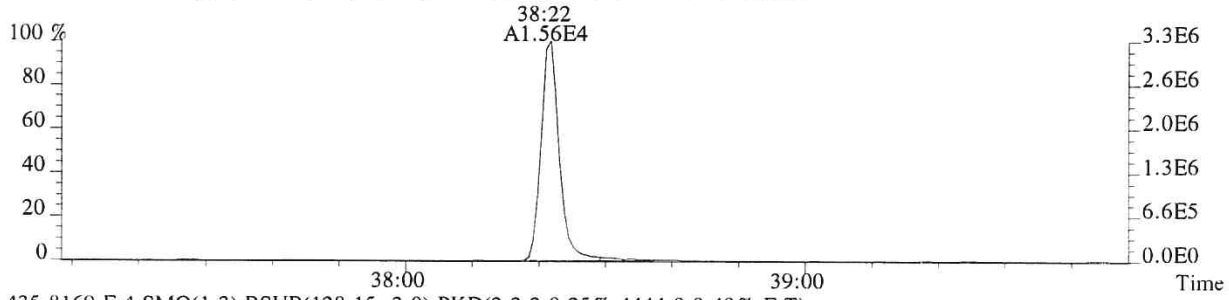
059534

File:P616141 #1-241 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

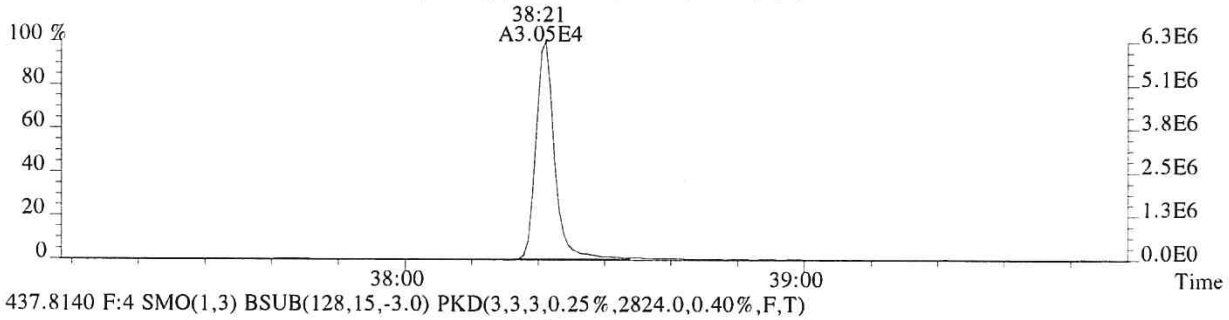
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3064.0,0.40%,F,T)



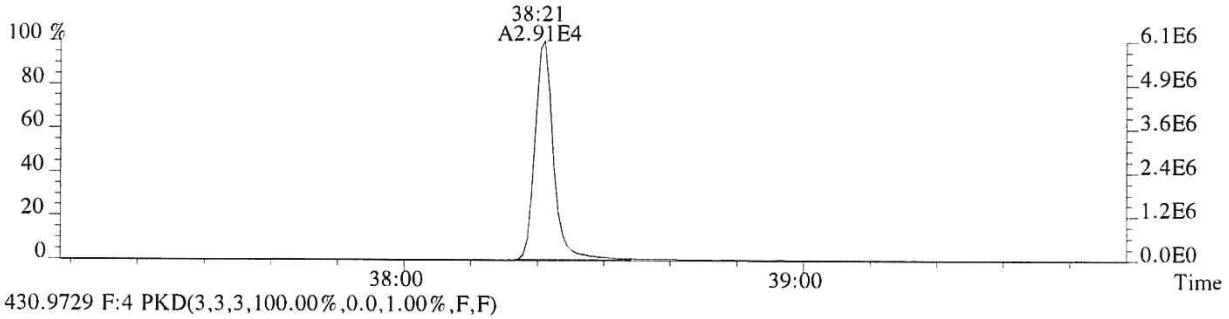
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1772.0,0.40%,F,T)



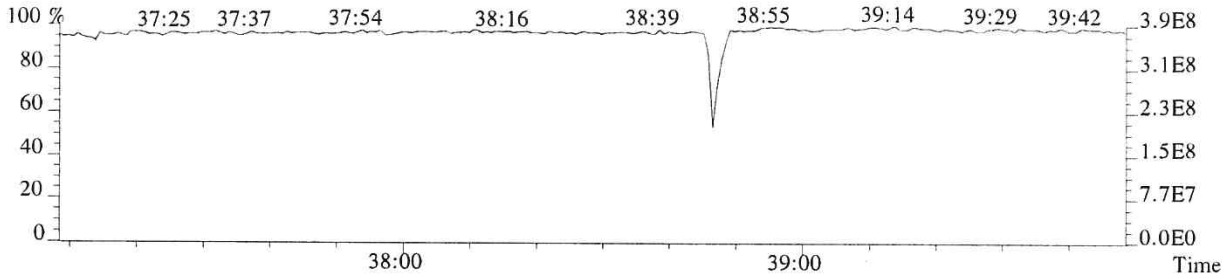
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4444.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2824.0,0.40%,F,T)



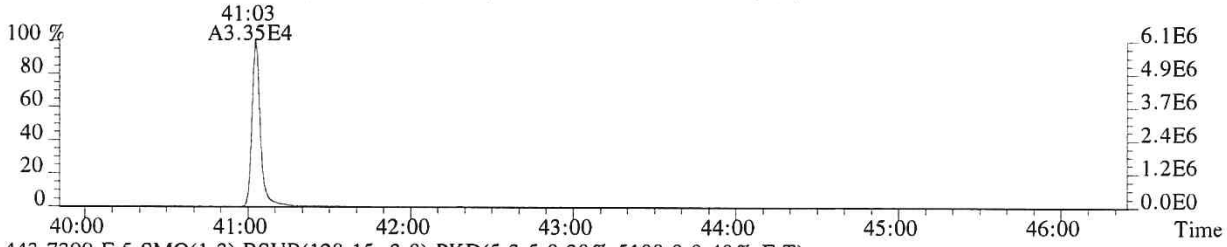
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



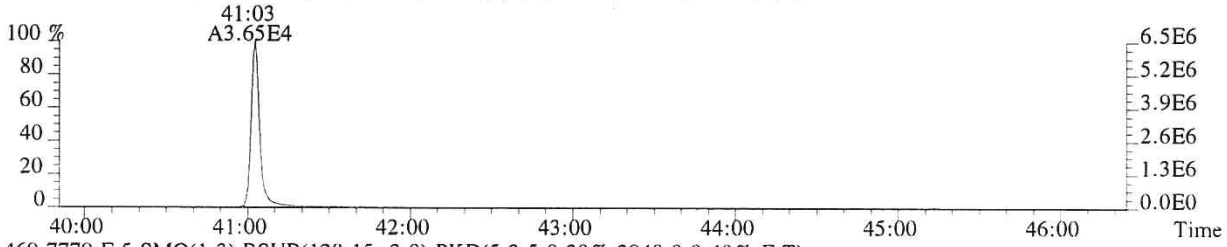
059535

File:P616141 #1-591 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

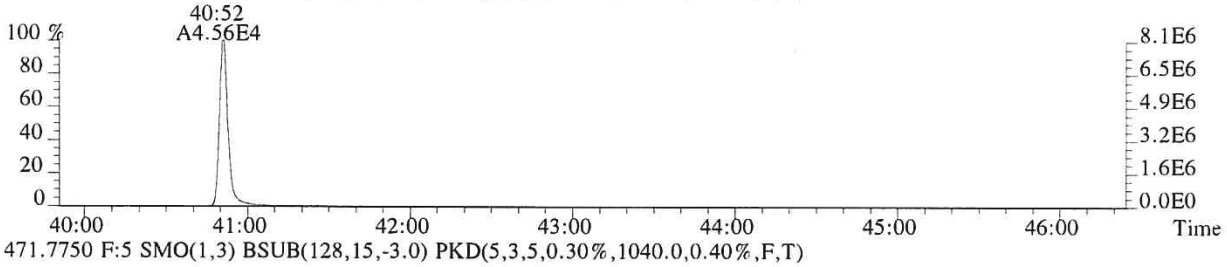
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1428.0,0.40%,F,T)



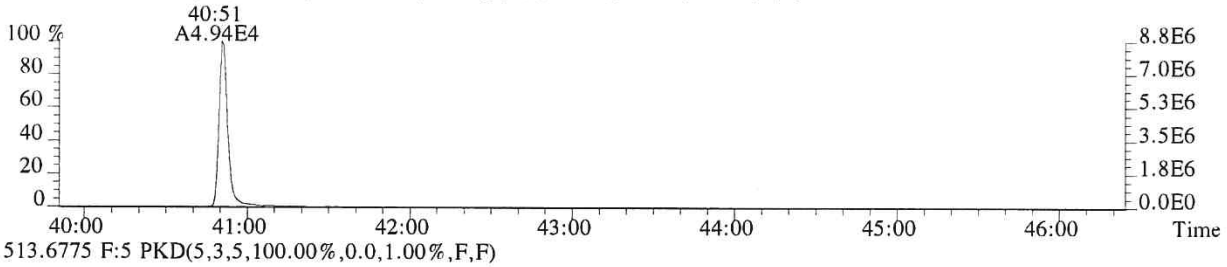
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5108.0,0.40%,F,T)



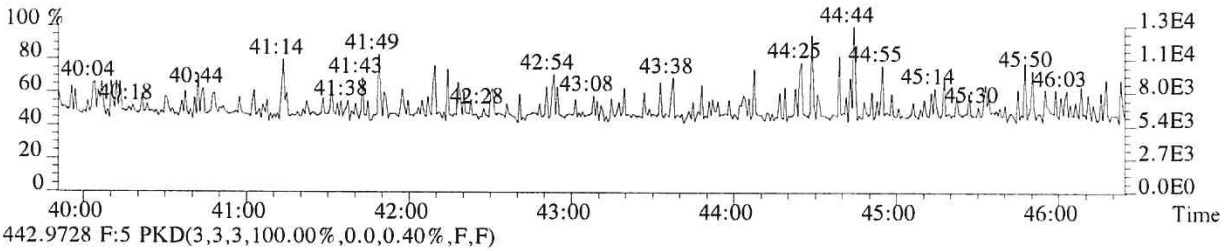
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3948.0,0.40%,F,T)



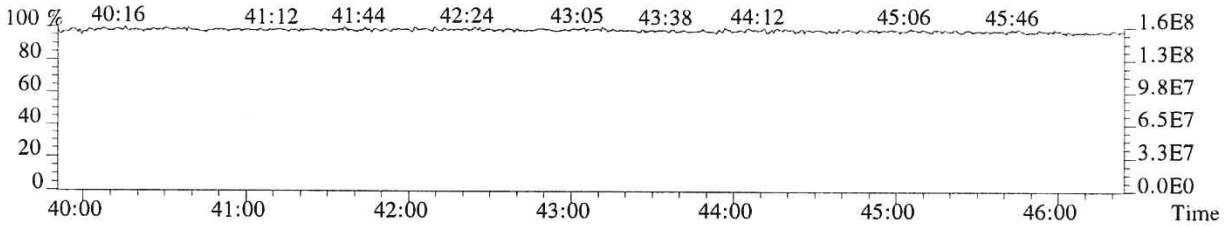
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1040.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

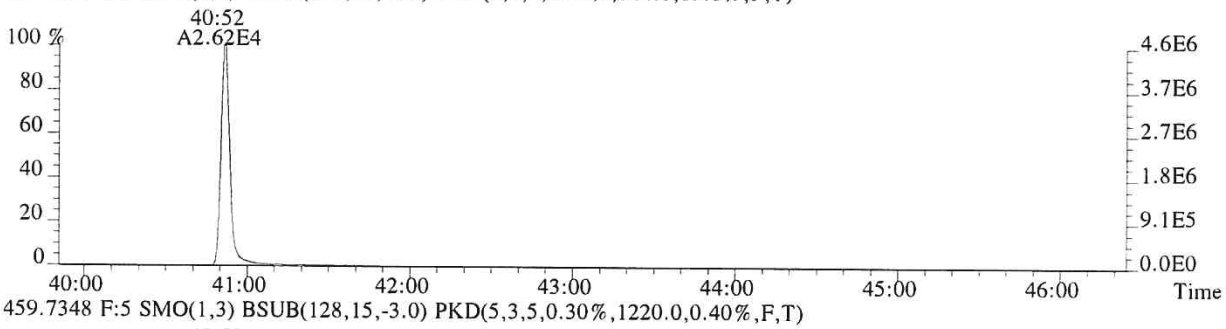


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

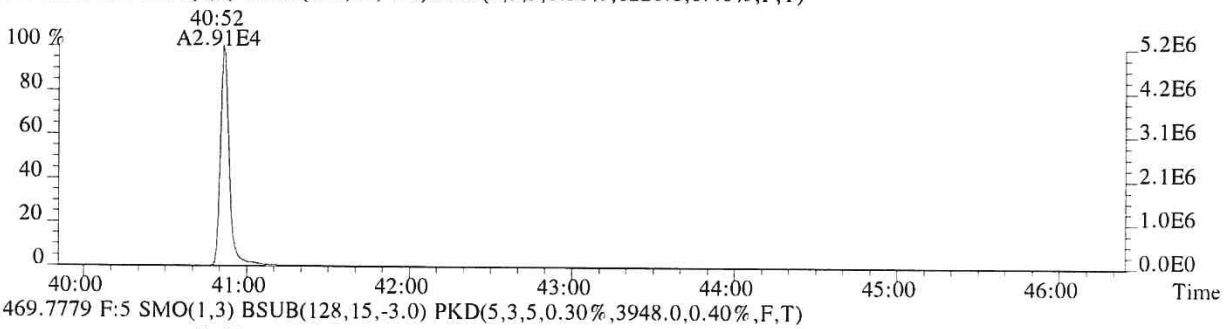


059536

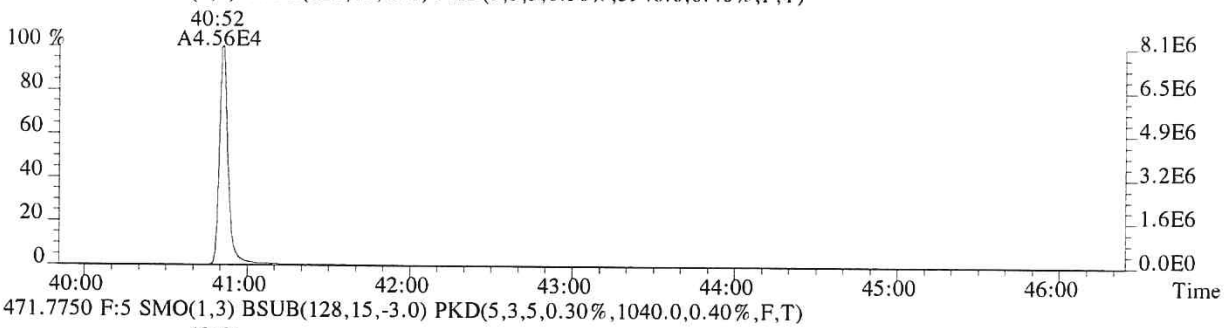
File:P616141 #1-591 Acq:20-DEC-2018 12:57:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,844.0,0.40%,F,T)



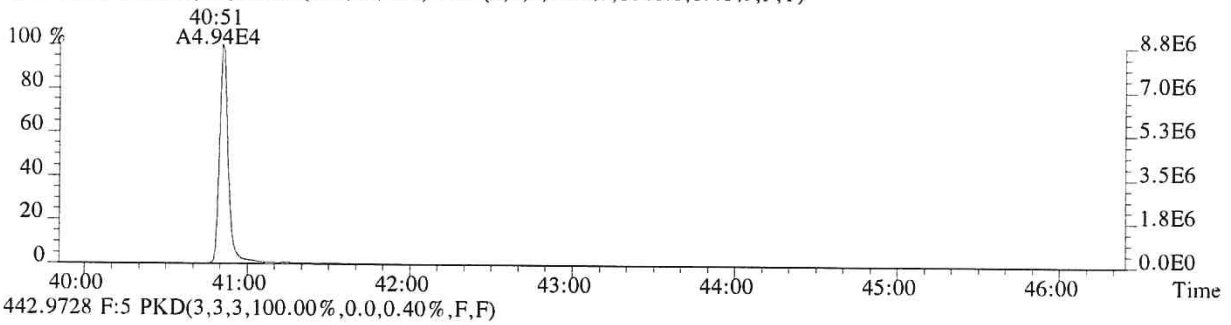
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1220.0,0.40%,F,T)



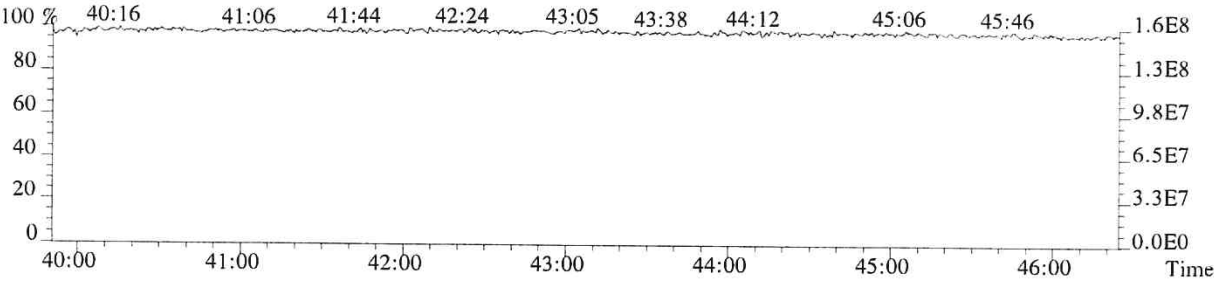
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3948.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1040.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059537

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290	Process Date: 01/25/18
Instrument Name: E-HRMS-07	Calibration File Name: P5-1801241613I
Processor Name: Gisela Cruz	Reviewer Name: Loan Leung
Supervisor: Kristin Neir	

Description	Yes	No	NA	NR	ER#
Analytical Sequence					
Does the analytical sequence summary accurately reflect the instrument run log, including ICV?	√				
Was a Mass Resolution Check performed at the beginning and end of the 12-hour sequence?	√				
Were all calibration standards and the ICV analyzed within the same 12-hour sequence?	√				
Were all calibration standards analyzed only once?	√				
Was the ICV analyzed after the ICAL, before analyzing samples?	√				
	√				
Mass Resolution Check					
Are beginning and ending resolution checks provided and legible?	√				
Were all target masses >10,000 resolving power at the beginning of the sequence?	√				
Were all target masses >10,000 resolving power at the end of the sequence?	√				
For PCB analysis, were masses at the low and high end of each function mass range >8,000?			√		
Where automatic printout of the mass resolution were not >10,000, was the resolution inspected by a trained analyst, including manual calculation of the resolution, if warranted?			√		
Window Define/209					
Is the window defining mix summary present, and accompanied by SICPs/Chromatograms for the WDM?	√				
Was the WDM/Column Performance/209 solution analyzed prior to the analysis of the calibration standards?	√				
Was 2,3,7,8-TCDD peak valley <25% to any other TCDD?	√				
Were all first and last eluters adequately resolved in each function?	√				
If first and last eluters were not resolved, was corrective action performed and documented, followed by a reanalysis of the WDM?			√		
Was the retention time of PCB 209 >55 min?			√		
Were the following congeners uniquely resolved (valley height <40% of the shortest peak)? PCB-34 and PCB-23 PCB-187 and PCB-182			√		
Did PCB 156/157 co-elute within 2 seconds at peak maximum?			√		
Calibration Standards					
Were there at least 5 calibration standards analyzed?	√				
If not all calibration standards were used, were the omitted standards either the lowest or highest calibration standard?			√		

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290	Process Date: 01/25/18
Instrument Name: E-HRMS-07	Calibration File Name: P5-180124161 3I
Processor Name: Gisela Cruz	Reviewer Name: Loan Luong
Supervisor: Kristin Neir	

Description	Yes	No	NA	NR	ER#
Are all sample response summaries, S/N height summaries, and SICPs included (and legible) for the entire sequence?	√				
Did each calibration point meet method criteria for Ion Abundance Ratio for all analytes and labeled standards?	√				
Did each calibration point meet method criteria for signal-to-noise ratios (S/N)?	√				
Were area counts for the highest calibration standard below levels of saturation?	√				
Were manual integrations technically justified to correct for poor software integration?		√			
Response Factors					
Is the ICAL Response Factor Summary present, including RR/RF values for each native/labeled analyte at each level of calibration?	√				
Were all calibration standards used in determining response factors?	√				
Were relative response factors (RR) for each native analyte calculated at each calibration point?	√				
Did the RSD for RRFs for each native analyte meet method criteria?	√				
Were response factors (RF) for each native analyte not having a corresponding labeled compound calculated at each calibration point?	√				
Were RFs for each labeled compound calculated for each calibration point?	√				
Did the RSD for RF for each labeled compound meet method criteria?	√				
Initial Calibration Verification					
Is the calibration verification present, including form 4A/B reflecting results for the ICV (Conc. or %D)	√				
Did all analytes meet method criteria for the ICV.	√				

Laboratory Review Checklist: Initial Calibration

Method: 1613/8290	Process Date: 01/25/18
Instrument Name: E-HRMS-07	Calibration File Name: P5-180124161 3I
Processor Name: Gisela Cruz	Reviewer Name: Loan Luong

ER#[5]	Description

NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: TX01411 Episode No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm) Instrument ID: E-HRMS-07

Init. Calib. Date: 01/24/18

Init. Calib.Times: 11:44

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, SPIKES AND DUPLICATES IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
183360	WINDOW DEFINE	P513848	24-JAN-18	11:44:47
76554	CS0.5	P513850	24-JAN-18	13:32:06
76555	CS1	P513851	24-JAN-18	14:23:56
76556	CS2	P513852	24-JAN-18	15:18:44
76557	CS3	P513853	24-JAN-18	16:06:29
76558	CS4	P513854	24-JAN-18	16:55:09
185657	CS5	P513855	24-JAN-18	17:43:48
75080	2ND SOURCE	P513857	24-JAN-18	19:21:06

Sample List Report — **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS07.PRO\SampleDB\20180124A.SPL
Last Modified: Thursday, January 25, 2018 07:09:10 Eastern Standard Time
Printed: Thursday, January 25, 2018 07:24:00 Eastern Standard Time

Page Position (1, 1)

Opus 4: P5-180124I613I P513857res

*Opus 4: P5-180124m23I P513857resm23

	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	1/24/18	10:39	P513847	CS3	186061	EPA1613_ALS	Dioxin_ALS	Tray1:1	YY	not used
2		11:44	P513848	WINDOWDEFINE	183360	EPA1613_ALS	Dioxin_ALS	Tray1:2		H2Ocheck 11:10
3		12:35	P513849	CS0.5	76554	EPA1613_ALS	Dioxin_ALS	Tray1:3		not used
4		13:32	P513850	CS0.5	76554	EPA1613_ALS	Dioxin_ALS	Tray1:4		~~not used~~ YB 1/25/18
5		14:23	P513851	CS1	76555	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		15:18	P513852	CS2	76556	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		16:06	P513853	CS3	76557	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		16:55	P513854	CS4	76558	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		17:43	P513855	CS5	185657	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		18:32	P513856	NONANE	NONANE	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		19:21	P513857	2ND SOURCE	75080	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12			---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1		
13			---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1		
14			---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2		
15			---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:15		H2Ocheck 1/25/18 00:51
16		19:21	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:16	---	---
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:17	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:18	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---
20	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:20	---	---
21	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:21	---	---
22	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:22	---	---
23	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:23	---	---
24	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:24	---	---
25	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:25	---	---

gc 01/25/18

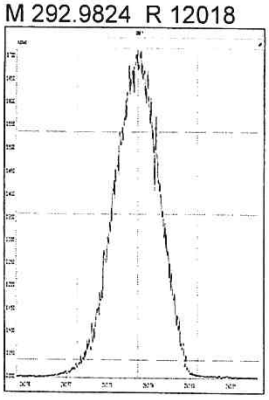
* gc 01/25/18

Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

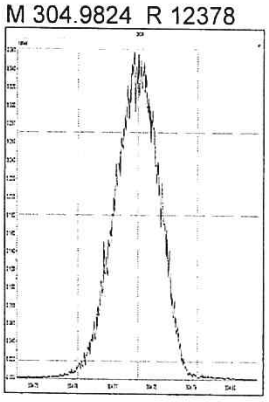
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, January 24, 2018 11:40:23 Eastern Standard Time

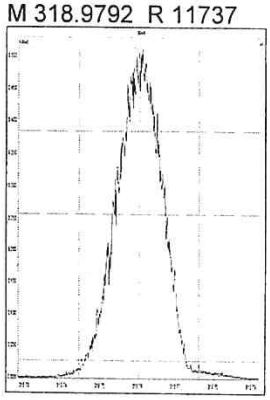
M 292.9824 R 12018



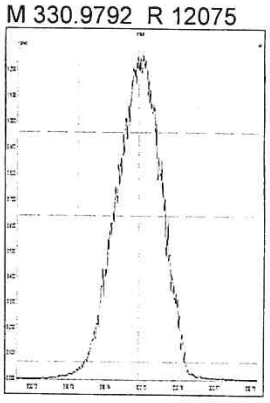
M 304.9824 R 12378



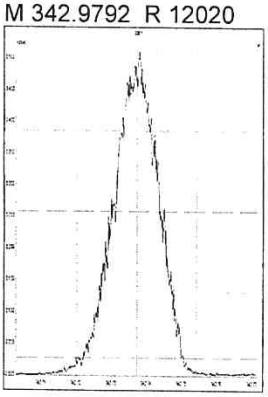
M 318.9792 R 11737



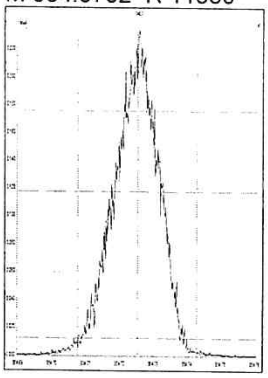
M 330.9792 R 12075



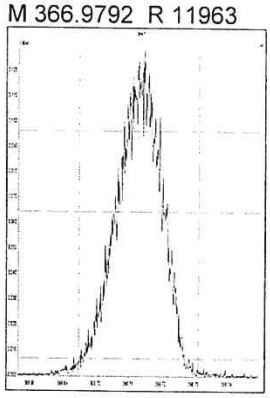
M 342.9792 R 12020



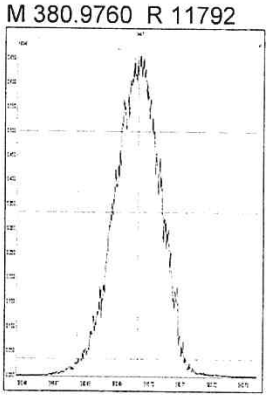
M 354.9792 R 11680



M 366.9792 R 11963



M 380.9760 R 11792

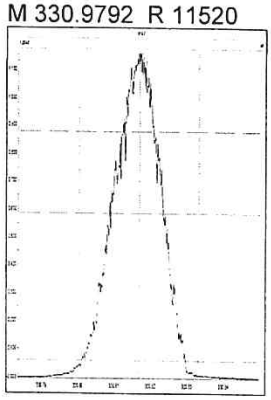


059543

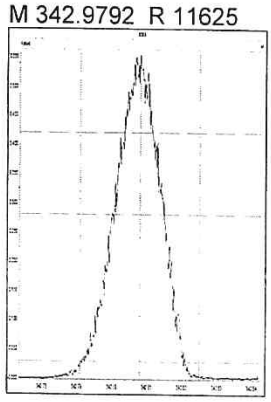
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, January 24, 2018 11:41:23 Eastern Standard Time

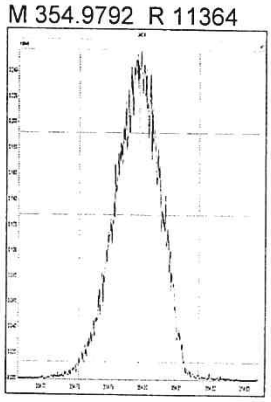
M 330.9792 R 11520



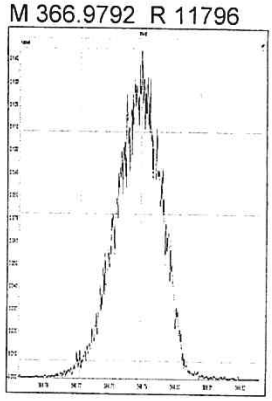
M 342.9792 R 11625



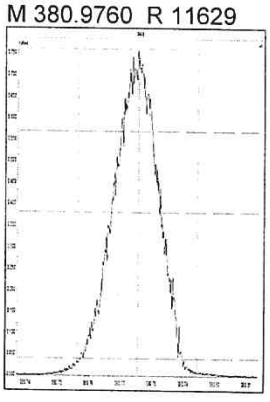
M 354.9792 R 11364



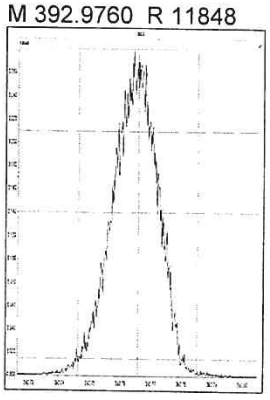
M 366.9792 R 11796



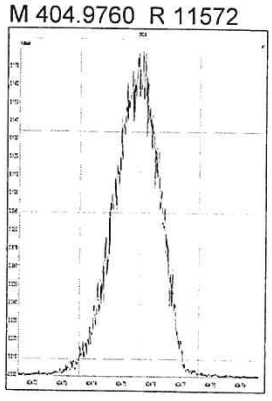
M 380.9760 R 11629



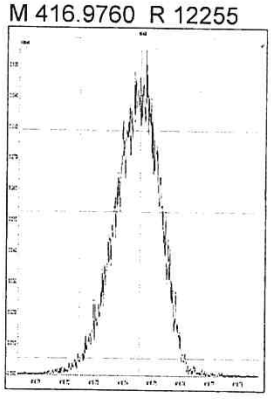
M 392.9760 R 11848



M 404.9760 R 11572



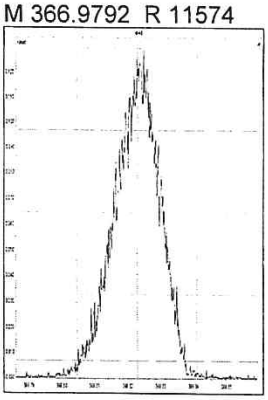
M 416.9760 R 12255



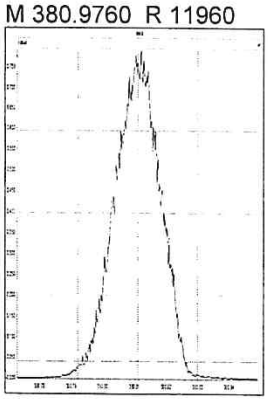
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, January 24, 2018 11:42:15 Eastern Standard Time

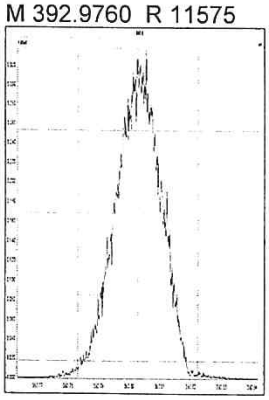
M 366.9792 R 11574



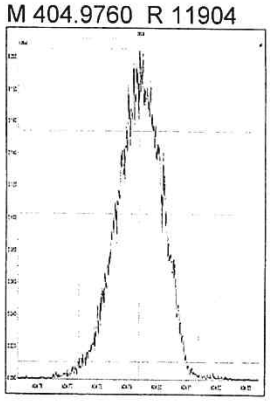
M 380.9760 R 11960



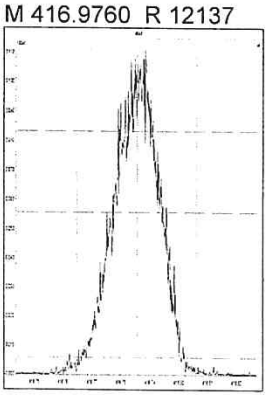
M 392.9760 R 11575



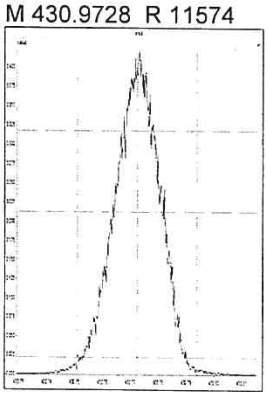
M 404.9760 R 11904



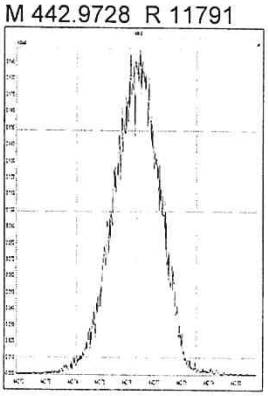
M 416.9760 R 12137



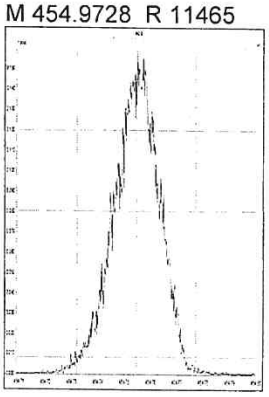
M 430.9728 R 11574



M 442.9728 R 11791



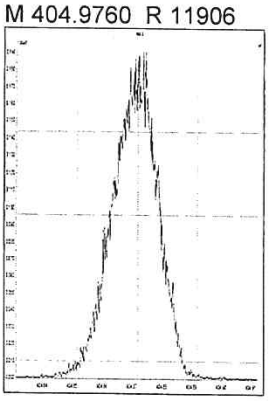
M 454.9728 R 11465



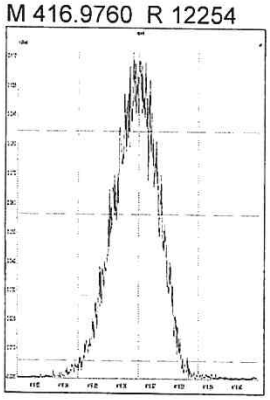
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, January 24, 2018 11:43:11 Eastern Standard Time

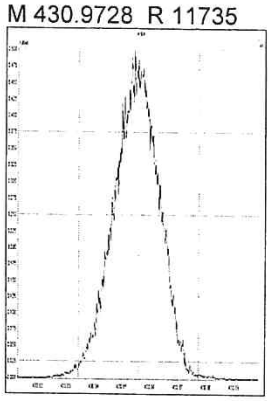
M 404.9760 R 11906



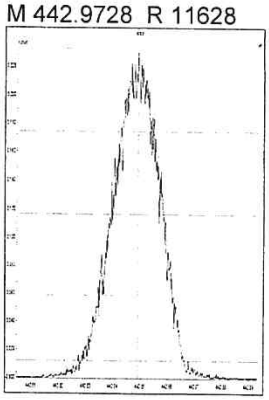
M 416.9760 R 12254



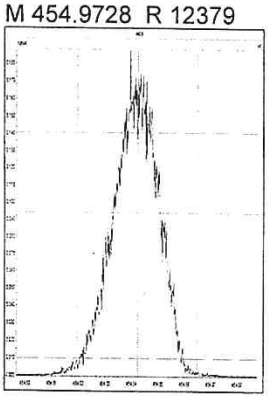
M 430.9728 R 11735



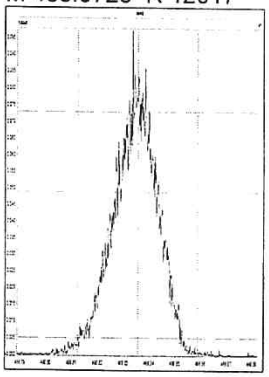
M 442.9728 R 11628



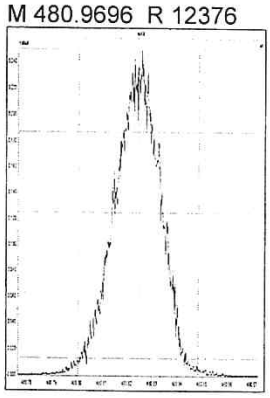
M 454.9728 R 12379



M 466.9728 R 12017



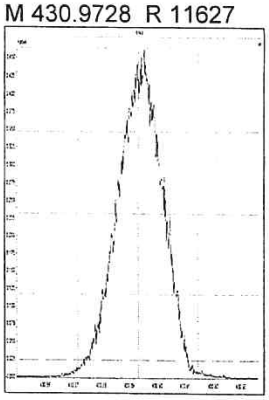
M 480.9696 R 12376



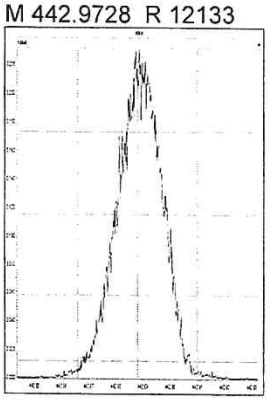
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, January 24, 2018 11:43:57 Eastern Standard Time

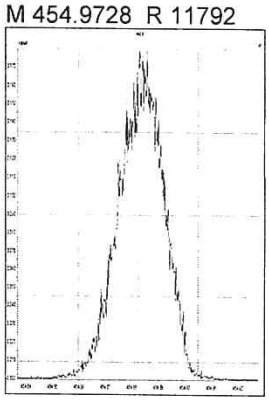
M 430.9728 R 11627



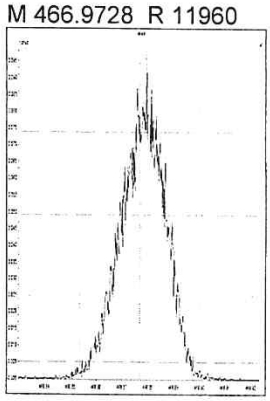
M 442.9728 R 12133



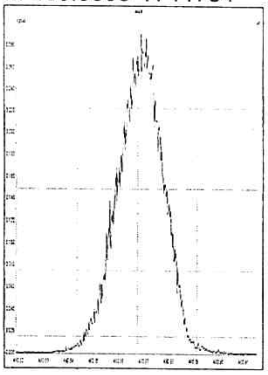
M 454.9728 R 11792



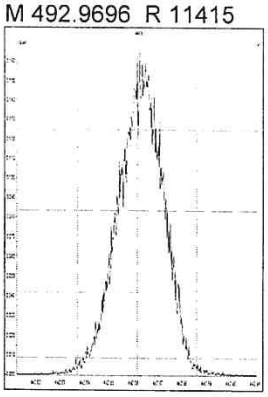
M 466.9728 R 11960



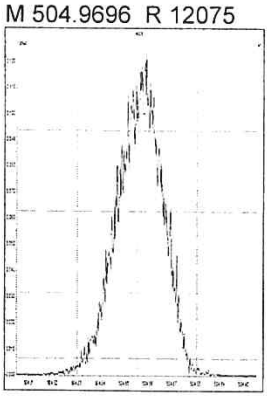
M 480.9696 R 11734



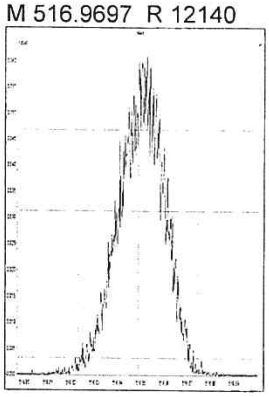
M 492.9696 R 11415



M 504.9696 R 12075



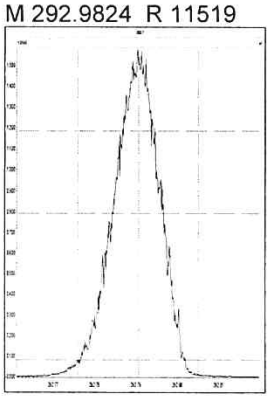
M 516.9697 R 12140



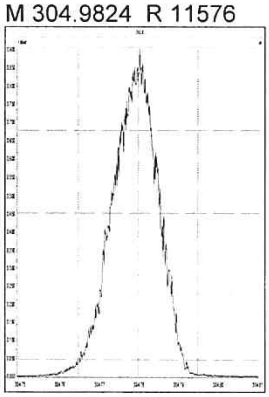
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, January 25, 2018 06:51:19 Eastern Standard Time

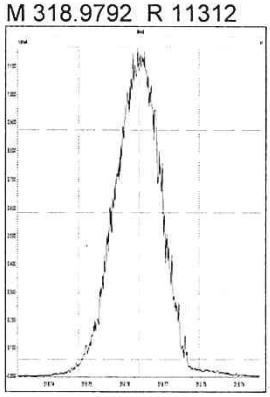
M 292.9824 R 11519



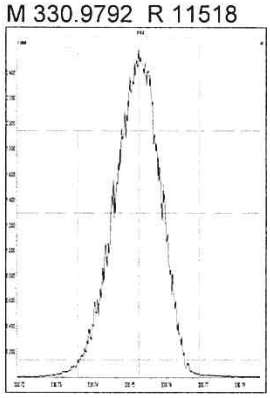
M 304.9824 R 11576



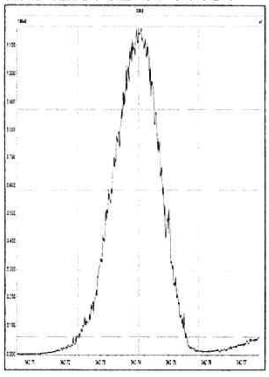
M 318.9792 R 11312



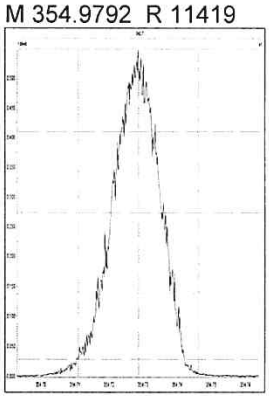
M 330.9792 R 11518



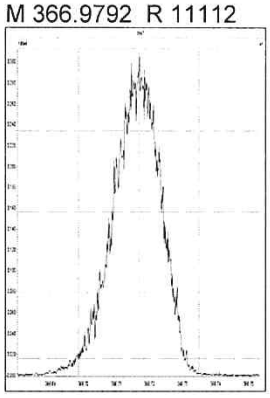
M 342.9792 R 11161



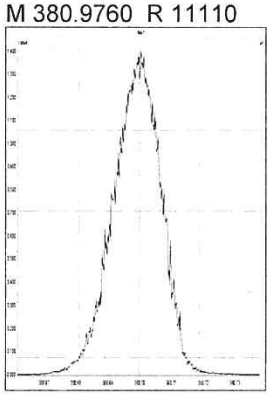
M 354.9792 R 11419



M 366.9792 R 11112



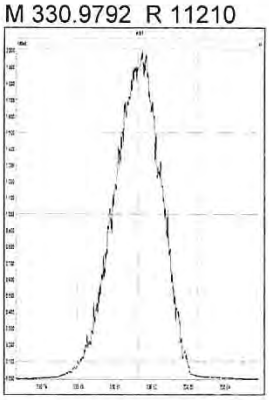
M 380.9760 R 11110



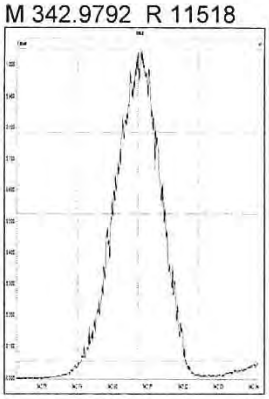
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Thursday, January 25, 2018 06:52:11 Eastern Standard Time

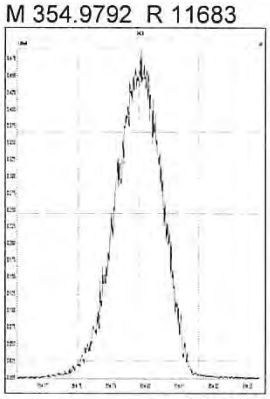
M 330.9792 R 11210



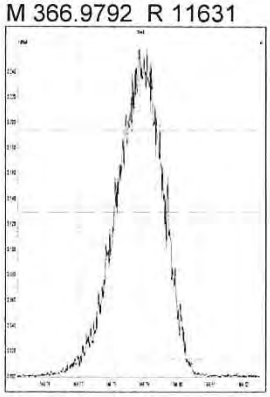
M 342.9792 R 11518



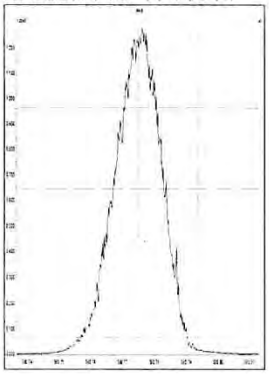
M 354.9792 R 11683



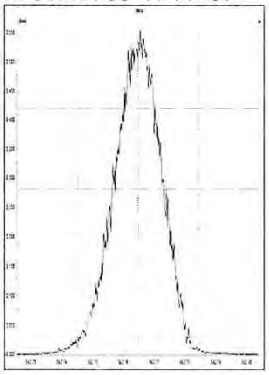
M 366.9792 R 11631



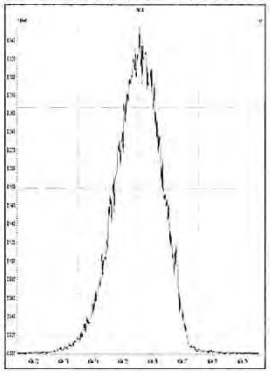
M 380.9760 R 11314



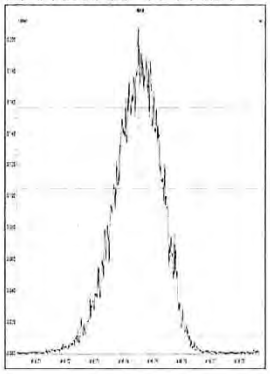
M 392.9760 R 11467



M 404.9760 R 11518



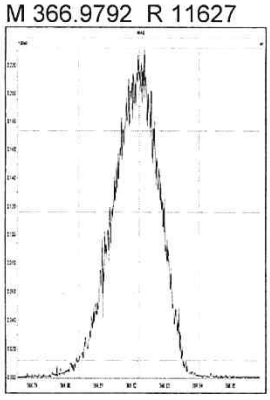
M 416.9760 R 11161



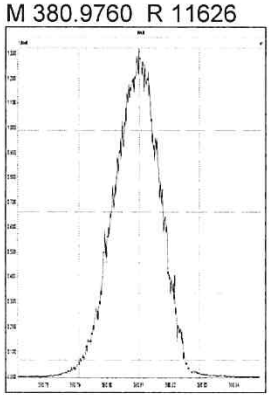
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, January 25, 2018 06:52:51 Eastern Standard Time

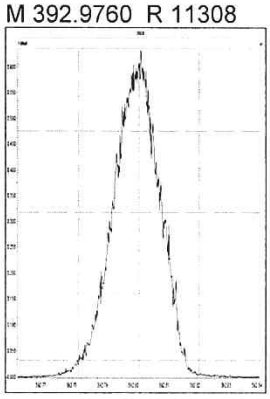
M 366.9792 R 11627



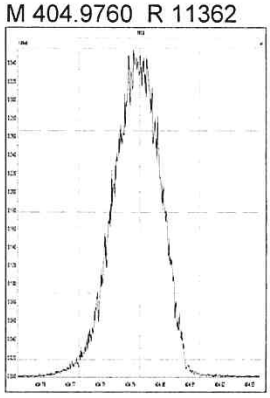
M 380.9760 R 11626



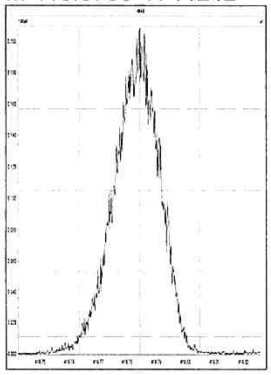
M 392.9760 R 11308



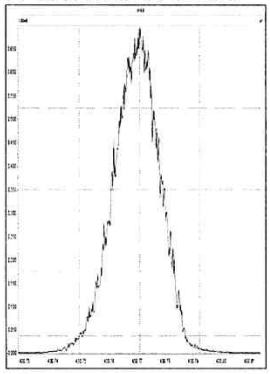
M 404.9760 R 11362



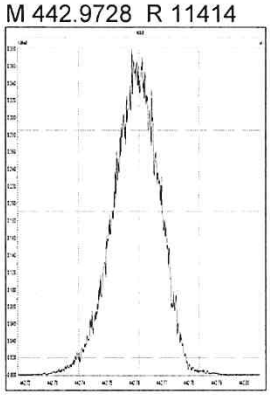
M 416.9760 R 11212



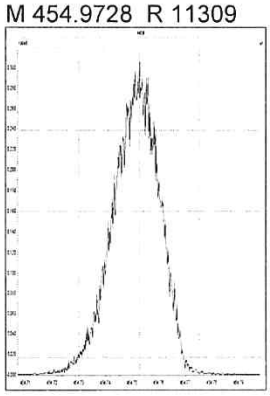
M 430.9728 R 11363



M 442.9728 R 11414



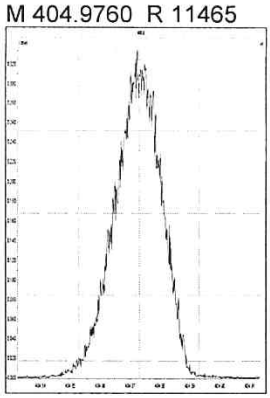
M 454.9728 R 11309



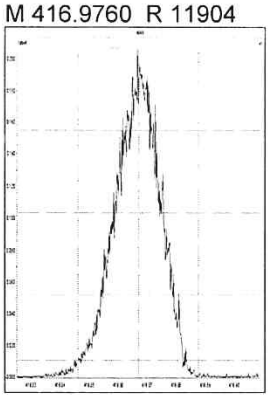
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Thursday, January 25, 2018 06:53:26 Eastern Standard Time

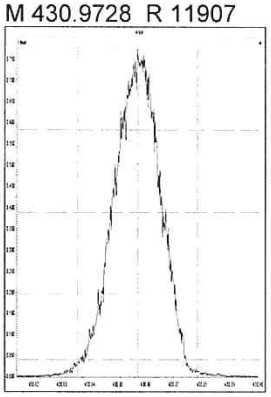
M 404.9760 R 11465



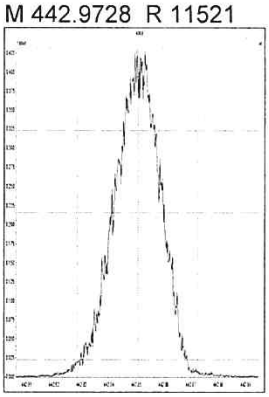
M 416.9760 R 11904



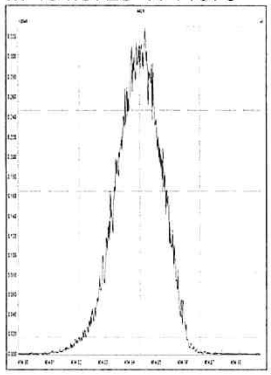
M 430.9728 R 11907



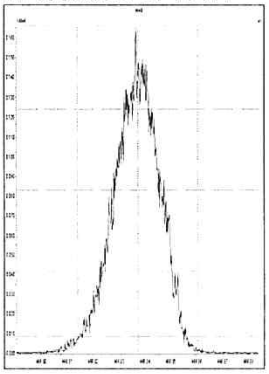
M 442.9728 R 11521



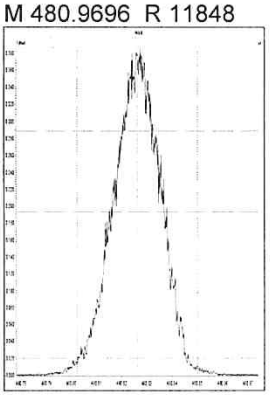
M 454.9728 R 11573



M 466.9728 R 11417



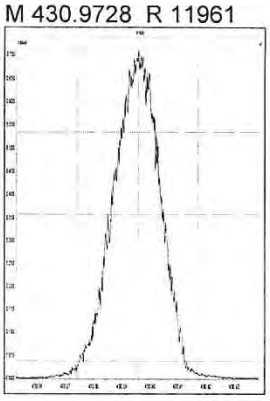
M 480.9696 R 11848



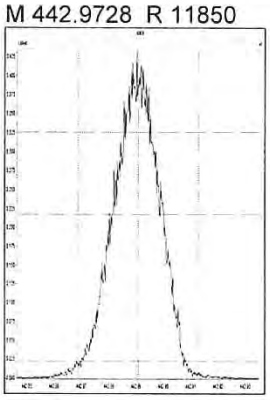
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, January 25, 2018 06:53:57 Eastern Standard Time

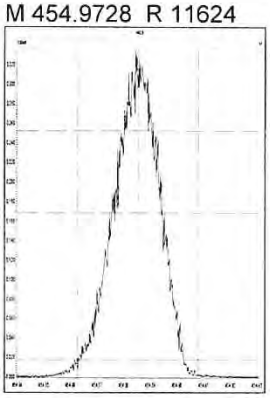
M 430.9728 R 11961



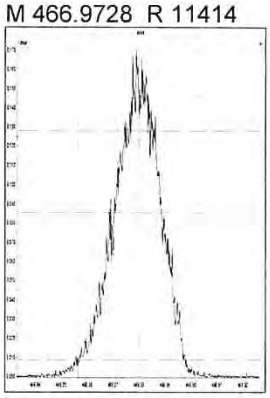
M 442.9728 R 11850



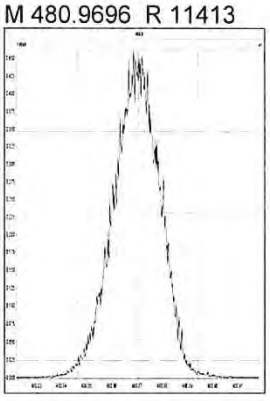
M 454.9728 R 11624



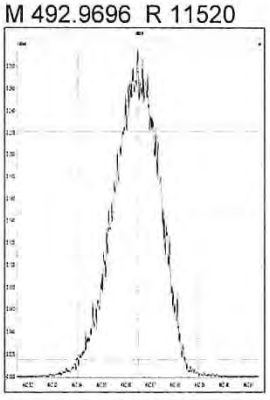
M 466.9728 R 11414



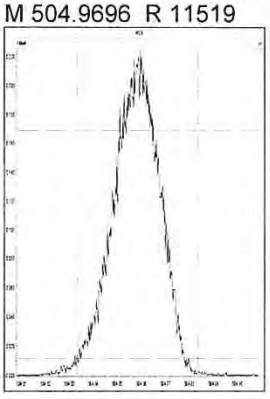
M 480.9696 R 11413



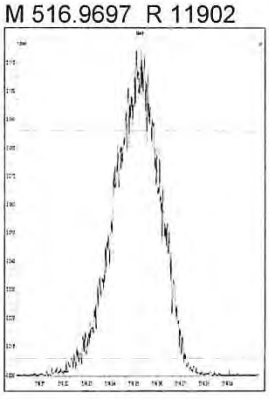
M 492.9696 R 11520



M 504.9696 R 11519



M 516.9697 R 11902



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

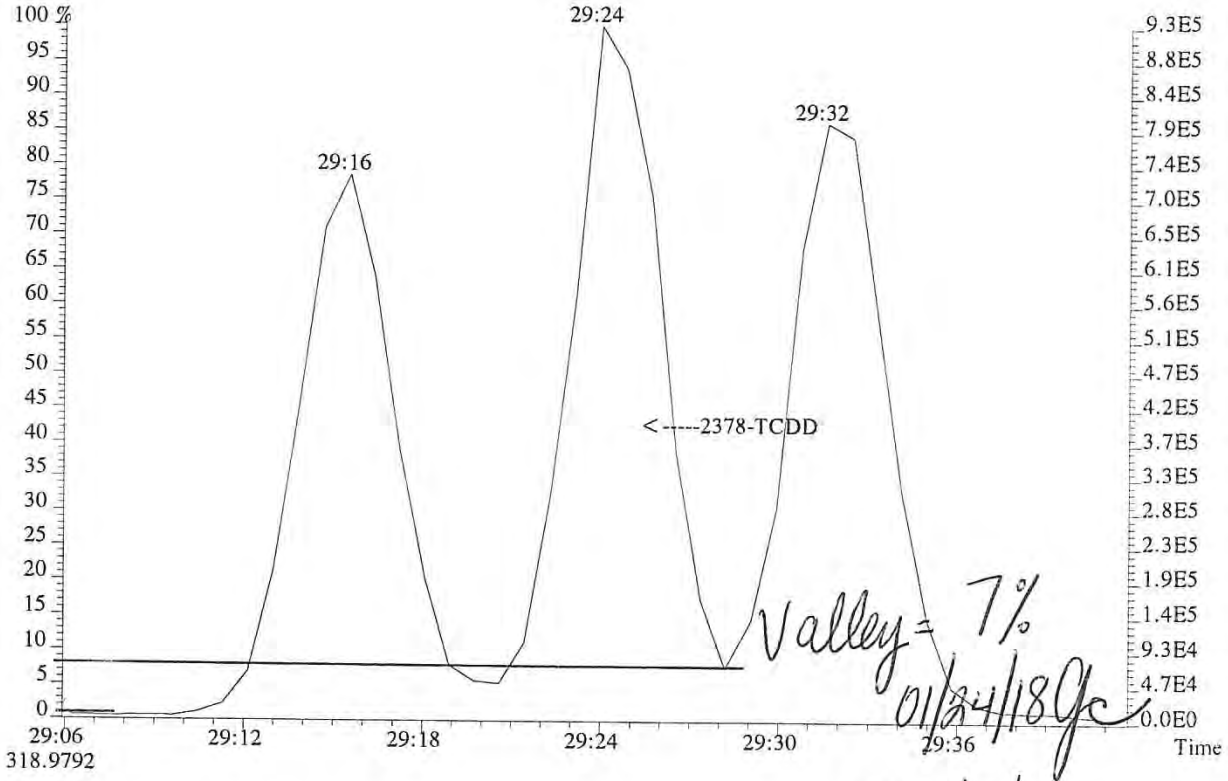
Case No.: _____ SDG No.:
ID: 0.25 (mm)
Lab File ID: P513848
Date Analyzed: 24-JAN-2018
Time Analyzed: 11:44:47

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	24:25	30:32
TCDD	26:17	30:22
PeCDF	30:27	34:34
PeCDD	31:55	34:19
HxCDF	35:11	37:38
HxCDD	35:41	37:14
HpCDF	38:49	40:14
HpCDD	39:04	39:44

% Valley 2378-TCDD: 7 %

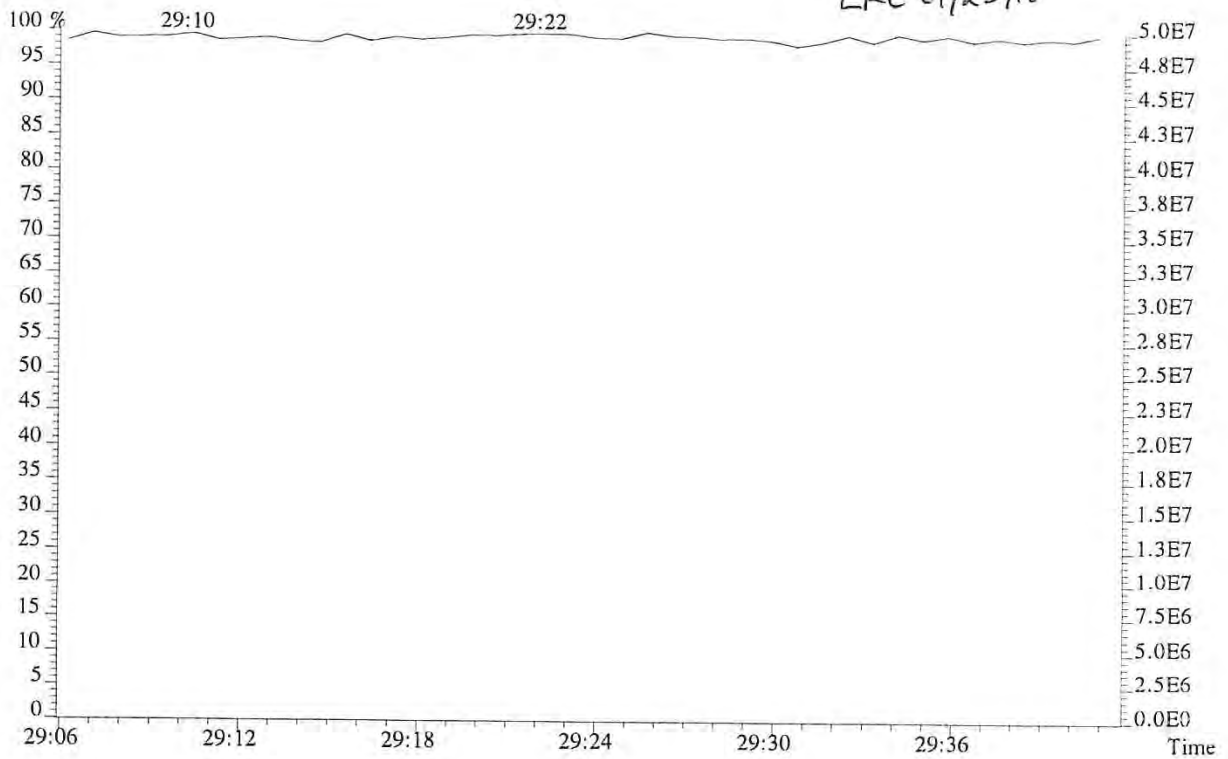
059553

File:P513848 #1-665 Acq:24-JAN-2018 11:44:47 Probe EI+ Magnet SIR VG BioTech Mass spectt
Sample#1 Exp:183360
319.8965



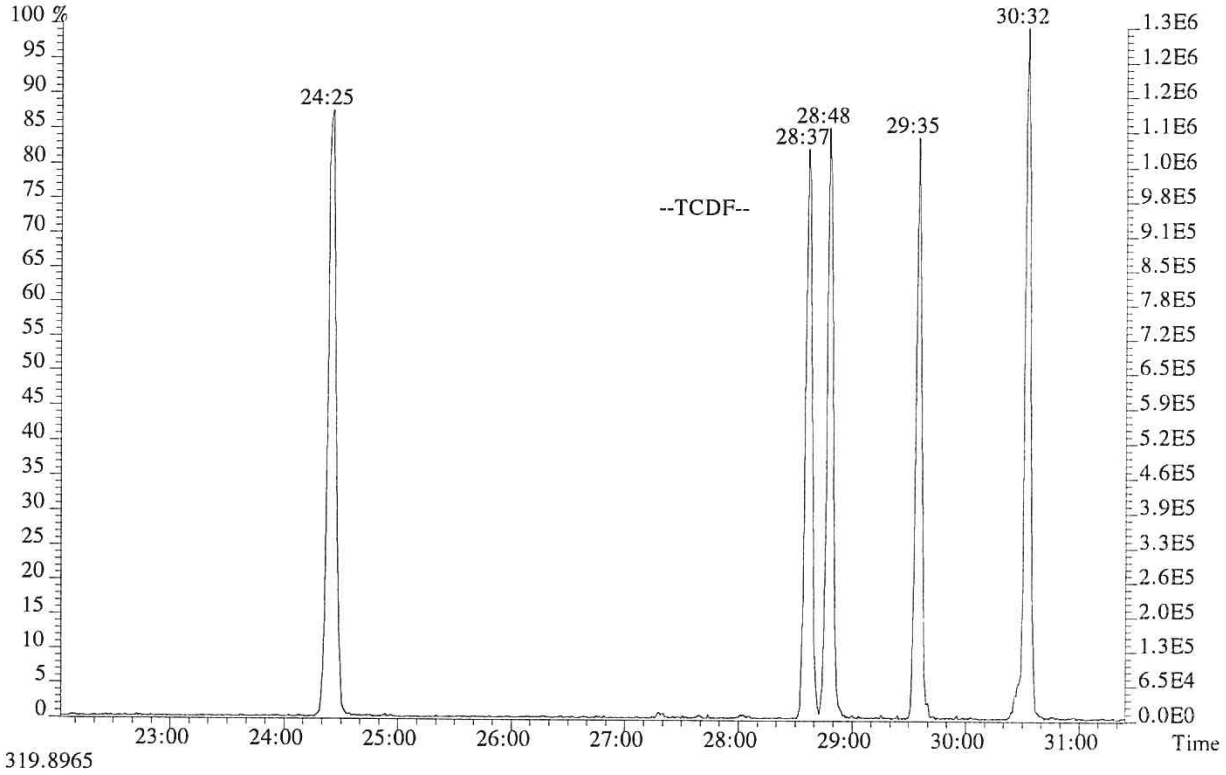
318.9792

LKL 01/25/18



059554

File:P513848 #1-665 Acq:24-JAN-2018 11:44:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:183360
303.9016



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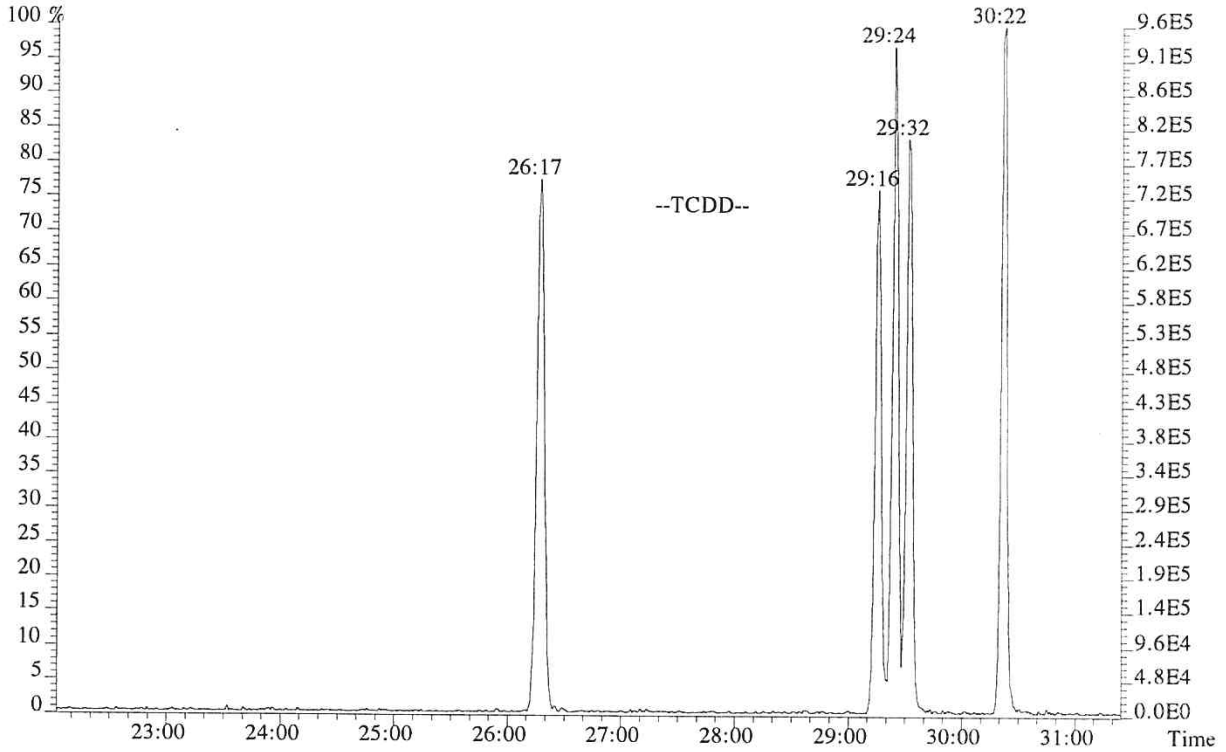
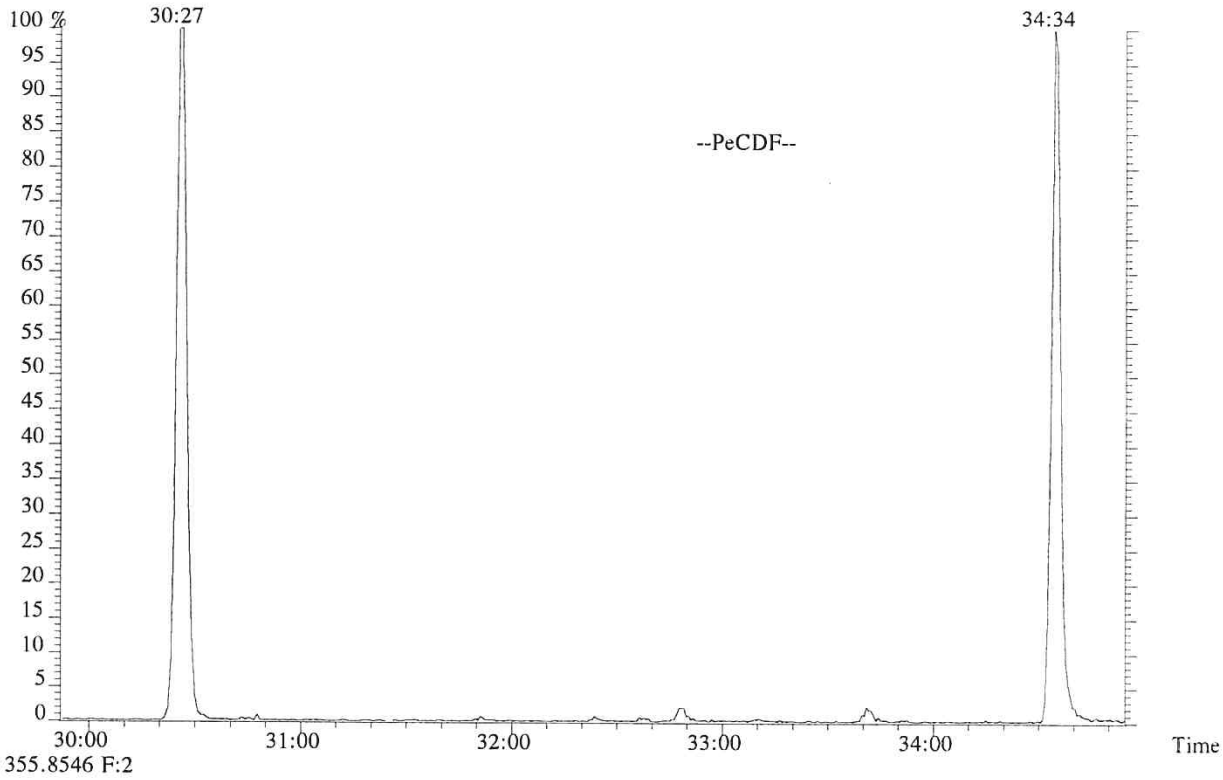
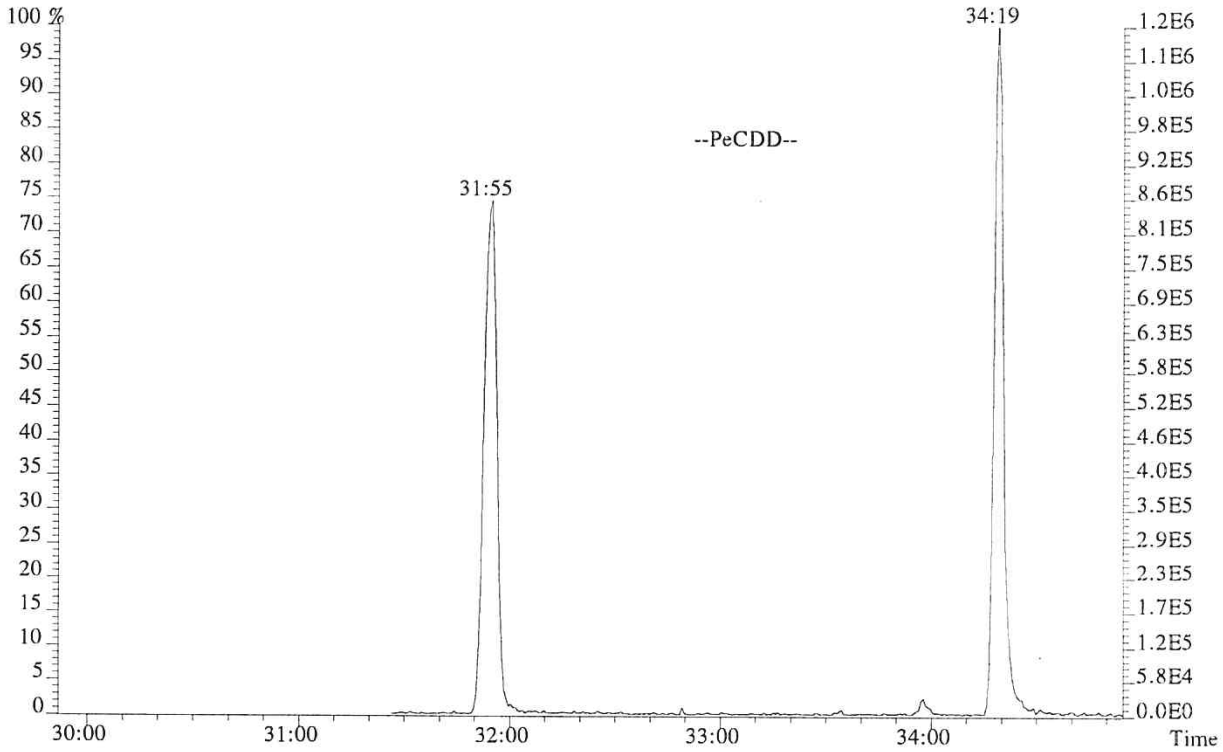


059555

File:P513848 #1-665 Acq:24-JAN-2018 11:44:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:183360
339.8597,339.8597 F:2

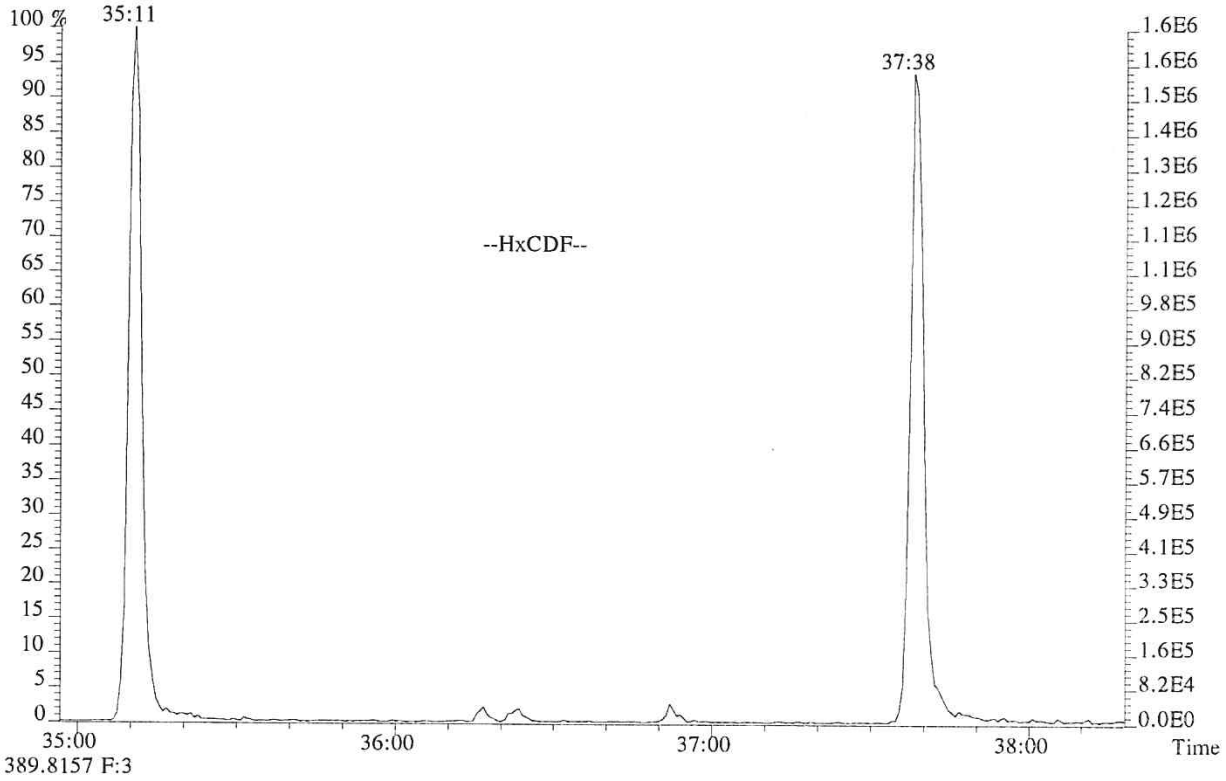


355.8546 F:2

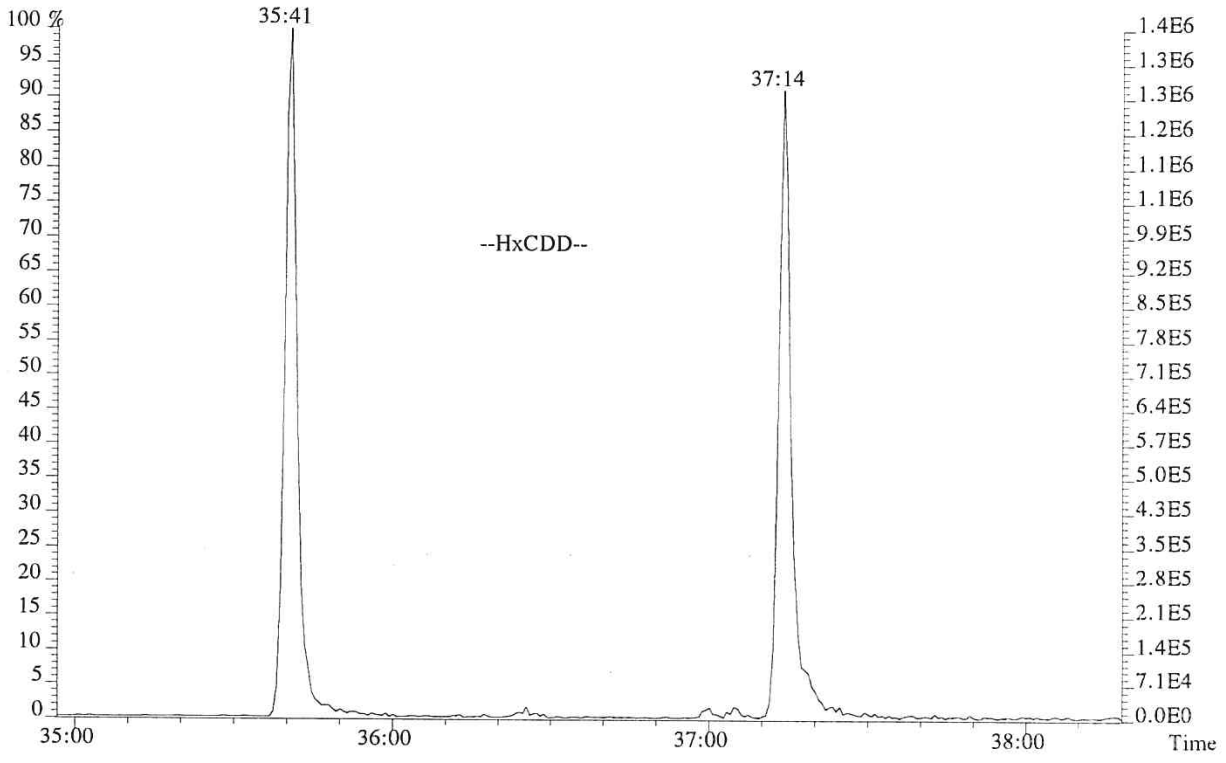


059556

File:P513848 #1-303 Acq:24-JAN-2018 11:44:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:183360
373.8208 F:3

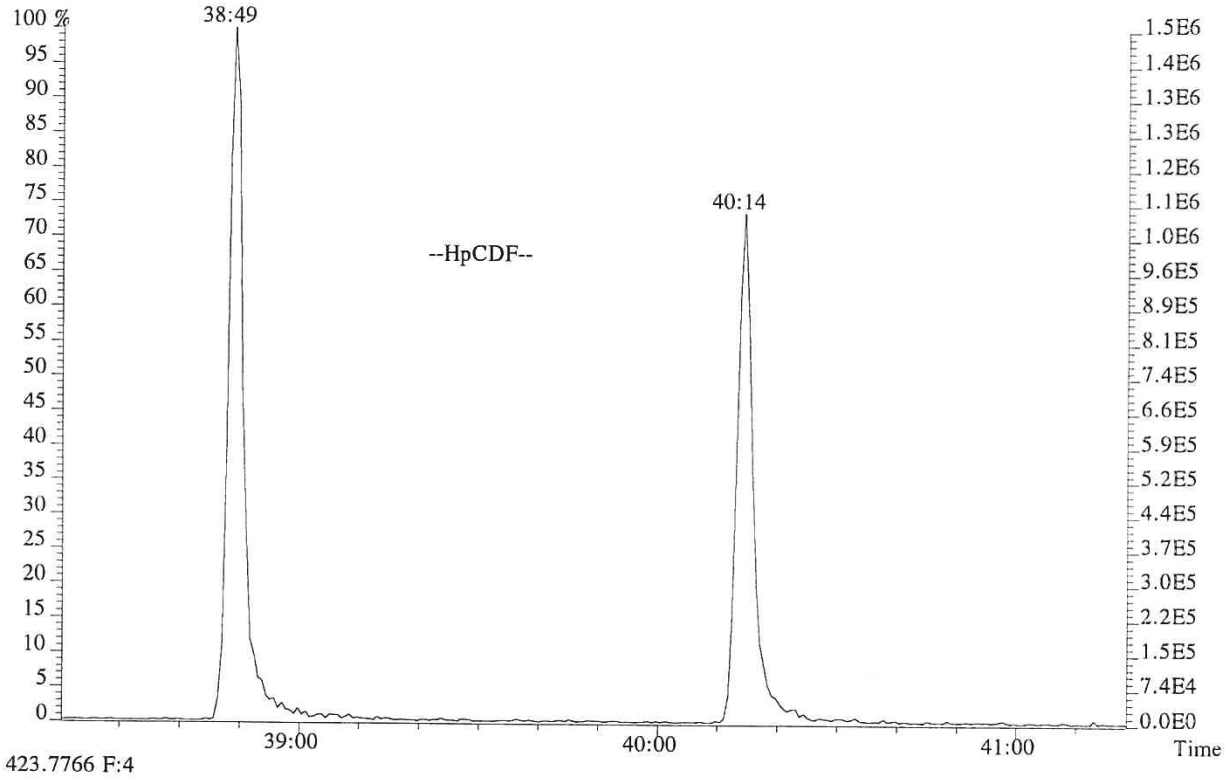


389.8157 F:3

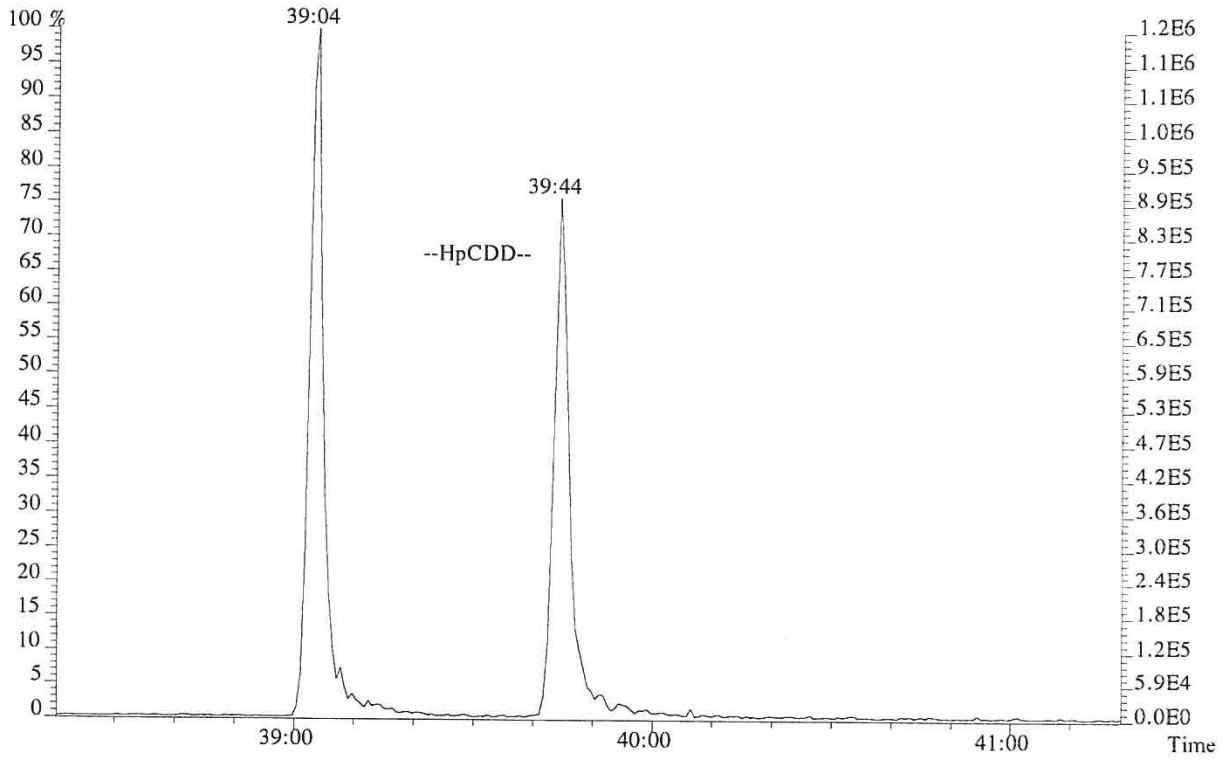


059557

File:P513848 #1-268 Acq:24-JAN-2018 11:44:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:183360
407.7818 F:4



423.7766 F:4



059558

USEPA - CLP
6DFA6
CDD/CDF INITIAL CALIBRATION RESPONSE FACTOR SUMMARY
HIGH RESOLUTION

Lab Name: ALS Environmental Contract No.:
Lab Code: ALSTX Case No.: TO No.: SDG No.:
GC Column: DB-5MSUI ID: 0.25(mm) Instrument ID: E-HRMS-07
Init. Calib. Date(s).: 01/24/18 Method 1613/8290
Init. Calib. Time.: 11:44

RR/RRF

Target Analytes	CS0.5	CS1	CS2	CS3	CS4	CS5	MEAN RR/RRF	%RSD	QC LIMITS
2,3,7,8-TCDD	1.10	1.07	1.06	1.07	1.10	1.11	1.09	1.96	+/-20%
2,3,7,8-TCDF	0.89	0.96	0.91	0.94	0.96	0.99	0.94	4.09	+/-20%
1,2,3,7,8-PeCDF	0.93	0.98	1.02	1.03	1.06	1.06	1.01	5.02	+/-20%
1,2,3,7,8-PeCDD	0.92	0.97	0.96	0.95	0.97	0.97	0.96	2.08	+/-20%
2,3,4,7,8-PeCDF	0.87	0.94	0.98	0.97	0.99	1.00	0.96	4.97	+/-20%
1,2,3,4,7,8-HxCDF	1.07	1.13	1.22	1.21	1.25	1.26	1.19	6.34	+/-20%
1,2,3,6,7,8-HxCDF	1.06	1.07	1.13	1.13	1.17	1.17	1.12	4.28	+/-20%
1,2,3,4,7,8-HxCDD	0.96	1.04	1.03	1.06	1.06	1.07	1.04	3.78	+/-20%
1,2,3,6,7,8-HxCDD	1.00	1.06	1.03	1.03	1.05	1.06	1.04	2.33	+/-20%
1,2,3,7,8,9-HxCDD	0.98	1.06	1.10	1.06	1.07	1.10	1.06	4.09	+/-20%
2,3,4,6,7,8-HxCDF	1.01	1.09	1.12	1.13	1.15	1.17	1.11	5.18	+/-20%
1,2,3,7,8,9-HxCDF	1.08	1.10	1.15	1.17	1.18	1.18	1.14	3.94	+/-20%
1,2,3,4,6,7,8-HpCDF	1.31	1.32	1.36	1.37	1.37	1.38	1.35	2.22	+/-20%
1,2,3,4,6,7,8-HpCDD	1.00	0.98	1.05	1.03	1.05	1.04	1.02	2.88	+/-20%
1,2,3,4,7,8,9-HpCDF	1.18	1.23	1.29	1.30	1.28	1.27	1.26	3.68	+/-20%
OCDD	1.05	1.14	1.14	1.13	1.12	1.12	1.12	2.97	+/-20%
OCDF	1.26	1.39	1.35	1.33	1.39	1.43	1.36	4.36	+/-20%
Labeled Compounds									
13C-2,3,7,8-TCDD	0.91	0.87	0.93	0.90	0.94	0.98	0.92	4.14	+/-35%
13C-1,2,3,7,8-PeCDD	0.91	0.83	1.03	0.99	1.01	1.08	0.98	9.21	+/-35%
13C-1,2,3,4,7,8-HxCDD	0.94	0.90	0.90	0.95	0.93	0.92	0.92	2.06	+/-35%
13C-1,2,3,6,7,8-HxCDD	0.96	0.96	0.94	0.97	0.97	0.91	0.95	2.50	+/-35%
13C-1,2,3,4,6,7,8-HpCDD	0.81	0.92	0.79	0.88	0.90	0.85	0.86	5.83	+/-35%
13C-OCDD	0.52	0.63	0.58	0.58	0.62	0.57	0.58	6.90	+/-35%
13C-2,3,7,8-TCDF	1.45	1.48	1.53	1.60	1.53	1.49	1.51	3.54	+/-35%
13C-1,2,3,7,8-PeCDF	1.37	1.32	1.50	1.50	1.52	1.62	1.47	7.34	+/-35%
13C-2,3,4,7,8-PeCDF	1.36	1.29	1.50	1.46	1.52	1.61	1.46	7.94	+/-35%
13C-1,2,3,4,7,8-HxCDF	1.22	1.27	1.18	1.29	1.25	1.19	1.23	3.63	+/-35%
13C-1,2,3,6,7,8-HxCDF	1.40	1.48	1.34	1.42	1.41	1.34	1.40	3.84	+/-35%
13C-2,3,4,6,7,8-HxCDF	1.26	1.26	1.23	1.27	1.28	1.23	1.26	1.87	+/-35%
13C-1,2,3,7,8,9-HxCDF	1.03	1.17	1.06	1.00	1.17	1.08	1.09	6.47	+/-35%
13C-1,2,3,4,6,7,8-HpCDF	0.96	1.02	0.92	0.99	0.98	0.93	0.97	3.83	+/-35%
13C-1,2,3,4,7,8,9-HpCDF	0.76	0.95	0.79	0.74	0.86	0.82	0.82	9.19	+/-35%
37Cl-2,3,7,8-TCDD	0.93	0.96	1.03	1.00	1.05	1.11	1.01	6.21	+/-35%

1.123789-HxCDD Relative Response (RR) is calculated based on the labeled analog of the other two HxCDDs.
2. OCDF RR is calculated based on the labeled analog of OCDD

USEPA - CLP
6DFB6
CDD/CDF INITIAL CALIBRATION ION ABUNDANCE RATIO SUMMARY
HIGH RESOLUTION

Lab Name: ALS Environmental Contract No.:
Lab Code: ALSTX Case No.: TO No.: SDG No.:
GC Column: DB-5MSUI ID: 0.25(mm) Instrument ID: E-HRMS-07
Init. Calib. Date(s).: 01/24/18 Method 1613/8290
Init. Calib. Time.: 11:44

Target Analytes	SELECTED IONS	ION ABUNDANCE RATIO CS0.5	CS1	CS2	CS3	CS4	CS5	FLAG	ION RATIO QC LIMITS
2,3,7,8-TCDF	304/306	0.76	0.72	0.74	0.75	0.77	0.77		0.65-0.89
2,3,7,8-TCDD	320/322	0.73	0.88	0.76	0.79	0.78	0.78		0.65-0.89
1,2,3,7,8-PeCDF	340/342	1.42	1.54	1.48	1.53	1.54	1.55		1.32-1.78
2,3,4,7,8-PeCDF	340/342	1.48	1.46	1.50	1.52	1.53	1.54		1.32-1.78
1,2,3,7,8-PeCDD	356/358	1.64	1.66	1.58	1.56	1.56	1.57		1.32-1.78
1,2,3,4,7,8-HxCDF	374/376	1.18	1.20	1.20	1.22	1.22	1.23		1.05-1.43
1,2,3,6,7,8-HxCDF	374/376	1.28	1.17	1.21	1.21	1.22	1.24		1.05-1.43
2,3,4,6,7,8-HxCDF	374/376	1.12	1.24	1.22	1.22	1.21	1.22		1.05-1.43
1,2,3,7,8,9-HxCDF	374/376	1.19	1.33	1.22	1.21	1.24	1.23		1.05-1.43
1,2,3,4,7,8-HxCDD	390/392	1.32	1.26	1.25	1.25	1.25	1.26		1.05-1.43
1,2,3,6,7,8-HxCDD	390/392	1.09	1.35	1.26	1.26	1.26	1.26		1.05-1.43
1,2,3,7,8,9-HxCDD	390/392	1.23	1.21	1.24	1.28	1.26	1.25		1.05-1.43
1,2,3,4,6,7,8-HpCDF	408/410	0.98	1.03	1.02	1.02	1.03	1.04		0.88-1.20
1,2,3,4,7,8,9-HpCDF	408/410	1.03	0.96	1.01	1.03	1.03	1.04		0.88-1.20
1,2,3,4,6,7,8-HpCDD	424/426	0.99	1.11	1.04	1.05	1.05	1.05		0.88-1.20
OCDF	442/444	0.88	0.95	0.89	0.90	0.91	0.91		0.76-1.02
OCDD	458/460	0.86	0.88	0.89	0.89	0.89	0.89		0.76-1.02
13C-2,3,7,8-TCDD	332/334	0.81	0.80	0.80	0.80	0.81	0.80		0.65-0.89
13C-1,2,3,7,8-PeCDD	368/370	1.60	1.59	1.59	1.58	1.59	1.59		1.32-1.78
13C-1,2,3,4,7,8-HxCDD	402/404	1.29	1.27	1.26	1.33	1.27	1.28		1.05-1.43
13C-1,2,3,6,7,8-HxCDD	402/404	1.26	1.28	1.27	1.20	1.26	1.26		1.05-1.43
13C-1,2,3,4,6,7,8-HpCDD	436/438	1.06	1.04	1.06	1.06	1.08	1.06		0.88-1.20
13C-OCDD	470/472	0.90	0.91	0.90	0.89	0.90	0.89		0.76-1.02
13C-2,3,7,8-TCDF	316/318	0.79	0.79	0.80	0.79	0.79	0.79		0.65-0.89
13C-1,2,3,7,8-PeCDF	352/354	1.58	1.60	1.59	1.58	1.58	1.59		1.32-1.78
13C-2,3,4,7,8-PeCDF	352/354	1.58	1.58	1.58	1.58	1.58	1.58		1.32-1.78
13C-1,2,3,4,7,8-HxCDF	384/386	0.53	0.52	0.52	0.53	0.53	0.53		0.43-0.59
13C-1,2,3,6,7,8-HxCDF	384/386	0.53	0.53	0.53	0.53	0.53	0.53		0.43-0.59
13C-2,3,4,6,7,8-HxCDF	384/386	0.52	0.52	0.52	0.52	0.53	0.52		0.43-0.59
13C-1,2,3,7,8,9-HxCDF	384/386	0.52	0.52	0.53	0.53	0.52	0.52		0.43-0.59
13C-1,2,3,4,6,7,8-HpCDF	418/420	0.45	0.45	0.45	0.45	0.45	0.45		0.37-0.51
13C-1,2,3,4,7,8,9-HpCDF	418/420	0.45	0.44	0.45	0.45	0.45	0.45		0.37-0.51
13C-1,2,3,4-TCDD	332/334	0.81	0.82	0.81	0.81	0.82	0.82		0.65-0.89
13C-1,2,3,7,8,9-HxCDD	402/404	1.26	1.25	1.27	1.23	1.25	1.25		1.05-1.43

Quality Control (QC) limits represent +/- 15% window around the theoretical ion abundance ratio. The laboratory must flag any analyte in any calibration solution which does not meet the ion abundance ratio QC limit by placing an asterisk in the flag column.

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76554

Run #1 Filename P513850 Samp: 1 Inj: 1 Acquired: 24-JAN-18 13:32:06
Processed: 24-JAN-18 15:49:37 Sample ID: CS0.5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:48	3.276e+02	4.332e+02	0.76	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	2.212e+03	1.557e+03	1.42	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:42	2.093e+03	1.410e+03	1.48	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:17	1.728e+03	1.459e+03	1.18	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:23	2.025e+03	1.584e+03	1.28	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:53	1.636e+03	1.459e+03	1.12	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	1.473e+03	1.234e+03	1.19	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:49	1.513e+03	1.543e+03	0.98	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	1.104e+03	1.067e+03	1.03	yes	no	1.258
10	Unk	OCDF	42:45	1.481e+03	1.680e+03	0.88	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:32	2.508e+02	3.419e+02	0.73	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:58	1.543e+03	9.381e+02	1.64	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	37:00	1.247e+03	9.443e+02	1.32	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:05	1.208e+03	1.105e+03	1.09	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:19	1.245e+03	1.015e+03	1.23	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:44	9.700e+02	9.817e+02	0.99	yes	no	1.025
17	Unk	OCDD	42:31	1.223e+03	1.416e+03	0.86	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:47	1.518e+05	1.920e+05	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:48	1.987e+05	1.259e+05	1.58	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:41	1.969e+05	1.249e+05	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:16	8.196e+04	1.558e+05	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:23	9.429e+04	1.782e+05	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:52	8.377e+04	1.622e+05	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:37	6.829e+04	1.322e+05	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:48	5.778e+04	1.288e+05	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	4.552e+04	1.019e+05	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:31	9.630e+04	1.195e+05	0.81	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	1.330e+05	8.317e+04	1.60	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	1.026e+05	7.962e+04	1.29	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:04	1.036e+05	8.231e+04	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:44	8.056e+04	7.625e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	42:31	9.520e+04	1.052e+05	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:58	1.055e+05	1.310e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:18	1.085e+05	8.606e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:32	5.518e+02				no	1.014

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www.alsglobal.com

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76554

Run #1 Filename P513850 Samp: 1 Inj: 1 Acquired: 24-JAN-18 13:32:06
Processed: 24-JAN-18 15:49:37 LAB. ID: CS0.5

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.43e+04	7.40e+02	8.7e+01	8.19e+04	1.58e+03	5.2e+01
2	1,2,3,7,8-PeCDF	4.30e+05	1.01e+03	4.3e+02	3.00e+05	2.96e+03	1.0e+02
3	2,3,4,7,8-PeCDF	4.25e+05	1.01e+03	4.2e+02	2.98e+05	2.96e+03	1.0e+02
4	1,2,3,4,7,8-HxCDF	3.96e+05	8.76e+02	4.5e+02	3.10e+05	2.44e+02	1.3e+03
5	1,2,3,6,7,8-HxCDF	4.08e+05	8.76e+02	4.7e+02	3.20e+05	2.44e+02	1.3e+03
6	2,3,4,6,7,8-HxCDF	3.56e+05	8.76e+02	4.1e+02	3.17e+05	2.44e+02	1.3e+03
7	1,2,3,7,8,9-HxCDF	3.08e+05	8.76e+02	3.5e+02	2.40e+05	2.44e+02	9.9e+02
8	1,2,3,4,6,7,8-HpCDF	3.07e+05	8.60e+02	3.6e+02	3.29e+05	5.36e+02	6.1e+02
9	1,2,3,4,7,8,9-HpCDF	2.09e+05	8.60e+02	2.4e+02	1.94e+05	5.36e+02	3.6e+02
10	OCDF	2.59e+05	6.40e+02	4.0e+02	2.85e+05	1.05e+03	2.7e+02
11	2,3,7,8-TCDD	4.96e+04	1.22e+03	4.1e+01	7.37e+04	7.32e+02	1.0e+02
12	1,2,3,7,8-PeCDD	3.05e+05	1.17e+03	2.6e+02	1.78e+05	1.88e+02	9.5e+02
13	1,2,3,4,7,8-HxCDD	2.70e+05	5.20e+02	5.2e+02	2.09e+05	4.64e+02	4.5e+02
14	1,2,3,6,7,8-HxCDD	2.52e+05	5.20e+02	4.8e+02	2.26e+05	4.64e+02	4.9e+02
15	1,2,3,7,8,9-HxCDD	2.55e+05	5.20e+02	4.9e+02	2.09e+05	4.64e+02	4.5e+02
16	1,2,3,4,6,7,8-HpCDD	1.84e+05	1.72e+02	1.1e+03	2.04e+05	1.92e+02	1.1e+03
17	OCDD	1.95e+05	1.24e+02	1.6e+03	2.29e+05	1.76e+03	1.3e+02
18	13C-2,3,7,8-TCDF	2.97e+07	7.00e+03	4.2e+03	3.74e+07	3.24e+03	1.2e+04
19	13C-1,2,3,7,8-PeCDF	3.75e+07	6.04e+02	6.2e+04	2.38e+07	1.03e+03	2.3e+04
20	13C-2,3,4,7,8-PeCDF	3.92e+07	6.04e+02	6.5e+04	2.45e+07	1.03e+03	2.4e+04
21	13C-1,2,3,4,7,8-HxCDF	1.77e+07	4.00e+02	4.4e+04	3.34e+07	1.14e+03	2.9e+04
22	13C-1,2,3,6,7,8-HxCDF	1.91e+07	4.00e+02	4.8e+04	3.65e+07	1.14e+03	3.2e+04
23	13C-2,3,4,6,7,8-HxCDF	1.78e+07	4.00e+02	4.5e+04	3.38e+07	1.14e+03	3.0e+04
24	13C-1,2,3,7,8,9-HxCDF	1.38e+07	4.00e+02	3.5e+04	2.65e+07	1.14e+03	2.3e+04
25	13C-1,2,3,4,6,7,8-HpCDF	1.16e+07	1.44e+03	8.1e+03	2.60e+07	5.60e+03	4.6e+03
26	13C-1,2,3,4,7,8,9-HpCDF	8.60e+06	1.44e+03	6.0e+03	1.92e+07	5.60e+03	3.4e+03
27	13C-2,3,7,8-TCDD	1.97e+07	6.10e+03	3.2e+03	2.45e+07	2.10e+03	1.2e+04
28	13C-1,2,3,7,8-PeCDD	2.62e+07	9.88e+02	2.7e+04	1.65e+07	6.72e+02	2.4e+04
29	13C-1,2,3,4,7,8-HxCDD	2.25e+07	4.24e+03	5.3e+03	1.74e+07	9.28e+02	1.9e+04
30	13C-1,2,3,6,7,8-HxCDD	2.12e+07	4.24e+03	5.0e+03	1.71e+07	9.28e+02	1.8e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.57e+07	9.20e+02	1.7e+04	1.49e+07	8.32e+02	1.8e+04
32	13C-OCDD	1.56e+07	1.68e+02	9.3e+04	1.71e+07	3.40e+02	5.0e+04
33	13C-1,2,3,4-TCDD	2.11e+07	6.10e+03	3.5e+03	2.60e+07	2.10e+03	1.2e+04
34	13C-1,2,3,7,8,9-HxCDD	2.13e+07	4.24e+03	5.0e+03	1.71e+07	9.28e+02	1.8e+04
35	37Cl-2,3,7,8-TCDD	1.10e+05	1.04e+03	1.1e+02			

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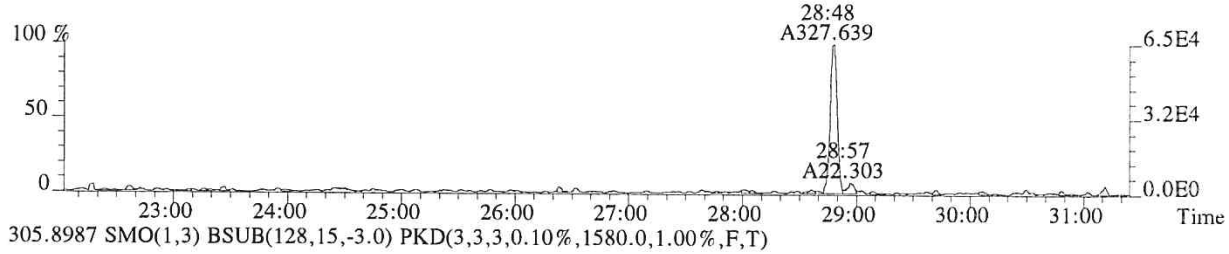
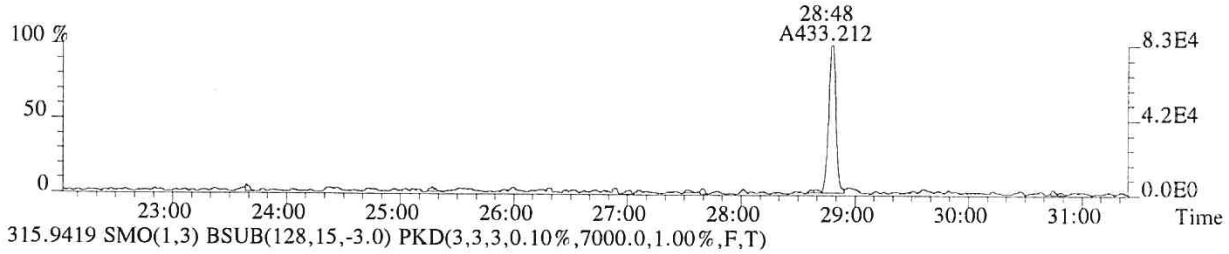
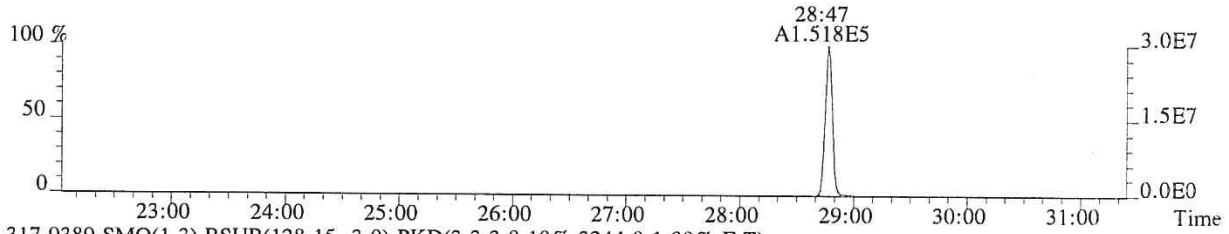
File:P513850 #1-665 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,740.0,1.00%,F,T)



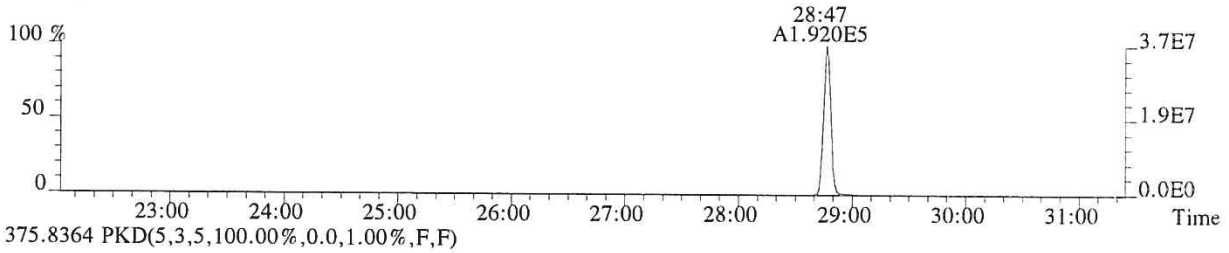
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1580.0,1.00%,F,T)



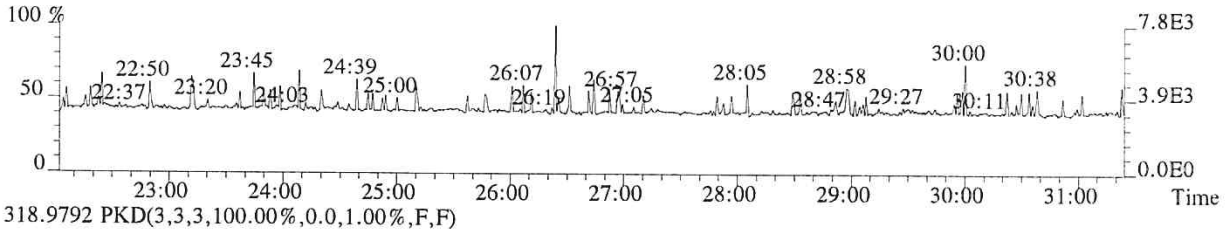
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7000.0,1.00%,F,T)



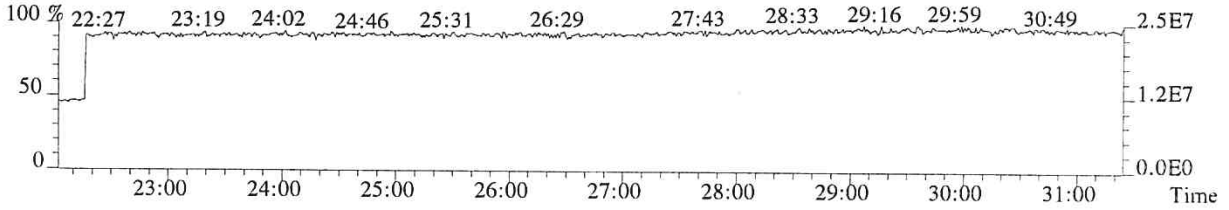
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3244.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

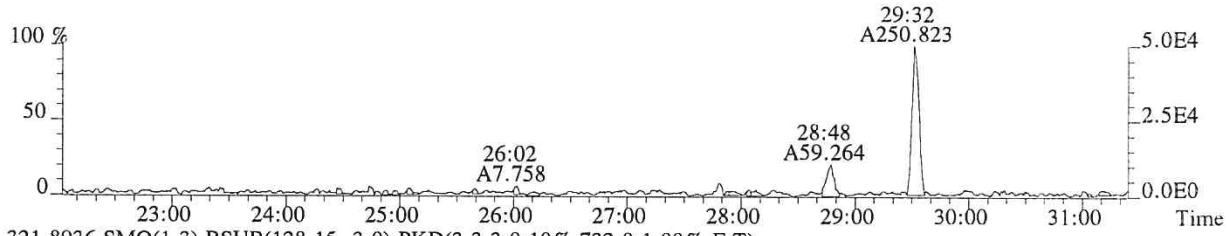


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

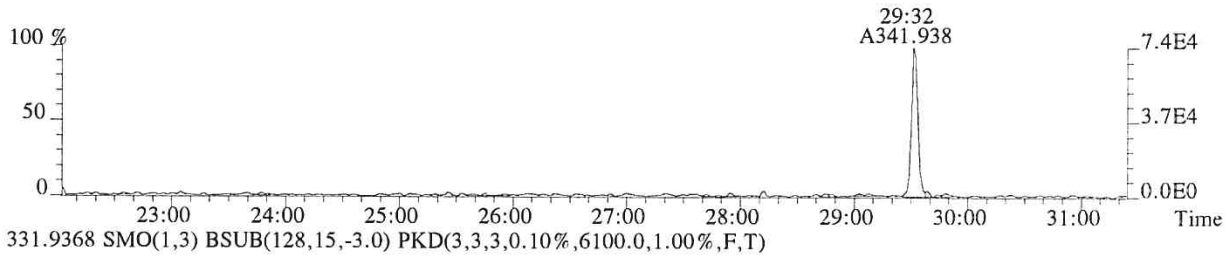


059563

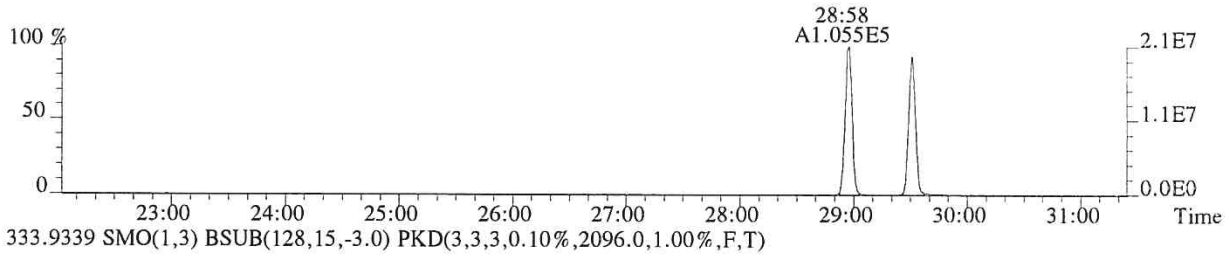
File:P513850 #1-665 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1220.0,1.00%,F,T)



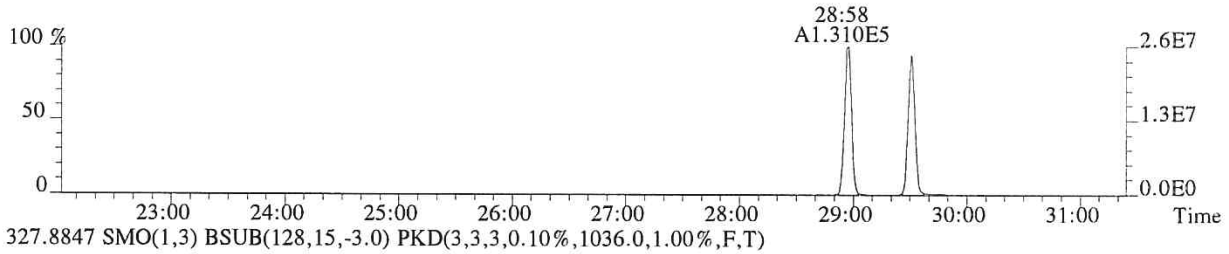
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,732.0,1.00%,F,T)



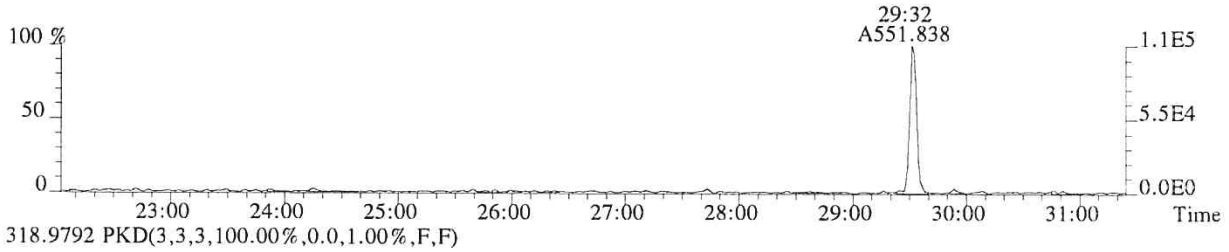
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6100.0,1.00%,F,T)



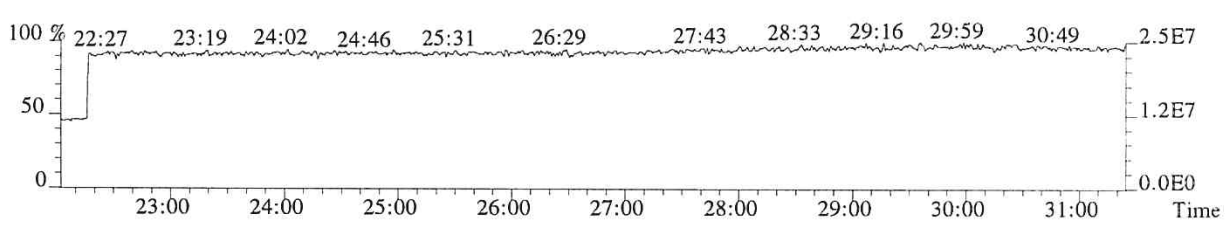
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2096.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1036.0,1.00%,F,T)

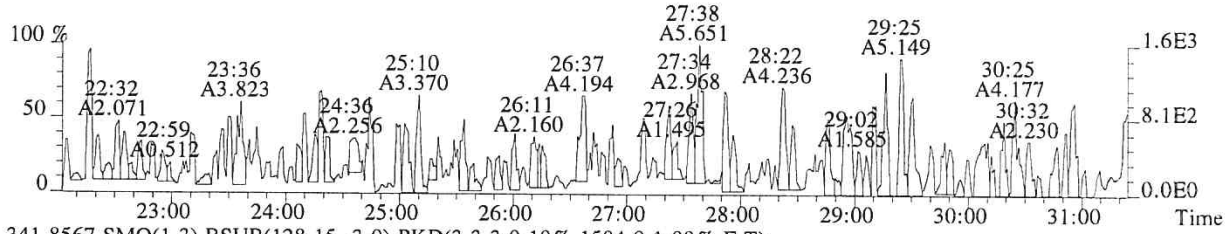


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

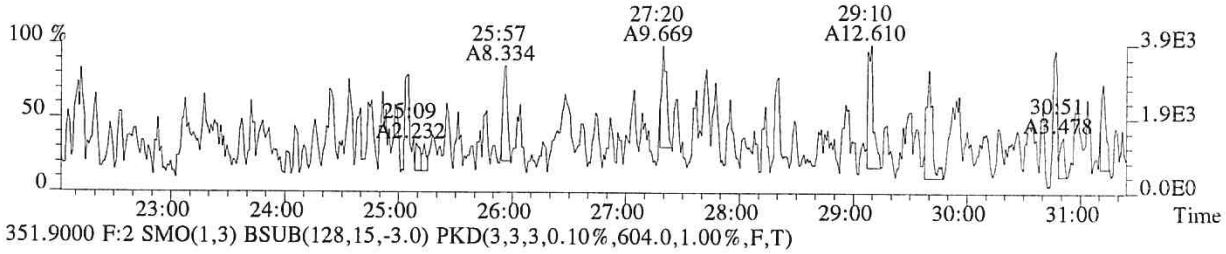


059564

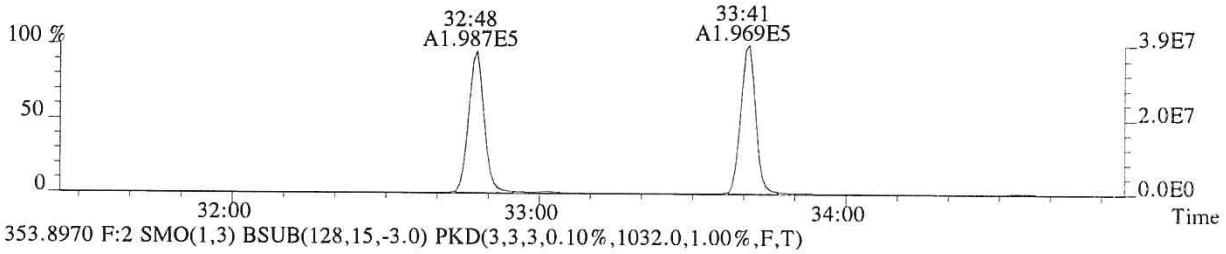
File:P513850 #1-665 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,244.0,1.00%,F,T)



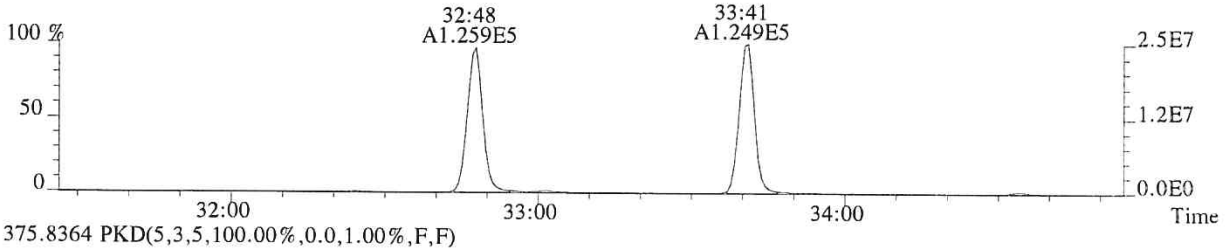
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1504.0,1.00%,F,T)



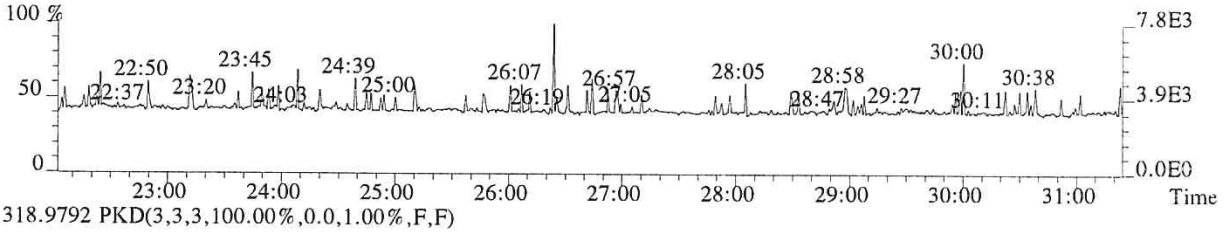
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,T)



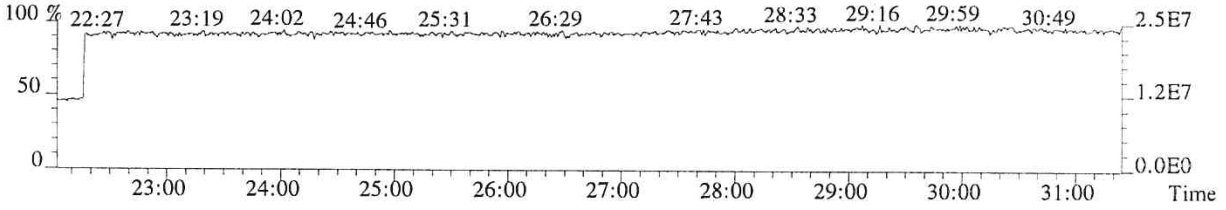
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1032.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

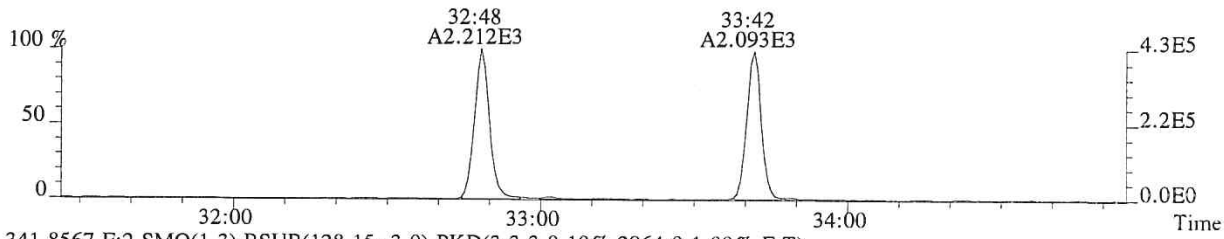


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

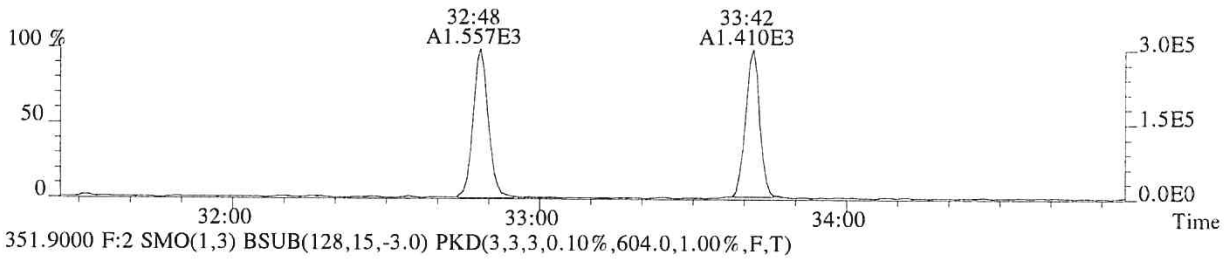


059565

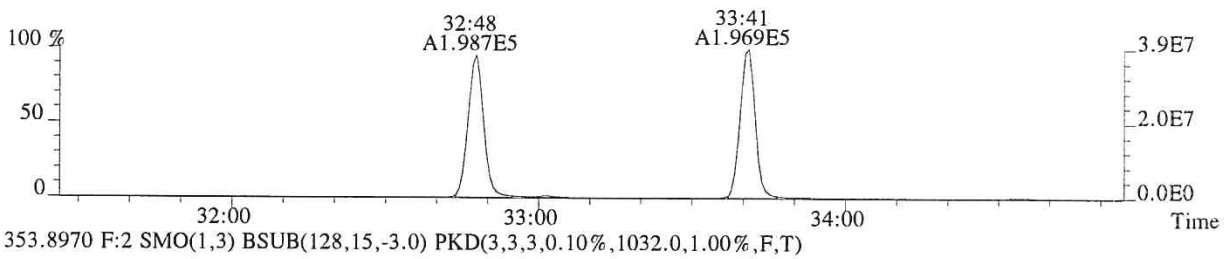
File:P513850 #1-313 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1008.0,1.00%,F,T)



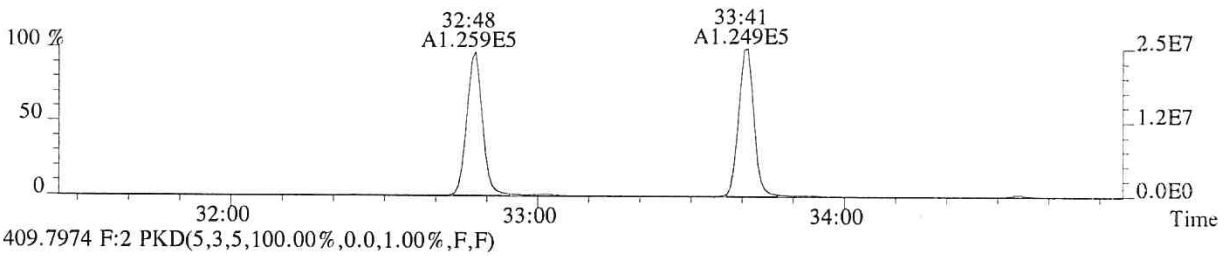
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2964.0,1.00%,F,T)



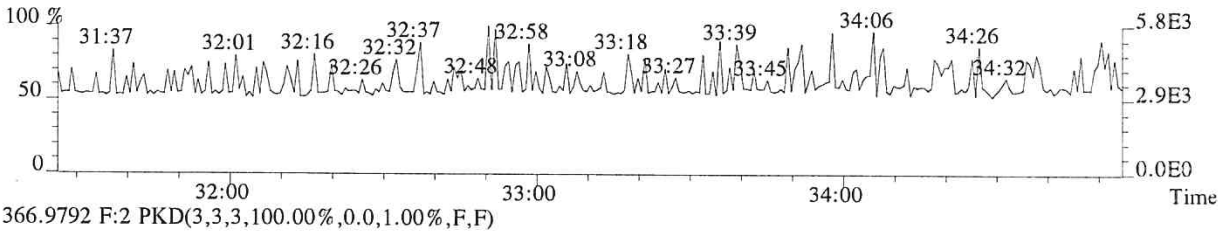
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,T)



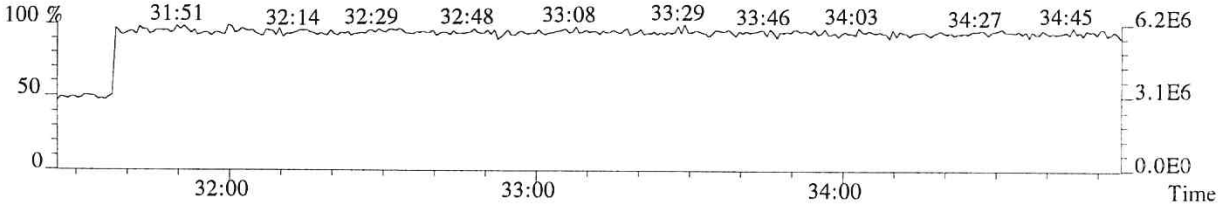
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1032.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

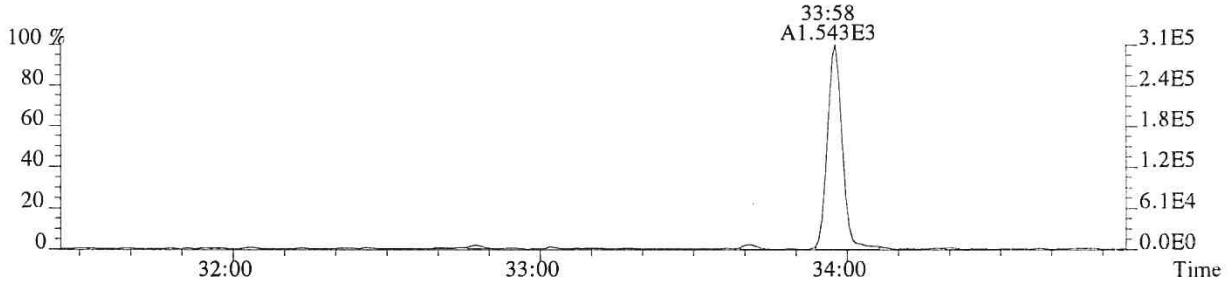


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

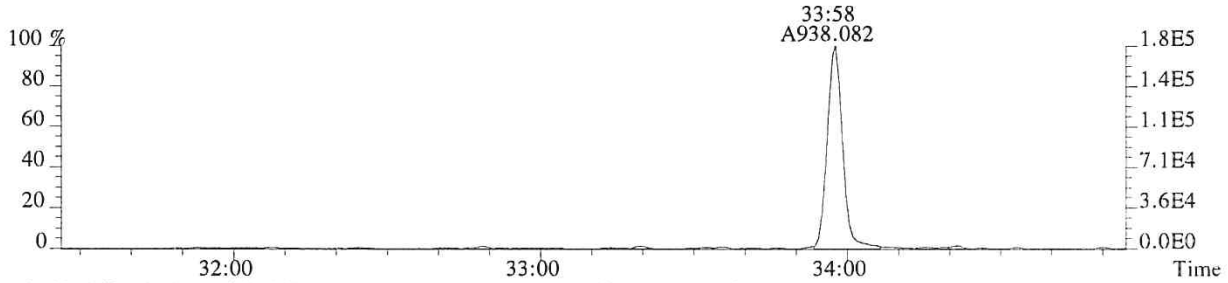


059566

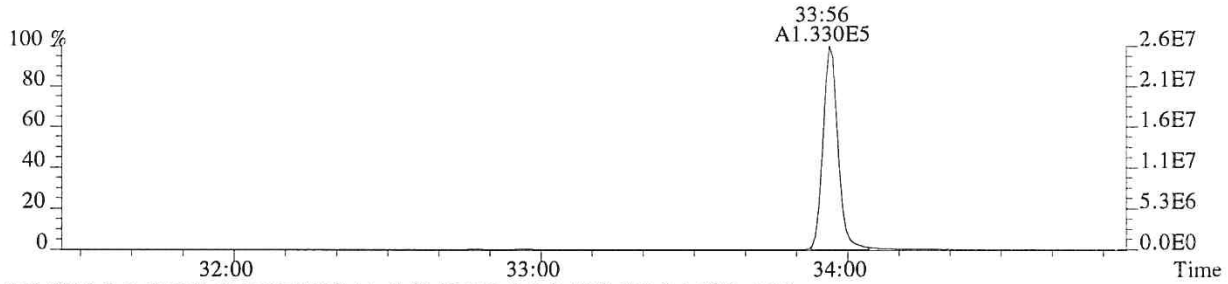
File:P513850 #1-313 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1172.0,1.00%,F,T)



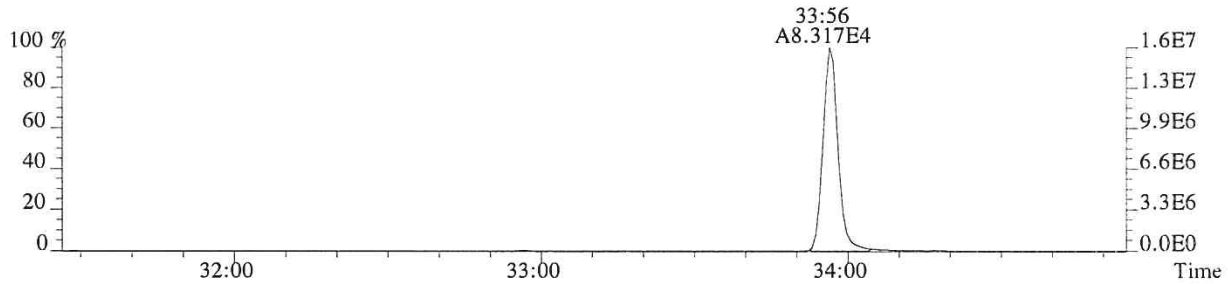
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,188.0,1.00%,F,T)



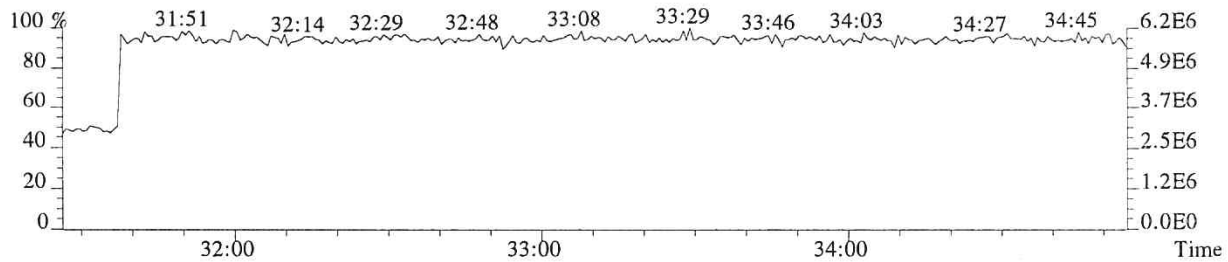
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,988.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,672.0,1.00%,F,T)

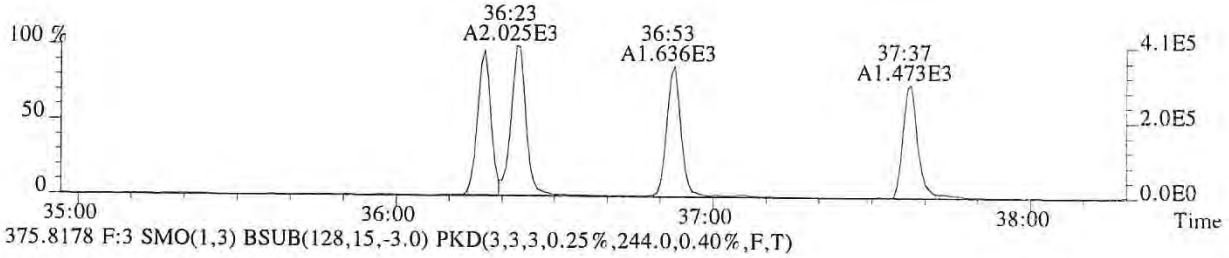


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

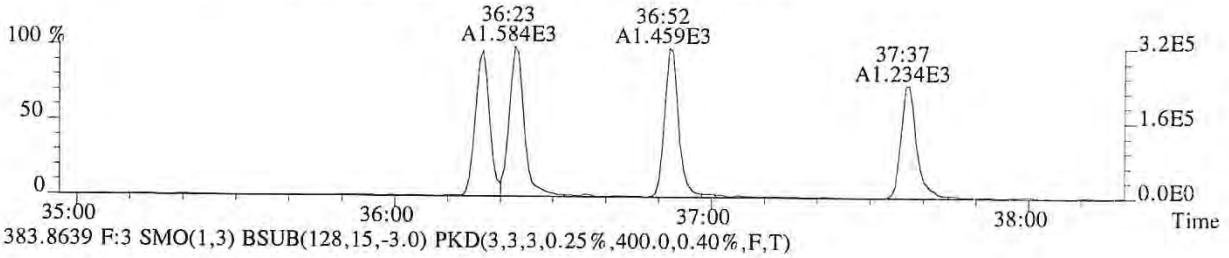


059567

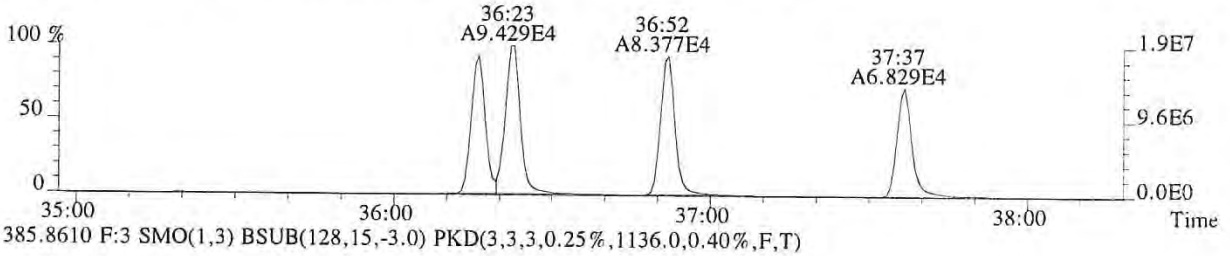
File:P513850 #1-303 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,876.0,0.40%,F,T)



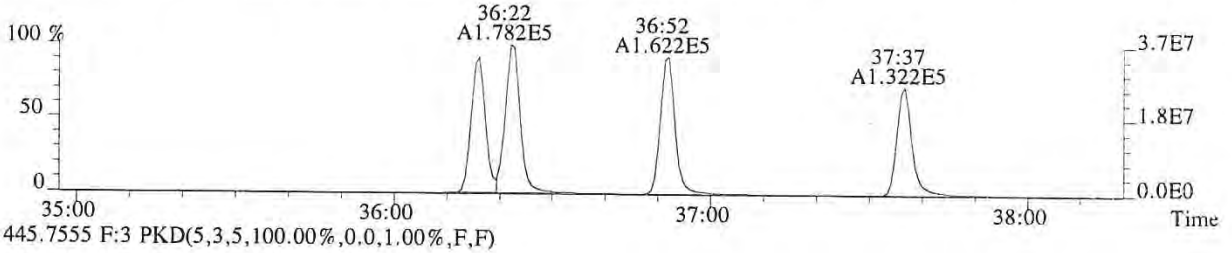
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,244.0,0.40%,F,T)



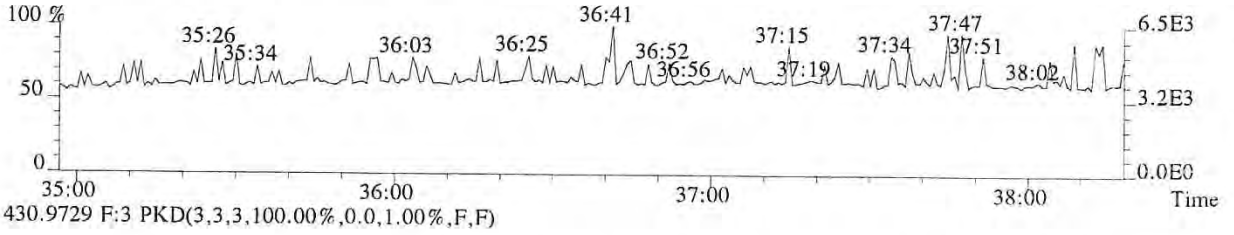
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,400.0,0.40%,F,T)



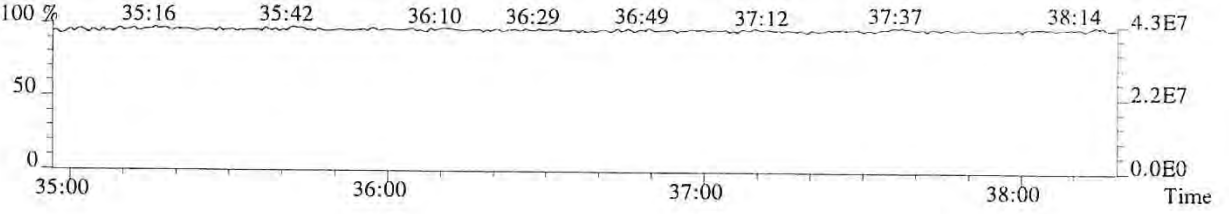
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1136.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

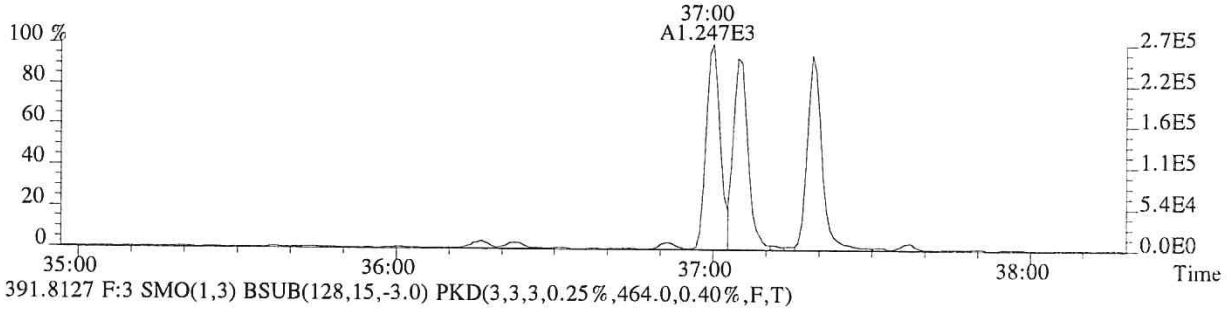


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

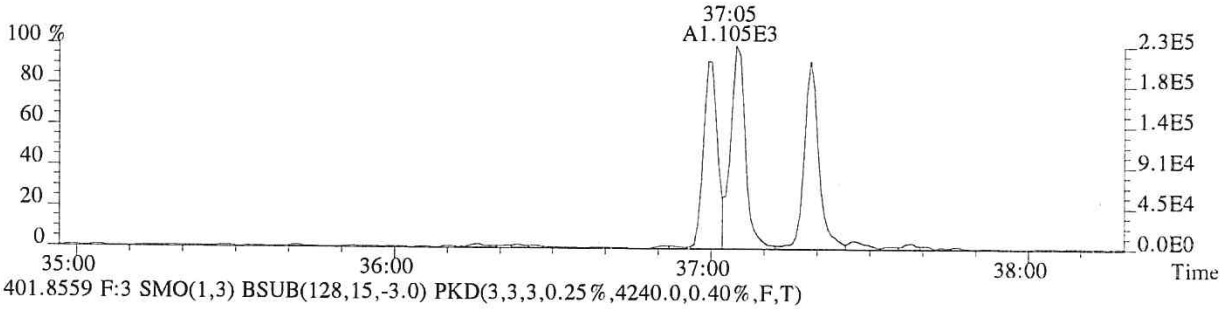


059568

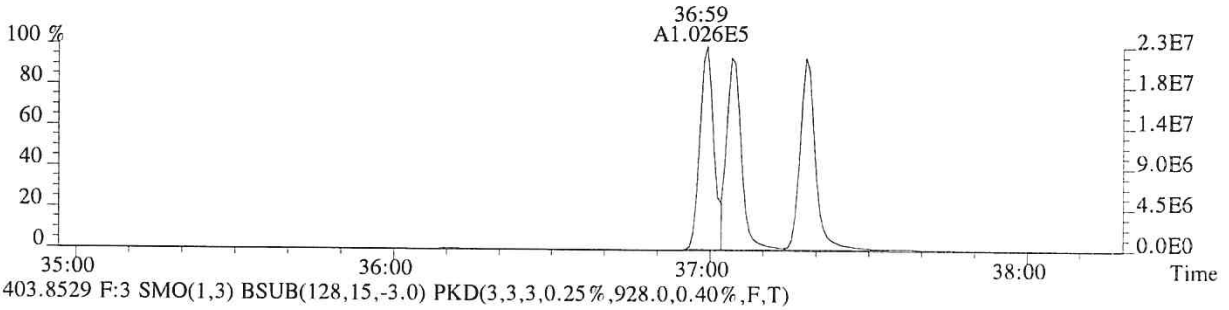
File:P513850 #1-303 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,520.0,0.40%,F,T)



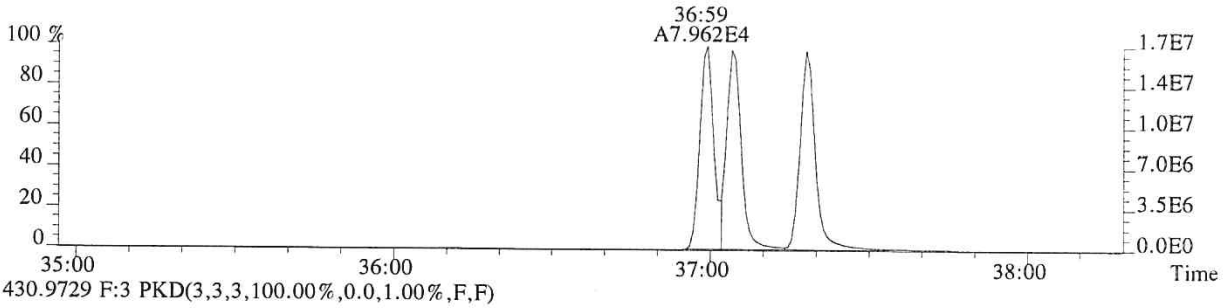
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,464.0,0.40%,F,T)



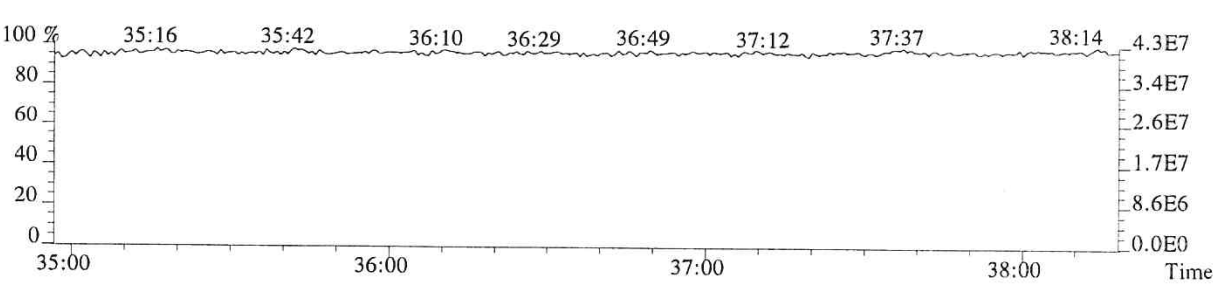
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4240.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,928.0,0.40%,F,T)

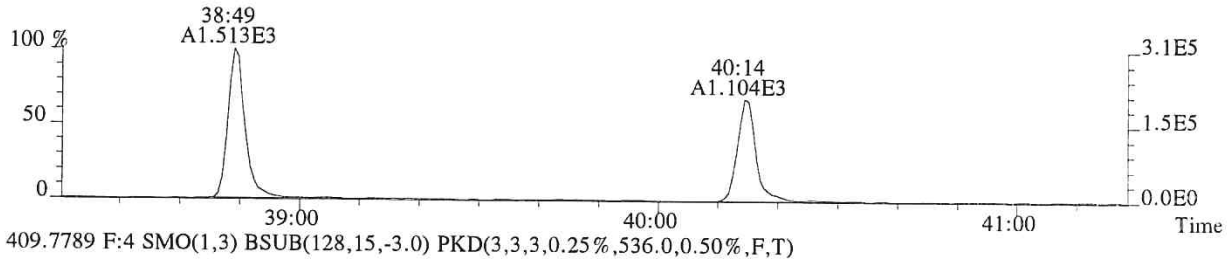


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

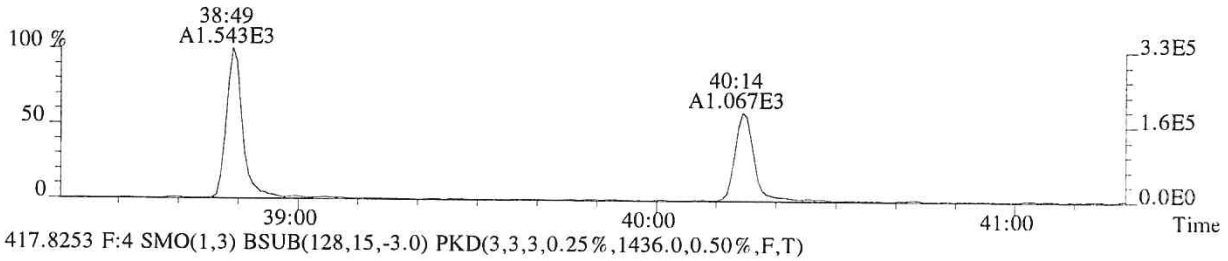


059569

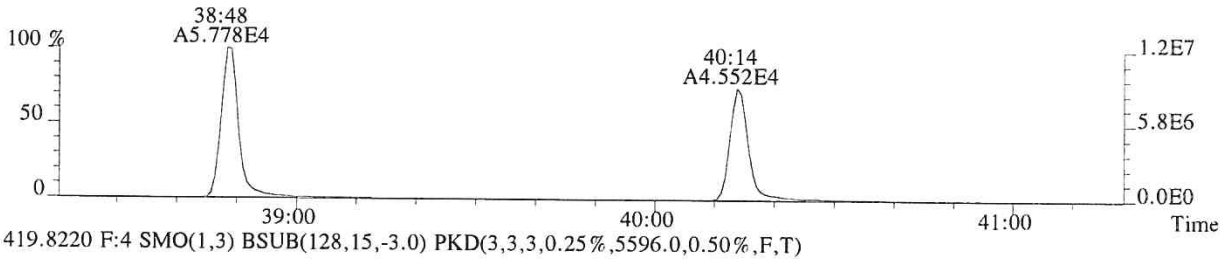
File:P513850 #1-268 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,860.0,0.50%,F,T)



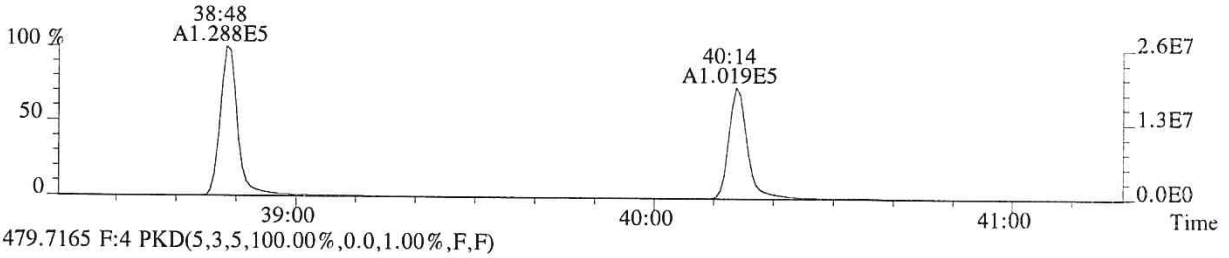
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,536.0,0.50%,F,T)



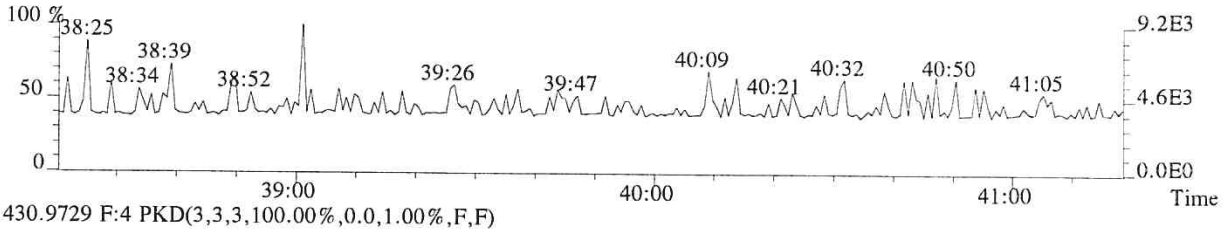
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1436.0,0.50%,F,T)



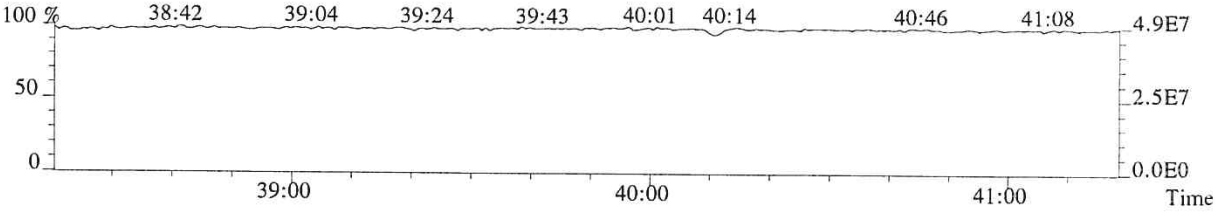
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5596.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

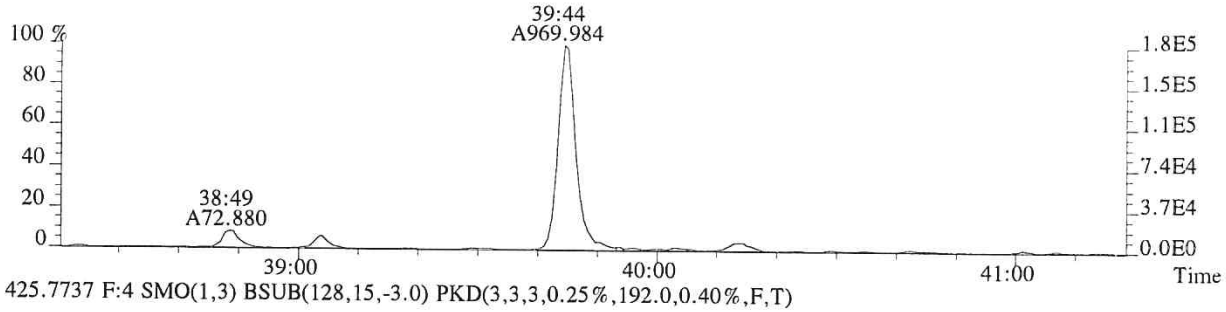


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

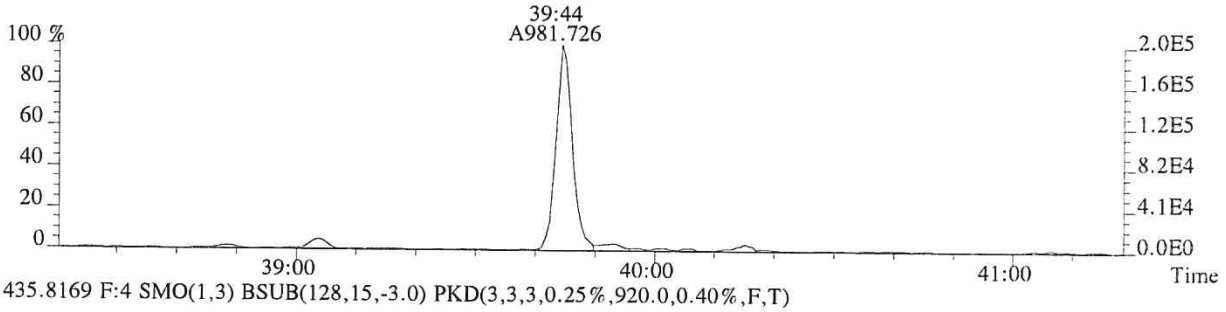


059570

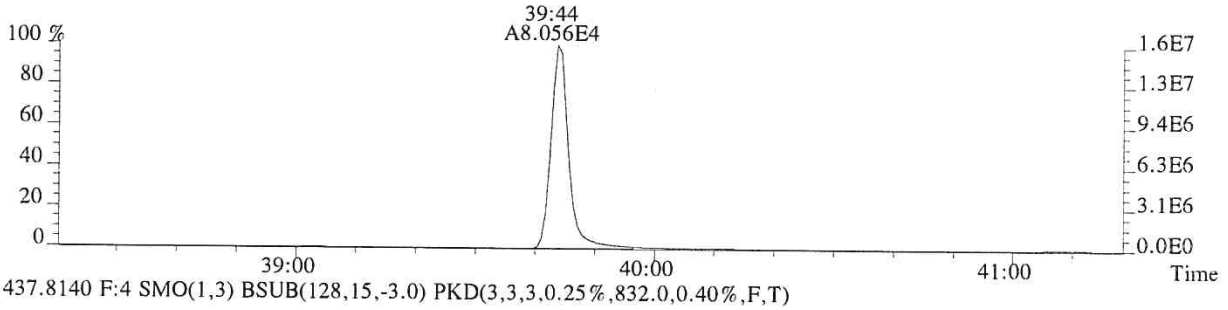
File:P513850 #1-268 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,172.0,0.40%,F,T)



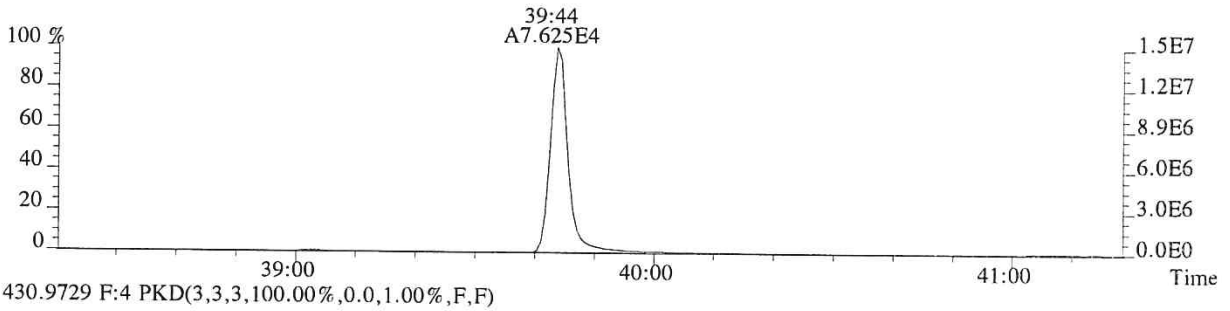
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,192.0,0.40%,F,T)



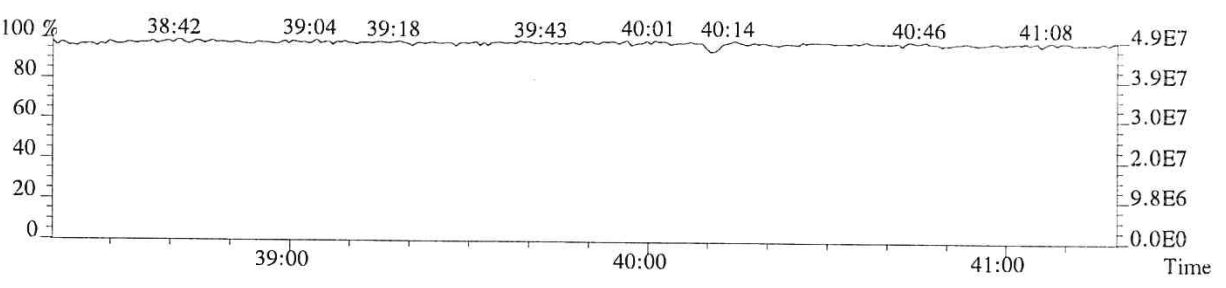
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,920.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,832.0,0.40%,F,T)

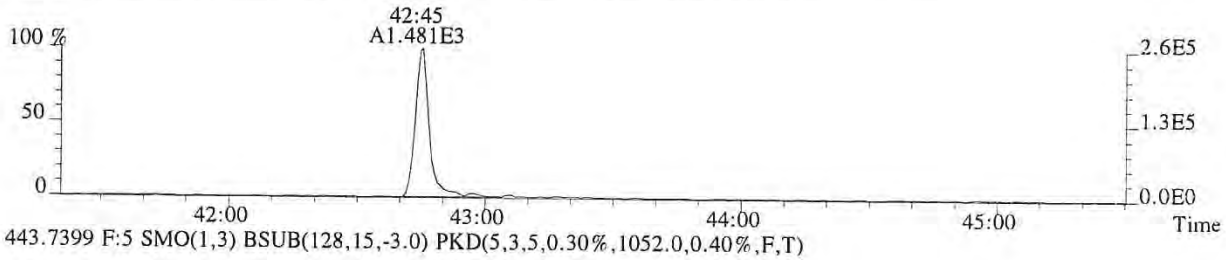


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

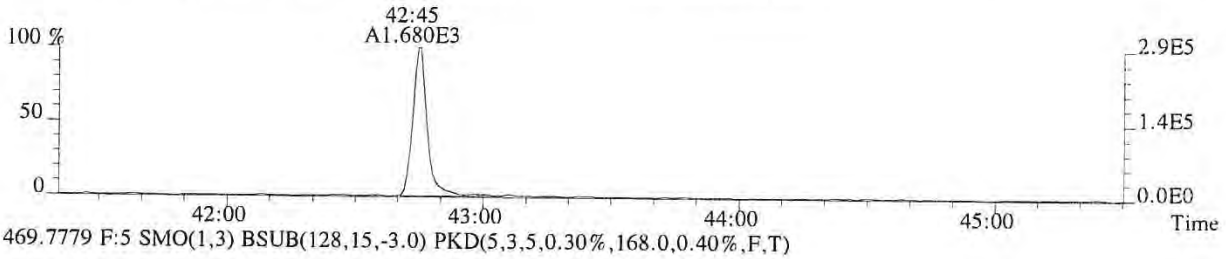


059571

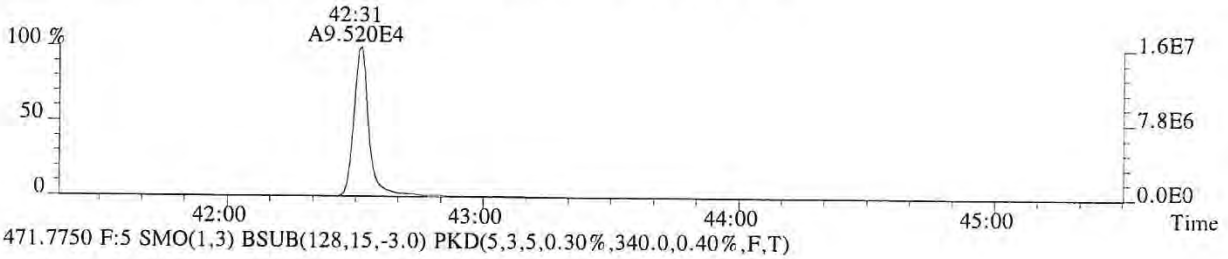
File:P513850 #1-375 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,640.0,0.40%,F,T)



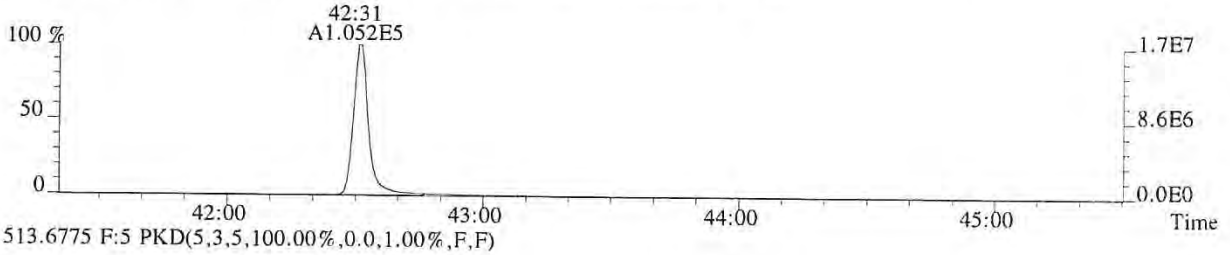
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1052.0,0.40%,F,T)



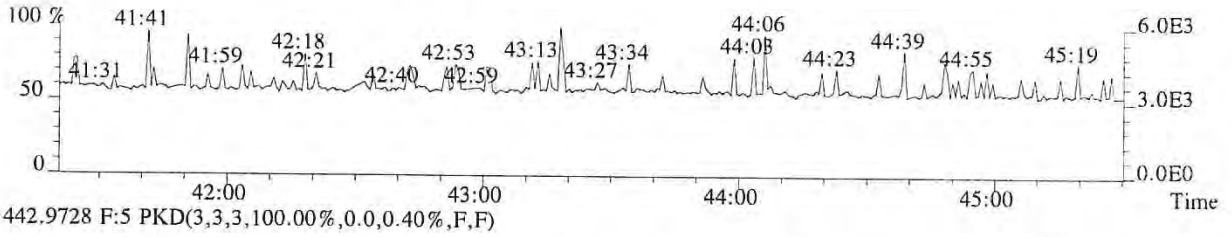
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,168.0,0.40%,F,T)



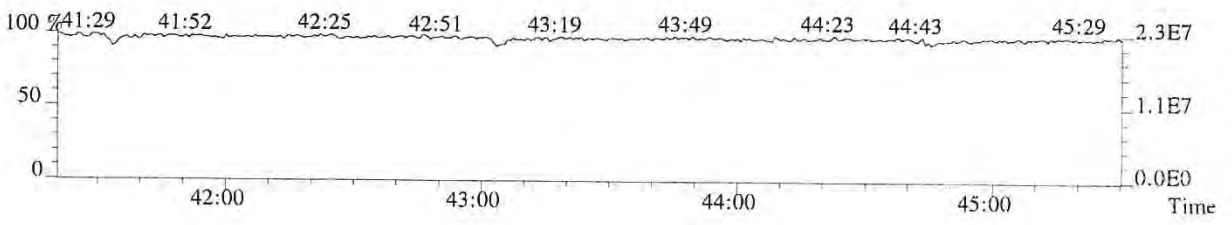
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,340.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

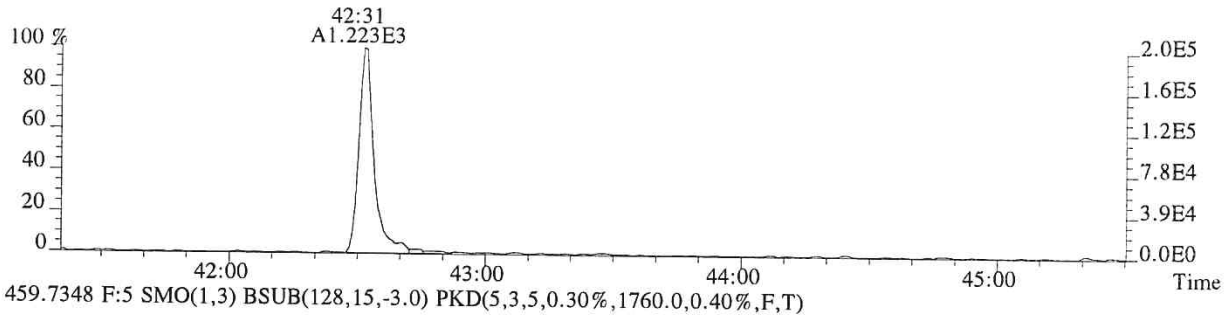


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

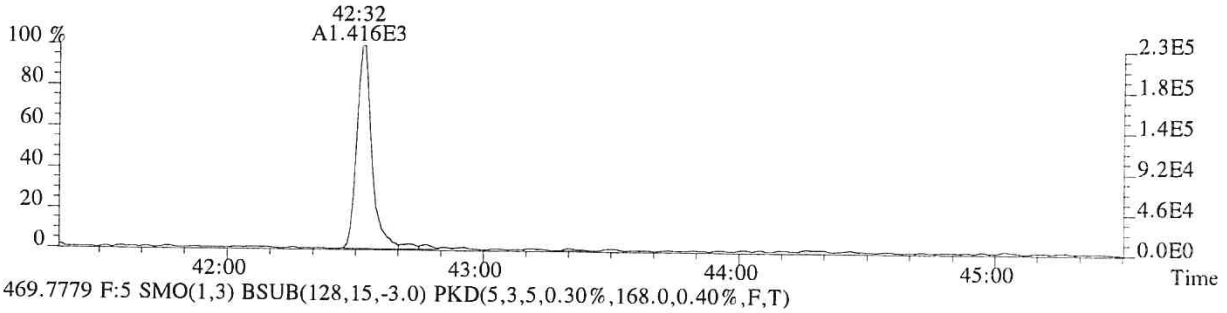


059572

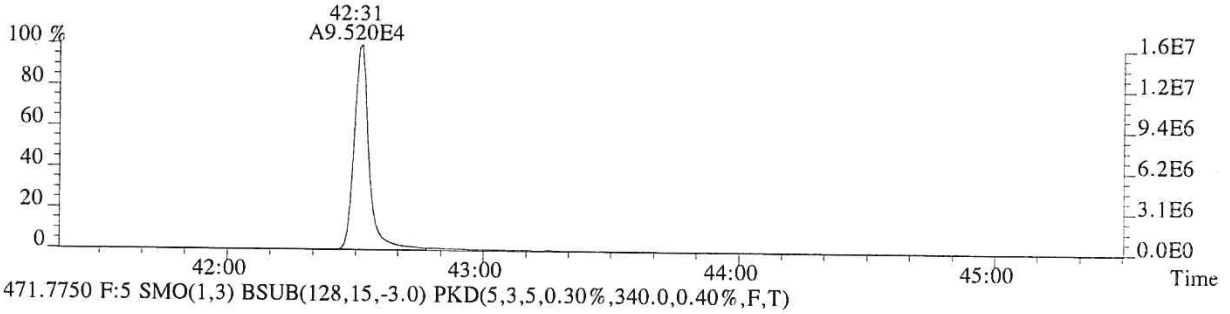
File:P513850 #1-375 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,124.0,0.40%,F,T)



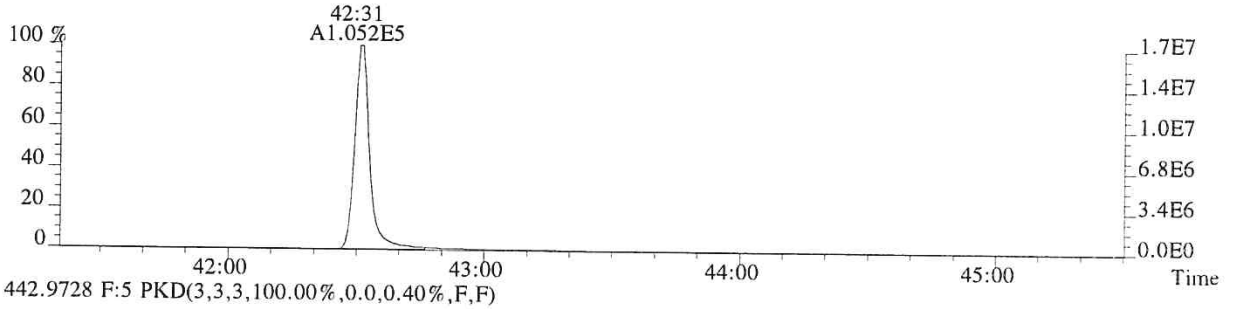
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1760.0,0.40%,F,T)



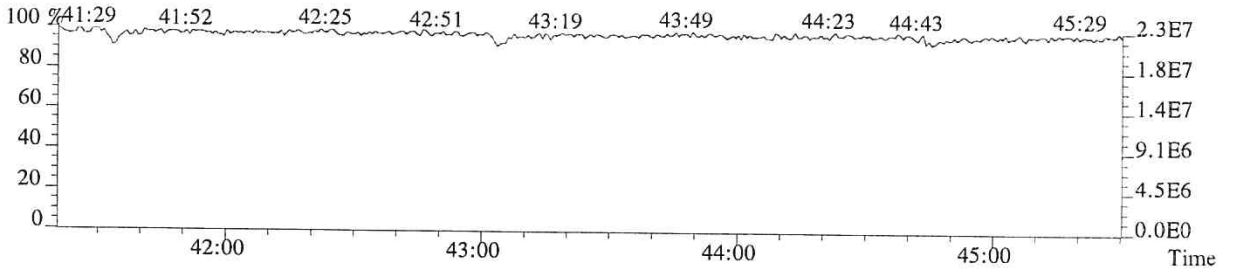
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,168.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,340.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059573

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76555

Run #2 Filename P513851 Samp: 1 Inj: 1 Acquired: 24-JAN-18 14:23:56
Processed: 24-JAN-18 15:49:38 Sample ID: CS1

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:48	3.265e+02	4.510e+02	0.72	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	2.143e+03	1.390e+03	1.54	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:41	1.966e+03	1.345e+03	1.46	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:16	1.692e+03	1.406e+03	1.20	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:23	1.851e+03	1.586e+03	1.17	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:52	1.642e+03	1.320e+03	1.24	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	1.587e+03	1.193e+03	1.33	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:49	1.464e+03	1.425e+03	1.03	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	1.230e+03	1.277e+03	0.96	yes	no	1.258
10	Unk	OCDF	42:45	1.832e+03	1.936e+03	0.95	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:32	2.385e+02	2.700e+02	0.88	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:57	1.365e+03	8.234e+02	1.66	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:59	1.134e+03	9.001e+02	1.26	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:05	1.250e+03	9.288e+02	1.35	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:19	1.168e+03	9.616e+02	1.21	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:44	1.020e+03	9.210e+02	1.11	yes	no	1.025
17	Unk	OCDD	42:31	1.446e+03	1.652e+03	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:47	7.137e+04	9.000e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:47	8.867e+04	5.547e+04	1.60	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	8.638e+04	5.480e+04	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:15	3.777e+04	7.232e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:22	4.414e+04	8.392e+04	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:51	3.753e+04	7.150e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:36	3.488e+04	6.647e+04	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:48	2.710e+04	6.070e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	2.509e+04	5.658e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:31	4.231e+04	5.302e+04	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	5.560e+04	3.503e+04	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	4.358e+04	3.432e+04	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:04	4.635e+04	3.621e+04	1.28	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:44	4.039e+04	3.882e+04	1.04	yes	no	0.858
32	IS	13C-OCDD	42:31	5.166e+04	5.687e+04	0.91	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:57	4.919e+04	6.018e+04	0.82	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:18	4.800e+04	3.836e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:32	5.257e+02				no	1.014

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76555

Run #2 Filename P513851 Samp: 1 Inj: 1 Acquired: 24-JAN-18 14:23:56
Processed: 24-JAN-18 15:49:38 LAB. ID: CS1

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.11e+04	5.52e+02	1.1e+02	8.10e+04	1.82e+03	4.5e+01
2	1,2,3,7,8-PeCDF	4.20e+05	1.32e+03	3.2e+02	2.59e+05	1.41e+03	1.8e+02
3	2,3,4,7,8-PeCDF	4.04e+05	1.32e+03	3.1e+02	2.67e+05	1.41e+03	1.9e+02
4	1,2,3,4,7,8-HxCDF	3.58e+05	5.32e+02	6.7e+02	3.14e+05	1.28e+02	2.5e+03
5	1,2,3,6,7,8-HxCDF	3.97e+05	5.32e+02	7.5e+02	3.35e+05	1.28e+02	2.6e+03
6	2,3,4,6,7,8-HxCDF	3.52e+05	5.32e+02	6.6e+02	2.91e+05	1.28e+02	2.3e+03
7	1,2,3,7,8,9-HxCDF	3.28e+05	5.32e+02	6.2e+02	2.40e+05	1.28e+02	1.9e+03
8	1,2,3,4,6,7,8-HpCDF	3.00e+05	3.04e+02	9.9e+02	3.07e+05	7.12e+02	4.3e+02
9	1,2,3,4,7,8,9-HpCDF	2.35e+05	3.04e+02	7.7e+02	2.45e+05	7.12e+02	3.4e+02
10	OCDF	3.05e+05	4.12e+02	7.4e+02	3.13e+05	8.20e+02	3.8e+02
11	2,3,7,8-TCDD	5.05e+04	1.50e+03	3.4e+01	5.68e+04	1.02e+03	5.5e+01
12	1,2,3,7,8-PeCDD	2.75e+05	9.88e+02	2.8e+02	1.65e+05	1.80e+02	9.2e+02
13	1,2,3,4,7,8-HxCDD	2.60e+05	5.96e+02	4.4e+02	2.09e+05	7.60e+02	2.7e+02
14	1,2,3,6,7,8-HxCDD	2.55e+05	5.96e+02	4.3e+02	1.96e+05	7.60e+02	2.6e+02
15	1,2,3,7,8,9-HxCDD	2.36e+05	5.96e+02	4.0e+02	1.94e+05	7.60e+02	2.6e+02
16	1,2,3,4,6,7,8-HpCDD	1.99e+05	6.88e+02	2.9e+02	1.95e+05	5.68e+02	3.4e+02
17	OCDD	2.63e+05	1.92e+02	1.4e+03	2.88e+05	1.59e+03	1.8e+02
18	13C-2,3,7,8-TCDF	1.42e+07	6.97e+03	2.0e+03	1.79e+07	2.86e+03	6.3e+03
19	13C-1,2,3,7,8-PeCDF	1.70e+07	6.48e+02	2.6e+04	1.08e+07	1.59e+03	6.8e+03
20	13C-2,3,4,7,8-PeCDF	1.78e+07	6.48e+02	2.7e+04	1.13e+07	1.59e+03	7.1e+03
21	13C-1,2,3,4,7,8-HxCDF	8.20e+06	9.16e+02	9.0e+03	1.58e+07	1.42e+03	1.1e+04
22	13C-1,2,3,6,7,8-HxCDF	9.34e+06	9.16e+02	1.0e+04	1.79e+07	1.42e+03	1.3e+04
23	13C-2,3,4,6,7,8-HxCDF	8.09e+06	9.16e+02	8.8e+03	1.56e+07	1.42e+03	1.1e+04
24	13C-1,2,3,7,8,9-HxCDF	7.17e+06	9.16e+02	7.8e+03	1.36e+07	1.42e+03	9.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.66e+06	2.69e+03	2.1e+03	1.28e+07	9.09e+03	1.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.79e+06	2.69e+03	1.8e+03	1.07e+07	9.09e+03	1.2e+03
27	13C-2,3,7,8-TCDD	8.84e+06	4.39e+03	2.0e+03	1.11e+07	2.59e+03	4.3e+03
28	13C-1,2,3,7,8-PeCDD	1.13e+07	1.11e+03	1.0e+04	7.15e+06	7.88e+02	9.1e+03
29	13C-1,2,3,4,7,8-HxCDD	9.90e+06	2.00e+03	4.9e+03	7.79e+06	1.42e+03	5.5e+03
30	13C-1,2,3,6,7,8-HxCDD	9.60e+06	2.00e+03	4.8e+03	7.47e+06	1.42e+03	5.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.95e+06	1.15e+03	6.9e+03	7.67e+06	8.88e+02	8.6e+03
32	13C-OCDD	8.56e+06	6.00e+01	1.4e+05	9.50e+06	8.00e+02	1.2e+04
33	13C-1,2,3,4-TCDD	9.96e+06	4.39e+03	2.3e+03	1.22e+07	2.59e+03	4.7e+03
34	13C-1,2,3,7,8,9-HxCDD	9.63e+06	2.00e+03	4.8e+03	7.67e+06	1.42e+03	5.4e+03
35	37Cl-2,3,7,8-TCDD	1.07e+05	1.30e+03	8.2e+01			

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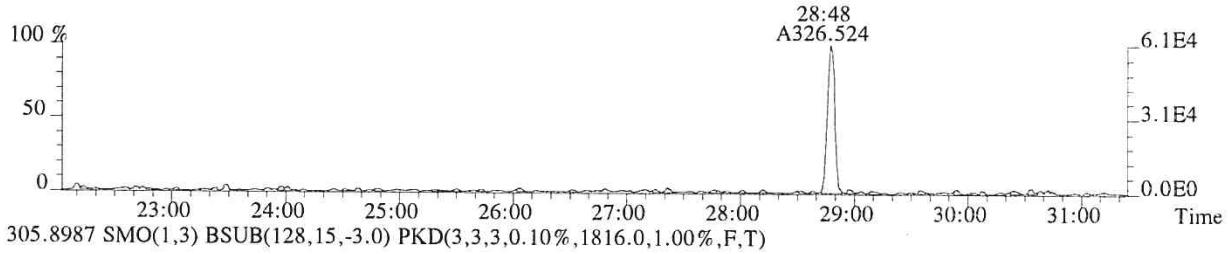
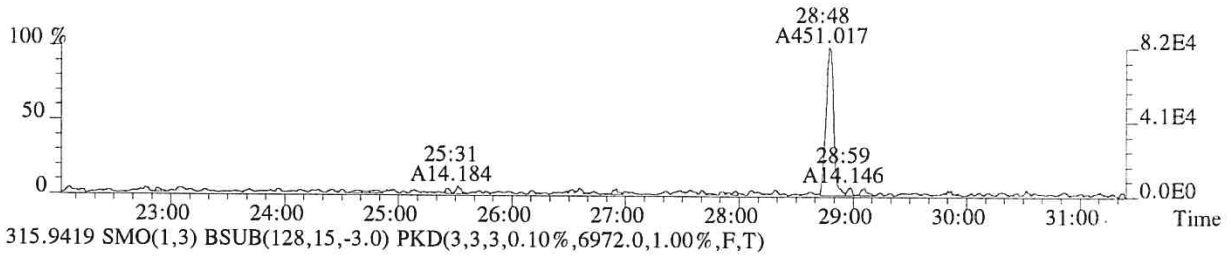
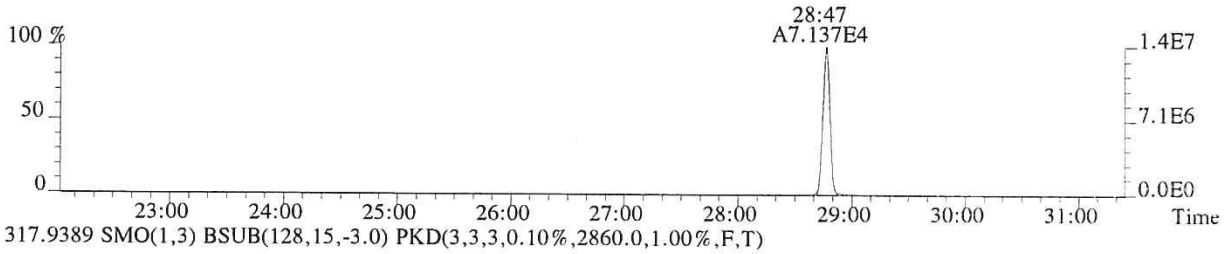
File:P513851 #1-665 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,552.0,1.00%,F,T)



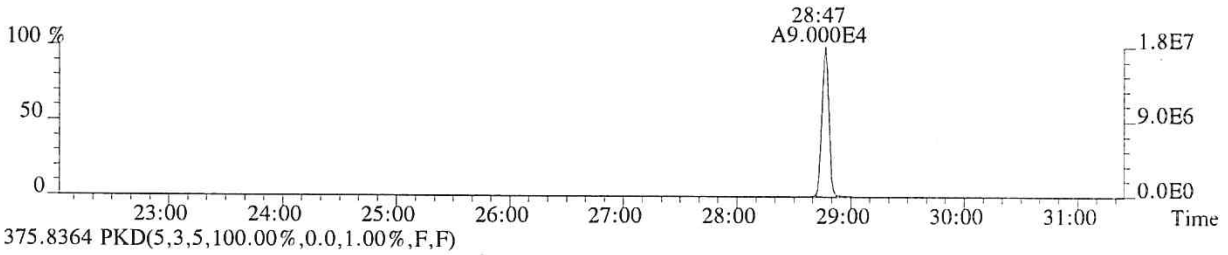
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1816.0,1.00%,F,T)



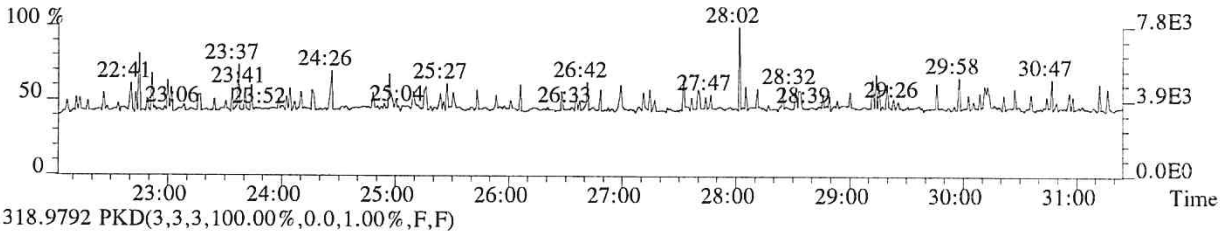
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6972.0,1.00%,F,T)



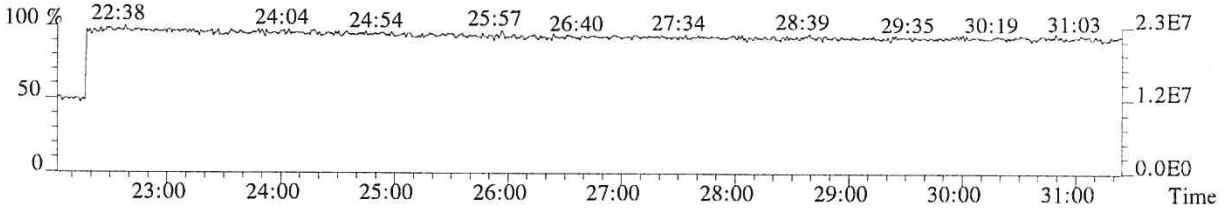
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2860.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

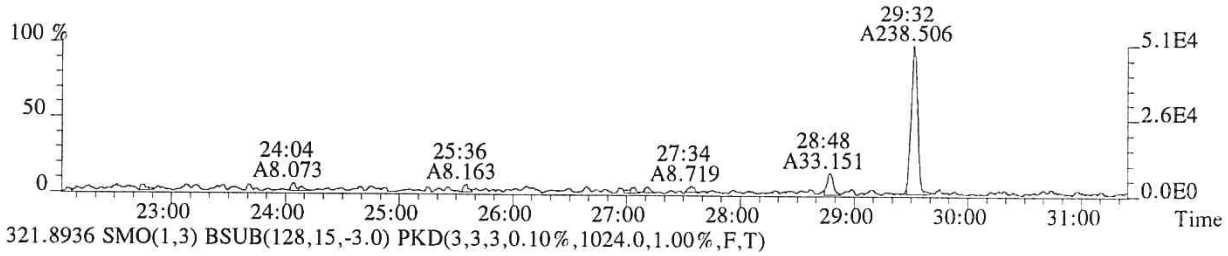


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

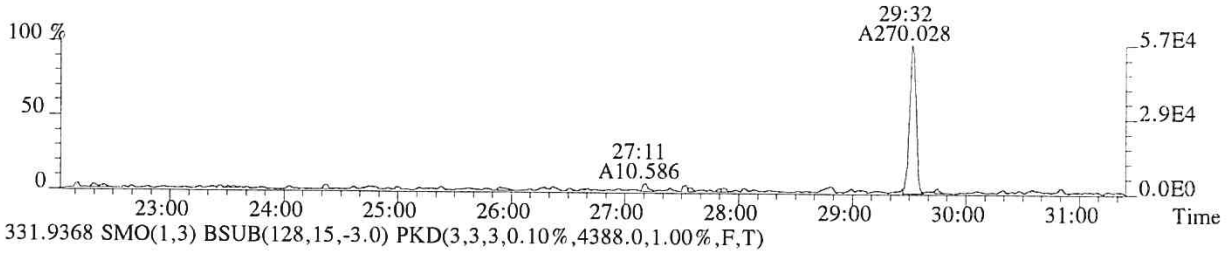


059576

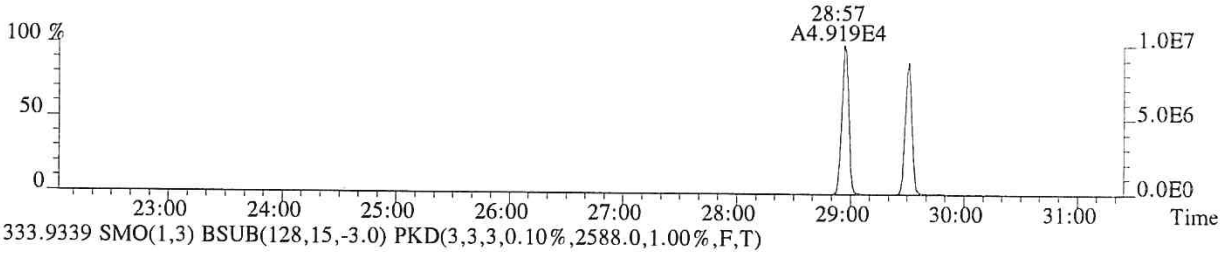
File:P513851 #1-665 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1496.0,1.00%,F,T)



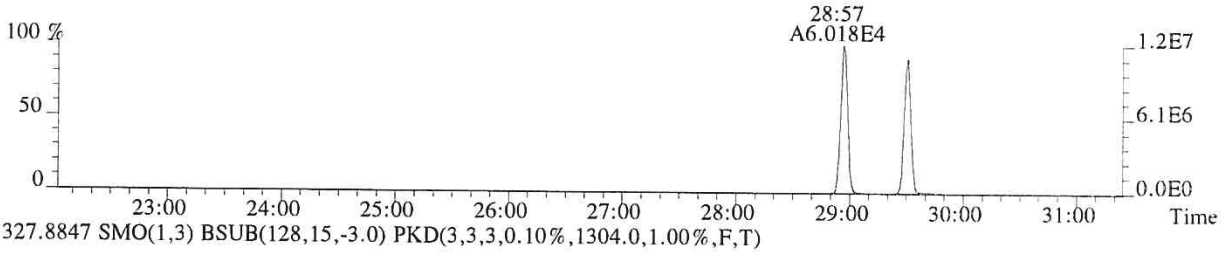
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1024.0,1.00%,F,T)



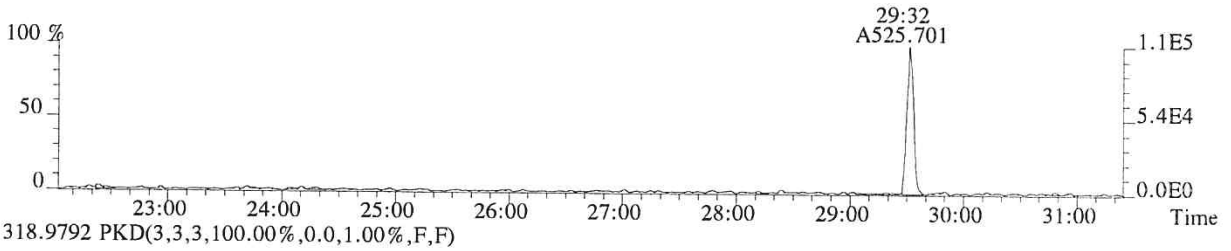
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4388.0,1.00%,F,T)



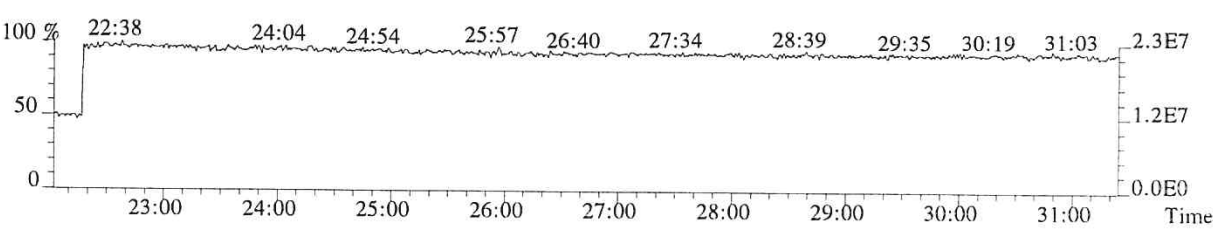
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2588.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1304.0,1.00%,F,T)

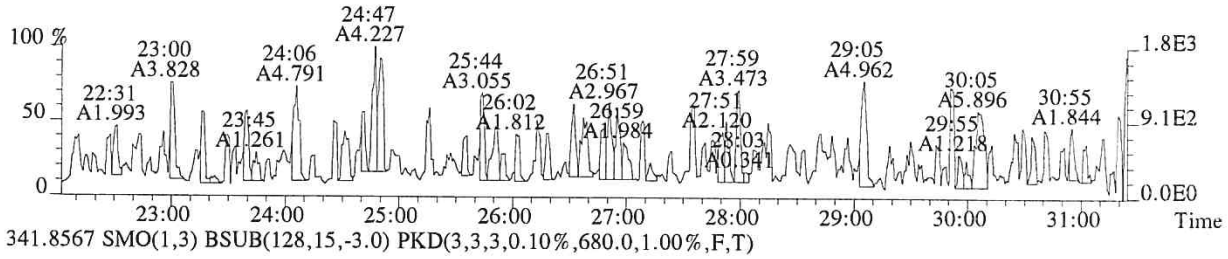


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

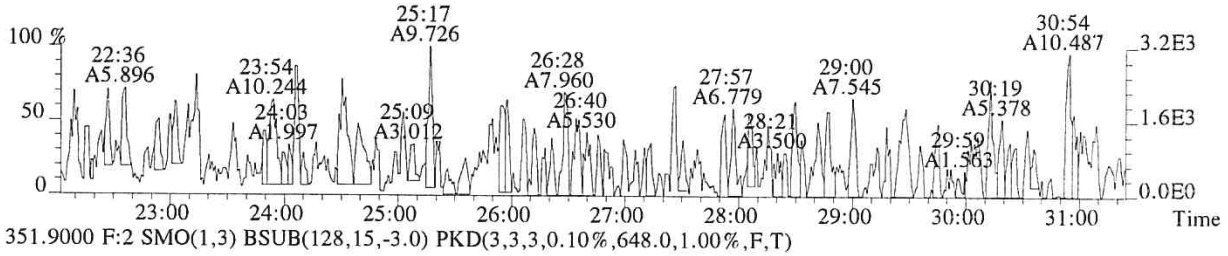


059577

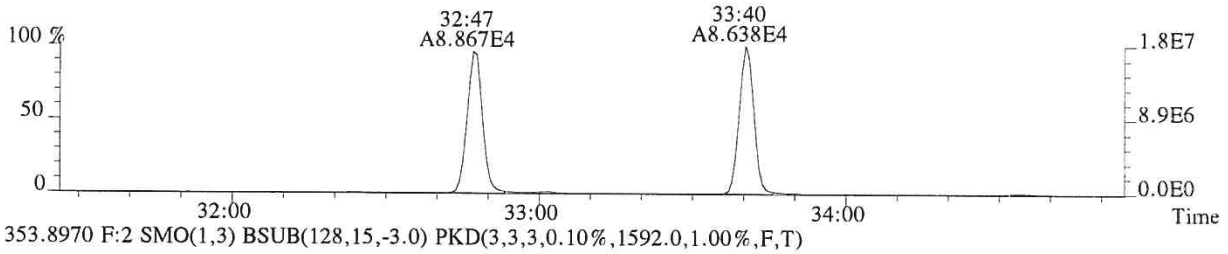
File:P513851 #1-665 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:76555
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,388.0,1.00%,F,T)



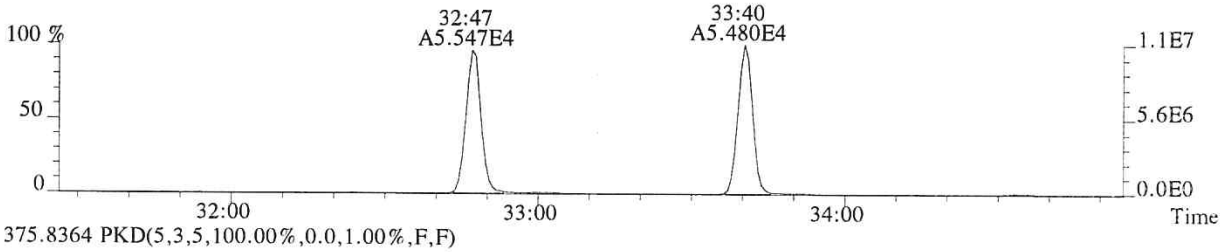
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,680.0,1.00%,F,T)



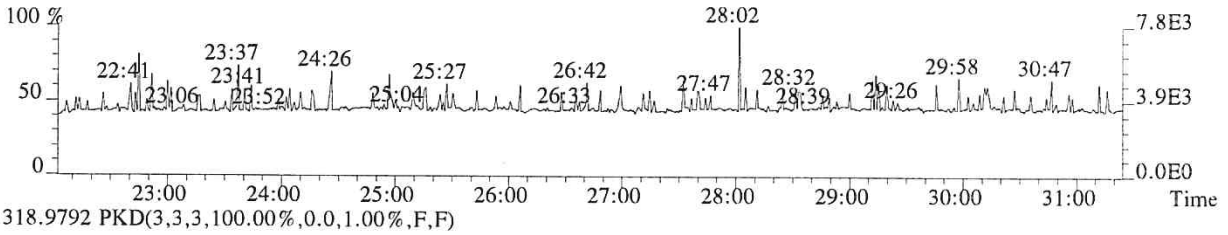
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,648.0,1.00%,F,T)



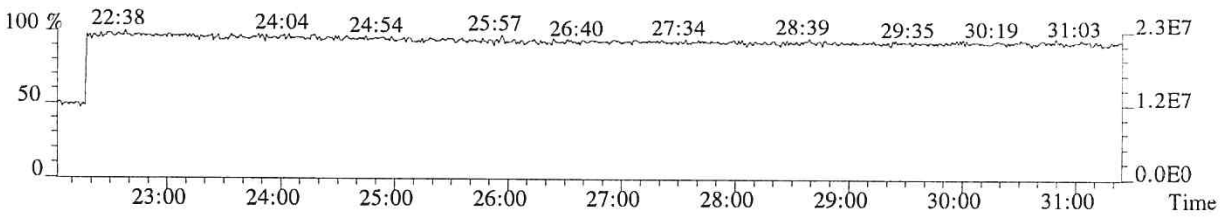
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1592.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

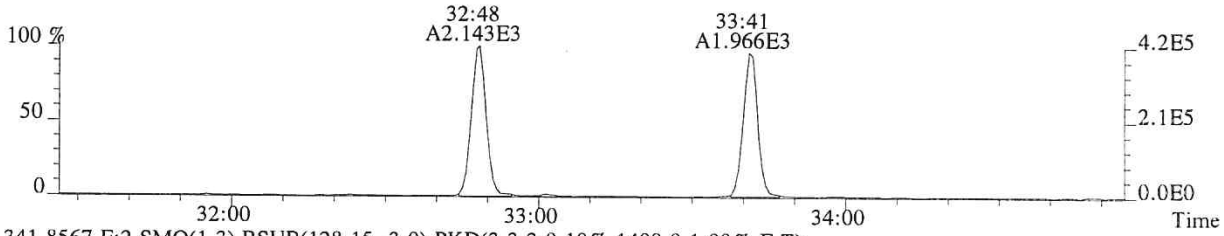


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

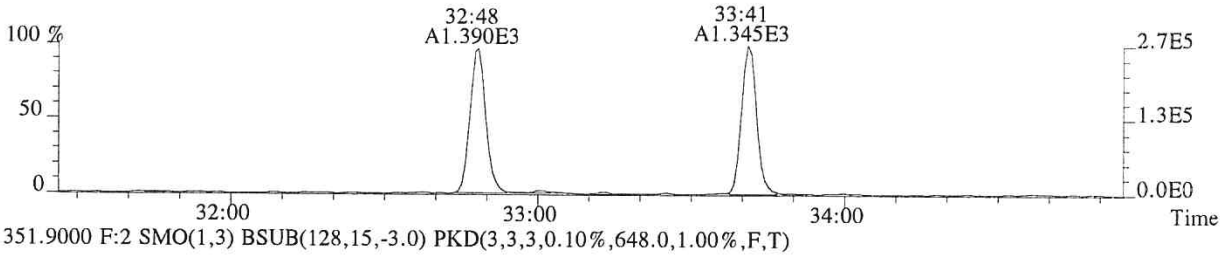


059578

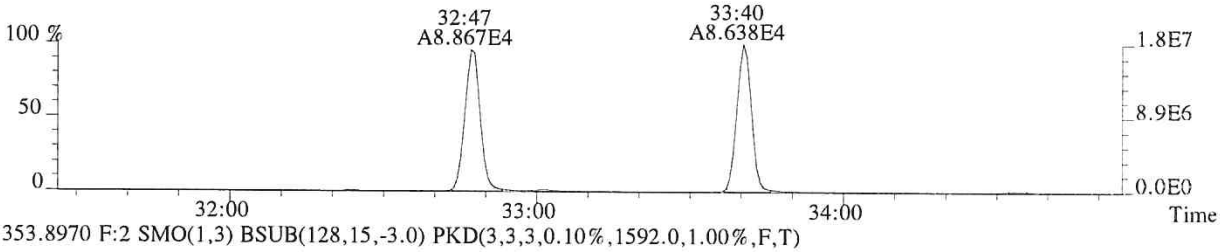
File:P513851 #1-313 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1316.0,1.00%,F,T)



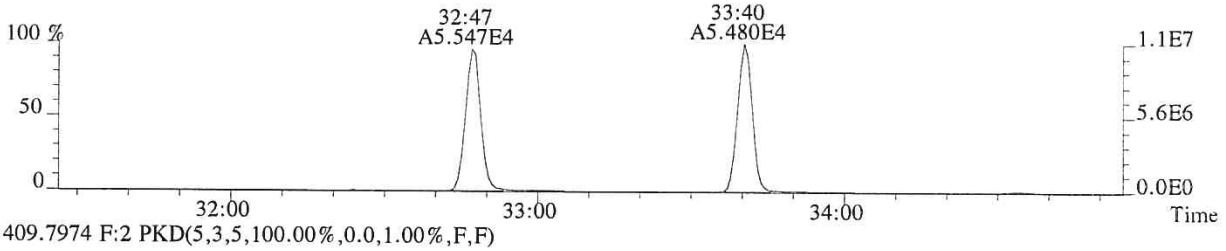
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1408.0,1.00%,F,T)



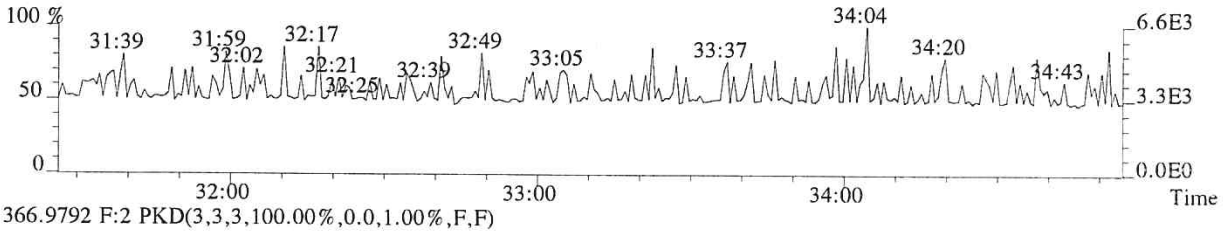
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,648.0,1.00%,F,T)



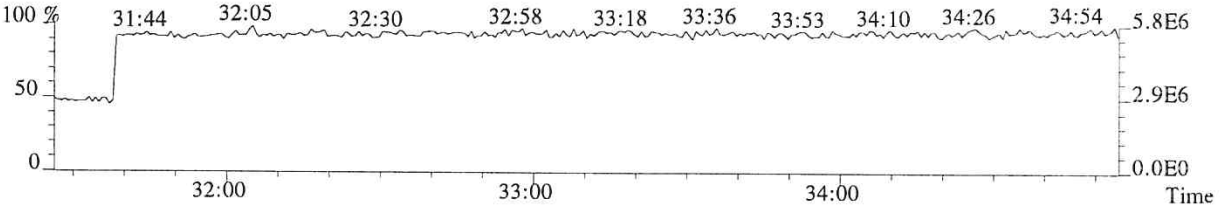
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1592.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

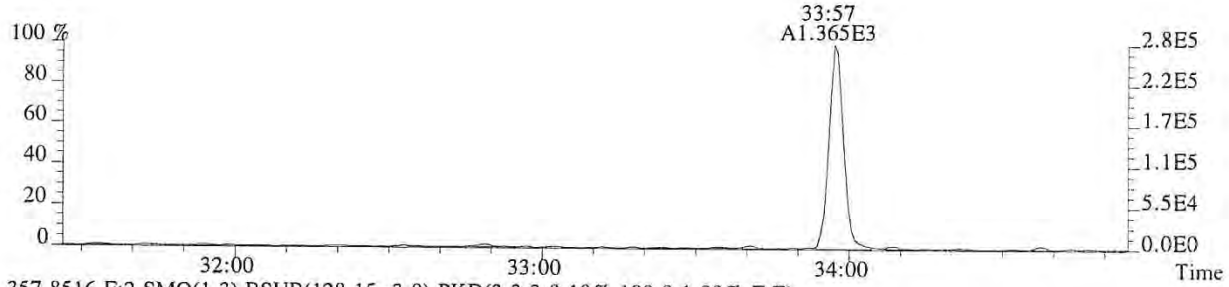


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

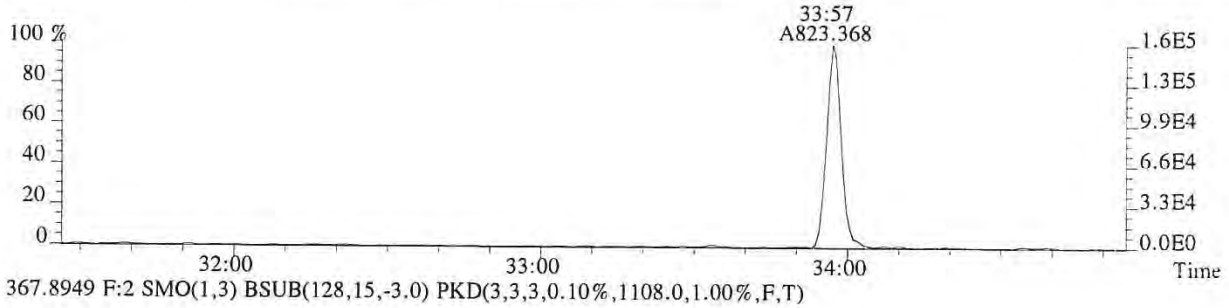


059579

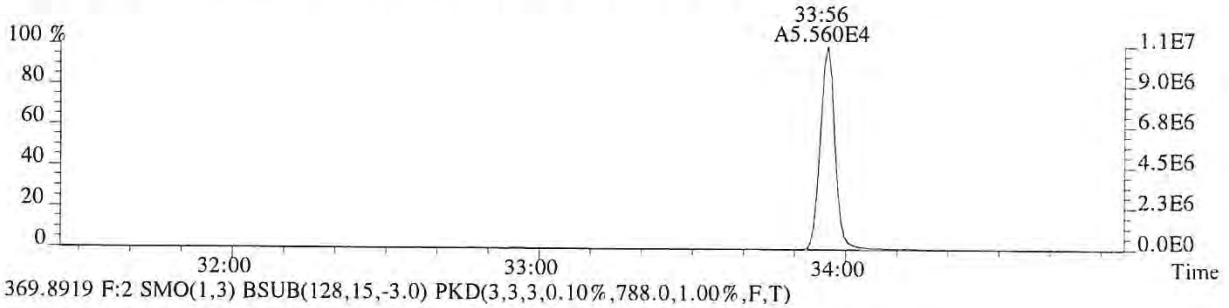
File:P513851 #1-313 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,988.0,1.00%,F,T)



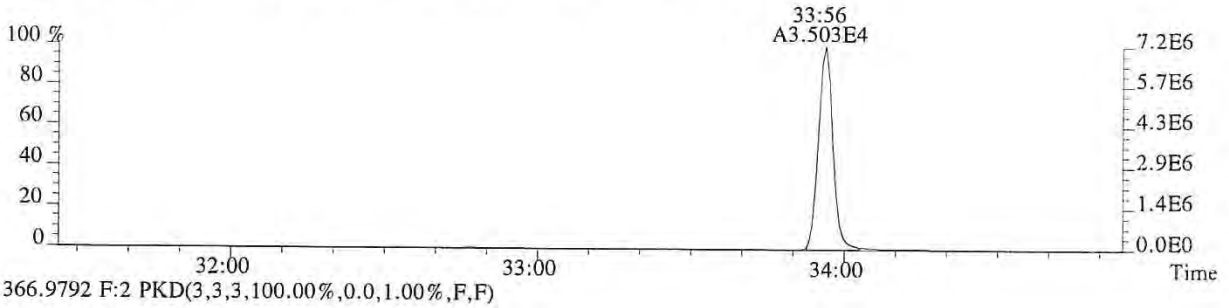
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,180.0,1.00%,F,T)



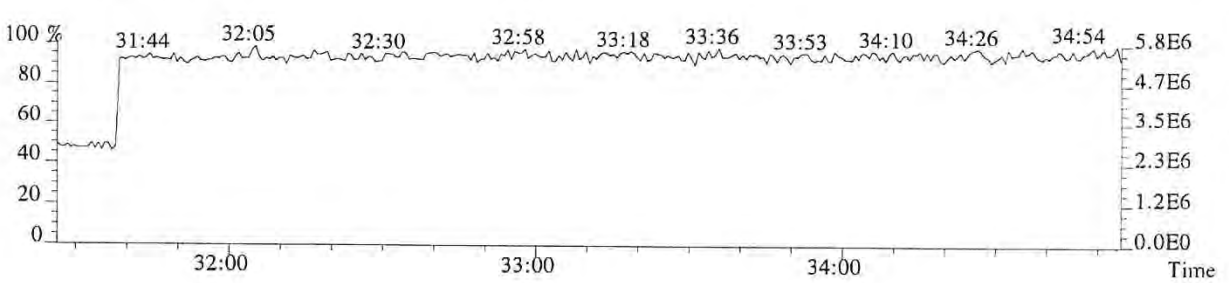
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1108.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



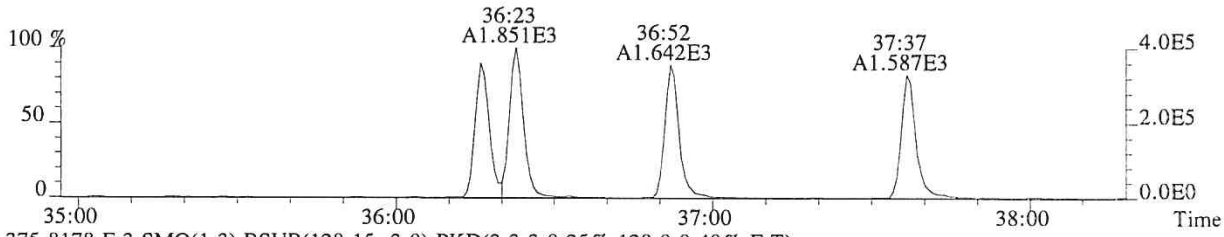
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



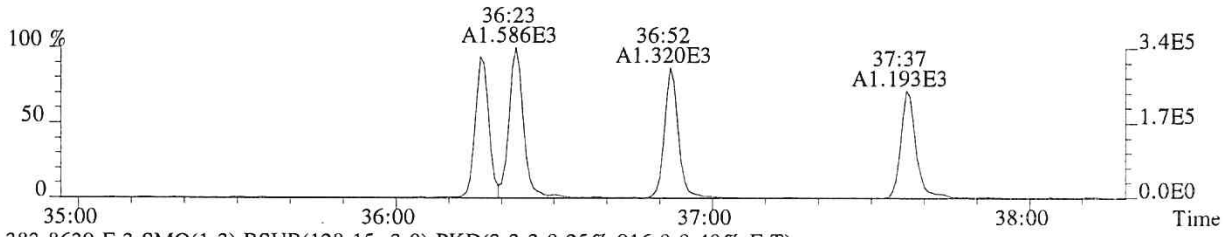
059580

File:P513851 #1-303 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

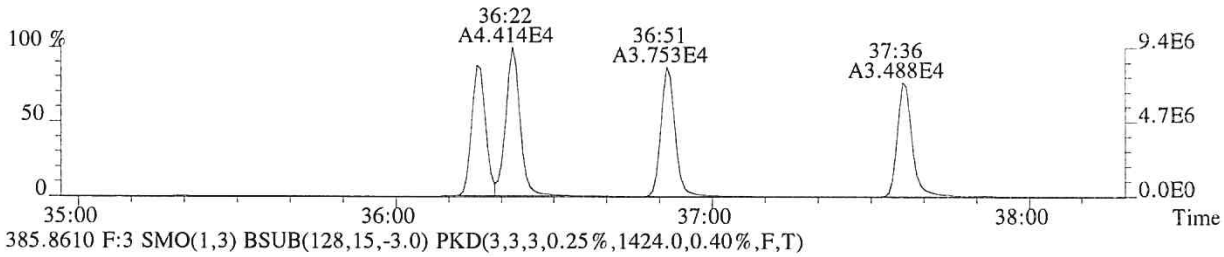
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,532.0,0.40%,F,T)



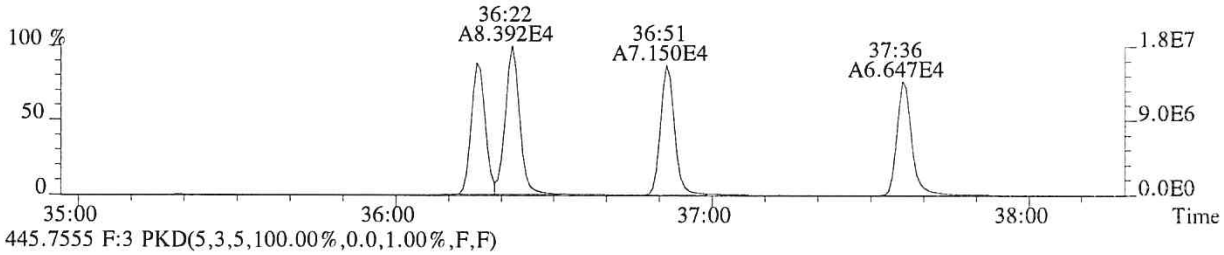
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,128.0,0.40%,F,T)



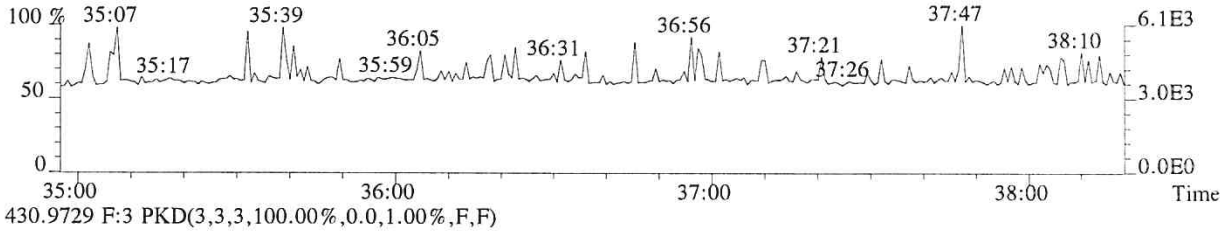
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,916.0,0.40%,F,T)



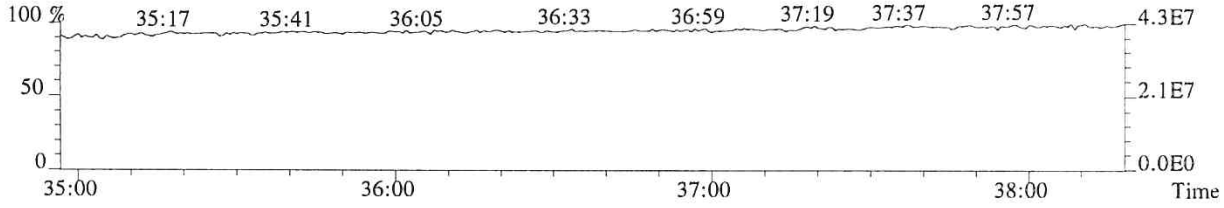
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1424.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

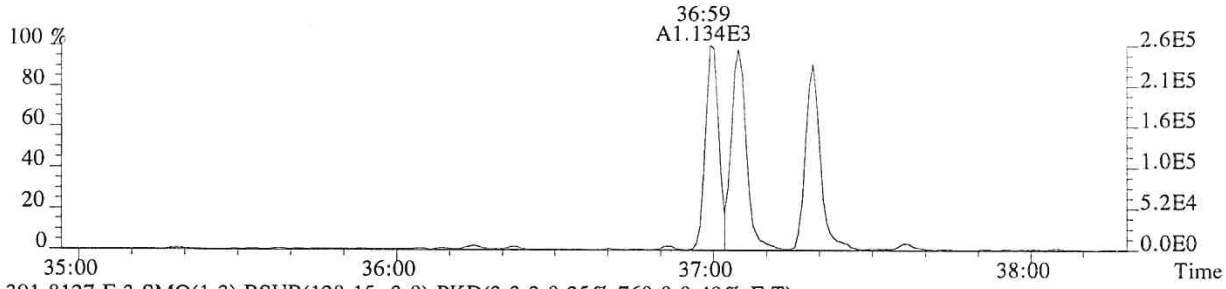


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

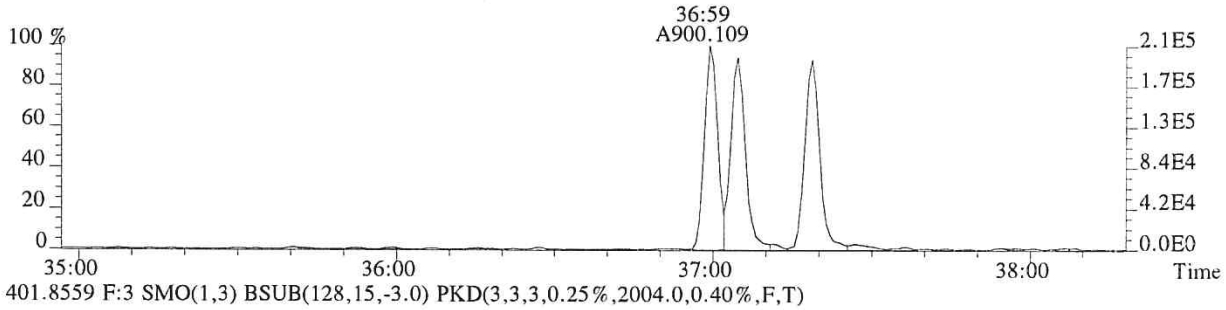


059581

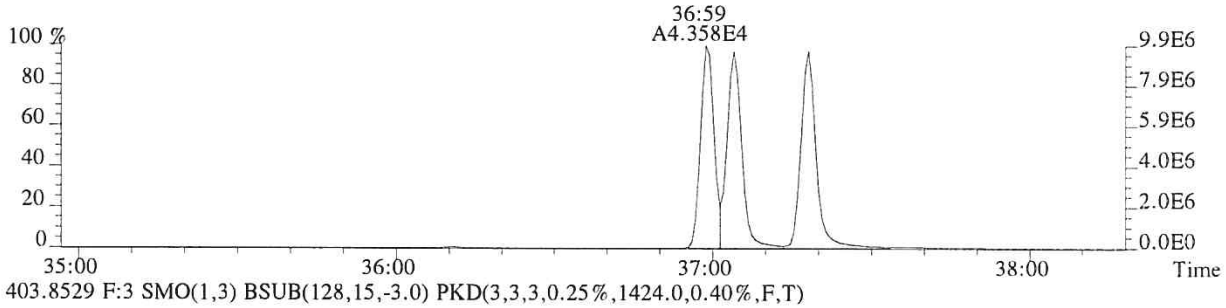
File:P513851 #1-303 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,596.0,0.40%,F,T)



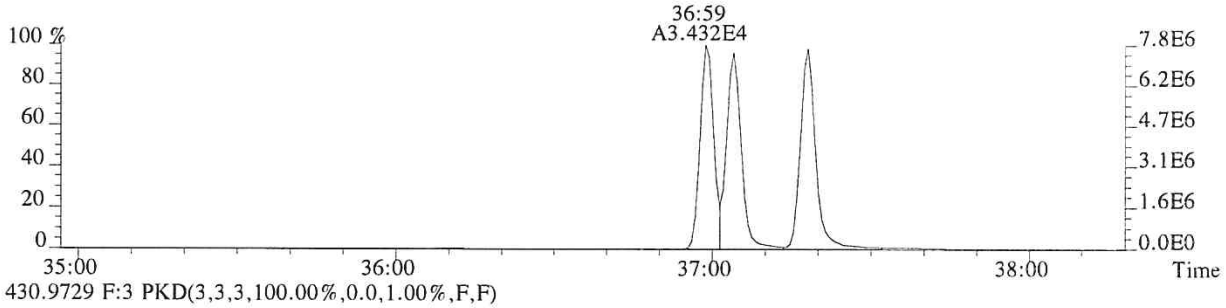
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,760.0,0.40%,F,T)



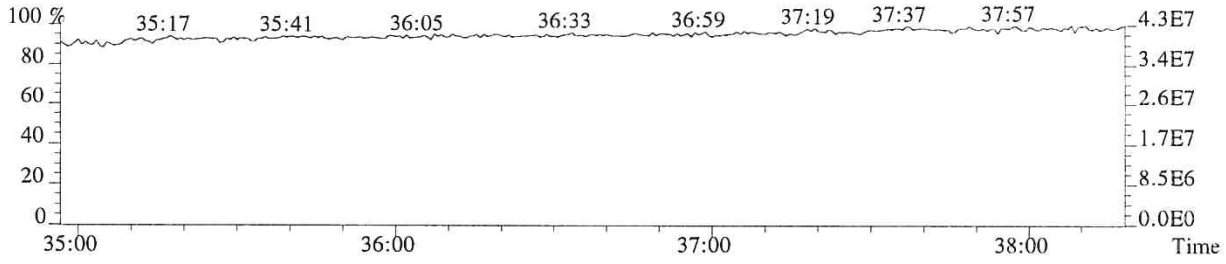
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2004.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1424.0,0.40%,F,T)

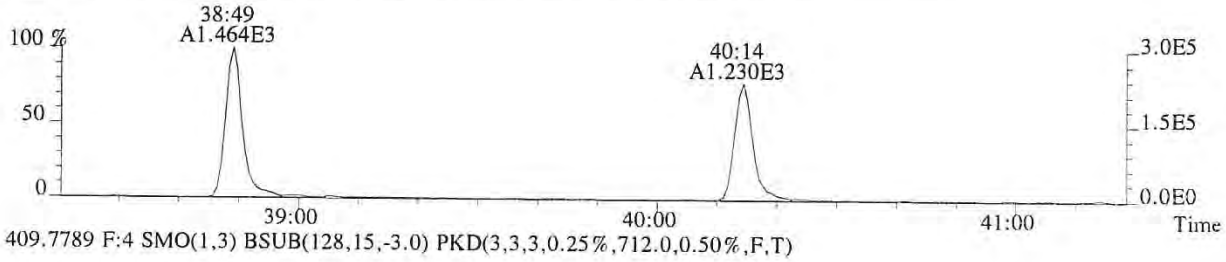


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

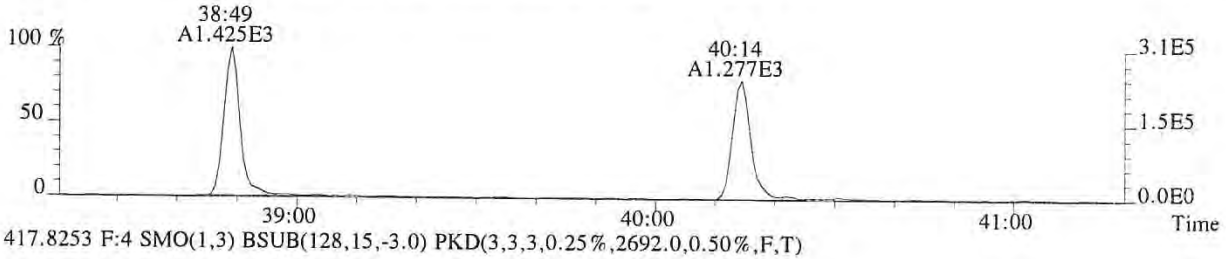


059582

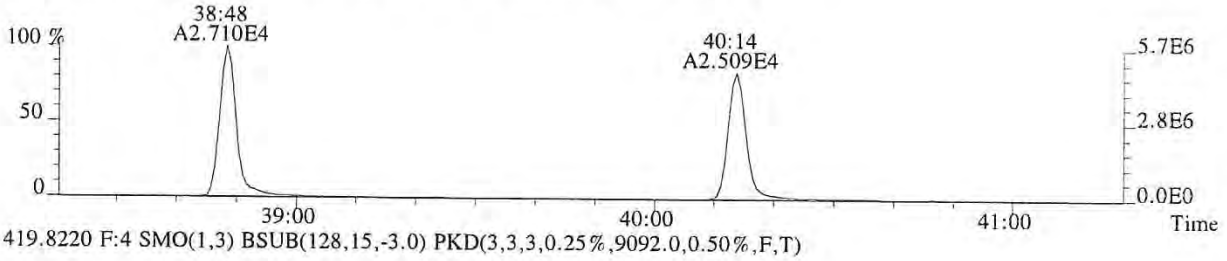
File:P513851 #1-268 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,304.0,0.50%,F,T)



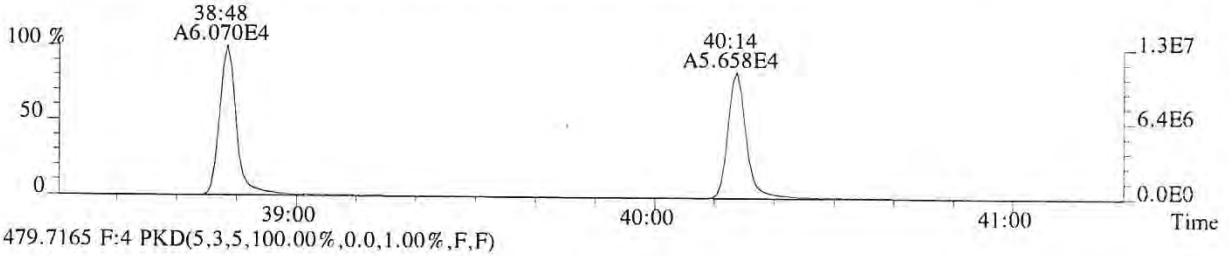
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,712.0,0.50%,F,T)



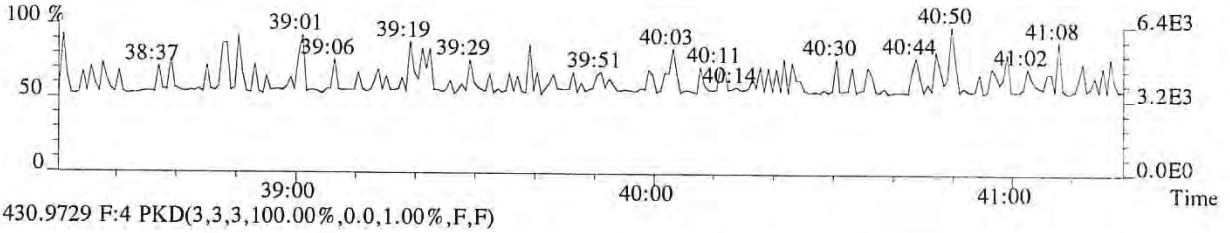
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2692.0,0.50%,F,T)



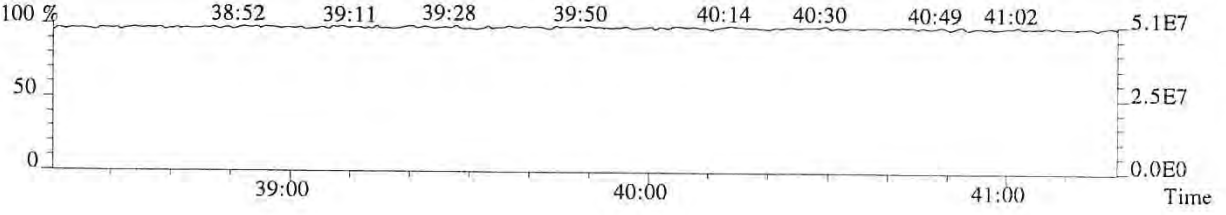
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9092.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

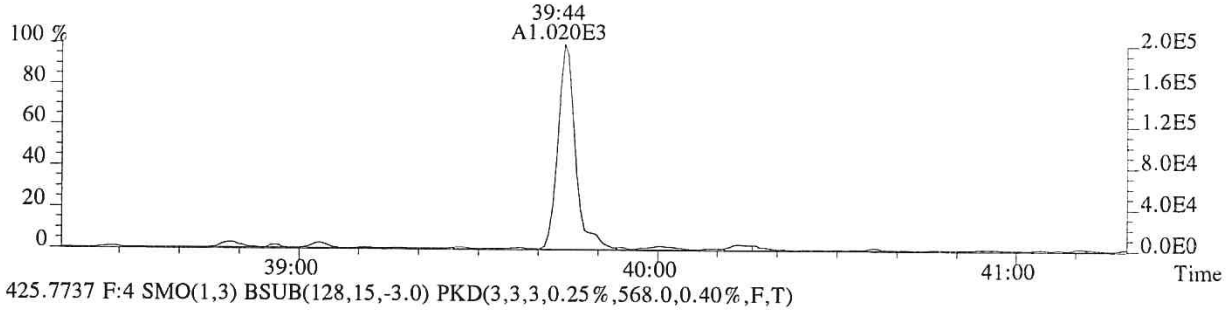


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

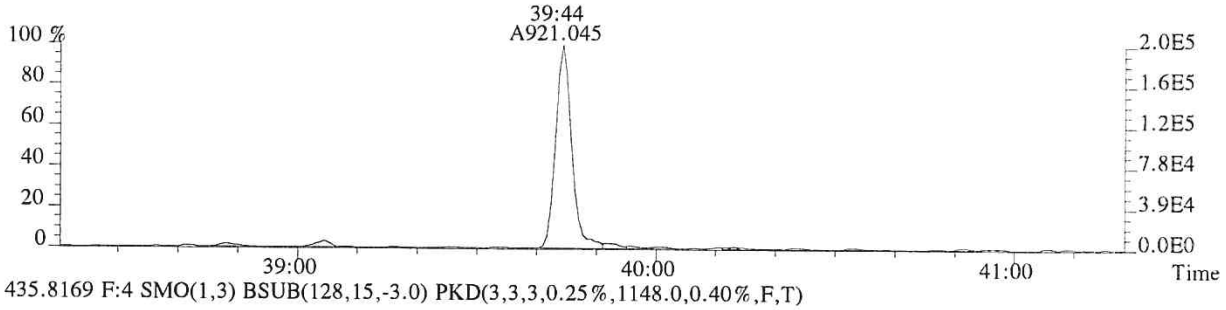


059583

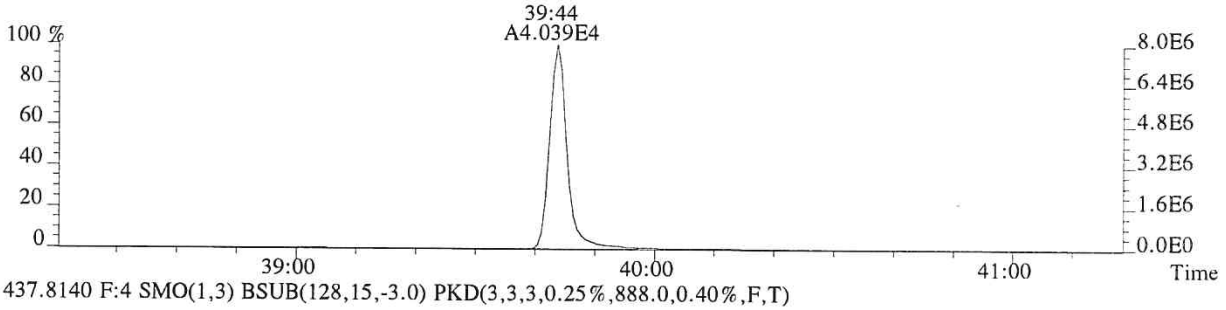
File:P513851 #1-268 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,688.0,0.40%,F,T)



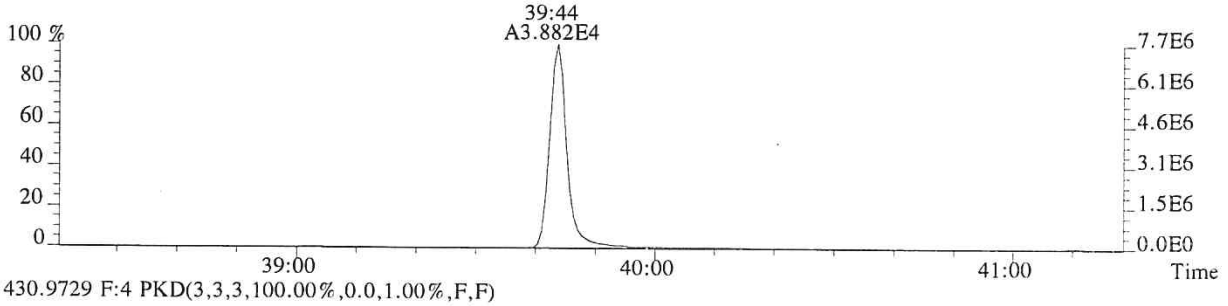
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,568.0,0.40%,F,T)



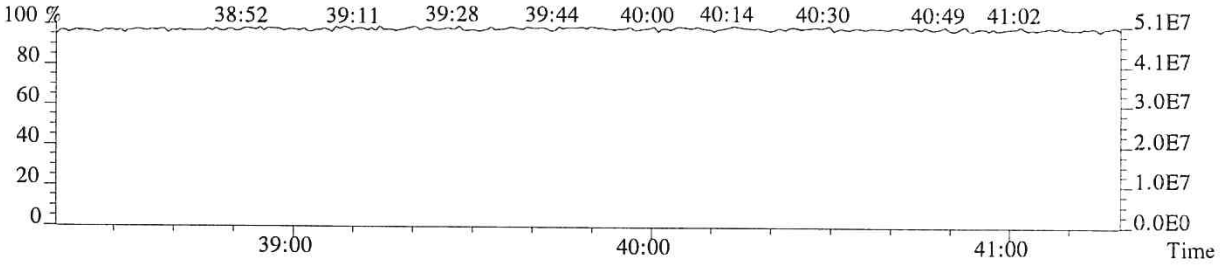
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1148.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,888.0,0.40%,F,T)

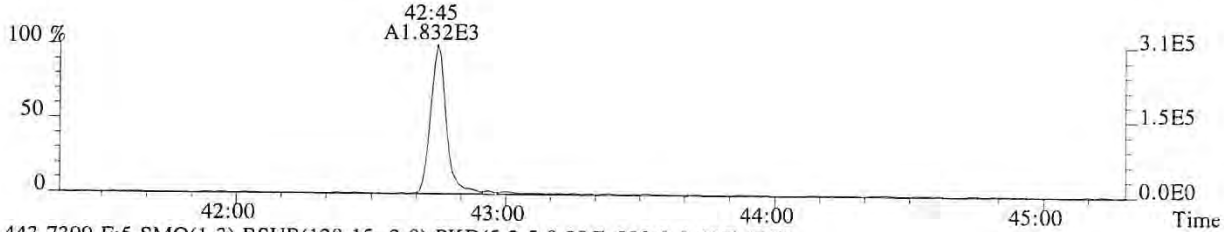


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

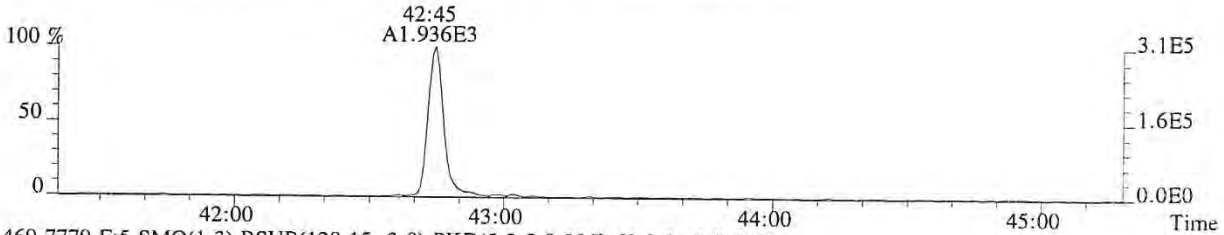


059584

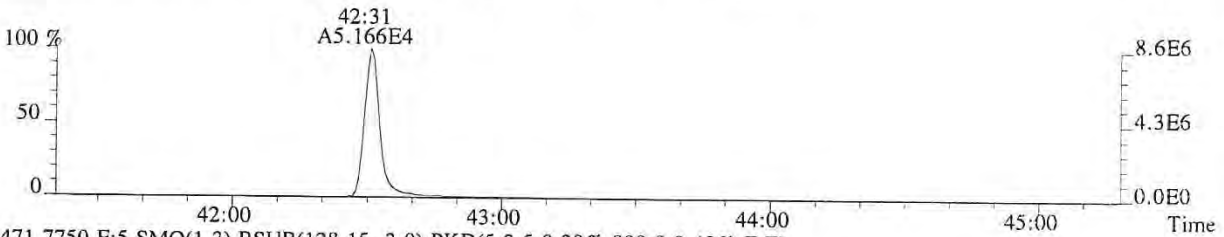
File:P513851 #1-357 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



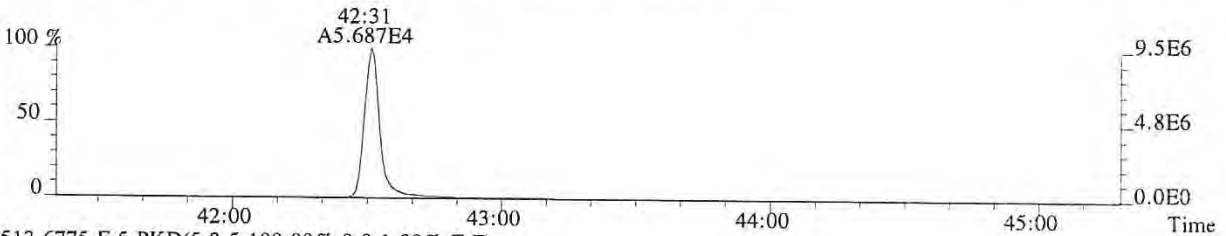
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,820.0,0.40%,F,T)



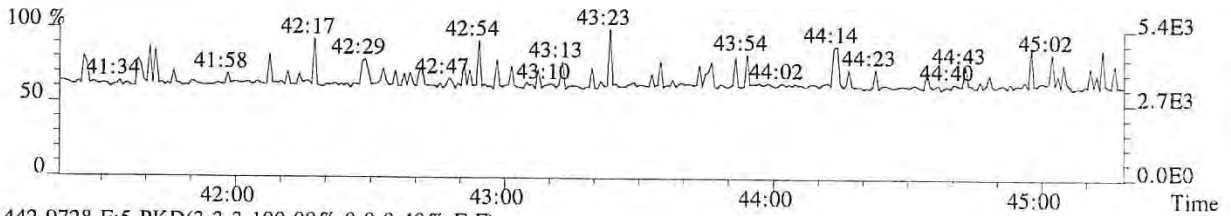
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,60.0,0.40%,F,T)



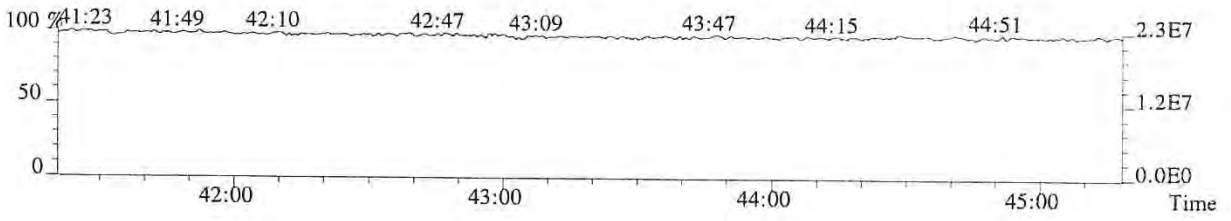
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,800.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

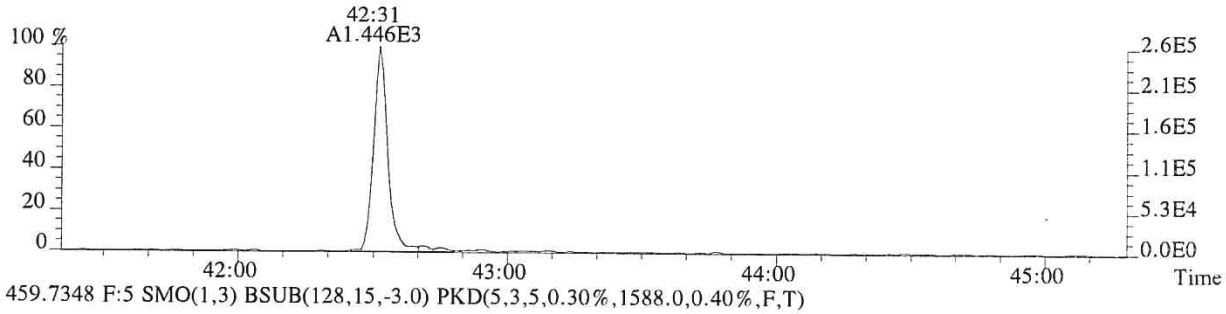


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

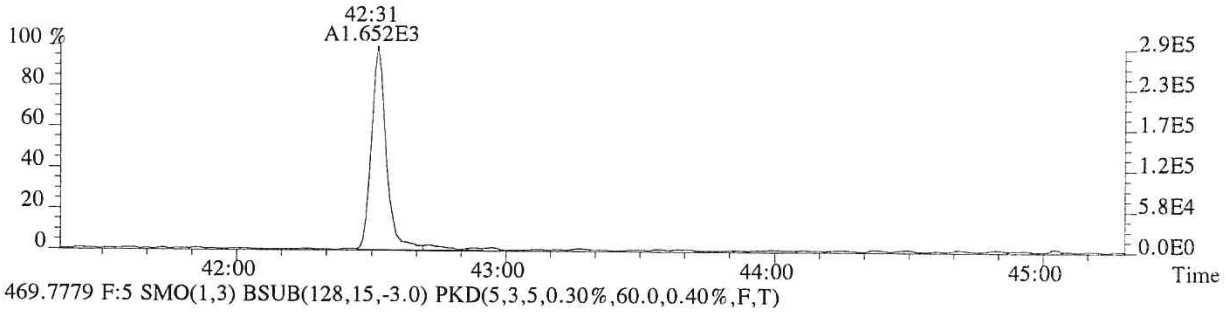


059585

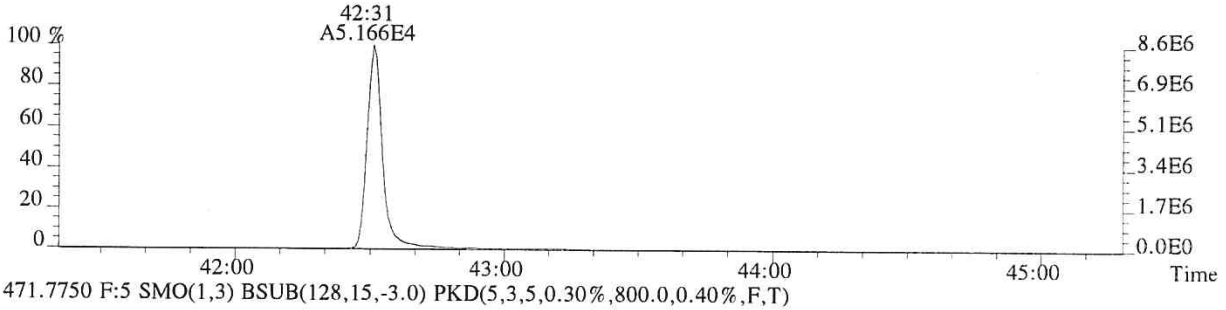
File:P513851 #1-357 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,192.0,0.40%,F,T)



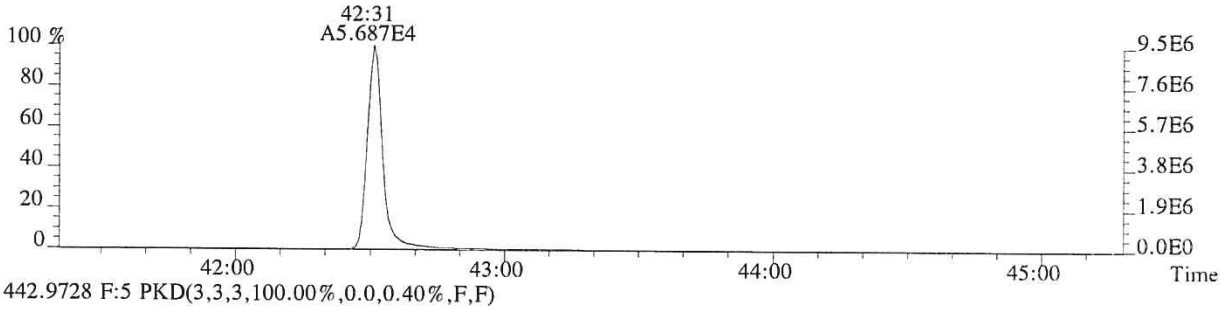
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1588.0,0.40%,F,T)



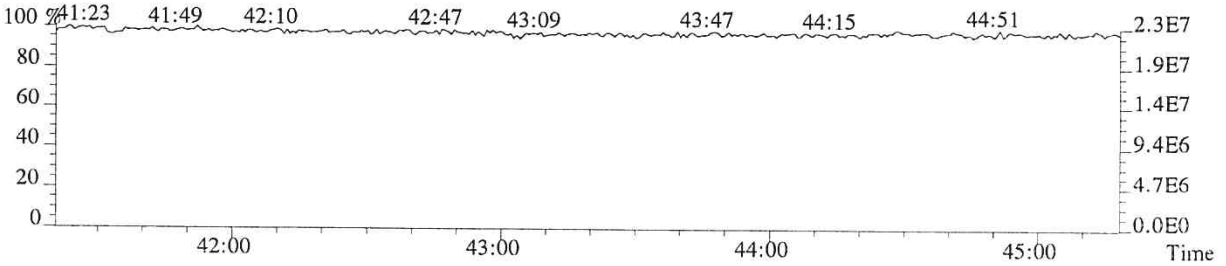
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,60.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,800.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059586

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76556

Run #3 Filename P513852 Samp: 1 Inj: 1 Acquired: 24-JAN-18 15:18:44
Processed: 24-JAN-18 16:27:06 Sample ID: CS2

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:48	5.859e+03	7.932e+03	0.74	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	4.499e+04	3.047e+04	1.48	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:42	4.356e+04	2.901e+04	1.50	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:17	4.061e+04	3.382e+04	1.20	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:23	4.295e+04	3.562e+04	1.21	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:53	3.905e+04	3.212e+04	1.22	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	3.479e+04	2.862e+04	1.22	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:49	3.262e+04	3.207e+04	1.02	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	2.654e+04	2.632e+04	1.01	yes	no	1.258
10	Unk	OCDF	42:45	3.789e+04	4.247e+04	0.89	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:32	4.192e+03	5.525e+03	0.76	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:58	2.973e+04	1.886e+04	1.58	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	37:00	2.687e+04	2.156e+04	1.25	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:05	2.801e+04	2.223e+04	1.26	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:19	2.898e+04	2.343e+04	1.24	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:45	2.194e+04	2.114e+04	1.04	yes	no	1.025
17	Unk	OCDD	42:32	3.213e+04	3.615e+04	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:47	3.357e+05	4.220e+05	0.80	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:48	4.551e+05	2.871e+05	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	4.534e+05	2.868e+05	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:16	2.091e+05	4.014e+05	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:23	2.405e+05	4.554e+05	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:52	2.176e+05	4.192e+05	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:37	1.900e+05	3.615e+05	0.53	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:49	1.476e+05	3.275e+05	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	1.279e+05	2.823e+05	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:31	2.035e+05	2.546e+05	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	3.112e+05	1.963e+05	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	2.611e+05	2.071e+05	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:05	2.721e+05	2.137e+05	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:44	2.118e+05	1.999e+05	1.06	yes	no	0.858
32	IS	13C-OCDD	42:31	2.824e+05	3.150e+05	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:57	2.212e+05	2.732e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:19	2.902e+05	2.282e+05	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:32	1.018e+04				no	1.014

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Signal/Noise Height Ratio Summary

CLIENT ID.
76556

Run #3 Filename P513852 Samp: 1 Inj: 1 Acquired: 24-JAN-18 15:18:44
Processed: 24-JAN-18 16:27:06 LAB. ID: CS2

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.20e+06	7.00e+02	1.7e+03	1.59e+06	1.72e+03	9.3e+02
2	1,2,3,7,8-PeCDF	9.02e+06	1.92e+02	4.7e+04	6.06e+06	3.56e+03	1.7e+03
3	2,3,4,7,8-PeCDF	8.94e+06	1.92e+02	4.7e+04	5.88e+06	3.56e+03	1.7e+03
4	1,2,3,4,7,8-HxCDF	9.11e+06	1.02e+03	9.0e+03	7.52e+06	1.04e+03	7.2e+03
5	1,2,3,6,7,8-HxCDF	8.86e+06	1.02e+03	8.7e+03	7.32e+06	1.04e+03	7.0e+03
6	2,3,4,6,7,8-HxCDF	8.62e+06	1.02e+03	8.5e+03	6.97e+06	1.04e+03	6.7e+03
7	1,2,3,7,8,9-HxCDF	7.31e+06	1.02e+03	7.2e+03	6.00e+06	1.04e+03	5.7e+03
8	1,2,3,4,6,7,8-HpCDF	6.83e+06	3.67e+03	1.9e+03	6.77e+06	3.04e+03	2.2e+03
9	1,2,3,4,7,8,9-HpCDF	5.23e+06	3.67e+03	1.4e+03	5.30e+06	3.04e+03	1.7e+03
10	OCDF	6.47e+06	1.08e+03	6.0e+03	7.24e+06	1.74e+03	4.2e+03
11	2,3,7,8-TCDD	8.47e+05	1.35e+03	6.3e+02	1.14e+06	7.40e+02	1.5e+03
12	1,2,3,7,8-PeCDD	6.05e+06	5.16e+02	1.2e+04	3.80e+06	5.04e+02	7.5e+03
13	1,2,3,4,7,8-HxCDD	6.06e+06	7.48e+02	8.1e+03	4.85e+06	1.29e+03	3.8e+03
14	1,2,3,6,7,8-HxCDD	5.88e+06	7.48e+02	7.9e+03	4.64e+06	1.29e+03	3.6e+03
15	1,2,3,7,8,9-HxCDD	5.73e+06	7.48e+02	7.7e+03	4.69e+06	1.29e+03	3.6e+03
16	1,2,3,4,6,7,8-HpCDD	4.40e+06	1.68e+03	2.6e+03	4.18e+06	7.28e+02	5.7e+03
17	OCDD	5.55e+06	1.60e+02	3.5e+04	6.20e+06	1.07e+03	5.8e+03
18	13C-2,3,7,8-TCDF	6.63e+07	8.64e+03	7.7e+03	8.31e+07	4.36e+03	1.9e+04
19	13C-1,2,3,7,8-PeCDF	8.82e+07	9.44e+02	9.3e+04	5.54e+07	2.55e+03	2.2e+04
20	13C-2,3,4,7,8-PeCDF	9.11e+07	9.44e+02	9.6e+04	5.80e+07	2.55e+03	2.3e+04
21	13C-1,2,3,4,7,8-HxCDF	4.63e+07	1.33e+03	3.5e+04	8.84e+07	3.58e+03	2.5e+04
22	13C-1,2,3,6,7,8-HxCDF	4.97e+07	1.33e+03	3.7e+04	9.31e+07	3.58e+03	2.6e+04
23	13C-2,3,4,6,7,8-HxCDF	4.74e+07	1.33e+03	3.6e+04	9.03e+07	3.58e+03	2.5e+04
24	13C-1,2,3,7,8,9-HxCDF	3.91e+07	1.33e+03	2.9e+04	7.44e+07	3.58e+03	2.1e+04
25	13C-1,2,3,4,6,7,8-HpCDF	3.05e+07	5.18e+03	5.9e+03	6.68e+07	7.38e+03	9.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.48e+07	5.18e+03	4.8e+03	5.51e+07	7.38e+03	7.5e+03
27	13C-2,3,7,8-TCDD	4.21e+07	6.43e+03	6.5e+03	5.22e+07	3.34e+03	1.6e+04
28	13C-1,2,3,7,8-PeCDD	6.30e+07	1.05e+03	6.0e+04	3.99e+07	1.24e+03	3.2e+04
29	13C-1,2,3,4,7,8-HxCDD	5.84e+07	4.36e+03	1.3e+04	4.60e+07	2.04e+03	2.3e+04
30	13C-1,2,3,6,7,8-HxCDD	5.57e+07	4.36e+03	1.3e+04	4.34e+07	2.04e+03	2.1e+04
31	13C-1,2,3,4,6,7,8-HpCDD	4.12e+07	2.07e+03	2.0e+04	3.91e+07	2.18e+03	1.8e+04
32	13C-OCDD	4.87e+07	6.80e+01	7.2e+05	5.40e+07	9.12e+02	5.9e+04
33	13C-1,2,3,4-TCDD	4.48e+07	6.43e+03	7.0e+03	5.57e+07	3.34e+03	1.7e+04
34	13C-1,2,3,7,8,9-HxCDD	5.61e+07	4.36e+03	1.3e+04	4.47e+07	2.04e+03	2.2e+04
35	37Cl-2,3,7,8-TCDD	2.10e+06	1.00e+03	2.1e+03			

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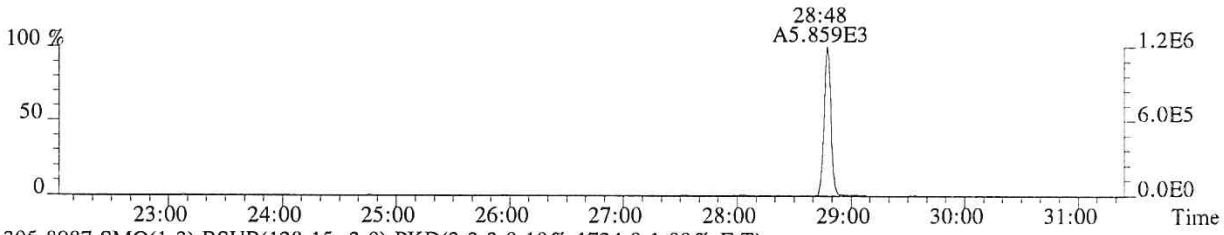
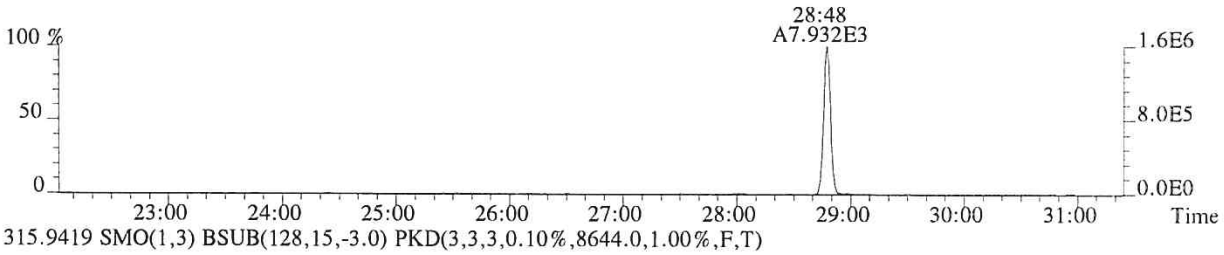
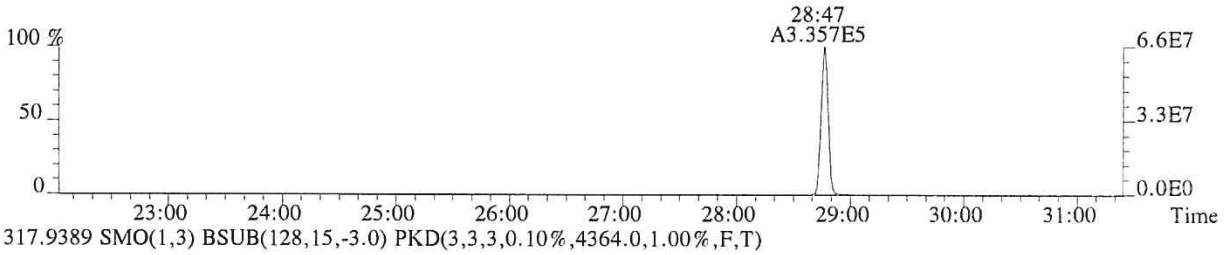
File:P513852 #1-665 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,700.0,1.00%,F,T)



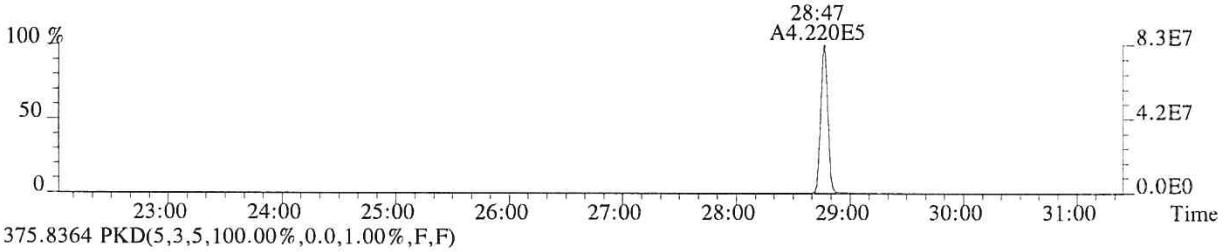
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1724.0,1.00%,F,T)



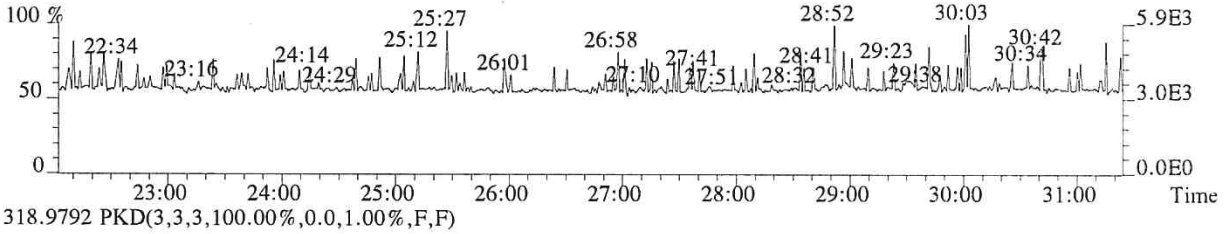
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8644.0,1.00%,F,T)



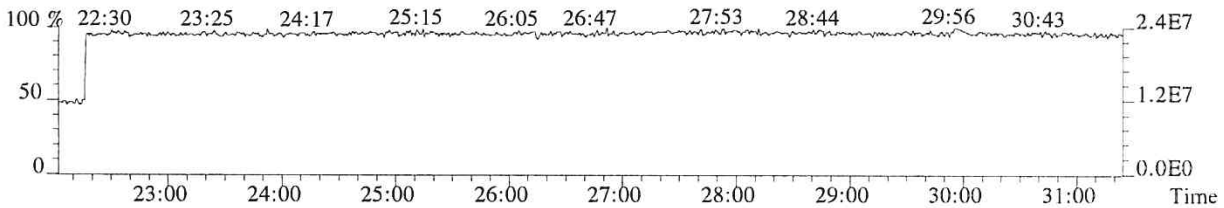
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4364.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

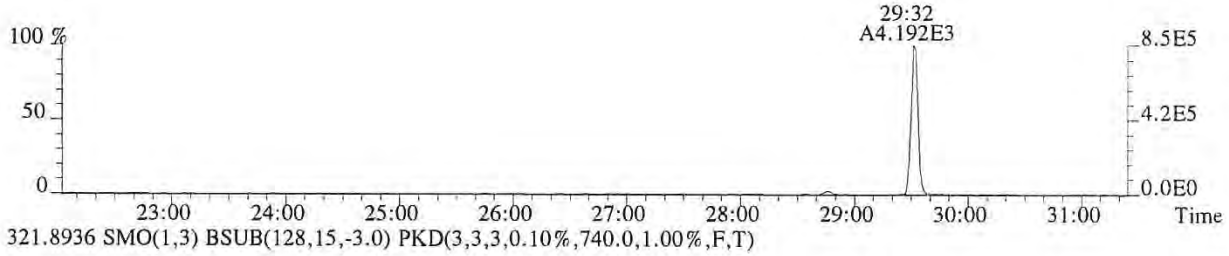


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

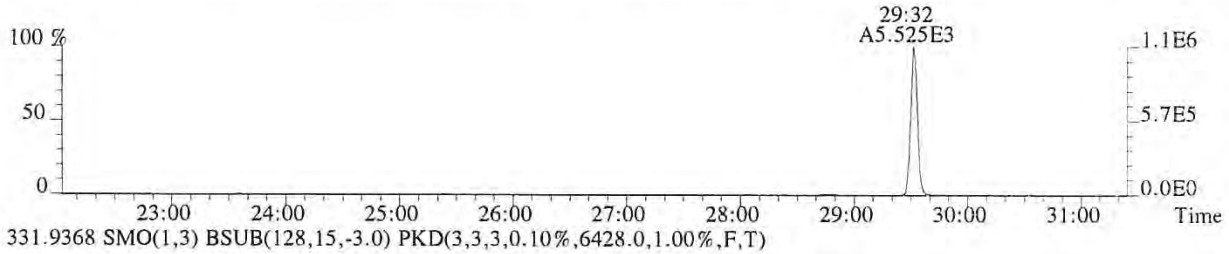


059589

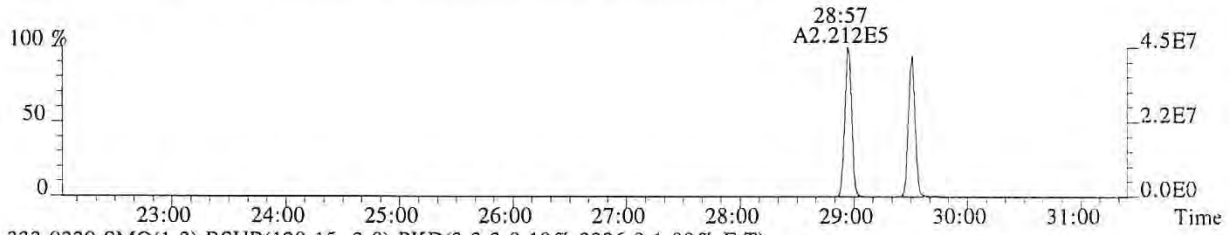
File:P513852 #1-665 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1348.0,1.00%,F,T)



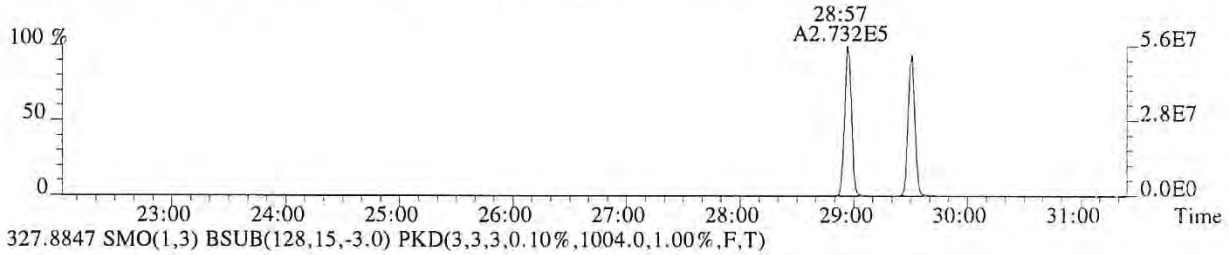
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,740.0,1.00%,F,T)



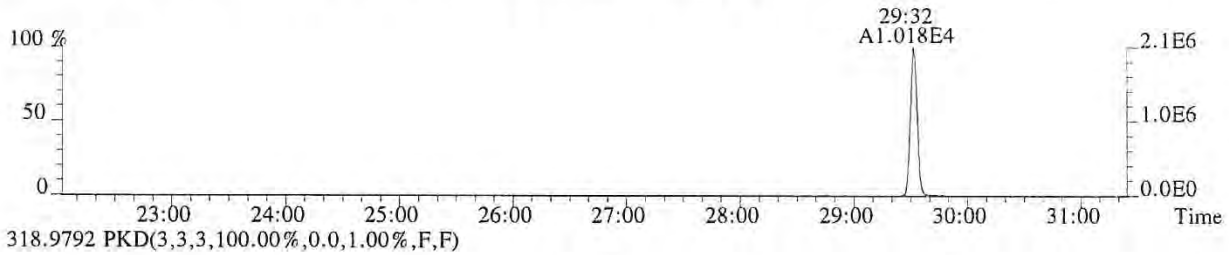
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6428.0,1.00%,F,T)



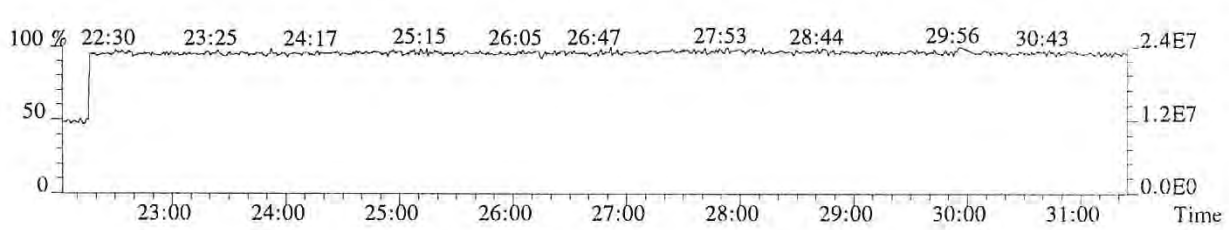
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3336.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1004.0,1.00%,F,T)

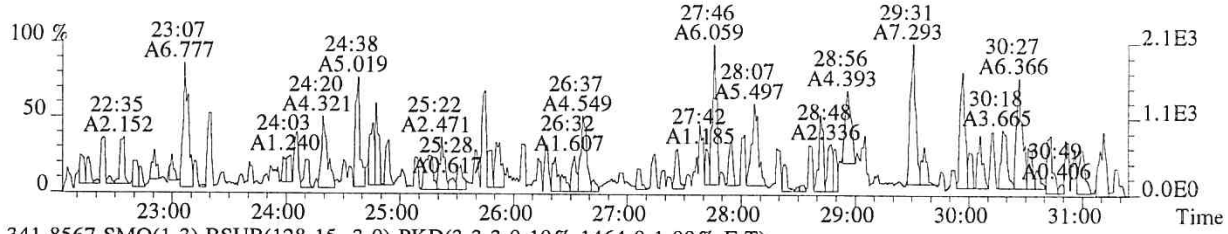


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

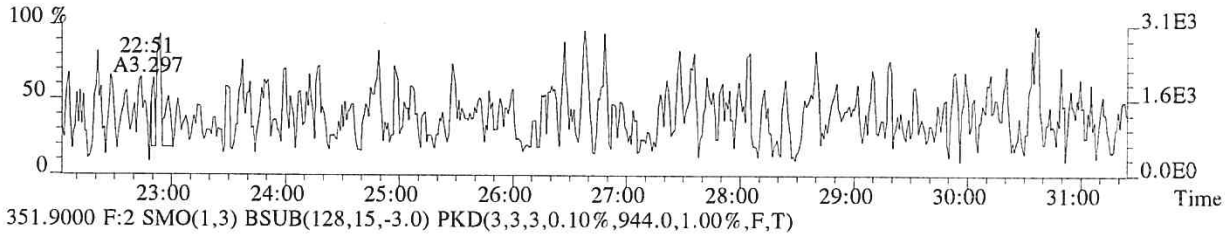


059590

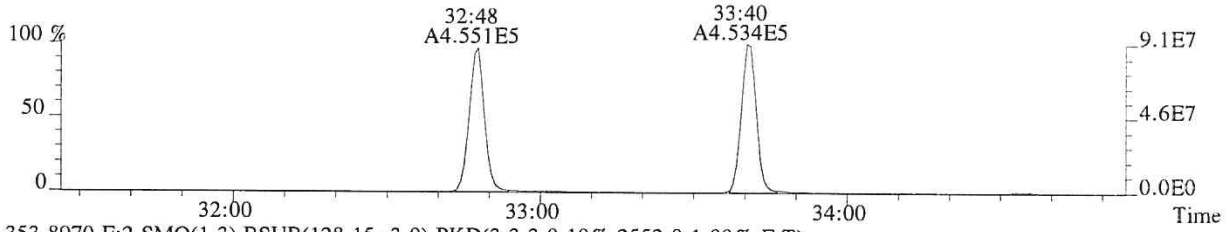
File:P513852 #1-665 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,196.0,1.00%,F,T)



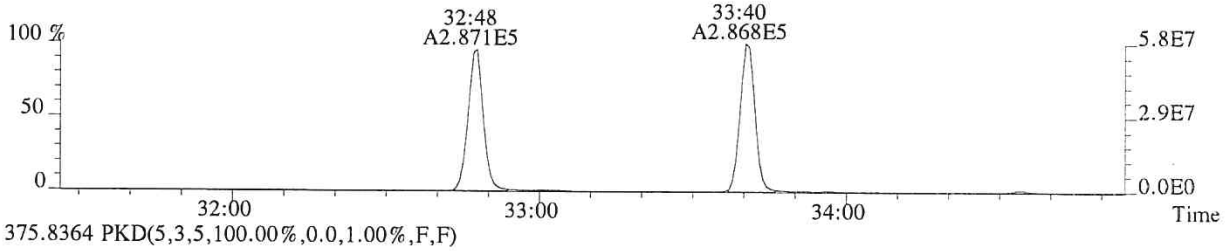
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1464.0,1.00%,F,T)



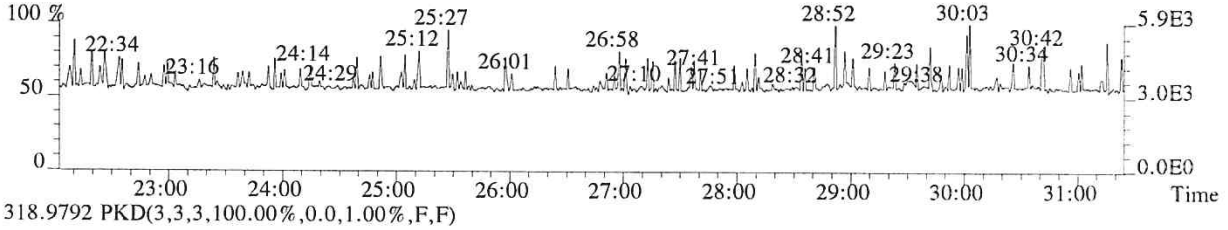
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,944.0,1.00%,F,T)



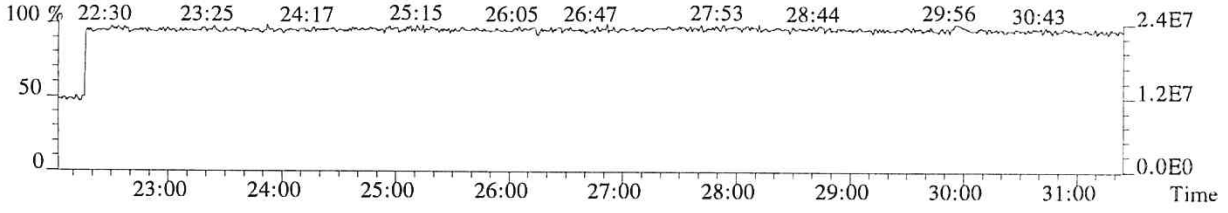
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2552.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

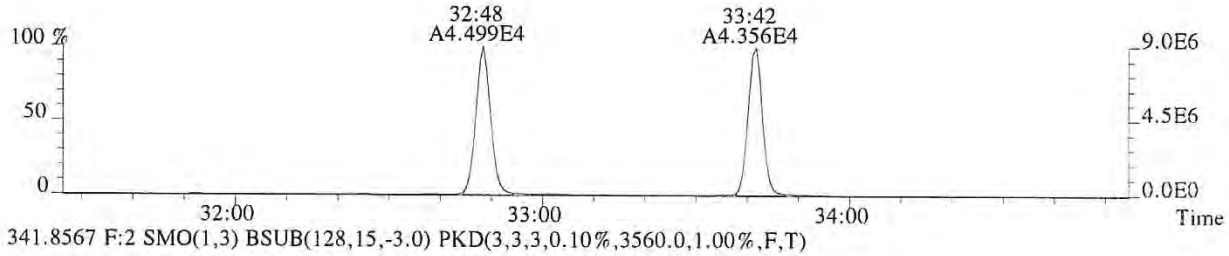


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

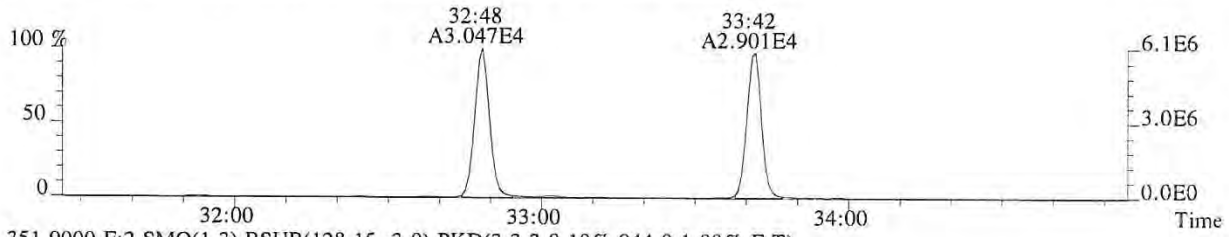


059591

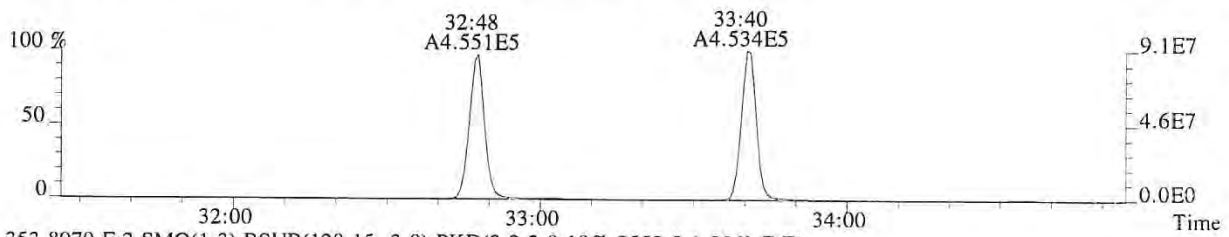
File:P513852 #1-313 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,192.0,1.00%,F,T)



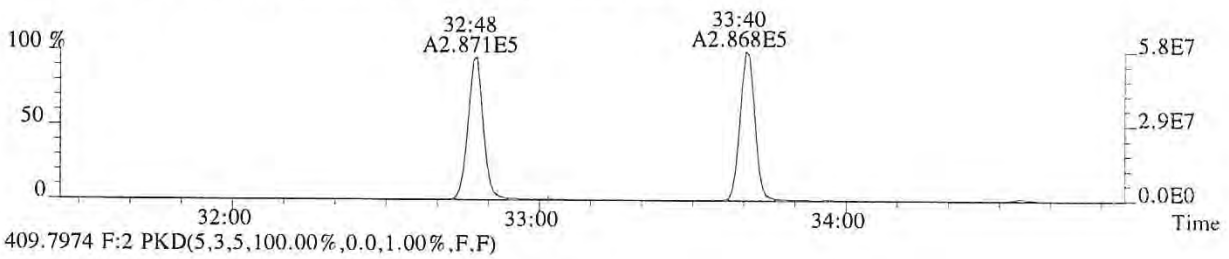
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3560.0,1.00%,F,T)



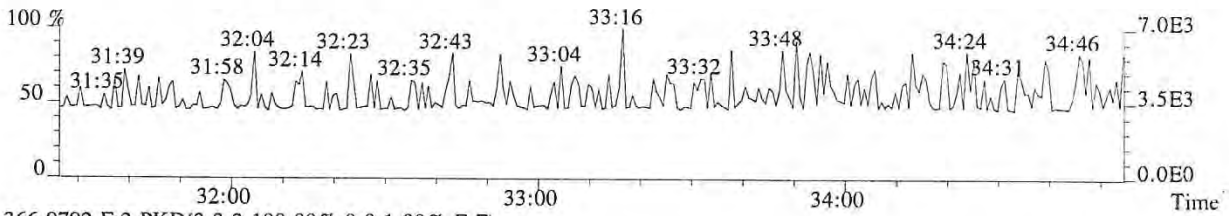
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,944.0,1.00%,F,T)



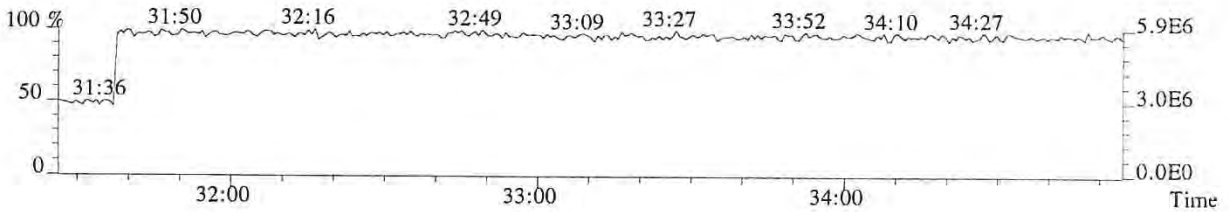
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2552.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

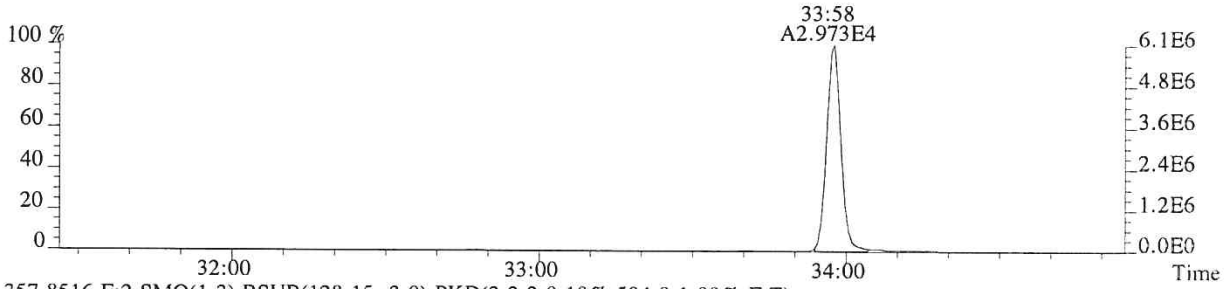


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

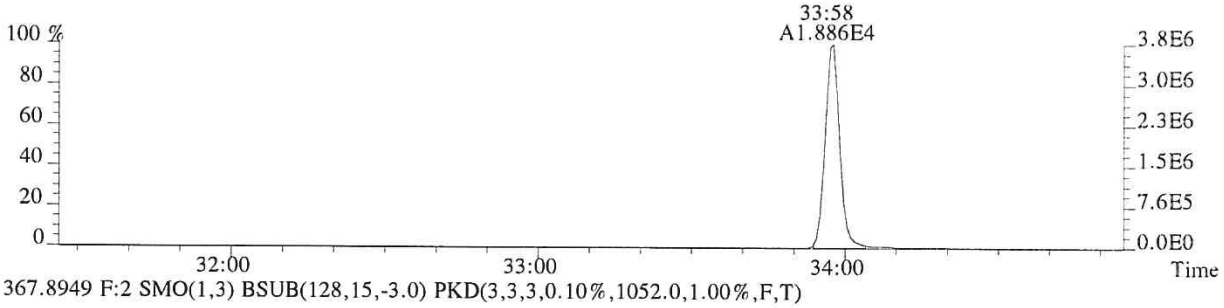


059592

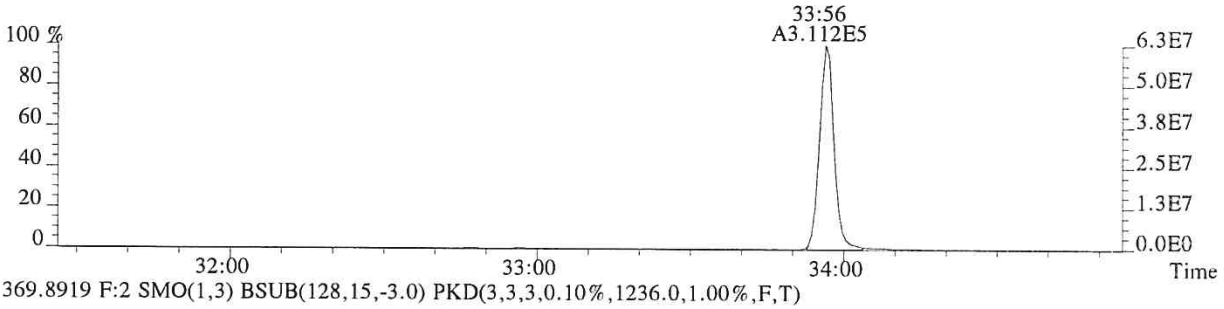
File:P513852 #1-313 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,516.0,1.00%,F,T)



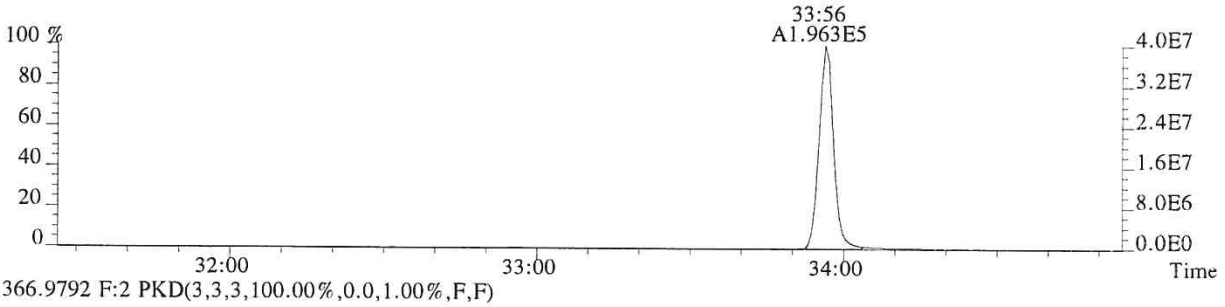
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,504.0,1.00%,F,T)



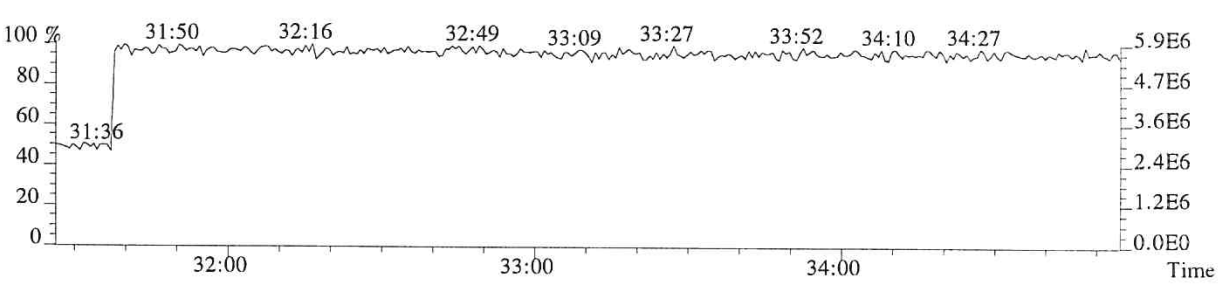
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1052.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1236.0,1.00%,F,T)

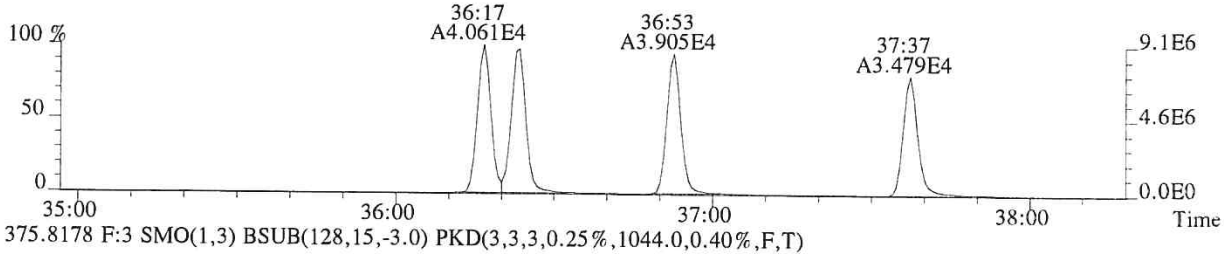


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

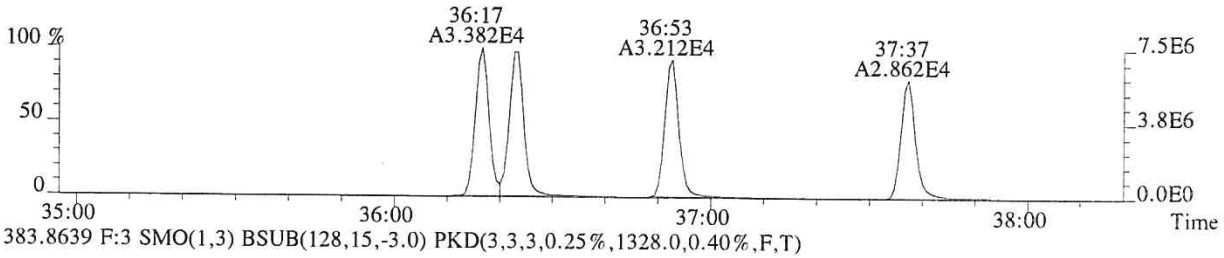


059593

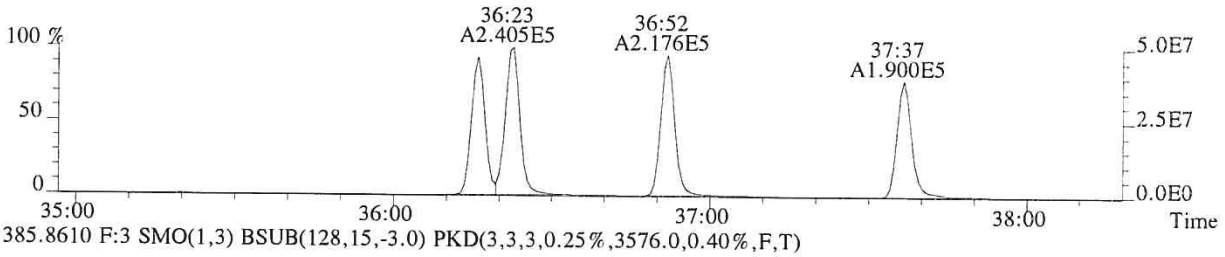
File:P513852 #1-303 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:76556
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1016.0,0.40%,F,T)



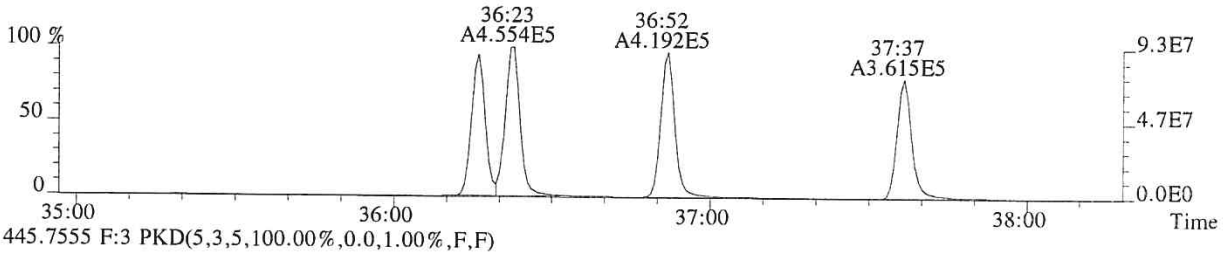
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1044.0,0.40%,F,T)



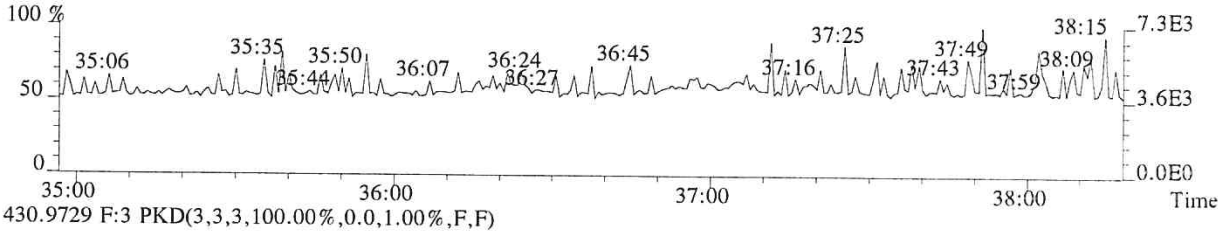
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1328.0,0.40%,F,T)



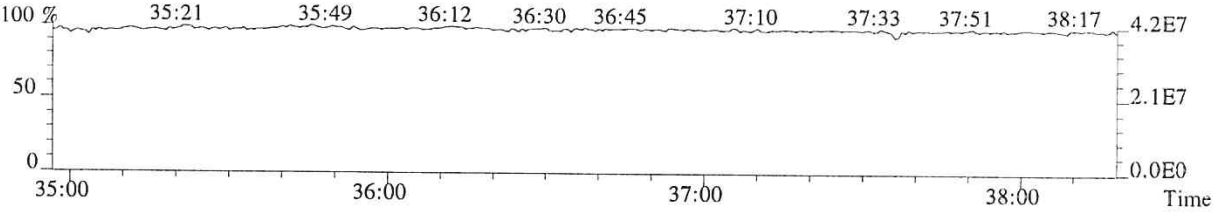
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3576.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

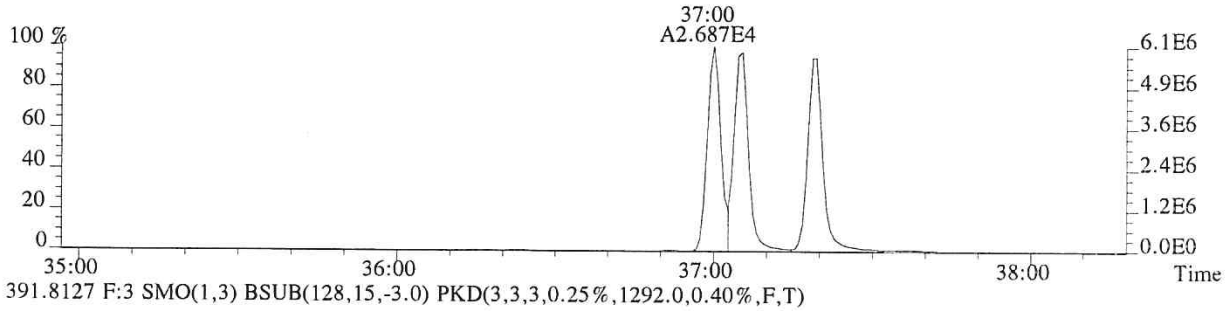


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

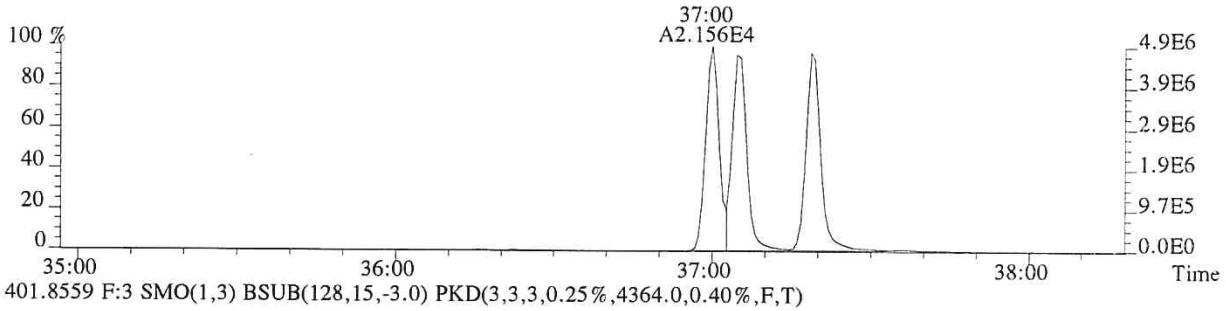


059594

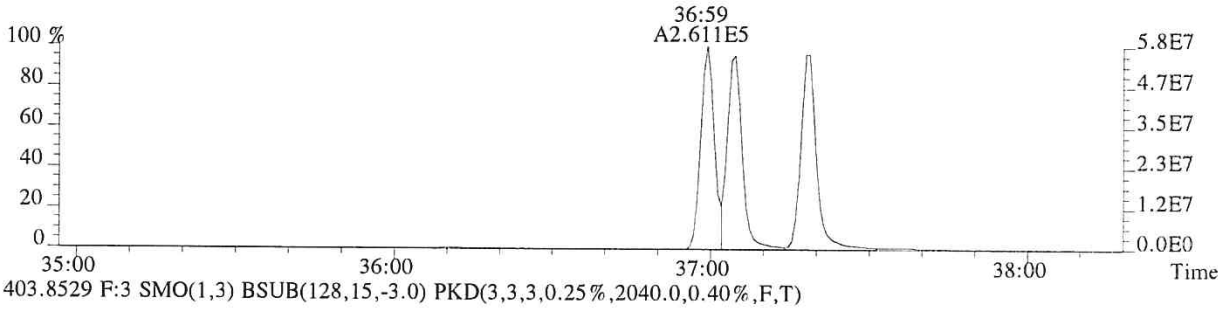
File:P513852 #1-303 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,748.0,0.40%,F,T)



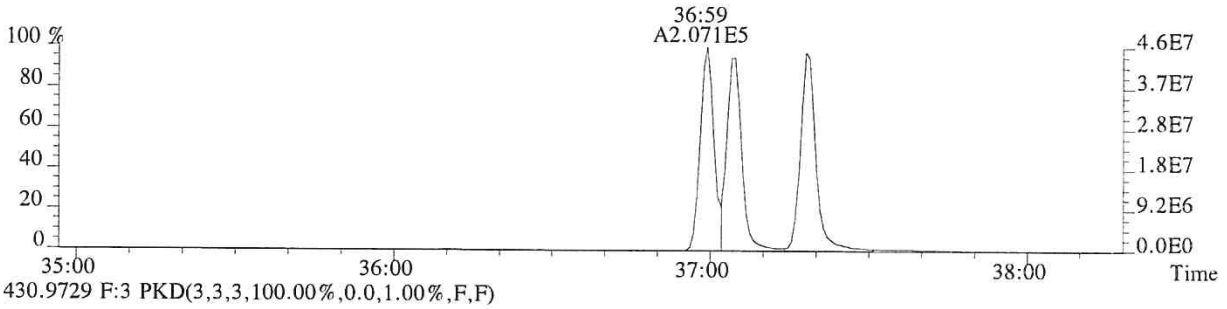
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1292.0,0.40%,F,T)



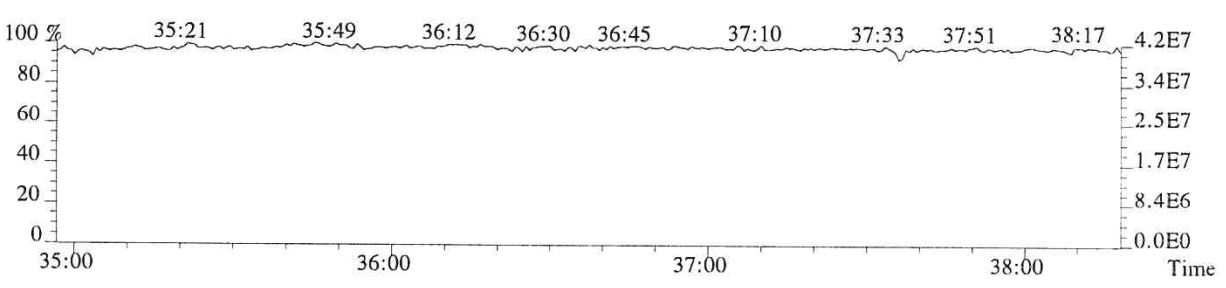
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4364.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2040.0,0.40%,F,T)

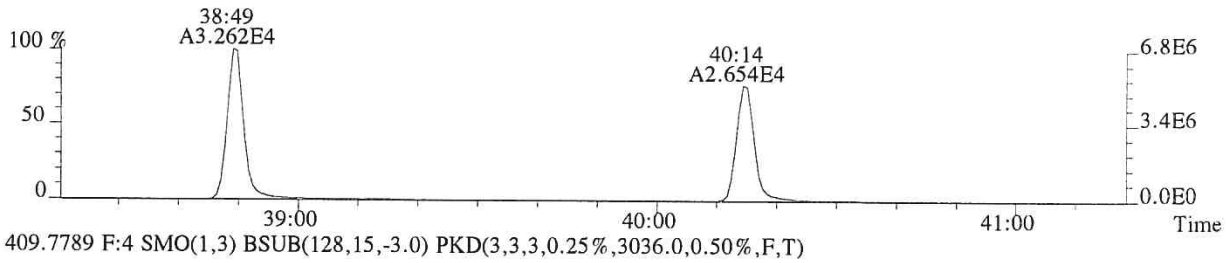


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

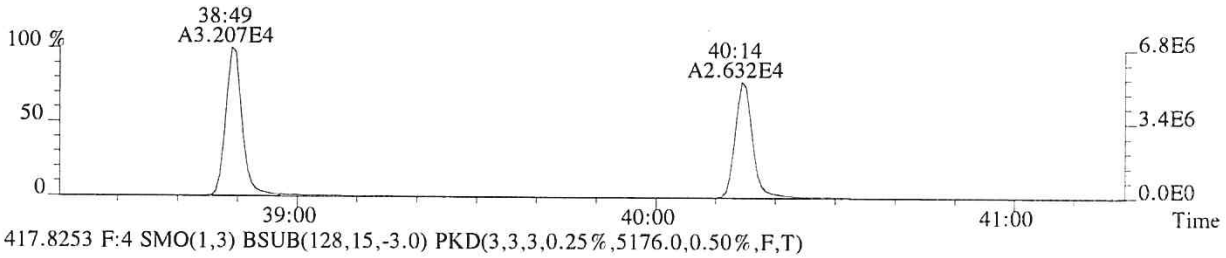


059595

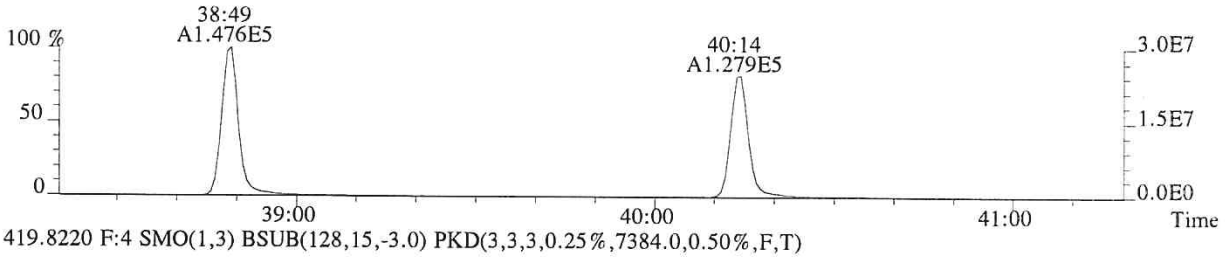
File:P513852 #1-268 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3668.0,0.50%,F,T)



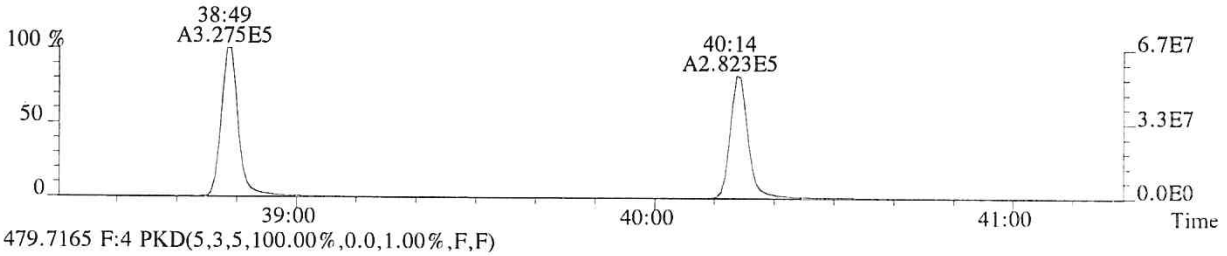
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3036.0,0.50%,F,T)



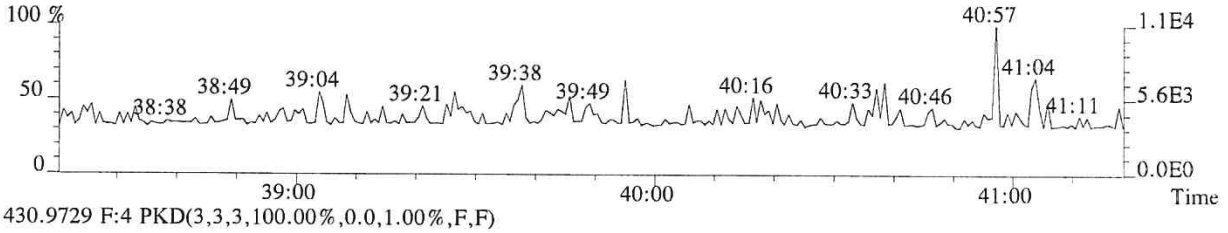
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5176.0,0.50%,F,T)



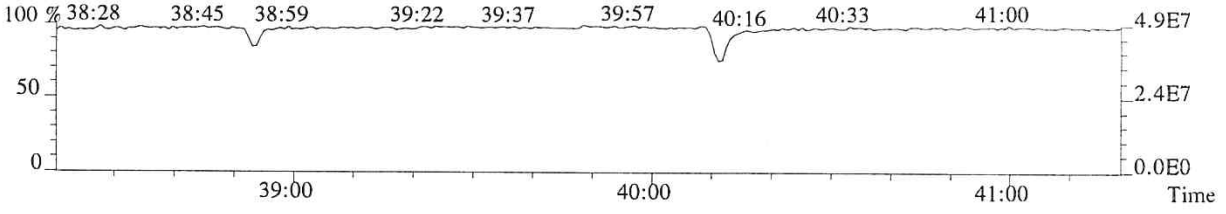
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7384.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

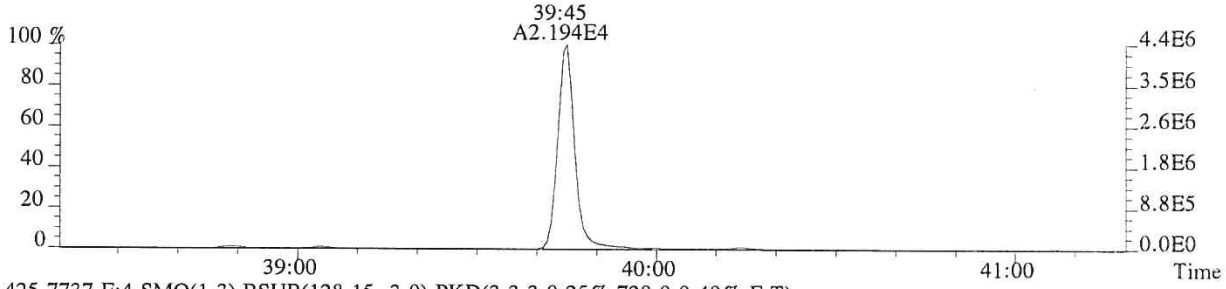


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

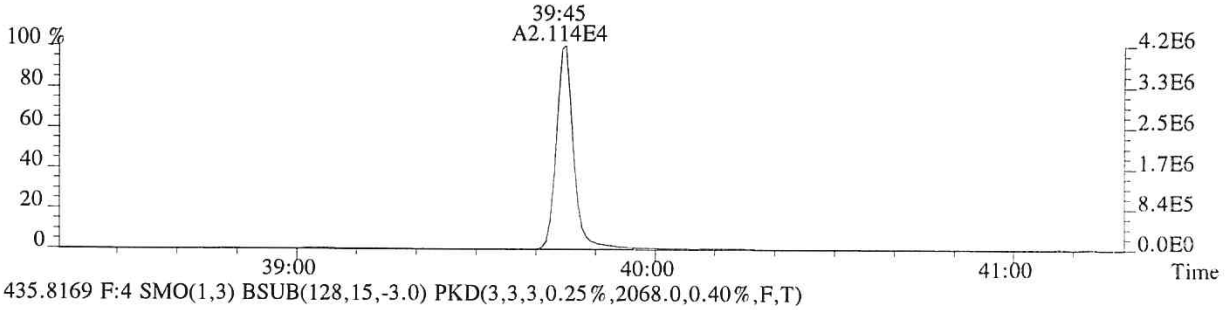


059596

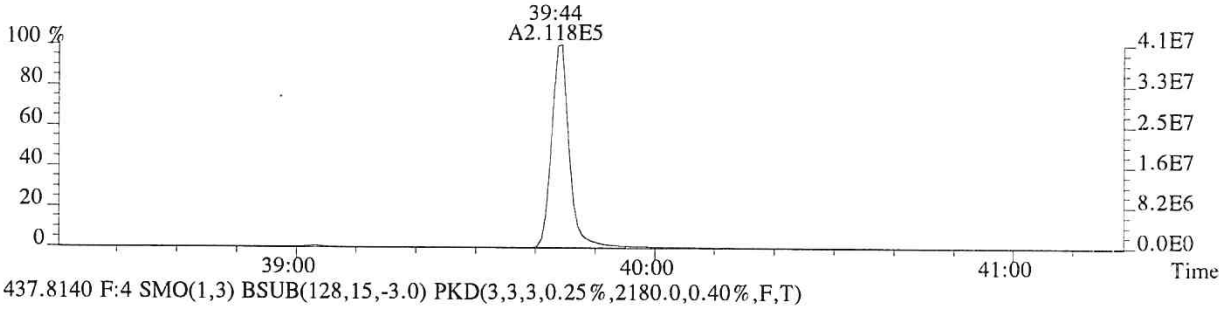
File:P513852 #1-268 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spectŁ
Sample#1 Exp:76556
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1676.0,0.40%,F,T)



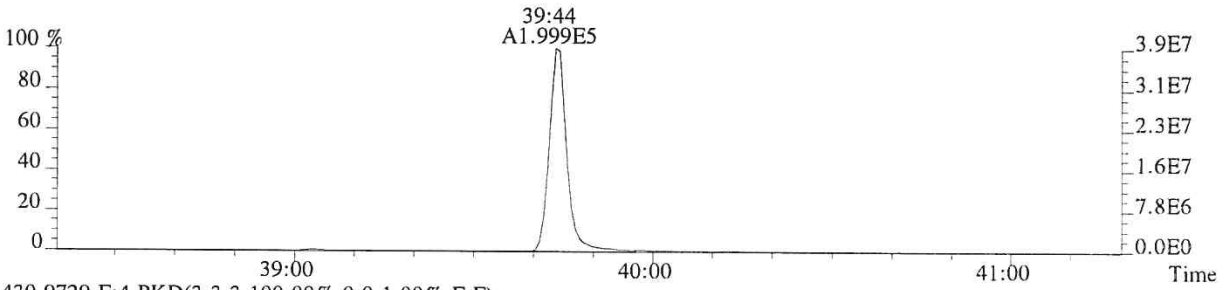
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,728.0,0.40%,F,T)



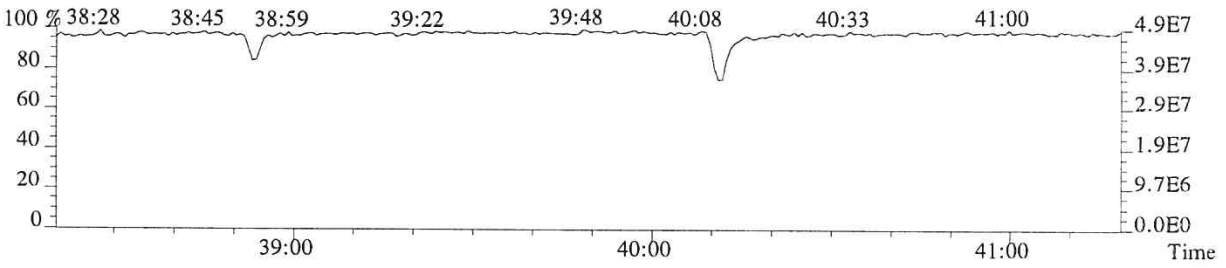
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2068.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2180.0,0.40%,F,T)

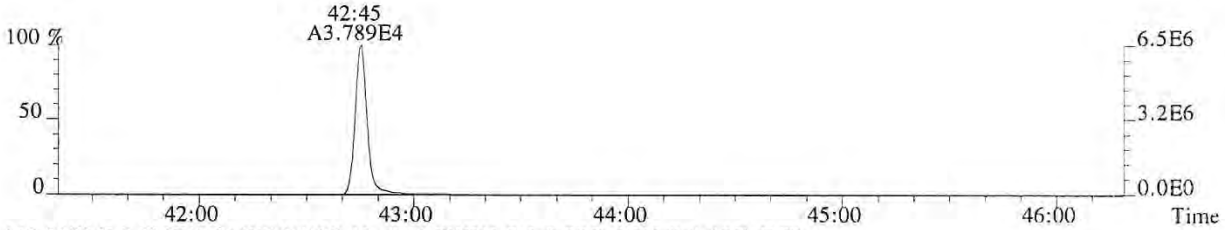


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

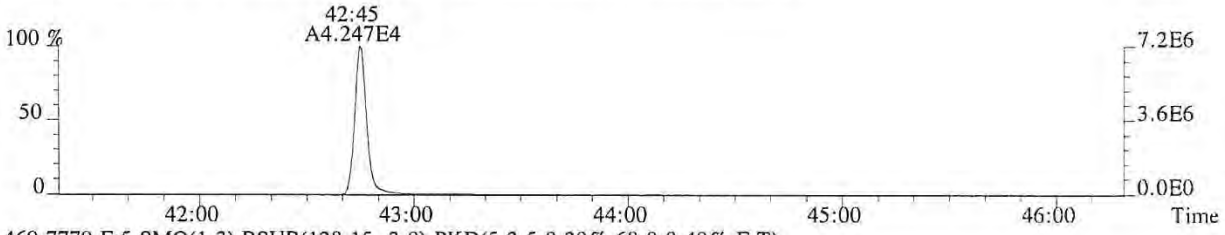


059597

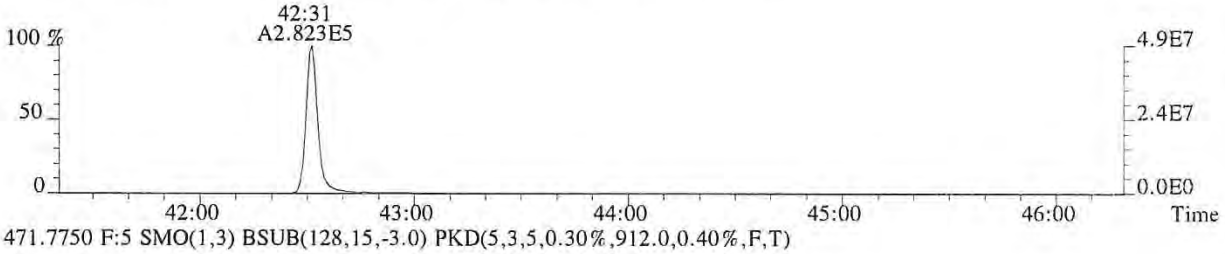
File:P513852 #1-448 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1076.0,0.40%,F,T)



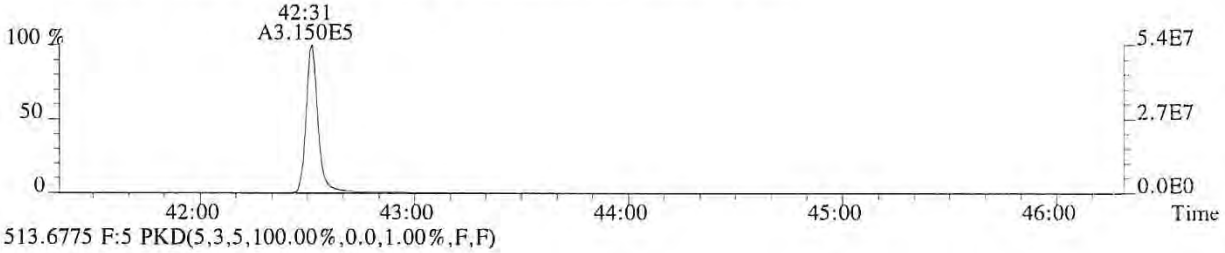
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1736.0,0.40%,F,T)



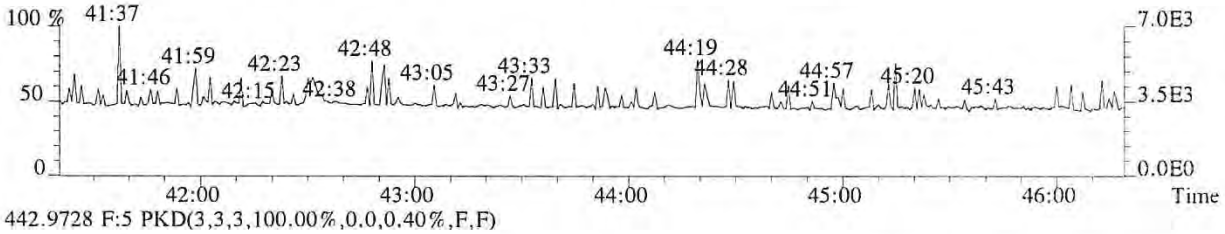
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,68.0,0.40%,F,T)



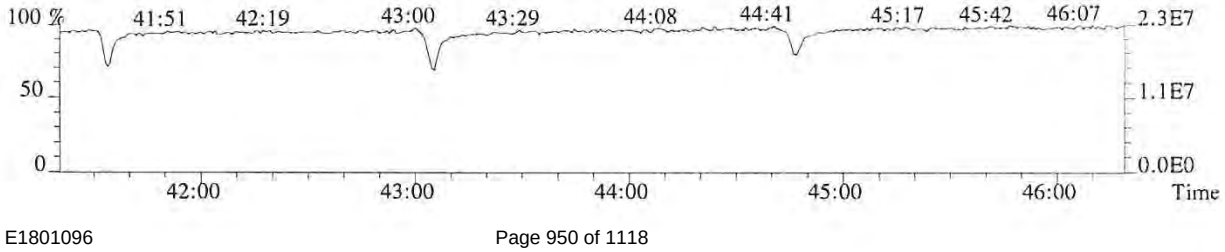
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,912.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

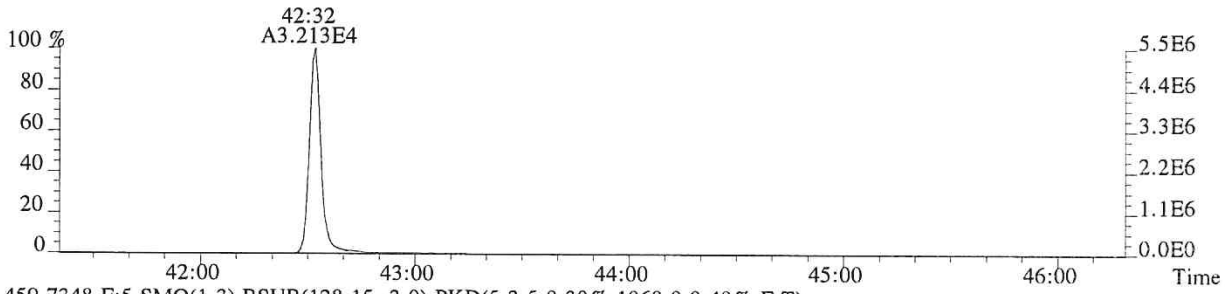


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

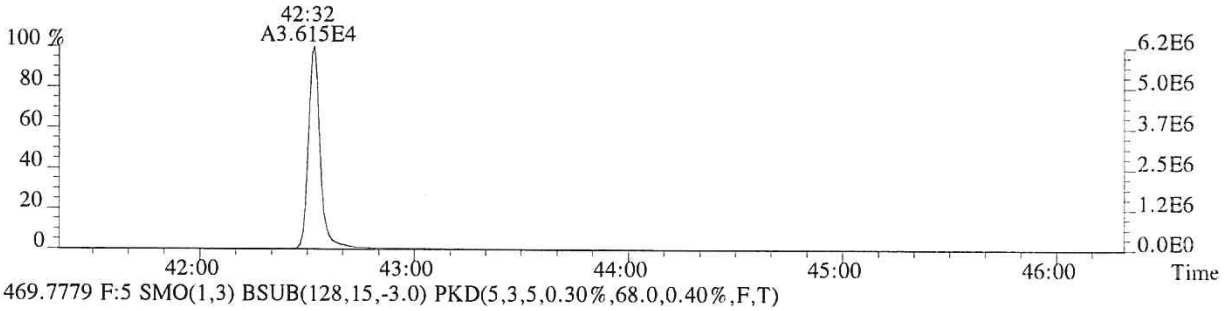


059598

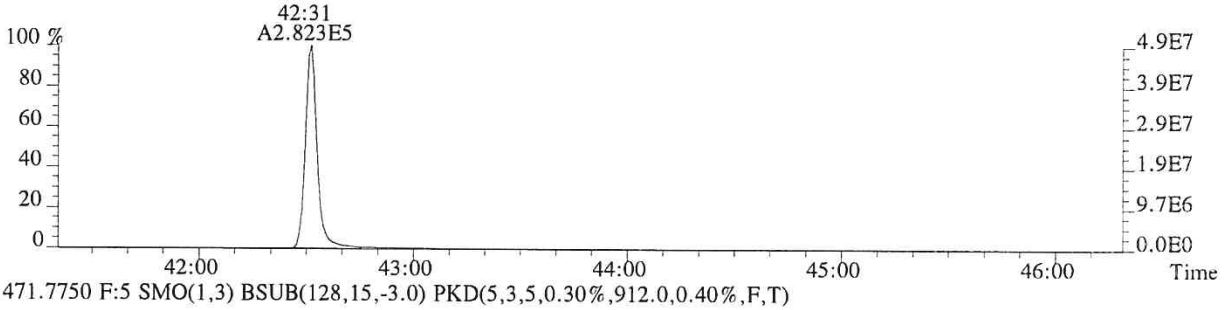
File:P513852 #1-448 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,160.0,0.40%,F,T)



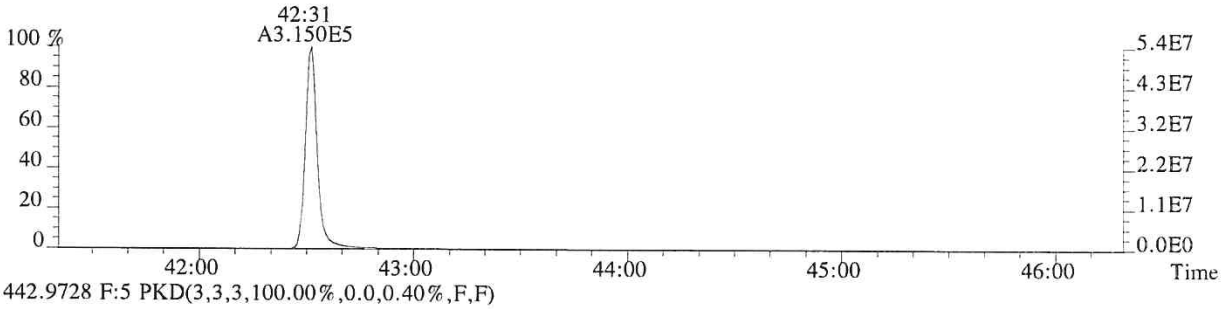
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1068.0,0.40%,F,T)



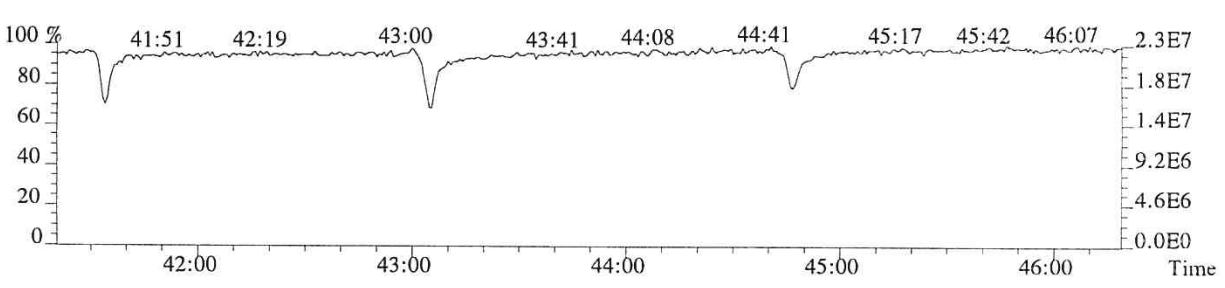
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,68.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,912.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059599

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76557

Run #4 Filename P513853 Samp: 1 Inj: 1 Acquired: 24-JAN-18 16:06:29
Processed: 24-JAN-18 17:13:42 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:47	4.270e+04	5.692e+04	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	3.077e+05	2.016e+05	1.53	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:41	2.833e+05	1.864e+05	1.52	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:16	2.625e+05	2.158e+05	1.22	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:22	2.702e+05	2.228e+05	1.21	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:52	2.439e+05	2.001e+05	1.22	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	1.977e+05	1.631e+05	1.21	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:48	2.099e+05	2.057e+05	1.02	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	1.509e+05	1.470e+05	1.03	yes	no	1.258
10	Unk	OCDF	42:45	2.260e+05	2.525e+05	0.90	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:31	2.824e+04	3.588e+04	0.79	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:57	1.903e+05	1.221e+05	1.56	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:59	1.727e+05	1.384e+05	1.25	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:04	1.705e+05	1.356e+05	1.26	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:18	1.758e+05	1.371e+05	1.28	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:44	1.431e+05	1.365e+05	1.05	yes	no	1.025
17	Unk	OCDD	42:31	1.906e+05	2.140e+05	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:46	4.689e+05	5.926e+05	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:47	6.073e+05	3.832e+05	1.58	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	5.900e+05	3.740e+05	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:15	2.738e+05	5.189e+05	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:21	3.023e+05	5.708e+05	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:51	2.671e+05	5.167e+05	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:36	2.133e+05	4.042e+05	0.53	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:48	1.882e+05	4.188e+05	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	1.419e+05	3.155e+05	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:30	2.668e+05	3.316e+05	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	4.009e+05	2.534e+05	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	3.335e+05	2.508e+05	1.33	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:03	3.244e+05	2.699e+05	1.20	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:43	2.779e+05	2.632e+05	1.06	yes	no	0.858
32	IS	13C-OCDD	42:31	3.375e+05	3.799e+05	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:56	2.956e+05	3.663e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:17	3.390e+05	2.761e+05	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:31	6.612e+04				no	1.014

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Signal/Noise Height Ratio Summary

CLIENT ID.
76557

Run #4 Filename P513853 Samp: 1 Inj: 1 Acquired: 24-JAN-18 16:06:29
Processed: 24-JAN-18 17:13:42 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	8.50e+06	6.40e+02	1.3e+04	1.14e+07	2.11e+03	5.4e+03
2	1,2,3,7,8-PeCDF	6.16e+07	1.61e+03	3.8e+04	4.01e+07	2.10e+03	1.9e+04
3	2,3,4,7,8-PeCDF	5.79e+07	1.61e+03	3.6e+04	3.78e+07	2.10e+03	1.8e+04
4	1,2,3,4,7,8-HxCDF	5.83e+07	1.86e+03	3.1e+04	4.74e+07	2.55e+03	1.9e+04
5	1,2,3,6,7,8-HxCDF	5.80e+07	1.86e+03	3.1e+04	4.80e+07	2.55e+03	1.9e+04
6	2,3,4,6,7,8-HxCDF	5.37e+07	1.86e+03	2.9e+04	4.34e+07	2.55e+03	1.7e+04
7	1,2,3,7,8,9-HxCDF	4.12e+07	1.86e+03	2.2e+04	3.39e+07	2.55e+03	1.3e+04
8	1,2,3,4,6,7,8-HpCDF	4.57e+07	4.44e+03	1.0e+04	4.52e+07	1.05e+04	4.3e+03
9	1,2,3,4,7,8,9-HpCDF	3.06e+07	4.44e+03	6.9e+03	2.99e+07	1.05e+04	2.8e+03
10	OCDF	3.93e+07	1.44e+02	2.7e+05	4.34e+07	1.38e+03	3.1e+04
11	2,3,7,8-TCDD	5.83e+06	1.92e+03	3.0e+03	7.39e+06	1.30e+03	5.7e+03
12	1,2,3,7,8-PeCDD	3.83e+07	1.45e+03	2.6e+04	2.46e+07	7.04e+02	3.5e+04
13	1,2,3,4,7,8-HxCDD	3.89e+07	5.12e+02	7.6e+04	3.08e+07	1.23e+03	2.5e+04
14	1,2,3,6,7,8-HxCDD	3.74e+07	5.12e+02	7.3e+04	3.02e+07	1.23e+03	2.5e+04
15	1,2,3,7,8,9-HxCDD	3.75e+07	5.12e+02	7.3e+04	3.01e+07	1.23e+03	2.5e+04
16	1,2,3,4,6,7,8-HpCDD	2.89e+07	1.84e+03	1.6e+04	2.78e+07	1.41e+03	2.0e+04
17	OCDD	3.41e+07	6.32e+02	5.4e+04	3.81e+07	1.31e+03	2.9e+04
18	13C-2,3,7,8-TCDF	9.47e+07	6.52e+03	1.5e+04	1.19e+08	4.12e+03	2.9e+04
19	13C-1,2,3,7,8-PeCDF	1.17e+08	1.28e+03	9.1e+04	7.33e+07	8.08e+02	9.1e+04
20	13C-2,3,4,7,8-PeCDF	1.21e+08	1.28e+03	9.4e+04	7.72e+07	8.08e+02	9.6e+04
21	13C-1,2,3,4,7,8-HxCDF	6.01e+07	1.97e+03	3.1e+04	1.13e+08	1.75e+03	6.5e+04
22	13C-1,2,3,6,7,8-HxCDF	6.52e+07	1.97e+03	3.3e+04	1.24e+08	1.75e+03	7.1e+04
23	13C-2,3,4,6,7,8-HxCDF	5.86e+07	1.97e+03	3.0e+04	1.11e+08	1.75e+03	6.4e+04
24	13C-1,2,3,7,8,9-HxCDF	4.44e+07	1.97e+03	2.3e+04	8.35e+07	1.75e+03	4.8e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.03e+07	8.48e+03	4.8e+03	9.01e+07	6.21e+03	1.5e+04
26	13C-1,2,3,4,7,8,9-HpCDF	2.83e+07	8.48e+03	3.3e+03	6.33e+07	6.21e+03	1.0e+04
27	13C-2,3,7,8-TCDD	5.56e+07	5.87e+03	9.5e+03	6.88e+07	2.90e+03	2.4e+04
28	13C-1,2,3,7,8-PeCDD	8.27e+07	1.46e+03	5.7e+04	5.24e+07	1.17e+03	4.5e+04
29	13C-1,2,3,4,7,8-HxCDD	7.51e+07	3.07e+03	2.4e+04	5.90e+07	2.67e+03	2.2e+04
30	13C-1,2,3,6,7,8-HxCDD	7.07e+07	3.07e+03	2.3e+04	5.69e+07	2.67e+03	2.1e+04
31	13C-1,2,3,4,6,7,8-HpCDD	5.63e+07	2.93e+03	1.9e+04	5.39e+07	1.32e+03	4.1e+04
32	13C-OCDD	5.98e+07	1.07e+03	5.6e+04	6.69e+07	9.36e+02	7.1e+04
33	13C-1,2,3,4-TCDD	5.97e+07	5.87e+03	1.0e+04	7.42e+07	2.90e+03	2.6e+04
34	13C-1,2,3,7,8,9-HxCDD	7.31e+07	3.07e+03	2.4e+04	5.89e+07	2.67e+03	2.2e+04
35	37Cl-2,3,7,8-TCDD	1.36e+07	1.25e+03	1.1e+04			

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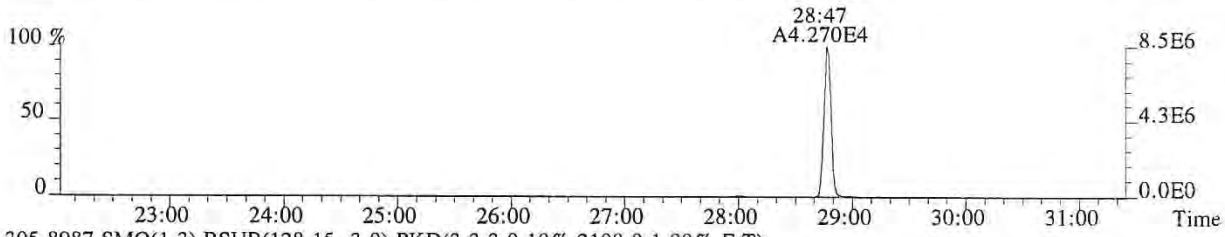
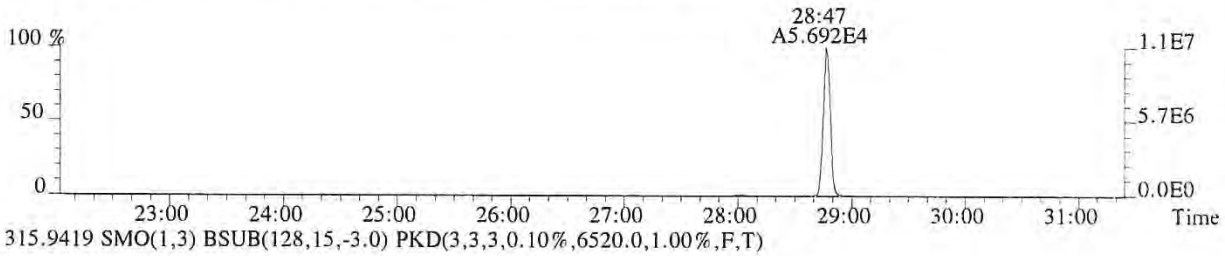
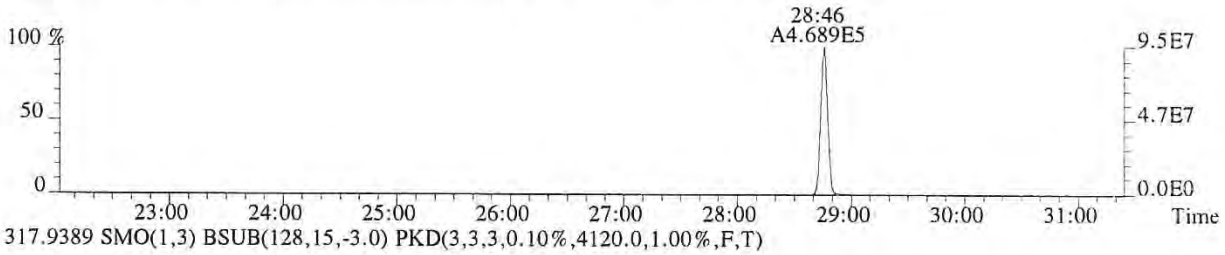
File:P513853 #1-665 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,640.0,1.00%,F,T)



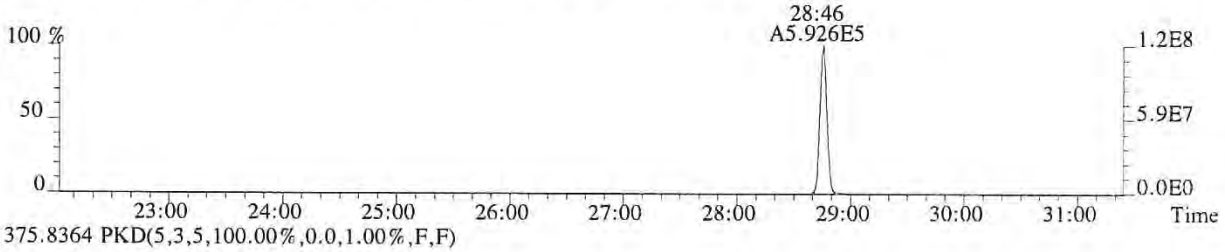
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2108.0,1.00%,F,T)



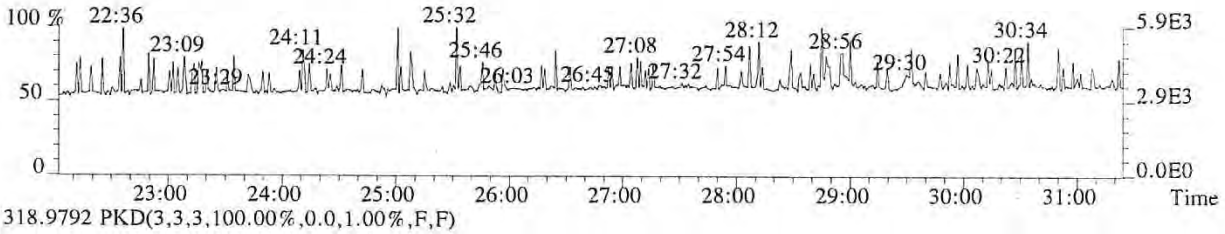
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6520.0,1.00%,F,T)



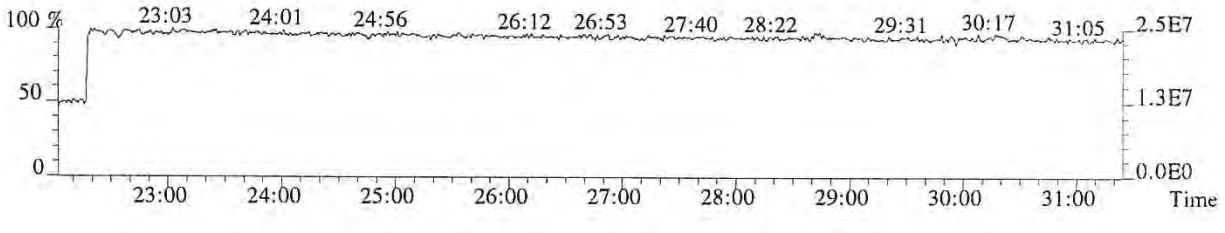
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4120.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

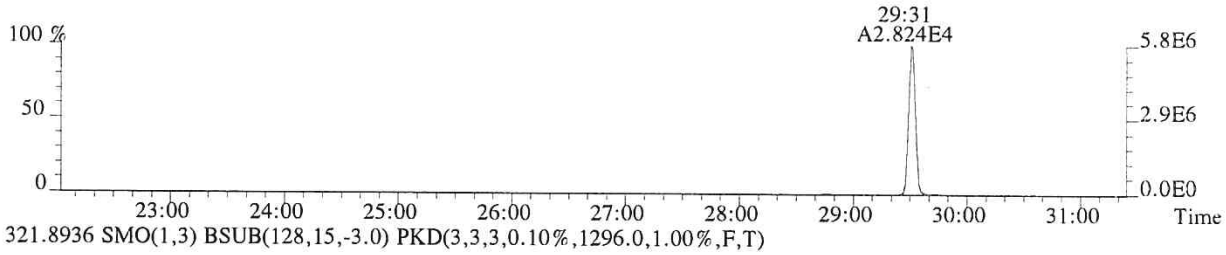


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

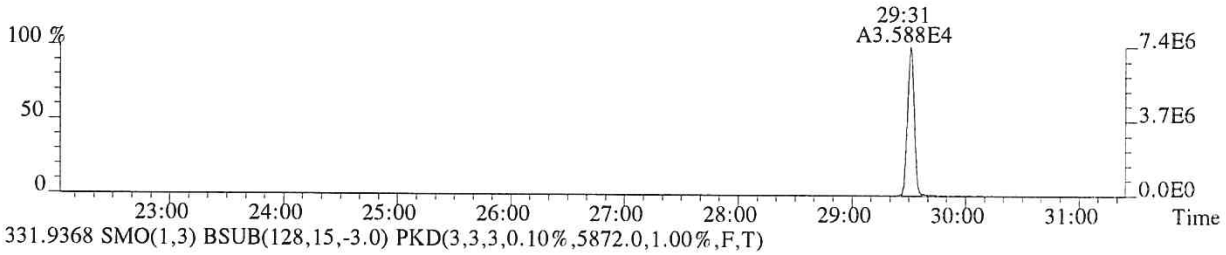


059602

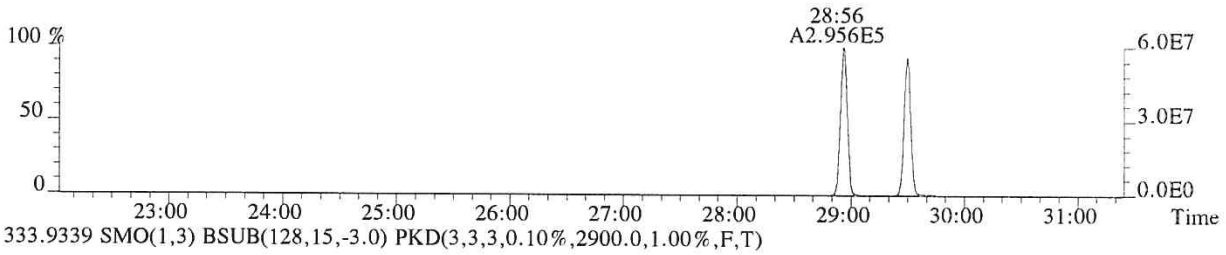
File:P513853 #1-665 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1924.0,1.00%,F,T)



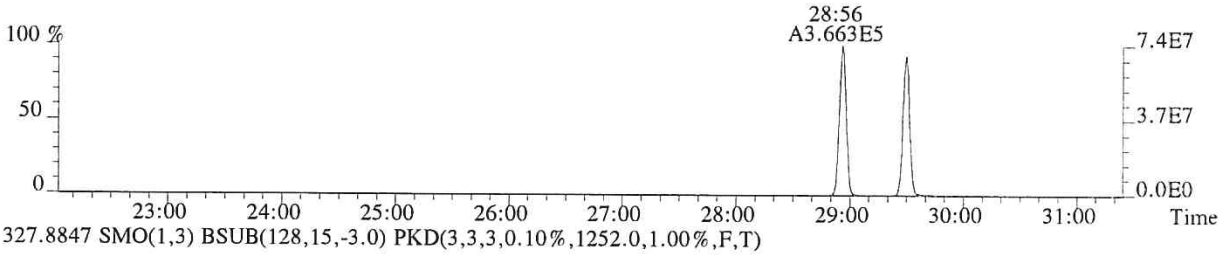
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1296.0,1.00%,F,T)



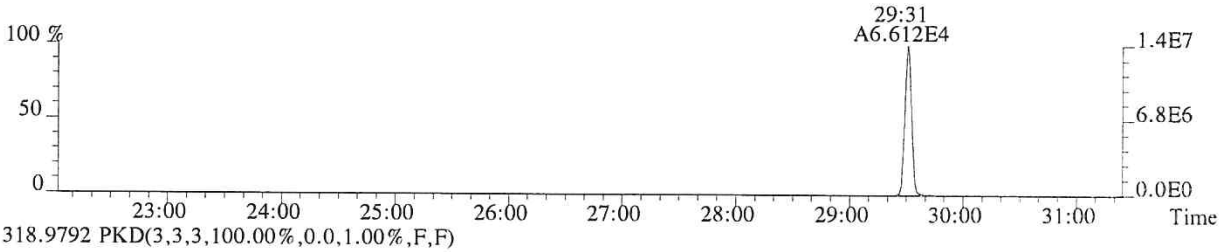
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5872.0,1.00%,F,T)



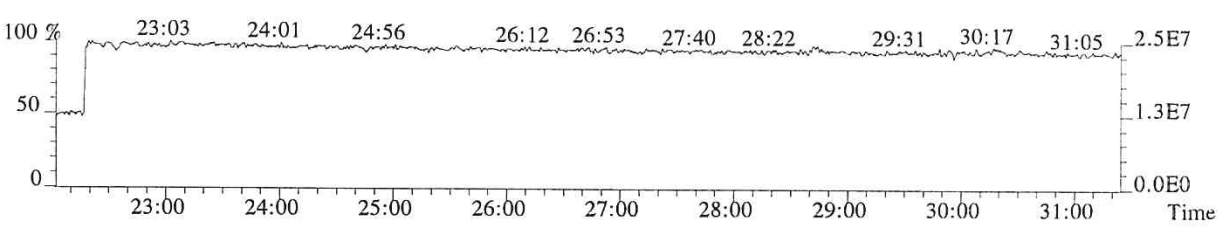
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2900.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1252.0,1.00%,F,T)

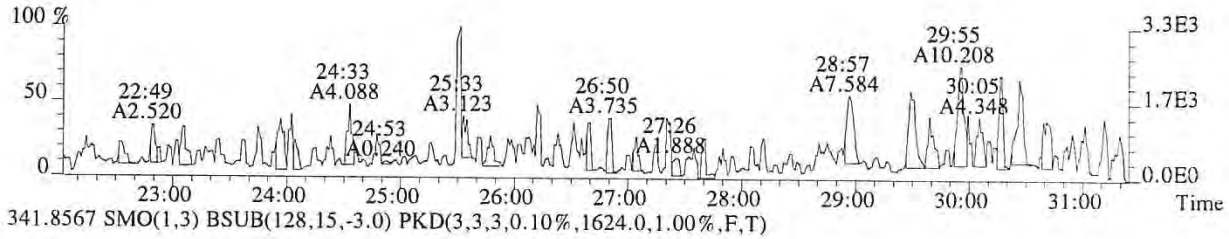


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

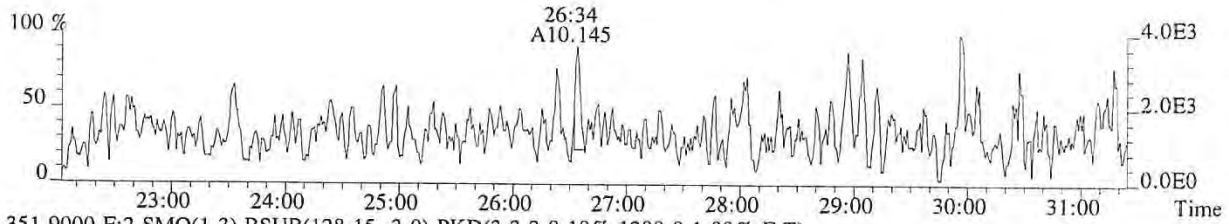


059603

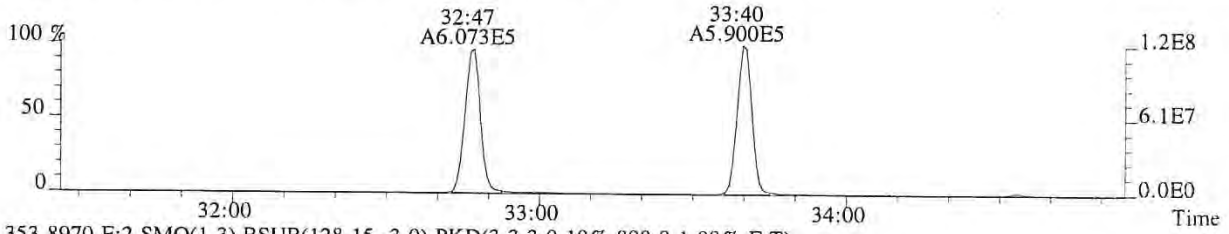
File:P513853 #1-665 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spectΣ
Sample#1 Exp:76557
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,452.0,1.00%,F,T)



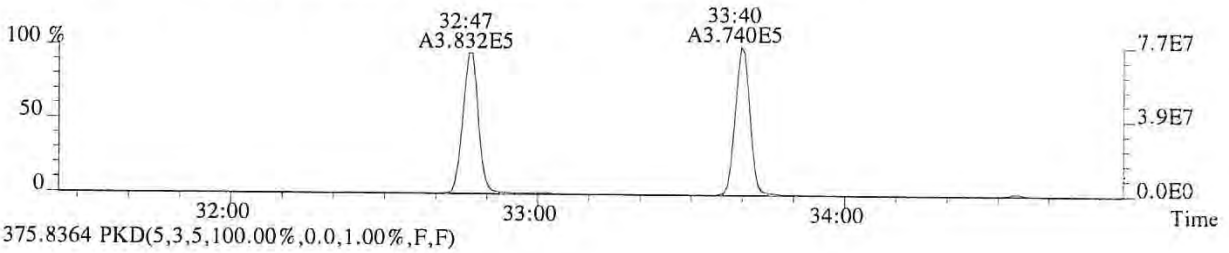
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1624.0,1.00%,F,T)



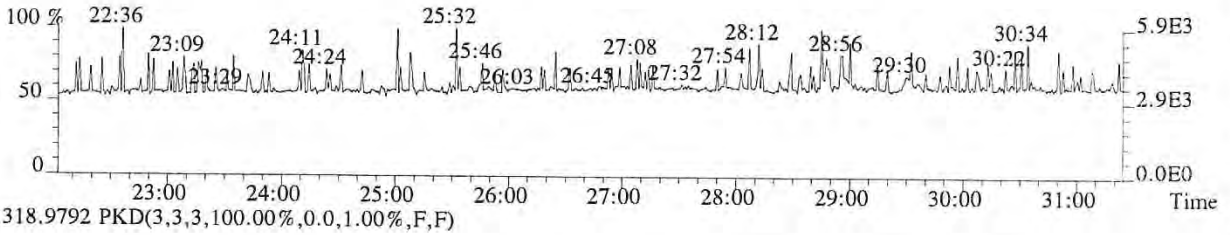
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1280.0,1.00%,F,T)



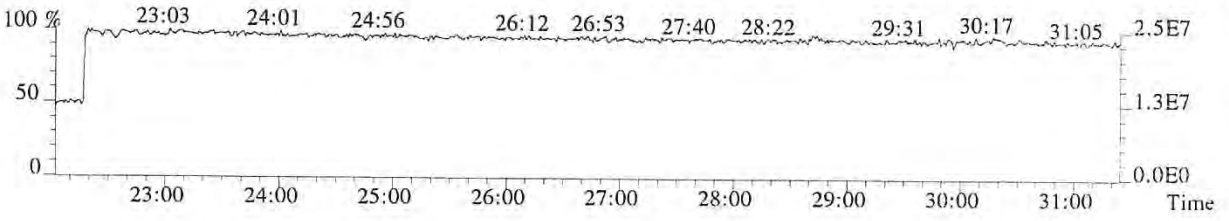
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,808.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

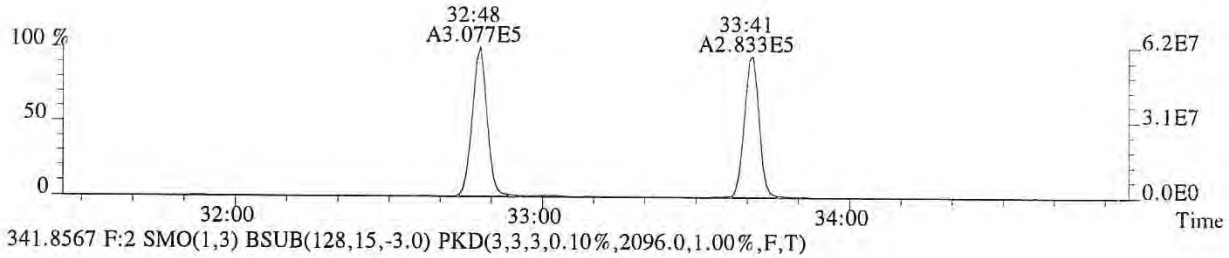


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

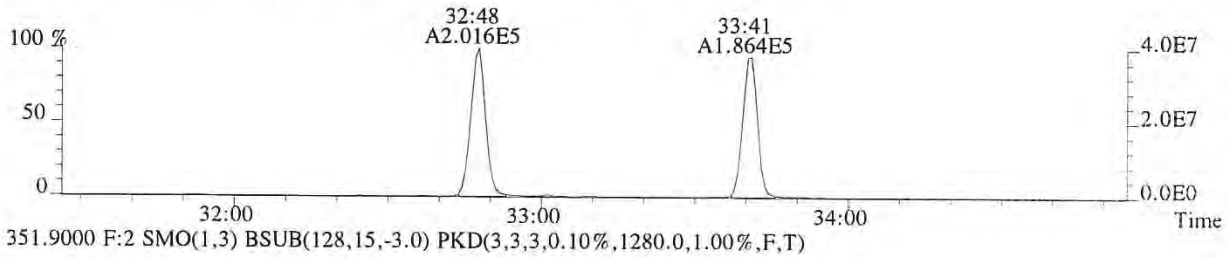


059604

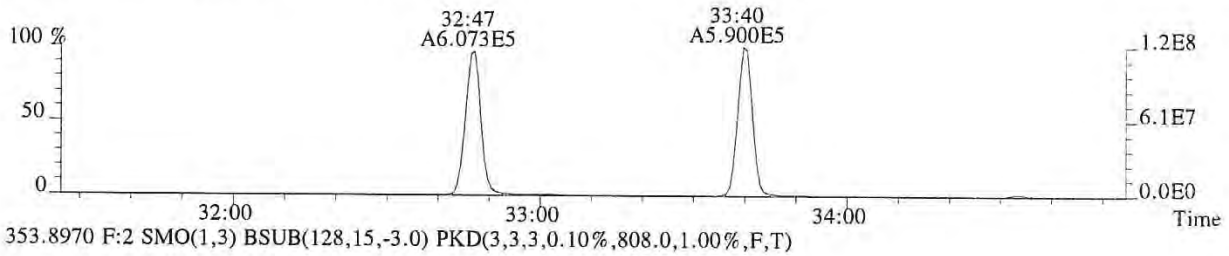
File:P513853 #1-313 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1612.0,1.00%,F,T)



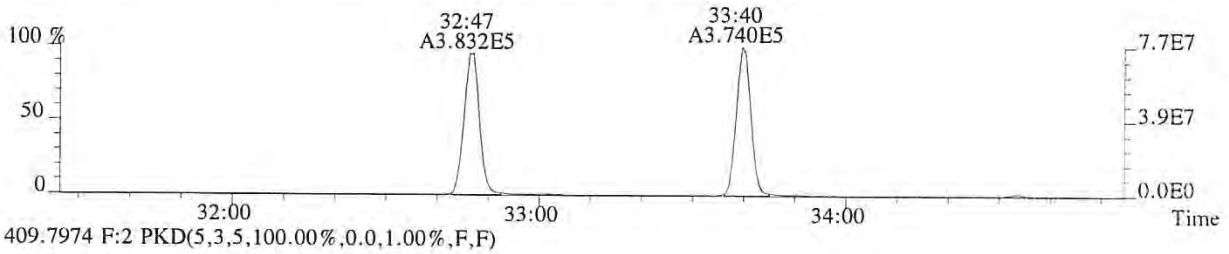
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2096.0,1.00%,F,T)



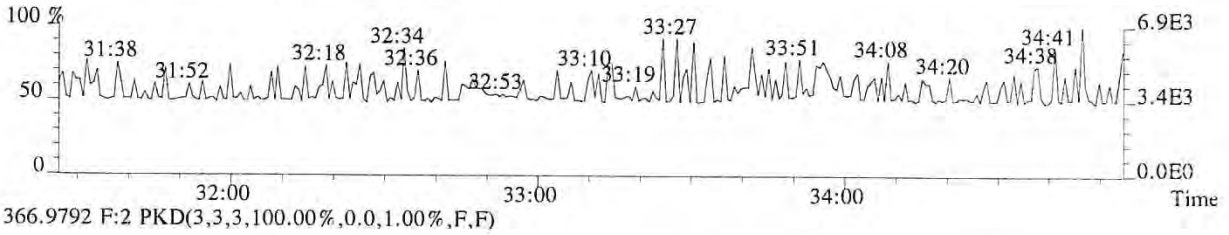
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1280.0,1.00%,F,T)



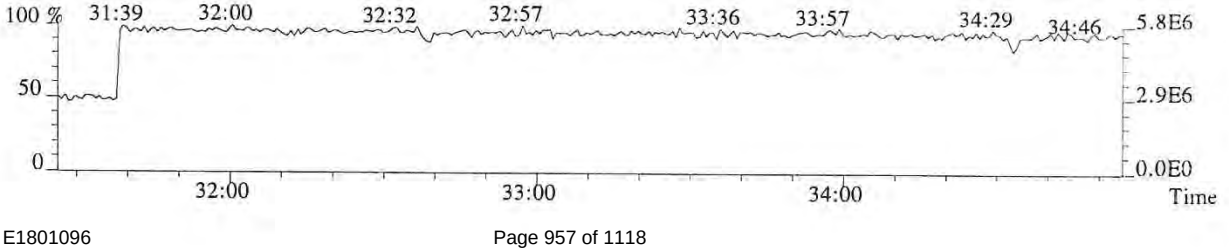
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,808.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

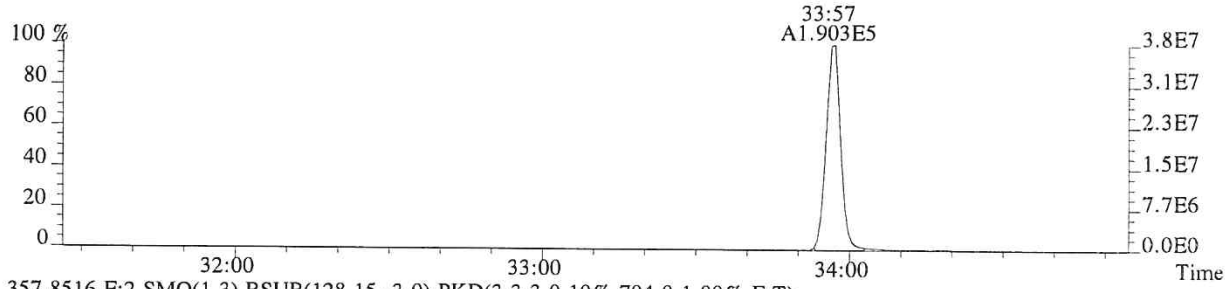


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

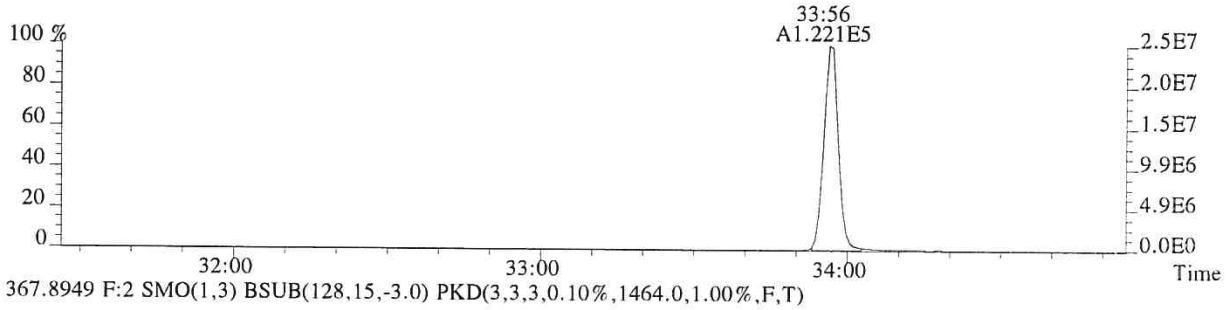


059605

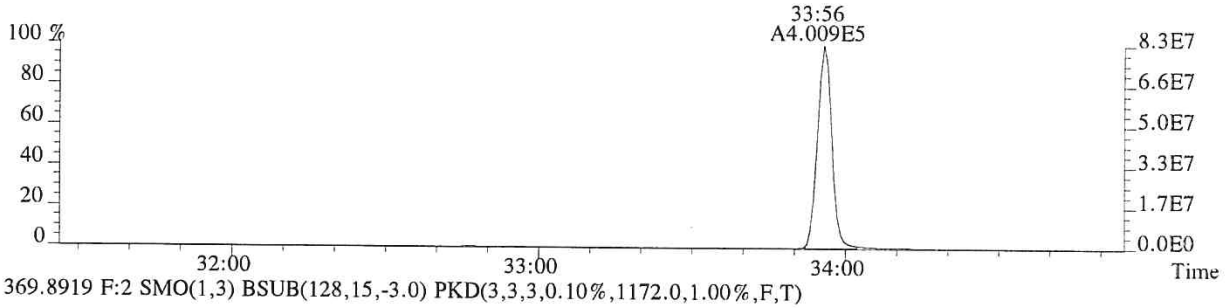
File:P513853 #1-313 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1452.0,1.00%,F,T)



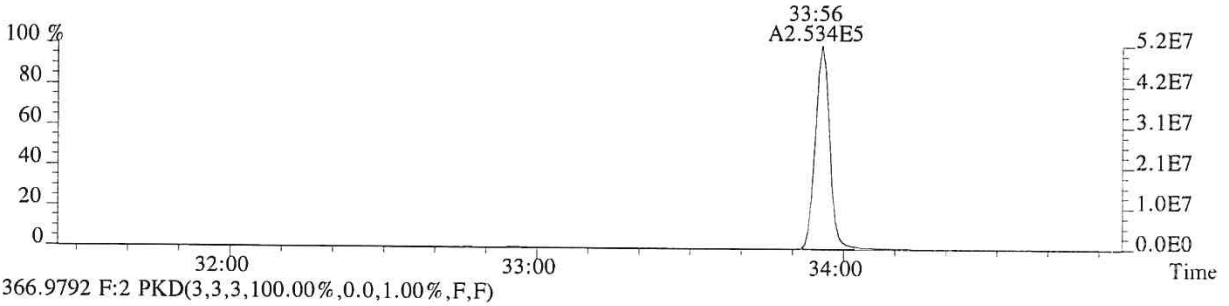
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)



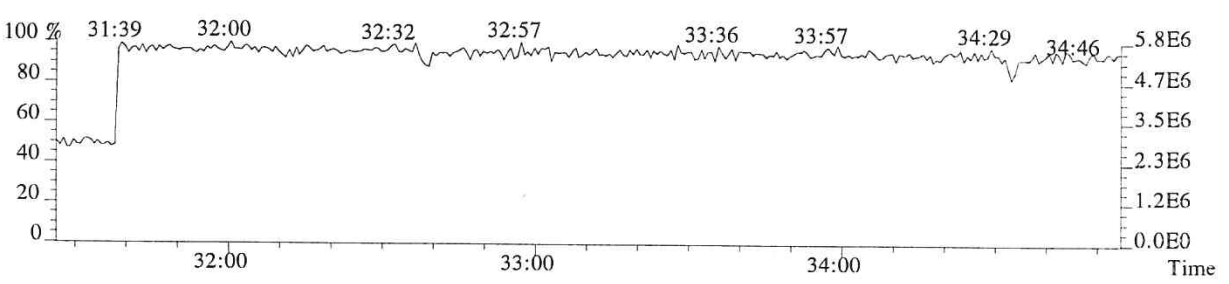
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1464.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1172.0,1.00%,F,T)

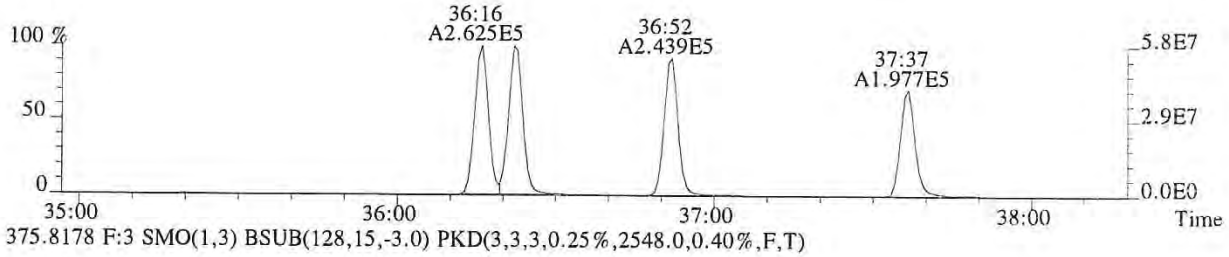


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

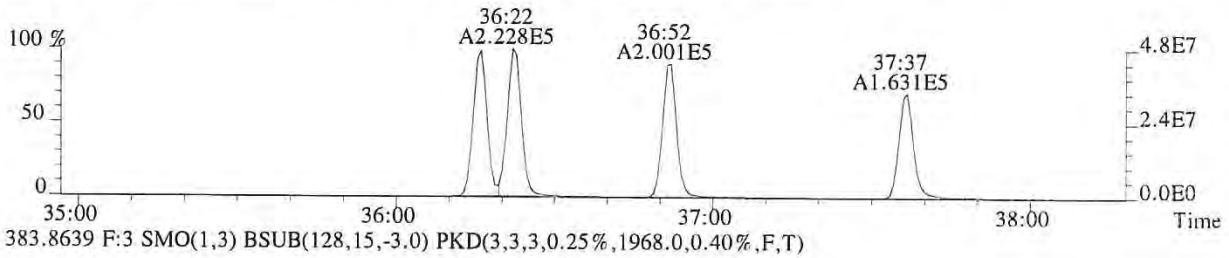


059606

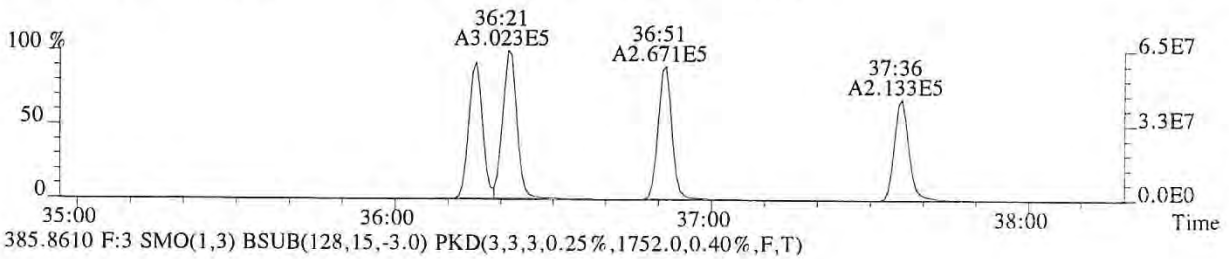
File:P513853 #1-303 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1856.0,0.40%,F,T)



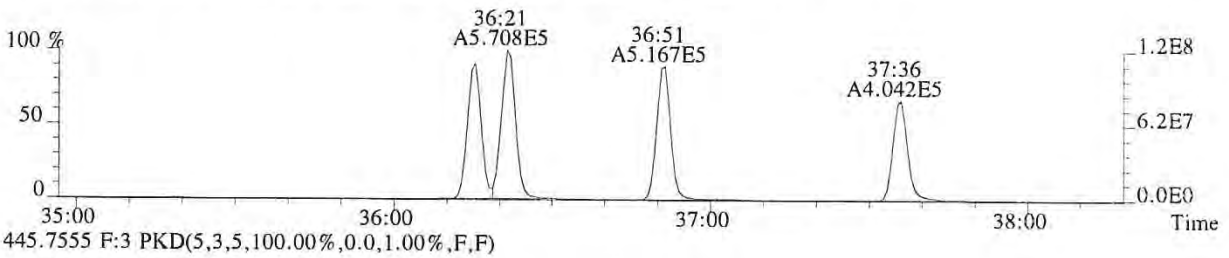
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2548.0,0.40%,F,T)



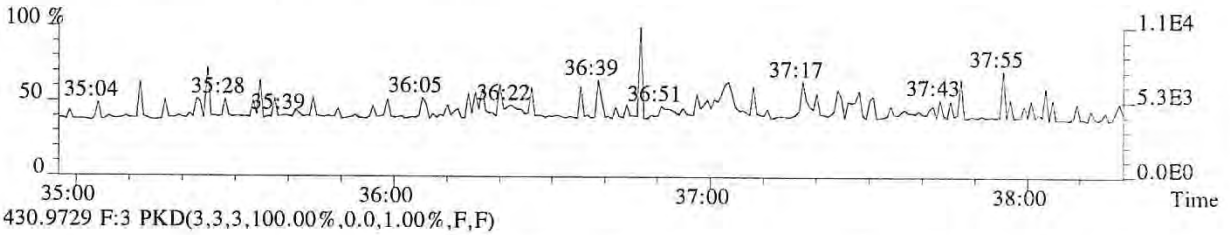
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1968.0,0.40%,F,T)



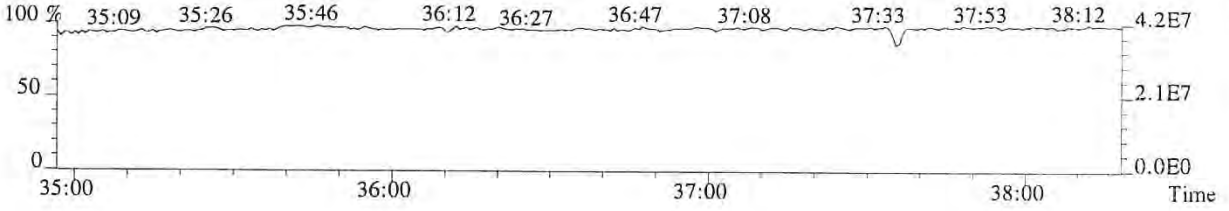
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1752.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

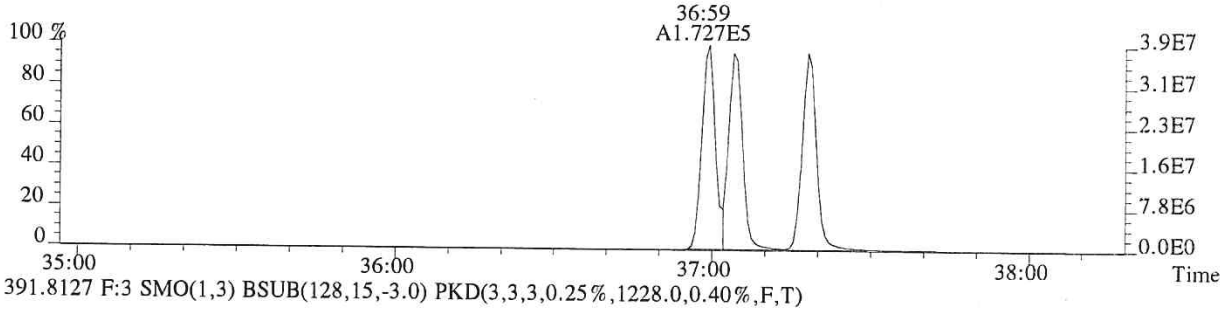


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

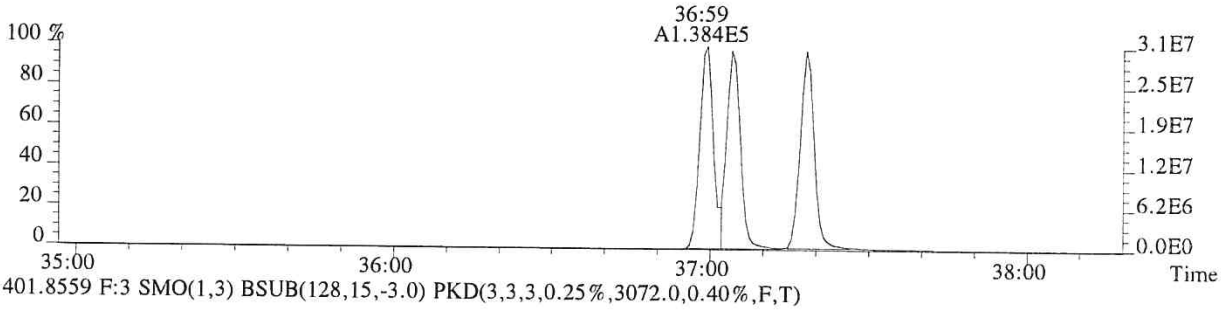


059607

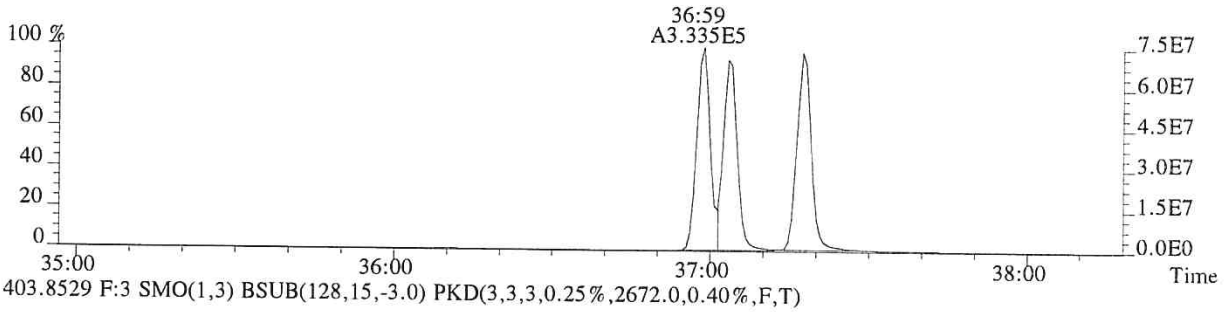
File:P513853 #1-303 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,512.0,0.40%,F,T)



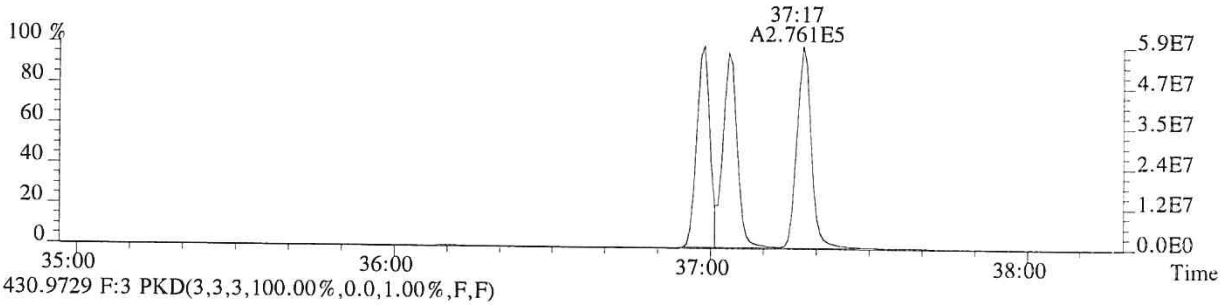
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1228.0,0.40%,F,T)



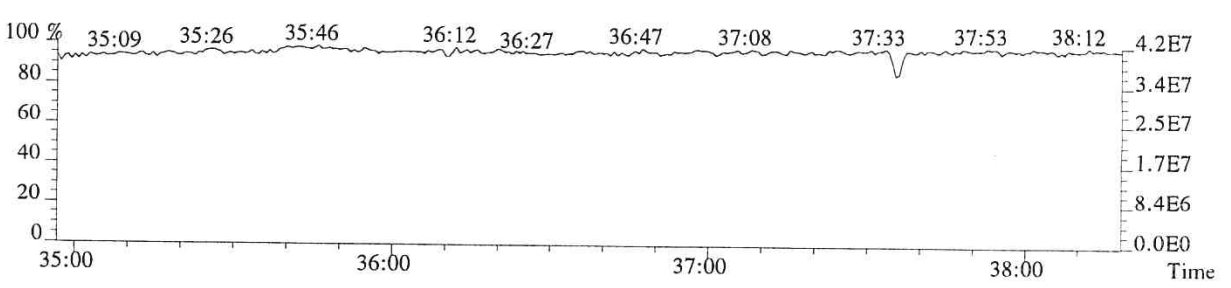
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3072.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2672.0,0.40%,F,T)

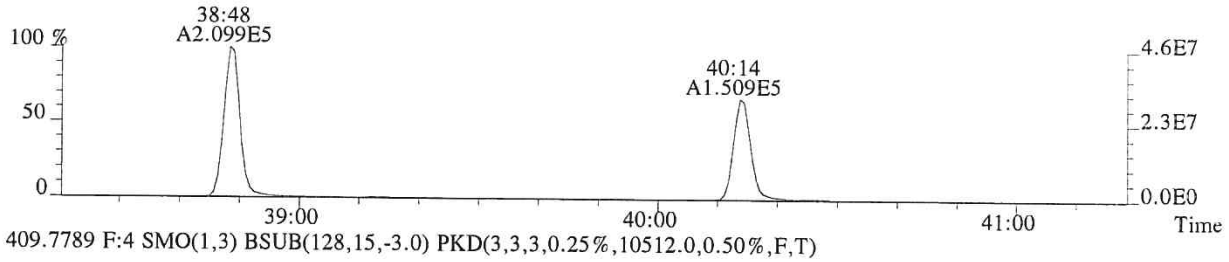


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

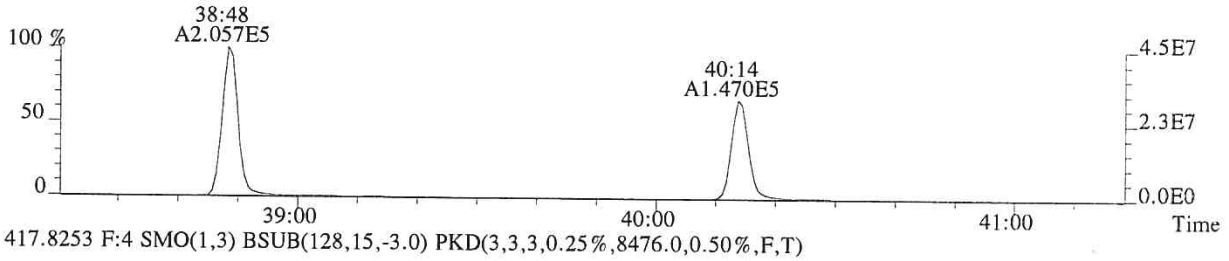


059608

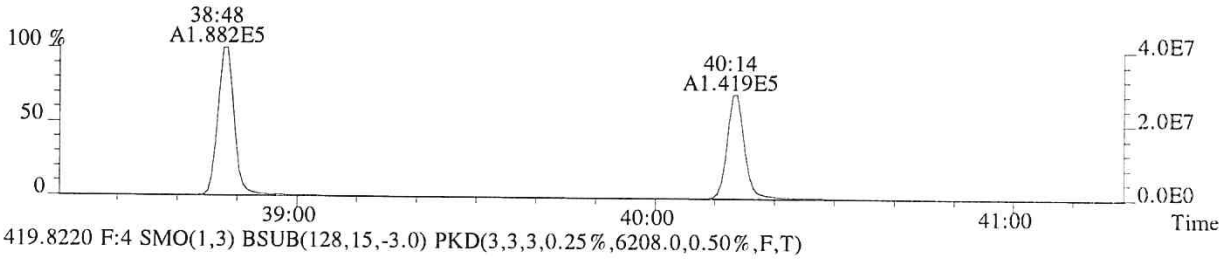
File:P513853 #1-268 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4436.0,0.50%,F,T)



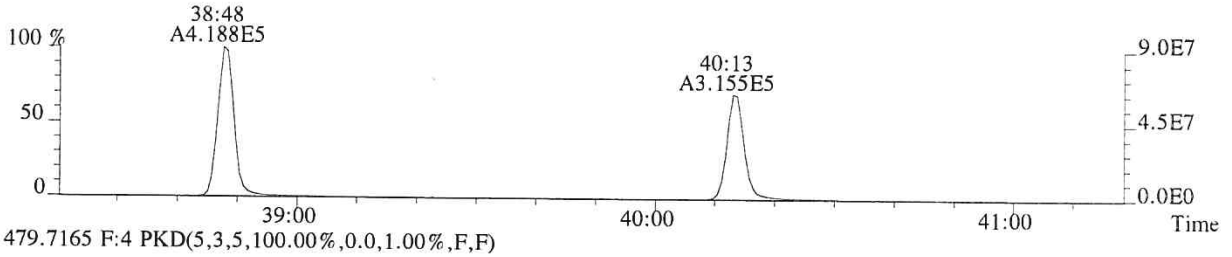
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10512.0,0.50%,F,T)



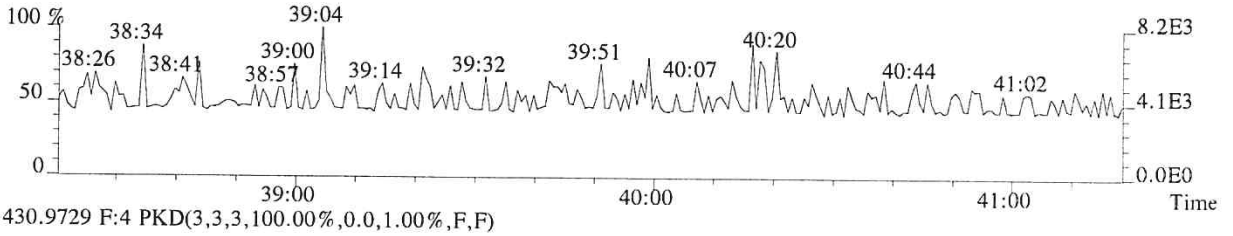
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8476.0,0.50%,F,T)



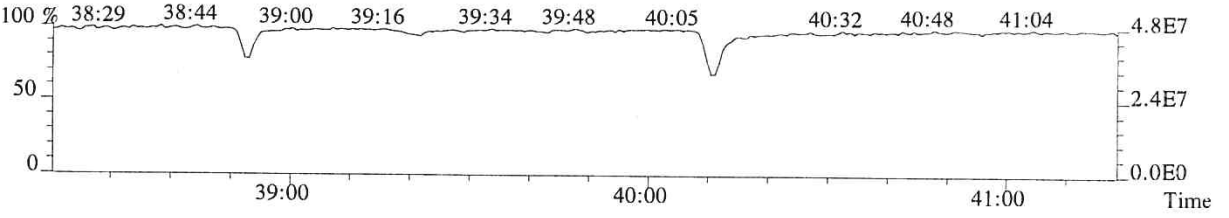
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6208.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

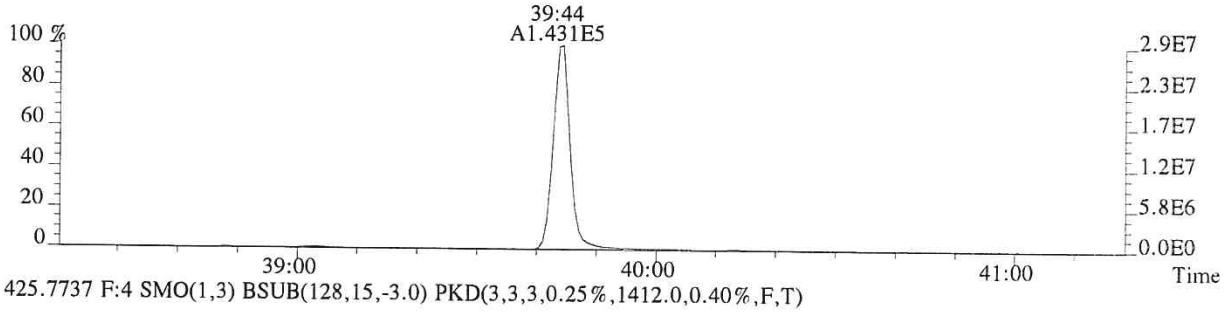


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

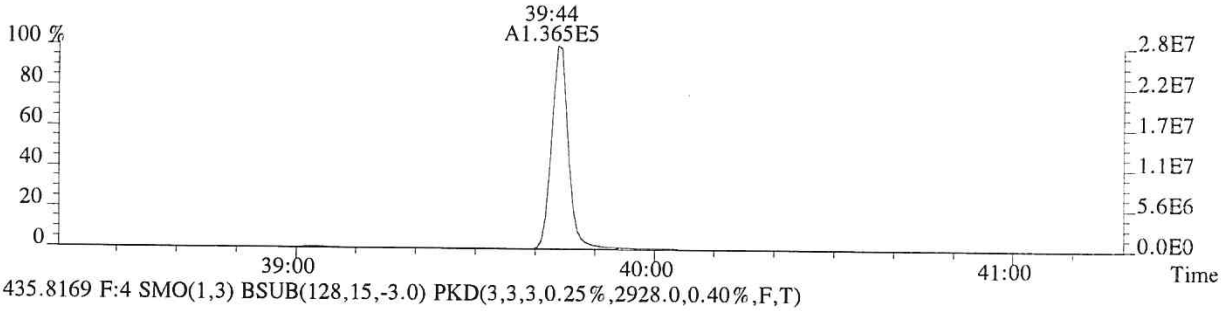


059609

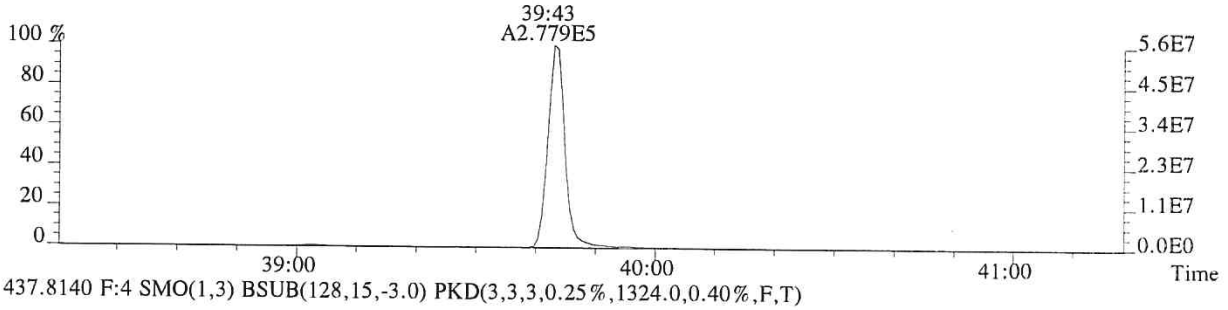
File:P513853 #1-268 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1840.0,0.40%,F,T)



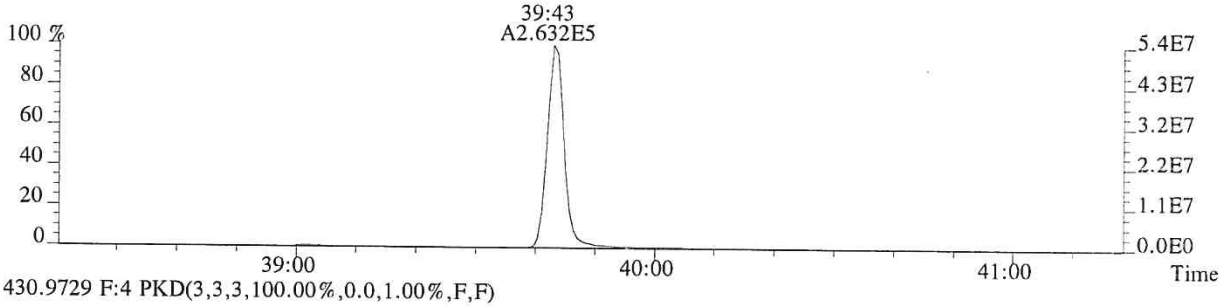
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1412.0,0.40%,F,T)



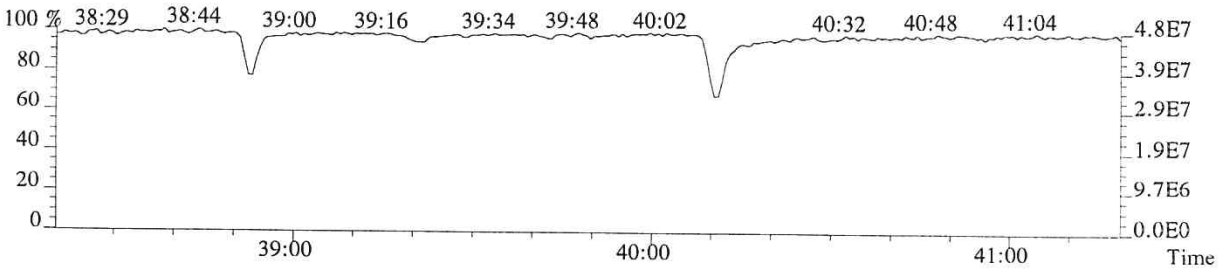
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2928.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1324.0,0.40%,F,T)

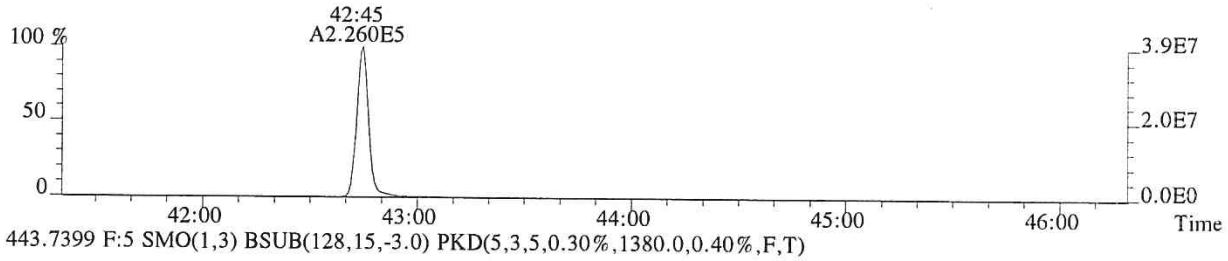


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

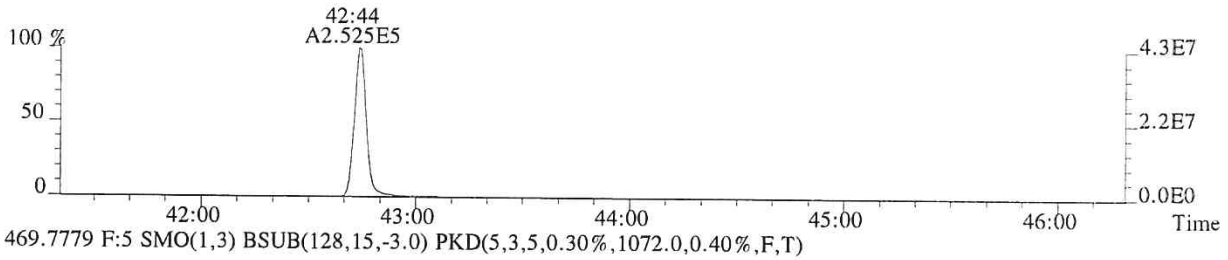


059610

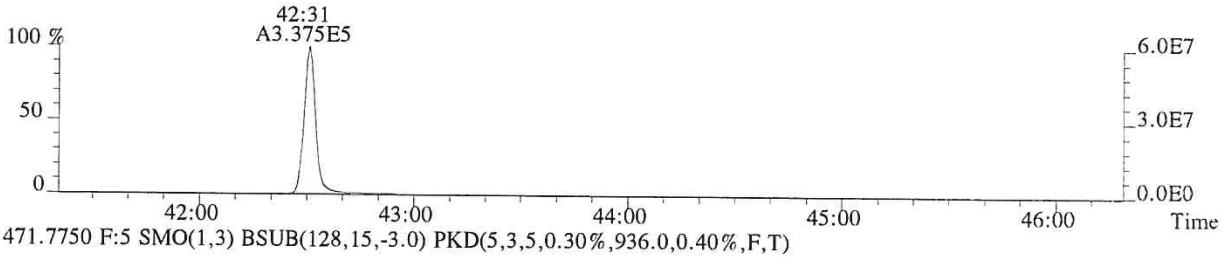
File:P513853 #1-448 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,144.0,0.40%,F,T)



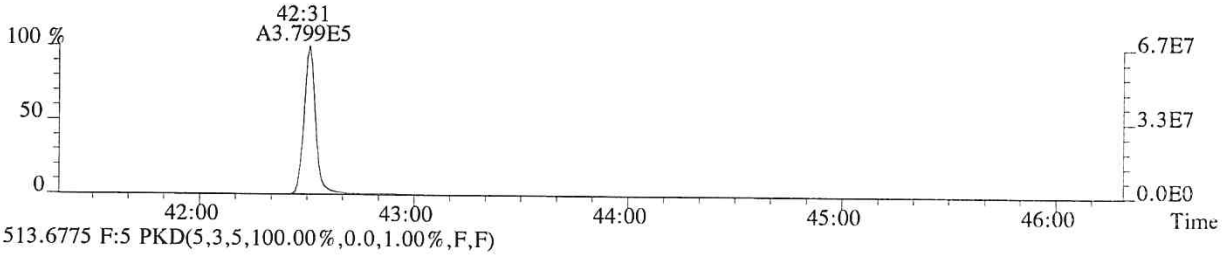
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1380.0,0.40%,F,T)



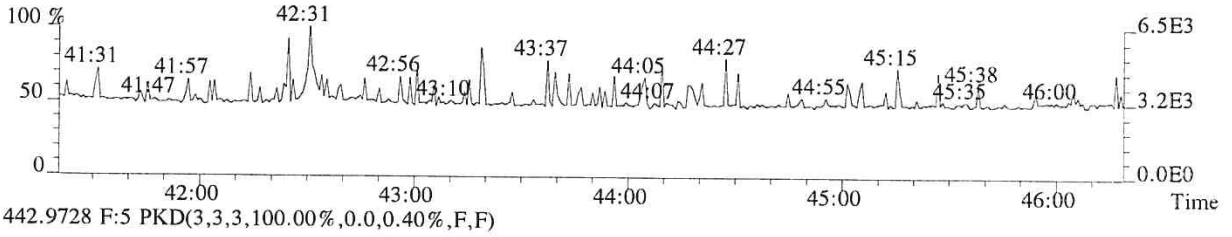
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1072.0,0.40%,F,T)



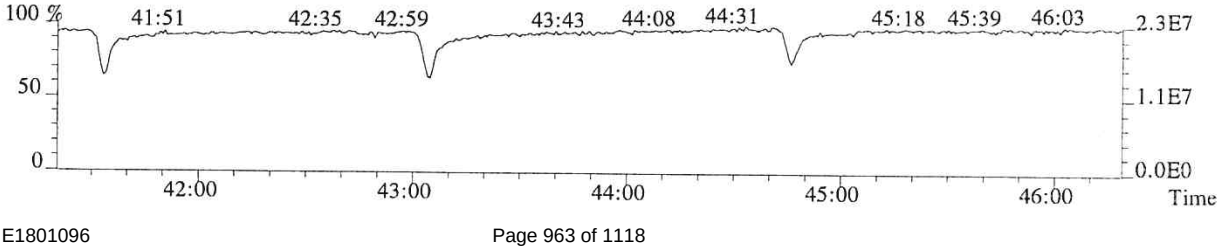
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,936.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

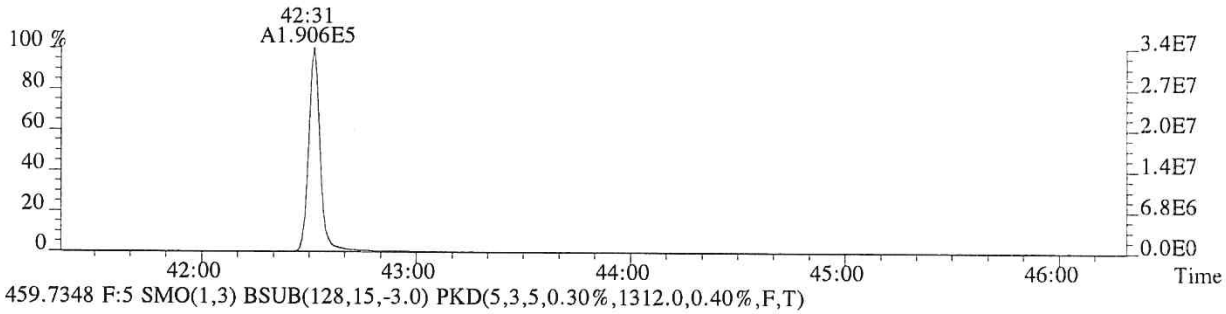


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

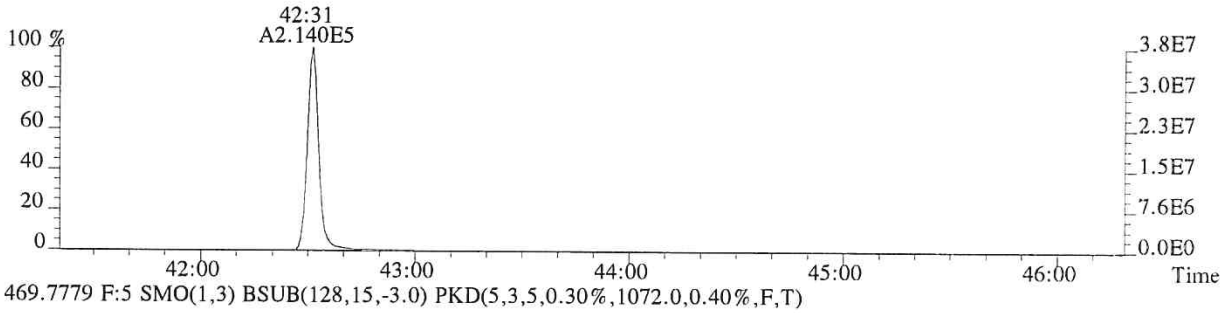


059611

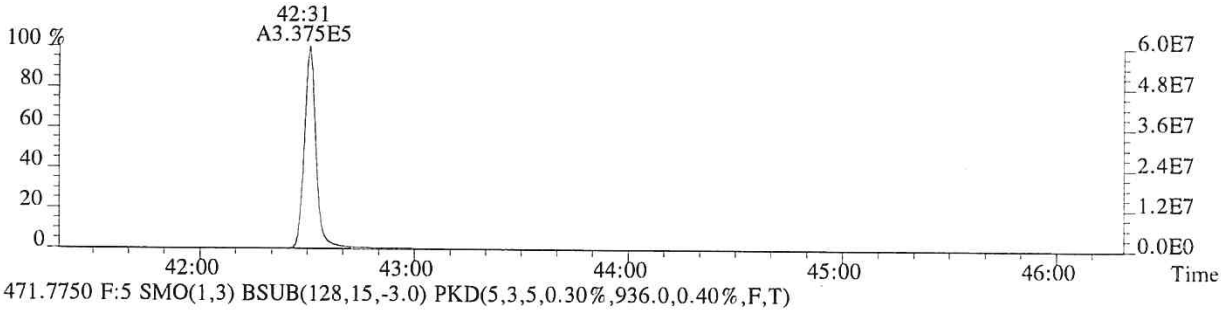
File:P513853 #1-448 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,632.0,0.40%,F,T)



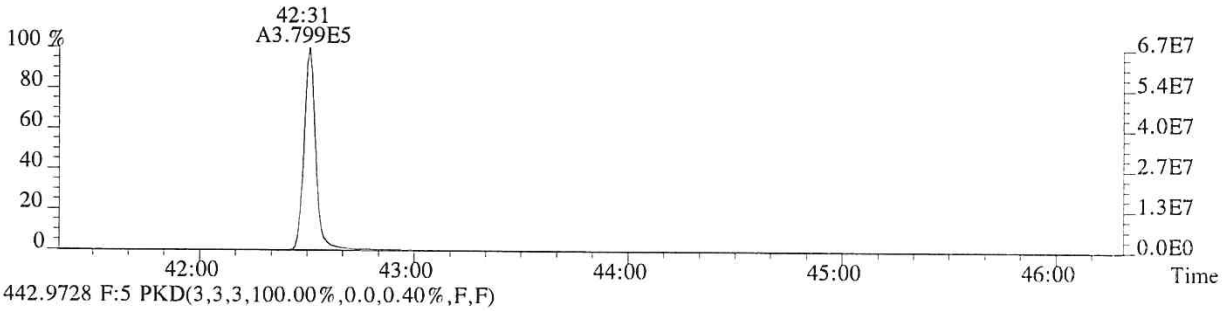
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1312.0,0.40%,F,T)



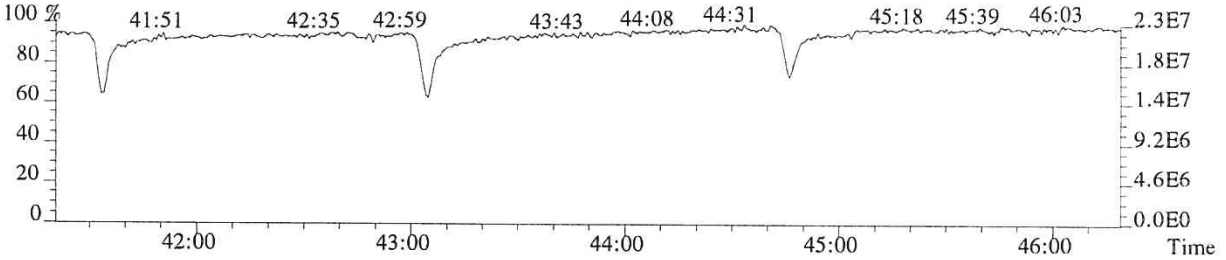
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1072.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,936.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059612

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76558

Run #5 Filename P513854 Samp: 1 Inj: 1 Acquired: 24-JAN-18 16:55:09
Processed: 24-JAN-18 17:50:33 Sample ID: CS4

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:47	9.367e+04	1.218e+05	0.77	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:47	7.158e+05	4.652e+05	1.54	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:40	6.668e+05	4.362e+05	1.53	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:15	6.097e+05	4.979e+05	1.22	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:22	6.415e+05	5.246e+05	1.22	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:51	5.685e+05	4.706e+05	1.21	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:36	5.397e+05	4.367e+05	1.24	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:48	4.833e+05	4.698e+05	1.03	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	3.955e+05	3.845e+05	1.03	yes	no	1.258
10	Unk	OCDF	42:44	5.770e+05	6.374e+05	0.91	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:31	6.699e+04	8.569e+04	0.78	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:56	4.394e+05	2.817e+05	1.56	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:59	3.869e+05	3.085e+05	1.25	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:04	4.031e+05	3.210e+05	1.26	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:18	4.024e+05	3.196e+05	1.26	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:44	3.425e+05	3.252e+05	1.05	yes	no	1.025
17	Unk	OCDD	42:31	4.623e+05	5.191e+05	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:46	2.467e+05	3.121e+05	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:46	3.414e+05	2.167e+05	1.58	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	3.412e+05	2.161e+05	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:15	1.522e+05	2.895e+05	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:21	1.720e+05	3.253e+05	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:51	1.562e+05	2.969e+05	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:36	1.406e+05	2.715e+05	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:48	1.081e+05	2.395e+05	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:13	9.438e+04	2.110e+05	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:30	1.544e+05	1.910e+05	0.81	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	2.282e+05	1.431e+05	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	1.841e+05	1.451e+05	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:03	1.915e+05	1.516e+05	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:43	1.646e+05	1.528e+05	1.08	yes	no	0.858
32	IS	13C-OCDD	42:31	2.072e+05	2.298e+05	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:56	1.645e+05	2.018e+05	0.82	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:17	1.964e+05	1.566e+05	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:31	1.545e+05				no	1.014

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Signal/Noise Height Ratio Summary

CLIENT ID.
76558

Run #5 Filename P513854 Samp: 1 Inj: 1 Acquired: 24-JAN-18 16:55:09
Processed: 24-JAN-18 17:50:33 LAB. ID: CS4

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.89e+07	1.00e+03	1.9e+04	2.44e+07	1.90e+03	1.3e+04
2	1,2,3,7,8-PeCDF	1.40e+08	2.03e+03	6.9e+04	9.16e+07	1.47e+03	6.2e+04
3	2,3,4,7,8-PeCDF	1.39e+08	2.03e+03	6.9e+04	9.17e+07	1.47e+03	6.2e+04
4	1,2,3,4,7,8-HxCDF	1.35e+08	1.80e+03	7.5e+04	1.11e+08	2.10e+03	5.3e+04
5	1,2,3,6,7,8-HxCDF	1.41e+08	1.80e+03	7.8e+04	1.16e+08	2.10e+03	5.5e+04
6	2,3,4,6,7,8-HxCDF	1.27e+08	1.80e+03	7.0e+04	1.06e+08	2.10e+03	5.0e+04
7	1,2,3,7,8,9-HxCDF	1.14e+08	1.80e+03	6.3e+04	9.30e+07	2.10e+03	4.4e+04
8	1,2,3,4,6,7,8-HpCDF	1.07e+08	1.75e+04	6.1e+03	1.05e+08	2.93e+04	3.6e+03
9	1,2,3,4,7,8,9-HpCDF	8.10e+07	1.75e+04	4.6e+03	7.89e+07	2.93e+04	2.7e+03
10	OCDF	1.02e+08	5.04e+02	2.0e+05	1.14e+08	1.72e+03	6.6e+04
11	2,3,7,8-TCDD	1.41e+07	2.20e+03	6.4e+03	1.80e+07	1.38e+03	1.3e+04
12	1,2,3,7,8-PeCDD	9.08e+07	1.42e+03	6.4e+04	5.86e+07	1.44e+02	4.1e+05
13	1,2,3,4,7,8-HxCDD	8.77e+07	1.20e+03	7.3e+04	7.06e+07	1.58e+03	4.5e+04
14	1,2,3,6,7,8-HxCDD	8.80e+07	1.20e+03	7.3e+04	7.05e+07	1.58e+03	4.5e+04
15	1,2,3,7,8,9-HxCDD	8.97e+07	1.20e+03	7.5e+04	7.13e+07	1.58e+03	4.5e+04
16	1,2,3,4,6,7,8-HpCDD	7.19e+07	1.52e+03	4.7e+04	6.86e+07	1.50e+03	4.6e+04
17	OCDD	8.05e+07	7.36e+02	1.1e+05	9.09e+07	1.16e+03	7.8e+04
18	13C-2,3,7,8-TCDF	4.92e+07	8.28e+03	5.9e+03	6.18e+07	3.78e+03	1.6e+04
19	13C-1,2,3,7,8-PeCDF	6.78e+07	1.09e+03	6.2e+04	4.35e+07	7.12e+02	6.1e+04
20	13C-2,3,4,7,8-PeCDF	7.11e+07	1.09e+03	6.5e+04	4.54e+07	7.12e+02	6.4e+04
21	13C-1,2,3,4,7,8-HxCDF	3.32e+07	1.94e+03	1.7e+04	6.39e+07	1.54e+03	4.2e+04
22	13C-1,2,3,6,7,8-HxCDF	3.76e+07	1.94e+03	1.9e+04	7.17e+07	1.54e+03	4.7e+04
23	13C-2,3,4,6,7,8-HxCDF	3.46e+07	1.94e+03	1.8e+04	6.63e+07	1.54e+03	4.3e+04
24	13C-1,2,3,7,8,9-HxCDF	2.97e+07	1.94e+03	1.5e+04	5.66e+07	1.54e+03	3.7e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.37e+07	7.11e+03	3.3e+03	5.25e+07	1.03e+04	5.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.95e+07	7.11e+03	2.7e+03	4.34e+07	1.03e+04	4.2e+03
27	13C-2,3,7,8-TCDD	3.25e+07	6.40e+03	5.1e+03	3.99e+07	2.77e+03	1.4e+04
28	13C-1,2,3,7,8-PeCDD	4.73e+07	1.13e+03	4.2e+04	2.97e+07	8.40e+02	3.5e+04
29	13C-1,2,3,4,7,8-HxCDD	4.15e+07	3.03e+03	1.4e+04	3.28e+07	2.40e+03	1.4e+04
30	13C-1,2,3,6,7,8-HxCDD	4.14e+07	3.03e+03	1.4e+04	3.31e+07	2.40e+03	1.4e+04
31	13C-1,2,3,4,6,7,8-HpCDD	3.45e+07	1.55e+03	2.2e+04	3.21e+07	1.32e+03	2.4e+04
32	13C-OCDD	3.61e+07	1.25e+03	2.9e+04	4.00e+07	1.19e+03	3.4e+04
33	13C-1,2,3,4-TCDD	3.34e+07	6.40e+03	5.2e+03	4.12e+07	2.77e+03	1.5e+04
34	13C-1,2,3,7,8,9-HxCDD	4.34e+07	3.03e+03	1.4e+04	3.46e+07	2.40e+03	1.4e+04
35	37Cl-2,3,7,8-TCDD	3.25e+07	1.28e+03	2.5e+04			

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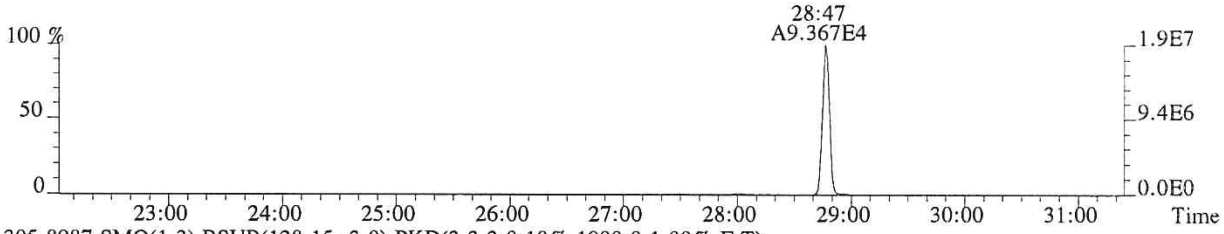
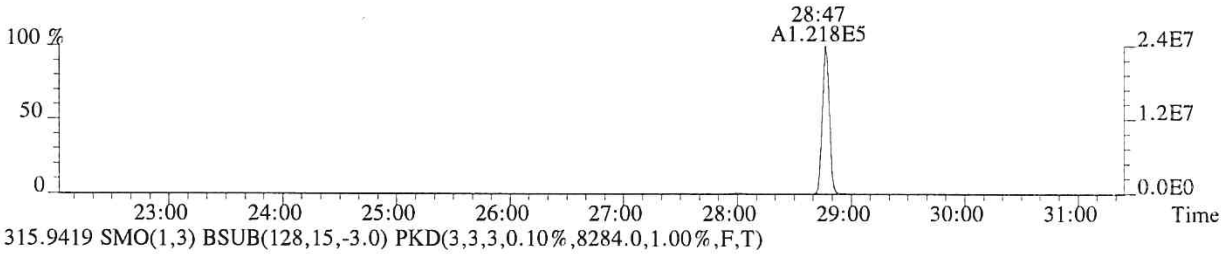
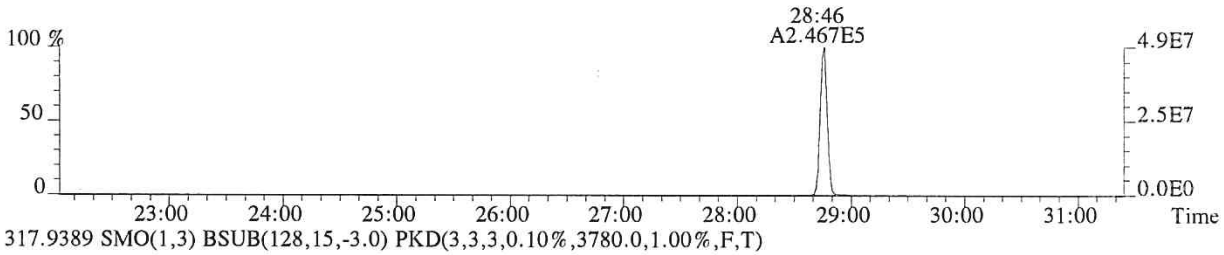
File:P513854 #1-665 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1004.0,1.00%,F,T)



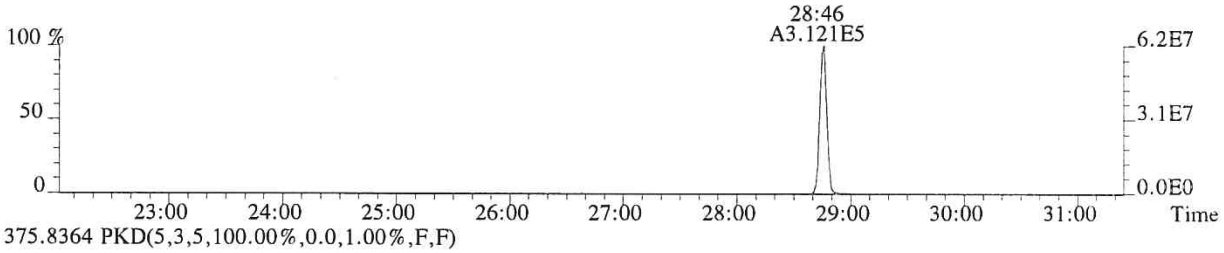
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1900.0,1.00%,F,T)



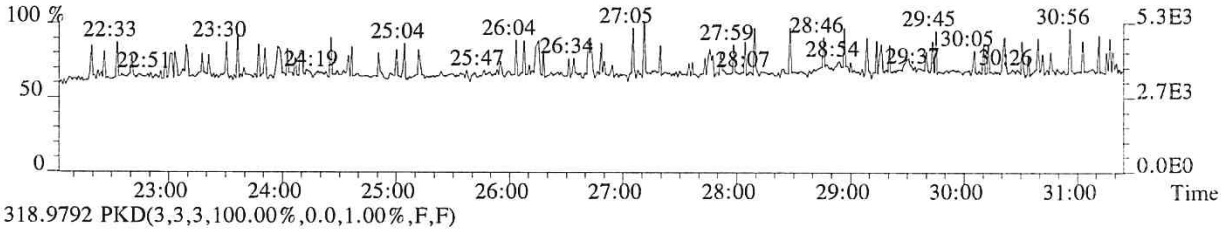
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8284.0,1.00%,F,T)



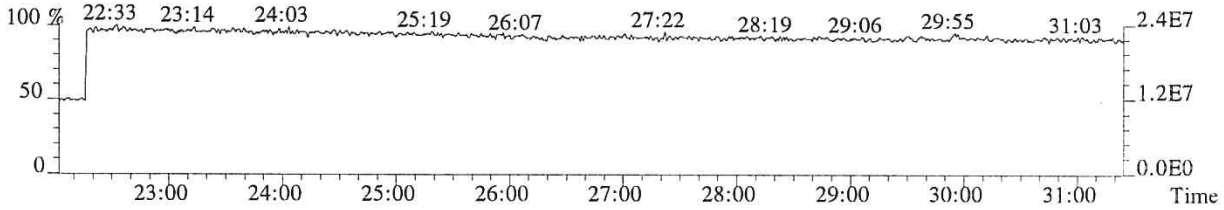
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3780.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

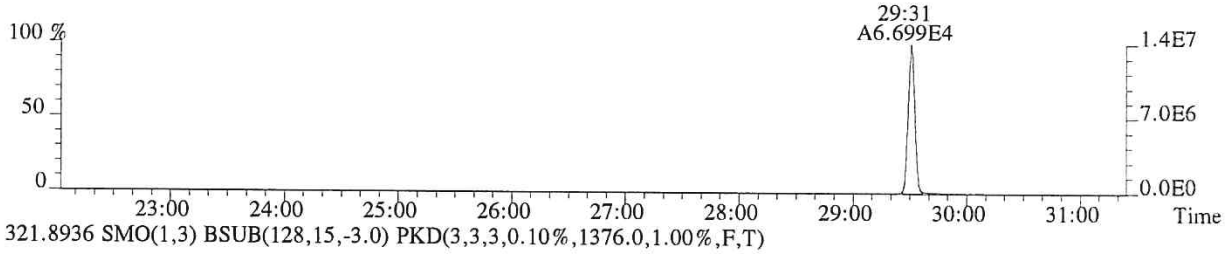


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

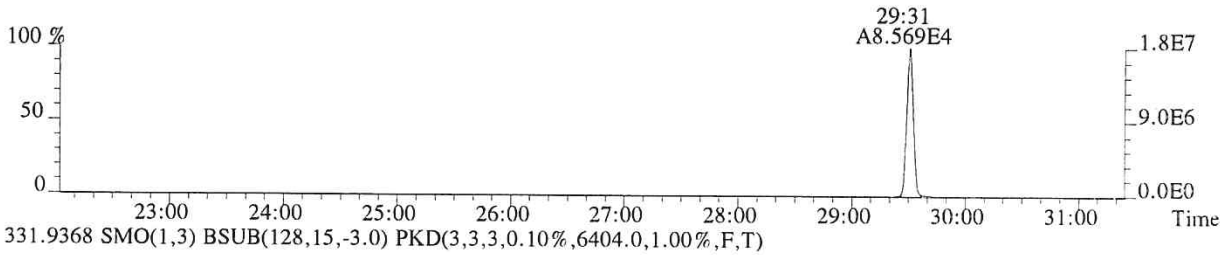


059615

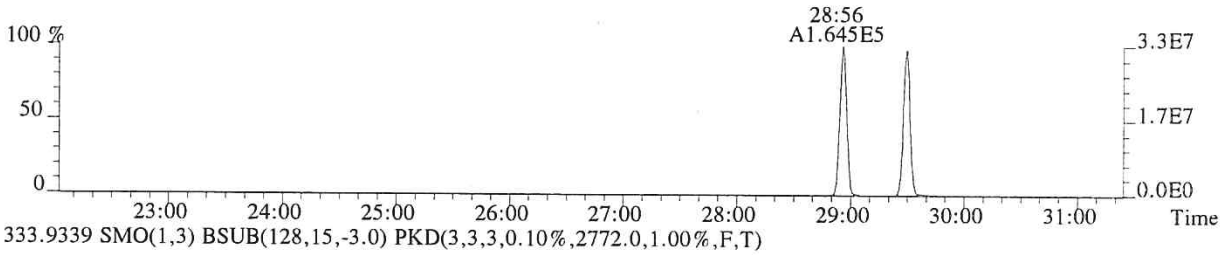
File:P513854 #1-665 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2200.0,1.00%,F,T)



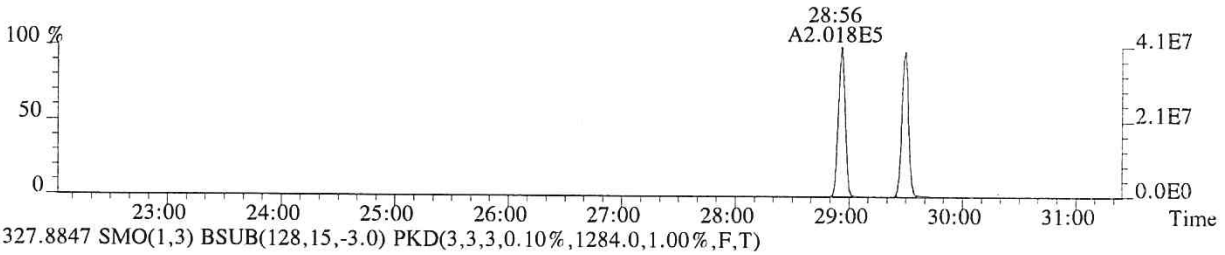
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1376.0,1.00%,F,T)



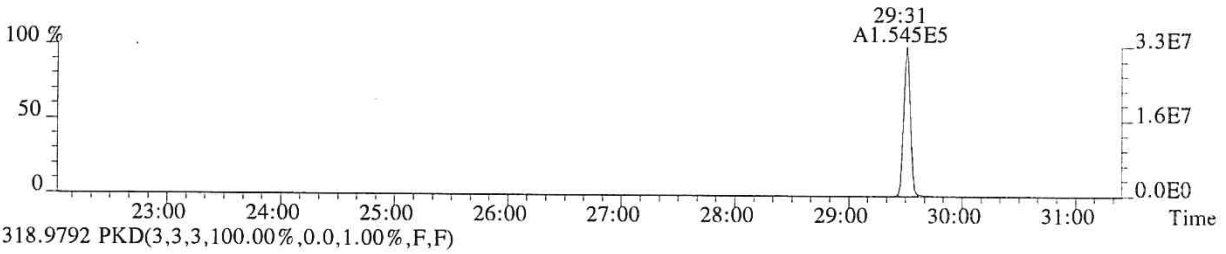
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6404.0,1.00%,F,T)



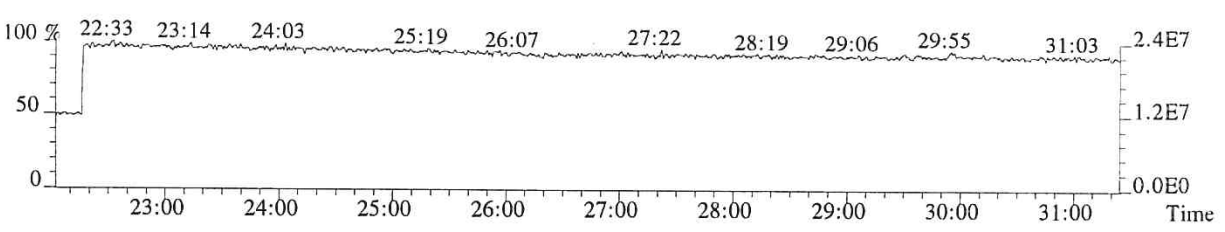
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2772.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1284.0,1.00%,F,T)

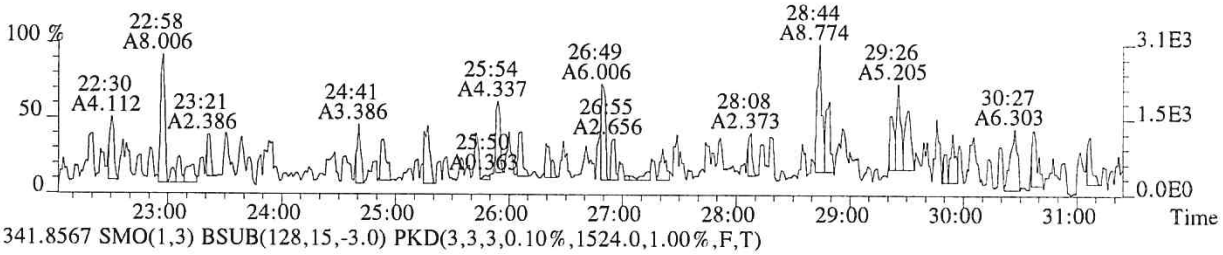


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

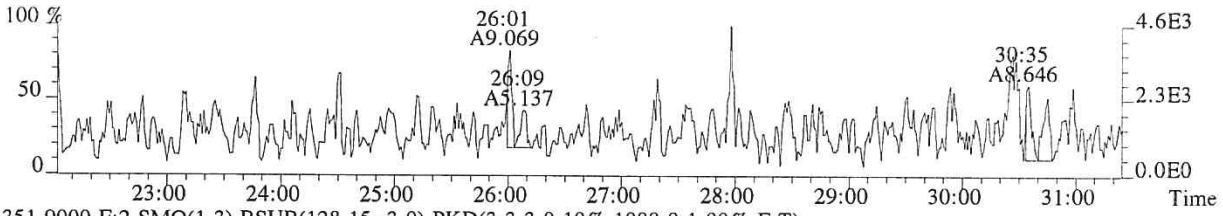


059616

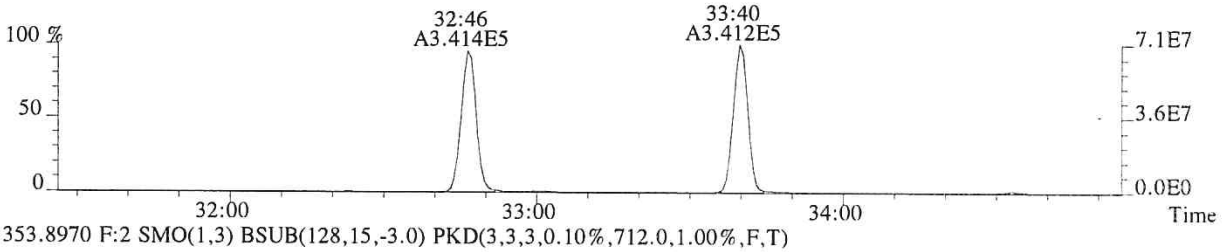
File:P513854 #1-665 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,600.0,1.00%,F,T)



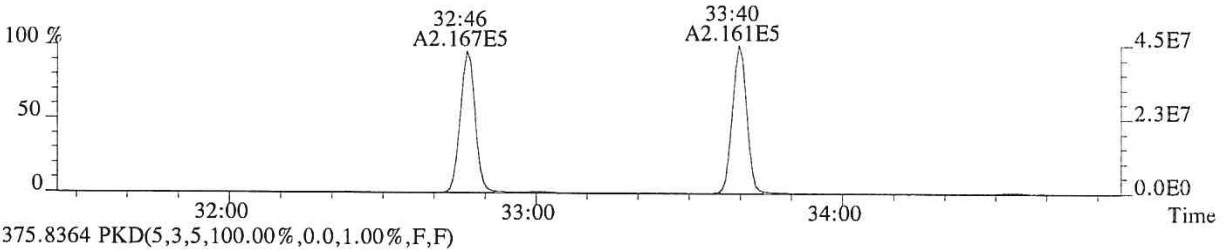
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1524.0,1.00%,F,T)



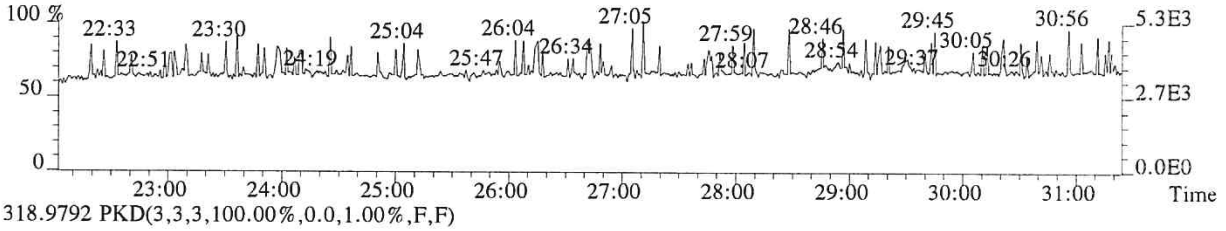
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1088.0,1.00%,F,T)



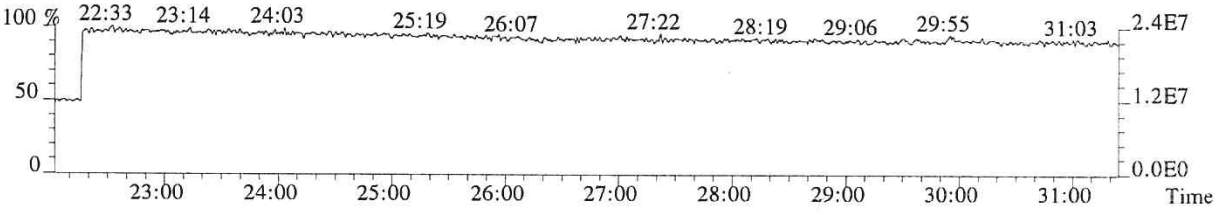
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,712.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

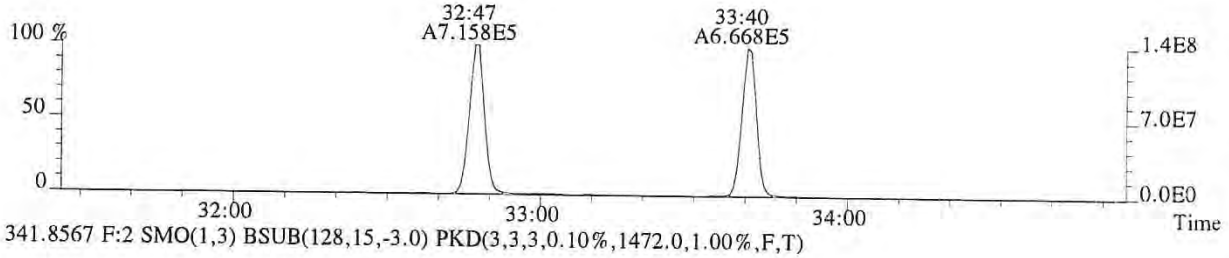


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

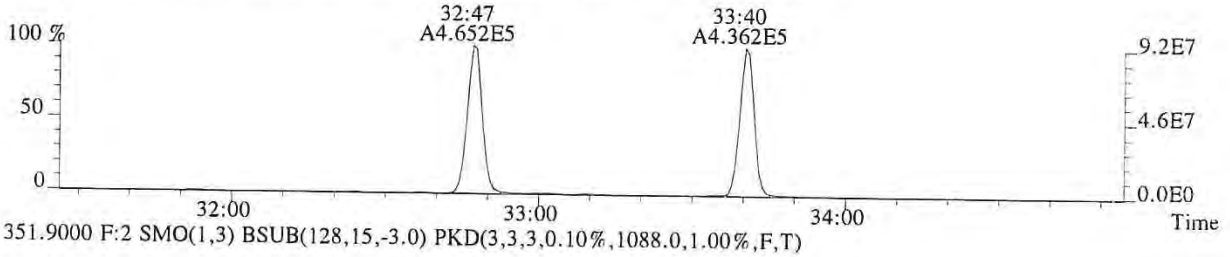


059617

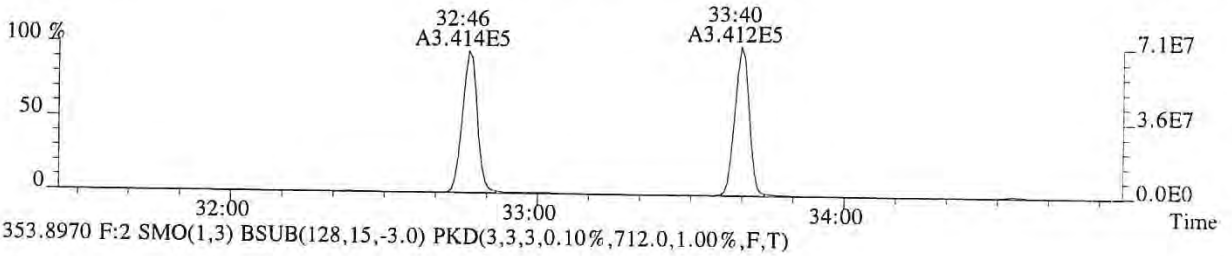
File:P513854 #1-313 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2028.0,1.00%,F,T)



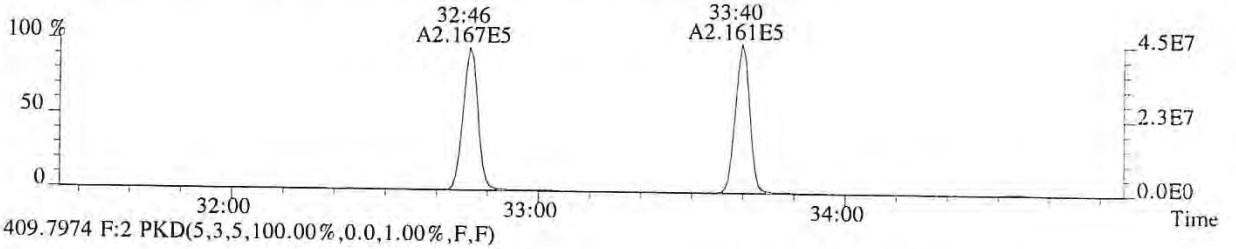
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1472.0,1.00%,F,T)



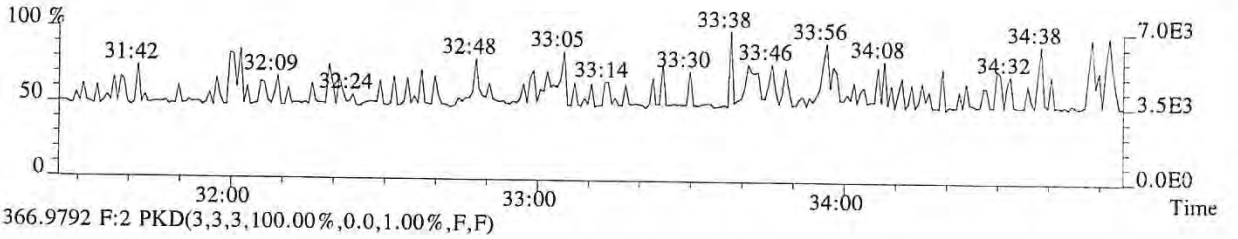
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1088.0,1.00%,F,T)



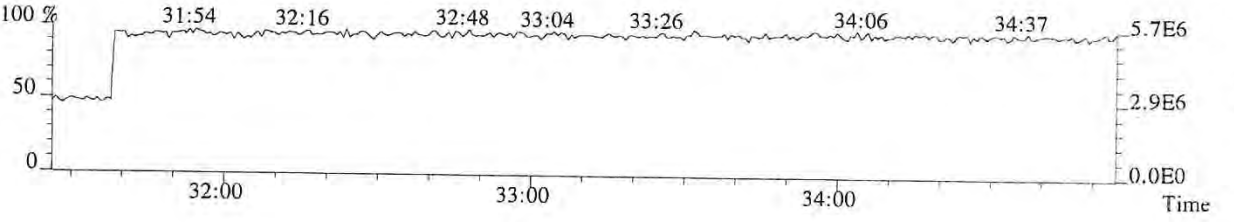
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,712.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

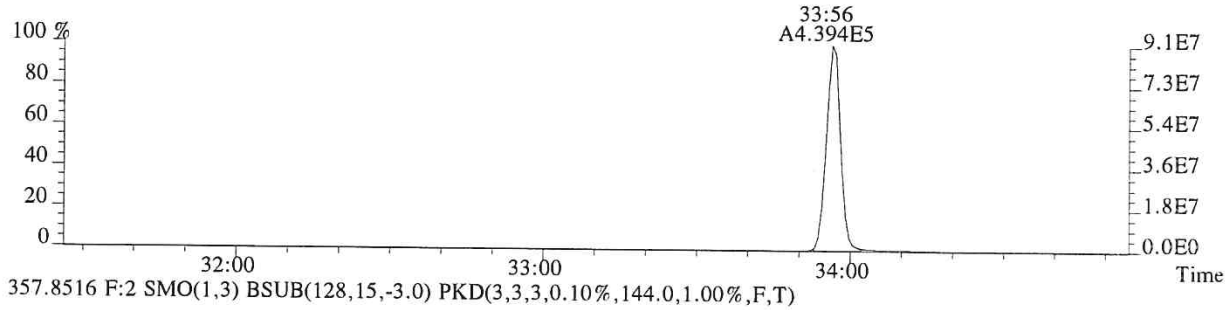


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

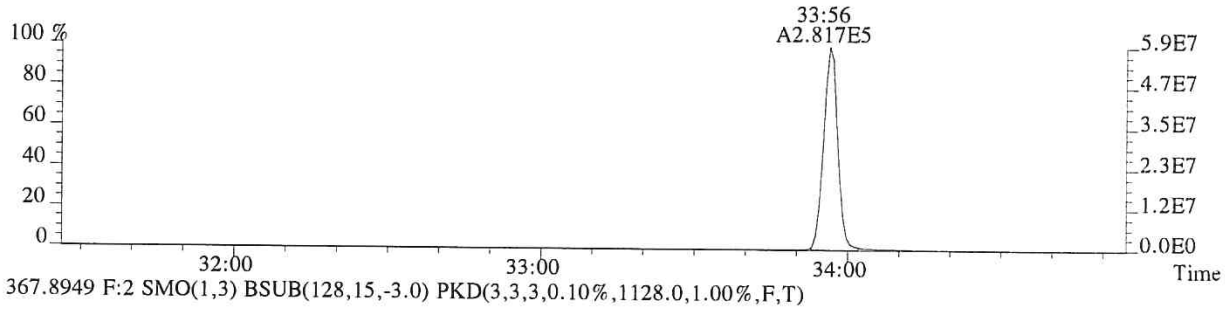


059618

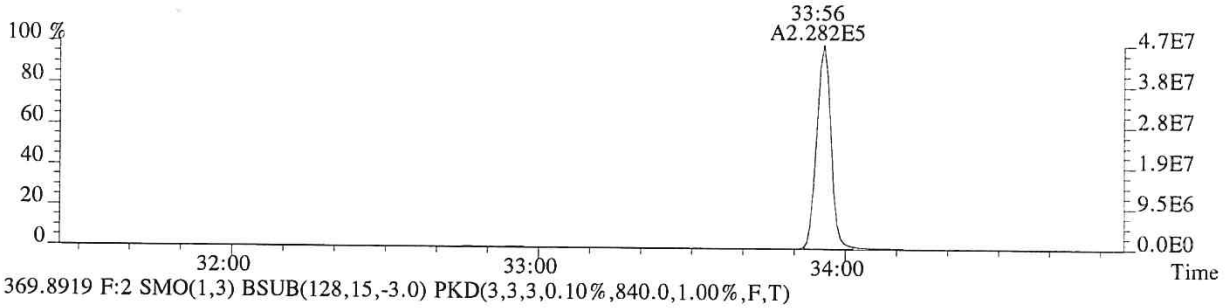
File:P513854 #1-313 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1420.0,1.00%,F,T)



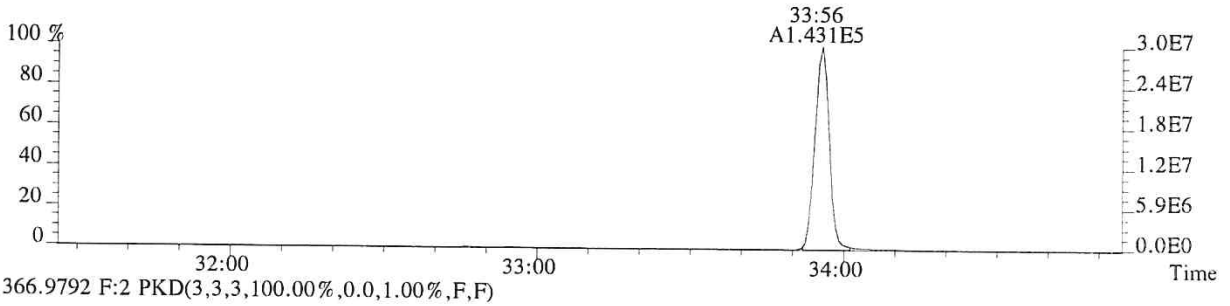
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,144.0,1.00%,F,T)



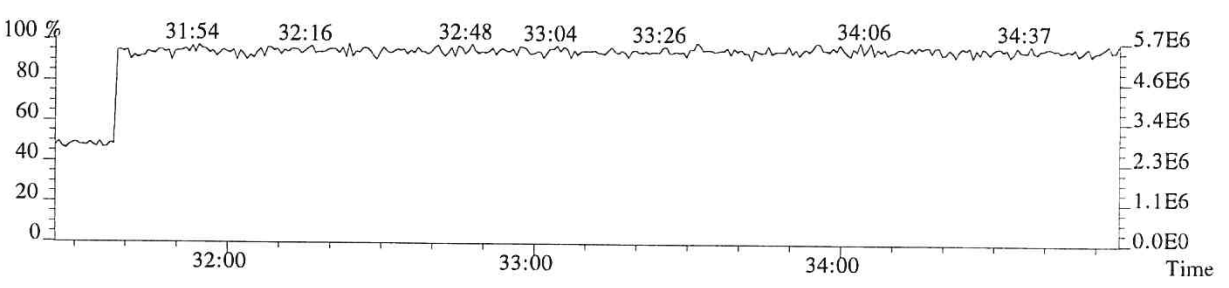
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1128.0,1.00%,F,T)



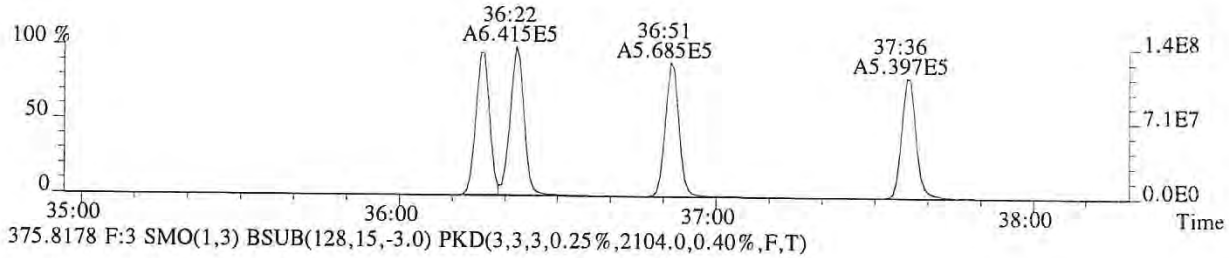
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,840.0,1.00%,F,T)



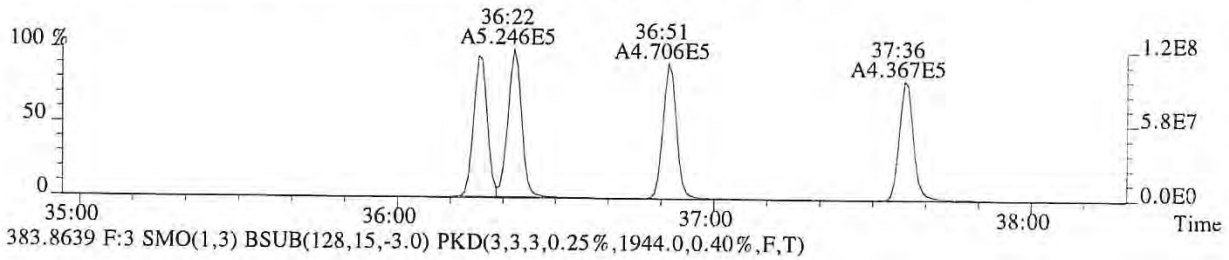
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



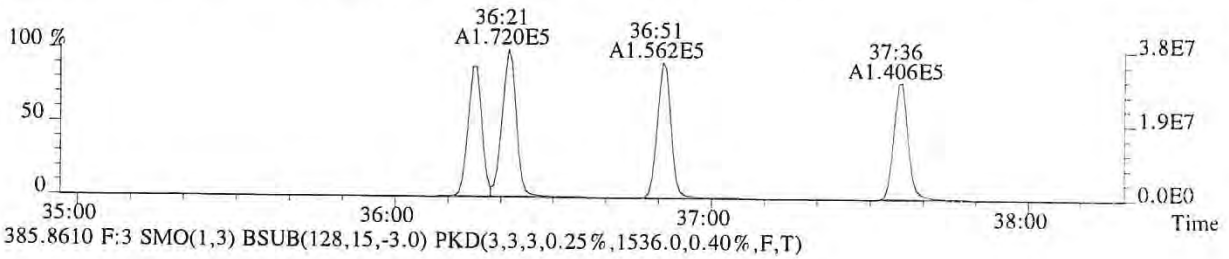
File:P513854 #1-303 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1804.0,0.40%,F,T)



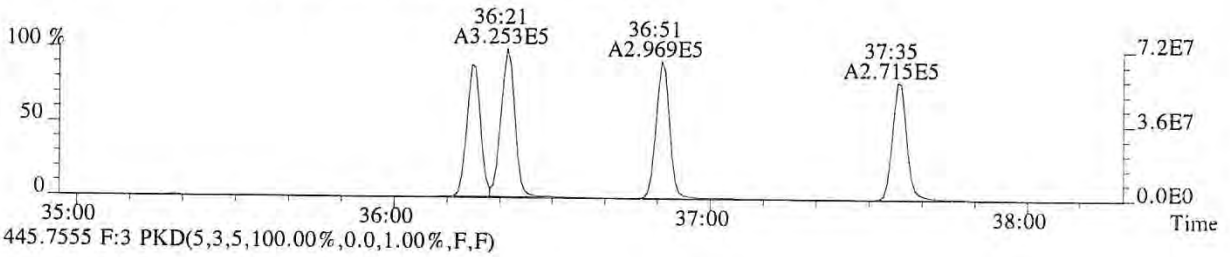
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2104.0,0.40%,F,T)



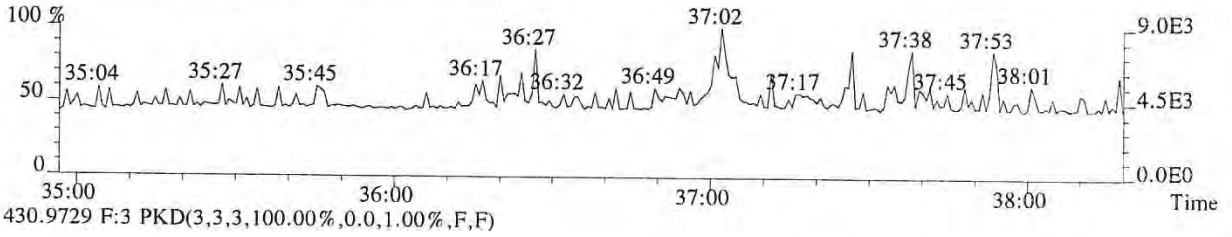
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1944.0,0.40%,F,T)



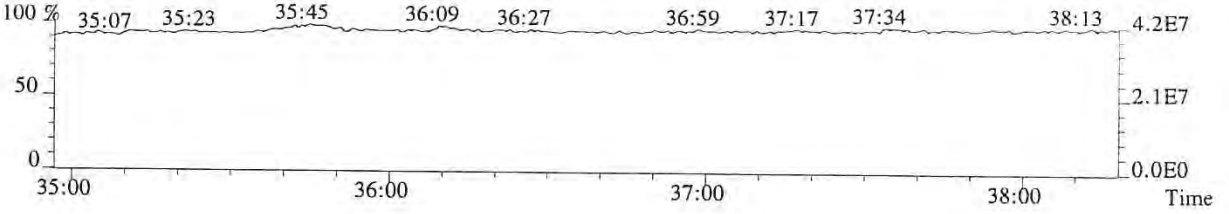
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1536.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

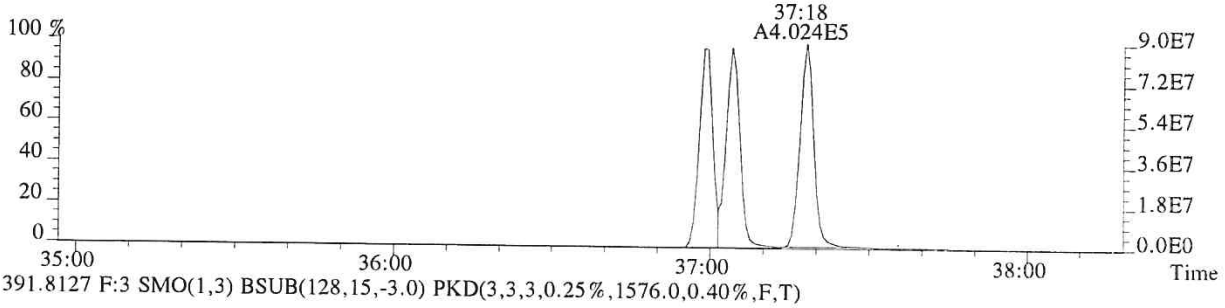


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

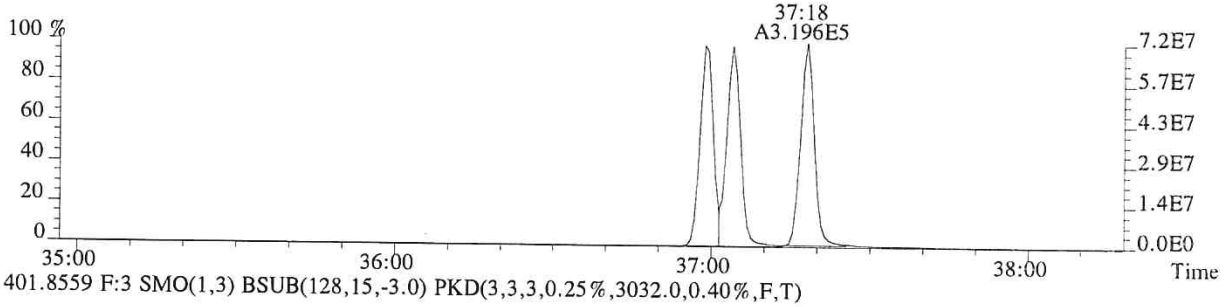


059620

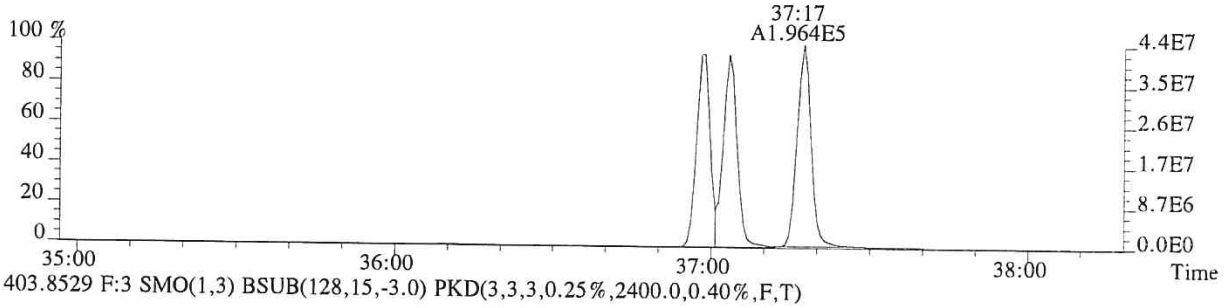
File:P513854 #1-303 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1200.0,0.40%,F,T)



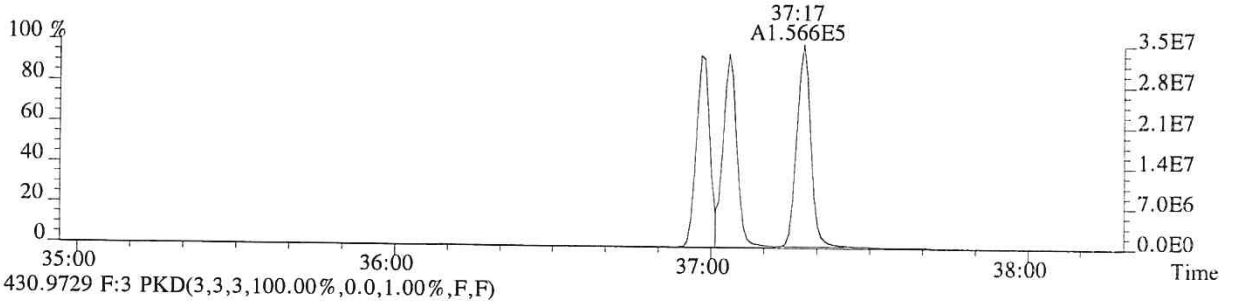
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1576.0,0.40%,F,T)



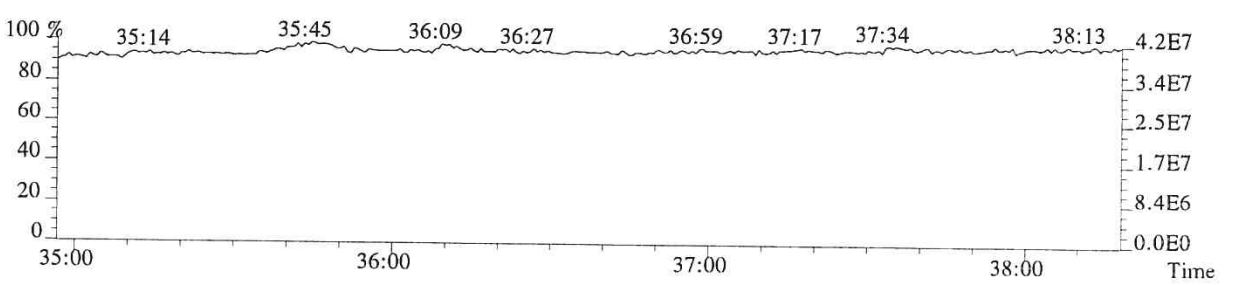
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3032.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2400.0,0.40%,F,T)

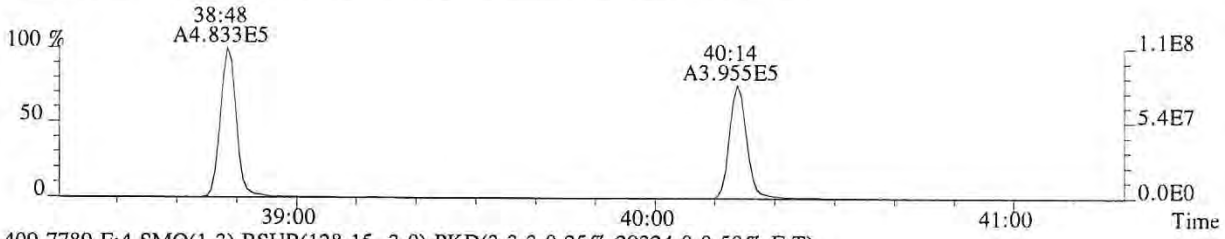


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

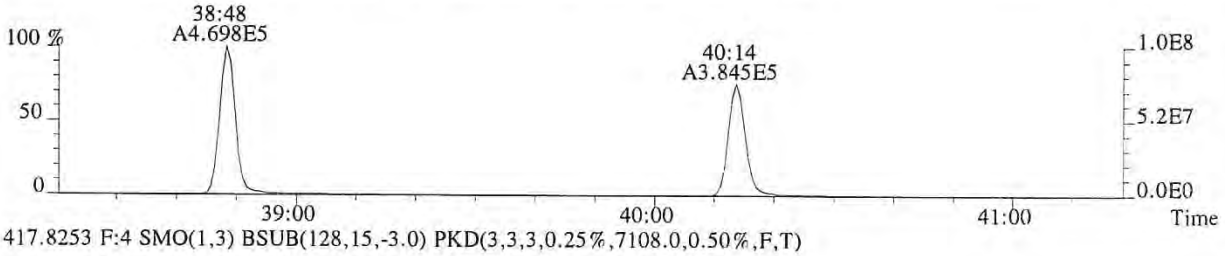


059621

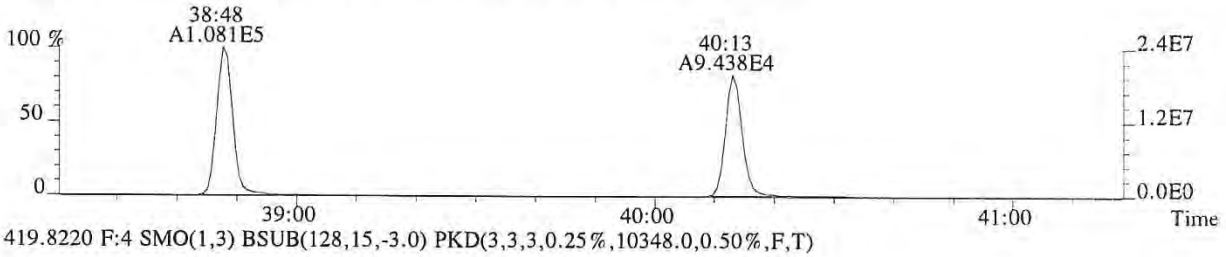
File:P513854 #1-268 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,17516.0,0.50%,F,T)



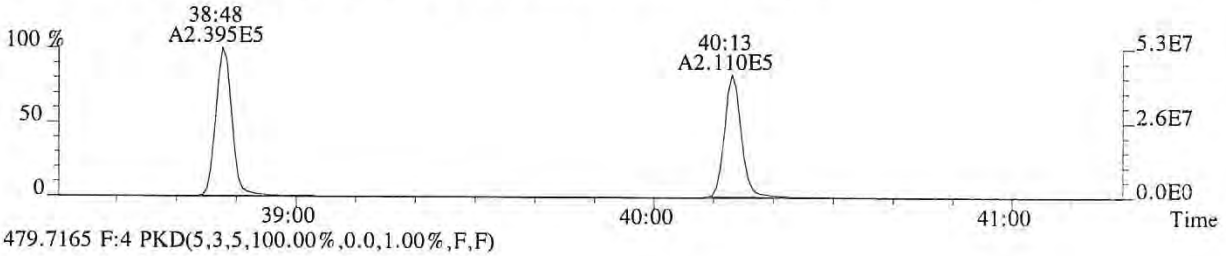
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,29324.0,0.50%,F,T)



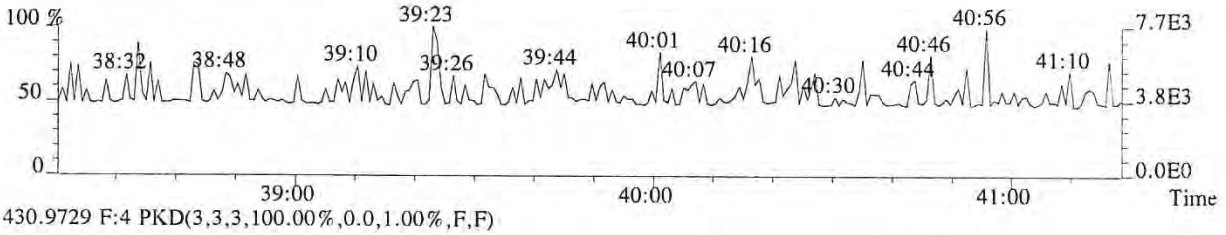
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7108.0,0.50%,F,T)



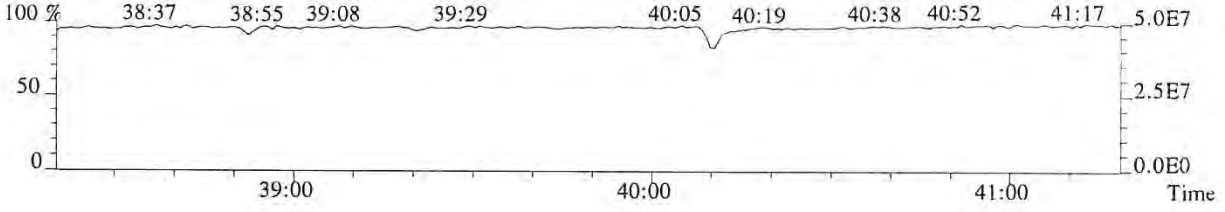
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10348.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

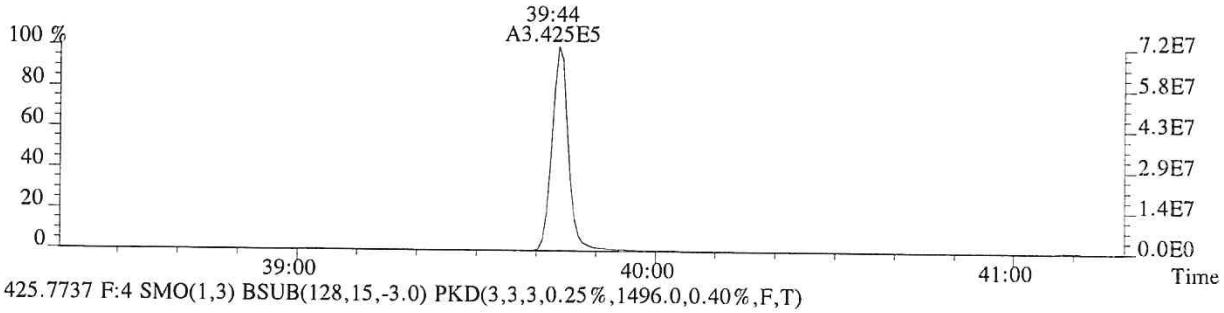


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

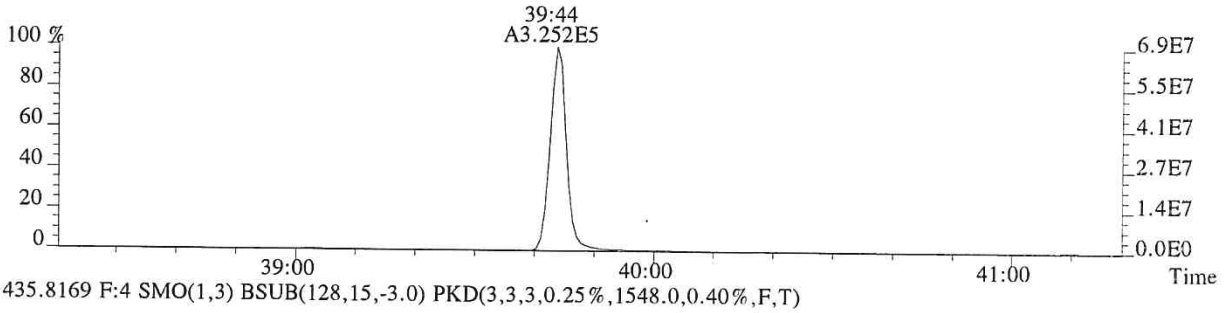


059622

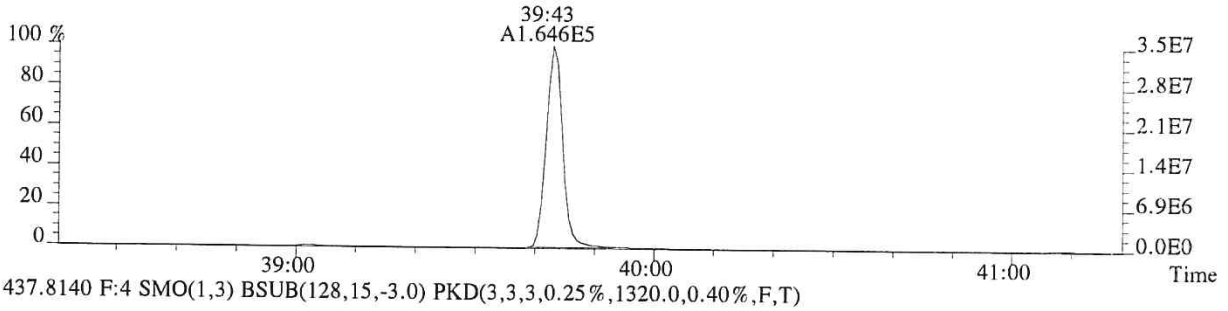
File:P513854 #1-268 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1516.0,0.40%,F,T)



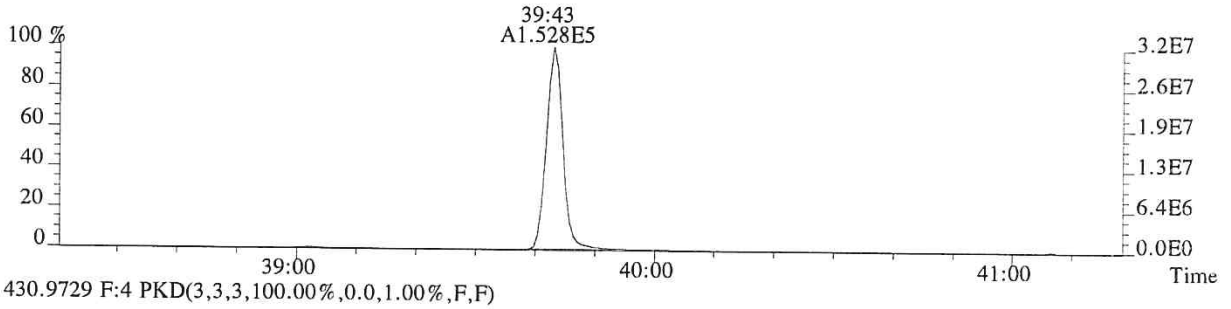
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1496.0,0.40%,F,T)



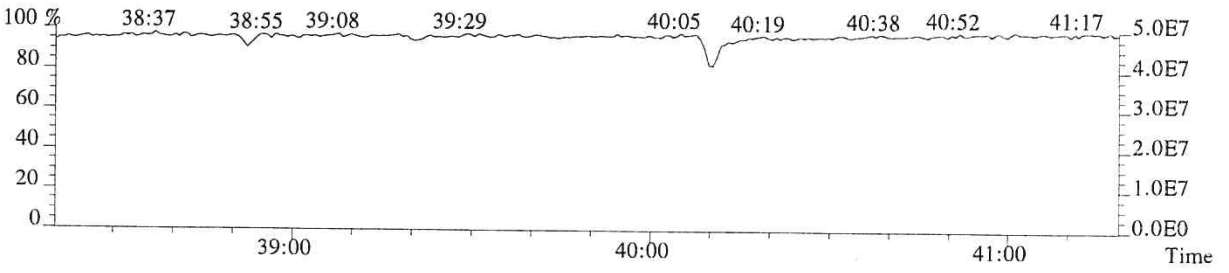
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1548.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1320.0,0.40%,F,T)

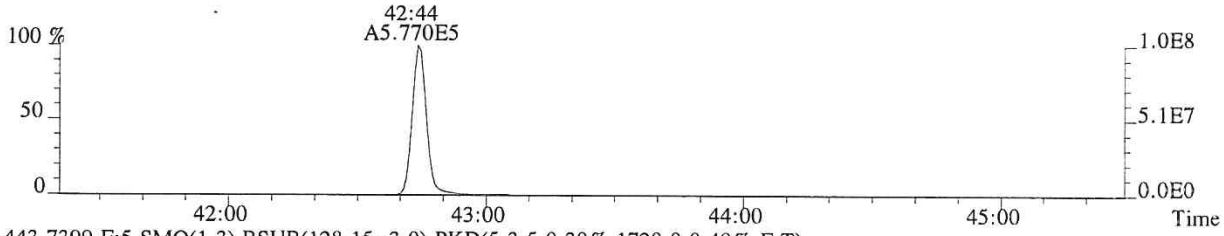


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

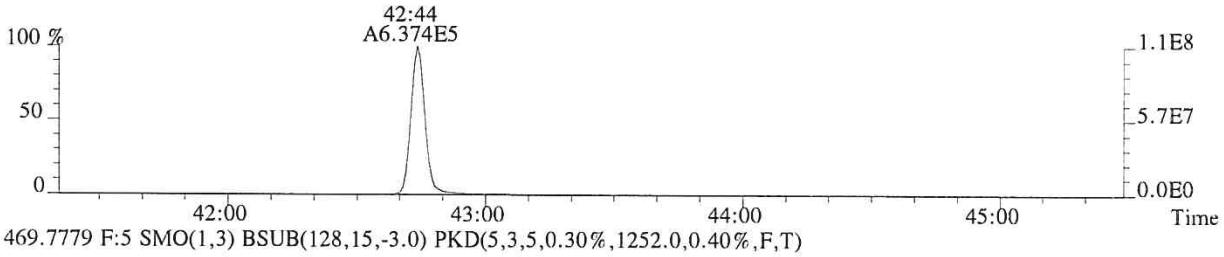


059623

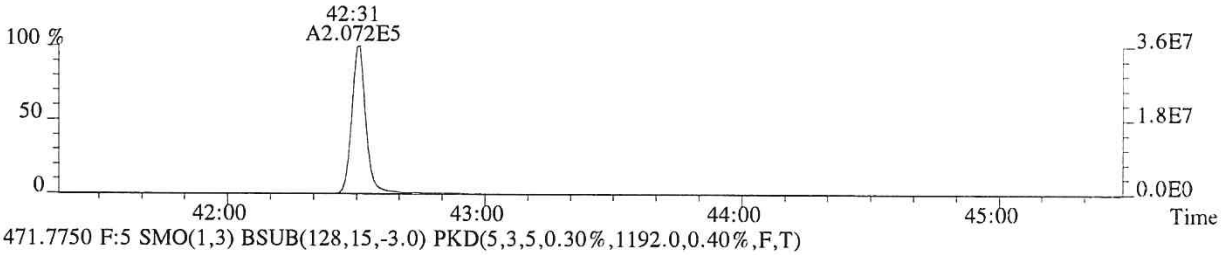
File:P513854 #1-373 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,504.0,0.40%,F,T)



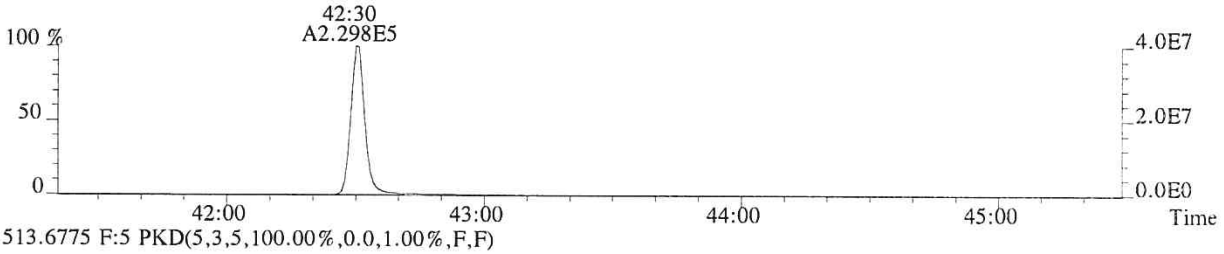
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1720.0,0.40%,F,T)



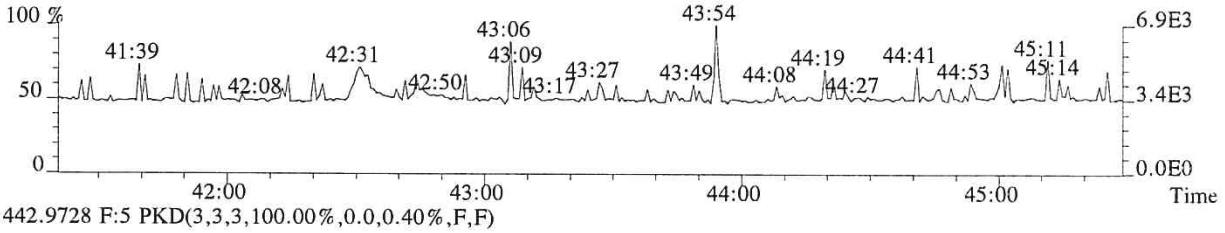
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1252.0,0.40%,F,T)



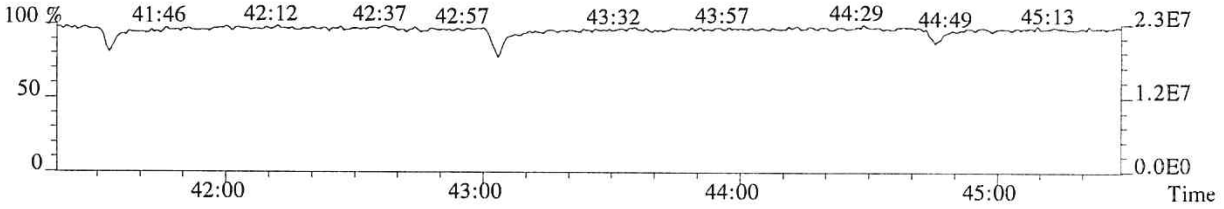
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1192.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

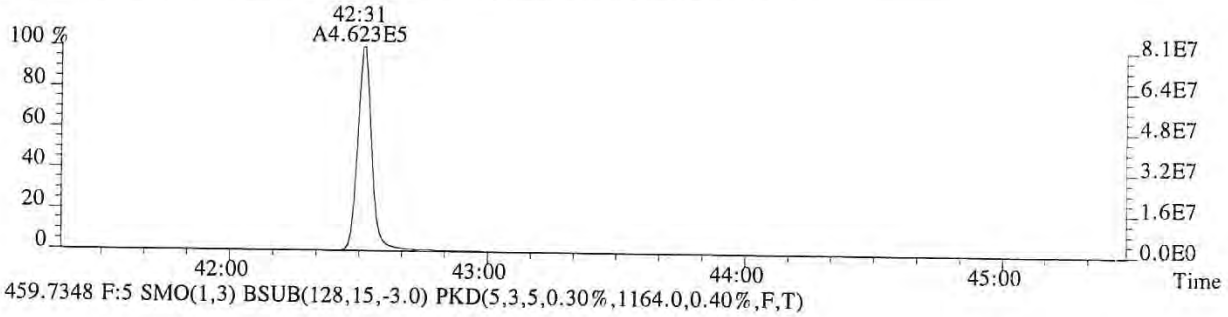


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

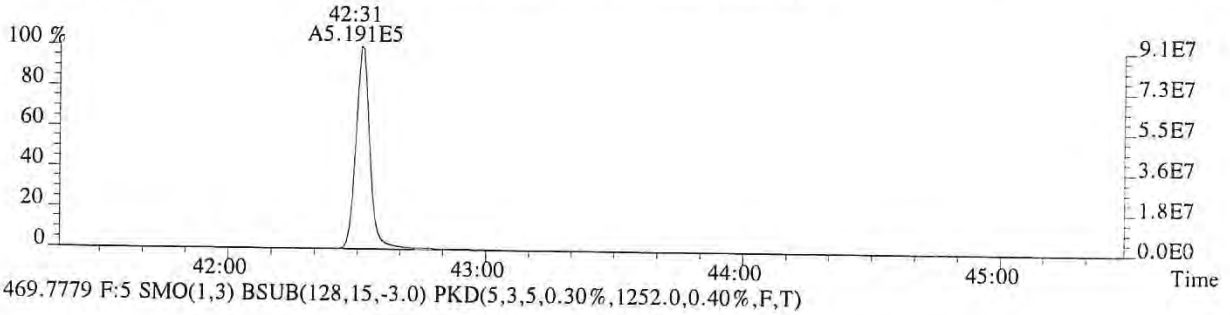


059624

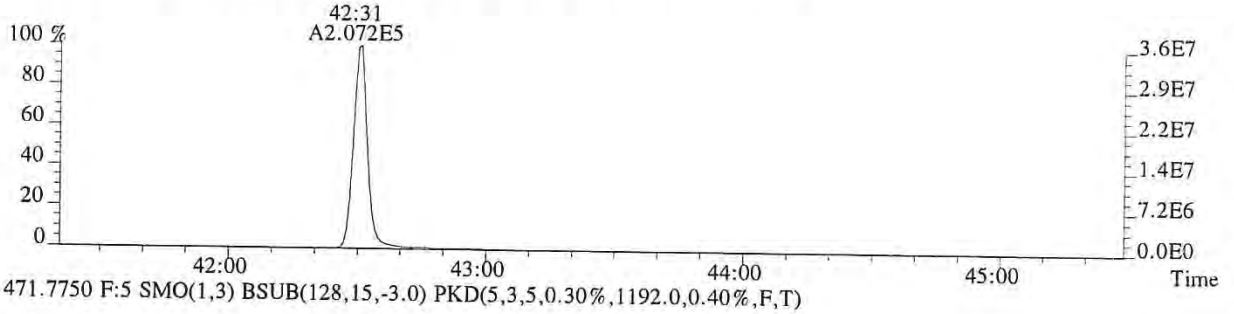
File:P513854 #1-373 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,736.0,0.40%,F,T)



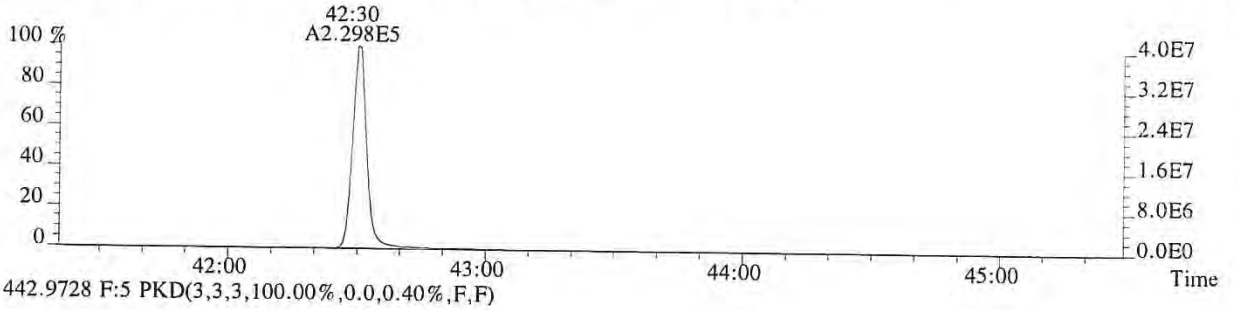
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1164.0,0.40%,F,T)



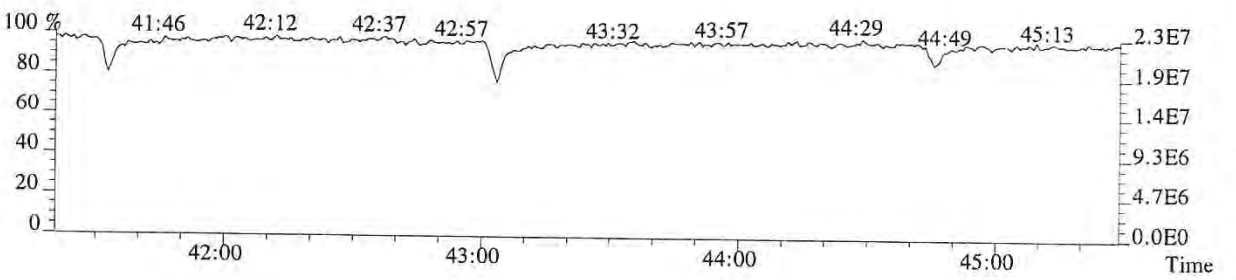
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1252.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1192.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059625

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
185657

Run #6 Filename P513855 Samp: 1 Inj: 1 Acquired: 24-JAN-18 17:43:48
Processed: 25-JAN-18 08:12:42 Sample ID: CS5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:48	2.519e+05	3.290e+05	0.77	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	2.059e+06	1.330e+06	1.55	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:42	1.928e+06	1.251e+06	1.54	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:17	1.692e+06	1.377e+06	1.23	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:23	1.772e+06	1.434e+06	1.24	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:53	1.608e+06	1.317e+06	1.22	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	1.433e+06	1.167e+06	1.23	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:49	1.339e+06	1.290e+06	1.04	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	1.080e+06	1.042e+06	1.04	yes	no	1.258
10	Unk	OCDF	42:45	1.595e+06	1.756e+06	0.91	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:32	1.888e+05	2.423e+05	0.78	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:58	1.263e+06	8.057e+05	1.57	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	37:00	1.121e+06	8.925e+05	1.26	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:05	1.092e+06	8.671e+05	1.26	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:19	1.145e+06	9.139e+05	1.25	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:45	9.236e+05	8.810e+05	1.05	yes	no	1.025
17	Unk	OCDD	42:32	1.236e+06	1.384e+06	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:47	1.298e+05	1.639e+05	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:48	1.958e+05	1.231e+05	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	1.948e+05	1.236e+05	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:16	8.374e+04	1.594e+05	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:23	9.521e+04	1.780e+05	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:52	8.554e+04	1.650e+05	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:37	7.556e+04	1.441e+05	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:49	5.927e+04	1.314e+05	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	5.166e+04	1.153e+05	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:31	8.633e+04	1.080e+05	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	1.308e+05	8.218e+04	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	1.058e+05	8.279e+04	1.28	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:04	1.031e+05	8.205e+04	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:44	8.934e+04	8.409e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	42:31	1.103e+05	1.236e+05	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:57	8.893e+04	1.085e+05	0.82	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:18	1.136e+05	9.051e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:32	4.366e+05				no	1.014

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
185657

Run #6 Filename P513855 Samp: 1 Inj: 1 Acquired: 24-JAN-18 17:43:48
Processed: 25-JAN-18 08:12:42 LAB. ID: CS5

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.13e+07	1.02e+03	5.0e+04	6.69e+07	2.00e+03	3.3e+04
2	1,2,3,7,8-PeCDF	4.18e+08	1.72e+03	2.4e+05	2.69e+08	4.25e+03	6.3e+04
3	2,3,4,7,8-PeCDF	4.06e+08	1.72e+03	2.4e+05	2.60e+08	4.25e+03	6.1e+04
4	1,2,3,4,7,8-HxCDF	3.87e+08	3.18e+03	1.2e+05	3.12e+08	2.28e+03	1.4e+05
5	1,2,3,6,7,8-HxCDF	3.87e+08	3.18e+03	1.2e+05	3.14e+08	2.28e+03	1.4e+05
6	2,3,4,6,7,8-HxCDF	3.59e+08	3.18e+03	1.1e+05	2.88e+08	2.28e+03	1.3e+05
7	1,2,3,7,8,9-HxCDF	3.14e+08	3.18e+03	9.9e+04	2.53e+08	2.28e+03	1.1e+05
8	1,2,3,4,6,7,8-HpCDF	2.94e+08	4.87e+04	6.0e+03	2.86e+08	4.51e+04	6.3e+03
9	1,2,3,4,7,8,9-HpCDF	2.17e+08	4.87e+04	4.5e+03	2.12e+08	4.51e+04	4.7e+03
10	OCDF	2.95e+08	6.68e+02	4.4e+05	3.20e+08	1.53e+03	2.1e+05
11	2,3,7,8-TCDD	4.01e+07	1.56e+03	2.6e+04	5.16e+07	1.78e+03	2.9e+04
12	1,2,3,7,8-PeCDD	2.63e+08	1.48e+03	1.8e+05	1.68e+08	6.04e+02	2.8e+05
13	1,2,3,4,7,8-HxCDD	2.57e+08	1.76e+03	1.5e+05	2.02e+08	1.10e+03	1.8e+05
14	1,2,3,6,7,8-HxCDD	2.40e+08	1.76e+03	1.4e+05	1.94e+08	1.10e+03	1.8e+05
15	1,2,3,7,8,9-HxCDD	2.55e+08	1.76e+03	1.5e+05	2.05e+08	1.10e+03	1.9e+05
16	1,2,3,4,6,7,8-HpCDD	1.92e+08	4.16e+03	4.6e+04	1.82e+08	2.40e+03	7.6e+04
17	OCDD	2.24e+08	1.92e+02	1.2e+06	2.52e+08	1.77e+03	1.4e+05
18	13C-2,3,7,8-TCDF	2.56e+07	8.72e+03	2.9e+03	3.23e+07	4.65e+03	7.0e+03
19	13C-1,2,3,7,8-PeCDF	3.90e+07	1.47e+03	2.7e+04	2.42e+07	1.14e+03	2.1e+04
20	13C-2,3,4,7,8-PeCDF	3.95e+07	1.47e+03	2.7e+04	2.53e+07	1.14e+03	2.2e+04
21	13C-1,2,3,4,7,8-HxCDF	1.87e+07	1.28e+03	1.5e+04	3.55e+07	3.08e+03	1.2e+04
22	13C-1,2,3,6,7,8-HxCDF	2.06e+07	1.28e+03	1.6e+04	3.85e+07	3.08e+03	1.3e+04
23	13C-2,3,4,6,7,8-HxCDF	1.90e+07	1.28e+03	1.5e+04	3.60e+07	3.08e+03	1.2e+04
24	13C-1,2,3,7,8,9-HxCDF	1.65e+07	1.28e+03	1.3e+04	3.12e+07	3.08e+03	1.0e+04
25	13C-1,2,3,4,6,7,8-HpCDF	1.32e+07	1.18e+04	1.1e+03	2.87e+07	5.77e+03	5.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.03e+07	1.18e+04	8.7e+02	2.29e+07	5.77e+03	4.0e+03
27	13C-2,3,7,8-TCDD	1.81e+07	7.00e+03	2.6e+03	2.26e+07	3.08e+03	7.3e+03
28	13C-1,2,3,7,8-PeCDD	2.76e+07	1.47e+03	1.9e+04	1.74e+07	7.76e+02	2.2e+04
29	13C-1,2,3,4,7,8-HxCDD	2.40e+07	2.43e+03	9.9e+03	1.87e+07	1.70e+03	1.1e+04
30	13C-1,2,3,6,7,8-HxCDD	2.24e+07	2.43e+03	9.2e+03	1.82e+07	1.70e+03	1.1e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.84e+07	1.79e+03	1.0e+04	1.72e+07	1.40e+03	1.2e+04
32	13C-OCDD	1.97e+07	1.62e+03	1.2e+04	2.22e+07	1.42e+03	1.6e+04
33	13C-1,2,3,4-TCDD	1.83e+07	7.00e+03	2.6e+03	2.22e+07	3.08e+03	7.2e+03
34	13C-1,2,3,7,8,9-HxCDD	2.50e+07	2.43e+03	1.0e+04	1.99e+07	1.70e+03	1.2e+04
35	37Cl-2,3,7,8-TCDD	9.29e+07	1.57e+03	5.9e+04			

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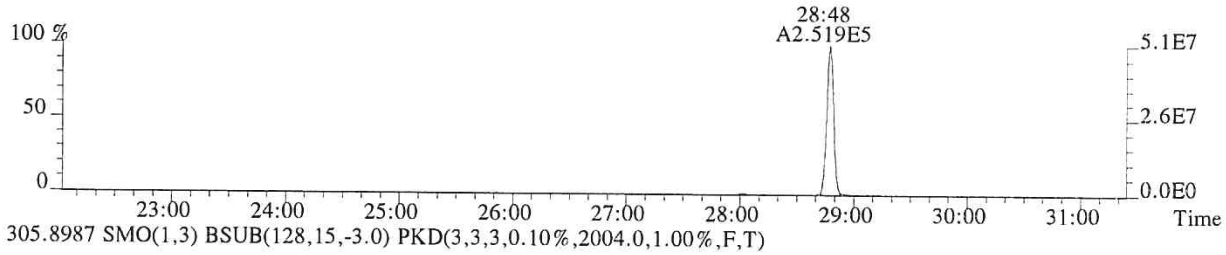
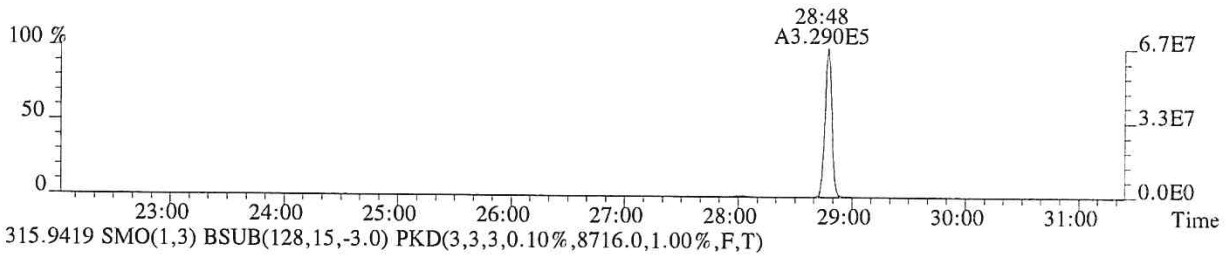
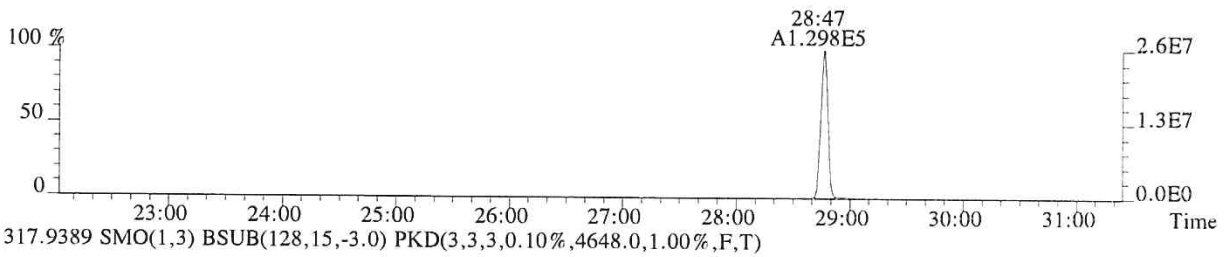
File:P513855 #1-665 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1024.0,1.00%,F,T)



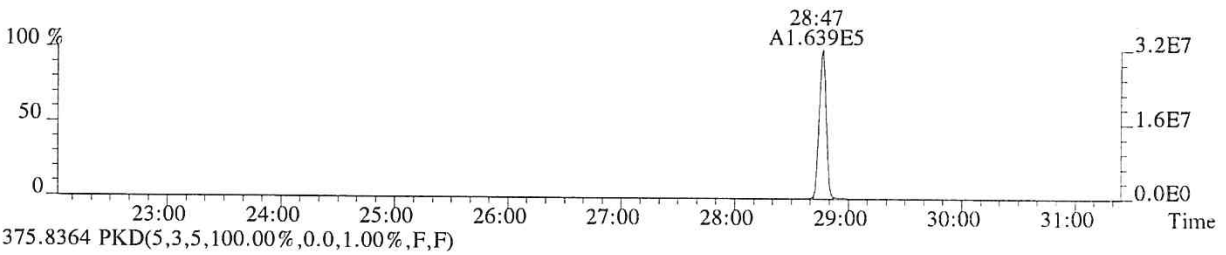
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2004.0,1.00%,F,T)



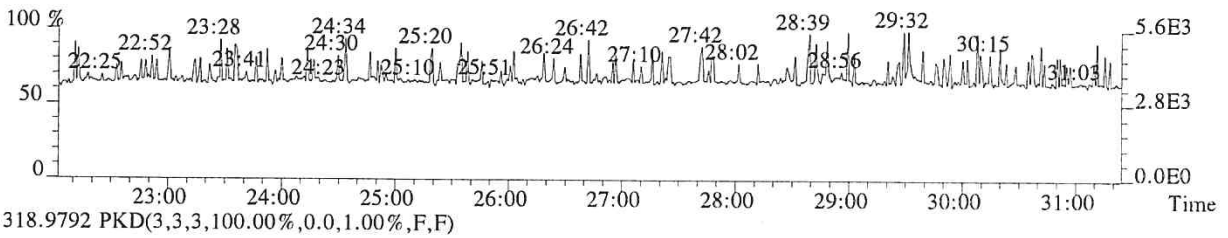
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8716.0,1.00%,F,T)



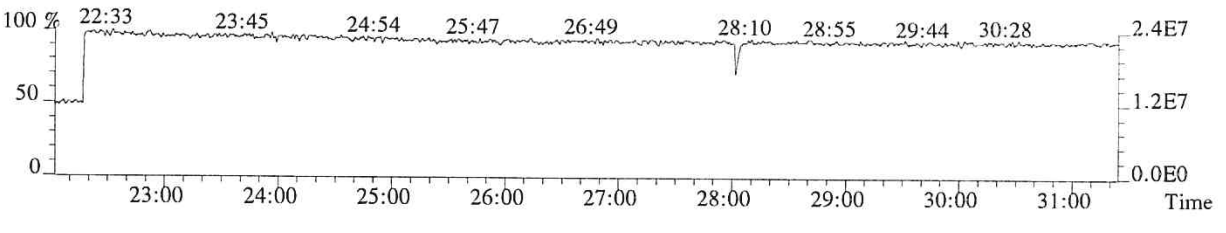
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4648.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

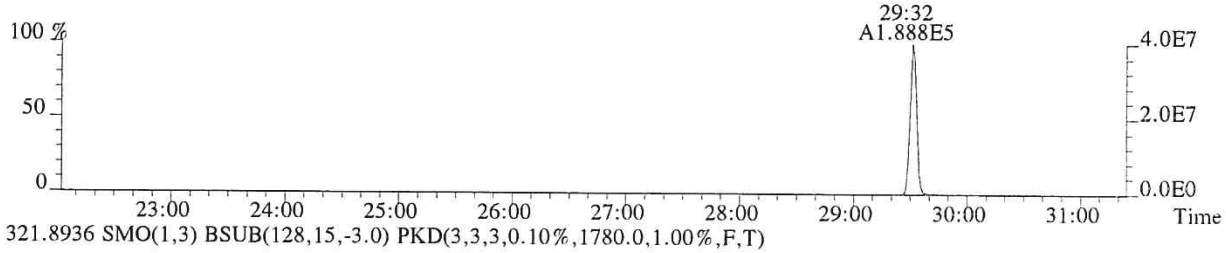


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

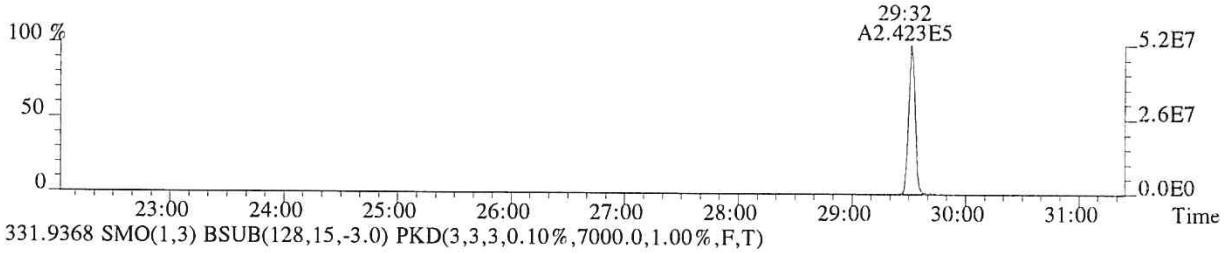


059628

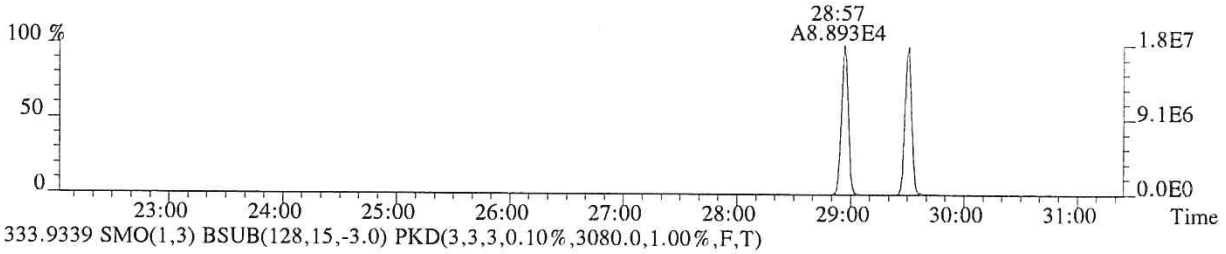
File:P513855 #1-665 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1556.0,1.00%,F,T)



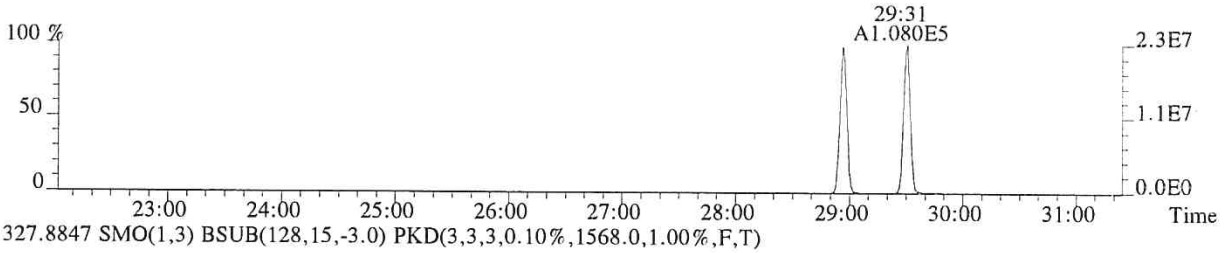
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1780.0,1.00%,F,T)



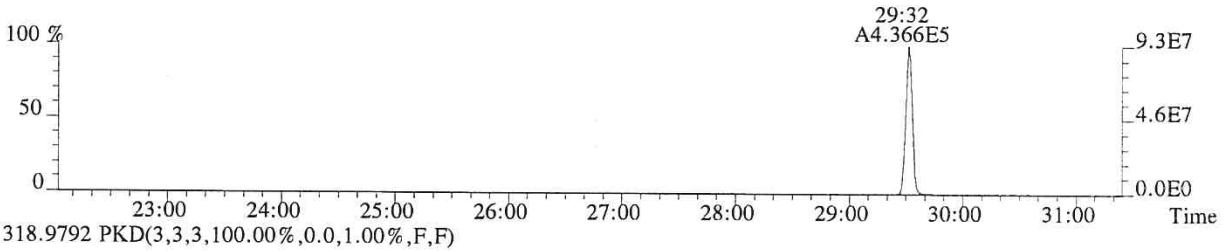
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7000.0,1.00%,F,T)



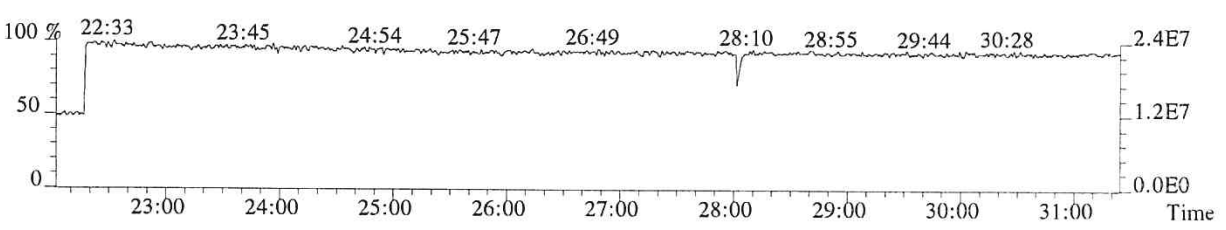
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3080.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1568.0,1.00%,F,T)

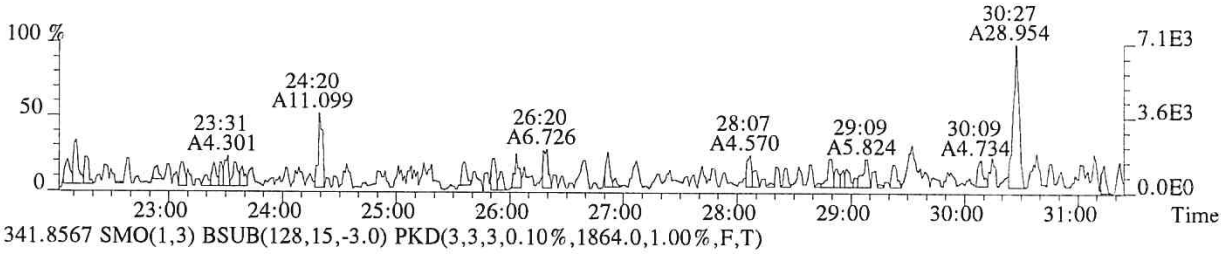


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

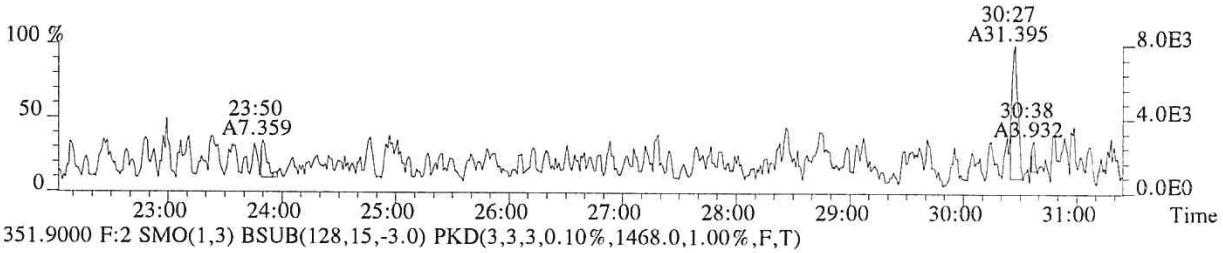


059629

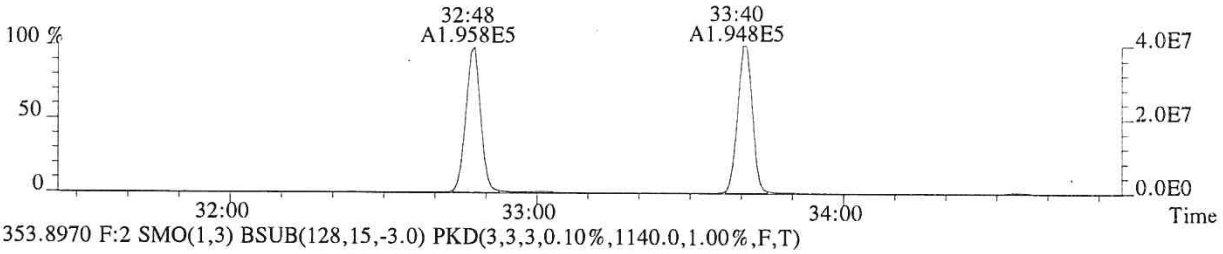
File:P513855 #1-665 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,696.0,1.00%,F,T)



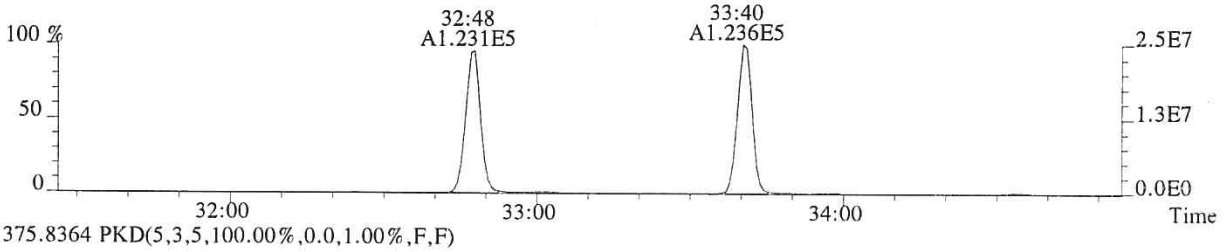
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1864.0,1.00%,F,T)



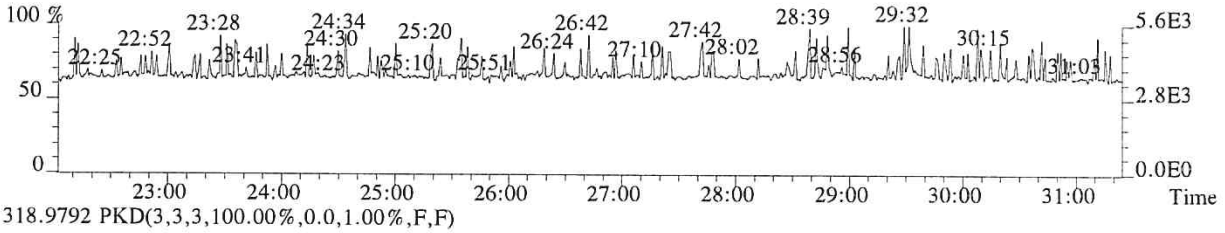
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1468.0,1.00%,F,T)



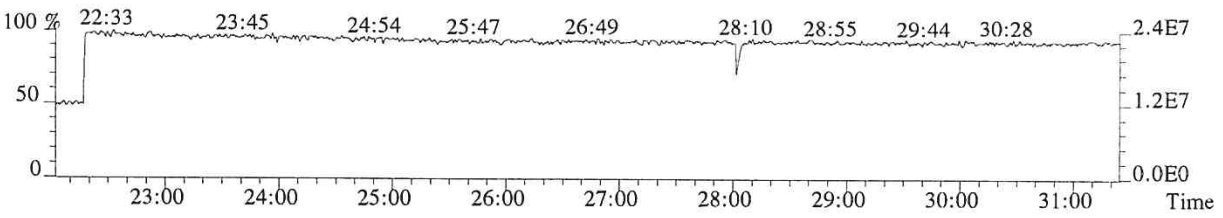
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1140.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

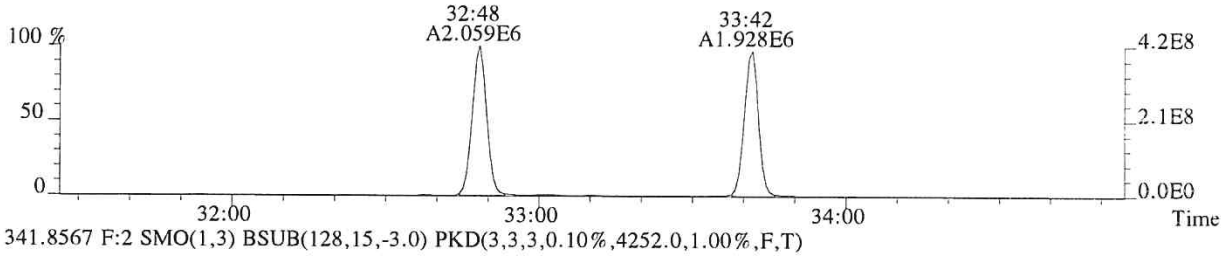


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

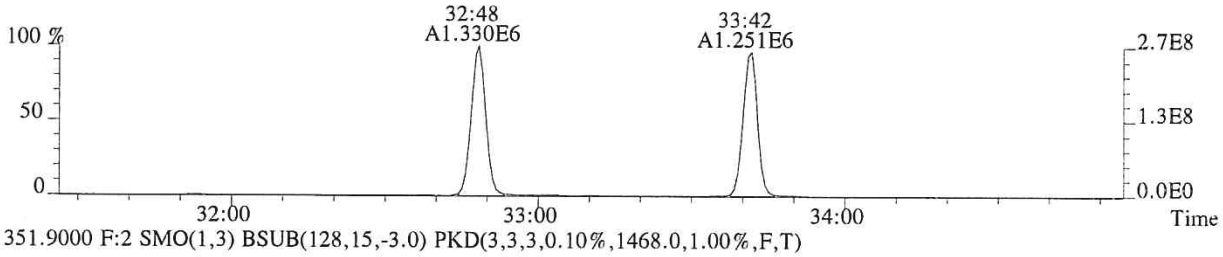


059630

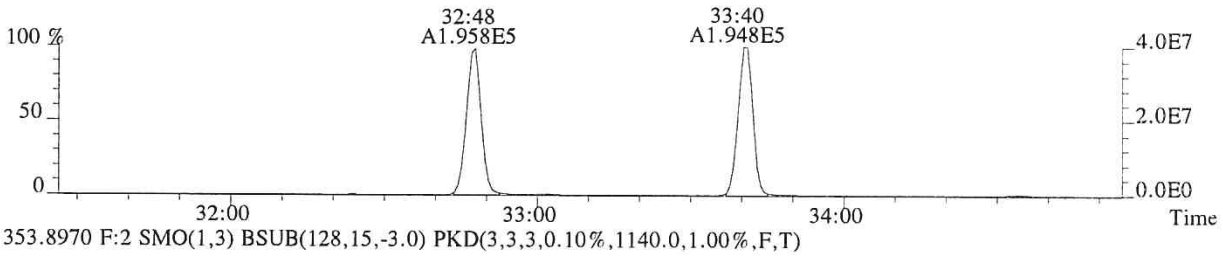
File:P513855 #1-313 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1724.0,1.00%,F,T)



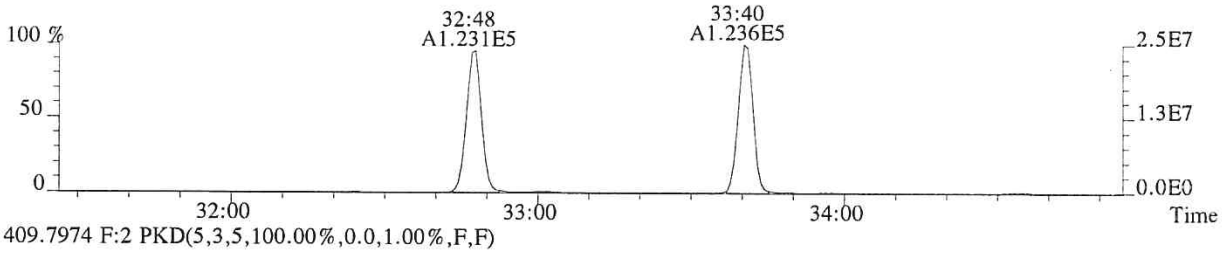
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4252.0,1.00%,F,T)



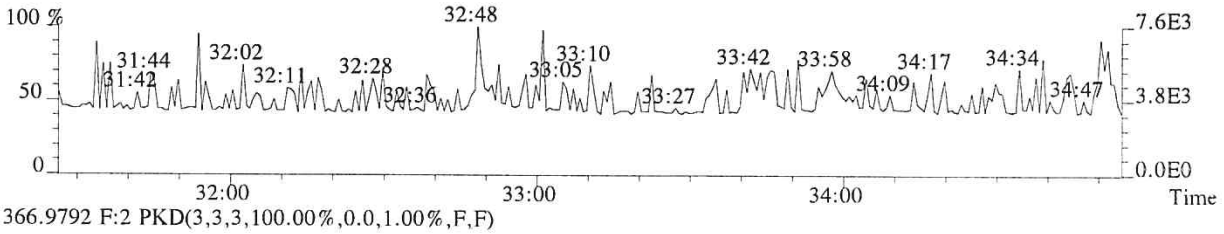
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1468.0,1.00%,F,T)



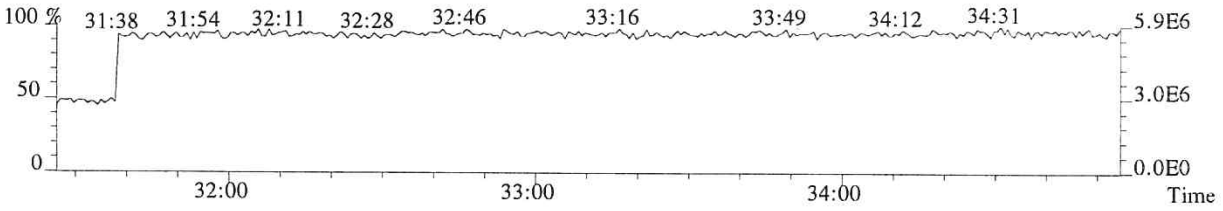
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1140.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

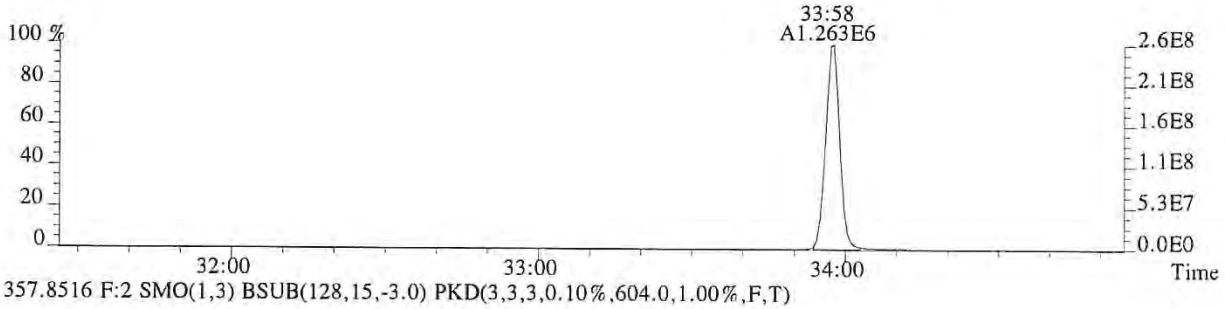


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

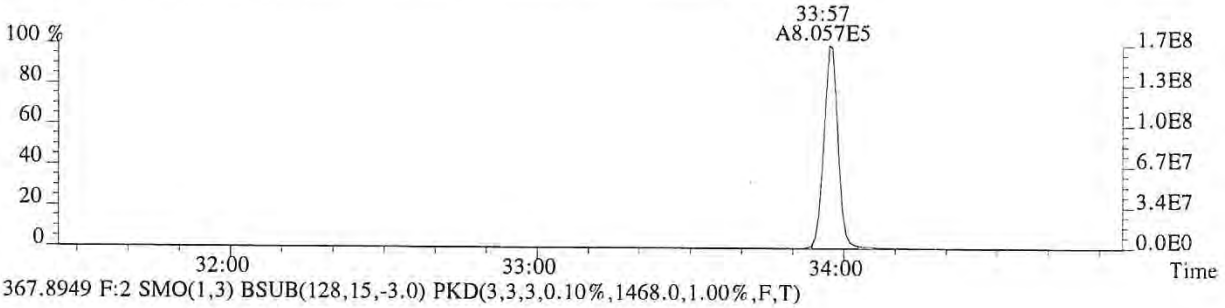


059631

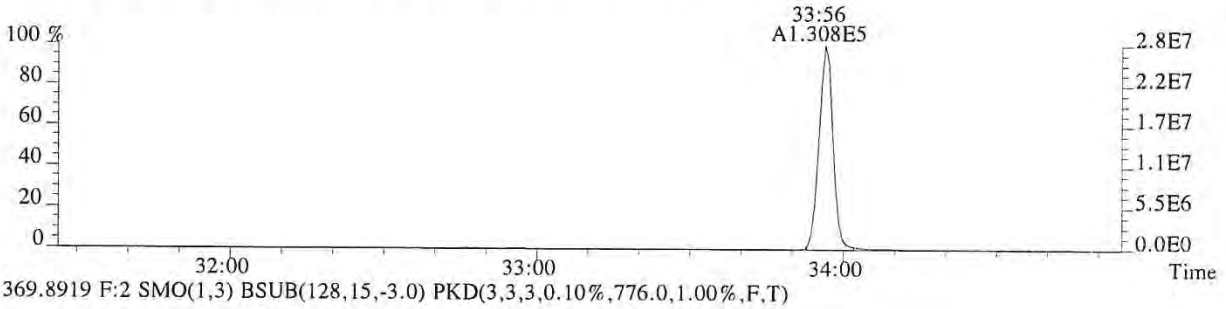
File:P513855 #1-313 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1476.0,1.00%,F,T)



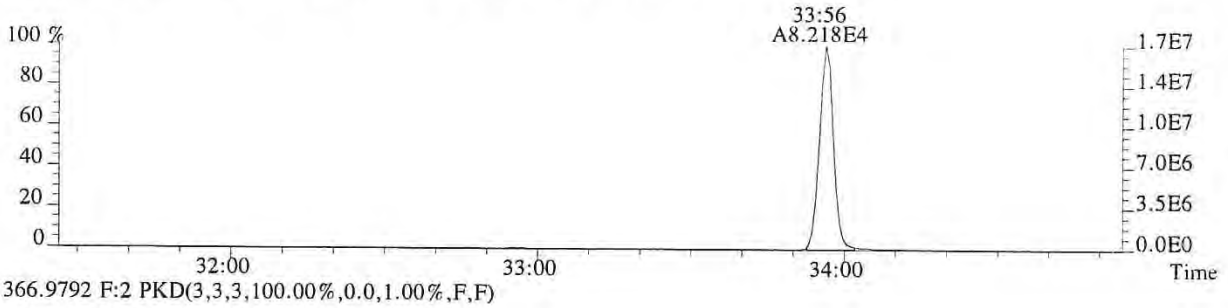
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,T)



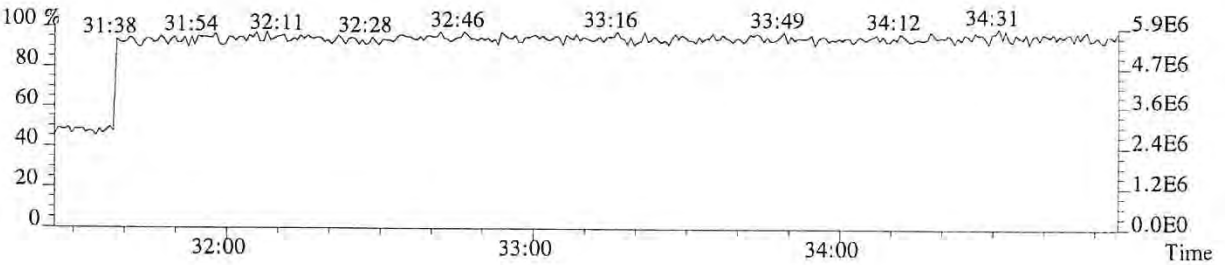
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1468.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,776.0,1.00%,F,T)

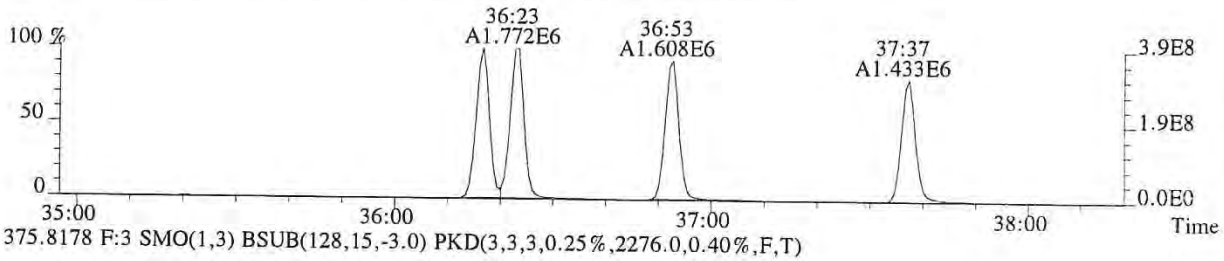


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

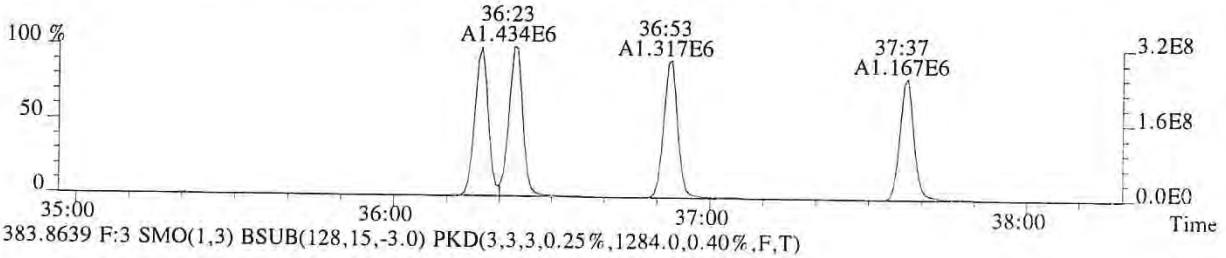


059632

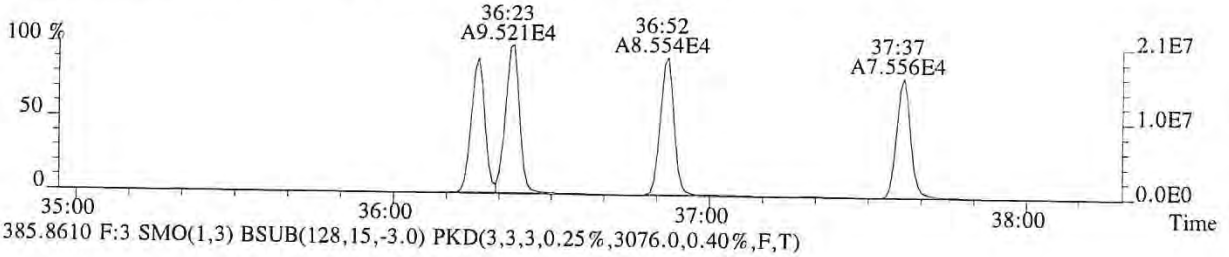
File:P513855 #1-303 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:185657
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3180.0,0.40%,F,T)



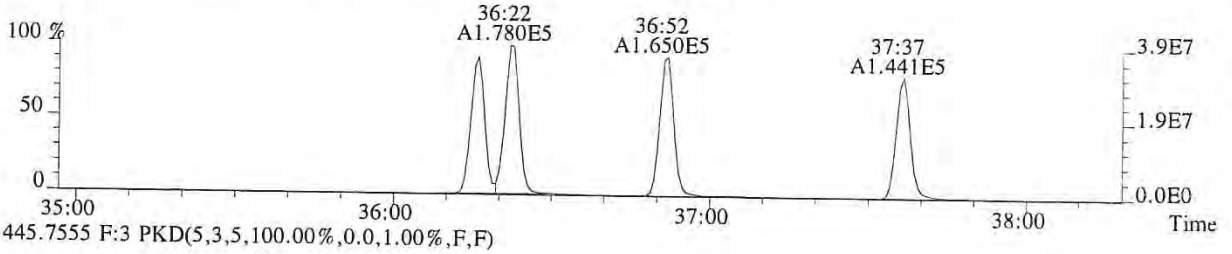
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2276.0,0.40%,F,T)



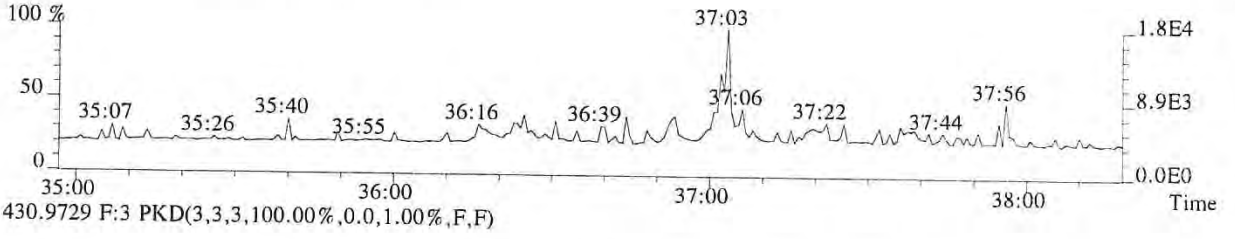
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1284.0,0.40%,F,T)



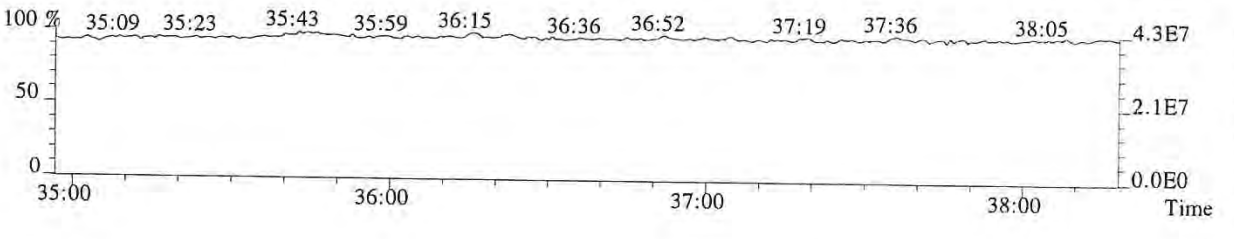
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3076.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

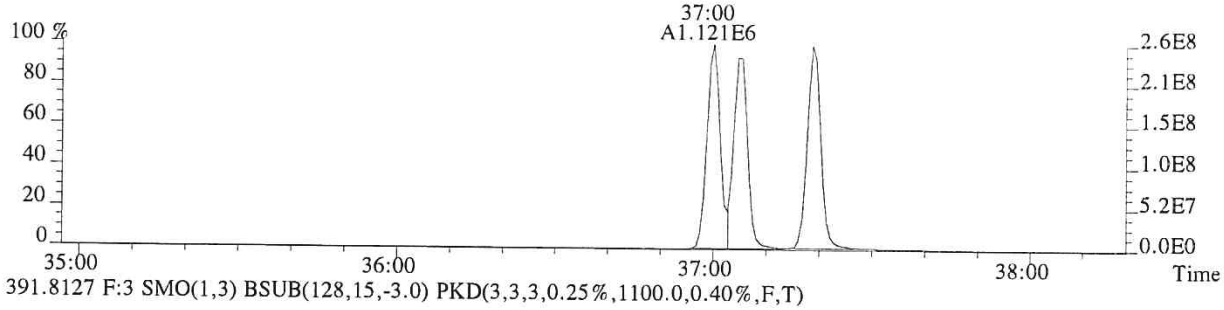


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

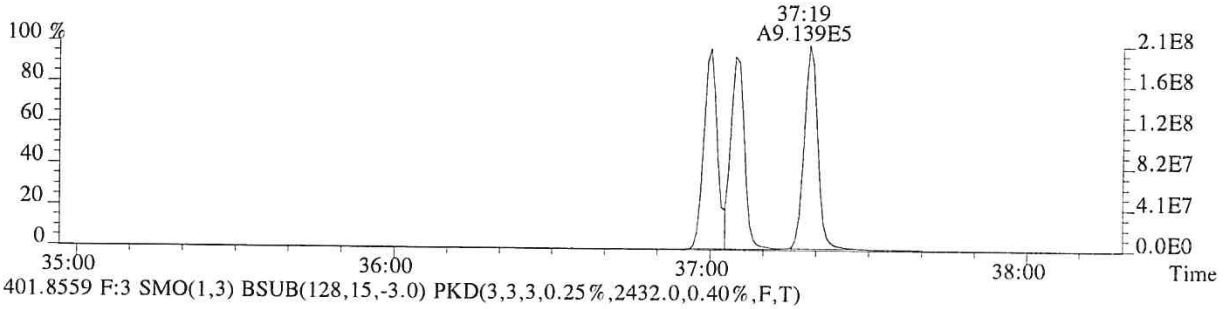


059633

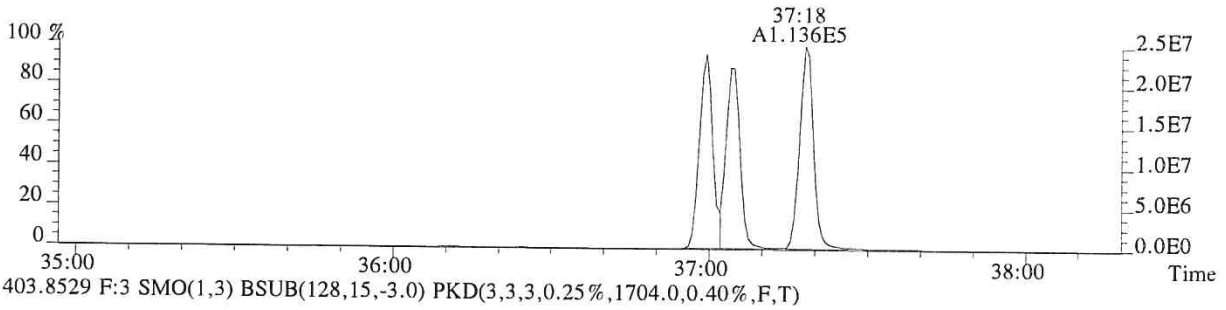
File:P513855 #1-303 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1760.0,0.40%,F,T)



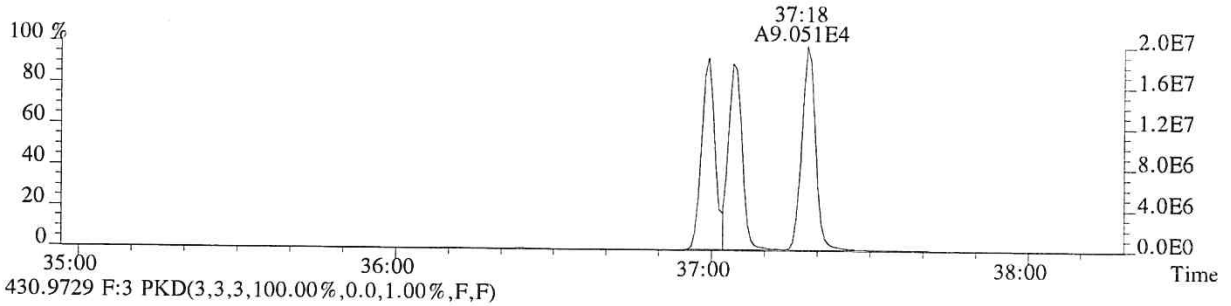
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1100.0,0.40%,F,T)



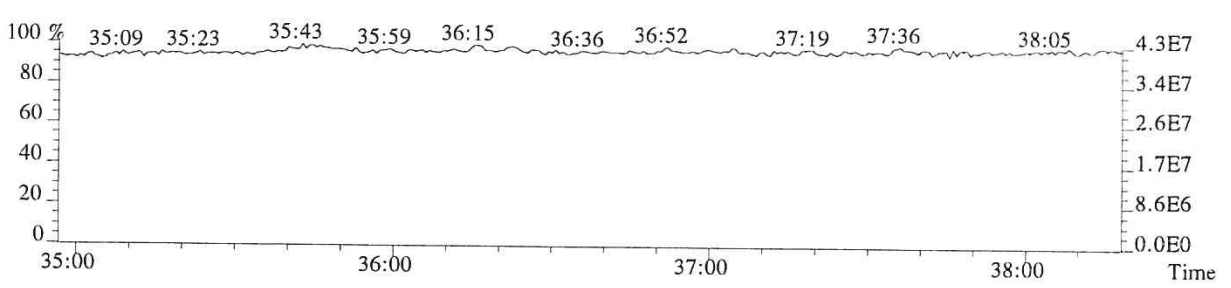
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2432.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1704.0,0.40%,F,T)

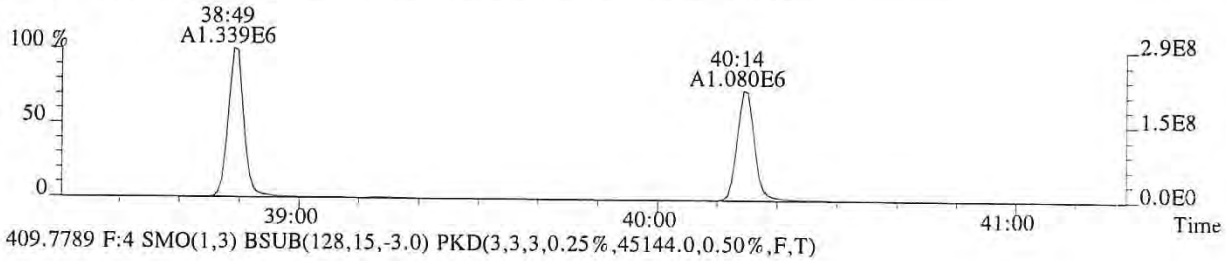


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

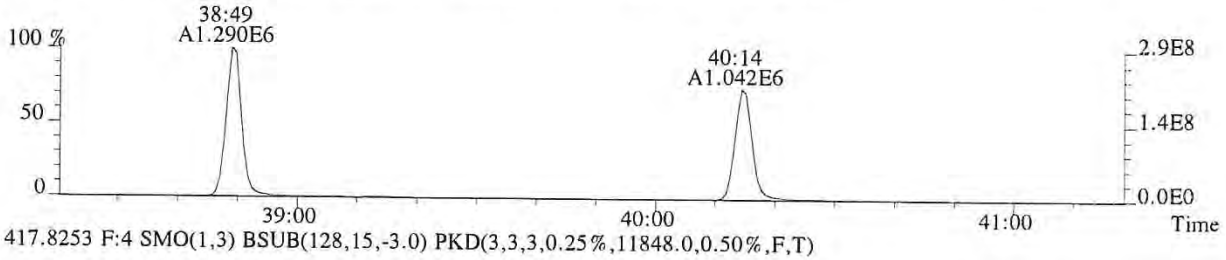


059634

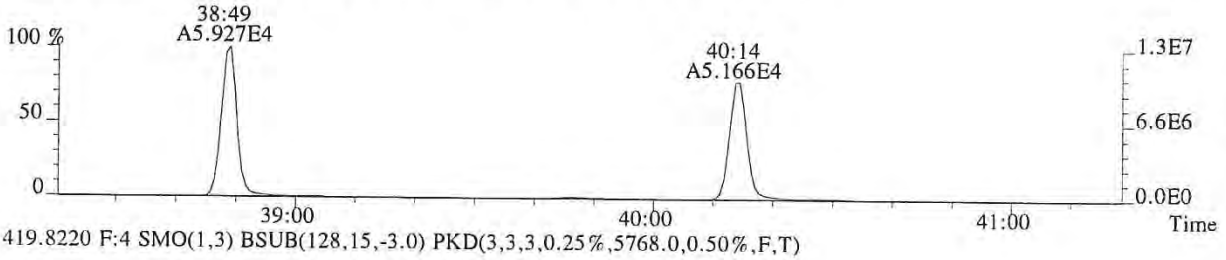
File:P513855 #1-268 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:185657
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,48736.0,0.50%,F,T)



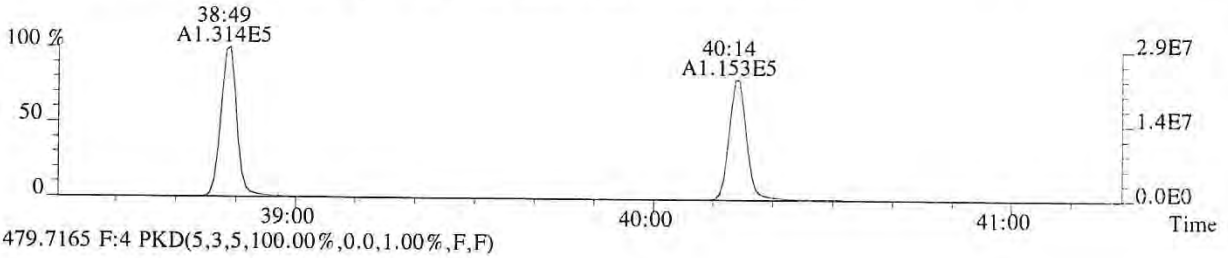
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,45144.0,0.50%,F,T)



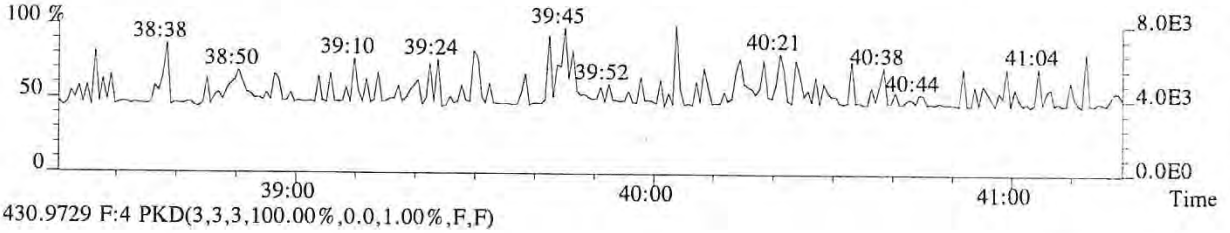
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11848.0,0.50%,F,T)



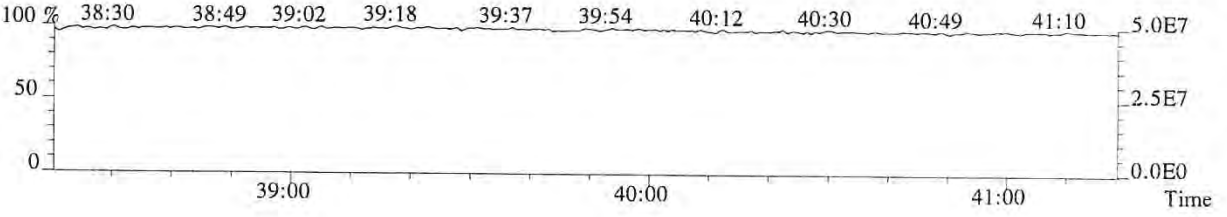
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5768.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

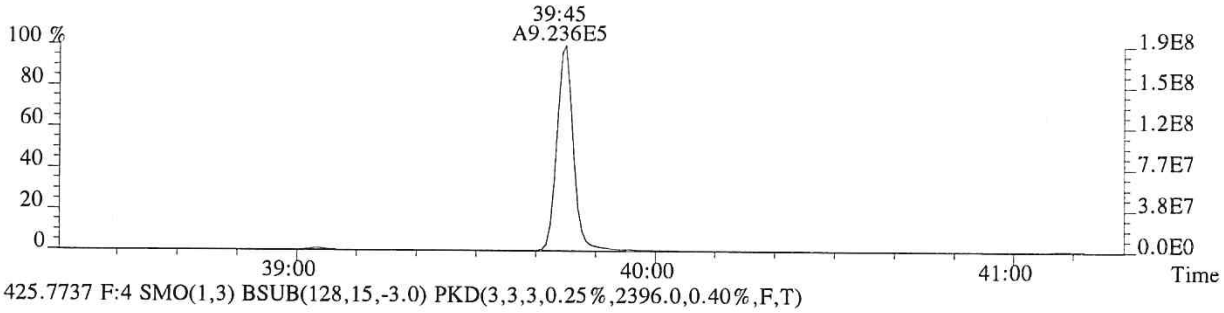


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

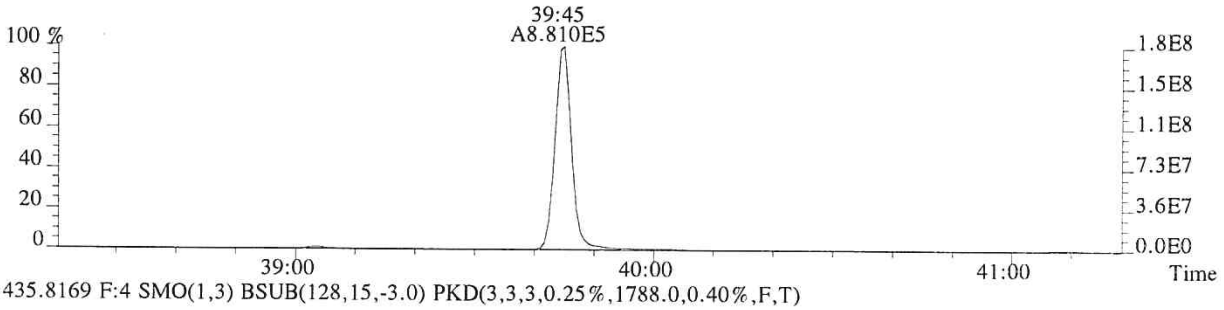


059635

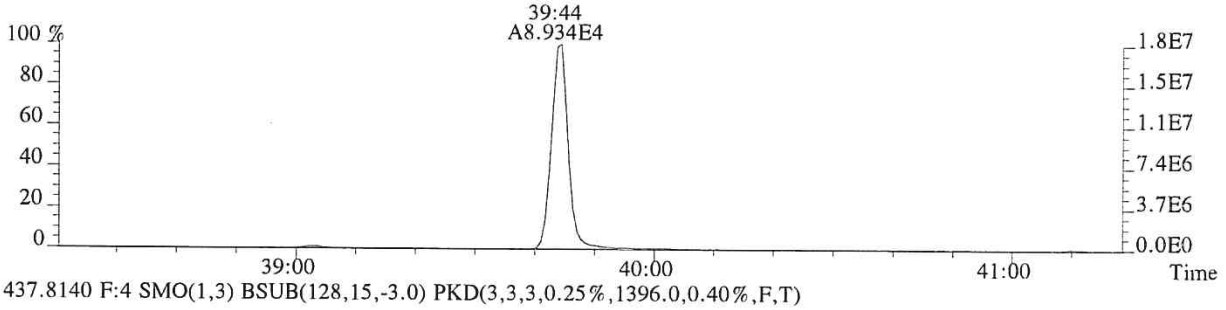
File:P513855 #1-268 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4156.0,0.40%,F,T)



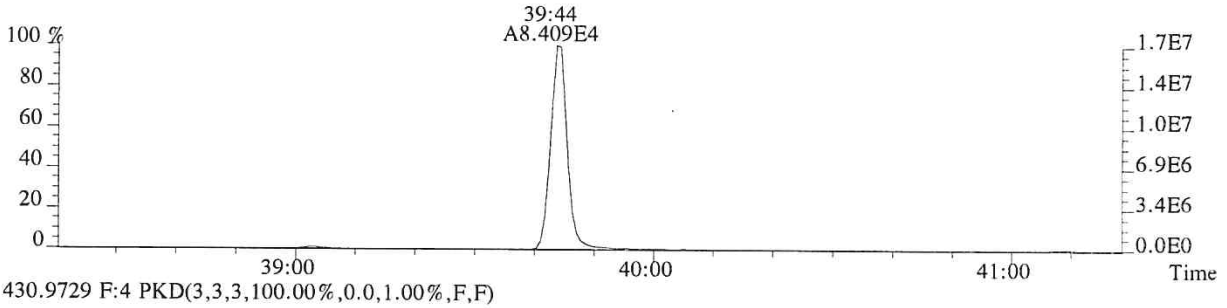
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2396.0,0.40%,F,T)



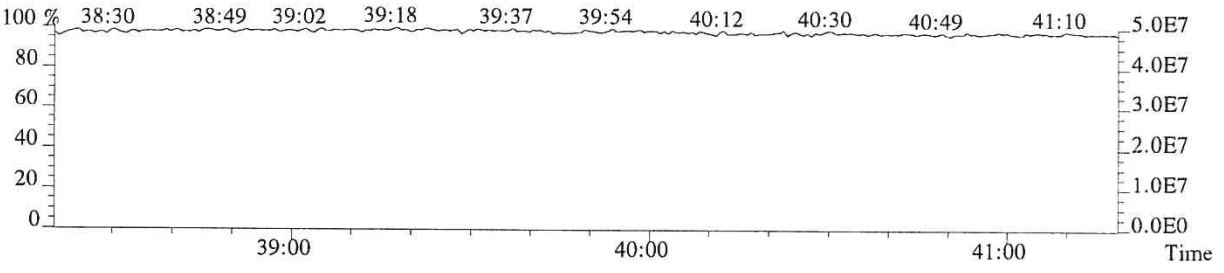
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1788.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1396.0,0.40%,F,T)

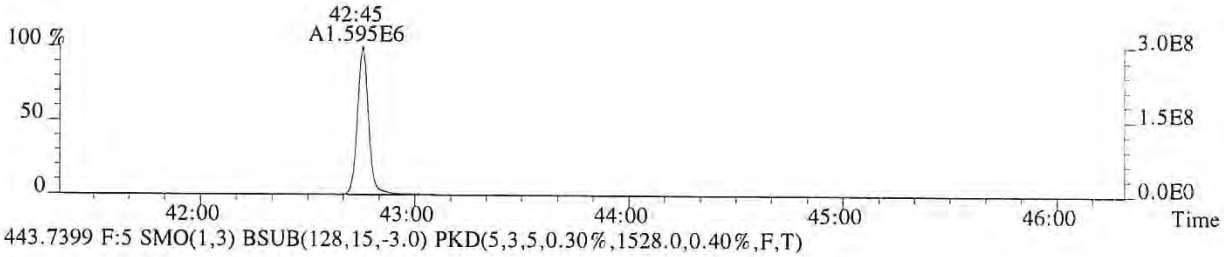


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

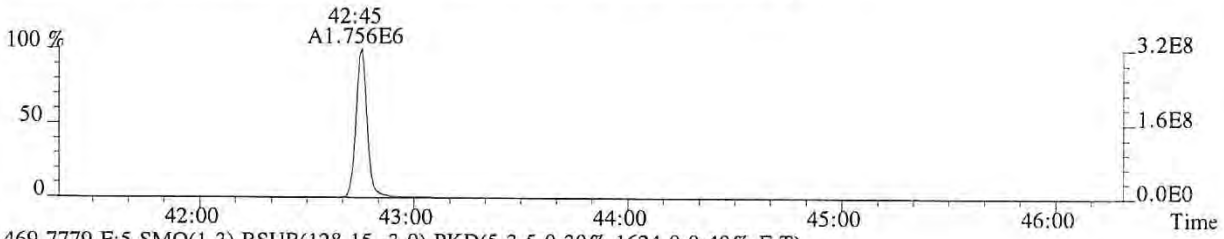


059636

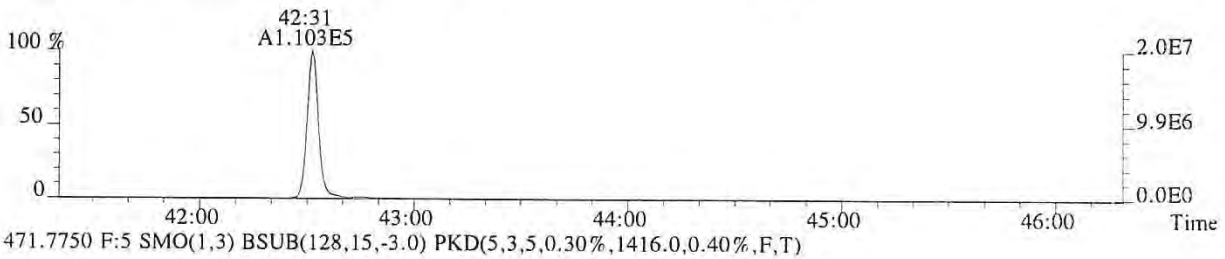
File:P513855 #1-448 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,668.0,0.40%,F,T)



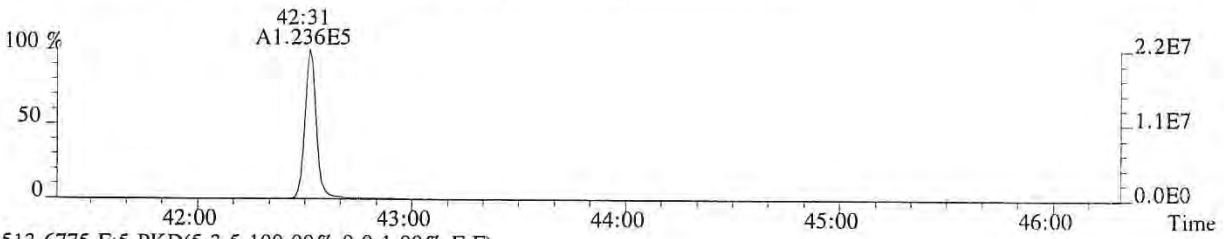
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1528.0,0.40%,F,T)



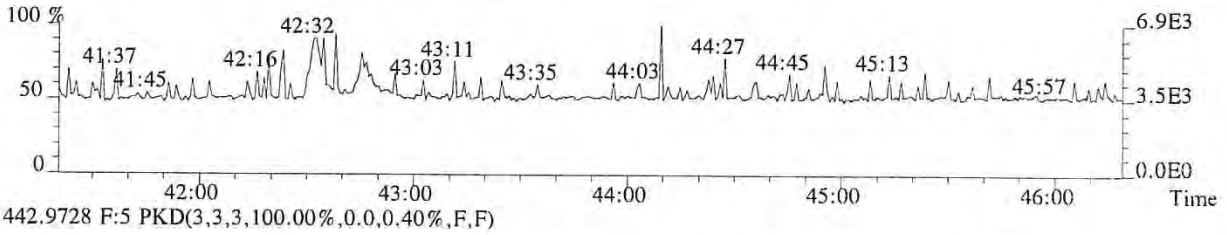
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1624.0,0.40%,F,T)



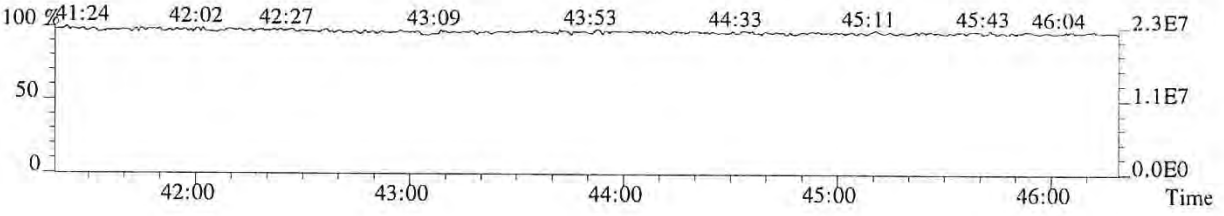
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1416.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

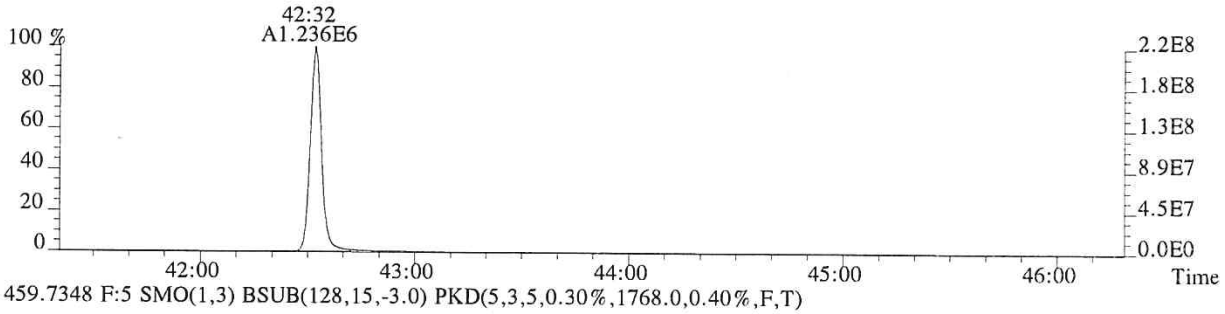


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

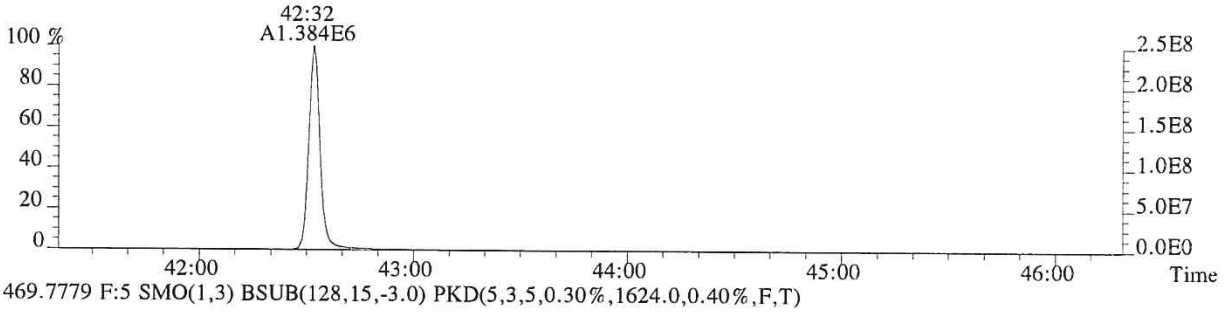


059637

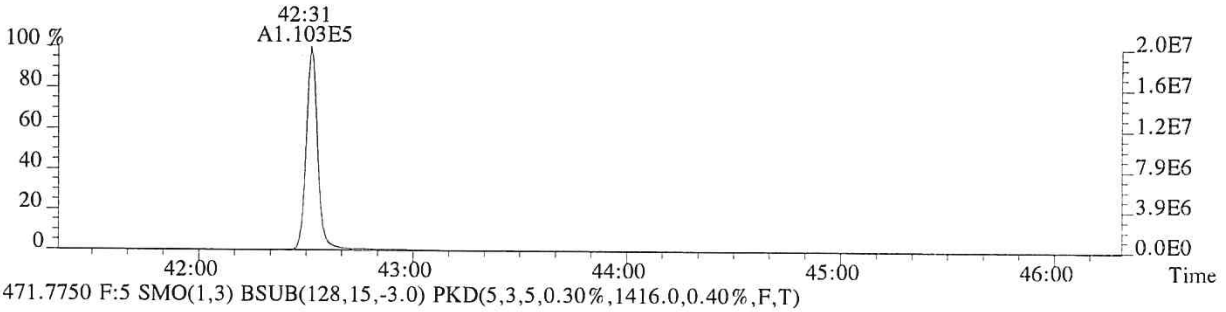
File:P513855 #1-448 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,192.0,0.40%,F,T)



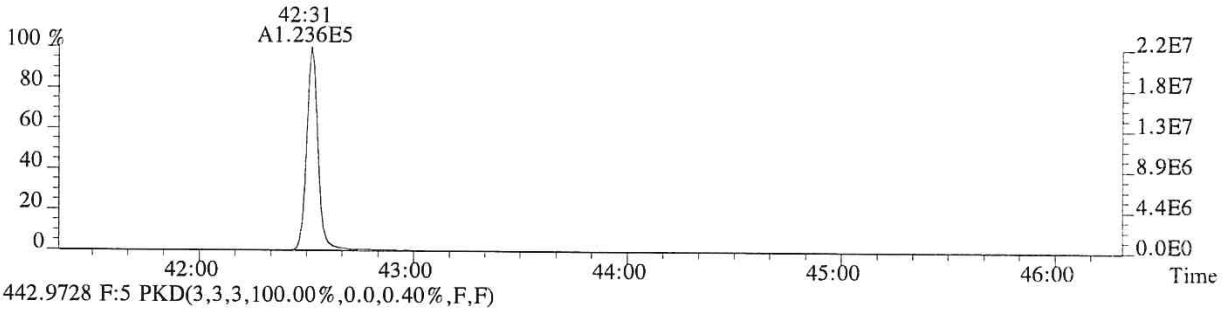
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1768.0,0.40%,F,T)



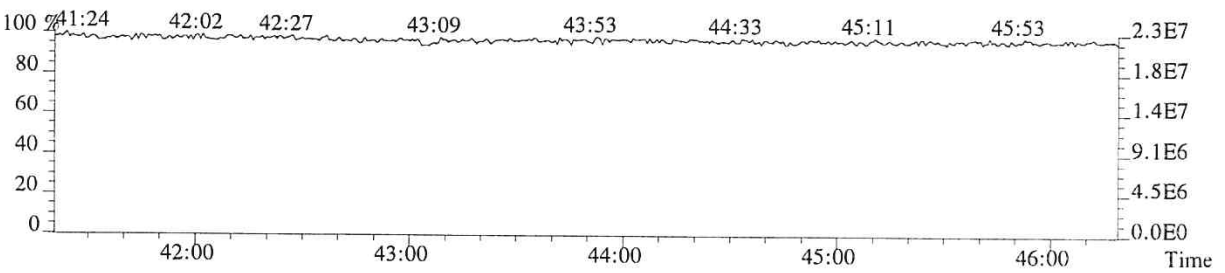
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1624.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1416.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059638

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P513857 Analysis Date: 24-JAN-18 Time: 19:21:06

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.76	0.65-0.89	9.9	7.8 - 12.9	-0.8
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	50	39 - 65	0.9
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	50	39 - 64	0.2
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	50	39 - 64	0.8
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	50	41 - 61	-0.7
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	51	43 - 58	1.6
OCDD	M+2/M+4	0.89	0.76-1.02	101	79 - 126	1.5
2,3,7,8-TCDF	M/M+2	0.71	0.65-0.89	10.2	8.4 - 12.0	2.1
1,2,3,7,8-PeCDF	M+2/M+4	1.51	1.32-1.78	51	41 - 60	2.7
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.32-1.78	50	41 - 61	0.8
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	52	45 - 56	4.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	50	44 - 57	-0.1
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05-1.43	51	45 - 56	2.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	50	44 - 57	0.8
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.00	0.88-1.20	50	45 - 55	0.3
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.00	0.88-1.20	50	43 - 58	0.1
OCDF	M+2/M+4	0.89	0.76-1.02	100	63 - 159	0.0

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P513857 Analysis Date: 24-JAN-18 Time: 19:21:06

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	98	82 - 121	-1.7
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32-1.78	92	62 - 160	-8.5
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	101	85 - 117	1.4
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	103	85 - 118	2.7
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	113	72 - 138	13.3
13C-OCDD	M+2/M+4	0.89	0.76-1.02	253	96 - 415	26.3
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	94	71 - 140	-6.2
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	94	76 - 130	-6.3
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	94	77 - 130	-6.4
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	97	76 - 131	-2.6
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	102	70 - 143	1.7
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	104	74 - 135	3.6
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	105	73 - 137	4.9
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	112	78 - 129	11.6
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	116	77 - 129	16.1
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				10.1	7.8 - 12.7	0.9

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
75080

Run #7 Filename P513857 Samp: 1 Inj: 1 Acquired: 24-JAN-18 19:21:06
Processed: 25-JAN-18 08:41:26 Sample ID: 2ND SOURCE

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:48	5.152e+03	7.223e+03	0.71	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	3.916e+04	2.586e+04	1.51	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:41	3.607e+04	2.366e+04	1.52	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:16	3.202e+04	2.632e+04	1.22	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:23	3.416e+04	2.839e+04	1.20	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:52	3.150e+04	2.633e+04	1.20	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	2.836e+04	2.314e+04	1.23	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:49	2.874e+04	2.862e+04	1.00	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	2.352e+04	2.346e+04	1.00	yes	no	1.258
10	Unk	OCDF	42:45	3.688e+04	4.148e+04	0.89	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:32	3.845e+03	5.032e+03	0.76	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:57	2.377e+04	1.531e+04	1.55	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:59	2.145e+04	1.680e+04	1.28	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:05	2.240e+04	1.756e+04	1.28	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:19	2.219e+04	1.741e+04	1.27	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:44	2.034e+04	1.933e+04	1.05	yes	no	1.025
17	Unk	OCDD	42:31	3.083e+04	3.462e+04	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:46	5.681e+04	7.189e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:47	7.678e+04	4.833e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	7.550e+04	4.814e+04	1.57	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:15	3.216e+04	6.216e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:22	3.808e+04	7.348e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:51	3.589e+04	6.747e+04	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:36	3.054e+04	5.771e+04	0.53	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:48	2.616e+04	5.845e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	2.287e+04	5.181e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:30	3.654e+04	4.587e+04	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	4.972e+04	3.125e+04	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	4.147e+04	3.207e+04	1.29	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:04	4.264e+04	3.379e+04	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:44	3.921e+04	3.703e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	42:31	5.445e+04	6.090e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:57	4.052e+04	5.019e+04	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:18	4.325e+04	3.518e+04	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:32	9.276e+03				no	1.014

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
75080

Run #7 Filename P513857 Samp: 1 Inj: 1 Acquired: 24-JAN-18 19:21:06
Processed: 25-JAN-18 08:41:26 LAB. ID: 2ND SOURCE

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.04e+06	1.03e+03	1.0e+03	1.42e+06	2.00e+03	7.1e+02
2	1,2,3,7,8-PeCDF	7.88e+06	8.44e+02	9.3e+03	5.19e+06	1.52e+03	3.4e+03
3	2,3,4,7,8-PeCDF	7.53e+06	8.44e+02	8.9e+03	4.93e+06	1.52e+03	3.2e+03
4	1,2,3,4,7,8-HxCDF	7.21e+06	1.53e+03	4.7e+03	5.89e+06	1.36e+03	4.3e+03
5	1,2,3,6,7,8-HxCDF	7.34e+06	1.53e+03	4.8e+03	6.08e+06	1.36e+03	4.5e+03
6	2,3,4,6,7,8-HxCDF	7.02e+06	1.53e+03	4.6e+03	5.88e+06	1.36e+03	4.3e+03
7	1,2,3,7,8,9-HxCDF	6.10e+06	1.53e+03	4.0e+03	4.95e+06	1.36e+03	3.6e+03
8	1,2,3,4,6,7,8-HpCDF	6.16e+06	5.00e+03	1.2e+03	6.13e+06	6.59e+03	9.3e+02
9	1,2,3,4,7,8,9-HpCDF	4.58e+06	5.00e+03	9.1e+02	4.45e+06	6.59e+03	6.7e+02
10	OCDF	6.54e+06	1.44e+02	4.5e+04	7.12e+06	8.36e+02	8.5e+03
11	2,3,7,8-TCDD	8.13e+05	1.92e+03	4.2e+02	1.05e+06	1.26e+03	8.3e+02
12	1,2,3,7,8-PeCDD	4.95e+06	8.52e+02	5.8e+03	3.18e+06	2.84e+02	1.1e+04
13	1,2,3,4,7,8-HxCDD	4.98e+06	7.64e+02	6.5e+03	3.93e+06	4.12e+02	9.5e+03
14	1,2,3,6,7,8-HxCDD	4.78e+06	7.64e+02	6.3e+03	3.77e+06	4.12e+02	9.2e+03
15	1,2,3,7,8,9-HxCDD	4.67e+06	7.64e+02	6.1e+03	3.64e+06	4.12e+02	8.8e+03
16	1,2,3,4,6,7,8-HpCDD	4.20e+06	1.17e+03	3.6e+03	3.99e+06	7.20e+01	5.5e+04
17	OCDD	5.25e+06	1.60e+02	3.3e+04	5.90e+06	1.22e+03	4.8e+03
18	13C-2,3,7,8-TCDF	1.11e+07	9.00e+03	1.2e+03	1.40e+07	3.76e+03	3.7e+03
19	13C-1,2,3,7,8-PeCDF	1.52e+07	6.36e+02	2.4e+04	9.62e+06	1.34e+03	7.2e+03
20	13C-2,3,4,7,8-PeCDF	1.56e+07	6.36e+02	2.5e+04	9.99e+06	1.34e+03	7.5e+03
21	13C-1,2,3,4,7,8-HxCDF	7.22e+06	7.60e+02	9.5e+03	1.40e+07	1.60e+03	8.8e+03
22	13C-1,2,3,6,7,8-HxCDF	8.16e+06	7.60e+02	1.1e+04	1.57e+07	1.60e+03	9.8e+03
23	13C-2,3,4,6,7,8-HxCDF	7.92e+06	7.60e+02	1.0e+04	1.49e+07	1.60e+03	9.3e+03
24	13C-1,2,3,7,8,9-HxCDF	6.41e+06	7.60e+02	8.4e+03	1.22e+07	1.60e+03	7.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.67e+06	2.84e+03	2.0e+03	1.26e+07	6.70e+03	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.44e+06	2.84e+03	1.6e+03	1.00e+07	6.70e+03	1.5e+03
27	13C-2,3,7,8-TCDD	7.51e+06	5.77e+03	1.3e+03	9.42e+06	2.25e+03	4.2e+03
28	13C-1,2,3,7,8-PeCDD	1.01e+07	1.06e+03	9.5e+03	6.31e+06	5.88e+02	1.1e+04
29	13C-1,2,3,4,7,8-HxCDD	9.57e+06	2.66e+03	3.6e+03	7.40e+06	1.57e+03	4.7e+03
30	13C-1,2,3,6,7,8-HxCDD	9.03e+06	2.66e+03	3.4e+03	7.14e+06	1.57e+03	4.6e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.97e+06	1.17e+03	6.8e+03	7.51e+06	7.00e+02	1.1e+04
32	13C-OCDD	9.30e+06	2.60e+02	3.6e+04	1.03e+07	4.00e+02	2.6e+04
33	13C-1,2,3,4-TCDD	8.25e+06	5.77e+03	1.4e+03	1.02e+07	2.25e+03	4.5e+03
34	13C-1,2,3,7,8,9-HxCDD	9.23e+06	2.66e+03	3.5e+03	7.29e+06	1.57e+03	4.6e+03
35	37Cl-2,3,7,8-TCDD	1.94e+06	1.18e+03	1.6e+03			

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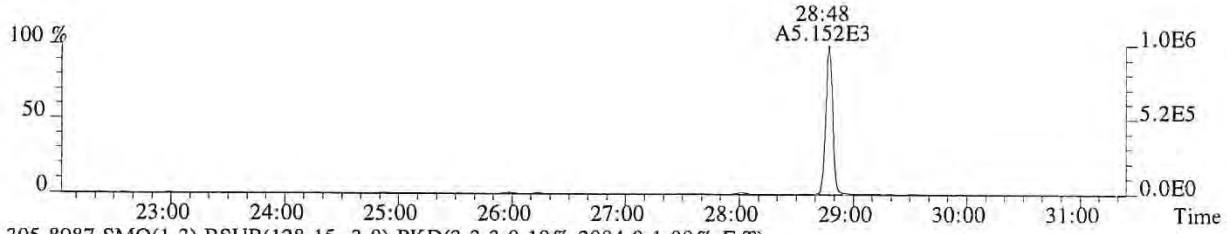
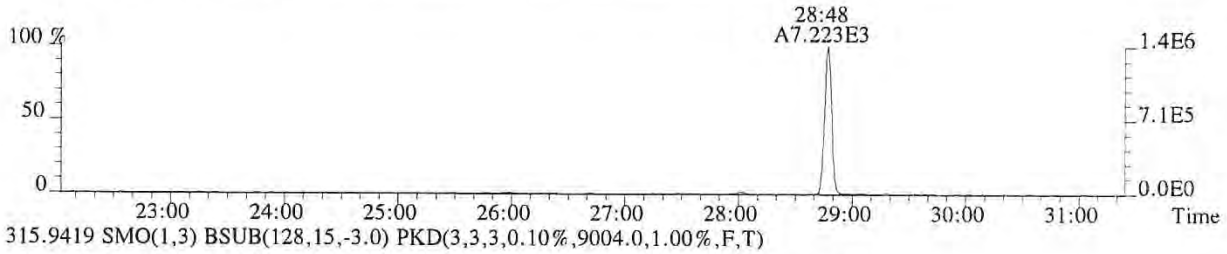
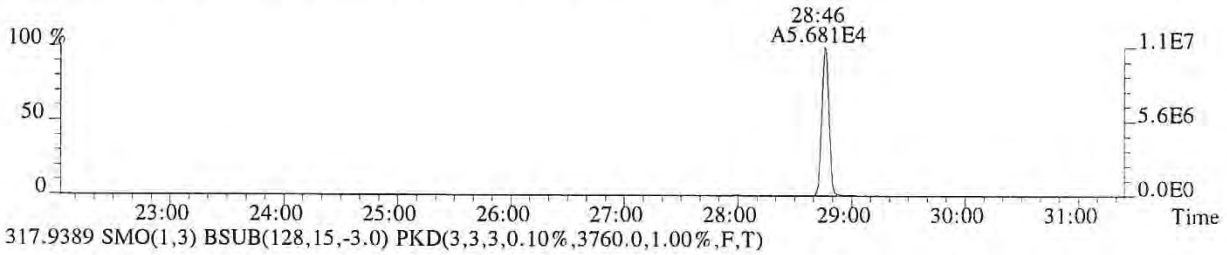
File:P513857 #1-665 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1032.0,1.00%,F,T)



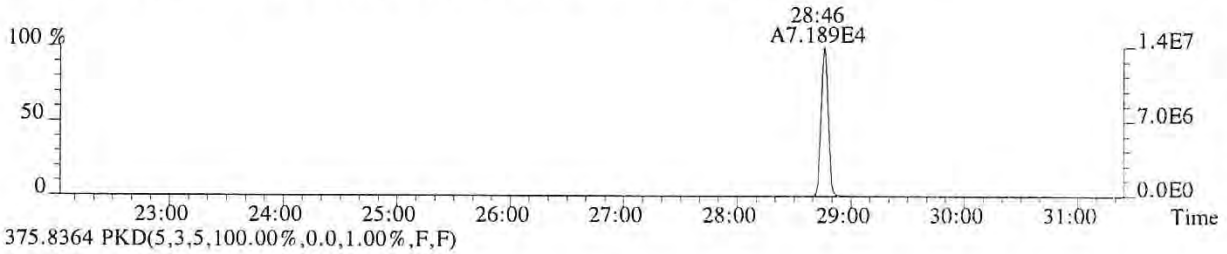
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2004.0,1.00%,F,T)



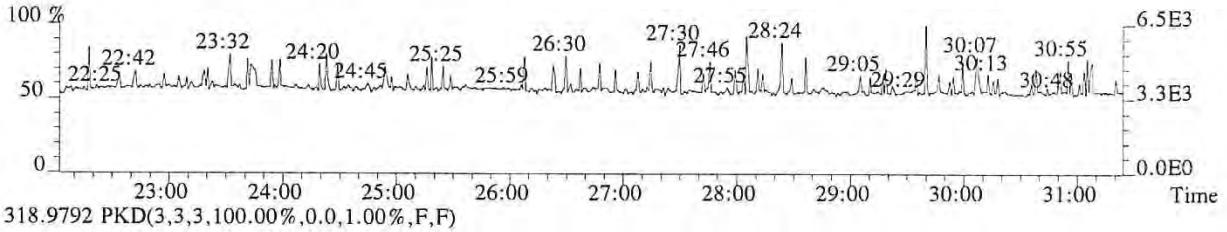
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9004.0,1.00%,F,T)



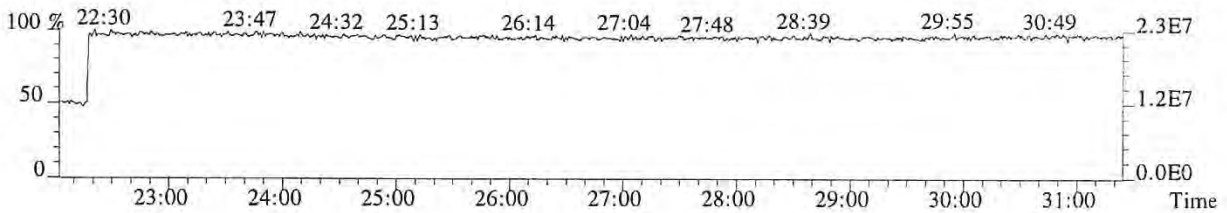
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3760.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

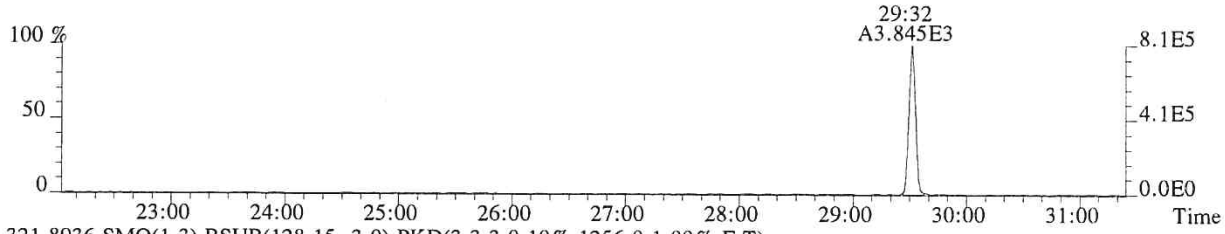


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

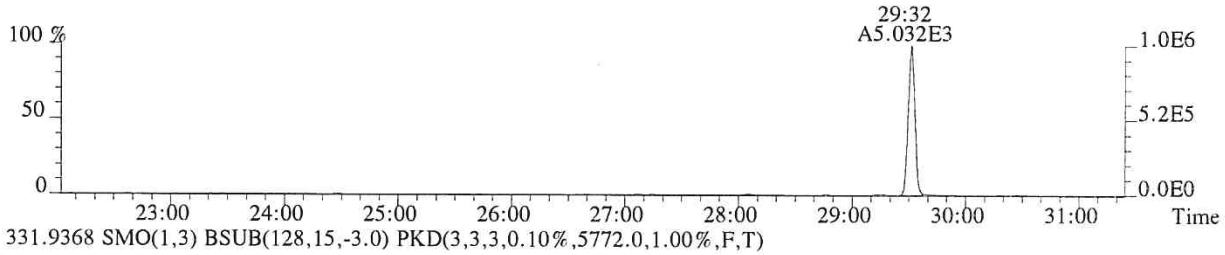


059643

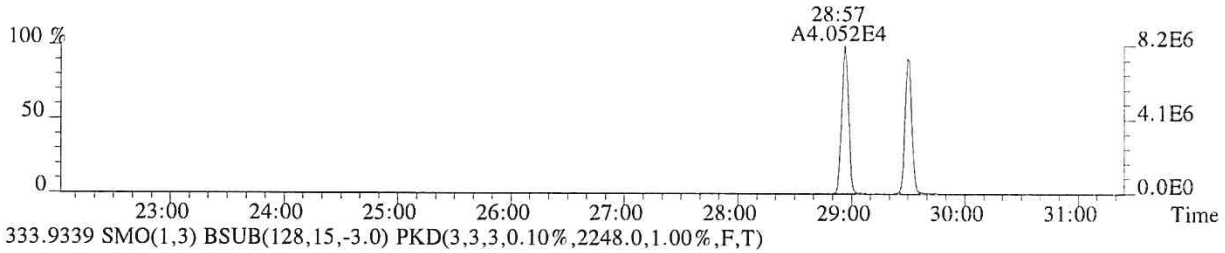
File:P513857 #1-665 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1924.0,1.00%,F,T)



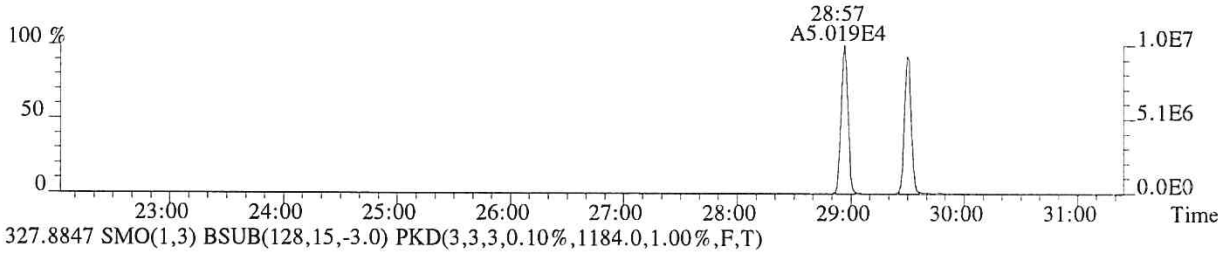
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1256.0,1.00%,F,T)



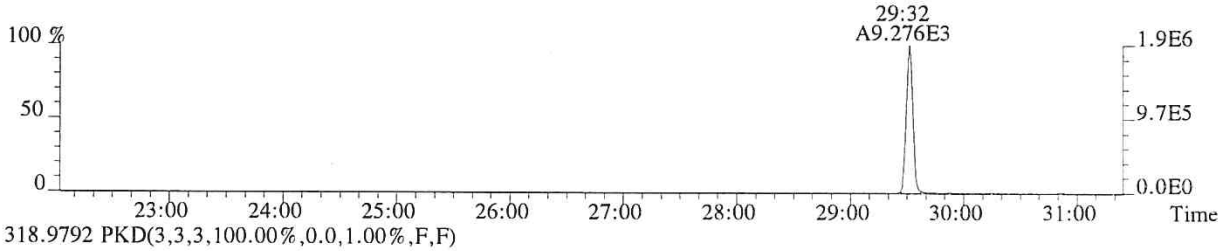
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5772.0,1.00%,F,T)



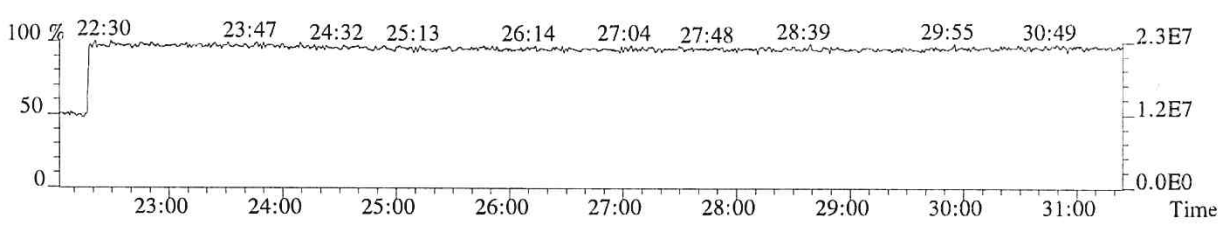
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2248.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1184.0,1.00%,F,T)

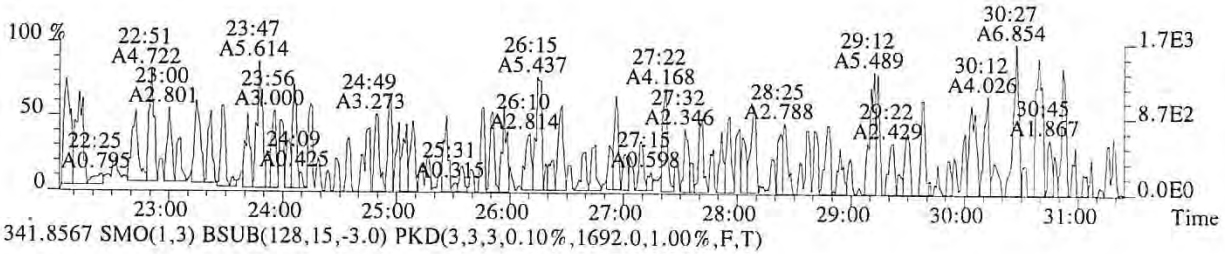


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

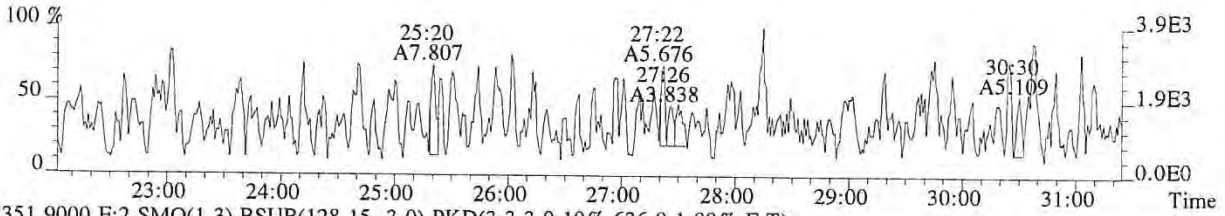


059644

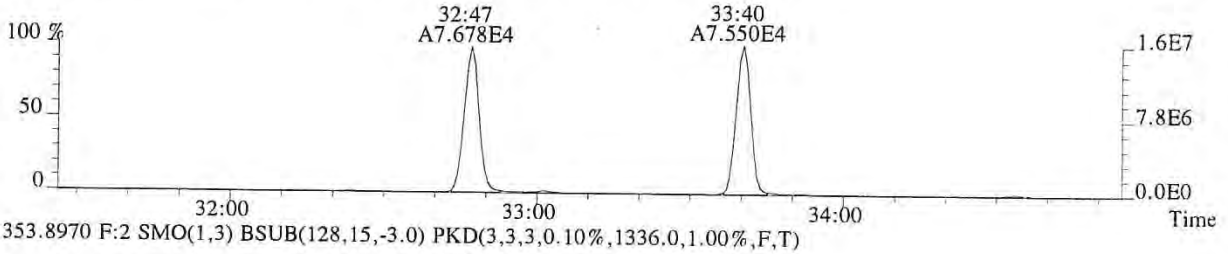
File:P513857 #1-665 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,188.0,1.00%,F,T)



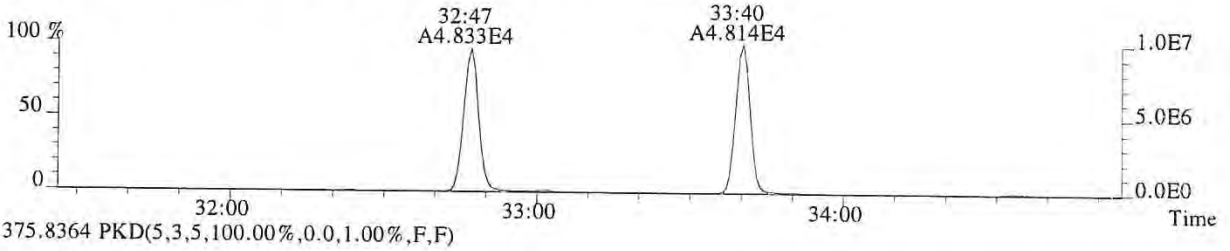
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1692.0,1.00%,F,T)



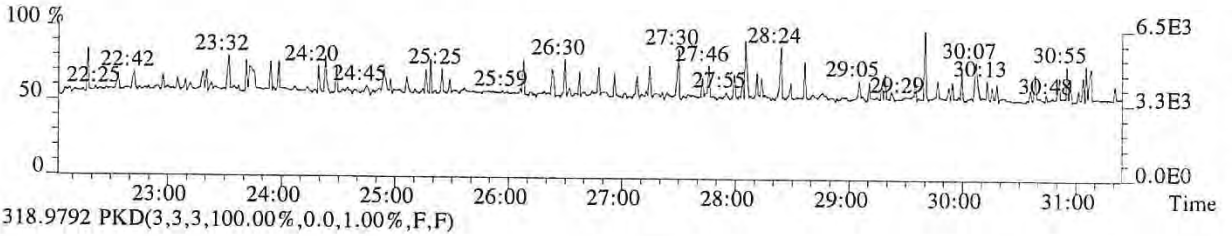
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,636.0,1.00%,F,T)



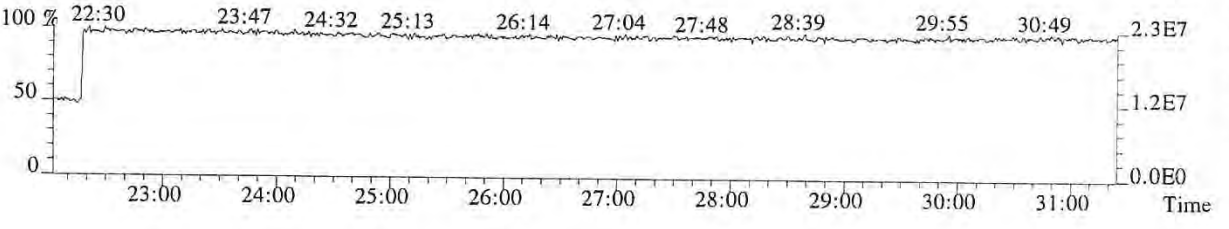
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1336.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

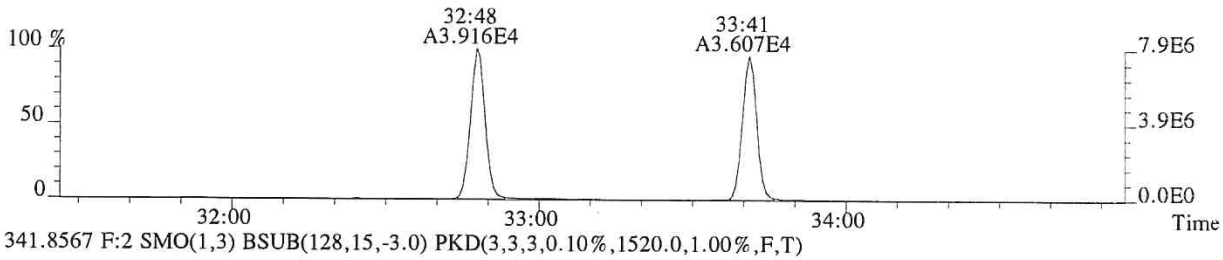


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

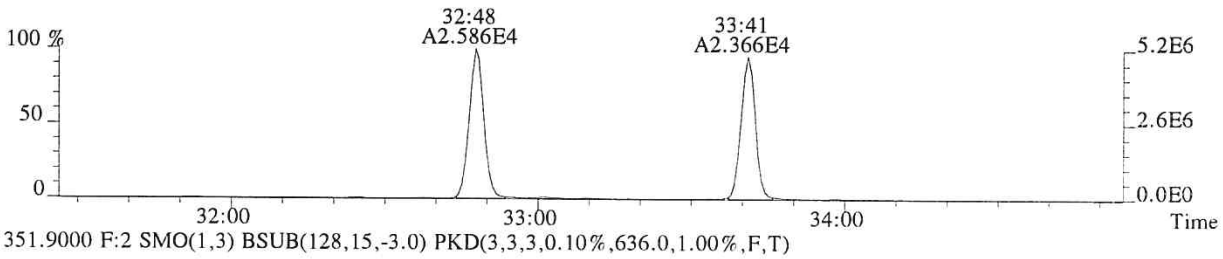


059645

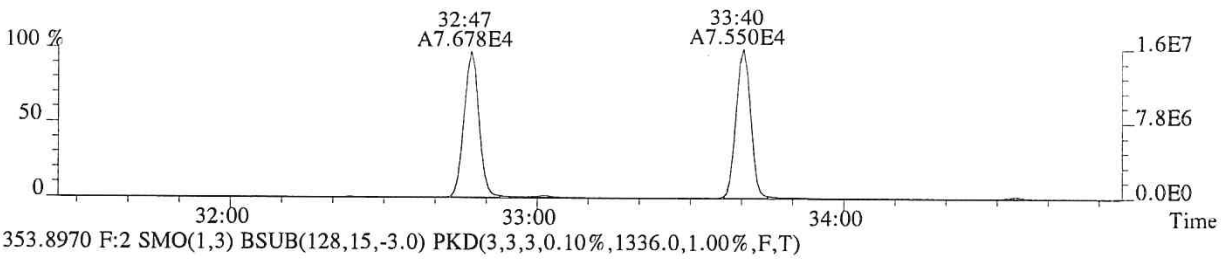
File:P513857 #1-313 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,844.0,1.00%,F,T)



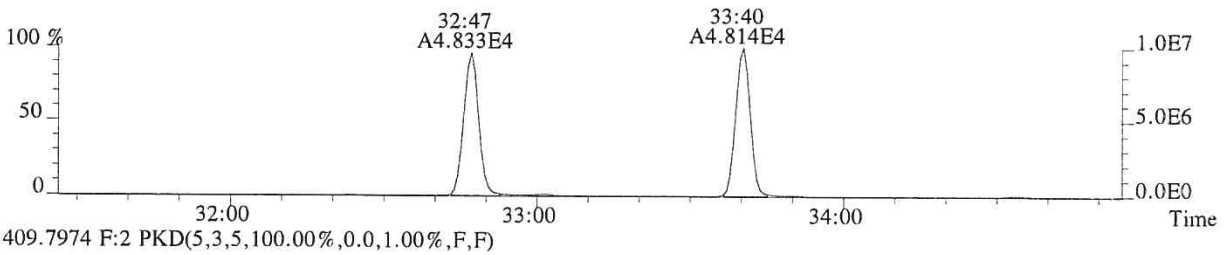
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1520.0,1.00%,F,T)



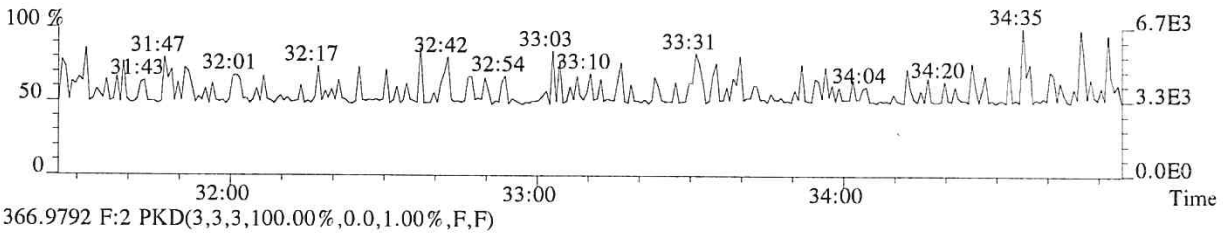
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,636.0,1.00%,F,T)



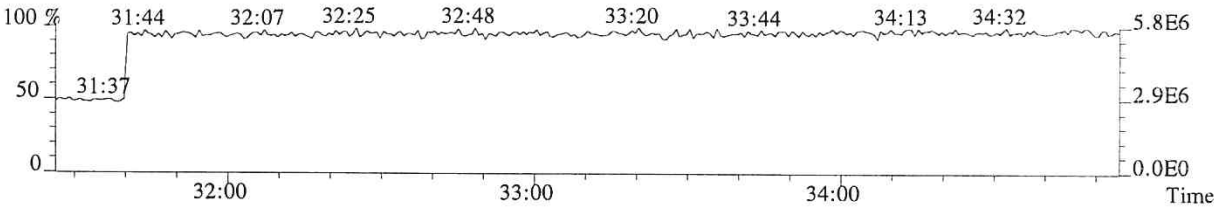
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1336.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

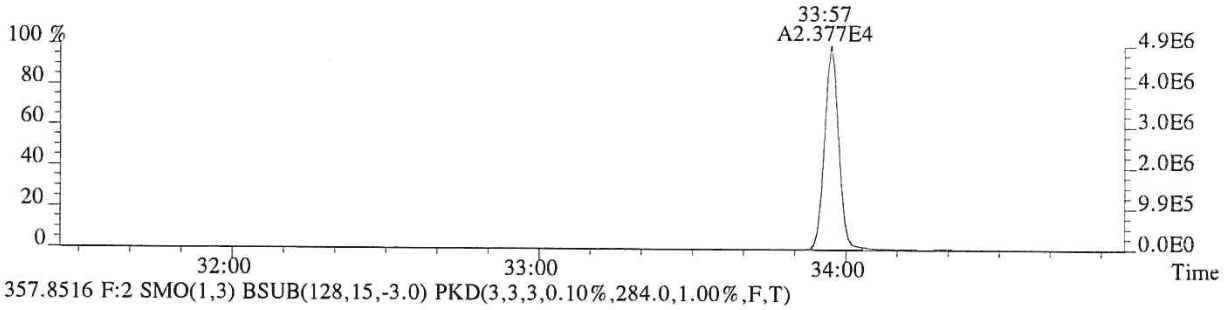


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

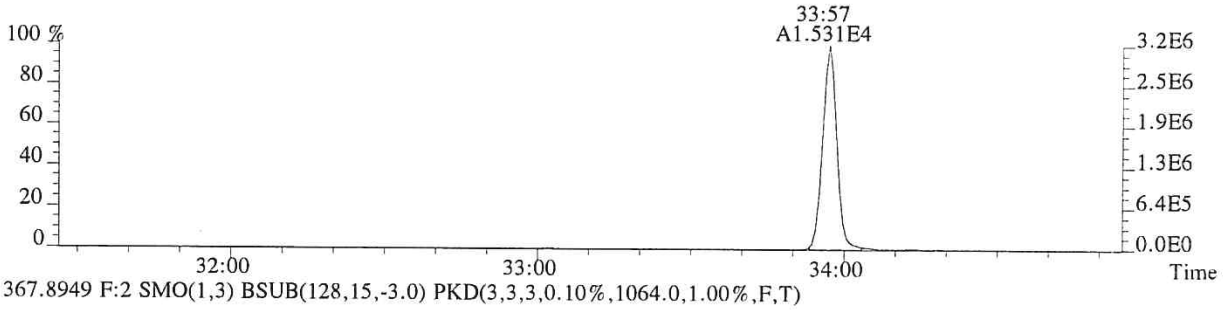


059646

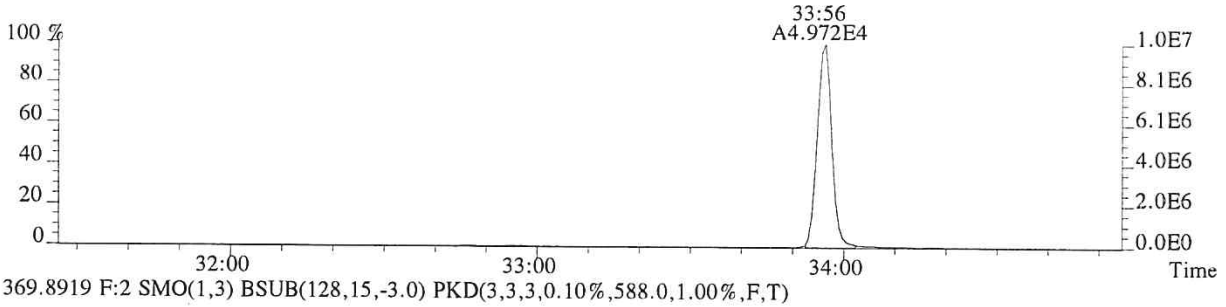
File:P513857 #1-313 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,852.0,1.00%,F,T)



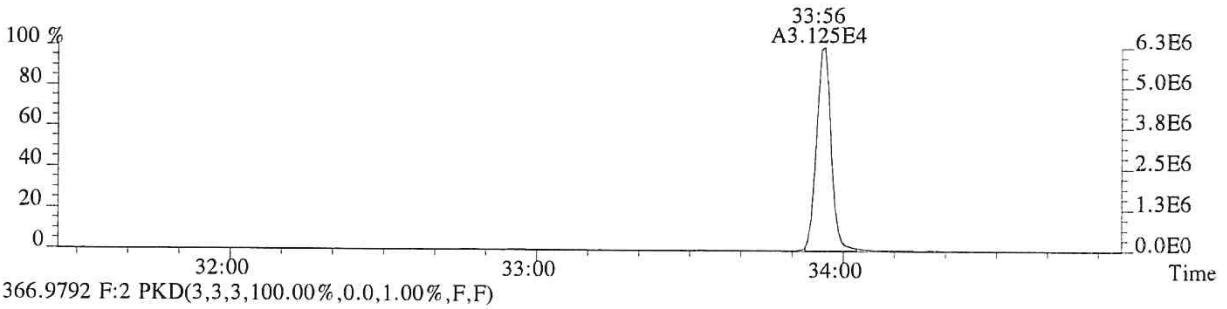
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,284.0,1.00%,F,T)



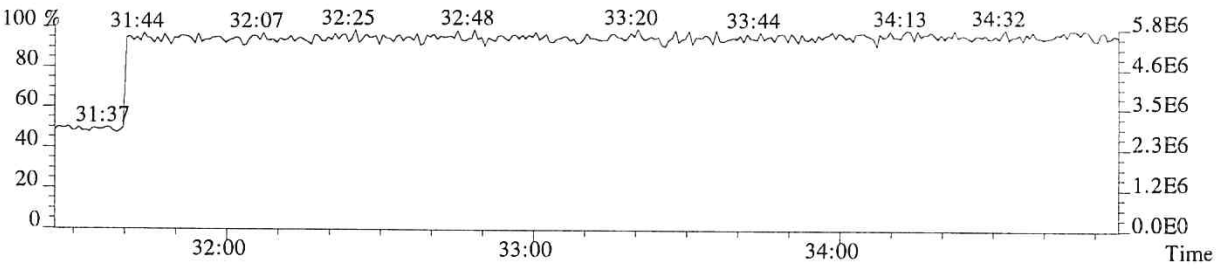
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1064.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,588.0,1.00%,F,T)

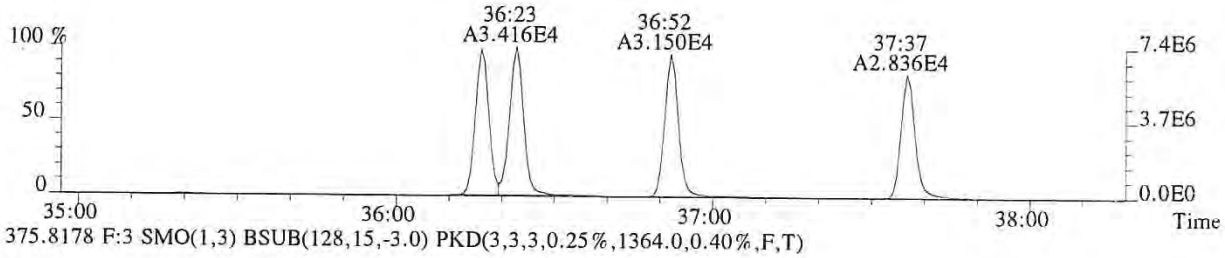


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

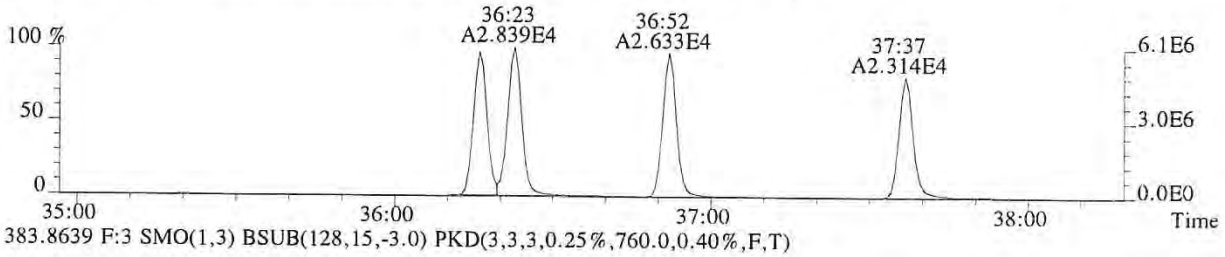


059647

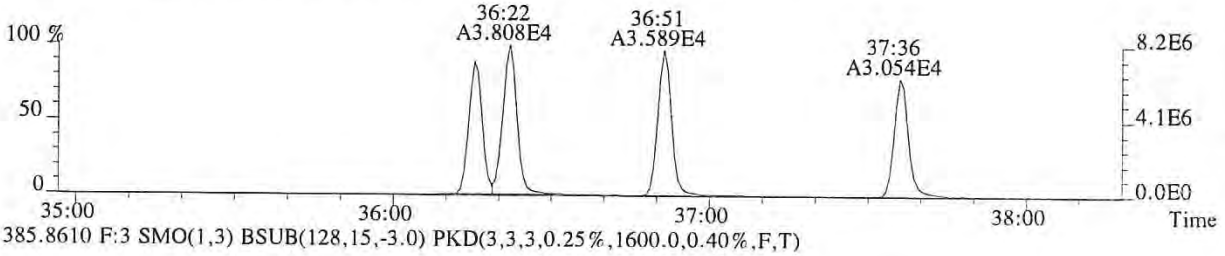
File:P513857 #1-303 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1528.0,0.40%,F,T)



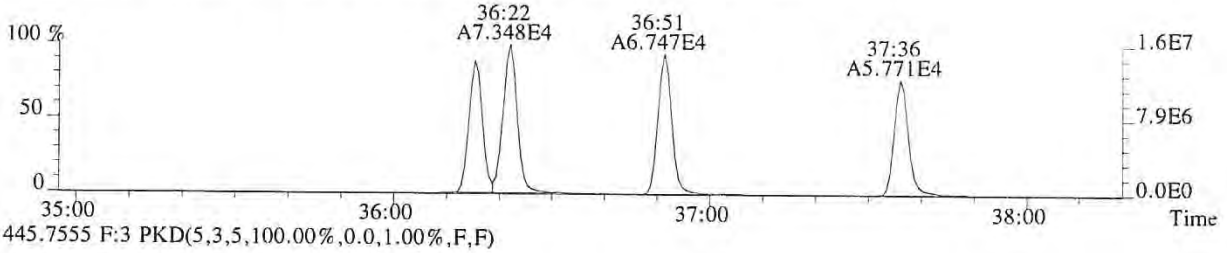
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1364.0,0.40%,F,T)



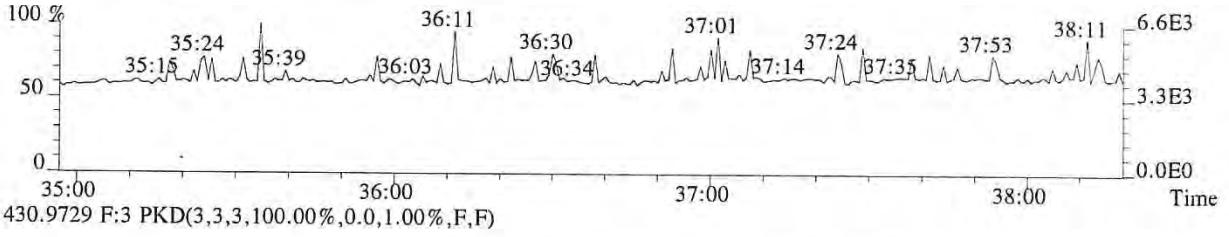
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,760.0,0.40%,F,T)



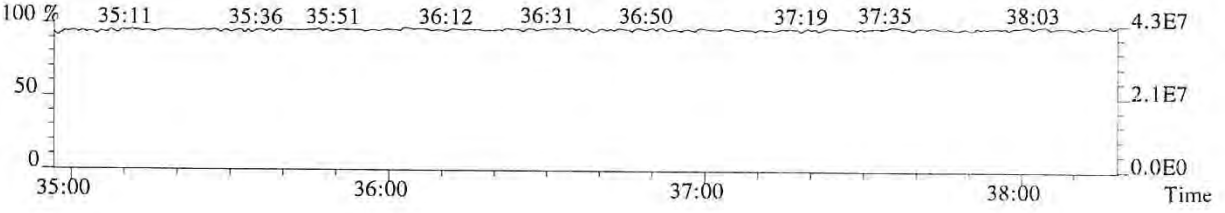
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1600.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

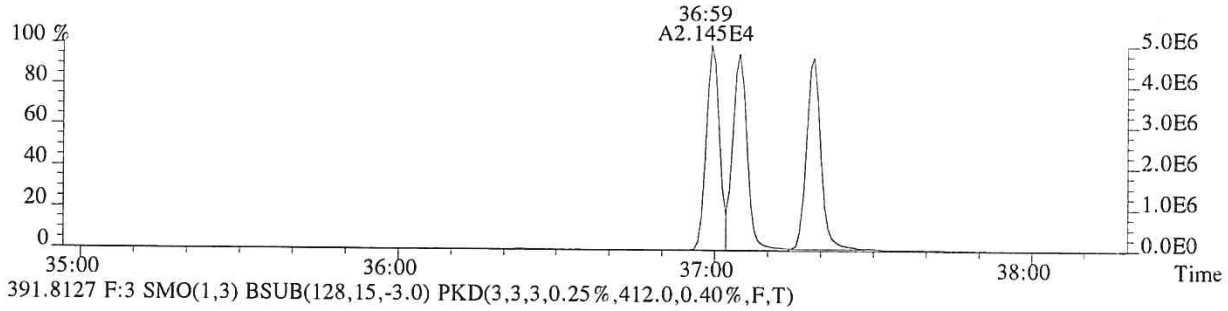


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

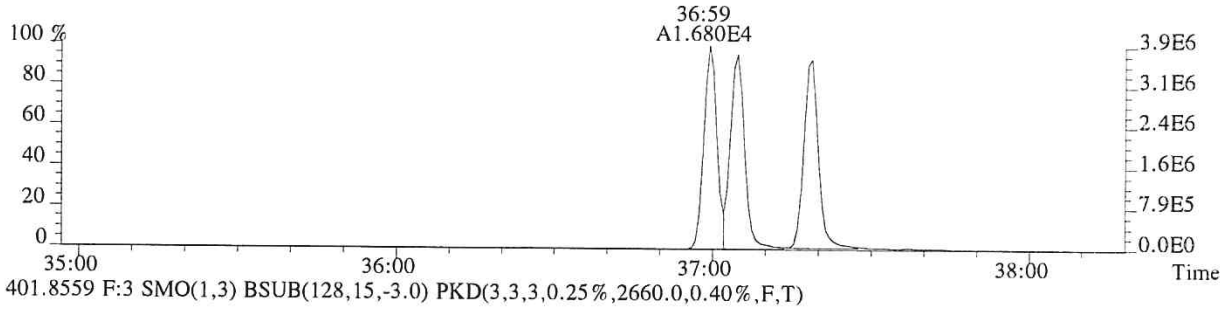


059648

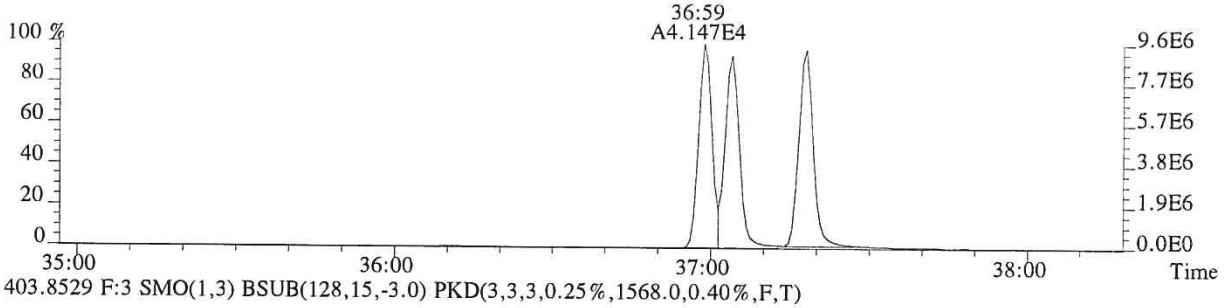
File:P513857 #1-303 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,764.0,0.40%,F,T)



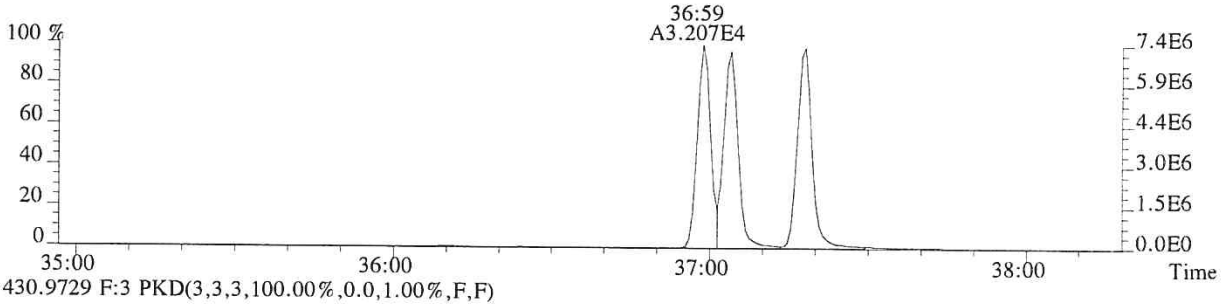
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,412.0,0.40%,F,T)



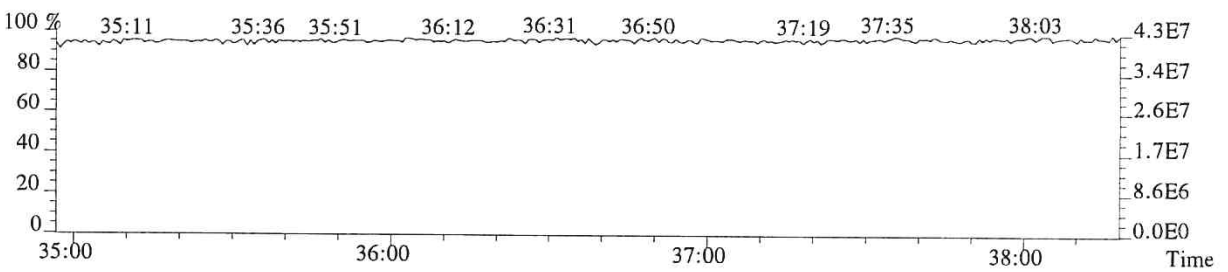
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2660.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1568.0,0.40%,F,T)

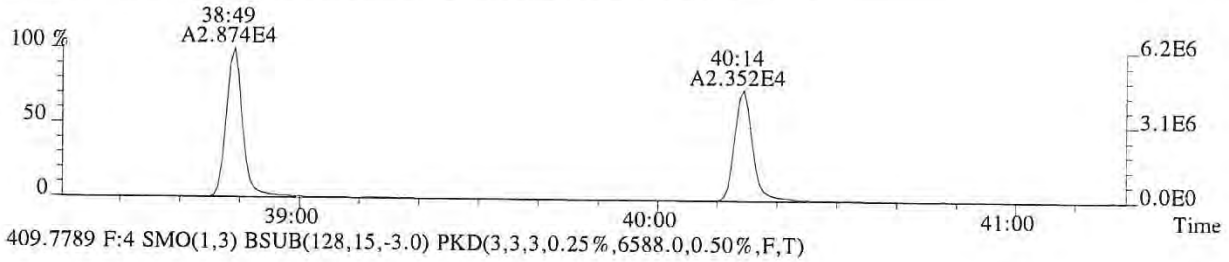


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

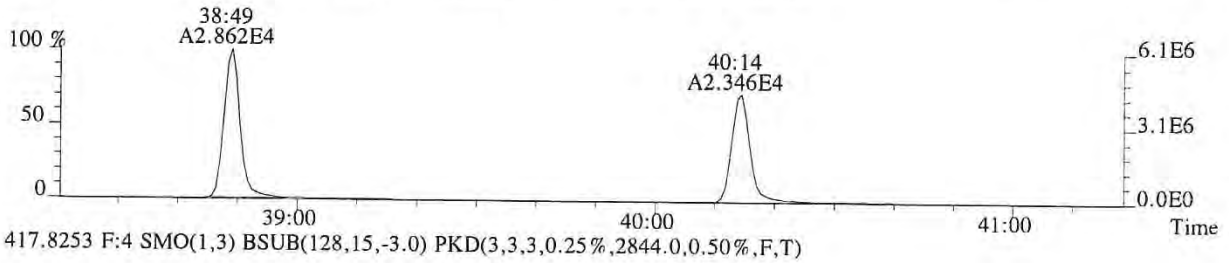


059649

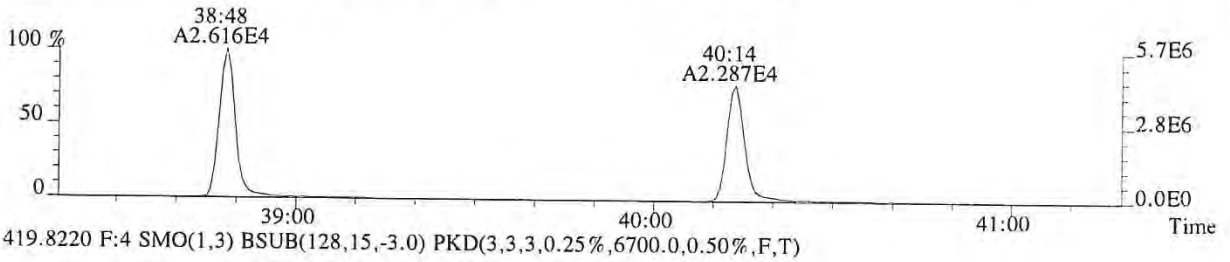
File:P513857 #1-268 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:75080
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5004.0,0.50%,F,T)



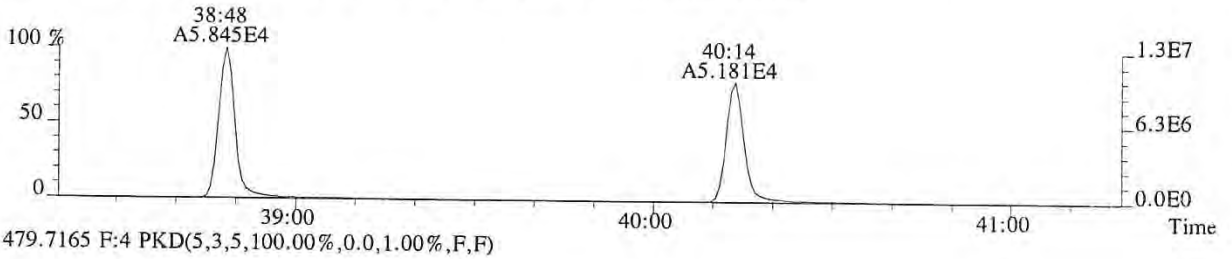
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6588.0,0.50%,F,T)



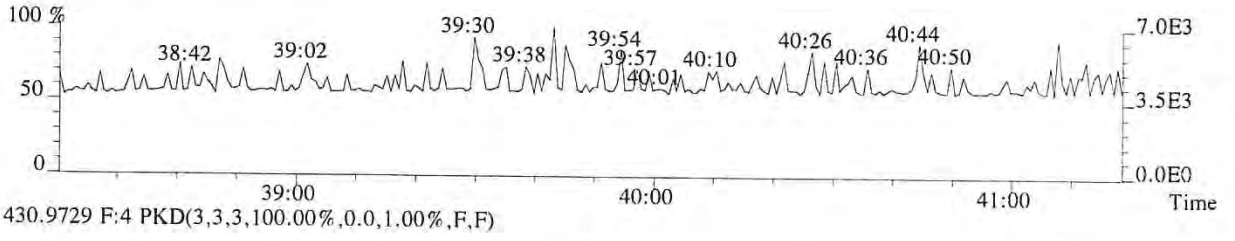
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2844.0,0.50%,F,T)



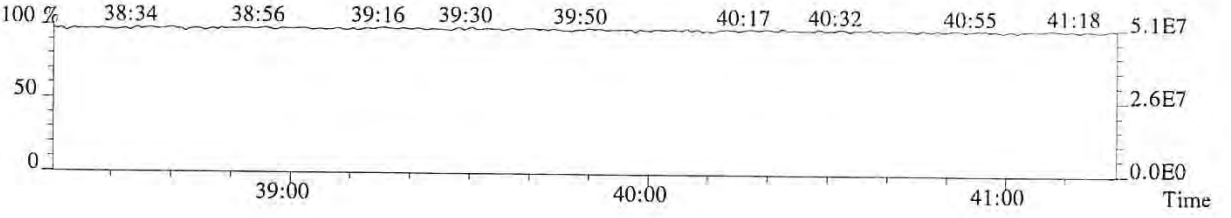
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6700.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

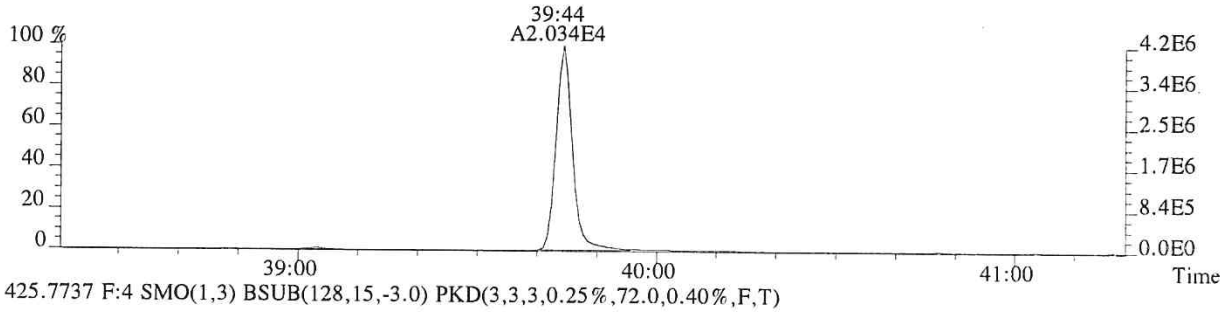


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

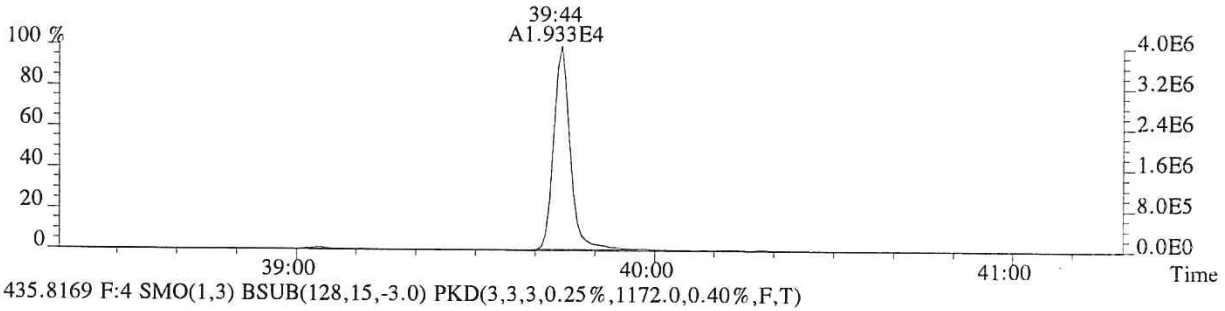


059650

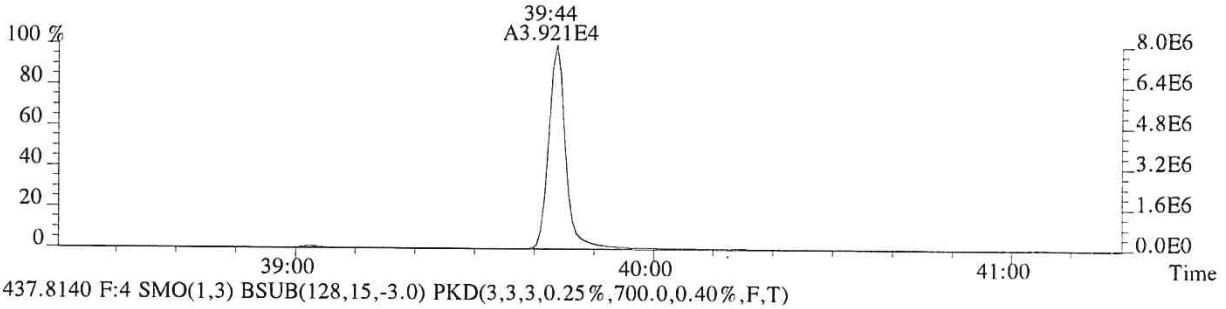
File:P513857 #1-268 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1168.0,0.40%,F,T)



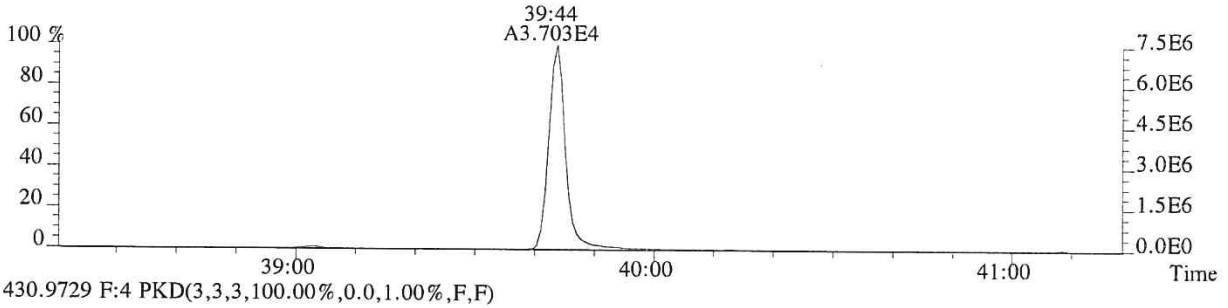
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,72.0,0.40%,F,T)



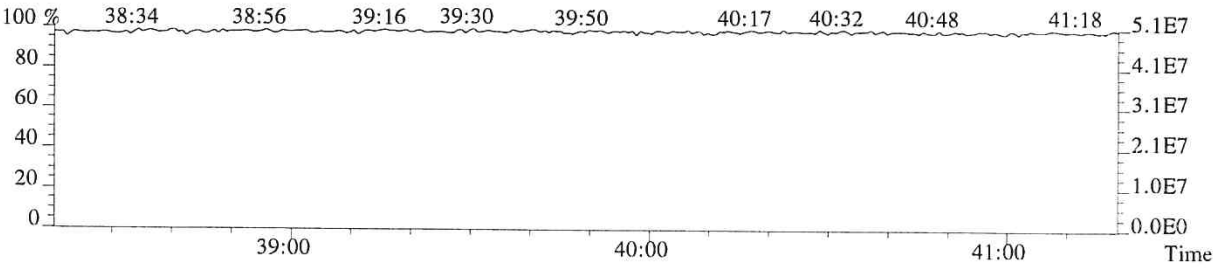
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1172.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,700.0,0.40%,F,T)

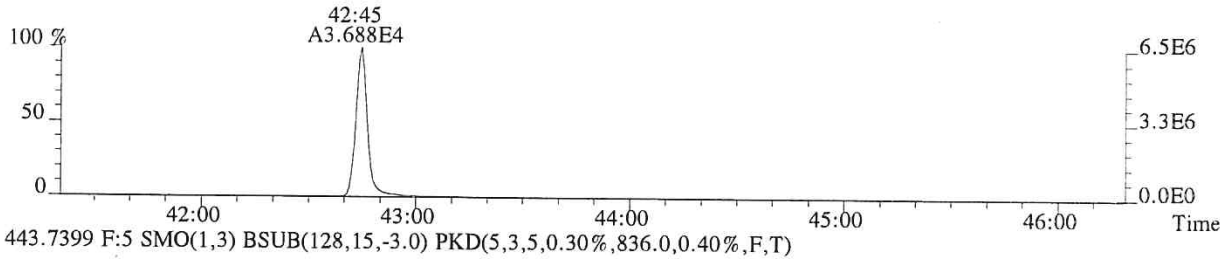


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

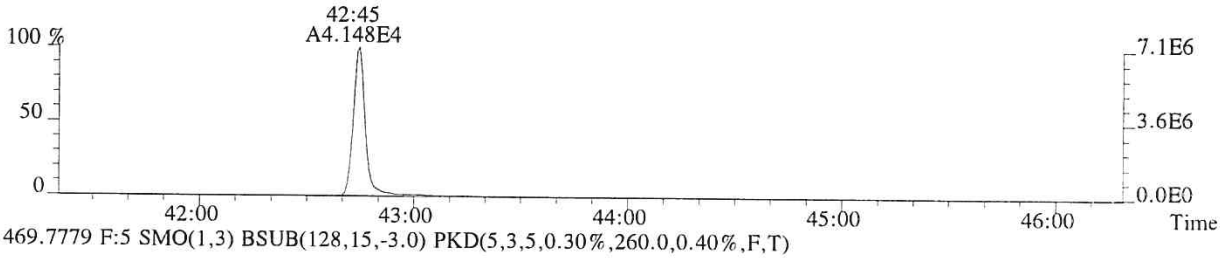


059651

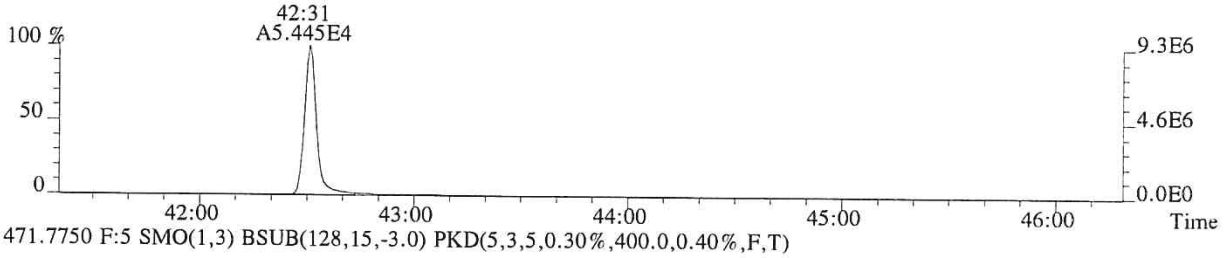
File:P513857 #1-448 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,144.0,0.40%,F,T)



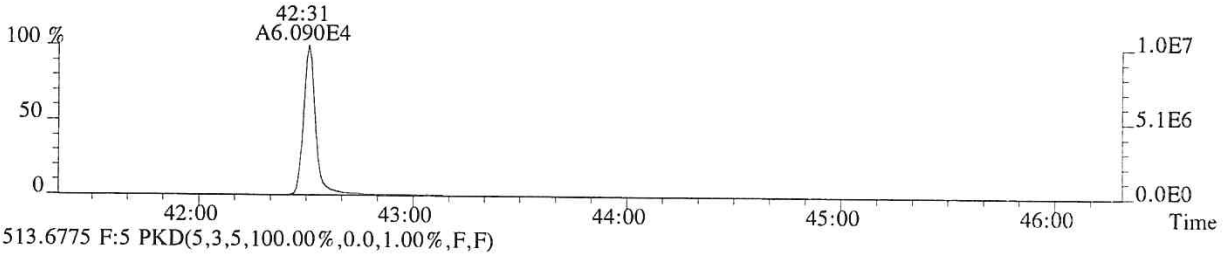
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,836.0,0.40%,F,T)



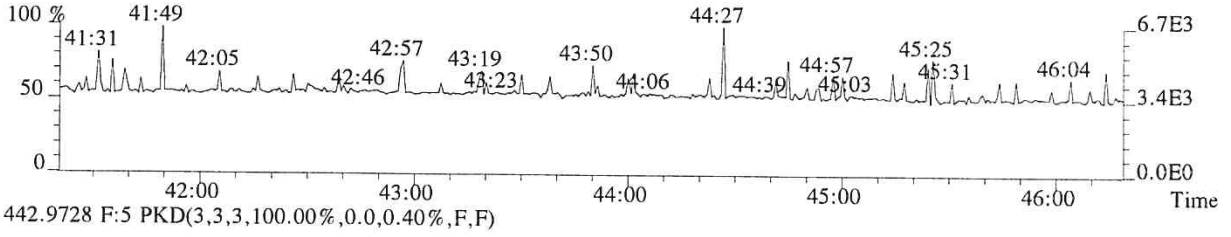
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,260.0,0.40%,F,T)



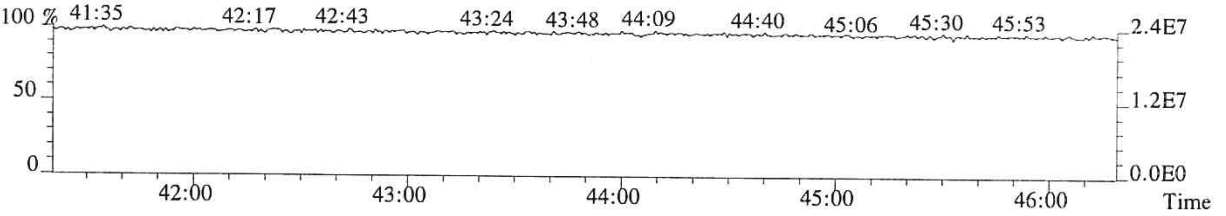
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,400.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

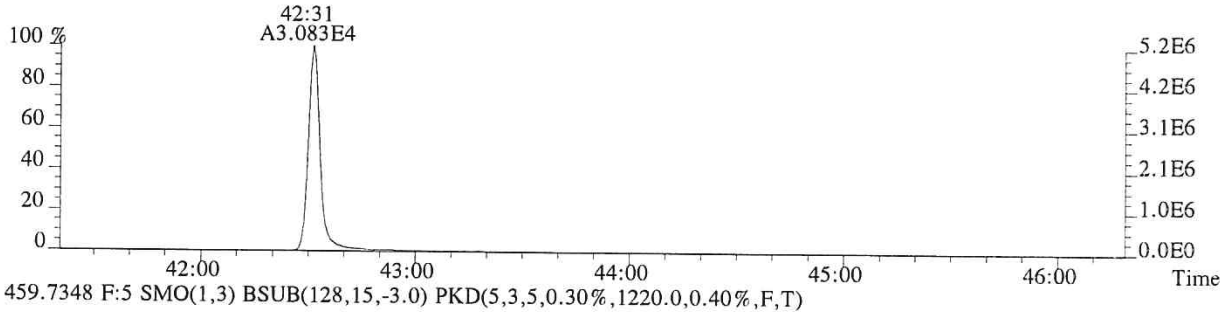


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

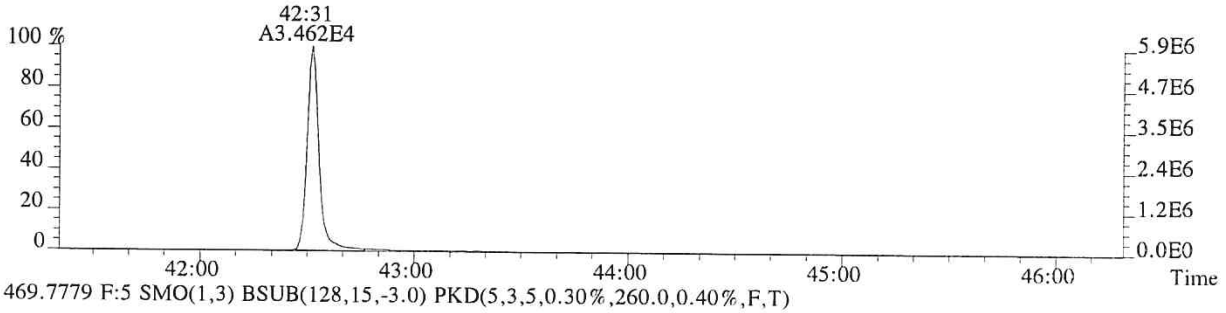


059652

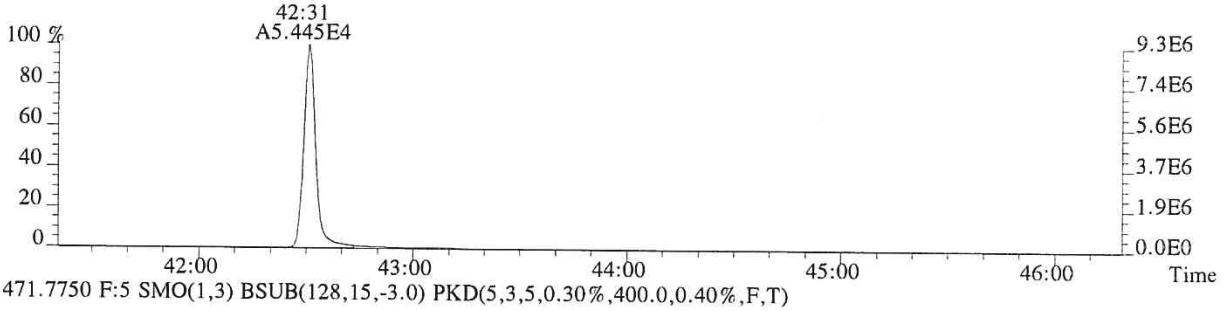
File:P513857 #1-448 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,160.0,0.40%,F,T)



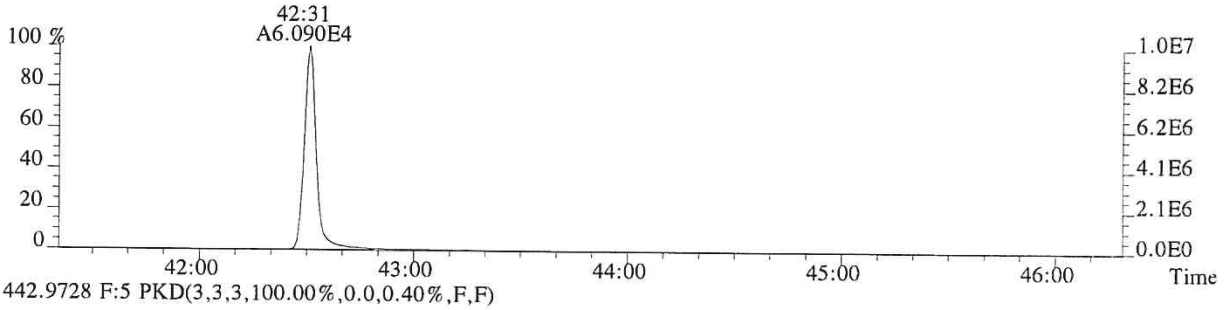
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1220.0,0.40%,F,T)



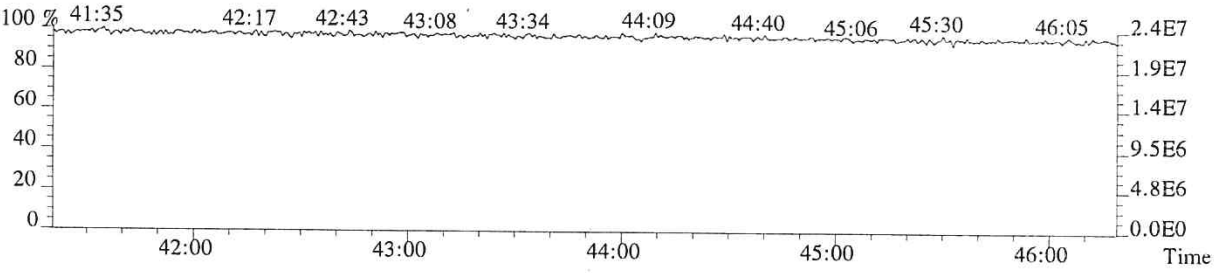
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,260.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,400.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059653

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290		Process Date: 09/26/2018				
Instrument Name: E-HRMS-08		Calibration File Name: P6-18092516131				
Processor Name: Gisela Cruz		Reviewer Name: Loan Luong				
Supervisor Signature: Kristin Neir						
Description		**Yes**	**No**	**NA**	**NR**	**ER#**
Analytical Sequence						
Does the analytical sequence summary accurately reflect the instrument run log, including ICV?		√				
Was a Mass Resolution Check performed at the beginning and end of the 12-hour sequence?		√				
Were all calibration standards and the ICV analyzed within the same 12-hour sequence?		√				
Were all calibration standards analyzed only once?		√				
Was the ICV analyzed after the ICAL, before analyzing samples?		√				
Mass Resolution Check						
Are beginning and ending resolution checks provided and legible?		√				
Were all target masses >10,000 resolving power at the beginning of the sequence?		√				
Were all target masses >10,000 resolving power at the end of the sequence?		√				
For PCB analysis, were masses at the low and high end of each function mass range >8,000?				√		
Where automatic printout of the mass resolution were not >10,000, was the resolution inspected by a trained analyst, including manual calculation of the resolution, if warranted?				√		
Window Define/209						
Is the window defining mix summary present, and accompanied by SICPs/Chromatograms for the WDM?		√				
Was the WDM/Column Performance/209 solution analyzed prior to the analysis of the calibration standards?		√				
Was 2,3,7,8-TCDD peak valley <25% to any other TCDD?		√				
Were all first and last eluters adequately resolved in each function?		√				
If first and last eluters were not resolved, was corrective action performed and documented, followed by a reanalysis of the WDM?				√		
Was the retention time of PCB 209 >55 min?				√		
Were the following congeners uniquely resolved (valley height <40% of the shortest peak)? PCB-34 and PCB-23 PCB-187 and PCB-182				√		
Did PCB 156/157 co-elute within 2 seconds at peak maximum?				√		
Calibration Standards						
Were there at least 5 calibration standards analyzed?		√				
If not all calibration standards were used, were the omitted standards either the lowest or highest calibration standard?				√		
Are all sample response summaries, S/N height summaries, and SICPs included (and legible) for the entire sequence?		√				

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290		Process Date: 09/26/2018				
Instrument Name: E-HRMS-08		Calibration File Name: P6-180925161 3I				
Processor Name: Gisela Cruz		Reviewer Name: Loan Luong				
Supervisor Signature: Kristin Neir		Yes	No	NA	NR	ER#
Description						
Did each calibration point meet method criteria for Ion Abundance Ratio for all analytes and labeled standards?		√				
Did each calibration point meet method criteria for signal-to-noise ratios (S/N)?		√				
Were area counts for the highest calibration standard below levels of saturation?		√				
Were manual integrations technically justified to correct for poor software integration?				√		
Response Factors						
Is the ICAL Response Factor Summary present, including RR/RF values for each native/labeled analyte at each level of calibration?		√				
Were all calibration standards used in determining response factors?		√				
Were relative response factors (RR) for each native analyte calculated at each calibration point?		√				
Did the RSD for RRFs for each native analyte meet method criteria?		√				
Were response factors (RF) for each native analyte not having a corresponding labeled compound calculated at each calibration point?		√				
Were RFs for each labeled compound calculated for each calibration point?		√				
Did the RSD for RF for each labeled compound meet method criteria?		√				
Initial Calibration Verification						
Is the calibration verification present, including form 4A/B reflecting results for the ICV (Conc. or %D)		√				
Did all analytes meet method criteria for the ICV.		√				

Laboratory Review Checklist: Initial Calibration			
Method: 1613/8290		Process Date: 09/26/2018	
Instrument Name: E-HRMS-08		Calibration File Name: P6-180925161 3I	
Processor Name: Gisela Cruz		Reviewer Name: Loan Luong	
ER#[5]	**Description**		

NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: TX01411 Episode No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm) Instrument ID: E-HRMS-08

Init. Calib. Date: 09/25/18

Init. Calib.Times: 12:13

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, SPIKES AND DUPLICATES IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P614680	25-SEP-18	12:13:01
76554	CS0.5	P614682	25-SEP-18	14:18:27
82614	CS1	P614683	25-SEP-18	15:08:49
193434	CS2	P614684	25-SEP-18	15:59:37
76557	CS3	P614685	25-SEP-18	16:52:47
82167	CS4	P614686	25-SEP-18	17:41:03
185657	CS5	P614687	25-SEP-18	18:30:08
188969	2ND SOURCE	P614690	25-SEP-18	20:57:19

Sample List Report **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20180925A.SPL
Last Modified: Wednesday, September 26, 2018 06:14:12 Central Daylight Time
Printed: Wednesday, September 26, 2018 06:14:14 Central Daylight Time

Page Position (1, 1)

OPUS4: P6-180925161 3I
P614690res

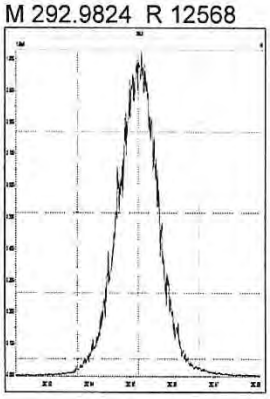
	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	9/25/18	12:13	P614680	192977	WINDOW DEFINE	EPA1613_ALS	Dioxin_ALS	Tray1:1	LG	HRMScheck 12:08
2		13:01	P614681	192807	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:2		
3		14:18	P614682	76554	CS0.5	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4		15:08	P614683	82614	CS1	EPA1613_ALS	Dioxin_ALS	Tray1:4		
5		15:59	P614684	193434	CS2	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		16:52	P614685	76557	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		17:41	P614686	82167	CS4	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		18:30	P614687	185657	CS5	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		19:19	P614688	NONANE	NONANE	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		20:08	P614689	188969	2ND SOURCE	EPA1613_ALS	Dioxin_ALS	Tray1:10		Do not use
11		20:57	P614690	188969	2ND SOURCE	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12		21:51	P614691	NONANE	NONANE	EPA1613_ALS	Dioxin_ALS	Tray1:12		HRMScheck 22:51
13	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:13	---	---
14	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:14	---	---
15	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:15	---	---
16	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:16	---	---
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:17	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:18	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---
20	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:20	---	---
21	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:21	---	---

gc 09/26/18

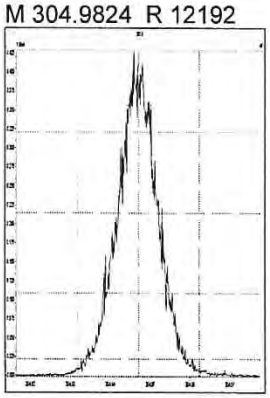
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, September 25, 2018 12:08:26 Central Daylight Time

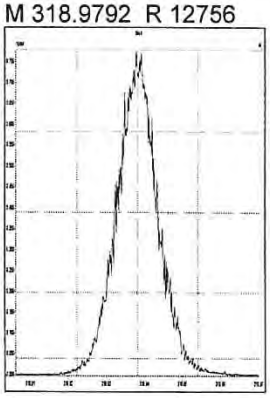
M 292.9824 R 12568



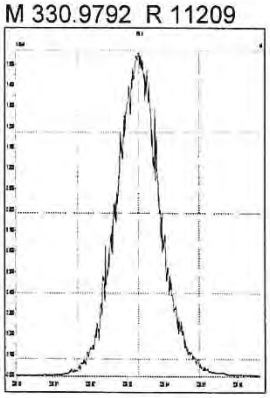
M 304.9824 R 12192



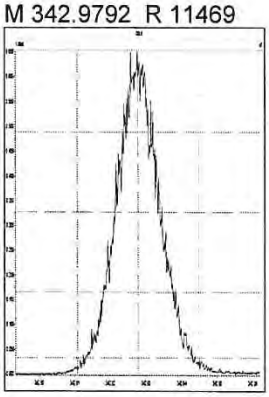
M 318.9792 R 12756



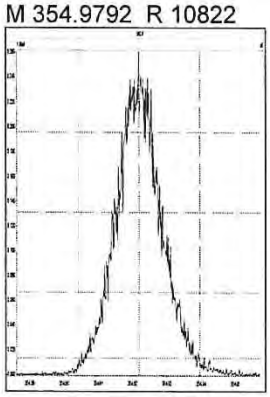
M 330.9792 R 11209



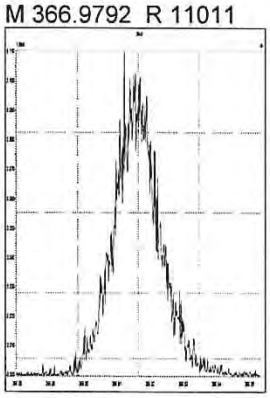
M 342.9792 R 11469



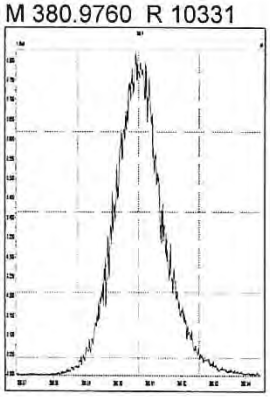
M 354.9792 R 10822



M 366.9792 R 11011



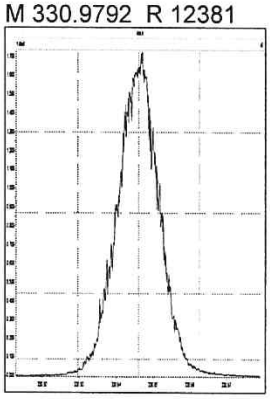
M 380.9760 R 10331



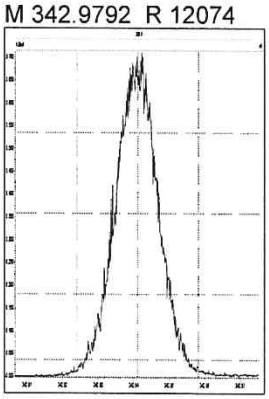
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, September 25, 2018 12:09:22 Central Daylight Time

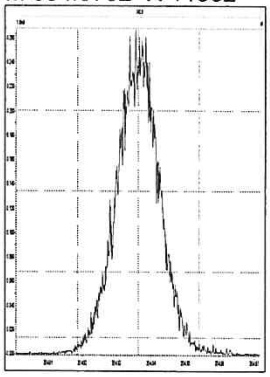
M 330.9792 R 12381



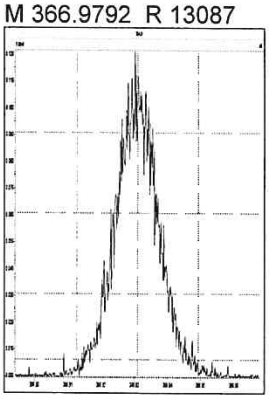
M 342.9792 R 12074



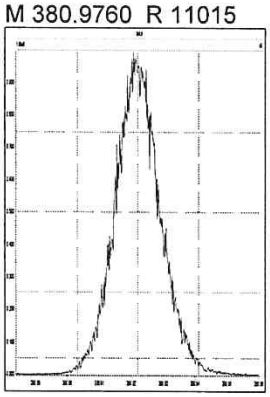
M 354.9792 R 11962



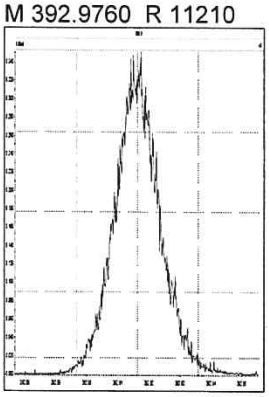
M 366.9792 R 13087



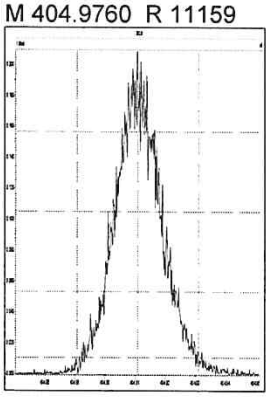
M 380.9760 R 11015



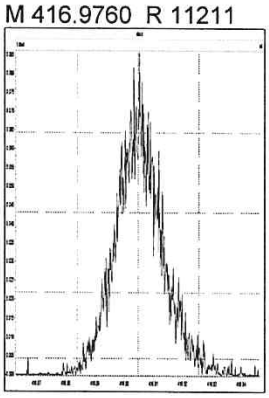
M 392.9760 R 11210



M 404.9760 R 11159



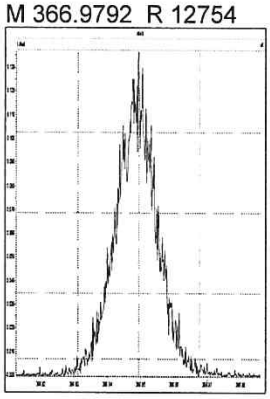
M 416.9760 R 11211



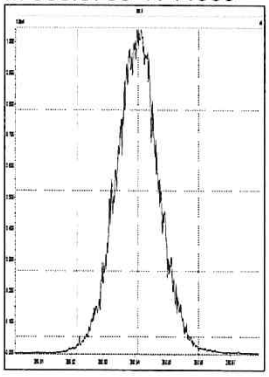
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, September 25, 2018 12:10:10 Central Daylight Time

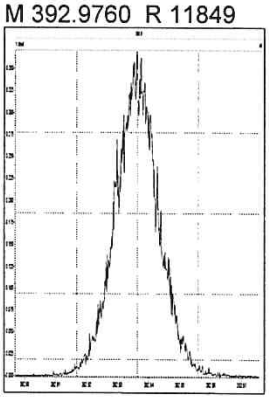
M 366.9792 R 12754



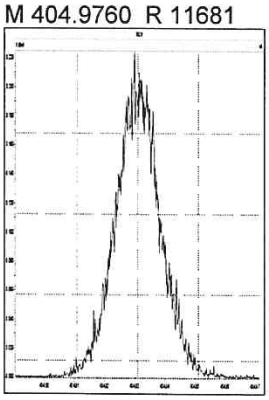
M 380.9760 R 11959



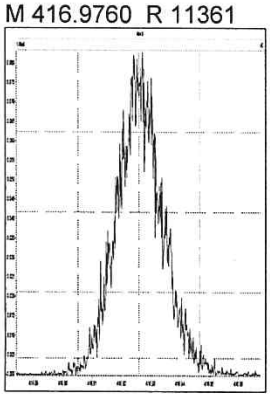
M 392.9760 R 11849



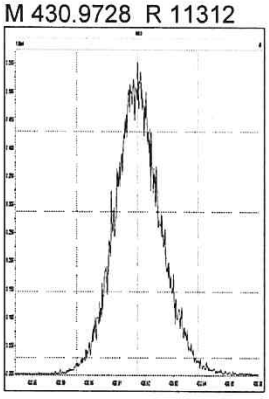
M 404.9760 R 11681



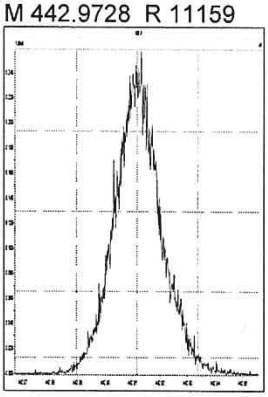
M 416.9760 R 11361



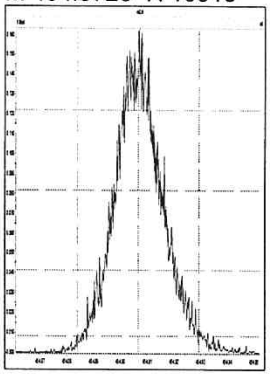
M 430.9728 R 11312



M 442.9728 R 11159



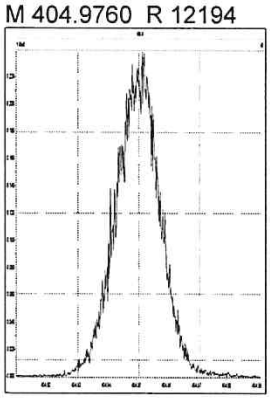
M 454.9728 R 10918



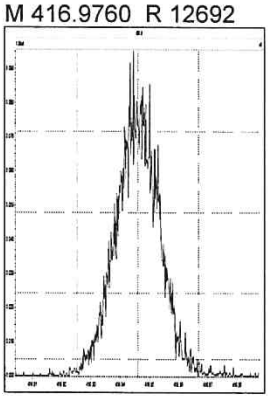
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Tuesday, September 25, 2018 12:10:51 Central Daylight Time

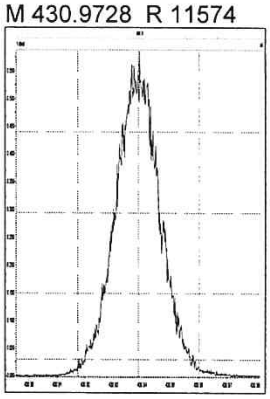
M 404.9760 R 12194



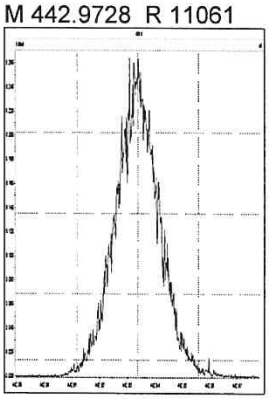
M 416.9760 R 12692



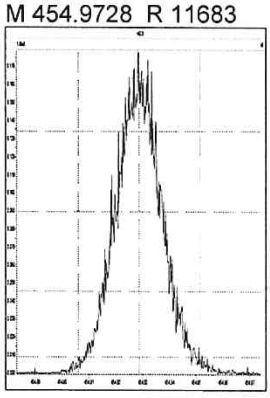
M 430.9728 R 11574



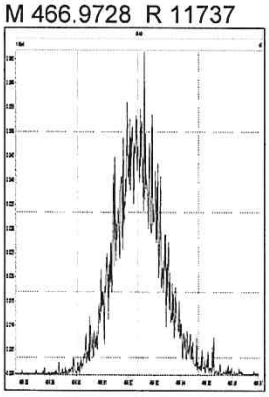
M 442.9728 R 11061



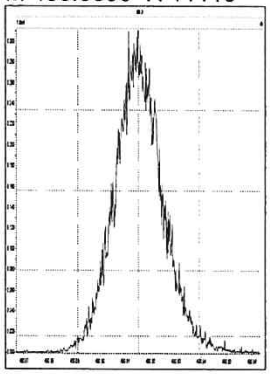
M 454.9728 R 11683



M 466.9728 R 11737



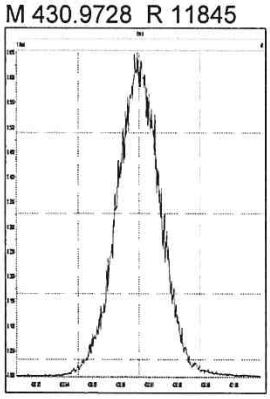
M 480.9696 R 11110



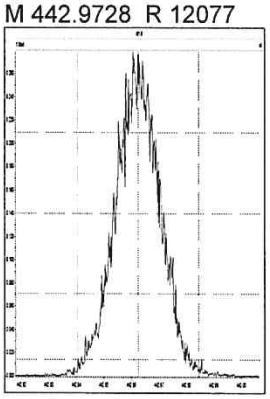
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, September 25, 2018 12:11:41 Central Daylight Time

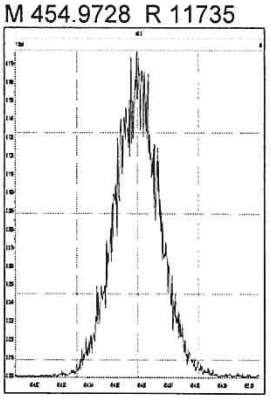
M 430.9728 R 11845



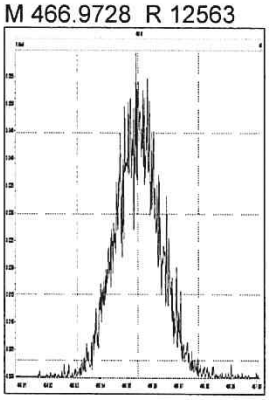
M 442.9728 R 12077



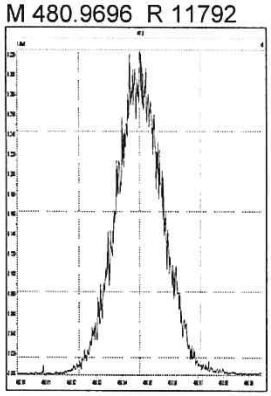
M 454.9728 R 11735



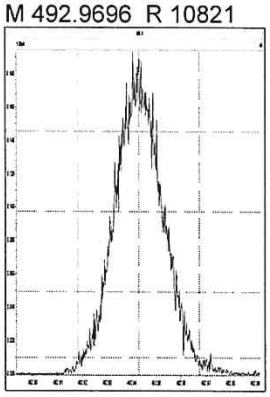
M 466.9728 R 12563



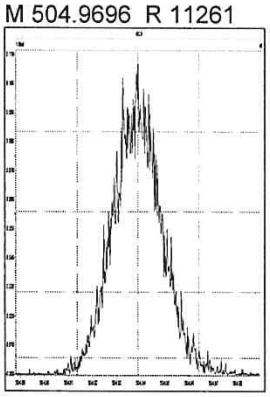
M 480.9696 R 11792



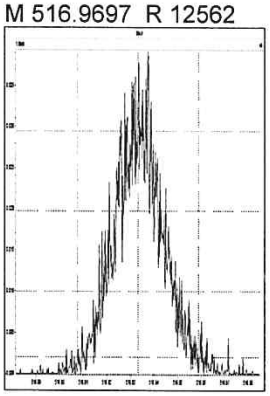
M 492.9696 R 10821



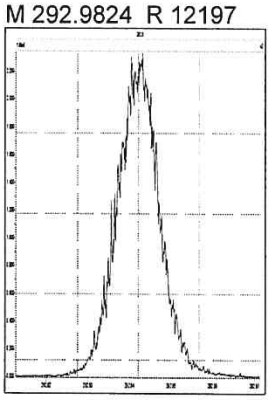
M 504.9696 R 11261



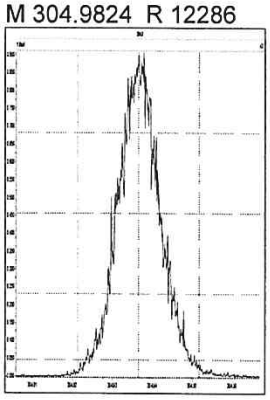
M 516.9697 R 12562



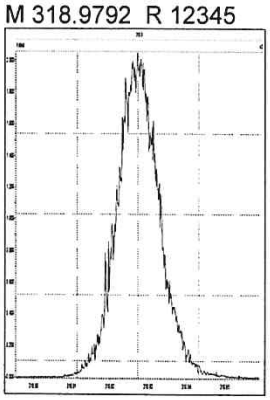
M 292.9824 R 12197



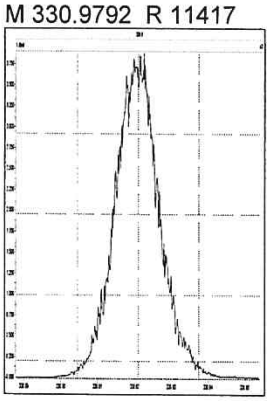
M 304.9824 R 12286



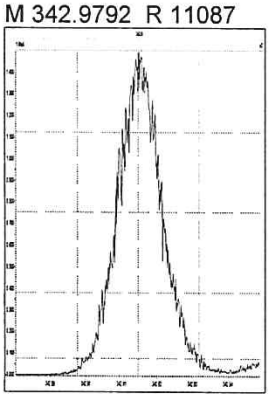
M 318.9792 R 12345



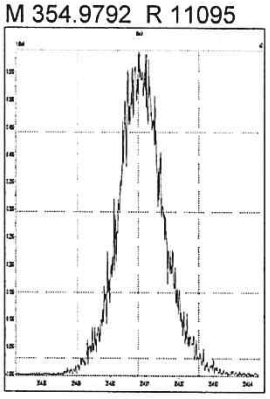
M 330.9792 R 11417



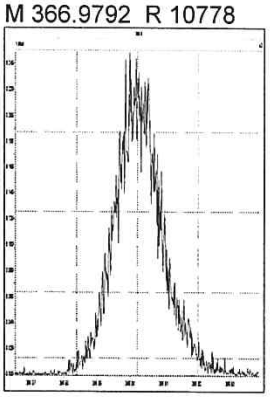
M 342.9792 R 11087



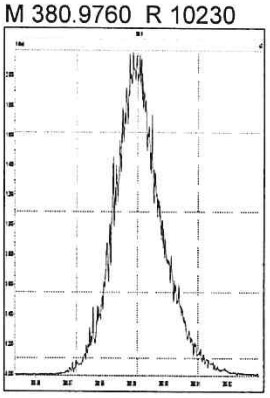
M 354.9792 R 11095



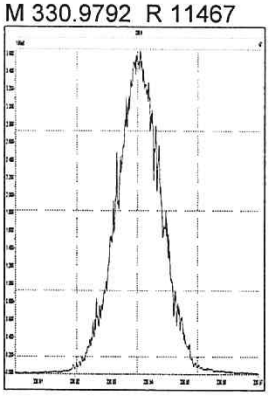
M 366.9792 R 10778



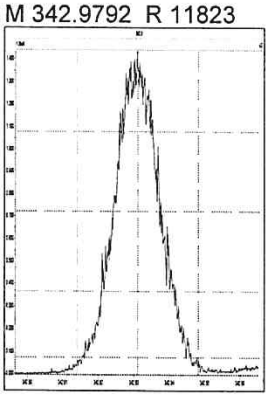
M 380.9760 R 10230



M 330.9792 R 11467



M 342.9792 R 11823



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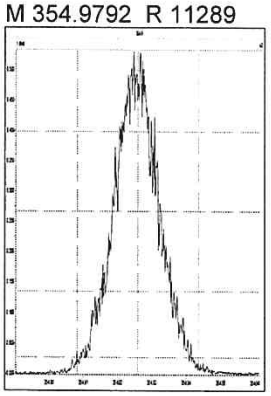

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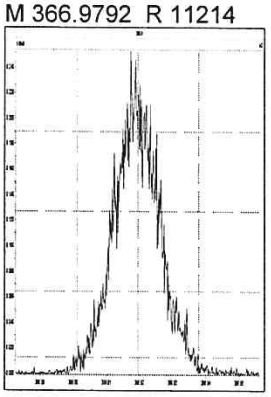
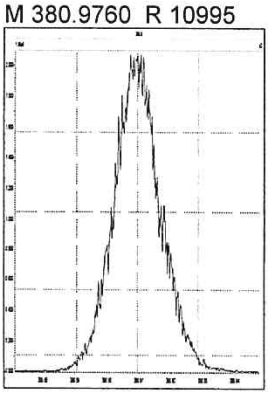
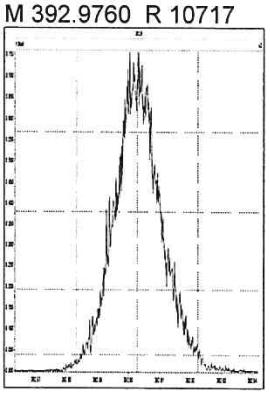


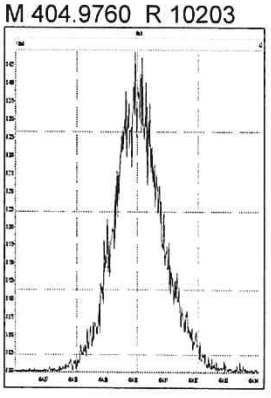
M 380.9760 R 10995



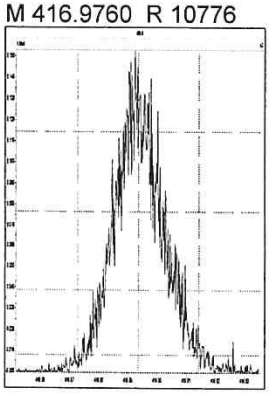
M 392.9760 R 10717



M 404.9760 R 10203



M 416.9760 R 10776



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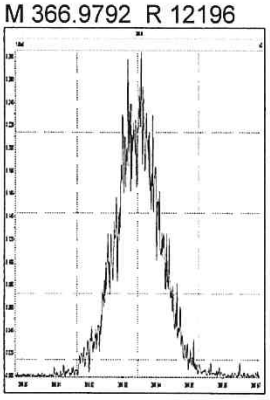
M 366.9792 R 12196



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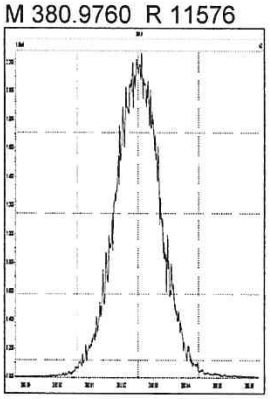
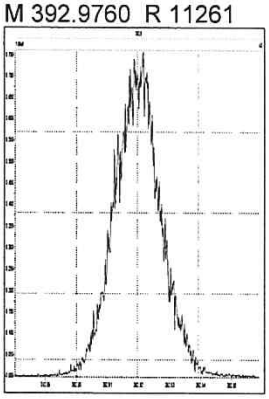
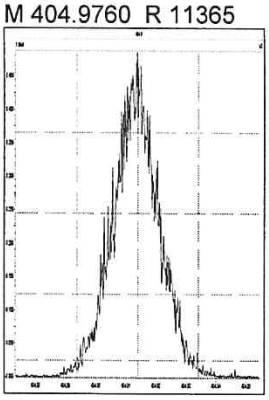


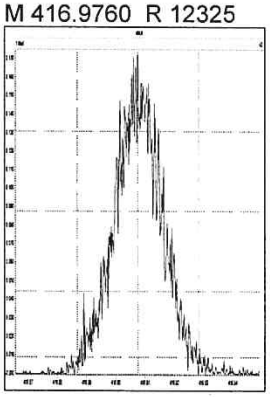
M 392.9760 R 11261



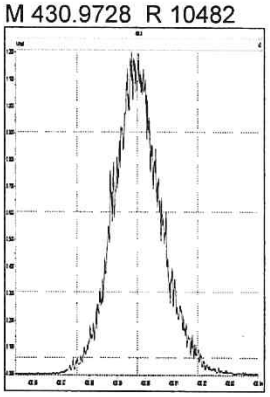
M 404.9760 R 11365



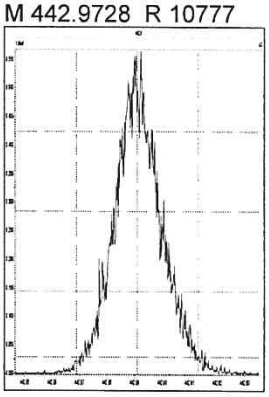
M 416.9760 R 12325



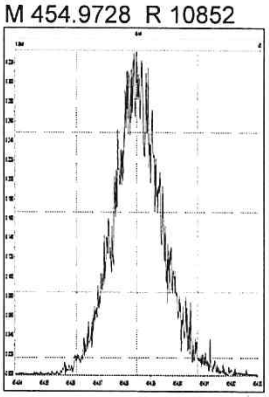
M 430.9728 R 10482



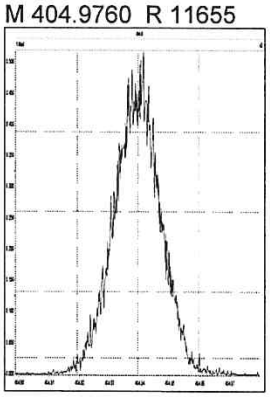
M 442.9728 R 10777



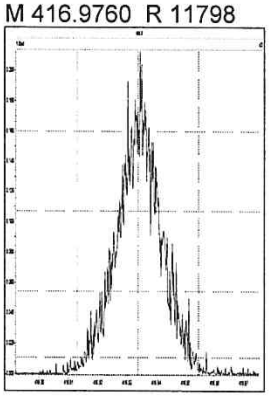
M 454.9728 R 10852



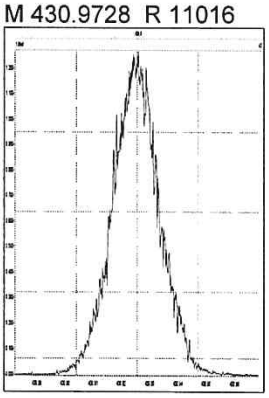
M 404.9760 R 11655



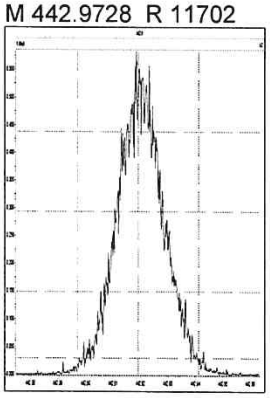
M 416.9760 R 11798



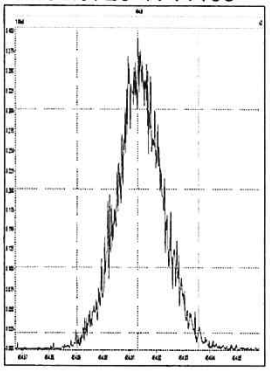
M 430.9728 R 11016



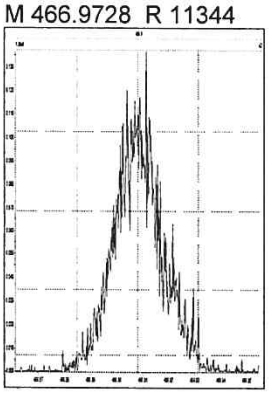
M 442.9728 R 11702



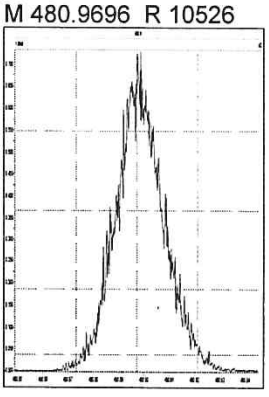
M 454.9728 R 11188



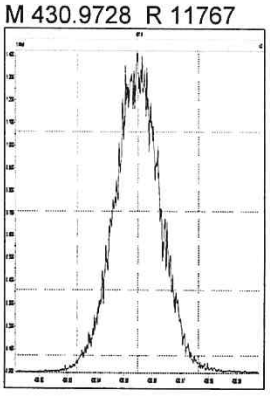
M 466.9728 R 11344



M 480.9696 R 10526



M 430.9728 R 11767



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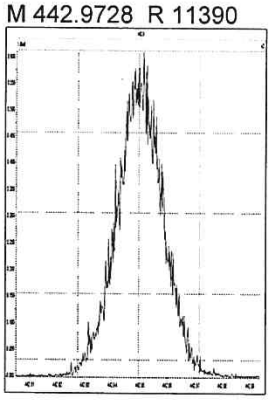
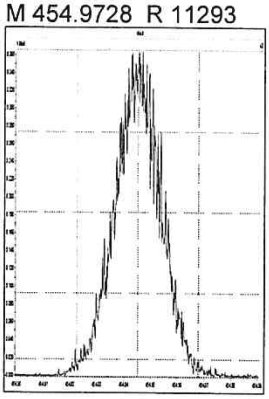
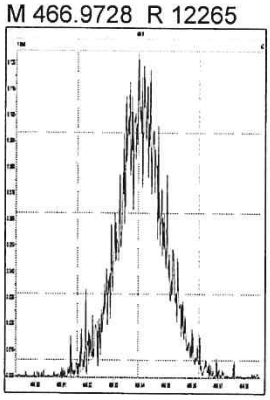
M 442.9728 R 11390



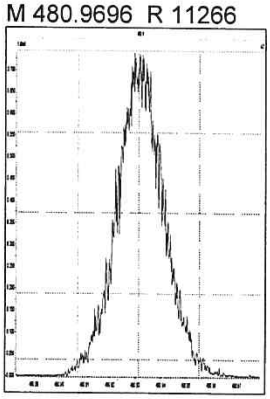
M 454.9728 R 11293



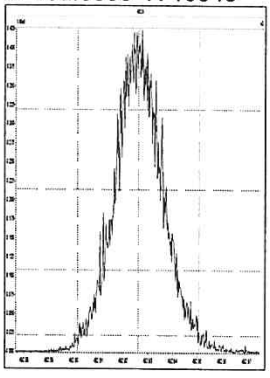
M 466.9728 R 12265



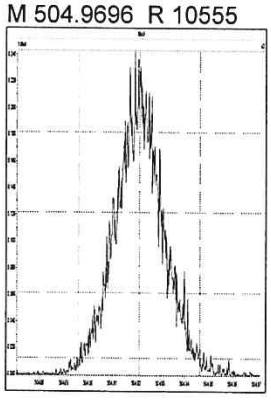
M 480.9696 R 11266



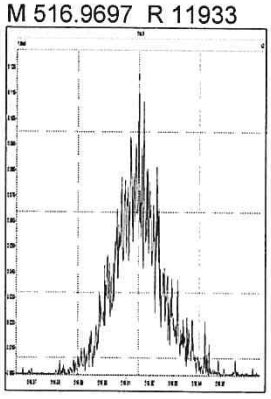
M 492.9696 R 10848



M 504.9696 R 10555



M 516.9697 R 11933



059665

5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

Case No.: _____ SDG No.:
ID: 0.25 (mm)

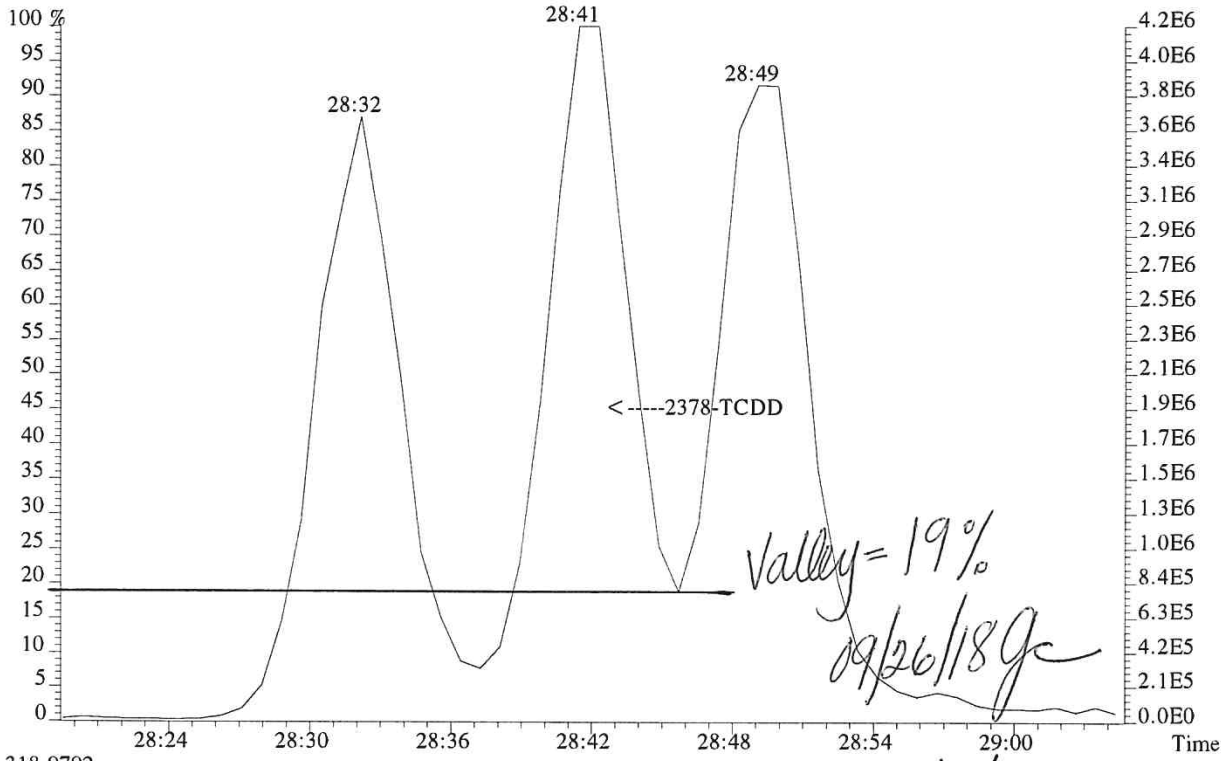
Lab File ID: P614680
Date Analyzed: 25-SEP-18
Time Analyzed: 12:13:01

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	23:28	29:52
TCDD	25:18	29:42
PeCDF	29:48	34:04
PeCDD	31:21	33:49
HxCDF	34:43	37:12
HxCDD	35:14	36:49
HpCDF	38:24	39:46
HpCDD	38:39	39:18

% Valley 2378-TCDD: 19 %

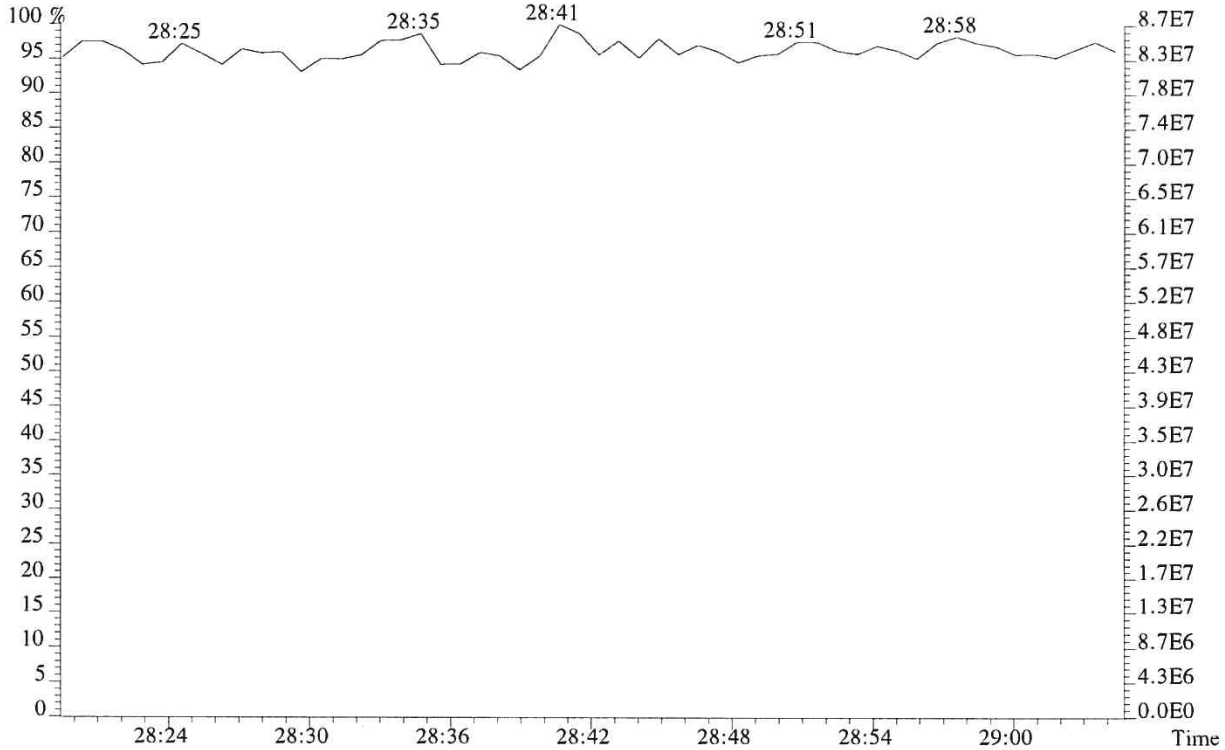
059666

File:P614680 #1-552 Acq:25-SEP-2018 12:13:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
319.8965



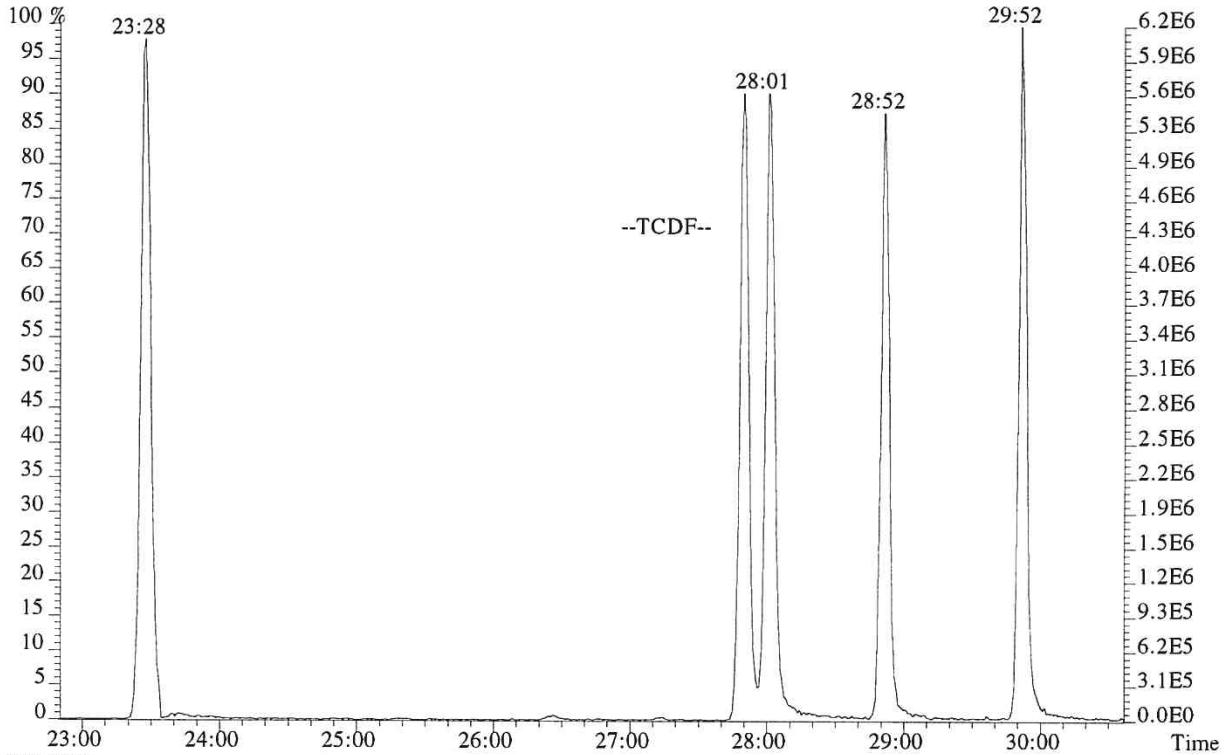
318.9792

LKL 09/26/18

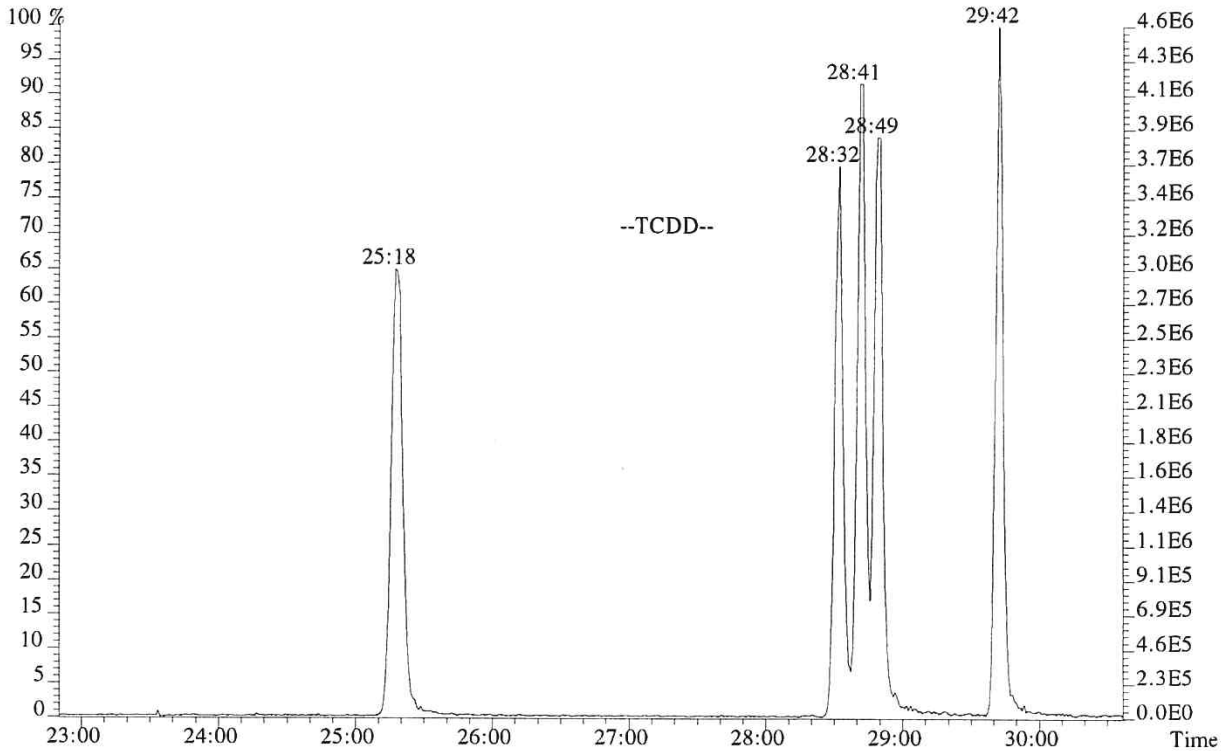


059667

File:P614680 #1-552 Acq:25-SEP-2018 12:13:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
303.9016

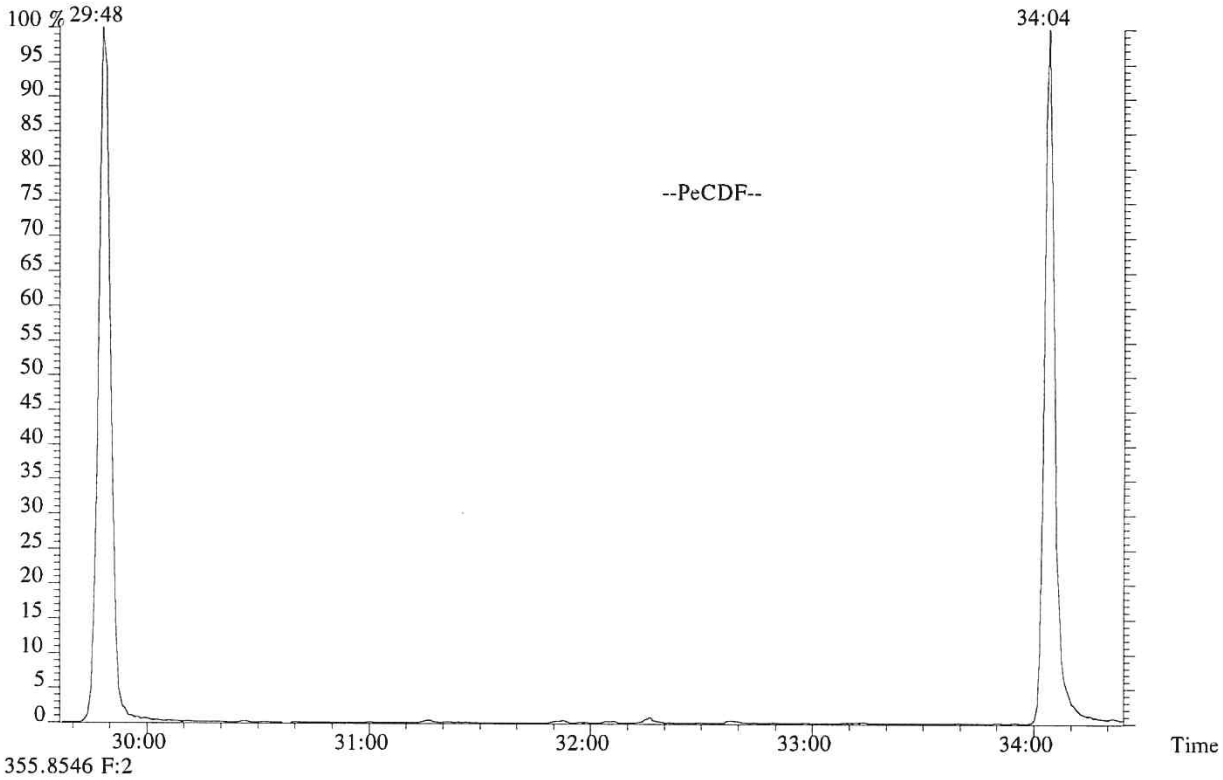


319.8965

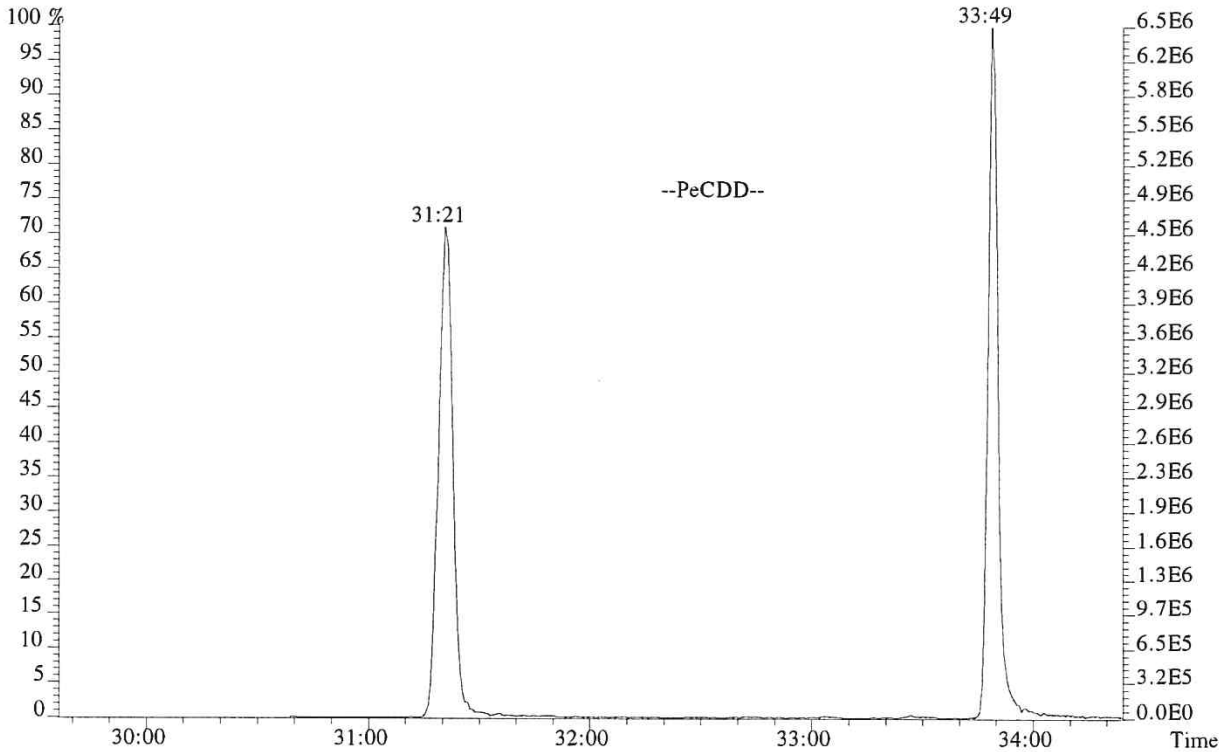


059668

File:P614680 #1-552 Acq:25-SEP-2018 12:13:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
339.8597,339.8597 F:2

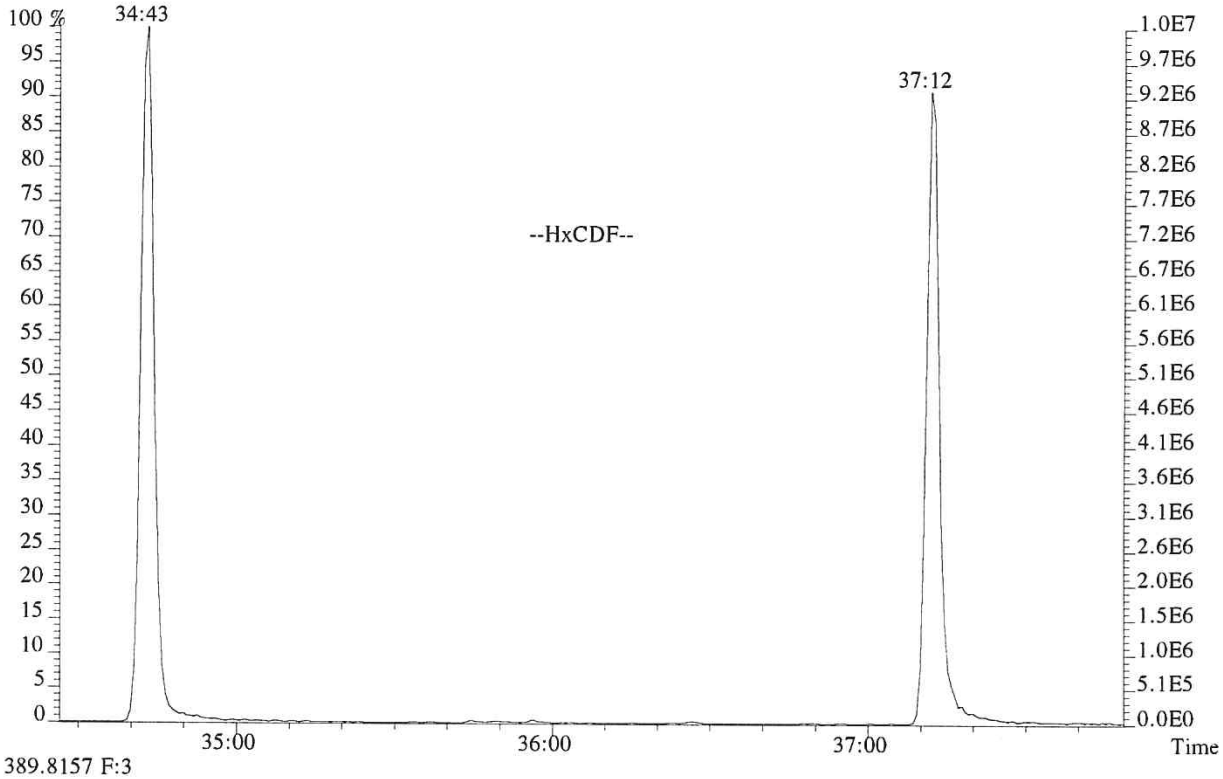


355.8546 F:2

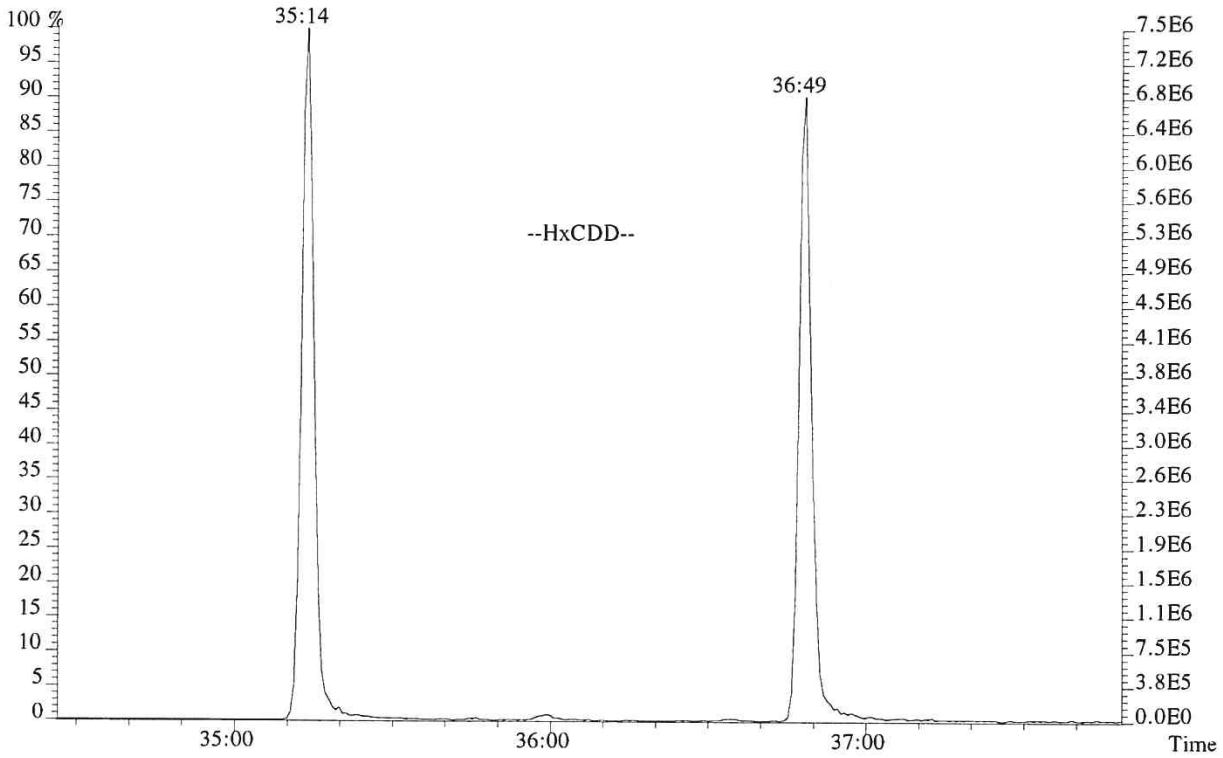


059669

File:P614680 #1-304 Acq:25-SEP-2018 12:13:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
373.8208 F:3

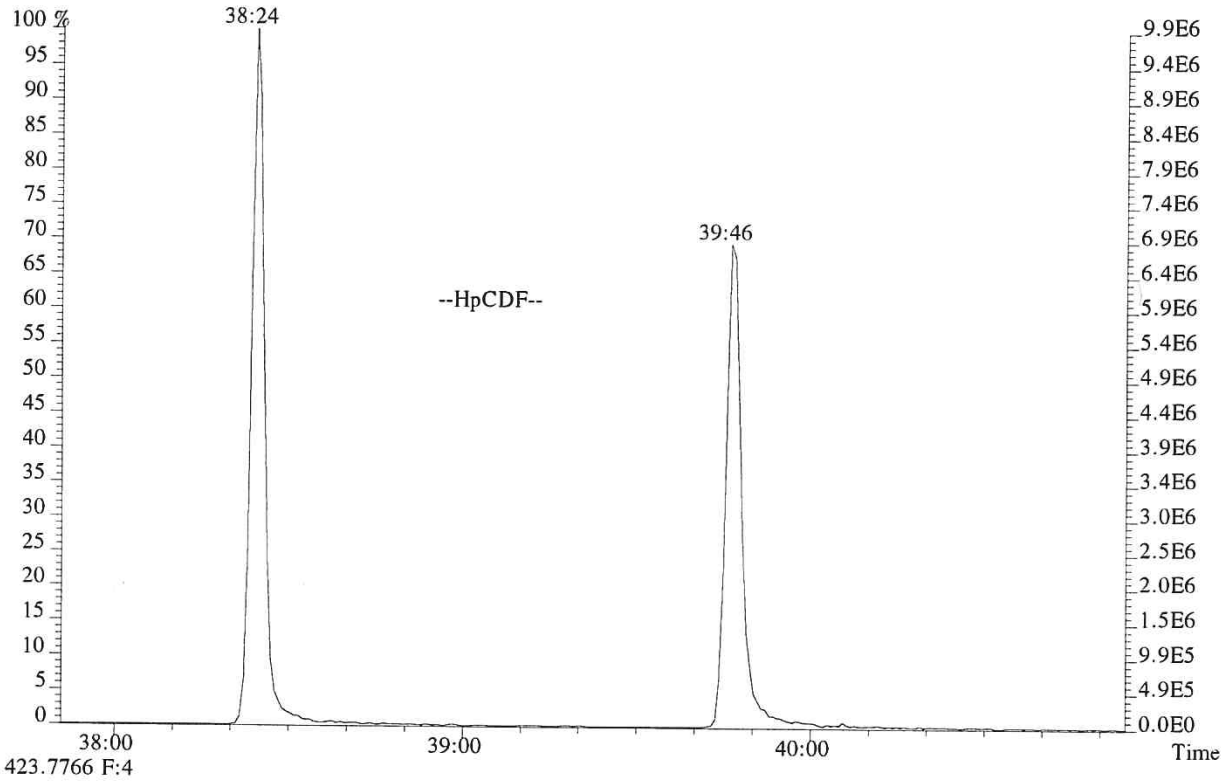


389.8157 F:3

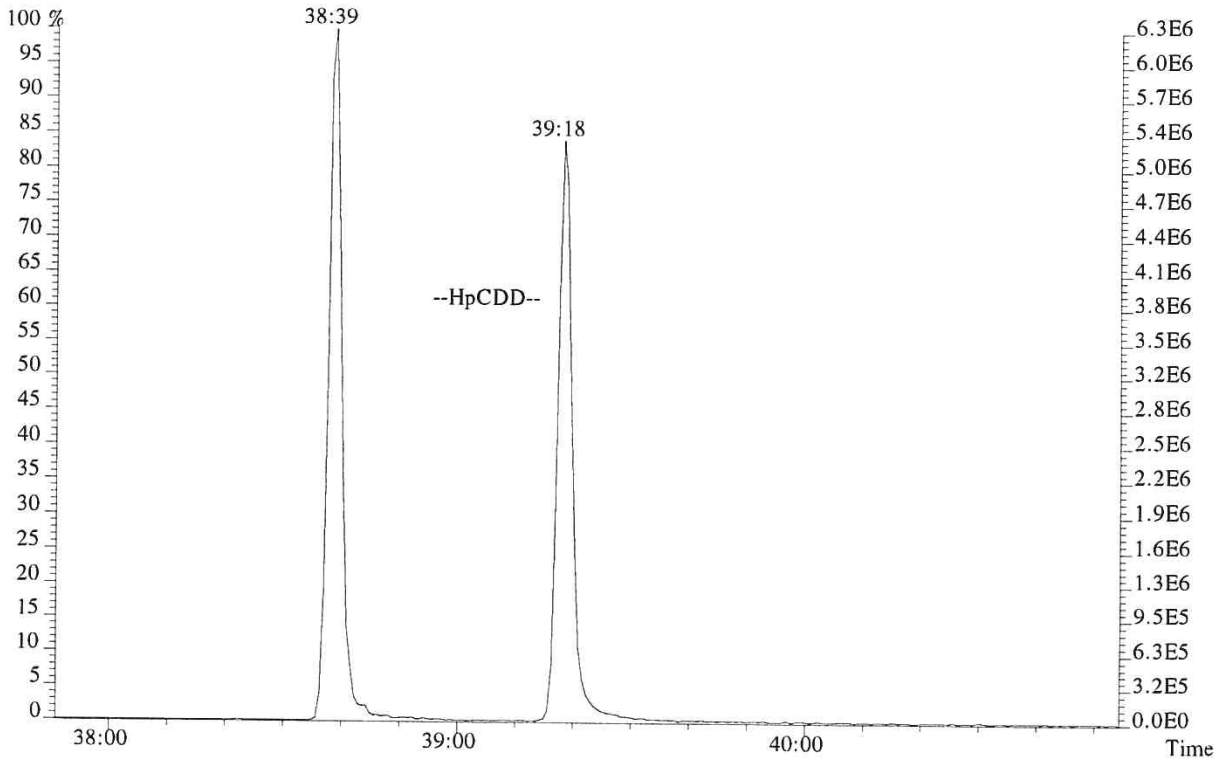


059670

File:P614680 #1-276 Acq:25-SEP-2018 12:13:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
407.7818 F:4



423.7766 F:4



059671

USEPA - CLP
6DFA6
CDD/CDF INITIAL CALIBRATION RESPONSE FACTOR SUMMARY
HIGH RESOLUTION

Lab Name: ALS Environmental Contract No.:
Lab Code: ALSTX Case No.: TO No.: SDG No.:
GC Column: DB-5MSUI ID: 0.25(mm) Instrument ID: E-HRMS-08
Init. Calib. Date(s).: 09/25/18 Method 1613/8290
Init. Calib. Time.: 12:13

	RR/RRF						MEAN		
Target Analytes	CS0.5	CS1	CS2	CS3	CS4	CS5	RR/RRF	%RSD	QC LIMITS
2,3,7,8-TCDD	1.15	1.00	1.00	1.03	1.05	1.06	1.05	5.38	+/-20%
2,3,7,8-TCDF	1.13	1.08	1.12	1.05	1.06	1.05	1.08	3.07	+/-20%
1,2,3,7,8-PeCDF	1.16	1.17	1.12	1.15	1.16	1.18	1.16	1.72	+/-20%
1,2,3,7,8-PeCDD	0.89	0.95	0.95	0.91	0.93	0.93	0.93	2.61	+/-20%
2,3,4,7,8-PeCDF	1.10	1.13	1.10	1.08	1.10	1.11	1.10	1.49	+/-20%
1,2,3,4,7,8-HxCDF	1.47	1.46	1.39	1.36	1.38	1.42	1.42	3.10	+/-20%
1,2,3,6,7,8-HxCDF	1.27	1.36	1.30	1.28	1.28	1.28	1.29	2.52	+/-20%
1,2,3,4,7,8-HxCDD	1.11	1.11	1.04	1.06	1.05	1.06	1.07	3.00	+/-20%
1,2,3,6,7,8-HxCDD	1.06	1.07	1.06	1.06	1.06	1.05	1.06	0.70	+/-20%
1,2,3,7,8,9-HxCDD	1.17	1.18	1.12	1.13	1.14	1.12	1.15	2.24	+/-20%
2,3,4,6,7,8-HxCDF	1.27	1.32	1.29	1.28	1.27	1.27	1.28	1.52	+/-20%
1,2,3,7,8,9-HxCDF	1.34	1.34	1.29	1.30	1.30	1.30	1.31	1.68	+/-20%
1,2,3,4,6,7,8-HpCDF	1.56	1.60	1.46	1.50	1.51	1.51	1.52	3.15	+/-20%
1,2,3,4,6,7,8-HpCDD	1.14	1.13	1.09	1.10	1.10	1.11	1.11	1.85	+/-20%
1,2,3,4,7,8,9-HpCDF	1.47	1.54	1.46	1.45	1.43	1.43	1.46	2.80	+/-20%
OCDD	1.22	1.21	1.10	1.14	1.14	1.14	1.16	4.23	+/-20%
OCDF	1.60	1.61	1.49	1.57	1.57	1.59	1.57	2.60	+/-20%
Labeled Compounds									
13C-2,3,7,8-TCDD	0.96	0.98	0.97	0.97	1.00	1.01	0.98	2.13	+/-35%
13C-1,2,3,7,8-PeCDD	1.09	1.05	1.16	1.13	1.16	1.15	1.12	3.77	+/-35%
13C-1,2,3,4,7,8-HxCDD	0.91	0.90	0.91	0.90	0.90	0.89	0.90	0.67	+/-35%
13C-1,2,3,6,7,8-HxCDD	0.92	0.92	0.89	0.89	0.91	0.90	0.90	1.52	+/-35%
13C-1,2,3,4,6,7,8-HpCDD	0.86	0.88	0.85	0.86	0.84	0.84	0.86	1.91	+/-35%
13C-OCDD	0.65	0.69	0.65	0.67	0.65	0.65	0.66	2.45	+/-35%
13C-2,3,7,8-TCDF	1.40	1.41	1.42	1.44	1.40	1.43	1.42	1.24	+/-35%
13C-1,2,3,7,8-PeCDF	1.52	1.54	1.61	1.61	1.65	1.63	1.60	3.24	+/-35%
13C-2,3,4,7,8-PeCDF	1.52	1.49	1.60	1.57	1.63	1.61	1.57	3.42	+/-35%
13C-1,2,3,4,7,8-HxCDF	1.18	1.19	1.14	1.21	1.18	1.06	1.16	4.58	+/-35%
13C-1,2,3,6,7,8-HxCDF	1.39	1.34	1.33	1.35	1.31	1.29	1.34	2.46	+/-35%
13C-2,3,4,6,7,8-HxCDF	1.27	1.25	1.24	1.24	1.25	1.24	1.25	1.06	+/-35%
13C-1,2,3,7,8,9-HxCDF	1.13	1.13	1.12	1.15	1.15	1.10	1.13	1.66	+/-35%
13C-1,2,3,4,6,7,8-HpCDF	1.04	1.06	1.02	1.04	1.01	1.01	1.03	1.93	+/-35%
13C-1,2,3,4,7,8,9-HpCDF	0.94	0.95	0.90	0.86	0.90	0.88	0.91	3.64	+/-35%
37Cl-2,3,7,8-TCDD	1.06	1.11	1.07	1.05	1.11	1.13	1.09	3.15	+/-35%

1.123789-HxCDD Relative Response (RR) is calculated based on the labeled analog of the other two HxCDDs.
2. OCDF RR is calculated based on the labeled analog of OCDD

USEPA - CLP
6DFB6
CDD/CDF INITIAL CALIBRATION ION ABUNDANCE RATIO SUMMARY
HIGH RESOLUTION

Lab Name: ALS Environmental Contract No.:
Lab Code: ALSTX Case No.: TO No.: SDG No.:
GC Column: DB-5MSUI ID: 0.25(mm) Instrument ID: E-HRMS-08
Init. Calib. Date(s).: 09/25/18 Method 1613/8290
Init. Calib. Time.: 12:13

Target Analytes	SELECTED IONS	ION ABUNDANCE RATIO CS0.5	CS1	CS2	CS3	CS4	CS5	FLAG	ION RATIO QC lIMITS
2,3,7,8-TCDF	304/306	0.75	0.75	0.83	0.80	0.79	0.80		0.65-0.89
2,3,7,8-TCDD	320/322	0.78	0.83	0.80	0.78	0.79	0.77		0.65-0.89
1,2,3,7,8-PeCDF	340/342	1.65	1.58	1.57	1.58	1.60	1.60		1.32-1.78
2,3,4,7,8-PeCDF	340/342	1.57	1.61	1.57	1.58	1.59	1.59		1.32-1.78
1,2,3,7,8-PeCDD	356/358	1.56	1.52	1.53	1.55	1.55	1.57		1.32-1.78
1,2,3,4,7,8-HxCDF	374/376	1.26	1.29	1.25	1.26	1.28	1.29		1.05-1.43
1,2,3,6,7,8-HxCDF	374/376	1.29	1.24	1.25	1.27	1.27	1.27		1.05-1.43
2,3,4,6,7,8-HxCDF	374/376	1.29	1.25	1.28	1.28	1.26	1.26		1.05-1.43
1,2,3,7,8,9-HxCDF	374/376	1.22	1.29	1.23	1.28	1.28	1.27		1.05-1.43
1,2,3,4,7,8-HxCDD	390/392	1.21	1.20	1.26	1.33	1.26	1.27		1.05-1.43
1,2,3,6,7,8-HxCDD	390/392	1.41	1.27	1.25	1.23	1.27	1.26		1.05-1.43
1,2,3,7,8,9-HxCDD	390/392	1.20	1.22	1.25	1.24	1.27	1.26		1.05-1.43
1,2,3,4,6,7,8-HpCDF	408/410	1.04	1.02	1.06	1.05	1.04	1.05		0.88-1.20
1,2,3,4,7,8,9-HpCDF	408/410	0.89	1.07	1.05	1.04	1.05	1.05		0.88-1.20
1,2,3,4,6,7,8-HpCDD	424/426	1.10	1.07	1.07	1.06	1.06	1.06		0.88-1.20
OCDF	442/444	0.90	0.87	0.91	0.92	0.93	0.92		0.76-1.02
OCDD	458/460	0.93	0.89	0.88	0.90	0.90	0.90		0.76-1.02
13C-2,3,7,8-TCDD	332/334	0.79	0.80	0.80	0.80	0.80	0.79		0.65-0.89
13C-1,2,3,7,8-PeCDD	368/370	1.58	1.58	1.57	1.58	1.56	1.57		1.32-1.78
13C-1,2,3,4,7,8-HxCDD	402/404	1.27	1.26	1.26	1.32	1.25	1.26		1.05-1.43
13C-1,2,3,6,7,8-HxCDD	402/404	1.27	1.26	1.26	1.20	1.25	1.26		1.05-1.43
13C-1,2,3,4,6,7,8-HpCDD	436/438	1.06	1.06	1.04	1.06	1.05	1.05		0.88-1.20
13C-OCDD	470/472	0.90	0.90	0.90	0.91	0.90	0.89		0.76-1.02
13C-2,3,7,8-TCDF	316/318	0.78	0.80	0.79	0.79	0.79	0.79		0.65-0.89
13C-1,2,3,7,8-PeCDF	352/354	1.61	1.62	1.60	1.60	1.60	1.60		1.32-1.78
13C-2,3,4,7,8-PeCDF	352/354	1.59	1.59	1.62	1.61	1.59	1.61		1.32-1.78
13C-1,2,3,4,7,8-HxCDF	384/386	0.54	0.53	0.53	0.53	0.53	0.54		0.43-0.59
13C-1,2,3,6,7,8-HxCDF	384/386	0.53	0.54	0.53	0.54	0.54	0.54		0.43-0.59
13C-2,3,4,6,7,8-HxCDF	384/386	0.54	0.54	0.53	0.54	0.54	0.53		0.43-0.59
13C-1,2,3,7,8,9-HxCDF	384/386	0.52	0.53	0.53	0.54	0.53	0.53		0.43-0.59
13C-1,2,3,4,6,7,8-HpCDF	418/420	0.46	0.46	0.46	0.46	0.46	0.46		0.37-0.51
13C-1,2,3,4,7,8,9-HpCDF	418/420	0.46	0.46	0.45	0.46	0.45	0.46		0.37-0.51
13C-1,2,3,4-TCDD	332/334	0.81	0.81	0.81	0.80	0.79	0.81		0.65-0.89
13C-1,2,3,7,8,9-HxCDD	402/404	1.24	1.26	1.26	1.24	1.25	1.25		1.05-1.43

Quality Control (QC) limits represent +/- 15% window around the theoretical ion abundance ratio. The laboratory must flag any analyte in any calibration solution which does not meet the ion abundance ratio QC limit by placing an asterisk in the flag column.

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76554

Run #1 Filename P614682 Samp: 1 Inj: 1 Acquired: 25-SEP-18 14:18:27
Processed: 26-SEP-18 07:39:04 Sample ID: CS0.5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:01	3.991e+02	5.332e+02	0.75	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:15	3.245e+03	1.970e+03	1.65	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:10	3.017e+03	1.917e+03	1.57	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	2.964e+03	2.360e+03	1.26	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	3.032e+03	2.349e+03	1.29	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	2.788e+03	2.154e+03	1.29	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:10	2.544e+03	2.080e+03	1.22	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	2.520e+03	2.421e+03	1.04	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	1.988e+03	2.226e+03	0.89	yes	no	1.463
10	Unk	OCDF	42:13	3.006e+03	3.322e+03	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:49	2.873e+02	3.690e+02	0.78	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	1.757e+03	1.126e+03	1.56	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	1.695e+03	1.402e+03	1.21	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:39	1.736e+03	1.234e+03	1.41	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:53	1.790e+03	1.494e+03	1.20	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	1.575e+03	1.438e+03	1.10	yes	no	1.112
17	Unk	OCDD	42:01	2.333e+03	2.510e+03	0.93	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	28:00	1.453e+05	1.860e+05	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	2.225e+05	1.378e+05	1.61	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	2.208e+05	1.389e+05	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:49	1.017e+05	1.873e+05	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:55	1.172e+05	2.227e+05	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:25	1.097e+05	2.020e+05	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	9.463e+04	1.814e+05	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:24	7.990e+04	1.736e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:46	7.243e+04	1.569e+05	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	1.005e+05	1.270e+05	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:26	1.588e+05	1.004e+05	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:33	1.251e+05	9.838e+04	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:38	1.252e+05	9.893e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:18	1.083e+05	1.026e+05	1.06	yes	no	0.857
32	IS	13C-OCDD	42:01	1.503e+05	1.668e+05	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:14	1.058e+05	1.311e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:52	1.355e+05	1.094e+05	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:49	6.272e+02				no	1.086

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76554

Run #1 Filename P614682 Samp: 1 Inj: 1 Acquired: 25-SEP-18 14:18:27
Processed: 26-SEP-18 07:39:04 LAB. ID: CS0.5

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.55e+04	1.79e+03	3.7e+01	1.00e+05	4.41e+03	2.3e+01
2	1,2,3,7,8-PeCDF	5.99e+05	1.18e+03	5.1e+02	3.57e+05	4.28e+03	8.3e+01
3	2,3,4,7,8-PeCDF	5.69e+05	1.18e+03	4.8e+02	3.70e+05	4.28e+03	8.7e+01
4	1,2,3,4,7,8-HxCDF	6.38e+05	3.25e+03	2.0e+02	4.85e+05	1.42e+03	3.4e+02
5	1,2,3,6,7,8-HxCDF	6.38e+05	3.25e+03	2.0e+02	4.95e+05	1.42e+03	3.5e+02
6	2,3,4,6,7,8-HxCDF	6.03e+05	3.25e+03	1.9e+02	4.83e+05	1.42e+03	3.4e+02
7	1,2,3,7,8,9-HxCDF	4.97e+05	3.25e+03	1.5e+02	4.13e+05	1.42e+03	2.9e+02
8	1,2,3,4,6,7,8-HpCDF	5.62e+05	1.66e+03	3.4e+02	5.47e+05	1.04e+03	5.3e+02
9	1,2,3,4,7,8,9-HpCDF	4.02e+05	1.66e+03	2.4e+02	4.51e+05	1.04e+03	4.3e+02
10	OCDF	5.23e+05	1.34e+03	3.9e+02	5.81e+05	4.02e+03	1.4e+02
11	2,3,7,8-TCDD	6.18e+04	5.07e+03	1.2e+01	6.68e+04	2.40e+03	2.8e+01
12	1,2,3,7,8-PeCDD	3.47e+05	2.36e+03	1.5e+02	2.20e+05	2.64e+02	8.3e+02
13	1,2,3,4,7,8-HxCDD	3.95e+05	1.84e+03	2.1e+02	3.18e+05	1.66e+03	1.9e+02
14	1,2,3,6,7,8-HxCDD	3.64e+05	1.84e+03	2.0e+02	2.60e+05	1.66e+03	1.6e+02
15	1,2,3,7,8,9-HxCDD	4.06e+05	1.84e+03	2.2e+02	3.23e+05	1.66e+03	1.9e+02
16	1,2,3,4,6,7,8-HpCDD	3.19e+05	2.32e+03	1.4e+02	3.31e+05	1.19e+03	2.8e+02
17	OCDD	4.28e+05	8.48e+02	5.0e+02	4.37e+05	1.30e+03	3.4e+02
18	13C-2,3,7,8-TCDF	2.54e+07	1.52e+04	1.7e+03	3.22e+07	1.06e+04	3.1e+03
19	13C-1,2,3,7,8-PeCDF	4.04e+07	2.12e+03	1.9e+04	2.49e+07	3.13e+03	8.0e+03
20	13C-2,3,4,7,8-PeCDF	4.23e+07	2.12e+03	2.0e+04	2.67e+07	3.13e+03	8.5e+03
21	13C-1,2,3,4,7,8-HxCDF	2.18e+07	3.28e+03	6.7e+03	4.05e+07	3.71e+03	1.1e+04
22	13C-1,2,3,6,7,8-HxCDF	2.40e+07	3.28e+03	7.3e+03	4.55e+07	3.71e+03	1.2e+04
23	13C-2,3,4,6,7,8-HxCDF	2.42e+07	3.28e+03	7.4e+03	4.44e+07	3.71e+03	1.2e+04
24	13C-1,2,3,7,8,9-HxCDF	1.91e+07	3.28e+03	5.8e+03	3.68e+07	3.71e+03	9.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.81e+07	5.66e+03	3.2e+03	3.90e+07	2.05e+04	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.45e+07	5.66e+03	2.6e+03	3.15e+07	2.05e+04	1.5e+03
27	13C-2,3,7,8-TCDD	1.84e+07	1.55e+04	1.2e+03	2.34e+07	5.32e+03	4.4e+03
28	13C-1,2,3,7,8-PeCDD	3.10e+07	3.24e+03	9.6e+03	1.95e+07	2.82e+03	6.9e+03
29	13C-1,2,3,4,7,8-HxCDD	2.85e+07	5.20e+03	5.5e+03	2.24e+07	3.08e+03	7.3e+03
30	13C-1,2,3,6,7,8-HxCDD	2.65e+07	5.20e+03	5.1e+03	2.10e+07	3.08e+03	6.8e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.26e+07	2.60e+03	8.7e+03	2.13e+07	2.03e+03	1.1e+04
32	13C-OCDD	2.73e+07	1.56e+03	1.8e+04	2.99e+07	4.32e+02	6.9e+04
33	13C-1,2,3,4-TCDD	1.96e+07	1.55e+04	1.3e+03	2.41e+07	5.32e+03	4.5e+03
34	13C-1,2,3,7,8,9-HxCDD	3.00e+07	5.20e+03	5.8e+03	2.40e+07	3.08e+03	7.8e+03
35	37Cl-2,3,7,8-TCDD	1.12e+05	4.66e+03	2.4e+01			

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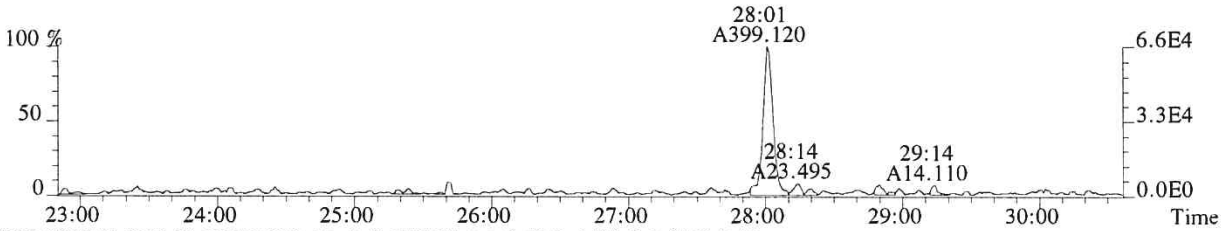
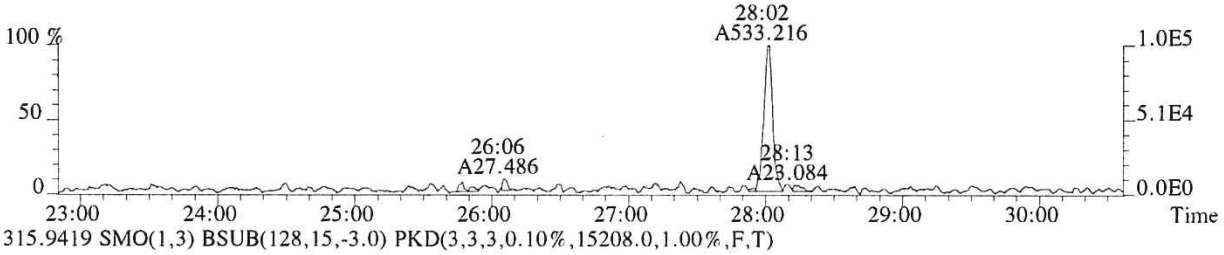
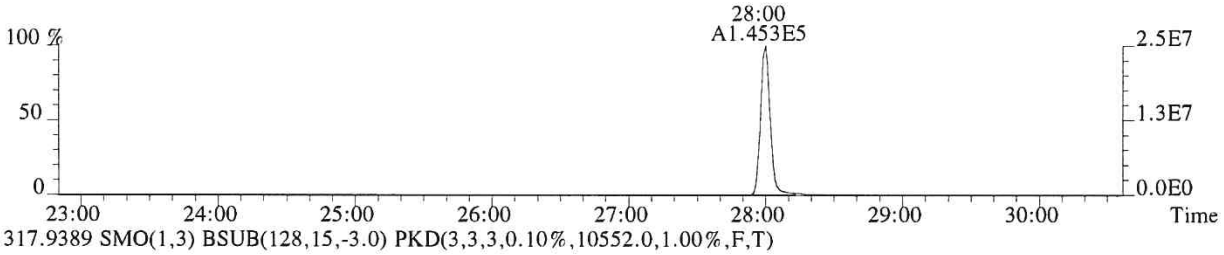
File:P614682 #1-552 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1788.0,1.00%,F,T)



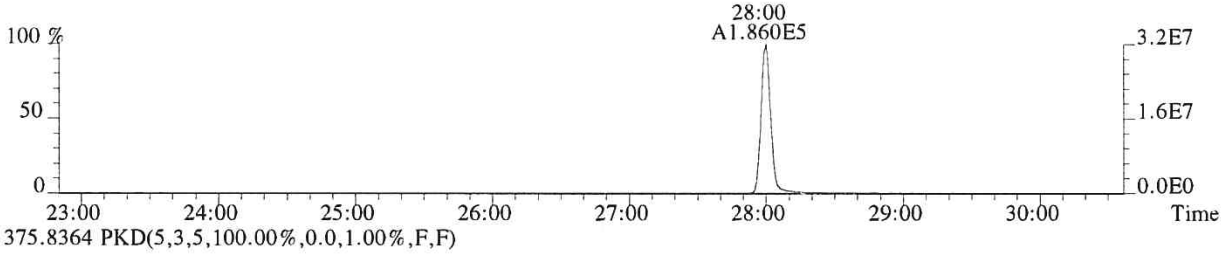
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4408.0,1.00%,F,T)



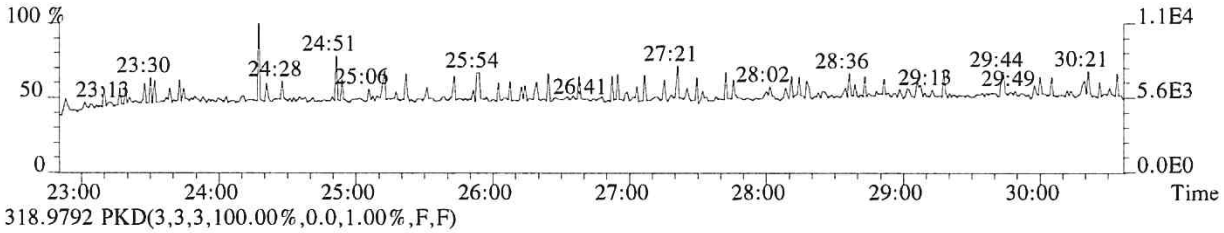
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15208.0,1.00%,F,T)



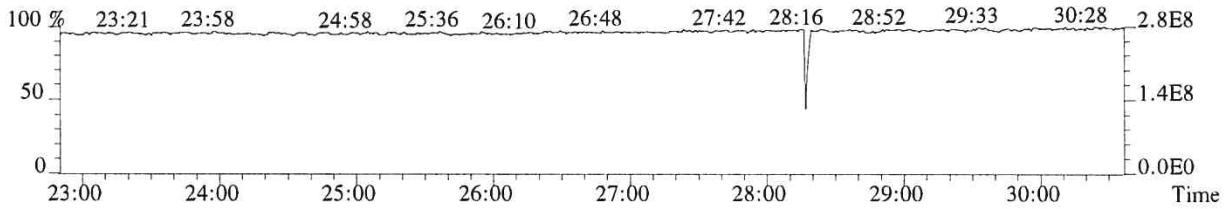
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10552.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

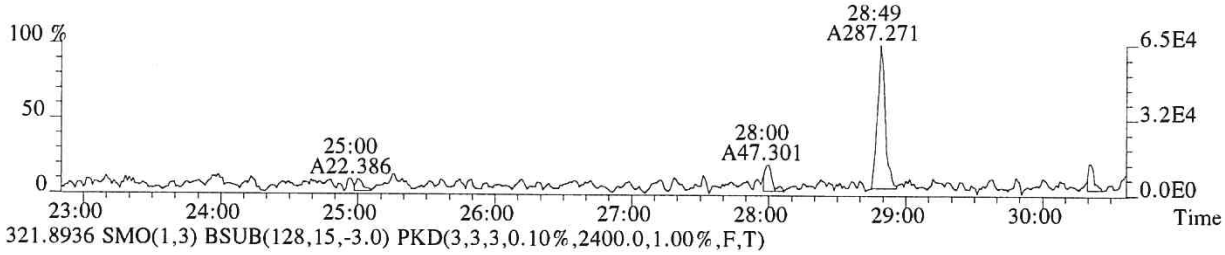


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

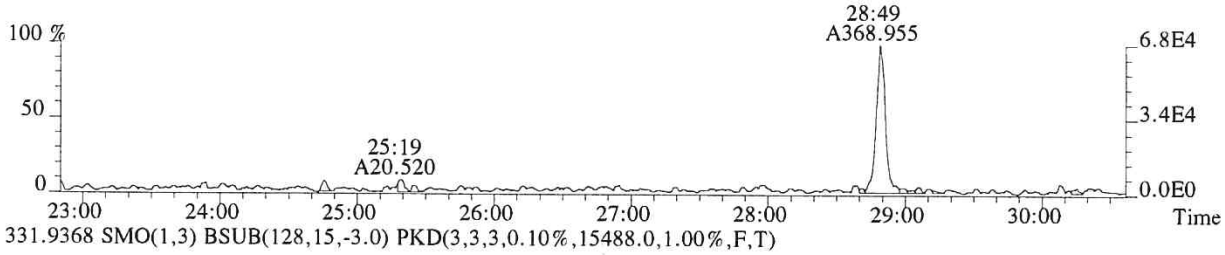


059676

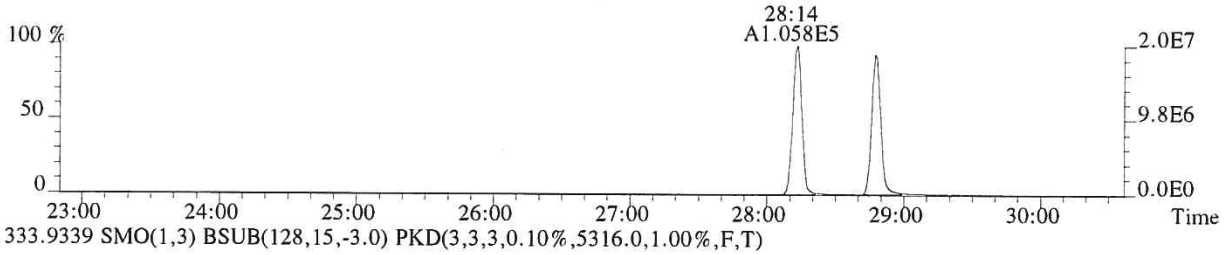
File:P614682 #1-552 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5072.0,1.00%,F,T)



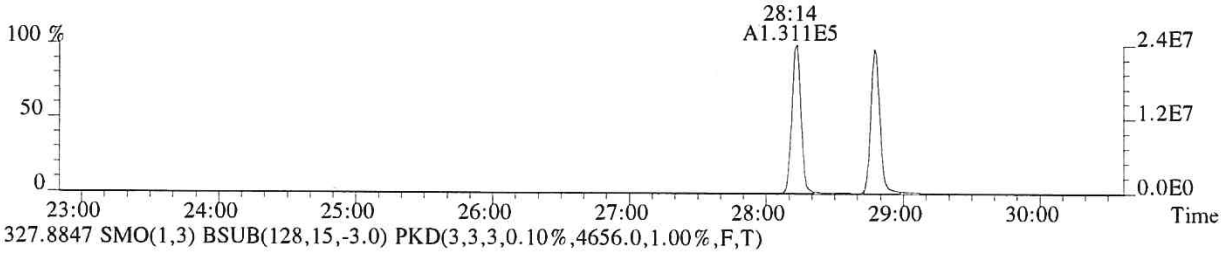
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2400.0,1.00%,F,T)



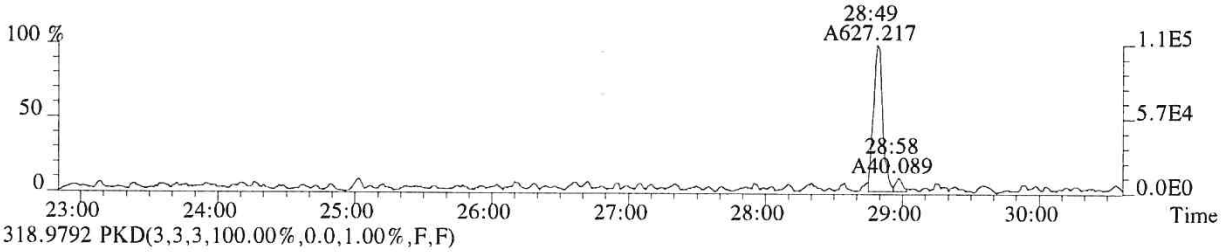
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15488.0,1.00%,F,T)



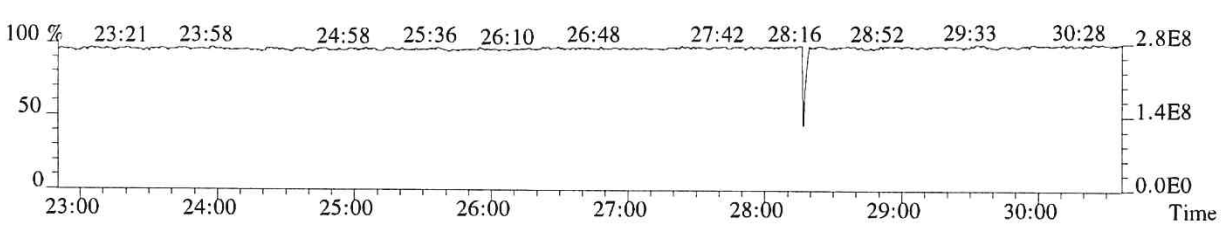
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5316.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4656.0,1.00%,F,T)

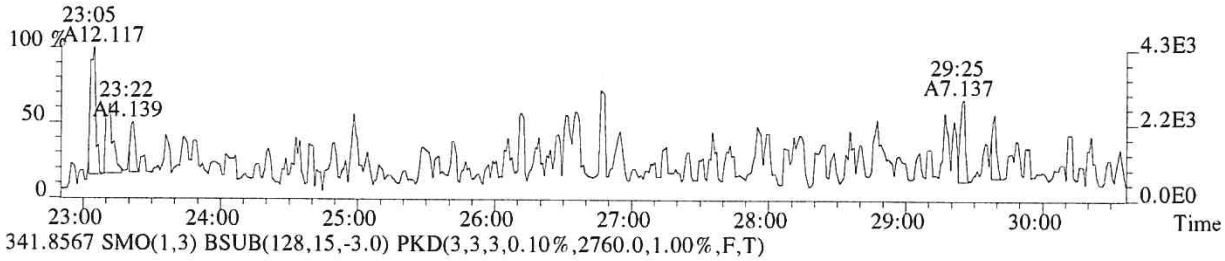


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

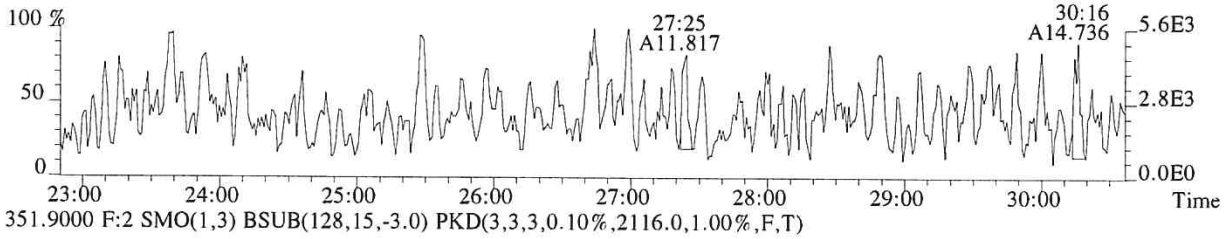


059677

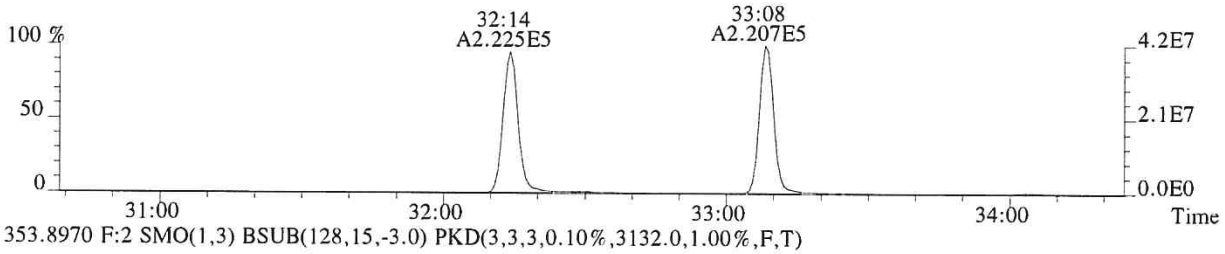
File:P614682 #1-552 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1072.0,1.00%,F,T)



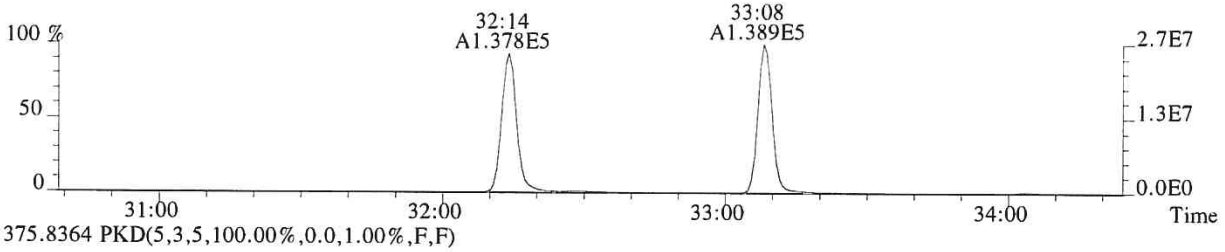
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2760.0,1.00%,F,T)



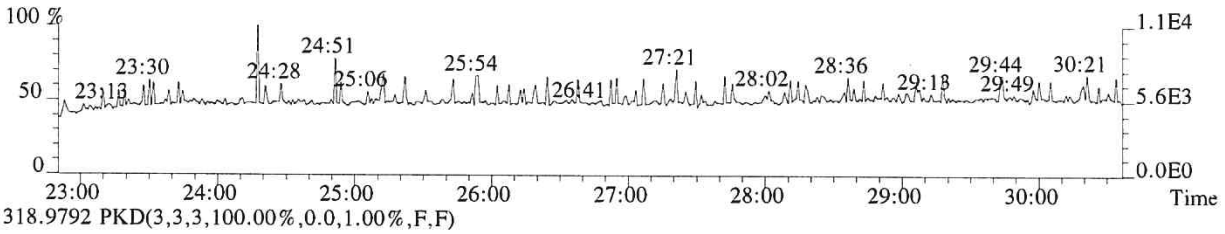
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2116.0,1.00%,F,T)



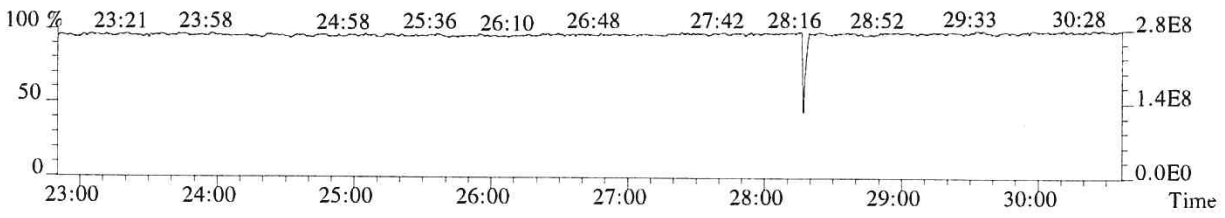
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3132.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

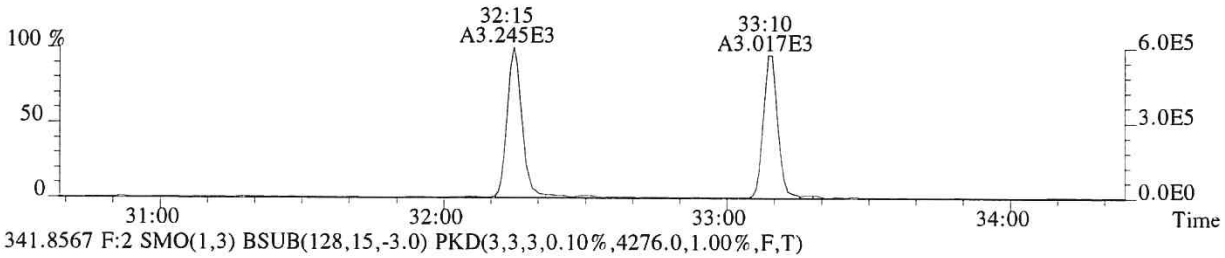


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

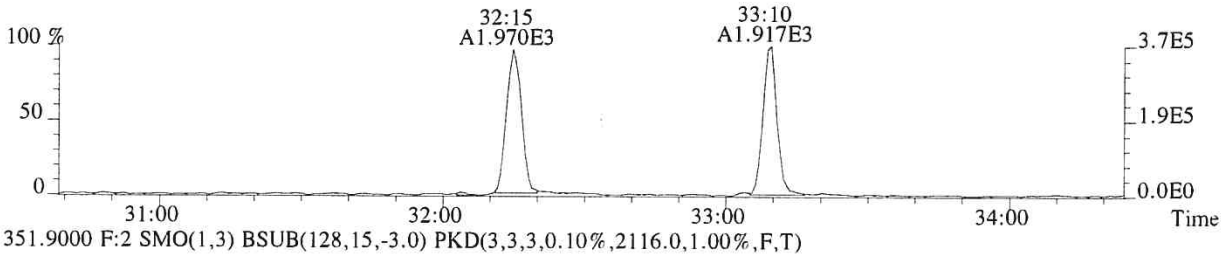


059678

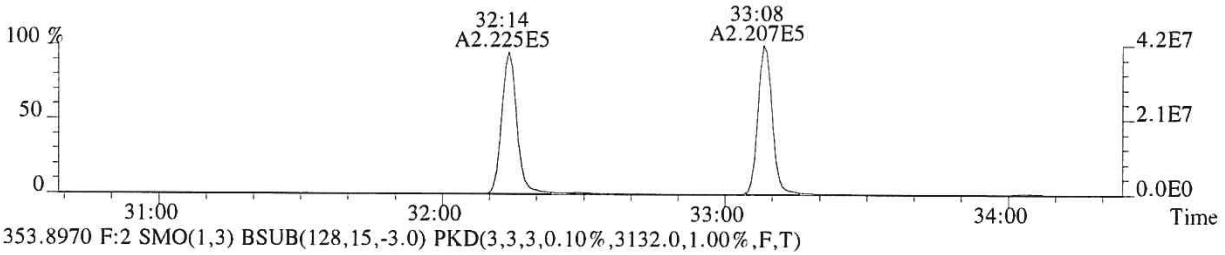
File:P614682 #1-339 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1180.0,1.00%,F,T)



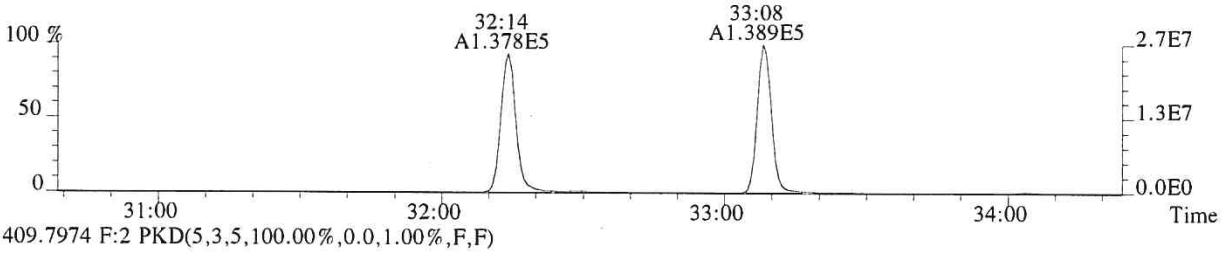
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4276.0,1.00%,F,T)



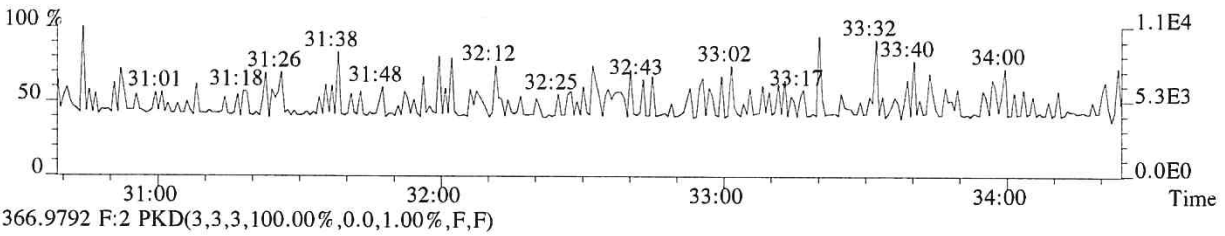
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2116.0,1.00%,F,T)



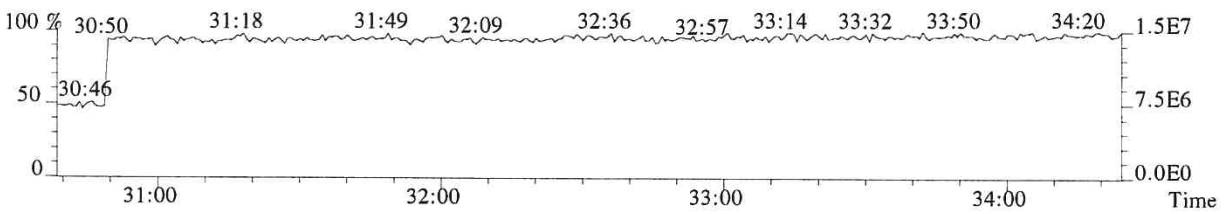
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3132.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

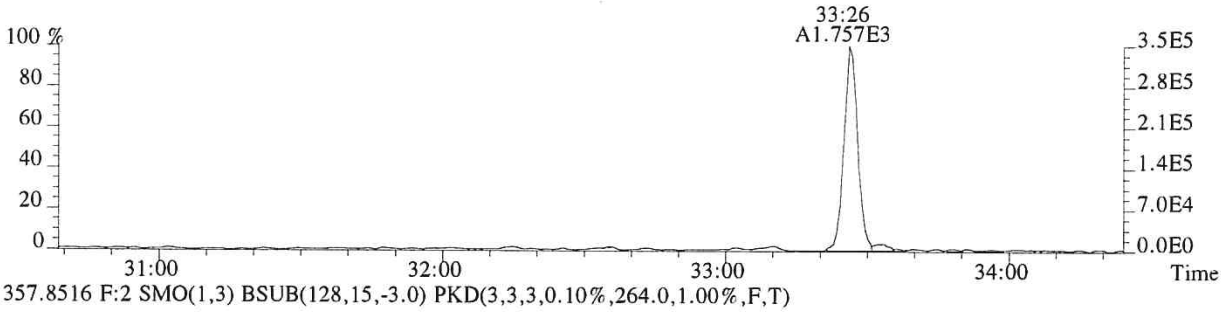


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

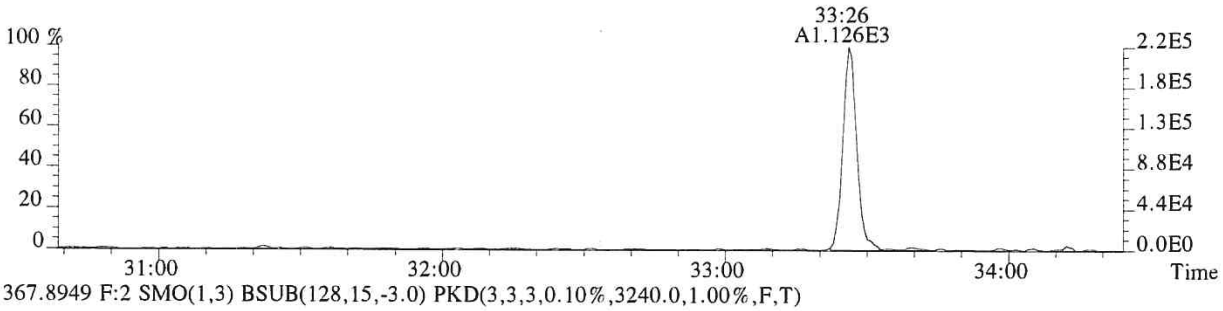


059679

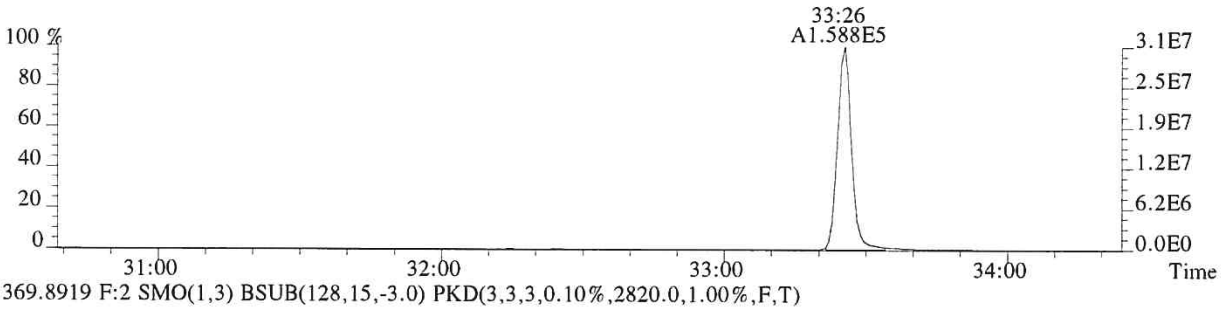
File:P614682 #1-339 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2356.0,1.00%,F,T)



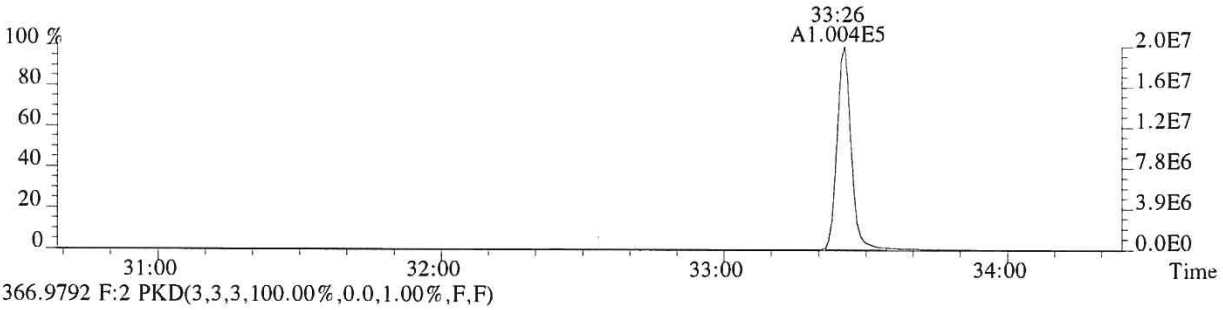
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,264.0,1.00%,F,T)



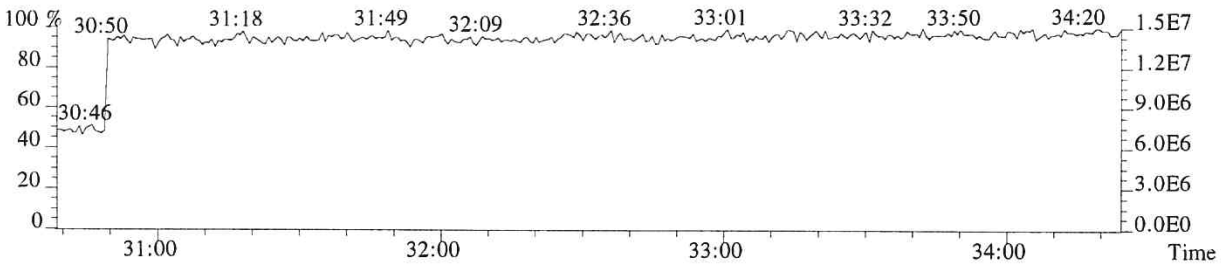
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3240.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2820.0,1.00%,F,T)

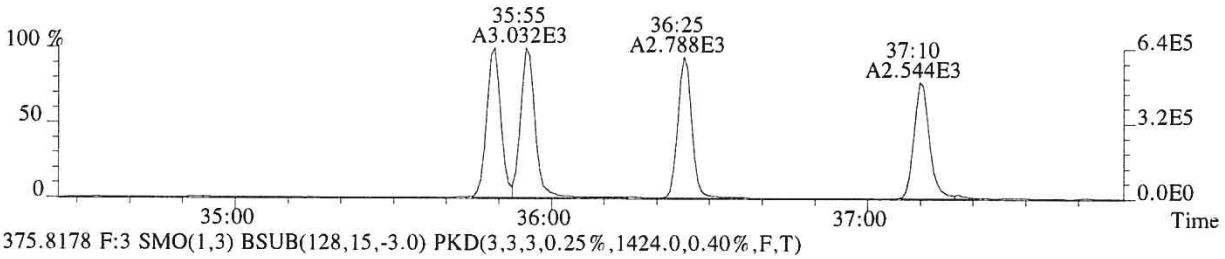


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

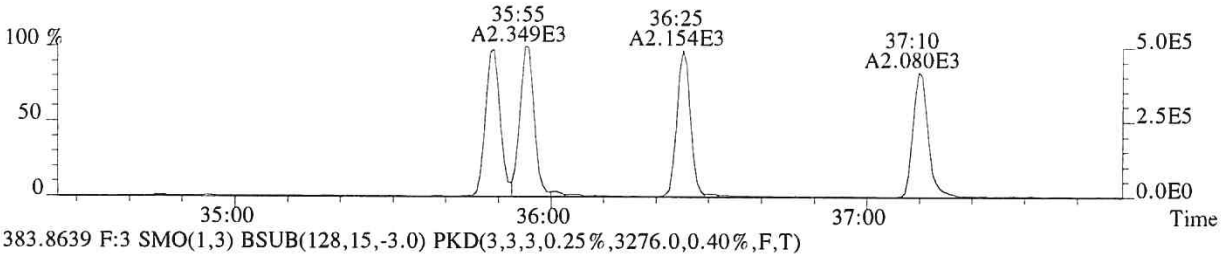


059680

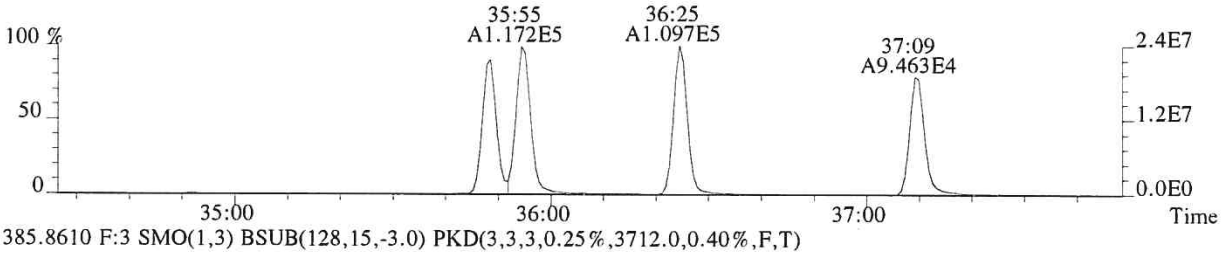
File:P614682 #1-304 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3252.0,0.40%,F,T)



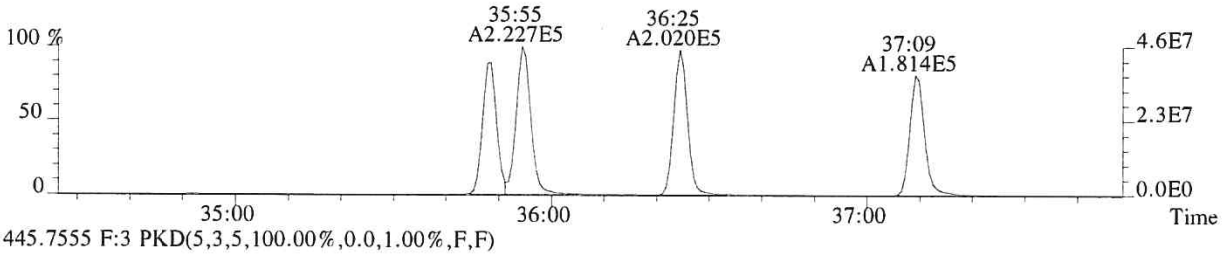
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1424.0,0.40%,F,T)



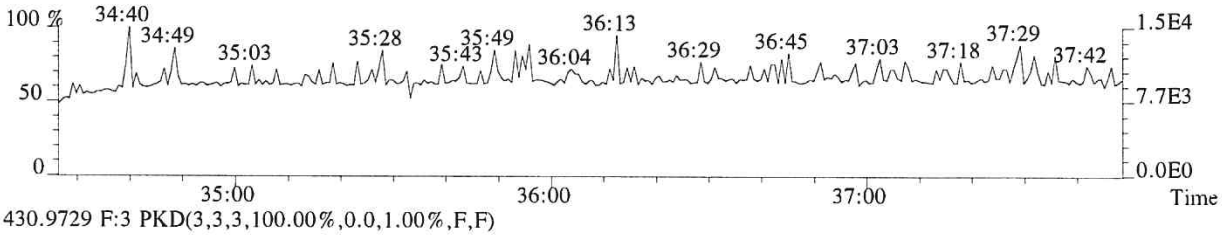
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3276.0,0.40%,F,T)



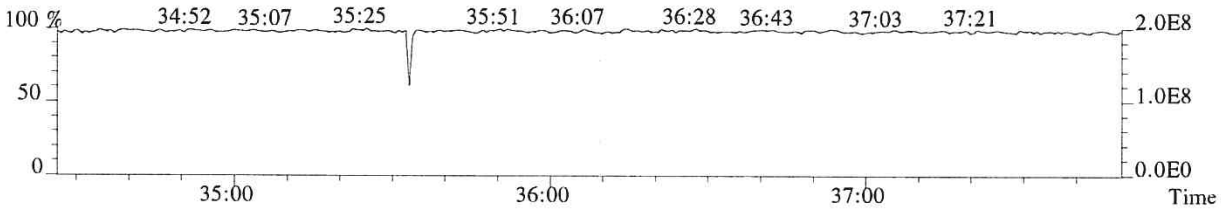
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3712.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

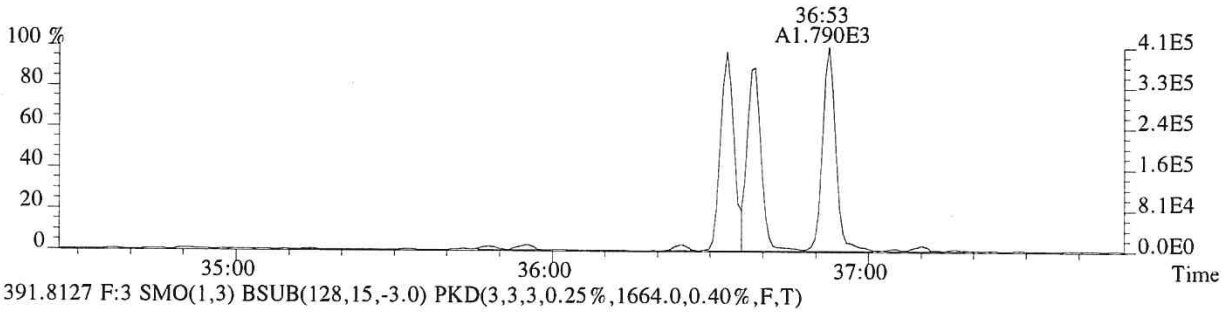


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

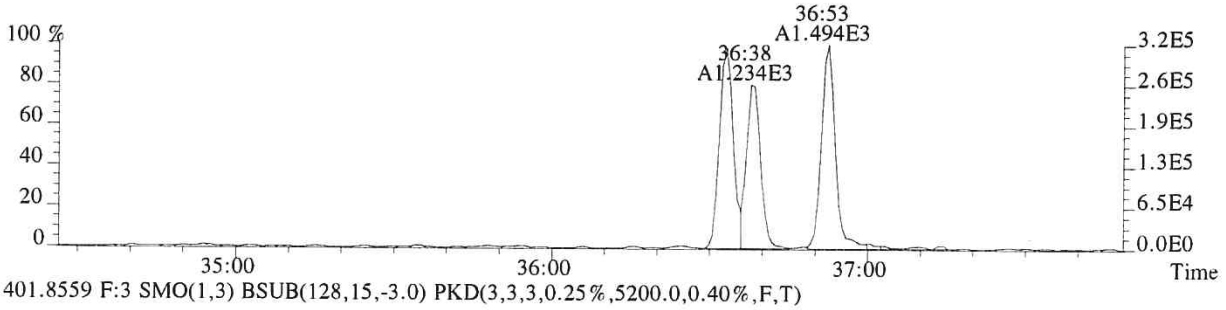


059681

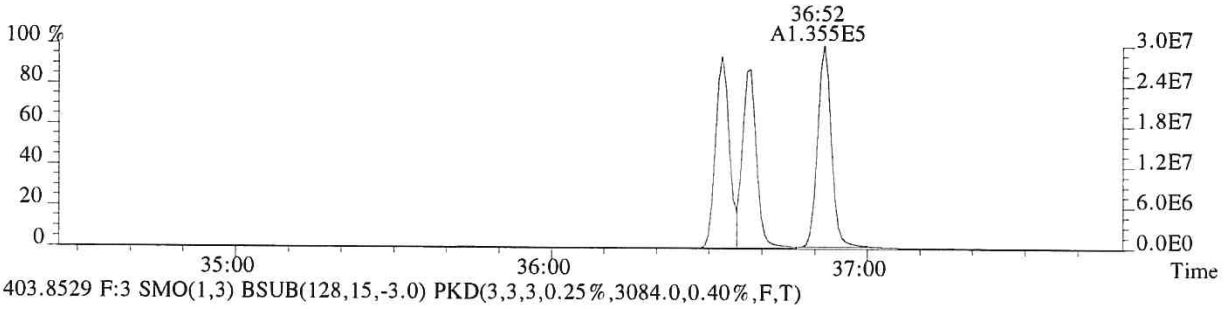
File:P614682 #1-304 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1840.0,0.40%,F,T)



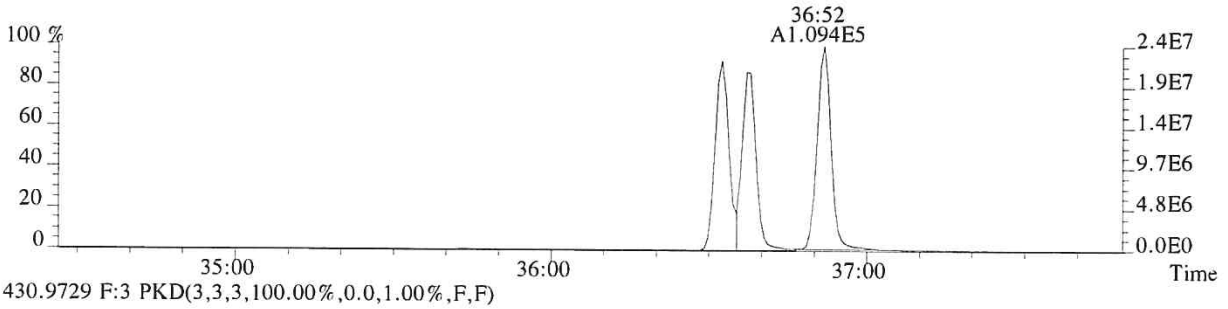
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1664.0,0.40%,F,T)



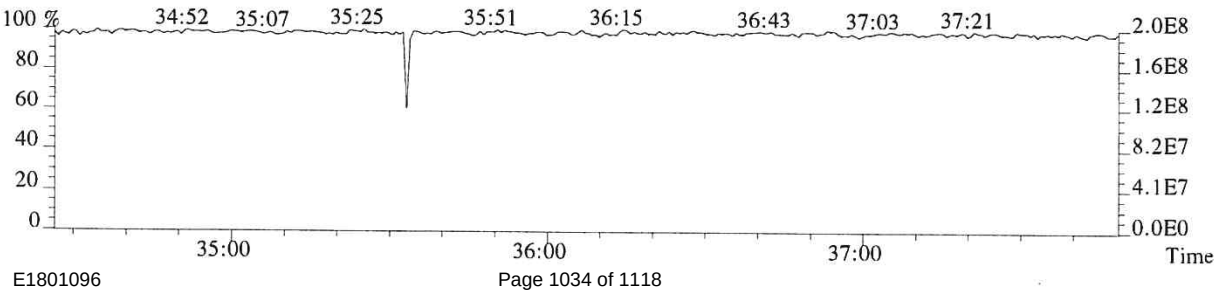
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5200.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3084.0,0.40%,F,T)

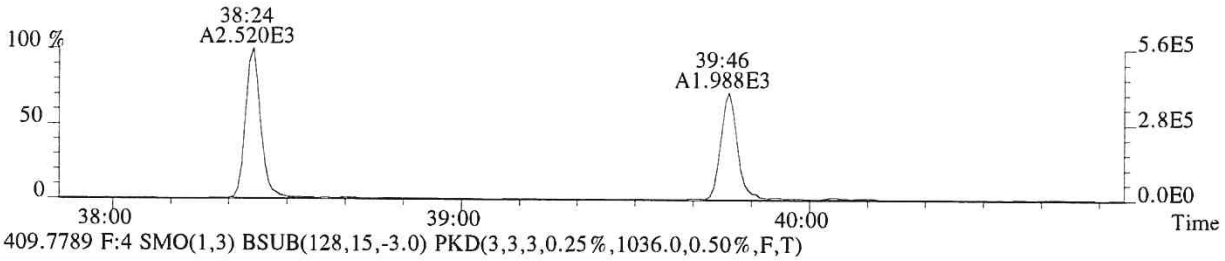


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

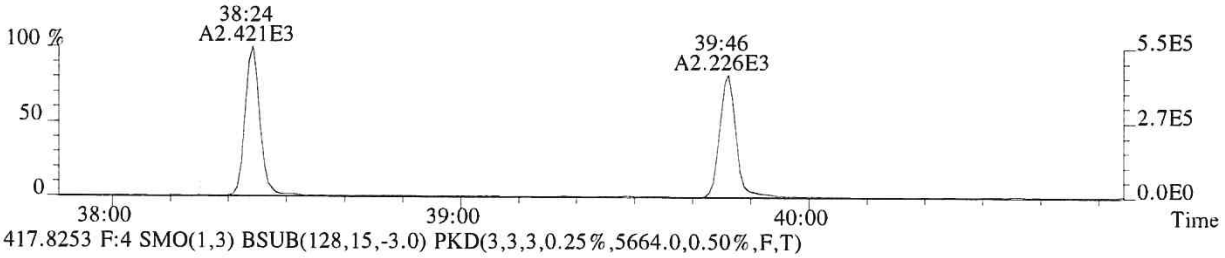


059682

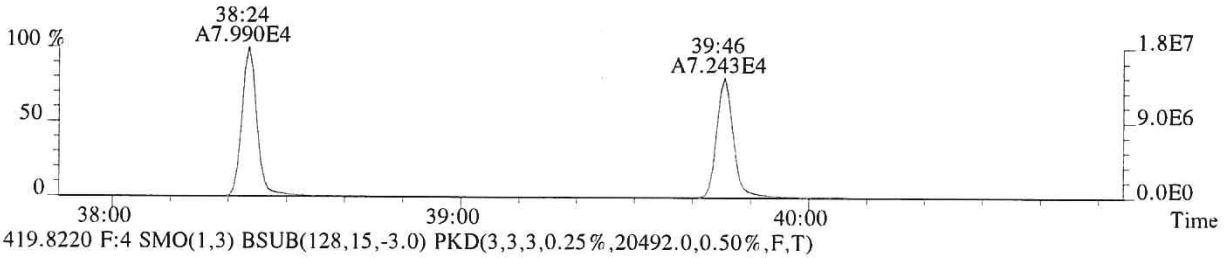
File:P614682 #1-276 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1664.0,0.50%,F,T)



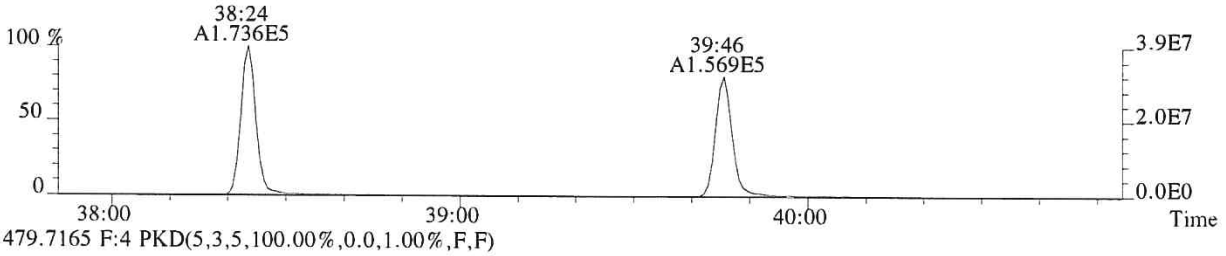
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1036.0,0.50%,F,T)



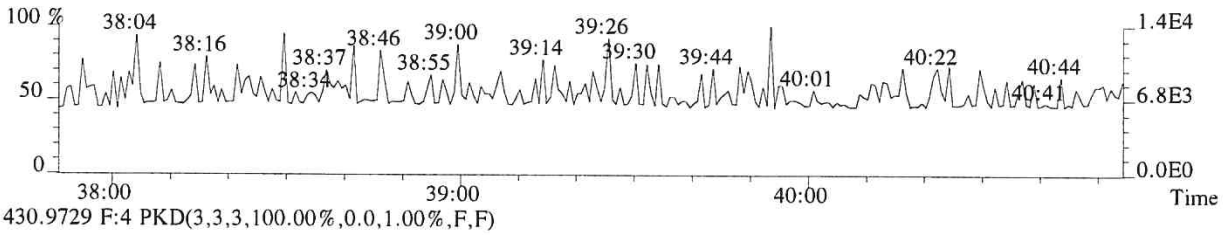
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5664.0,0.50%,F,T)



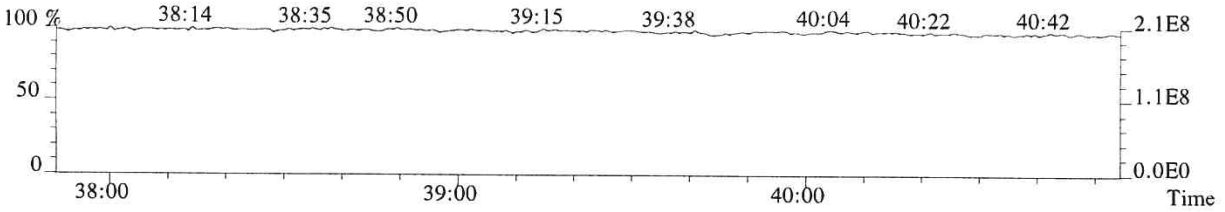
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,20492.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

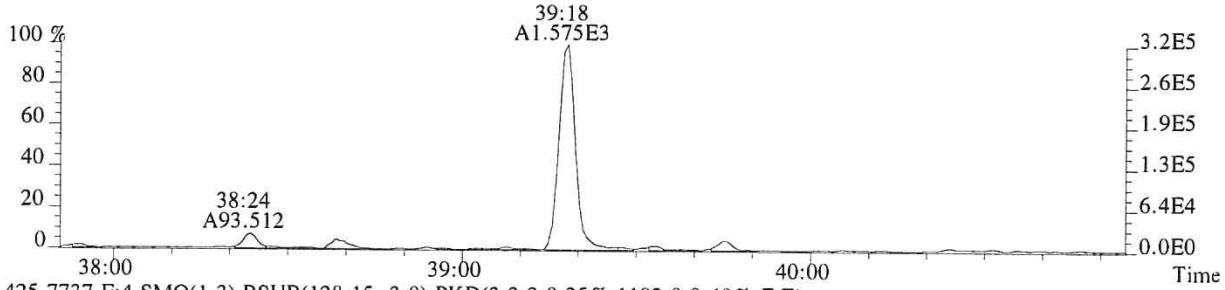


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

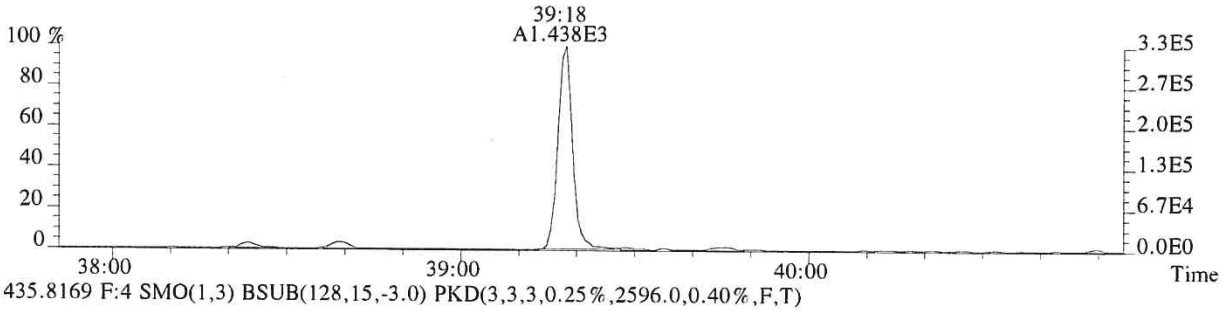


059683

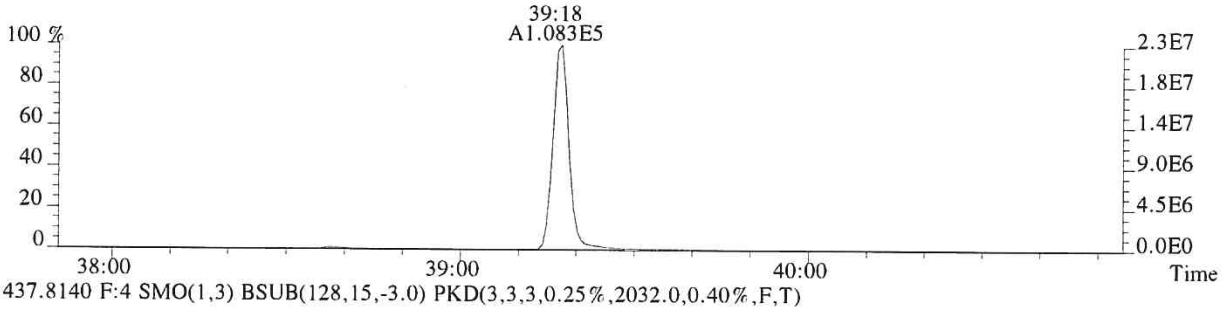
File:P614682 #1-276 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2320.0,0.40%,F,T)



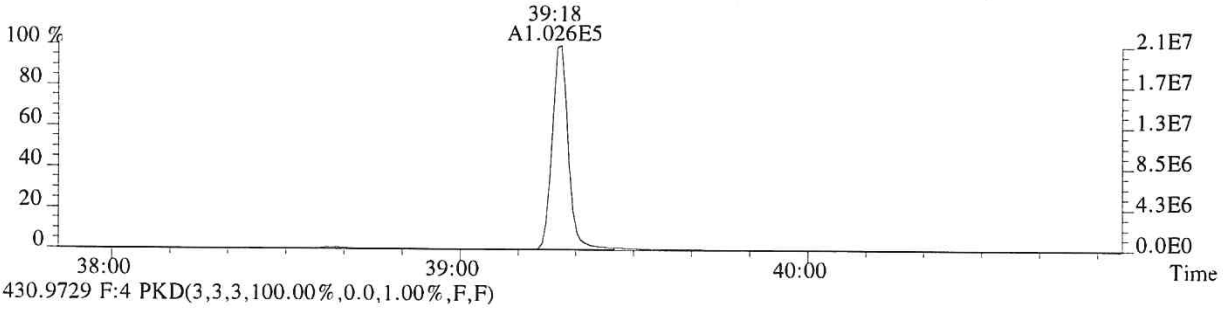
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1192.0,0.40%,F,T)



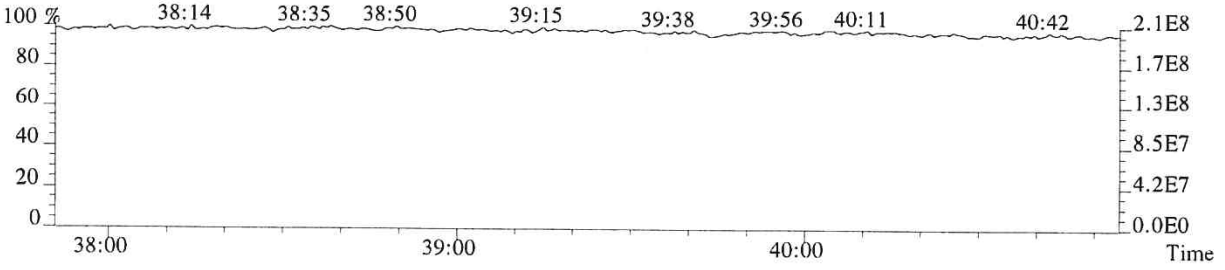
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2596.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2032.0,0.40%,F,T)

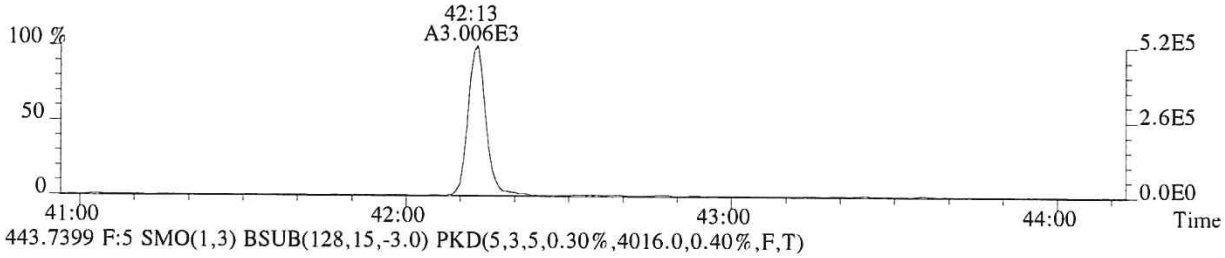


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

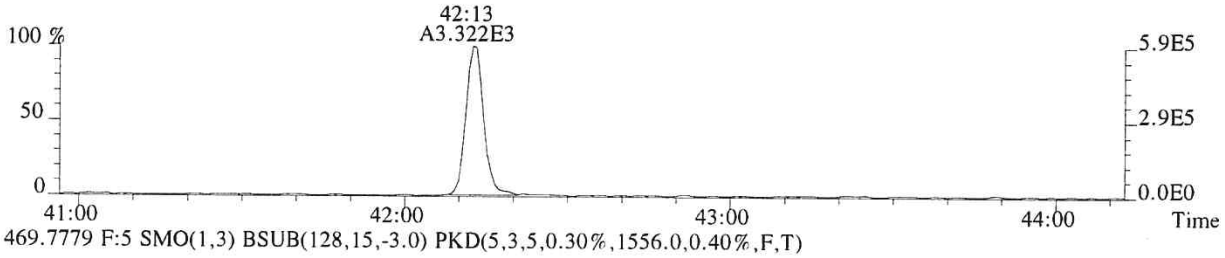


059684

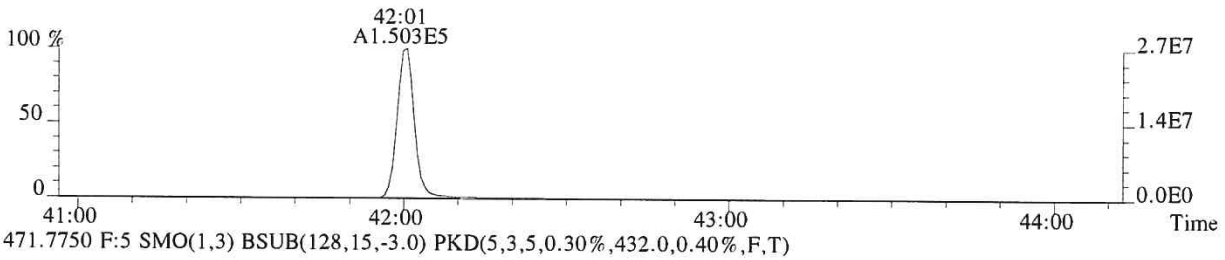
File:P614682 #1-295 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1340.0,0.40%,F,T)



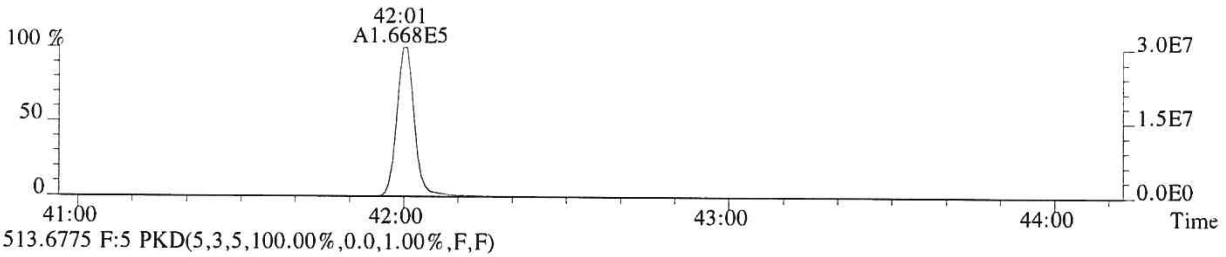
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4016.0,0.40%,F,T)



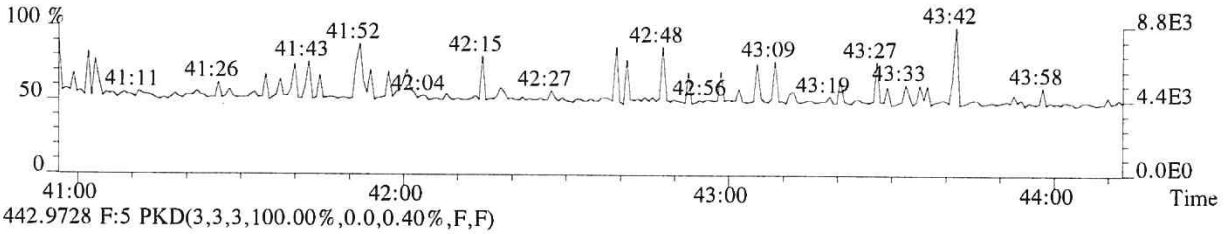
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1556.0,0.40%,F,T)



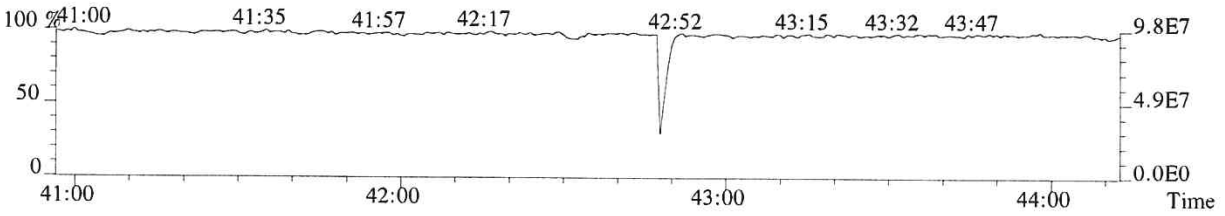
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,432.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

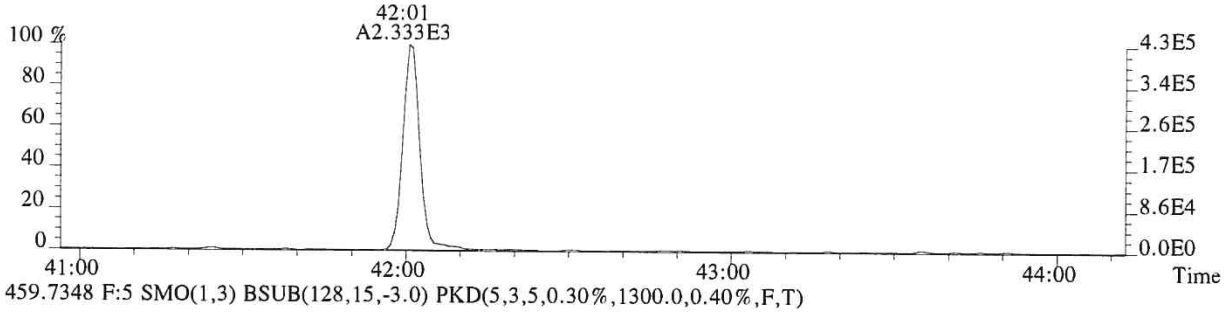


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

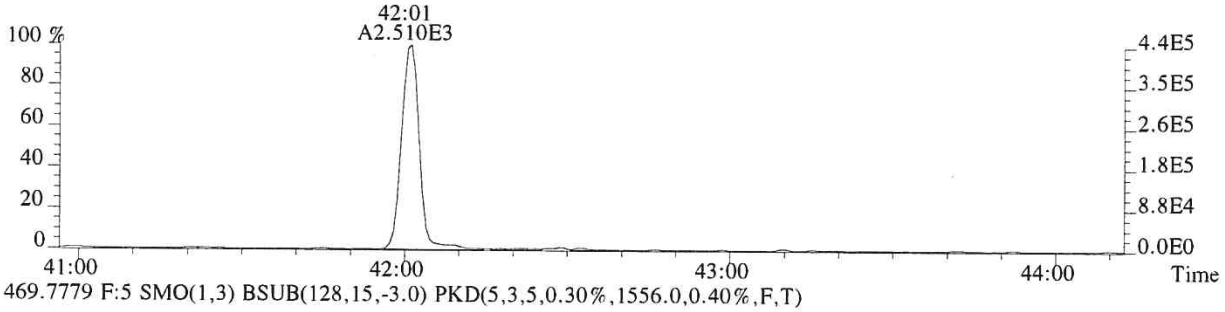


059685

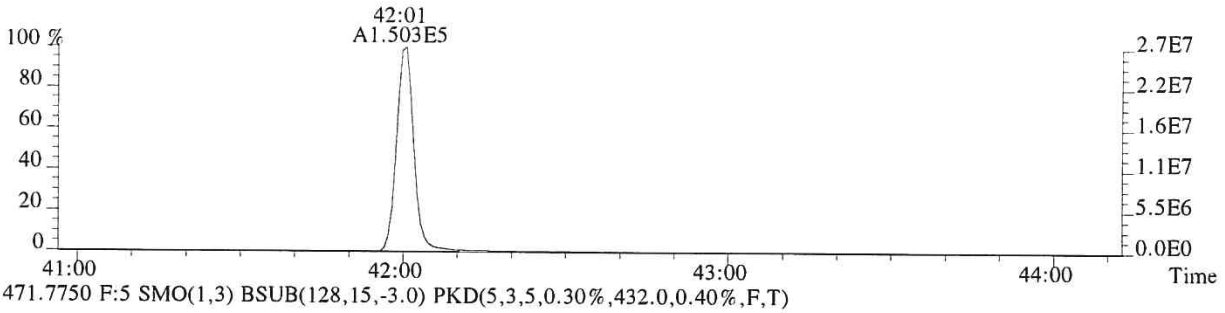
File:P614682 #1-295 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,848.0,0.40%,F,T)



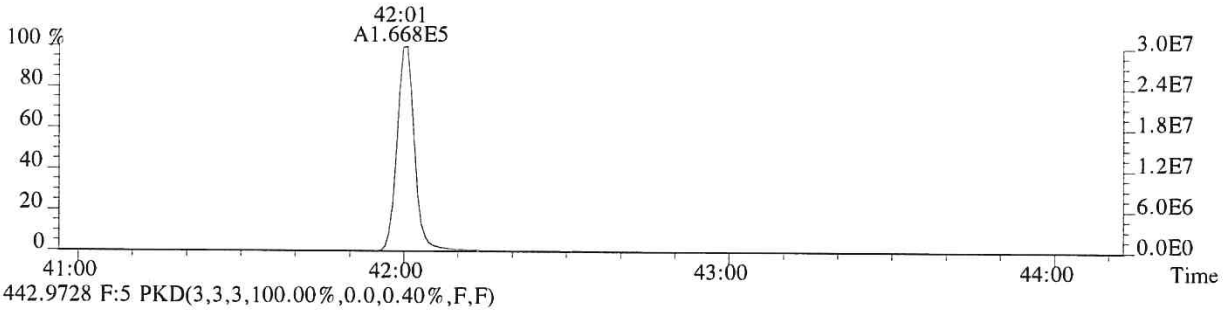
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1300.0,0.40%,F,T)



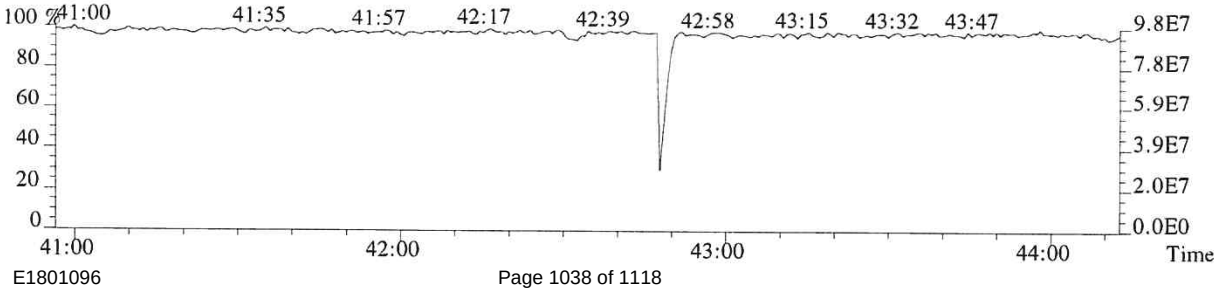
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1556.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,432.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059686

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
82614

Run #2 Filename P614683 Samp: 1 Inj: 1 Acquired: 25-SEP-18 15:08:49
Processed: 26-SEP-18 07:39:06 Sample ID: CS1

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:00	9.696e+02	1.301e+03	0.75	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:14	8.209e+03	5.211e+03	1.58	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:09	7.782e+03	4.847e+03	1.61	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	7.580e+03	5.860e+03	1.29	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	7.826e+03	6.295e+03	1.24	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	7.149e+03	5.707e+03	1.25	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:10	6.633e+03	5.137e+03	1.29	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	6.668e+03	6.509e+03	1.02	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	5.874e+03	5.515e+03	1.07	yes	no	1.463
10	Unk	OCDF	42:13	7.957e+03	9.190e+03	0.87	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	6.591e+02	7.969e+02	0.83	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	4.521e+03	2.979e+03	1.52	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	4.250e+03	3.535e+03	1.20	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	4.303e+03	3.394e+03	1.27	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:52	4.586e+03	3.767e+03	1.22	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	4.011e+03	3.764e+03	1.07	yes	no	1.112
17	Unk	OCDD	42:01	6.097e+03	6.815e+03	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	1.863e+05	2.330e+05	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	2.845e+05	1.757e+05	1.62	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	2.739e+05	1.718e+05	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:48	1.281e+05	2.407e+05	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:55	1.461e+05	2.703e+05	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:25	1.362e+05	2.538e+05	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	1.215e+05	2.294e+05	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:23	1.041e+05	2.259e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:45	9.345e+04	2.024e+05	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	1.293e+05	1.616e+05	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	1.924e+05	1.218e+05	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:32	1.556e+05	1.239e+05	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	1.601e+05	1.267e+05	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	1.414e+05	1.336e+05	1.06	yes	no	0.857
32	IS	13C-OCDD	42:00	2.022e+05	2.237e+05	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:13	1.337e+05	1.646e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:51	1.731e+05	1.377e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	1.653e+03				no	1.086

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Signal/Noise Height Ratio Summary

CLIENT ID.
82614

Run #2 Filename P614683 Samp: 1 Inj: 1 Acquired: 25-SEP-18 15:08:49
Processed: 26-SEP-18 07:39:06 LAB. ID: CS1

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.73e+05	2.52e+03	6.9e+01	2.26e+05	4.68e+03	4.8e+01
2	1,2,3,7,8-PeCDF	1.49e+06	1.07e+03	1.4e+03	9.88e+05	5.47e+03	1.8e+02
3	2,3,4,7,8-PeCDF	1.55e+06	1.07e+03	1.5e+03	9.81e+05	5.47e+03	1.8e+02
4	1,2,3,4,7,8-HxCDF	1.64e+06	3.19e+03	5.1e+02	1.29e+06	1.24e+03	1.0e+03
5	1,2,3,6,7,8-HxCDF	1.65e+06	3.19e+03	5.2e+02	1.30e+06	1.24e+03	1.0e+03
6	2,3,4,6,7,8-HxCDF	1.53e+06	3.19e+03	4.8e+02	1.19e+06	1.24e+03	9.6e+02
7	1,2,3,7,8,9-HxCDF	1.37e+06	3.19e+03	4.3e+02	1.06e+06	1.24e+03	8.5e+02
8	1,2,3,4,6,7,8-HpCDF	1.48e+06	1.97e+03	7.5e+02	1.45e+06	1.25e+03	1.2e+03
9	1,2,3,4,7,8,9-HpCDF	1.19e+06	1.97e+03	6.0e+02	1.11e+06	1.25e+03	8.9e+02
10	OCDF	1.45e+06	1.15e+03	1.3e+03	1.64e+06	2.28e+03	7.2e+02
11	2,3,7,8-TCDD	1.20e+05	6.88e+03	1.7e+01	1.48e+05	2.99e+03	5.0e+01
12	1,2,3,7,8-PeCDD	8.64e+05	2.37e+03	3.6e+02	5.83e+05	1.39e+03	4.2e+02
13	1,2,3,4,7,8-HxCDD	9.60e+05	1.02e+03	9.4e+02	8.07e+05	1.68e+03	4.8e+02
14	1,2,3,6,7,8-HxCDD	9.46e+05	1.02e+03	9.3e+02	7.52e+05	1.68e+03	4.5e+02
15	1,2,3,7,8,9-HxCDD	1.01e+06	1.02e+03	9.9e+02	8.34e+05	1.68e+03	5.0e+02
16	1,2,3,4,6,7,8-HpCDD	8.38e+05	1.17e+03	7.2e+02	8.29e+05	4.84e+02	1.7e+03
17	OCDD	1.16e+06	3.14e+03	3.7e+02	1.30e+06	1.96e+03	6.6e+02
18	13C-2,3,7,8-TCDF	3.28e+07	1.64e+04	2.0e+03	4.11e+07	1.27e+04	3.2e+03
19	13C-1,2,3,7,8-PeCDF	5.29e+07	3.44e+03	1.5e+04	3.26e+07	2.57e+03	1.3e+04
20	13C-2,3,4,7,8-PeCDF	5.43e+07	3.44e+03	1.6e+04	3.38e+07	2.57e+03	1.3e+04
21	13C-1,2,3,4,7,8-HxCDF	2.86e+07	3.47e+03	8.3e+03	5.39e+07	4.48e+03	1.2e+04
22	13C-1,2,3,6,7,8-HxCDF	3.07e+07	3.47e+03	8.8e+03	5.68e+07	4.48e+03	1.3e+04
23	13C-2,3,4,6,7,8-HxCDF	2.95e+07	3.47e+03	8.5e+03	5.46e+07	4.48e+03	1.2e+04
24	13C-1,2,3,7,8,9-HxCDF	2.51e+07	3.47e+03	7.2e+03	4.72e+07	4.48e+03	1.1e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.28e+07	1.29e+04	1.8e+03	4.99e+07	2.56e+04	2.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.87e+07	1.29e+04	1.5e+03	4.06e+07	2.56e+04	1.6e+03
27	13C-2,3,7,8-TCDD	2.37e+07	1.79e+04	1.3e+03	2.98e+07	7.48e+03	4.0e+03
28	13C-1,2,3,7,8-PeCDD	3.81e+07	3.05e+03	1.3e+04	2.43e+07	1.79e+03	1.4e+04
29	13C-1,2,3,4,7,8-HxCDD	3.53e+07	4.99e+03	7.1e+03	2.84e+07	2.28e+03	1.2e+04
30	13C-1,2,3,6,7,8-HxCDD	3.46e+07	4.99e+03	6.9e+03	2.73e+07	2.28e+03	1.2e+04
31	13C-1,2,3,4,6,7,8-HpCDD	3.08e+07	3.94e+03	7.8e+03	2.93e+07	1.60e+03	1.8e+04
32	13C-OCDD	3.85e+07	1.12e+03	3.4e+04	4.22e+07	1.86e+03	2.3e+04
33	13C-1,2,3,4-TCDD	2.49e+07	1.79e+04	1.4e+03	3.07e+07	7.48e+03	4.1e+03
34	13C-1,2,3,7,8,9-HxCDD	3.76e+07	4.99e+03	7.5e+03	3.01e+07	2.28e+03	1.3e+04
35	37Cl-2,3,7,8-TCDD	3.03e+05	3.87e+03	7.8e+01			

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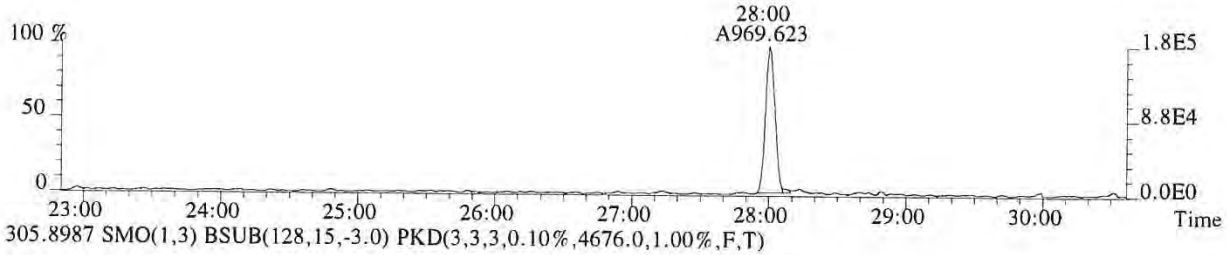
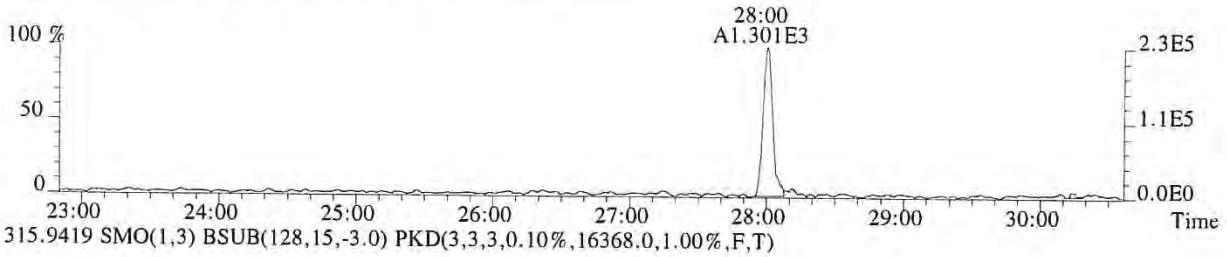
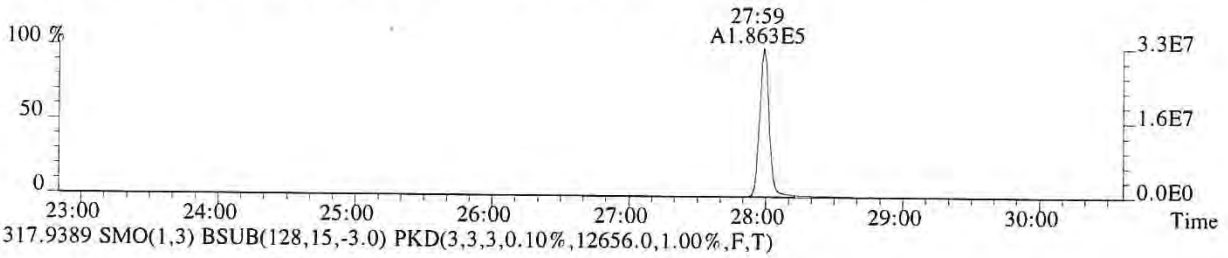
File:P614683 #1-552 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spectΣ
Sample#1 Exp:CS1
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2516.0,1.00%,F,T)



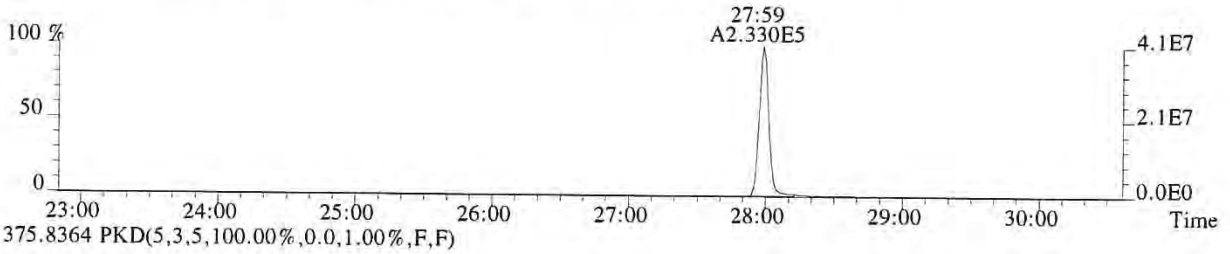
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4676.0,1.00%,F,T)



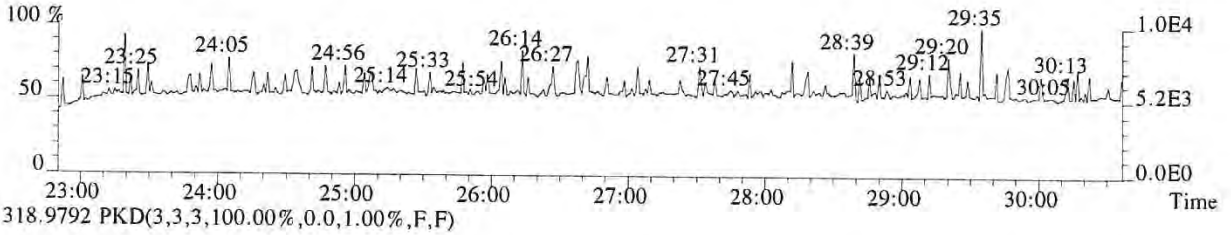
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16368.0,1.00%,F,T)



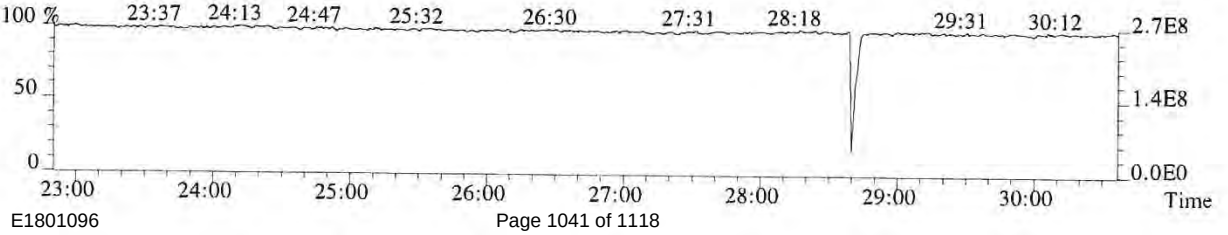
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12656.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

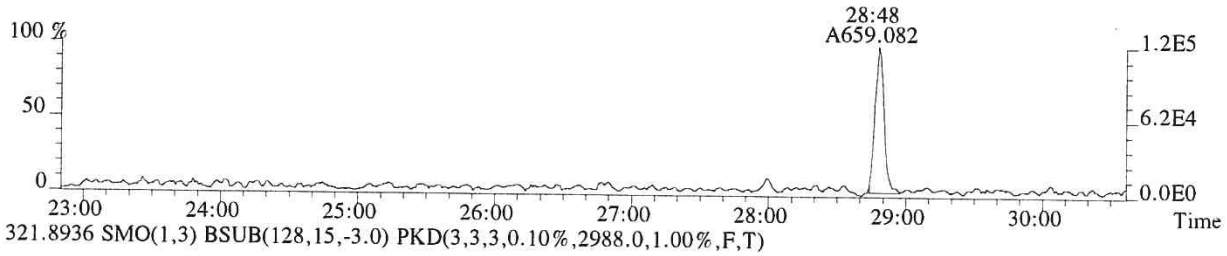


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

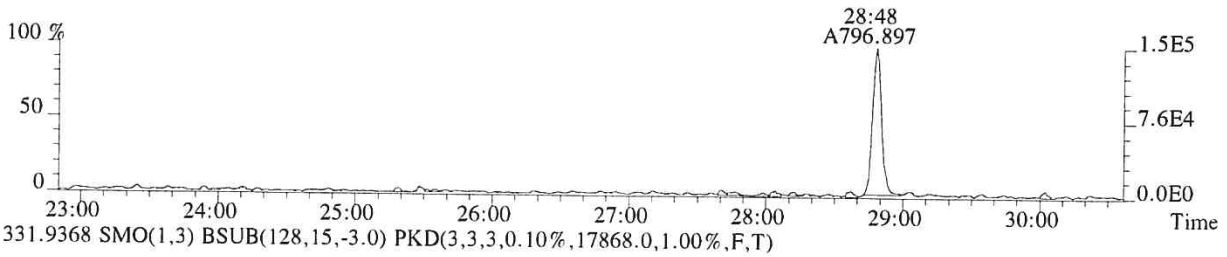


059689

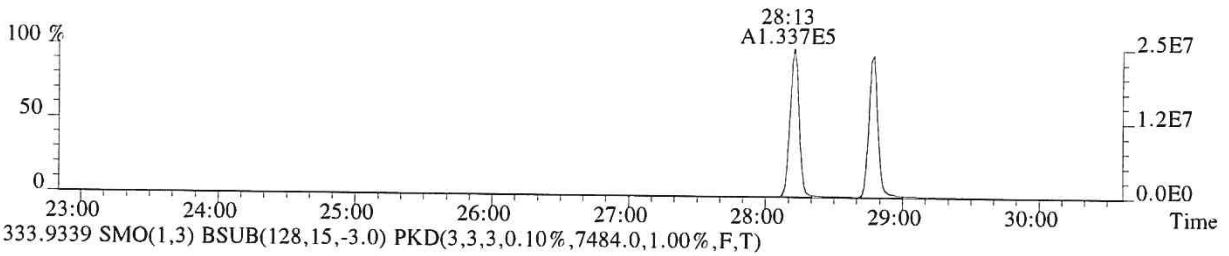
File:P614683 #1-552 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6880.0,1.00%,F,T)



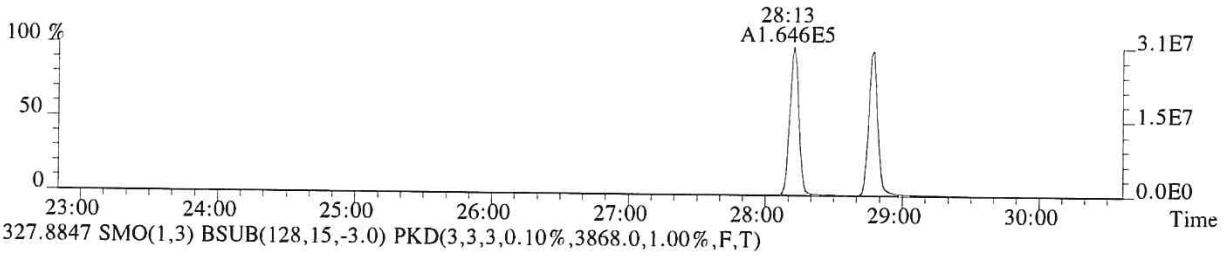
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2988.0,1.00%,F,T)



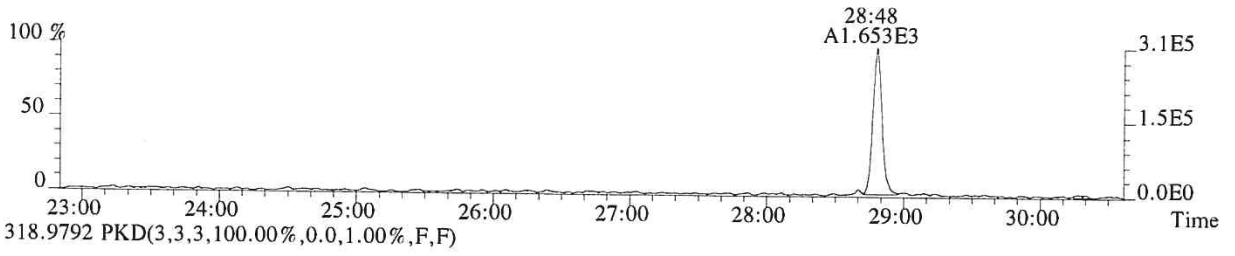
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,17868.0,1.00%,F,T)



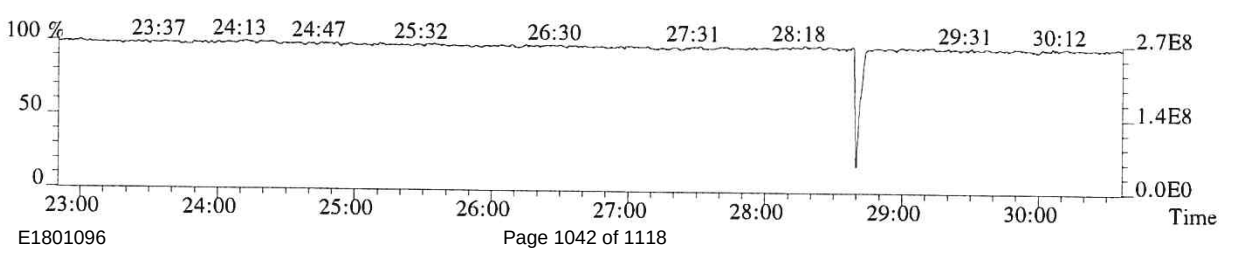
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7484.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3868.0,1.00%,F,T)

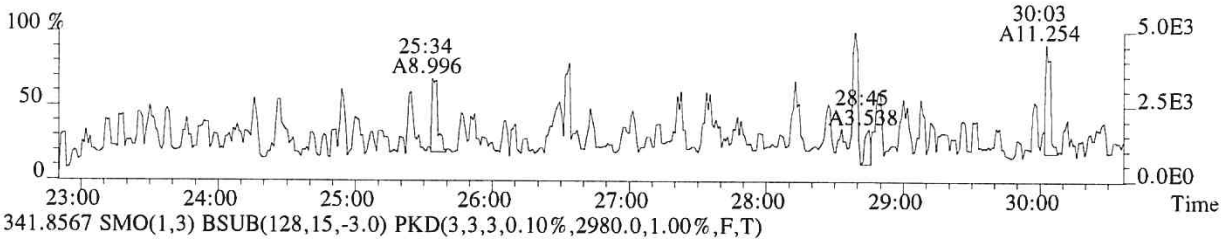


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

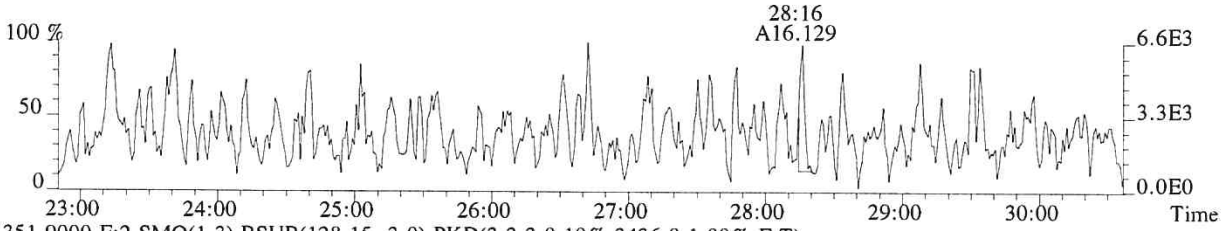


059690

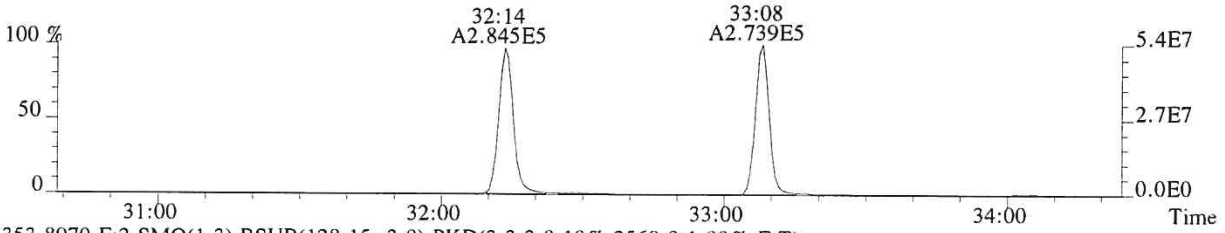
File:P614683 #1-552 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1796.0,1.00%,F,T)



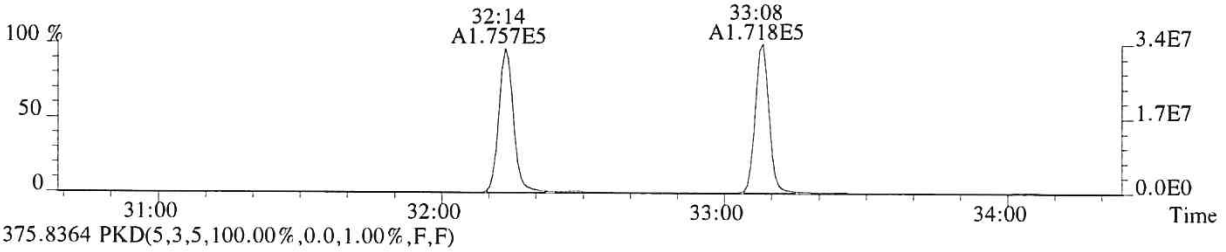
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2980.0,1.00%,F,T)



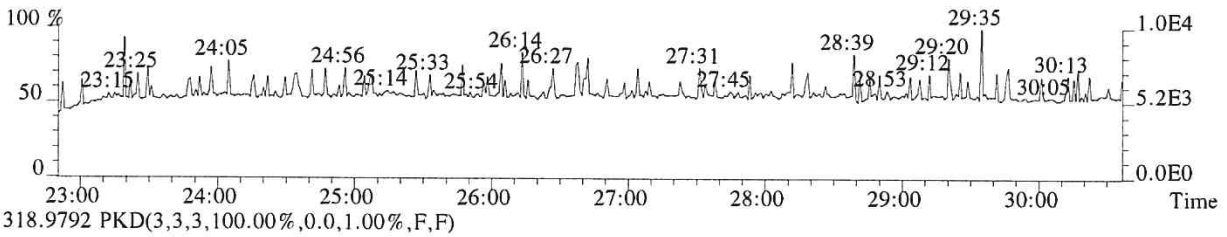
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3436.0,1.00%,F,T)



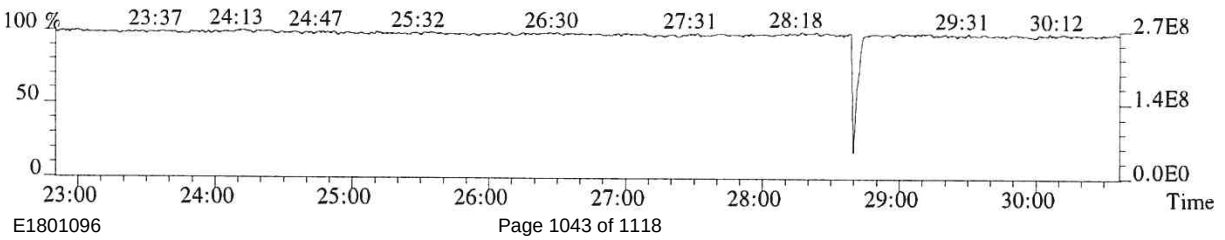
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2568.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

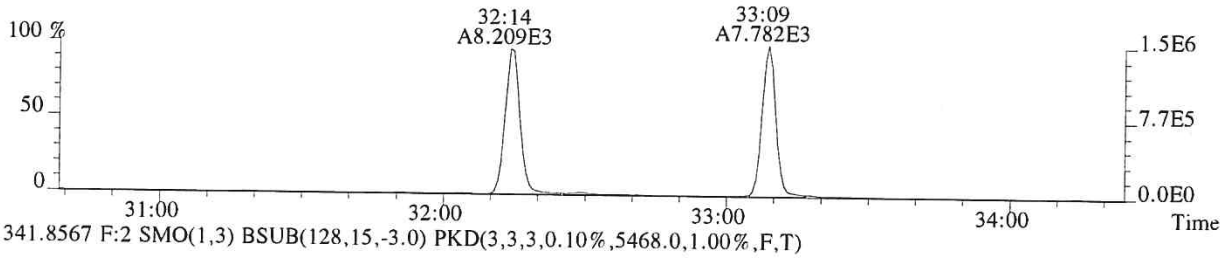


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

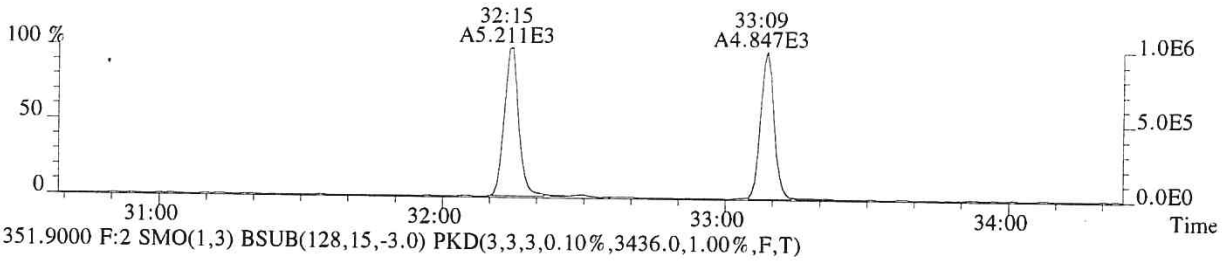


059691

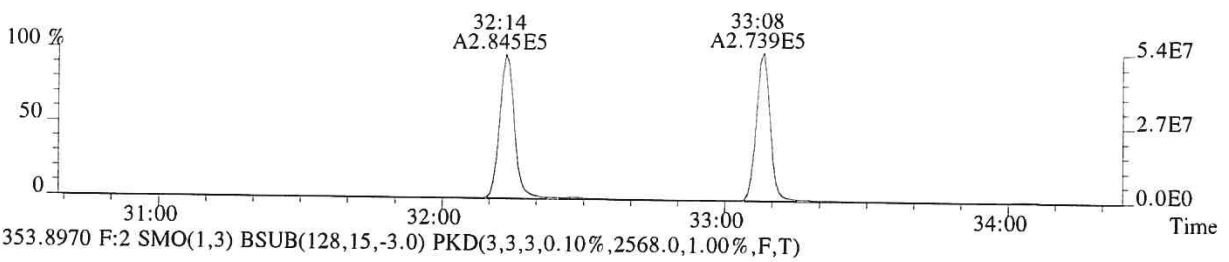
File:P614683 #1-339 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1068.0,1.00%,F,T)



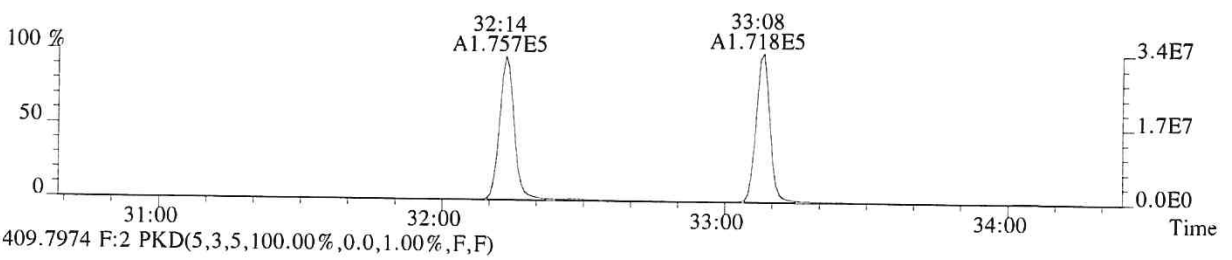
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5468.0,1.00%,F,T)



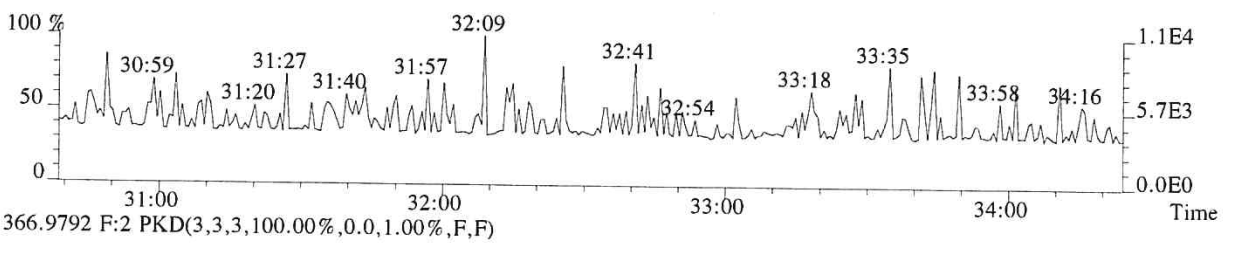
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3436.0,1.00%,F,T)



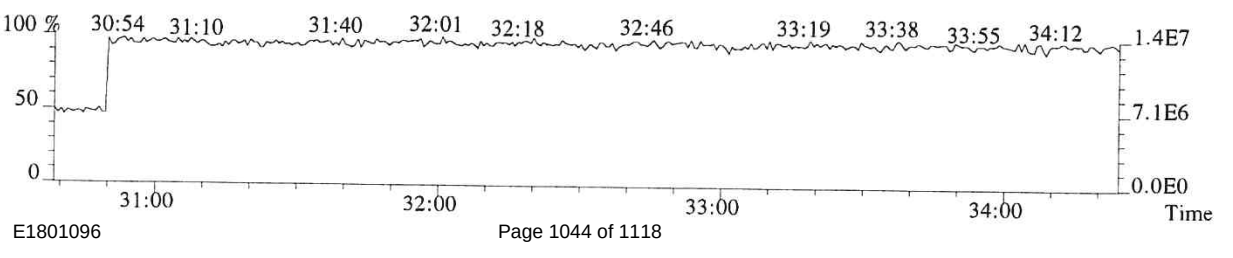
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2568.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

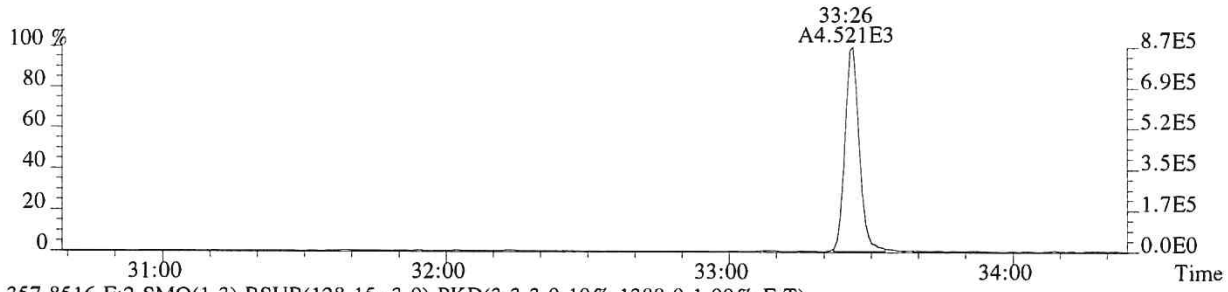


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

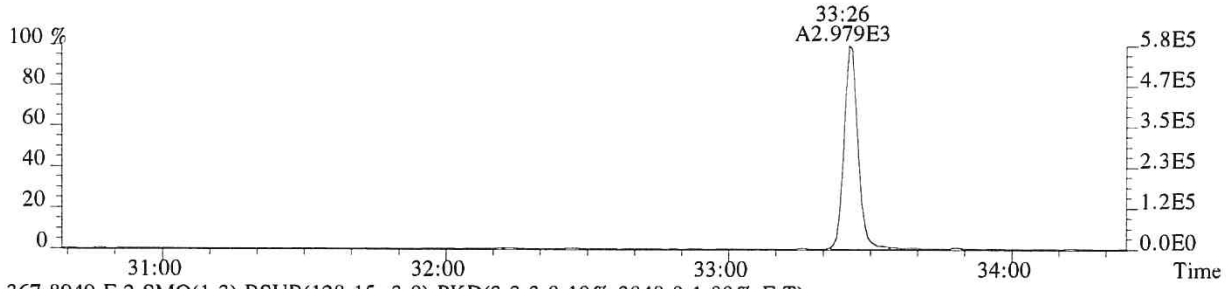


059692

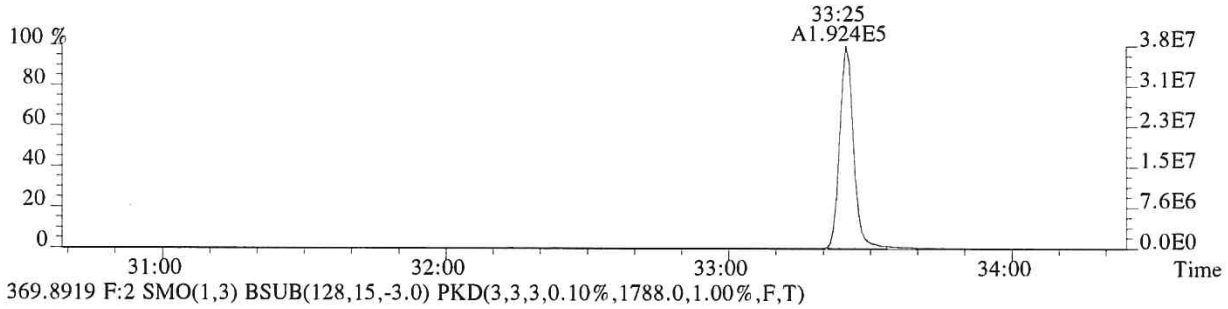
File:P614683 #1-339 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2368.0,1.00%,F,T)



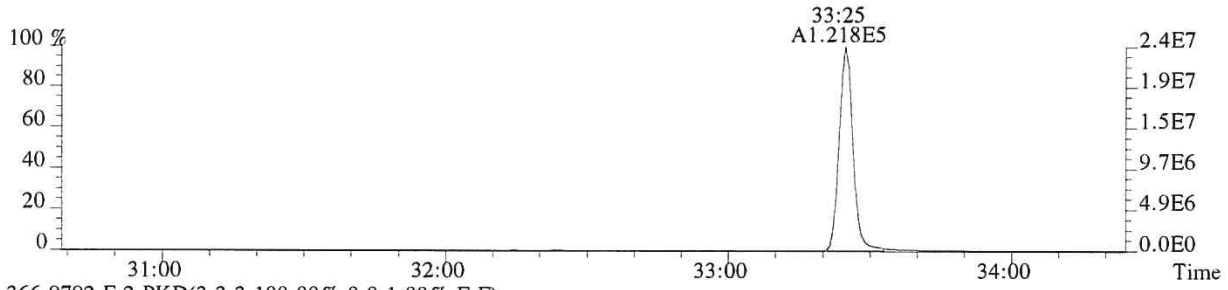
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1388.0,1.00%,F,T)



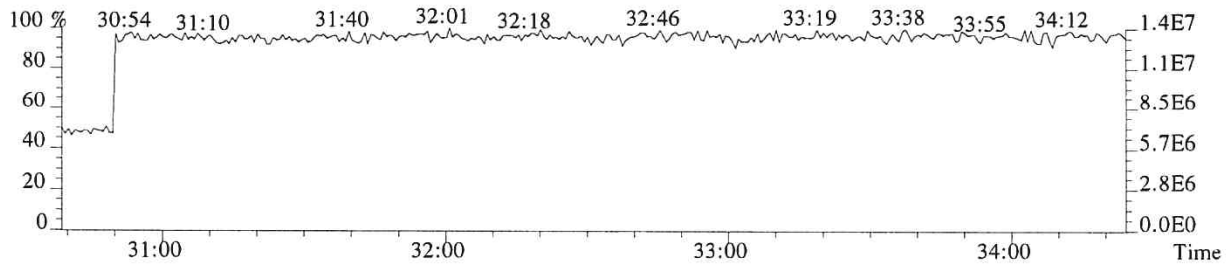
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3048.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1788.0,1.00%,F,T)

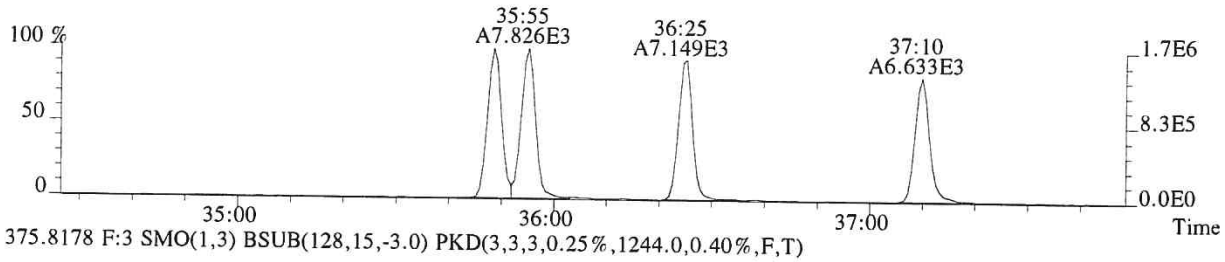


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

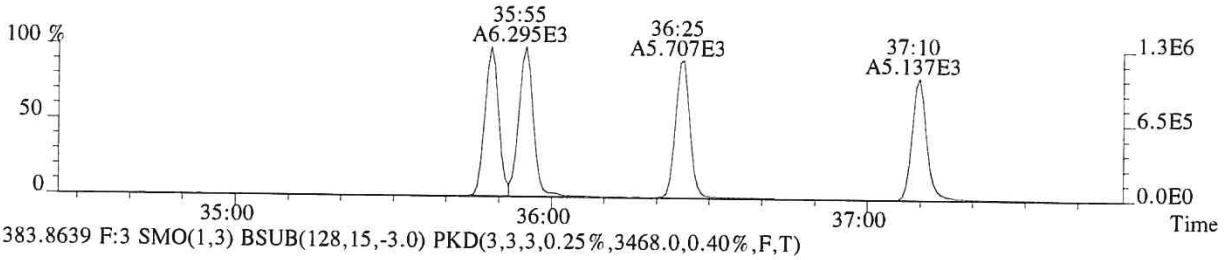


059693

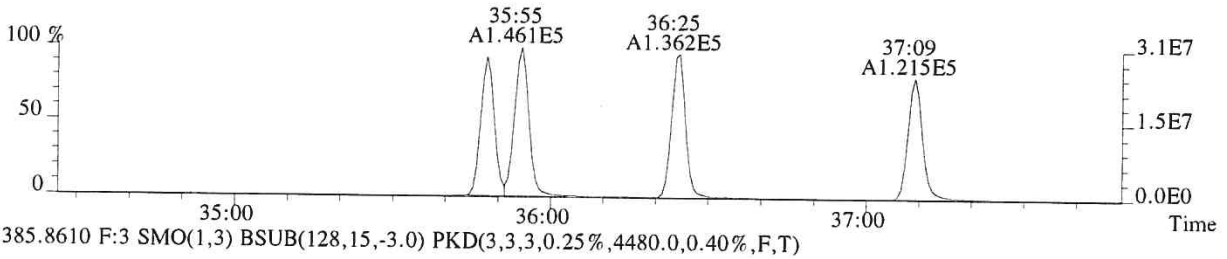
File:P614683 #1-304 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3192.0,0.40%,F,T)



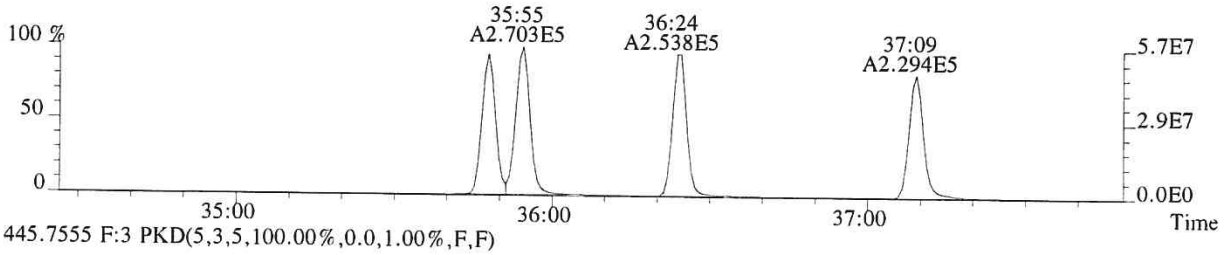
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1244.0,0.40%,F,T)



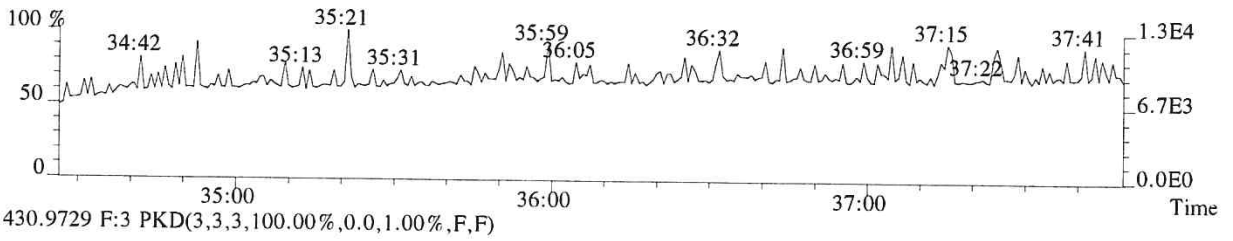
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3468.0,0.40%,F,T)



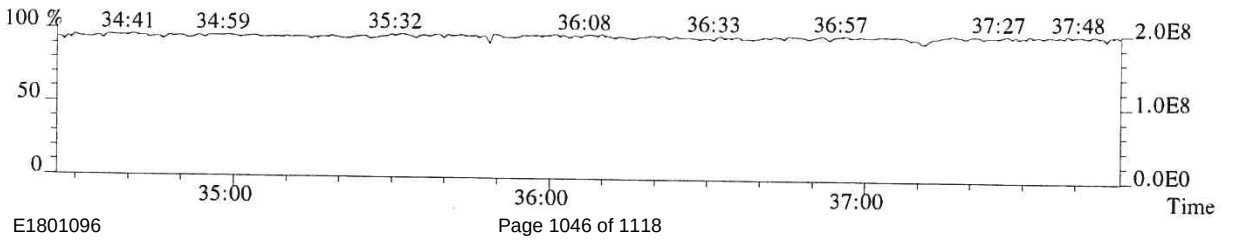
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4480.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

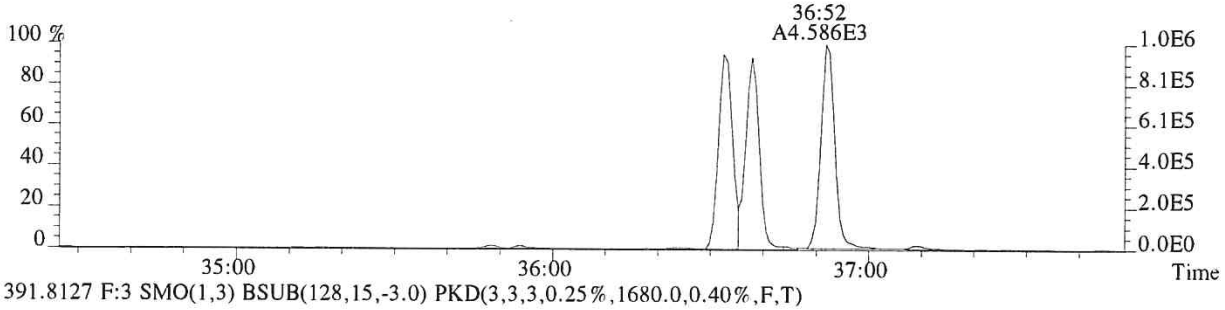


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

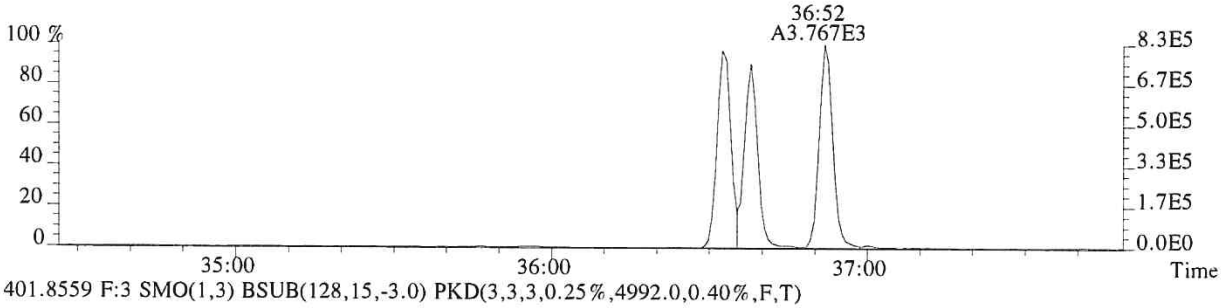


059694

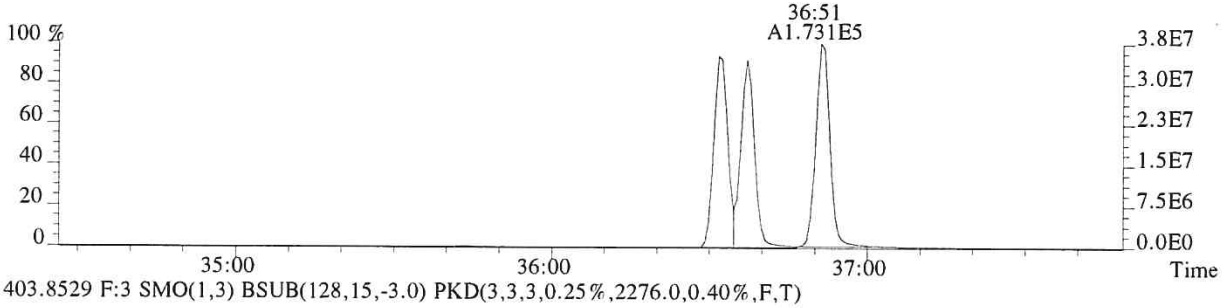
File:P614683 #1-304 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:CS1
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1020.0,0.40%,F,T)



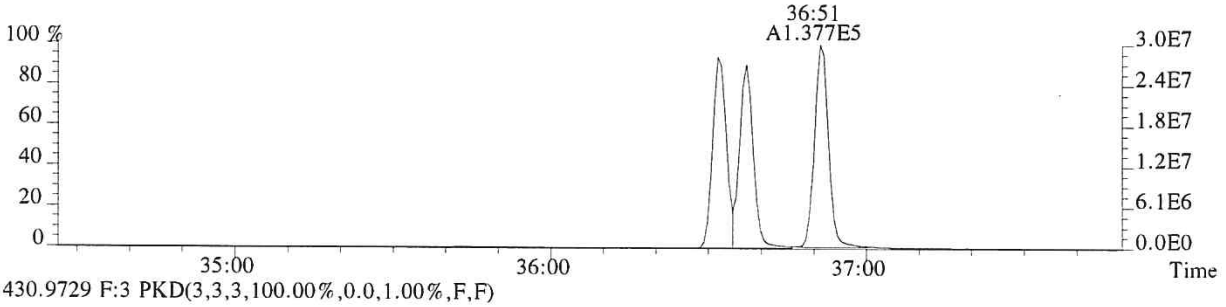
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1680.0,0.40%,F,T)



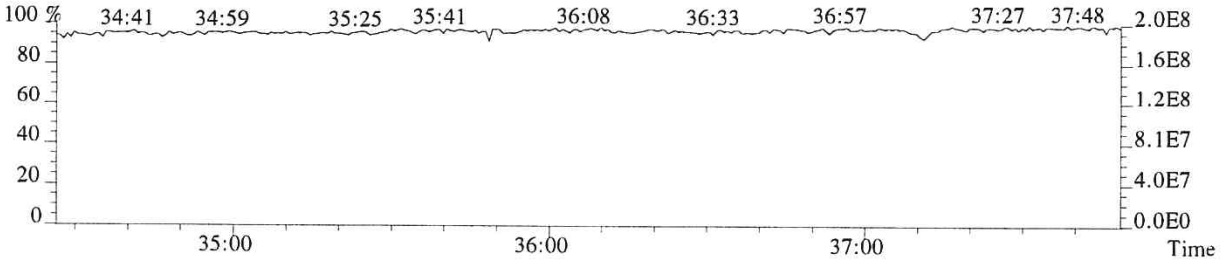
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4992.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2276.0,0.40%,F,T)

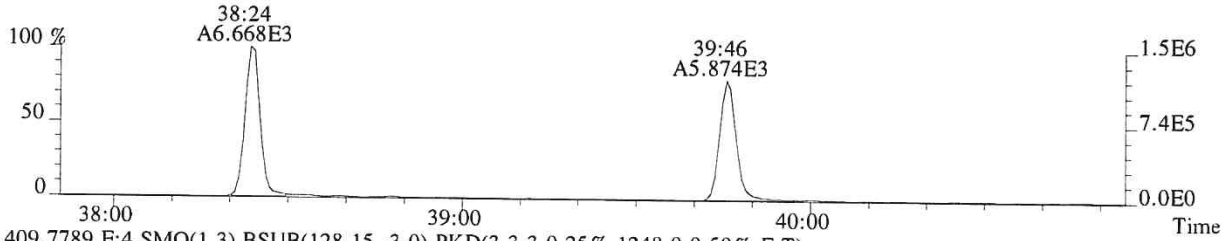


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

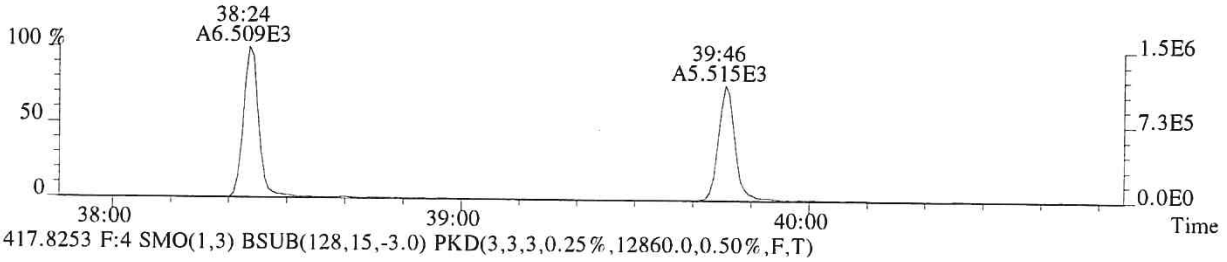


059695

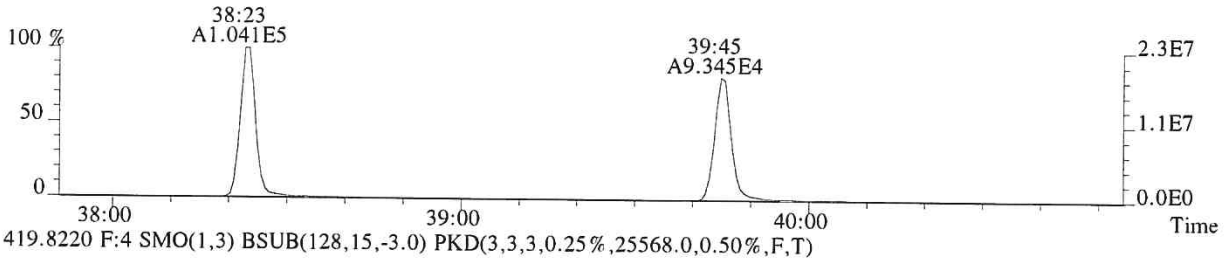
File:P614683 #1-276 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1968.0,0.50%,F,T)



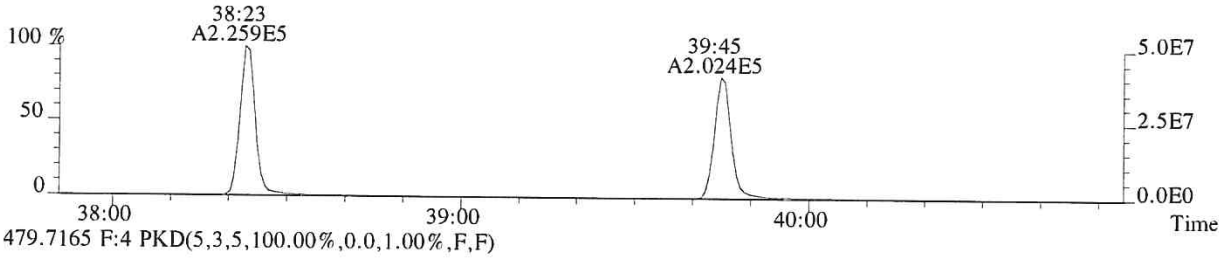
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1248.0,0.50%,F,T)



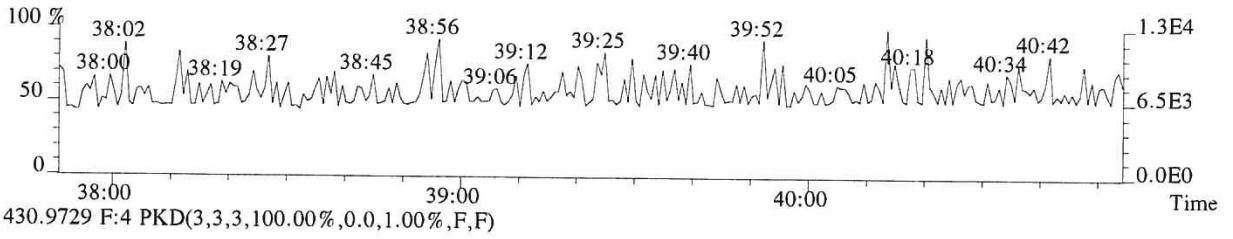
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12860.0,0.50%,F,T)



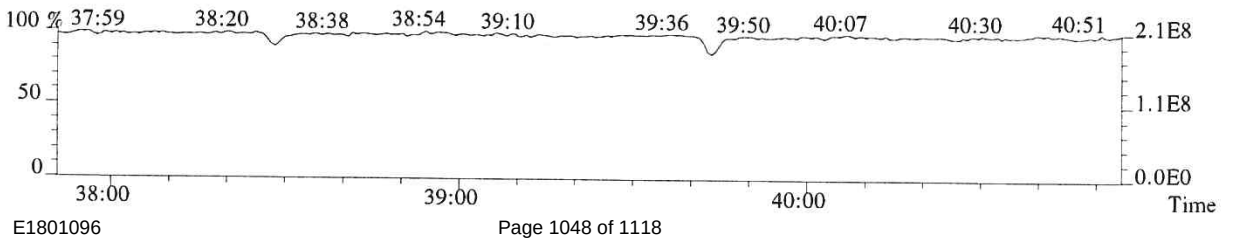
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,25568.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

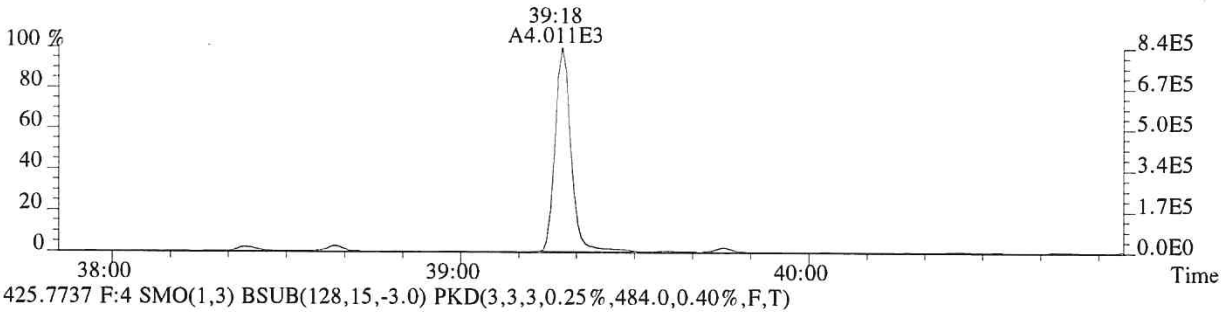


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

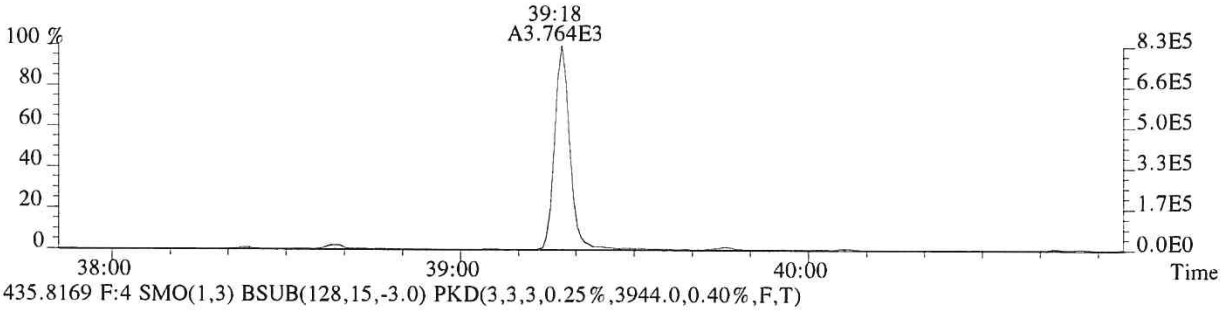


059696

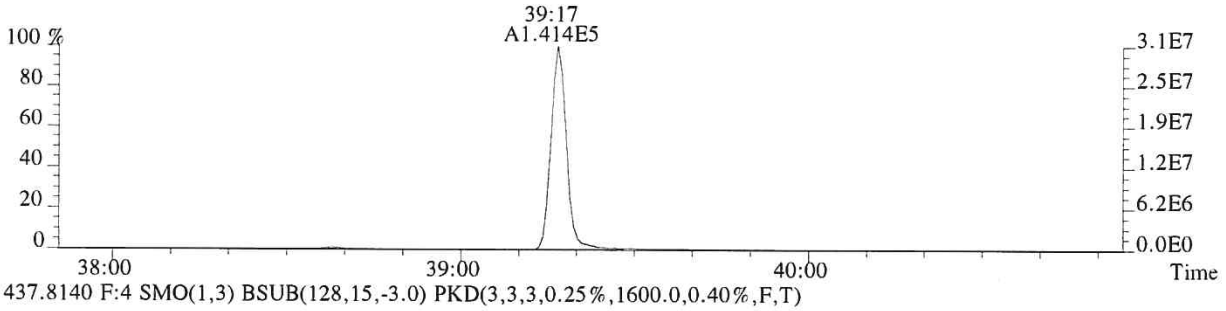
File:P614683 #1-276 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1168.0,0.40%,F,T)



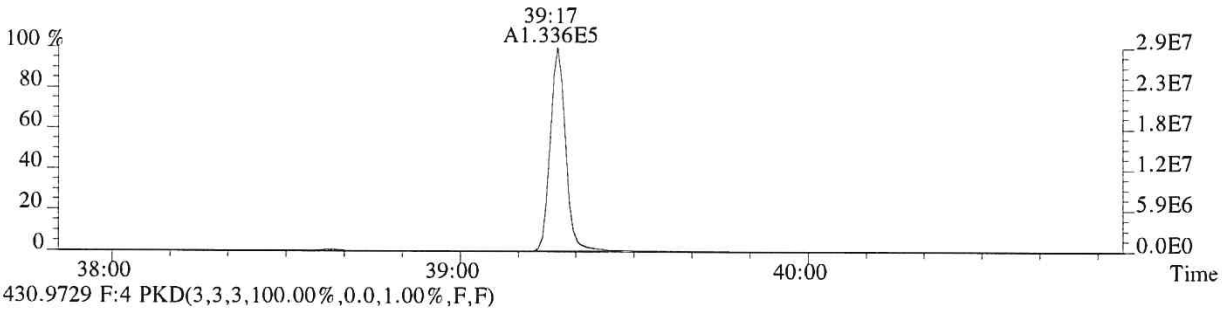
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,484.0,0.40%,F,T)



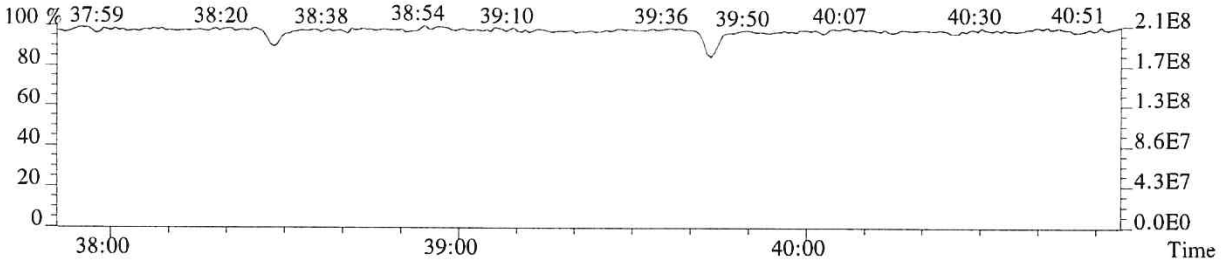
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3944.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1600.0,0.40%,F,T)



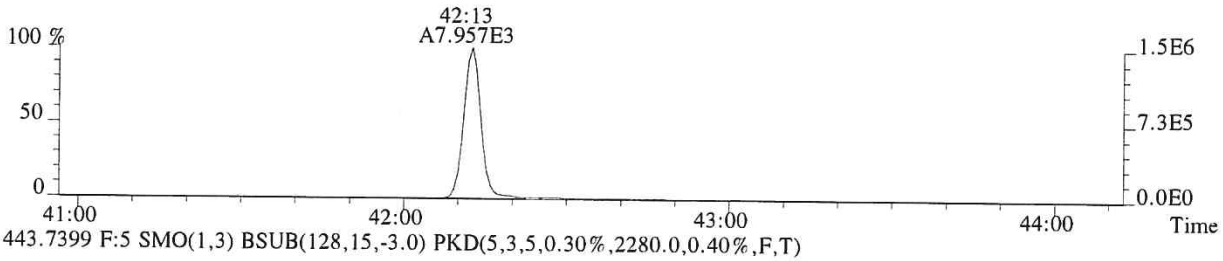
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



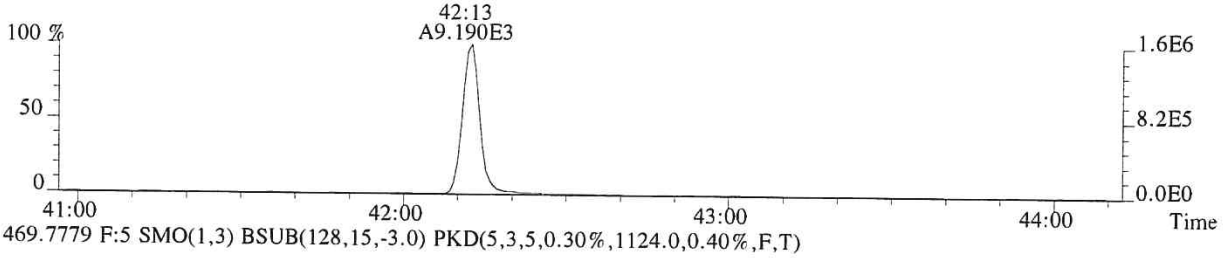
059697

File:P614683 #1-295 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1

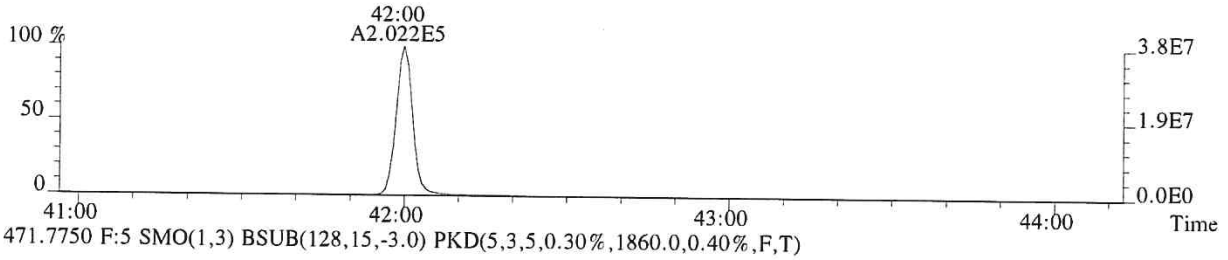
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1152.0,0.40%,F,T)



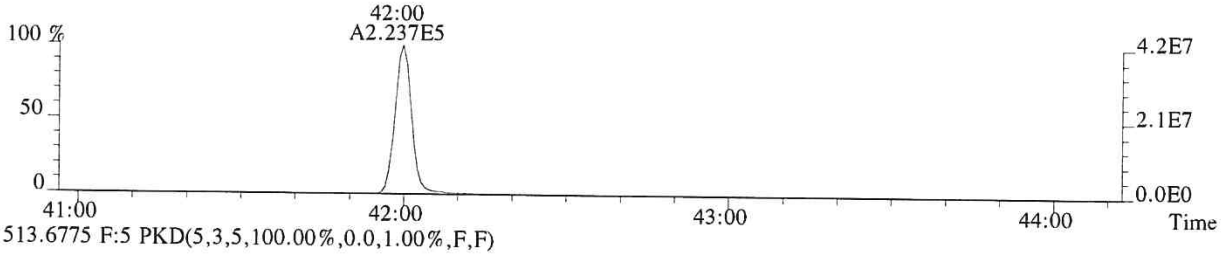
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2280.0,0.40%,F,T)



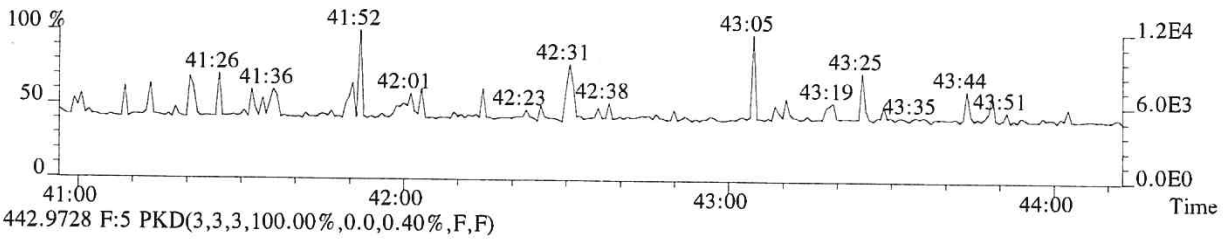
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1124.0,0.40%,F,T)



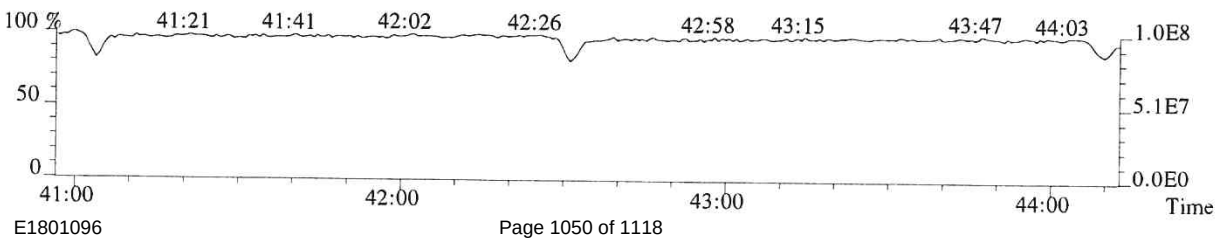
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1860.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

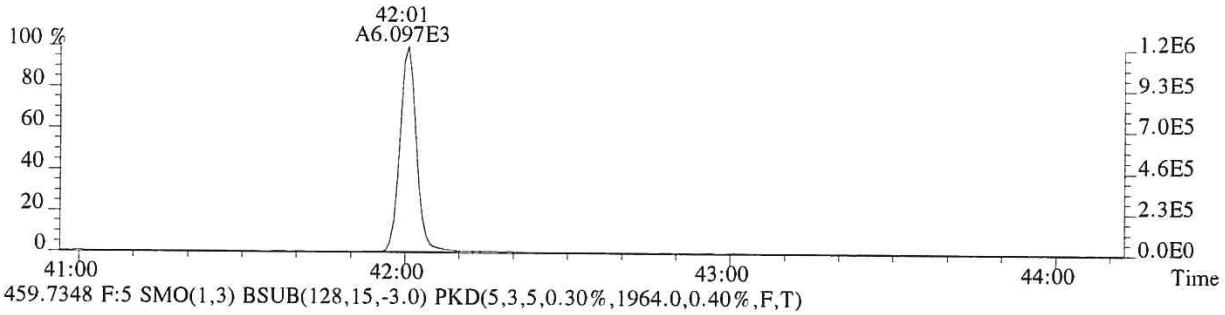


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

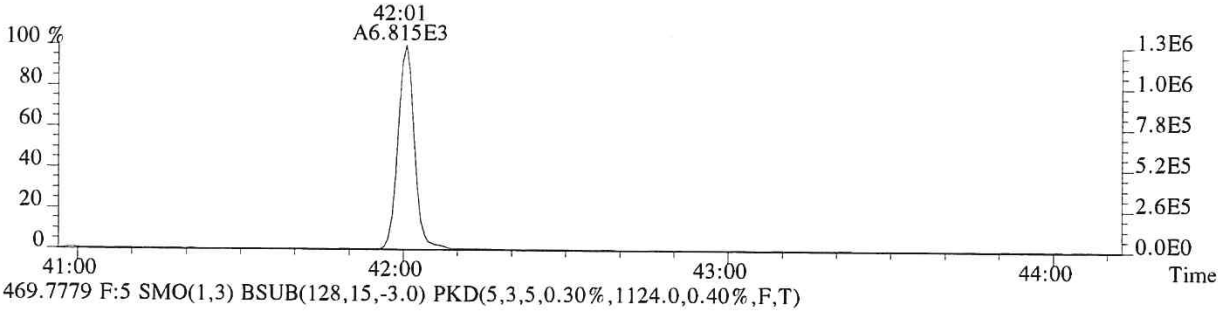


059698

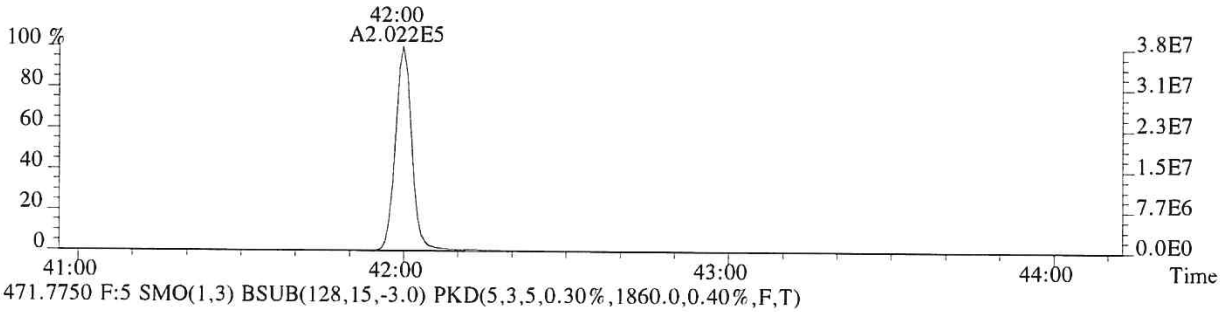
File:P614683 #1-295 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3136.0,0.40%,F,T)



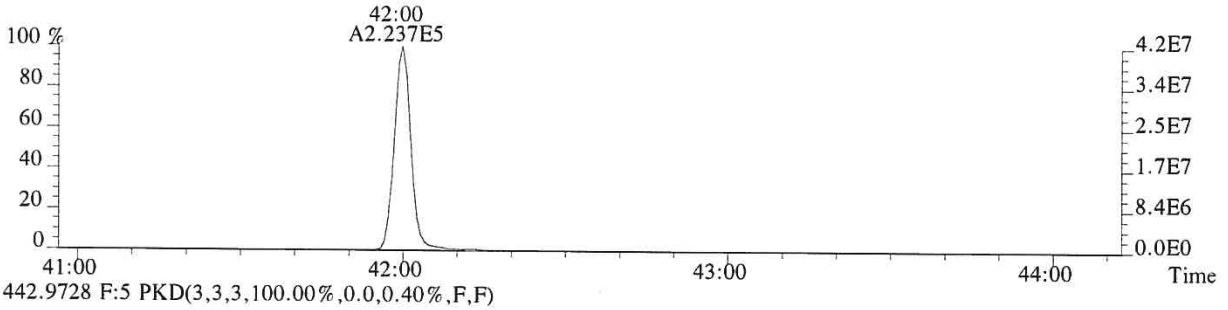
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1964.0,0.40%,F,T)



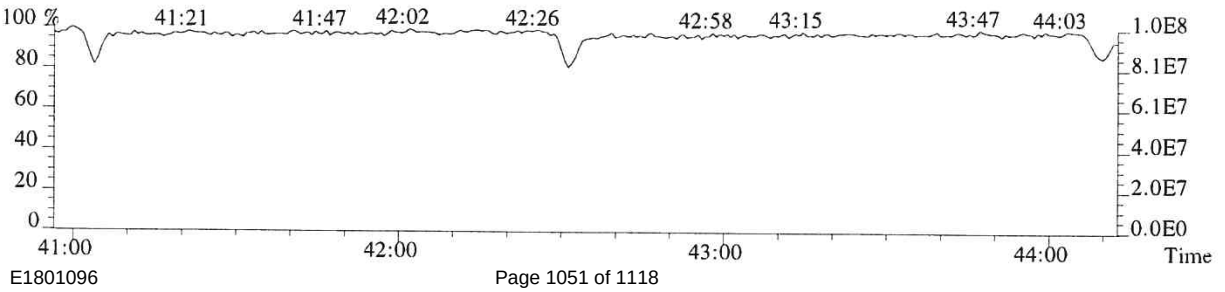
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1124.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1860.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059699

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
193434

Run #3 Filename P614684 Samp: 1 Inj: 1 Acquired: 25-SEP-18 15:59:37
Processed: 26-SEP-18 07:39:08 Sample ID: CS2

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:00	3.102e+03	3.732e+03	0.83	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:14	2.387e+04	1.519e+04	1.57	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:08	2.329e+04	1.484e+04	1.57	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	2.143e+04	1.713e+04	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	2.340e+04	1.874e+04	1.25	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	2.188e+04	1.713e+04	1.28	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:09	1.950e+04	1.588e+04	1.23	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	1.863e+04	1.764e+04	1.06	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	1.650e+04	1.567e+04	1.05	yes	no	1.463
10	Unk	OCDF	42:12	2.250e+04	2.478e+04	0.91	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	1.874e+03	2.328e+03	0.80	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	1.440e+04	9.416e+03	1.53	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	1.279e+04	1.013e+04	1.26	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	1.275e+04	1.020e+04	1.25	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:52	1.359e+04	1.091e+04	1.25	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	1.169e+04	1.088e+04	1.07	yes	no	1.112
17	Unk	OCDD	42:01	1.626e+04	1.848e+04	0.88	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	1.350e+05	1.713e+05	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	2.144e+05	1.340e+05	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	2.142e+05	1.318e+05	1.62	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:47	9.603e+04	1.811e+05	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:54	1.132e+05	2.120e+05	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:24	1.055e+05	1.978e+05	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	9.513e+04	1.787e+05	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:23	7.767e+04	1.706e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:45	6.849e+04	1.521e+05	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	9.327e+04	1.167e+05	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	1.531e+05	9.729e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:32	1.232e+05	9.748e+04	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	1.208e+05	9.608e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	1.060e+05	1.018e+05	1.04	yes	no	0.857
32	IS	13C-OCDD	42:00	1.501e+05	1.663e+05	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:12	9.647e+04	1.194e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:51	1.360e+05	1.078e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	4.600e+03				no	1.086

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Signal/Noise Height Ratio Summary

CLIENT ID.
193434

Run #3 Filename P614684 Samp: 1 Inj: 1 Acquired: 25-SEP-18 15:59:37
Processed: 26-SEP-18 07:39:08 LAB. ID: CS2

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.46e+05	1.35e+03	4.0e+02	6.81e+05	4.17e+03	1.6e+02
2	1,2,3,7,8-PeCDF	4.40e+06	1.19e+03	3.7e+03	2.83e+06	5.62e+03	5.0e+02
3	2,3,4,7,8-PeCDF	4.45e+06	1.19e+03	3.7e+03	2.83e+06	5.62e+03	5.0e+02
4	1,2,3,4,7,8-HxCDF	4.64e+06	2.66e+03	1.7e+03	3.65e+06	1.33e+03	2.7e+03
5	1,2,3,6,7,8-HxCDF	4.85e+06	2.66e+03	1.8e+03	3.88e+06	1.33e+03	2.9e+03
6	2,3,4,6,7,8-HxCDF	4.77e+06	2.66e+03	1.8e+03	3.75e+06	1.33e+03	2.8e+03
7	1,2,3,7,8,9-HxCDF	3.92e+06	2.66e+03	1.5e+03	3.16e+06	1.33e+03	2.4e+03
8	1,2,3,4,6,7,8-HpCDF	4.16e+06	4.06e+03	1.0e+03	3.98e+06	5.19e+03	7.7e+02
9	1,2,3,4,7,8,9-HpCDF	3.43e+06	4.06e+03	8.5e+02	3.23e+06	5.19e+03	6.2e+02
10	OCDF	4.02e+06	1.02e+03	3.9e+03	4.45e+06	3.18e+03	1.4e+03
11	2,3,7,8-TCDD	3.59e+05	5.08e+03	7.1e+01	4.49e+05	2.84e+03	1.6e+02
12	1,2,3,7,8-PeCDD	2.79e+06	2.23e+03	1.3e+03	1.83e+06	1.03e+03	1.8e+03
13	1,2,3,4,7,8-HxCDD	2.90e+06	1.16e+03	2.5e+03	2.30e+06	2.22e+03	1.0e+03
14	1,2,3,6,7,8-HxCDD	2.75e+06	1.16e+03	2.4e+03	2.20e+06	2.22e+03	9.9e+02
15	1,2,3,7,8,9-HxCDD	2.97e+06	1.16e+03	2.6e+03	2.38e+06	2.22e+03	1.1e+03
16	1,2,3,4,6,7,8-HpCDD	2.45e+06	1.22e+03	2.0e+03	2.30e+06	1.43e+03	1.6e+03
17	OCDD	3.03e+06	8.24e+02	3.7e+03	3.48e+06	2.34e+03	1.5e+03
18	13C-2,3,7,8-TCDF	2.30e+07	1.44e+04	1.6e+03	2.91e+07	8.40e+03	3.5e+03
19	13C-1,2,3,7,8-PeCDF	3.88e+07	2.39e+03	1.6e+04	2.43e+07	1.71e+03	1.4e+04
20	13C-2,3,4,7,8-PeCDF	4.22e+07	2.39e+03	1.8e+04	2.60e+07	1.71e+03	1.5e+04
21	13C-1,2,3,4,7,8-HxCDF	2.07e+07	2.16e+03	9.6e+03	3.93e+07	5.29e+03	7.4e+03
22	13C-1,2,3,6,7,8-HxCDF	2.36e+07	2.16e+03	1.1e+04	4.45e+07	5.29e+03	8.4e+03
23	13C-2,3,4,6,7,8-HxCDF	2.32e+07	2.16e+03	1.1e+04	4.39e+07	5.29e+03	8.3e+03
24	13C-1,2,3,7,8,9-HxCDF	1.94e+07	2.16e+03	8.9e+03	3.69e+07	5.29e+03	7.0e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.76e+07	7.69e+03	2.3e+03	3.85e+07	2.07e+04	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.41e+07	7.69e+03	1.8e+03	3.12e+07	2.07e+04	1.5e+03
27	13C-2,3,7,8-TCDD	1.74e+07	1.66e+04	1.0e+03	2.17e+07	7.77e+03	2.8e+03
28	13C-1,2,3,7,8-PeCDD	2.92e+07	3.94e+03	7.4e+03	1.87e+07	3.45e+03	5.4e+03
29	13C-1,2,3,4,7,8-HxCDD	2.82e+07	5.37e+03	5.3e+03	2.21e+07	2.98e+03	7.4e+03
30	13C-1,2,3,6,7,8-HxCDD	2.61e+07	5.37e+03	4.9e+03	2.11e+07	2.98e+03	7.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.24e+07	3.06e+03	7.3e+03	2.12e+07	2.68e+03	7.9e+03
32	13C-OCDD	2.74e+07	2.09e+03	1.3e+04	3.02e+07	1.61e+03	1.9e+04
33	13C-1,2,3,4-TCDD	1.78e+07	1.66e+04	1.1e+03	2.20e+07	7.77e+03	2.8e+03
34	13C-1,2,3,7,8,9-HxCDD	2.99e+07	5.37e+03	5.6e+03	2.35e+07	2.98e+03	7.9e+03
35	37Cl-2,3,7,8-TCDD	8.73e+05	3.54e+03	2.5e+02			

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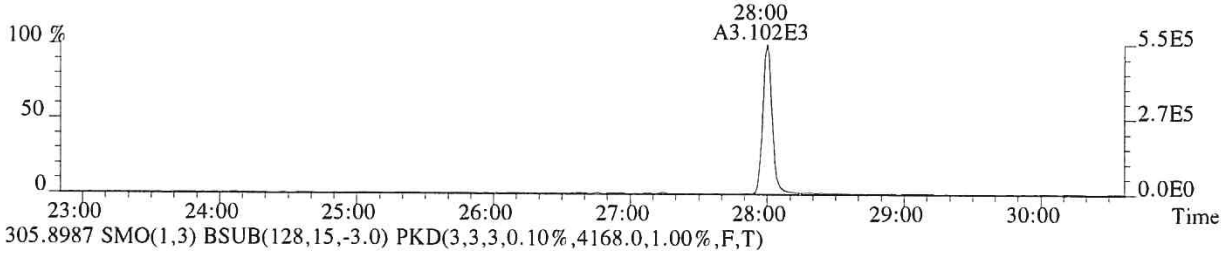
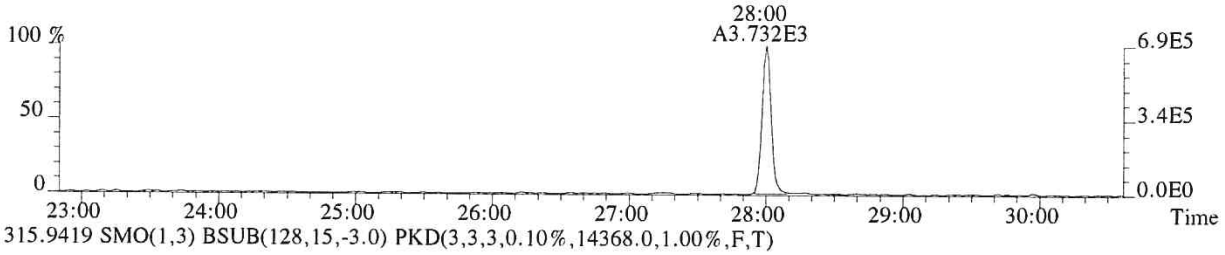
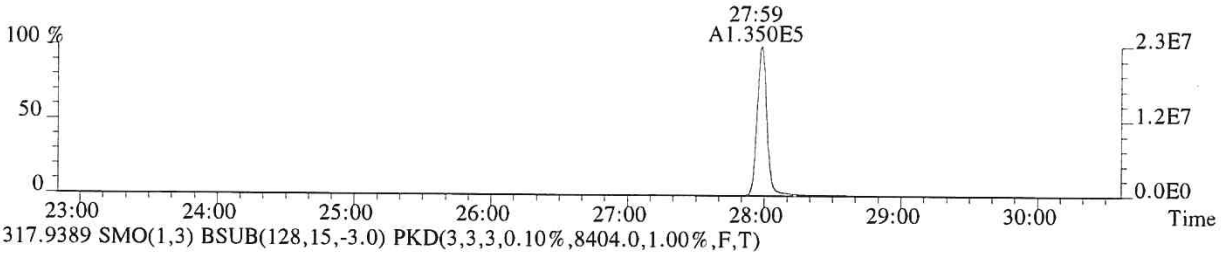
File:P614684 #1-552 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1352.0,1.00%,F,T)



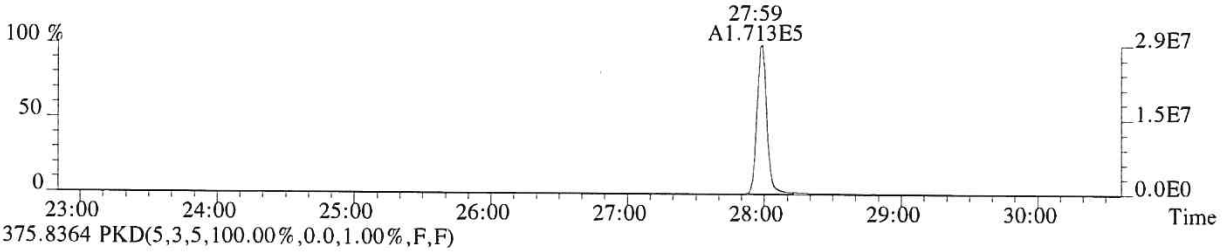
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4168.0,1.00%,F,T)



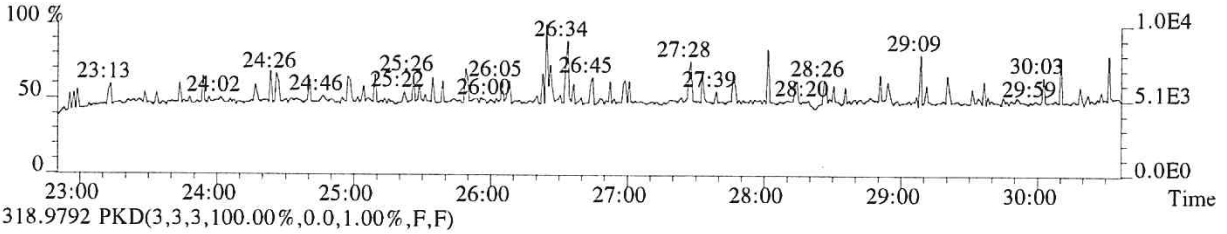
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,14368.0,1.00%,F,T)



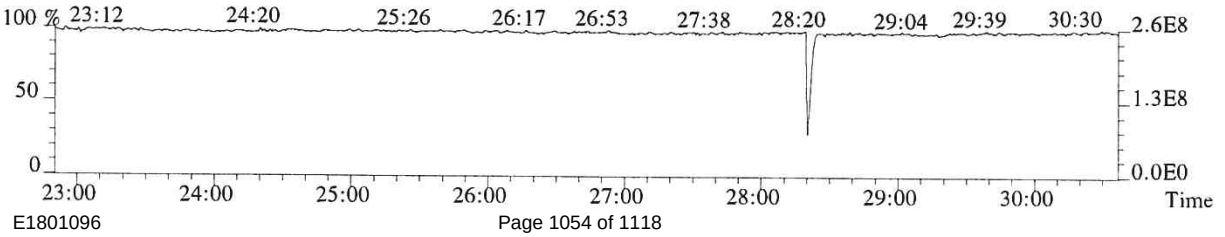
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8404.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

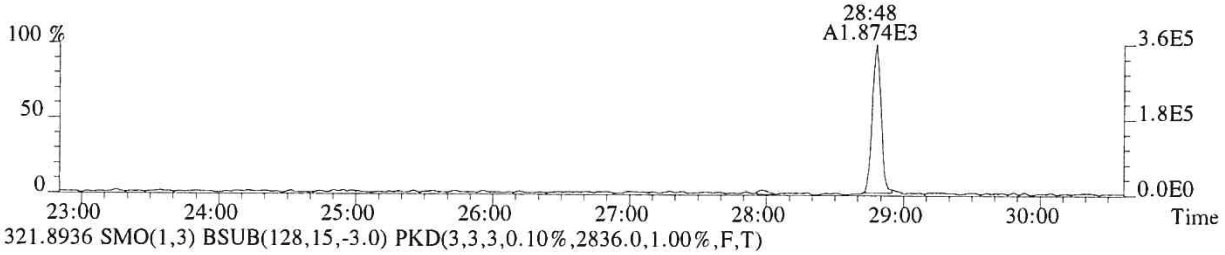


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

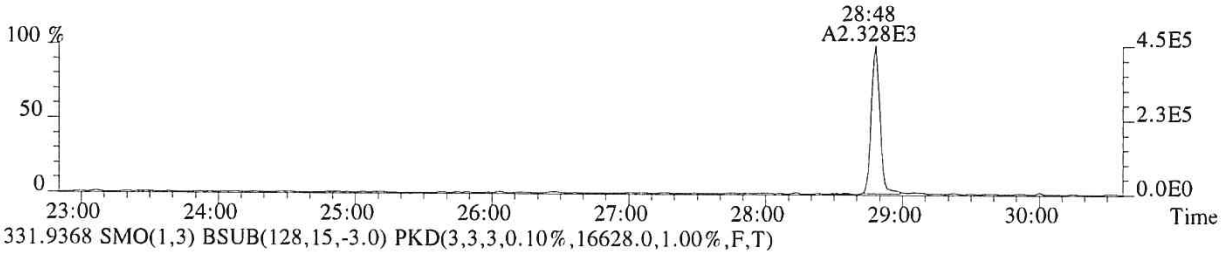


059702

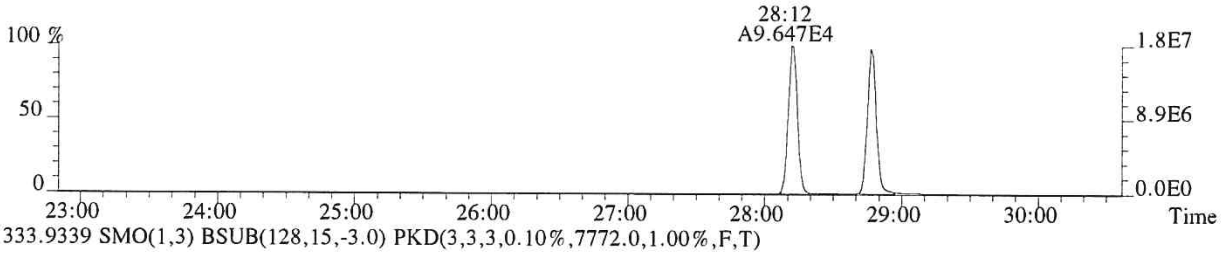
File:P614684 #1-552 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5080.0,1.00%,F,T)



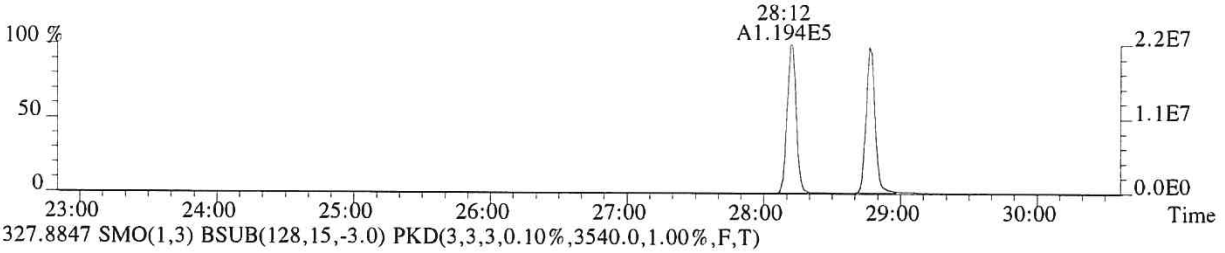
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2836.0,1.00%,F,T)



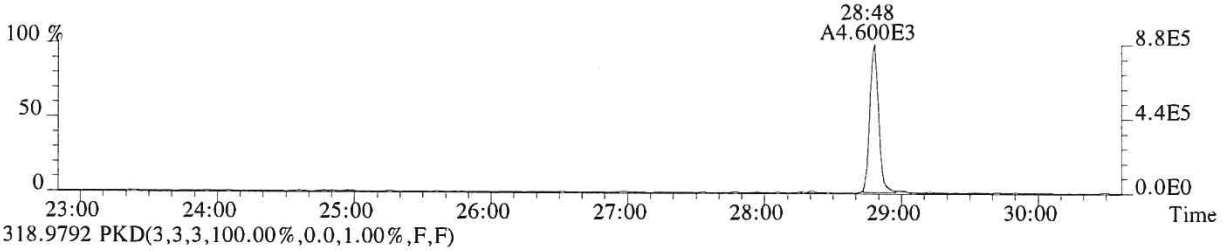
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16628.0,1.00%,F,T)



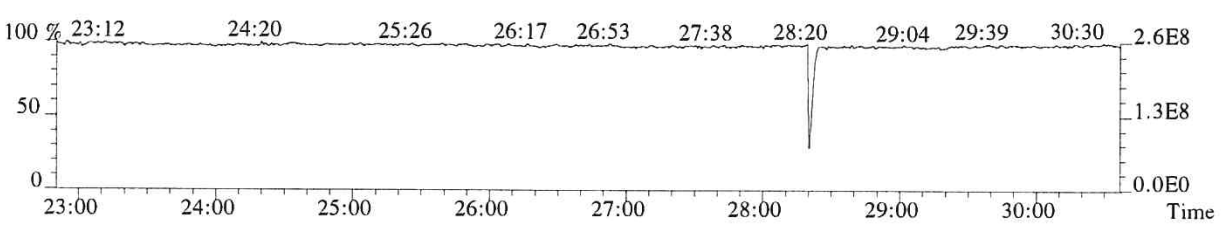
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7772.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3540.0,1.00%,F,T)

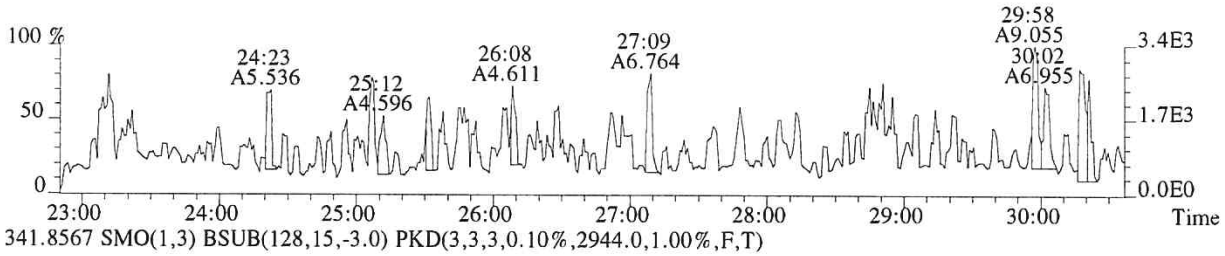


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

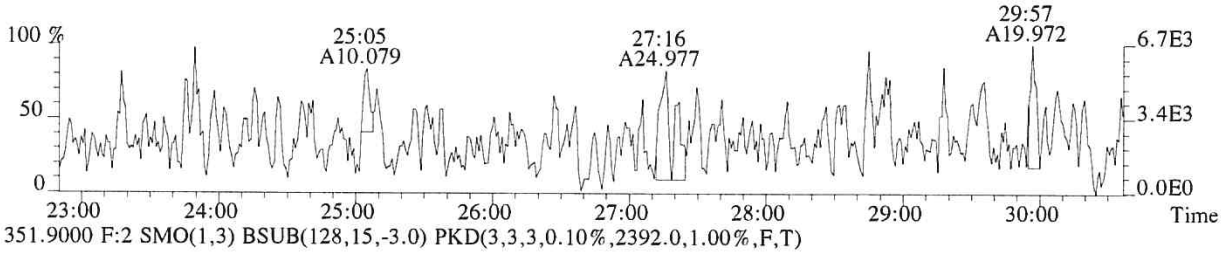


059703

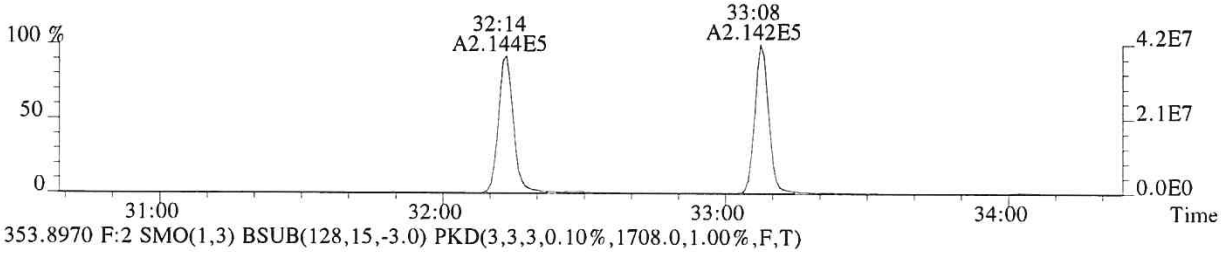
File:P614684 #1-552 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1084.0,1.00%,F,T)



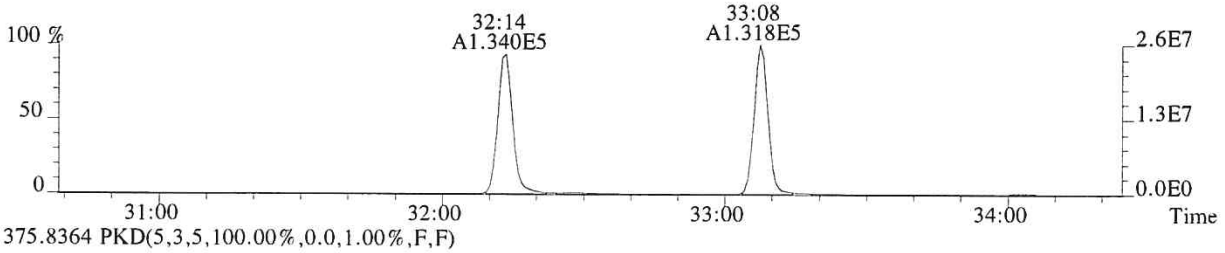
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2944.0,1.00%,F,T)



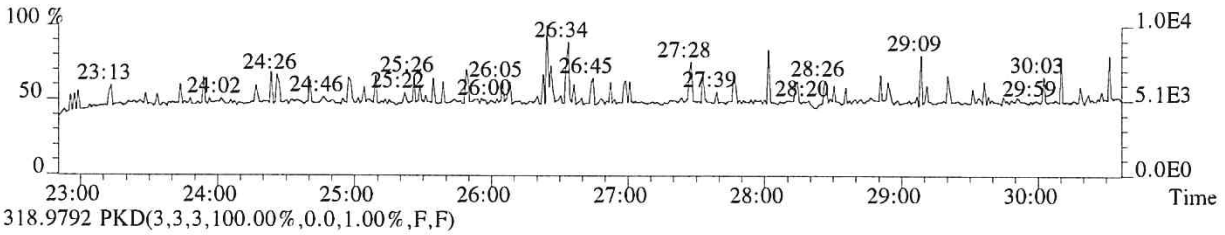
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2392.0,1.00%,F,T)



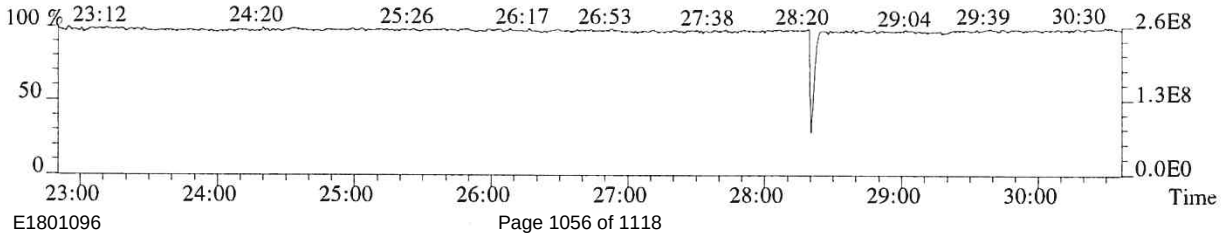
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1708.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

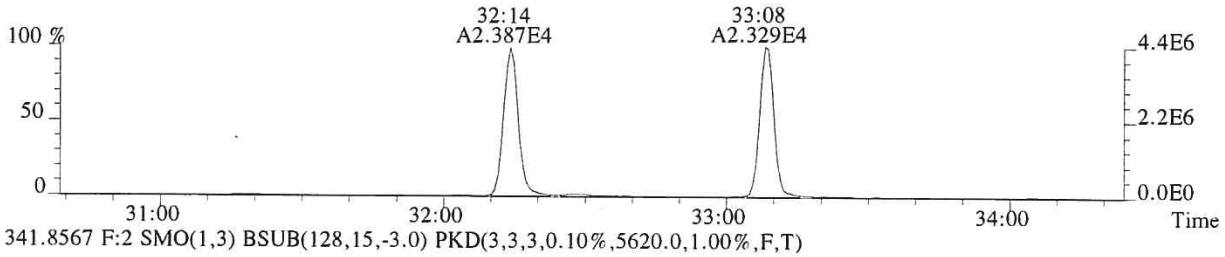


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

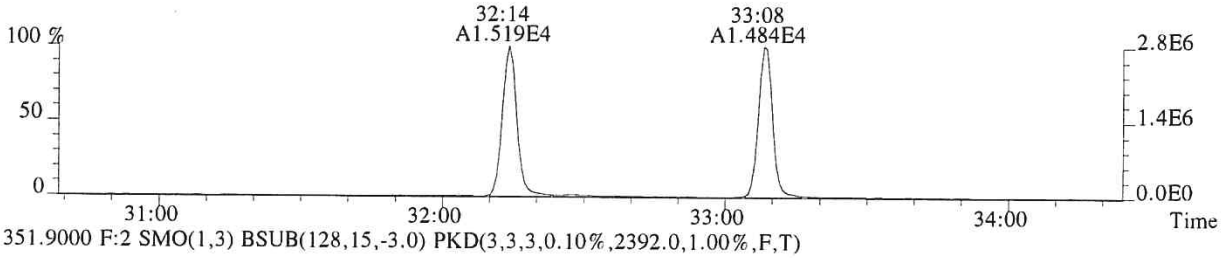


059704

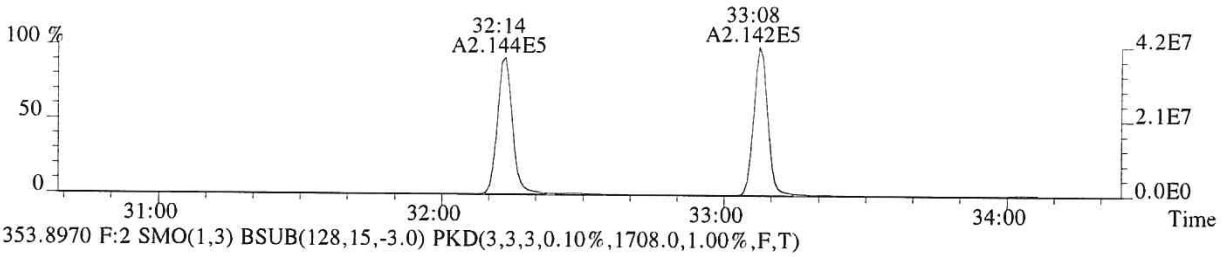
File:P614684 #1-339 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1188.0,1.00%,F,T)



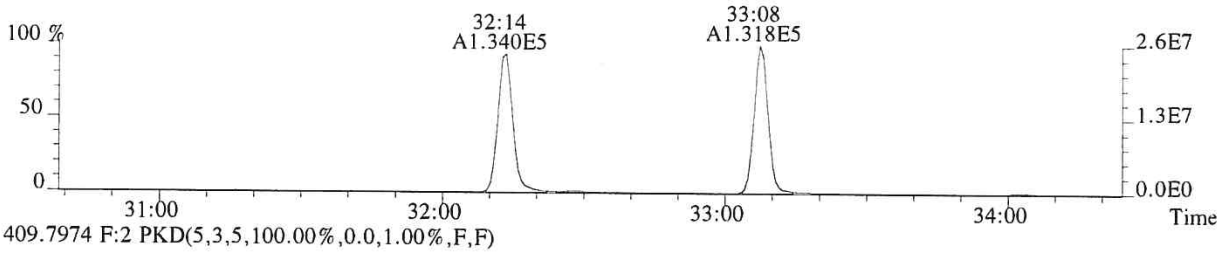
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5620.0,1.00%,F,T)



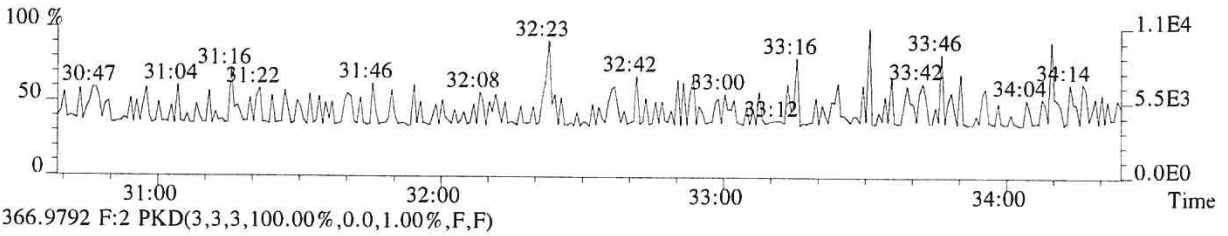
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2392.0,1.00%,F,T)



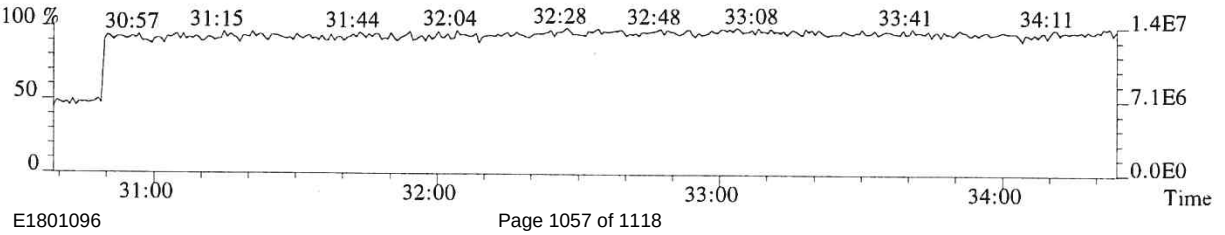
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1708.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

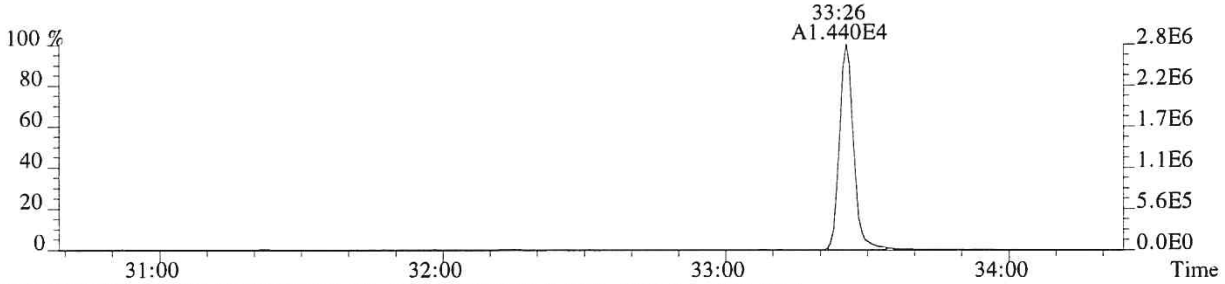


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

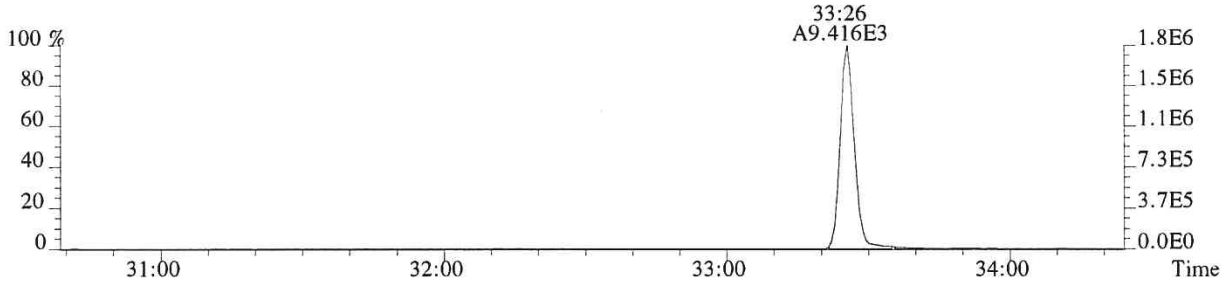


059705

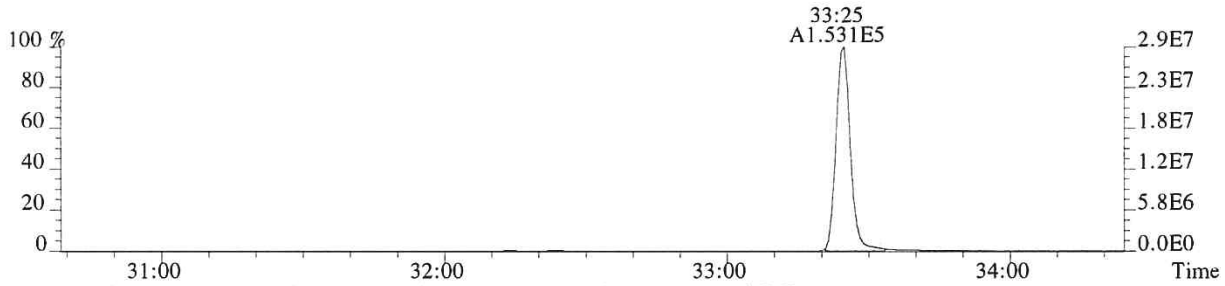
File:P614684 #1-339 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2228.0,1.00%,F,T)



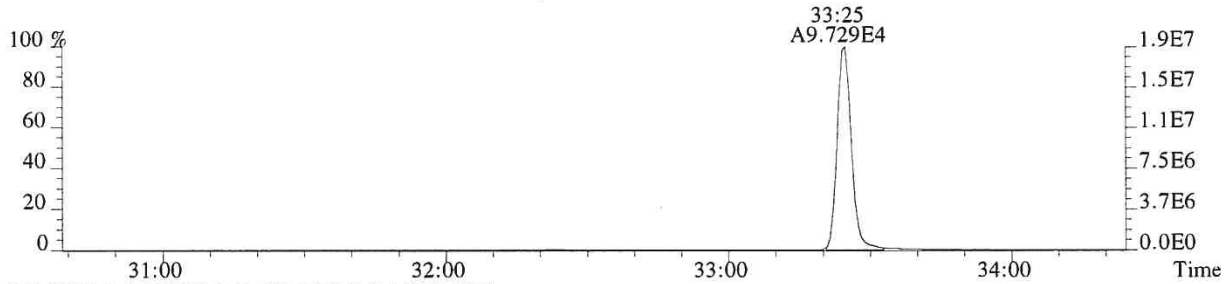
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1032.0,1.00%,F,T)



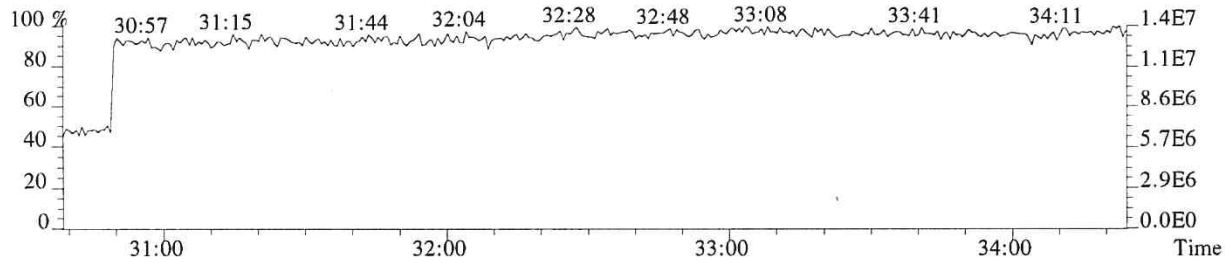
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3936.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3448.0,1.00%,F,T)

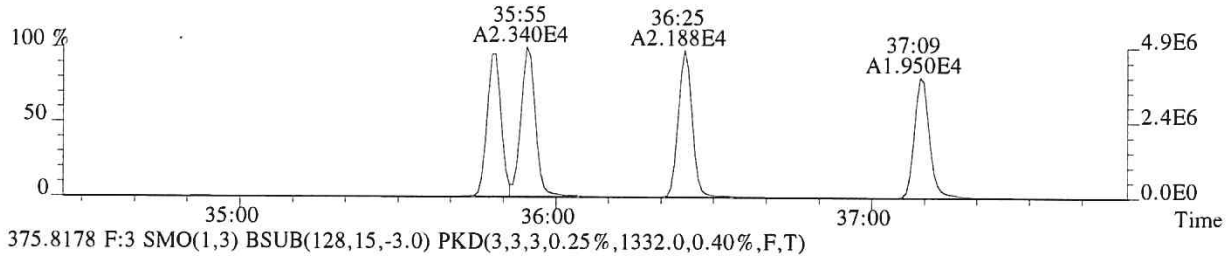


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

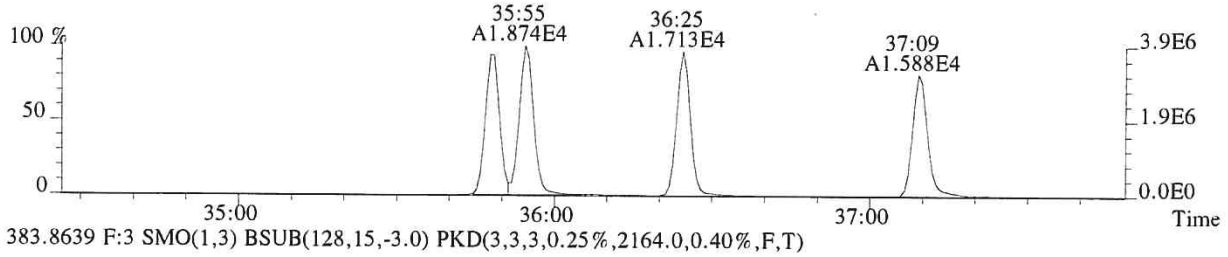


059706

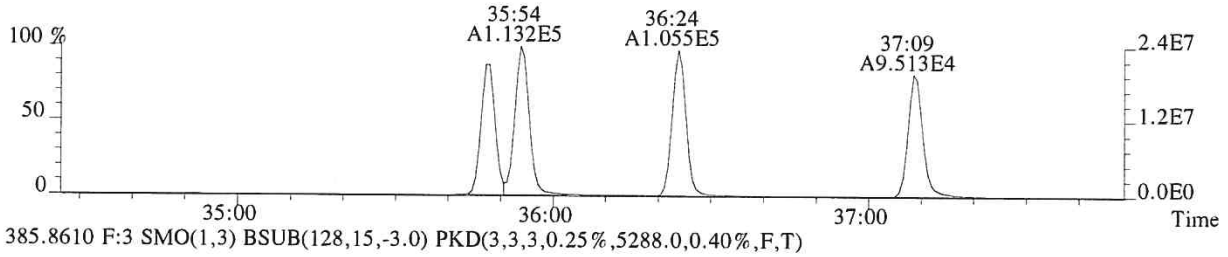
File:P614684 #1-304 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2656.0,0.40%,F,T)



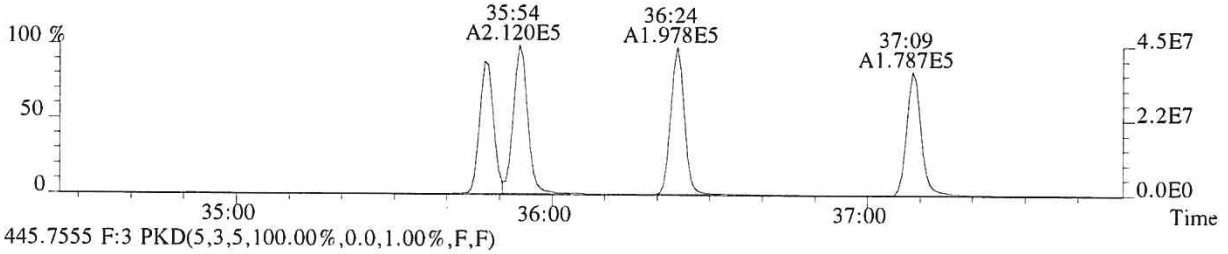
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1332.0,0.40%,F,T)



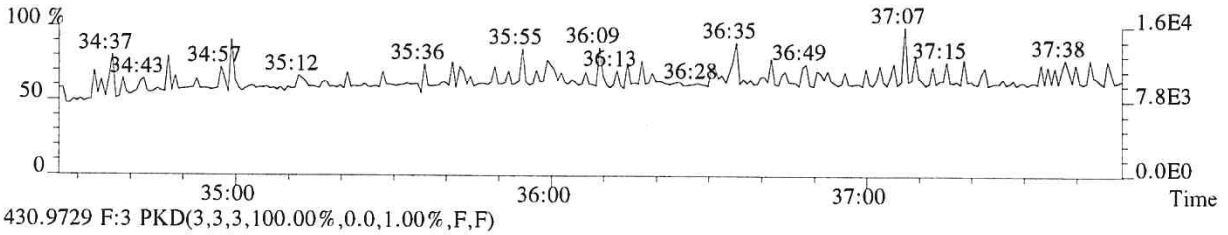
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2164.0,0.40%,F,T)



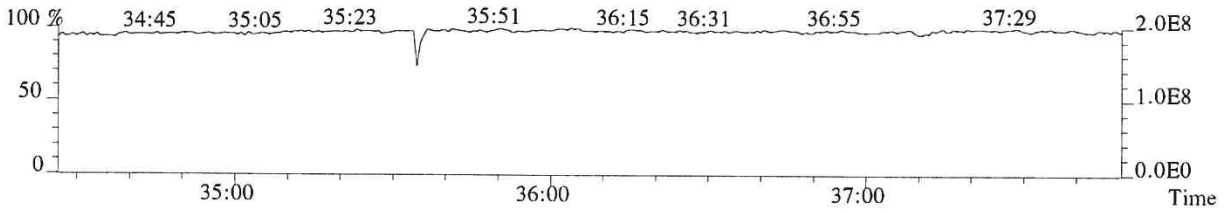
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5288.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

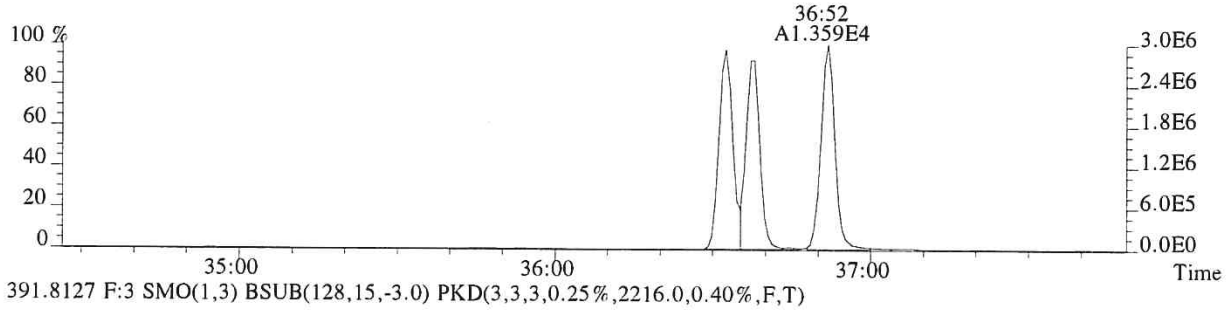


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

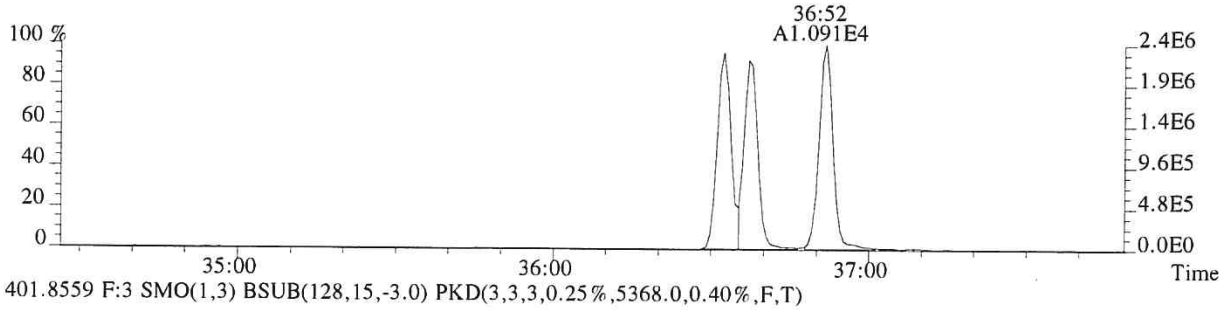


059707

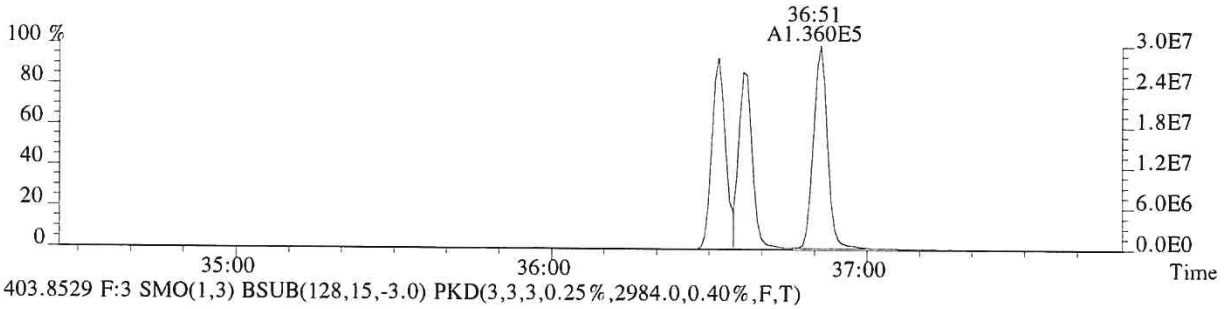
File:P614684 #1-304 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1156.0,0.40%,F,T)



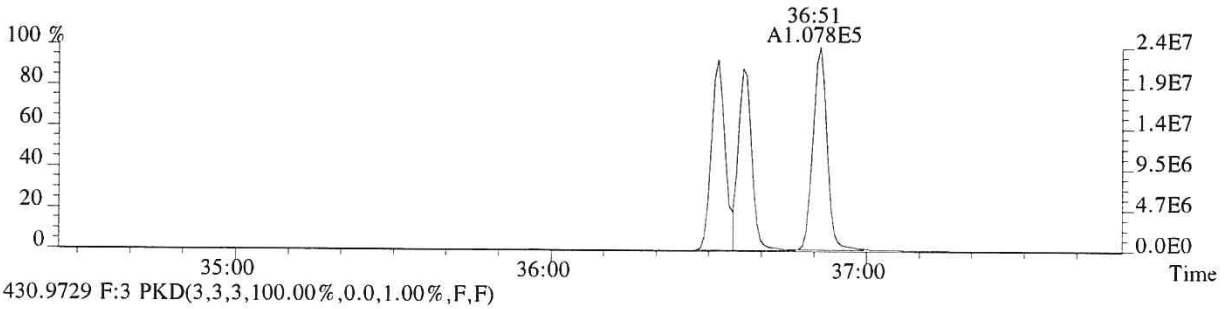
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2216.0,0.40%,F,T)



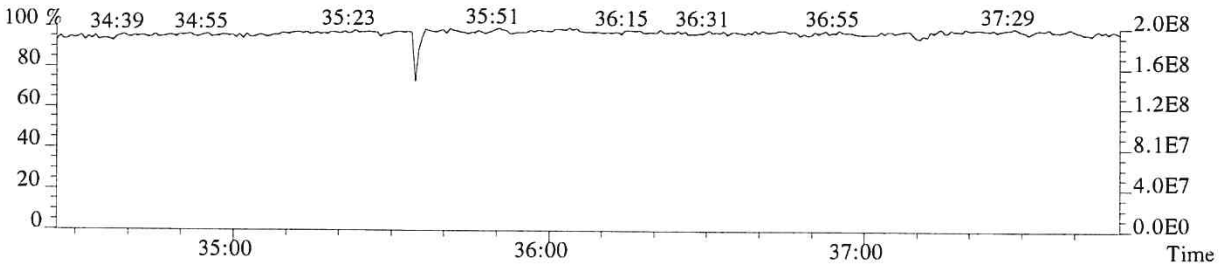
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5368.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2984.0,0.40%,F,T)

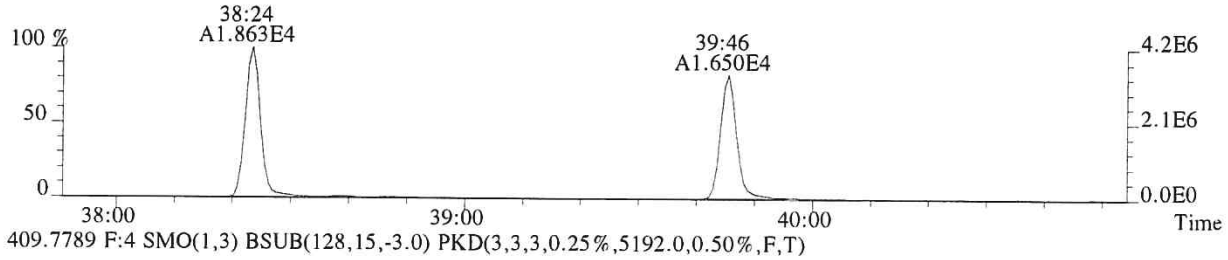


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

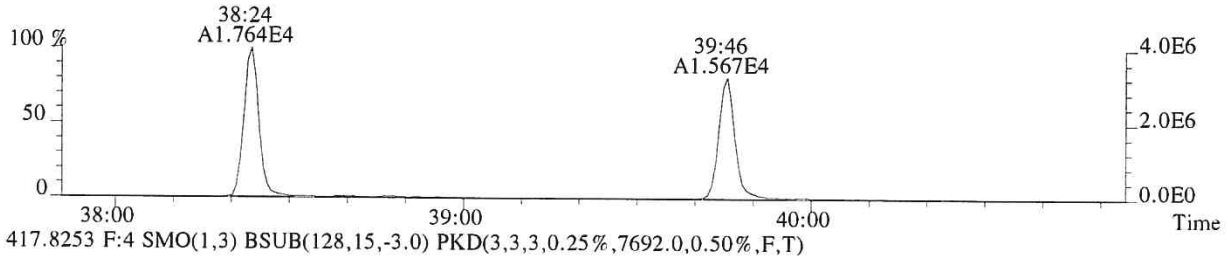


059708

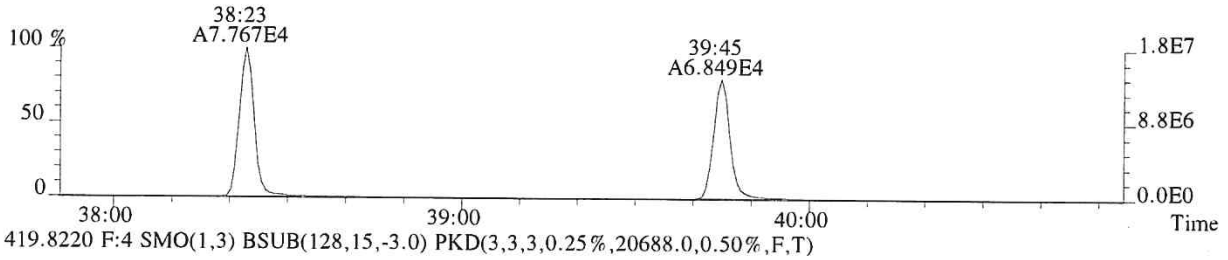
File:P614684 #1-276 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4060.0,0.50%,F,T)



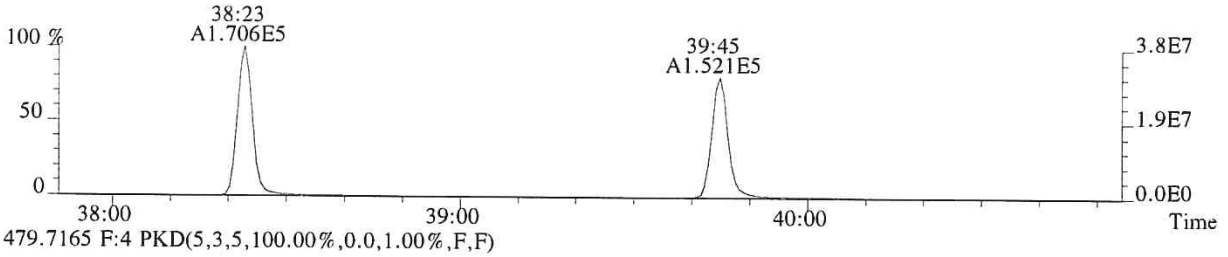
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5192.0,0.50%,F,T)



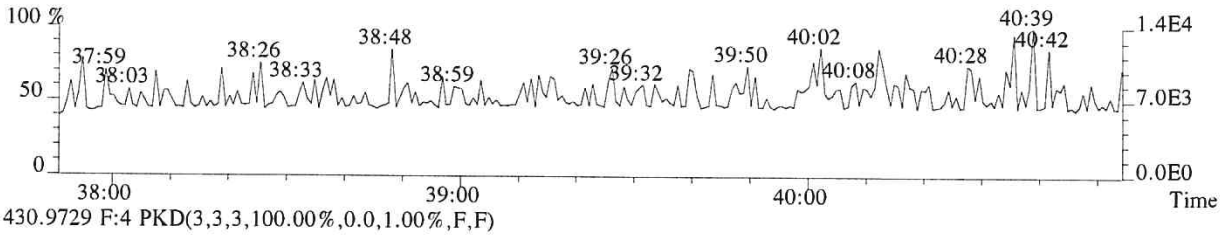
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7692.0,0.50%,F,T)



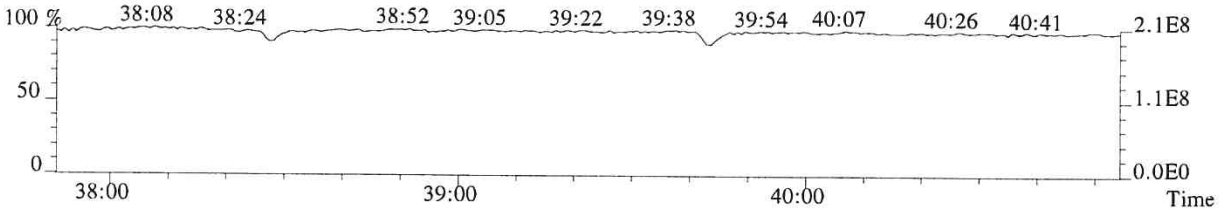
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,20688.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

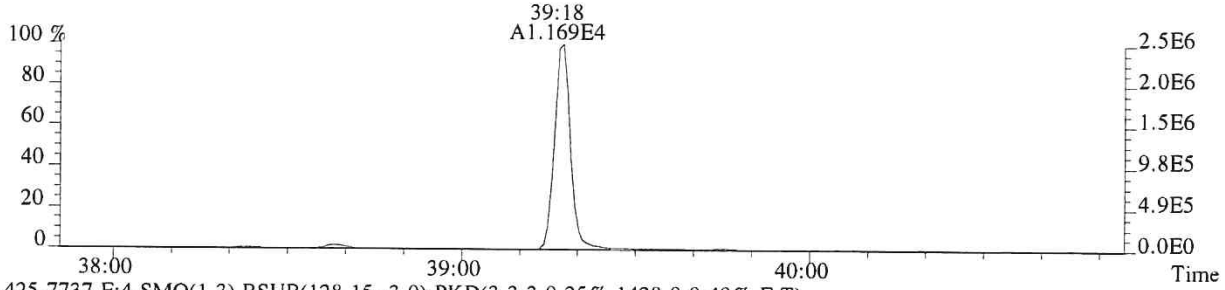


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

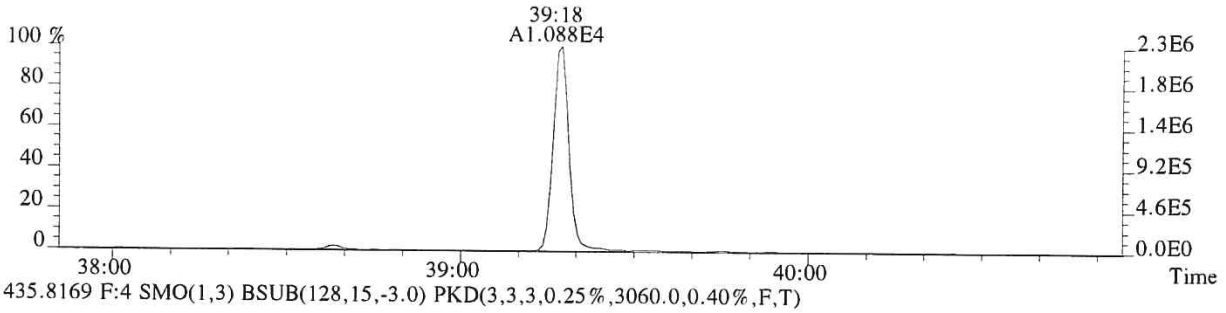


059709

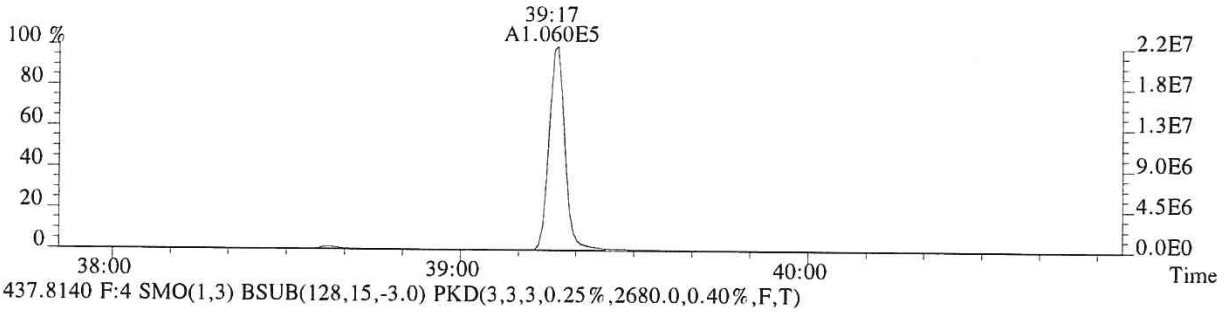
File:P614684 #1-276 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1224.0,0.40%,F,T)



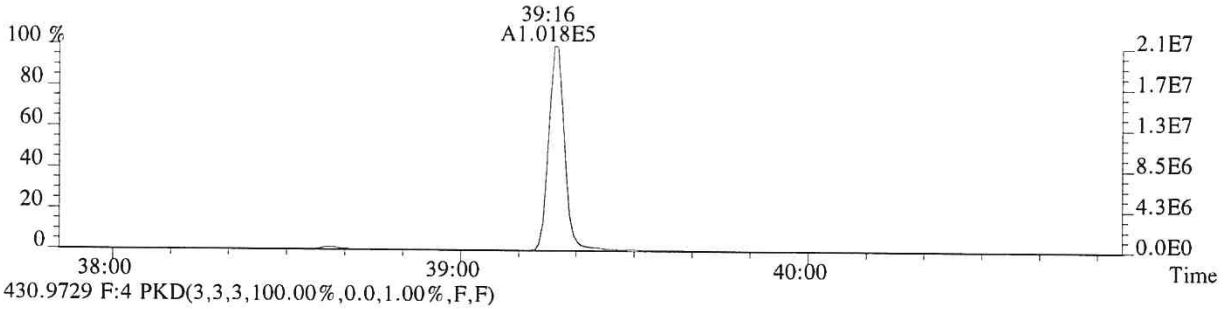
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1428.0,0.40%,F,T)



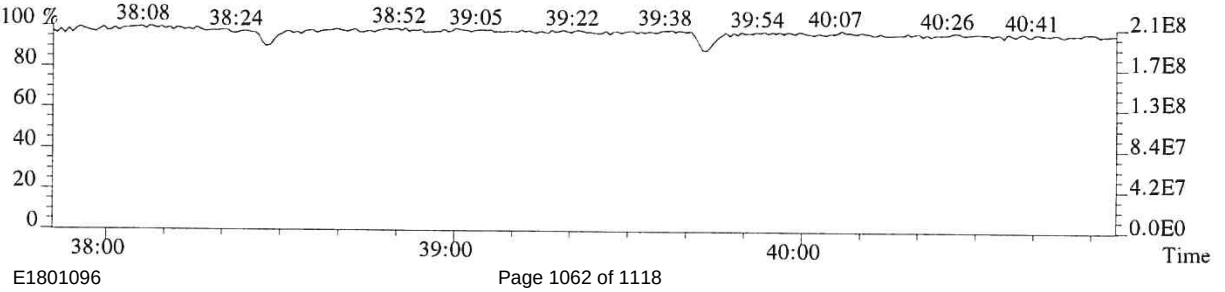
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3060.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2680.0,0.40%,F,T)

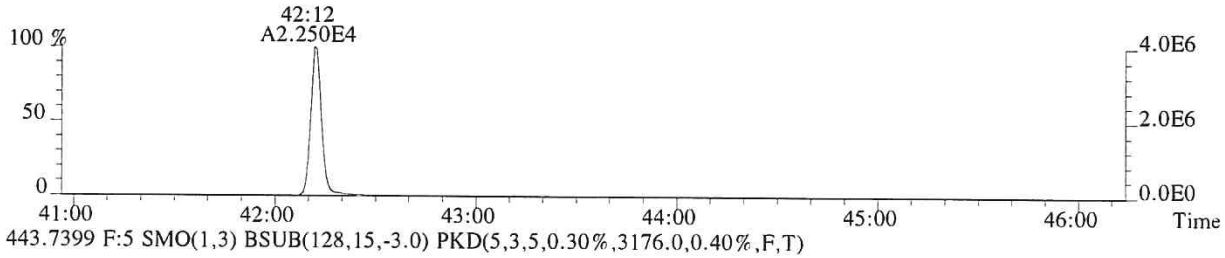


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

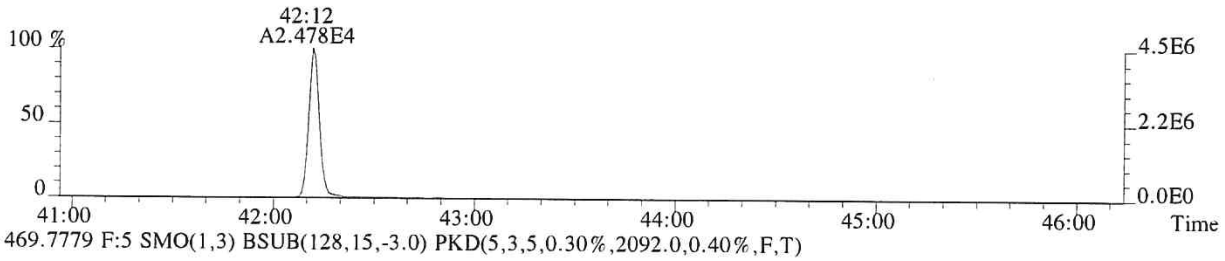


059710

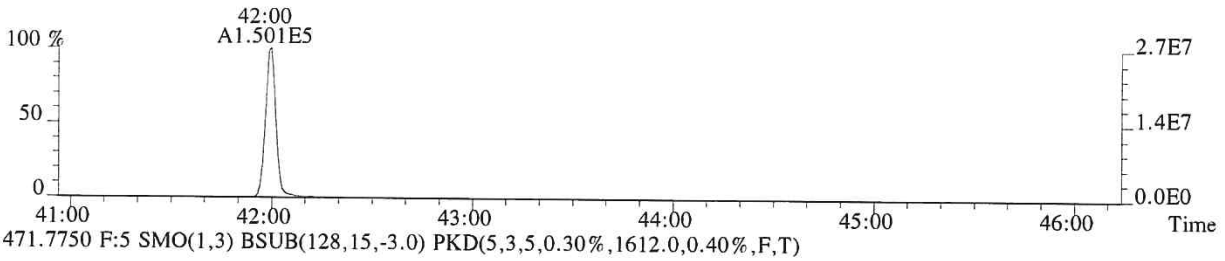
File:P614684 #1-477 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1020.0,0.40%,F,T)



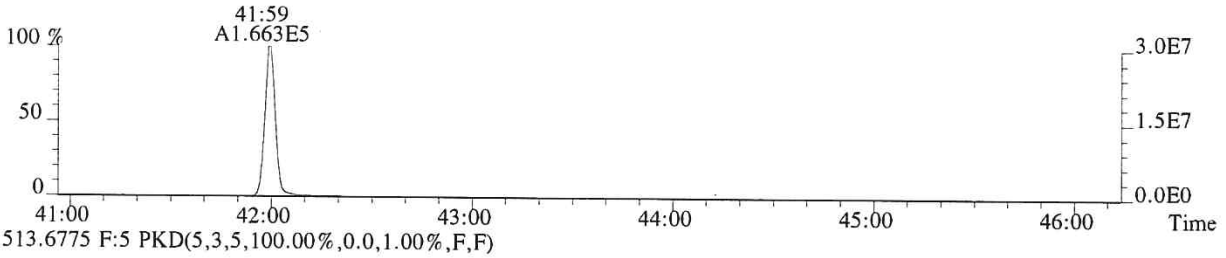
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3176.0,0.40%,F,T)



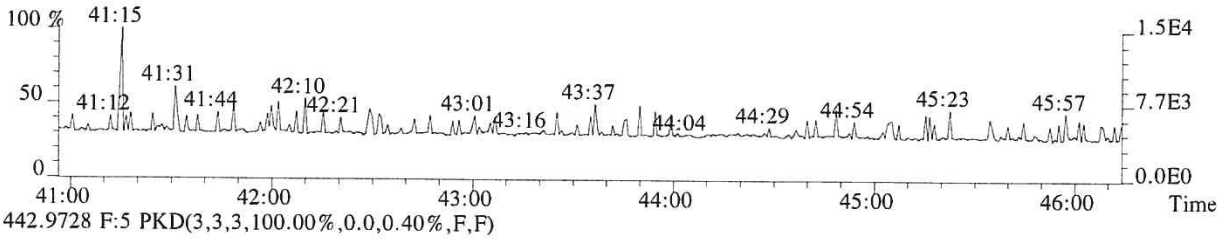
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2092.0,0.40%,F,T)



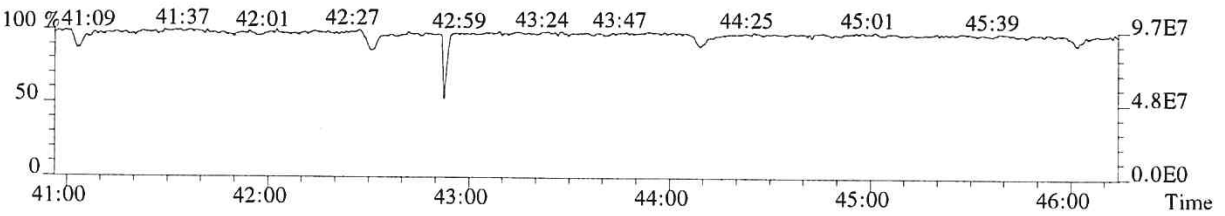
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1612.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

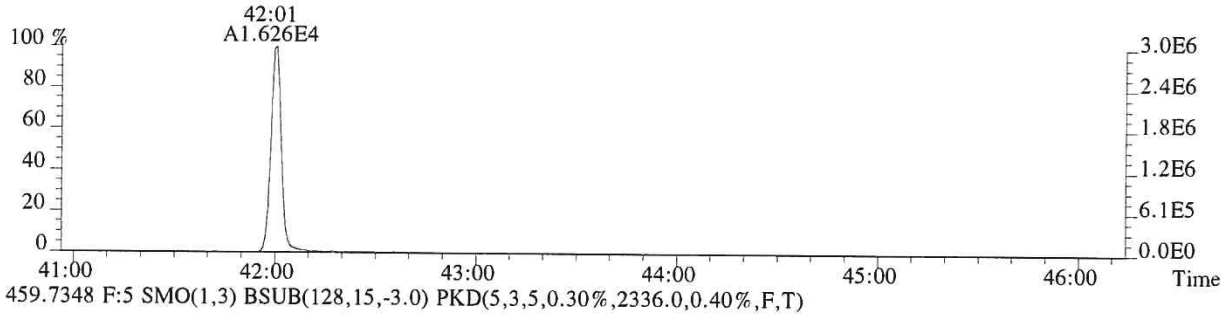


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

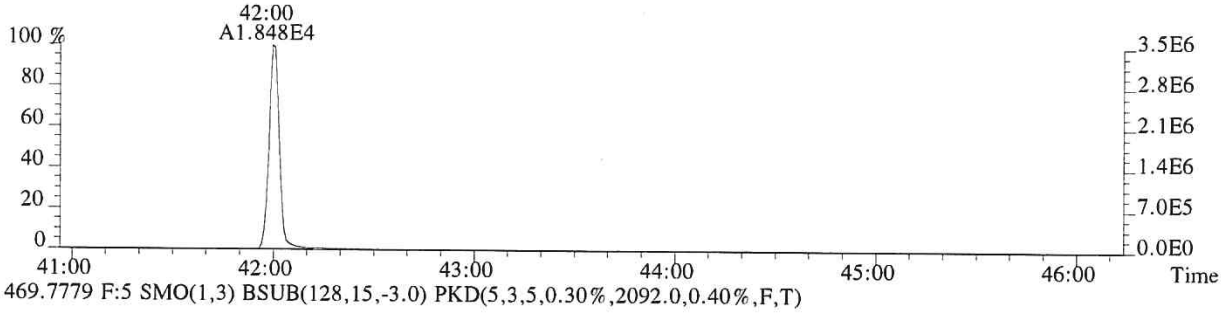


059711

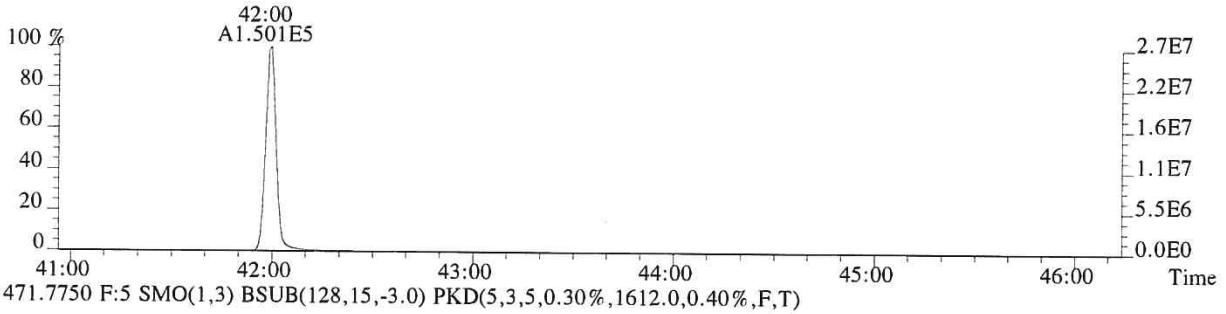
File:P614684 #1-477 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,824.0,0.40%,F,T)



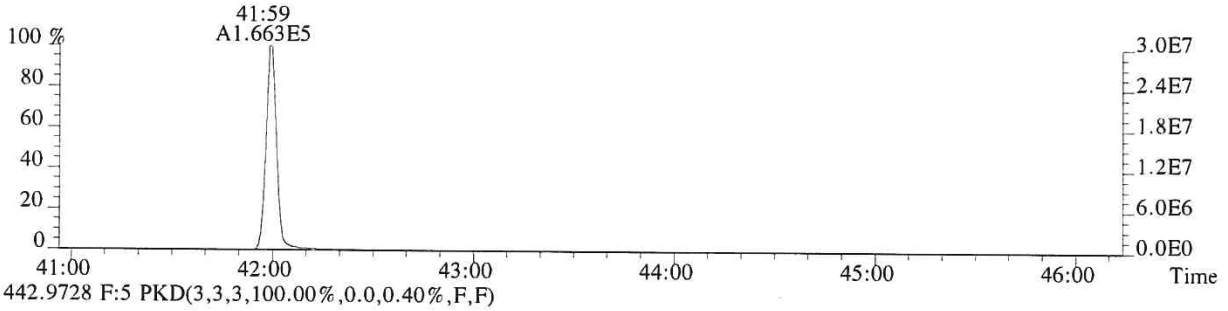
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2336.0,0.40%,F,T)



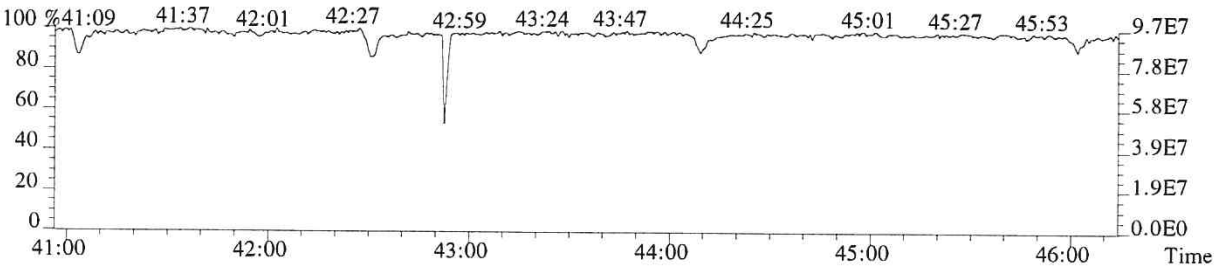
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2092.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1612.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059712

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76557

Run #4 Filename P614685 Samp: 1 Inj: 1 Acquired: 25-SEP-18 16:52:47
Processed: 26-SEP-18 07:39:09 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:01	3.637e+04	4.546e+04	0.80	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:15	3.073e+05	1.939e+05	1.58	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:09	2.818e+05	1.782e+05	1.58	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	2.774e+05	2.200e+05	1.26	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	2.905e+05	2.295e+05	1.27	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	2.685e+05	2.105e+05	1.28	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:10	2.537e+05	1.982e+05	1.28	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	2.407e+05	2.292e+05	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	1.925e+05	1.847e+05	1.04	yes	no	1.463
10	Unk	OCDF	42:13	3.041e+05	3.309e+05	0.92	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	2.365e+04	3.051e+04	0.78	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	1.706e+05	1.098e+05	1.55	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	1.645e+05	1.238e+05	1.33	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	1.567e+05	1.272e+05	1.23	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:53	1.702e+05	1.368e+05	1.24	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	1.477e+05	1.392e+05	1.06	yes	no	1.112
17	Unk	OCDD	42:01	2.180e+05	2.422e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	3.444e+05	4.352e+05	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	5.358e+05	3.352e+05	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	5.234e+05	3.254e+05	1.61	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:48	2.524e+05	4.773e+05	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:55	2.834e+05	5.294e+05	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:25	2.621e+05	4.867e+05	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	2.431e+05	4.520e+05	0.54	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:24	1.967e+05	4.289e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:46	1.638e+05	3.571e+05	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	2.330e+05	2.909e+05	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	3.758e+05	2.372e+05	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:33	3.106e+05	2.345e+05	1.32	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	2.932e+05	2.439e+05	1.20	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	2.673e+05	2.524e+05	1.06	yes	no	0.857
32	IS	13C-OCDD	42:00	3.863e+05	4.247e+05	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:13	2.395e+05	3.006e+05	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:52	3.335e+05	2.694e+05	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	5.645e+04				no	1.086

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Signal/Noise Height Ratio Summary

CLIENT ID.
76557

Run #4 Filename P614685 Samp: 1 Inj: 1 Acquired: 25-SEP-18 16:52:47
Processed: 26-SEP-18 07:39:09 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.55e+06	2.18e+03	3.0e+03	8.17e+06	4.39e+03	1.9e+03
2	1,2,3,7,8-PeCDF	5.78e+07	2.87e+03	2.0e+04	3.64e+07	4.35e+03	8.4e+03
3	2,3,4,7,8-PeCDF	5.79e+07	2.87e+03	2.0e+04	3.65e+07	4.35e+03	8.4e+03
4	1,2,3,4,7,8-HxCDF	6.15e+07	2.89e+03	2.1e+04	4.93e+07	2.08e+03	2.4e+04
5	1,2,3,6,7,8-HxCDF	6.26e+07	2.89e+03	2.2e+04	4.97e+07	2.08e+03	2.4e+04
6	2,3,4,6,7,8-HxCDF	6.14e+07	2.89e+03	2.1e+04	4.79e+07	2.08e+03	2.3e+04
7	1,2,3,7,8,9-HxCDF	5.42e+07	2.89e+03	1.9e+04	4.26e+07	2.08e+03	2.0e+04
8	1,2,3,4,6,7,8-HpCDF	5.56e+07	1.47e+04	3.8e+03	5.23e+07	1.66e+04	3.1e+03
9	1,2,3,4,7,8,9-HpCDF	3.99e+07	1.47e+04	2.7e+03	3.80e+07	1.66e+04	2.3e+03
10	OCDF	5.72e+07	1.23e+03	4.7e+04	6.22e+07	3.01e+03	2.1e+04
11	2,3,7,8-TCDD	4.49e+06	5.36e+03	8.4e+02	5.78e+06	2.64e+03	2.2e+03
12	1,2,3,7,8-PeCDD	3.45e+07	2.46e+03	1.4e+04	2.21e+07	1.02e+03	2.2e+04
13	1,2,3,4,7,8-HxCDD	3.72e+07	9.04e+02	4.1e+04	2.90e+07	1.56e+03	1.9e+04
14	1,2,3,6,7,8-HxCDD	3.60e+07	9.04e+02	4.0e+04	2.81e+07	1.56e+03	1.8e+04
15	1,2,3,7,8,9-HxCDD	3.80e+07	9.04e+02	4.2e+04	3.00e+07	1.56e+03	1.9e+04
16	1,2,3,4,6,7,8-HpCDD	3.19e+07	1.58e+03	2.0e+04	3.06e+07	1.63e+03	1.9e+04
17	OCDD	4.21e+07	1.71e+03	2.5e+04	4.66e+07	1.53e+03	3.0e+04
18	13C-2,3,7,8-TCDF	6.23e+07	1.55e+04	4.0e+03	7.90e+07	1.02e+04	7.8e+03
19	13C-1,2,3,7,8-PeCDF	1.00e+08	2.14e+03	4.7e+04	6.28e+07	2.18e+03	2.9e+04
20	13C-2,3,4,7,8-PeCDF	1.07e+08	2.14e+03	5.0e+04	6.66e+07	2.18e+03	3.1e+04
21	13C-1,2,3,4,7,8-HxCDF	5.63e+07	2.92e+03	1.9e+04	1.07e+08	4.60e+03	2.3e+04
22	13C-1,2,3,6,7,8-HxCDF	6.12e+07	2.92e+03	2.1e+04	1.15e+08	4.60e+03	2.5e+04
23	13C-2,3,4,6,7,8-HxCDF	5.95e+07	2.92e+03	2.0e+04	1.10e+08	4.60e+03	2.4e+04
24	13C-1,2,3,7,8,9-HxCDF	5.22e+07	2.92e+03	1.8e+04	9.74e+07	4.60e+03	2.1e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.59e+07	1.18e+04	3.9e+03	9.95e+07	3.82e+04	2.6e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.37e+07	1.18e+04	2.9e+03	7.29e+07	3.82e+04	1.9e+03
27	13C-2,3,7,8-TCDD	4.45e+07	1.91e+04	2.3e+03	5.53e+07	7.70e+03	7.2e+03
28	13C-1,2,3,7,8-PeCDD	7.50e+07	3.59e+03	2.1e+04	4.74e+07	2.50e+03	1.9e+04
29	13C-1,2,3,4,7,8-HxCDD	6.95e+07	5.55e+03	1.3e+04	5.43e+07	3.18e+03	1.7e+04
30	13C-1,2,3,6,7,8-HxCDD	6.70e+07	5.55e+03	1.2e+04	5.36e+07	3.18e+03	1.7e+04
31	13C-1,2,3,4,6,7,8-HpCDD	5.80e+07	4.72e+03	1.2e+04	5.53e+07	2.63e+03	2.1e+04
32	13C-OCDD	7.33e+07	1.86e+03	4.0e+04	8.10e+07	5.92e+02	1.4e+05
33	13C-1,2,3,4-TCDD	4.48e+07	1.91e+04	2.3e+03	5.67e+07	7.70e+03	7.4e+03
34	13C-1,2,3,7,8,9-HxCDD	7.38e+07	5.55e+03	1.3e+04	5.89e+07	3.18e+03	1.9e+04
35	37Cl-2,3,7,8-TCDD	1.08e+07	3.52e+03	3.1e+03			

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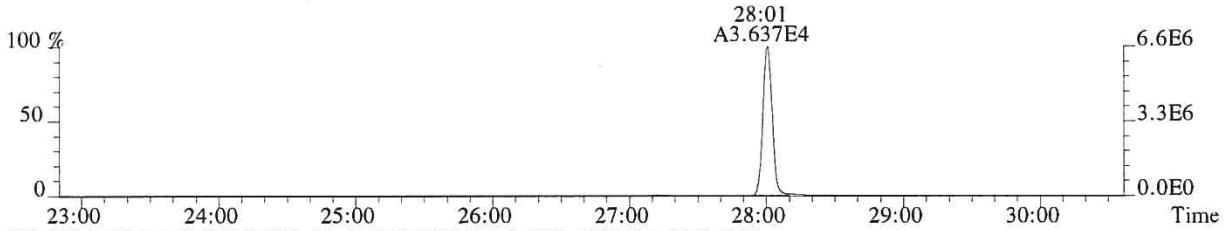
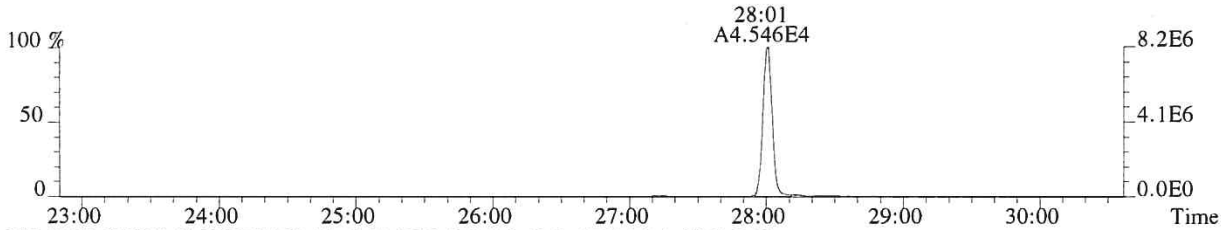
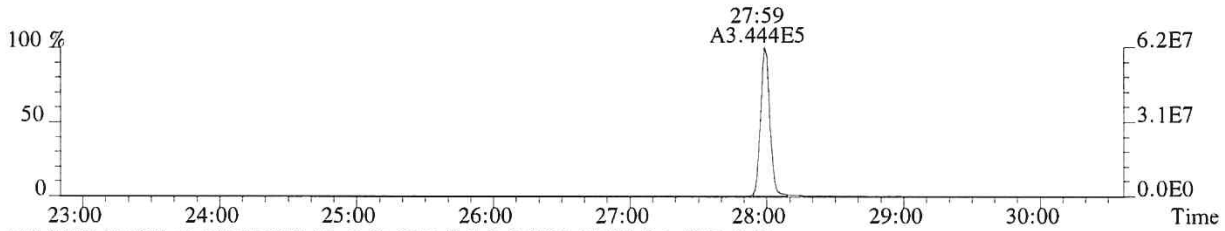
File:P614685 #1-552 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,T)



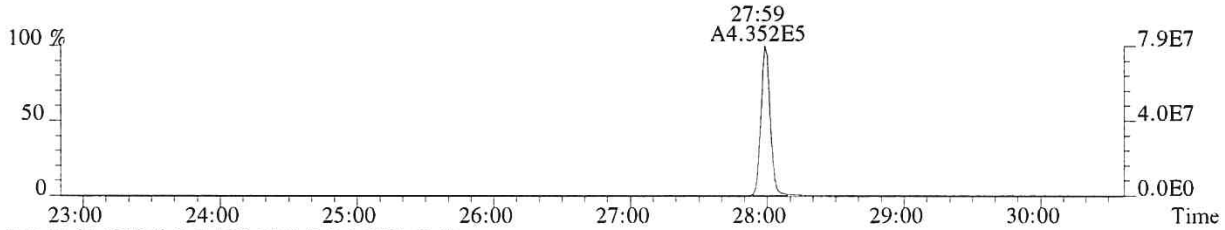
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4392.0,1.00%,F,T)



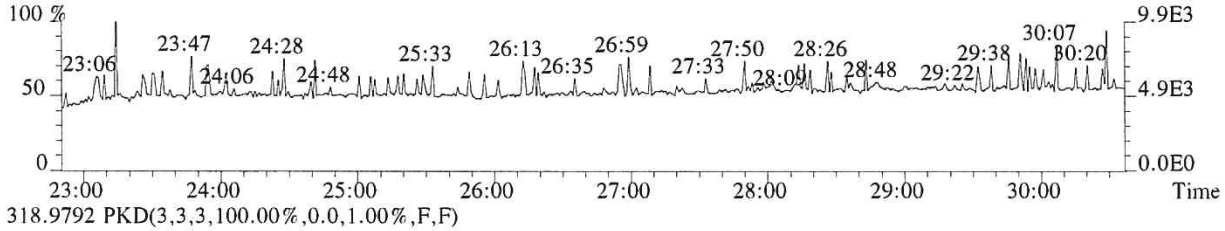
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15516.0,1.00%,F,T)



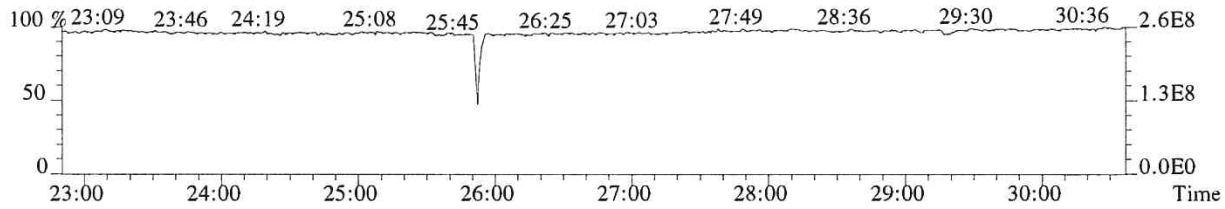
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10180.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

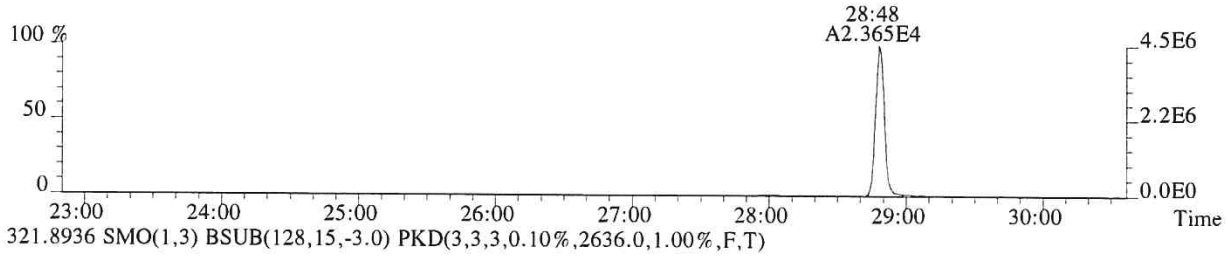


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

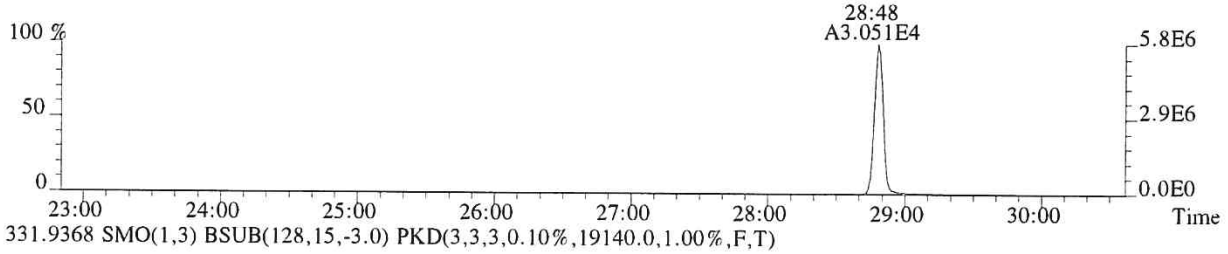


059715

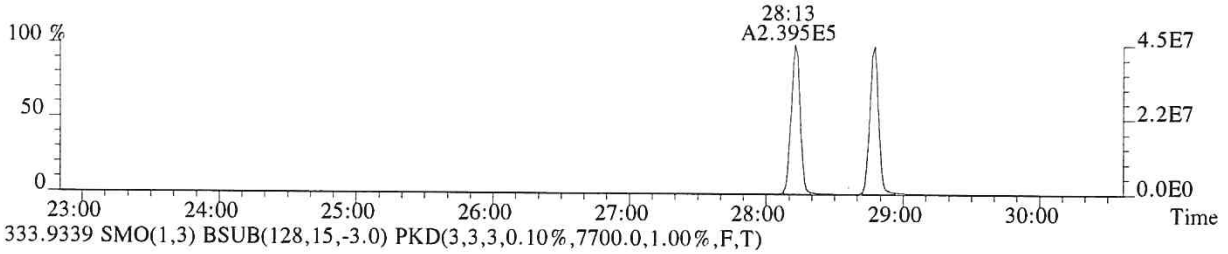
File:P614685 #1-552 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5364.0,1.00%,F,T)



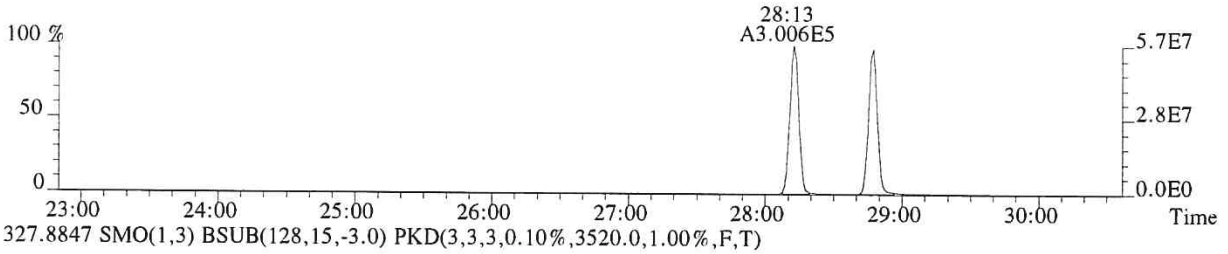
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2636.0,1.00%,F,T)



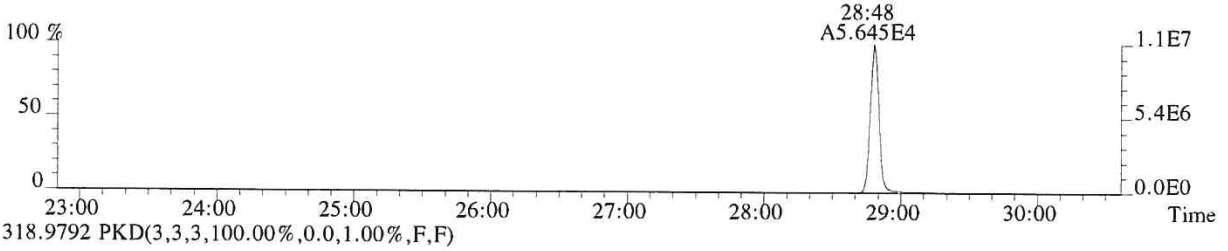
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,19140.0,1.00%,F,T)



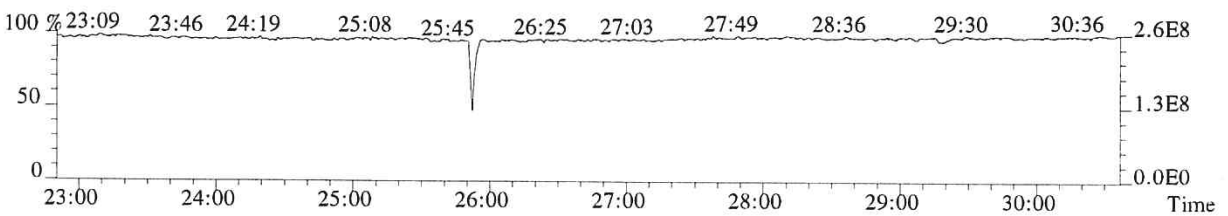
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7700.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3520.0,1.00%,F,T)

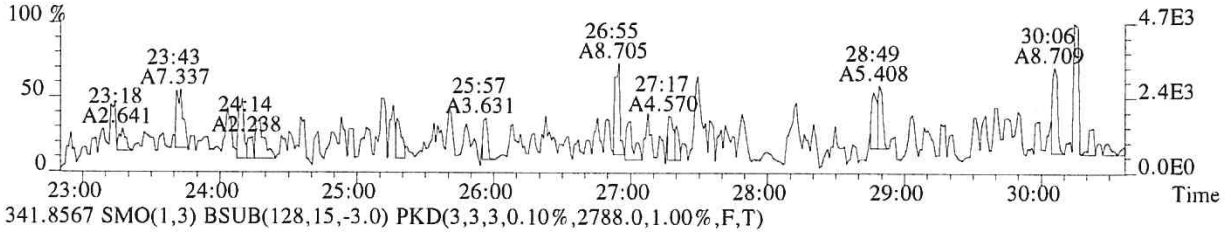


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

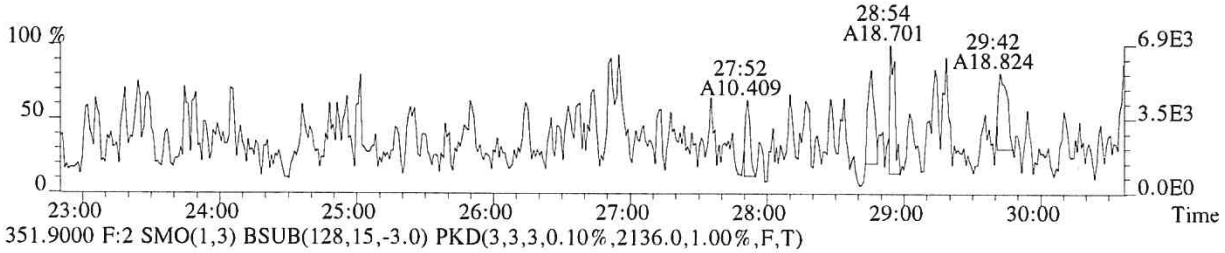


059716

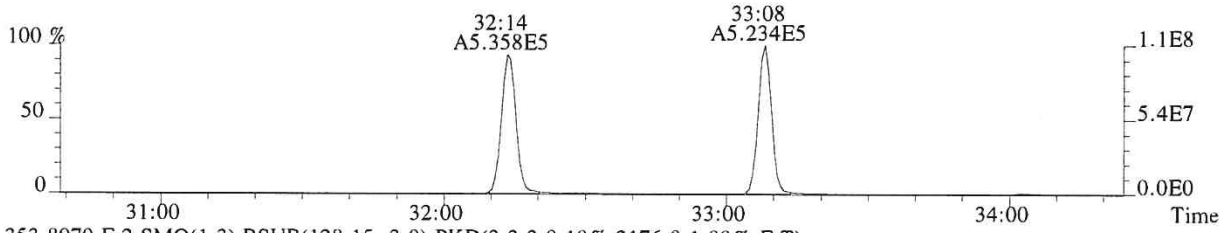
File:P614685 #1-552 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1116.0,1.00%,F,T)



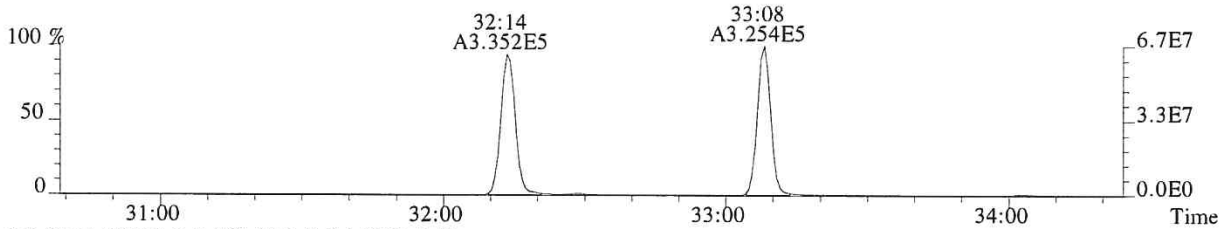
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2788.0,1.00%,F,T)



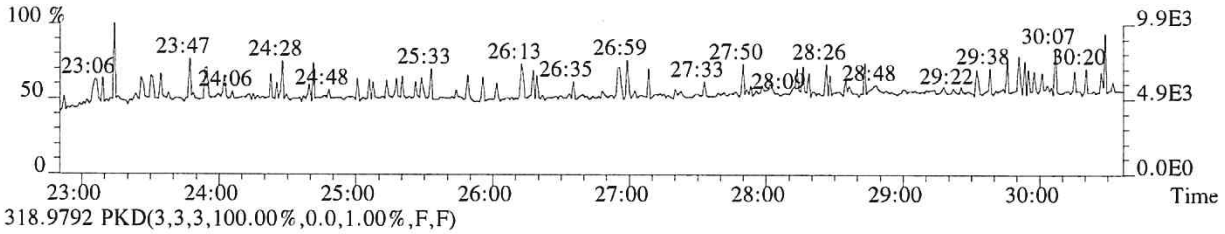
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2136.0,1.00%,F,T)



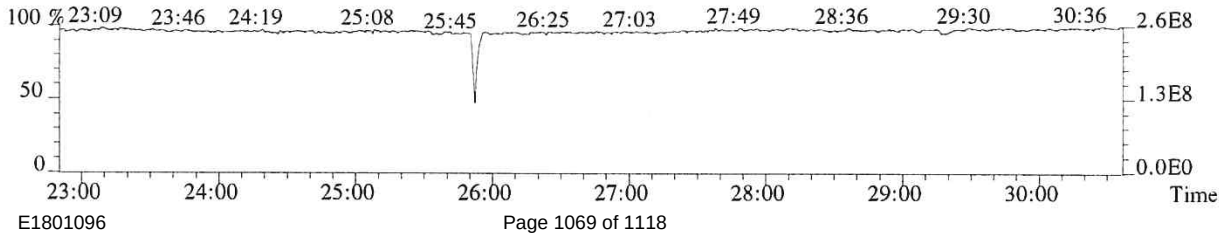
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

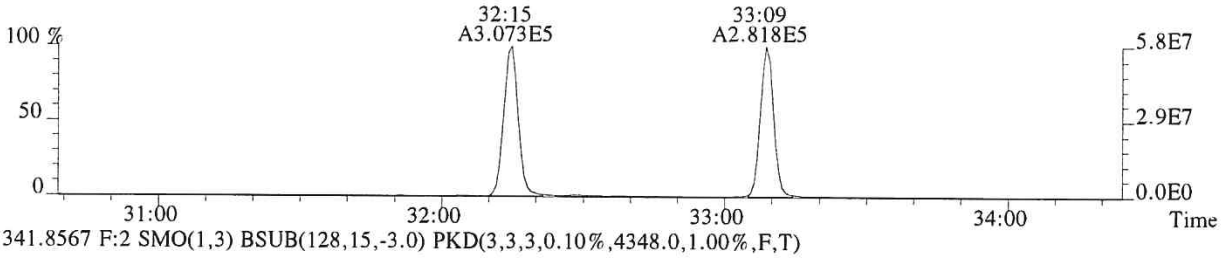


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

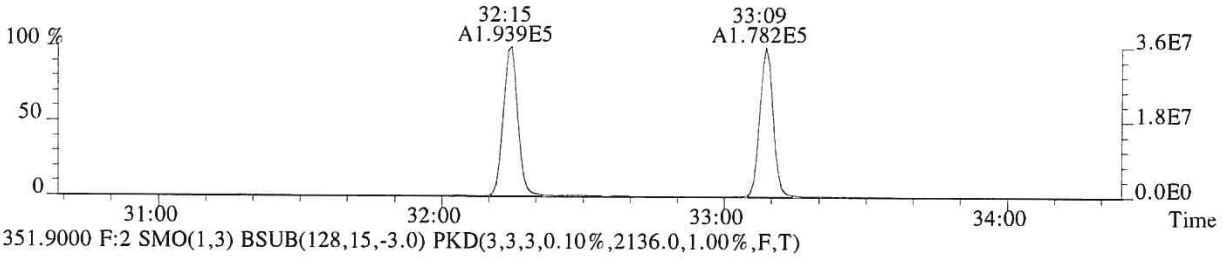


059717

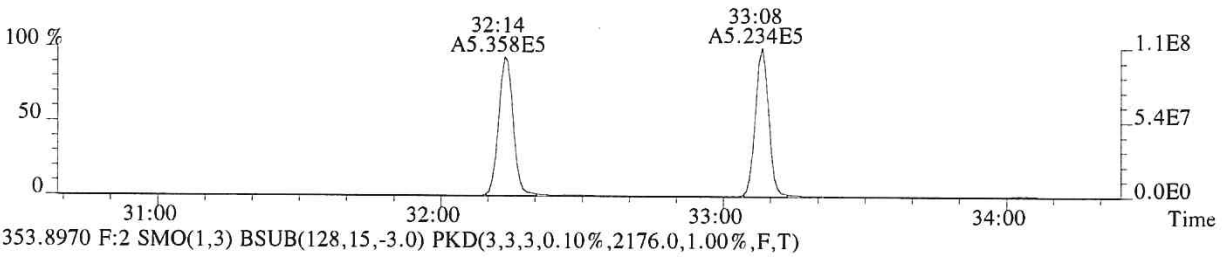
File:P614685 #1-339 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2872.0,1.00%,F,T)



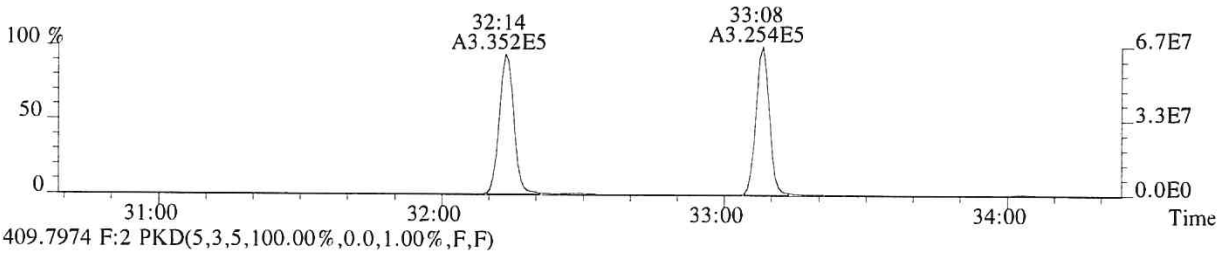
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4348.0,1.00%,F,T)



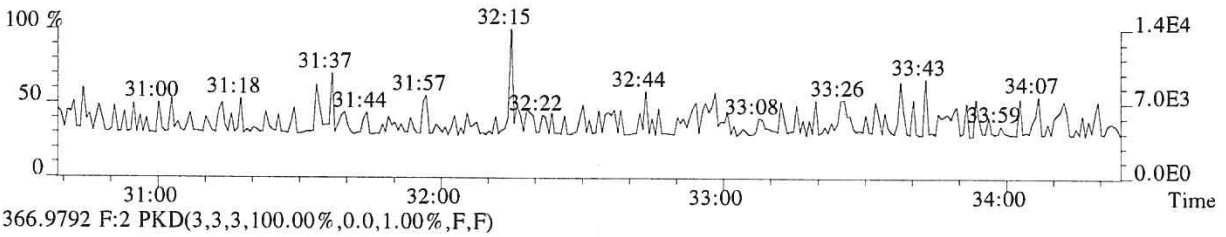
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2136.0,1.00%,F,T)



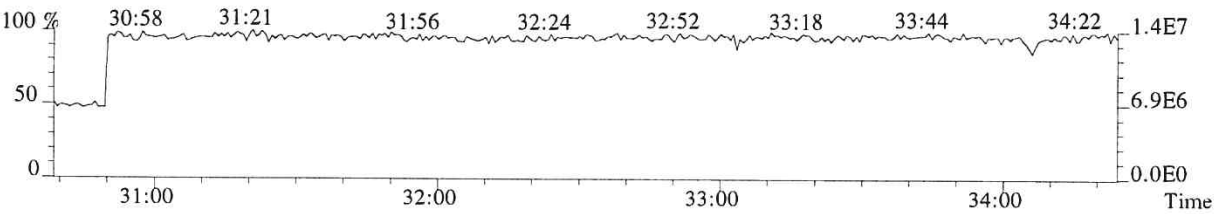
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

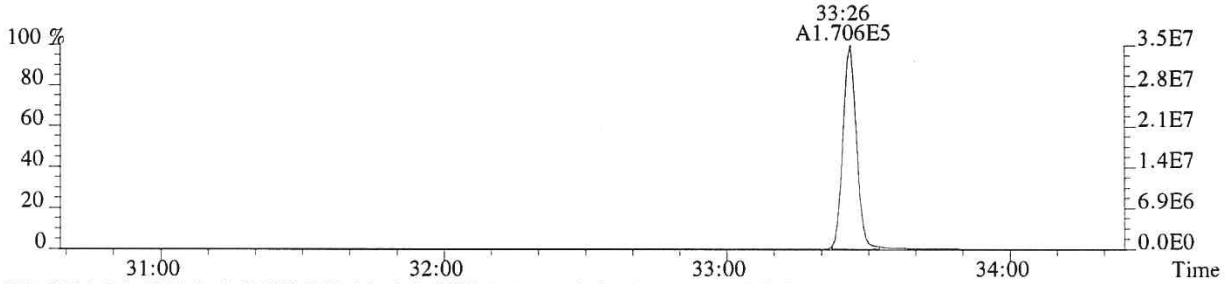


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

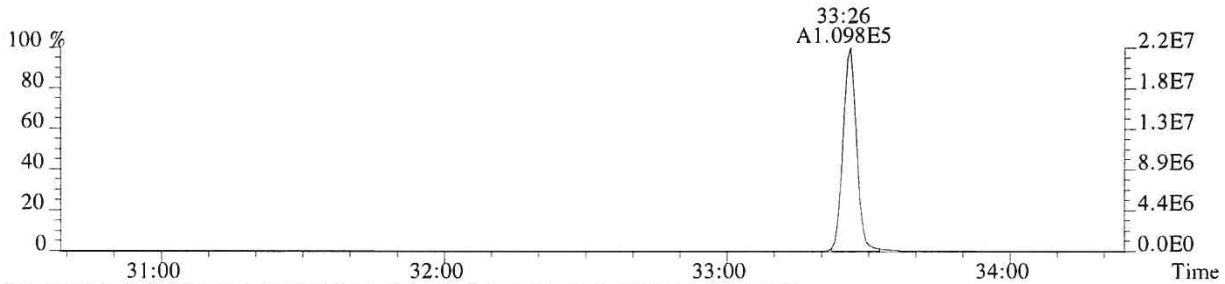


059718

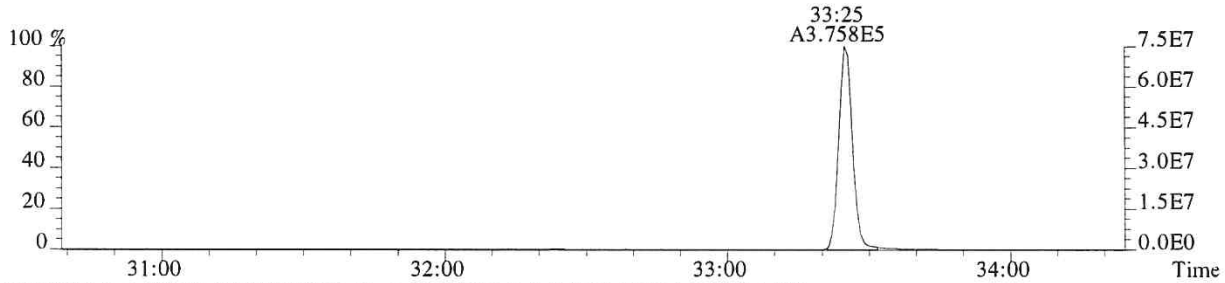
File:P614685 #1-339 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2460.0,1.00%,F,T)



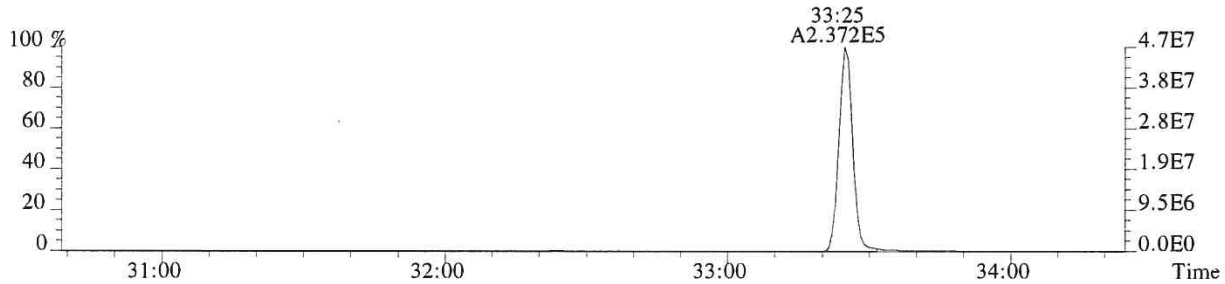
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1020.0,1.00%,F,T)



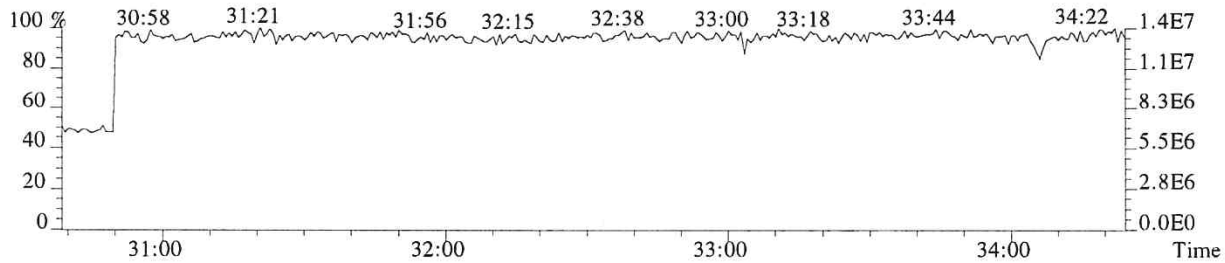
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3592.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2496.0,1.00%,F,T)

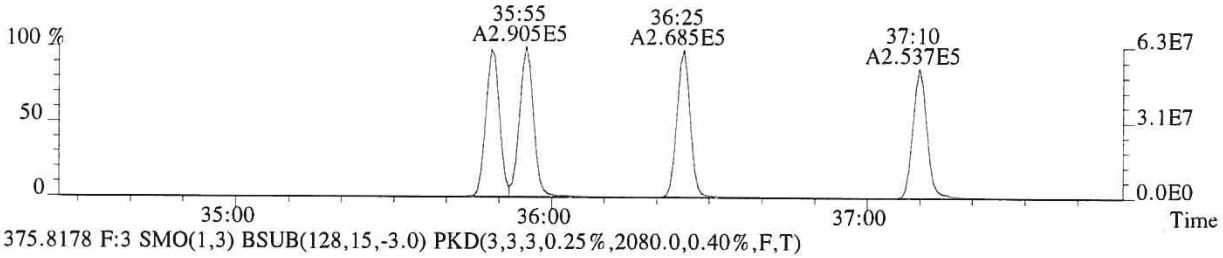


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

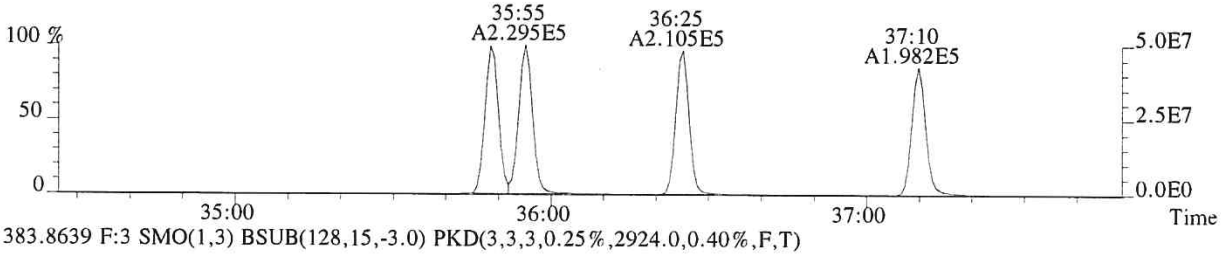


059719

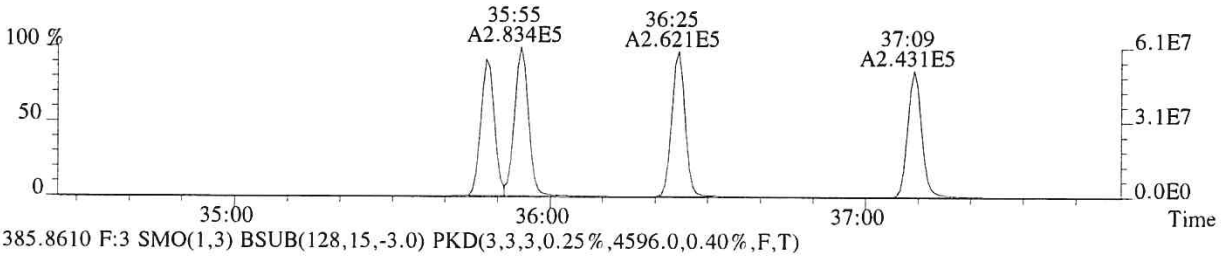
File:P614685 #1-304 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2888.0,0.40%,F,T)



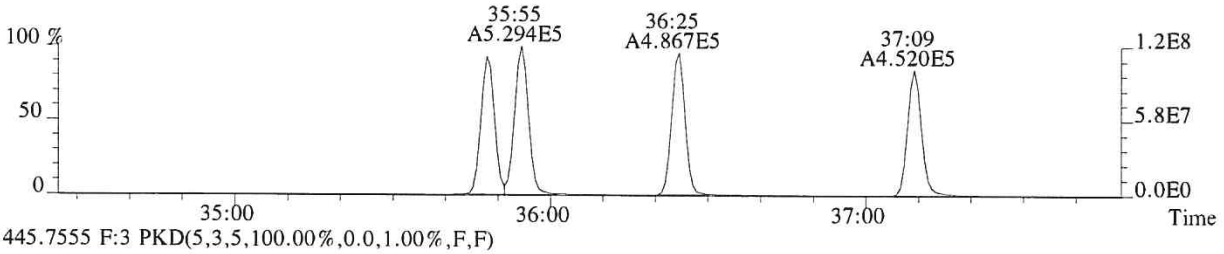
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2080.0,0.40%,F,T)



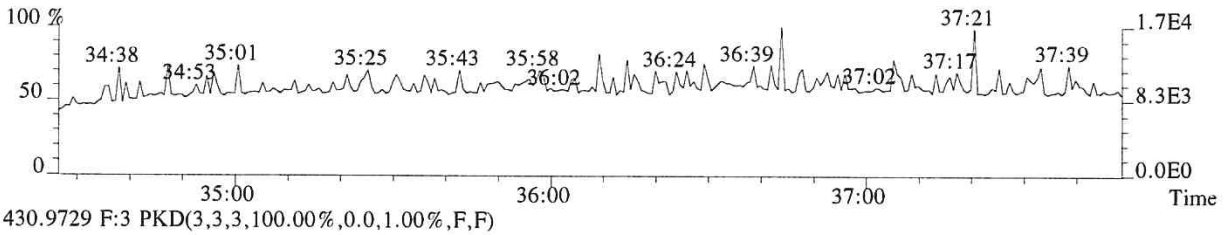
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2924.0,0.40%,F,T)



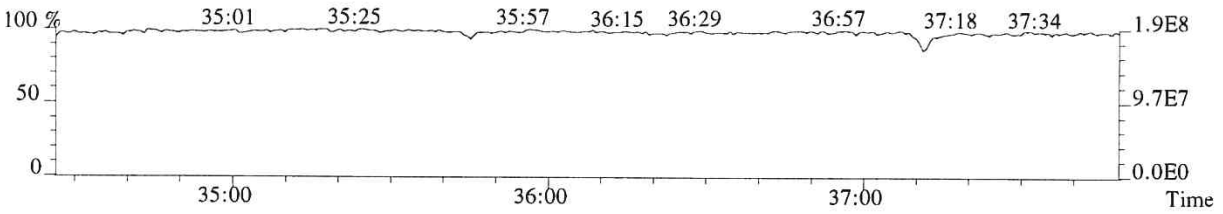
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4596.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

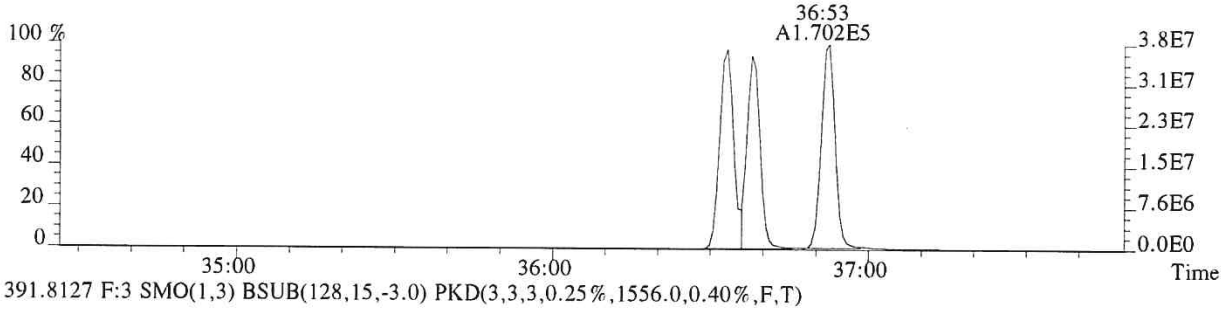


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

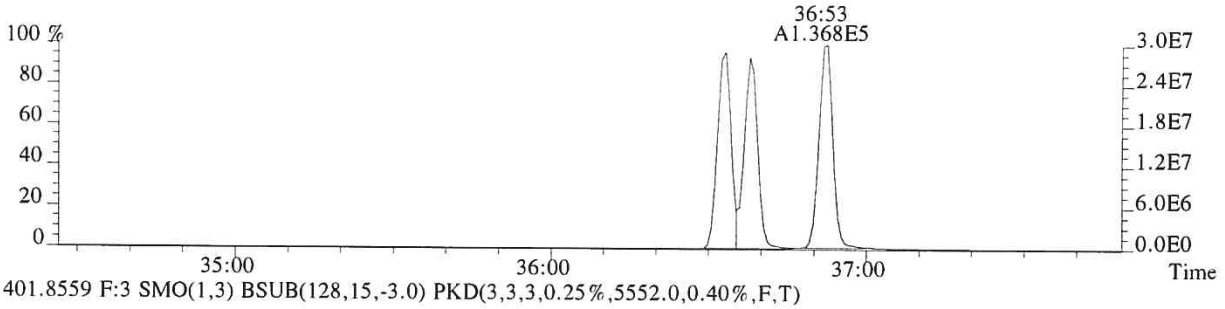


059720

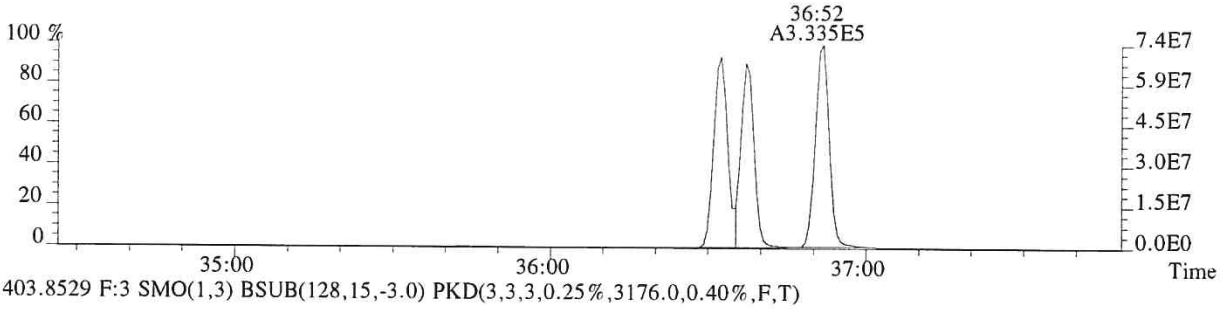
File:P614685 #1-304 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,904.0,0.40%,F,T)



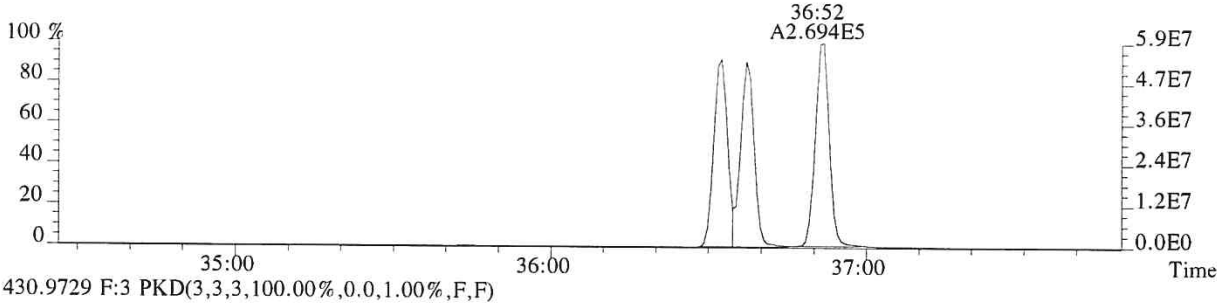
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1556.0,0.40%,F,T)



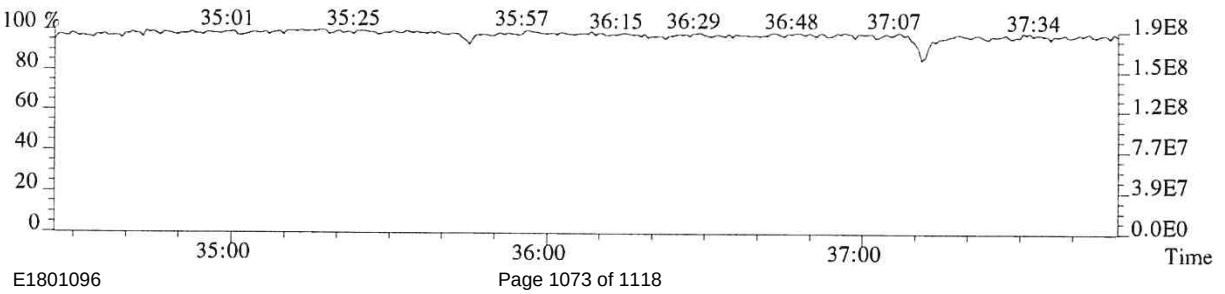
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5552.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3176.0,0.40%,F,T)

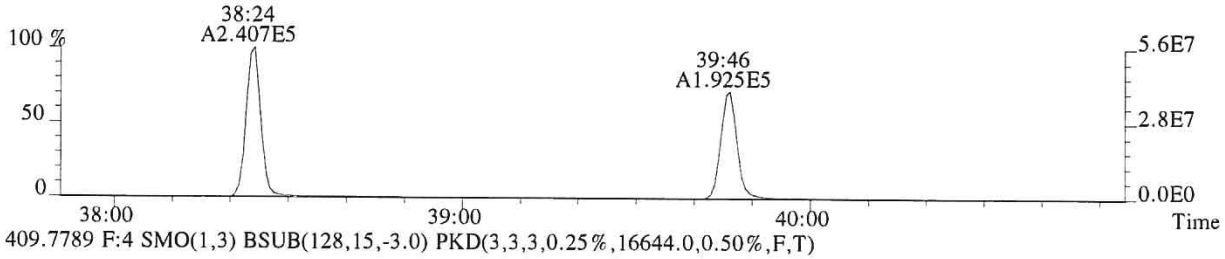


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

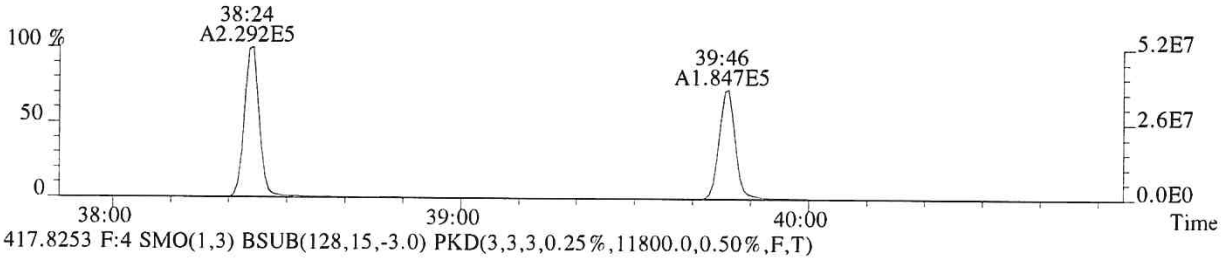


059721

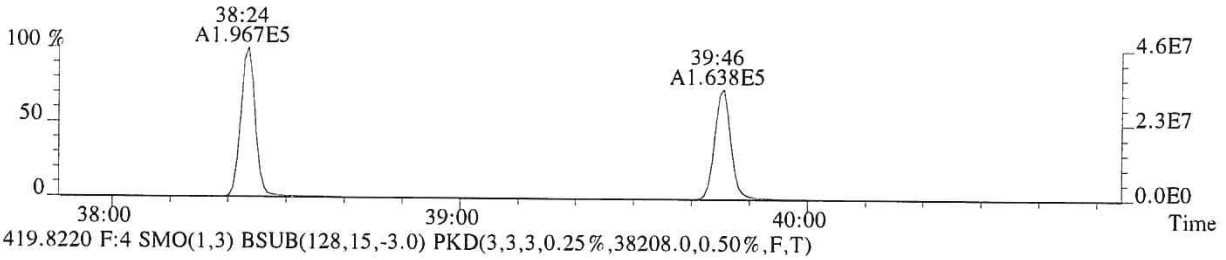
File:P614685 #1-276 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spectℓ
Sample#1 Exp:CS3
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,14728.0,0.50%,F,T)



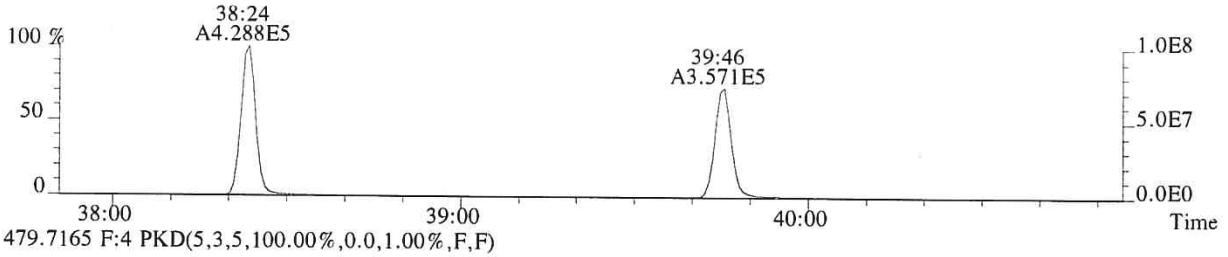
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,16644.0,0.50%,F,T)



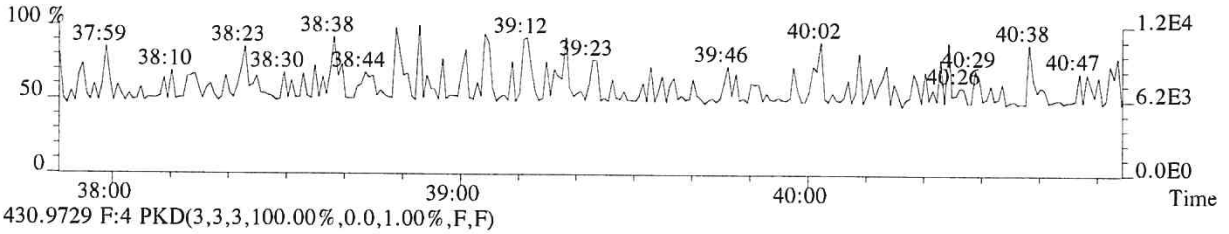
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11800.0,0.50%,F,T)



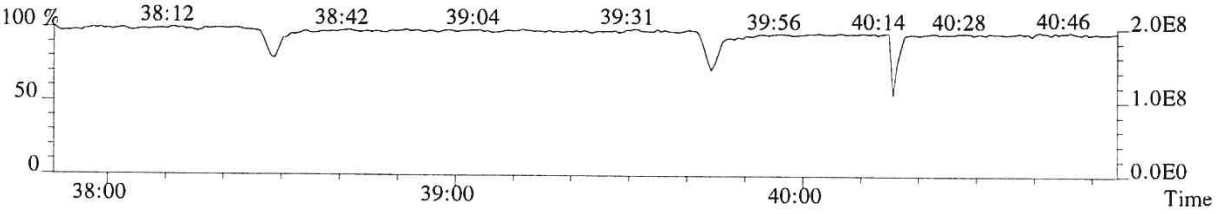
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,38208.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

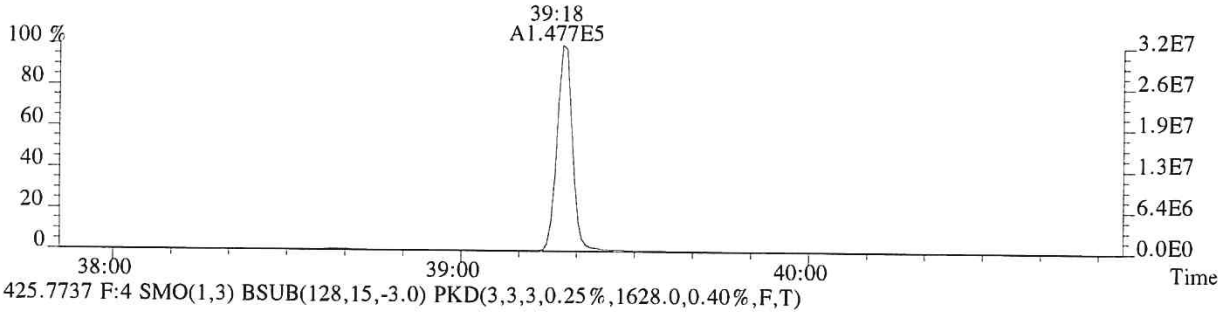


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

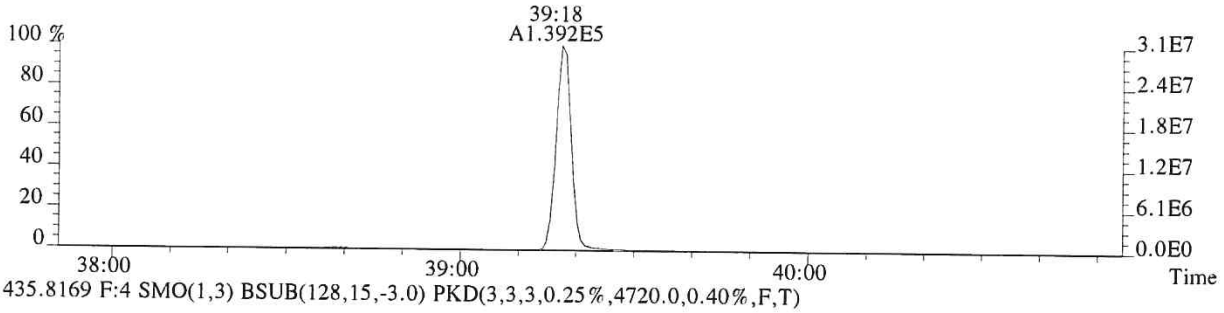


059722

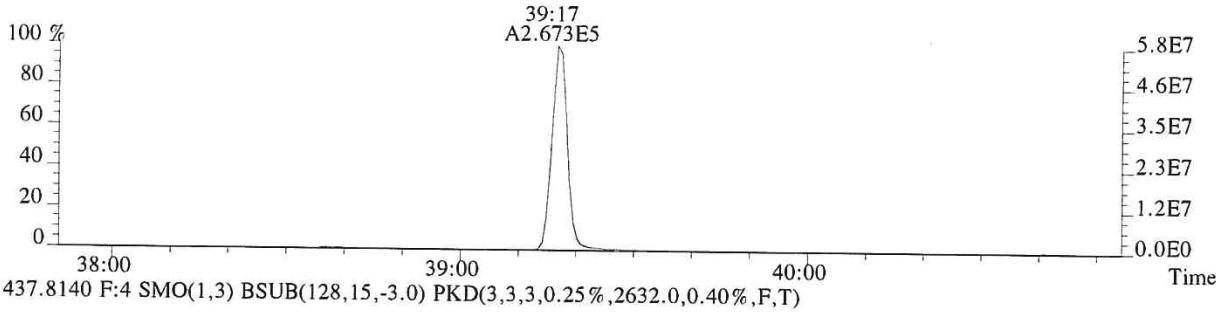
File:P614685 #1-276 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1576.0,0.40%,F,T)



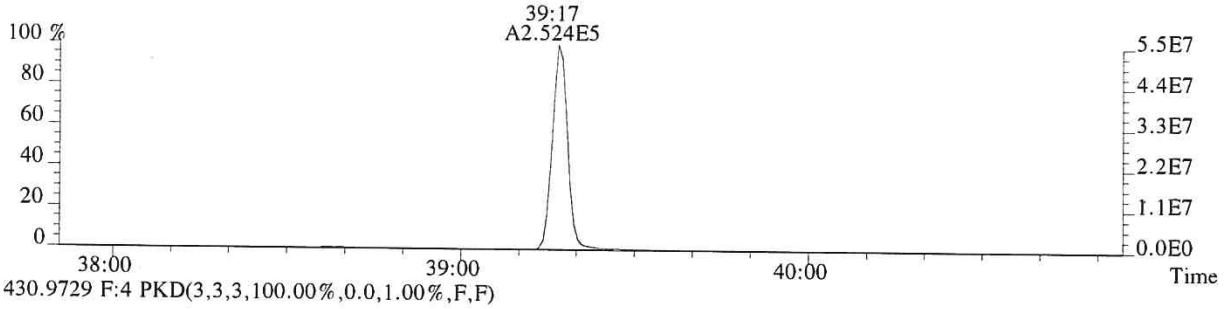
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1628.0,0.40%,F,T)



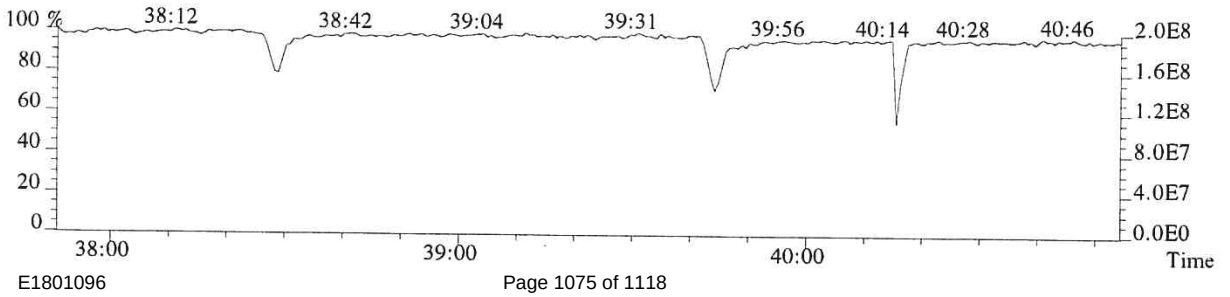
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4720.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2632.0,0.40%,F,T)

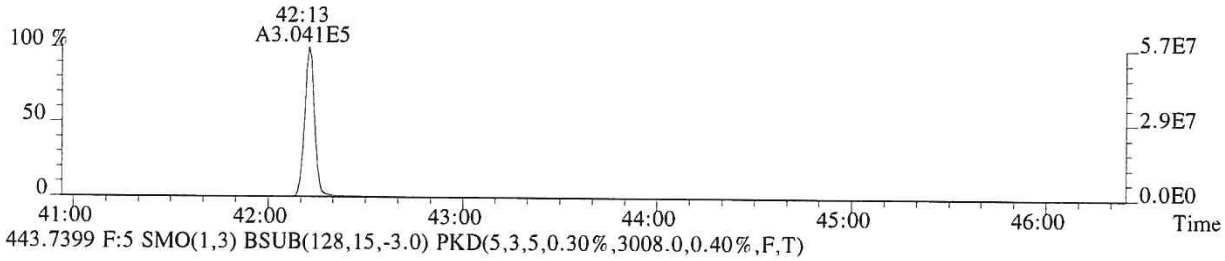


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

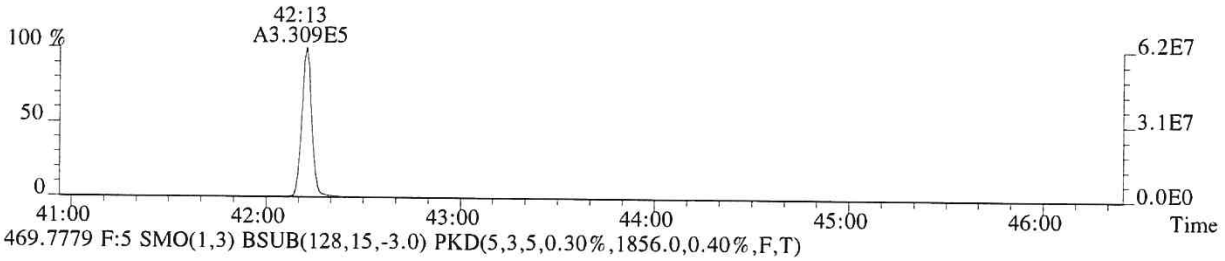


059723

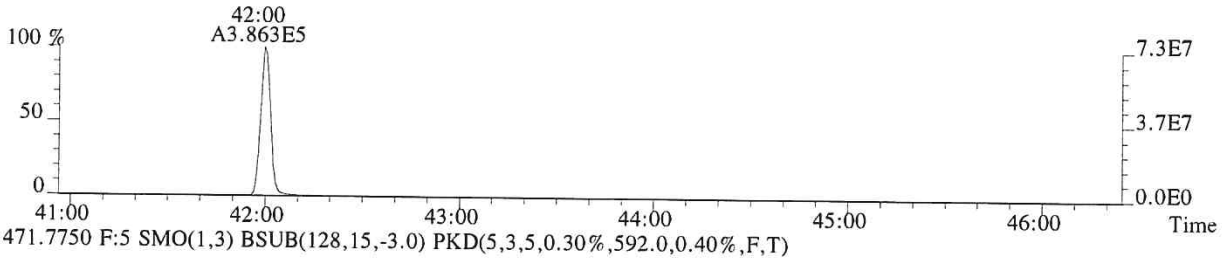
File:P614685 #1-493 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:CS3
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1228.0,0.40%,F,T)



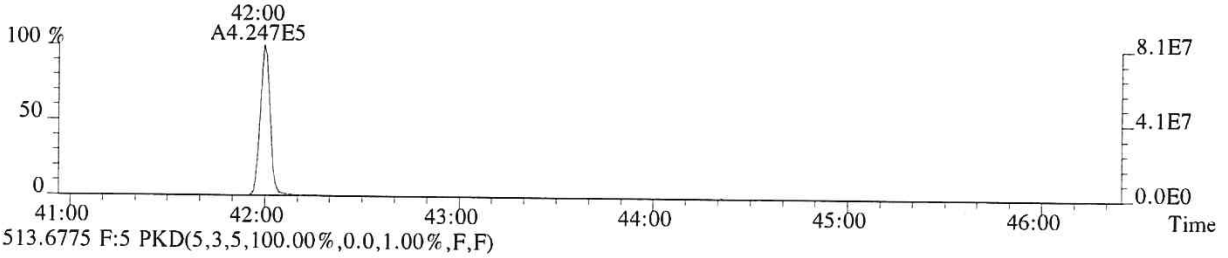
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3008.0,0.40%,F,T)



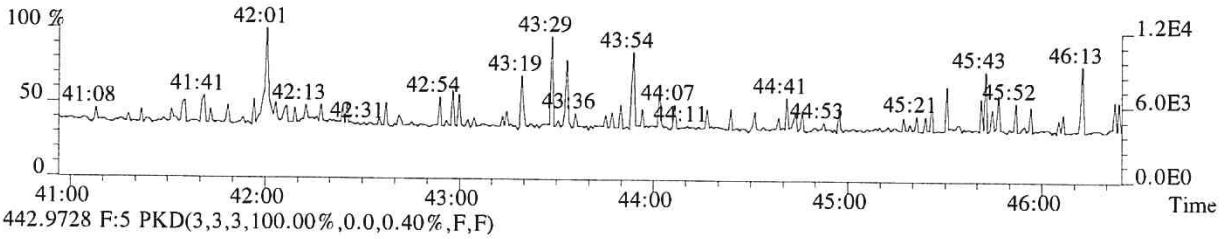
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1856.0,0.40%,F,T)



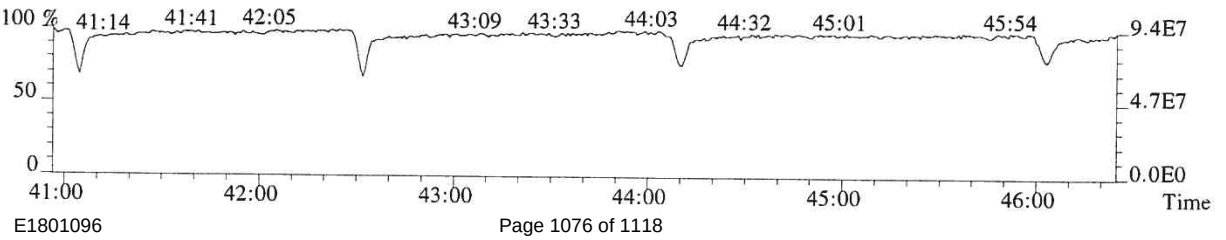
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,592.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

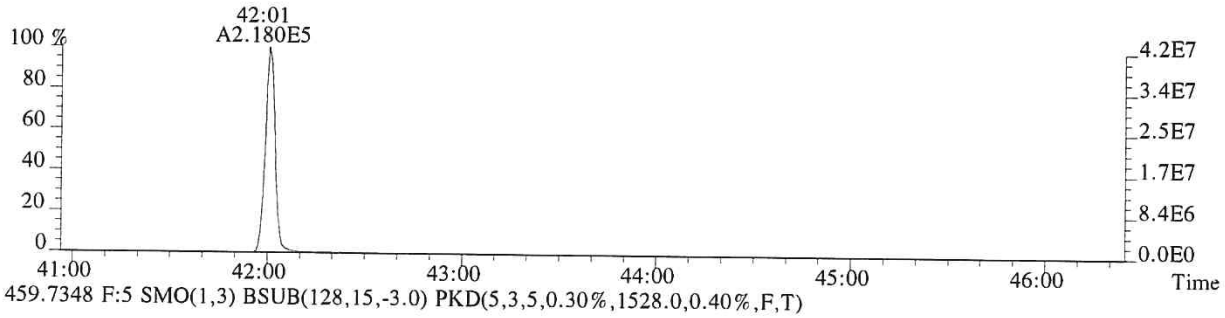


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

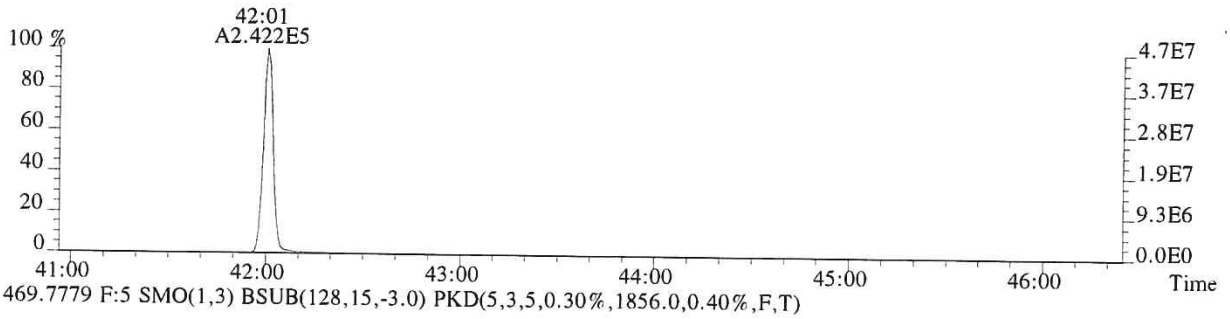


059724

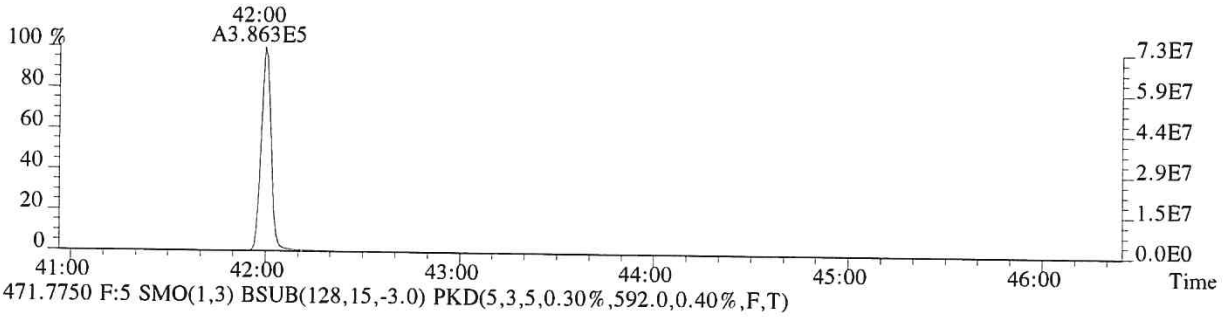
File:P614685 #1-493 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1708.0,0.40%,F,T)



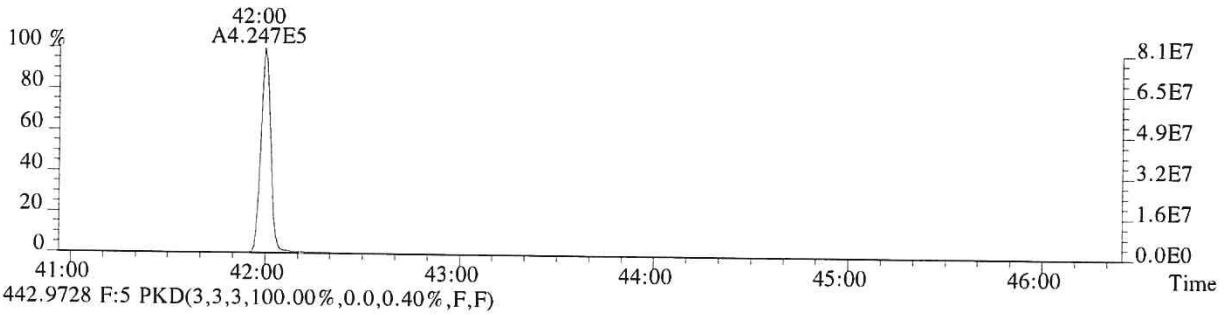
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1528.0,0.40%,F,T)



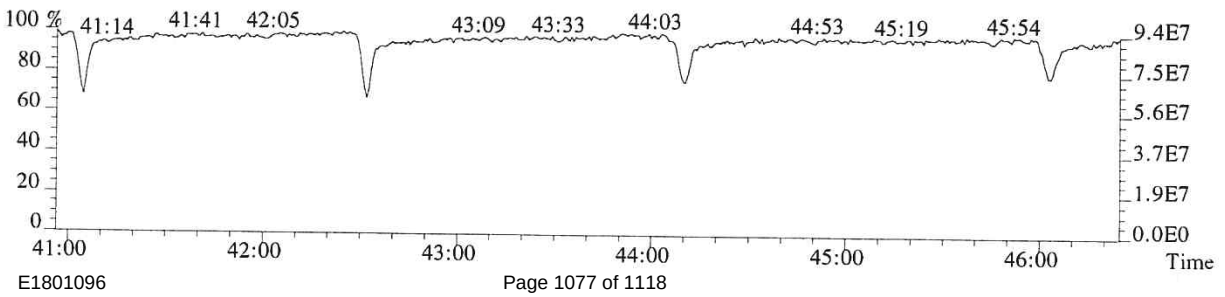
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1856.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,592.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059725

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
82167

Run #5 Filename P614686 Samp: 1 Inj: 1 Acquired: 25-SEP-18 17:41:03
Processed: 26-SEP-18 07:39:11 Sample ID: CS4

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:00	1.186e+05	1.498e+05	0.79	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:14	1.070e+06	6.680e+05	1.60	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:09	9.931e+05	6.255e+05	1.59	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	9.336e+05	7.318e+05	1.28	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	9.546e+05	7.530e+05	1.27	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	9.004e+05	7.134e+05	1.26	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:10	8.574e+05	6.711e+05	1.28	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	7.924e+05	7.640e+05	1.04	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	6.712e+05	6.389e+05	1.05	yes	no	1.463
10	Unk	OCDF	42:13	9.999e+05	1.075e+06	0.93	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	8.371e+04	1.065e+05	0.79	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	5.908e+05	3.807e+05	1.55	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	5.387e+05	4.268e+05	1.26	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	5.444e+05	4.299e+05	1.27	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:52	5.850e+05	4.610e+05	1.27	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	4.859e+05	4.568e+05	1.06	yes	no	1.112
17	Unk	OCDD	42:01	7.127e+05	7.901e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	2.799e+05	3.543e+05	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	4.595e+05	2.875e+05	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	4.523e+05	2.842e+05	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:48	2.092e+05	3.928e+05	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:55	2.332e+05	4.327e+05	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:25	2.224e+05	4.139e+05	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	2.041e+05	3.825e+05	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:24	1.626e+05	3.528e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:46	1.431e+05	3.159e+05	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	2.012e+05	2.528e+05	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	3.193e+05	2.044e+05	1.56	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:33	2.552e+05	2.035e+05	1.25	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	2.565e+05	2.045e+05	1.25	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	2.187e+05	2.081e+05	1.05	yes	no	0.857
32	IS	13C-OCDD	42:00	3.133e+05	3.464e+05	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:13	2.000e+05	2.518e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:51	2.828e+05	2.264e+05	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	2.003e+05				no	1.086

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Signal/Noise Height Ratio Summary

CLIENT ID.
82167

Run #5 Filename P614686 Samp: 1 Inj: 1 Acquired: 25-SEP-18 17:41:03
Processed: 26-SEP-18 07:39:11 LAB. ID: CS4

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.13e+07	2.15e+03	9.9e+03	2.70e+07	4.22e+03	6.4e+03
2	1,2,3,7,8-PeCDF	2.03e+08	3.06e+03	6.6e+04	1.29e+08	4.95e+03	2.6e+04
3	2,3,4,7,8-PeCDF	2.04e+08	3.06e+03	6.7e+04	1.28e+08	4.95e+03	2.6e+04
4	1,2,3,4,7,8-HxCDF	2.14e+08	1.85e+03	1.2e+05	1.68e+08	4.92e+03	3.4e+04
5	1,2,3,6,7,8-HxCDF	2.12e+08	1.85e+03	1.1e+05	1.67e+08	4.92e+03	3.4e+04
6	2,3,4,6,7,8-HxCDF	2.02e+08	1.85e+03	1.1e+05	1.59e+08	4.92e+03	3.2e+04
7	1,2,3,7,8,9-HxCDF	1.88e+08	1.85e+03	1.0e+05	1.47e+08	4.92e+03	3.0e+04
8	1,2,3,4,6,7,8-HpCDF	1.78e+08	2.61e+04	6.8e+03	1.72e+08	1.83e+04	9.4e+03
9	1,2,3,4,7,8,9-HpCDF	1.41e+08	2.61e+04	5.4e+03	1.35e+08	1.83e+04	7.4e+03
10	OCDF	1.94e+08	1.46e+03	1.3e+05	2.08e+08	3.00e+03	6.9e+04
11	2,3,7,8-TCDD	1.62e+07	6.38e+03	2.5e+03	2.06e+07	2.42e+03	8.5e+03
12	1,2,3,7,8-PeCDD	1.19e+08	3.22e+03	3.7e+04	7.64e+07	1.02e+03	7.5e+04
13	1,2,3,4,7,8-HxCDD	1.25e+08	9.48e+02	1.3e+05	9.78e+07	1.64e+03	5.9e+04
14	1,2,3,6,7,8-HxCDD	1.22e+08	9.48e+02	1.3e+05	9.73e+07	1.64e+03	5.9e+04
15	1,2,3,7,8,9-HxCDD	1.31e+08	9.48e+02	1.4e+05	1.04e+08	1.64e+03	6.3e+04
16	1,2,3,4,6,7,8-HpCDD	1.10e+08	2.46e+03	4.5e+04	1.04e+08	2.38e+03	4.4e+04
17	OCDD	1.42e+08	1.24e+03	1.1e+05	1.57e+08	1.46e+03	1.1e+05
18	13C-2,3,7,8-TCDF	5.06e+07	1.14e+04	4.4e+03	6.41e+07	7.28e+03	8.8e+03
19	13C-1,2,3,7,8-PeCDF	8.88e+07	3.08e+03	2.9e+04	5.58e+07	3.54e+03	1.6e+04
20	13C-2,3,4,7,8-PeCDF	9.15e+07	3.08e+03	3.0e+04	5.70e+07	3.54e+03	1.6e+04
21	13C-1,2,3,4,7,8-HxCDF	4.76e+07	3.01e+03	1.6e+04	8.96e+07	4.64e+03	1.9e+04
22	13C-1,2,3,6,7,8-HxCDF	5.17e+07	3.01e+03	1.7e+04	9.54e+07	4.64e+03	2.1e+04
23	13C-2,3,4,6,7,8-HxCDF	4.99e+07	3.01e+03	1.7e+04	9.21e+07	4.64e+03	2.0e+04
24	13C-1,2,3,7,8,9-HxCDF	4.48e+07	3.01e+03	1.5e+04	8.44e+07	4.64e+03	1.8e+04
25	13C-1,2,3,4,6,7,8-HpCDF	3.73e+07	8.80e+03	4.2e+03	8.02e+07	1.92e+04	4.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.97e+07	8.80e+03	3.4e+03	6.54e+07	1.92e+04	3.4e+03
27	13C-2,3,7,8-TCDD	3.77e+07	1.85e+04	2.0e+03	4.78e+07	7.81e+03	6.1e+03
28	13C-1,2,3,7,8-PeCDD	6.47e+07	3.56e+03	1.8e+04	4.18e+07	3.26e+03	1.3e+04
29	13C-1,2,3,4,7,8-HxCDD	5.86e+07	4.66e+03	1.3e+04	4.67e+07	3.04e+03	1.5e+04
30	13C-1,2,3,6,7,8-HxCDD	5.76e+07	4.66e+03	1.2e+04	4.61e+07	3.04e+03	1.5e+04
31	13C-1,2,3,4,6,7,8-HpCDD	4.94e+07	3.14e+03	1.6e+04	4.74e+07	1.71e+03	2.8e+04
32	13C-OCDD	6.18e+07	1.83e+03	3.4e+04	6.87e+07	9.56e+02	7.2e+04
33	13C-1,2,3,4-TCDD	3.76e+07	1.85e+04	2.0e+03	4.73e+07	7.81e+03	6.1e+03
34	13C-1,2,3,7,8,9-HxCDD	6.25e+07	4.66e+03	1.3e+04	5.04e+07	3.04e+03	1.7e+04
35	37Cl-2,3,7,8-TCDD	3.86e+07	4.32e+03	9.0e+03			

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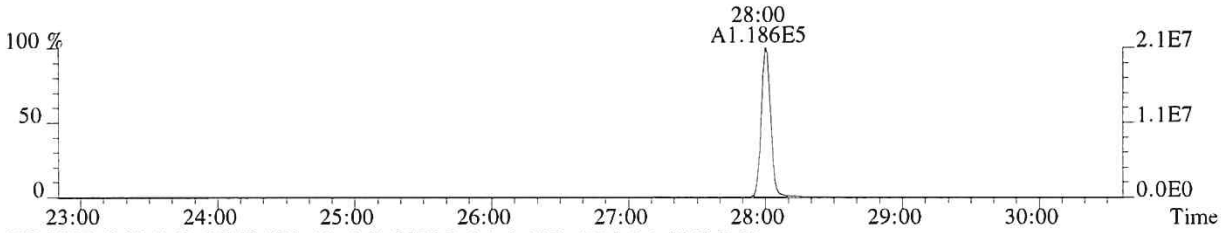
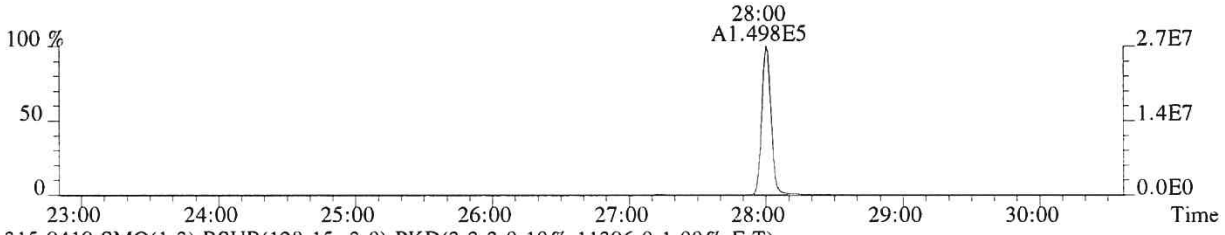
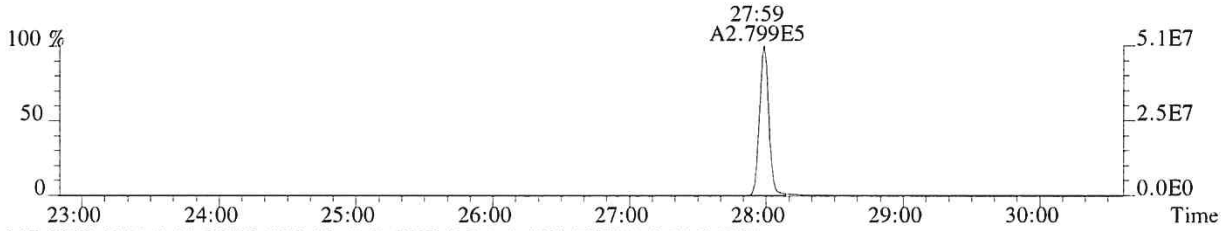
File:P614686 #1-552 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2148.0,1.00%,F,T)



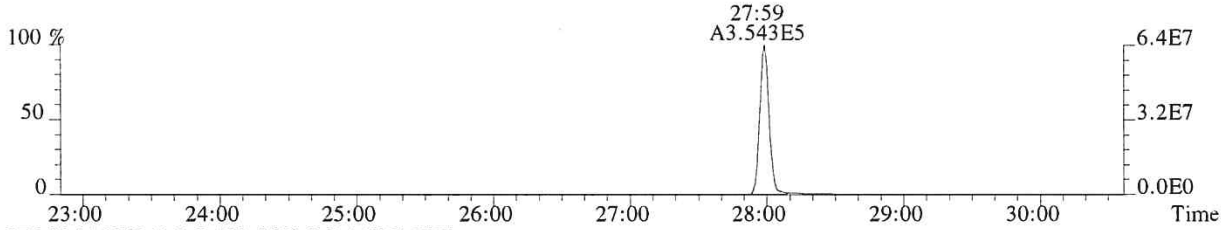
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4220.0,1.00%,F,T)



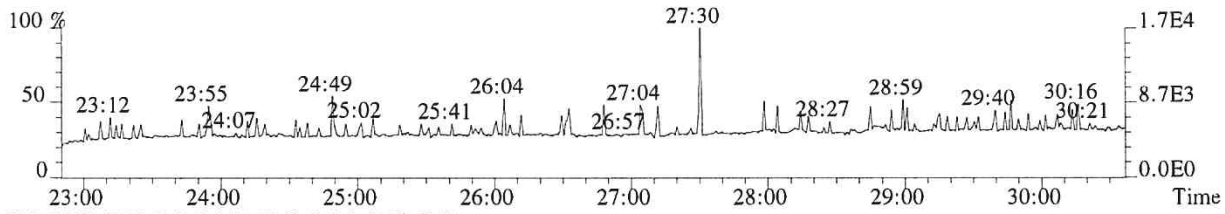
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11396.0,1.00%,F,T)



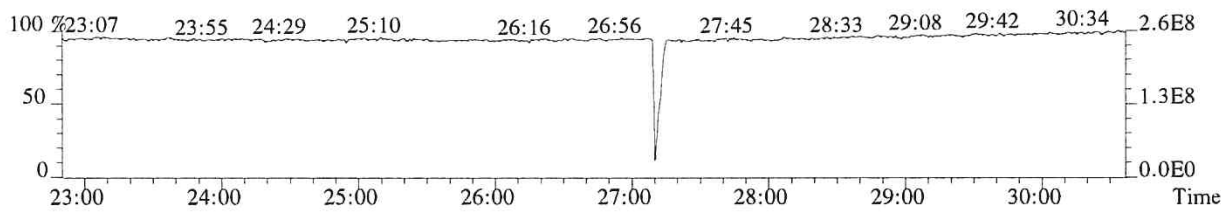
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7276.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

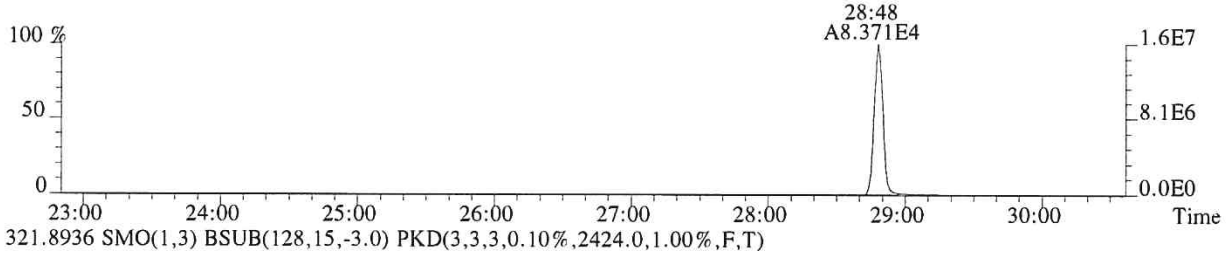


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

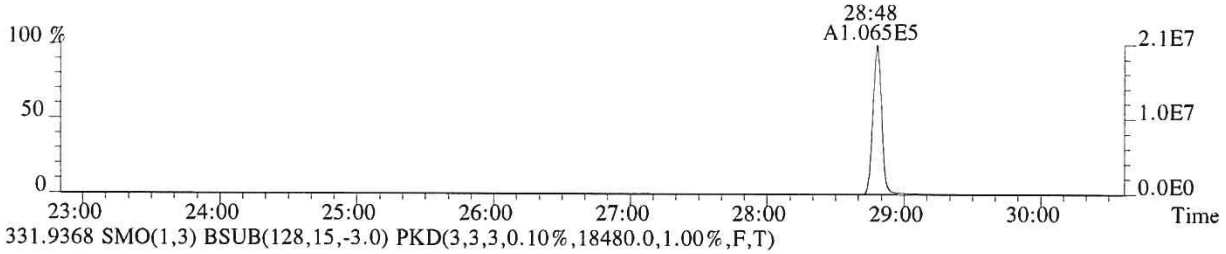


059728

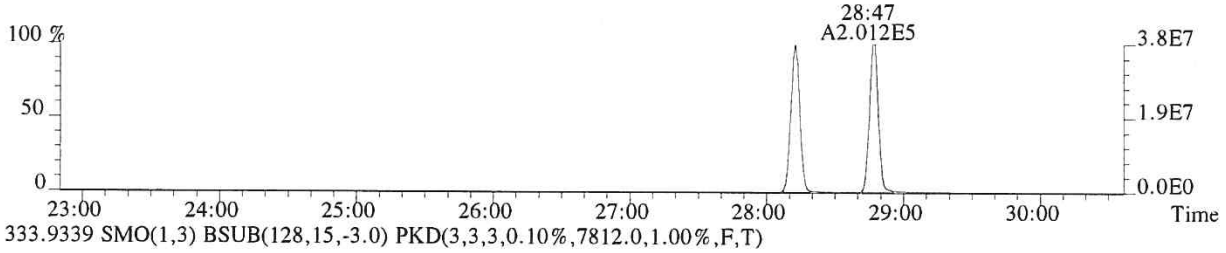
File:P614686 #1-552 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6384.0,1.00%,F,T)



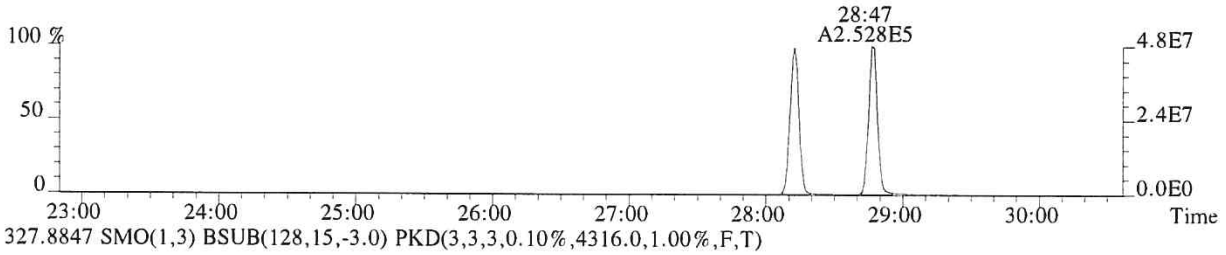
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2424.0,1.00%,F,T)



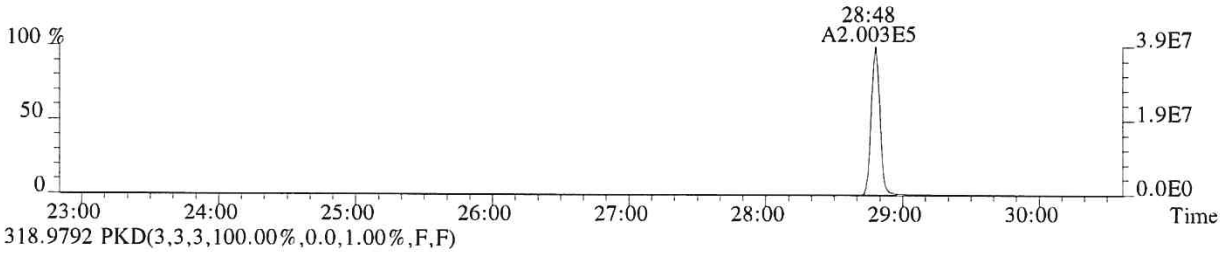
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18480.0,1.00%,F,T)



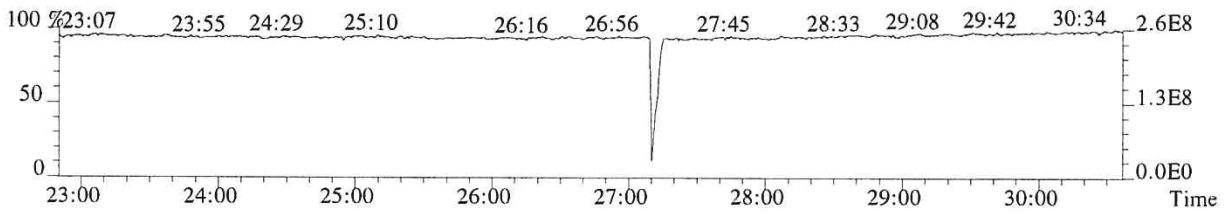
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7812.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4316.0,1.00%,F,T)

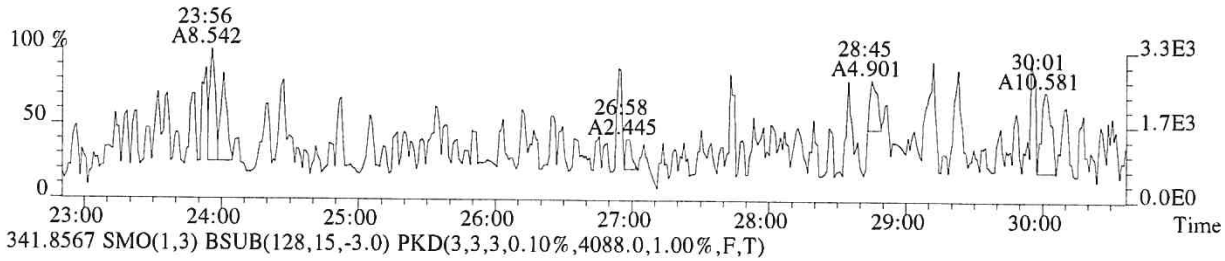


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

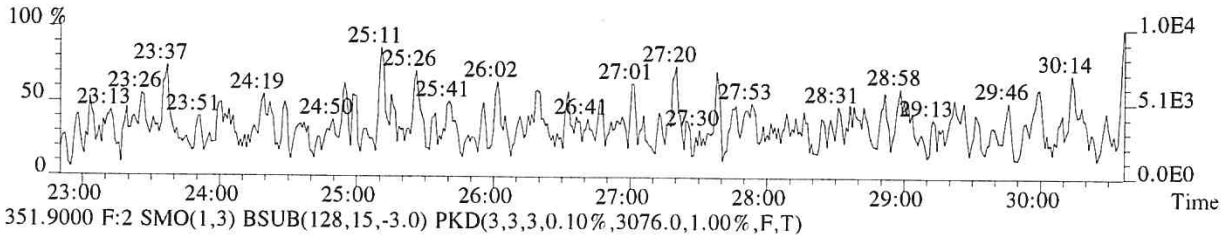


059729

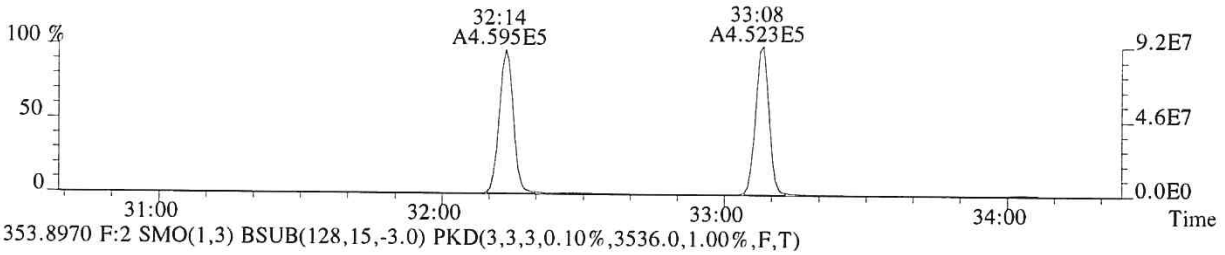
File:P614686 #1-552 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1356.0,1.00%,F,T)



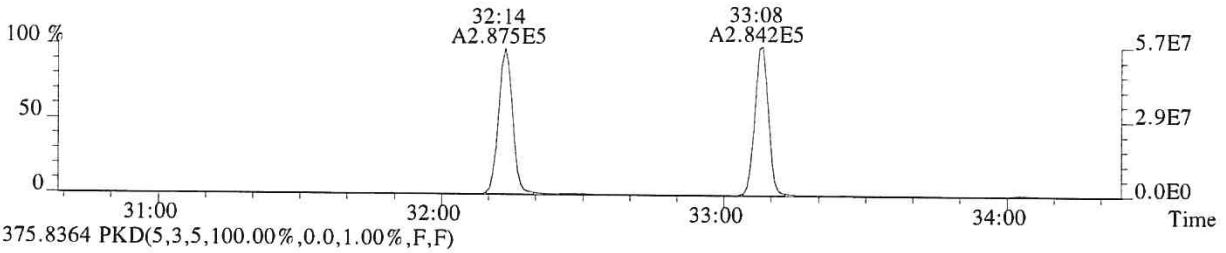
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4088.0,1.00%,F,T)



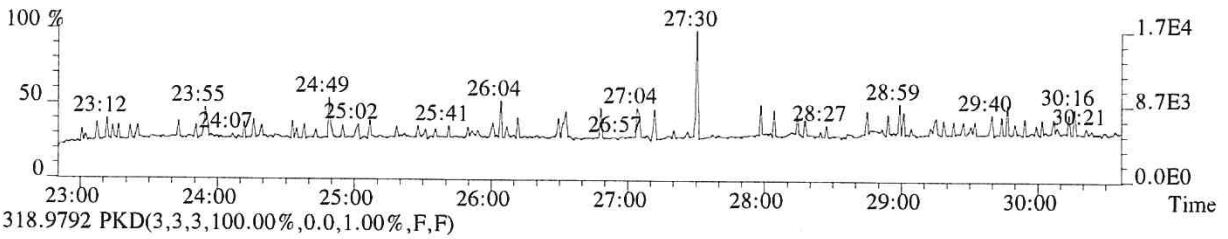
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3076.0,1.00%,F,T)



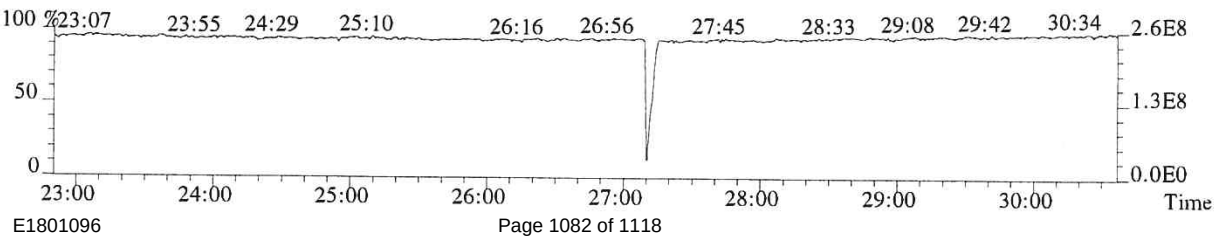
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3536.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

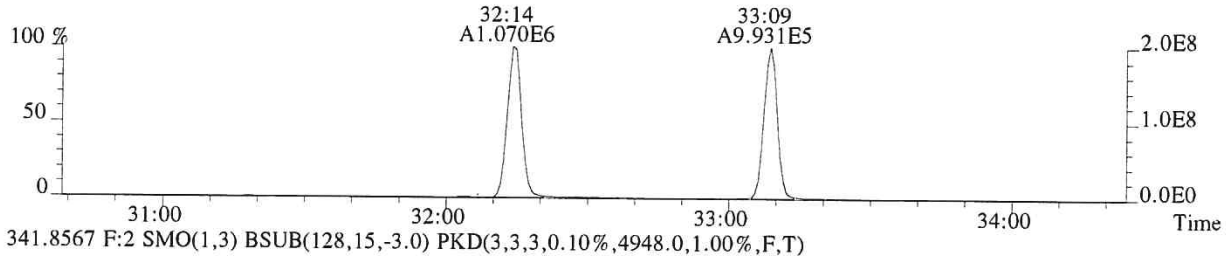


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

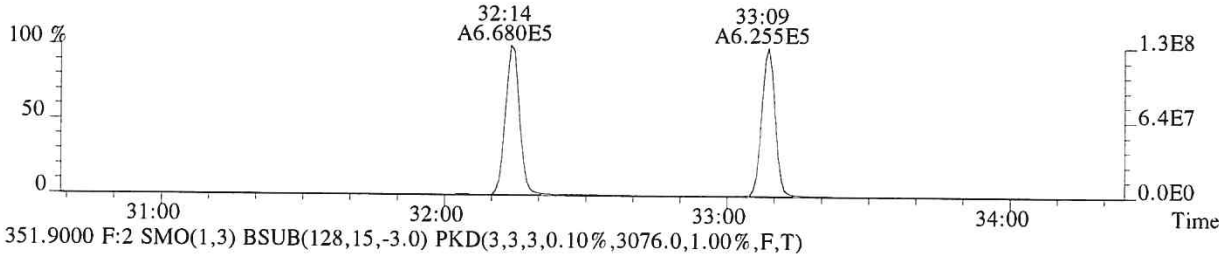


059730

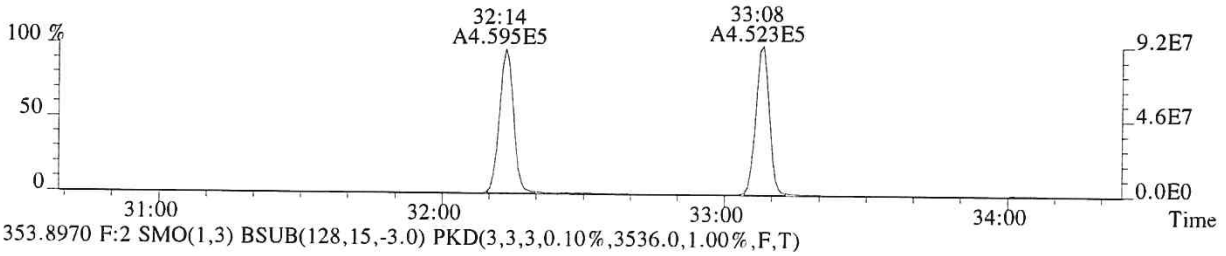
File:P614686 #1-339 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3064.0,1.00%,F,T)



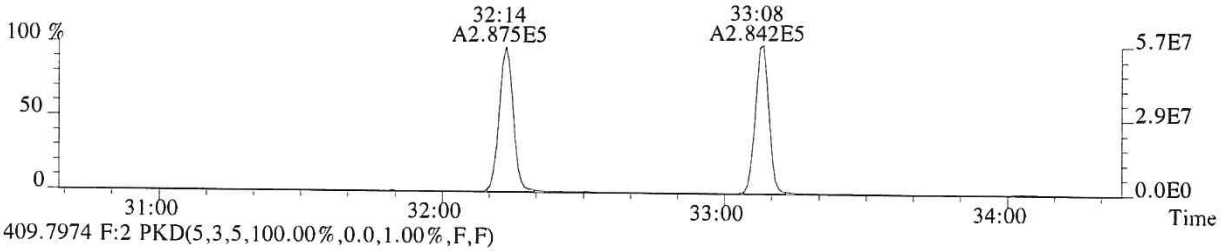
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4948.0,1.00%,F,T)



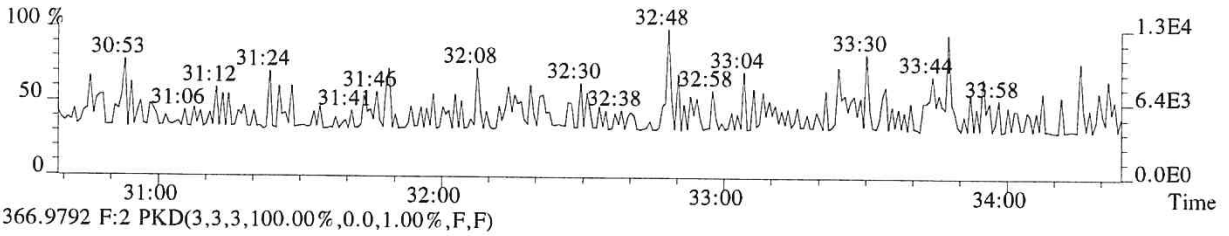
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3076.0,1.00%,F,T)



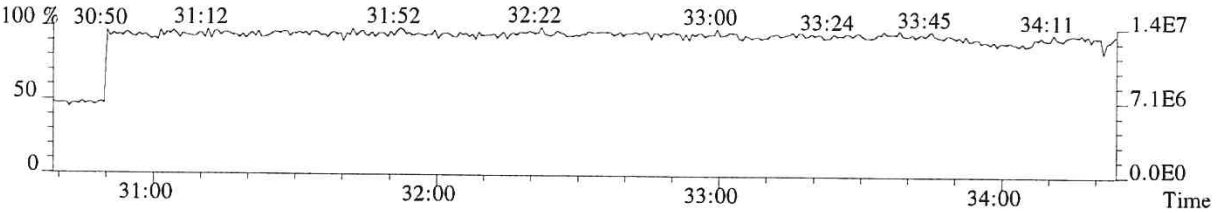
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3536.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

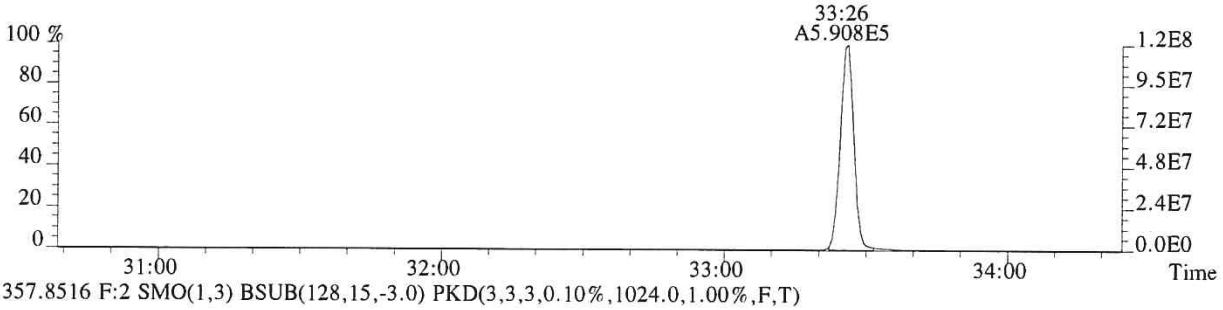


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

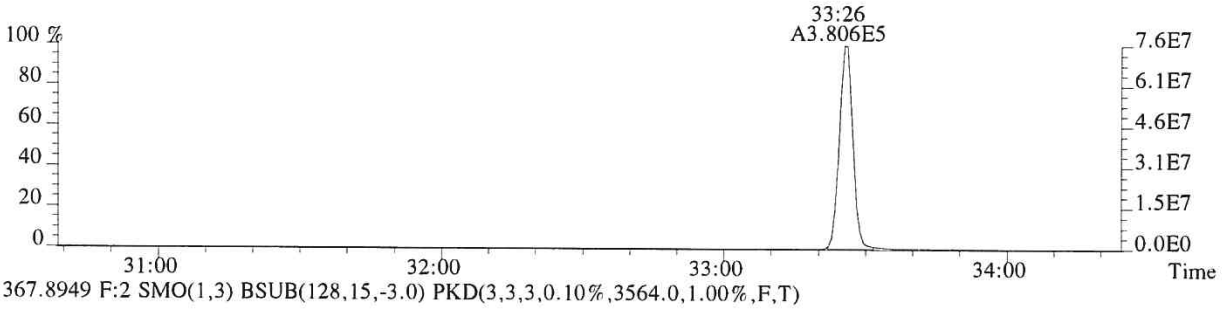


059731

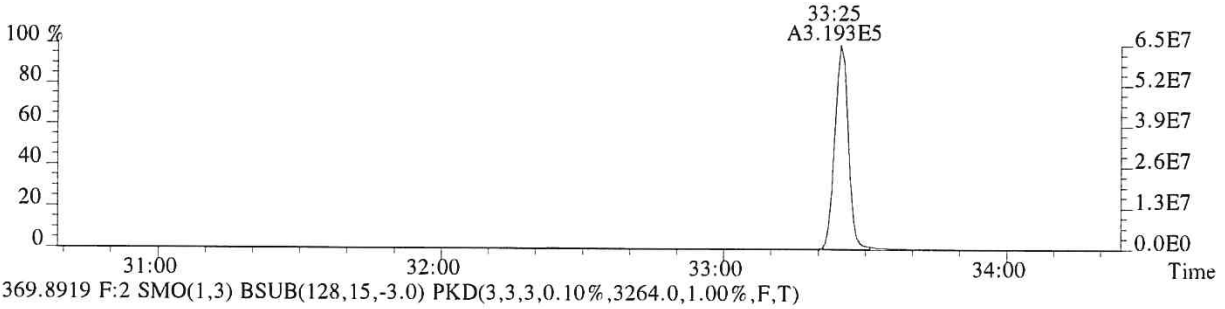
File:P614686 #1-339 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3220.0,1.00%,F,T)



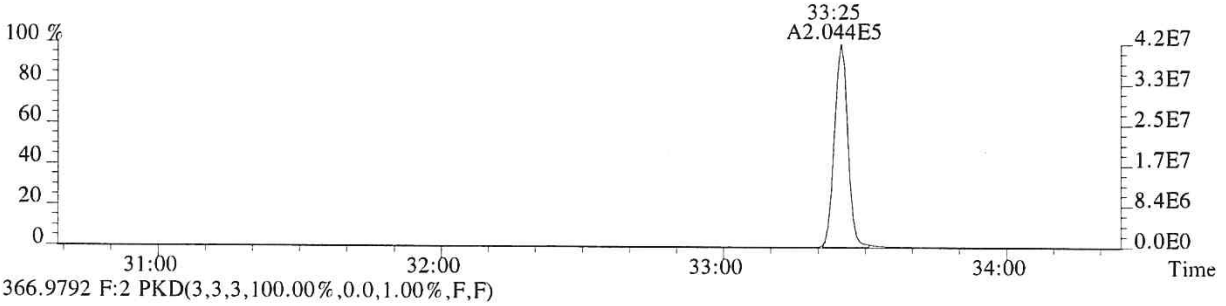
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1024.0,1.00%,F,T)



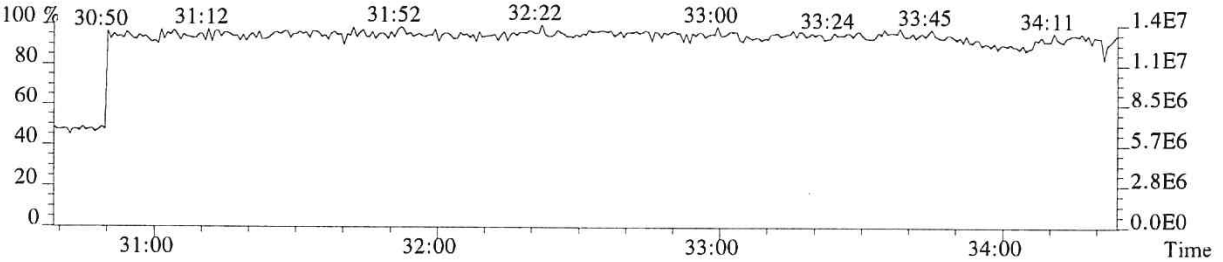
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3564.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3264.0,1.00%,F,T)

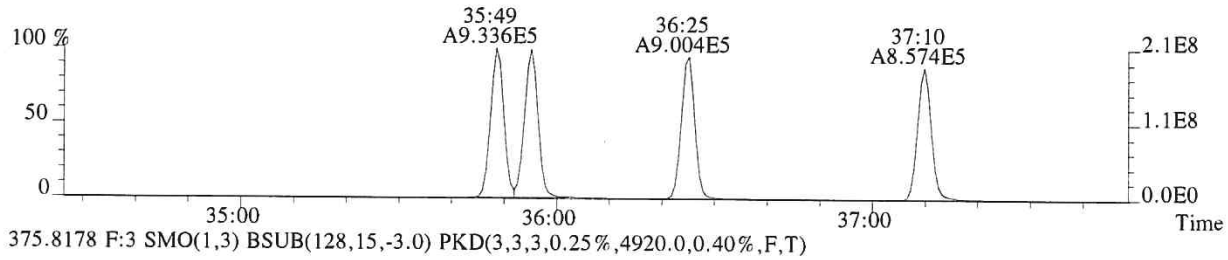


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

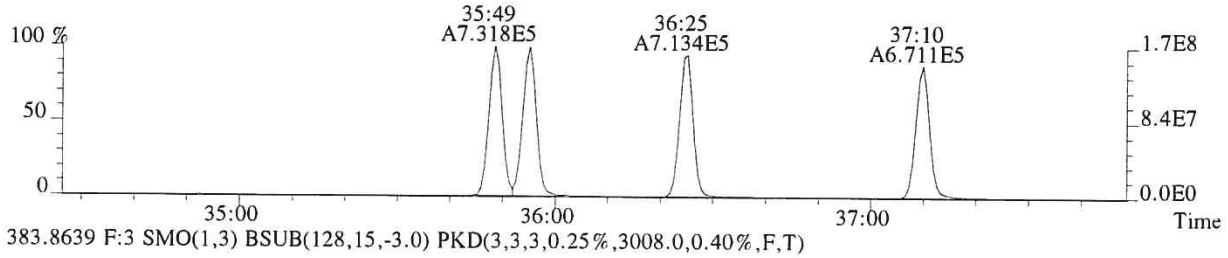


059732

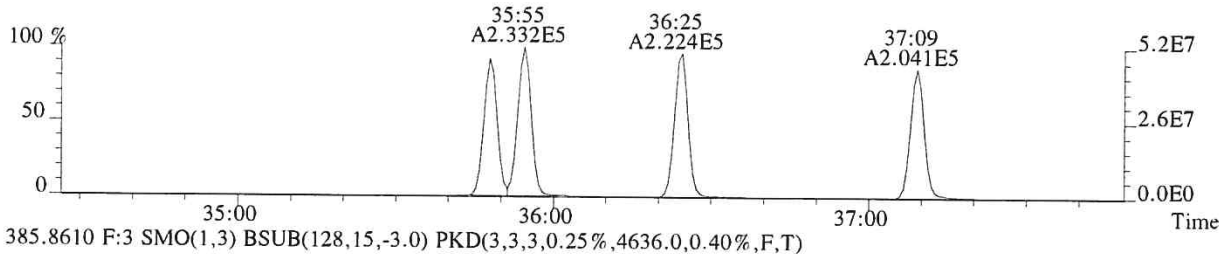
File:P614686 #1-304 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1848.0,0.40%,F,T)



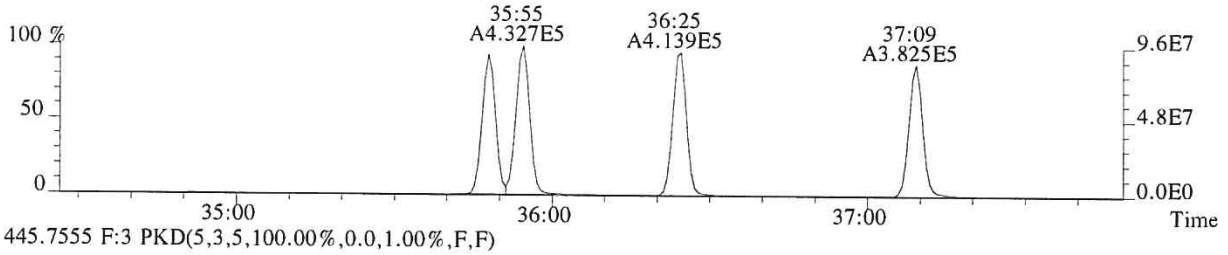
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4920.0,0.40%,F,T)



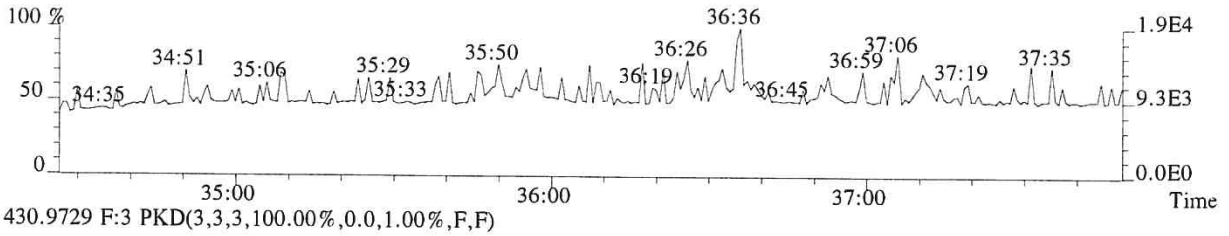
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3008.0,0.40%,F,T)



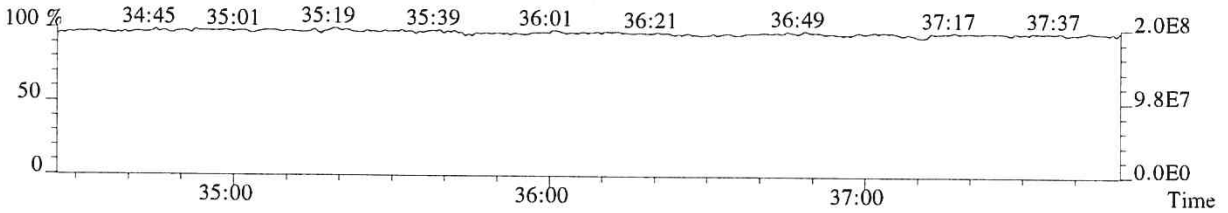
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4636.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

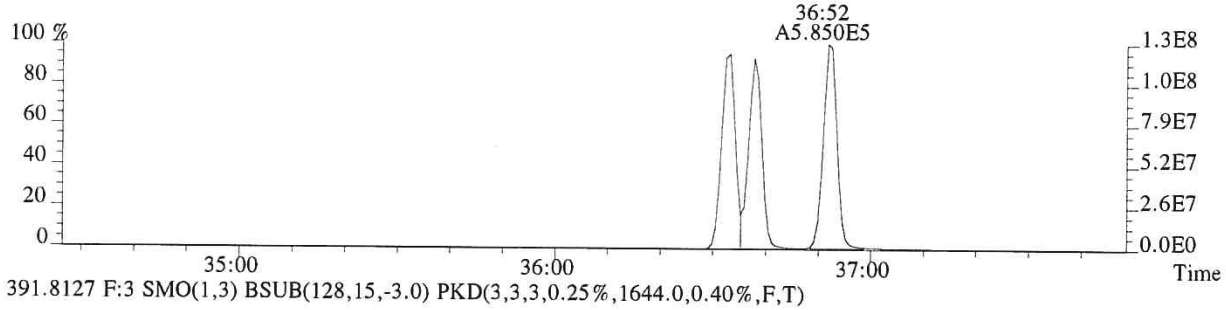


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

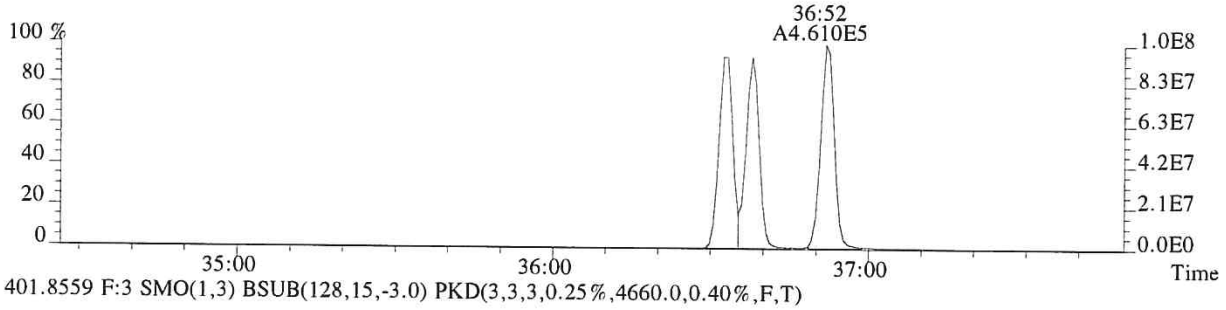


059733

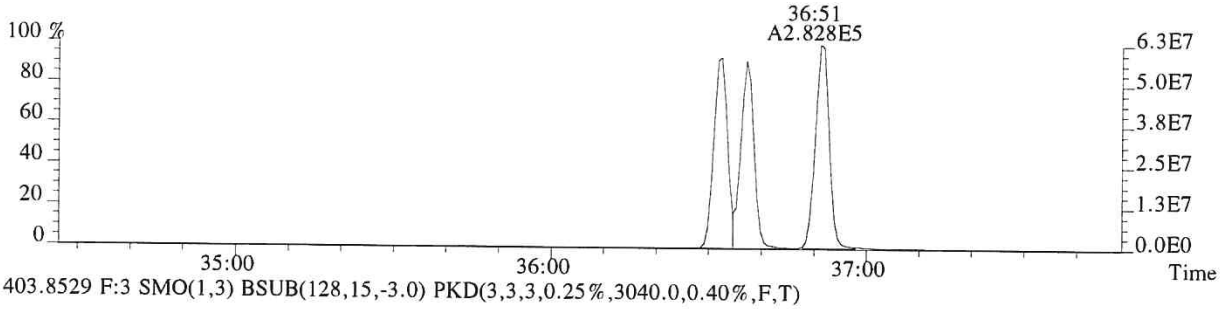
File:P614686 #1-304 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,948.0,0.40%,F,T)



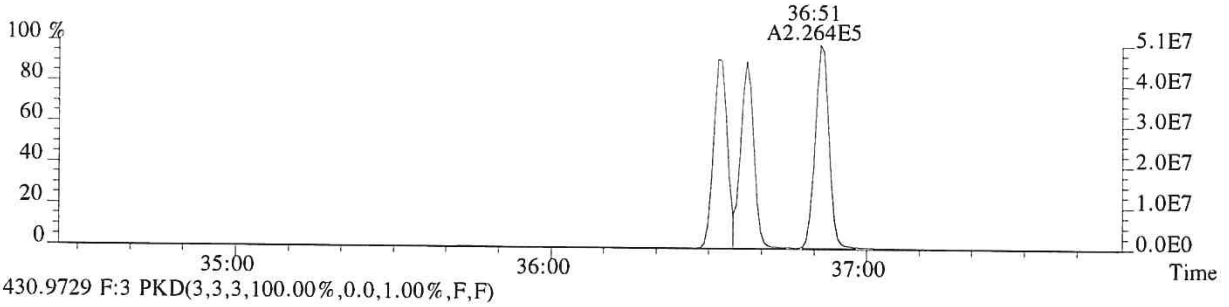
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1644.0,0.40%,F,T)



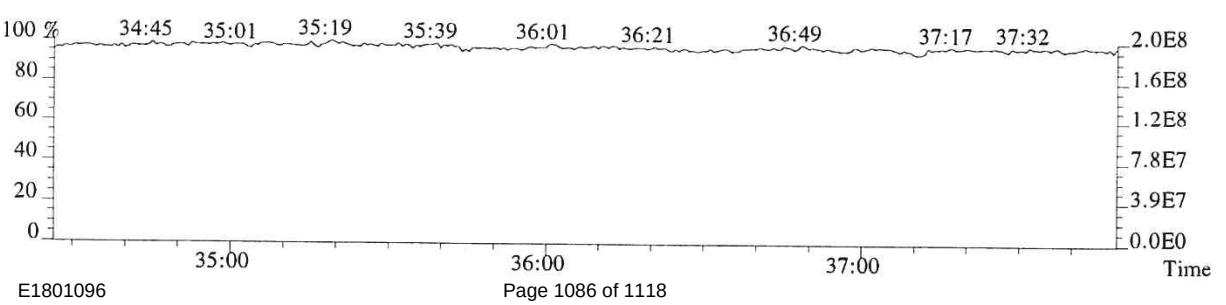
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4660.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3040.0,0.40%,F,T)

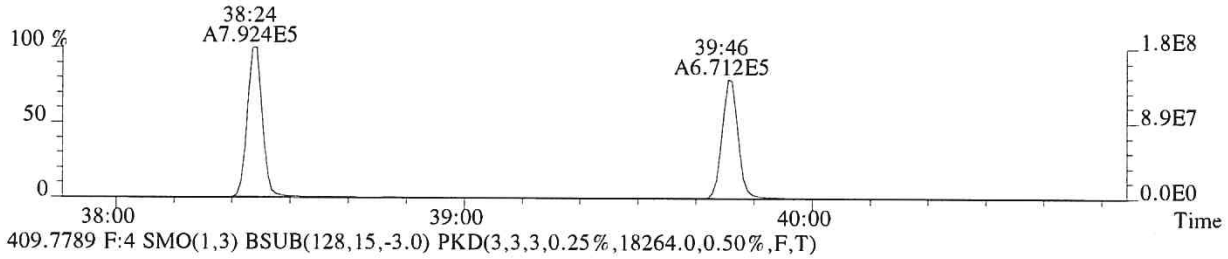


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

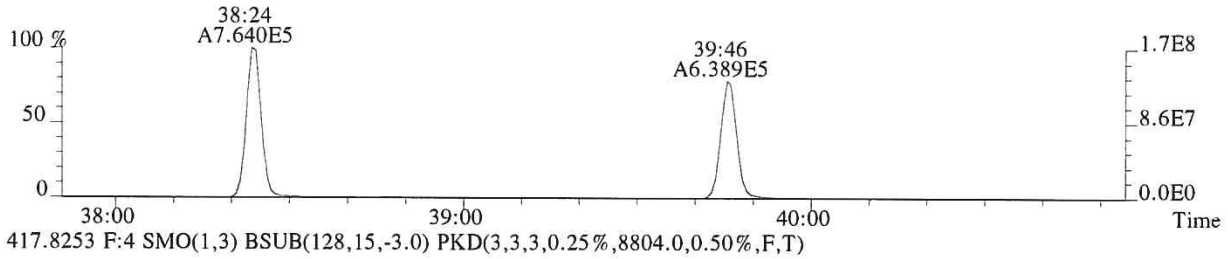


059734

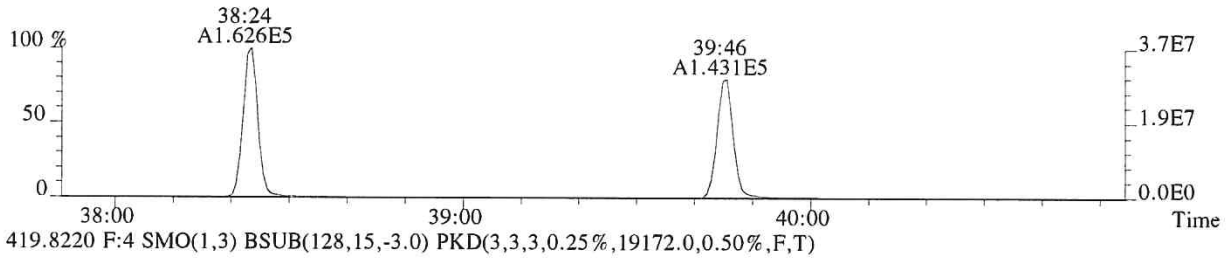
File:P614686 #1-276 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,26056.0,0.50%,F,T)



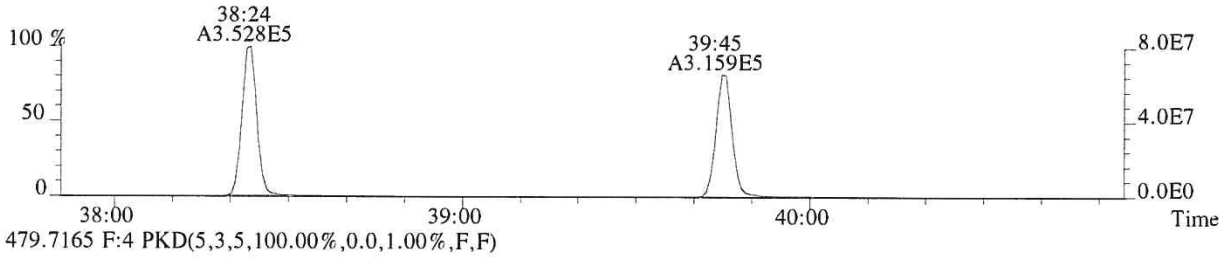
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,18264.0,0.50%,F,T)



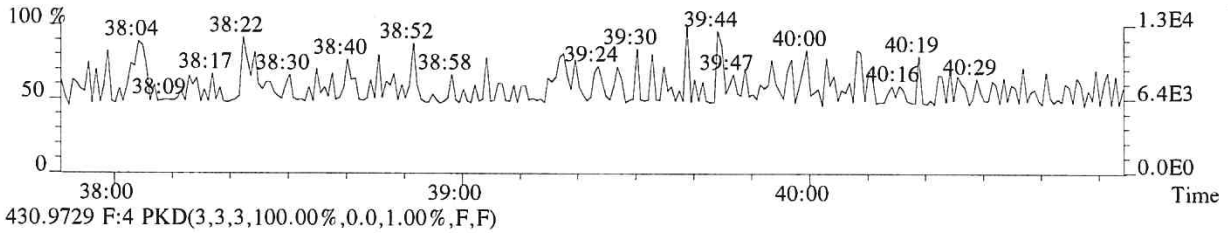
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8804.0,0.50%,F,T)



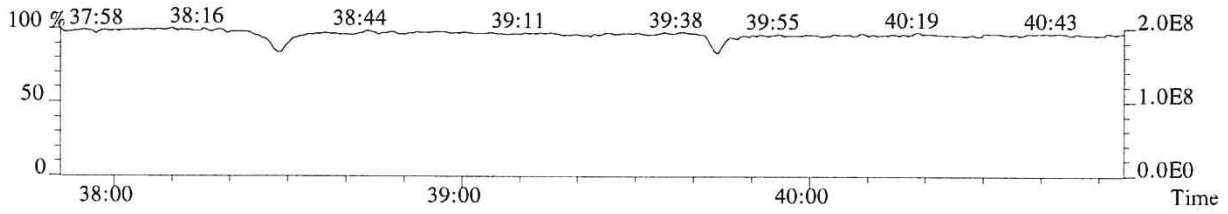
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,19172.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

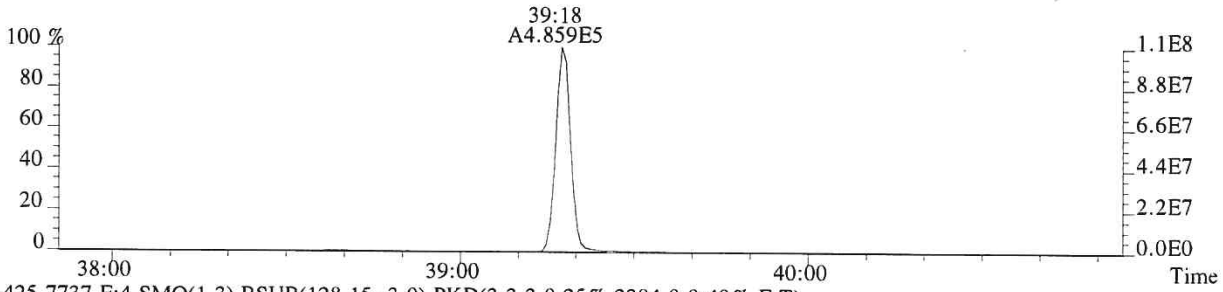


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

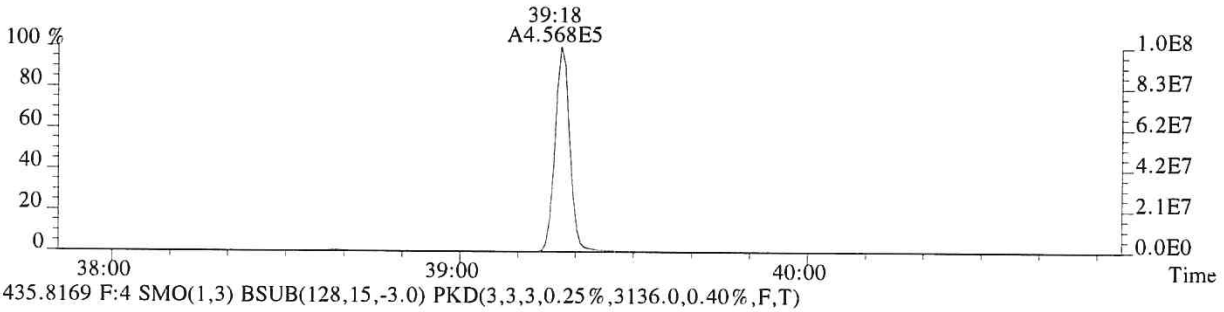


059735

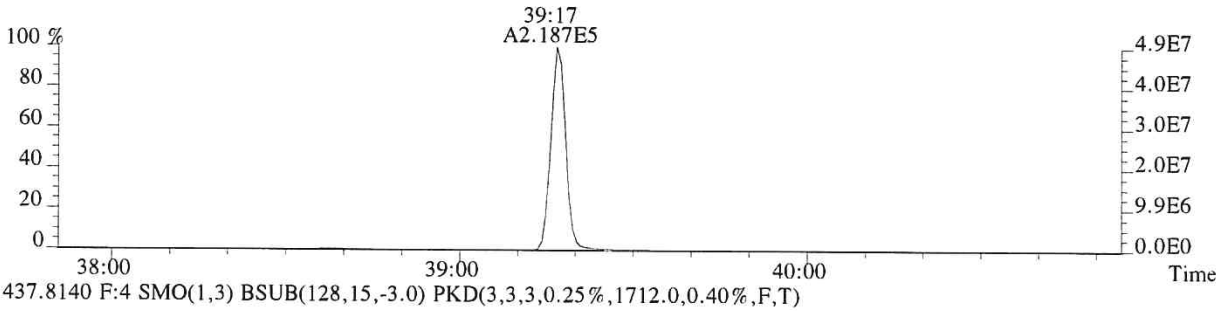
File:P614686 #1-276 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2456.0,0.40%,F,T)



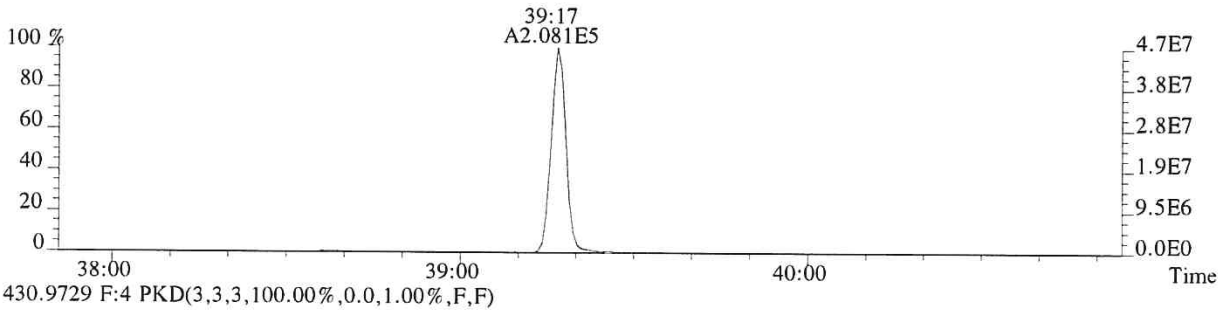
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2384.0,0.40%,F,T)



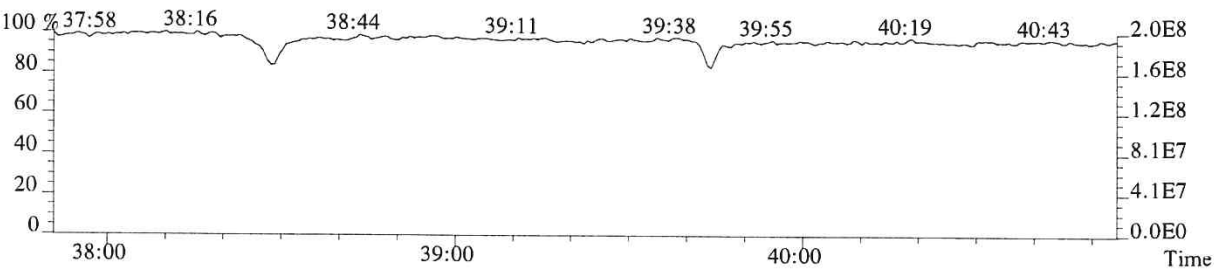
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3136.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1712.0,0.40%,F,T)

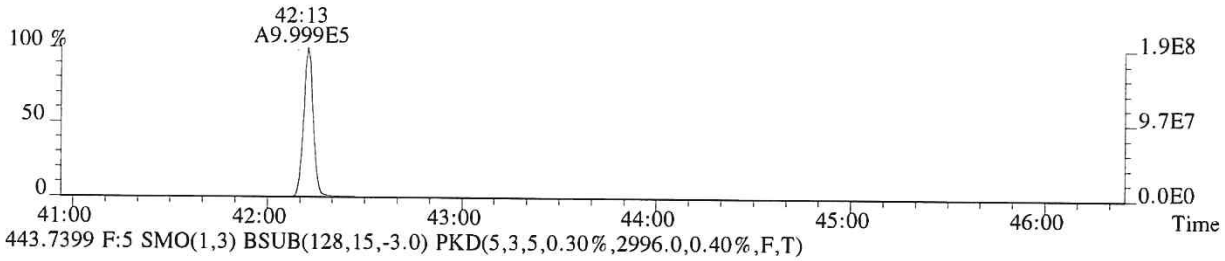


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

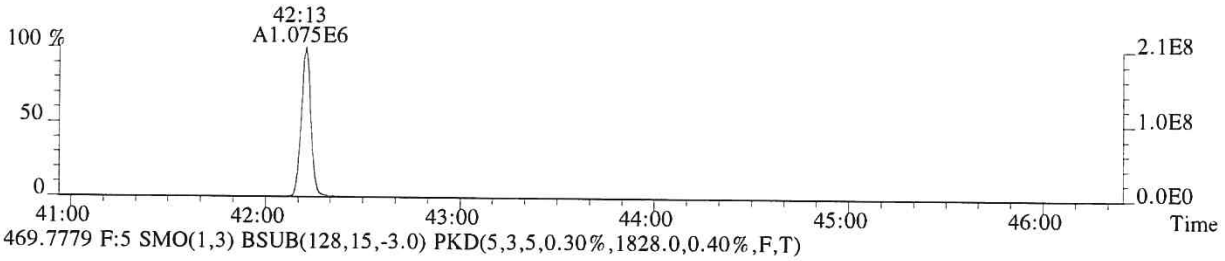


059736

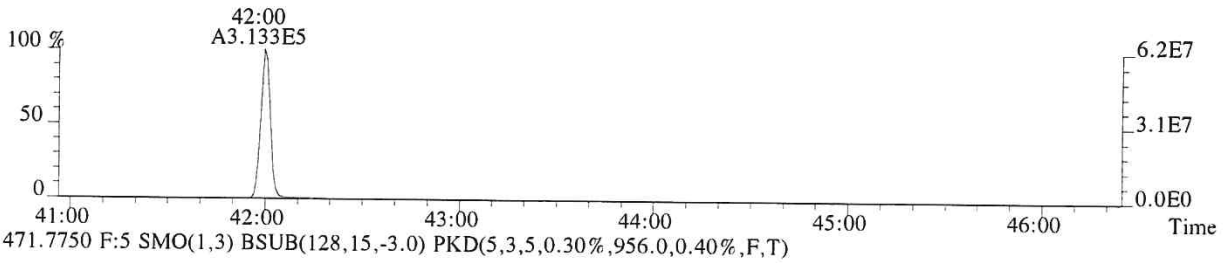
File:P614686 #1-493 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1464.0,0.40%,F,T)



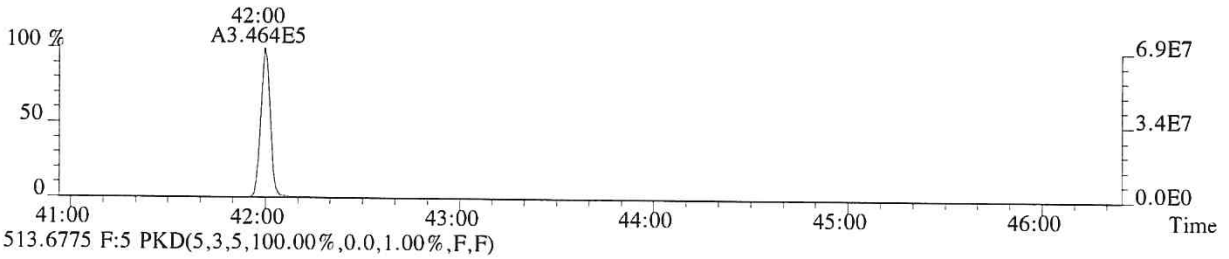
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2996.0,0.40%,F,T)



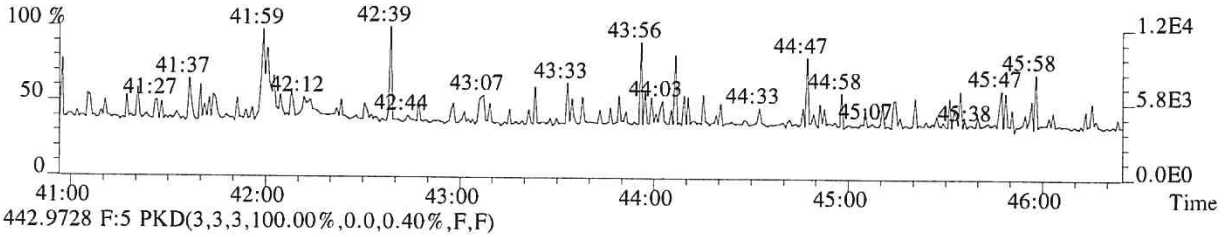
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1828.0,0.40%,F,T)



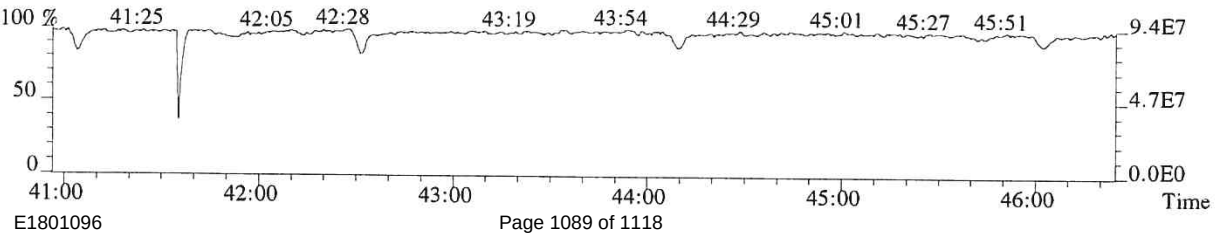
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,956.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

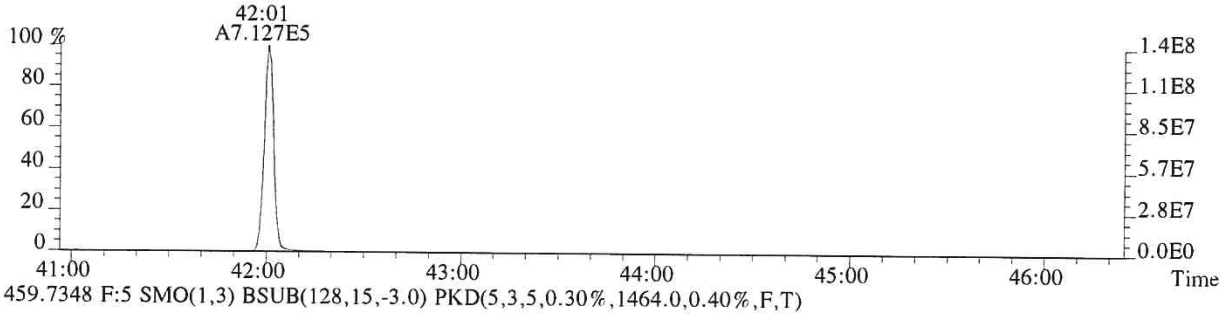


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

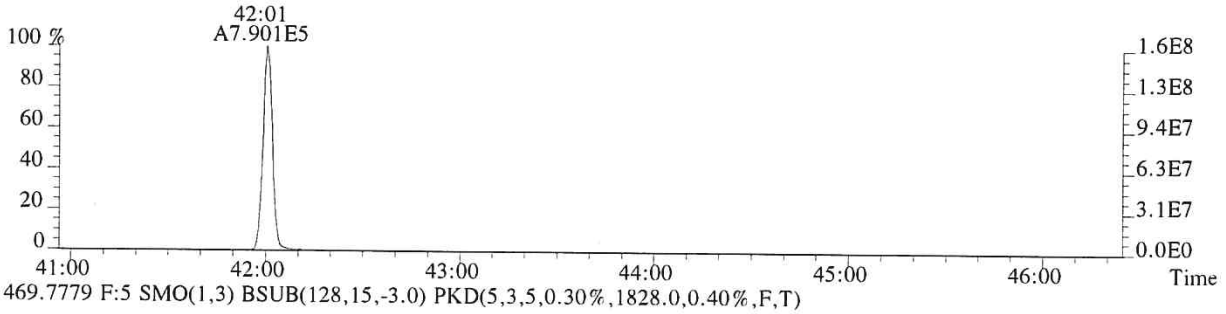


059737

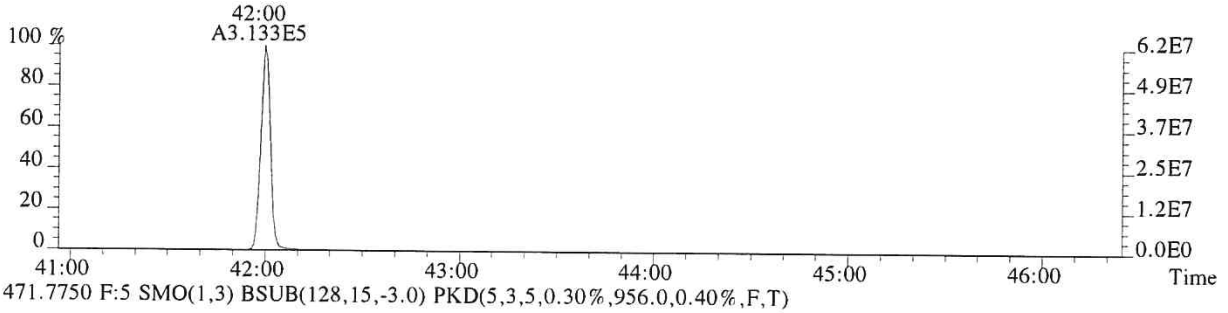
File:P614686 #1-493 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1244.0,0.40%,F,T)



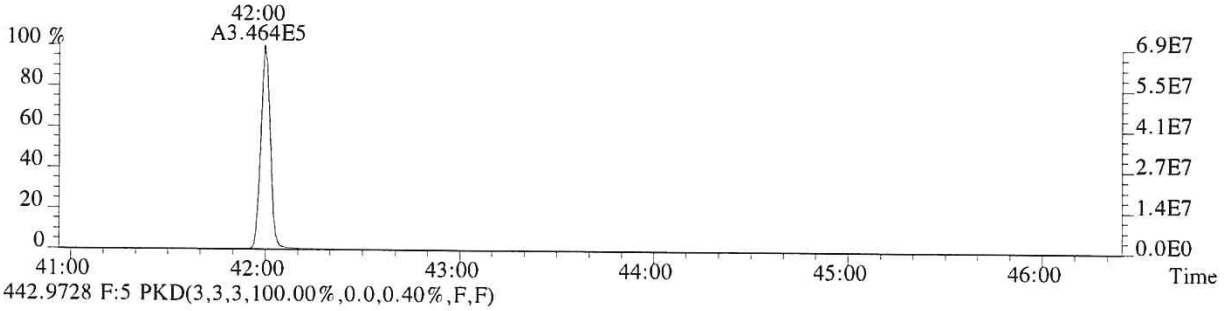
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1464.0,0.40%,F,T)



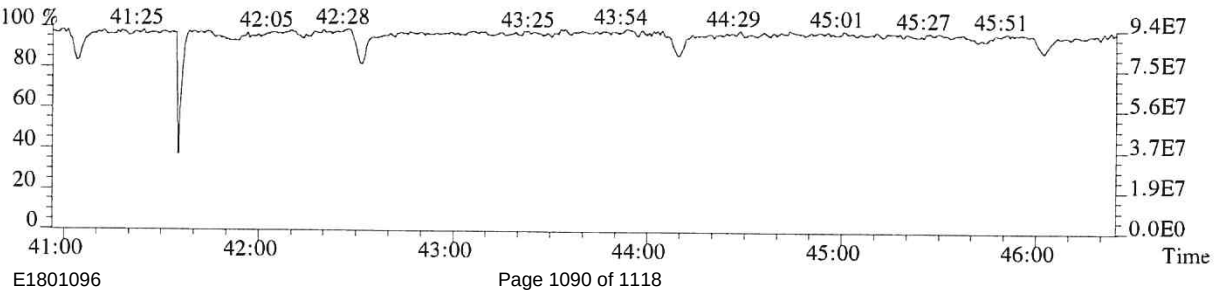
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1828.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,956.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059738

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
185657

Run #6 Filename P614687 Samp: 1 Inj: 1 Acquired: 25-SEP-18 18:30:08
Processed: 26-SEP-18 07:39:13 Sample ID: CS5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:00	4.651e+05	5.844e+05	0.80	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:14	4.117e+06	2.575e+06	1.60	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:09	3.795e+06	2.391e+06	1.59	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	3.313e+06	2.571e+06	1.29	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	3.588e+06	2.836e+06	1.27	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	3.399e+06	2.690e+06	1.26	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:10	3.119e+06	2.463e+06	1.27	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	3.035e+06	2.883e+06	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	2.518e+06	2.388e+06	1.05	yes	no	1.463
10	Unk	OCDF	42:13	3.855e+06	4.175e+06	0.92	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	3.257e+05	4.207e+05	0.77	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	2.277e+06	1.455e+06	1.57	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	2.053e+06	1.616e+06	1.27	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	2.042e+06	1.617e+06	1.26	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:52	2.180e+06	1.732e+06	1.26	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	1.868e+06	1.765e+06	1.06	yes	no	1.112
17	Unk	OCDD	42:01	2.725e+06	3.028e+06	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	2.197e+05	2.785e+05	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	3.496e+05	2.178e+05	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	3.453e+05	2.138e+05	1.61	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:48	1.447e+05	2.684e+05	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:55	1.758e+05	3.274e+05	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:25	1.668e+05	3.132e+05	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	1.489e+05	2.799e+05	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:23	1.241e+05	2.682e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:45	1.078e+05	2.346e+05	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	1.558e+05	1.966e+05	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	2.439e+05	1.553e+05	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:32	1.940e+05	1.538e+05	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	1.938e+05	1.542e+05	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	1.682e+05	1.601e+05	1.05	yes	no	0.857
32	IS	13C-OCDD	42:00	2.375e+05	2.681e+05	0.89	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:13	1.555e+05	1.925e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:51	2.160e+05	1.725e+05	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	7.877e+05				no	1.086

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Signal/Noise Height Ratio Summary

CLIENT ID.
185657

Run #6 Filename P614687 Samp: 1 Inj: 1 Acquired: 25-SEP-18 18:30:08
Processed: 26-SEP-18 07:39:13 LAB. ID: CS5

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	8.41e+07	1.94e+03	4.3e+04	1.06e+08	4.26e+03	2.5e+04
2	1,2,3,7,8-PeCDF	8.11e+08	8.46e+03	9.6e+04	5.11e+08	9.13e+03	5.6e+04
3	2,3,4,7,8-PeCDF	7.87e+08	8.46e+03	9.3e+04	4.93e+08	9.13e+03	5.4e+04
4	1,2,3,4,7,8-HxCDF	7.76e+08	1.23e+04	6.3e+04	6.07e+08	9.42e+03	6.4e+04
5	1,2,3,6,7,8-HxCDF	8.10e+08	1.23e+04	6.6e+04	6.40e+08	9.42e+03	6.8e+04
6	2,3,4,6,7,8-HxCDF	7.65e+08	1.23e+04	6.2e+04	6.05e+08	9.42e+03	6.4e+04
7	1,2,3,7,8,9-HxCDF	6.96e+08	1.23e+04	5.6e+04	5.46e+08	9.42e+03	5.8e+04
8	1,2,3,4,6,7,8-HpCDF	7.09e+08	9.68e+04	7.3e+03	6.78e+08	6.15e+04	1.1e+04
9	1,2,3,4,7,8,9-HpCDF	5.55e+08	9.68e+04	5.7e+03	5.29e+08	6.15e+04	8.6e+03
10	OCDF	7.55e+08	1.43e+03	5.3e+05	8.22e+08	2.80e+03	2.9e+05
11	2,3,7,8-TCDD	6.32e+07	4.52e+03	1.4e+04	8.21e+07	2.67e+03	3.1e+04
12	1,2,3,7,8-PeCDD	4.67e+08	3.26e+03	1.4e+05	2.98e+08	1.54e+03	1.9e+05
13	1,2,3,4,7,8-HxCDD	4.65e+08	2.34e+03	2.0e+05	3.68e+08	1.99e+03	1.8e+05
14	1,2,3,6,7,8-HxCDD	4.59e+08	2.34e+03	2.0e+05	3.67e+08	1.99e+03	1.8e+05
15	1,2,3,7,8,9-HxCDD	4.96e+08	2.34e+03	2.1e+05	3.98e+08	1.99e+03	2.0e+05
16	1,2,3,4,6,7,8-HpCDD	4.28e+08	1.10e+04	3.9e+04	4.06e+08	8.82e+03	4.6e+04
17	OCDD	5.24e+08	9.60e+02	5.5e+05	5.87e+08	1.87e+03	3.1e+05
18	13C-2,3,7,8-TCDF	3.91e+07	1.53e+04	2.6e+03	4.94e+07	1.22e+04	4.0e+03
19	13C-1,2,3,7,8-PeCDF	6.89e+07	2.06e+03	3.3e+04	4.27e+07	4.55e+03	9.4e+03
20	13C-2,3,4,7,8-PeCDF	6.95e+07	2.06e+03	3.4e+04	4.34e+07	4.55e+03	9.5e+03
21	13C-1,2,3,4,7,8-HxCDF	3.33e+07	2.62e+03	1.3e+04	6.22e+07	4.07e+03	1.5e+04
22	13C-1,2,3,6,7,8-HxCDF	3.91e+07	2.62e+03	1.5e+04	7.31e+07	4.07e+03	1.8e+04
23	13C-2,3,4,6,7,8-HxCDF	3.74e+07	2.62e+03	1.4e+04	6.98e+07	4.07e+03	1.7e+04
24	13C-1,2,3,7,8,9-HxCDF	3.36e+07	2.62e+03	1.3e+04	6.29e+07	4.07e+03	1.5e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.82e+07	6.76e+03	4.2e+03	6.20e+07	1.14e+04	5.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.34e+07	6.76e+03	3.5e+03	5.11e+07	1.14e+04	4.5e+03
27	13C-2,3,7,8-TCDD	3.04e+07	1.91e+04	1.6e+03	3.86e+07	8.85e+03	4.4e+03
28	13C-1,2,3,7,8-PeCDD	5.04e+07	1.98e+03	2.5e+04	3.21e+07	2.85e+03	1.1e+04
29	13C-1,2,3,4,7,8-HxCDD	4.39e+07	4.70e+03	9.3e+03	3.50e+07	2.24e+03	1.6e+04
30	13C-1,2,3,6,7,8-HxCDD	4.37e+07	4.70e+03	9.3e+03	3.49e+07	2.24e+03	1.6e+04
31	13C-1,2,3,4,6,7,8-HpCDD	3.82e+07	2.97e+03	1.3e+04	3.65e+07	2.54e+03	1.4e+04
32	13C-OCDD	4.50e+07	3.46e+03	1.3e+04	5.10e+07	1.82e+03	2.8e+04
33	13C-1,2,3,4-TCDD	2.93e+07	1.91e+04	1.5e+03	3.60e+07	8.85e+03	4.1e+03
34	13C-1,2,3,7,8,9-HxCDD	4.90e+07	4.70e+03	1.0e+04	3.94e+07	2.24e+03	1.8e+04
35	37Cl-2,3,7,8-TCDD	1.54e+08	4.95e+03	3.1e+04			

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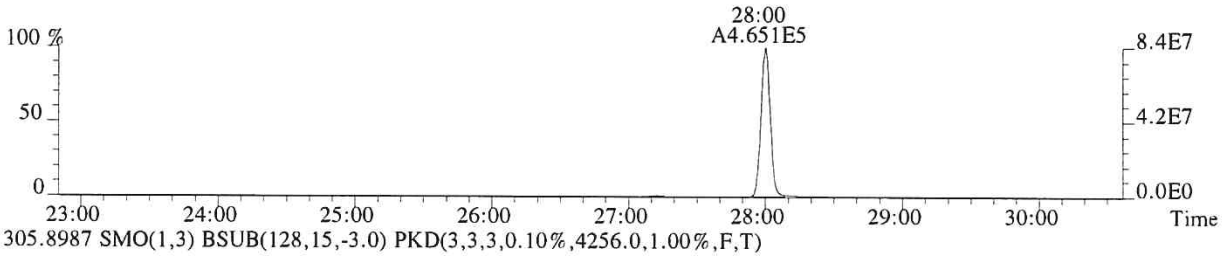
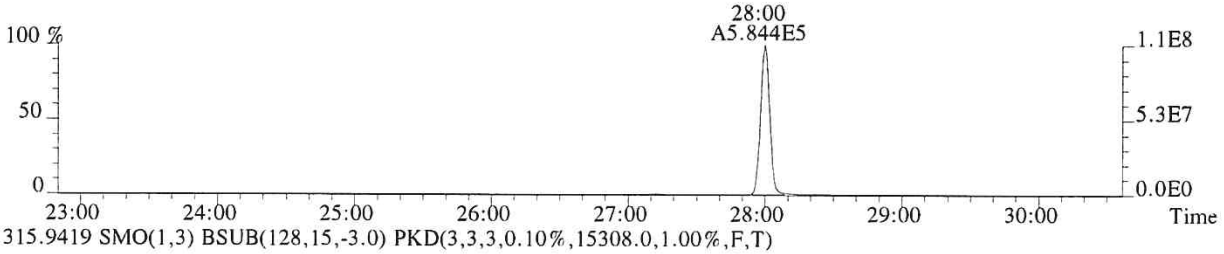
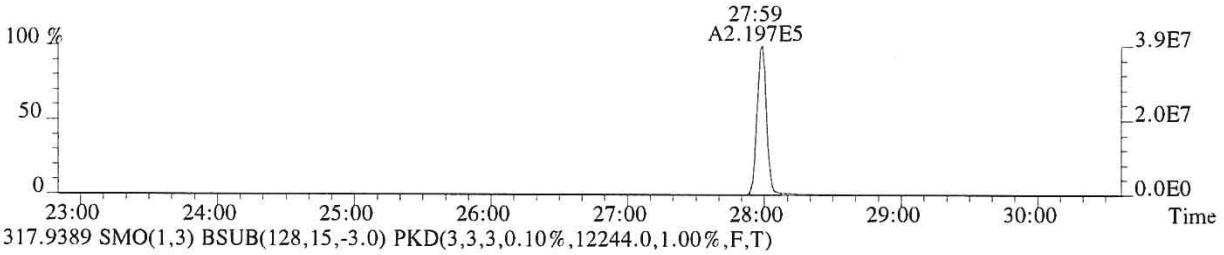
File:P614687 #1-552 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1940.0,1.00%,F,T)



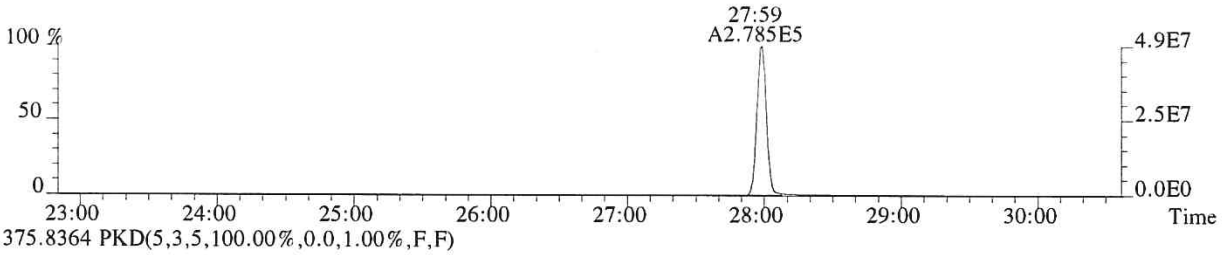
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4256.0,1.00%,F,T)



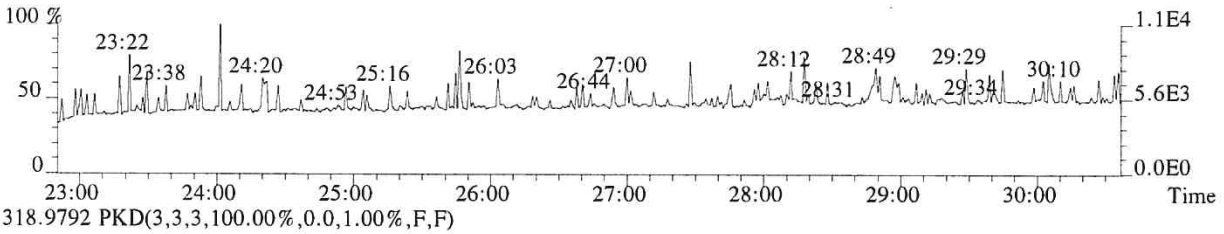
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15308.0,1.00%,F,T)



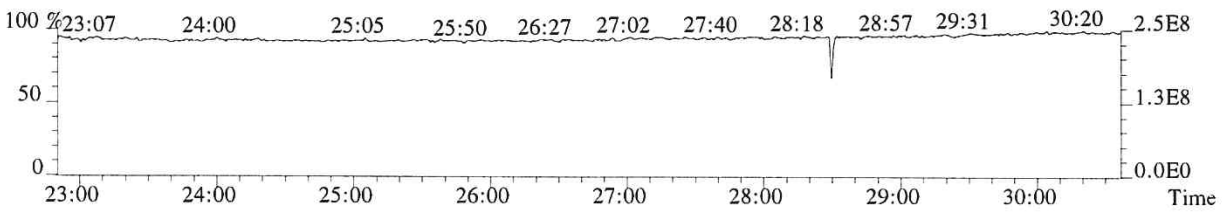
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12244.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

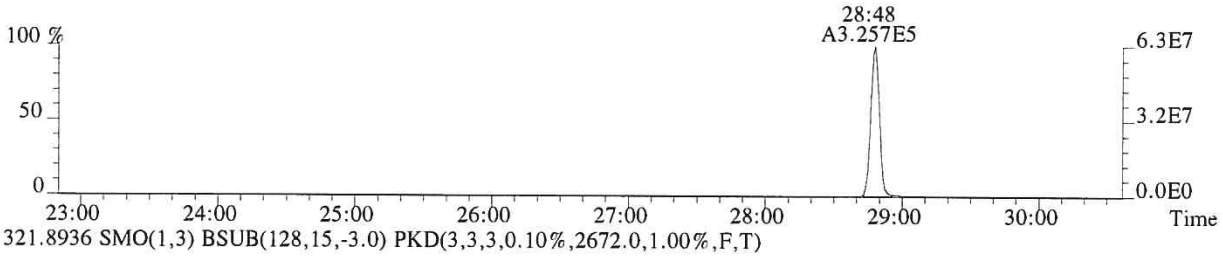


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

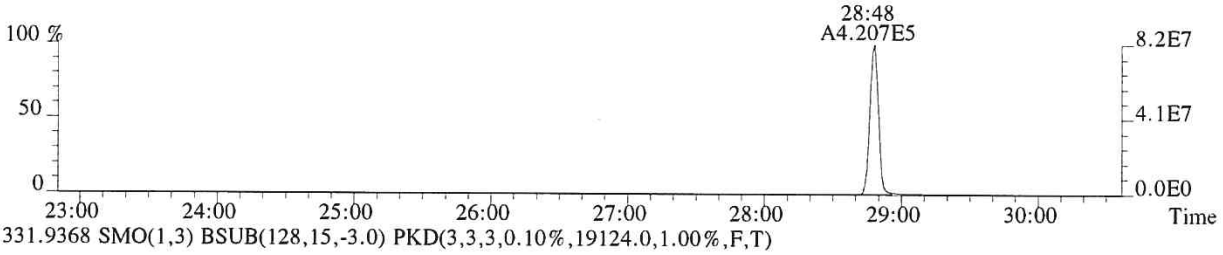


059741

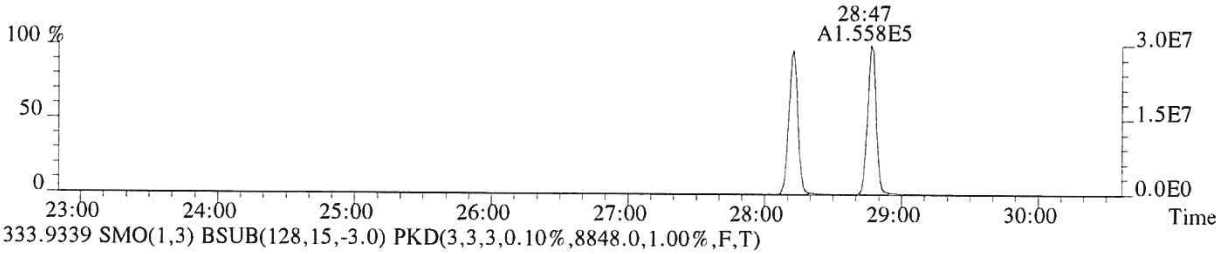
File:P614687 #1-552 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4516.0,1.00%,F,T)



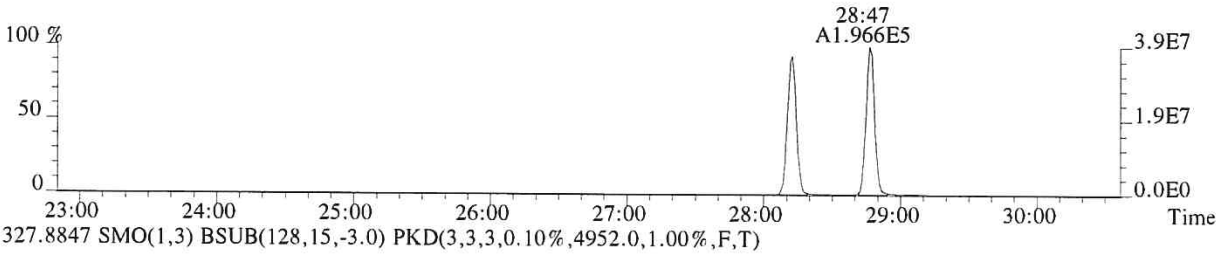
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2672.0,1.00%,F,T)



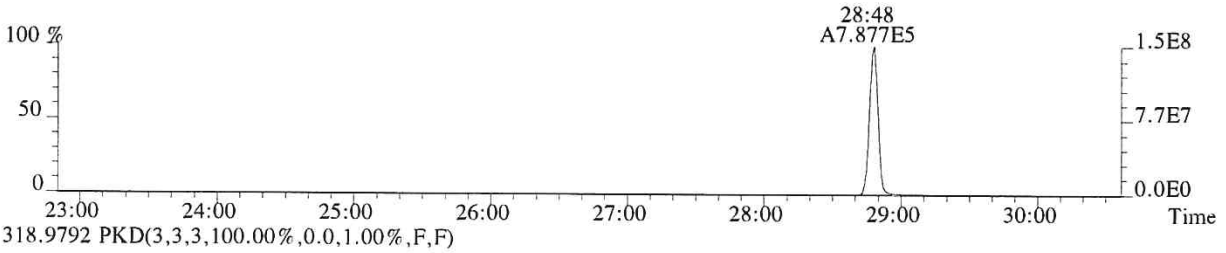
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,19124.0,1.00%,F,T)



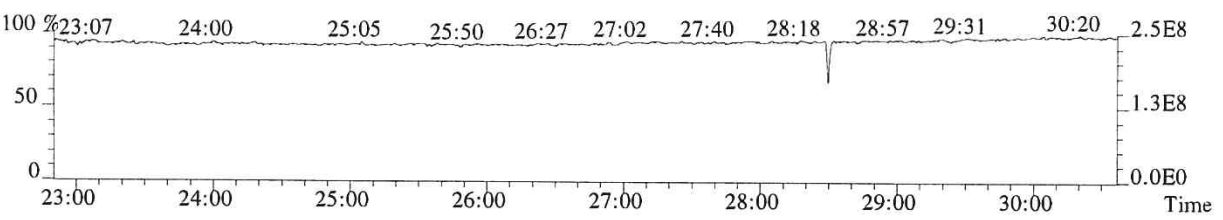
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8848.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4952.0,1.00%,F,T)

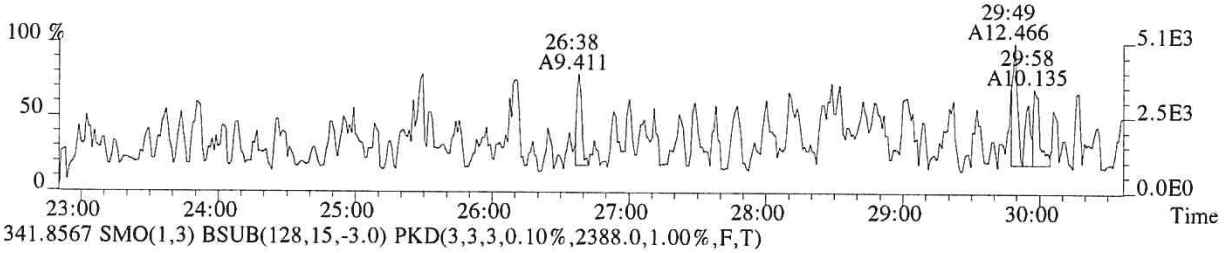


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

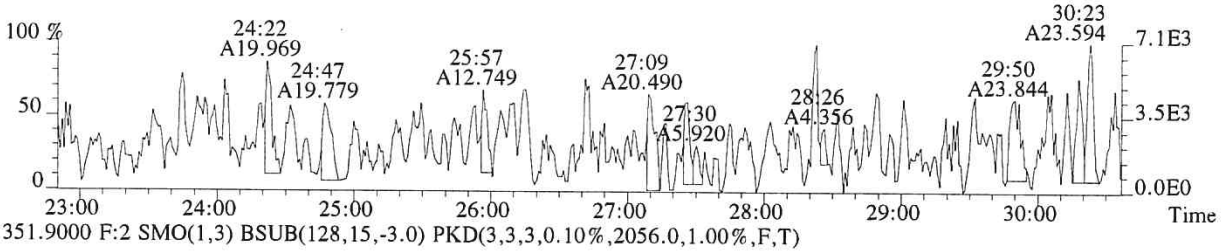


059742

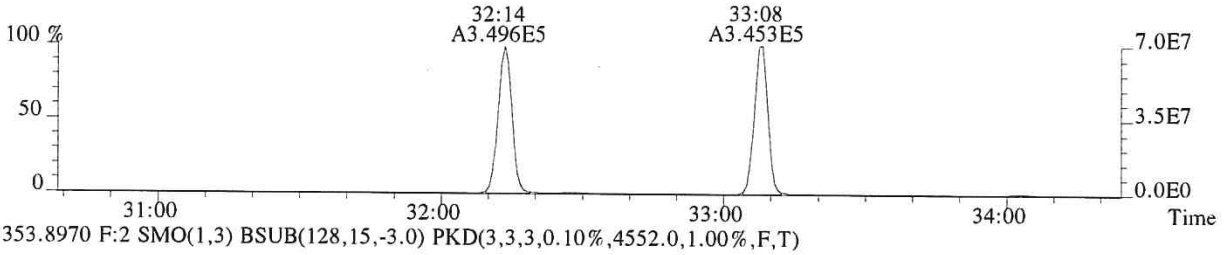
File:P614687 #1-552 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1884.0,1.00%,F,T)



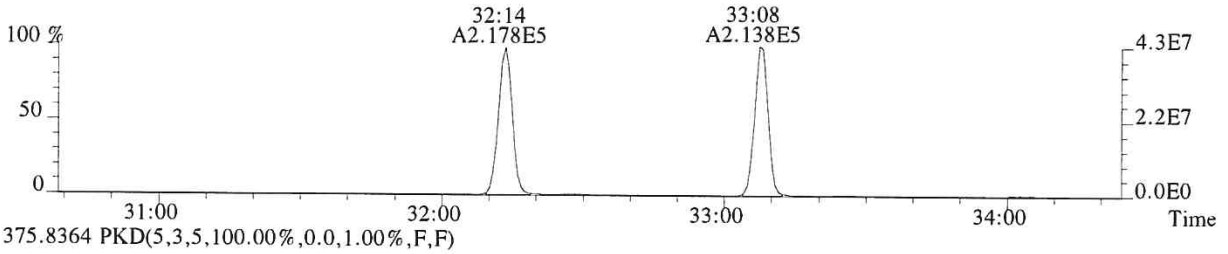
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2388.0,1.00%,F,T)



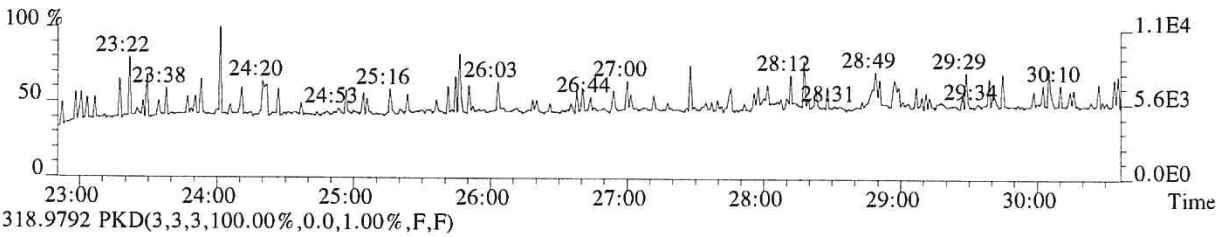
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2056.0,1.00%,F,T)



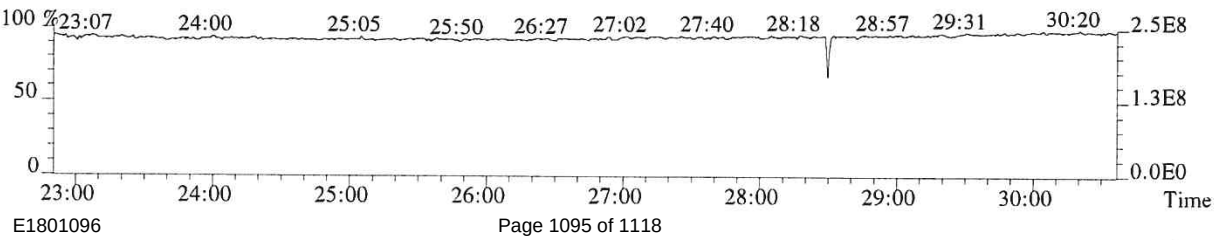
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4552.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

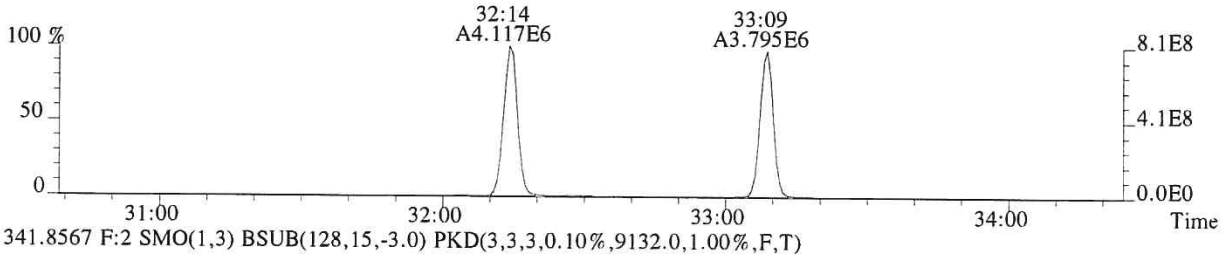


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

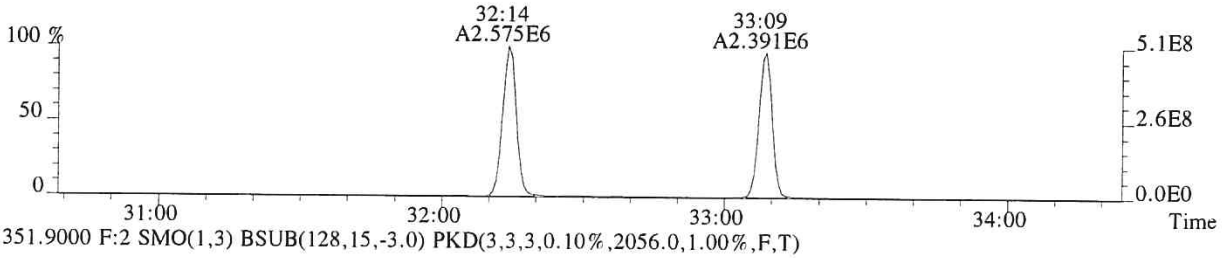


059743

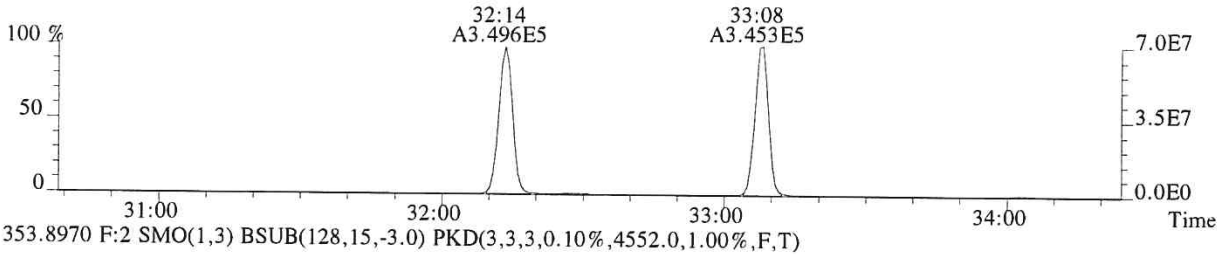
File:P614687 #1-339 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8456.0,1.00%,F,T)



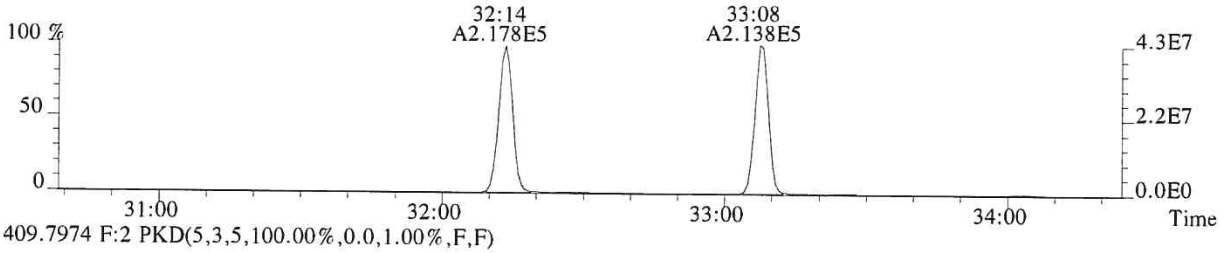
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9132.0,1.00%,F,T)



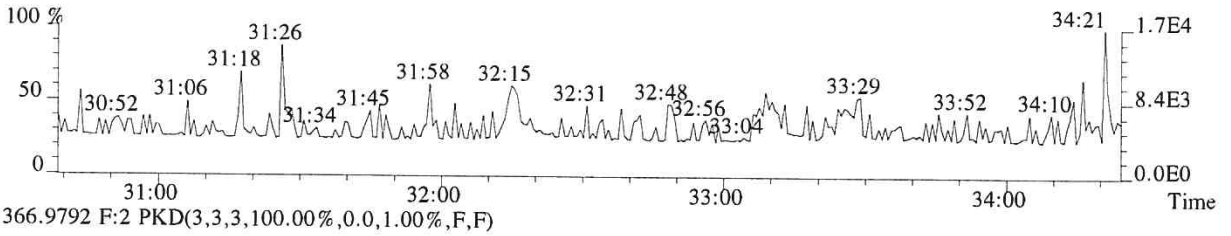
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2056.0,1.00%,F,T)



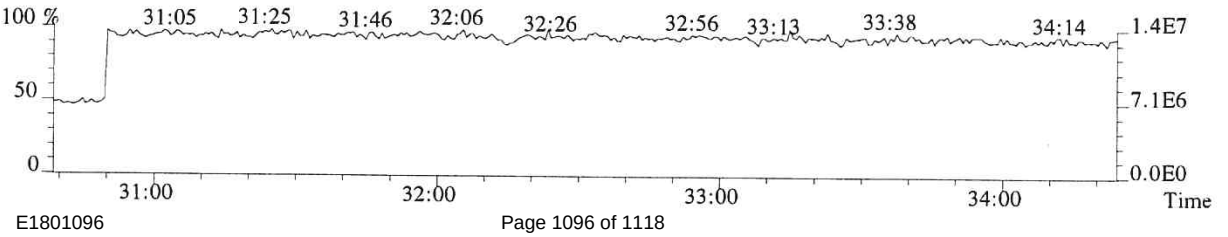
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4552.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

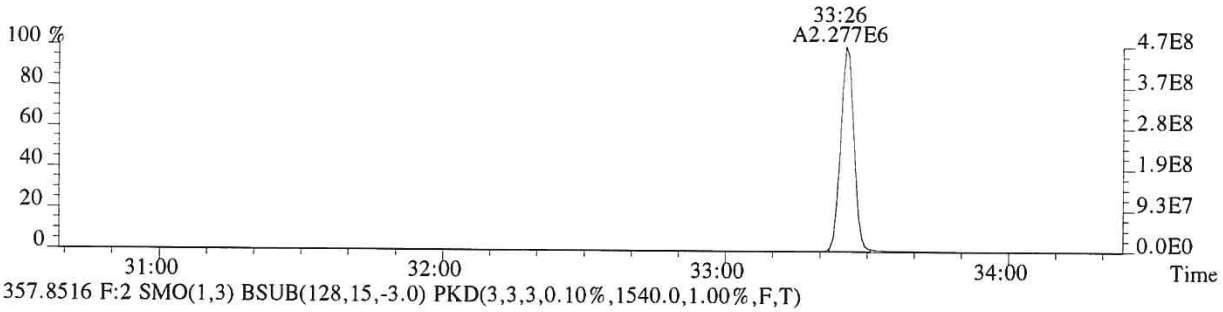


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

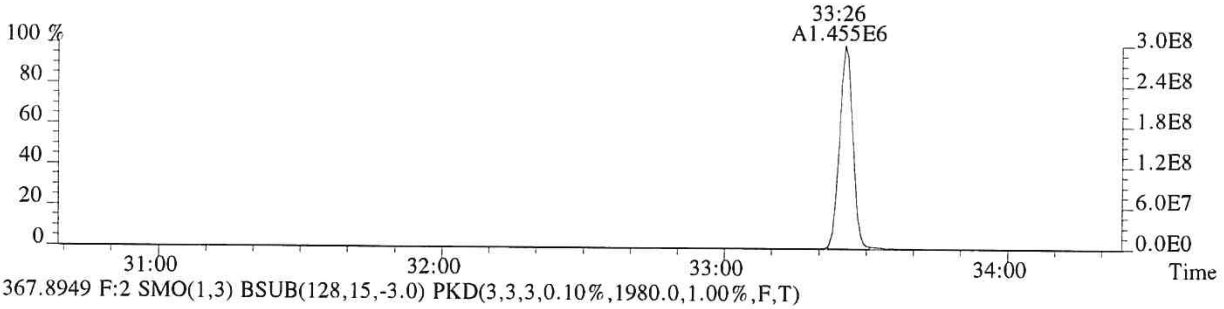


059744

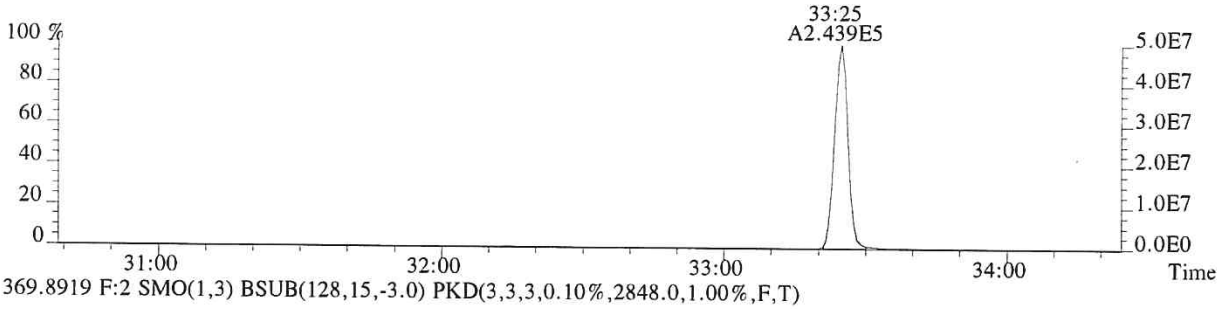
File:P614687 #1-339 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3264.0,1.00%,F,T)



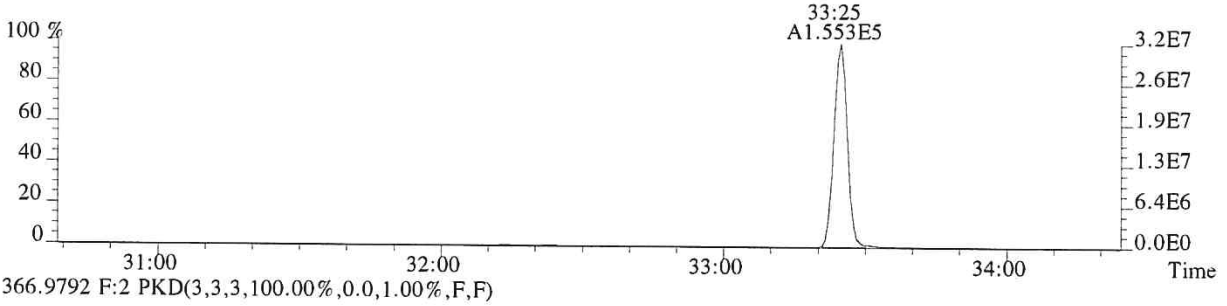
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1540.0,1.00%,F,T)



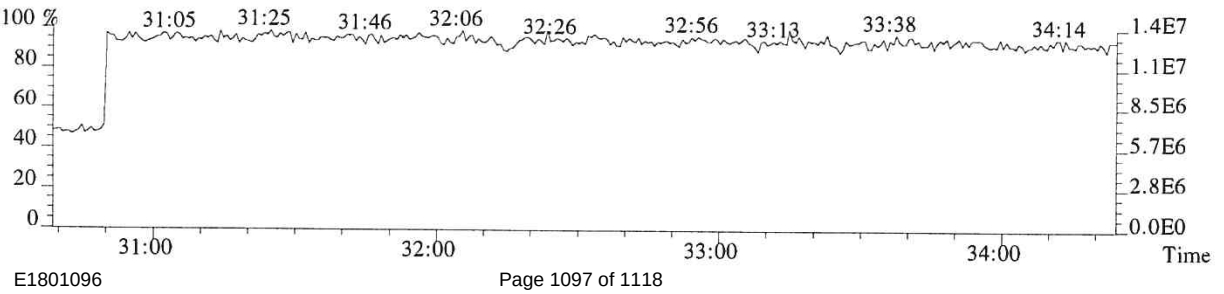
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1980.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2848.0,1.00%,F,T)

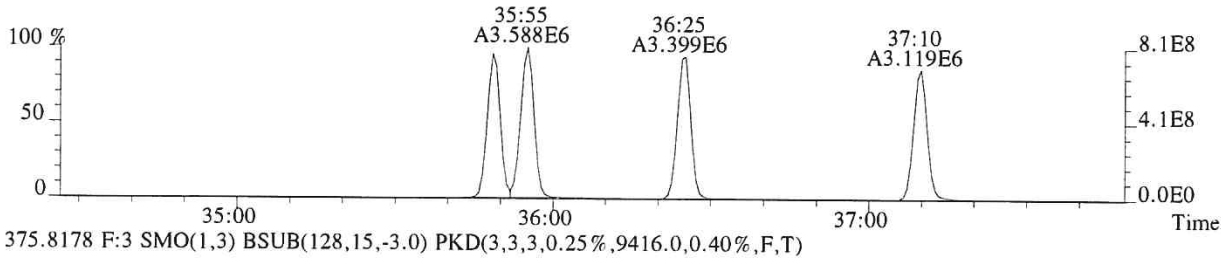


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

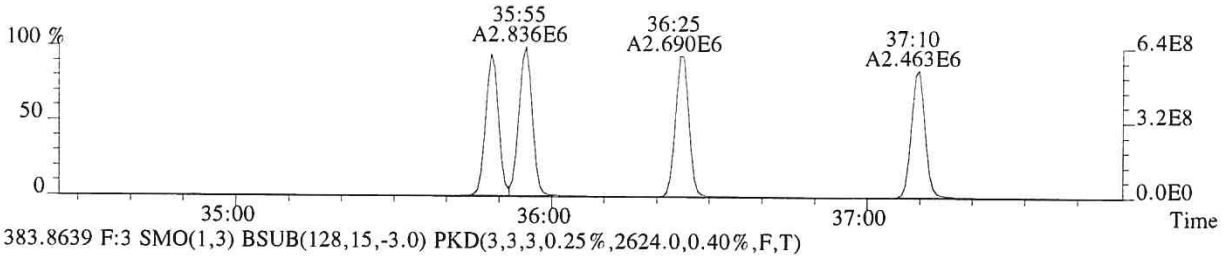


059745

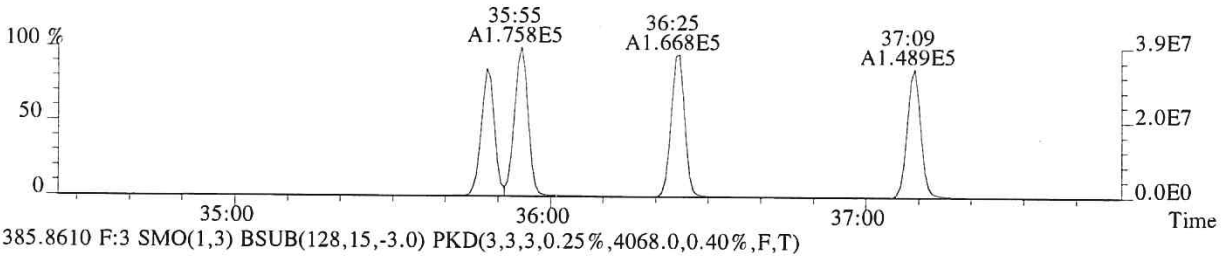
File:P614687 #1-304 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12332.0,0.40%,F,T)



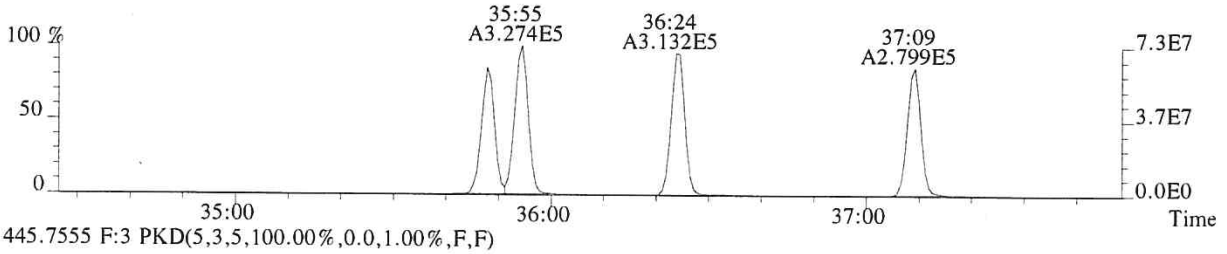
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9416.0,0.40%,F,T)



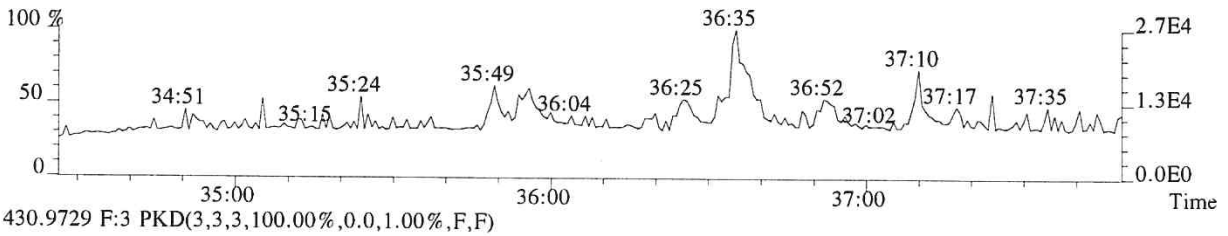
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2624.0,0.40%,F,T)



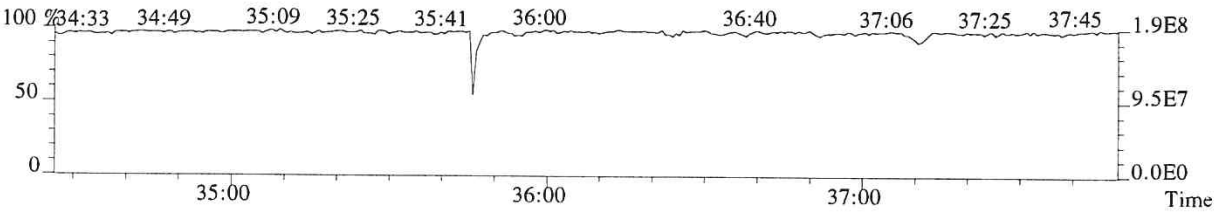
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4068.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

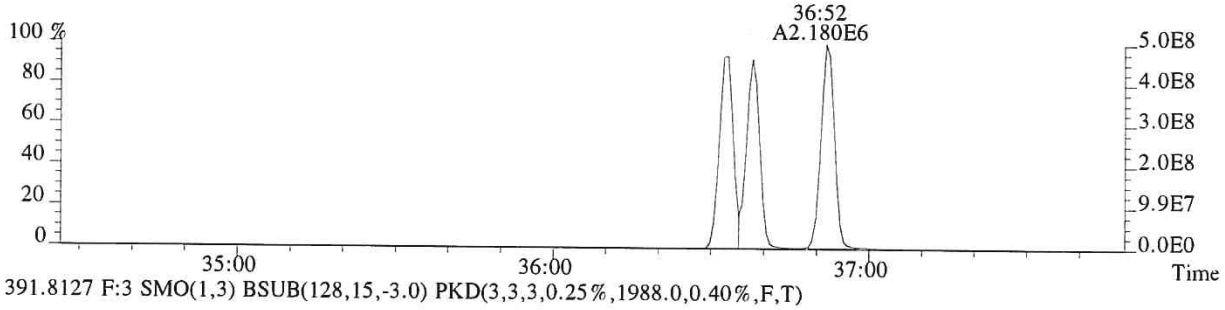


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

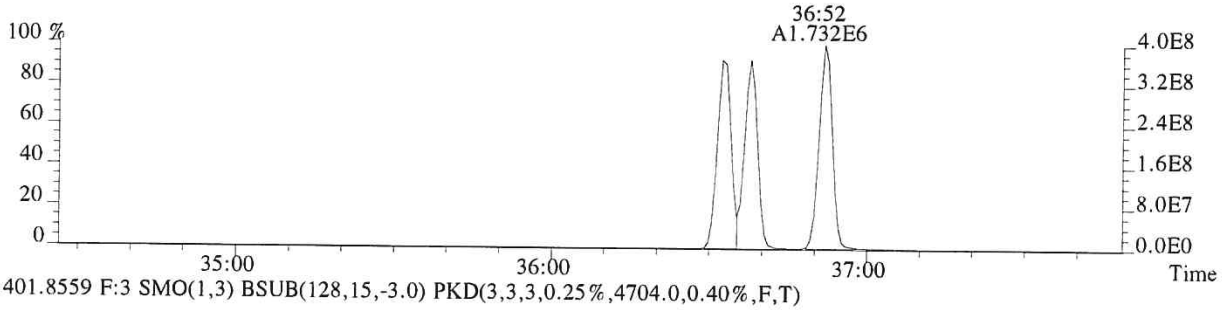


059746

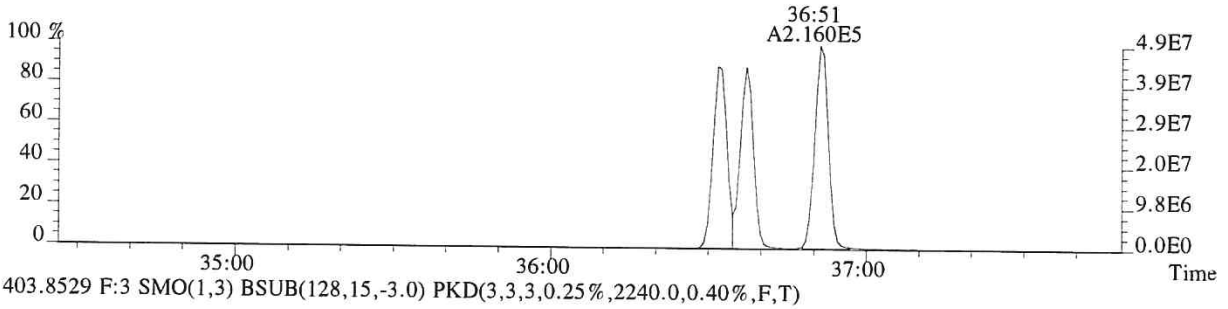
File:P614687 #1-304 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2336.0,0.40%,F,T)



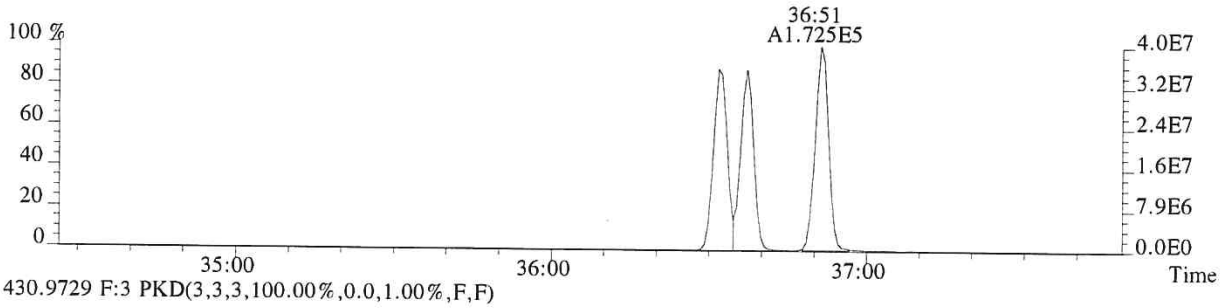
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1988.0,0.40%,F,T)



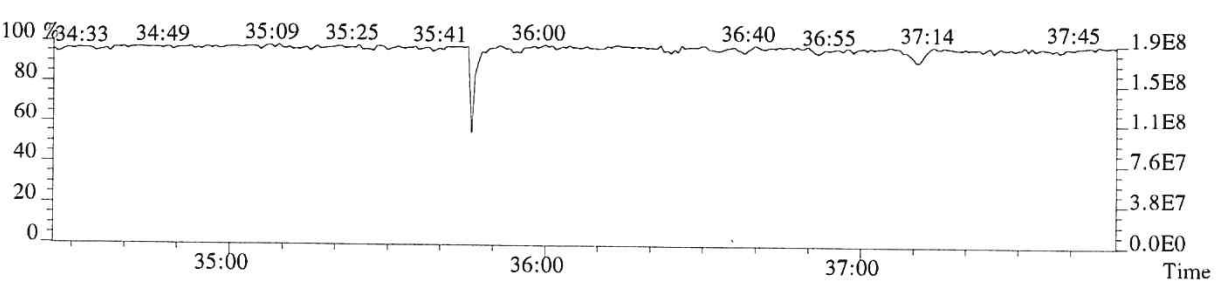
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4704.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2240.0,0.40%,F,T)

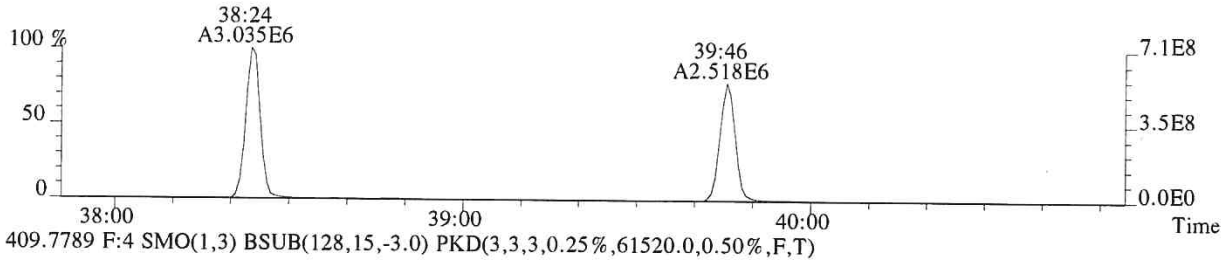


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

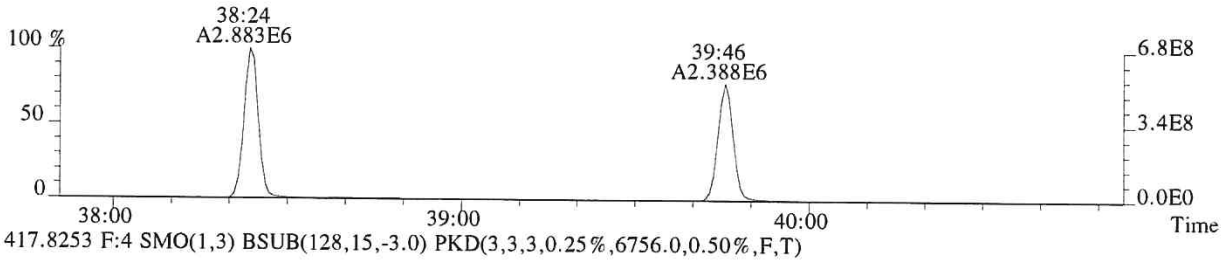


059747

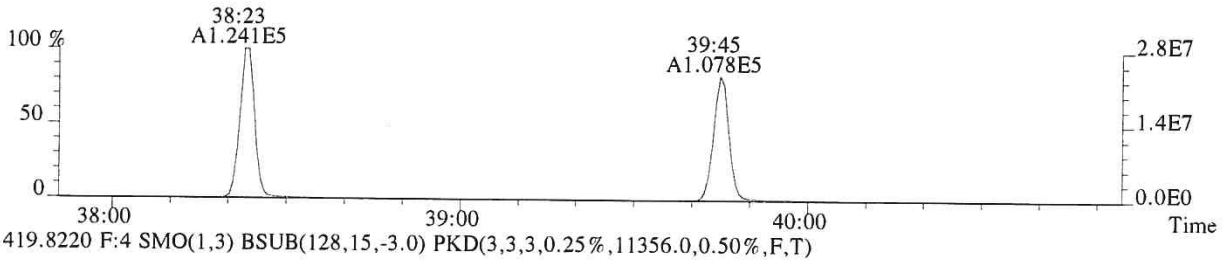
File:P614687 #1-276 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,96804.0,0.50%,F,T)



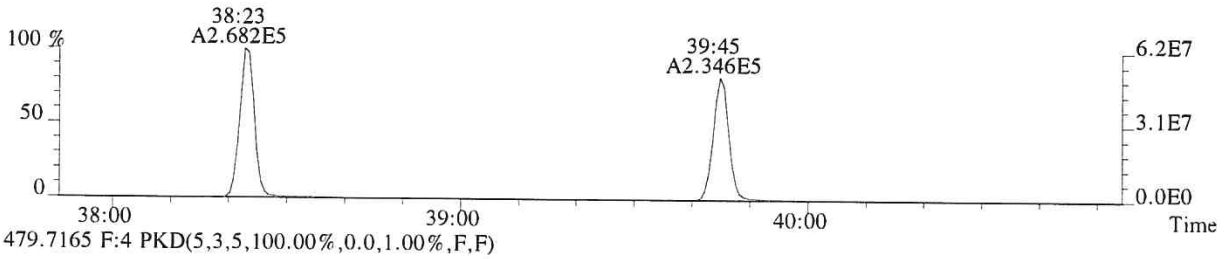
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,61520.0,0.50%,F,T)



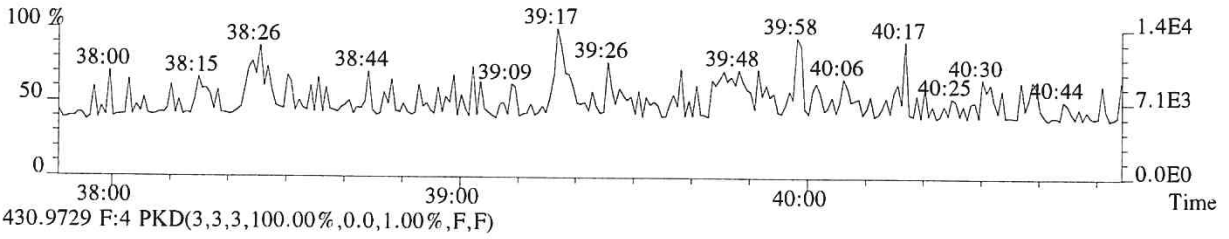
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6756.0,0.50%,F,T)



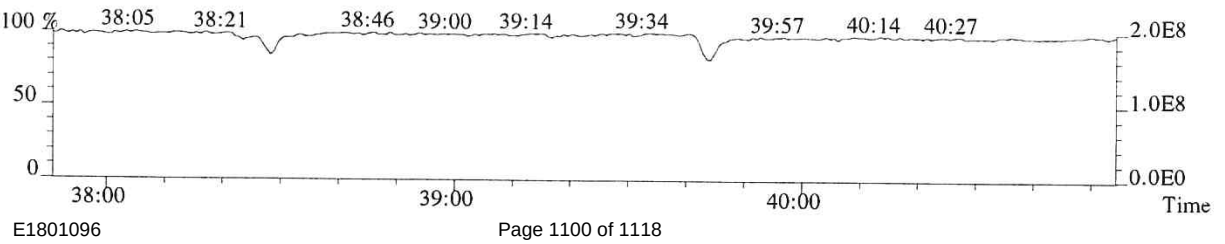
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11356.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

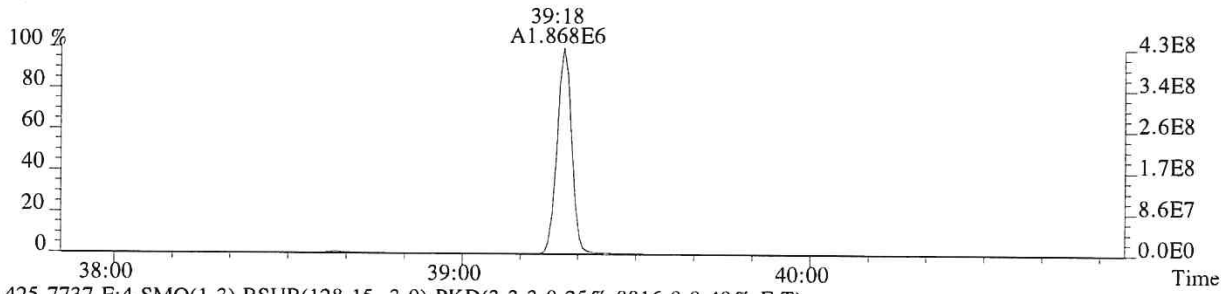


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

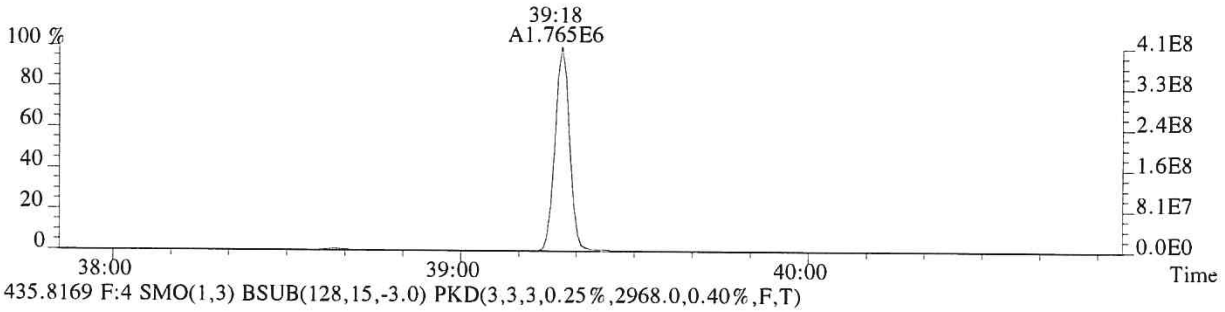


059748

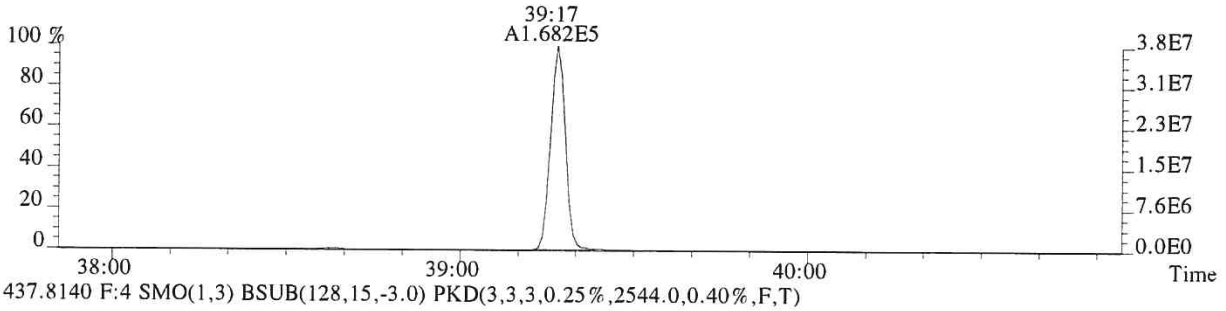
File:P614687 #1-276 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11044.0,0.40%,F,T)



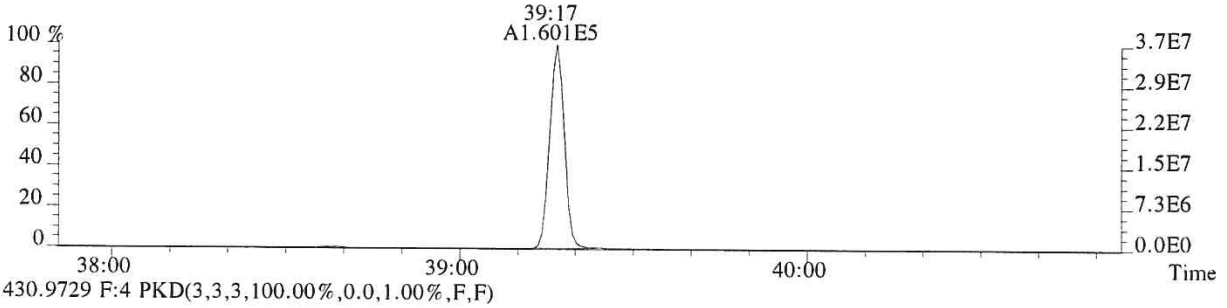
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8816.0,0.40%,F,T)



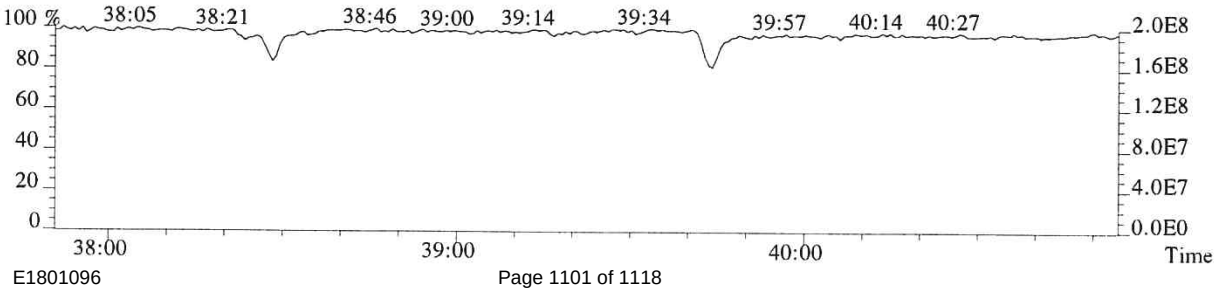
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2968.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2544.0,0.40%,F,T)

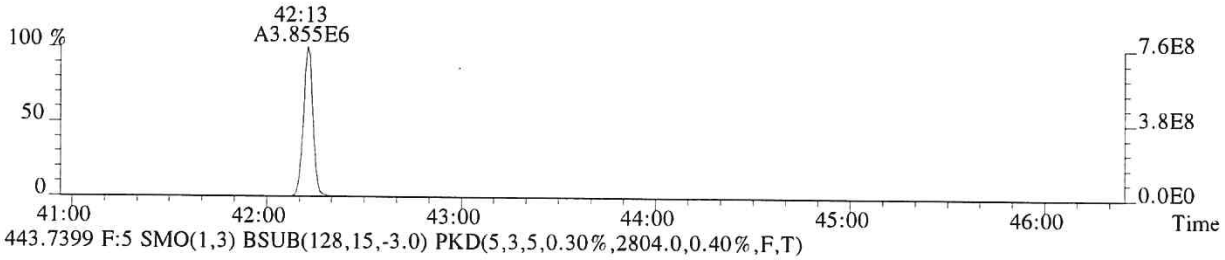


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

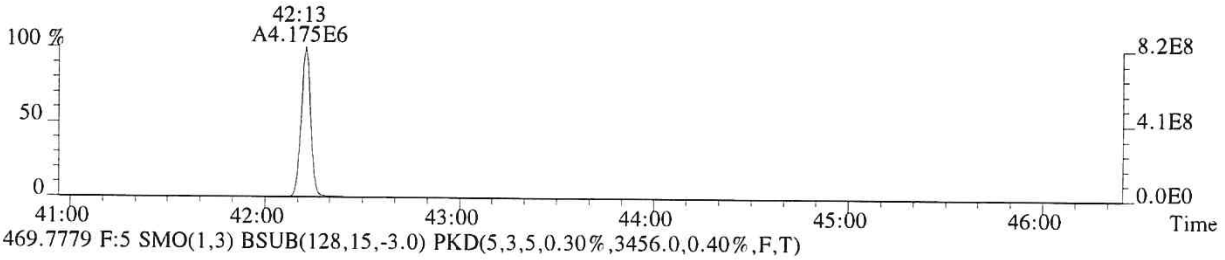


059749

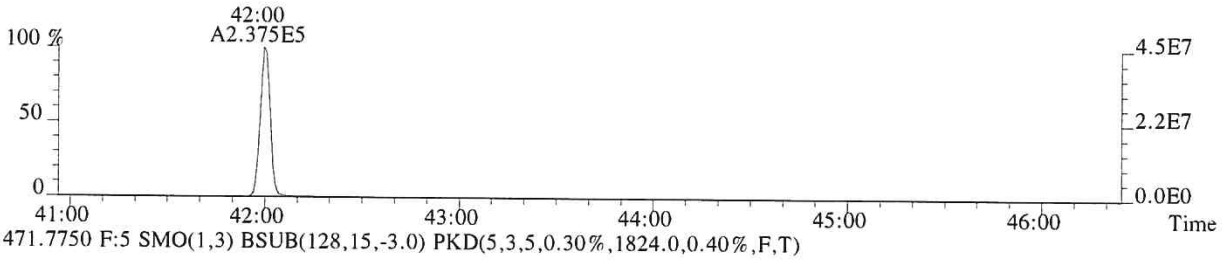
File:P614687 #1-493 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1428.0,0.40%,F,T)



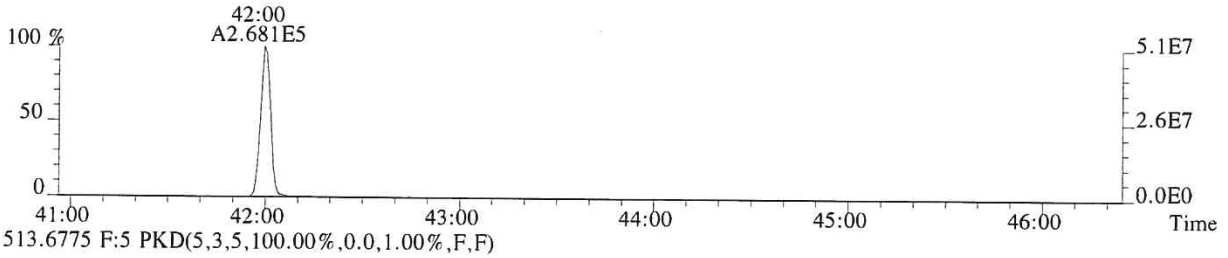
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2804.0,0.40%,F,T)



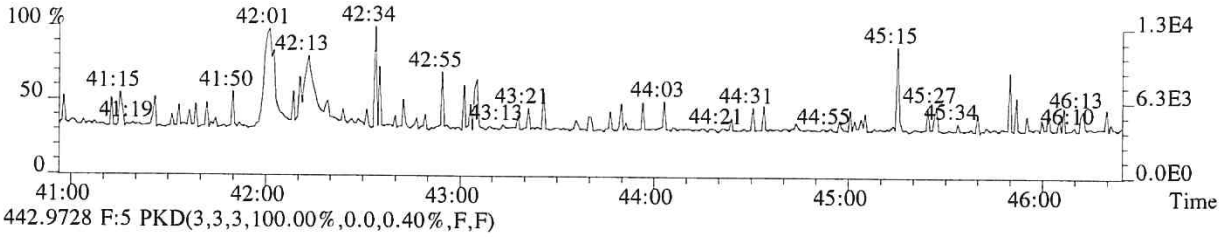
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3456.0,0.40%,F,T)



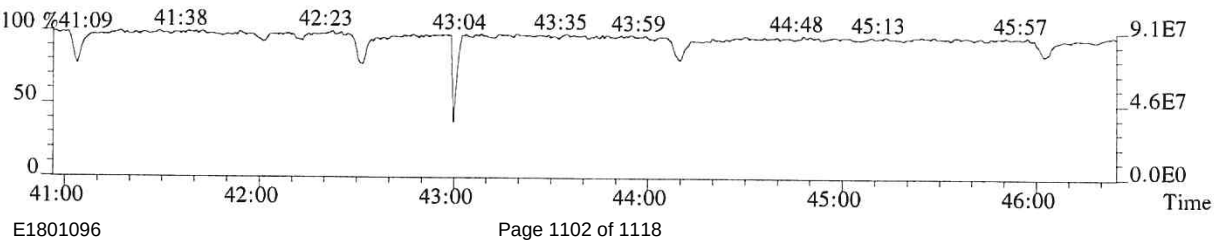
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1824.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

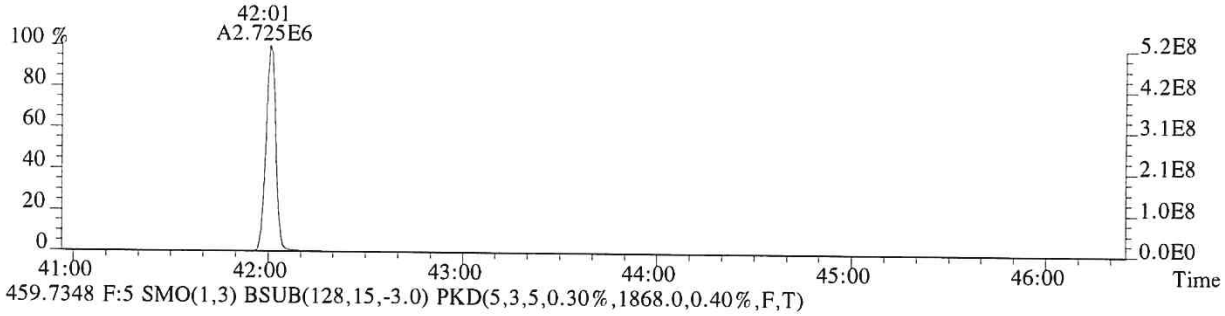


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

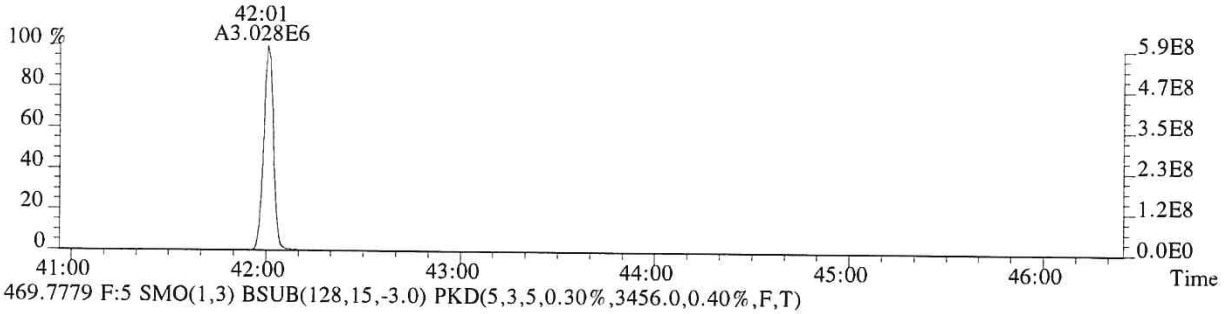


059750

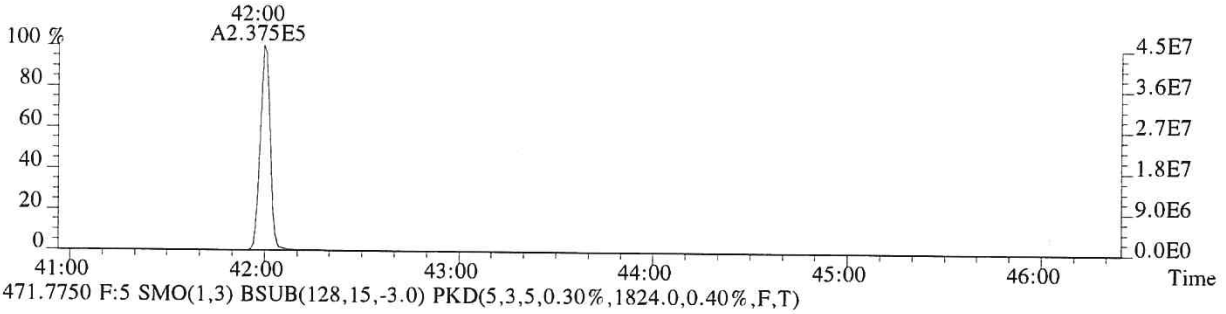
File:P614687 #1-493 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spectℓ
Sample#1 Exp:CS5
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,960.0,0.40%,F,T)



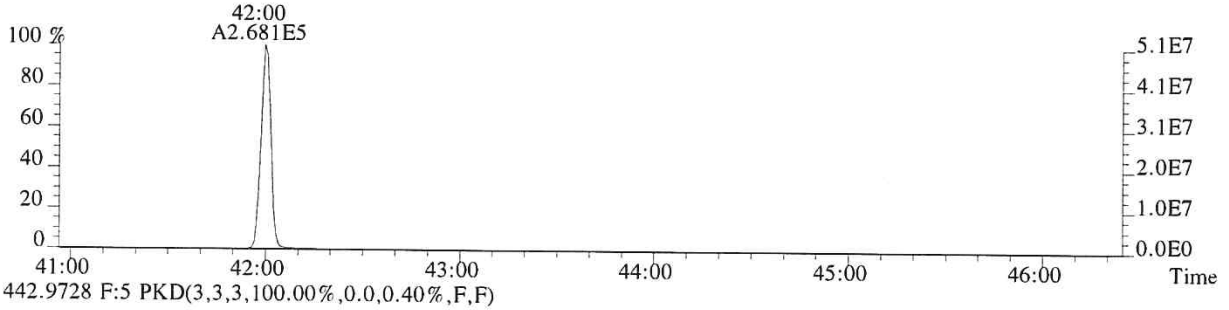
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1868.0,0.40%,F,T)



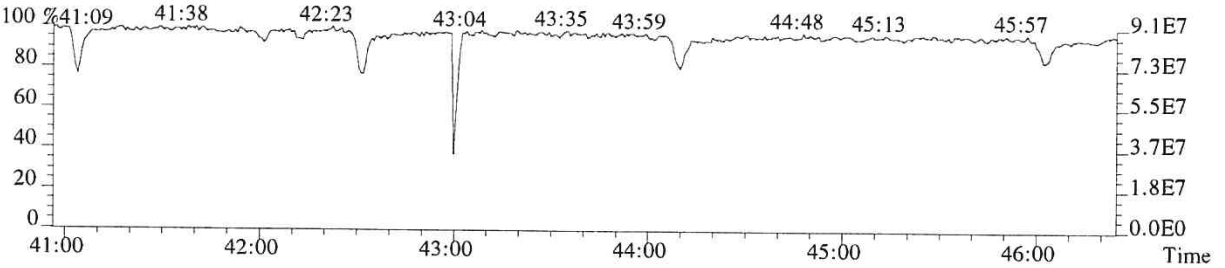
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3456.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1824.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059751

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P614690 Analysis Date: 25-SEP-18 Time: 20:57:19

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	9.7	7.8 - 12.9	-2.5
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	49	39 - 65	-2.2
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	49	39 - 64	-2.2
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	50	39 - 64	-0.1
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	49	41 - 61	-1.9
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	50	43 - 58	-0.9
OCDD	M+2/M+4	0.91	0.76-1.02	98	79 - 126	-2.1
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	9.7	8.4 - 12.0	-2.7
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	49	41 - 60	-1.1
2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	49	41 - 61	-1.4
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	49	45 - 56	-2.6
1,2,3,6,7,8-HxCDF	M+2/M+4	1.28	1.05-1.43	49	44 - 57	-2.3
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05-1.43	50	45 - 56	0.3
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	50	44 - 57	-0.4
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	50	45 - 55	-0.6
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	48	43 - 58	-3.5
OCDF	M+2/M+4	0.93	0.76-1.02	100	63 - 159	-0.4

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

059752

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P614690 Analysis Date: 25-SEP-18 Time: 20:57:19

LABELED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	99	82 - 121	-0.7
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	97	62 - 160	-2.6
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	102	85 - 117	1.5
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	100	85 - 118	-0.2
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	105	72 - 138	5.2
13C-OCDD	M+2/M+4	0.89	0.76-1.02	224	96 - 415	11.9
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	99	71 - 140	-0.7
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	98	76 - 130	-2.1
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	96	77 - 130	-3.8
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43-0.59	102	76 - 131	2.1
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	101	70 - 143	0.6
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	100	74 - 135	0.4
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43-0.59	100	73 - 137	0.2
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	103	78 - 129	2.7
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	109	77 - 129	9.0
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				9.9	7.8 - 12.7	-1.0

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

059753

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
188969

Run #7 Filename P614690 Samp: 1 Inj: 1 Acquired: 25-SEP-18 20:57:19
Processed: 26-SEP-18 08:08:37 Sample ID: 2ND SOURCE

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:00	1.742e+04	2.239e+04	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:14	1.470e+05	9.342e+04	1.57	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:09	1.362e+05	8.490e+04	1.60	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	1.308e+05	1.044e+05	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	1.371e+05	1.074e+05	1.28	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	1.285e+05	1.018e+05	1.26	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:09	1.211e+05	9.459e+04	1.28	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	1.180e+05	1.126e+05	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	1.018e+05	9.931e+04	1.02	yes	no	1.463
10	Unk	OCDF	42:12	1.605e+05	1.721e+05	0.93	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	1.193e+04	1.490e+04	0.80	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	8.164e+04	5.215e+04	1.57	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	7.752e+04	6.082e+04	1.27	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	7.678e+04	6.066e+04	1.27	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:52	8.213e+04	6.494e+04	1.26	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	7.382e+04	6.944e+04	1.06	yes	no	1.112
17	Unk	OCDD	42:01	1.146e+05	1.261e+05	0.91	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	1.682e+05	2.104e+05	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	2.590e+05	1.613e+05	1.61	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	2.497e+05	1.565e+05	1.60	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:48	1.202e+05	2.212e+05	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:54	1.342e+05	2.529e+05	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:24	1.258e+05	2.350e+05	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	1.132e+05	2.142e+05	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:23	9.579e+04	2.089e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:45	8.964e+04	1.952e+05	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	1.166e+05	1.457e+05	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	1.797e+05	1.149e+05	1.56	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:32	1.476e+05	1.165e+05	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	1.453e+05	1.145e+05	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	1.336e+05	1.263e+05	1.06	yes	no	0.857
32	IS	13C-OCDD	42:00	2.007e+05	2.242e+05	0.89	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:13	1.202e+05	1.487e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:51	1.598e+05	1.284e+05	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	2.893e+04				no	1.086

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
188969

Run #7 Filename P614690 Samp: 1 Inj: 1 Acquired: 25-SEP-18 20:57:19
Processed: 26-SEP-18 08:08:37 LAB. ID: 2ND SOURCE

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.08e+06	2.16e+03	1.4e+03	3.95e+06	5.67e+03	7.0e+02
2	1,2,3,7,8-PeCDF	2.75e+07	1.50e+03	1.8e+04	1.74e+07	8.24e+03	2.1e+03
3	2,3,4,7,8-PeCDF	2.67e+07	1.50e+03	1.8e+04	1.67e+07	8.24e+03	2.0e+03
4	1,2,3,4,7,8-HxCDF	2.88e+07	2.35e+03	1.2e+04	2.29e+07	2.48e+03	9.3e+03
5	1,2,3,6,7,8-HxCDF	2.88e+07	2.35e+03	1.2e+04	2.30e+07	2.48e+03	9.3e+03
6	2,3,4,6,7,8-HxCDF	2.86e+07	2.35e+03	1.2e+04	2.28e+07	2.48e+03	9.2e+03
7	1,2,3,7,8,9-HxCDF	2.47e+07	2.35e+03	1.1e+04	1.95e+07	2.48e+03	7.9e+03
8	1,2,3,4,6,7,8-HpCDF	2.70e+07	4.46e+03	6.0e+03	2.58e+07	1.29e+04	2.0e+03
9	1,2,3,4,7,8,9-HpCDF	2.12e+07	4.46e+03	4.8e+03	2.03e+07	1.29e+04	1.6e+03
10	OCDF	3.01e+07	1.50e+03	2.0e+04	3.28e+07	3.09e+03	1.1e+04
11	2,3,7,8-TCDD	2.20e+06	4.04e+03	5.4e+02	2.73e+06	2.27e+03	1.2e+03
12	1,2,3,7,8-PeCDD	1.64e+07	3.14e+03	5.2e+03	1.06e+07	2.92e+02	3.6e+04
13	1,2,3,4,7,8-HxCDD	1.79e+07	1.59e+03	1.1e+04	1.41e+07	2.43e+03	5.8e+03
14	1,2,3,6,7,8-HxCDD	1.70e+07	1.59e+03	1.1e+04	1.34e+07	2.43e+03	5.5e+03
15	1,2,3,7,8,9-HxCDD	1.85e+07	1.59e+03	1.2e+04	1.48e+07	2.43e+03	6.1e+03
16	1,2,3,4,6,7,8-HpCDD	1.59e+07	2.28e+03	7.0e+03	1.49e+07	8.84e+02	1.7e+04
17	OCDD	2.16e+07	1.17e+03	1.8e+04	2.38e+07	1.31e+03	1.8e+04
18	13C-2,3,7,8-TCDF	2.88e+07	1.57e+04	1.8e+03	3.60e+07	9.18e+03	3.9e+03
19	13C-1,2,3,7,8-PeCDF	4.79e+07	4.01e+03	1.2e+04	3.00e+07	3.41e+03	8.8e+03
20	13C-2,3,4,7,8-PeCDF	4.95e+07	4.01e+03	1.2e+04	3.12e+07	3.41e+03	9.1e+03
21	13C-1,2,3,4,7,8-HxCDF	2.65e+07	2.99e+03	8.9e+03	4.93e+07	3.83e+03	1.3e+04
22	13C-1,2,3,6,7,8-HxCDF	2.83e+07	2.99e+03	9.5e+03	5.32e+07	3.83e+03	1.4e+04
23	13C-2,3,4,6,7,8-HxCDF	2.80e+07	2.99e+03	9.4e+03	5.25e+07	3.83e+03	1.4e+04
24	13C-1,2,3,7,8,9-HxCDF	2.35e+07	2.99e+03	7.9e+03	4.43e+07	3.83e+03	1.2e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.19e+07	7.32e+03	3.0e+03	4.77e+07	1.38e+04	3.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.88e+07	7.32e+03	2.6e+03	4.06e+07	1.38e+04	2.9e+03
27	13C-2,3,7,8-TCDD	2.17e+07	2.56e+04	8.4e+02	2.71e+07	6.97e+03	3.9e+03
28	13C-1,2,3,7,8-PeCDD	3.57e+07	3.26e+03	1.1e+04	2.28e+07	2.28e+03	1.0e+04
29	13C-1,2,3,4,7,8-HxCDD	3.37e+07	5.66e+03	6.0e+03	2.64e+07	3.42e+03	7.7e+03
30	13C-1,2,3,6,7,8-HxCDD	3.18e+07	5.66e+03	5.6e+03	2.51e+07	3.42e+03	7.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.85e+07	3.13e+03	9.1e+03	2.68e+07	1.88e+03	1.4e+04
32	13C-OCDD	3.77e+07	2.72e+03	1.4e+04	4.17e+07	9.60e+02	4.3e+04
33	13C-1,2,3,4-TCDD	2.21e+07	2.56e+04	8.6e+02	2.72e+07	6.97e+03	3.9e+03
34	13C-1,2,3,7,8,9-HxCDD	3.62e+07	5.66e+03	6.4e+03	2.92e+07	3.42e+03	8.5e+03
35	37Cl-2,3,7,8-TCDD	5.28e+06	4.24e+03	1.2e+03			

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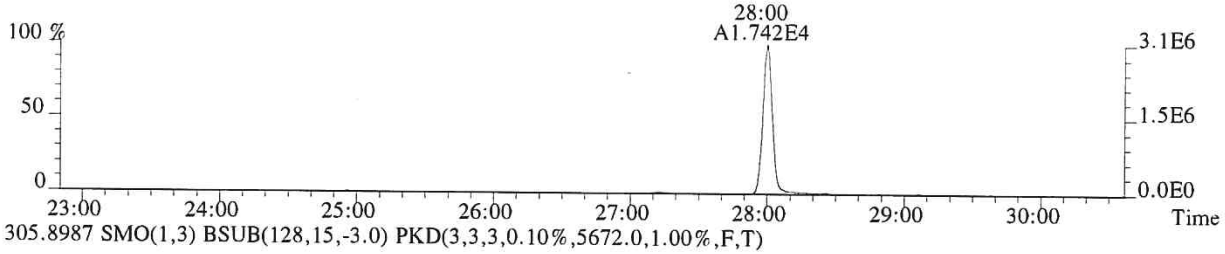
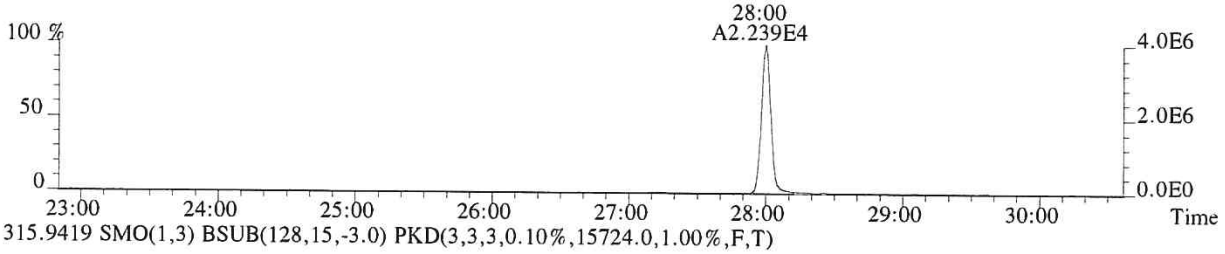
059755

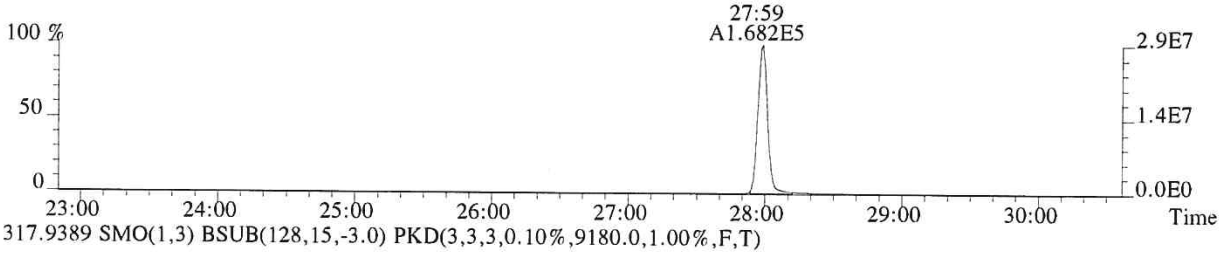
File:P614690 #1-552 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2160.0,1.00%,F,T)



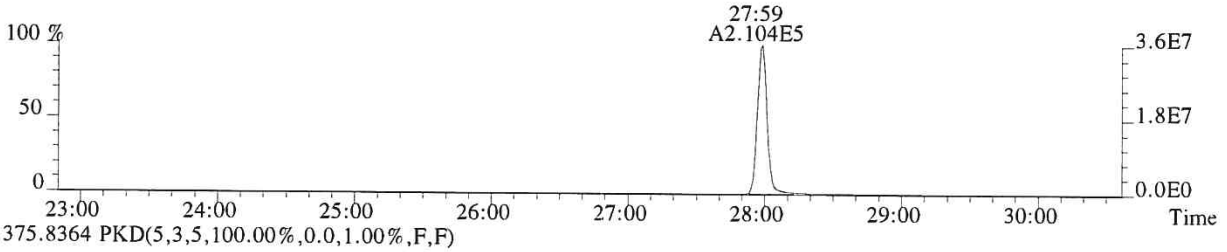
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5672.0,1.00%,F,T)



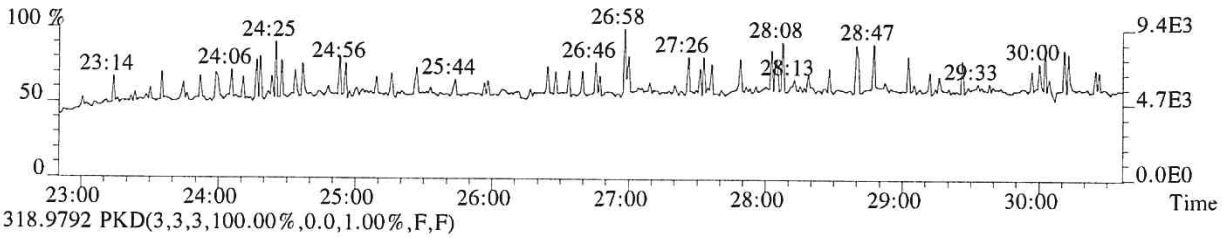
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15724.0,1.00%,F,T)



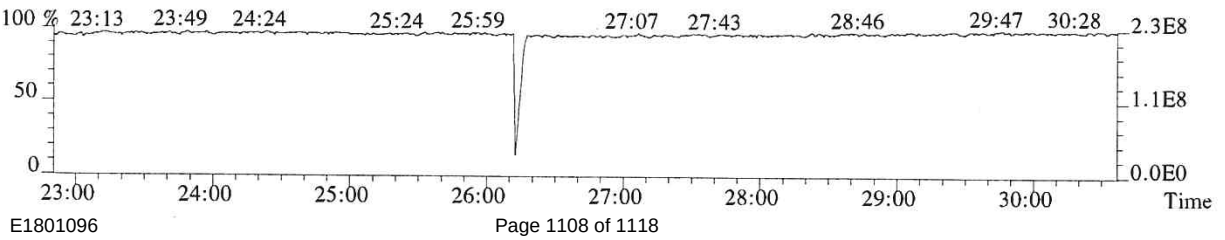
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9180.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

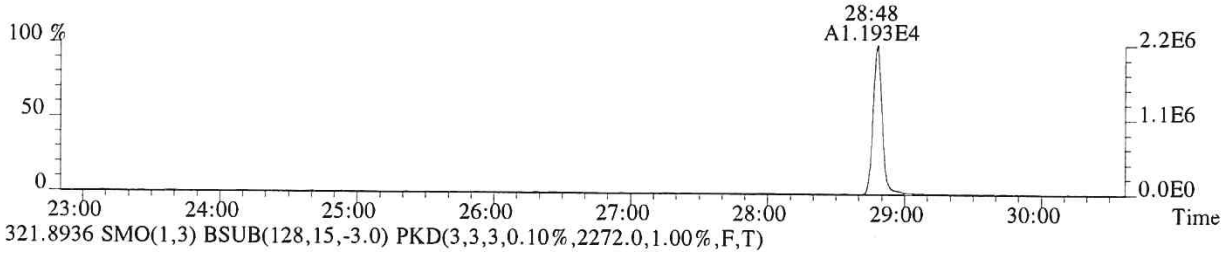


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

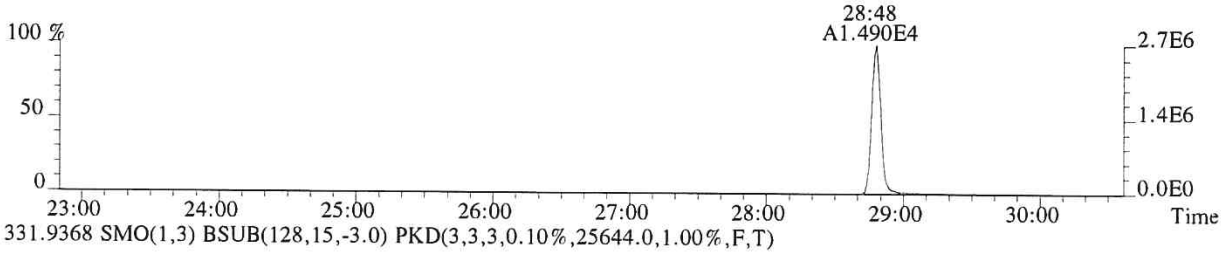


059756

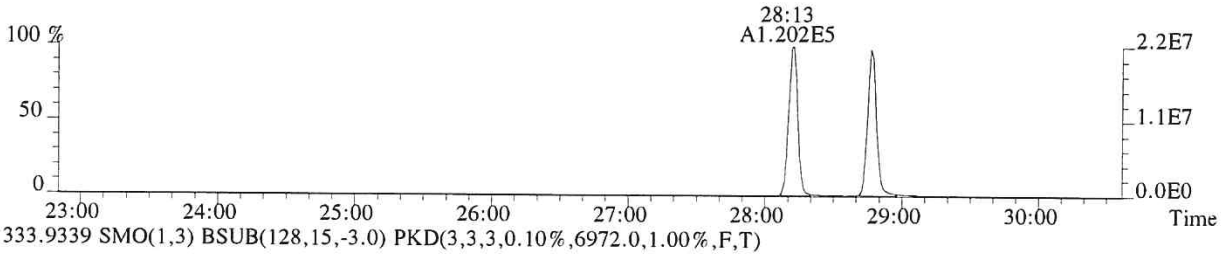
File:P614690 #1-552 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4040.0,1.00%,F,T)



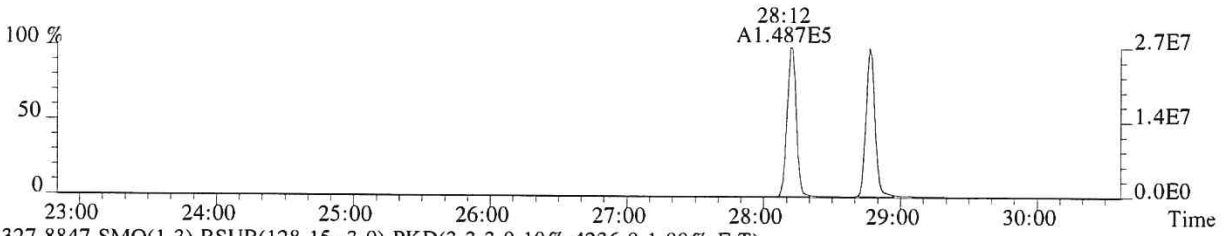
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2272.0,1.00%,F,T)



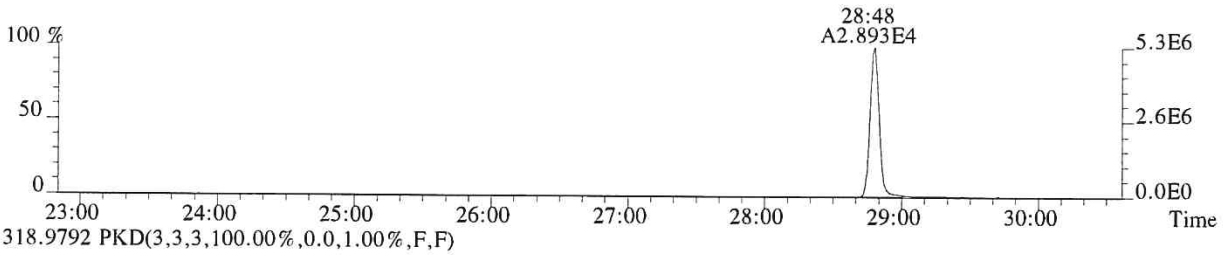
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,25644.0,1.00%,F,T)



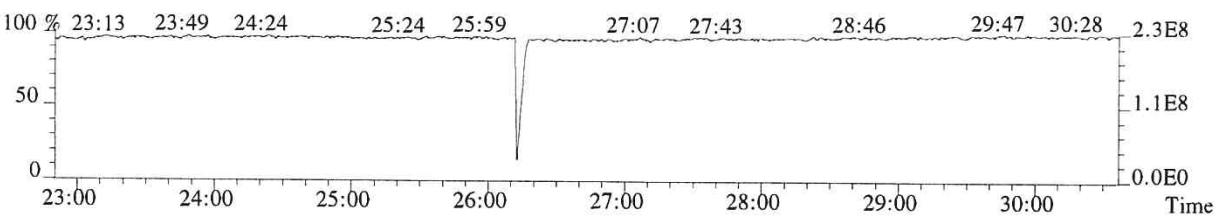
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6972.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4236.0,1.00%,F,T)

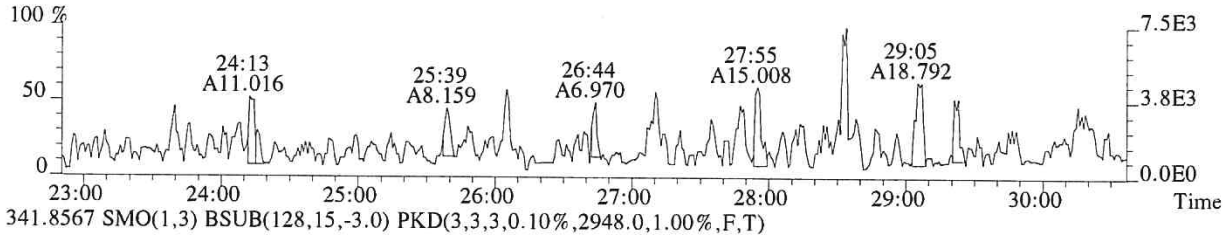


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

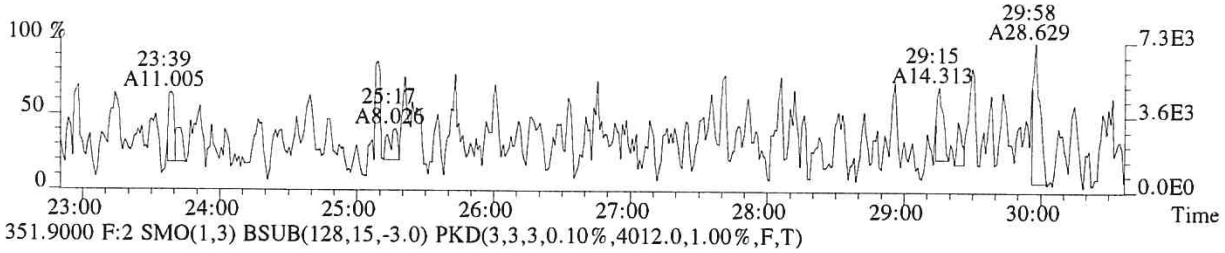


059757

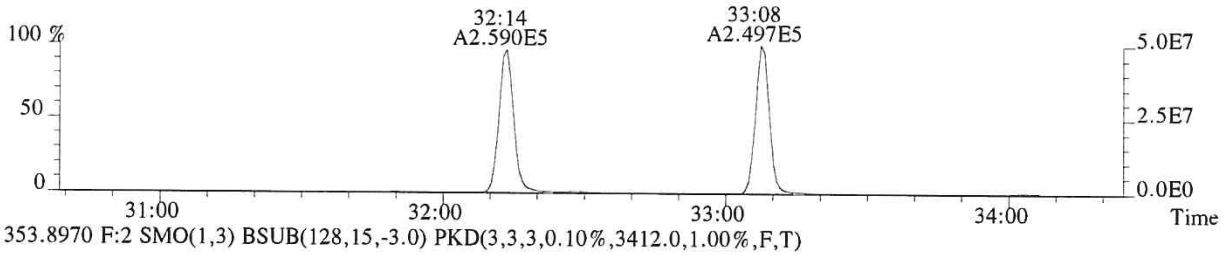
File:P614690 #1-552 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spectℓ
Sample#1 Exp:2ND SOURCE
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1588.0,1.00%,F,T)



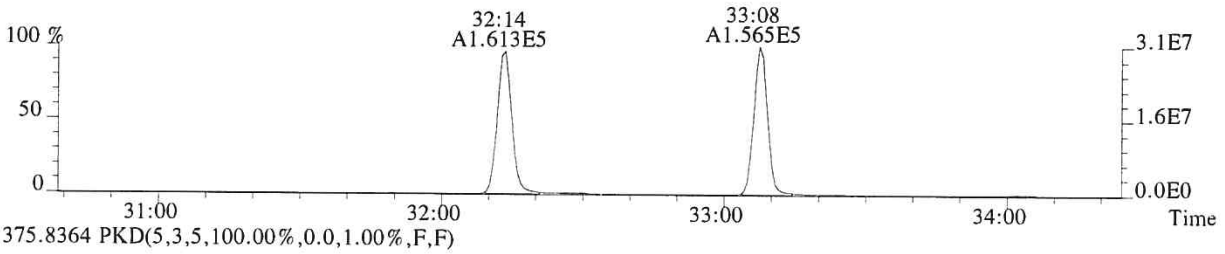
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2948.0,1.00%,F,T)



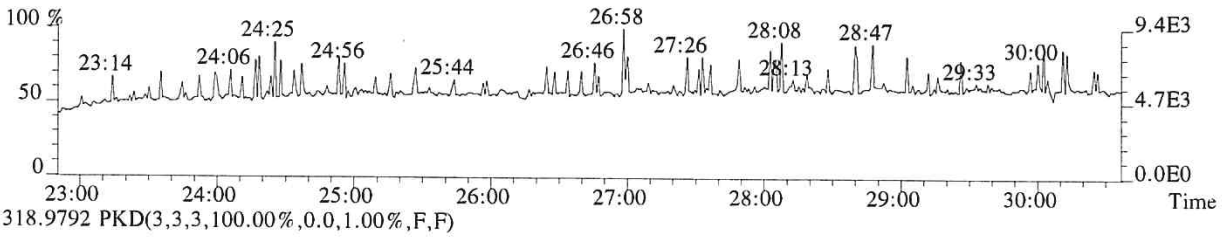
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4012.0,1.00%,F,T)



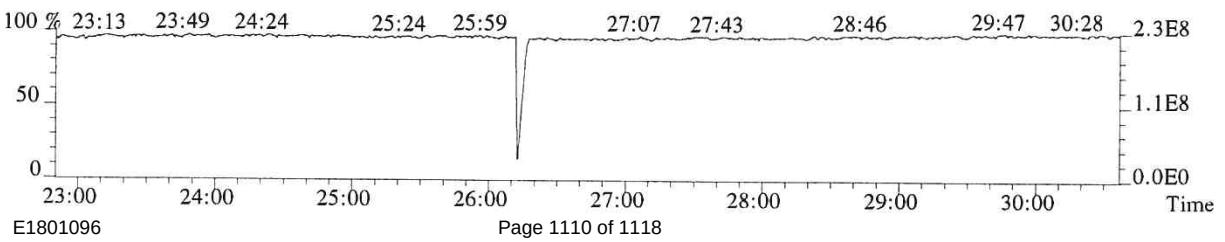
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3412.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

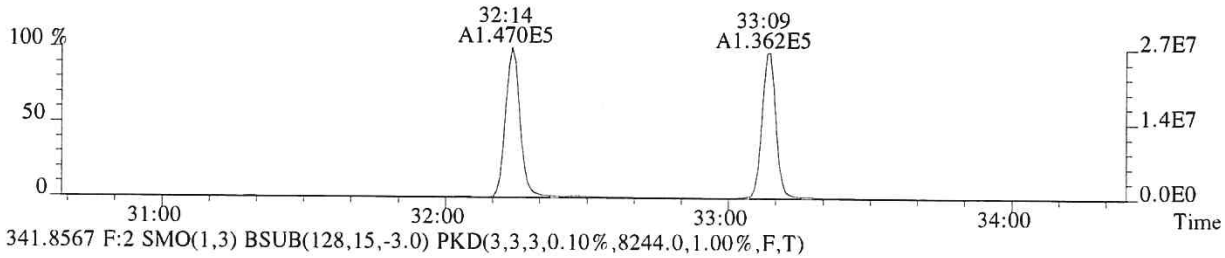


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

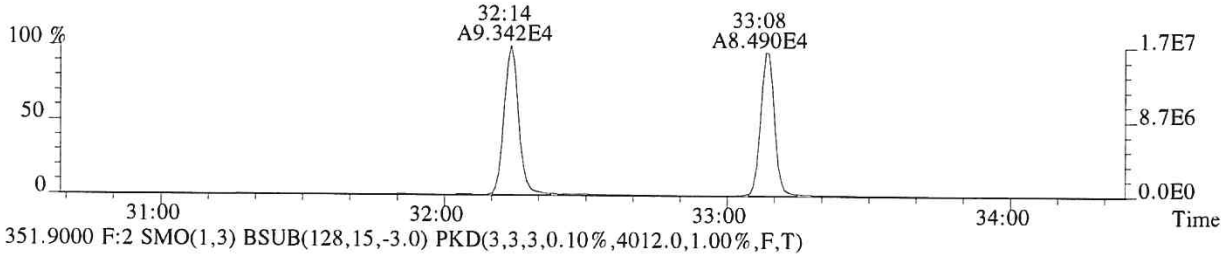


059758

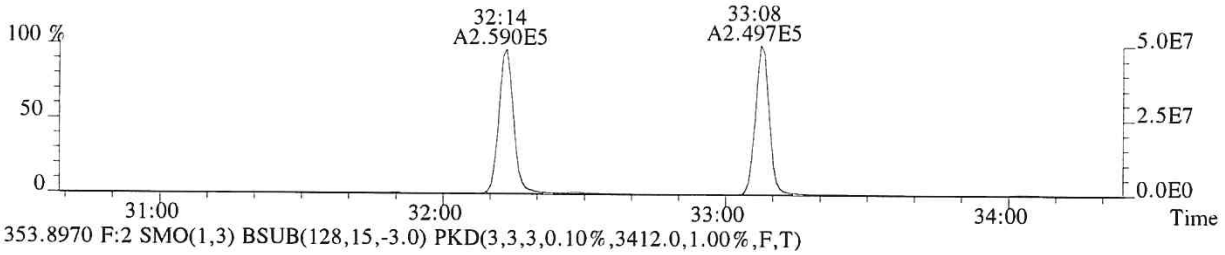
File:P614690 #1-339 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1504.0,1.00%,F,T)



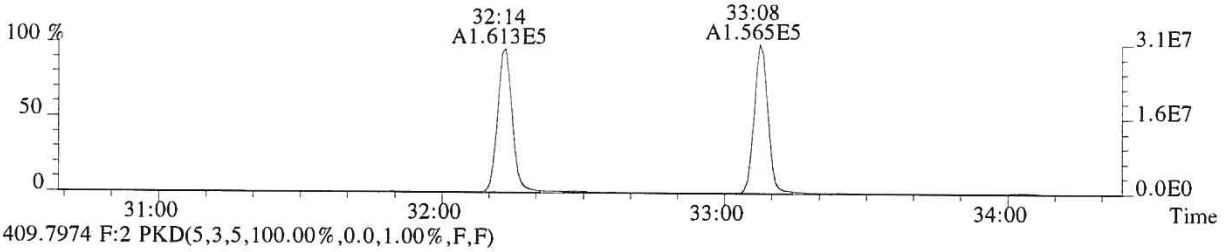
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8244.0,1.00%,F,T)



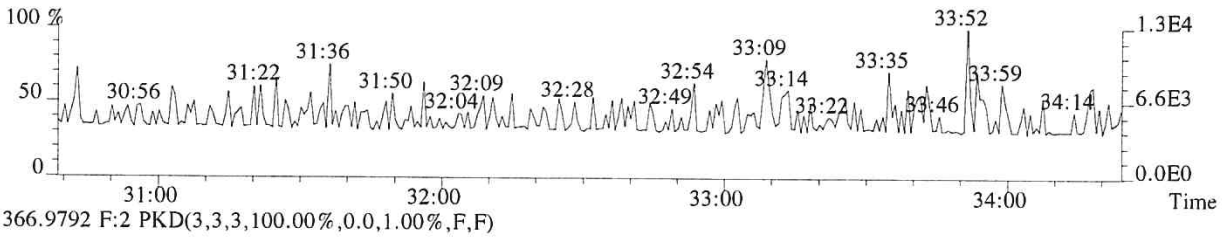
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4012.0,1.00%,F,T)



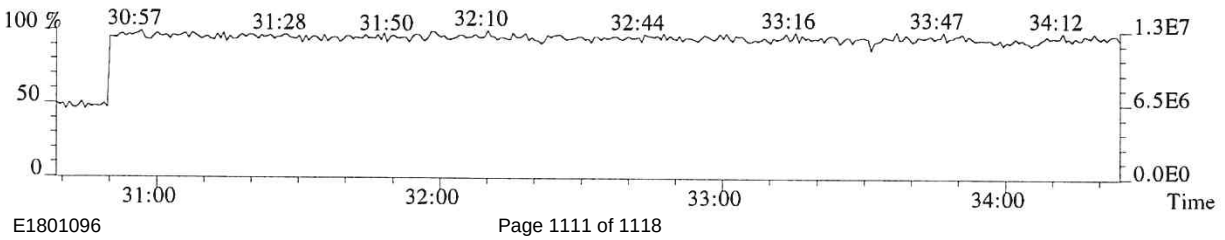
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3412.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

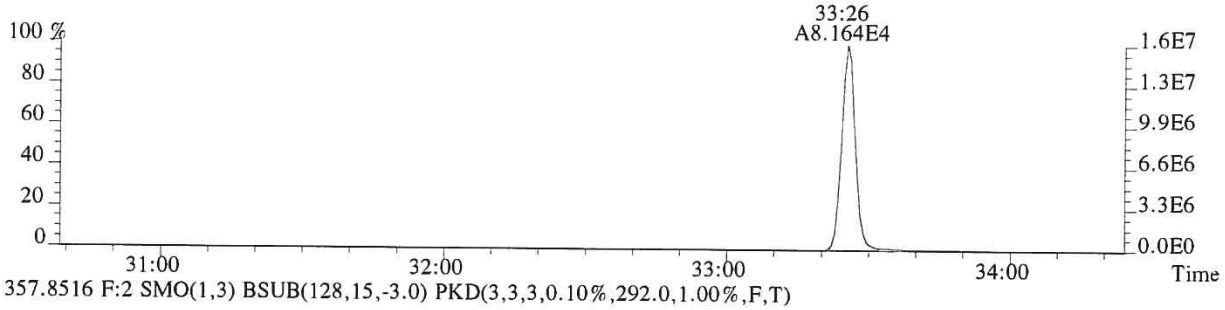


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

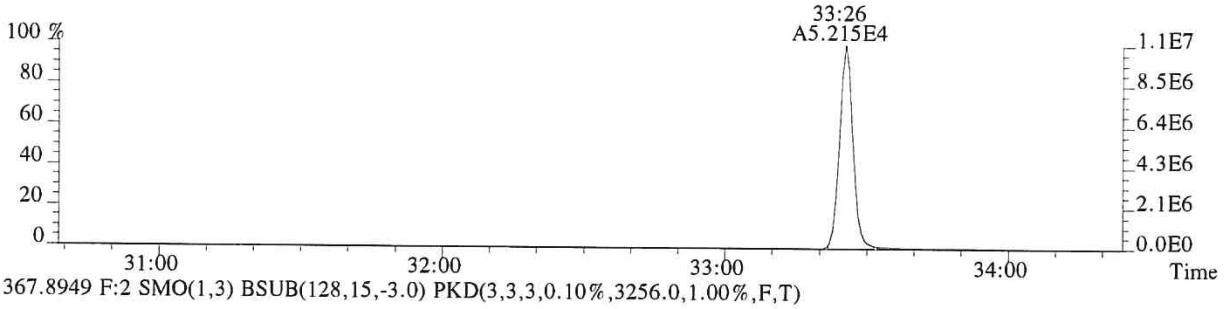


059759

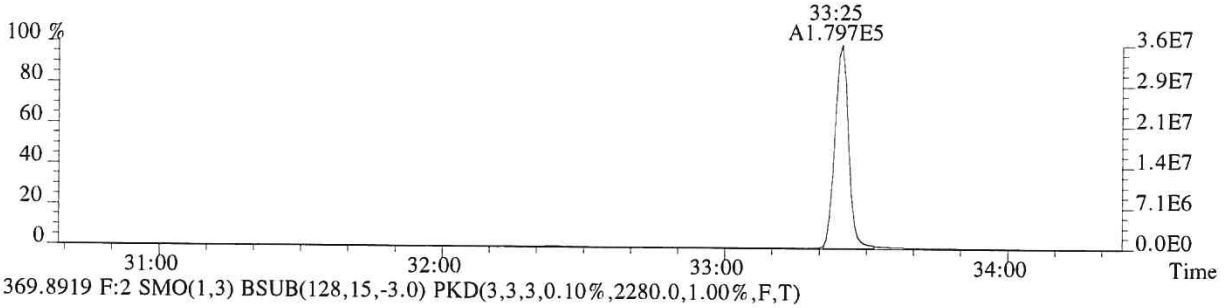
File:P614690 #1-339 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3144.0,1.00%,F,T)



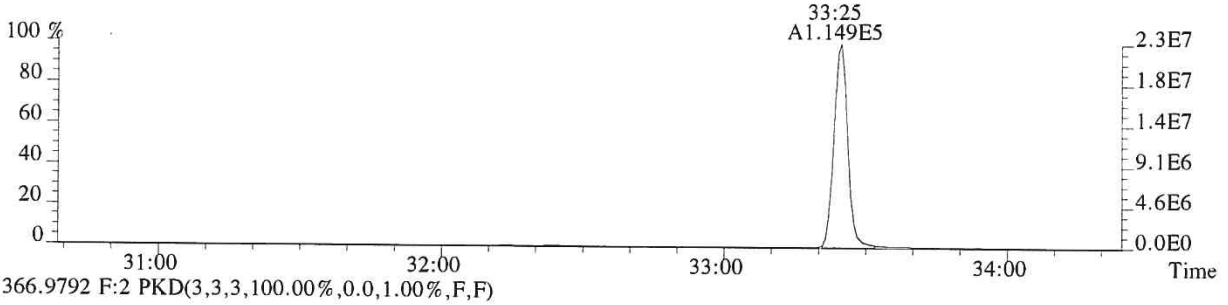
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,292.0,1.00%,F,T)



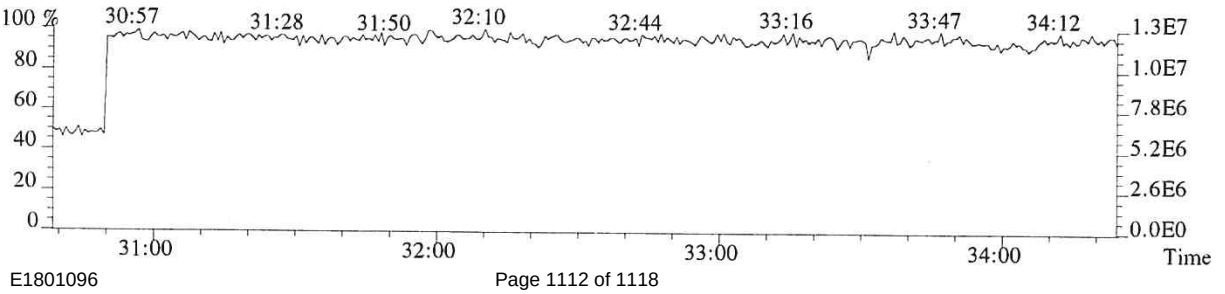
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3256.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2280.0,1.00%,F,T)

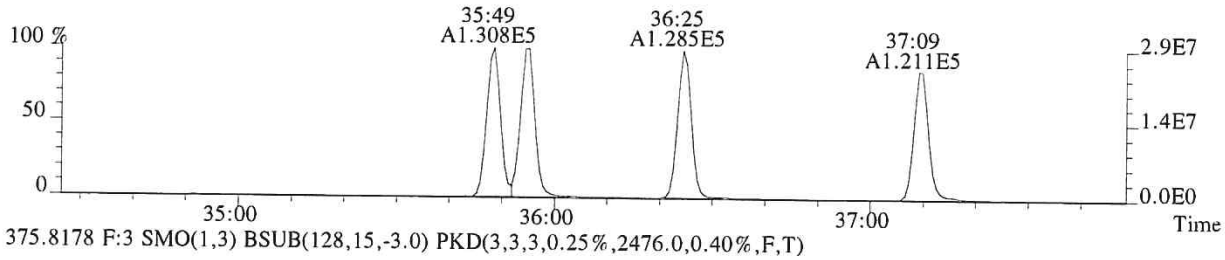


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

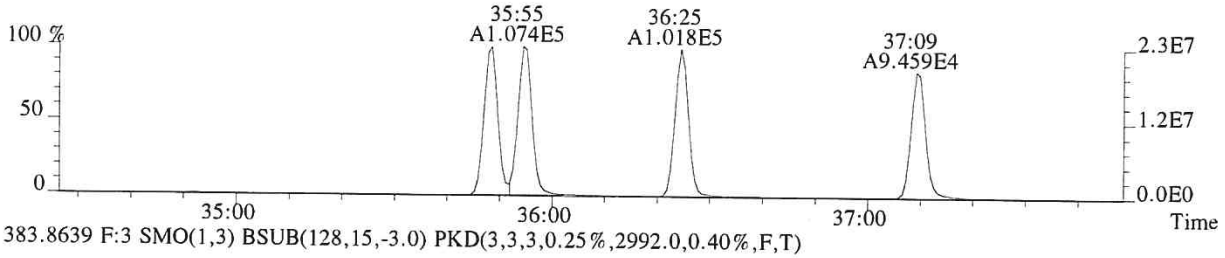


059760

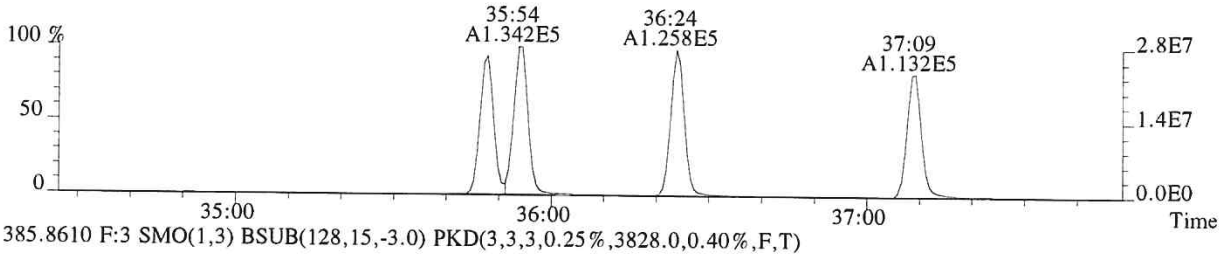
File:P614690 #1-304 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2352.0,0.40%,F,T)



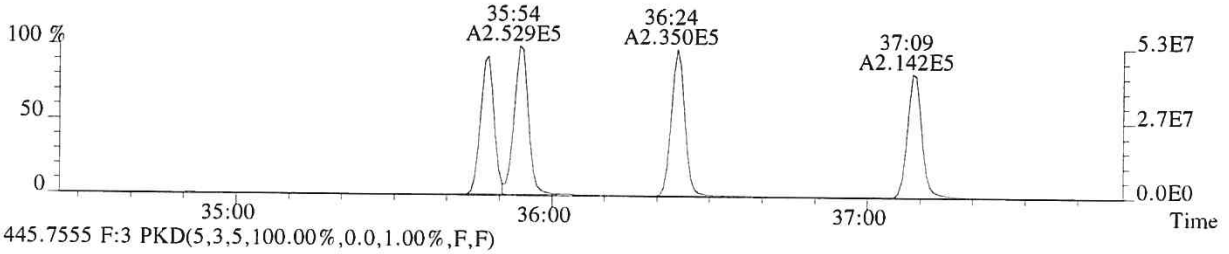
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2476.0,0.40%,F,T)



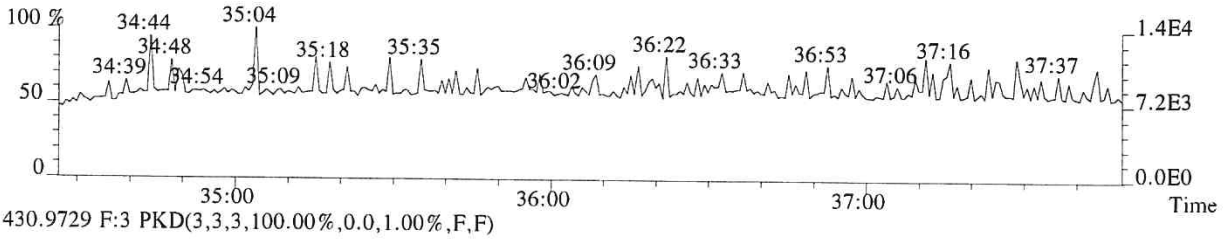
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2992.0,0.40%,F,T)



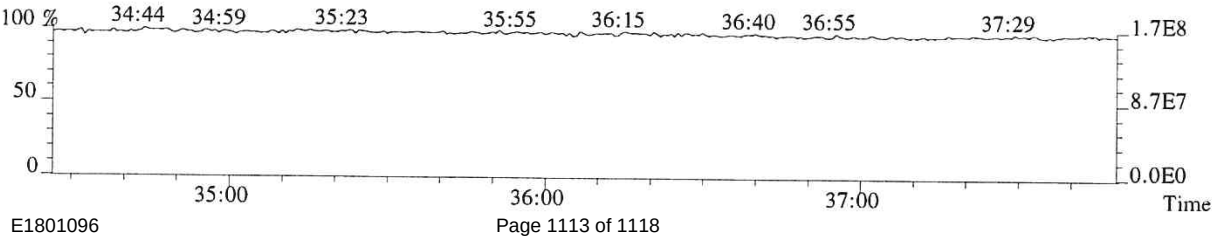
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3828.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

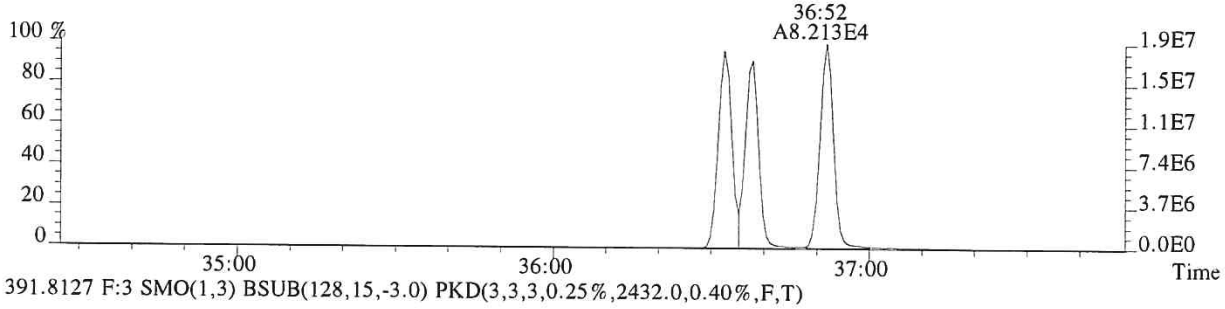


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

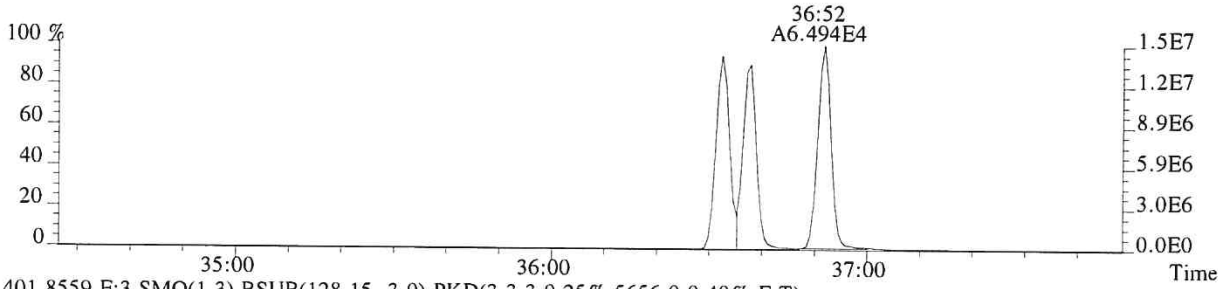


059761

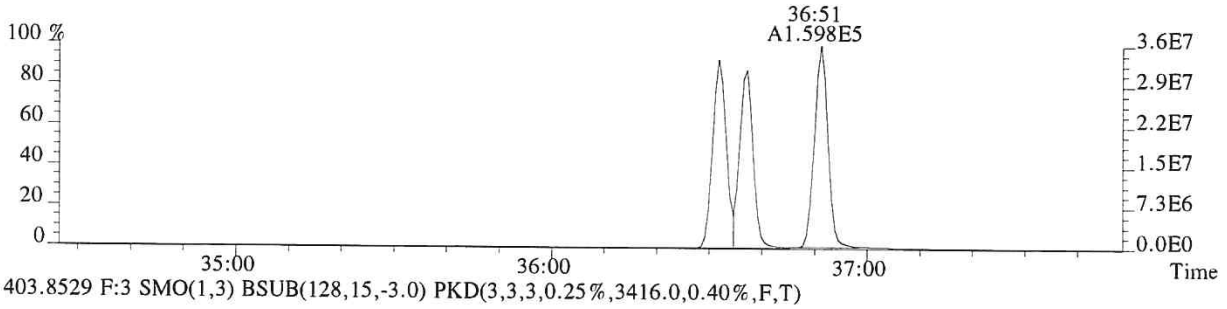
File:P614690 #1-304 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1588.0,0.40%,F,T)



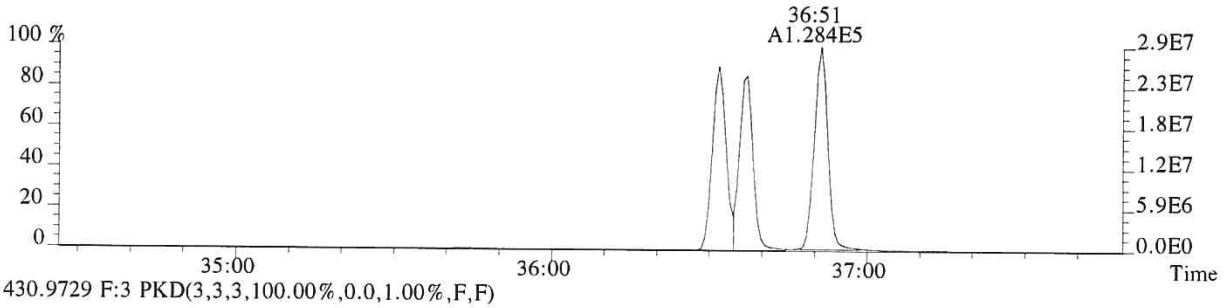
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2432.0,0.40%,F,T)



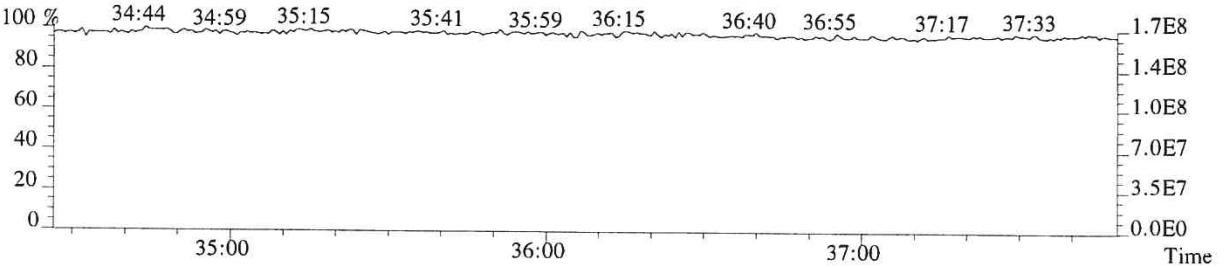
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5656.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3416.0,0.40%,F,T)

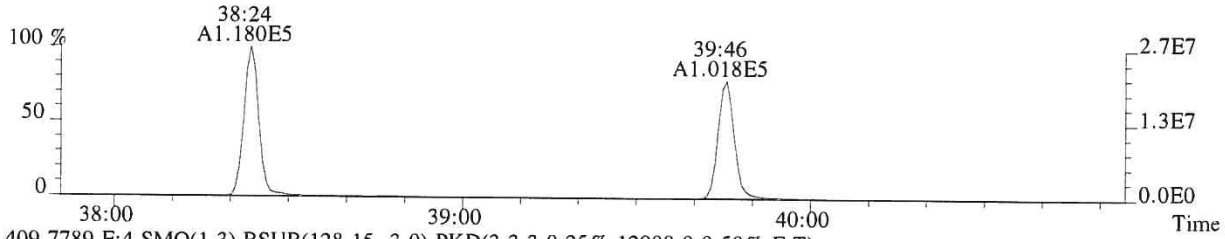


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

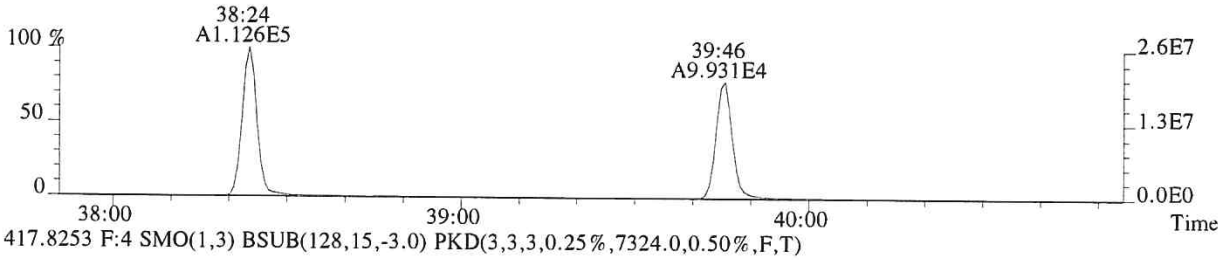


059762

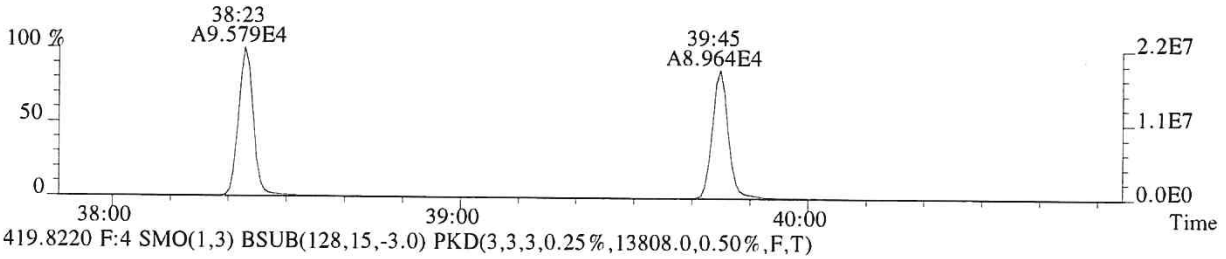
File:P614690 #1-276 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4460.0,0.50%,F,T)



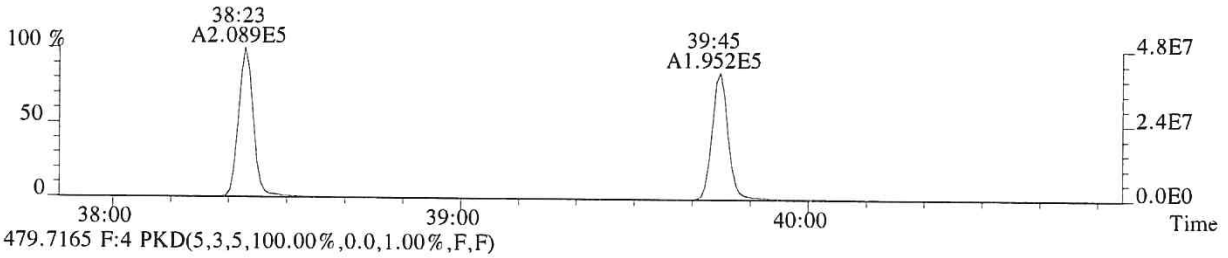
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12908.0,0.50%,F,T)



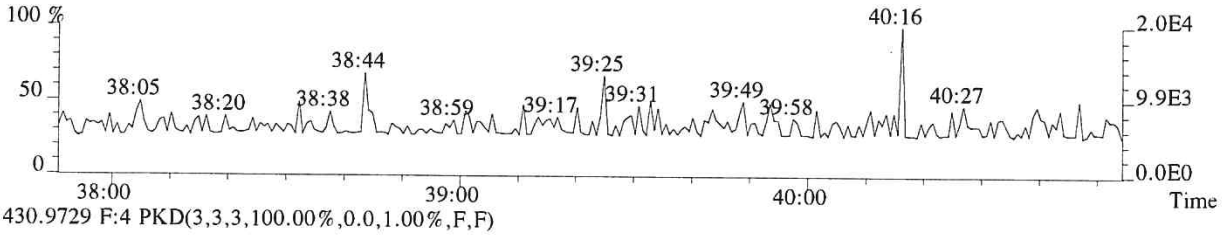
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7324.0,0.50%,F,T)



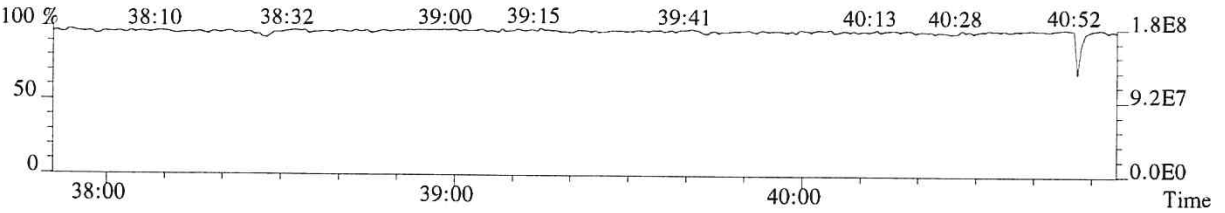
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,13808.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

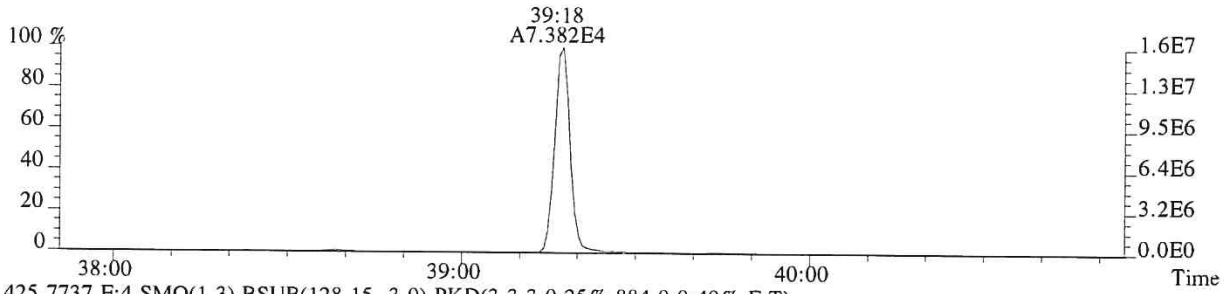


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

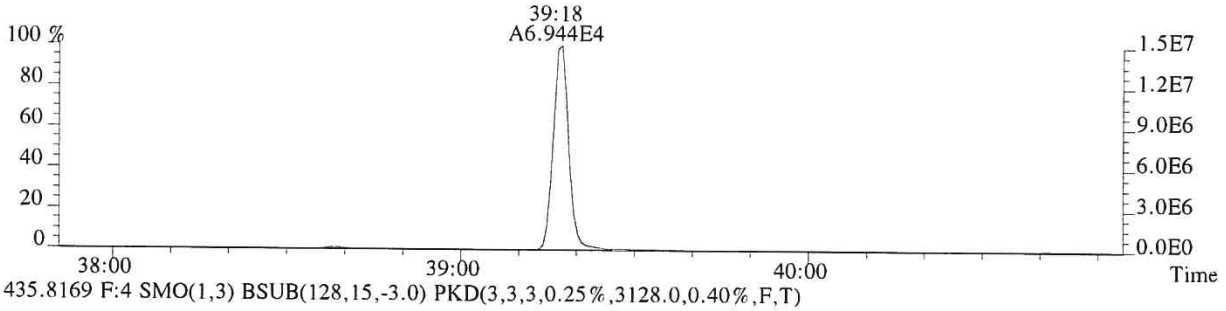


059763

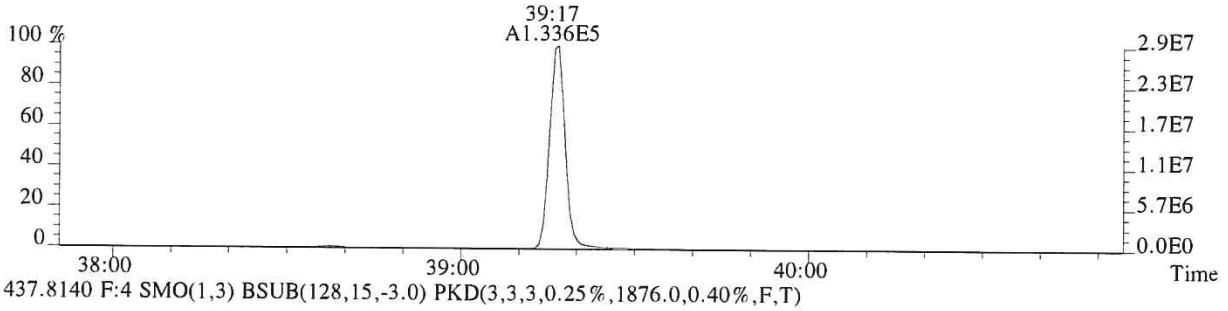
File:P614690 #1-276 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2280.0,0.40%,F,T)



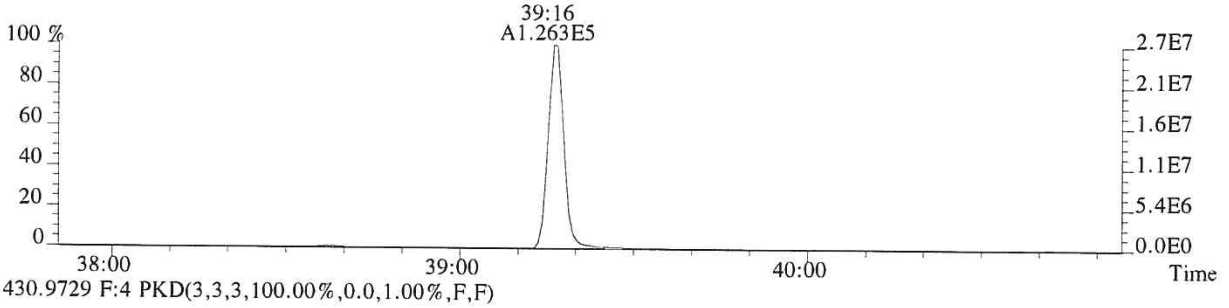
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,884.0,0.40%,F,T)



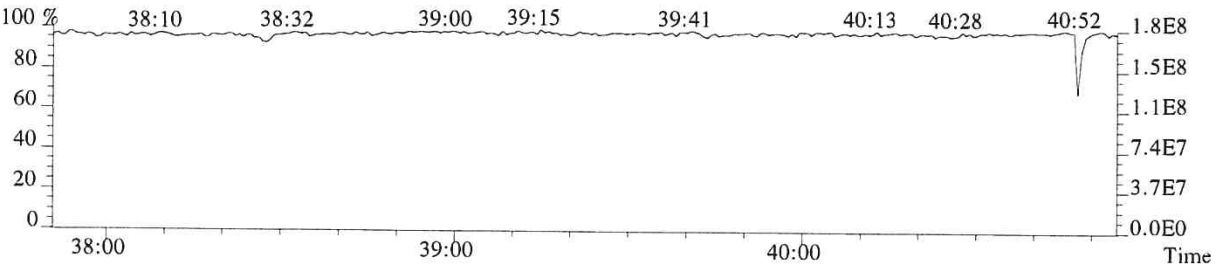
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3128.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1876.0,0.40%,F,T)

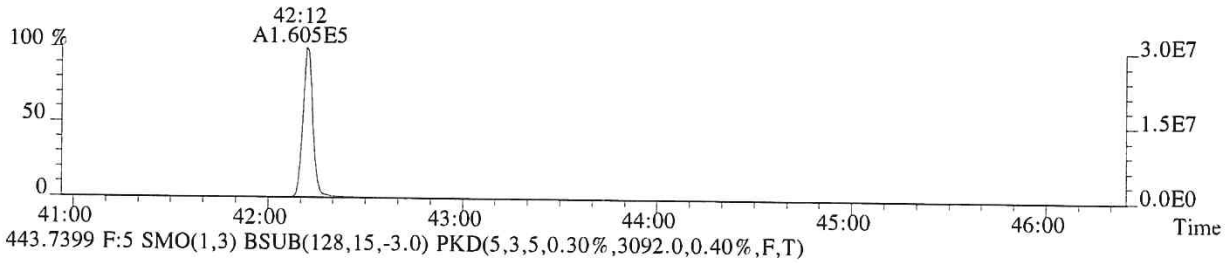


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

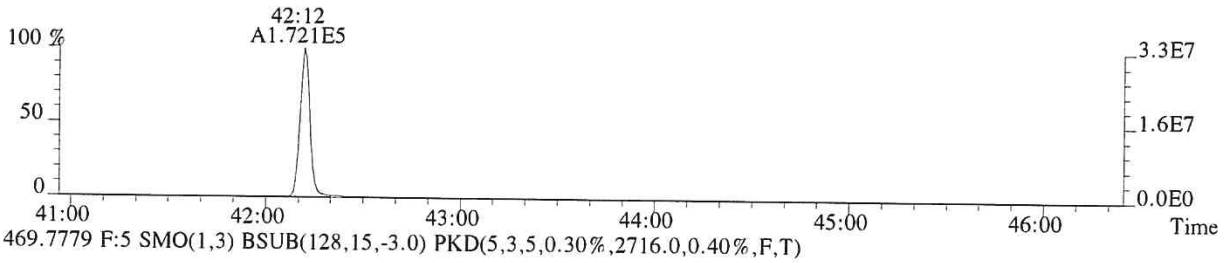


059764

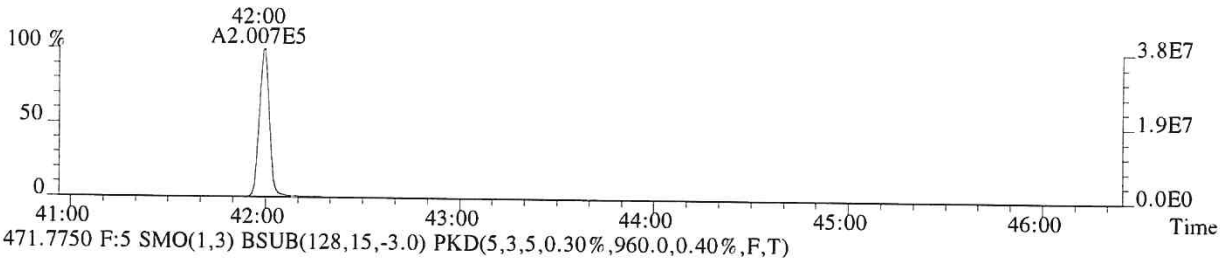
File:P614690 #1-493 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1500.0,0.40%,F,T)



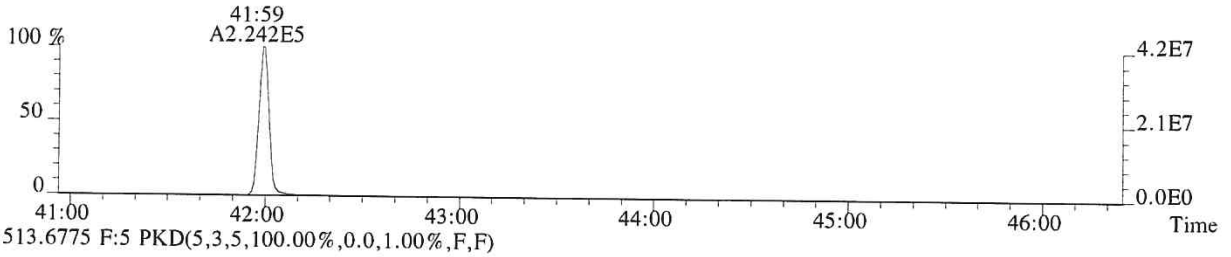
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3092.0,0.40%,F,T)



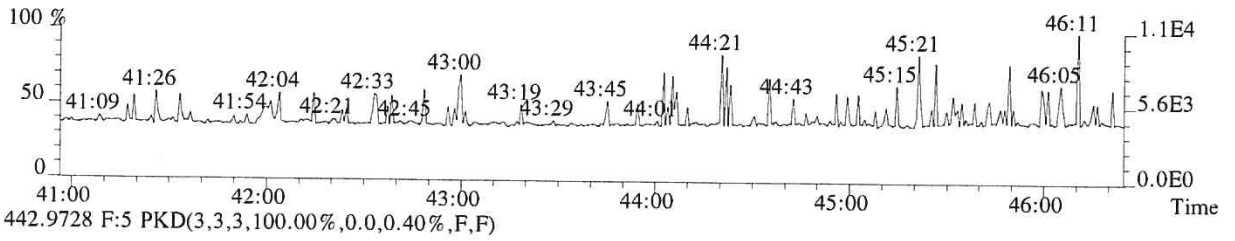
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2716.0,0.40%,F,T)



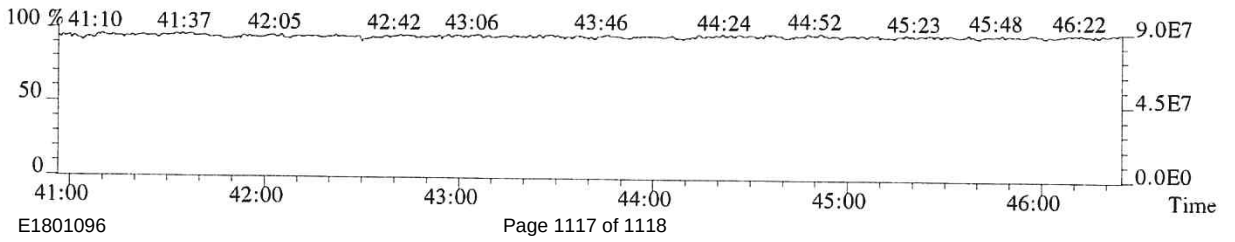
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,960.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

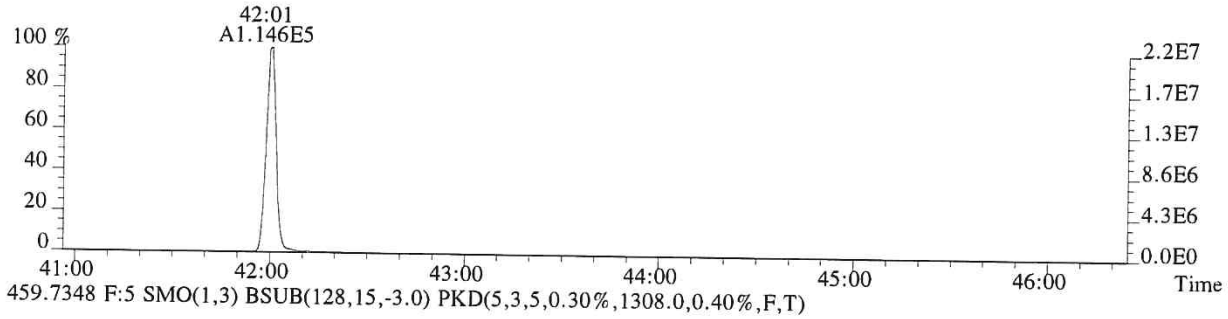


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

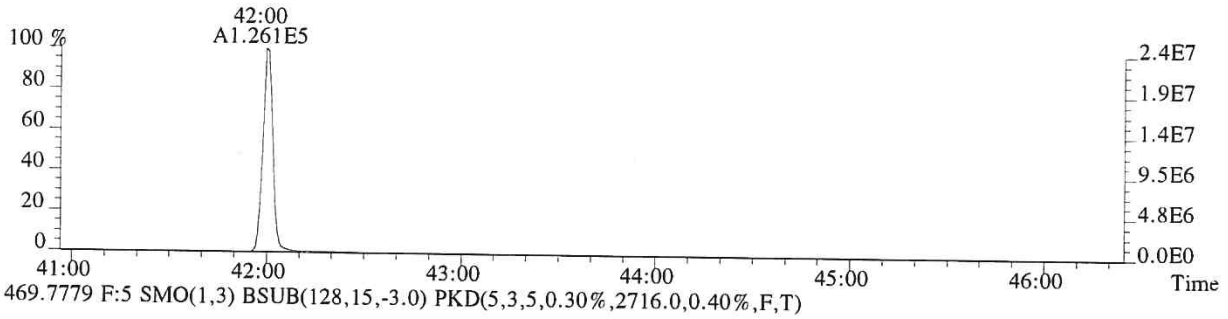


059765

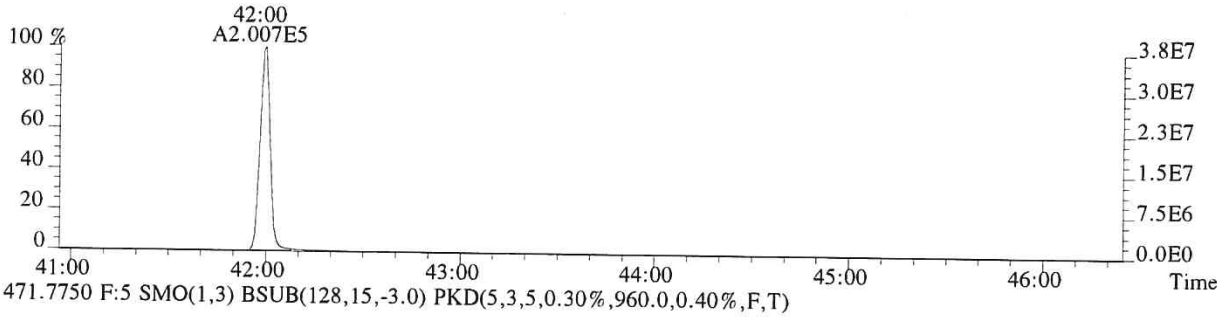
File:P614690 #1-493 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1172.0,0.40%,F,T)



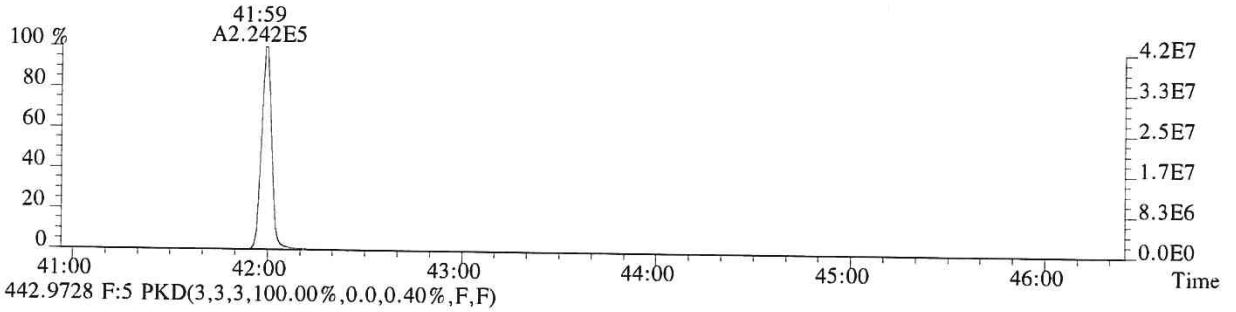
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1308.0,0.40%,F,T)



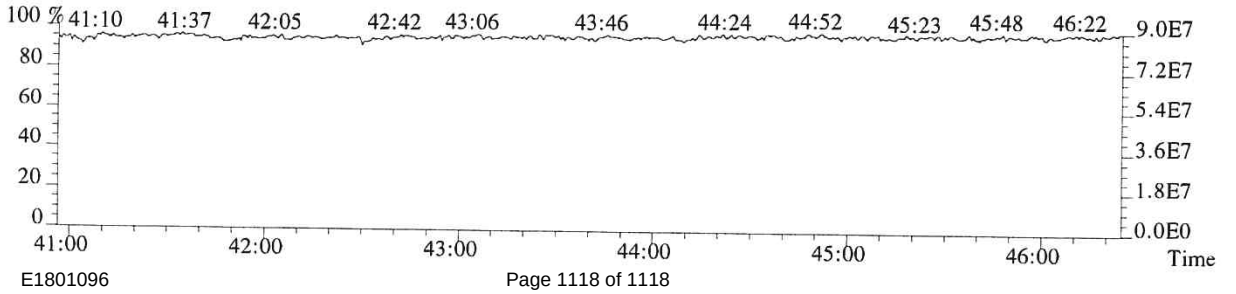
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2716.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,960.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059766

January 02, 2019 Service Request No:E1801136

Craig Hutchings
Integral Consulting, Inc.
1205 West Bay Drive NW
Olympia, WA 98502-4670

Laboratory Results for: C1887-0501

Dear Craig,

Enclosed are the results of the sample(s) submitted to our laboratory December 21, 2018
For your reference, these analyses have been assigned our service request number **E1801136.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kristin Brown

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	Integral	**Service Request No.:**	E1801136
Project:	C1887-0501		
Sample Matrix:	Sediment		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Sample on hold originally reported on a separate ALS service request number; samples were activated and reported under E1801136.

Data Validation Notes and Discussion

B flags – Method Blanks

The Method Blank EQ1800529-01 contained low levels of various dioxins furans compounds below the Method Reporting Limit (MRL). The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

Precision and Accuracy:

EQ1800529: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within control limits.

E flags

When OCDD exceed the upper method calibration limit (MCL), we use an 'E' flag on the Sample Analytical Report results page when the detector is not saturated. Samples E1801136-006, 014, 018, and 020 are reported with an 'E' flag to denote that they had concentration greater than the highest calibration point. The process of dilution is counter to the isotopic dilution technique that the laboratory uses to determine recovery and produces variability in the final value. The laboratory only dilutes when detector saturation occurs.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

P flags

Chlorodiphenyl ether interference was present at the retention time of the target analyte 1,2,3,6,7,8-HxCDF in samples E1801136-014, 019, 020 and 1,2,3,4,6,7,8-HpCDF in sample E1801136-017. Reported result should be considered an estimate.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

Dilutions

Various samples had elevated levels of target analytes and required a dilution. The undiluted and diluted results were combined into one Total TEQ summary report for each sample. This reports a 'Total' result that includes the most appropriate concentration found for the associated target analyte.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

Manual Integrations

For this type of instrumentation and software, manual integration may be required frequently to correct inaccurate integrations performed by the processing software. These manual integrations are indicated in the raw data with a before and after chromatogram and are stamped with the reason for integration.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds are not included in the 'Total'
- The 1:1 and associated dilution have been combined into one TEQ Summary report

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for

which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1801136-001	SL0079	11/8/2018	0845
E1801136-002	SL0080	11/8/2018	0850
E1801136-003	SL0081	11/8/2018	0855
E1801136-004	SL0082	11/8/2018	0900
E1801136-005	SL0083	11/8/2018	0905
E1801136-006	SL0085	11/8/2018	1050
E1801136-007	SL0086	11/8/2018	1055
E1801136-008	SL0087	11/8/2018	1100
E1801136-009	SL0088	11/8/2018	1105
E1801136-010	SL0089	11/8/2018	1110
E1801136-011	SL0116	11/11/2018	1025
E1801136-012	SL0117	11/11/2018	1030
E1801136-013	SL0118	11/11/2018	1035
E1801136-014	SL0124	11/11/2018	1525
E1801136-015	SL0126	11/11/2018	1535
E1801136-016	SL0127	11/11/2018	1540
E1801136-017	SL0128	11/11/2018	1545
E1801136-018	SL0141	11/13/2018	0940
E1801136-019	SL0142	11/13/2018	0945
E1801136-020	SL0143	11/13/2018	0950

Service Request Summary

Folder #: **E1801136**
Client Name: Integral Consulting, Incorporated
Project Name: C1887-0501
Project Number:

Report To: Craig Hutchings
Integral Consulting, Inc.
1205 West Bay Drive NW
Olympia, WA 98502-4670
USA
Phone Number: 360-705-3534
Cell Number:
Fax Number:
E-mail: chutchings@integral-corp.com

Project Chemist: Kristin Brown
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 11/09/18 - 11/14/18
Internal Due Date: 1/11/2019
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N, Y
Report to MDL?: N, Y
P.O. Number:
EDD: Integral-UCR

20 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 2D, EHRMS-WIC 2A, EHRMS-WIC 1A
Pressure Gas:

				HOUSTON	
Lab Samp No.	**Client Samp No**	**Matrix**	**Collected**	Dioxins Furans/1613B	Total Solids/ALS SOP
E1801136-001	SL0079	Sediment	11/08/18 0845	**IV**	**IV**
E1801136-002	SL0080	Sediment	11/08/18 0850	**IV**	**IV**
E1801136-003	SL0081	Sediment	11/08/18 0855	**IV**	**IV**
E1801136-004	SL0082	Sediment	11/08/18 0900	**IV**	**IV**
E1801136-005	SL0083	Sediment	11/08/18 0905	**IV**	**IV**
E1801136-006	SL0085	Sediment	11/08/18 1050	**IV**	**IV**
E1801136-007	SL0086	Sediment	11/08/18 1055	**IV**	**IV**
E1801136-008	SL0087	Sediment	11/08/18 1100	**IV**	**IV**
E1801136-009	SL0088	Sediment	11/08/18 1105	**IV**	**IV**
E1801136-010	SL0089	Sediment	11/08/18 1110	**IV**	**IV**
E1801136-011	SL0116	Sediment	11/11/18 1025	**IV**	**IV**
E1801136-012	SL0117	Sediment	11/11/18 1030	**IV**	**IV**
E1801136-013	SL0118	Sediment	11/11/18 1035	**IV**	**IV**
E1801136-014	SL0124	Sediment	11/11/18 1525	**IV**	**IV**
E1801136-015	SL0126	Sediment	11/11/18 1535	**IV**	**IV**
E1801136-016	SL0127	Sediment	11/11/18 1540	**IV**	**IV**

Service Request Summary

Folder #: **E1801136**
Client Name: Integral Consulting, Incorporated
Project Name: C1887-0501
Project Number:

Report To: Craig Hutchings
Integral Consulting, Inc.
1205 West Bay Drive NW
Olympia, WA 98502-4670
USA
Phone Number: 360-705-3534
Cell Number:
Fax Number:
E-mail: chutchings@integral-corp.com

Project Chemist: Kristin Brown
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 11/09/18 - 11/14/18
Internal Due Date: 1/11/2019
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N, Y
Report to MDL?: N, Y
P.O. Number:
EDD: Integral-UCR

20 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 2D, EHRMS-WIC 2A, EHRMS-WIC 1A
Pressure Gas:

				HOUSTON	
Lab Samp No.	**Client Samp No**	**Matrix**	**Collected**	Dioxins Furans/1613B	Total Solids/ALS SOP
E1801136-017	SL0128	Sediment	11/11/18 1545	**IV**	**IV**
E1801136-018	SL0141	Sediment	11/13/18 0940	**IV**	**IV**
E1801136-019	SL0142	Sediment	11/13/18 0945	**IV**	**IV**
E1801136-020	SL0143	Sediment	11/13/18 0950	**IV**	**IV**

Service Request Summary

Folder #:	**E1801136**
Client Name:	Integral Consulting, Incorporated
Project Name:	C1887-0501
Project Number:	
Report To:	Craig Hutchings Integral Consulting, Inc. 1205 West Bay Drive NW Olympia, WA 98502-4670 USA
Phone Number:	360-705-3534
Cell Number:	
Fax Number:	
E-mail:	chutchings@integral-corp.com

Project Chemist:	Kristin Brown
Originating Lab:	HOUSTON
Logged By:	ALOPEZ
Date Received:	11/09/18 - 11/14/18
Internal Due Date:	1/11/2019
QAP:	LAB QAP
Qualifier Set:	HRMS Qualifier Set
Formset:	Lab Standard
Merged?:	N, Y
Report to MDL?:	N, Y
P.O. Number:	
EDD:	Integral-UCR

20 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 2D, EHRMS-WIC 2A, EHRMS-WIC 1A

Pressure Gas:

Superset Summary

Service Request: E1801136 **SuperSet Reference:** 18-0000493387 rev 00

Analytical Method: **1613B**

Calibrations: 01/24/18

Data Files:

Raw Data	Begin CCAL	Method Blank	Lab ID
P519687	P519683	P519713	E1801136-001
P519717	P519710	P519713	E1801136-002
P519688	P519683	P519713	E1801136-002.R01
P519718	P519710	P519713	E1801136-003
P519689	P519683	P519713	E1801136-003.R01
P519719	P519710	P519713	E1801136-004
P519690	P519683	P519713	E1801136-004.R01
P519691	P519683	P519713	E1801136-005
P519692	P519683	P519713	E1801136-006
P519720	P519710	P519713	E1801136-007
P519693	P519683	P519713	E1801136-007.R01
P519721	P519710	P519713	E1801136-008
P519694	P519683	P519713	E1801136-008.R01
P519722	P519710	P519713	E1801136-009
P519695	P519683	P519713	E1801136-009.R01
P519703	P519698	P519713	E1801136-019
P519704	P519698	P519713	E1801136-020
P519713	P519710	P519713	EQ1800529-01

Calibrations: 09/25/18

Data Files:

Raw Data	Begin CCAL	Method Blank	Lab ID
P616280	P616277	P519713	E1801136-010
P616281	P616277	P519713	E1801136-011
P616282	P616277	P519713	E1801136-012
P616283	P616277	P519713	E1801136-013
P616284	P616277	P519713	E1801136-014
P616306	P616302	P519713	E1801136-015
P616285	P616277	P519713	E1801136-015.R01
P616307	P616302	P519713	E1801136-016
P616286	P616277	P519713	E1801136-016.R01
P616287	P616277	P519713	E1801136-017
P616288	P616277	P519713	E1801136-018
P616289	P616277	P519713	EQ1800529-02
P616290	P616277	P519713	EQ1800529-03

Data Qualifiers

HRMS Qualifier Set

B	Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E	Estimated value. The reported concentration is above the calibration range of the instrument.
H	Sample extracted and/or analyzed out of suggested holding time.
J	Estimated value. The reported concentration is below the MRL.
K	The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P	Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q	Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S	Signal saturated detector. Result reported from dilution.
U	Compound was analyzed for, but was not detected (ND).
X	See Case Narrative.
Y	Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i	The MDL/MRL have been elevated due to a matrix interference.

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E181136 (DB-5MSUI) SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
12/30/18	LKL	001 - 009

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
12/30/18	LG	001-009

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E1801136 (DB-5MSUI) SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
12/31/18	LKL	010 - 018

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
12/31/18	LG	010 - 018

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E1801136 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
12/30/18	JC	-019, -020

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
12/31/18	LG	~~00~~ 019-020

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E1801136 (DB-5MSUI) SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
12/31/18	LKL	002DL - 004DL, 007DL - 009DL

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
12/31/18	LG	002DL - 004DL, 007DL, 009DL

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E1801136 | DB-5MSUI | SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
12/31/18	LKL	015 DL, 016 DL

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
12/31/18	LG	015DL 016DL

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 328819 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/ALOPEZ **Prep Method:** Method Soxhlet **Prep Date/Time:** 12/26/18 07:44 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1801136-001	SL0079	.01	1613B/Dioxins Furans			Sediment	10.519g	Brown Clay
2	E1801136-002	SL0080	.01	1613B/Dioxins Furans			Sediment	10.578g	Brown + Black Clay
3	E1801136-003	SL0081	.01	1613B/Dioxins Furans			Sediment	10.488g	Moist Brown + Black Sand
4	E1801136-004	SL0082	.01	1613B/Dioxins Furans			Sediment	10.836g	Brown Mud
5	E1801136-005	SL0083	.01	1613B/Dioxins Furans			Sediment	10.633g	Brown Mud
6	E1801136-006	SL0085	.01	1613B/Dioxins Furans			Sediment	10.301g	Brown Clay
7	E1801136-007	SL0086	.01	1613B/Dioxins Furans			Sediment	10.275g	Brown + Black Clay + Rocks
8	E1801136-008	SL0087	.01	1613B/Dioxins Furans			Sediment	10.874g	Brown Mud
9	E1801136-009	SL0088	.01	1613B/Dioxins Furans			Sediment	10.861g	Brown Mud
10	E1801136-010	SL0089	.01	1613B/Dioxins Furans			Sediment	10.200g	Brown Mud
11	E1801136-011	SL0116	.01	1613B/Dioxins Furans			Sediment	10.308g	Brown Mud
12	E1801136-012	SL0117	.01	1613B/Dioxins Furans			Sediment	10.270g	Brown Mud
13	E1801136-013	SL0118	.01	1613B/Dioxins Furans			Sediment	10.891g	Brown Mud
14	E1801136-014	SL0124	.01	1613B/Dioxins Furans			Sediment	10.649g	Brown Mud
15	E1801136-015	SL0126	.01	1613B/Dioxins Furans			Sediment	10.667g	Brown Mud
16	E1801136-016	SL0127	.01	1613B/Dioxins Furans			Sediment	10.871g	Brown + Black Mud
17	E1801136-017	SL0128	.01	1613B/Dioxins Furans			Sediment	10.479g	Brown Mud
18	E1801136-018	SL0141	.01	1613B/Dioxins Furans			Sediment	10.040g	Brown Mud
19	E1801136-019	SL0142	.01	1613B/Dioxins Furans			Sediment	10.284g	Moist Brown Dirt + Rocks
20	E1801136-020	SL0143	.01	1613B/Dioxins Furans			Sediment	10.443g	Brown + Black Mud + Rocks
21	EQ1800529-01	MB		1613B/Dioxins Furans			Solid	10.281g	
22	EQ1800529-02	LCS		1613B/Dioxins Furans			Solid	10.324g	
23	EQ1800529-03	DLCS		1613B/Dioxins Furans			Solid	10.343g	

Spiking Solutions

Name: 1613B Matrix Working Standard Inventory ID 195564 Logbook Ref: 195564 AL 12/11/18 2-20 ng/mL Expires On: 06/09/2019

EQ1800529-02 100.00µL EQ1800529-03 100.00µL

Name: 8290/1613B Cleanup Working Standard Inventory ID 195630 Logbook Ref: 195630 tw012/14/18 8ng/ml Expires On: 04/27/2019

E1801136-001	100.00µL	E1801136-002	100.00µL	E1801136-003	100.00µL	E1801136-004	100.00µL	E1801136-005	100.00µL	E1801136-006	100.00µL
E1801136-007	100.00µL	E1801136-008	100.00µL	E1801136-009	100.00µL	E1801136-010	100.00µL	E1801136-011	100.00µL	E1801136-012	100.00µL
E1801136-013	100.00µL	E1801136-014	100.00µL	E1801136-015	100.00µL	E1801136-016	100.00µL	E1801136-017	100.00µL	E1801136-018	100.00µL
E1801136-019	100.00µL	E1801136-020	100.00µL	EQ1800529-01	100.00µL	EQ1800529-02	100.00µL	EQ1800529-03	100.00µL		

Preparation Information Benchsheet

Prep Run#: 328819 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/ALOPEZ **Prep Method:** Method Soxhlet **Prep Date/Time:** 12/26/18 07:44 AM

Name:	1613B Labeled Working Standard	Inventory ID	195849	Logbook Ref:	195849 AL 12/26/18 2-4 ng/mL	Expires On:	01/31/2019

E1801136-001	1,000.00µL	E1801136-002	1,000.00µL	E1801136-003	1,000.00µL	E1801136-004	1,000.00µL	E1801136-005	1,000.00µL	E1801136-006	1,000.00µL
E1801136-007	1,000.00µL	E1801136-008	1,000.00µL	E1801136-009	1,000.00µL	E1801136-010	1,000.00µL	E1801136-011	1,000.00µL	E1801136-012	1,000.00µL
E1801136-013	1,000.00µL	E1801136-014	1,000.00µL	E1801136-015	1,000.00µL	E1801136-016	1,000.00µL	E1801136-017	1,000.00µL	E1801136-018	1,000.00µL
E1801136-019	1,000.00µL	E1801136-020	1,000.00µL	EQ1800529-01	1,000.00µL	EQ1800529-02	1,000.00µL	EQ1800529-03	1,000.00µL		

Preparation Materials

Carbon, High Purity	12/7/18 carbon tw (195519)	Ethyl Acetate 99.9% Minimum EtOAc	tw ethyl acet 080218 (192158)	Glass Wool	112018 tw glasswool (195079)
Hexanes 95%	JG 12/17/18 #2 (195674)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	AL (195005)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Tridecane (n-Tridecane)	AL 12/12/18 (195585)	Toluene 99.9% Minimum	JG 12/17/18 (195675)	sulfuric acid	AL 10/11/18 (194007)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	AL 10/12/18 (194060)	Silica Gel	AL 10/11/18 (194005)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	12/26/18 07:44	Started:	12/28/18 09:00	Started:	12/28/18 11:00	Started:	12/29/18 08:00
Finished:	12/27/18 08:00	Finished:	12/28/18 10:00	Finished:	12/28/18 14:00	Finished:	12/29/18 11:00
By:	TWOODS	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:45
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0079	**Units:**	ng/Kg
Lab Code:	E1801136-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 12:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.519g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519687	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	159		0.481	0.595	0.76	1.001	1
1,2,3,7,8-PeCDD	1.38	**J**	0.104	2.97	1.54	1.001	1
1,2,3,4,7,8-HxCDD	0.536	**J**	0.109	2.97	1.16	1.000	1
1,2,3,6,7,8-HxCDD	1.05	**JK**	0.123	2.97	1.44	1.000	1
1,2,3,7,8,9-HxCDD	1.07	**J**	0.114	2.97	1.26	1.007	1
1,2,3,4,6,7,8-HpCDD	34.3		0.267	2.97	1.01	1.000	1
OCDD	4310		0.353	5.95	0.89	1.000	1
2,3,7,8-TCDF	308		0.304	0.595	0.74	1.001	1
1,2,3,7,8-PeCDF	9.07		0.199	2.97	1.50	1.000	1
2,3,4,7,8-PeCDF	8.04		0.221	2.97	1.56	1.001	1
1,2,3,4,7,8-HxCDF	16.0		0.0906	2.97	1.12	1.000	1
1,2,3,6,7,8-HxCDF	4.40		0.0876	2.97	1.15	1.000	1
1,2,3,7,8,9-HxCDF	1.67	**J**	0.111	2.97	1.16	1.001	1
2,3,4,6,7,8-HxCDF	1.06	**J**	0.101	2.97	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	8.94		0.146	2.97	1.15	1.000	1
1,2,3,4,7,8,9-HpCDF	1.53	**J**	0.205	2.97	0.89	1.001	1
OCDF	18.6		0.356	5.95	0.77	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:45
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0079	**Units:**	ng/Kg
Lab Code:	E1801136-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 12:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.519g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519687	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	175		0.481	0.595	0.68		1
Total Penta-Dioxins	1.83	**J**	0.104	2.97	1.67		1
Total Hexa-Dioxins	10.9		0.115	2.97	1.38		1
Total Hepta-Dioxins	83.2		0.267	2.97	1.01		1
Total Tetra-Furans	566		0.304	0.595	0.66		1
Total Penta-Furans	26.2		0.210	2.97	1.66		1
Total Hexa-Furans	28.0		0.0968	2.97	1.10		1
Total Hepta-Furans	19.8		0.174	2.97	1.15		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:45
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0079	**Units:**	Percent
Lab Code:	E1801136-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 12:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.519g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519687	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	797.809	40		25-164	0.80	1.026
13C-1,2,3,7,8-PeCDD	2000	1369.399	68		25-181	1.58	1.225
13C-1,2,3,4,7,8-HxCDD	2000	1153.089	58		32-141	1.29	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1228.700	61		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1501.519	75		23-140	1.07	1.075
13C-OCDD	4000	2482.374	62		17-157	0.89	1.158
13C-2,3,7,8-TCDF	2000	968.084	48		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1186.961	59		24-185	1.60	1.175
13C-2,3,4,7,8-PeCDF	2000	1136.488	57		21-178	1.60	1.213
13C-1,2,3,4,7,8-HxCDF	2000	934.559	47		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	971.771	49		26-123	0.51	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1034.958	52		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	960.838	48		28-136	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	981.834	49		28-143	0.44	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	1142.077	57		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	523.199	65		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:45
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0079	**Units:**	ng/Kg
Lab Code:	E1801136-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**159**	0.481	0.595	1	1	159
1,2,3,7,8-PeCDD	**1.38**	0.104	2.97	1	1	1.38
1,2,3,4,7,8-HxCDD	**0.536**	0.109	2.97	1	0.1	0.0536
1,2,3,6,7,8-HxCDD	**1.05**	0.123	2.97	1	0.1	0.105
1,2,3,7,8,9-HxCDD	**1.07**	0.114	2.97	1	0.1	0.107
1,2,3,4,6,7,8-HpCDD	**34.3**	0.267	2.97	1	0.01	0.343
OCDD	**4310**	0.353	5.95	1	0.0003	1.29
2,3,7,8-TCDF	**308**	0.304	0.595	1	0.1	30.8
1,2,3,7,8-PeCDF	**9.07**	0.199	2.97	1	0.03	0.272
2,3,4,7,8-PeCDF	**8.04**	0.221	2.97	1	0.3	2.41
1,2,3,4,7,8-HxCDF	**16.0**	0.0906	2.97	1	0.1	1.60
1,2,3,6,7,8-HxCDF	**4.40**	0.0876	2.97	1	0.1	0.440
1,2,3,7,8,9-HxCDF	**1.67**	0.111	2.97	1	0.1	0.167
2,3,4,6,7,8-HxCDF	**1.06**	0.101	2.97	1	0.1	0.106
1,2,3,4,6,7,8-HpCDF	**8.94**	0.146	2.97	1	0.01	0.0894
1,2,3,4,7,8,9-HpCDF	**1.53**	0.205	2.97	1	0.01	0.0153
OCDF	**18.6**	0.356	5.95	1	0.0003	0.00558
		Total TEQ				198

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:45
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0079	**Units:**	Percent
Lab Code:	E1801136-001	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	6.249g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	79.9		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:50
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0080	**Units:**	ng/Kg
Lab Code:	E1801136-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 13:29
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.578g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519717	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	13400		150	150	0.79	1.001	100
1,2,3,7,8-PeCDD	49.0		0.119	2.96	1.60	1.001	1
1,2,3,4,7,8-HxCDD	1.18	**J**	0.261	2.96	1.13	1.000	1
1,2,3,6,7,8-HxCDD	9.19		0.296	2.96	1.24	1.000	1
1,2,3,7,8,9-HxCDD	4.00		0.272	2.96	1.08	1.007	1
1,2,3,4,6,7,8-HpCDD	307		0.129	2.96	1.04	1.000	1
OCDD	6250		42.6	592	0.88	1.000	100
2,3,7,8-TCDF	23600		66.9	66.9	0.75	1.001	100
1,2,3,7,8-PeCDF	551		0.746	2.96	1.52	1.001	1
2,3,4,7,8-PeCDF	464		0.784	2.96	1.53	1.001	1
1,2,3,4,7,8-HxCDF	1160		0.799	2.96	1.21	1.000	1
1,2,3,6,7,8-HxCDF	273		0.792	2.96	1.22	1.000	1
1,2,3,7,8,9-HxCDF	130		0.964	2.96	1.22	1.001	1
2,3,4,6,7,8-HxCDF	59.3		0.872	2.96	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	444		1.51	2.96	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	144		2.08	2.96	1.03	1.000	1
OCDF	262		0.285	5.92	0.89	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:50
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0080	**Units:**	ng/Kg
Lab Code:	E1801136-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 13:29
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.578g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519717	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	8070		0.557	0.592	0.80		1
Total Penta-Dioxins	76.1		0.119	2.96	1.56		1
Total Hexa-Dioxins	91.4		0.277	2.96	1.22		1
Total Hepta-Dioxins	578		0.129	2.96	1.05		1
Total Tetra-Furans	27600		0.280	0.592	0.74		1
Total Penta-Furans	1660		0.764	2.96	1.52		1
Total Hexa-Furans	1840		0.854	2.96	1.19		1
Total Hepta-Furans	816		1.78	2.96	1.02		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:50
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0080	**Units:**	Percent
Lab Code:	E1801136-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 13:08
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.578g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519688	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	896.908	45		25-164	0.78	1.025
13C-1,2,3,7,8-PeCDD	2000	1424.110	71		25-181	1.58	1.223
13C-1,2,3,4,7,8-HxCDD	2000	1246.698	62		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1258.999	63		28-130	1.25	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1506.810	75		23-140	1.06	1.074
13C-OCDD	4000	2502.051	63		17-157	0.88	1.157
13C-2,3,7,8-TCDF	2000	1118.087	56		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1256.465	63		24-185	1.60	1.173
13C-2,3,4,7,8-PeCDF	2000	1213.109	61		21-178	1.59	1.211
13C-1,2,3,4,7,8-HxCDF	2000	1026.349	51		26-152	0.52	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1027.295	51		26-123	0.52	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1164.030	58		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1045.572	52		28-136	0.50	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	992.702	50		28-143	0.44	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	1131.364	57		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	682.744	85		35-197	NA	1.026

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:50
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0080	**Units:**	ng/Kg
Lab Code:	E1801136-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**13400**	150	150	100	1	13400
1,2,3,7,8-PeCDD	**49.0**	0.119	2.96	1	1	49.0
1,2,3,4,7,8-HxCDD	**1.18**	0.261	2.96	1	0.1	0.118
1,2,3,6,7,8-HxCDD	**9.19**	0.296	2.96	1	0.1	0.919
1,2,3,7,8,9-HxCDD	**4.00**	0.272	2.96	1	0.1	0.400
1,2,3,4,6,7,8-HpCDD	**307**	0.129	2.96	1	0.01	3.07
OCDD	**6250**	42.6	592	100	0.0003	1.88
2,3,7,8-TCDF	**23600**	66.9	66.9	100	0.1	2360
1,2,3,7,8-PeCDF	**551**	0.746	2.96	1	0.03	16.5
2,3,4,7,8-PeCDF	**464**	0.784	2.96	1	0.3	139
1,2,3,4,7,8-HxCDF	**1160**	0.799	2.96	1	0.1	116
1,2,3,6,7,8-HxCDF	**273**	0.792	2.96	1	0.1	27.3
1,2,3,7,8,9-HxCDF	**130**	0.964	2.96	1	0.1	13.0
2,3,4,6,7,8-HxCDF	**59.3**	0.872	2.96	1	0.1	5.93
1,2,3,4,6,7,8-HpCDF	**444**	1.51	2.96	1	0.01	4.44
1,2,3,4,7,8,9-HpCDF	**144**	2.08	2.96	1	0.01	1.44
OCDF	**262**	0.285	5.92	1	0.0003	0.0786
		Total TEQ				16100

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:50
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0080	**Units:**	Percent
Lab Code:	E1801136-002	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	10.024g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	79.8		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:55
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0081	**Units:**	ng/Kg
Lab Code:	E1801136-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 14:17
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.488g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519718	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	5640		131	131	0.75	1.001	50
1,2,3,7,8-PeCDD	15.9		0.210	3.11	1.57	1.001	1
1,2,3,4,7,8-HxCDD	0.250	**JK**	0.176	3.11	1.47	1.000	1
1,2,3,6,7,8-HxCDD	3.01	**J**	0.204	3.11	1.30	1.000	1
1,2,3,7,8,9-HxCDD	1.05	**J**	0.185	3.11	1.23	1.007	1
1,2,3,4,6,7,8-HpCDD	95.7		0.499	3.11	1.04	1.000	1
OCDD	1800		0.574	6.22	0.88	1.000	1
2,3,7,8-TCDF	10400		45.3	45.3	0.72	1.001	50
1,2,3,7,8-PeCDF	516		1.45	3.11	1.50	1.001	1
2,3,4,7,8-PeCDF	313		1.51	3.11	1.51	1.001	1
1,2,3,4,7,8-HxCDF	911		0.691	3.11	1.20	1.000	1
1,2,3,6,7,8-HxCDF	186		0.637	3.11	1.25	1.000	1
1,2,3,7,8,9-HxCDF	72.2		0.843	3.11	1.21	1.001	1
2,3,4,6,7,8-HxCDF	35.8		0.750	3.11	1.17	1.000	1
1,2,3,4,6,7,8-HpCDF	168		0.269	3.11	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	74.3		0.393	3.11	1.01	1.000	1
OCDF	95.1		0.682	6.22	0.85	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:55
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0081	**Units:**	ng/Kg
Lab Code:	E1801136-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 14:17
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.488g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519718	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	2930		0.503	0.622	0.73		1
Total Penta-Dioxins	20.7		0.210	3.11	1.32		1
Total Hexa-Dioxins	17.1		0.188	3.11	1.30		1
Total Hepta-Dioxins	187		0.499	3.11	1.02		1
Total Tetra-Furans	11200		0.434	0.622	0.75		1
Total Penta-Furans	1270		1.48	3.11	1.50		1
Total Hexa-Furans	1290		0.726	3.11	1.20		1
Total Hepta-Furans	304		0.326	3.11	1.02		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:55
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0081	**Units:**	Percent
Lab Code:	E1801136-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 13:56
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.488g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519689	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	560.098	28		25-164	0.81	1.026
13C-1,2,3,7,8-PeCDD	2000	895.509	45		25-181	1.56	1.224
13C-1,2,3,4,7,8-HxCDD	2000	828.367	41		32-141	1.25	0.990
13C-1,2,3,6,7,8-HxCDD	2000	774.347	39		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1019.121	51		23-140	1.08	1.074
13C-OCDD	4000	1653.631	41		17-157	0.89	1.156
13C-2,3,7,8-TCDF	2000	695.311	35		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	795.757	40		24-185	1.54	1.174
13C-2,3,4,7,8-PeCDF	2000	755.922	38		21-178	1.60	1.212
13C-1,2,3,4,7,8-HxCDF	2000	679.280	34		26-152	0.51	0.967
13C-1,2,3,6,7,8-HxCDF	2000	687.275	34		26-123	0.51	0.970
13C-1,2,3,7,8,9-HxCDF	2000	755.926	38		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	656.176	33		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	683.255	34		28-143	0.44	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	763.717	38		26-138	0.44	1.087
37Cl-2,3,7,8-TCDD	800	522.372	65		35-197	NA	1.026

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:55
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0081	**Units:**	ng/Kg
Lab Code:	E1801136-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**5640**	131	131	50	1	5640
1,2,3,7,8-PeCDD	**15.9**	0.210	3.11	1	1	15.9
1,2,3,4,7,8-HxCDD	**0.250**	0.176	3.11	1	0.1	0.0250
1,2,3,6,7,8-HxCDD	**3.01**	0.204	3.11	1	0.1	0.301
1,2,3,7,8,9-HxCDD	**1.05**	0.185	3.11	1	0.1	0.105
1,2,3,4,6,7,8-HpCDD	**95.7**	0.499	3.11	1	0.01	0.957
OCDD	**1800**	0.574	6.22	1	0.0003	0.540
2,3,7,8-TCDF	**10400**	45.3	45.3	50	0.1	1040
1,2,3,7,8-PeCDF	**516**	1.45	3.11	1	0.03	15.5
2,3,4,7,8-PeCDF	**313**	1.51	3.11	1	0.3	93.9
1,2,3,4,7,8-HxCDF	**911**	0.691	3.11	1	0.1	91.1
1,2,3,6,7,8-HxCDF	**186**	0.637	3.11	1	0.1	18.6
1,2,3,7,8,9-HxCDF	**72.2**	0.843	3.11	1	0.1	7.22
2,3,4,6,7,8-HxCDF	**35.8**	0.750	3.11	1	0.1	3.58
1,2,3,4,6,7,8-HpCDF	**168**	0.269	3.11	1	0.01	1.68
1,2,3,4,7,8,9-HpCDF	**74.3**	0.393	3.11	1	0.01	0.743
OCDF	**95.1**	0.682	6.22	1	0.0003	0.0285
		Total TEQ				6930

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 08:55
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0081	**Units:**	Percent
Lab Code:	E1801136-003	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	9.647g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	76.7		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 09:00
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0082	**Units:**	ng/Kg
Lab Code:	E1801136-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 15:06
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.836g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519719	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	1630		13.9	13.9	0.79	1.001	10
1,2,3,7,8-PeCDD	7.49		0.103	2.89	1.63	1.001	1
1,2,3,4,7,8-HxCDD	0.266	**J**	0.171	2.89	1.28	1.000	1
1,2,3,6,7,8-HxCDD	1.47	**J**	0.188	2.89	1.36	1.000	1
1,2,3,7,8,9-HxCDD	1.55	**J**	0.175	2.89	1.29	1.007	1
1,2,3,4,6,7,8-HpCDD	49.5		0.146	2.89	1.01	1.000	1
OCDD	1040		0.282	5.79	0.89	1.000	1
2,3,7,8-TCDF	2930		5.53	5.79	0.73	1.001	10
1,2,3,7,8-PeCDF	63.8		0.313	2.89	1.52	1.001	1
2,3,4,7,8-PeCDF	56.9		0.337	2.89	1.46	1.001	1
1,2,3,4,7,8-HxCDF	118		0.163	2.89	1.22	1.000	1
1,2,3,6,7,8-HxCDF	28.5		0.155	2.89	1.28	1.000	1
1,2,3,7,8,9-HxCDF	8.39		0.197	2.89	1.05	1.001	1
2,3,4,6,7,8-HxCDF	5.27		0.168	2.89	1.20	1.000	1
1,2,3,4,6,7,8-HpCDF	38.9		0.155	2.89	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	13.2		0.217	2.89	1.00	1.000	1
OCDF	22.9		0.409	5.79	0.91	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 09:00
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0082	**Units:**	ng/Kg
Lab Code:	E1801136-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 15:06
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.836g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519719	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	1130		0.484	0.579	0.85		1
Total Penta-Dioxins	10.3		0.103	2.89	1.63		1
Total Hexa-Dioxins	26.3		0.178	2.89	1.33		1
Total Hepta-Dioxins	109		0.146	2.89	1.05		1
Total Tetra-Furans	3930		0.186	0.579	0.75		1
Total Penta-Furans	184		0.325	2.89	1.48		1
Total Hexa-Furans	175		0.170	2.89	1.08		1
Total Hepta-Furans	69.7		0.184	2.89	0.99		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 09:00
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0082	**Units:**	Percent
Lab Code:	E1801136-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 14:45
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.836g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519690	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	746.775	37		25-164	0.80	1.026
13C-1,2,3,7,8-PeCDD	2000	1212.964	61		25-181	1.60	1.224
13C-1,2,3,4,7,8-HxCDD	2000	1123.554	56		32-141	1.30	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1062.683	53		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1346.319	67		23-140	1.05	1.075
13C-OCDD	4000	2259.186	56		17-157	0.89	1.158
13C-2,3,7,8-TCDF	2000	924.538	46		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1070.217	54		24-185	1.59	1.174
13C-2,3,4,7,8-PeCDF	2000	1029.434	51		21-178	1.60	1.212
13C-1,2,3,4,7,8-HxCDF	2000	879.405	44		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	899.520	45		26-123	0.51	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1018.343	51		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	905.102	45		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	874.563	44		28-143	0.44	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	1005.394	50		26-138	0.43	1.088
37Cl-2,3,7,8-TCDD	800	486.641	61		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 09:00
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0082	**Units:**	ng/Kg
Lab Code:	E1801136-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**1630**	13.9	13.9	10	1	1630
1,2,3,7,8-PeCDD	**7.49**	0.103	2.89	1	1	7.49
1,2,3,4,7,8-HxCDD	**0.266**	0.171	2.89	1	0.1	0.0266
1,2,3,6,7,8-HxCDD	**1.47**	0.188	2.89	1	0.1	0.147
1,2,3,7,8,9-HxCDD	**1.55**	0.175	2.89	1	0.1	0.155
1,2,3,4,6,7,8-HpCDD	**49.5**	0.146	2.89	1	0.01	0.495
OCDD	**1040**	0.282	5.79	1	0.0003	0.312
2,3,7,8-TCDF	**2930**	5.53	5.79	10	0.1	293
1,2,3,7,8-PeCDF	**63.8**	0.313	2.89	1	0.03	1.91
2,3,4,7,8-PeCDF	**56.9**	0.337	2.89	1	0.3	17.1
1,2,3,4,7,8-HxCDF	**118**	0.163	2.89	1	0.1	11.8
1,2,3,6,7,8-HxCDF	**28.5**	0.155	2.89	1	0.1	2.85
1,2,3,7,8,9-HxCDF	**8.39**	0.197	2.89	1	0.1	0.839
2,3,4,6,7,8-HxCDF	**5.27**	0.168	2.89	1	0.1	0.527
1,2,3,4,6,7,8-HpCDF	**38.9**	0.155	2.89	1	0.01	0.389
1,2,3,4,7,8,9-HpCDF	**13.2**	0.217	2.89	1	0.01	0.132
OCDF	**22.9**	0.409	5.79	1	0.0003	0.00687
		Total TEQ				1970

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 09:00
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0082	**Units:**	Percent
Lab Code:	E1801136-004	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	5.813g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	79.7		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 09:05
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0083	**Units:**	ng/Kg
Lab Code:	E1801136-005	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 15:33
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.633g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519691	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	66.9		0.612	0.612	0.81	1.000	1
1,2,3,7,8-PeCDD	0.839	**J**	0.128	2.99	1.69	1.000	1
1,2,3,4,7,8-HxCDD	0.210	**JK**	0.192	2.99	0.81	1.000	1
1,2,3,6,7,8-HxCDD	0.474	**JK**	0.211	2.99	1.65	1.000	1
1,2,3,7,8,9-HxCDD	1.27	**J**	0.197	2.99	1.15	1.007	1
1,2,3,4,6,7,8-HpCDD	18.6		0.164	2.99	1.03	1.000	1
OCDD	499		0.205	5.98	0.89	1.000	1
2,3,7,8-TCDF	140		0.209	0.598	0.73	1.001	1
1,2,3,7,8-PeCDF	4.81		0.121	2.99	1.38	1.001	1
2,3,4,7,8-PeCDF	4.10		0.120	2.99	1.54	1.001	1
1,2,3,4,7,8-HxCDF	7.75		0.0788	2.99	1.21	1.000	1
1,2,3,6,7,8-HxCDF	1.61	**JK**	0.0775	2.99	0.89	1.000	1
1,2,3,7,8,9-HxCDF	0.814	**J**	0.108	2.99	1.19	1.001	1
2,3,4,6,7,8-HxCDF	0.424	**JK**	0.0808	2.99	0.99	1.001	1
1,2,3,4,6,7,8-HpCDF	2.18	**J**	0.165	2.99	0.98	1.000	1
1,2,3,4,7,8,9-HpCDF	0.479	**JK**	0.255	2.99	1.59	1.000	1
OCDF	1.61	**J**	0.363	5.98	0.90	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 09:05
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0083	**Units:**	ng/Kg
Lab Code:	E1801136-005	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 15:33
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.633g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519691	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	82.1		0.612	0.612	0.69		1
Total Penta-Dioxins	5.54		0.128	2.99	1.43		1
Total Hexa-Dioxins	25.4		0.200	2.99	1.30		1
Total Hepta-Dioxins	55.0		0.164	2.99	1.07		1
Total Tetra-Furans	245		0.209	0.598	0.75		1
Total Penta-Furans	11.9		0.121	2.99	1.51		1
Total Hexa-Furans	8.57		0.0854	2.99	1.21		1
Total Hepta-Furans	3.37		0.206	2.99	0.98		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 09:05
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0083	**Units:**	Percent
Lab Code:	E1801136-005	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 15:33
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.633g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519691	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	721.993	36		25-164	0.80	1.027
13C-1,2,3,7,8-PeCDD	2000	1264.062	63		25-181	1.61	1.225
13C-1,2,3,4,7,8-HxCDD	2000	1184.317	59		32-141	1.25	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1122.365	56		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1561.496	78		23-140	1.05	1.076
13C-OCDD	4000	2799.347	70		17-157	0.91	1.158
13C-2,3,7,8-TCDF	2000	887.326	44		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	1068.118	53		24-185	1.56	1.174
13C-2,3,4,7,8-PeCDF	2000	1052.897	53		21-178	1.60	1.212
13C-1,2,3,4,7,8-HxCDF	2000	912.721	46		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	951.280	48		26-123	0.51	0.971
13C-1,2,3,7,8,9-HxCDF	2000	952.147	48		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	942.914	47		28-136	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1019.650	51		28-143	0.44	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	1104.461	55		26-138	0.43	1.088
37Cl-2,3,7,8-TCDD	800	472.905	59		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 09:05
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0083	**Units:**	ng/Kg
Lab Code:	E1801136-005	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**66.9**	0.612	0.612	1	1	66.9
1,2,3,7,8-PeCDD	**0.839**	0.128	2.99	1	1	0.839
1,2,3,4,7,8-HxCDD	**0.210**	0.192	2.99	1	0.1	0.0210
1,2,3,6,7,8-HxCDD	**0.474**	0.211	2.99	1	0.1	0.0474
1,2,3,7,8,9-HxCDD	**1.27**	0.197	2.99	1	0.1	0.127
1,2,3,4,6,7,8-HpCDD	**18.6**	0.164	2.99	1	0.01	0.186
OCDD	**499**	0.205	5.98	1	0.0003	0.150
2,3,7,8-TCDF	**140**	0.209	0.598	1	0.1	14.0
1,2,3,7,8-PeCDF	**4.81**	0.121	2.99	1	0.03	0.144
2,3,4,7,8-PeCDF	**4.10**	0.120	2.99	1	0.3	1.23
1,2,3,4,7,8-HxCDF	**7.75**	0.0788	2.99	1	0.1	0.775
1,2,3,6,7,8-HxCDF	**1.61**	0.0775	2.99	1	0.1	0.161
1,2,3,7,8,9-HxCDF	**0.814**	0.108	2.99	1	0.1	0.0814
2,3,4,6,7,8-HxCDF	**0.424**	0.0808	2.99	1	0.1	0.0424
1,2,3,4,6,7,8-HpCDF	**2.18**	0.165	2.99	1	0.01	0.0218
1,2,3,4,7,8,9-HpCDF	**0.479**	0.255	2.99	1	0.01	0.00479
OCDF	**1.61**	0.363	5.98	1	0.0003	0.000483
		Total TEQ				84.7

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 09:05
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0083	**Units:**	Percent
Lab Code:	E1801136-005	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	6.794g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	78.6		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 10:50
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0085	**Units:**	ng/Kg
Lab Code:	E1801136-006	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 16:21
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.301g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519692	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	17.8		0.411	0.598	0.82	1.001	1
1,2,3,7,8-PeCDD	0.783**J**		0.115	2.99	1.54	1.000	1
1,2,3,4,7,8-HxCDD	0.480**JK**		0.151	2.99	2.06	1.000	1
1,2,3,6,7,8-HxCDD	1.47**J**		0.164	2.99	1.27	1.000	1
1,2,3,7,8,9-HxCDD	1.44**J**		0.154	2.99	1.08	1.007	1
1,2,3,4,6,7,8-HpCDD	37.4		0.117	2.99	1.03	1.000	1
OCDD	4850**E**		0.182	5.98	0.89	1.000	1
2,3,7,8-TCDF	37.2		0.219	0.598	0.72	1.001	1
1,2,3,7,8-PeCDF	2.07**J**		0.231	2.99	1.46	1.000	1
2,3,4,7,8-PeCDF	2.28**JK**		0.265	2.99	1.30	1.001	1
1,2,3,4,7,8-HxCDF	4.37		0.116	2.99	1.06	1.000	1
1,2,3,6,7,8-HxCDF	1.83**J**		0.113	2.99	1.19	1.000	1
1,2,3,7,8,9-HxCDF	0.525**JK**		0.126	2.99	1.00	1.001	1
2,3,4,6,7,8-HxCDF	1.49**J**		0.128	2.99	1.15	1.000	1
1,2,3,4,6,7,8-HpCDF	8.09		0.328	2.99	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.461	2.99			1
OCDF	13.4		0.342	5.98	0.81	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 10:50
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0085	**Units:**	ng/Kg
Lab Code:	E1801136-006	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 16:21
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.301g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519692	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	19.5		0.411	0.598	0.82		1
Total Penta-Dioxins	2.28	**J**	0.115	2.99	1.43		1
Total Hexa-Dioxins	17.1		0.157	2.99	1.28		1
Total Hepta-Dioxins	95.0		0.117	2.99	1.03		1
Total Tetra-Furans	67.3		0.219	0.598	0.88		1
Total Penta-Furans	8.70		0.247	2.99	1.52		1
Total Hexa-Furans	15.1		0.121	2.99	1.18		1
Total Hepta-Furans	15.5		0.390	2.99	1.04		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 10:50
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0085	**Units:**	Percent
Lab Code:	E1801136-006	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 16:21
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.301g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519692	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	836.662	42		25-164	0.78	1.027
13C-1,2,3,7,8-PeCDD	2000	1359.460	68		25-181	1.59	1.226
13C-1,2,3,4,7,8-HxCDD	2000	1144.284	57		32-141	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1181.431	59		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1483.630	74		23-140	1.07	1.075
13C-OCDD	4000	2462.886	62		17-157	0.92	1.158
13C-2,3,7,8-TCDF	2000	1006.320	50		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	1185.824	59		24-185	1.57	1.175
13C-2,3,4,7,8-PeCDF	2000	1110.726	56		21-178	1.57	1.213
13C-1,2,3,4,7,8-HxCDF	2000	934.674	47		26-152	0.52	0.968
13C-1,2,3,6,7,8-HxCDF	2000	961.342	48		26-123	0.52	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1114.551	56		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	957.634	48		28-136	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	983.423	49		28-143	0.44	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	1108.641	55		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	509.499	64		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 10:50
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0085	**Units:**	ng/Kg
Lab Code:	E1801136-006	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**17.8**	0.411	0.598	1	1	17.8
1,2,3,7,8-PeCDD	**0.783**	0.115	2.99	1	1	0.783
1,2,3,4,7,8-HxCDD	**0.480**	0.151	2.99	1	0.1	0.0480
1,2,3,6,7,8-HxCDD	**1.47**	0.164	2.99	1	0.1	0.147
1,2,3,7,8,9-HxCDD	**1.44**	0.154	2.99	1	0.1	0.144
1,2,3,4,6,7,8-HpCDD	**37.4**	0.117	2.99	1	0.01	0.374
OCDD	**4850**	0.182	5.98	1	0.0003	1.46
2,3,7,8-TCDF	**37.2**	0.219	0.598	1	0.1	3.72
1,2,3,7,8-PeCDF	**2.07**	0.231	2.99	1	0.03	0.0621
2,3,4,7,8-PeCDF	**2.28**	0.265	2.99	1	0.3	0.684
1,2,3,4,7,8-HxCDF	**4.37**	0.116	2.99	1	0.1	0.437
1,2,3,6,7,8-HxCDF	**1.83**	0.113	2.99	1	0.1	0.183
1,2,3,7,8,9-HxCDF	**0.525**	0.126	2.99	1	0.1	0.0525
2,3,4,6,7,8-HxCDF	**1.49**	0.128	2.99	1	0.1	0.149
1,2,3,4,6,7,8-HpCDF	**8.09**	0.328	2.99	1	0.01	0.0809
1,2,3,4,7,8,9-HpCDF	ND	0.461	2.99	1	0.01	
OCDF	**13.4**	0.342	5.98	1	0.0003	0.00402
		Total TEQ				26.1

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 10:50
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0085	**Units:**	Percent
Lab Code:	E1801136-006	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	6.542g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	81.2		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 10:55
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0086	**Units:**	ng/Kg
Lab Code:	E1801136-007	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 15:55
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.275g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519720	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	3130		33.7	33.7	0.75	1.001	20
1,2,3,7,8-PeCDD	12.3		0.105	3.10	1.65	1.001	1
1,2,3,4,7,8-HxCDD	0.331	**JK**	0.0914	3.10	0.80	1.000	1
1,2,3,6,7,8-HxCDD	3.00	**J**	0.103	3.10	1.25	1.000	1
1,2,3,7,8,9-HxCDD	1.22	**J**	0.0949	3.10	1.13	1.007	1
1,2,3,4,6,7,8-HpCDD	96.2		0.107	3.10	1.01	1.000	1
OCDD	1740		0.338	6.21	0.89	1.000	1
2,3,7,8-TCDF	5350		13.7	13.7	0.76	1.001	20
1,2,3,7,8-PeCDF	147		0.309	3.10	1.55	1.001	1
2,3,4,7,8-PeCDF	114		0.336	3.10	1.52	1.001	1
1,2,3,4,7,8-HxCDF	376		0.187	3.10	1.20	1.000	1
1,2,3,6,7,8-HxCDF	81.7		0.174	3.10	1.21	1.000	1
1,2,3,7,8,9-HxCDF	24.3		0.224	3.10	1.25	1.001	1
2,3,4,6,7,8-HxCDF	13.3		0.191	3.10	1.20	1.000	1
1,2,3,4,6,7,8-HpCDF	100		0.119	3.10	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	38.2		0.165	3.10	1.00	1.000	1
OCDF	66.3		0.353	6.21	0.87	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 10:55
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0086	**Units:**	ng/Kg
Lab Code:	E1801136-007	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 15:55
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.275g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519720	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	2030		0.418	0.621	0.84		1
Total Penta-Dioxins	17.7		0.105	3.10	1.49		1
Total Hexa-Dioxins	20.5		0.0964	3.10	1.21		1
Total Hepta-Dioxins	173		0.107	3.10	1.03		1
Total Tetra-Furans	7000		0.177	0.621	0.73		1
Total Penta-Furans	396		0.322	3.10	1.68		1
Total Hexa-Furans	533		0.194	3.10	1.16		1
Total Hepta-Furans	183		0.141	3.10	0.99		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 10:55
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0086	**Units:**	Percent
Lab Code:	E1801136-007	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 17:10
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.275g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519693	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	793.599	40		25-164	0.79	1.026
13C-1,2,3,7,8-PeCDD	2000	1332.105	67		25-181	1.58	1.225
13C-1,2,3,4,7,8-HxCDD	2000	1170.709	59		32-141	1.26	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1178.514	59		28-130	1.24	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1503.307	75		23-140	1.07	1.075
13C-OCDD	4000	2468.539	62		17-157	0.89	1.158
13C-2,3,7,8-TCDF	2000	962.339	48		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1139.486	57		24-185	1.57	1.174
13C-2,3,4,7,8-PeCDF	2000	1098.307	55		21-178	1.57	1.212
13C-1,2,3,4,7,8-HxCDF	2000	965.436	48		26-152	0.52	0.967
13C-1,2,3,6,7,8-HxCDF	2000	978.571	49		26-123	0.52	0.970
13C-1,2,3,7,8,9-HxCDF	2000	1101.367	55		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	987.724	49		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	980.135	49		28-143	0.44	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	1114.132	56		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	529.111	66		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 10:55
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0086	**Units:**	ng/Kg
Lab Code:	E1801136-007	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**3130**	33.7	33.7	20	1	3130
1,2,3,7,8-PeCDD	**12.3**	0.105	3.10	1	1	12.3
1,2,3,4,7,8-HxCDD	**0.331**	0.0914	3.10	1	0.1	0.0331
1,2,3,6,7,8-HxCDD	**3.00**	0.103	3.10	1	0.1	0.300
1,2,3,7,8,9-HxCDD	**1.22**	0.0949	3.10	1	0.1	0.122
1,2,3,4,6,7,8-HpCDD	**96.2**	0.107	3.10	1	0.01	0.962
OCDD	**1740**	0.338	6.21	1	0.0003	0.522
2,3,7,8-TCDF	**5350**	13.7	13.7	20	0.1	535
1,2,3,7,8-PeCDF	**147**	0.309	3.10	1	0.03	4.41
2,3,4,7,8-PeCDF	**114**	0.336	3.10	1	0.3	34.2
1,2,3,4,7,8-HxCDF	**376**	0.187	3.10	1	0.1	37.6
1,2,3,6,7,8-HxCDF	**81.7**	0.174	3.10	1	0.1	8.17
1,2,3,7,8,9-HxCDF	**24.3**	0.224	3.10	1	0.1	2.43
2,3,4,6,7,8-HxCDF	**13.3**	0.191	3.10	1	0.1	1.33
1,2,3,4,6,7,8-HpCDF	**100**	0.119	3.10	1	0.01	1.00
1,2,3,4,7,8,9-HpCDF	**38.2**	0.165	3.10	1	0.01	0.382
OCDF	**66.3**	0.353	6.21	1	0.0003	0.0199
		Total TEQ				3770

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 10:55
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0086	**Units:**	Percent
Lab Code:	E1801136-007	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	6.439g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	78.4		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:00
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0087	**Units:**	ng/Kg
Lab Code:	E1801136-008	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 16:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.874g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519721	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	8450		90.2	90.2	0.79	1.001	50
1,2,3,7,8-PeCDD	31.2		0.132	3.08	1.54	1.001	1
1,2,3,4,7,8-HxCDD	0.523	**JK**	0.101	3.08	1.52	1.000	1
1,2,3,6,7,8-HxCDD	5.61		0.117	3.08	1.35	1.000	1
1,2,3,7,8,9-HxCDD	1.92	**JK**	0.107	3.08	1.03	1.007	1
1,2,3,4,6,7,8-HpCDD	203		0.155	3.08	1.04	1.000	1
OCDD	3320		0.367	6.16	0.88	1.000	1
2,3,7,8-TCDF	14300		53.0	53.0	0.77	1.001	50
1,2,3,7,8-PeCDF	292		0.322	3.08	1.51	1.001	1
2,3,4,7,8-PeCDF	275		0.355	3.08	1.51	1.001	1
1,2,3,4,7,8-HxCDF	519		0.366	3.08	1.20	1.000	1
1,2,3,6,7,8-HxCDF	122		0.370	3.08	1.24	1.000	1
1,2,3,7,8,9-HxCDF	35.0		0.464	3.08	1.13	1.001	1
2,3,4,6,7,8-HxCDF	22.9		0.413	3.08	1.16	1.000	1
1,2,3,4,6,7,8-HpCDF	158		0.727	3.08	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	56.2		1.01	3.08	0.98	1.000	1
OCDF	86.3		0.464	6.16	0.85	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:00
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0087	**Units:**	ng/Kg
Lab Code:	E1801136-008	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 16:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.874g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519721	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	5360		0.612	0.616	0.76		1
Total Penta-Dioxins	41.6		0.132	3.08	1.59		1
Total Hexa-Dioxins	30.2		0.109	3.08	1.33		1
Total Hepta-Dioxins	354		0.155	3.08	1.05		1
Total Tetra-Furans	18700		0.341	0.616	0.74		1
Total Penta-Furans	876		0.337	3.08	1.60		1
Total Hexa-Furans	757		0.401	3.08	1.18		1
Total Hepta-Furans	287		0.858	3.08	1.00		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:00
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0087	**Units:**	Percent
Lab Code:	E1801136-008	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 17:59
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.874g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519694	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	660.378	33		25-164	0.78	1.025
13C-1,2,3,7,8-PeCDD	2000	1063.533	53		25-181	1.59	1.223
13C-1,2,3,4,7,8-HxCDD	2000	879.359	44		32-141	1.26	0.990
13C-1,2,3,6,7,8-HxCDD	2000	928.659	46		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1178.016	59		23-140	1.05	1.075
13C-OCDD	4000	2074.129	52		17-157	0.89	1.158
13C-2,3,7,8-TCDF	2000	833.140	42		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	926.337	46		24-185	1.59	1.174
13C-2,3,4,7,8-PeCDF	2000	898.497	45		21-178	1.56	1.211
13C-1,2,3,4,7,8-HxCDF	2000	731.591	37		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	749.706	37		26-123	0.53	0.970
13C-1,2,3,7,8,9-HxCDF	2000	822.897	41		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	745.620	37		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	769.121	38		28-143	0.43	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	874.187	44		26-138	0.43	1.088
37Cl-2,3,7,8-TCDD	800	547.630	68		35-197	NA	1.026

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:00
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0087	**Units:**	ng/Kg
Lab Code:	E1801136-008	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**8450**	90.2	90.2	50	1	8450
1,2,3,7,8-PeCDD	**31.2**	0.132	3.08	1	1	31.2
1,2,3,4,7,8-HxCDD	**0.523**	0.101	3.08	1	0.1	0.0523
1,2,3,6,7,8-HxCDD	**5.61**	0.117	3.08	1	0.1	0.561
1,2,3,7,8,9-HxCDD	**1.92**	0.107	3.08	1	0.1	0.192
1,2,3,4,6,7,8-HpCDD	**203**	0.155	3.08	1	0.01	2.03
OCDD	**3320**	0.367	6.16	1	0.0003	0.996
2,3,7,8-TCDF	**14300**	53.0	53.0	50	0.1	1430
1,2,3,7,8-PeCDF	**292**	0.322	3.08	1	0.03	8.76
2,3,4,7,8-PeCDF	**275**	0.355	3.08	1	0.3	82.5
1,2,3,4,7,8-HxCDF	**519**	0.366	3.08	1	0.1	51.9
1,2,3,6,7,8-HxCDF	**122**	0.370	3.08	1	0.1	12.2
1,2,3,7,8,9-HxCDF	**35.0**	0.464	3.08	1	0.1	3.50
2,3,4,6,7,8-HxCDF	**22.9**	0.413	3.08	1	0.1	2.29
1,2,3,4,6,7,8-HpCDF	**158**	0.727	3.08	1	0.01	1.58
1,2,3,4,7,8,9-HpCDF	**56.2**	1.01	3.08	1	0.01	0.562
OCDF	**86.3**	0.464	6.16	1	0.0003	0.0259
		Total TEQ				10100

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:00
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0087	**Units:**	Percent
Lab Code:	E1801136-008	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	7.695g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	74.7		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:05
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0088	**Units:**	ng/Kg
Lab Code:	E1801136-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 17:32
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.861g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519722	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	1110		17.4	17.4	0.72	1.001	10
1,2,3,7,8-PeCDD	4.88		0.105	3.03	1.42	1.001	1
1,2,3,4,7,8-HxCDD	0.293	**JK**	0.150	3.03	0.83	1.001	1
1,2,3,6,7,8-HxCDD	1.12	**JK**	0.160	3.03	1.01	1.001	1
1,2,3,7,8,9-HxCDD	1.11	**J**	0.151	3.03	1.10	1.007	1
1,2,3,4,6,7,8-HpCDD	36.9		0.211	3.03	1.02	1.000	1
OCDD	785		0.433	6.06	0.89	1.000	1
2,3,7,8-TCDF	1830		4.52	6.06	0.75	1.001	10
1,2,3,7,8-PeCDF	43.0		0.250	3.03	1.50	1.000	1
2,3,4,7,8-PeCDF	36.7		0.265	3.03	1.50	1.001	1
1,2,3,4,7,8-HxCDF	75.5		0.136	3.03	1.19	1.000	1
1,2,3,6,7,8-HxCDF	19.3		0.131	3.03	1.29	1.000	1
1,2,3,7,8,9-HxCDF	5.56		0.176	3.03	1.22	1.001	1
2,3,4,6,7,8-HxCDF	3.64		0.142	3.03	1.14	1.000	1
1,2,3,4,6,7,8-HpCDF	22.3		0.371	3.03	0.96	1.000	1
1,2,3,4,7,8,9-HpCDF	8.29		0.547	3.03	1.00	1.000	1
OCDF	15.2		0.245	6.06	0.85	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:05
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0088	**Units:**	ng/Kg
Lab Code:	E1801136-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 17:32
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.861g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519722	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	778		0.421	0.606	0.79		1
Total Penta-Dioxins	6.31		0.105	3.03	1.40		1
Total Hexa-Dioxins	25.7		0.154	3.03	1.24		1
Total Hepta-Dioxins	88.5		0.211	3.03	1.03		1
Total Tetra-Furans	2590		0.190	0.606	0.67		1
Total Penta-Furans	122		0.257	3.03	1.47		1
Total Hexa-Furans	114		0.145	3.03	1.41		1
Total Hepta-Furans	41.4		0.453	3.03	0.96		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:05
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0088	**Units:**	Percent
Lab Code:	E1801136-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 18:47
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.861g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519695	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519683

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	727.459	36		25-164	0.78	1.027
13C-1,2,3,7,8-PeCDD	2000	1221.168	61		25-181	1.57	1.225
13C-1,2,3,4,7,8-HxCDD	2000	1111.901	56		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1108.752	55		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1406.619	70		23-140	1.06	1.075
13C-OCDD	4000	2343.375	59		17-157	0.89	1.158
13C-2,3,7,8-TCDF	2000	895.311	45		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	1046.305	52		24-185	1.59	1.175
13C-2,3,4,7,8-PeCDF	2000	1011.415	51		21-178	1.61	1.213
13C-1,2,3,4,7,8-HxCDF	2000	892.123	45		26-152	0.52	0.968
13C-1,2,3,6,7,8-HxCDF	2000	924.420	46		26-123	0.51	0.971
13C-1,2,3,7,8,9-HxCDF	2000	965.498	48		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	931.308	47		28-136	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	916.145	46		28-143	0.44	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	1030.410	52		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	480.895	60		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:05
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0088	**Units:**	ng/Kg
Lab Code:	E1801136-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**1110**	17.4	17.4	10	1	1110
1,2,3,7,8-PeCDD	**4.88**	0.105	3.03	1	1	4.88
1,2,3,4,7,8-HxCDD	**0.293**	0.150	3.03	1	0.1	0.0293
1,2,3,6,7,8-HxCDD	**1.12**	0.160	3.03	1	0.1	0.112
1,2,3,7,8,9-HxCDD	**1.11**	0.151	3.03	1	0.1	0.111
1,2,3,4,6,7,8-HpCDD	**36.9**	0.211	3.03	1	0.01	0.369
OCDD	**785**	0.433	6.06	1	0.0003	0.236
2,3,7,8-TCDF	**1830**	4.52	6.06	10	0.1	183
1,2,3,7,8-PeCDF	**43.0**	0.250	3.03	1	0.03	1.29
2,3,4,7,8-PeCDF	**36.7**	0.265	3.03	1	0.3	11.0
1,2,3,4,7,8-HxCDF	**75.5**	0.136	3.03	1	0.1	7.55
1,2,3,6,7,8-HxCDF	**19.3**	0.131	3.03	1	0.1	1.93
1,2,3,7,8,9-HxCDF	**5.56**	0.176	3.03	1	0.1	0.556
2,3,4,6,7,8-HxCDF	**3.64**	0.142	3.03	1	0.1	0.364
1,2,3,4,6,7,8-HpCDF	**22.3**	0.371	3.03	1	0.01	0.223
1,2,3,4,7,8,9-HpCDF	**8.29**	0.547	3.03	1	0.01	0.0829
OCDF	**15.2**	0.245	6.06	1	0.0003	0.00456
		Total TEQ				1320

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:05
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0088	**Units:**	Percent
Lab Code:	E1801136-009	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	6.365g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	76.0		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:10
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0089	**Units:**	ng/Kg
Lab Code:	E1801136-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 16:05
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.200g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616280	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	26.5		1.04	1.04	0.85	1.001	1
1,2,3,7,8-PeCDD	0.547	**JK**	0.187	3.18	1.09	1.001	1
1,2,3,4,7,8-HxCDD	0.519	**J**	0.149	3.18	1.25	1.000	1
1,2,3,6,7,8-HxCDD	0.659	**JK**	0.165	3.18	2.14	1.000	1
1,2,3,7,8,9-HxCDD	0.804	**JK**	0.146	3.18	0.90	1.007	1
1,2,3,4,6,7,8-HpCDD	8.03		0.107	3.18	1.01	1.000	1
OCDD	228		0.166	6.36	0.90	1.000	1
2,3,7,8-TCDF	54.1		0.505	0.636	0.80	1.001	1
1,2,3,7,8-PeCDF	2.16	**J**	0.280	3.18	1.48	1.001	1
2,3,4,7,8-PeCDF	1.88	**J**	0.283	3.18	1.54	1.000	1
1,2,3,4,7,8-HxCDF	2.75	**JK**	0.151	3.18	1.63	1.000	1
1,2,3,6,7,8-HxCDF	0.839	**JK**	0.143	3.18	1.51	1.000	1
1,2,3,7,8,9-HxCDF	0.306	**JK**	0.179	3.18	2.98	1.000	1
2,3,4,6,7,8-HxCDF	0.453	**J**	0.164	3.18	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	3.26		0.0523	3.18	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	0.583	**J**	0.0594	3.18	0.94	1.000	1
OCDF	1.84	**JK**	0.223	6.36	0.69	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:10
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0089	**Units:**	ng/Kg
Lab Code:	E1801136-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 16:05
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.200g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616280	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	33.4		1.04	1.04	0.72		1
Total Penta-Dioxins	3.95		0.187	3.18	1.39		1
Total Hexa-Dioxins	17.5		0.153	3.18	1.14		1
Total Hepta-Dioxins	30.0		0.107	3.18	1.10		1
Total Tetra-Furans	90.9		0.505	0.636	0.73		1
Total Penta-Furans	4.04		0.282	3.18	1.48		1
Total Hexa-Furans	0.682	**J**	0.158	3.18	1.33		1
Total Hepta-Furans	5.50		0.0556	3.18	1.03		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:10
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0089	**Units:**	Percent
Lab Code:	E1801136-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 16:05
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.200g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616280	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	723.551	36		25-164	0.80	1.031
13C-1,2,3,7,8-PeCDD	2000	1281.303	64		25-181	1.49	1.241
13C-1,2,3,4,7,8-HxCDD	2000	1348.045	67		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1298.408	65		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1670.788	84		23-140	1.06	1.070
13C-OCDD	4000	2501.130	63		17-157	0.93	1.139
13C-2,3,7,8-TCDF	2000	887.776	44		24-169	0.78	0.990
13C-1,2,3,7,8-PeCDF	2000	1183.516	59		24-185	1.57	1.188
13C-2,3,4,7,8-PeCDF	2000	1147.601	57		21-178	1.55	1.229
13C-1,2,3,4,7,8-HxCDF	2000	1130.858	57		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1174.698	59		26-123	0.52	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1115.465	56		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1062.368	53		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1068.363	53		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1162.444	58		26-138	0.46	1.082
37Cl-2,3,7,8-TCDD	800	422.919	53		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:10
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0089	**Units:**	ng/Kg
Lab Code:	E1801136-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**26.5**	1.04	1.04	1	1	26.5
1,2,3,7,8-PeCDD	**0.547**	0.187	3.18	1	1	0.547
1,2,3,4,7,8-HxCDD	**0.519**	0.149	3.18	1	0.1	0.0519
1,2,3,6,7,8-HxCDD	**0.659**	0.165	3.18	1	0.1	0.0659
1,2,3,7,8,9-HxCDD	**0.804**	0.146	3.18	1	0.1	0.0804
1,2,3,4,6,7,8-HpCDD	**8.03**	0.107	3.18	1	0.01	0.0803
OCDD	**228**	0.166	6.36	1	0.0003	0.0684
2,3,7,8-TCDF	**54.1**	0.505	0.636	1	0.1	5.41
1,2,3,7,8-PeCDF	**2.16**	0.280	3.18	1	0.03	0.0648
2,3,4,7,8-PeCDF	**1.88**	0.283	3.18	1	0.3	0.564
1,2,3,4,7,8-HxCDF	**2.75**	0.151	3.18	1	0.1	0.275
1,2,3,6,7,8-HxCDF	**0.839**	0.143	3.18	1	0.1	0.0839
1,2,3,7,8,9-HxCDF	**0.306**	0.179	3.18	1	0.1	0.0306
2,3,4,6,7,8-HxCDF	**0.453**	0.164	3.18	1	0.1	0.0453
1,2,3,4,6,7,8-HpCDF	**3.26**	0.0523	3.18	1	0.01	0.0326
1,2,3,4,7,8,9-HpCDF	**0.583**	0.0594	3.18	1	0.01	0.00583
OCDF	**1.84**	0.223	6.36	1	0.0003	0.000552
		Total TEQ				33.9

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/08/18 11:10
Sample Matrix:	Sediment	**Date Received:**	11/09/18 12:35
Sample Name:	SL0089	**Units:**	Percent
Lab Code:	E1801136-010	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	5.945g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	77.1		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:25
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0116	**Units:**	ng/Kg
Lab Code:	E1801136-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 16:54
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.308g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616281	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	78.0		0.655	0.655	0.75	1.001	1
1,2,3,7,8-PeCDD	1.12	**JK**	0.0869	3.02	1.82	1.001	1
1,2,3,4,7,8-HxCDD	0.439	**JK**	0.192	3.02	2.37	1.000	1
1,2,3,6,7,8-HxCDD	1.20	**JK**	0.217	3.02	1.02	1.000	1
1,2,3,7,8,9-HxCDD	1.32	**JK**	0.190	3.02	1.55	1.007	1
1,2,3,4,6,7,8-HpCDD	28.1		0.102	3.02	1.01	1.000	1
OCDD	788		0.0655	6.05	0.90	1.000	1
2,3,7,8-TCDF	143		0.380	0.605	0.78	1.001	1
1,2,3,7,8-PeCDF	3.91		0.179	3.02	1.47	1.001	1
2,3,4,7,8-PeCDF	3.41	**K**	0.176	3.02	1.22	1.001	1
1,2,3,4,7,8-HxCDF	5.55		0.0928	3.02	1.27	1.000	1
1,2,3,6,7,8-HxCDF	1.56	**J**	0.0832	3.02	1.05	1.001	1
1,2,3,7,8,9-HxCDF	0.598	**JK**	0.108	3.02	1.51	1.001	1
2,3,4,6,7,8-HxCDF	0.372	**JK**	0.0979	3.02	1.86	1.000	1
1,2,3,4,6,7,8-HpCDF	2.75	**J**	0.0616	3.02	1.09	1.000	1
1,2,3,4,7,8,9-HpCDF	0.751	**JK**	0.0696	3.02	0.83	1.000	1
OCDF	5.33	**J**	0.148	6.05	0.93	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:25
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0116	**Units:**	ng/Kg
Lab Code:	E1801136-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 16:54
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.308g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616281	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	86.6		0.655	0.655	0.71		1
Total Penta-Dioxins	3.57		0.0869	3.02	1.48		1
Total Hexa-Dioxins	34.6		0.199	3.02	1.29		1
Total Hepta-Dioxins	111		0.102	3.02	1.03		1
Total Tetra-Furans	258		0.380	0.605	0.78		1
Total Penta-Furans	7.88		0.178	3.02	1.64		1
Total Hexa-Furans	6.56		0.0945	3.02	1.19		1
Total Hepta-Furans	2.82	**J**	0.0654	3.02	1.09		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:25
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0116	**Units:**	Percent
Lab Code:	E1801136-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 16:54
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.308g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616281	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	798.660	40		25-164	0.78	1.030
13C-1,2,3,7,8-PeCDD	2000	1232.401	62		25-181	1.55	1.241
13C-1,2,3,4,7,8-HxCDD	2000	1336.698	67		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1297.447	65		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1642.639	82		23-140	1.03	1.070
13C-OCDD	4000	2306.135	58		17-157	0.90	1.139
13C-2,3,7,8-TCDF	2000	1025.789	51		24-169	0.78	0.990
13C-1,2,3,7,8-PeCDF	2000	1176.958	59		24-185	1.59	1.188
13C-2,3,4,7,8-PeCDF	2000	1146.740	57		21-178	1.57	1.229
13C-1,2,3,4,7,8-HxCDF	2000	1140.549	57		26-152	0.52	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1278.085	64		26-123	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1157.205	58		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1099.297	55		28-136	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1078.858	54		28-143	0.45	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1146.446	57		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	480.489	60		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:25
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0116	**Units:**	ng/Kg
Lab Code:	E1801136-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**78.0**	0.655	0.655	1	1	78.0
1,2,3,7,8-PeCDD	**1.12**	0.0869	3.02	1	1	1.12
1,2,3,4,7,8-HxCDD	**0.439**	0.192	3.02	1	0.1	0.0439
1,2,3,6,7,8-HxCDD	**1.20**	0.217	3.02	1	0.1	0.120
1,2,3,7,8,9-HxCDD	**1.32**	0.190	3.02	1	0.1	0.132
1,2,3,4,6,7,8-HpCDD	**28.1**	0.102	3.02	1	0.01	0.281
OCDD	**788**	0.0655	6.05	1	0.0003	0.236
2,3,7,8-TCDF	**143**	0.380	0.605	1	0.1	14.3
1,2,3,7,8-PeCDF	**3.91**	0.179	3.02	1	0.03	0.117
2,3,4,7,8-PeCDF	**3.41**	0.176	3.02	1	0.3	1.02
1,2,3,4,7,8-HxCDF	**5.55**	0.0928	3.02	1	0.1	0.555
1,2,3,6,7,8-HxCDF	**1.56**	0.0832	3.02	1	0.1	0.156
1,2,3,7,8,9-HxCDF	**0.598**	0.108	3.02	1	0.1	0.0598
2,3,4,6,7,8-HxCDF	**0.372**	0.0979	3.02	1	0.1	0.0372
1,2,3,4,6,7,8-HpCDF	**2.75**	0.0616	3.02	1	0.01	0.0275
1,2,3,4,7,8,9-HpCDF	**0.751**	0.0696	3.02	1	0.01	0.00751
OCDF	**5.33**	0.148	6.05	1	0.0003	0.00160
		Total TEQ				96.2

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:25
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0116	**Units:**	Percent
Lab Code:	E1801136-011	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	7.537g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	80.2		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:30
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0117	**Units:**	ng/Kg
Lab Code:	E1801136-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 17:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.270g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616282	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.836	0.836			1
1,2,3,7,8-PeCDD	0.136**JK**		0.134	3.08	2.85	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.226	3.08			1
1,2,3,6,7,8-HxCDD	1.14**J**		0.260	3.08	1.25	1.001	1
1,2,3,7,8,9-HxCDD	0.951**J**		0.226	3.08	1.18	1.008	1
1,2,3,4,6,7,8-HpCDD	8.33		0.118	3.08	0.93	1.000	1
OCDD	236		0.266	6.16	0.87	1.000	1
2,3,7,8-TCDF	ND	U	0.474	0.616			1
1,2,3,7,8-PeCDF	ND	U	0.180	3.08			1
2,3,4,7,8-PeCDF	ND	U	0.174	3.08			1
1,2,3,4,7,8-HxCDF	0.923**J**		0.103	3.08	1.16	1.000	1
1,2,3,6,7,8-HxCDF	0.276**JK**		0.0925	3.08	2.17	1.001	1
1,2,3,7,8,9-HxCDF	0.293**J**		0.130	3.08	1.27	1.001	1
2,3,4,6,7,8-HxCDF	0.562**J**		0.112	3.08	1.20	1.000	1
1,2,3,4,6,7,8-HpCDF	21.3		0.0865	3.08	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	0.405**JK**		0.104	3.08	1.47	1.001	1
OCDF	7.33		0.331	6.16	0.89	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:30
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0117	**Units:**	ng/Kg
Lab Code:	E1801136-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 17:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.270g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616282	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.836	0.836			1
Total Penta-Dioxins	1.81**J**		0.134	3.08	1.51		1
Total Hexa-Dioxins	17.8		0.237	3.08	1.11		1
Total Hepta-Dioxins	32.7		0.118	3.08	1.06		1
Total Tetra-Furans	ND	U	0.474	0.616			1
Total Penta-Furans	ND	U	0.177	3.08			1
Total Hexa-Furans	9.51		0.108	3.08	1.24		1
Total Hepta-Furans	34.0		0.0942	3.08	1.05		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:30
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0117	**Units:**	Percent
Lab Code:	E1801136-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 17:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.270g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616282	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	519.072	26		25-164	0.80	1.030
13C-1,2,3,7,8-PeCDD	2000	938.484	47		25-181	1.57	1.241
13C-1,2,3,4,7,8-HxCDD	2000	1033.605	52		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1018.314	51		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1176.997	59		23-140	1.02	1.070
13C-OCDD	4000	1558.918	39		17-157	0.90	1.139
13C-2,3,7,8-TCDF	2000	745.552	37		24-169	0.77	0.990
13C-1,2,3,7,8-PeCDF	2000	874.269	44		24-185	1.58	1.188
13C-2,3,4,7,8-PeCDF	2000	862.221	43		21-178	1.59	1.228
13C-1,2,3,4,7,8-HxCDF	2000	899.318	45		26-152	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	957.333	48		26-123	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	799.955	40		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	831.447	42		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	810.651	41		28-143	0.46	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	797.762	40		26-138	0.46	1.082
37Cl-2,3,7,8-TCDD	800	382.927	48		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:30
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0117	**Units:**	ng/Kg
Lab Code:	E1801136-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.836	0.836	1	1	
1,2,3,7,8-PeCDD	**0.136**	0.134	3.08	1	1	0.136
1,2,3,4,7,8-HxCDD	ND	0.226	3.08	1	0.1	
1,2,3,6,7,8-HxCDD	**1.14**	0.260	3.08	1	0.1	0.114
1,2,3,7,8,9-HxCDD	**0.951**	0.226	3.08	1	0.1	0.0951
1,2,3,4,6,7,8-HpCDD	**8.33**	0.118	3.08	1	0.01	0.0833
OCDD	**236**	0.266	6.16	1	0.0003	0.0708
2,3,7,8-TCDF	ND	0.474	0.616	1	0.1	
1,2,3,7,8-PeCDF	ND	0.180	3.08	1	0.03	
2,3,4,7,8-PeCDF	ND	0.174	3.08	1	0.3	
1,2,3,4,7,8-HxCDF	**0.923**	0.103	3.08	1	0.1	0.0923
1,2,3,6,7,8-HxCDF	**0.276**	0.0925	3.08	1	0.1	0.0276
1,2,3,7,8,9-HxCDF	**0.293**	0.130	3.08	1	0.1	0.0293
2,3,4,6,7,8-HxCDF	**0.562**	0.112	3.08	1	0.1	0.0562
1,2,3,4,6,7,8-HpCDF	**21.3**	0.0865	3.08	1	0.01	0.213
1,2,3,4,7,8,9-HpCDF	**0.405**	0.104	3.08	1	0.01	0.00405
OCDF	**7.33**	0.331	6.16	1	0.0003	0.00220
		Total TEQ				0.924

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:30
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0117	**Units:**	Percent
Lab Code:	E1801136-012	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	6.404g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	79.0		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:35
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0118	**Units:**	ng/Kg
Lab Code:	E1801136-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 18:32
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.891g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616283	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.740	0.740			1
1,2,3,7,8-PeCDD	0.235**JK**		0.120	3.01	2.74	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.131	3.01			1
1,2,3,6,7,8-HxCDD	0.355**JK**		0.147	3.01	0.66	1.000	1
1,2,3,7,8,9-HxCDD	0.775**JK**		0.129	3.01	1.94	1.007	1
1,2,3,4,6,7,8-HpCDD	9.01		0.0783	3.01	0.89	1.000	1
OCDD	280		0.124	6.02	0.88	1.000	1
2,3,7,8-TCDF	ND	U	0.337	0.602			1
1,2,3,7,8-PeCDF	ND	U	0.163	3.01			1
2,3,4,7,8-PeCDF	ND	U	0.155	3.01			1
1,2,3,4,7,8-HxCDF	0.141**JK**		0.0679	3.01	1.66	1.000	1
1,2,3,6,7,8-HxCDF	0.107**JK**		0.0621	3.01	0.59	1.001	1
1,2,3,7,8,9-HxCDF	0.117**JK**		0.0818	3.01	2.32	1.000	1
2,3,4,6,7,8-HxCDF	0.102**JK**		0.0721	3.01	0.71	1.000	1
1,2,3,4,6,7,8-HpCDF	0.270**J**		0.0313	3.01	1.12	1.000	1
1,2,3,4,7,8,9-HpCDF	0.151**J**		0.0359	3.01	1.17	1.000	1
OCDF	0.444**J**		0.187	6.02	1.02	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:35
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0118	**Units:**	ng/Kg
Lab Code:	E1801136-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 18:32
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.891g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616283	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	16.0		0.740	0.740	0.83		1
Total Penta-Dioxins	ND	U	0.120	3.01			1
Total Hexa-Dioxins	28.7		0.135	3.01	1.23		1
Total Hepta-Dioxins	45.1		0.0783	3.01	1.07		1
Total Tetra-Furans	1.64		0.337	0.602	0.79		1
Total Penta-Furans	0.441**J**		0.159	3.01	1.50		1
Total Hexa-Furans	ND	U	0.0703	3.01			1
Total Hepta-Furans	0.421**J**		0.0335	3.01	1.12		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:35
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0118	**Units:**	Percent
Lab Code:	E1801136-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 18:32
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.891g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616283	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	573.709	29		25-164	0.77	1.030
13C-1,2,3,7,8-PeCDD	2000	977.086	49		25-181	1.57	1.241
13C-1,2,3,4,7,8-HxCDD	2000	1143.232	57		32-141	1.24	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1059.022	53		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1356.970	68		23-140	1.06	1.070
13C-OCDD	4000	1946.944	49		17-157	0.90	1.139
13C-2,3,7,8-TCDF	2000	715.109	36		24-169	0.78	0.990
13C-1,2,3,7,8-PeCDF	2000	897.617	45		24-185	1.56	1.188
13C-2,3,4,7,8-PeCDF	2000	903.293	45		21-178	1.57	1.229
13C-1,2,3,4,7,8-HxCDF	2000	947.769	47		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1010.493	51		26-123	0.54	0.971
13C-1,2,3,7,8,9-HxCDF	2000	893.425	45		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	908.222	45		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	883.889	44		28-143	0.45	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	936.531	47		26-138	0.44	1.082
37Cl-2,3,7,8-TCDD	800	376.970	47		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:35
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0118	**Units:**	ng/Kg
Lab Code:	E1801136-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.740	0.740	1	1	
1,2,3,7,8-PeCDD	**0.235**	0.120	3.01	1	1	0.235
1,2,3,4,7,8-HxCDD	ND	0.131	3.01	1	0.1	
1,2,3,6,7,8-HxCDD	**0.355**	0.147	3.01	1	0.1	0.0355
1,2,3,7,8,9-HxCDD	**0.775**	0.129	3.01	1	0.1	0.0775
1,2,3,4,6,7,8-HpCDD	**9.01**	0.0783	3.01	1	0.01	0.0901
OCDD	**280**	0.124	6.02	1	0.0003	0.0840
2,3,7,8-TCDF	ND	0.337	0.602	1	0.1	
1,2,3,7,8-PeCDF	ND	0.163	3.01	1	0.03	
2,3,4,7,8-PeCDF	ND	0.155	3.01	1	0.3	
1,2,3,4,7,8-HxCDF	**0.141**	0.0679	3.01	1	0.1	0.0141
1,2,3,6,7,8-HxCDF	**0.107**	0.0621	3.01	1	0.1	0.0107
1,2,3,7,8,9-HxCDF	**0.117**	0.0818	3.01	1	0.1	0.0117
2,3,4,6,7,8-HxCDF	**0.102**	0.0721	3.01	1	0.1	0.0102
1,2,3,4,6,7,8-HpCDF	**0.270**	0.0313	3.01	1	0.01	0.00270
1,2,3,4,7,8,9-HpCDF	**0.151**	0.0359	3.01	1	0.01	0.00151
OCDF	**0.444**	0.187	6.02	1	0.0003	0.000133
		Total TEQ				0.573

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 10:35
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0118	**Units:**	Percent
Lab Code:	E1801136-013	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	6.811g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	76.3		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:25
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0124	**Units:**	ng/Kg
Lab Code:	E1801136-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 19:21
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.649g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616284	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	0.696**K**		0.494	0.608	1.03	1.001	1
1,2,3,7,8-PeCDD	1.17**J**		0.101	3.04	1.55	1.001	1
1,2,3,4,7,8-HxCDD	1.72**JK**		0.0897	3.04	0.95	1.000	1
1,2,3,6,7,8-HxCDD	7.88		0.102	3.04	1.22	1.000	1
1,2,3,7,8,9-HxCDD	3.58		0.0890	3.04	1.22	1.007	1
1,2,3,4,6,7,8-HpCDD	661		1.79	3.04	1.03	1.000	1
OCDD	41500**E**		0.124	6.08	0.89	1.000	1
2,3,7,8-TCDF	1.01**K**		0.195	0.608	0.96	1.002	1
1,2,3,7,8-PeCDF	ND	U	0.116	3.04			1
2,3,4,7,8-PeCDF	0.429**JK**		0.117	3.04	1.29	1.001	1
1,2,3,4,7,8-HxCDF	1.66**J**		0.228	3.04	1.20	1.000	1
1,2,3,6,7,8-HxCDF	0.757**JP**		0.221	3.04	1.21	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.250	3.04			1
2,3,4,6,7,8-HxCDF	0.866**JK**		0.249	3.04	1.55	1.000	1
1,2,3,4,6,7,8-HpCDF	33.1		0.139	3.04	1.09	1.000	1
1,2,3,4,7,8,9-HpCDF	3.90		0.149	3.04	1.08	1.000	1
OCDF	201		0.137	6.08	0.88	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:25
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0124	**Units:**	ng/Kg
Lab Code:	E1801136-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 19:21
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.649g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616284	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.494	0.608			1
Total Penta-Dioxins	3.32		0.101	3.04	1.57		1
Total Hexa-Dioxins	50.9		0.0932	3.04	1.20		1
Total Hepta-Dioxins	1250		1.79	3.04	1.03		1
Total Tetra-Furans	ND	U	0.195	0.608			1
Total Penta-Furans	3.60		0.117	3.04	1.44		1
Total Hexa-Furans	44.2		0.236	3.04	1.08		1
Total Hepta-Furans	209		0.143	3.04	1.09		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:25
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0124	**Units:**	Percent
Lab Code:	E1801136-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 19:21
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.649g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616284	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	851.862	43		25-164	0.78	1.030
13C-1,2,3,7,8-PeCDD	2000	1237.614	62		25-181	1.54	1.240
13C-1,2,3,4,7,8-HxCDD	2000	1240.857	62		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1113.340	56		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1395.963	70		23-140	1.05	1.070
13C-OCDD	4000	1958.156	49		17-157	0.92	1.140
13C-2,3,7,8-TCDF	2000	1107.577	55		24-169	0.78	0.990
13C-1,2,3,7,8-PeCDF	2000	1187.050	59		24-185	1.57	1.188
13C-2,3,4,7,8-PeCDF	2000	1168.263	58		21-178	1.58	1.228
13C-1,2,3,4,7,8-HxCDF	2000	1047.134	52		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1054.160	53		26-123	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1086.168	54		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	987.305	49		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	914.124	46		28-143	0.45	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1003.316	50		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	477.477	60		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:25
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0124	**Units:**	ng/Kg
Lab Code:	E1801136-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**0.696**	0.494	0.608	1	1	0.696
1,2,3,7,8-PeCDD	**1.17**	0.101	3.04	1	1	1.17
1,2,3,4,7,8-HxCDD	**1.72**	0.0897	3.04	1	0.1	0.172
1,2,3,6,7,8-HxCDD	**7.88**	0.102	3.04	1	0.1	0.788
1,2,3,7,8,9-HxCDD	**3.58**	0.0890	3.04	1	0.1	0.358
1,2,3,4,6,7,8-HpCDD	**661**	1.79	3.04	1	0.01	6.61
OCDD	**41500**	0.124	6.08	1	0.0003	12.5
2,3,7,8-TCDF	**1.01**	0.195	0.608	1	0.1	0.101
1,2,3,7,8-PeCDF	ND	0.116	3.04	1	0.03	
2,3,4,7,8-PeCDF	**0.429**	0.117	3.04	1	0.3	0.129
1,2,3,4,7,8-HxCDF	**1.66**	0.228	3.04	1	0.1	0.166
1,2,3,6,7,8-HxCDF	**0.757**	0.221	3.04	1	0.1	0.0757
1,2,3,7,8,9-HxCDF	ND	0.250	3.04	1	0.1	
2,3,4,6,7,8-HxCDF	**0.866**	0.249	3.04	1	0.1	0.0866
1,2,3,4,6,7,8-HpCDF	**33.1**	0.139	3.04	1	0.01	0.331
1,2,3,4,7,8,9-HpCDF	**3.90**	0.149	3.04	1	0.01	0.0390
OCDF	**201**	0.137	6.08	1	0.0003	0.0603
		Total TEQ				23.3

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:25
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0124	**Units:**	Percent
Lab Code:	E1801136-014	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	5.326g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	77.2		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:35
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0126	**Units:**	ng/Kg
Lab Code:	E1801136-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 13:56
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.667g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616306	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616302

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	3780		58.1	58.1	0.77	1.001	20
1,2,3,7,8-PeCDD	27.3		0.436	3.96	1.54	1.001	1
1,2,3,4,7,8-HxCDD	5.44		0.566	3.96	1.08	1.000	1
1,2,3,6,7,8-HxCDD	34.5		0.646	3.96	1.25	1.000	1
1,2,3,7,8,9-HxCDD	14.0		0.562	3.96	1.19	1.007	1
1,2,3,4,6,7,8-HpCDD	855		1.51	3.96	1.04	1.000	1
OCDD	27400		11.1	158	0.88	1.000	20
2,3,7,8-TCDF	4820		27.9	27.9	0.78	1.001	20
1,2,3,7,8-PeCDF	175		0.688	3.96	1.57	1.001	1
2,3,4,7,8-PeCDF	162		0.741	3.96	1.58	1.001	1
1,2,3,4,7,8-HxCDF	262		0.898	3.96	1.24	1.000	1
1,2,3,6,7,8-HxCDF	73.0		0.934	3.96	1.26	1.000	1
1,2,3,7,8,9-HxCDF	23.4		1.10	3.96	1.20	1.001	1
2,3,4,6,7,8-HxCDF	27.6		1.01	3.96	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	246		0.979	3.96	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	39.3		1.32	3.96	0.93	1.000	1
OCDF	1440		0.976	7.92	0.90	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:35
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0126	**Units:**	ng/Kg
Lab Code:	E1801136-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 13:56
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.667g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616306	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616302

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	3460		1.15	1.15	0.74		1
Total Penta-Dioxins	100		0.436	3.96	1.59		1
Total Hexa-Dioxins	353		0.589	3.96	1.23		1
Total Hepta-Dioxins	1960		1.51	3.96	1.05		1
Total Tetra-Furans	9350		0.571	0.792	0.85		1
Total Penta-Furans	683		0.714	3.96	1.57		1
Total Hexa-Furans	635		0.976	3.96	1.12		1
Total Hepta-Furans	840		1.13	3.96	0.99		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:35
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0126	**Units:**	Percent
Lab Code:	E1801136-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 20:10
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.667g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616285	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	849.598	42		25-164	0.78	1.029
13C-1,2,3,7,8-PeCDD	2000	1116.771	56		25-181	1.59	1.237
13C-1,2,3,4,7,8-HxCDD	2000	1254.278	63		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1149.619	57		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1009.065	50		23-140	1.07	1.070
13C-OCDD	4000	1008.718	25		17-157	0.94	1.139
13C-2,3,7,8-TCDF	2000	1154.300	58		24-169	0.77	0.990
13C-1,2,3,7,8-PeCDF	2000	1088.347	54		24-185	1.59	1.185
13C-2,3,4,7,8-PeCDF	2000	1042.553	52		21-178	1.62	1.226
13C-1,2,3,4,7,8-HxCDF	2000	1164.771	58		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1062.877	53		26-123	0.54	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1035.225	52		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1059.272	53		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	745.750	37		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	673.854	34		26-138	0.44	1.082
37Cl-2,3,7,8-TCDD	800	527.216	66		35-197	NA	1.030

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:35
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0126	**Units:**	ng/Kg
Lab Code:	E1801136-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**3780**	58.1	58.1	20	1	3780
1,2,3,7,8-PeCDD	**27.3**	0.436	3.96	1	1	27.3
1,2,3,4,7,8-HxCDD	**5.44**	0.566	3.96	1	0.1	0.544
1,2,3,6,7,8-HxCDD	**34.5**	0.646	3.96	1	0.1	3.45
1,2,3,7,8,9-HxCDD	**14.0**	0.562	3.96	1	0.1	1.40
1,2,3,4,6,7,8-HpCDD	**855**	1.51	3.96	1	0.01	8.55
OCDD	**27400**	11.1	158	20	0.0003	8.22
2,3,7,8-TCDF	**4820**	27.9	27.9	20	0.1	482
1,2,3,7,8-PeCDF	**175**	0.688	3.96	1	0.03	5.25
2,3,4,7,8-PeCDF	**162**	0.741	3.96	1	0.3	48.6
1,2,3,4,7,8-HxCDF	**262**	0.898	3.96	1	0.1	26.2
1,2,3,6,7,8-HxCDF	**73.0**	0.934	3.96	1	0.1	7.30
1,2,3,7,8,9-HxCDF	**23.4**	1.10	3.96	1	0.1	2.34
2,3,4,6,7,8-HxCDF	**27.6**	1.01	3.96	1	0.1	2.76
1,2,3,4,6,7,8-HpCDF	**246**	0.979	3.96	1	0.01	2.46
1,2,3,4,7,8,9-HpCDF	**39.3**	1.32	3.96	1	0.01	0.393
OCDF	**1440**	0.976	7.92	1	0.0003	0.432
		Total TEQ				4410

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:35
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0126	**Units:**	Percent
Lab Code:	E1801136-015	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	5.675g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	59.2		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:40
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0127	**Units:**	ng/Kg
Lab Code:	E1801136-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 14:45
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.871g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616307	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616302

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	3840		35.6	35.6	0.81	1.001	20
1,2,3,7,8-PeCDD	21.3		1.55	4.13	1.51	1.000	1
1,2,3,4,7,8-HxCDD	5.06		0.489	4.13	1.29	1.000	1
1,2,3,6,7,8-HxCDD	26.3		0.560	4.13	1.25	1.000	1
1,2,3,7,8,9-HxCDD	11.9		0.486	4.13	1.23	1.007	1
1,2,3,4,6,7,8-HpCDD	383		1.61	4.13	1.03	1.000	1
OCDD	21300		16.5	165	0.93	1.000	20
2,3,7,8-TCDF	5100		24.1	24.1	0.76	1.001	20
1,2,3,7,8-PeCDF	105		1.50	4.13	1.52	1.001	1
2,3,4,7,8-PeCDF	104		1.61	4.13	1.50	1.001	1
1,2,3,4,7,8-HxCDF	195		0.980	4.13	1.21	1.000	1
1,2,3,6,7,8-HxCDF	52.7		1.03	4.13	1.23	1.000	1
1,2,3,7,8,9-HxCDF	19.7		1.16	4.13	1.30	1.001	1
2,3,4,6,7,8-HxCDF	19.0		1.05	4.13	1.12	1.000	1
1,2,3,4,6,7,8-HpCDF	281		0.577	4.13	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	39.8		0.751	4.13	1.11	1.000	1
OCDF	27400		35.5	165	0.89	1.005	20

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:40
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0127	**Units:**	ng/Kg
Lab Code:	E1801136-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 14:45
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.871g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616307	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616302

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	2300		0.818	0.826	0.83		1
Total Penta-Dioxins	38.2		1.55	4.13	1.37		1
Total Hexa-Dioxins	264		0.510	4.13	1.25		1
Total Hepta-Dioxins	940		1.61	4.13	1.06		1
Total Tetra-Furans	7010		0.423	0.826	0.78		1
Total Penta-Furans	448		1.55	4.13	1.37		1
Total Hexa-Furans	476		1.05	4.13	1.30		1
Total Hepta-Furans	620		0.654	4.13	1.03		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:40
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0127	**Units:**	Percent
Lab Code:	E1801136-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 20:59
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.871g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616286	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	879.699	44		25-164	0.77	1.030
13C-1,2,3,7,8-PeCDD	2000	1130.594	57		25-181	1.54	1.238
13C-1,2,3,4,7,8-HxCDD	2000	1320.584	66		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1180.781	59		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1052.538	53		23-140	1.07	1.070
13C-OCDD	4000	934.246	23		17-157	0.92	1.139
13C-2,3,7,8-TCDF	2000	1158.323	58		24-169	0.78	0.990
13C-1,2,3,7,8-PeCDF	2000	1095.232	55		24-185	1.61	1.186
13C-2,3,4,7,8-PeCDF	2000	1034.455	52		21-178	1.63	1.226
13C-1,2,3,4,7,8-HxCDF	2000	1190.668	60		26-152	0.54	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1097.537	55		26-123	0.54	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1069.456	53		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1098.084	55		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	771.168	39		28-143	0.46	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	711.028	36		26-138	0.44	1.082
37Cl-2,3,7,8-TCDD	800	548.114	69		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:40
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0127	**Units:**	ng/Kg
Lab Code:	E1801136-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**3840**	35.6	35.6	20	1	3840
1,2,3,7,8-PeCDD	**21.3**	1.55	4.13	1	1	21.3
1,2,3,4,7,8-HxCDD	**5.06**	0.489	4.13	1	0.1	0.506
1,2,3,6,7,8-HxCDD	**26.3**	0.560	4.13	1	0.1	2.63
1,2,3,7,8,9-HxCDD	**11.9**	0.486	4.13	1	0.1	1.19
1,2,3,4,6,7,8-HpCDD	**383**	1.61	4.13	1	0.01	3.83
OCDD	**21300**	16.5	165	20	0.0003	6.39
2,3,7,8-TCDF	**5100**	24.1	24.1	20	0.1	510
1,2,3,7,8-PeCDF	**105**	1.50	4.13	1	0.03	3.15
2,3,4,7,8-PeCDF	**104**	1.61	4.13	1	0.3	31.2
1,2,3,4,7,8-HxCDF	**195**	0.980	4.13	1	0.1	19.5
1,2,3,6,7,8-HxCDF	**52.7**	1.03	4.13	1	0.1	5.27
1,2,3,7,8,9-HxCDF	**19.7**	1.16	4.13	1	0.1	1.97
2,3,4,6,7,8-HxCDF	**19.0**	1.05	4.13	1	0.1	1.90
1,2,3,4,6,7,8-HpCDF	**281**	0.577	4.13	1	0.01	2.81
1,2,3,4,7,8,9-HpCDF	**39.8**	0.751	4.13	1	0.01	0.398
OCDF	**27400**	35.5	165	20	0.0003	8.22
		Total TEQ				4460

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:40
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0127	**Units:**	Percent
Lab Code:	E1801136-016	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	6.684g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	55.7		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:45
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0128	**Units:**	ng/Kg
Lab Code:	E1801136-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 21:48
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.479g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616287	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.968	0.968			1
1,2,3,7,8-PeCDD	0.635**JK**		0.282	4.12	1.31	1.001	1
1,2,3,4,7,8-HxCDD	0.470**JK**		0.194	4.12	1.59	1.000	1
1,2,3,6,7,8-HxCDD	0.901**JK**		0.219	4.12	1.52	1.000	1
1,2,3,7,8,9-HxCDD	1.33**JK**		0.191	4.12	1.50	1.008	1
1,2,3,4,6,7,8-HpCDD	27.2		0.182	4.12	1.11	1.000	1
OCDD	1430		0.527	8.24	0.90	1.000	1
2,3,7,8-TCDF	1.38		0.445	0.824	0.78	1.001	1
1,2,3,7,8-PeCDF	ND	U	0.224	4.12			1
2,3,4,7,8-PeCDF	ND	U	0.222	4.12			1
1,2,3,4,7,8-HxCDF	0.184**JK**		0.0874	4.12	0.61	1.000	1
1,2,3,6,7,8-HxCDF	0.271**JK**		0.0841	4.12	1.85	1.000	1
1,2,3,7,8,9-HxCDF	0.138**JK**		0.105	4.12	1.86	1.001	1
2,3,4,6,7,8-HxCDF	0.197**JK**		0.0943	4.12	1.96	1.000	1
1,2,3,4,6,7,8-HpCDF	2.38**JP**		0.155	4.12	1.18	1.000	1
1,2,3,4,7,8,9-HpCDF	0.181**JK**		0.179	4.12	1.81	1.001	1
OCDF	4.91**J**		0.547	8.24	0.98	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:45
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0128	**Units:**	ng/Kg
Lab Code:	E1801136-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 21:48
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.479g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616287	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	7.17		0.968	0.968	0.81		1
Total Penta-Dioxins	3.52**J**		0.282	4.12	1.50		1
Total Hexa-Dioxins	35.7		0.200	4.12	1.29		1
Total Hepta-Dioxins	97.8		0.182	4.12	1.02		1
Total Tetra-Furans	3.81		0.445	0.824	0.74		1
Total Penta-Furans	2.12**J**		0.223	4.12	1.68		1
Total Hexa-Furans	ND	U	0.0920	4.12			1
Total Hepta-Furans	2.59**J**		0.166	4.12	1.18		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:45
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0128	**Units:**	Percent
Lab Code:	E1801136-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 21:48
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.479g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616287	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	597.313	30		25-164	0.81	1.031
13C-1,2,3,7,8-PeCDD	2000	973.144	49		25-181	1.58	1.240
13C-1,2,3,4,7,8-HxCDD	2000	1102.741	55		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	977.261	49		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1051.485	53		23-140	1.05	1.070
13C-OCDD	4000	1098.494	27		17-157	0.92	1.140
13C-2,3,7,8-TCDF	2000	783.759	39		24-169	0.78	0.991
13C-1,2,3,7,8-PeCDF	2000	923.369	46		24-185	1.56	1.188
13C-2,3,4,7,8-PeCDF	2000	894.162	45		21-178	1.57	1.228
13C-1,2,3,4,7,8-HxCDF	2000	938.531	47		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	922.111	46		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	860.383	43		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	891.294	45		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	701.743	35		28-143	0.46	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	729.437	36		26-138	0.46	1.082
37Cl-2,3,7,8-TCDD	800	433.002	54		35-197	NA	1.032

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:45
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0128	**Units:**	ng/Kg
Lab Code:	E1801136-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.968	0.968	1	1	
1,2,3,7,8-PeCDD	**0.635**	0.282	4.12	1	1	0.635
1,2,3,4,7,8-HxCDD	**0.470**	0.194	4.12	1	0.1	0.0470
1,2,3,6,7,8-HxCDD	**0.901**	0.219	4.12	1	0.1	0.0901
1,2,3,7,8,9-HxCDD	**1.33**	0.191	4.12	1	0.1	0.133
1,2,3,4,6,7,8-HpCDD	**27.2**	0.182	4.12	1	0.01	0.272
OCDD	**1430**	0.527	8.24	1	0.0003	0.429
2,3,7,8-TCDF	**1.38**	0.445	0.824	1	0.1	0.138
1,2,3,7,8-PeCDF	ND	0.224	4.12	1	0.03	
2,3,4,7,8-PeCDF	ND	0.222	4.12	1	0.3	
1,2,3,4,7,8-HxCDF	**0.184**	0.0874	4.12	1	0.1	0.0184
1,2,3,6,7,8-HxCDF	**0.271**	0.0841	4.12	1	0.1	0.0271
1,2,3,7,8,9-HxCDF	**0.138**	0.105	4.12	1	0.1	0.0138
2,3,4,6,7,8-HxCDF	**0.197**	0.0943	4.12	1	0.1	0.0197
1,2,3,4,6,7,8-HpCDF	**2.38**	0.155	4.12	1	0.01	0.0238
1,2,3,4,7,8,9-HpCDF	**0.181**	0.179	4.12	1	0.01	0.00181
OCDF	**4.91**	0.547	8.24	1	0.0003	0.00147
		Total TEQ				1.85

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/11/18 15:45
Sample Matrix:	Sediment	**Date Received:**	11/12/18 13:45
Sample Name:	SL0128	**Units:**	Percent
Lab Code:	E1801136-017	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	6.32g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	57.9		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:40
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0141	**Units:**	ng/Kg
Lab Code:	E1801136-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 22:38
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.040g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616288	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	1.27**K**		0.456	0.638	0.97	1.001	1
1,2,3,7,8-PeCDD	1.21**J**		0.133	3.19	1.41	1.001	1
1,2,3,4,7,8-HxCDD	1.98**J**		0.174	3.19	1.38	1.000	1
1,2,3,6,7,8-HxCDD	3.97		0.198	3.19	1.15	1.000	1
1,2,3,7,8,9-HxCDD	3.61		0.173	3.19	1.18	1.007	1
1,2,3,4,6,7,8-HpCDD	200		1.37	3.19	1.08	1.000	1
OCDD	72700**E**		0.614	6.38	0.89	1.000	1
2,3,7,8-TCDF	2.88		0.330	0.638	0.66	1.001	1
1,2,3,7,8-PeCDF	0.269**JK**		0.142	3.19	0.96	1.001	1
2,3,4,7,8-PeCDF	0.571**J**		0.155	3.19	1.52	1.001	1
1,2,3,4,7,8-HxCDF	0.618**JK**		0.238	3.19	1.62	1.000	1
1,2,3,6,7,8-HxCDF	0.547**JK**		0.231	3.19	1.93	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.289	3.19			1
2,3,4,6,7,8-HxCDF	0.691**JK**		0.274	3.19	1.67	1.000	1
1,2,3,4,6,7,8-HpCDF	9.67		0.155	3.19	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	0.600**JK**		0.204	3.19	0.74	1.000	1
OCDF	28.8		0.483	6.38	0.88	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:40
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0141	**Units:**	ng/Kg
Lab Code:	E1801136-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 22:38
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.040g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616288	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.456	0.638			1
Total Penta-Dioxins	3.22		0.133	3.19	1.51		1
Total Hexa-Dioxins	51.4		0.181	3.19	1.25		1
Total Hepta-Dioxins	528		1.37	3.19	1.04		1
Total Tetra-Furans	5.76		0.330	0.638	0.76		1
Total Penta-Furans	1.03**J**		0.149	3.19	1.74		1
Total Hexa-Furans	9.00		0.256	3.19	1.26		1
Total Hepta-Furans	24.6		0.176	3.19	1.03		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:40
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0141	**Units:**	Percent
Lab Code:	E1801136-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 22:38
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.040g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616288	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	767.952	38		25-164	0.79	1.031
13C-1,2,3,7,8-PeCDD	2000	1037.901	52		25-181	1.54	1.240
13C-1,2,3,4,7,8-HxCDD	2000	1158.602	58		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1097.395	55		28-130	1.29	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	992.561	50		23-140	1.03	1.070
13C-OCDD	4000	1017.693	25		17-157	0.93	1.140
13C-2,3,7,8-TCDF	2000	996.062	50		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	1016.074	51		24-185	1.59	1.187
13C-2,3,4,7,8-PeCDF	2000	939.815	47		21-178	1.59	1.228
13C-1,2,3,4,7,8-HxCDF	2000	1059.725	53		26-152	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1026.645	51		26-123	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	927.253	46		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	946.235	47		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	741.589	37		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	648.506	32		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	463.008	58		35-197	NA	1.032

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:40
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0141	**Units:**	ng/Kg
Lab Code:	E1801136-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**1.27**	0.456	0.638	1	1	1.27
1,2,3,7,8-PeCDD	**1.21**	0.133	3.19	1	1	1.21
1,2,3,4,7,8-HxCDD	**1.98**	0.174	3.19	1	0.1	0.198
1,2,3,6,7,8-HxCDD	**3.97**	0.198	3.19	1	0.1	0.397
1,2,3,7,8,9-HxCDD	**3.61**	0.173	3.19	1	0.1	0.361
1,2,3,4,6,7,8-HpCDD	**200**	1.37	3.19	1	0.01	2.00
OCDD	**72700**	0.614	6.38	1	0.0003	21.8
2,3,7,8-TCDF	**2.88**	0.330	0.638	1	0.1	0.288
1,2,3,7,8-PeCDF	**0.269**	0.142	3.19	1	0.03	0.00807
2,3,4,7,8-PeCDF	**0.571**	0.155	3.19	1	0.3	0.171
1,2,3,4,7,8-HxCDF	**0.618**	0.238	3.19	1	0.1	0.0618
1,2,3,6,7,8-HxCDF	**0.547**	0.231	3.19	1	0.1	0.0547
1,2,3,7,8,9-HxCDF	ND	0.289	3.19	1	0.1	
2,3,4,6,7,8-HxCDF	**0.691**	0.274	3.19	1	0.1	0.0691
1,2,3,4,6,7,8-HpCDF	**9.67**	0.155	3.19	1	0.01	0.0967
1,2,3,4,7,8,9-HpCDF	**0.600**	0.204	3.19	1	0.01	0.00600
OCDF	**28.8**	0.483	6.38	1	0.0003	0.00864
		Total TEQ				28.0

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:40
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0141	**Units:**	Percent
Lab Code:	E1801136-018	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	7.6g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	78.1		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:45
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0142	**Units:**	ng/Kg
Lab Code:	E1801136-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 01:31
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.284g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519703	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519698

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	1.40		0.239	0.582	0.65	1.002	1
1,2,3,7,8-PeCDD	0.707**JK**		0.105	2.91	1.08	1.001	1
1,2,3,4,7,8-HxCDD	0.807**J**		0.132	2.91	1.17	1.000	1
1,2,3,6,7,8-HxCDD	4.43		0.145	2.91	1.19	1.000	1
1,2,3,7,8,9-HxCDD	2.11**J**		0.135	2.91	1.41	1.007	1
1,2,3,4,6,7,8-HpCDD	157		0.110	2.91	1.04	1.000	1
OCDD	2770		0.260	5.82	0.89	1.000	1
2,3,7,8-TCDF	2.87		0.130	0.582	0.66	1.001	1
1,2,3,7,8-PeCDF	0.494**JK**		0.115	2.91	1.93	1.001	1
2,3,4,7,8-PeCDF	1.25**J**		0.124	2.91	1.53	1.001	1
1,2,3,4,7,8-HxCDF	1.44**J**		0.189	2.91	1.12	1.000	1
1,2,3,6,7,8-HxCDF	1.23**JP**		0.182	2.91	1.14	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.219	2.91			1
2,3,4,6,7,8-HxCDF	1.59**J**		0.205	2.91	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	21.7		0.154	2.91	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.234	2.91			1
OCDF	85.2		0.227	5.82	0.86	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:45
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0142	**Units:**	ng/Kg
Lab Code:	E1801136-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 01:31
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.284g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519703	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519698

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	1.18		0.239	0.582	0.85		1
Total Penta-Dioxins	2.19	**J**	0.105	2.91	1.48		1
Total Hexa-Dioxins	39.1		0.138	2.91	1.20		1
Total Hepta-Dioxins	500		0.110	2.91	1.05		1
Total Tetra-Furans	5.91		0.130	0.582	0.71		1
Total Penta-Furans	11.5		0.119	2.91	1.66		1
Total Hexa-Furans	25.9		0.198	2.91	1.33		1
Total Hepta-Furans	76.9		0.191	2.91	1.04		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:45
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0142	**Units:**	Percent
Lab Code:	E1801136-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 01:31
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.284g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519703	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519698

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	712.375	36		25-164	0.81	1.026
13C-1,2,3,7,8-PeCDD	2000	1113.034	56		25-181	1.62	1.225
13C-1,2,3,4,7,8-HxCDD	2000	995.700	50		32-141	1.36	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1038.727	52		28-130	1.18	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1338.680	67		23-140	1.07	1.075
13C-OCDD	4000	2098.301	52		17-157	0.90	1.157
13C-2,3,7,8-TCDF	2000	858.835	43		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	994.555	50		24-185	1.57	1.174
13C-2,3,4,7,8-PeCDF	2000	934.765	47		21-178	1.58	1.213
13C-1,2,3,4,7,8-HxCDF	2000	821.761	41		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	849.096	42		26-123	0.51	0.971
13C-1,2,3,7,8,9-HxCDF	2000	956.958	48		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	843.524	42		28-136	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	896.661	45		28-143	0.44	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	970.379	49		26-138	0.43	1.088
37Cl-2,3,7,8-TCDD	800	412.298	52		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:45
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0142	**Units:**	ng/Kg
Lab Code:	E1801136-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**1.40**	0.239	0.582	1	1	1.40
1,2,3,7,8-PeCDD	**0.707**	0.105	2.91	1	1	0.707
1,2,3,4,7,8-HxCDD	**0.807**	0.132	2.91	1	0.1	0.0807
1,2,3,6,7,8-HxCDD	**4.43**	0.145	2.91	1	0.1	0.443
1,2,3,7,8,9-HxCDD	**2.11**	0.135	2.91	1	0.1	0.211
1,2,3,4,6,7,8-HpCDD	**157**	0.110	2.91	1	0.01	1.57
OCDD	**2770**	0.260	5.82	1	0.0003	0.831
2,3,7,8-TCDF	**2.87**	0.130	0.582	1	0.1	0.287
1,2,3,7,8-PeCDF	**0.494**	0.115	2.91	1	0.03	0.0148
2,3,4,7,8-PeCDF	**1.25**	0.124	2.91	1	0.3	0.375
1,2,3,4,7,8-HxCDF	**1.44**	0.189	2.91	1	0.1	0.144
1,2,3,6,7,8-HxCDF	**1.23**	0.182	2.91	1	0.1	0.123
1,2,3,7,8,9-HxCDF	ND	0.219	2.91	1	0.1	
2,3,4,6,7,8-HxCDF	**1.59**	0.205	2.91	1	0.1	0.159
1,2,3,4,6,7,8-HpCDF	**21.7**	0.154	2.91	1	0.01	0.217
1,2,3,4,7,8,9-HpCDF	ND	0.234	2.91	1	0.01	
OCDF	**85.2**	0.227	5.82	1	0.0003	0.0256
		Total TEQ				6.59

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:45
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0142	**Units:**	Percent
Lab Code:	E1801136-019	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	7.342g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	83.6		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:50
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0143	**Units:**	ng/Kg
Lab Code:	E1801136-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 02:20
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.443g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519704	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519698

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	19.2		0.485	0.814	0.80	1.001	1
1,2,3,7,8-PeCDD	2.00	**JK**	0.223	4.07	0.90	1.001	1
1,2,3,4,7,8-HxCDD	2.80	**J**	0.317	4.07	1.15	1.000	1
1,2,3,6,7,8-HxCDD	12.9		0.363	4.07	1.09	1.000	1
1,2,3,7,8,9-HxCDD	7.09		0.332	4.07	1.31	1.007	1
1,2,3,4,6,7,8-HpCDD	332		0.205	4.07	1.02	1.000	1
OCDD	7360	**E**	0.822	8.14	0.89	1.000	1
2,3,7,8-TCDF	47.6		0.136	0.814	0.73	1.001	1
1,2,3,7,8-PeCDF	1.91	**J**	0.231	4.07	1.74	1.001	1
2,3,4,7,8-PeCDF	3.37	**J**	0.251	4.07	1.46	1.001	1
1,2,3,4,7,8-HxCDF	5.61		0.228	4.07	1.14	1.000	1
1,2,3,6,7,8-HxCDF	3.90	**JP**	0.219	4.07	1.07	1.001	1
1,2,3,7,8,9-HxCDF	1.35	**J**	0.259	4.07	1.23	1.001	1
2,3,4,6,7,8-HxCDF	3.78	**J**	0.249	4.07	1.28	1.000	1
1,2,3,4,6,7,8-HpCDF	72.2		0.713	4.07	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	4.12		1.09	4.07	1.05	1.001	1
OCDF	454		0.487	8.14	0.87	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:50
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0143	**Units:**	ng/Kg
Lab Code:	E1801136-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 02:20
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.443g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519704	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519698

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	29.7		0.485	0.814	0.73		1
Total Penta-Dioxins	21.0		0.223	4.07	1.63		1
Total Hexa-Dioxins	135		0.338	4.07	1.29		1
Total Hepta-Dioxins	739		0.205	4.07	1.05		1
Total Tetra-Furans	118		0.136	0.814	0.74		1
Total Penta-Furans	34.5		0.240	4.07	1.61		1
Total Hexa-Furans	81.0		0.238	4.07	1.26		1
Total Hepta-Furans	215		0.885	4.07	1.02		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:50
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0143	**Units:**	Percent
Lab Code:	E1801136-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 02:20
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.443g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519704	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519698

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	750.708	38		25-164	0.79	1.026
13C-1,2,3,7,8-PeCDD	2000	1137.453	57		25-181	1.58	1.225
13C-1,2,3,4,7,8-HxCDD	2000	1045.846	52		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1042.525	52		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1171.178	59		23-140	1.06	1.075
13C-OCDD	4000	1490.579	37		17-157	0.89	1.157
13C-2,3,7,8-TCDF	2000	903.488	45		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	1009.919	50		24-185	1.56	1.174
13C-2,3,4,7,8-PeCDF	2000	951.299	48		21-178	1.57	1.213
13C-1,2,3,4,7,8-HxCDF	2000	839.959	42		26-152	0.52	0.968
13C-1,2,3,6,7,8-HxCDF	2000	878.997	44		26-123	0.52	0.970
13C-1,2,3,7,8,9-HxCDF	2000	989.436	49		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	871.698	44		28-136	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	799.914	40		28-143	0.43	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	858.688	43		26-138	0.44	1.087
37Cl-2,3,7,8-TCDD	800	492.962	62		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:50
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0143	**Units:**	ng/Kg
Lab Code:	E1801136-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**19.2**	0.485	0.814	1	1	19.2
1,2,3,7,8-PeCDD	**2.00**	0.223	4.07	1	1	2.00
1,2,3,4,7,8-HxCDD	**2.80**	0.317	4.07	1	0.1	0.280
1,2,3,6,7,8-HxCDD	**12.9**	0.363	4.07	1	0.1	1.29
1,2,3,7,8,9-HxCDD	**7.09**	0.332	4.07	1	0.1	0.709
1,2,3,4,6,7,8-HpCDD	**332**	0.205	4.07	1	0.01	3.32
OCDD	**7360**	0.822	8.14	1	0.0003	2.21
2,3,7,8-TCDF	**47.6**	0.136	0.814	1	0.1	4.76
1,2,3,7,8-PeCDF	**1.91**	0.231	4.07	1	0.03	0.0573
2,3,4,7,8-PeCDF	**3.37**	0.251	4.07	1	0.3	1.01
1,2,3,4,7,8-HxCDF	**5.61**	0.228	4.07	1	0.1	0.561
1,2,3,6,7,8-HxCDF	**3.90**	0.219	4.07	1	0.1	0.390
1,2,3,7,8,9-HxCDF	**1.35**	0.259	4.07	1	0.1	0.135
2,3,4,6,7,8-HxCDF	**3.78**	0.249	4.07	1	0.1	0.378
1,2,3,4,6,7,8-HpCDF	**72.2**	0.713	4.07	1	0.01	0.722
1,2,3,4,7,8,9-HpCDF	**4.12**	1.09	4.07	1	0.01	0.0412
OCDF	**454**	0.487	8.14	1	0.0003	0.136
		Total TEQ				37.2

2005 WHO TEFs, ND = 0

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	11/13/18 09:50
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0143	**Units:**	Percent
Lab Code:	E1801136-020	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	12/31/18 08:49
	7.712g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	58.8		-	1

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1800529-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 10:14
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.281g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519713	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.394	0.486			1
1,2,3,7,8-PeCDD	ND	U	0.0570	2.43			1
1,2,3,4,7,8-HxCDD	ND	U	0.0599	2.43			1
1,2,3,6,7,8-HxCDD	ND	U	0.0613	2.43			1
1,2,3,7,8,9-HxCDD	ND	U	0.0592	2.43			1
1,2,3,4,6,7,8-HpCDD	0.0696**J**		0.0424	2.43	1.02	1.000	1
OCDD	1.75**J**		0.140	4.86	0.99	1.000	1
2,3,7,8-TCDF	ND	U	0.136	0.486			1
1,2,3,7,8-PeCDF	ND	U	0.0682	2.43			1
2,3,4,7,8-PeCDF	ND	U	0.0701	2.43			1
1,2,3,4,7,8-HxCDF	ND	U	0.0544	2.43			1
1,2,3,6,7,8-HxCDF	ND	U	0.0533	2.43			1
1,2,3,7,8,9-HxCDF	ND	U	0.0673	2.43			1
2,3,4,6,7,8-HxCDF	ND	U	0.0621	2.43			1
1,2,3,4,6,7,8-HpCDF	ND	U	0.0414	2.43			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0641	2.43			1
OCDF	ND	U	0.285	4.86			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1800529-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 10:14
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.281g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519713	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.394	0.486			1
Total Penta-Dioxins	ND	U	0.0570	2.43			1
Total Hexa-Dioxins	ND	U	0.0601	2.43			1
Total Hepta-Dioxins	0.185**J**		0.0424	2.43	1.00		1
Total Tetra-Furans	ND	U	0.136	0.486			1
Total Penta-Furans	ND	U	0.0691	2.43			1
Total Hexa-Furans	ND	U	0.0590	2.43			1
Total Hepta-Furans	ND	U	0.0517	2.43			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1800529-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 10:14
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.281g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519713	**Blank File Name:**	P519713
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519710

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1104.376	55		25-164	0.79	1.027
13C-1,2,3,7,8-PeCDD	2000	2061.520	103		25-181	1.58	1.226
13C-1,2,3,4,7,8-HxCDD	2000	1959.233	98		32-141	1.37	0.991
13C-1,2,3,6,7,8-HxCDD	2000	2092.772	105		28-130	1.17	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	2576.596	129		23-140	1.06	1.076
13C-OCDD	4000	3634.877	91		17-157	0.89	1.158
13C-2,3,7,8-TCDF	2000	1312.978	66		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1752.421	88		24-185	1.59	1.175
13C-2,3,4,7,8-PeCDF	2000	1710.454	86		21-178	1.59	1.213
13C-1,2,3,4,7,8-HxCDF	2000	1593.166	80		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1709.726	85		26-123	0.52	0.970
13C-1,2,3,7,8,9-HxCDF	2000	1883.499	94		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1692.001	85		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1722.353	86		28-143	0.44	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	1854.815	93		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	354.746	44		35-197	NA	1.027

Accuracy & Precision

ALS Environmental - Houston HRMS
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ALS Group USA, Corp.
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QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Analyzed:**	12/29/18 - 12/30/18
Sample Matrix:	Sediment	**Date Extracted:**	12/26/18

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	Dry
		Analysis Lot:	620628

	Lab Control Sample EQ1800529-02			Duplicate Lab Control Sample EQ1800529-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	68.3	96.9	71	71.8	96.7	74	70-140	5	50
1,2,3,4,7,8-HxCDD	87.3	96.9	90	89.5	96.7	93	70-164	2	50
1,2,3,6,7,8-HxCDD	98.4	96.9	102	102	96.7	106	76-134	4	50
1,2,3,7,8,9-HxCDD	89.0	96.9	92	92.1	96.7	95	64-162	3	50
1,2,3,7,8-PeCDD	98.9	96.9	102	103	96.7	106	70-142	4	50
2,3,7,8-TCDD	27.2	19.4	140	27.9	19.3	144	67-158	3	50
OCDD	194	194	100	193	193	100	78-144	<1	50
1,2,3,4,6,7,8-HpCDF	85.0	96.9	88	87.4	96.7	90	82-122	3	50
1,2,3,4,7,8,9-HpCDF	90.7	96.9	94	91.5	96.7	95	78-138	<1	50
1,2,3,4,7,8-HxCDF	83.1	96.9	86	86.5	96.7	89	72-134	4	50
1,2,3,6,7,8-HxCDF	87.0	96.9	90	88.7	96.7	92	84-130	2	50
1,2,3,7,8,9-HxCDF	84.3	96.9	87	88.3	96.7	91	78-130	5	50
1,2,3,7,8-PeCDF	81.9	96.9	85	84.4	96.7	87	80-134	3	50
2,3,4,6,7,8-HxCDF	88.6	96.9	92	93.5	96.7	97	70-156	5	50
2,3,4,7,8-PeCDF	89.5	96.9	92	91.1	96.7	94	68-160	2	50
2,3,7,8-TCDF	17.5	19.4	91	18.0	19.3	93	75-158	3	50
OCDF	165	194	85	168	193	87	63-170	1	50

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QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Analyzed:**	12/29/18
Sample Matrix:	Sediment	**Date Extracted:**	12/26/18

Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	Dry
		Analysis Lot:	620628

EQ1800529-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,3,4,6,7,8-HpCDD	68.3	96.9	71	70-140
1,2,3,4,7,8-HxCDD	87.3	96.9	90	70-164
1,2,3,6,7,8-HxCDD	98.4	96.9	102	76-134
1,2,3,7,8,9-HxCDD	89.0	96.9	92	64-162
1,2,3,7,8-PeCDD	98.9	96.9	102	70-142
2,3,7,8-TCDD	27.2	19.4	140	67-158
OCDD	194	194	100	78-144
1,2,3,4,6,7,8-HpCDF	85.0	96.9	88	82-122
1,2,3,4,7,8,9-HpCDF	90.7	96.9	94	78-138
1,2,3,4,7,8-HxCDF	83.1	96.9	86	72-134
1,2,3,6,7,8-HxCDF	87.0	96.9	90	84-130
1,2,3,7,8,9-HxCDF	84.3	96.9	87	78-130
1,2,3,7,8-PeCDF	81.9	96.9	85	80-134
2,3,4,6,7,8-HxCDF	88.6	96.9	92	70-156
2,3,4,7,8-PeCDF	89.5	96.9	92	68-160
2,3,7,8-TCDF	17.5	19.4	91	75-158
OCDF	165	194	85	63-170

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800529-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 23:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.324g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616289	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	27.2		0.390	0.484	0.75	1.001	1
1,2,3,7,8-PeCDD	98.9		0.0555	2.42	1.57	1.001	1
1,2,3,4,7,8-HxCDD	87.3		0.0426	2.42	1.26	1.000	1
1,2,3,6,7,8-HxCDD	98.4		0.0466	2.42	1.30	1.000	1
1,2,3,7,8,9-HxCDD	89.0		0.0414	2.42	1.26	1.007	1
1,2,3,4,6,7,8-HpCDD	68.3		0.0612	2.42	1.04	1.000	1
OCDD	194		0.371	4.84	0.90	1.000	1
2,3,7,8-TCDF	17.5		0.129	0.484	0.78	1.001	1
1,2,3,7,8-PeCDF	81.9		0.0574	2.42	1.57	1.001	1
2,3,4,7,8-PeCDF	89.5		0.0571	2.42	1.54	1.001	1
1,2,3,4,7,8-HxCDF	83.1		0.0361	2.42	1.23	1.000	1
1,2,3,6,7,8-HxCDF	87.0		0.0356	2.42	1.24	1.000	1
1,2,3,7,8,9-HxCDF	84.3		0.0405	2.42	1.23	1.000	1
2,3,4,6,7,8-HxCDF	88.6		0.0395	2.42	1.25	1.000	1
1,2,3,4,6,7,8-HpCDF	85.0		0.112	2.42	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	90.7		0.130	2.42	0.99	1.000	1
OCDF	165		0.110	4.84	0.92	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800529-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 23:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.324g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616289	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	27.2		0.390	0.484	0.75		1
Total Penta-Dioxins	98.9		0.0555	2.42	1.57		1
Total Hexa-Dioxins	275		0.0433	2.42	1.26		1
Total Hepta-Dioxins	68.3		0.0612	2.42	1.04		1
Total Tetra-Furans	17.5		0.129	0.484	0.78		1
Total Penta-Furans	172		0.0573	2.42	1.57		1
Total Hexa-Furans	343		0.0378	2.42	1.23		1
Total Hepta-Furans	176		0.120	2.42	1.05		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1800529-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/29/18 23:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.324g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616289	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	728.172	36		25-164	0.78	1.031
13C-1,2,3,7,8-PeCDD	2000	1122.149	56		25-181	1.54	1.240
13C-1,2,3,4,7,8-HxCDD	2000	1316.715	66		32-141	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1165.641	58		28-130	1.24	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1348.319	67		23-140	1.05	1.070
13C-OCDD	4000	1653.475	41		17-157	0.89	1.139
13C-2,3,7,8-TCDF	2000	951.400	48		24-169	0.78	0.991
13C-1,2,3,7,8-PeCDF	2000	1039.479	52		24-185	1.59	1.187
13C-2,3,4,7,8-PeCDF	2000	1028.335	51		21-178	1.61	1.228
13C-1,2,3,4,7,8-HxCDF	2000	1129.619	56		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1060.519	53		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1072.793	54		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1029.030	51		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	900.858	45		28-143	0.46	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	909.606	45		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	397.000	50		35-197	NA	1.032

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800529-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 00:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.343g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616290	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	27.9		0.322	0.483	0.75	1.001	1
1,2,3,7,8-PeCDD	103		0.102	2.42	1.53	1.001	1
1,2,3,4,7,8-HxCDD	89.5		0.0595	2.42	1.29	1.000	1
1,2,3,6,7,8-HxCDD	102		0.0696	2.42	1.24	1.000	1
1,2,3,7,8,9-HxCDD	92.1		0.0598	2.42	1.24	1.007	1
1,2,3,4,6,7,8-HpCDD	71.8		0.0681	2.42	1.01	1.000	1
OCDD	193		0.183	4.83	0.91	1.000	1
2,3,7,8-TCDF	18.0		0.111	0.483	0.78	1.001	1
1,2,3,7,8-PeCDF	84.4		0.0357	2.42	1.53	1.001	1
2,3,4,7,8-PeCDF	91.1		0.0350	2.42	1.56	1.001	1
1,2,3,4,7,8-HxCDF	86.5		0.0308	2.42	1.25	1.000	1
1,2,3,6,7,8-HxCDF	88.7		0.0307	2.42	1.21	1.000	1
1,2,3,7,8,9-HxCDF	88.3		0.0356	2.42	1.20	1.000	1
2,3,4,6,7,8-HxCDF	93.5		0.0327	2.42	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	87.4		0.131	2.42	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	91.5		0.160	2.42	1.01	1.000	1
OCDF	168		0.135	4.83	0.89	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800529-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 00:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.343g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616290	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	27.9		0.322	0.483	0.75		1
Total Penta-Dioxins	103		0.102	2.42	1.53		1
Total Hexa-Dioxins	284		0.0627	2.42	1.29		1
Total Hepta-Dioxins	71.8		0.0681	2.42	1.01		1
Total Tetra-Furans	18.1		0.111	0.483	0.81		1
Total Penta-Furans	177		0.0354	2.42	1.63		1
Total Hexa-Furans	357		0.0323	2.42	1.25		1
Total Hepta-Furans	179		0.144	2.42	1.03		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801136
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1800529-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/30/18 00:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/26/18
Sample Amount:	10.343g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616290	**Blank File Name:**	P519713
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	808.483	40		25-164	0.80	1.031
13C-1,2,3,7,8-PeCDD	2000	1235.321	62		25-181	1.57	1.240
13C-1,2,3,4,7,8-HxCDD	2000	1421.513	71		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1256.422	63		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1409.877	70		23-140	1.07	1.070
13C-OCDD	4000	1671.712	42		17-157	0.92	1.139
13C-2,3,7,8-TCDF	2000	1011.567	51		24-169	0.79	0.991
13C-1,2,3,7,8-PeCDF	2000	1160.074	58		24-185	1.57	1.188
13C-2,3,4,7,8-PeCDF	2000	1134.307	57		21-178	1.58	1.228
13C-1,2,3,4,7,8-HxCDF	2000	1212.041	61		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1157.496	58		26-123	0.54	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1143.144	57		29-147	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1122.080	56		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	969.567	48		28-143	0.45	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	940.758	47		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	442.654	55		35-197	NA	1.032

Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
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ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0079

Run #10 Filename P519687 Samp: 1 Inj: 1 Acquired: 29-DEC-18 12:16:54
Processed: 30-DEC-18 07:59:27 Sample ID: E1801136-001

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:05	2.299e+04	3.118e+04	0.74	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:58	1.225e+03	8.176e+02	1.50	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	31:59	9.910e+02	6.351e+02	1.56	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	1.644e+03	1.470e+03	1.12	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:01	5.094e+02	4.440e+02	1.15	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	1.111e+02	9.130e+01	1.22	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:24	1.642e+02	1.411e+02	1.16	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:47	8.691e+02	7.586e+02	1.15	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:16	1.210e+02	1.357e+02	0.89	yes	yes	1.258
10	Unk	OCDF	41:54	1.126e+03	1.467e+03	0.77	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	7.007e+03	9.180e+03	0.76	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:18	1.367e+02	8.867e+01	1.54	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:44	4.527e+01	3.893e+01	1.16	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:49	1.161e+02	8.078e+01	1.44	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	1.007e+02	7.966e+01	1.26	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:47	3.229e+03	3.199e+03	1.01	yes	no	1.025
17	Unk	OCDD	41:45	2.333e+05	2.620e+05	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	1.955e+04	2.486e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	3.255e+04	2.039e+04	1.60	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	3.085e+04	1.934e+04	1.60	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:54	1.309e+04	2.590e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.554e+04	3.039e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:34	1.371e+04	2.710e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:22	1.297e+04	2.502e+04	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:46	9.807e+03	2.226e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	9.749e+03	2.191e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:02	9.951e+03	1.239e+04	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:17	2.480e+04	1.568e+04	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:43	2.028e+04	1.575e+04	1.29	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	2.201e+04	1.740e+04	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:46	2.246e+04	2.106e+04	1.07	yes	no	0.858
32	IS	13C-OCDD	41:45	2.298e+04	2.588e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	2.697e+04	3.366e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:04	3.800e+04	2.960e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	1.608e+04				no	1.014

$$\text{OCDD} = \frac{(2.333e+05 + 2.620e+05) \times 4000\ \text{pg} \times 1}{(2.298e+04 + 2.588e+04) \times 10.519\ \text{g} \times 79.9/100 \times 1.118} = 4315.3082\ \text{ng/kg}$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0079

Run #10 Filename P519687 Samp: 1 Inj: 1 Acquired: 29-DEC-18 12:16:54
Processed: 30-DEC-18 07:59:27 LAB. ID: E1801136-001

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.26e+06	1.02e+03	3.2e+03	4.48e+06	2.24e+03	2.0e+03
2	1,2,3,7,8-PeCDF	2.15e+05	9.84e+02	2.2e+02	1.40e+05	2.12e+03	6.6e+01
3	2,3,4,7,8-PeCDF	1.56e+05	9.84e+02	1.6e+02	1.01e+05	2.12e+03	4.8e+01
4	1,2,3,4,7,8-HxCDF	2.99e+05	5.64e+02	5.3e+02	2.62e+05	7.28e+02	3.6e+02
5	1,2,3,6,7,8-HxCDF	8.27e+04	5.64e+02	1.5e+02	7.16e+04	7.28e+02	9.8e+01
6	2,3,4,6,7,8-HxCDF	1.90e+04	5.64e+02	3.4e+01	1.50e+04	7.28e+02	2.1e+01
7	1,2,3,7,8,9-HxCDF	2.46e+04	5.64e+02	4.4e+01	1.84e+04	7.28e+02	2.5e+01
8	1,2,3,4,6,7,8-HpCDF	1.19e+05	6.40e+02	1.9e+02	1.04e+05	7.84e+02	1.3e+02
9	1,2,3,4,7,8,9-HpCDF	1.80e+04	6.40e+02	2.8e+01	1.87e+04	7.84e+02	2.4e+01
10	OCDF	7.38e+04	4.28e+02	1.7e+02	8.23e+04	8.48e+02	9.7e+01
11	2,3,7,8-TCDD	1.23e+06	2.11e+03	5.8e+02	1.55e+06	1.22e+03	1.3e+03
12	1,2,3,7,8-PeCDD	2.32e+04	7.92e+02	2.9e+01	1.59e+04	4.20e+02	3.8e+01
13	1,2,3,4,7,8-HxCDD	8.55e+03	6.84e+02	1.2e+01	6.87e+03	5.92e+02	1.2e+01
14	1,2,3,6,7,8-HxCDD	1.91e+04	6.84e+02	2.8e+01	1.15e+04	5.92e+02	1.9e+01
15	1,2,3,7,8,9-HxCDD	1.15e+04	6.84e+02	1.7e+01	1.41e+04	5.92e+02	2.4e+01
16	1,2,3,4,6,7,8-HpCDD	3.48e+05	1.66e+03	2.1e+02	3.60e+05	6.04e+02	6.0e+02
17	OCDD	1.47e+07	5.08e+02	2.9e+04	1.64e+07	5.32e+02	3.1e+04
18	13C-2,3,7,8-TCDF	2.97e+06	5.82e+03	5.1e+02	3.78e+06	5.33e+03	7.1e+02
19	13C-1,2,3,7,8-PeCDF	5.64e+06	6.96e+02	8.1e+03	3.53e+06	8.60e+02	4.1e+03
20	13C-2,3,4,7,8-PeCDF	5.37e+06	6.96e+02	7.7e+03	3.35e+06	8.60e+02	3.9e+03
21	13C-1,2,3,4,7,8-HxCDF	2.40e+06	1.21e+03	2.0e+03	4.69e+06	7.64e+02	6.1e+03
22	13C-1,2,3,6,7,8-HxCDF	2.67e+06	1.21e+03	2.2e+03	5.08e+06	7.64e+02	6.7e+03
23	13C-2,3,4,6,7,8-HxCDF	2.33e+06	1.21e+03	1.9e+03	4.56e+06	7.64e+02	6.0e+03
24	13C-1,2,3,7,8,9-HxCDF	2.09e+06	1.21e+03	1.7e+03	3.93e+06	7.64e+02	5.1e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.31e+06	1.12e+03	1.2e+03	2.98e+06	2.42e+03	1.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.01e+06	1.12e+03	9.0e+02	2.27e+06	2.42e+03	9.4e+02
27	13C-2,3,7,8-TCDD	1.68e+06	6.03e+03	2.8e+02	2.10e+06	1.90e+03	1.1e+03
28	13C-1,2,3,7,8-PeCDD	4.43e+06	1.10e+03	4.0e+03	2.82e+06	1.24e+03	2.3e+03
29	13C-1,2,3,4,7,8-HxCDD	3.82e+06	1.21e+03	3.2e+03	2.89e+06	9.96e+02	2.9e+03
30	13C-1,2,3,6,7,8-HxCDD	3.30e+06	1.21e+03	2.7e+03	2.64e+06	9.96e+02	2.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.49e+06	4.60e+02	5.4e+03	2.40e+06	5.56e+02	4.3e+03
32	13C-OCDD	1.47e+06	3.68e+02	4.0e+03	1.66e+06	2.64e+02	6.3e+03
33	13C-1,2,3,4-TCDD	4.44e+06	6.03e+03	7.4e+02	5.52e+06	1.90e+03	2.9e+03
34	13C-1,2,3,7,8,9-HxCDD	6.00e+06	1.21e+03	4.9e+03	4.75e+06	9.96e+02	4.8e+03
35	37Cl-2,3,7,8-TCDD	2.79e+06	1.18e+03	2.4e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.112e{+}03 + 1.216e{+}03) \times 2000}{(1.683e{+}06 + 2.096e{+}06) \times (\quad) \times 1.085} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0079

Entry: 36 Totals Name: Total Tetra-Furans

Run: 10 File: P519687 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 12:16:54 Processed: 30-DEC-18 07:59:27

Mass: 303.9020 305.8990 Tot Response: 9.95e+04 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:25	5.16e+01	7.81e+01	0.66	yes	1.30e+02		n	n
2	22:54	2.33e+02	3.38e+02	0.69	yes	5.71e+02		n	n
3	23:10	1.16e+03	1.59e+03	0.73	yes	2.76e+03		n	n
4	23:33	3.85e+02	5.15e+02	0.75	yes	9.01e+02		n	n
5	23:50	9.78e+02	1.27e+03	0.77	yes	2.25e+03		n	n
6	24:14	2.86e+02	3.39e+02	0.84	yes	6.25e+02		n	n
7	24:29	7.09e+02	9.36e+02	0.76	yes	1.65e+03		n	n
8	24:35	1.20e+03	1.55e+03	0.77	yes	2.75e+03		n	n
9	25:06	1.06e+04	1.39e+04	0.76	yes	2.45e+04		n	n
10	25:24	5.51e+02	7.28e+02	0.76	yes	1.28e+03		n	n
11	26:05	2.30e+04	3.12e+04	0.74	yes	5.42e+04	2,3,7,8-TCDF	n	n
12	26:30	1.64e+03	2.22e+03	0.74	yes	3.86e+03		n	n
13	28:16	1.75e+03	2.27e+03	0.77	yes	4.02e+03		n	n

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Peak List Summary

CLIENT ID.
SL0079

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 10 File: P519687 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 12:16:54 Processed: 30-DEC-18 07:59:27

Mass: 319.8970 321.8940 Tot Response: 1.78e+04 RRF: 1.085

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:44	8.92e+01	1.30e+02	0.68	yes	2.20e+02		n	n
2	27:04	7.01e+03	9.18e+03	0.76	yes	1.62e+04	2,3,7,8-TCDD	n	n
3	27:25	6.28e+02	8.06e+02	0.78	yes	1.43e+03		n	n

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Peak List Summary

CLIENT ID.
SL0079

Entry: 38 Totals Name: Total Penta-Furans1

Run: 10 File: P519687 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 12:16:54 Processed: 30-DEC-18 07:59:27

Mass: 339.8600 341.8570 Tot Response: 1.96e+02 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:16	1.25e+02	7.12e+01 1.76	yes	1.96e+02		n	n

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Peak List Summary

CLIENT ID.
SL0079

Entry: 39 Totals Name: Total Penta-Furans2

Run: 10 File: P519687 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 12:16:54 Processed: 30-DEC-18 07:59:27

Mass: 339.8600 341.8570 Tot Response: 5.41e+03 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:56	6.66e+02	4.02e+02	1.66	yes	1.07e+03		n	n
2	30:58	1.22e+03	8.18e+02	1.50	yes	2.04e+03	1,2,3,7,8-PeCDF	n	n
3	31:15	4.15e+02	2.63e+02	1.58	yes	6.78e+02		n	n
4	31:59	9.91e+02	6.35e+02	1.56	yes	1.63e+03	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.
SL0079

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 10 File: P519687 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 12:16:54 Processed: 30-DEC-18 07:59:27

Mass: 355.8550 357.8520 Tot Response: 2.98e+02 RRF: 0.9565

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	31:18	3.12e+01	1.86e+01	1.67	yes	4.98e+01		n	n
2	31:30	1.46e+01	8.27e+00	1.76	yes	2.28e+01		n	n
3	32:18	1.37e+02	8.87e+01	1.54	yes	2.25e+02	1,2,3,7,8-PeCDD	n	n

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Peak List Summary

CLIENT ID.
SL0079

Entry: 41 Totals Name: Total Hexa-Furans

Run: 10 File: P519687 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 12:16:54 Processed: 30-DEC-18 07:59:27

Mass: 373.8210 375.8180 Tot Response: 5.53e+03 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:53	2.54e+02	2.31e+02	1.10	yes	4.86e+02		n	n
2	34:27	2.53e+02	2.14e+02	1.18	yes	4.68e+02		n	n
3	34:55	1.64e+03	1.47e+03	1.12	yes	3.11e+03	1,2,3,4,7,8-HxCDF	n	n
4	35:01	5.09e+02	4.44e+02	1.15	yes	9.53e+02	1,2,3,6,7,8-HxCDF	n	n
5	35:35	1.11e+02	9.13e+01	1.22	yes	2.02e+02	2,3,4,6,7,8-HxCDF	n	n
6	36:24	1.64e+02	1.41e+02	1.16	yes	3.05e+02	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0079

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 10 File: P519687 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 12:16:54 Processed: 30-DEC-18 07:59:27

Mass: 389.8160 391.8130 Tot Response: 1.81e+03 RRF: 1.047

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:17	4.70e+02	3.42e+02	1.38	yes	8.12e+02		n	n
2	34:51	4.11e+01	2.91e+01	1.41	yes	7.02e+01		n	n
3	35:06	3.13e+02	2.70e+02	1.16	yes	5.82e+02		n	n
4	35:13	4.33e+01	3.92e+01	1.11	yes	8.26e+01		n	n
5	35:44	4.53e+01	3.89e+01	1.16	yes	8.42e+01	1,2,3,4,7,8-HxCDD	n	n
6	36:05	1.01e+02	7.97e+01	1.26	yes	1.80e+02	1,2,3,7,8,9-HxCDD	n	n

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CLIENT ID.
SL0079

Entry: 43 Totals Name: Total Hepta-Furans

Run: 10 File: P519687 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 12:16:54 Processed: 30-DEC-18 07:59:27

Mass: 407.7820 409.7790 Tot Response: 3.53e+03 RRF: 1.308

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:47	8.69e+02	7.59e+02	1.15	yes	1.63e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	38:05	2.23e+01	2.00e+01	1.12	yes	4.24e+01		n	n
3	38:12	7.99e+02	7.99e+02	1.00	yes	1.60e+03		n	n
4	39:16	1.21e+02	1.36e+02	0.89	yes	2.57e+02	1,2,3,4,7,8,9-HpCDF	n	y

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CLIENT ID.
SL0079

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 10 File: P519687 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 12:16:54 Processed: 30-DEC-18 07:59:27

Mass: 423.7770 425.7740 Tot Response: 1.56e+04 RRF: 1.025

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:04	4.60e+03	1.01	yes	9.16e+03		n	n
2	38:47	3.23e+03	1.01	yes	6.43e+03	1,2,3,4,6,7,8-HpCDD	n	n

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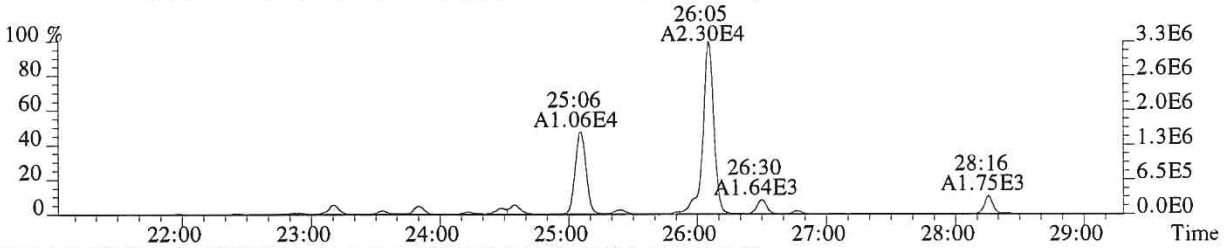
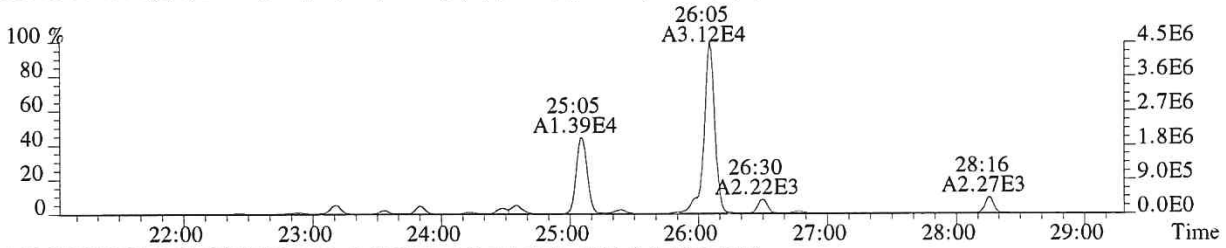
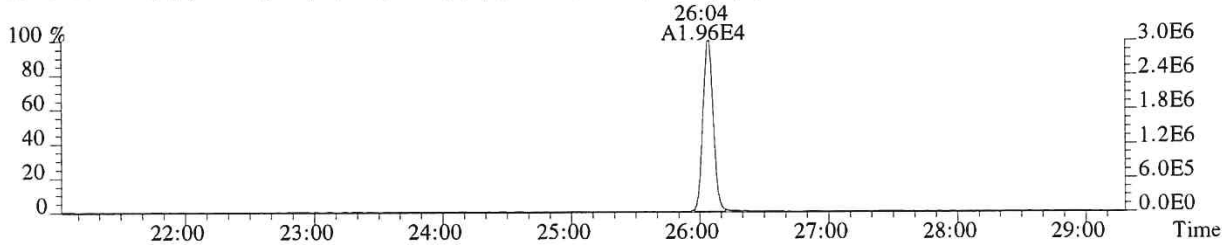
File:P519687 #1-587 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1020.0,1.00%,F,T)



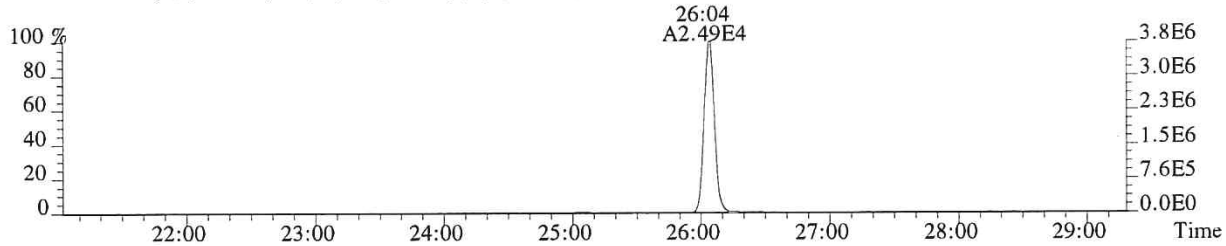
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2240.0,1.00%,F,T)



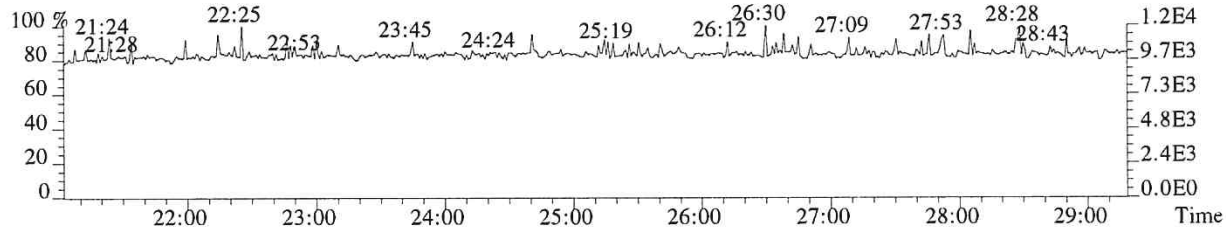
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5820.0,1.00%,F,T)



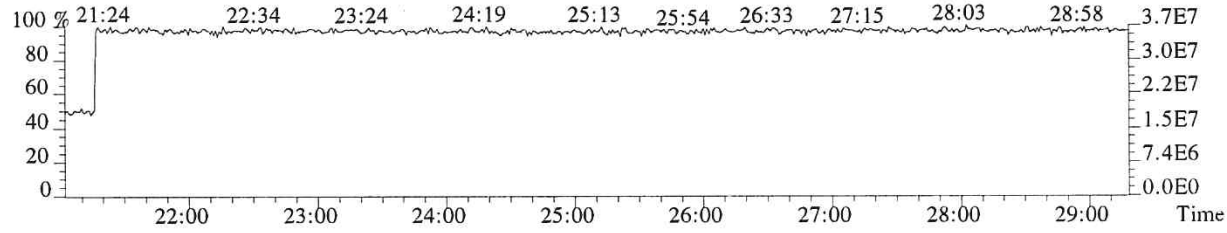
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5332.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

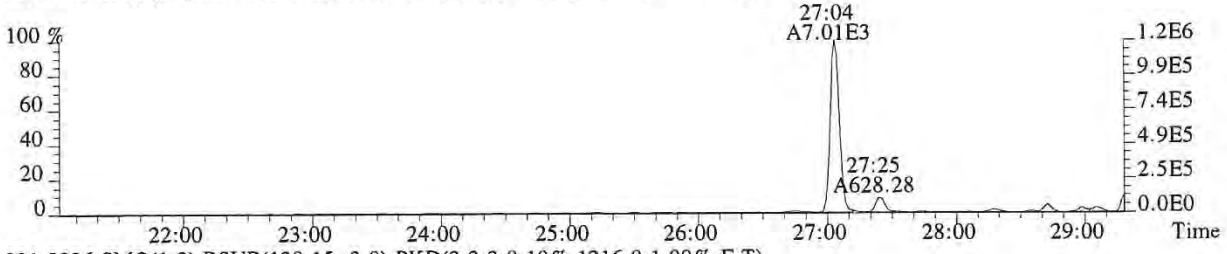


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

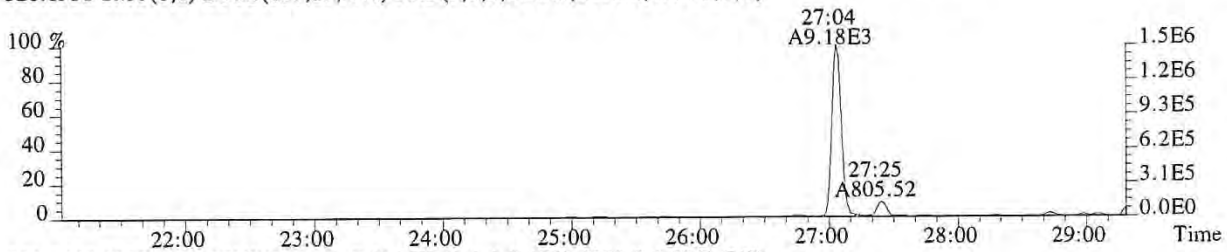


059912

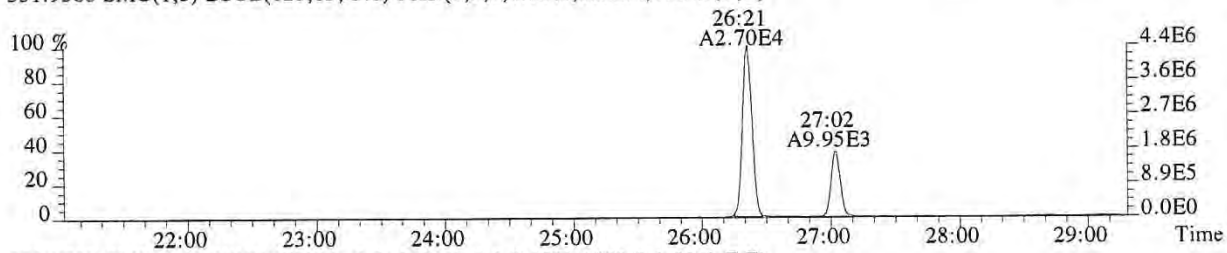
File:P519687 #1-587 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2112.0,1.00%,F,T)



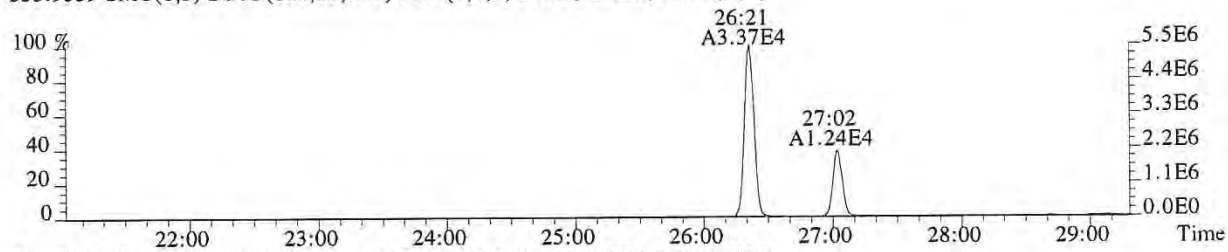
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1216.0,1.00%,F,T)



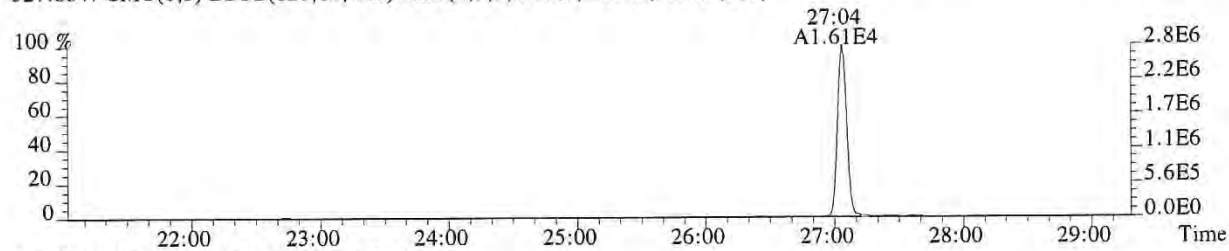
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6032.0,1.00%,F,T)



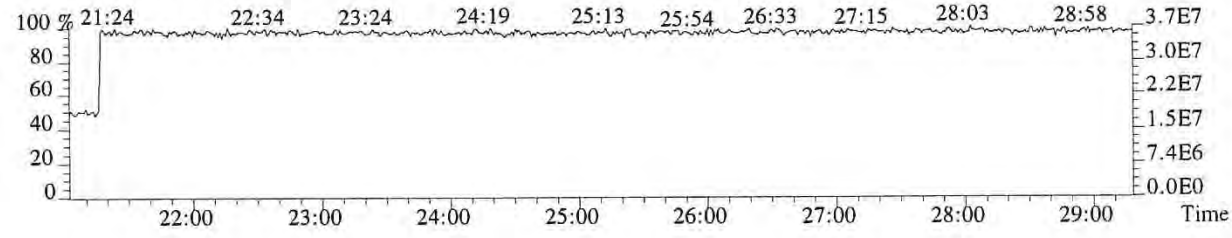
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1900.0,1.00%,F,T)



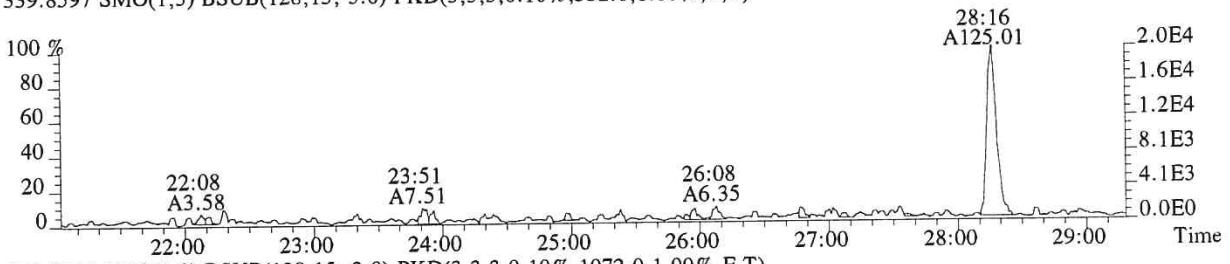
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1180.0,1.00%,F,T)



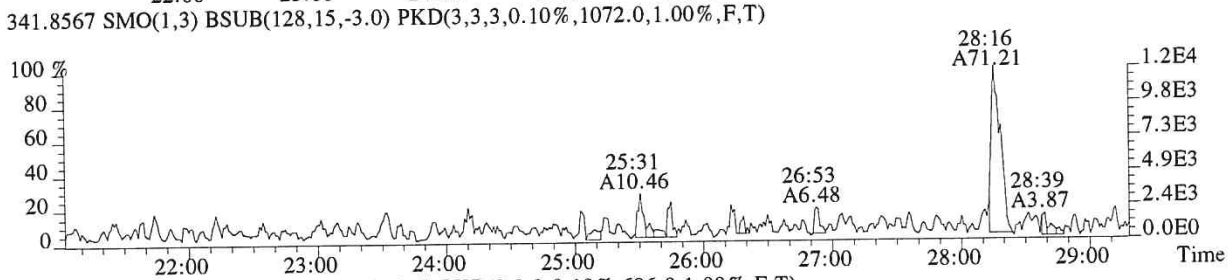
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



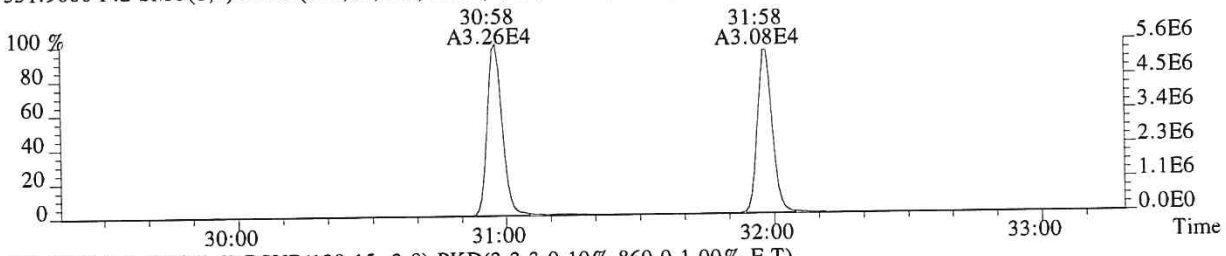
File:P519687 #1-587 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,532.0,1.00%,F,T)



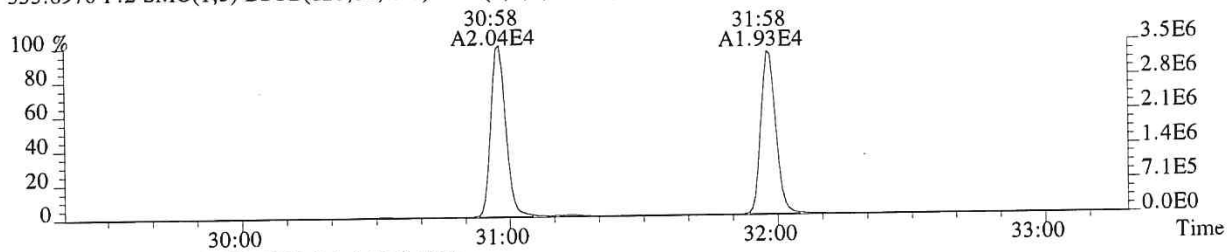
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1072.0,1.00%,F,T)



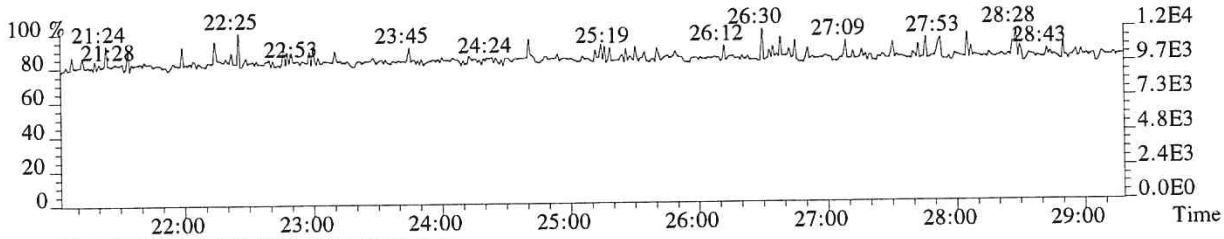
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,696.0,1.00%,F,T)



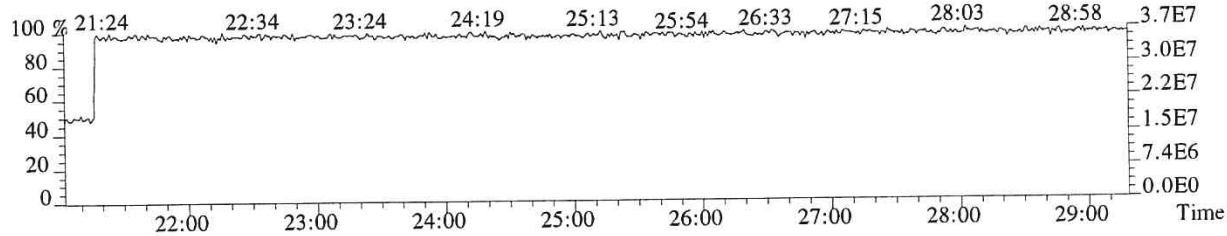
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,860.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

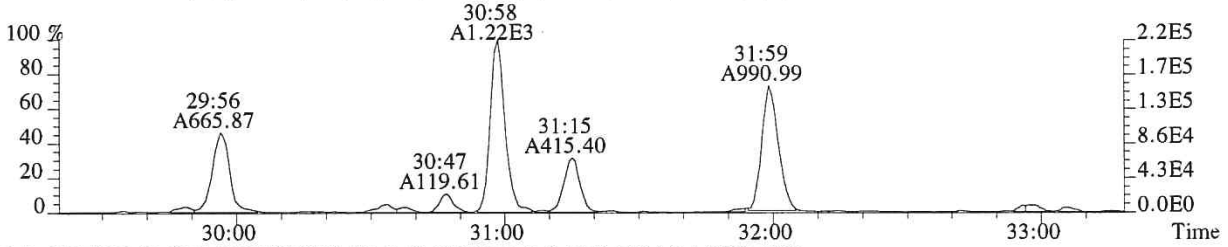


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

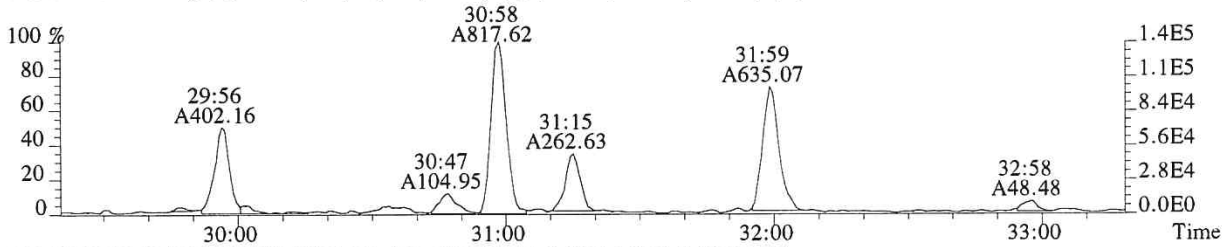


059914

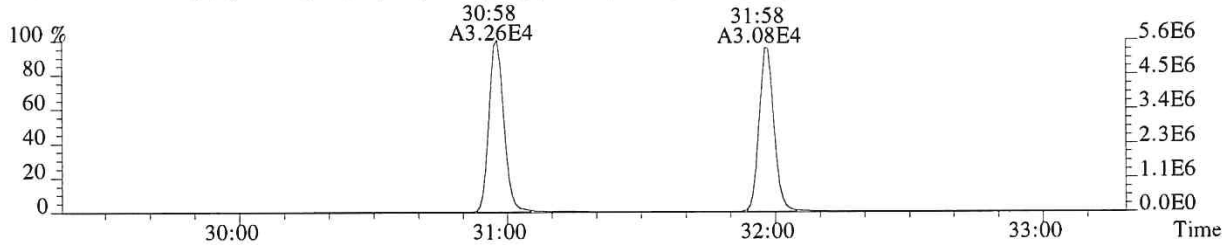
File:P519687 #1-358 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,984.0,1.00%,F,T)



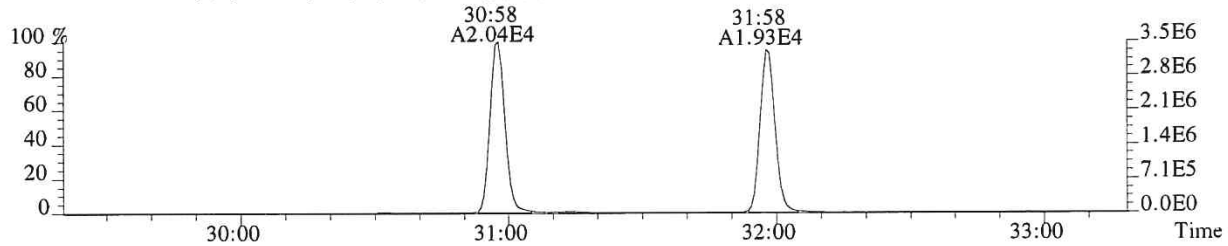
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2124.0,1.00%,F,T)



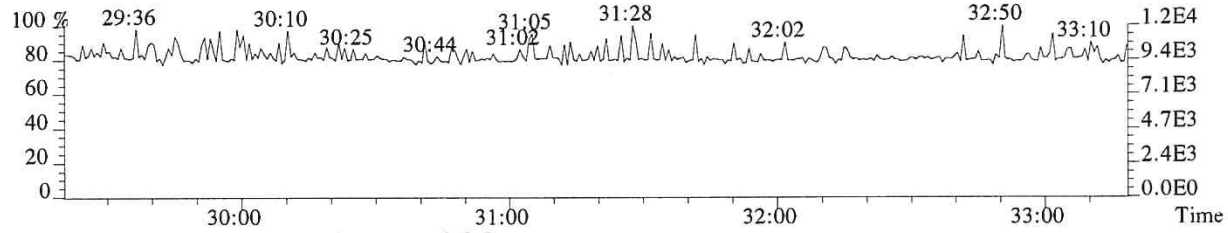
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,696.0,1.00%,F,T)



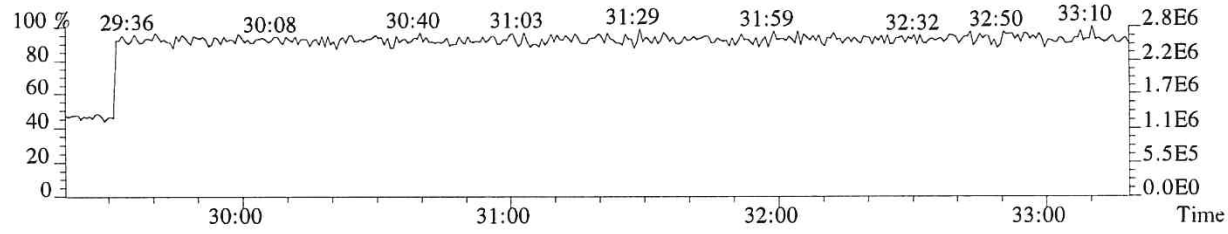
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,860.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

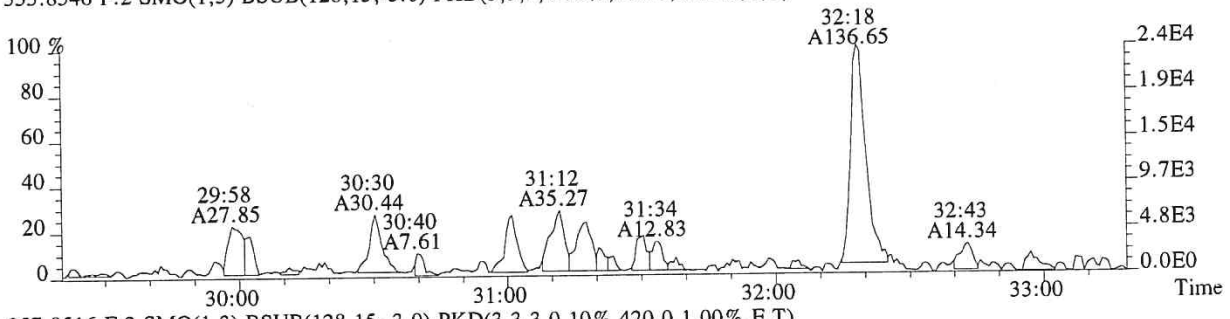


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

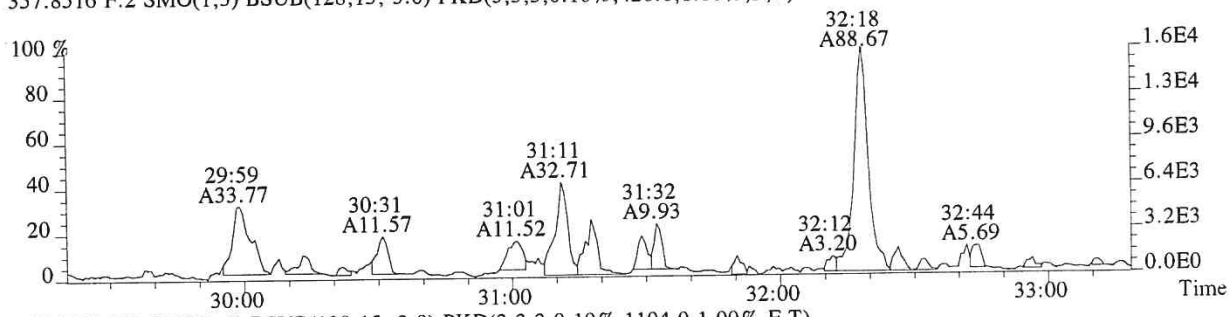


059915

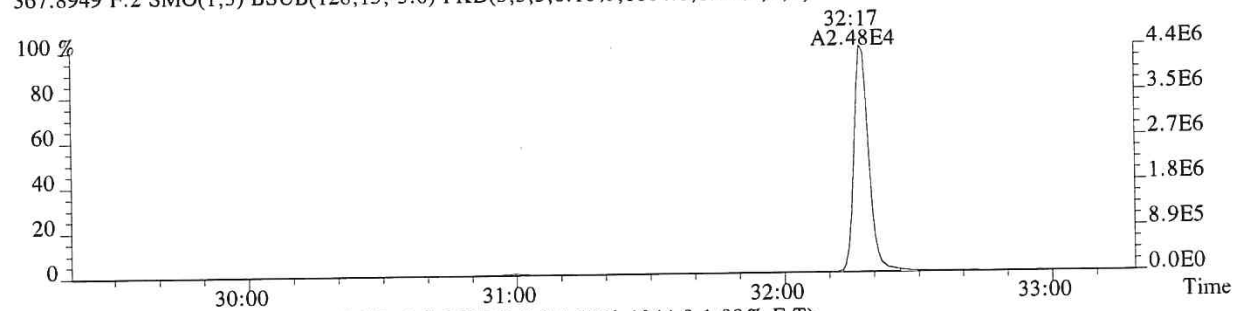
File:P519687 #1-358 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,792.0,1.00%,F,T)



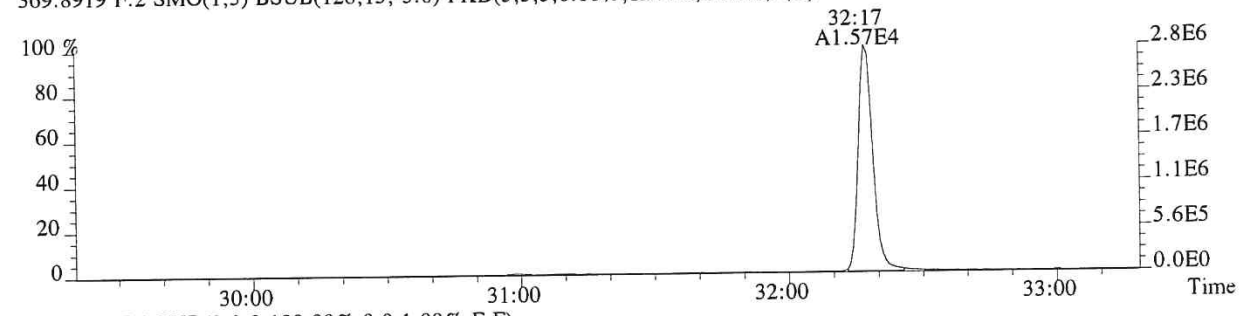
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,420.0,1.00%,F,T)



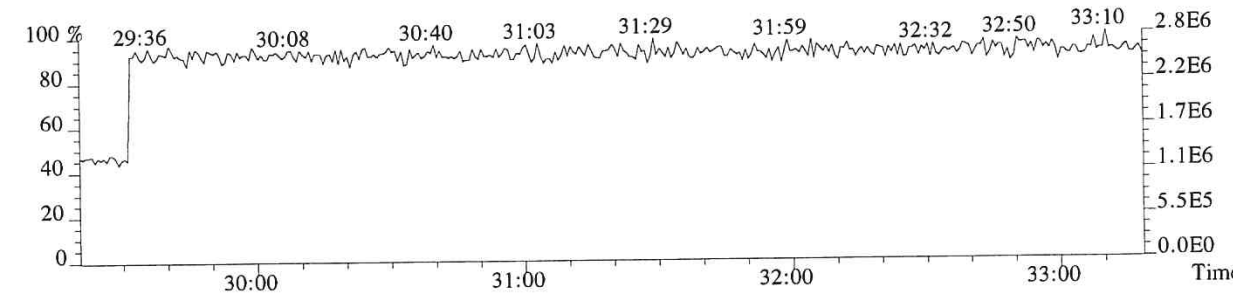
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1104.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1244.0,1.00%,F,T)

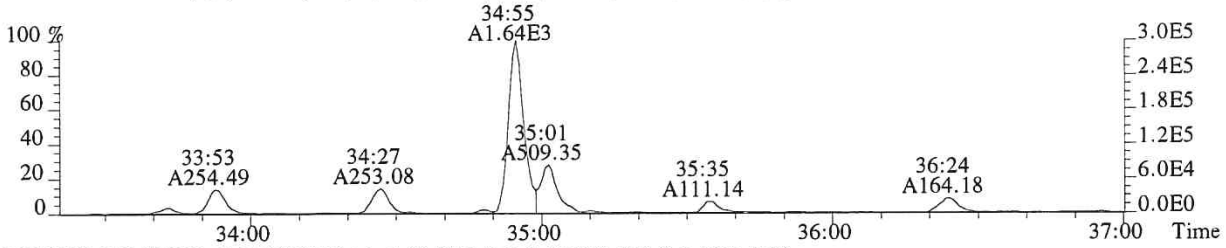


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

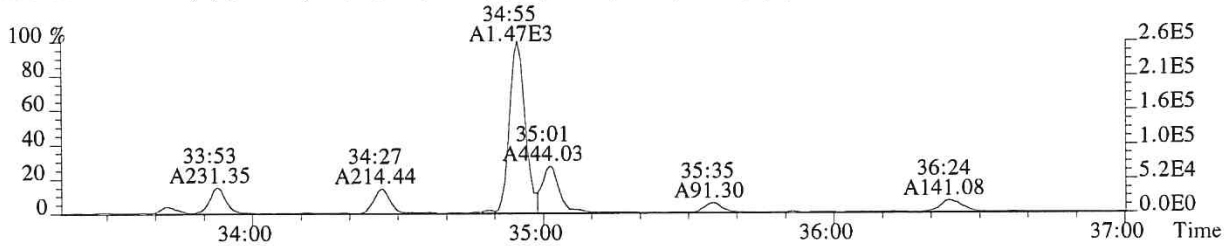


059916

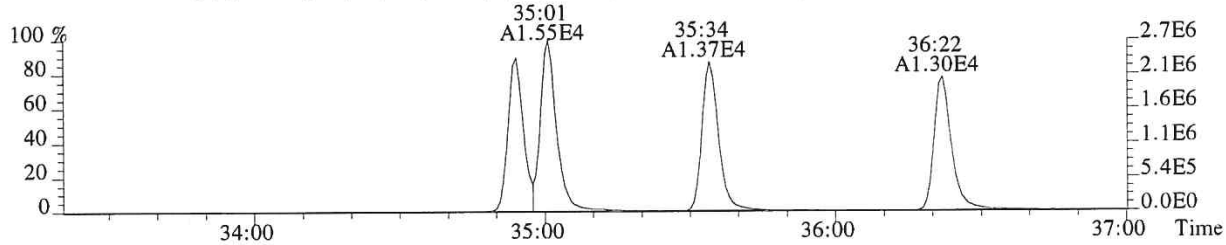
File:P519687 #1-330 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,564.0,0.40%,F,T)



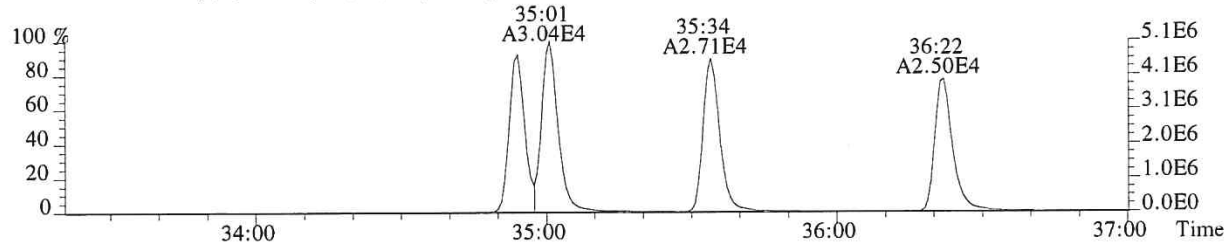
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,728.0,0.40%,F,T)



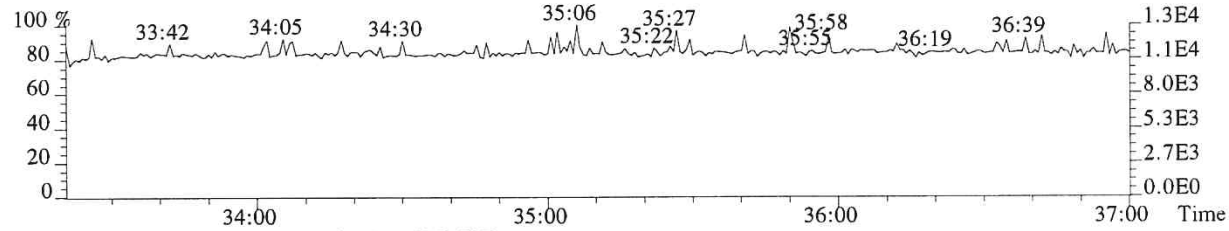
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1208.0,0.40%,F,T)



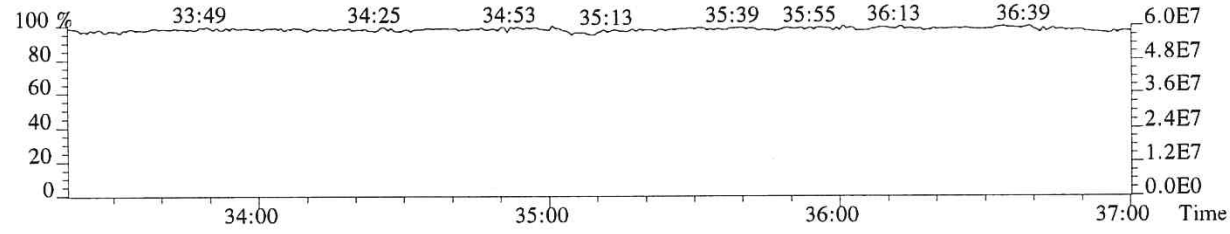
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,764.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

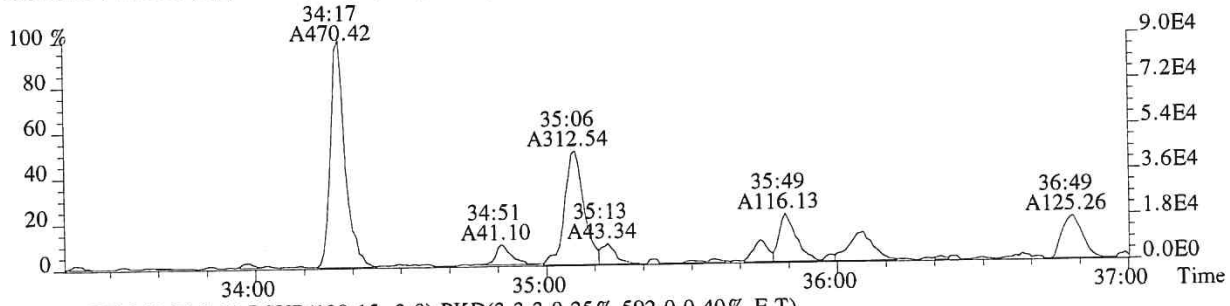


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

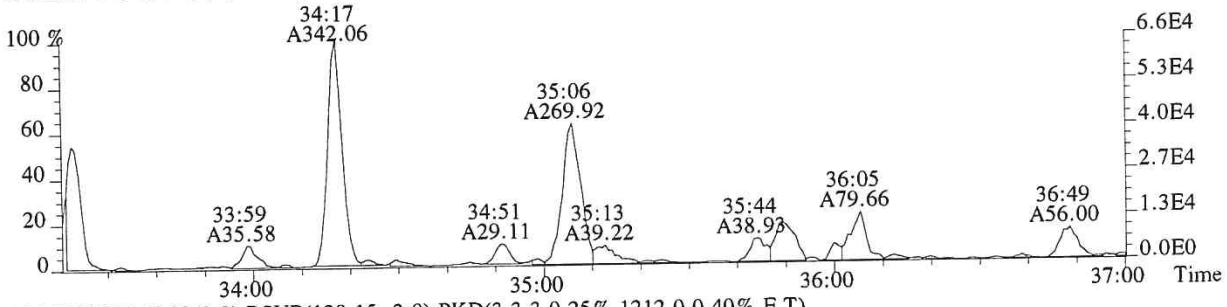


059917

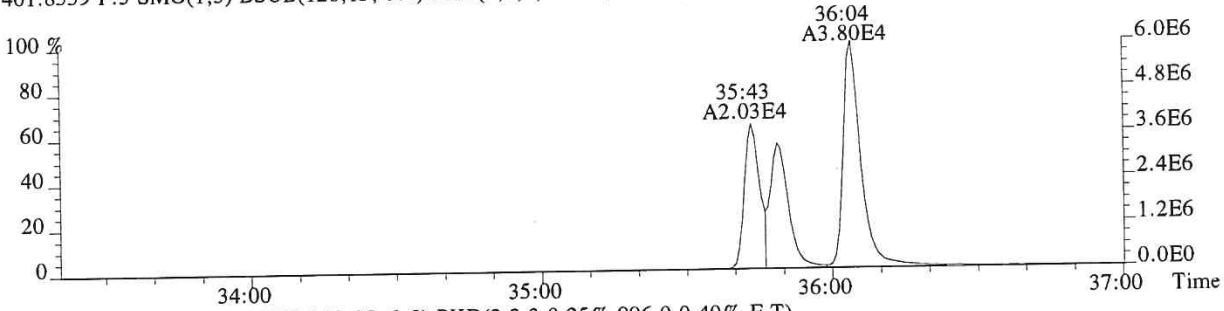
File:P519687 #1-330 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,684.0,0.40%,F,T)



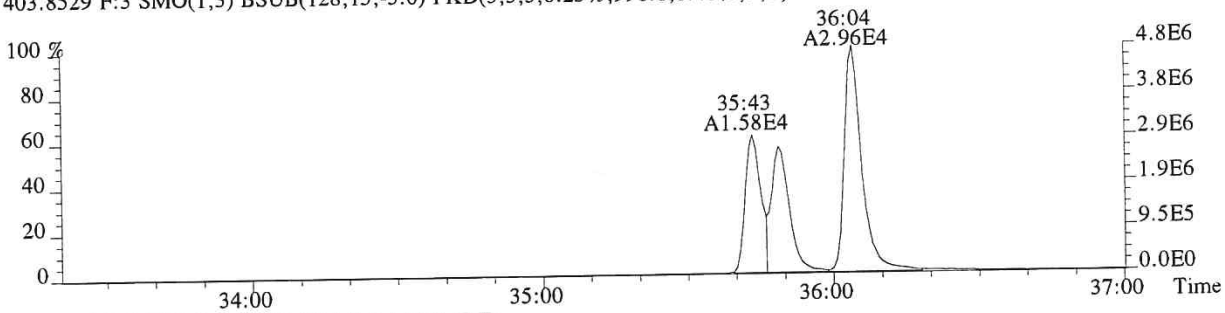
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,592.0,0.40%,F,T)



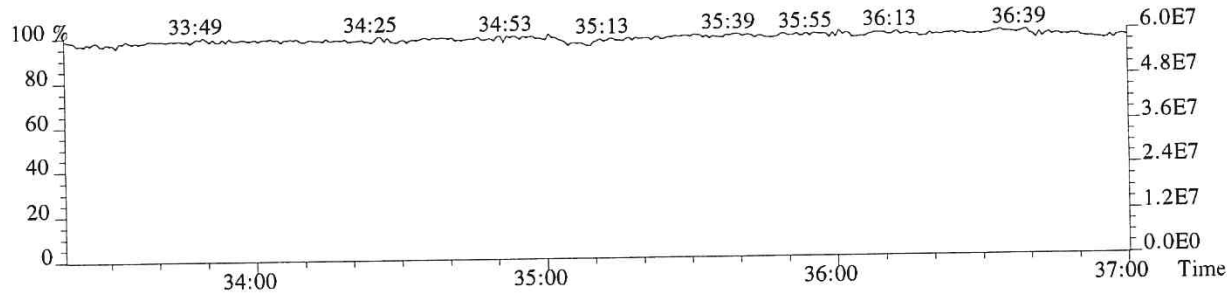
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1212.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,996.0,0.40%,F,T)

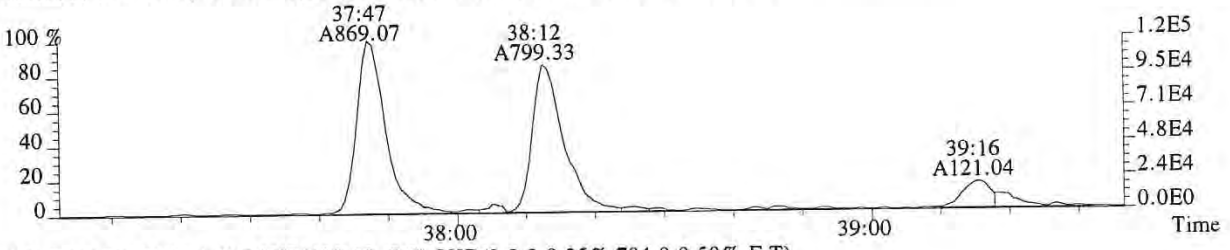


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

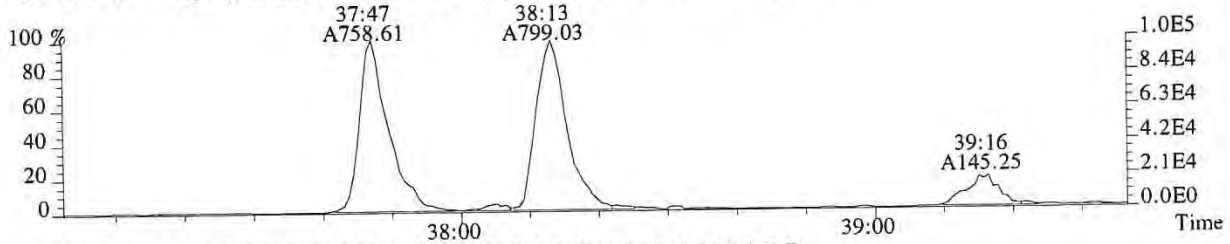


059918

File:P519687 #1-232 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,640.0,0.50%,F,T)



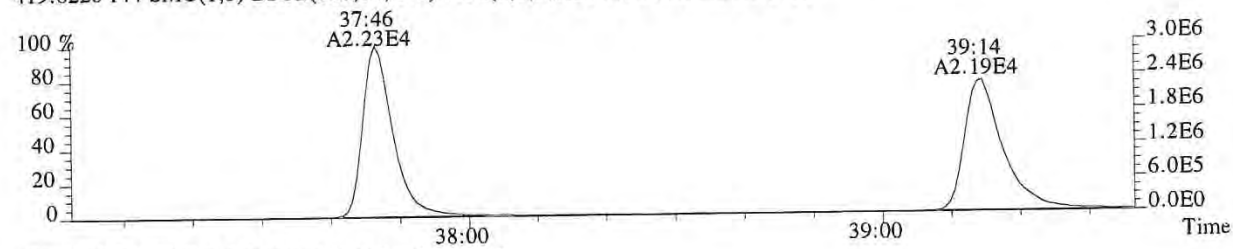
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,784.0,0.50%,F,T)



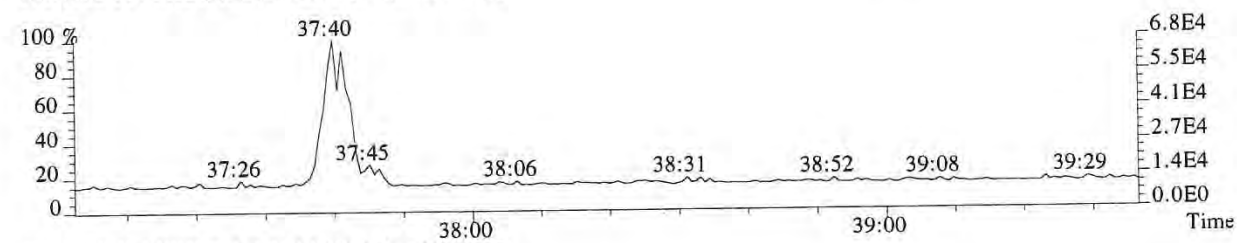
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1124.0,0.50%,F,T)



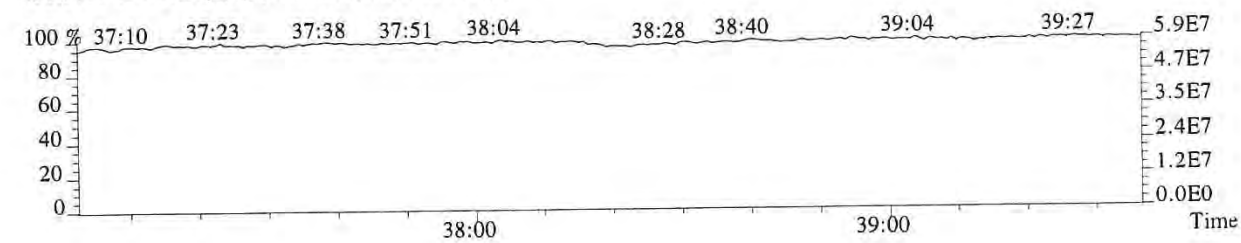
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2420.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

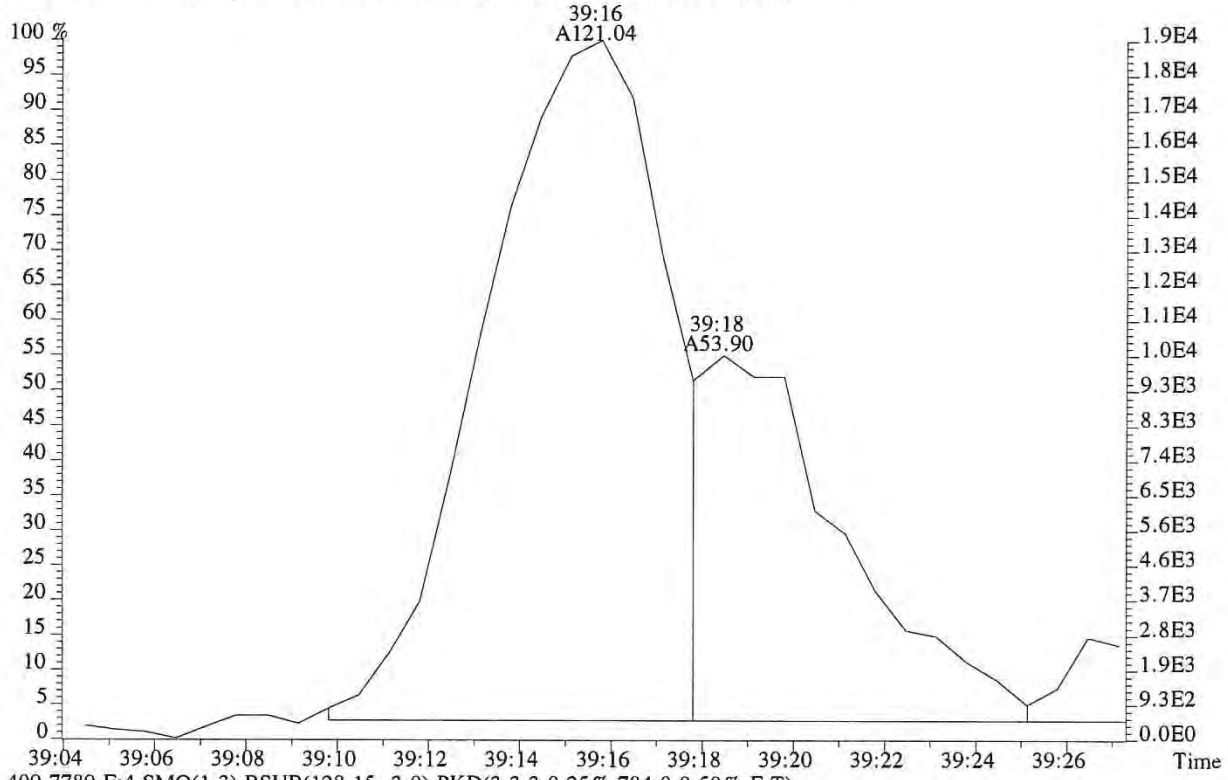


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

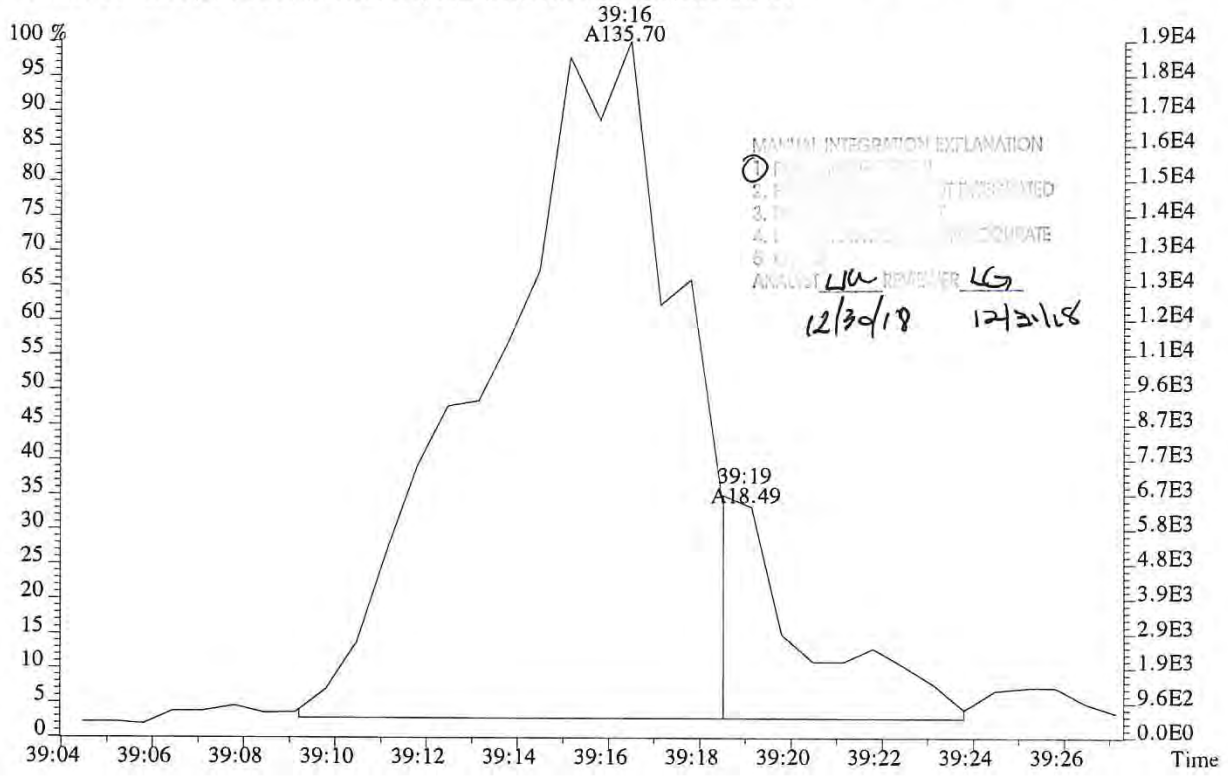


059919

File:P519687 #1-232 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,640.0,0.50%,F,T)

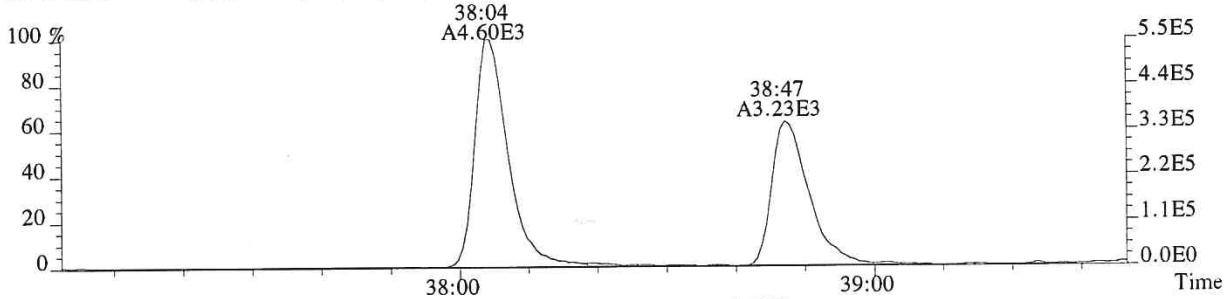


409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,784.0,0.50%,F,T)

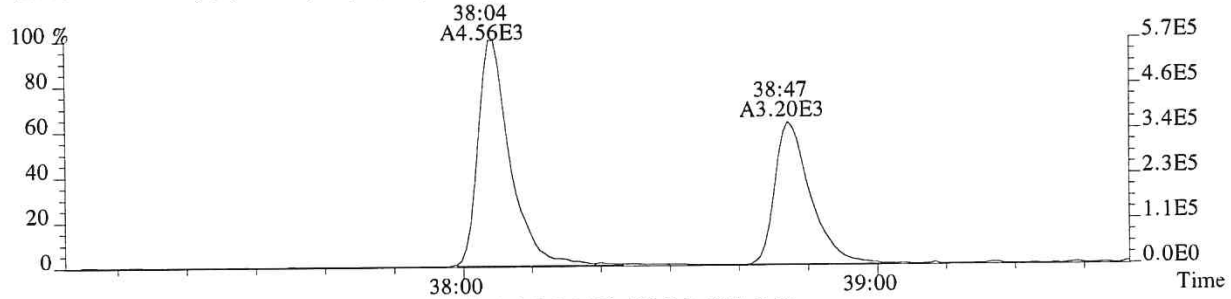


059920

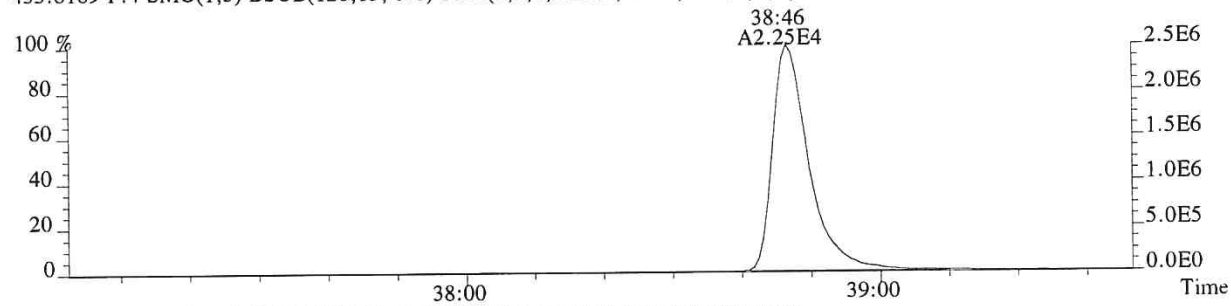
File:P519687 #1-232 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1656.0,0.40%,F,T)



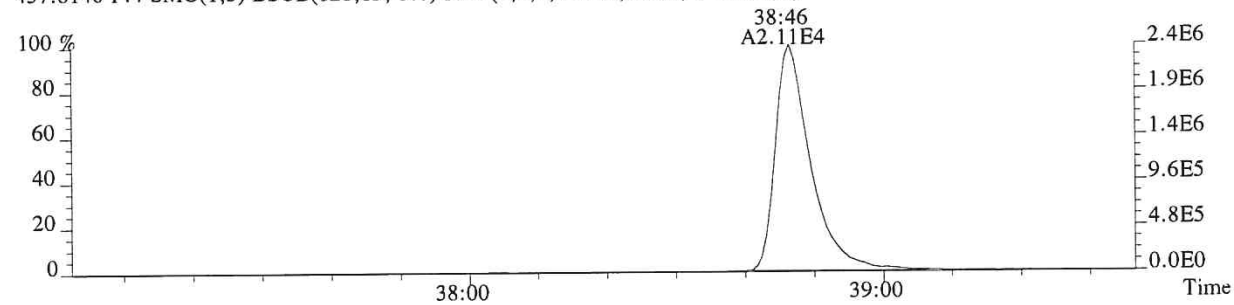
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,604.0,0.40%,F,T)



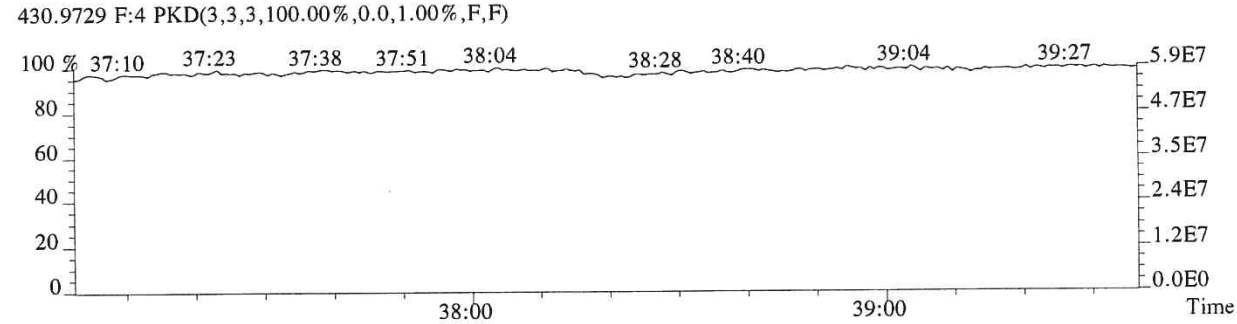
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,460.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,556.0,0.40%,F,T)

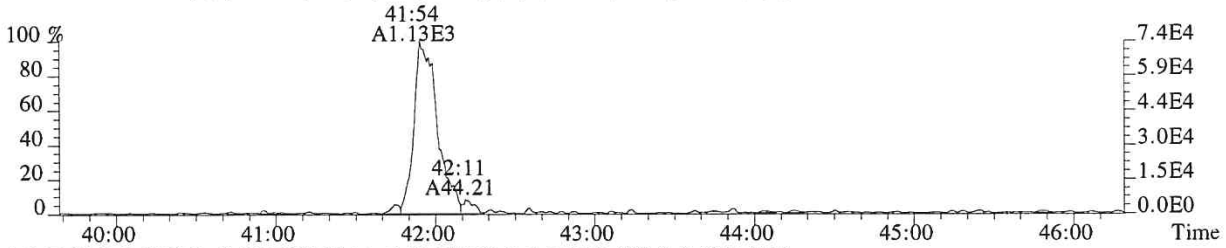


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

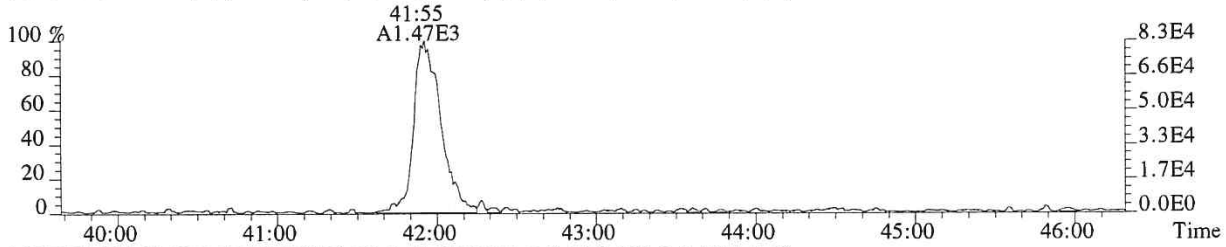


059921

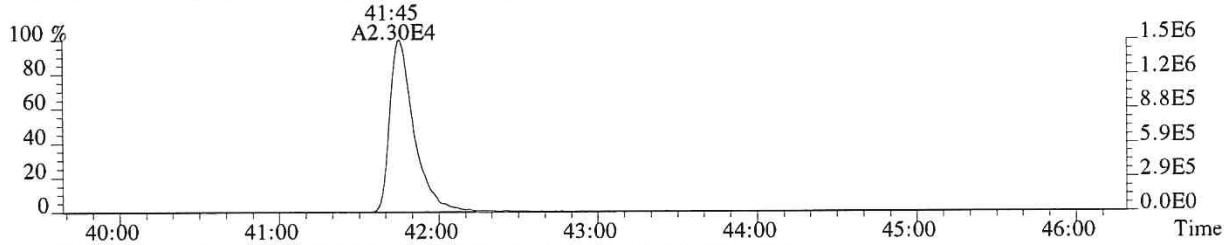
File:P519687 #1-601 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,428.0,0.40%,F,T)



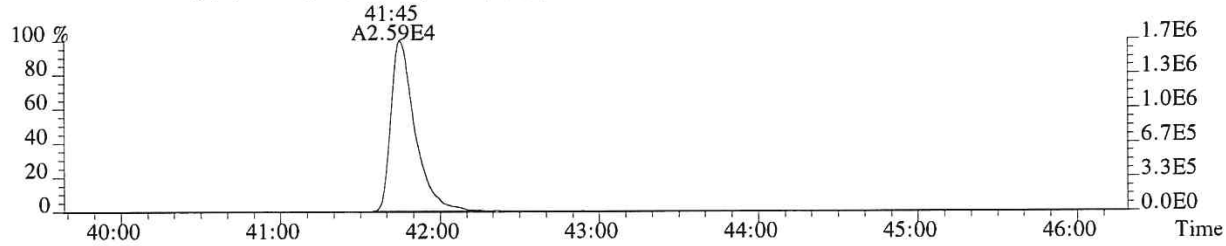
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,848.0,0.40%,F,T)



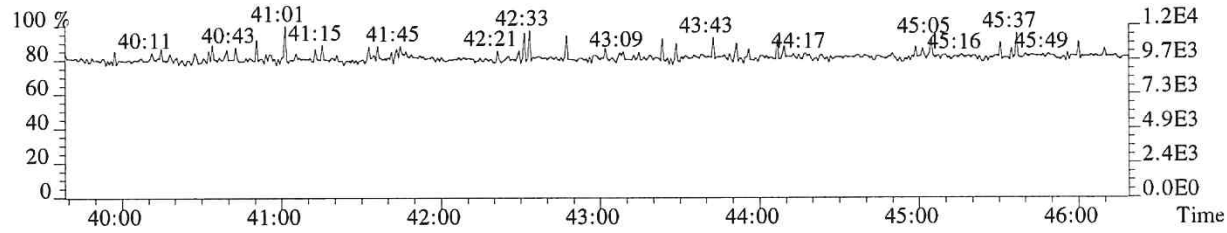
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,368.0,0.40%,F,T)



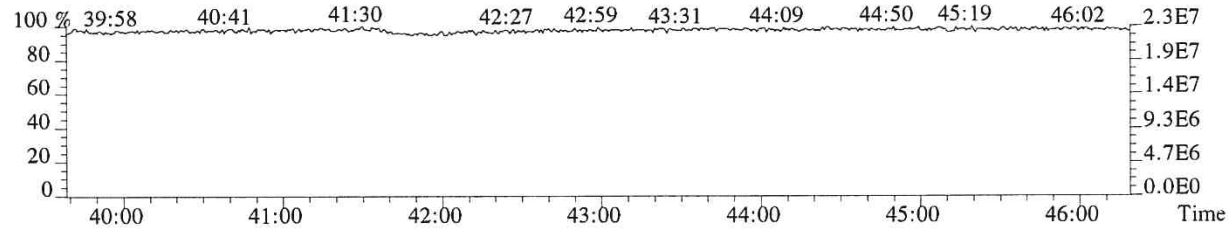
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,264.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



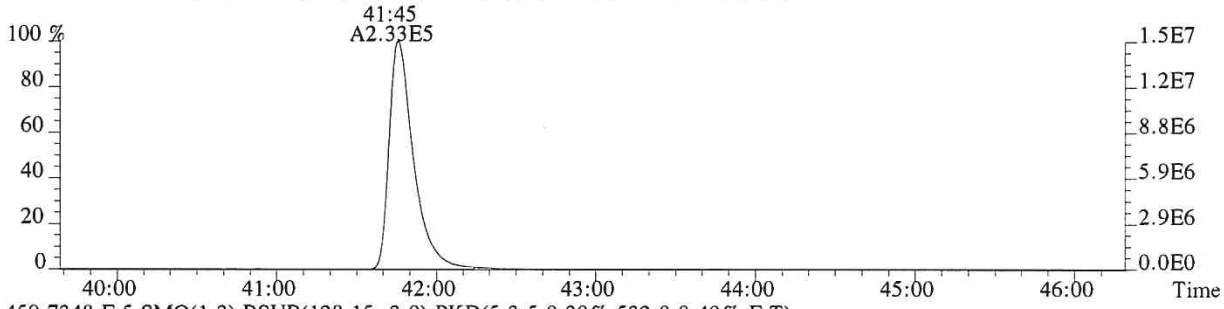
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



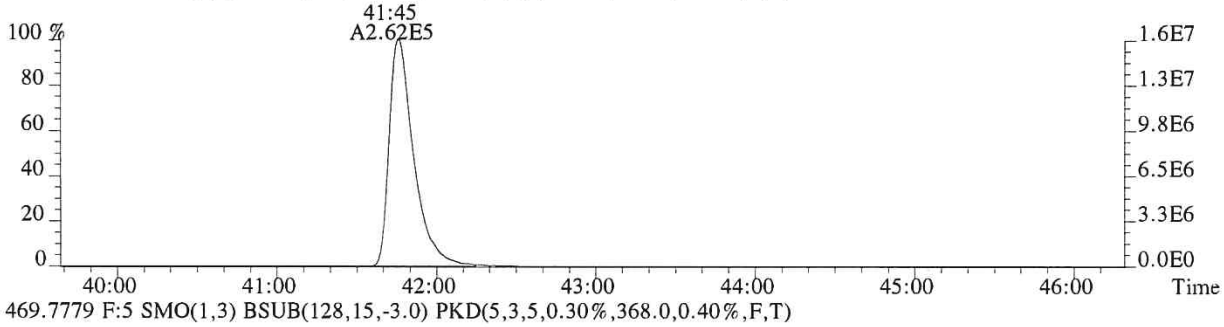
059922

File:P519687 #1-601 Acq:29-DEC-2018 12:16:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-001

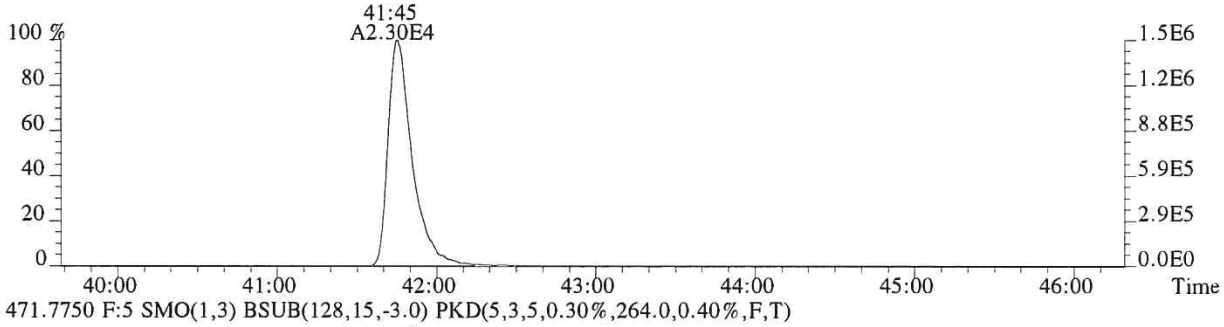
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



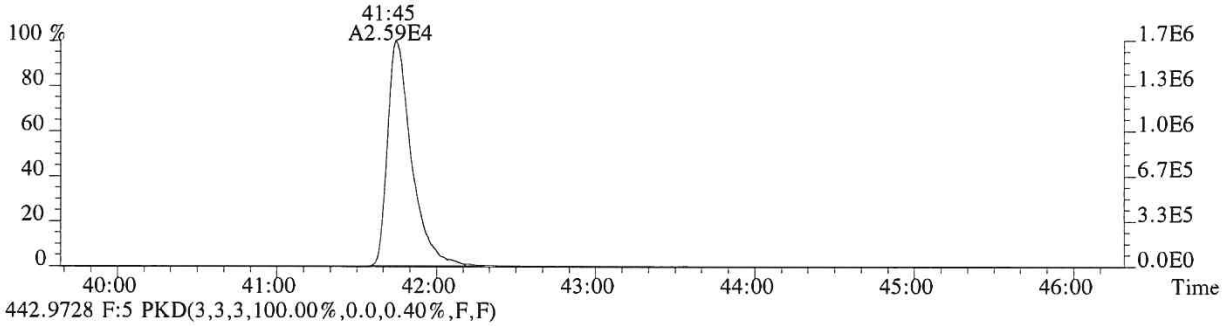
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,532.0,0.40%,F,T)



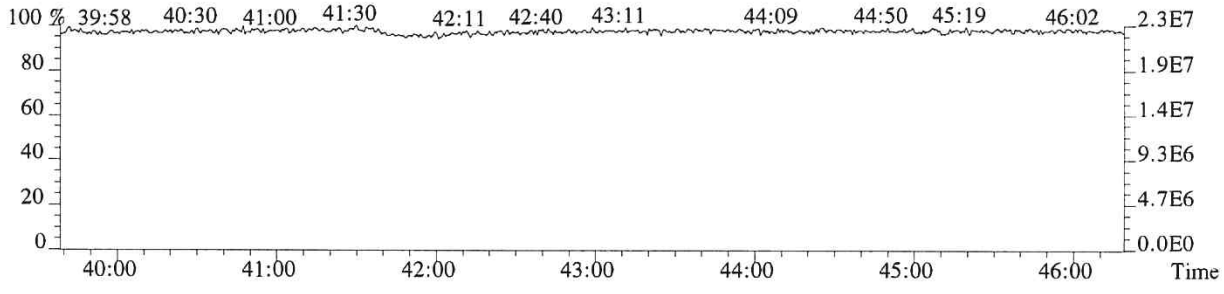
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,368.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,264.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059923

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0080

Run #11 Filename P519688 Samp: 1 Inj: 1 Acquired: 29-DEC-18 13:08:12
Processed: 30-DEC-18 08:00:28 Sample ID: E1801136-002

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:09	1.816e+06	2.371e+06	0.77	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:00	1.070e+05	7.027e+04	1.52	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:01	8.167e+04	5.337e+04	1.53	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:56	1.693e+05	1.396e+05	1.21	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:03	4.265e+04	3.500e+04	1.22	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:36	8.394e+03	6.880e+03	1.22	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	1.819e+04	1.497e+04	1.22	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	5.134e+04	5.026e+04	1.02	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:16	1.502e+04	1.456e+04	1.03	yes	no	1.258
10	Unk	OCDF	41:55	2.158e+04	2.418e+04	0.89	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:06	4.965e+05	6.371e+05	0.78	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:20	6.890e+03	4.303e+03	1.60	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:45	1.321e+02	1.171e+02	1.13	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:51	1.114e+03	8.991e+02	1.24	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:06	4.585e+02	4.235e+02	1.08	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:47	3.663e+04	3.521e+04	1.04	yes	no	1.025
17	Unk	OCDD	41:47	3.817e+05	4.306e+05	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:07	3.038e+04	3.850e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:59	4.626e+04	2.900e+04	1.60	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	32:00	4.413e+04	2.781e+04	1.59	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.803e+04	3.495e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:02	2.049e+04	3.962e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.837e+04	3.659e+04	0.50	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.775e+04	3.512e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:48	1.232e+04	2.780e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:15	1.191e+04	2.690e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:04	1.483e+04	1.891e+04	0.78	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	3.465e+04	2.189e+04	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	2.687e+04	2.134e+04	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:50	2.779e+04	2.218e+04	1.25	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:46	2.778e+04	2.628e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	41:45	2.853e+04	3.243e+04	0.88	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:25	3.605e+04	4.539e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	4.625e+04	3.741e+04	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:06	2.818e+04				no	1.014

$$\text{OCDD} = \frac{(3.817e+05 + 4.306e+05) \times 4000\ \text{pg} \times 1}{(2.853e+04 + 3.243e+04) \times 10.518\ \text{g} \times 79.8 / 100 \times 1.118} = 5647.8510\ \text{ng/kg}$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0080

Run #11 Filename P519688 Samp: 1 Inj: 1 Acquired: 29-DEC-18 13:08:12
Processed: 30-DEC-18 08:00:28 LAB. ID: E1801136-002

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.69e+08	1.46e+03	1.9e+05	3.48e+08	3.34e+03	1.0e+05
2	1,2,3,7,8-PeCDF	1.81e+07	5.50e+03	3.3e+03	1.19e+07	1.06e+04	1.1e+03
3	2,3,4,7,8-PeCDF	1.20e+07	5.50e+03	2.2e+03	7.87e+06	1.06e+04	7.5e+02
4	1,2,3,4,7,8-HxCDF	2.97e+07	1.19e+04	2.5e+03	2.43e+07	3.27e+03	7.4e+03
5	1,2,3,6,7,8-HxCDF	6.78e+06	1.19e+04	5.7e+02	5.54e+06	3.27e+03	1.7e+03
6	2,3,4,6,7,8-HxCDF	1.50e+06	1.19e+04	1.3e+02	1.23e+06	3.27e+03	3.8e+02
7	1,2,3,7,8,9-HxCDF	2.84e+06	1.19e+04	2.4e+02	2.35e+06	3.27e+03	7.2e+02
8	1,2,3,4,6,7,8-HpCDF	6.87e+06	7.64e+03	9.0e+02	6.60e+06	1.04e+04	6.3e+02
9	1,2,3,4,7,8,9-HpCDF	1.64e+06	7.64e+03	2.1e+02	1.58e+06	1.04e+04	1.5e+02
10	OCDF	1.36e+06	3.12e+02	4.4e+03	1.57e+06	9.56e+02	1.6e+03
11	2,3,7,8-TCDD	8.35e+07	4.20e+03	2.0e+04	1.07e+08	1.64e+03	6.5e+04
12	1,2,3,7,8-PeCDD	1.10e+06	1.00e+03	1.1e+03	7.04e+05	8.72e+02	8.1e+02
13	1,2,3,4,7,8-HxCDD	3.62e+04	1.32e+03	2.8e+01	2.32e+04	2.89e+03	8.0e+00
14	1,2,3,6,7,8-HxCDD	1.84e+05	1.32e+03	1.4e+02	1.43e+05	2.89e+03	4.9e+01
15	1,2,3,7,8,9-HxCDD	6.92e+04	1.32e+03	5.3e+01	6.56e+04	2.89e+03	2.3e+01
16	1,2,3,4,6,7,8-HpCDD	4.09e+06	6.96e+02	5.9e+03	4.02e+06	6.68e+02	6.0e+03
17	OCDD	2.41e+07	3.56e+02	6.8e+04	2.72e+07	6.20e+02	4.4e+04
18	13C-2,3,7,8-TCDF	4.74e+06	1.19e+04	4.0e+02	6.00e+06	1.07e+04	5.6e+02
19	13C-1,2,3,7,8-PeCDF	7.70e+06	4.36e+03	1.8e+03	4.84e+06	2.33e+03	2.1e+03
20	13C-2,3,4,7,8-PeCDF	7.75e+06	4.36e+03	1.8e+03	4.87e+06	2.33e+03	2.1e+03
21	13C-1,2,3,4,7,8-HxCDF	3.21e+06	3.18e+03	1.0e+03	6.19e+06	1.26e+03	4.9e+03
22	13C-1,2,3,6,7,8-HxCDF	3.41e+06	3.18e+03	1.1e+03	6.66e+06	1.26e+03	5.3e+03
23	13C-2,3,4,6,7,8-HxCDF	3.11e+06	3.18e+03	9.8e+02	6.11e+06	1.26e+03	4.9e+03
24	13C-1,2,3,7,8,9-HxCDF	2.74e+06	3.18e+03	8.6e+02	5.35e+06	1.26e+03	4.3e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.58e+06	2.02e+03	7.8e+02	3.67e+06	6.14e+03	6.0e+02
26	13C-1,2,3,4,7,8,9-HpCDF	1.24e+06	2.02e+03	6.2e+02	2.85e+06	6.14e+03	4.6e+02
27	13C-2,3,7,8-TCDD	2.50e+06	6.91e+03	3.6e+02	3.21e+06	2.14e+03	1.5e+03
28	13C-1,2,3,7,8-PeCDD	5.96e+06	7.96e+02	7.5e+03	3.80e+06	1.45e+03	2.6e+03
29	13C-1,2,3,4,7,8-HxCDD	5.08e+06	1.14e+03	4.5e+03	4.08e+06	6.00e+02	6.8e+03
30	13C-1,2,3,6,7,8-HxCDD	4.49e+06	1.14e+03	3.9e+03	3.61e+06	6.00e+02	6.0e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.11e+06	1.07e+03	2.9e+03	2.98e+06	9.60e+02	3.1e+03
32	13C-OCDD	1.81e+06	1.16e+03	1.6e+03	2.06e+06	8.04e+02	2.6e+03
33	13C-1,2,3,4-TCDD	5.63e+06	6.91e+03	8.2e+02	7.08e+06	2.14e+03	3.3e+03
34	13C-1,2,3,7,8,9-HxCDD	7.40e+06	1.14e+03	6.5e+03	5.82e+06	6.00e+02	9.7e+03
35	37Cl-2,3,7,8-TCDD	4.74e+06	1.71e+03	2.8e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (4.200e{+}03 + 1.644e{+}03) \times 2000}{(2.502e{+}06 + 3.208e{+}06) \times (\quad) \times 1.085} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0080

Entry: 36 Totals Name: Total Tetra-Furans

Run: 11 File: P519688 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 13:08:12 Processed: 30-DEC-18 08:00:28

Mass: 303.9020 305.8990 Tot Response: 7.57e+06 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:58	1.54e+04	2.07e+04	0.74	yes	3.61e+04		n	n
2	23:14	8.69e+04	1.15e+05	0.75	yes	2.02e+05		n	n
3	23:36	2.67e+04	3.60e+04	0.74	yes	6.27e+04		n	n
4	23:43	2.93e+03	4.16e+03	0.70	yes	7.09e+03		n	n
5	23:53	7.12e+04	9.39e+04	0.76	yes	1.65e+05		n	n
6	24:16	1.48e+04	1.96e+04	0.75	yes	3.43e+04		n	n
7	24:31	5.04e+04	6.71e+04	0.75	yes	1.18e+05		n	n
8	24:38	8.69e+04	1.14e+05	0.76	yes	2.01e+05		n	n
9	25:08	7.96e+05	1.04e+06	0.77	yes	1.83e+06		n	n
10	25:26	3.68e+04	4.89e+04	0.75	yes	8.57e+04		n	n
11	26:09	1.82e+06	2.37e+06	0.77	yes	4.19e+06	2,3,7,8-TCDF	n	n
12	26:33	1.24e+05	1.65e+05	0.75	yes	2.89e+05		n	n
13	26:49	2.02e+04	2.66e+04	0.76	yes	4.68e+04		n	n
14	28:19	1.30e+05	1.69e+05	0.77	yes	2.99e+05		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0080

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 11 File: P519688 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 13:08:12 Processed: 30-DEC-18 08:00:28

Mass: 319.8970 321.8940 Tot Response: 1.25e+06 RRF: 1.085

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:48	6.94e+03	8.66e+03	0.80	yes	1.56e+04		n	n
2	27:06	4.97e+05	6.37e+05	0.78	yes	1.13e+06	2,3,7,8-TCDD	n	n
3	27:26	4.28e+04	5.44e+04	0.79	yes	9.72e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0080

Entry: 38 Totals Name: Total Penta-Furans1

Run: 11 File: P519688 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 13:08:12 Processed: 30-DEC-18 08:00:28

Mass: 339.8600 341.8570 Tot Response: 4.44e+03 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:20	2.72e+03	1.72e+03 1.58	yes	4.44e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0080

Entry: 39 Totals Name: Total Penta-Furans2

Run: 11 File: P519688 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 13:08:12 Processed: 30-DEC-18 08:00:28

Mass: 339.8600 341.8570 Tot Response: 5.05e+05 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:50	1.65e+03	1.09e+03 1.52	yes	2.74e+03		n	n
2	29:58	5.23e+04	3.41e+04 1.53	yes	8.64e+04		n	n
3	30:35	2.05e+03	1.27e+03 1.61	yes	3.32e+03		n	n
4	30:40	3.31e+03	2.02e+03 1.64	yes	5.33e+03		n	n
5	30:49	1.60e+04	1.02e+04 1.57	yes	2.62e+04		n	n
6	31:00	1.07e+05	7.03e+04 1.52	yes	1.77e+05	1,2,3,7,8-PeCDF	n	n
7	31:17	3.70e+04	2.41e+04 1.54	yes	6.11e+04		n	n
8	31:54	9.59e+02	7.06e+02 1.36	yes	1.66e+03		n	n
9	32:01	8.17e+04	5.34e+04 1.53	yes	1.35e+05	2,3,4,7,8-PeCDF	n	n
10	32:58	3.86e+03	2.47e+03 1.56	yes	6.33e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0080

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 11 File: P519688 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 13:08:12 Processed: 30-DEC-18 08:00:28

Mass: 355.8550 357.8520 Tot Response: 1.74e+04 RRF: 0.9565

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:02	5.77e+02	3.70e+02	1.56	yes	9.47e+02		n	n
2	30:32	7.72e+02	5.31e+02	1.45	yes	1.30e+03		n	n
3	31:02	1.17e+03	7.03e+02	1.66	yes	1.87e+03		n	n
4	31:13	4.18e+02	2.63e+02	1.59	yes	6.81e+02		n	n
5	31:19	3.87e+02	2.25e+02	1.72	yes	6.12e+02		n	n
6	31:32	3.18e+02	2.02e+02	1.58	yes	5.19e+02		n	n
7	32:20	6.89e+03	4.30e+03	1.60	yes	1.12e+04	1,2,3,7,8-PeCDD	n	n
8	32:44	1.39e+02	9.55e+01	1.45	yes	2.34e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0080

Entry: 41 Totals Name: Total Hexa-Furans

Run: 11 File: P519688 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 13:08:12 Processed: 30-DEC-18 08:00:28

Mass: 373.8210 375.8180 Tot Response: 4.92e+05 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:44	4.76e+03	4.01e+03	1.19	yes	8.77e+03		n	n
2	33:54	1.72e+04	1.43e+04	1.20	yes	3.15e+04		n	n
3	34:29	6.02e+03	4.95e+03	1.21	yes	1.10e+04		n	n
4	34:49	2.06e+03	1.85e+03	1.11	yes	3.91e+03		n	n
5	34:56	1.69e+05	1.40e+05	1.21	yes	3.09e+05	1,2,3,4,7,8-HxCDF	n	n
6	35:03	4.26e+04	3.50e+04	1.22	yes	7.76e+04	1,2,3,6,7,8-HxCDF	n	n
7	35:18	9.56e+02	7.23e+02	1.32	yes	1.68e+03		n	n
8	35:36	8.39e+03	6.88e+03	1.22	yes	1.53e+04	2,3,4,6,7,8-HxCDF	n	n
9	36:25	1.82e+04	1.50e+04	1.22	yes	3.32e+04	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0080

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 11 File: P519688 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 13:08:12 Processed: 30-DEC-18 08:00:28

Mass: 389.8160 391.8130 Tot Response: 1.99e+04 RRF: 1.047

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:19	6.11e+03	5.00e+03	1.22	yes	1.11e+04		n	n
2	35:07	3.11e+03	2.49e+03	1.25	yes	5.61e+03		n	n
3	35:45	1.32e+02	1.17e+02	1.13	yes	2.49e+02	1,2,3,4,7,8-HxCDD	n	n
4	35:51	1.11e+03	8.99e+02	1.24	yes	2.01e+03	1,2,3,6,7,8-HxCDD	n	n
5	36:06	4.58e+02	4.24e+02	1.08	yes	8.82e+02	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0080

Entry: 43 Totals Name: Total Hepta-Furans

Run: 11 File: P519688 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 13:08:12 Processed: 30-DEC-18 08:00:28

Mass: 407.7820 409.7790 Tot Response: 1.81e+05 RRF: 1.308

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:48	5.13e+04	5.03e+04	1.02	yes	1.02e+05	1,2,3,4,6,7,8-HpCDF	n	n
2	38:04	2.03e+03	1.73e+03	1.17	yes	3.76e+03		n	n
3	38:13	2.33e+04	2.28e+04	1.02	yes	4.61e+04		n	n
4	39:16	1.50e+04	1.46e+04	1.03	yes	2.96e+04	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0080

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 11 File: P519688 Sample:1 Injection:1 Function:4

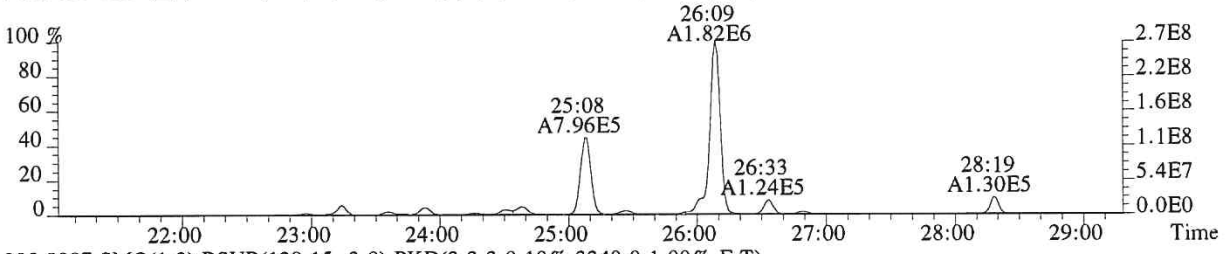
Acquired: 29-DEC-18 13:08:12 Processed: 30-DEC-18 08:00:28

Mass: 423.7770 425.7740 Tot Response: 1.35e+05 RRF: 1.025

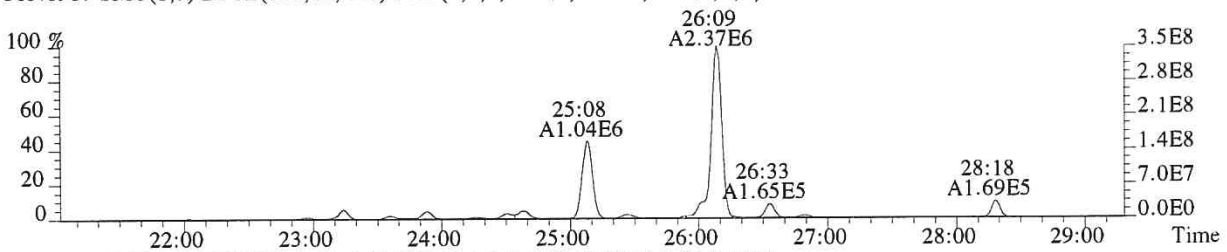
#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:05	3.24e+04	3.10e+04 1.05	yes	6.34e+04		n	n
2	38:47	3.66e+04	3.52e+04 1.04	yes	7.18e+04	1,2,3,4,6,7,8-HpCDD	n	n

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

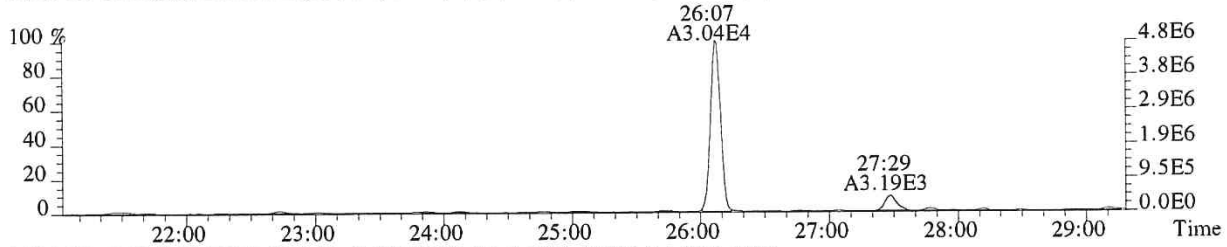
File:P519688 #1-587 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1456.0,1.00%,F,T)



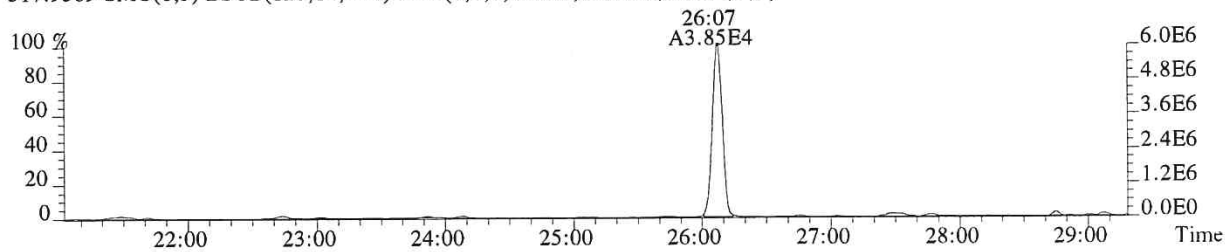
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3340.0,1.00%,F,T)



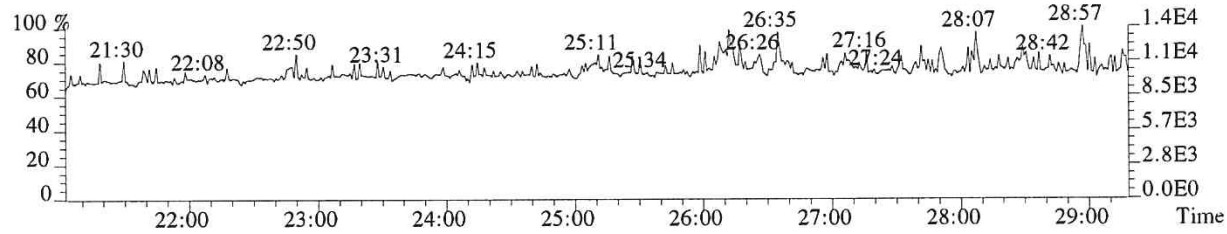
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11900.0,1.00%,F,T)



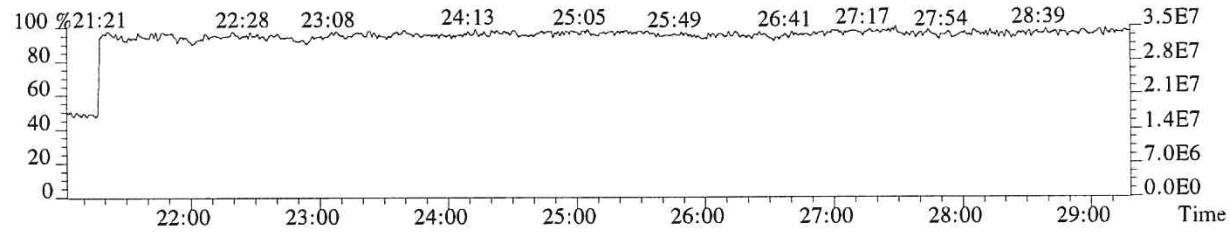
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10720.0,1.00%,F,T)



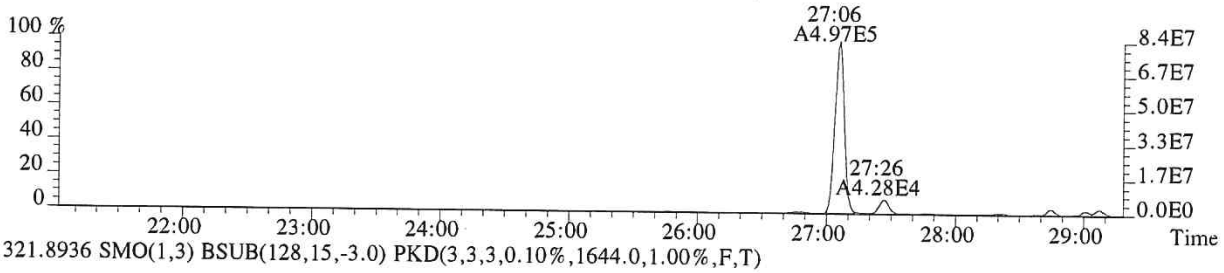
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



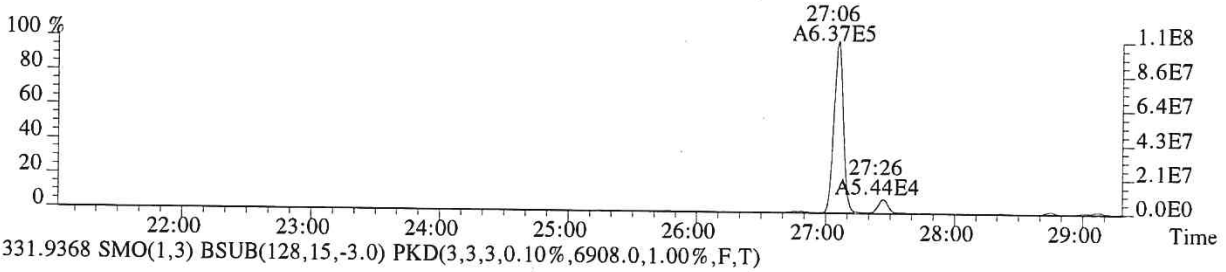
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



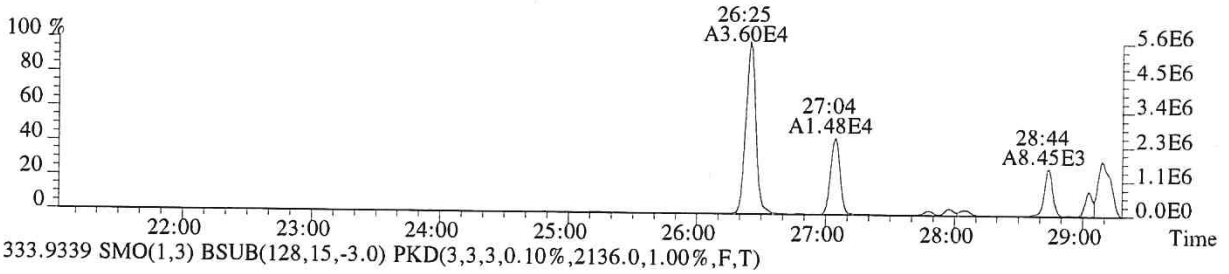
File:P519688 #1-587 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4200.0,1.00%,F,T)



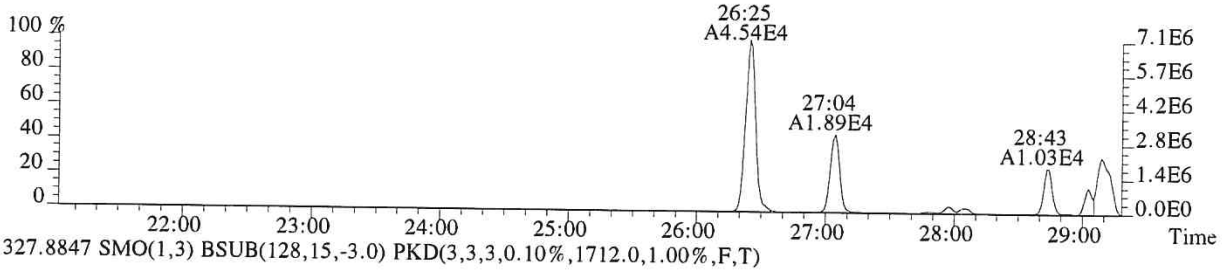
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1644.0,1.00%,F,T)



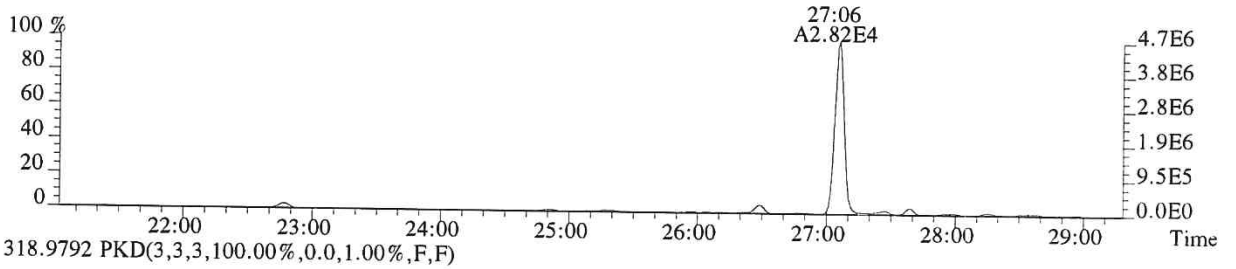
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6908.0,1.00%,F,T)



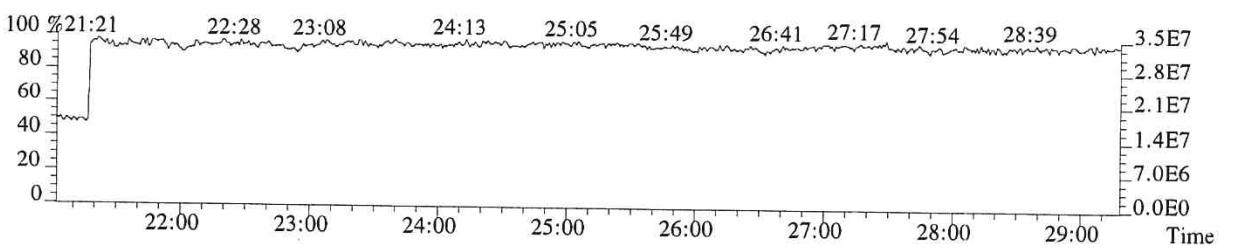
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2136.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1712.0,1.00%,F,T)

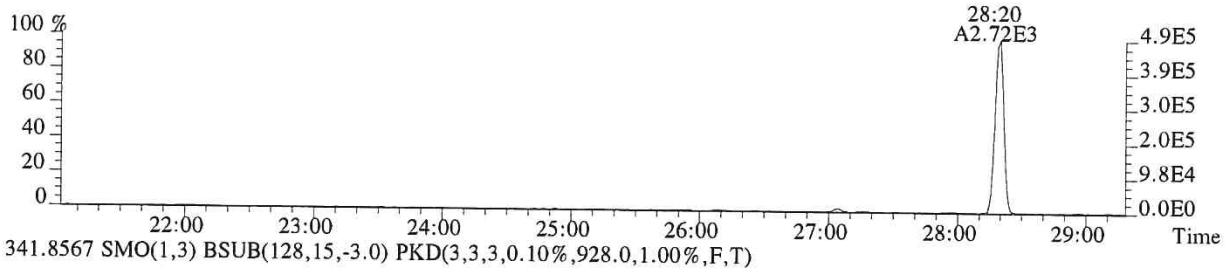


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

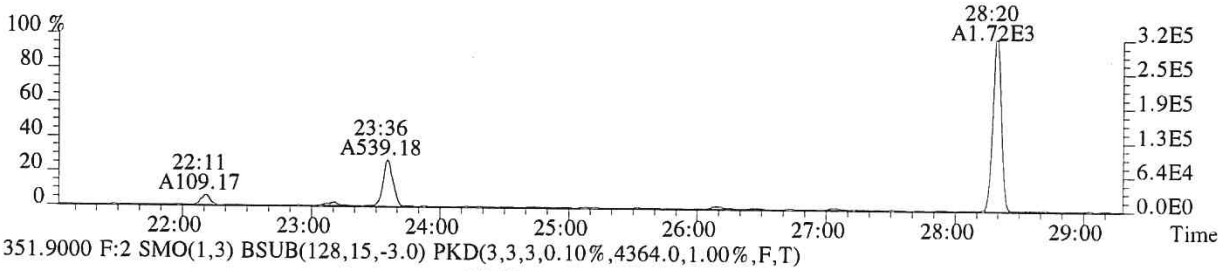


059936

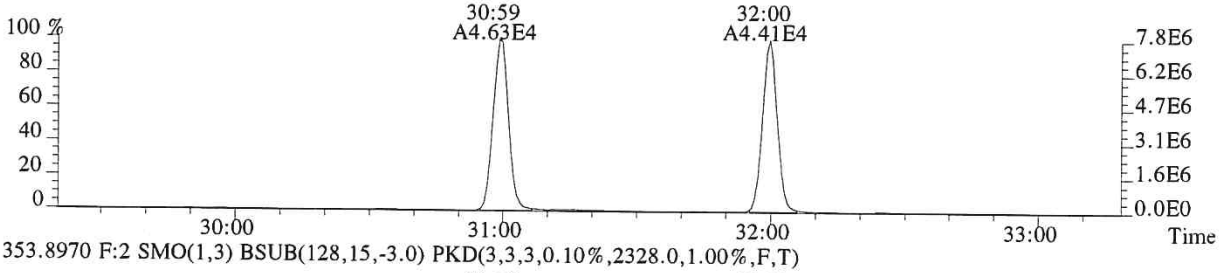
File:P519688 #1-587 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,776.0,1.00%,F,T)



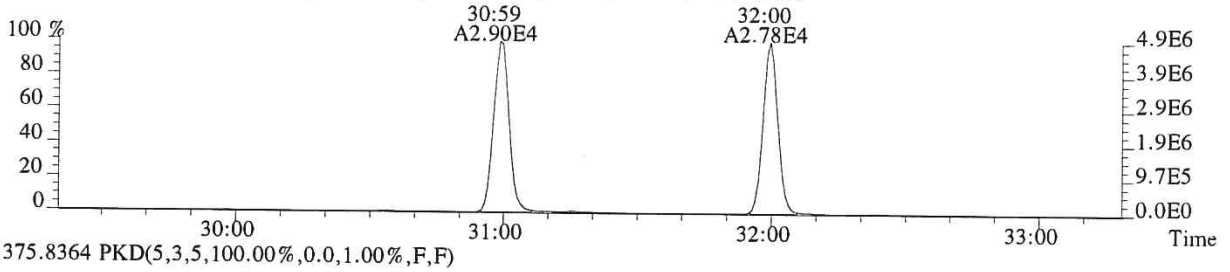
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,928.0,1.00%,F,T)



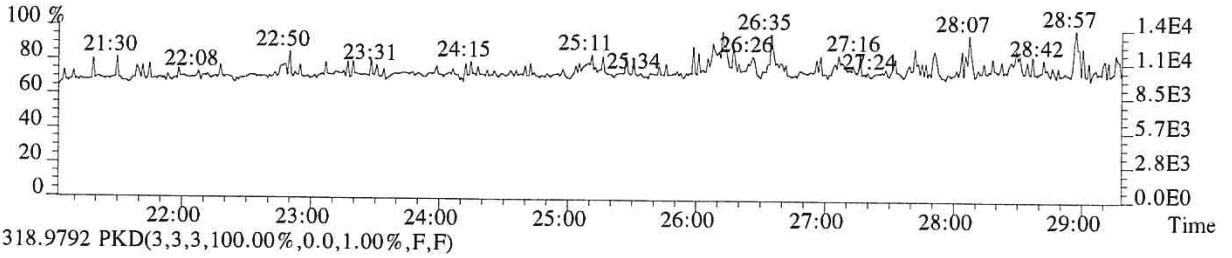
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4364.0,1.00%,F,T)



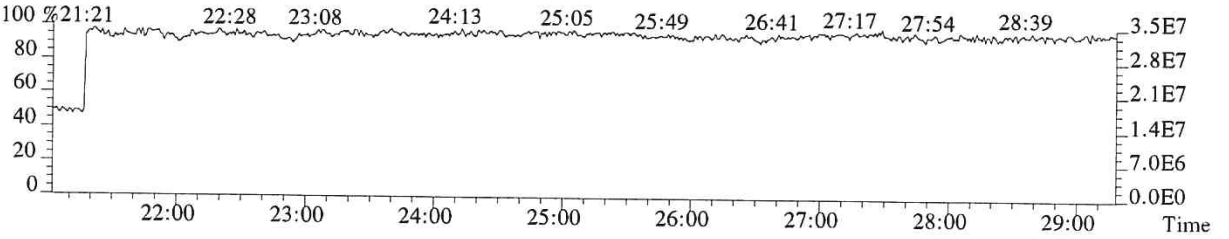
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2328.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



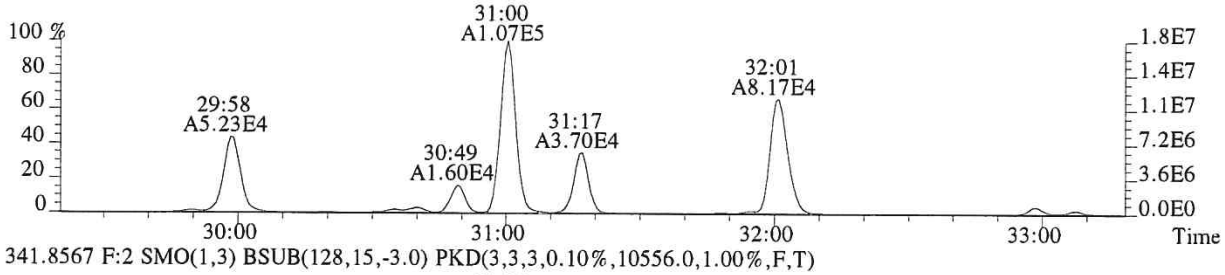
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



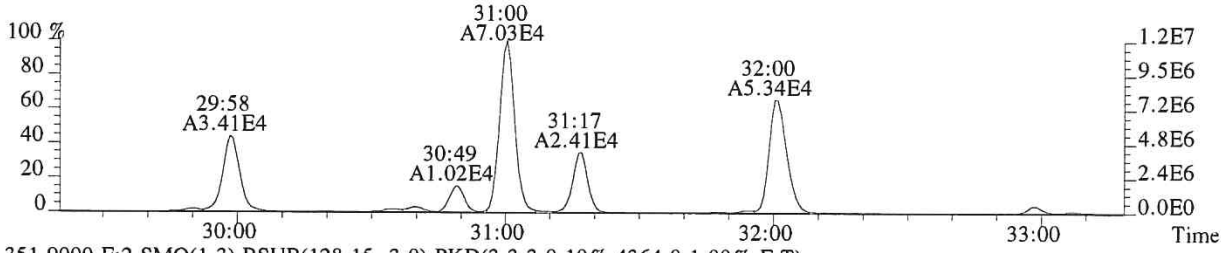
059937

File:P519688 #1-358 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002

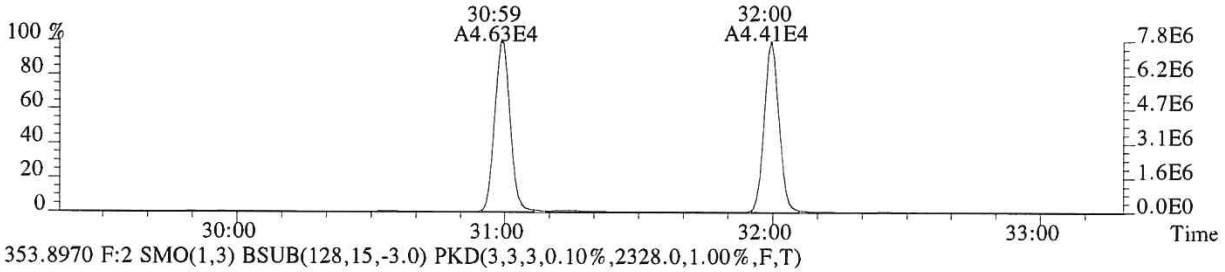
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5496.0,1.00%,F,T)



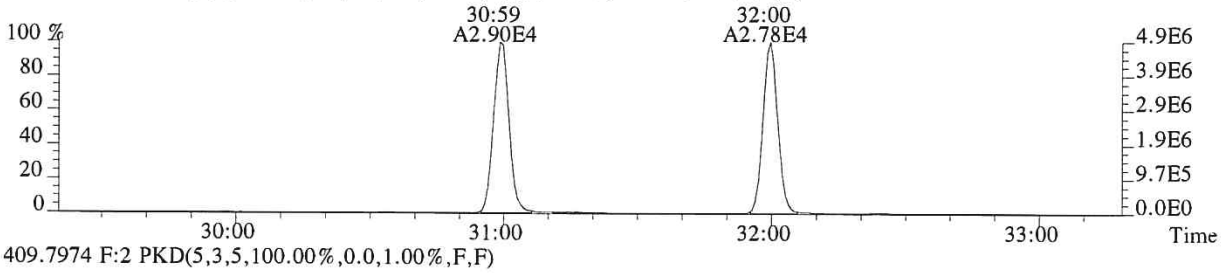
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10556.0,1.00%,F,T)



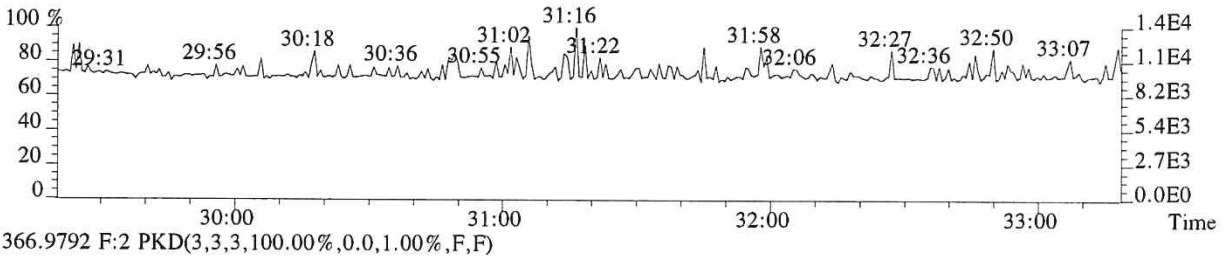
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4364.0,1.00%,F,T)



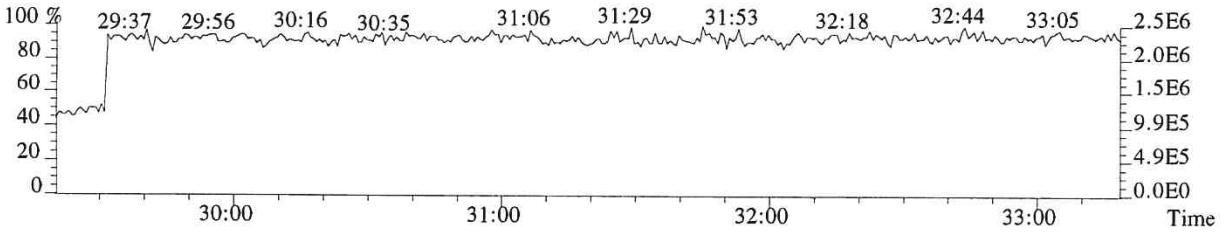
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2328.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

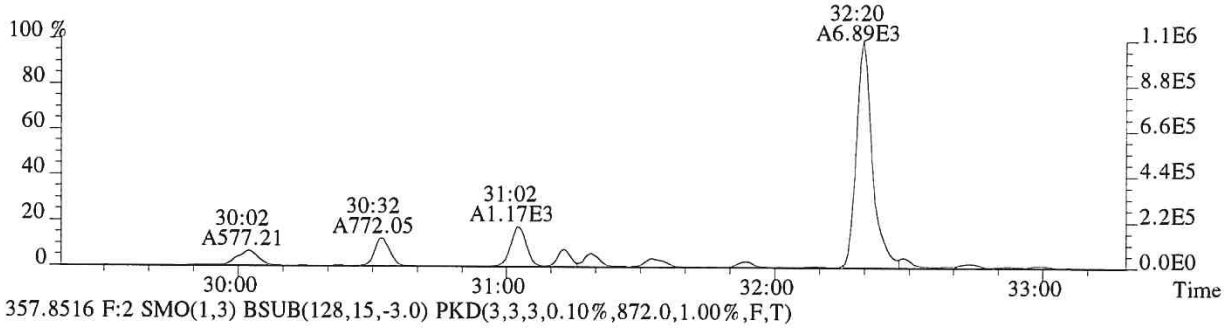


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

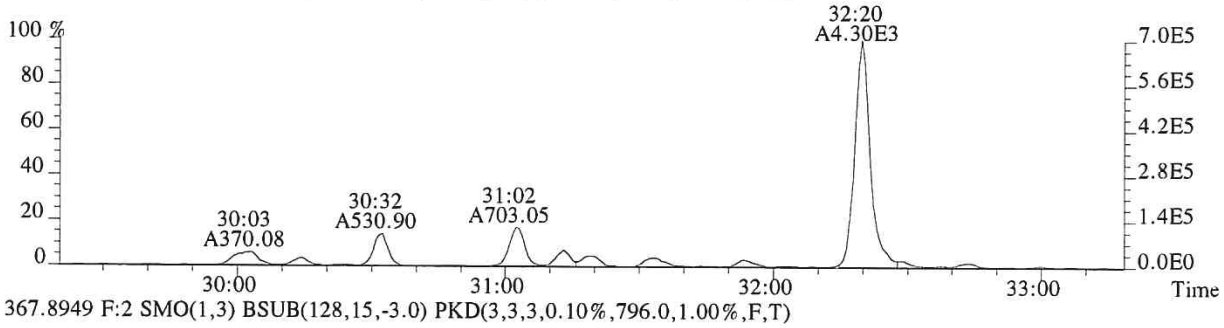


059938

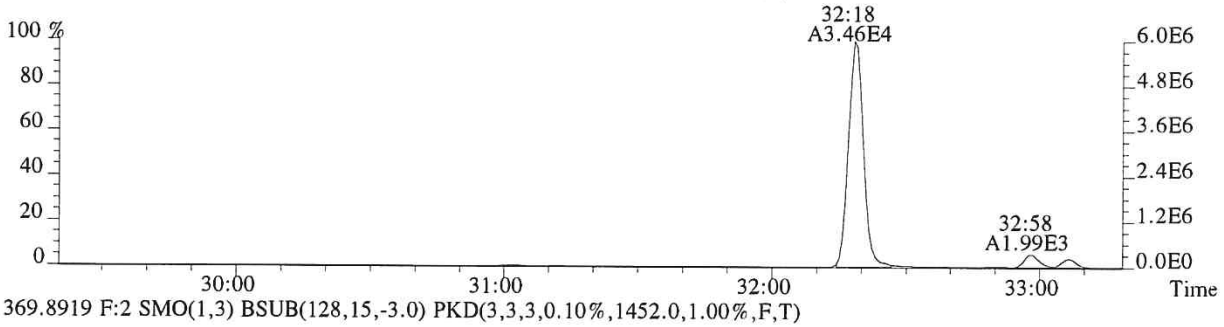
File:P519688 #1-358 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1000.0,1.00%,F,T)



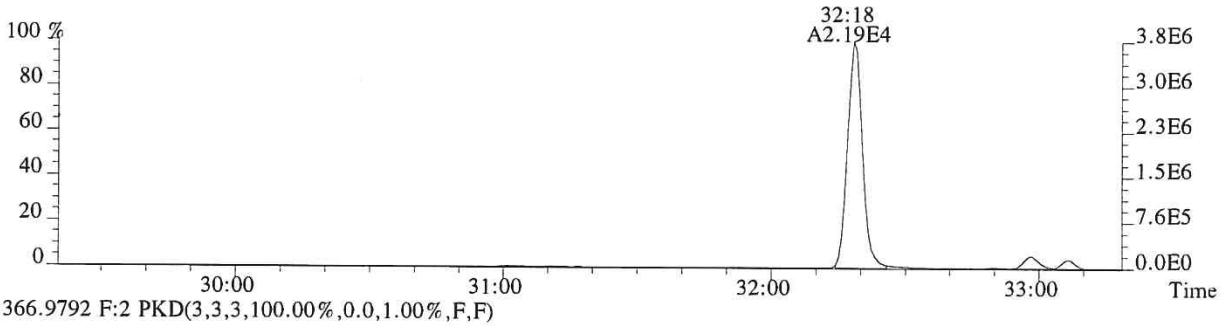
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,872.0,1.00%,F,T)



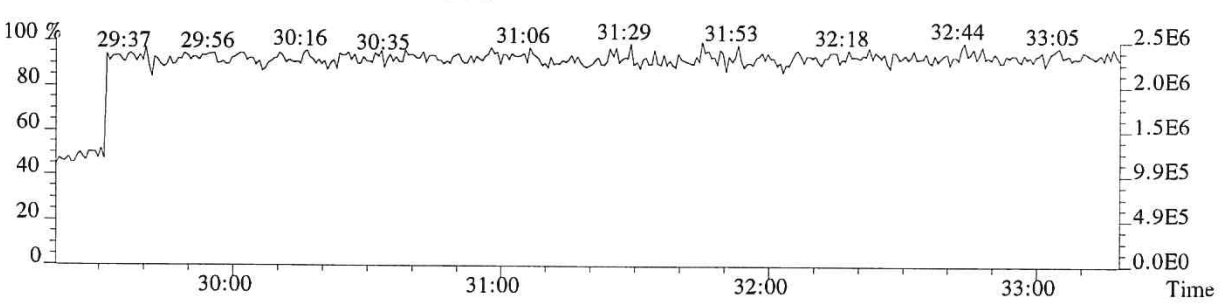
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,796.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1452.0,1.00%,F,T)



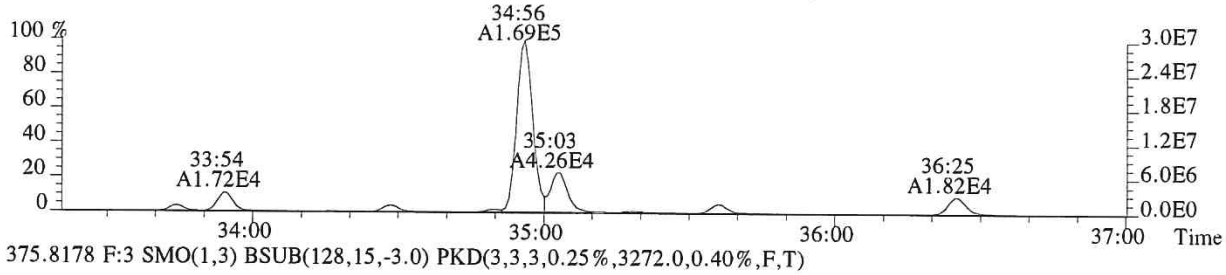
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



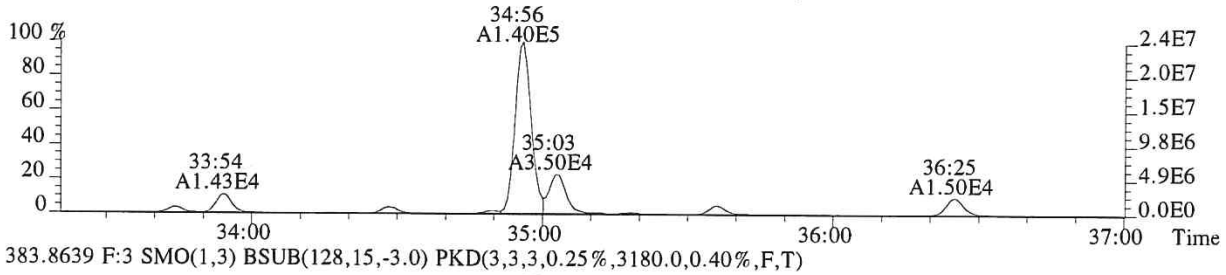
059939

File:P519688 #1-330 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002

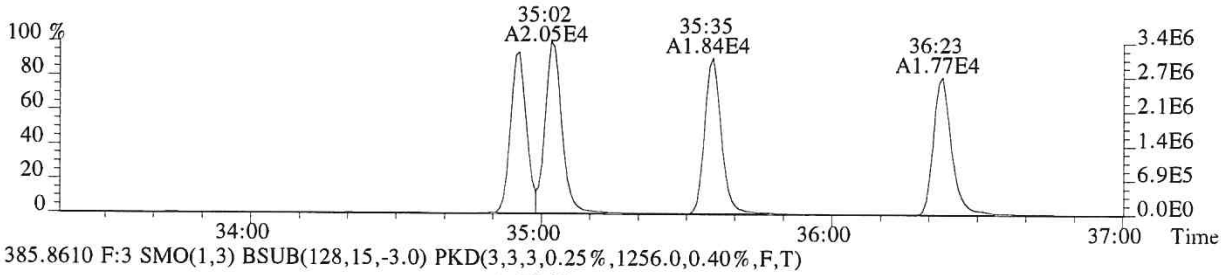
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11876.0,0.40%,F,T)



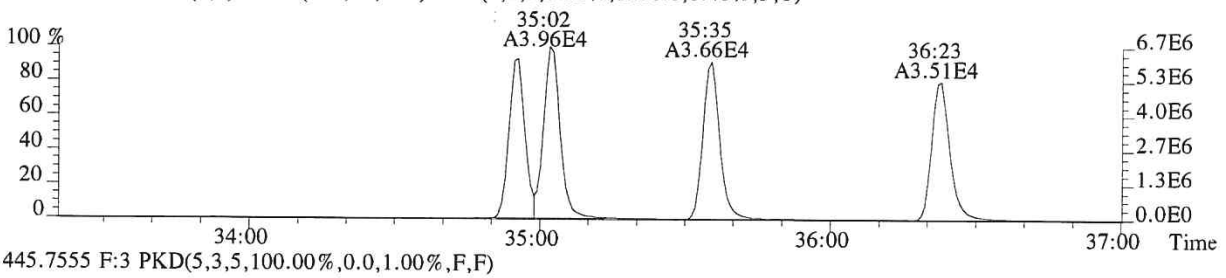
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3272.0,0.40%,F,T)



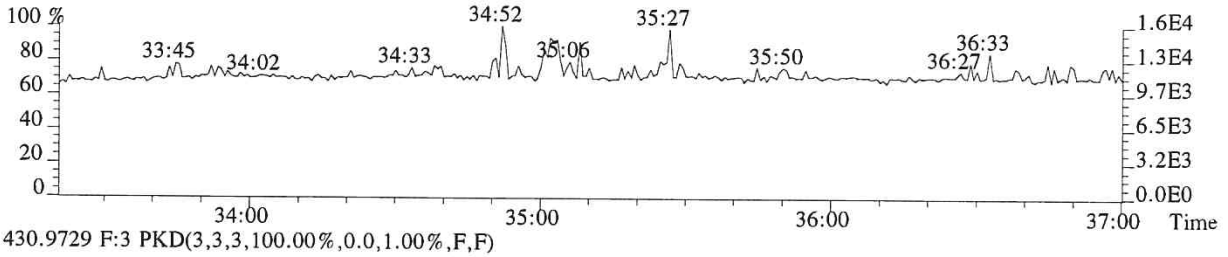
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3180.0,0.40%,F,T)



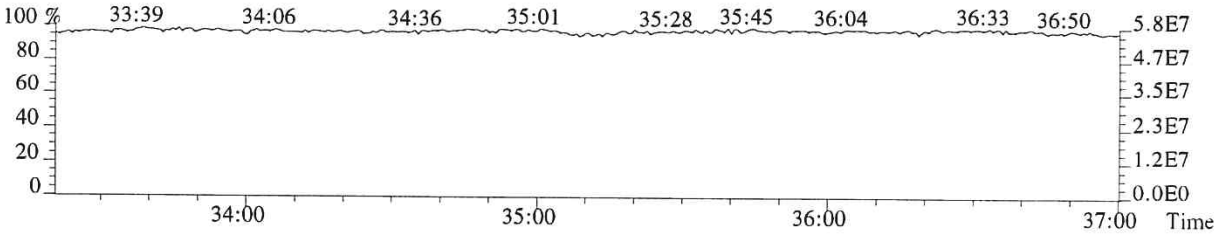
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1256.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

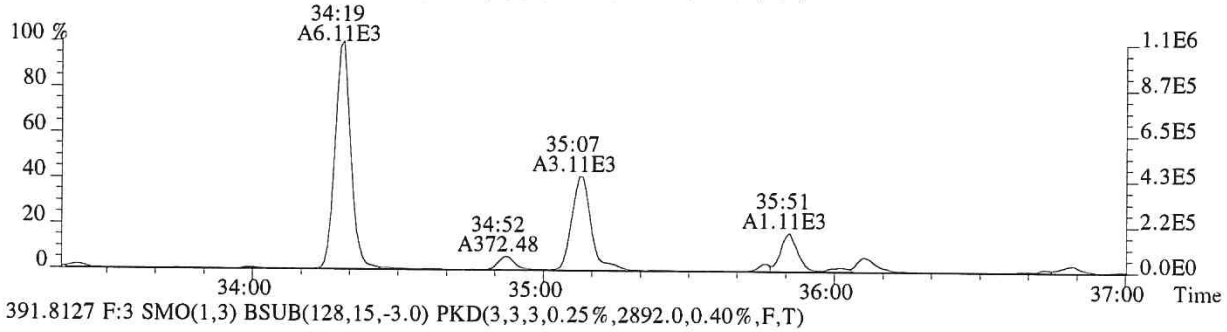


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

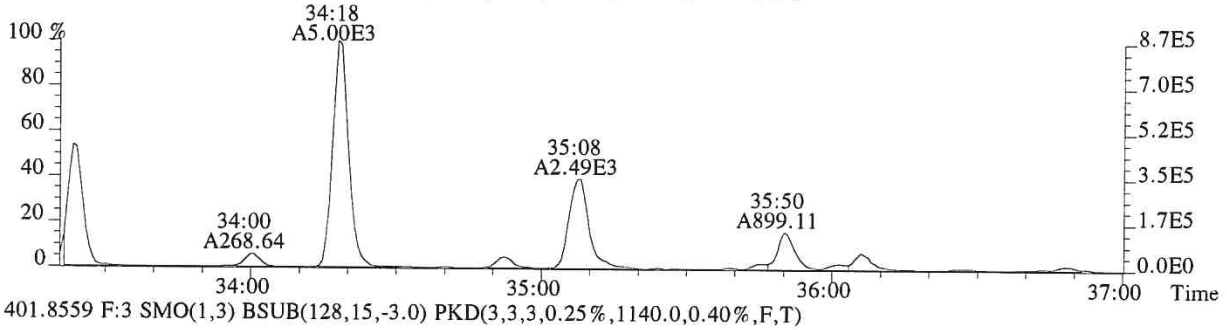


059940

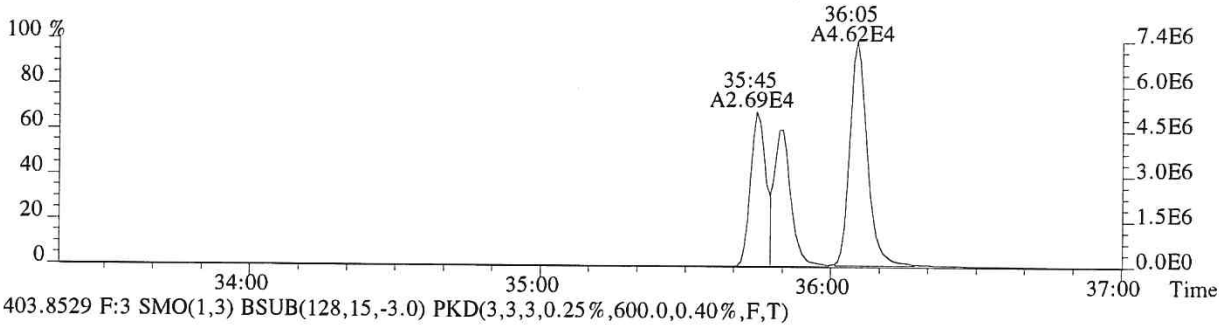
File:P519688 #1-330 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1316.0,0.40%,F,T)



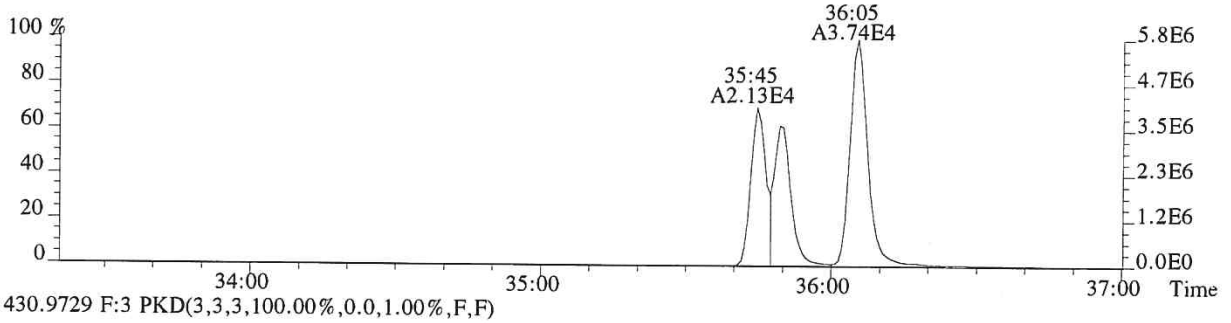
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2892.0,0.40%,F,T)



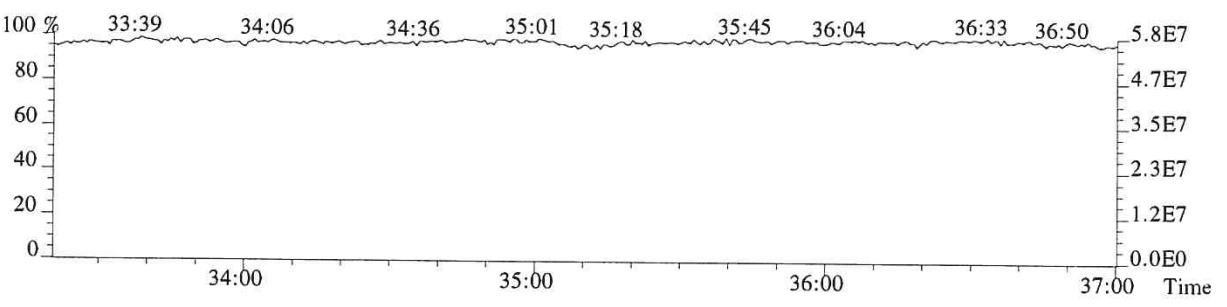
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1140.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.40%,F,T)



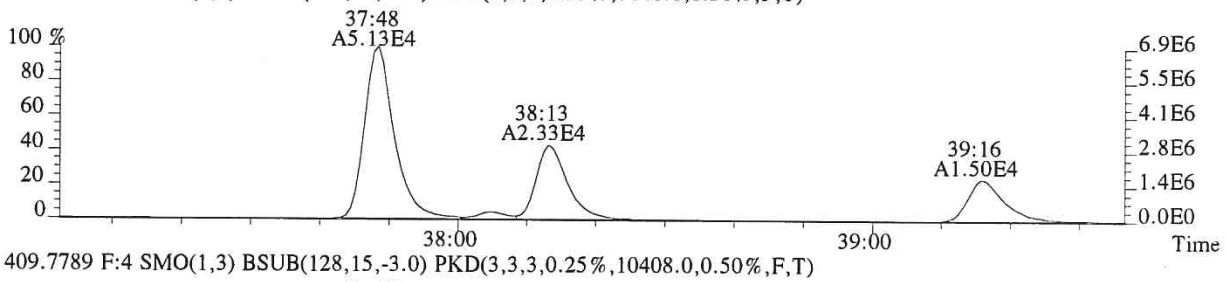
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



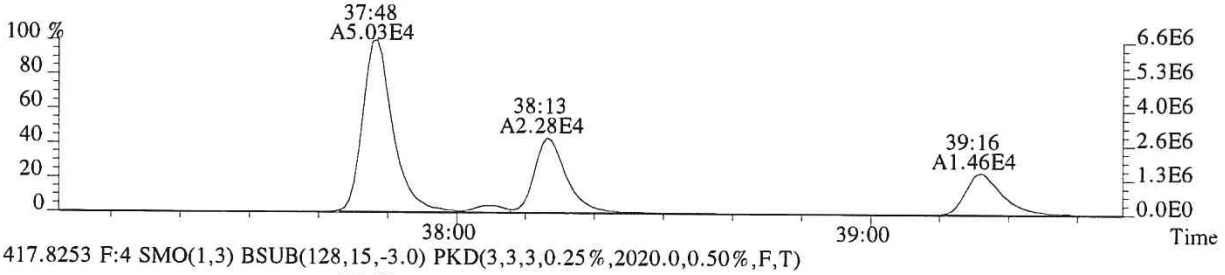
059941

File:P519688 #1-232 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002

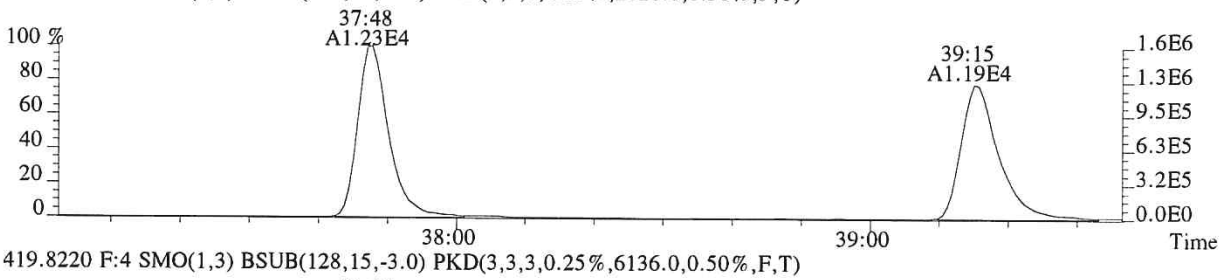
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7640.0,0.50%,F,T)



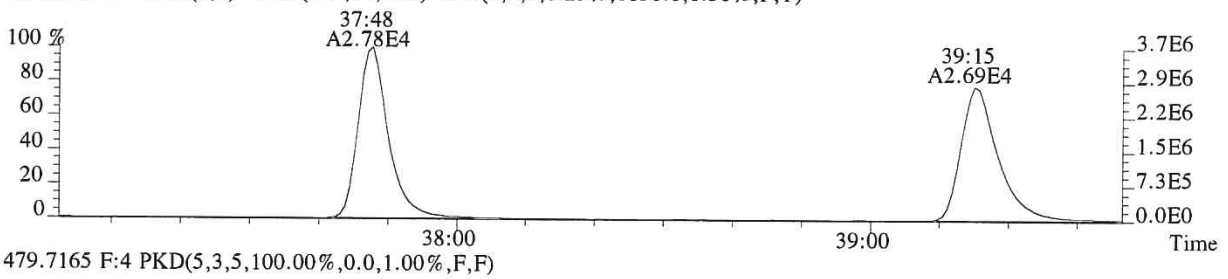
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10408.0,0.50%,F,T)



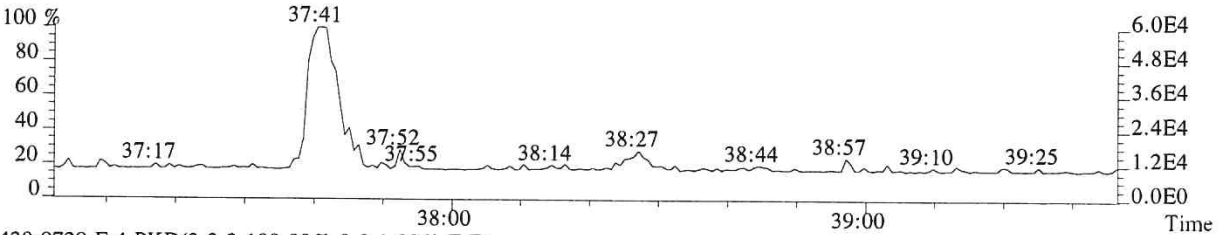
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2020.0,0.50%,F,T)



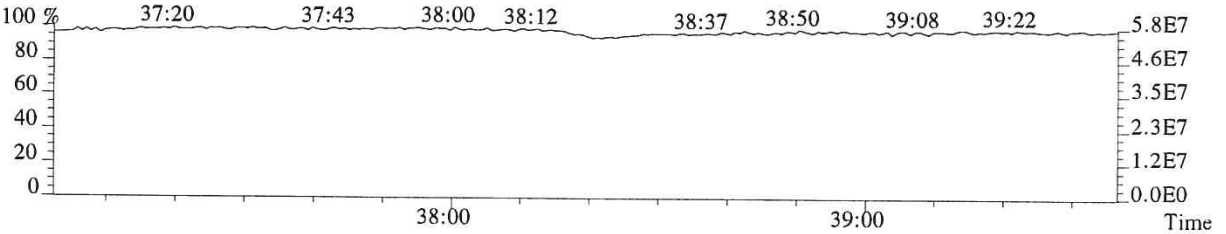
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6136.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

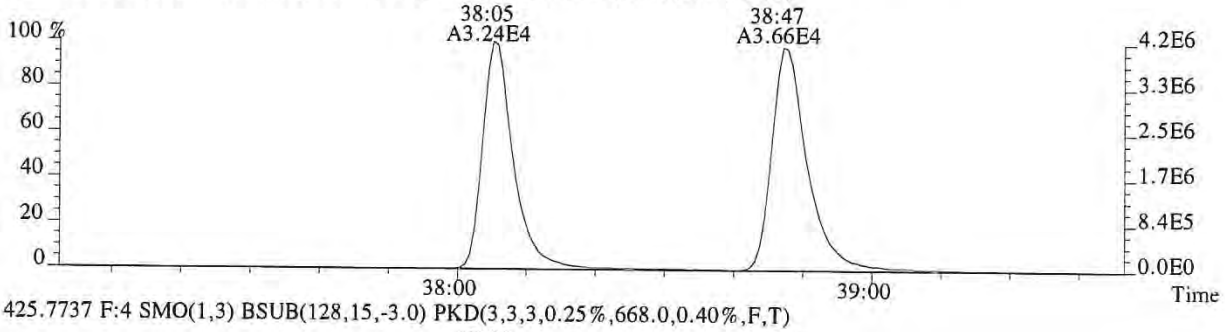


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

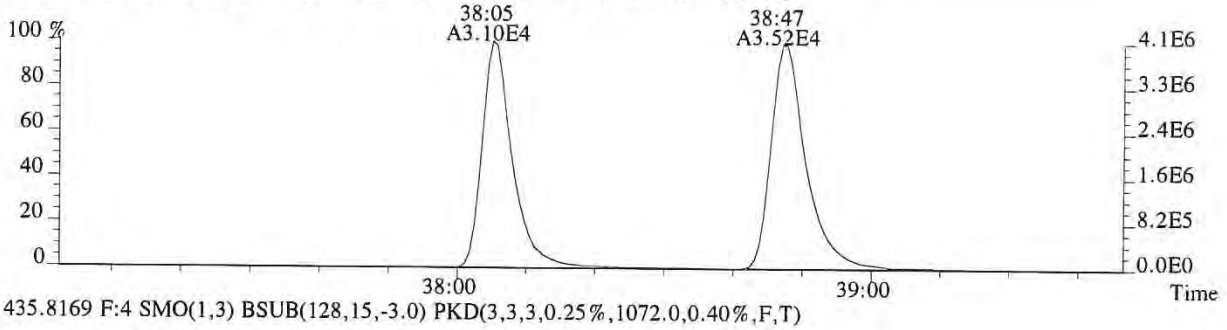


059942

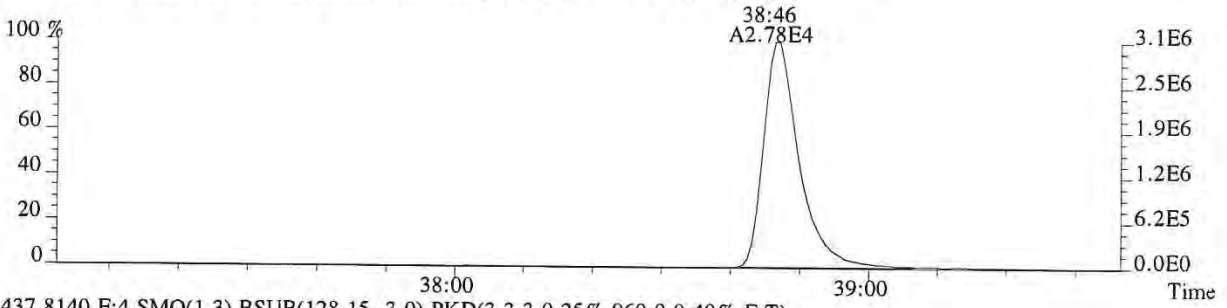
File:P519688 #1-232 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,696.0,0.40%,F,T)



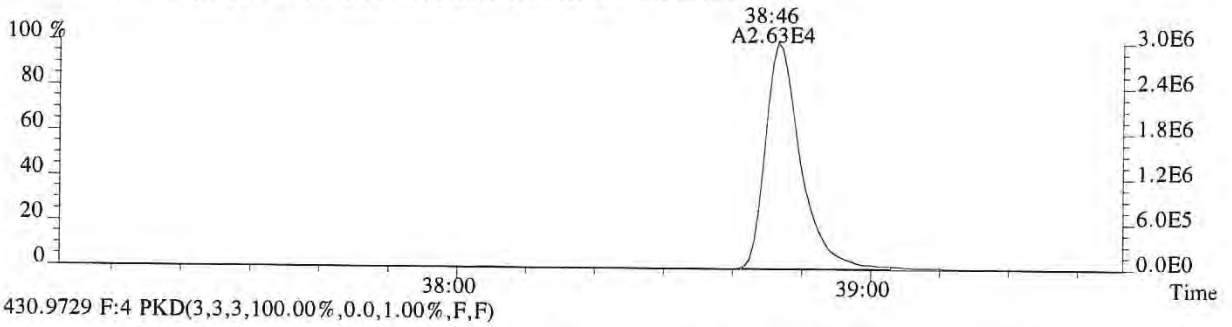
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,668.0,0.40%,F,T)



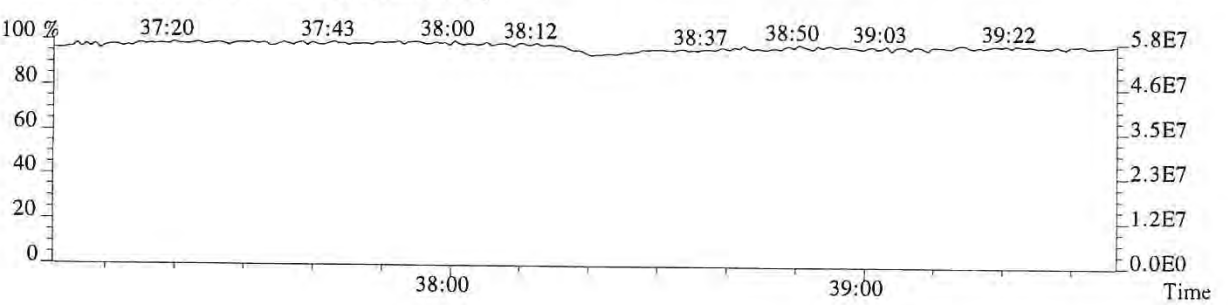
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1072.0,0.40%,F,T)



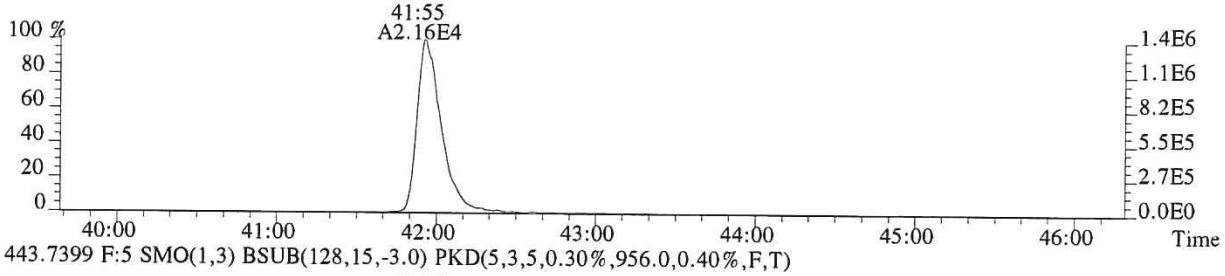
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,960.0,0.40%,F,T)



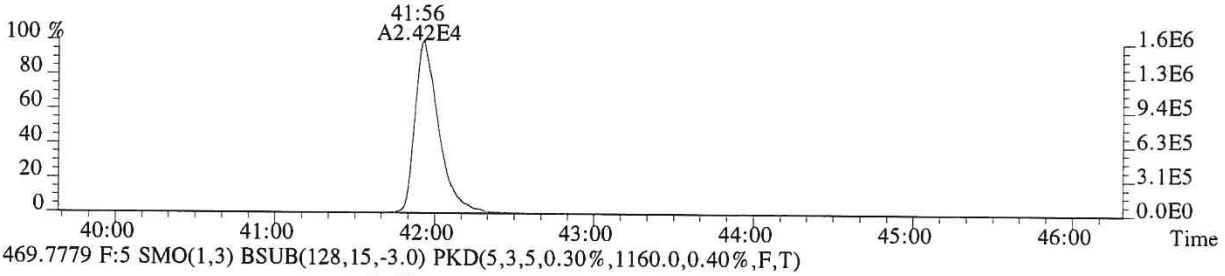
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



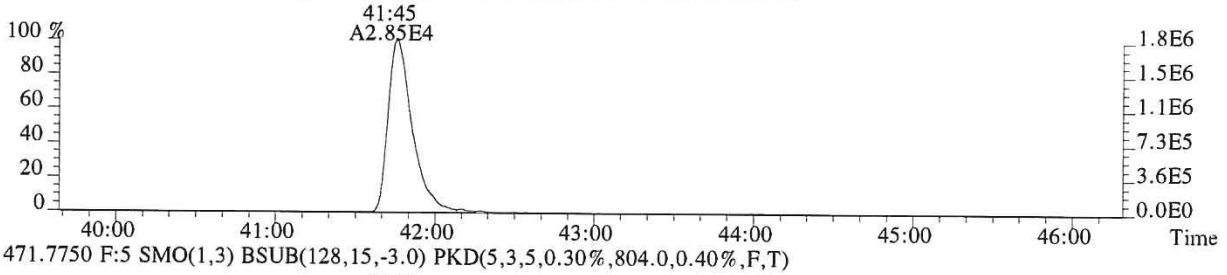
File:P519688 #1-601 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,312.0,0.40%,F,T)



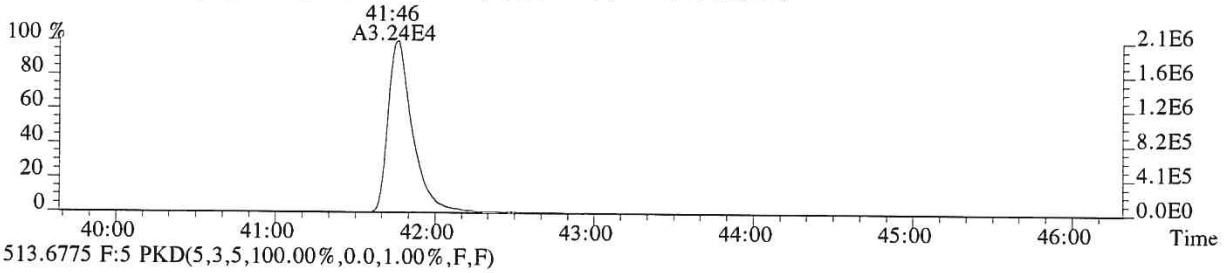
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,956.0,0.40%,F,T)



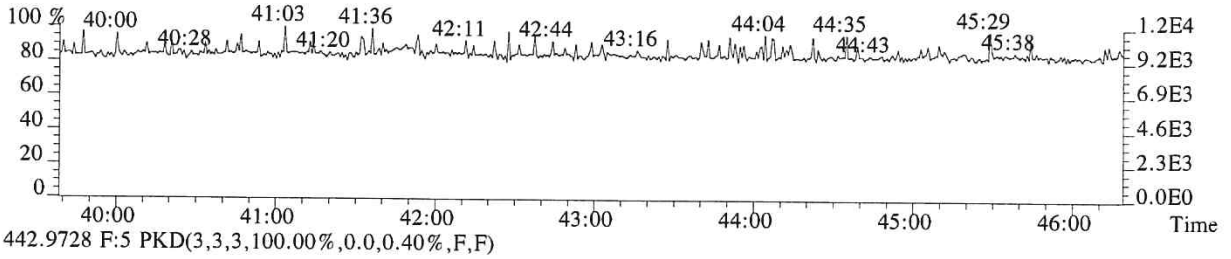
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1160.0,0.40%,F,T)



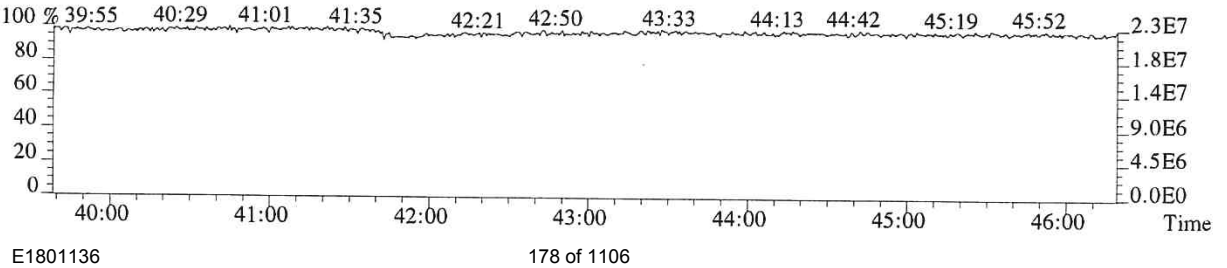
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,804.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

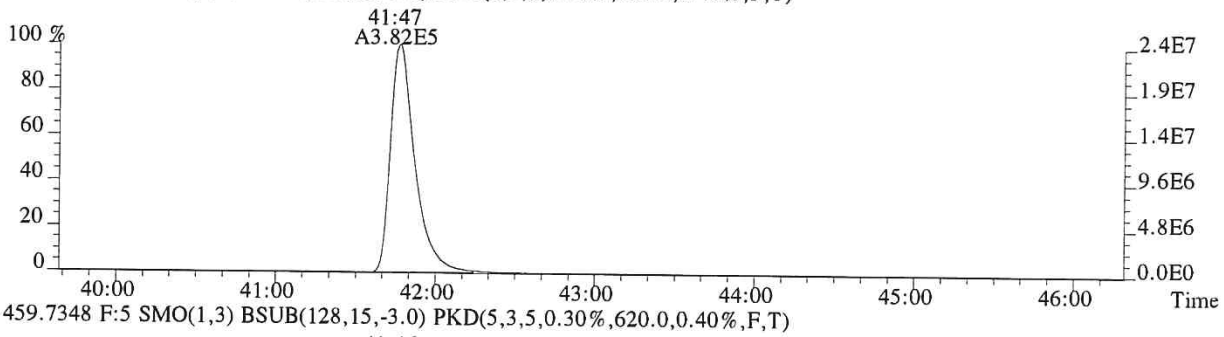


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

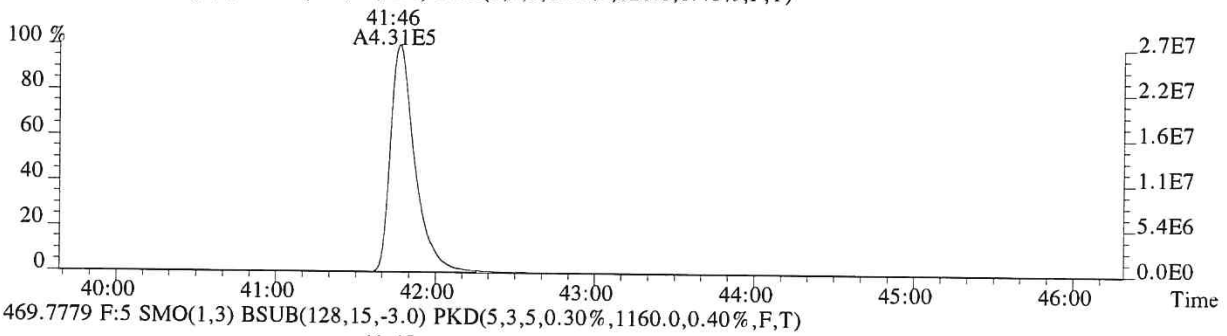


059944

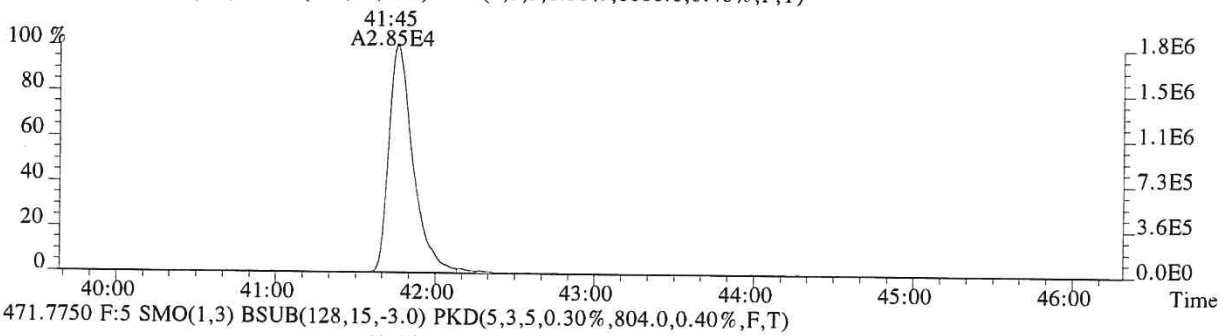
File:P519688 #1-601 Acq:29-DEC-2018 13:08:12 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,356.0,0.40%,F,T)



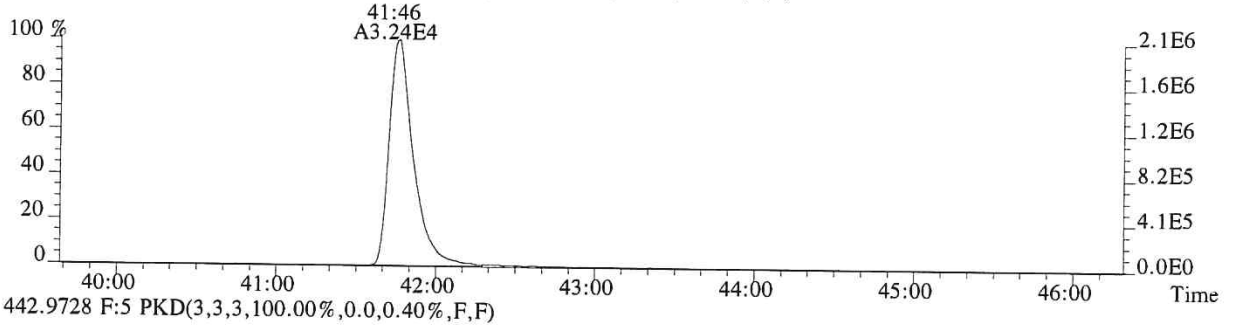
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,620.0,0.40%,F,T)



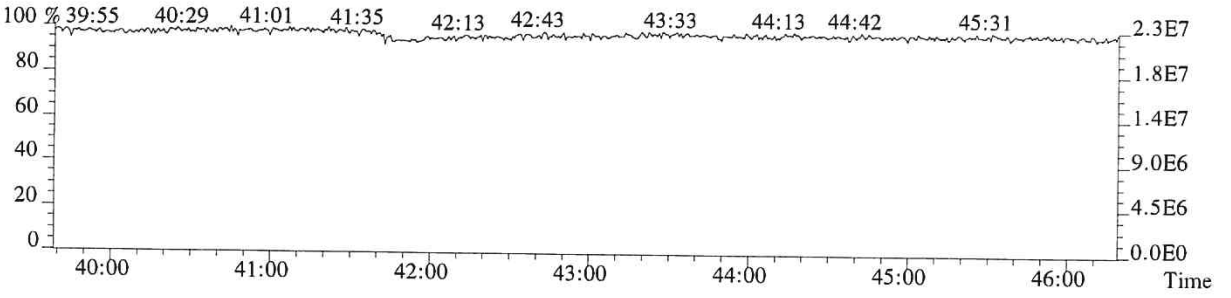
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1160.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,804.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059945

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0080

Run #13 Filename P519717 Samp: 1 Inj: 1 Acquired: 30-DEC-18 13:29:07
Processed: 31-DEC-18 09:53:22 Sample ID: E1801136-002DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:06	1.149e+04	1.534e+04	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:00	6.993e+02	4.235e+02	1.65	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	5.116e+02	3.747e+02	1.37	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	9.694e+02	8.175e+02	1.19	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:03	2.663e+02	2.635e+02	1.01	no	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:36	5.746e+01	5.980e+01	0.96	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	1.063e+02	1.012e+02	1.05	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	3.788e+02	3.962e+02	0.96	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:18	5.649e+01	1.039e+02	0.54	no	no	1.258
10	Unk	OCDF	41:55	8.571e+01	1.792e+02	0.48	no	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	3.042e+03	3.841e+03	0.79	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:20	6.523e+01	2.729e+01	2.39	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	yes	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	yes	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	yes	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:49	2.613e+02	2.277e+02	1.15	yes	no	1.025
17	Unk	OCDD	41:45	2.629e+03	2.986e+03	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	2.237e+04	2.874e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	3.317e+04	2.088e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:59	3.127e+04	1.993e+04	1.57	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.375e+04	2.585e+04	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:02	1.600e+04	3.184e+04	0.50	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.490e+04	2.879e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.350e+04	2.637e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:48	1.141e+04	2.543e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:16	1.036e+04	2.257e+04	0.46	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	1.091e+04	1.395e+04	0.78	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.478e+04	1.573e+04	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	1.893e+04	1.518e+04	1.25	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:50	2.306e+04	1.795e+04	1.28	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:48	2.467e+04	2.311e+04	1.07	yes	no	0.858
32	IS	13C-OCDD	41:45	2.882e+04	3.166e+04	0.91	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	1.664e+04	2.112e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:06	2.230e+04	1.751e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	1.999e+02				no	1.014

$$\text{OCDD} = \frac{(2.629e+03 + 2.986e+03) \times 4000\ \text{pg} \times 100}{(2.882e+04 + 3.166e+04) \times 10.578\ \text{g} \times 79.8 / 100 \times 1.118} = 62446.1033\ \text{ng/kg}$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0080

Run #13 Filename P519717 Samp: 1 Inj: 1 Acquired: 30-DEC-18 13:29:07
Processed: 31-DEC-18 09:53:22 LAB. ID: E1801136-002DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.56e+06	1.50e+03	1.0e+03	2.05e+06	3.04e+03	6.7e+02
2	1,2,3,7,8-PeCDF	1.12e+05	1.14e+03	9.9e+01	7.51e+04	2.29e+03	3.3e+01
3	2,3,4,7,8-PeCDF	8.16e+04	1.14e+03	7.2e+01	5.10e+04	2.29e+03	2.2e+01
4	1,2,3,4,7,8-HxCDF	1.55e+05	1.56e+03	9.9e+01	1.32e+05	1.16e+03	1.1e+02
5	1,2,3,6,7,8-HxCDF	3.53e+04	1.56e+03	2.3e+01	3.60e+04	1.16e+03	3.1e+01
6	2,3,4,6,7,8-HxCDF	9.83e+03	1.56e+03	6.3e+00	9.13e+03	1.16e+03	7.9e+00
7	1,2,3,7,8,9-HxCDF	1.54e+04	1.56e+03	9.9e+00	1.52e+04	1.16e+03	1.3e+01
8	1,2,3,4,6,7,8-HpCDF	4.47e+04	1.80e+03	2.5e+01	4.69e+04	7.32e+02	6.4e+01
9	1,2,3,4,7,8,9-HpCDF	9.32e+03	1.80e+03	5.2e+00	1.30e+04	7.32e+02	1.8e+01
10	OCDF	1.31e+04	6.44e+02	2.0e+01	2.16e+04	1.20e+03	1.8e+01
11	2,3,7,8-TCDD	5.04e+05	3.20e+03	1.6e+02	6.20e+05	1.76e+03	3.5e+02
12	1,2,3,7,8-PeCDD	9.73e+03	1.28e+03	7.6e+00	5.30e+03	4.68e+02	1.1e+01
13	1,2,3,4,7,8-HxCDD	*	6.80e+02	*	*	7.52e+02	*
14	1,2,3,6,7,8-HxCDD	*	6.80e+02	*	*	7.52e+02	*
15	1,2,3,7,8,9-HxCDD	*	6.80e+02	*	*	7.52e+02	*
16	1,2,3,4,6,7,8-HpCDD	2.82e+04	6.48e+02	4.4e+01	2.40e+04	6.48e+02	3.7e+01
17	OCDD	1.53e+05	3.88e+02	3.9e+02	1.79e+05	4.68e+02	3.8e+02
18	13C-2,3,7,8-TCDF	3.34e+06	9.47e+03	3.5e+02	4.27e+06	8.02e+03	5.3e+02
19	13C-1,2,3,7,8-PeCDF	5.52e+06	6.88e+02	8.0e+03	3.48e+06	1.13e+03	3.1e+03
20	13C-2,3,4,7,8-PeCDF	5.42e+06	6.88e+02	7.9e+03	3.51e+06	1.13e+03	3.1e+03
21	13C-1,2,3,4,7,8-HxCDF	2.31e+06	1.68e+03	1.4e+03	4.49e+06	1.25e+03	3.6e+03
22	13C-1,2,3,6,7,8-HxCDF	2.45e+06	1.68e+03	1.5e+03	4.70e+06	1.25e+03	3.8e+03
23	13C-2,3,4,6,7,8-HxCDF	2.32e+06	1.68e+03	1.4e+03	4.60e+06	1.25e+03	3.7e+03
24	13C-1,2,3,7,8,9-HxCDF	1.81e+06	1.68e+03	1.1e+03	3.59e+06	1.25e+03	2.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.39e+06	1.92e+03	7.2e+02	3.11e+06	1.27e+04	2.5e+02
26	13C-1,2,3,4,7,8,9-HpCDF	9.69e+05	1.92e+03	5.0e+02	2.10e+06	1.27e+04	1.7e+02
27	13C-2,3,7,8-TCDD	1.74e+06	8.34e+03	2.1e+02	2.27e+06	2.58e+03	8.8e+02
28	13C-1,2,3,7,8-PeCDD	4.05e+06	1.50e+03	2.7e+03	2.61e+06	1.58e+03	1.7e+03
29	13C-1,2,3,4,7,8-HxCDD	3.49e+06	1.46e+03	2.4e+03	2.82e+06	1.02e+03	2.8e+03
30	13C-1,2,3,6,7,8-HxCDD	3.32e+06	1.46e+03	2.3e+03	2.57e+06	1.02e+03	2.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.46e+06	1.05e+03	2.3e+03	2.33e+06	7.00e+02	3.3e+03
32	13C-OCDD	1.59e+06	1.29e+03	1.2e+03	1.78e+06	4.12e+02	4.3e+03
33	13C-1,2,3,4-TCDD	2.64e+06	8.34e+03	3.2e+02	3.37e+06	2.58e+03	1.3e+03
34	13C-1,2,3,7,8,9-HxCDD	3.15e+06	1.46e+03	2.2e+03	2.55e+06	1.02e+03	2.5e+03
35	37Cl-2,3,7,8-TCDD	3.29e+04	2.35e+03	1.4e+01			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.204e{+}03 + 1.760e{+}03) \times 2000}{(1.740e{+}06 + 2.272e{+}06) \times (\quad) \times 1.085} =$$

ALS ENVIRONMENTAL
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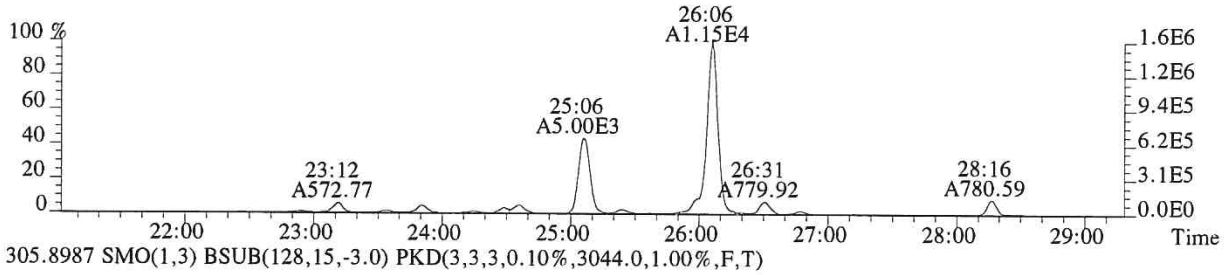
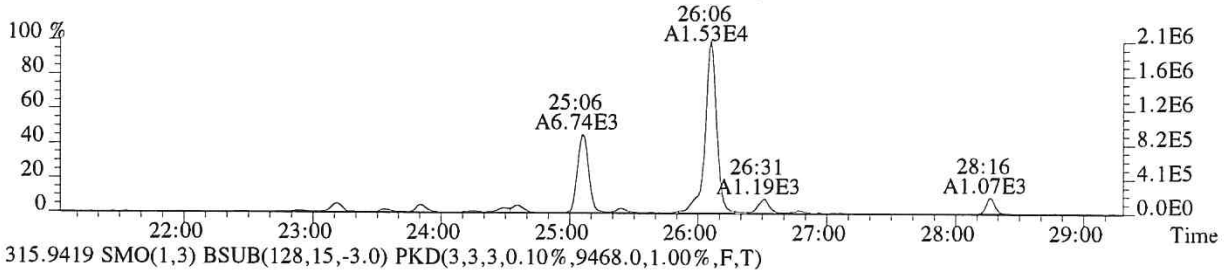
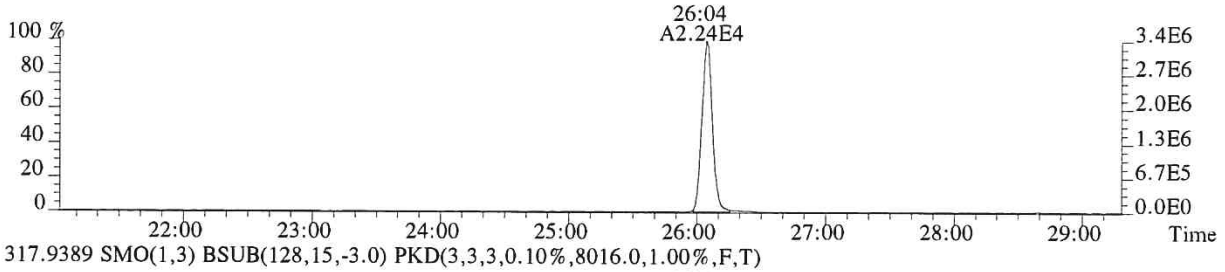
File:P519717 #1-587 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1504.0,1.00%,F,T)



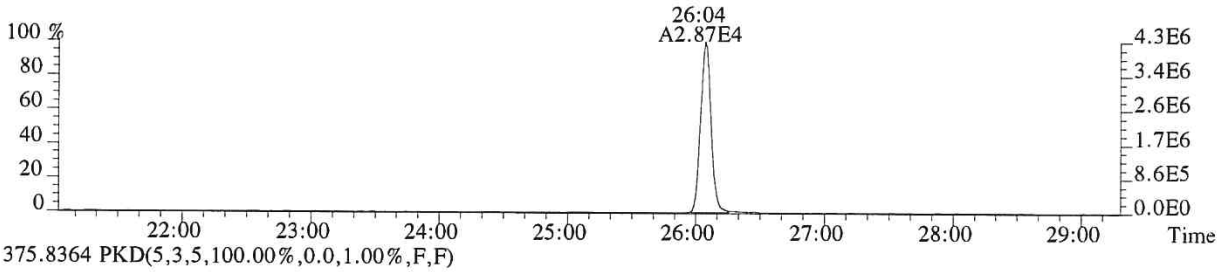
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3044.0,1.00%,F,T)



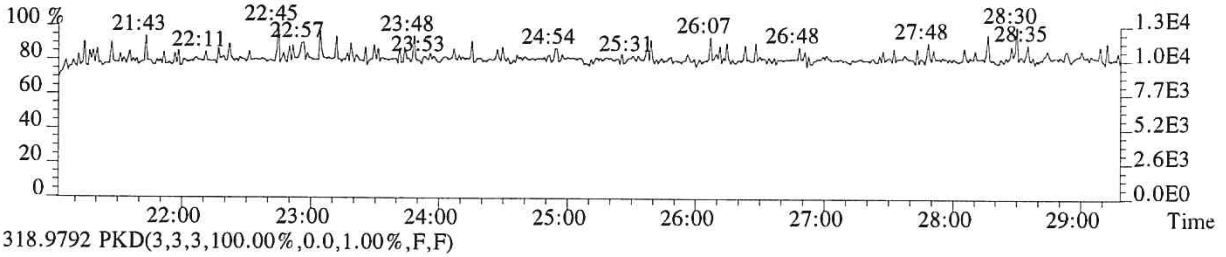
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9468.0,1.00%,F,T)



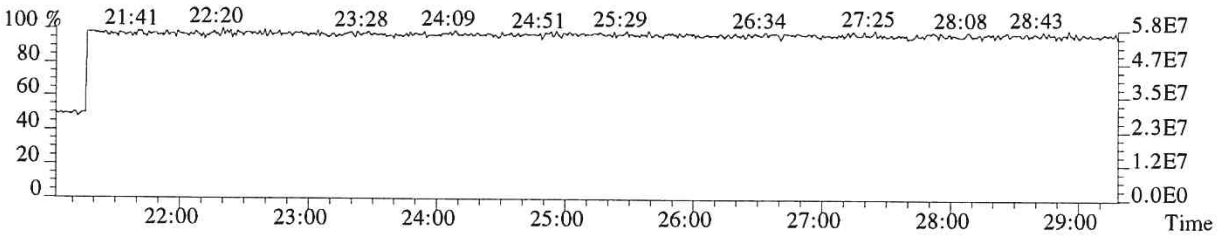
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8016.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

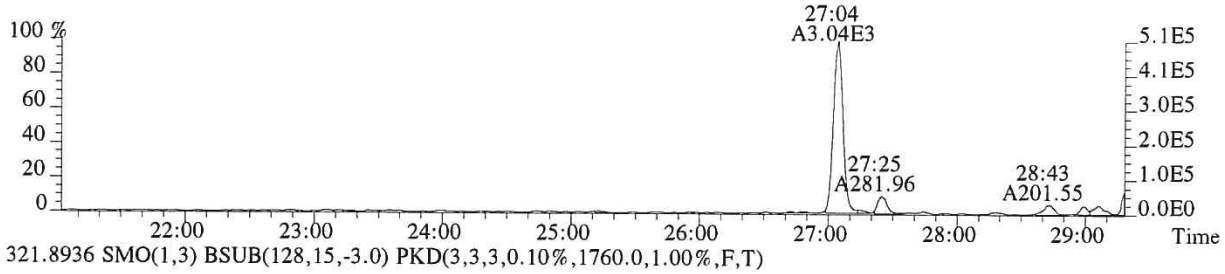


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

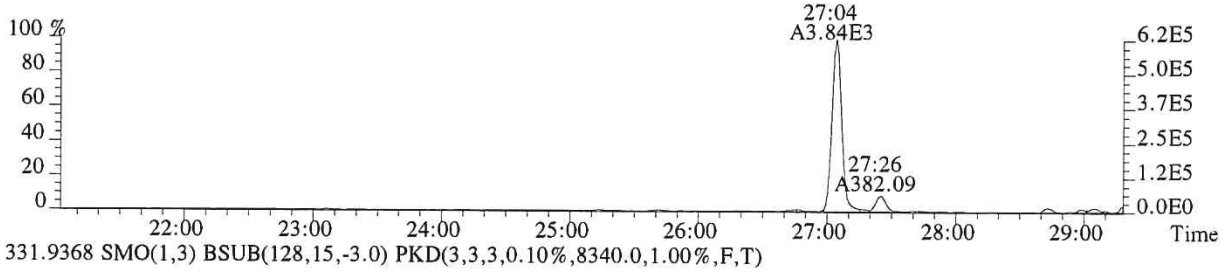


059948

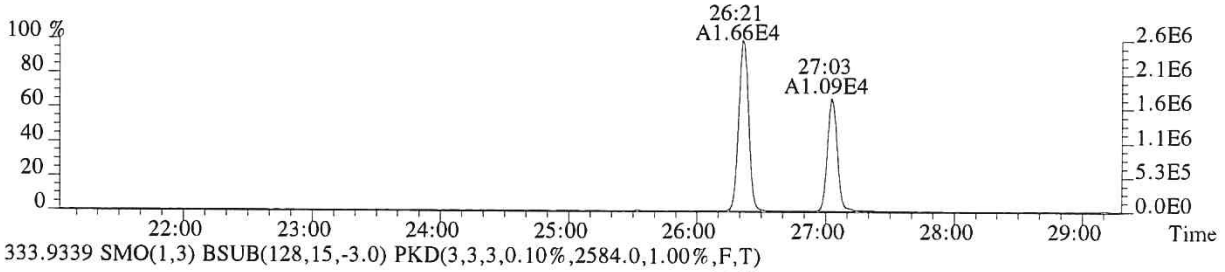
File:P519717 #1-587 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3204.0,1.00%,F,T)



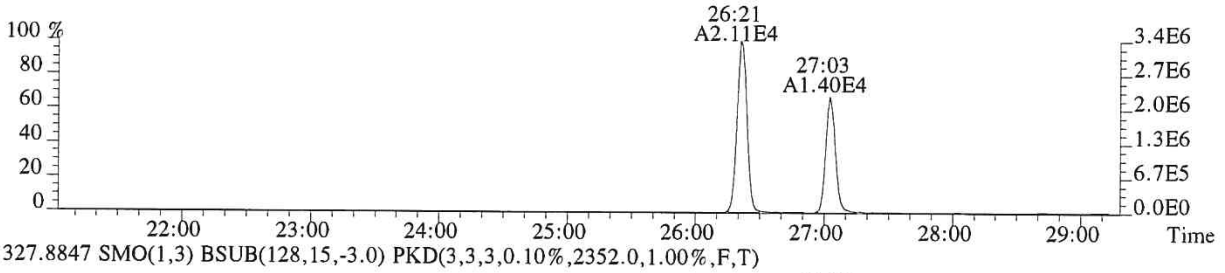
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1760.0,1.00%,F,T)



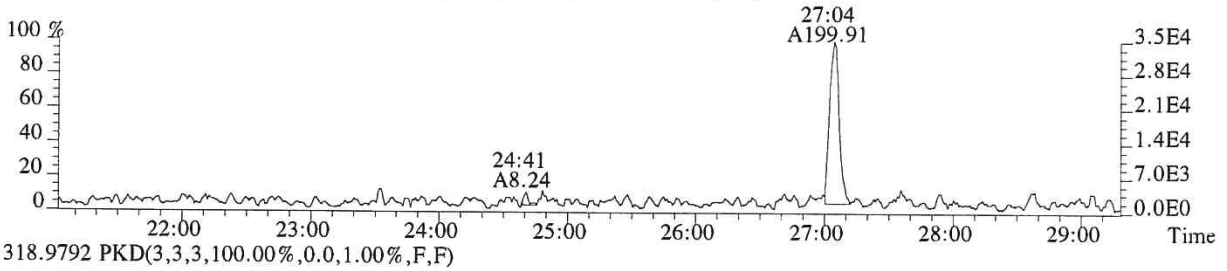
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8340.0,1.00%,F,T)



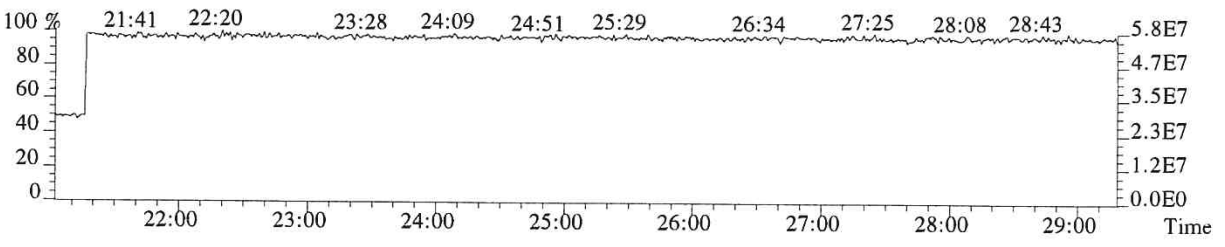
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2584.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2352.0,1.00%,F,T)

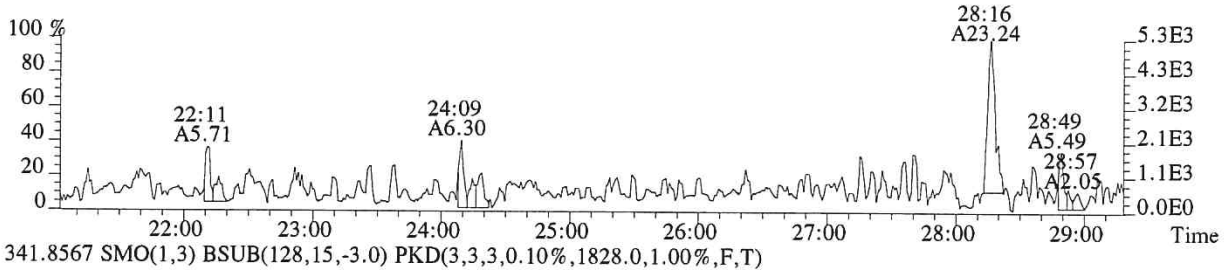


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

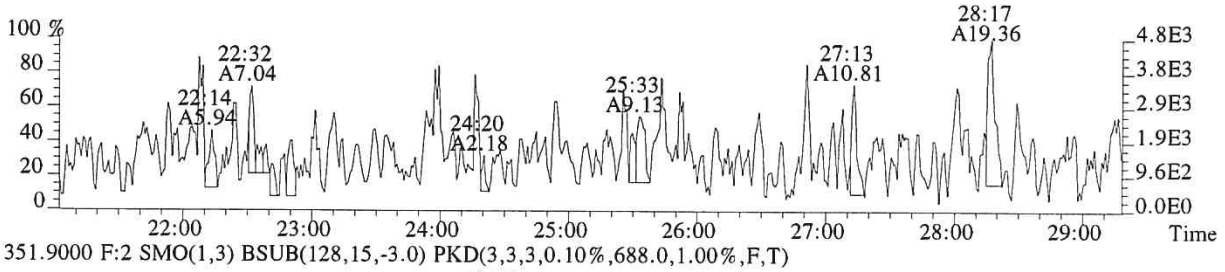


059949

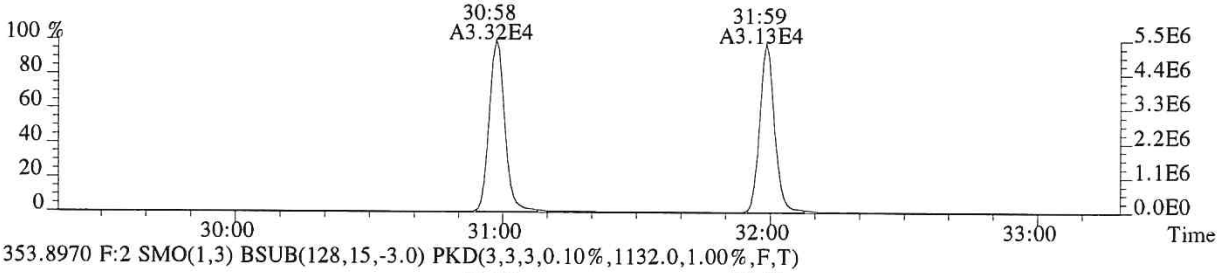
File:P519717 #1-587 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,752.0,1.00%,F,T)



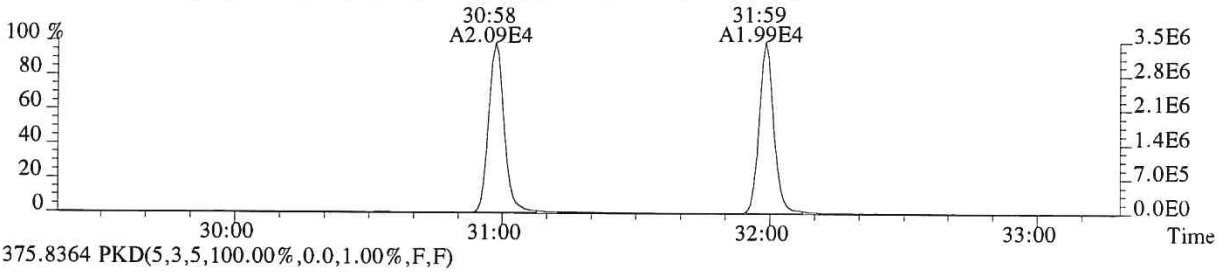
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1828.0,1.00%,F,T)



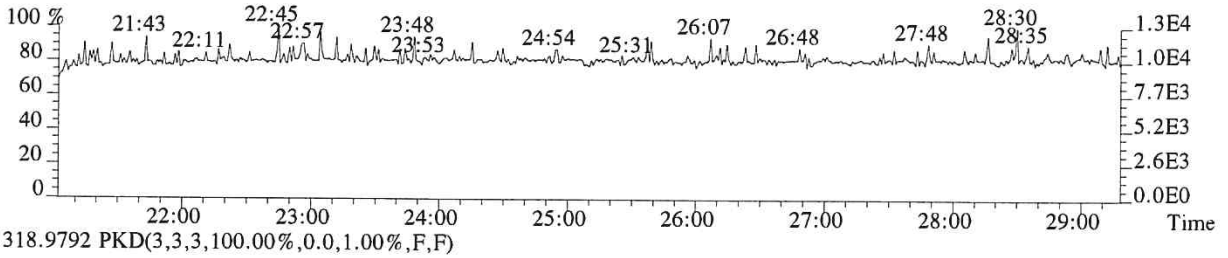
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,688.0,1.00%,F,T)



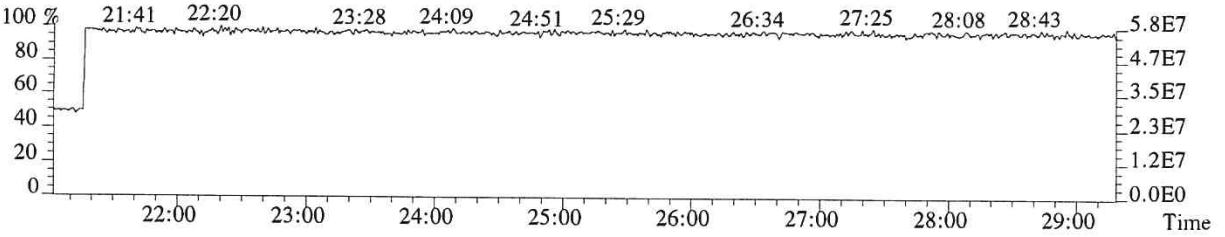
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1132.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

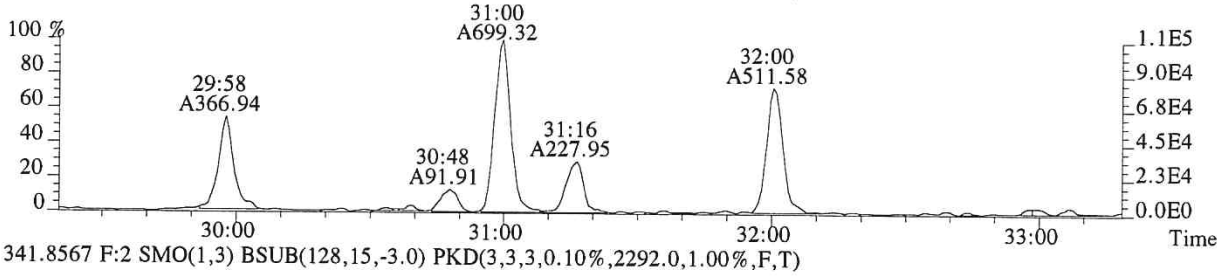


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

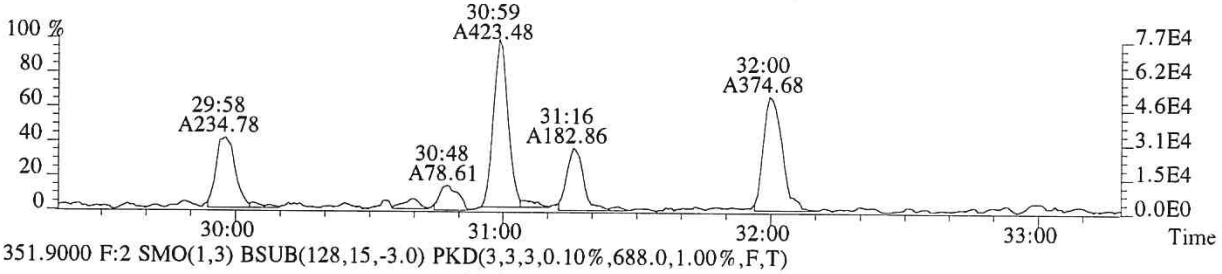


059950

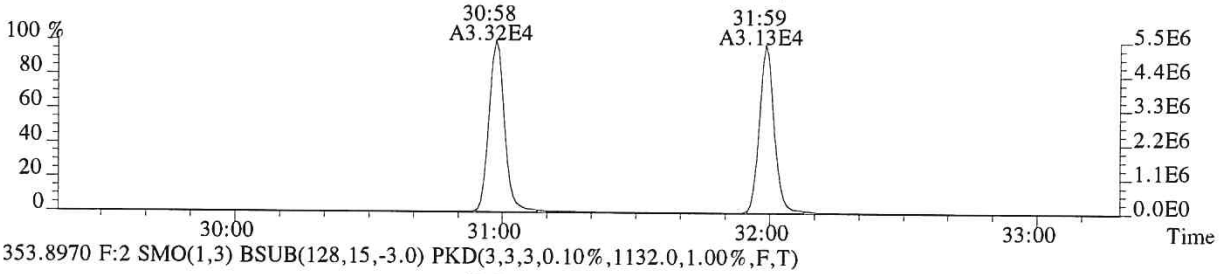
File:P519717 #1-358 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1140.0,1.00%,F,T)



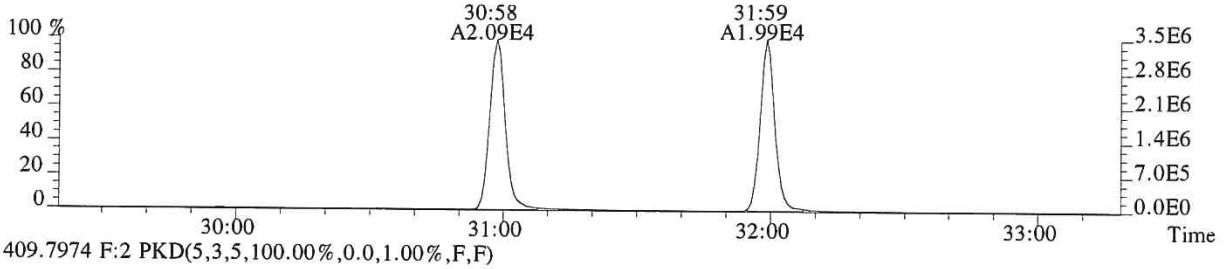
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2292.0,1.00%,F,T)



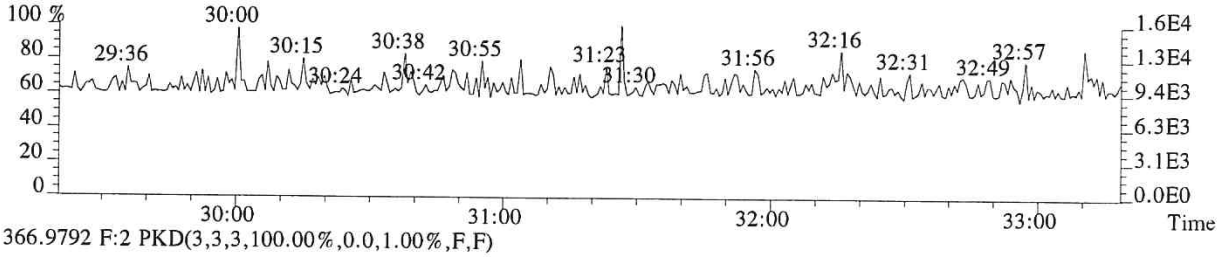
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,688.0,1.00%,F,T)



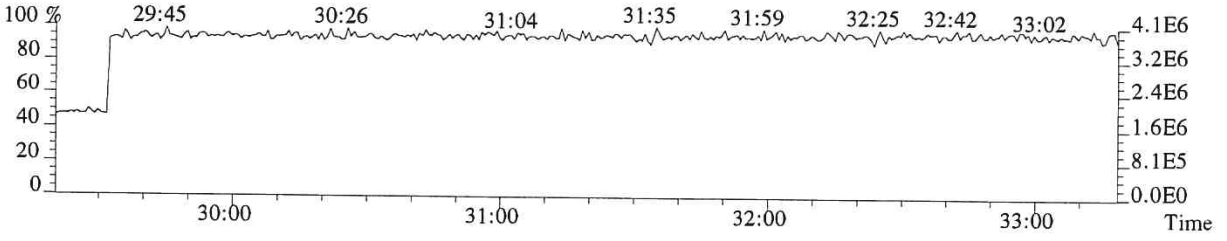
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1132.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

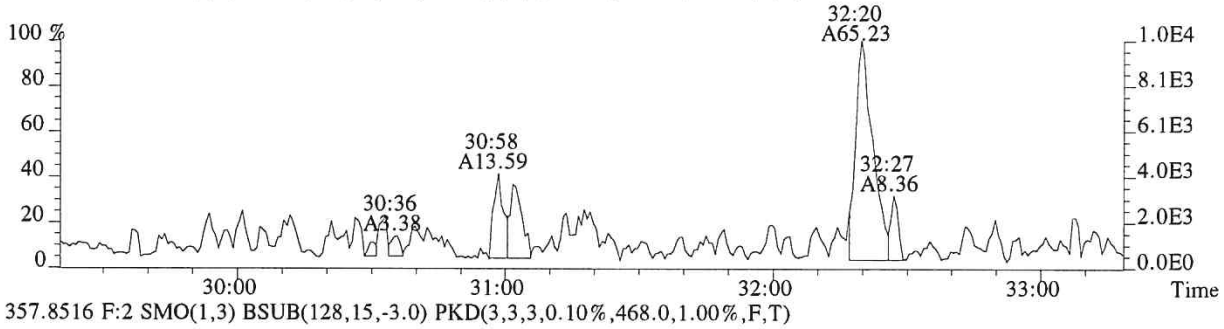


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

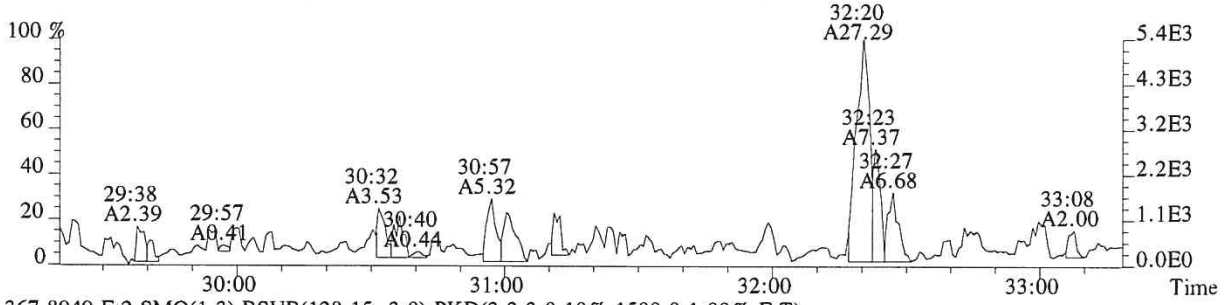


059951

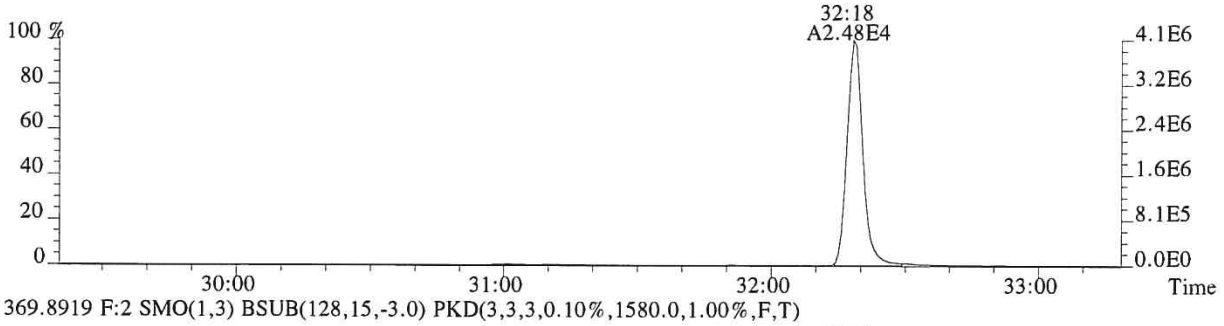
File:P519717 #1-358 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1284.0,1.00%,F,T)



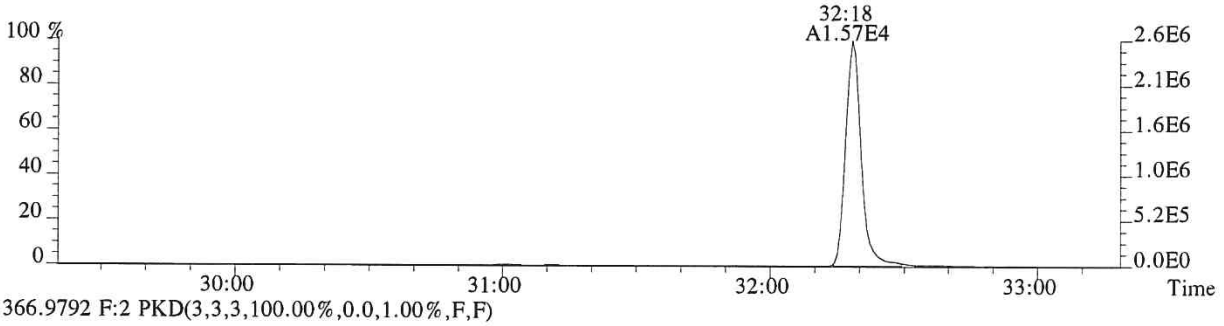
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,468.0,1.00%,F,T)



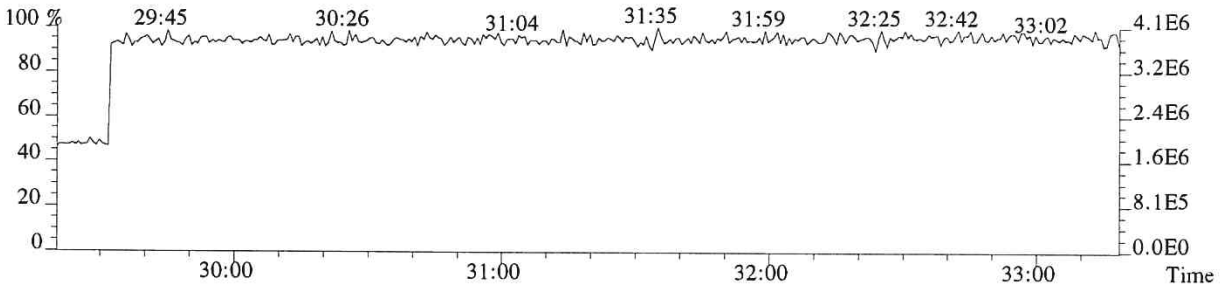
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1500.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1580.0,1.00%,F,T)

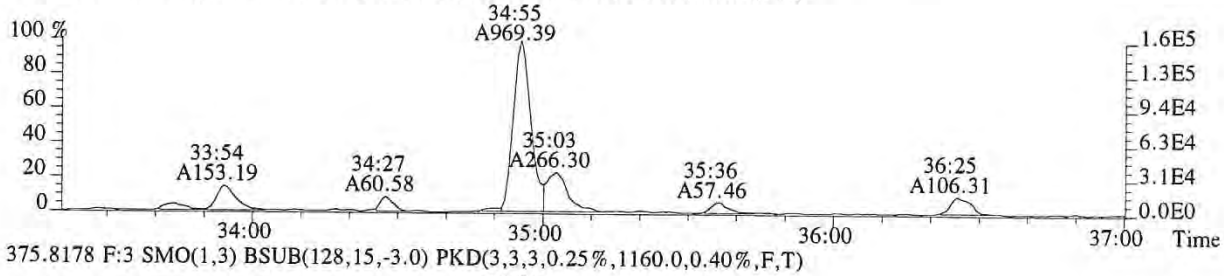


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

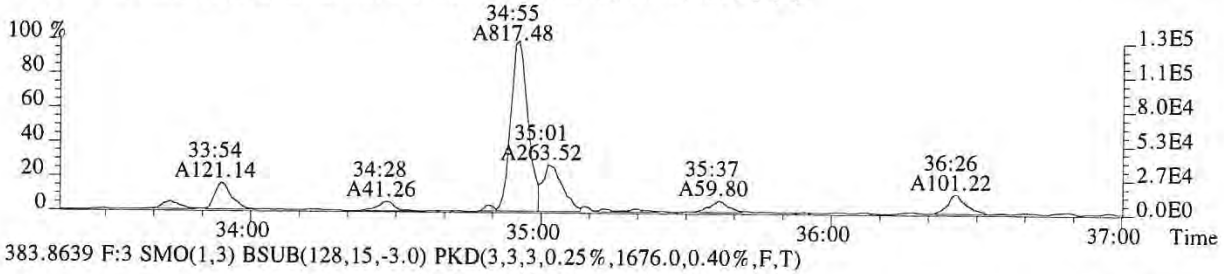


059952

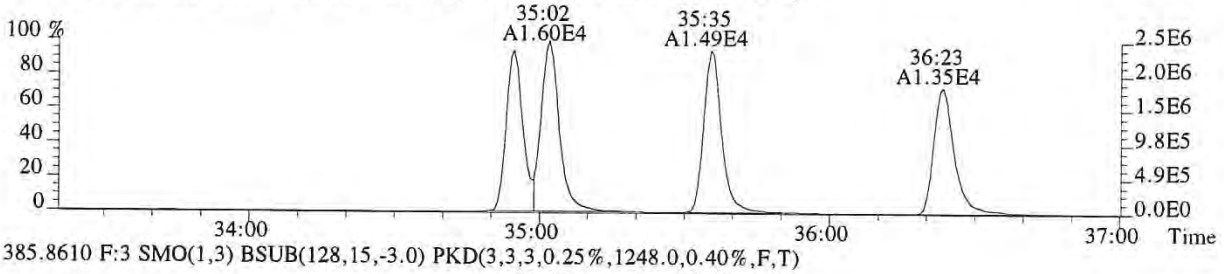
File:P519717 #1-330 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1560.0,0.40%,F,T)



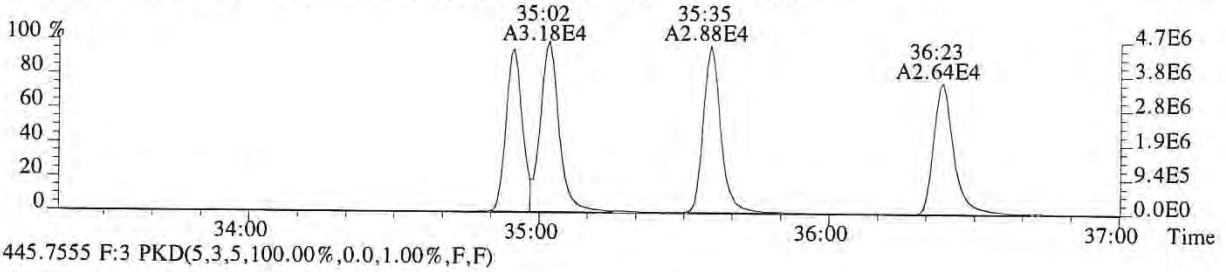
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1160.0,0.40%,F,T)



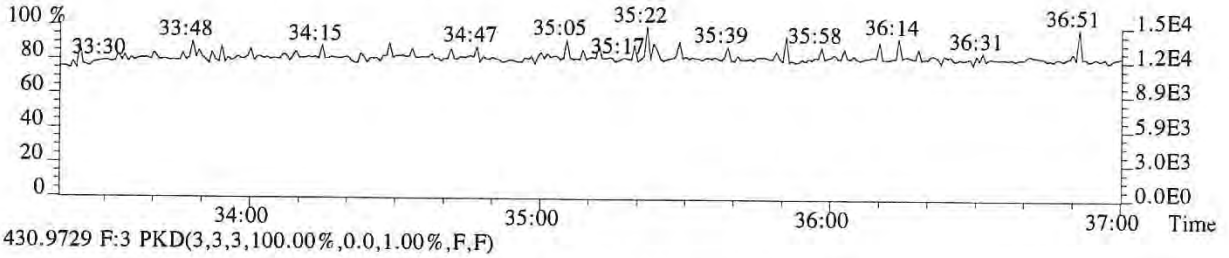
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1676.0,0.40%,F,T)



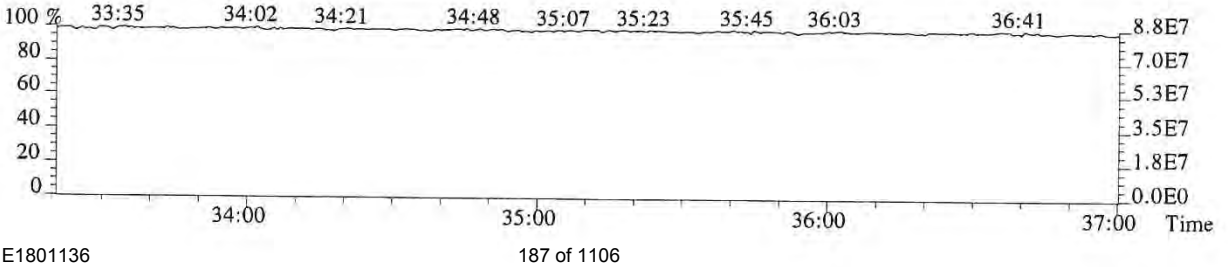
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1248.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

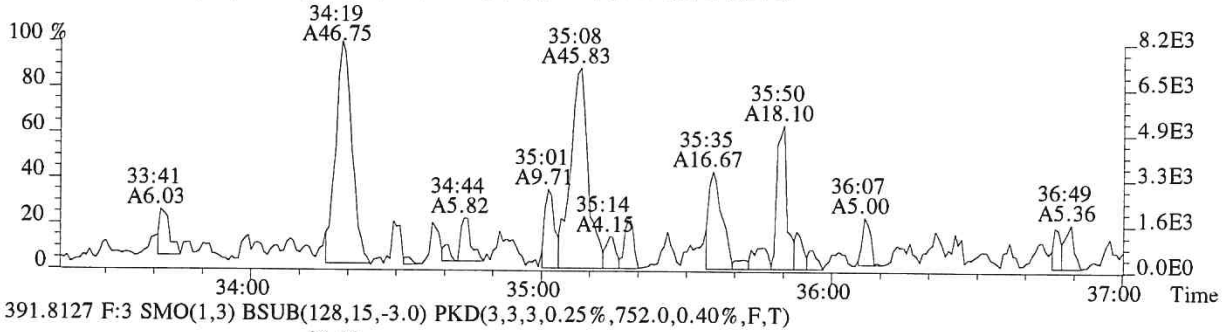


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

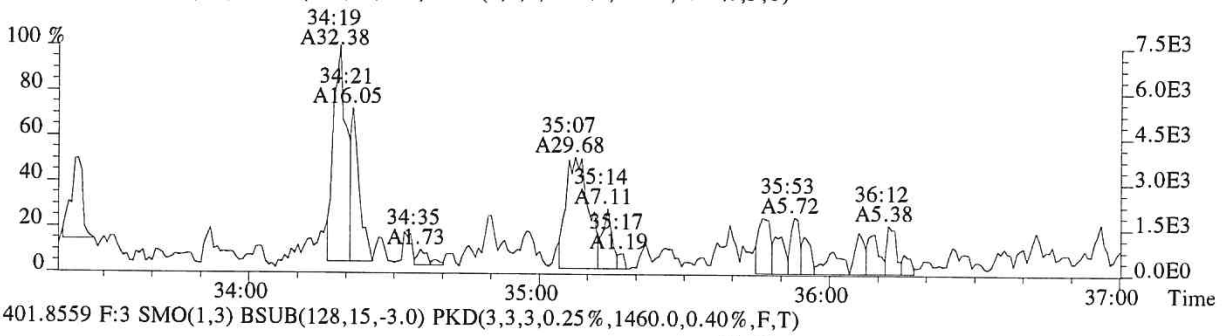


059953

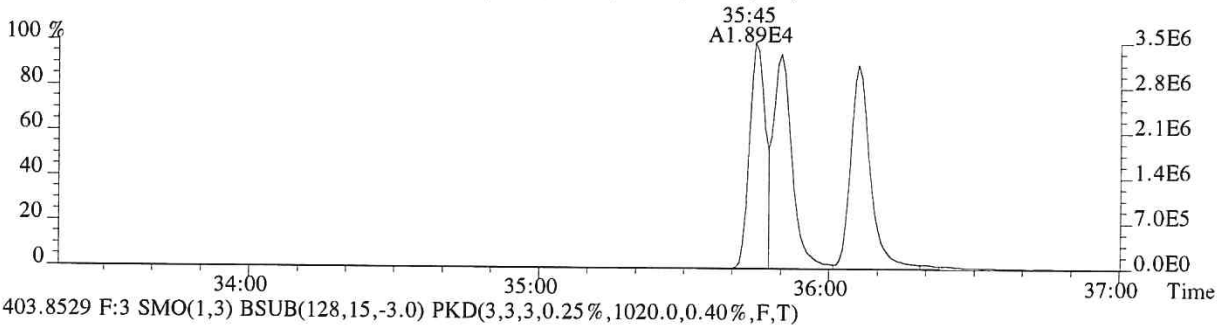
File:P519717 #1-330 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,680.0,0.40%,F,T)



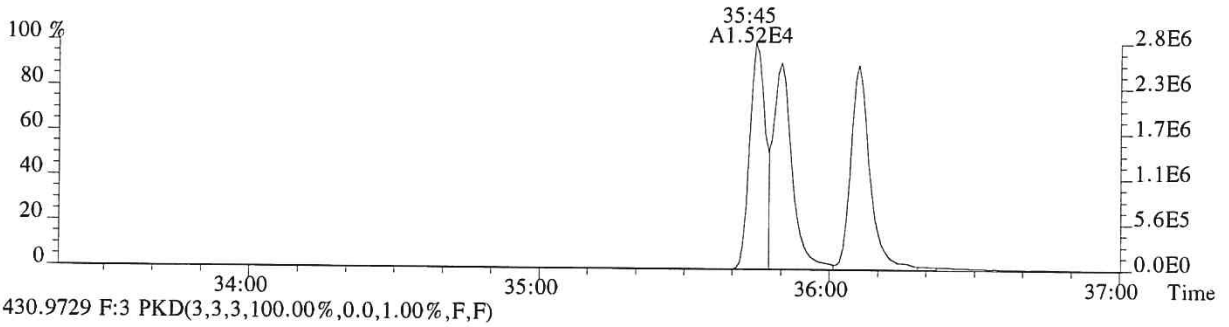
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,752.0,0.40%,F,T)



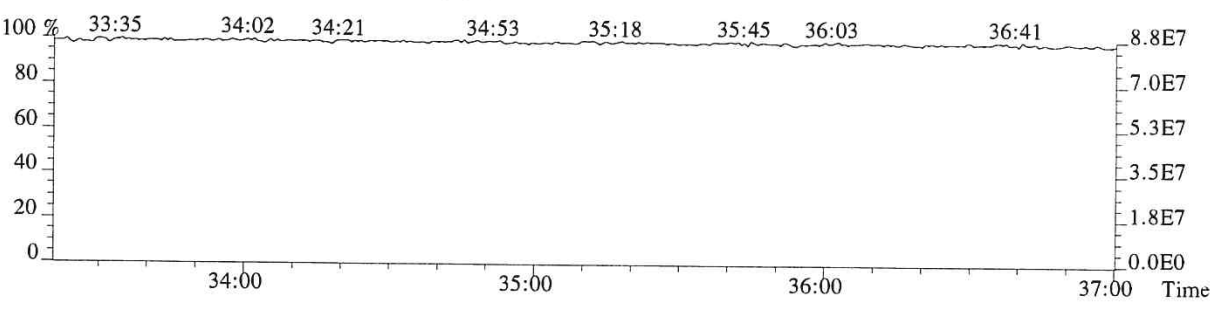
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1460.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1020.0,0.40%,F,T)



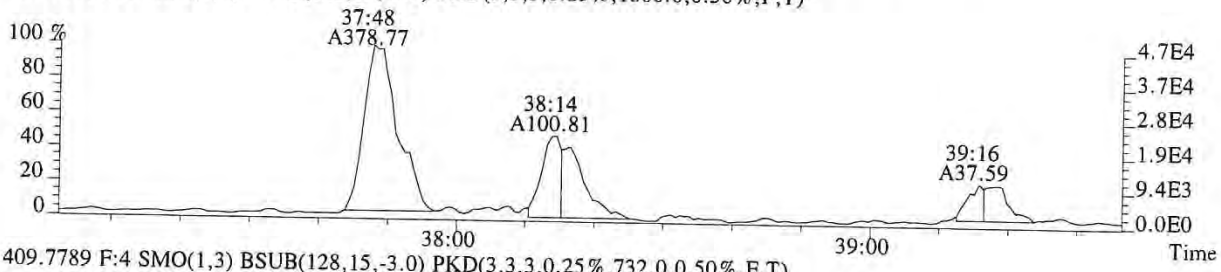
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



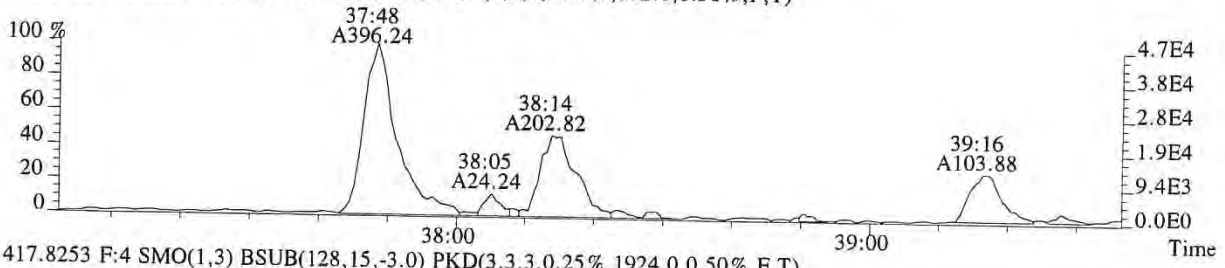
059954

File:P519717 #1-232 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL

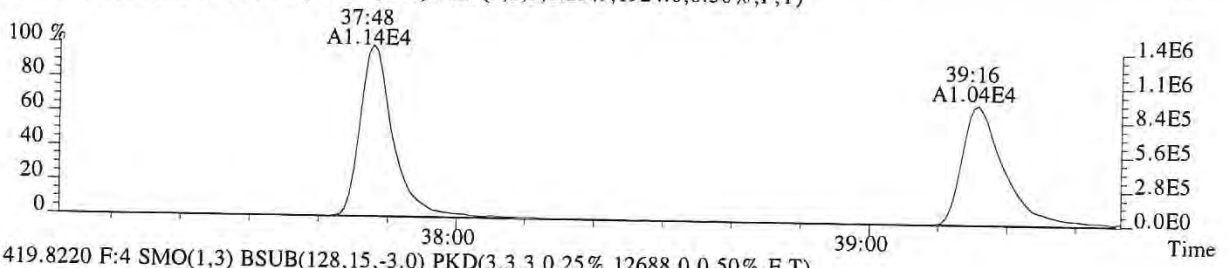
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1800.0,0.50%,F,T)



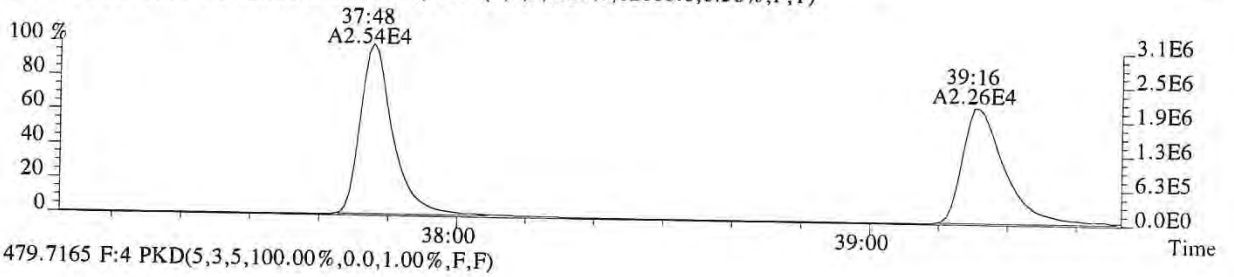
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,732.0,0.50%,F,T)



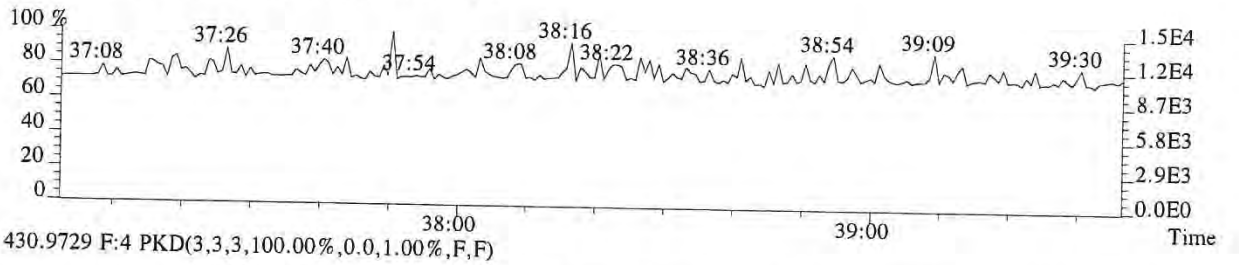
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1924.0,0.50%,F,T)



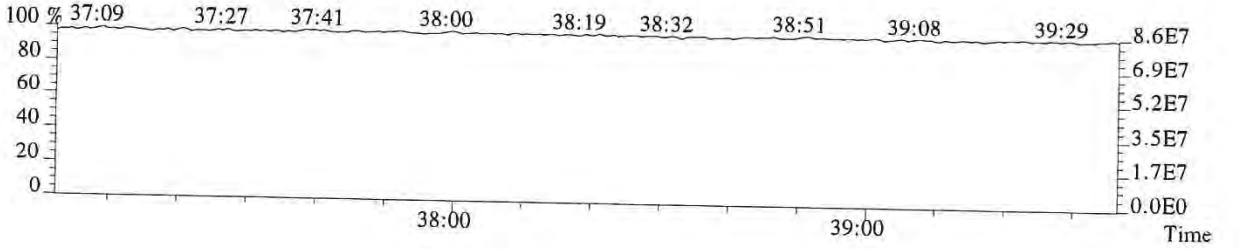
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12688.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

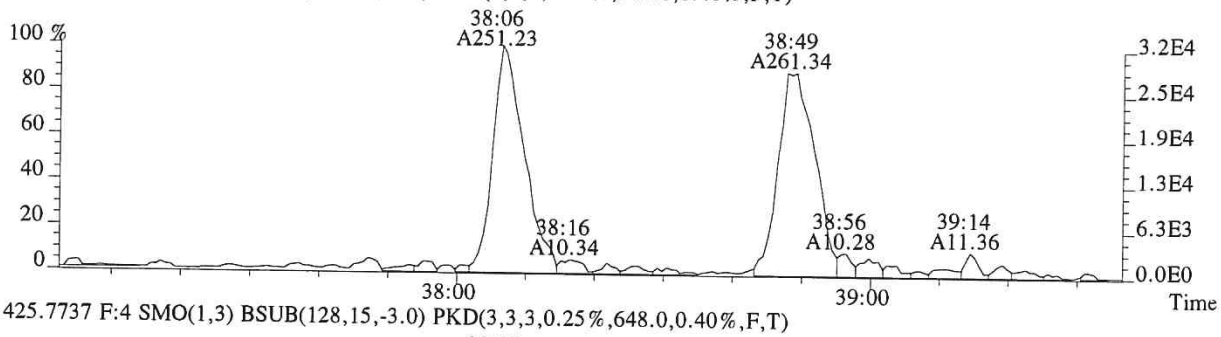


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

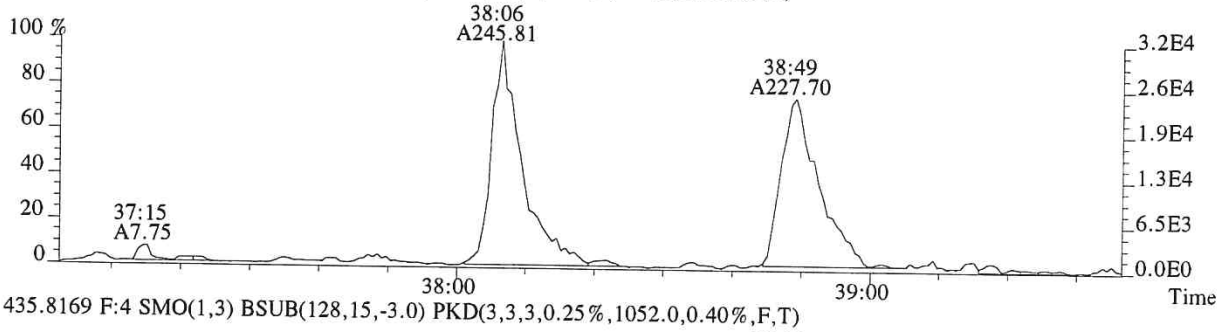


059955

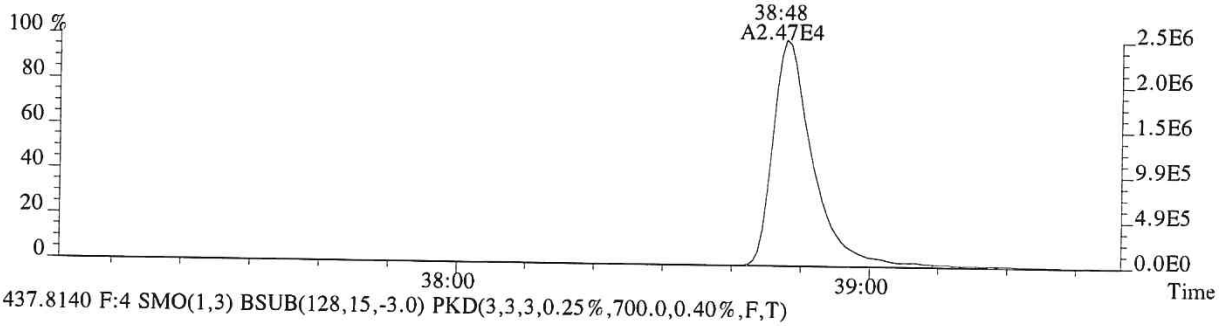
File:P519717 #1-232 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,648.0,0.40%,F,T)



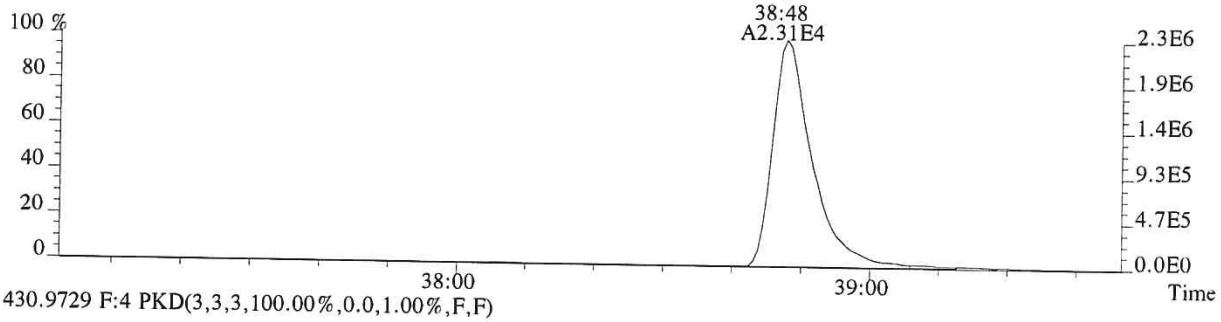
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,648.0,0.40%,F,T)



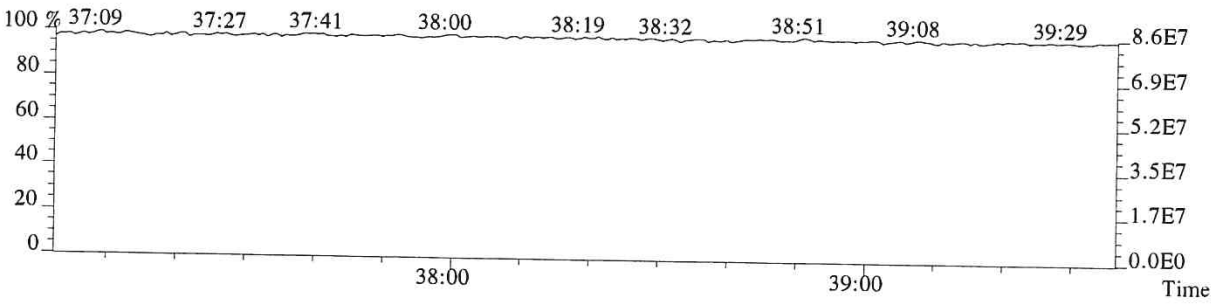
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1052.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,700.0,0.40%,F,T)

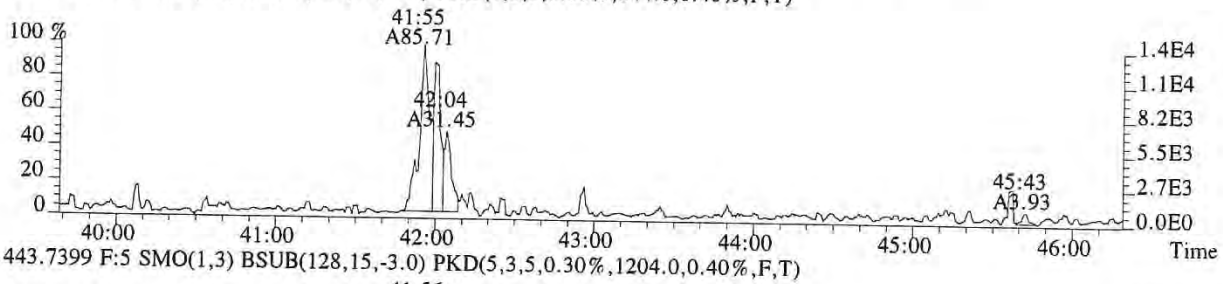


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

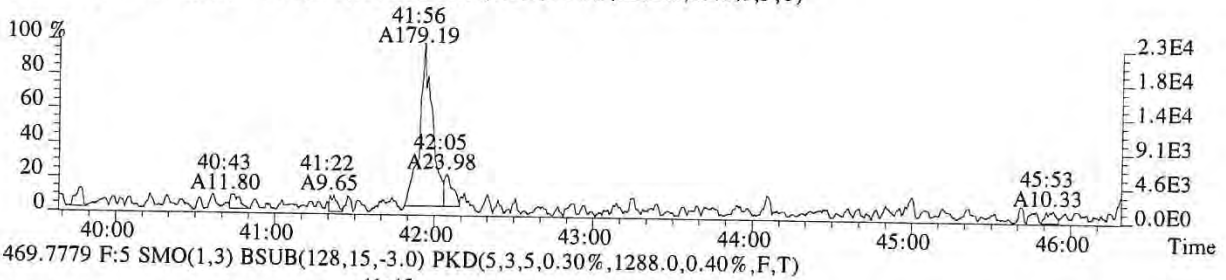


059956

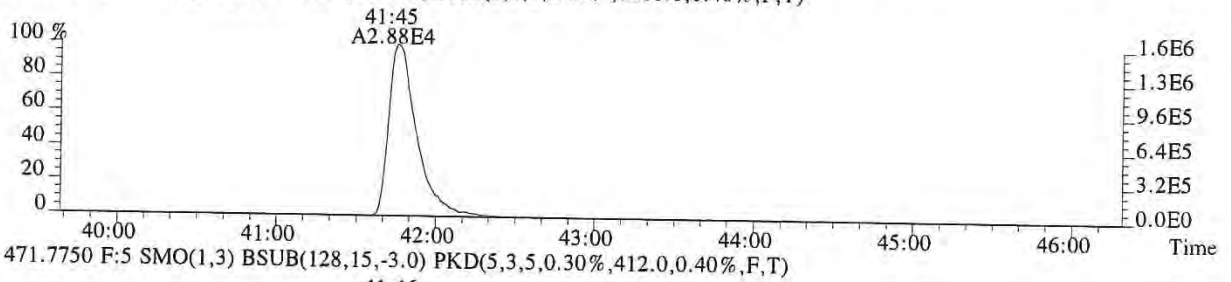
File:P519717 #1-601 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,644.0,0.40%,F,T)



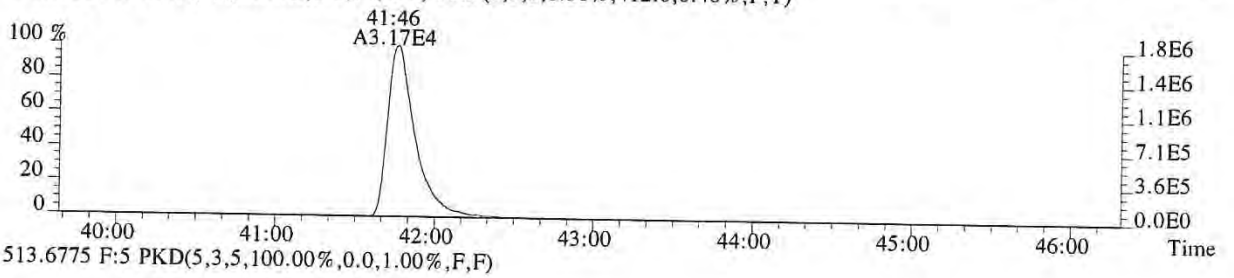
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1204.0,0.40%,F,T)



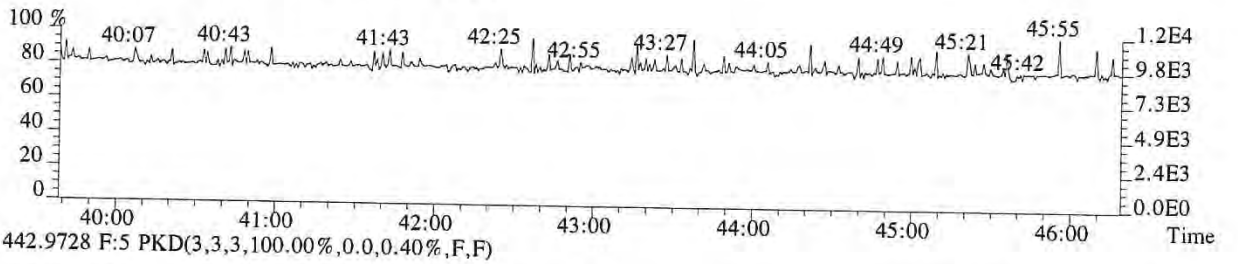
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1288.0,0.40%,F,T)



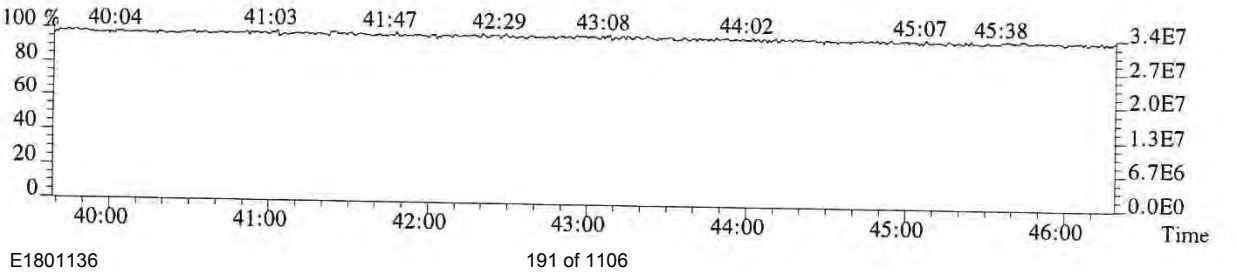
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



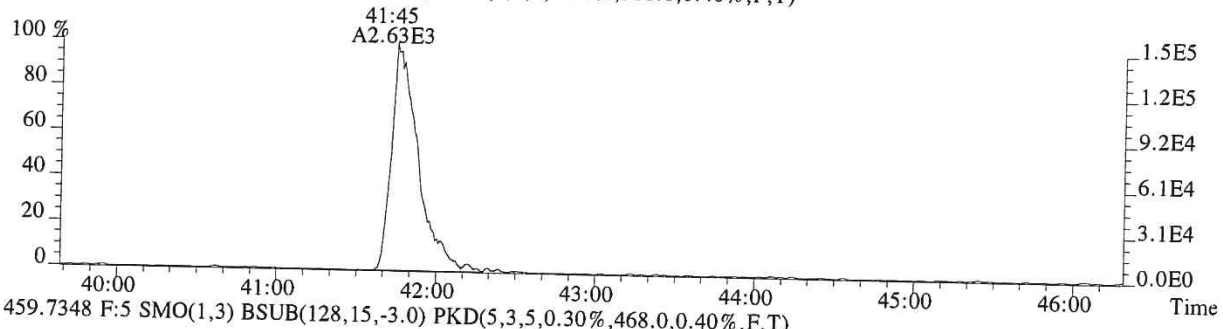
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



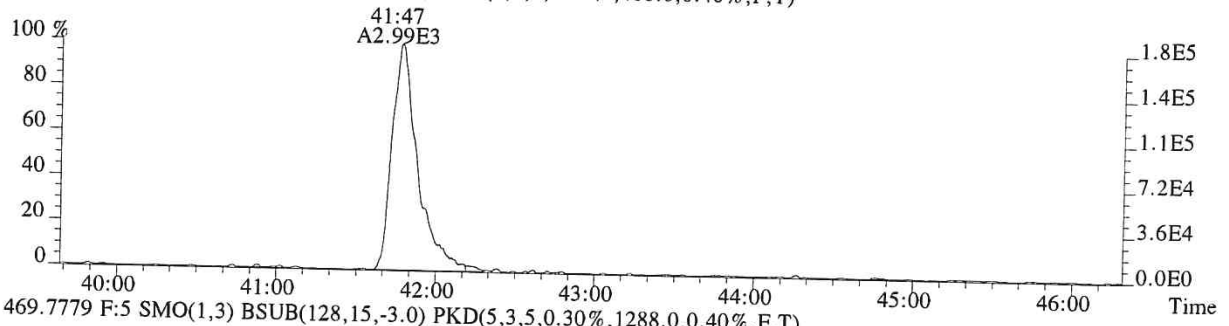
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



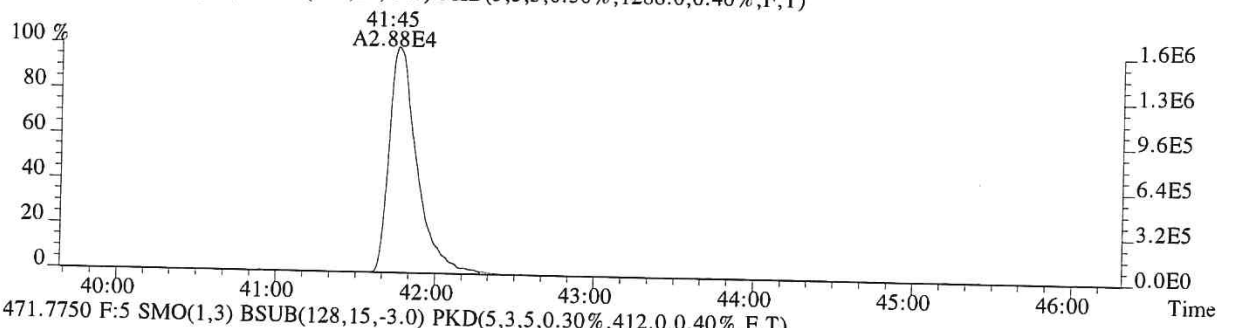
File:P519717 #1-601 Acq:30-DEC-2018 13:29:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-002DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,388.0,0.40%,F,T)



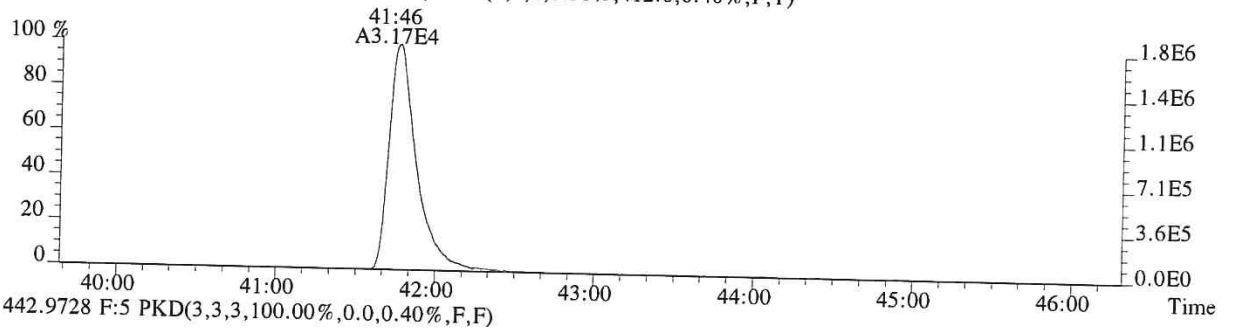
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,468.0,0.40%,F,T)



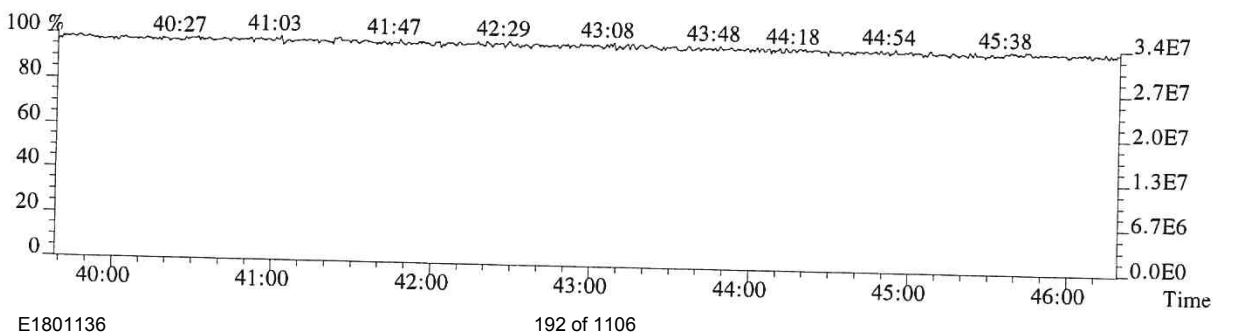
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1288.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059958

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0081

Run #12 Filename P519689 Samp: 1 Inj: 1 Acquired: 29-DEC-18 13:56:01
Processed: 30-DEC-18 08:01:41 Sample ID: E1801136-003

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:07	4.273e+05	5.614e+05	0.76	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	5.956e+04	3.962e+04	1.50	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	3.229e+04	2.133e+04	1.51	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	8.023e+04	6.687e+04	1.20	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	1.807e+04	1.450e+04	1.25	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	2.852e+03	2.447e+03	1.17	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	6.015e+03	4.961e+03	1.21	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	1.224e+04	1.202e+04	1.02	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:15	4.748e+03	4.723e+03	1.01	yes	no	1.258
10	Unk	OCDF	41:55	4.621e+03	5.456e+03	0.85	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	1.059e+05	1.354e+05	0.78	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:19	1.312e+03	8.350e+02	1.57	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:44	2.113e+01	1.436e+01	1.47	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:50	2.103e+02	1.614e+02	1.30	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	7.459e+01	6.088e+01	1.23	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:46	7.059e+03	6.812e+03	1.04	yes	no	1.025
17	Unk	OCDD	41:43	7.353e+04	8.325e+04	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:05	1.872e+04	2.370e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	2.862e+04	1.858e+04	1.54	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	2.732e+04	1.707e+04	1.60	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:54	1.143e+04	2.232e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.314e+04	2.556e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.142e+04	2.178e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:22	1.112e+04	2.193e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:47	8.103e+03	1.848e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	7.654e+03	1.756e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:04	9.336e+03	1.152e+04	0.81	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.143e+04	1.377e+04	1.56	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:43	1.711e+04	1.372e+04	1.25	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	1.657e+04	1.302e+04	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:46	1.825e+04	1.694e+04	1.08	yes	no	0.858
32	IS	13C-OCDD	41:43	1.826e+04	2.051e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:23	3.592e+04	4.471e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	4.489e+04	3.562e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	2.135e+04				no	1.014

$$\text{OCDD} = \frac{(7.353e+04 + 8.325e+04) \times 4000\ \text{pg} \times 1}{(1.826e+04 + 2.051e+04) \times 10.488\ \text{g} \times 76.7/100 \times 1.118} = 1798.5203\ \text{ng/kg}$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0081

Run #12 Filename P519689 Samp: 1 Inj: 1 Acquired: 29-DEC-18 13:56:01
Processed: 30-DEC-18 08:01:41 LAB. ID: E1801136-003

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.04e+07	2.16e+03	2.8e+04	7.86e+07	2.19e+03	3.6e+04
2	1,2,3,7,8-PeCDF	1.00e+07	1.28e+04	7.8e+02	6.73e+06	5.98e+03	1.1e+03
3	2,3,4,7,8-PeCDF	4.78e+06	1.28e+04	3.7e+02	3.13e+06	5.98e+03	5.2e+02
4	1,2,3,4,7,8-HxCDF	1.37e+07	3.28e+03	4.2e+03	1.16e+07	4.54e+03	2.5e+03
5	1,2,3,6,7,8-HxCDF	3.08e+06	3.28e+03	9.4e+02	2.49e+06	4.54e+03	5.5e+02
6	2,3,4,6,7,8-HxCDF	5.44e+05	3.28e+03	1.7e+02	4.67e+05	4.54e+03	1.0e+02
7	1,2,3,7,8,9-HxCDF	9.01e+05	3.28e+03	2.8e+02	7.64e+05	4.54e+03	1.7e+02
8	1,2,3,4,6,7,8-HpCDF	1.70e+06	1.37e+03	1.2e+03	1.67e+06	7.84e+02	2.1e+03
9	1,2,3,4,7,8,9-HpCDF	5.06e+05	1.37e+03	3.7e+02	4.89e+05	7.84e+02	6.2e+02
10	OCDF	2.98e+05	5.68e+02	5.2e+02	3.41e+05	1.26e+03	2.7e+02
11	2,3,7,8-TCDD	1.85e+07	1.79e+03	1.0e+04	2.38e+07	1.43e+03	1.7e+04
12	1,2,3,7,8-PeCDD	2.22e+05	1.56e+03	1.4e+02	1.39e+05	4.84e+02	2.9e+02
13	1,2,3,4,7,8-HxCDD	4.26e+03	1.19e+03	3.6e+00	4.04e+03	4.24e+02	9.5e+00
14	1,2,3,6,7,8-HxCDD	3.56e+04	1.19e+03	3.0e+01	2.54e+04	4.24e+02	6.0e+01
15	1,2,3,7,8,9-HxCDD	9.63e+03	1.19e+03	8.1e+00	9.79e+03	4.24e+02	2.3e+01
16	1,2,3,4,6,7,8-HpCDD	8.08e+05	2.14e+03	3.8e+02	7.91e+05	1.11e+03	7.1e+02
17	OCDD	4.62e+06	8.16e+02	5.7e+03	5.25e+06	4.52e+02	1.2e+04
18	13C-2,3,7,8-TCDF	2.92e+06	6.64e+03	4.4e+02	3.67e+06	6.91e+03	5.3e+02
19	13C-1,2,3,7,8-PeCDF	4.83e+06	8.88e+02	5.4e+03	3.10e+06	2.31e+03	1.3e+03
20	13C-2,3,4,7,8-PeCDF	4.93e+06	8.88e+02	5.6e+03	3.11e+06	2.31e+03	1.3e+03
21	13C-1,2,3,4,7,8-HxCDF	1.97e+06	1.56e+03	1.3e+03	3.95e+06	1.50e+03	2.6e+03
22	13C-1,2,3,6,7,8-HxCDF	2.27e+06	1.56e+03	1.5e+03	4.52e+06	1.50e+03	3.0e+03
23	13C-2,3,4,6,7,8-HxCDF	2.00e+06	1.56e+03	1.3e+03	3.82e+06	1.50e+03	2.5e+03
24	13C-1,2,3,7,8,9-HxCDF	1.69e+06	1.56e+03	1.1e+03	3.34e+06	1.50e+03	2.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.14e+06	1.27e+03	9.0e+02	2.51e+06	3.84e+03	6.5e+02
26	13C-1,2,3,4,7,8,9-HpCDF	8.33e+05	1.27e+03	6.6e+02	1.85e+06	3.84e+03	4.8e+02
27	13C-2,3,7,8-TCDD	1.62e+06	6.83e+03	2.4e+02	2.03e+06	2.66e+03	7.7e+02
28	13C-1,2,3,7,8-PeCDD	3.82e+06	1.30e+03	2.9e+03	2.50e+06	1.48e+03	1.7e+03
29	13C-1,2,3,4,7,8-HxCDD	3.06e+06	8.92e+02	3.4e+03	2.43e+06	9.56e+02	2.5e+03
30	13C-1,2,3,6,7,8-HxCDD	2.67e+06	8.92e+02	3.0e+03	2.06e+06	9.56e+02	2.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.00e+06	5.28e+02	3.8e+03	1.93e+06	1.10e+03	1.8e+03
32	13C-OCDD	1.16e+06	7.12e+02	1.6e+03	1.28e+06	5.44e+02	2.4e+03
33	13C-1,2,3,4-TCDD	5.86e+06	6.83e+03	8.6e+02	7.23e+06	2.66e+03	2.7e+03
34	13C-1,2,3,7,8,9-HxCDD	7.37e+06	8.92e+02	8.3e+03	5.85e+06	9.56e+02	6.1e+03
35	37Cl-2,3,7,8-TCDD	3.76e+06	1.88e+03	2.0e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.788e{+}03 + 1.428e{+}03) \times 2000}{(1.620e{+}06 + 2.034e{+}06) \times (\quad) \times 1.085} =$$

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Peak List Summary

CLIENT ID.
SL0081

Entry: 36 Totals Name: Total Tetra-Furans

Run: 12 File: P519689 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 13:56:01 Processed: 30-DEC-18 08:01:41

Mass: 303.9020 305.8990 Tot Response: 1.81e+06 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:55	3.72e+03	4.97e+03	0.75	yes	8.69e+03		n	n
2	23:12	2.20e+04	2.93e+04	0.75	yes	5.13e+04		n	n
3	23:34	6.48e+03	9.05e+03	0.72	yes	1.55e+04		n	n
4	23:42	7.51e+02	1.02e+03	0.73	yes	1.78e+03		n	n
5	23:52	1.76e+04	2.39e+04	0.74	yes	4.16e+04		n	n
6	24:14	3.33e+03	4.57e+03	0.73	yes	7.90e+03		n	n
7	24:30	1.19e+04	1.62e+04	0.73	yes	2.82e+04		n	n
8	24:36	2.00e+04	2.69e+04	0.74	yes	4.69e+04		n	n
9	25:07	1.90e+05	2.48e+05	0.77	yes	4.39e+05		n	n
10	25:25	8.30e+03	1.19e+04	0.70	yes	2.02e+04		n	n
11	26:07	4.27e+05	5.61e+05	0.76	yes	9.89e+05	2,3,7,8-TCDF	n	n
12	26:32	3.03e+04	4.03e+04	0.75	yes	7.06e+04		n	n
13	26:48	4.92e+03	6.61e+03	0.74	yes	1.15e+04		n	n
14	28:16	3.17e+04	4.20e+04	0.75	yes	7.37e+04		n	n

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Peak List Summary

CLIENT ID.
SL0081

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 12 File: P519689 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 13:56:01 Processed: 30-DEC-18 08:01:41

Mass: 319.8970 321.8940 Tot Response: 2.67e+05 RRF: 1.085

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:45	1.50e+03	2.04e+03	0.73	yes	3.55e+03		n	n
2	27:04	1.06e+05	1.35e+05	0.78	yes	2.41e+05	2,3,7,8-TCDD	n	n
3	27:26	9.64e+03	1.25e+04	0.77	yes	2.21e+04		n	n

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Peak List Summary

CLIENT ID.
SL0081

Entry: 38 Totals Name: Total Penta-Furans1

Run: 12 File: P519689 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 13:56:01 Processed: 30-DEC-18 08:01:41

Mass: 339.8600 341.8570 Tot Response: 1.21e+03 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:17	7.54e+02	4.52e+02	1.67	yes	1.21e+03	n	n

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Peak List Summary

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SL0081

Entry: 39 Totals Name: Total Penta-Furans2

Run: 12 File: P519689 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 13:56:01 Processed: 30-DEC-18 08:01:41

Mass: 339.8600 341.8570 Tot Response: 2.32e+05 RRF: 0.9857

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:58	2.57e+04	1.72e+04	1.50	yes	4.29e+04		n	n
2	30:48	3.72e+03	2.43e+03	1.53	yes	6.15e+03		n	n
3	30:59	5.96e+04	3.96e+04	1.50	yes	9.92e+04	1,2,3,7,8-PeCDF	n	n
4	31:16	1.66e+04	1.11e+04	1.50	yes	2.78e+04		n	n
5	32:00	3.23e+04	2.13e+04	1.51	yes	5.36e+04	2,3,4,7,8-PeCDF	n	n
6	32:58	1.35e+03	9.17e+02	1.47	yes	2.26e+03		n	n

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Peak List Summary

CLIENT ID.
SL0081

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 12 File: P519689 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 13:56:01 Processed: 30-DEC-18 08:01:41

Mass: 355.8550 357.8520 Tot Response: 2.80e+03 RRF: 0.9565

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	31:02	2.35e+02	1.78e+02	1.32	yes	4.13e+02		n	n
2	31:12	6.77e+01	4.68e+01	1.44	yes	1.15e+02		n	n
3	31:17	7.94e+01	4.78e+01	1.66	yes	1.27e+02		n	n
4	32:19	1.31e+03	8.35e+02	1.57	yes	2.15e+03	1,2,3,7,8-PeCDD	n	n

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Peak List Summary

CLIENT ID.
SL0081

Entry: 41 Totals Name: Total Hexa-Furans

Run: 12 File: P519689 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 13:56:01 Processed: 30-DEC-18 08:01:41

Mass: 373.8210 375.8180 Tot Response: 2.10e+05 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:53	5.13e+03	4.27e+03	1.20	yes	9.39e+03		n	n
2	34:27	2.67e+03	2.09e+03	1.28	yes	4.76e+03		n	n
3	34:55	8.02e+04	6.69e+04	1.20	yes	1.47e+05	1,2,3,4,7,8-HxCDF	n	n
4	35:02	1.81e+04	1.45e+04	1.25	yes	3.26e+04	1,2,3,6,7,8-HxCDF	n	n
5	35:35	2.85e+03	2.45e+03	1.17	yes	5.30e+03	2,3,4,6,7,8-HxCDF	n	n
6	36:25	6.01e+03	4.96e+03	1.21	yes	1.10e+04	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0081

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 12 File: P519689 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 13:56:01 Processed: 30-DEC-18 08:01:41

Mass: 389.8160 391.8130 Tot Response: 2.17e+03 RRF: 1.047

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:17	4.09e+02	3.15e+02	1.30	yes	7.25e+02		n	n
2	35:07	5.20e+02	4.16e+02	1.25	yes	9.36e+02		n	n
3	35:50	2.10e+02	1.61e+02	1.30	yes	3.72e+02	1,2,3,6,7,8-HxCDD	n	n
4	36:05	7.46e+01	6.09e+01	1.23	yes	1.35e+02	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0081

Entry: 43 Totals Name: Total Hepta-Furans

Run: 12 File: P519689 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 13:56:01 Processed: 30-DEC-18 08:01:41

Mass: 407.7820 409.7790 Tot Response: 4.21e+04 RRF: 1.308

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:48	1.22e+04	1.20e+04	1.02	yes	2.43e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	38:13	4.21e+03	4.18e+03	1.01	yes	8.39e+03		n	n
3	39:15	4.75e+03	4.72e+03	1.01	yes	9.47e+03	1,2,3,4,7,8,9-HpCDF	n	n

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SL0081

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 12 File: P519689 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 13:56:01 Processed: 30-DEC-18 08:01:41

Mass: 423.7770 425.7740 Tot Response: 2.71e+04 RRF: 1.025

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:04	6.66e+03	6.55e+03	1.02	yes	1.32e+04		n	n
2	38:46	7.06e+03	6.81e+03	1.04	yes	1.39e+04	1,2,3,4,6,7,8-HpCDD	n	n

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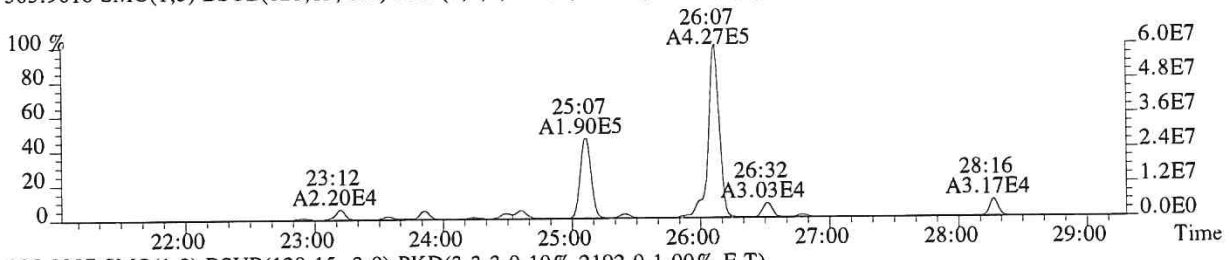
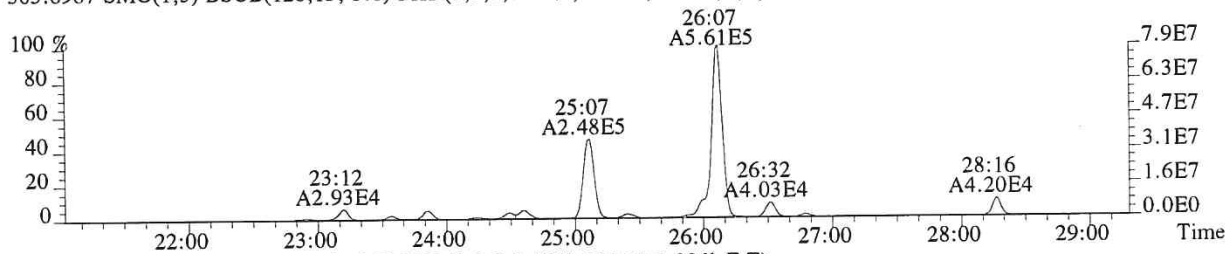
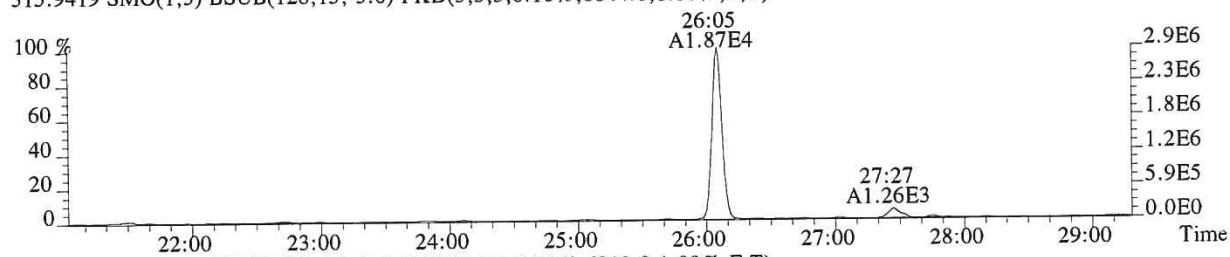
File:P519689 #1-587 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2164.0,1.00%,F,T)



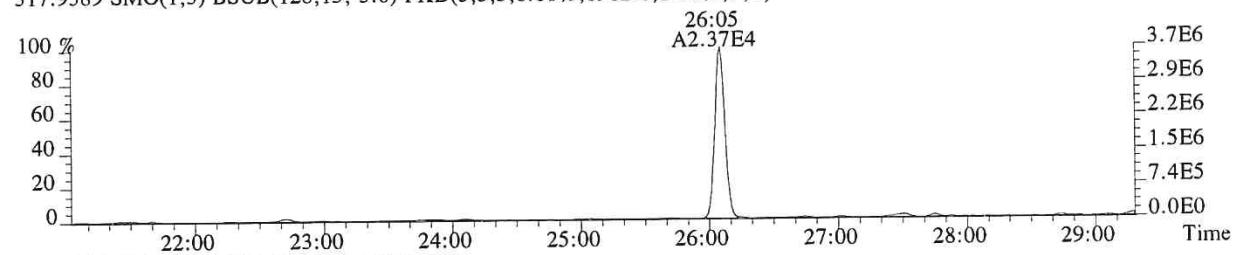
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2192.0,1.00%,F,T)



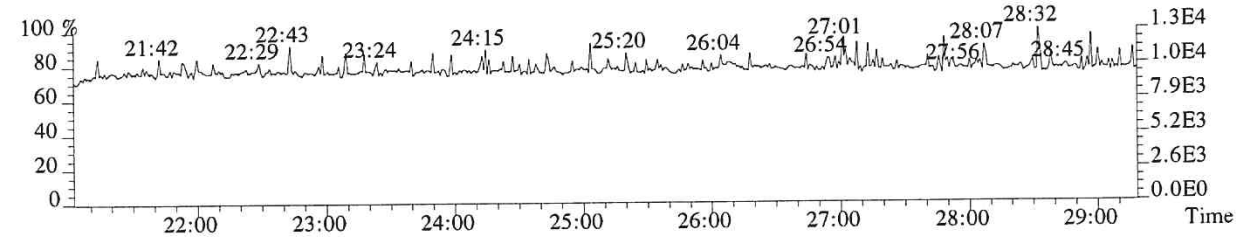
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6644.0,1.00%,F,T)



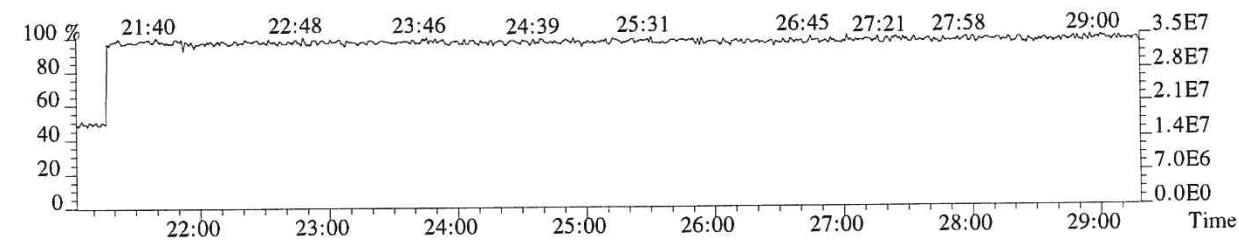
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6912.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

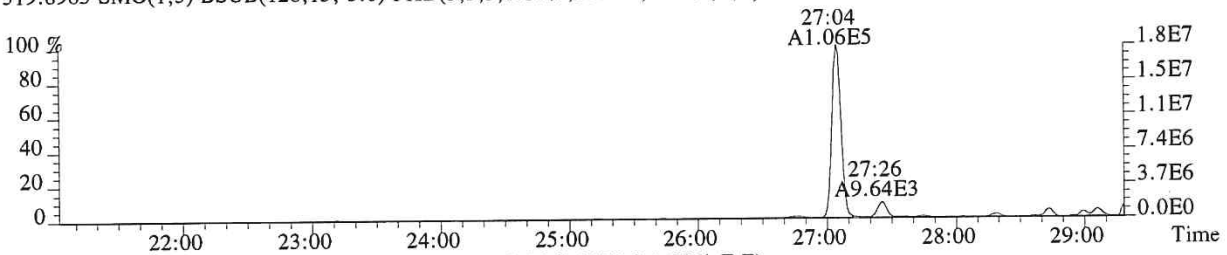


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

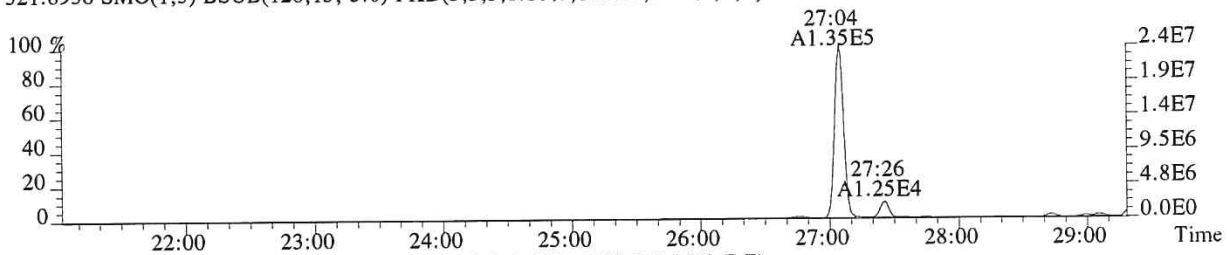


059970

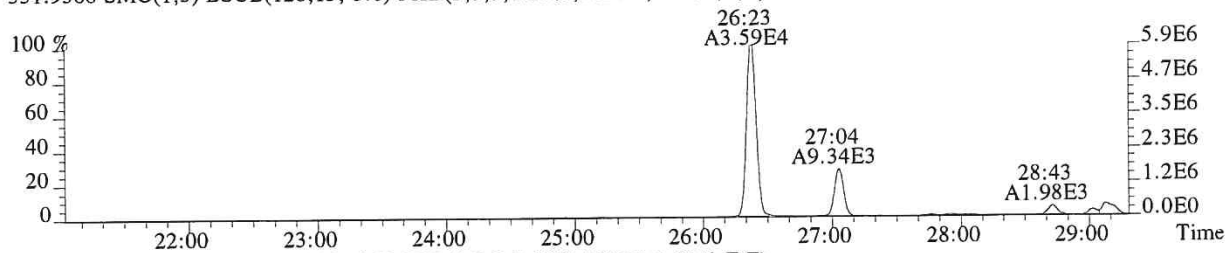
File:P519689 #1-587 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1788.0,1.00%,F,T)



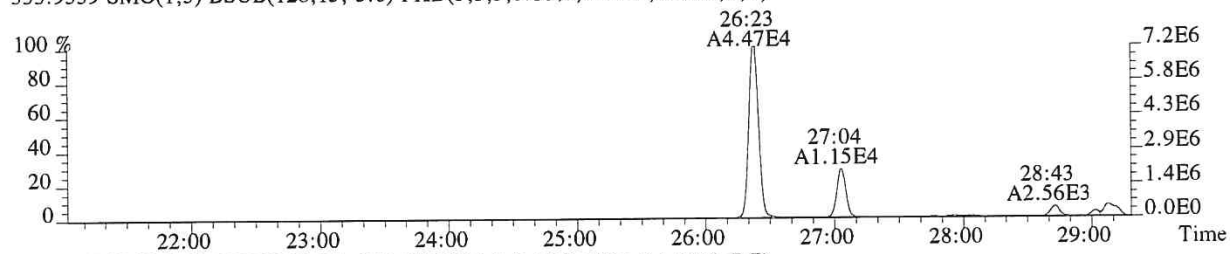
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1428.0,1.00%,F,T)



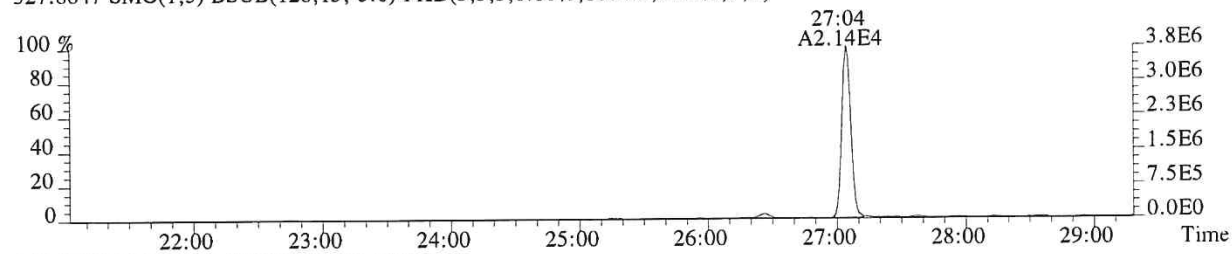
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6828.0,1.00%,F,T)



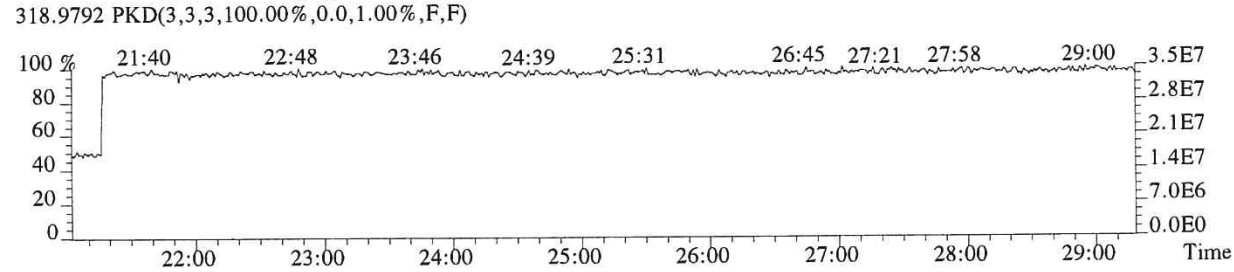
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2656.0,1.00%,F,T)



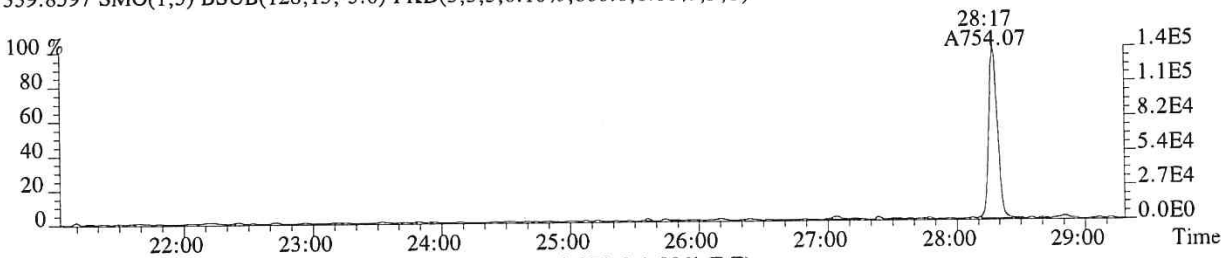
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1884.0,1.00%,F,T)



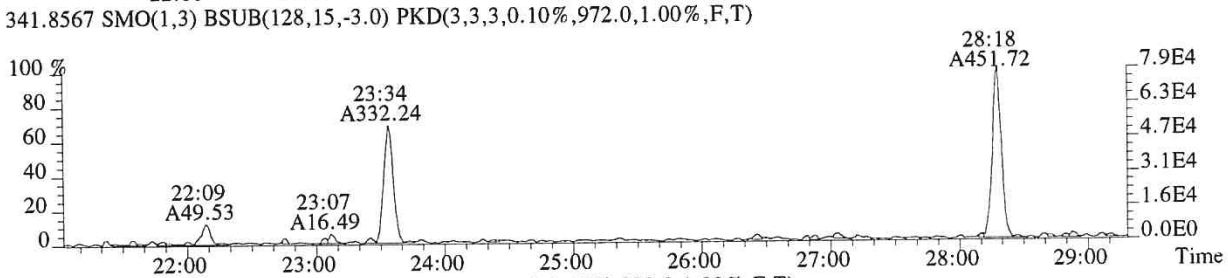
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



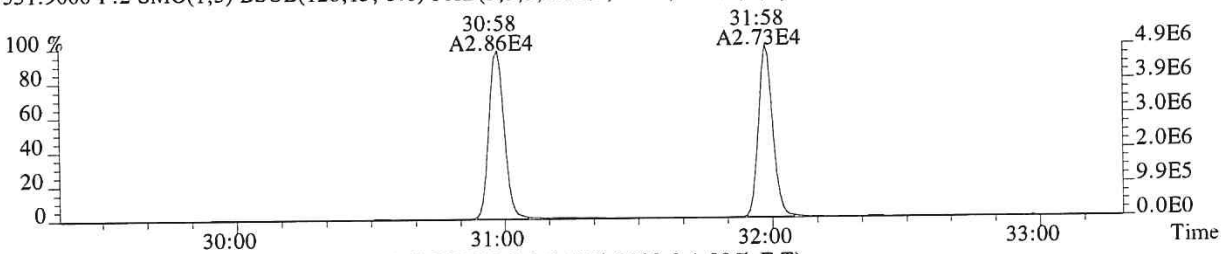
File:P519689 #1-587 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,800.0,1.00%,F,T)



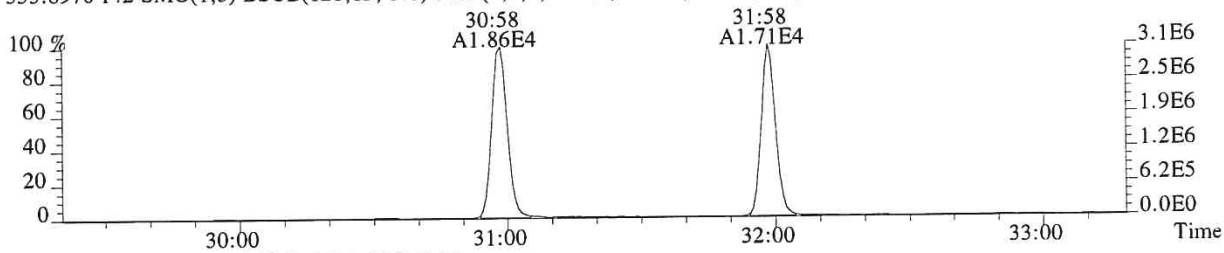
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,972.0,1.00%,F,T)



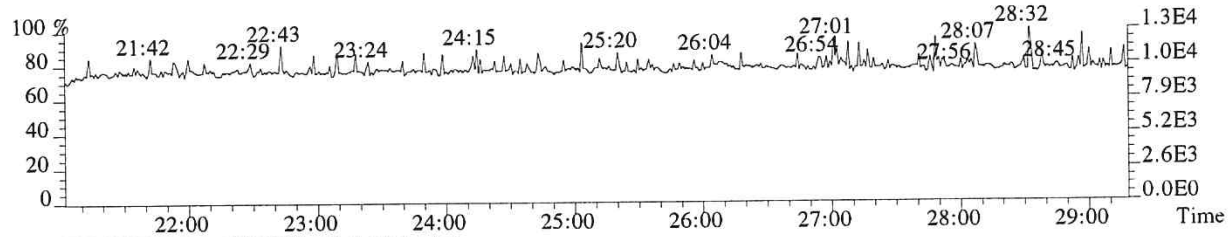
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,888.0,1.00%,F,T)



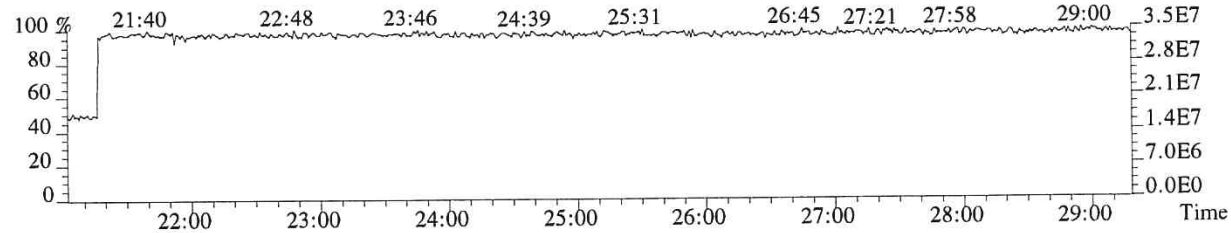
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2308.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

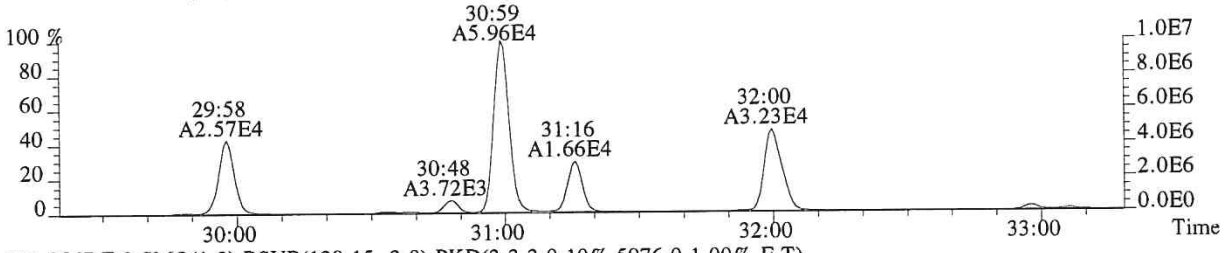


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

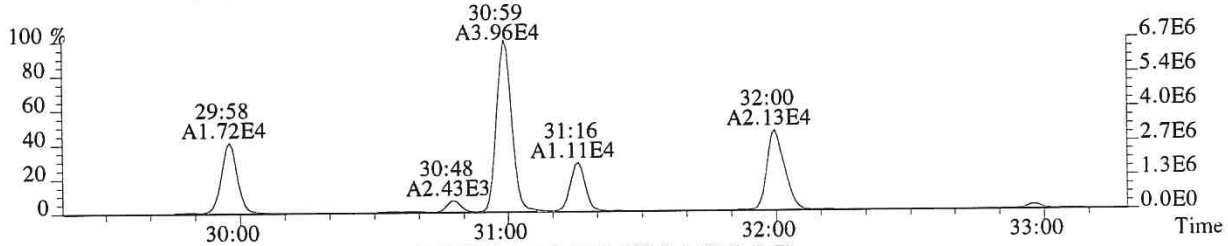


059972

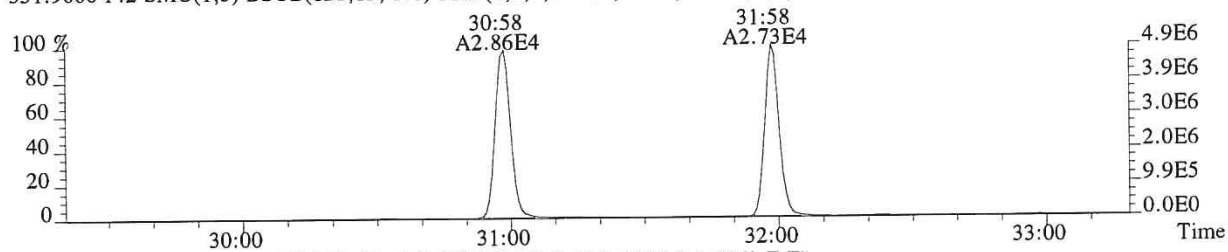
File:P519689 #1-358 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12796.0,1.00%,F,T)



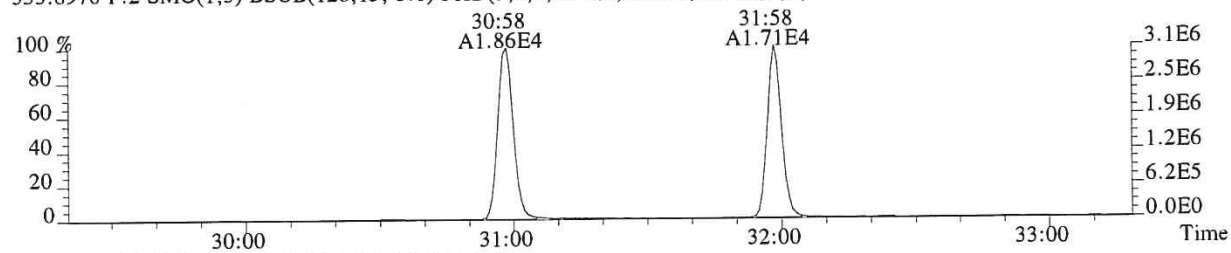
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5976.0,1.00%,F,T)



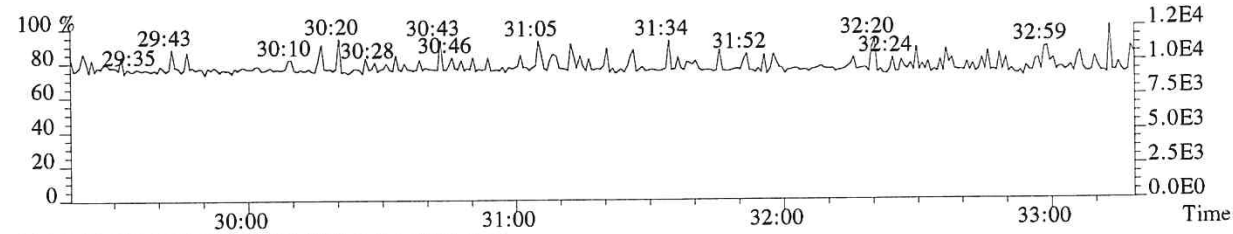
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,888.0,1.00%,F,T)



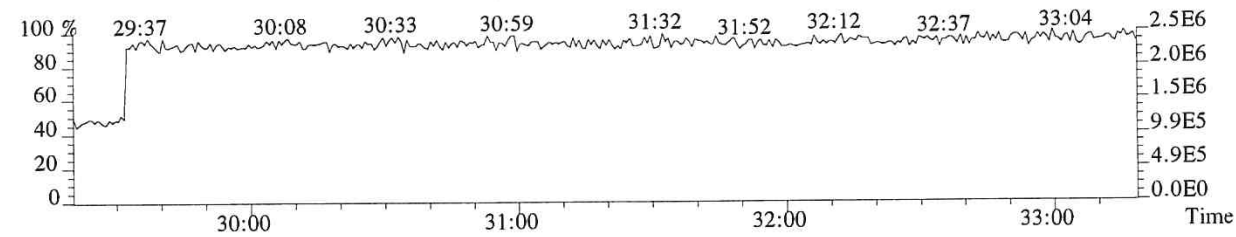
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2308.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

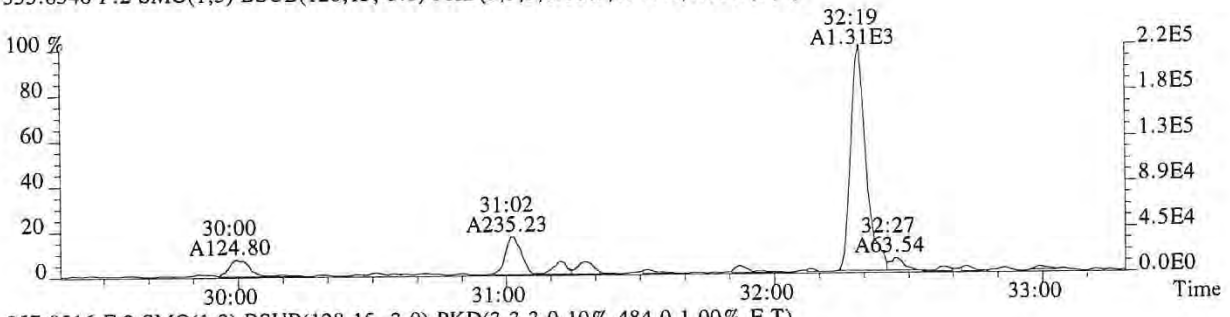


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

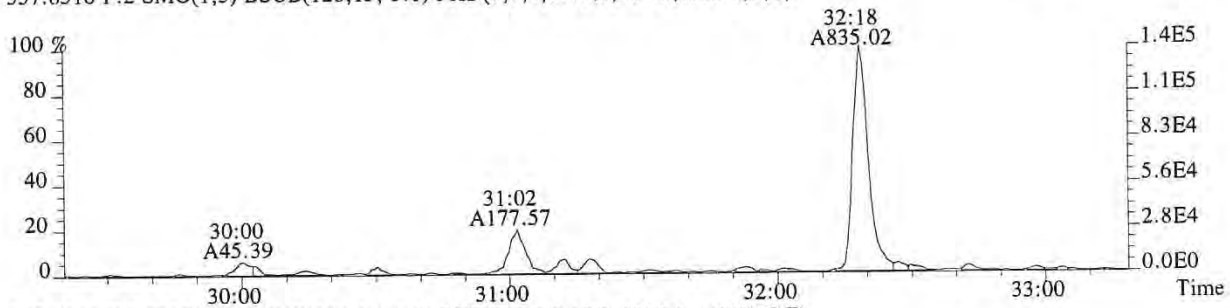


059973

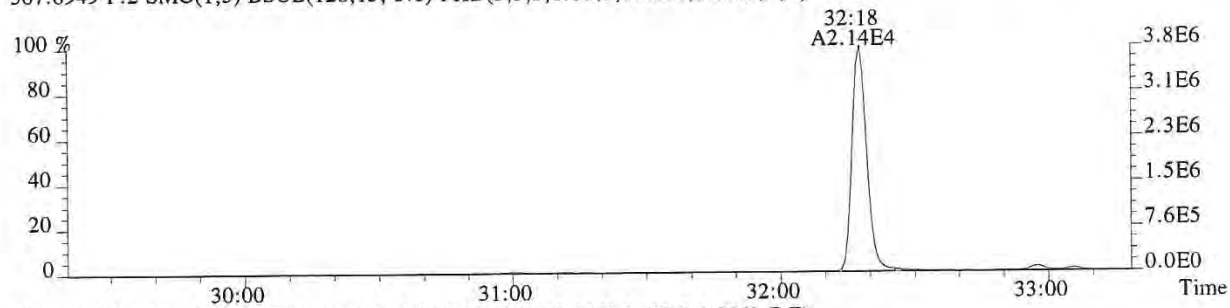
File:P519689 #1-358 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1560.0,1.00%,F,T)



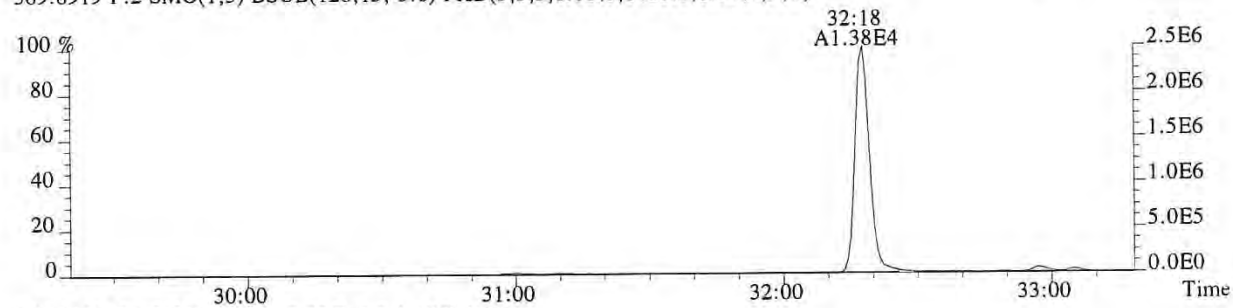
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,484.0,1.00%,F,T)



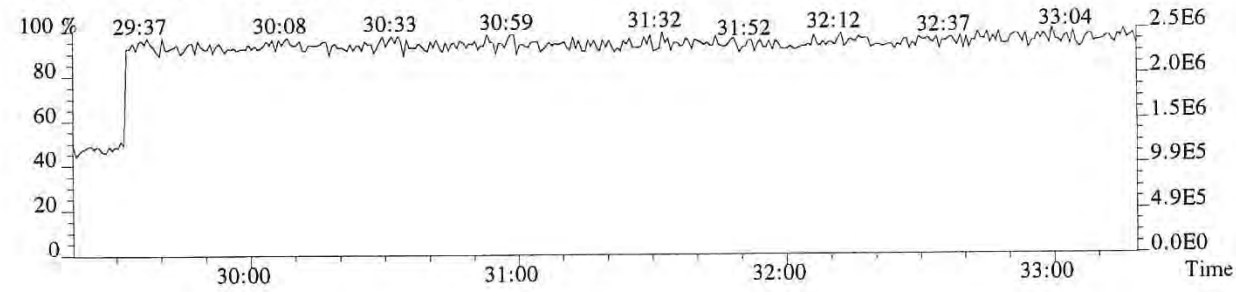
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1300.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1480.0,1.00%,F,T)

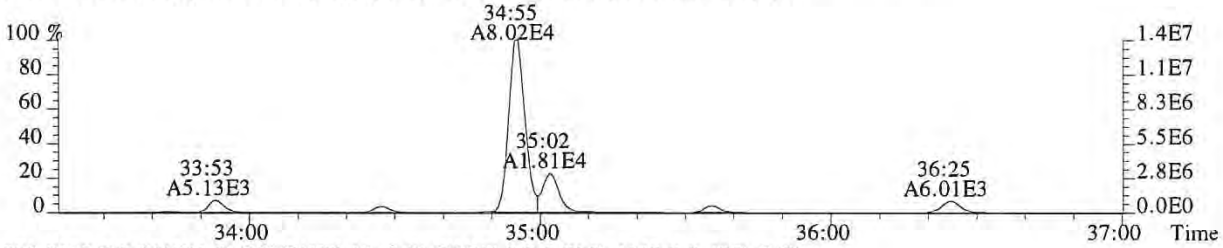


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

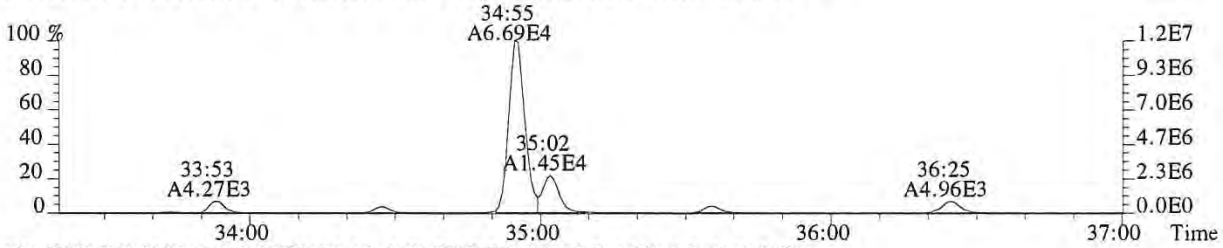


File:P519689 #1-330 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003

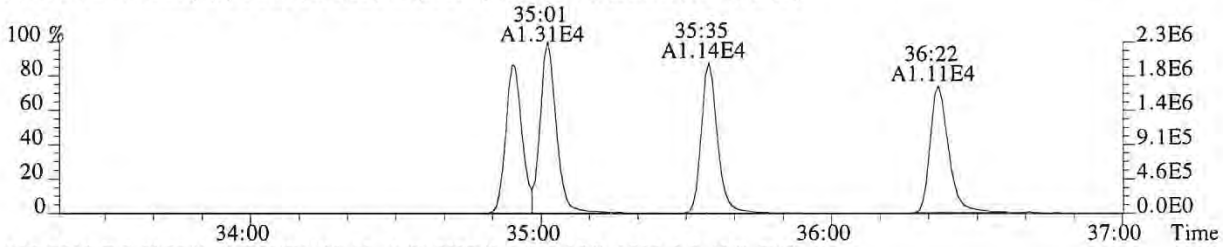
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3276.0,0.40%,F,T)



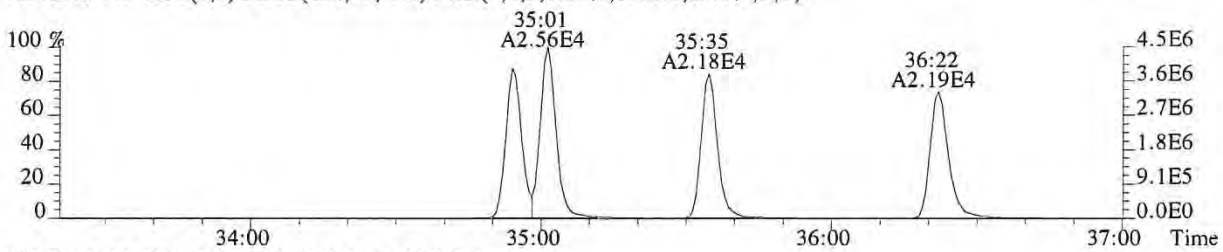
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4540.0,0.40%,F,T)



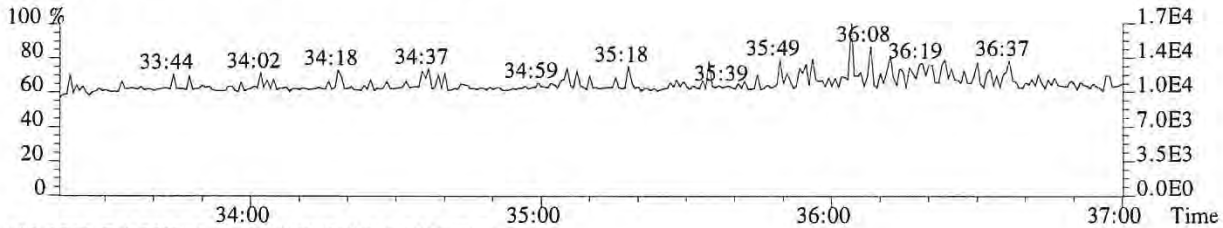
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1560.0,0.40%,F,T)



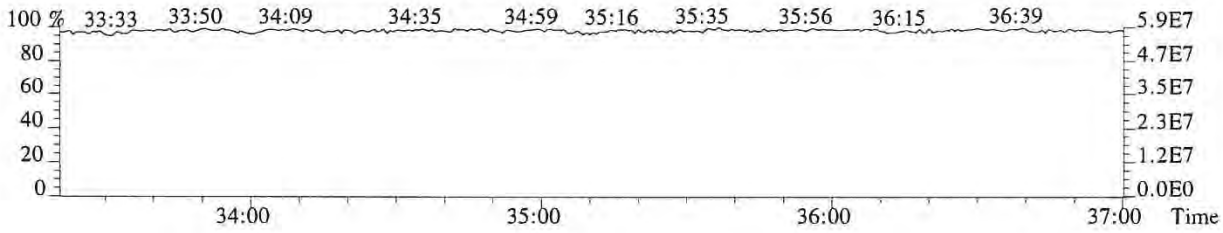
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1500.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

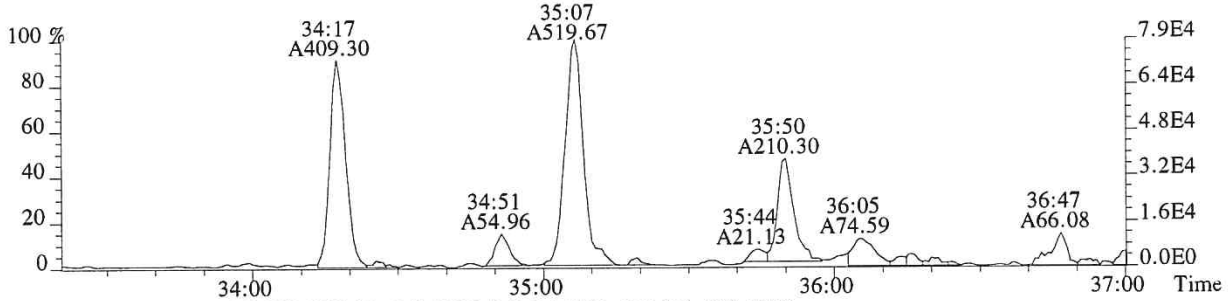


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

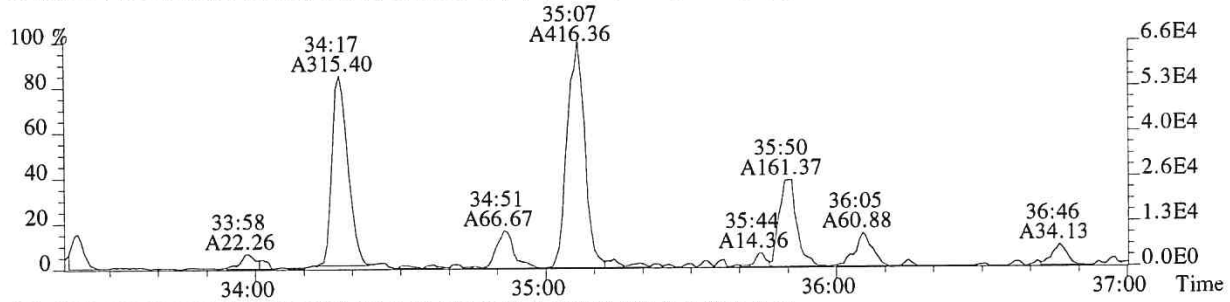


059975

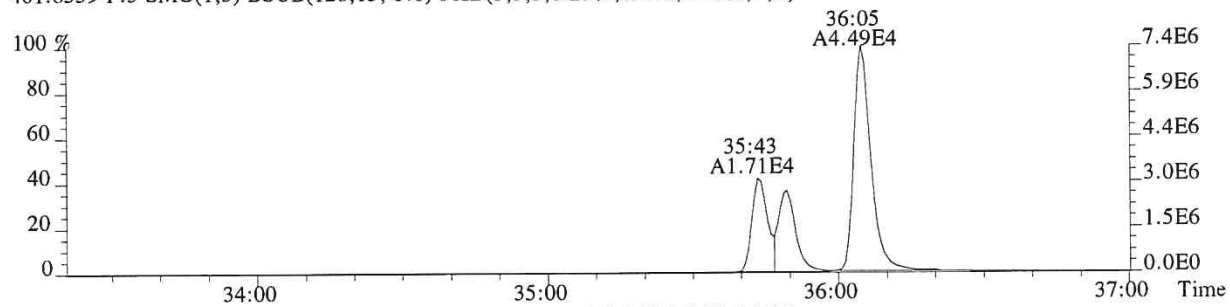
File:P519689 #1-330 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1188.0,0.40%,F,T)



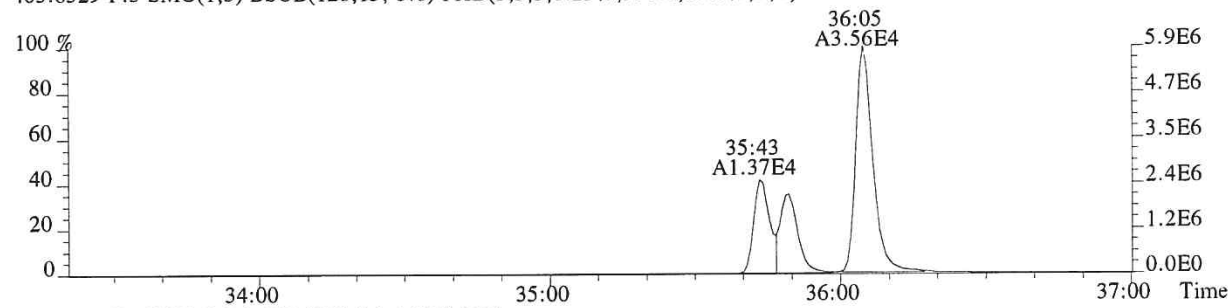
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,424.0,0.40%,F,T)



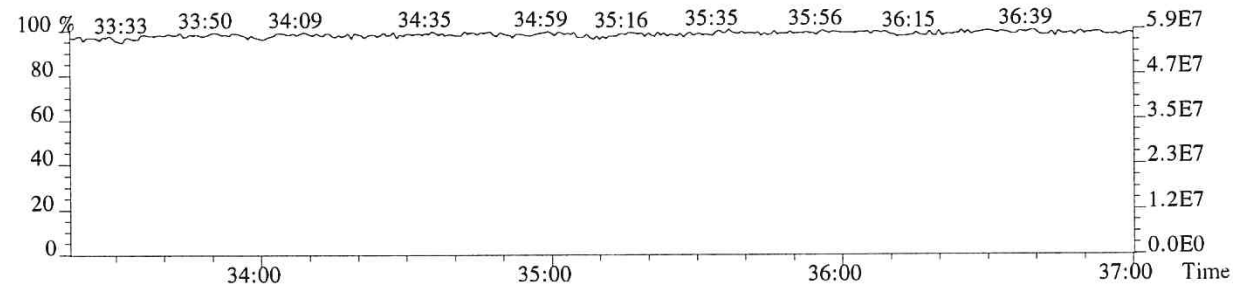
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,892.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,956.0,0.40%,F,T)



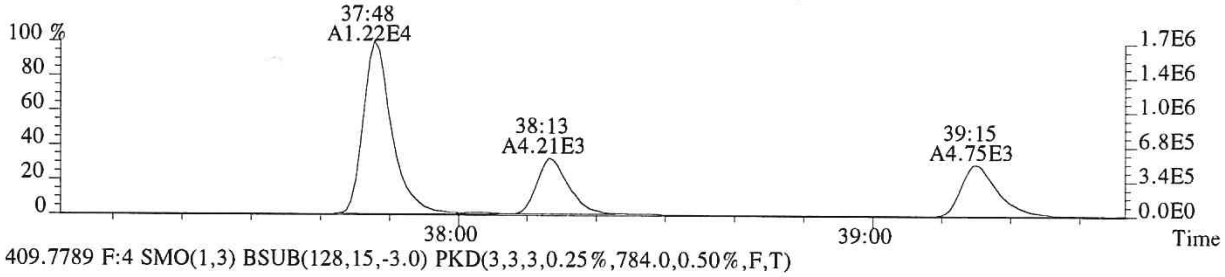
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



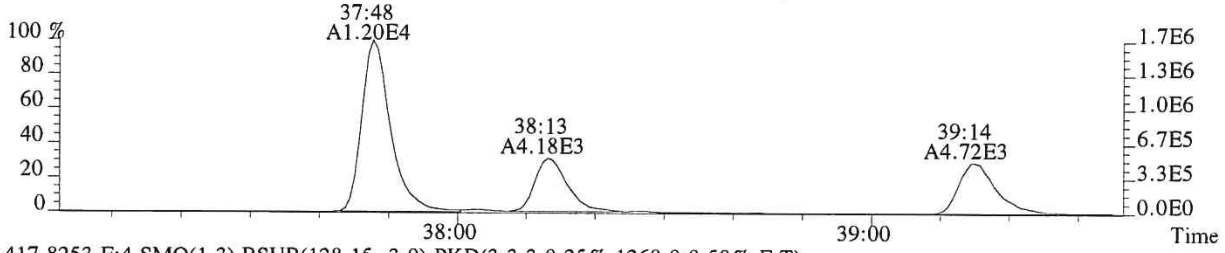
059976

File:P519689 #1-232 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003

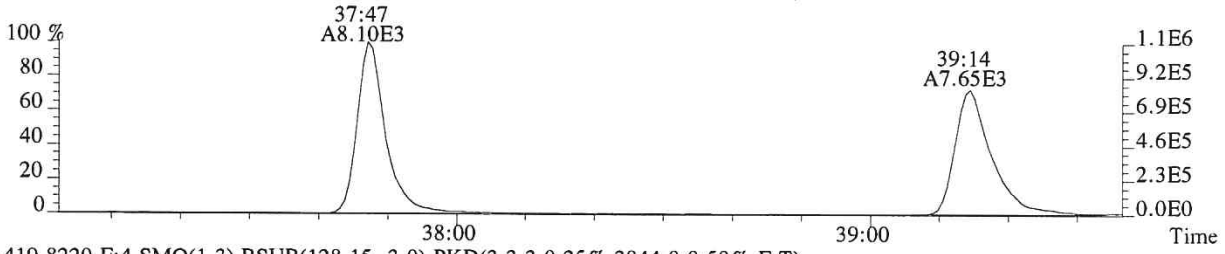
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1368.0,0.50%,F,T)



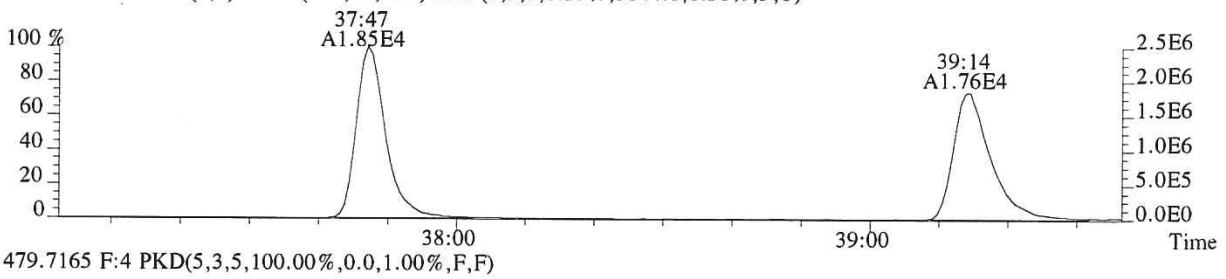
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,784.0,0.50%,F,T)



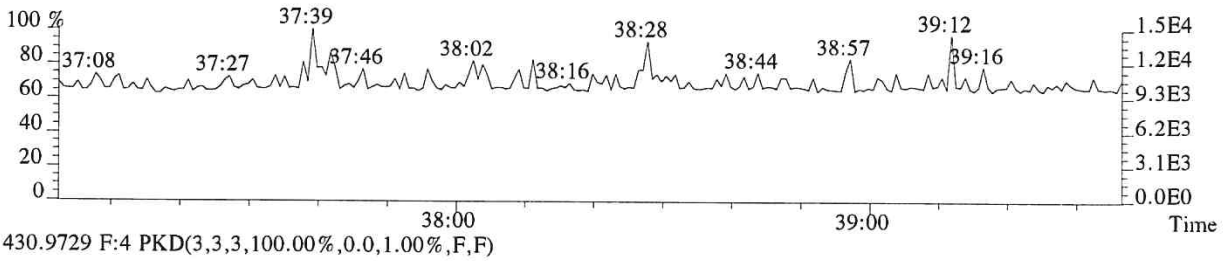
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1268.0,0.50%,F,T)



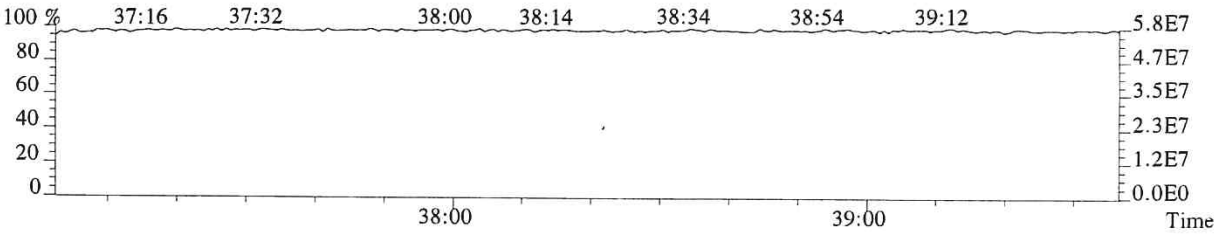
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3844.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

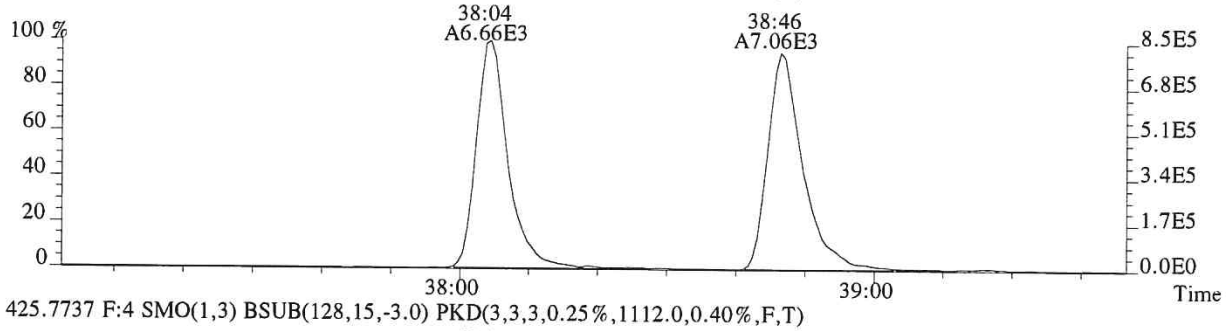


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

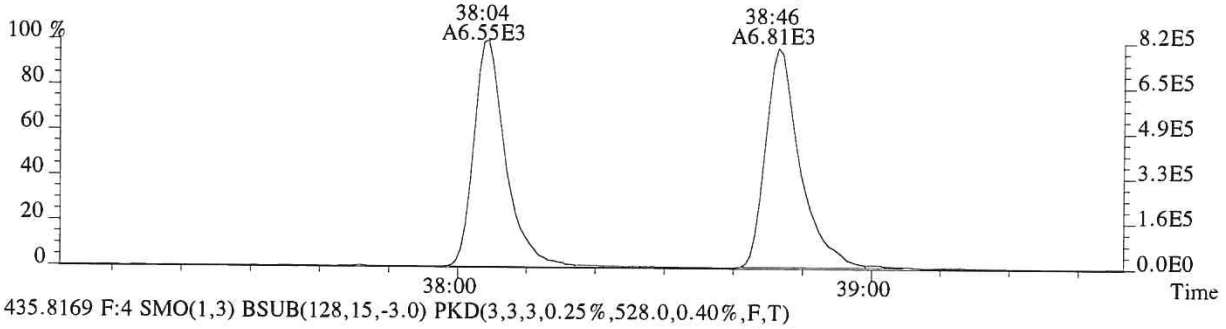


059977

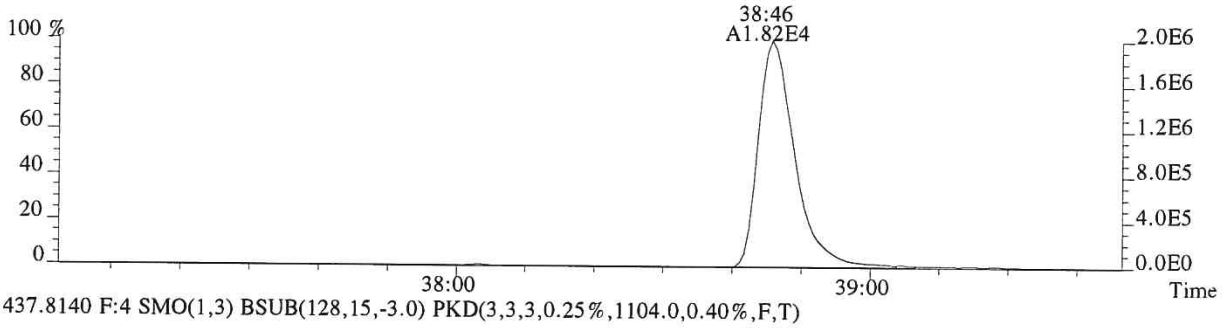
File:P519689 #1-232 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2136.0,0.40%,F,T)



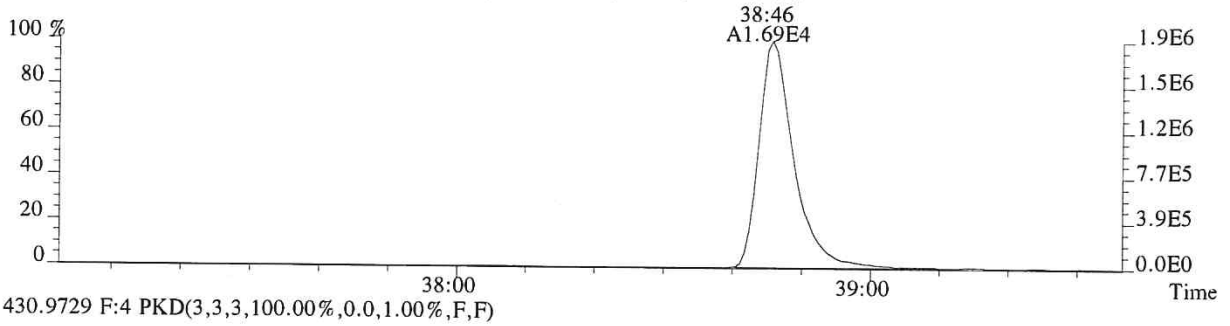
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1112.0,0.40%,F,T)



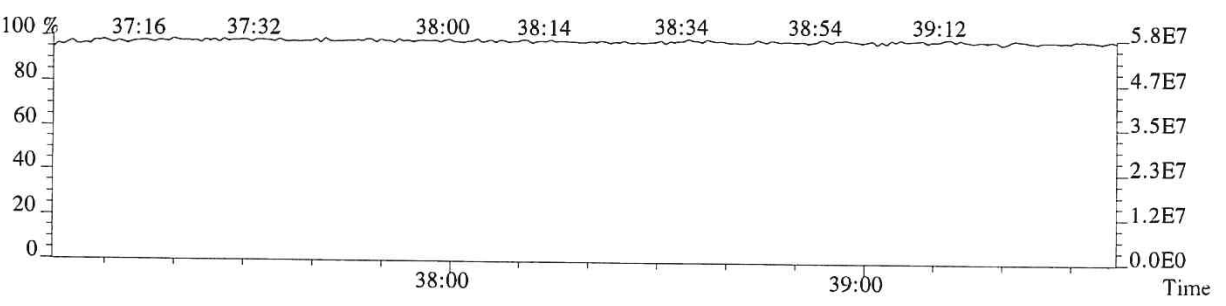
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,528.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1104.0,0.40%,F,T)



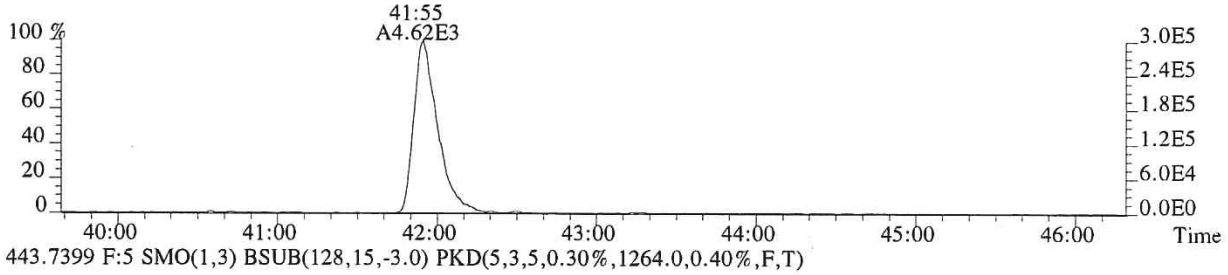
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



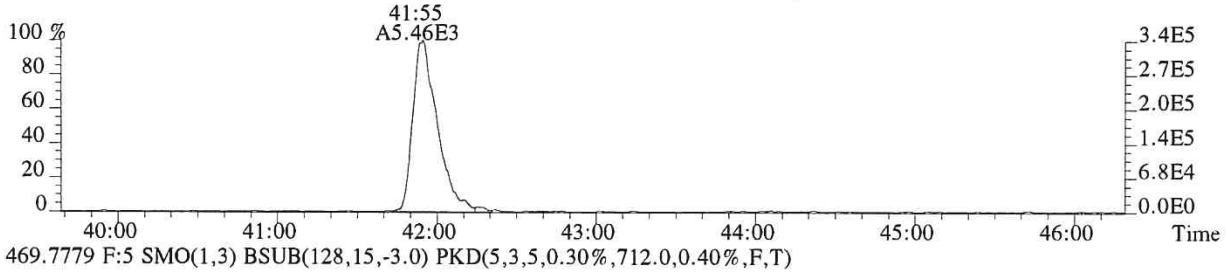
059978

File:P519689 #1-601 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003

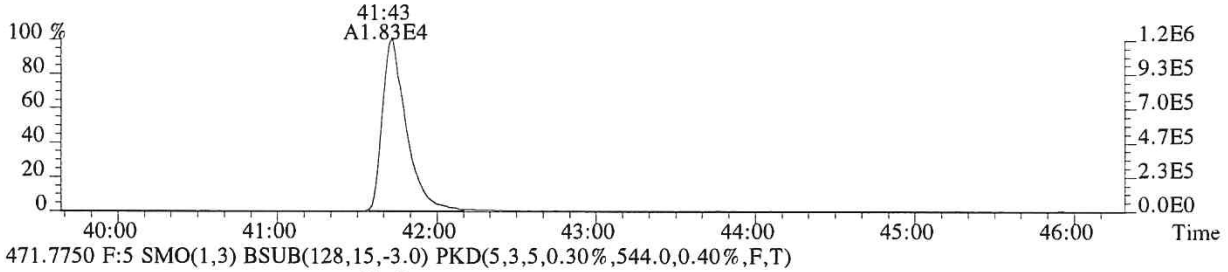
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,568.0,0.40%,F,T)



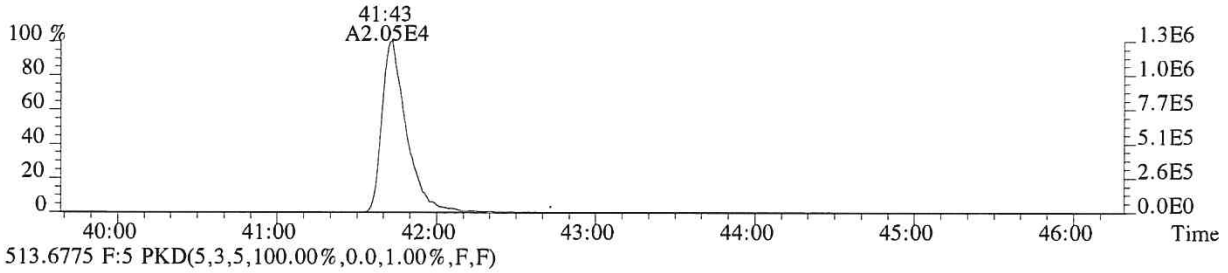
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1264.0,0.40%,F,T)



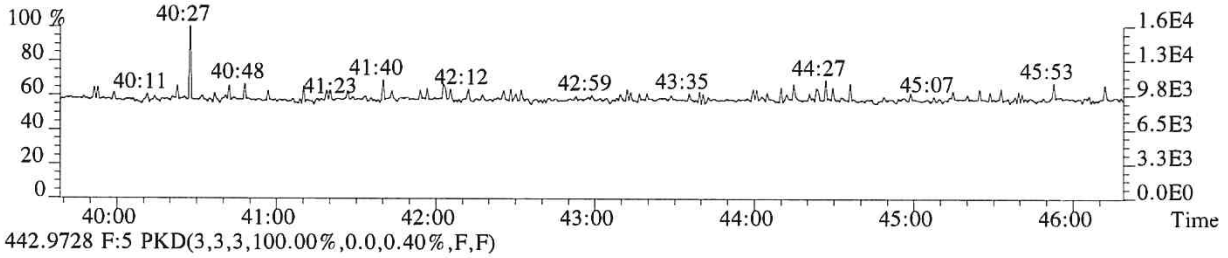
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,712.0,0.40%,F,T)



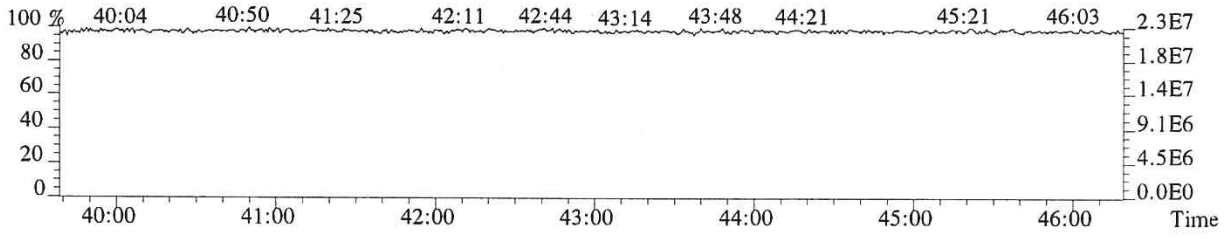
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,544.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

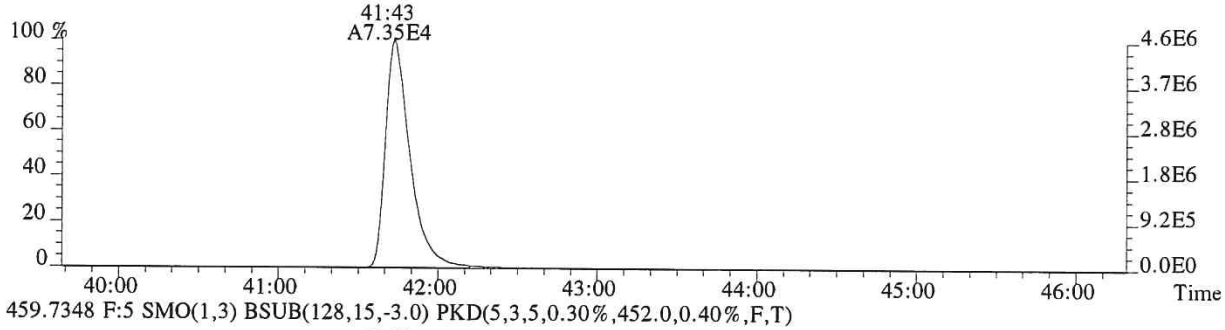


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

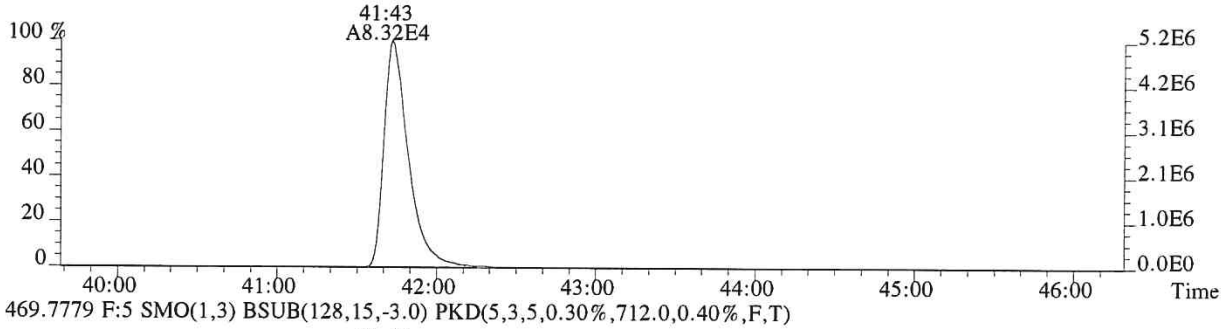


059979

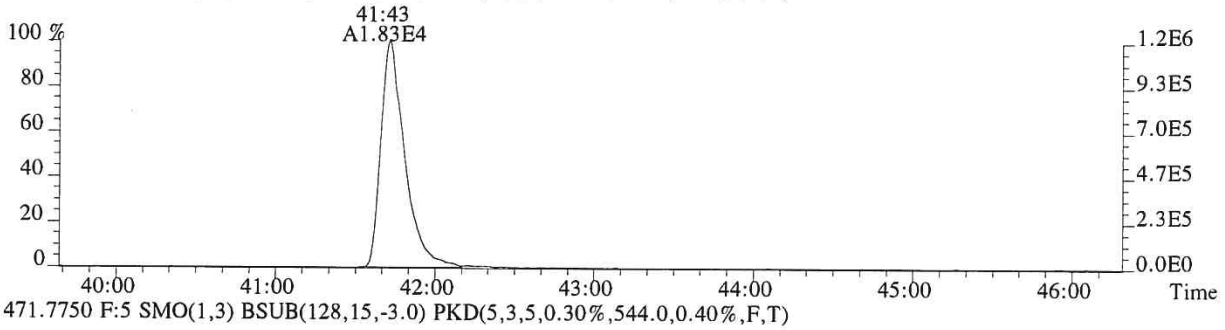
File:P519689 #1-601 Acq:29-DEC-2018 13:56:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,816.0,0.40%,F,T)



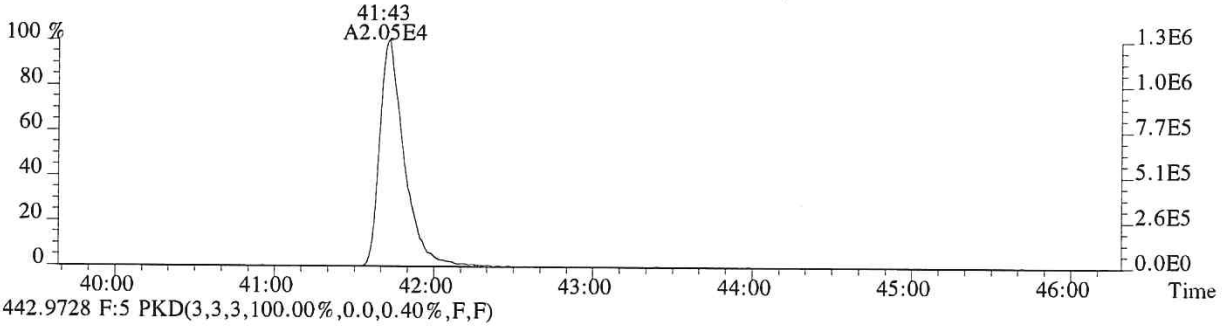
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,452.0,0.40%,F,T)



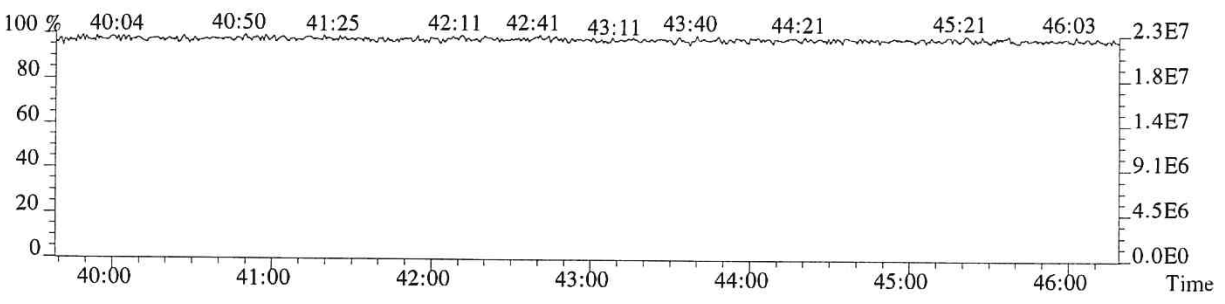
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,712.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,544.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059980

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0081

Run #14 Filename P519718 Samp: 1 Inj: 1 Acquired: 30-DEC-18 14:17:52
Processed: 31-DEC-18 09:54:28 Sample ID: E1801136-003DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:05	5.999e+03	8.320e+03	0.72	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:58	8.671e+02	5.368e+02	1.62	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	4.836e+02	2.674e+02	1.81	no	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	1.066e+03	8.748e+02	1.22	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	2.763e+02	2.082e+02	1.33	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	6.017e+01	4.345e+01	1.39	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	8.920e+01	7.747e+01	1.15	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	1.402e+02	2.044e+02	0.69	no	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:15	5.316e+01	5.040e+01	1.05	yes	no	1.258
10	Unk	OCDF	NotFnd	*	*	*	no	yes	1.359
11	Unk	2,3,7,8-TCDD	27:04	1.495e+03	2.003e+03	0.75	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	yes	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:48	4.621e+01	1.318e+02	0.35	no	no	1.025
17	Unk	OCDD	41:45	9.481e+02	1.136e+03	0.83	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	2.307e+04	2.909e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	3.337e+04	2.123e+04	1.57	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	3.119e+04	1.979e+04	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:54	1.256e+04	2.445e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.591e+04	3.009e+04	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:34	1.387e+04	2.749e+04	0.50	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:22	1.280e+04	2.470e+04	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:47	1.040e+04	2.387e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	8.797e+03	1.999e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:02	1.120e+04	1.417e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.443e+04	1.531e+04	1.60	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:44	1.851e+04	1.461e+04	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	2.102e+04	1.656e+04	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:47	2.213e+04	2.090e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	41:45	2.466e+04	2.718e+04	0.91	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	2.022e+04	2.529e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	2.439e+04	1.955e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	3.756e+02				no	1.014

$$\text{OCDD} = \frac{(9.481e+02 + 1.136e+03) \times 4000\ \text{pg} \times 50}{(2.466e+04 + 2.718e+04) \times 10.488\ \text{g} \times 76.7/100 \times 1.118} = 2180.529\ \text{ng/kg}$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0081

Run #14 Filename P519718 Samp: 1 Inj: 1 Acquired: 30-DEC-18 14:17:52
Processed: 31-DEC-18 09:54:28 LAB. ID: E1801136-003DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	7.77e+05	1.25e+03	6.2e+02	1.11e+06	2.42e+03	4.6e+02
2	1,2,3,7,8-PeCDF	1.39e+05	3.56e+02	3.9e+02	8.97e+04	2.74e+03	3.3e+01
3	2,3,4,7,8-PeCDF	7.10e+04	3.56e+02	2.0e+02	3.43e+04	2.74e+03	1.3e+01
4	1,2,3,4,7,8-HxCDF	1.82e+05	1.70e+03	1.1e+02	1.51e+05	8.56e+02	1.8e+02
5	1,2,3,6,7,8-HxCDF	4.00e+04	1.70e+03	2.4e+01	3.43e+04	8.56e+02	4.0e+01
6	2,3,4,6,7,8-HxCDF	9.99e+03	1.70e+03	5.9e+00	6.42e+03	8.56e+02	7.5e+00
7	1,2,3,7,8,9-HxCDF	1.18e+04	1.70e+03	7.0e+00	9.40e+03	8.56e+02	1.1e+01
8	1,2,3,4,6,7,8-HpCDF	2.51e+04	7.00e+02	3.6e+01	2.44e+04	3.80e+02	6.4e+01
9	1,2,3,4,7,8,9-HpCDF	9.52e+03	7.00e+02	1.4e+01	6.64e+03	3.80e+02	1.7e+01
10	OCDF	*	7.32e+02	*	*	1.47e+03	*
11	2,3,7,8-TCDD	2.38e+05	3.69e+03	6.4e+01	3.17e+05	1.42e+03	2.2e+02
12	1,2,3,7,8-PeCDD	*	1.08e+03	*	*	6.00e+02	*
13	1,2,3,4,7,8-HxCDD	*	9.20e+02	*	*	7.20e+02	*
14	1,2,3,6,7,8-HxCDD	*	9.20e+02	*	*	7.20e+02	*
15	1,2,3,7,8,9-HxCDD	*	9.20e+02	*	*	7.20e+02	*
16	1,2,3,4,6,7,8-HpCDD	8.85e+03	8.28e+02	1.1e+01	1.26e+04	3.44e+02	3.7e+01
17	OCDD	5.95e+04	4.08e+02	1.5e+02	6.92e+04	3.92e+02	1.8e+02
18	13C-2,3,7,8-TCDF	3.37e+06	8.62e+03	3.9e+02	4.25e+06	7.18e+03	5.9e+02
19	13C-1,2,3,7,8-PeCDF	5.54e+06	1.03e+03	5.4e+03	3.46e+06	4.76e+02	7.3e+03
20	13C-2,3,4,7,8-PeCDF	5.30e+06	1.03e+03	5.2e+03	3.29e+06	4.76e+02	6.9e+03
21	13C-1,2,3,4,7,8-HxCDF	2.16e+06	9.72e+02	2.2e+03	4.17e+06	9.16e+02	4.6e+03
22	13C-1,2,3,6,7,8-HxCDF	2.41e+06	9.72e+02	2.5e+03	4.62e+06	9.16e+02	5.0e+03
23	13C-2,3,4,6,7,8-HxCDF	2.30e+06	9.72e+02	2.4e+03	4.47e+06	9.16e+02	4.9e+03
24	13C-1,2,3,7,8,9-HxCDF	1.71e+06	9.72e+02	1.8e+03	3.42e+06	9.16e+02	3.7e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.24e+06	1.62e+03	7.6e+02	2.94e+06	1.66e+03	1.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	8.41e+05	1.62e+03	5.2e+02	1.86e+06	1.66e+03	1.1e+03
27	13C-2,3,7,8-TCDD	1.78e+06	8.82e+03	2.0e+02	2.21e+06	2.98e+03	7.4e+02
28	13C-1,2,3,7,8-PeCDD	3.94e+06	1.02e+03	3.9e+03	2.46e+06	1.62e+03	1.5e+03
29	13C-1,2,3,4,7,8-HxCDD	3.20e+06	1.71e+03	1.9e+03	2.49e+06	9.92e+02	2.5e+03
30	13C-1,2,3,6,7,8-HxCDD	3.13e+06	1.71e+03	1.8e+03	2.45e+06	9.92e+02	2.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.17e+06	8.64e+02	2.5e+03	2.02e+06	5.88e+02	3.4e+03
32	13C-OCDD	1.37e+06	1.04e+03	1.3e+03	1.52e+06	3.32e+02	4.6e+03
33	13C-1,2,3,4-TCDD	3.21e+06	8.82e+03	3.6e+02	4.02e+06	2.98e+03	1.3e+03
34	13C-1,2,3,7,8,9-HxCDD	3.44e+06	1.71e+03	2.0e+03	2.73e+06	9.92e+02	2.8e+03
35	37Cl-2,3,7,8-TCDD	5.94e+04	2.14e+03	2.8e+01			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.692e{+}03 + 1.416e{+}03\ ) \times 2000}{(1.778e{+}06 + 2.215e{+}06\ ) \times (\qquad\qquad\qquad\qquad) \times 1.085} =$$

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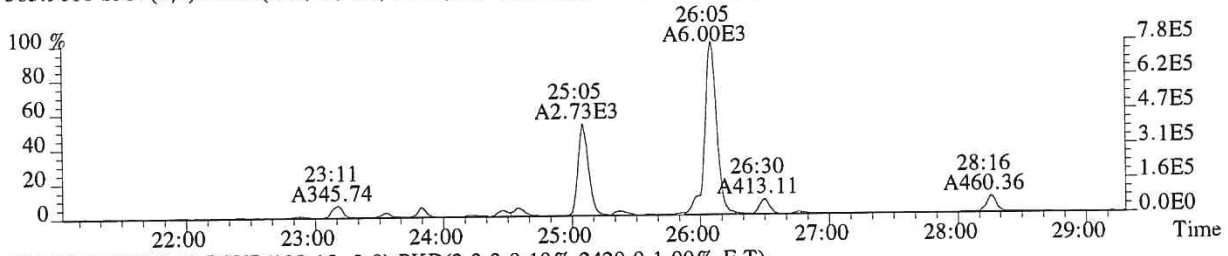
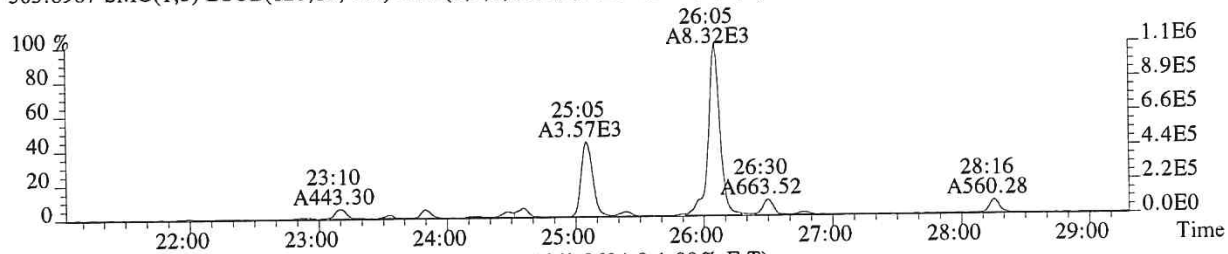
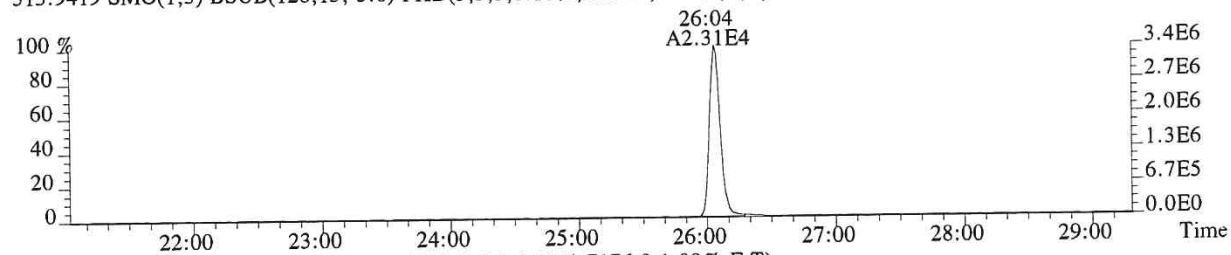
File:P519718 #1-587 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1248.0,1.00%,F,T)



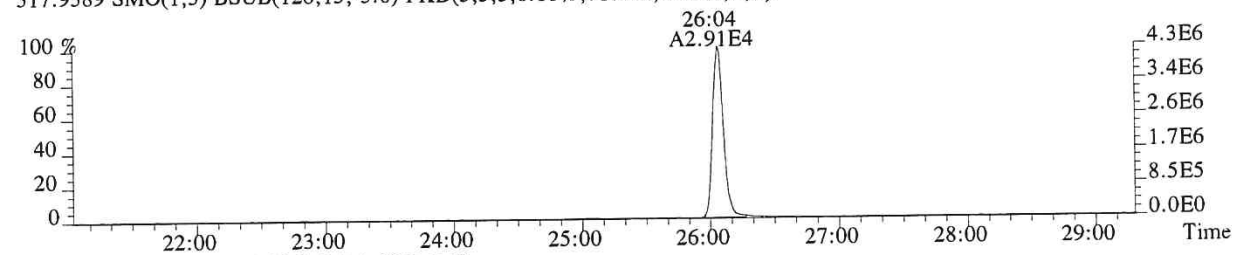
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2420.0,1.00%,F,T)



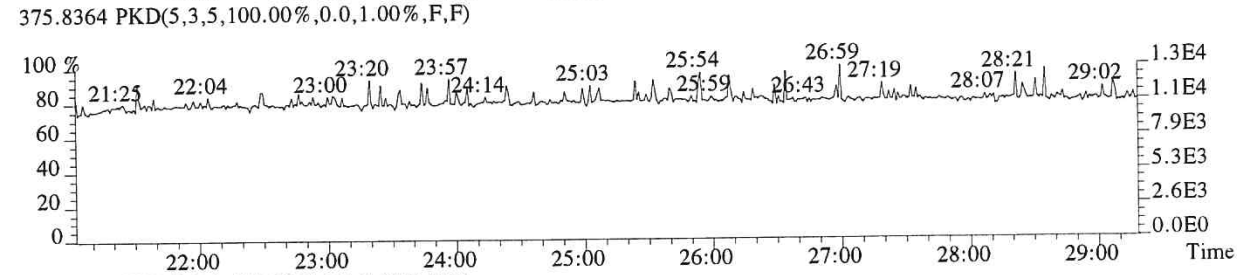
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8624.0,1.00%,F,T)



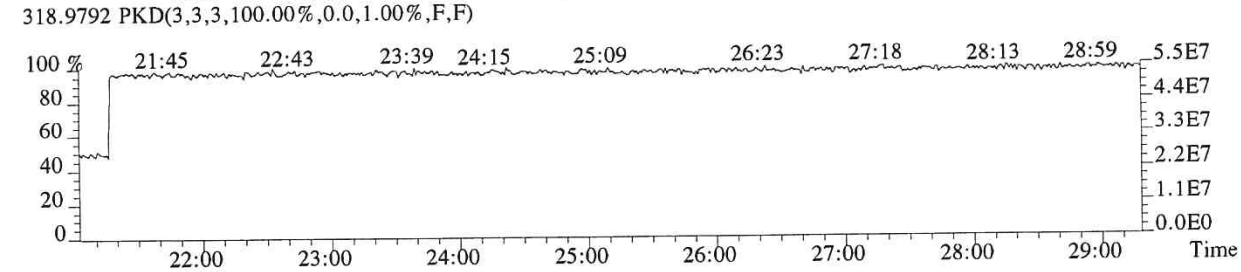
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7176.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

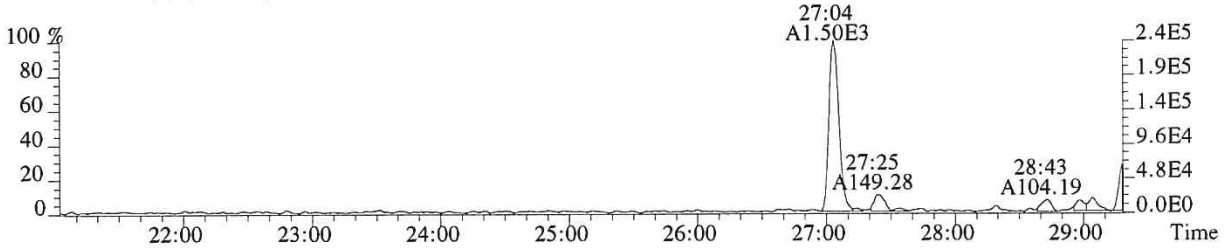


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

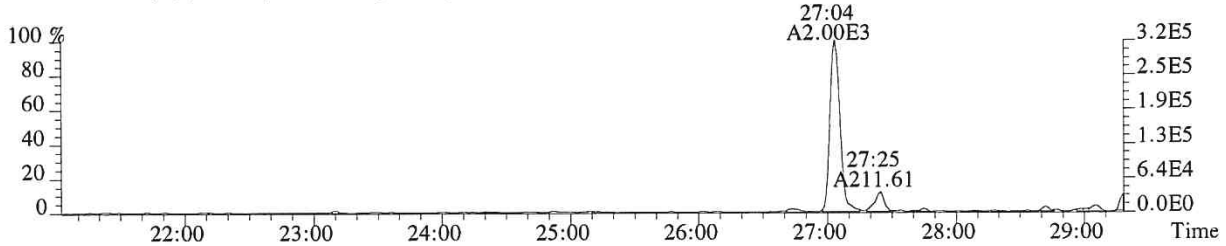


059983

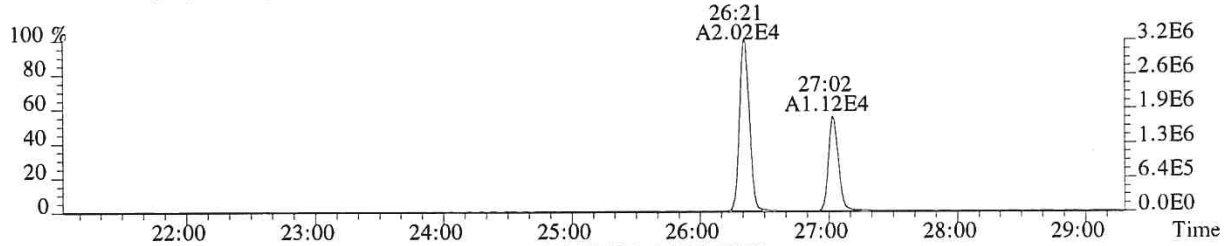
File:P519718 #1-587 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3692.0,1.00%,F,T)



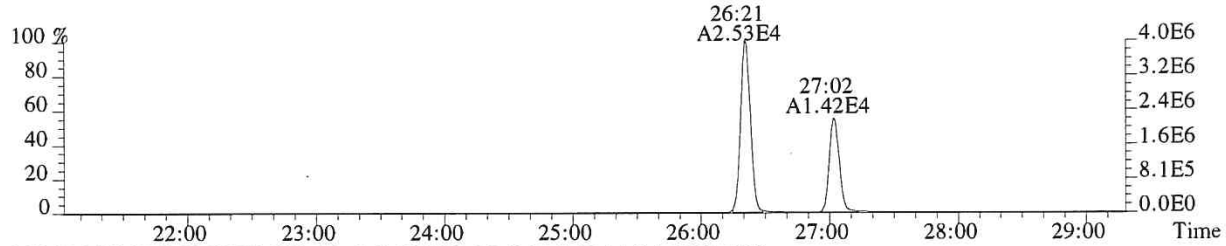
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1416.0,1.00%,F,T)



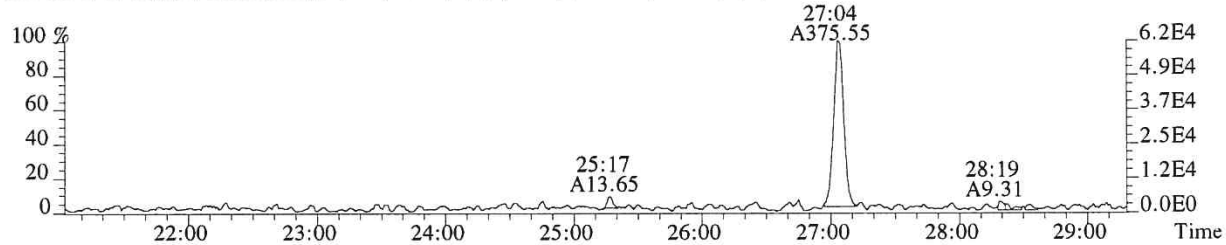
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8816.0,1.00%,F,T)



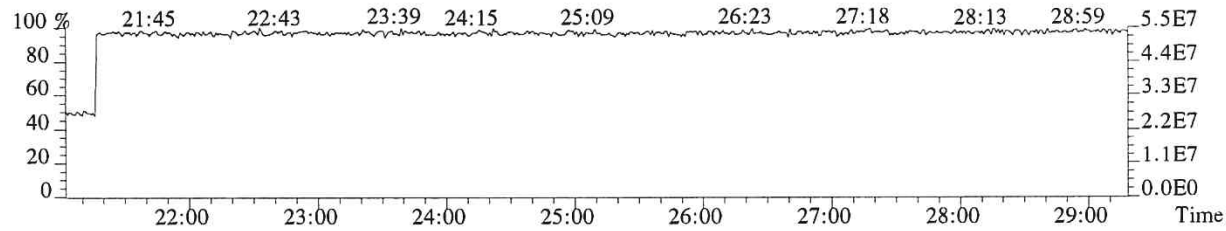
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2980.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2144.0,1.00%,F,T)

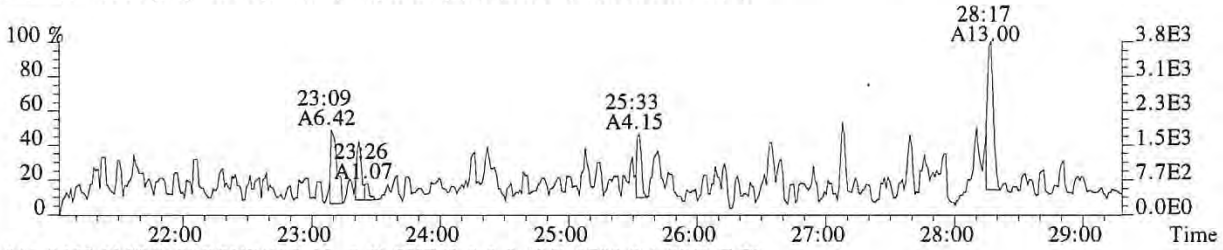


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

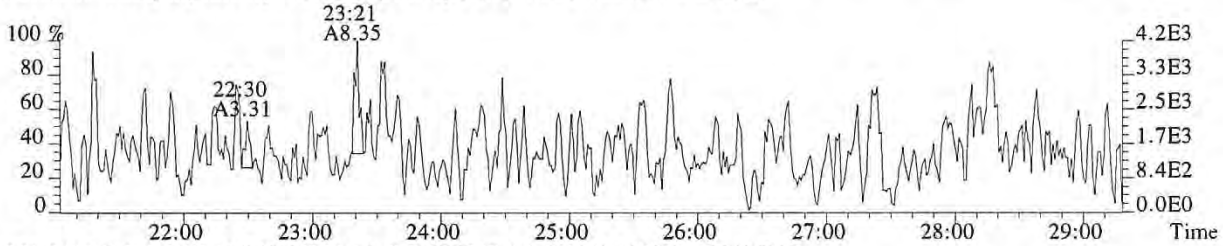


059984

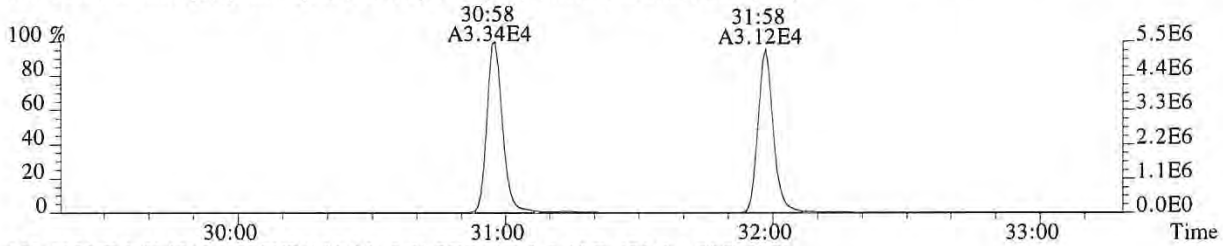
File:P519718 #1-587 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,796.0,1.00%,F,T)



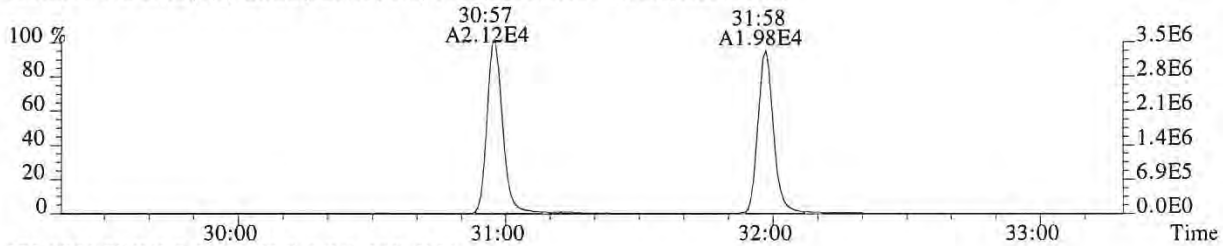
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1788.0,1.00%,F,T)



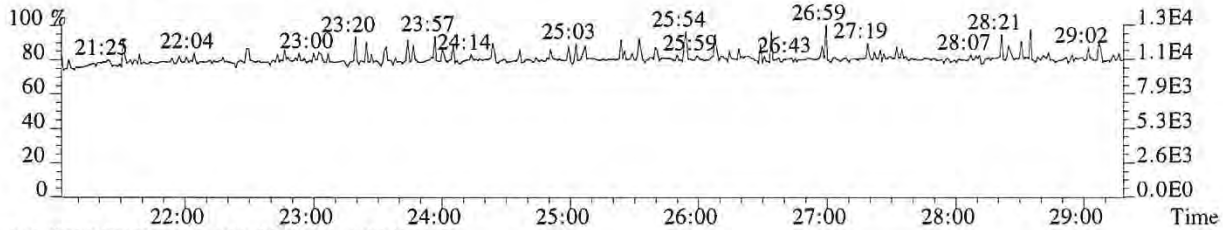
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1028.0,1.00%,F,T)



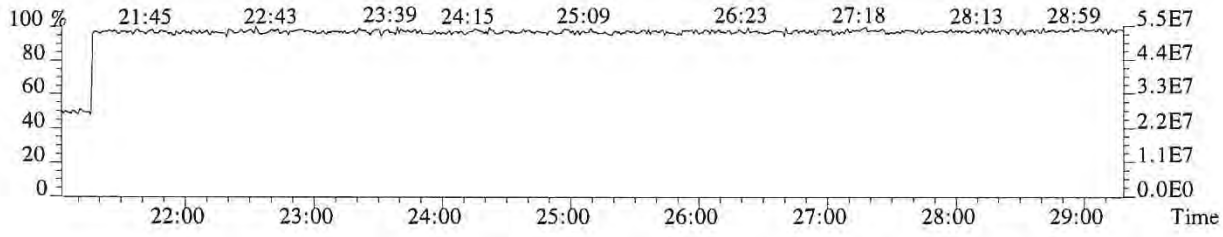
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,476.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

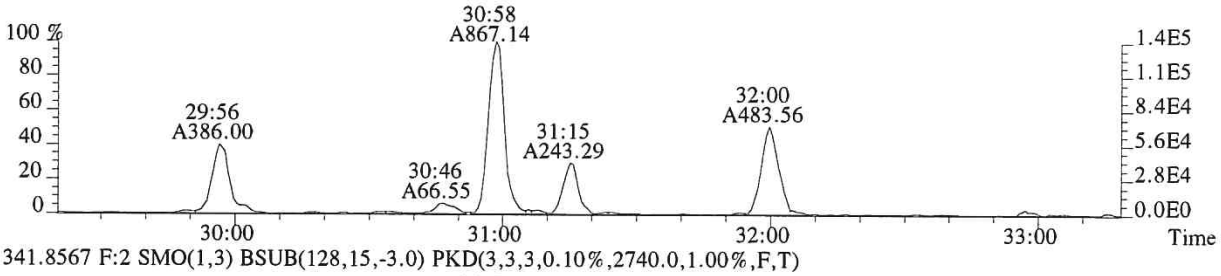


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

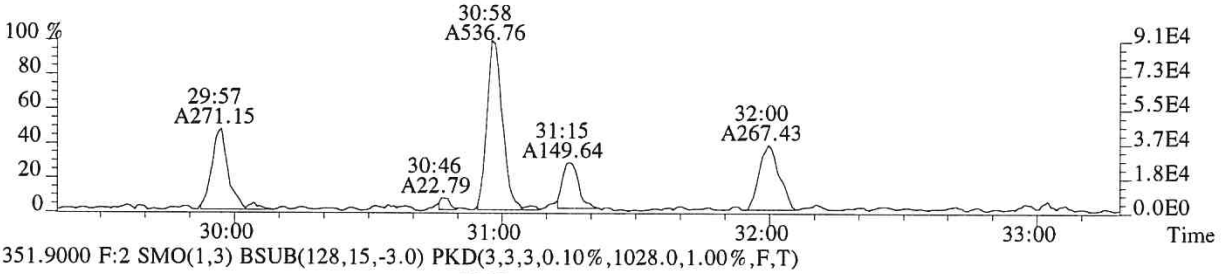


File:P519718 #1-358 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003DL

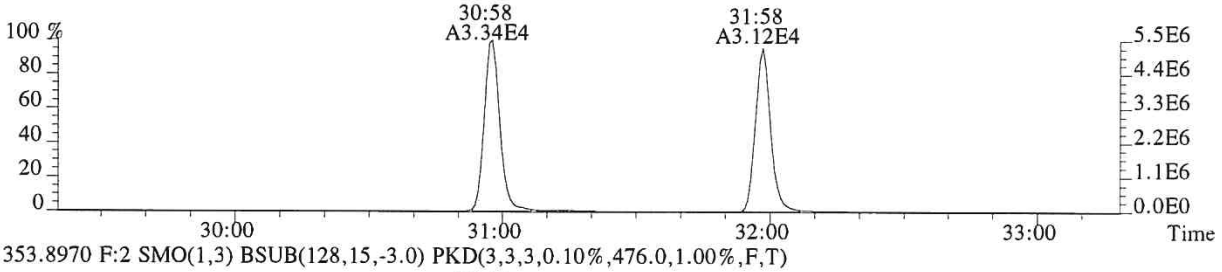
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,356.0,1.00%,F,T)



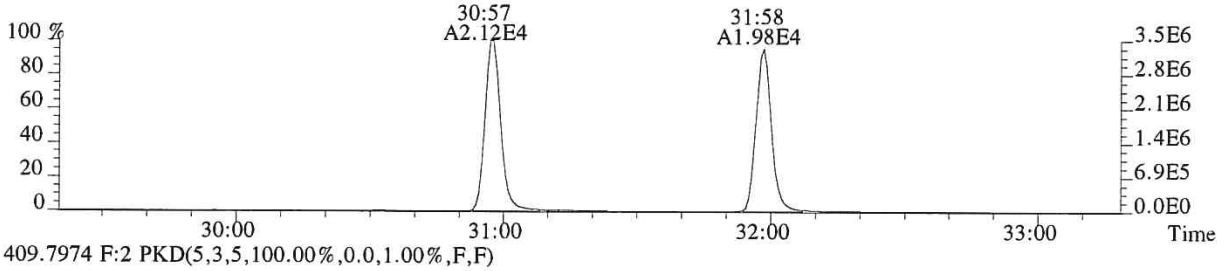
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2740.0,1.00%,F,T)



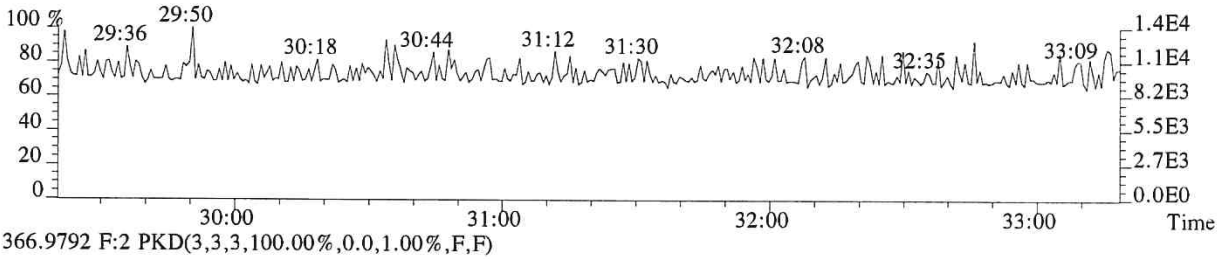
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1028.0,1.00%,F,T)



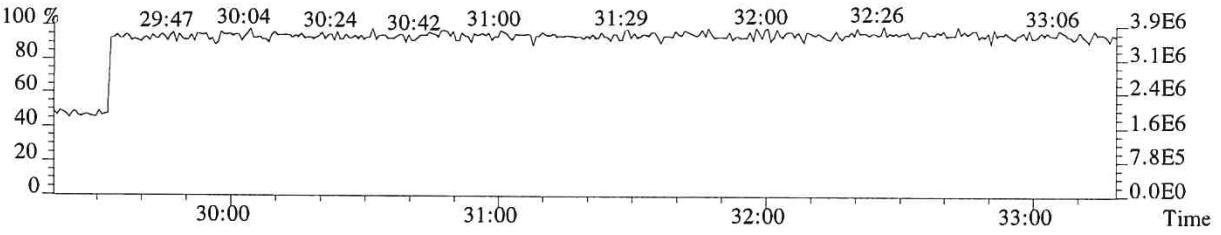
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,476.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

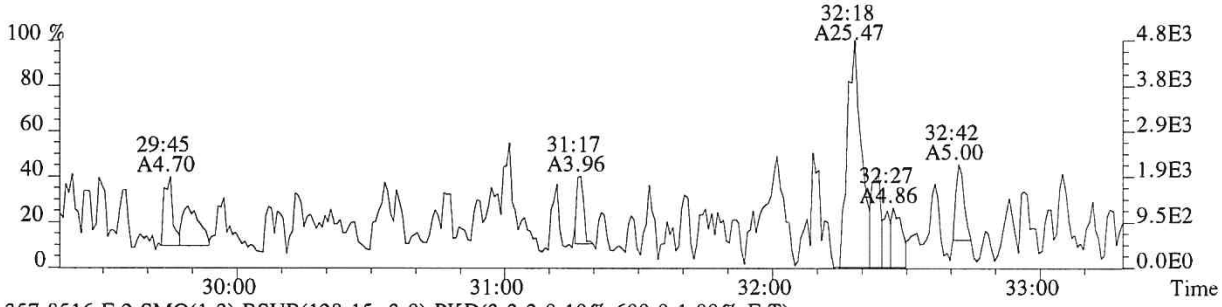


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

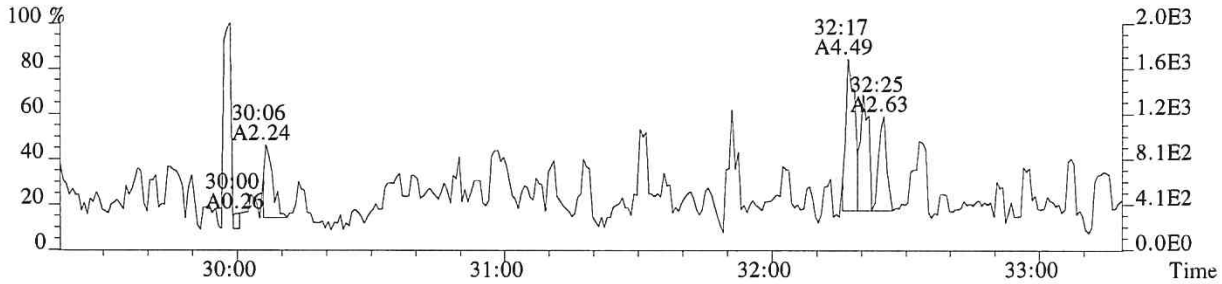


059986

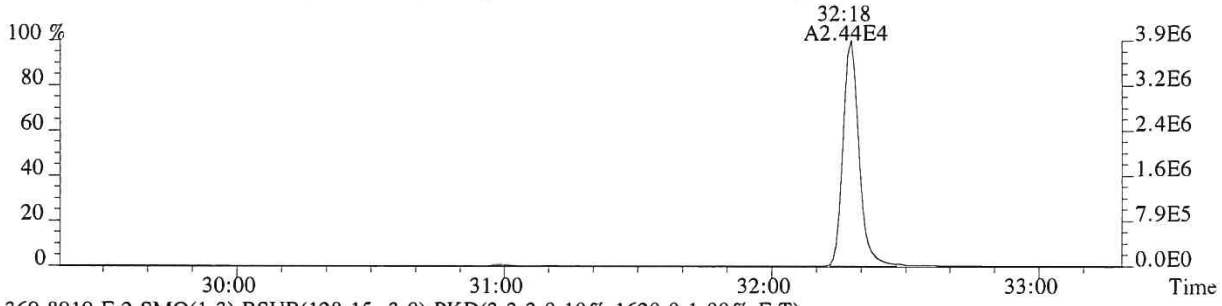
File:P519718 #1-358 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1080.0,1.00%,F,T)



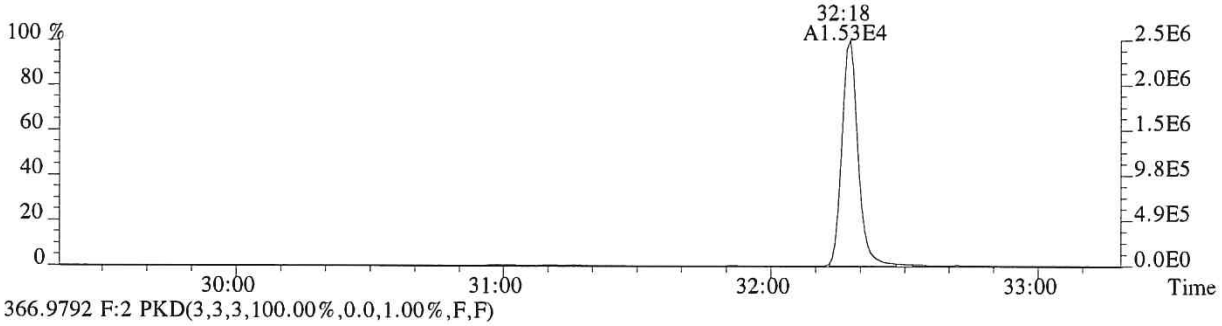
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,600.0,1.00%,F,T)



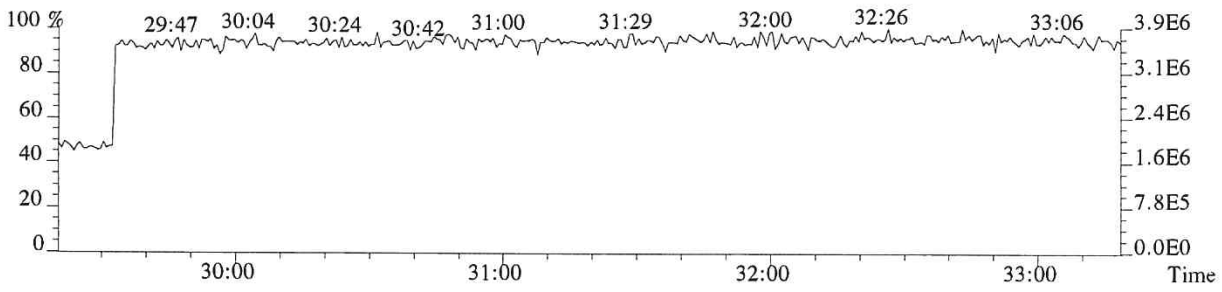
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1016.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1620.0,1.00%,F,T)

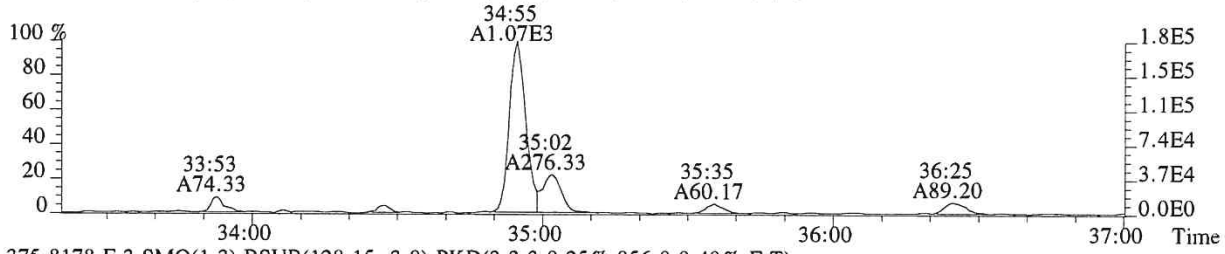


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

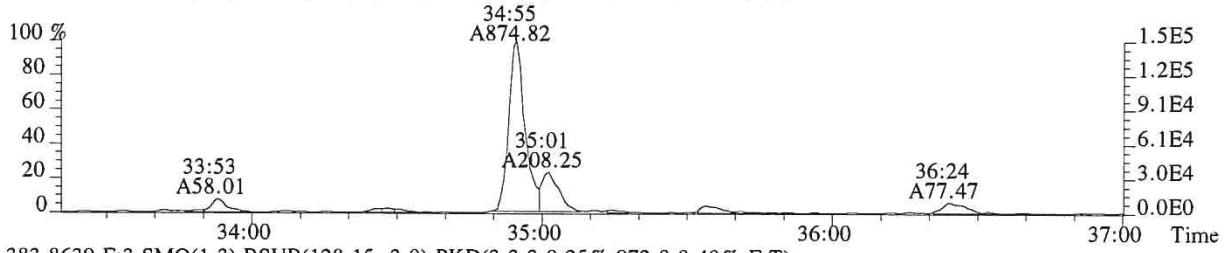


059987

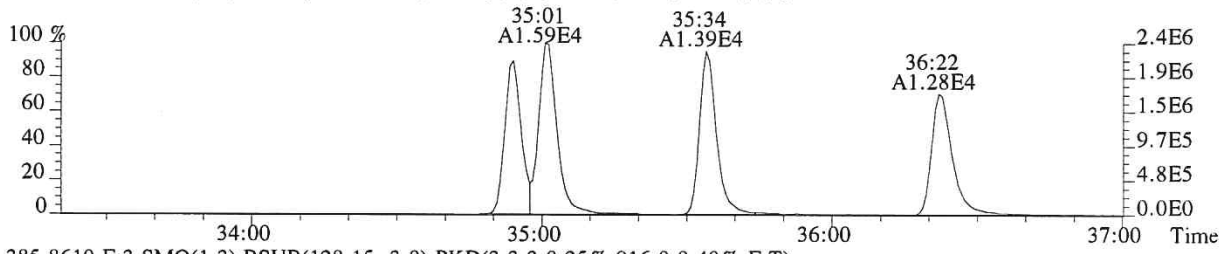
File:P519718 #1-330 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1696.0,0.40%,F,T)



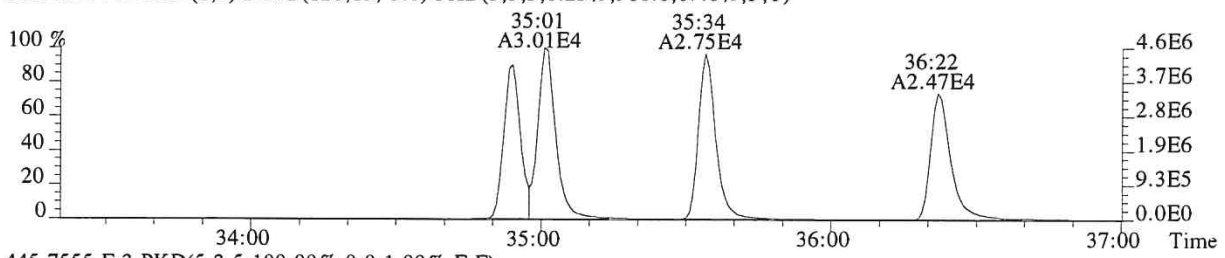
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,856.0,0.40%,F,T)



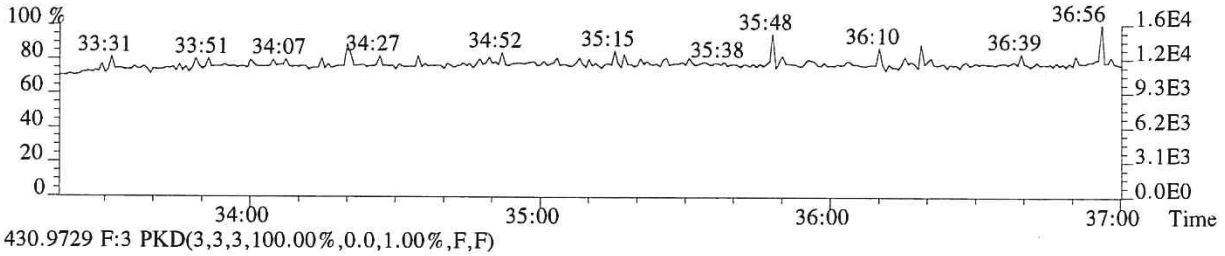
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,972.0,0.40%,F,T)



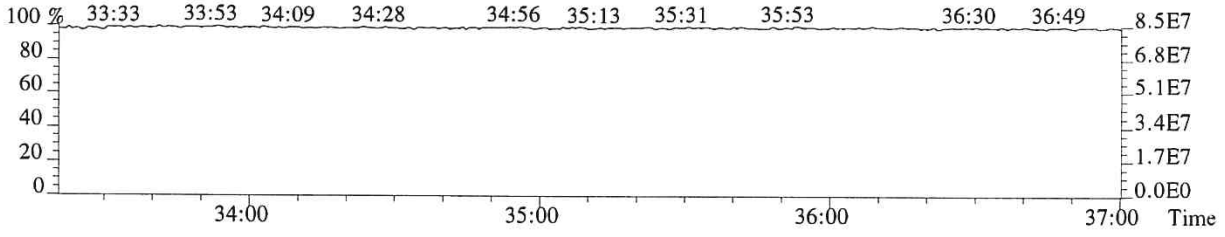
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,916.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

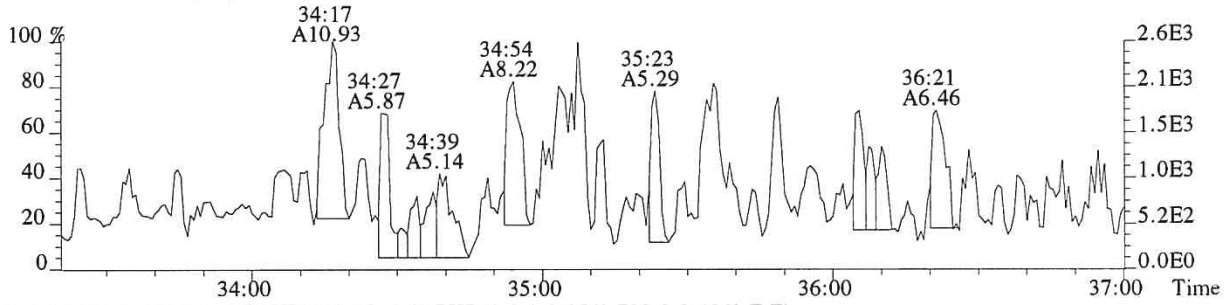


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

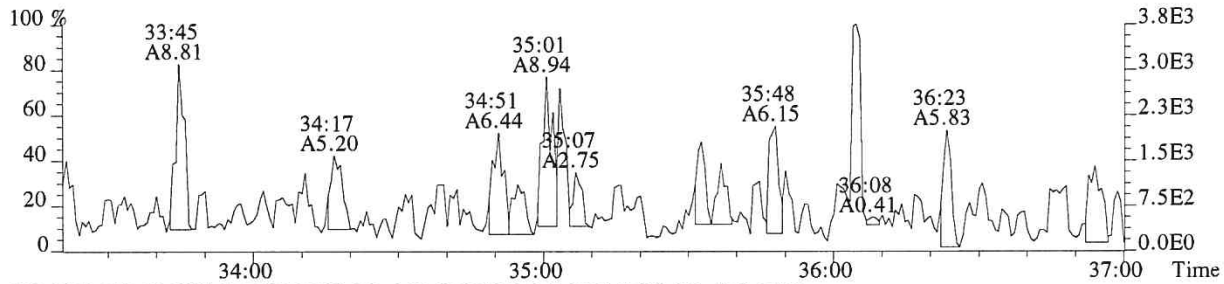


059988

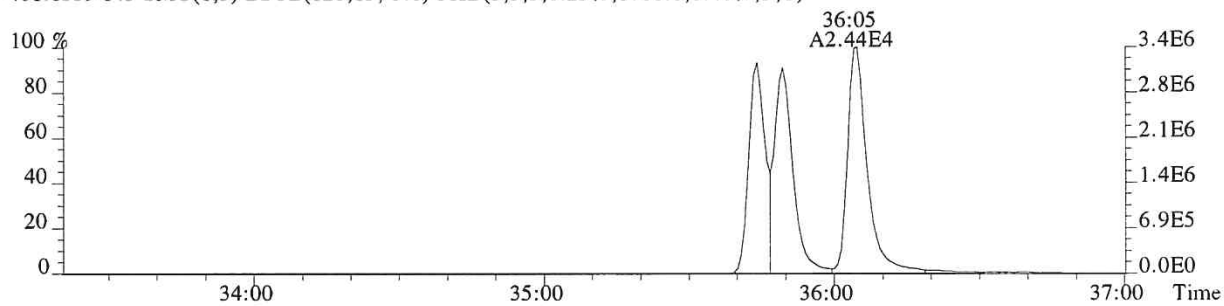
File:P519718 #1-330 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801136-003DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,920.0,0.40%,F,T)



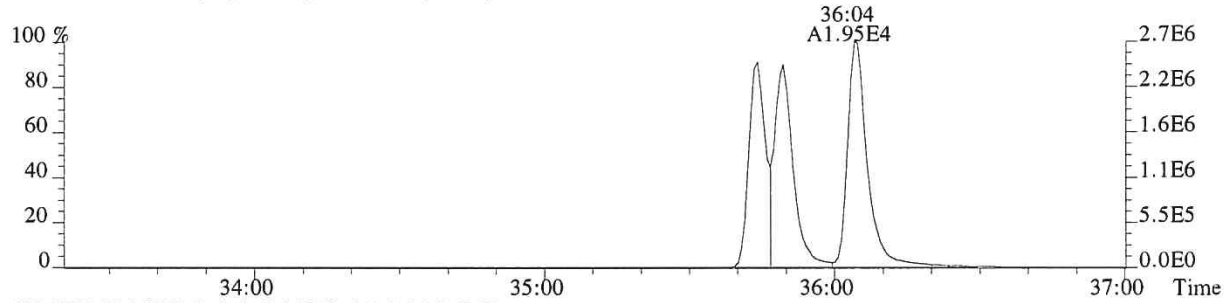
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,720.0,0.40%,F,T)



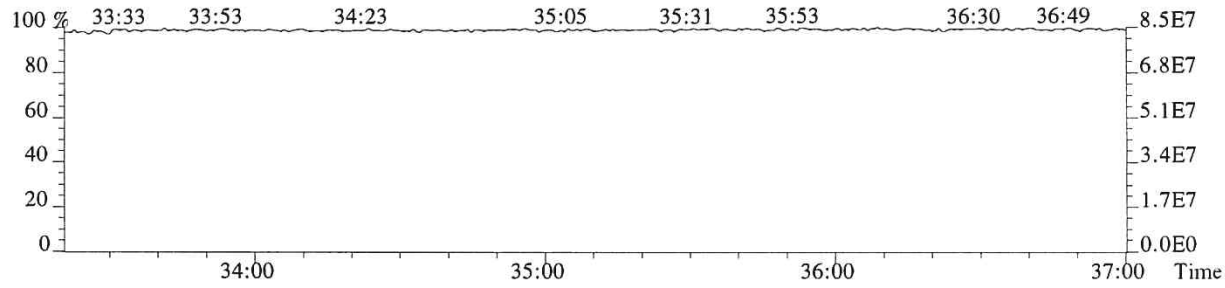
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1708.0,0.40%,F,T)



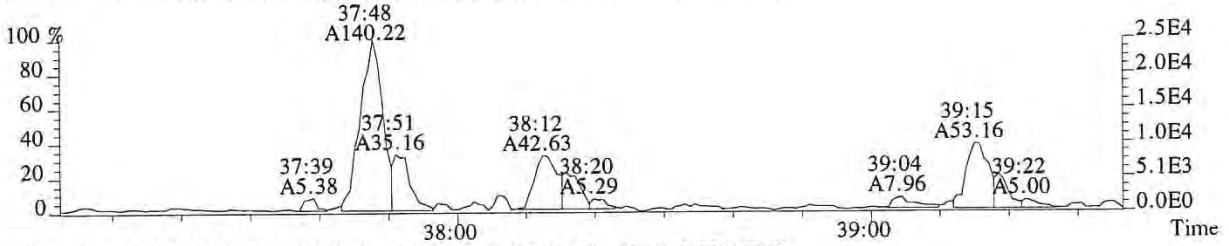
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,992.0,0.40%,F,T)



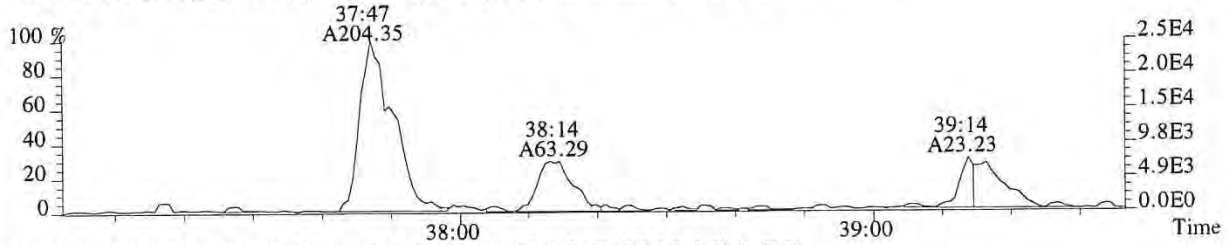
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P519718 #1-232 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,700.0,0.50%,F,T)



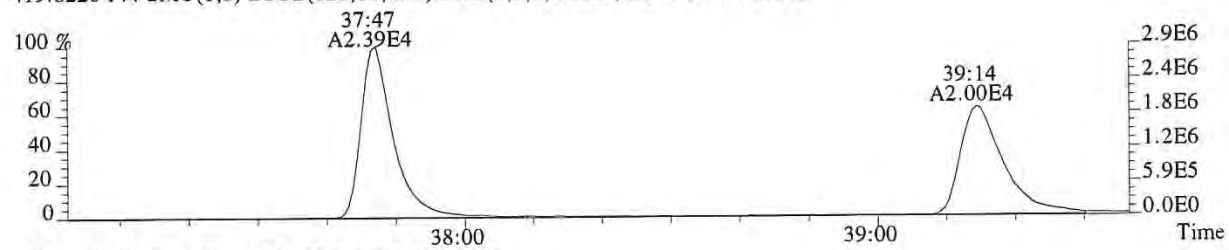
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,380.0,0.50%,F,T)



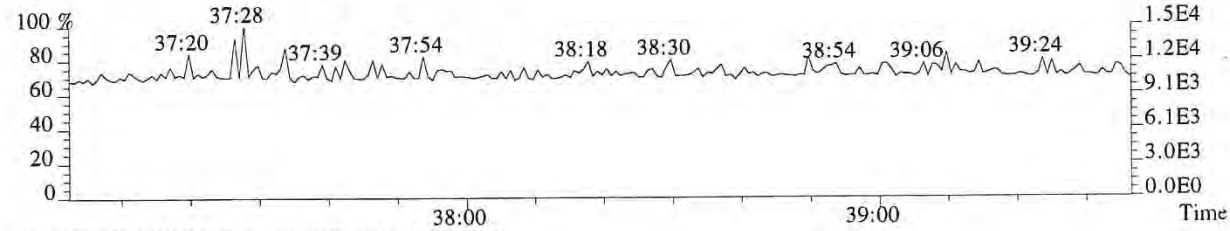
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1624.0,0.50%,F,T)



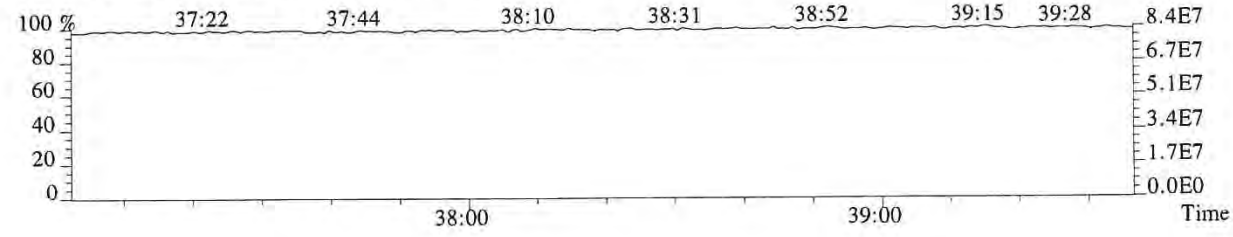
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1664.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

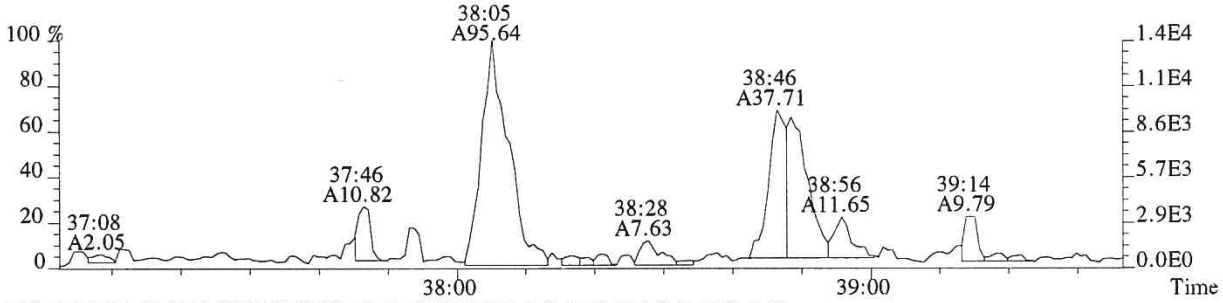


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

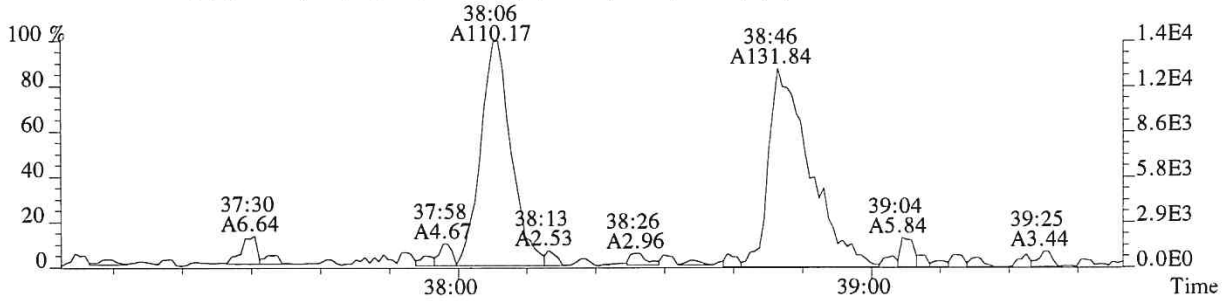


059990

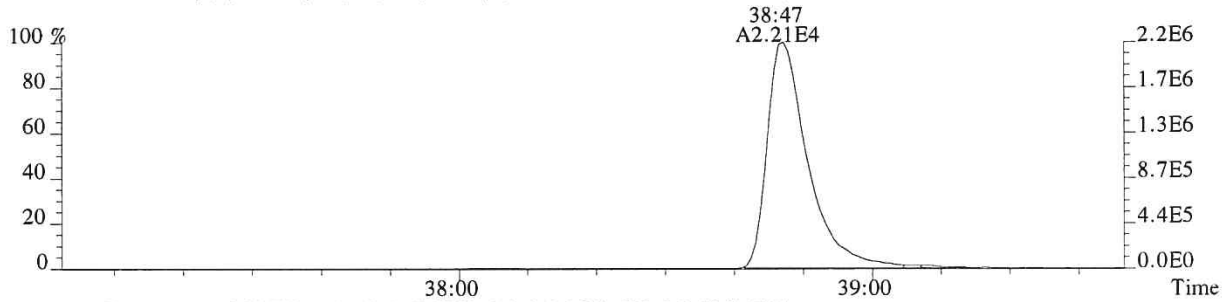
File:P519718 #1-232 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,828.0,0.40%,F,T)



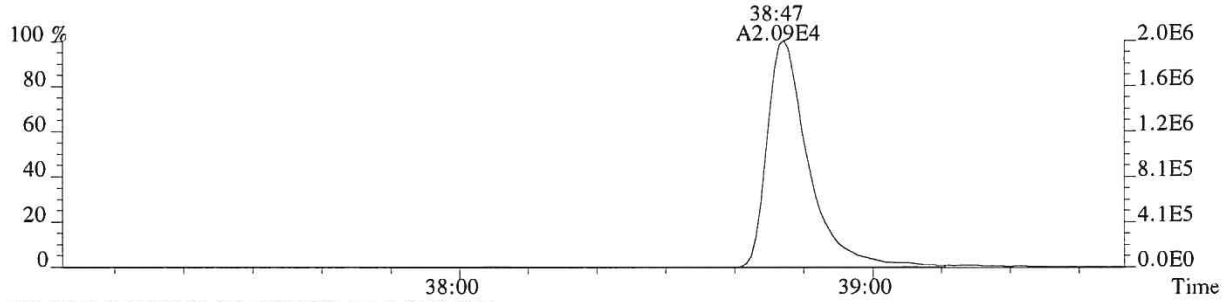
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,344.0,0.40%,F,T)



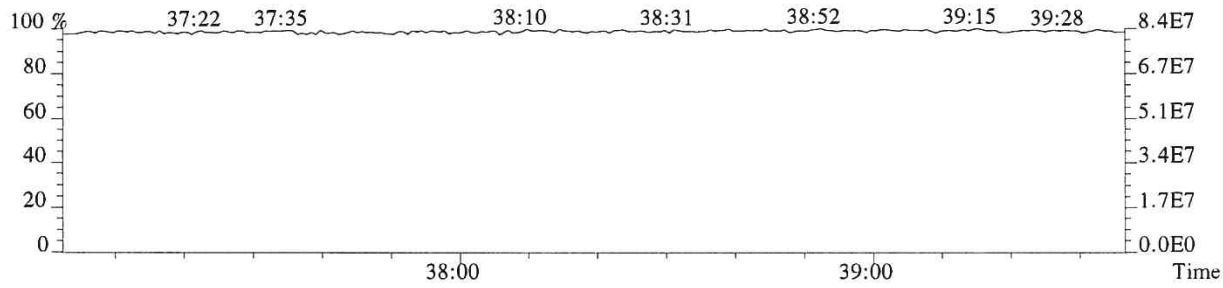
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,864.0,0.40%,F,T)



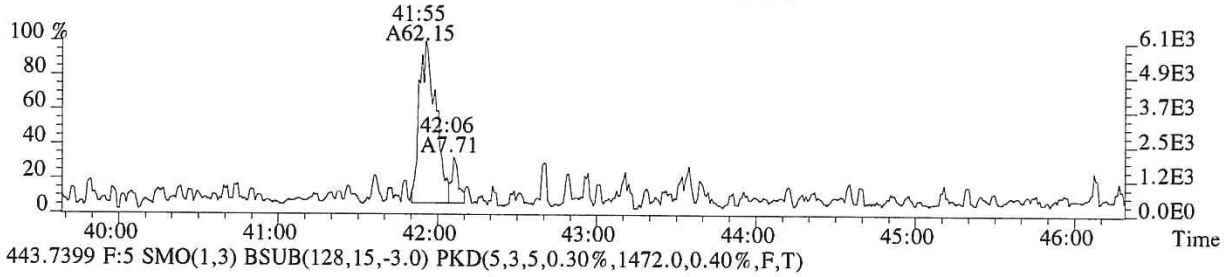
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,588.0,0.40%,F,T)



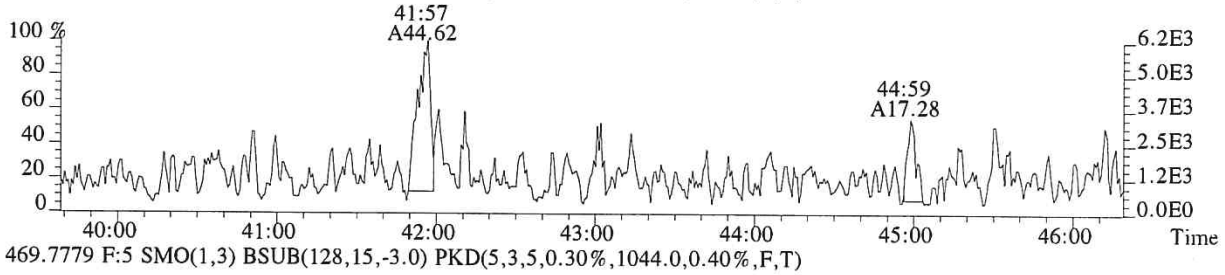
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



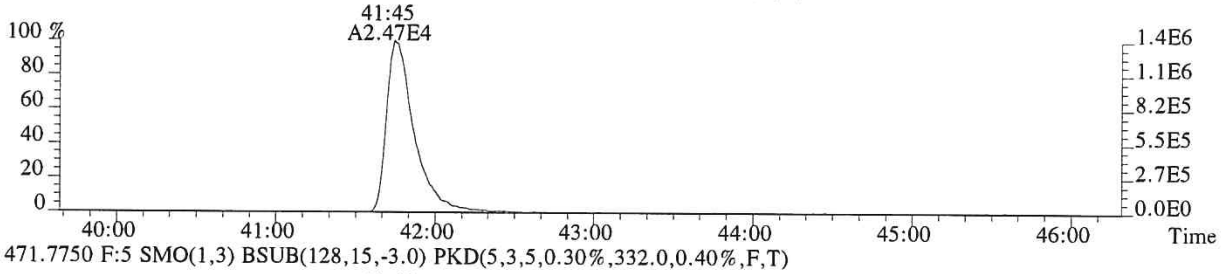
File:P519718 #1-601 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,732.0,0.40%,F,T)



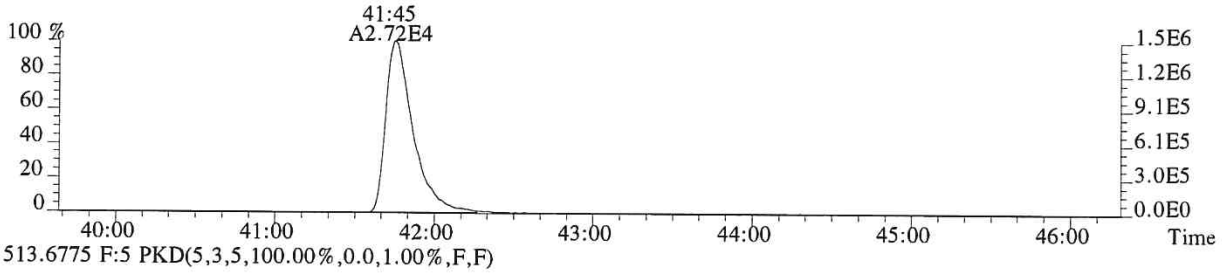
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1472.0,0.40%,F,T)



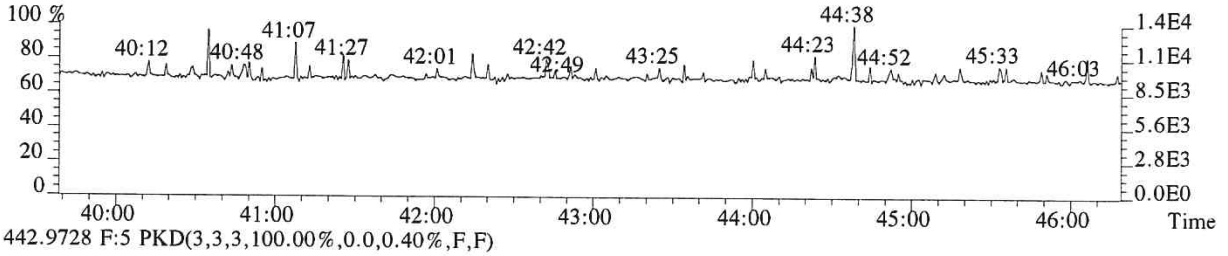
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1044.0,0.40%,F,T)



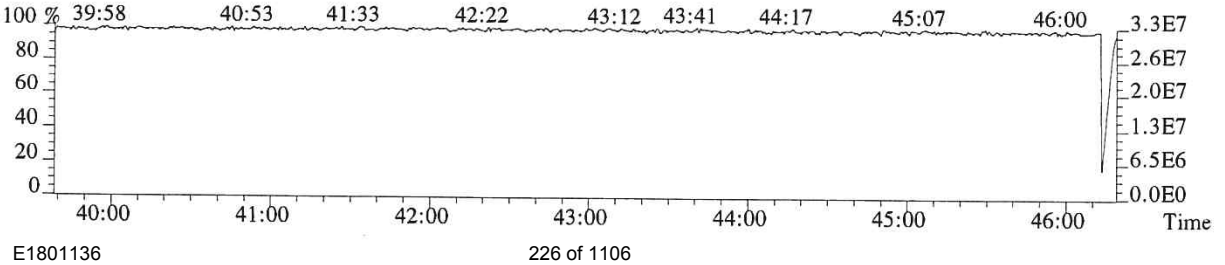
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,332.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

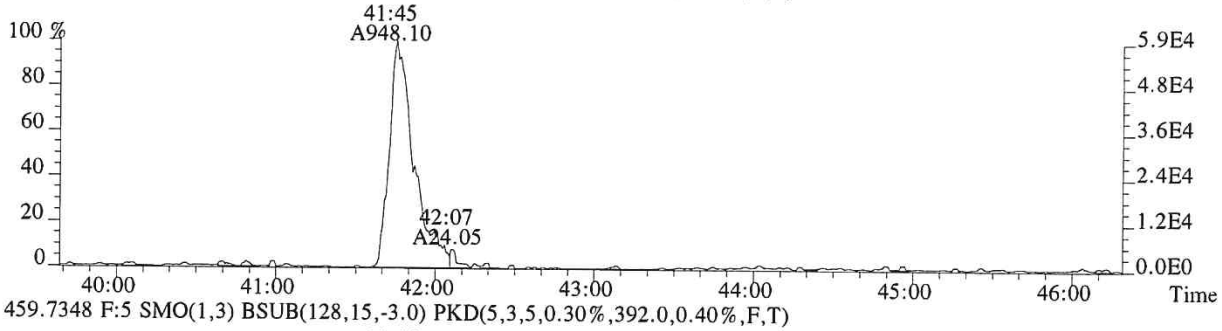


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

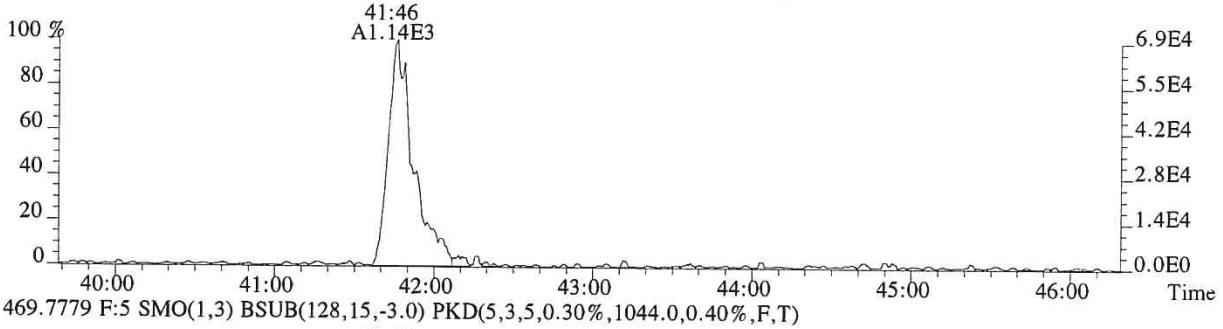


059992

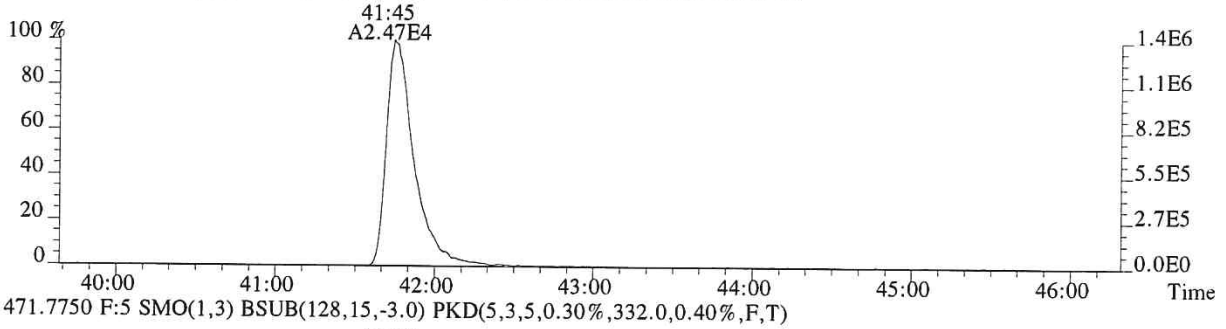
File:P519718 #1-601 Acq:30-DEC-2018 14:17:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-003DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,408.0,0.40%,F,T)



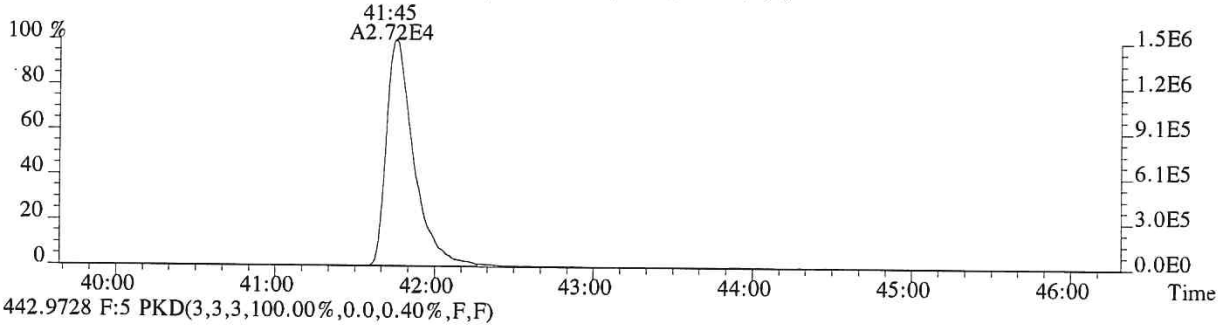
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,392.0,0.40%,F,T)



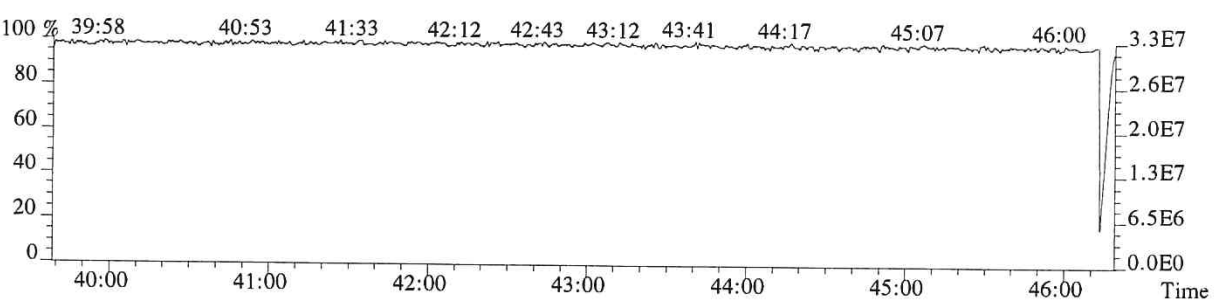
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1044.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,332.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



059993

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0082

Run #13 Filename P519690 Samp: 1 Inj: 1 Acquired: 29-DEC-18 14:45:25
Processed: 30-DEC-18 08:03:01 Sample ID: E1801136-004

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:06	2.190e+05	2.878e+05	0.76	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	1.076e+04	7.099e+03	1.52	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	31:59	8.533e+03	5.834e+03	1.46	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	1.501e+04	1.228e+04	1.22	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:01	4.052e+03	3.154e+03	1.28	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:34	6.504e+02	5.418e+02	1.20	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	9.748e+02	9.247e+02	1.05	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:46	3.958e+03	3.993e+03	0.99	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:14	1.222e+03	1.225e+03	1.00	yes	no	1.258
10	Unk	OCDF	41:55	1.742e+03	1.922e+03	0.91	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	5.863e+04	7.524e+04	0.78	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:18	9.218e+02	5.662e+02	1.63	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:43	2.881e+01	2.256e+01	1.28	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:50	1.591e+02	1.168e+02	1.36	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:04	1.709e+02	1.320e+02	1.29	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:47	5.281e+03	5.210e+03	1.01	yes	no	1.025
17	Unk	OCDD	41:45	6.427e+04	7.262e+04	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	2.510e+04	3.182e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	3.929e+04	2.478e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	3.750e+04	2.350e+04	1.60	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:54	1.520e+04	2.981e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.773e+04	3.445e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:33	1.622e+04	3.094e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:22	1.550e+04	3.036e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:46	1.073e+04	2.431e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	1.020e+04	2.400e+04	0.43	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	1.244e+04	1.563e+04	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:17	2.964e+04	1.848e+04	1.60	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:43	2.433e+04	1.875e+04	1.30	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	2.343e+04	1.839e+04	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:46	2.454e+04	2.334e+04	1.05	yes	no	0.858
32	IS	13C-OCDD	41:45	2.574e+04	2.883e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:22	3.590e+04	4.547e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:04	4.634e+04	3.660e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	2.007e+04				no	1.014

$$\text{OCDD} = \frac{(6.427e{+}04 + 7.262e{+}04) \times 4000\ \text{pg} \times 1}{(2.574e{+}04 + 2.883e{+}04) \times 10.83\ \text{g} \times 79.1\ \% \times 100 \times 1.118} = 1039.227\ \text{ng/kg}$$

LG 12/5/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0082

Run #13 Filename P519690 Samp: 1 Inj: 1 Acquired: 29-DEC-18 14:45:25
Processed: 30-DEC-18 08:03:01 LAB. ID: E1801136-004

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.18e+07	8.48e+02	3.7e+04	4.15e+07	1.87e+03	2.2e+04
2	1,2,3,7,8-PeCDF	1.90e+06	2.98e+03	6.4e+02	1.24e+06	3.02e+03	4.1e+02
3	2,3,4,7,8-PeCDF	1.30e+06	2.98e+03	4.4e+02	8.71e+05	3.02e+03	2.9e+02
4	1,2,3,4,7,8-HxCDF	2.66e+06	1.16e+03	2.3e+03	2.19e+06	1.58e+03	1.4e+03
5	1,2,3,6,7,8-HxCDF	6.73e+05	1.16e+03	5.8e+02	5.35e+05	1.58e+03	3.4e+02
6	2,3,4,6,7,8-HxCDF	1.19e+05	1.16e+03	1.0e+02	9.98e+04	1.58e+03	6.3e+01
7	1,2,3,7,8,9-HxCDF	1.47e+05	1.16e+03	1.3e+02	1.42e+05	1.58e+03	9.0e+01
8	1,2,3,4,6,7,8-HpCDF	5.43e+05	7.20e+02	7.5e+02	5.35e+05	9.76e+02	5.5e+02
9	1,2,3,4,7,8,9-HpCDF	1.28e+05	7.20e+02	1.8e+02	1.26e+05	9.76e+02	1.3e+02
10	OCDF	1.06e+05	4.40e+02	2.4e+02	1.16e+05	1.20e+03	9.6e+01
11	2,3,7,8-TCDD	1.01e+07	2.67e+03	3.8e+03	1.29e+07	1.80e+03	7.2e+03
12	1,2,3,7,8-PeCDD	1.51e+05	7.88e+02	1.9e+02	8.61e+04	6.40e+02	1.3e+02
13	1,2,3,4,7,8-HxCDD	5.61e+03	1.14e+03	4.9e+00	5.19e+03	1.12e+03	4.6e+00
14	1,2,3,6,7,8-HxCDD	2.38e+04	1.14e+03	2.1e+01	1.90e+04	1.12e+03	1.7e+01
15	1,2,3,7,8,9-HxCDD	2.62e+04	1.14e+03	2.3e+01	1.77e+04	1.12e+03	1.6e+01
16	1,2,3,4,6,7,8-HpCDD	6.11e+05	4.76e+02	1.3e+03	5.72e+05	9.28e+02	6.2e+02
17	OCDD	4.04e+06	6.20e+02	6.5e+03	4.60e+06	3.12e+02	1.5e+04
18	13C-2,3,7,8-TCDF	3.98e+06	8.34e+03	4.8e+02	5.00e+06	6.56e+03	7.6e+02
19	13C-1,2,3,7,8-PeCDF	6.72e+06	2.08e+03	3.2e+03	4.22e+06	1.46e+03	2.9e+03
20	13C-2,3,4,7,8-PeCDF	6.58e+06	2.08e+03	3.2e+03	4.13e+06	1.46e+03	2.8e+03
21	13C-1,2,3,4,7,8-HxCDF	2.75e+06	9.40e+02	2.9e+03	5.42e+06	1.46e+03	3.7e+03
22	13C-1,2,3,6,7,8-HxCDF	3.08e+06	9.40e+02	3.3e+03	6.05e+06	1.46e+03	4.2e+03
23	13C-2,3,4,6,7,8-HxCDF	2.93e+06	9.40e+02	3.1e+03	5.56e+06	1.46e+03	3.8e+03
24	13C-1,2,3,7,8,9-HxCDF	2.39e+06	9.40e+02	2.5e+03	4.63e+06	1.46e+03	3.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.44e+06	2.39e+03	6.0e+02	3.25e+06	3.14e+03	1.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.06e+06	2.39e+03	4.4e+02	2.55e+06	3.14e+03	8.1e+02
27	13C-2,3,7,8-TCDD	2.18e+06	5.05e+03	4.3e+02	2.72e+06	2.83e+03	9.6e+02
28	13C-1,2,3,7,8-PeCDD	5.19e+06	8.52e+02	6.1e+03	3.24e+06	1.54e+03	2.1e+03
29	13C-1,2,3,4,7,8-HxCDD	4.14e+06	1.30e+03	3.2e+03	3.20e+06	8.72e+02	3.7e+03
30	13C-1,2,3,6,7,8-HxCDD	3.70e+06	1.30e+03	2.8e+03	2.97e+06	8.72e+02	3.4e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.74e+06	8.04e+02	3.4e+03	2.69e+06	7.20e+02	3.7e+03
32	13C-OCDD	1.61e+06	6.72e+02	2.4e+03	1.81e+06	5.12e+02	3.5e+03
33	13C-1,2,3,4-TCDD	5.94e+06	5.05e+03	1.2e+03	7.38e+06	2.83e+03	2.6e+03
34	13C-1,2,3,7,8,9-HxCDD	7.73e+06	1.30e+03	5.9e+03	6.11e+06	8.72e+02	7.0e+03
35	37Cl-2,3,7,8-TCDD	3.51e+06	1.64e+03	2.1e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.668e{+}03 + 1.796e{+}03) \times 2000}{(2.184e{+}06 + 2.721e{+}06) \times (\quad) \times 1.085} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0082

Entry: 36 Totals Name: Total Tetra-Furans

Run: 13 File: P519690 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 14:45:25 Processed: 30-DEC-18 08:03:01

Mass: 303.9020 305.8990 Tot Response: 9.10e+05 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:54	1.80e+03	2.41e+03	0.75	yes	4.21e+03		n	n
2	23:11	1.01e+04	1.36e+04	0.74	yes	2.36e+04		n	n
3	23:34	3.14e+03	4.19e+03	0.75	yes	7.34e+03		n	n
4	23:42	3.36e+02	4.71e+02	0.71	yes	8.07e+02		n	n
5	23:51	8.18e+03	1.13e+04	0.72	yes	1.95e+04		n	n
6	24:14	1.77e+03	2.66e+03	0.67	yes	4.43e+03		n	n
7	24:29	5.42e+03	7.68e+03	0.71	yes	1.31e+04		n	n
8	24:36	1.02e+04	1.37e+04	0.74	yes	2.38e+04		n	n
9	25:06	9.43e+04	1.25e+05	0.75	yes	2.19e+05		n	n
10	25:25	4.23e+03	5.88e+03	0.72	yes	1.01e+04		n	n
11	26:06	2.19e+05	2.88e+05	0.76	yes	5.07e+05	2,3,7,8-TCDF	n	n
12	26:31	1.46e+04	2.00e+04	0.73	yes	3.46e+04		n	n
13	26:48	2.31e+03	3.08e+03	0.75	yes	5.40e+03		n	n
14	28:16	1.57e+04	2.12e+04	0.74	yes	3.69e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0082

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 13 File: P519690 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 14:45:25 Processed: 30-DEC-18 08:03:01

Mass: 319.8970 321.8940 Tot Response: 1.48e+05 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:45	2.87e+02	3.36e+02	0.85	yes	6.23e+02		n n
2	26:45	9.00e+02	1.06e+03	0.85	yes	1.96e+03		n n
3	27:04	5.86e+04	7.52e+04	0.78	yes	1.34e+05	2,3,7,8-TCDD	n n
4	27:25	5.03e+03	6.62e+03	0.76	yes	1.16e+04		n n
5	27:33	1.63e+02	1.88e+02	0.87	yes	3.51e+02		n n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0082

Entry: 38 Totals Name: Total Penta-Furans1

Run: 13 File: P519690 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 14:45:25 Processed: 30-DEC-18 08:03:01

Mass: 339.8600 341.8570 Tot Response: 4.09e+02 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:17	2.52e+02	1.57e+02 1.60	yes	4.09e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0082

Entry: 39 Totals Name: Total Penta-Furans2

Run: 13 File: P519690 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 14:45:25 Processed: 30-DEC-18 08:03:01

Mass: 339.8600 341.8570 Tot Response: 4.86e+04 RRF: 0.9857

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:57	4.84e+03	3.28e+03	1.48	yes	8.11e+03		n	n
2	30:47	1.14e+03	8.10e+02	1.40	yes	1.95e+03		n	n
3	30:59	1.08e+04	7.10e+03	1.52	yes	1.79e+04	1,2,3,7,8-PeCDF	n	n
4	31:15	3.30e+03	2.34e+03	1.41	yes	5.64e+03		n	n
5	31:59	8.53e+03	5.83e+03	1.46	yes	1.44e+04	2,3,4,7,8-PeCDF	n	n
6	32:58	4.16e+02	2.75e+02	1.51	yes	6.91e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0082

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 13 File: P519690 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 14:45:25 Processed: 30-DEC-18 08:03:01

Mass: 355.8550 357.8520 Tot Response: 2.05e+03 RRF: 0.9565

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:00	1.19e+02	7.32e+01	1.63	yes	1.93e+02		n	n
2	31:01	1.42e+02	9.36e+01	1.52	yes	2.36e+02		n	n
3	31:18	6.16e+01	3.60e+01	1.71	yes	9.76e+01		n	n
4	31:52	1.86e+01	1.34e+01	1.39	yes	3.20e+01		n	n
5	32:18	9.22e+02	5.66e+02	1.63	yes	1.49e+03	1,2,3,7,8-PeCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0082

Entry: 41 Totals Name: Total Hexa-Furans

Run: 13 File: P519690 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 14:45:25 Processed: 30-DEC-18 08:03:01

Mass: 373.8210 375.8180 Tot Response: 4.11e+04 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:43	1.38e+02	1.28e+02	1.08	yes	2.66e+02		n	n
2	33:53	1.07e+03	9.20e+02	1.16	yes	1.99e+03		n	n
3	34:27	7.25e+02	5.17e+02	1.40	yes	1.24e+03		n	n
4	34:55	1.50e+04	1.23e+04	1.22	yes	2.73e+04	1,2,3,4,7,8-HxCDF	n	n
5	35:01	4.05e+03	3.15e+03	1.28	yes	7.21e+03	1,2,3,6,7,8-HxCDF	n	n
6	35:34	6.50e+02	5.42e+02	1.20	yes	1.19e+03	2,3,4,6,7,8-HxCDF	n	n
7	36:25	9.75e+02	9.25e+02	1.05	yes	1.90e+03	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0082

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 13 File: P519690 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 14:45:25 Processed: 30-DEC-18 08:03:01

Mass: 389.8160 391.8130 Tot Response: 5.05e+03 RRF: 1.047

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:17	1.76e+03	1.33e+03 1.33	yes	3.09e+03		n	n
2	35:05	7.04e+02	6.22e+02 1.13	yes	1.33e+03		n	n
3	35:43	2.88e+01	2.26e+01 1.28	yes	5.14e+01	1,2,3,4,7,8-HxCDD	n	n
4	35:50	1.59e+02	1.17e+02 1.36	yes	2.76e+02	1,2,3,6,7,8-HxCDD	n	n
5	36:04	1.71e+02	1.32e+02 1.29	yes	3.03e+02	1,2,3,7,8,9-HxCDD	n	n

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

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Peak List Summary

CLIENT ID.
SL0082

Entry: 43 Totals Name: Total Hepta-Furans

Run: 13 File: P519690 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 14:45:25 Processed: 30-DEC-18 08:03:01

Mass: 407.7820 409.7790 Tot Response: 1.39e+04 RRF: 1.308

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:46	3.96e+03	3.99e+03	0.99	yes	7.95e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	38:13	1.71e+03	1.74e+03	0.98	yes	3.46e+03		n	n
3	39:14	1.22e+03	1.23e+03	1.00	yes	2.45e+03	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0082

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 13 File: P519690 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 14:45:25 Processed: 30-DEC-18 08:03:01

Mass: 423.7770 425.7740 Tot Response: 2.32e+04 RRF: 1.025

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:05	6.49e+03	6.17e+03 1.05	yes	1.27e+04		n	n
2	38:47	5.28e+03	5.21e+03 1.01	yes	1.05e+04	1,2,3,4,6,7,8-HpCDD	n	n

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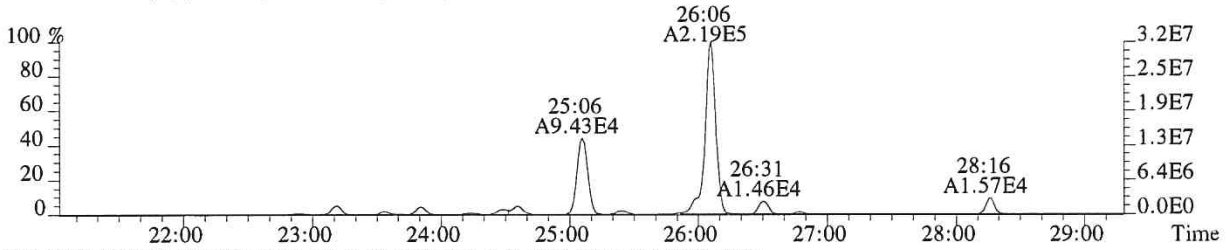
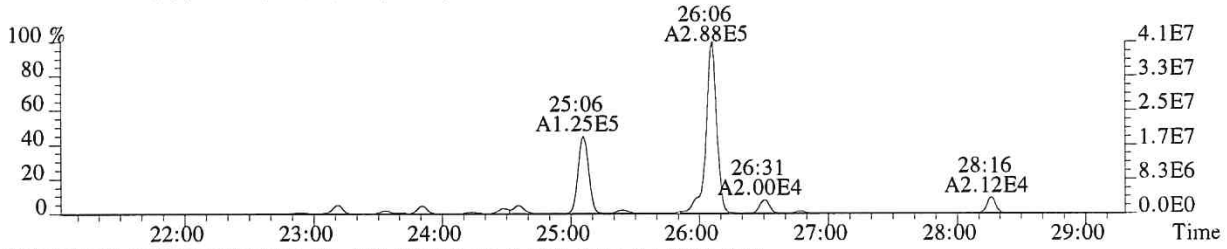
File:P519690 #1-587 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004

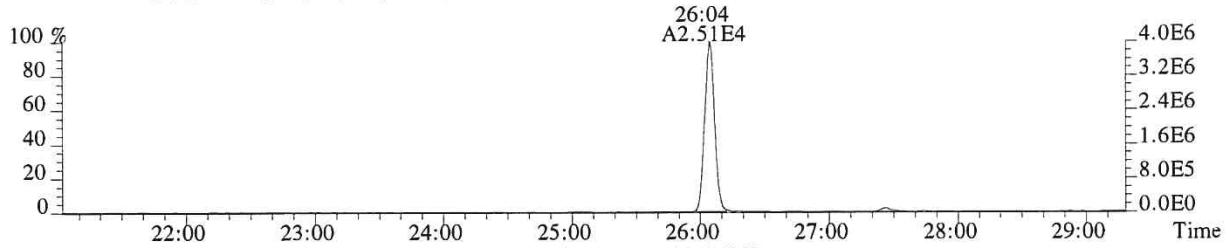
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,848.0,1.00%,F,T)



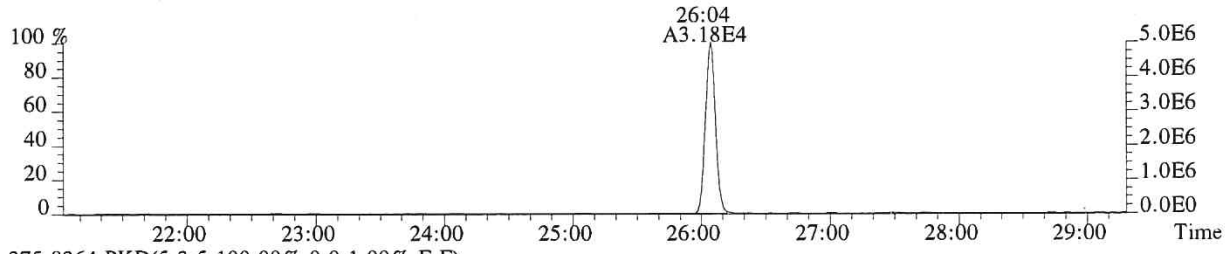
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1872.0,1.00%,F,T)



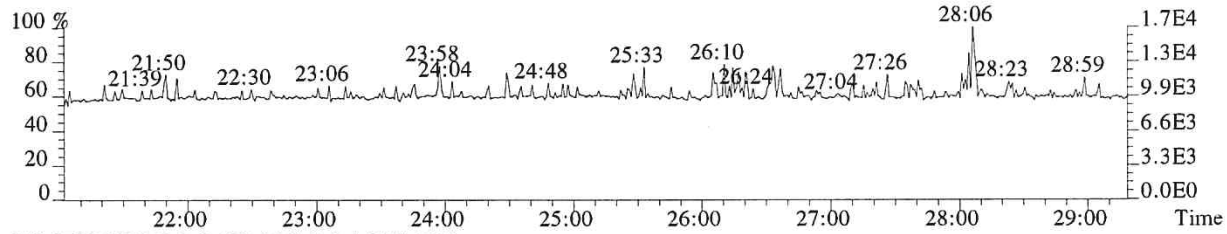
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8336.0,1.00%,F,T)



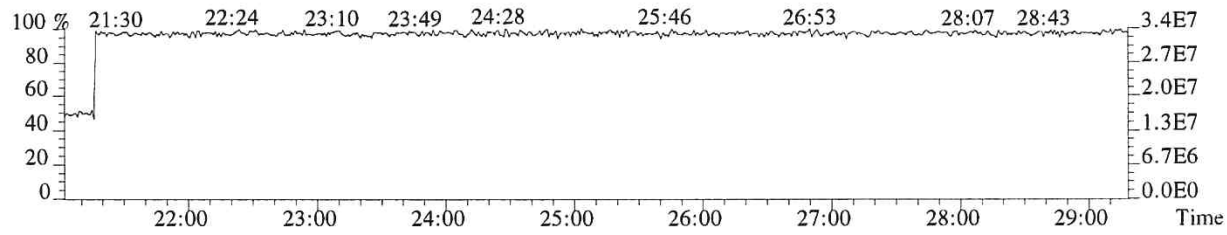
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6564.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

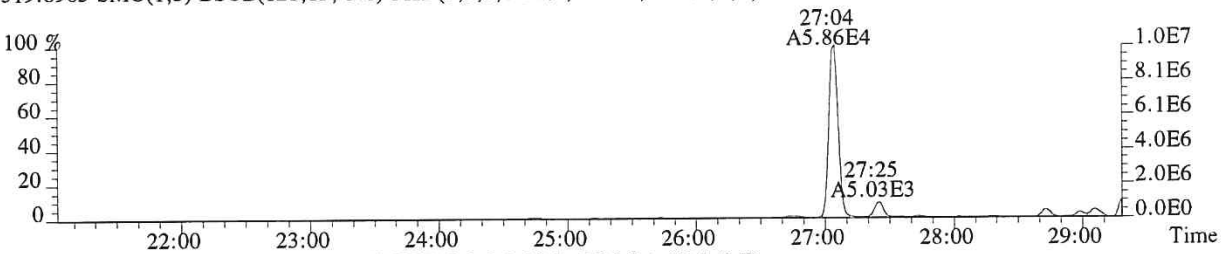


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

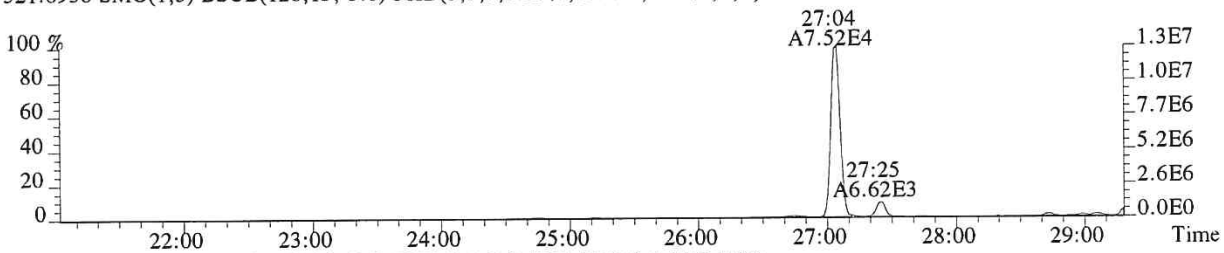


060005

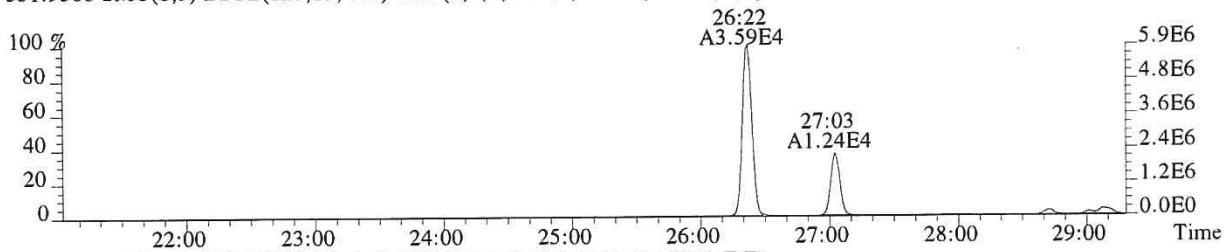
File:P519690 #1-587 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2668.0,1.00%,F,T)



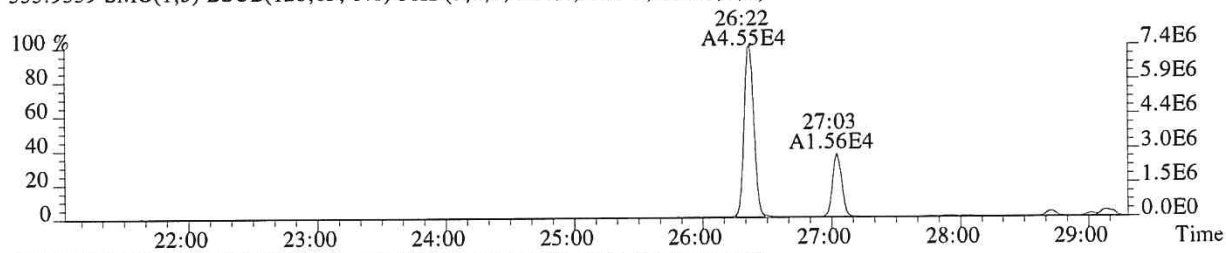
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1796.0,1.00%,F,T)



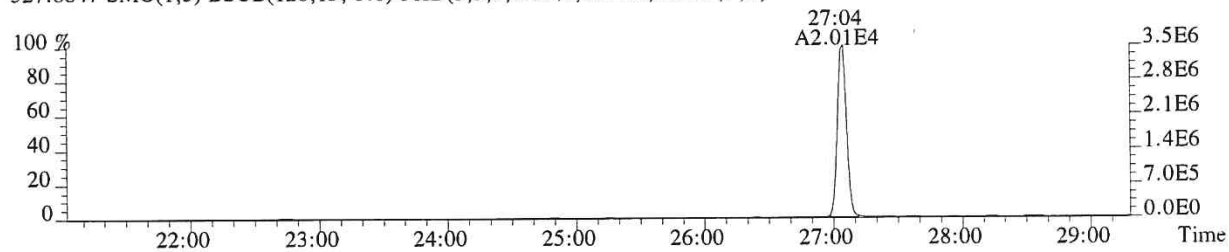
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5052.0,1.00%,F,T)



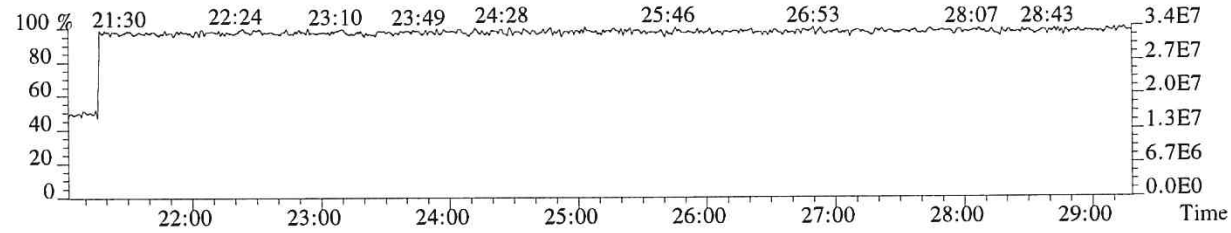
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2832.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1644.0,1.00%,F,T)

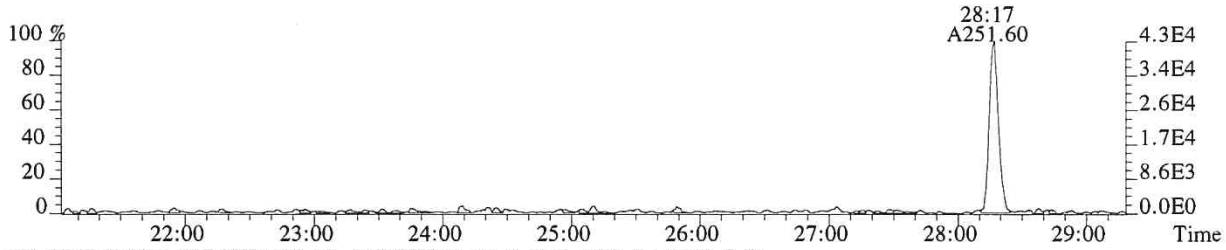


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

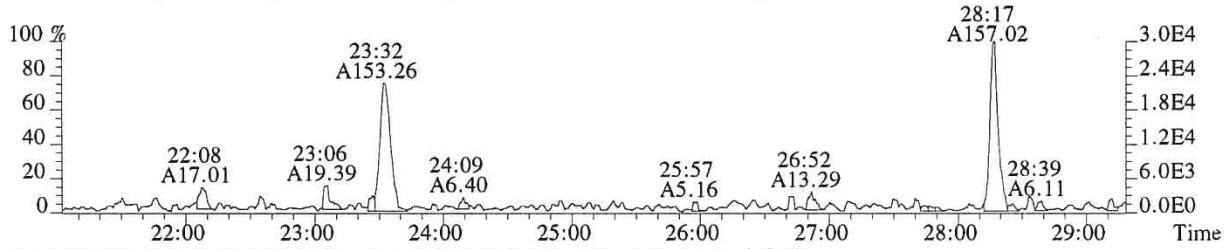


060006

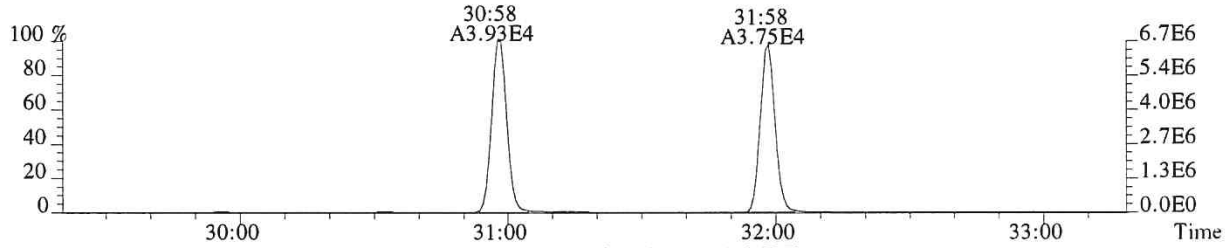
File:P519690 #1-587 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,496.0,1.00%,F,T)



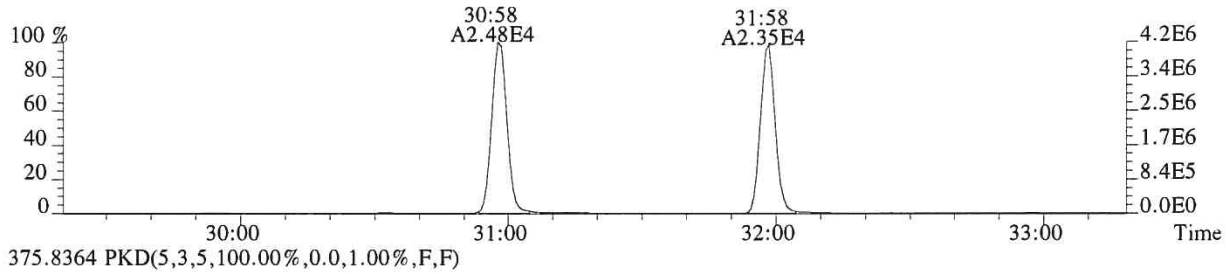
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1092.0,1.00%,F,T)



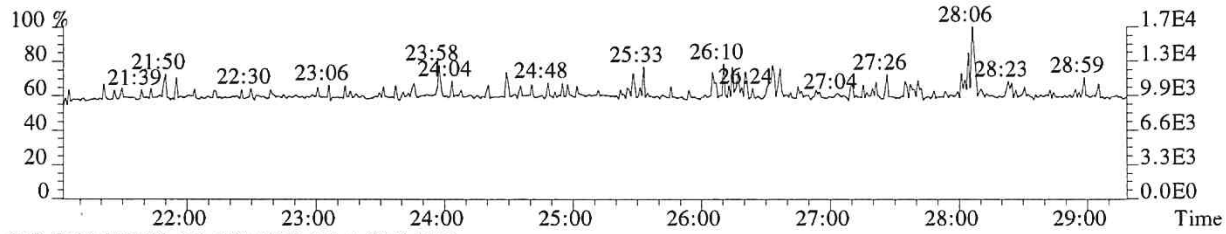
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2084.0,1.00%,F,T)



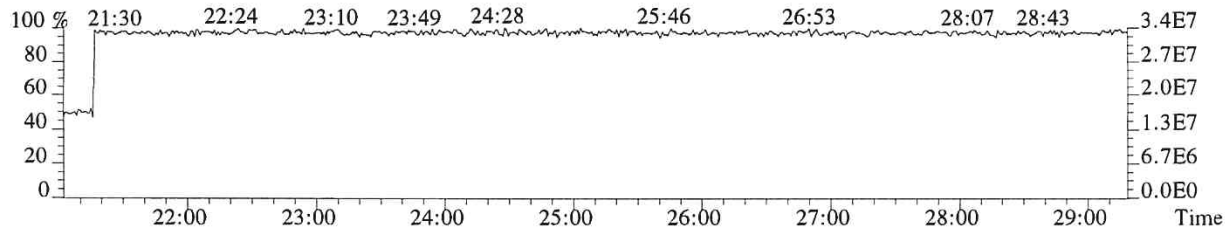
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1464.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

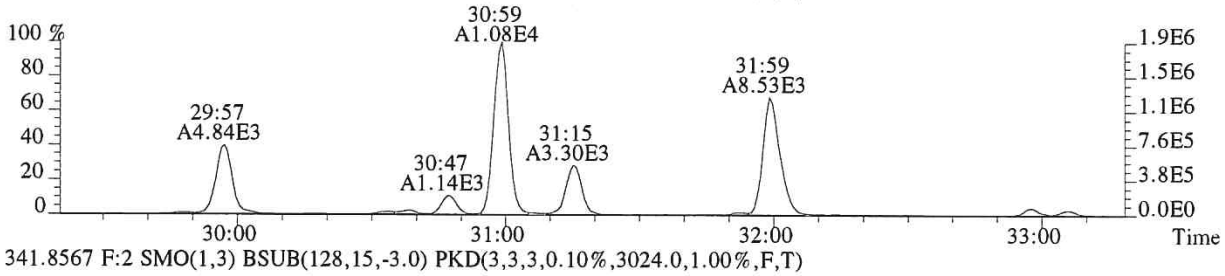


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

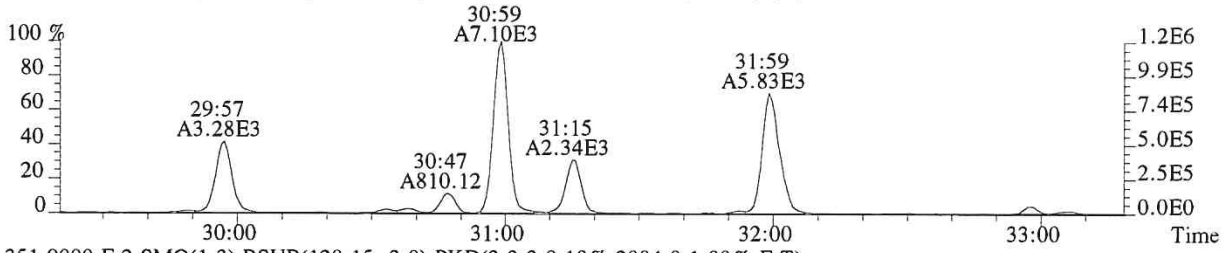


060007

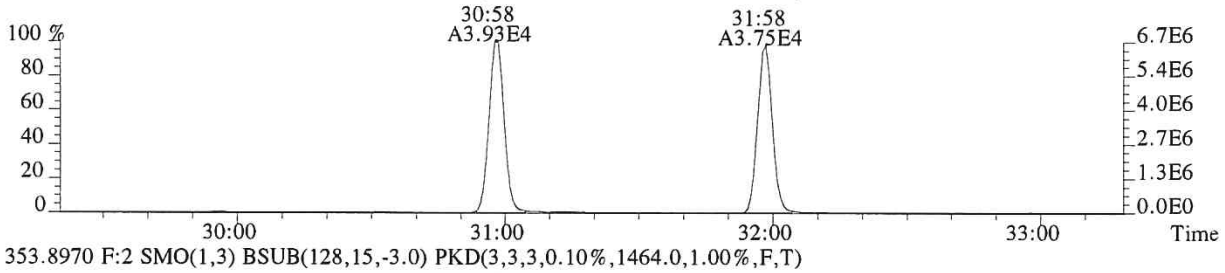
File:P519690 #1-358 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2976.0,1.00%,F,T)



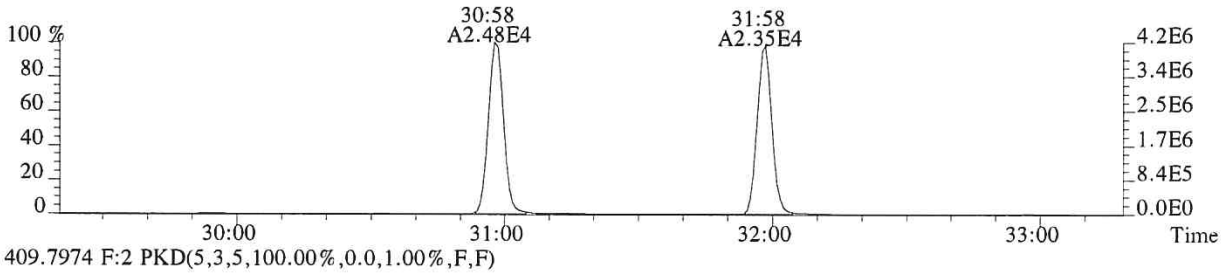
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3024.0,1.00%,F,T)



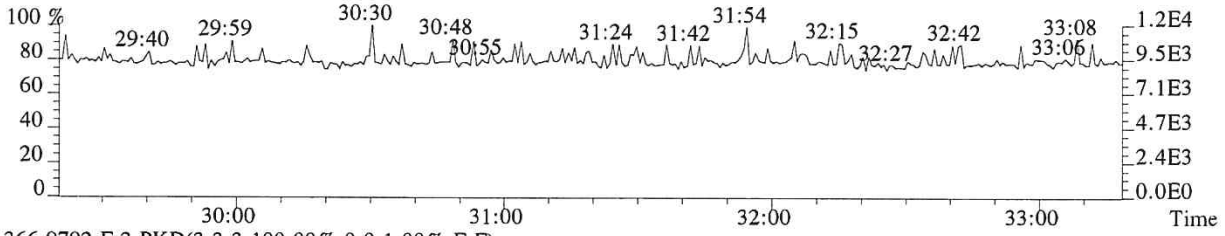
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2084.0,1.00%,F,T)



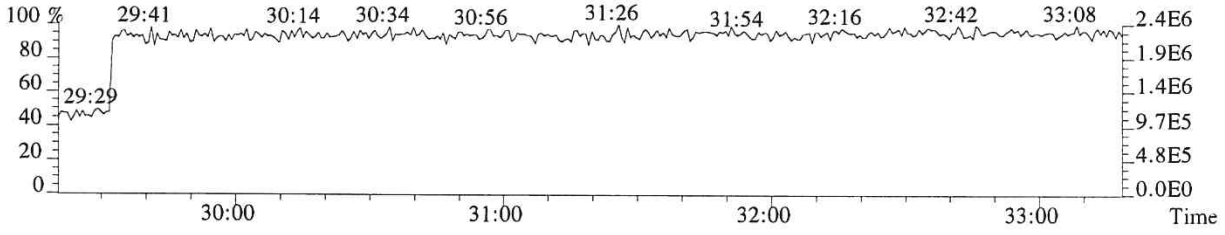
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1464.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

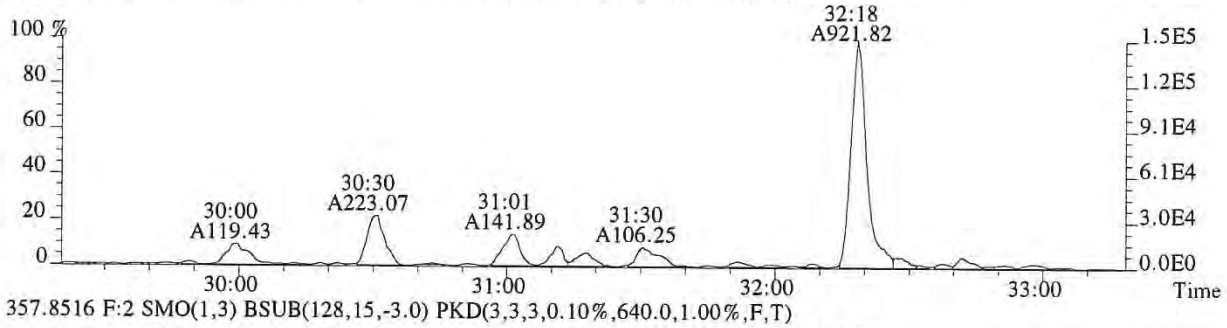


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

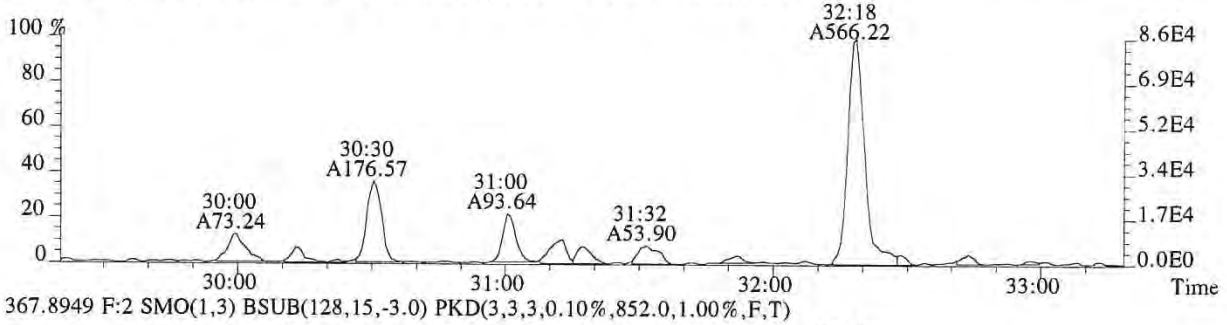


060008

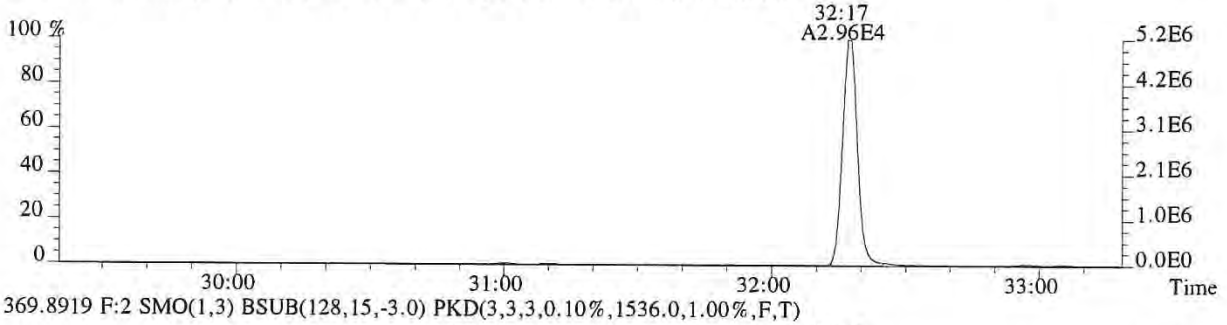
File:P519690 #1-358 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



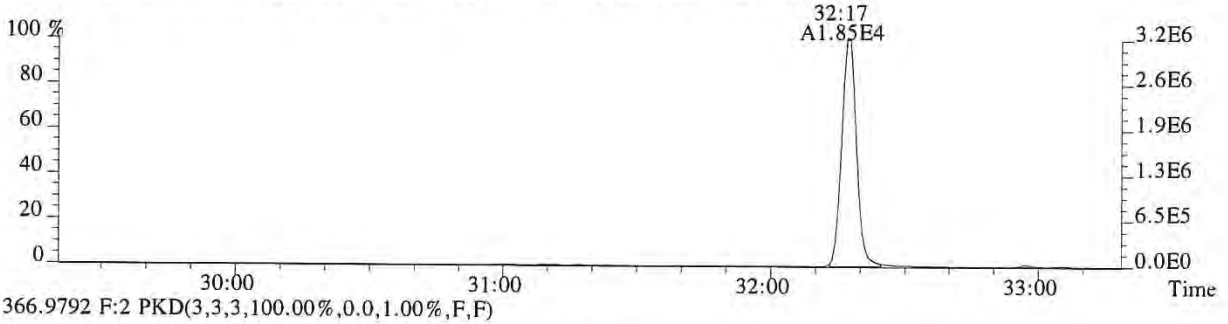
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,640.0,1.00%,F,T)



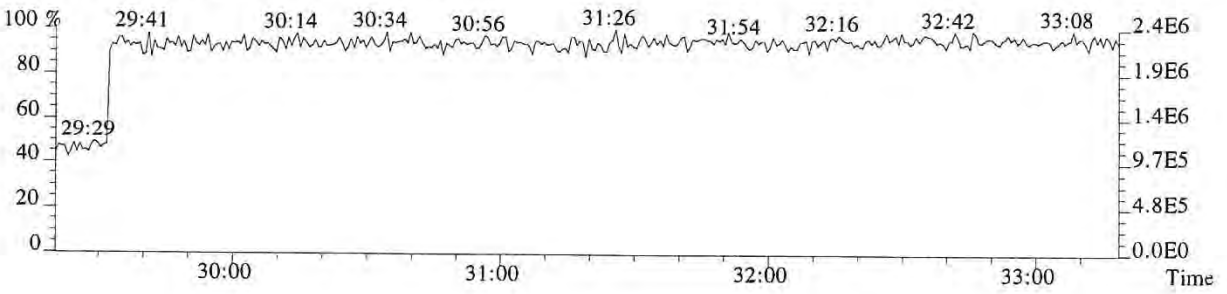
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,852.0,1.00%,F,T)



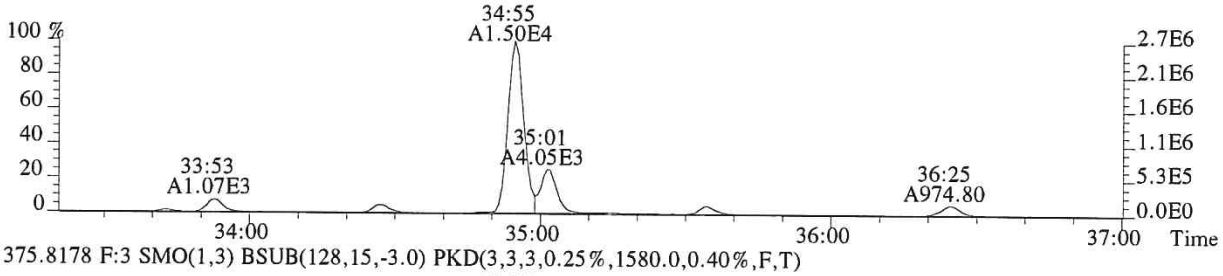
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1536.0,1.00%,F,T)



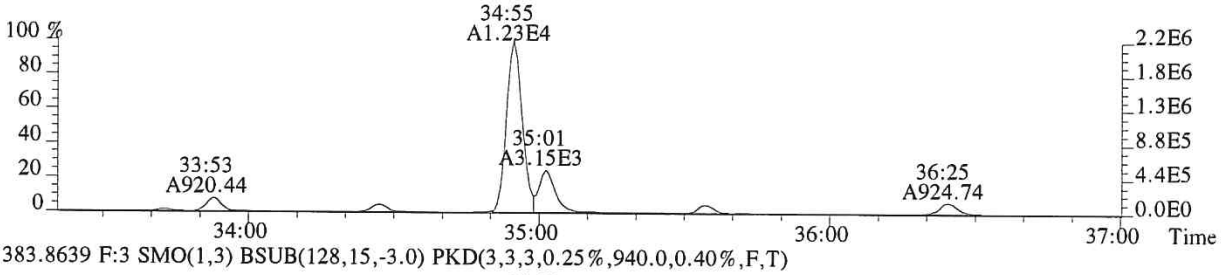
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



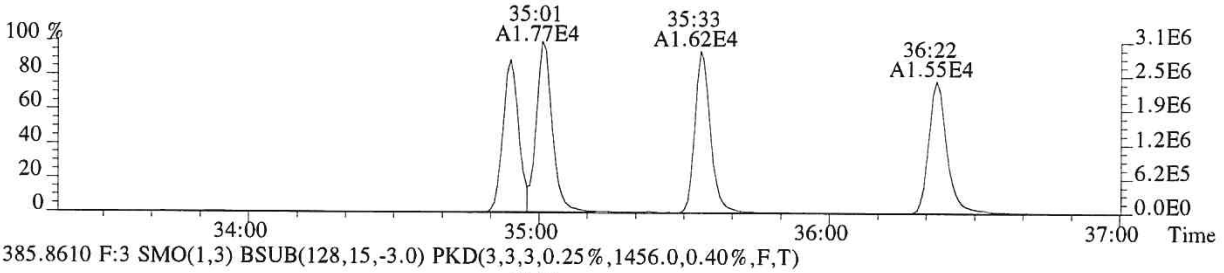
File:P519690 #1-330 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1160.0,0.40%,F,T)



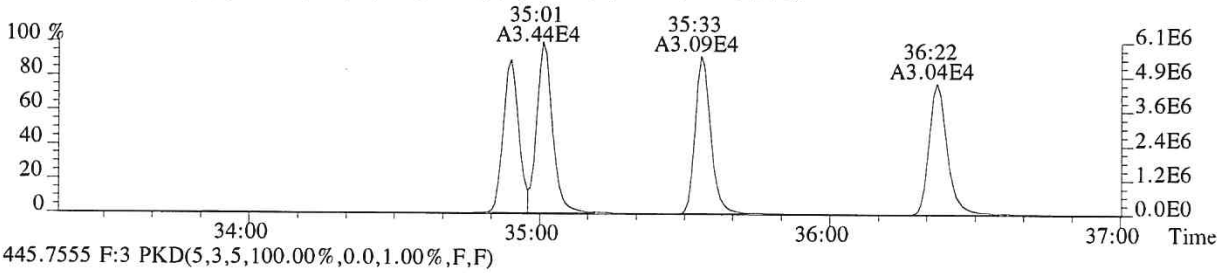
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1580.0,0.40%,F,T)



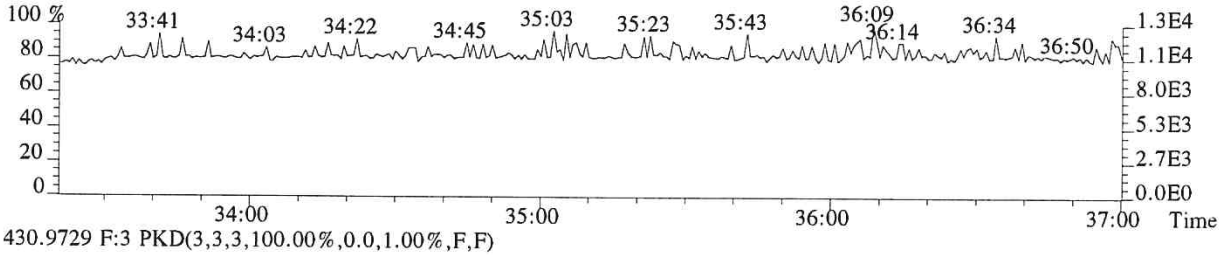
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,940.0,0.40%,F,T)



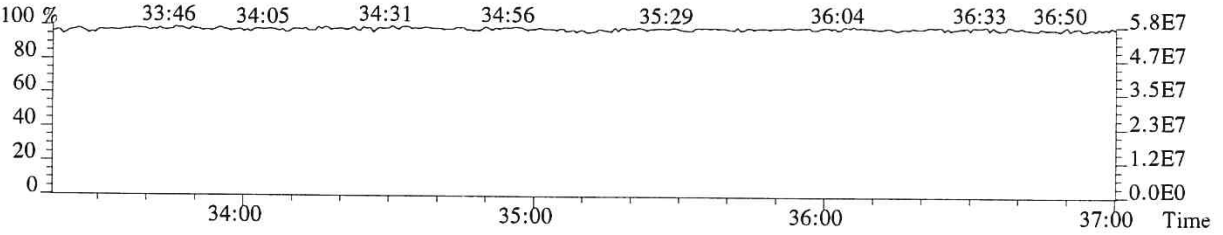
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1456.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

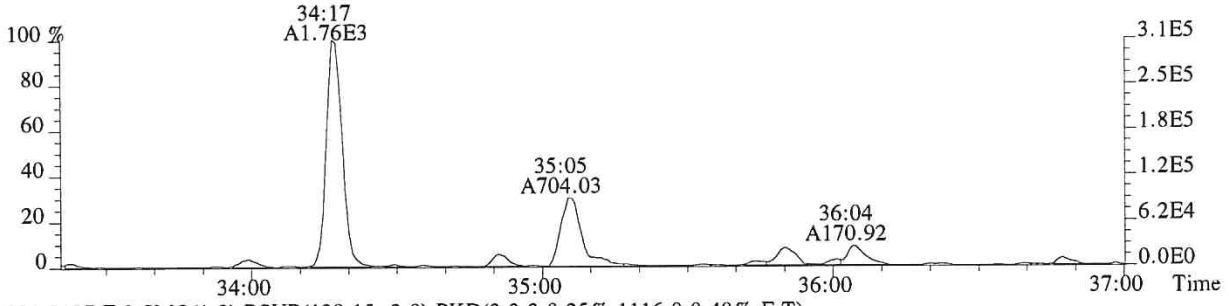


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

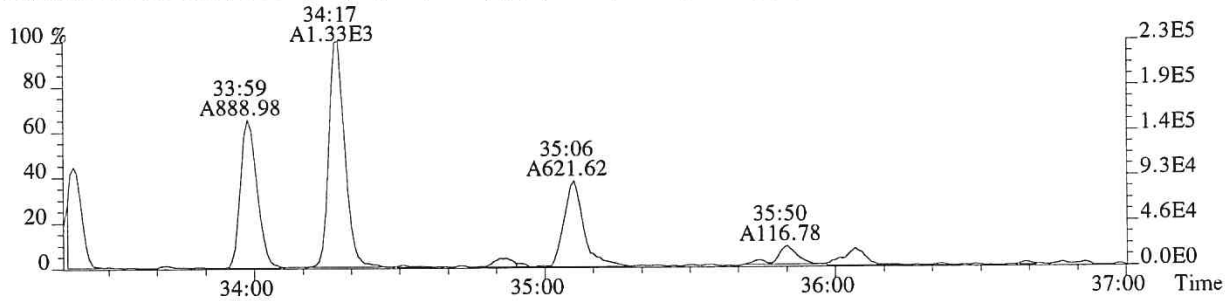


060010

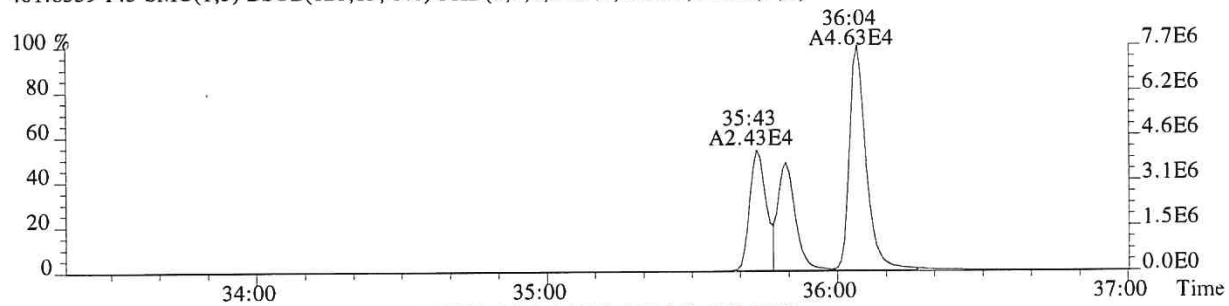
File:P519690 #1-330 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1140.0,0.40%,F,T)



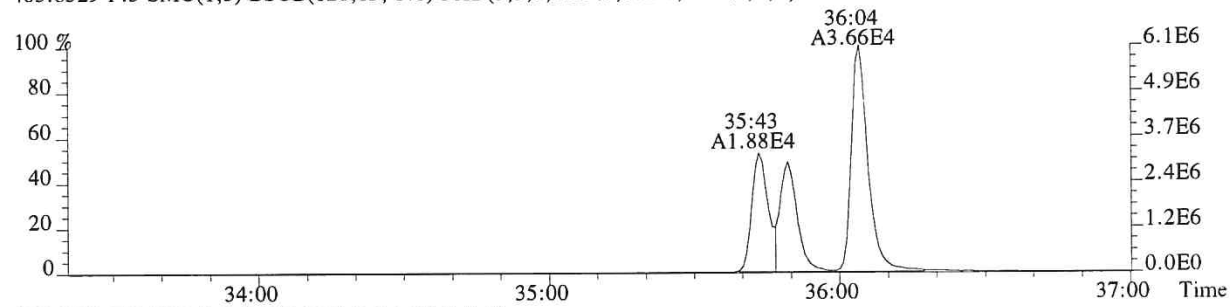
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1116.0,0.40%,F,T)



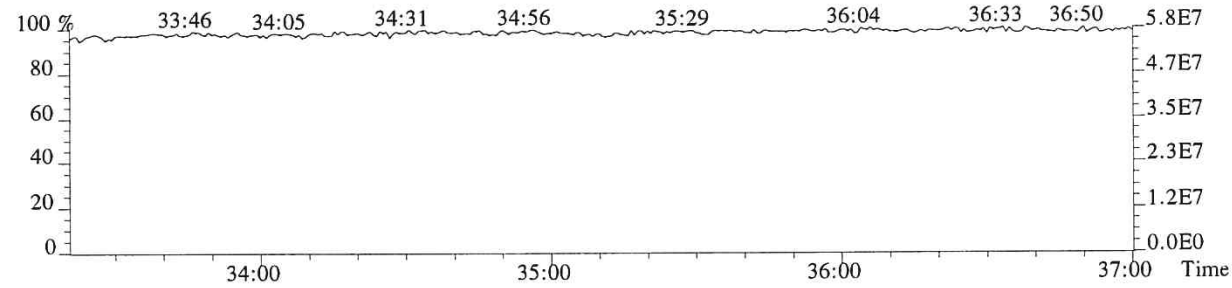
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1304.0,0.40%,F,T)



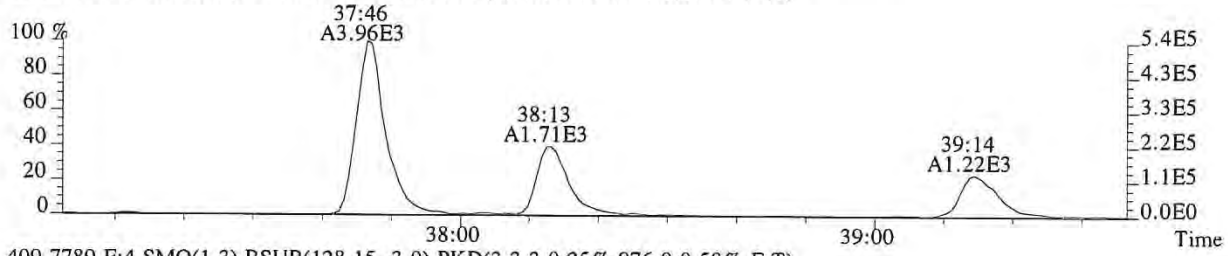
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,872.0,0.40%,F,T)



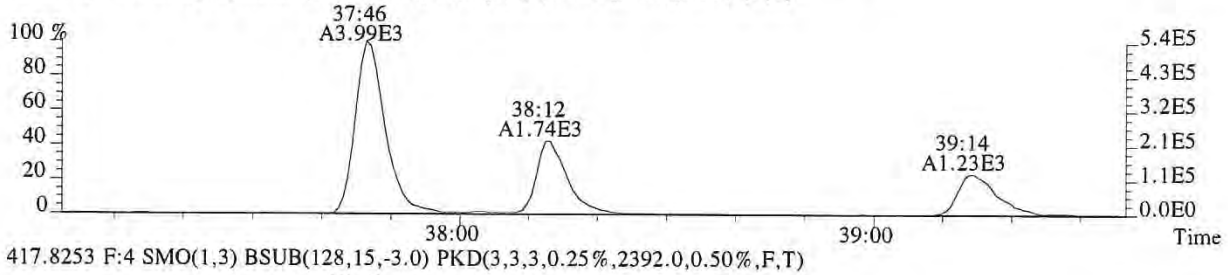
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



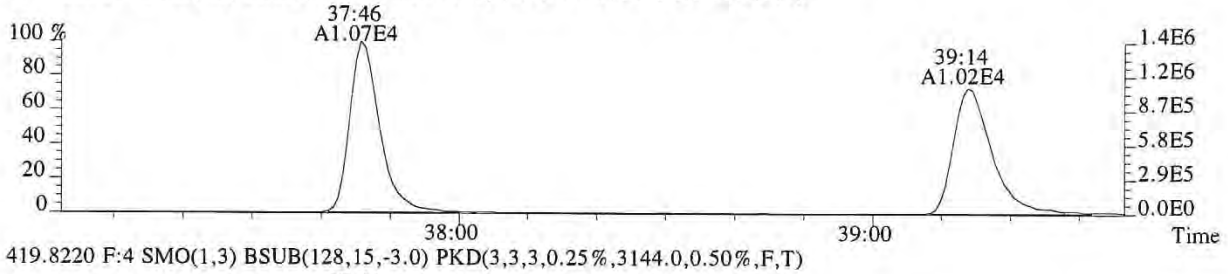
File:P519690 #1-232 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,720.0,0.50%,F,T)



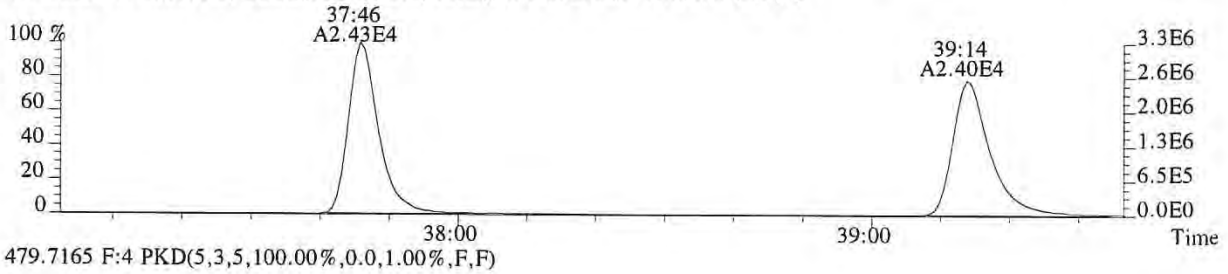
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,976.0,0.50%,F,T)



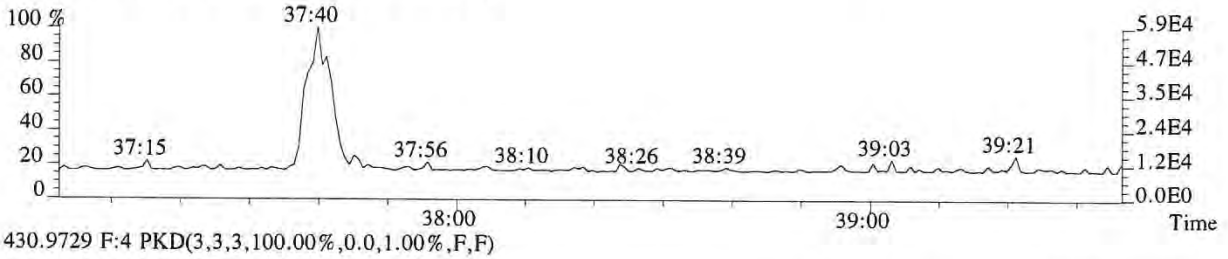
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2392.0,0.50%,F,T)



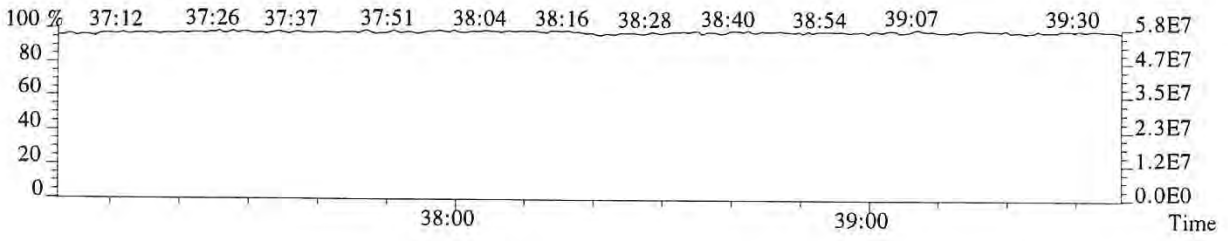
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3144.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

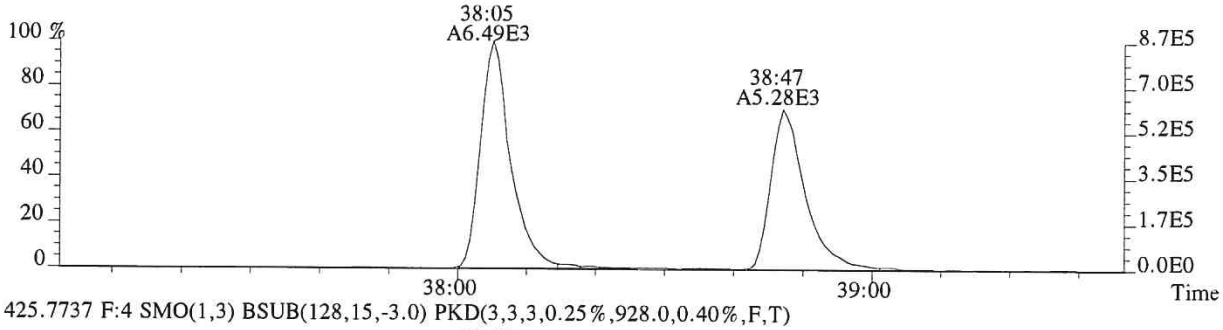


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

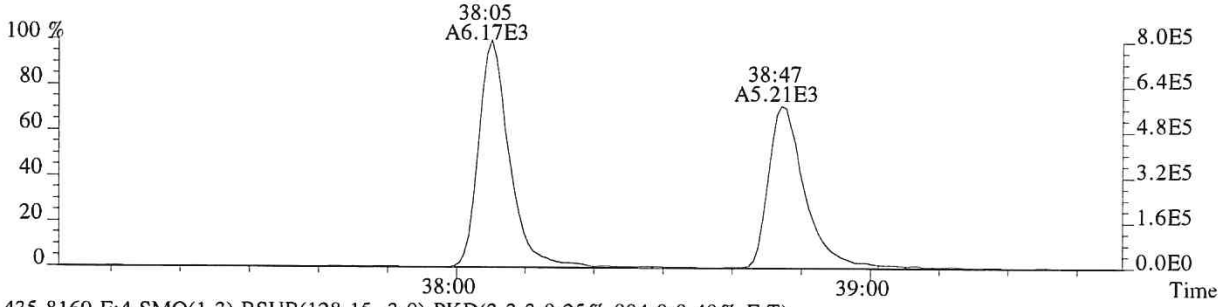


060012

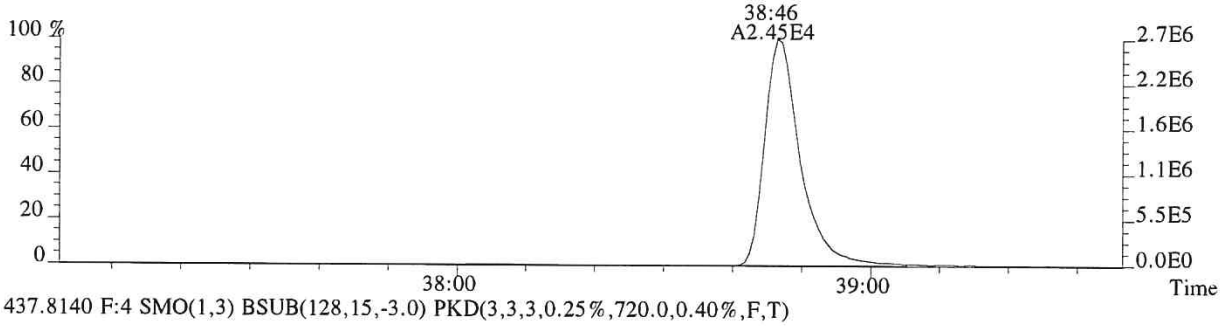
File:P519690 #1-232 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,476.0,0.40%,F,T)



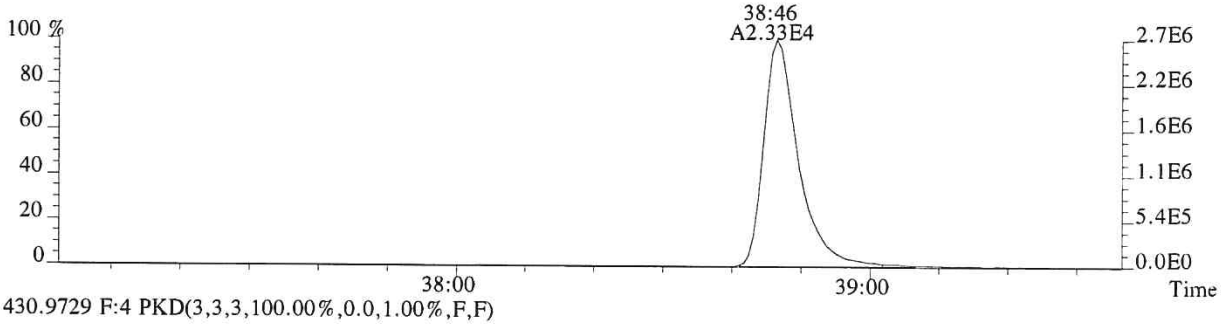
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,928.0,0.40%,F,T)



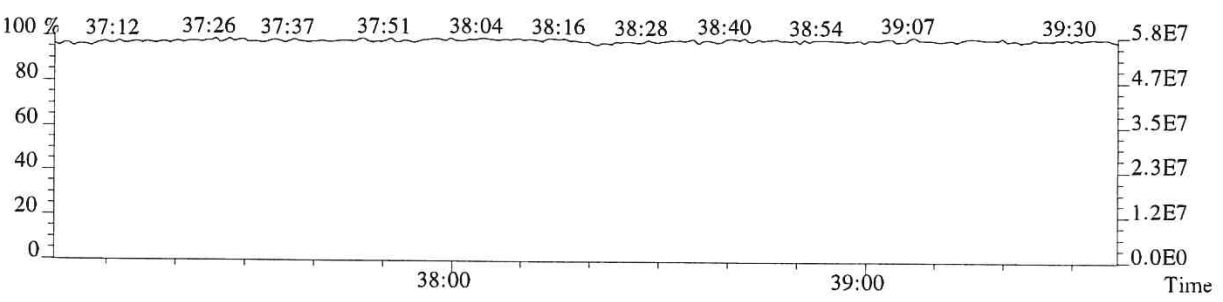
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,804.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,720.0,0.40%,F,T)

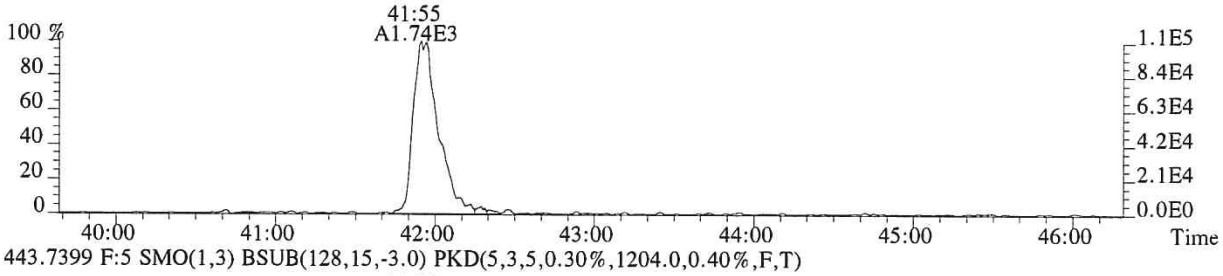


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

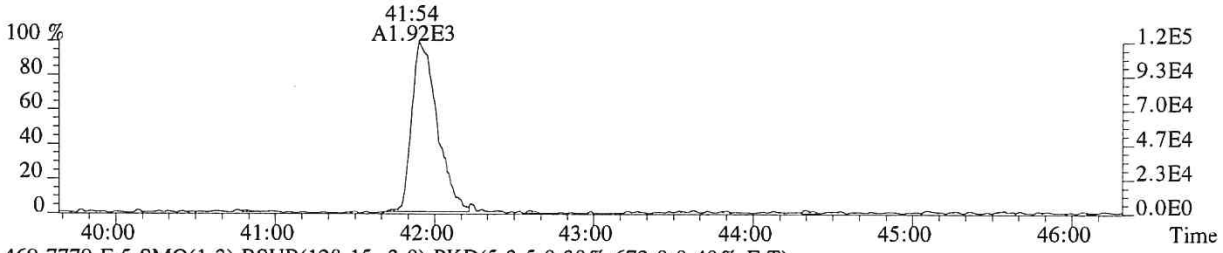


060013

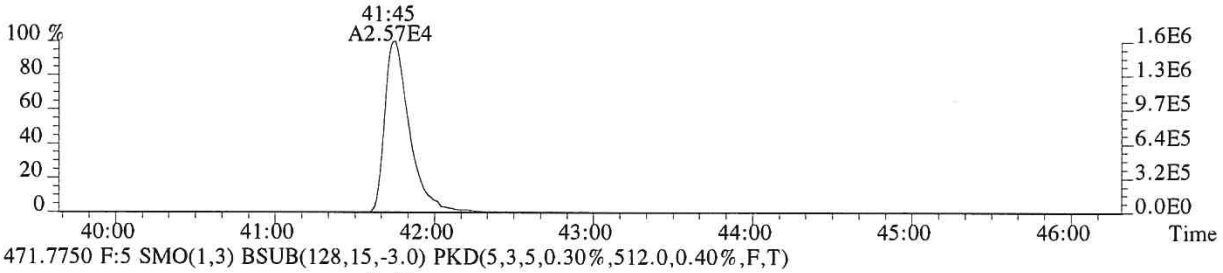
File:P519690 #1-601 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,440.0,0.40%,F,T)



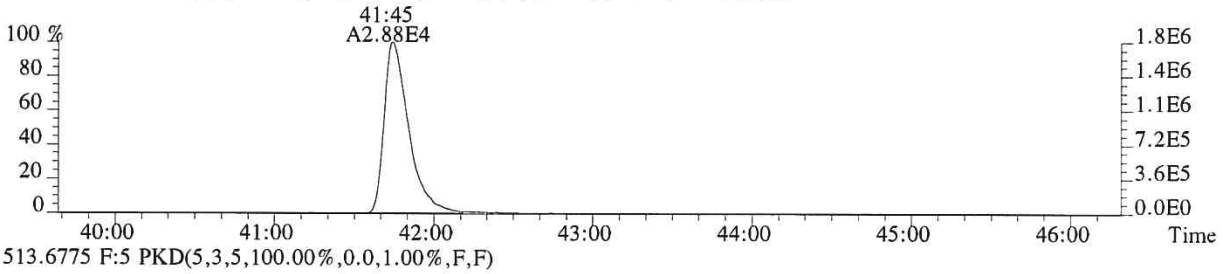
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1204.0,0.40%,F,T)



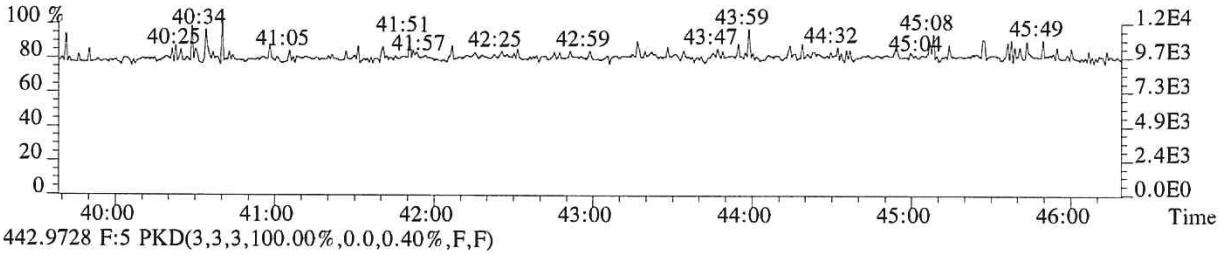
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,672.0,0.40%,F,T)



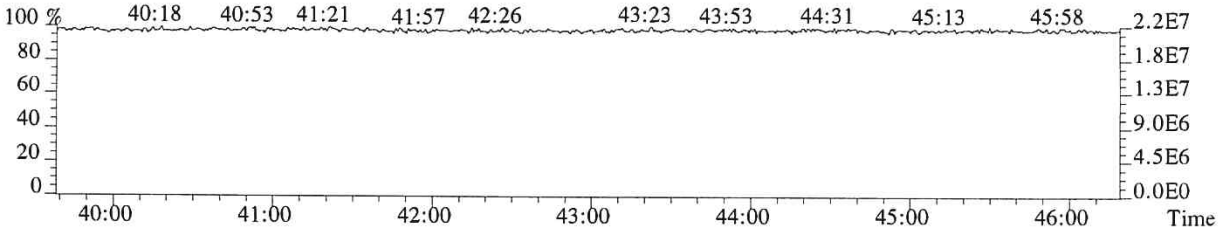
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,512.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

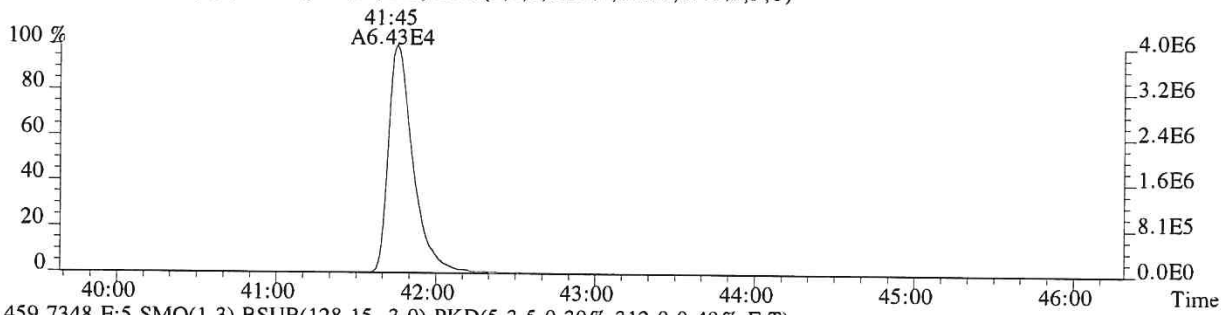


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

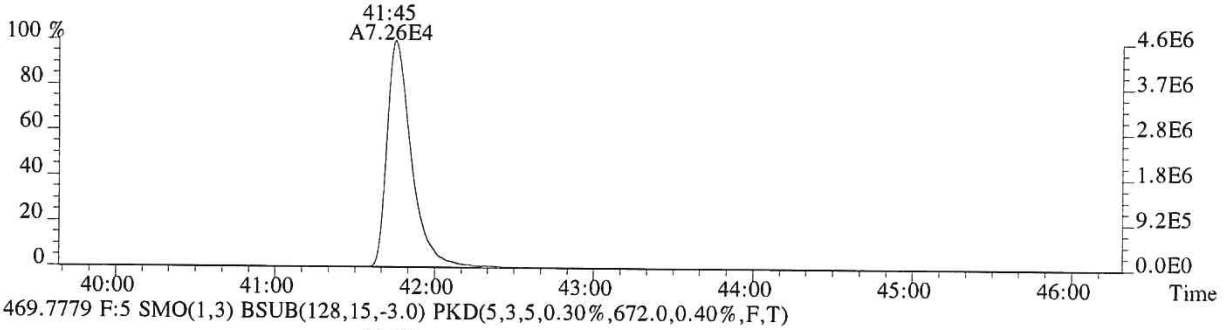


060014

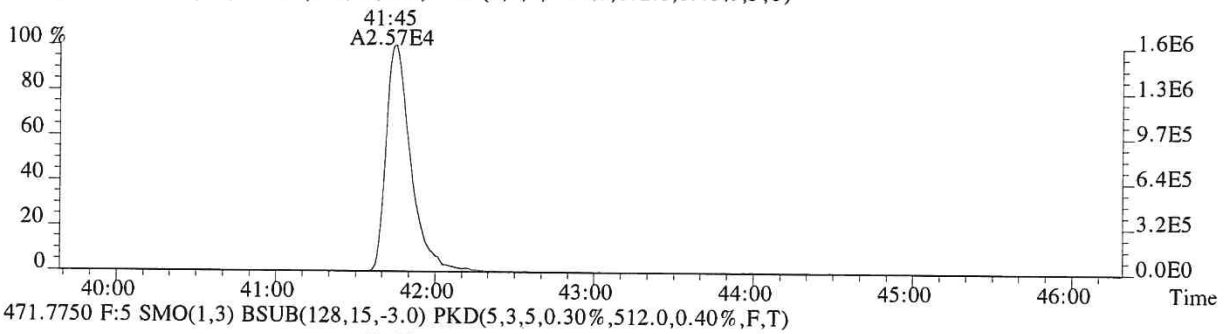
File:P519690 #1-601 Acq:29-DEC-2018 14:45:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,620.0,0.40%,F,T)



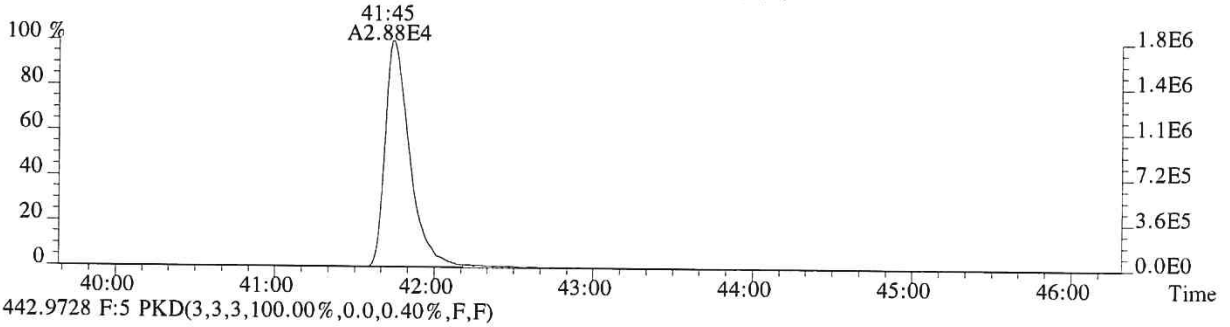
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,312.0,0.40%,F,T)



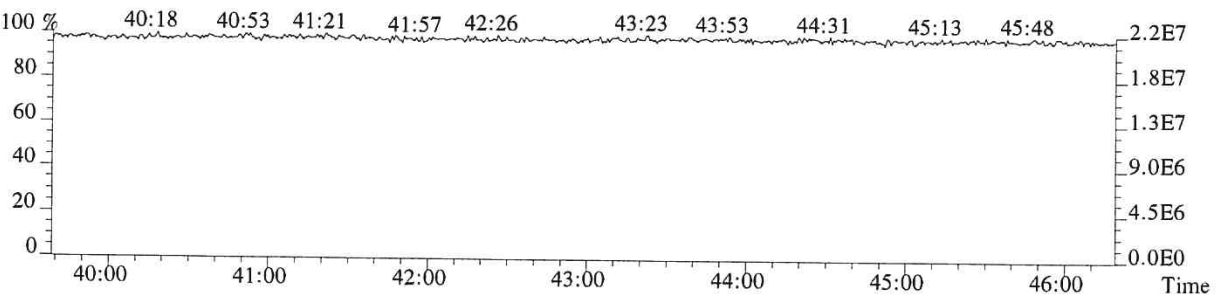
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,672.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,512.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060015

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0082

Run #15 Filename P519719 Samp: 1 Inj: 1 Acquired: 30-DEC-18 15:06:31
Processed: 31-DEC-18 09:55:21 Sample ID: E1801136-004DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:05	1.176e+04	1.619e+04	0.73	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	5.659e+02	3.744e+02	1.51	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	31:59	4.689e+02	2.886e+02	1.62	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	7.987e+02	6.417e+02	1.24	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:01	2.135e+02	2.016e+02	1.06	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	2.104e+01	2.915e+01	0.72	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	4.834e+01	3.861e+01	1.25	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:47	2.471e+02	1.853e+02	1.33	no	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:16	5.382e+01	3.167e+01	1.70	no	no	1.258
10	Unk	OCDF	41:57	9.009e+01	3.868e+01	2.33	no	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	3.121e+03	3.931e+03	0.79	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:18	4.909e+01	2.171e+01	2.26	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	yes	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:48	2.445e+02	2.667e+02	0.92	yes	no	1.025
17	Unk	OCDD	41:45	3.206e+03	3.764e+03	0.85	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	2.247e+04	2.858e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	3.199e+04	2.035e+04	1.57	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	3.019e+04	1.924e+04	1.57	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:54	1.221e+04	2.363e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.532e+04	2.932e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:34	1.363e+04	2.736e+04	0.50	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:22	1.229e+04	2.377e+04	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:47	1.046e+04	2.336e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	8.982e+03	1.995e+04	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:02	1.098e+04	1.391e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.310e+04	1.473e+04	1.57	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:44	1.775e+04	1.412e+04	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	2.060e+04	1.581e+04	1.30	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:47	2.159e+04	2.048e+04	1.05	yes	no	0.858
32	IS	13C-OCDD	41:44	2.474e+04	2.736e+04	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	2.197e+04	2.791e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	2.669e+04	2.082e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	1.031e+03				no	1.014

$$\text{OCDD} = \frac{(3.206e+03 + 3.764e+03) \times 4000\ \text{pg} \times 10}{(2.474e+04 + 2.736e+04) \times 10.58\ \text{g} \times 79.7 / 100 \times 1.118} = 989.6811\ \text{ng/kg}$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0082

Run #15 Filename P519719 Samp: 1 Inj: 1 Acquired: 30-DEC-18 15:06:31
Processed: 31-DEC-18 09:55:21 LAB. ID: E1801136-004DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.64e+06	1.05e+03	1.6e+03	2.19e+06	2.13e+03	1.0e+03
2	1,2,3,7,8-PeCDF	9.16e+04	8.52e+02	1.1e+02	5.95e+04	2.30e+03	2.6e+01
3	2,3,4,7,8-PeCDF	6.76e+04	8.52e+02	7.9e+01	3.92e+04	2.30e+03	1.7e+01
4	1,2,3,4,7,8-HxCDF	1.32e+05	9.00e+02	1.5e+02	1.16e+05	8.80e+02	1.3e+02
5	1,2,3,6,7,8-HxCDF	3.59e+04	9.00e+02	4.0e+01	3.31e+04	8.80e+02	3.8e+01
6	2,3,4,6,7,8-HxCDF	3.55e+03	9.00e+02	3.9e+00	5.51e+03	8.80e+02	6.3e+00
7	1,2,3,7,8,9-HxCDF	8.33e+03	9.00e+02	9.3e+00	7.23e+03	8.80e+02	8.2e+00
8	1,2,3,4,6,7,8-HpCDF	3.01e+04	4.44e+02	6.8e+01	2.34e+04	5.60e+02	4.2e+01
9	1,2,3,4,7,8,9-HpCDF	6.56e+03	4.44e+02	1.5e+01	6.40e+03	5.60e+02	1.1e+01
10	OCDF	7.50e+03	5.00e+02	1.5e+01	7.95e+03	9.80e+02	8.1e+00
11	2,3,7,8-TCDD	4.98e+05	2.50e+03	2.0e+02	5.95e+05	1.28e+03	4.7e+02
12	1,2,3,7,8-PeCDD	8.33e+03	1.56e+03	5.3e+00	5.33e+03	5.68e+02	9.4e+00
13	1,2,3,4,7,8-HxCDD	*	6.00e+02	*	*	1.44e+03	*
14	1,2,3,6,7,8-HxCDD	*	6.00e+02	*	*	1.44e+03	*
15	1,2,3,7,8,9-HxCDD	*	6.00e+02	*	*	1.44e+03	*
16	1,2,3,4,6,7,8-HpCDD	3.22e+04	7.52e+02	4.3e+01	2.61e+04	6.32e+02	4.1e+01
17	OCDD	1.86e+05	4.44e+02	4.2e+02	2.13e+05	6.68e+02	3.2e+02
18	13C-2,3,7,8-TCDF	3.35e+06	1.13e+04	3.0e+02	4.31e+06	6.89e+03	6.3e+02
19	13C-1,2,3,7,8-PeCDF	5.19e+06	3.80e+02	1.4e+04	3.31e+06	8.16e+02	4.1e+03
20	13C-2,3,4,7,8-PeCDF	5.11e+06	3.80e+02	1.3e+04	3.28e+06	8.16e+02	4.0e+03
21	13C-1,2,3,4,7,8-HxCDF	2.13e+06	1.07e+03	2.0e+03	4.23e+06	1.41e+03	3.0e+03
22	13C-1,2,3,6,7,8-HxCDF	2.30e+06	1.07e+03	2.1e+03	4.52e+06	1.41e+03	3.2e+03
23	13C-2,3,4,6,7,8-HxCDF	2.19e+06	1.07e+03	2.0e+03	4.32e+06	1.41e+03	3.1e+03
24	13C-1,2,3,7,8,9-HxCDF	1.73e+06	1.07e+03	1.6e+03	3.27e+06	1.41e+03	2.3e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.28e+06	1.43e+03	9.0e+02	2.88e+06	3.89e+03	7.4e+02
26	13C-1,2,3,4,7,8,9-HpCDF	8.66e+05	1.43e+03	6.1e+02	1.87e+06	3.89e+03	4.8e+02
27	13C-2,3,7,8-TCDD	1.73e+06	7.40e+03	2.3e+02	2.18e+06	2.98e+03	7.3e+02
28	13C-1,2,3,7,8-PeCDD	3.88e+06	1.25e+03	3.1e+03	2.46e+06	1.77e+03	1.4e+03
29	13C-1,2,3,4,7,8-HxCDD	3.09e+06	1.59e+03	1.9e+03	2.40e+06	9.36e+02	2.6e+03
30	13C-1,2,3,6,7,8-HxCDD	3.00e+06	1.59e+03	1.9e+03	2.31e+06	9.36e+02	2.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.19e+06	7.76e+02	2.8e+03	2.04e+06	5.16e+02	3.9e+03
32	13C-OCDD	1.38e+06	1.09e+03	1.3e+03	1.57e+06	3.20e+02	4.9e+03
33	13C-1,2,3,4-TCDD	3.49e+06	7.40e+03	4.7e+02	4.55e+06	2.98e+03	1.5e+03
34	13C-1,2,3,7,8,9-HxCDD	3.78e+06	1.59e+03	2.4e+03	2.94e+06	9.36e+02	3.1e+03
35	37Cl-2,3,7,8-TCDD	1.69e+05	1.28e+03	1.3e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.500e{+}03 + 1.276e{+}03) \times 2000}{(1.727e{+}06 + 2.183e{+}06) \times (\quad) \times 1.085} =$$

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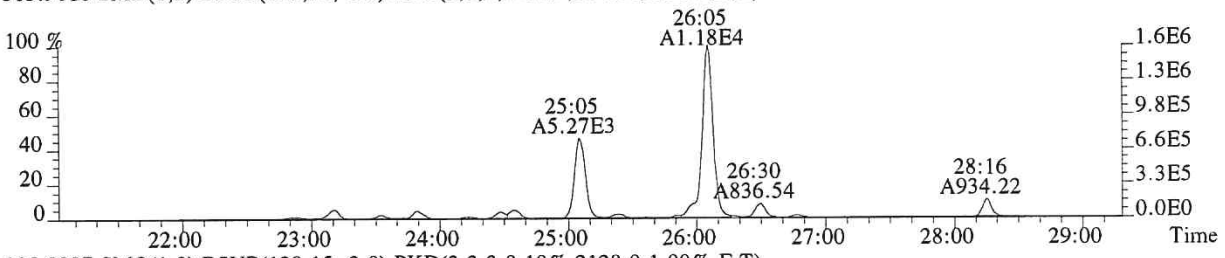
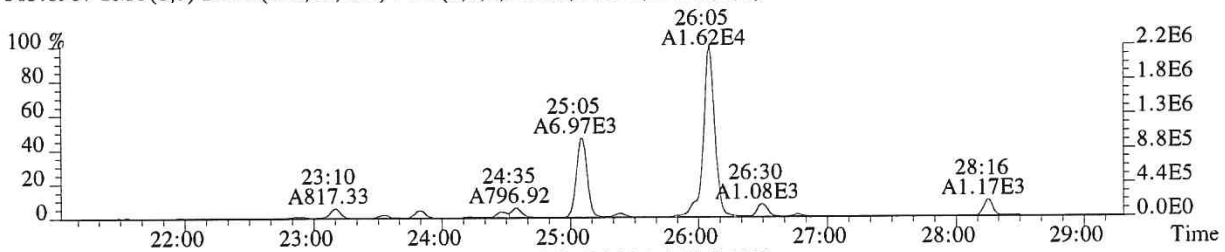
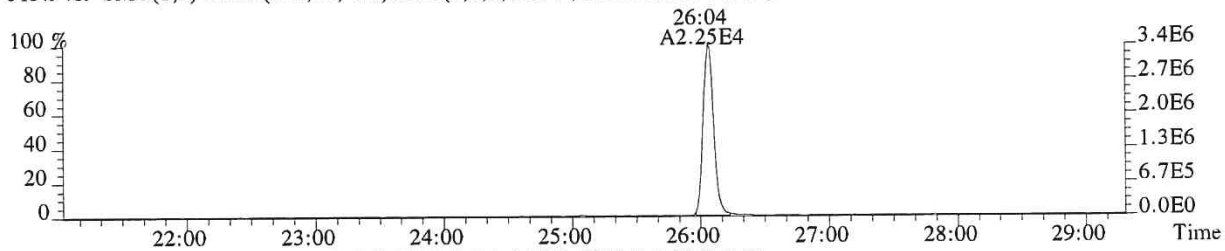
File:P519719 #1-587 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,T)



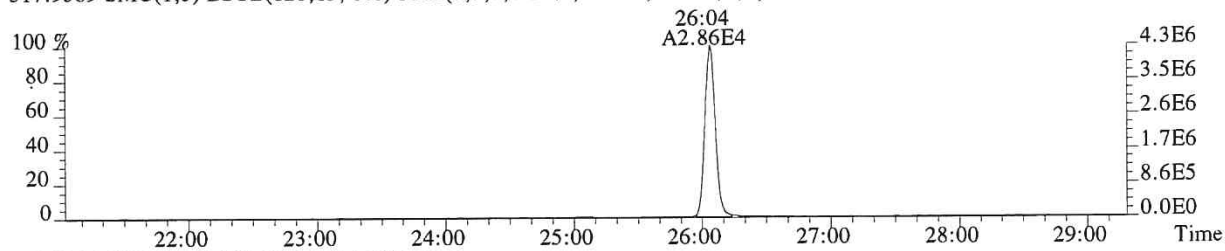
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2128.0,1.00%,F,T)



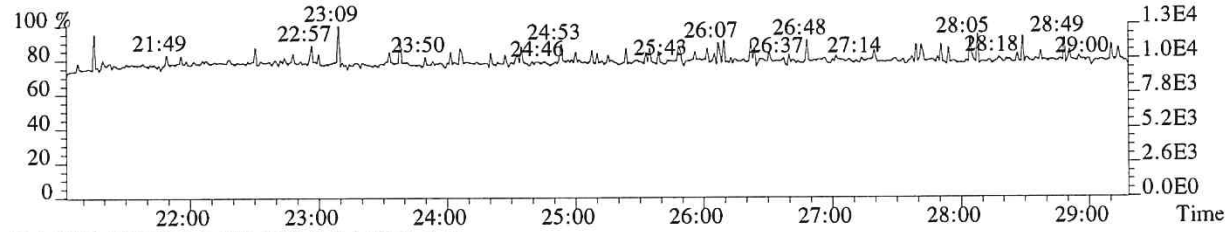
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11264.0,1.00%,F,T)



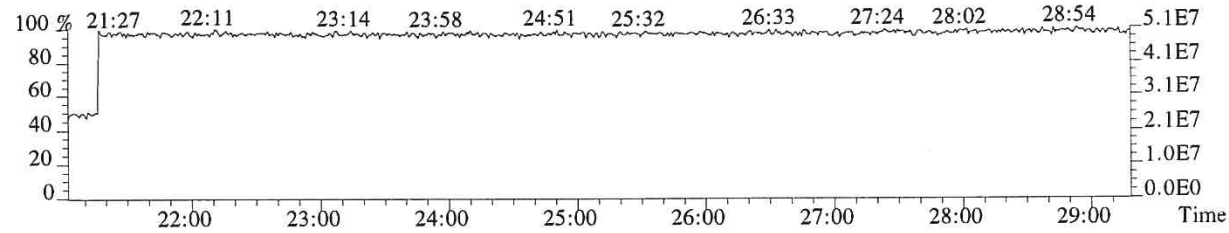
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6888.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

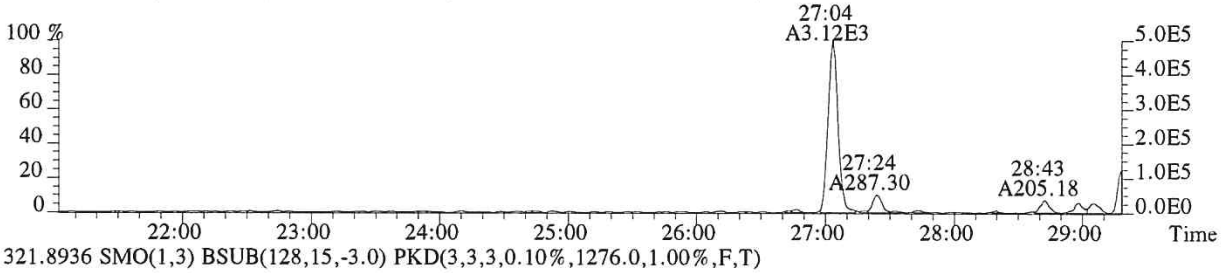


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

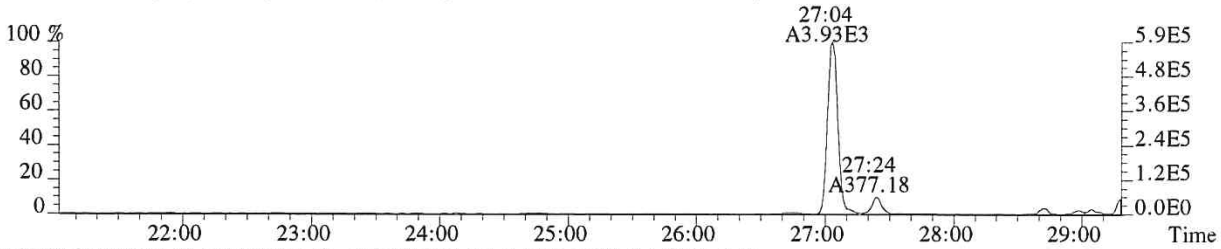


060018

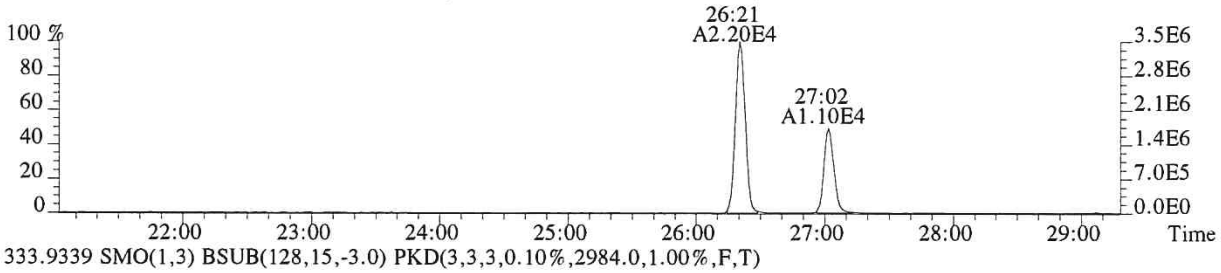
File:P519719 #1-587 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2500.0,1.00%,F,T)



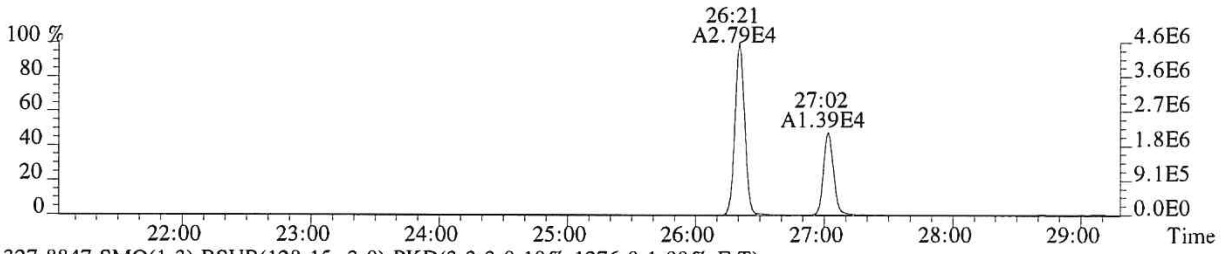
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1276.0,1.00%,F,T)



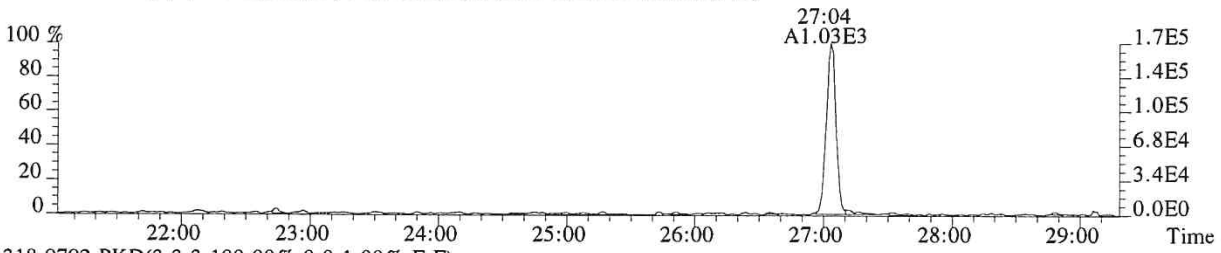
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7404.0,1.00%,F,T)



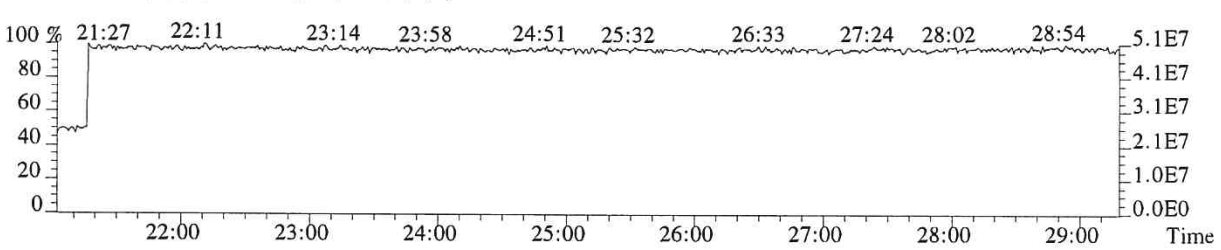
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2984.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1276.0,1.00%,F,T)

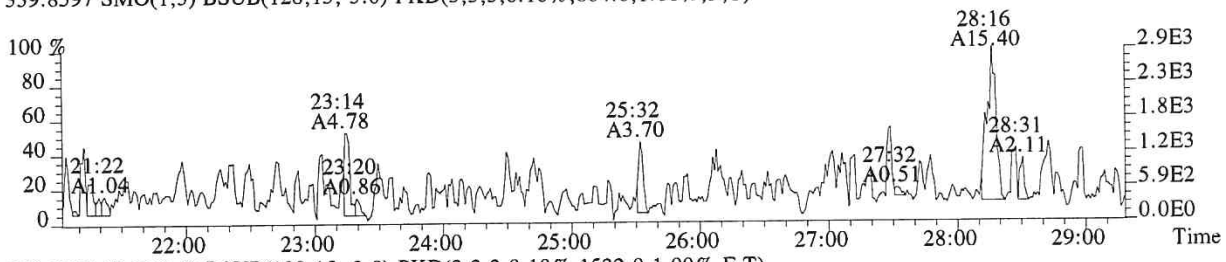


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

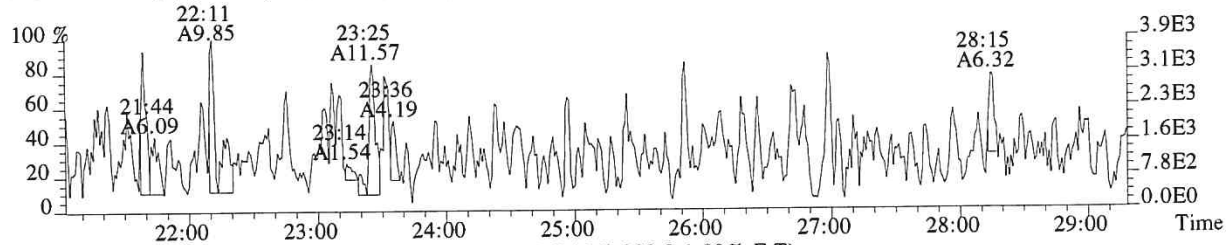


060019

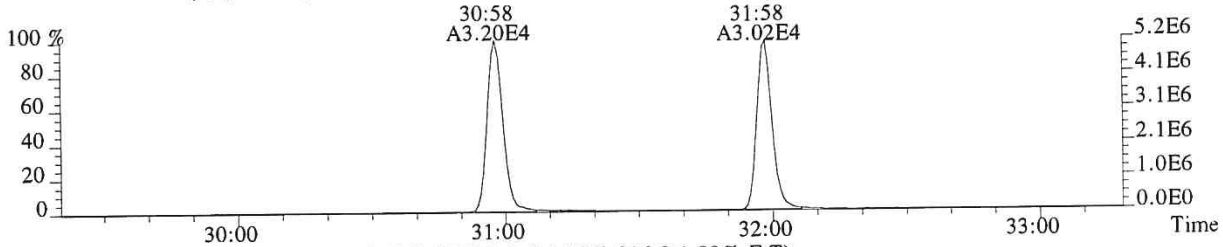
File:P519719 #1-587 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,T)



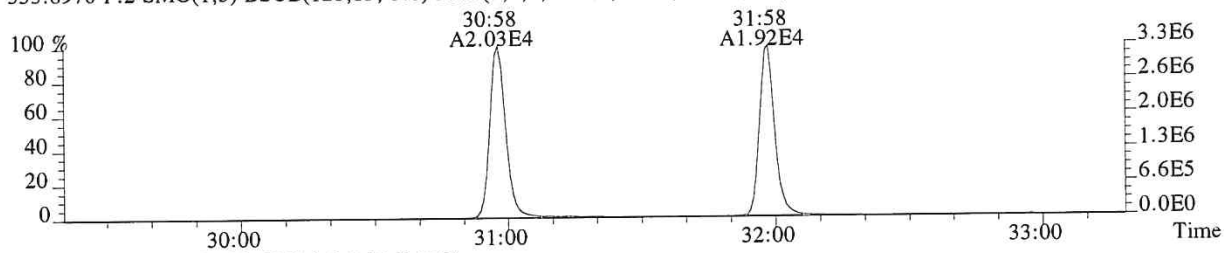
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1532.0,1.00%,F,T)



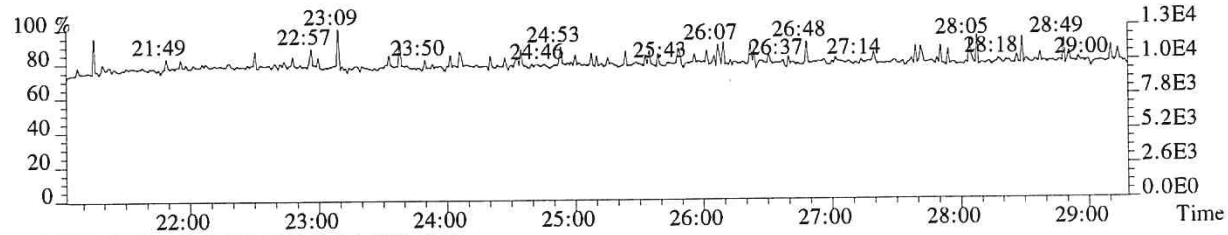
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,380.0,1.00%,F,T)



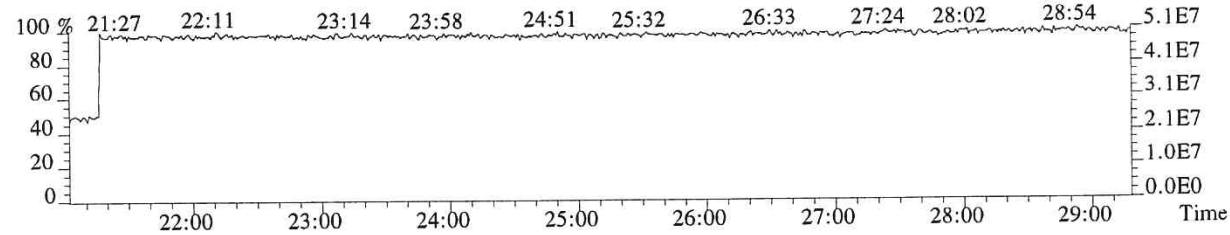
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,816.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

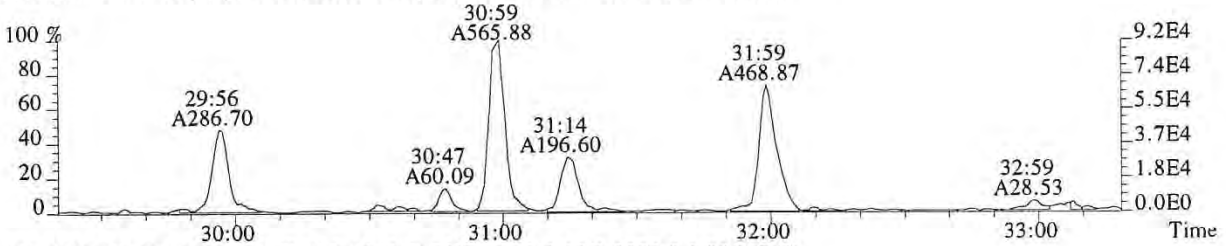


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

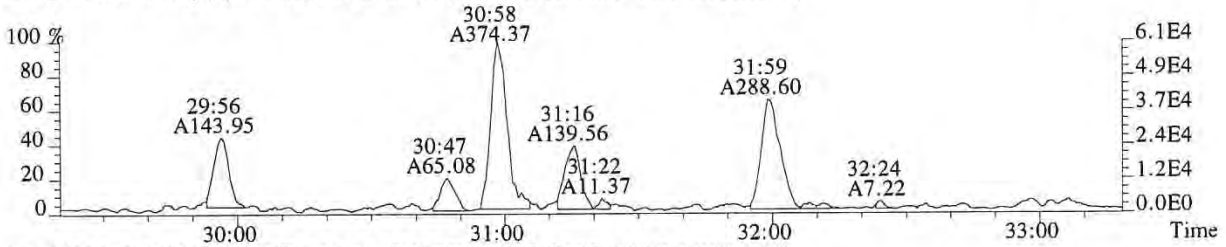


060020

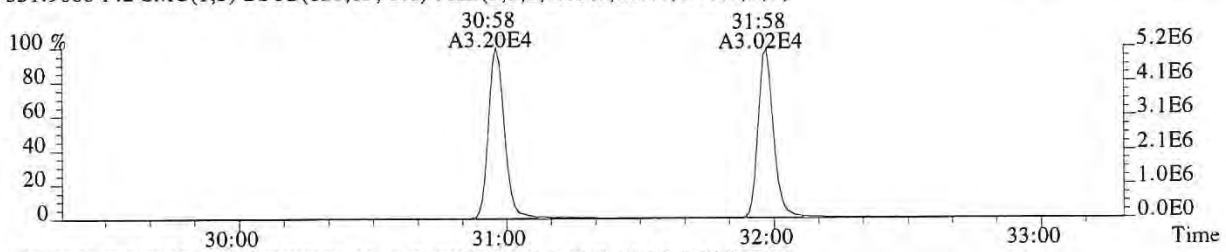
File:P519719 #1-358 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,852.0,1.00%,F,T)



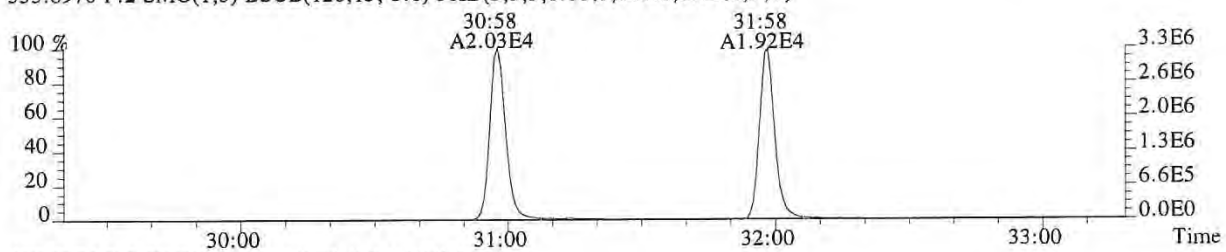
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2296.0,1.00%,F,T)



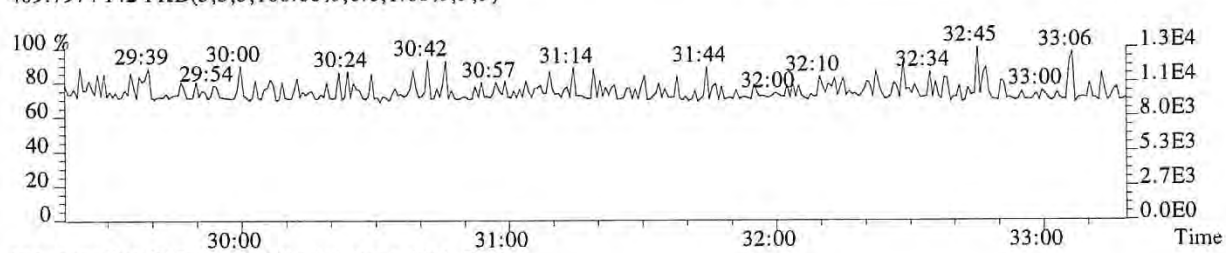
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,380.0,1.00%,F,T)



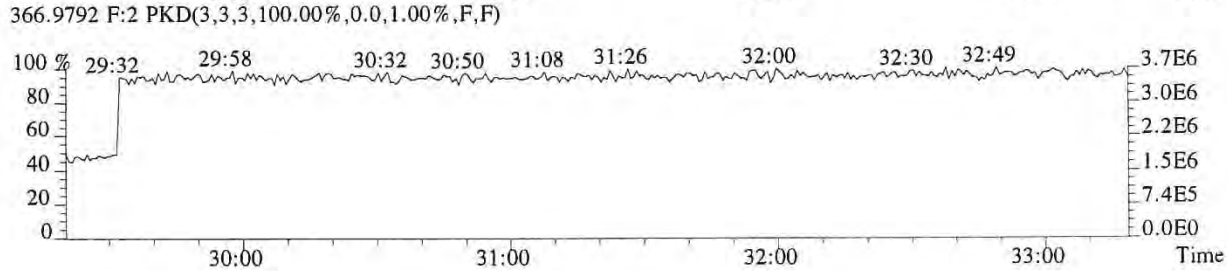
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,816.0,1.00%,F,T)



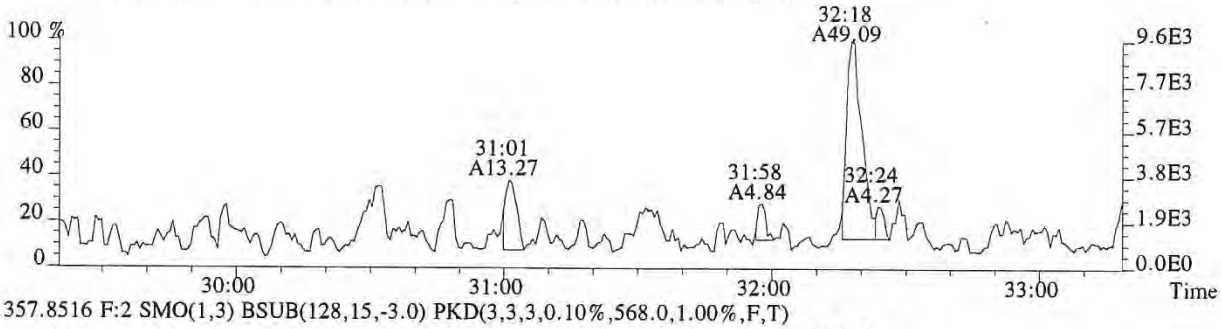
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



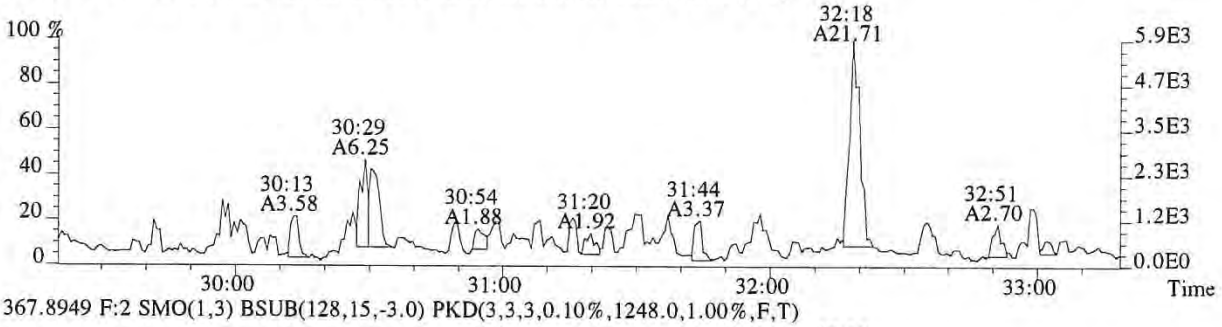
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



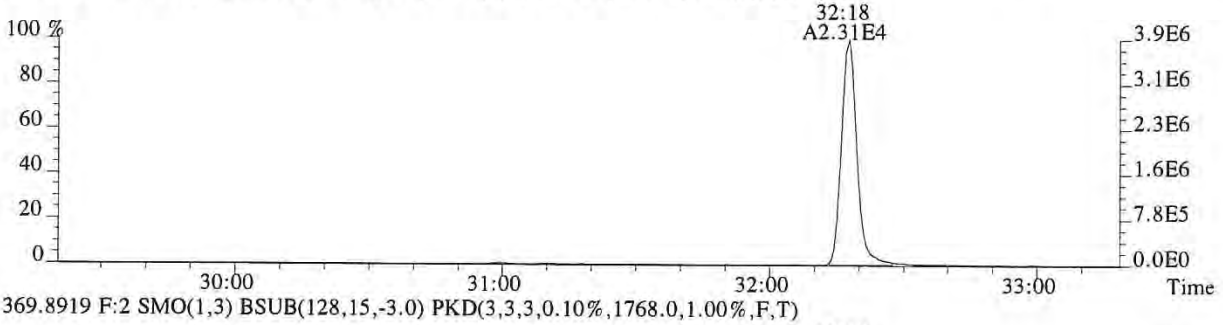
File:P519719 #1-358 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1560.0,1.00%,F,T)



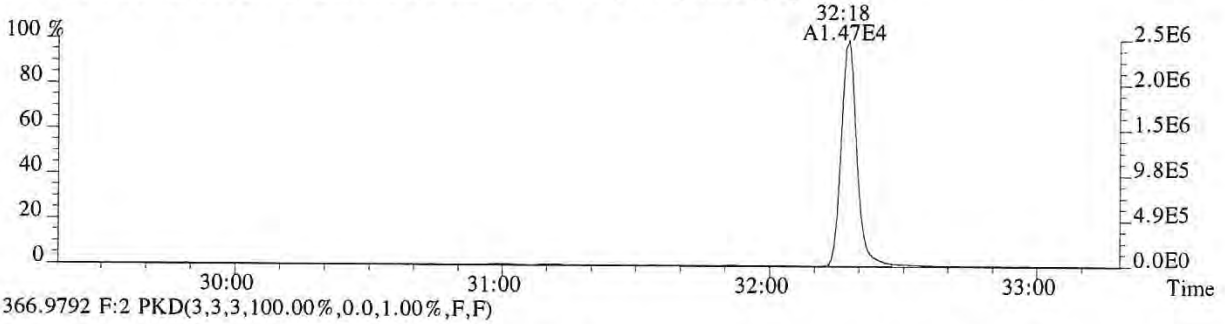
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,568.0,1.00%,F,T)



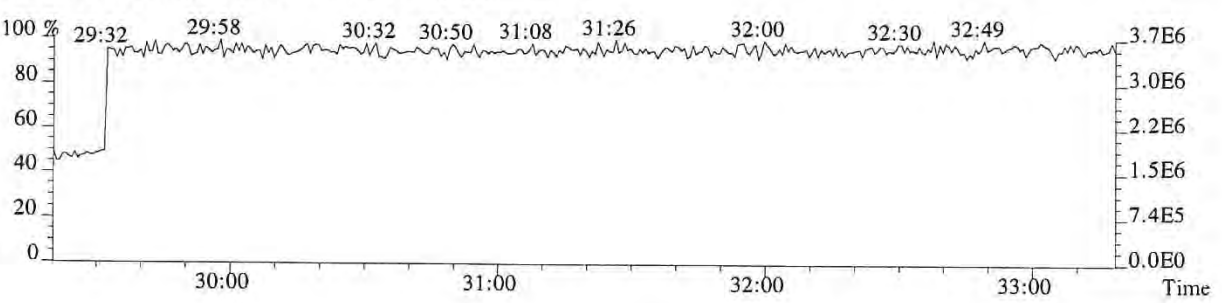
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1248.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1768.0,1.00%,F,T)

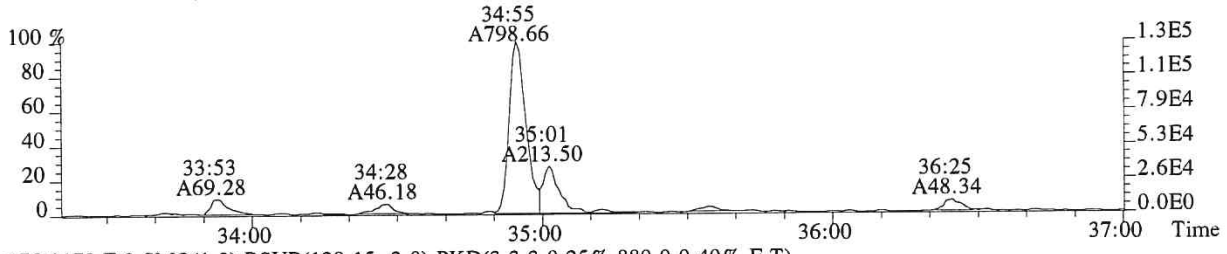


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

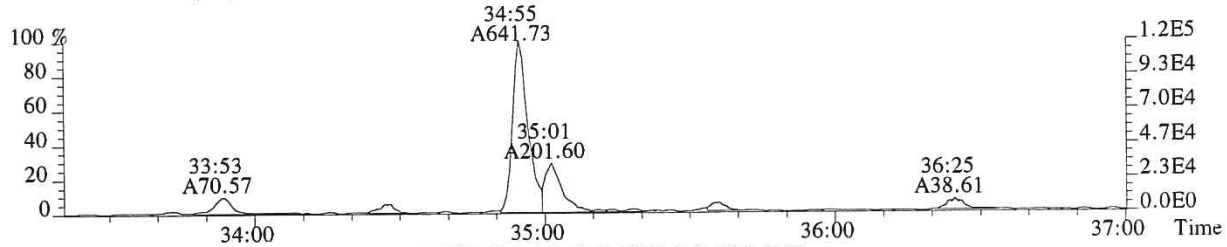


060022

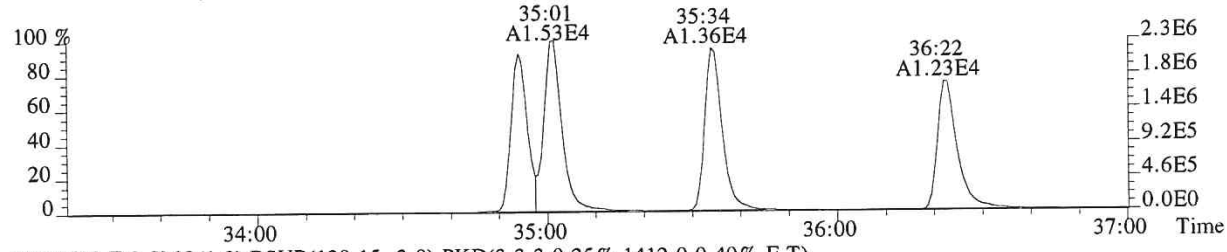
File:P519719 #1-330 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,900.0,0.40%,F,T)



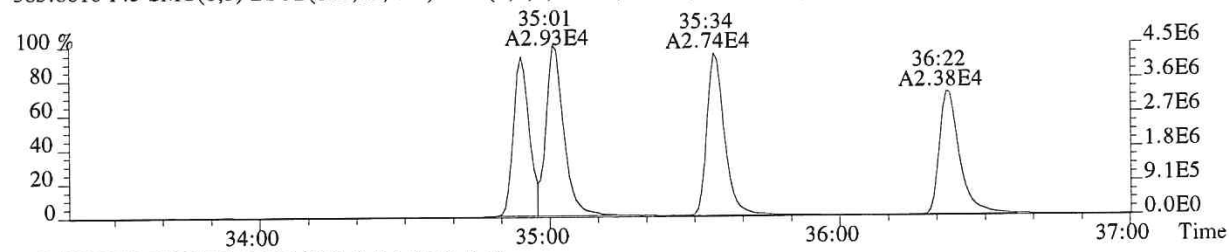
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,880.0,0.40%,F,T)



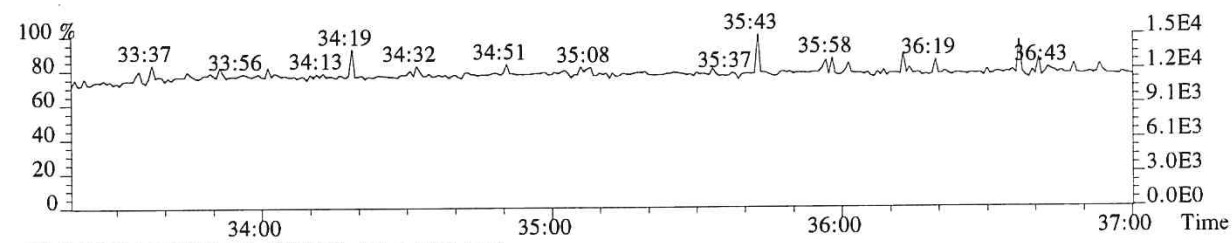
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1072.0,0.40%,F,T)



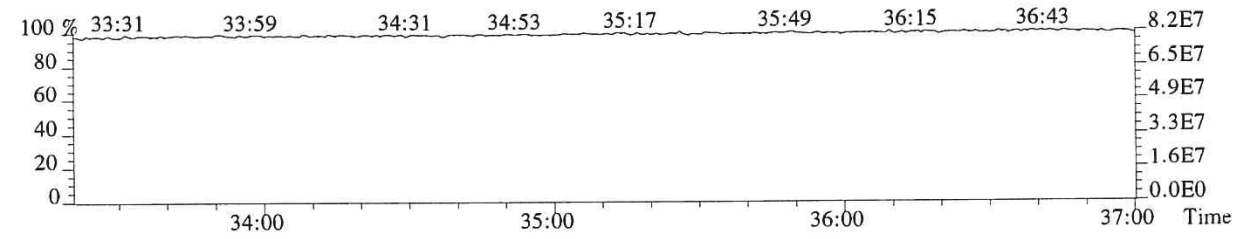
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1412.0,0.40%,F,T)



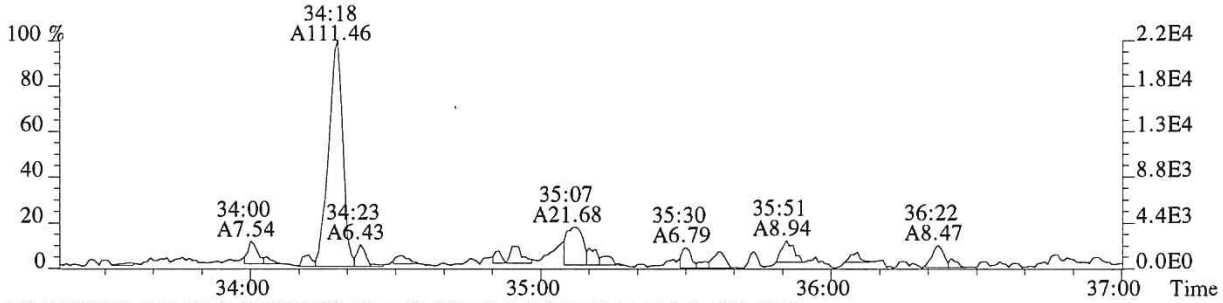
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



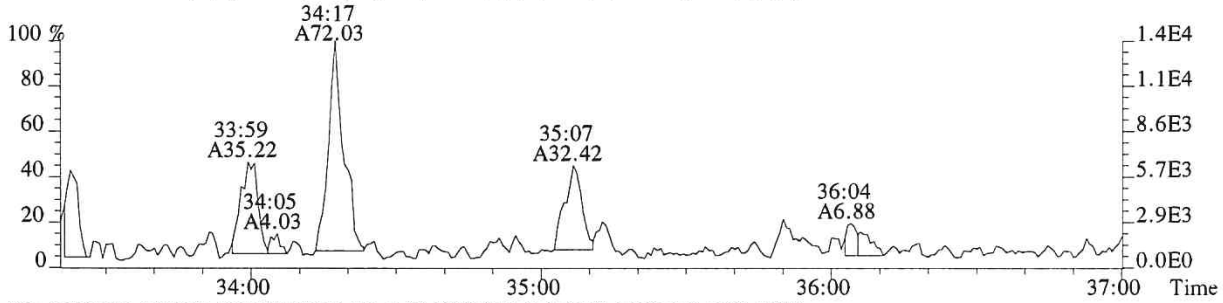
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



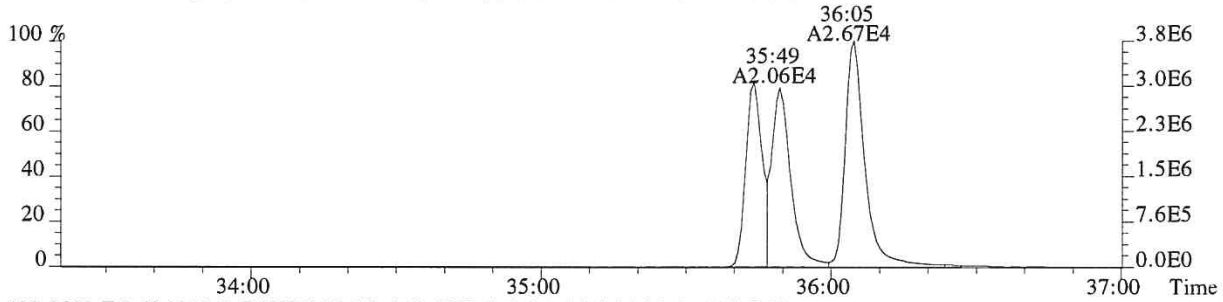
File:P519719 #1-330 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.40%,F,T)



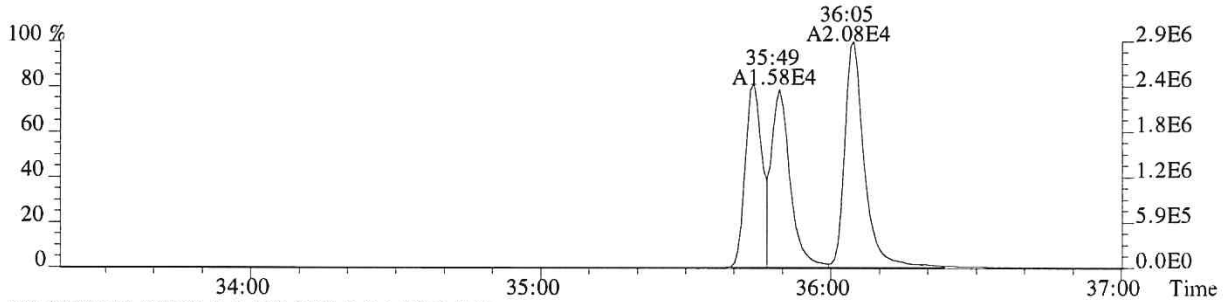
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1444.0,0.40%,F,T)



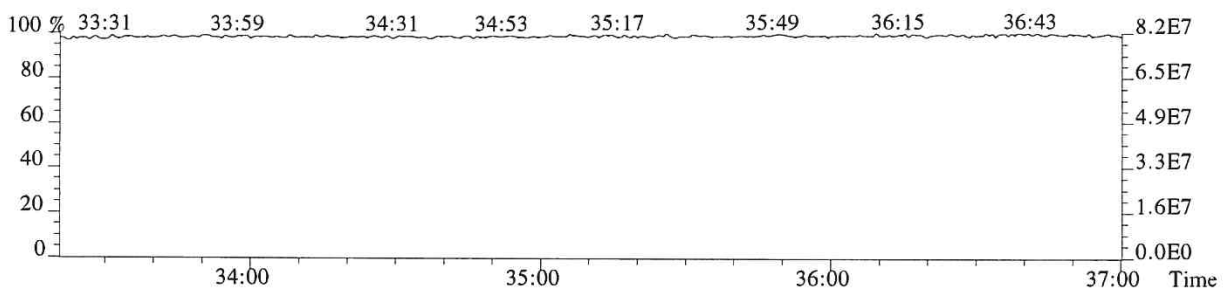
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1592.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,936.0,0.40%,F,T)

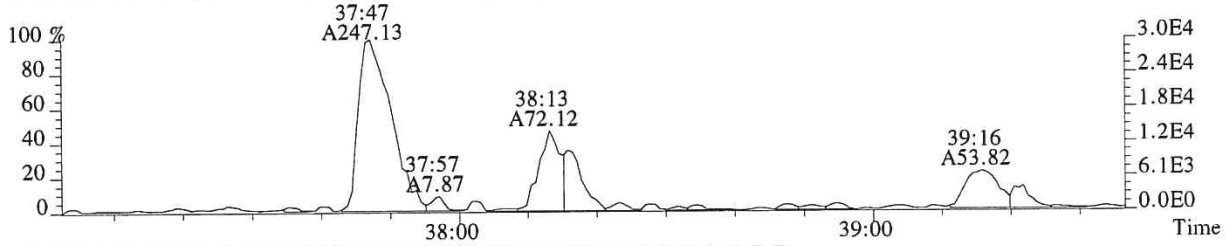


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

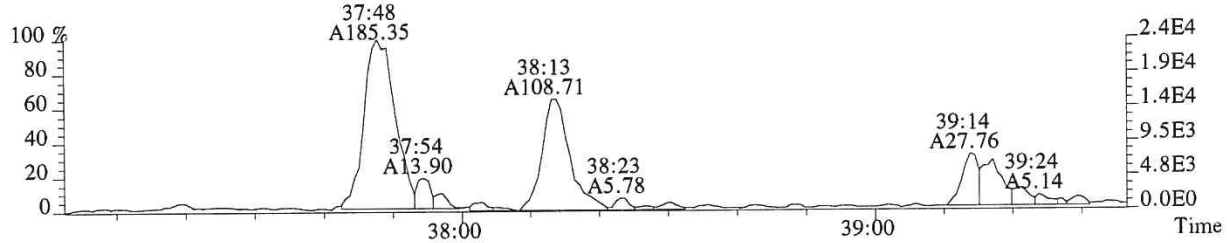


060024

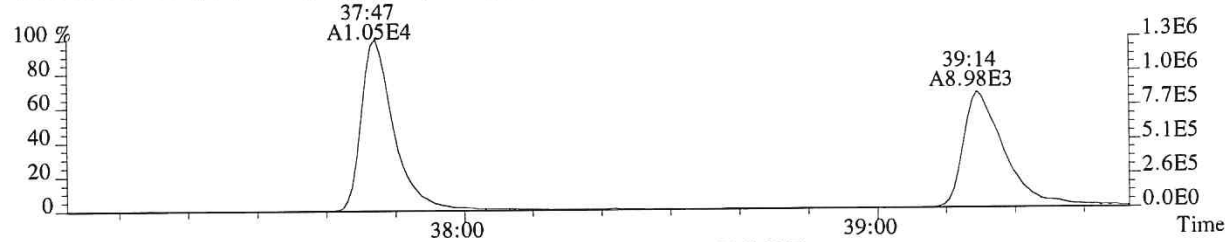
File:P519719 #1-232 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,444.0,0.50%,F,T)



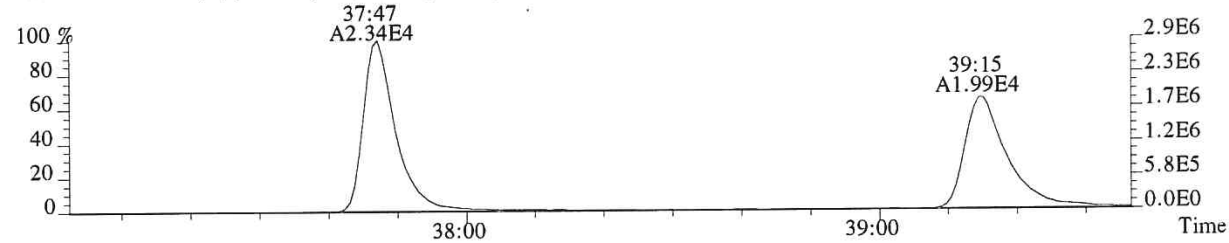
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,560.0,0.50%,F,T)



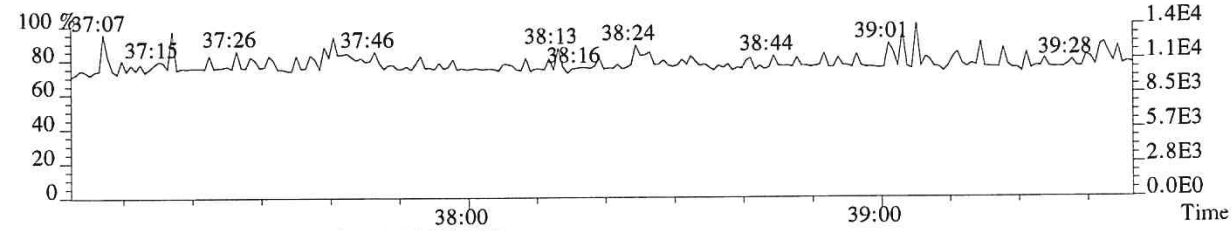
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1428.0,0.50%,F,T)



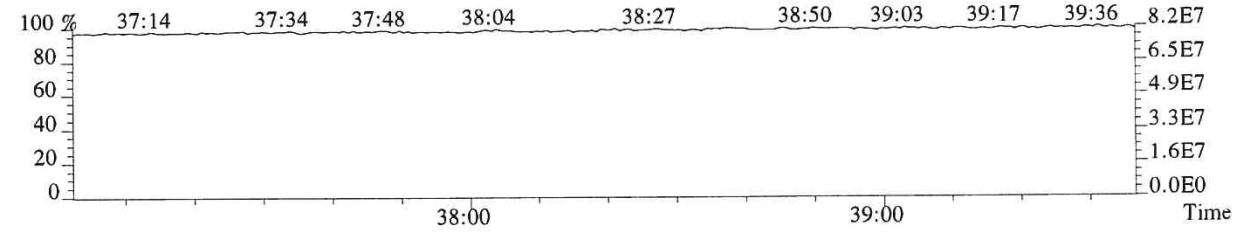
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3892.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

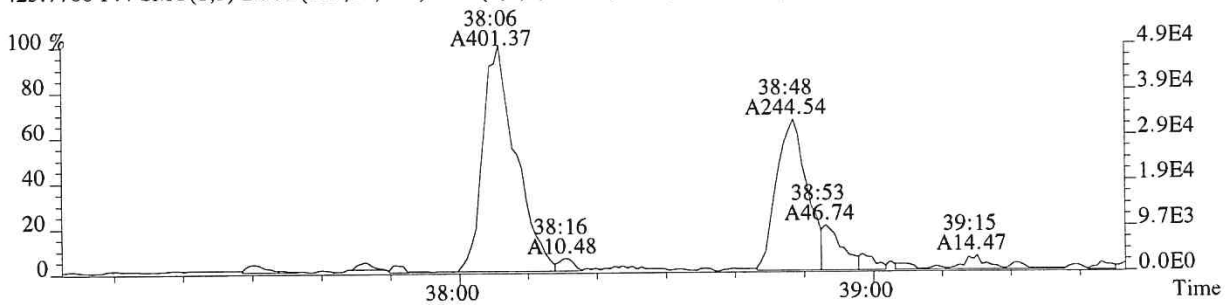


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

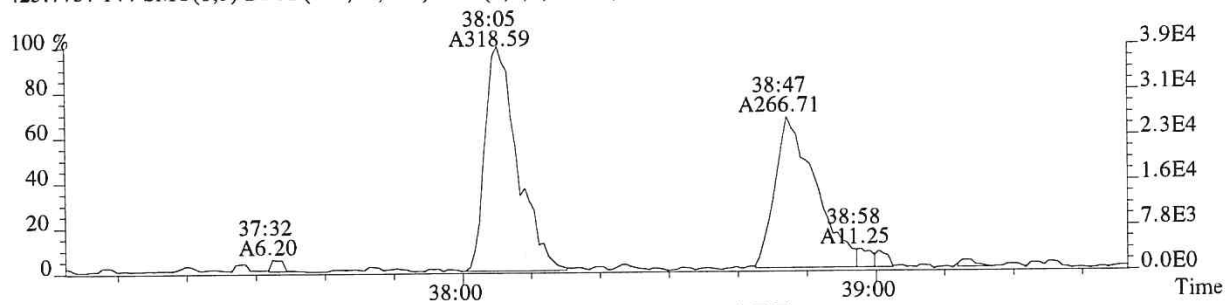


060025

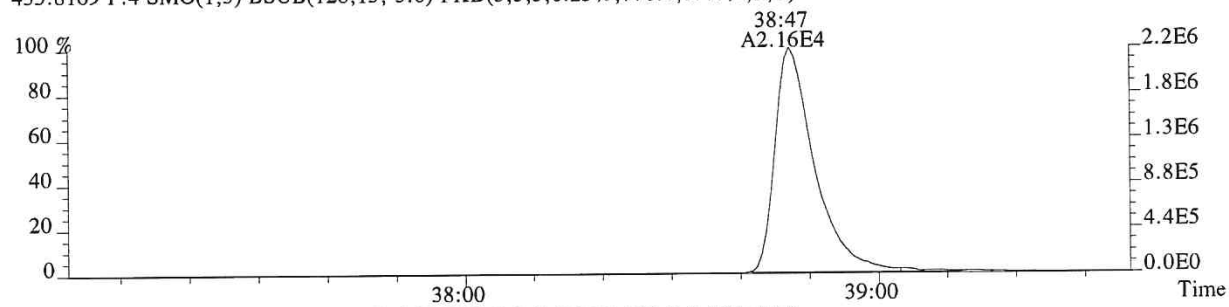
File:P519719 #1-232 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,752.0,0.40%,F,T)



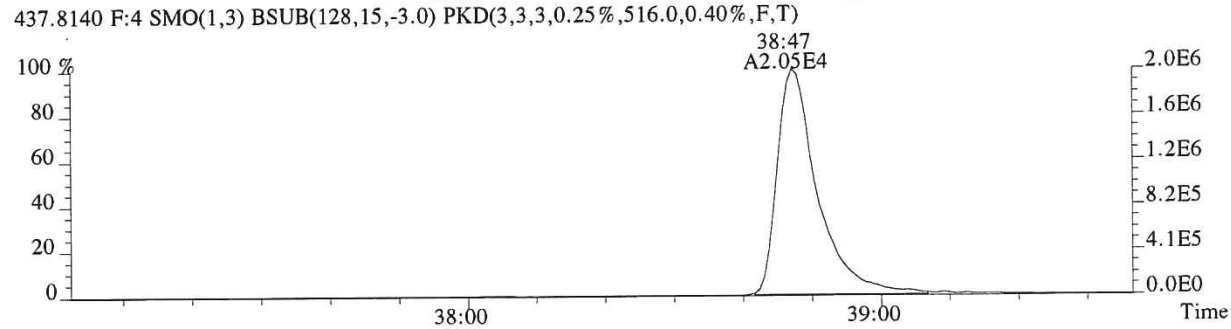
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,632.0,0.40%,F,T)



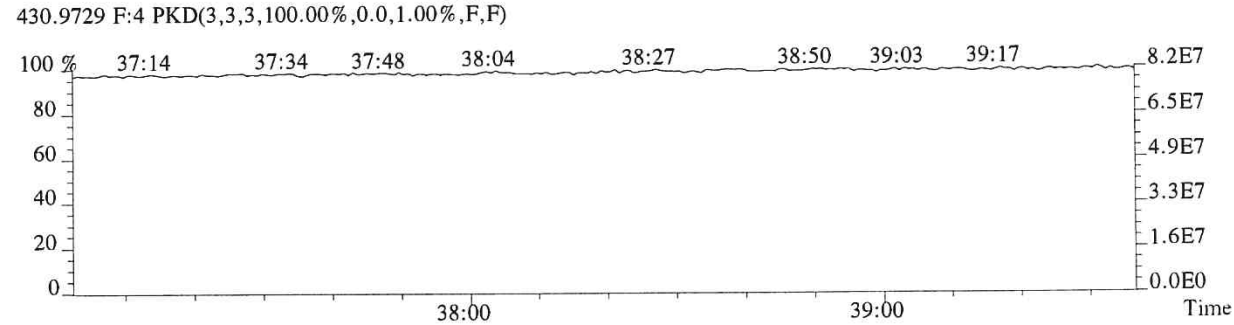
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,776.0,0.40%,F,T)



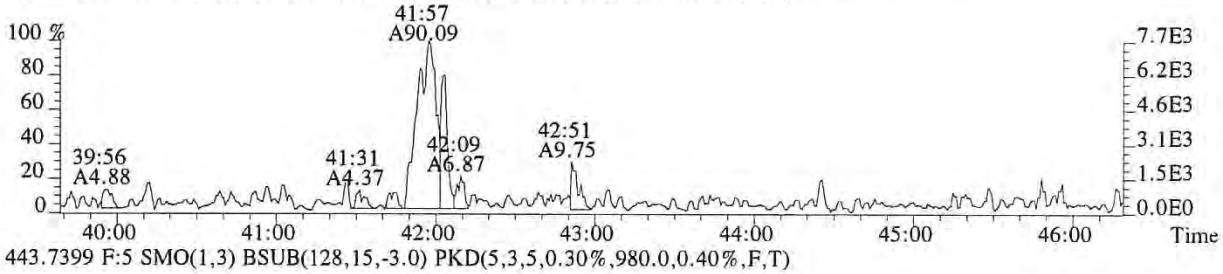
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,516.0,0.40%,F,T)



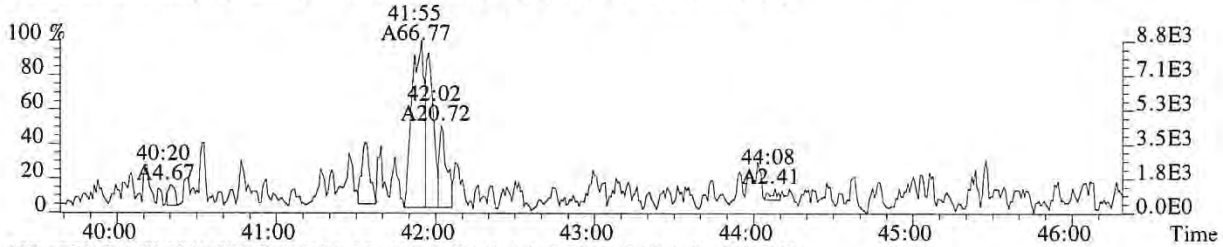
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



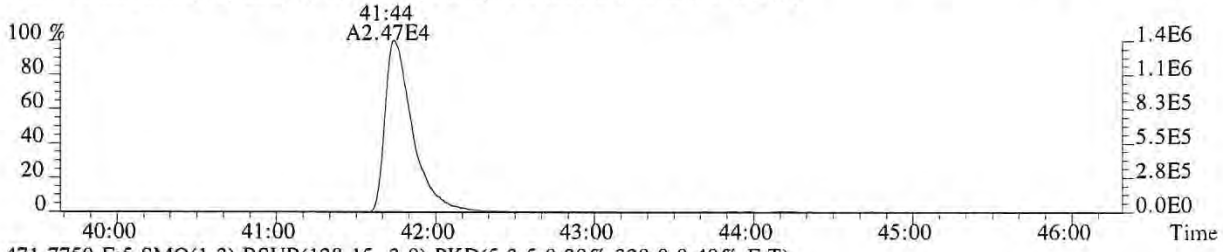
File:P519719 #1-601 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,500.0,0.40%,F,T)



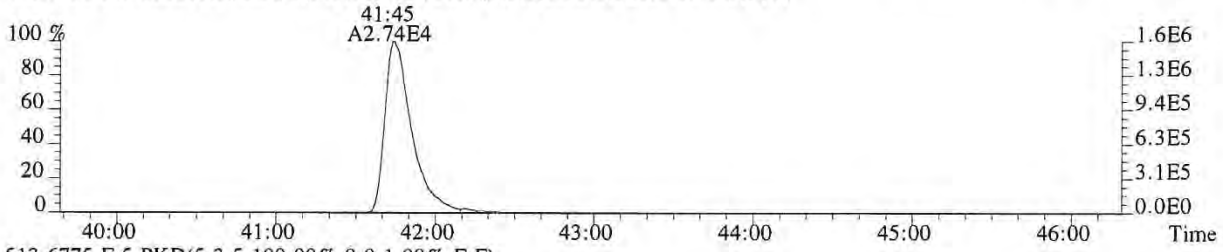
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,980.0,0.40%,F,T)



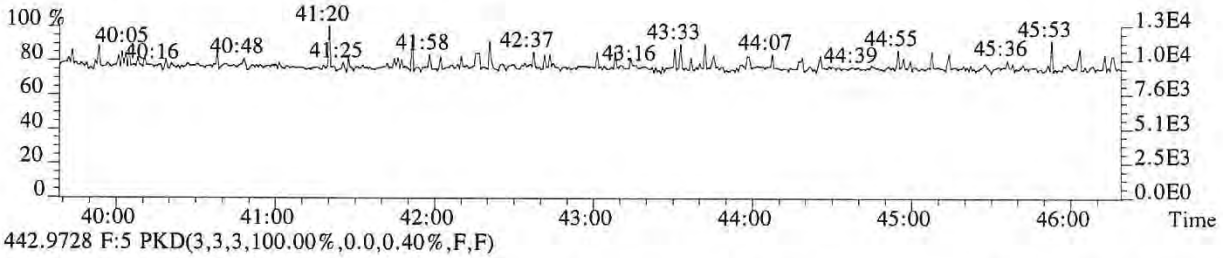
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1088.0,0.40%,F,T)



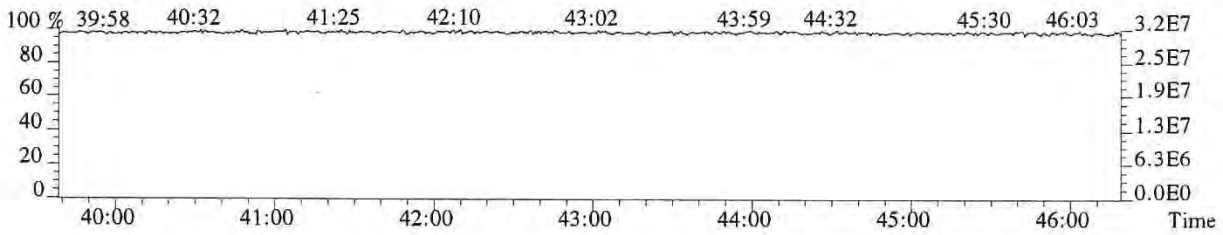
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,320.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

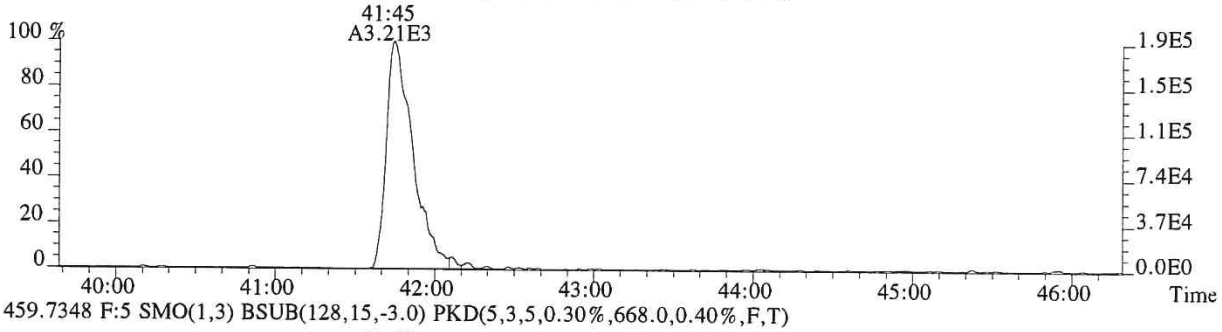


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

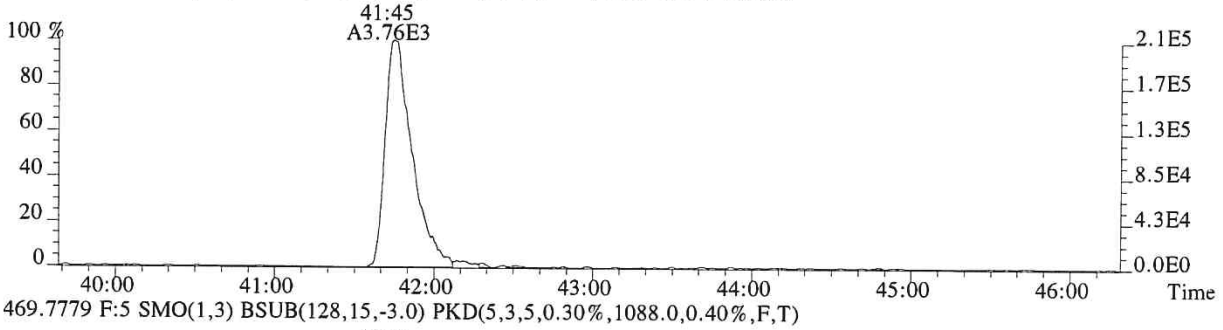


060027

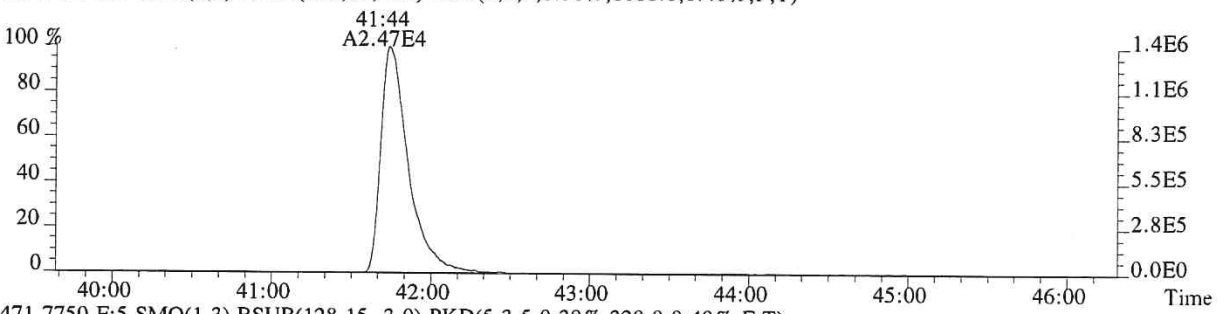
File:P519719 #1-601 Acq:30-DEC-2018 15:06:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-004DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,444.0,0.40%,F,T)



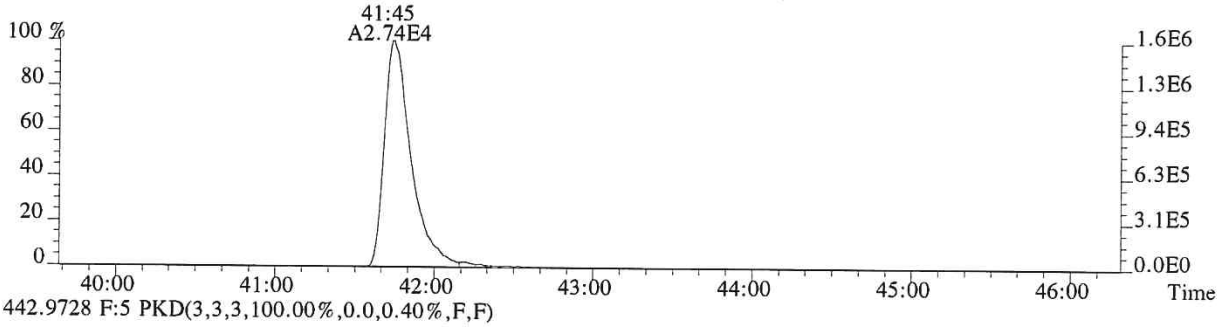
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,668.0,0.40%,F,T)



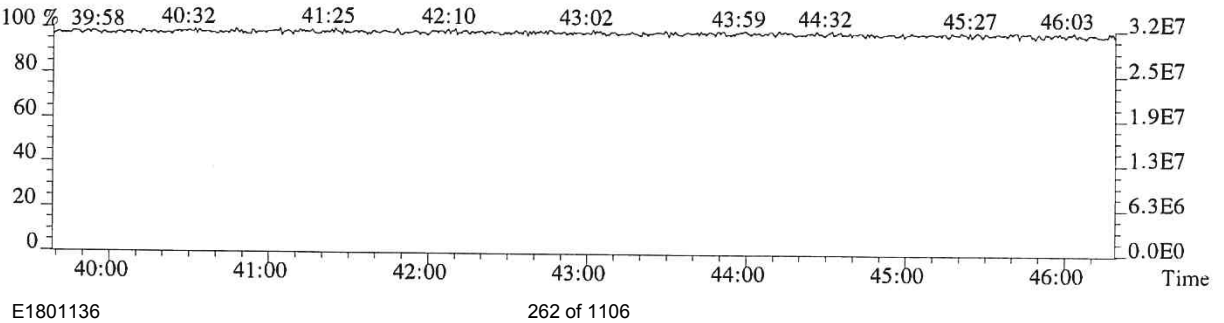
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1088.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,320.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060028

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0083

Run #14 Filename P519691 Samp: 1 Inj: 1 Acquired: 29-DEC-18 15:33:21
Processed: 30-DEC-18 08:04:19 Sample ID: E1801136-005

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:06	1.014e+04	1.395e+04	0.73	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	6.060e+02	4.382e+02	1.38	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	4.985e+02	3.229e+02	1.54	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	8.435e+02	6.958e+02	1.21	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:03	1.974e+02	2.214e+02	0.89	no	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:37	4.567e+01	4.600e+01	0.99	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:26	7.750e+01	6.511e+01	1.19	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:49	2.136e+02	2.171e+02	0.98	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:17	6.315e+01	3.966e+01	1.59	no	no	1.258
10	Unk	OCDF	41:56	1.253e+02	1.395e+02	0.90	yes	yes	1.359
11	Unk	2,3,7,8-TCDD	27:04	2.952e+03	3.652e+03	0.81	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:18	8.472e+01	5.016e+01	1.69	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:44	1.956e+01	2.403e+01	0.81	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:50	5.725e+01	3.466e+01	1.65	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:06	1.153e+02	1.003e+02	1.15	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:50	1.911e+03	1.862e+03	1.03	yes	no	1.025
17	Unk	OCDD	41:47	3.184e+04	3.559e+04	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:05	1.913e+04	2.468e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	3.127e+04	2.000e+04	1.56	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	3.080e+04	1.924e+04	1.60	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.341e+04	2.651e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:02	1.590e+04	3.125e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.422e+04	2.778e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.235e+04	2.429e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:48	1.075e+04	2.417e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:16	9.690e+03	2.242e+04	0.43	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:04	9.669e+03	1.209e+04	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.480e+04	1.542e+04	1.61	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:44	2.157e+04	1.725e+04	1.25	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:50	2.122e+04	1.653e+04	1.28	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:49	2.436e+04	2.311e+04	1.05	yes	no	0.858
32	IS	13C-OCDD	41:47	2.750e+04	3.028e+04	0.91	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:22	2.883e+04	3.642e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	3.916e+04	3.172e+04	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	1.564e+04				no	1.014

$$\text{OCDD} = \frac{(3.184e+04 + 3.559e+04) \times 4000\ \text{pg} \times 1}{(2.750e+04 + 3.028e+04) \times 10.633\text{g} \times 78.4/100 \times 1.118} = 499.592\ \text{ng/kg}$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0083

Run #14 Filename P519691 Samp: 1 Inj: 1 Acquired: 29-DEC-18 15:33:21
Processed: 30-DEC-18 08:04:19 LAB. ID: E1801136-005

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.44e+06	9.76e+02	1.5e+03	2.02e+06	1.25e+03	1.6e+03
2	1,2,3,7,8-PeCDF	9.37e+04	4.16e+02	2.3e+02	6.72e+04	1.30e+03	5.2e+01
3	2,3,4,7,8-PeCDF	7.85e+04	4.16e+02	1.9e+02	4.78e+04	1.30e+03	3.7e+01
4	1,2,3,4,7,8-HxCDF	1.38e+05	5.92e+02	2.3e+02	1.20e+05	5.24e+02	2.3e+02
5	1,2,3,6,7,8-HxCDF	3.44e+04	5.92e+02	5.8e+01	3.31e+04	5.24e+02	6.3e+01
6	2,3,4,6,7,8-HxCDF	6.85e+03	5.92e+02	1.2e+01	9.42e+03	5.24e+02	1.8e+01
7	1,2,3,7,8,9-HxCDF	1.12e+04	5.92e+02	1.9e+01	9.38e+03	5.24e+02	1.8e+01
8	1,2,3,4,6,7,8-HpCDF	3.31e+04	1.23e+03	2.7e+01	2.73e+04	4.88e+02	5.6e+01
9	1,2,3,4,7,8,9-HpCDF	9.15e+03	1.23e+03	7.4e+00	4.90e+03	4.88e+02	1.0e+01
10	OCDF	1.12e+04	4.20e+02	2.7e+01	9.48e+03	1.02e+03	9.3e+00
11	2,3,7,8-TCDD	4.72e+05	2.54e+03	1.9e+02	5.94e+05	1.43e+03	4.2e+02
12	1,2,3,7,8-PeCDD	1.13e+04	1.11e+03	1.0e+01	9.07e+03	3.56e+02	2.5e+01
13	1,2,3,4,7,8-HxCDD	3.98e+03	8.16e+02	4.9e+00	5.30e+03	1.37e+03	3.9e+00
14	1,2,3,6,7,8-HxCDD	1.10e+04	8.16e+02	1.3e+01	5.87e+03	1.37e+03	4.3e+00
15	1,2,3,7,8,9-HxCDD	1.58e+04	8.16e+02	1.9e+01	1.92e+04	1.37e+03	1.4e+01
16	1,2,3,4,6,7,8-HpCDD	2.08e+05	8.52e+02	2.4e+02	1.96e+05	6.04e+02	3.2e+02
17	OCDD	1.98e+06	3.64e+02	5.4e+03	2.25e+06	3.04e+02	7.4e+03
18	13C-2,3,7,8-TCDF	2.97e+06	7.73e+03	3.8e+02	3.77e+06	4.00e+03	9.4e+02
19	13C-1,2,3,7,8-PeCDF	5.14e+06	1.01e+03	5.1e+03	3.25e+06	8.68e+02	3.7e+03
20	13C-2,3,4,7,8-PeCDF	5.49e+06	1.01e+03	5.4e+03	3.41e+06	8.68e+02	3.9e+03
21	13C-1,2,3,4,7,8-HxCDF	2.37e+06	5.60e+02	4.2e+03	4.73e+06	5.44e+02	8.7e+03
22	13C-1,2,3,6,7,8-HxCDF	2.59e+06	5.60e+02	4.6e+03	5.04e+06	5.44e+02	9.3e+03
23	13C-2,3,4,6,7,8-HxCDF	2.52e+06	5.60e+02	4.5e+03	4.90e+06	5.44e+02	9.0e+03
24	13C-1,2,3,7,8,9-HxCDF	1.79e+06	5.60e+02	3.2e+03	3.64e+06	5.44e+02	6.7e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.41e+06	1.09e+03	1.3e+03	3.24e+06	5.18e+03	6.3e+02
26	13C-1,2,3,4,7,8,9-HpCDF	9.66e+05	1.09e+03	8.9e+02	2.25e+06	5.18e+03	4.3e+02
27	13C-2,3,7,8-TCDD	1.57e+06	4.34e+03	3.6e+02	2.00e+06	2.35e+03	8.5e+02
28	13C-1,2,3,7,8-PeCDD	4.42e+06	7.36e+02	6.0e+03	2.74e+06	1.34e+03	2.0e+03
29	13C-1,2,3,4,7,8-HxCDD	3.64e+06	1.07e+03	3.4e+03	2.89e+06	1.04e+03	2.8e+03
30	13C-1,2,3,6,7,8-HxCDD	3.33e+06	1.07e+03	3.1e+03	2.61e+06	1.04e+03	2.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.66e+06	6.80e+02	3.9e+03	2.51e+06	5.88e+02	4.3e+03
32	13C-OCDD	1.67e+06	8.04e+02	2.1e+03	1.81e+06	5.44e+02	3.3e+03
33	13C-1,2,3,4-TCDD	4.63e+06	4.34e+03	1.1e+03	5.97e+06	2.35e+03	2.5e+03
34	13C-1,2,3,7,8,9-HxCDD	6.35e+06	1.07e+03	5.9e+03	5.14e+06	1.04e+03	4.9e+03
35	37Cl-2,3,7,8-TCDD	2.61e+06	1.11e+03	2.4e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.540e+03 + 1.428e+03) \times 2000}{(1.571e+06 + 1.997e+06) \times (\quad) \times 1.085} =$$

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Peak List Summary

CLIENT ID.
SL0083

Entry: 36 Totals Name: Total Tetra-Furans

Run: 14 File: P519691 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 15:33:21 Processed: 30-DEC-18 08:04:19

Mass: 303.9020 305.8990 Tot Response: 4.22e+04 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:12	5.10e+02	6.84e+02	0.75	yes	1.19e+03		n	n
2	23:42	1.42e+01	1.62e+01	0.87	yes	3.04e+01		n	n
3	23:52	3.99e+02	5.54e+02	0.72	yes	9.53e+02		n	n
4	24:15	9.42e+01	1.14e+02	0.83	yes	2.08e+02		n	n
5	24:36	5.69e+02	7.23e+02	0.79	yes	1.29e+03		n	n
6	25:06	4.33e+03	5.98e+03	0.72	yes	1.03e+04		n	n
7	25:26	1.93e+02	2.75e+02	0.70	yes	4.68e+02		n	n
8	26:06	1.01e+04	1.39e+04	0.73	yes	2.41e+04	2,3,7,8-TCDF	n	n
9	26:31	7.07e+02	9.14e+02	0.77	yes	1.62e+03		n	n
10	26:48	9.88e+01	1.36e+02	0.73	yes	2.35e+02		n	n
11	28:16	8.20e+02	1.02e+03	0.80	yes	1.84e+03		n	n

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Peak List Summary

CLIENT ID.
SL0083

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 14 File: P519691 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 15:33:21 Processed: 30-DEC-18 08:04:19

Mass: 319.8970 321.8940 Tot Response: 8.10e+03 RRF: 1.085

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:45	3.77e+02	5.45e+02	0.69	yes	9.22e+02		n	n
2	27:04	2.95e+03	3.65e+03	0.81	yes	6.60e+03	2,3,7,8-TCDD	n	n
3	27:26	2.55e+02	3.17e+02	0.81	yes	5.72e+02		n	n

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Peak List Summary

CLIENT ID.
SL0083

Entry: 39 Totals Name: Total Penta-Furans2

Run: 14 File: P519691 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 15:33:21 Processed: 30-DEC-18 08:04:19

Mass: 339.8600 341.8570 Tot Response: 2.50e+03 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:58	3.14e+02	2.07e+02 1.51	yes	5.21e+02		n	n
2	30:48	6.38e+01	4.53e+01 1.41	yes	1.09e+02		n	n
3	30:59	6.06e+02	4.38e+02 1.38	yes	1.04e+03	1,2,3,7,8-PeCDF	n	n
4	32:00	4.98e+02	3.23e+02 1.54	yes	8.21e+02	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.
SL0083

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 14 File: P519691 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 15:33:21 Processed: 30-DEC-18 08:04:19

Mass: 355.8550 357.8520 Tot Response: 8.91e+02 RRF: 0.9565

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:30	3.26e+02	2.28e+02	1.43	yes	5.54e+02		n	n
2	31:32	1.06e+02	7.73e+01	1.37	yes	1.83e+02		n	n
3	32:18	8.47e+01	5.02e+01	1.69	yes	1.35e+02	1,2,3,7,8-PeCDD	n	n
4	32:44	1.14e+01	7.73e+00	1.47	yes	1.91e+01		n	n

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CLIENT ID.
SL0083

Entry: 41 Totals Name: Total Hexa-Furans

Run: 14 File: P519691 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 15:33:21 Processed: 30-DEC-18 08:04:19

Mass: 373.8210 375.8180 Tot Response: 1.68e+03 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:55	8.44e+02	6.96e+02	1.21	yes	1.54e+03	1,2,3,4,7,8-HxCDF	n	n
2	36:26	7.75e+01	6.51e+01	1.19	yes	1.43e+02	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0083

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 14 File: P519691 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 15:33:21 Processed: 30-DEC-18 08:04:19

Mass: 389.8160 391.8130 Tot Response: 4.26e+03 RRF: 1.047

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:17	1.82e+03	1.39e+03	1.30	yes	3.21e+03		n	n
2	34:52	2.57e+01	1.89e+01	1.36	yes	4.47e+01		n	n
3	35:07	4.44e+02	3.51e+02	1.26	yes	7.95e+02		n	n
4	36:06	1.15e+02	1.00e+02	1.15	yes	2.16e+02	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0083

Entry: 43 Totals Name: Total Hepta-Furans

Run: 14 File: P519691 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 15:33:21 Processed: 30-DEC-18 08:04:19

Mass: 407.7820 409.7790 Tot Response: 6.48e+02 RRF: 1.308

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:49	2.14e+02	2.17e+02	0.98	yes	4.31e+02	1,2,3,4,6,7,8-HpCDF	n	n
2	37:58	1.03e+01	1.15e+01	0.89	yes	2.18e+01		n	n
3	38:14	9.44e+01	1.01e+02	0.93	yes	1.96e+02		n	n

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Peak List Summary

CLIENT ID.
SL0083

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 14 File: P519691 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 15:33:21 Processed: 30-DEC-18 08:04:19

Mass: 423.7770 425.7740 Tot Response: 1.12e+04 RRF: 1.025

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:07	3.83e+03	3.57e+03	1.07	yes	7.40e+03		n	n
2	38:50	1.91e+03	1.86e+03	1.03	yes	3.77e+03	1,2,3,4,6,7,8-HpCDD	n	n

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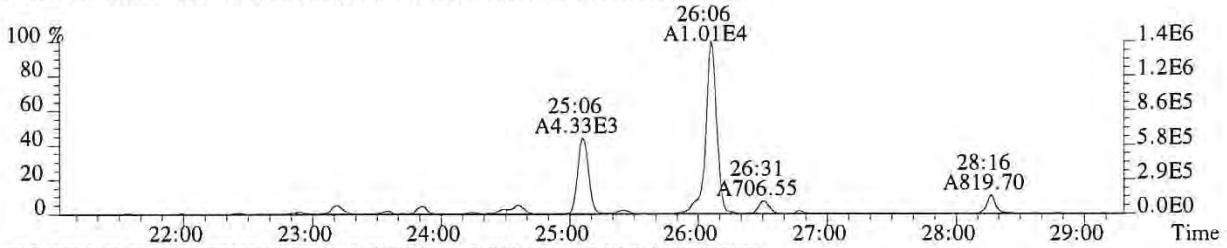
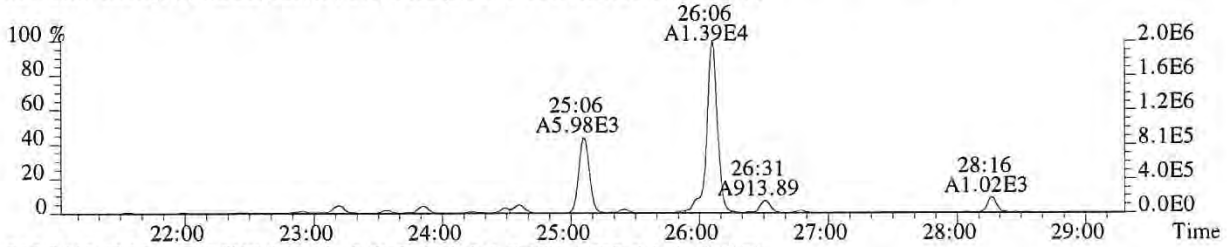
File:P519691 #1-587 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005

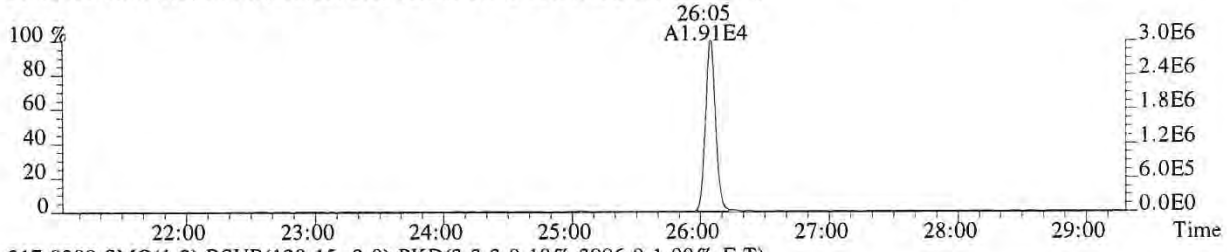
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,976.0,1.00%,F,T)



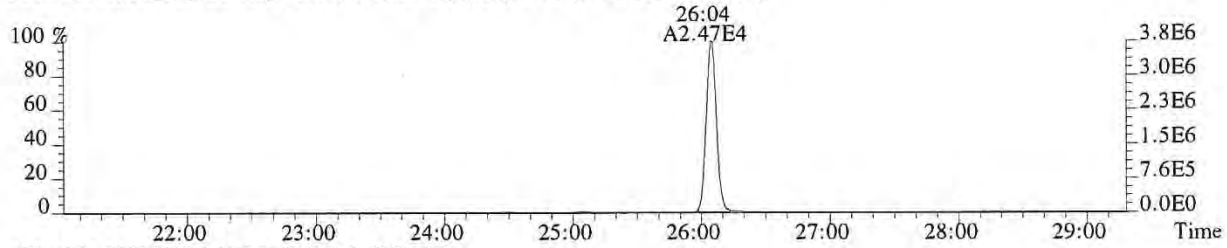
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1248.0,1.00%,F,T)



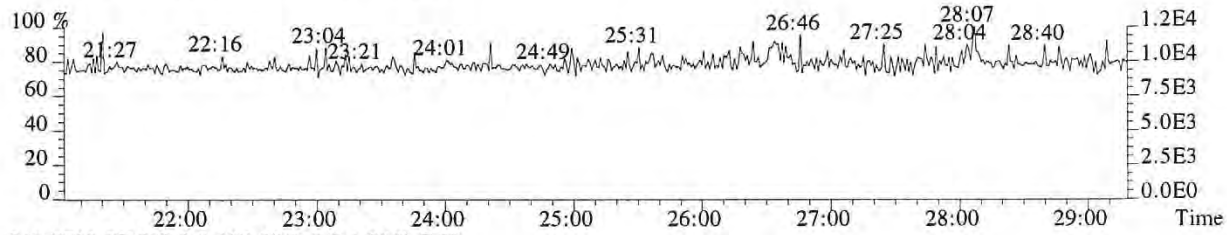
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7732.0,1.00%,F,T)



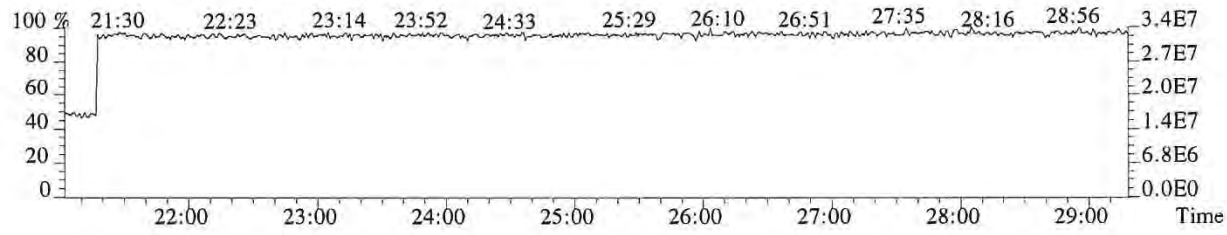
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3996.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



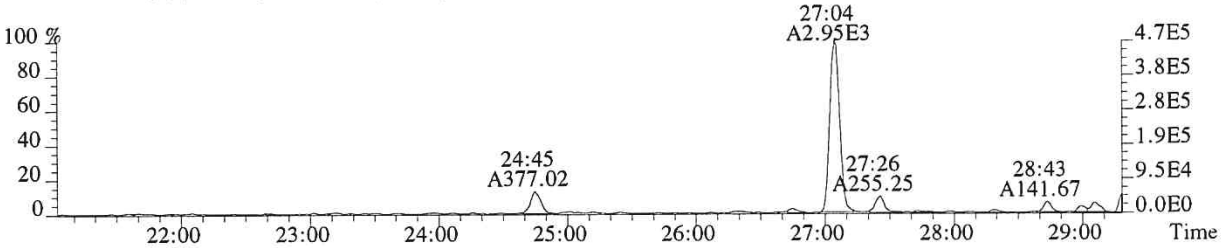
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



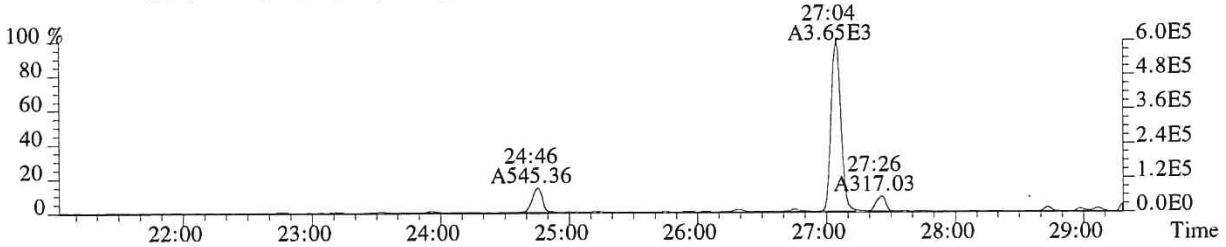
060039

File:P519691 #1-587 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005

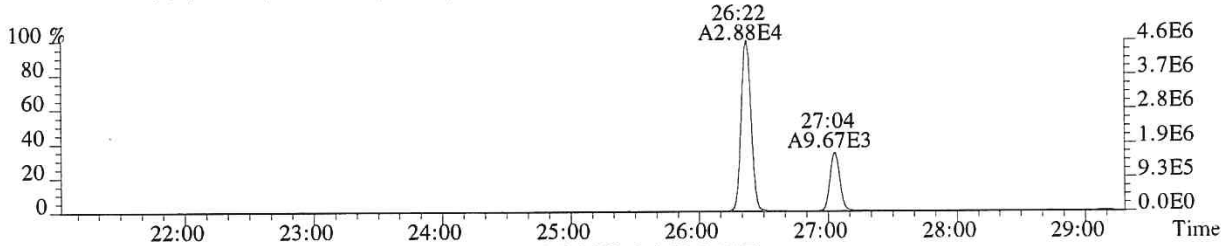
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2540.0,1.00%,F,T)



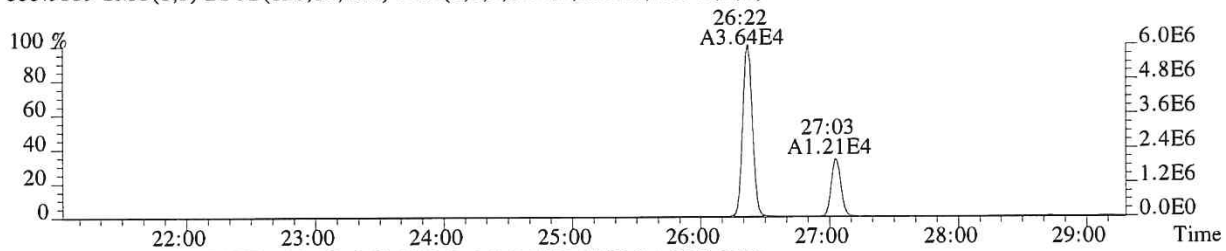
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1428.0,1.00%,F,T)



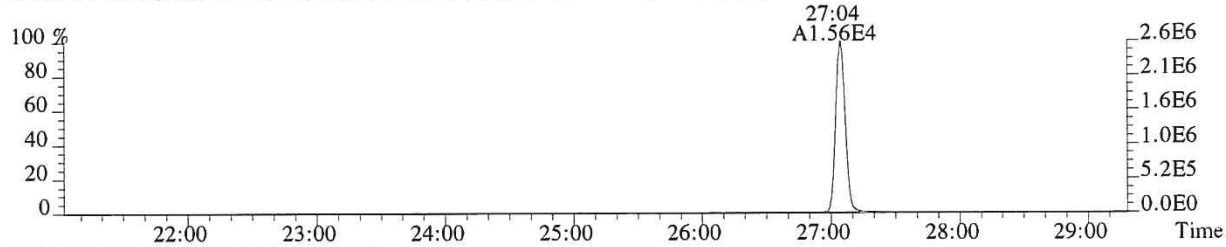
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4340.0,1.00%,F,T)



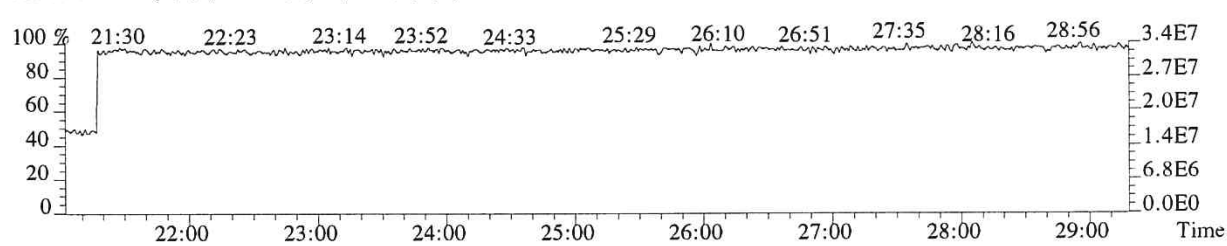
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2352.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1108.0,1.00%,F,T)

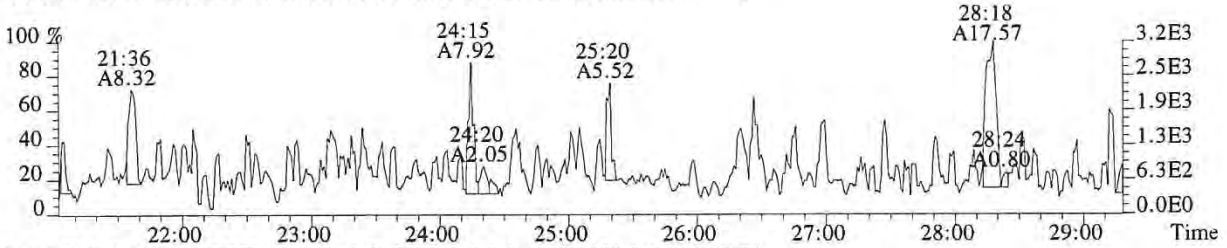


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

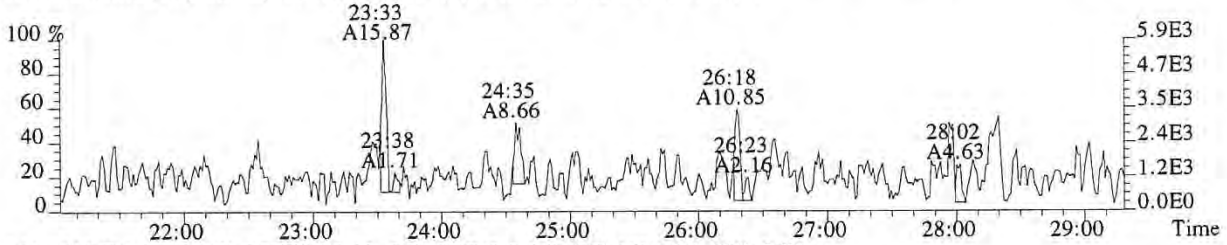


060040

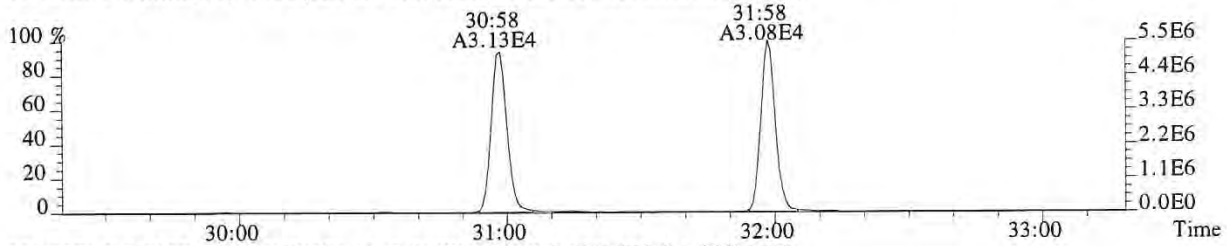
File:P519691 #1-587 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,832.0,1.00%,F,T)



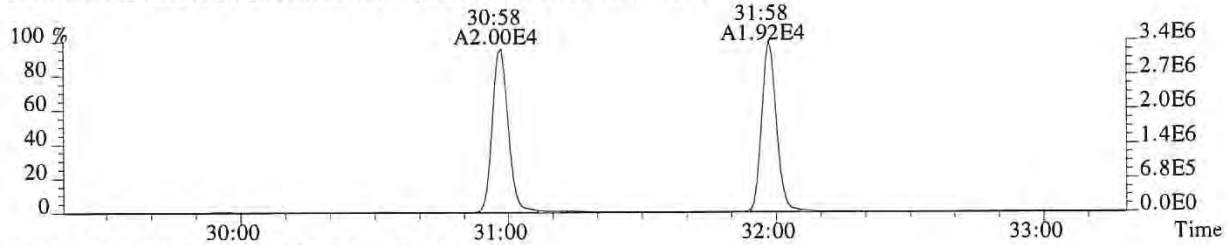
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1400.0,1.00%,F,T)



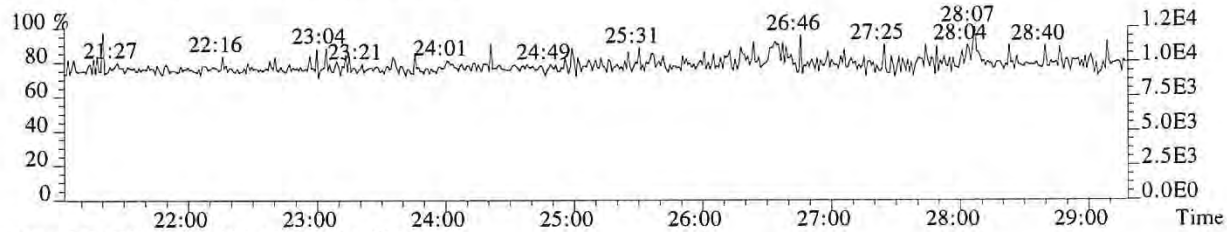
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1008.0,1.00%,F,T)



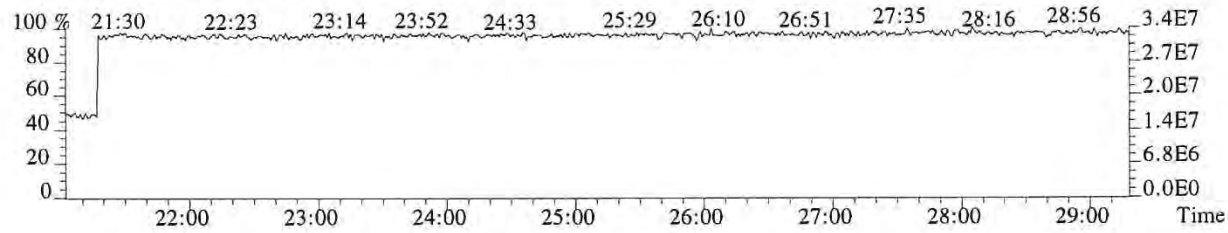
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,868.0,1.00%,F,T)



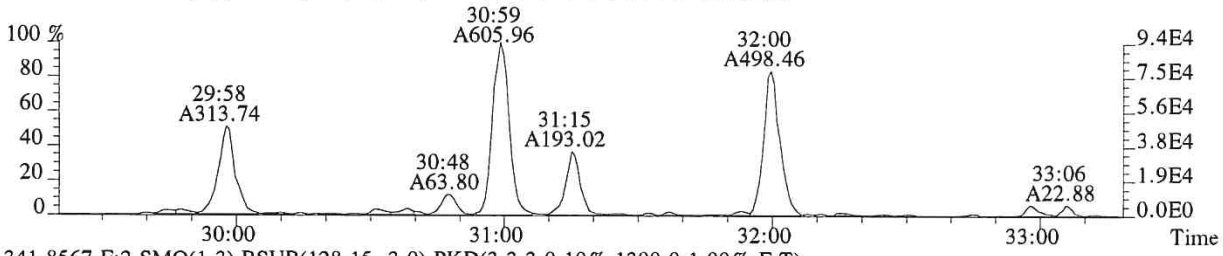
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



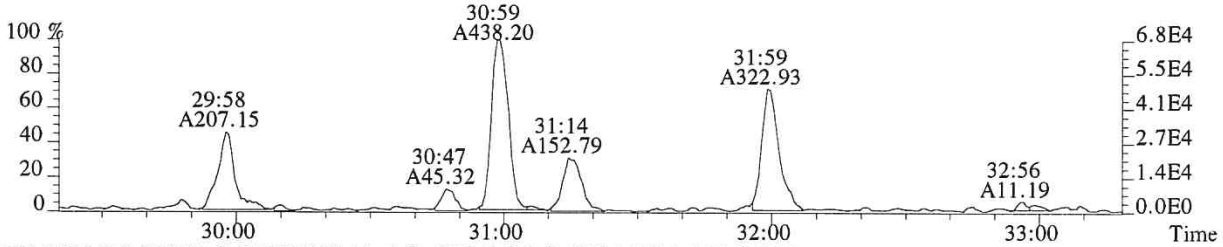
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



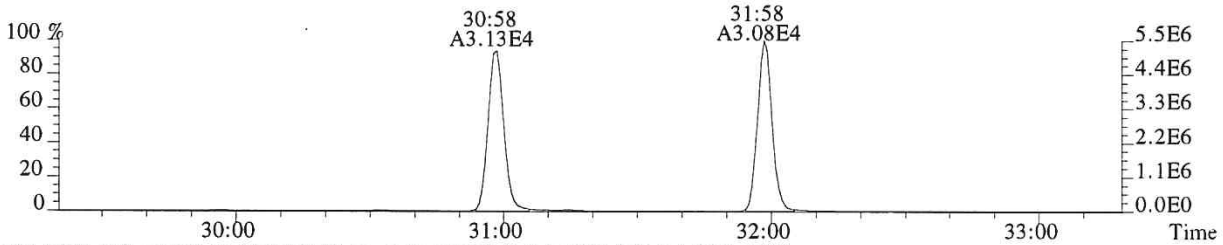
File:P519691 #1-358 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,416.0,1.00%,F,T)



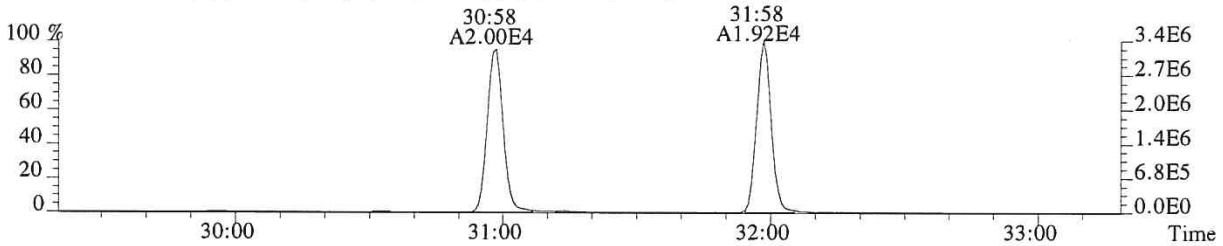
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1300.0,1.00%,F,T)



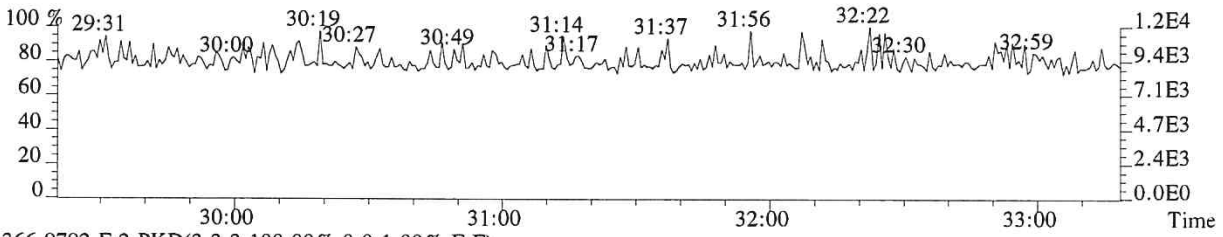
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1008.0,1.00%,F,T)



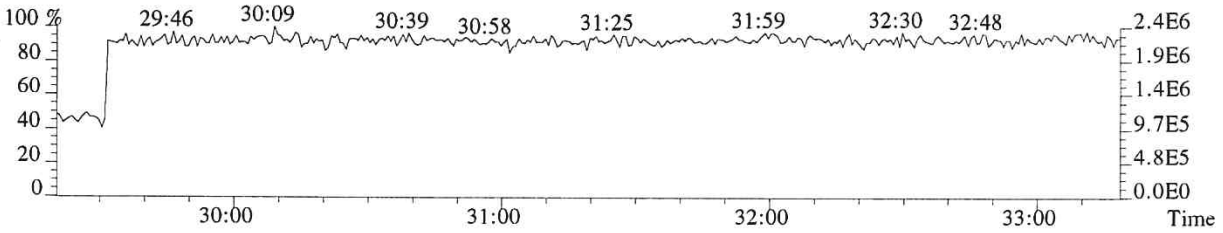
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,868.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

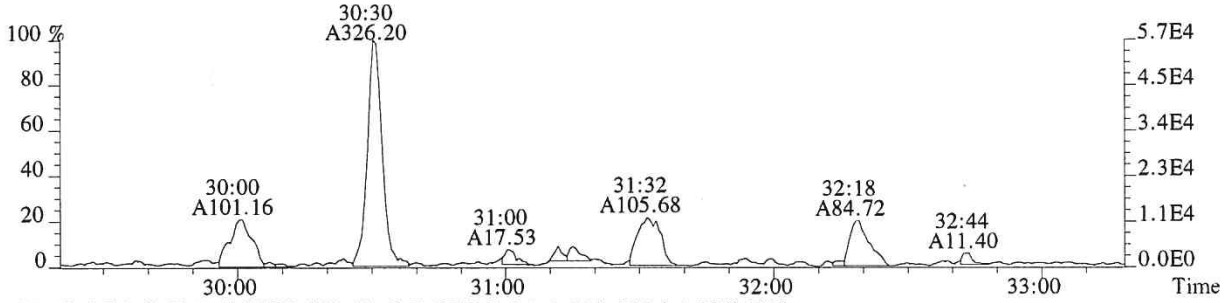


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

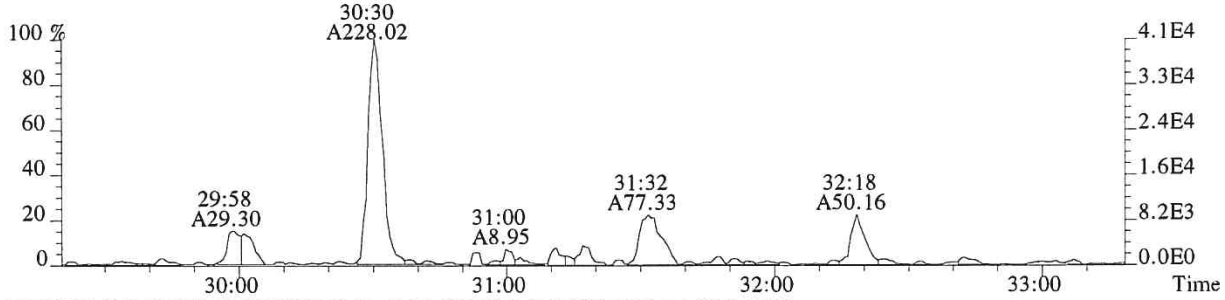


060042

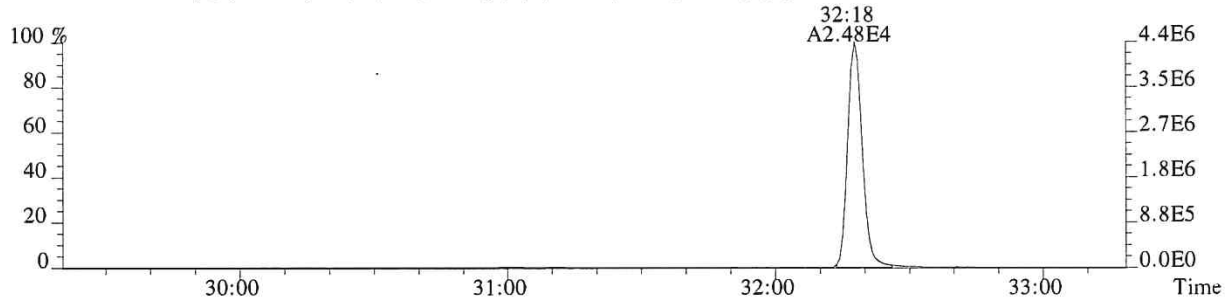
File:P519691 #1-358 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1108.0,1.00%,F,T)



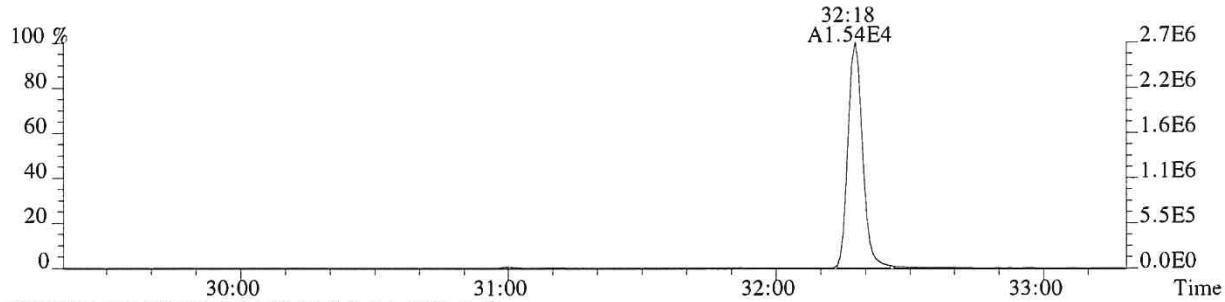
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,356.0,1.00%,F,T)



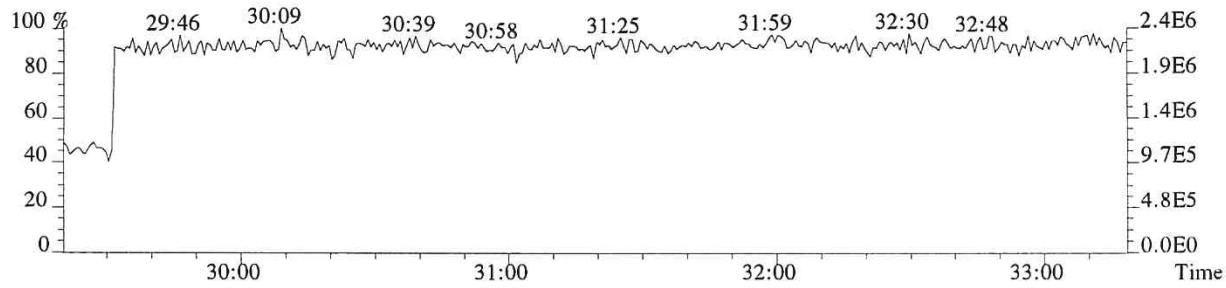
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,736.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1344.0,1.00%,F,T)



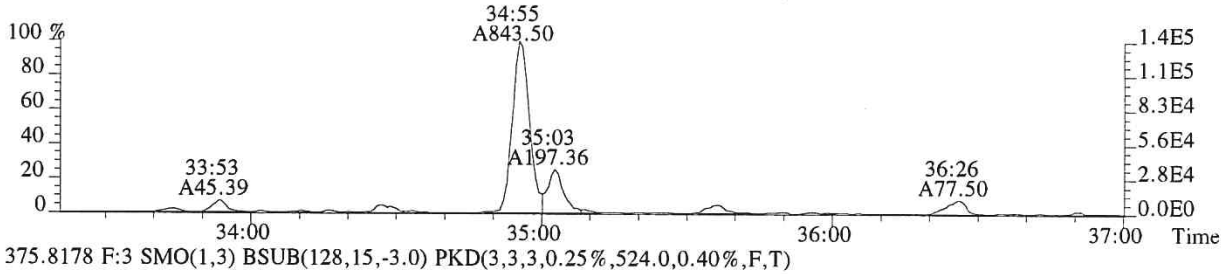
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



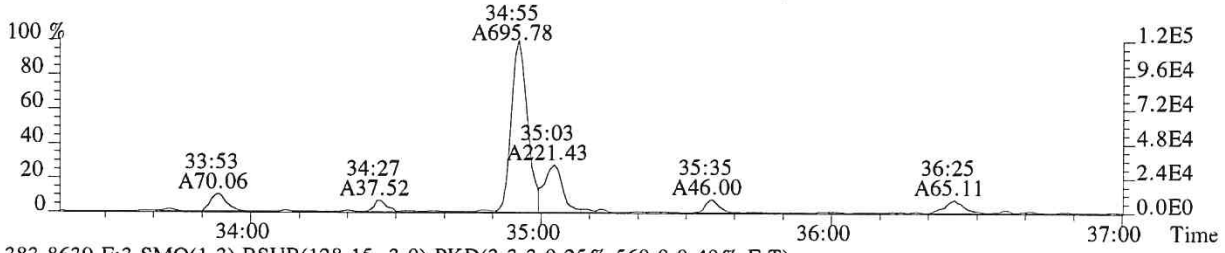
060043

File:P519691 #1-330 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005

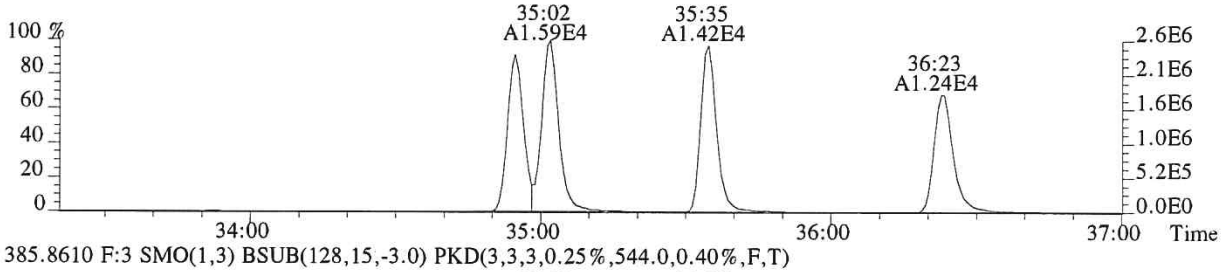
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,592.0,0.40%,F,T)



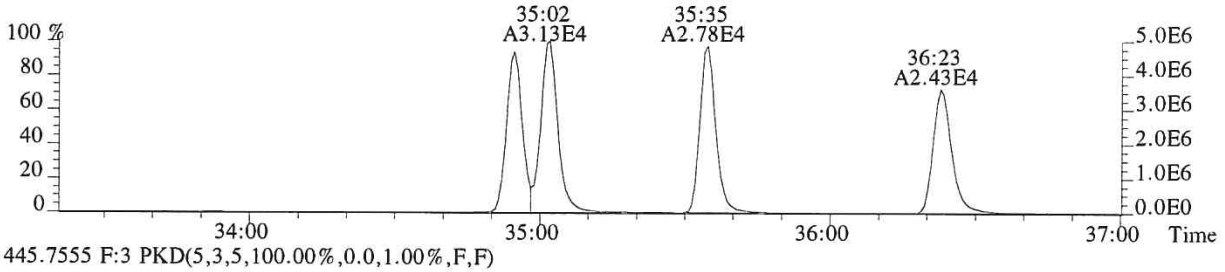
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,524.0,0.40%,F,T)



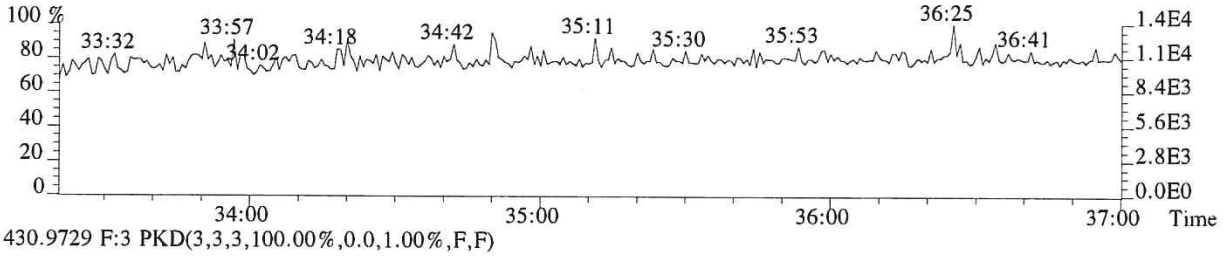
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,560.0,0.40%,F,T)



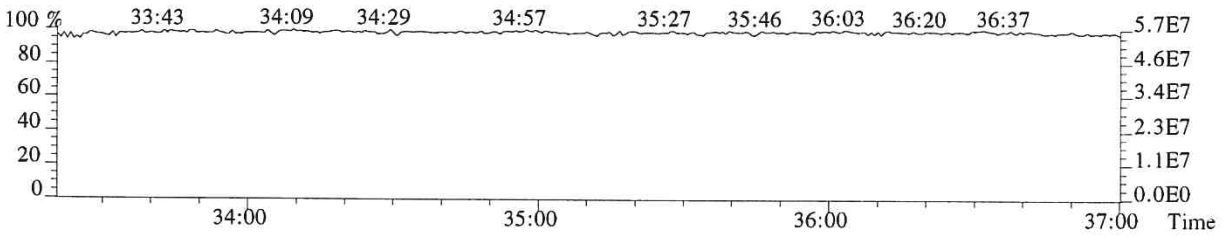
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,544.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

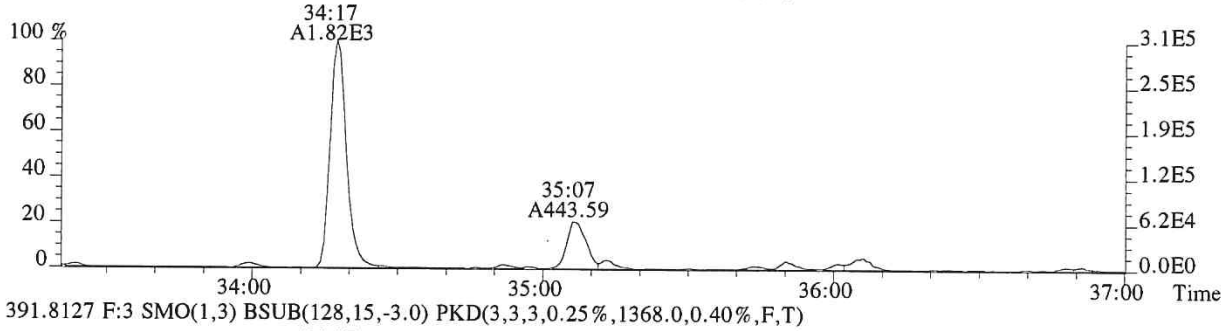


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

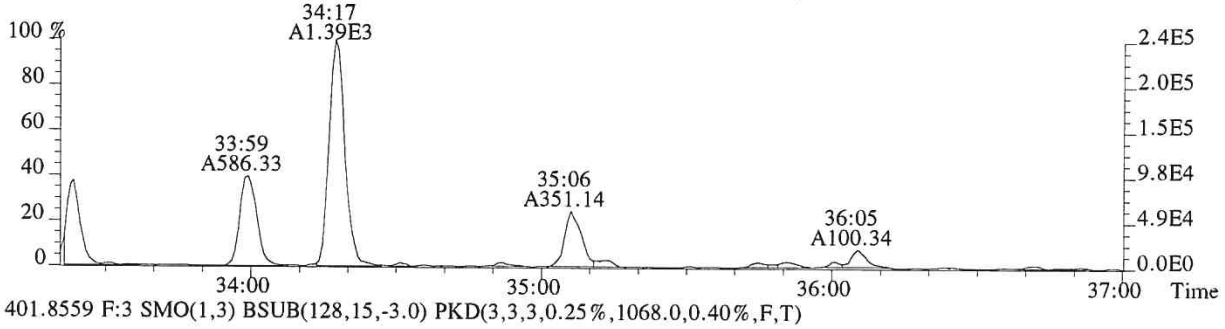


060044

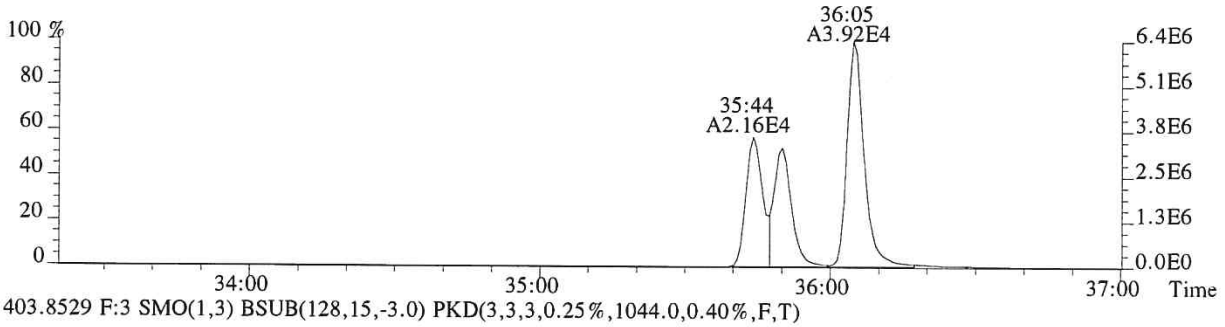
File:P519691 #1-330 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,816.0,0.40%,F,T)



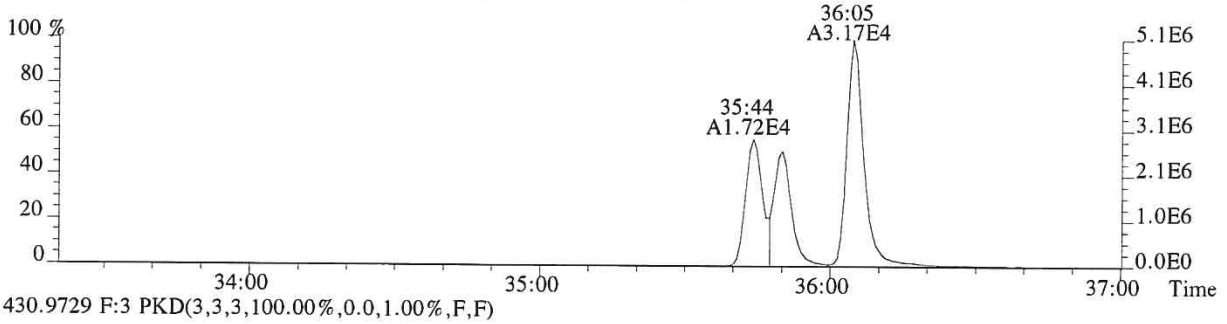
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1368.0,0.40%,F,T)



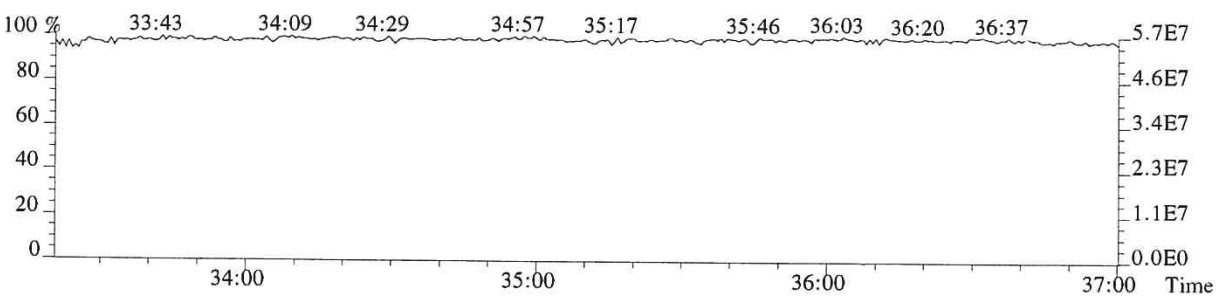
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1068.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1044.0,0.40%,F,T)

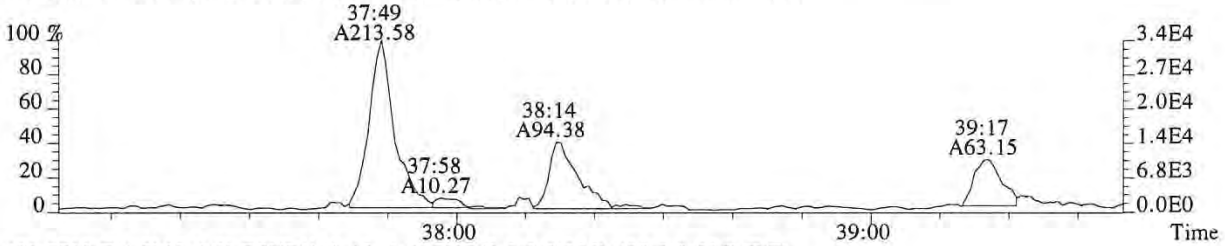


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

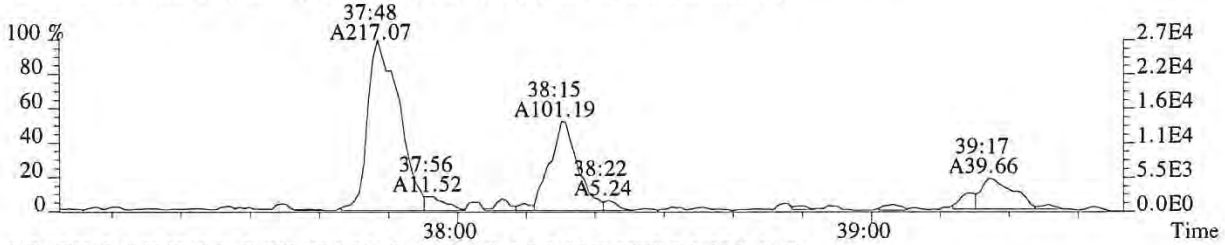


060045

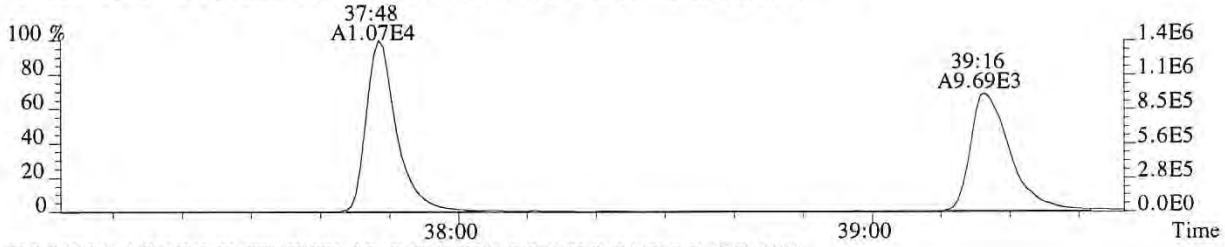
File:P519691 #1-232 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1232.0,0.50%,F,T)



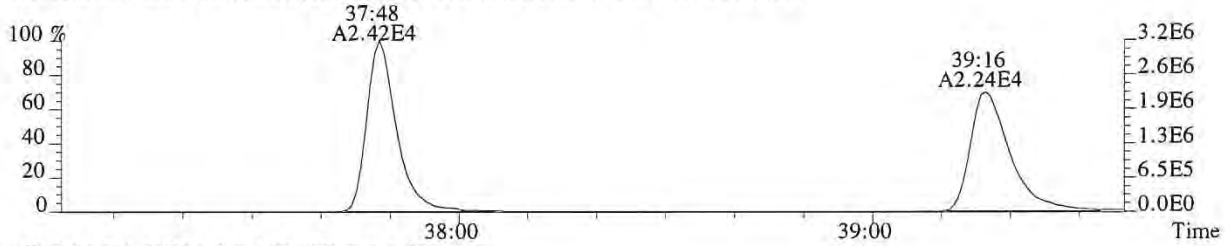
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,488.0,0.50%,F,T)



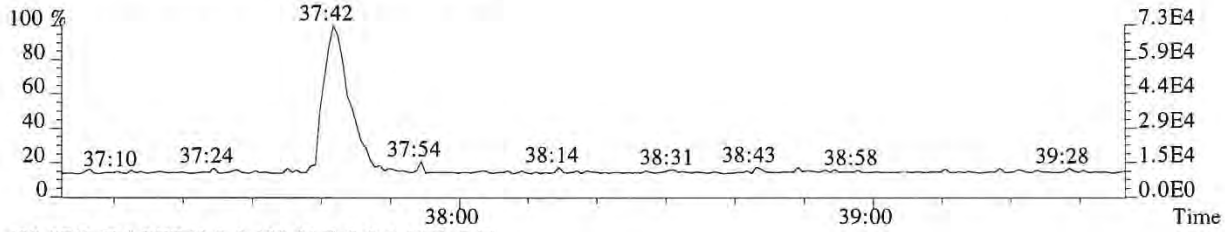
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1088.0,0.50%,F,T)



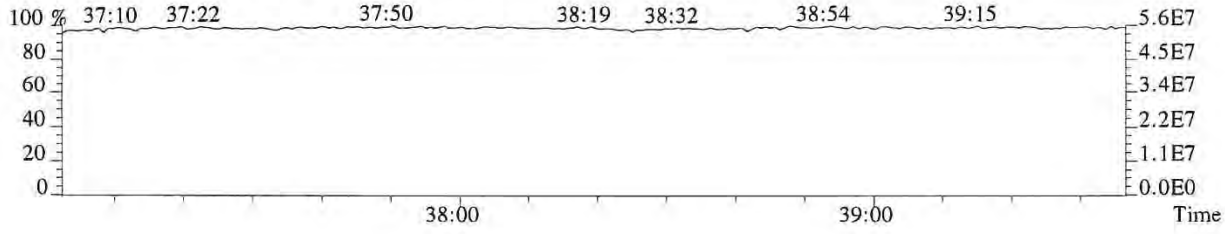
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5180.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

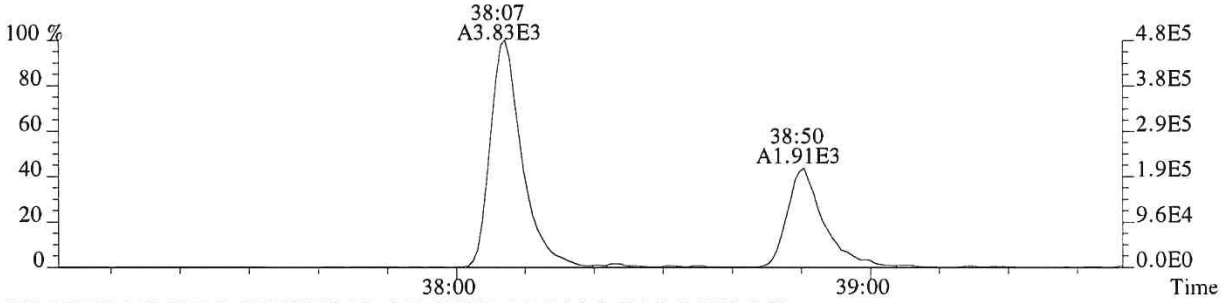


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

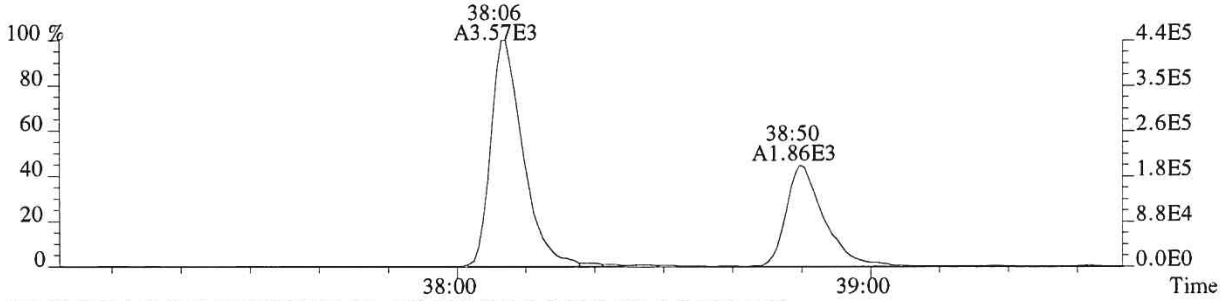


060046

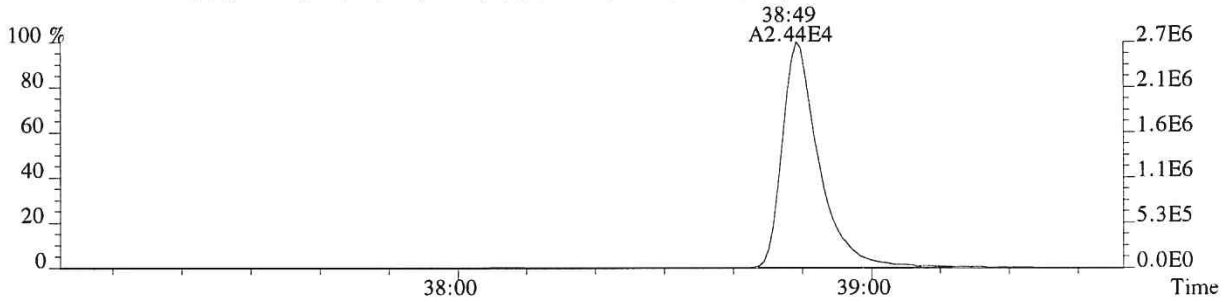
File:P519691 #1-232 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,852.0,0.40%,F,T)



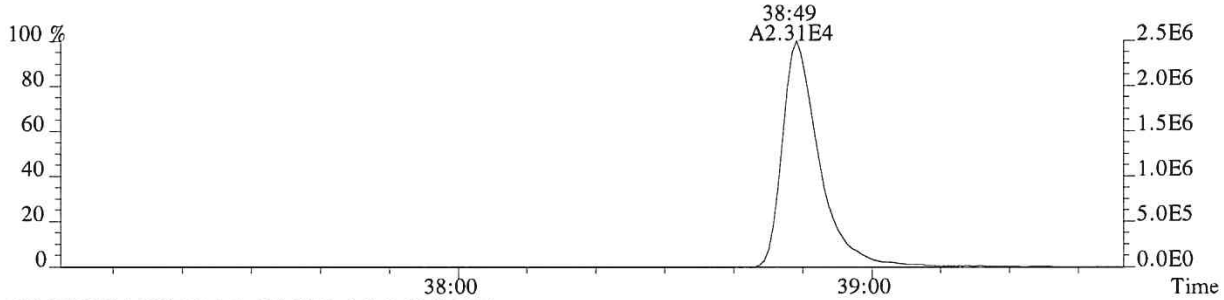
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,604.0,0.40%,F,T)



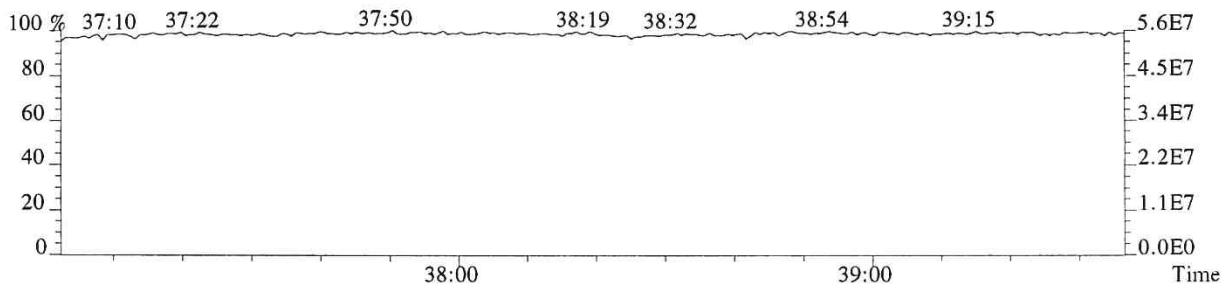
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,680.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,588.0,0.40%,F,T)

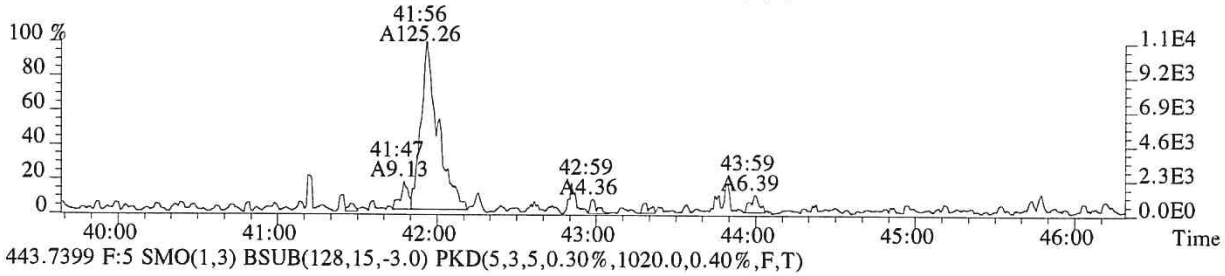


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

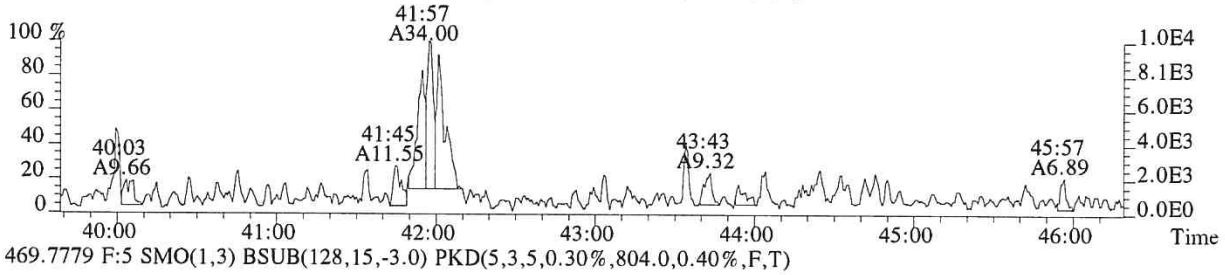


File:P519691 #1-601 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005

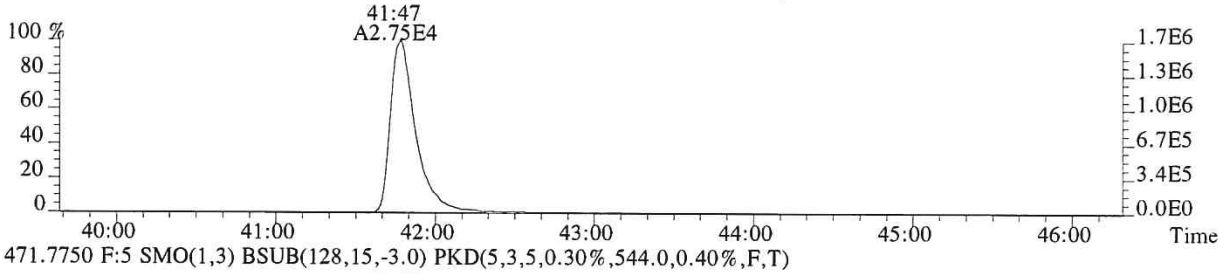
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



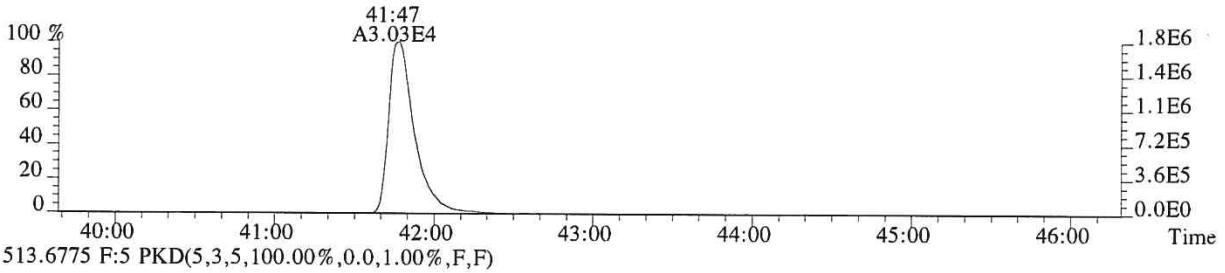
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1020.0,0.40%,F,T)



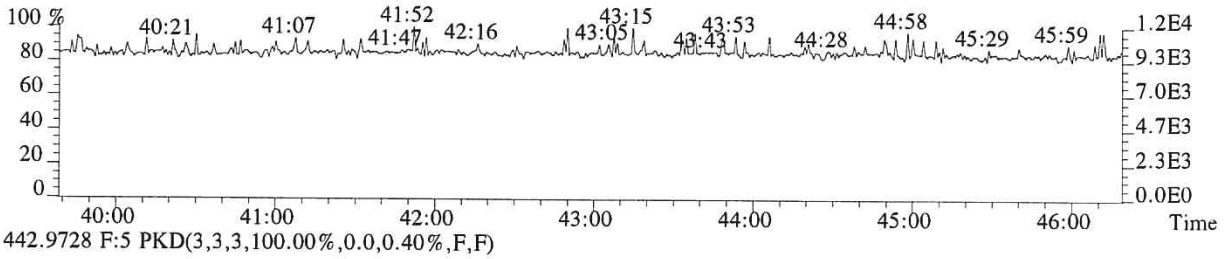
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,804.0,0.40%,F,T)



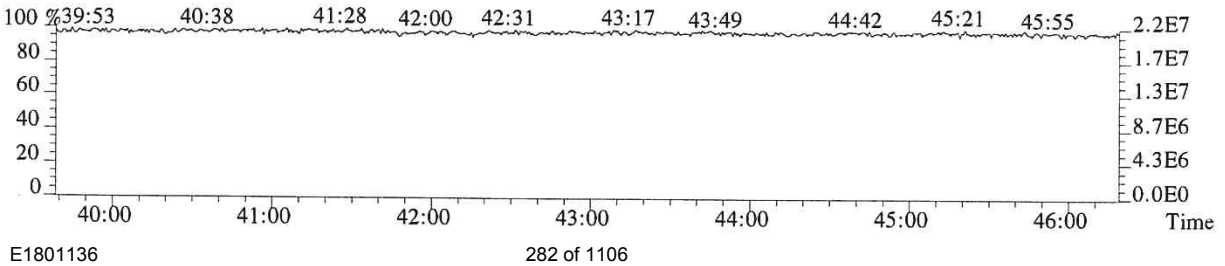
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,544.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

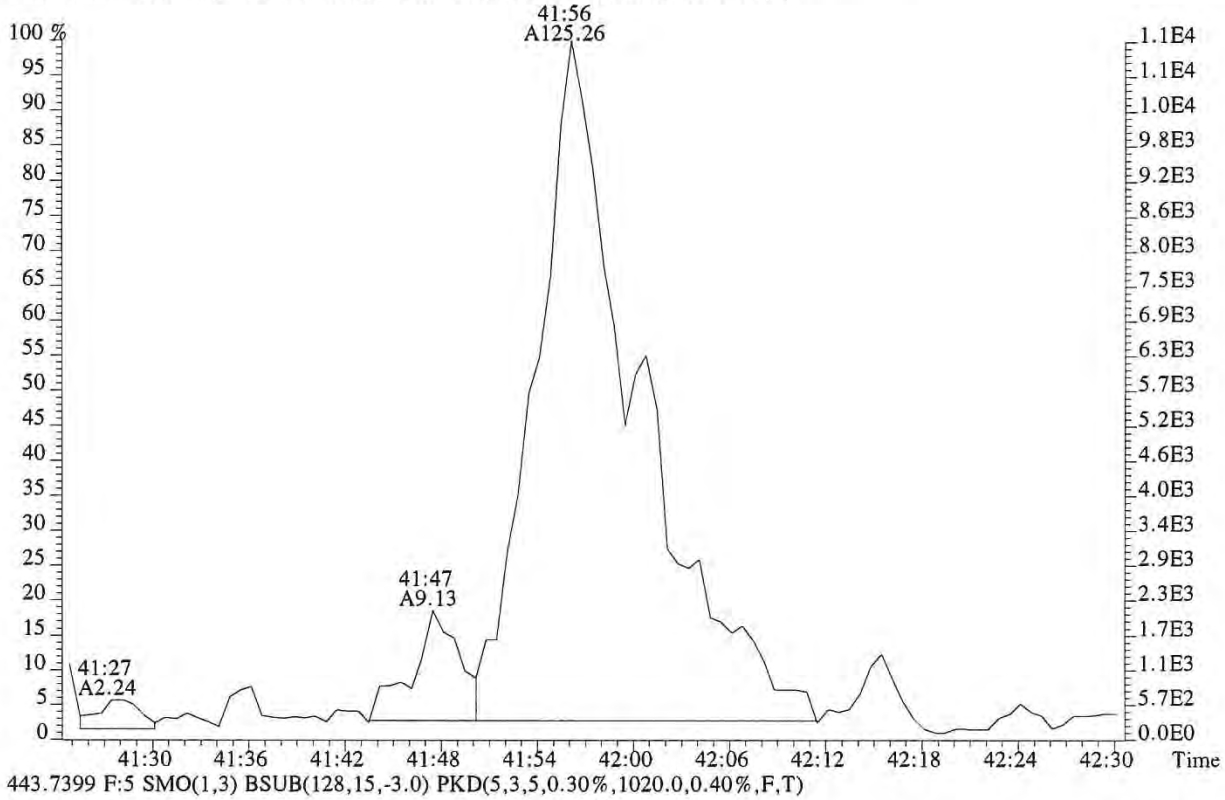


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

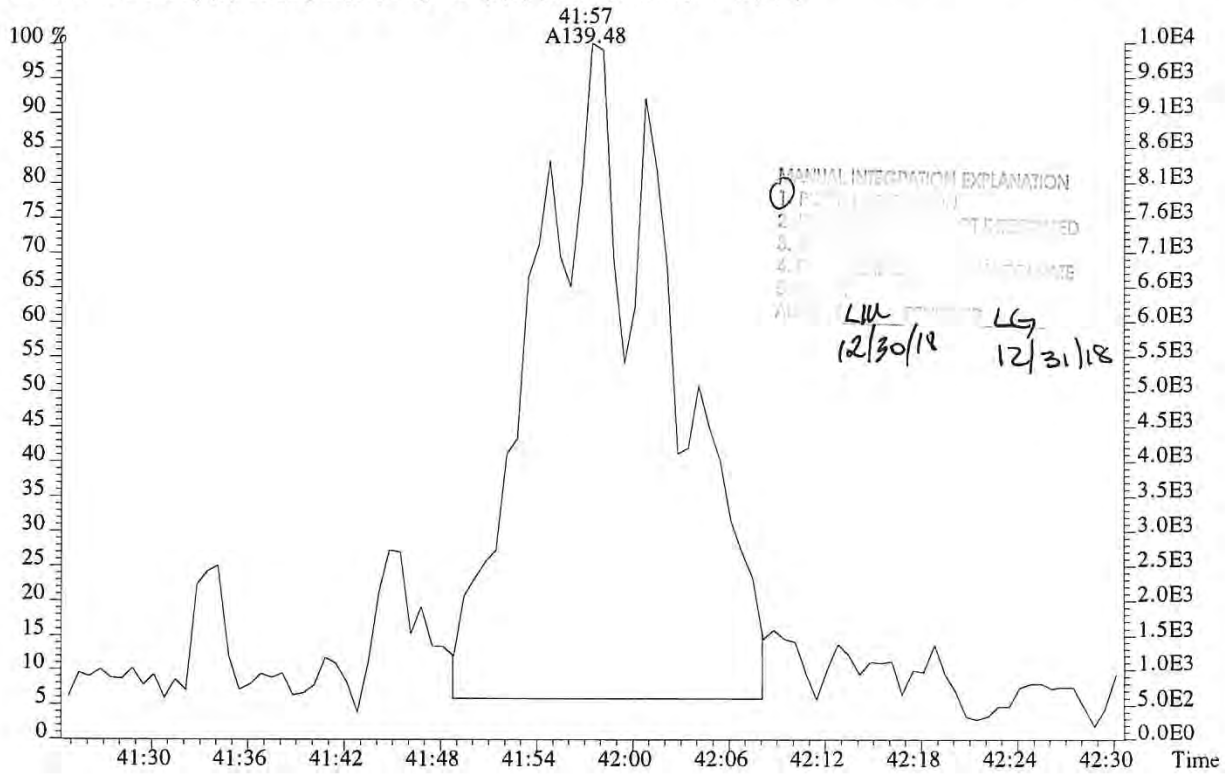


060048

File:P519691 #1-601 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



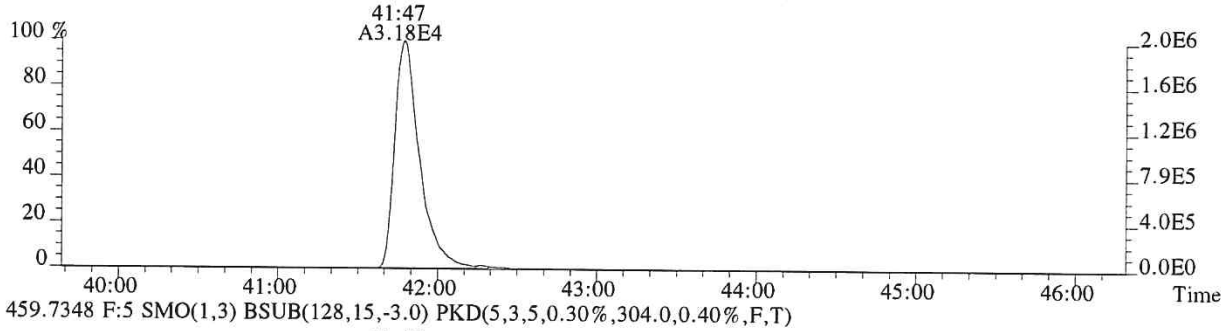
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1020.0,0.40%,F,T)



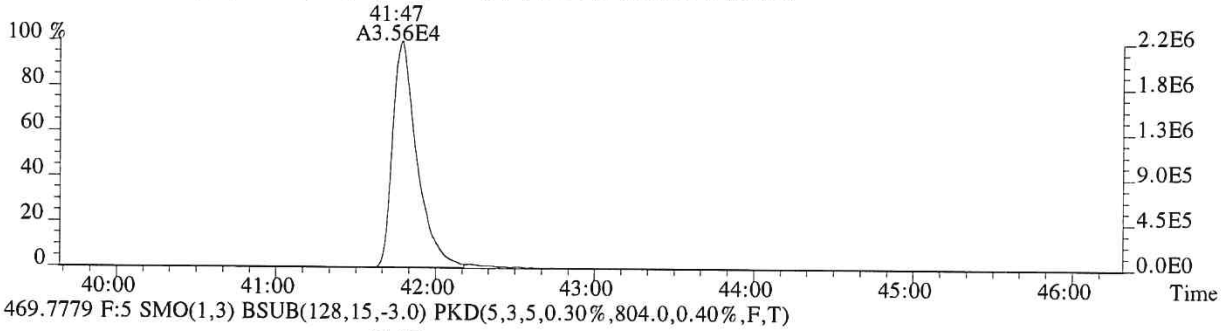
MANUAL INTEGRATION EXPLANATION
1
LH 12/30/18
LG 12/31/18

060049

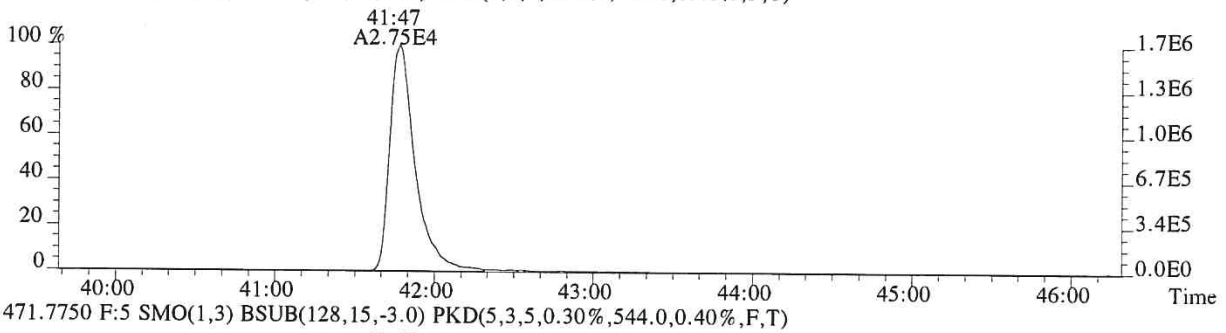
File:P519691 #1-601 Acq:29-DEC-2018 15:33:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-005
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,364.0,0.40%,F,T)



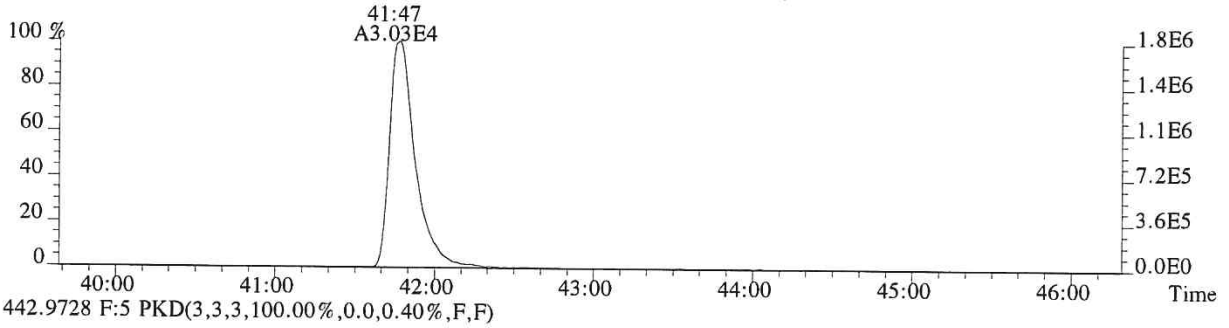
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,304.0,0.40%,F,T)



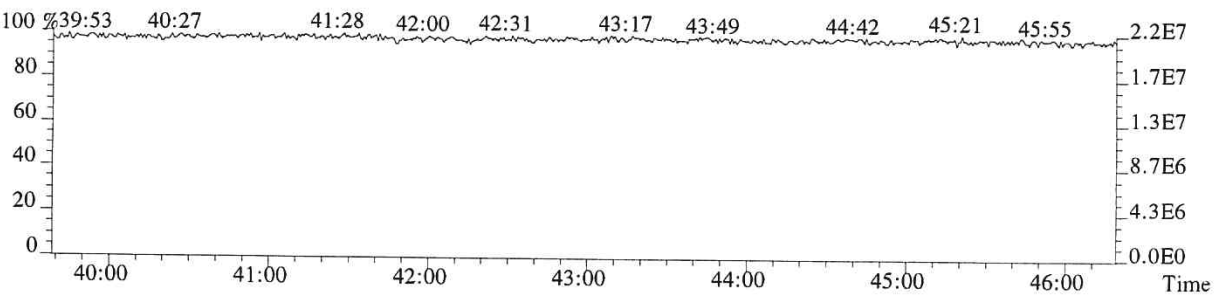
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,804.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,544.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060050

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0085

Run #15 Filename P519692 Samp: 1 Inj: 1 Acquired: 29-DEC-18 16:21:57
Processed: 30-DEC-18 08:05:03 Sample ID: E1801136-006

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:06	3.636e+03	5.018e+03	0.72	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:58	3.520e+02	2.412e+02	1.46	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	31:59	3.489e+02	2.693e+02	1.30	no	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	5.411e+02	5.118e+02	1.06	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:01	2.642e+02	2.220e+02	1.19	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:34	1.867e+02	1.629e+02	1.15	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	7.062e+01	7.050e+01	1.00	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:47	9.293e+02	8.948e+02	1.04	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.258
10	Unk	OCDF	41:56	1.025e+03	1.266e+03	0.81	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	1.090e+03	1.330e+03	0.82	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:18	9.772e+01	6.346e+01	1.54	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:45	8.498e+01	4.130e+01	2.06	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:50	1.676e+02	1.321e+02	1.27	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	1.516e+02	1.406e+02	1.08	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:47	4.336e+03	4.222e+03	1.03	yes	no	1.025
17	Unk	OCDD	41:45	3.211e+05	3.615e+05	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	2.599e+04	3.314e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	4.134e+04	2.641e+04	1.57	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	3.841e+04	2.441e+04	1.57	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:54	1.649e+04	3.195e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.920e+04	3.726e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:34	1.716e+04	3.337e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:22	1.722e+04	3.360e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:47	1.221e+04	2.769e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	1.162e+04	2.657e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	1.314e+04	1.687e+04	0.78	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	3.158e+04	1.990e+04	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:44	2.467e+04	1.976e+04	1.25	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	2.632e+04	2.076e+04	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:46	2.756e+04	2.587e+04	1.07	yes	no	0.858
32	IS	13C-OCDD	41:45	2.881e+04	3.143e+04	0.92	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	3.403e+04	4.364e+04	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:04	4.669e+04	3.730e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	2.006e+04				no	1.014

$$\text{OCDD} = \frac{(3.211e+05 + 3.615e+05) \times 4000\ \text{pg} \times 1}{(2.881e+04 + 3.143e+04) \times 10.301\ \text{g} \times 81.2 / 100 \times 1.118} = 4846.9004\ \text{ng/kg}$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0085

Run #15 Filename P519692 Samp: 1 Inj: 1 Acquired: 29-DEC-18 16:21:57
Processed: 30-DEC-18 08:05:03 LAB. ID: E1801136-006

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.55e+05	1.84e+03	3.0e+02	7.14e+05	1.35e+03	5.3e+02
2	1,2,3,7,8-PeCDF	6.46e+04	2.65e+03	2.4e+01	4.65e+04	2.04e+03	2.3e+01
3	2,3,4,7,8-PeCDF	5.63e+04	2.65e+03	2.1e+01	4.33e+04	2.04e+03	2.1e+01
4	1,2,3,4,7,8-HxCDF	8.90e+04	9.48e+02	9.4e+01	8.59e+04	1.06e+03	8.1e+01
5	1,2,3,6,7,8-HxCDF	4.29e+04	9.48e+02	4.5e+01	4.08e+04	1.06e+03	3.9e+01
6	2,3,4,6,7,8-HxCDF	3.09e+04	9.48e+02	3.3e+01	2.60e+04	1.06e+03	2.5e+01
7	1,2,3,7,8,9-HxCDF	1.22e+04	9.48e+02	1.3e+01	1.21e+04	1.06e+03	1.1e+01
8	1,2,3,4,6,7,8-HpCDF	1.25e+05	1.03e+03	1.2e+02	1.23e+05	2.86e+03	4.3e+01
9	1,2,3,4,7,8,9-HpCDF	*	1.03e+03	*	*	2.86e+03	*
10	OCDF	6.12e+04	4.12e+02	1.5e+02	7.53e+04	1.05e+03	7.2e+01
11	2,3,7,8-TCDD	1.78e+05	2.68e+03	6.6e+01	2.18e+05	1.12e+03	2.0e+02
12	1,2,3,7,8-PeCDD	1.75e+04	1.09e+03	1.6e+01	1.21e+04	5.64e+02	2.1e+01
13	1,2,3,4,7,8-HxCDD	1.56e+04	6.52e+02	2.4e+01	1.05e+04	1.41e+03	7.5e+00
14	1,2,3,6,7,8-HxCDD	2.69e+04	6.52e+02	4.1e+01	1.92e+04	1.41e+03	1.4e+01
15	1,2,3,7,8,9-HxCDD	2.46e+04	6.52e+02	3.8e+01	1.97e+04	1.41e+03	1.4e+01
16	1,2,3,4,6,7,8-HpCDD	4.93e+05	6.60e+02	7.5e+02	4.79e+05	4.96e+02	9.7e+02
17	OCDD	2.04e+07	4.16e+02	4.9e+04	2.26e+07	2.24e+02	1.0e+05
18	13C-2,3,7,8-TCDF	4.07e+06	6.34e+03	6.4e+02	5.17e+06	4.27e+03	1.2e+03
19	13C-1,2,3,7,8-PeCDF	7.32e+06	8.28e+02	8.8e+03	4.66e+06	9.24e+02	5.0e+03
20	13C-2,3,4,7,8-PeCDF	6.72e+06	8.28e+02	8.1e+03	4.30e+06	9.24e+02	4.7e+03
21	13C-1,2,3,4,7,8-HxCDF	2.96e+06	1.30e+03	2.3e+03	5.73e+06	1.12e+03	5.1e+03
22	13C-1,2,3,6,7,8-HxCDF	3.20e+06	1.30e+03	2.5e+03	6.22e+06	1.12e+03	5.6e+03
23	13C-2,3,4,6,7,8-HxCDF	2.88e+06	1.30e+03	2.2e+03	5.56e+06	1.12e+03	5.0e+03
24	13C-1,2,3,7,8,9-HxCDF	2.83e+06	1.30e+03	2.2e+03	5.47e+06	1.12e+03	4.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.58e+06	2.26e+03	7.0e+02	3.69e+06	4.55e+03	8.1e+02
26	13C-1,2,3,4,7,8,9-HpCDF	1.22e+06	2.26e+03	5.4e+02	2.77e+06	4.55e+03	6.1e+02
27	13C-2,3,7,8-TCDD	2.23e+06	5.44e+03	4.1e+02	2.85e+06	2.54e+03	1.1e+03
28	13C-1,2,3,7,8-PeCDD	5.49e+06	1.22e+03	4.5e+03	3.45e+06	1.23e+03	2.8e+03
29	13C-1,2,3,4,7,8-HxCDD	4.40e+06	8.52e+02	5.2e+03	3.46e+06	1.00e+03	3.5e+03
30	13C-1,2,3,6,7,8-HxCDD	4.04e+06	8.52e+02	4.7e+03	3.17e+06	1.00e+03	3.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.99e+06	1.00e+03	3.0e+03	2.77e+06	3.16e+02	8.8e+03
32	13C-OCDD	1.77e+06	9.04e+02	2.0e+03	1.98e+06	5.24e+02	3.8e+03
33	13C-1,2,3,4-TCDD	5.62e+06	5.44e+03	1.0e+03	7.16e+06	2.54e+03	2.8e+03
34	13C-1,2,3,7,8,9-HxCDD	6.95e+06	8.52e+02	8.2e+03	5.56e+06	1.00e+03	5.6e+03
35	37Cl-2,3,7,8-TCDD	3.31e+06	1.04e+03	3.2e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.684e{+}03 + 1.116e{+}03) \times 2000}{(2.225e{+}06 + 2.855e{+}06) \times (\quad) \times 1.085} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0085

Entry: 36 Totals Name: Total Tetra-Furans

Run: 15 File: P519692 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 16:21:57 Processed: 30-DEC-18 08:05:03

Mass: 303.9020 305.8990 Tot Response: 1.57e+04 RRF: 0.9417

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:27	9.81e+01	1.12e+02	0.88	yes	2.10e+02	n	n
2	22:54	2.79e+02	4.01e+02	0.70	yes	6.80e+02	n	n
3	23:11	2.62e+02	3.88e+02	0.68	yes	6.50e+02	n	n
4	23:51	1.48e+02	1.96e+02	0.76	yes	3.45e+02	n	n
5	24:30	1.18e+02	1.48e+02	0.80	yes	2.65e+02	n	n
6	25:06	1.39e+03	1.81e+03	0.76	yes	3.20e+03	n	n
7	26:06	3.64e+03	5.02e+03	0.72	yes	8.65e+03 2,3,7,8-TCDF	n	n
8	26:31	4.65e+02	6.29e+02	0.74	yes	1.09e+03	n	n
9	28:16	2.49e+02	3.19e+02	0.78	yes	5.69e+02	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0085

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 15 File: P519692 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 16:21:57 Processed: 30-DEC-18 08:05:03

Mass: 319.8970 321.8940 Tot Response: 2.65e+03 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:04	1.09e+03	1.33e+03 0.82	yes	2.42e+03	2,3,7,8-TCDD	n	n
2	27:25	9.15e+01	1.39e+02 0.66	yes	2.30e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0085

Entry: 38 Totals Name: Total Penta-Furans1

Run: 15 File: P519692 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 16:21:57 Processed: 30-DEC-18 08:05:03

Mass: 339.8600 341.8570 Tot Response: 5.26e+02 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:16	3.08e+02	2.18e+02 1.41	yes	5.26e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0085

Entry: 39 Totals Name: Total Penta-Furans2

Run: 15 File: P519692 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 16:21:57 Processed: 30-DEC-18 08:05:03

Mass: 339.8600 341.8570 Tot Response: 1.85e+03 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:48	3.27e+02	2.15e+02 1.52	yes	5.42e+02		n	n
2	30:33	1.96e+02	1.40e+02 1.39	yes	3.36e+02		n	n
3	30:58	3.52e+02	2.41e+02 1.46	yes	5.93e+02	1,2,3,7,8-PeCDF	n	n
4	31:52	2.33e+02	1.46e+02 1.60	yes	3.79e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0085

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 15 File: P519692 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 16:21:57 Processed: 30-DEC-18 08:05:03

Mass: 355.8550 357.8520 Tot Response: 4.70e+02 RRF: 0.9565

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:00	1.11e+02	7.76e+01	1.43	yes	1.89e+02		n	n
2	31:01	3.20e+01	2.12e+01	1.51	yes	5.31e+01		n	n
3	31:17	4.27e+01	2.42e+01	1.77	yes	6.69e+01		n	n
4	32:18	9.77e+01	6.35e+01	1.54	yes	1.61e+02	1,2,3,7,8-PeCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0085

Entry: 41 Totals Name: Total Hexa-Furans

Run: 15 File: P519692 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 16:21:57 Processed: 30-DEC-18 08:05:03

Mass: 373.8210 375.8180 Tot Response: 3.71e+03 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:53	5.89e+02	5.00e+02	1.18	yes	1.09e+03		n	n
2	34:27	2.13e+02	1.65e+02	1.29	yes	3.78e+02		n	n
3	34:48	1.82e+02	1.36e+02	1.33	yes	3.19e+02		n	n
4	34:55	5.41e+02	5.12e+02	1.06	yes	1.05e+03	1,2,3,4,7,8-HxCDF	n	n
5	35:01	2.64e+02	2.22e+02	1.19	yes	4.86e+02	1,2,3,6,7,8-HxCDF	n	n
6	35:10	2.06e+01	1.90e+01	1.08	yes	3.96e+01		n	n
7	35:34	1.87e+02	1.63e+02	1.15	yes	3.50e+02	2,3,4,6,7,8-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0085

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 15 File: P519692 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 16:21:57 Processed: 30-DEC-18 08:05:03

Mass: 389.8160 391.8130 Tot Response: 3.43e+03 RRF: 1.047

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:17	9.37e+02	7.34e+02	1.28	yes	1.67e+03		n	n
2	35:05	6.19e+02	5.50e+02	1.13	yes	1.17e+03		n	n
3	35:50	1.68e+02	1.32e+02	1.27	yes	3.00e+02	1,2,3,6,7,8-HxCDD	n	n
4	36:05	1.52e+02	1.41e+02	1.08	yes	2.92e+02	1,2,3,7,8,9-HxCDD	n	n

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10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0085

Entry: 43 Totals Name: Total Hepta-Furans

Run: 15 File: P519692 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 16:21:57 Processed: 30-DEC-18 08:05:03

Mass: 407.7820 409.7790 Tot Response: 3.41e+03 RRF: 1.308

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:47	9.29e+02	8.95e+02 1.04	yes	1.82e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	38:05	6.81e+01	6.08e+01 1.12	yes	1.29e+02		n	n
3	38:14	7.25e+02	7.35e+02 0.99	yes	1.46e+03		n	n

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Peak List Summary

CLIENT ID.
SL0085

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 15 File: P519692 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 16:21:57 Processed: 30-DEC-18 08:05:03

Mass: 423.7770 425.7740 Tot Response: 2.18e+04 RRF: 1.025

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:06	6.69e+03	6.51e+03	1.03	yes	1.32e+04		n	n
2	38:47	4.34e+03	4.22e+03	1.03	yes	8.56e+03	1,2,3,4,6,7,8-HpCDD	n	n

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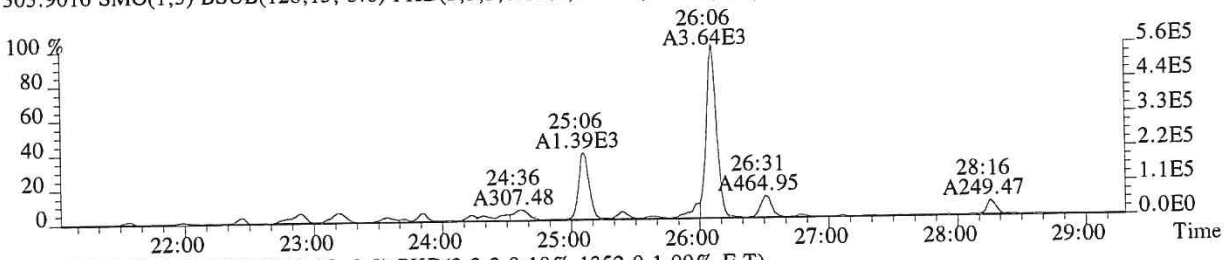
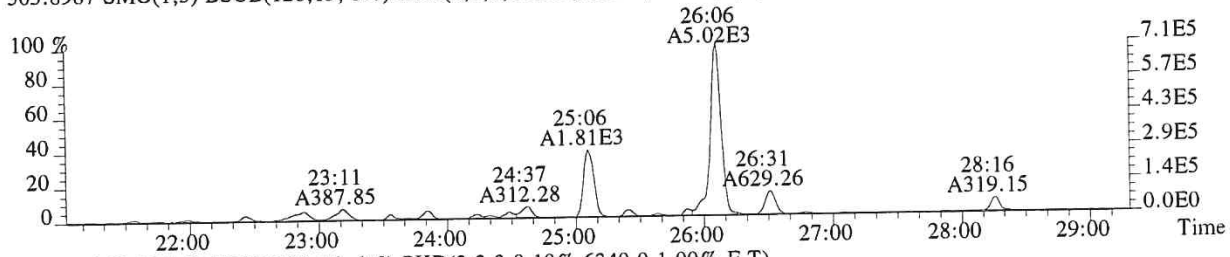
File:P519692 #1-587 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006

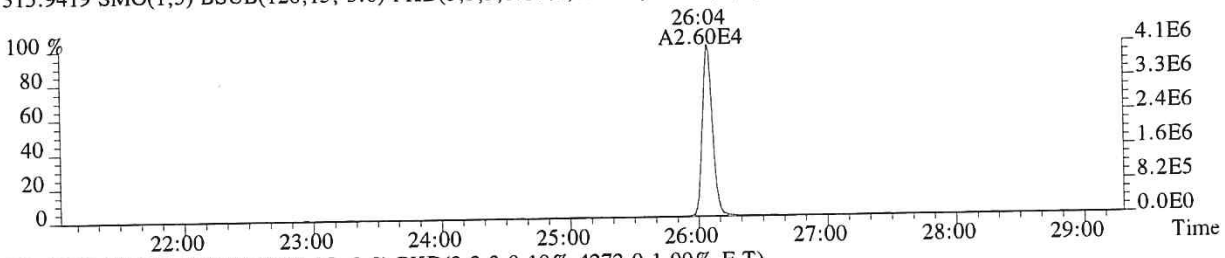
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1836.0,1.00%,F,T)



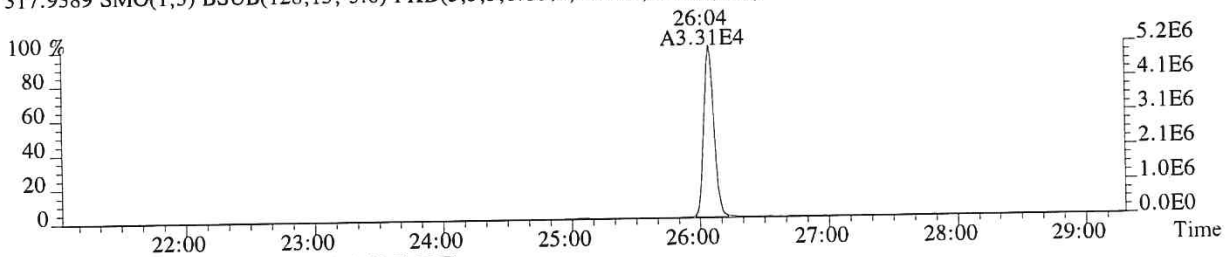
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1352.0,1.00%,F,T)



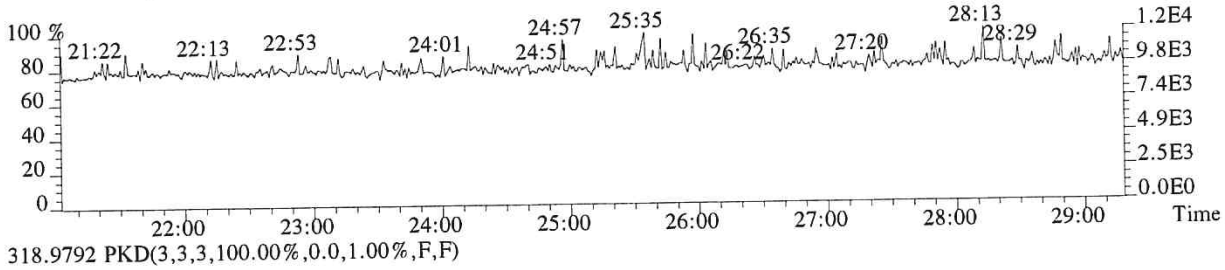
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6340.0,1.00%,F,T)



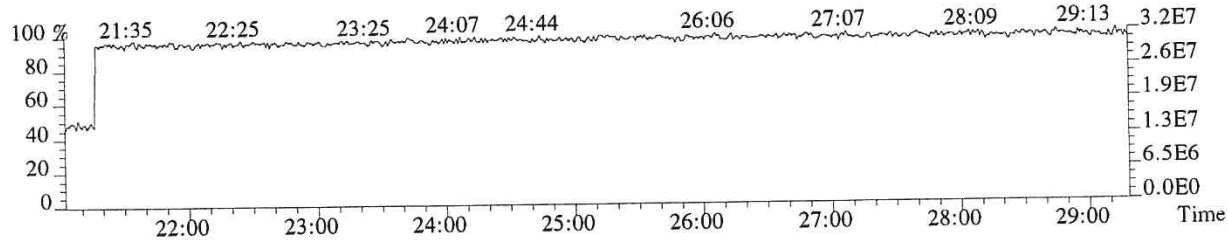
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4272.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



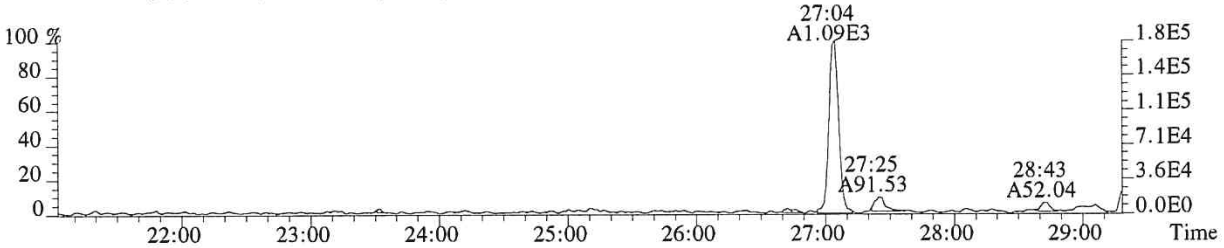
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



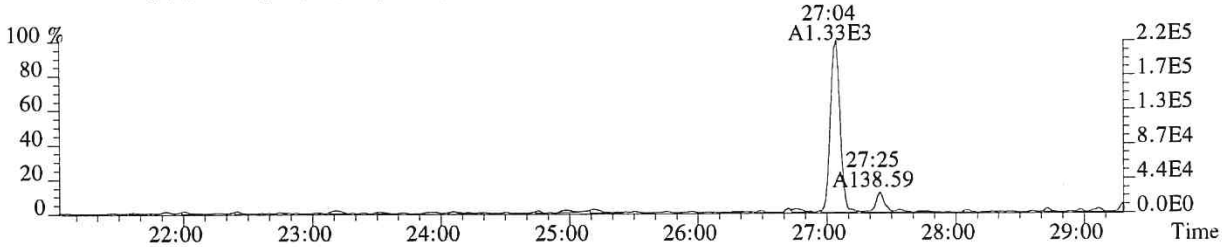
060062

File:P519692 #1-587 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006

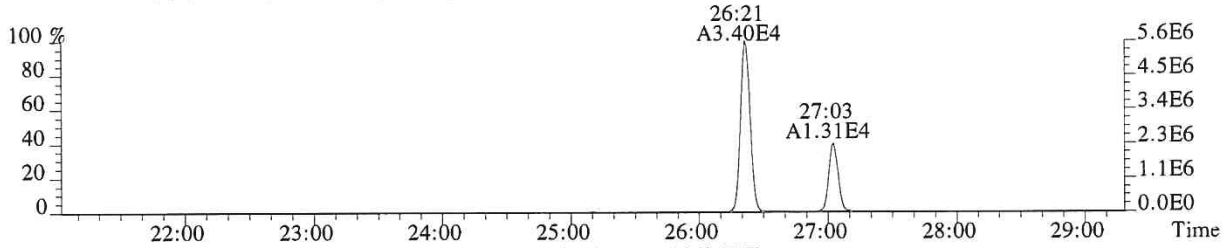
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2684.0,1.00%,F,T)



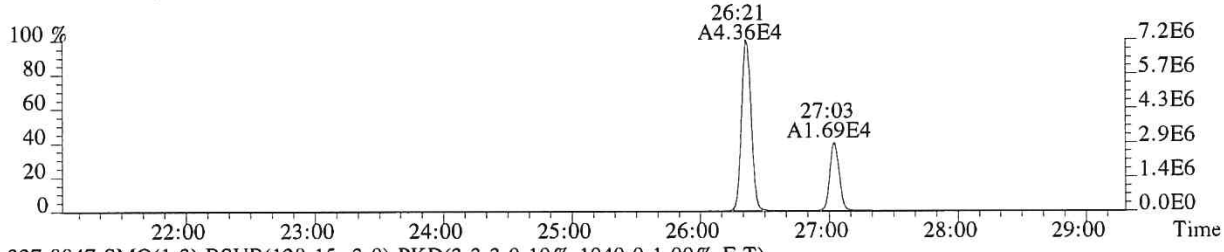
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1116.0,1.00%,F,T)



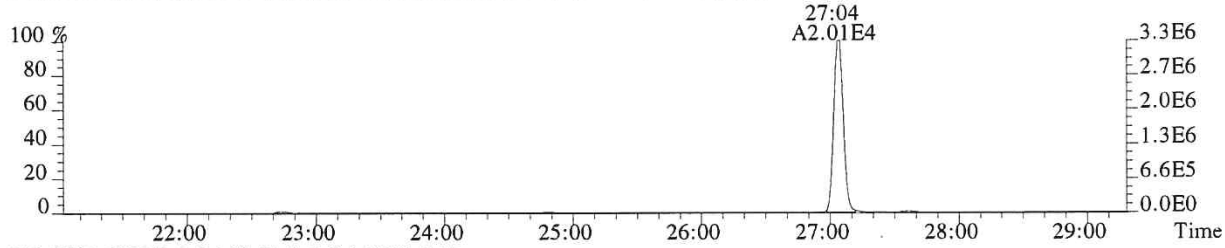
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5436.0,1.00%,F,T)



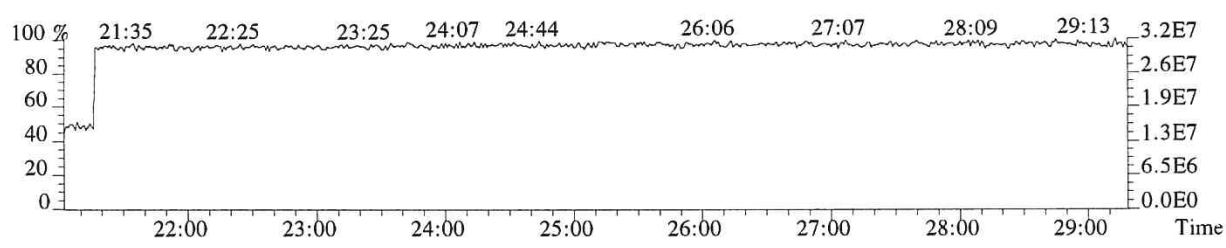
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2540.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1040.0,1.00%,F,T)

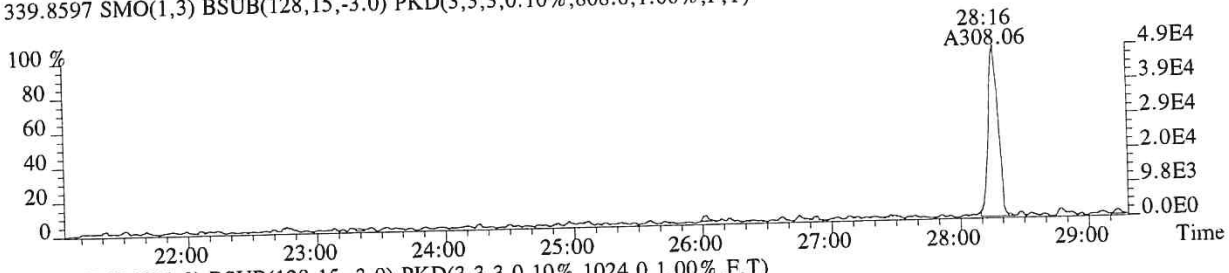


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

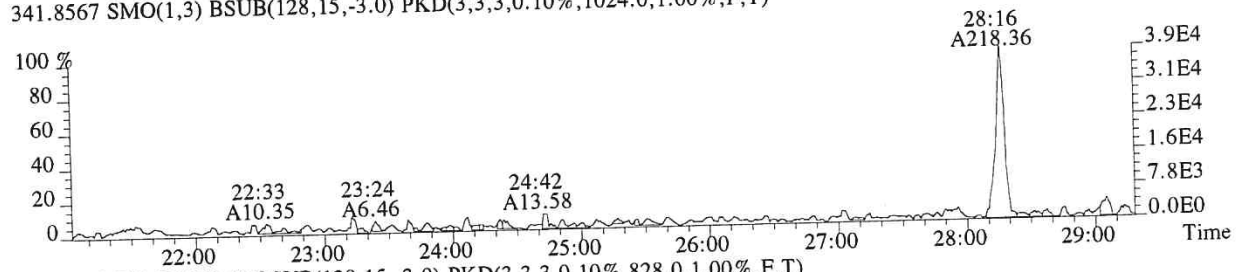


060063

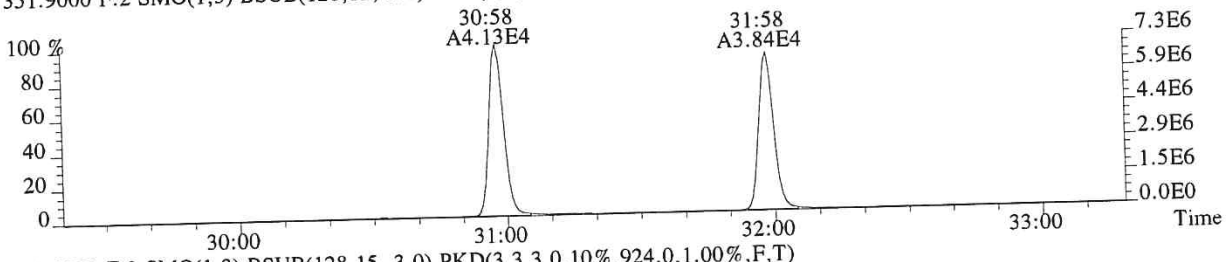
File:P519692 #1-587 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,808.0,1.00%,F,T)



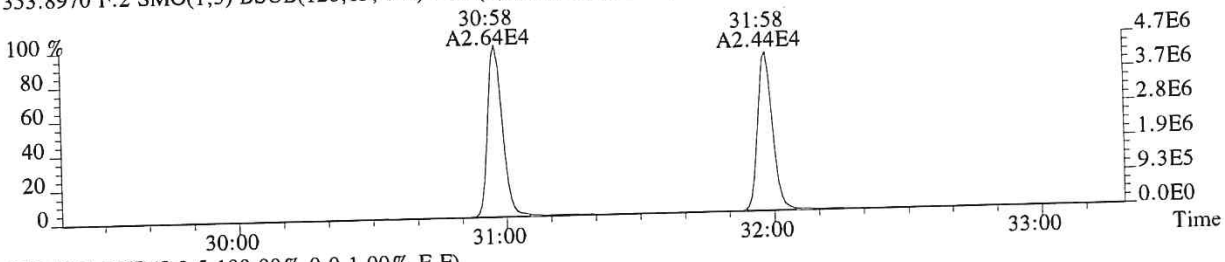
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1024.0,1.00%,F,T)



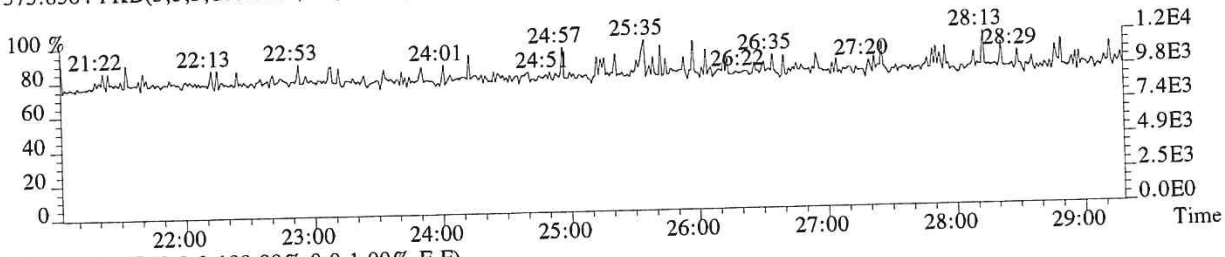
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,828.0,1.00%,F,T)



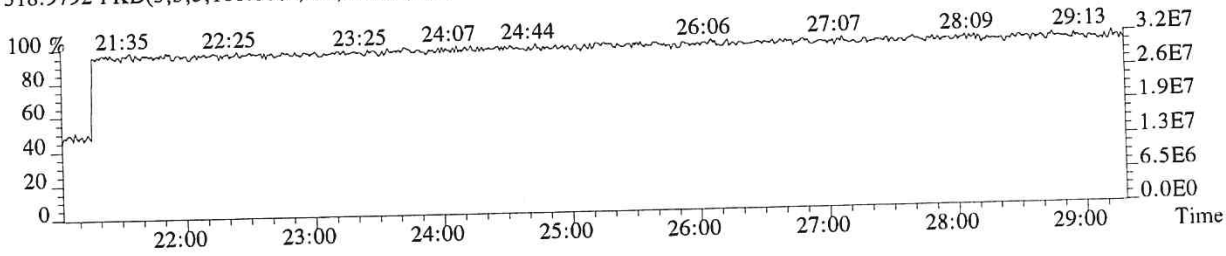
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,924.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

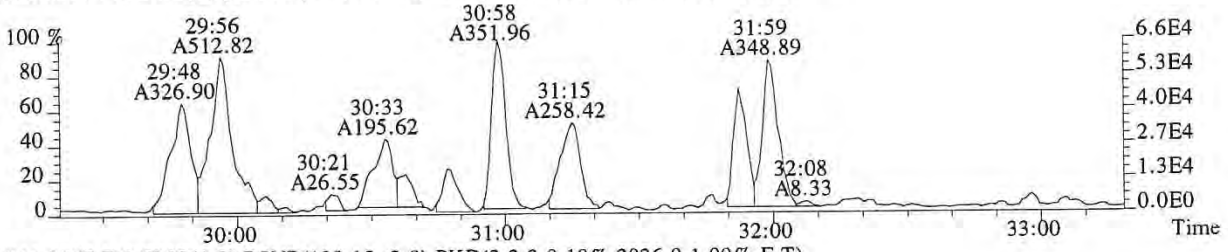


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

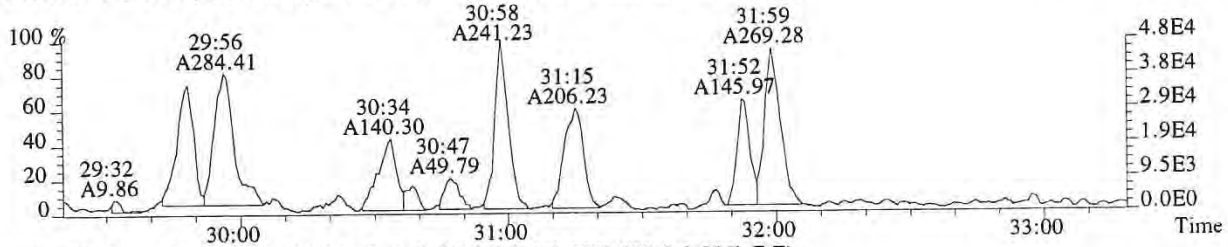


060064

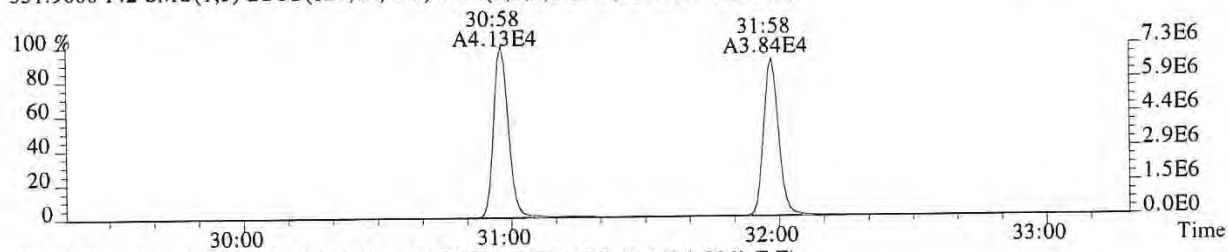
File:P519692 #1-358 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2652.0,1.00%,F,T)



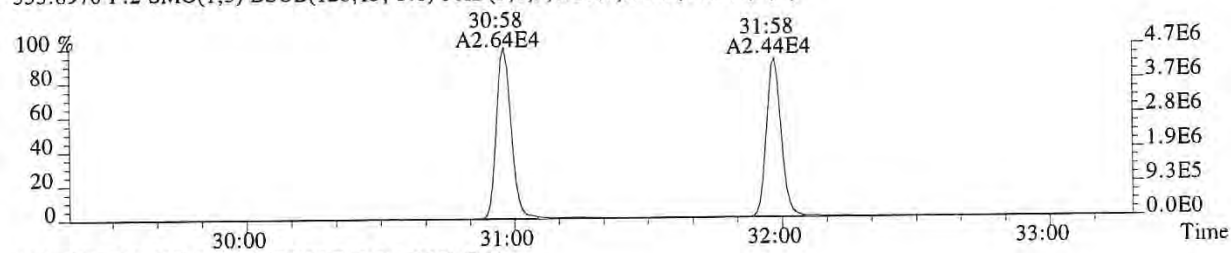
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2036.0,1.00%,F,T)



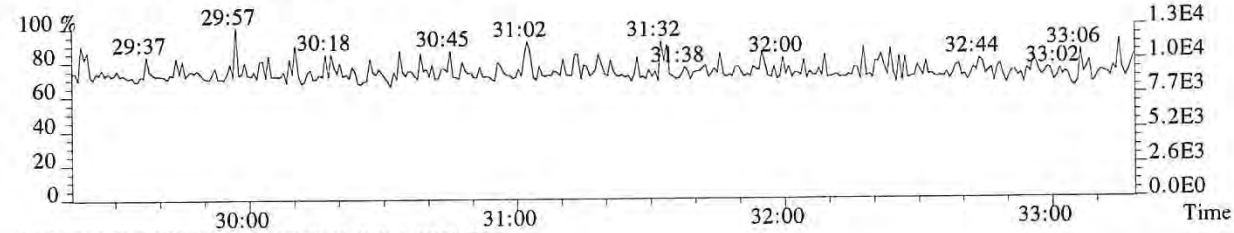
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,828.0,1.00%,F,T)



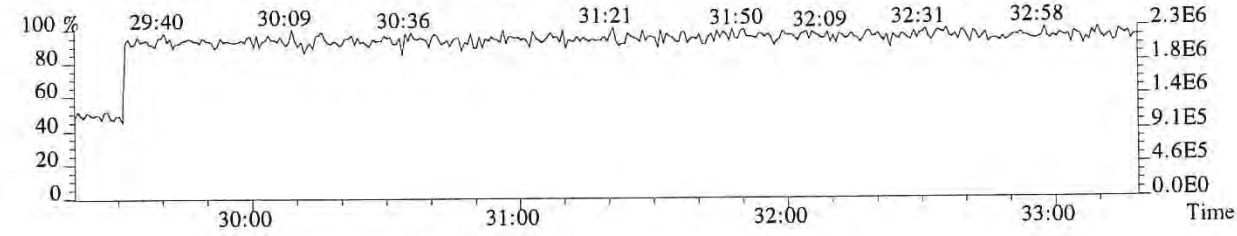
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,924.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

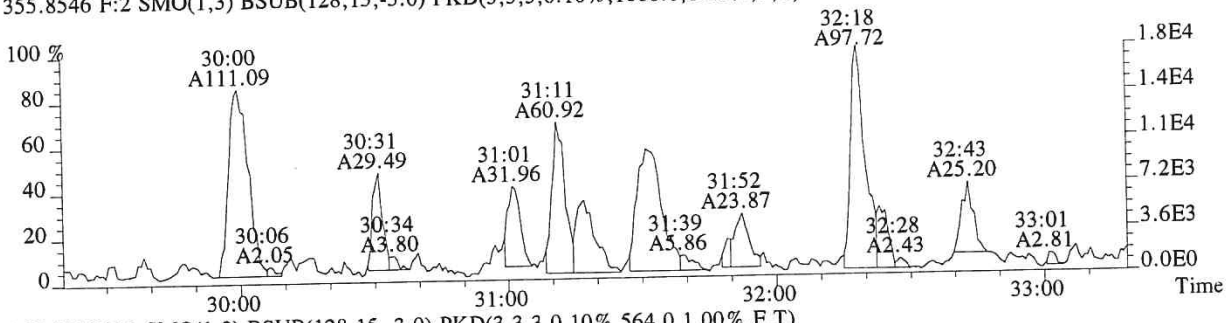


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

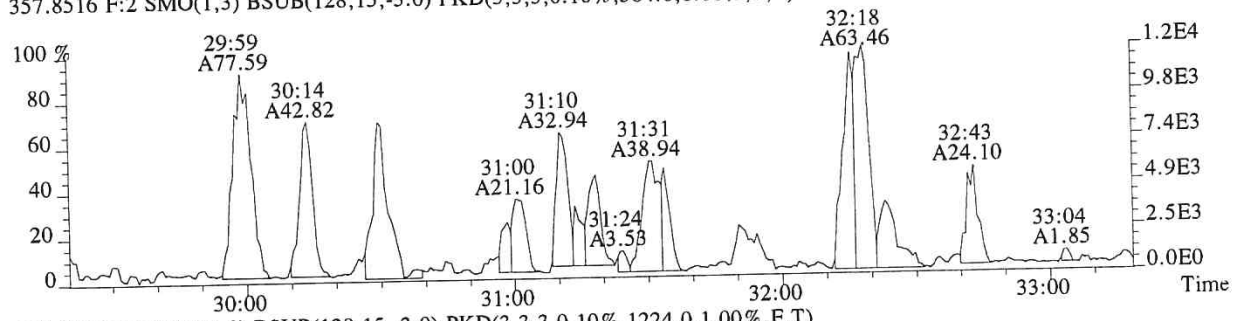


060065

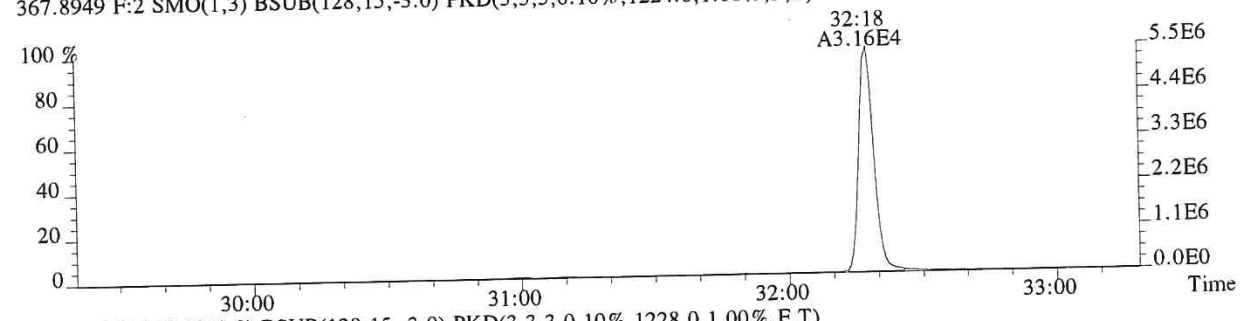
File:P519692 #1-358 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1088.0,1.00%,F,T)



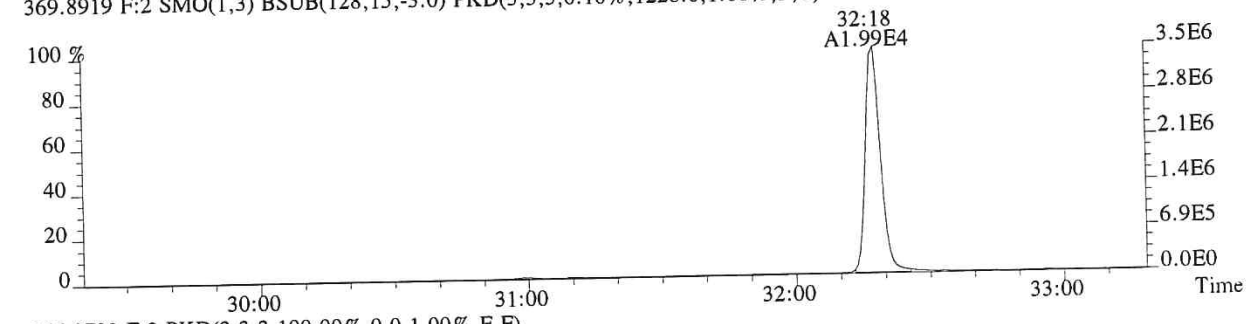
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,564.0,1.00%,F,T)



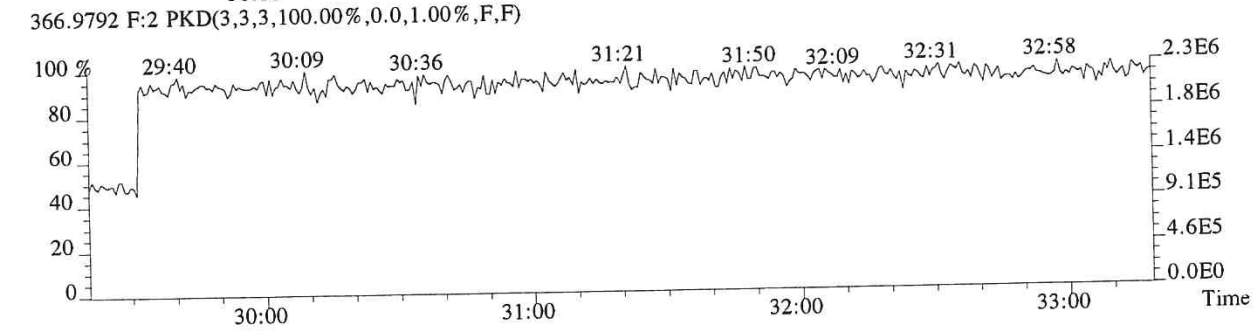
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1224.0,1.00%,F,T)



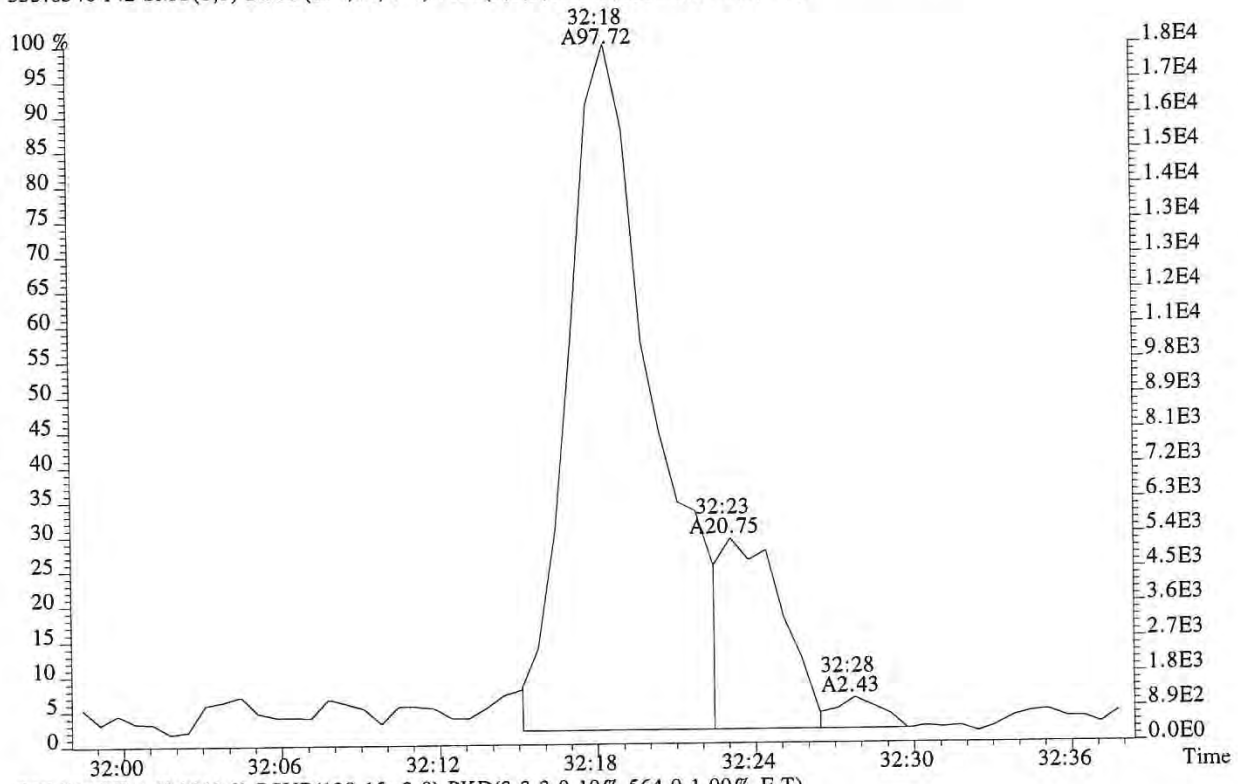
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1228.0,1.00%,F,T)



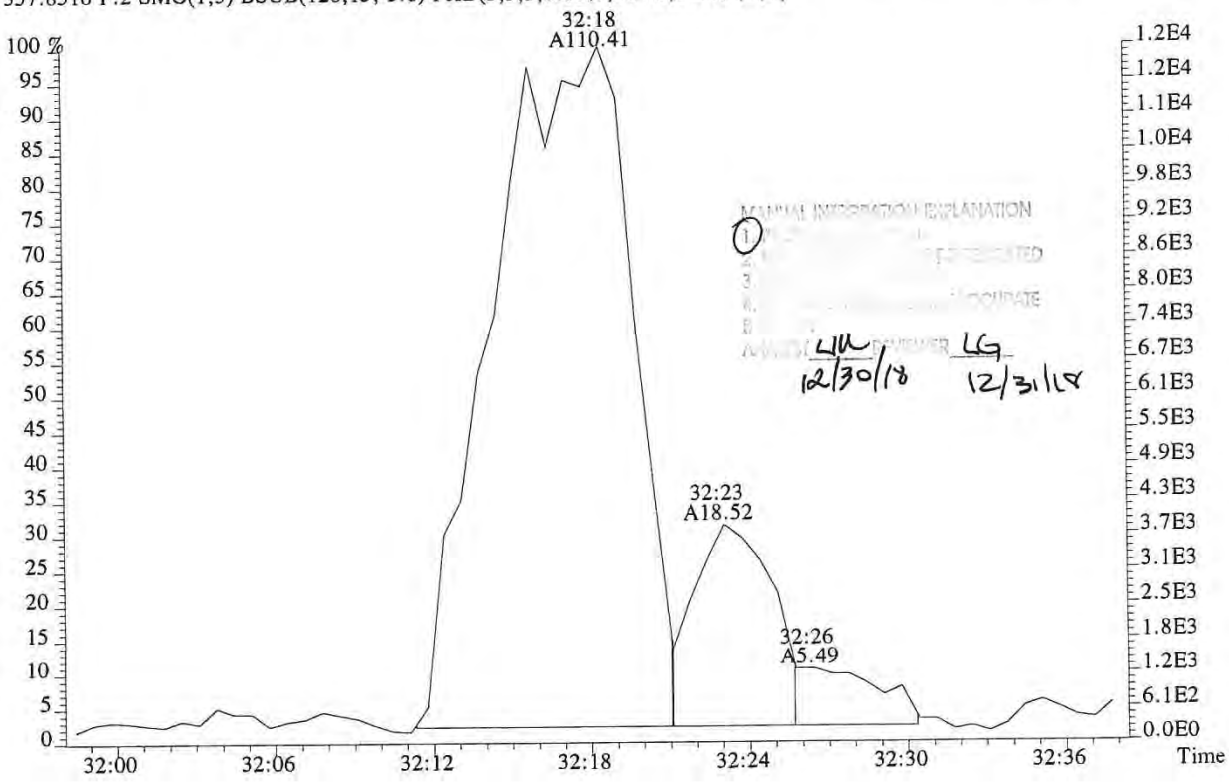
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P519692 #1-358 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1088.0,1.00%,F,T)



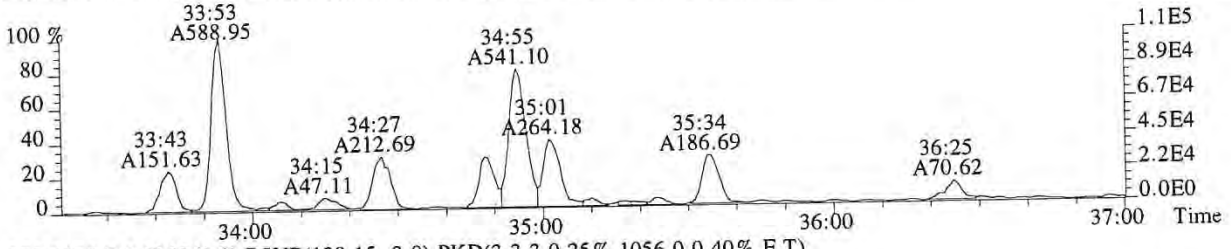
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,564.0,1.00%,F,T)



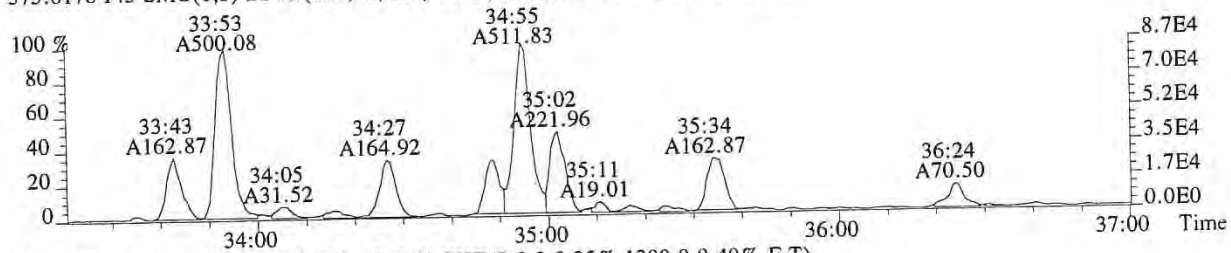
MANUAL INTEGRATION EXPLANATION
1
LM 12/30/18 LG 12/31/18

060067

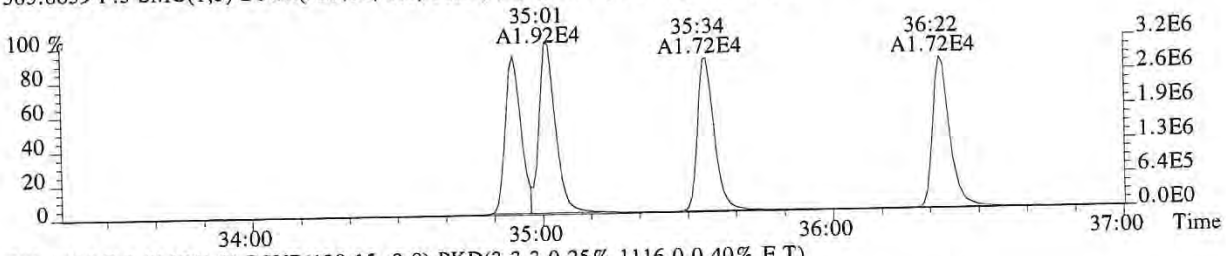
File:P519692 #1-330 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,948.0,0.40%,F,T)



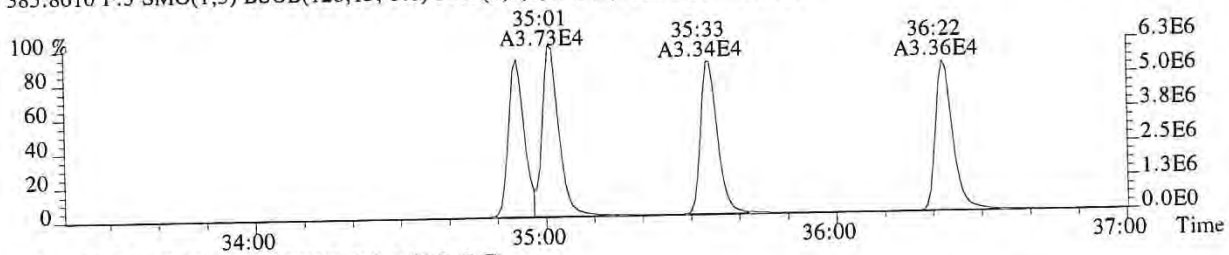
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1056.0,0.40%,F,T)



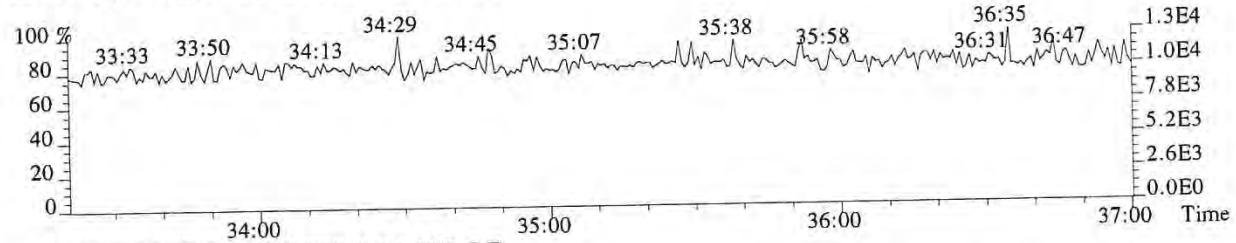
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1300.0,0.40%,F,T)



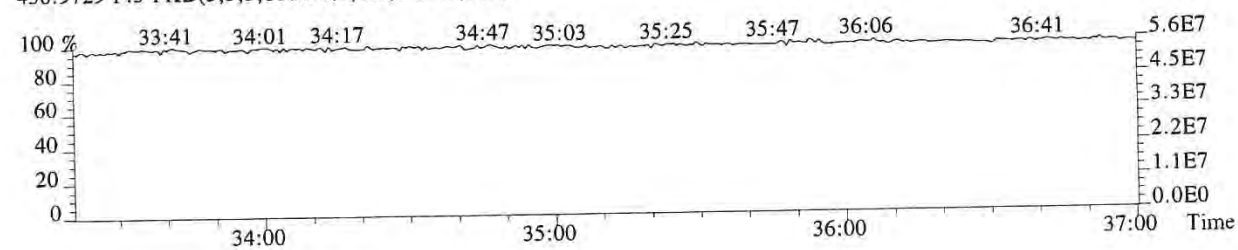
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1116.0,0.40%,F,T)



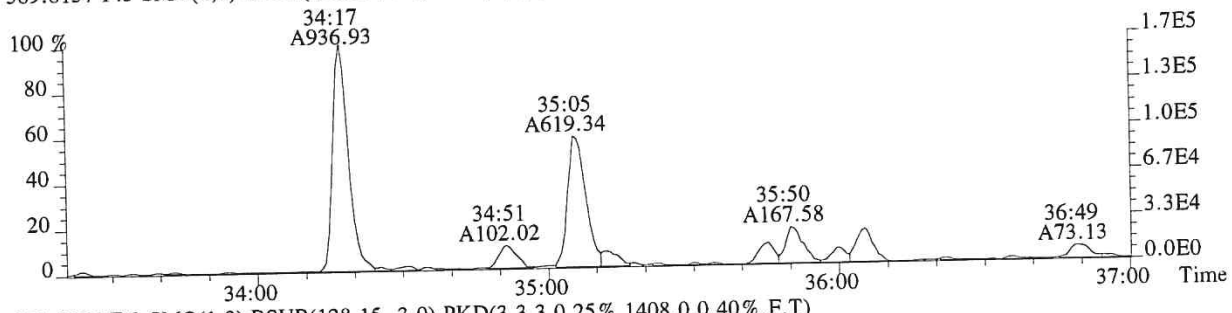
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



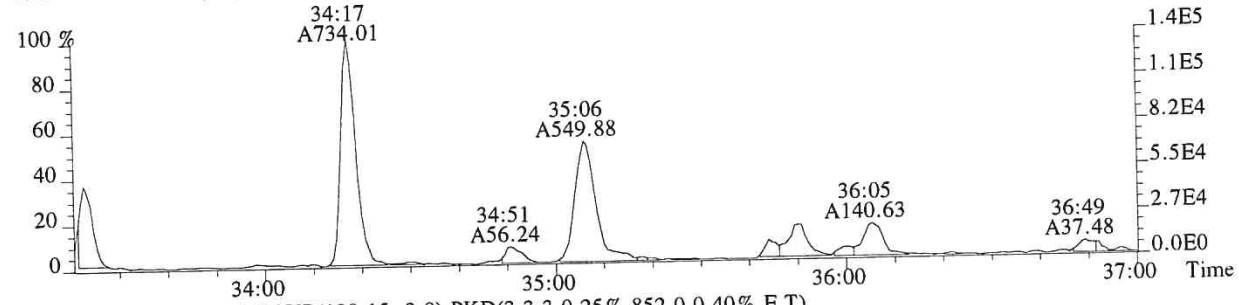
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



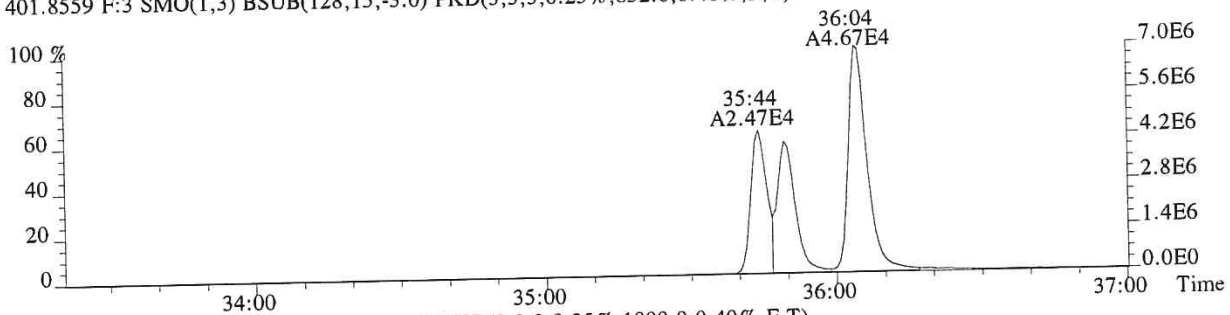
File:P519692 #1-330 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,652.0,0.40%,F,T)



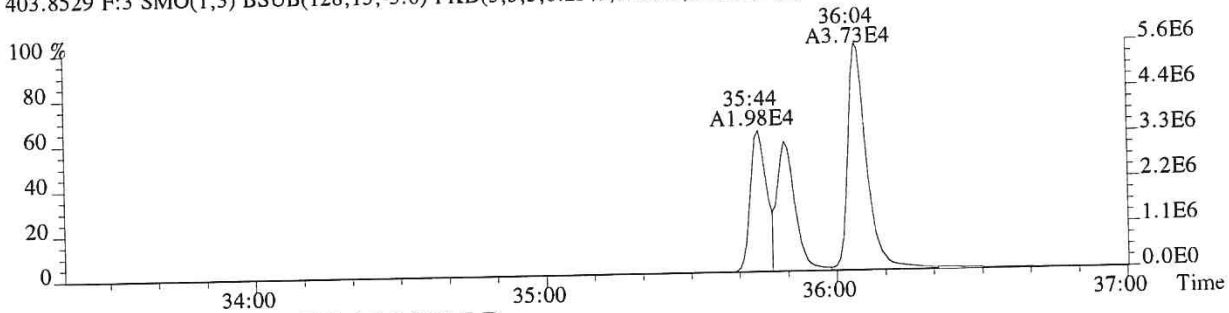
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1408.0,0.40%,F,T)



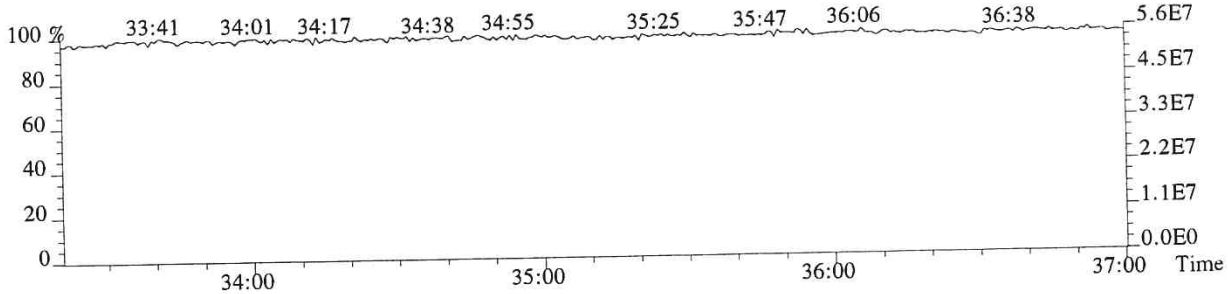
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,852.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1000.0,0.40%,F,T)

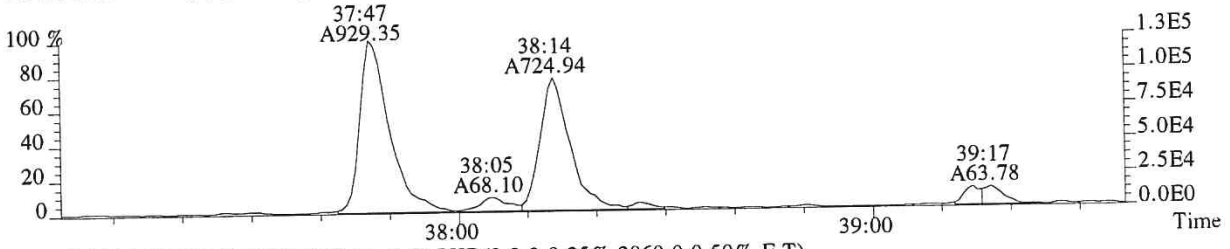


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

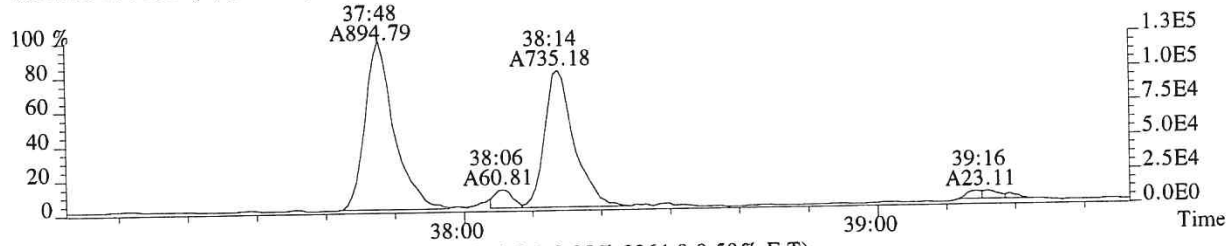


060069

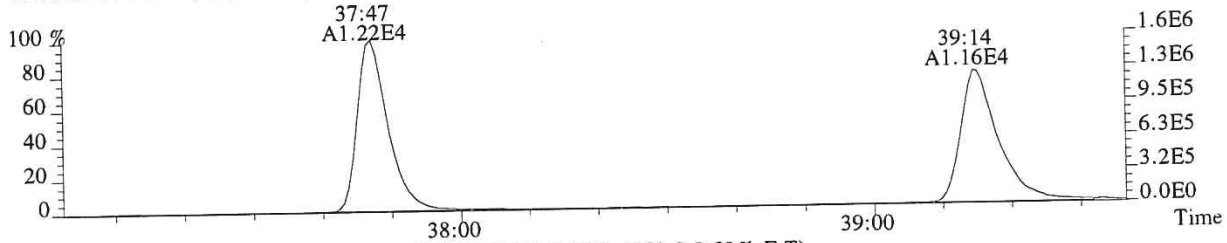
File:P519692 #1-232 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1032.0,0.50%,F,T)



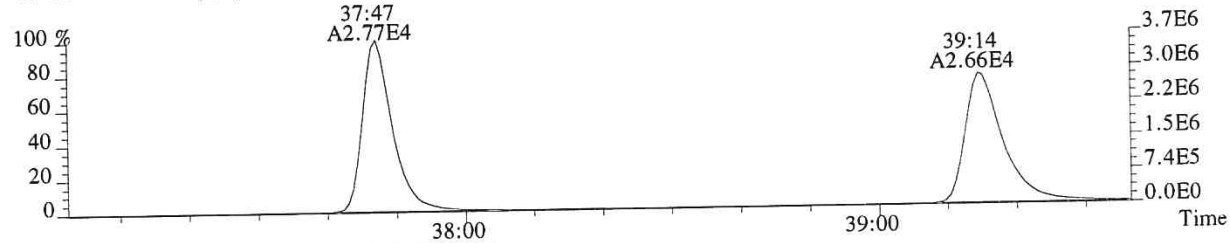
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2860.0,0.50%,F,T)



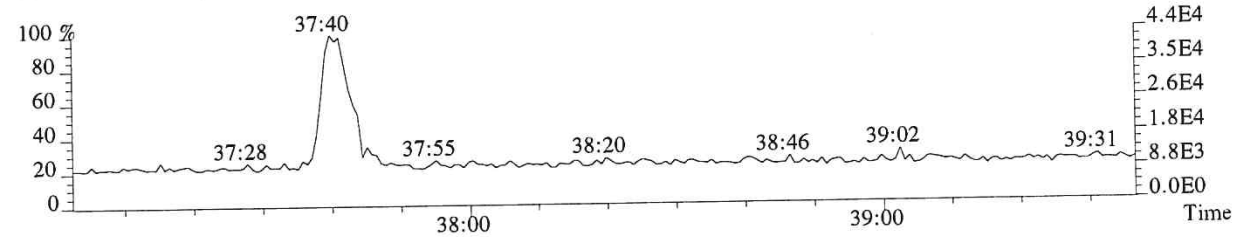
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2264.0,0.50%,F,T)



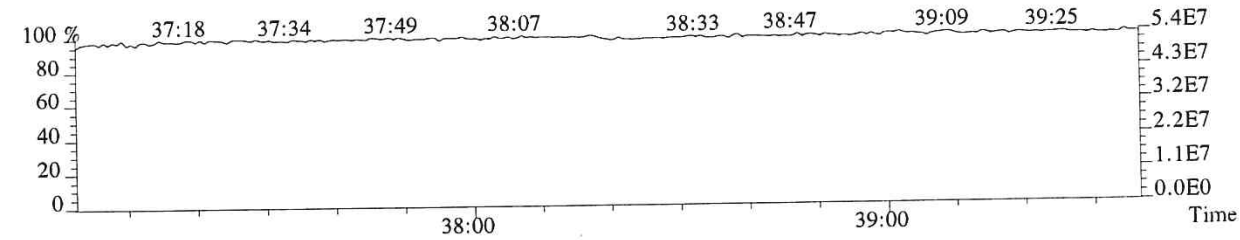
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4552.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

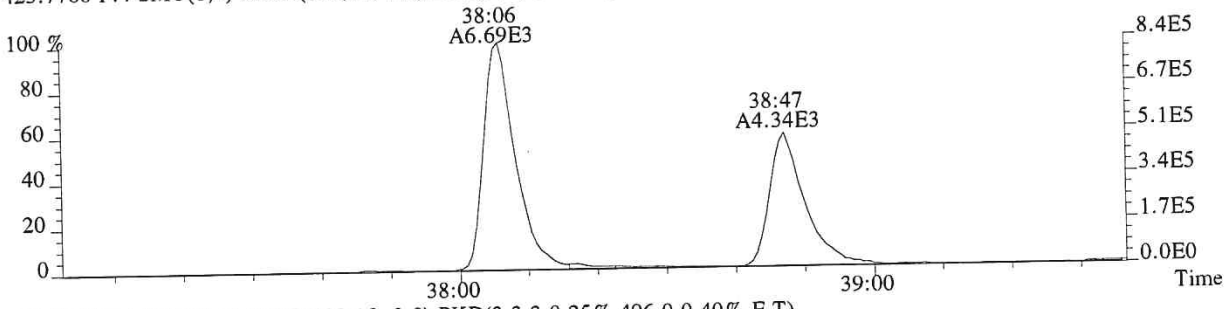


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

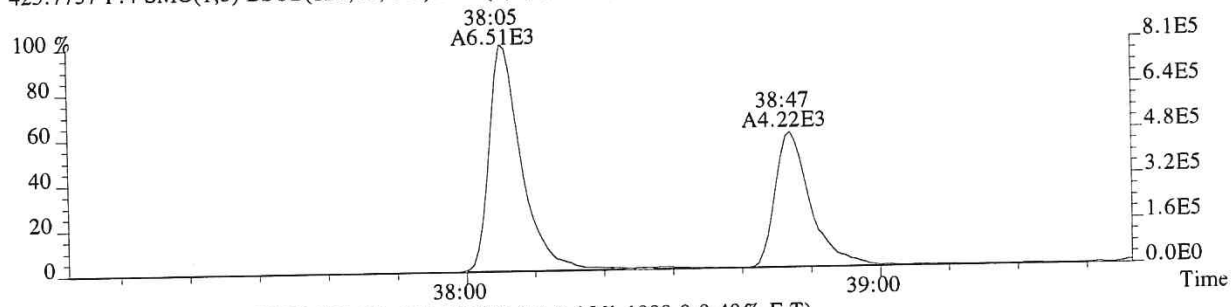


060070

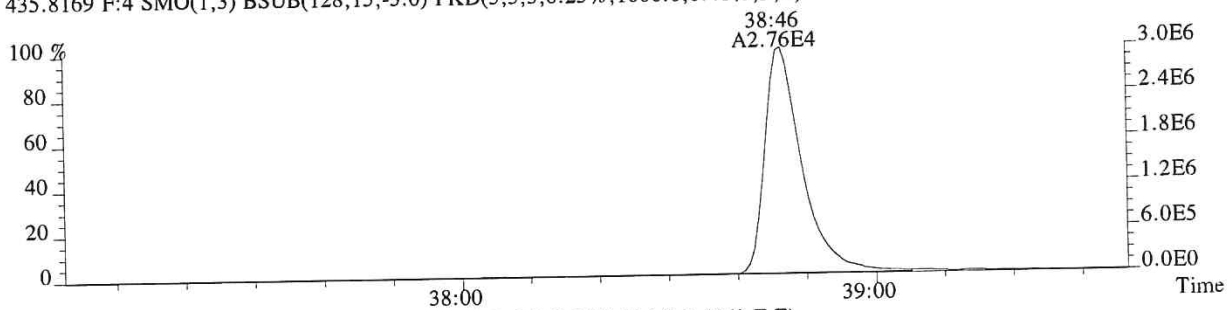
File:P519692 #1-232 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,660.0,0.40%,F,T)



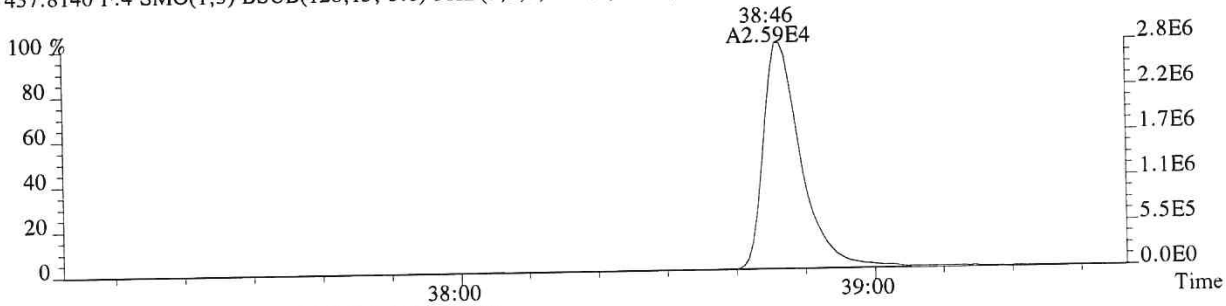
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,496.0,0.40%,F,T)



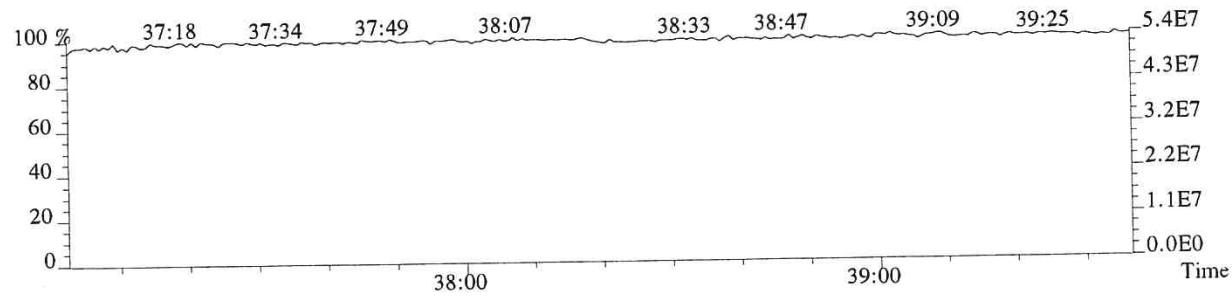
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1000.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,316.0,0.40%,F,T)

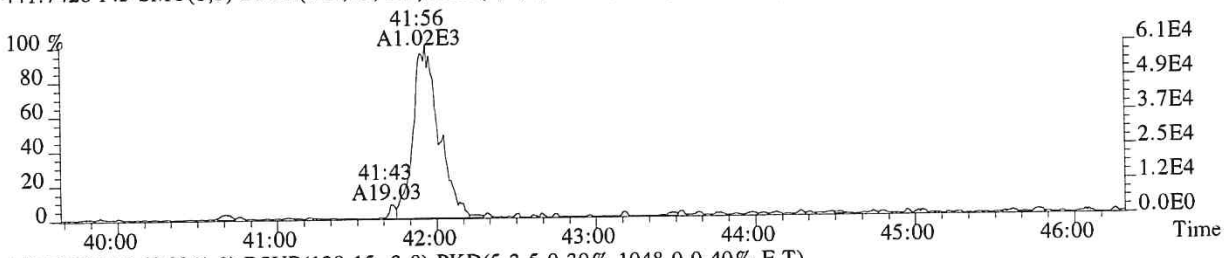


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

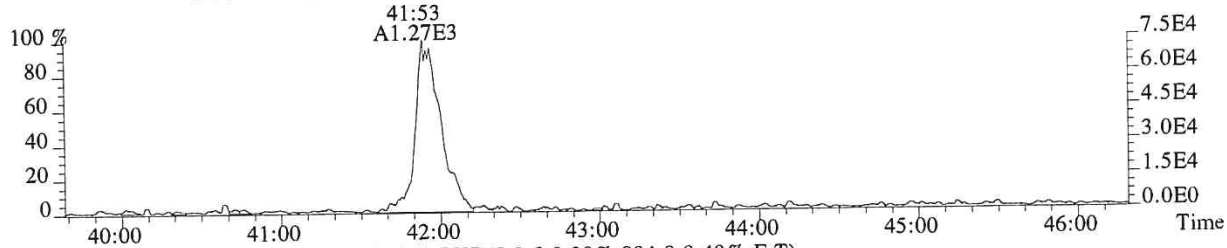


060071

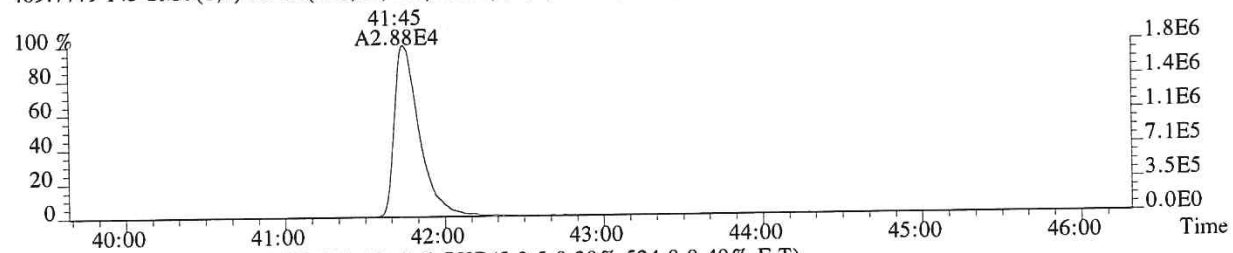
File:P519692 #1-601 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



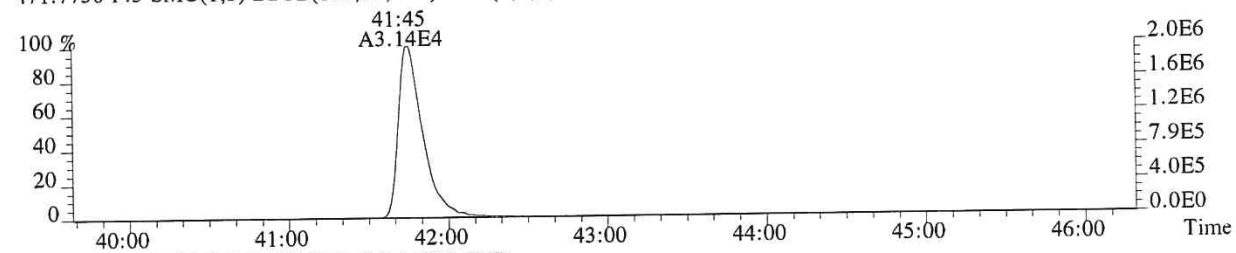
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1048.0,0.40%,F,T)



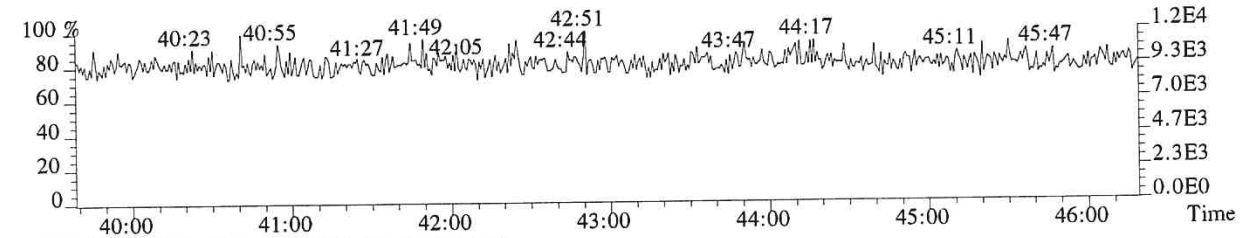
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,904.0,0.40%,F,T)



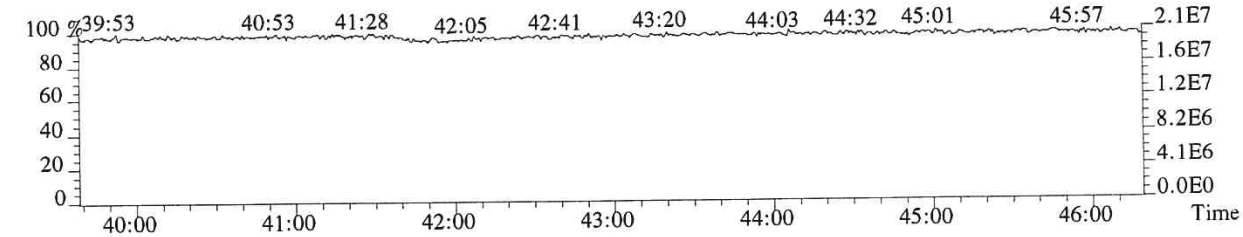
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,524.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

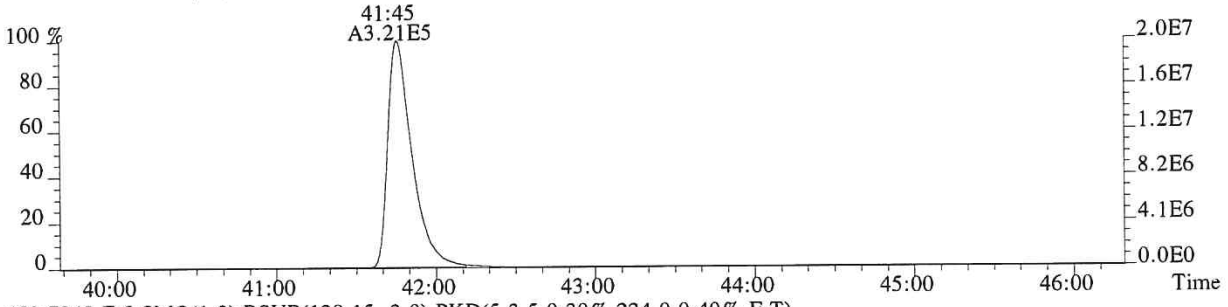


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

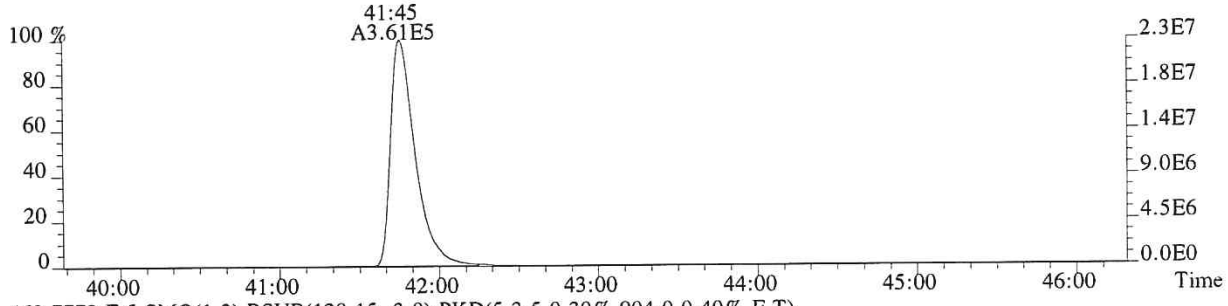


060072

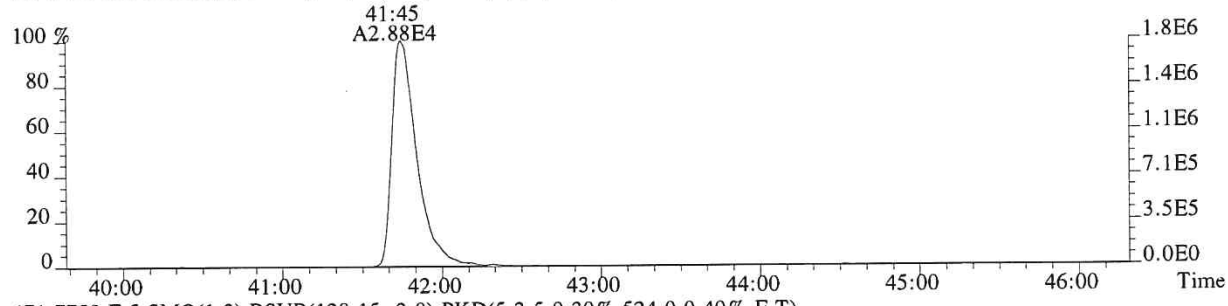
File:P519692 #1-601 Acq:29-DEC-2018 16:21:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-006
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,416.0,0.40%,F,T)



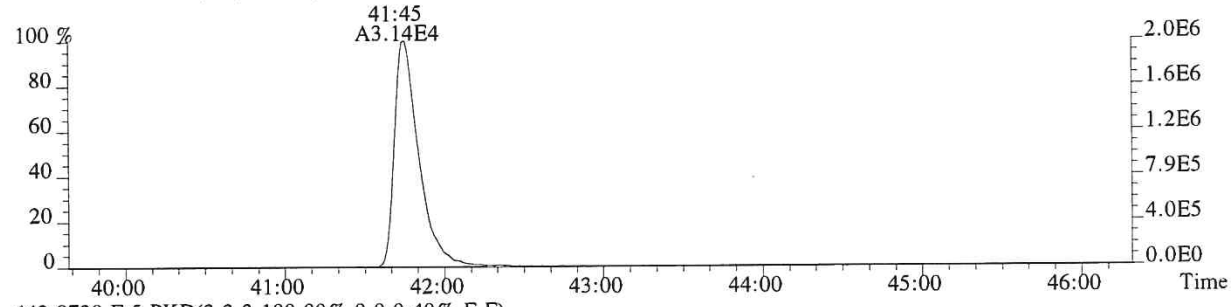
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,224.0,0.40%,F,T)



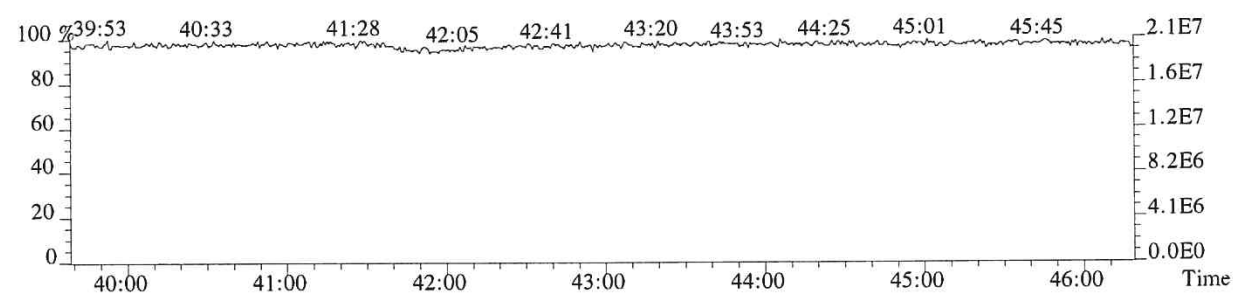
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,904.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,524.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060073

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0086

Run #16 Filename P519693 Samp: 1 Inj: 1 Acquired: 29-DEC-18 17:10:35
Processed: 30-DEC-18 08:06:00 Sample ID: E1801136-007

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:07	3.960e+05	5.205e+05	0.76	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	2.578e+04	1.664e+04	1.55	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	1.806e+04	1.187e+04	1.52	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	5.131e+04	4.287e+04	1.20	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	1.214e+04	1.003e+04	1.21	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	1.770e+03	1.472e+03	1.20	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	3.256e+03	2.614e+03	1.25	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	1.130e+04	1.137e+04	0.99	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:16	3.868e+03	3.879e+03	1.00	yes	no	1.258
10	Unk	OCDF	41:55	5.324e+03	6.112e+03	0.87	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	1.104e+05	1.410e+05	0.78	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:19	1.626e+03	9.828e+02	1.65	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:45	3.635e+01	4.569e+01	0.80	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:50	3.415e+02	2.740e+02	1.25	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	1.340e+02	1.187e+02	1.13	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:48	1.130e+04	1.115e+04	1.01	yes	no	1.025
17	Unk	OCDD	41:47	1.167e+05	1.308e+05	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:05	2.721e+04	3.446e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	4.334e+04	2.765e+04	1.57	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	4.143e+04	2.631e+04	1.57	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:54	1.778e+04	3.448e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	2.046e+04	3.956e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:34	1.865e+04	3.578e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.767e+04	3.478e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:48	1.272e+04	2.881e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:15	1.227e+04	2.780e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	1.368e+04	1.737e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	3.365e+04	2.135e+04	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:44	2.649e+04	2.098e+04	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	2.719e+04	2.186e+04	1.24	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:48	2.926e+04	2.728e+04	1.07	yes	no	0.858
32	IS	13C-OCDD	41:46	2.971e+04	3.335e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:22	3.738e+04	4.730e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	4.874e+04	3.897e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	2.271e+04				no	1.014

$$OCDD = \frac{(1.167e+05 + 1.308e+05) \times 4000\ pg \times 1}{(2.971e+04 + 3.335e+04) \times 10.275\ g \times 78.4/100 \times 1.118} = 1743.1772\ ng/kg$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0086

Run #16 Filename P519693 Samp: 1 Inj: 1 Acquired: 29-DEC-18 17:10:35
Processed: 30-DEC-18 08:06:00 LAB. ID: E1801136-007

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.63e+07	1.06e+03	5.3e+04	7.37e+07	1.51e+03	4.9e+04
2	1,2,3,7,8-PeCDF	4.49e+06	1.97e+03	2.3e+03	2.86e+06	4.30e+03	6.7e+02
3	2,3,4,7,8-PeCDF	2.77e+06	1.97e+03	1.4e+03	1.83e+06	4.30e+03	4.2e+02
4	1,2,3,4,7,8-HxCDF	9.04e+06	2.23e+03	4.0e+03	7.52e+06	1.12e+03	6.7e+03
5	1,2,3,6,7,8-HxCDF	2.08e+06	2.23e+03	9.3e+02	1.74e+06	1.12e+03	1.6e+03
6	2,3,4,6,7,8-HxCDF	3.29e+05	2.23e+03	1.5e+02	2.60e+05	1.12e+03	2.3e+02
7	1,2,3,7,8,9-HxCDF	4.79e+05	2.23e+03	2.1e+02	4.05e+05	1.12e+03	3.6e+02
8	1,2,3,4,6,7,8-HpCDF	1.54e+06	9.48e+02	1.6e+03	1.50e+06	4.80e+02	3.1e+03
9	1,2,3,4,7,8,9-HpCDF	4.16e+05	9.48e+02	4.4e+02	4.20e+05	4.80e+02	8.7e+02
10	OCDF	3.29e+05	3.84e+02	8.6e+02	3.81e+05	1.14e+03	3.3e+02
11	2,3,7,8-TCDD	1.96e+07	3.27e+03	6.0e+03	2.49e+07	6.08e+02	4.1e+04
12	1,2,3,7,8-PeCDD	2.53e+05	9.08e+02	2.8e+02	1.65e+05	6.24e+02	2.6e+02
13	1,2,3,4,7,8-HxCDD	8.06e+03	6.40e+02	1.3e+01	8.18e+03	6.40e+02	1.3e+01
14	1,2,3,6,7,8-HxCDD	5.29e+04	6.40e+02	8.3e+01	4.16e+04	6.40e+02	6.5e+01
15	1,2,3,7,8,9-HxCDD	1.99e+04	6.40e+02	3.1e+01	1.78e+04	6.40e+02	2.8e+01
16	1,2,3,4,6,7,8-HpCDD	1.25e+06	2.64e+02	4.7e+03	1.24e+06	8.48e+02	1.5e+03
17	OCDD	7.31e+06	5.36e+02	1.4e+04	8.22e+06	6.64e+02	1.2e+04
18	13C-2,3,7,8-TCDF	4.26e+06	6.34e+03	6.7e+02	5.29e+06	4.06e+03	1.3e+03
19	13C-1,2,3,7,8-PeCDF	7.53e+06	1.54e+03	4.9e+03	4.86e+06	1.58e+03	3.1e+03
20	13C-2,3,4,7,8-PeCDF	7.32e+06	1.54e+03	4.8e+03	4.70e+06	1.58e+03	3.0e+03
21	13C-1,2,3,4,7,8-HxCDF	3.18e+06	1.52e+03	2.1e+03	6.14e+06	1.27e+03	4.8e+03
22	13C-1,2,3,6,7,8-HxCDF	3.62e+06	1.52e+03	2.4e+03	7.04e+06	1.27e+03	5.5e+03
23	13C-2,3,4,6,7,8-HxCDF	3.36e+06	1.52e+03	2.2e+03	6.47e+06	1.27e+03	5.1e+03
24	13C-1,2,3,7,8,9-HxCDF	2.72e+06	1.52e+03	1.8e+03	5.38e+06	1.27e+03	4.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.70e+06	2.12e+03	8.0e+02	3.76e+06	2.60e+03	1.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.31e+06	2.12e+03	6.2e+02	2.95e+06	2.60e+03	1.1e+03
27	13C-2,3,7,8-TCDD	2.33e+06	5.93e+03	3.9e+02	2.97e+06	1.95e+03	1.5e+03
28	13C-1,2,3,7,8-PeCDD	5.86e+06	7.60e+02	7.7e+03	3.67e+06	9.44e+02	3.9e+03
29	13C-1,2,3,4,7,8-HxCDD	4.69e+06	9.36e+02	5.0e+03	3.66e+06	8.36e+02	4.4e+03
30	13C-1,2,3,6,7,8-HxCDD	4.10e+06	9.36e+02	4.4e+03	3.31e+06	8.36e+02	4.0e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.24e+06	4.84e+02	6.7e+03	3.05e+06	5.80e+02	5.3e+03
32	13C-OCDD	1.87e+06	9.92e+02	1.9e+03	2.06e+06	5.76e+02	3.6e+03
33	13C-1,2,3,4-TCDD	5.94e+06	5.93e+03	1.0e+03	7.54e+06	1.95e+03	3.9e+03
34	13C-1,2,3,7,8,9-HxCDD	8.34e+06	9.36e+02	8.9e+03	6.58e+06	8.36e+02	7.9e+03
35	37Cl-2,3,7,8-TCDD	4.06e+06	2.07e+03	2.0e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.272e{+}03 + 6.080e{+}02) \times 2000}{(2.328e{+}06 + 2.967e{+}06) \times (\quad) \times 1.085} =$$

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Peak List Summary

CLIENT ID.
SL0086

Entry: 36 Totals Name: Total Tetra-Furans

Run: 16 File: P519693 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 17:10:35 Processed: 30-DEC-18 08:06:00

Mass: 303.9020 305.8990 Tot Response: 1.64e+06 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:54	3.19e+03	4.35e+03	0.73	yes	7.55e+03		n	n
2	23:12	1.80e+04	2.39e+04	0.75	yes	4.20e+04		n	n
3	23:34	5.74e+03	7.45e+03	0.77	yes	1.32e+04		n	n
4	23:51	1.49e+04	1.99e+04	0.75	yes	3.48e+04		n	n
5	24:14	2.77e+03	3.68e+03	0.75	yes	6.45e+03		n	n
6	24:29	1.11e+04	1.49e+04	0.75	yes	2.60e+04		n	n
7	24:36	1.77e+04	2.36e+04	0.75	yes	4.13e+04		n	n
8	25:06	1.69e+05	2.22e+05	0.76	yes	3.91e+05		n	n
9	25:25	7.91e+03	1.02e+04	0.77	yes	1.81e+04		n	n
10	26:07	3.96e+05	5.20e+05	0.76	yes	9.16e+05	2,3,7,8-TCDF	n	n
11	26:31	2.72e+04	3.59e+04	0.76	yes	6.32e+04		n	n
12	26:48	4.33e+03	5.47e+03	0.79	yes	9.81e+03		n	n
13	28:16	2.88e+04	3.75e+04	0.77	yes	6.63e+04		n	n

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CLIENT ID.
SL0086

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 16 File: P519693 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 17:10:35 Processed: 30-DEC-18 08:06:00

Mass: 319.8970 321.8940 Tot Response: 2.76e+05 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:45	1.61e+03	1.91e+03	0.84	yes	3.52e+03		n	n
2	27:04	1.10e+05	1.41e+05	0.78	yes	2.51e+05	2,3,7,8-TCDD	n	n
3	27:26	9.24e+03	1.19e+04	0.78	yes	2.11e+04		n	n

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CLIENT ID.
SL0086

Entry: 38 Totals Name: Total Penta-Furans1

Run: 16 File: P519693 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 17:10:35 Processed: 30-DEC-18 08:06:00

Mass: 339.8600 341.8570 Tot Response: 9.79e+02 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:17	5.87e+02	3.93e+02 1.49	yes	9.79e+02		n	n

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Entry: 39 Totals Name: Total Penta-Furans2

Run: 16 File: P519693 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 17:10:35 Processed: 30-DEC-18 08:06:00

Mass: 339.8600 341.8570 Tot Response: 1.09e+05 RRF: 0.9857

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:49	2.21e+02	1.32e+02	1.68	yes	3.53e+02		n	n
2	29:57	1.10e+04	7.18e+03	1.53	yes	1.81e+04		n	n
3	30:34	3.79e+02	2.84e+02	1.33	yes	6.63e+02		n	n
4	30:48	2.07e+03	1.37e+03	1.51	yes	3.45e+03		n	n
5	30:59	2.58e+04	1.66e+04	1.55	yes	4.24e+04	1,2,3,7,8-PeCDF	n	n
6	31:16	7.19e+03	4.85e+03	1.48	yes	1.20e+04		n	n
7	31:53	1.88e+02	1.28e+02	1.47	yes	3.16e+02		n	n
8	32:00	1.81e+04	1.19e+04	1.52	yes	2.99e+04	2,3,4,7,8-PeCDF	n	n
9	32:58	7.85e+02	5.14e+02	1.53	yes	1.30e+03		n	n

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Peak List Summary

CLIENT ID.
SL0086

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 16 File: P519693 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 17:10:35 Processed: 30-DEC-18 08:06:00

Mass: 355.8550 357.8520 Tot Response: 3.74e+03 RRF: 0.9565

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:59	1.46e+02	9.81e+01	1.49	yes	2.45e+02		n	n
2	31:02	3.10e+02	2.25e+02	1.38	yes	5.35e+02		n	n
3	31:18	1.13e+02	7.70e+01	1.47	yes	1.90e+02		n	n
4	31:32	2.91e+01	2.18e+01	1.34	yes	5.09e+01		n	n
5	31:53	4.58e+01	2.75e+01	1.67	yes	7.33e+01		n	n
6	32:19	1.63e+03	9.83e+02	1.65	yes	2.61e+03	1,2,3,7,8-PeCDD	n	n
7	32:42	2.39e+01	1.55e+01	1.54	yes	3.94e+01		n	n

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Entry: 41 Totals Name: Total Hexa-Furans

Run: 16 File: P519693 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 17:10:35 Processed: 30-DEC-18 08:06:00

Mass: 373.8210 375.8180 Tot Response: 1.35e+05 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:43	2.68e+02	2.31e+02	1.16	yes	5.00e+02		n	n
2	33:53	3.14e+03	2.56e+03	1.23	yes	5.69e+03		n	n
3	34:27	1.92e+03	1.49e+03	1.29	yes	3.41e+03		n	n
4	34:55	5.13e+04	4.29e+04	1.20	yes	9.42e+04	1,2,3,4,7,8-HxCDF	n	n
5	35:02	1.21e+04	1.00e+04	1.21	yes	2.22e+04	1,2,3,6,7,8-HxCDF	n	n
6	35:35	1.77e+03	1.47e+03	1.20	yes	3.24e+03	2,3,4,6,7,8-HxCDF	n	n
7	36:25	3.26e+03	2.61e+03	1.25	yes	5.87e+03	1,2,3,7,8,9-HxCDF	n	n

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Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 16 File: P519693 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 17:10:35 Processed: 30-DEC-18 08:06:00

Mass: 389.8160 391.8130 Tot Response: 4.17e+03 RRF: 1.047

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:17	7.87e+02	6.50e+02 1.21	yes	1.44e+03		n	n
2	34:51	1.29e+02	1.07e+02 1.21	yes	2.35e+02		n	n
3	35:07	8.41e+02	7.65e+02 1.10	yes	1.61e+03		n	n
4	35:50	3.42e+02	2.74e+02 1.25	yes	6.15e+02	1,2,3,6,7,8-HxCDD	n	n
5	36:00	1.50e+01	1.27e+01 1.18	yes	2.77e+01		n	n
6	36:05	1.34e+02	1.19e+02 1.13	yes	2.53e+02	1,2,3,7,8,9-HxCDD	n	n

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Entry: 43 Totals Name: Total Hepta-Furans

Run: 16 File: P519693 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 17:10:35 Processed: 30-DEC-18 08:06:00

Mass: 407.7820 409.7790 Tot Response: 3.99e+04 RRF: 1.308

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:48	1.13e+04	1.14e+04 0.99	yes	2.27e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	38:14	4.64e+03	4.88e+03 0.95	yes	9.53e+03		n	n
3	39:16	3.87e+03	3.88e+03 1.00	yes	7.75e+03	1,2,3,4,7,8,9-HpCDF	n	n

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Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 16 File: P519693 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 17:10:35 Processed: 30-DEC-18 08:06:00

Mass: 423.7770 425.7740 Tot Response: 4.03e+04 RRF: 1.025

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:06	9.06e+03	8.76e+03	1.03	yes	1.78e+04		n	n
2	38:48	1.13e+04	1.11e+04	1.01	yes	2.24e+04	1,2,3,4,6,7,8-HpCDD	n	n

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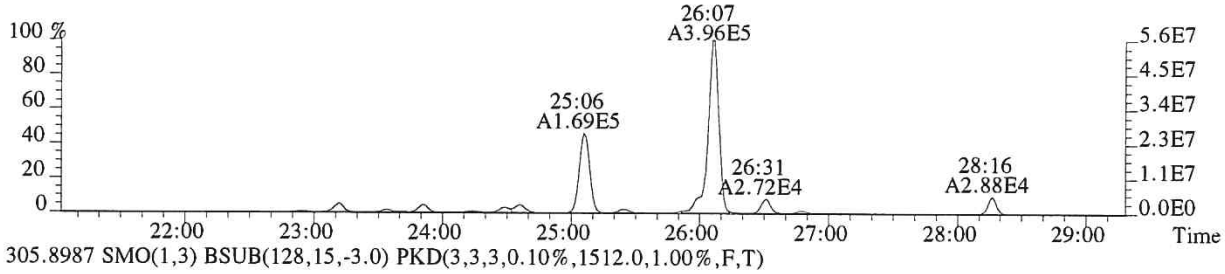
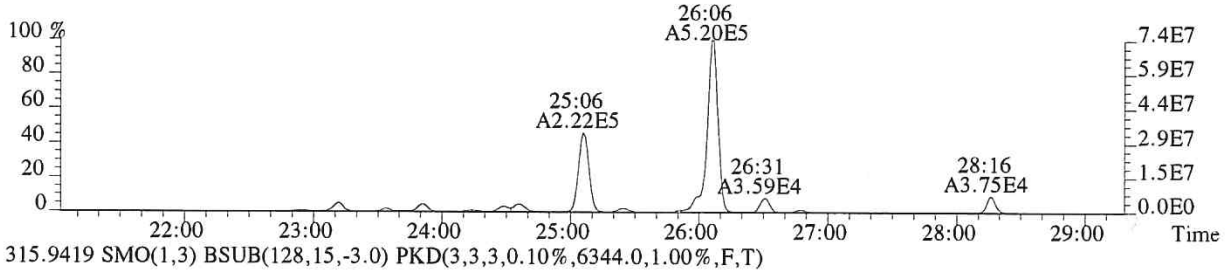
File:P519693 #1-587 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007

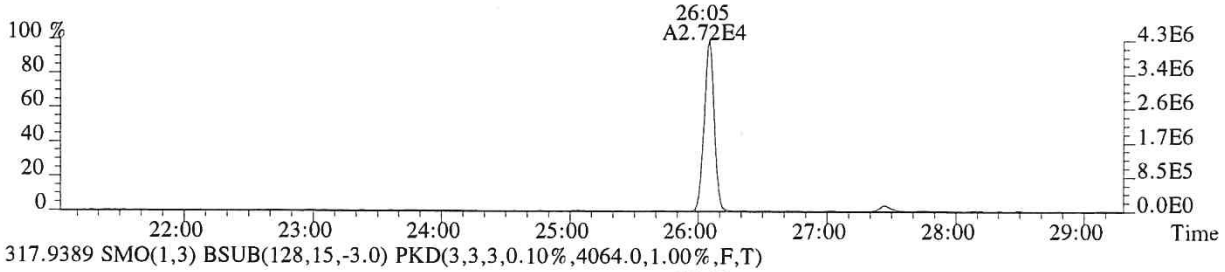
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1060.0,1.00%,F,T)



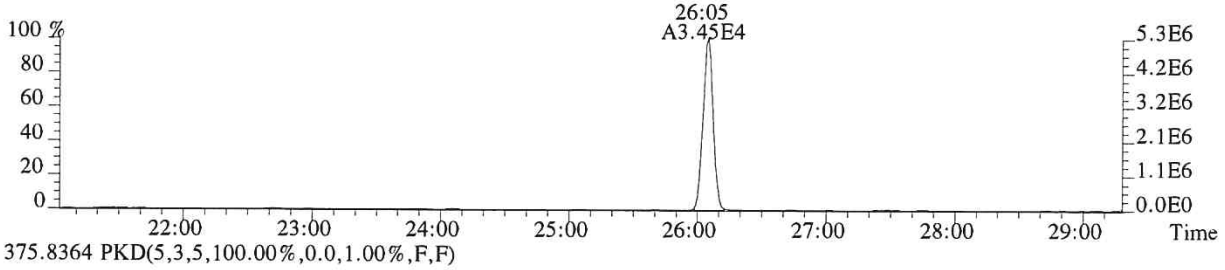
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1512.0,1.00%,F,T)



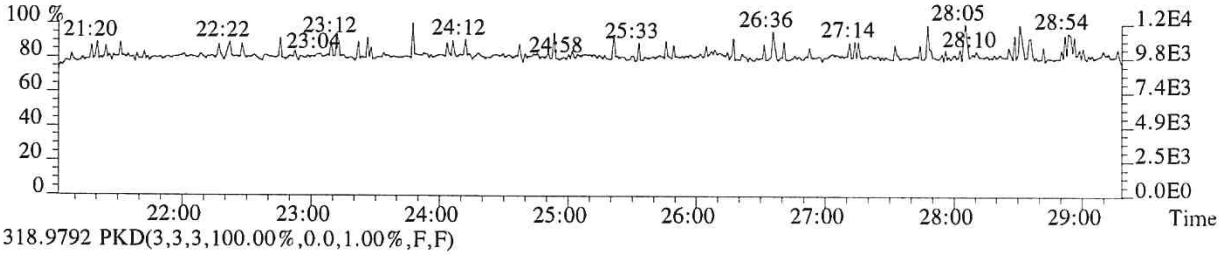
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6344.0,1.00%,F,T)



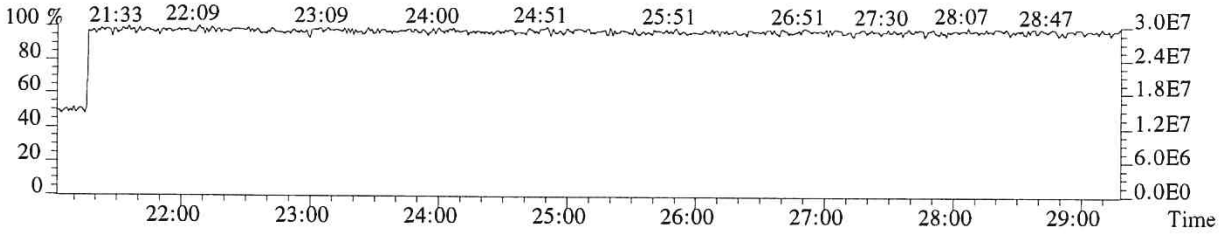
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4064.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



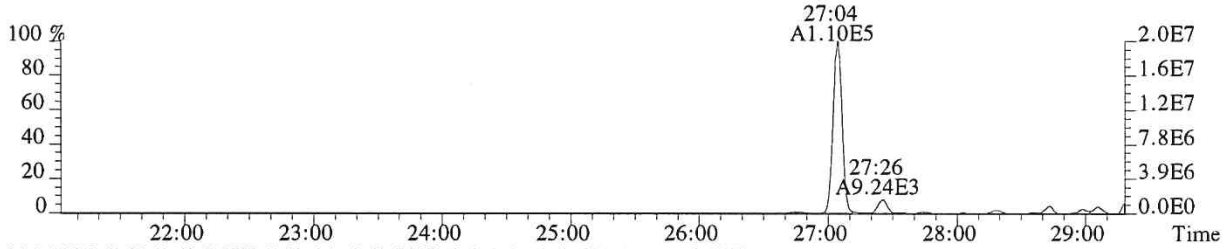
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



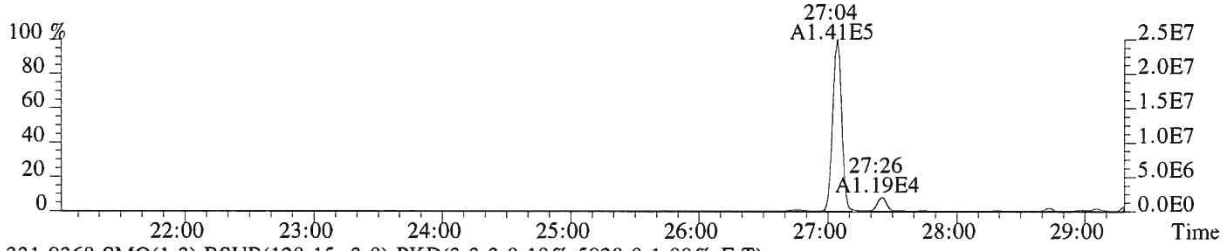
060085

File:P519693 #1-587 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007

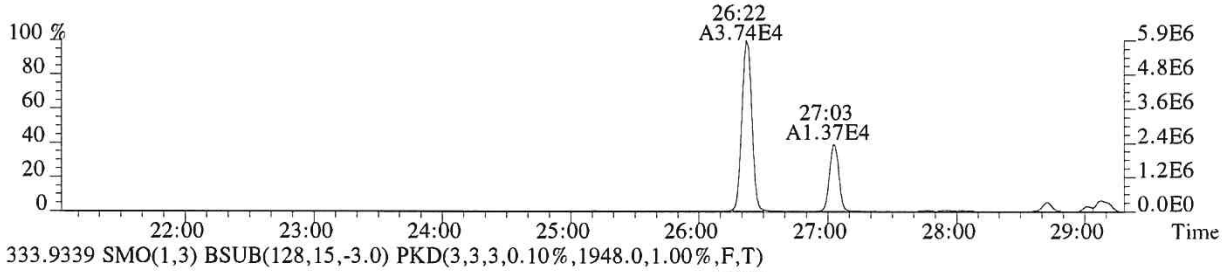
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3272.0,1.00%,F,T)



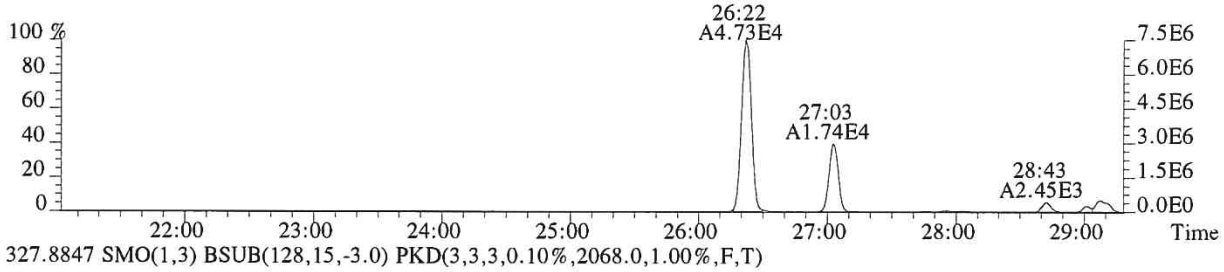
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,608.0,1.00%,F,T)



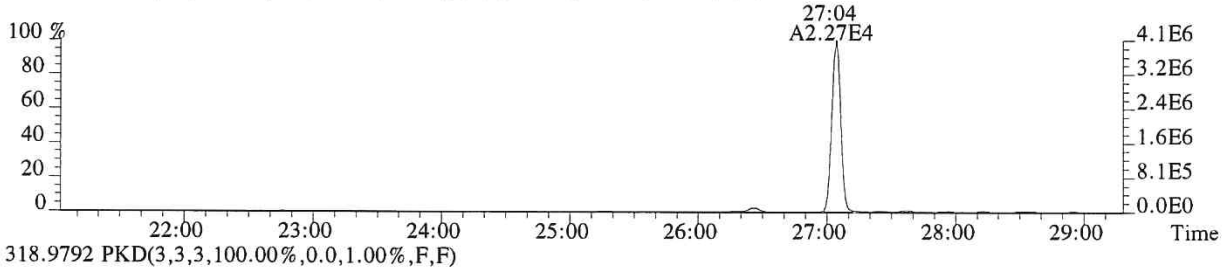
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5928.0,1.00%,F,T)



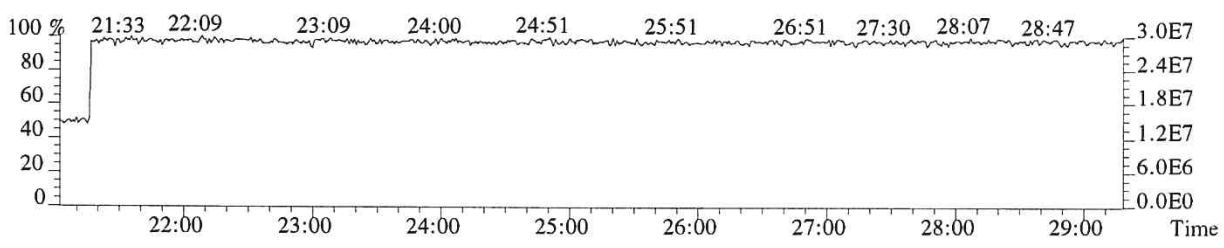
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1948.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2068.0,1.00%,F,T)



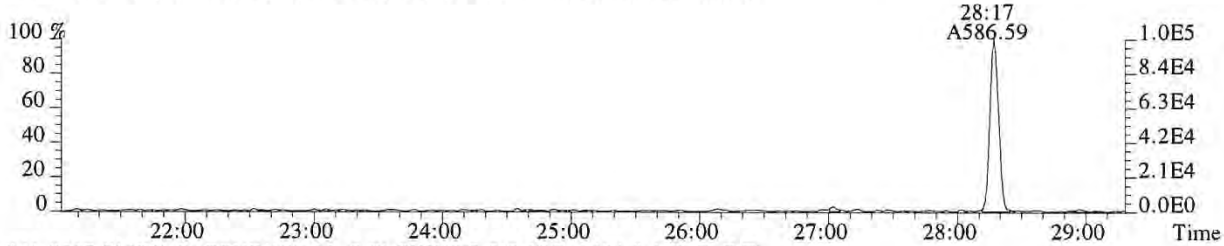
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



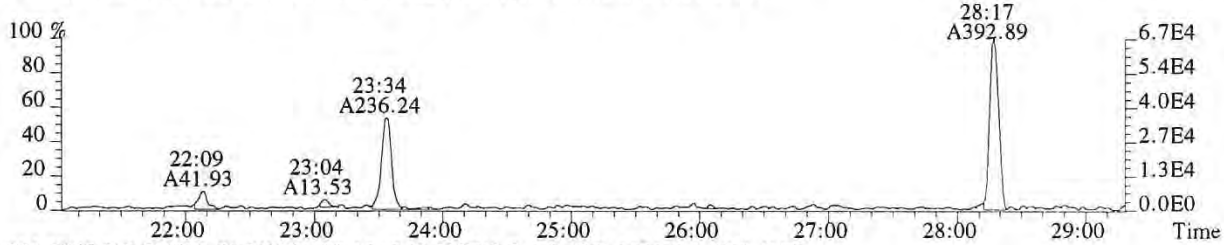
060086

File:P519693 #1-587 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007

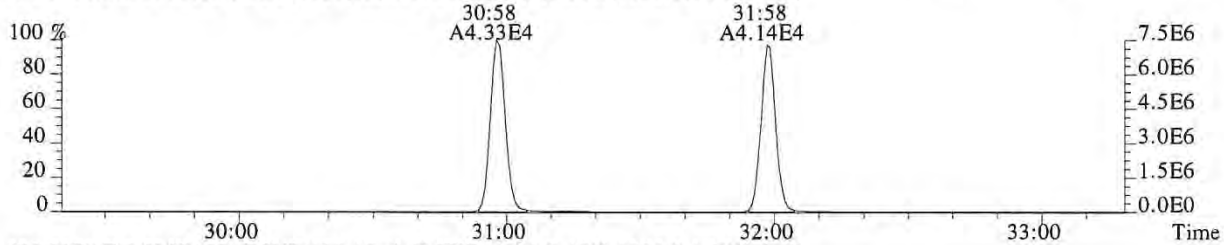
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,T)



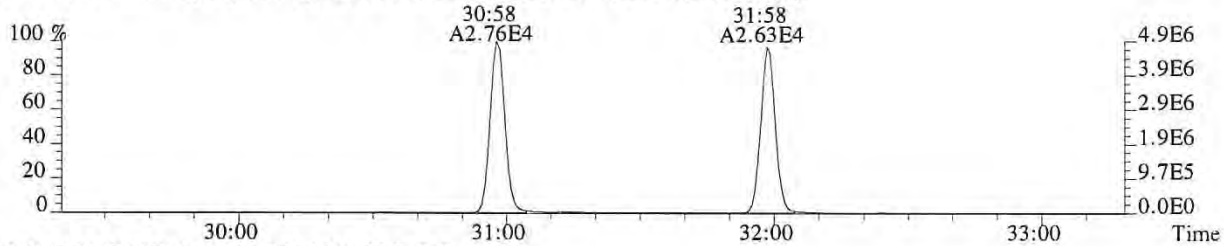
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1404.0,1.00%,F,T)



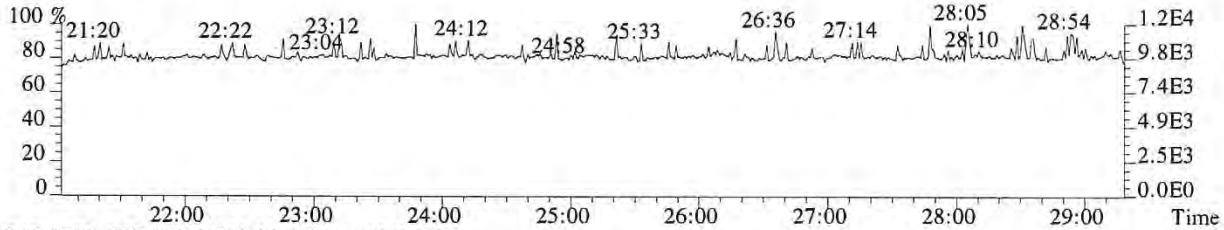
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1536.0,1.00%,F,T)



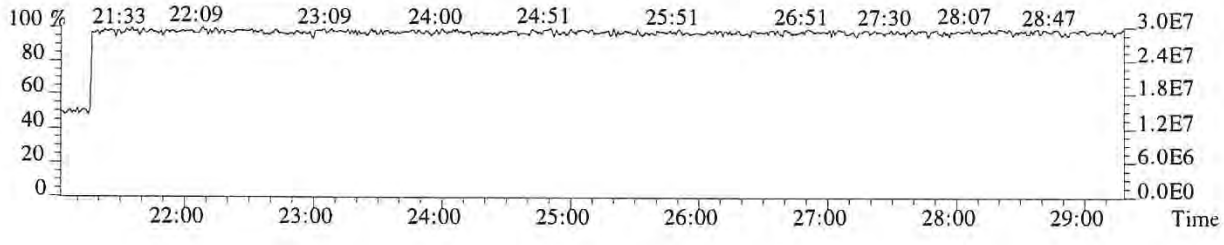
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1584.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

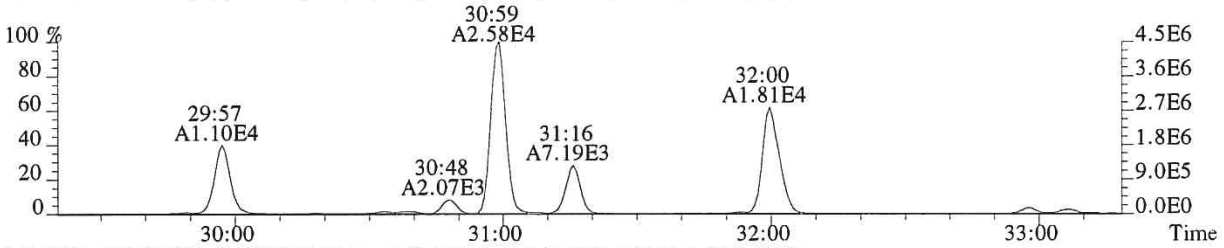


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

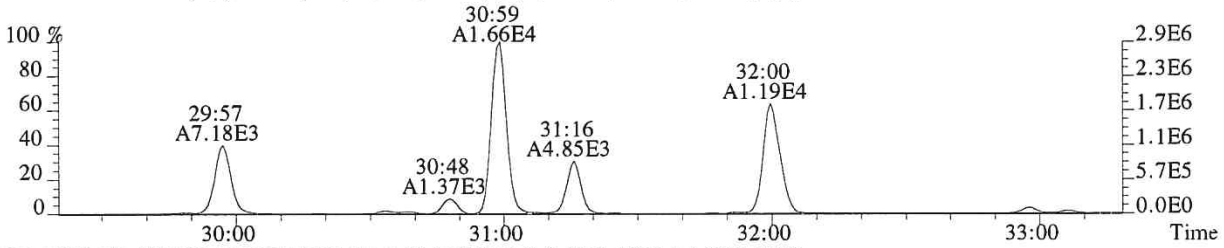


060087

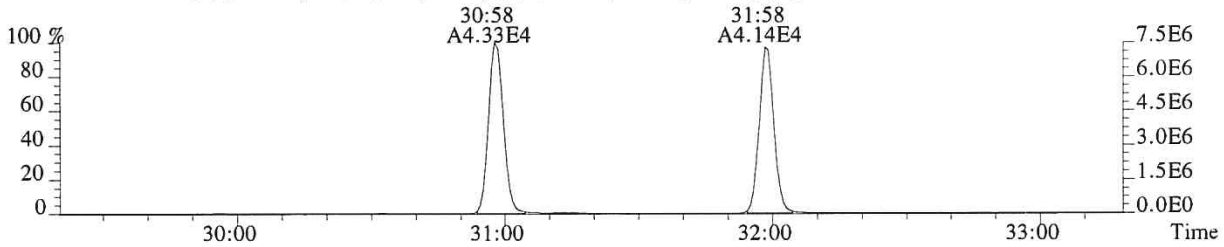
File:P519693 #1-358 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1972.0,1.00%,F,T)



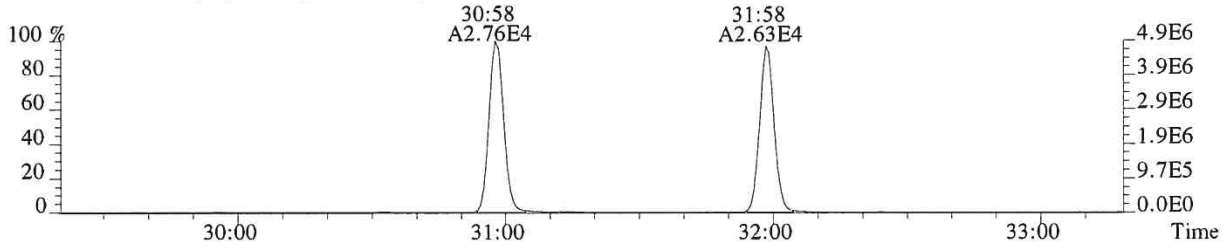
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4296.0,1.00%,F,T)



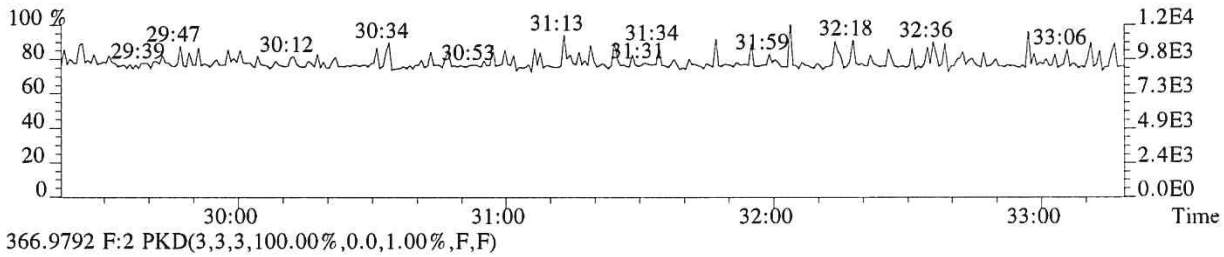
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1536.0,1.00%,F,T)



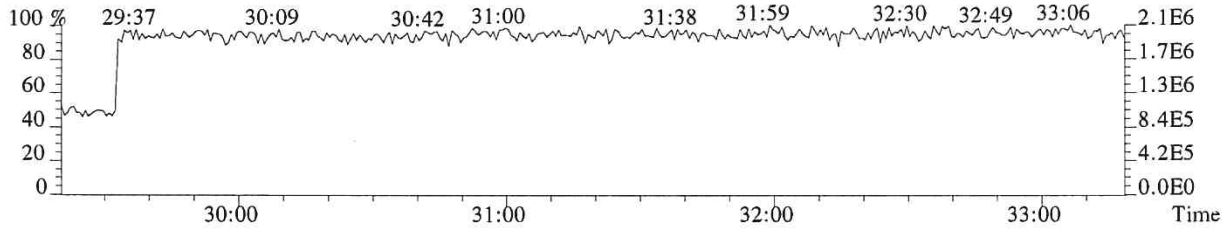
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1584.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

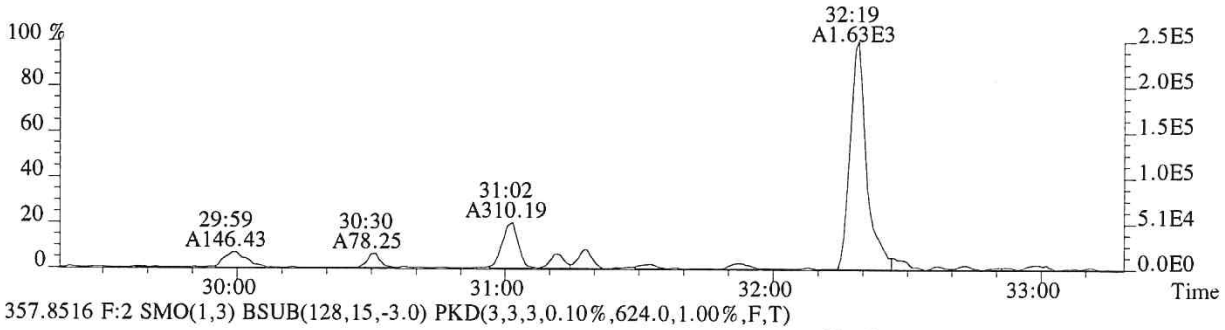


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

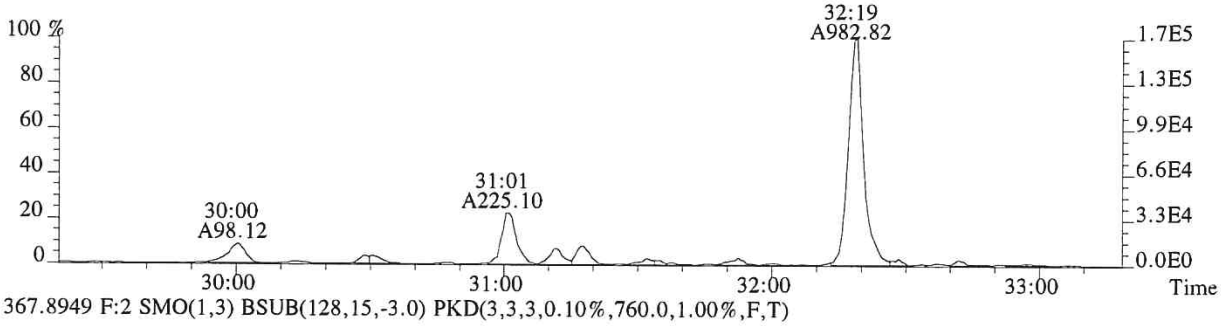


060088

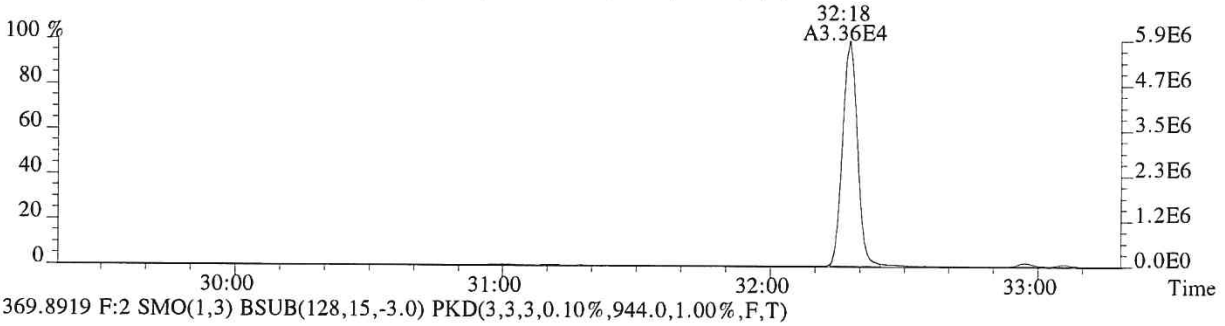
File:P519693 #1-358 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,908.0,1.00%,F,T)



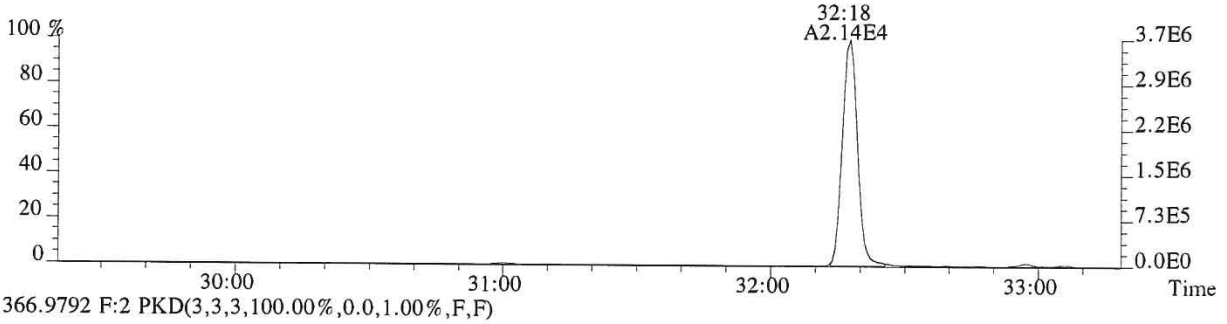
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,624.0,1.00%,F,T)



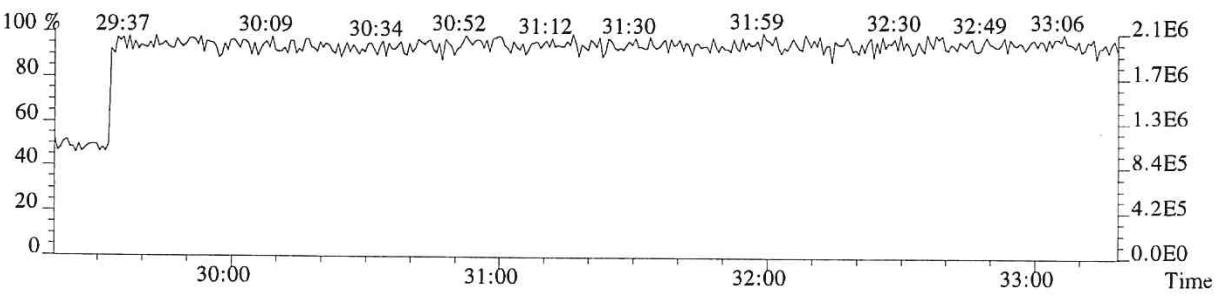
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,760.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,944.0,1.00%,F,T)

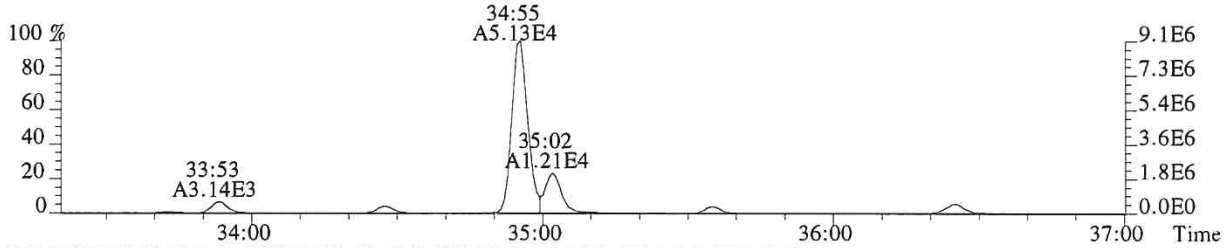


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

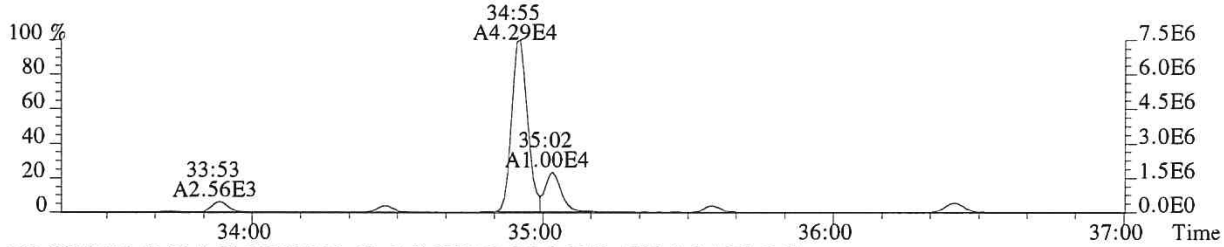


File:P519693 #1-330 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007

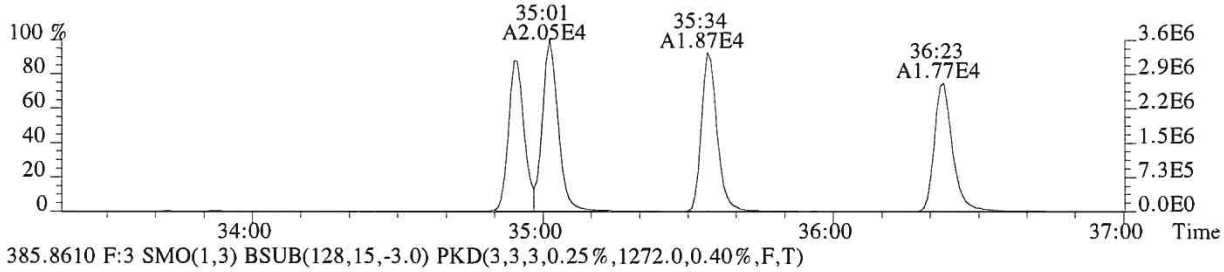
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2232.0,0.40%,F,T)



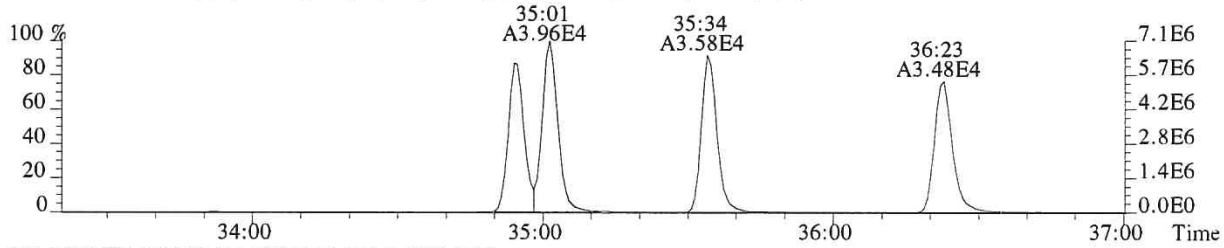
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1124.0,0.40%,F,T)



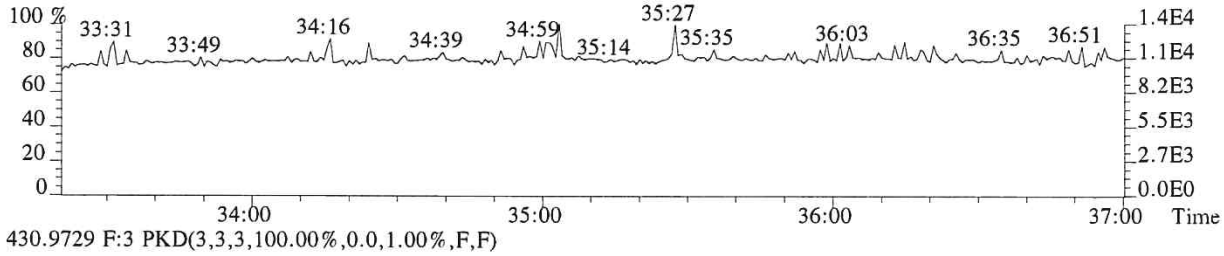
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1520.0,0.40%,F,T)



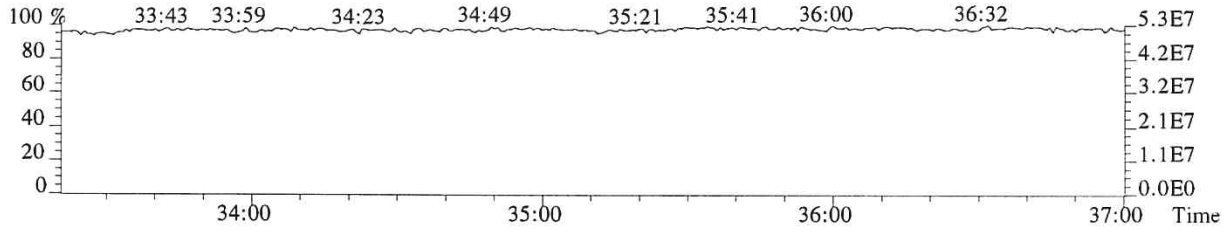
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1272.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

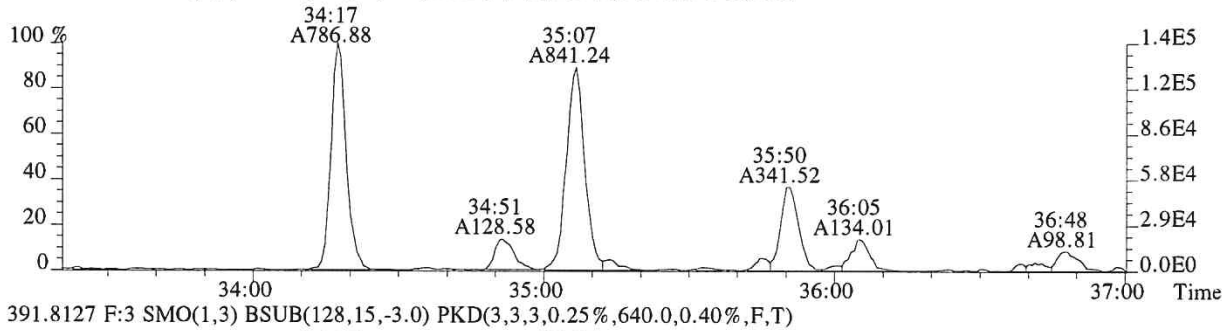


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

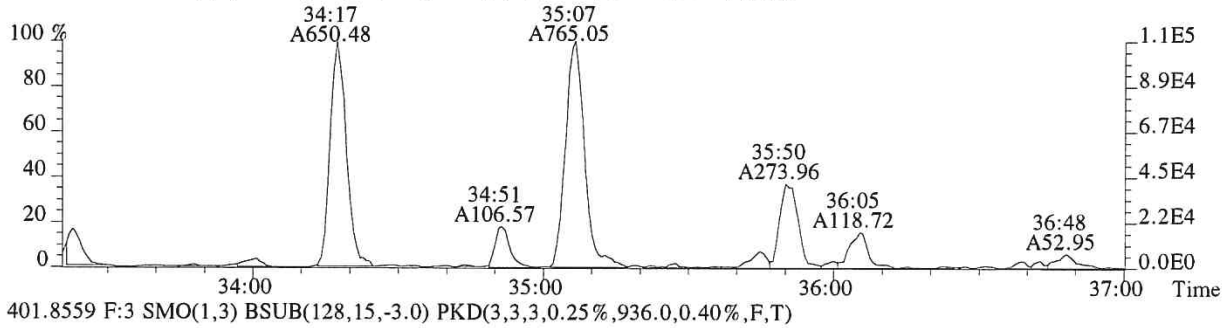


060090

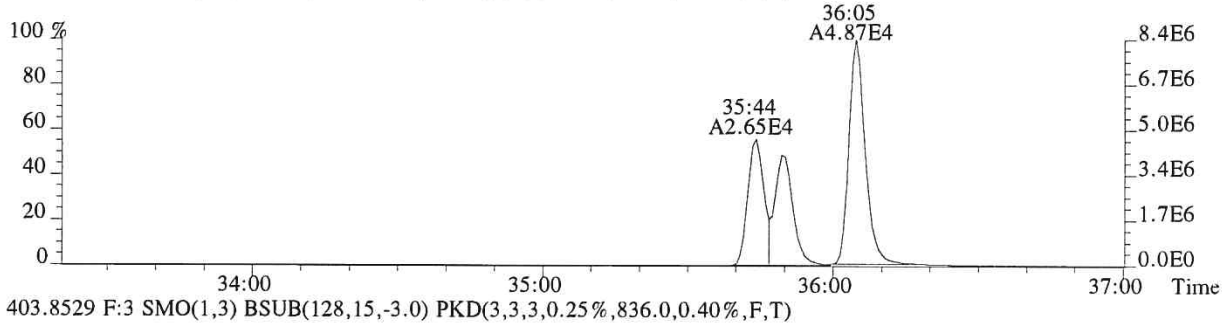
File:P519693 #1-330 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,640.0,0.40%,F,T)



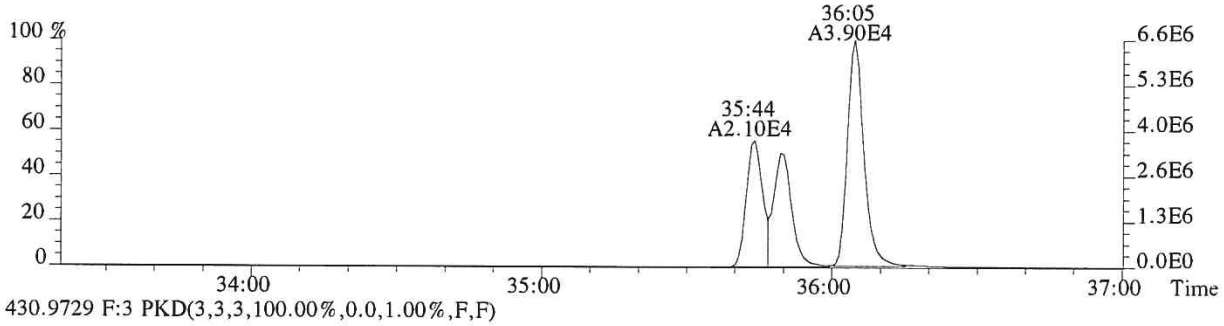
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,640.0,0.40%,F,T)



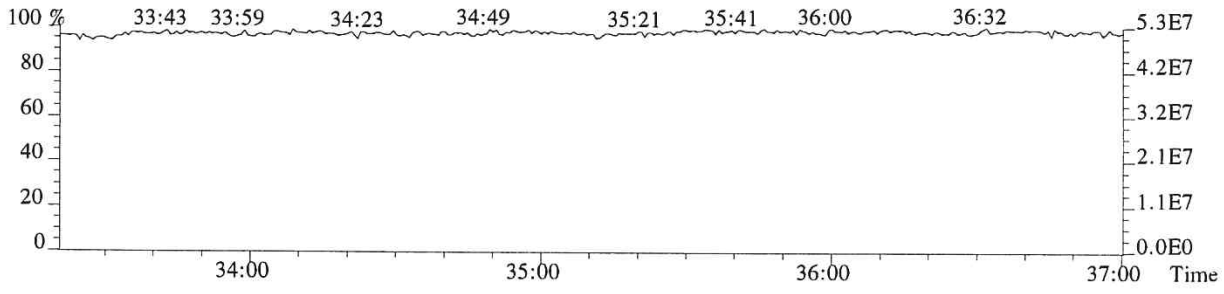
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,936.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,836.0,0.40%,F,T)

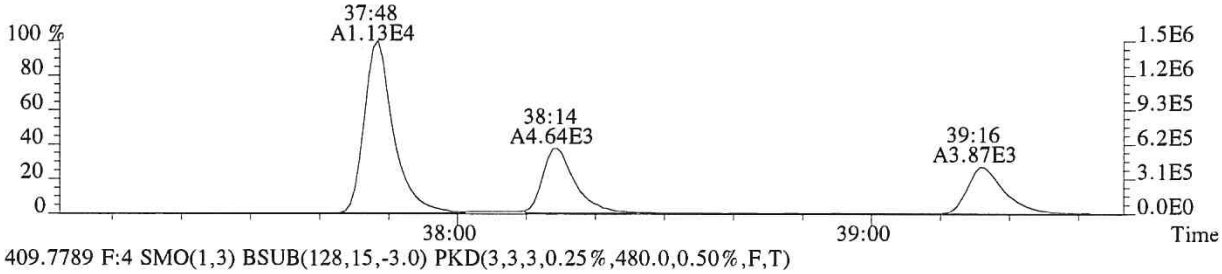


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

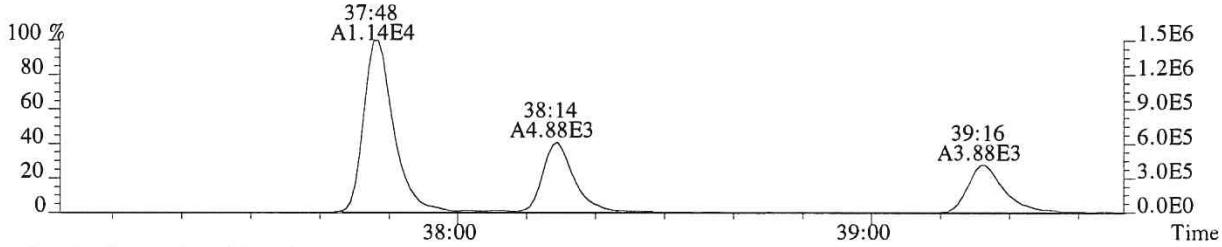


File:P519693 #1-232 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007

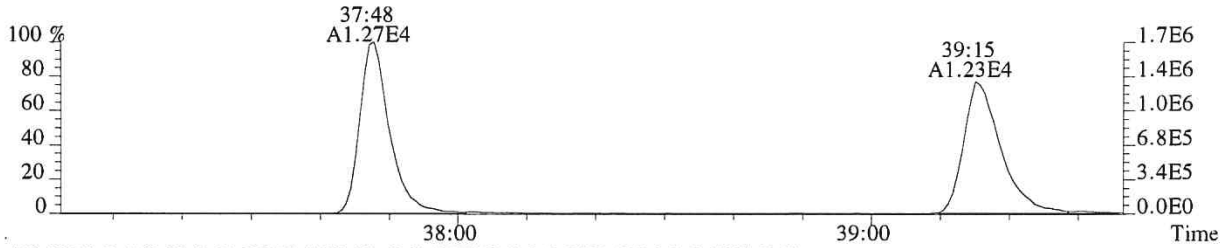
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,948.0,0.50%,F,T)



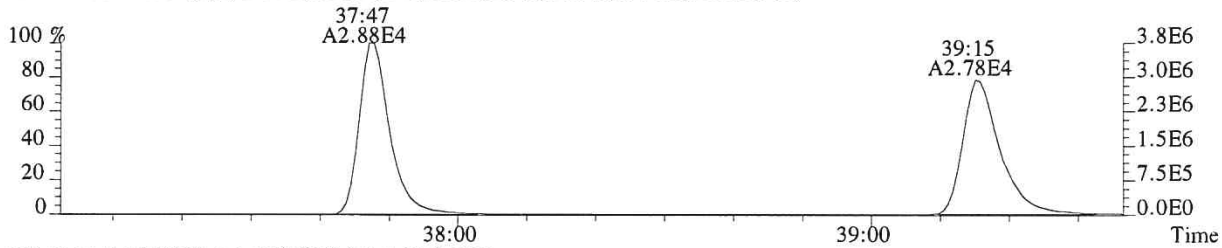
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,480.0,0.50%,F,T)



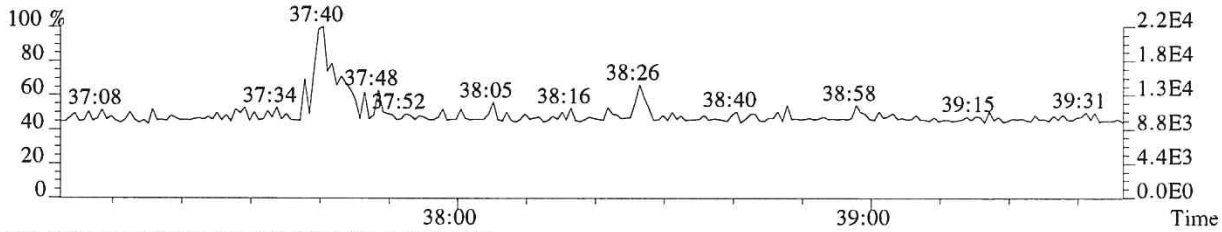
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2124.0,0.50%,F,T)



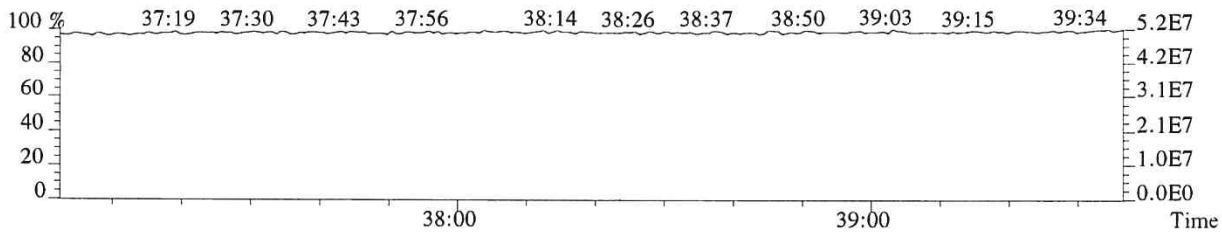
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2596.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

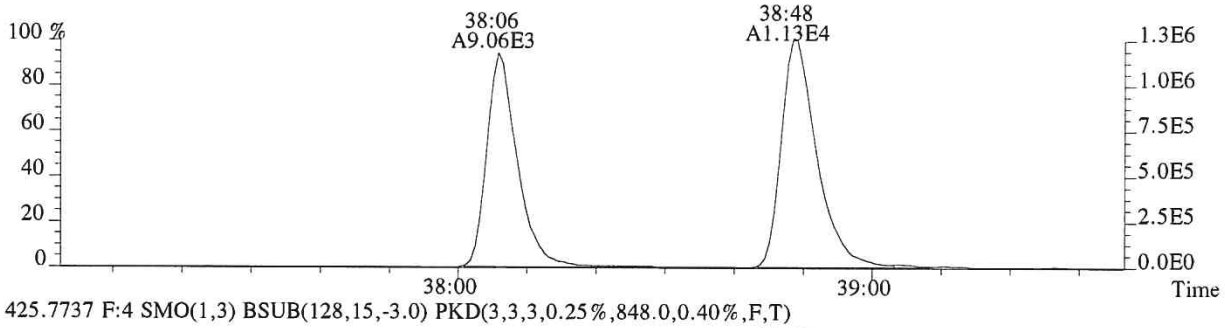


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

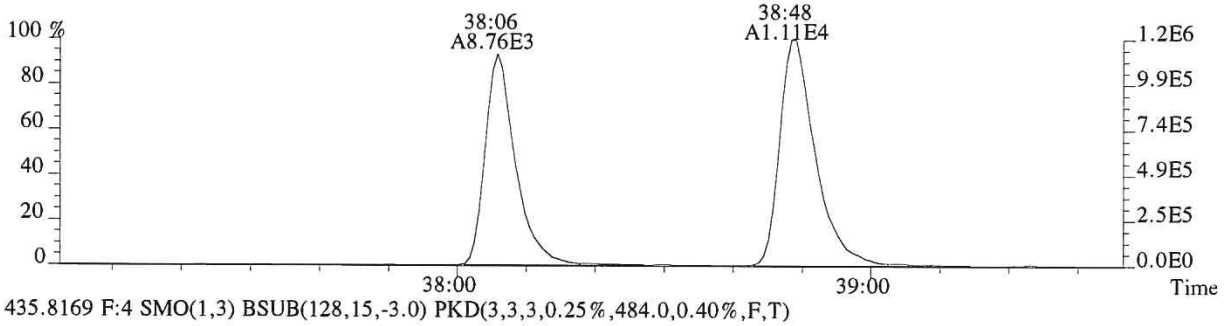


060092

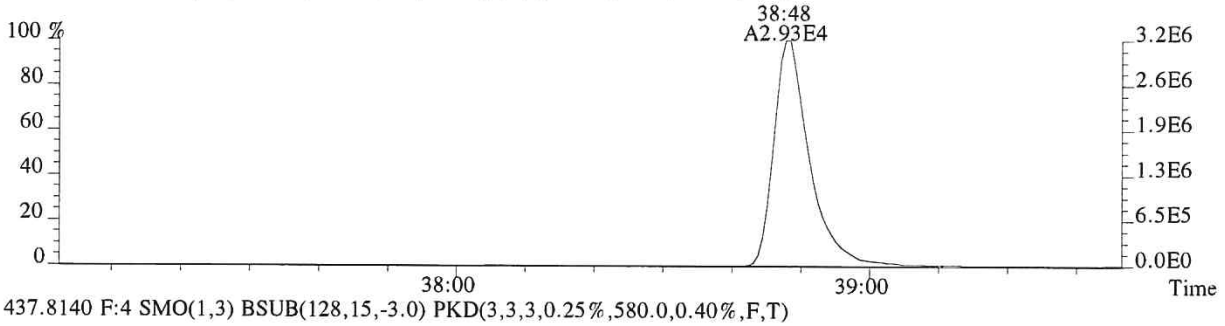
File:P519693 #1-232 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,264.0,0.40%,F,T)



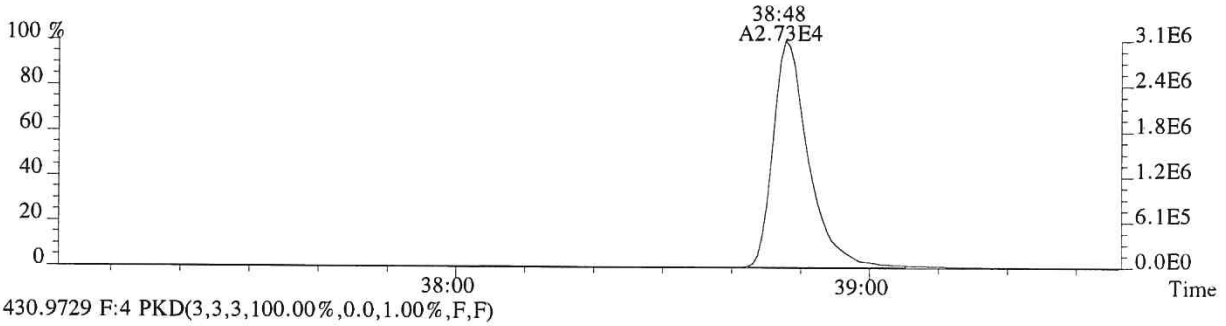
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,848.0,0.40%,F,T)



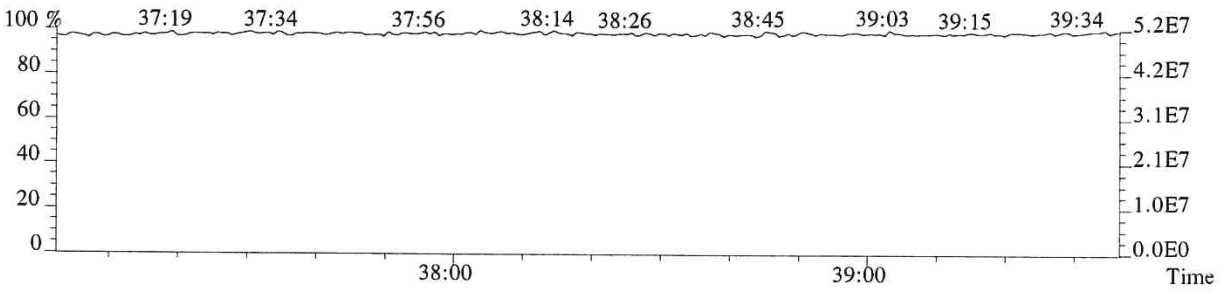
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,484.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,580.0,0.40%,F,T)

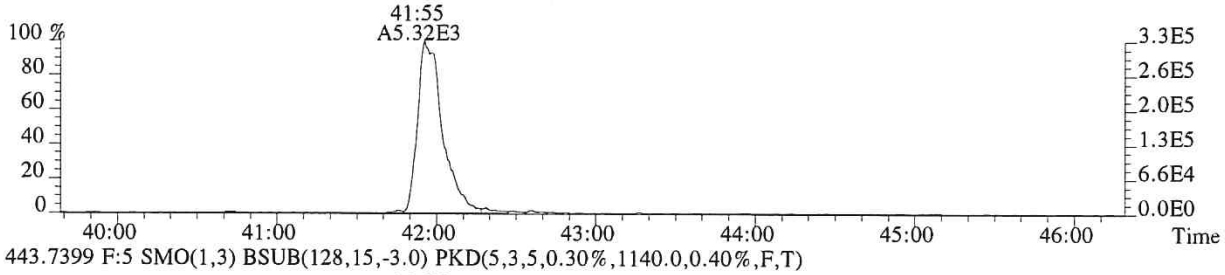


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

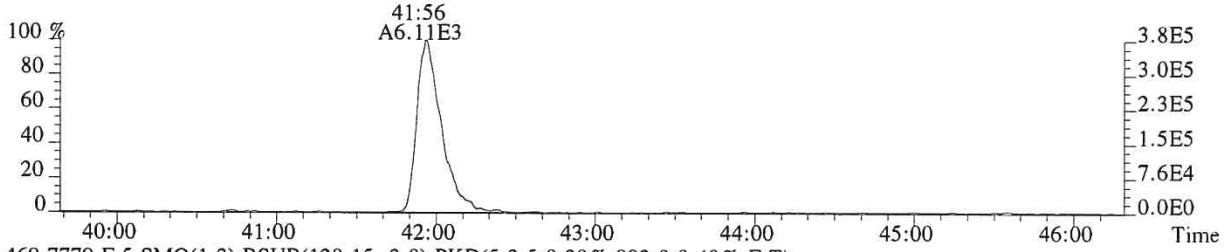


060093

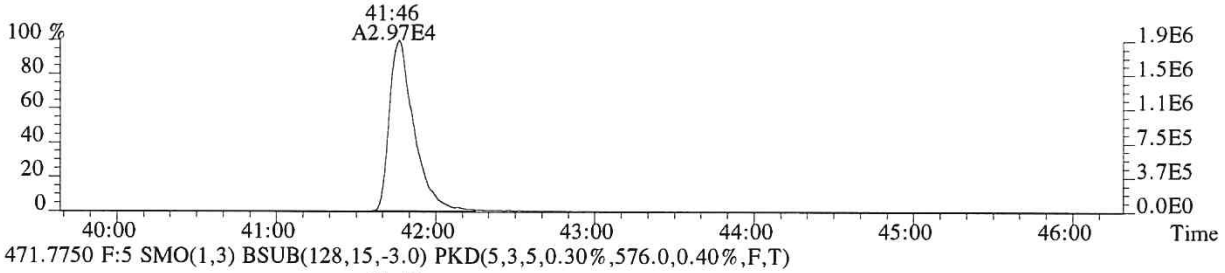
File:P519693 #1-601 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,384.0,0.40%,F,T)



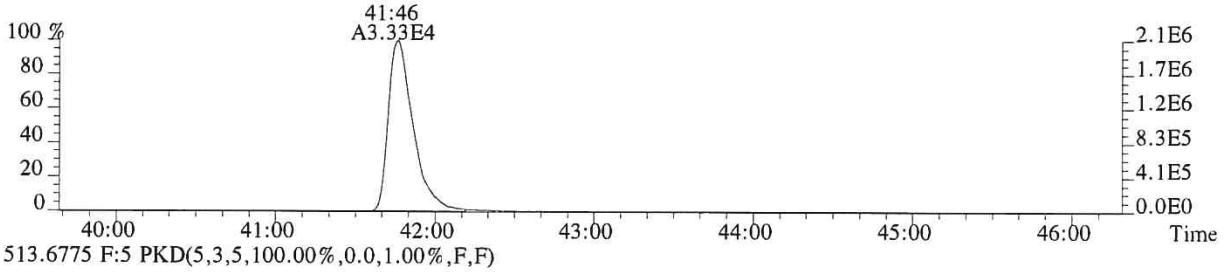
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1140.0,0.40%,F,T)



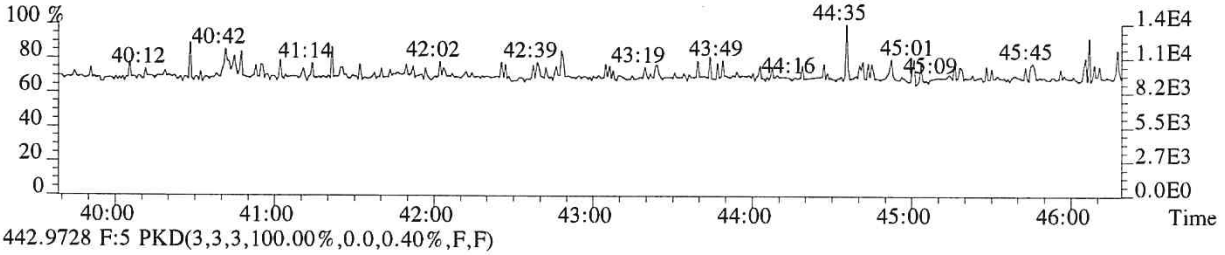
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,992.0,0.40%,F,T)



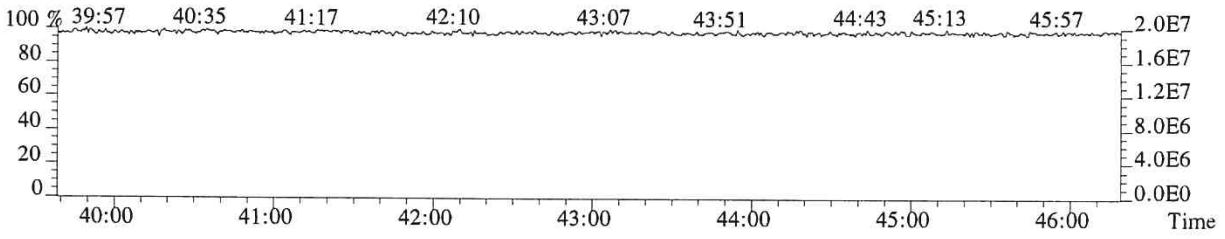
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,576.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

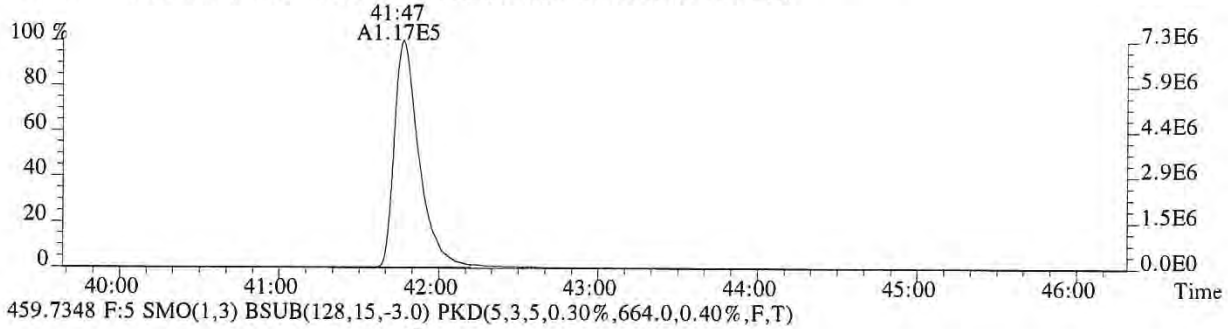


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

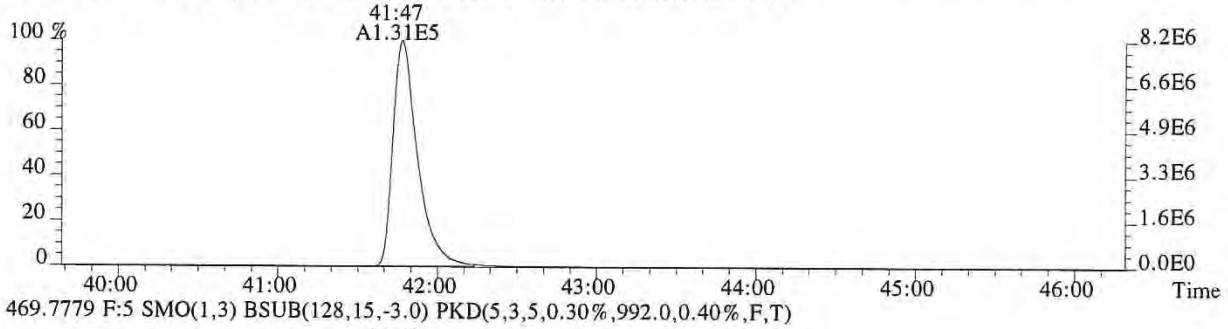


060094

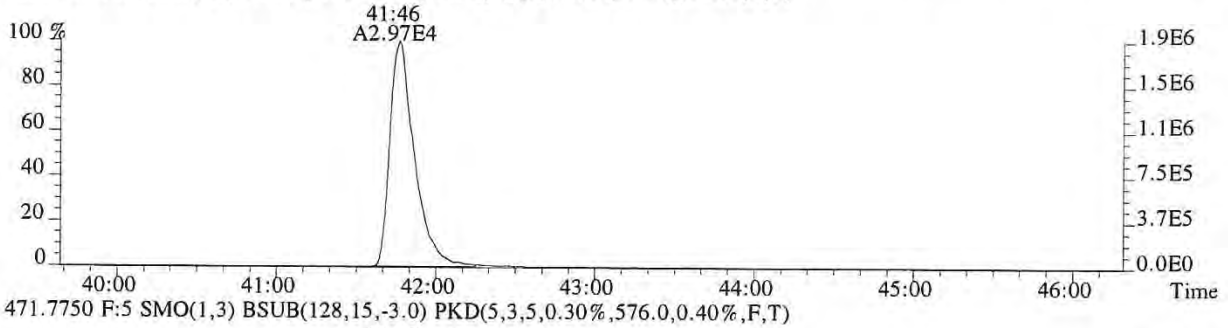
File:P519693 #1-601 Acq:29-DEC-2018 17:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,536.0,0.40%,F,T)



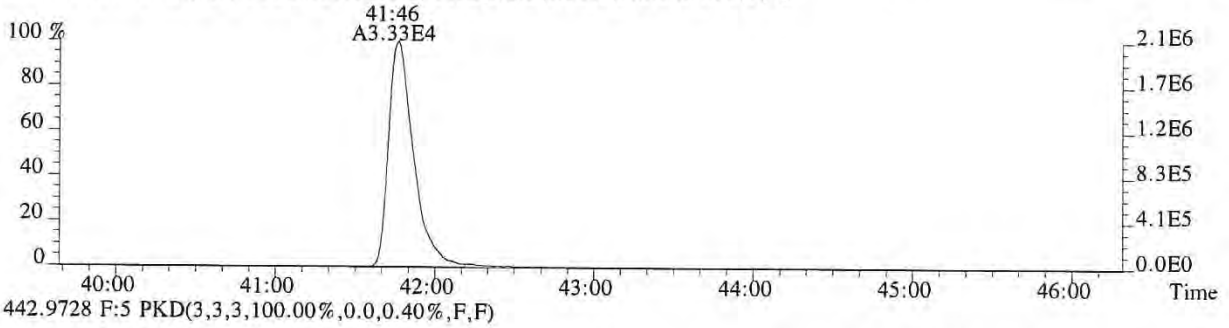
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,664.0,0.40%,F,T)



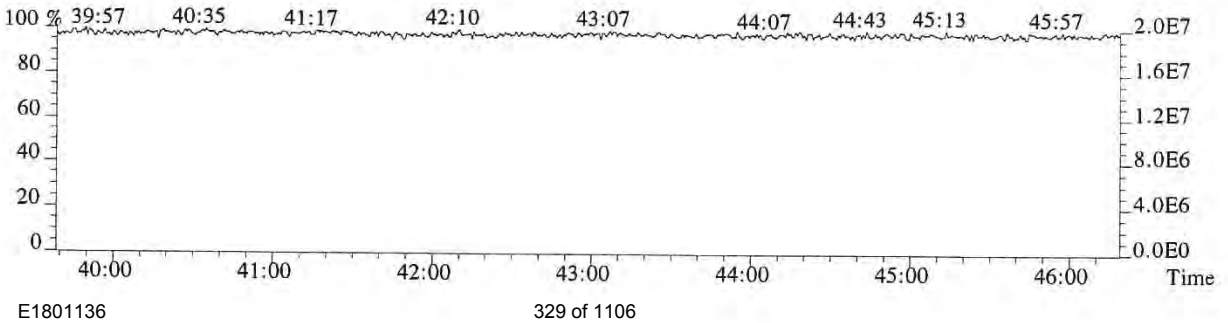
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,992.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,576.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0086

Run #16 Filename P519720 Samp: 1 Inj: 1 Acquired: 30-DEC-18 15:55:16
Processed: 31-DEC-18 09:56:25 Sample ID: E1801136-007DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:06	9.176e+03	1.205e+04	0.76	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	6.014e+02	3.635e+02	1.65	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	4.202e+02	3.066e+02	1.37	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	1.134e+03	1.034e+03	1.10	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	3.600e+02	2.533e+02	1.42	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:36	5.921e+01	3.369e+01	1.76	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	6.005e+01	7.045e+01	0.85	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:49	2.727e+02	2.780e+02	0.98	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:18	8.554e+01	5.620e+01	1.52	no	no	1.258
10	Unk	OCDF	NotFnd	*	*	*	no	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	2.443e+03	3.272e+03	0.75	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:18	2.006e+01	1.226e+01	1.64	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:49	2.647e+02	2.782e+02	0.95	yes	no	1.025
17	Unk	OCDD	41:47	2.862e+03	3.280e+03	0.87	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	1.903e+04	2.455e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	2.901e+04	1.819e+04	1.60	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	2.772e+04	1.716e+04	1.61	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.178e+04	2.266e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:02	1.433e+04	2.800e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.284e+04	2.475e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.163e+04	2.289e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:48	9.989e+03	2.284e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:16	8.954e+03	2.025e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	9.230e+03	1.169e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.115e+04	1.336e+04	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	1.740e+04	1.370e+04	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:51	1.888e+04	1.507e+04	1.25	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:49	2.118e+04	2.007e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	41:47	2.497e+04	2.758e+04	0.91	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	1.651e+04	2.085e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	2.225e+04	1.731e+04	1.29	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	5.198e+02				no	1.014

$$\text{OCDD} = \frac{(2.862e+03 + 3.280e+03) \times 4000\ \text{pg} \times 20}{(2.497e+04 + 2.758e+04) \times 10.275\text{g} \times 78.4 / 100 \times 1.118} = 1674.5402\ \text{ng/kg}$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0086

Run #16 Filename P519720 Samp: 1 Inj: 1 Acquired: 30-DEC-18 15:55:16
Processed: 31-DEC-18 09:56:25 LAB. ID: E1801136-007DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.28e+06	1.01e+03	1.3e+03	1.66e+06	2.34e+03	7.1e+02
2	1,2,3,7,8-PeCDF	9.30e+04	8.72e+02	1.1e+02	5.91e+04	2.66e+03	2.2e+01
3	2,3,4,7,8-PeCDF	5.95e+04	8.72e+02	6.8e+01	4.47e+04	2.66e+03	1.7e+01
4	1,2,3,4,7,8-HxCDF	1.80e+05	4.24e+02	4.2e+02	1.70e+05	9.00e+02	1.9e+02
5	1,2,3,6,7,8-HxCDF	5.14e+04	4.24e+02	1.2e+02	4.26e+04	9.00e+02	4.7e+01
6	2,3,4,6,7,8-HxCDF	1.02e+04	4.24e+02	2.4e+01	6.08e+03	9.00e+02	6.8e+00
7	1,2,3,7,8,9-HxCDF	9.90e+03	4.24e+02	2.3e+01	1.06e+04	9.00e+02	1.2e+01
8	1,2,3,4,6,7,8-HpCDF	4.00e+04	1.26e+03	3.2e+01	3.55e+04	8.68e+02	4.1e+01
9	1,2,3,4,7,8,9-HpCDF	9.23e+03	1.26e+03	7.3e+00	8.31e+03	8.68e+02	9.6e+00
10	OCDF	*	4.32e+02	*	*	1.18e+03	*
11	2,3,7,8-TCDD	4.02e+05	2.47e+03	1.6e+02	5.21e+05	1.51e+03	3.5e+02
12	1,2,3,7,8-PeCDD	4.96e+03	1.09e+03	4.5e+00	3.26e+03	5.12e+02	6.4e+00
13	1,2,3,4,7,8-HxCDD	*	8.08e+02	*	*	1.24e+03	*
14	1,2,3,6,7,8-HxCDD	*	8.08e+02	*	*	1.24e+03	*
15	1,2,3,7,8,9-HxCDD	*	8.08e+02	*	*	1.24e+03	*
16	1,2,3,4,6,7,8-HpCDD	2.75e+04	1.16e+03	2.4e+01	3.01e+04	8.12e+02	3.7e+01
17	OCDD	1.68e+05	2.88e+02	5.8e+02	2.02e+05	4.12e+02	4.9e+02
18	13C-2,3,7,8-TCDF	2.94e+06	5.79e+03	5.1e+02	3.79e+06	5.60e+03	6.8e+02
19	13C-1,2,3,7,8-PeCDF	4.52e+06	5.24e+02	8.6e+03	2.85e+06	5.44e+02	5.2e+03
20	13C-2,3,4,7,8-PeCDF	4.64e+06	5.24e+02	8.9e+03	2.83e+06	5.44e+02	5.2e+03
21	13C-1,2,3,4,7,8-HxCDF	1.98e+06	1.16e+03	1.7e+03	3.85e+06	1.36e+03	2.8e+03
22	13C-1,2,3,6,7,8-HxCDF	2.20e+06	1.16e+03	1.9e+03	4.30e+06	1.36e+03	3.2e+03
23	13C-2,3,4,6,7,8-HxCDF	2.08e+06	1.16e+03	1.8e+03	3.91e+06	1.36e+03	2.9e+03
24	13C-1,2,3,7,8,9-HxCDF	1.60e+06	1.16e+03	1.4e+03	3.17e+06	1.36e+03	2.3e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.22e+06	7.36e+02	1.7e+03	2.73e+06	4.36e+03	6.3e+02
26	13C-1,2,3,4,7,8,9-HpCDF	8.39e+05	7.36e+02	1.1e+03	1.85e+06	4.36e+03	4.2e+02
27	13C-2,3,7,8-TCDD	1.50e+06	6.88e+03	2.2e+02	1.87e+06	2.39e+03	7.8e+02
28	13C-1,2,3,7,8-PeCDD	3.43e+06	1.12e+03	3.0e+03	2.18e+06	1.18e+03	1.8e+03
29	13C-1,2,3,4,7,8-HxCDD	2.87e+06	1.38e+03	2.1e+03	2.23e+06	1.20e+03	1.9e+03
30	13C-1,2,3,6,7,8-HxCDD	2.76e+06	1.38e+03	2.0e+03	2.18e+06	1.20e+03	1.8e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.08e+06	9.32e+02	2.2e+03	1.92e+06	6.20e+02	3.1e+03
32	13C-OCDD	1.38e+06	1.15e+03	1.2e+03	1.52e+06	4.96e+02	3.1e+03
33	13C-1,2,3,4-TCDD	2.59e+06	6.88e+03	3.8e+02	3.26e+06	2.39e+03	1.4e+03
34	13C-1,2,3,7,8,9-HxCDD	3.04e+06	1.38e+03	2.2e+03	2.38e+06	1.20e+03	2.0e+03
35	37Cl-2,3,7,8-TCDD	8.46e+04	1.88e+03	4.5e+01			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.472e{+}03 + 1.508e{+}03) \times 2000}{(1.502e{+}06 + 1.866e{+}06) \times (\quad) \times 1.085} =$$

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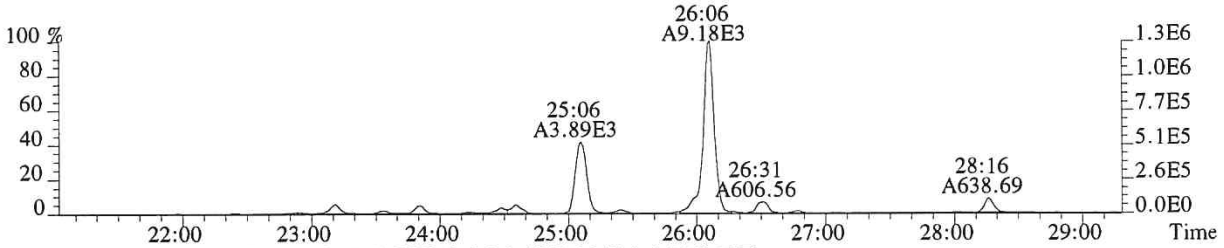
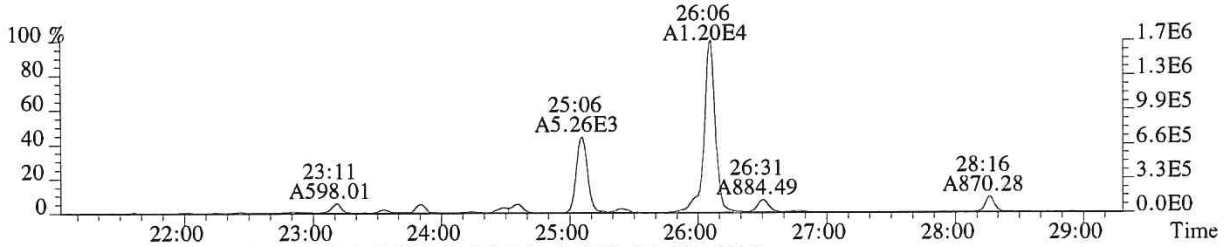
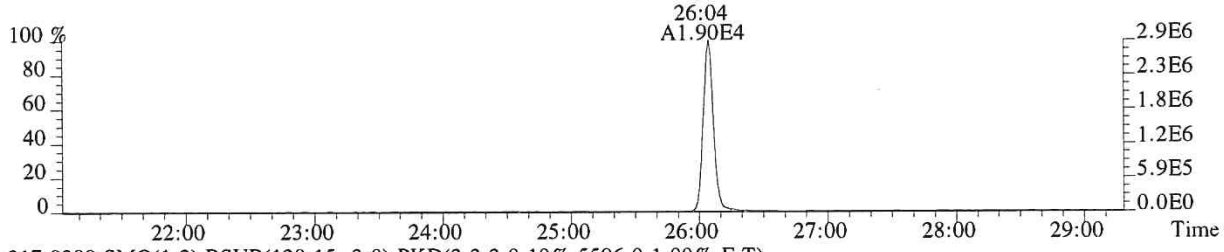
File:P519720 #1-587 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1008.0,1.00%,F,T)



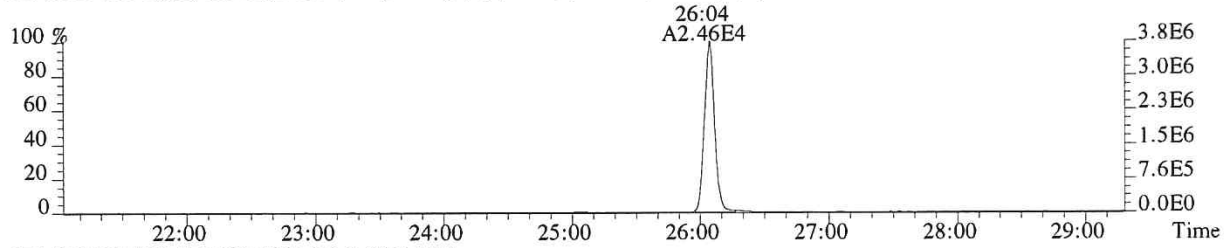
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2340.0,1.00%,F,T)



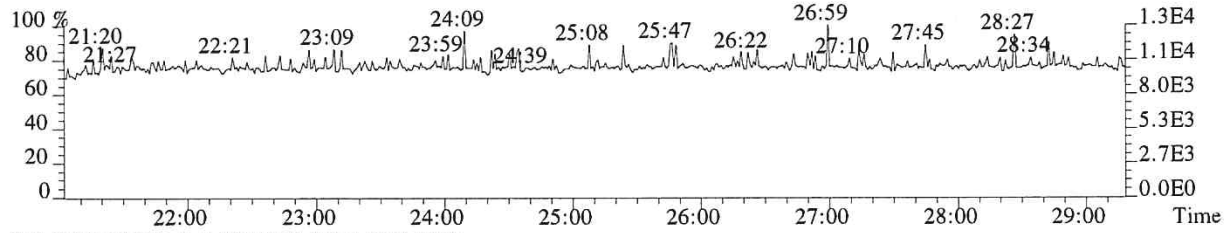
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5788.0,1.00%,F,T)



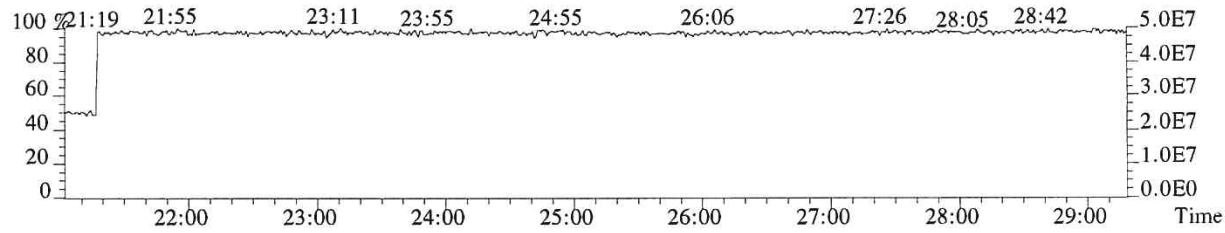
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5596.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



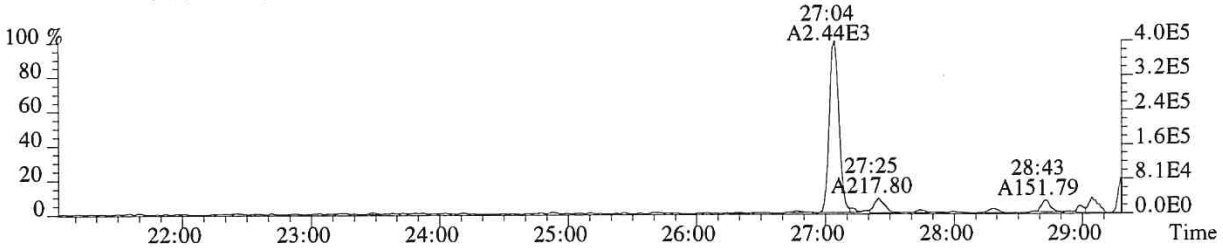
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



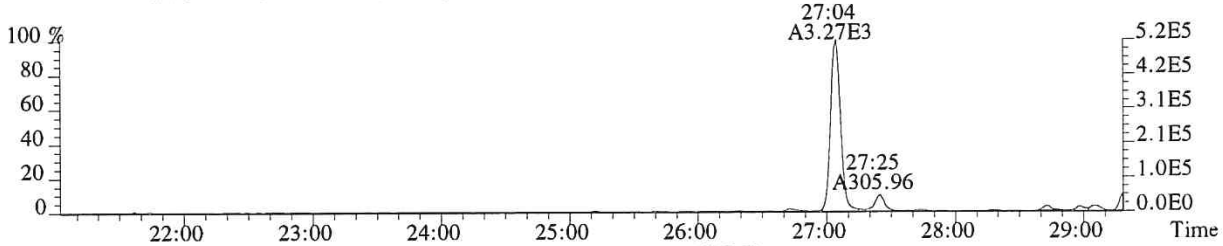
060098

File:P519720 #1-587 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL

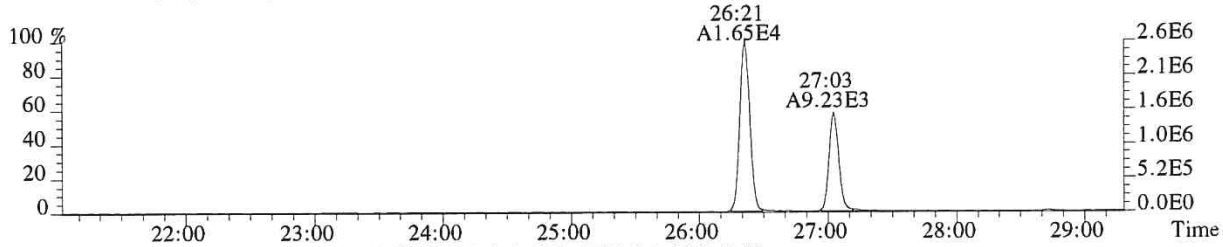
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2472.0,1.00%,F,T)



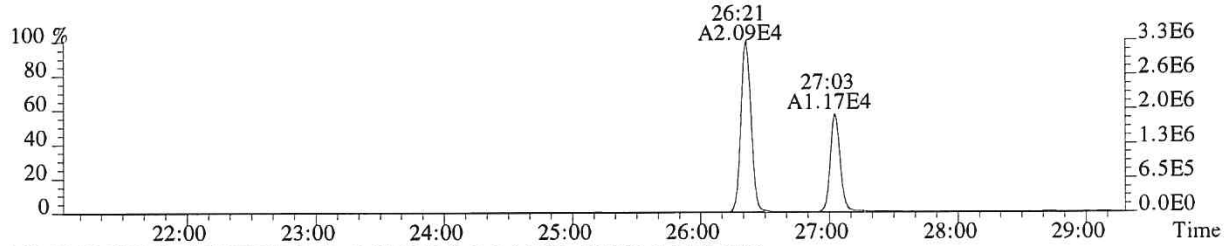
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1508.0,1.00%,F,T)



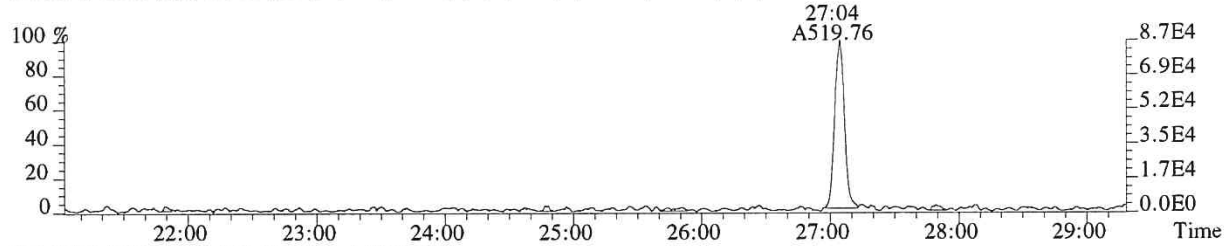
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6880.0,1.00%,F,T)



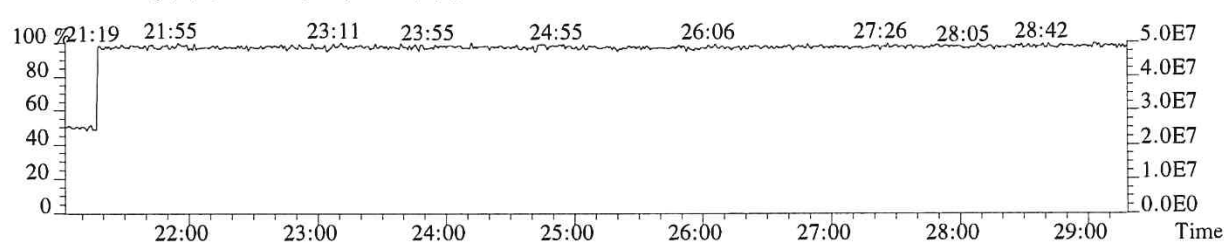
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2388.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1876.0,1.00%,F,T)

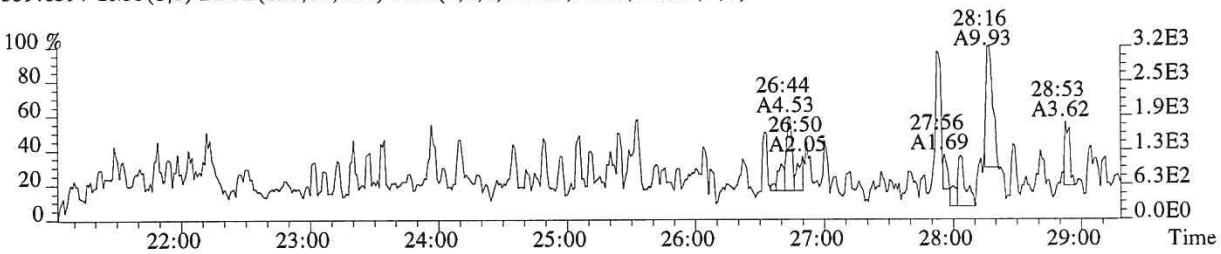


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

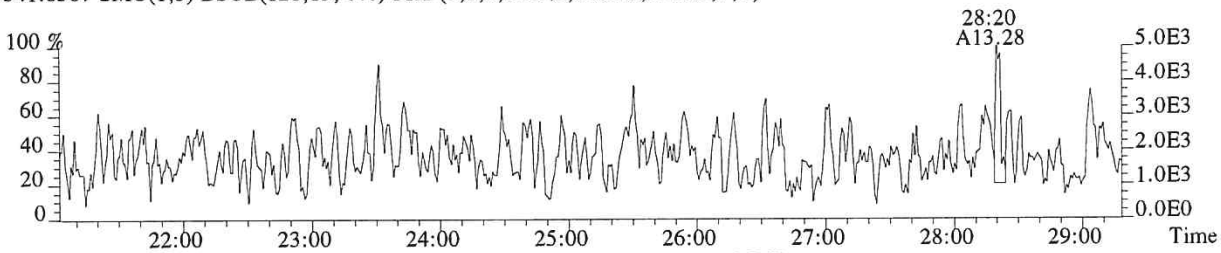


060099

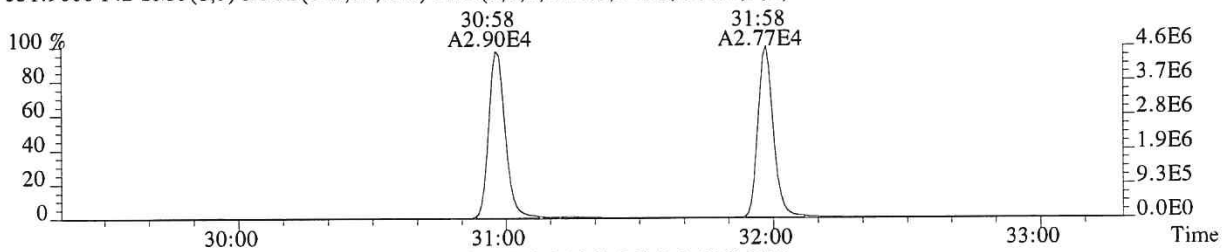
File:P519720 #1-587 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,912.0,1.00%,F,T)



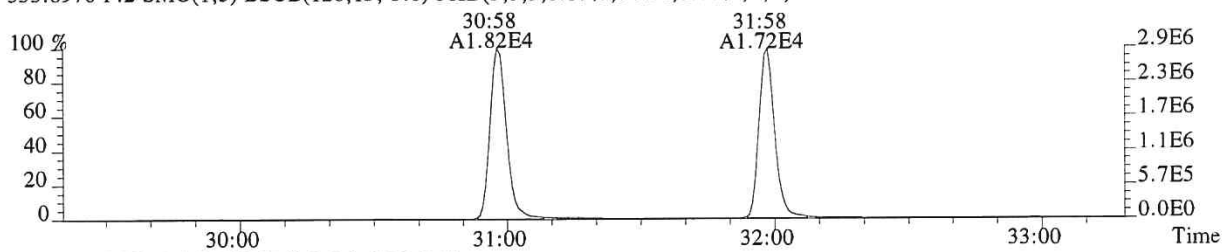
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2252.0,1.00%,F,T)



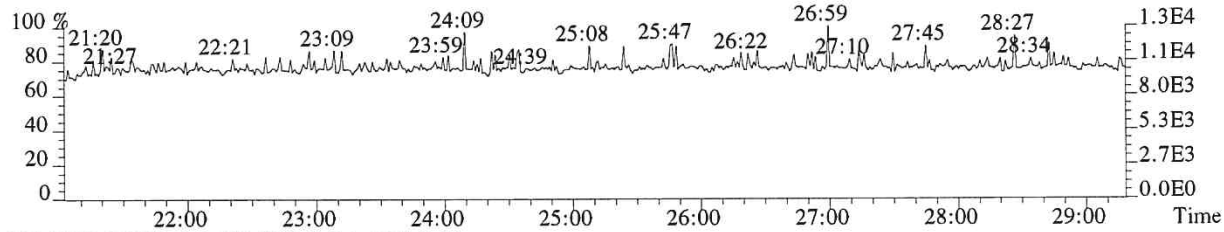
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,524.0,1.00%,F,T)



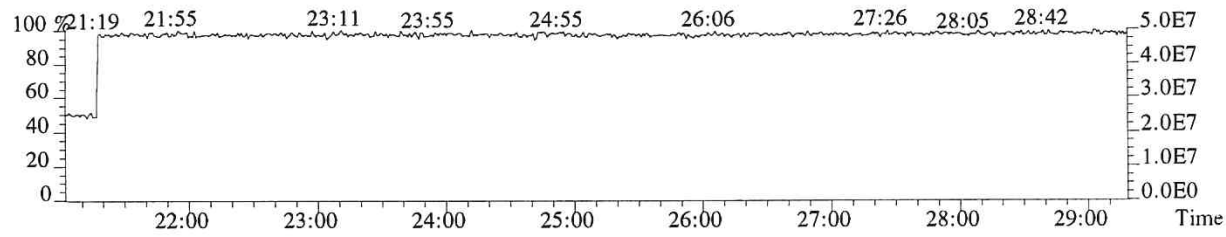
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,544.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

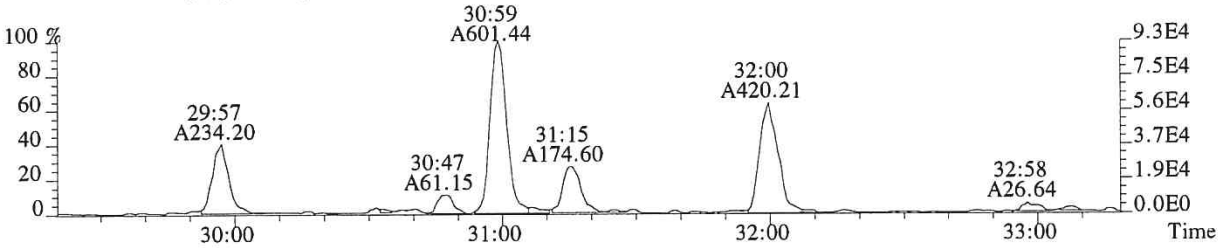


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

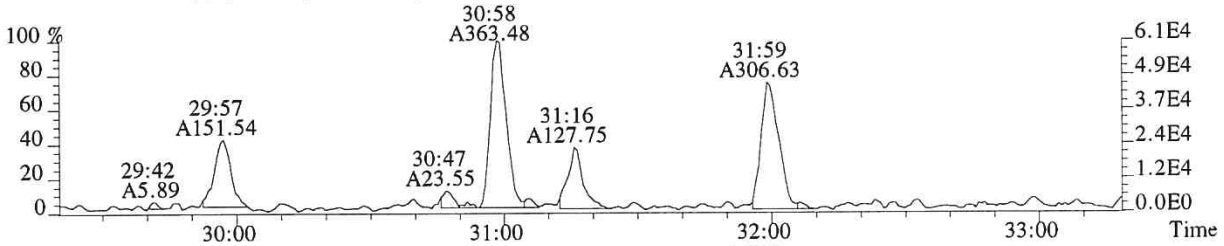


060100

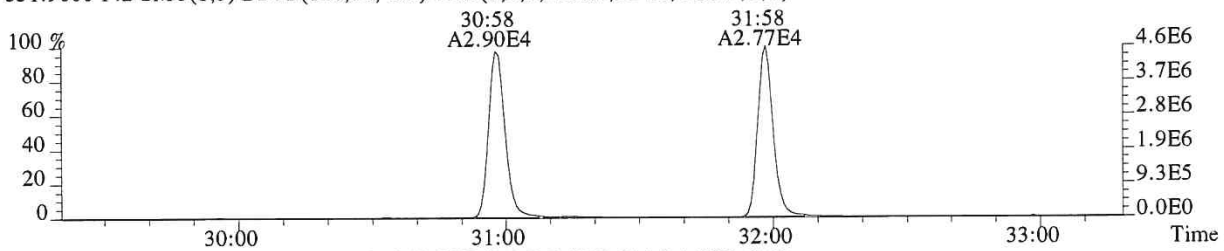
File:P519720 #1-358 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,872.0,1.00%,F,T)



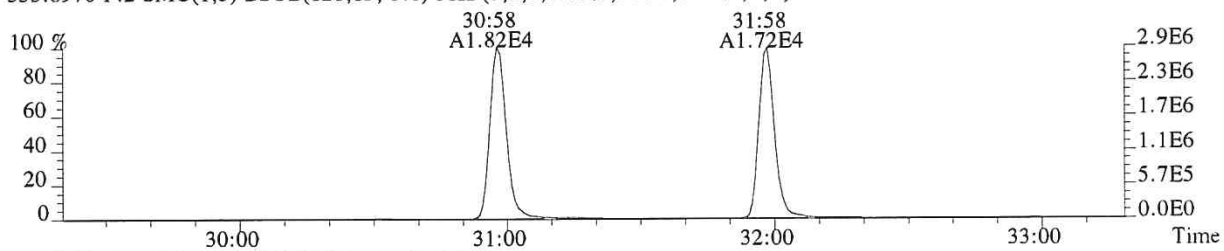
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2660.0,1.00%,F,T)



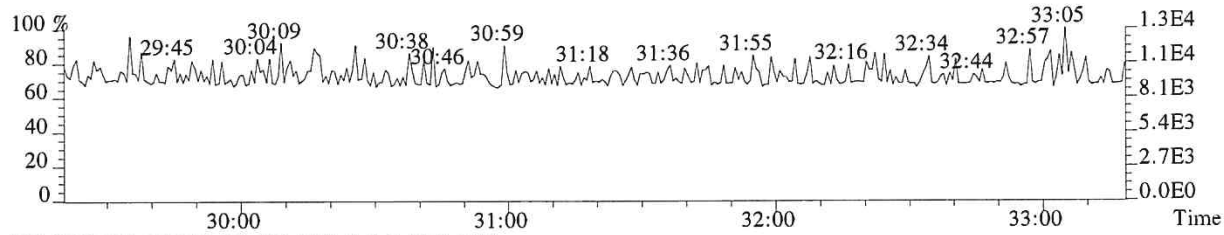
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,524.0,1.00%,F,T)



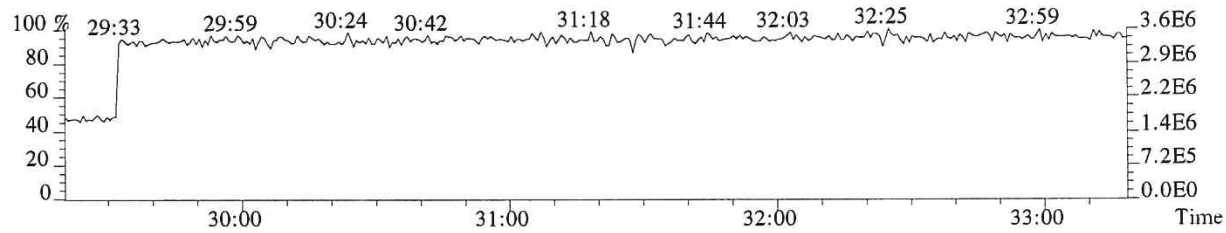
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,544.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

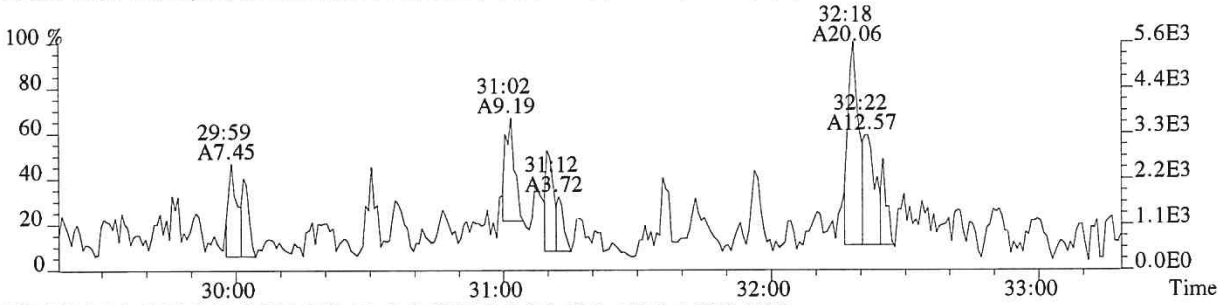


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

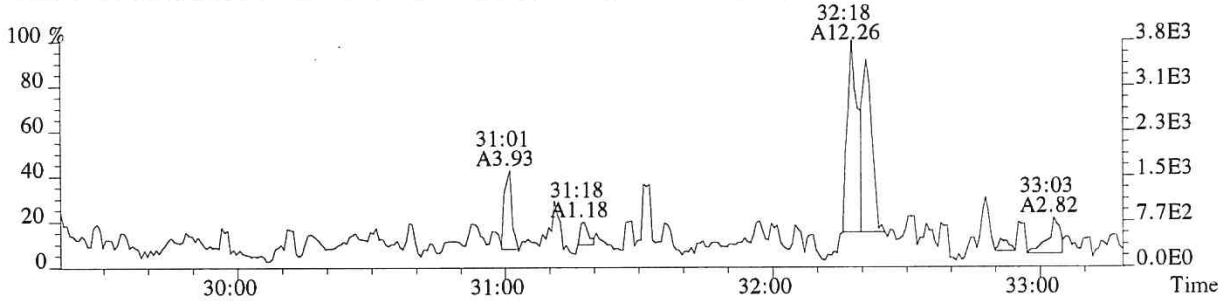


060101

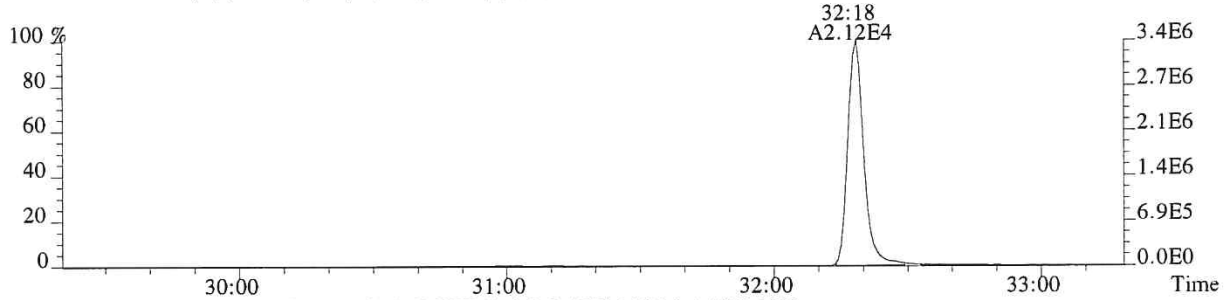
File:P519720 #1-358 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1092.0,1.00%,F,T)



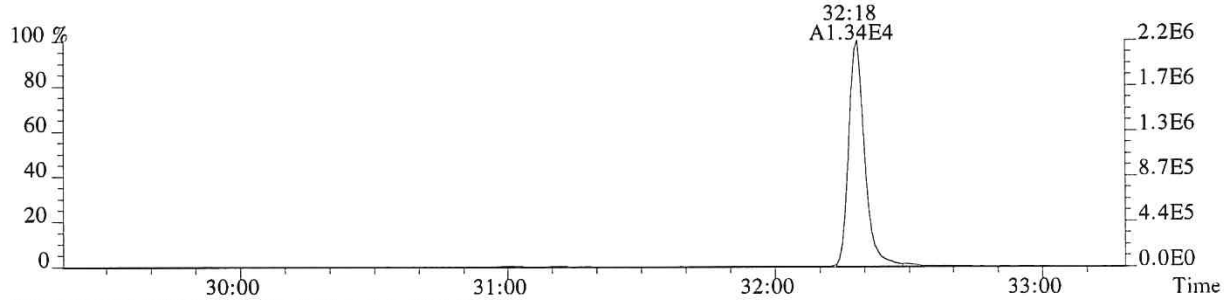
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,512.0,1.00%,F,T)



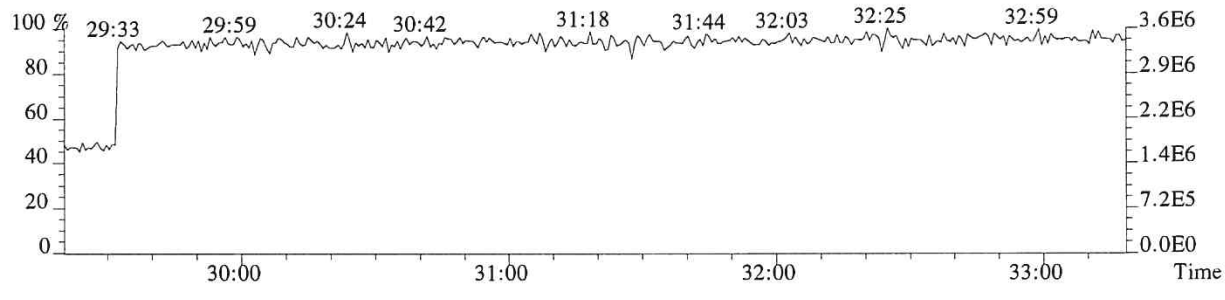
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1124.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1180.0,1.00%,F,T)

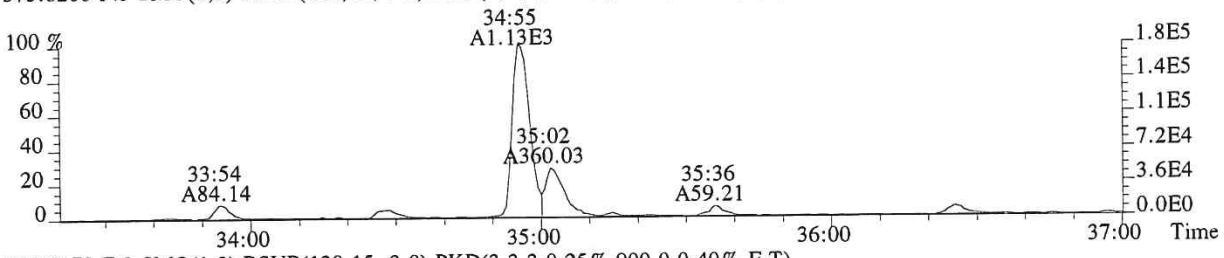


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

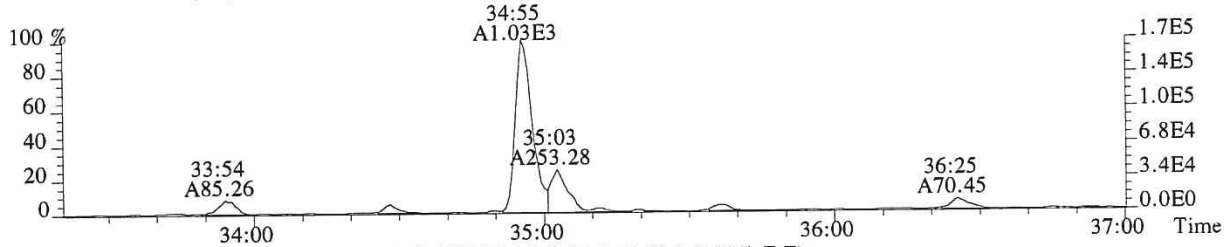


060102

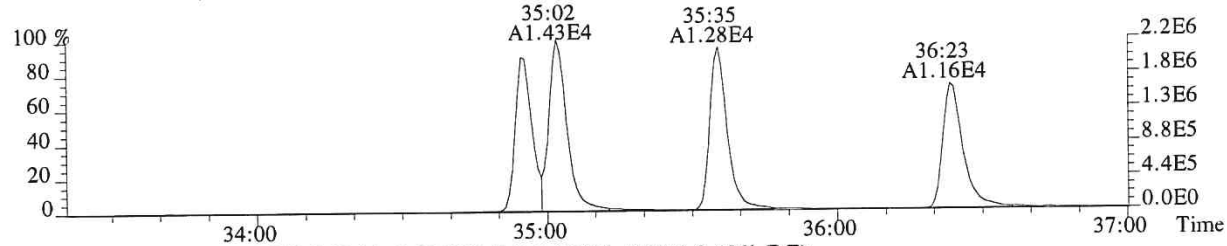
File:P519720 #1-330 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,424.0,0.40%,F,T)



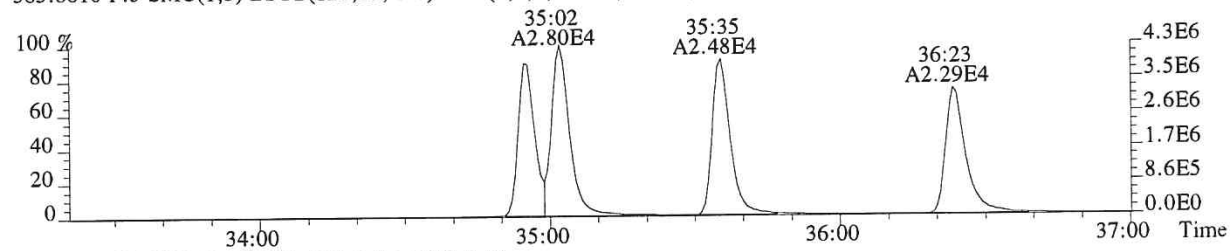
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,900.0,0.40%,F,T)



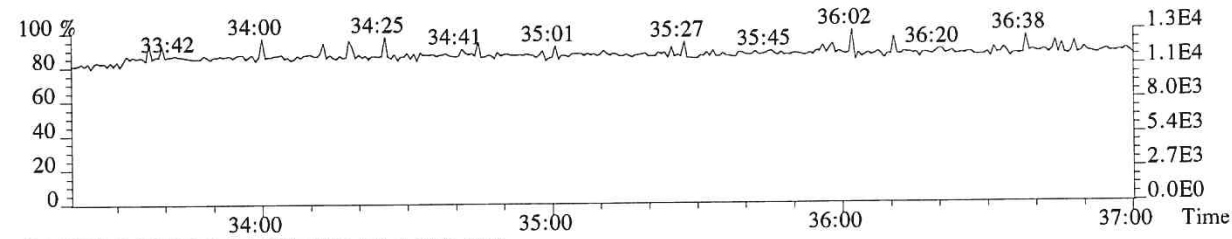
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1160.0,0.40%,F,T)



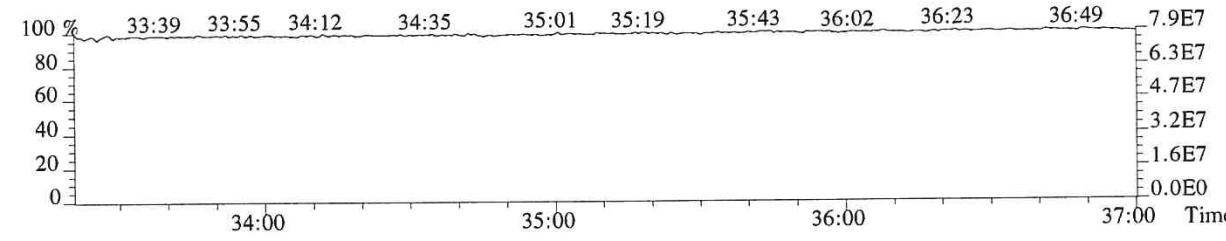
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1360.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

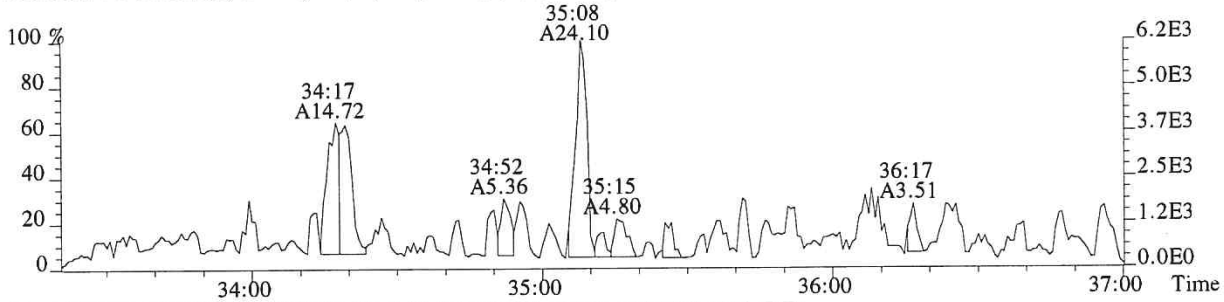


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

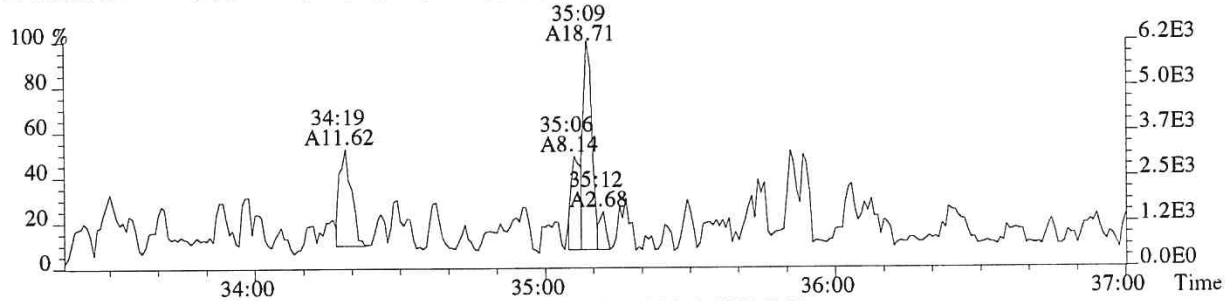


060103

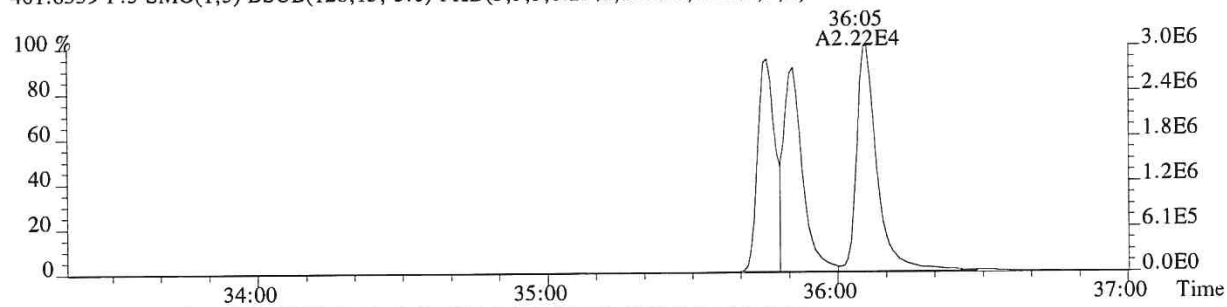
File:P519720 #1-330 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,808.0,0.40%,F,T)



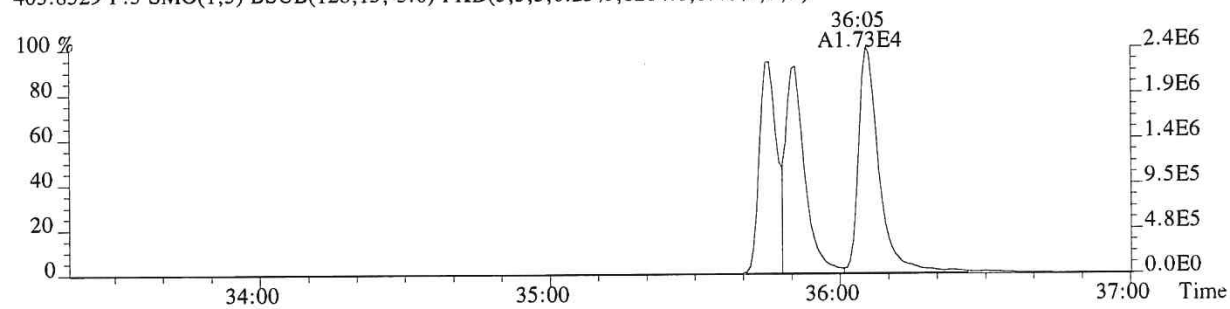
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1244.0,0.40%,F,T)



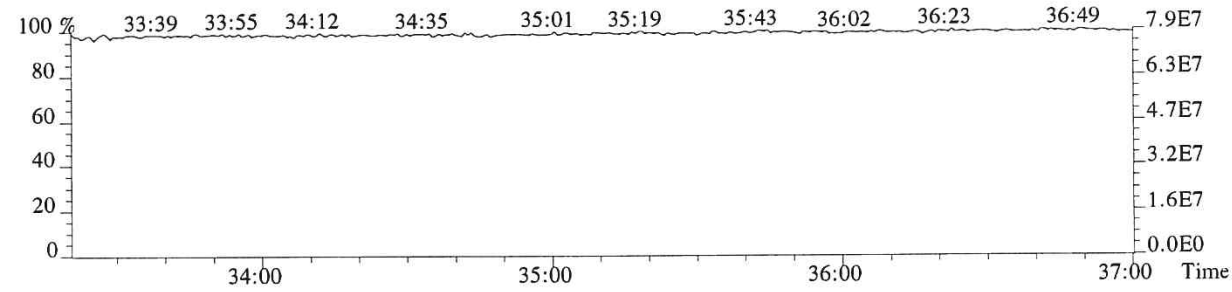
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1376.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1204.0,0.40%,F,T)

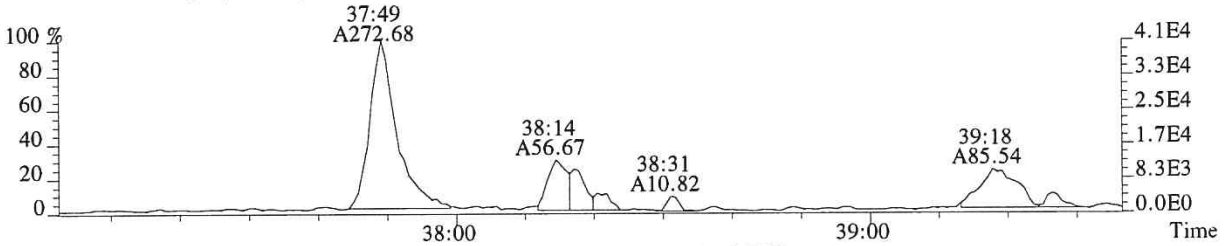


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

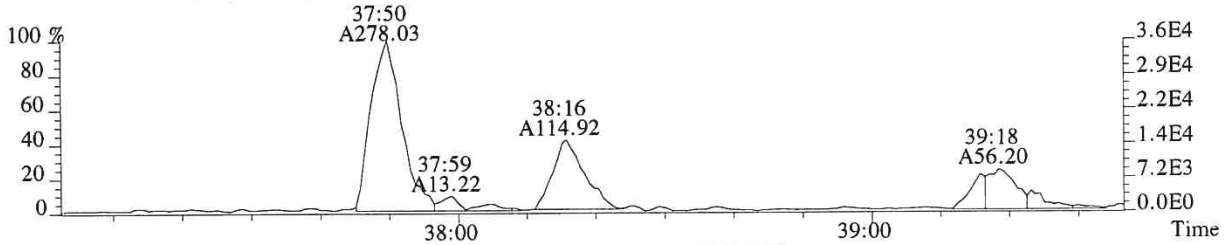


060104

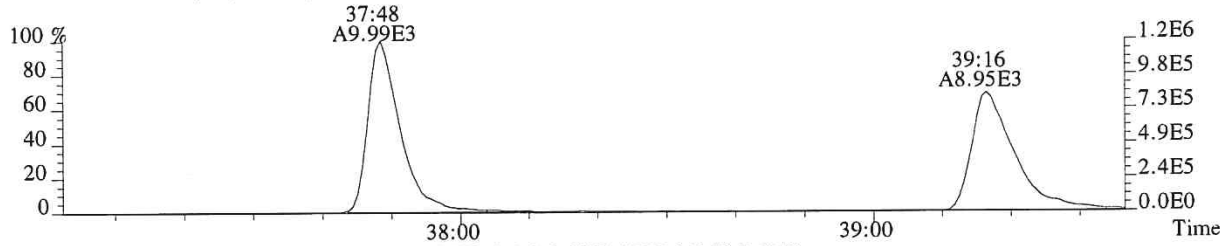
File:P519720 #1-232 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1260.0,0.50%,F,T)



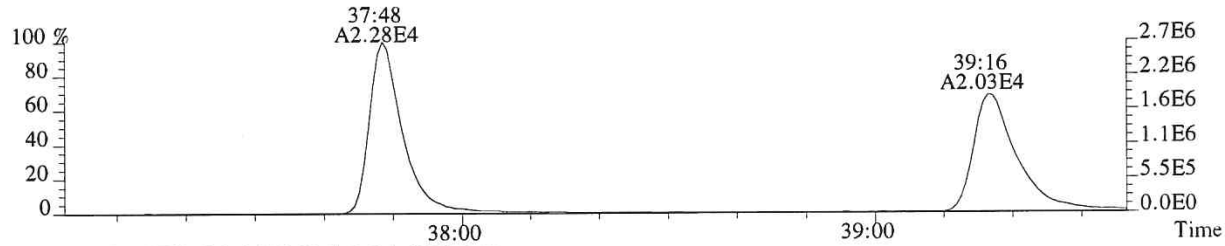
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,868.0,0.50%,F,T)



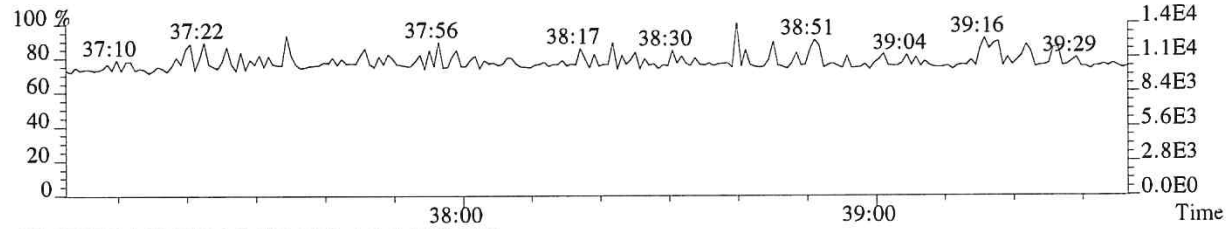
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,736.0,0.50%,F,T)



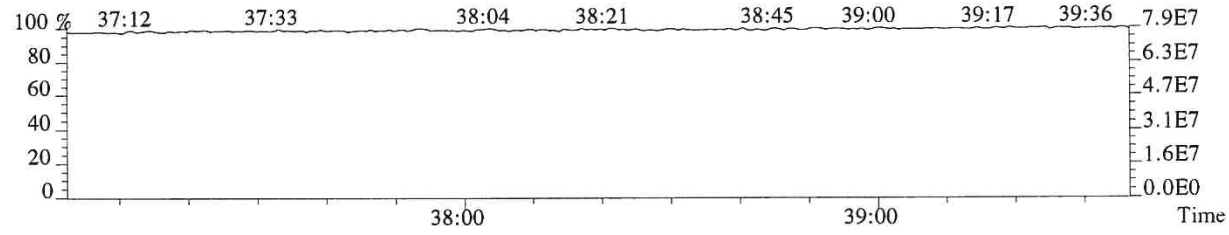
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4356.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

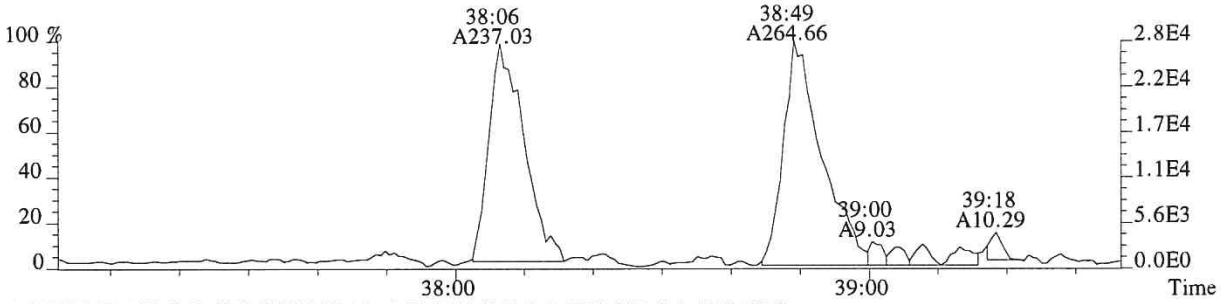


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

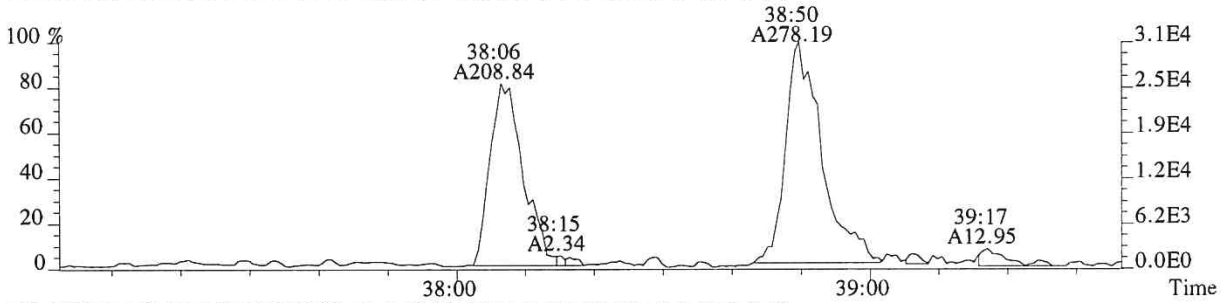


060105

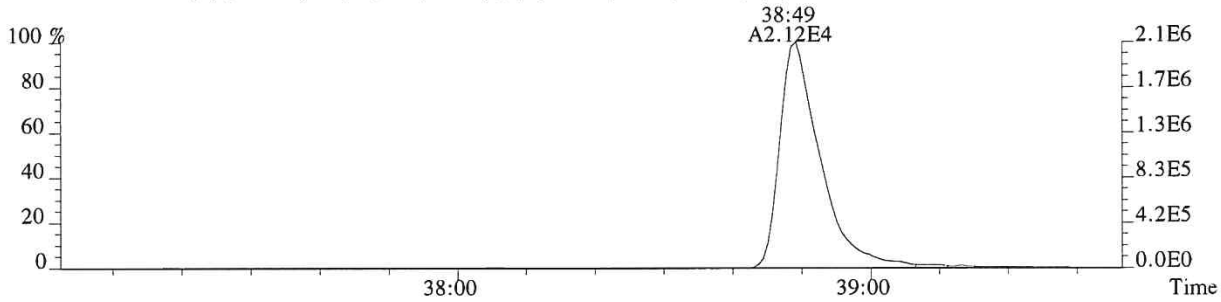
File:P519720 #1-232 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1156.0,0.40%,F,T)



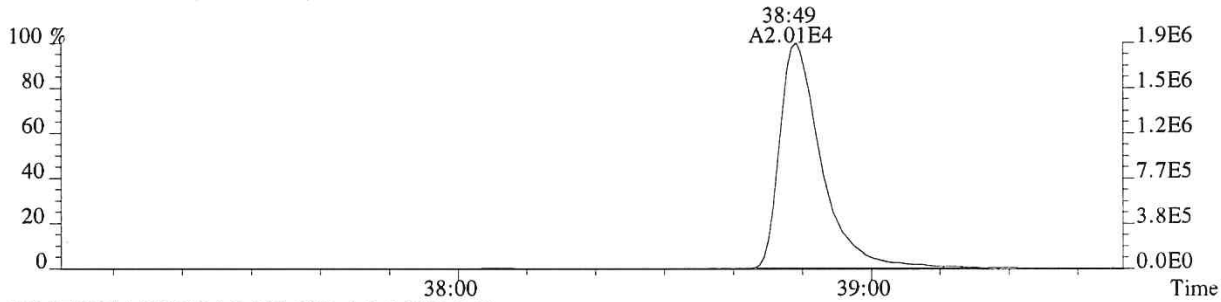
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,812.0,0.40%,F,T)



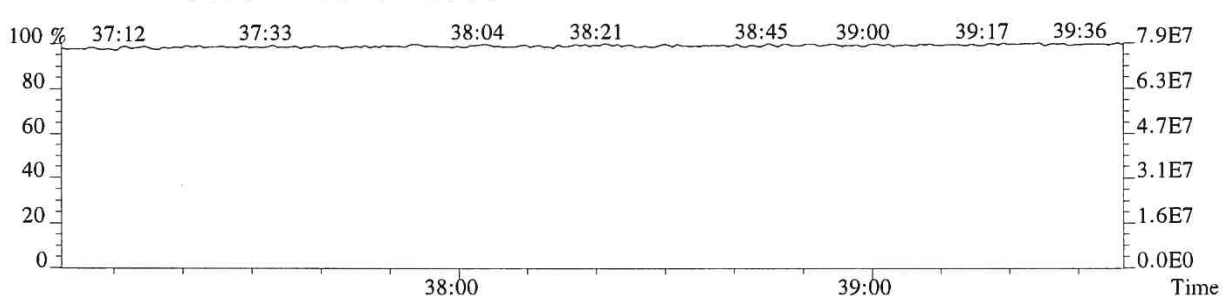
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,932.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,620.0,0.40%,F,T)

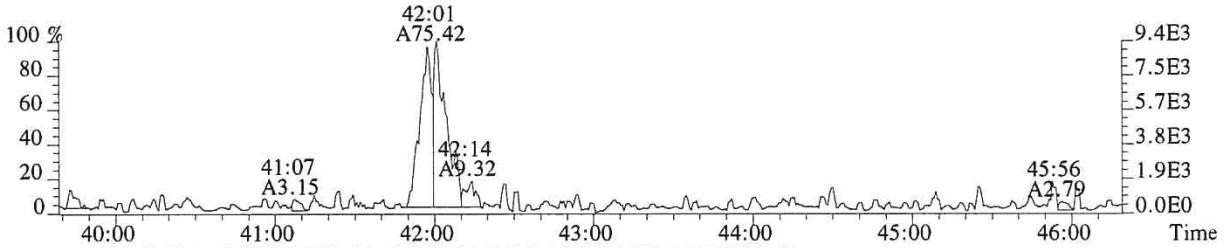


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

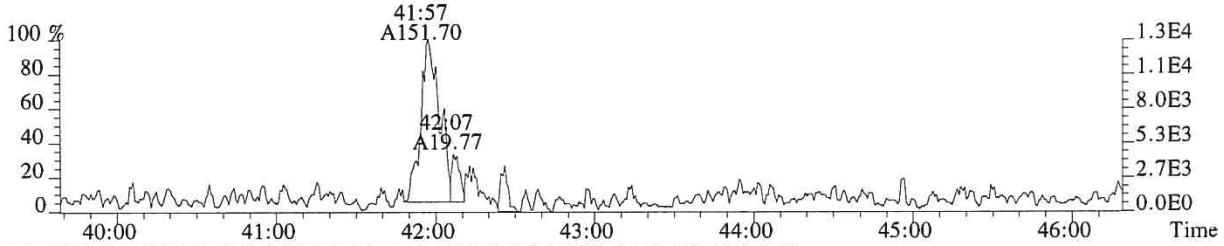


060106

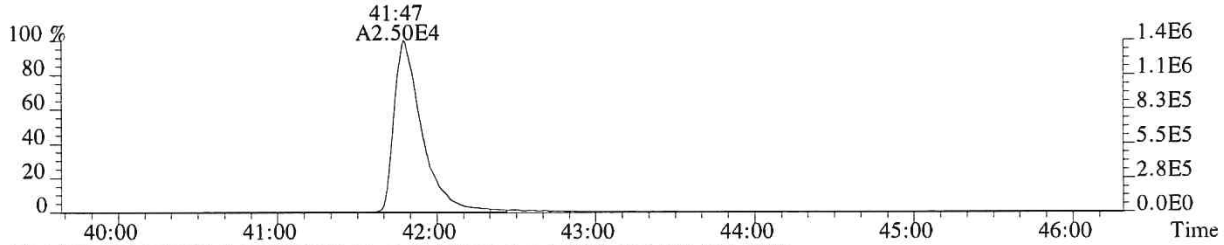
File:P519720 #1-601 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,432.0,0.40%,F,T)



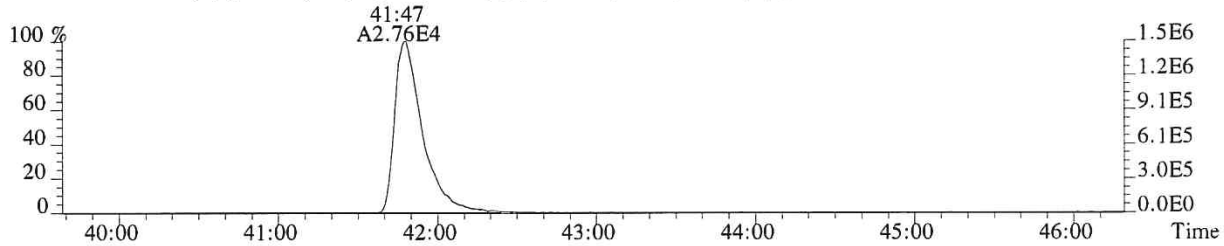
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1184.0,0.40%,F,T)



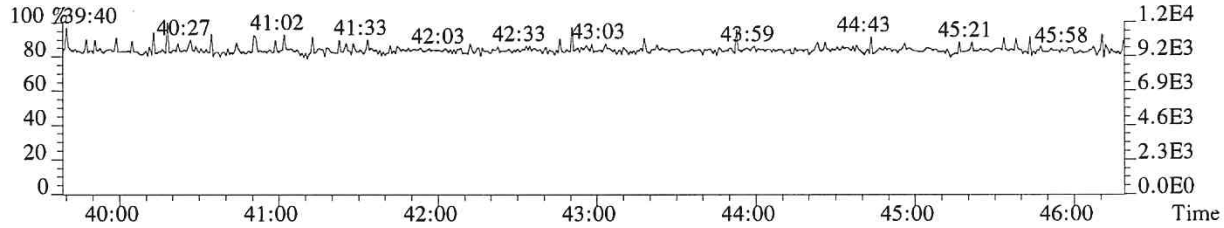
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1148.0,0.40%,F,T)



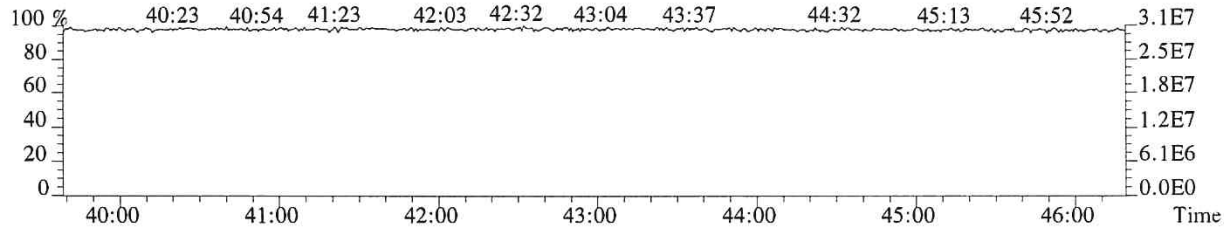
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,496.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

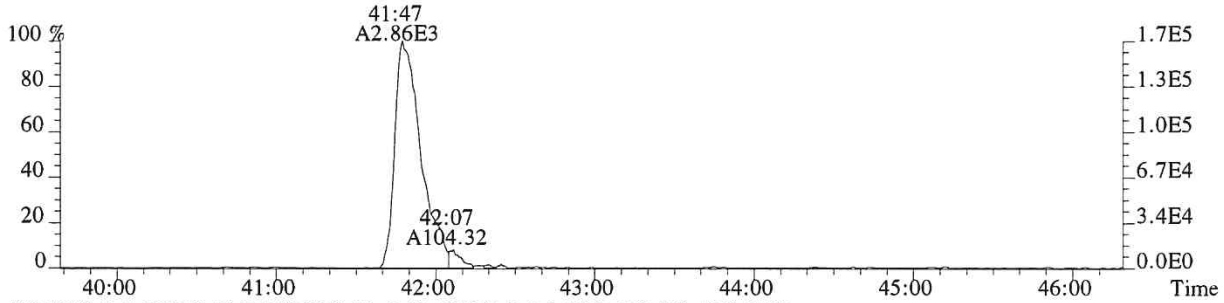


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

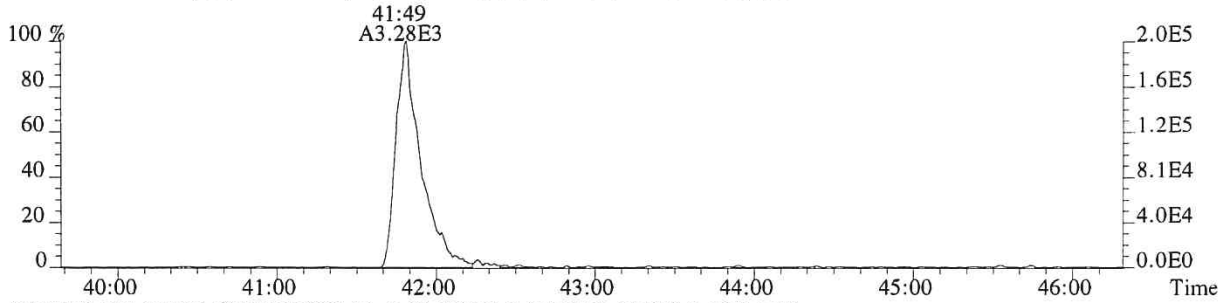


060107

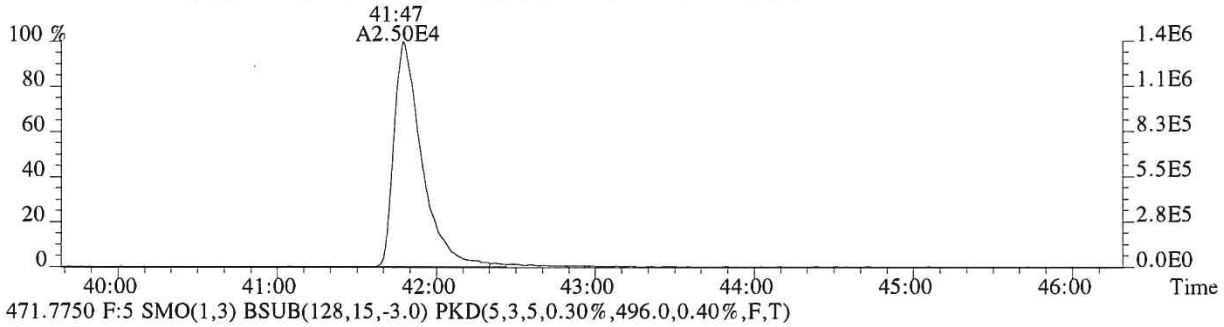
File:P519720 #1-601 Acq:30-DEC-2018 15:55:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-007DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,288.0,0.40%,F,T)



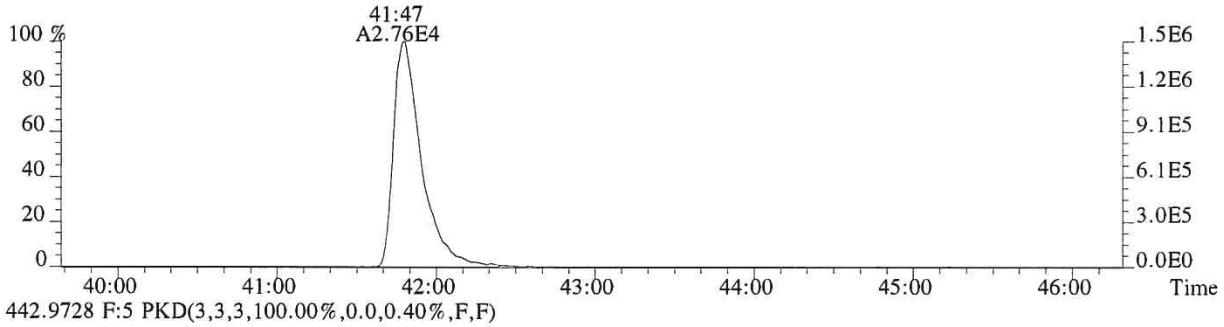
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



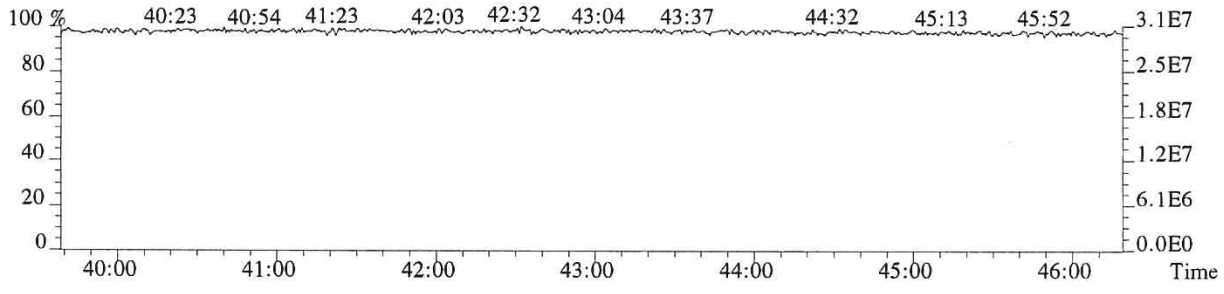
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1148.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,496.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060108

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0087

Run #17 Filename P519694 Samp: 1 Inj: 1 Acquired: 29-DEC-18 17:59:13
Processed: 30-DEC-18 08:08:07 Sample ID: E1801136-008

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:08	9.407e+05	1.227e+06	0.77	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:00	4.279e+04	2.839e+04	1.51	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	3.673e+04	2.424e+04	1.51	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	5.761e+04	4.797e+04	1.20	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	1.503e+04	1.208e+04	1.24	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	2.423e+03	2.083e+03	1.16	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	3.593e+03	3.186e+03	1.13	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	1.502e+04	1.505e+04	1.00	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:16	4.754e+03	4.837e+03	0.98	yes	no	1.258
10	Unk	OCDF	41:56	6.159e+03	7.257e+03	0.85	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:05	2.500e+05	3.175e+05	0.79	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:19	3.312e+03	2.144e+03	1.54	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:45	5.691e+01	3.736e+01	1.52	no	yes	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:50	5.590e+02	4.138e+02	1.35	yes	yes	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	1.810e+02	1.751e+02	1.03	no	yes	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:48	2.036e+04	1.950e+04	1.04	yes	no	1.025
17	Unk	OCDD	41:47	1.993e+05	2.252e+05	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:06	2.431e+04	3.048e+04	0.80	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:59	3.638e+04	2.286e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:59	3.471e+04	2.218e+04	1.56	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.413e+04	2.798e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.689e+04	3.201e+04	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.495e+04	2.874e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.408e+04	2.759e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:47	1.045e+04	2.421e+04	0.43	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:15	1.013e+04	2.330e+04	0.43	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:04	1.160e+04	1.491e+04	0.78	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.764e+04	1.743e+04	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:44	2.112e+04	1.680e+04	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	2.289e+04	1.821e+04	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:47	2.413e+04	2.298e+04	1.05	yes	no	0.858
32	IS	13C-OCDD	41:46	2.660e+04	2.974e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:24	3.838e+04	4.855e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	5.138e+04	4.189e+04	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:05	2.413e+04				no	1.014

$$\text{OCDD} = \frac{(1.993e+05 + 2.252e+05) \times 4000\ \text{pg} \times 1}{(2.660e+04 + 2.974e+04) \times 10.874\text{g} \times 74.7/100 \times 1.118} = 3318.7085\ \text{ng/kg}$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0087

Run #17 Filename P519694 Samp: 1 Inj: 1 Acquired: 29-DEC-18 17:59:13
Processed: 30-DEC-18 08:08:07 LAB. ID: E1801136-008

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.39e+08	2.42e+03	5.7e+04	1.80e+08	2.13e+03	8.4e+04
2	1,2,3,7,8-PeCDF	7.49e+06	3.27e+03	2.3e+03	4.98e+06	2.28e+03	2.2e+03
3	2,3,4,7,8-PeCDF	5.42e+06	3.27e+03	1.7e+03	3.52e+06	2.28e+03	1.5e+03
4	1,2,3,4,7,8-HxCDF	1.06e+07	2.95e+03	3.6e+03	8.82e+06	2.59e+03	3.4e+03
5	1,2,3,6,7,8-HxCDF	2.48e+06	2.95e+03	8.4e+02	2.02e+06	2.59e+03	7.8e+02
6	2,3,4,6,7,8-HxCDF	4.48e+05	2.95e+03	1.5e+02	3.73e+05	2.59e+03	1.4e+02
7	1,2,3,7,8,9-HxCDF	5.78e+05	2.95e+03	2.0e+02	4.85e+05	2.59e+03	1.9e+02
8	1,2,3,4,6,7,8-HpCDF	2.00e+06	4.03e+03	5.0e+02	1.95e+06	3.22e+03	6.1e+02
9	1,2,3,4,7,8,9-HpCDF	4.98e+05	4.03e+03	1.2e+02	5.21e+05	3.22e+03	1.6e+02
10	OCDF	3.78e+05	5.32e+02	7.1e+02	4.52e+05	1.23e+03	3.7e+02
11	2,3,7,8-TCDD	4.25e+07	3.63e+03	1.2e+04	5.40e+07	1.27e+03	4.2e+04
12	1,2,3,7,8-PeCDD	5.13e+05	1.01e+03	5.1e+02	3.53e+05	5.96e+02	5.9e+02
13	1,2,3,4,7,8-HxCDD	1.36e+04	5.72e+02	2.4e+01	8.98e+03	6.52e+02	1.4e+01
14	1,2,3,6,7,8-HxCDD	9.01e+04	5.72e+02	1.6e+02	6.49e+04	6.52e+02	1.0e+02
15	1,2,3,7,8,9-HxCDD	2.84e+04	5.72e+02	5.0e+01	2.86e+04	6.52e+02	4.4e+01
16	1,2,3,4,6,7,8-HpCDD	2.28e+06	5.00e+02	4.6e+03	2.18e+06	8.60e+02	2.5e+03
17	OCDD	1.23e+07	5.24e+02	2.3e+04	1.38e+07	6.24e+02	2.2e+04
18	13C-2,3,7,8-TCDF	3.88e+06	7.82e+03	5.0e+02	4.83e+06	9.13e+03	5.3e+02
19	13C-1,2,3,7,8-PeCDF	6.43e+06	2.64e+03	2.4e+03	4.05e+06	1.18e+03	3.4e+03
20	13C-2,3,4,7,8-PeCDF	6.09e+06	2.64e+03	2.3e+03	3.93e+06	1.18e+03	3.3e+03
21	13C-1,2,3,4,7,8-HxCDF	2.62e+06	1.43e+03	1.8e+03	5.16e+06	1.94e+03	2.7e+03
22	13C-1,2,3,6,7,8-HxCDF	2.82e+06	1.43e+03	2.0e+03	5.37e+06	1.94e+03	2.8e+03
23	13C-2,3,4,6,7,8-HxCDF	2.54e+06	1.43e+03	1.8e+03	4.87e+06	1.94e+03	2.5e+03
24	13C-1,2,3,7,8,9-HxCDF	2.16e+06	1.43e+03	1.5e+03	4.26e+06	1.94e+03	2.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.35e+06	3.17e+03	4.3e+02	3.20e+06	3.99e+03	8.0e+02
26	13C-1,2,3,4,7,8,9-HpCDF	1.05e+06	3.17e+03	3.3e+02	2.48e+06	3.99e+03	6.2e+02
27	13C-2,3,7,8-TCDD	1.98e+06	5.18e+03	3.8e+02	2.55e+06	2.97e+03	8.6e+02
28	13C-1,2,3,7,8-PeCDD	4.80e+06	1.21e+03	4.0e+03	3.04e+06	9.92e+02	3.1e+03
29	13C-1,2,3,4,7,8-HxCDD	4.01e+06	9.72e+02	4.1e+03	3.16e+06	1.02e+03	3.1e+03
30	13C-1,2,3,6,7,8-HxCDD	3.47e+06	9.72e+02	3.6e+03	2.74e+06	1.02e+03	2.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.69e+06	9.36e+02	2.9e+03	2.57e+06	5.84e+02	4.4e+03
32	13C-OCDD	1.63e+06	8.96e+02	1.8e+03	1.80e+06	6.40e+02	2.8e+03
33	13C-1,2,3,4-TCDD	6.18e+06	5.18e+03	1.2e+03	7.90e+06	2.97e+03	2.7e+03
34	13C-1,2,3,7,8,9-HxCDD	8.58e+06	9.72e+02	8.8e+03	6.83e+06	1.02e+03	6.7e+03
35	37Cl-2,3,7,8-TCDD	4.14e+06	1.46e+03	2.8e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.628e{+}03 + 1.272e{+}03) \times 2000}{(1.983e{+}06 + 2.546e{+}06) \times (\quad) \times 1.085} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0087

Entry: 36 Totals Name: Total Tetra-Furans

Run: 17 File: P519694 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 17:59:13 Processed: 30-DEC-18 08:08:07

Mass: 303.9020 305.8990 Tot Response: 3.93e+06 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:57	8.07e+03	1.09e+04	0.74	yes	1.90e+04		n	n
2	23:13	4.58e+04	6.12e+04	0.75	yes	1.07e+05		n	n
3	23:35	1.42e+04	1.95e+04	0.73	yes	3.37e+04		n	n
4	23:43	1.58e+03	2.12e+03	0.74	yes	3.69e+03		n	n
5	23:52	3.77e+04	5.08e+04	0.74	yes	8.84e+04		n	n
6	24:15	7.17e+03	9.53e+03	0.75	yes	1.67e+04		n	n
7	24:30	2.75e+04	3.65e+04	0.75	yes	6.40e+04		n	n
8	24:37	4.41e+04	5.80e+04	0.76	yes	1.02e+05		n	n
9	25:07	4.06e+05	5.33e+05	0.76	yes	9.39e+05		n	n
10	25:26	1.94e+04	2.62e+04	0.74	yes	4.57e+04		n	n
11	26:08	9.41e+05	1.23e+06	0.77	yes	2.17e+06	2,3,7,8-TCDF	n	n
12	26:32	6.66e+04	8.81e+04	0.76	yes	1.55e+05		n	n
13	26:48	1.04e+04	1.50e+04	0.70	yes	2.54e+04		n	n
14	28:17	7.11e+04	9.18e+04	0.77	yes	1.63e+05		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0087

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 17 File: P519694 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 17:59:13 Processed: 30-DEC-18 08:08:07

Mass: 319.8970 321.8940 Tot Response: 6.26e+05 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:46	3.35e+03	4.42e+03 0.76	yes	7.77e+03		n	n
2	27:05	2.50e+05	3.17e+05 0.79	yes	5.67e+05	2,3,7,8-TCDD	n	n
3	27:26	2.24e+04	2.83e+04 0.79	yes	5.07e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0087

Entry: 38 Totals Name: Total Penta-Furans1

Run: 17 File: P519694 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 17:59:13 Processed: 30-DEC-18 08:08:07

Mass: 339.8600 341.8570 Tot Response: 1.56e+03 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:19	9.64e+02	5.95e+02 1.62	yes	1.56e+03		n	n

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Peak List Summary

CLIENT ID.
SL0087

Entry: 39 Totals Name: Total Penta-Furans2

Run: 17 File: P519694 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 17:59:13 Processed: 30-DEC-18 08:08:07

Mass: 339.8600 341.8570 Tot Response: 2.02e+05 RRF: 0.9857

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:50	4.49e+02	2.81e+02	1.60	yes	7.30e+02		n	n
2	29:58	2.00e+04	1.31e+04	1.53	yes	3.30e+04		n	n
3	30:18	1.52e+02	8.94e+01	1.70	yes	2.41e+02		n	n
4	30:34	8.50e+02	4.90e+02	1.73	yes	1.34e+03		n	n
5	30:39	8.46e+02	6.12e+02	1.38	yes	1.46e+03		n	n
6	30:48	4.60e+03	3.06e+03	1.50	yes	7.66e+03		n	n
7	31:00	4.28e+04	2.84e+04	1.51	yes	7.12e+04	1,2,3,7,8-PeCDF	n	n
8	31:16	1.36e+04	9.09e+03	1.50	yes	2.27e+04		n	n
9	32:00	3.67e+04	2.42e+04	1.51	yes	6.10e+04	2,3,4,7,8-PeCDF	n	n
10	32:58	1.76e+03	1.11e+03	1.59	yes	2.87e+03		n	n

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Peak List Summary

CLIENT ID.
SL0087

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 17 File: P519694 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 17:59:13 Processed: 30-DEC-18 08:08:07

Mass: 355.8550 357.8520 Tot Response: 7.29e+03 RRF: 0.9565

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:32	8.99e+01	5.64e+01 1.59	yes	1.46e+02		n	n
2	31:02	6.09e+02	4.22e+02 1.44	yes	1.03e+03		n	n
3	31:12	2.02e+02	1.24e+02 1.62	yes	3.26e+02		n	n
4	31:19	1.94e+02	1.35e+02 1.44	yes	3.29e+02		n	n
5	32:19	3.31e+03	2.14e+03 1.54	yes	5.46e+03	1,2,3,7,8-PeCDD	n	n

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Peak List Summary

CLIENT ID.
SL0087

Entry: 41 Totals Name: Total Hexa-Furans

Run: 17 File: P519694 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 17:59:13 Processed: 30-DEC-18 08:08:07

Mass: 373.8210 375.8180 Tot Response: 1.56e+05 RRF: 1.141

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:53	4.07e+03	3.45e+03 1.18	yes	7.51e+03		n	n
2	34:28	2.39e+03	2.16e+03 1.11	yes	4.55e+03		n	n
3	34:55	5.76e+04	4.80e+04 1.20	yes	1.06e+05	1,2,3,4,7,8-HxCDF	n	n
4	35:02	1.50e+04	1.21e+04 1.24	yes	2.71e+04	1,2,3,6,7,8-HxCDF	n	n
5	35:35	2.42e+03	2.08e+03 1.16	yes	4.51e+03	2,3,4,6,7,8-HxCDF	n	n
6	36:25	3.59e+03	3.19e+03 1.13	yes	6.78e+03	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0087

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 17 File: P519694 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 17:59:13 Processed: 30-DEC-18 08:08:07

Mass: 389.8160 391.8130 Tot Response: 5.10e+03 RRF: 1.047

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:17	9.80e+02	7.35e+02 1.33	yes	1.72e+03		n	n
2	35:07	1.36e+03	1.04e+03 1.31	yes	2.41e+03		n	n
3	35:50	5.59e+02	4.14e+02 1.35	yes	9.73e+02	1,2,3,6,7,8-HxCDD	n	y

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Peak List Summary

CLIENT ID.
SL0087

Entry: 43 Totals Name: Total Hepta-Furans

Run: 17 File: P519694 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 17:59:13 Processed: 30-DEC-18 08:08:07

Mass: 407.7820 409.7790 Tot Response: 5.28e+04 RRF: 1.308

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:48	1.50e+04	1.51e+04	1.00	yes	3.01e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	38:14	6.35e+03	6.80e+03	0.93	yes	1.32e+04		n	n
3	39:16	4.75e+03	4.84e+03	0.98	yes	9.59e+03	1,2,3,4,7,8,9-HpCDF	n	n

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Peak List Summary

CLIENT ID.
SL0087

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 17 File: P519694 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 17:59:13 Processed: 30-DEC-18 08:08:07

Mass: 423.7770 425.7740 Tot Response: 6.95e+04 RRF: 1.025

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:05	1.52e+04	1.45e+04	1.05	yes	2.96e+04		n	n
2	38:48	2.04e+04	1.95e+04	1.04	yes	3.99e+04	1,2,3,4,6,7,8-HpCDD	n	n

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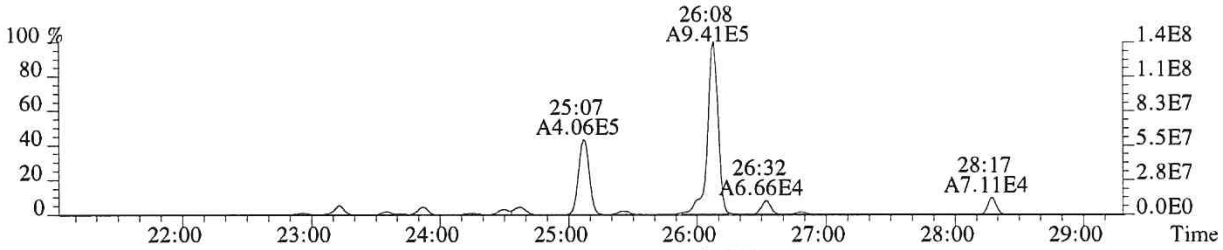
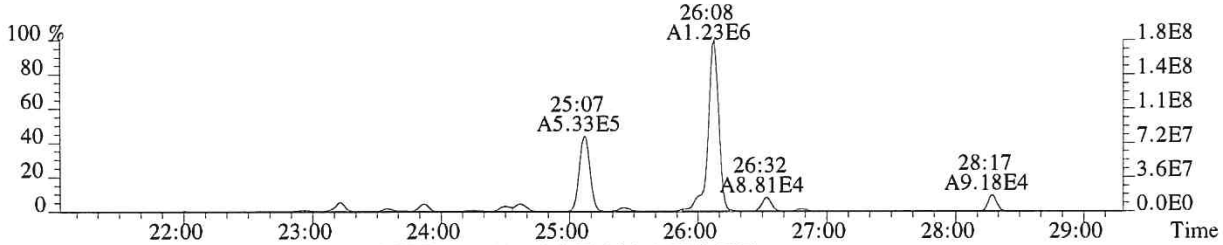
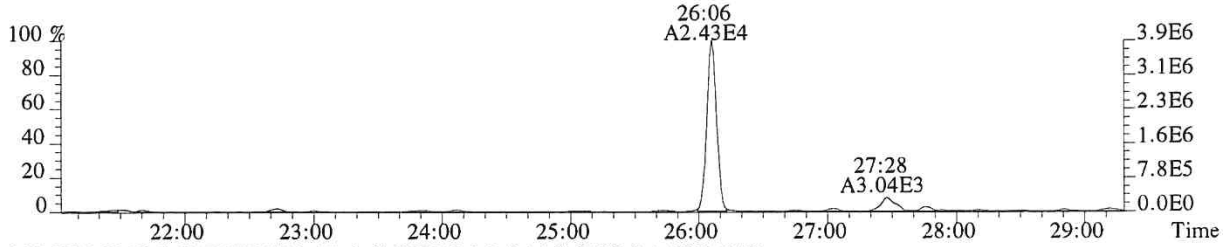
File:P519694 #1-587 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2424.0,1.00%,F,T)



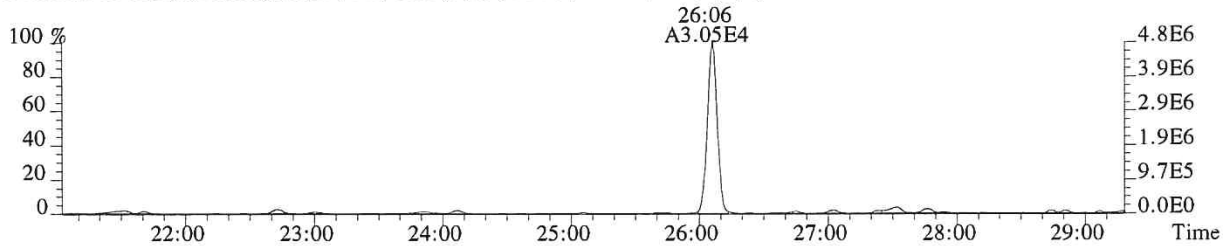
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2132.0,1.00%,F,T)



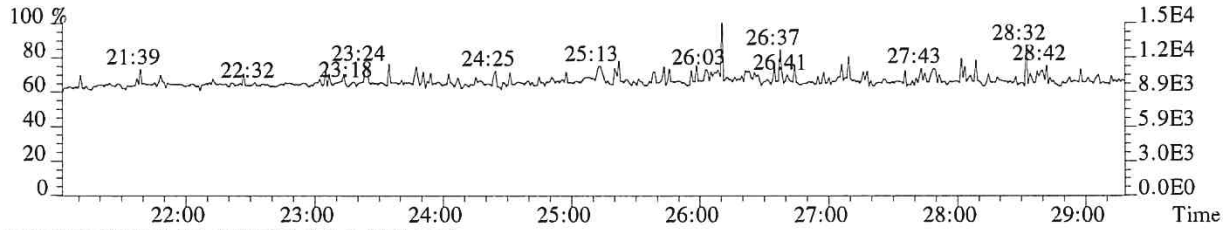
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7816.0,1.00%,F,T)



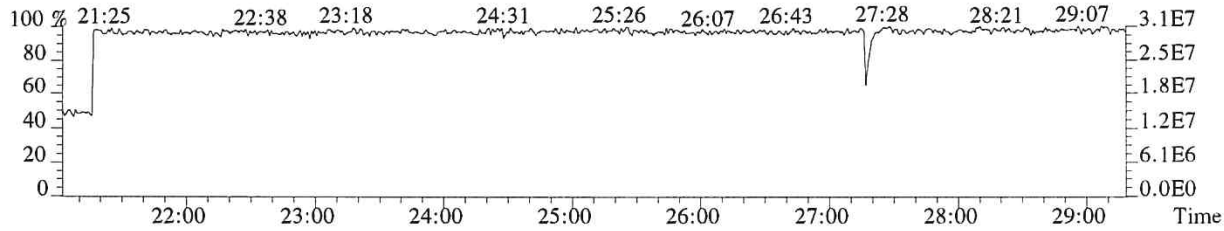
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9128.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



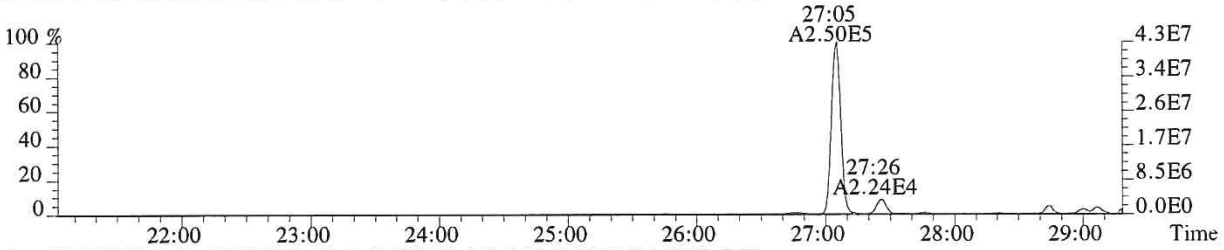
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



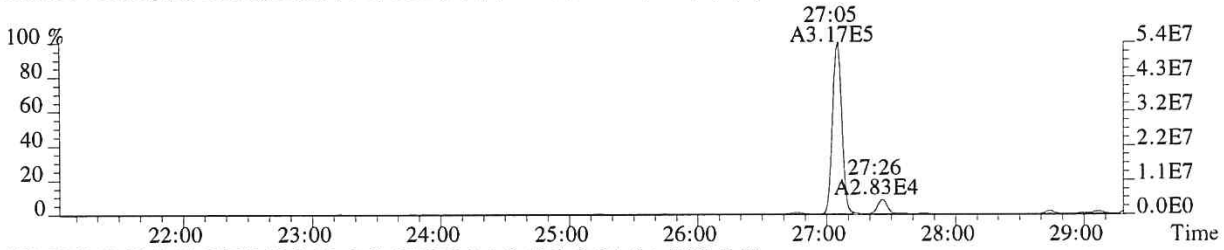
060120

File:P519694 #1-587 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008

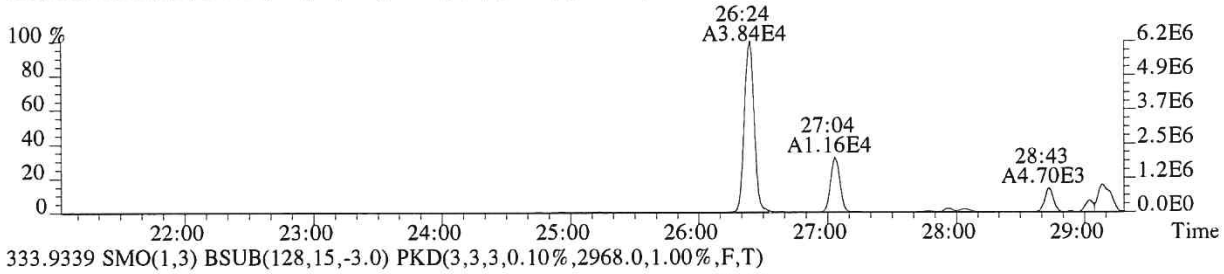
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3628.0,1.00%,F,T)



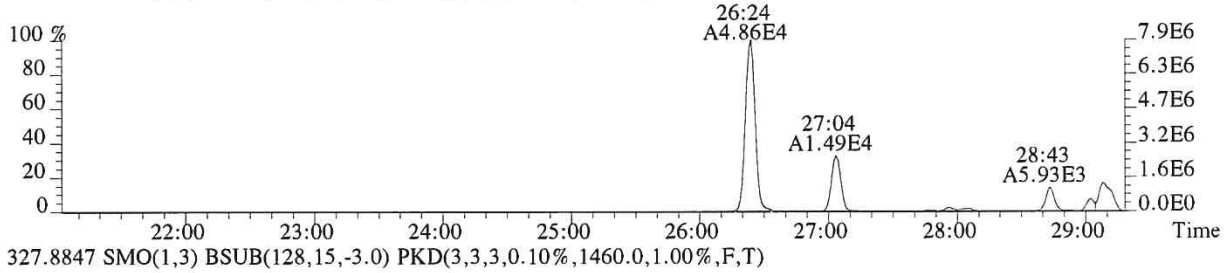
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1272.0,1.00%,F,T)



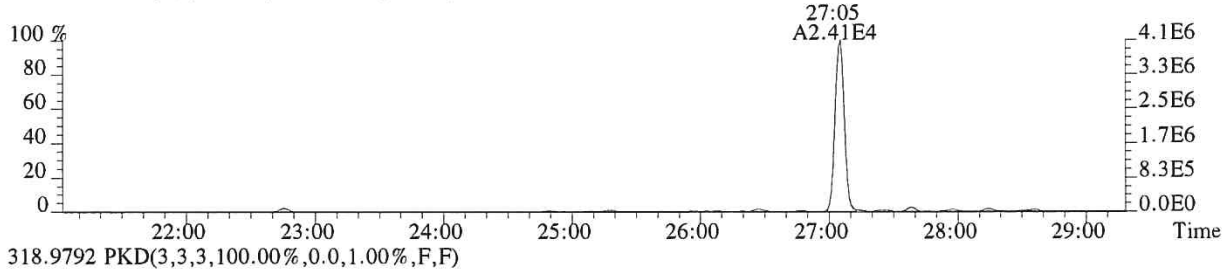
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5184.0,1.00%,F,T)



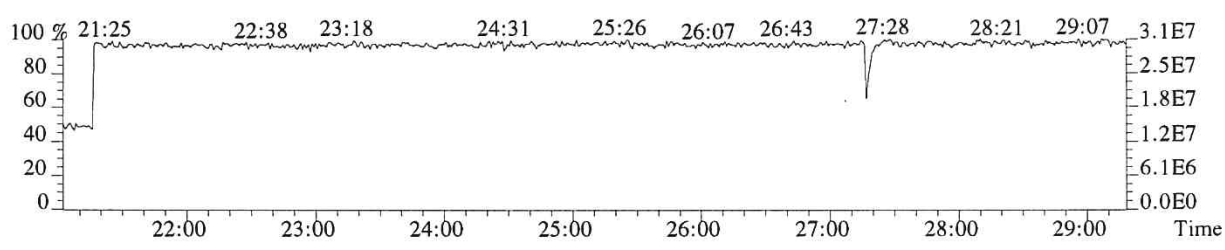
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2968.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1460.0,1.00%,F,T)



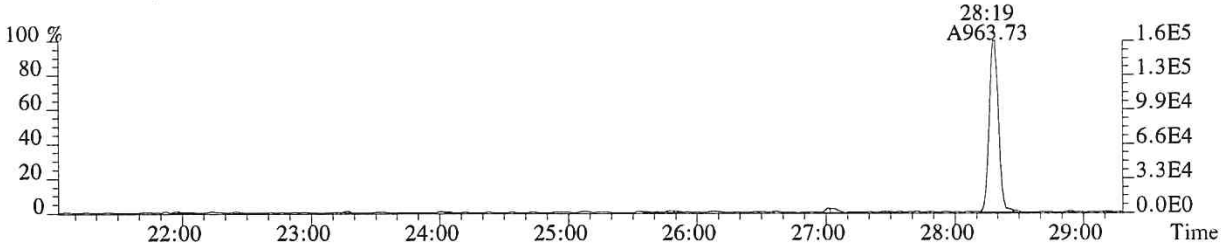
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



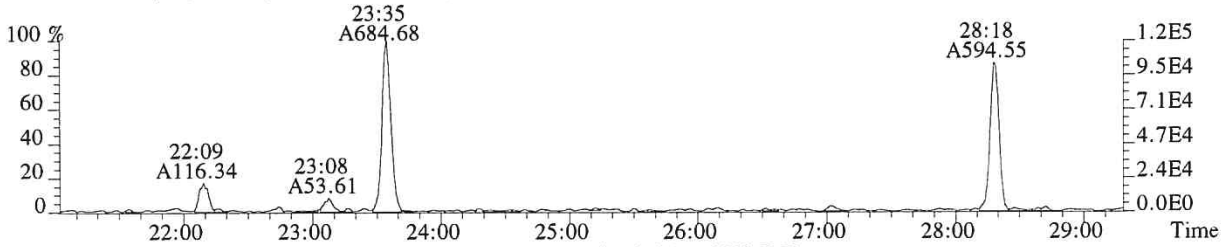
060121

File:P519694 #1-587 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008

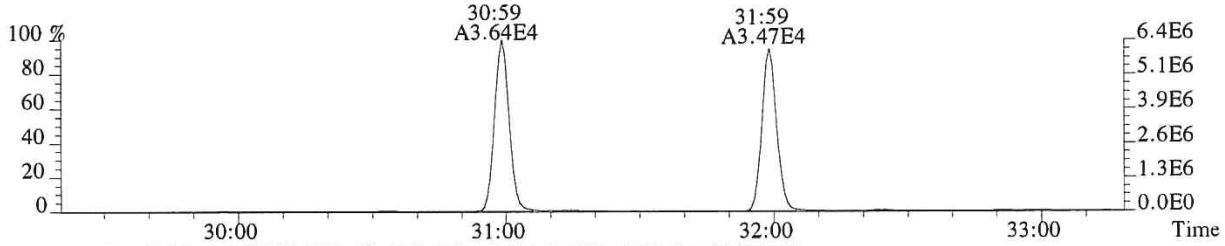
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,872.0,1.00%,F,T)



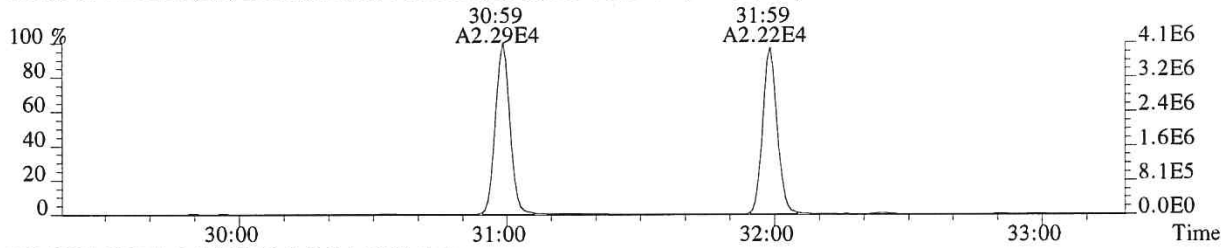
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1140.0,1.00%,F,T)



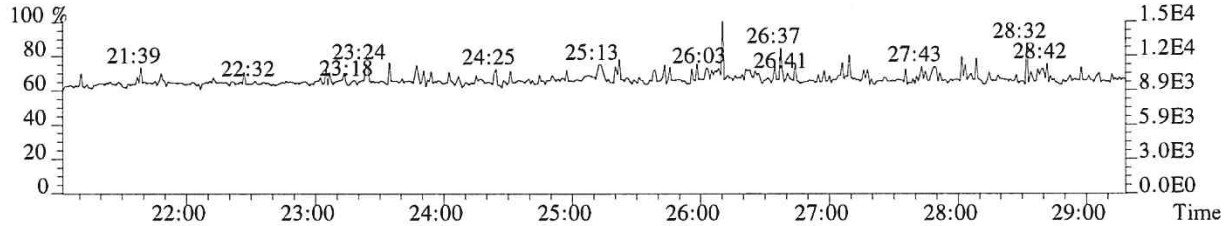
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2636.0,1.00%,F,T)



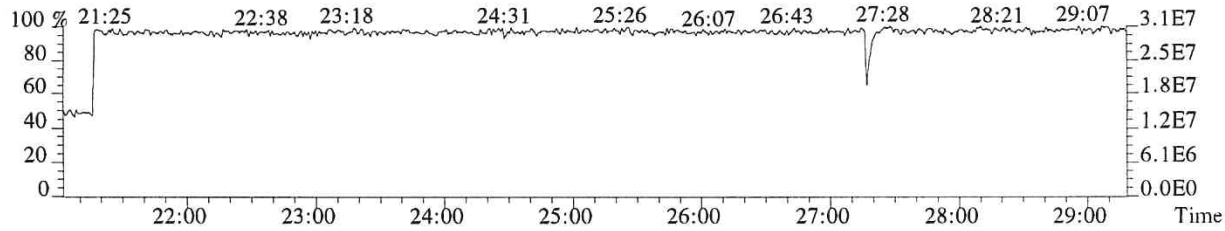
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1176.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



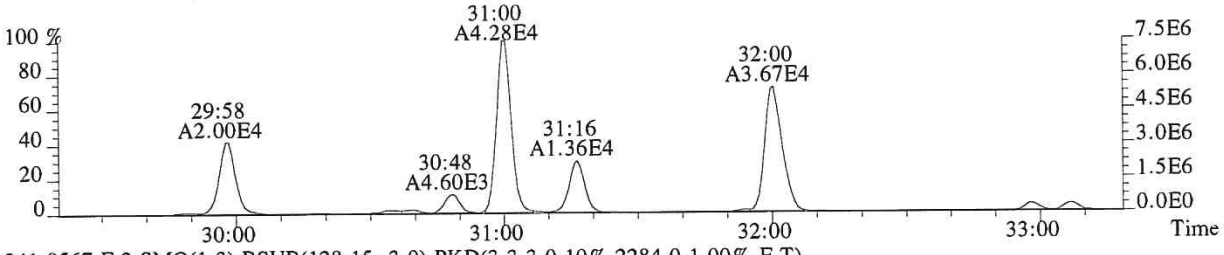
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



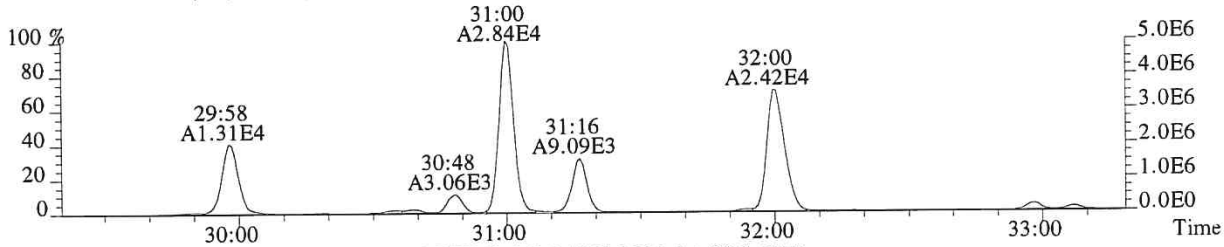
060122

File:P519694 #1-358 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008

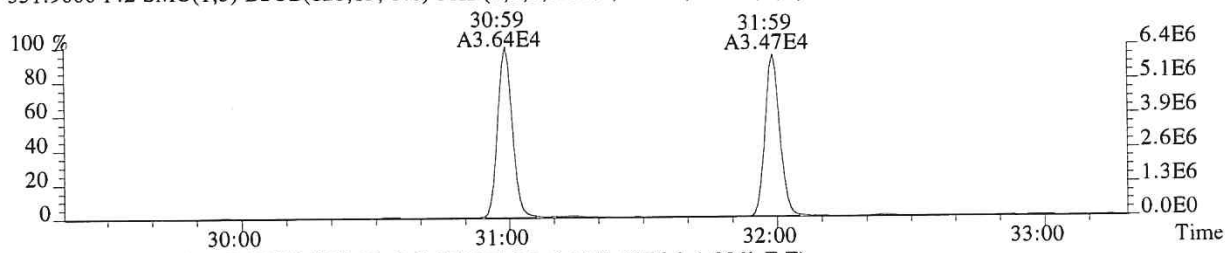
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3272.0,1.00%,F,T)



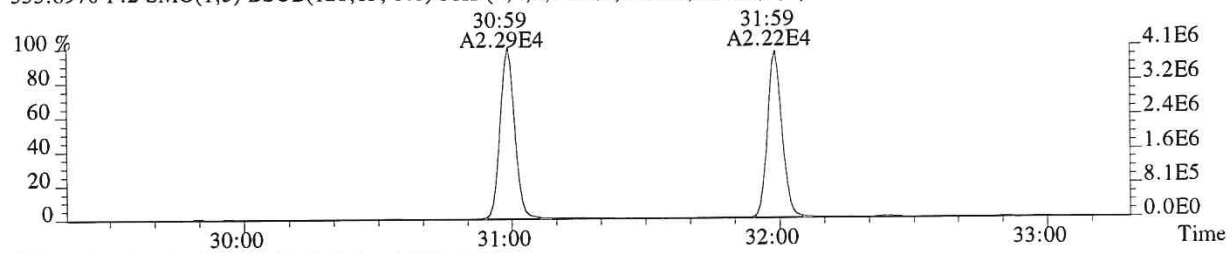
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2284.0,1.00%,F,T)



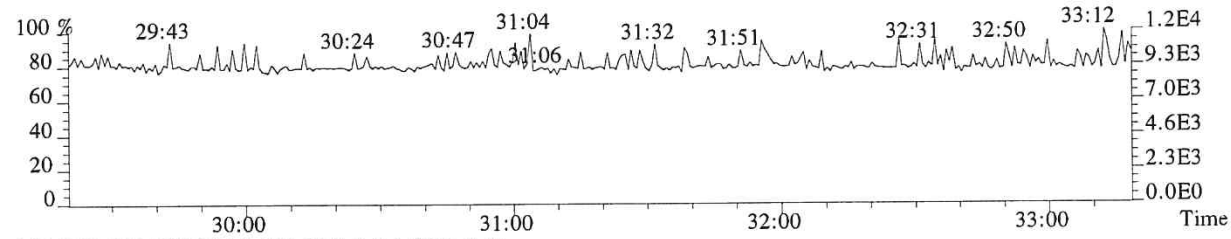
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2636.0,1.00%,F,T)



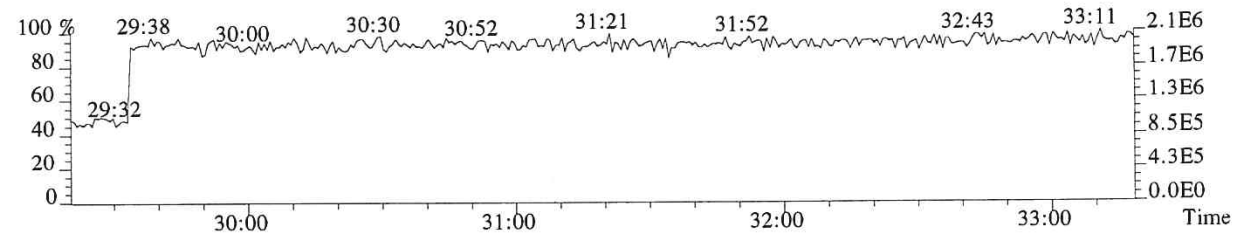
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1176.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

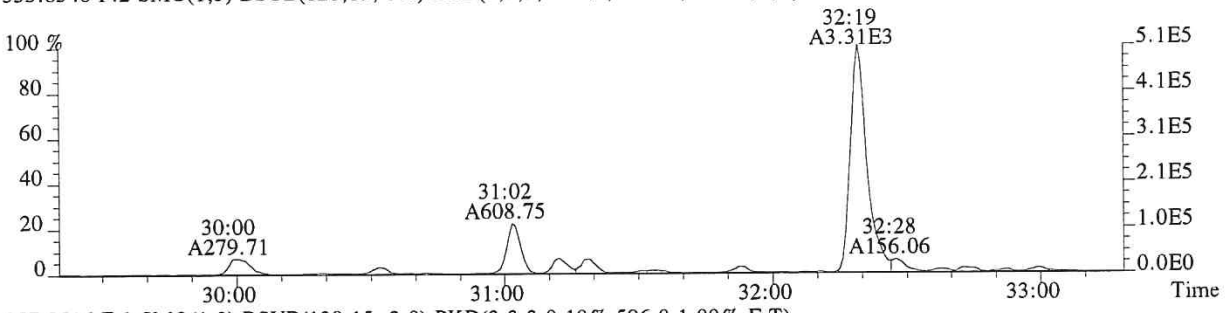


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

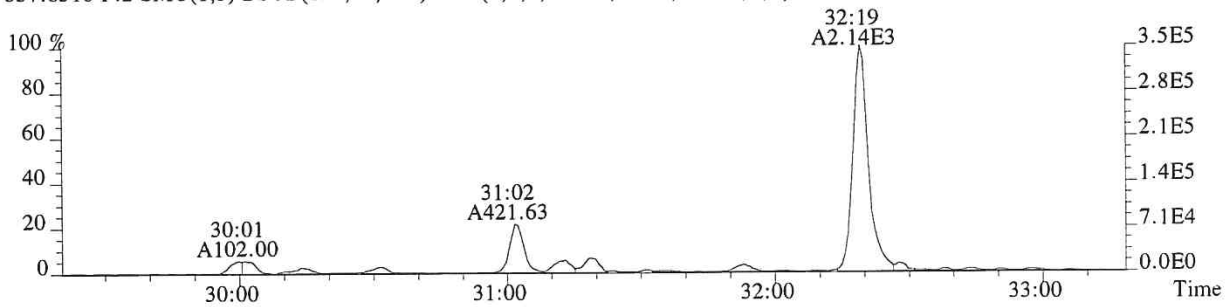


060123

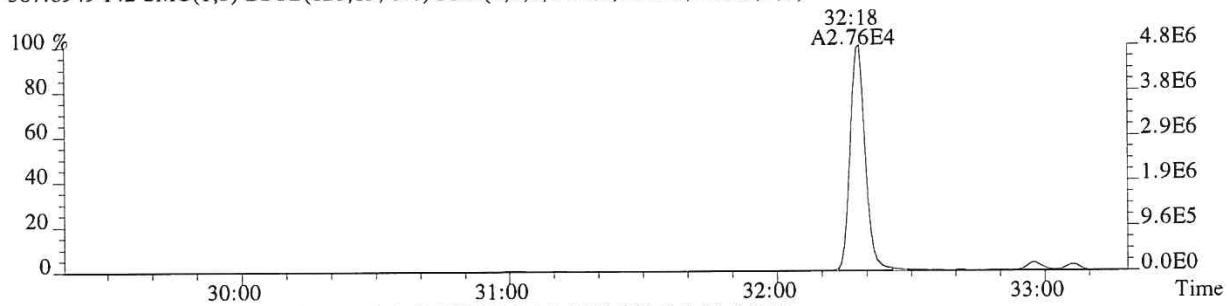
File:P519694 #1-358 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1008.0,1.00%,F,T)



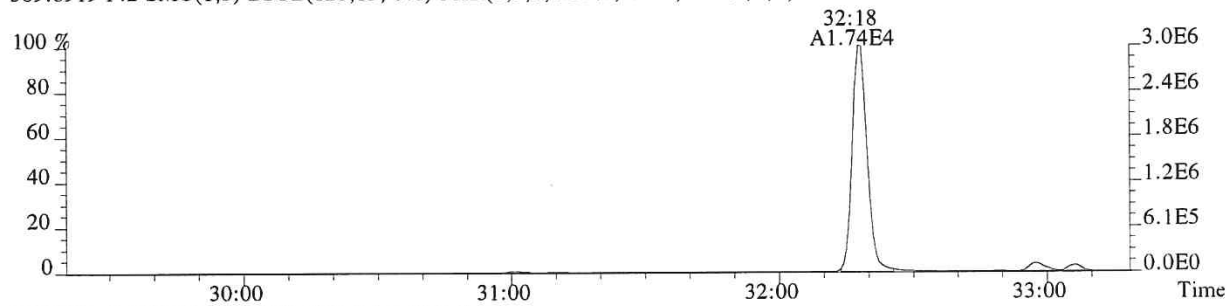
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,596.0,1.00%,F,T)



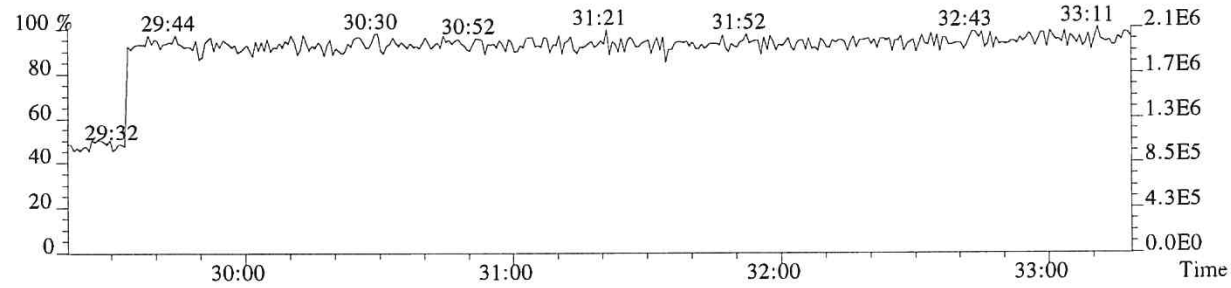
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1212.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,992.0,1.00%,F,T)

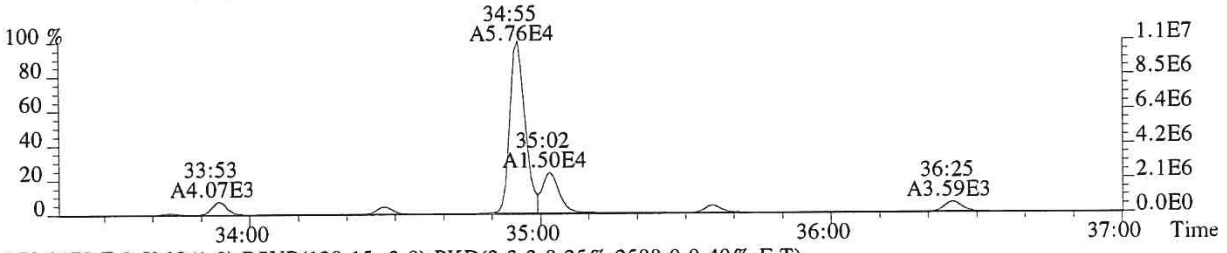


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

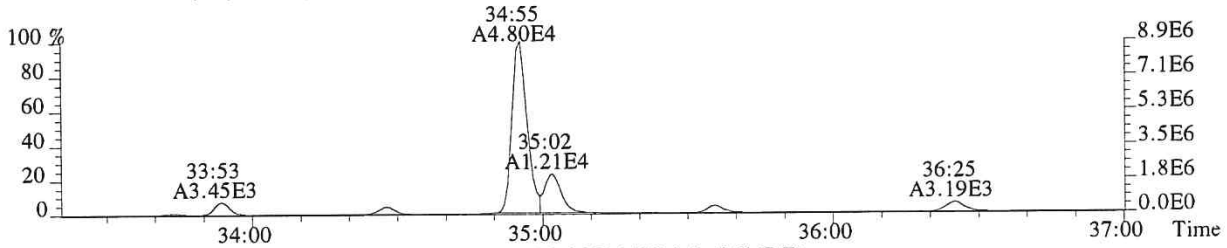


060124

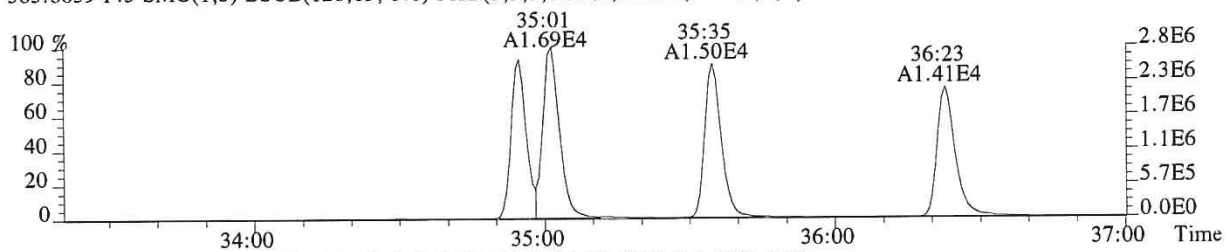
File:P519694 #1-330 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2948.0,0.40%,F,T)



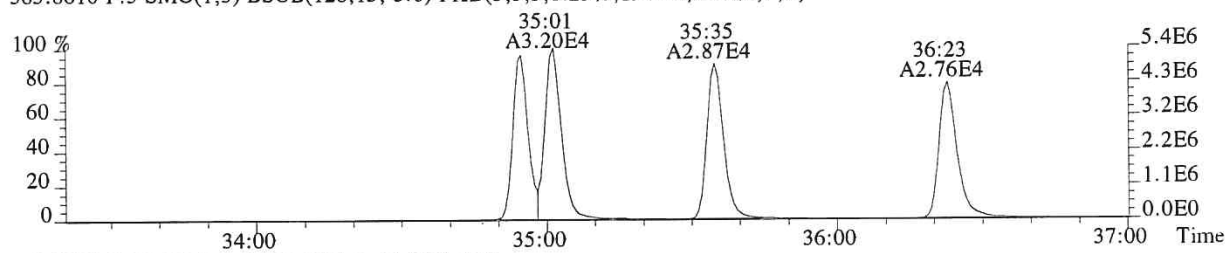
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2588.0,0.40%,F,T)



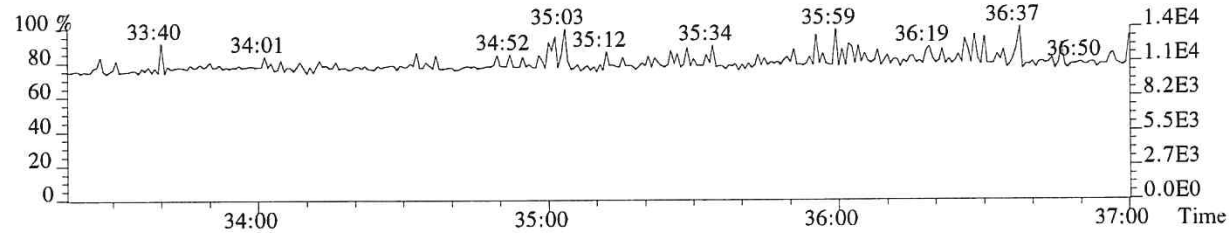
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1432.0,0.40%,F,T)



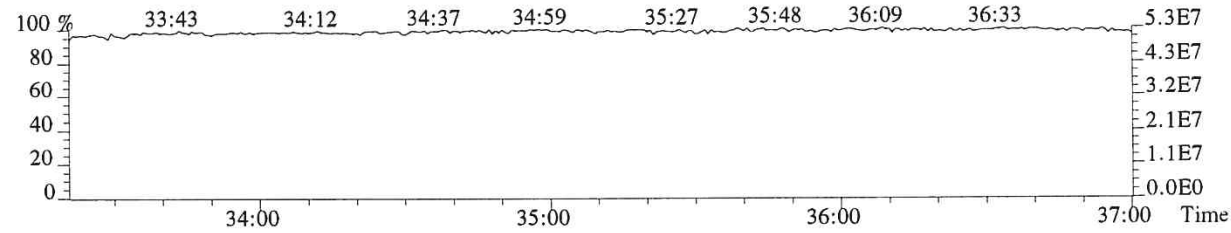
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1940.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

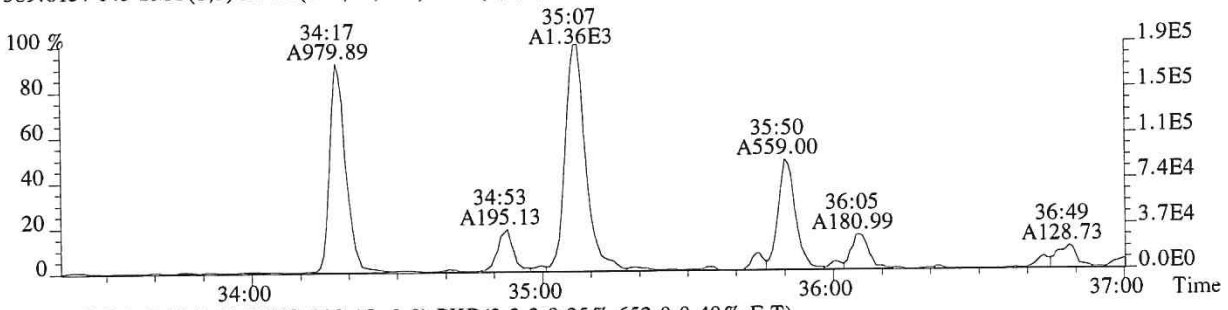


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

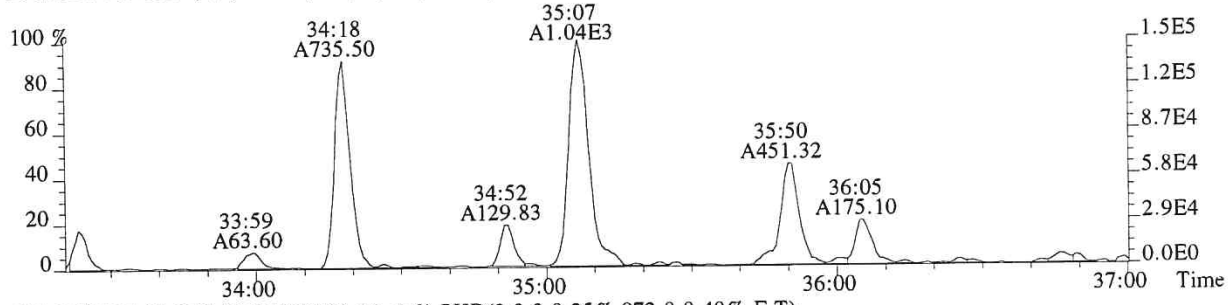


060125

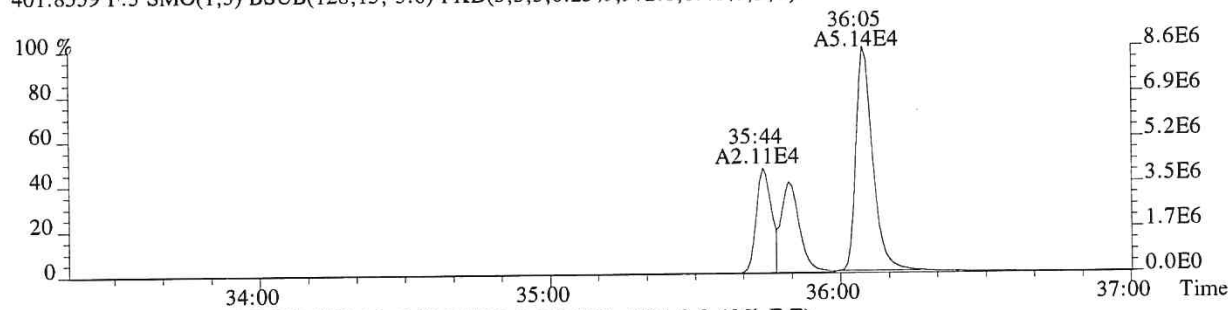
File:P519694 #1-330 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,572.0,0.40%,F,T)



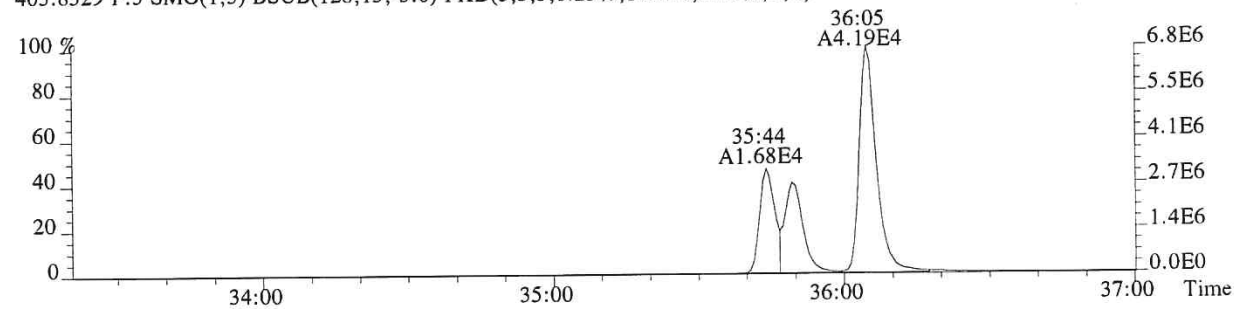
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,652.0,0.40%,F,T)



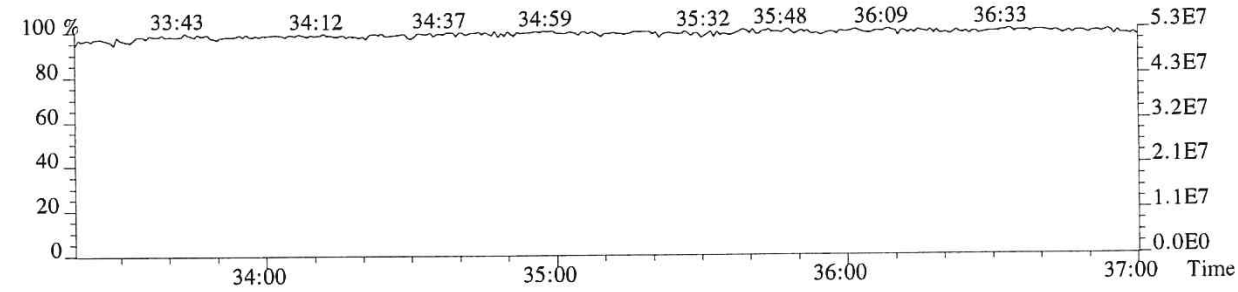
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,972.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1024.0,0.40%,F,T)

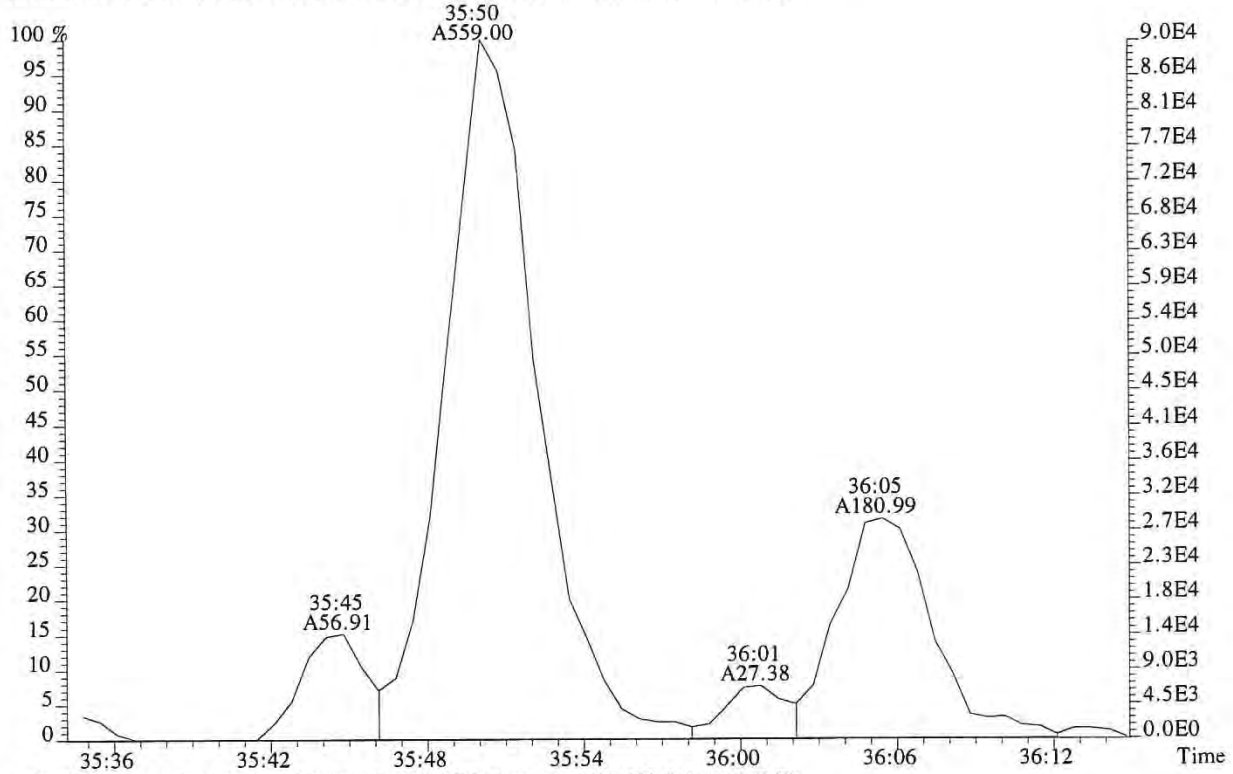


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

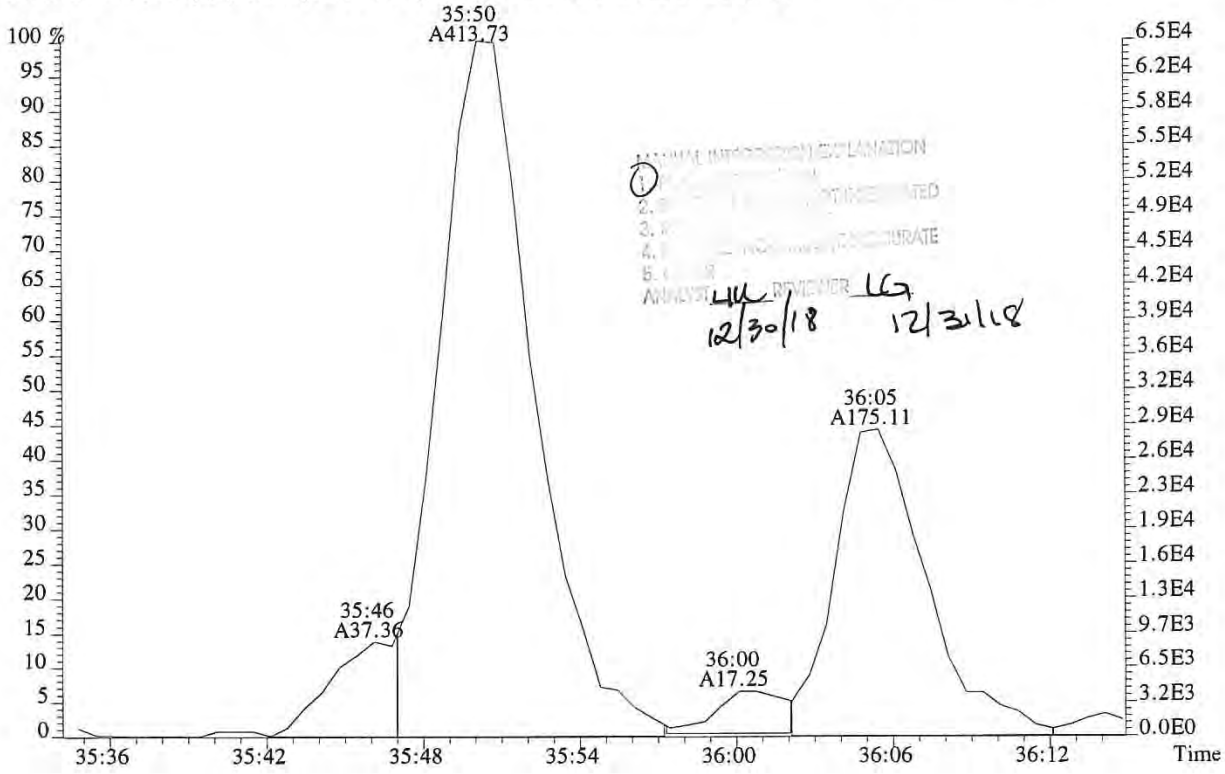


060126

File:P519694 #1-330 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,572.0,0.40%,F,T)



391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,652.0,0.40%,F,T)

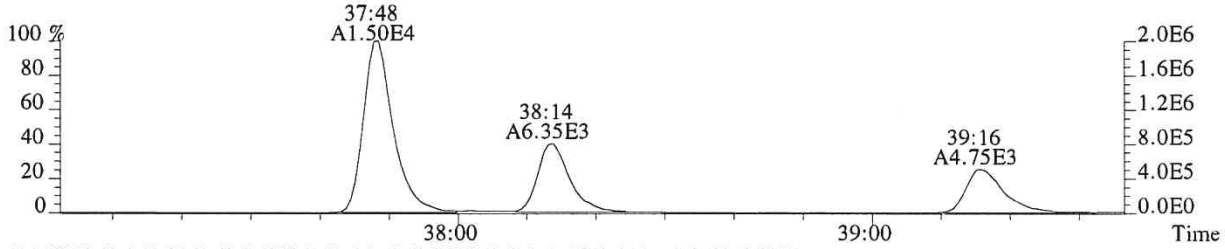


12/30/18 12/31/18

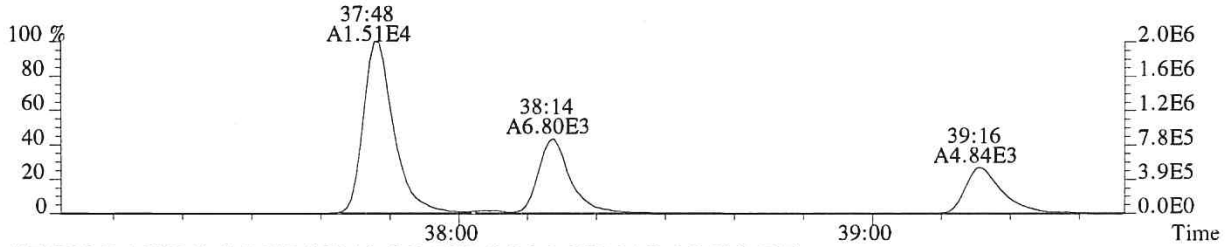
060127

File:P519694 #1-232 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008

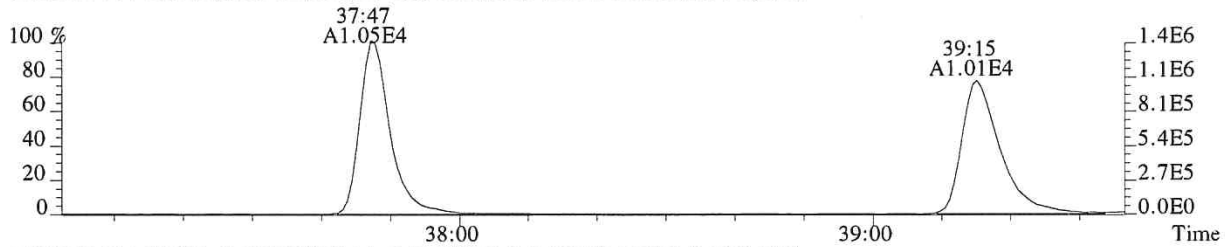
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4028.0,0.50%,F,T)



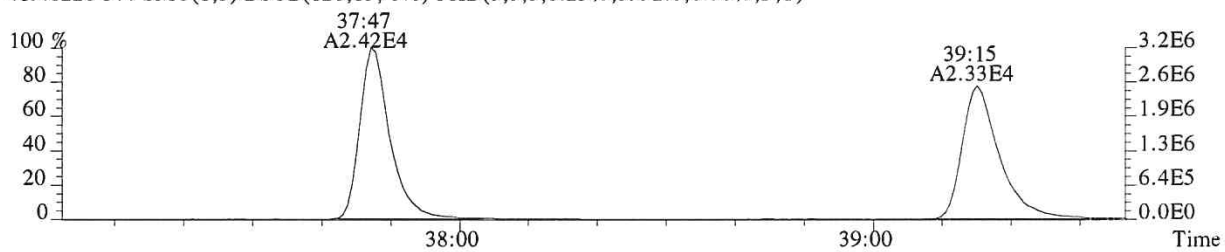
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3224.0,0.50%,F,T)



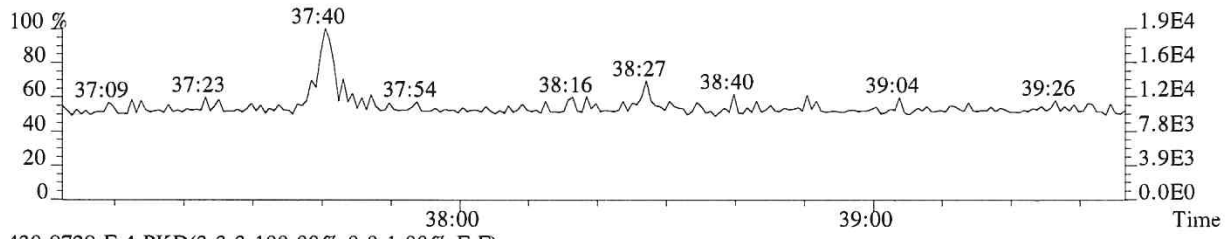
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3168.0,0.50%,F,T)



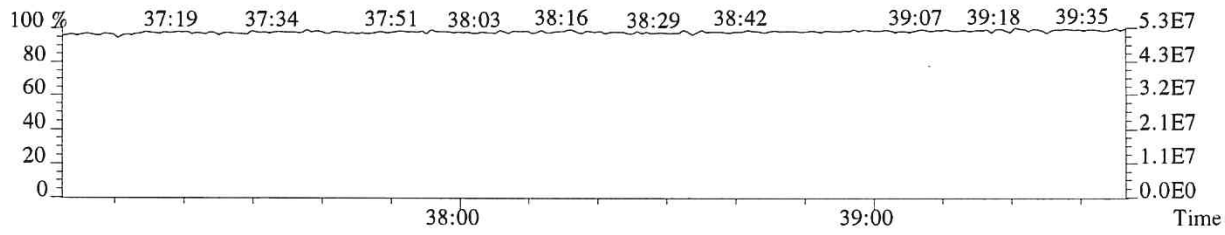
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3992.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

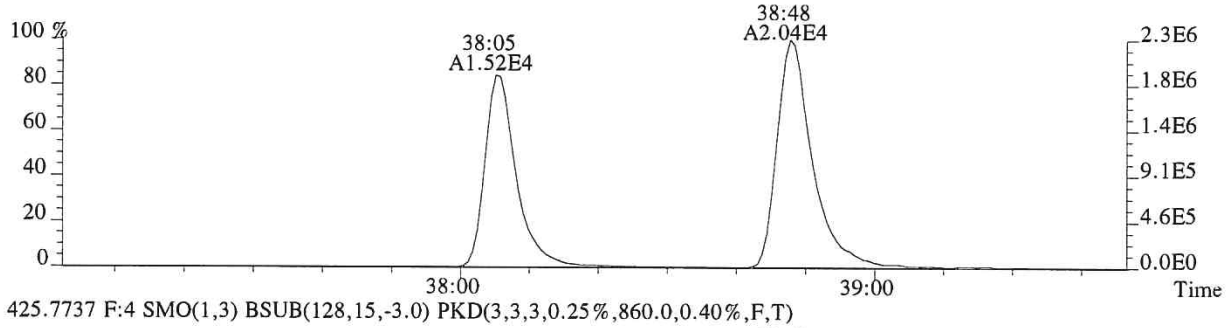


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

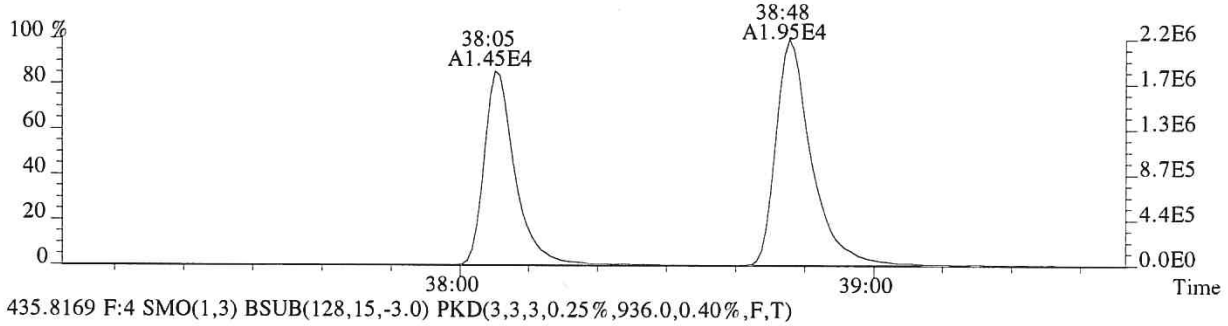


060128

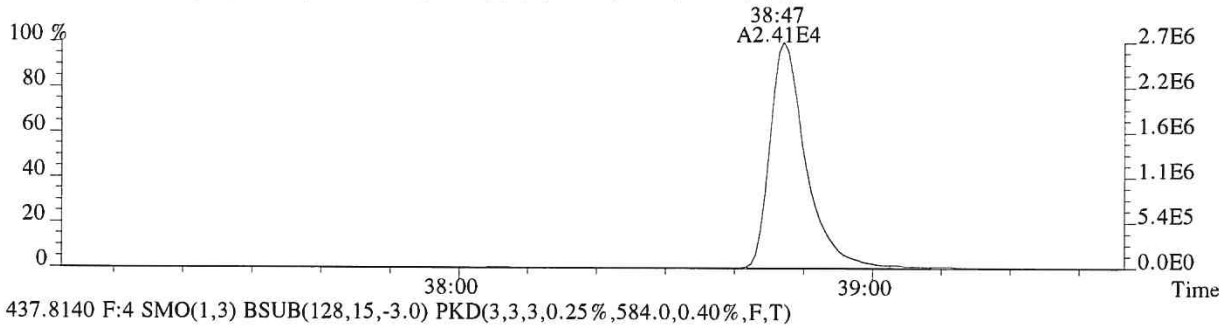
File:P519694 #1-232 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,500.0,0.40%,F,T)



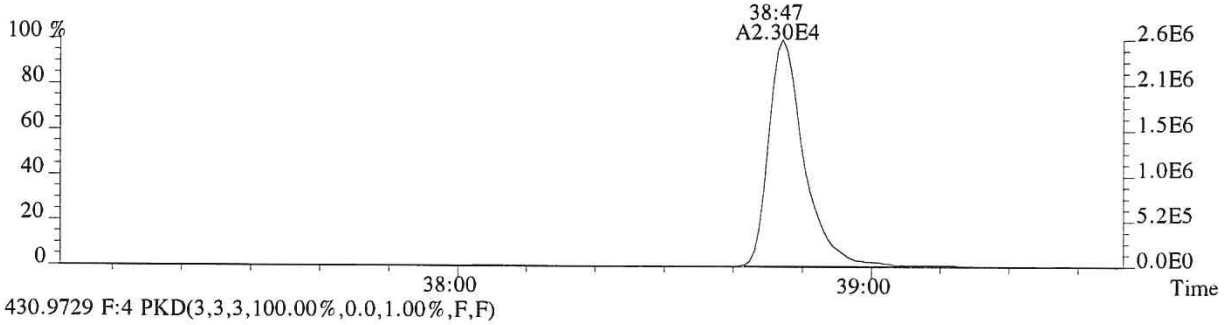
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,860.0,0.40%,F,T)



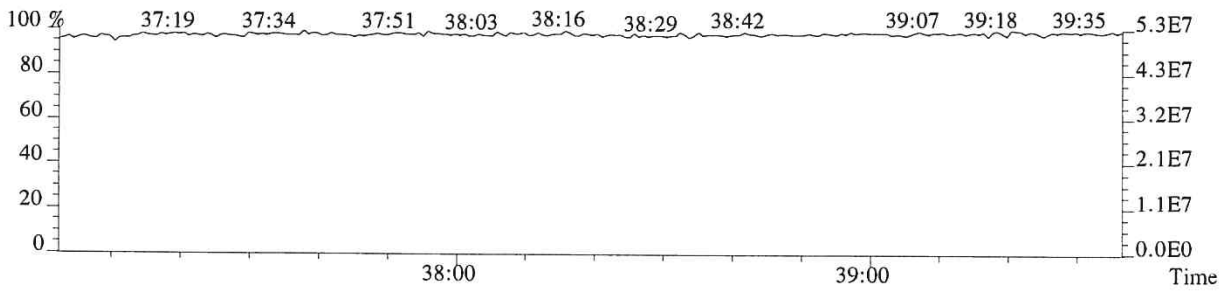
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,936.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,584.0,0.40%,F,T)

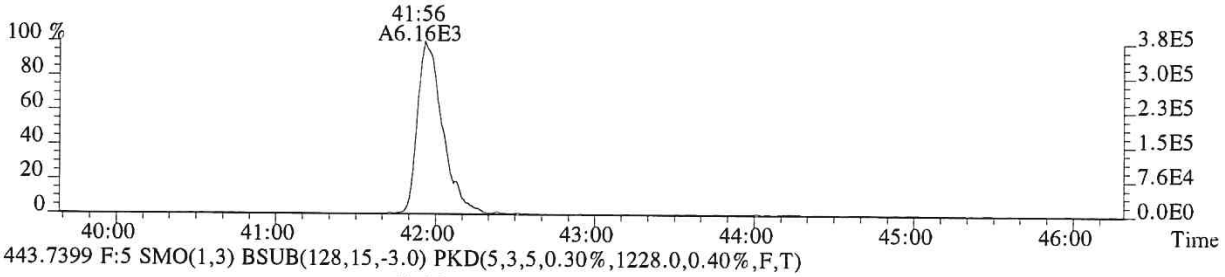


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

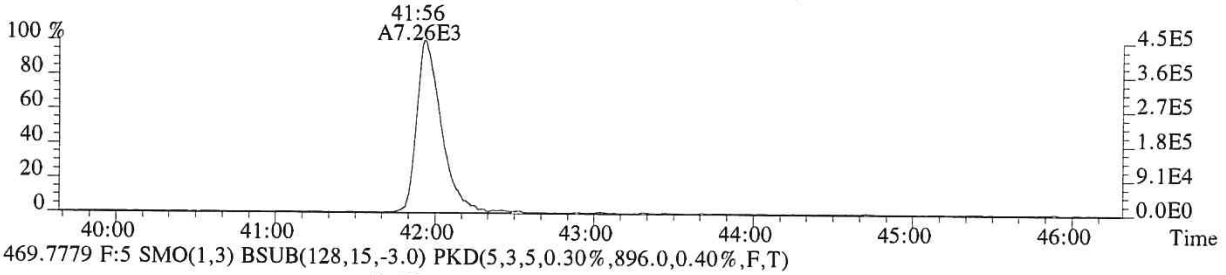


060129

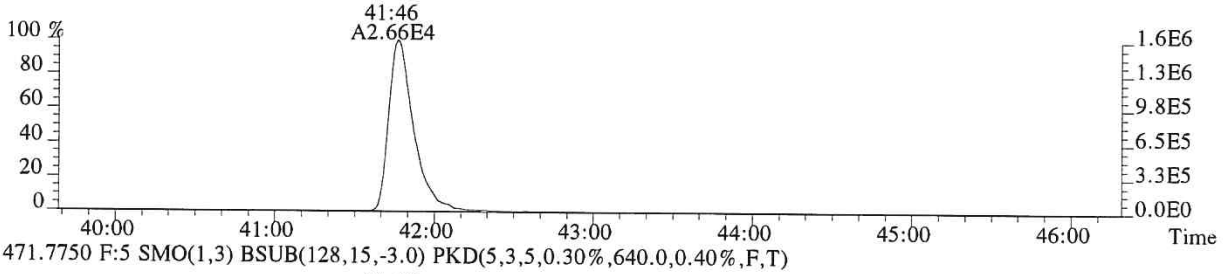
File:P519694 #1-601 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,532.0,0.40%,F,T)



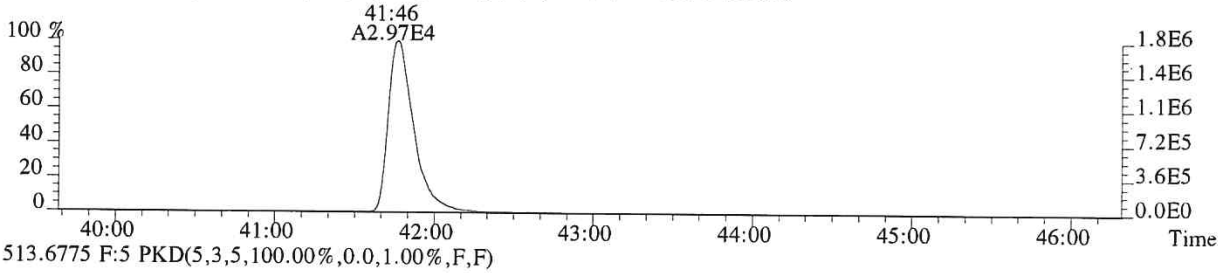
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1228.0,0.40%,F,T)



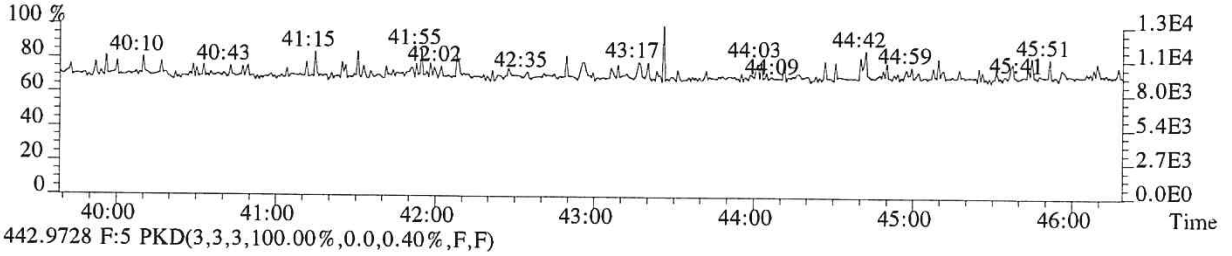
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,896.0,0.40%,F,T)



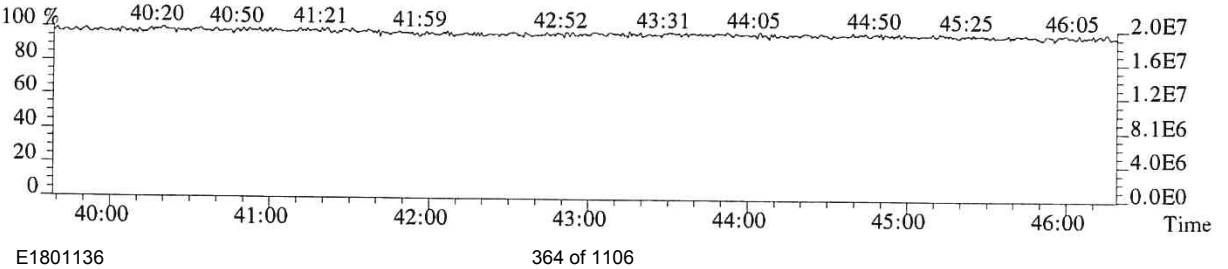
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,640.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

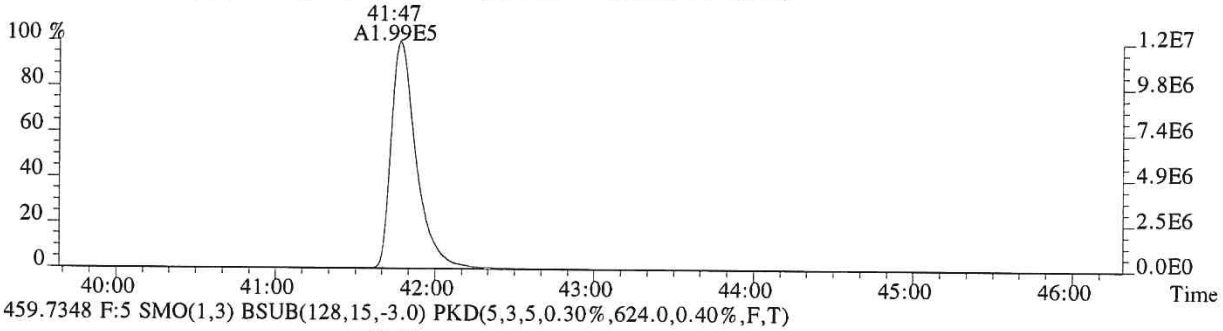


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

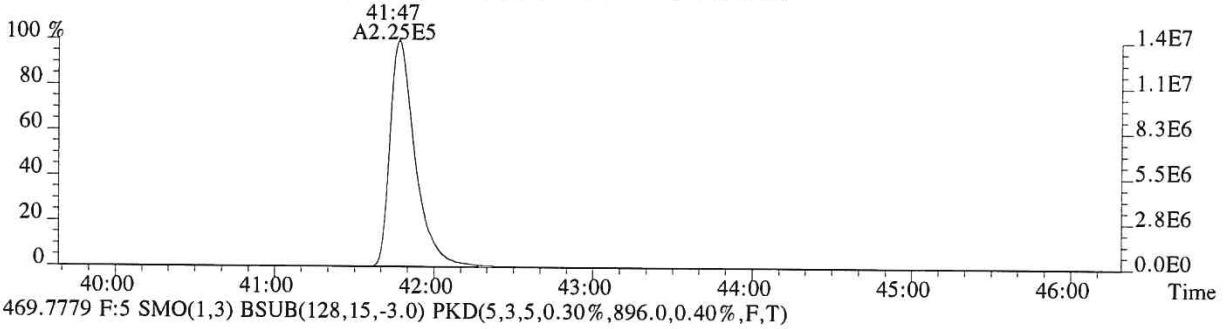


060130

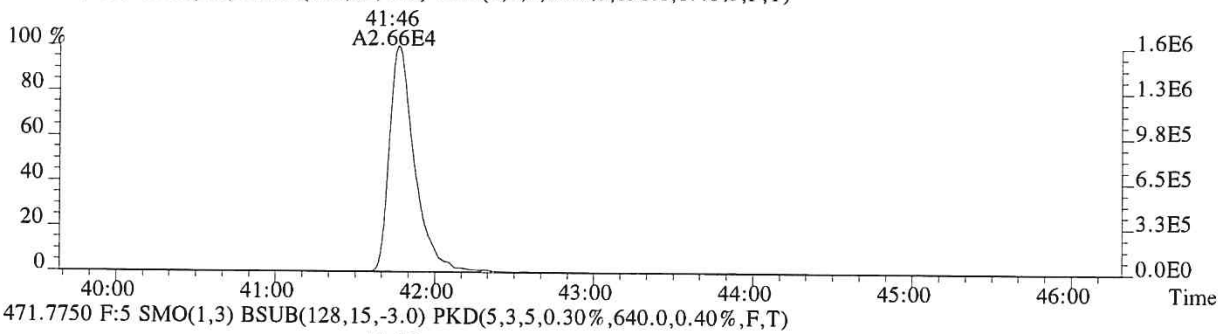
File:P519694 #1-601 Acq:29-DEC-2018 17:59:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,524.0,0.40%,F,T)



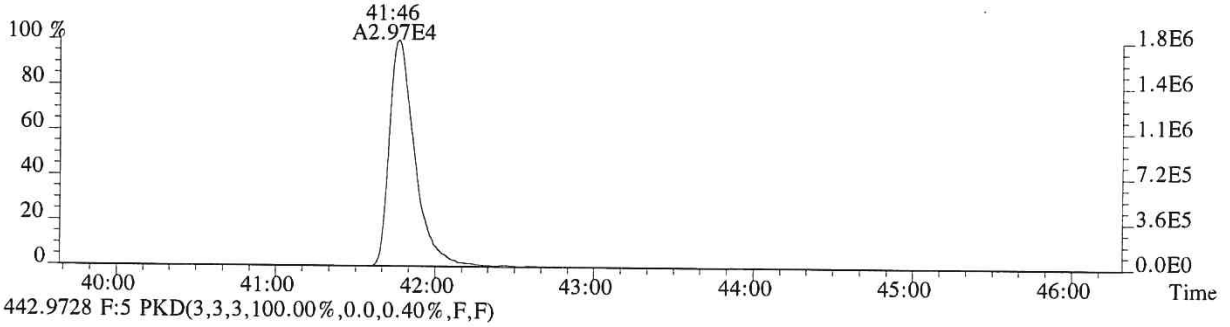
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,624.0,0.40%,F,T)



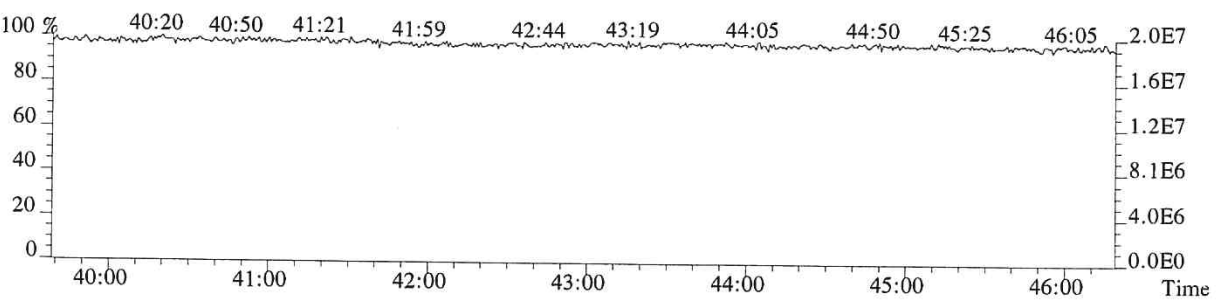
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,896.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,640.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060131

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0087

Run #17 Filename P519721 Samp: 1 Inj: 1 Acquired: 30-DEC-18 16:43:52
Processed: 31-DEC-18 09:57:29 Sample ID: E1801136-008DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:05	8.603e+03	1.111e+04	0.77	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	3.981e+02	2.681e+02	1.48	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	3.145e+02	2.261e+02	1.39	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	4.721e+02	4.001e+02	1.18	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:03	1.527e+02	1.138e+02	1.34	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	2.767e+01	2.318e+01	1.19	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	2.143e+01	3.849e+01	0.56	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	1.713e+02	1.488e+02	1.15	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:15	4.668e+01	2.887e+01	1.62	no	no	1.258
10	Unk	OCDF	NotFnd	*	*	*	no	yes	1.359
11	Unk	2,3,7,8-TCDD	27:04	2.257e+03	2.871e+03	0.79	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	yes	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	yes	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:49	1.594e+02	1.245e+02	1.28	no	no	1.025
17	Unk	OCDD	41:45	1.642e+03	1.728e+03	0.95	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	1.873e+04	2.417e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	2.786e+04	1.789e+04	1.56	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	2.653e+04	1.699e+04	1.56	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.119e+04	2.190e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.423e+04	2.745e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.266e+04	2.489e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.106e+04	2.199e+04	0.50	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:48	9.736e+03	2.191e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:15	8.266e+03	1.917e+04	0.43	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	9.177e+03	1.168e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.067e+04	1.308e+04	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	1.604e+04	1.283e+04	1.25	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:50	1.937e+04	1.495e+04	1.30	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:48	2.039e+04	1.892e+04	1.08	yes	no	0.858
32	IS	13C-OCDD	41:43	2.295e+04	2.595e+04	0.88	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	1.605e+04	2.096e+04	0.77	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	2.139e+04	1.698e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	2.618e+02				no	1.014

$$\text{OCDD} = \frac{(1.642e+03 + 1.728e+03) \times 4000\ \text{pg} \times 50}{(2.295e+04 + 2.595e+04) \times 10.574\text{g} \times 74.7/100 \times 1.118} = 2918.7437\ \text{ng/kg}$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0087

Run #17 Filename P519721 Samp: 1 Inj: 1 Acquired: 30-DEC-18 16:43:52
Processed: 31-DEC-18 09:57:29 LAB. ID: E1801136-008DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.20e+06	1.52e+03	7.9e+02	1.54e+06	2.87e+03	5.4e+02
2	1,2,3,7,8-PeCDF	6.20e+04	7.48e+02	8.3e+01	4.04e+04	1.89e+03	2.1e+01
3	2,3,4,7,8-PeCDF	4.61e+04	7.48e+02	6.2e+01	3.12e+04	1.89e+03	1.7e+01
4	1,2,3,4,7,8-HxCDF	8.63e+04	1.12e+03	7.7e+01	6.89e+04	7.64e+02	9.0e+01
5	1,2,3,6,7,8-HxCDF	2.37e+04	1.12e+03	2.1e+01	1.96e+04	7.64e+02	2.6e+01
6	2,3,4,6,7,8-HxCDF	6.42e+03	1.12e+03	5.7e+00	3.62e+03	7.64e+02	4.7e+00
7	1,2,3,7,8,9-HxCDF	4.31e+03	1.12e+03	3.8e+00	6.49e+03	7.64e+02	8.5e+00
8	1,2,3,4,6,7,8-HpCDF	2.33e+04	5.96e+02	3.9e+01	1.85e+04	1.08e+03	1.7e+01
9	1,2,3,4,7,8,9-HpCDF	8.15e+03	5.96e+02	1.4e+01	6.40e+03	1.08e+03	5.9e+00
10	OCDF	*	4.68e+02	*	*	1.27e+03	*
11	2,3,7,8-TCDD	3.57e+05	1.90e+03	1.9e+02	4.28e+05	1.55e+03	2.8e+02
12	1,2,3,7,8-PeCDD	*	9.52e+02	*	*	4.48e+02	*
13	1,2,3,4,7,8-HxCDD	*	8.12e+02	*	*	7.64e+02	*
14	1,2,3,6,7,8-HxCDD	*	8.12e+02	*	*	7.64e+02	*
15	1,2,3,7,8,9-HxCDD	*	8.12e+02	*	*	7.64e+02	*
16	1,2,3,4,6,7,8-HpCDD	1.84e+04	8.16e+02	2.2e+01	1.62e+04	6.44e+02	2.5e+01
17	OCDD	9.27e+04	5.72e+02	1.6e+02	1.01e+05	4.64e+02	2.2e+02
18	13C-2,3,7,8-TCDF	2.81e+06	7.16e+03	3.9e+02	3.60e+06	4.63e+03	7.8e+02
19	13C-1,2,3,7,8-PeCDF	4.33e+06	5.92e+02	7.3e+03	2.77e+06	6.88e+02	4.0e+03
20	13C-2,3,4,7,8-PeCDF	4.34e+06	5.92e+02	7.3e+03	2.82e+06	6.88e+02	4.1e+03
21	13C-1,2,3,4,7,8-HxCDF	1.96e+06	1.35e+03	1.4e+03	3.81e+06	1.29e+03	3.0e+03
22	13C-1,2,3,6,7,8-HxCDF	2.13e+06	1.35e+03	1.6e+03	4.10e+06	1.29e+03	3.2e+03
23	13C-2,3,4,6,7,8-HxCDF	1.98e+06	1.35e+03	1.5e+03	3.89e+06	1.29e+03	3.0e+03
24	13C-1,2,3,7,8,9-HxCDF	1.57e+06	1.35e+03	1.2e+03	3.07e+06	1.29e+03	2.4e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.17e+06	2.73e+03	4.3e+02	2.67e+06	2.23e+03	1.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	7.67e+05	2.73e+03	2.8e+02	1.74e+06	2.23e+03	7.8e+02
27	13C-2,3,7,8-TCDD	1.46e+06	6.89e+03	2.1e+02	1.81e+06	2.88e+03	6.3e+02
28	13C-1,2,3,7,8-PeCDD	3.29e+06	1.09e+03	3.0e+03	2.12e+06	1.28e+03	1.7e+03
29	13C-1,2,3,4,7,8-HxCDD	2.73e+06	1.43e+03	1.9e+03	2.18e+06	9.88e+02	2.2e+03
30	13C-1,2,3,6,7,8-HxCDD	2.63e+06	1.43e+03	1.8e+03	2.15e+06	9.88e+02	2.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.98e+06	7.56e+02	2.6e+03	1.86e+06	5.72e+02	3.3e+03
32	13C-OCDD	1.25e+06	1.18e+03	1.1e+03	1.39e+06	7.56e+02	1.8e+03
33	13C-1,2,3,4-TCDD	2.53e+06	6.89e+03	3.7e+02	3.28e+06	2.88e+03	1.1e+03
34	13C-1,2,3,7,8,9-HxCDD	2.94e+06	1.43e+03	2.1e+03	2.35e+06	9.88e+02	2.4e+03
35	37Cl-2,3,7,8-TCDD	4.40e+04	2.13e+03	2.1e+01			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.896e+03 + 1.552e+03) \times 2000}{(1.458e+06 + 1.812e+06) \times (\quad) \times 1.085} =$$

ALS ENVIRONMENTAL
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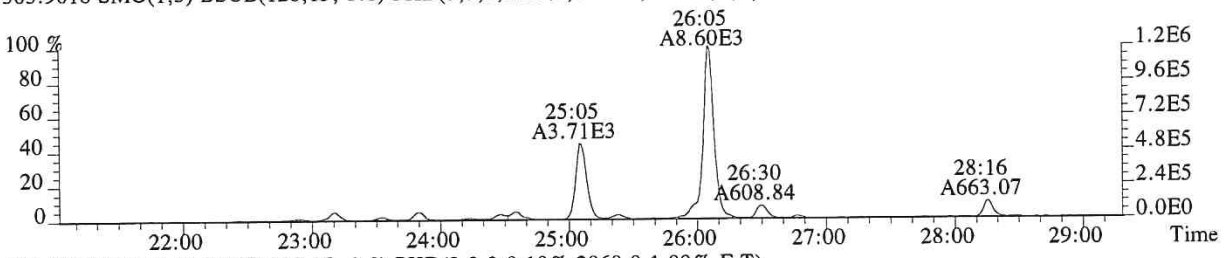
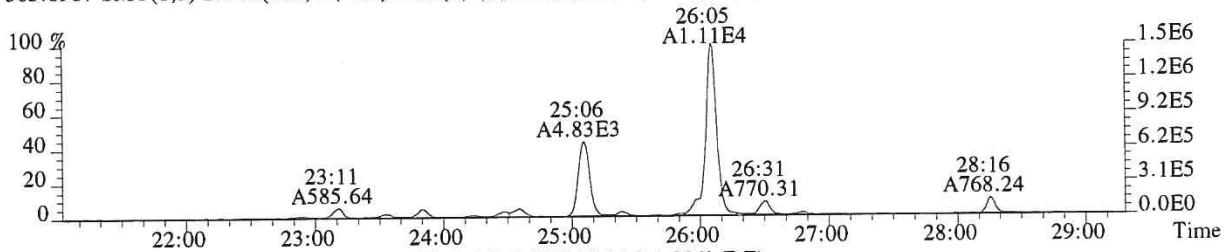
File:P519721 #1-587 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL

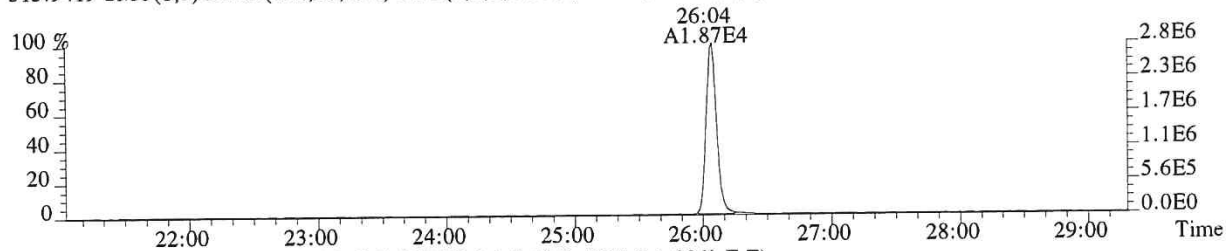
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1516.0,1.00%,F,T)



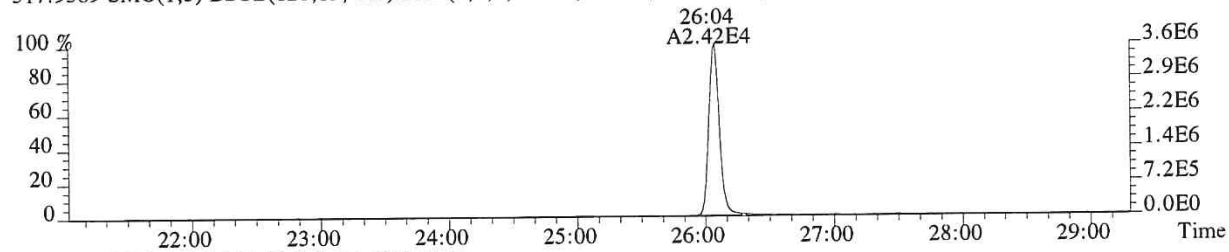
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2868.0,1.00%,F,T)



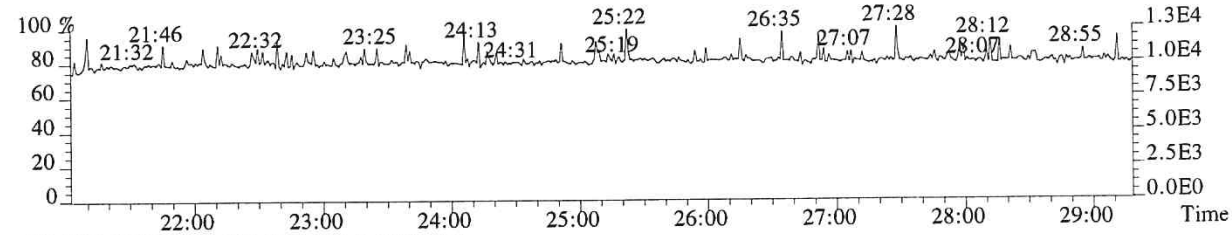
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7164.0,1.00%,F,T)



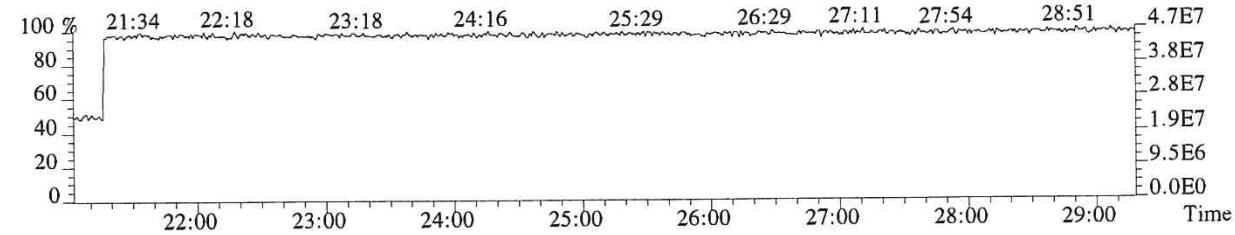
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4628.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

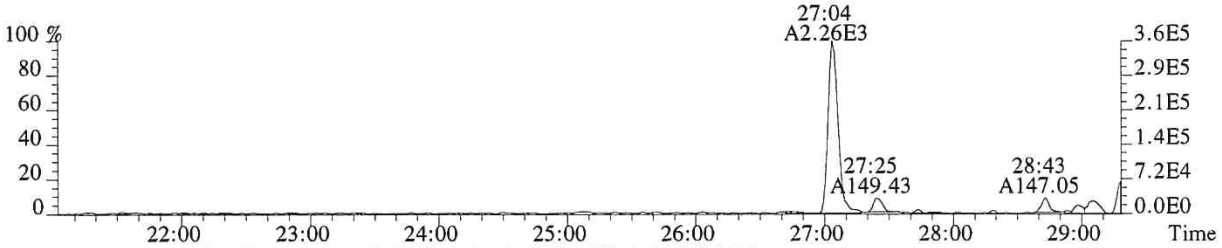


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

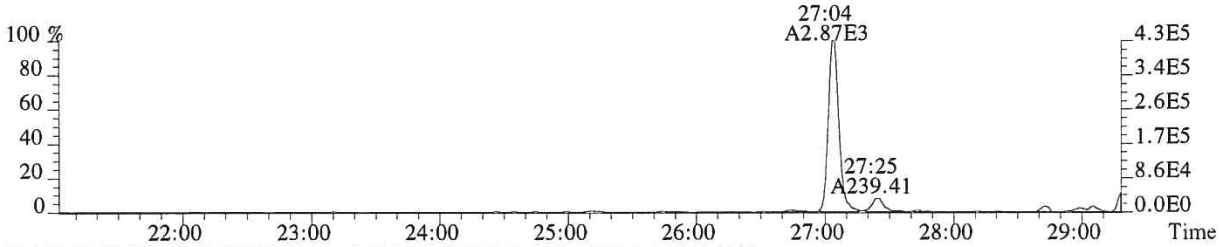


060134

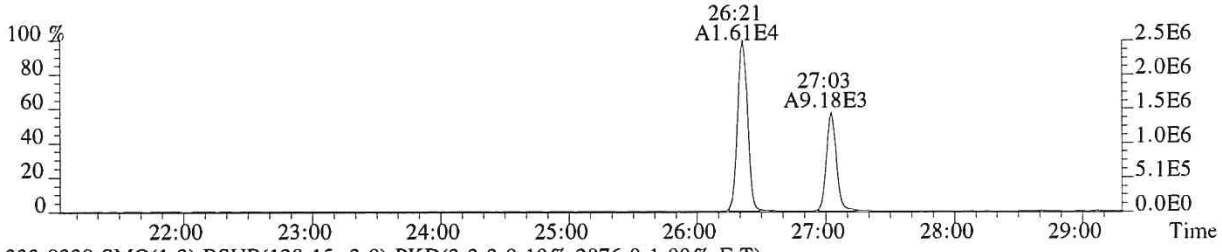
File:P519721 #1-587 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1896.0,1.00%,F,T)



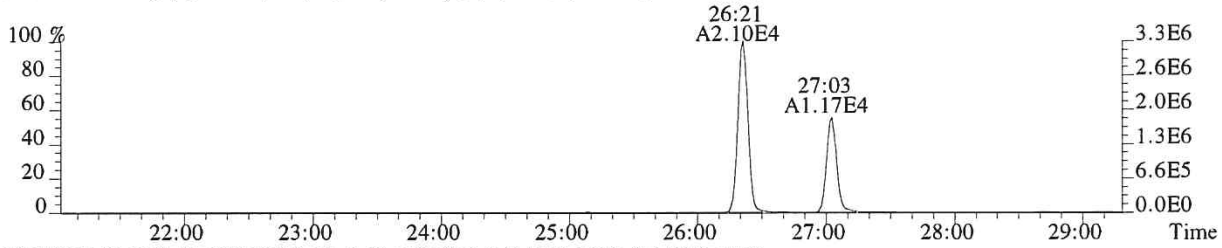
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1552.0,1.00%,F,T)



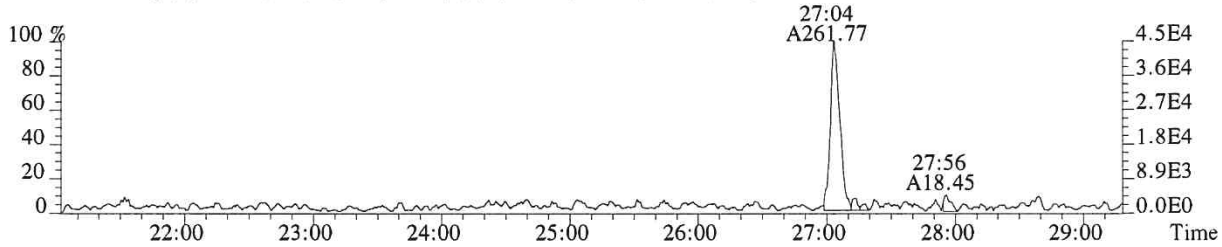
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6888.0,1.00%,F,T)



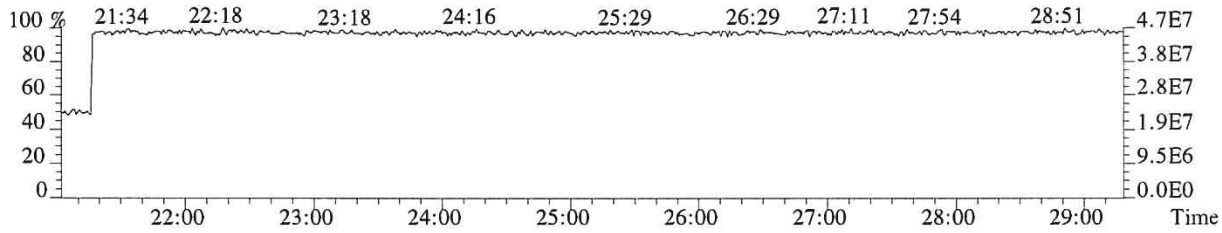
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2876.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2132.0,1.00%,F,T)

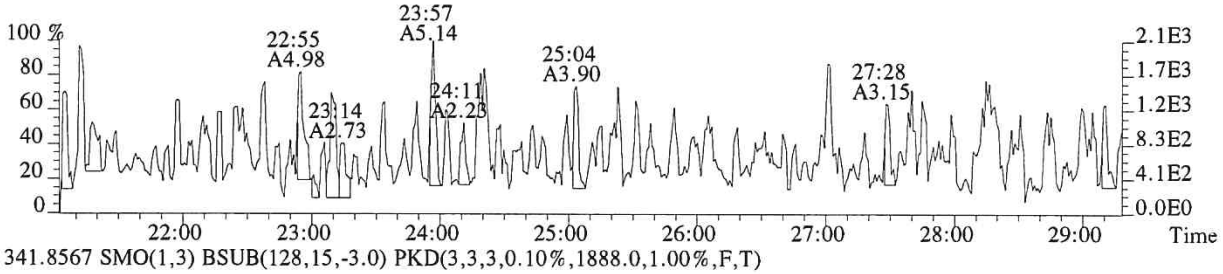


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

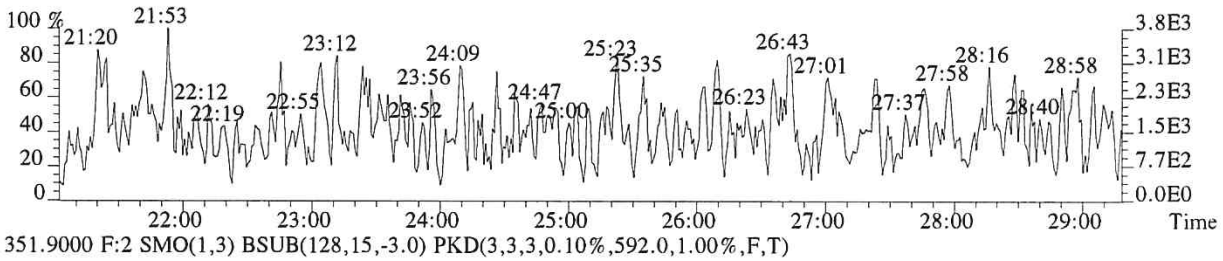


060135

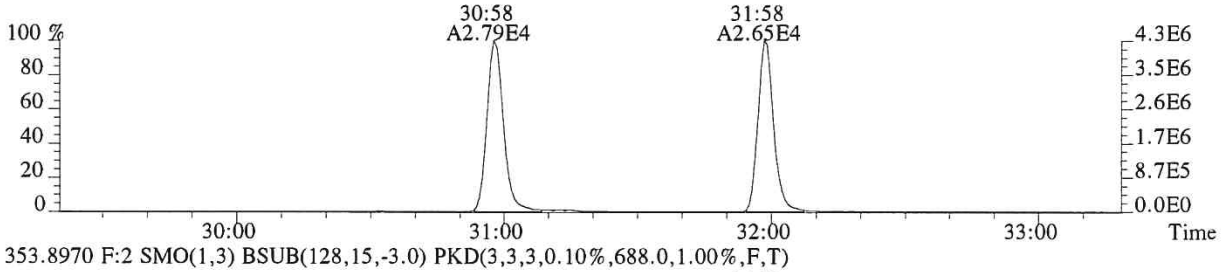
File:P519721 #1-587 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,816.0,1.00%,F,T)



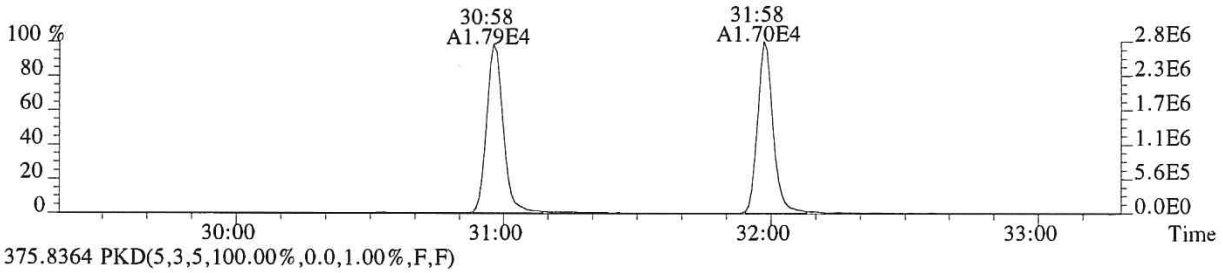
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1888.0,1.00%,F,T)



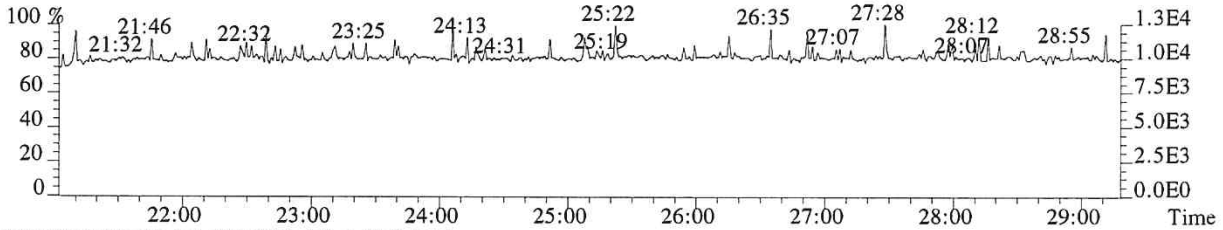
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,592.0,1.00%,F,T)



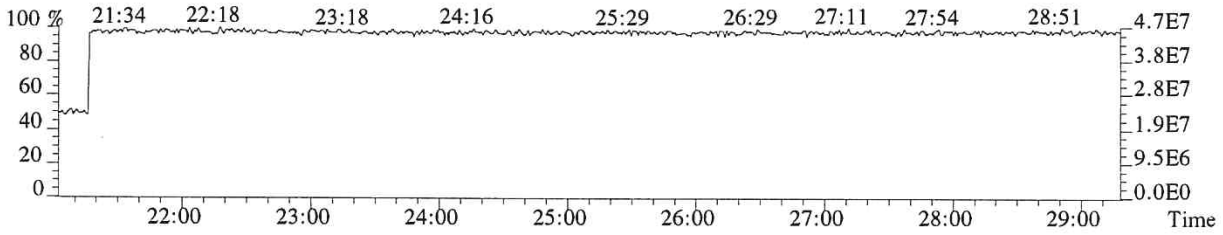
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,688.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

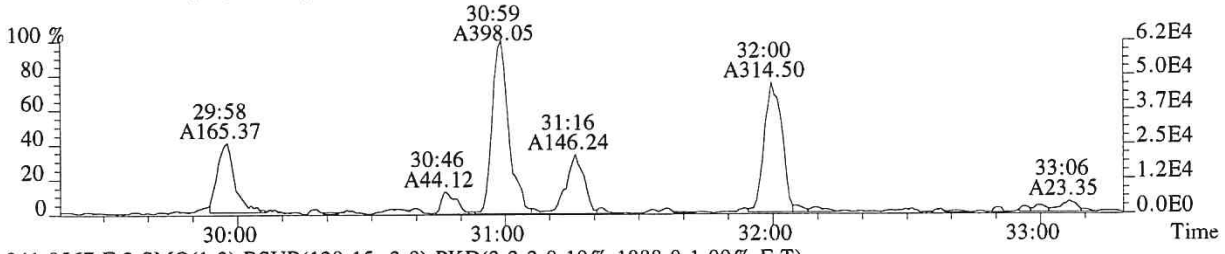


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

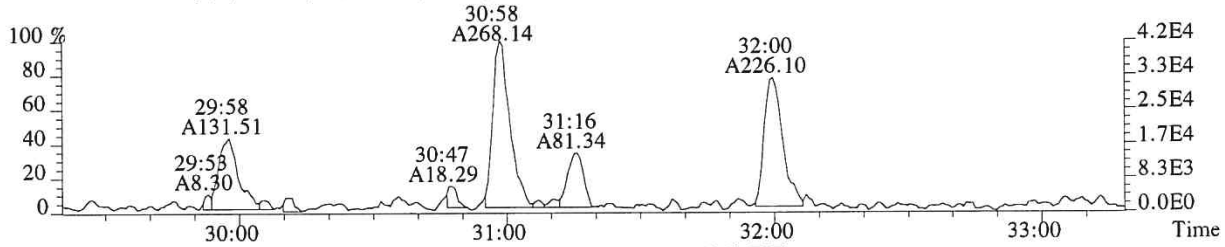


060136

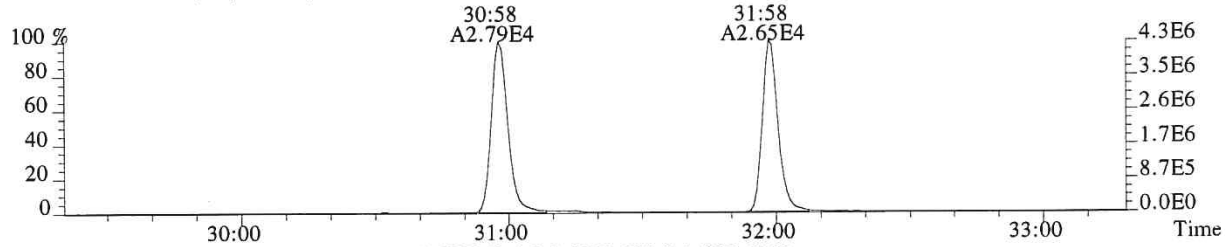
File:P519721 #1-358 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,748.0,1.00%,F,T)



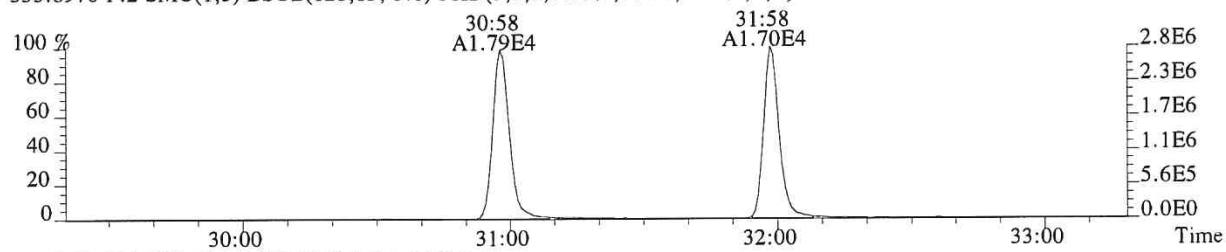
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1888.0,1.00%,F,T)



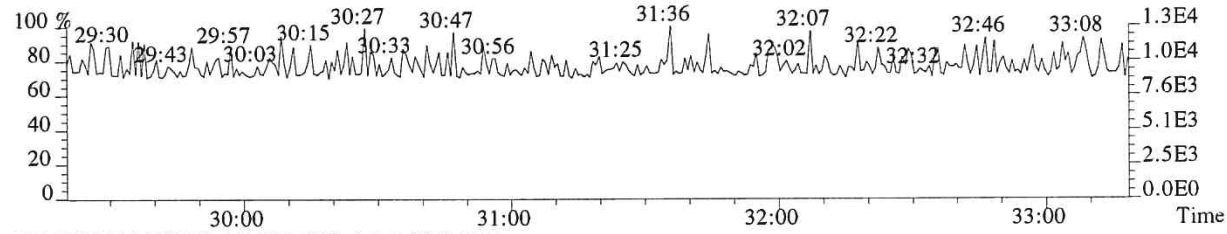
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,592.0,1.00%,F,T)



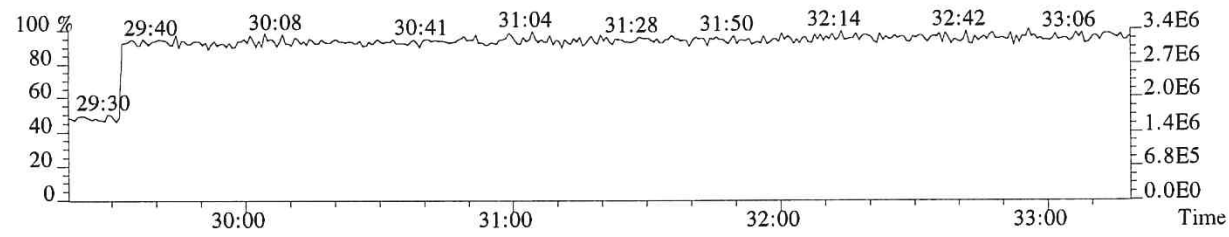
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,688.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

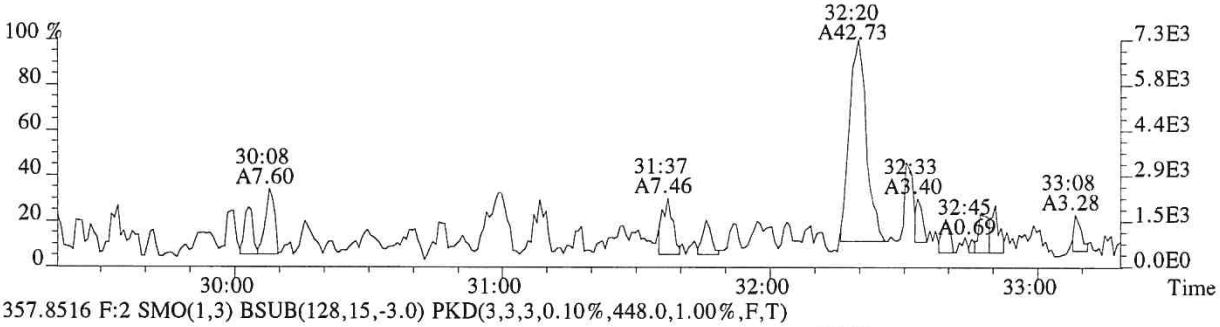


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

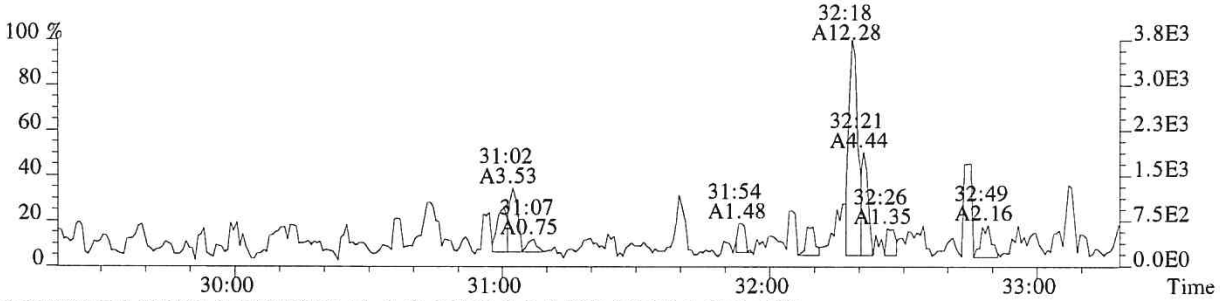


060137

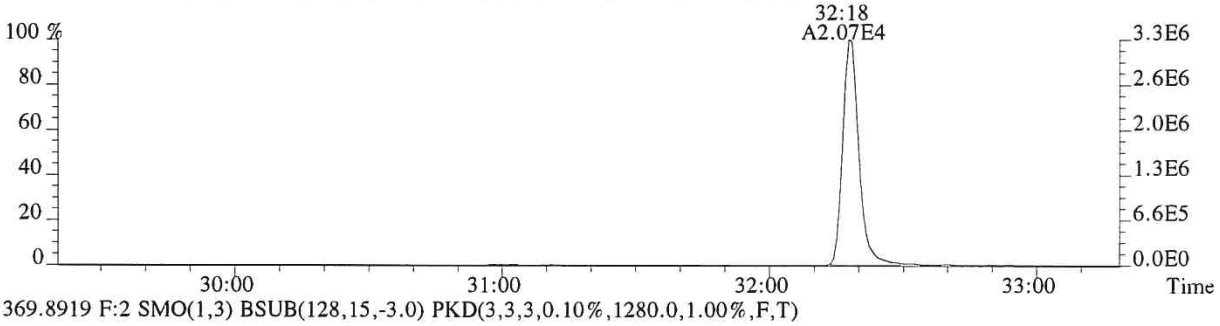
File:P519721 #1-358 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,952.0,1.00%,F,T)



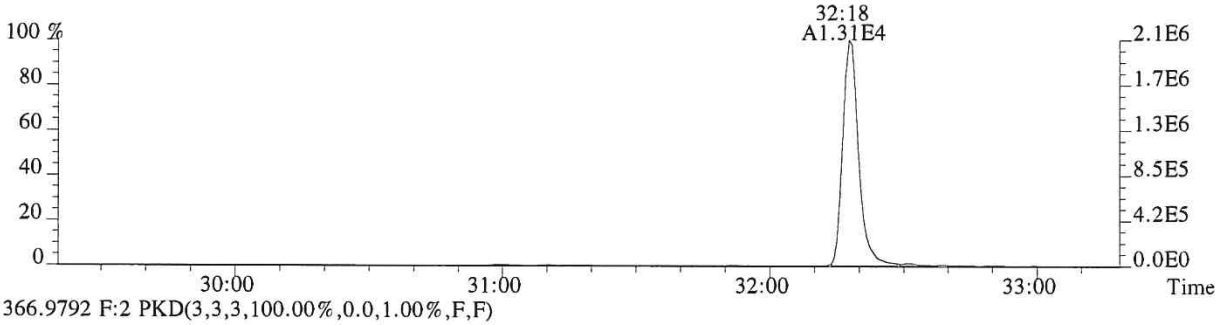
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,448.0,1.00%,F,T)



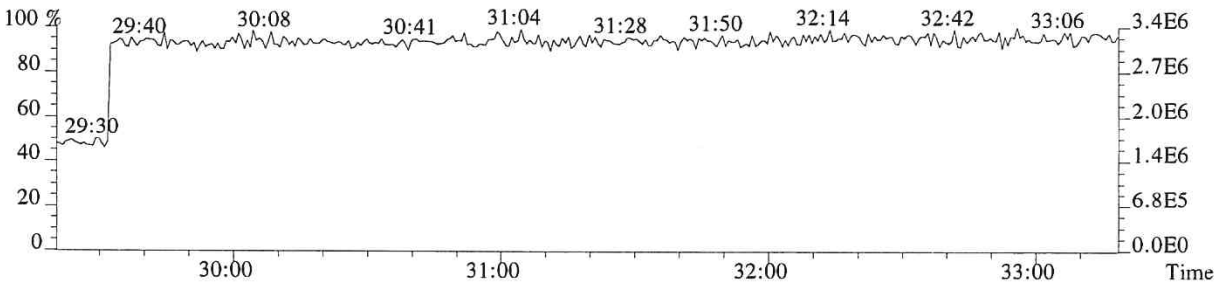
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1092.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1280.0,1.00%,F,T)

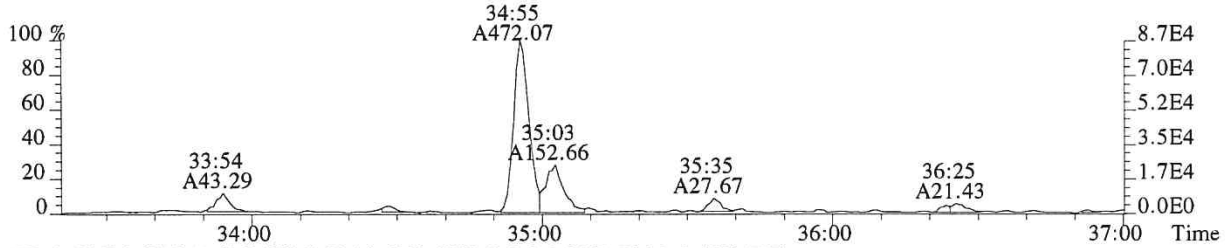


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

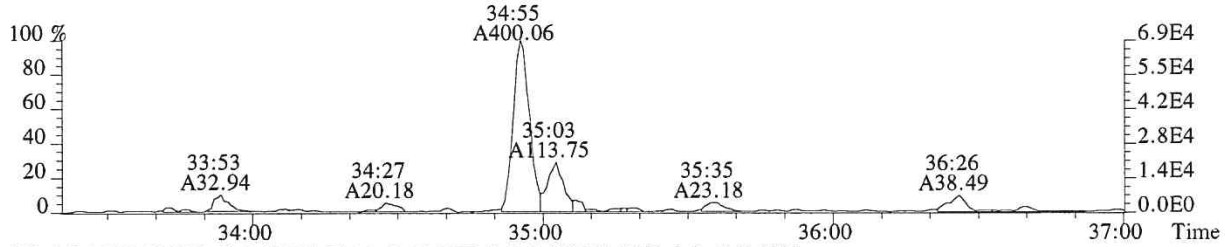


060138

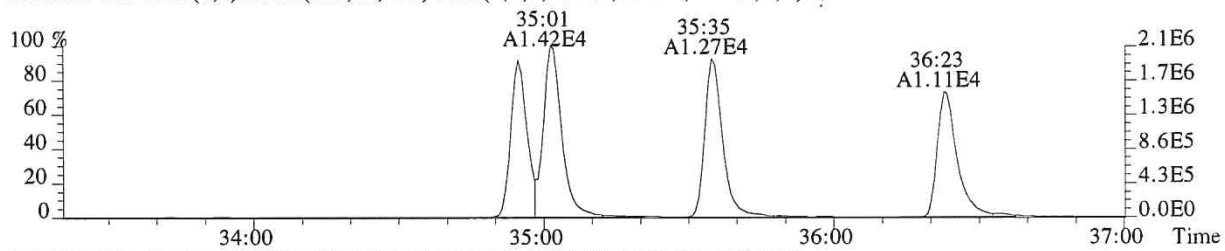
File:P519721 #1-330 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1124.0,0.40%,F,T)



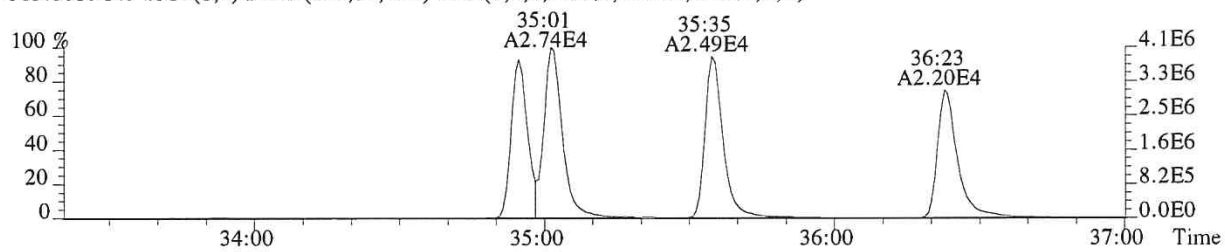
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,764.0,0.40%,F,T)



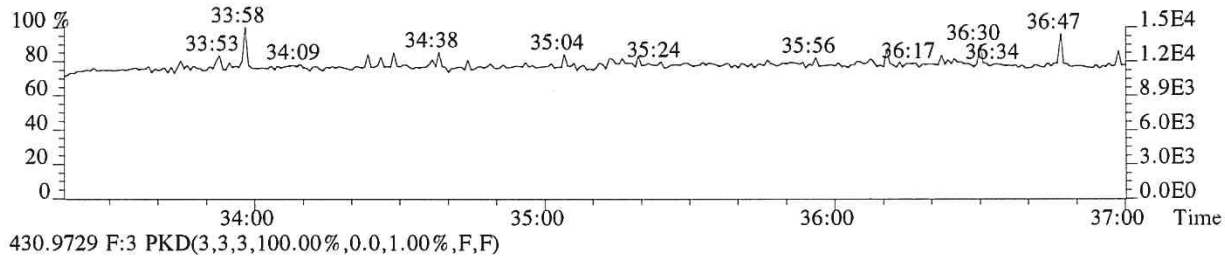
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1352.0,0.40%,F,T)



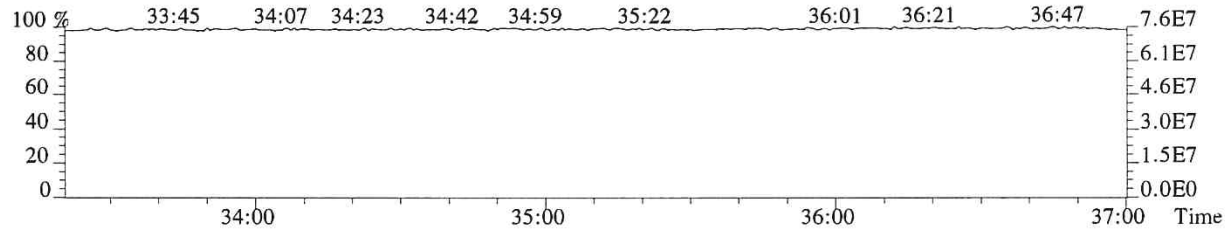
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1288.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

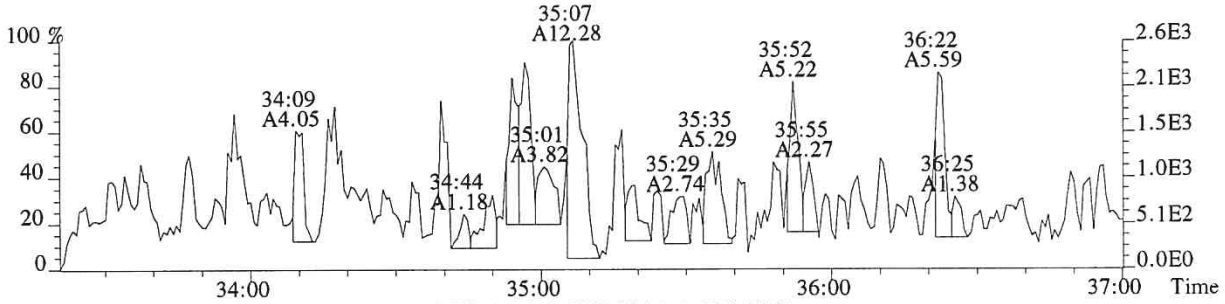


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

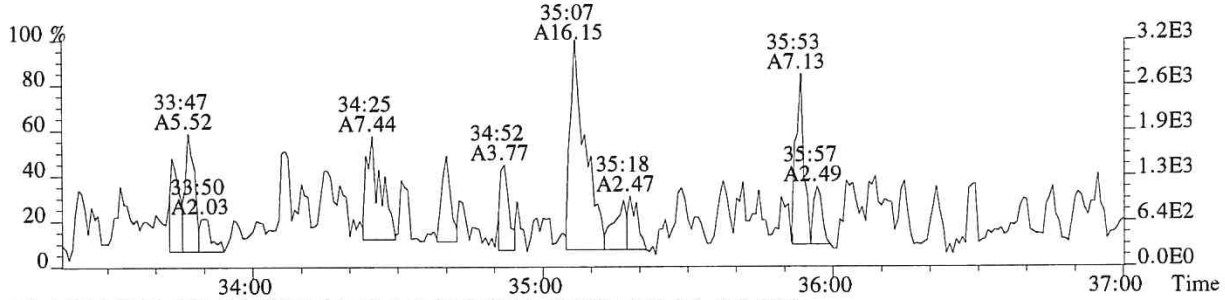


060139

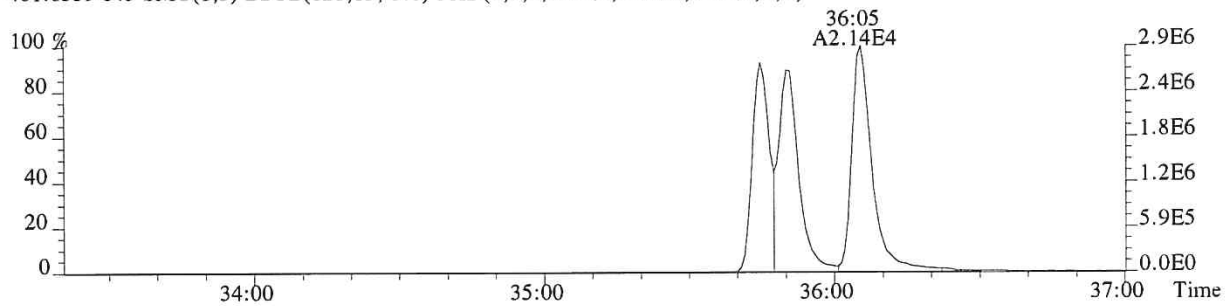
File:P519721 #1-330 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,812.0,0.40%,F,T)



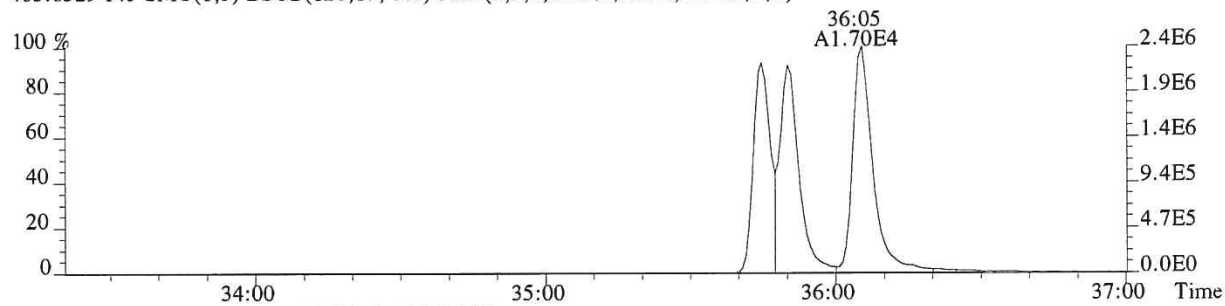
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,764.0,0.40%,F,T)



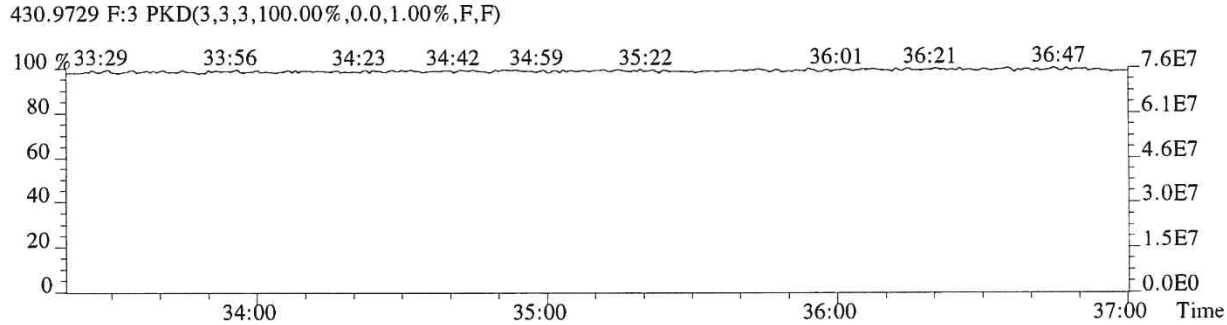
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1428.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,988.0,0.40%,F,T)

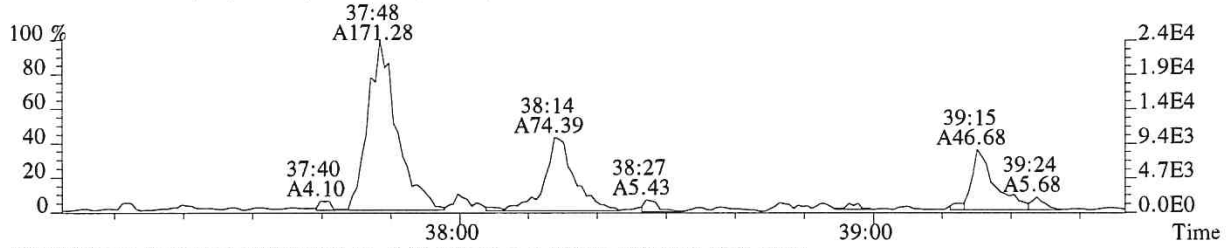


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

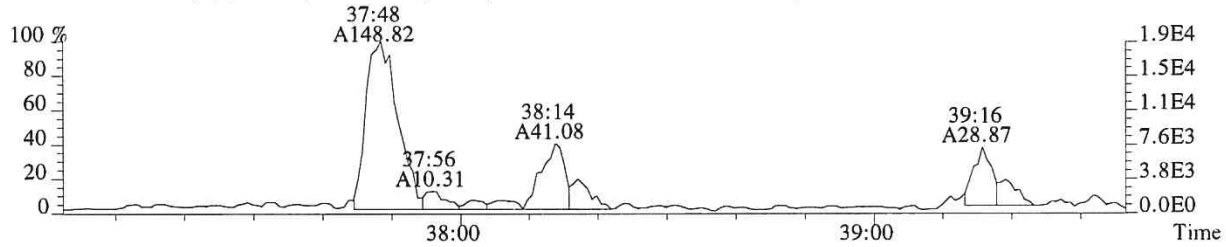


060140

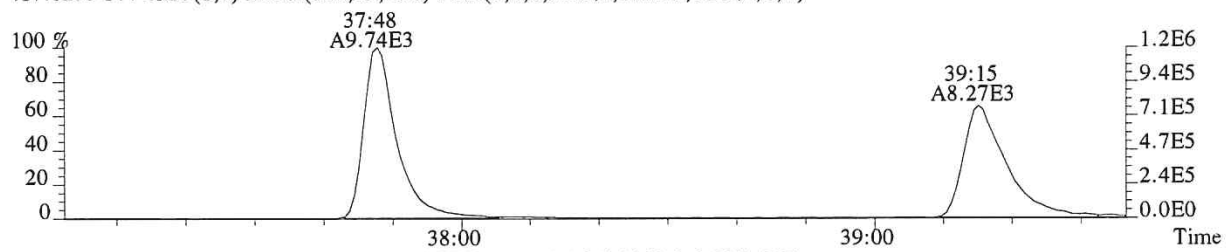
File:P519721 #1-232 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,596.0,0.50%,F,T)



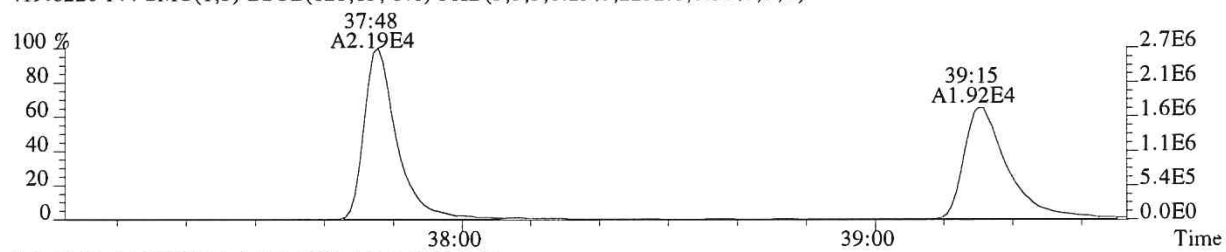
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1080.0,0.50%,F,T)



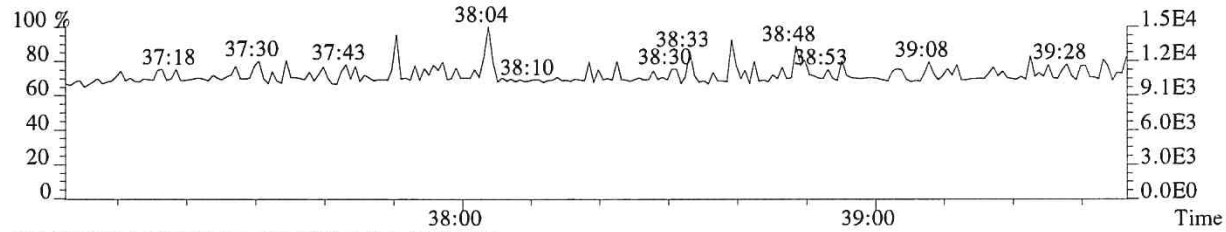
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2728.0,0.50%,F,T)



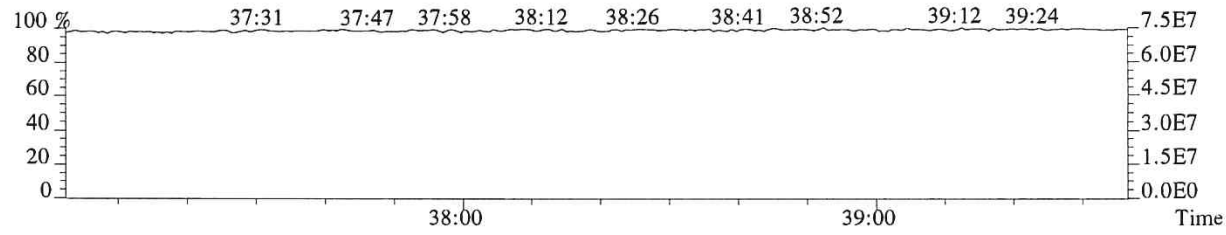
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2232.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

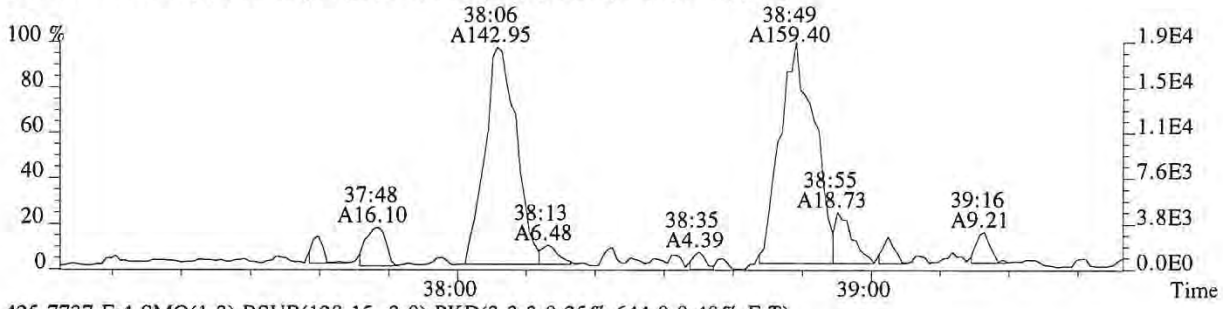


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

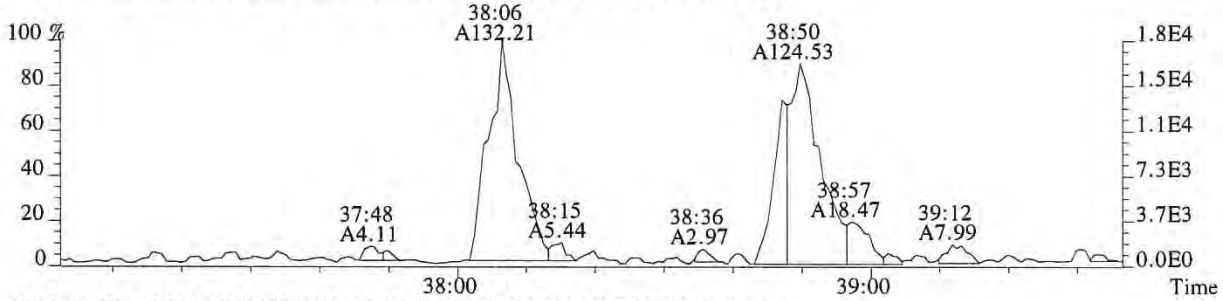


060141

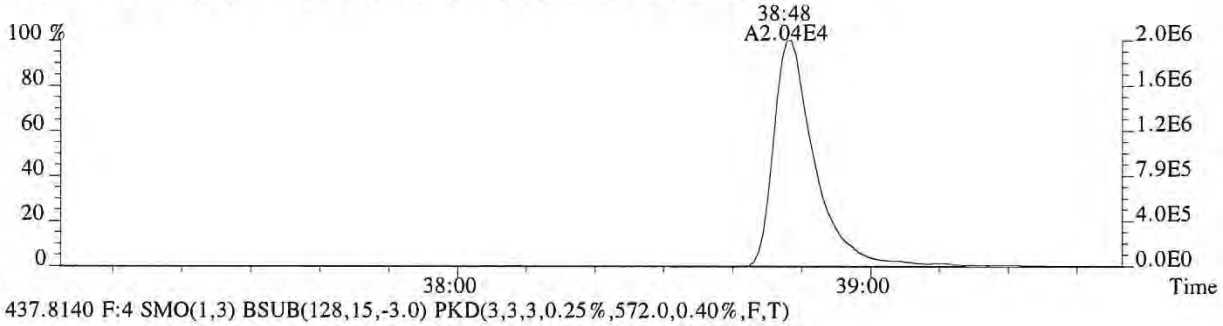
File:P519721 #1-232 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,816.0,0.40%,F,T)



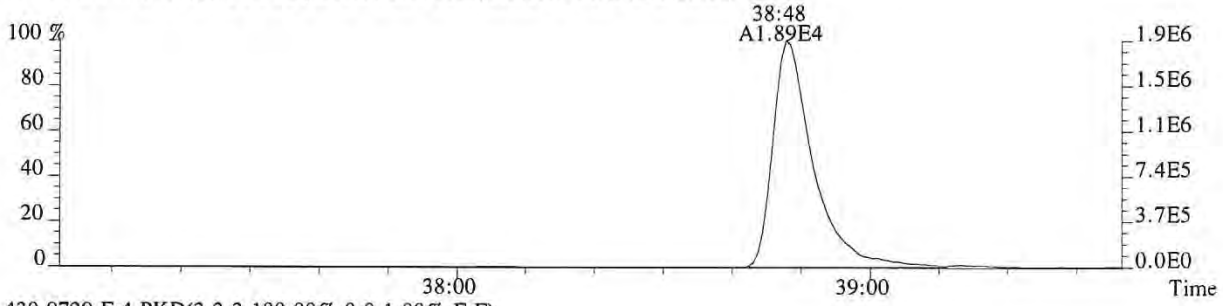
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,644.0,0.40%,F,T)



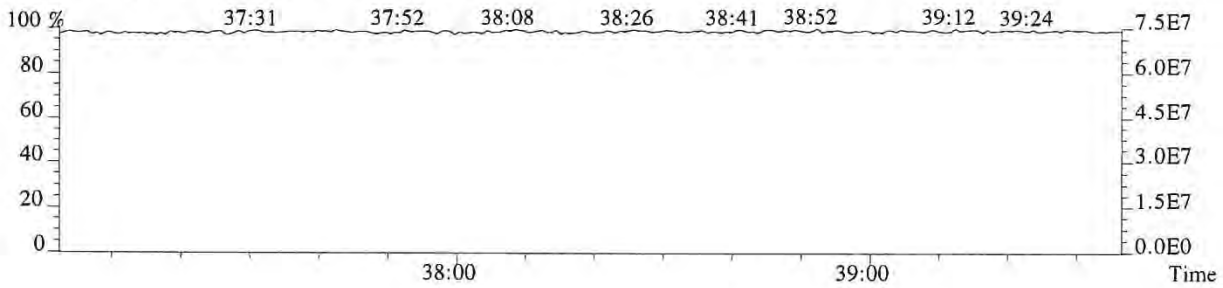
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,756.0,0.40%,F,T)



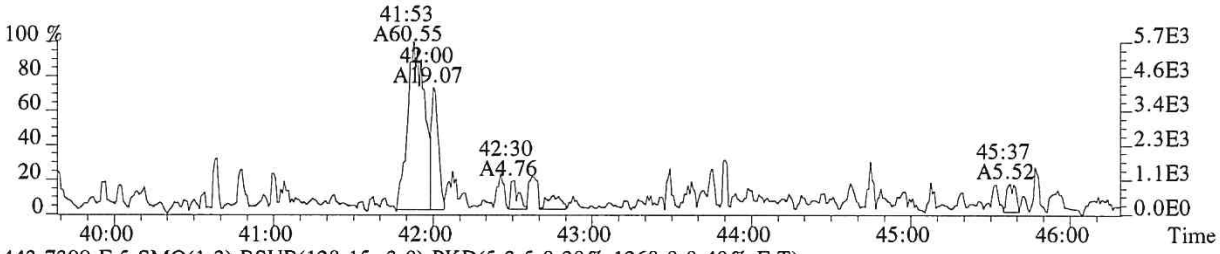
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,572.0,0.40%,F,T)



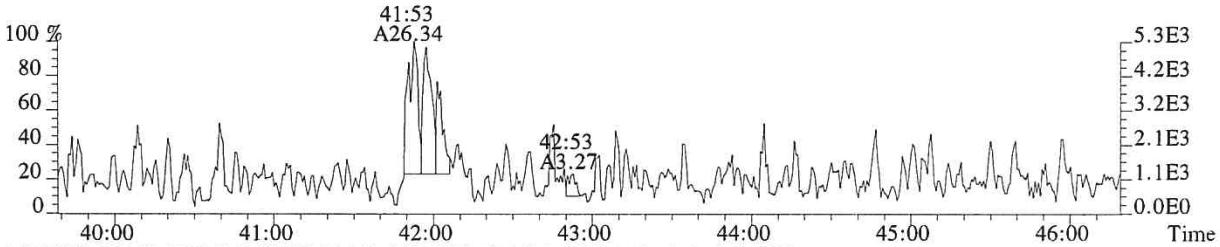
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



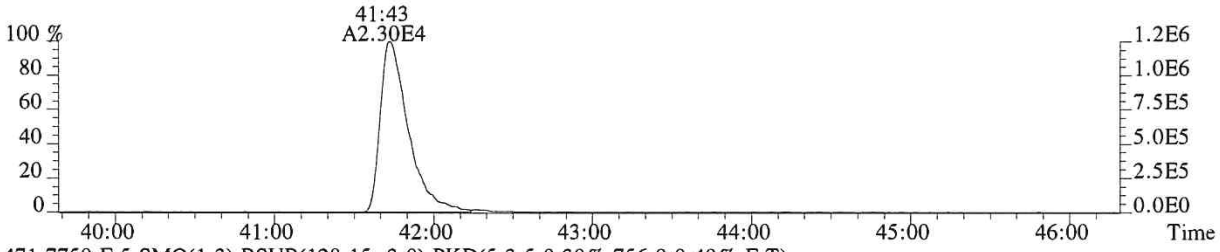
File:P519721 #1-601 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,468.0,0.40%,F,T)



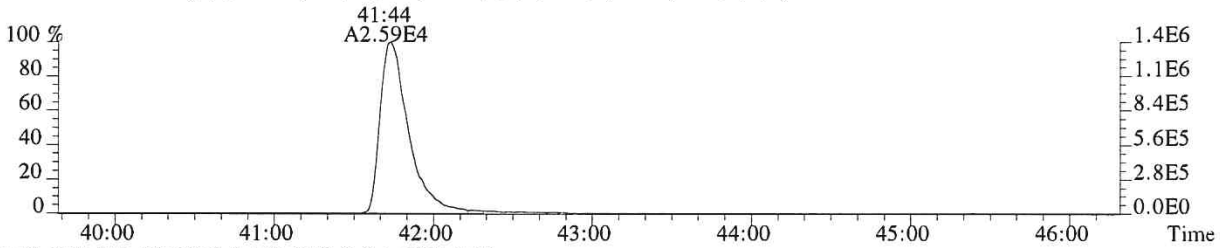
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1268.0,0.40%,F,T)



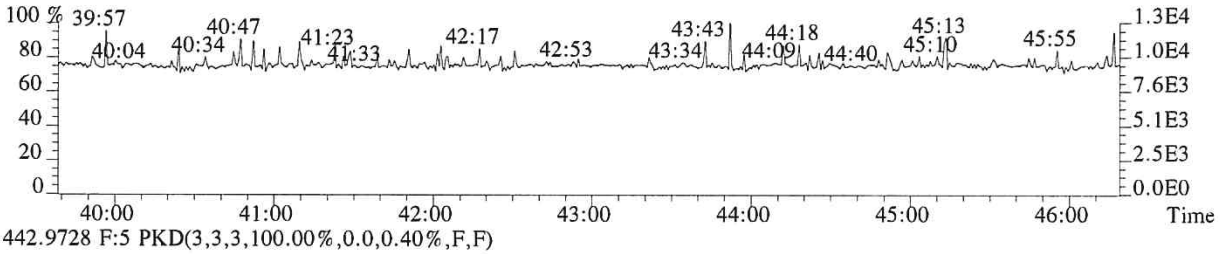
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1184.0,0.40%,F,T)



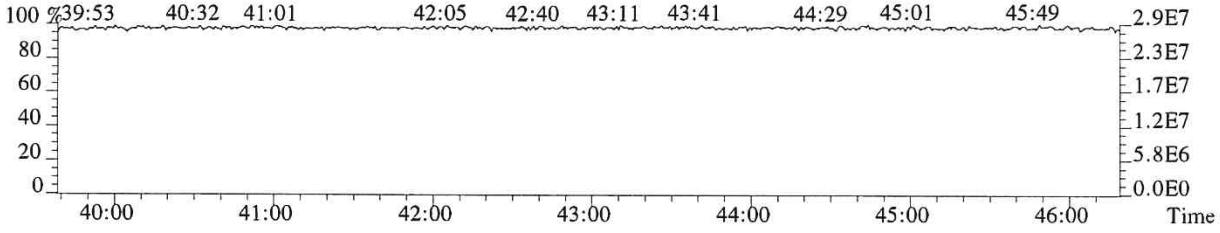
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,756.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

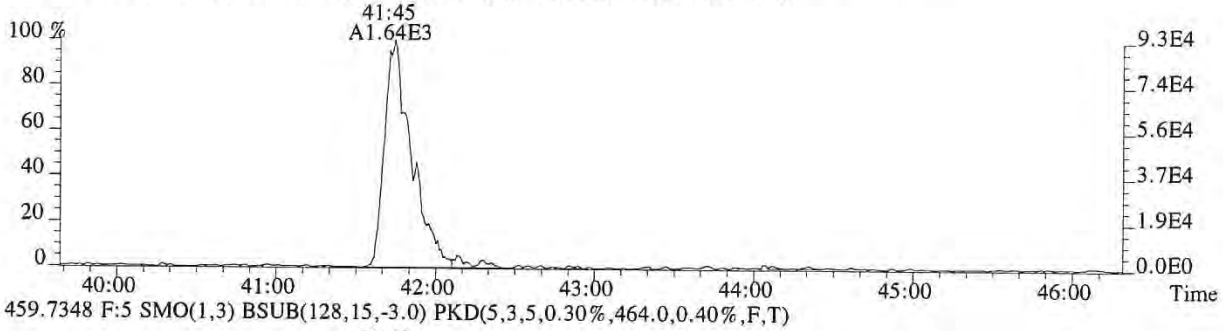


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

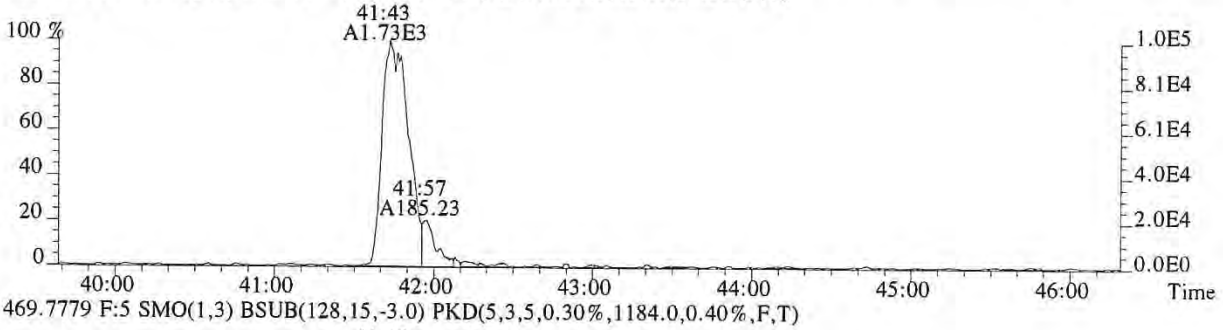


060143

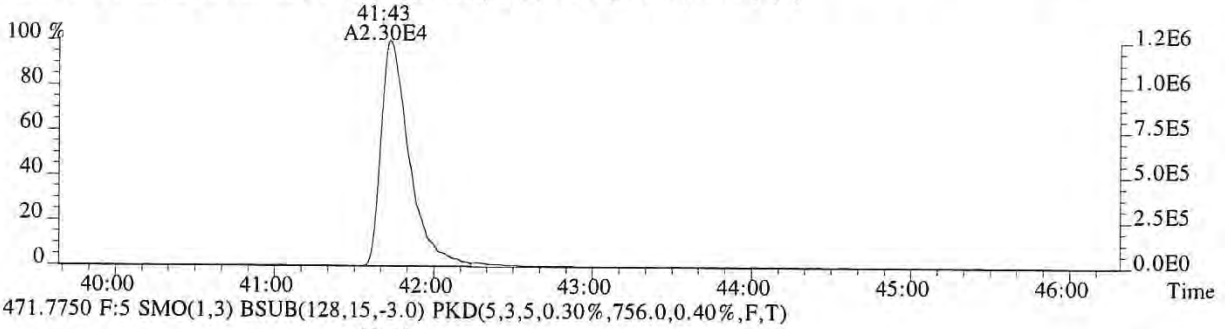
File:P519721 #1-601 Acq:30-DEC-2018 16:43:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-008DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,572.0,0.40%,F,T)



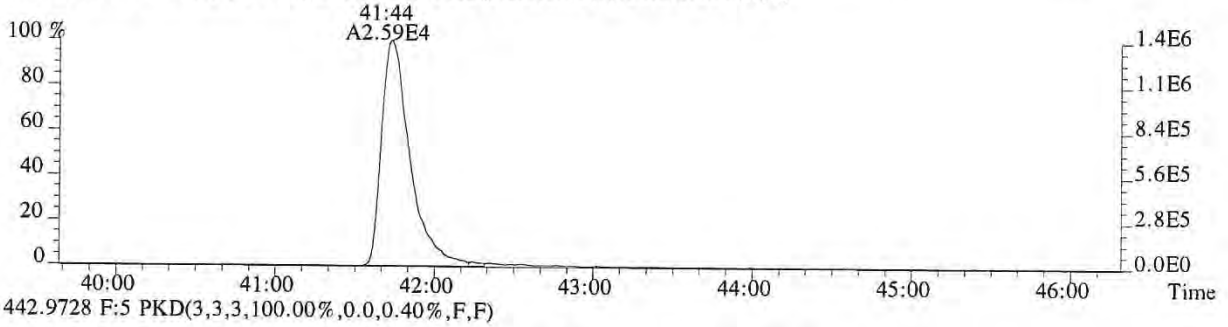
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,464.0,0.40%,F,T)



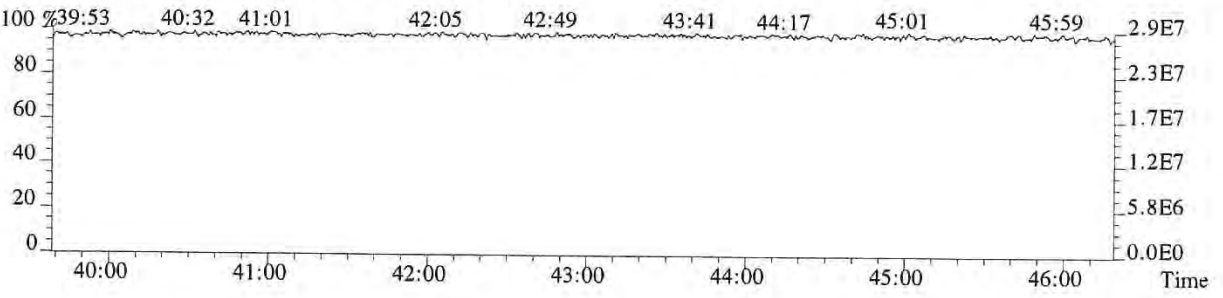
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1184.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,756.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0088

Run #18 Filename P519695 Samp: 1 Inj: 1 Acquired: 29-DEC-18 18:47:50
Processed: 30-DEC-18 08:09:19 Sample ID: E1801136-009

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:06	1.403e+05	1.851e+05	0.76	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:58	7.032e+03	4.677e+03	1.50	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	31:59	5.448e+03	3.621e+03	1.50	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	9.724e+03	8.181e+03	1.19	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	2.858e+03	2.221e+03	1.29	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	4.565e+02	3.997e+02	1.14	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	6.629e+02	5.445e+02	1.22	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	2.368e+03	2.455e+03	0.96	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:15	7.971e+02	7.985e+02	1.00	yes	no	1.258
10	Unk	OCDF	41:55	1.172e+03	1.378e+03	0.85	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	3.920e+04	5.067e+04	0.77	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:19	5.704e+02	4.004e+02	1.42	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:46	3.138e+01	3.762e+01	0.83	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:51	1.229e+02	1.221e+02	1.01	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	1.163e+02	1.059e+02	1.10	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:48	4.168e+03	4.080e+03	1.02	yes	no	1.025
17	Unk	OCDD	41:46	5.095e+04	5.745e+04	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	2.510e+04	3.227e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	4.005e+04	2.513e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	3.845e+04	2.393e+04	1.61	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:54	1.643e+04	3.187e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.925e+04	3.747e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:34	1.730e+04	3.403e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:22	1.542e+04	3.057e+04	0.50	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:47	1.183e+04	2.700e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	1.135e+04	2.572e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	1.250e+04	1.595e+04	0.78	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:17	3.082e+04	1.960e+04	1.57	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:44	2.513e+04	1.997e+04	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	2.585e+04	2.030e+04	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:47	2.718e+04	2.574e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	41:45	2.818e+04	3.169e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	3.755e+04	4.714e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:04	4.946e+04	3.826e+04	1.29	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	2.064e+04				no	1.014

$$\text{OCDD} = \frac{(5.095e+04 + 5.745e+04) \times 4000\ \text{pg} \times 1}{(2.818e+04 + 3.169e+04) \times 10.861\ \text{g} \times 76\ /\ 100 \times 1.118} = 784.7924\ \text{ng/kg}$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0088

Run #18 Filename P519695 Samp: 1 Inj: 1 Acquired: 29-DEC-18 18:47:50
Processed: 30-DEC-18 08:09:19 LAB. ID: E1801136-009

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.03e+07	9.88e+02	2.1e+04	2.65e+07	1.70e+03	1.6e+04
2	1,2,3,7,8-PeCDF	1.20e+06	2.40e+03	5.0e+02	7.69e+05	2.26e+03	3.4e+02
3	2,3,4,7,8-PeCDF	8.13e+05	2.40e+03	3.4e+02	5.62e+05	2.26e+03	2.5e+02
4	1,2,3,4,7,8-HxCDF	1.72e+06	1.20e+03	1.4e+03	1.45e+06	1.14e+03	1.3e+03
5	1,2,3,6,7,8-HxCDF	4.41e+05	1.20e+03	3.7e+02	3.62e+05	1.14e+03	3.2e+02
6	2,3,4,6,7,8-HxCDF	7.81e+04	1.20e+03	6.5e+01	6.73e+04	1.14e+03	5.9e+01
7	1,2,3,7,8,9-HxCDF	1.00e+05	1.20e+03	8.4e+01	8.24e+04	1.14e+03	7.2e+01
8	1,2,3,4,6,7,8-HpCDF	3.29e+05	3.75e+03	8.8e+01	3.30e+05	5.52e+02	6.0e+02
9	1,2,3,4,7,8,9-HpCDF	9.00e+04	3.75e+03	2.4e+01	8.24e+04	5.52e+02	1.5e+02
10	OCDF	7.49e+04	4.44e+02	1.7e+02	8.55e+04	5.68e+02	1.5e+02
11	2,3,7,8-TCDD	6.58e+06	2.45e+03	2.7e+03	8.52e+06	1.24e+03	6.9e+03
12	1,2,3,7,8-PeCDD	8.89e+04	9.76e+02	9.1e+01	6.34e+04	4.64e+02	1.4e+02
13	1,2,3,4,7,8-HxCDD	6.12e+03	7.52e+02	8.1e+00	6.29e+03	1.24e+03	5.1e+00
14	1,2,3,6,7,8-HxCDD	1.86e+04	7.52e+02	2.5e+01	1.80e+04	1.24e+03	1.5e+01
15	1,2,3,7,8,9-HxCDD	1.94e+04	7.52e+02	2.6e+01	1.43e+04	1.24e+03	1.2e+01
16	1,2,3,4,6,7,8-HpCDD	4.77e+05	9.24e+02	5.2e+02	4.54e+05	1.16e+03	3.9e+02
17	OCDD	3.22e+06	6.72e+02	4.8e+03	3.55e+06	8.04e+02	4.4e+03
18	13C-2,3,7,8-TCDF	3.97e+06	5.91e+03	6.7e+02	5.12e+06	5.52e+03	9.3e+02
19	13C-1,2,3,7,8-PeCDF	6.81e+06	1.39e+03	4.9e+03	4.33e+06	9.96e+02	4.3e+03
20	13C-2,3,4,7,8-PeCDF	6.74e+06	1.39e+03	4.8e+03	4.30e+06	9.96e+02	4.3e+03
21	13C-1,2,3,4,7,8-HxCDF	2.99e+06	8.36e+02	3.6e+03	5.77e+06	1.23e+03	4.7e+03
22	13C-1,2,3,6,7,8-HxCDF	3.30e+06	8.36e+02	3.9e+03	6.32e+06	1.23e+03	5.1e+03
23	13C-2,3,4,6,7,8-HxCDF	3.05e+06	8.36e+02	3.6e+03	5.95e+06	1.23e+03	4.8e+03
24	13C-1,2,3,7,8,9-HxCDF	2.37e+06	8.36e+02	2.8e+03	4.66e+06	1.23e+03	3.8e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.59e+06	1.06e+03	1.5e+03	3.57e+06	1.09e+03	3.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.15e+06	1.06e+03	1.1e+03	2.63e+06	1.09e+03	2.4e+03
27	13C-2,3,7,8-TCDD	2.15e+06	6.32e+03	3.4e+02	2.73e+06	3.15e+03	8.7e+02
28	13C-1,2,3,7,8-PeCDD	5.29e+06	5.56e+02	9.5e+03	3.37e+06	8.12e+02	4.2e+03
29	13C-1,2,3,4,7,8-HxCDD	4.34e+06	1.18e+03	3.7e+03	3.41e+06	9.80e+02	3.5e+03
30	13C-1,2,3,6,7,8-HxCDD	4.06e+06	1.18e+03	3.4e+03	3.19e+06	9.80e+02	3.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.01e+06	8.52e+02	3.5e+03	2.82e+06	6.52e+02	4.3e+03
32	13C-OCDD	1.76e+06	5.08e+02	3.5e+03	1.92e+06	3.72e+02	5.2e+03
33	13C-1,2,3,4-TCDD	6.24e+06	6.32e+03	9.9e+02	7.81e+06	3.15e+03	2.5e+03
34	13C-1,2,3,7,8,9-HxCDD	7.51e+06	1.18e+03	6.4e+03	5.96e+06	9.80e+02	6.1e+03
35	37Cl-2,3,7,8-TCDD	3.44e+06	1.27e+03	2.7e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.448e{+}03 + 1.244e{+}03) \times 2000}{(2.150e{+}06 + 2.730e{+}06) \times (\quad) \times 1.085} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0088

Entry: 36 Totals Name: Total Tetra-Furans

Run: 18 File: P519695 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 18:47:50 Processed: 30-DEC-18 08:09:19

Mass: 303.9020 305.8990 Tot Response: 5.78e+05 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:53	1.04e+03	1.55e+03	0.67	yes	2.59e+03		n	n
2	23:11	6.18e+03	8.27e+03	0.75	yes	1.45e+04		n	n
3	23:33	1.94e+03	2.59e+03	0.75	yes	4.54e+03		n	n
4	23:41	2.37e+02	3.23e+02	0.73	yes	5.59e+02		n	n
5	23:50	5.14e+03	6.85e+03	0.75	yes	1.20e+04		n	n
6	24:14	1.07e+03	1.32e+03	0.80	yes	2.39e+03		n	n
7	24:29	3.67e+03	4.93e+03	0.74	yes	8.59e+03		n	n
8	24:36	6.29e+03	8.38e+03	0.75	yes	1.47e+04		n	n
9	25:06	5.90e+04	7.89e+04	0.75	yes	1.38e+05		n	n
10	25:24	2.62e+03	3.54e+03	0.74	yes	6.16e+03		n	n
11	26:06	1.40e+05	1.85e+05	0.76	yes	3.25e+05	2,3,7,8-TCDF	n	n
12	26:30	9.19e+03	1.26e+04	0.73	yes	2.18e+04		n	n
13	26:47	1.37e+03	1.93e+03	0.71	yes	3.30e+03		n	n
14	28:16	9.86e+03	1.33e+04	0.74	yes	2.32e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0088

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 18 File: P519695 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 18:47:50 Processed: 30-DEC-18 08:09:19

Mass: 319.8970 321.8940 Tot Response: 9.92e+04 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:44	2.67e+02	3.36e+02 0.79	yes	6.02e+02		n	n
2	26:45	5.99e+02	7.06e+02 0.85	yes	1.30e+03		n	n
3	27:04	3.92e+04	5.07e+04 0.77	yes	8.99e+04	2,3,7,8-TCDD	n	n
4	27:25	3.19e+03	4.20e+03 0.76	yes	7.39e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0088

Entry: 38 Totals Name: Total Penta-Furans1

Run: 18 File: P519695 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 18:47:50 Processed: 30-DEC-18 08:09:19

Mass: 339.8600 341.8570 Tot Response: 2.67e+02 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:16	1.69e+02	9.75e+01 1.73	yes	2.67e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0088

Entry: 39 Totals Name: Total Penta-Furans2

Run: 18 File: P519695 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 18:47:50 Processed: 30-DEC-18 08:09:19

Mass: 339.8600 341.8570 Tot Response: 3.16e+04 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:57	3.25e+03	2.22e+03 1.47	yes	5.47e+03		n	n
2	30:34	1.23e+02	6.96e+01 1.77	yes	1.93e+02		n	n
3	30:47	7.50e+02	4.34e+02 1.73	yes	1.18e+03		n	n
4	30:58	7.03e+03	4.68e+03 1.50	yes	1.17e+04	1,2,3,7,8-PeCDF	n	n
5	31:15	2.07e+03	1.45e+03 1.43	yes	3.52e+03		n	n
6	31:59	5.45e+03	3.62e+03 1.50	yes	9.07e+03	2,3,4,7,8-PeCDF	n	n
7	32:58	2.68e+02	1.79e+02 1.50	yes	4.47e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0088

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 18 File: P519695 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 18:47:50 Processed: 30-DEC-18 08:09:19

Mass: 355.8550 357.8520 Tot Response: 1.26e+03 RRF: 0.9565

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	31:01	1.03e+02	7.34e+01	1.40	yes	1.76e+02		n	n
2	31:10	5.38e+01	3.67e+01	1.47	yes	9.06e+01		n	n
3	31:56	1.01e+01	7.29e+00	1.38	yes	1.73e+01		n	n
4	32:19	5.70e+02	4.00e+02	1.42	yes	9.71e+02	1,2,3,7,8-PeCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0088

Entry: 41 Totals Name: Total Hexa-Furans

Run: 18 File: P519695 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 18:47:50 Processed: 30-DEC-18 08:09:19

Mass: 373.8210 375.8180 Tot Response: 2.73e+04 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:43	1.09e+02	7.68e+01	1.41	yes	1.85e+02		n	n
2	33:53	7.65e+02	6.20e+02	1.23	yes	1.38e+03		n	n
3	34:27	4.09e+02	3.07e+02	1.34	yes	7.16e+02		n	n
4	34:55	9.72e+03	8.18e+03	1.19	yes	1.79e+04	1,2,3,4,7,8-HxCDF	n	n
5	35:02	2.86e+03	2.22e+03	1.29	yes	5.08e+03	1,2,3,6,7,8-HxCDF	n	n
6	35:35	4.56e+02	4.00e+02	1.14	yes	8.56e+02	2,3,4,6,7,8-HxCDF	n	n
7	36:25	6.63e+02	5.44e+02	1.22	yes	1.21e+03	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0088

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 18 File: P519695 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 18:47:50 Processed: 30-DEC-18 08:09:19

Mass: 389.8160 391.8130 Tot Response: 5.07e+03 RRF: 1.047

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:17	1.98e+03	1.60e+03	1.24	yes	3.58e+03		n	n
2	34:52	5.69e+01	4.73e+01	1.20	yes	1.04e+02		n	n
3	35:06	5.70e+02	4.27e+02	1.33	yes	9.97e+02		n	n
4	35:13	5.30e+01	4.75e+01	1.12	yes	1.00e+02		n	n
5	35:59	3.46e+01	3.19e+01	1.09	yes	6.65e+01		n	n
6	36:05	1.16e+02	1.06e+02	1.10	yes	2.22e+02	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0088

Entry: 43 Totals Name: Total Hepta-Furans

Run: 18 File: P519695 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 18:47:50 Processed: 30-DEC-18 08:09:19

Mass: 407.7820 409.7790 Tot Response: 8.63e+03 RRF: 1.308

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:48	2.37e+03	2.46e+03	0.96	yes	4.82e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	38:13	1.07e+03	1.14e+03	0.93	yes	2.21e+03		n	n
3	39:15	7.97e+02	7.99e+02	1.00	yes	1.60e+03	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0088

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 18 File: P519695 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 18:47:50 Processed: 30-DEC-18 08:09:19

Mass: 423.7770 425.7740 Tot Response: 1.98e+04 RRF: 1.025

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:05	5.87e+03	5.68e+03	1.03	yes	1.16e+04		n	n
2	38:48	4.17e+03	4.08e+03	1.02	yes	8.25e+03	1,2,3,4,6,7,8-HpCDD	n	n

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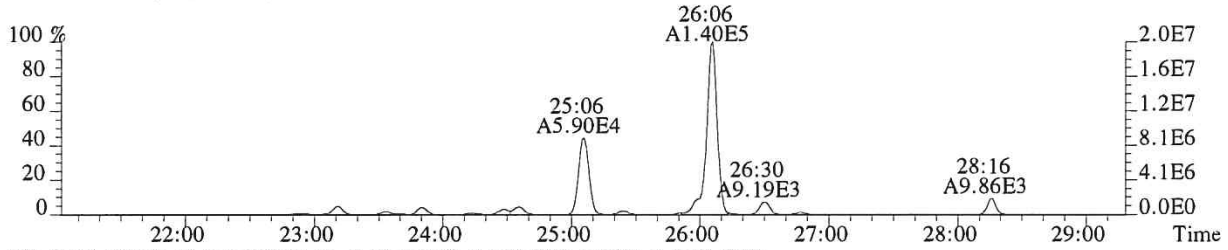
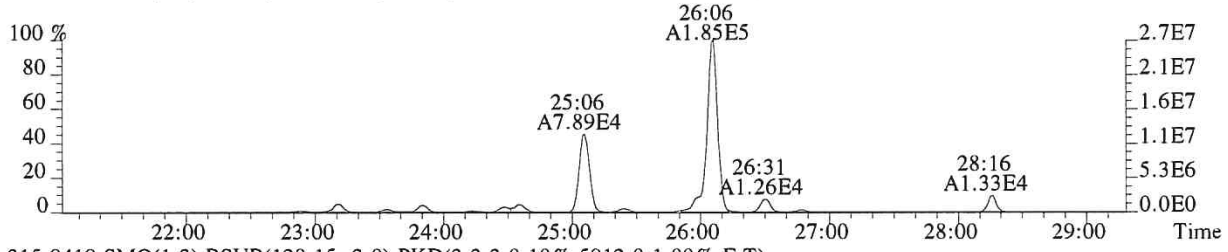
File:P519695 #1-587 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009

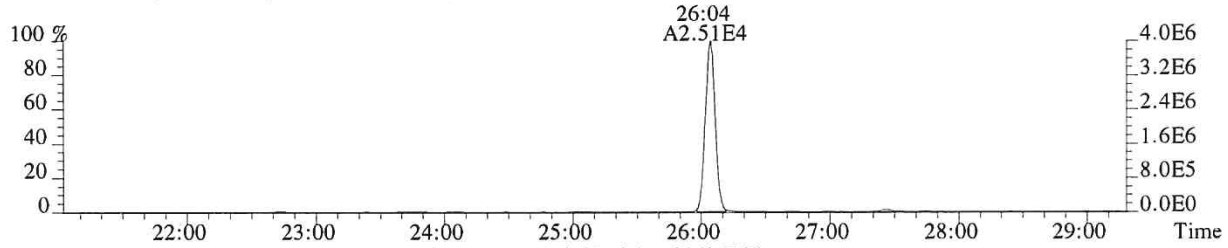
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,988.0,1.00%,F,T)



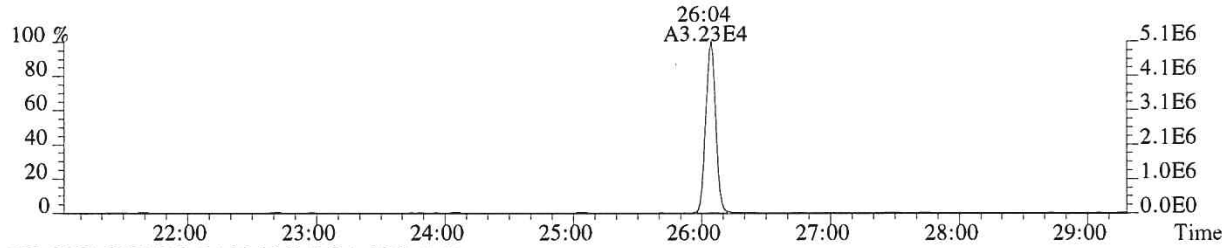
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1700.0,1.00%,F,T)



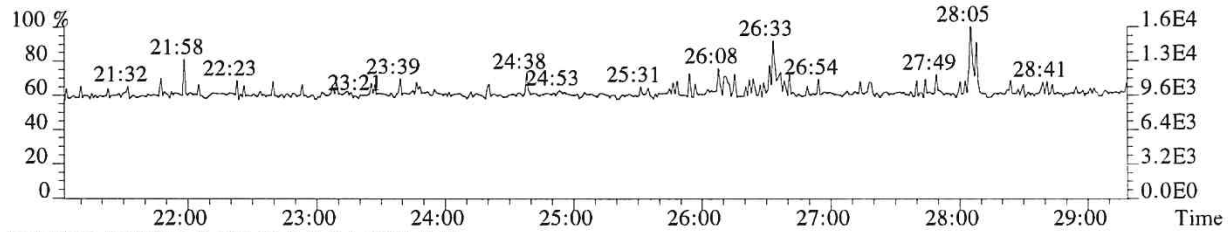
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5912.0,1.00%,F,T)



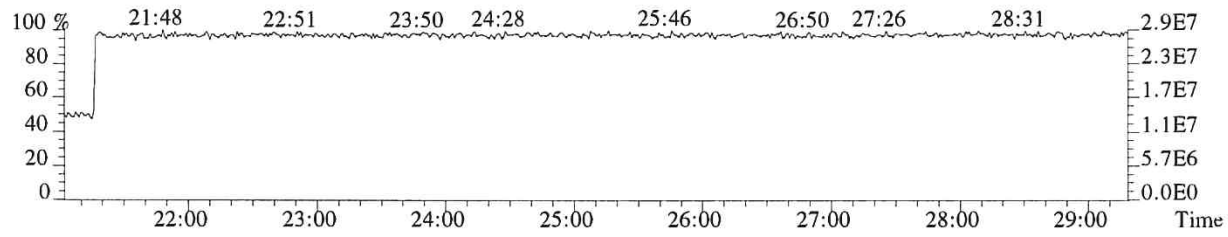
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5516.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



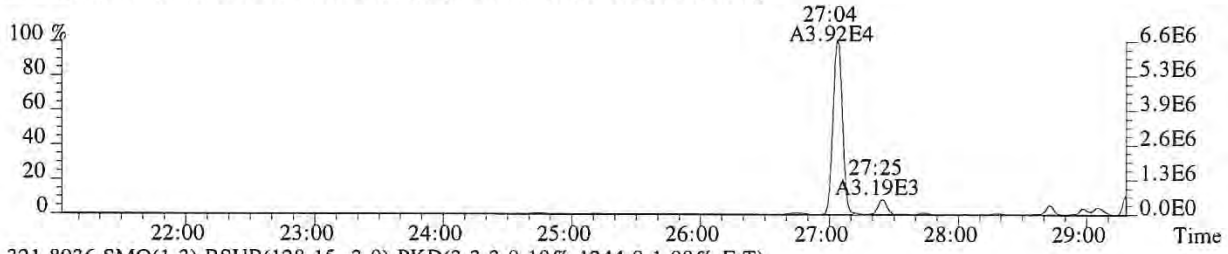
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



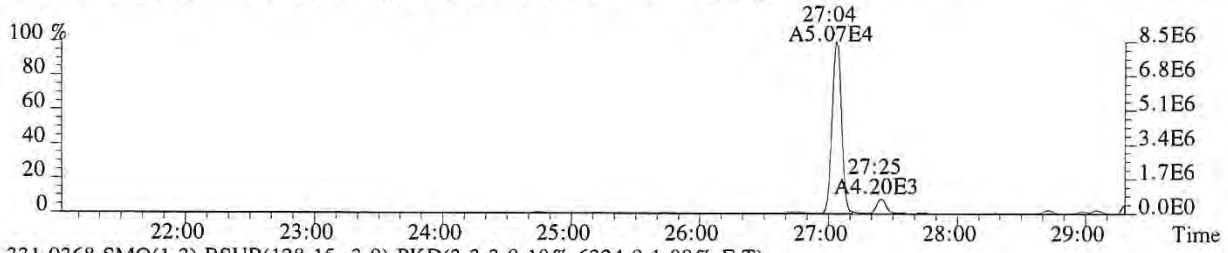
060156

File:P519695 #1-587 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009

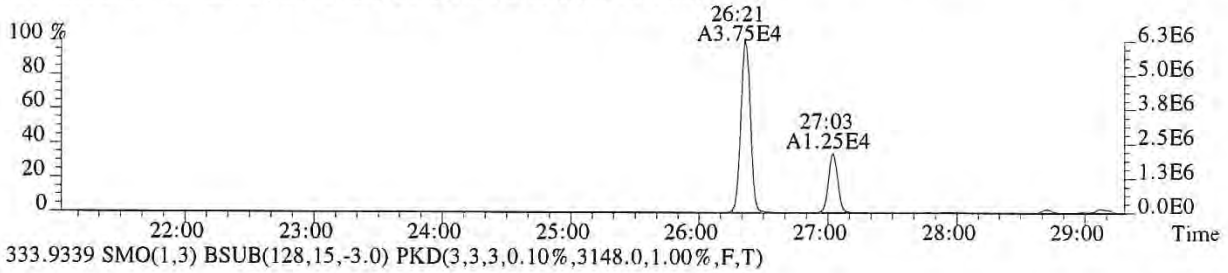
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2448.0,1.00%,F,T)



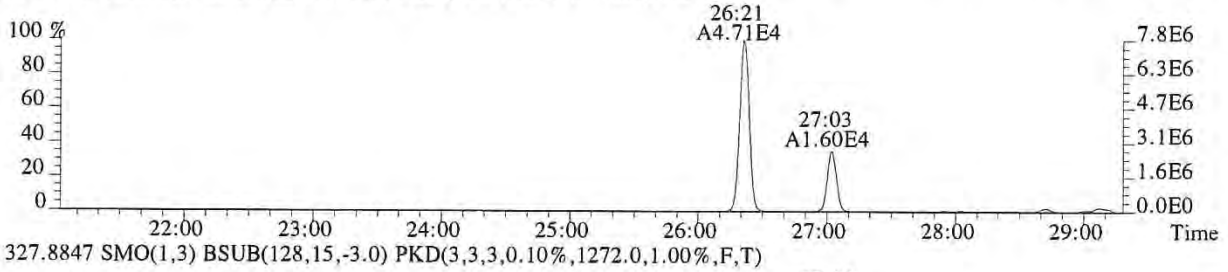
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1244.0,1.00%,F,T)



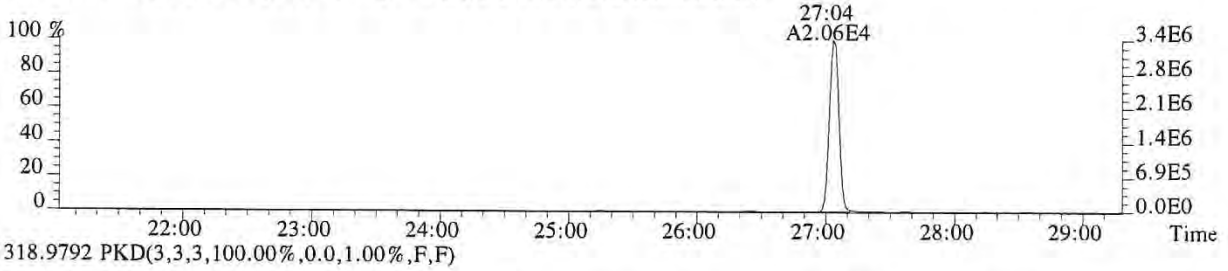
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6324.0,1.00%,F,T)



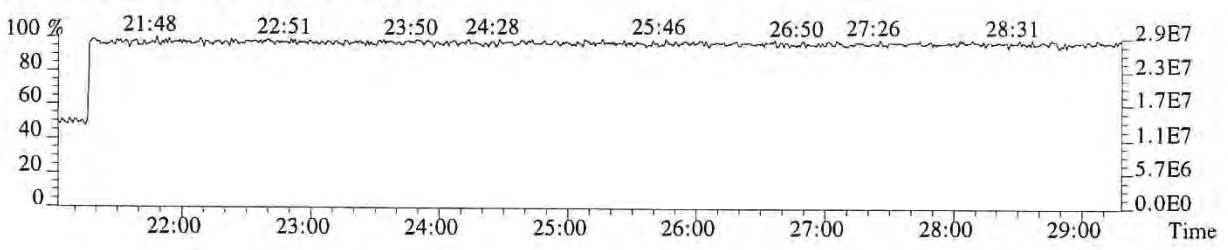
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3148.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1272.0,1.00%,F,T)

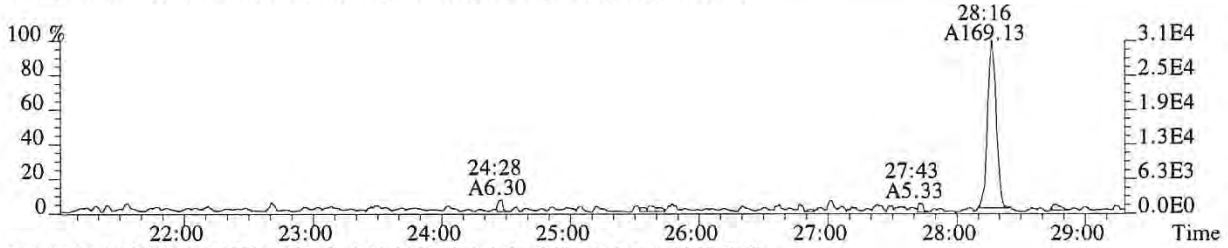


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

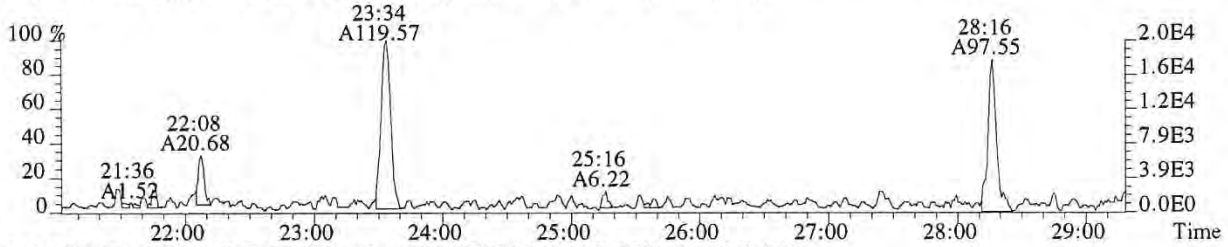


060157

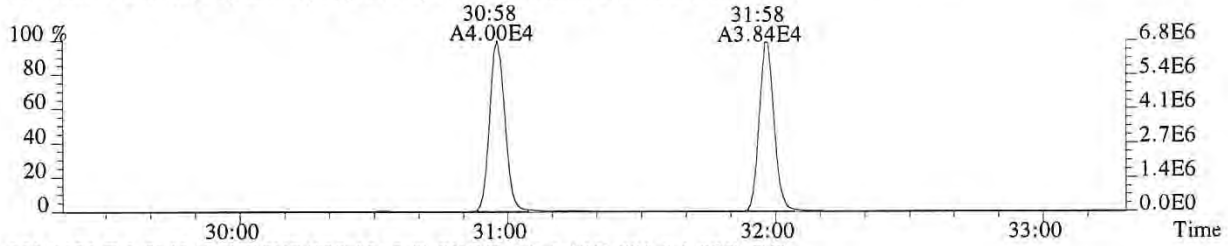
File:P519695 #1-587 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,868.0,1.00%,F,T)



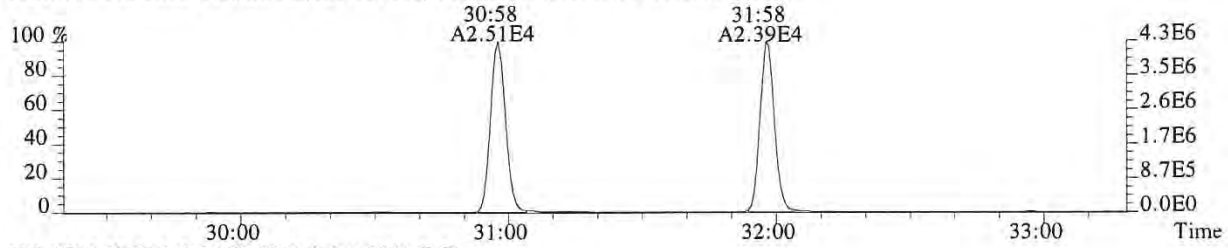
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1148.0,1.00%,F,T)



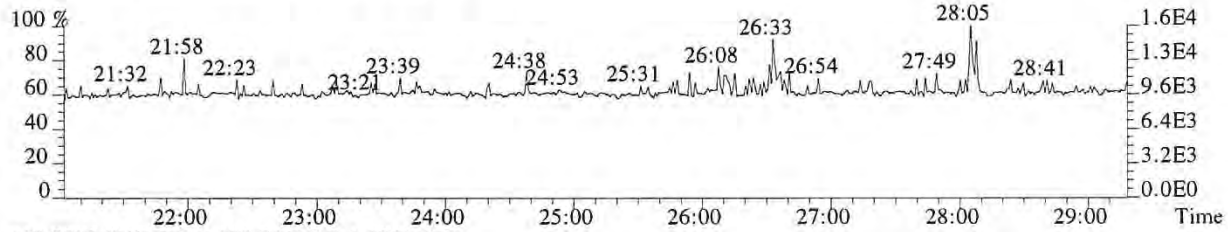
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1392.0,1.00%,F,T)



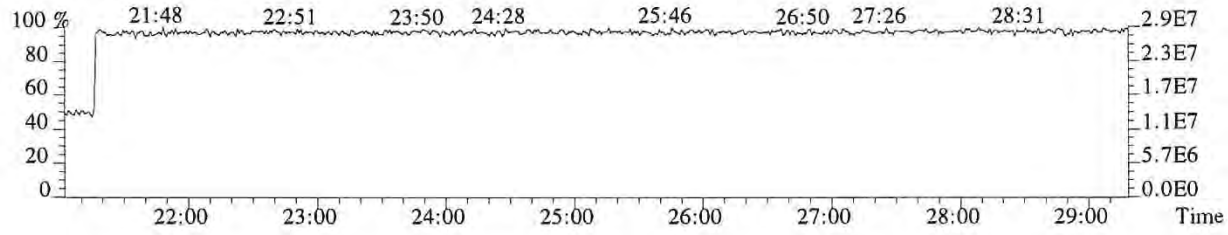
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,996.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



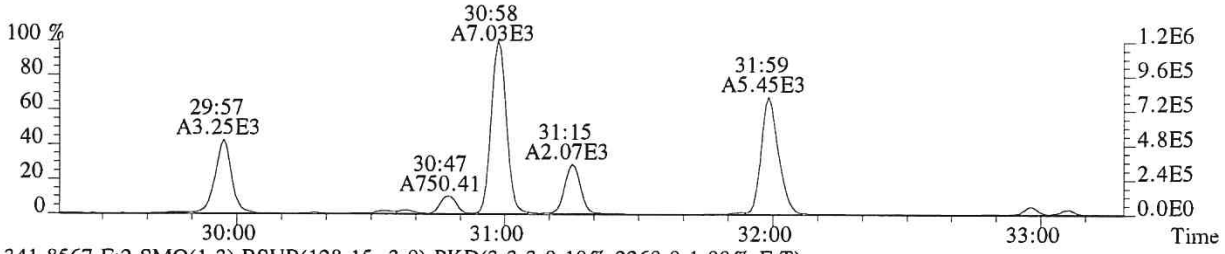
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



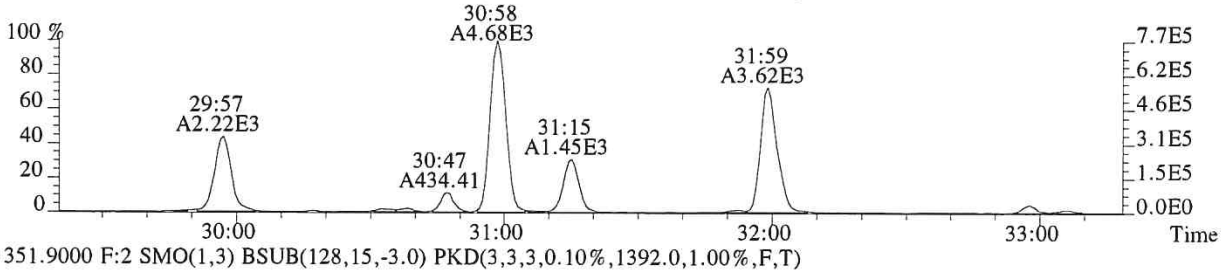
060158

File:P519695 #1-358 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009

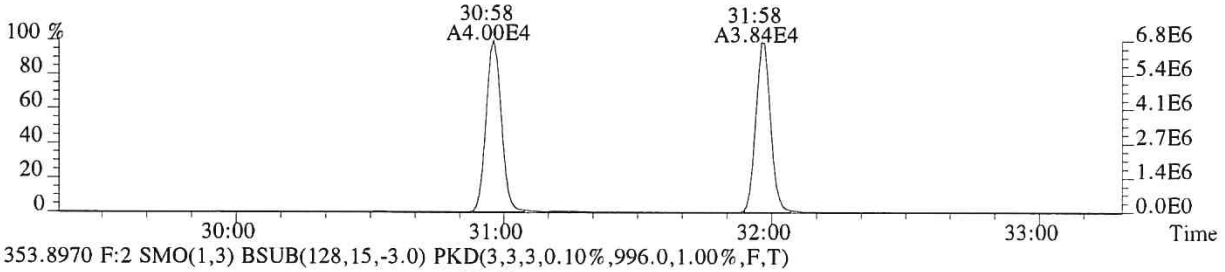
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2404.0,1.00%,F,T)



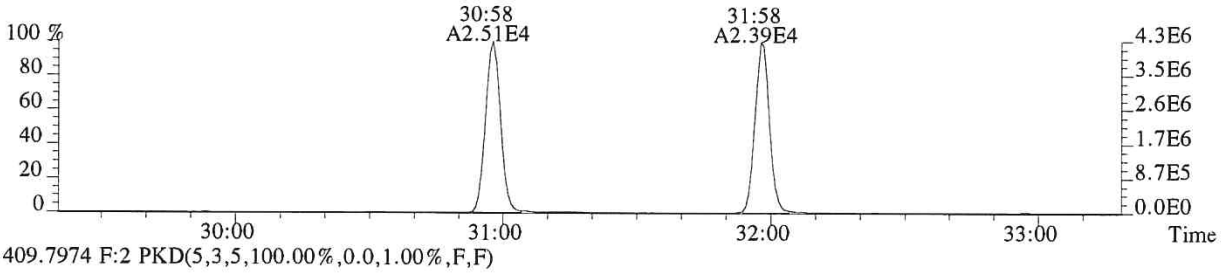
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2260.0,1.00%,F,T)



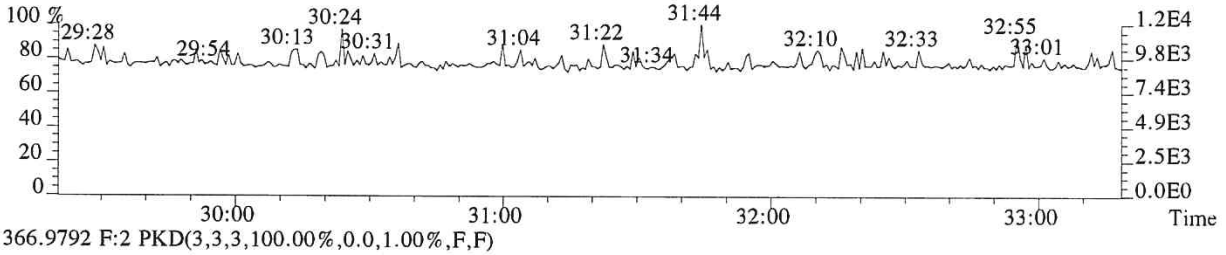
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1392.0,1.00%,F,T)



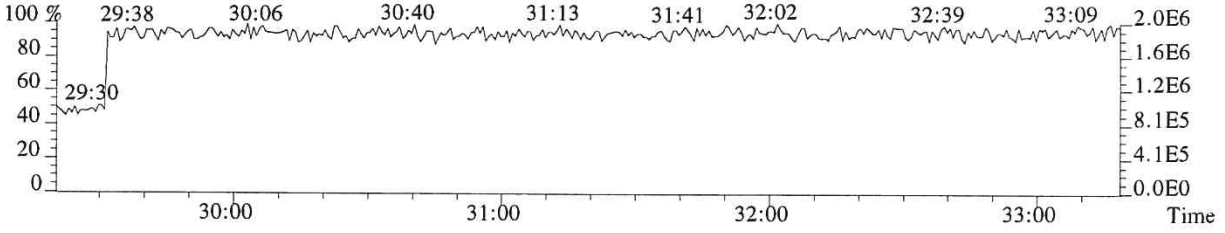
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,996.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

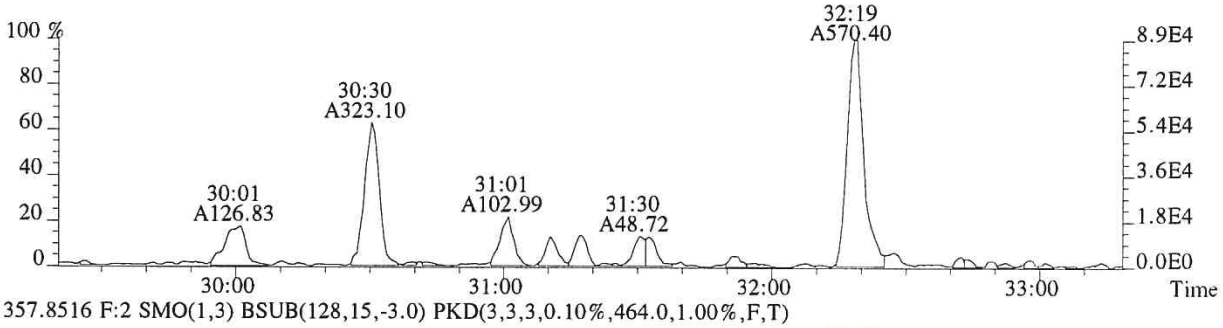


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

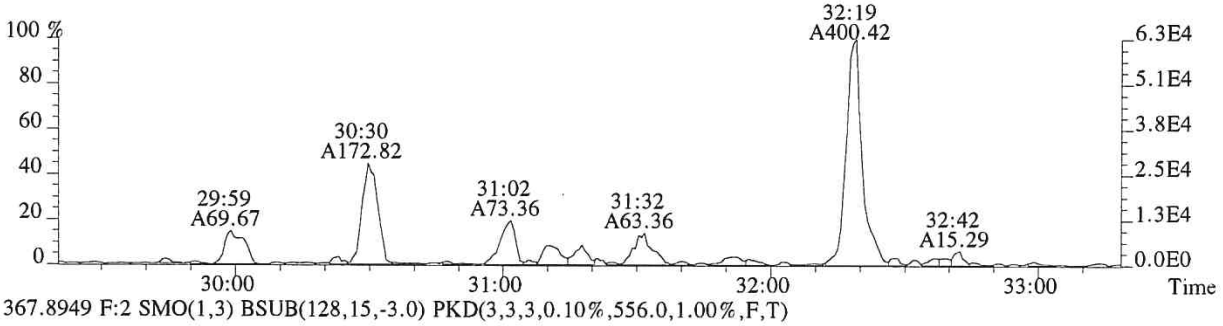


060159

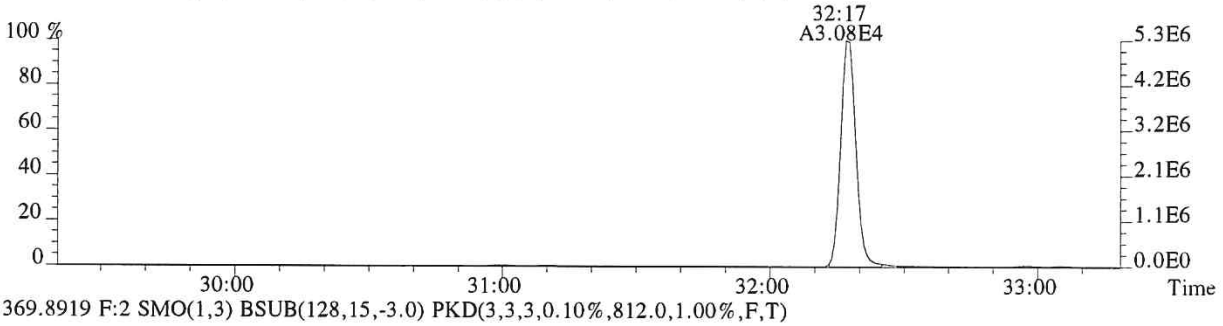
File:P519695 #1-358 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,976.0,1.00%,F,T)



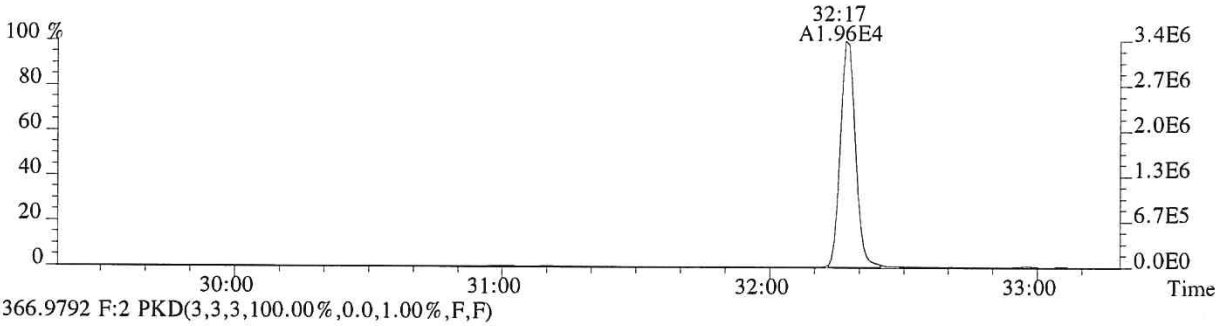
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,464.0,1.00%,F,T)



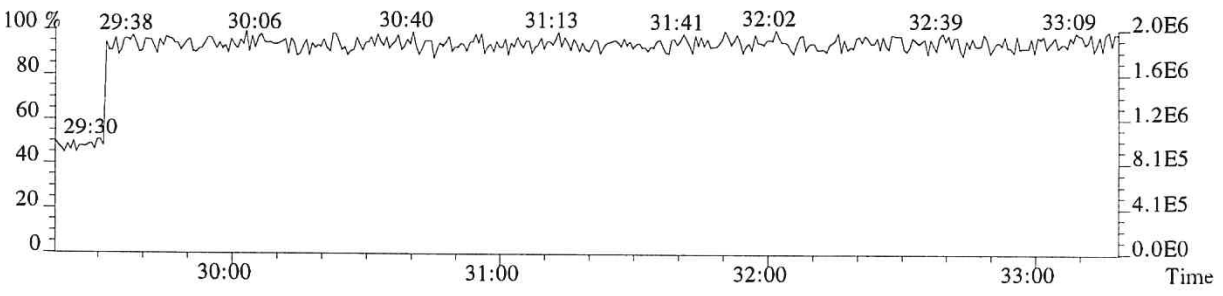
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,556.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,812.0,1.00%,F,T)

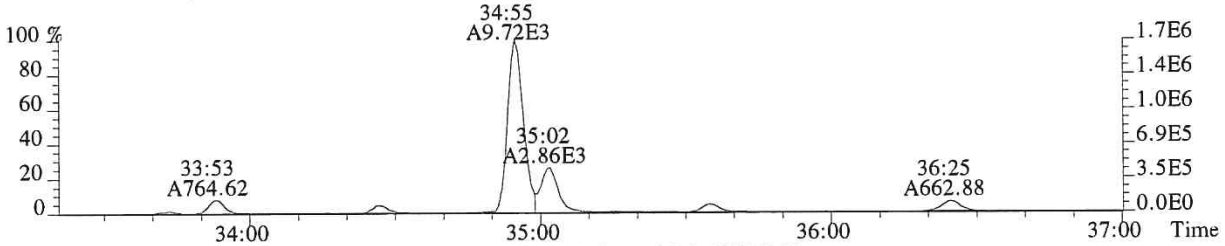


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

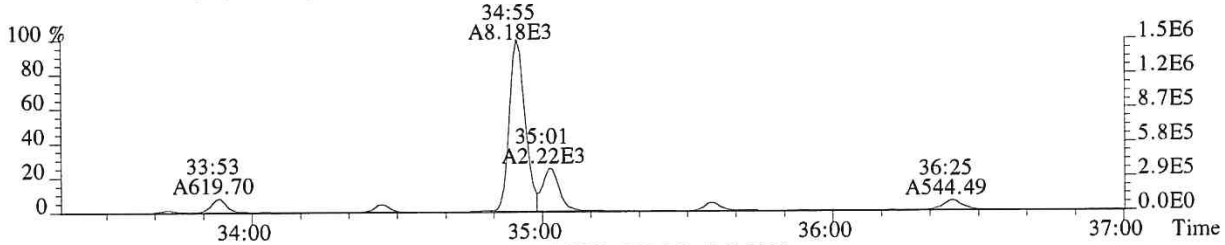


060160

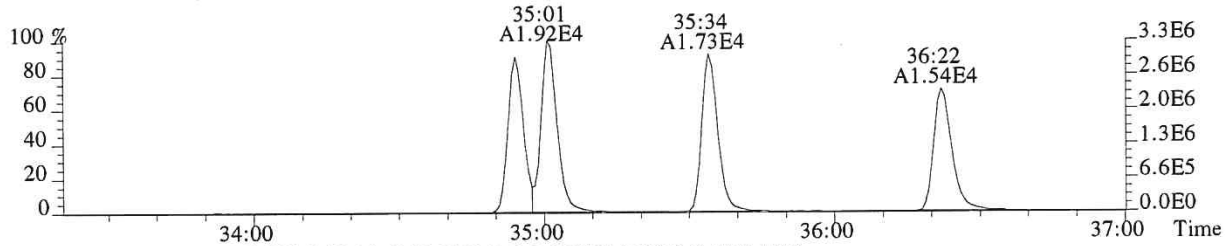
File:P519695 #1-330 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1196.0,0.40%,F,T)



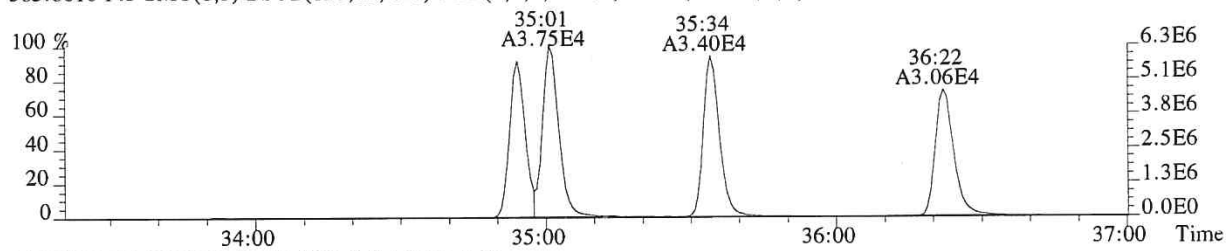
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1144.0,0.40%,F,T)



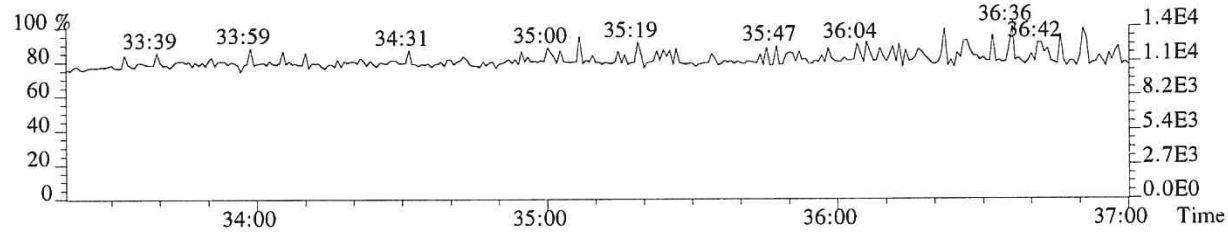
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,836.0,0.40%,F,T)



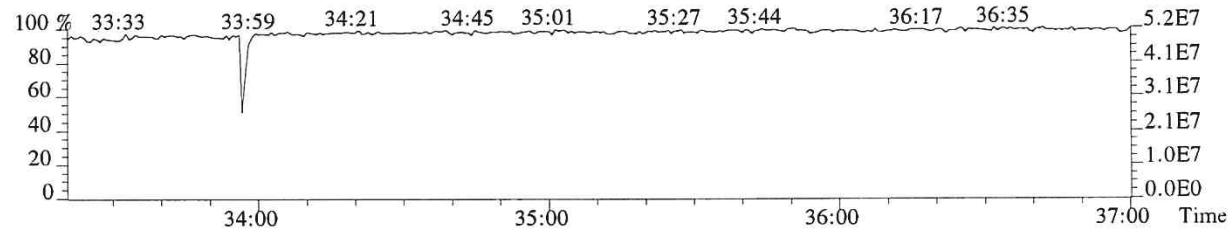
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1228.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

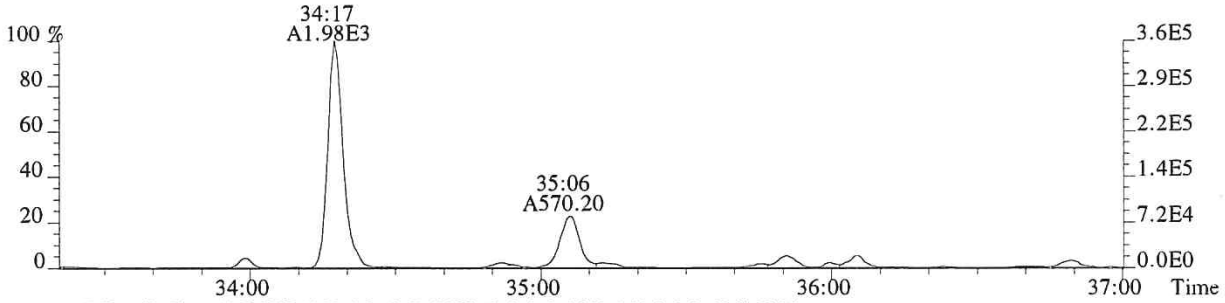


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

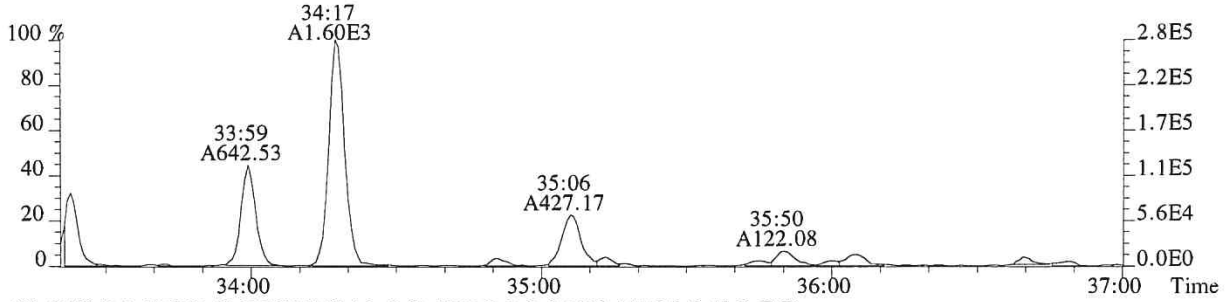


060161

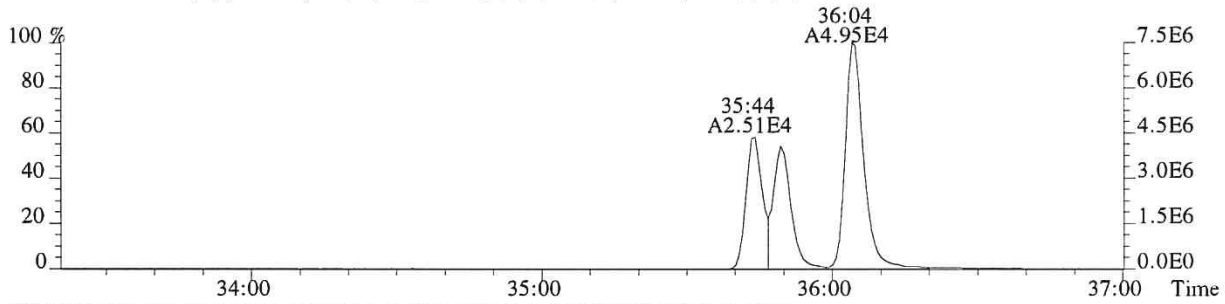
File:P519695 #1-330 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,752.0,0.40%,F,T)



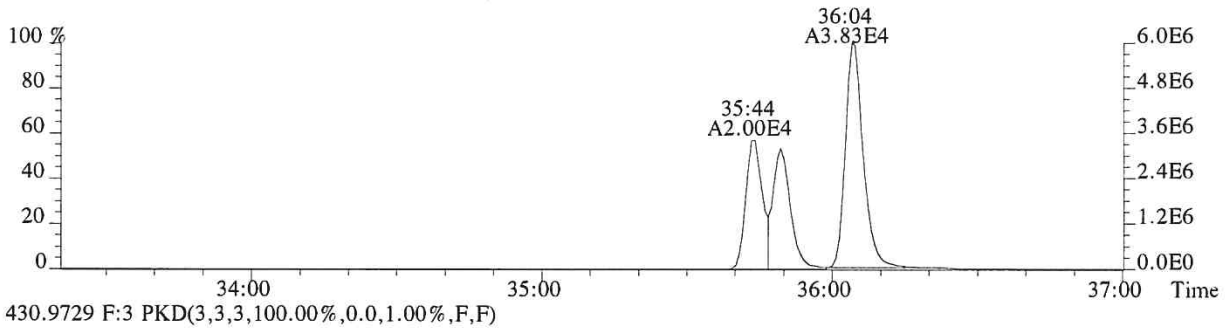
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1236.0,0.40%,F,T)



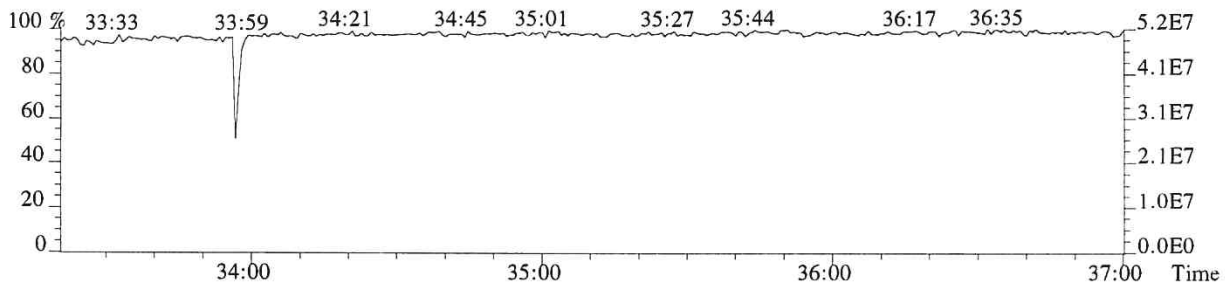
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1176.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,980.0,0.40%,F,T)

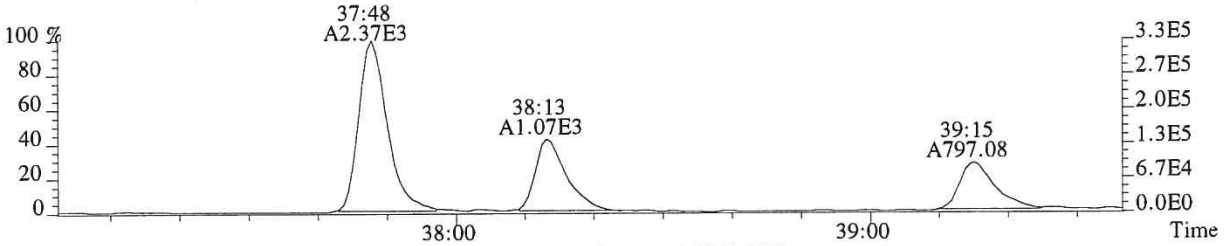


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

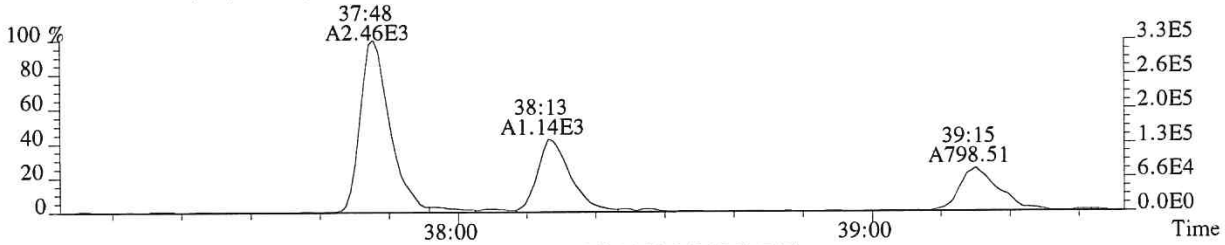


060162

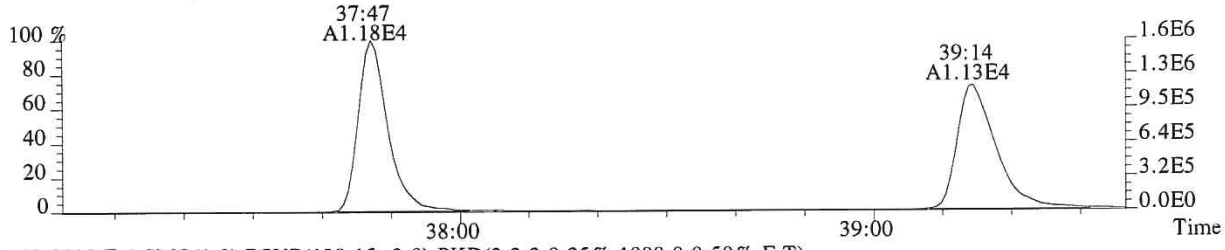
File:P519695 #1-232 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3748.0,0.50%,F,T)



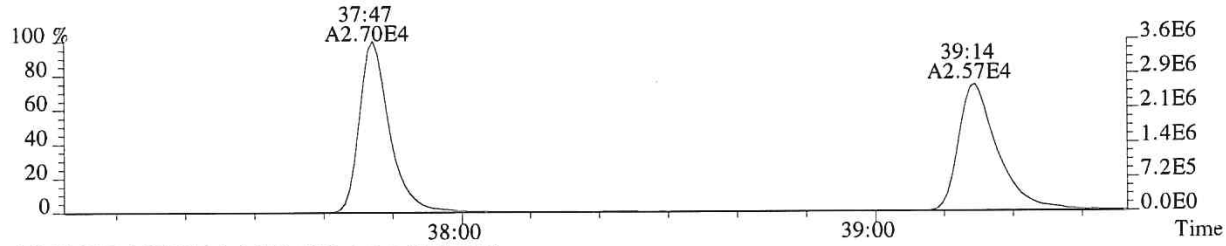
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,552.0,0.50%,F,T)



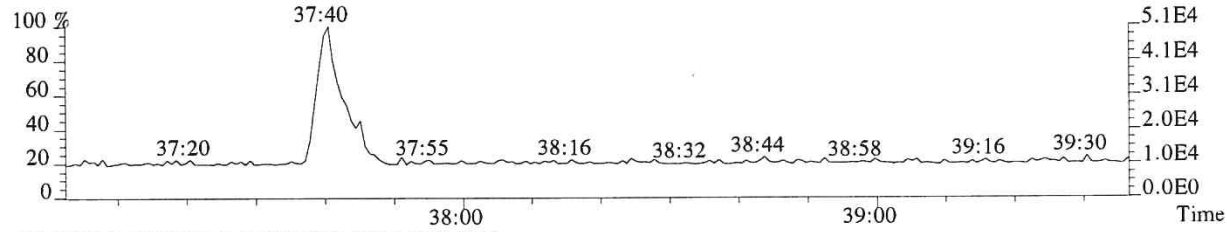
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1064.0,0.50%,F,T)



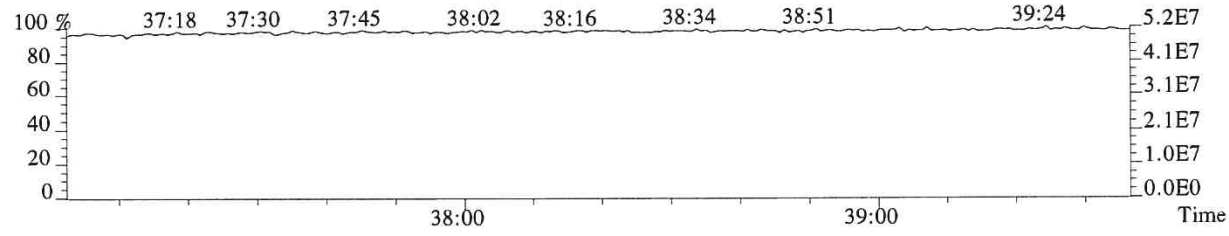
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1088.0,0.50%,F,T)



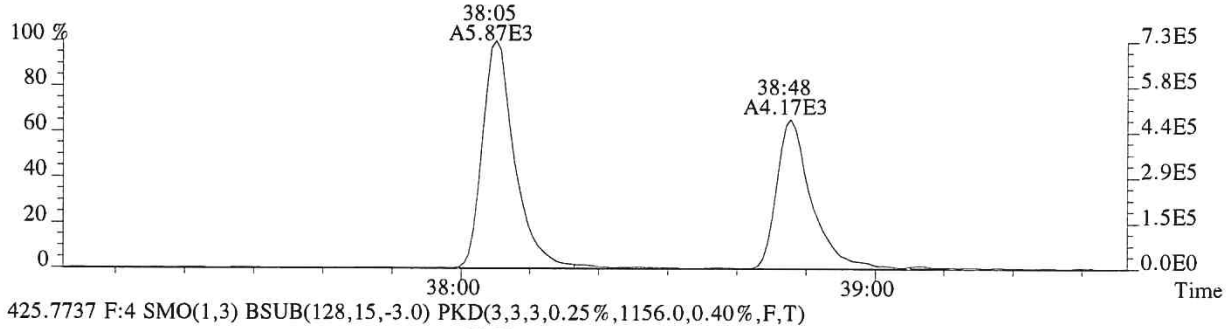
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



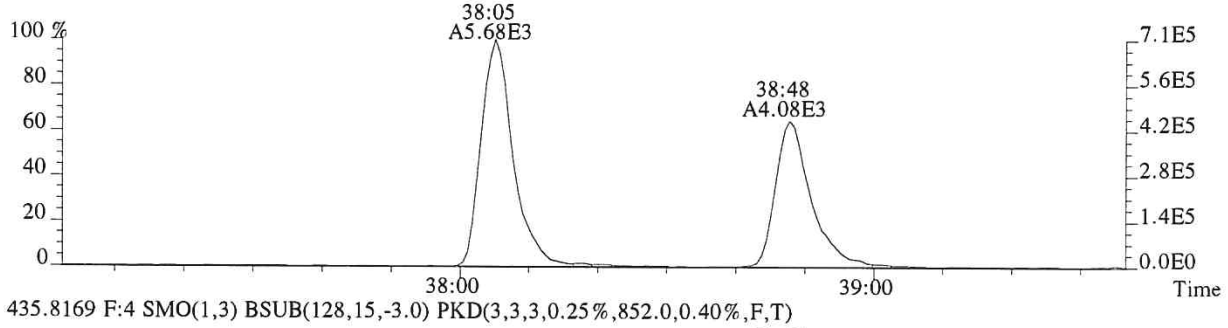
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



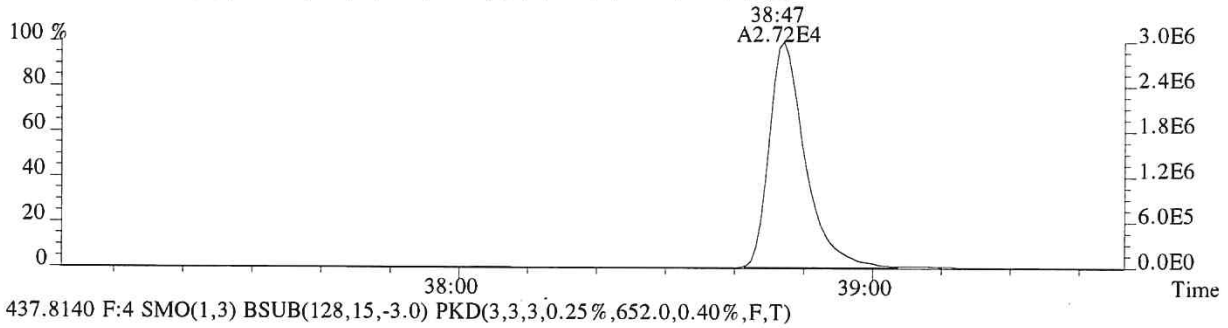
File:P519695 #1-232 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,924.0,0.40%,F,T)



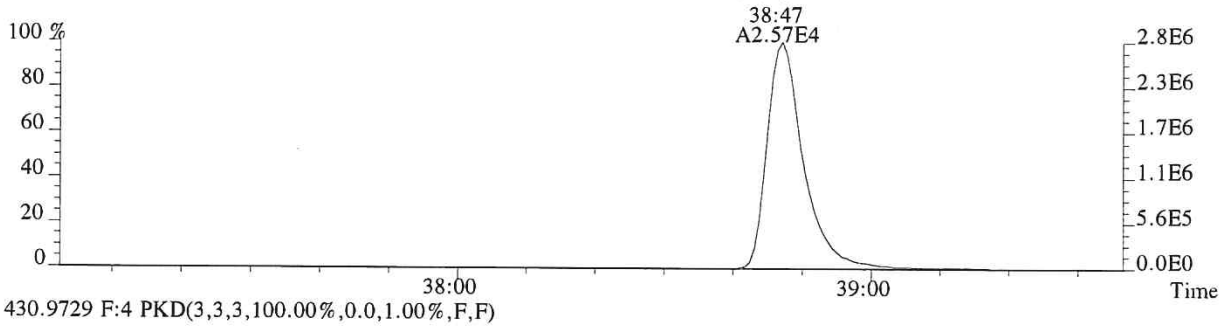
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1156.0,0.40%,F,T)



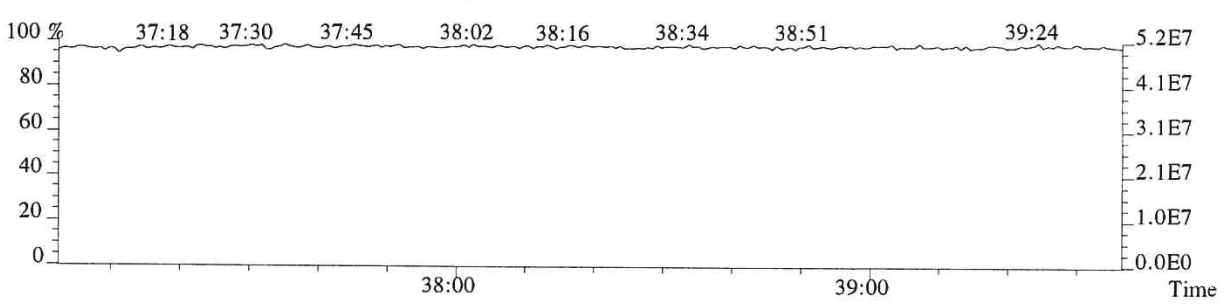
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,852.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,652.0,0.40%,F,T)



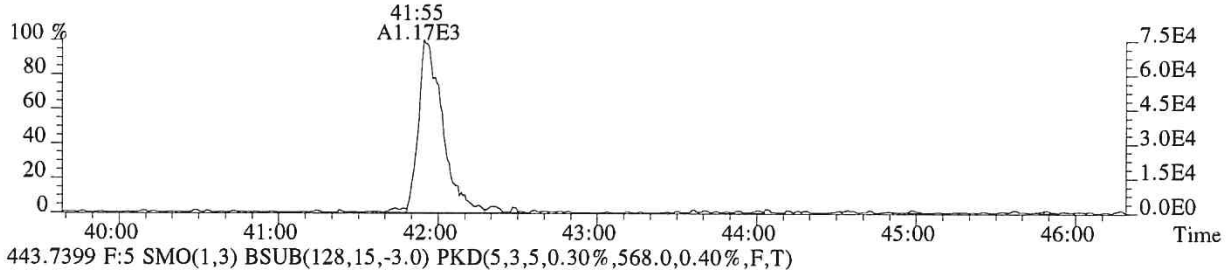
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



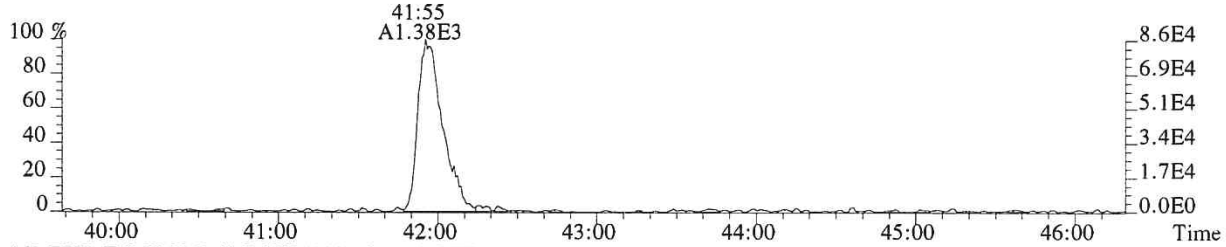
060164

File:P519695 #1-601 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009

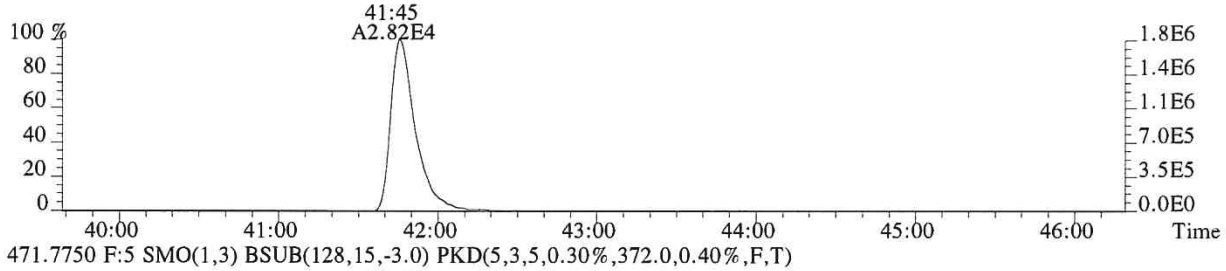
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,444.0,0.40%,F,T)



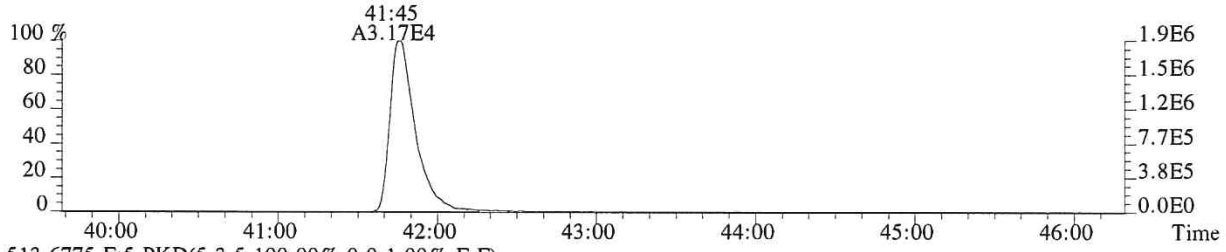
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,568.0,0.40%,F,T)



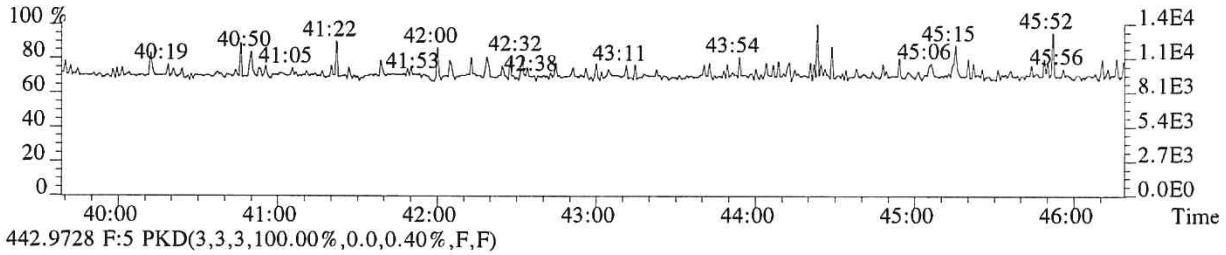
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



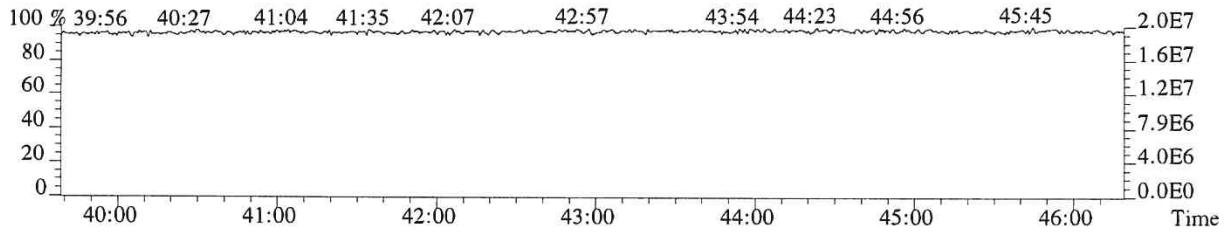
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,372.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

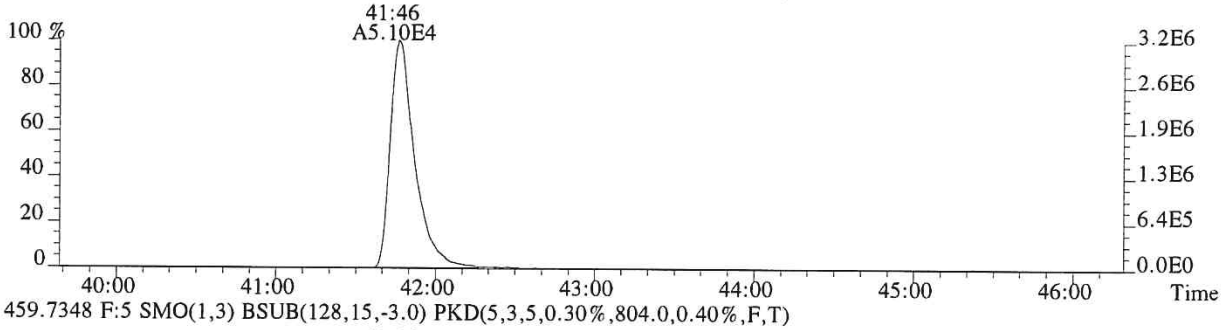


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

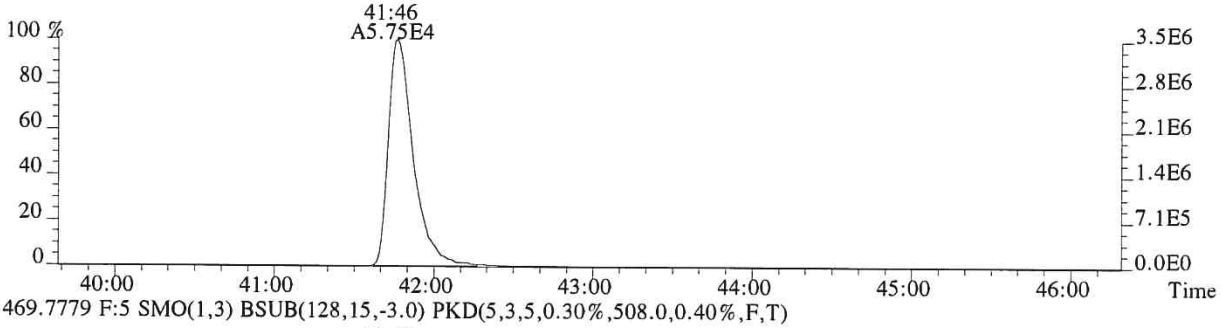


060165

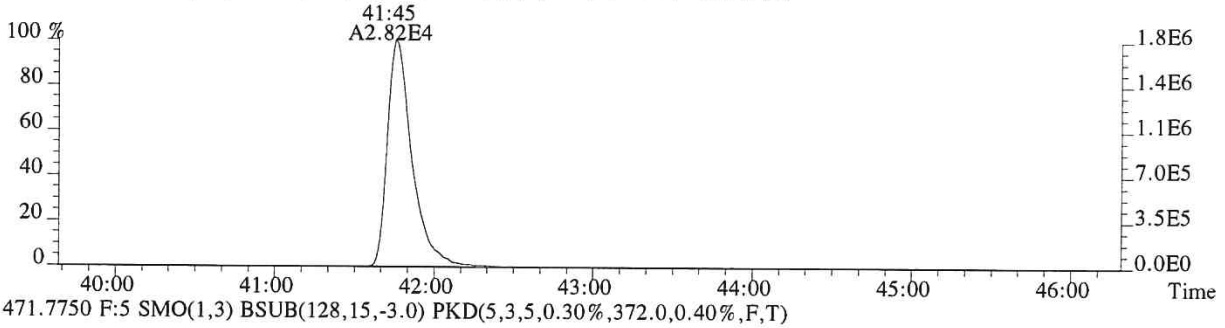
File:P519695 #1-601 Acq:29-DEC-2018 18:47:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,672.0,0.40%,F,T)



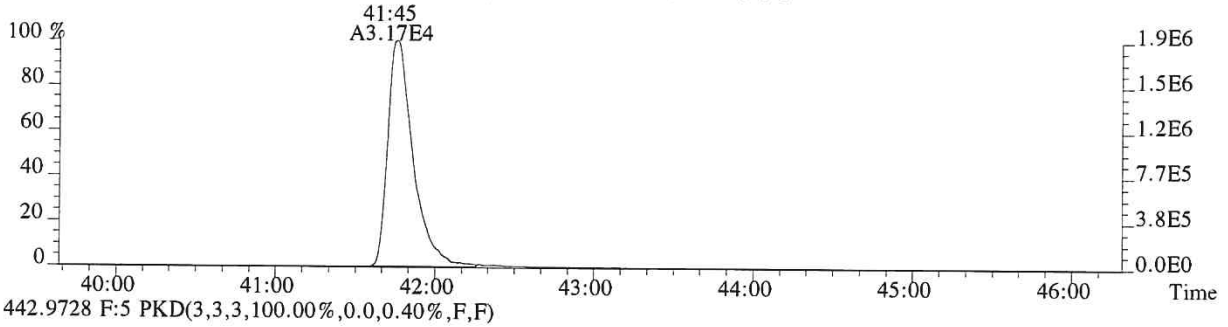
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,804.0,0.40%,F,T)



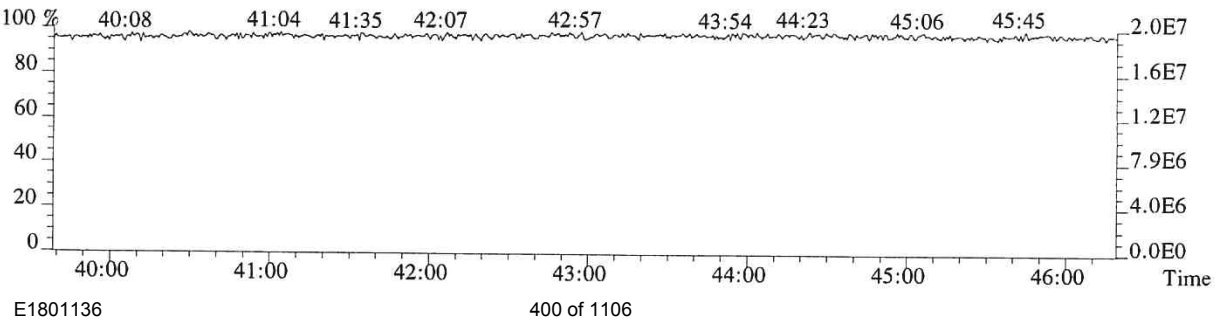
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,372.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060166

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0088

Run #18 Filename P519722 Samp: 1 Inj: 1 Acquired: 30-DEC-18 17:32:39
Processed: 31-DEC-18 09:58:25 Sample ID: E1801136-009DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:05	7.195e+03	9.640e+03	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	3.656e+02	2.135e+02	1.71	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	2.921e+02	1.855e+02	1.57	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	4.780e+02	4.098e+02	1.17	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	1.547e+02	1.248e+02	1.24	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	2.435e+01	1.546e+01	1.57	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:47	1.657e+02	1.064e+02	1.56	no	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.258
10	Unk	OCDF	NotFnd	*	*	*	no	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	1.927e+03	2.659e+03	0.72	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:18	2.765e+01	2.066e+01	1.34	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	yes	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	yes	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:47	1.924e+02	2.216e+02	0.87	no	no	1.025
17	Unk	OCDD	41:47	2.291e+03	2.746e+03	0.83	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	2.323e+04	2.939e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	3.300e+04	2.097e+04	1.57	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	3.107e+04	1.955e+04	1.59	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.269e+04	2.497e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.566e+04	3.076e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.401e+04	2.705e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.258e+04	2.425e+04	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:46	1.050e+04	2.425e+04	0.43	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	9.273e+03	2.029e+04	0.46	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	1.114e+04	1.440e+04	0.77	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.342e+04	1.496e+04	1.57	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:44	1.921e+04	1.495e+04	1.29	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:50	2.043e+04	1.557e+04	1.31	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:46	2.147e+04	2.070e+04	1.04	yes	no	0.858
32	IS	13C-OCDD	41:45	2.499e+04	2.815e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	2.026e+04	2.580e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	2.416e+04	1.927e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	1.031e+03				no	1.014

$$\text{OCDD} = \frac{(2.291e+03 + 2.746e+03) \times 4000\ \text{pg} \times 10}{(2.499e+04 + 2.815e+04) \times 10.961\ \text{g} \times 76 / 100 \times 1.118} = 696.359\ \text{ng/kg}$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0088

Run #18 Filename P519722 Samp: 1 Inj: 1 Acquired: 30-DEC-18 17:32:39
Processed: 31-DEC-18 09:58:25 LAB. ID: E1801136-009DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	9.72e+05	7.04e+02	1.4e+03	1.33e+06	1.73e+03	7.7e+02
2	1,2,3,7,8-PeCDF	6.15e+04	5.12e+02	1.2e+02	4.30e+04	2.29e+03	1.9e+01
3	2,3,4,7,8-PeCDF	4.05e+04	5.12e+02	7.9e+01	2.61e+04	2.29e+03	1.1e+01
4	1,2,3,4,7,8-HxCDF	8.29e+04	1.09e+03	7.6e+01	6.76e+04	7.44e+02	9.1e+01
5	1,2,3,6,7,8-HxCDF	2.65e+04	1.09e+03	2.4e+01	2.19e+04	7.44e+02	2.9e+01
6	2,3,4,6,7,8-HxCDF	*	1.09e+03	*	*	7.44e+02	*
7	1,2,3,7,8,9-HxCDF	6.90e+03	1.09e+03	6.3e+00	3.44e+03	7.44e+02	4.6e+00
8	1,2,3,4,6,7,8-HpCDF	2.32e+04	4.36e+02	5.3e+01	1.57e+04	6.32e+02	2.5e+01
9	1,2,3,4,7,8,9-HpCDF	*	4.36e+02	*	*	6.32e+02	*
10	OCDF	*	4.64e+02	*	*	1.17e+03	*
11	2,3,7,8-TCDD	2.99e+05	2.56e+03	1.2e+02	4.19e+05	1.90e+03	2.2e+02
12	1,2,3,7,8-PeCDD	5.43e+03	3.88e+02	1.4e+01	4.97e+03	3.76e+02	1.3e+01
13	1,2,3,4,7,8-HxCDD	*	7.28e+02	*	*	9.36e+02	*
14	1,2,3,6,7,8-HxCDD	*	7.28e+02	*	*	9.36e+02	*
15	1,2,3,7,8,9-HxCDD	*	7.28e+02	*	*	9.36e+02	*
16	1,2,3,4,6,7,8-HpCDD	2.17e+04	5.36e+02	4.1e+01	2.35e+04	9.32e+02	2.5e+01
17	OCDD	1.29e+05	4.68e+02	2.8e+02	1.59e+05	3.48e+02	4.6e+02
18	13C-2,3,7,8-TCDF	3.37e+06	5.80e+03	5.8e+02	4.31e+06	5.16e+03	8.3e+02
19	13C-1,2,3,7,8-PeCDF	5.32e+06	6.84e+02	7.8e+03	3.39e+06	7.68e+02	4.4e+03
20	13C-2,3,4,7,8-PeCDF	5.10e+06	6.84e+02	7.5e+03	3.27e+06	7.68e+02	4.3e+03
21	13C-1,2,3,4,7,8-HxCDF	2.26e+06	1.58e+03	1.4e+03	4.32e+06	1.67e+03	2.6e+03
22	13C-1,2,3,6,7,8-HxCDF	2.49e+06	1.58e+03	1.6e+03	4.80e+06	1.67e+03	2.9e+03
23	13C-2,3,4,6,7,8-HxCDF	2.23e+06	1.58e+03	1.4e+03	4.40e+06	1.67e+03	2.6e+03
24	13C-1,2,3,7,8,9-HxCDF	1.79e+06	1.58e+03	1.1e+03	3.48e+06	1.67e+03	2.1e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.28e+06	4.93e+03	2.6e+02	2.97e+06	2.92e+03	1.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	8.80e+05	4.93e+03	1.8e+02	1.92e+06	2.92e+03	6.6e+02
27	13C-2,3,7,8-TCDD	1.75e+06	6.23e+03	2.8e+02	2.21e+06	2.67e+03	8.3e+02
28	13C-1,2,3,7,8-PeCDD	3.89e+06	1.38e+03	2.8e+03	2.51e+06	1.41e+03	1.8e+03
29	13C-1,2,3,4,7,8-HxCDD	3.09e+06	1.13e+03	2.7e+03	2.43e+06	8.24e+02	2.9e+03
30	13C-1,2,3,6,7,8-HxCDD	2.93e+06	1.13e+03	2.6e+03	2.25e+06	8.24e+02	2.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.14e+06	8.88e+02	2.4e+03	2.06e+06	3.92e+02	5.2e+03
32	13C-OCDD	1.39e+06	8.36e+02	1.7e+03	1.57e+06	5.84e+02	2.7e+03
33	13C-1,2,3,4-TCDD	3.18e+06	6.23e+03	5.1e+02	4.04e+06	2.67e+03	1.5e+03
34	13C-1,2,3,7,8,9-HxCDD	3.33e+06	1.13e+03	2.9e+03	2.72e+06	8.24e+02	3.3e+03
35	37Cl-2,3,7,8-TCDD	1.59e+05	1.66e+03	9.6e+01			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.564e{+}03 + 1.896e{+}03) \times 2000}{(1.748e{+}06 + 2.213e{+}06) \times (\quad) \times 1.085} =$$

ALS ENVIRONMENTAL
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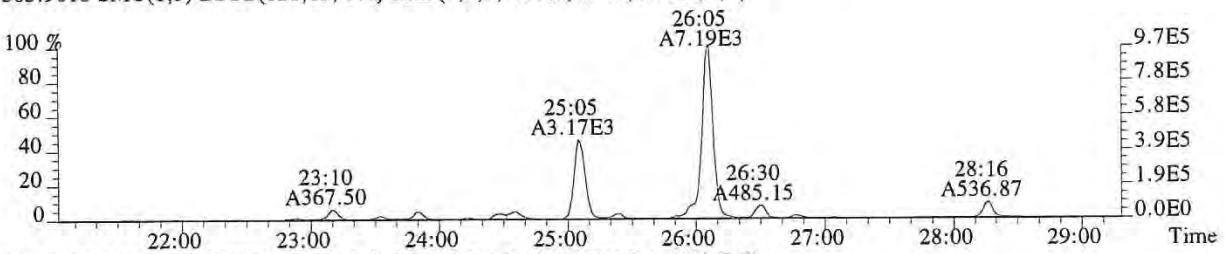
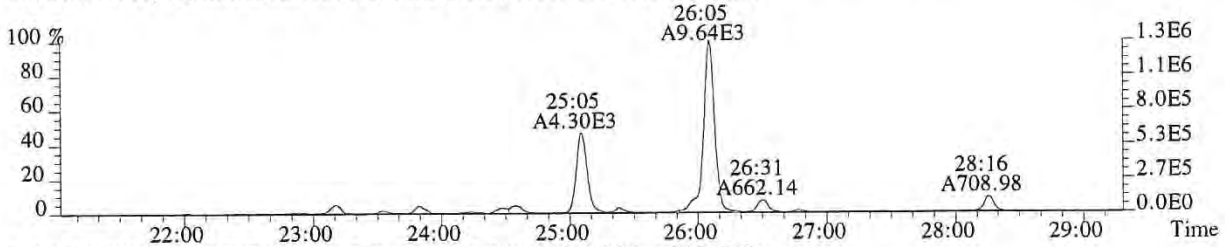
Office:(281)530-5656. Fax:(281)530-5887

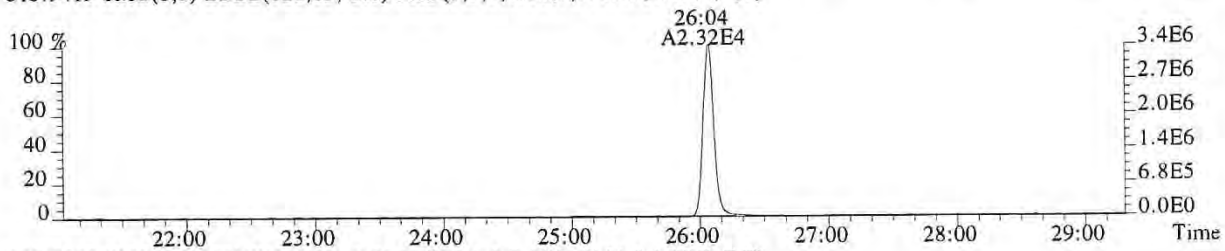
File:P519722 #1-587 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)



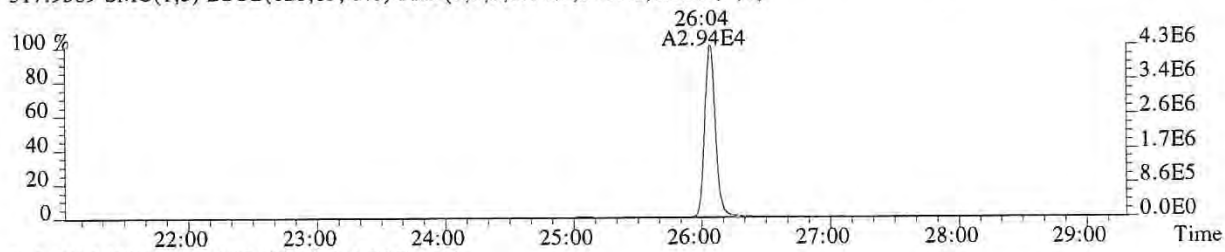
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1732.0,1.00%,F,T)



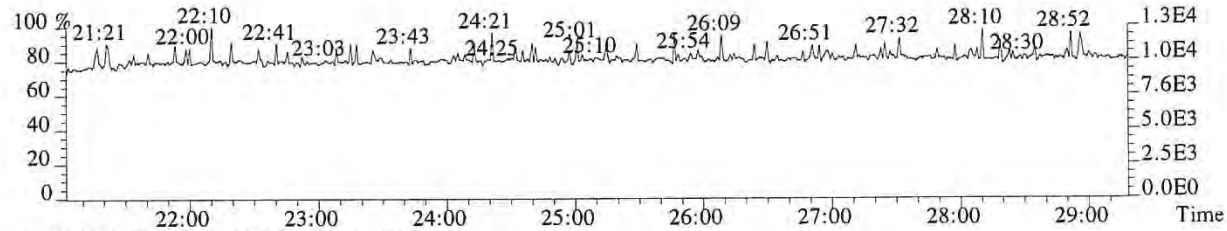
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5796.0,1.00%,F,T)



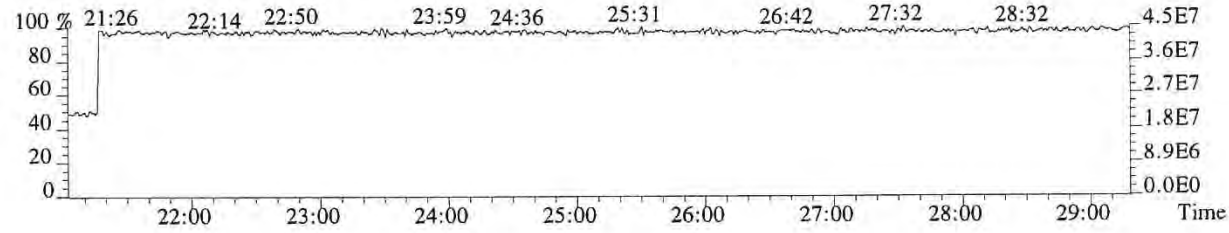
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5164.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

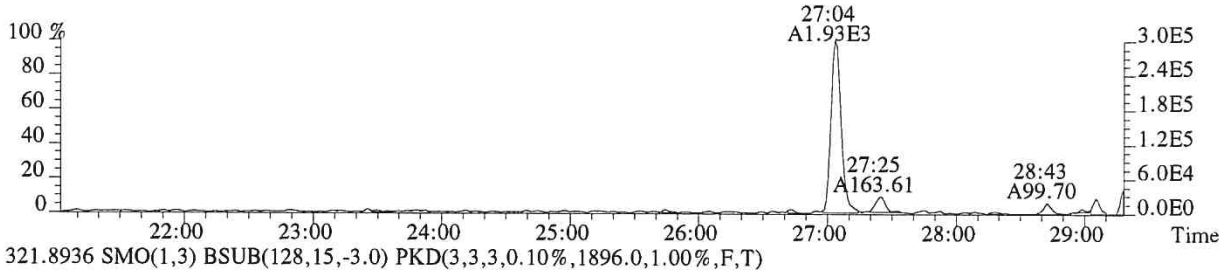


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

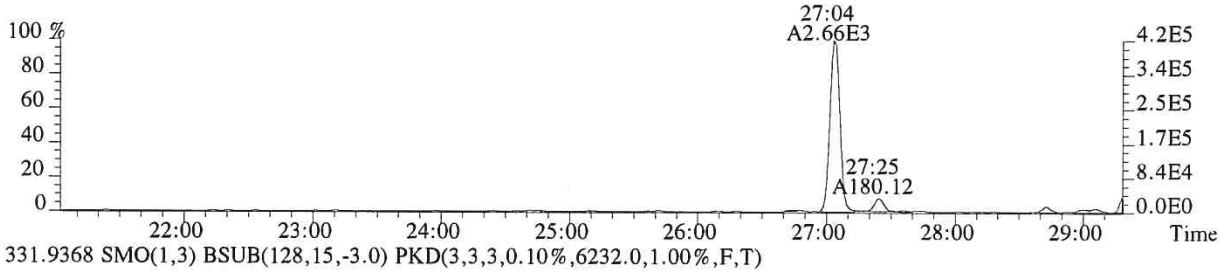


060169

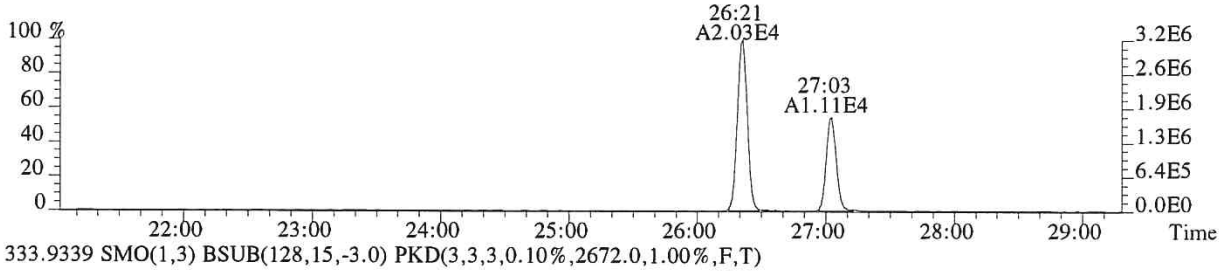
File:P519722 #1-587 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2564.0,1.00%,F,T)



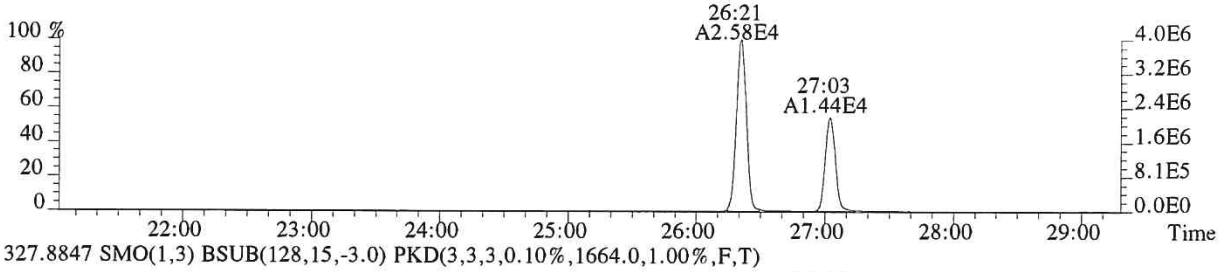
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1896.0,1.00%,F,T)



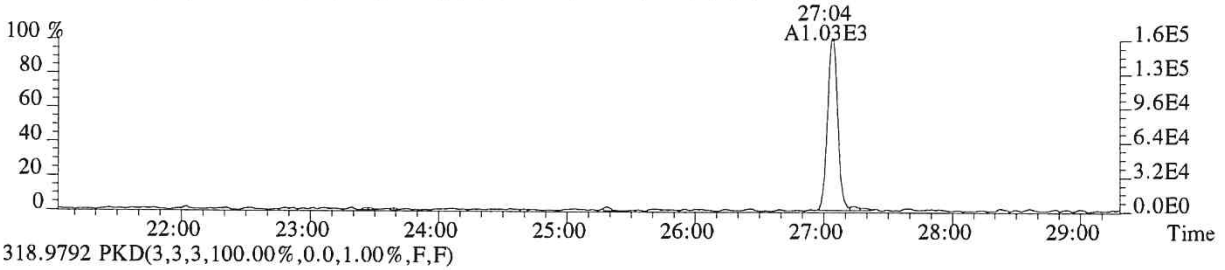
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6232.0,1.00%,F,T)



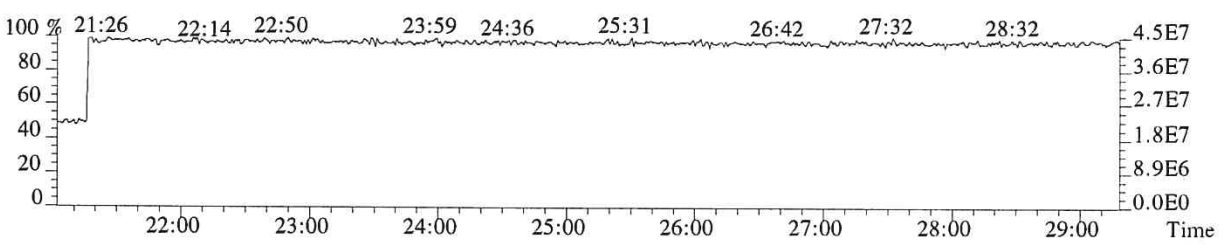
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2672.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1664.0,1.00%,F,T)

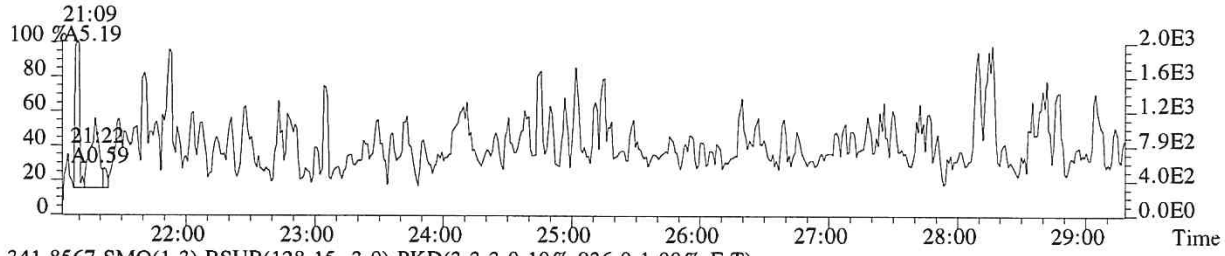


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

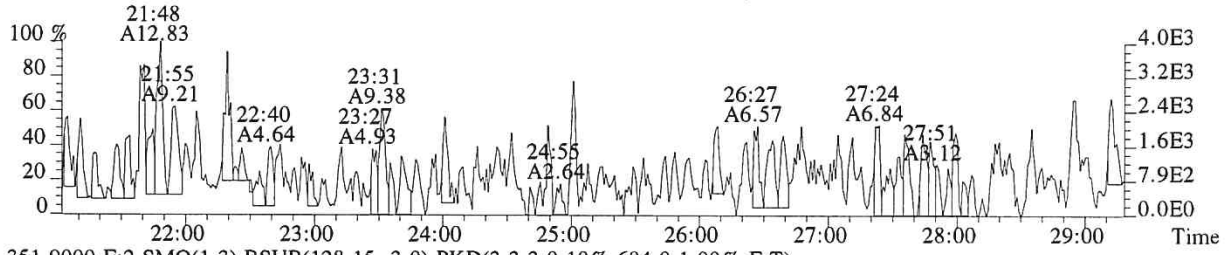


060170

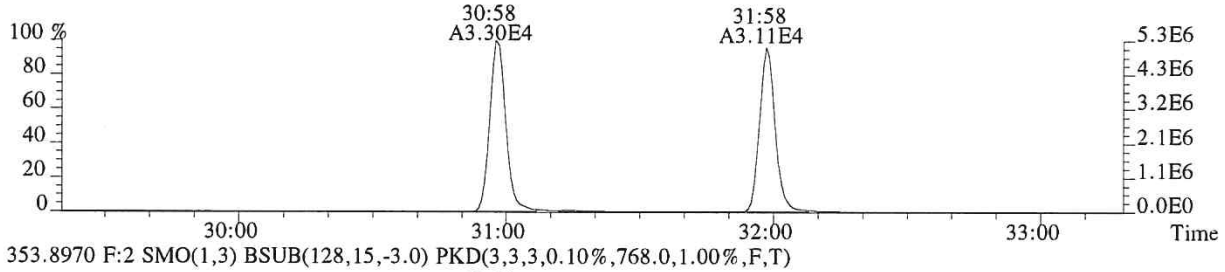
File:P519722 #1-587 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,980.0,1.00%,F,T)



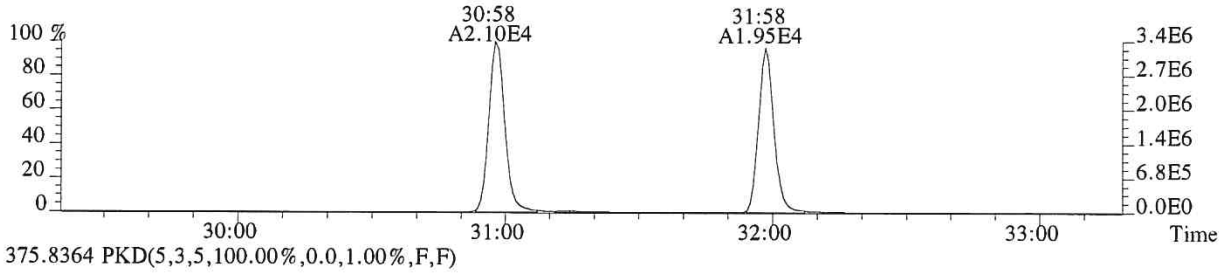
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,936.0,1.00%,F,T)



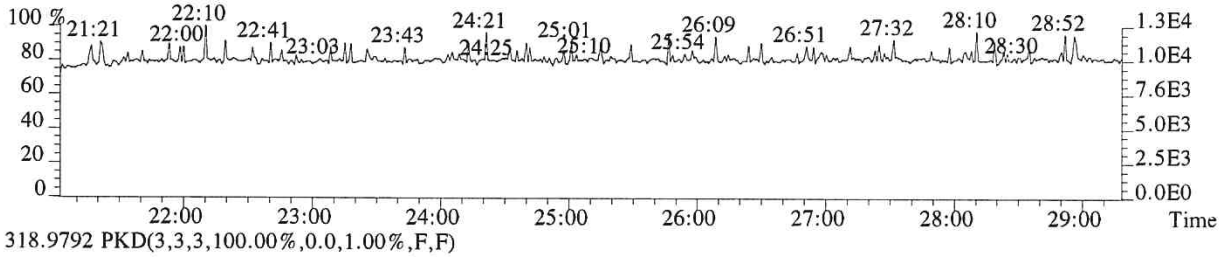
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



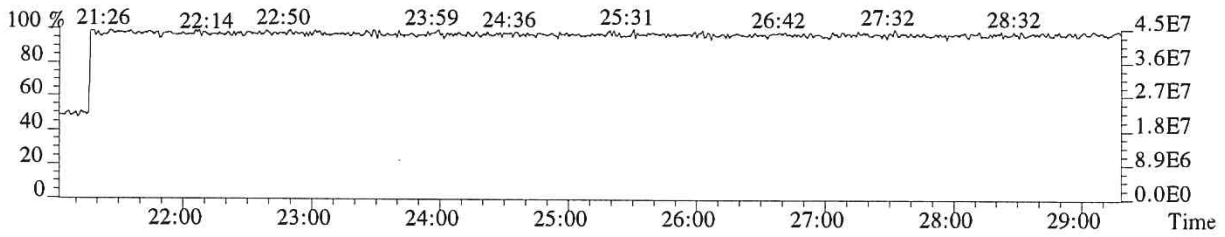
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,768.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

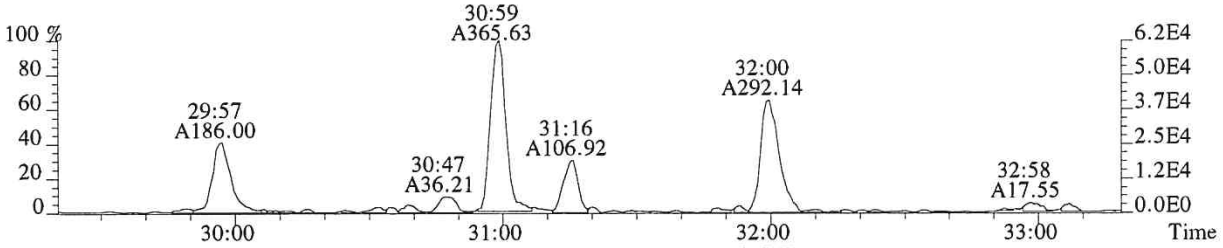


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

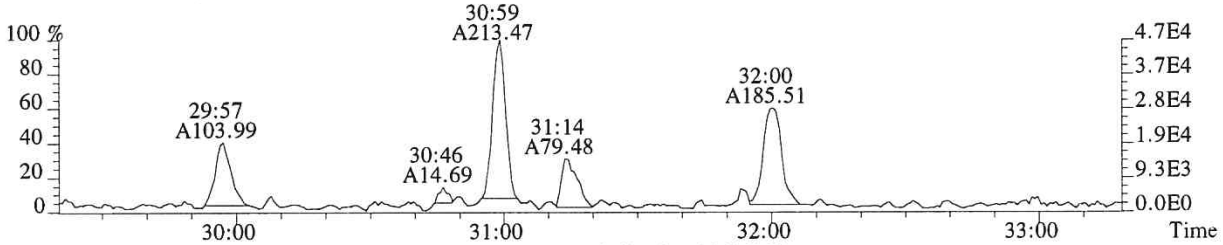


060171

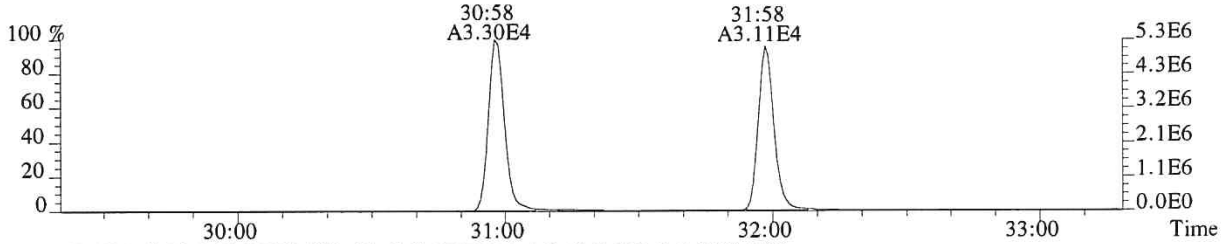
File:P519722 #1-358 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,512.0,1.00%,F,T)



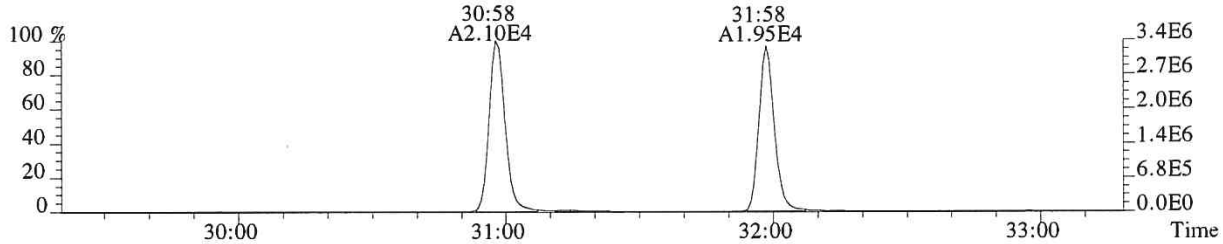
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2288.0,1.00%,F,T)



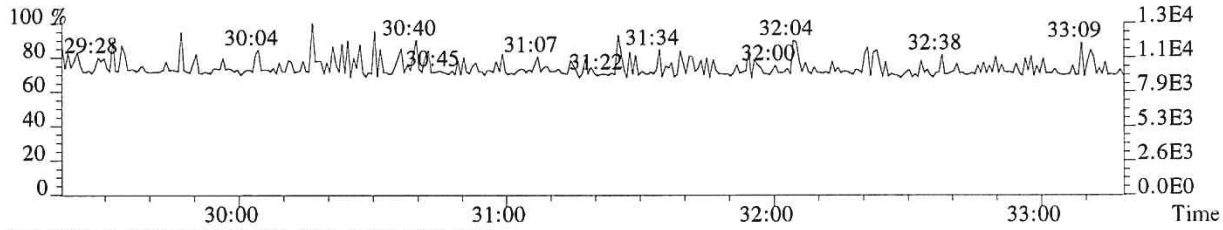
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



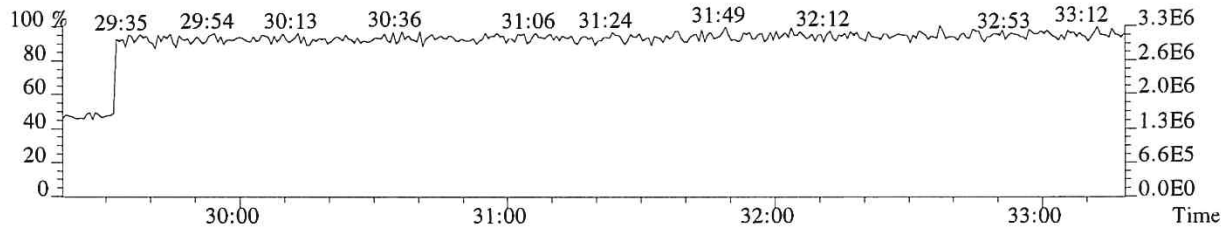
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,768.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

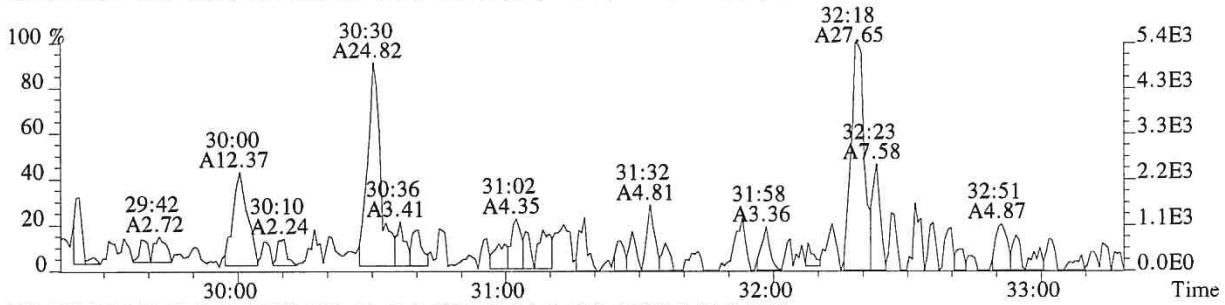


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

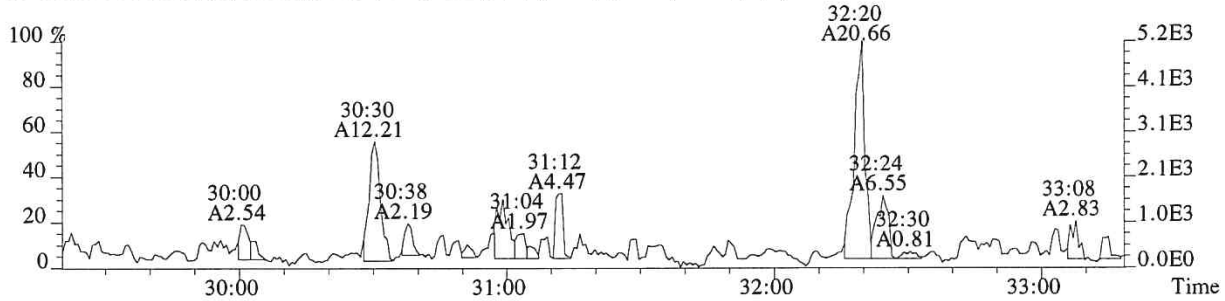


060172

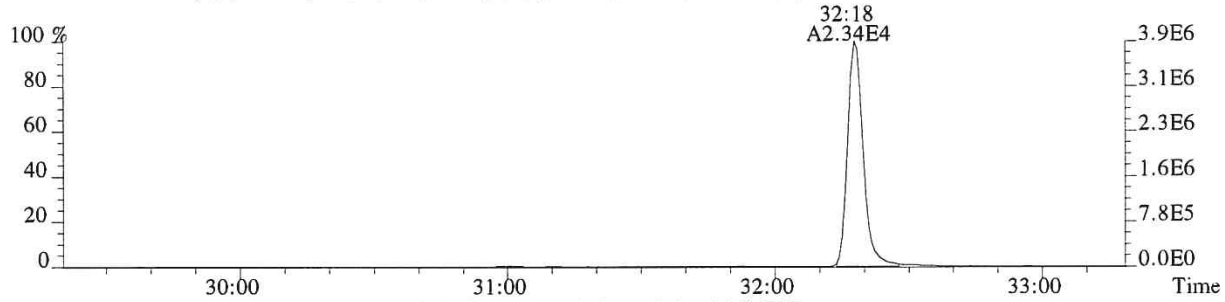
File:P519722 #1-358 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,388.0,1.00%,F,T)



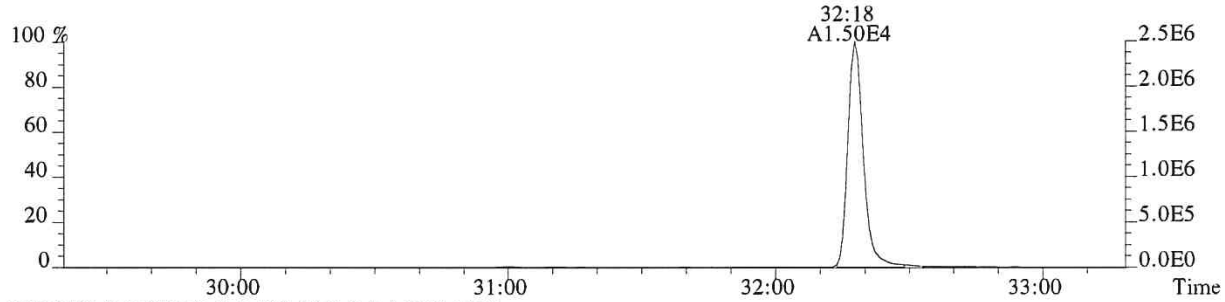
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,376.0,1.00%,F,T)



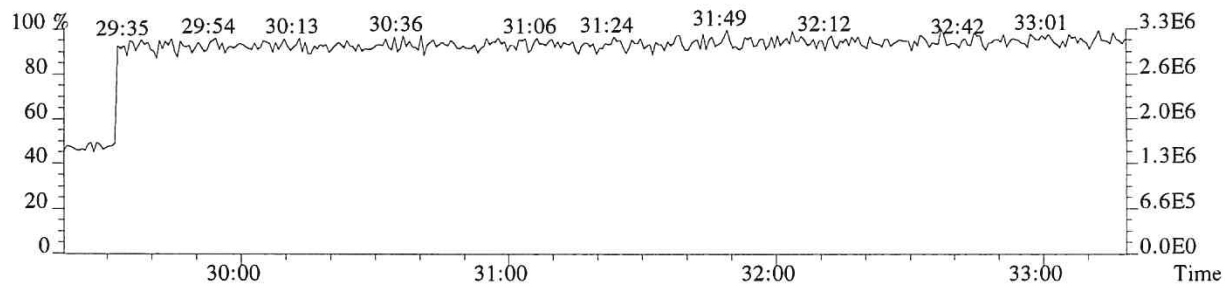
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1376.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1412.0,1.00%,F,T)

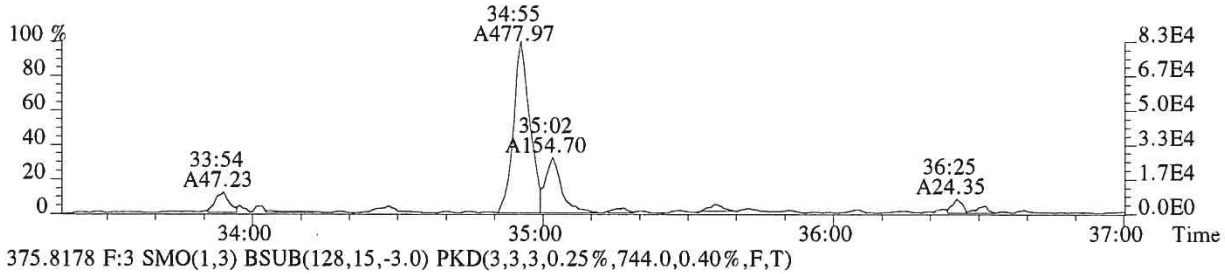


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

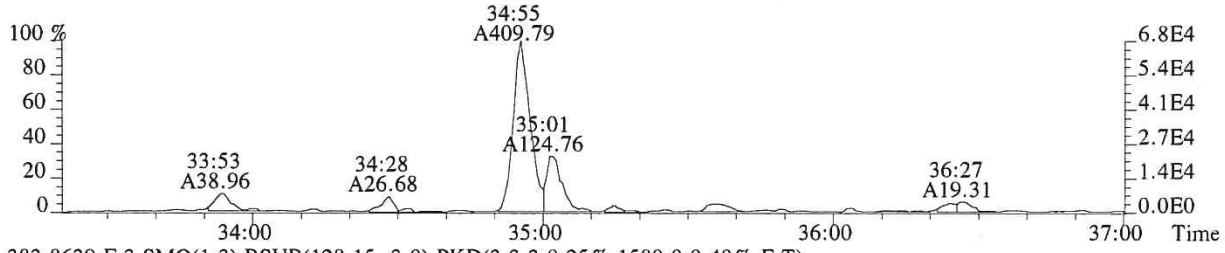


File:P519722 #1-330 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL

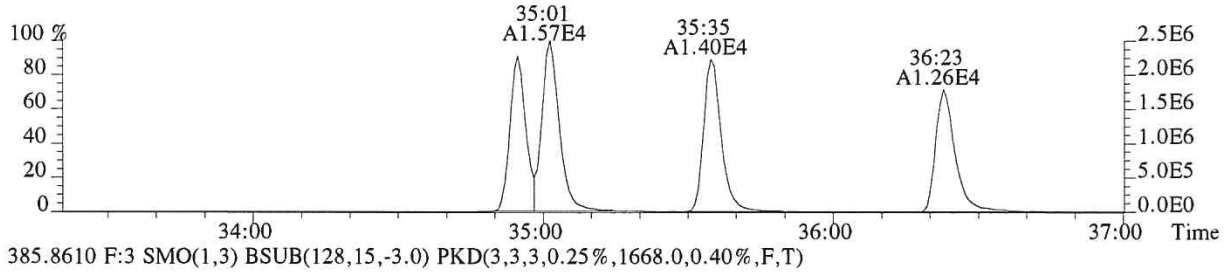
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1088.0,0.40%,F,T)



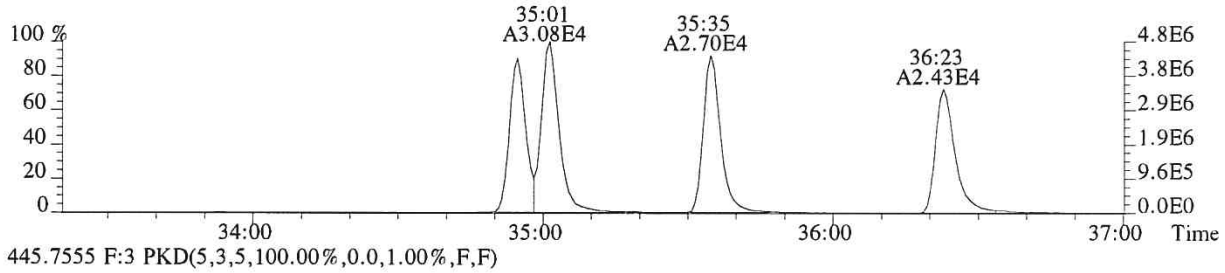
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,744.0,0.40%,F,T)



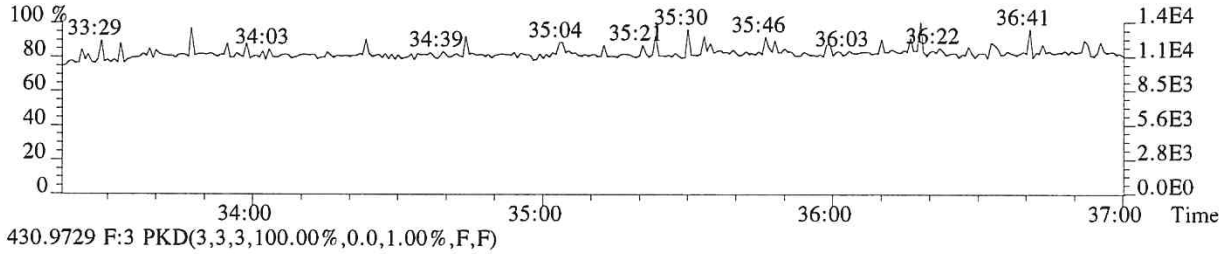
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1580.0,0.40%,F,T)



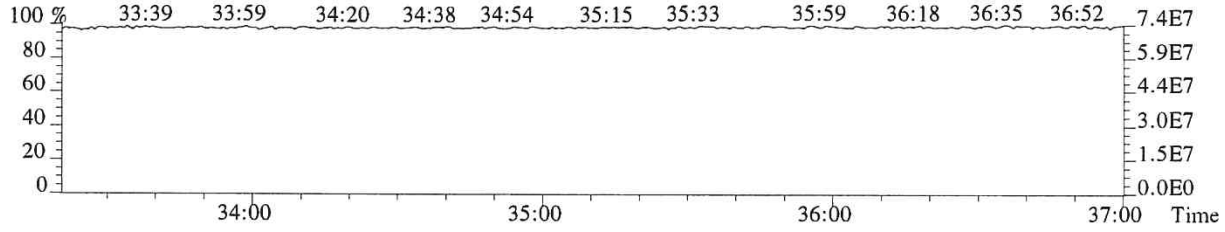
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1668.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

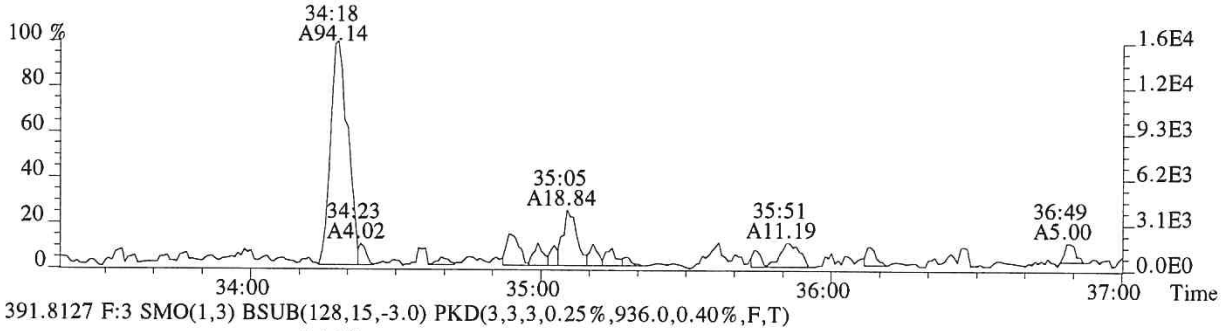


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

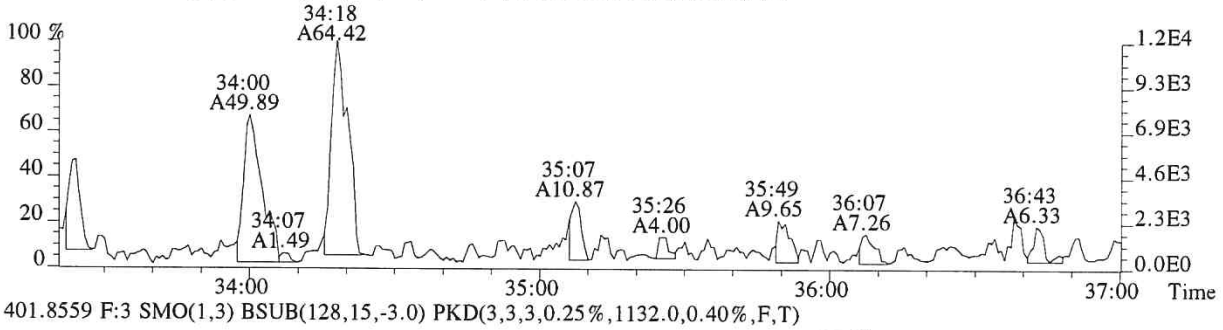


060174

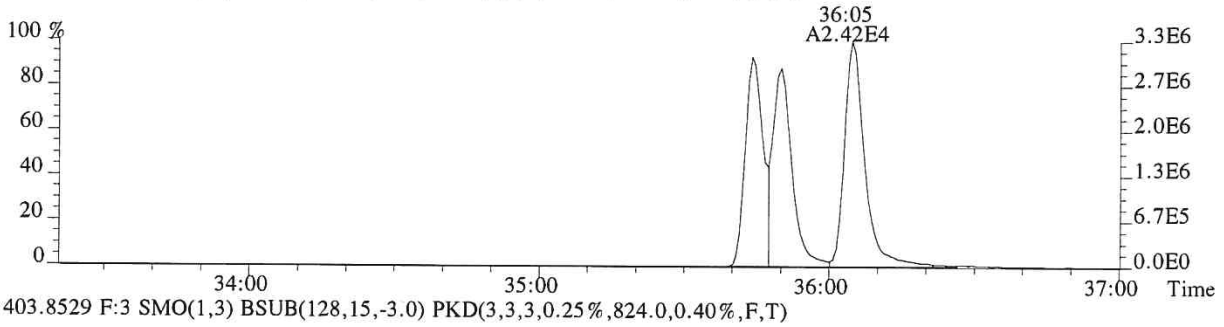
File:P519722 #1-330 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,728.0,0.40%,F,T)



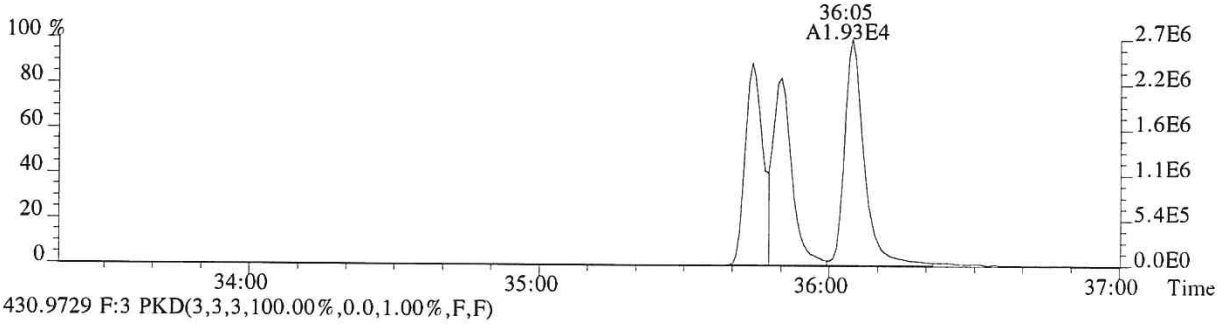
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,936.0,0.40%,F,T)



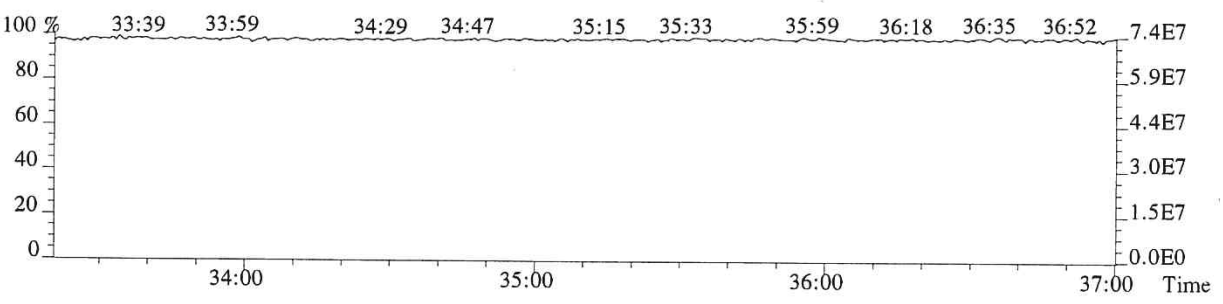
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1132.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,824.0,0.40%,F,T)

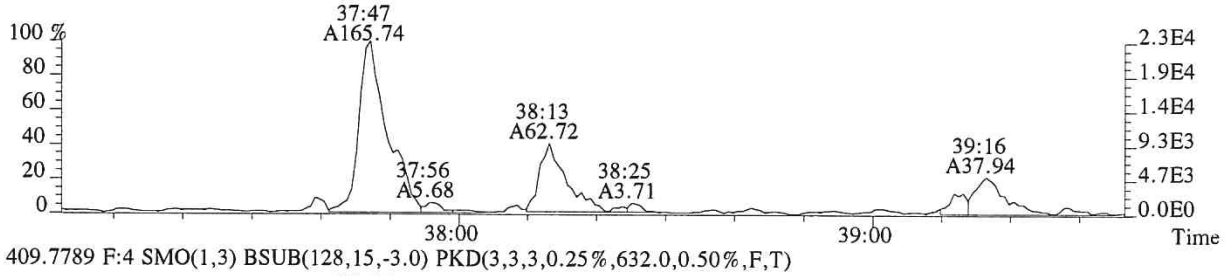


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

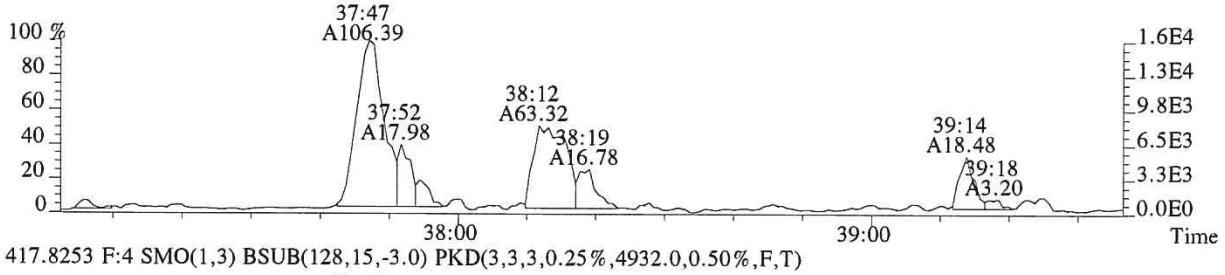


060175

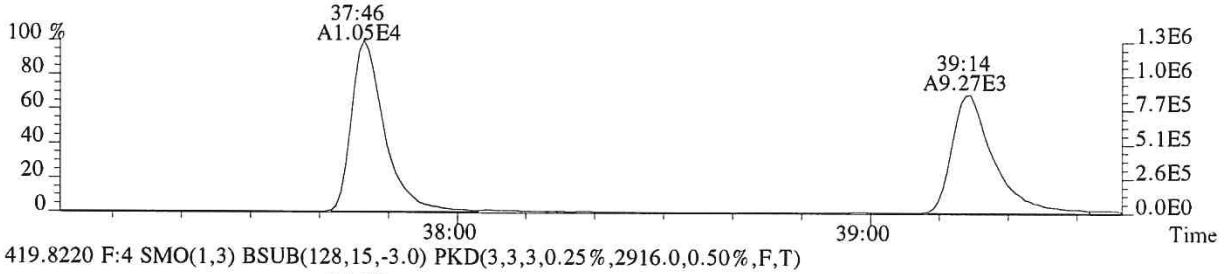
File:P519722 #1-232 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,436.0,0.50%,F,T)



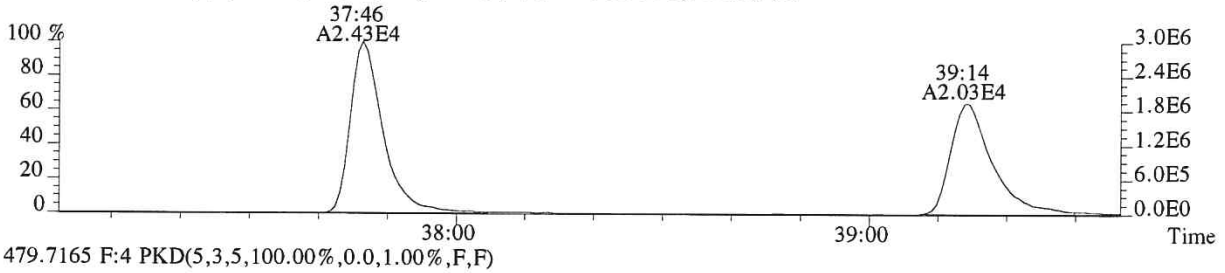
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,632.0,0.50%,F,T)



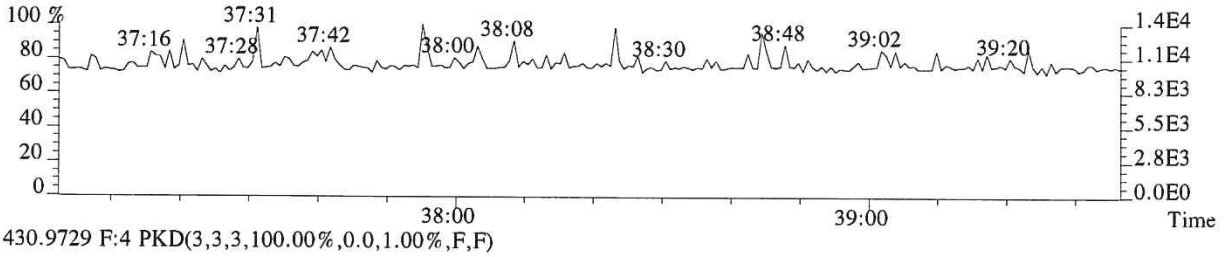
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4932.0,0.50%,F,T)



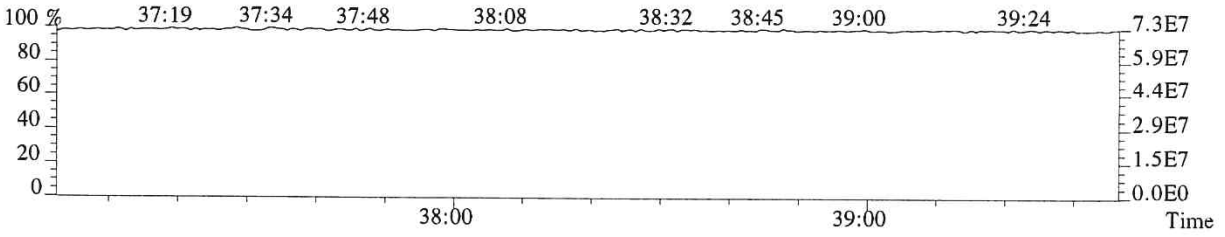
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2916.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

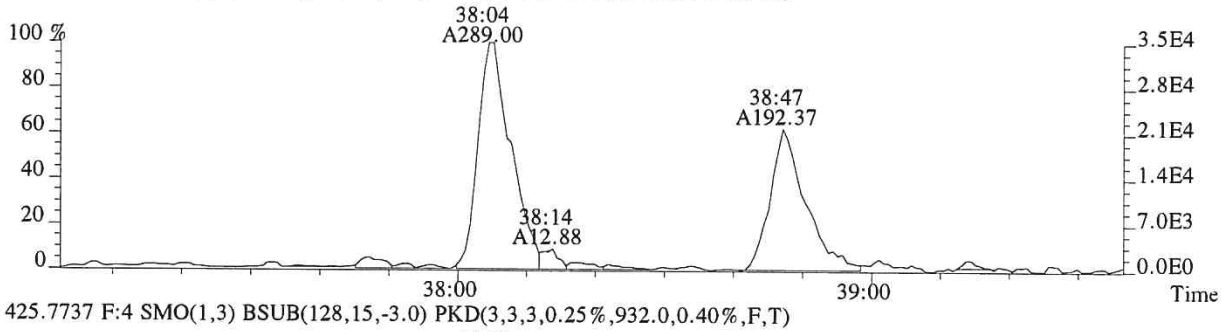


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

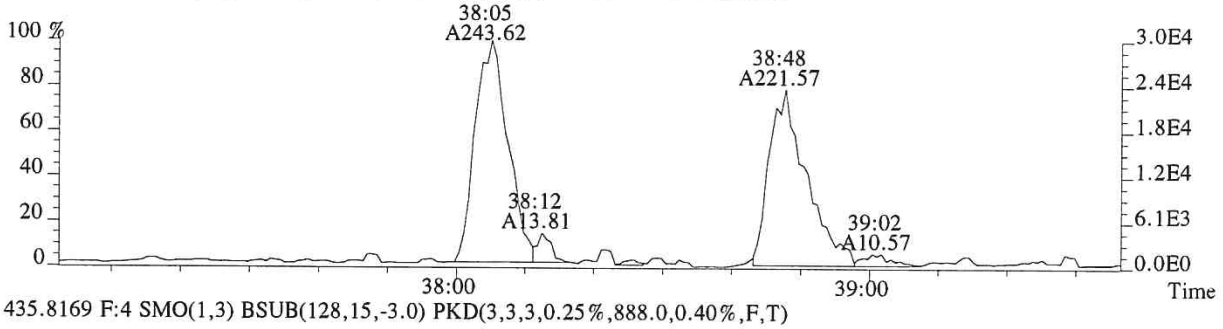


060176

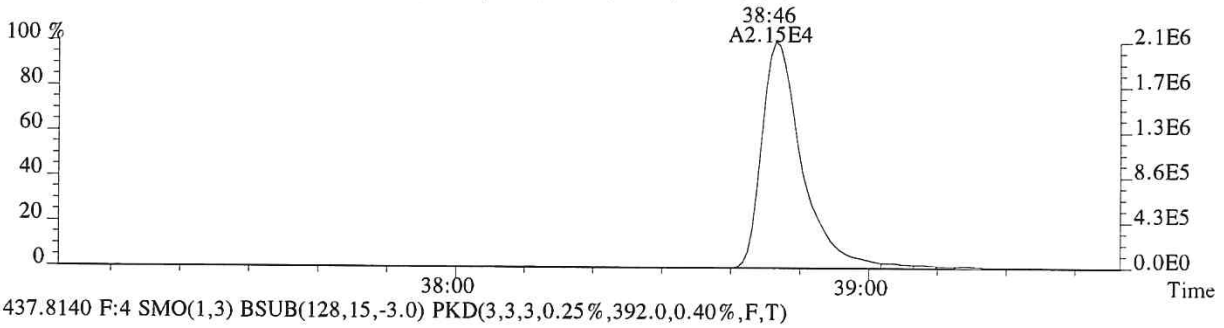
File:P519722 #1-232 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,536.0,0.40%,F,T)



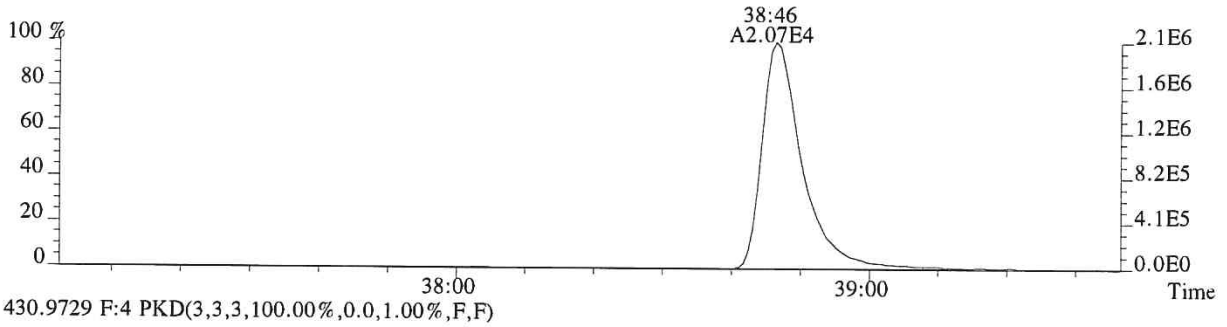
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,932.0,0.40%,F,T)



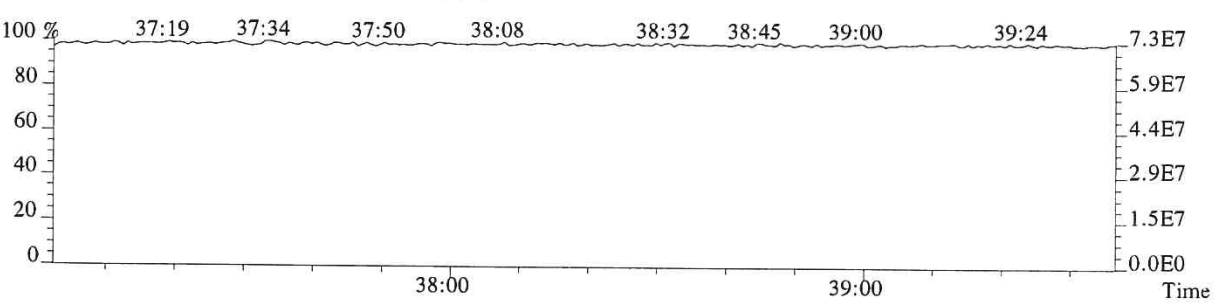
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,888.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,392.0,0.40%,F,T)

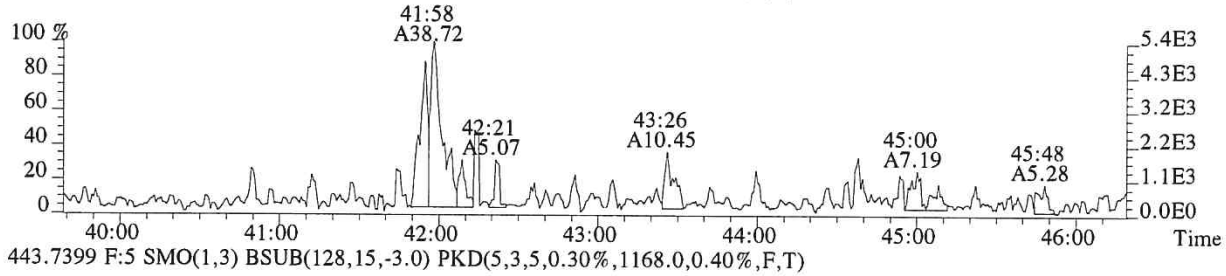


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

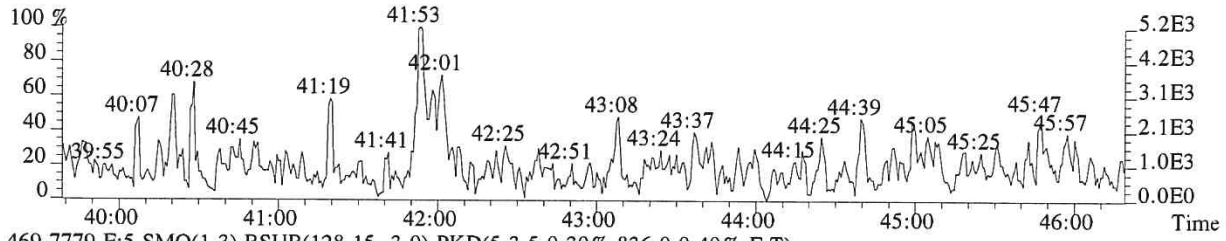


060177

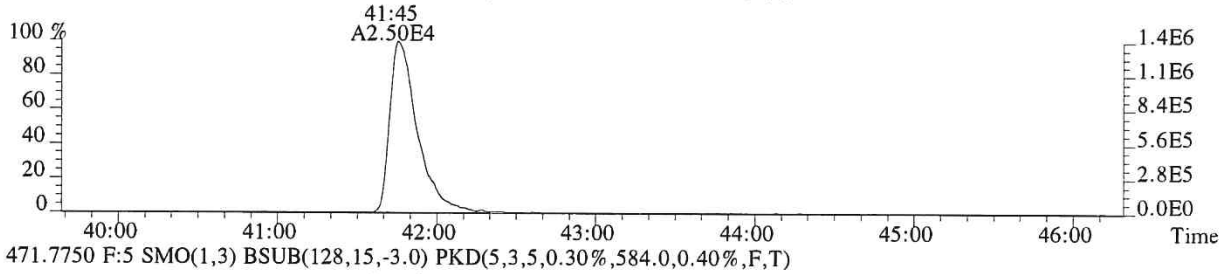
File:P519722 #1-601 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,464.0,0.40%,F,T)



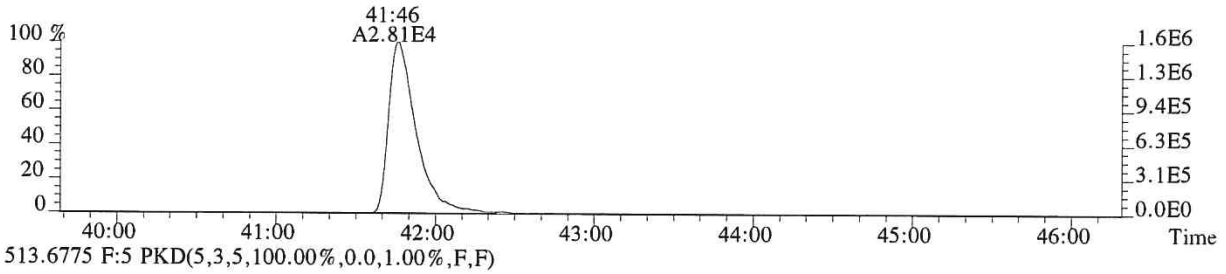
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1168.0,0.40%,F,T)



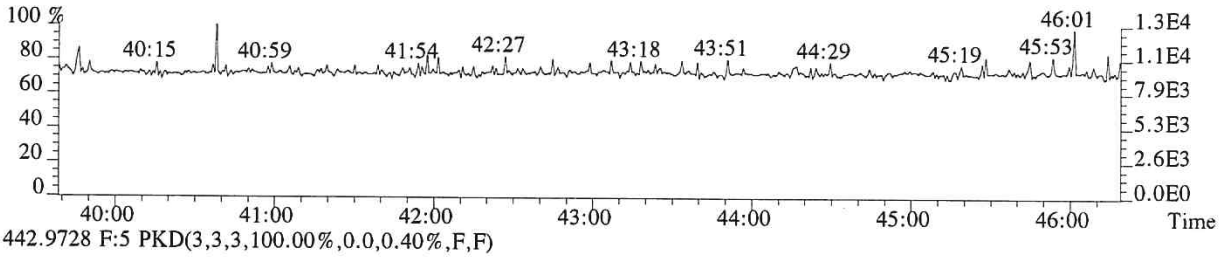
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,836.0,0.40%,F,T)



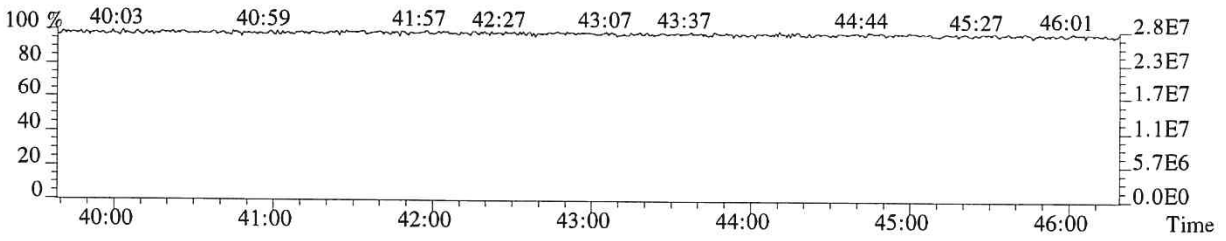
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,584.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

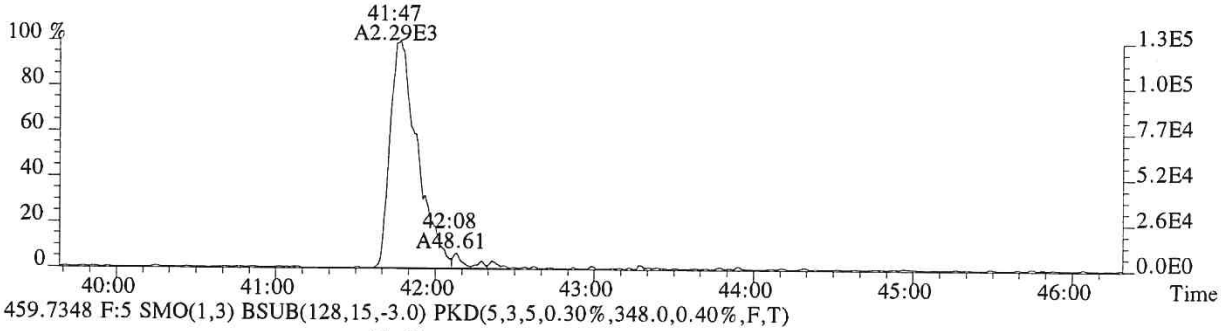


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

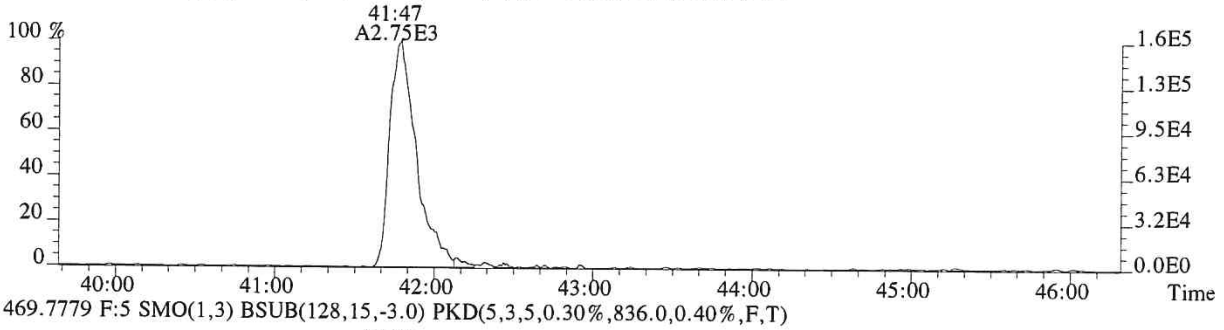


060178

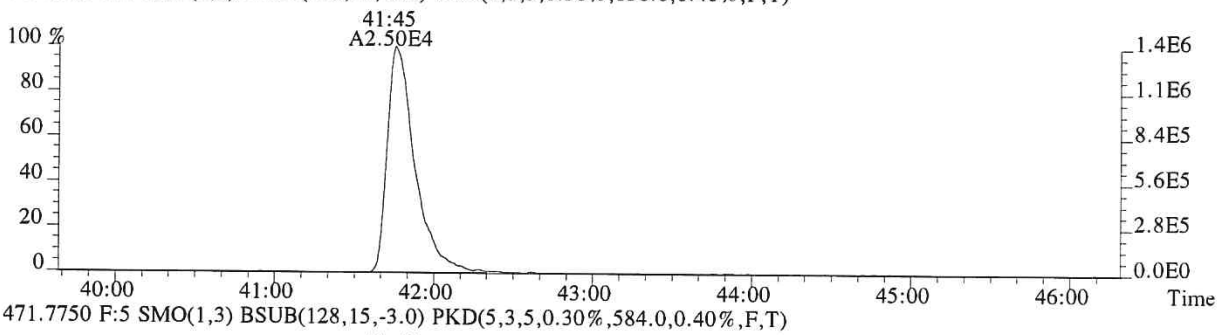
File:P519722 #1-601 Acq:30-DEC-2018 17:32:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-009DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,468.0,0.40%,F,T)



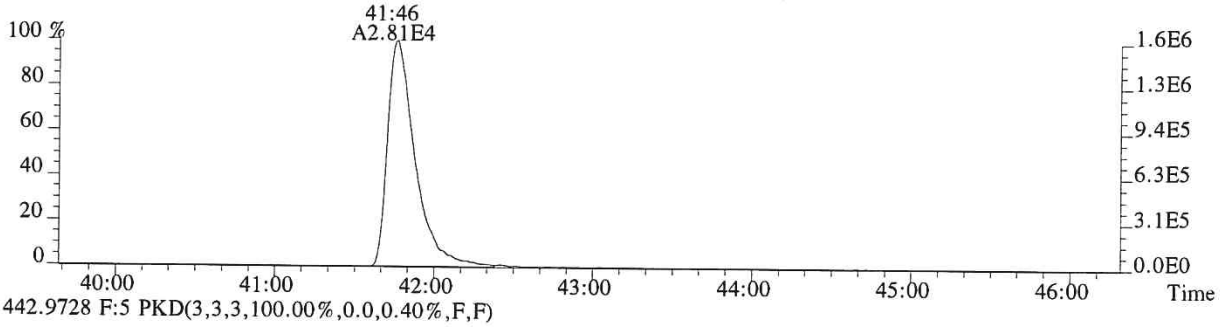
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,348.0,0.40%,F,T)



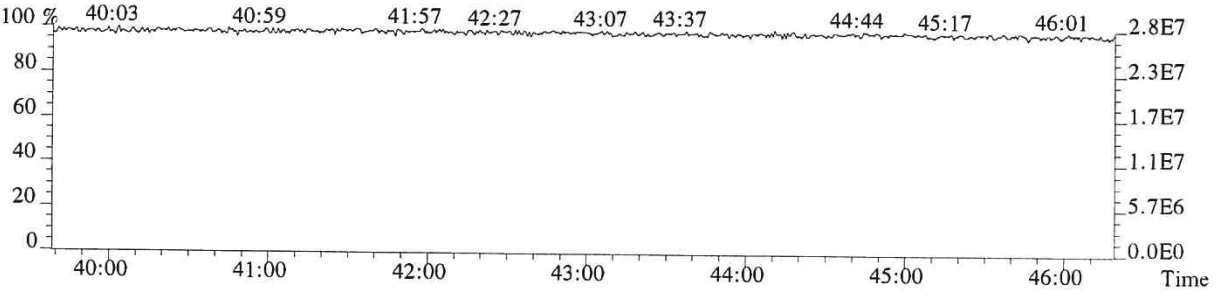
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,836.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,584.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060179

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0089

Run #9 Filename P616280 Samp: 1 Inj: 1 Acquired: 29-DEC-18 16:05:05
Processed: 30-DEC-18 09:01:15 Sample ID: E1801136-010

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:25	3.780e+03	4.747e+03	0.80	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:28	3.268e+02	2.203e+02	1.48	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:30	2.628e+02	1.707e+02	1.54	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:21	5.271e+02	3.225e+02	1.63	no	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:28	1.627e+02	1.076e+02	1.51	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:01	5.991e+01	4.921e+01	1.22	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:47	9.564e+01	3.212e+01	2.98	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:04	3.933e+02	3.811e+02	1.03	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	6.173e+01	6.548e+01	0.94	yes	no	1.463
10	Unk	OCDF	40:35	1.592e+02	2.318e+02	0.69	no	no	1.571
11	Unk	2,3,7,8-TCDD	26:26	1.051e+03	1.238e+03	0.85	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:49	5.154e+01	4.718e+01	1.09	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:09	5.321e+01	4.272e+01	1.25	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:15	1.111e+02	5.180e+01	2.14	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:29	8.625e+01	9.589e+01	0.90	no	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:58	9.088e+02	9.029e+02	1.01	yes	no	1.112
17	Unk	OCDD	40:24	1.455e+04	1.624e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:23	1.625e+04	2.082e+04	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:27	3.402e+04	2.163e+04	1.57	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:30	3.229e+04	2.083e+04	1.55	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:21	1.629e+04	3.096e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:27	1.928e+04	3.724e+04	0.52	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:00	1.621e+04	3.162e+04	0.51	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:46	1.563e+04	2.983e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:03	1.219e+04	2.741e+04	0.44	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:23	1.188e+04	2.609e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:25	9.305e+03	1.165e+04	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:48	2.544e+04	1.703e+04	1.49	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	2.443e+04	1.942e+04	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:14	2.365e+04	1.860e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:57	2.658e+04	2.503e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:24	2.858e+04	3.078e+04	0.93	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:38	2.613e+04	3.281e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:28	4.065e+04	3.140e+04	1.29	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:26	1.354e+04				no	1.086

$$OCDD = \frac{(1.455e+04 + 1.624e+04) \times 4000\ pg \times 1}{(2.858e+04 + 3.078e+04) \times 10.2\ g \times 71.1 / 100 \times 1.157} = 228.02718\ ng/kg$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0089

Run #9 Filename P616280 Samp: 1 Inj: 1 Acquired: 29-DEC-18 16:05:05
Processed: 30-DEC-18 09:01:15 LAB. ID: E1801136-010

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.36e+05	1.34e+03	4.0e+02	6.00e+05	3.14e+03	1.9e+02
2	1,2,3,7,8-PeCDF	5.53e+04	1.28e+03	4.3e+01	4.02e+04	3.56e+03	1.1e+01
3	2,3,4,7,8-PeCDF	4.74e+04	1.28e+03	3.7e+01	2.64e+04	3.56e+03	7.4e+00
4	1,2,3,4,7,8-HxCDF	1.18e+05	2.03e+03	5.8e+01	6.75e+04	1.32e+03	5.1e+01
5	1,2,3,6,7,8-HxCDF	3.26e+04	2.03e+03	1.6e+01	2.27e+04	1.32e+03	1.7e+01
6	2,3,4,6,7,8-HxCDF	1.09e+04	2.03e+03	5.4e+00	1.14e+04	1.32e+03	8.7e+00
7	1,2,3,7,8,9-HxCDF	1.82e+04	2.03e+03	9.0e+00	9.26e+03	1.32e+03	7.0e+00
8	1,2,3,4,6,7,8-HpCDF	8.69e+04	5.92e+02	1.5e+02	8.60e+04	5.08e+02	1.7e+02
9	1,2,3,4,7,8,9-HpCDF	1.60e+04	5.92e+02	2.7e+01	1.58e+04	5.08e+02	3.1e+01
10	OCDF	3.12e+04	8.44e+02	3.7e+01	4.21e+04	2.18e+03	1.9e+01
11	2,3,7,8-TCDD	1.58e+05	4.02e+03	3.9e+01	2.03e+05	1.46e+03	1.4e+02
12	1,2,3,7,8-PeCDD	9.95e+03	1.64e+03	6.1e+00	1.04e+04	5.48e+02	1.9e+01
13	1,2,3,4,7,8-HxCDD	1.03e+04	1.14e+03	9.0e+00	1.16e+04	1.26e+03	9.2e+00
14	1,2,3,6,7,8-HxCDD	2.40e+04	1.14e+03	2.1e+01	1.05e+04	1.26e+03	8.3e+00
15	1,2,3,7,8,9-HxCDD	1.66e+04	1.14e+03	1.5e+01	2.41e+04	1.26e+03	1.9e+01
16	1,2,3,4,6,7,8-HpCDD	1.98e+05	4.44e+02	4.5e+02	2.06e+05	1.61e+03	1.3e+02
17	OCDD	2.70e+06	6.72e+02	4.0e+03	3.01e+06	9.84e+02	3.1e+03
18	13C-2,3,7,8-TCDF	2.28e+06	1.13e+04	2.0e+02	2.93e+06	5.63e+03	5.2e+02
19	13C-1,2,3,7,8-PeCDF	5.81e+06	1.26e+03	4.6e+03	3.68e+06	9.84e+02	3.7e+03
20	13C-2,3,4,7,8-PeCDF	6.06e+06	1.26e+03	4.8e+03	3.80e+06	9.84e+02	3.9e+03
21	13C-1,2,3,4,7,8-HxCDF	3.45e+06	1.39e+03	2.5e+03	6.46e+06	1.77e+03	3.6e+03
22	13C-1,2,3,6,7,8-HxCDF	3.96e+06	1.39e+03	2.8e+03	7.54e+06	1.77e+03	4.3e+03
23	13C-2,3,4,6,7,8-HxCDF	3.44e+06	1.39e+03	2.5e+03	6.67e+06	1.77e+03	3.8e+03
24	13C-1,2,3,7,8,9-HxCDF	3.11e+06	1.39e+03	2.2e+03	5.93e+06	1.77e+03	3.3e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.72e+06	3.15e+03	8.6e+02	5.99e+06	3.12e+03	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.53e+06	3.15e+03	8.0e+02	5.48e+06	3.12e+03	1.8e+03
27	13C-2,3,7,8-TCDD	1.42e+06	1.35e+04	1.0e+02	1.79e+06	5.79e+03	3.1e+02
28	13C-1,2,3,7,8-PeCDD	4.78e+06	1.90e+03	2.5e+03	3.20e+06	2.40e+03	1.3e+03
29	13C-1,2,3,4,7,8-HxCDD	5.37e+06	2.97e+03	1.8e+03	4.24e+06	1.40e+03	3.0e+03
30	13C-1,2,3,6,7,8-HxCDD	4.88e+06	2.97e+03	1.6e+03	3.85e+06	1.40e+03	2.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	5.66e+06	1.86e+03	3.0e+03	5.30e+06	7.88e+02	6.7e+03
32	13C-OCDD	5.26e+06	9.92e+02	5.3e+03	5.69e+06	7.52e+02	7.6e+03
33	13C-1,2,3,4-TCDD	3.83e+06	1.35e+04	2.8e+02	4.78e+06	5.79e+03	8.3e+02
34	13C-1,2,3,7,8,9-HxCDD	8.31e+06	2.97e+03	2.8e+03	6.49e+06	1.40e+03	4.6e+03
35	37Cl-2,3,7,8-TCDD	2.09e+06	2.63e+03	7.9e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (4.020e{+}03 + 1.460e{+}03) \times 2000}{(1.418e{+}06 + 1.794e{+}06) \times (\quad) \times 1.049} =$$

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Peak List Summary

CLIENT ID.
SL0089

Entry: 36 Totals Name: Total Tetra-Furans

Run: 9 File: P616280 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 16:05:05 Processed: 30-DEC-18 09:01:15

Mass: 303.9020 305.8990 Tot Response: 1.43e+04 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:31	2.46e+02	3.35e+02	0.73	yes	5.81e+02		n	n
2	23:10	1.67e+02	2.21e+02	0.76	yes	3.88e+02		n	n
3	24:23	1.72e+03	2.09e+03	0.83	yes	3.81e+03		n	n
4	24:41	1.26e+02	1.54e+02	0.82	yes	2.79e+02		n	n
5	25:25	3.78e+03	4.75e+03	0.80	yes	8.53e+03	2,3,7,8-TCDF	n	n
6	25:51	3.27e+02	4.19e+02	0.78	yes	7.46e+02		n	n

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CLIENT ID.
SL0089

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 9 File: P616280 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 16:05:05 Processed: 30-DEC-18 09:01:15

Mass: 319.8970 321.8940 Tot Response: 2.89e+03 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:01	2.51e+02	3.51e+02	0.72	yes	6.02e+02		n	n
2	26:26	1.05e+03	1.24e+03	0.85	yes	2.29e+03	2,3,7,8-TCDD	n	n

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Peak List Summary

CLIENT ID.
SL0089

Entry: 39 Totals Name: Total Penta-Furans2

Run: 9 File: P616280 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 16:05:05 Processed: 30-DEC-18 09:01:15

Mass: 339.8600 341.8570 Tot Response: 9.81e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:28	3.27e+02	2.20e+02 1.48	yes	5.47e+02	1,2,3,7,8-PeCDF	n	n
2	31:30	2.63e+02	1.71e+02 1.54	yes	4.34e+02	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.
SL0089

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 9 File: P616280 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 16:05:05 Processed: 30-DEC-18 09:01:15

Mass: 355.8550 357.8520 Tot Response: 6.13e+02 RRF: 0.9288

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:28	4.97e+01	3.58e+01 1.39	yes	8.55e+01		n	n
2	29:58	2.74e+02	1.94e+02 1.41	yes	4.67e+02		n	n
3	31:03	3.83e+01	2.19e+01 1.75	yes	6.02e+01		n	n

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Peak List Summary

CLIENT ID.
SL0089

Entry: 41 Totals Name: Total Hexa-Furans

Run: 9 File: P616280 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 16:05:05 Processed: 30-DEC-18 09:01:15

Mass: 373.8210 375.8180 Tot Response: 1.68e+02 RRF: 1.324

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:11	3.35e+01	2.52e+01 1.33	yes	5.87e+01		n	n
2	35:01	5.99e+01	4.92e+01 1.22	yes	1.09e+02	2,3,4,6,7,8-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0089

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 9 File: P616280 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 16:05:05 Processed: 30-DEC-18 09:01:15

Mass: 389.8160 391.8130 Tot Response: 3.24e+03 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:44	1.37e+03	1.20e+03	1.14	yes	2.57e+03		n	n
2	34:31	3.20e+02	2.48e+02	1.29	yes	5.68e+02		n	n
3	35:09	5.32e+01	4.27e+01	1.25	yes	9.59e+01	1,2,3,4,7,8-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0089

Entry: 43 Totals Name: Total Hepta-Furans

Run: 9 File: P616280 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 16:05:05 Processed: 30-DEC-18 09:01:15

Mass: 407.7820 409.7790 Tot Response: 1.28e+03 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:04	3.93e+02	3.81e+02	1.03	yes	7.74e+02	1,2,3,4,6,7,8-HpCDF	n	n
2	37:28	1.88e+02	1.88e+02	1.00	yes	3.76e+02		n	n
3	38:24	6.17e+01	6.55e+01	0.94	yes	1.27e+02	1,2,3,4,7,8,9-HpCDF	n	n

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Peak List Summary

CLIENT ID.
SL0089

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 9 File: P616280 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 16:05:05 Processed: 30-DEC-18 09:01:15

Mass: 423.7770 425.7740 Tot Response: 6.77e+03 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:19	2.60e+03	2.36e+03 1.10	yes	4.96e+03		n	n
2	37:58	9.09e+02	9.03e+02 1.01	yes	1.81e+03	1,2,3,4,6,7,8-HpCDD	n	n

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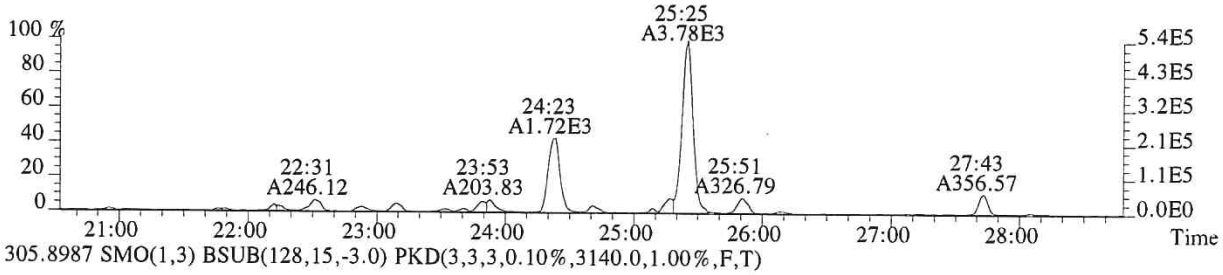
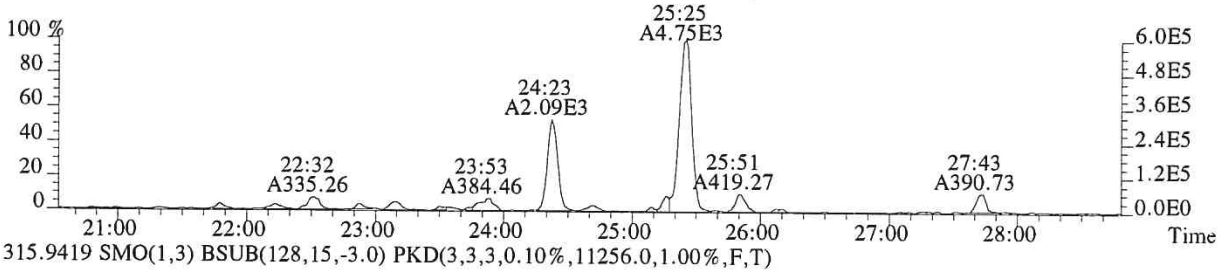
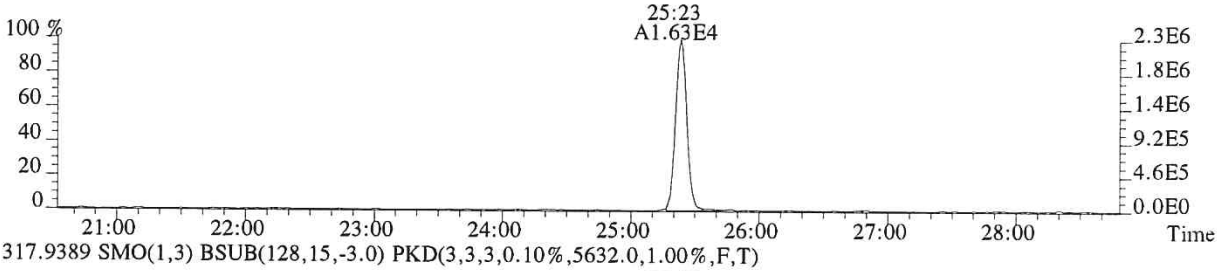
File:P616280 #1-587 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1344.0,1.00%,F,T)



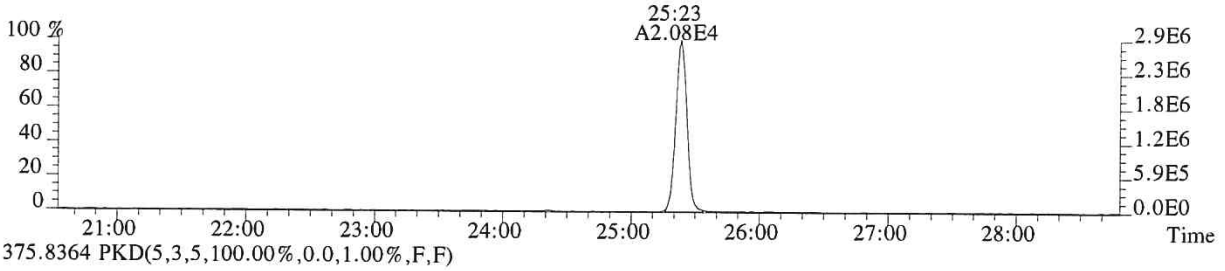
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3140.0,1.00%,F,T)



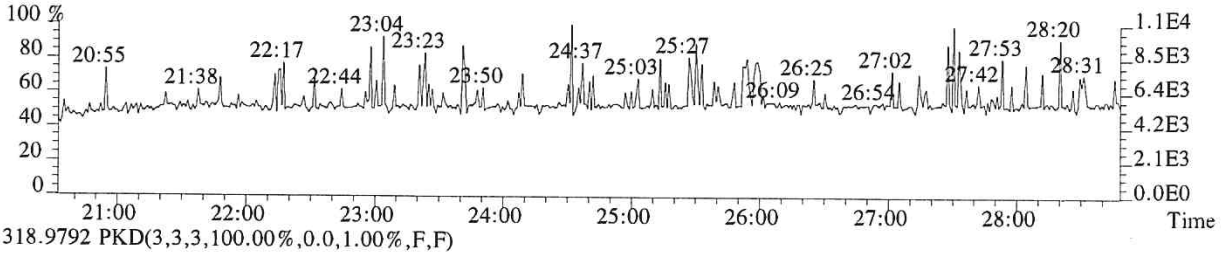
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11256.0,1.00%,F,T)



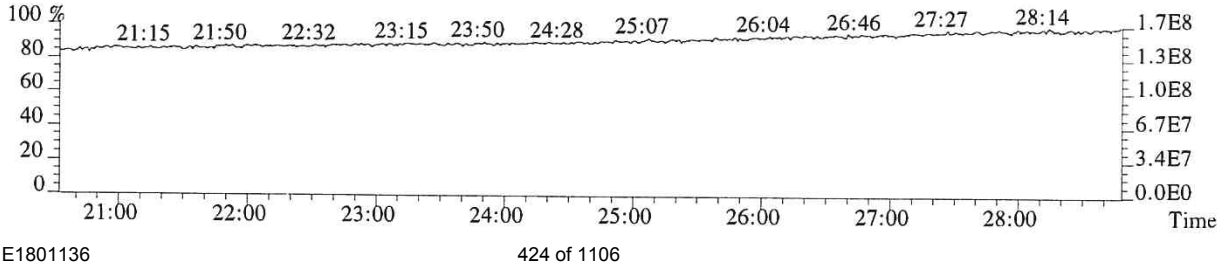
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5632.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

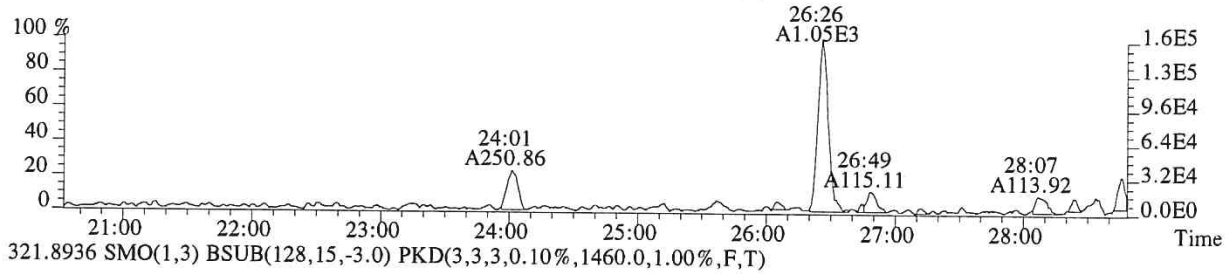


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

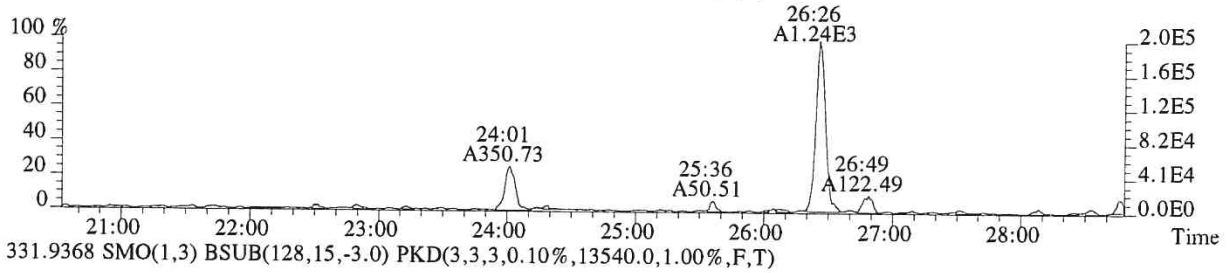


060190

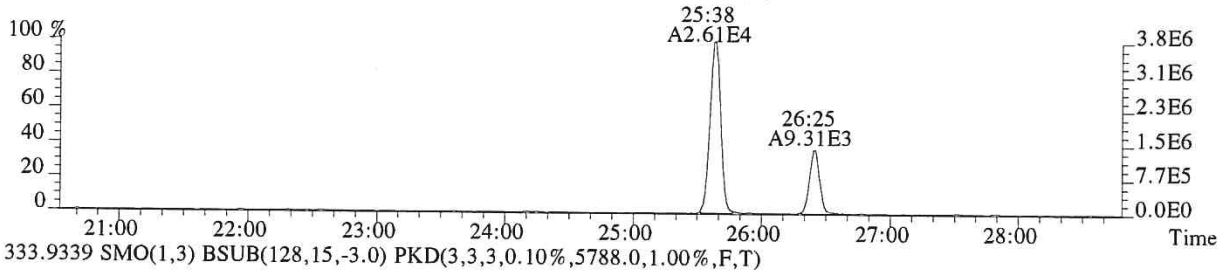
File:P616280 #1-587 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4020.0,1.00%,F,T)



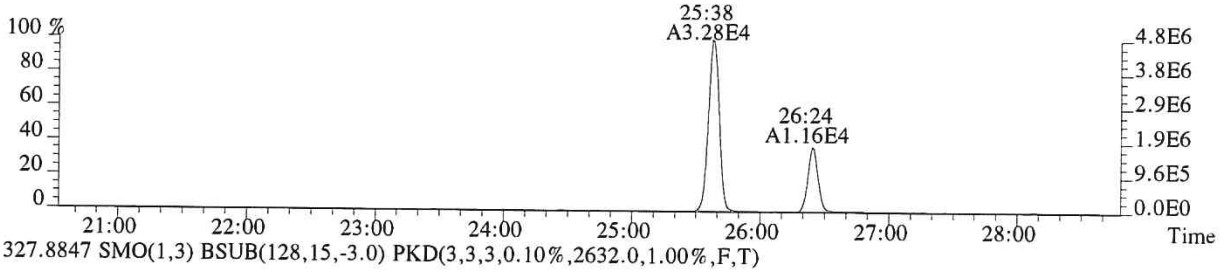
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1460.0,1.00%,F,T)



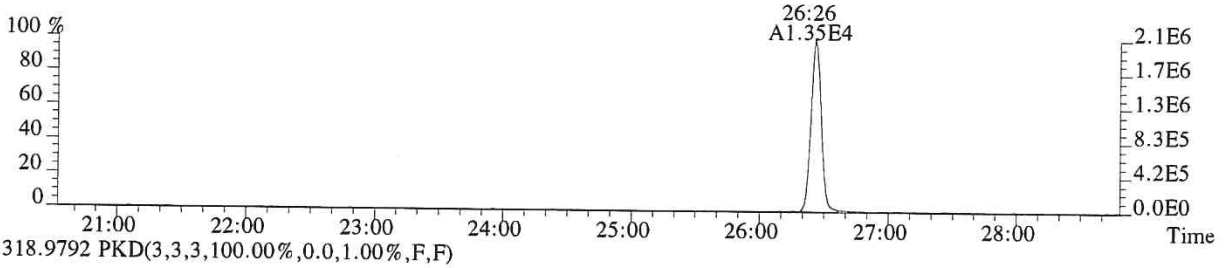
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13540.0,1.00%,F,T)



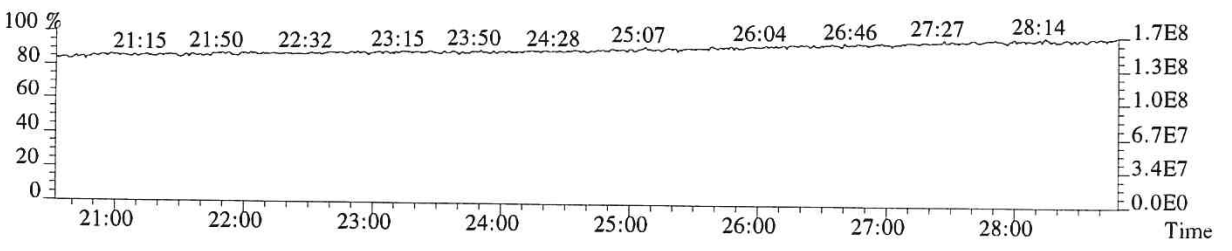
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5788.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2632.0,1.00%,F,T)

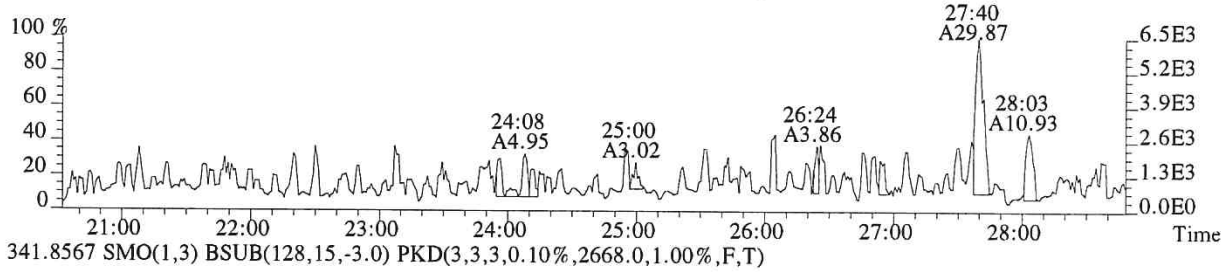


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

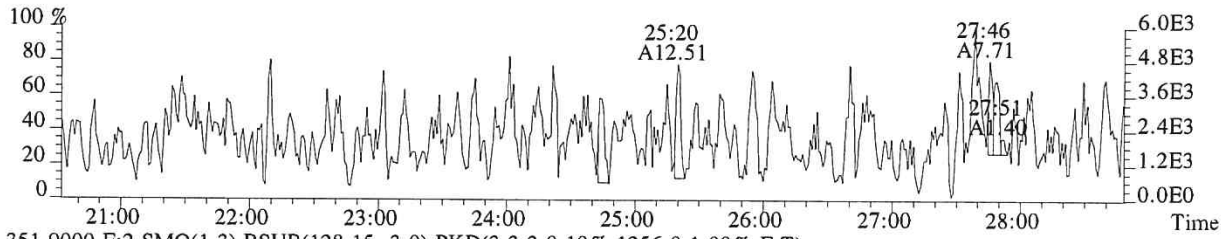


060191

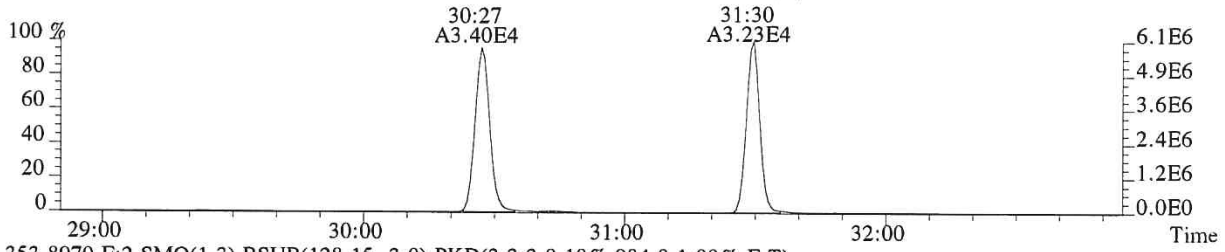
File:P616280 #1-587 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1196.0,1.00%,F,T)



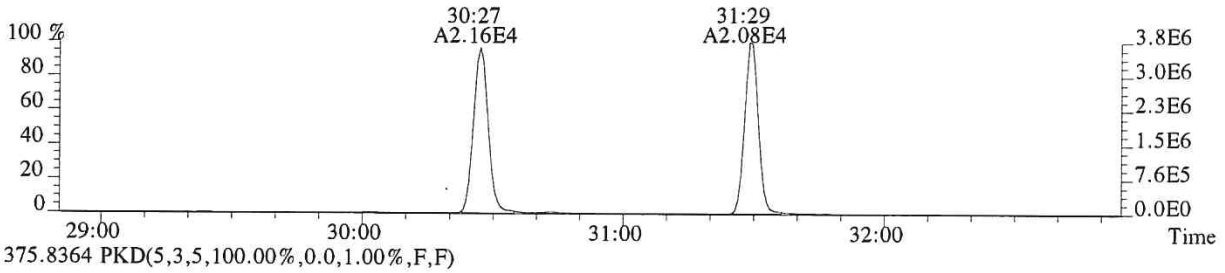
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2668.0,1.00%,F,T)



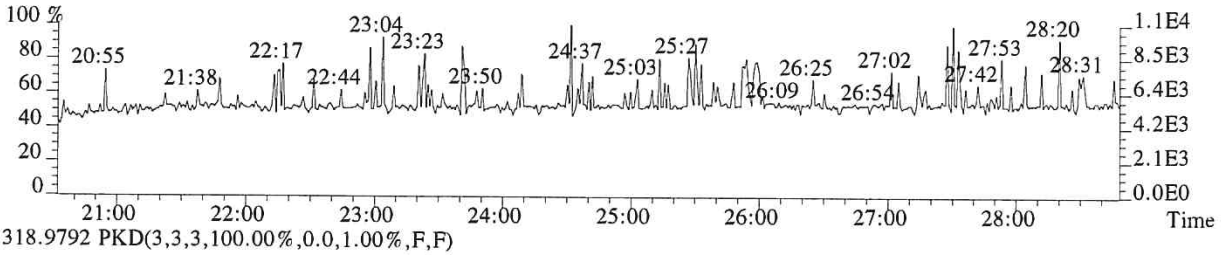
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1256.0,1.00%,F,T)



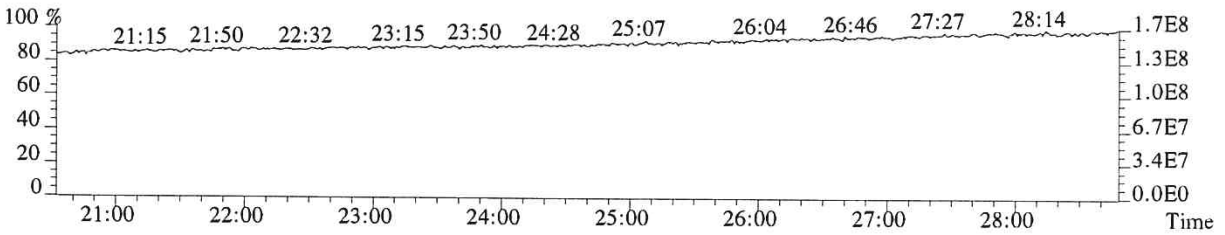
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,984.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

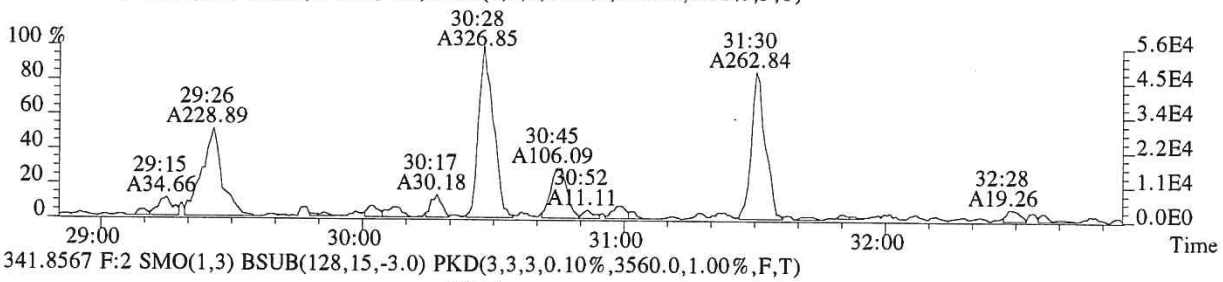


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

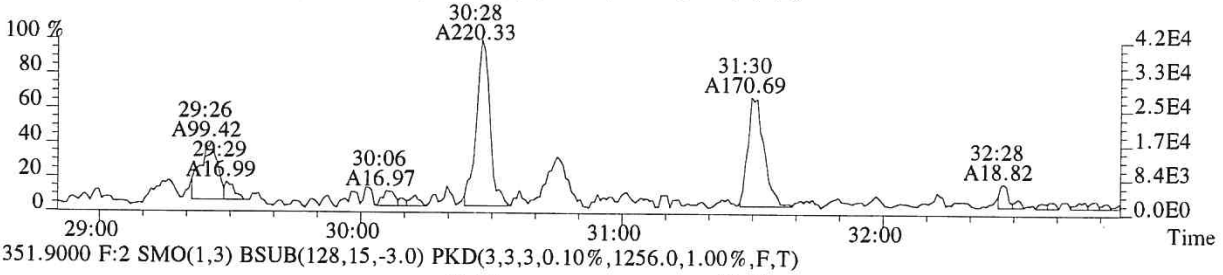


060192

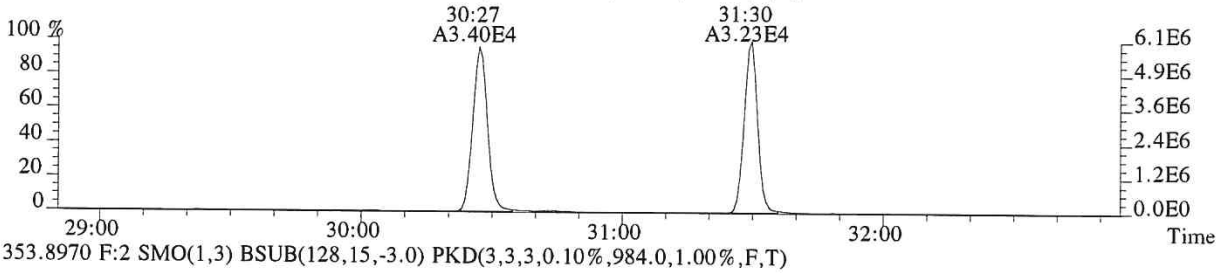
File:P616280 #1-367 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1284.0,1.00%,F,T)



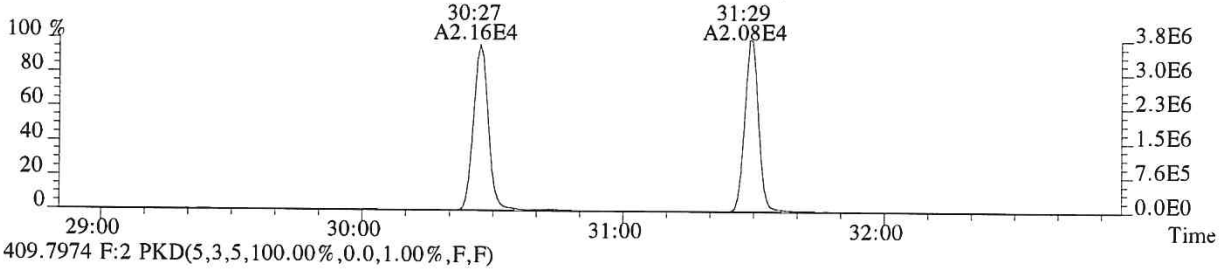
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3560.0,1.00%,F,T)



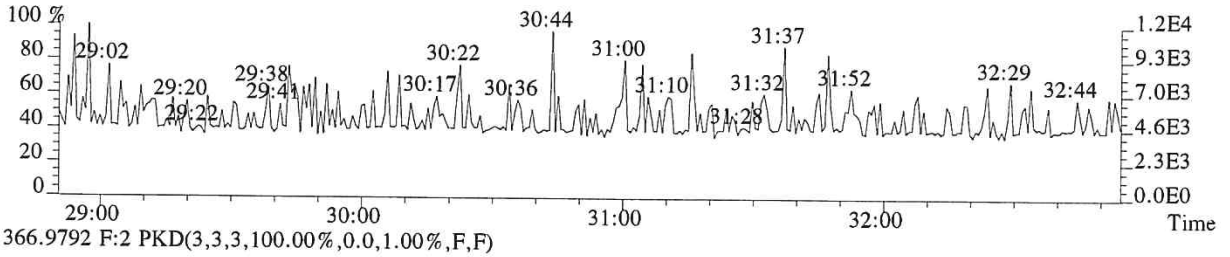
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1256.0,1.00%,F,T)



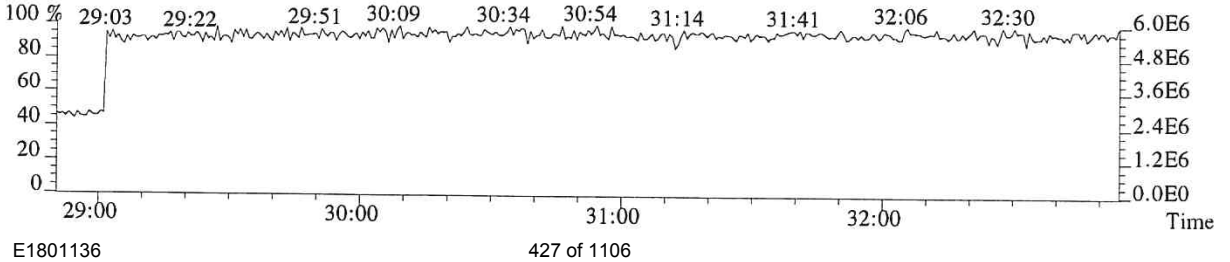
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,984.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

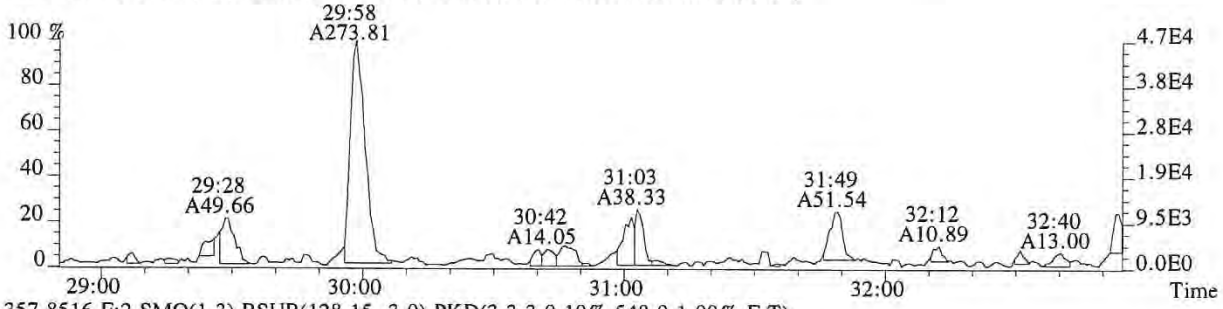


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

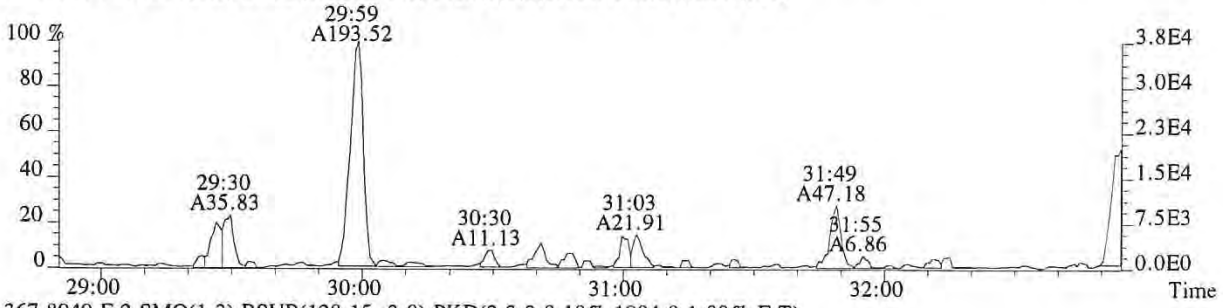


060193

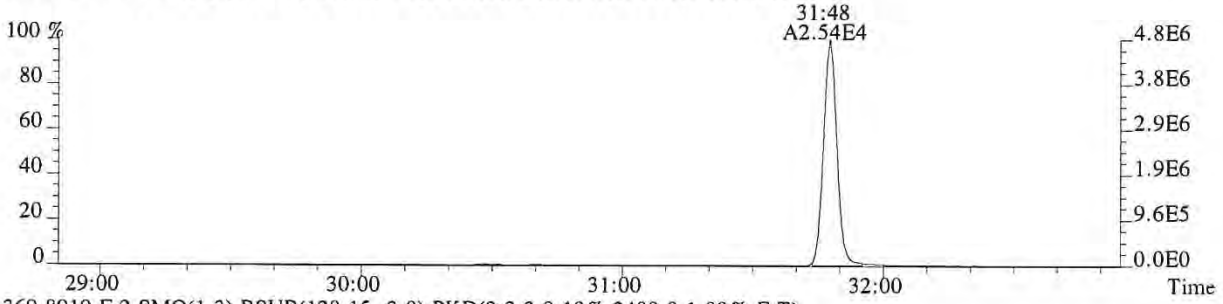
File:P616280 #1-367 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1640.0,1.00%,F,T)



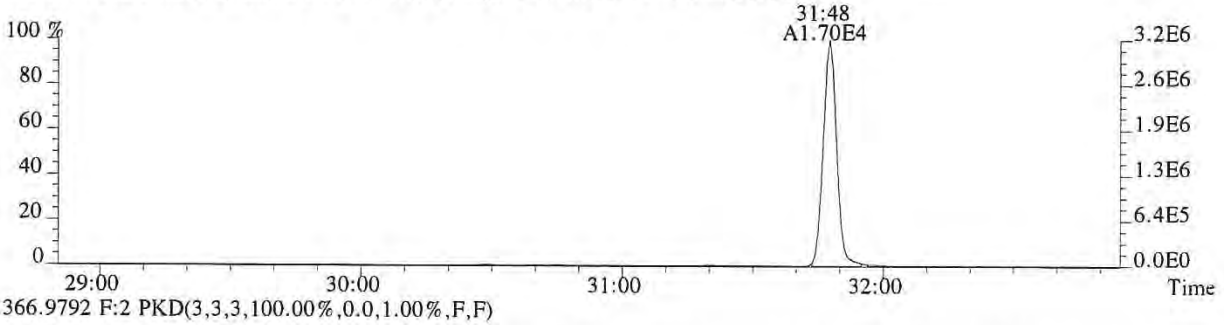
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,548.0,1.00%,F,T)



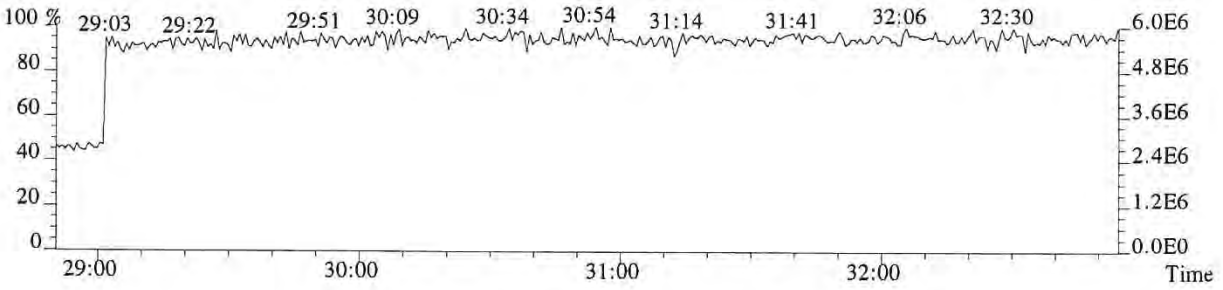
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1904.0,1.00%,F,T)



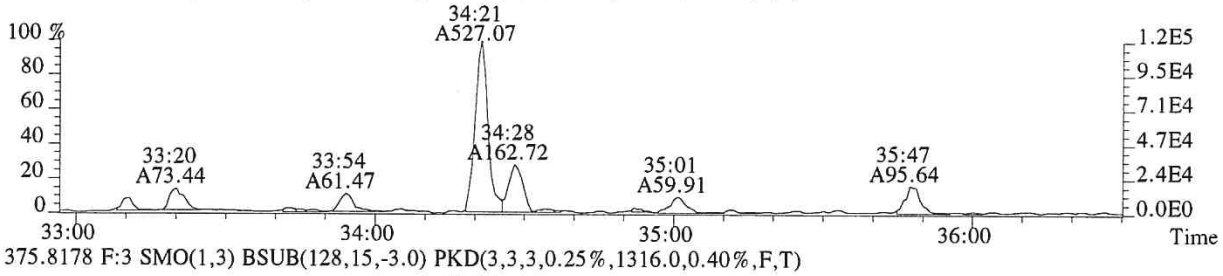
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2400.0,1.00%,F,T)



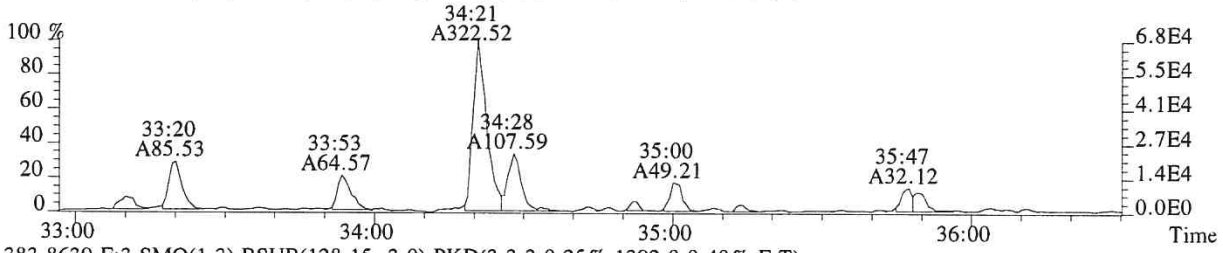
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



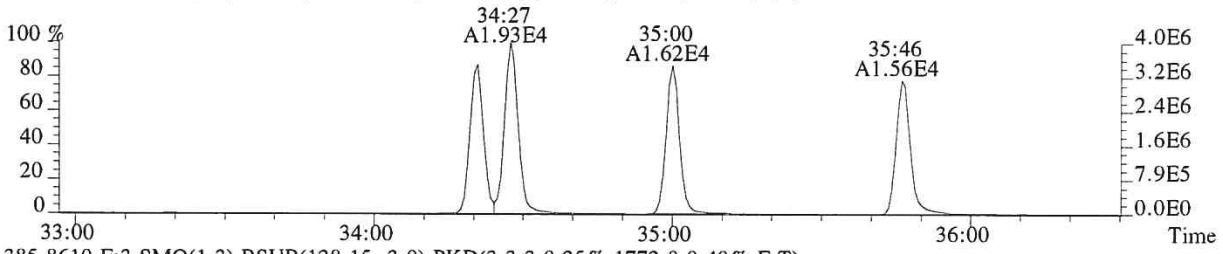
File:P616280 #1-321 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2028.0,0.40%,F,T)



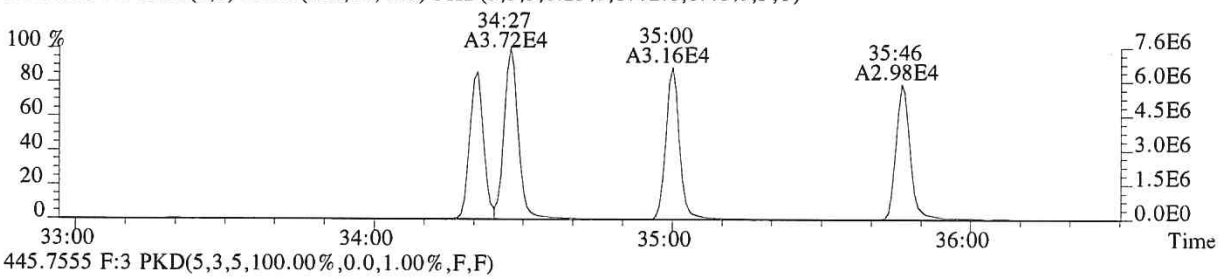
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1316.0,0.40%,F,T)



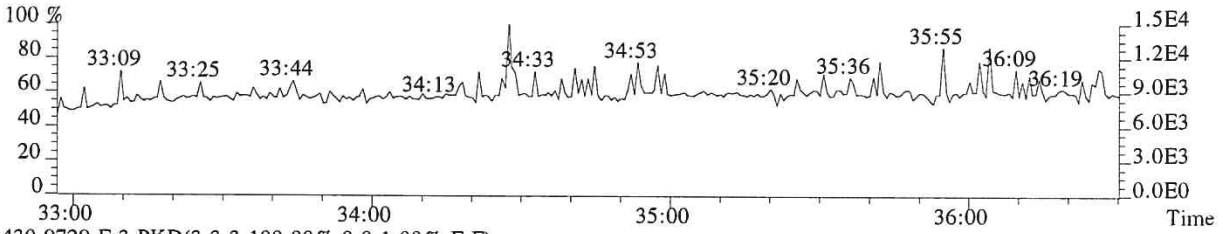
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1392.0,0.40%,F,T)



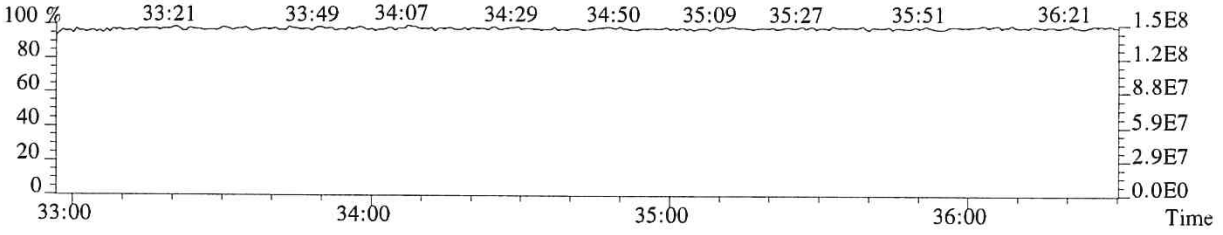
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1772.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

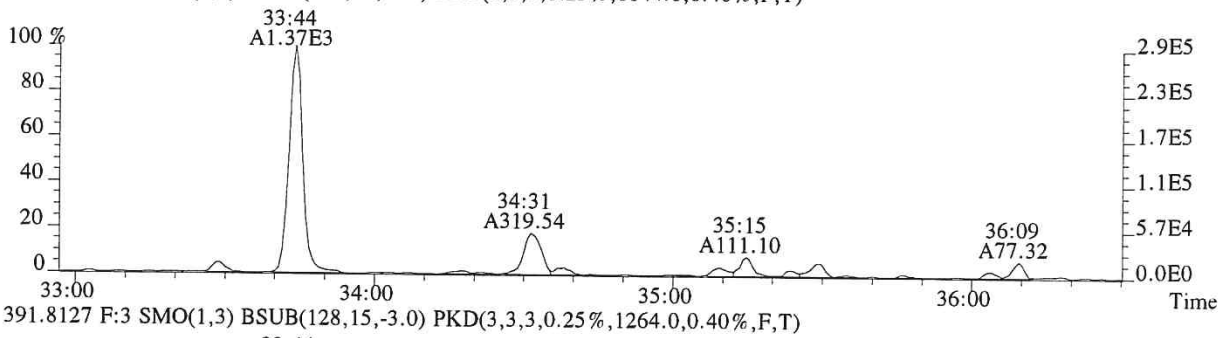


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

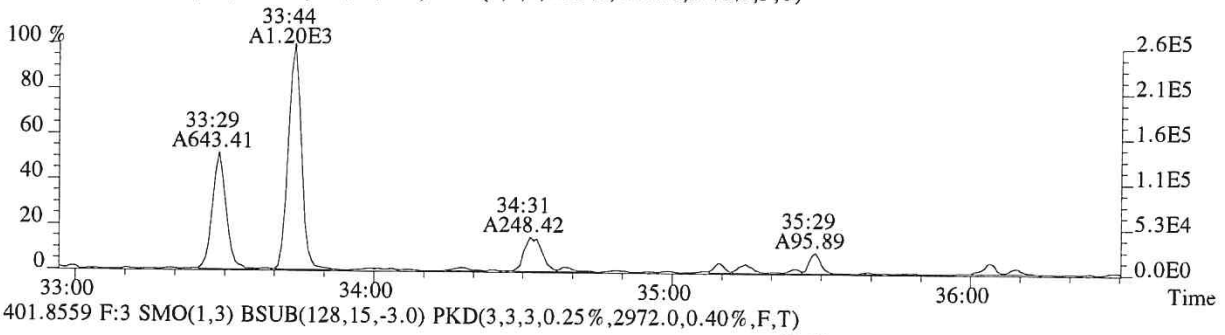


060195

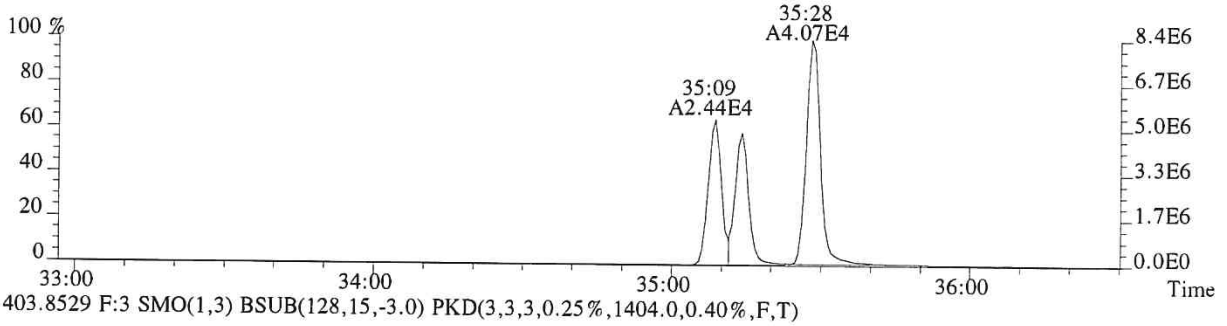
File:P616280 #1-321 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1144.0,0.40%,F,T)



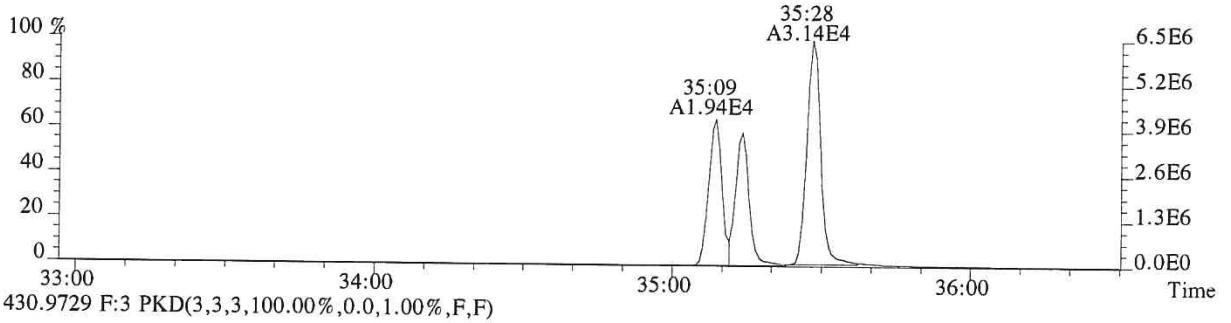
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1264.0,0.40%,F,T)



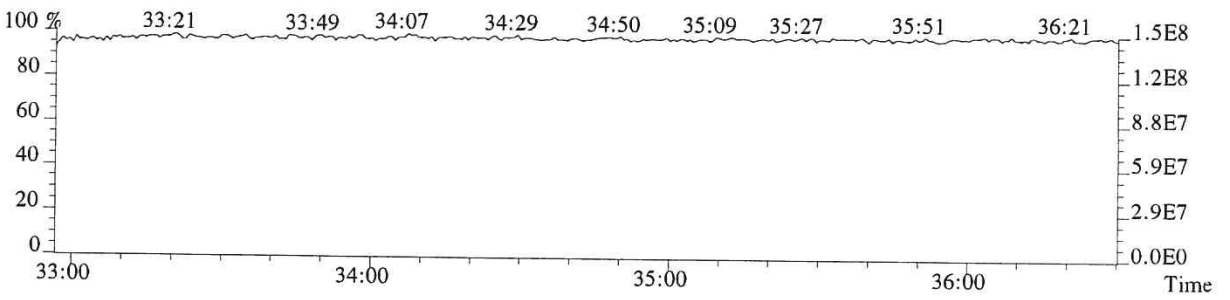
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2972.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1404.0,0.40%,F,T)

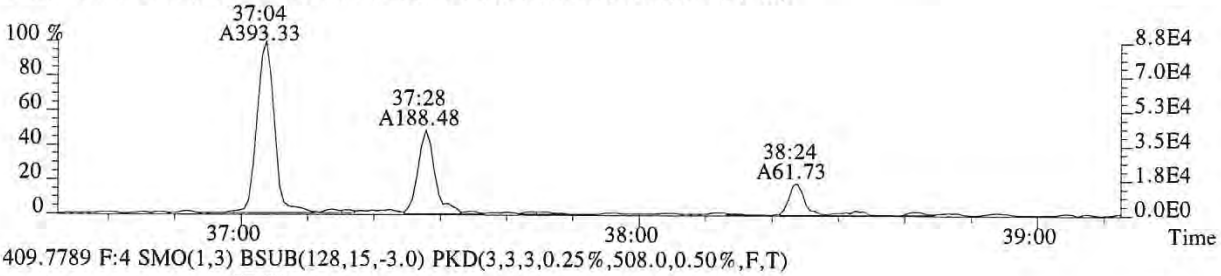


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

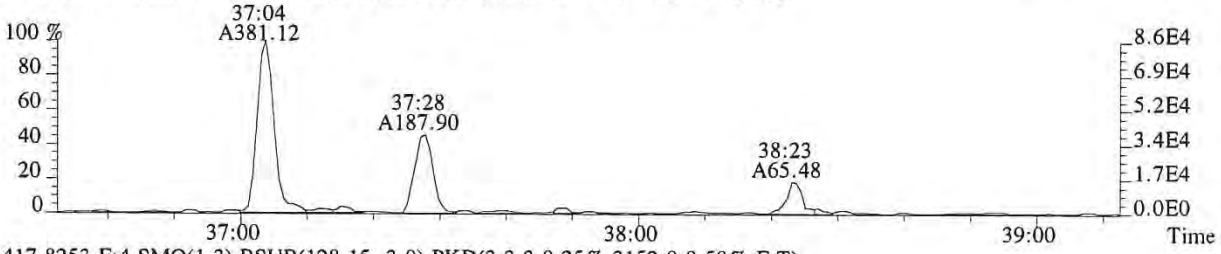


060196

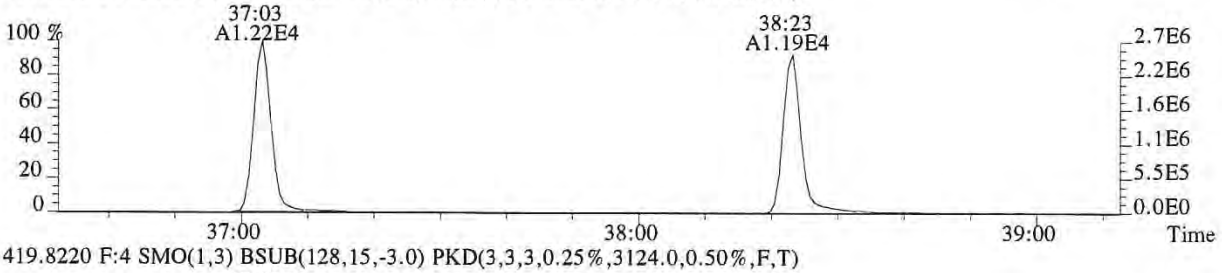
File:P616280 #1-241 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,592.0,0.50%,F,T)



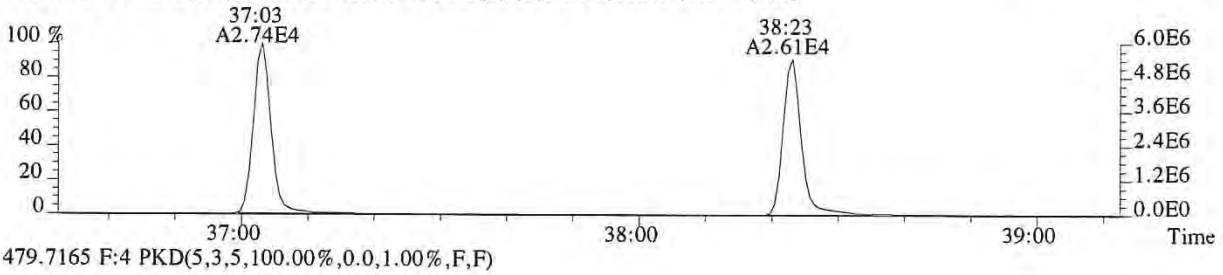
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,508.0,0.50%,F,T)



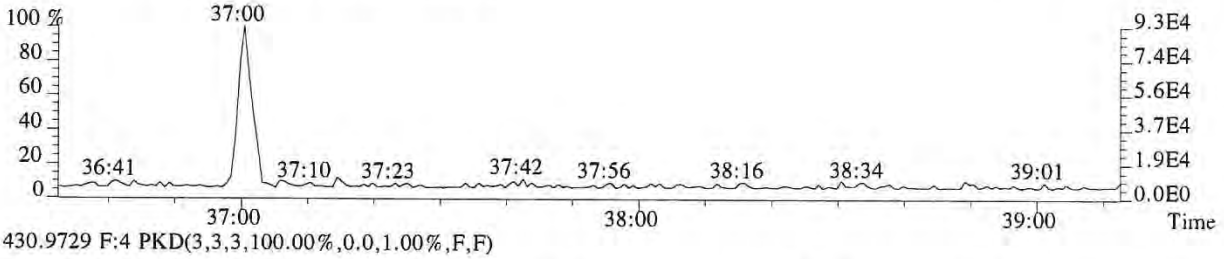
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3152.0,0.50%,F,T)



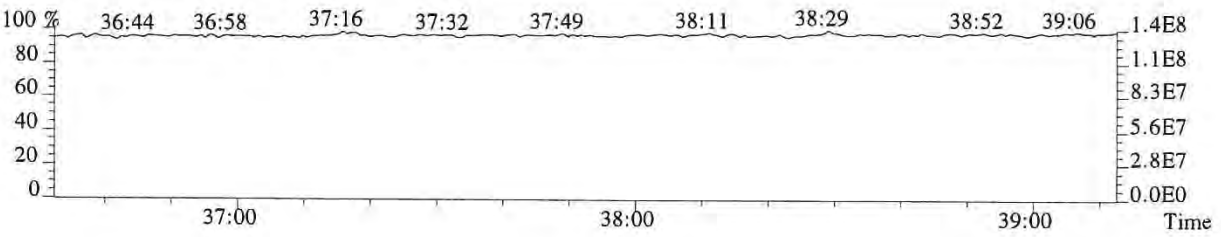
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3124.0,0.50%,F,T)



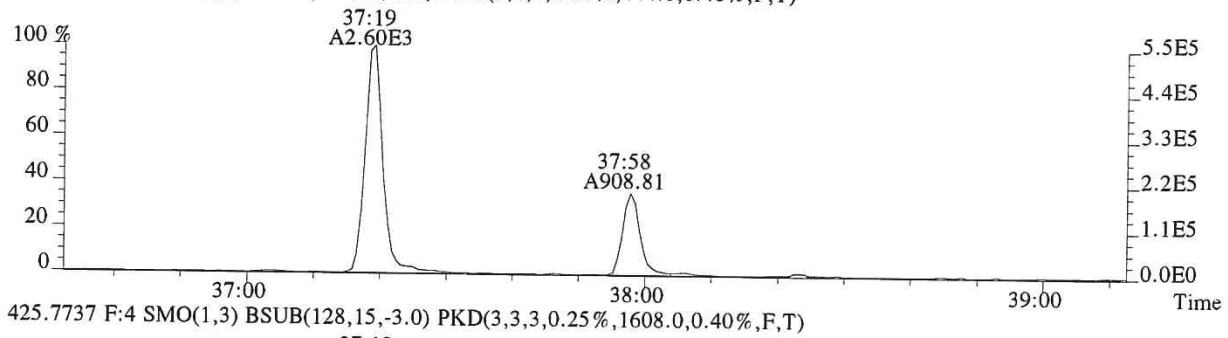
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



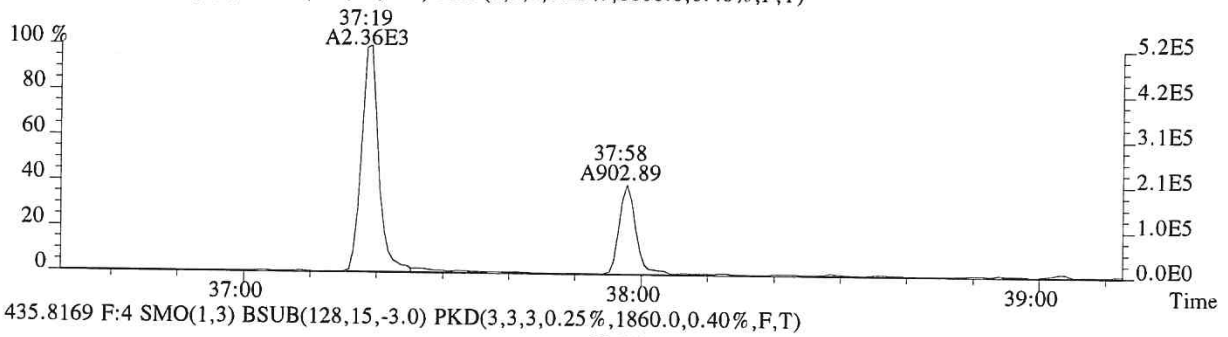
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



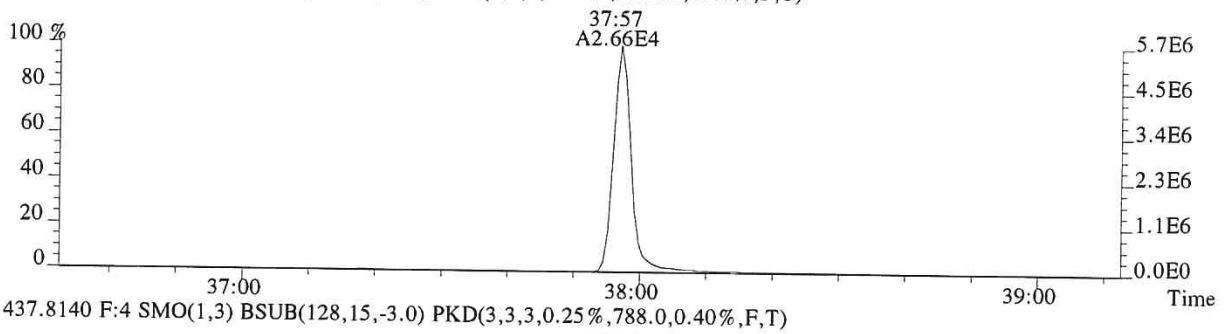
File:P616280 #1-241 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,444.0,0.40%,F,T)



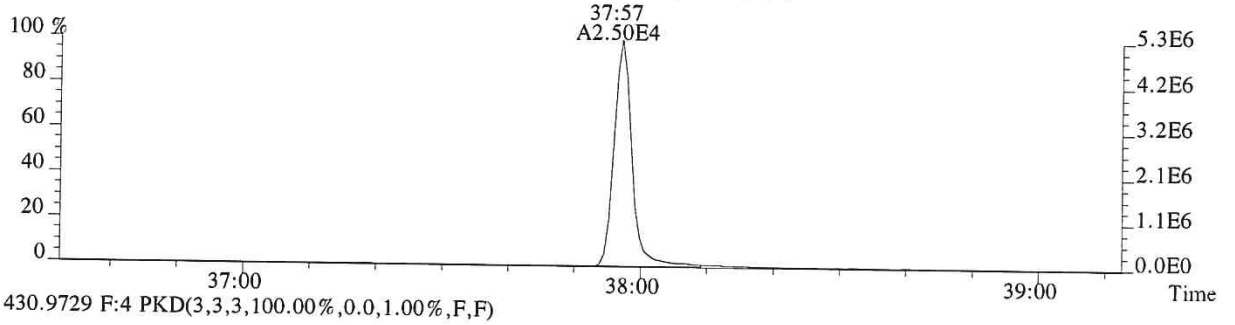
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1608.0,0.40%,F,T)



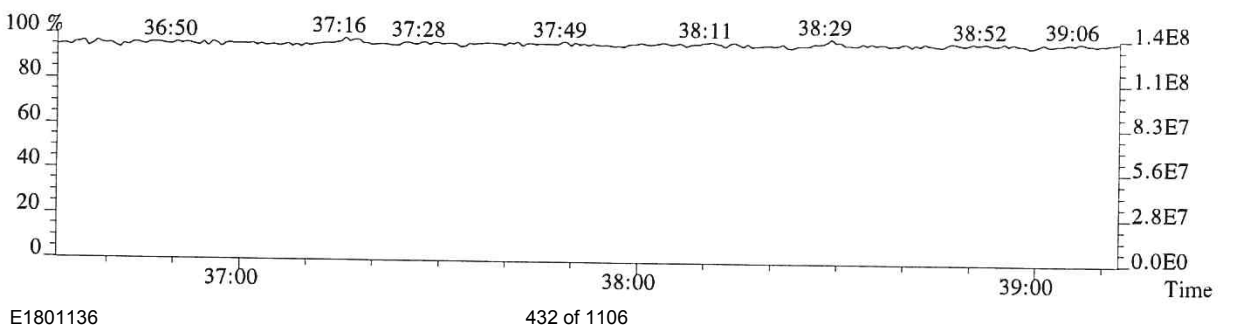
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1860.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,788.0,0.40%,F,T)



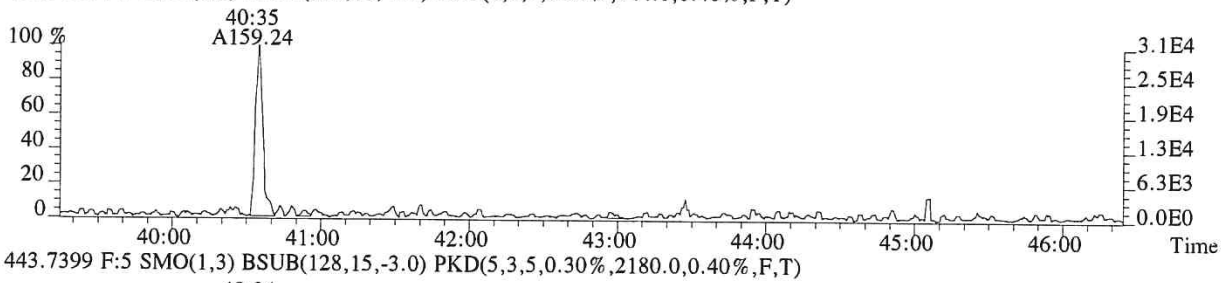
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



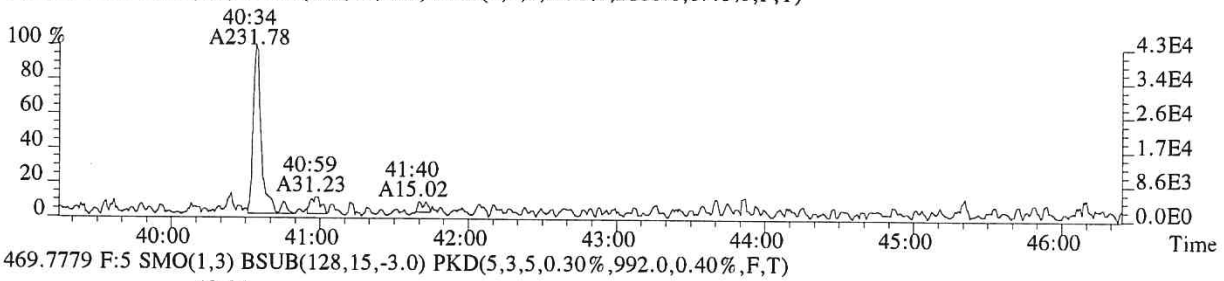
060198

File:P616280 #1-645 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010

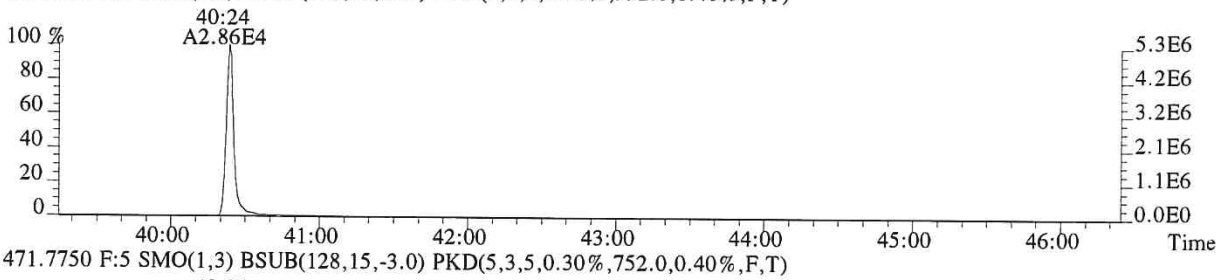
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,844.0,0.40%,F,T)



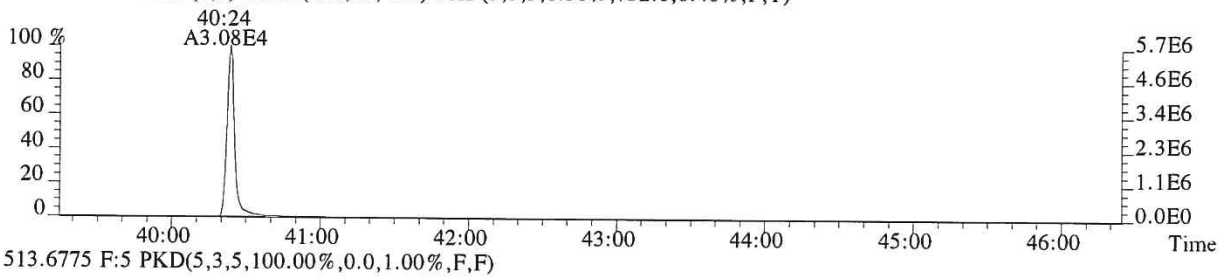
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2180.0,0.40%,F,T)



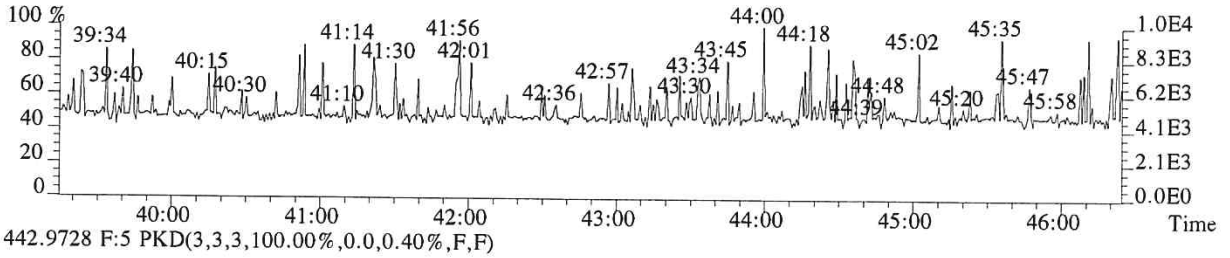
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,992.0,0.40%,F,T)



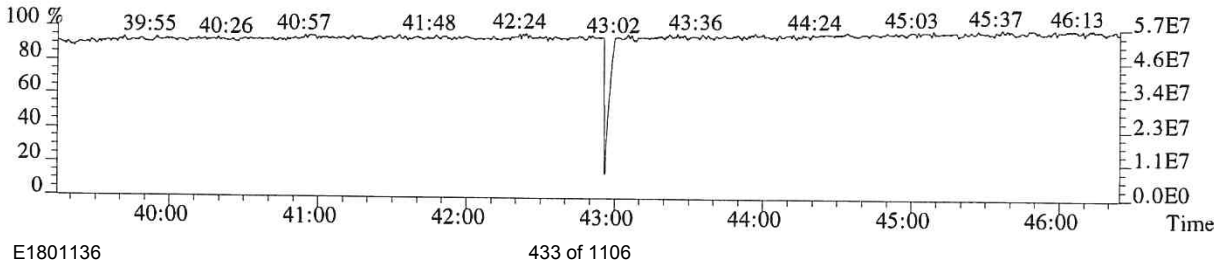
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,752.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

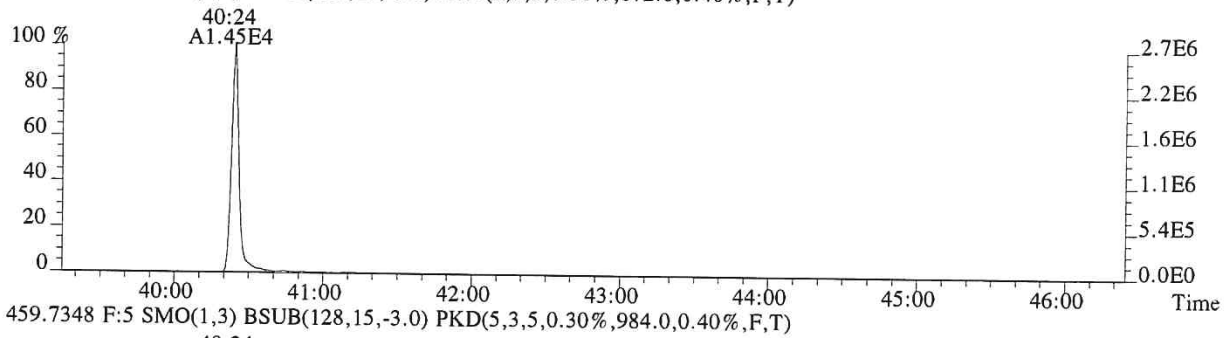


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

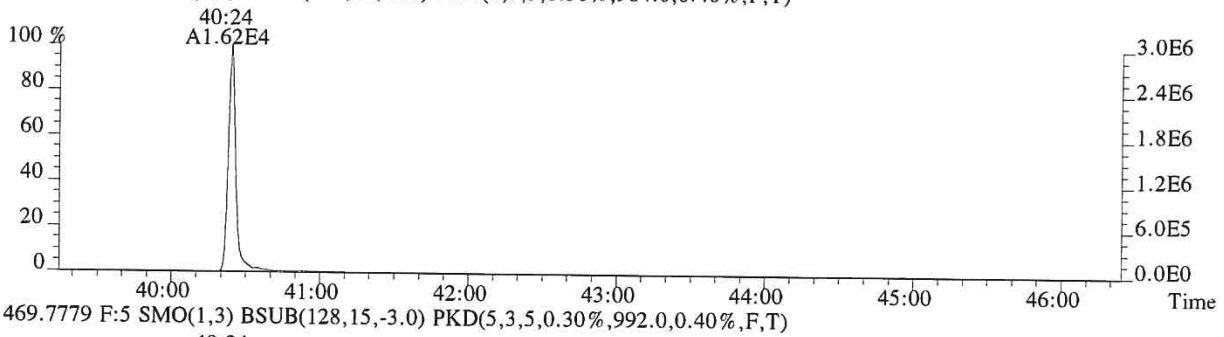


060199

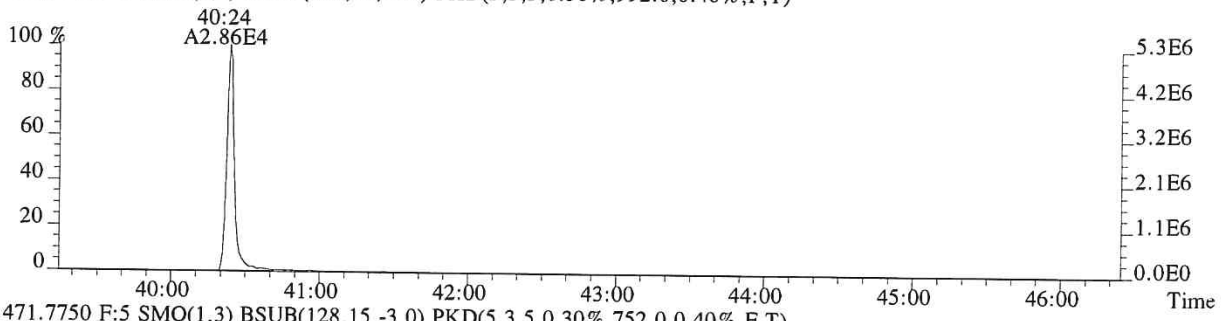
File:P616280 #1-645 Acq:29-DEC-2018 16:05:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-010
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,672.0,0.40%,F,T)



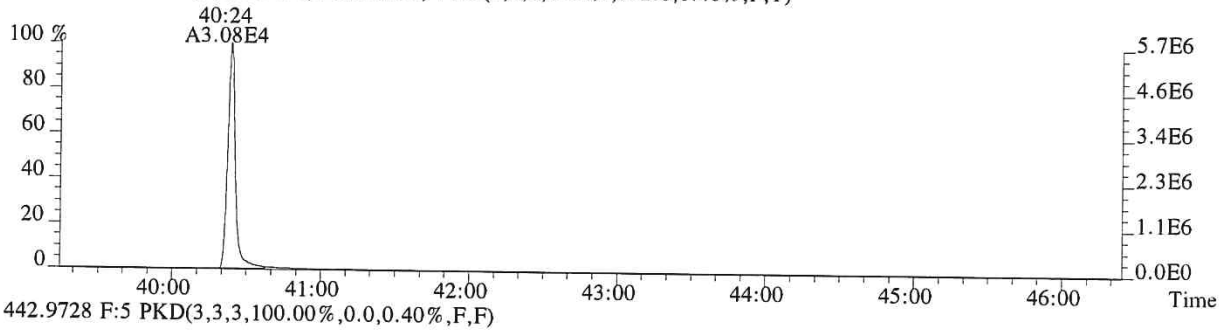
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,984.0,0.40%,F,T)



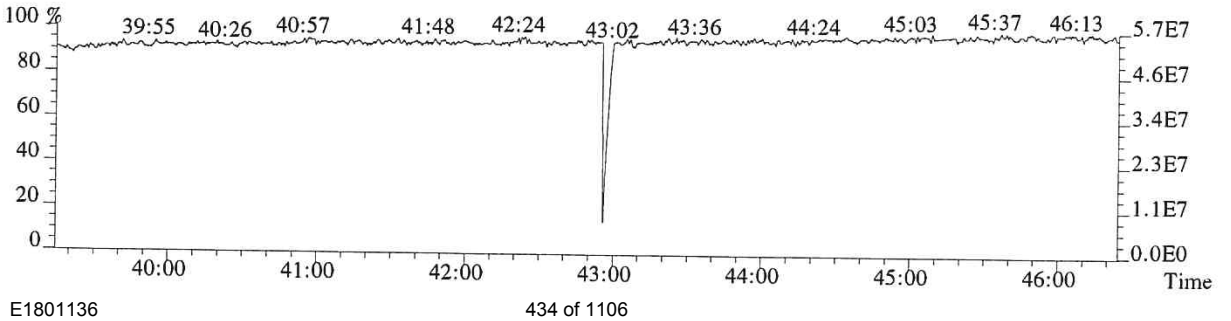
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,992.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,752.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060200

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0116

Run #10 Filename P616281 Samp: 1 Inj: 1 Acquired: 29-DEC-18 16:54:09
Processed: 30-DEC-18 09:02:12 Sample ID: E1801136-011

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:25	1.780e+04	2.295e+04	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:28	9.149e+02	6.226e+02	1.47	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:31	7.458e+02	6.110e+02	1.22	no	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:21	1.166e+03	9.155e+02	1.27	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	3.820e+02	3.634e+02	1.05	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:01	1.087e+02	5.845e+01	1.86	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:49	1.388e+02	9.193e+01	1.51	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:04	4.853e+02	4.441e+02	1.09	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	1.166e+02	1.401e+02	0.83	no	no	1.463
10	Unk	OCDF	40:35	6.141e+02	6.586e+02	0.93	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:26	4.993e+03	6.645e+03	0.75	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:49	1.867e+02	1.025e+02	1.82	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:09	1.205e+02	5.076e+01	2.37	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:14	1.647e+02	1.612e+02	1.02	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:29	2.502e+02	1.609e+02	1.55	no	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:58	4.440e+03	4.378e+03	1.01	yes	no	1.112
17	Unk	OCDD	40:24	6.552e+04	7.310e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:23	2.797e+04	3.574e+04	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:27	5.049e+04	3.184e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:30	4.825e+04	3.070e+04	1.57	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:21	2.203e+04	4.203e+04	0.52	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:27	2.867e+04	5.398e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:00	2.309e+04	4.344e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	2.171e+04	4.169e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:03	1.658e+04	3.718e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:23	1.560e+04	3.473e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:24	1.512e+04	1.928e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:48	3.692e+04	2.384e+04	1.55	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	3.282e+04	2.562e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:14	3.179e+04	2.496e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:57	3.457e+04	3.363e+04	1.03	yes	no	0.857
32	IS	13C-OCDD	40:24	3.476e+04	3.880e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:38	3.859e+04	4.908e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	5.356e+04	4.328e+04	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:26	2.288e+04				no	1.086

$$OCDD = \frac{(6.552e+04 + 7.310e+04) \times 4000\ pg \times 1}{(3.476e+04 + 3.880e+04) \times 10.358\ g \times 80.2 / 100 \times 1.157} = 4588 \cdot 0268\ ng/kg$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0116

Run #10 Filename P616281 Samp: 1 Inj: 1 Acquired: 29-DEC-18 16:54:09
Processed: 30-DEC-18 09:02:12 LAB. ID: E1801136-011

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.31e+06	1.17e+03	2.0e+03	3.02e+06	4.96e+03	6.1e+02
2	1,2,3,7,8-PeCDF	1.51e+05	1.60e+03	9.4e+01	1.06e+05	3.17e+03	3.3e+01
3	2,3,4,7,8-PeCDF	1.27e+05	1.60e+03	7.9e+01	9.37e+04	3.17e+03	3.0e+01
4	1,2,3,4,7,8-HxCDF	2.47e+05	1.80e+03	1.4e+02	1.91e+05	1.17e+03	1.6e+02
5	1,2,3,6,7,8-HxCDF	7.21e+04	1.80e+03	4.0e+01	7.13e+04	1.17e+03	6.1e+01
6	2,3,4,6,7,8-HxCDF	2.78e+04	1.80e+03	1.5e+01	1.38e+04	1.17e+03	1.2e+01
7	1,2,3,7,8,9-HxCDF	2.71e+04	1.80e+03	1.5e+01	1.51e+04	1.17e+03	1.3e+01
8	1,2,3,4,6,7,8-HpCDF	1.11e+05	1.42e+03	7.9e+01	9.82e+04	4.00e+02	2.5e+02
9	1,2,3,4,7,8,9-HpCDF	2.38e+04	1.42e+03	1.7e+01	3.02e+04	4.00e+02	7.6e+01
10	OCDF	1.21e+05	5.48e+02	2.2e+02	1.31e+05	2.14e+03	6.1e+01
11	2,3,7,8-TCDD	7.46e+05	4.54e+03	1.6e+02	1.03e+06	1.70e+03	6.0e+02
12	1,2,3,7,8-PeCDD	4.07e+04	1.11e+03	3.7e+01	1.91e+04	4.24e+02	4.5e+01
13	1,2,3,4,7,8-HxCDD	2.68e+04	8.20e+02	3.3e+01	1.18e+04	3.64e+03	3.2e+00
14	1,2,3,6,7,8-HxCDD	3.10e+04	8.20e+02	3.8e+01	3.16e+04	3.64e+03	8.7e+00
15	1,2,3,7,8,9-HxCDD	4.90e+04	8.20e+02	6.0e+01	3.54e+04	3.64e+03	9.7e+00
16	1,2,3,4,6,7,8-HpCDD	9.56e+05	1.75e+03	5.5e+02	9.27e+05	9.36e+02	9.9e+02
17	OCDD	1.28e+07	4.16e+02	3.1e+04	1.45e+07	4.60e+02	3.2e+04
18	13C-2,3,7,8-TCDF	3.97e+06	8.63e+03	4.6e+02	5.04e+06	5.71e+03	8.8e+02
19	13C-1,2,3,7,8-PeCDF	8.56e+06	1.54e+03	5.6e+03	5.37e+06	7.96e+02	6.8e+03
20	13C-2,3,4,7,8-PeCDF	9.04e+06	1.54e+03	5.9e+03	5.79e+06	7.96e+02	7.3e+03
21	13C-1,2,3,4,7,8-HxCDF	4.69e+06	1.05e+03	4.5e+03	8.92e+06	2.29e+03	3.9e+03
22	13C-1,2,3,6,7,8-HxCDF	5.71e+06	1.05e+03	5.4e+03	1.10e+07	2.29e+03	4.8e+03
23	13C-2,3,4,6,7,8-HxCDF	4.88e+06	1.05e+03	4.6e+03	9.43e+06	2.29e+03	4.1e+03
24	13C-1,2,3,7,8,9-HxCDF	4.35e+06	1.05e+03	4.1e+03	8.29e+06	2.29e+03	3.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	3.58e+06	1.96e+03	1.8e+03	8.09e+06	6.86e+03	1.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.35e+06	1.96e+03	1.7e+03	7.38e+06	6.86e+03	1.1e+03
27	13C-2,3,7,8-TCDD	2.43e+06	1.66e+04	1.5e+02	3.04e+06	5.33e+03	5.7e+02
28	13C-1,2,3,7,8-PeCDD	6.93e+06	1.21e+03	5.7e+03	4.51e+06	1.99e+03	2.3e+03
29	13C-1,2,3,4,7,8-HxCDD	7.36e+06	2.42e+03	3.0e+03	5.75e+06	1.91e+03	3.0e+03
30	13C-1,2,3,6,7,8-HxCDD	6.51e+06	2.42e+03	2.7e+03	5.19e+06	1.91e+03	2.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.28e+06	1.40e+03	5.2e+03	7.10e+06	1.37e+03	5.2e+03
32	13C-OCDD	6.61e+06	9.44e+02	7.0e+03	7.31e+06	1.03e+03	7.1e+03
33	13C-1,2,3,4-TCDD	5.63e+06	1.66e+04	3.4e+02	7.20e+06	5.33e+03	1.3e+03
34	13C-1,2,3,7,8,9-HxCDD	1.08e+07	2.42e+03	4.5e+03	8.67e+06	1.91e+03	4.5e+03
35	37Cl-2,3,7,8-TCDD	3.54e+06	3.41e+03	1.0e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (4.536e+03 + 1.704e+03) \times 2000}{(2.427e+06 + 3.040e+06) \times (\quad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0116

Entry: 36 Totals Name: Total Tetra-Furans

Run: 10 File: P616281 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 16:54:09 Processed: 30-DEC-18 09:02:12

Mass: 303.9020 305.8990 Tot Response: 7.34e+04 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:14	2.03e+02	2.60e+02	0.78	yes	4.63e+02		n	n
2	22:32	8.44e+02	9.68e+02	0.87	yes	1.81e+03		n	n
3	23:10	6.65e+02	8.56e+02	0.78	yes	1.52e+03		n	n
4	23:32	1.82e+02	2.29e+02	0.80	yes	4.11e+02		n	n
5	23:52	1.26e+03	1.69e+03	0.75	yes	2.95e+03		n	n
6	24:23	7.74e+03	9.78e+03	0.79	yes	1.75e+04		n	n
7	24:41	4.80e+02	6.60e+02	0.73	yes	1.14e+03		n	n
8	25:25	1.78e+04	2.30e+04	0.78	yes	4.08e+04	2,3,7,8-TCDF	n	n
9	25:51	1.41e+03	1.94e+03	0.73	yes	3.35e+03		n	n
10	27:43	1.53e+03	1.92e+03	0.80	yes	3.45e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0116

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 10 File: P616281 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 16:54:09 Processed: 30-DEC-18 09:02:12

Mass: 319.8970 321.8940 Tot Response: 1.29e+04 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:06	7.76e+01	1.09e+02	0.71	yes	1.86e+02		n	n
2	26:26	4.99e+03	6.64e+03	0.75	yes	1.16e+04	2,3,7,8-TCDD	n	n
3	26:48	4.54e+02	6.46e+02	0.70	yes	1.10e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0116

Entry: 39 Totals Name: Total Penta-Furans2

Run: 10 File: P616281 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 16:54:09 Processed: 30-DEC-18 09:02:12

Mass: 339.8600 341.8570 Tot Response: 3.03e+03 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:26	4.61e+02	2.81e+02	1.64	yes	7.42e+02		n	n
2	30:16	1.12e+02	6.58e+01	1.71	yes	1.78e+02		n	n
3	30:28	9.15e+02	6.23e+02	1.47	yes	1.54e+03	1,2,3,7,8-PeCDF	n	n
4	30:45	2.87e+02	2.06e+02	1.39	yes	4.92e+02		n	n
5	32:28	5.18e+01	3.26e+01	1.59	yes	8.45e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0116

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 10 File: P616281 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 16:54:09 Processed: 30-DEC-18 09:02:12

Mass: 355.8550 357.8520 Tot Response: 8.33e+02 RRF: 0.9288

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:59	4.97e+02	3.36e+02 1.48	yes	8.33e+02		n	n

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Peak List Summary

CLIENT ID.
SL0116

Entry: 41 Totals Name: Total Hexa-Furans

Run: 10 File: P616281 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 16:54:09 Processed: 30-DEC-18 09:02:12

Mass: 373.8210 375.8180 Tot Response: 2.46e+03 RRF: 1.324

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:10	3.93e+01	1.19	yes	7.22e+01		n	n
2	33:21	1.75e+02	1.32	yes	3.08e+02		n	n
3	34:21	1.17e+03	1.27	yes	2.08e+03	1,2,3,4,7,8-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0116

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 10 File: P616281 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 16:54:09 Processed: 30-DEC-18 09:02:12

Mass: 389.8160 391.8130 Tot Response: 9.01e+03 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:44	3.93e+03	3.05e+03	1.29	yes	6.98e+03		n	n
2	34:32	1.01e+03	7.50e+02	1.35	yes	1.76e+03		n	n
3	34:39	1.42e+02	1.24e+02	1.15	yes	2.66e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0116

Entry: 43 Totals Name: Total Hepta-Furans

Run: 10 File: P616281 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 16:54:09 Processed: 30-DEC-18 09:02:12

Mass: 407.7820 409.7790 Tot Response: 9.54e+02 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:04	4.85e+02	4.44e+02	1.09	yes	9.29e+02	1,2,3,4,6,7,8-HpCDF	n	n
2	37:19	1.15e+01	1.27e+01	0.91	yes	2.42e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0116

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 10 File: P616281 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 16:54:09 Processed: 30-DEC-18 09:02:12

Mass: 423.7770 425.7740 Tot Response: 3.48e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:19	1.32e+04	1.28e+04	1.03	yes	2.60e+04		n	n
2	37:58	4.44e+03	4.38e+03	1.01	yes	8.82e+03	1,2,3,4,6,7,8-HpCDD	n	n

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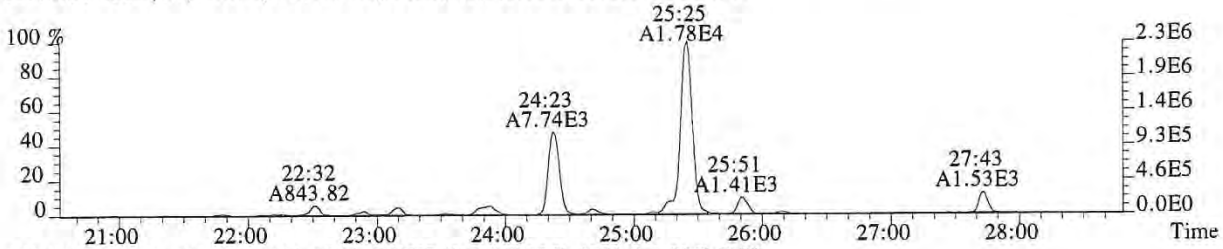
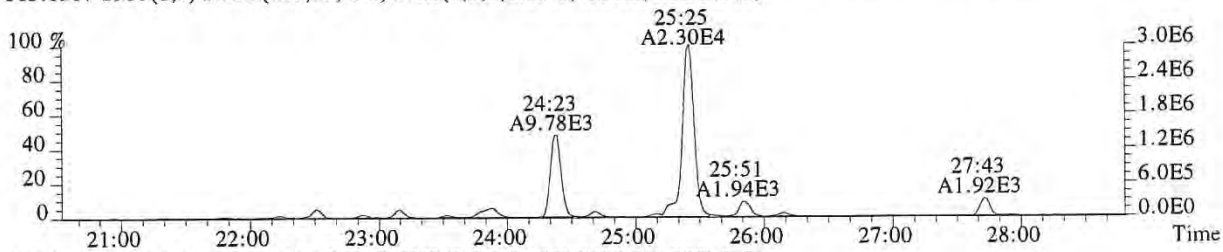
File:P616281 #1-587 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011

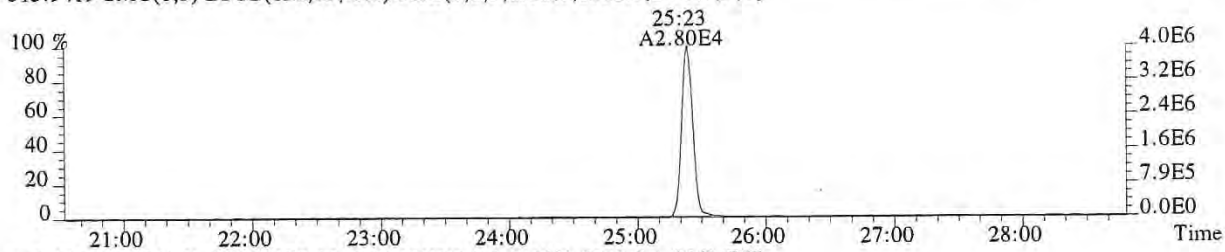
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1172.0,1.00%,F,T)



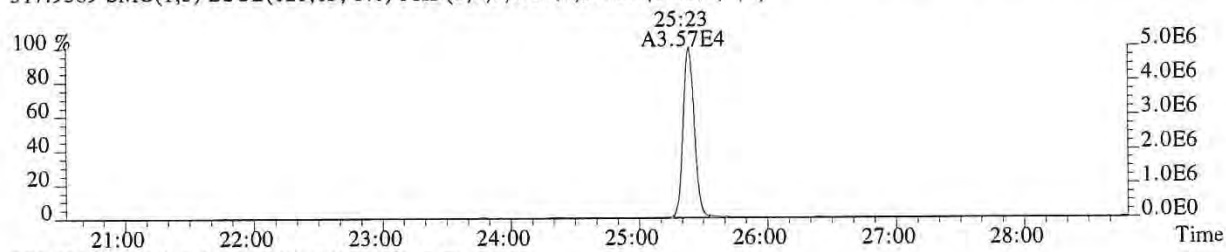
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4960.0,1.00%,F,T)



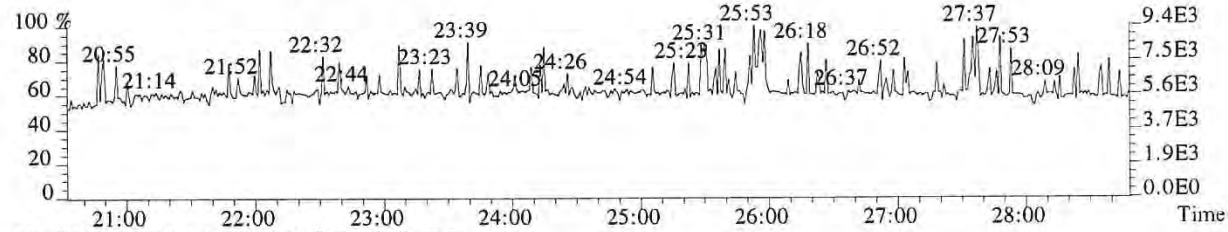
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8632.0,1.00%,F,T)



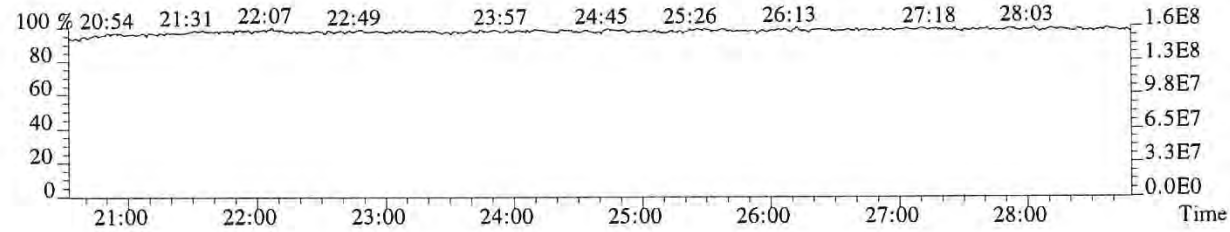
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5712.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



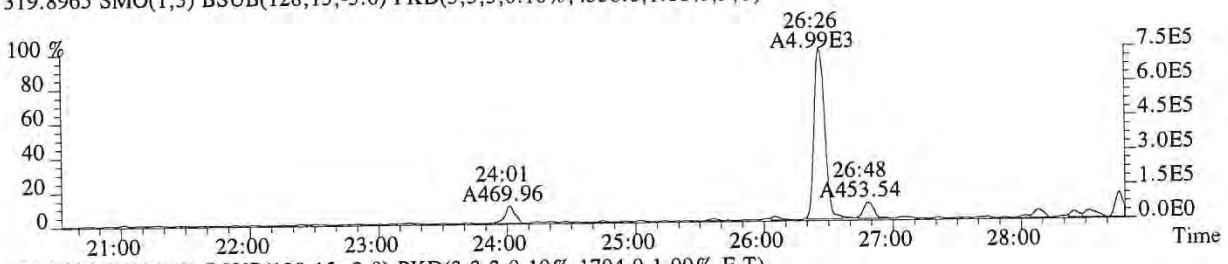
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



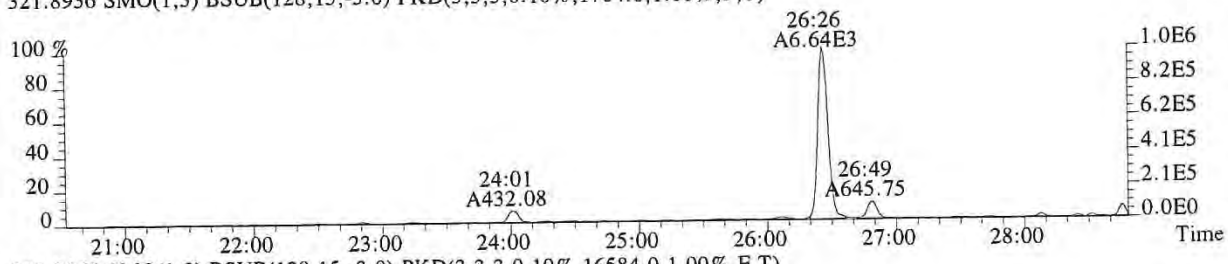
060211

File:P616281 #1-587 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011

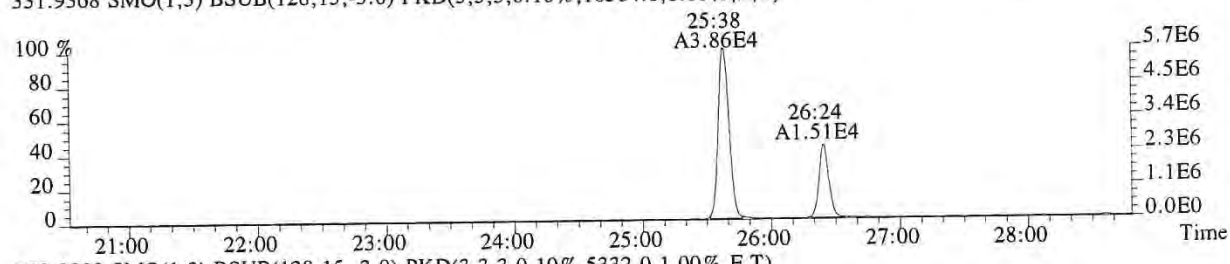
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4536.0,1.00%,F,T)



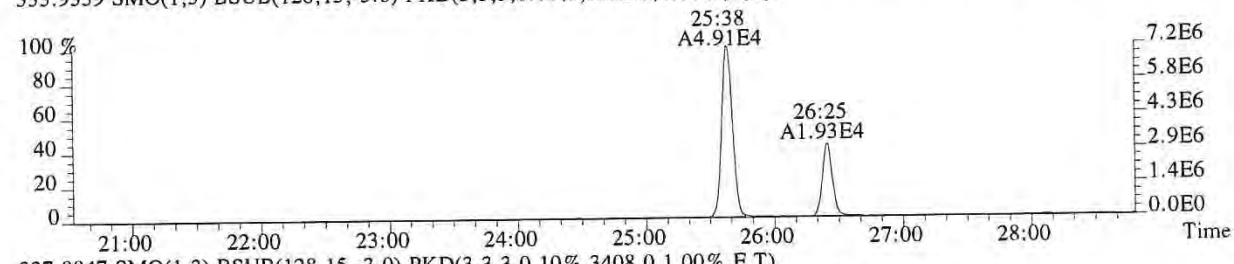
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1704.0,1.00%,F,T)



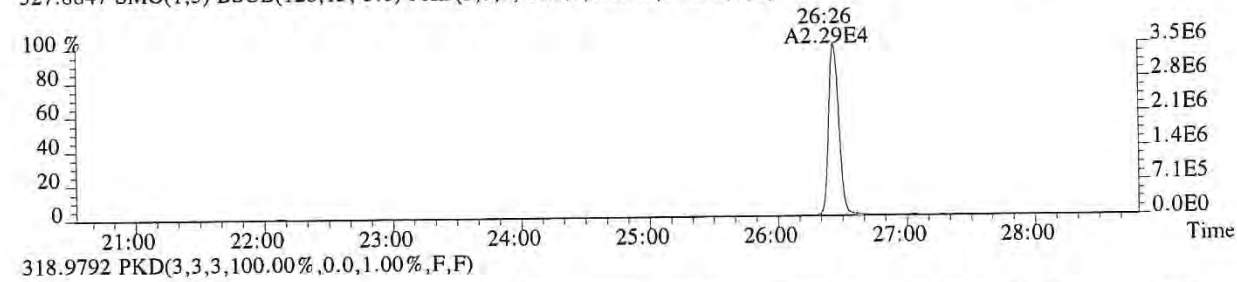
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16584.0,1.00%,F,T)



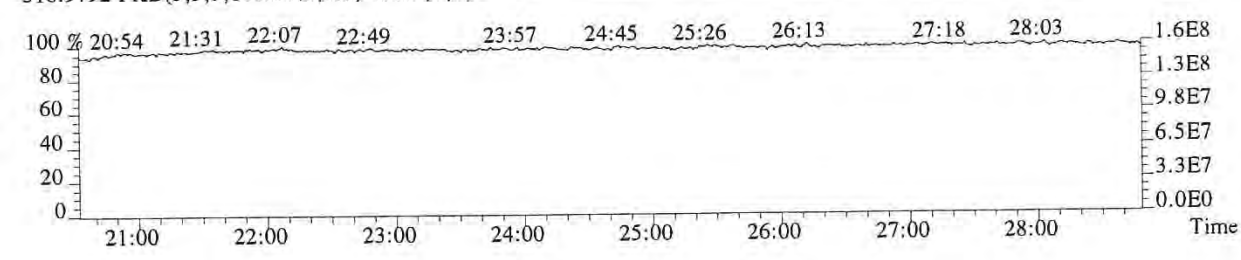
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5332.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3408.0,1.00%,F,T)

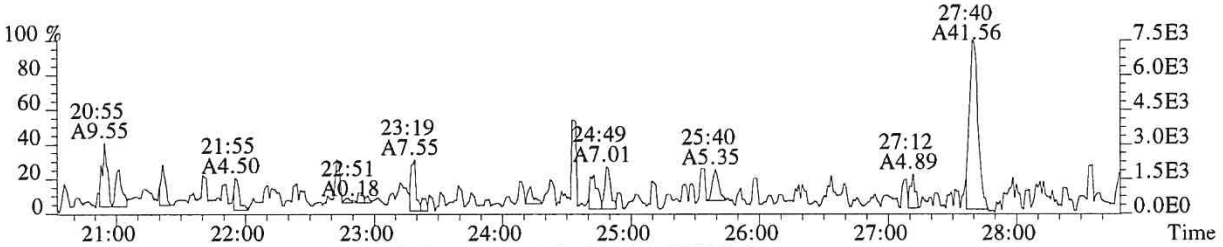


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

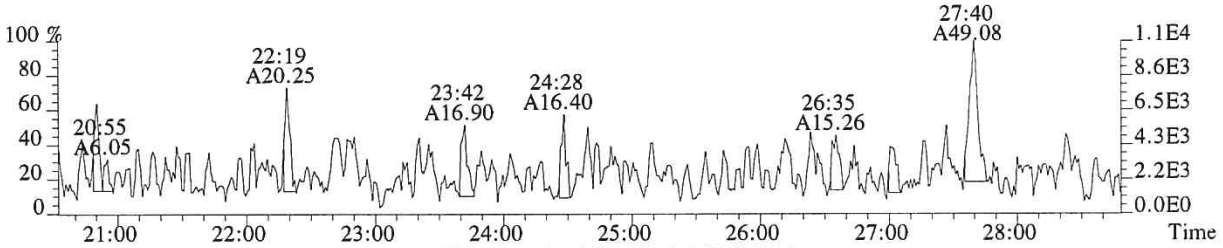


060212

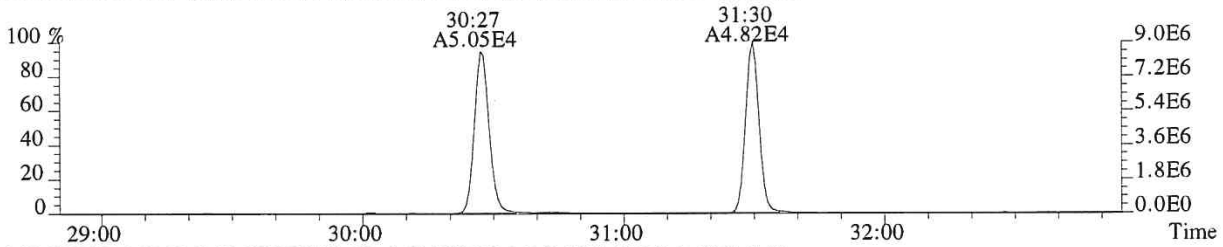
File:P616281 #1-587 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,752.0,1.00%,F,T)



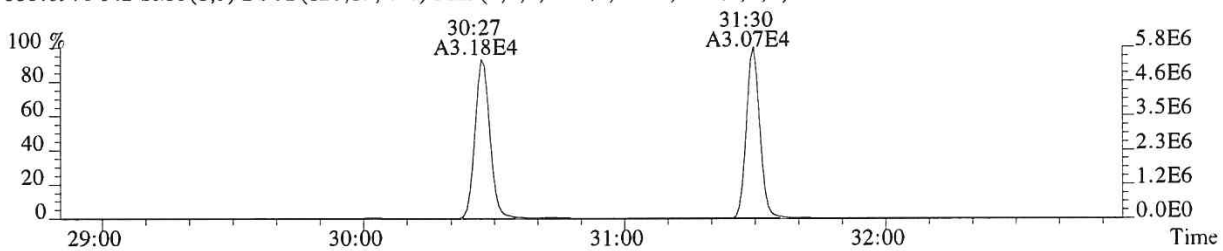
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2884.0,1.00%,F,T)



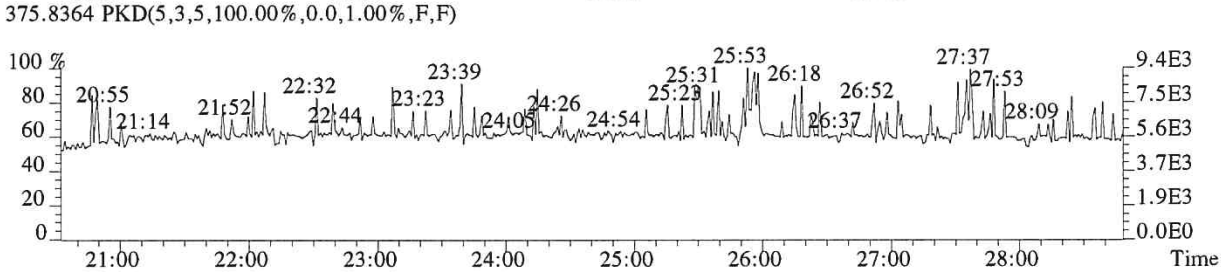
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1540.0,1.00%,F,T)



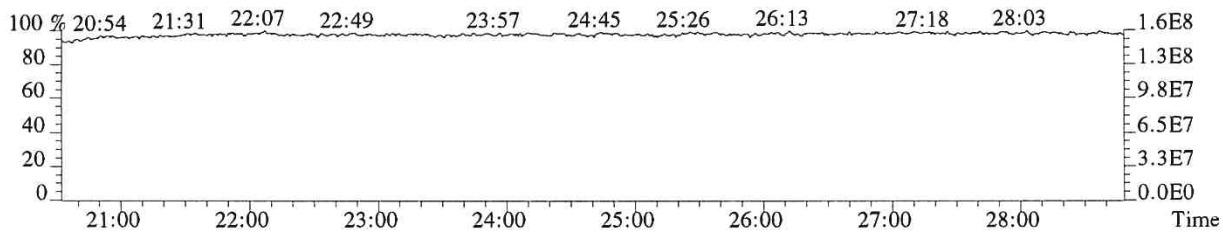
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,796.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



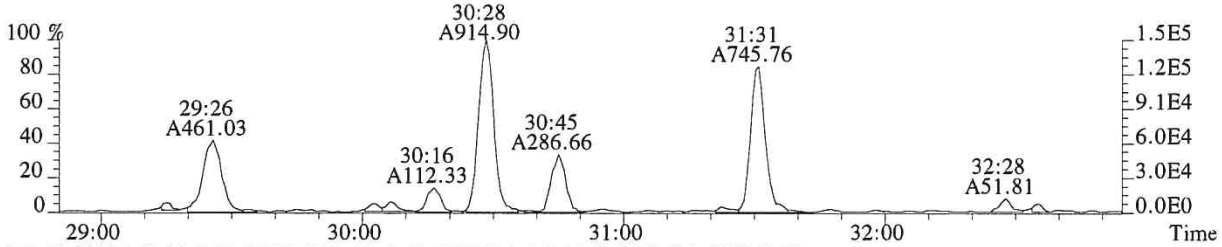
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



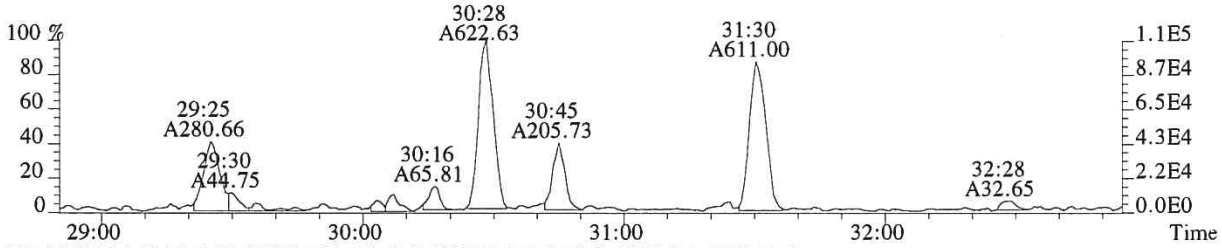
060213

File:P616281 #1-367 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011

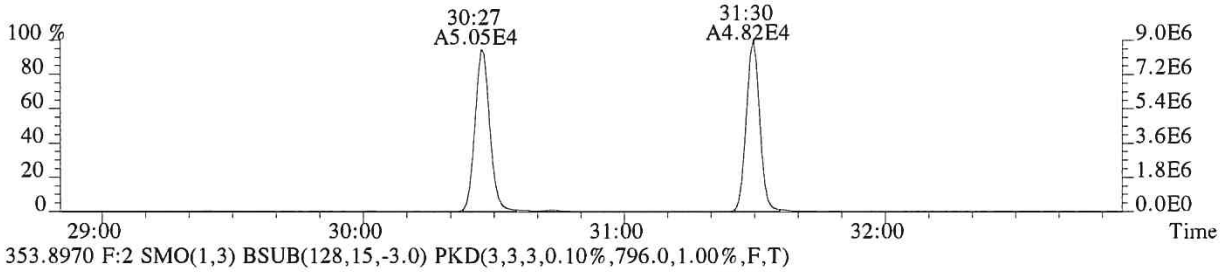
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1600.0,1.00%,F,T)



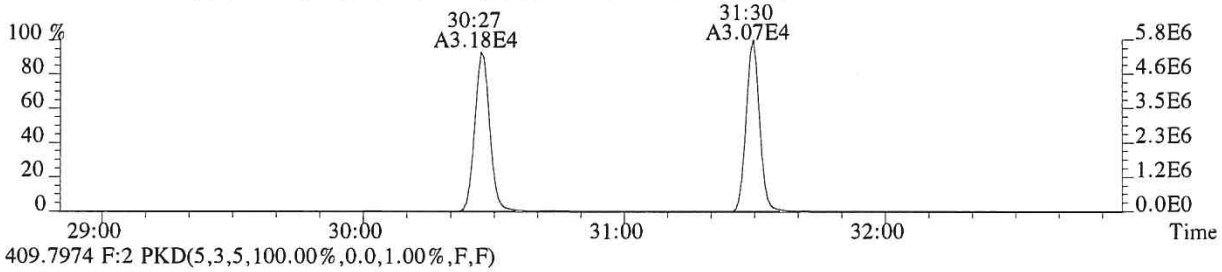
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3172.0,1.00%,F,T)



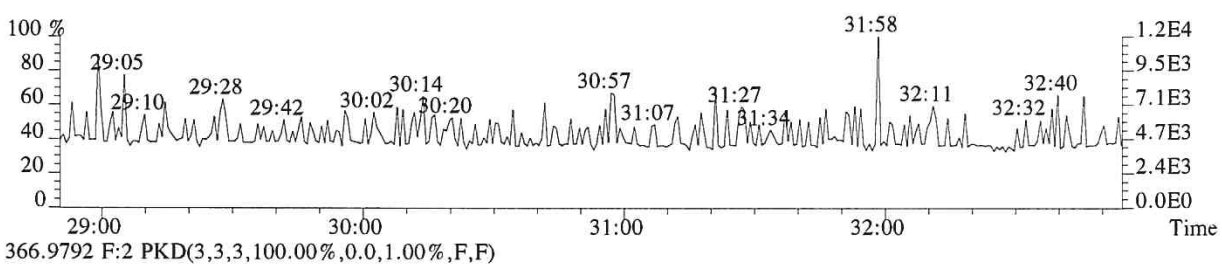
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1540.0,1.00%,F,T)



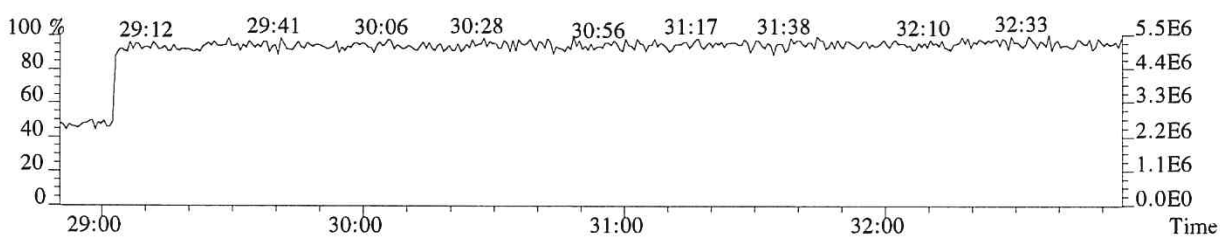
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,796.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

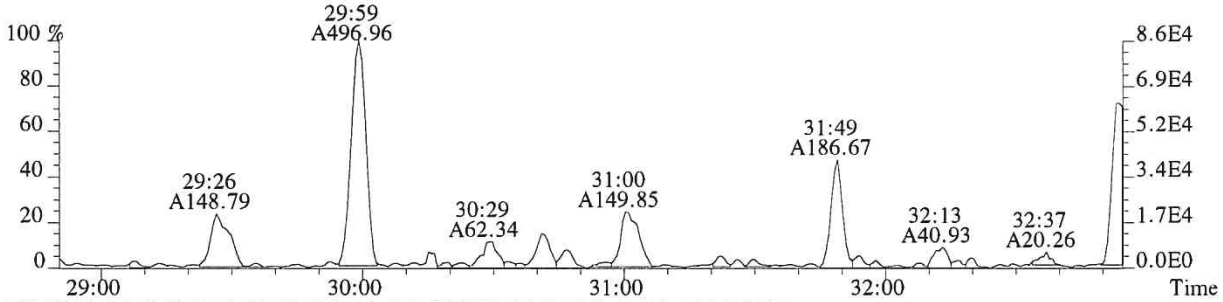


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

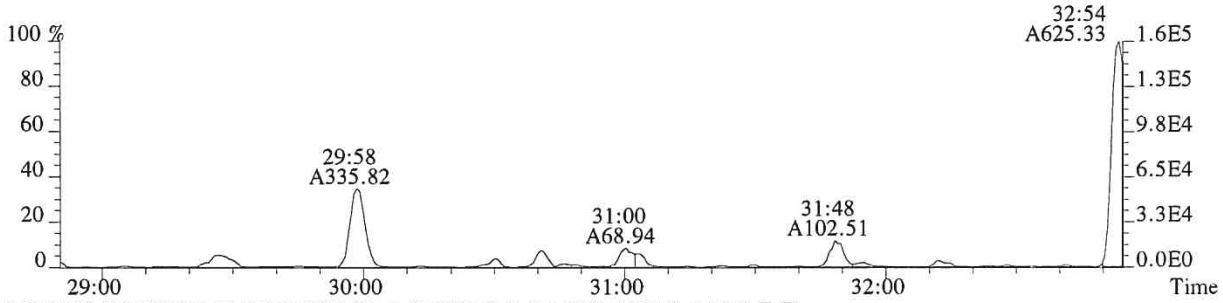


060214

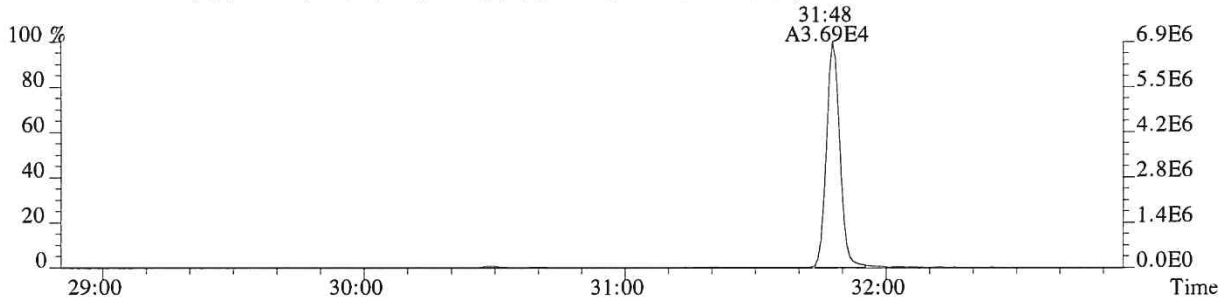
File:P616281 #1-367 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1108.0,1.00%,F,T)



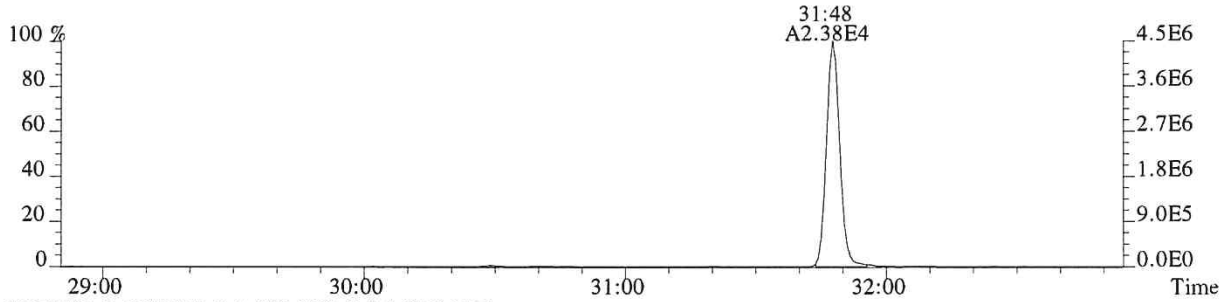
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,424.0,1.00%,F,T)



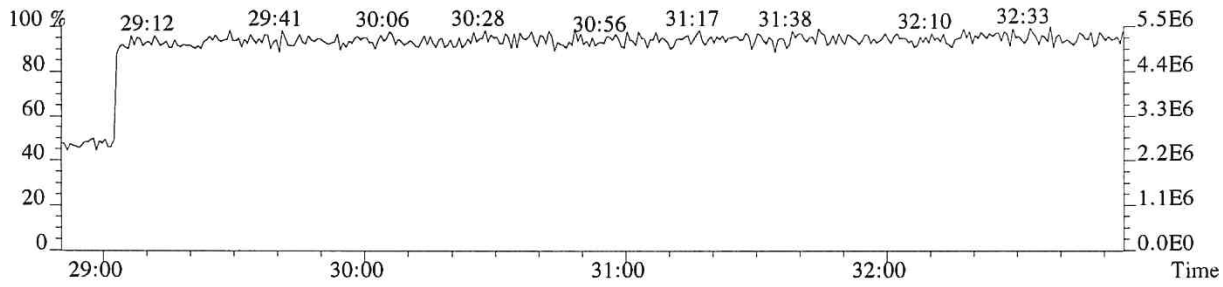
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1208.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1988.0,1.00%,F,T)

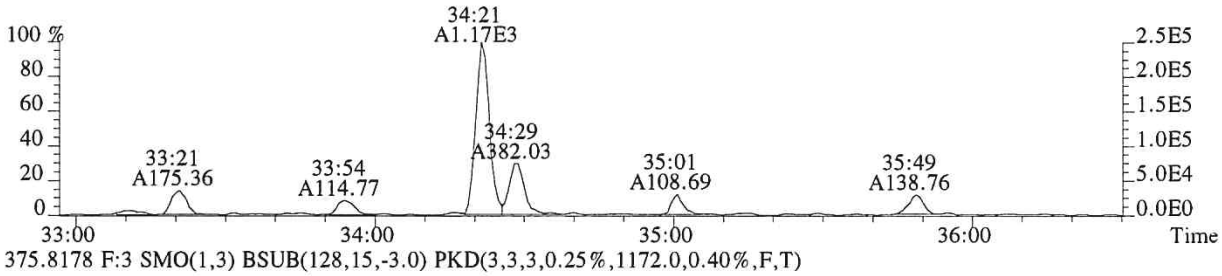


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

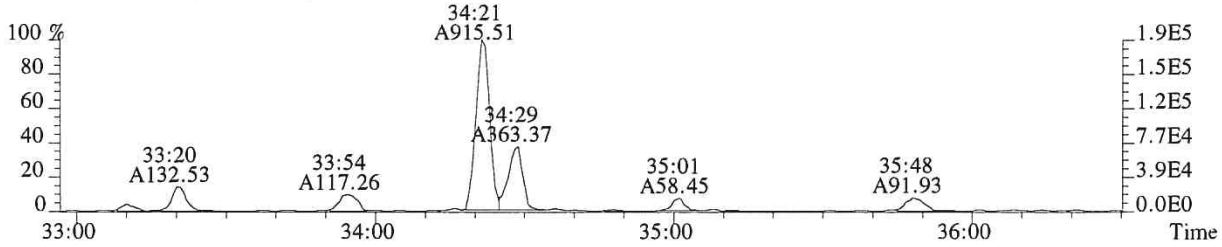


File:P616281 #1-321 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011

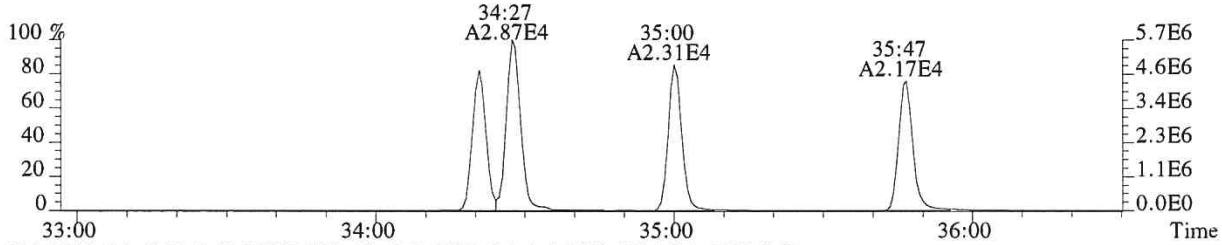
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1796.0,0.40%,F,T)



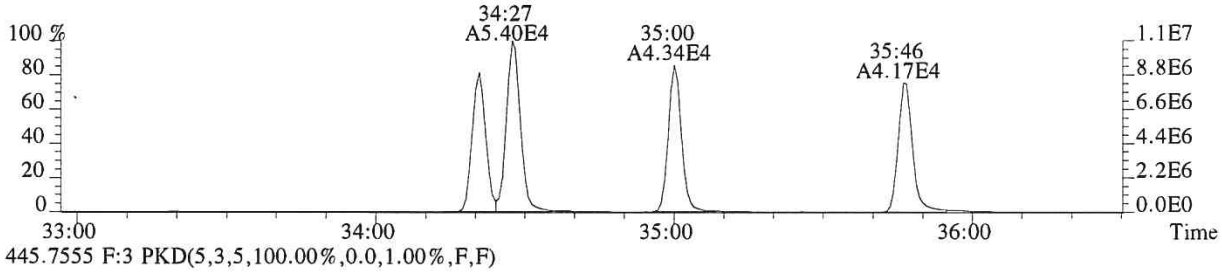
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1172.0,0.40%,F,T)



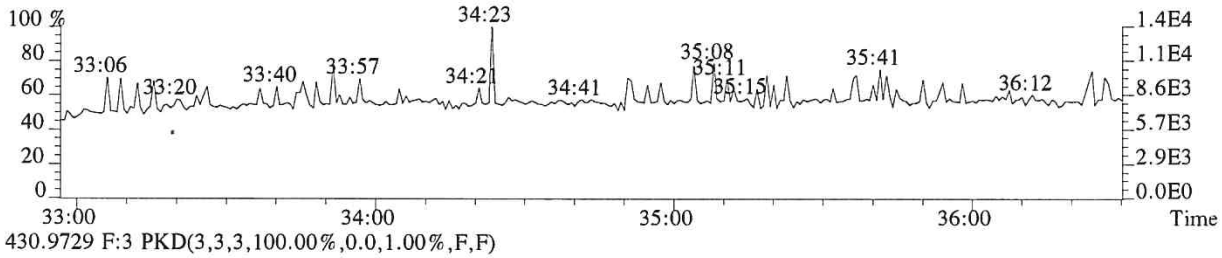
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1052.0,0.40%,F,T)



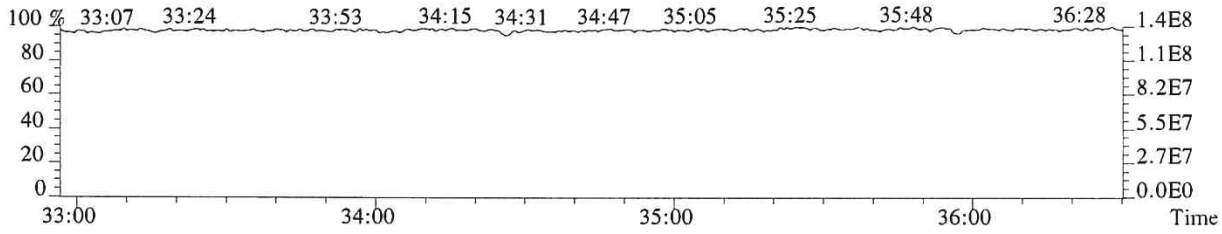
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2292.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

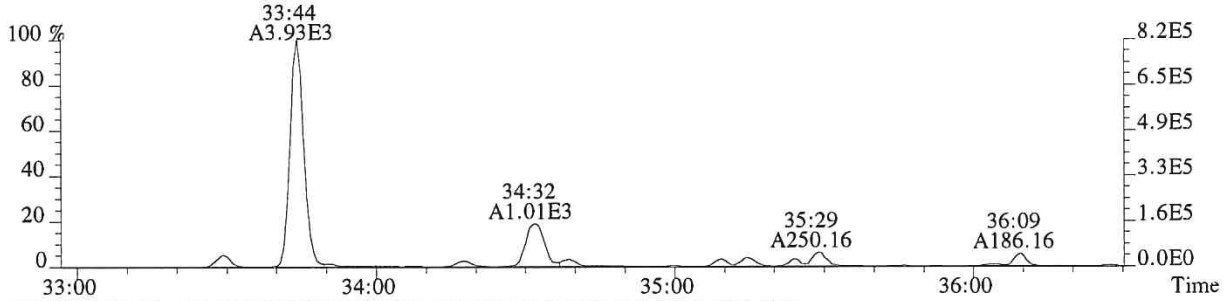


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

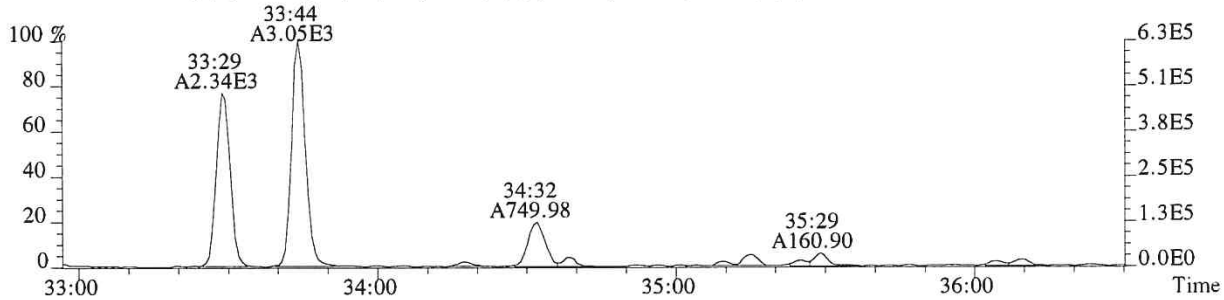


060216

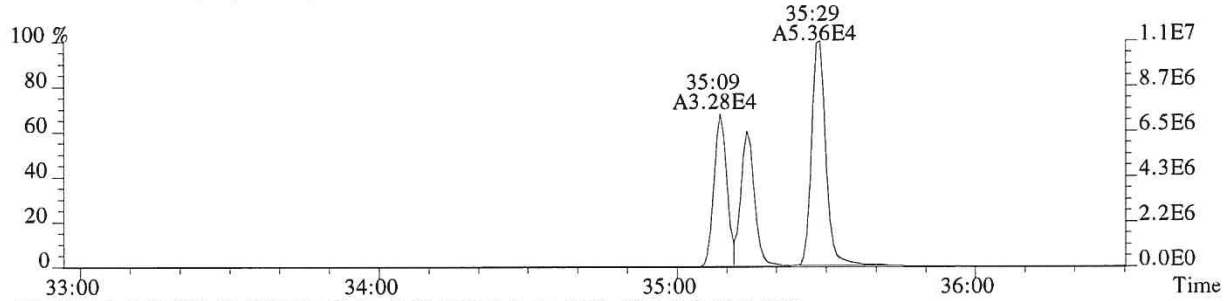
File:P616281 #1-321 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,820.0,0.40%,F,T)



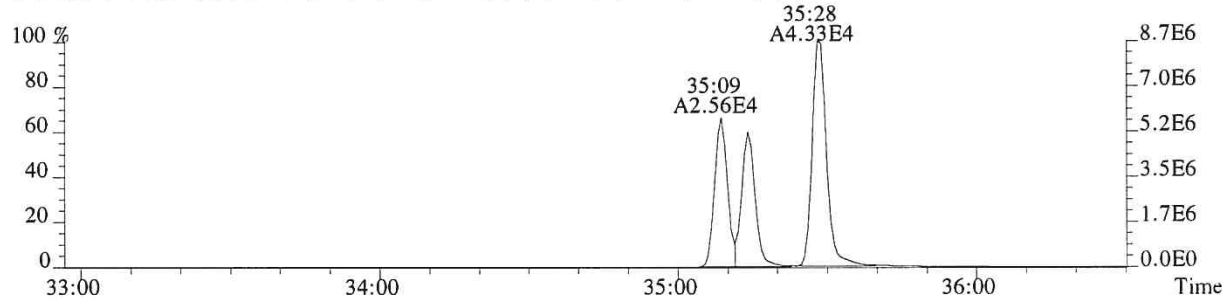
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3644.0,0.40%,F,T)



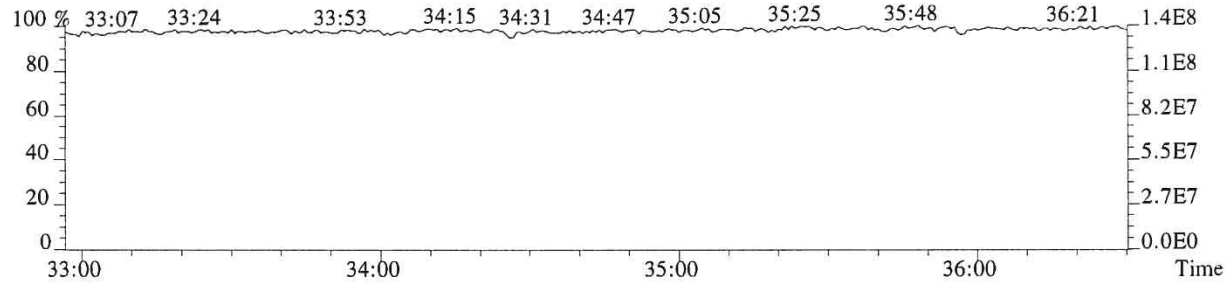
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2420.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1912.0,0.40%,F,T)



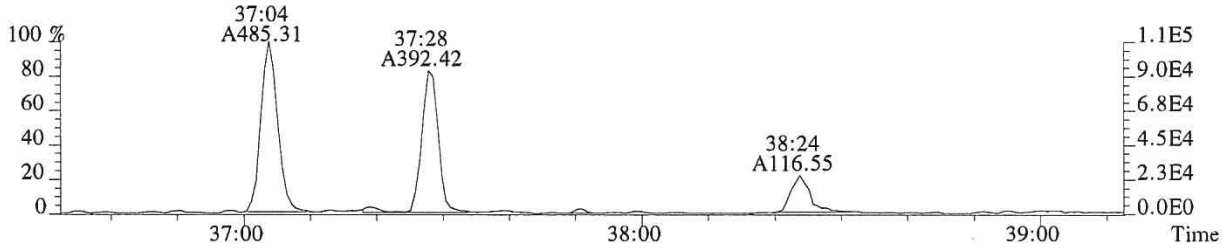
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



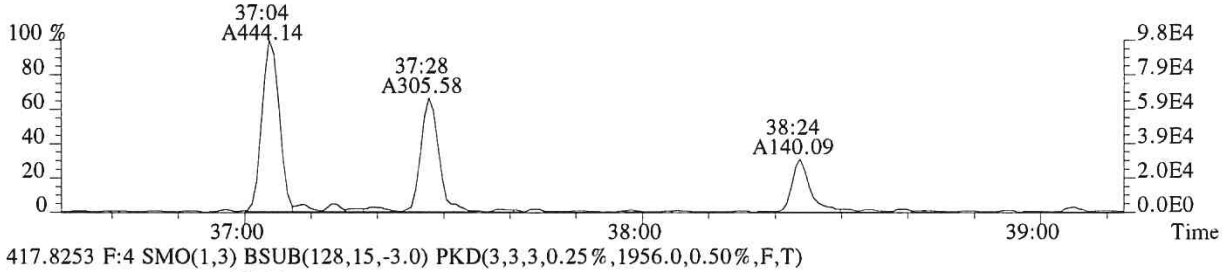
060217

File:P616281 #1-241 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011

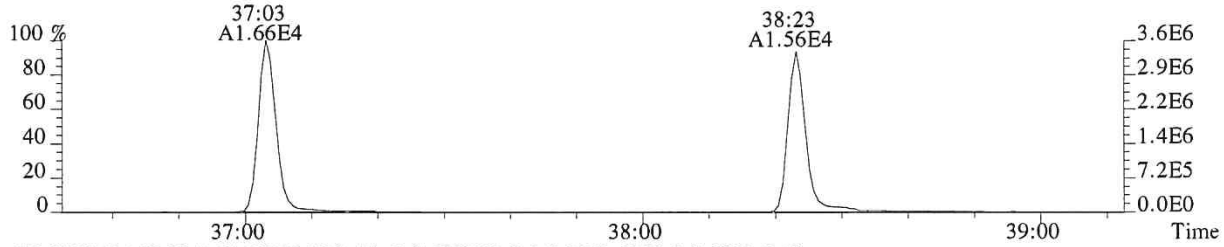
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1416.0,0.50%,F,T)



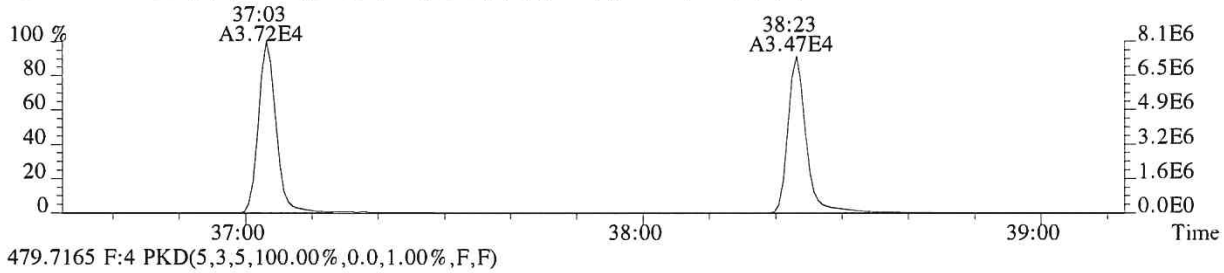
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,400.0,0.50%,F,T)



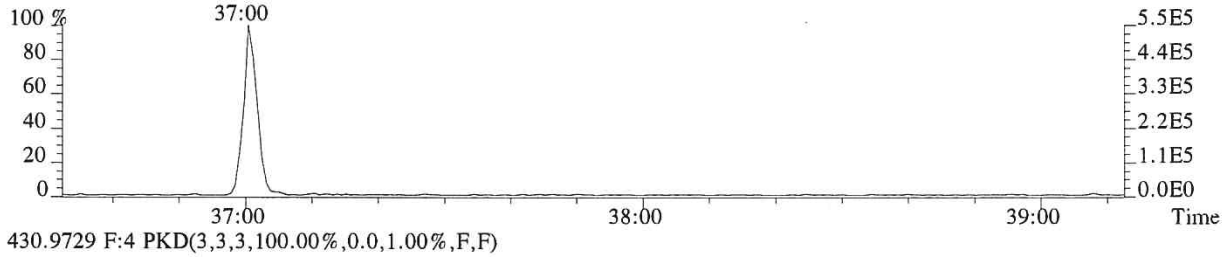
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1956.0,0.50%,F,T)



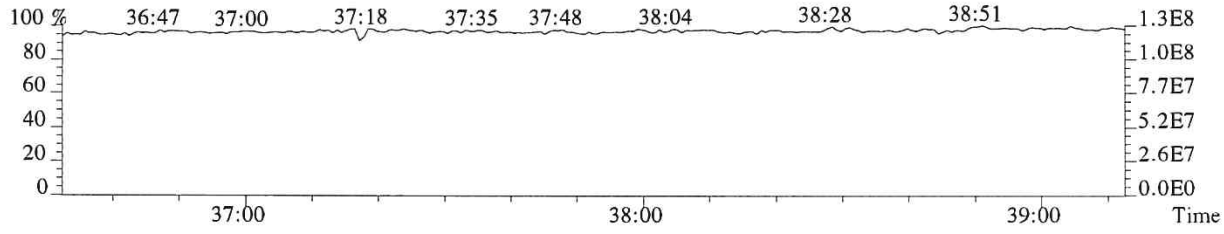
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6860.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

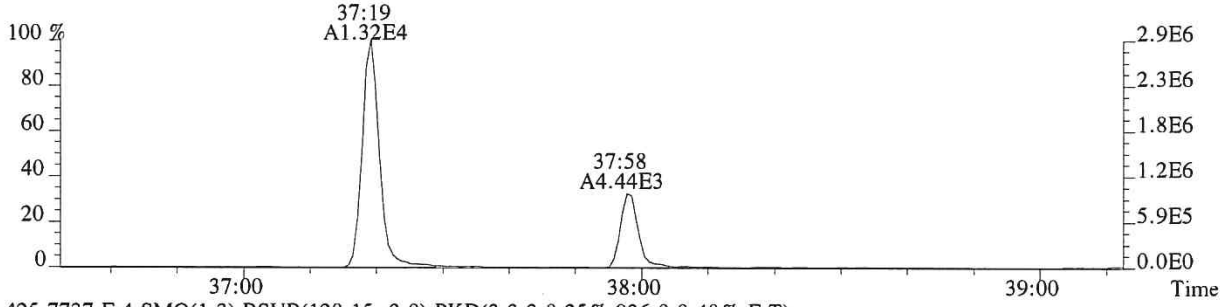


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

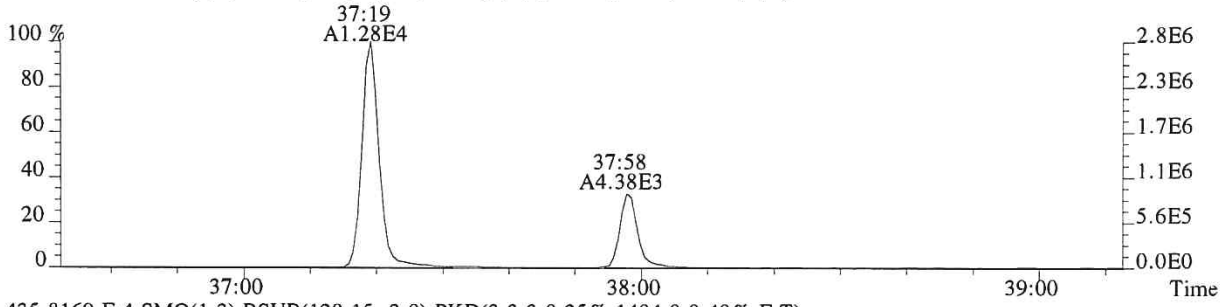


060218

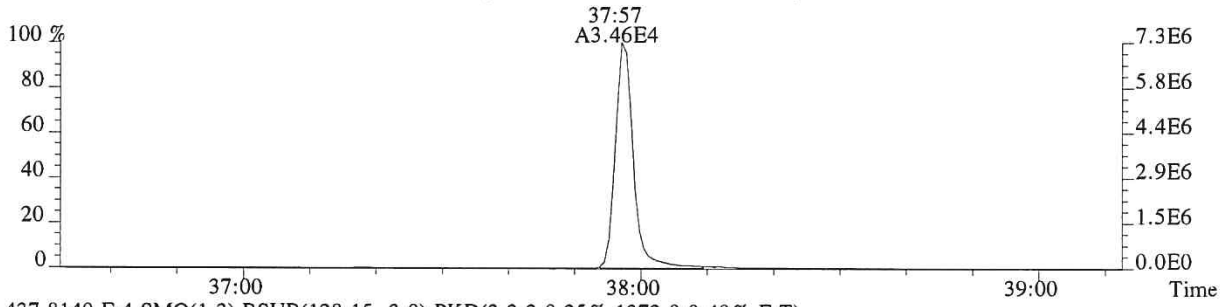
File:P616281 #1-241 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1748.0,0.40%,F,T)



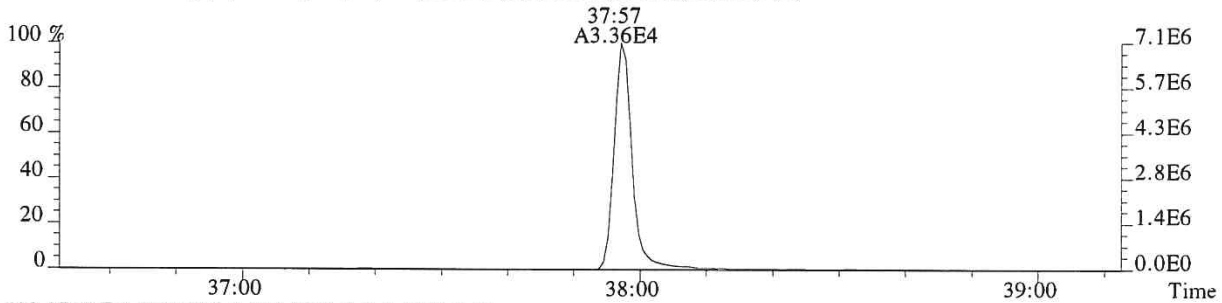
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,936.0,0.40%,F,T)



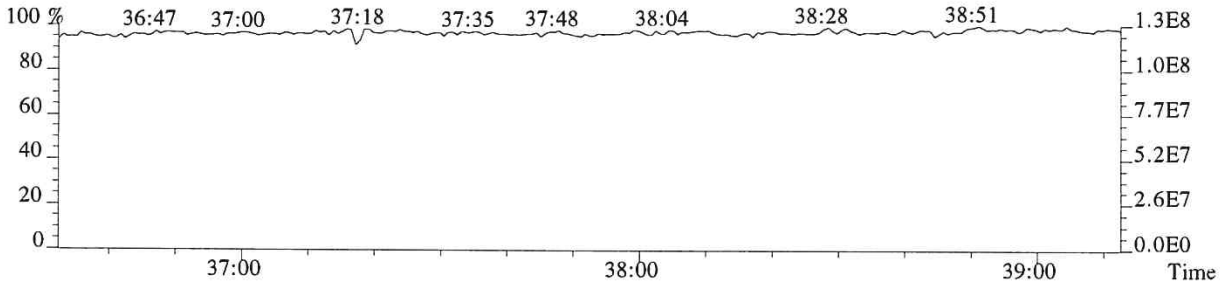
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1404.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1372.0,0.40%,F,T)



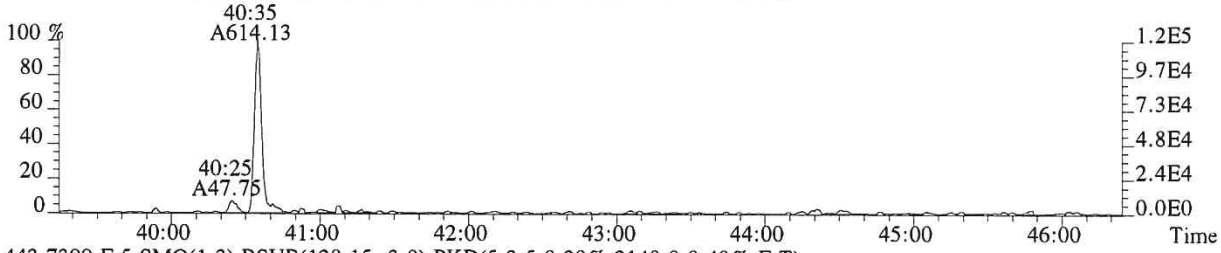
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



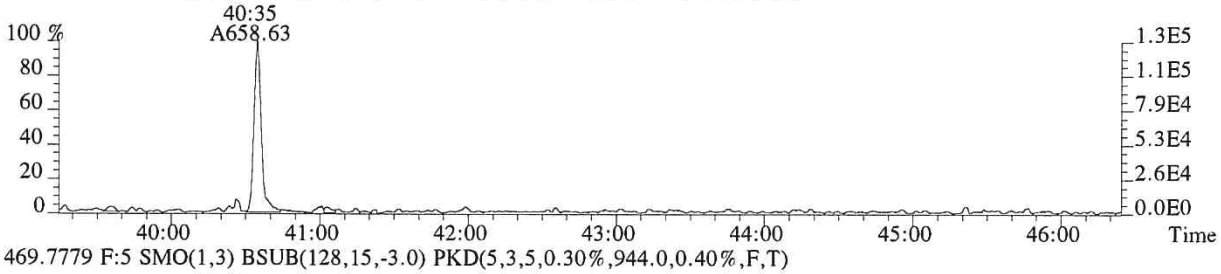
060219

File:P616281 #1-645 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011

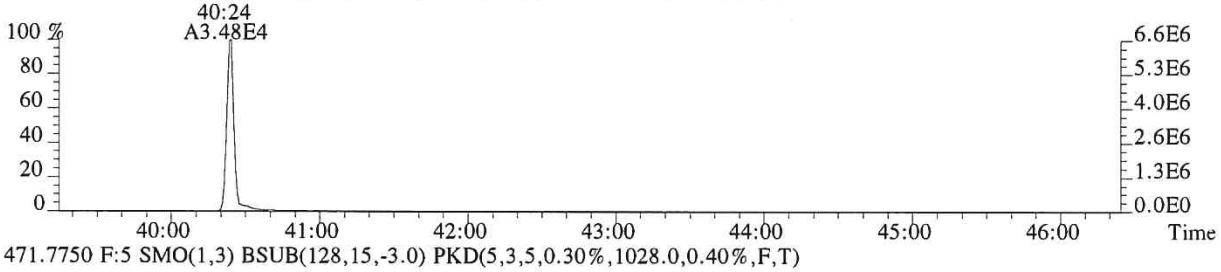
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,548.0,0.40%,F,T)



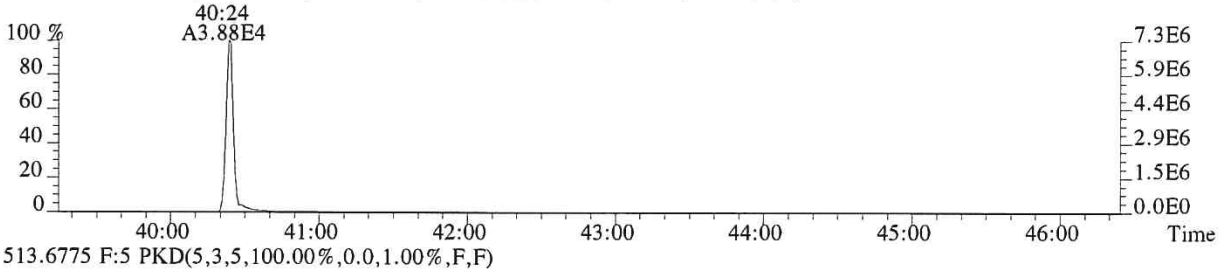
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2140.0,0.40%,F,T)



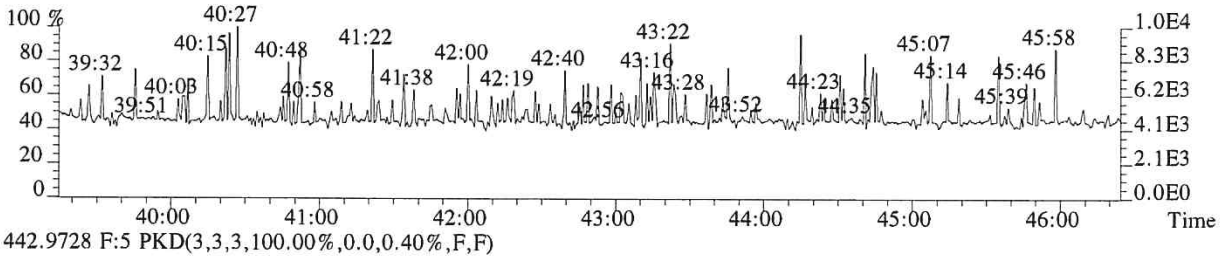
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,944.0,0.40%,F,T)



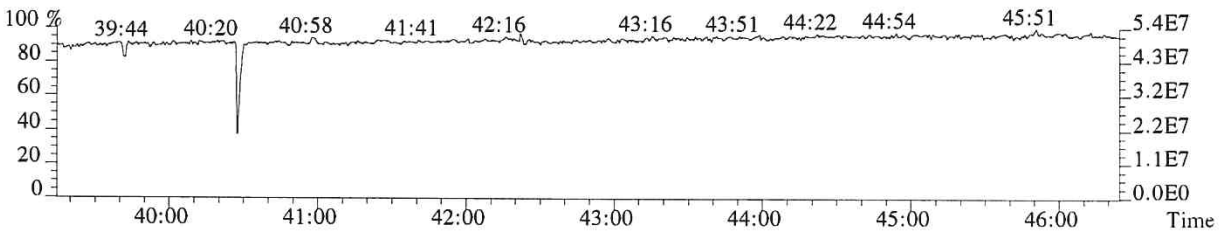
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1028.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

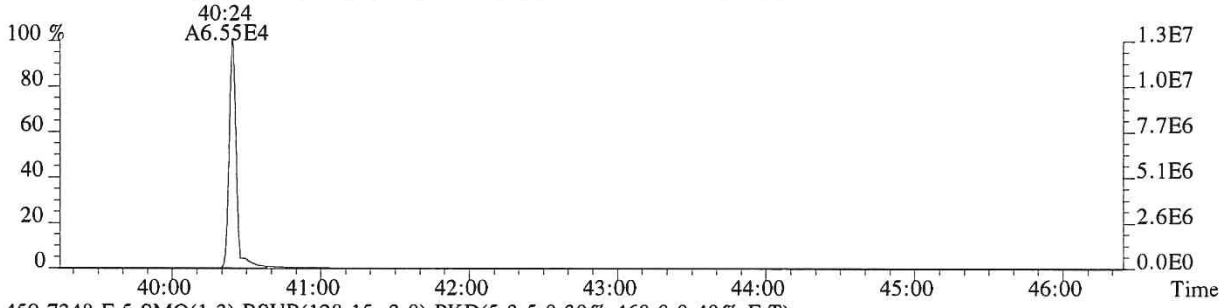


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

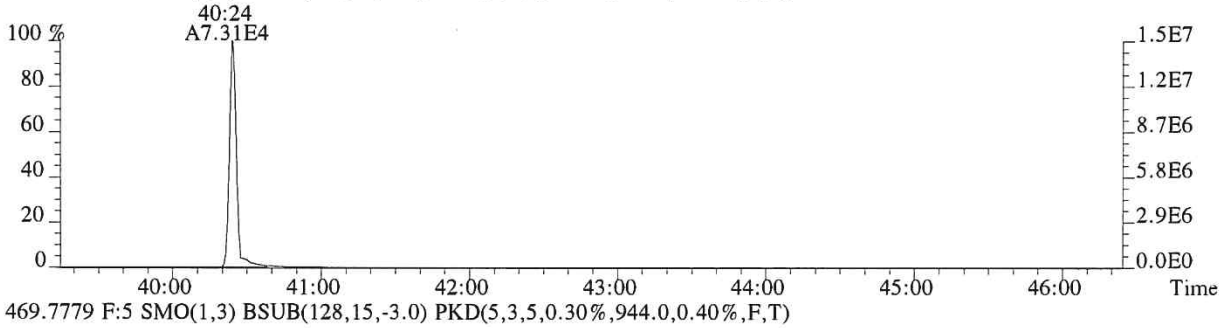


060220

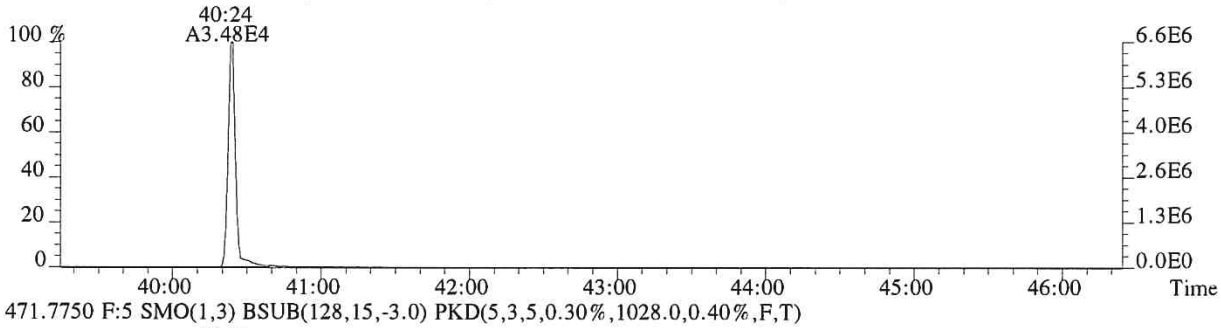
File:P616281 #1-645 Acq:29-DEC-2018 16:54:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-011
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,416.0,0.40%,F,T)



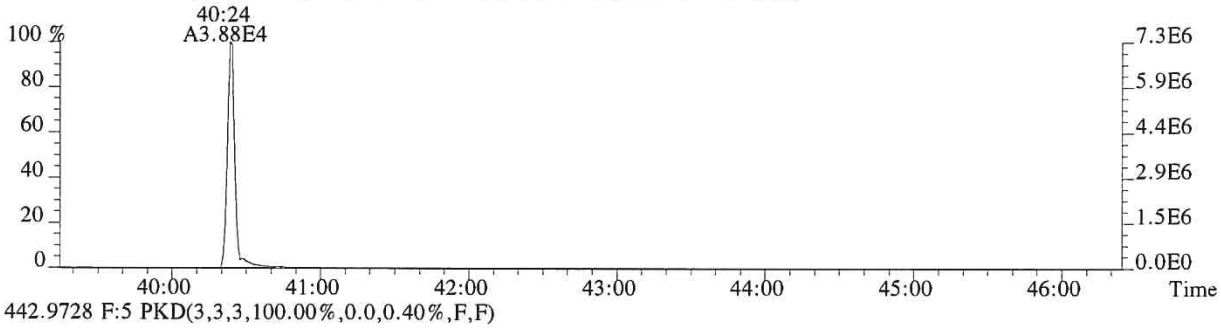
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,460.0,0.40%,F,T)



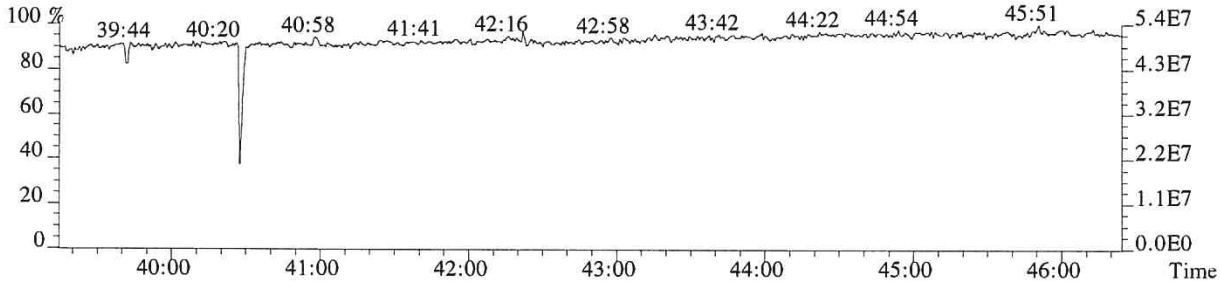
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,944.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1028.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060221

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0117

Run #11 Filename P616282 Samp: 1 Inj: 1 Acquired: 29-DEC-18 17:43:21
Processed: 30-DEC-18 09:03:04 Sample ID: E1801136-012

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	1.081
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	yes	1.156
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	yes	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:21	1.352e+02	1.169e+02	1.16	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	8.147e+01	3.762e+01	2.17	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:01	7.550e+01	6.291e+01	1.20	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:48	3.612e+01	2.837e+01	1.27	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:03	2.574e+03	2.440e+03	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	5.717e+01	3.883e+01	1.47	no	no	1.463
10	Unk	OCDF	40:35	5.163e+02	5.770e+02	0.89	yes	no	1.571
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:48	2.566e+01	9.010e+00	2.85	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	yes	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:15	1.137e+02	9.125e+01	1.25	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:29	1.010e+02	8.558e+01	1.18	yes	yes	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:57	8.321e+02	8.975e+02	0.93	yes	no	1.112
17	Unk	OCDD	40:24	1.209e+04	1.384e+04	0.87	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:23	1.959e+04	2.533e+04	0.77	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:27	3.631e+04	2.302e+04	1.58	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:29	3.538e+04	2.221e+04	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:20	1.655e+04	3.099e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:27	2.013e+04	3.814e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:00	1.590e+04	3.146e+04	0.51	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:46	1.413e+04	2.712e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:03	1.196e+04	2.606e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:22	1.032e+04	2.264e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:24	9.634e+03	1.206e+04	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:48	2.741e+04	1.748e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:08	2.386e+04	1.867e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:13	2.335e+04	1.857e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:57	2.317e+04	2.282e+04	1.02	yes	no	0.857
32	IS	13C-OCDD	40:24	2.214e+04	2.466e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:38	3.744e+04	4.761e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:28	5.061e+04	4.054e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:26	1.769e+04				no	1.086

$$\text{OCDD} = \frac{(1.209e+04 + 1.384e+04) \times 4000\ \text{pg} \times 1}{(2.214e+04 + 2.466e+04) \times 10.27\ \text{g} \times 79 / 100 \times 1.157} = 236.0944\ \text{ng/kg}$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0117

Run #11 Filename P616282 Samp: 1 Inj: 1 Acquired: 29-DEC-18 17:43:21
Processed: 30-DEC-18 09:03:04 LAB. ID: E1801136-012

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	1.86e+03	*	*	3.46e+03	*
2	1,2,3,7,8-PeCDF	*	9.48e+02	*	*	2.44e+03	*
3	2,3,4,7,8-PeCDF	*	9.48e+02	*	*	2.44e+03	*
4	1,2,3,4,7,8-HxCDF	2.57e+04	1.03e+03	2.5e+01	2.47e+04	1.30e+03	1.9e+01
5	1,2,3,6,7,8-HxCDF	1.86e+04	1.03e+03	1.8e+01	9.29e+03	1.30e+03	7.1e+00
6	2,3,4,6,7,8-HxCDF	1.36e+04	1.03e+03	1.3e+01	1.32e+04	1.30e+03	1.0e+01
7	1,2,3,7,8,9-HxCDF	7.14e+03	1.03e+03	6.9e+00	4.62e+03	1.30e+03	3.5e+00
8	1,2,3,4,6,7,8-HpCDF	5.41e+05	1.07e+03	5.0e+02	5.28e+05	6.44e+02	8.2e+02
9	1,2,3,4,7,8,9-HpCDF	1.58e+04	1.07e+03	1.5e+01	8.59e+03	6.44e+02	1.3e+01
10	OCDF	1.07e+05	1.17e+03	9.1e+01	1.15e+05	2.38e+03	4.8e+01
11	2,3,7,8-TCDD	*	3.85e+03	*	*	1.48e+03	*
12	1,2,3,7,8-PeCDD	5.91e+03	8.92e+02	6.6e+00	2.87e+03	7.64e+02	3.8e+00
13	1,2,3,4,7,8-HxCDD	*	2.45e+03	*	*	1.29e+03	*
14	1,2,3,6,7,8-HxCDD	2.64e+04	2.45e+03	1.1e+01	1.89e+04	1.29e+03	1.5e+01
15	1,2,3,7,8,9-HxCDD	2.07e+04	2.45e+03	8.4e+00	1.53e+04	1.29e+03	1.2e+01
16	1,2,3,4,6,7,8-HpCDD	1.92e+05	8.04e+02	2.4e+02	2.07e+05	1.32e+03	1.6e+02
17	OCDD	2.23e+06	7.32e+02	3.0e+03	2.46e+06	1.36e+03	1.8e+03
18	13C-2,3,7,8-TCDF	2.76e+06	8.89e+03	3.1e+02	3.63e+06	4.92e+03	7.4e+02
19	13C-1,2,3,7,8-PeCDF	6.20e+06	5.20e+02	1.2e+04	3.84e+06	7.36e+02	5.2e+03
20	13C-2,3,4,7,8-PeCDF	6.67e+06	5.20e+02	1.3e+04	4.18e+06	7.36e+02	5.7e+03
21	13C-1,2,3,4,7,8-HxCDF	3.43e+06	8.16e+02	4.2e+03	6.45e+06	2.11e+03	3.1e+03
22	13C-1,2,3,6,7,8-HxCDF	4.14e+06	8.16e+02	5.1e+03	7.82e+06	2.11e+03	3.7e+03
23	13C-2,3,4,6,7,8-HxCDF	3.39e+06	8.16e+02	4.2e+03	6.61e+06	2.11e+03	3.1e+03
24	13C-1,2,3,7,8,9-HxCDF	2.87e+06	8.16e+02	3.5e+03	5.55e+06	2.11e+03	2.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.52e+06	2.86e+03	8.8e+02	5.48e+06	1.36e+03	4.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.18e+06	2.86e+03	7.6e+02	4.80e+06	1.36e+03	3.5e+03
27	13C-2,3,7,8-TCDD	1.64e+06	1.78e+04	9.2e+01	2.10e+06	3.91e+03	5.4e+02
28	13C-1,2,3,7,8-PeCDD	5.00e+06	1.33e+03	3.8e+03	3.22e+06	2.11e+03	1.5e+03
29	13C-1,2,3,4,7,8-HxCDD	5.31e+06	2.50e+03	2.1e+03	4.19e+06	8.80e+02	4.8e+03
30	13C-1,2,3,6,7,8-HxCDD	4.63e+06	2.50e+03	1.9e+03	3.73e+06	8.80e+02	4.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	5.08e+06	1.16e+03	4.4e+03	4.91e+06	1.09e+03	4.5e+03
32	13C-OCDD	3.95e+06	1.22e+03	3.2e+03	4.44e+06	6.76e+02	6.6e+03
33	13C-1,2,3,4-TCDD	5.54e+06	1.78e+04	3.1e+02	7.16e+06	3.91e+03	1.8e+03
34	13C-1,2,3,7,8,9-HxCDD	1.05e+07	2.50e+03	4.2e+03	8.59e+06	8.80e+02	9.8e+03
35	37Cl-2,3,7,8-TCDD	2.86e+06	1.99e+03	1.4e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.848e{+}03 + 1.480e{+}03) \times 2000}{(1.637e{+}06 + 2.099e{+}06) \times (\quad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0117

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 11 File: P616282 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 17:43:21 Processed: 30-DEC-18 09:03:04

Mass: 355.8550 357.8520 Tot Response: 3.07e+02 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:28	8.66e+01	5.74e+01	1.51	yes	1.44e+02		n	n
2	30:41	3.06e+01	2.02e+01	1.51	yes	5.08e+01		n	n
3	31:00	6.82e+01	4.35e+01	1.57	yes	1.12e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0117

Entry: 41 Totals Name: Total Hexa-Furans

Run: 11 File: P616282 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 17:43:21 Processed: 30-DEC-18 09:03:04

Mass: 373.8210 375.8180 Tot Response: 2.47e+03 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:10	1.77e+02	1.42e+02	1.24	yes	3.19e+02		n	n
2	33:20	3.73e+02	3.19e+02	1.17	yes	6.92e+02		n	n
3	33:54	5.57e+02	4.49e+02	1.24	yes	1.01e+03		n	n
4	34:21	1.35e+02	1.17e+02	1.16	yes	2.52e+02	1,2,3,4,7,8-HxCDF	n	n
5	35:01	7.55e+01	6.29e+01	1.20	yes	1.38e+02	2,3,4,6,7,8-HxCDF	n	n
6	35:48	3.61e+01	2.84e+01	1.27	yes	6.45e+01	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0117

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 11 File: P616282 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 17:43:21 Processed: 30-DEC-18 09:03:04

Mass: 389.8160 391.8130 Tot Response: 3.32e+03 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:43	1.03e+03	9.30e+02	1.11	yes	1.96e+03		n	n
2	34:32	4.72e+02	4.14e+02	1.14	yes	8.87e+02		n	n
3	35:15	1.14e+02	9.13e+01	1.25	yes	2.05e+02	1,2,3,6,7,8-HxCDD	n	n
4	35:24	4.72e+01	3.55e+01	1.33	yes	8.26e+01		y	n
5	35:29	1.01e+02	8.56e+01	1.18	yes	1.87e+02	1,2,3,7,8,9-HxCDD	y	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0117

Entry: 43 Totals Name: Total Hepta-Furans

Run: 11 File: P616282 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 17:43:21 Processed: 30-DEC-18 09:03:04

Mass: 407.7820 409.7790 Tot Response: 7.74e+03 RRF: 1.495

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:03	2.57e+03	2.44e+03 1.05	yes	5.01e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:28	1.41e+03	1.31e+03 1.08	yes	2.72e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0117

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 11 File: P616282 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 17:43:21 Processed: 30-DEC-18 09:03:04

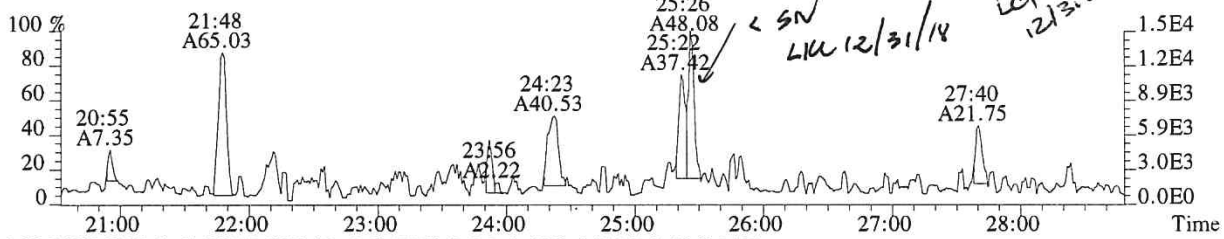
Mass: 423.7770 425.7740 Tot Response: 6.80e+03 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:18	2.61e+03	2.46e+03 1.06	yes	5.07e+03		n	n
2	37:57	8.32e+02	8.97e+02 0.93	yes	1.73e+03	1,2,3,4,6,7,8-HpCDD	n	n

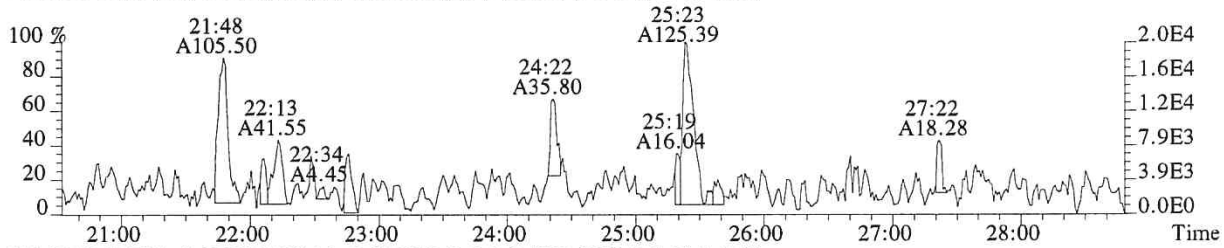
ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

File:P616282 #1-587 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012

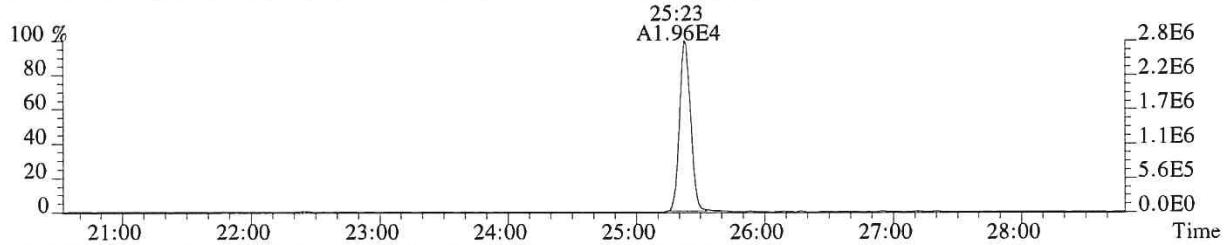
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1864.0,1.00%,F,T)



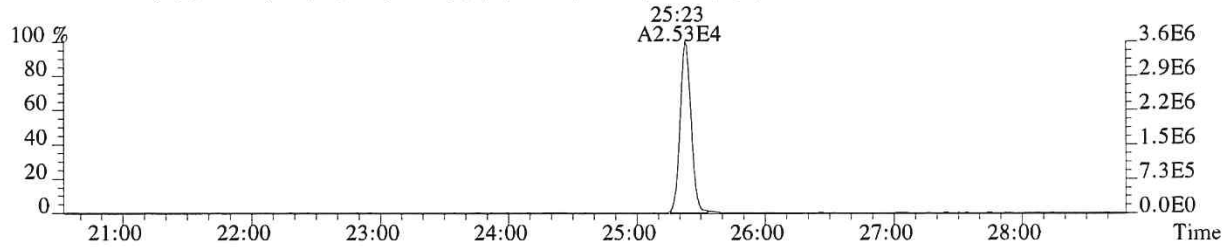
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3456.0,1.00%,F,T)



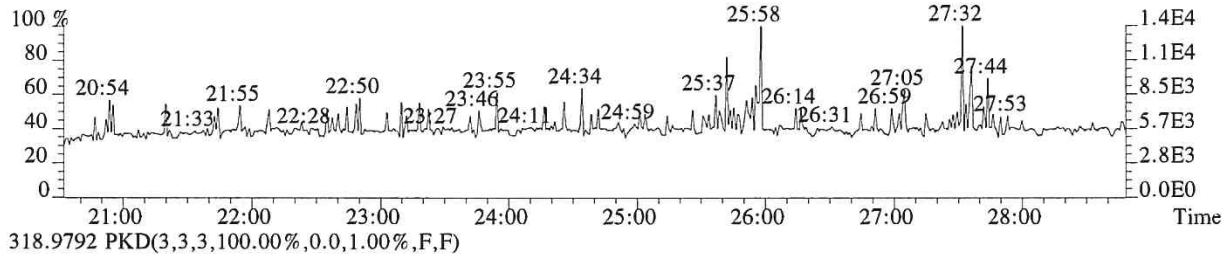
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8892.0,1.00%,F,T)



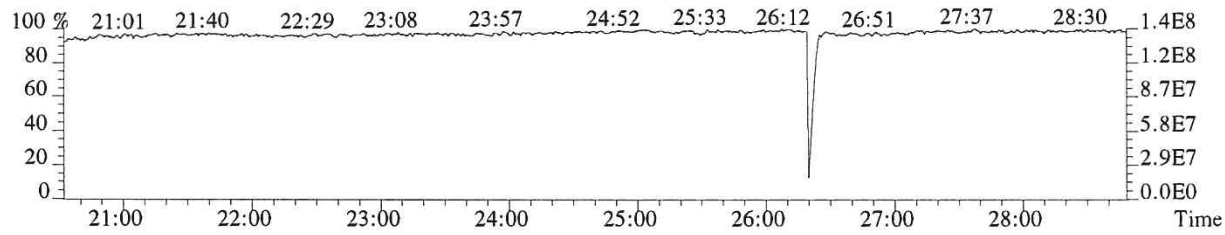
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4916.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

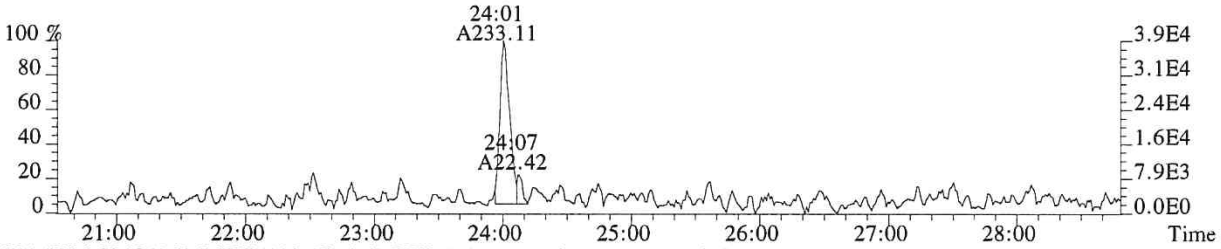


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

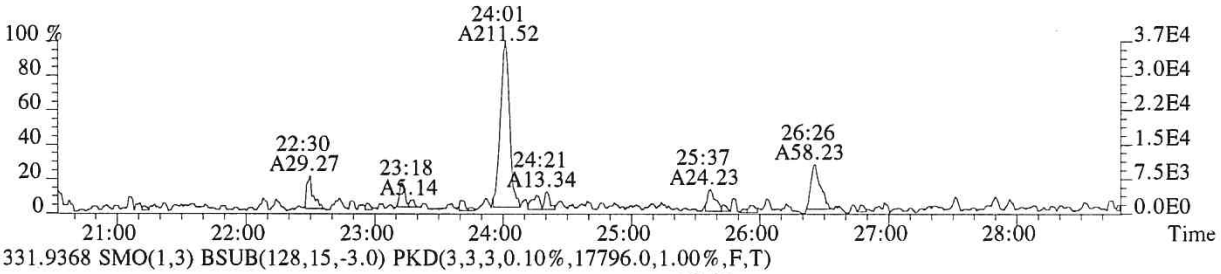


060229

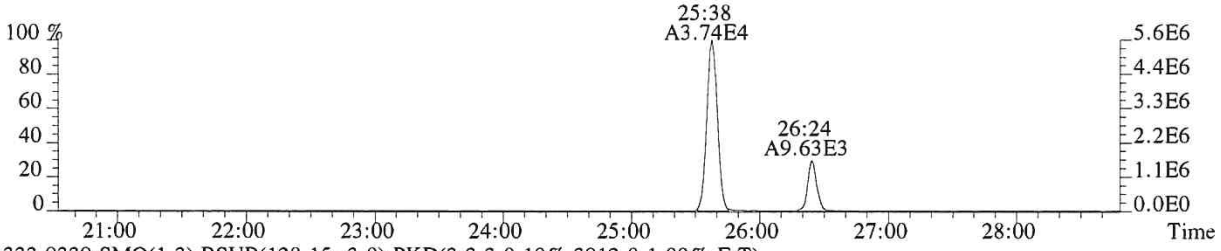
File:P616282 #1-587 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3848.0,1.00%,F,T)



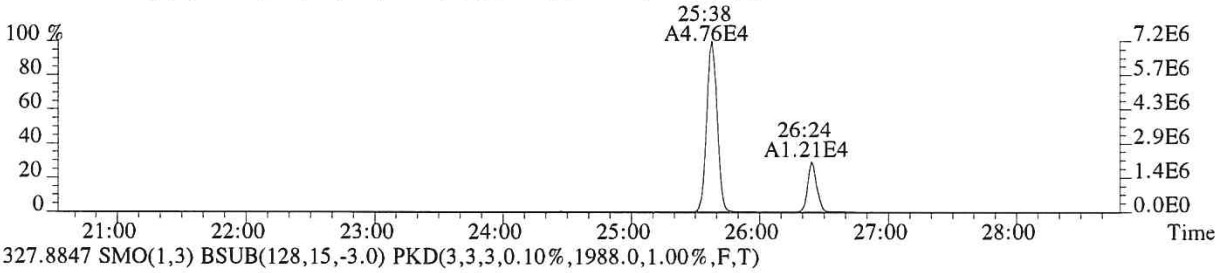
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1480.0,1.00%,F,T)



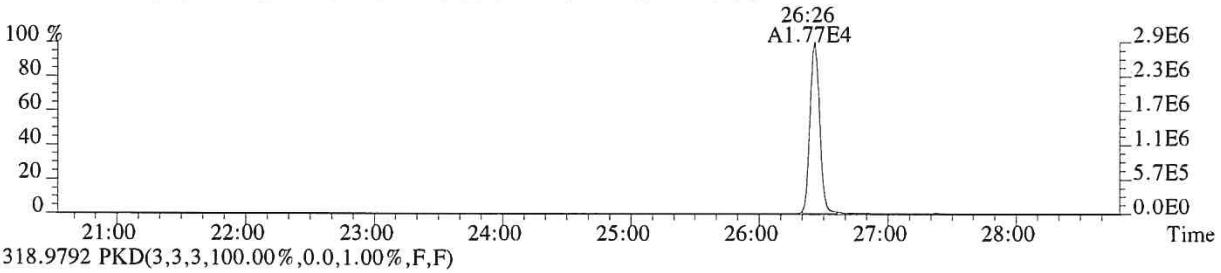
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,17796.0,1.00%,F,T)



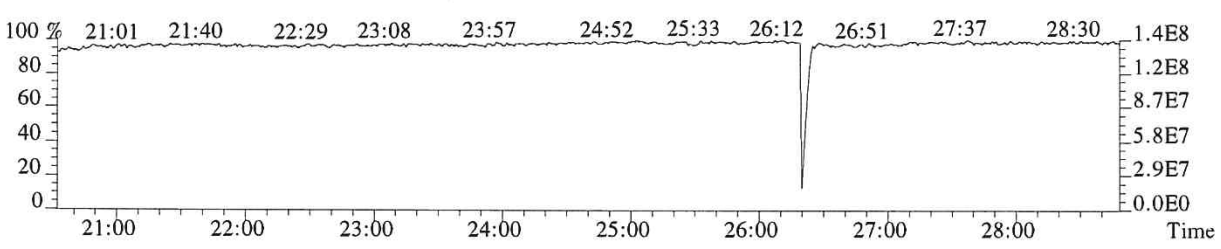
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3912.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1988.0,1.00%,F,T)

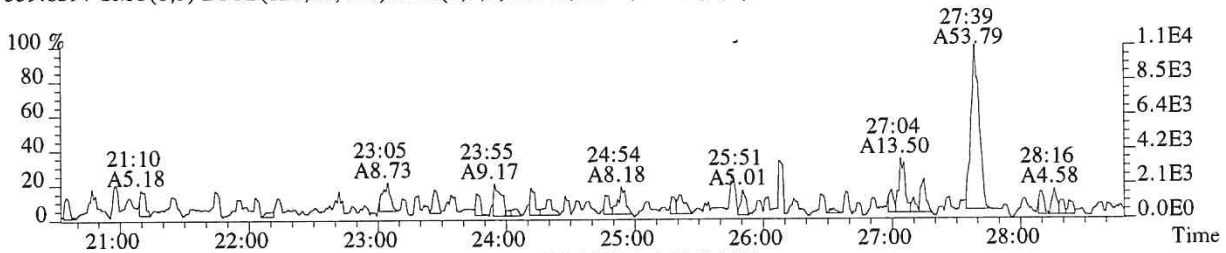


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

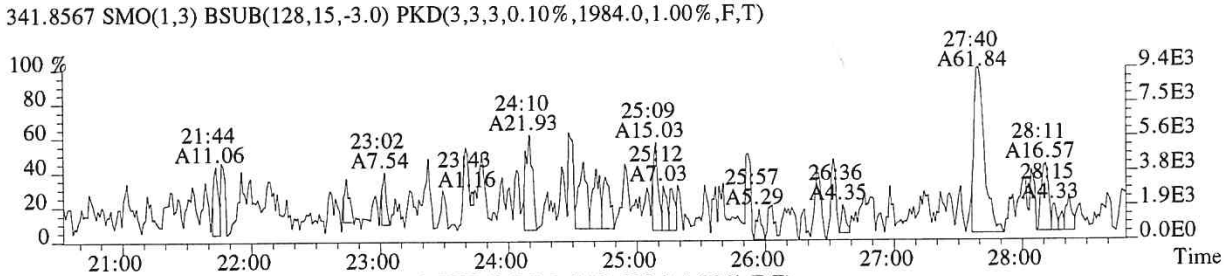


060230

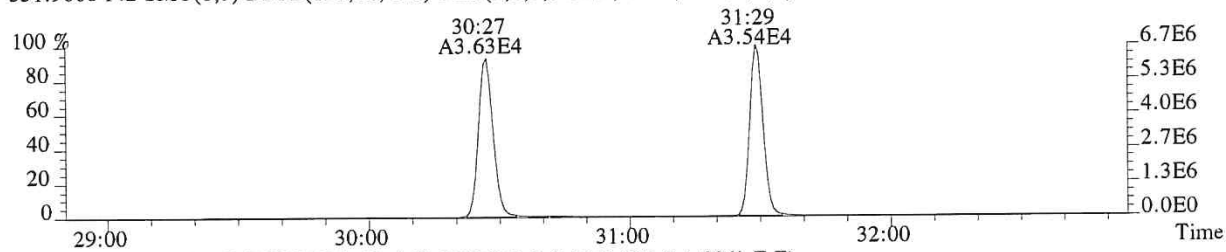
File:P616282 #1-587 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,720.0,1.00%,F,T)



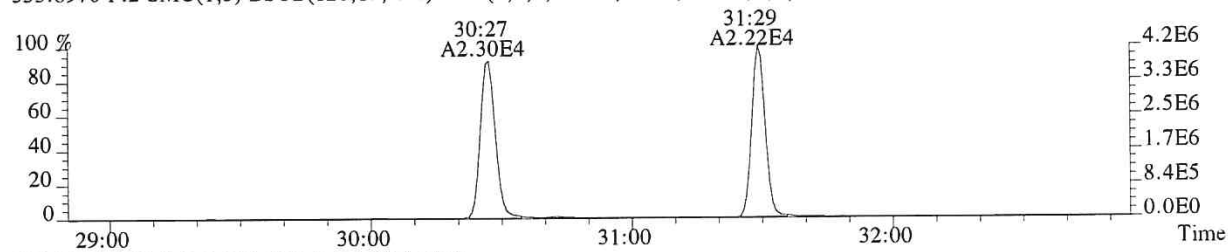
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1984.0,1.00%,F,T)



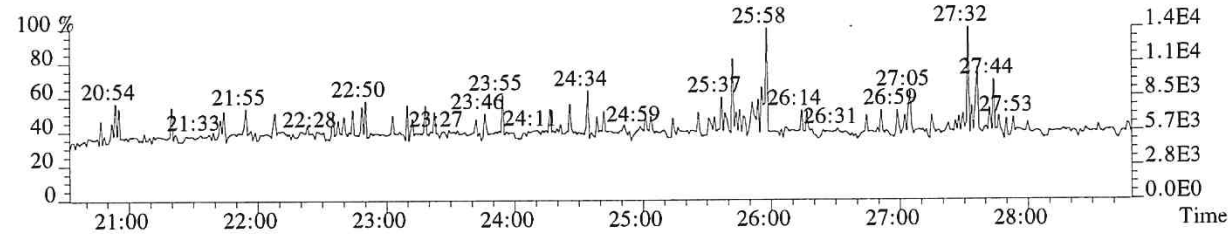
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,T)



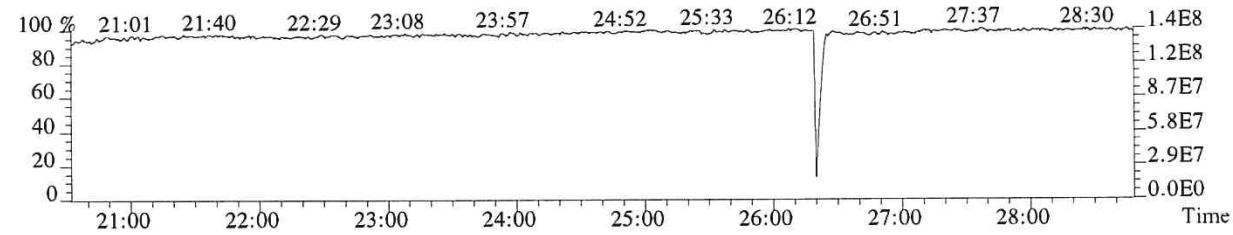
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,736.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

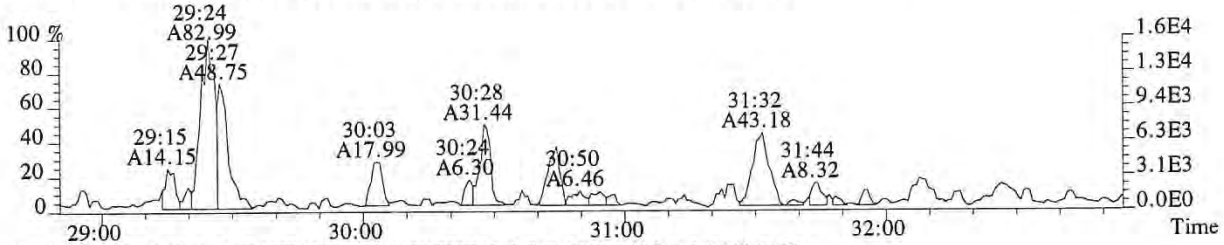


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

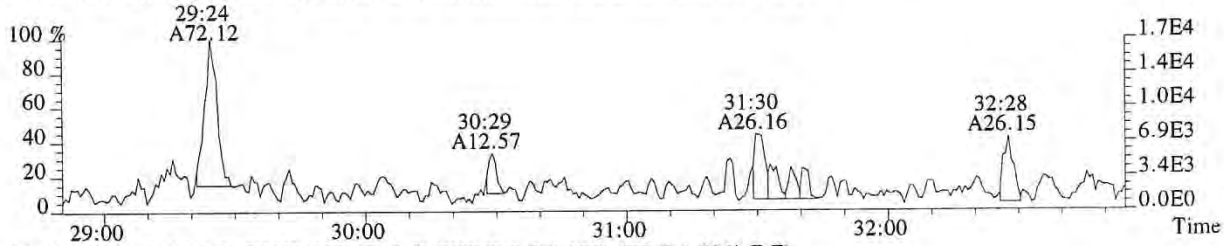


060231

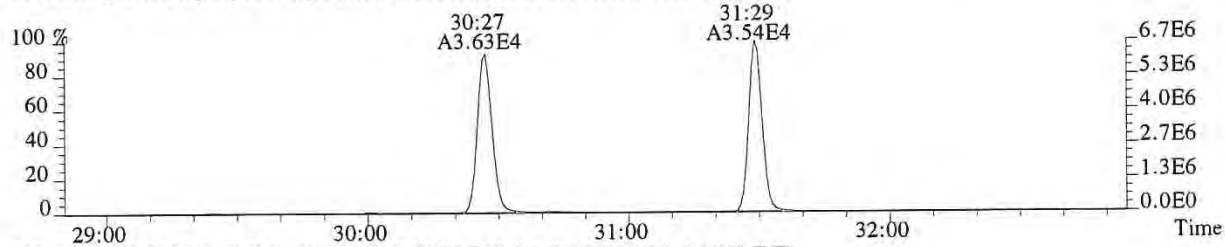
File:P616282 #1-367 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,948.0,1.00%,F,T)



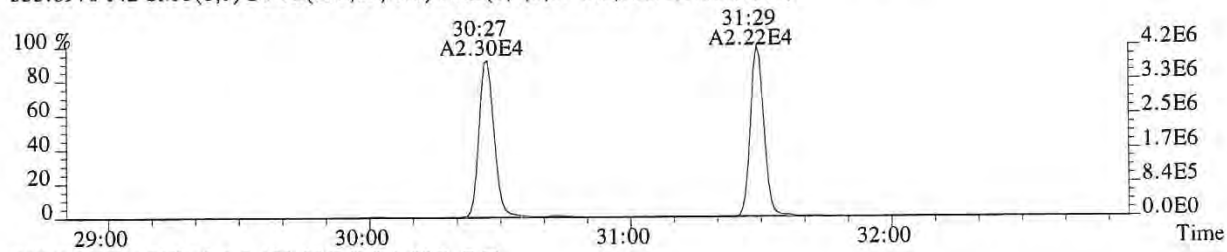
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2436.0,1.00%,F,T)



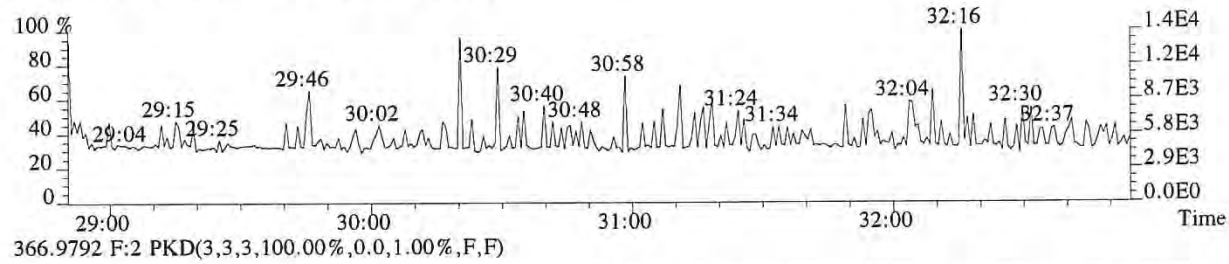
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,T)



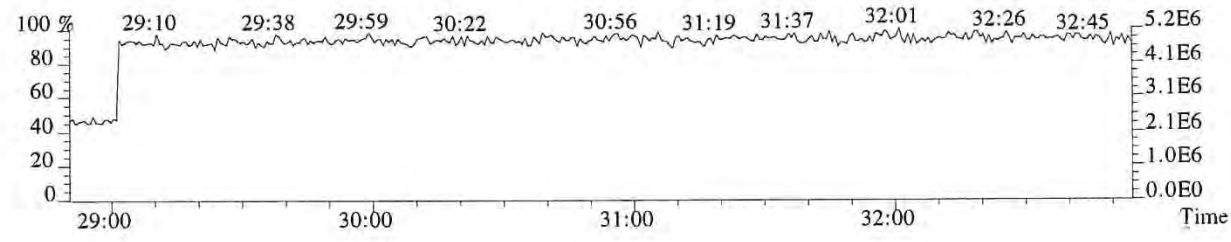
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,736.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

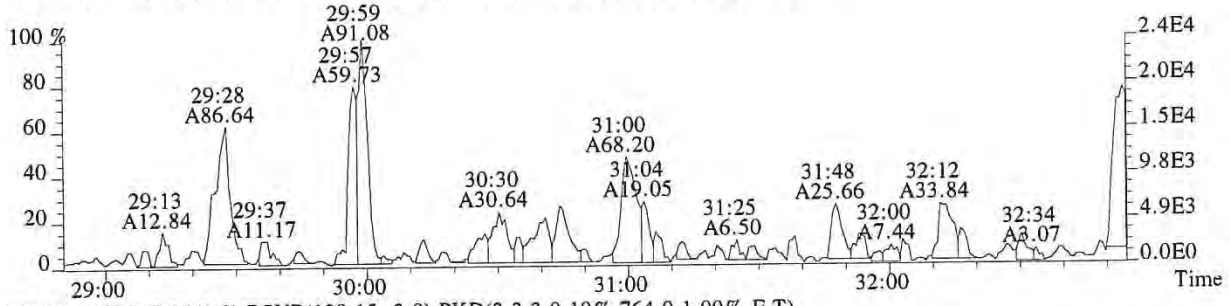


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

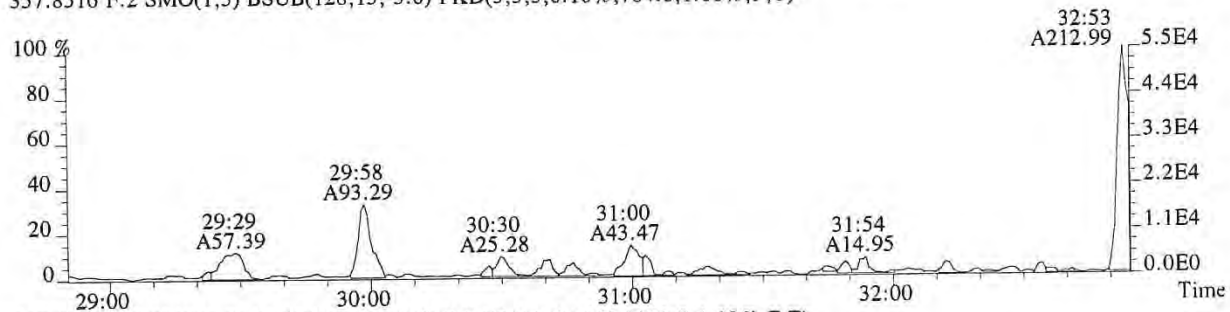


060232

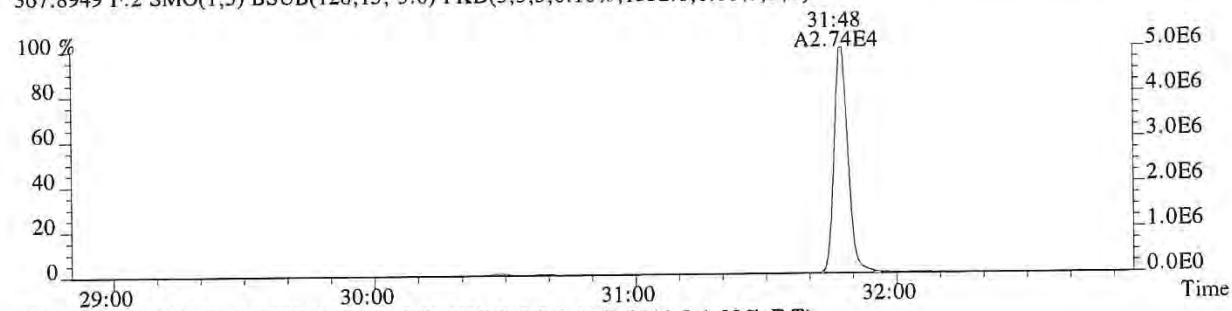
File:P616282 #1-367 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,892.0,1.00%,F,T)



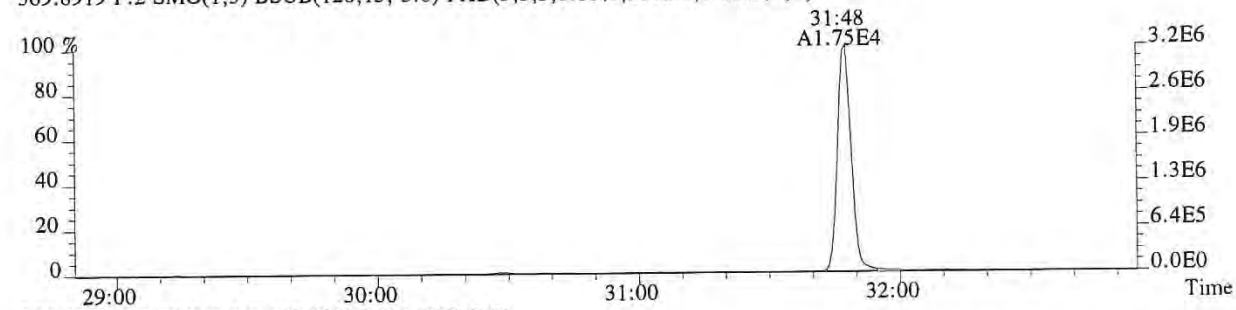
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,764.0,1.00%,F,T)



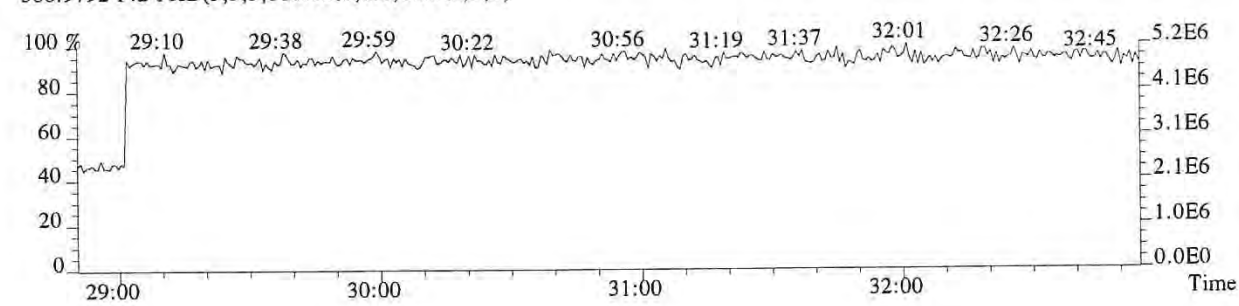
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1332.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2112.0,1.00%,F,T)

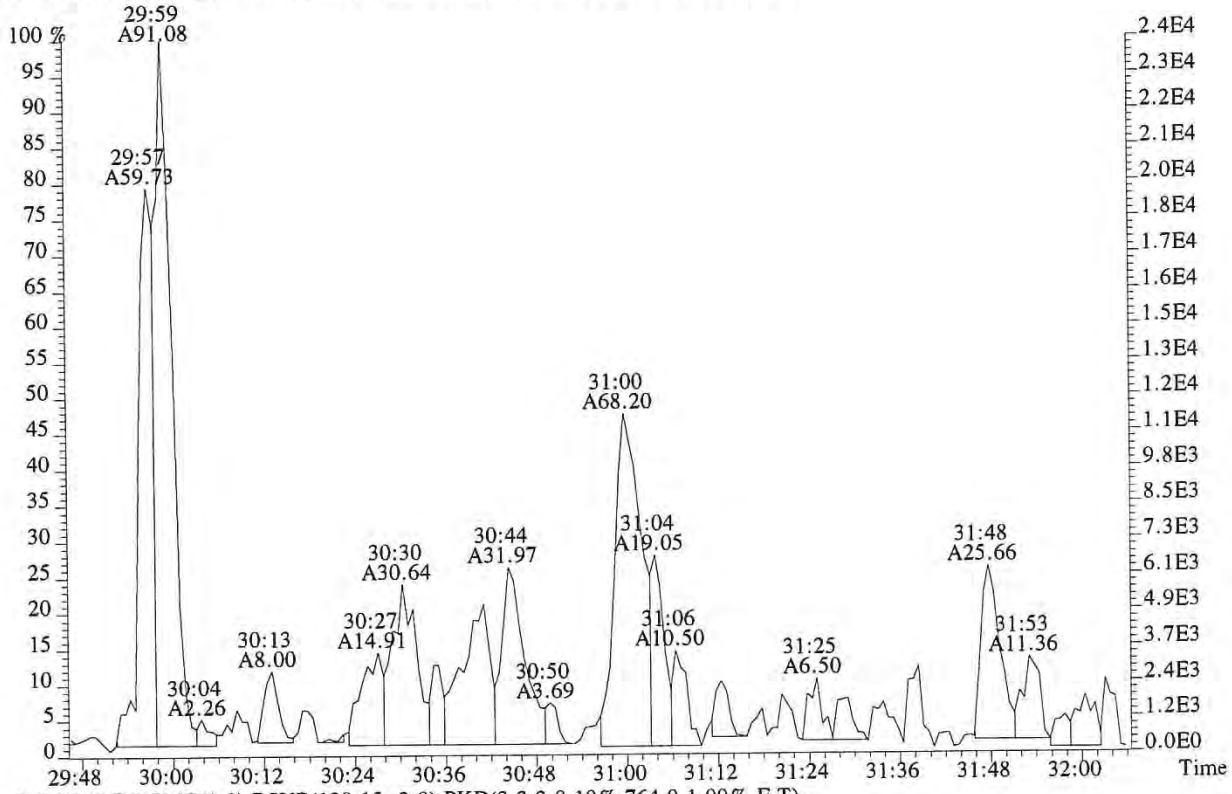


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

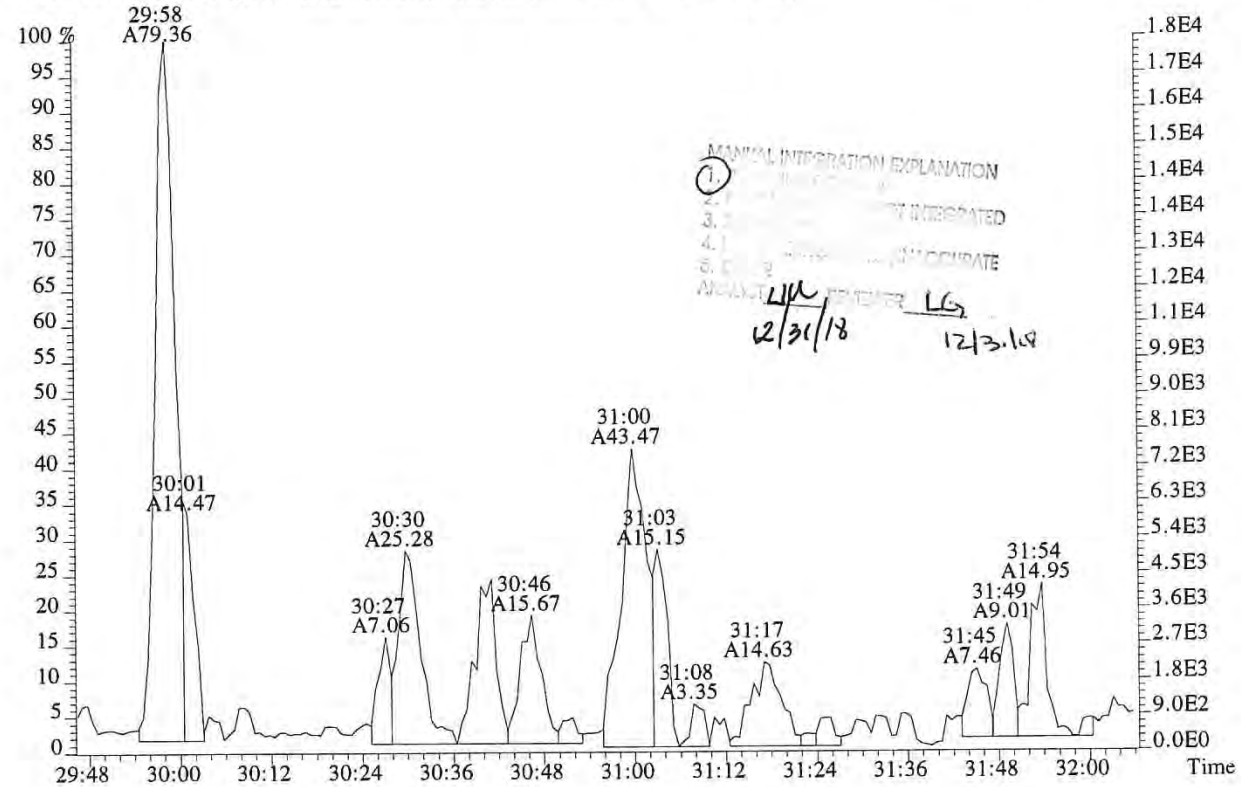


060233

File:P616282 #1-367 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,892.0,1.00%,F,T)



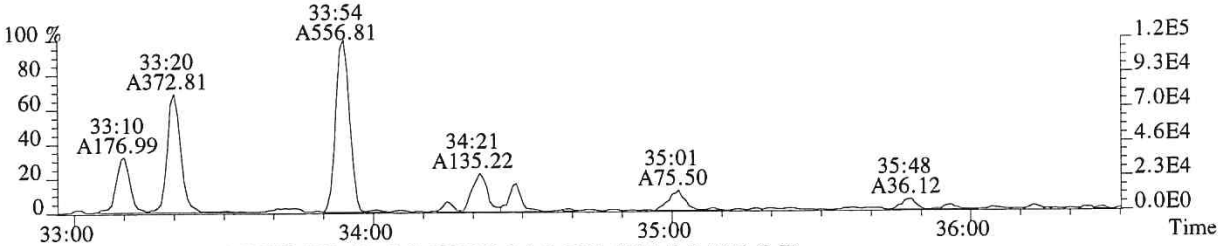
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,764.0,1.00%,F,T)



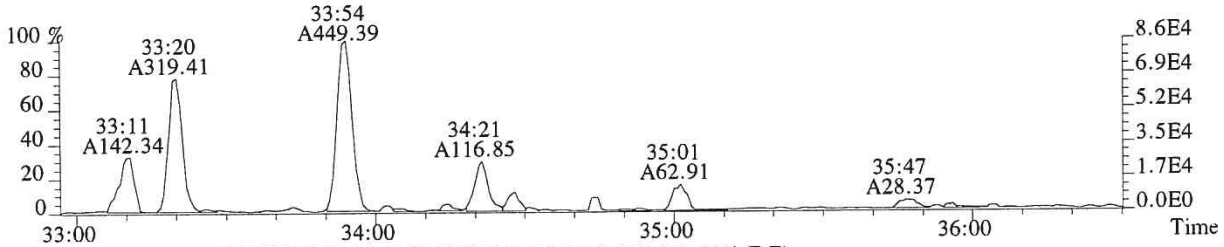
MANUAL INTEGRATION EXPLANATION
1.
2.
3. INTEGRATED
4.
5. ACCURATE
ANALYST LM REVIEWER LG
12/31/18 12/3.18

060234

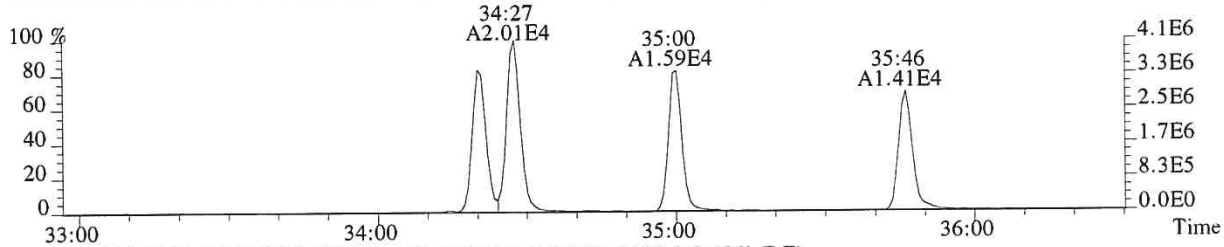
File:P616282 #1-321 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1028.0,0.40%,F,T)



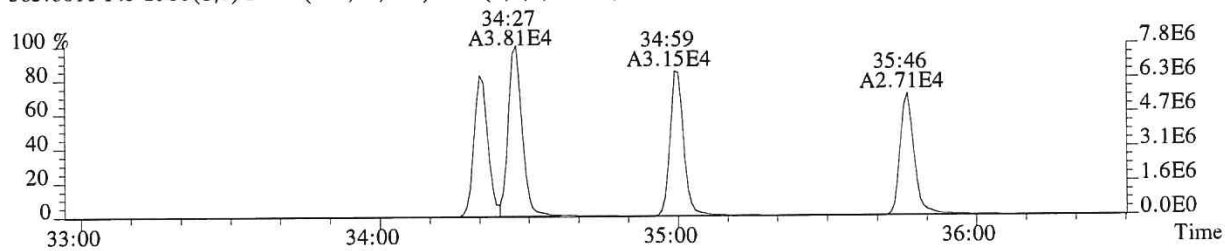
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1304.0,0.40%,F,T)



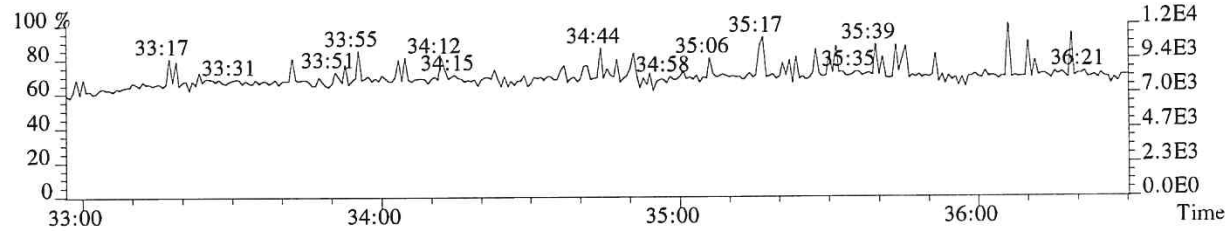
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,816.0,0.40%,F,T)



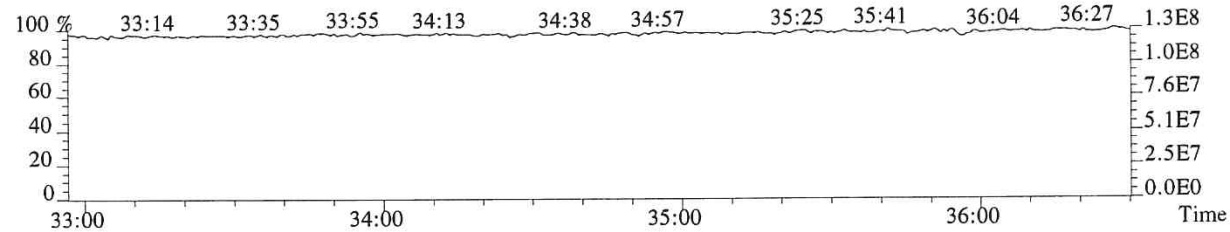
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2108.0,0.40%,F,T)



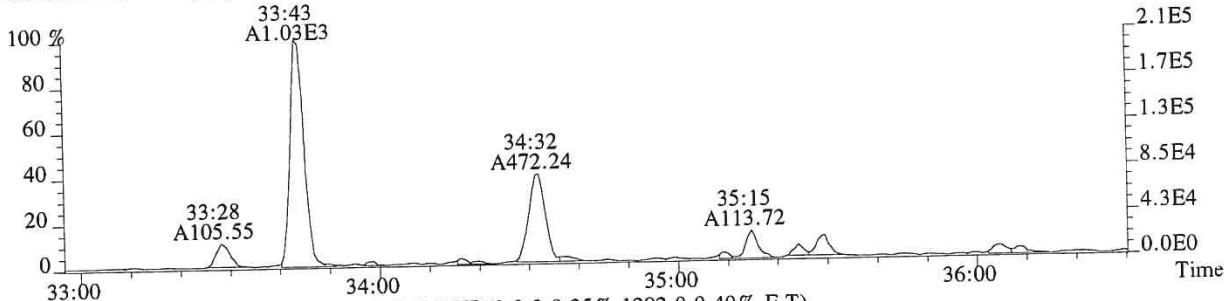
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



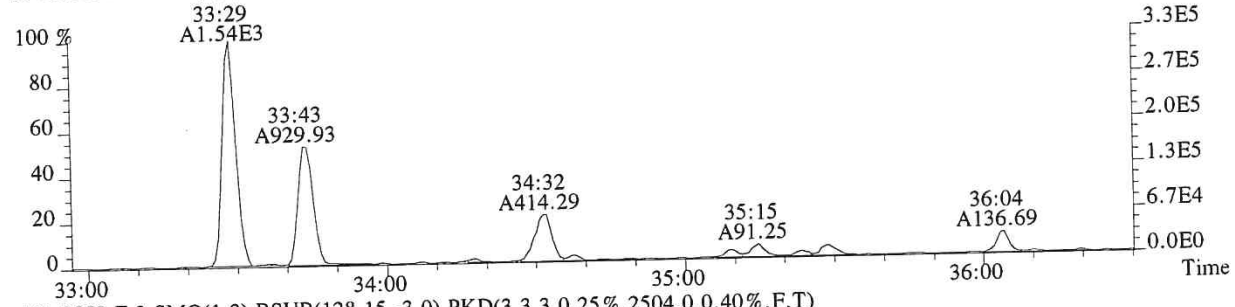
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



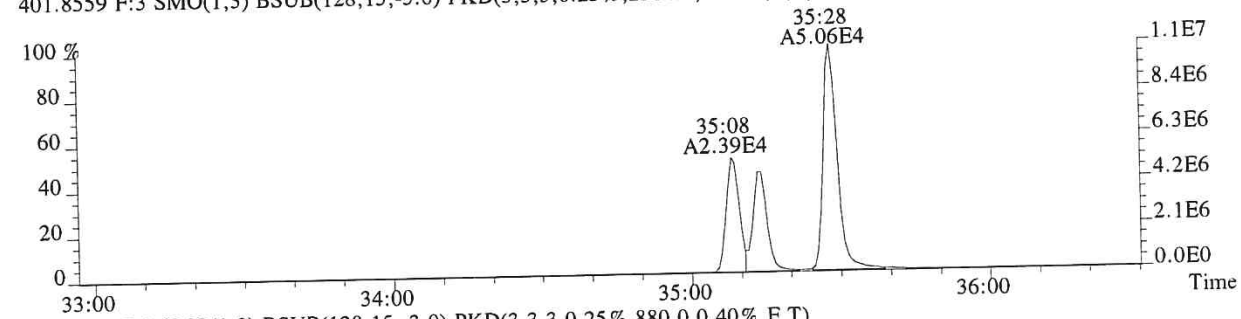
File:P616282 #1-321 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2452.0,0.40%,F,T)



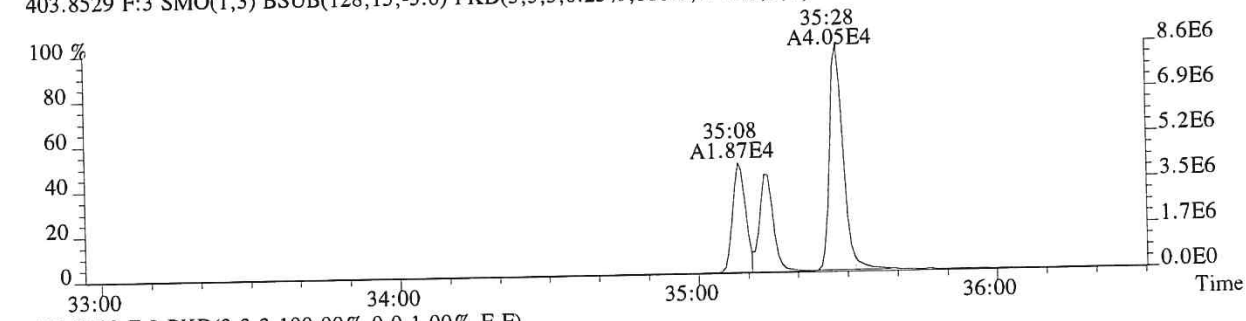
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1292.0,0.40%,F,T)



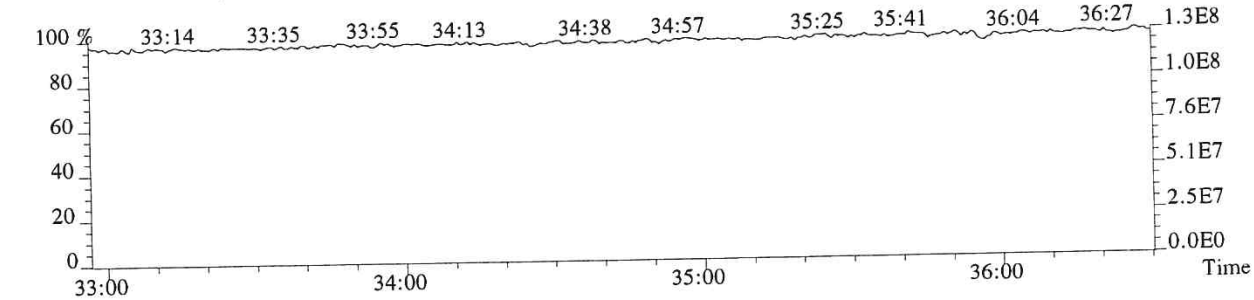
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2504.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,880.0,0.40%,F,T)

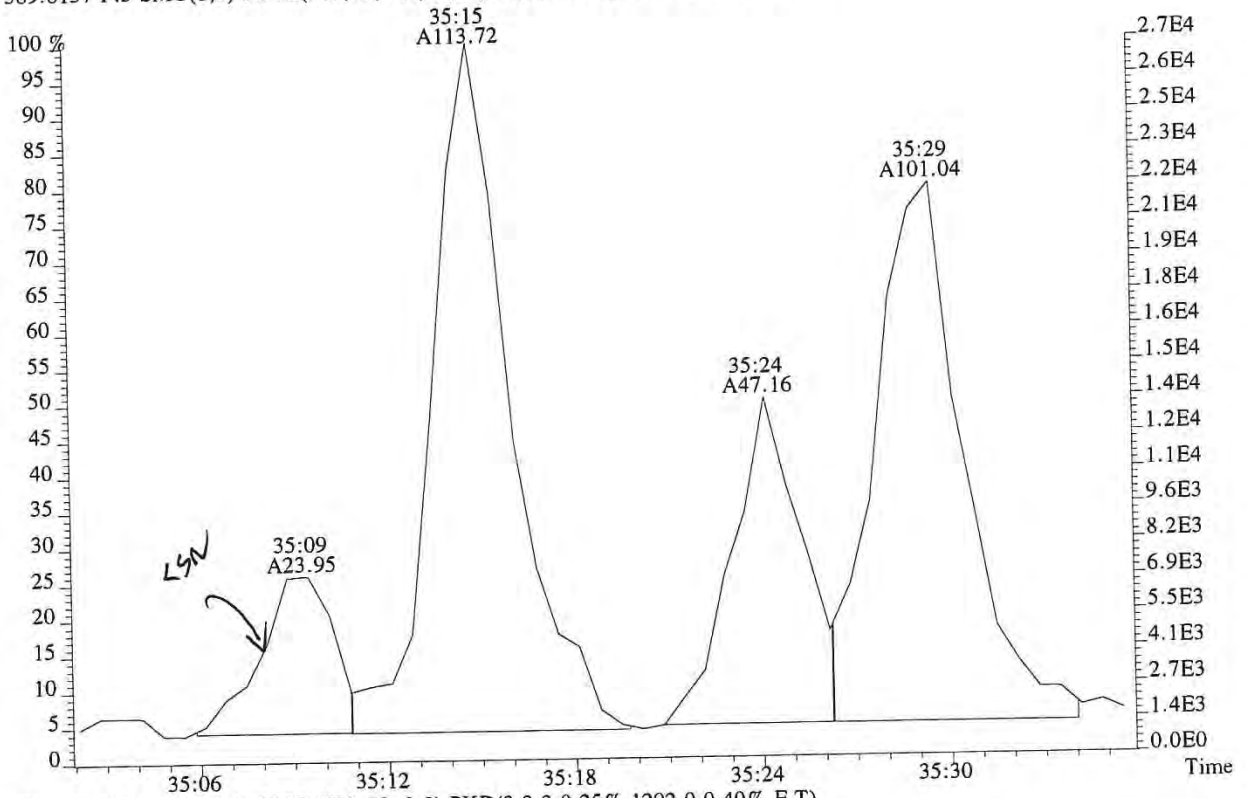


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

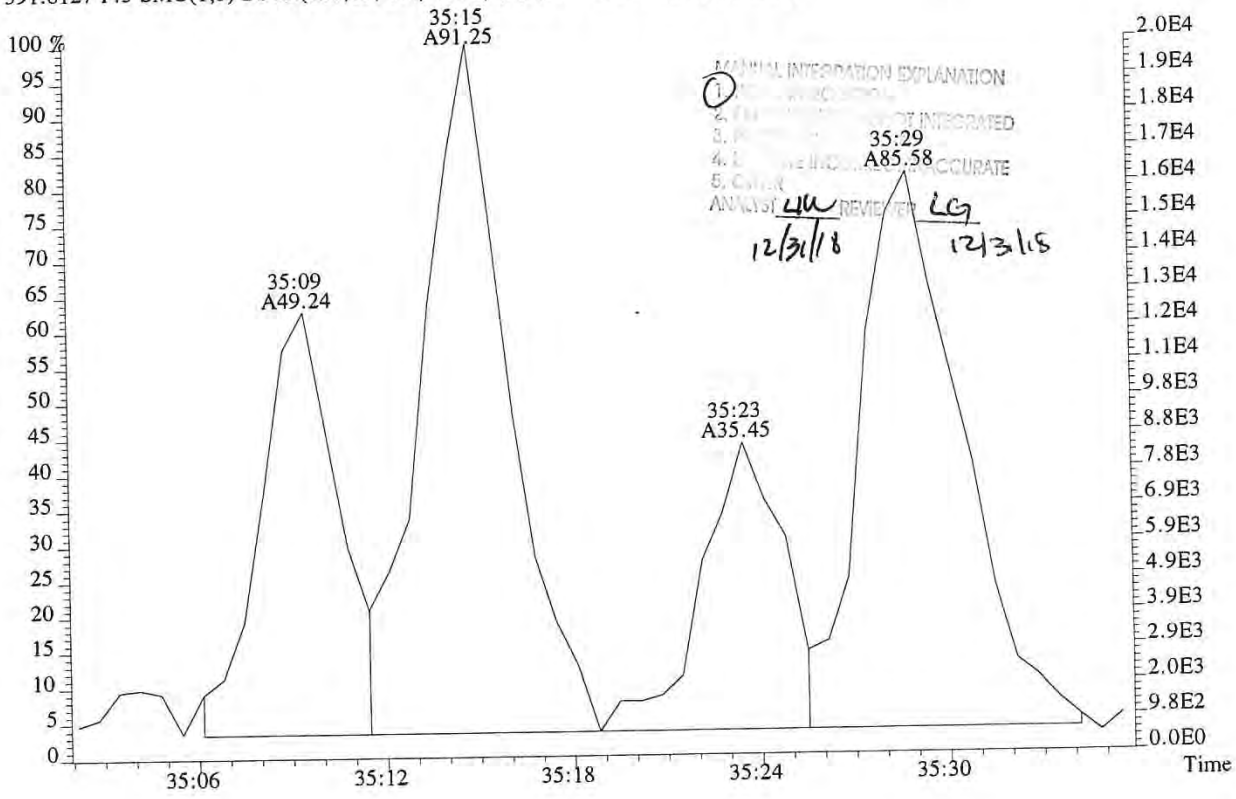


060236

File:P616282 #1-321 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2452.0,0.40%,F,T)

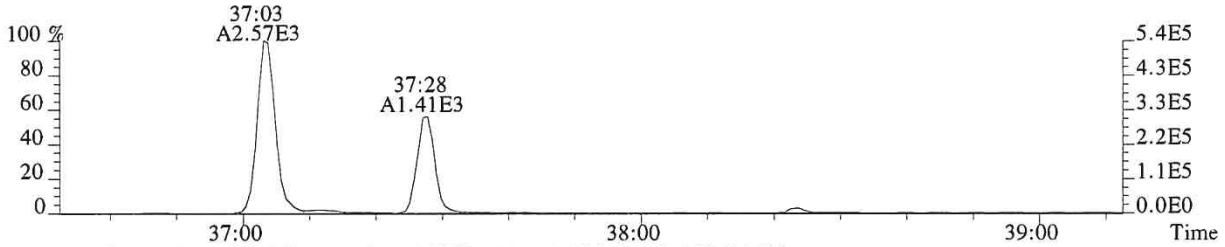


391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1292.0,0.40%,F,T)

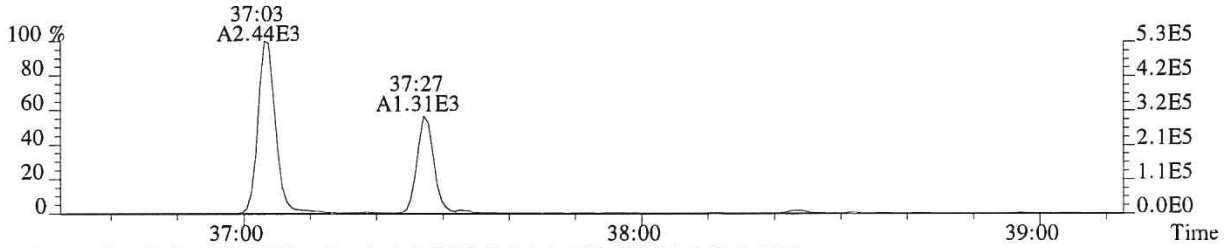


File:P616282 #1-241 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012

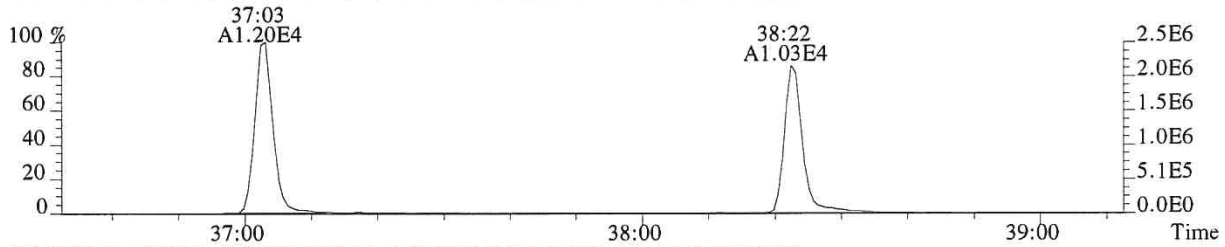
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1072.0,0.50%,F,T)



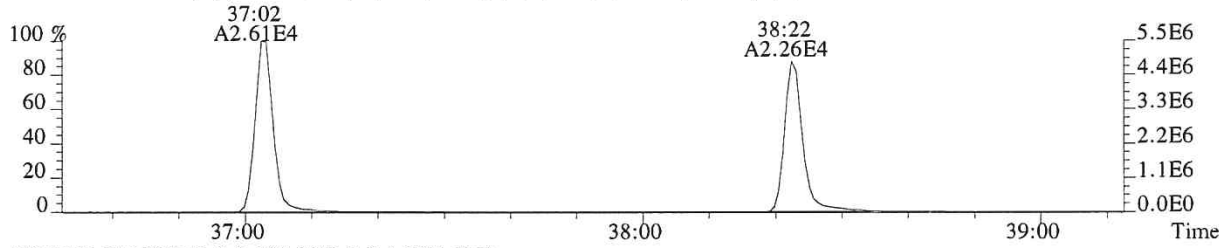
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,644.0,0.50%,F,T)



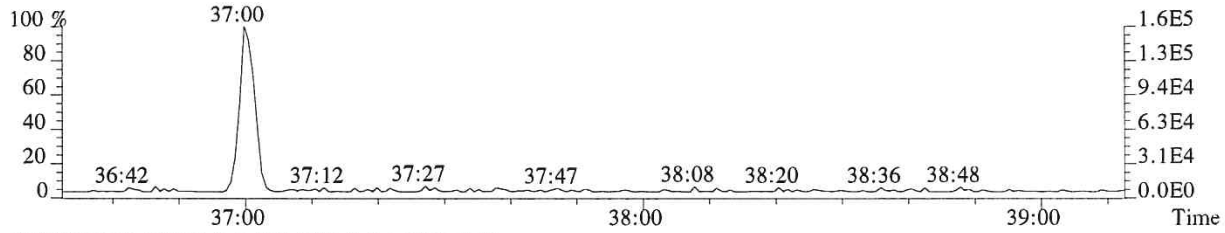
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2856.0,0.50%,F,T)



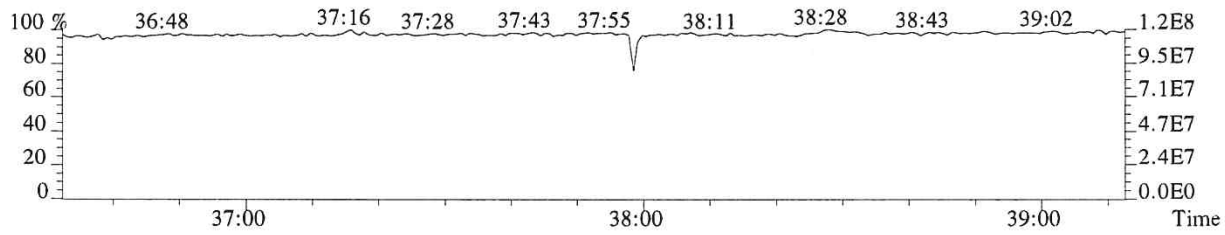
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1356.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

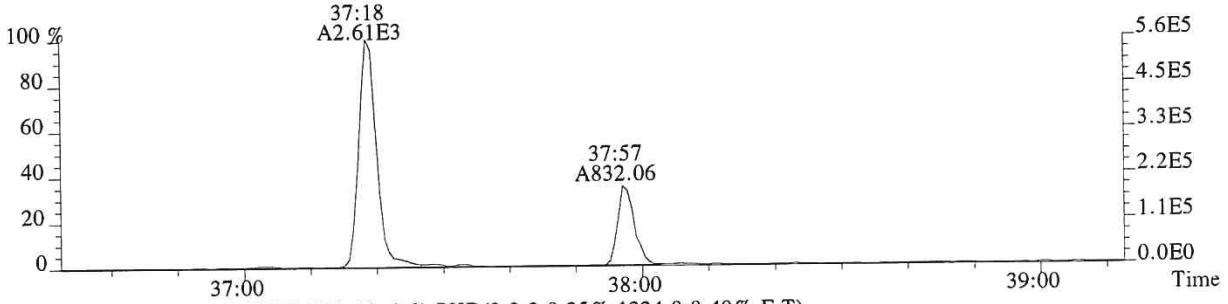


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

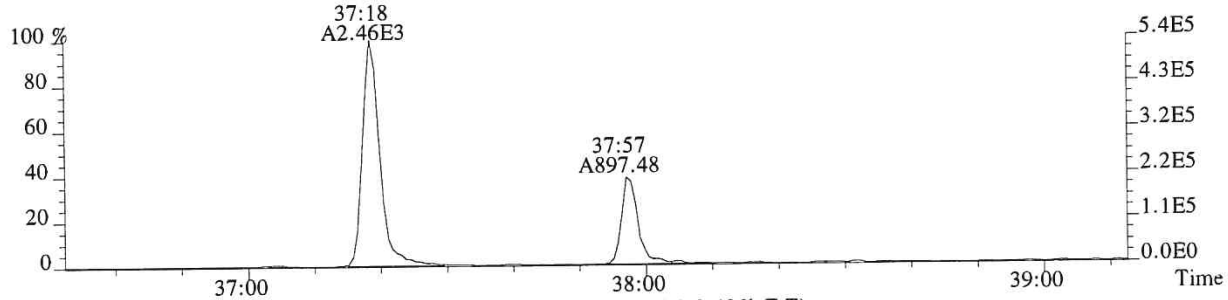


060238

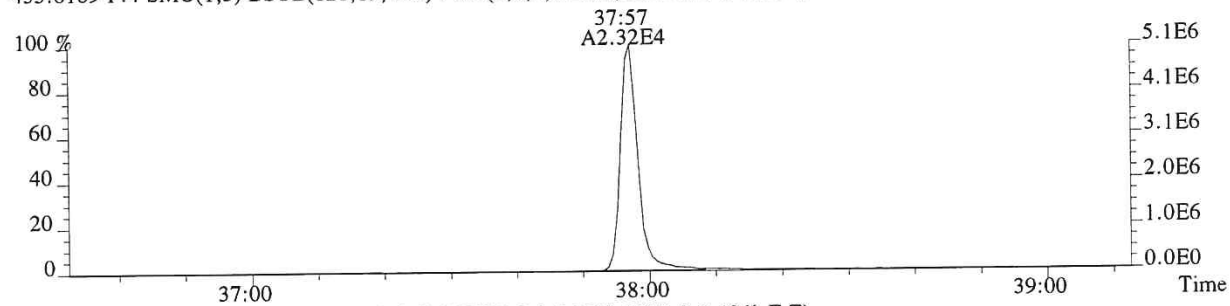
File:P616282 #1-241 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,804.0,0.40%,F,T)



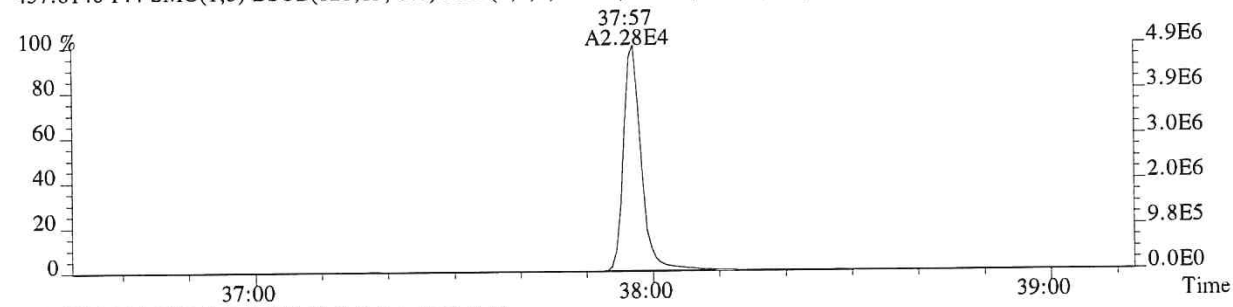
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1324.0,0.40%,F,T)



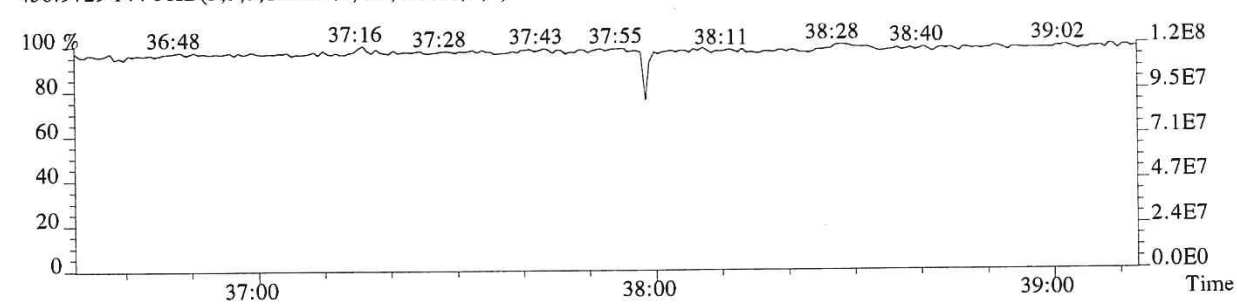
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1156.0,0.40%,F,T)



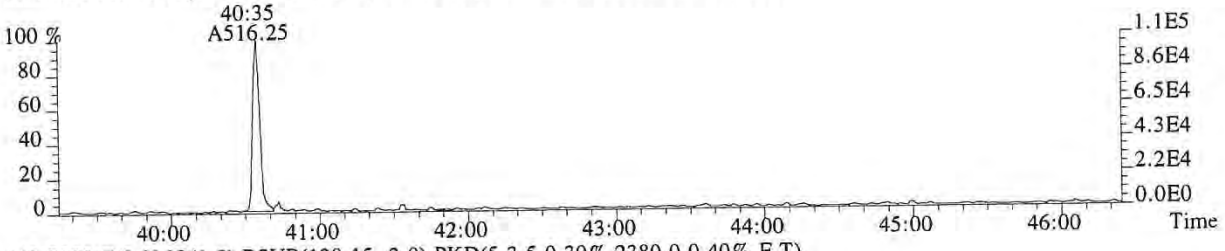
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1088.0,0.40%,F,T)



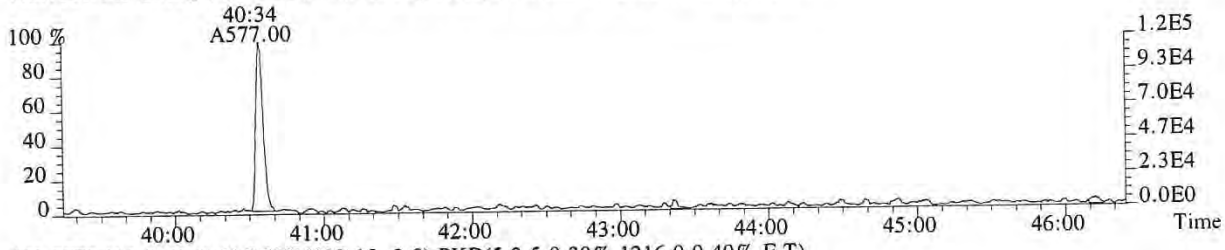
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



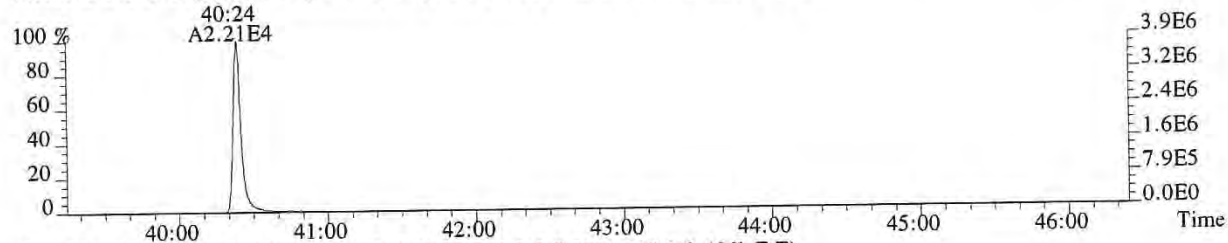
File:P616282 #1-645 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1168.0,0.40%,F,T)



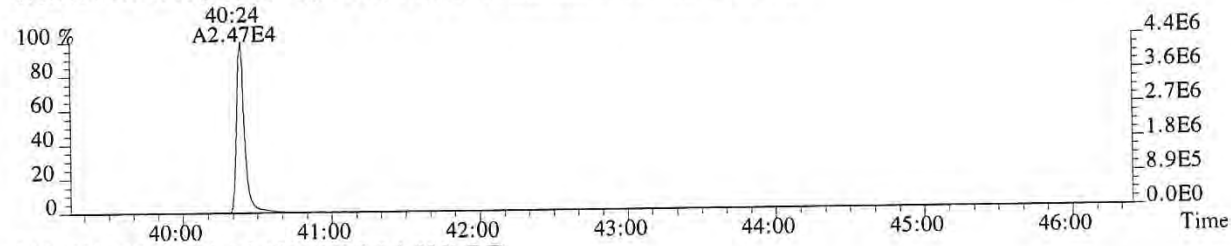
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2380.0,0.40%,F,T)



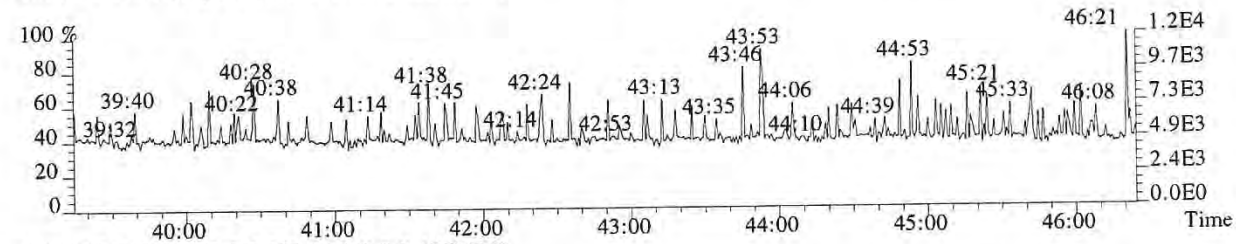
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1216.0,0.40%,F,T)



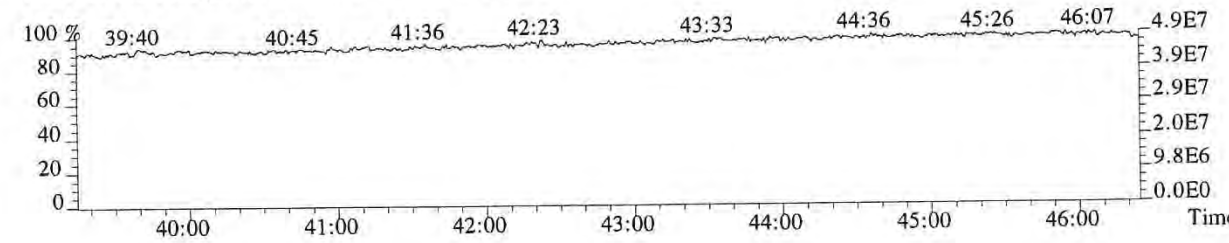
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,676.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

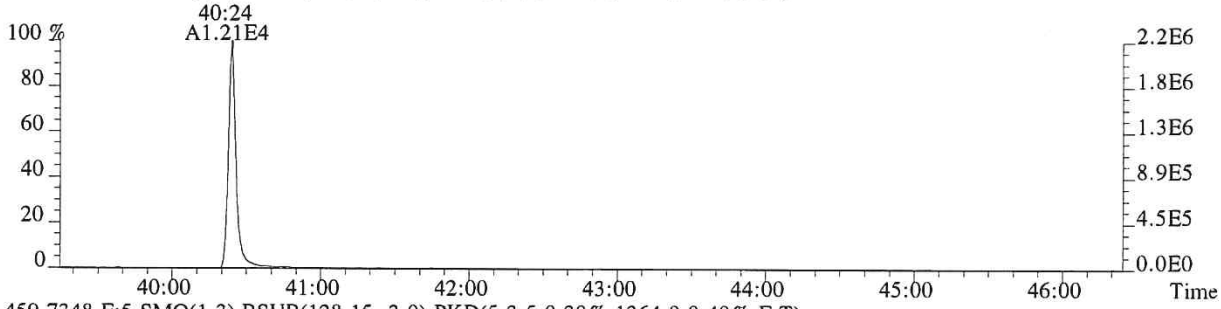


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

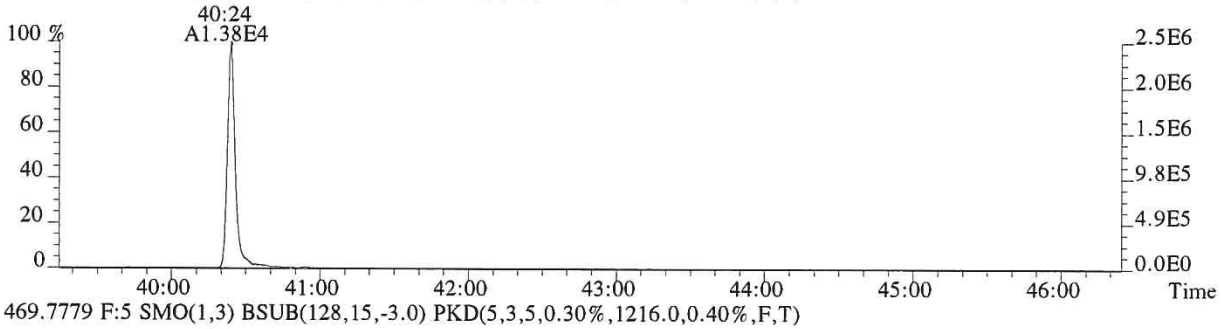


060240

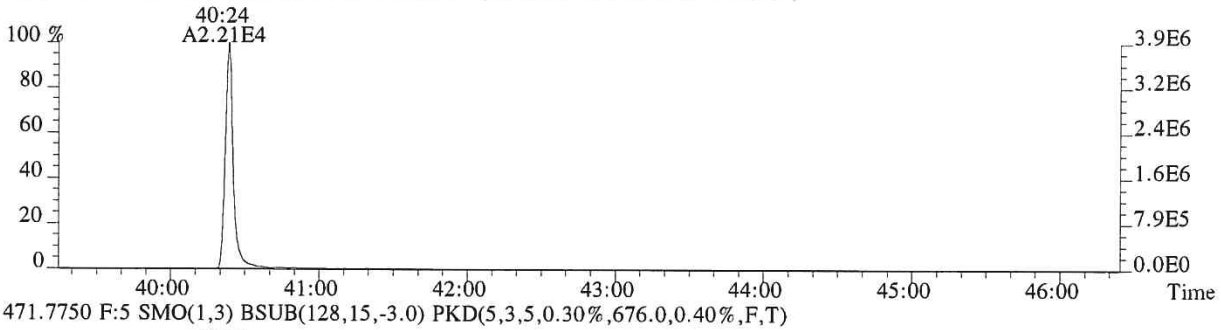
File:P616282 #1-645 Acq:29-DEC-2018 17:43:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-012
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,732.0,0.40%,F,T)



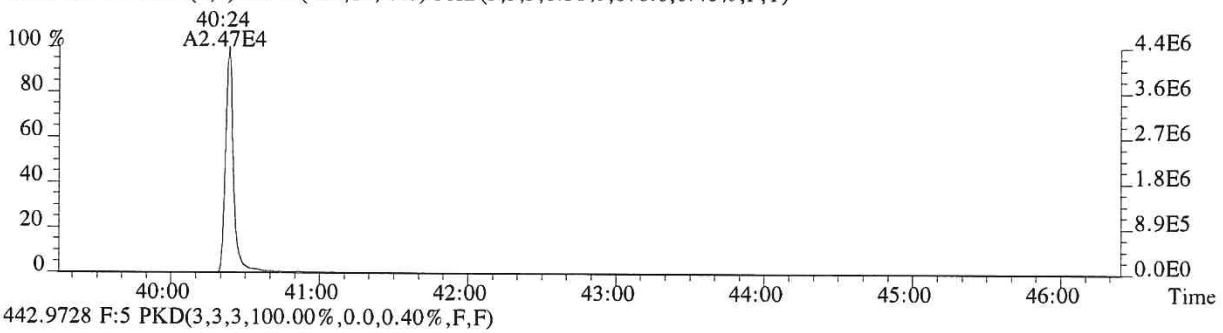
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1364.0,0.40%,F,T)



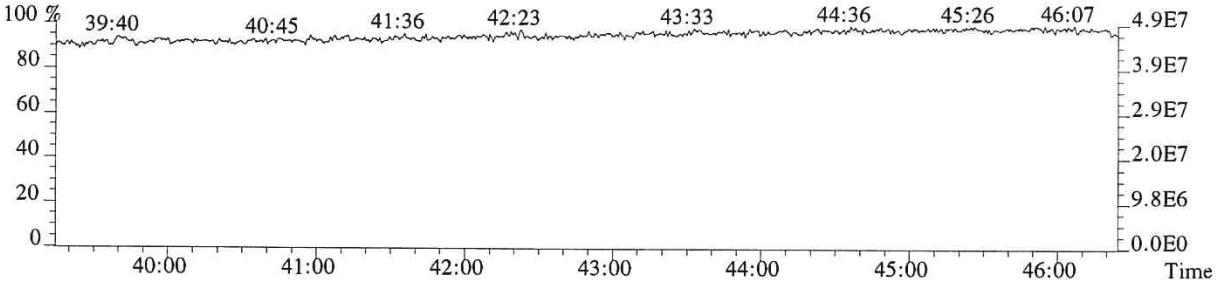
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1216.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,676.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060241

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0118

Run #12 Filename P616283 Samp: 1 Inj: 1 Acquired: 29-DEC-18 18:32:25
Processed: 30-DEC-18 09:03:54 Sample ID: E1801136-013

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	1.081
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	1.156
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:21	3.448e+01	2.076e+01	1.66	no	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	2.194e+01	3.708e+01	0.59	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:00	1.737e+01	2.438e+01	0.71	no	yes	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:47	3.396e+01	1.465e+01	2.32	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:04	4.179e+01	3.730e+01	1.12	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:23	2.134e+01	1.825e+01	1.17	yes	no	1.463
10	Unk	OCDF	40:36	5.121e+01	5.001e+01	1.02	no	no	1.571
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:48	4.925e+01	1.795e+01	2.74	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:15	4.209e+01	6.381e+01	0.66	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:29	1.618e+02	8.328e+01	1.94	no	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:58	1.163e+03	1.302e+03	0.89	yes	no	1.112
17	Unk	OCDD	40:24	2.058e+04	2.334e+04	0.88	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:23	2.042e+04	2.618e+04	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:27	4.017e+04	2.571e+04	1.56	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:30	3.989e+04	2.537e+04	1.57	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:21	1.934e+04	3.659e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:27	2.399e+04	4.469e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:00	2.024e+04	3.753e+04	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:46	1.758e+04	3.386e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:03	1.446e+04	3.183e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:23	1.329e+04	2.992e+04	0.44	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:24	1.125e+04	1.468e+04	0.77	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:48	3.092e+04	1.964e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	2.909e+04	2.344e+04	1.24	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:14	2.716e+04	2.152e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:57	3.041e+04	2.879e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:24	3.084e+04	3.443e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:38	4.051e+04	5.149e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:28	5.623e+04	4.554e+04	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:26	1.884e+04				no	1.086

$$OCDD = \frac{(2.058e+04 + 2.334e+04) \times 4000\ pg \times 1}{(3.084e+04 + 3.443e+04) \times 10.891\ g \times 76.3/100 \times 1.157} = 279.9517\ ng/kg$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0118

Run #12 Filename P616283 Samp: 1 Inj: 1 Acquired: 29-DEC-18 18:32:25
Processed: 30-DEC-18 09:03:54 LAB. ID: E1801136-013

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	1.14e+03	*	*	2.87e+03	*
2	1,2,3,7,8-PeCDF	*	8.08e+02	*	*	2.69e+03	*
3	2,3,4,7,8-PeCDF	*	8.08e+02	*	*	2.69e+03	*
4	1,2,3,4,7,8-HxCDF	6.71e+03	1.26e+03	5.3e+00	4.89e+03	6.32e+02	7.7e+00
5	1,2,3,6,7,8-HxCDF	4.65e+03	1.26e+03	3.7e+00	8.97e+03	6.32e+02	1.4e+01
6	2,3,4,6,7,8-HxCDF	3.45e+03	1.26e+03	2.7e+00	4.89e+03	6.32e+02	7.7e+00
7	1,2,3,7,8,9-HxCDF	9.08e+03	1.26e+03	7.2e+00	3.41e+03	6.32e+02	5.4e+00
8	1,2,3,4,6,7,8-HpCDF	7.07e+03	3.40e+02	2.1e+01	8.79e+03	4.60e+02	1.9e+01
9	1,2,3,4,7,8,9-HpCDF	4.39e+03	3.40e+02	1.3e+01	4.06e+03	4.60e+02	8.8e+00
10	OCDF	6.75e+03	4.08e+02	1.7e+01	9.62e+03	2.46e+03	3.9e+00
11	2,3,7,8-TCDD	*	3.80e+03	*	*	1.52e+03	*
12	1,2,3,7,8-PeCDD	7.93e+03	1.42e+03	5.6e+00	5.25e+03	3.48e+02	1.5e+01
13	1,2,3,4,7,8-HxCDD	*	1.05e+03	*	*	1.64e+03	*
14	1,2,3,6,7,8-HxCDD	9.75e+03	1.05e+03	9.3e+00	1.35e+04	1.64e+03	8.2e+00
15	1,2,3,7,8,9-HxCDD	3.42e+04	1.05e+03	3.2e+01	1.78e+04	1.64e+03	1.1e+01
16	1,2,3,4,6,7,8-HpCDD	2.56e+05	4.48e+02	5.7e+02	2.87e+05	1.41e+03	2.0e+02
17	OCDD	3.72e+06	3.56e+02	1.0e+04	4.19e+06	1.05e+03	4.0e+03
18	13C-2,3,7,8-TCDF	2.91e+06	7.74e+03	3.8e+02	3.70e+06	6.98e+03	5.3e+02
19	13C-1,2,3,7,8-PeCDF	6.80e+06	6.20e+02	1.1e+04	4.36e+06	1.52e+03	2.9e+03
20	13C-2,3,4,7,8-PeCDF	7.50e+06	6.20e+02	1.2e+04	4.77e+06	1.52e+03	3.1e+03
21	13C-1,2,3,4,7,8-HxCDF	4.10e+06	1.02e+03	4.0e+03	7.67e+06	1.56e+03	4.9e+03
22	13C-1,2,3,6,7,8-HxCDF	4.90e+06	1.02e+03	4.8e+03	9.22e+06	1.56e+03	5.9e+03
23	13C-2,3,4,6,7,8-HxCDF	4.25e+06	1.02e+03	4.2e+03	8.04e+06	1.56e+03	5.1e+03
24	13C-1,2,3,7,8,9-HxCDF	3.56e+06	1.02e+03	3.5e+03	7.03e+06	1.56e+03	4.5e+03
25	13C-1,2,3,4,6,7,8-HpCDF	3.14e+06	1.98e+03	1.6e+03	6.91e+06	3.06e+03	2.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.83e+06	1.98e+03	1.4e+03	6.32e+06	3.06e+03	2.1e+03
27	13C-2,3,7,8-TCDD	1.80e+06	1.26e+04	1.4e+02	2.30e+06	4.84e+03	4.8e+02
28	13C-1,2,3,7,8-PeCDD	5.87e+06	1.32e+03	4.4e+03	3.69e+06	1.66e+03	2.2e+03
29	13C-1,2,3,4,7,8-HxCDD	6.40e+06	2.64e+03	2.4e+03	5.17e+06	1.12e+03	4.6e+03
30	13C-1,2,3,6,7,8-HxCDD	5.81e+06	2.64e+03	2.2e+03	4.61e+06	1.12e+03	4.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	6.57e+06	1.26e+03	5.2e+03	6.22e+06	8.48e+02	7.3e+03
32	13C-OCDD	5.54e+06	1.48e+03	3.8e+03	6.20e+06	8.40e+02	7.4e+03
33	13C-1,2,3,4-TCDD	6.00e+06	1.26e+04	4.8e+02	7.56e+06	4.84e+03	1.6e+03
34	13C-1,2,3,7,8,9-HxCDD	1.16e+07	2.64e+03	4.4e+03	9.31e+06	1.12e+03	8.3e+03
35	37Cl-2,3,7,8-TCDD	2.93e+06	2.14e+03	1.4e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.796e{+}03 + 1.516e{+}03) \times 2000}{(1.797e{+}06 + 2.304e{+}06) \times (\quad) \times 1.049} =$$

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Peak List Summary

CLIENT ID.
SL0118

Entry: 36 Totals Name: Total Tetra-Furans

Run: 12 File: P616283 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 18:32:25 Processed: 30-DEC-18 09:03:54

Mass: 303.9020 305.8990 Tot Response: 3.42e+02 RRF: 1.081

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:53	2.24e+01	2.85e+01	0.79	yes	5.09e+01	n	n
2	23:48	4.79e+01	6.29e+01	0.76	yes	1.11e+02	n	n
3	24:21	8.04e+01	1.00e+02	0.80	yes	1.81e+02	n	n

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Peak List Summary

CLIENT ID.
SL0118

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 12 File: P616283 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 18:32:25 Processed: 30-DEC-18 09:03:54

Mass: 319.8970 321.8940 Tot Response: 1.80e+03 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:01	8.18e+02	9.86e+02 0.83	yes	1.80e+03		n	n

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Peak List Summary

CLIENT ID.
SL0118

Entry: 39 Totals Name: Total Penta-Furans2

Run: 12 File: P616283 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 18:32:25 Processed: 30-DEC-18 09:03:54

Mass: 339.8600 341.8570 Tot Response: 1.36e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:23	6.67e+01	4.45e+01 1.50	yes	1.11e+02		n	n
2	30:02	1.50e+01	9.63e+00 1.56	yes	2.47e+01		n	n

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Peak List Summary

CLIENT ID.
SL0118

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 12 File: P616283 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 18:32:25 Processed: 30-DEC-18 09:03:54

Mass: 389.8160 391.8130 Tot Response: 6.59e+03 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:44	3.17e+03	2.58e+03 1.23	yes	5.75e+03		n	n
2	34:32	3.81e+02	3.39e+02 1.12	yes	7.21e+02		n	n
3	34:39	6.42e+01	5.59e+01 1.15	yes	1.20e+02		n	n

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Peak List Summary

CLIENT ID.
SL0118

Entry: 43 Totals Name: Total Hepta-Furans

Run: 12 File: P616283 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 18:32:25 Processed: 30-DEC-18 09:03:54

Mass: 407.7820 409.7790 Tot Response: 1.19e+02 RRF: 1.495

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:04	4.18e+01	3.73e+01 1.12	yes	7.91e+01	1,2,3,4,6,7,8-HpCDF	n	n
2	38:23	2.13e+01	1.83e+01 1.17	yes	3.96e+01	1,2,3,4,7,8,9-HpCDF	n	n

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Peak List Summary

CLIENT ID.
SL0118

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 12 File: P616283 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 18:32:25 Processed: 30-DEC-18 09:03:54

Mass: 423.7770 425.7740 Tot Response: 1.23e+04 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:19	5.12e+03	4.77e+03 1.07	yes	9.89e+03		n	n
2	37:58	1.16e+03	1.30e+03 0.89	yes	2.46e+03	1,2,3,4,6,7,8-HpCDD	n	n

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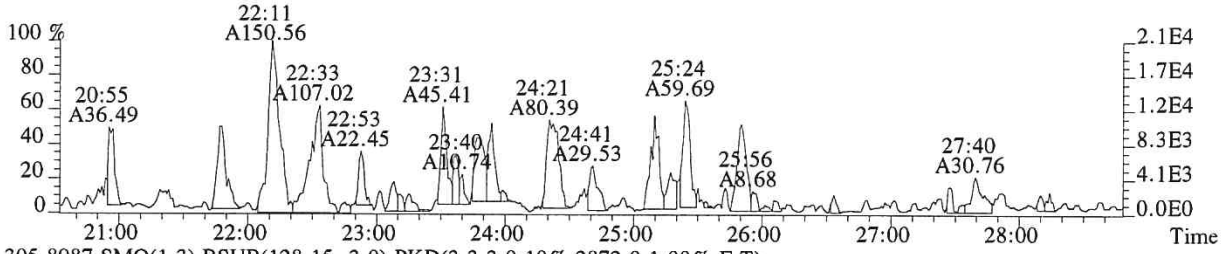
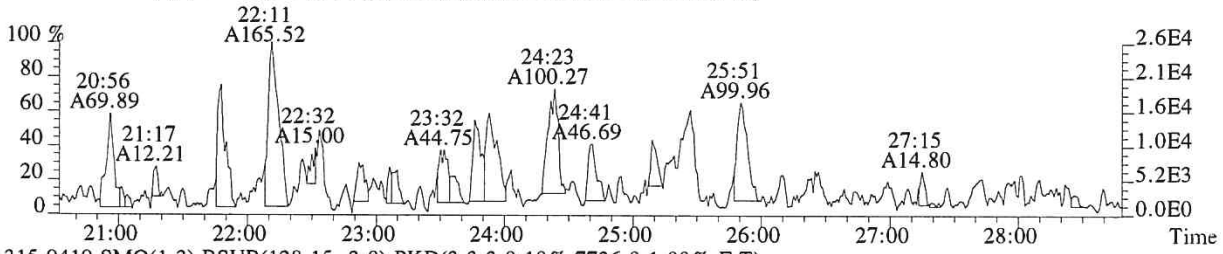
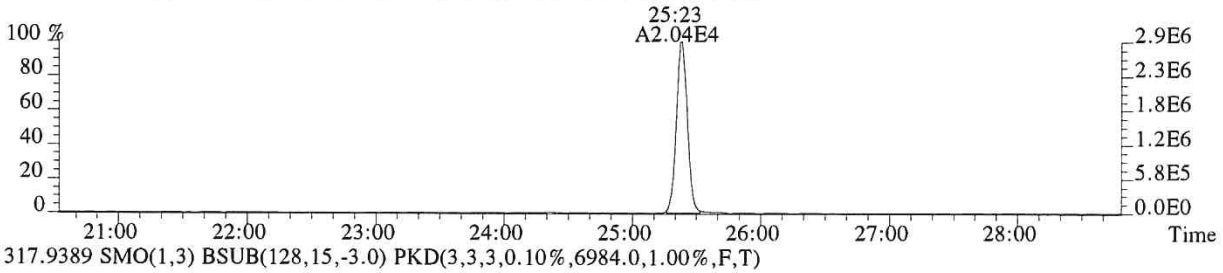
File:P616283 #1-587 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1136.0,1.00%,F,T)



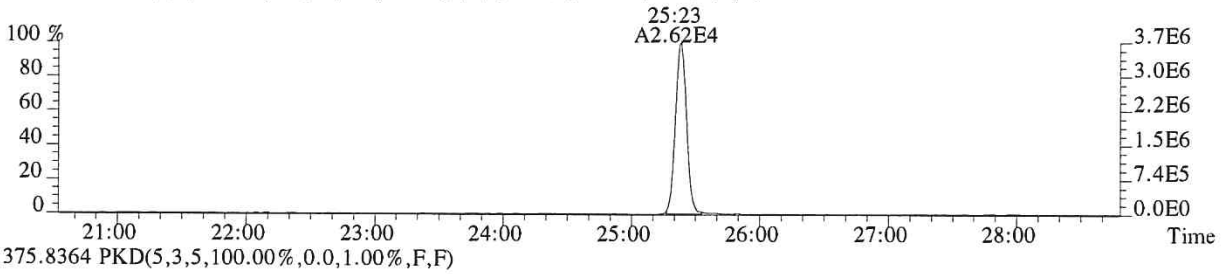
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2872.0,1.00%,F,T)



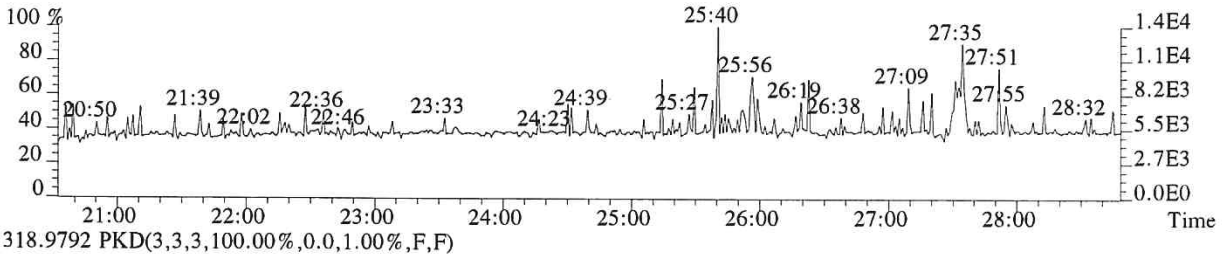
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7736.0,1.00%,F,T)



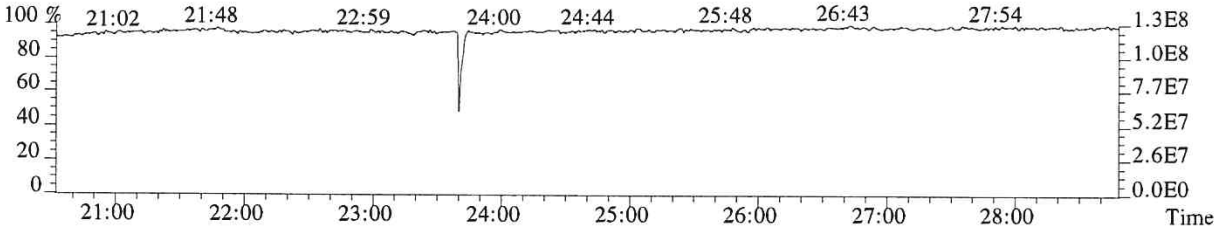
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6984.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



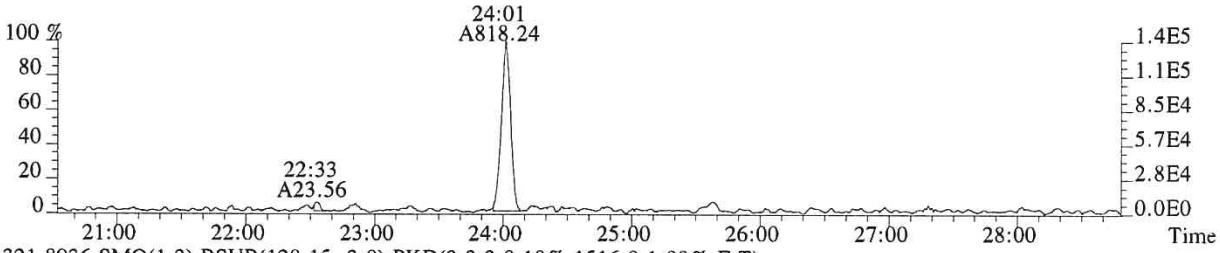
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



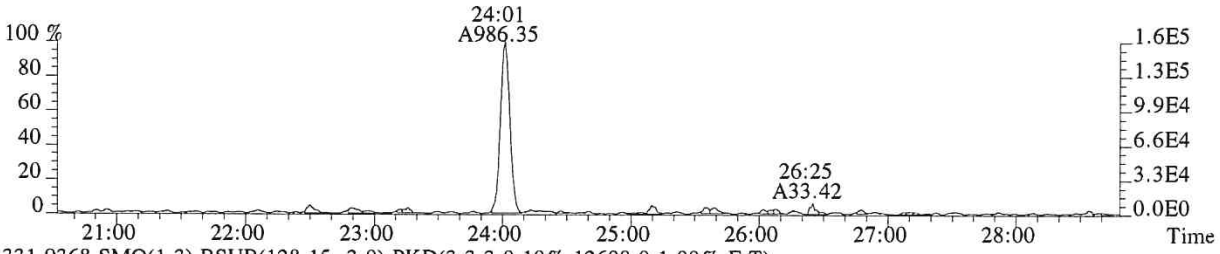
060250

File:P616283 #1-587 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013

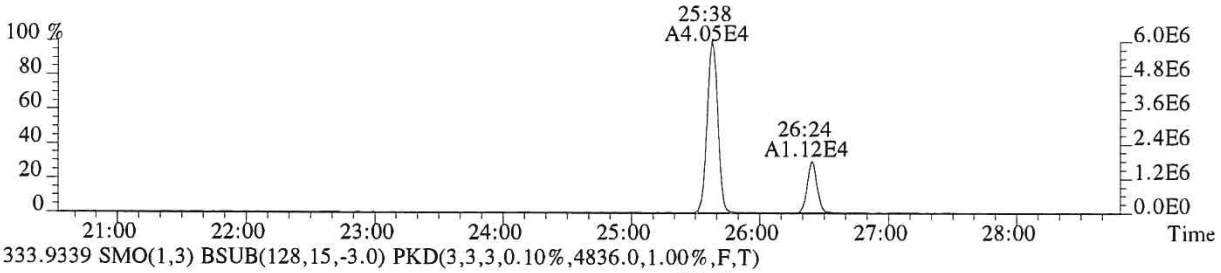
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3796.0,1.00%,F,T)



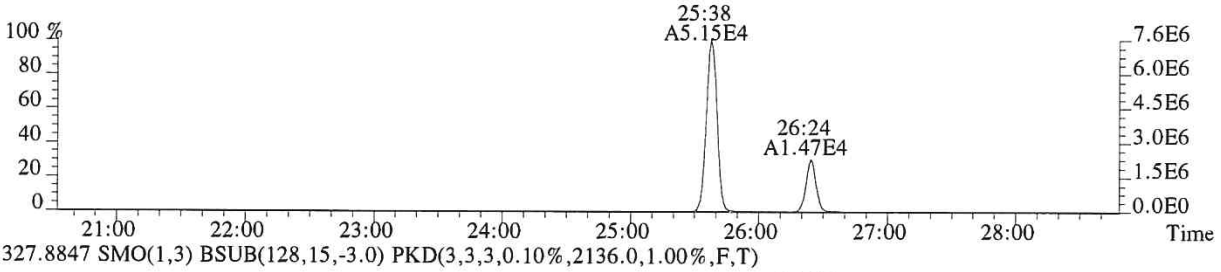
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1516.0,1.00%,F,T)



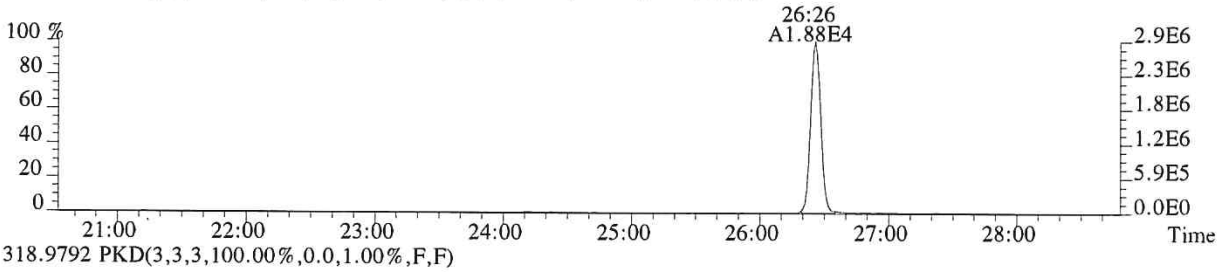
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12608.0,1.00%,F,T)



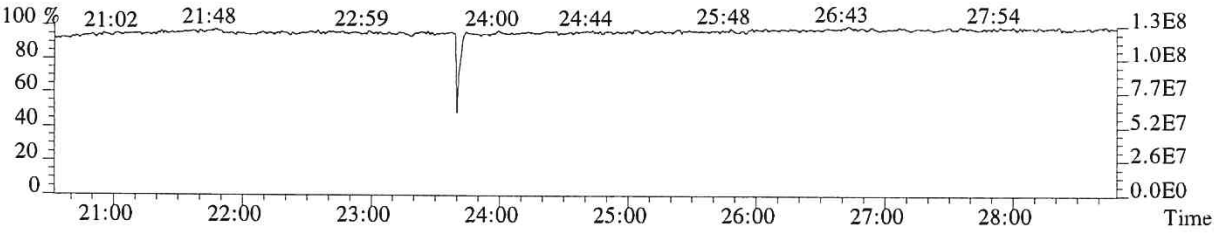
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4836.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2136.0,1.00%,F,T)

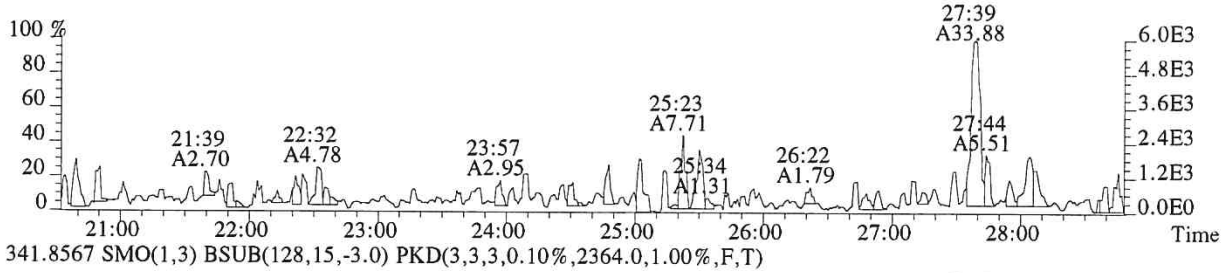


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

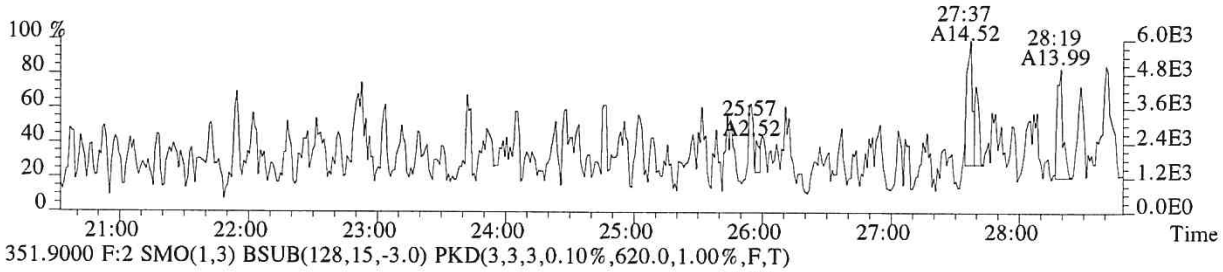


060251

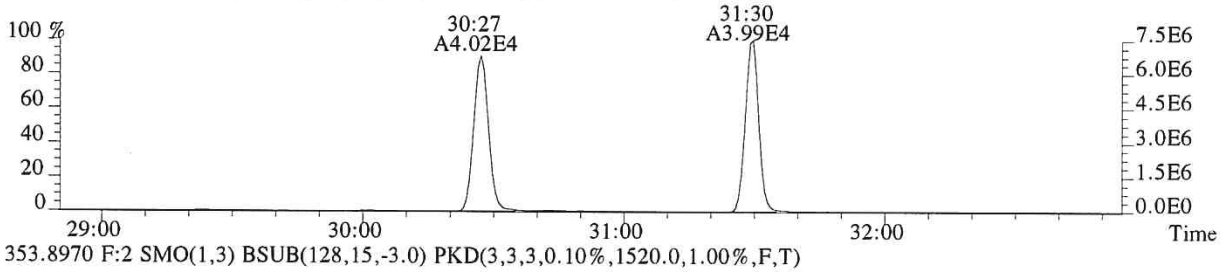
File:P616283 #1-587 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,448.0,1.00%,F,T)



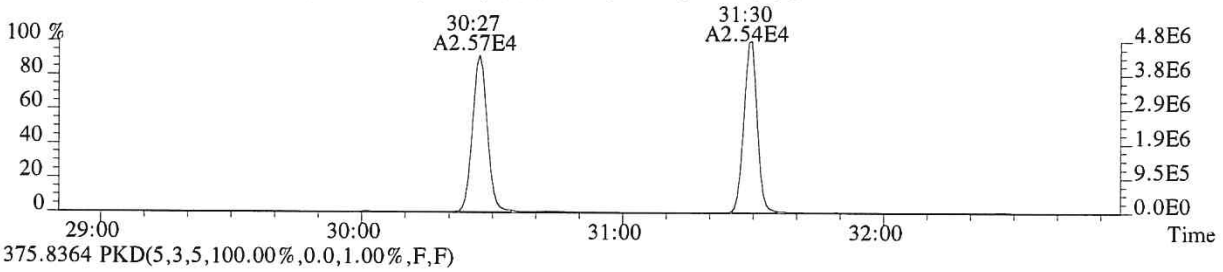
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2364.0,1.00%,F,T)



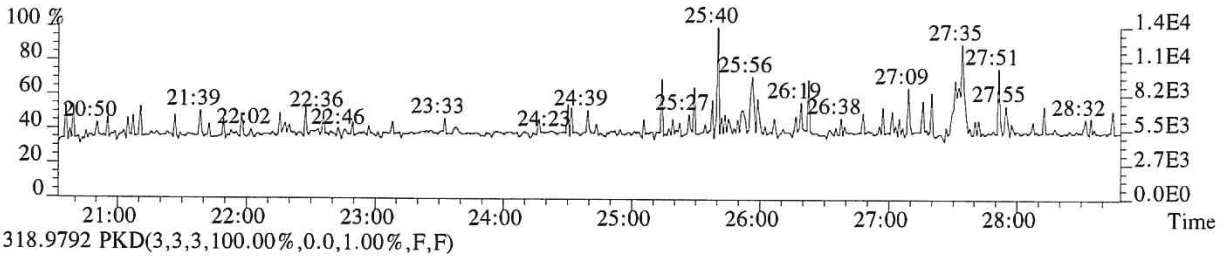
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,620.0,1.00%,F,T)



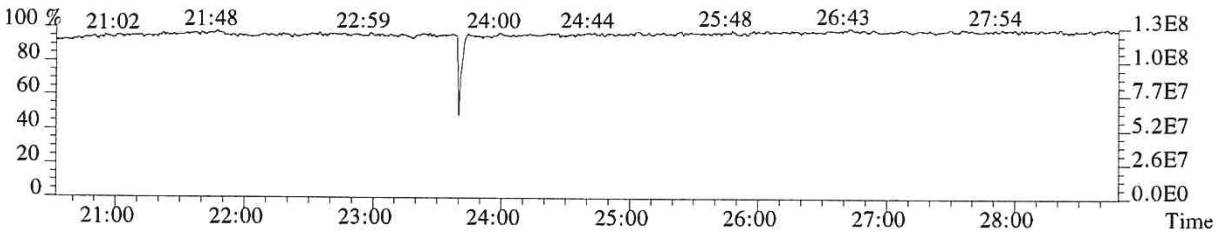
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1520.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



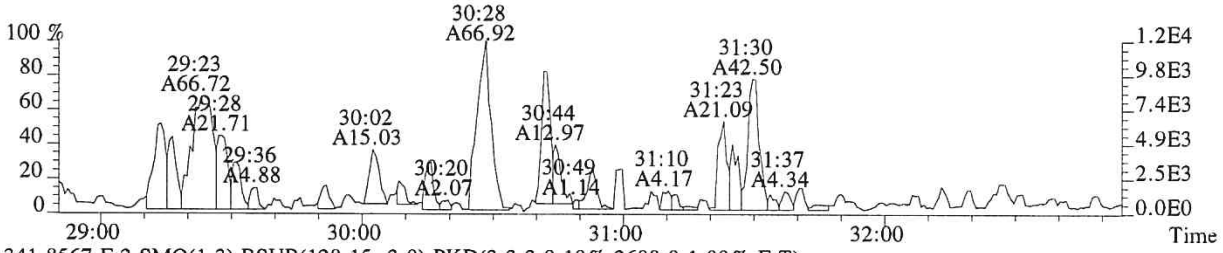
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



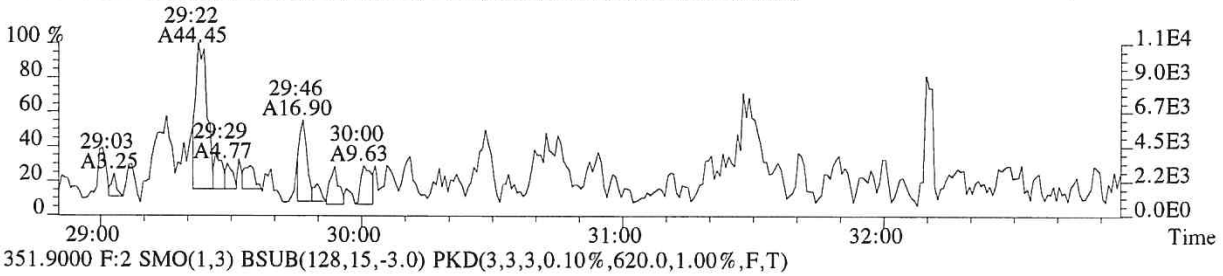
060252

File:P616283 #1-367 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013

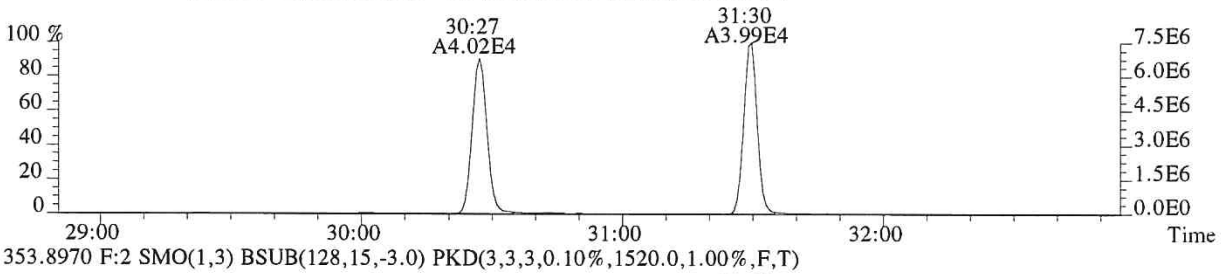
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,808.0,1.00%,F,T)



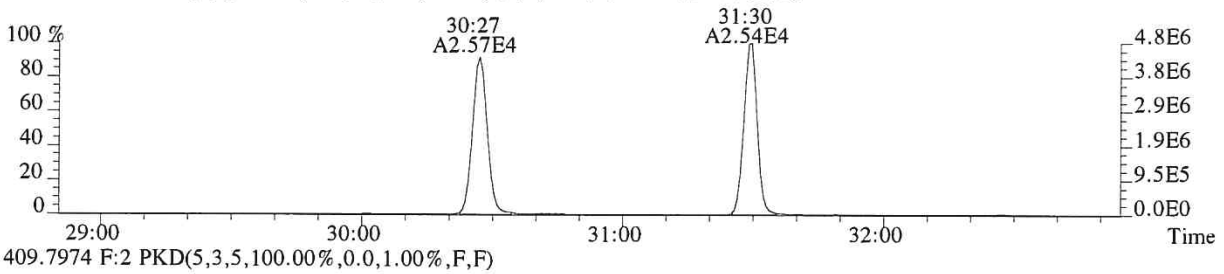
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2688.0,1.00%,F,T)



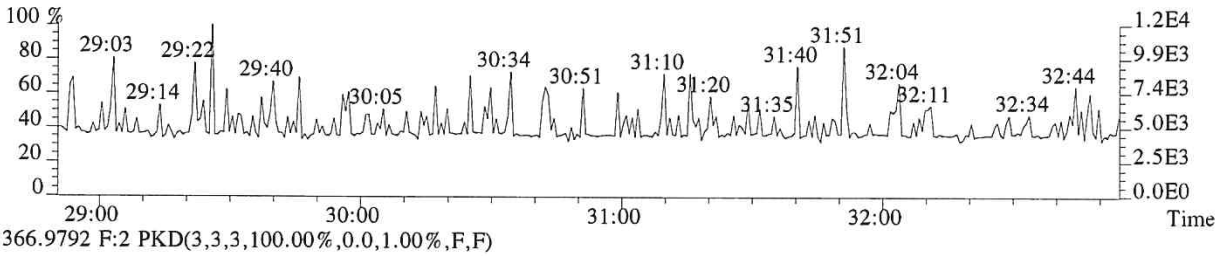
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,620.0,1.00%,F,T)



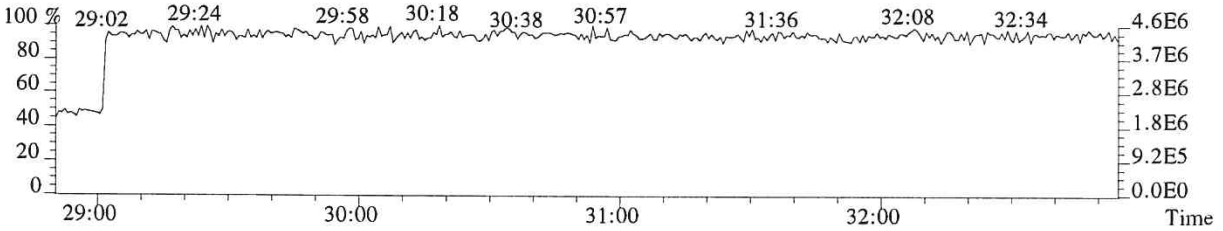
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1520.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

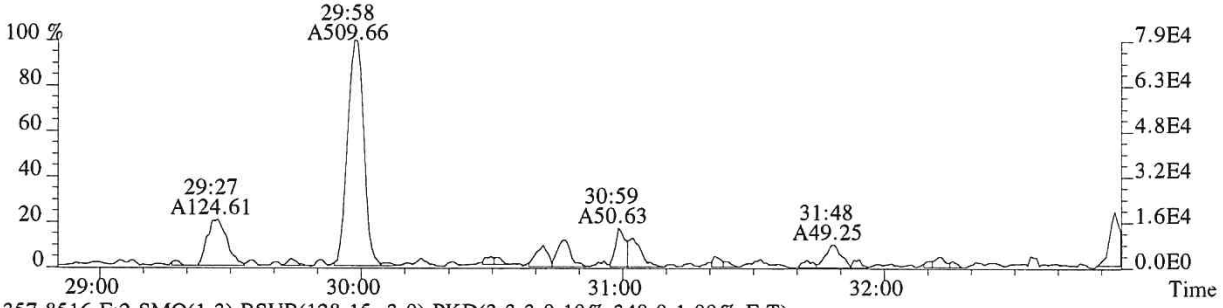


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

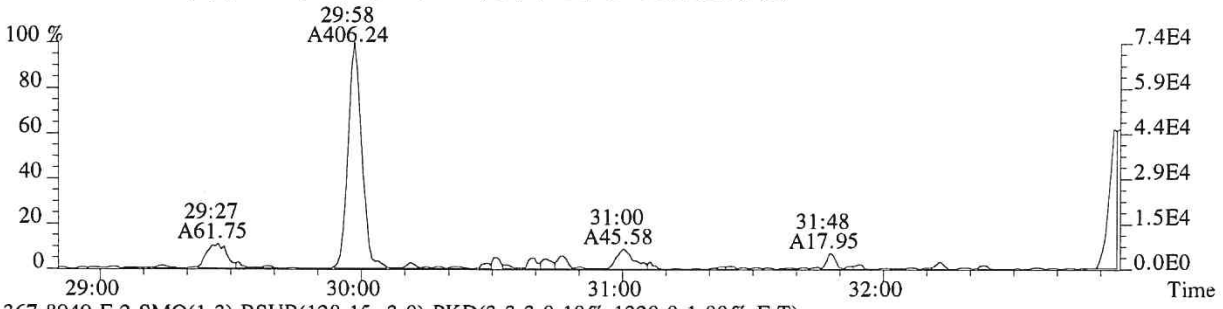


060253

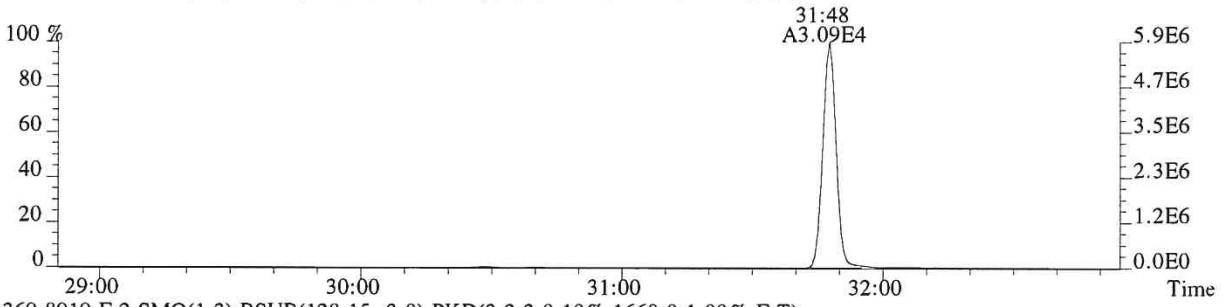
File:P616283 #1-367 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1420.0,1.00%,F,T)



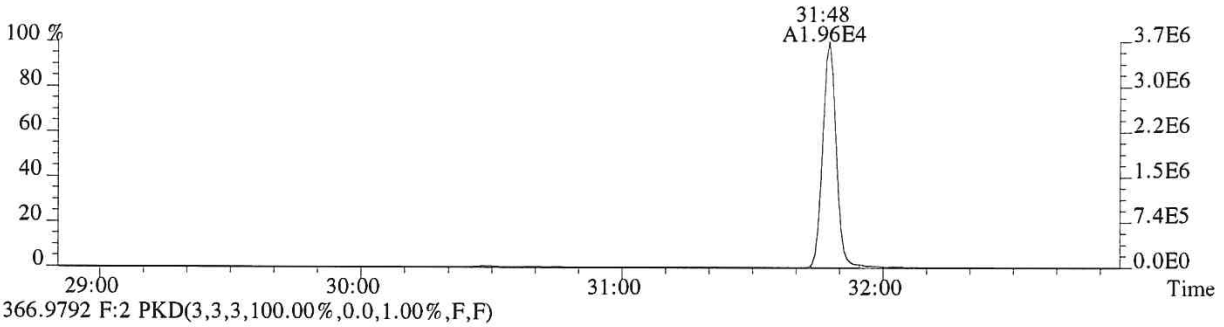
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,348.0,1.00%,F,T)



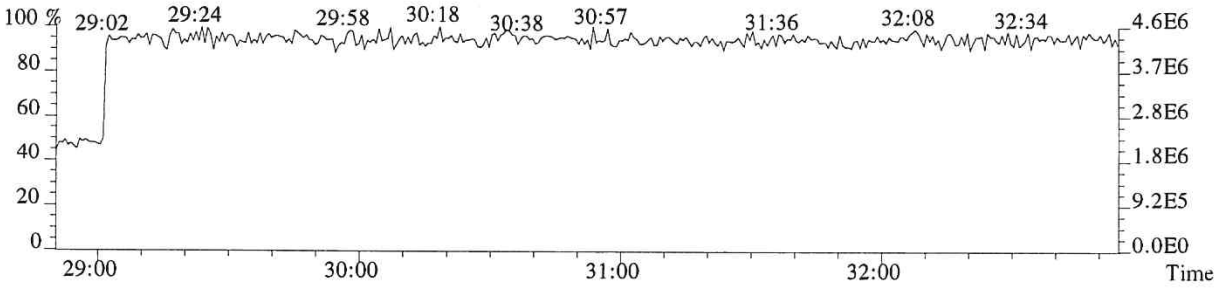
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1320.0,1.00%,F,T)



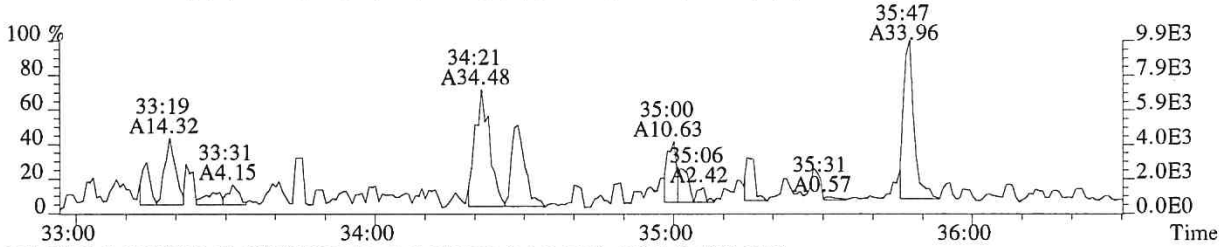
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1660.0,1.00%,F,T)



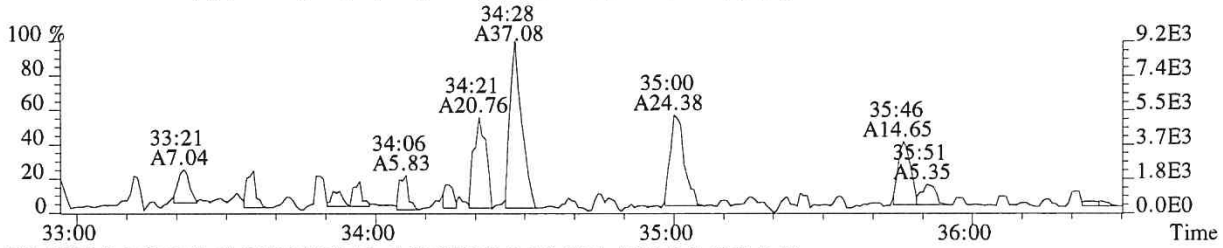
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



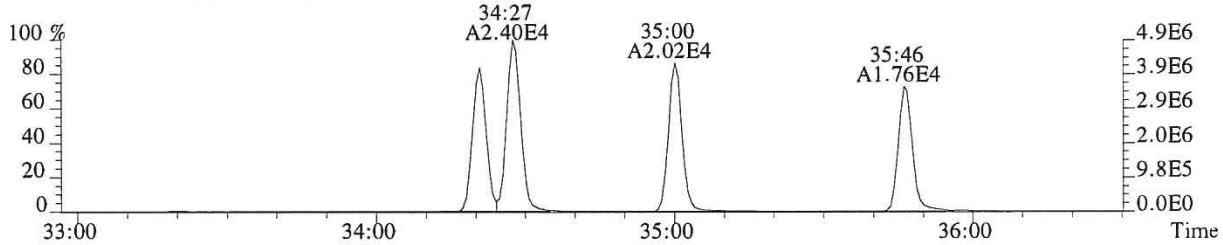
File:P616283 #1-321 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1256.0,0.40%,F,T)



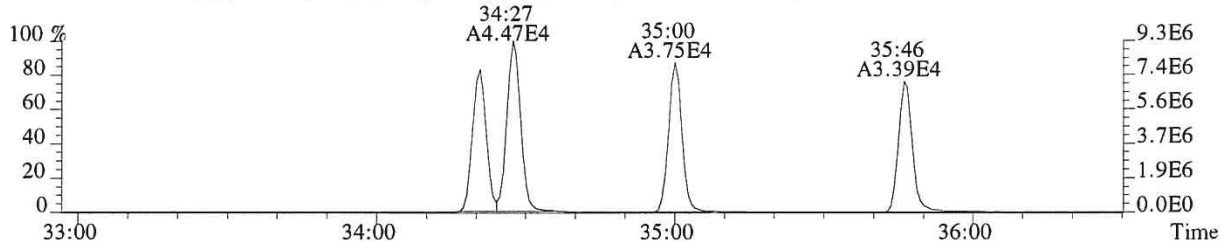
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,632.0,0.40%,F,T)



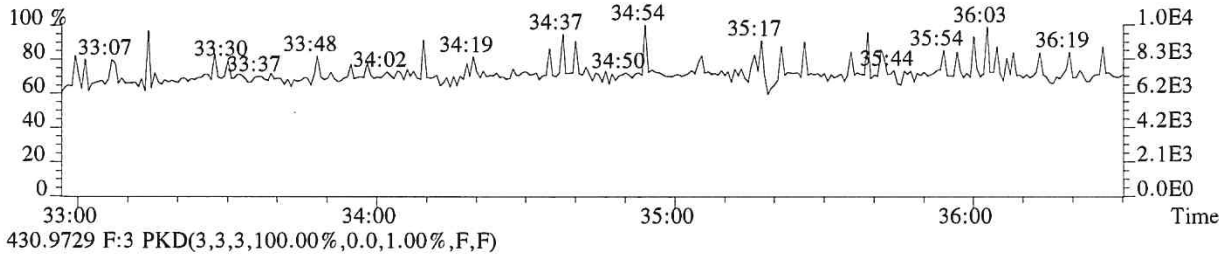
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1020.0,0.40%,F,T)



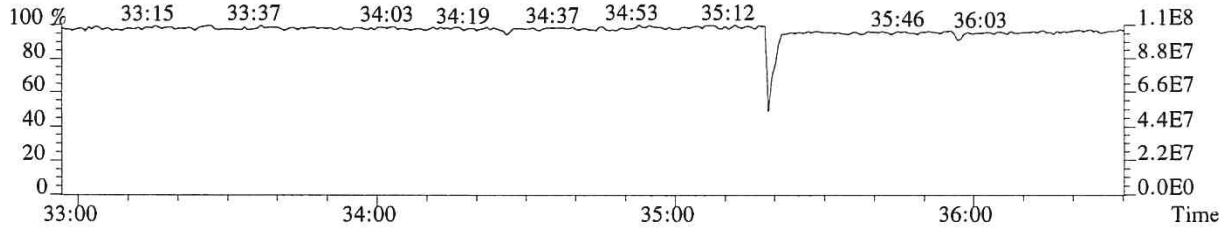
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1564.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

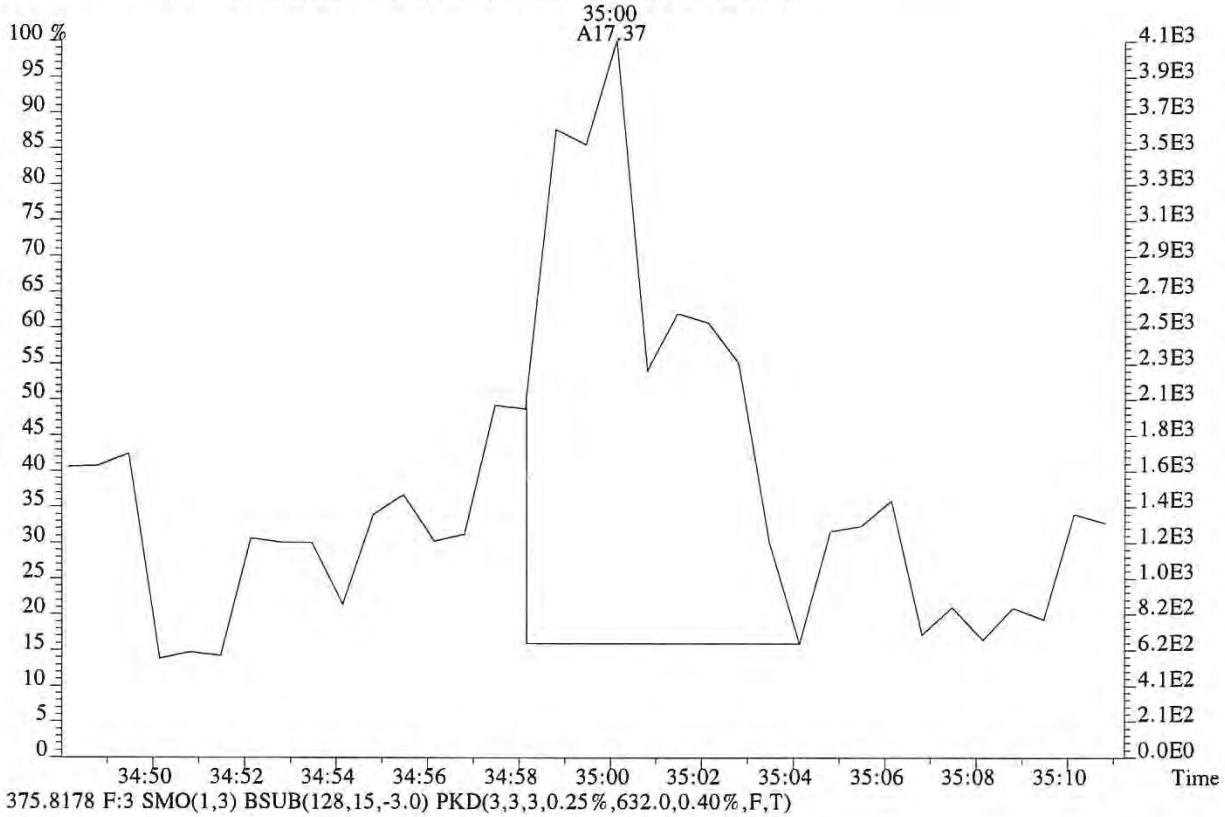


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

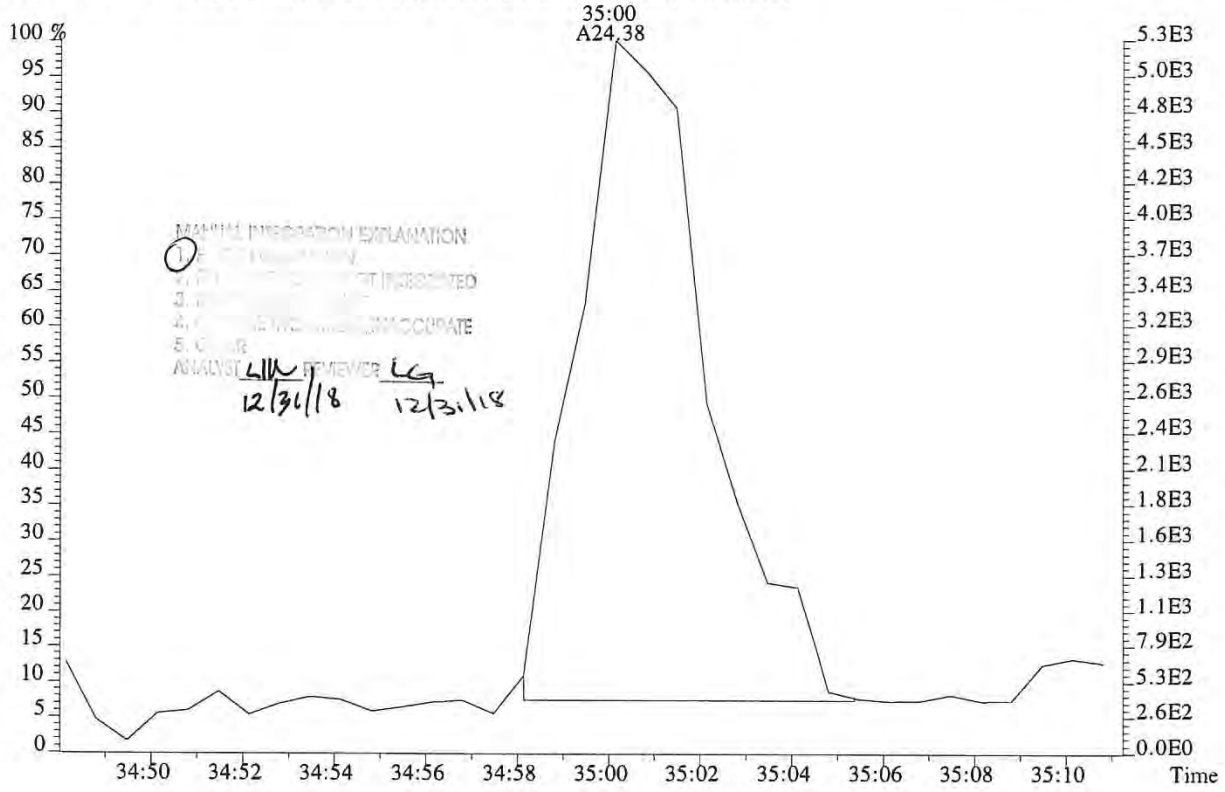


060255

File:P616283 #1-321 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1256.0,0.40%,F,T)



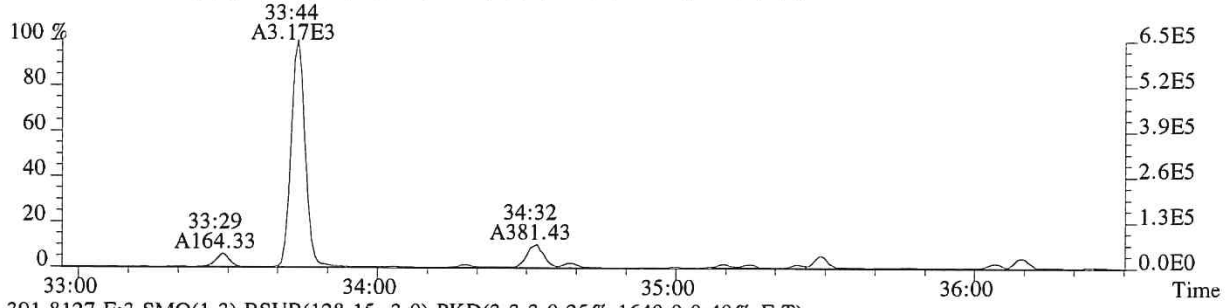
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,632.0,0.40%,F,T)



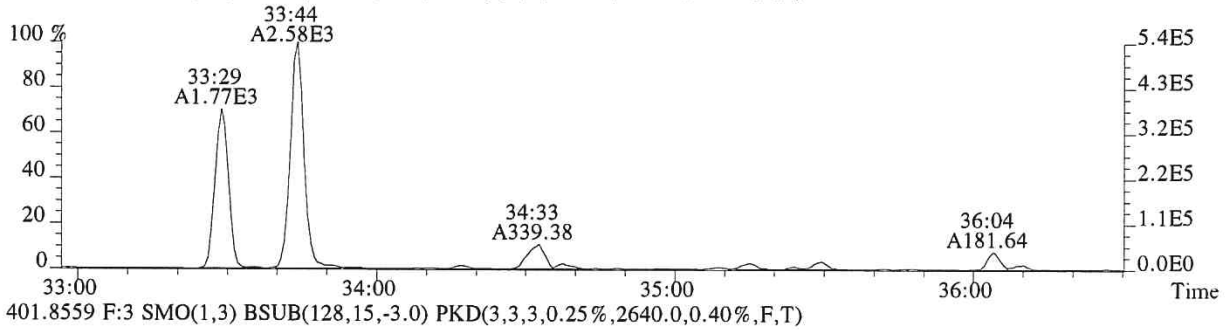
MANUAL INTEGRATION EXPLANATION
1)
ANALYST 12/31/18 REVIEWER 12/31/18

060256

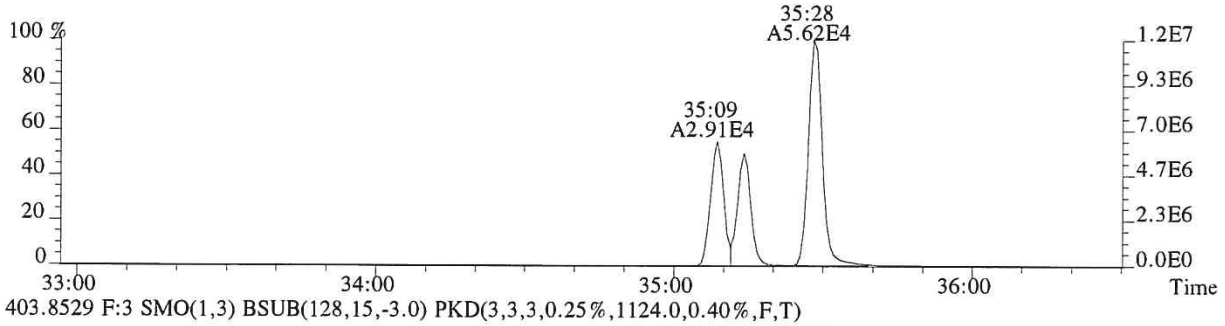
File:P616283 #1-321 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1052.0,0.40%,F,T)



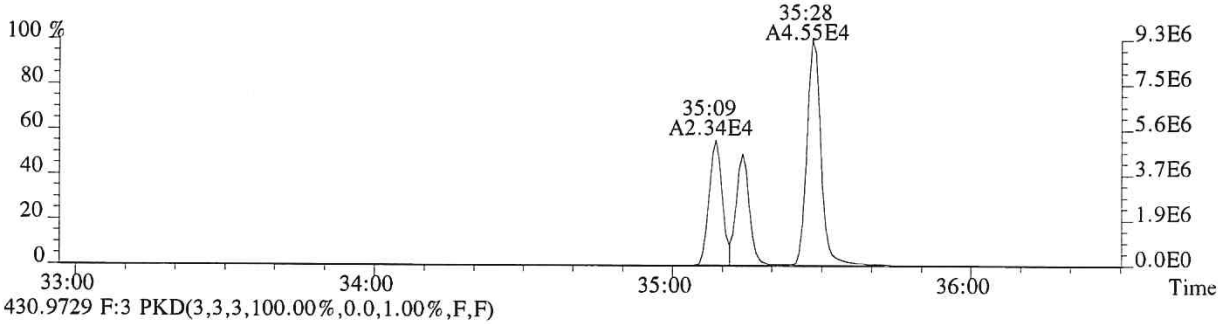
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1640.0,0.40%,F,T)



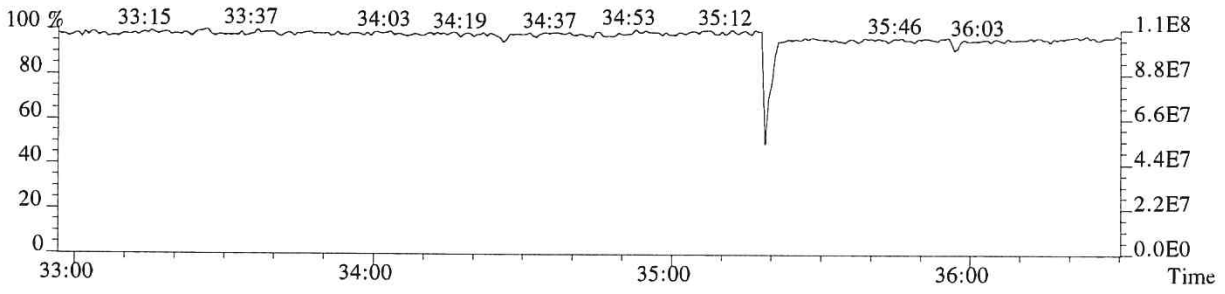
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2640.0,0.40%,F,T)



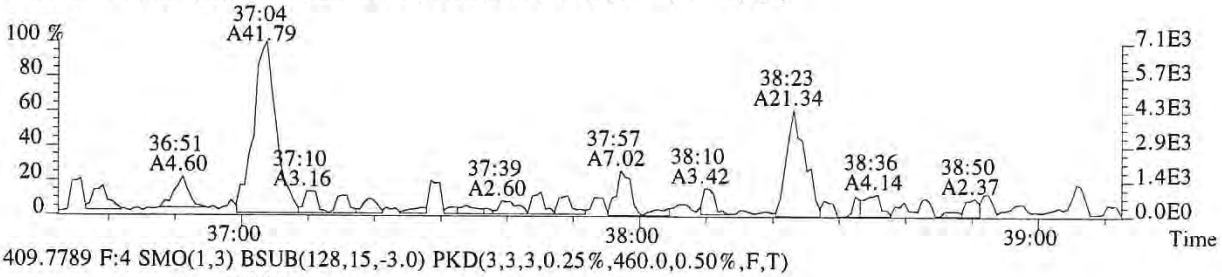
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1124.0,0.40%,F,T)



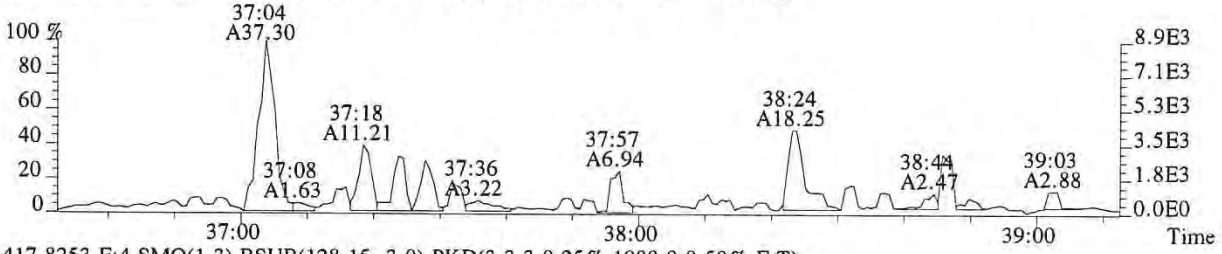
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



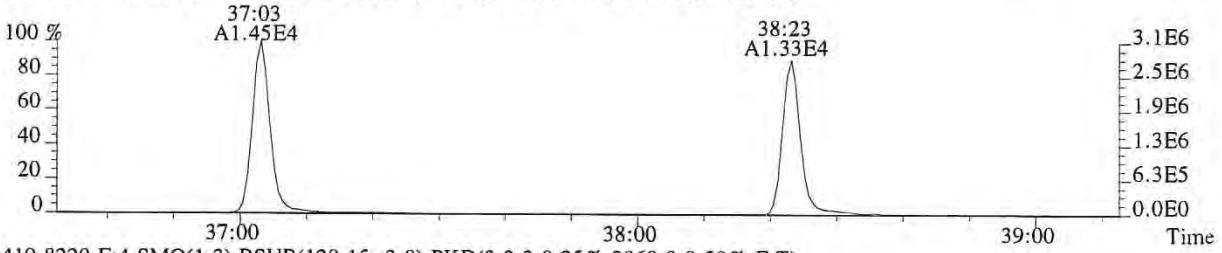
File:P616283 #1-241 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,340.0,0.50%,F,T)



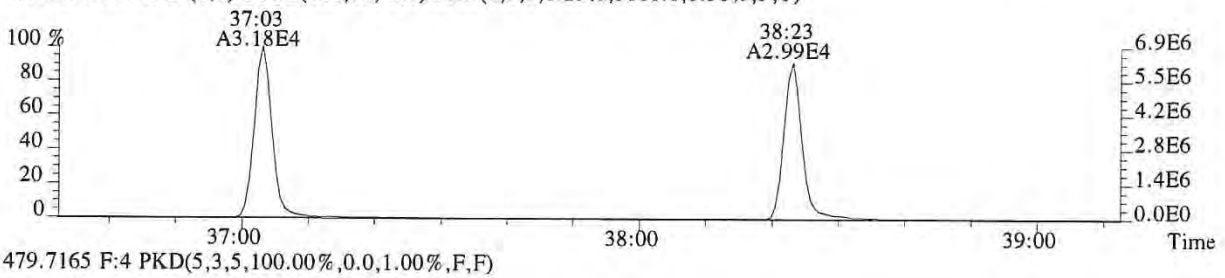
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,460.0,0.50%,F,T)



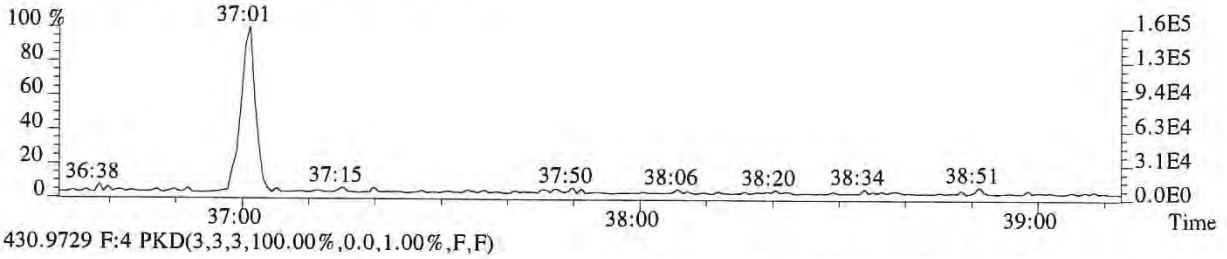
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1980.0,0.50%,F,T)



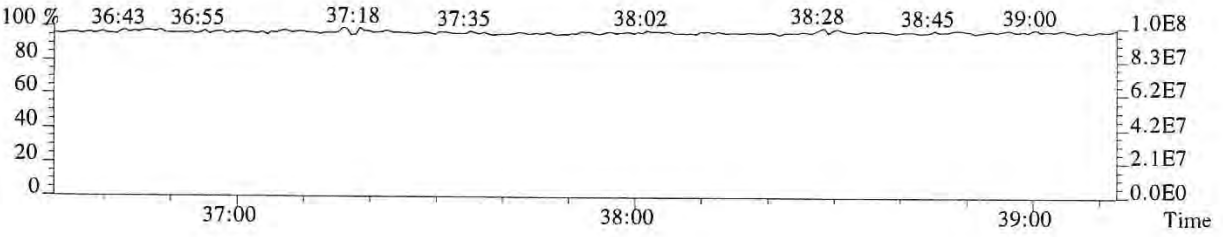
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3060.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

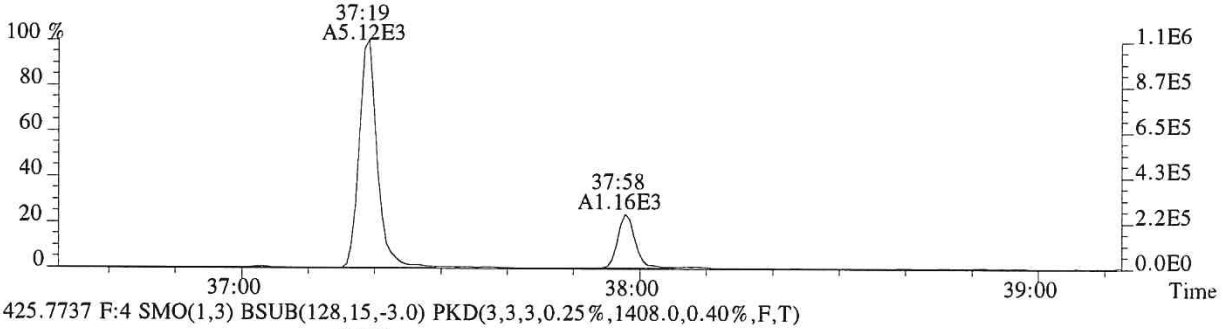


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

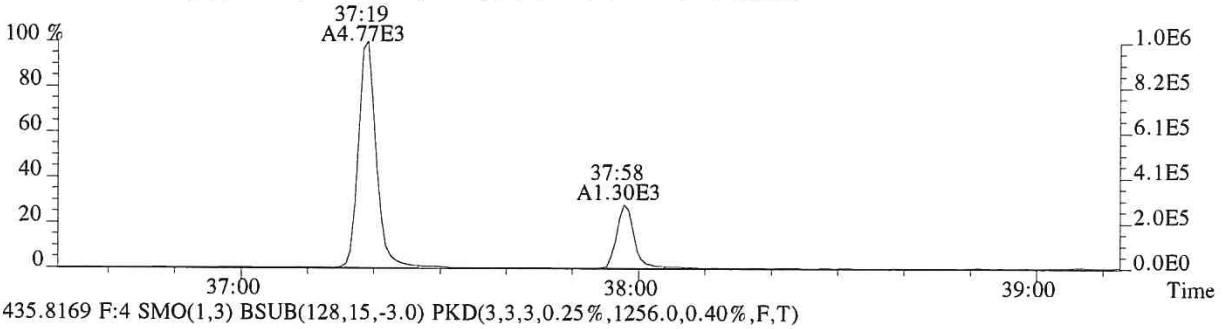


060258

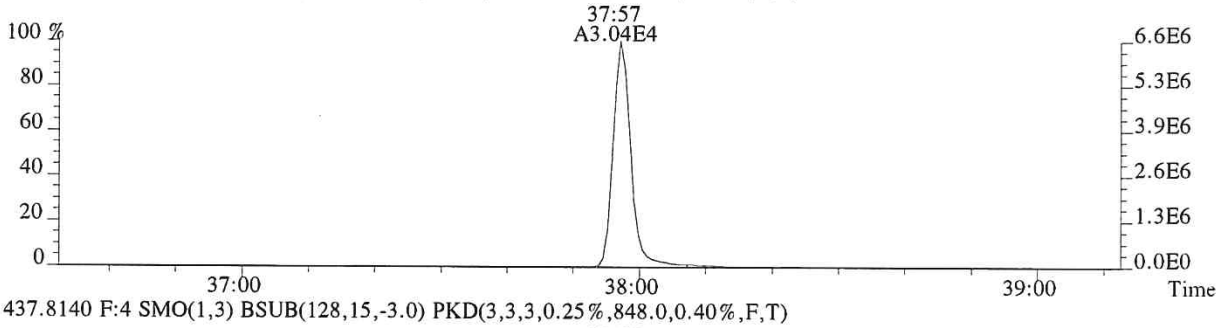
File:P616283 #1-241 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,448.0,0.40%,F,T)



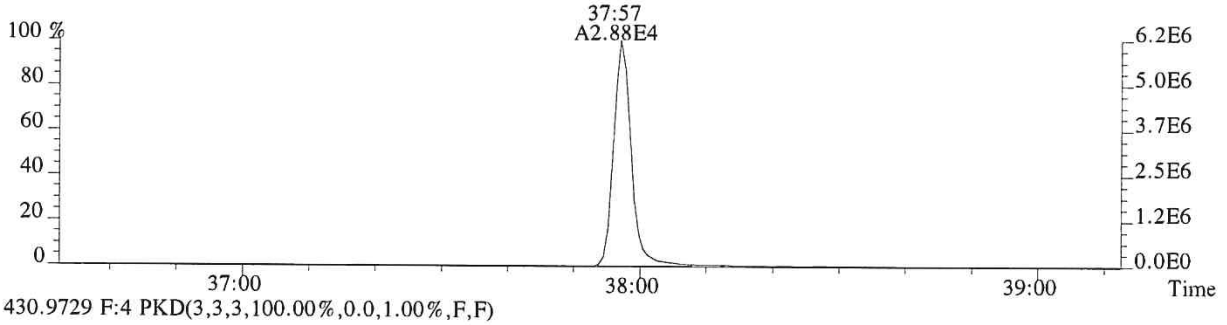
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1408.0,0.40%,F,T)



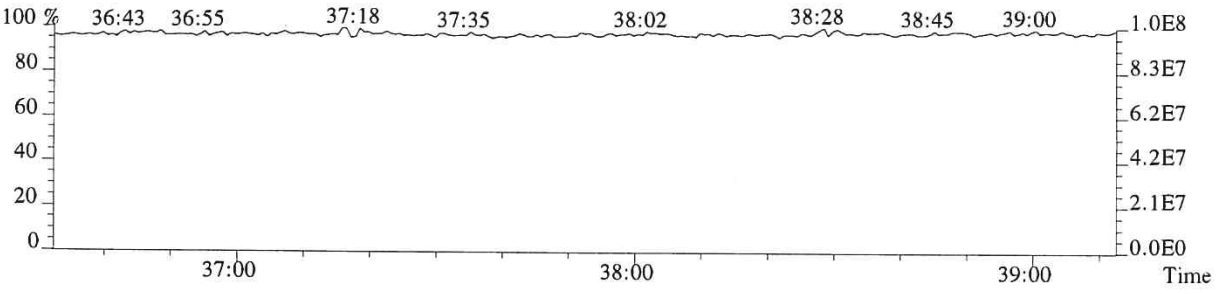
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1256.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,848.0,0.40%,F,T)



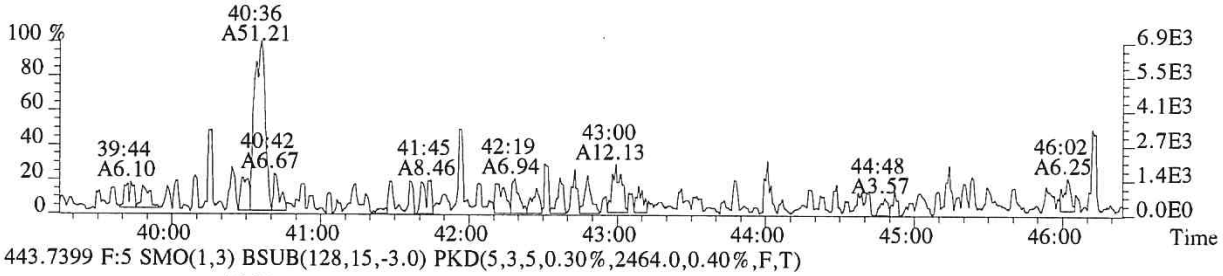
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



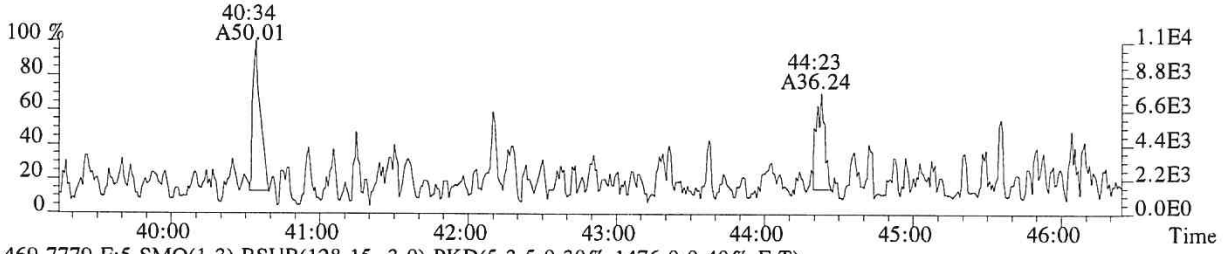
060259

File:P616283 #1-645 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013

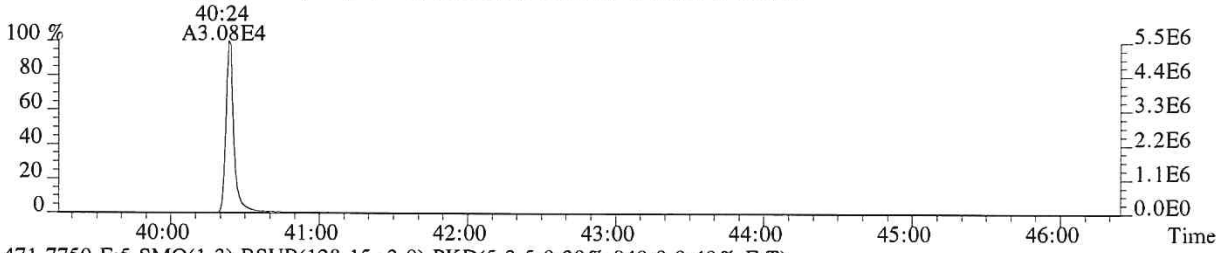
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,408.0,0.40%,F,T)



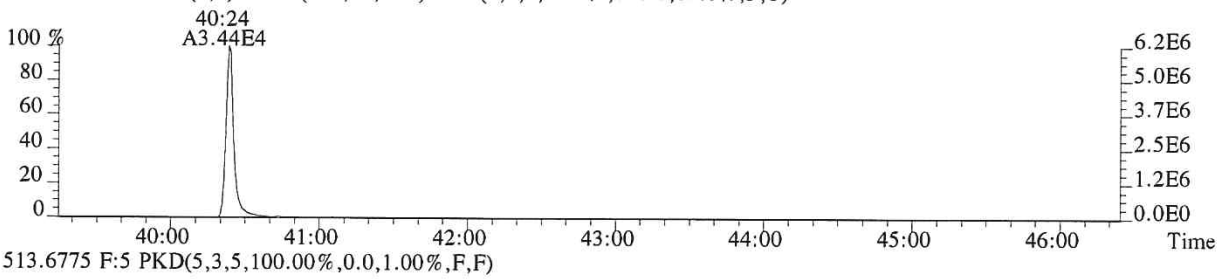
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2464.0,0.40%,F,T)



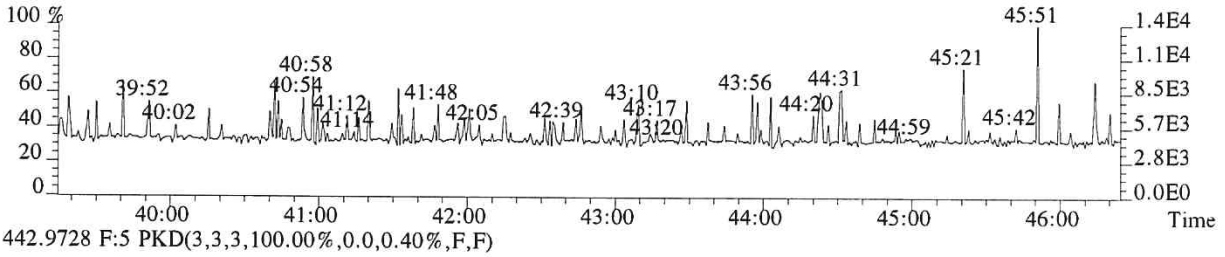
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1476.0,0.40%,F,T)



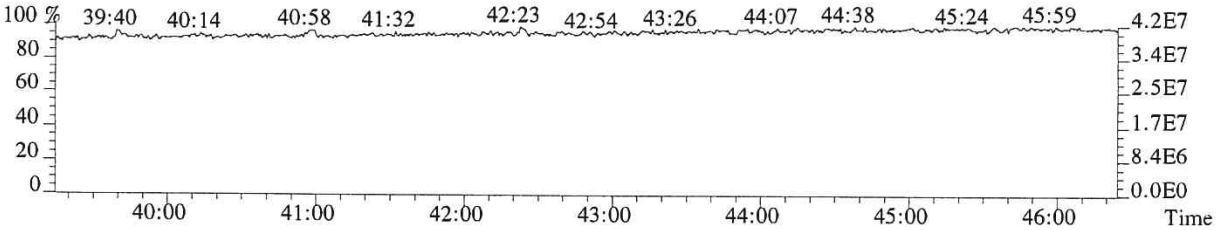
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,840.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

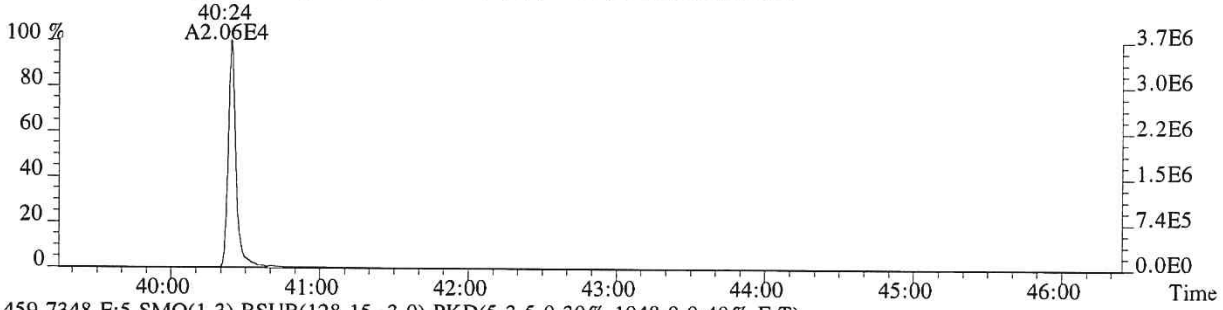


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

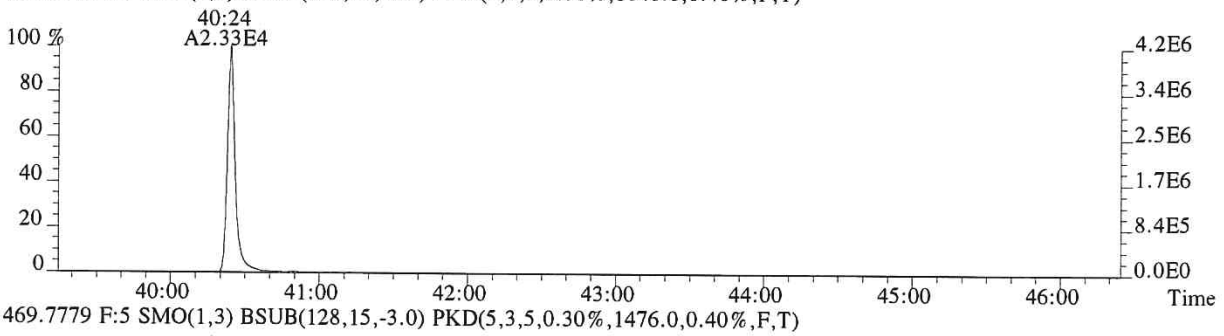


060260

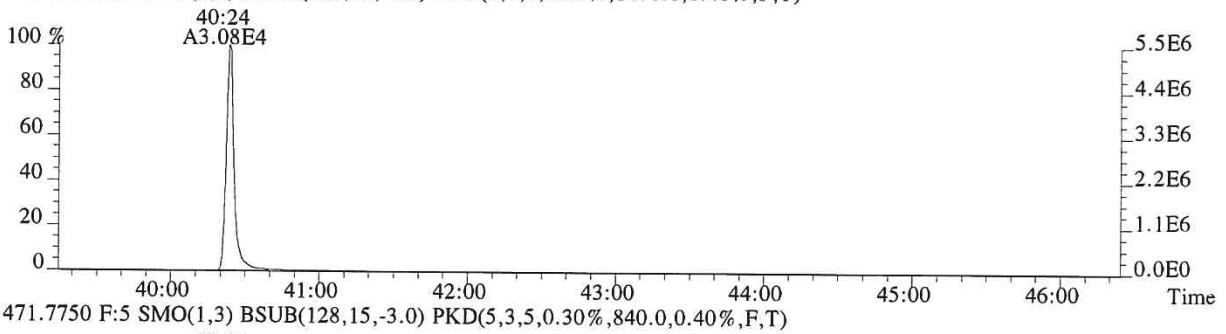
File:P616283 #1-645 Acq:29-DEC-2018 18:32:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-013
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,356.0,0.40%,F,T)



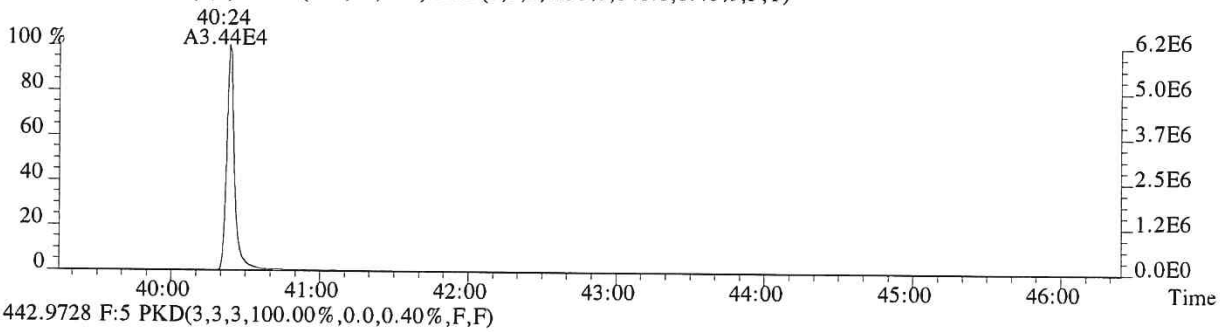
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1048.0,0.40%,F,T)



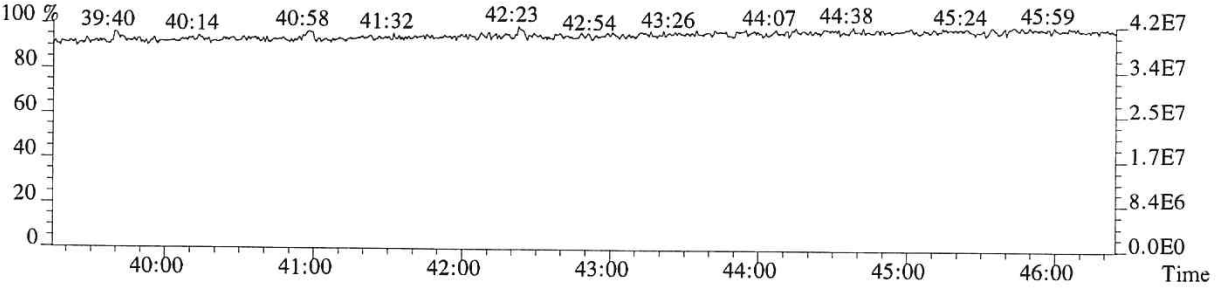
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1476.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,840.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060261

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0124

Run #13 Filename P616284 Samp: 1 Inj: 1 Acquired: 29-DEC-18 19:21:33
Processed: 30-DEC-18 09:04:39 Sample ID: E1801136-014

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:27	1.756e+02	1.833e+02	0.96	no	no	1.081
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:31	1.002e+02	7.761e+01	1.29	no	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:22	3.491e+02	2.911e+02	1.20	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	1.691e+02	1.398e+02	1.21	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:01	2.120e+02	1.369e+02	1.55	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:04	5.540e+03	5.094e+03	1.09	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	6.045e+02	5.573e+02	1.08	yes	no	1.463
10	Unk	OCDF	40:36	2.145e+04	2.428e+04	0.88	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:27	6.763e+01	6.560e+01	1.03	no	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:49	1.741e+02	1.126e+02	1.55	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:09	2.559e+02	2.687e+02	0.95	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:15	1.036e+03	8.455e+02	1.22	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:30	5.368e+02	4.386e+02	1.22	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:58	1.004e+05	9.697e+04	1.03	yes	no	1.112
17	Unk	OCDD	40:26	3.272e+06	3.667e+06	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:24	3.171e+04	4.079e+04	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:28	5.349e+04	3.401e+04	1.57	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:30	5.186e+04	3.290e+04	1.58	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:21	2.230e+04	4.390e+04	0.51	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:28	2.659e+04	5.015e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	2.320e+04	4.406e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	2.313e+04	4.386e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	1.594e+04	3.534e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	1.533e+04	3.426e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:25	1.695e+04	2.172e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:48	3.899e+04	2.532e+04	1.54	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	3.410e+04	2.697e+04	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	3.063e+04	2.418e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	3.342e+04	3.183e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:26	3.376e+04	3.656e+04	0.92	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:39	4.063e+04	5.176e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	6.141e+04	4.761e+04	1.29	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:27	2.396e+04				no	1.086

$$OCDD = \frac{(3.272e+06 + 3.667e+06) \times 4000\ pg \times 1}{(3.376e+04 + 3.656e+04) \times 10.649\ g \times 77\% / 100 \times 1.157} = 41497.1748\ ng/kg$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0124

Run #13 Filename P616284 Samp: 1 Inj: 1 Acquired: 29-DEC-18 19:21:33
Processed: 30-DEC-18 09:04:39 LAB. ID: E1801136-014

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.75e+04	9.16e+02	3.0e+01	3.04e+04	2.68e+03	1.1e+01
2	1,2,3,7,8-PeCDF	*	1.62e+03	*	*	1.79e+03	*
3	2,3,4,7,8-PeCDF	1.87e+04	1.62e+03	1.2e+01	1.06e+04	1.79e+03	5.9e+00
4	1,2,3,4,7,8-HxCDF	7.14e+04	2.47e+03	2.9e+01	6.57e+04	5.03e+03	1.3e+01
5	1,2,3,6,7,8-HxCDF	3.08e+04	2.47e+03	1.2e+01	2.94e+04	5.03e+03	5.9e+00
6	2,3,4,6,7,8-HxCDF	4.46e+04	2.47e+03	1.8e+01	2.81e+04	5.03e+03	5.6e+00
7	1,2,3,7,8,9-HxCDF	*	2.47e+03	*	*	5.03e+03	*
8	1,2,3,4,6,7,8-HpCDF	1.22e+06	1.85e+03	6.6e+02	1.16e+06	2.06e+03	5.6e+02
9	1,2,3,4,7,8,9-HpCDF	1.38e+05	1.85e+03	7.5e+01	1.17e+05	2.06e+03	5.7e+01
10	OCDF	4.19e+06	7.00e+02	6.0e+03	4.64e+06	1.79e+03	2.6e+03
11	2,3,7,8-TCDD	1.26e+04	3.48e+03	3.6e+00	1.12e+04	1.86e+03	6.0e+00
12	1,2,3,7,8-PeCDD	3.39e+04	1.55e+03	2.2e+01	1.91e+04	3.08e+02	6.2e+01
13	1,2,3,4,7,8-HxCDD	5.49e+04	8.16e+02	6.7e+01	6.10e+04	1.24e+03	4.9e+01
14	1,2,3,6,7,8-HxCDD	2.21e+05	8.16e+02	2.7e+02	1.80e+05	1.24e+03	1.5e+02
15	1,2,3,7,8,9-HxCDD	1.14e+05	8.16e+02	1.4e+02	8.64e+04	1.24e+03	6.9e+01
16	1,2,3,4,6,7,8-HpCDD	2.21e+07	2.36e+04	9.3e+02	2.16e+07	2.35e+04	9.2e+02
17	OCDD	6.61e+08	1.42e+03	4.7e+05	7.35e+08	2.36e+02	3.1e+06
18	13C-2,3,7,8-TCDF	4.62e+06	1.29e+04	3.6e+02	5.72e+06	5.92e+03	9.7e+02
19	13C-1,2,3,7,8-PeCDF	9.45e+06	5.80e+02	1.6e+04	5.98e+06	1.20e+03	5.0e+03
20	13C-2,3,4,7,8-PeCDF	9.79e+06	5.80e+02	1.7e+04	6.27e+06	1.20e+03	5.2e+03
21	13C-1,2,3,4,7,8-HxCDF	4.75e+06	1.27e+03	3.7e+03	9.35e+06	1.16e+03	8.1e+03
22	13C-1,2,3,6,7,8-HxCDF	5.52e+06	1.27e+03	4.3e+03	1.04e+07	1.16e+03	9.0e+03
23	13C-2,3,4,6,7,8-HxCDF	4.96e+06	1.27e+03	3.9e+03	9.27e+06	1.16e+03	8.0e+03
24	13C-1,2,3,7,8,9-HxCDF	4.83e+06	1.27e+03	3.8e+03	9.05e+06	1.16e+03	7.8e+03
25	13C-1,2,3,4,6,7,8-HpCDF	3.44e+06	7.68e+02	4.5e+03	7.86e+06	5.51e+03	1.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.42e+06	7.68e+02	4.4e+03	7.49e+06	5.51e+03	1.4e+03
27	13C-2,3,7,8-TCDD	2.75e+06	1.54e+04	1.8e+02	3.49e+06	3.92e+03	8.9e+02
28	13C-1,2,3,7,8-PeCDD	7.25e+06	7.12e+02	1.0e+04	4.79e+06	2.09e+03	2.3e+03
29	13C-1,2,3,4,7,8-HxCDD	7.22e+06	2.23e+03	3.2e+03	5.76e+06	1.10e+03	5.2e+03
30	13C-1,2,3,6,7,8-HxCDD	6.44e+06	2.23e+03	2.9e+03	5.10e+06	1.10e+03	4.6e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.28e+06	1.61e+03	4.5e+03	7.09e+06	1.09e+03	6.5e+03
32	13C-OCDD	6.79e+06	1.45e+03	4.7e+03	7.25e+06	1.04e+03	7.0e+03
33	13C-1,2,3,4-TCDD	5.99e+06	1.54e+04	3.9e+02	7.75e+06	3.92e+03	2.0e+03
34	13C-1,2,3,7,8,9-HxCDD	1.24e+07	2.23e+03	5.6e+03	9.81e+06	1.10e+03	8.9e+03
35	37Cl-2,3,7,8-TCDD	3.79e+06	1.79e+03	2.1e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.476e{+}03 + 1.860e{+}03\ ) \times 2000}{(2.747e{+}06 + 3.485e{+}06\ ) \times (\qquad\qquad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0124

Entry: 38 Totals Name: Total Penta-Furans1

Run: 13 File: P616284 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 19:21:33 Processed: 30-DEC-18 09:04:39

Mass: 339.8600 341.8570 Tot Response: 9.16e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:40	5.79e+02	3.38e+02 1.71	yes	9.16e+02		n	n

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Peak List Summary

CLIENT ID.
SL0124

Entry: 39 Totals Name: Total Penta-Furans2

Run: 13 File: P616284 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 19:21:33 Processed: 30-DEC-18 09:04:39

Mass: 339.8600 341.8570 Tot Response: 5.26e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:26	2.44e+02	1.69e+02 1.44	yes	4.12e+02		n	n
2	30:44	6.65e+01	4.68e+01 1.42	yes	1.13e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0124

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 13 File: P616284 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 19:21:33 Processed: 30-DEC-18 09:04:39

Mass: 355.8550 357.8520 Tot Response: 8.16e+02 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:59	9.21e+01	5.87e+01	1.57	yes	1.51e+02		n	n
2	30:42	1.28e+02	8.87e+01	1.44	yes	2.17e+02		n	n
3	31:02	1.01e+02	6.08e+01	1.66	yes	1.62e+02		n	n
4	31:49	1.74e+02	1.13e+02	1.55	yes	2.87e+02	1,2,3,7,8-PeCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0124

Entry: 41 Totals Name: Total Hexa-Furans

Run: 13 File: P616284 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 19:21:33 Processed: 30-DEC-18 09:04:39

Mass: 373.8210 375.8180 Tot Response: 1.67e+04 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:11	3.37e+02	3.12e+02	1.08	yes	6.49e+02		n	n
2	33:21	1.73e+03	1.47e+03	1.18	yes	3.21e+03		n	n
3	33:55	6.68e+03	5.21e+03	1.28	yes	1.19e+04		n	n
4	34:22	3.49e+02	2.91e+02	1.20	yes	6.40e+02	1,2,3,4,7,8-HxCDF	n	n
5	34:29	1.69e+02	1.40e+02	1.21	yes	3.09e+02	1,2,3,6,7,8-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0124

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 13 File: P616284 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 19:21:33 Processed: 30-DEC-18 09:04:39

Mass: 389.8160 391.8130 Tot Response: 1.31e+04 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:45	2.45e+03	2.04e+03 1.20	yes	4.49e+03		n	n
2	34:33	3.31e+03	2.45e+03 1.35	yes	5.76e+03		n	n
3	35:15	1.04e+03	8.45e+02 1.22	yes	1.88e+03	1,2,3,6,7,8-HxCDD	n	n
4	35:30	5.37e+02	4.39e+02 1.22	yes	9.75e+02	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0124

Entry: 43 Totals Name: Total Hepta-Furans

Run: 13 File: P616284 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 19:21:33 Processed: 30-DEC-18 09:04:39

Mass: 407.7820 409.7790 Tot Response: 6.51e+04 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:04	5.54e+03	5.09e+03	1.09	yes	1.06e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	37:29	2.70e+04	2.63e+04	1.03	yes	5.33e+04		n	n
3	38:24	6.04e+02	5.57e+02	1.08	yes	1.16e+03	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0124

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 13 File: P616284 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 19:21:33 Processed: 30-DEC-18 09:04:39

Mass: 423.7770 425.7740 Tot Response: 3.74e+05 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:20	8.96e+04	8.68e+04 1.03	yes	1.76e+05		n	n
2	37:58	1.00e+05	9.70e+04 1.03	yes	1.97e+05	1,2,3,4,6,7,8-HpCDD	n	n

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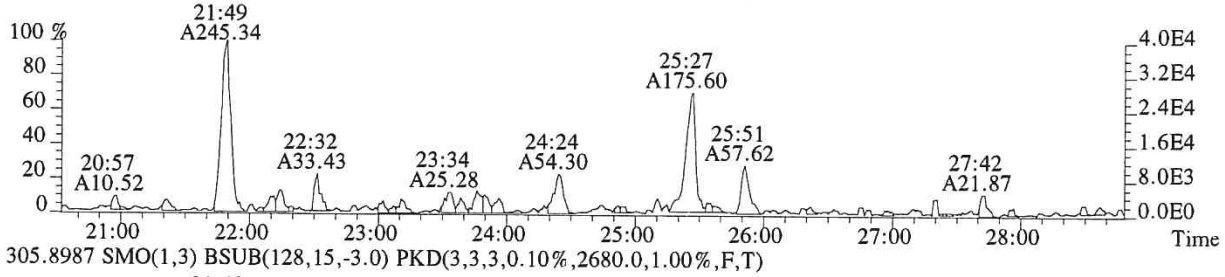
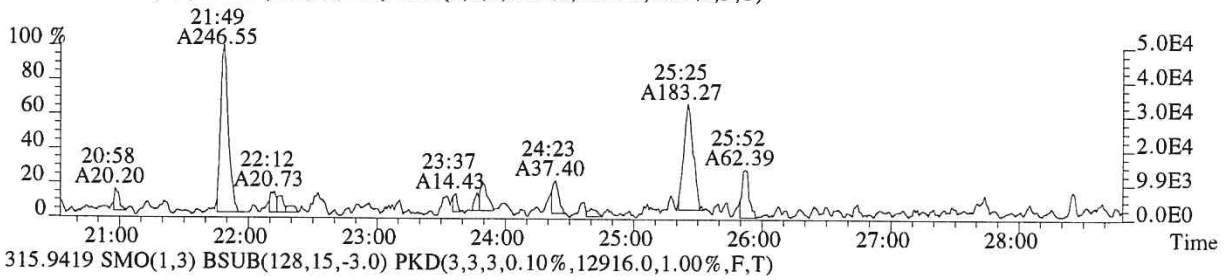
File:P616284 #1-587 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014

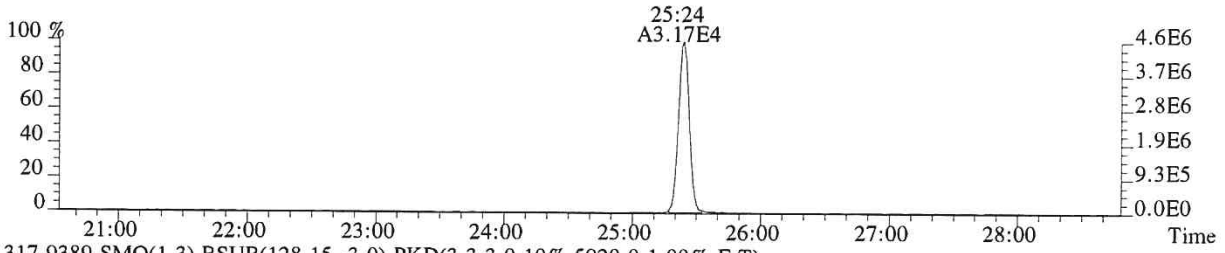
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,916.0,1.00%,F,T)



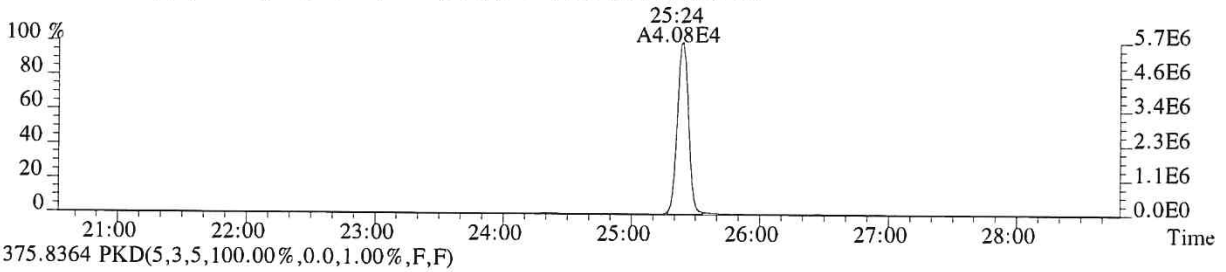
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2680.0,1.00%,F,T)



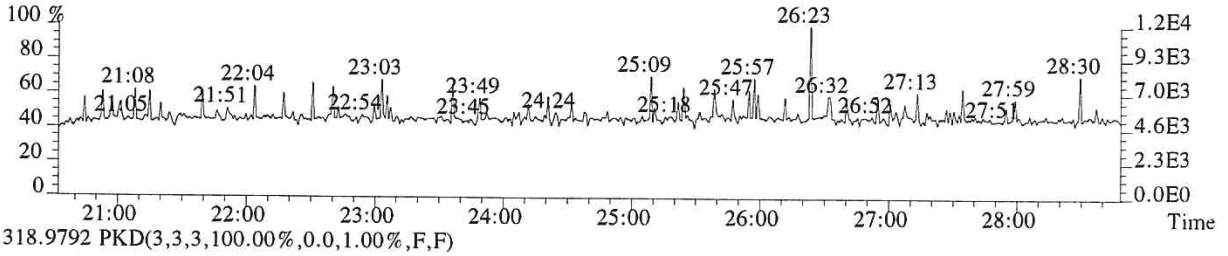
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12916.0,1.00%,F,T)



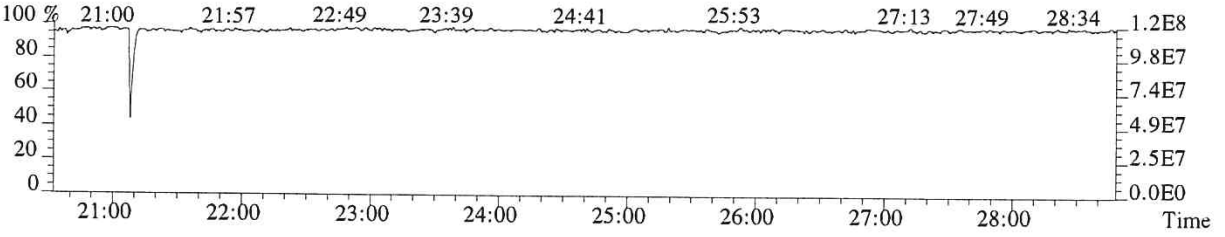
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5920.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

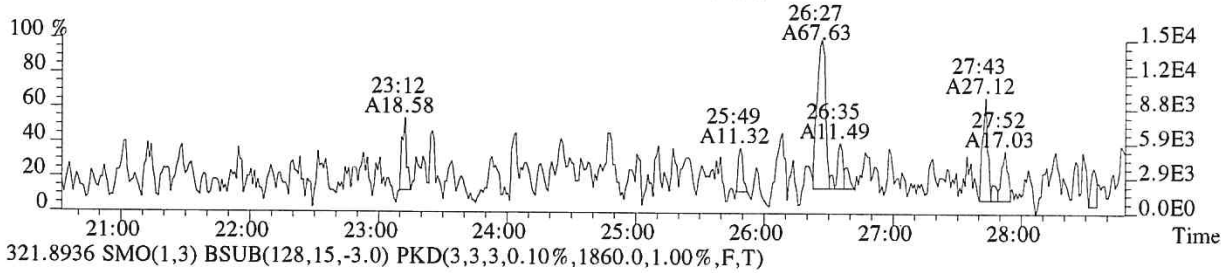


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

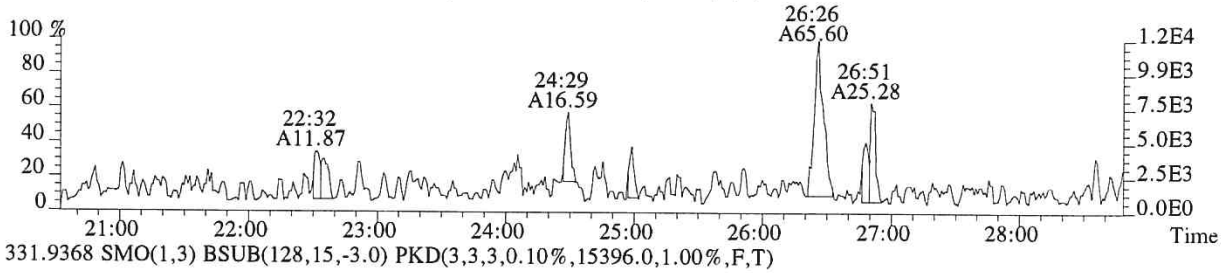


060271

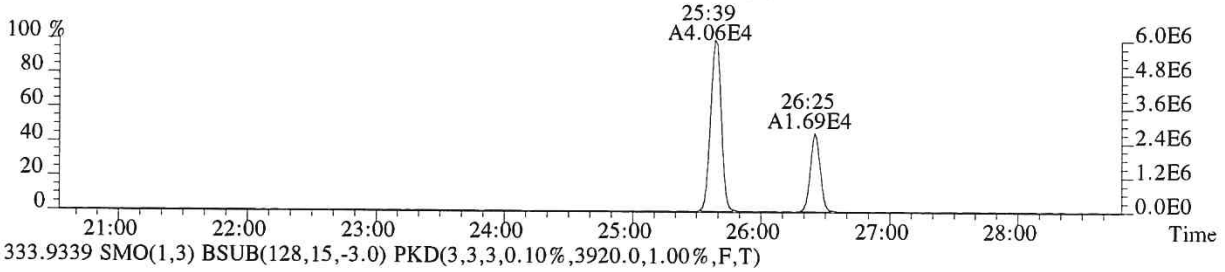
File:P616284 #1-587 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3476.0,1.00%,F,T)



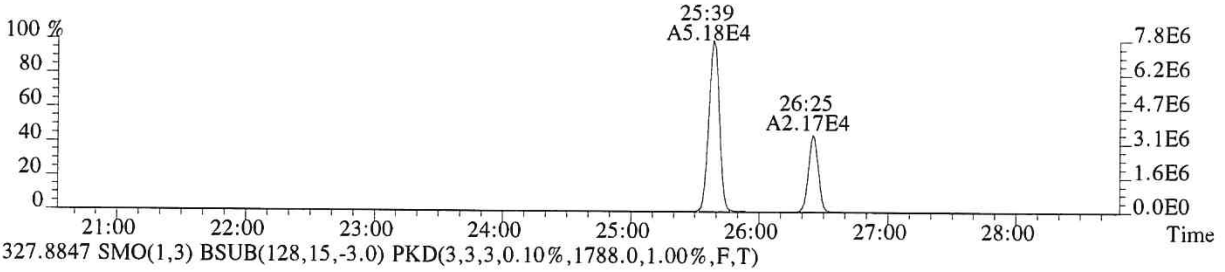
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1860.0,1.00%,F,T)



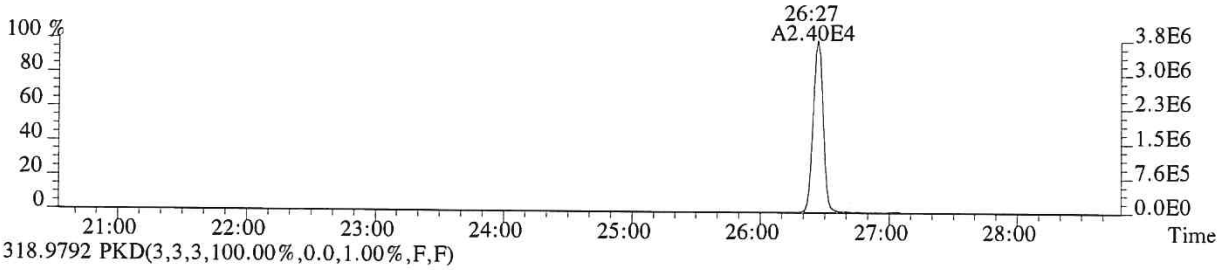
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15396.0,1.00%,F,T)



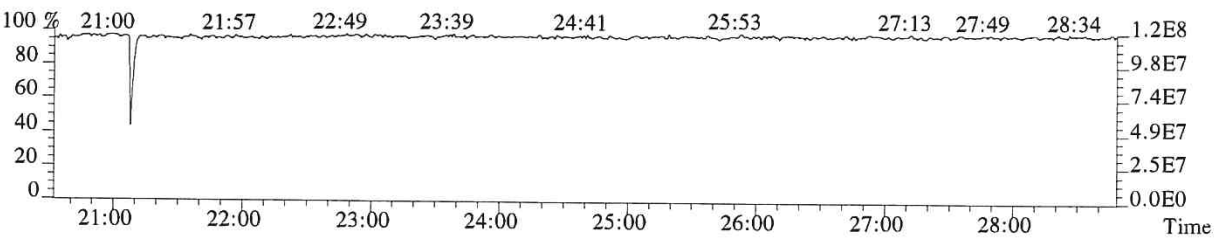
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3920.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1788.0,1.00%,F,T)

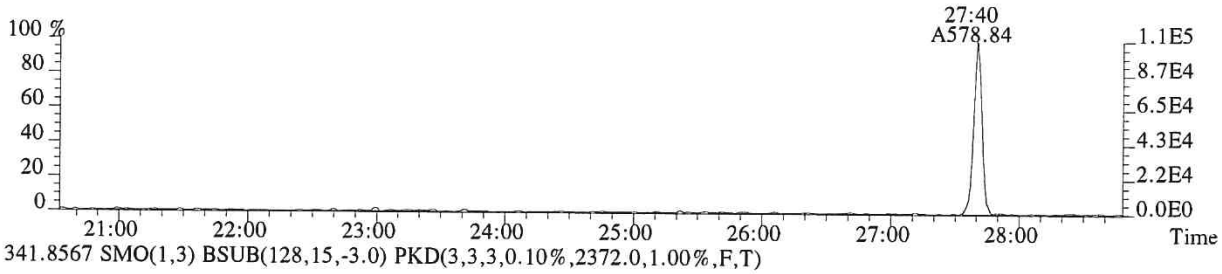


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

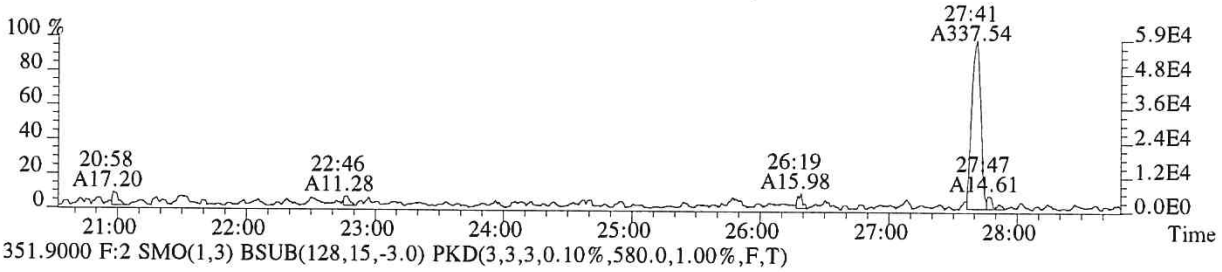


060272

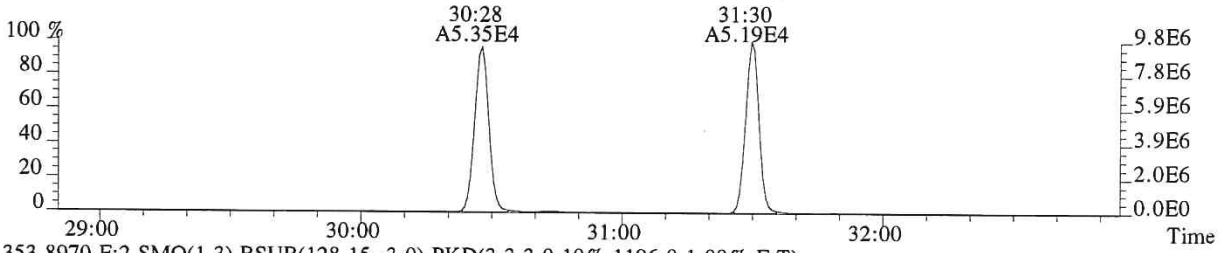
File:P616284 #1-587 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,324.0,1.00%,F,T)



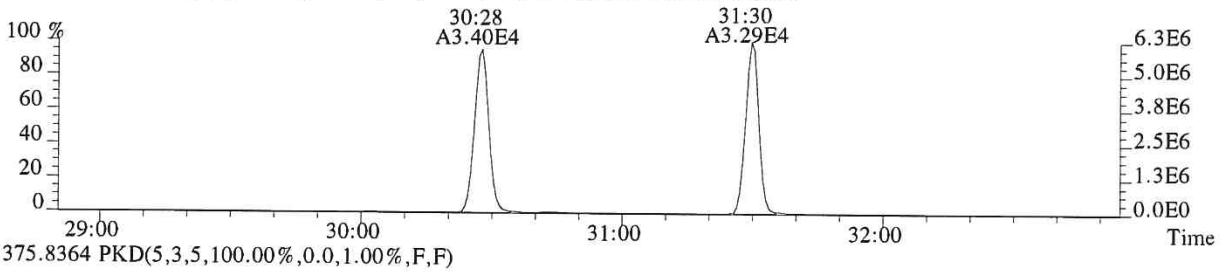
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2372.0,1.00%,F,T)



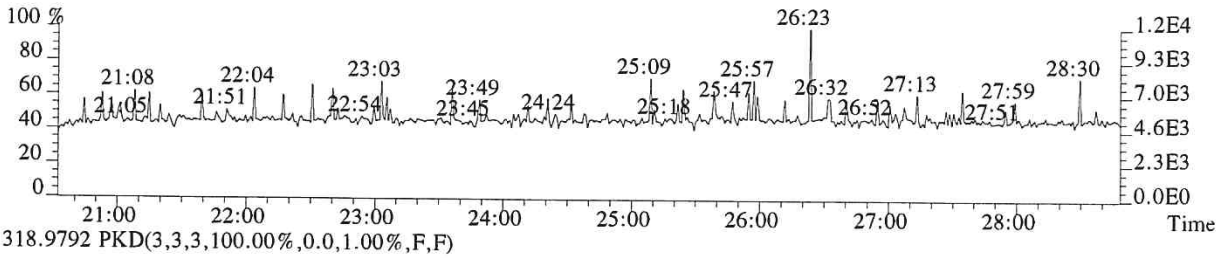
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,580.0,1.00%,F,T)



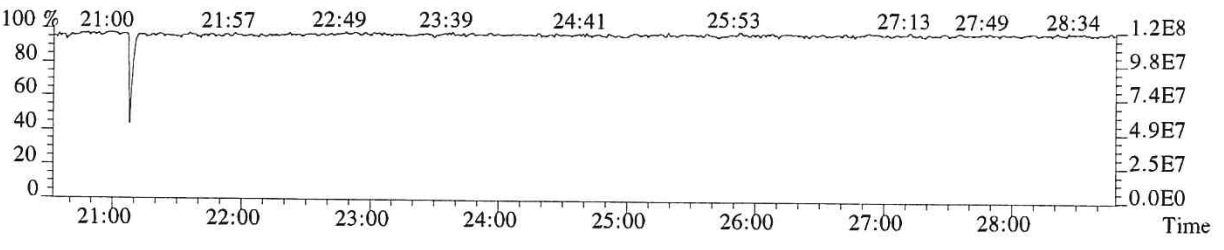
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1196.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



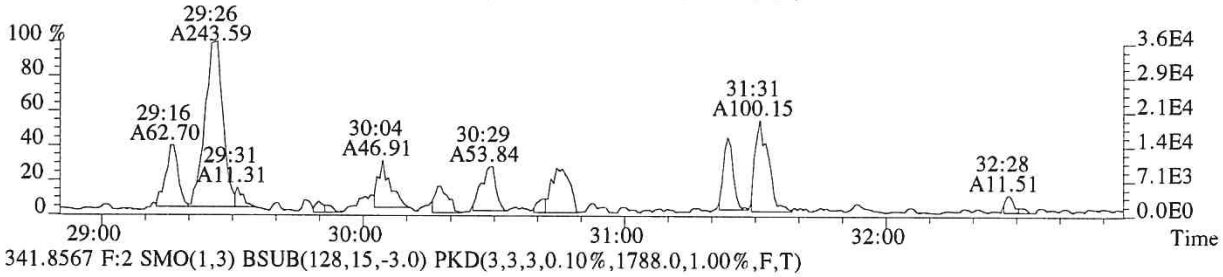
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



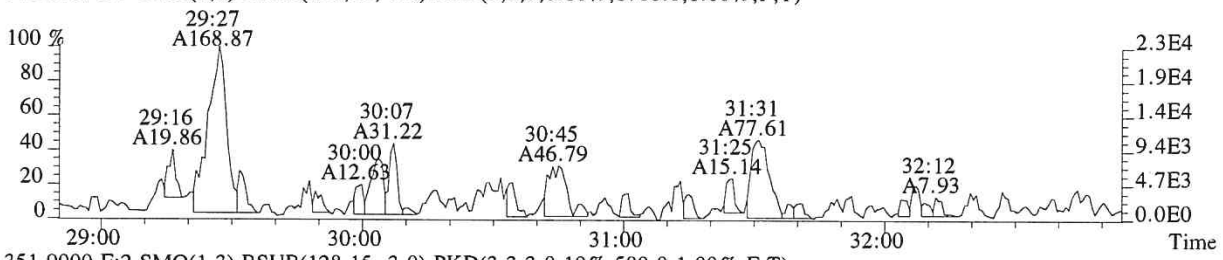
060273

File:P616284 #1-367 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014

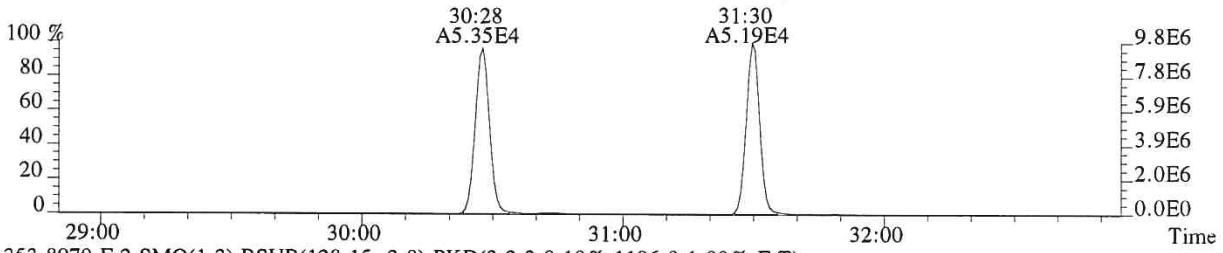
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1620.0,1.00%,F,T)



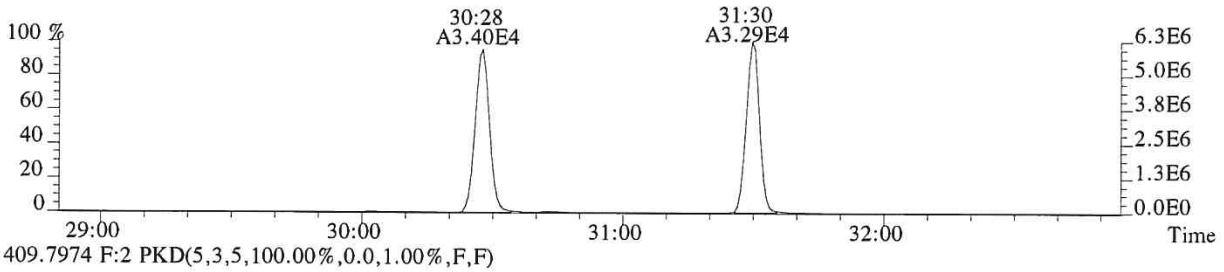
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1788.0,1.00%,F,T)



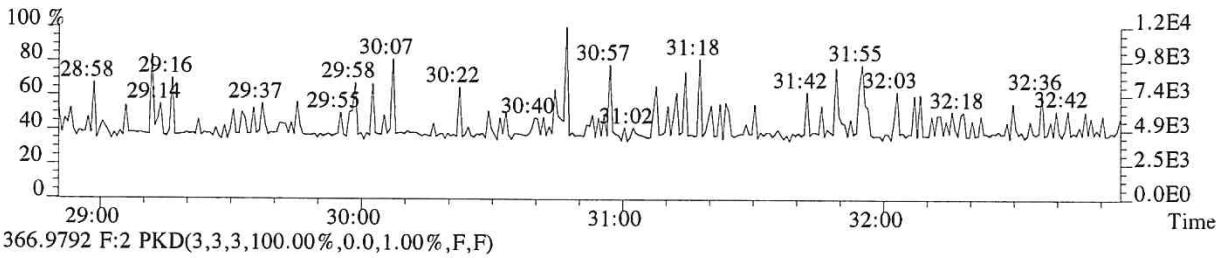
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,580.0,1.00%,F,T)



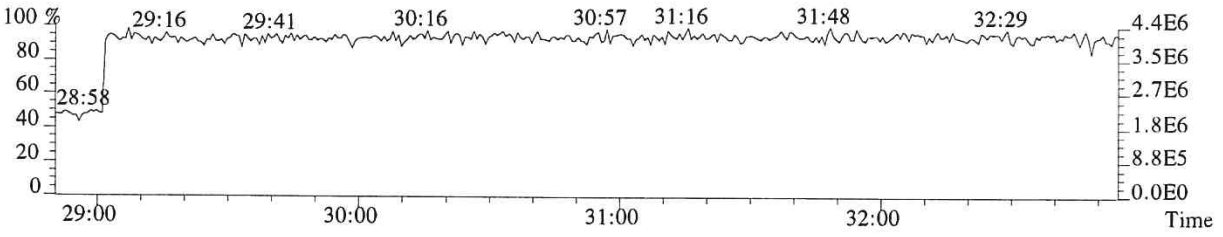
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1196.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

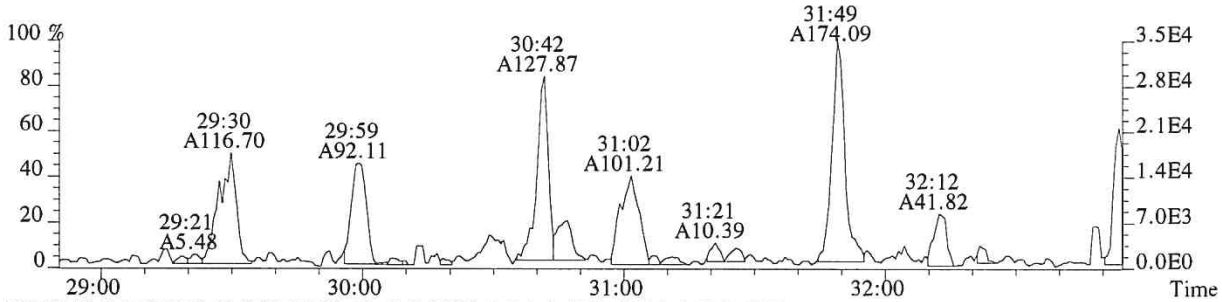


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

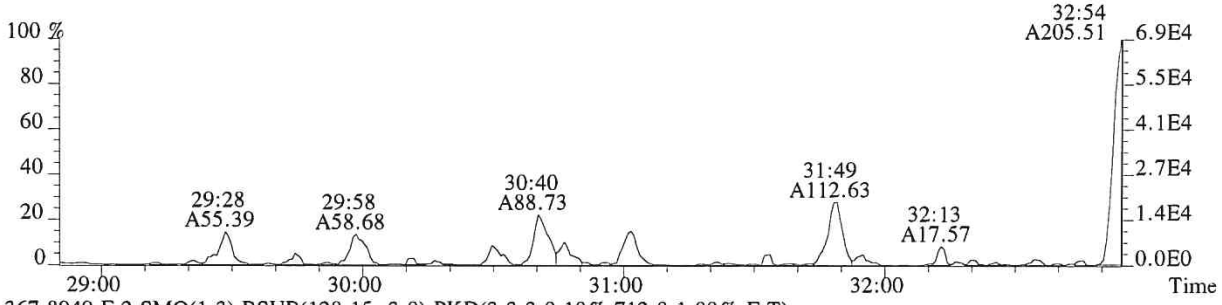


060274

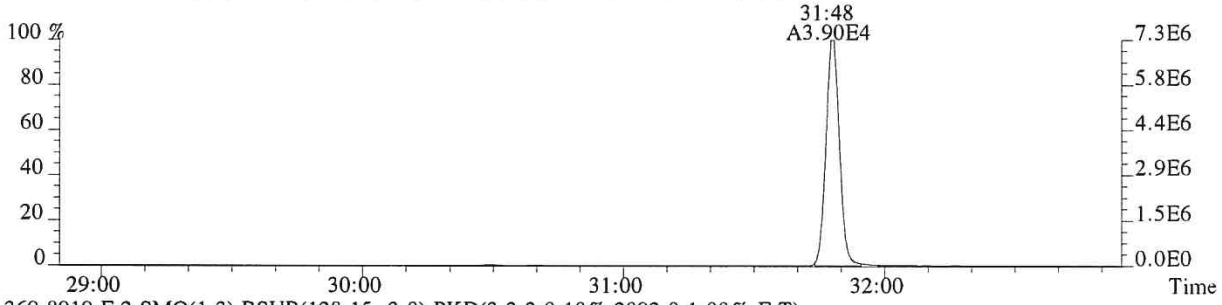
File:P616284 #1-367 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1552.0,1.00%,F,T)



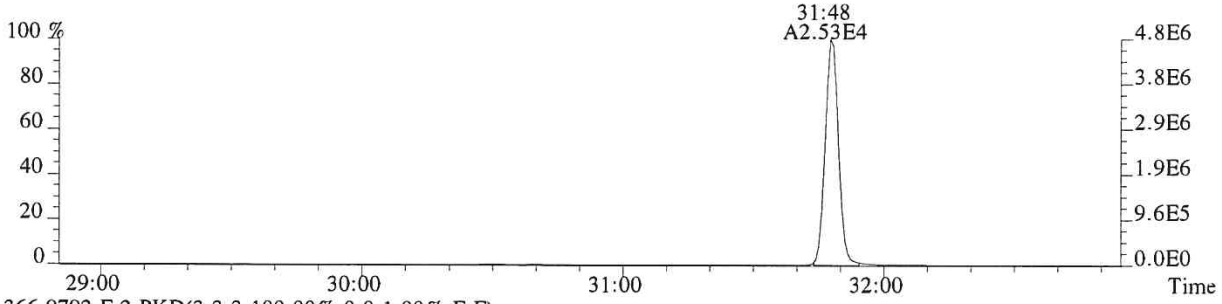
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,308.0,1.00%,F,T)



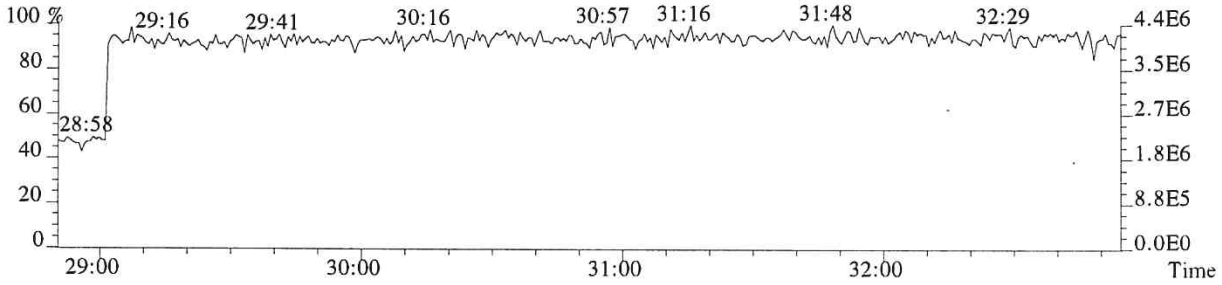
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,712.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2092.0,1.00%,F,T)



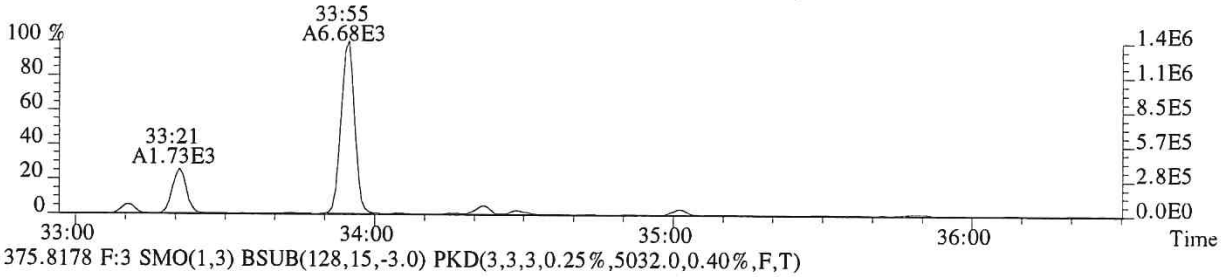
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



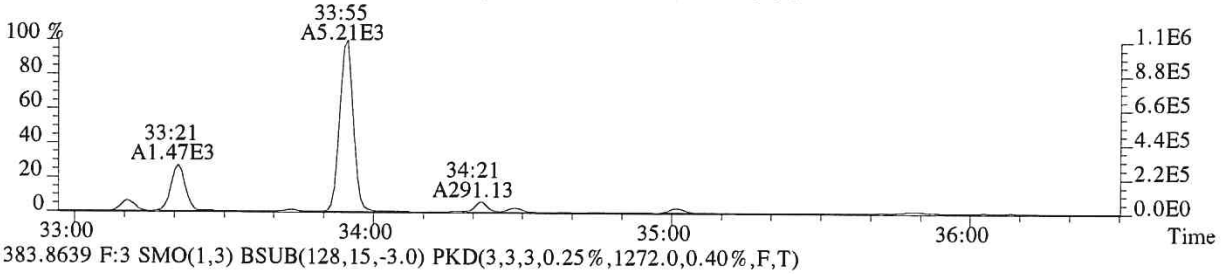
060275

File:P616284 #1-321 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014

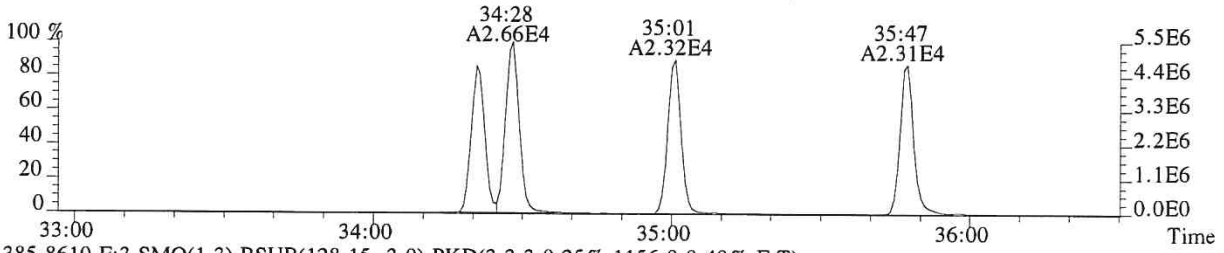
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2472.0,0.40%,F,T)



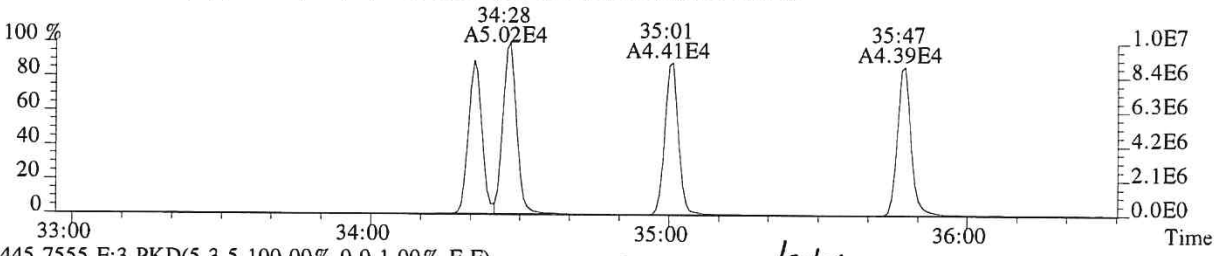
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5032.0,0.40%,F,T)



383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1272.0,0.40%,F,T)

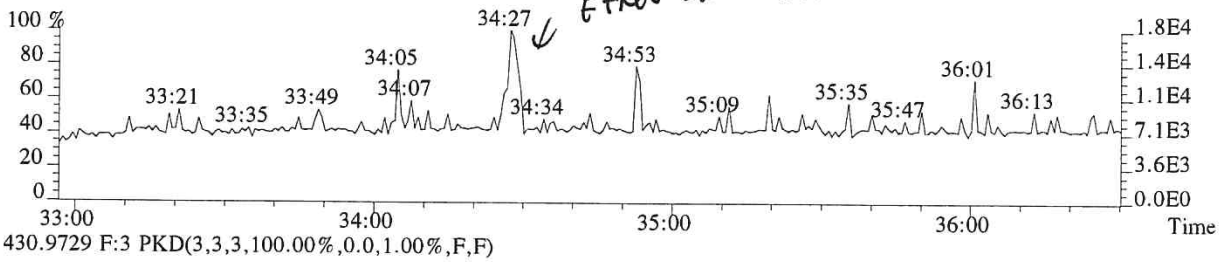


385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1156.0,0.40%,F,T)

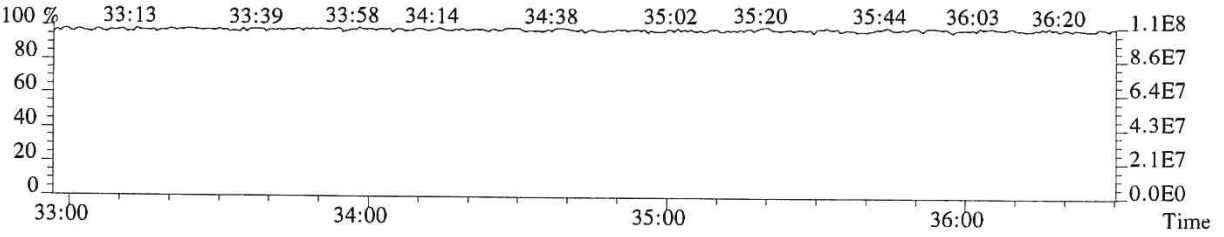


445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

Ether LOW 12/31/18

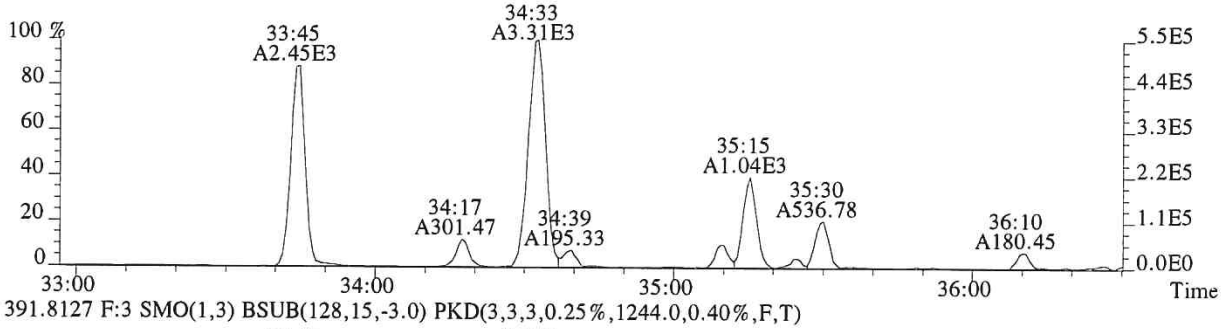


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

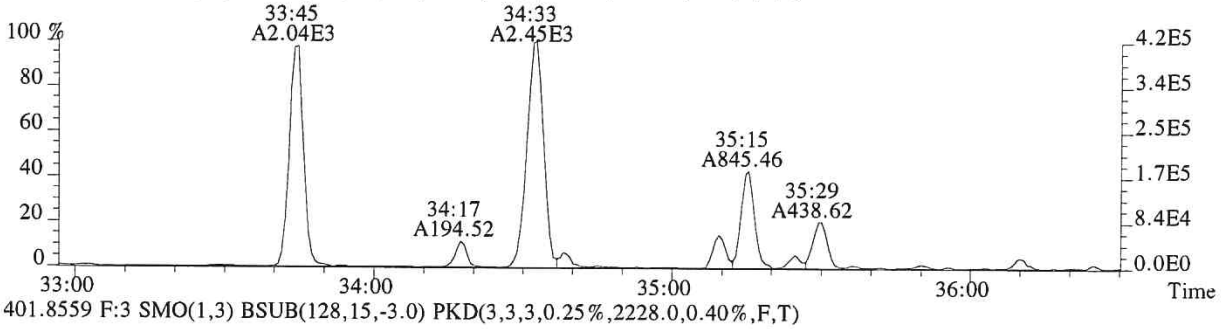


060276

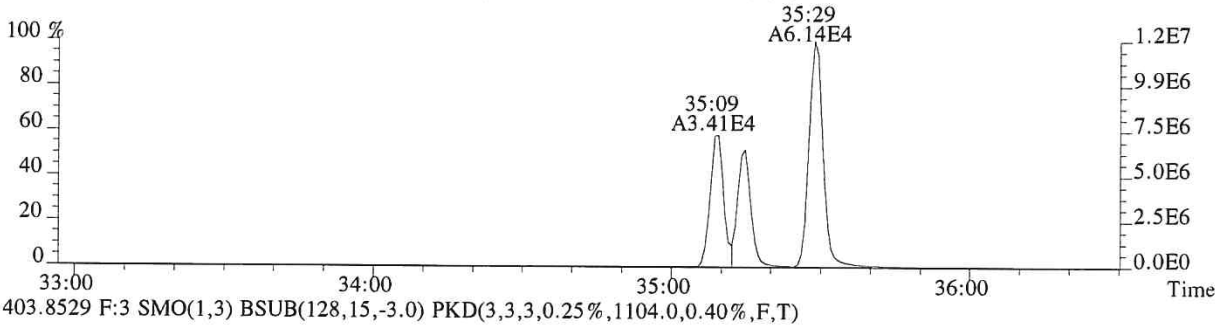
File:P616284 #1-321 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,816.0,0.40%,F,T)



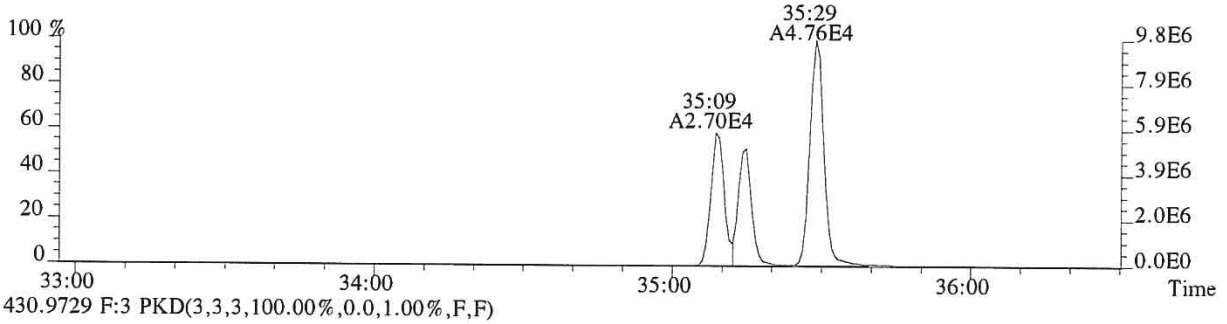
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1244.0,0.40%,F,T)



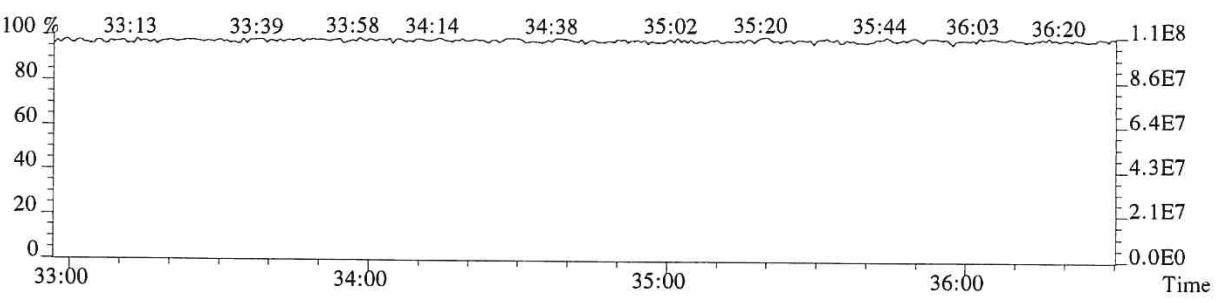
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2228.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1104.0,0.40%,F,T)



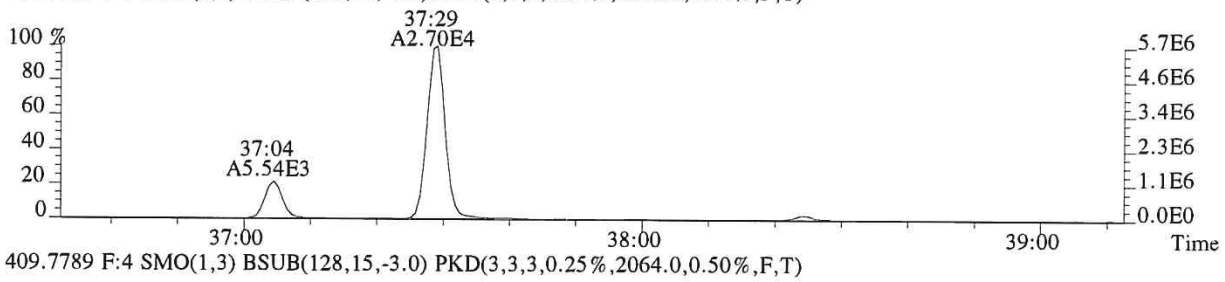
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



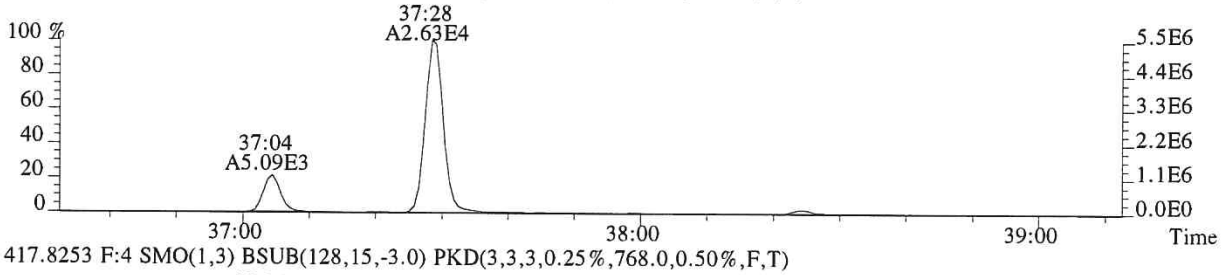
060277

File:P616284 #1-241 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014

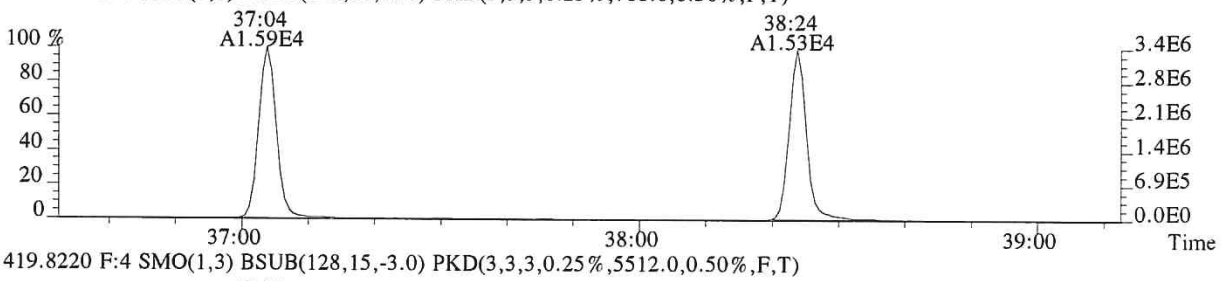
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1848.0,0.50%,F,T)



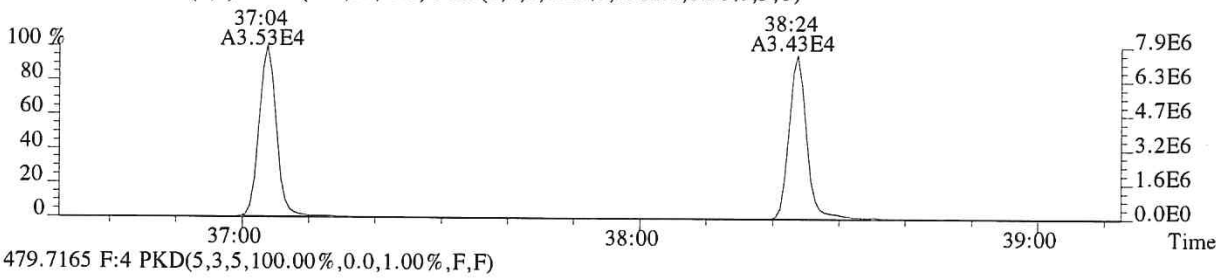
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2064.0,0.50%,F,T)



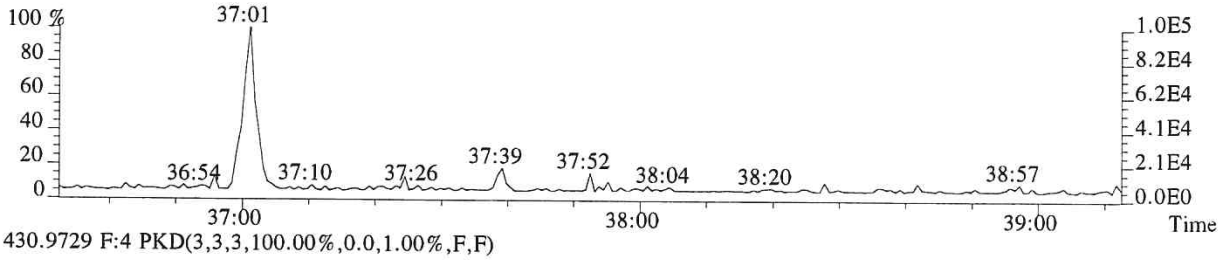
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,768.0,0.50%,F,T)



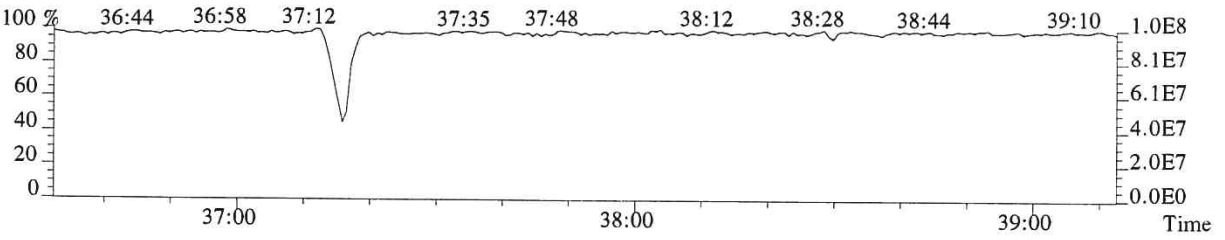
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5512.0,0.50%,F,T)



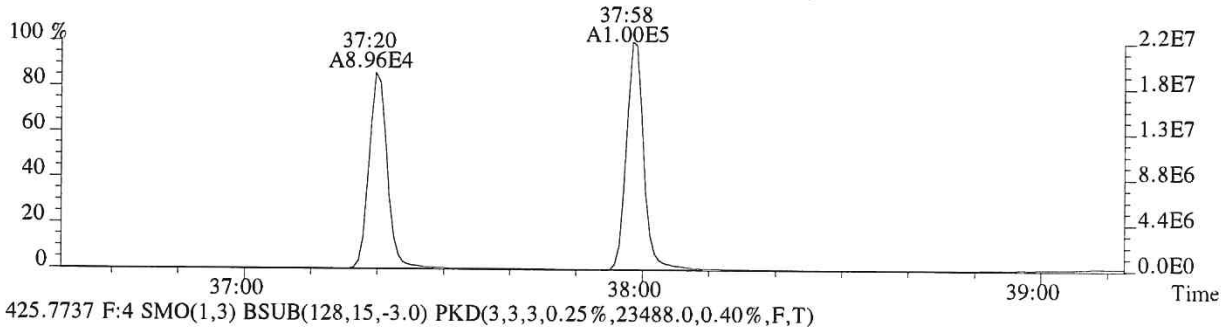
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



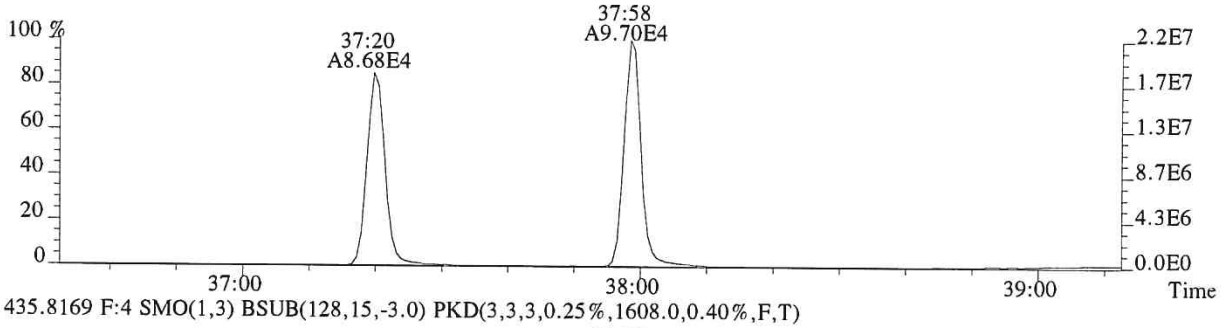
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



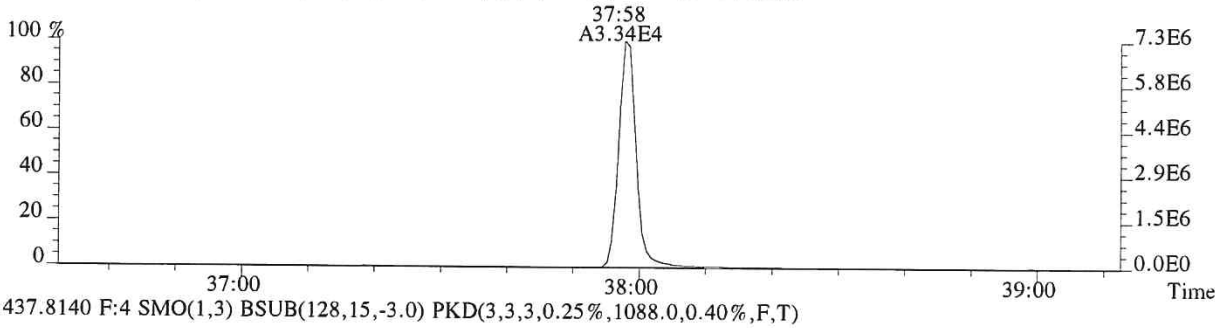
File:P616284 #1-241 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,23608.0,0.40%,F,T)



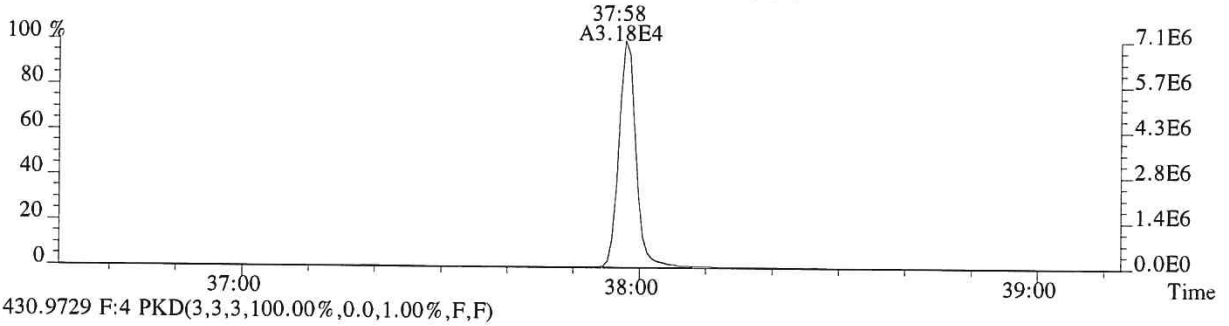
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,23488.0,0.40%,F,T)



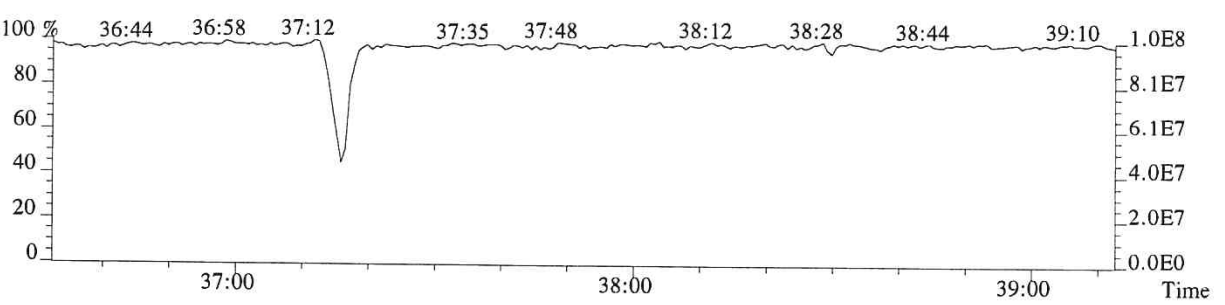
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1608.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1088.0,0.40%,F,T)



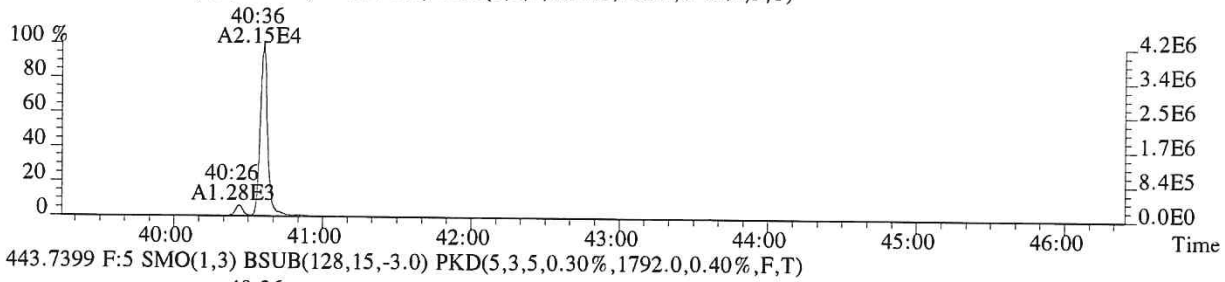
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



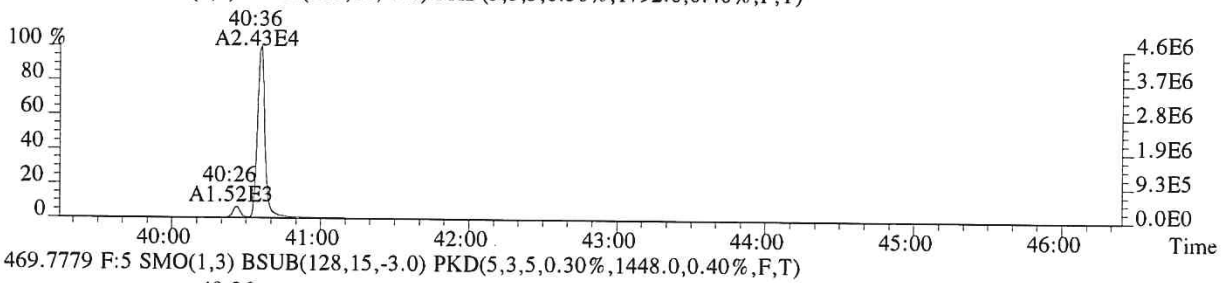
060279

File:P616284 #1-645 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014

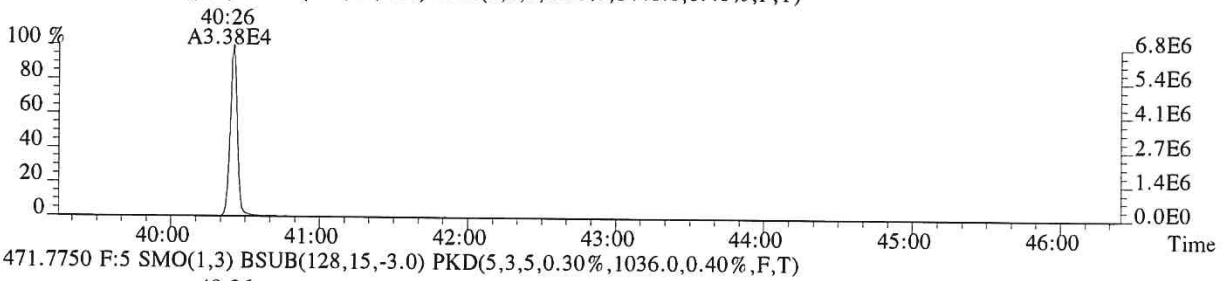
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,700.0,0.40%,F,T)



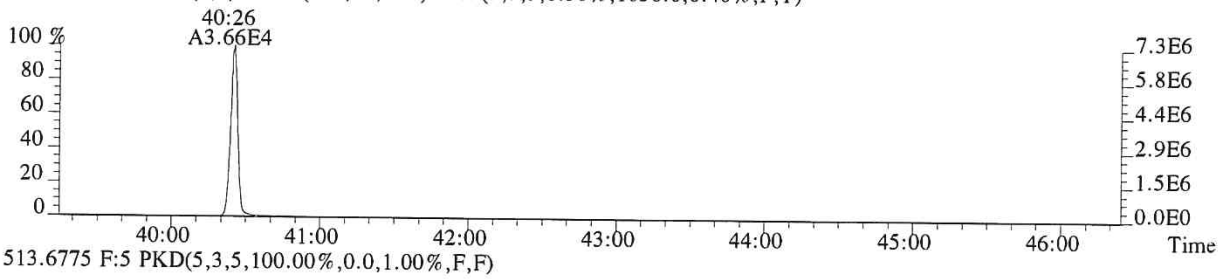
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1792.0,0.40%,F,T)



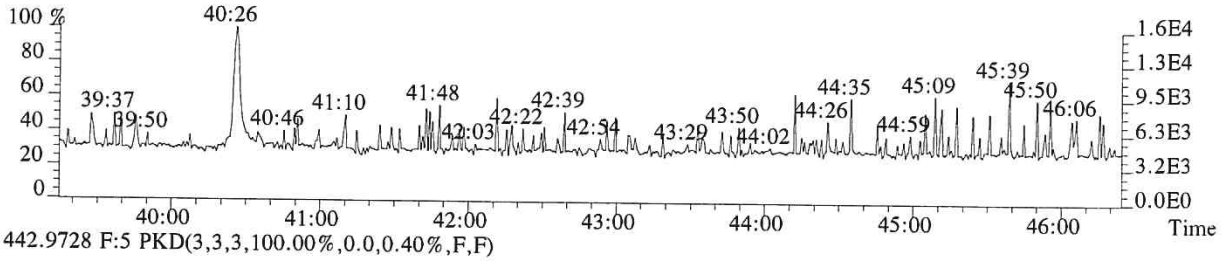
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1448.0,0.40%,F,T)



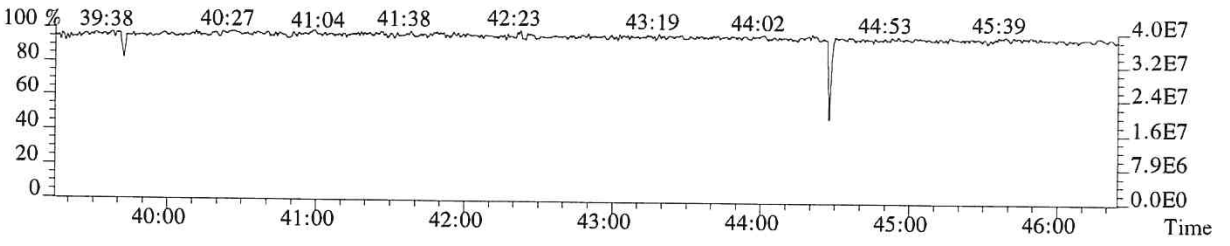
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1036.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

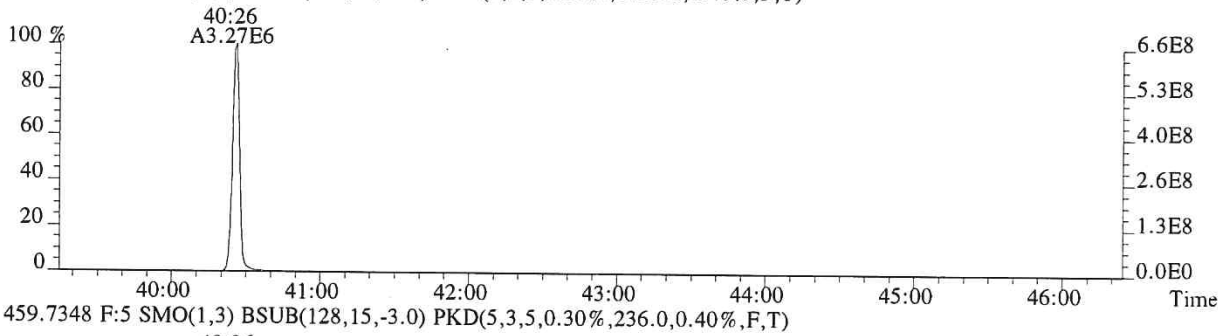


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

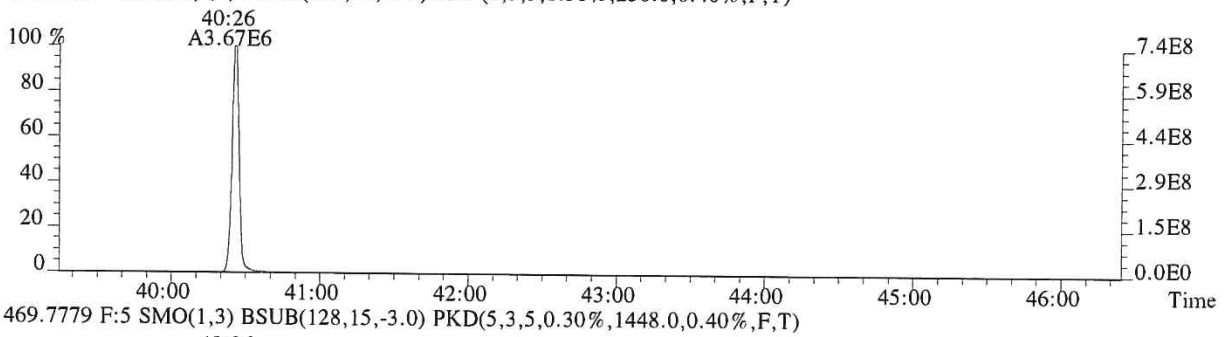


060280

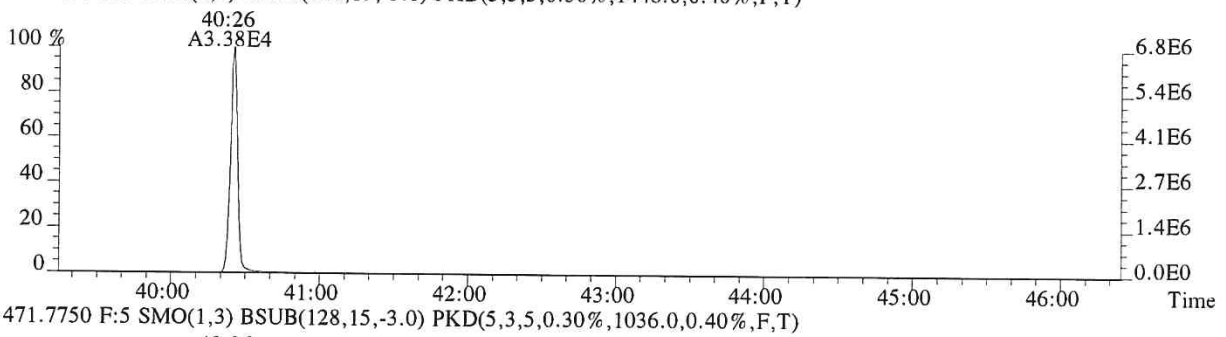
File:P616284 #1-645 Acq:29-DEC-2018 19:21:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-014
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1420.0,0.40%,F,T)



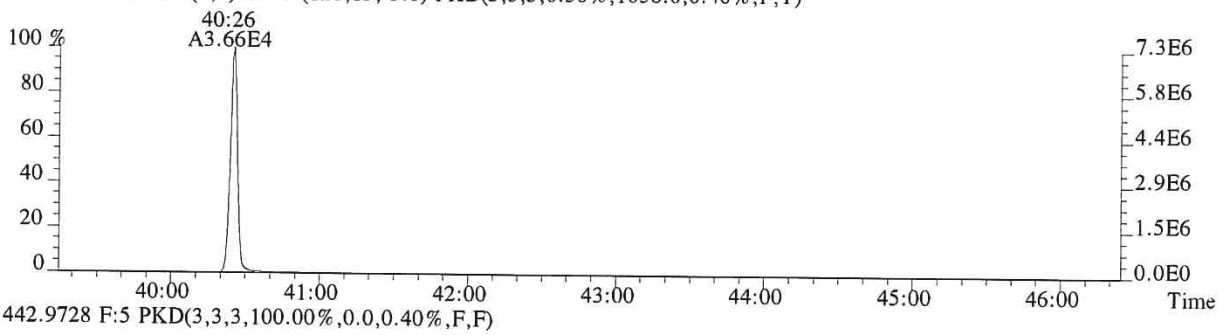
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,236.0,0.40%,F,T)



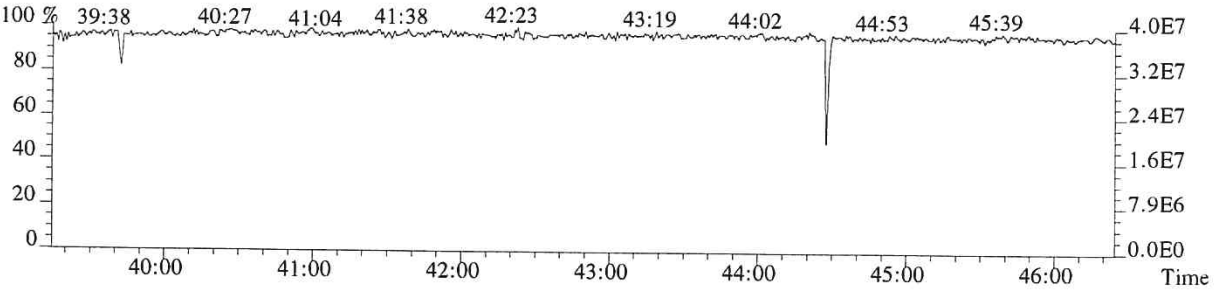
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1448.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1036.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060281

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0126

Run #14 Filename P616285 Samp: 1 Inj: 1 Acquired: 29-DEC-18 20:10:46
Processed: 30-DEC-18 09:06:14 Sample ID: E1801136-015

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:30	5.023e+05	6.459e+05	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:32	2.661e+04	1.700e+04	1.57	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:34	2.231e+04	1.411e+04	1.58	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:24	2.877e+04	2.322e+04	1.24	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:31	7.722e+03	6.151e+03	1.26	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:03	2.677e+03	2.175e+03	1.23	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:51	2.027e+03	1.695e+03	1.20	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:07	1.482e+04	1.503e+04	0.99	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:26	1.756e+03	1.885e+03	0.93	yes	no	1.463
10	Unk	OCDF	40:38	3.667e+04	4.096e+04	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:31	1.498e+05	1.900e+05	0.79	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:52	2.397e+03	1.560e+03	1.54	yes	yes	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:12	3.558e+02	3.284e+02	1.08	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:17	2.188e+03	1.746e+03	1.25	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:32	9.769e+02	8.193e+02	1.19	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:00	4.351e+04	4.177e+04	1.04	yes	no	1.112
17	Unk	OCDD	40:28	3.038e+05	3.390e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:29	2.806e+04	3.635e+04	0.77	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:30	4.203e+04	2.636e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:33	3.991e+04	2.457e+04	1.62	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:23	1.500e+04	2.932e+04	0.51	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:31	1.626e+04	3.031e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:03	1.512e+04	2.831e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:49	1.316e+04	2.527e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:06	7.746e+03	1.743e+04	0.44	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:26	6.123e+03	1.392e+04	0.44	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:29	1.442e+04	1.845e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:50	3.040e+04	1.906e+04	1.59	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:11	2.079e+04	1.636e+04	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:17	1.901e+04	1.506e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:00	1.469e+04	1.370e+04	1.07	yes	no	0.857
32	IS	13C-OCDD	40:27	1.054e+04	1.126e+04	0.94	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:44	3.484e+04	4.392e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:31	3.671e+04	2.891e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:31	2.255e+04				no	1.086

$$\text{OCDD} = \frac{(3.038e{+}05 + 3.390e{+}05) \times 4000\ \text{pg} \times 1}{(1.054e{+}04 + 1.126e{+}04) \times 10.6679\ \text{g} \times 59.2 / 100 \times 1.157} = 16142.9167\ \text{ng/kg}$$

LG 12/3/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0126

Run #14 Filename P616285 Samp: 1 Inj: 1 Acquired: 29-DEC-18 20:10:46
Processed: 30-DEC-18 09:06:14 LAB. ID: E1801136-015

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.06e+07	2.17e+03	2.8e+04	7.70e+07	4.39e+03	1.8e+04
2	1,2,3,7,8-PeCDF	4.68e+06	4.68e+03	1.0e+03	3.01e+06	7.46e+03	4.0e+02
3	2,3,4,7,8-PeCDF	3.66e+06	4.68e+03	7.8e+02	2.34e+06	7.46e+03	3.1e+02
4	1,2,3,4,7,8-HxCDF	5.84e+06	5.42e+03	1.1e+03	4.80e+06	9.40e+03	5.1e+02
5	1,2,3,6,7,8-HxCDF	1.57e+06	5.42e+03	2.9e+02	1.25e+06	9.40e+03	1.3e+02
6	2,3,4,6,7,8-HxCDF	5.72e+05	5.42e+03	1.1e+02	4.76e+05	9.40e+03	5.1e+01
7	1,2,3,7,8,9-HxCDF	3.88e+05	5.42e+03	7.2e+01	3.22e+05	9.40e+03	3.4e+01
8	1,2,3,4,6,7,8-HpCDF	3.35e+06	6.49e+03	5.2e+02	3.39e+06	4.29e+03	7.9e+02
9	1,2,3,4,7,8,9-HpCDF	4.23e+05	6.49e+03	6.5e+01	4.23e+05	4.29e+03	9.9e+01
10	OCDF	7.20e+06	1.49e+03	4.8e+03	8.16e+06	2.75e+03	3.0e+03
11	2,3,7,8-TCDD	2.37e+07	5.48e+03	4.3e+03	3.01e+07	2.56e+03	1.2e+04
12	1,2,3,7,8-PeCDD	4.36e+05	1.85e+03	2.4e+02	2.63e+05	2.92e+03	9.0e+01
13	1,2,3,4,7,8-HxCDD	8.89e+04	2.41e+03	3.7e+01	8.35e+04	3.86e+03	2.2e+01
14	1,2,3,6,7,8-HxCDD	4.73e+05	2.41e+03	2.0e+02	3.74e+05	3.86e+03	9.7e+01
15	1,2,3,7,8,9-HxCDD	2.15e+05	2.41e+03	8.9e+01	1.86e+05	3.86e+03	4.8e+01
16	1,2,3,4,6,7,8-HpCDD	9.83e+06	8.26e+03	1.2e+03	9.59e+06	5.47e+03	1.8e+03
17	OCDD	6.03e+07	1.47e+03	4.1e+04	6.72e+07	2.18e+03	3.1e+04
18	13C-2,3,7,8-TCDF	3.65e+06	1.16e+04	3.1e+02	4.73e+06	3.81e+03	1.2e+03
19	13C-1,2,3,7,8-PeCDF	7.42e+06	8.24e+03	9.0e+02	4.63e+06	6.65e+03	7.0e+02
20	13C-2,3,4,7,8-PeCDF	7.28e+06	8.24e+03	8.8e+02	4.44e+06	6.65e+03	6.7e+02
21	13C-1,2,3,4,7,8-HxCDF	3.10e+06	3.69e+03	8.4e+02	6.12e+06	3.59e+03	1.7e+03
22	13C-1,2,3,6,7,8-HxCDF	3.40e+06	3.69e+03	9.2e+02	6.28e+06	3.59e+03	1.8e+03
23	13C-2,3,4,6,7,8-HxCDF	3.19e+06	3.69e+03	8.6e+02	5.93e+06	3.59e+03	1.7e+03
24	13C-1,2,3,7,8,9-HxCDF	2.79e+06	3.69e+03	7.6e+02	5.38e+06	3.59e+03	1.5e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.74e+06	2.71e+03	6.4e+02	3.99e+06	3.12e+03	1.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.35e+06	2.71e+03	5.0e+02	3.08e+06	3.12e+03	9.9e+02
27	13C-2,3,7,8-TCDD	2.35e+06	1.57e+04	1.5e+02	2.92e+06	5.48e+03	5.3e+02
28	13C-1,2,3,7,8-PeCDD	5.70e+06	1.65e+03	3.5e+03	3.59e+06	1.82e+03	2.0e+03
29	13C-1,2,3,4,7,8-HxCDD	4.59e+06	2.72e+03	1.7e+03	3.59e+06	2.16e+03	1.7e+03
30	13C-1,2,3,6,7,8-HxCDD	4.02e+06	2.72e+03	1.5e+03	3.22e+06	2.16e+03	1.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.34e+06	1.36e+03	2.5e+03	3.12e+06	1.31e+03	2.4e+03
32	13C-OCDD	2.12e+06	3.94e+03	5.4e+02	2.24e+06	1.08e+03	2.1e+03
33	13C-1,2,3,4-TCDD	4.96e+06	1.57e+04	3.2e+02	6.07e+06	5.48e+03	1.1e+03
34	13C-1,2,3,7,8,9-HxCDD	7.97e+06	2.72e+03	2.9e+03	6.15e+06	2.16e+03	2.8e+03
35	37Cl-2,3,7,8-TCDD	3.55e+06	3.00e+03	1.2e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (5.476e{+}03 + 2.560e{+}03) \times 2000}{(2.354e{+}06 + 2.924e{+}06) \times (\quad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0126

Entry: 36 Totals Name: Total Tetra-Furans

Run: 14 File: P616285 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 20:10:46 Processed: 30-DEC-18 09:06:14

Mass: 303.9020 305.8990 Tot Response: 2.05e+06 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:24	1.02e+03	1.20e+03	0.85	yes	2.22e+03		n	n
2	21:52	2.12e+03	2.74e+03	0.77	yes	4.86e+03		n	n
3	22:18	5.59e+03	7.14e+03	0.78	yes	1.27e+04		n	n
4	22:35	2.37e+04	3.04e+04	0.78	yes	5.41e+04		n	n
5	22:57	8.41e+03	1.07e+04	0.79	yes	1.91e+04		n	n
6	23:14	2.00e+04	2.56e+04	0.78	yes	4.56e+04		n	n
7	23:36	5.57e+03	7.24e+03	0.77	yes	1.28e+04		n	n
8	23:56	3.75e+04	4.78e+04	0.78	yes	8.53e+04		n	n
9	24:27	2.07e+05	2.66e+05	0.78	yes	4.72e+05		n	n
10	24:45	1.06e+04	1.39e+04	0.76	yes	2.44e+04		n	n
11	25:30	5.02e+05	6.46e+05	0.78	yes	1.15e+06	2,3,7,8-TCDF	n	n
12	25:56	3.50e+04	4.58e+04	0.76	yes	8.09e+04		n	n
13	26:13	5.16e+03	6.78e+03	0.76	yes	1.19e+04		n	n
14	27:46	3.55e+04	4.51e+04	0.79	yes	8.06e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0126

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 14 File: P616285 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 20:10:46 Processed: 30-DEC-18 09:06:14

Mass: 319.8970 321.8940 Tot Response: 3.77e+05 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:35	9.36e+02	1.26e+03	0.74	yes	2.20e+03		n	n
2	22:55	4.01e+02	4.63e+02	0.87	yes	8.64e+02		n	n
3	26:11	2.08e+03	2.71e+03	0.77	yes	4.79e+03		n	n
4	26:31	1.50e+05	1.90e+05	0.79	yes	3.40e+05	2,3,7,8-TCDD	n	n
5	26:52	1.31e+04	1.59e+04	0.83	yes	2.90e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0126

Entry: 38 Totals Name: Total Penta-Furans1

Run: 14 File: P616285 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 20:10:46 Processed: 30-DEC-18 09:06:14

Mass: 339.8600 341.8570 Tot Response: 2.10e+04 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:45	1.29e+04	8.11e+03 1.59	yes	2.10e+04		n	n

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CLIENT ID.
SL0126

Entry: 39 Totals Name: Total Penta-Furans2

Run: 14 File: P616285 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 20:10:46 Processed: 30-DEC-18 09:06:14

Mass: 339.8600 341.8570 Tot Response: 1.41e+05 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:20	1.48e+03	9.44e+02	1.57	yes	2.42e+03		n	n
2	29:29	1.84e+04	1.22e+04	1.51	yes	3.07e+04		n	n
3	30:06	3.32e+03	2.15e+03	1.54	yes	5.48e+03		n	n
4	30:20	2.96e+03	1.80e+03	1.64	yes	4.76e+03		n	n
5	30:32	2.66e+04	1.70e+04	1.57	yes	4.36e+04	1,2,3,7,8-PeCDF	n	n
6	30:48	8.91e+03	5.59e+03	1.59	yes	1.45e+04		n	n
7	31:26	8.04e+02	4.62e+02	1.74	yes	1.27e+03		n	n
8	31:34	2.23e+04	1.41e+04	1.58	yes	3.64e+04	2,3,4,7,8-PeCDF	n	n
9	32:31	1.24e+03	7.87e+02	1.57	yes	2.02e+03		n	n

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CLIENT ID.
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Entry: 40 Totals Name: Total Penta-Dioxins

Run: 14 File: P616285 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 20:10:46 Processed: 30-DEC-18 09:06:14

Mass: 355.8550 357.8520 Tot Response: 1.45e+04 RRF: 0.9288

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:32	2.59e+03	1.63e+03	1.59	yes	4.22e+03		n	n
2	30:02	1.05e+03	7.87e+02	1.33	yes	1.83e+03		n	n
3	30:34	7.52e+02	5.39e+02	1.40	yes	1.29e+03		n	n
4	30:44	5.22e+02	3.51e+02	1.49	yes	8.74e+02		n	n
5	30:50	4.81e+02	2.81e+02	1.71	yes	7.62e+02		n	n
6	31:04	6.04e+02	3.66e+02	1.65	yes	9.69e+02		n	n
7	31:25	1.89e+02	1.36e+02	1.39	yes	3.25e+02		n	n
8	31:52	2.40e+03	1.56e+03	1.54	yes	3.96e+03	1,2,3,7,8-PeCDD	n	y
9	31:56	2.02e+02	1.18e+02	1.72	yes	3.20e+02		n	y

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Peak List Summary

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SL0126

Entry: 41 Totals Name: Total Hexa-Furans

Run: 14 File: P616285 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 20:10:46 Processed: 30-DEC-18 09:06:14

Mass: 373.8210 375.8180 Tot Response: 1.19e+05 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:13	2.39e+03	2.13e+03	1.12	yes	4.52e+03		n	n
2	33:24	1.03e+04	8.08e+03	1.27	yes	1.84e+04		n	n
3	33:57	1.22e+04	9.75e+03	1.25	yes	2.20e+04		n	n
4	34:24	2.88e+04	2.32e+04	1.24	yes	5.20e+04	1,2,3,4,7,8-HxCDF	n	n
5	34:31	7.72e+03	6.15e+03	1.26	yes	1.39e+04	1,2,3,6,7,8-HxCDF	n	n
6	35:03	2.68e+03	2.18e+03	1.23	yes	4.85e+03	2,3,4,6,7,8-HxCDF	n	n
7	35:51	2.03e+03	1.70e+03	1.20	yes	3.72e+03	1,2,3,7,8,9-HxCDF	n	n

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Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 14 File: P616285 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 20:10:46 Processed: 30-DEC-18 09:06:14

Mass: 389.8160 391.8130 Tot Response: 4.32e+04 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:47	1.12e+04	9.08e+03 1.23	yes	2.03e+04		n	n
2	34:20	1.23e+03	9.62e+02 1.27	yes	2.19e+03		n	n
3	34:35	7.36e+03	5.77e+03 1.27	yes	1.31e+04		n	n
4	34:41	3.15e+02	2.90e+02 1.09	yes	6.05e+02		n	n
5	35:12	3.56e+02	3.28e+02 1.08	yes	6.84e+02	1,2,3,4,7,8-HxCDD	n	n
6	35:17	2.19e+03	1.75e+03 1.25	yes	3.93e+03	1,2,3,6,7,8-HxCDD	n	n
7	35:27	3.01e+02	2.62e+02 1.15	yes	5.64e+02		n	n
8	35:32	9.77e+02	8.19e+02 1.19	yes	1.80e+03	1,2,3,7,8,9-HxCDD	n	n

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Entry: 43 Totals Name: Total Hepta-Furans

Run: 14 File: P616285 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 20:10:46 Processed: 30-DEC-18 09:06:14

Mass: 407.7820 409.7790 Tot Response: 9.26e+04 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:07	1.48e+04	1.50e+04	0.99	yes	2.98e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	37:22	2.62e+02	2.80e+02	0.94	yes	5.43e+02		n	n
3	37:30	2.97e+04	2.88e+04	1.03	yes	5.86e+04		n	n
4	38:26	1.76e+03	1.89e+03	0.93	yes	3.64e+03	1,2,3,4,7,8,9-HpCDF	n	n

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CLIENT ID.
SL0126

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 14 File: P616285 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 20:10:46 Processed: 30-DEC-18 09:06:14

Mass: 423.7770 425.7740 Tot Response: 1.96e+05 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:22	5.65e+04	5.37e+04 1.05	yes	1.10e+05		n	n
2	38:00	4.35e+04	4.18e+04 1.04	yes	8.53e+04	1,2,3,4,6,7,8-HpCDD	n	n

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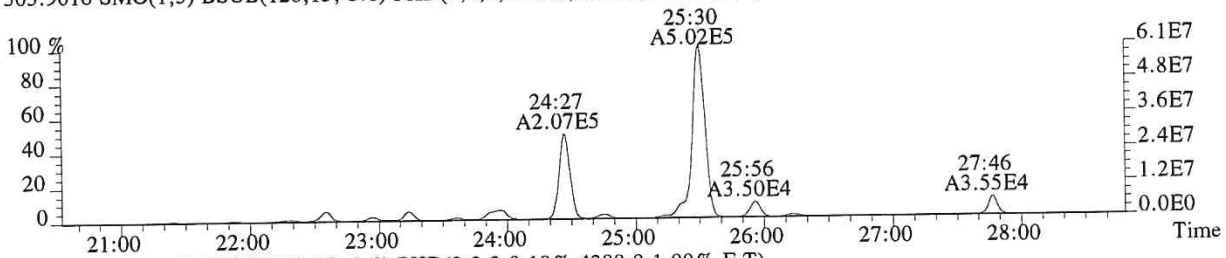
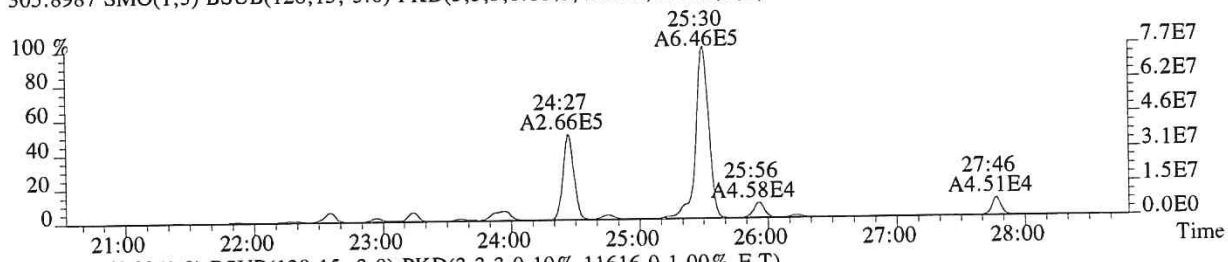
File:P616285 #1-587 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015

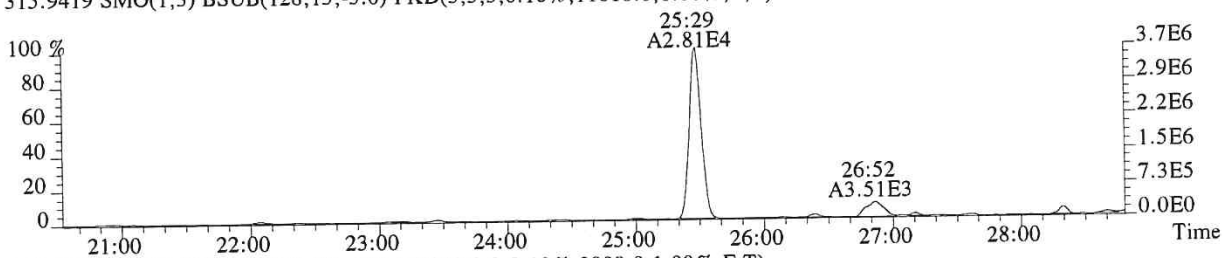
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2168.0,1.00%,F,T)



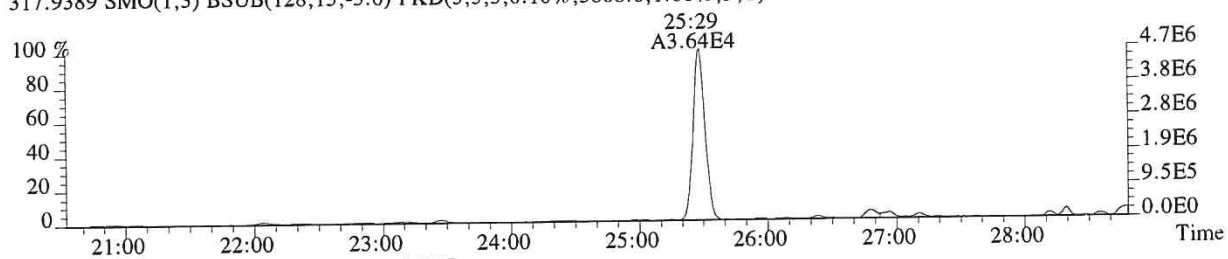
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4388.0,1.00%,F,T)



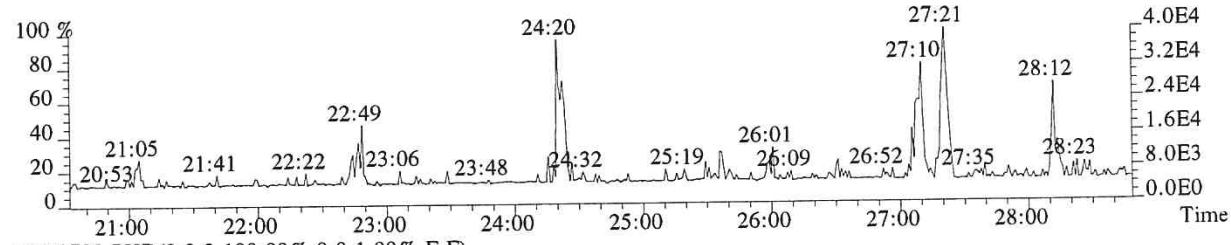
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11616.0,1.00%,F,T)



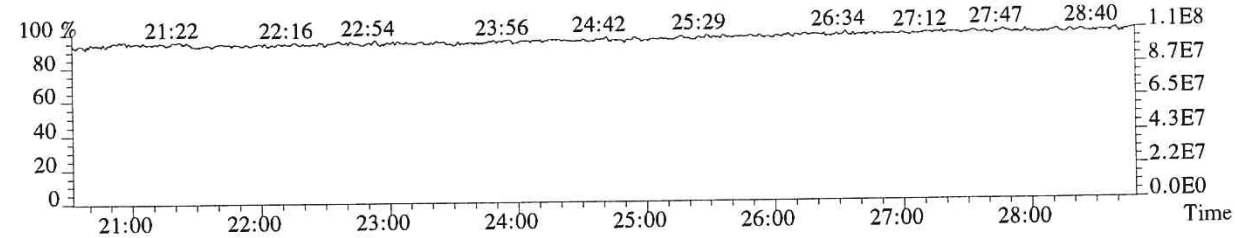
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3808.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



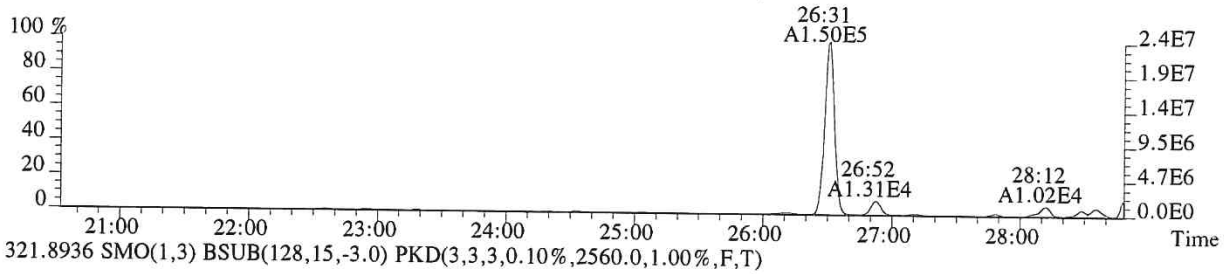
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



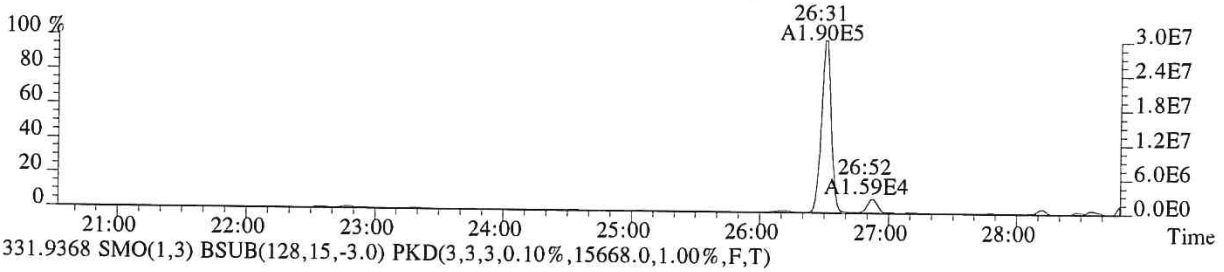
060293

File:P616285 #1-587 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015

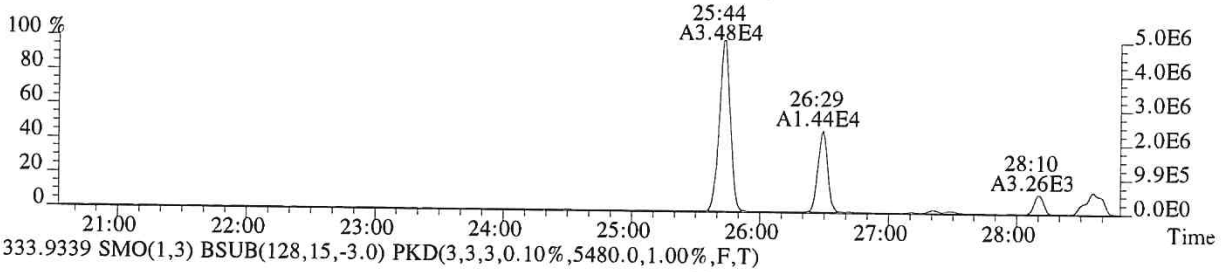
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5476.0,1.00%,F,T)



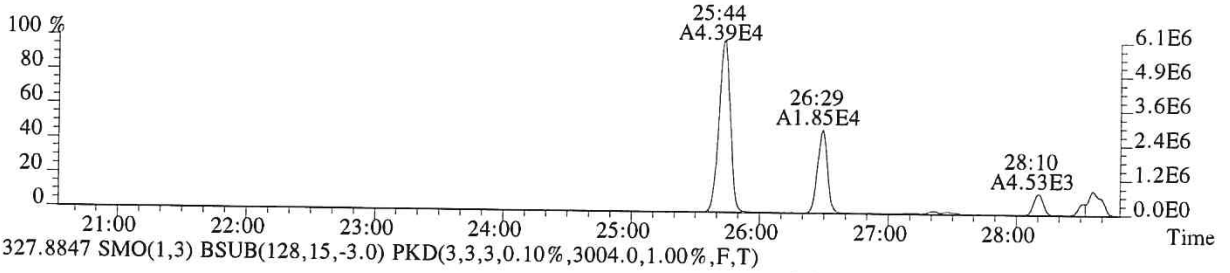
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2560.0,1.00%,F,T)



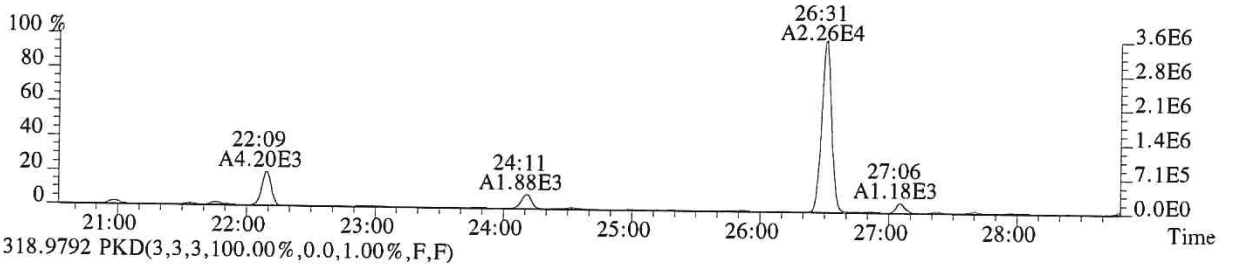
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15668.0,1.00%,F,T)



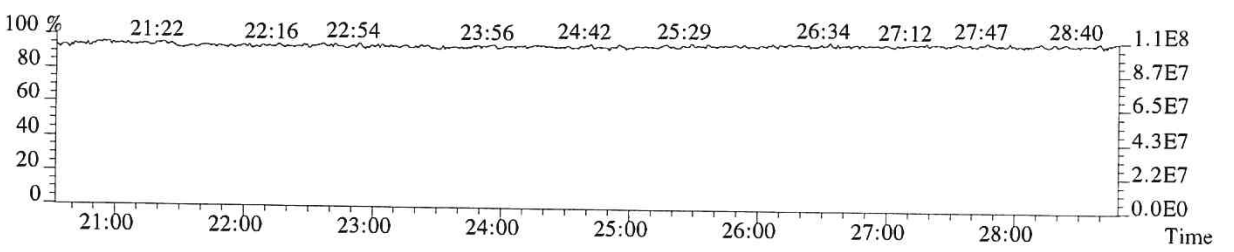
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5480.0,1.00%,F,T)



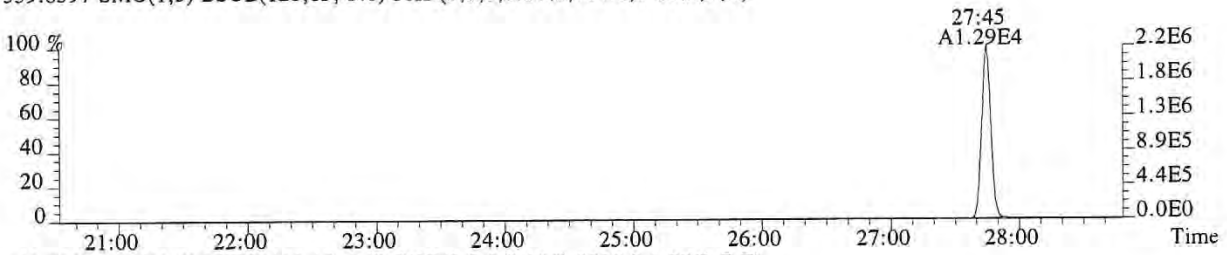
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3004.0,1.00%,F,T)



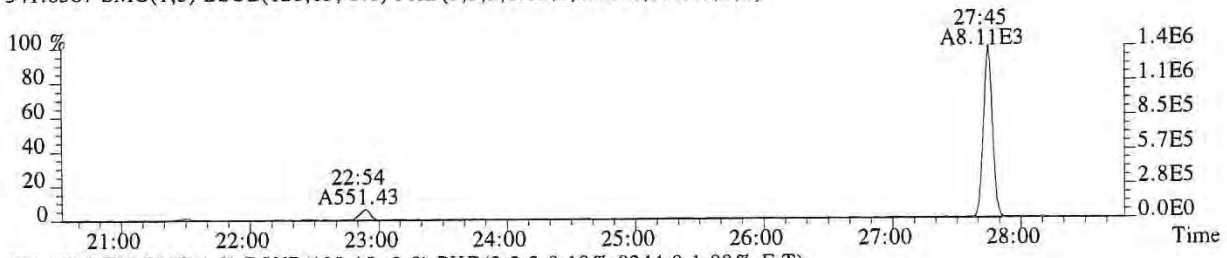
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



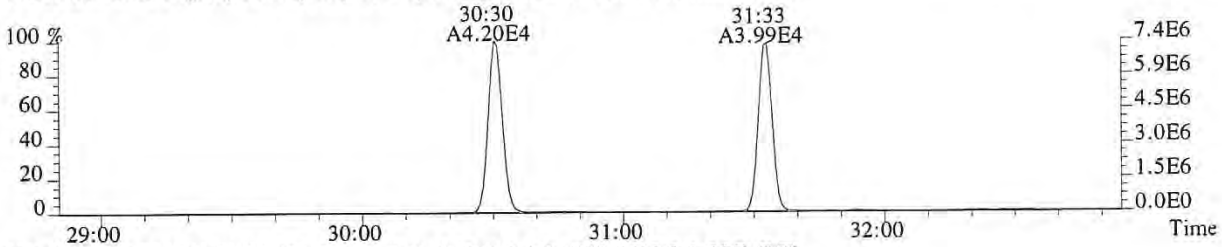
File:P616285 #1-587 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,764.0,1.00%,F,T)



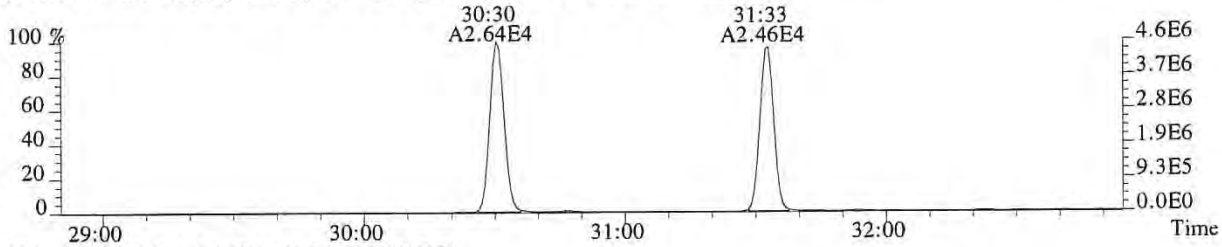
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2856.0,1.00%,F,T)



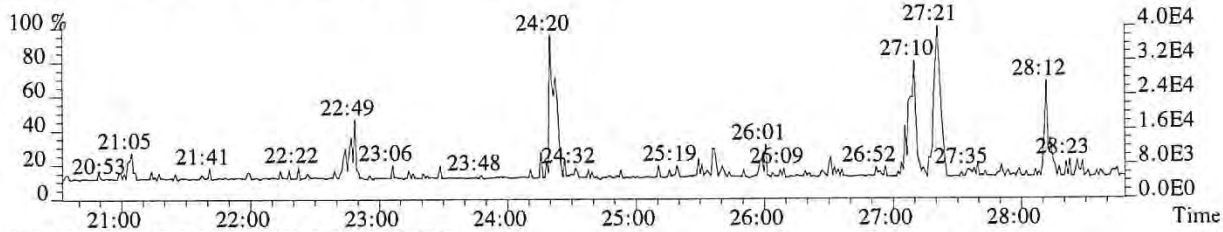
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8244.0,1.00%,F,T)



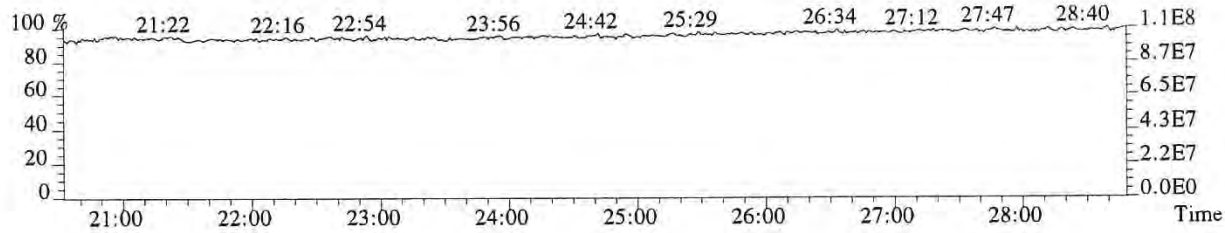
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6648.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

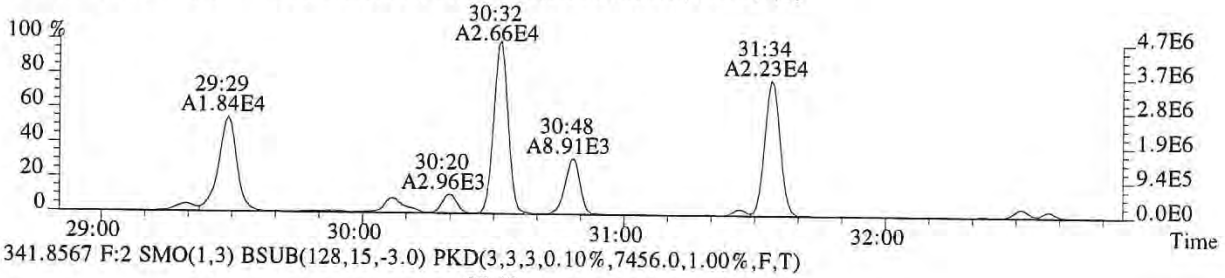


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

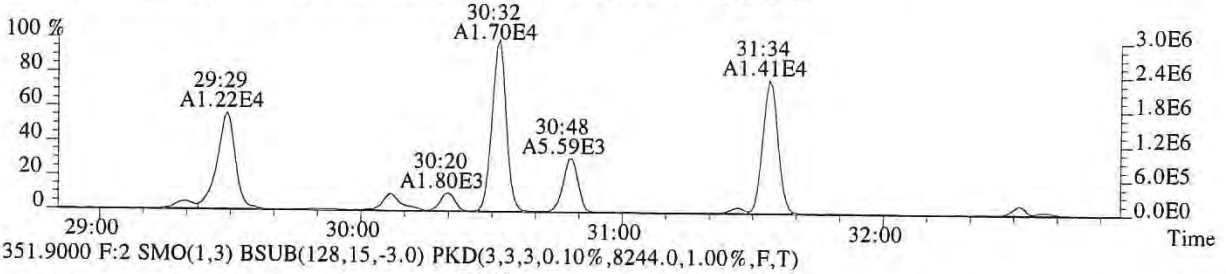


060295

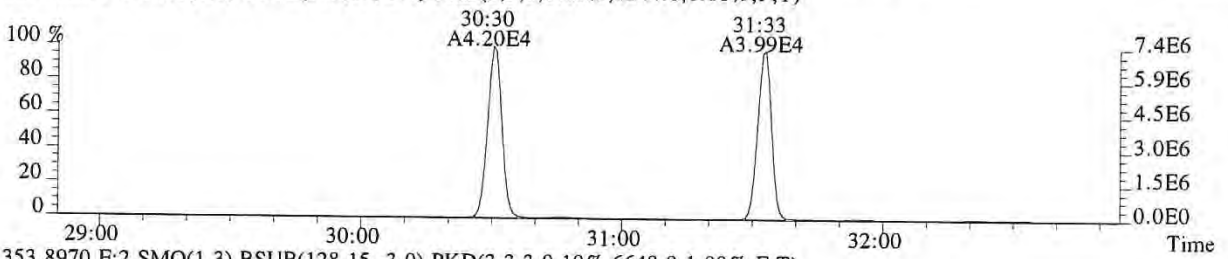
File:P616285 #1-367 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4680.0,1.00%,F,T)



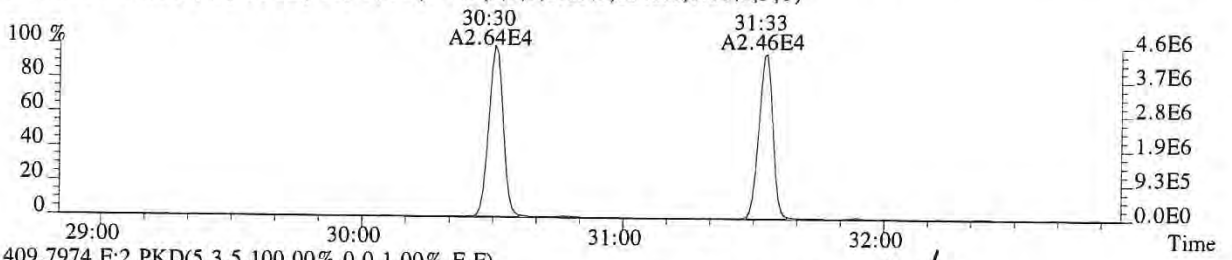
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7456.0,1.00%,F,T)



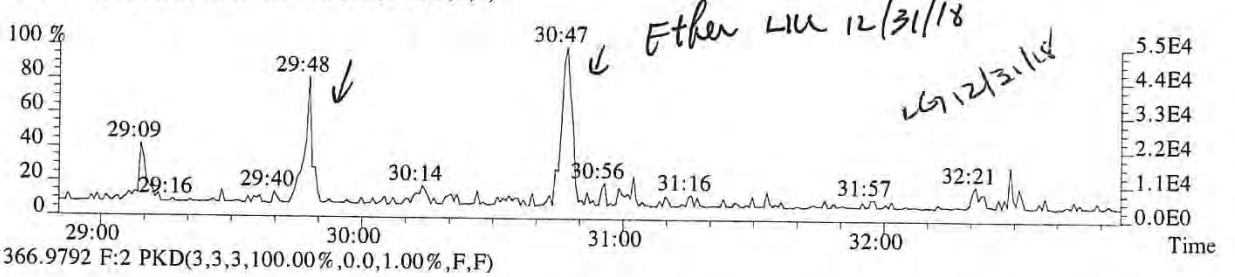
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8244.0,1.00%,F,T)



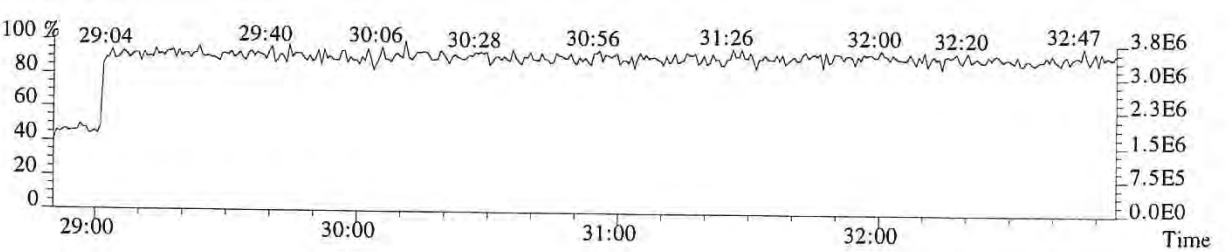
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6648.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

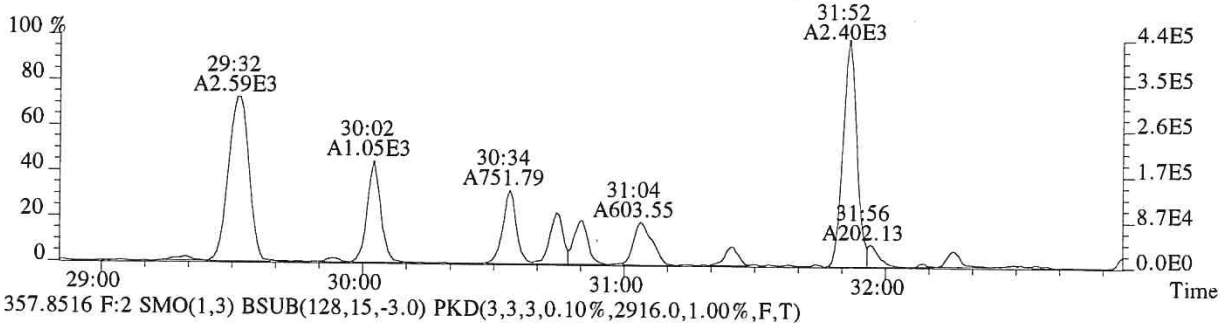


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

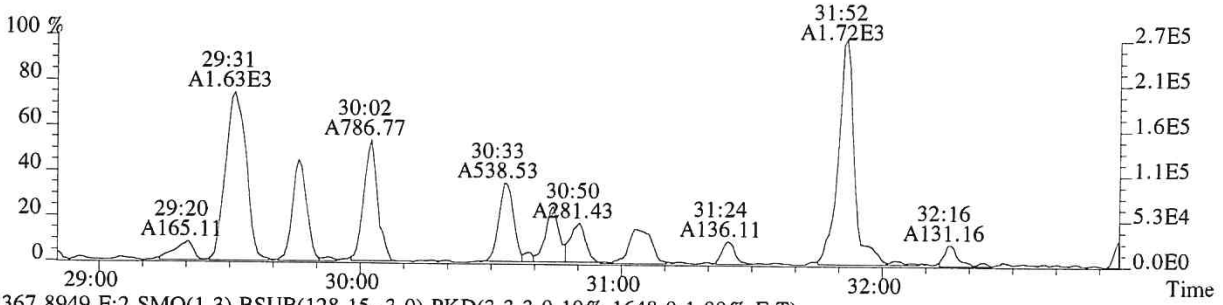


060296

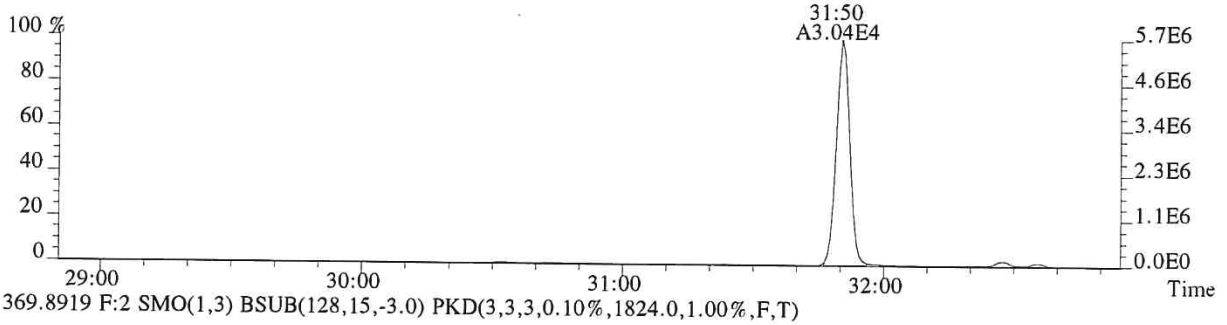
File:P616285 #1-367 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1848.0,1.00%,F,T)



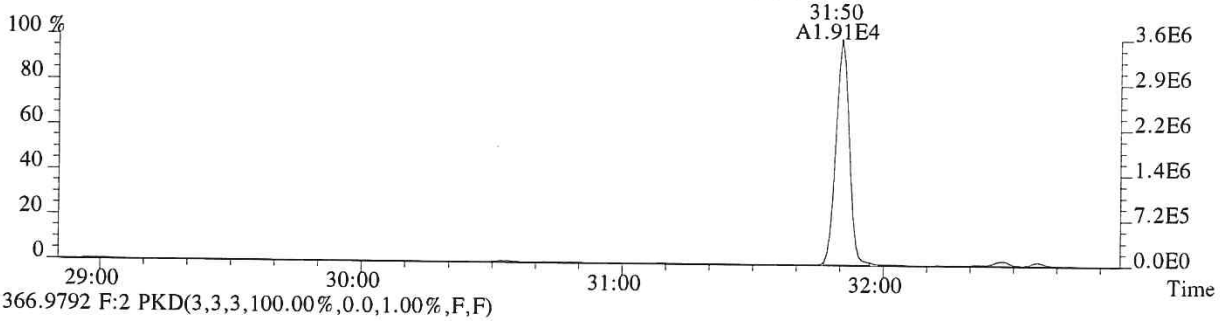
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2916.0,1.00%,F,T)



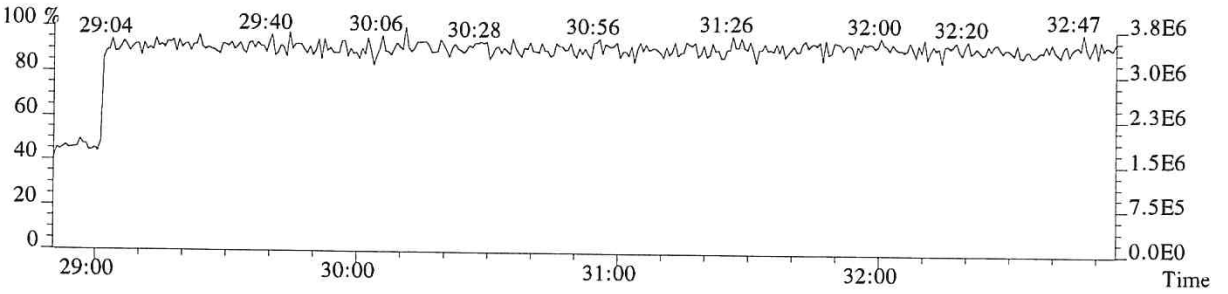
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1648.0,1.00%,F,T)



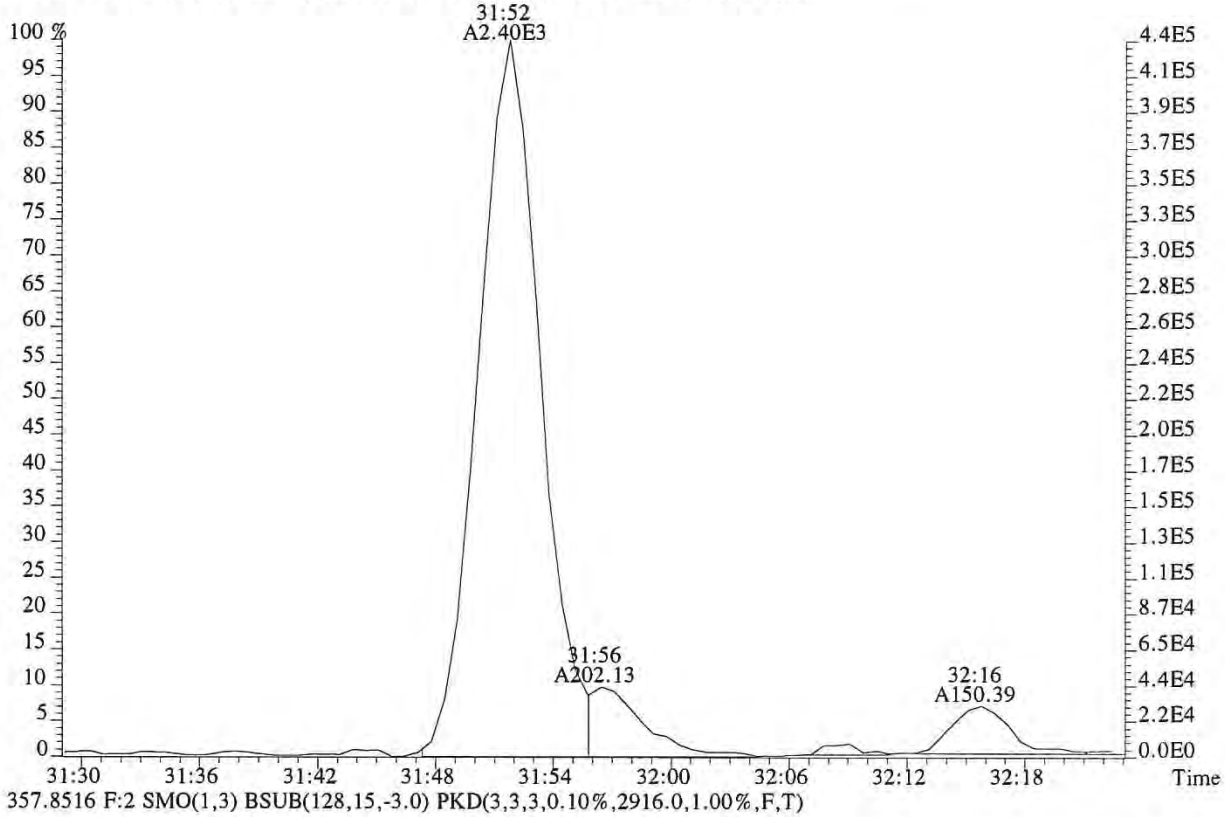
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1824.0,1.00%,F,T)



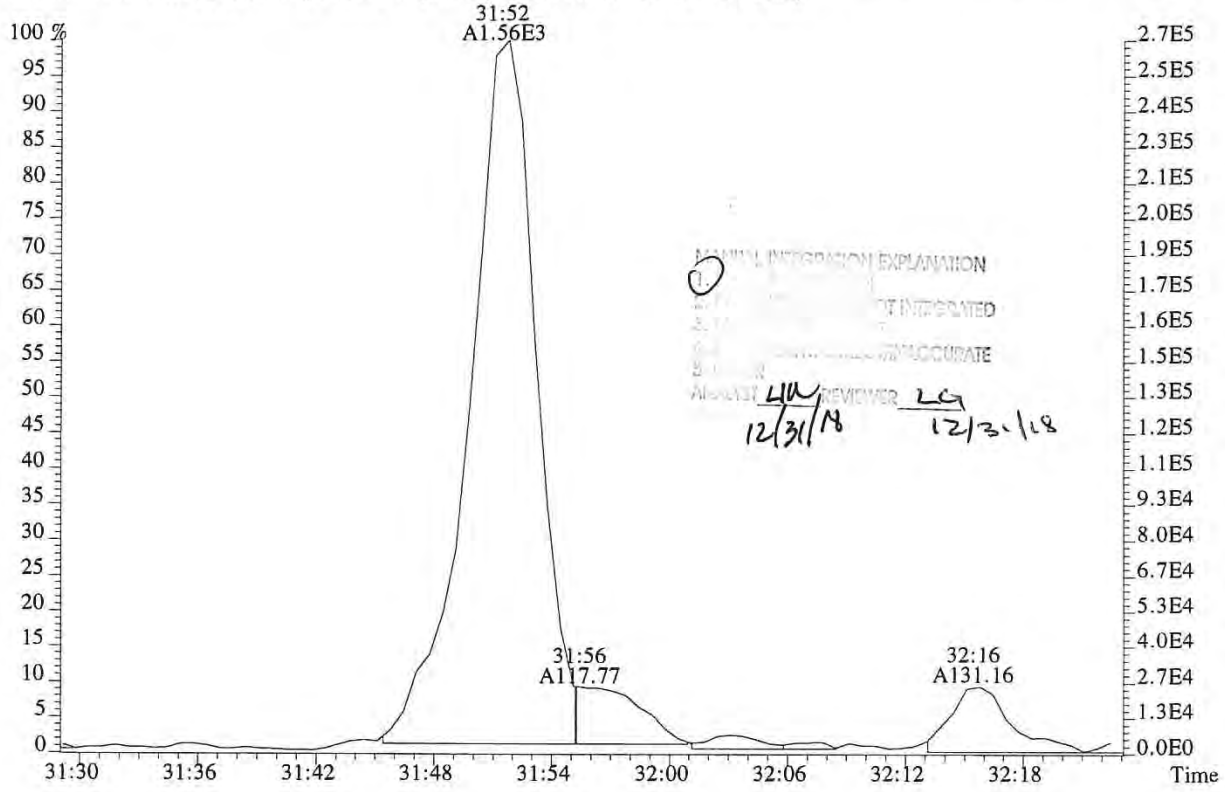
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P616285 #1-367 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1848.0,1.00%,F,T)



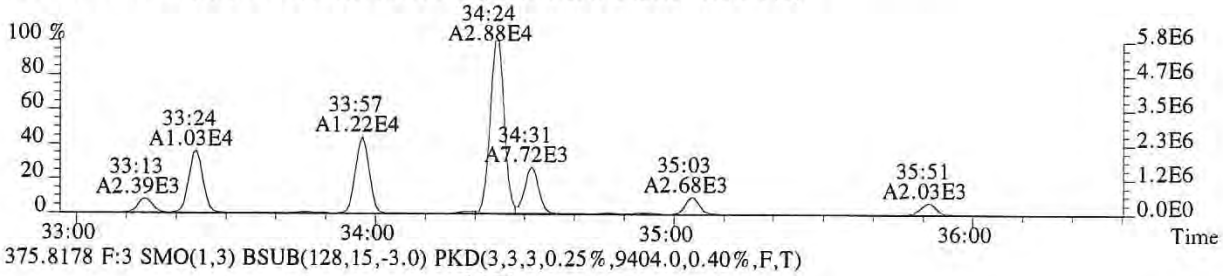
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2916.0,1.00%,F,T)



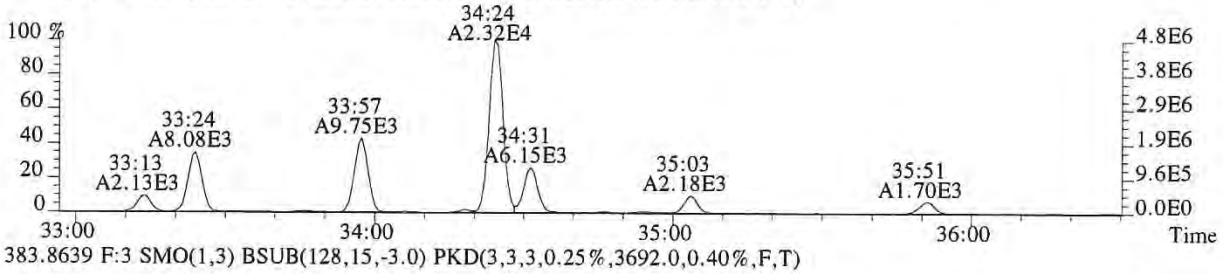
MANUAL INTEGRATION EXPLANATION
NOT INTEGRATED
INACCURATE
REVIEWER LG 12/31/18 12/31/18

060298

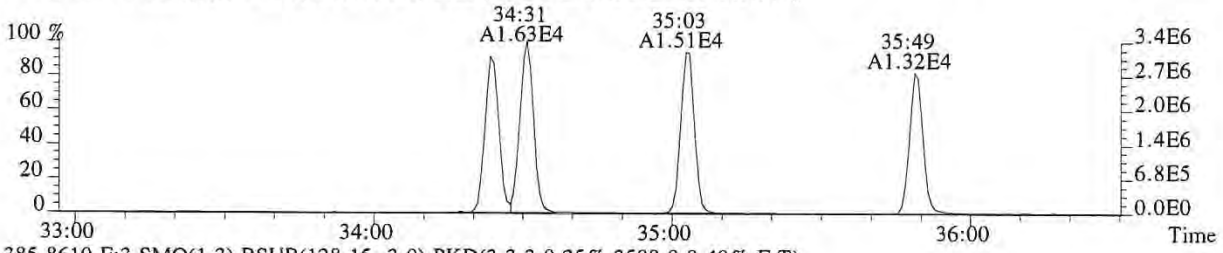
File:P616285 #1-321 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5420.0,0.40%,F,T)



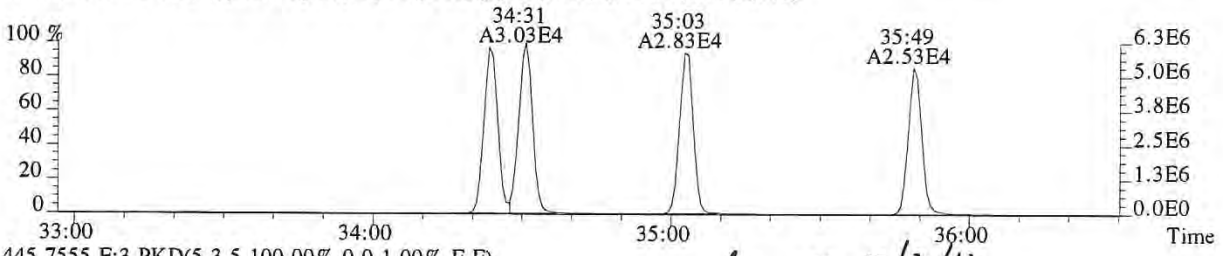
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9404.0,0.40%,F,T)



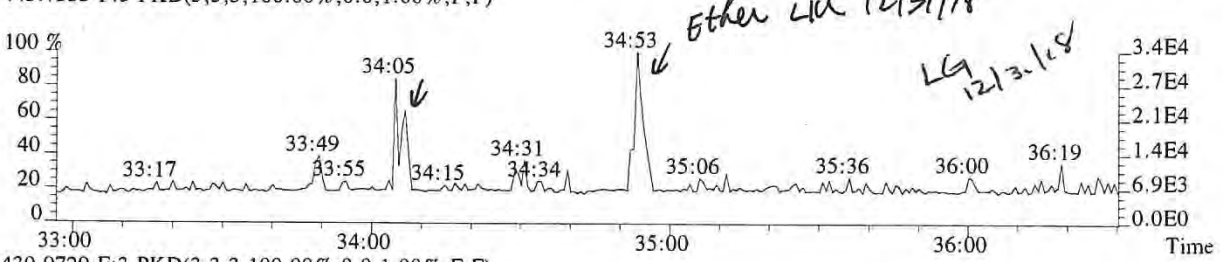
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3692.0,0.40%,F,T)



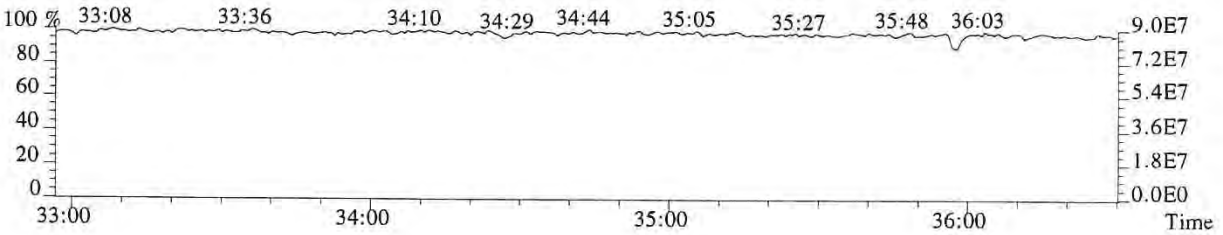
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3588.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



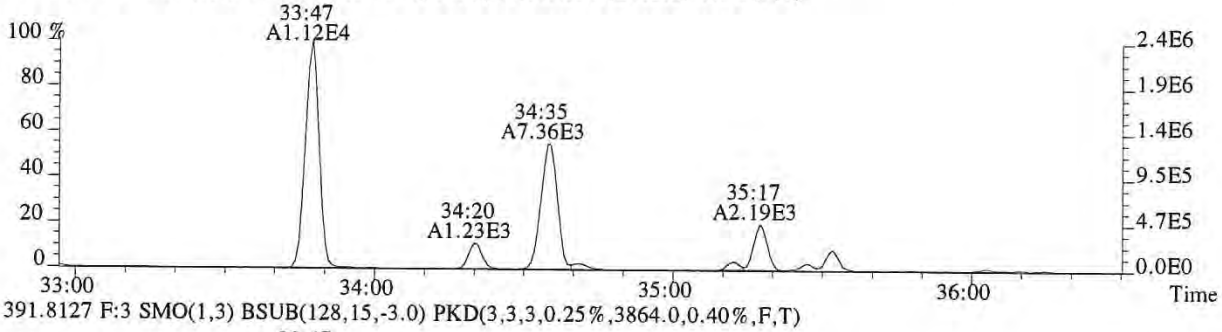
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



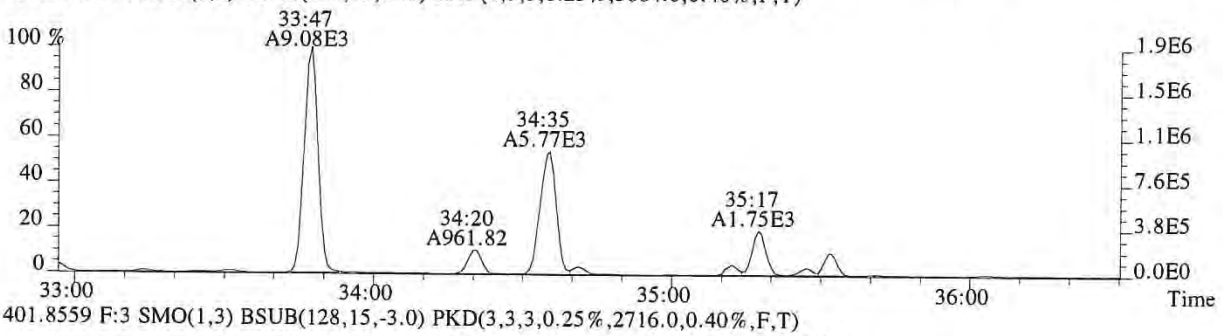
060299

File:P616285 #1-321 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015

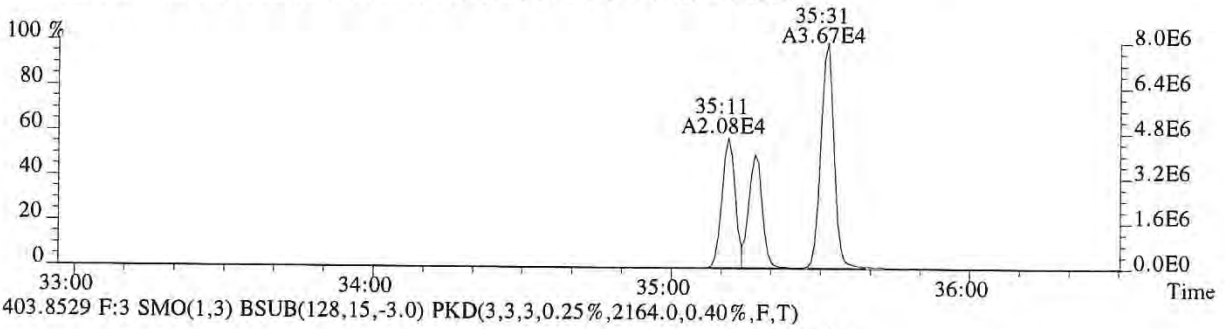
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2412.0,0.40%,F,T)



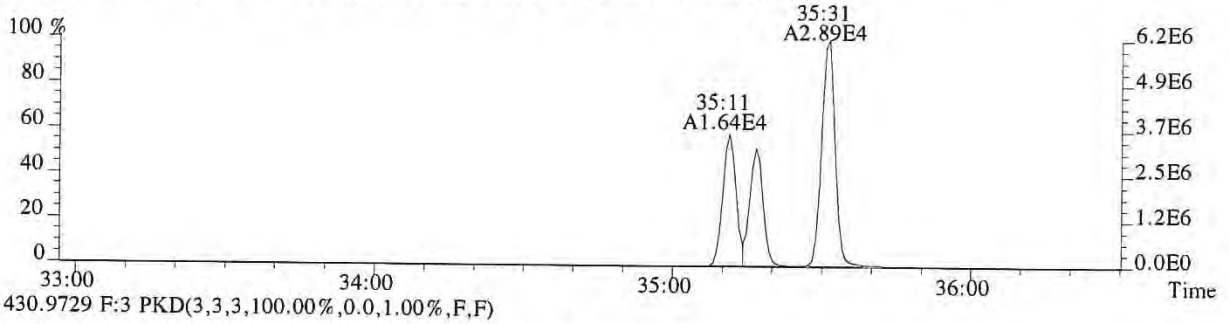
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3864.0,0.40%,F,T)



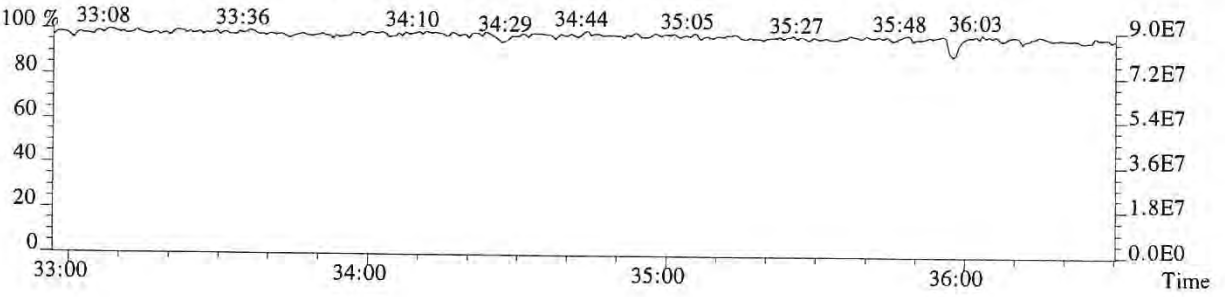
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2716.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2164.0,0.40%,F,T)

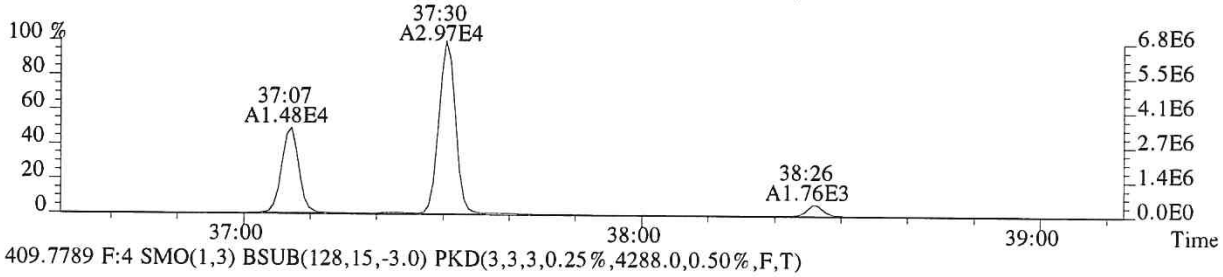


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

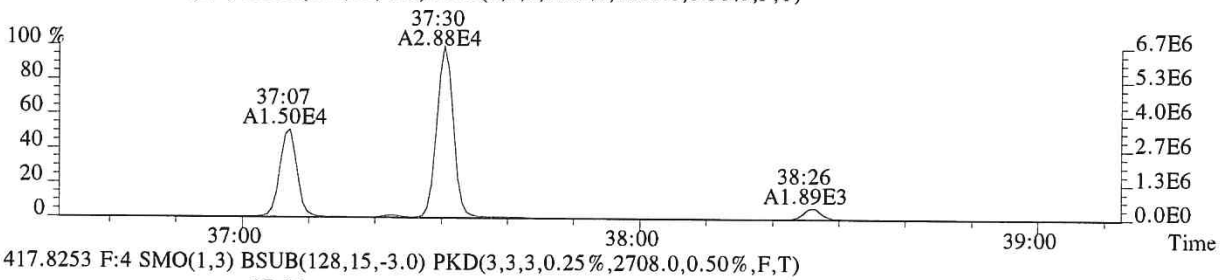


060300

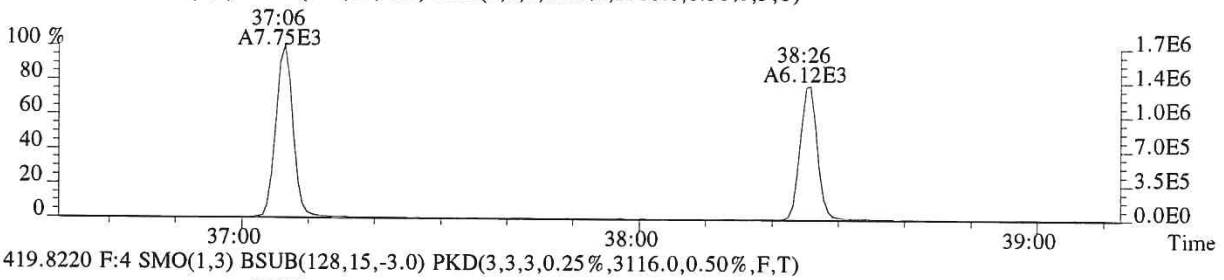
File:P616285 #1-241 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6492.0,0.50%,F,T)



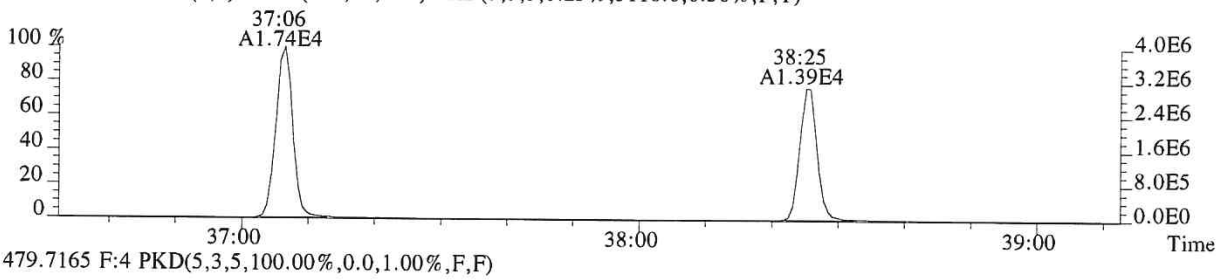
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4288.0,0.50%,F,T)



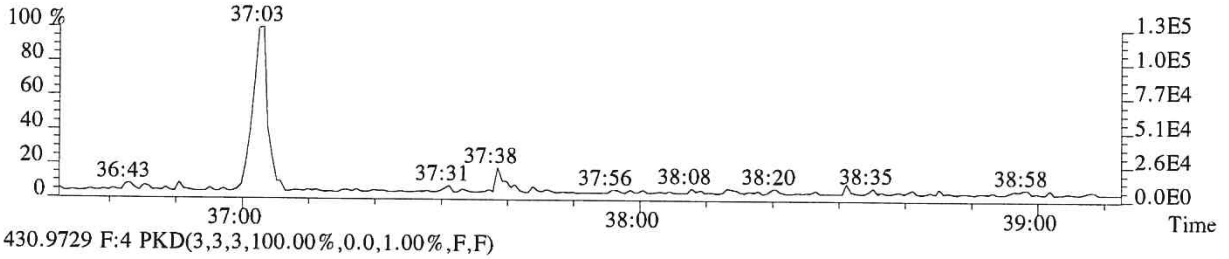
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2708.0,0.50%,F,T)



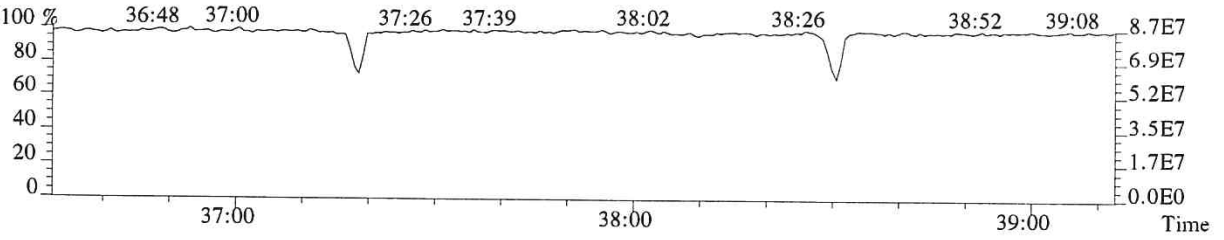
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3116.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

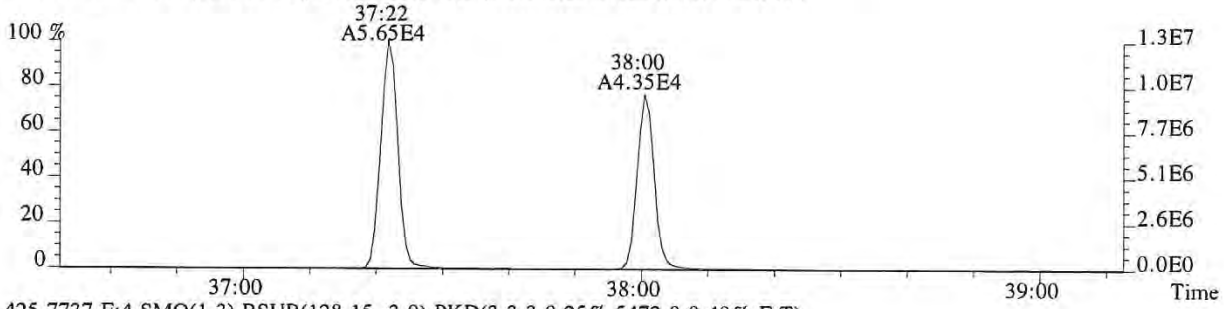


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

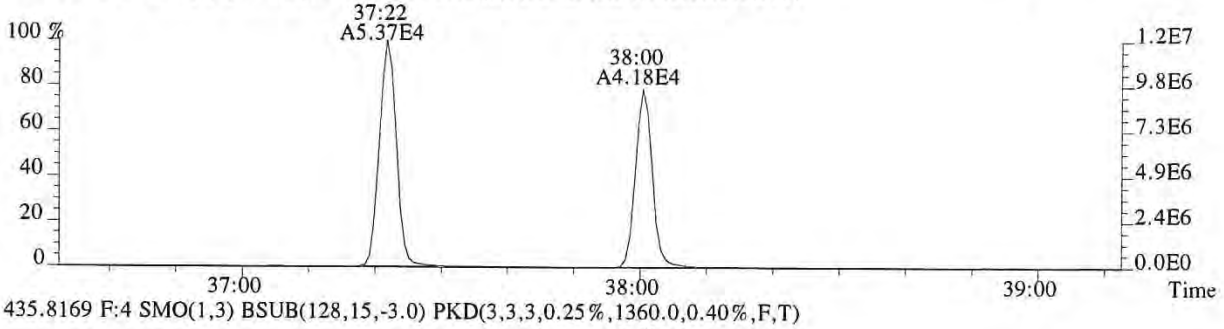


060301

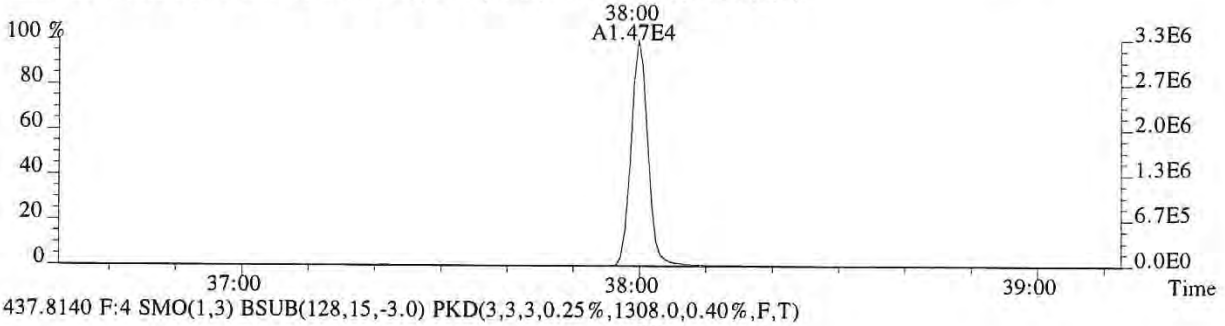
File:P616285 #1-241 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8264.0,0.40%,F,T)



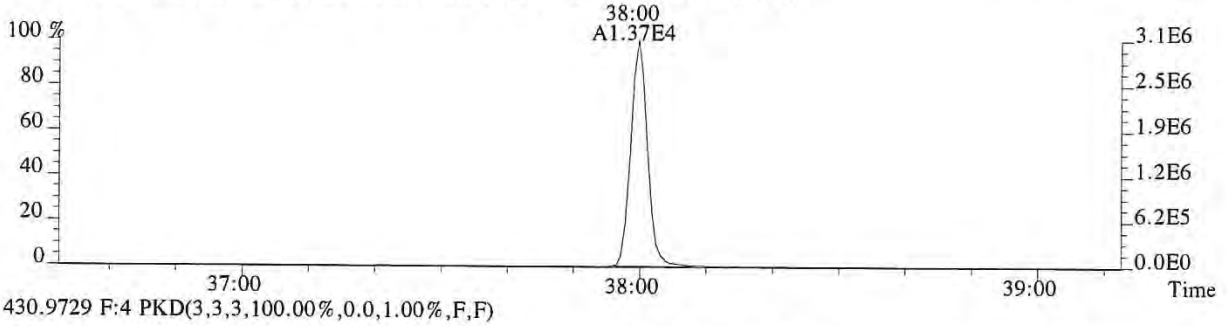
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5472.0,0.40%,F,T)



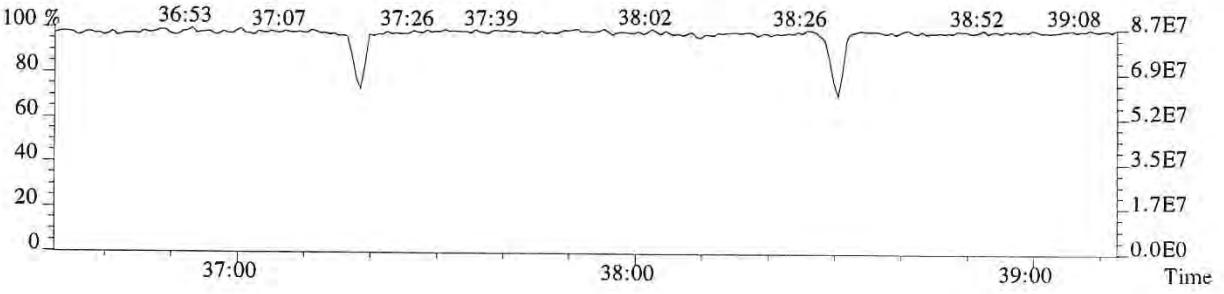
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1360.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1308.0,0.40%,F,T)



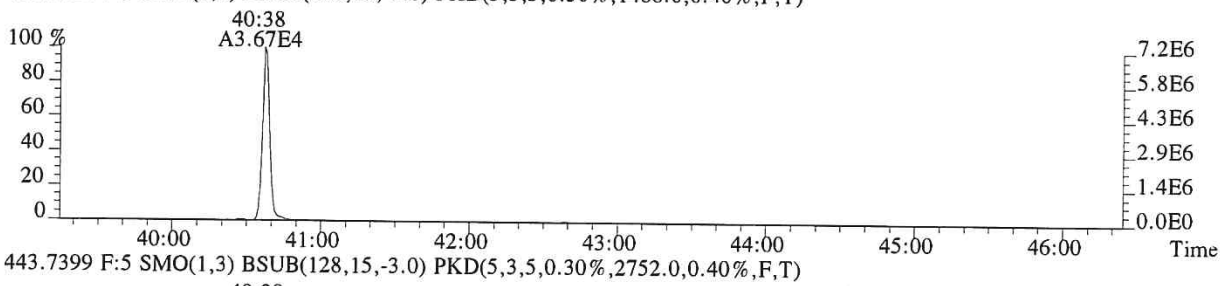
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



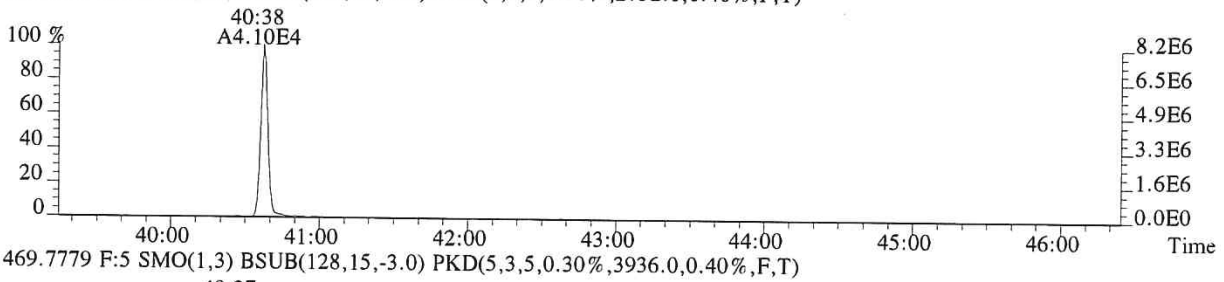
060302

File:P616285 #1-645 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015

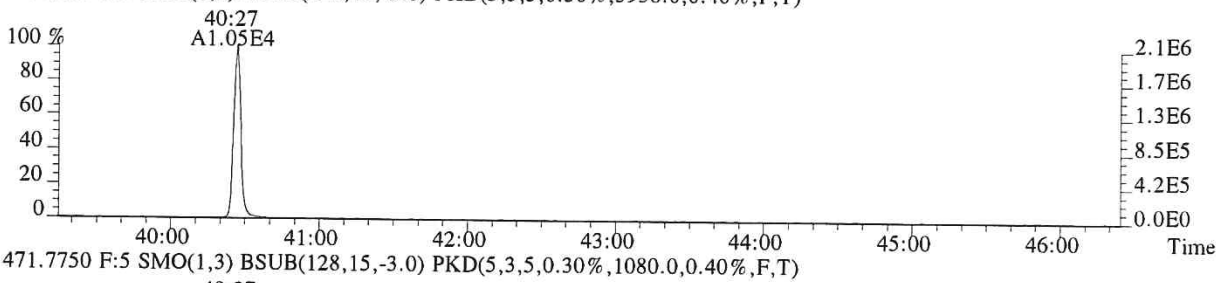
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1488.0,0.40%,F,T)



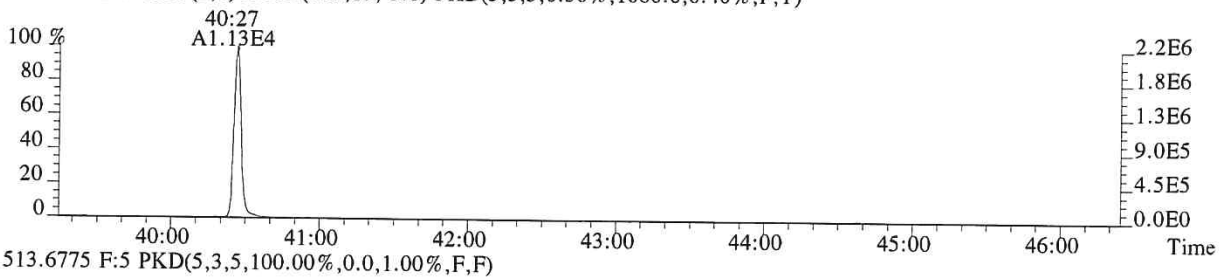
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2752.0,0.40%,F,T)



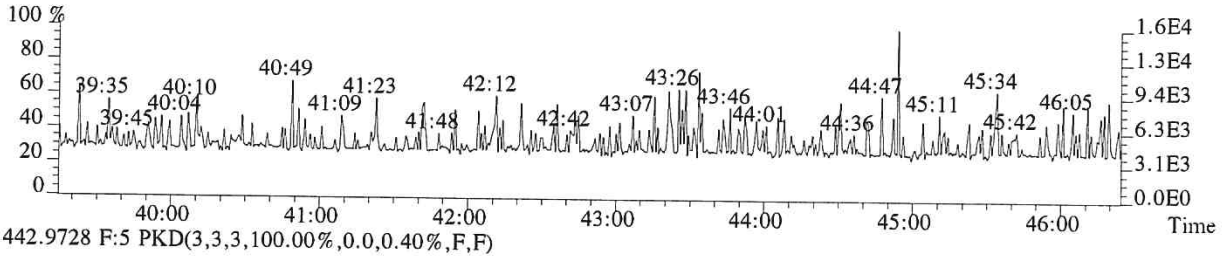
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3936.0,0.40%,F,T)



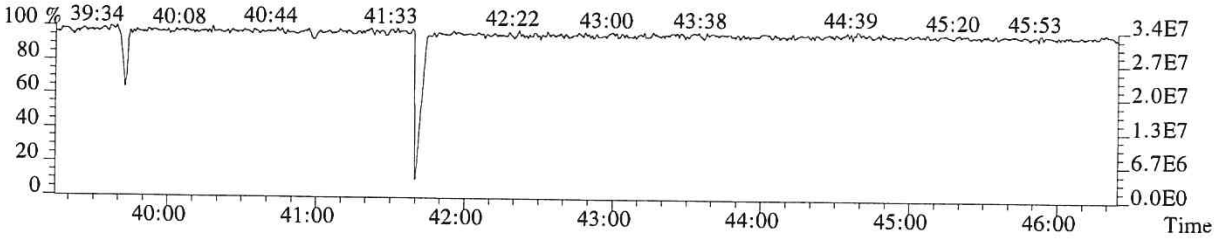
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1080.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

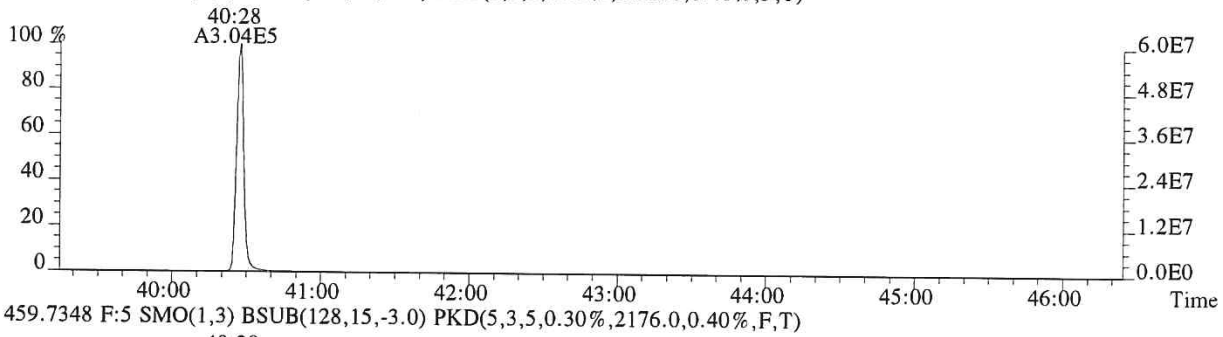


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

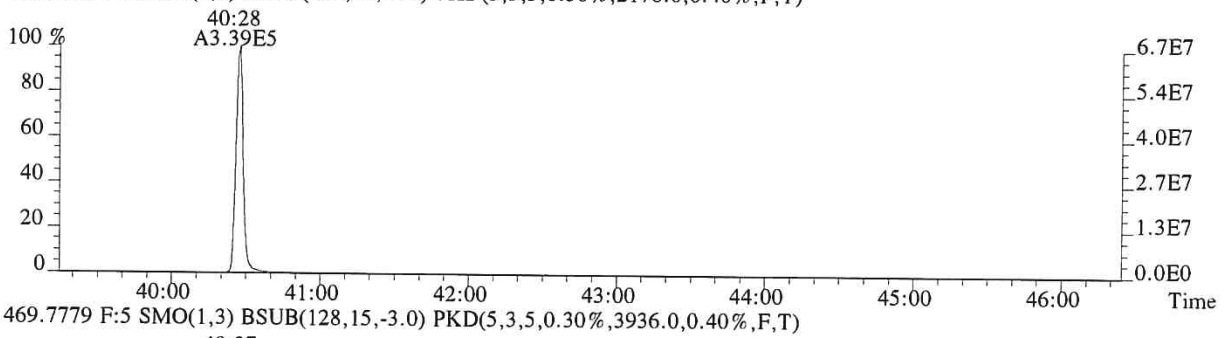


060303

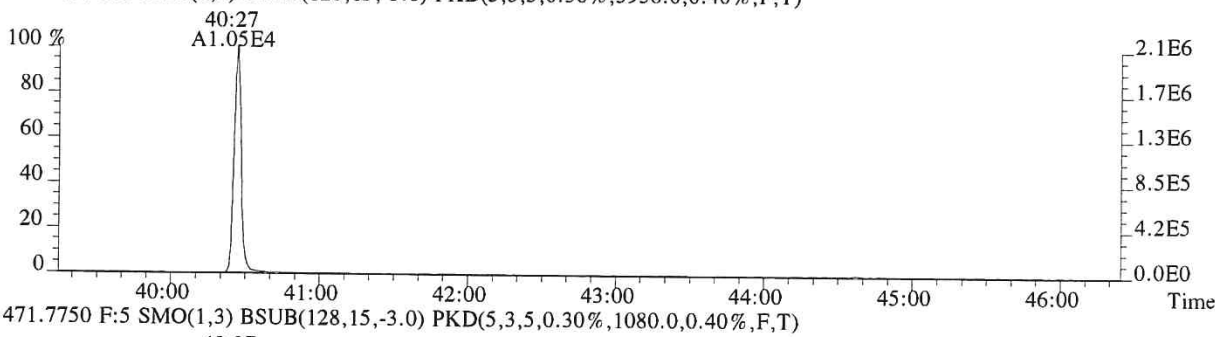
File:P616285 #1-645 Acq:29-DEC-2018 20:10:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1468.0,0.40%,F,T)



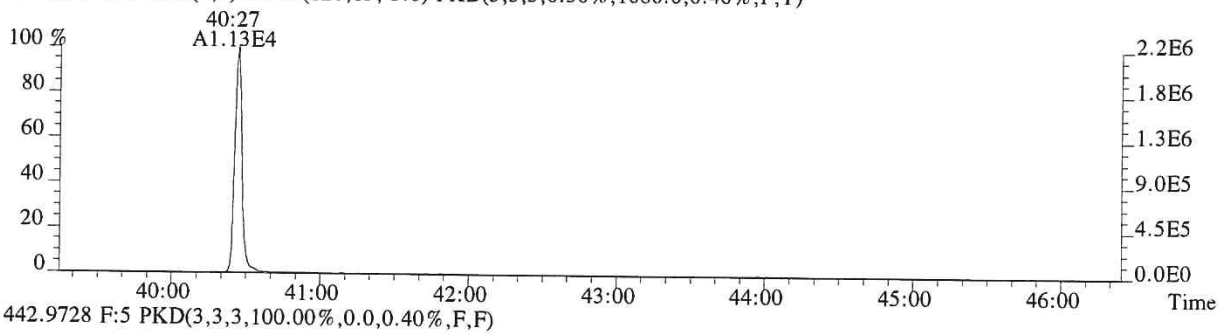
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2176.0,0.40%,F,T)



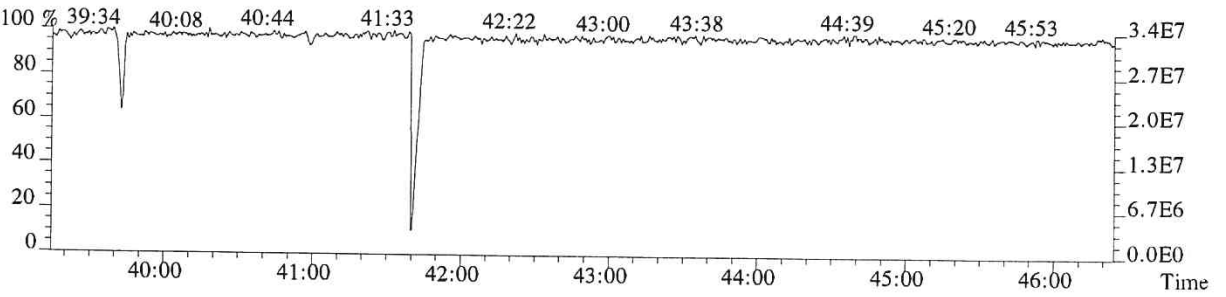
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3936.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1080.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060304

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0126

Run #9 Filename P616306 Samp: 1 Inj: 1 Acquired: 30-DEC-18 13:56:24
Processed: 31-DEC-18 11:29:01 Sample ID: E1801136-015DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:26	1.065e+04	1.360e+04	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:28	6.730e+02	3.557e+02	1.89	no	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:31	5.104e+02	3.817e+02	1.34	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:21	7.950e+02	6.546e+02	1.21	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	2.370e+02	1.972e+02	1.20	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:01	1.137e+02	5.476e+01	2.08	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:49	9.816e+01	5.023e+01	1.95	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:04	5.836e+02	5.470e+02	1.07	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	1.012e+02	8.394e+01	1.21	no	no	1.463
10	Unk	OCDF	40:36	1.277e+03	1.593e+03	0.80	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:27	2.952e+03	3.824e+03	0.77	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:49	7.478e+01	4.933e+01	1.52	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:10	1.514e+01	1.338e+01	1.13	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:15	6.699e+01	5.428e+01	1.23	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:30	5.462e+01	3.160e+01	1.73	no	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:58	1.523e+03	1.426e+03	1.07	yes	no	1.112
17	Unk	OCDD	40:25	1.048e+04	1.189e+04	0.88	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:24	2.237e+04	2.846e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:28	3.702e+04	2.343e+04	1.58	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:30	3.583e+04	2.245e+04	1.60	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:21	1.638e+04	3.040e+04	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:28	1.833e+04	3.492e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:00	1.693e+04	3.250e+04	0.52	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	1.530e+04	2.899e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:03	1.207e+04	2.633e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:23	8.979e+03	2.058e+04	0.44	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:25	1.143e+04	1.433e+04	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:48	2.682e+04	1.692e+04	1.59	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	2.227e+04	1.756e+04	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:14	2.226e+04	1.728e+04	1.29	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	2.155e+04	2.049e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:24	1.710e+04	1.860e+04	0.92	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:40	1.700e+04	2.121e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	2.543e+04	1.987e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:27	4.855e+02				no	1.086

$$\text{OCDD} = \frac{(1.048e+04 + 1.189e+04) \times 4000\ \text{pg} \times 20}{(1.710e+04 + 1.860e+04) \times 10.667\ \text{g} \times 59.2/100 \times 1.157} = 27.4\text{ppt}.\ 188\ \text{ng/kg}$$

LG 12/3.1.18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0126

Run #9 Filename P616306 Samp: 1 Inj: 1 Acquired: 30-DEC-18 13:56:24
Processed: 31-DEC-18 11:29:01 LAB. ID: E1801136-015DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.39e+06	1.55e+03	9.0e+02	1.79e+06	6.41e+03	2.8e+02
2	1,2,3,7,8-PeCDF	1.29e+05	1.56e+03	8.3e+01	6.26e+04	2.82e+03	2.2e+01
3	2,3,4,7,8-PeCDF	7.00e+04	1.56e+03	4.5e+01	5.42e+04	2.82e+03	1.9e+01
4	1,2,3,4,7,8-HxCDF	1.72e+05	1.71e+03	1.0e+02	1.34e+05	1.48e+03	9.1e+01
5	1,2,3,6,7,8-HxCDF	4.93e+04	1.71e+03	2.9e+01	3.68e+04	1.48e+03	2.5e+01
6	2,3,4,6,7,8-HxCDF	2.73e+04	1.71e+03	1.6e+01	1.24e+04	1.48e+03	8.4e+00
7	1,2,3,7,8,9-HxCDF	1.73e+04	1.71e+03	1.0e+01	1.19e+04	1.48e+03	8.0e+00
8	1,2,3,4,6,7,8-HpCDF	1.20e+05	6.28e+02	1.9e+02	1.26e+05	5.36e+02	2.3e+02
9	1,2,3,4,7,8,9-HpCDF	2.04e+04	6.28e+02	3.3e+01	1.81e+04	5.36e+02	3.4e+01
10	OCDF	2.33e+05	6.84e+02	3.4e+02	2.93e+05	2.49e+03	1.2e+02
11	2,3,7,8-TCDD	4.59e+05	4.70e+03	9.8e+01	6.17e+05	1.89e+03	3.3e+02
12	1,2,3,7,8-PeCDD	1.09e+04	1.26e+03	8.6e+00	9.33e+03	4.08e+02	2.3e+01
13	1,2,3,4,7,8-HxCDD	2.96e+03	7.64e+02	3.9e+00	4.23e+03	1.56e+03	2.7e+00
14	1,2,3,6,7,8-HxCDD	1.43e+04	7.64e+02	1.9e+01	1.28e+04	1.56e+03	8.2e+00
15	1,2,3,7,8,9-HxCDD	9.41e+03	7.64e+02	1.2e+01	7.97e+03	1.56e+03	5.1e+00
16	1,2,3,4,6,7,8-HpCDD	3.34e+05	8.40e+02	4.0e+02	3.11e+05	1.19e+03	2.6e+02
17	OCDD	1.98e+06	4.60e+02	4.3e+03	2.26e+06	2.32e+02	9.8e+03
18	13C-2,3,7,8-TCDF	3.11e+06	1.11e+04	2.8e+02	4.10e+06	1.15e+04	3.6e+02
19	13C-1,2,3,7,8-PeCDF	6.59e+06	1.01e+03	6.5e+03	4.17e+06	1.19e+03	3.5e+03
20	13C-2,3,4,7,8-PeCDF	6.91e+06	1.01e+03	6.8e+03	4.33e+06	1.19e+03	3.6e+03
21	13C-1,2,3,4,7,8-HxCDF	3.43e+06	1.78e+03	1.9e+03	6.51e+06	2.16e+03	3.0e+03
22	13C-1,2,3,6,7,8-HxCDF	3.80e+06	1.78e+03	2.1e+03	7.12e+06	2.16e+03	3.3e+03
23	13C-2,3,4,6,7,8-HxCDF	3.64e+06	1.78e+03	2.0e+03	7.00e+06	2.16e+03	3.2e+03
24	13C-1,2,3,7,8,9-HxCDF	3.11e+06	1.78e+03	1.8e+03	5.94e+06	2.16e+03	2.7e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.61e+06	1.62e+03	1.6e+03	5.66e+06	2.77e+03	2.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.93e+06	1.62e+03	1.2e+03	4.50e+06	2.77e+03	1.6e+03
27	13C-2,3,7,8-TCDD	1.79e+06	1.31e+04	1.4e+02	2.27e+06	5.86e+03	3.9e+02
28	13C-1,2,3,7,8-PeCDD	4.94e+06	2.59e+03	1.9e+03	3.20e+06	2.70e+03	1.2e+03
29	13C-1,2,3,4,7,8-HxCDD	5.02e+06	2.44e+03	2.1e+03	3.90e+06	1.43e+03	2.7e+03
30	13C-1,2,3,6,7,8-HxCDD	4.59e+06	2.44e+03	1.9e+03	3.58e+06	1.43e+03	2.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.70e+06	1.44e+03	3.3e+03	4.41e+06	5.92e+02	7.4e+03
32	13C-OCDD	3.27e+06	1.16e+03	2.8e+03	3.53e+06	5.00e+02	7.1e+03
33	13C-1,2,3,4-TCDD	2.49e+06	1.31e+04	1.9e+02	3.06e+06	5.86e+03	5.2e+02
34	13C-1,2,3,7,8,9-HxCDD	5.11e+06	2.44e+03	2.1e+03	4.01e+06	1.43e+03	2.8e+03
35	37Cl-2,3,7,8-TCDD	8.40e+04	3.19e+03	2.6e+01			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (4.696e+03 + 1.892e+03) \times 2000}{(1.790e+06 + 2.272e+06) \times (\quad) \times 1.049} =$$

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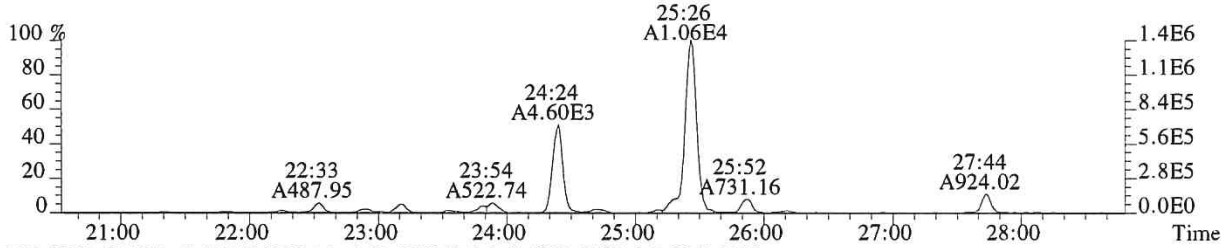
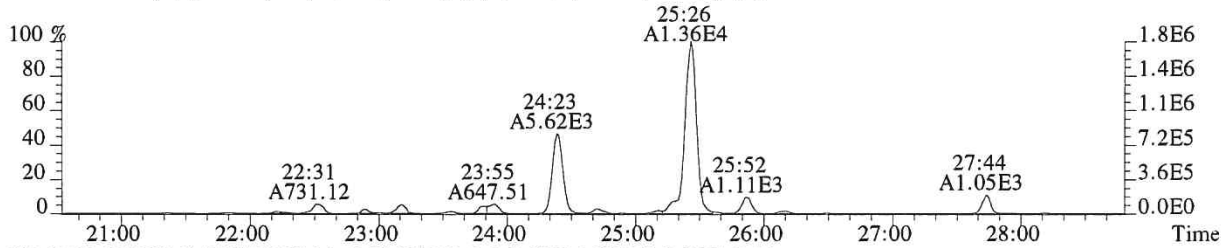
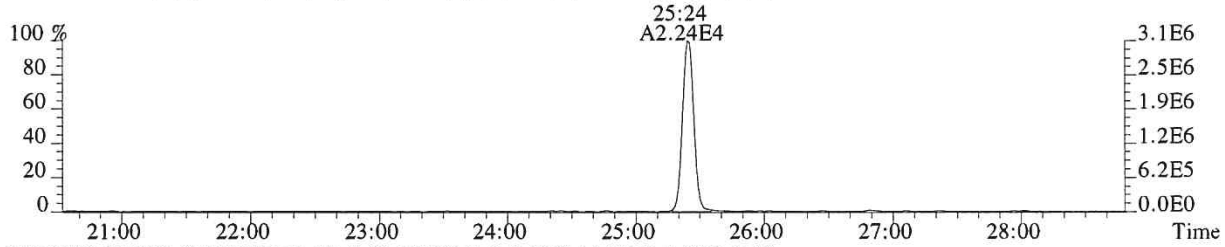
File:P616306 #1-587 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1552.0,1.00%,F,T)



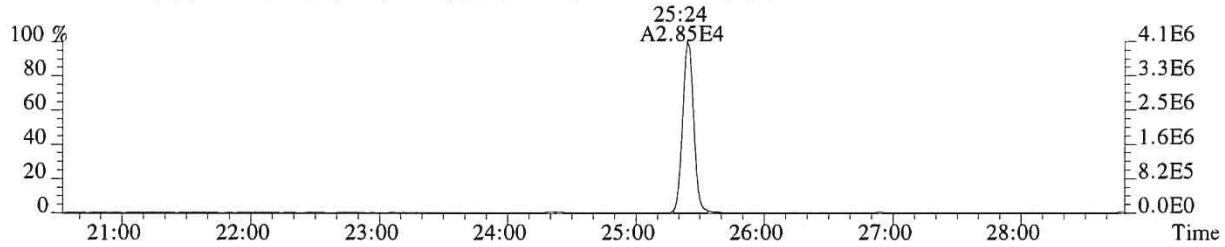
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6408.0,1.00%,F,T)



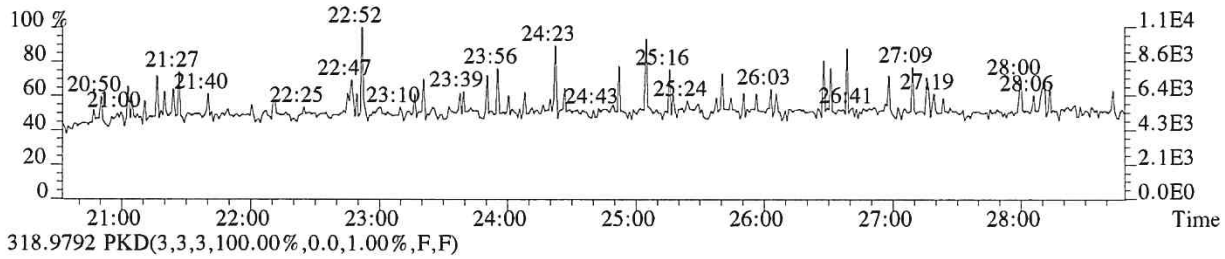
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11076.0,1.00%,F,T)



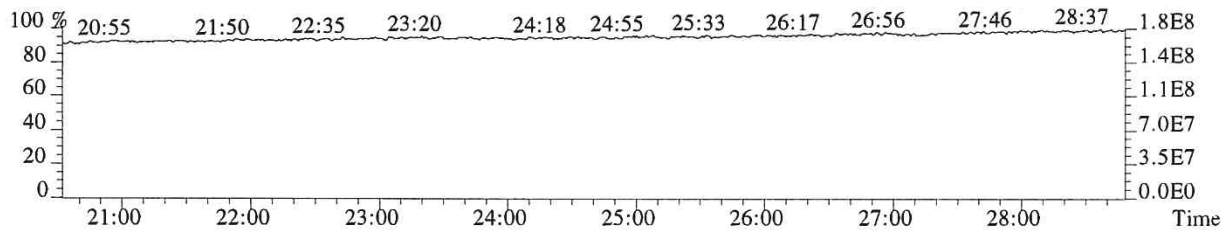
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11496.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



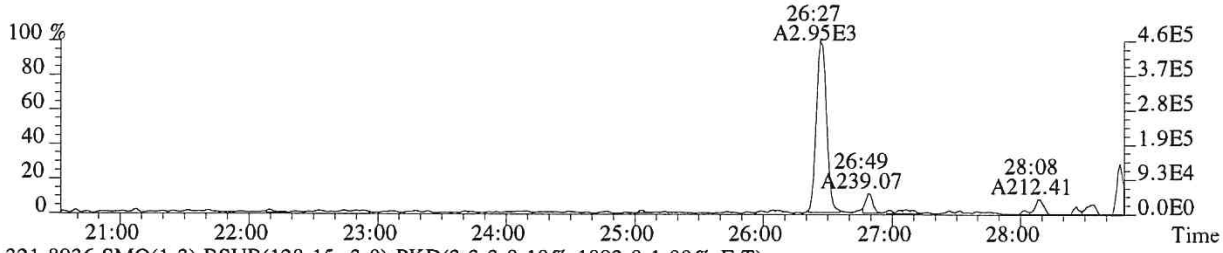
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



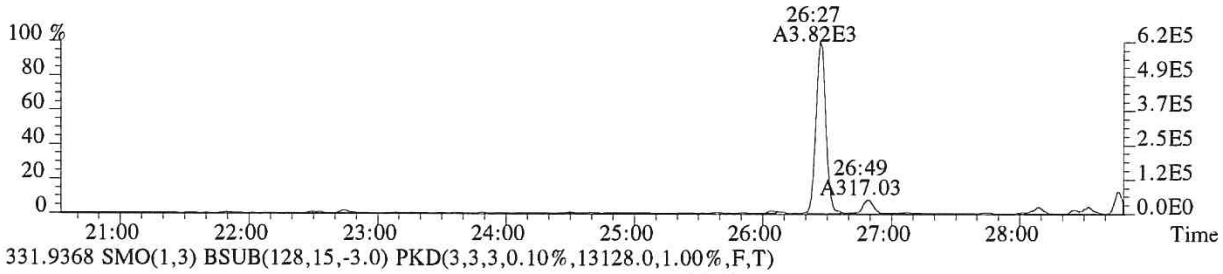
060307

File:P616306 #1-587 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015DL

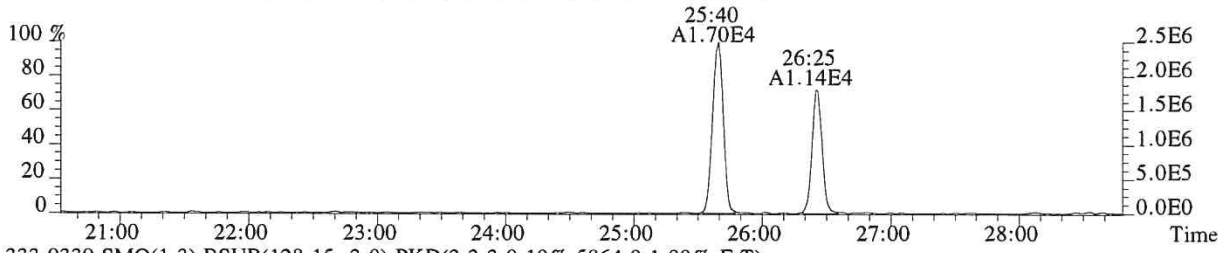
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4696.0,1.00%,F,T)



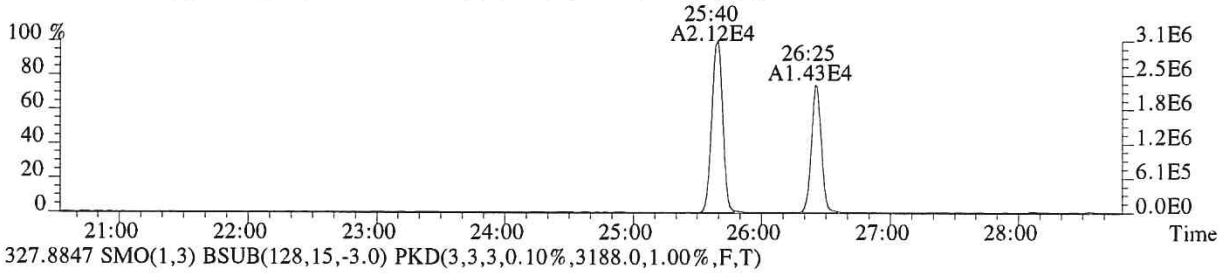
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1892.0,1.00%,F,T)



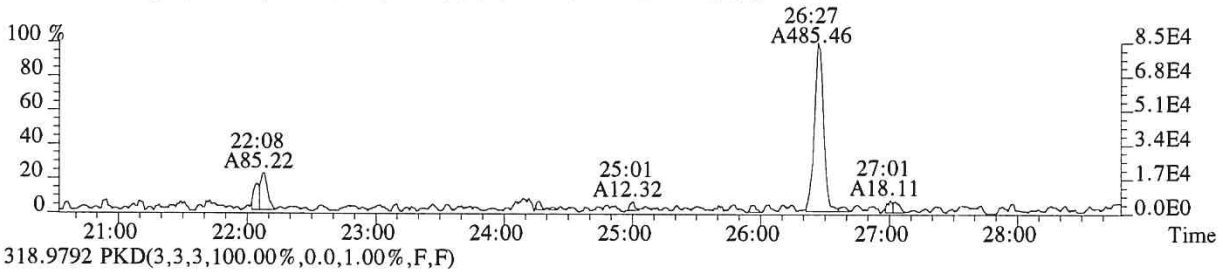
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13128.0,1.00%,F,T)



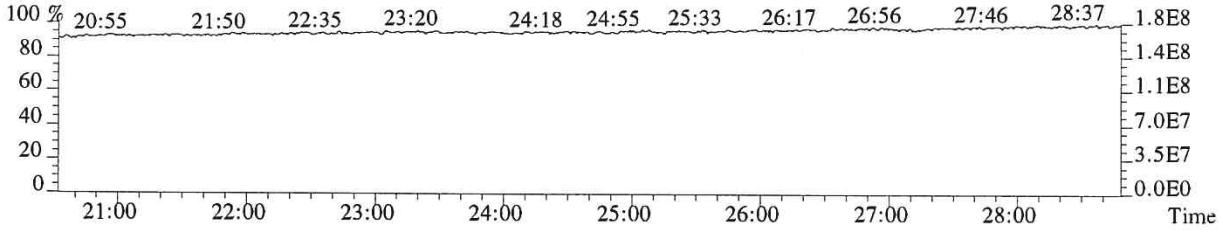
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5864.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3188.0,1.00%,F,T)

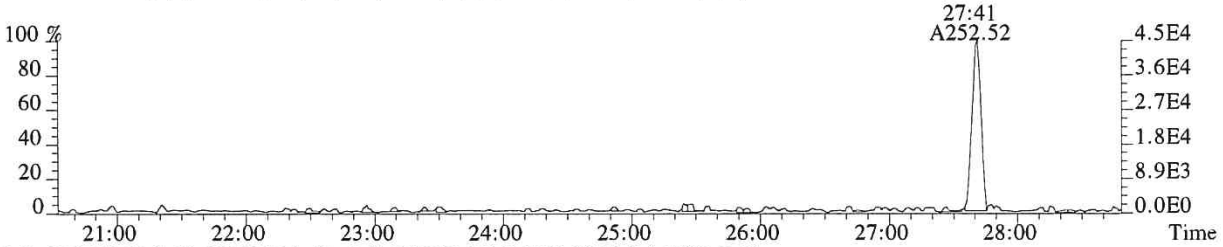


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

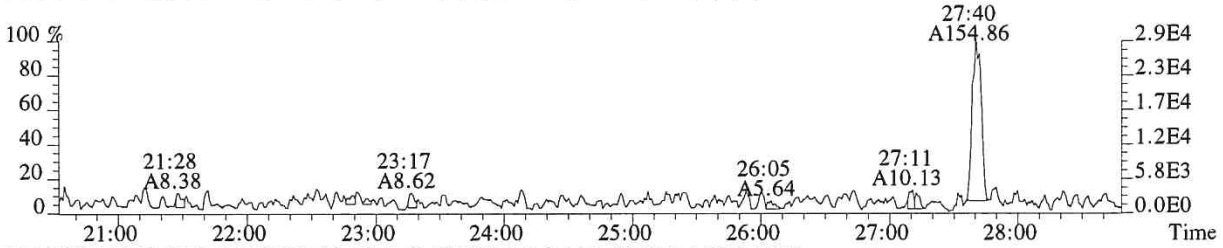


060308

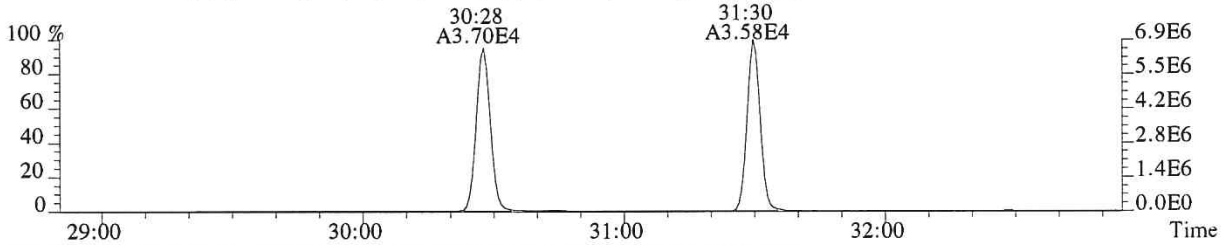
File:P616306 #1-587 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,808.0,1.00%,F,T)



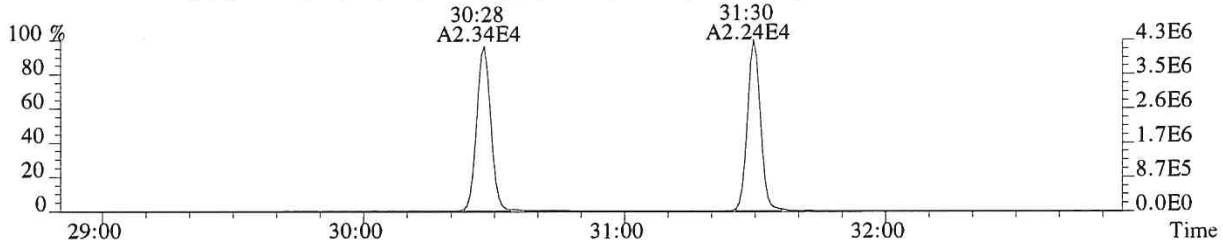
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2208.0,1.00%,F,T)



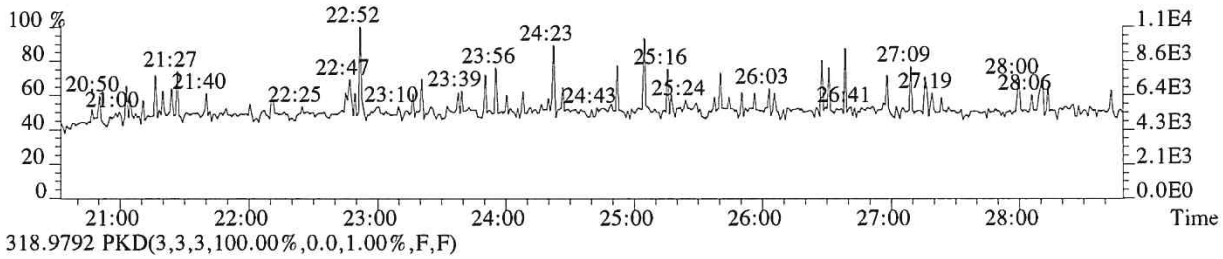
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1012.0,1.00%,F,T)



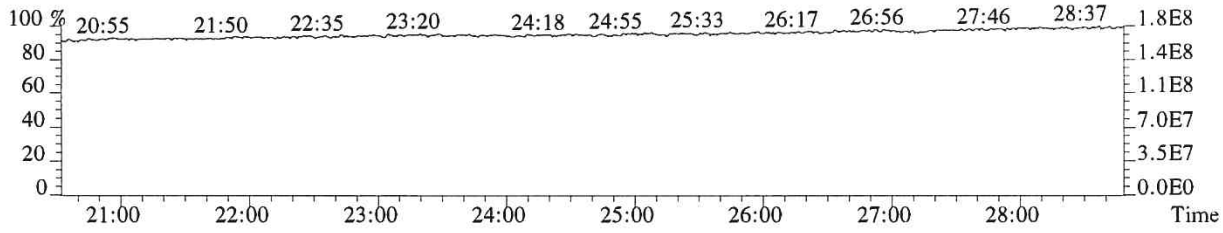
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1192.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

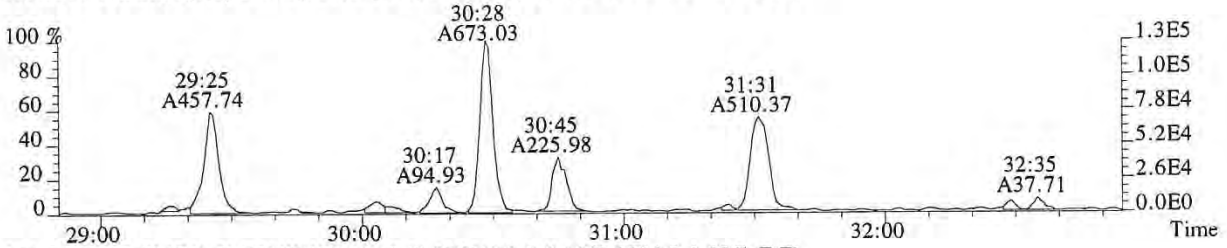


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

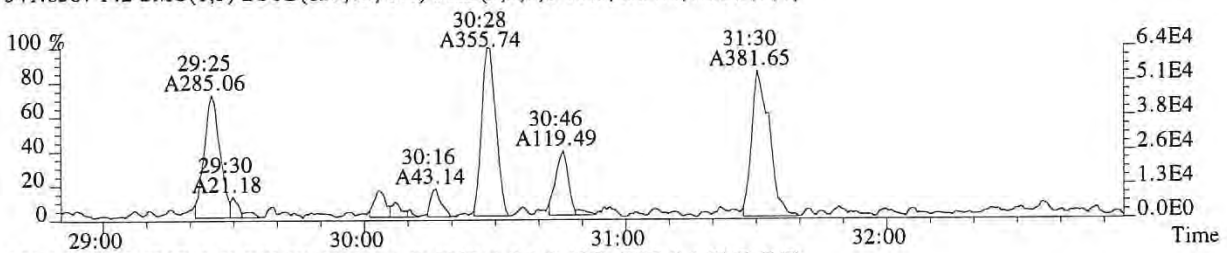


060309

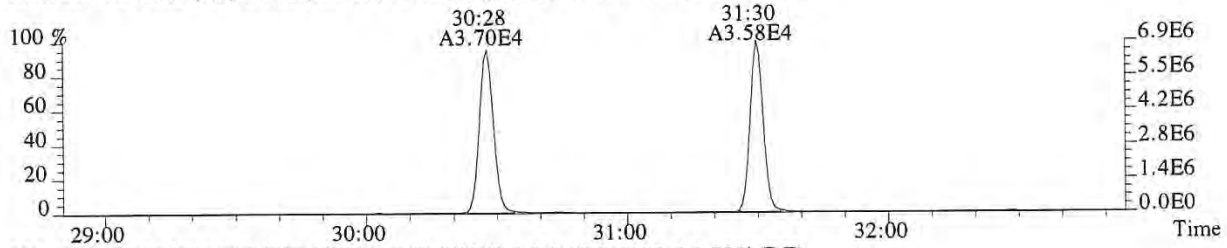
File:P616306 #1-367 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1556.0,1.00%,F,T)



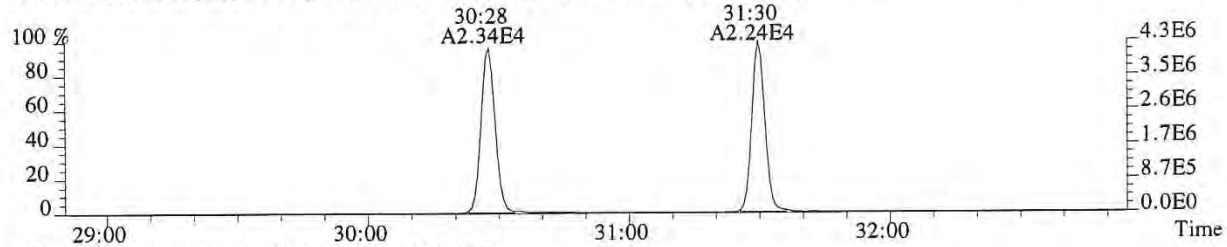
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2824.0,1.00%,F,T)



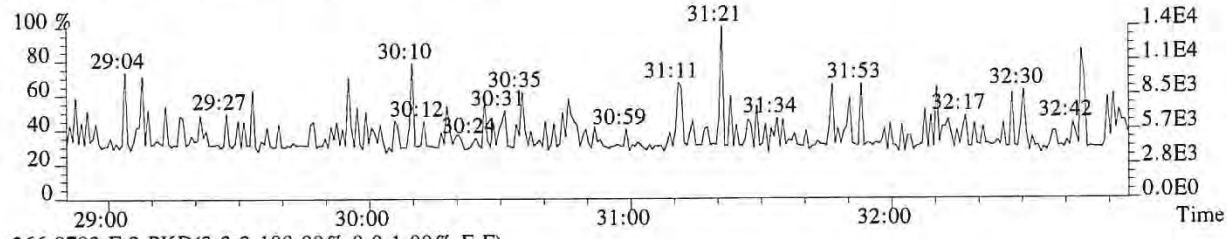
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1012.0,1.00%,F,T)



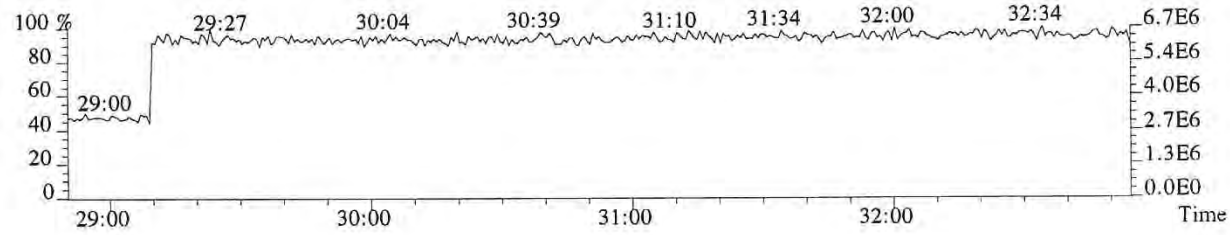
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1192.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

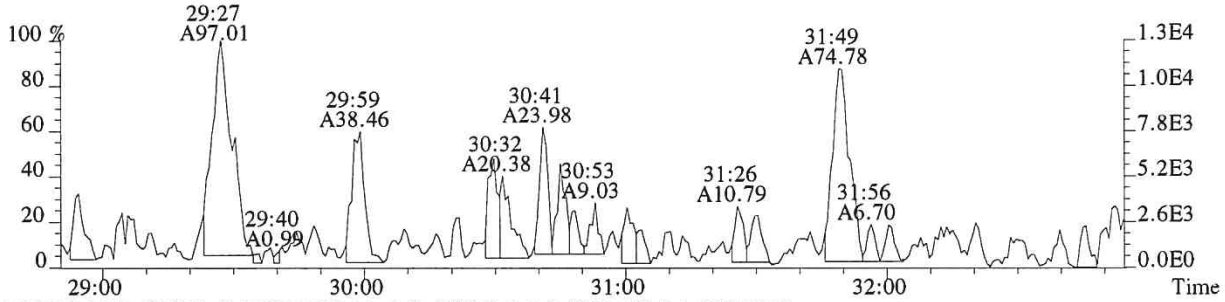


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

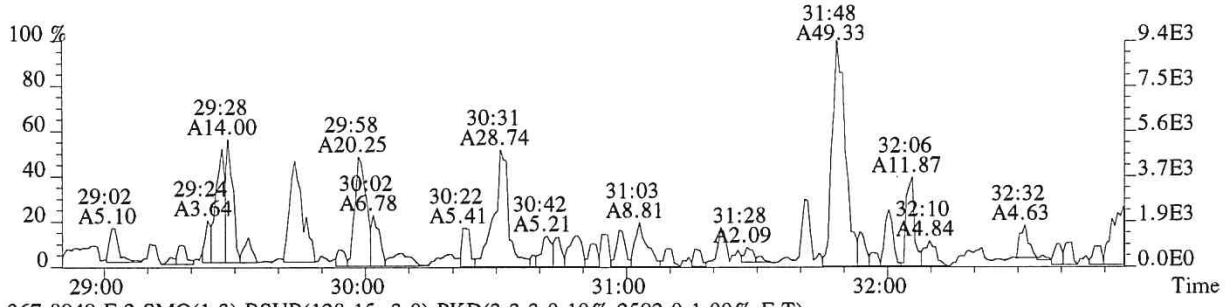


060310

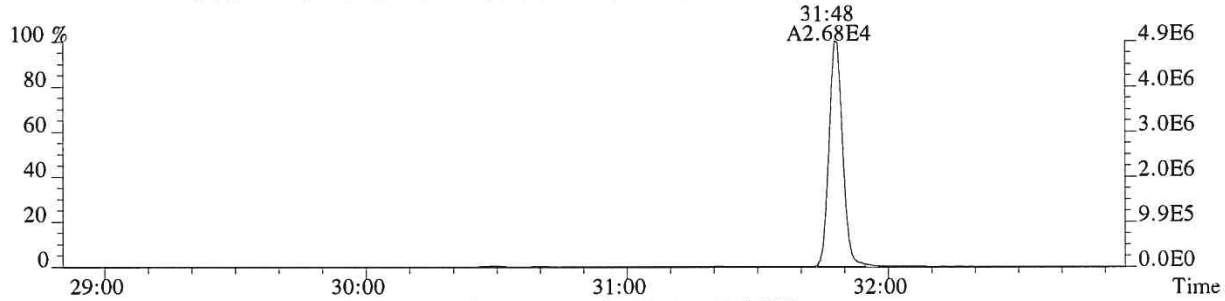
File:P616306 #1-367 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1264.0,1.00%,F,T)



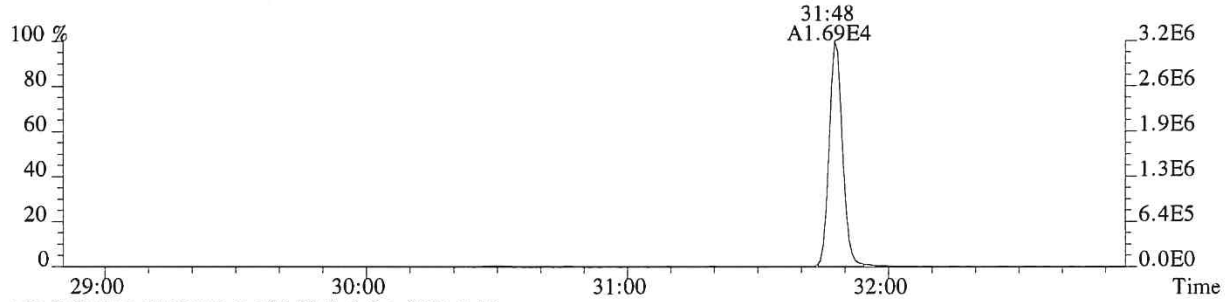
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,408.0,1.00%,F,T)



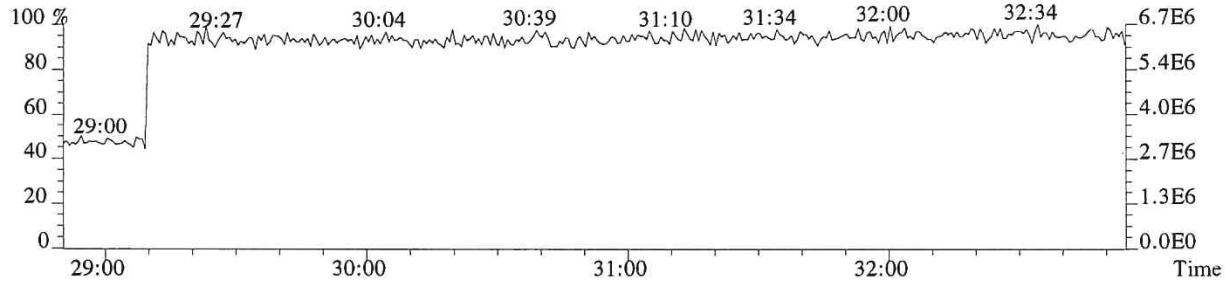
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2592.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2704.0,1.00%,F,T)

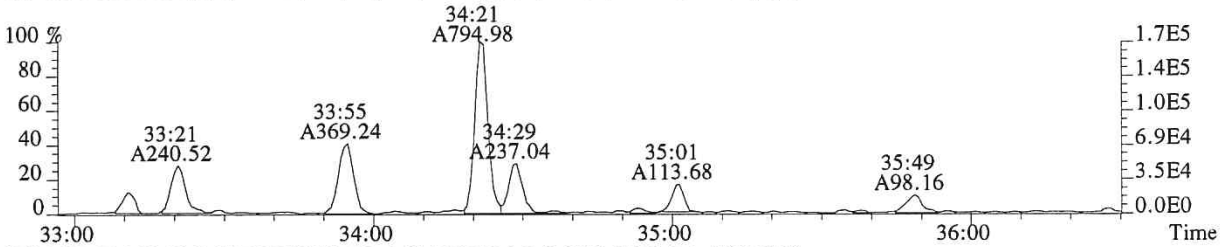


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

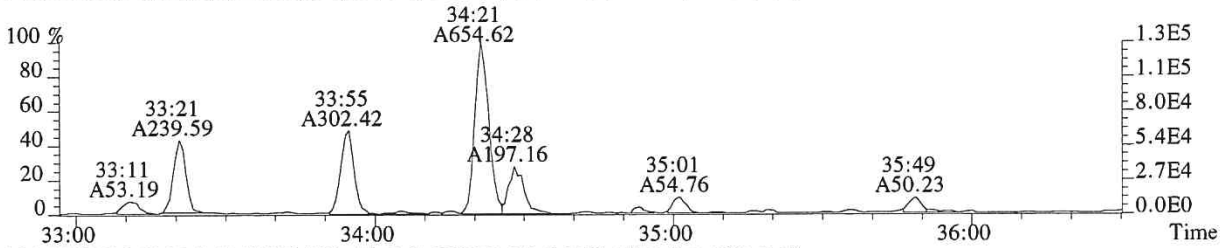


060311

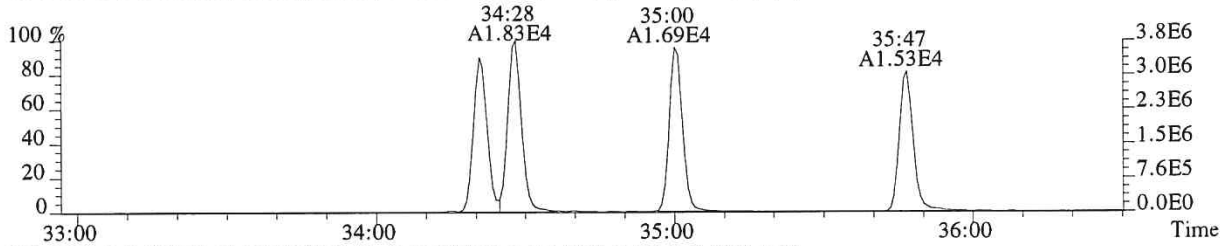
File:P616306 #1-321 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1708.0,0.40%,F,T)



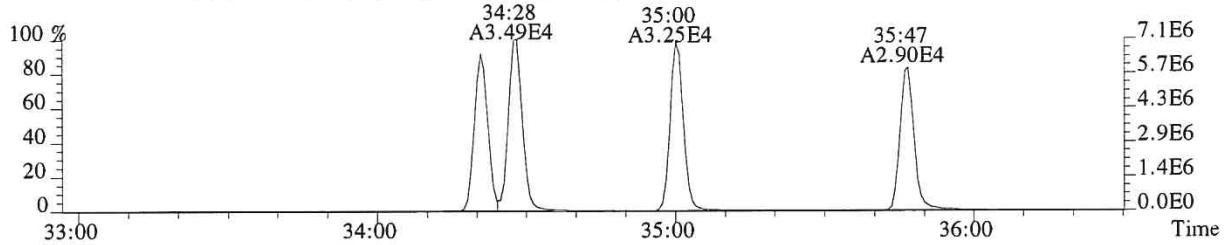
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1476.0,0.40%,F,T)



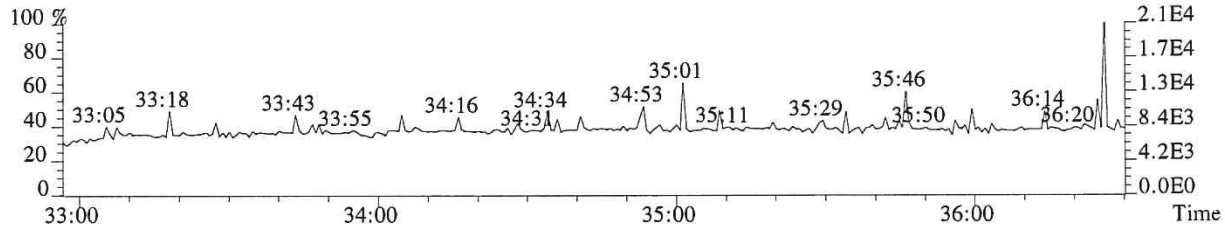
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1776.0,0.40%,F,T)



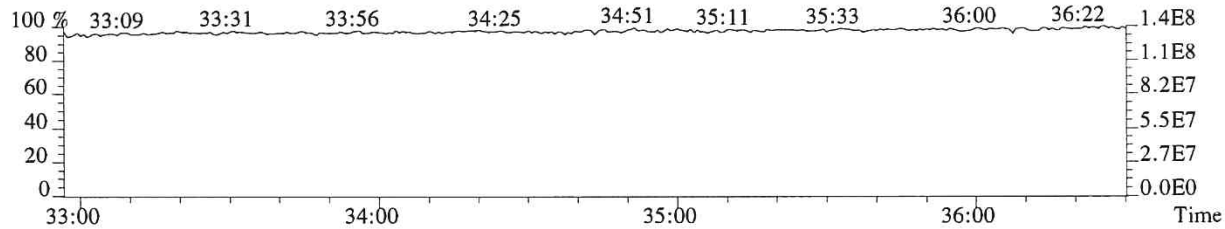
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2164.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

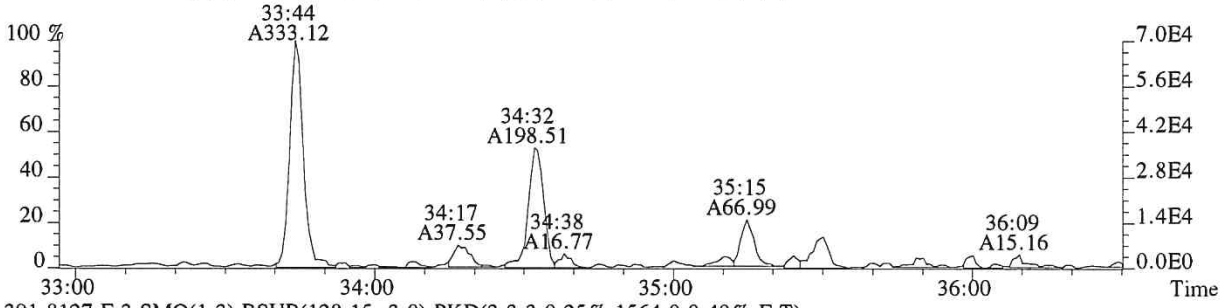


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

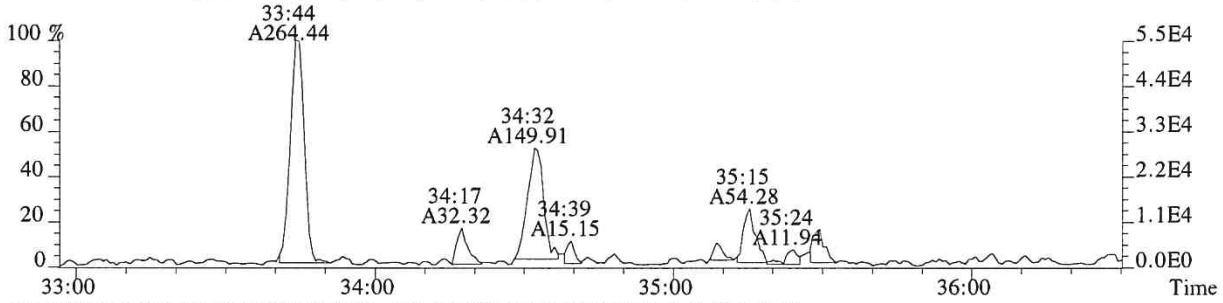


060312

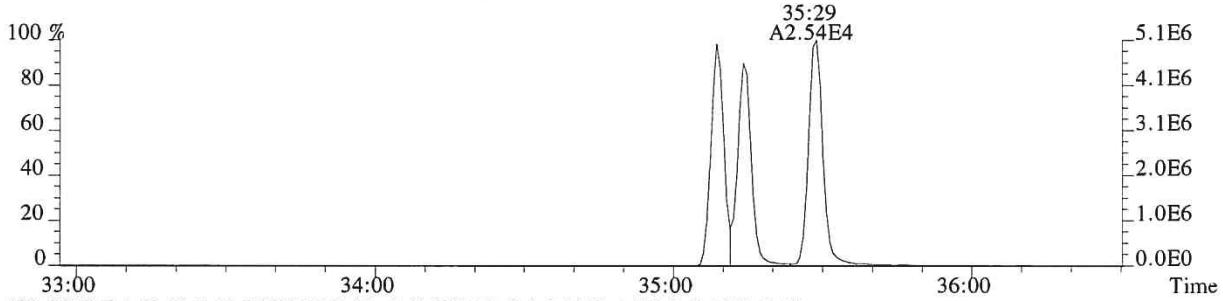
File:P616306 #1-321 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,764.0,0.40%,F,T)



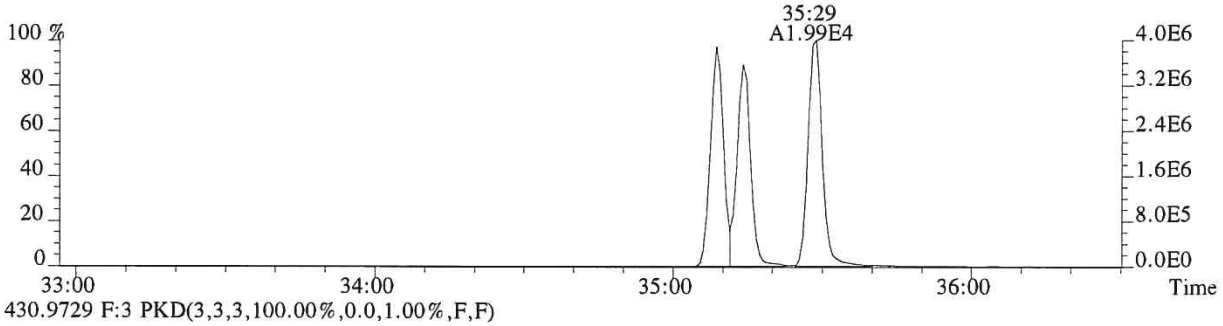
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1564.0,0.40%,F,T)



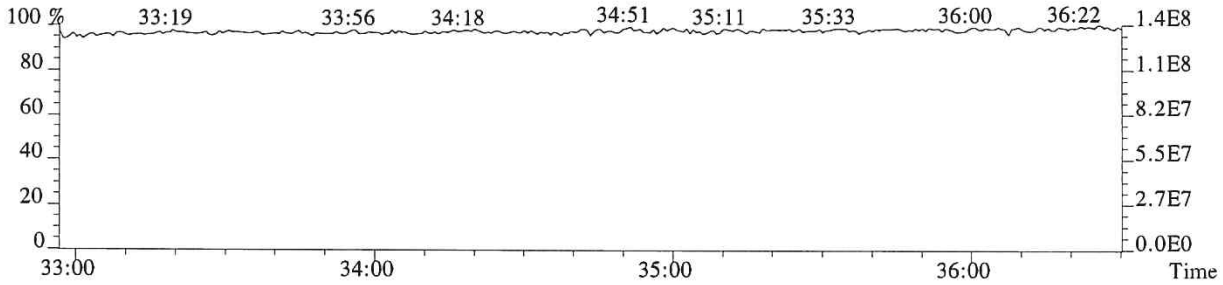
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2444.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1432.0,0.40%,F,T)



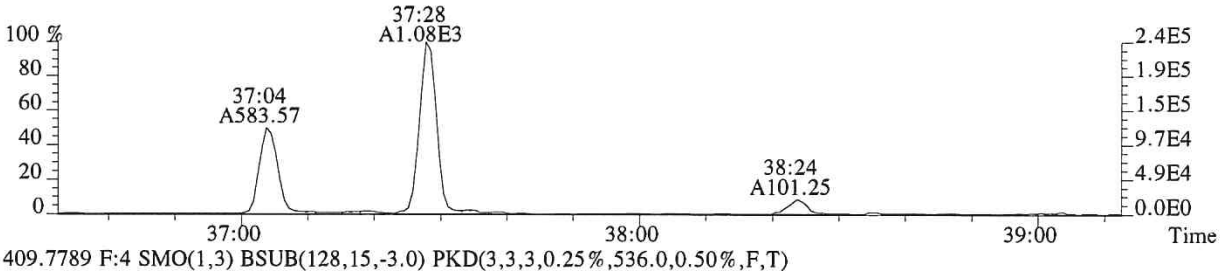
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



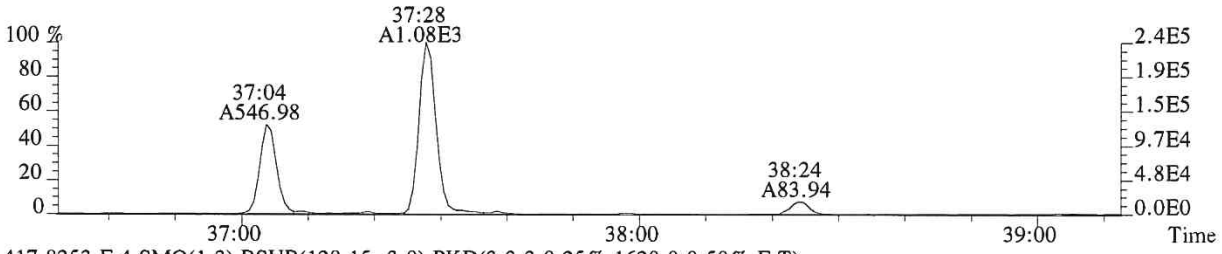
060313

File:P616306 #1-241 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015DL

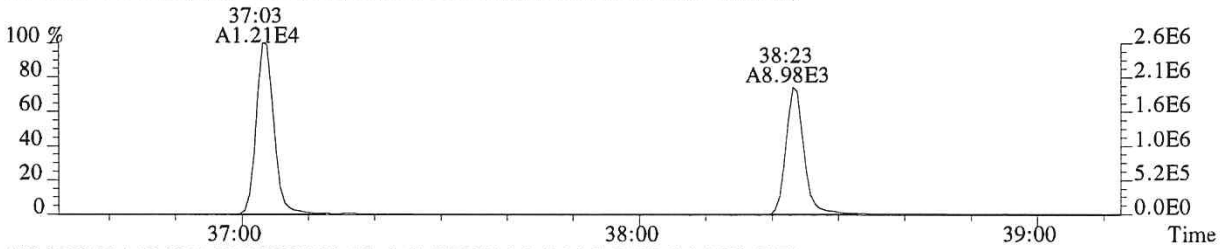
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,628.0,0.50%,F,T)



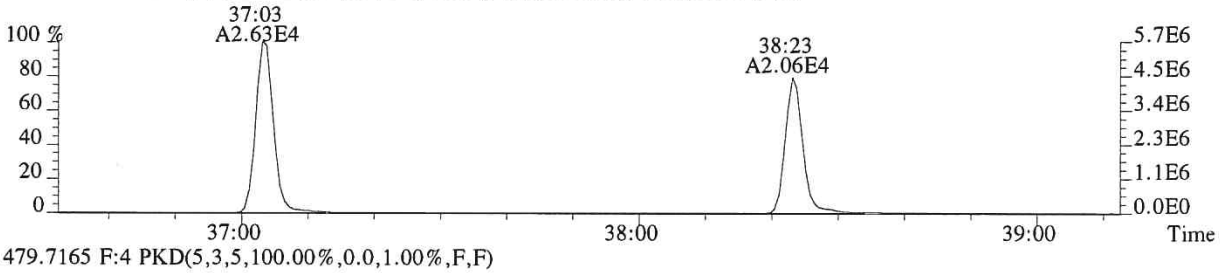
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,536.0,0.50%,F,T)



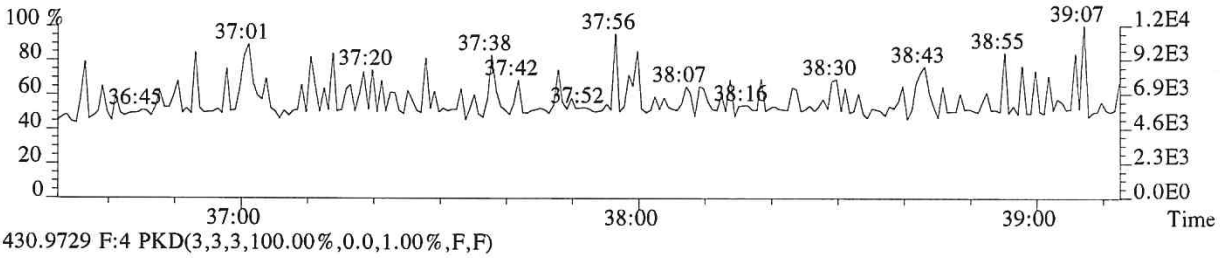
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1620.0,0.50%,F,T)



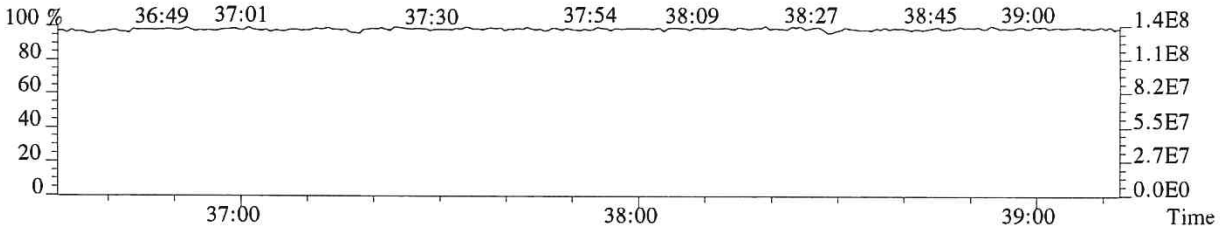
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2768.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

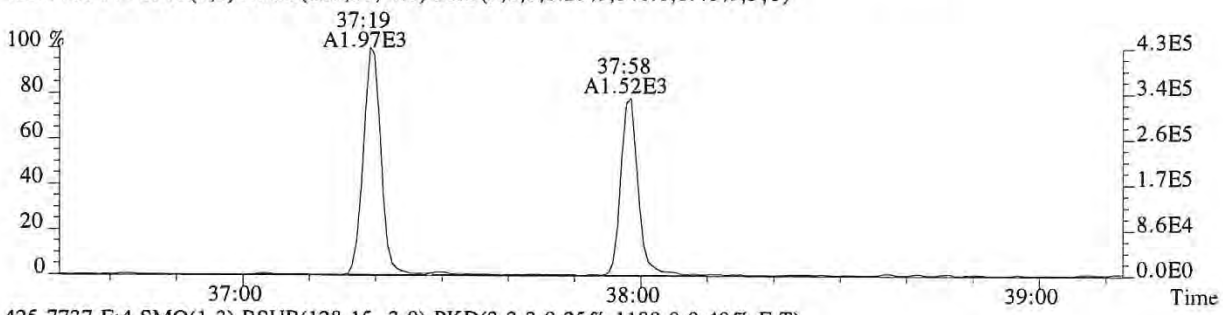


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

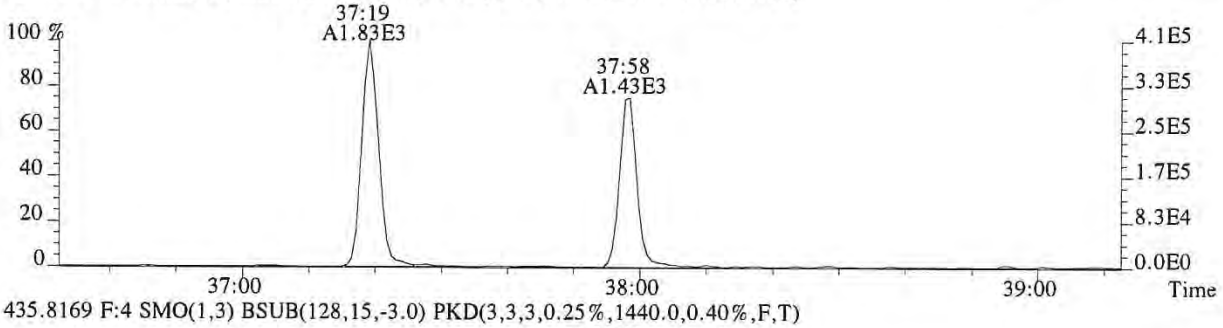


060314

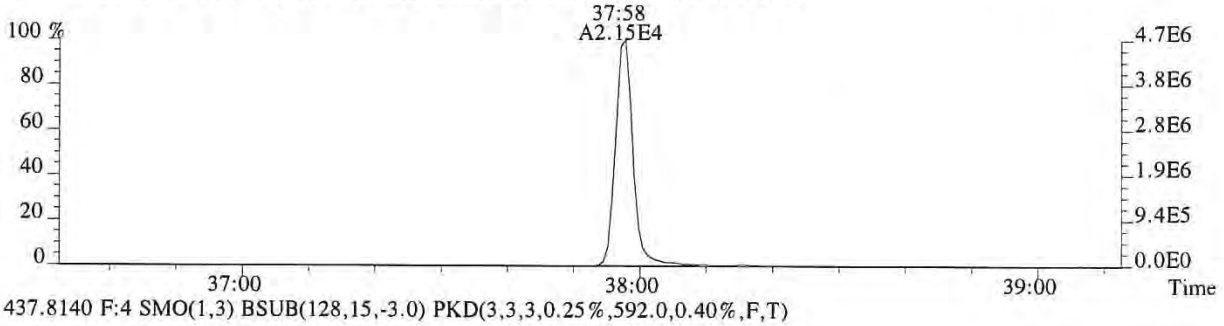
File:P616306 #1-241 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,840.0,0.40%,F,T)



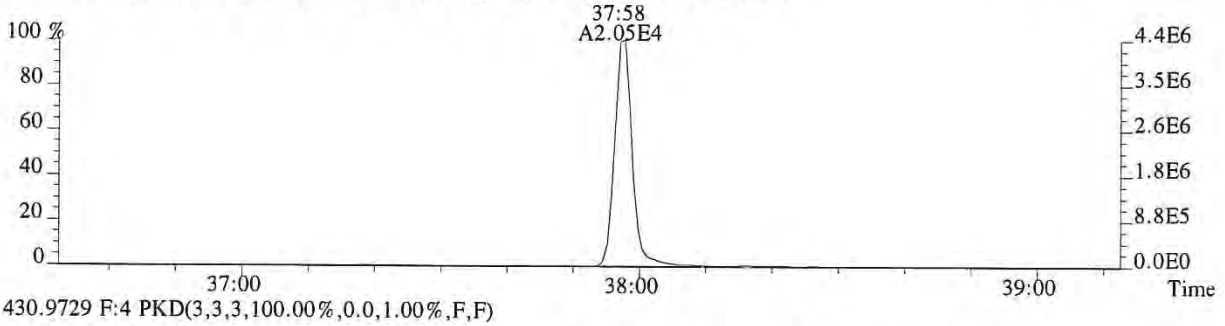
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1188.0,0.40%,F,T)



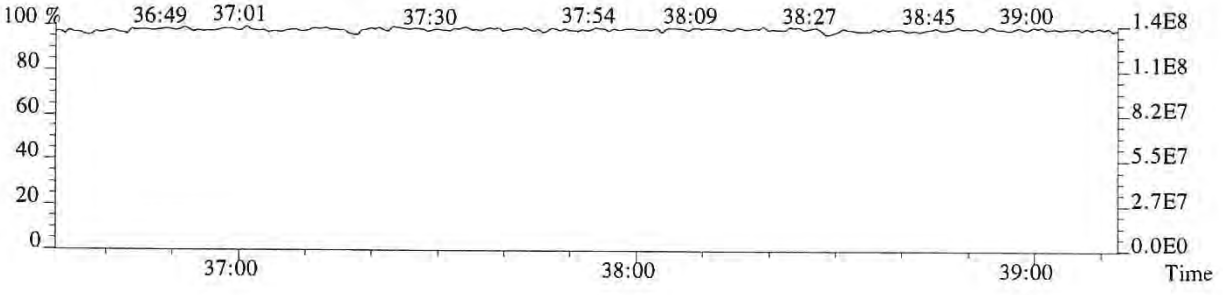
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1440.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,592.0,0.40%,F,T)



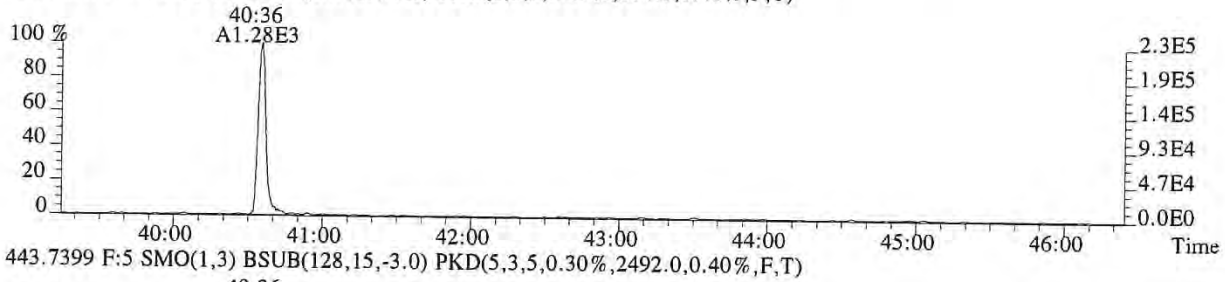
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



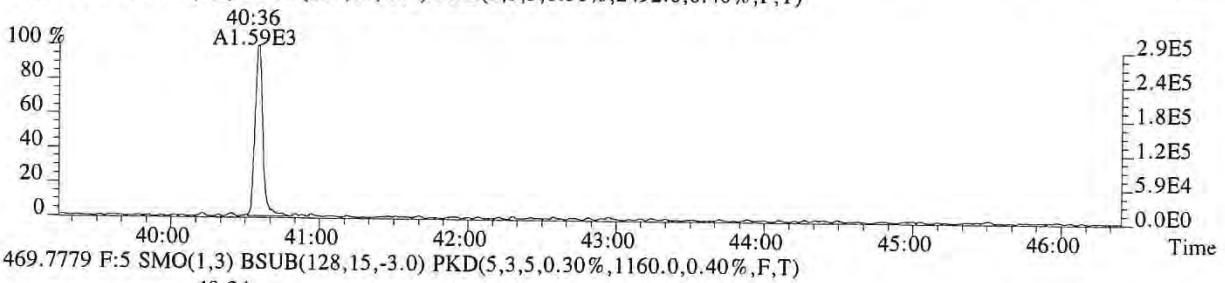
060315

File:P616306 #1-645 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spectŁ
Sample#1 Exp:E1801136-015DL

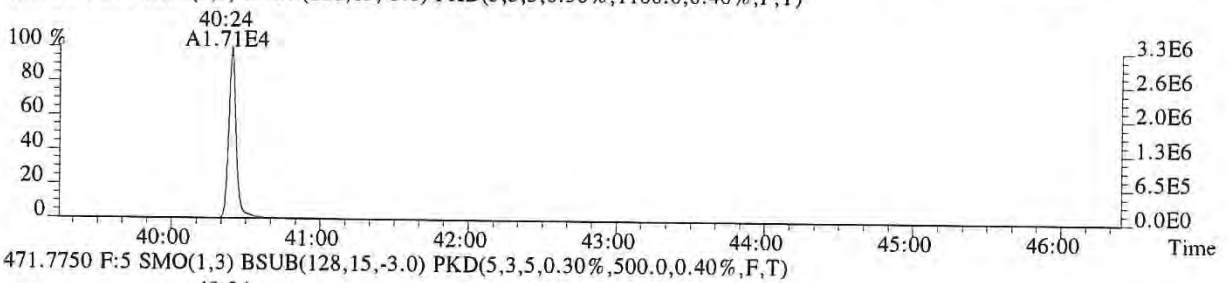
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,684.0,0.40%,F,T)



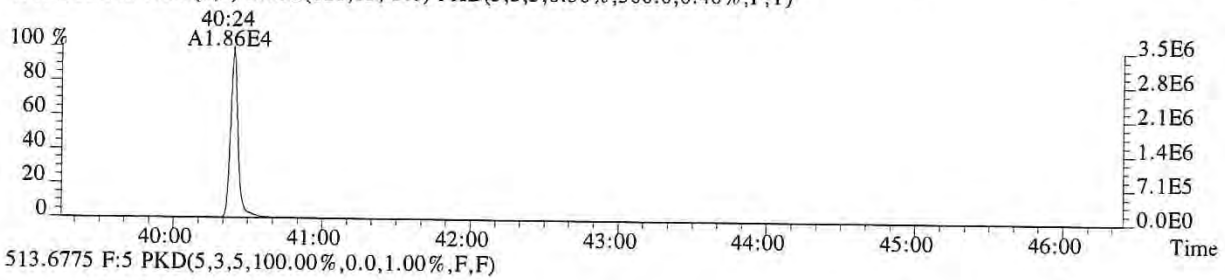
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2492.0,0.40%,F,T)



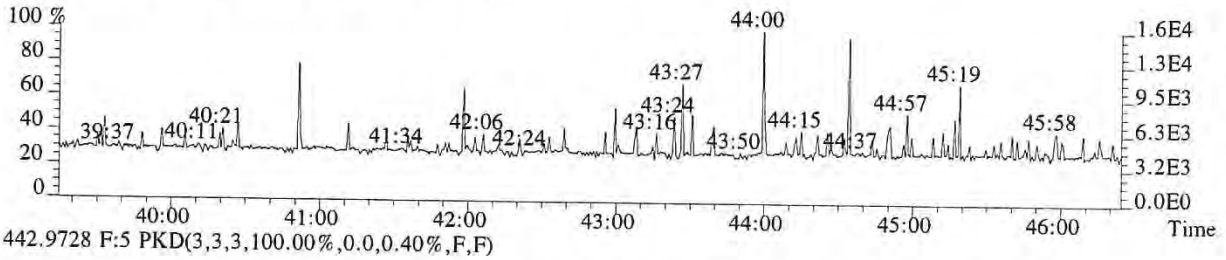
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1160.0,0.40%,F,T)



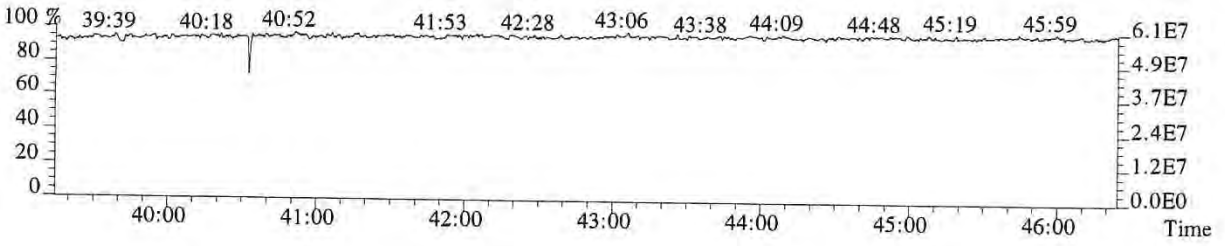
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,500.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

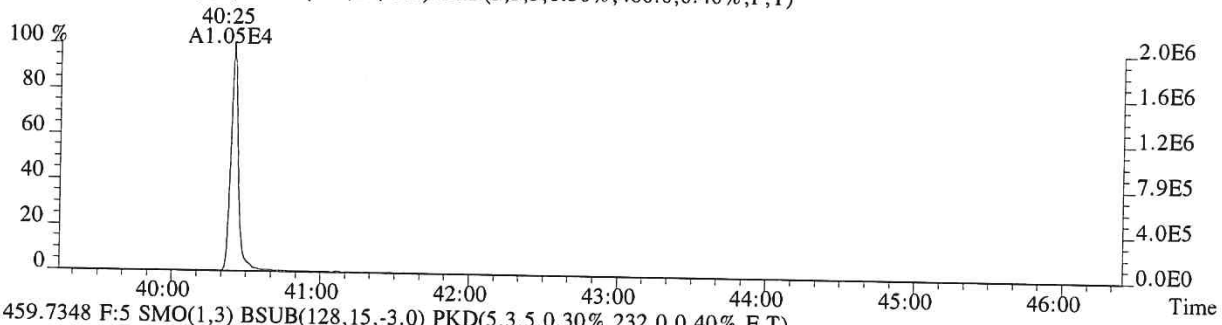


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

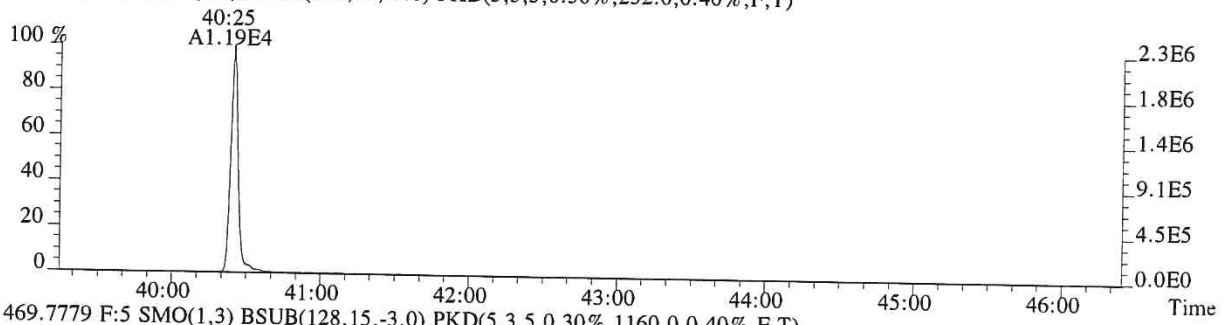


060316

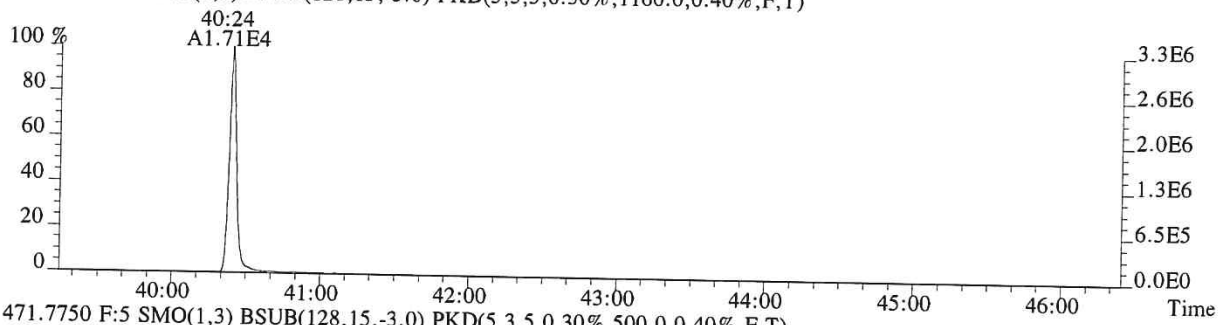
File:P616306 #1-645 Acq:30-DEC-2018 13:56:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-015DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,460.0,0.40%,F,T)



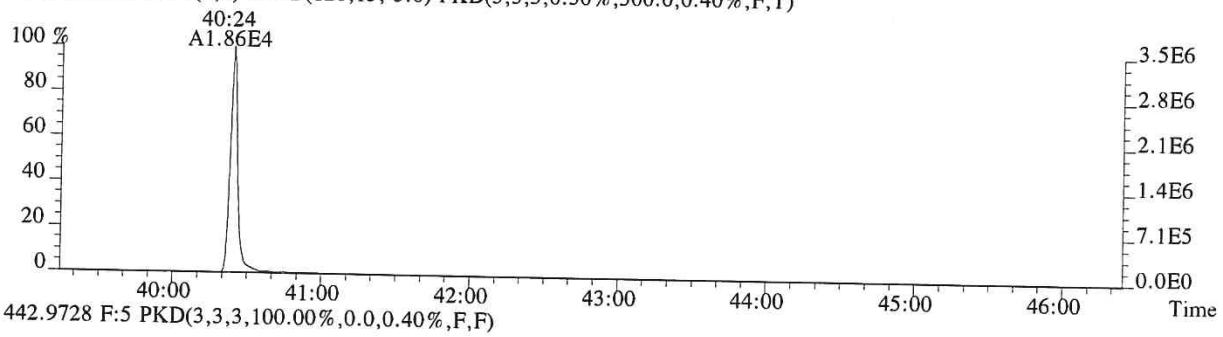
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,232.0,0.40%,F,T)



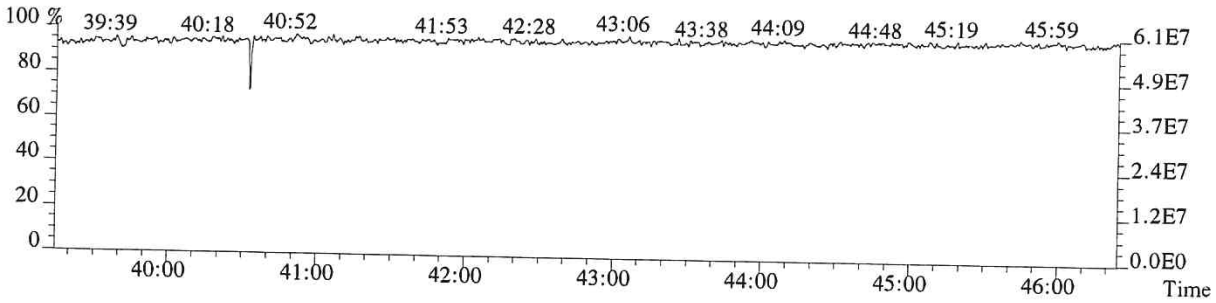
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1160.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,500.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060317

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0127

Run #15 Filename P616286 Samp: 1 Inj: 1 Acquired: 29-DEC-18 20:59:50
Processed: 30-DEC-18 09:19:45 Sample ID: E1801136-016

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:32	4.569e+05	5.854e+05	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:33	1.929e+04	1.270e+04	1.52	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:35	1.690e+04	1.124e+04	1.50	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:25	2.587e+04	2.145e+04	1.21	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:32	6.842e+03	5.558e+03	1.23	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:04	2.193e+03	1.959e+03	1.12	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:51	2.198e+03	1.691e+03	1.30	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:07	2.141e+04	2.079e+04	1.03	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:26	2.458e+03	2.206e+03	1.11	yes	no	1.463
10	Unk	OCDF	40:38	2.829e+05	3.205e+05	0.88	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:33	1.242e+05	1.574e+05	0.79	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:52	2.277e+03	1.504e+03	1.51	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:12	4.530e+02	3.501e+02	1.29	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:18	2.052e+03	1.646e+03	1.25	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:32	1.052e+03	8.538e+02	1.23	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:00	2.419e+04	2.351e+04	1.03	yes	no	1.112
17	Unk	OCDD	40:28	1.659e+05	1.856e+05	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:30	3.570e+04	4.581e+04	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:32	5.354e+04	3.326e+04	1.61	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:34	5.000e+04	3.069e+04	1.63	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:24	1.976e+04	3.689e+04	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:31	2.101e+04	3.913e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:03	1.936e+04	3.695e+04	0.52	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:49	1.715e+04	3.249e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:06	1.021e+04	2.235e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:26	8.089e+03	1.836e+04	0.44	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:32	1.870e+04	2.423e+04	0.77	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:52	3.830e+04	2.486e+04	1.54	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:12	2.733e+04	2.159e+04	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:17	2.440e+04	1.935e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:00	1.915e+04	1.787e+04	1.07	yes	no	0.857
32	IS	13C-OCDD	40:27	1.213e+04	1.312e+04	0.92	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:45	4.389e+04	5.544e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:31	4.589e+04	3.617e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:33	2.957e+04				no	1.086

$$\text{OCDD} = \frac{(1.659e+05 + 1.856e+05) \times 4000\ \text{pg} \times 1}{(1.213e+04 + 1.312e+04) \times 10.8911\ \text{g} \times 55.7/100 \times 1.157} = 7948.147\ \text{ng/kg}$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0127

Run #15 Filename P616286 Samp: 1 Inj: 1 Acquired: 29-DEC-18 20:59:50
Processed: 30-DEC-18 09:19:45 LAB. ID: E1801136-016

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.65e+07	2.92e+03	1.9e+04	7.30e+07	3.06e+03	2.4e+04
2	1,2,3,7,8-PeCDF	3.60e+06	2.43e+04	1.5e+02	2.25e+06	9.18e+03	2.5e+02
3	2,3,4,7,8-PeCDF	2.85e+06	2.43e+04	1.2e+02	1.83e+06	9.18e+03	2.0e+02
4	1,2,3,4,7,8-HxCDF	5.49e+06	1.25e+04	4.4e+02	4.53e+06	7.84e+03	5.8e+02
5	1,2,3,6,7,8-HxCDF	1.43e+06	1.25e+04	1.1e+02	1.15e+06	7.84e+03	1.5e+02
6	2,3,4,6,7,8-HxCDF	4.85e+05	1.25e+04	3.9e+01	4.30e+05	7.84e+03	5.5e+01
7	1,2,3,7,8,9-HxCDF	4.17e+05	1.25e+04	3.3e+01	3.31e+05	7.84e+03	4.2e+01
8	1,2,3,4,6,7,8-HpCDF	4.92e+06	4.85e+03	1.0e+03	4.69e+06	3.30e+03	1.4e+03
9	1,2,3,4,7,8,9-HpCDF	5.75e+05	4.85e+03	1.2e+02	5.06e+05	3.30e+03	1.5e+02
10	OCDF	5.61e+07	1.76e+03	3.2e+04	6.50e+07	2.58e+03	2.5e+04
11	2,3,7,8-TCDD	2.11e+07	3.58e+03	5.9e+03	2.71e+07	3.87e+03	7.0e+03
12	1,2,3,7,8-PeCDD	3.61e+05	2.34e+03	1.5e+02	2.45e+05	1.83e+04	1.3e+01
13	1,2,3,4,7,8-HxCDD	1.03e+05	2.96e+03	3.5e+01	8.38e+04	4.01e+03	2.1e+01
14	1,2,3,6,7,8-HxCDD	4.42e+05	2.96e+03	1.5e+02	3.71e+05	4.01e+03	9.3e+01
15	1,2,3,7,8,9-HxCDD	2.31e+05	2.96e+03	7.8e+01	1.84e+05	4.01e+03	4.6e+01
16	1,2,3,4,6,7,8-HpCDD	5.49e+06	3.46e+03	1.6e+03	5.38e+06	1.47e+04	3.7e+02
17	OCDD	3.36e+07	2.34e+03	1.4e+04	3.71e+07	2.26e+03	1.6e+04
18	13C-2,3,7,8-TCDF	4.71e+06	9.72e+03	4.8e+02	6.03e+06	6.56e+03	9.2e+02
19	13C-1,2,3,7,8-PeCDF	9.84e+06	2.44e+04	4.0e+02	6.15e+06	4.51e+04	1.4e+02
20	13C-2,3,4,7,8-PeCDF	9.62e+06	2.44e+04	3.9e+02	5.93e+06	4.51e+04	1.3e+02
21	13C-1,2,3,4,7,8-HxCDF	4.22e+06	3.08e+03	1.4e+03	7.88e+06	1.20e+04	6.6e+02
22	13C-1,2,3,6,7,8-HxCDF	4.38e+06	3.08e+03	1.4e+03	8.34e+06	1.20e+04	6.9e+02
23	13C-2,3,4,6,7,8-HxCDF	4.30e+06	3.08e+03	1.4e+03	8.21e+06	1.20e+04	6.8e+02
24	13C-1,2,3,7,8,9-HxCDF	3.83e+06	3.08e+03	1.2e+03	7.17e+06	1.20e+04	6.0e+02
25	13C-1,2,3,4,6,7,8-HpCDF	2.37e+06	5.24e+03	4.5e+02	5.29e+06	6.02e+03	8.8e+02
26	13C-1,2,3,4,7,8,9-HpCDF	1.90e+06	5.24e+03	3.6e+02	4.17e+06	6.02e+03	6.9e+02
27	13C-2,3,7,8-TCDD	3.15e+06	1.98e+04	1.6e+02	3.99e+06	6.78e+03	5.9e+02
28	13C-1,2,3,7,8-PeCDD	7.19e+06	3.14e+03	2.3e+03	4.61e+06	3.47e+03	1.3e+03
29	13C-1,2,3,4,7,8-HxCDD	6.14e+06	2.05e+03	3.0e+03	4.82e+06	2.52e+03	1.9e+03
30	13C-1,2,3,6,7,8-HxCDD	5.39e+06	2.05e+03	2.6e+03	4.28e+06	2.52e+03	1.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.31e+06	2.33e+03	1.8e+03	4.06e+06	1.98e+03	2.1e+03
32	13C-OCDD	2.44e+06	3.01e+03	8.1e+02	2.58e+06	1.45e+03	1.8e+03
33	13C-1,2,3,4-TCDD	6.28e+06	1.98e+04	3.2e+02	7.87e+06	6.78e+03	1.2e+03
34	13C-1,2,3,7,8,9-HxCDD	1.02e+07	2.05e+03	5.0e+03	8.01e+06	2.52e+03	3.2e+03
35	37Cl-2,3,7,8-TCDD	4.95e+06	4.31e+03	1.1e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.584e{+}03 + 3.868e{+}03) \times 2000}{(3.147e{+}06 + 3.992e{+}06) \times (\quad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0127

Entry: 36 Totals Name: Total Tetra-Furans

Run: 15 File: P616286 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 20:59:50 Processed: 30-DEC-18 09:19:45

Mass: 303.9020 305.8990 Tot Response: 1.87e+06 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:26	1.15e+03	1.47e+03	0.78	yes	2.62e+03		n	n
2	21:54	2.26e+03	2.98e+03	0.76	yes	5.23e+03		n	n
3	22:20	5.10e+03	6.94e+03	0.74	yes	1.20e+04		n	n
4	22:38	2.15e+04	2.77e+04	0.78	yes	4.93e+04		n	n
5	22:59	8.14e+03	9.84e+03	0.83	yes	1.80e+04		n	n
6	23:16	1.82e+04	2.34e+04	0.78	yes	4.16e+04		n	n
7	23:38	4.83e+03	6.34e+03	0.76	yes	1.12e+04		n	n
8	23:58	3.21e+04	4.16e+04	0.77	yes	7.37e+04		n	n
9	24:29	1.90e+05	2.47e+05	0.77	yes	4.37e+05		n	n
10	24:47	9.40e+03	1.20e+04	0.78	yes	2.14e+04		n	n
11	25:32	4.57e+05	5.85e+05	0.78	yes	1.04e+06	2,3,7,8-TCDF	n	n
12	25:58	3.16e+04	4.27e+04	0.74	yes	7.44e+04		n	n
13	26:16	4.67e+03	6.82e+03	0.68	yes	1.15e+04		n	n
14	27:48	3.11e+04	3.93e+04	0.79	yes	7.04e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0127

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 15 File: P616286 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 20:59:50 Processed: 30-DEC-18 09:19:45

Mass: 319.8970 321.8940 Tot Response: 3.13e+05 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:37	9.95e+02	1.20e+03	0.83	yes	2.20e+03		n	n
2	24:34	4.25e+02	4.91e+02	0.87	yes	9.17e+02		n	n
3	26:13	1.70e+03	2.32e+03	0.73	yes	4.03e+03		n	n
4	26:33	1.24e+05	1.57e+05	0.79	yes	2.82e+05	2,3,7,8-TCDD	n	n
5	26:54	1.08e+04	1.34e+04	0.81	yes	2.42e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0127

Entry: 38 Totals Name: Total Penta-Furans1

Run: 15 File: P616286 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 20:59:50 Processed: 30-DEC-18 09:19:45

Mass: 339.8600 341.8570 Tot Response: 1.79e+04 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:47	1.10e+04	6.85e+03 1.61	yes	1.79e+04		n	n
2	28:23	1.62e+01	9.24e+00 1.75	yes	2.54e+01		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0127

Entry: 39 Totals Name: Total Penta-Furans2

Run: 15 File: P616286 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 20:59:50 Processed: 30-DEC-18 09:19:45

Mass: 339.8600 341.8570 Tot Response: 1.11e+05 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:21	1.15e+03	1.37	yes	1.99e+03		n	n
2	29:31	1.51e+04	1.50	yes	2.51e+04		n	n
3	30:08	3.13e+03	1.68	yes	5.00e+03		n	n
4	30:21	2.70e+03	1.55	yes	4.45e+03		n	n
5	30:33	1.93e+04	1.52	yes	3.20e+04	1,2,3,7,8-PeCDF	n	n
6	30:50	6.89e+03	1.55	yes	1.14e+04		n	n
7	31:28	4.83e+02	1.52	yes	8.01e+02		n	n
8	31:35	1.69e+04	1.50	yes	2.81e+04	2,3,4,7,8-PeCDF	n	n
9	32:32	1.02e+03	1.58	yes	1.66e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0127

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 15 File: P616286 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 20:59:50 Processed: 30-DEC-18 09:19:45

Mass: 355.8550 357.8520 Tot Response: 6.78e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:04	8.32e+02	6.06e+02	1.37	yes	1.44e+03		n	n
2	30:35	9.64e+02	6.00e+02	1.61	yes	1.56e+03		n	n
3	31:52	2.28e+03	1.50e+03	1.51	yes	3.78e+03	1,2,3,7,8-PeCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0127

Entry: 41 Totals Name: Total Hexa-Furans

Run: 15 File: P616286 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 20:59:50 Processed: 30-DEC-18 09:19:45

Mass: 373.8210 375.8180 Tot Response: 1.10e+05 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:15	2.81e+03	2.16e+03	1.30	yes	4.98e+03		n	n
2	33:25	9.75e+03	7.95e+03	1.23	yes	1.77e+04		n	n
3	33:47	5.05e+02	4.31e+02	1.17	yes	9.36e+02		n	n
4	33:58	9.82e+03	7.90e+03	1.24	yes	1.77e+04		n	n
5	34:25	2.59e+04	2.14e+04	1.21	yes	4.73e+04	1,2,3,4,7,8-HxCDF	n	n
6	34:32	6.84e+03	5.56e+03	1.23	yes	1.24e+04	1,2,3,6,7,8-HxCDF	n	n
7	34:47	5.74e+02	5.09e+02	1.13	yes	1.08e+03		n	n
8	35:04	2.19e+03	1.96e+03	1.12	yes	4.15e+03	2,3,4,6,7,8-HxCDF	n	n
9	35:51	2.20e+03	1.69e+03	1.30	yes	3.89e+03	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0127

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 15 File: P616286 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 20:59:50 Processed: 30-DEC-18 09:19:45

Mass: 389.8160 391.8130 Tot Response: 4.02e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:48	9.82e+03	7.86e+03	1.25	yes	1.77e+04		n	n
2	34:21	1.29e+03	9.61e+02	1.34	yes	2.25e+03		n	n
3	34:36	6.88e+03	5.81e+03	1.18	yes	1.27e+04		n	n
4	34:42	3.65e+02	3.06e+02	1.19	yes	6.70e+02		n	n
5	35:12	4.53e+02	3.50e+02	1.29	yes	8.03e+02	1,2,3,4,7,8-HxCDD	n	n
6	35:18	2.05e+03	1.65e+03	1.25	yes	3.70e+03	1,2,3,6,7,8-HxCDD	n	n
7	35:27	2.86e+02	2.55e+02	1.12	yes	5.41e+02		n	n
8	35:32	1.05e+03	8.54e+02	1.23	yes	1.91e+03	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0127

Entry: 43 Totals Name: Total Hepta-Furans

Run: 15 File: P616286 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 20:59:50 Processed: 30-DEC-18 09:19:45

Mass: 407.7820 409.7790 Tot Response: 8.69e+04 RRF: 1.495

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:07	2.14e+04	2.08e+04 1.03	yes	4.22e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	37:22	1.17e+03	1.30e+03 0.90	yes	2.46e+03		n	n
3	37:31	1.88e+04	1.87e+04 1.01	yes	3.75e+04		n	n
4	38:26	2.46e+03	2.21e+03 1.11	yes	4.66e+03	1,2,3,4,7,8,9-HpCDF	n	n

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Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0127

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 15 File: P616286 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 20:59:50 Processed: 30-DEC-18 09:19:45

Mass: 423.7770 425.7740 Tot Response: 1.17e+05 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:22	3.57e+04	3.38e+04 1.06	yes	6.95e+04		n	n
2	38:00	2.42e+04	2.35e+04 1.03	yes	4.77e+04	1,2,3,4,6,7,8-HpCDD	n	n

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
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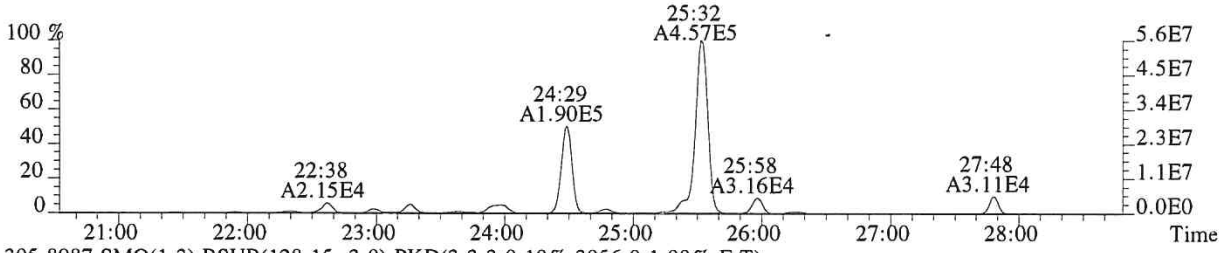
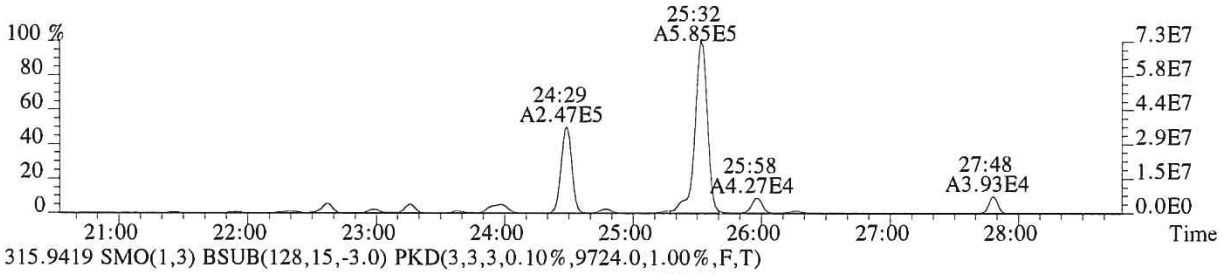
File:P616286 #1-587 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016

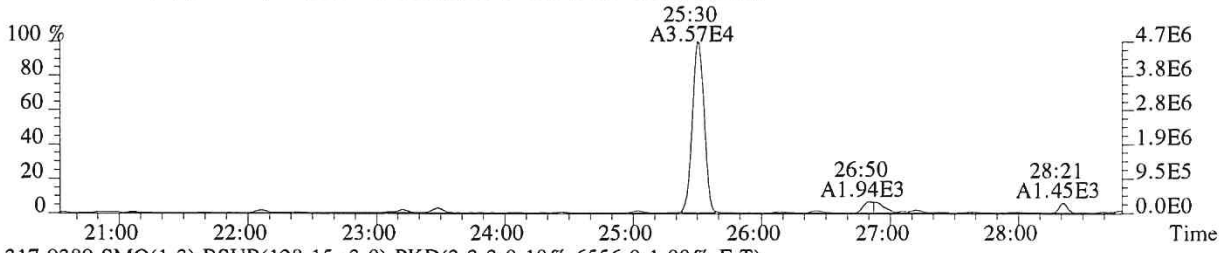
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2920.0,1.00%,F,T)



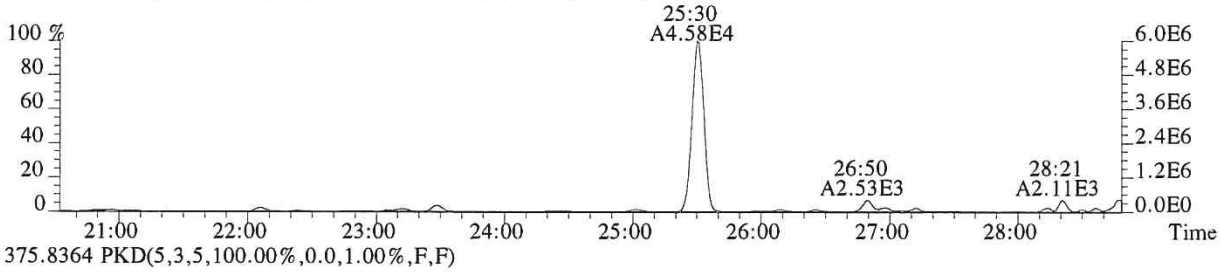
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3056.0,1.00%,F,T)



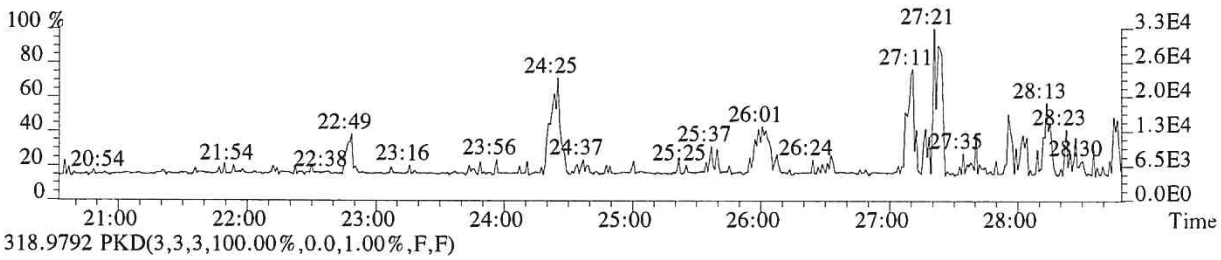
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9724.0,1.00%,F,T)



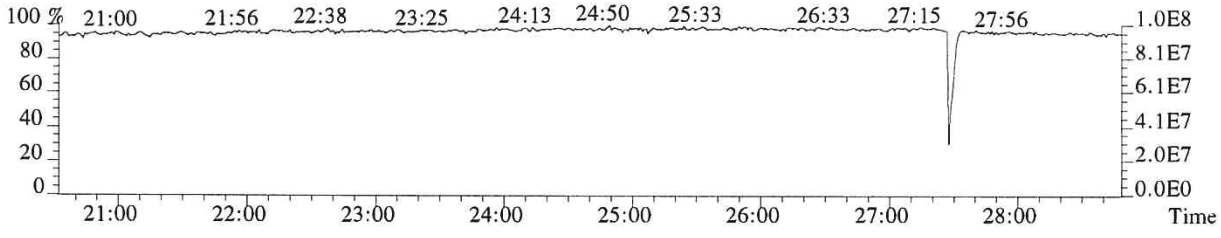
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6556.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



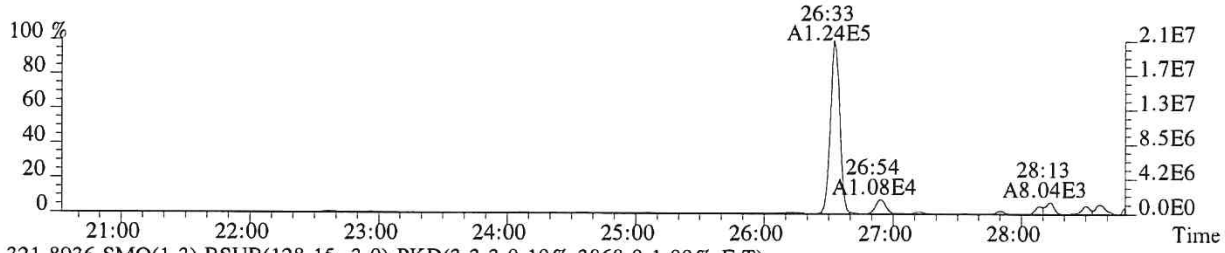
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



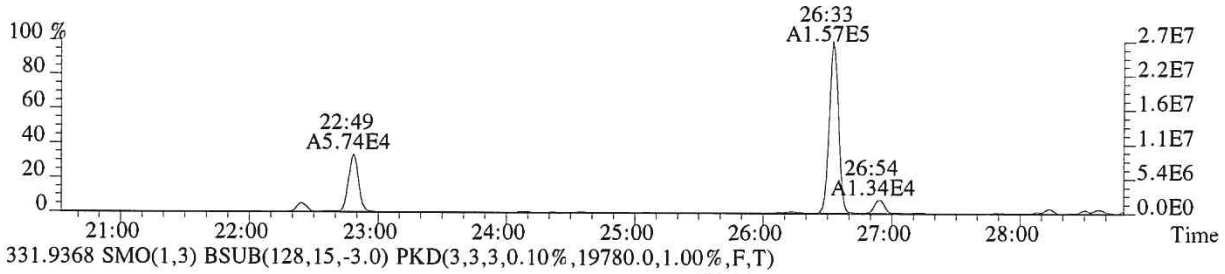
060329

File:P616286 #1-587 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016

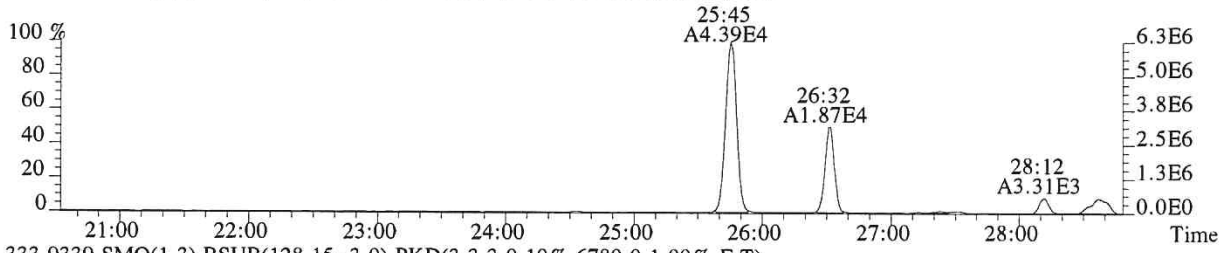
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3584.0,1.00%,F,T)



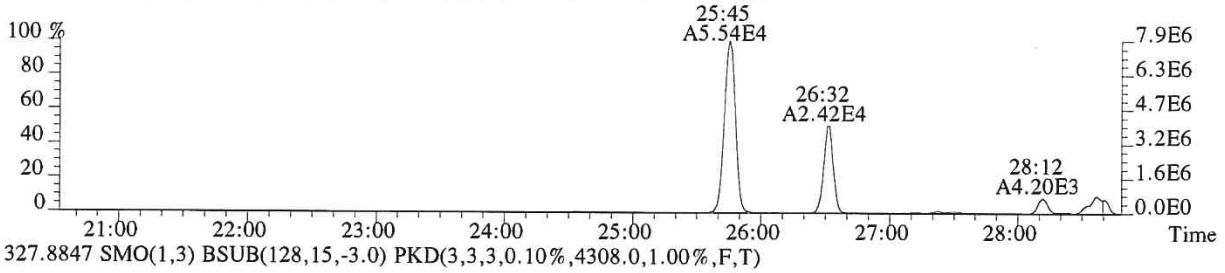
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3868.0,1.00%,F,T)



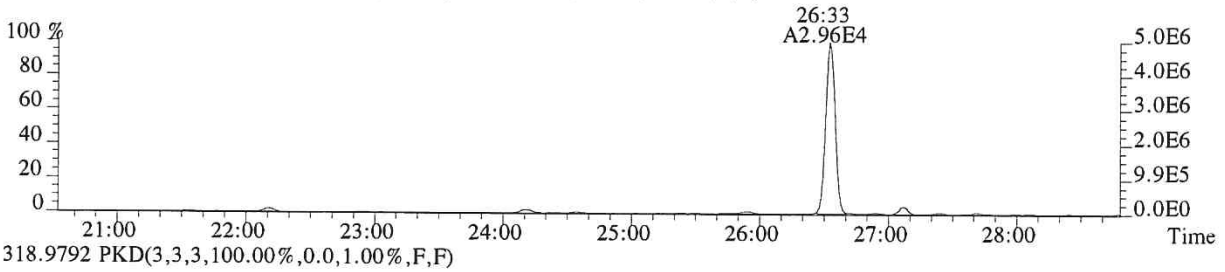
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,19780.0,1.00%,F,T)



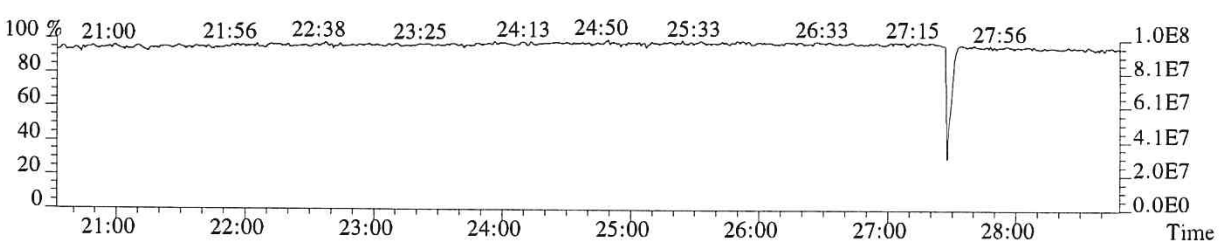
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6780.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4308.0,1.00%,F,T)

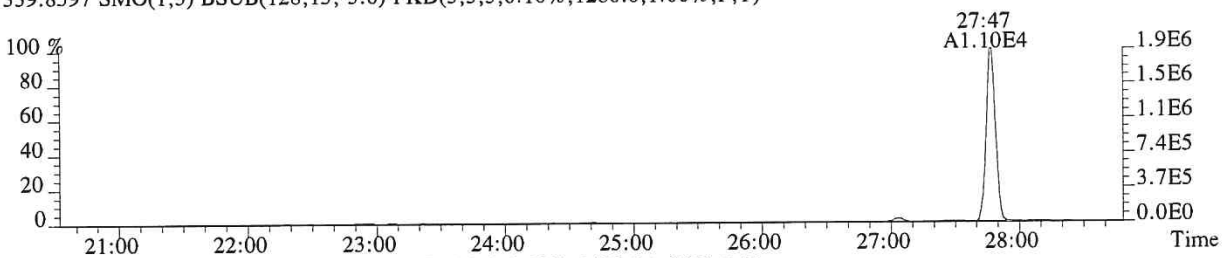


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

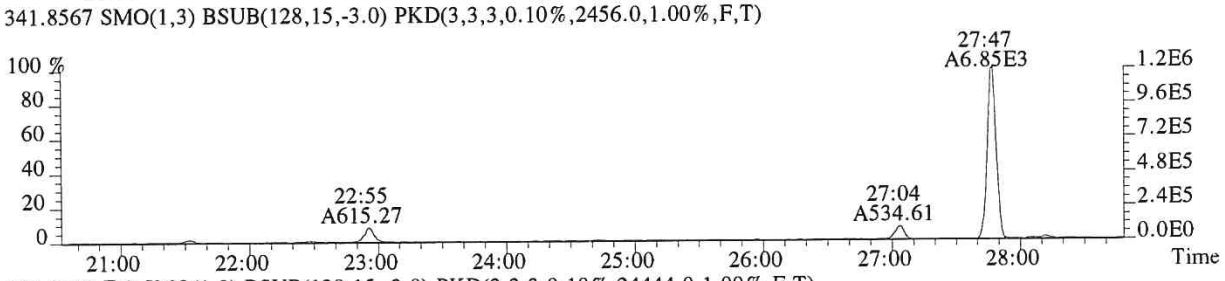


060330

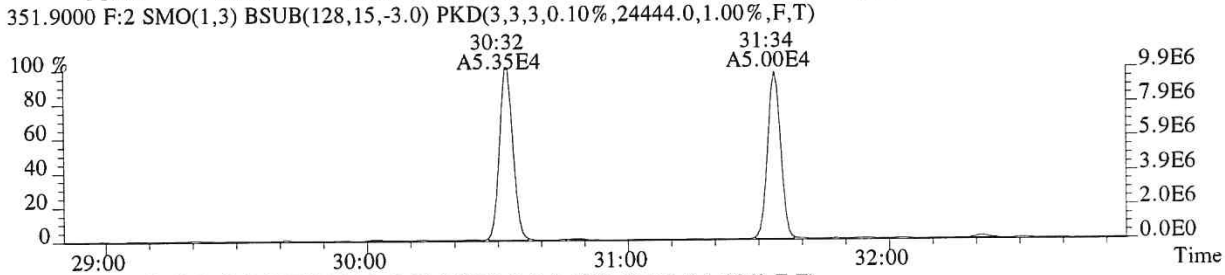
File:P616286 #1-587 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1280.0,1.00%,F,T)



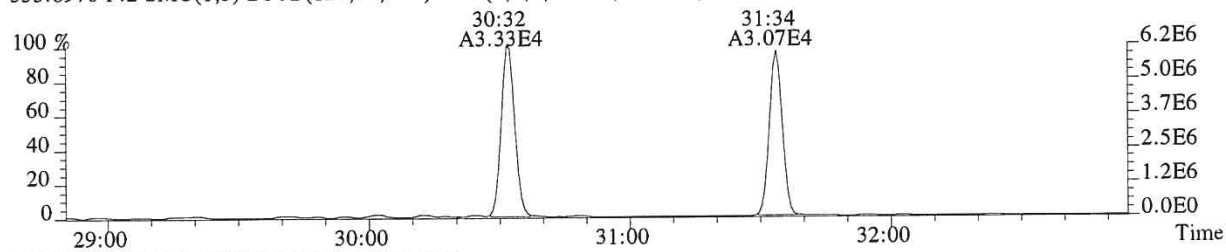
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2456.0,1.00%,F,T)



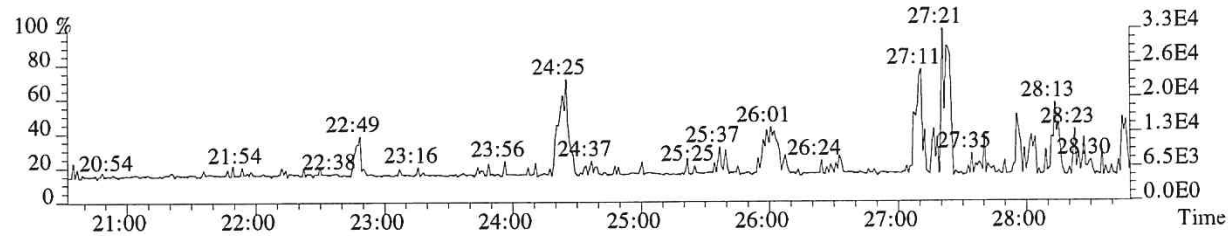
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,24444.0,1.00%,F,T)



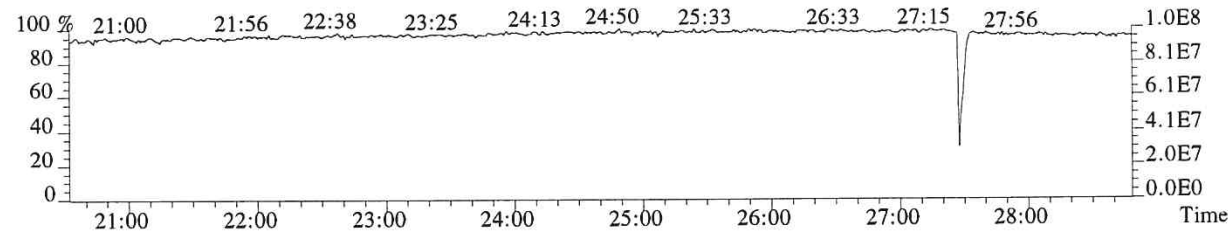
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,45148.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

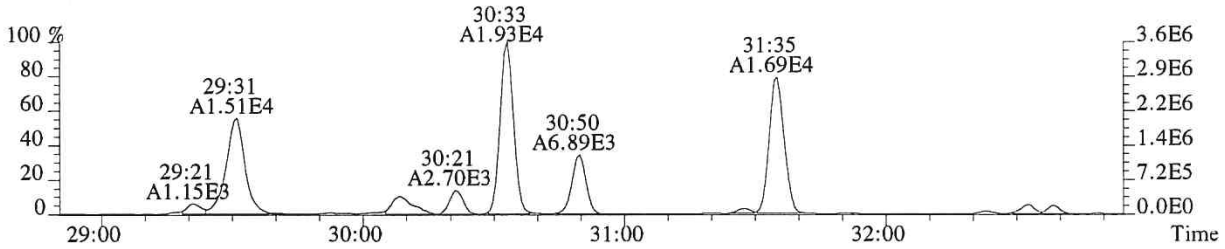


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

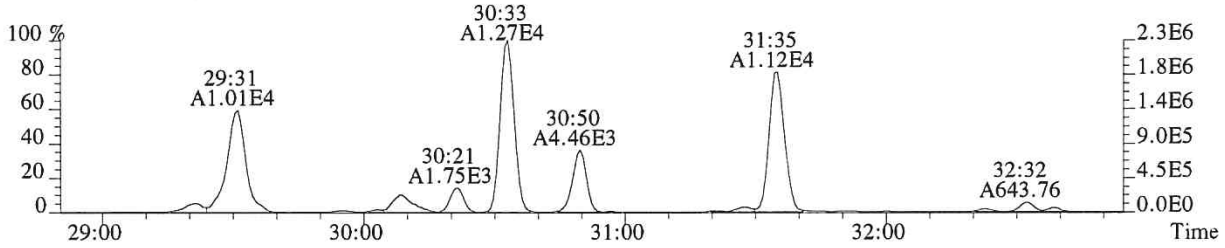


060331

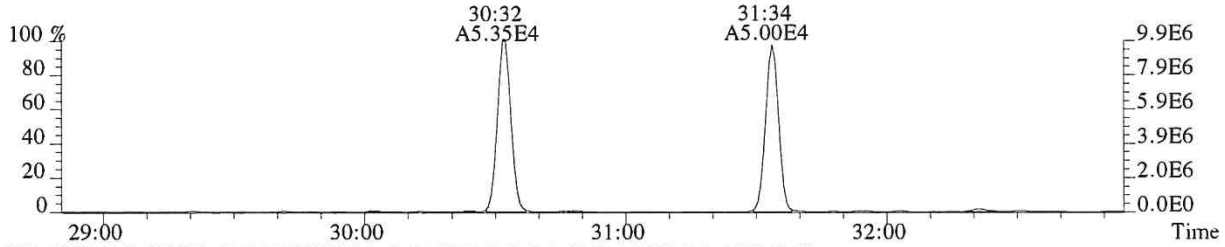
File:P616286 #1-367 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,24344.0,1.00%,F,T)



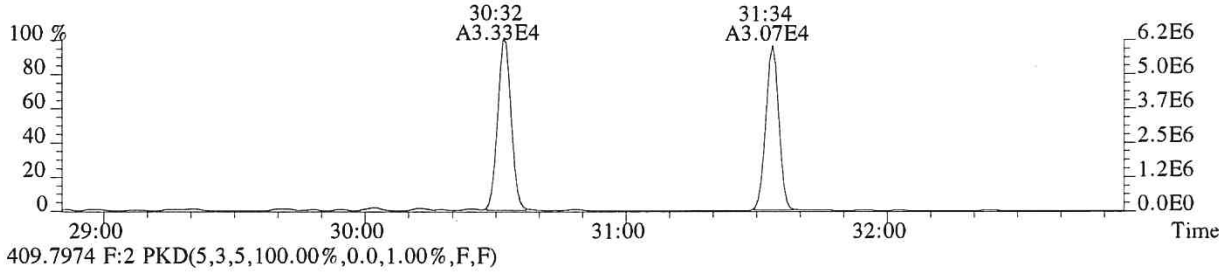
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9180.0,1.00%,F,T)



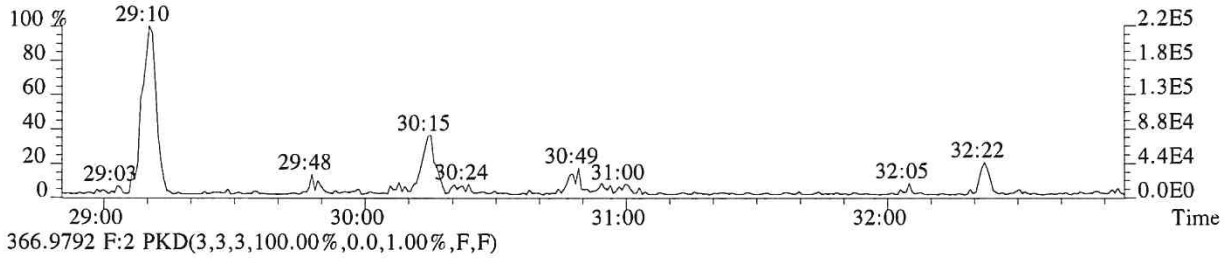
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,24444.0,1.00%,F,T)



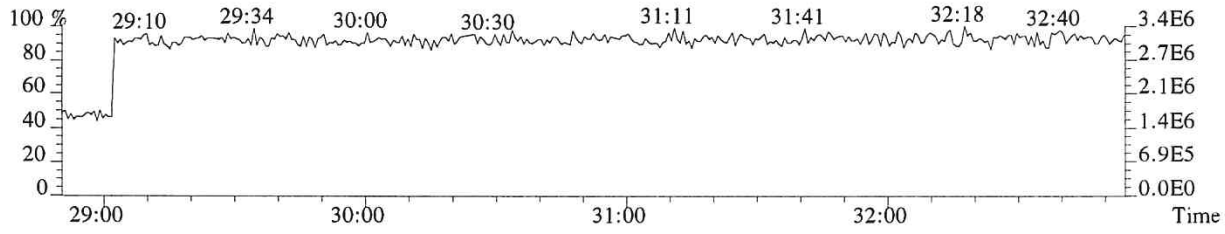
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,45148.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



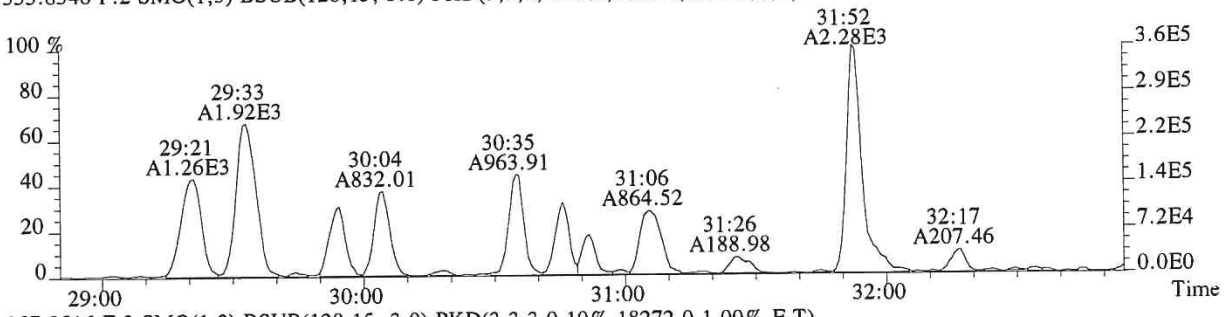
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



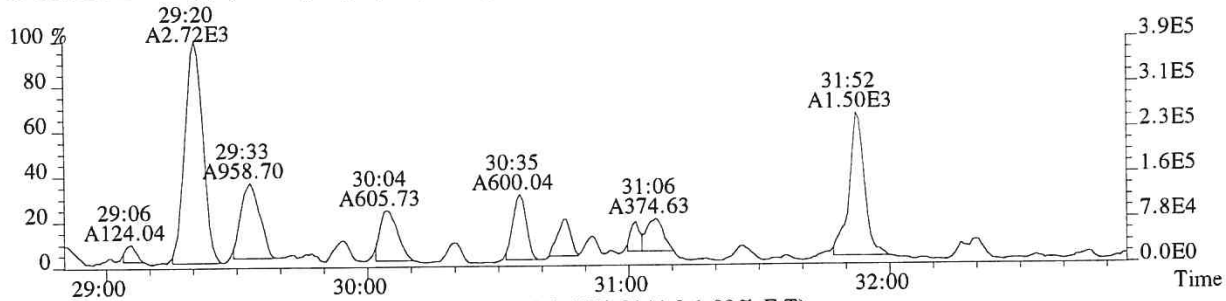
060332

File:P616286 #1-367 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016

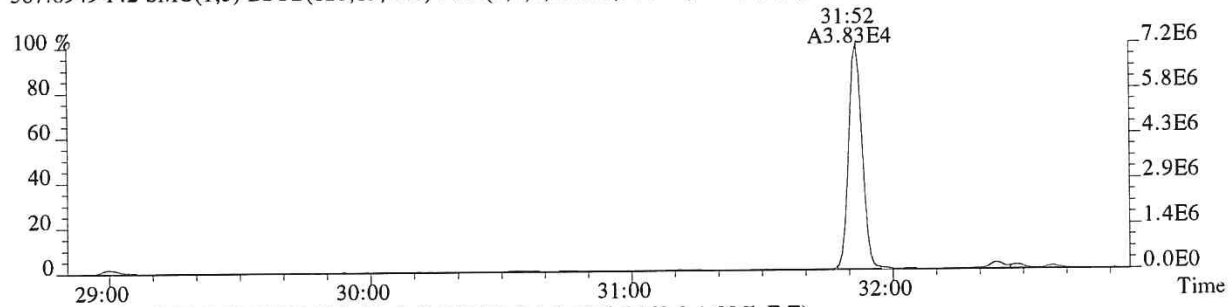
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2336.0,1.00%,F,T)



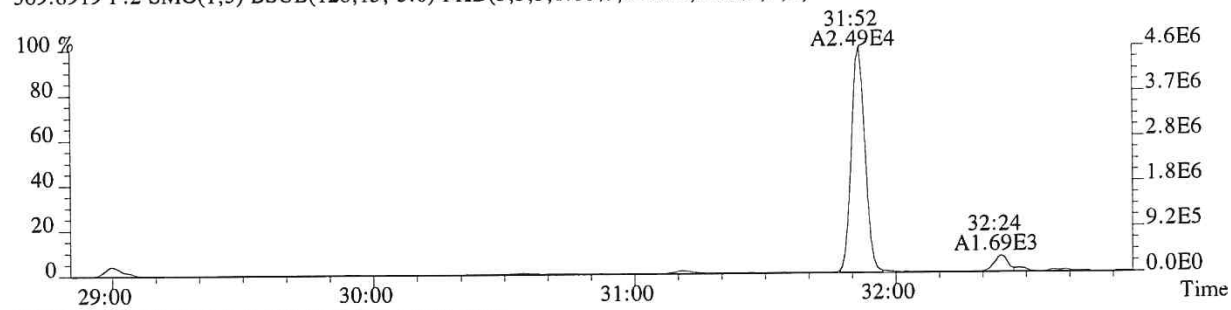
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18272.0,1.00%,F,T)



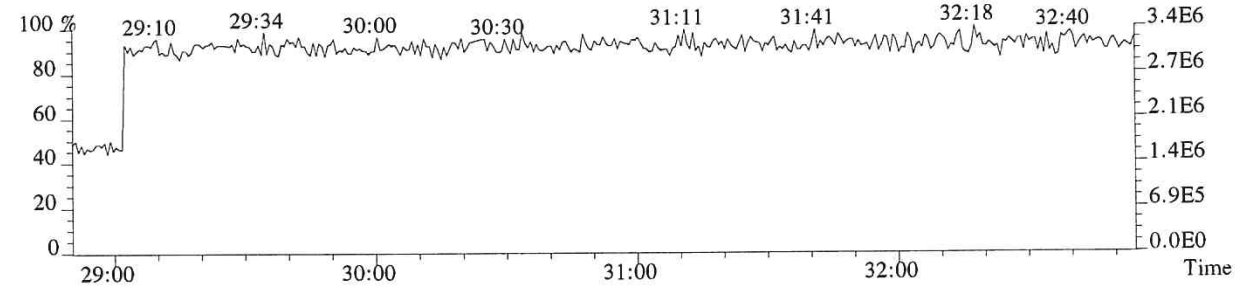
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3144.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3468.0,1.00%,F,T)



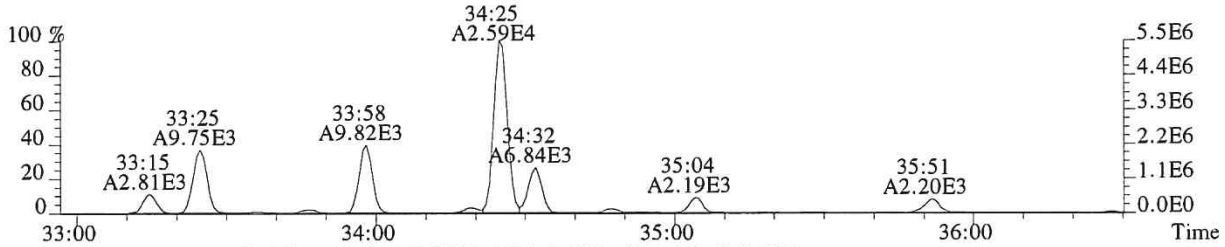
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



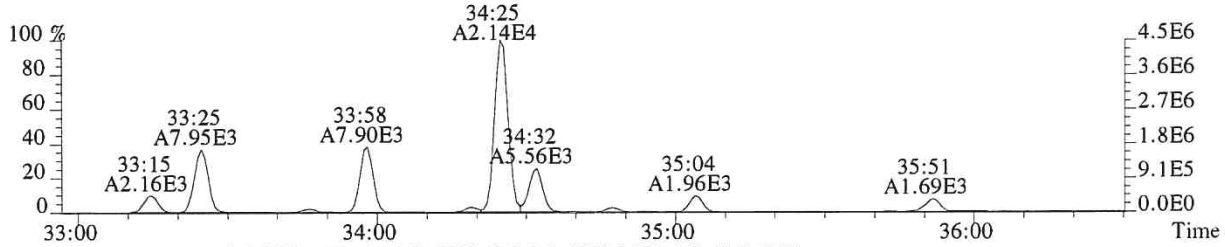
060333

File:P616286 #1-321 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016

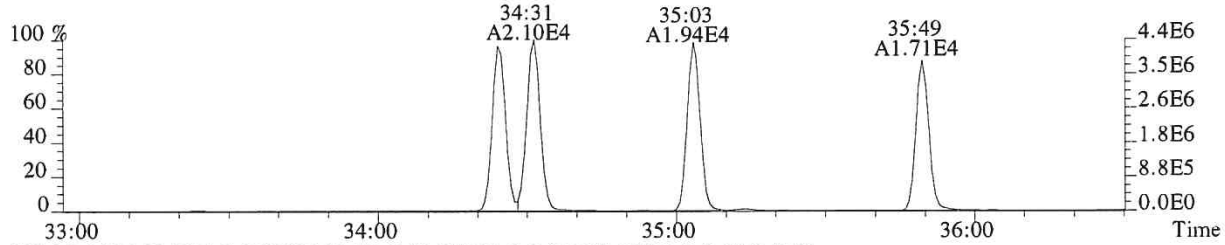
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12544.0,0.40%,F,T)



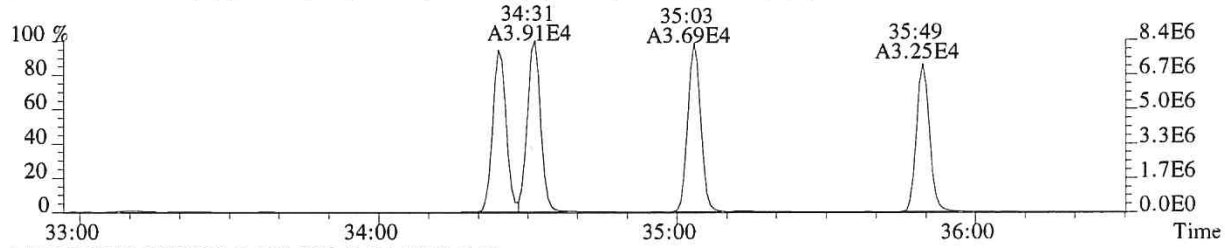
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7844.0,0.40%,F,T)



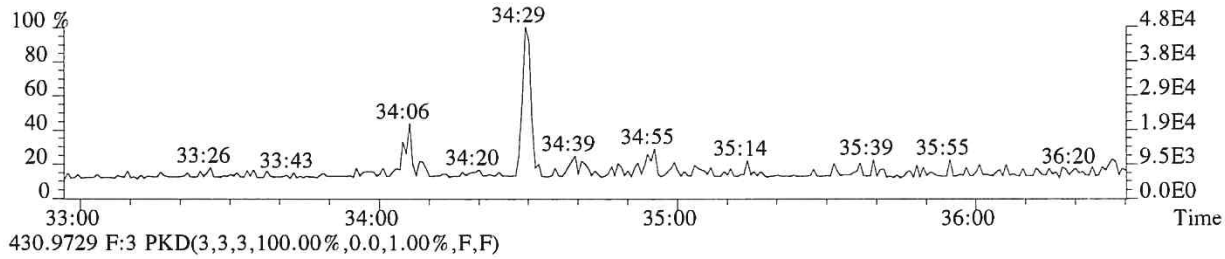
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3080.0,0.40%,F,T)



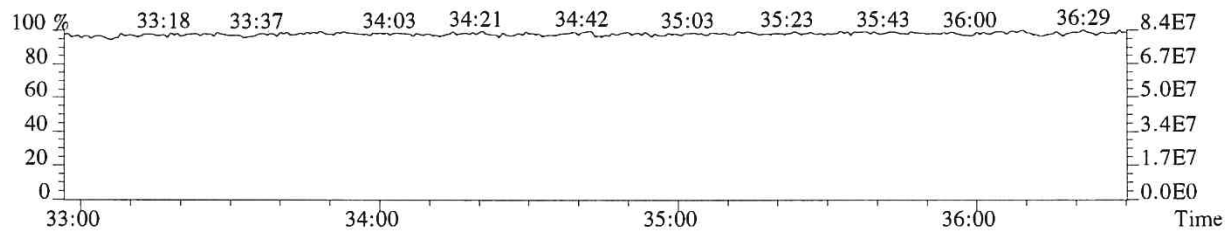
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12012.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

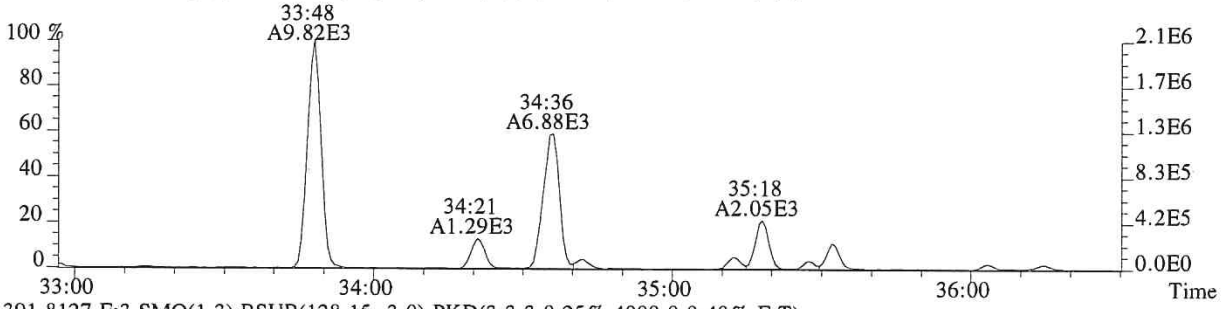


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

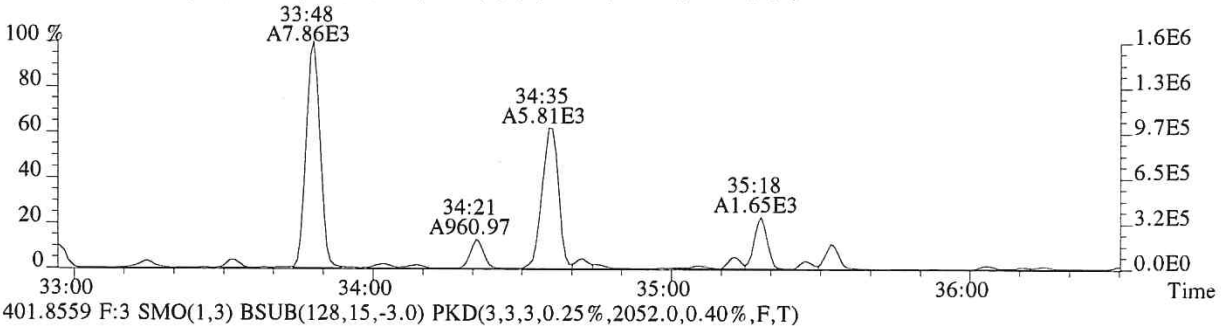


060334

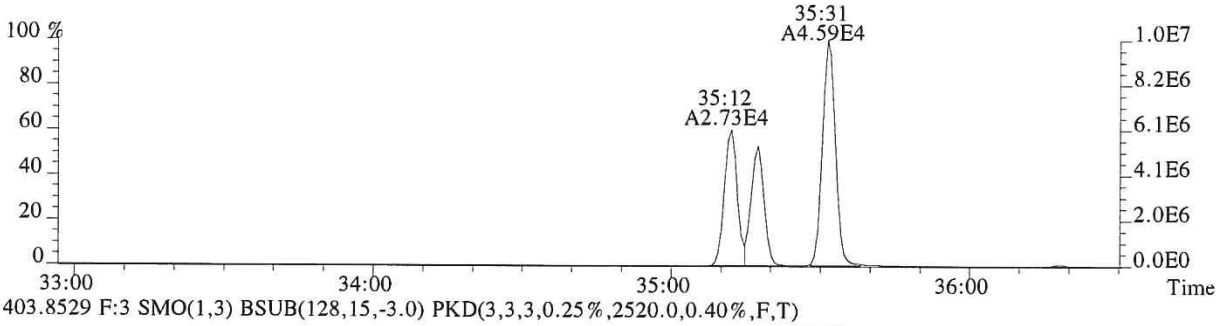
File:P616286 #1-321 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2964.0,0.40%,F,T)



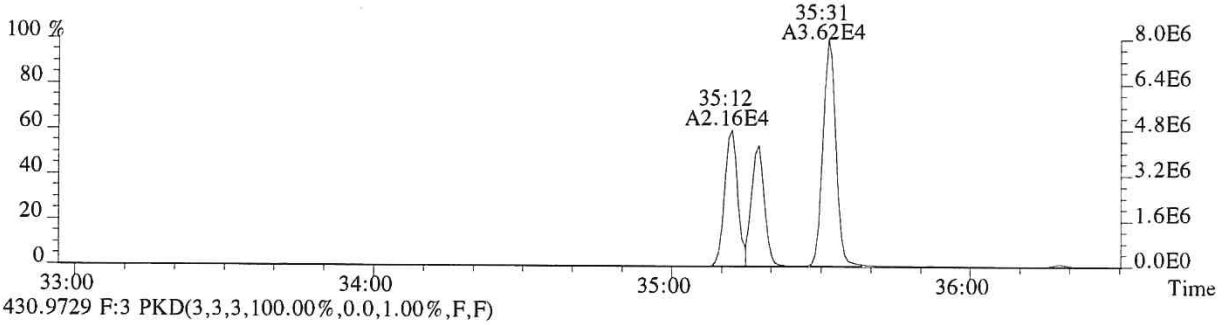
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4008.0,0.40%,F,T)



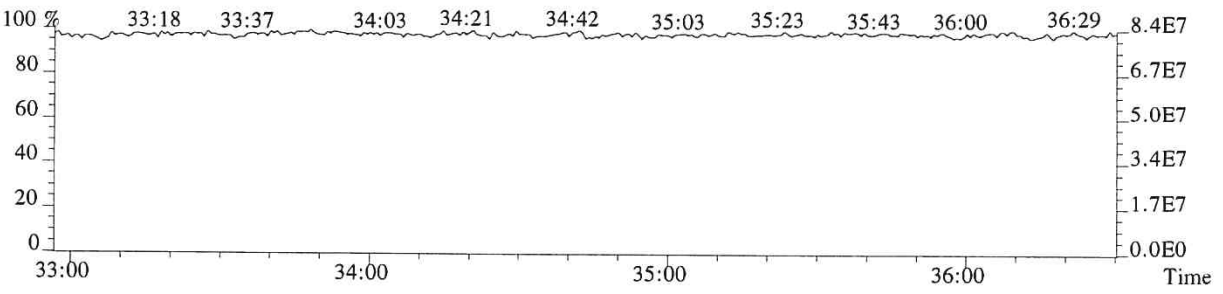
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2052.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2520.0,0.40%,F,T)

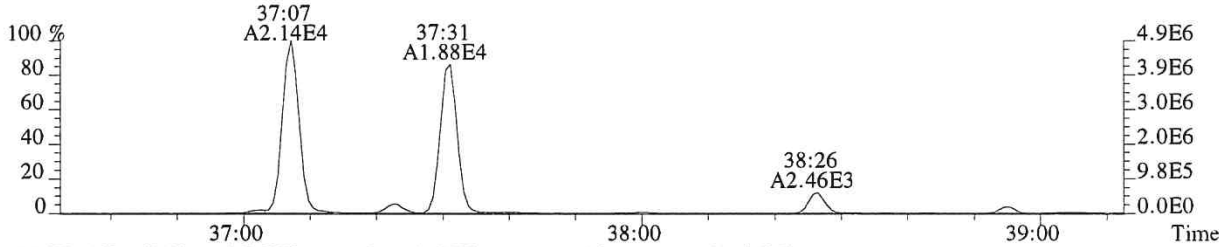


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

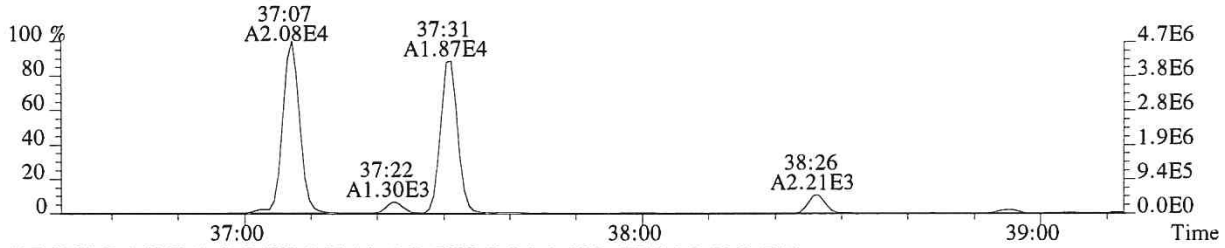


File:P616286 #1-241 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016

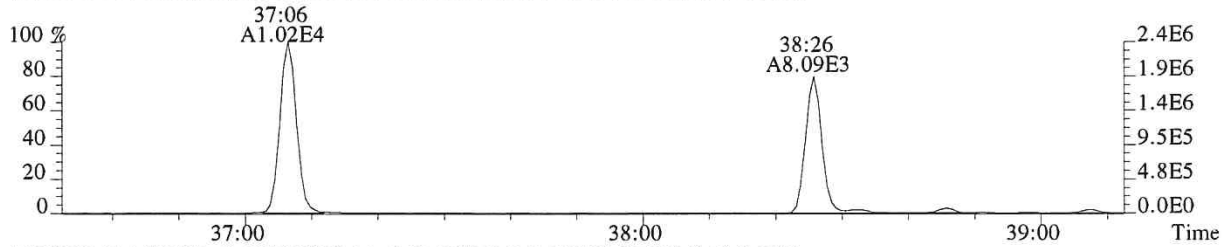
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4852.0,0.50%,F,T)



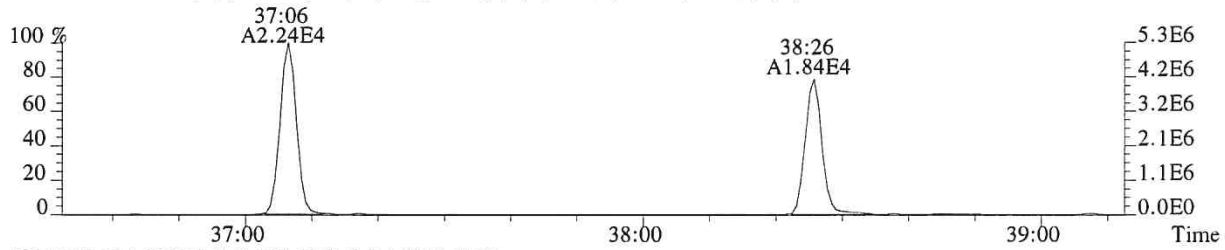
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3300.0,0.50%,F,T)



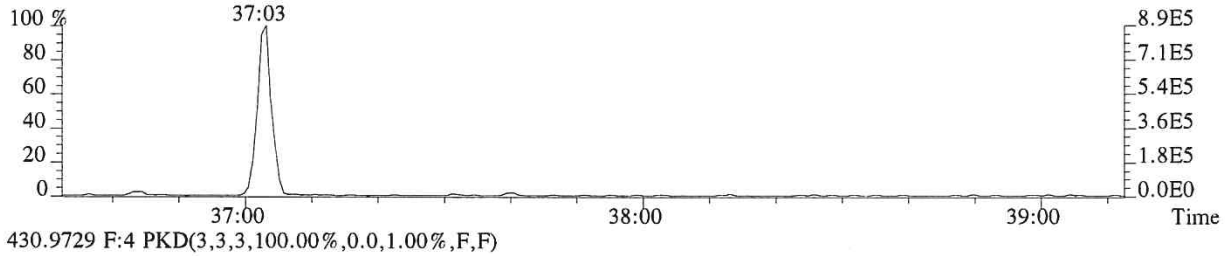
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5236.0,0.50%,F,T)



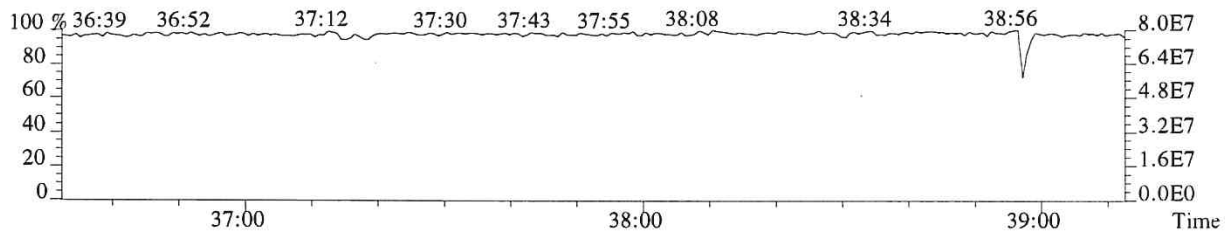
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6024.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

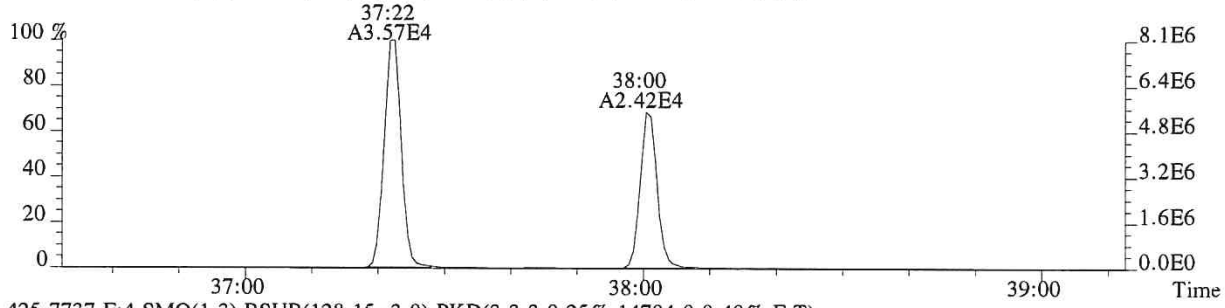


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

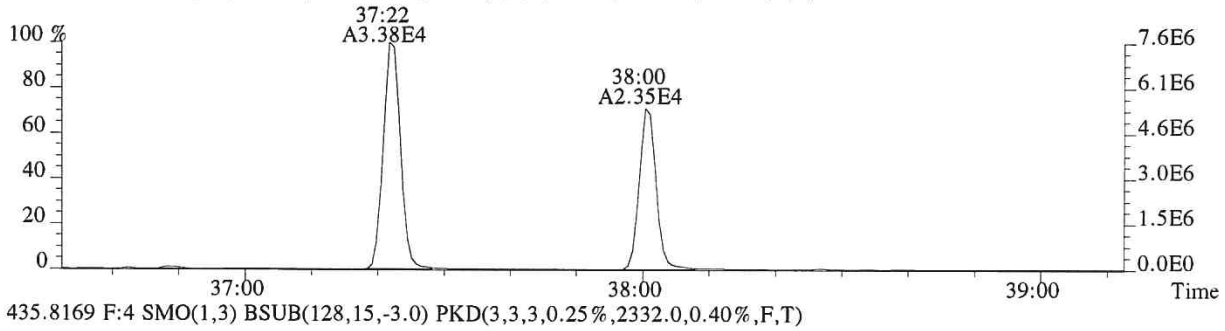


060336

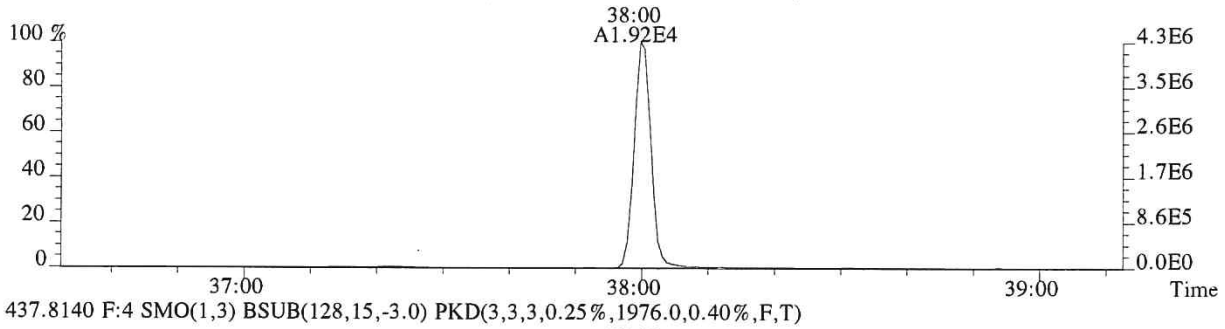
File:P616286 #1-241 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3460.0,0.40%,F,T)



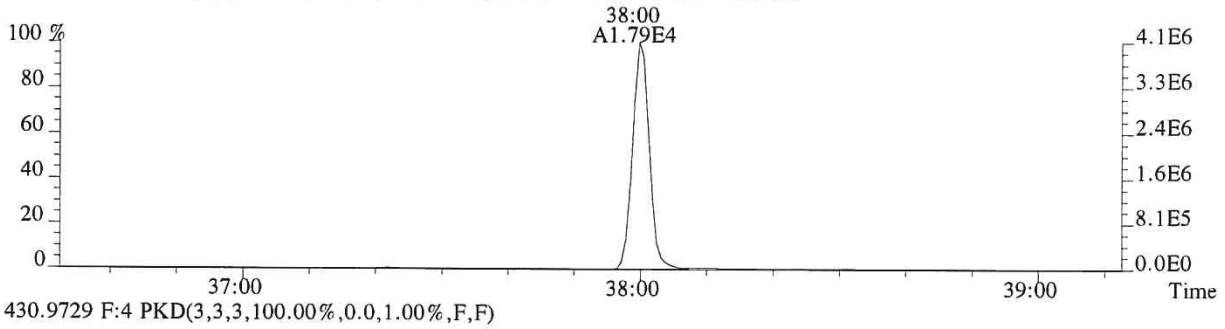
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,14704.0,0.40%,F,T)



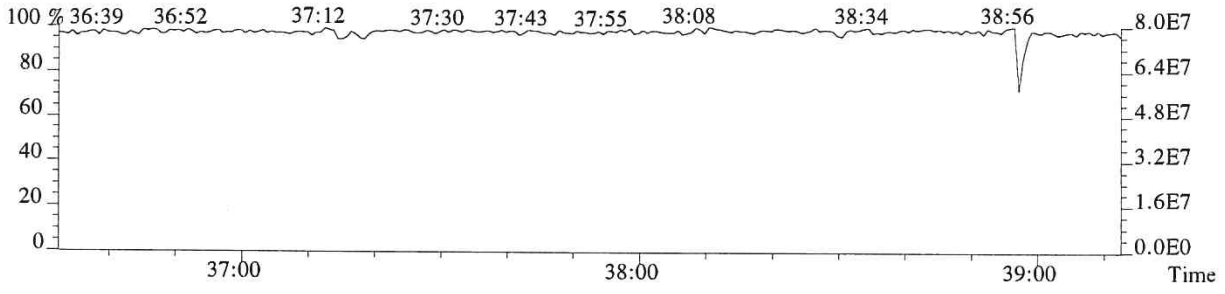
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2332.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1976.0,0.40%,F,T)

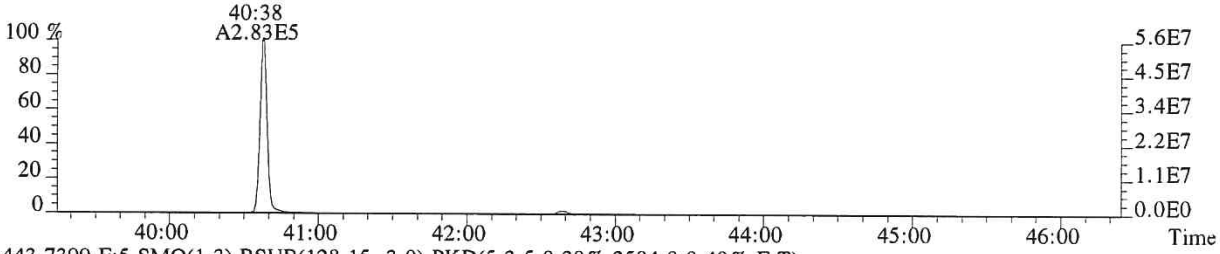


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

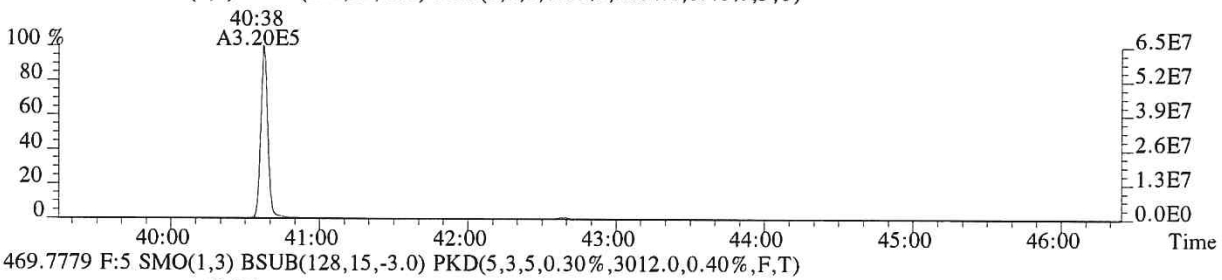


File:P616286 #1-645 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016

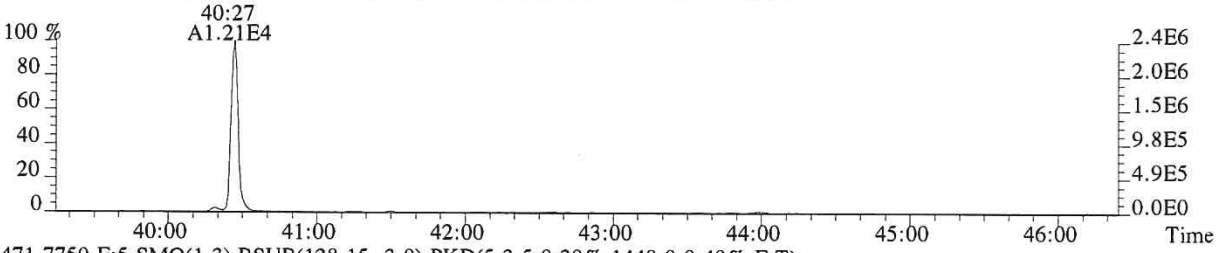
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1760.0,0.40%,F,T)



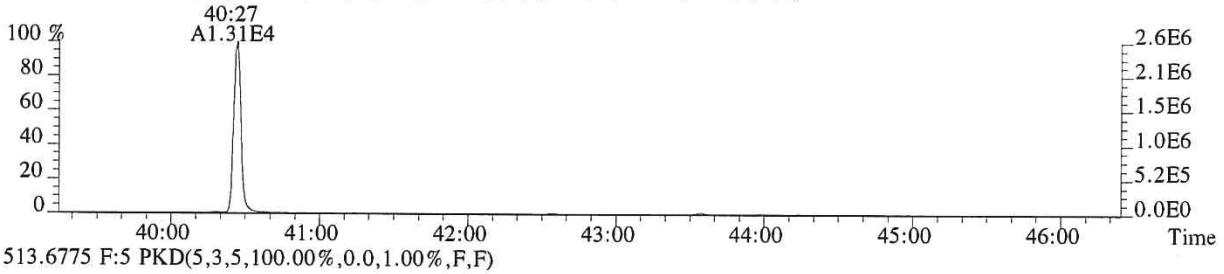
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2584.0,0.40%,F,T)



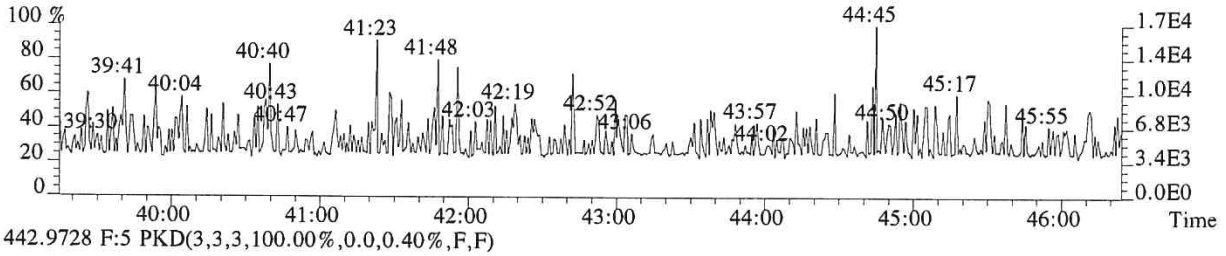
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3012.0,0.40%,F,T)



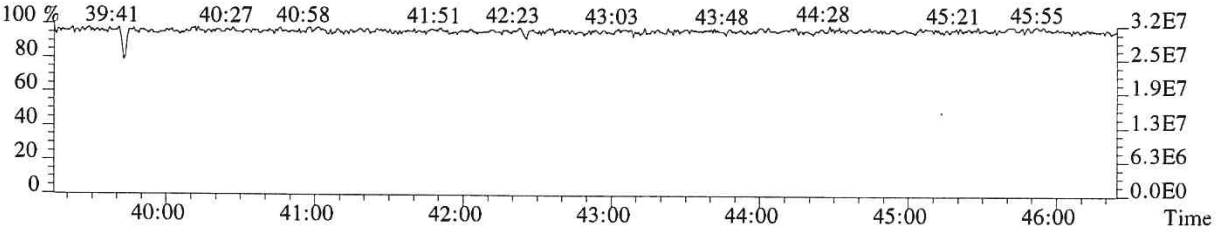
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1448.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

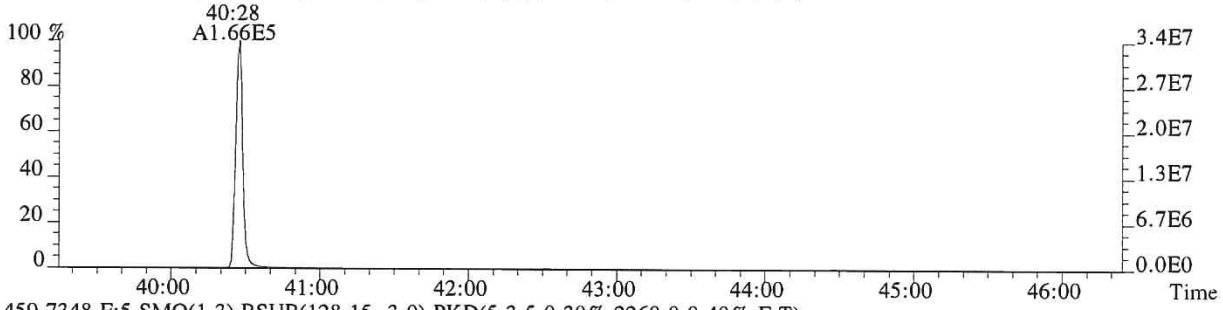


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

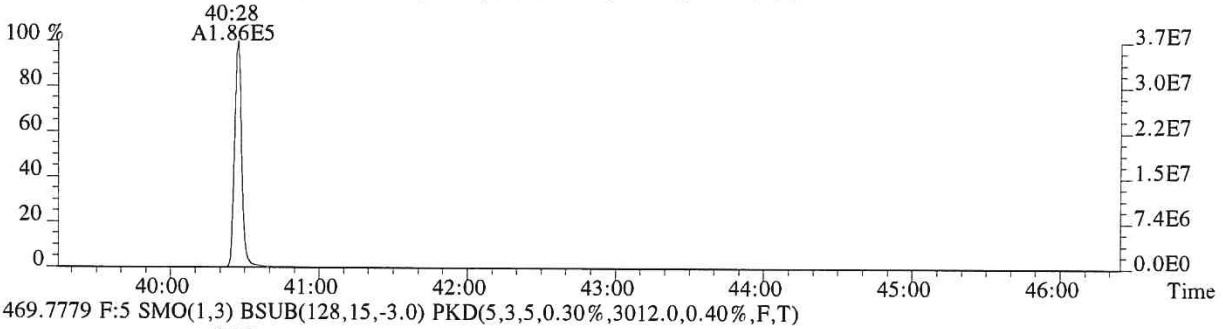


060338

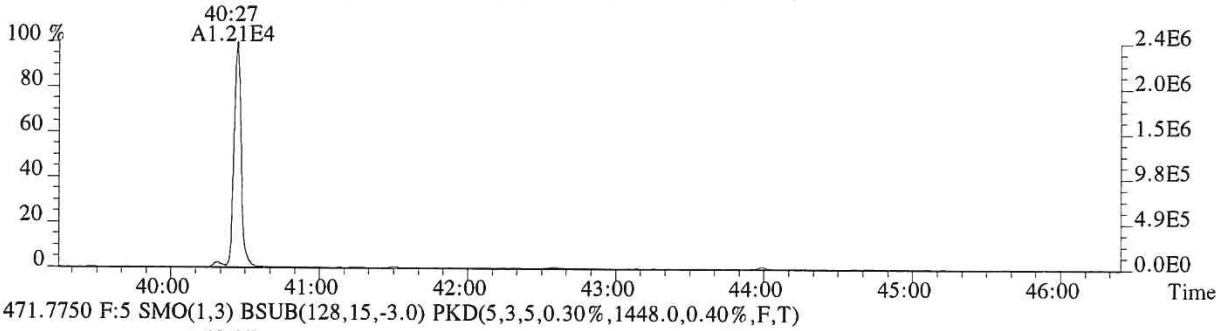
File:P616286 #1-645 Acq:29-DEC-2018 20:59:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2340.0,0.40%,F,T)



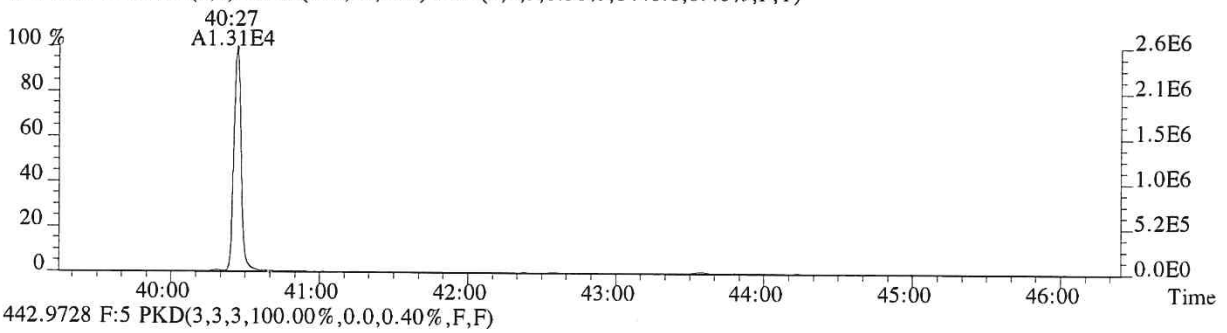
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2260.0,0.40%,F,T)



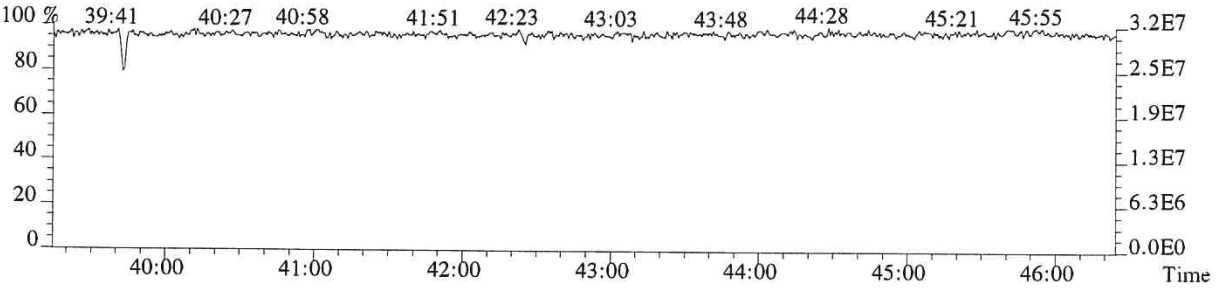
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3012.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1448.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060339

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0127

Run #10 Filename P616307 Samp: 1 Inj: 1 Acquired: 30-DEC-18 14:45:31
Processed: 31-DEC-18 11:31:36 Sample ID: E1801136-016DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:26	1.202e+04	1.582e+04	0.76	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:29	6.358e+02	3.712e+02	1.71	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:32	5.575e+02	3.384e+02	1.65	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:23	9.984e+02	7.760e+02	1.29	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	2.666e+02	2.279e+02	1.17	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:01	1.053e+02	1.046e+02	1.01	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:50	1.055e+02	1.089e+02	0.97	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:05	1.023e+03	9.819e+02	1.04	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	1.726e+02	1.621e+02	1.06	yes	no	1.463
10	Unk	OCDF	40:36	1.492e+04	1.670e+04	0.89	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:28	3.424e+03	4.205e+03	0.81	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:50	7.852e+01	6.936e+01	1.13	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:11	3.537e+01	2.265e+01	1.56	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:16	9.164e+01	6.568e+01	1.40	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:30	5.346e+01	4.843e+01	1.10	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:59	1.263e+03	1.190e+03	1.06	yes	no	1.112
17	Unk	OCDD	40:26	8.780e+03	9.391e+03	0.93	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:25	2.530e+04	3.221e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:28	4.130e+04	2.604e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:30	3.888e+04	2.459e+04	1.58	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:21	1.768e+04	3.397e+04	0.52	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:29	2.061e+04	3.915e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	1.885e+04	3.597e+04	0.52	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	1.720e+04	3.260e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	1.293e+04	2.923e+04	0.44	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	1.068e+04	2.355e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:26	1.260e+04	1.586e+04	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:49	2.947e+04	1.909e+04	1.54	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	2.598e+04	1.942e+04	1.34	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	2.335e+04	1.929e+04	1.21	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	2.470e+04	2.286e+04	1.08	yes	no	0.857
32	IS	13C-OCDD	40:25	2.014e+04	2.210e+04	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:40	1.910e+04	2.427e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	2.880e+04	2.251e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:27	8.036e+02				no	1.086

$$OCDD = \frac{(8.780e+03 + 9.391e+03) \times 4000\ pg \times 20}{(2.014e+04 + 2.210e+04) \times 10.871\ g \times 55.7 / 100 \times 1.157} = 21357.9232\ ng/kg$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0127

Run #10 Filename P616307 Samp: 1 Inj: 1 Acquired: 30-DEC-18 14:45:31
Processed: 31-DEC-18 11:31:36 LAB. ID: E1801136-016DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.60e+06	1.40e+03	1.1e+03	2.10e+06	6.16e+03	3.4e+02
2	1,2,3,7,8-PeCDF	1.15e+05	1.68e+03	6.9e+01	6.76e+04	1.78e+03	3.8e+01
3	2,3,4,7,8-PeCDF	8.40e+04	1.68e+03	5.0e+01	5.69e+04	1.78e+03	3.2e+01
4	1,2,3,4,7,8-HxCDF	2.13e+05	2.23e+03	9.6e+01	1.67e+05	1.34e+03	1.2e+02
5	1,2,3,6,7,8-HxCDF	5.05e+04	2.23e+03	2.3e+01	4.44e+04	1.34e+03	3.3e+01
6	2,3,4,6,7,8-HxCDF	2.25e+04	2.23e+03	1.0e+01	1.93e+04	1.34e+03	1.4e+01
7	1,2,3,7,8,9-HxCDF	1.81e+04	2.23e+03	8.1e+00	1.76e+04	1.34e+03	1.3e+01
8	1,2,3,4,6,7,8-HpCDF	2.32e+05	8.00e+02	2.9e+02	2.12e+05	6.00e+02	3.5e+02
9	1,2,3,4,7,8,9-HpCDF	3.94e+04	8.00e+02	4.9e+01	3.64e+04	6.00e+02	6.1e+01
10	OCDF	2.83e+06	9.40e+02	3.0e+03	3.19e+06	2.15e+03	1.5e+03
11	2,3,7,8-TCDD	5.31e+05	3.26e+03	1.6e+02	6.81e+05	1.33e+03	5.1e+02
12	1,2,3,7,8-PeCDD	1.53e+04	1.52e+03	1.0e+01	1.21e+04	9.04e+02	1.3e+01
13	1,2,3,4,7,8-HxCDD	9.26e+03	1.28e+03	7.2e+00	5.39e+03	1.46e+03	3.7e+00
14	1,2,3,6,7,8-HxCDD	1.68e+04	1.28e+03	1.3e+01	1.24e+04	1.46e+03	8.5e+00
15	1,2,3,7,8,9-HxCDD	1.09e+04	1.28e+03	8.5e+00	1.17e+04	1.46e+03	8.0e+00
16	1,2,3,4,6,7,8-HpCDD	2.67e+05	6.28e+02	4.2e+02	2.48e+05	6.12e+02	4.1e+02
17	OCDD	1.64e+06	3.88e+02	4.2e+03	1.81e+06	6.68e+02	2.7e+03
18	13C-2,3,7,8-TCDF	3.67e+06	1.29e+04	2.9e+02	4.57e+06	1.21e+04	3.8e+02
19	13C-1,2,3,7,8-PeCDF	7.39e+06	2.33e+03	3.2e+03	4.72e+06	2.84e+03	1.7e+03
20	13C-2,3,4,7,8-PeCDF	7.31e+06	2.33e+03	3.1e+03	4.65e+06	2.84e+03	1.6e+03
21	13C-1,2,3,4,7,8-HxCDF	3.67e+06	1.46e+03	2.5e+03	7.14e+06	2.16e+03	3.3e+03
22	13C-1,2,3,6,7,8-HxCDF	4.32e+06	1.46e+03	2.9e+03	8.15e+06	2.16e+03	3.8e+03
23	13C-2,3,4,6,7,8-HxCDF	3.95e+06	1.46e+03	2.7e+03	7.55e+06	2.16e+03	3.5e+03
24	13C-1,2,3,7,8,9-HxCDF	3.54e+06	1.46e+03	2.4e+03	6.79e+06	2.16e+03	3.1e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.85e+06	1.71e+03	1.7e+03	6.50e+06	2.88e+03	2.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.25e+06	1.71e+03	1.3e+03	4.91e+06	2.88e+03	1.7e+03
27	13C-2,3,7,8-TCDD	2.05e+06	1.09e+04	1.9e+02	2.55e+06	6.07e+03	4.2e+02
28	13C-1,2,3,7,8-PeCDD	5.58e+06	1.98e+03	2.8e+03	3.62e+06	3.39e+03	1.1e+03
29	13C-1,2,3,4,7,8-HxCDD	5.51e+06	2.84e+03	1.9e+03	4.33e+06	1.43e+03	3.0e+03
30	13C-1,2,3,6,7,8-HxCDD	4.81e+06	2.84e+03	1.7e+03	3.85e+06	1.43e+03	2.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	5.48e+06	1.03e+03	5.3e+03	5.06e+06	8.48e+02	6.0e+03
32	13C-OCDD	3.78e+06	1.43e+03	2.6e+03	4.17e+06	1.01e+03	4.1e+03
33	13C-1,2,3,4-TCDD	2.83e+06	1.09e+04	2.6e+02	3.60e+06	6.07e+03	5.9e+02
34	13C-1,2,3,7,8,9-HxCDD	5.97e+06	2.84e+03	2.1e+03	4.68e+06	1.43e+03	3.3e+03
35	37Cl-2,3,7,8-TCDD	1.35e+05	3.63e+03	3.7e+01			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.264e+03 + 1.332e+03) \times 2000}{(2.052e+06 + 2.547e+06) \times (\quad) \times 1.049} =$$

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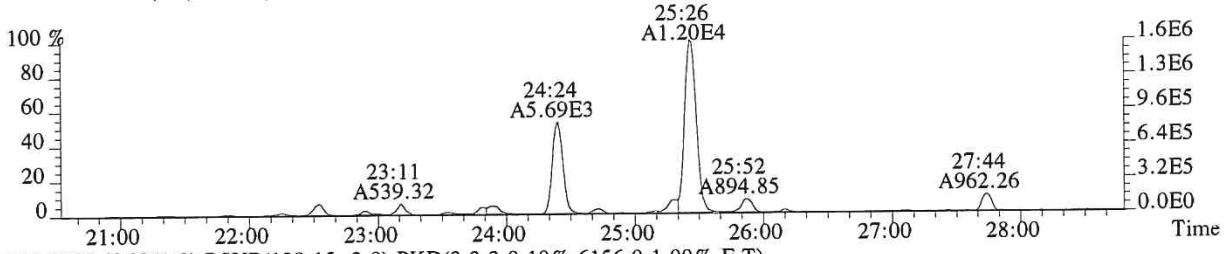
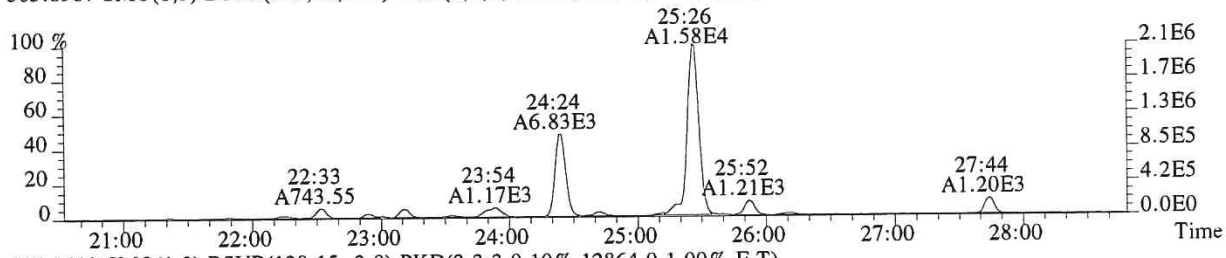
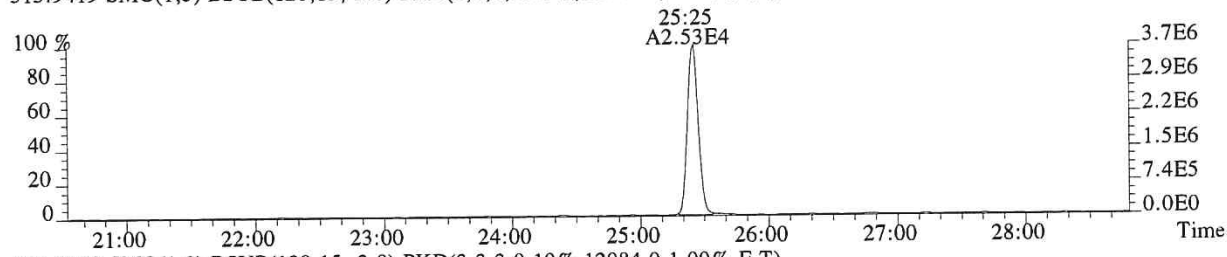
File:P616307 #1-587 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1396.0,1.00%,F,T)



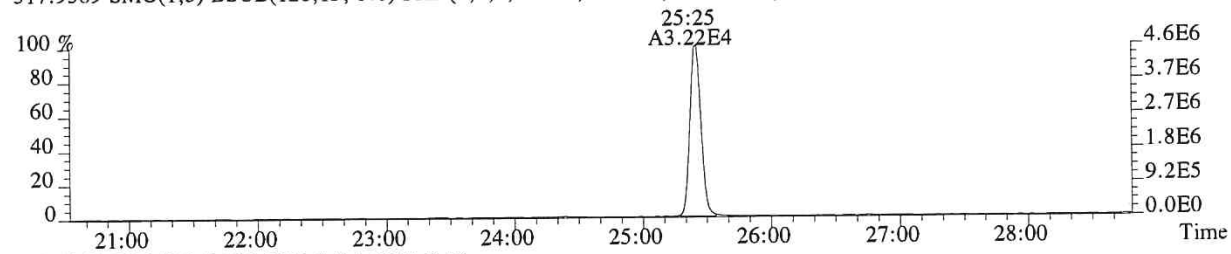
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6156.0,1.00%,F,T)



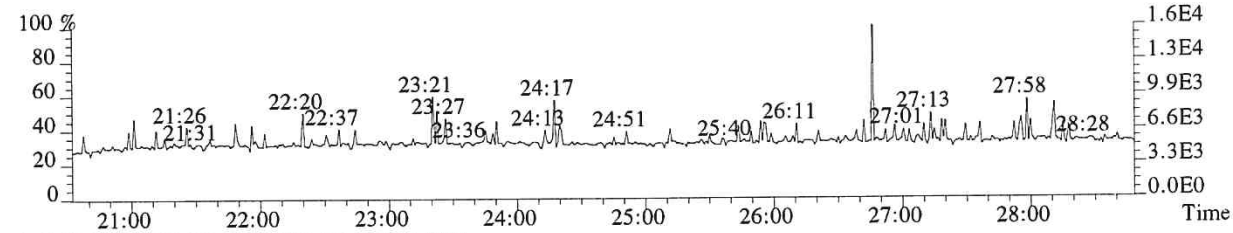
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12864.0,1.00%,F,T)



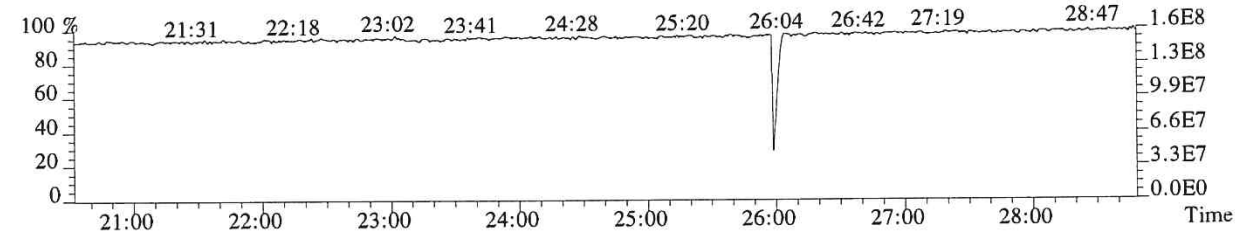
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12084.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

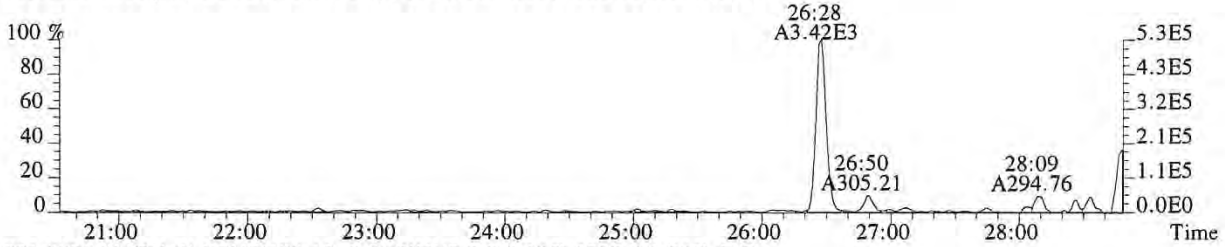


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

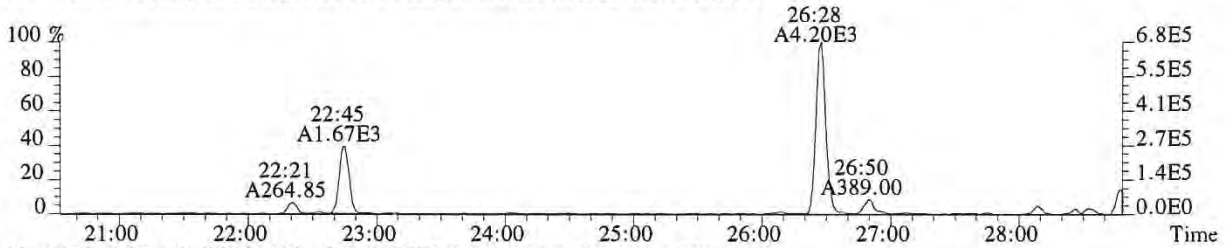


060342

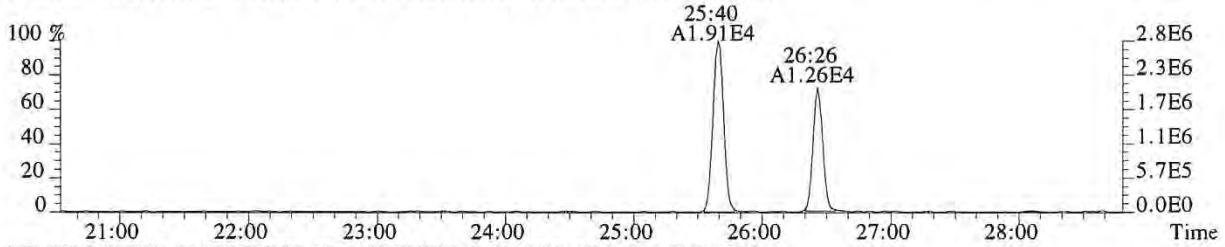
File:P616307 #1-587 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3264.0,1.00%,F,T)



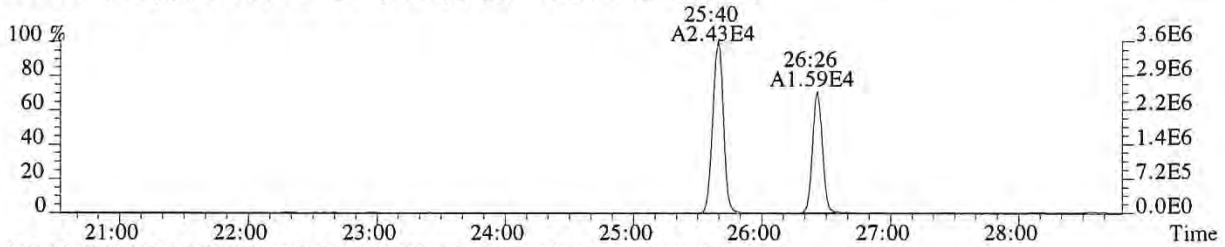
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1332.0,1.00%,F,T)



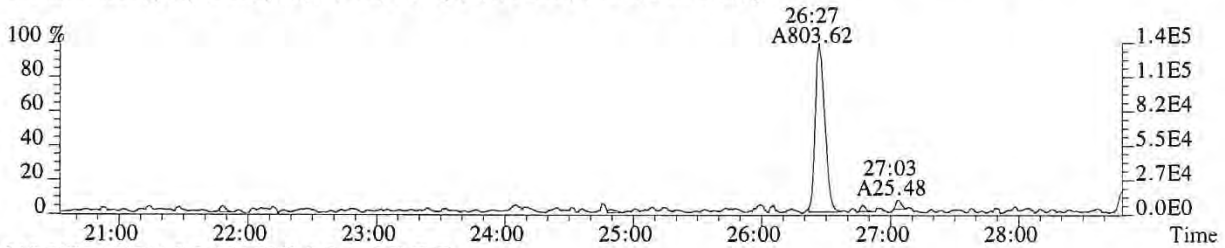
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10884.0,1.00%,F,T)



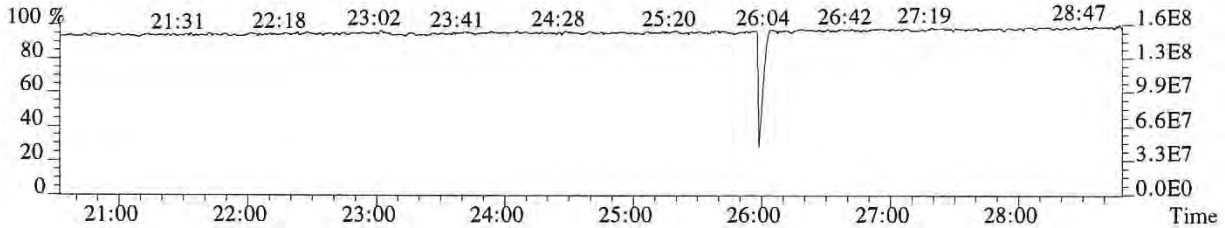
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6072.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3628.0,1.00%,F,T)

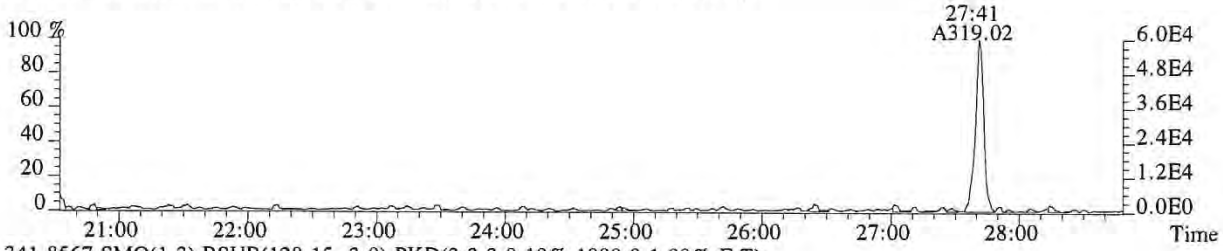


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

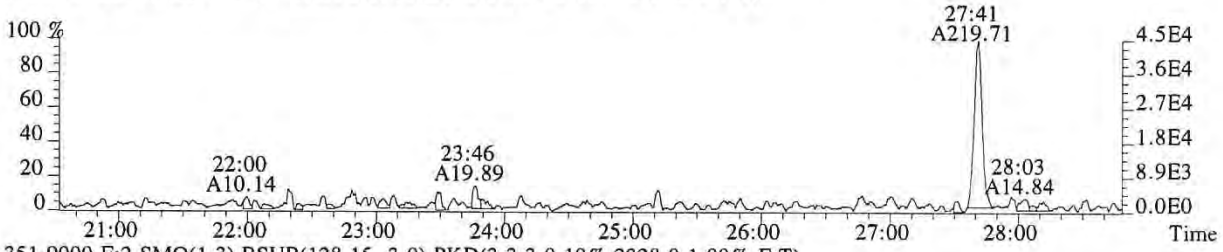


060343

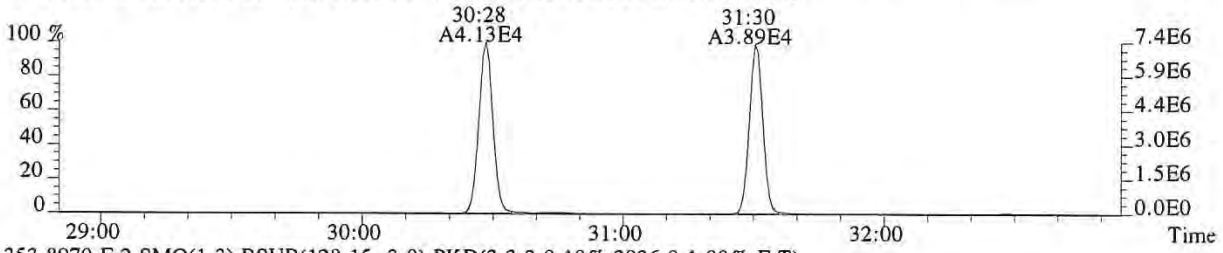
File:P616307 #1-587 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,884.0,1.00%,F,T)



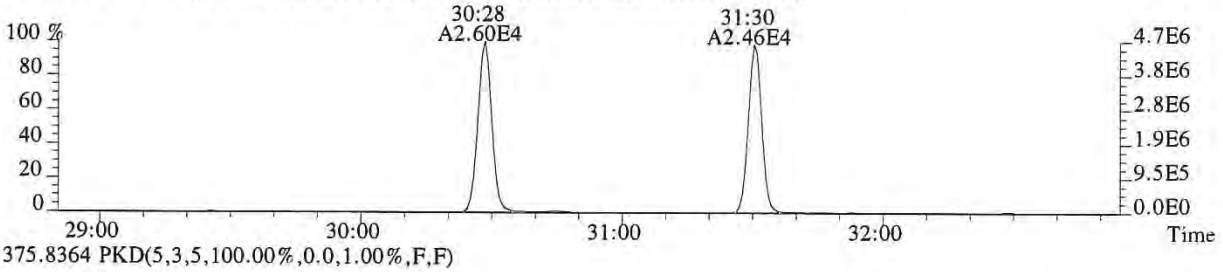
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1880.0,1.00%,F,T)



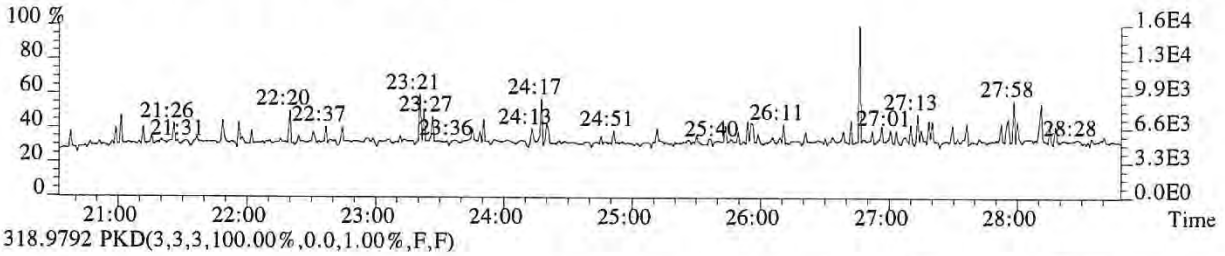
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2328.0,1.00%,F,T)



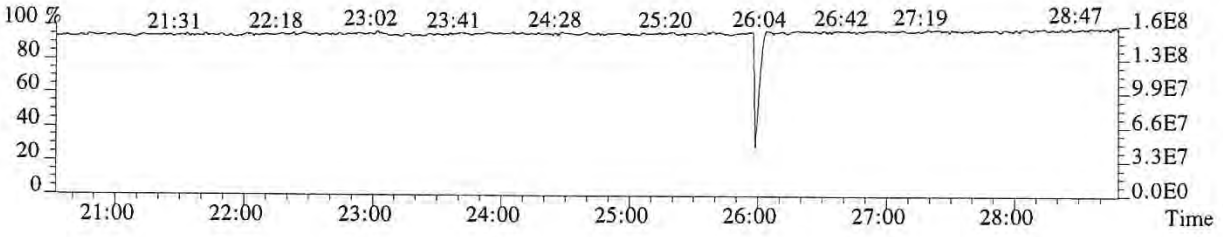
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2836.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

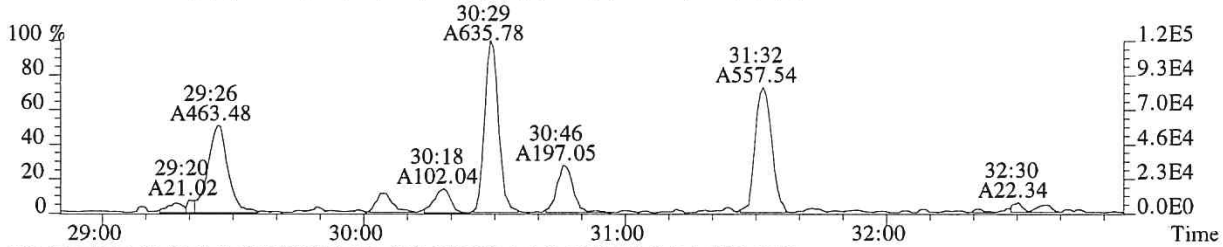


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

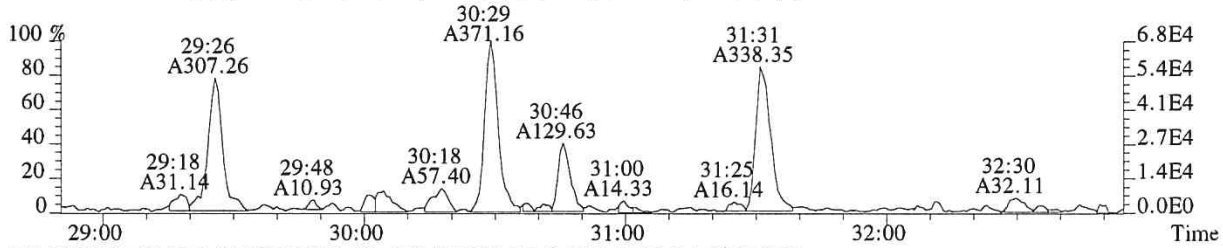


060344

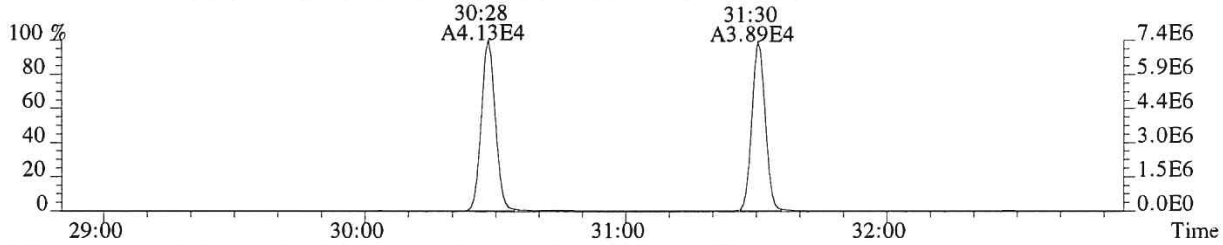
File:P616307 #1-367 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1680.0,1.00%,F,T)



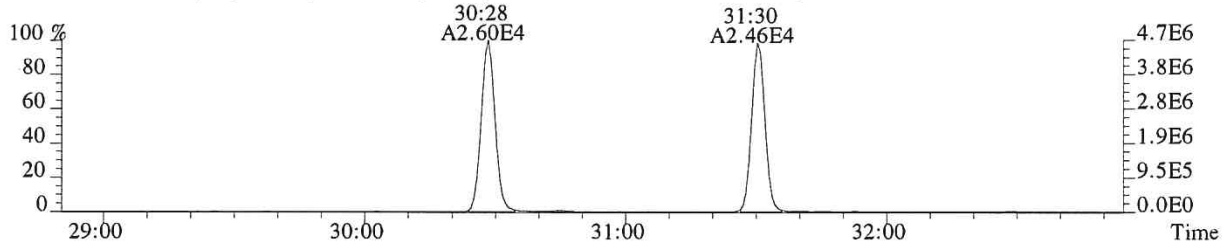
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1776.0,1.00%,F,T)



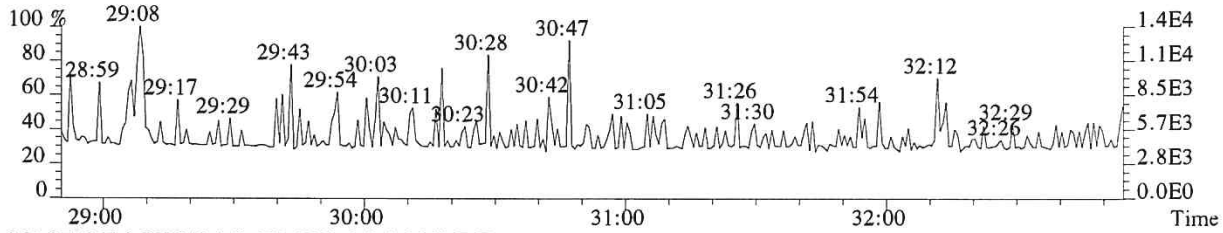
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2328.0,1.00%,F,T)



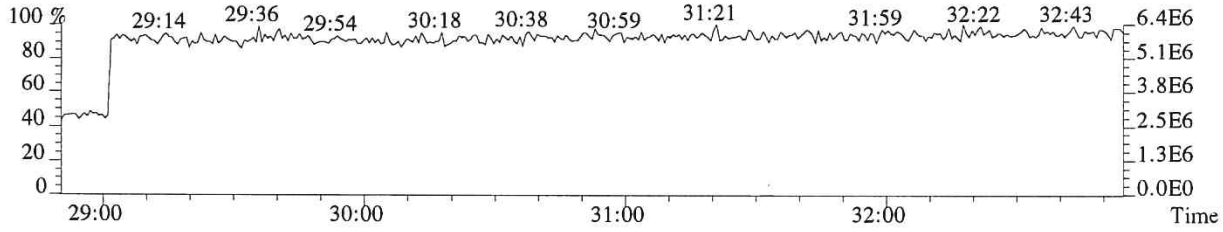
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2836.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

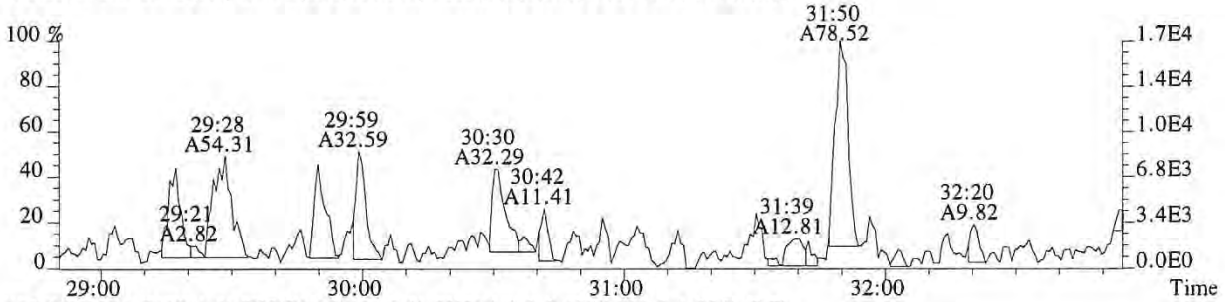


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

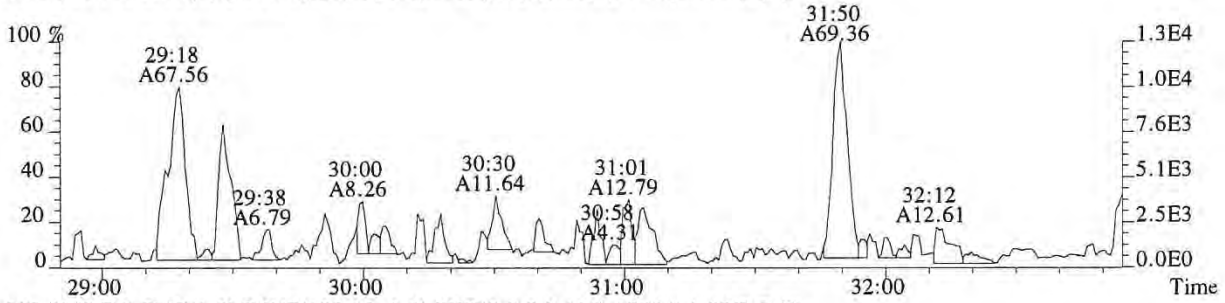


060345

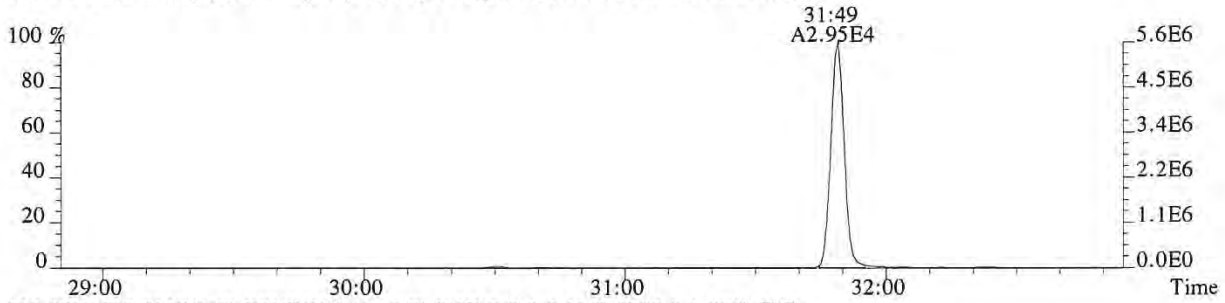
File:P616307 #1-367 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1516.0,1.00%,F,T)



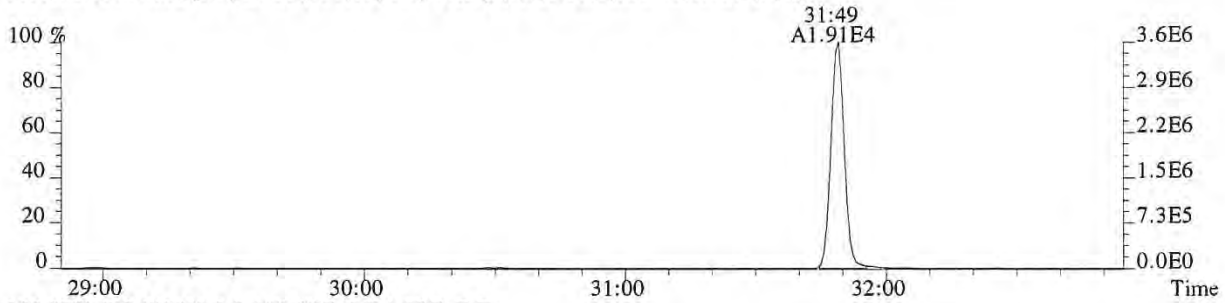
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,904.0,1.00%,F,T)



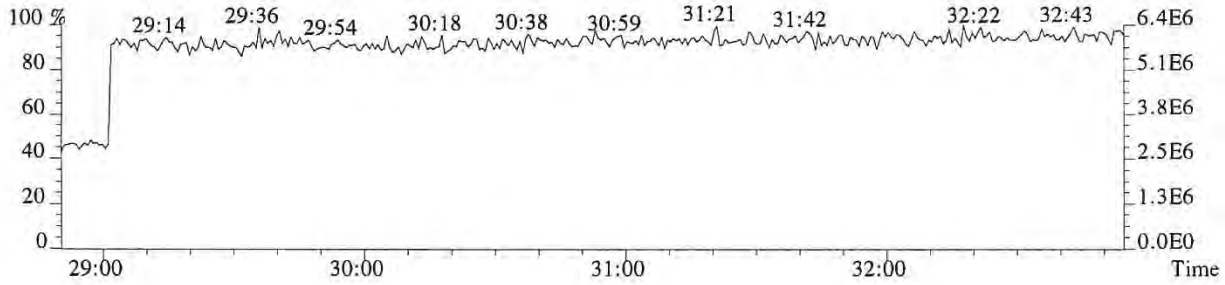
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1976.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3388.0,1.00%,F,T)

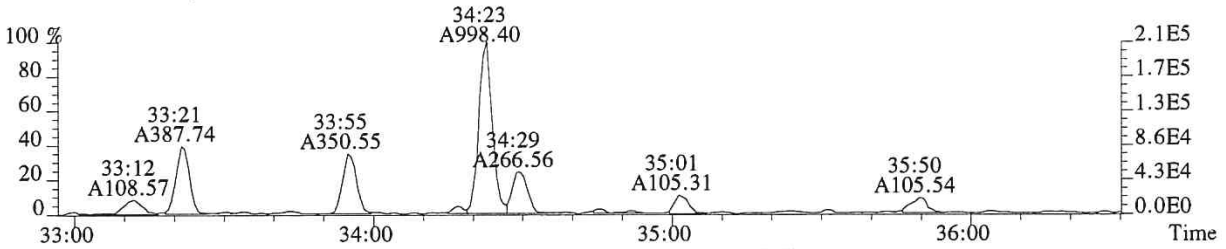


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

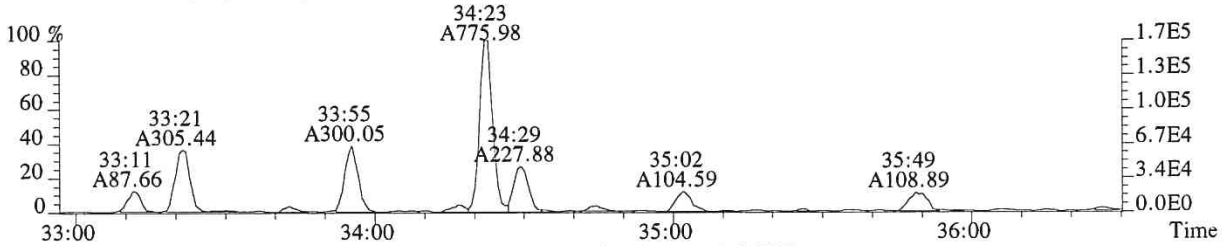


060346

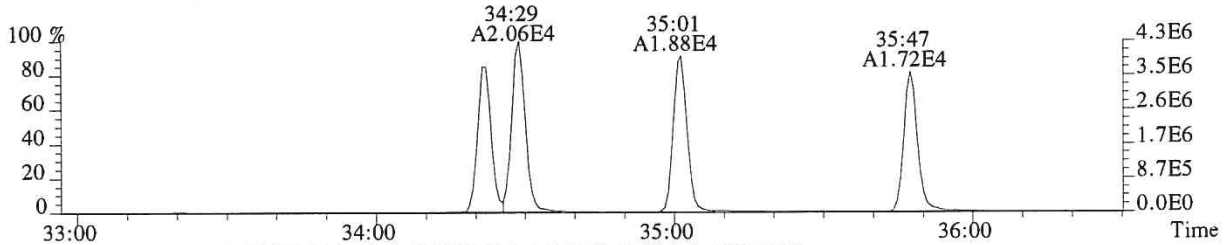
File:P616307 #1-321 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2228.0,0.40%,F,T)



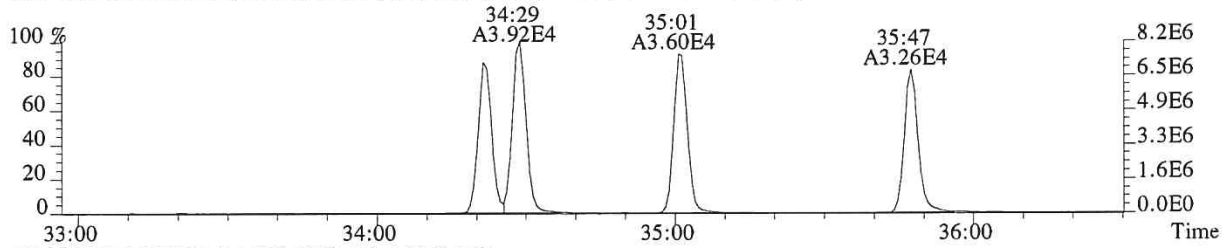
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1344.0,0.40%,F,T)



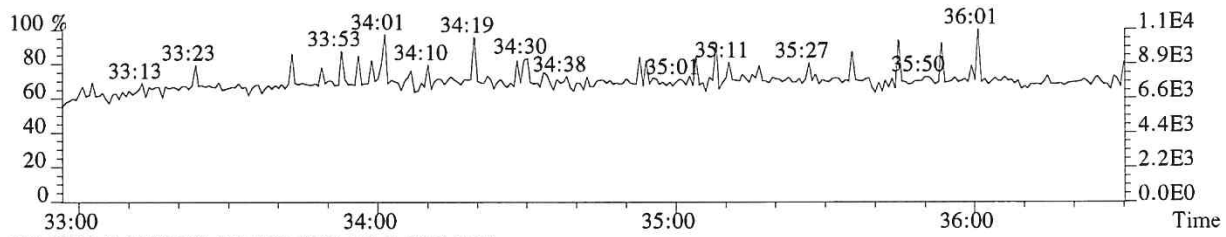
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1464.0,0.40%,F,T)



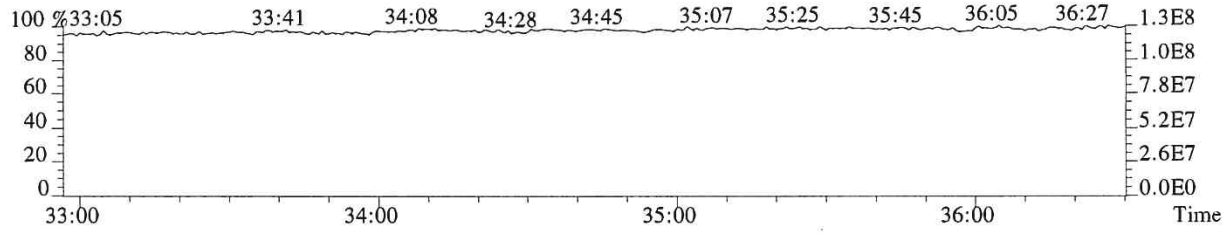
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2160.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

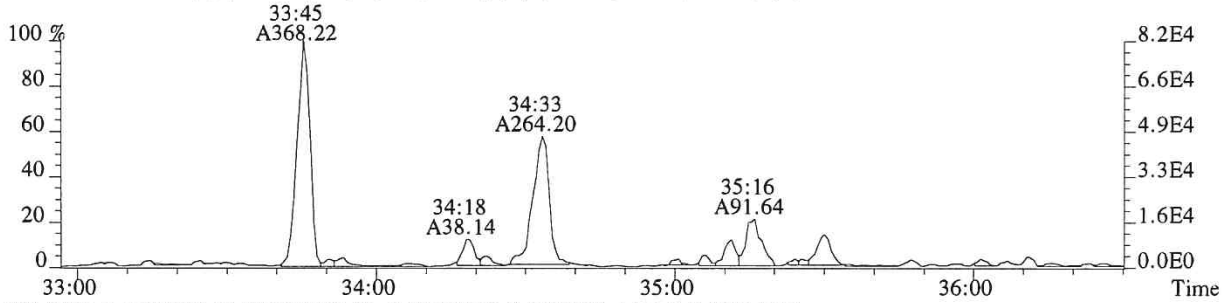


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

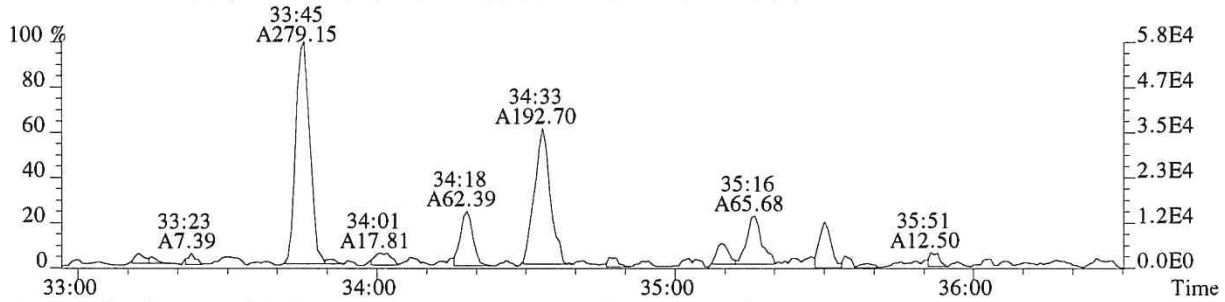


060347

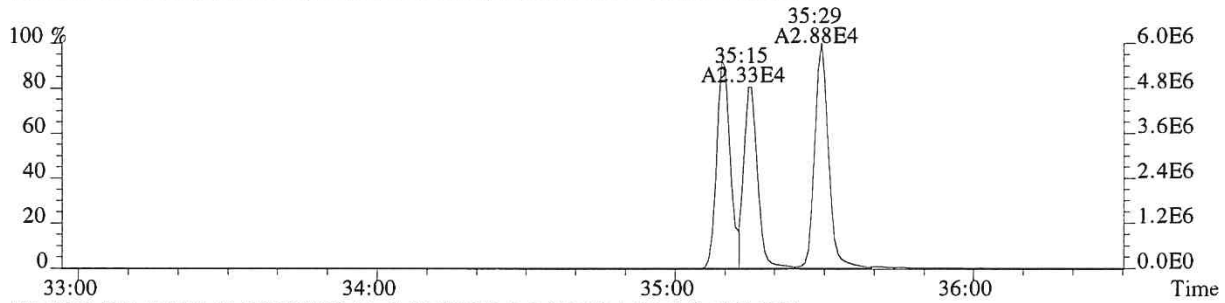
File:P616307 #1-321 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1284.0,0.40%,F,T)



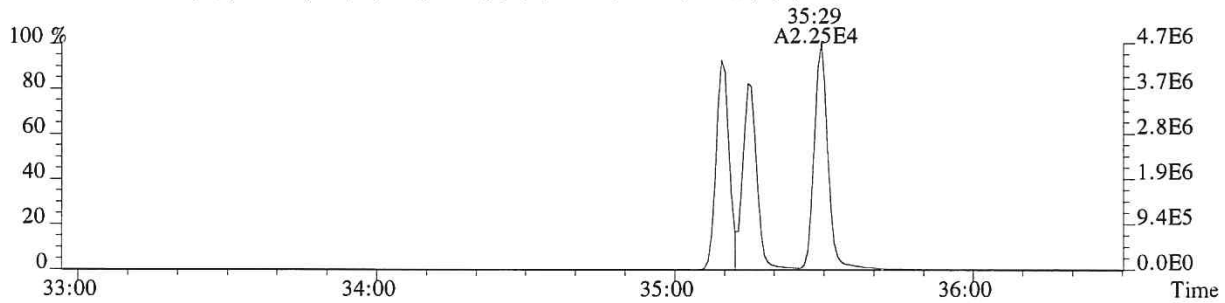
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1464.0,0.40%,F,T)



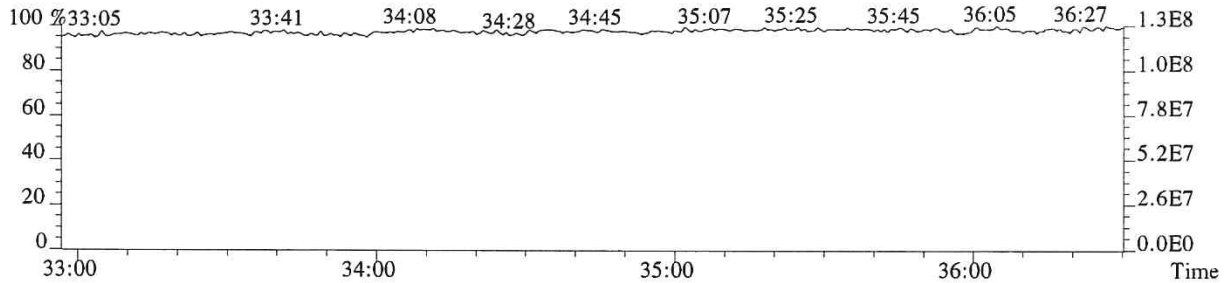
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2840.0,0.40%,F,T)



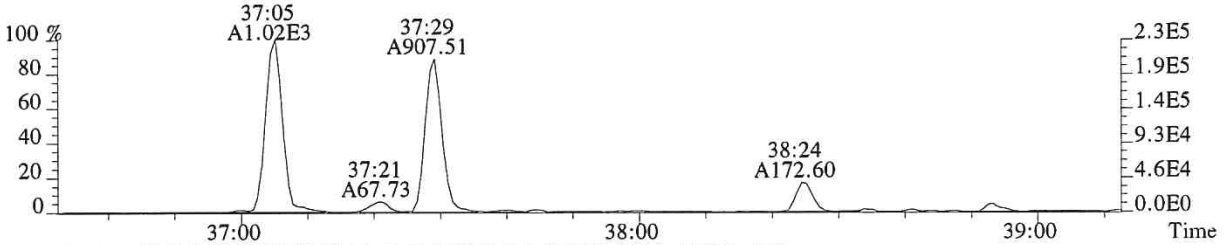
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1432.0,0.40%,F,T)



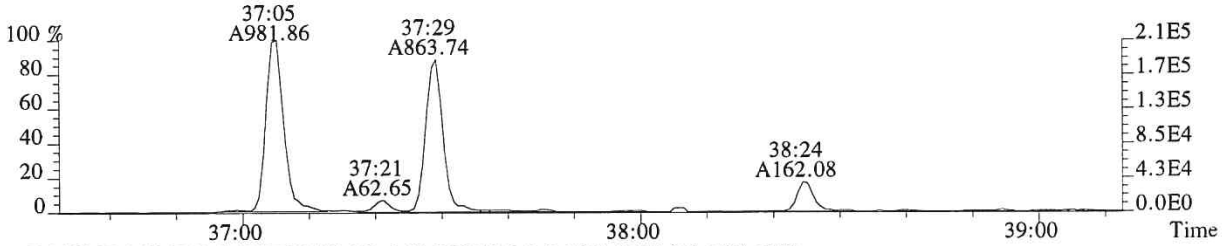
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



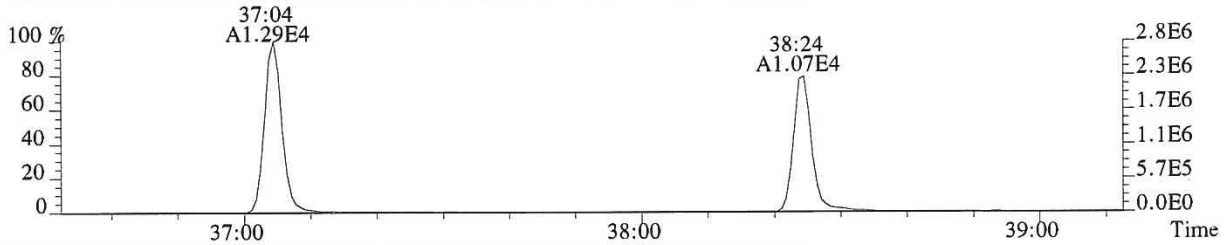
File:P616307 #1-241 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,800.0,0.50%,F,T)



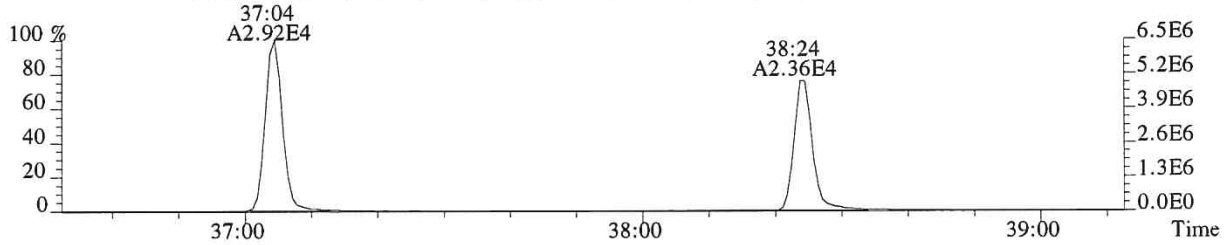
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.50%,F,T)



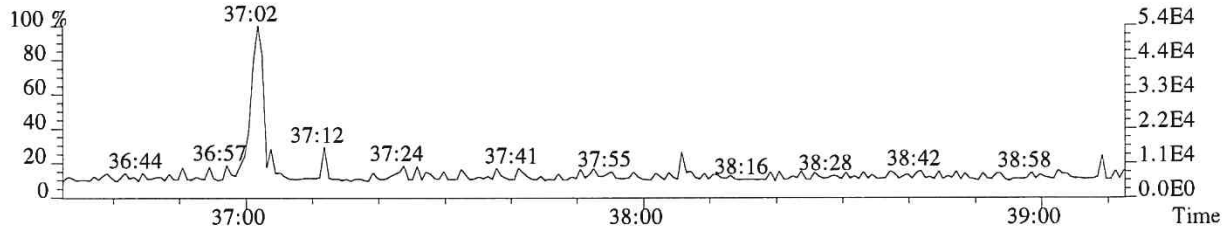
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1708.0,0.50%,F,T)



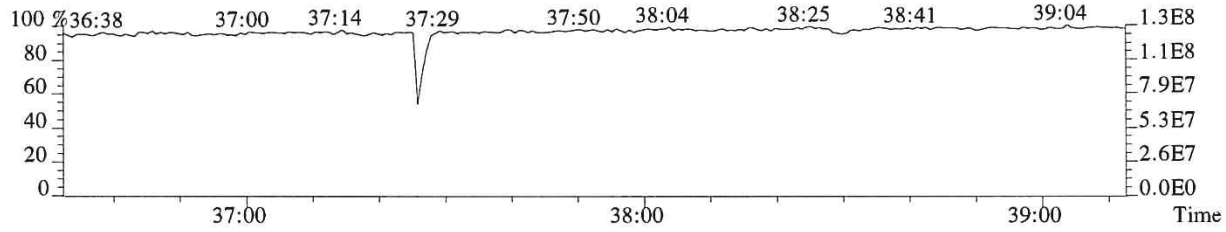
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2880.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

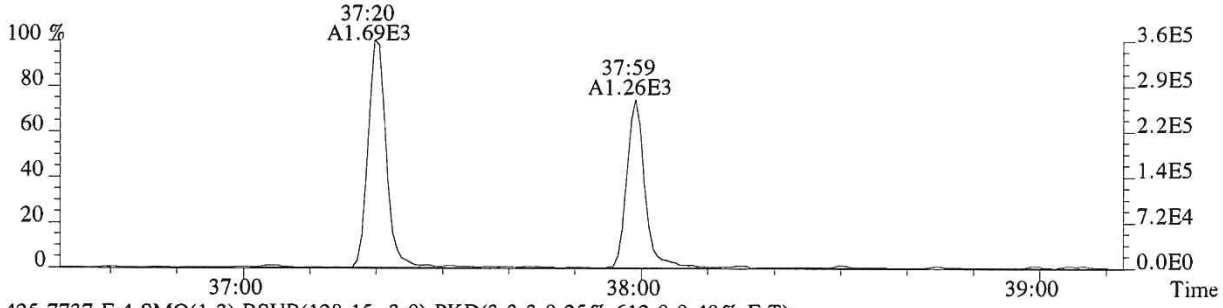


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

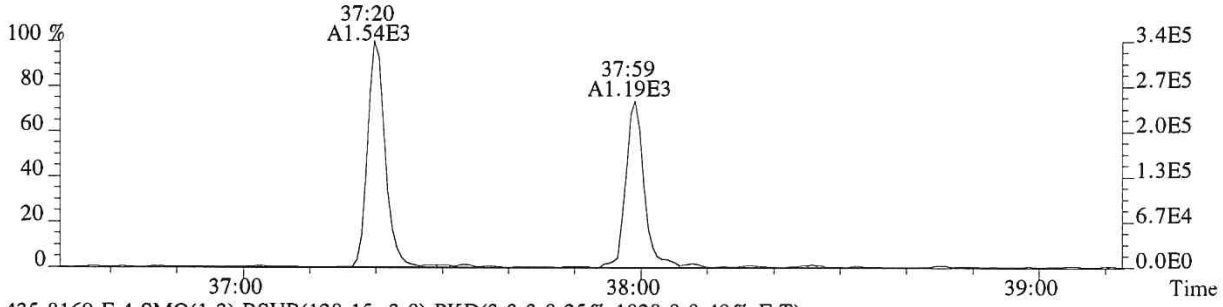


060349

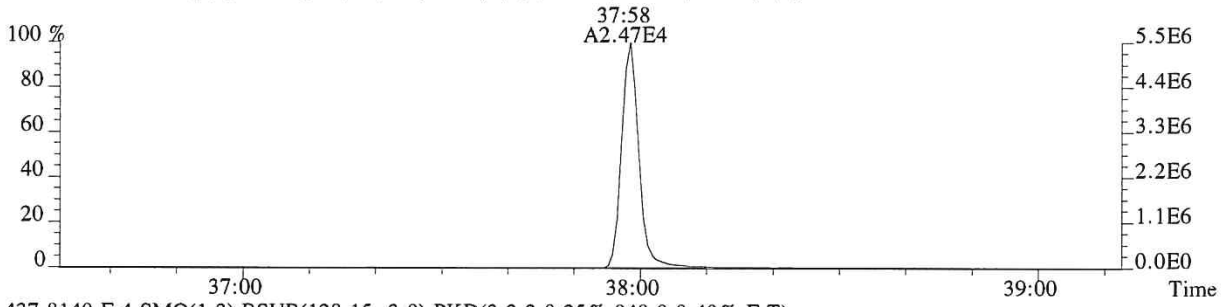
File:P616307 #1-241 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,628.0,0.40%,F,T)



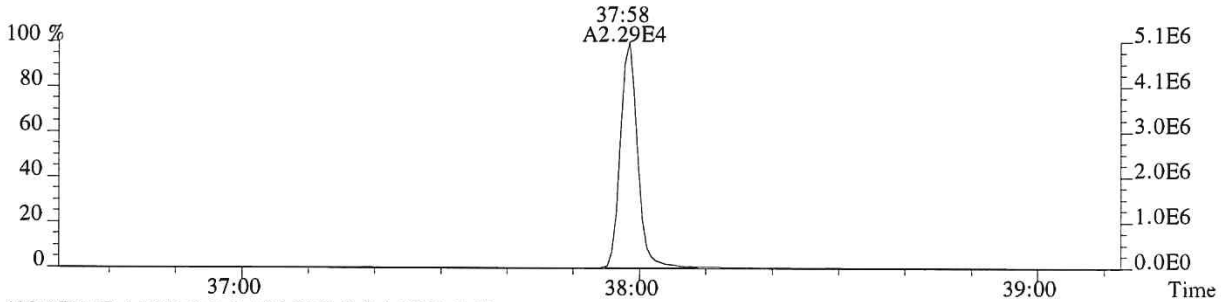
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,612.0,0.40%,F,T)



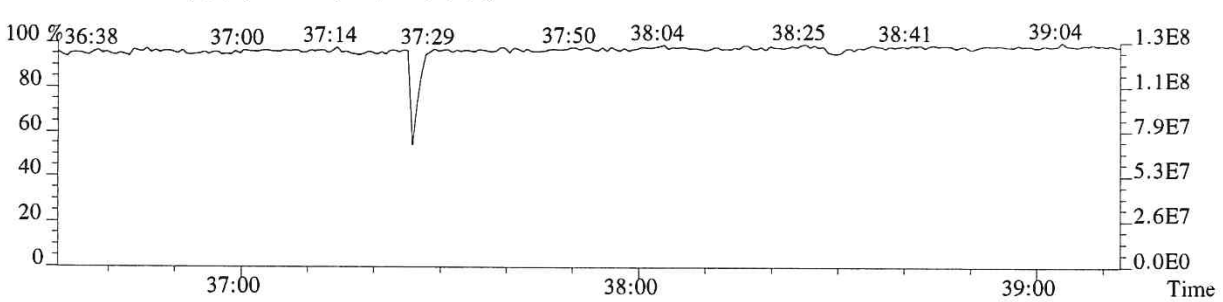
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1028.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,848.0,0.40%,F,T)

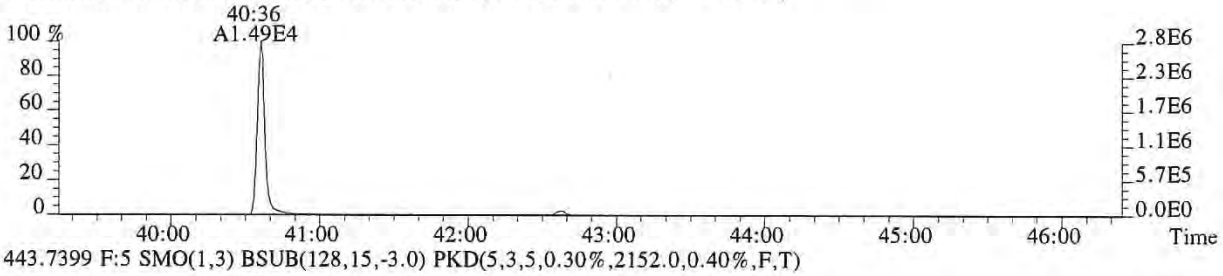


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

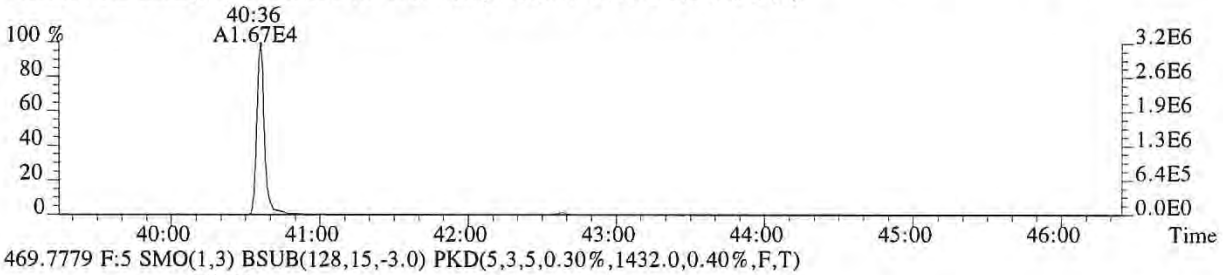


060350

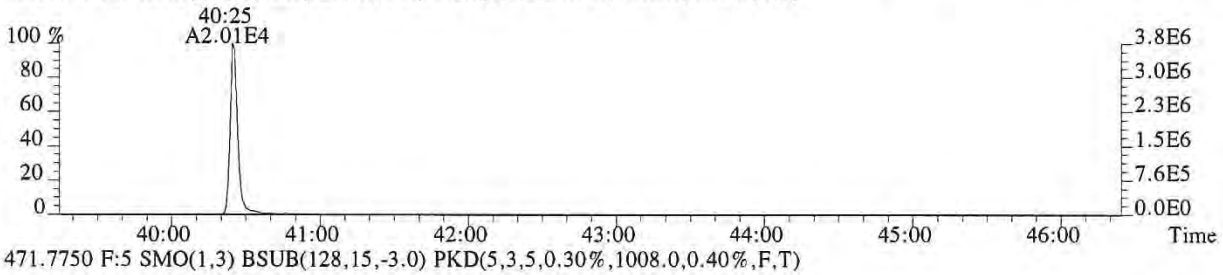
File:P616307 #1-645 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,940.0,0.40%,F,T)



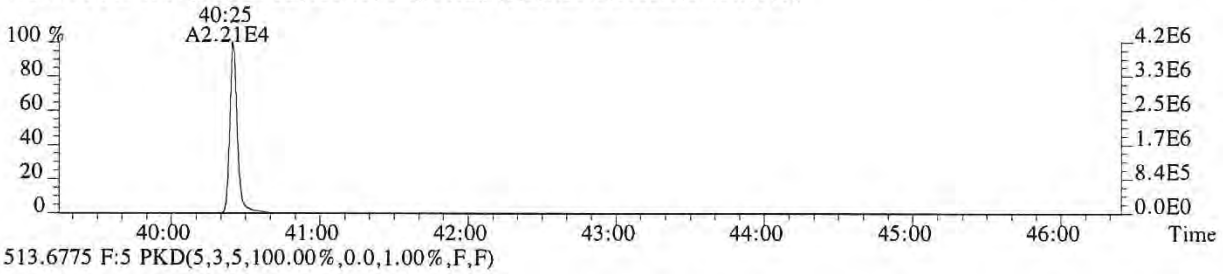
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2152.0,0.40%,F,T)



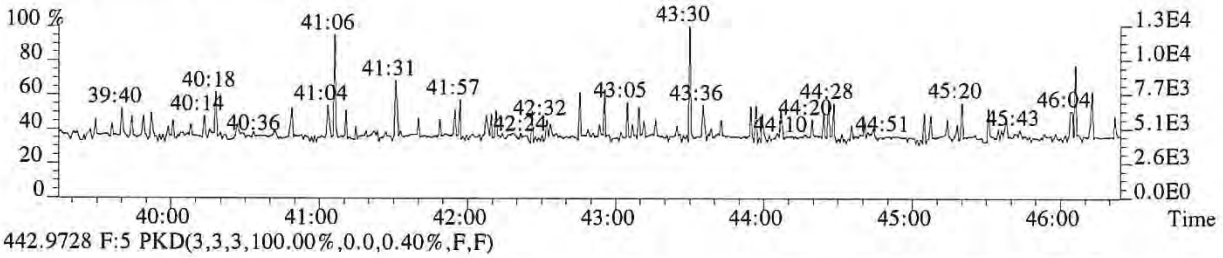
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1432.0,0.40%,F,T)



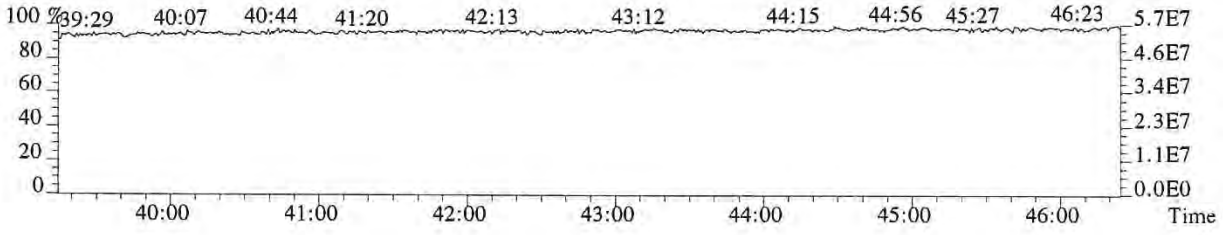
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1008.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

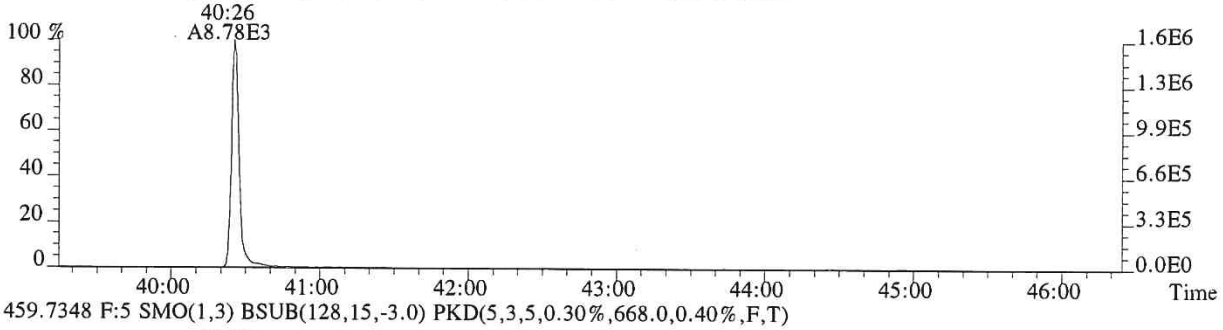


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

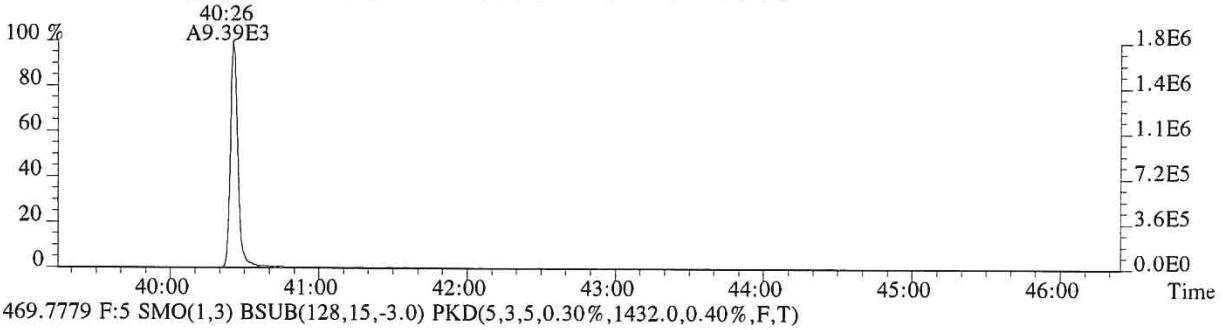


060351

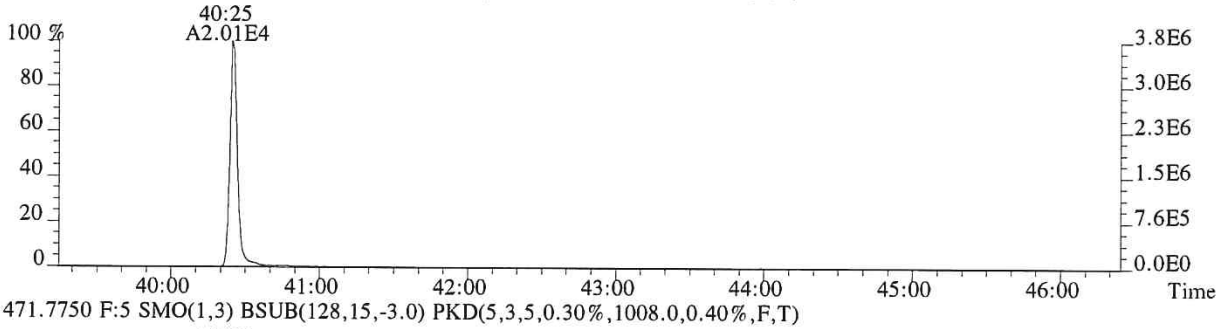
File:P616307 #1-645 Acq:30-DEC-2018 14:45:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-016DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,388.0,0.40%,F,T)



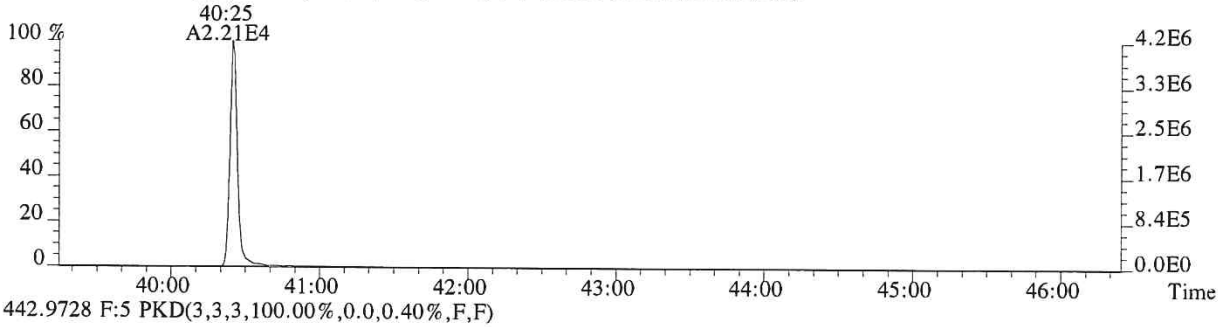
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,668.0,0.40%,F,T)



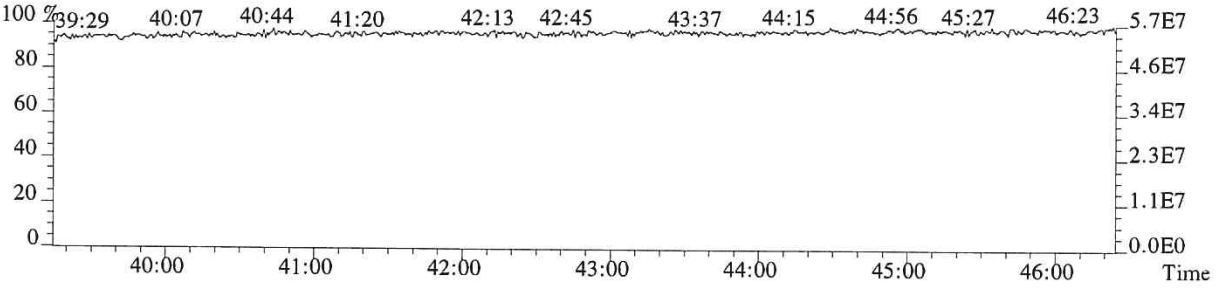
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1432.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1008.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060352

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0128

Run #16 Filename P616287 Samp: 1 Inj: 1 Acquired: 29-DEC-18 21:48:57
Processed: 30-DEC-18 09:21:29 Sample ID: E1801136-017

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:28	8.763e+01	1.118e+02	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	1.156
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:22	1.973e+01	3.235e+01	0.61	no	yes	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:30	4.476e+01	2.416e+01	1.85	no	yes	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:01	3.093e+01	1.577e+01	1.96	no	yes	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:49	1.839e+01	9.866e+00	1.86	no	yes	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:04	1.776e+02	1.510e+02	1.18	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:26	1.951e+01	1.080e+01	1.81	no	no	1.463
10	Unk	OCDF	40:37	1.735e+02	1.768e+02	0.98	yes	no	1.571
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:51	4.740e+01	3.623e+01	1.31	no	yes	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:10	4.450e+01	2.807e+01	1.59	no	yes	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:16	7.177e+01	4.725e+01	1.52	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:31	1.201e+02	7.992e+01	1.50	no	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:59	1.797e+03	1.621e+03	1.11	yes	no	1.112
17	Unk	OCDD	40:26	3.558e+04	3.935e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:26	1.939e+04	2.483e+04	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:29	3.575e+04	2.292e+04	1.56	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:31	3.415e+04	2.178e+04	1.57	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:22	1.566e+04	2.939e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:29	1.753e+04	3.343e+04	0.52	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	1.570e+04	3.040e+04	0.52	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	1.387e+04	2.641e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	9.357e+03	2.053e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	8.591e+03	1.878e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:27	1.043e+04	1.294e+04	0.81	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:49	2.670e+04	1.689e+04	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	2.314e+04	1.806e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	2.047e+04	1.606e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	1.914e+04	1.817e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:26	1.437e+04	1.557e+04	0.92	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:40	3.516e+04	4.448e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	4.587e+04	3.689e+04	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:29	1.873e+04				no	1.086

$$OCDD = \frac{(3.558e+04 + 3.935e+04) \times 4000\ pg \times 1}{(1.437e+04 + 1.557e+04) \times 10.479 \times 57.9 / 100 \times 1.157} = 1426.0445\ ng/kg$$

LG 12/3.18

ALS ENVIRONMENTAL -- HOUSTON HRMS
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Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0128

Run #16 Filename P616287 Samp: 1 Inj: 1 Acquired: 29-DEC-18 21:48:57
Processed: 30-DEC-18 09:21:29 LAB. ID: E1801136-017

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.50e+04	9.92e+02	1.5e+01	1.59e+04	2.70e+03	5.9e+00
2	1,2,3,7,8-PeCDF	*	1.43e+03	*	*	1.76e+03	*
3	2,3,4,7,8-PeCDF	*	1.43e+03	*	*	1.76e+03	*
4	1,2,3,4,7,8-HxCDF	3.93e+03	9.24e+02	4.3e+00	8.79e+03	5.36e+02	1.6e+01
5	1,2,3,6,7,8-HxCDF	8.62e+03	9.24e+02	9.3e+00	3.26e+03	5.36e+02	6.1e+00
6	2,3,4,6,7,8-HxCDF	5.85e+03	9.24e+02	6.3e+00	3.09e+03	5.36e+02	5.8e+00
7	1,2,3,7,8,9-HxCDF	3.41e+03	9.24e+02	3.7e+00	2.46e+03	5.36e+02	4.6e+00
8	1,2,3,4,6,7,8-HpCDF	3.87e+04	6.72e+02	5.8e+01	3.48e+04	1.25e+03	2.8e+01
9	1,2,3,4,7,8,9-HpCDF	4.96e+03	6.72e+02	7.4e+00	3.54e+03	1.25e+03	2.8e+00
10	OCDF	2.96e+04	7.60e+02	3.9e+01	3.45e+04	2.18e+03	1.6e+01
11	2,3,7,8-TCDD	*	3.26e+03	*	*	1.34e+03	*
12	1,2,3,7,8-PeCDD	8.60e+03	1.71e+03	5.0e+00	5.79e+03	1.00e+03	5.8e+00
13	1,2,3,4,7,8-HxCDD	1.08e+04	1.14e+03	9.4e+00	4.83e+03	1.10e+03	4.4e+00
14	1,2,3,6,7,8-HxCDD	1.66e+04	1.14e+03	1.5e+01	1.26e+04	1.10e+03	1.1e+01
15	1,2,3,7,8,9-HxCDD	2.50e+04	1.14e+03	2.2e+01	1.67e+04	1.10e+03	1.5e+01
16	1,2,3,4,6,7,8-HpCDD	3.98e+05	1.19e+03	3.3e+02	3.84e+05	9.12e+02	4.2e+02
17	OCDD	6.80e+06	4.08e+02	1.7e+04	7.64e+06	1.68e+03	4.5e+03
18	13C-2,3,7,8-TCDF	2.76e+06	6.74e+03	4.1e+02	3.56e+06	4.50e+03	7.9e+02
19	13C-1,2,3,7,8-PeCDF	6.15e+06	9.00e+02	6.8e+03	3.96e+06	8.80e+02	4.5e+03
20	13C-2,3,4,7,8-PeCDF	6.52e+06	9.00e+02	7.2e+03	4.18e+06	8.80e+02	4.7e+03
21	13C-1,2,3,4,7,8-HxCDF	3.38e+06	1.36e+03	2.5e+03	6.29e+06	1.58e+03	4.0e+03
22	13C-1,2,3,6,7,8-HxCDF	3.80e+06	1.36e+03	2.8e+03	7.22e+06	1.58e+03	4.6e+03
23	13C-2,3,4,6,7,8-HxCDF	3.40e+06	1.36e+03	2.5e+03	6.50e+06	1.58e+03	4.1e+03
24	13C-1,2,3,7,8,9-HxCDF	3.01e+06	1.36e+03	2.2e+03	5.70e+06	1.58e+03	3.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.09e+06	8.88e+02	2.4e+03	4.64e+06	3.51e+03	1.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.92e+06	8.88e+02	2.2e+03	4.12e+06	3.51e+03	1.2e+03
27	13C-2,3,7,8-TCDD	1.64e+06	1.27e+04	1.3e+02	2.08e+06	4.06e+03	5.1e+02
28	13C-1,2,3,7,8-PeCDD	5.23e+06	1.28e+03	4.1e+03	3.29e+06	1.38e+03	2.4e+03
29	13C-1,2,3,4,7,8-HxCDD	5.01e+06	1.10e+03	4.5e+03	3.91e+06	1.62e+03	2.4e+03
30	13C-1,2,3,6,7,8-HxCDD	4.48e+06	1.10e+03	4.1e+03	3.51e+06	1.62e+03	2.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.41e+06	5.16e+02	8.5e+03	4.15e+06	1.36e+03	3.1e+03
32	13C-OCDD	2.68e+06	1.52e+03	1.8e+03	2.94e+06	1.11e+03	2.7e+03
33	13C-1,2,3,4-TCDD	5.20e+06	1.27e+04	4.1e+02	6.61e+06	4.06e+03	1.6e+03
34	13C-1,2,3,7,8,9-HxCDD	1.03e+07	1.10e+03	9.3e+03	8.21e+06	1.62e+03	5.1e+03
35	37Cl-2,3,7,8-TCDD	2.96e+06	1.75e+03	1.7e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.256e+03 + 1.336e+03) \times 2000}{(1.639e+06 + 2.079e+06) \times (\quad) \times 1.049} =$$

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Peak List Summary

CLIENT ID.
SL0128

Entry: 36 Totals Name: Total Tetra-Furans

Run: 16 File: P616287 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 21:48:57 Processed: 30-DEC-18 09:21:29

Mass: 303.9020 305.8990 Tot Response: 5.53e+02 RRF: 1.081

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:50	8.86e+01	1.20e+02	0.74	yes	2.09e+02		n	n
2	24:25	6.20e+01	8.30e+01	0.75	yes	1.45e+02		n	n
3	25:28	8.76e+01	1.12e+02	0.78	yes	1.99e+02	2,3,7,8-TCDF	n	n

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Peak List Summary

CLIENT ID.
SL0128

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 16 File: P616287 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 21:48:57 Processed: 30-DEC-18 09:21:29

Mass: 319.8970 321.8940 Tot Response: 5.33e+02 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:04	2.39e+02	2.94e+02 0.81	yes	5.33e+02		n	n

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Peak List Summary

CLIENT ID.
SL0128

Entry: 38 Totals Name: Total Penta-Furans1

Run: 16 File: P616287 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 21:48:57 Processed: 30-DEC-18 09:21:29

Mass: 339.8600 341.8570 Tot Response: 3.19e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:42	1.96e+02	1.23e+02	1.59	yes	3.19e+02	n	n

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Peak List Summary

CLIENT ID.
SL0128

Entry: 39 Totals Name: Total Penta-Furans2

Run: 16 File: P616287 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 21:48:57 Processed: 30-DEC-18 09:21:29

Mass: 339.8600 341.8570 Tot Response: 9.76e+01 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:21	2.02e+01	1.20e+01 1.68	yes	3.23e+01		n	n
2	30:04	4.14e+01	2.39e+01 1.73	yes	6.54e+01		n	n

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Peak List Summary

CLIENT ID.
SL0128

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 16 File: P616287 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 21:48:57 Processed: 30-DEC-18 09:21:29

Mass: 355.8550 357.8520 Tot Response: 4.32e+02 RRF: 0.9288

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:00	2.59e+02	1.73e+02 1.50	yes	4.32e+02		n	n

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Peak List Summary

CLIENT ID.
SL0128

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 16 File: P616287 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 21:48:57 Processed: 30-DEC-18 09:21:29

Mass: 389.8160 391.8130 Tot Response: 4.60e+03 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:45	1.92e+03	1.49e+03 1.29	yes	3.40e+03		n	n
2	34:33	5.89e+02	4.52e+02 1.30	yes	1.04e+03		n	n
3	34:39	5.12e+01	3.89e+01 1.32	yes	9.01e+01		n	n
4	35:26	3.46e+01	3.11e+01 1.11	yes	6.57e+01		n	n

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Peak List Summary

CLIENT ID.
SL0128

Entry: 43 Totals Name: Total Hepta-Furans

Run: 16 File: P616287 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 21:48:57 Processed: 30-DEC-18 09:21:29

Mass: 407.7820 409.7790 Tot Response: 3.56e+02 RRF: 1.495

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:04	1.78e+02	1.51e+02 1.18	yes	3.29e+02	1,2,3,4,6,7,8-HpCDF	n	n
2	38:30	1.29e+01	1.44e+01 0.89	yes	2.73e+01		n	n

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Peak List Summary

CLIENT ID.
SL0128

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 16 File: P616287 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 21:48:57 Processed: 30-DEC-18 09:21:29

Mass: 423.7770 425.7740 Tot Response: 1.23e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:20	4.50e+03	4.40e+03	1.02	yes	8.90e+03		n	n
2	37:59	1.80e+03	1.62e+03	1.11	yes	3.42e+03	1,2,3,4,6,7,8-HpCDD	n	n

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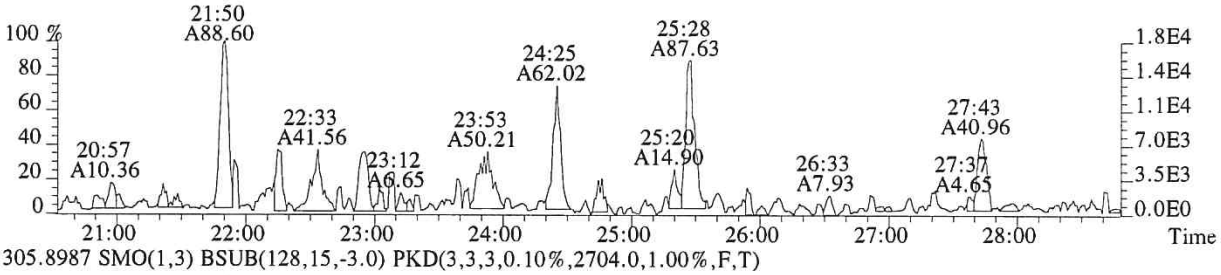
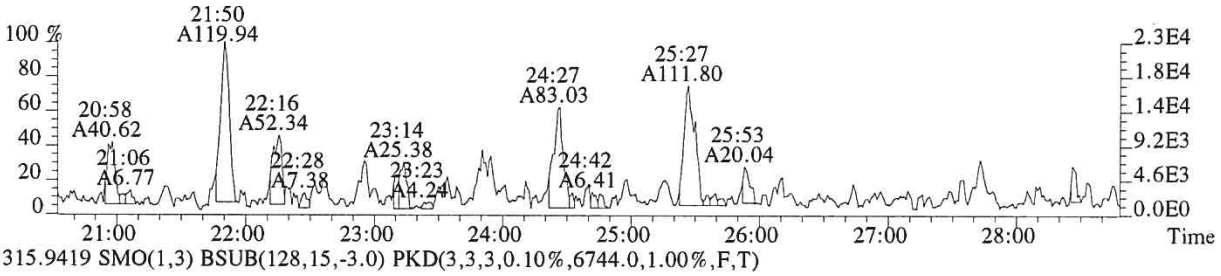
File:P616287 #1-587 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017

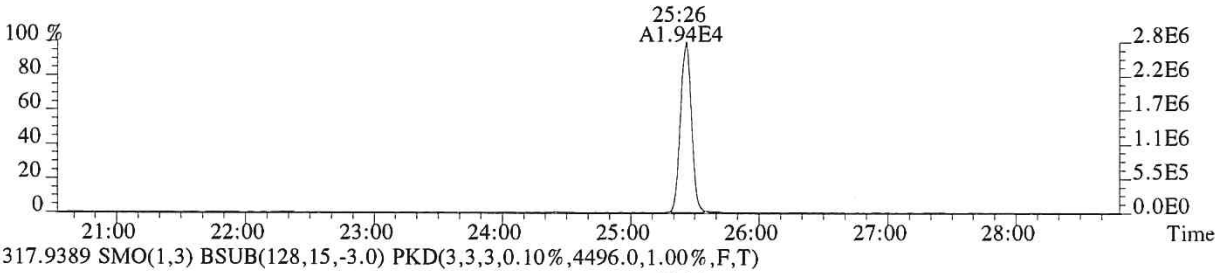
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,992.0,1.00%,F,T)



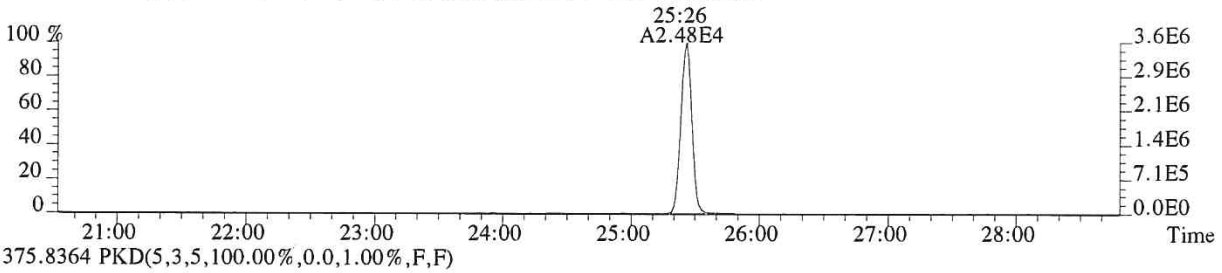
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2704.0,1.00%,F,T)



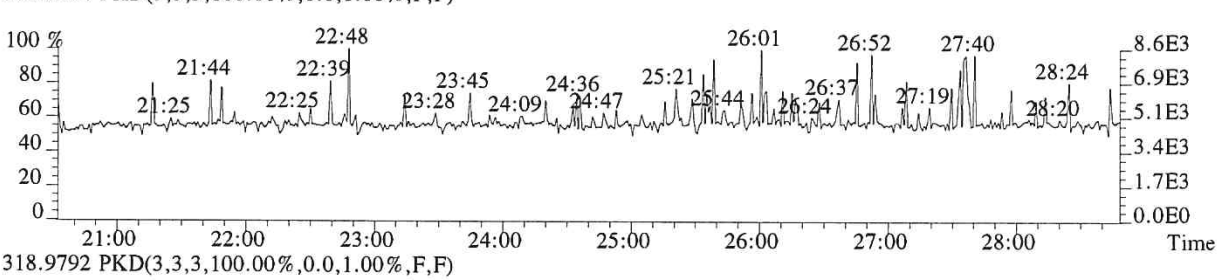
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6744.0,1.00%,F,T)



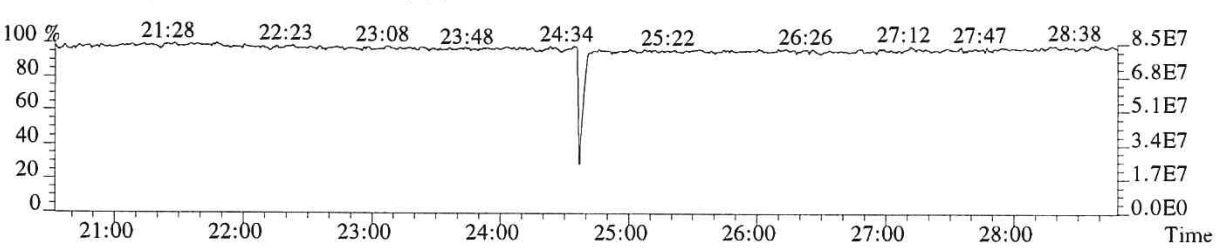
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4496.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



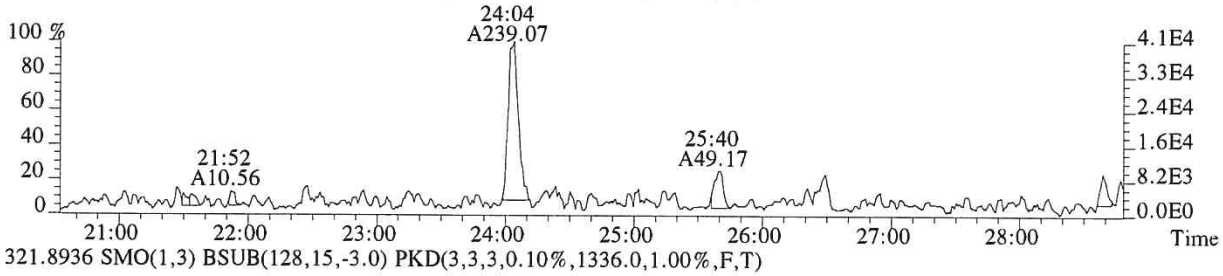
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



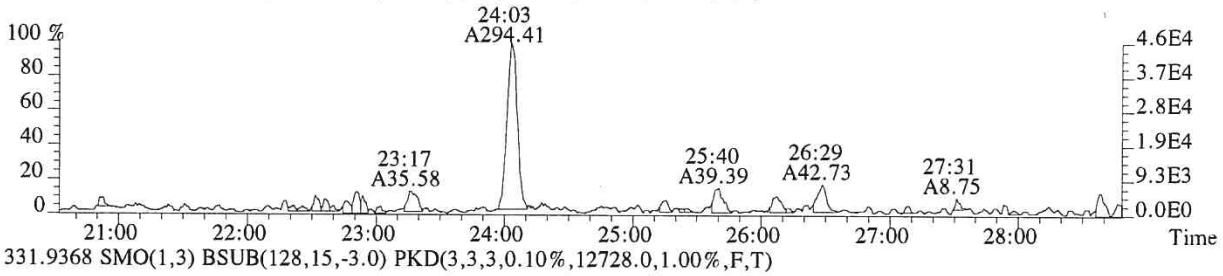
060363

File:P616287 #1-587 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017

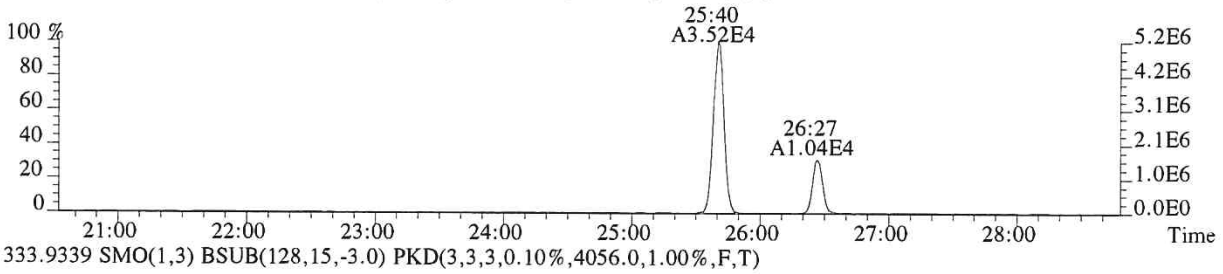
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3256.0,1.00%,F,T)



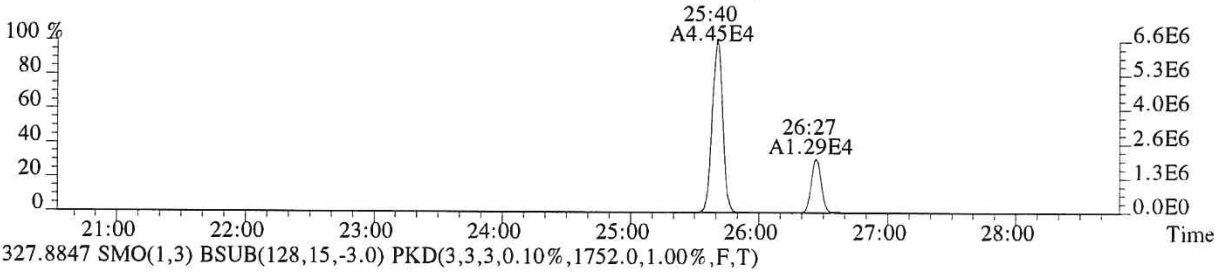
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1336.0,1.00%,F,T)



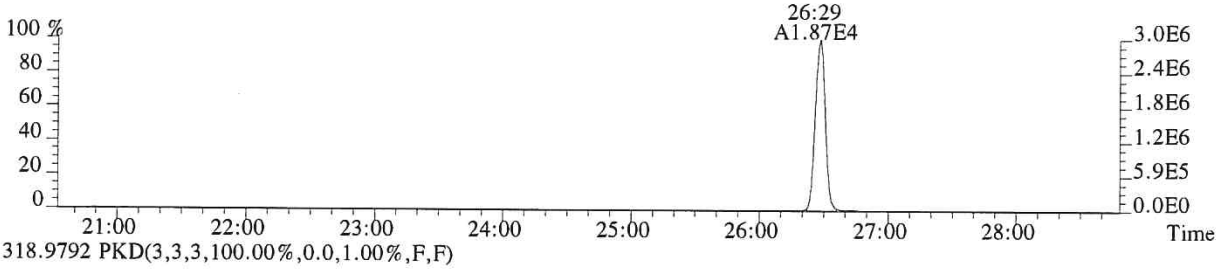
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12728.0,1.00%,F,T)



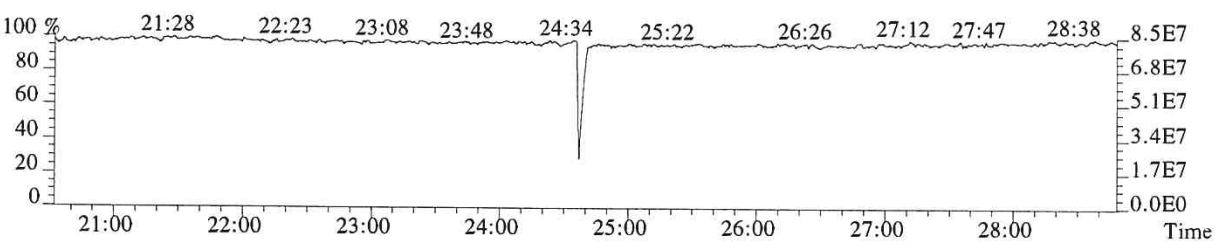
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4056.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1752.0,1.00%,F,T)

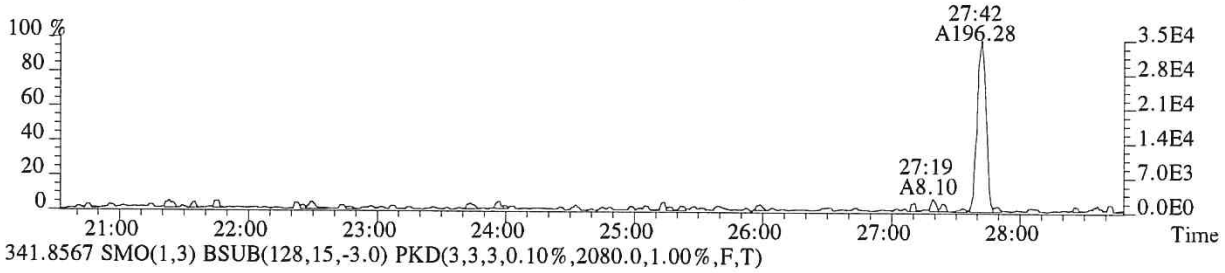


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

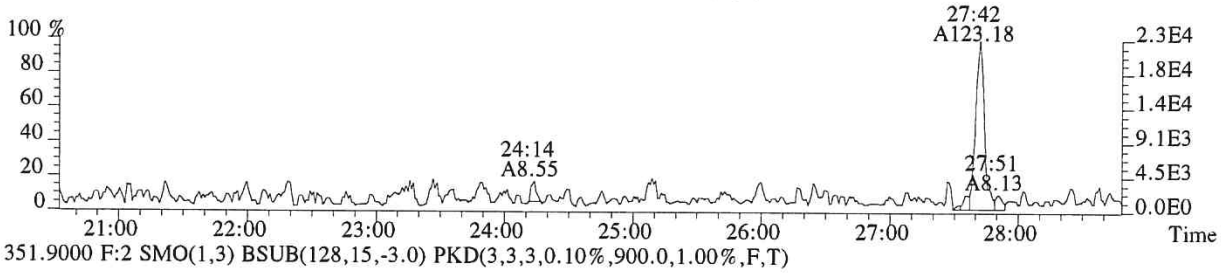


060364

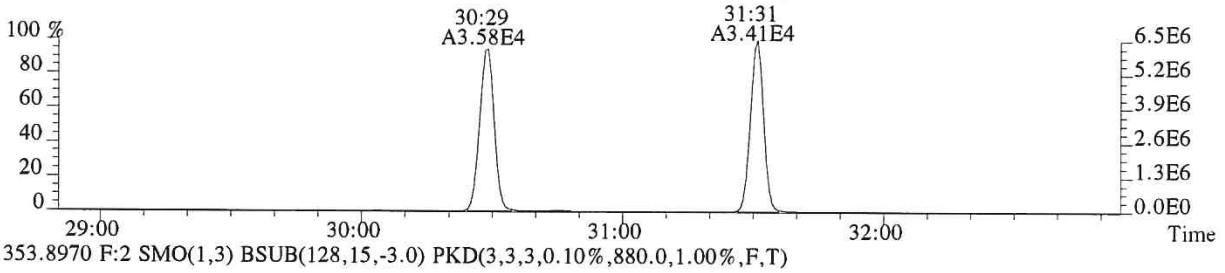
File:P616287 #1-587 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,624.0,1.00%,F,T)



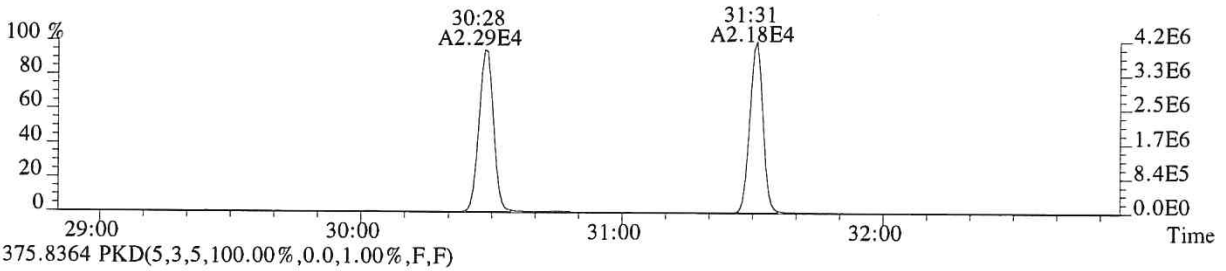
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2080.0,1.00%,F,T)



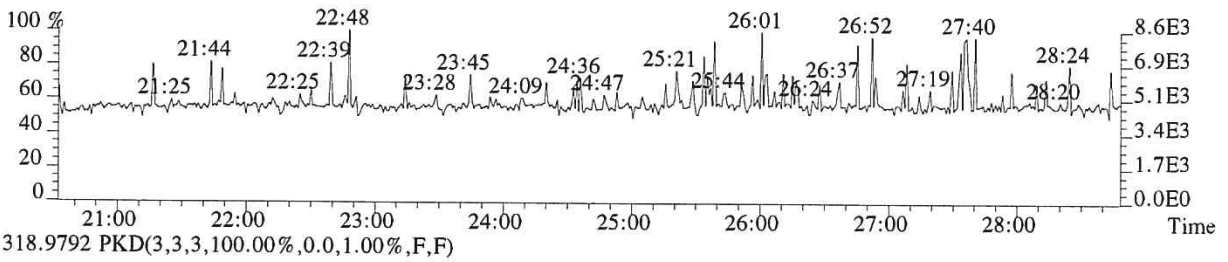
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,900.0,1.00%,F,T)



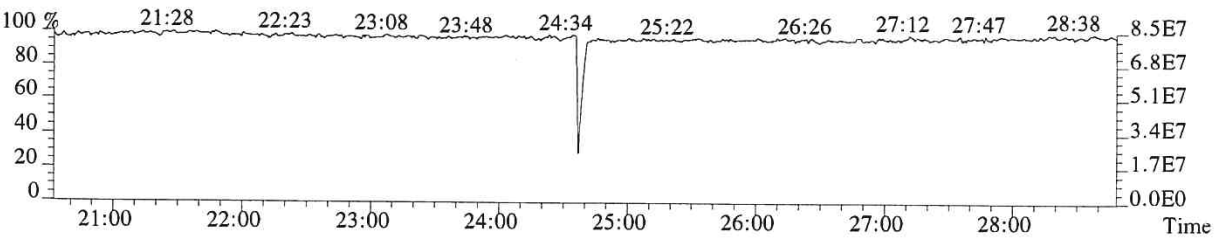
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,880.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

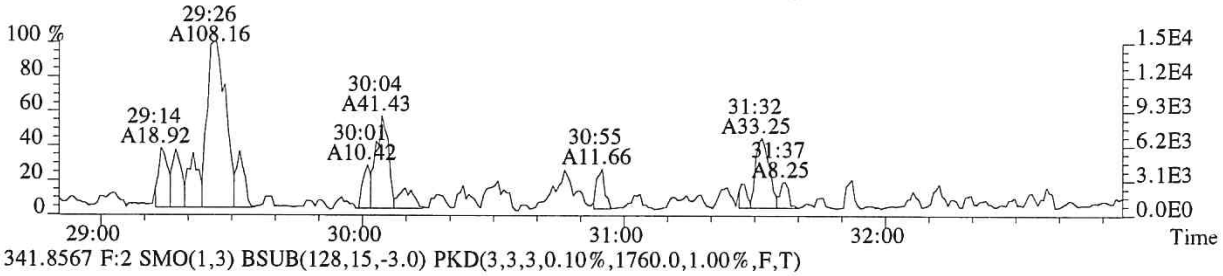


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

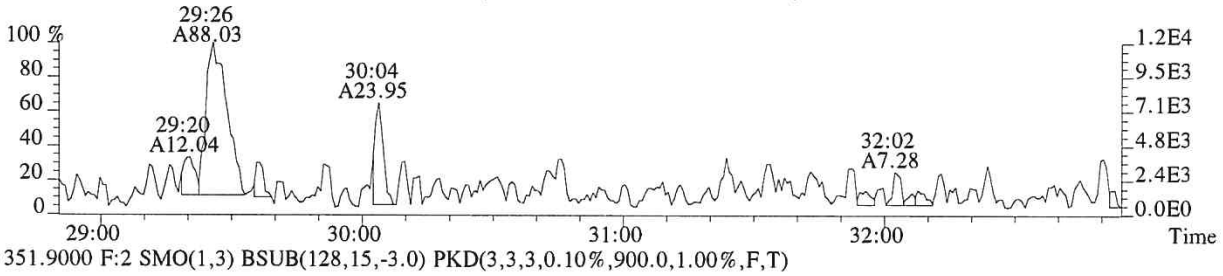


060365

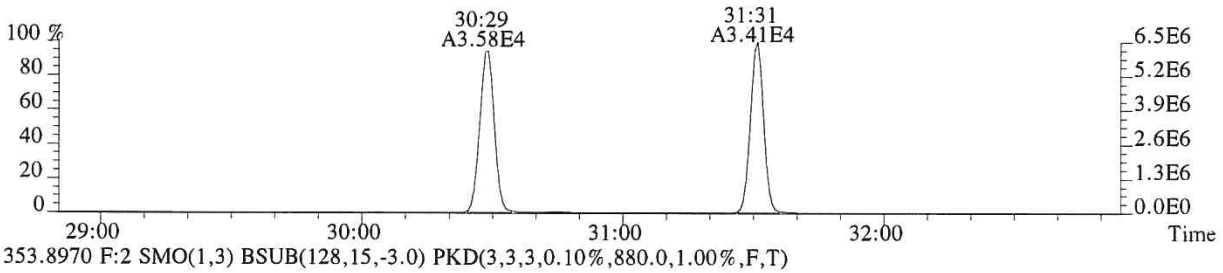
File:P616287 #1-367 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1428.0,1.00%,F,T)



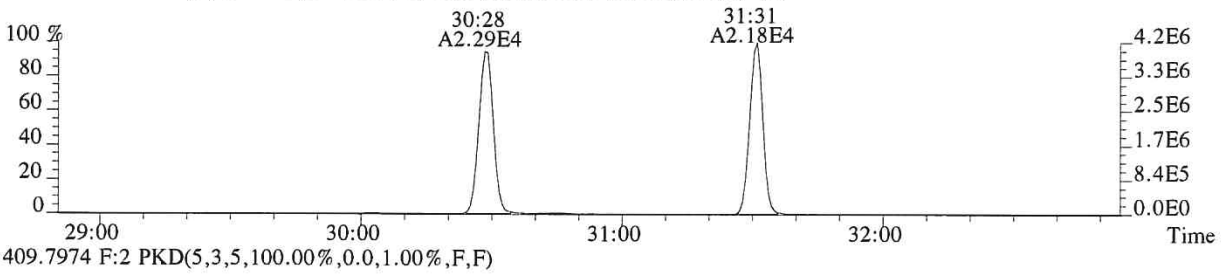
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1760.0,1.00%,F,T)



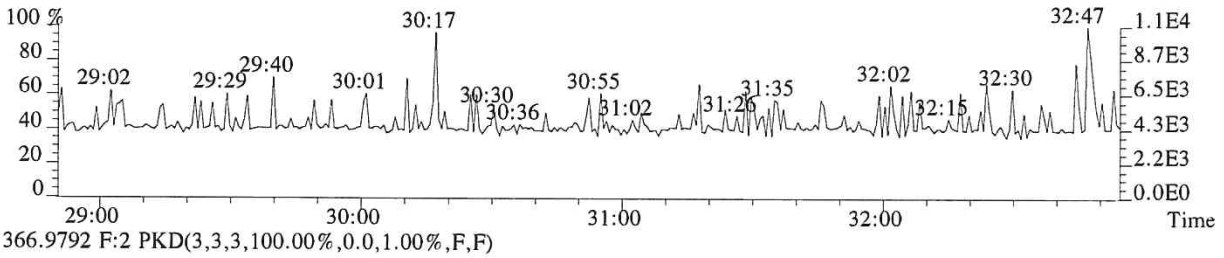
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,900.0,1.00%,F,T)



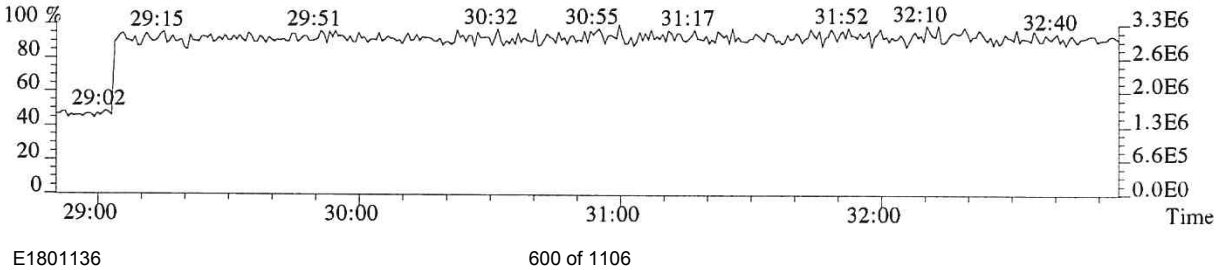
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,880.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

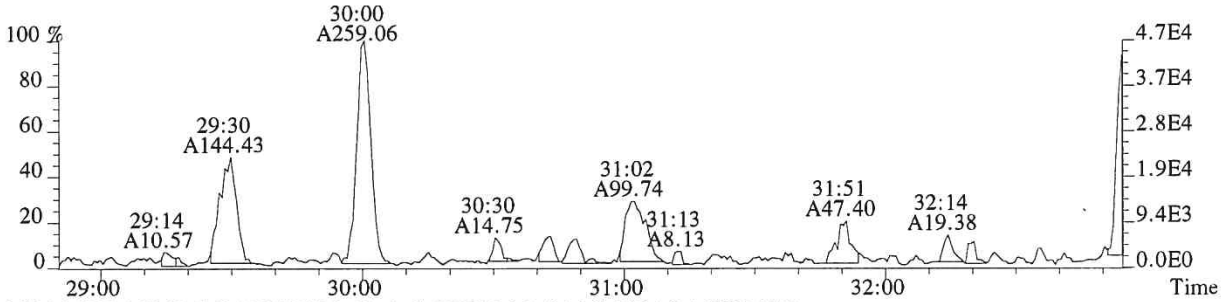


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

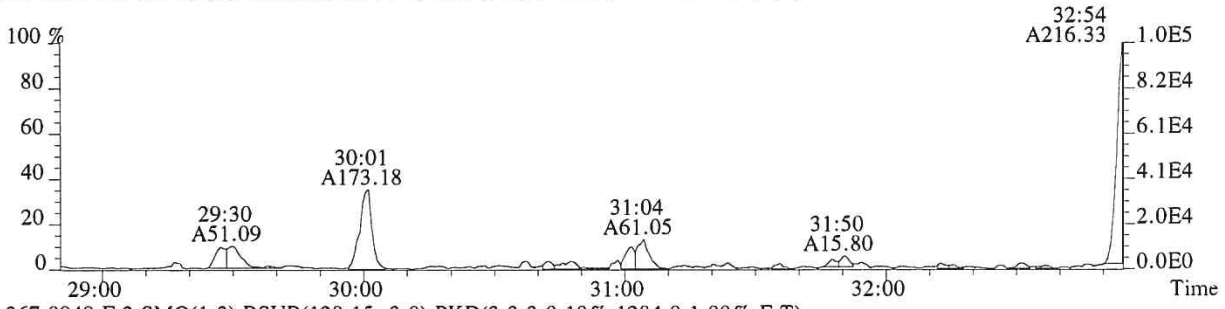


060366

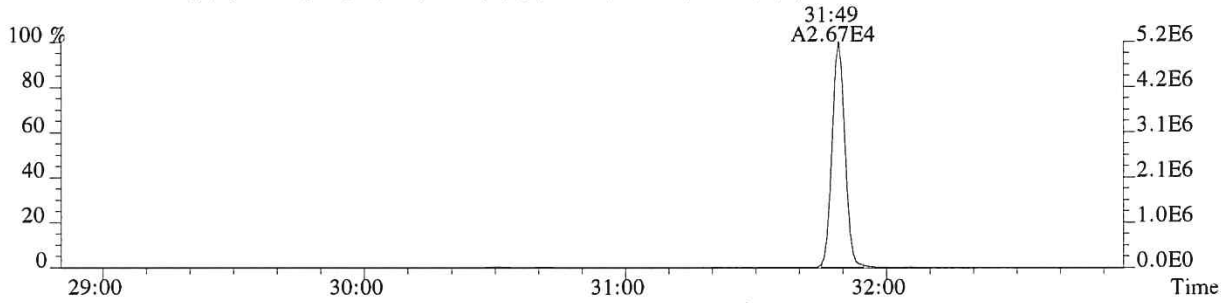
File:P616287 #1-367 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1708.0,1.00%,F,T)



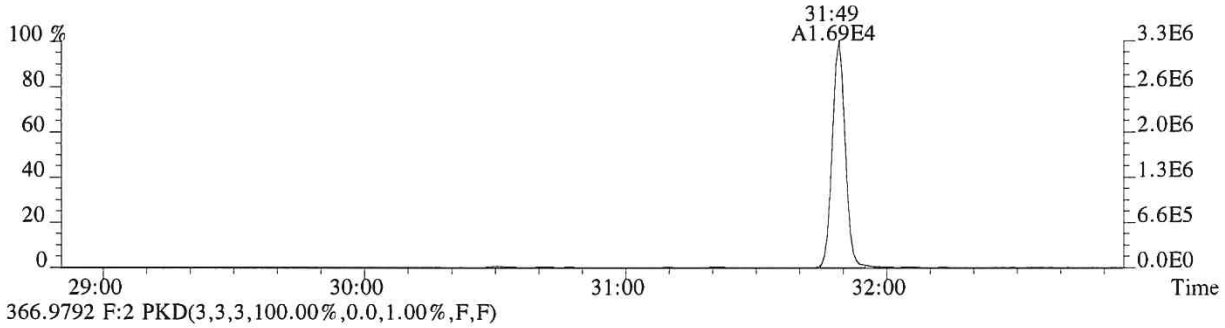
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1004.0,1.00%,F,T)



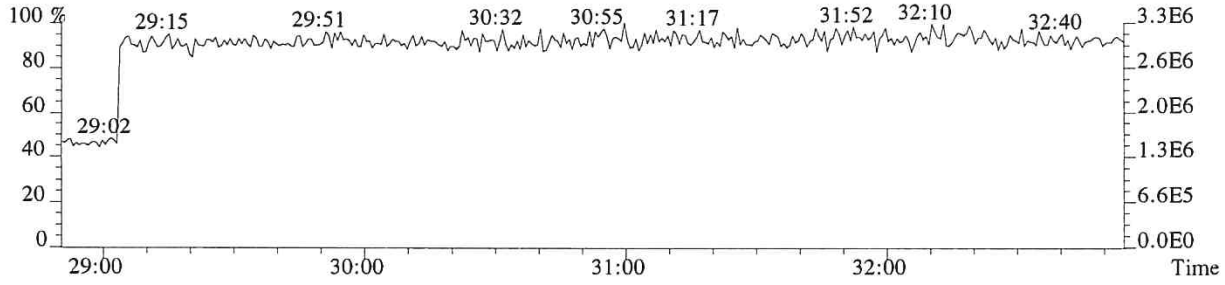
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1284.0,1.00%,F,T)



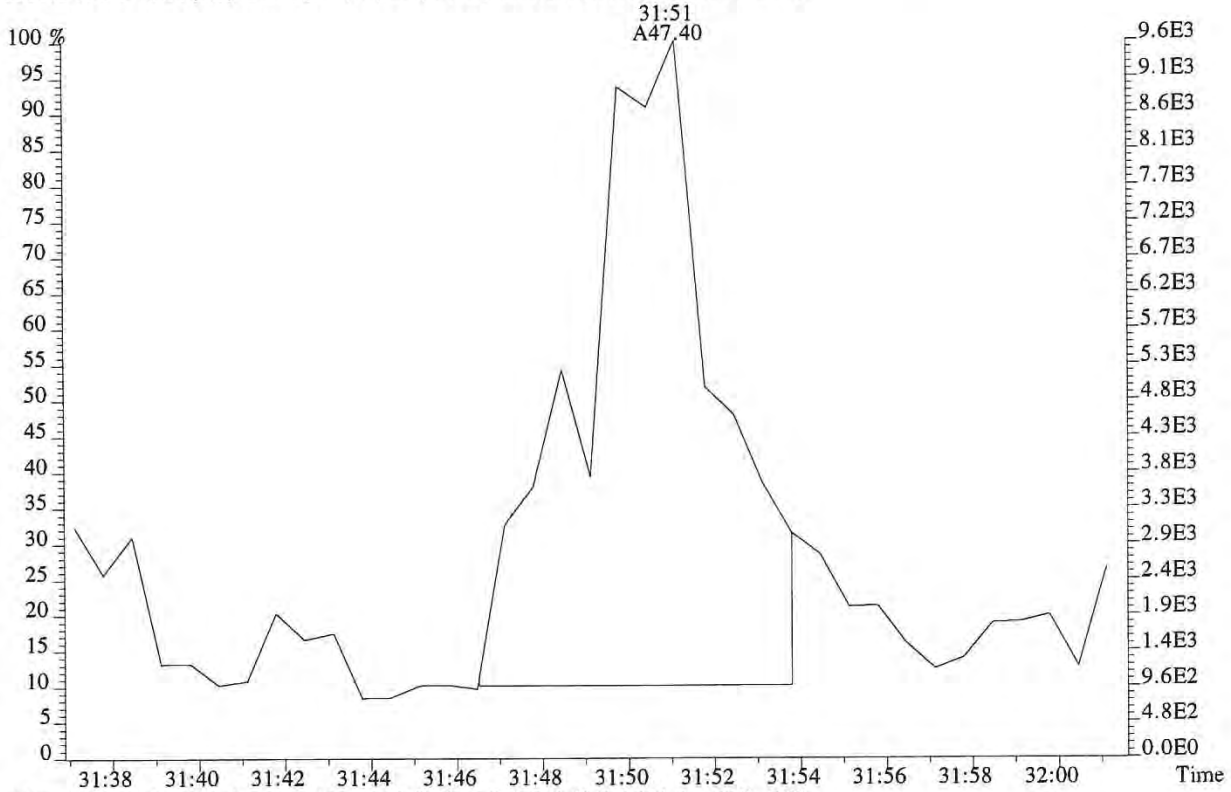
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1380.0,1.00%,F,T)



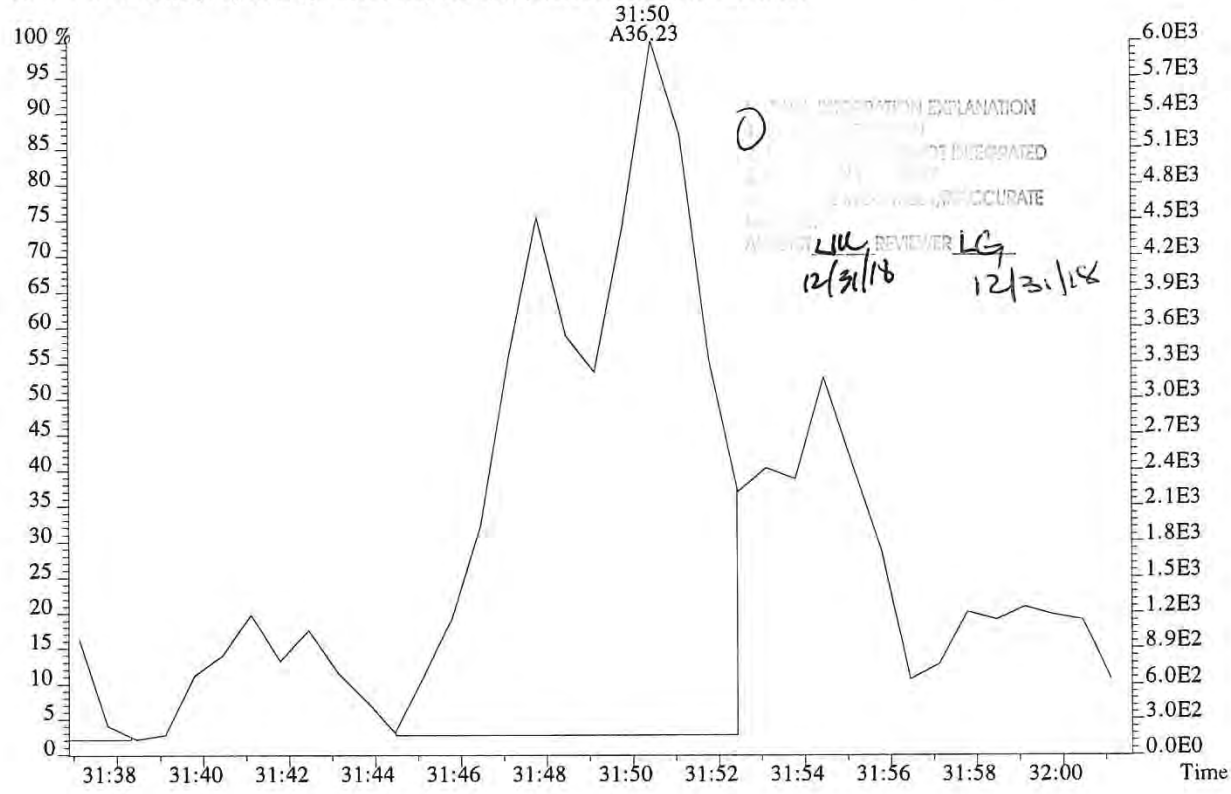
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P616287 #1-367 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1708.0,1.00%,F,T)



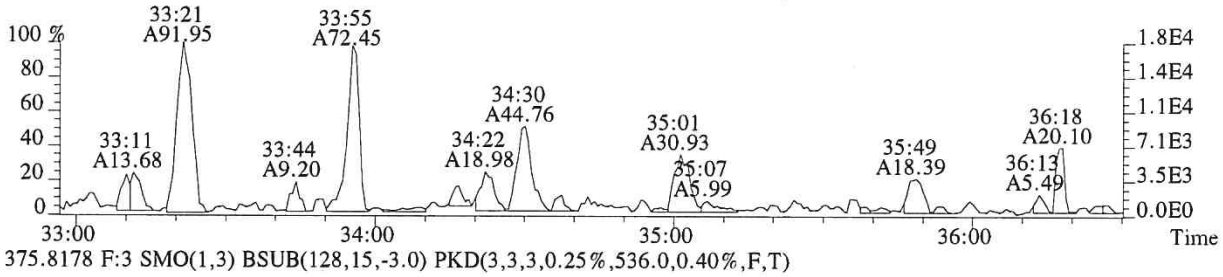
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1004.0,1.00%,F,T)



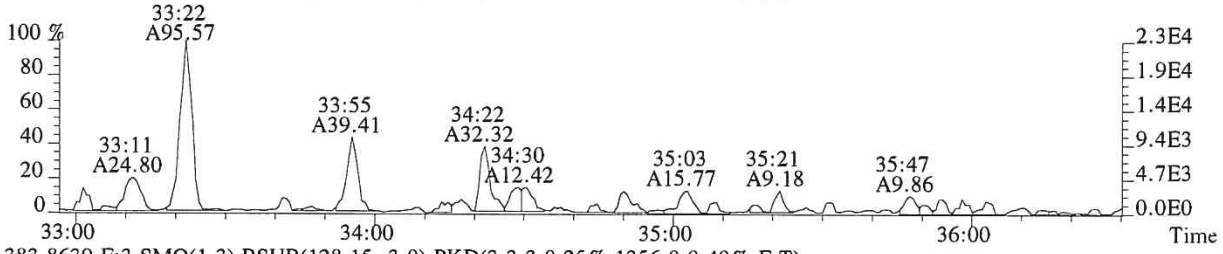
EXPLANATION
REVIEWER LG 12/31/18
12/31/18

060368

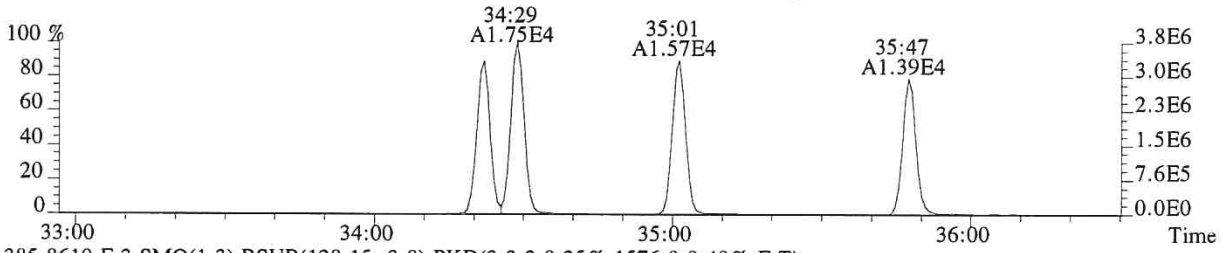
File:P616287 #1-321 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,924.0,0.40%,F,T)



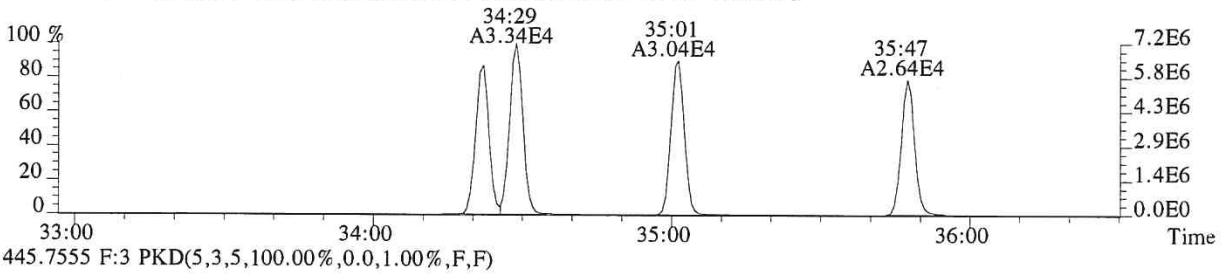
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,536.0,0.40%,F,T)



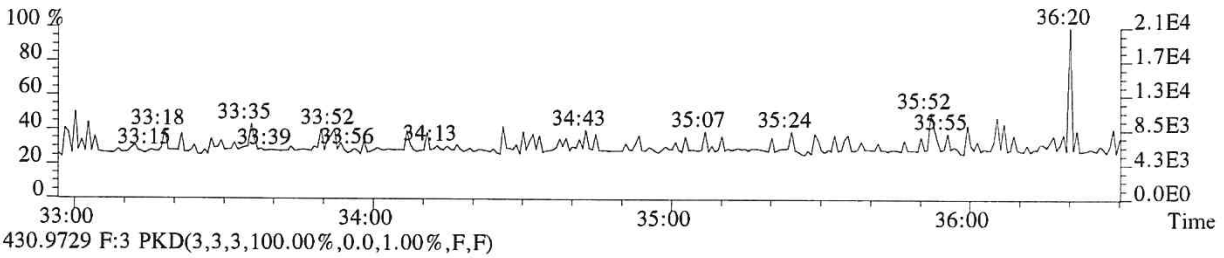
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1356.0,0.40%,F,T)



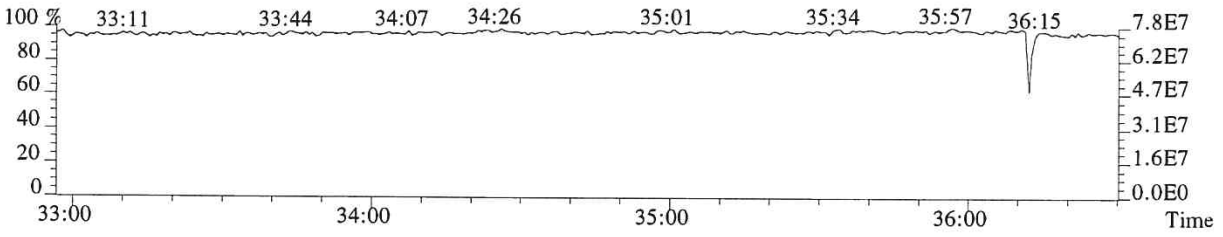
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1576.0,0.40%,F,T)



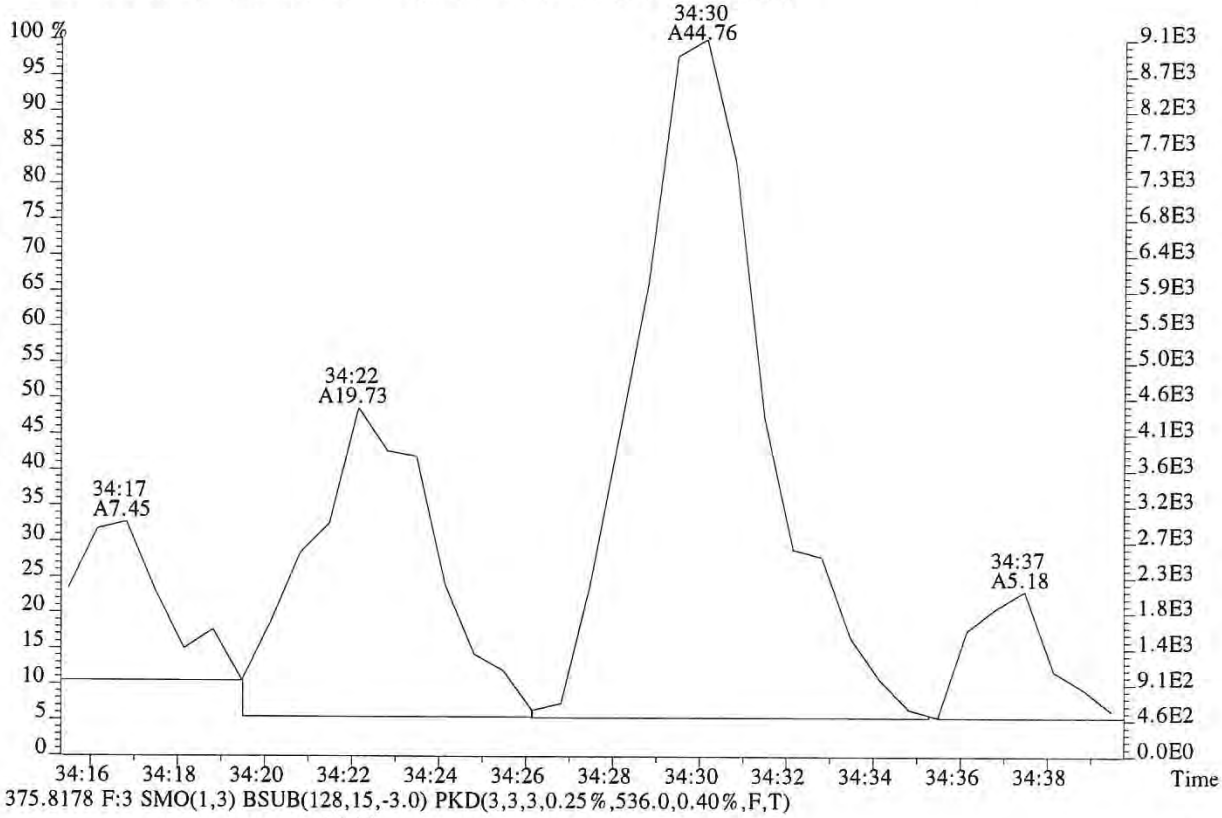
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



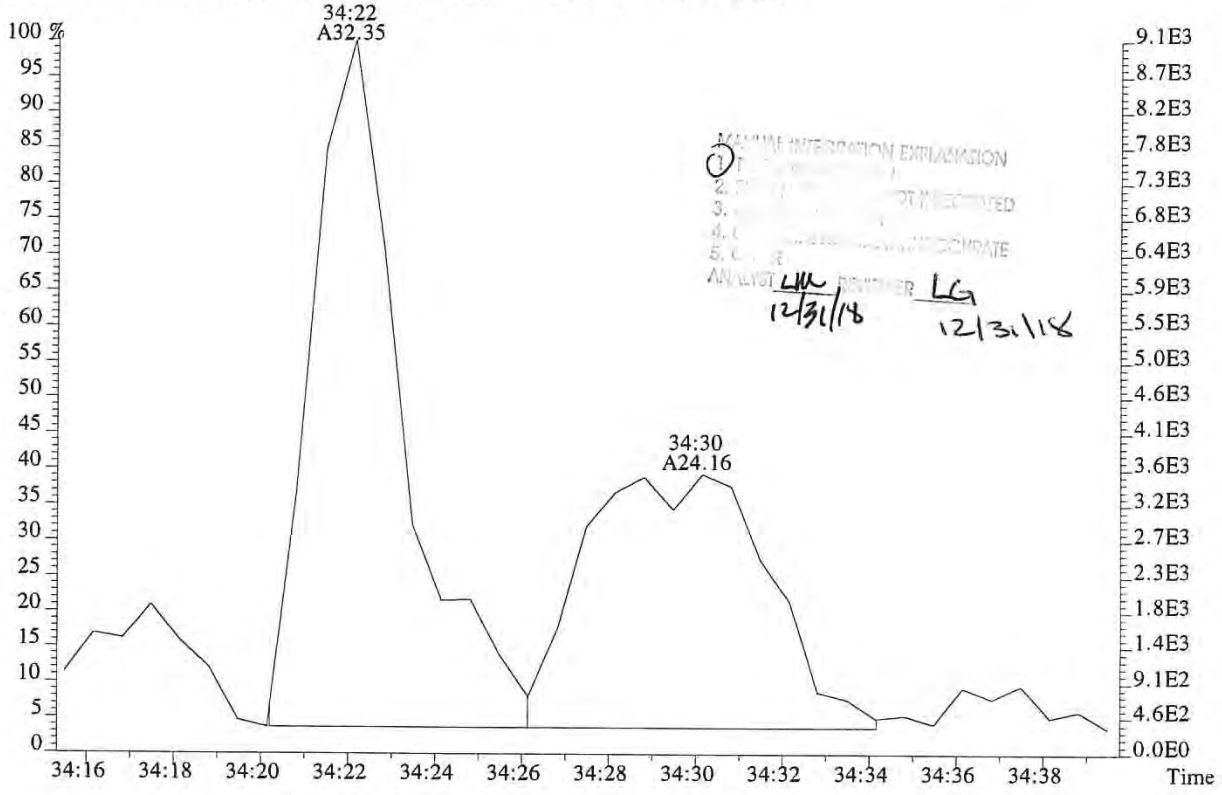
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P616287 #1-321 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,924.0,0.40%,F,T)

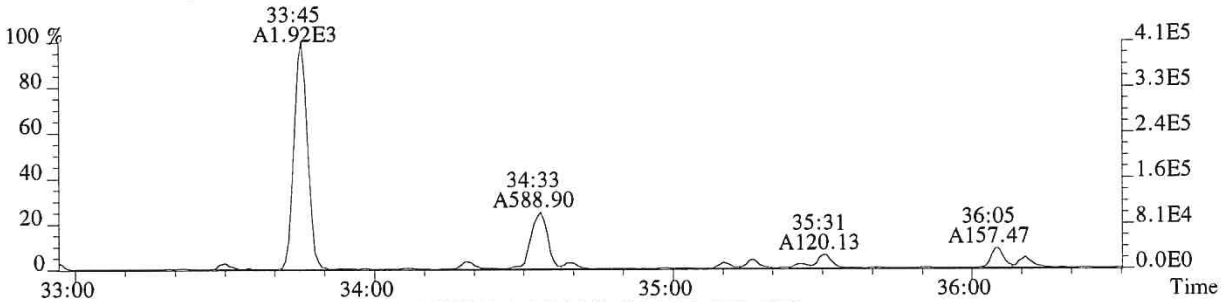


375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,536.0,0.40%,F,T)

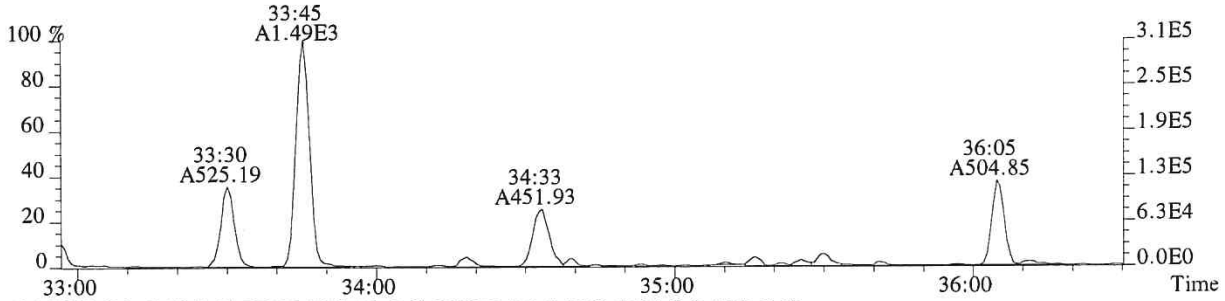


MANUAL INTEGRATION EXPLANATION
1.
2.
3.
4.
5.
ANALYST
12/31/18
REVIEWER
12/31/18

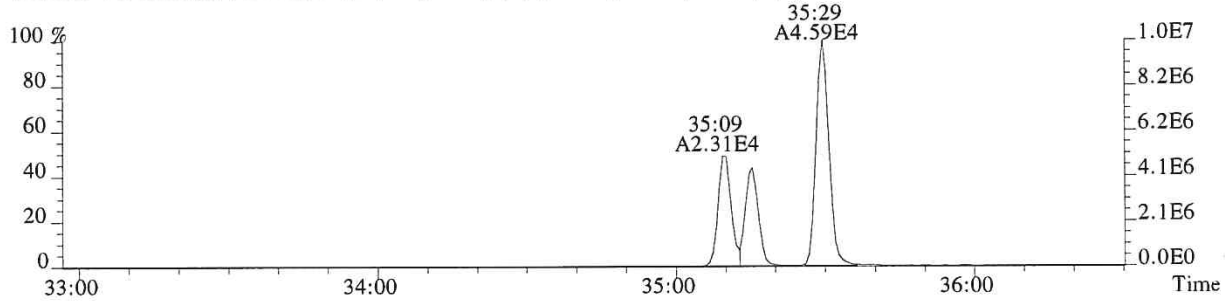
File:P616287 #1-321 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1144.0,0.40%,F,T)



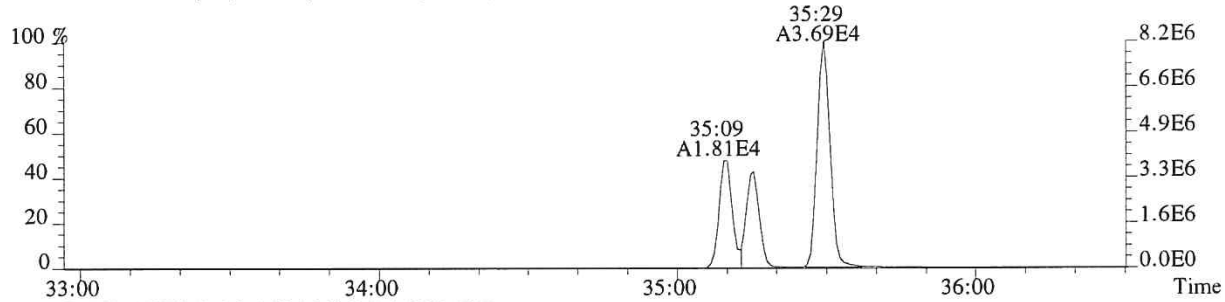
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1104.0,0.40%,F,T)



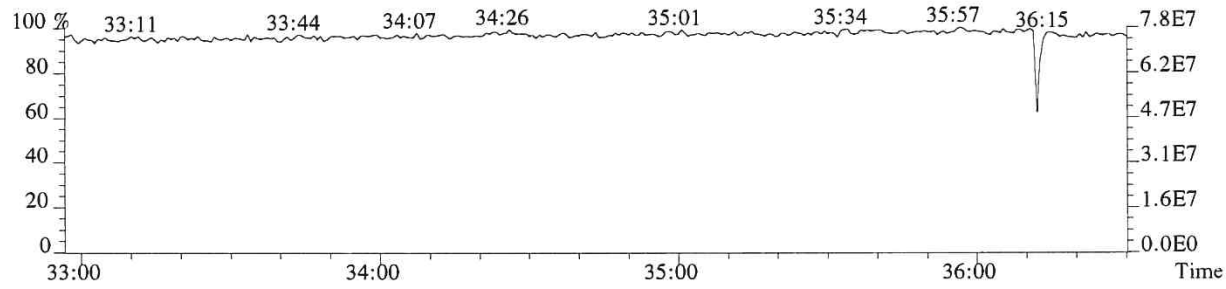
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1104.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1620.0,0.40%,F,T)

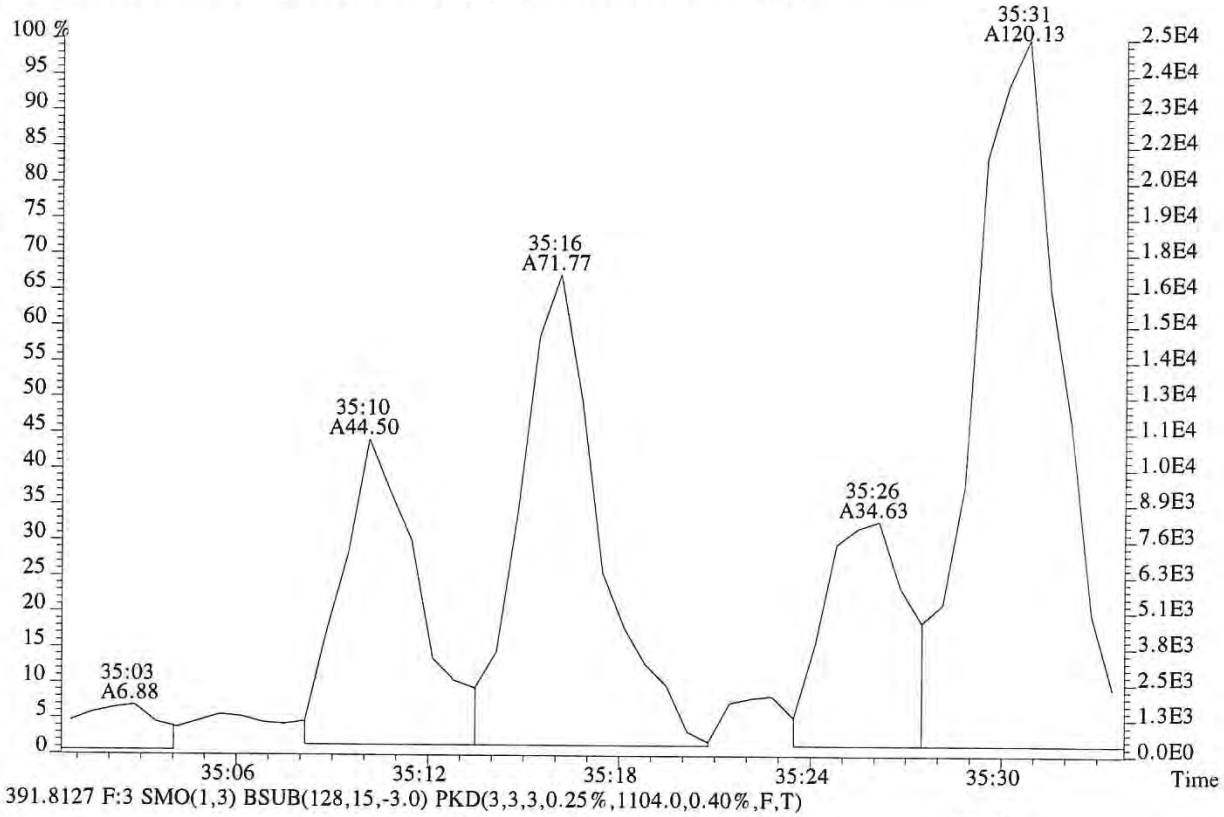


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

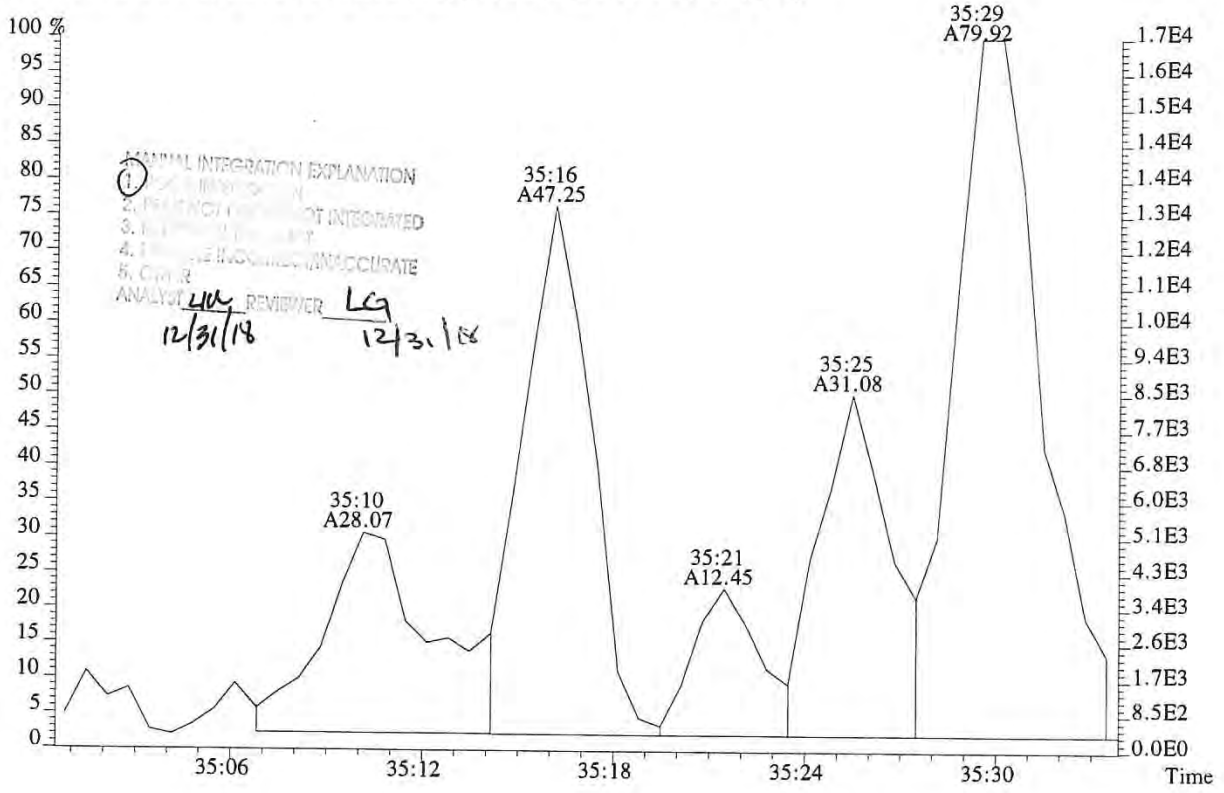


060371

File:P616287 #1-321 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1144.0,0.40%,F,T)



391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1104.0,0.40%,F,T)

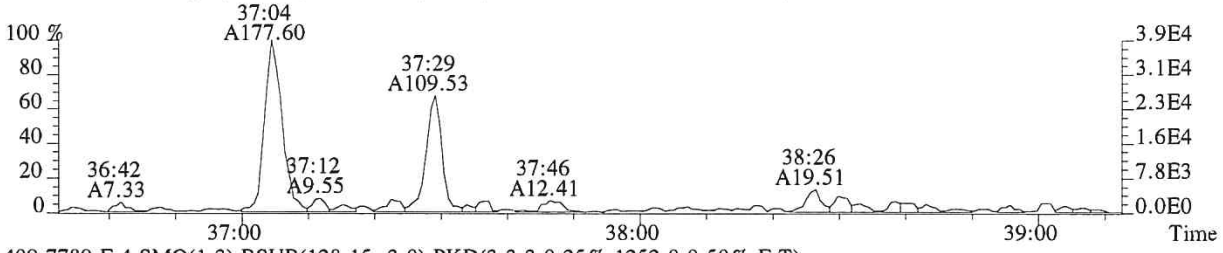


MANUAL INTEGRATION EXPLANATION
1.
2. PEAK NOT INTEGRATED
3.
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST HR REVIEWER LG
12/31/18 12/31/18

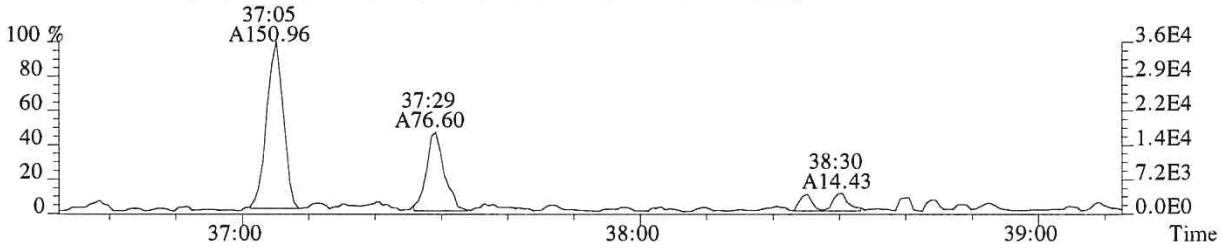
060372

File:P616287 #1-241 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017

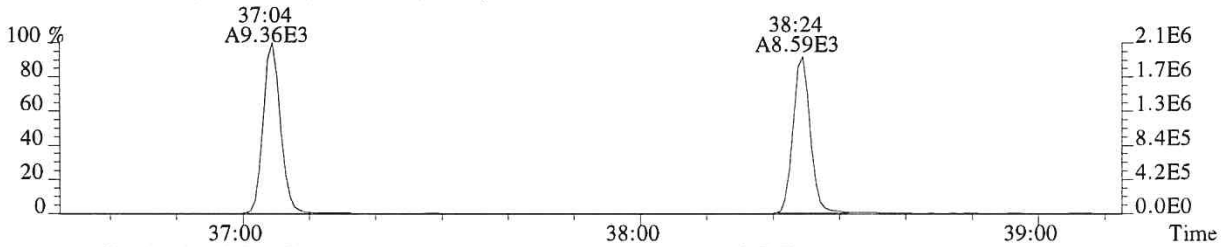
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,672.0,0.50%,F,T)



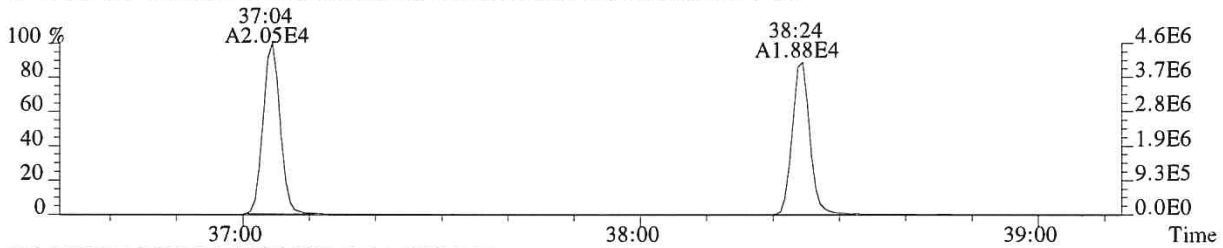
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1252.0,0.50%,F,T)



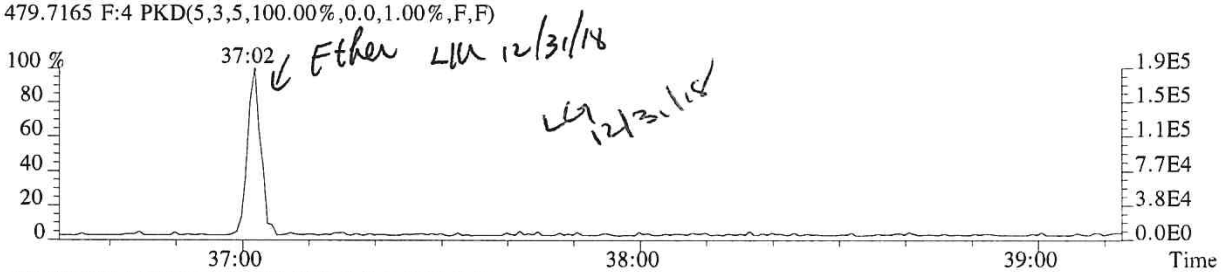
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,888.0,0.50%,F,T)



419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3508.0,0.50%,F,T)



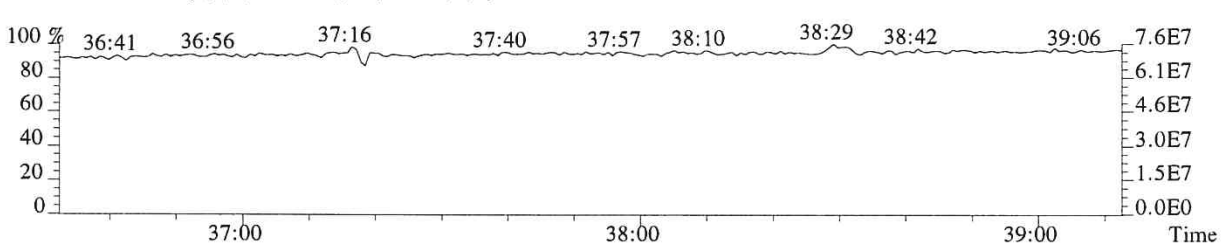
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



Ether LW 12/31/18

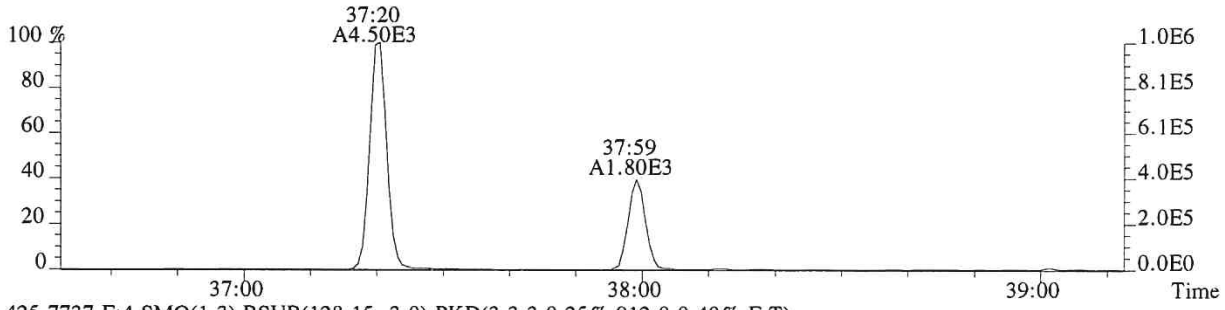
LW 12/31/18

430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

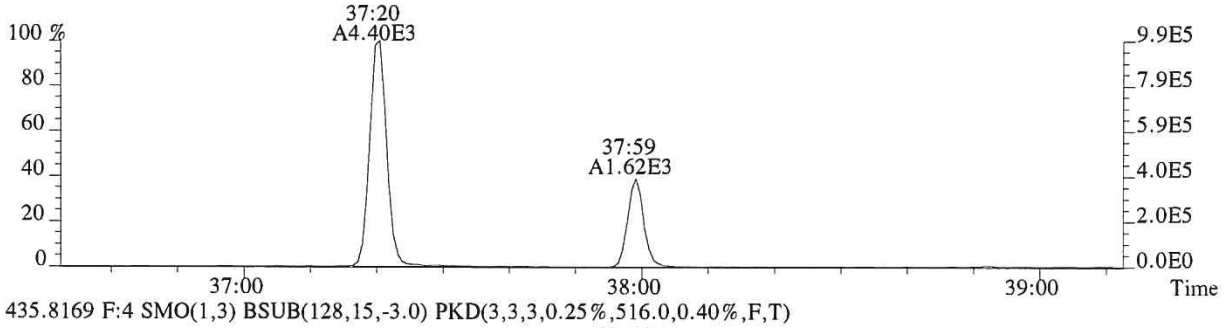


060373

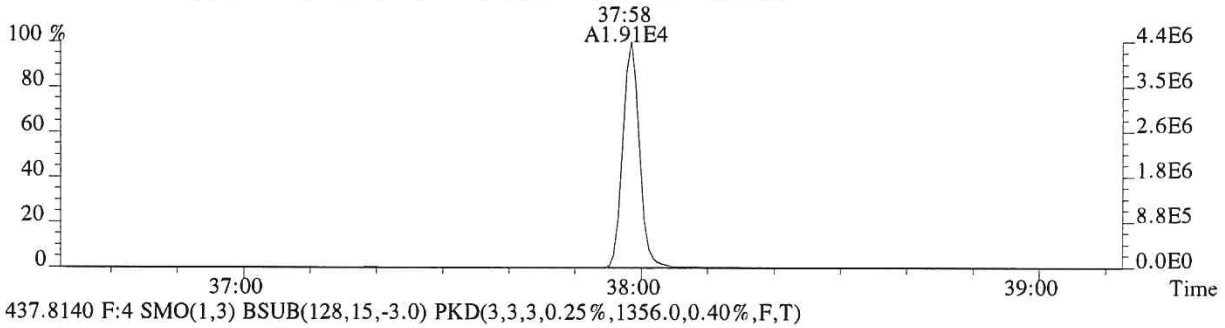
File:P616287 #1-241 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1192.0,0.40%,F,T)



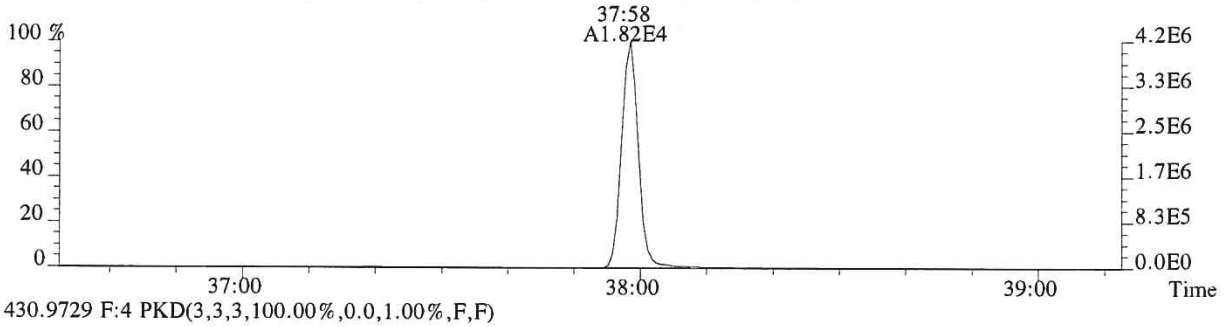
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,912.0,0.40%,F,T)



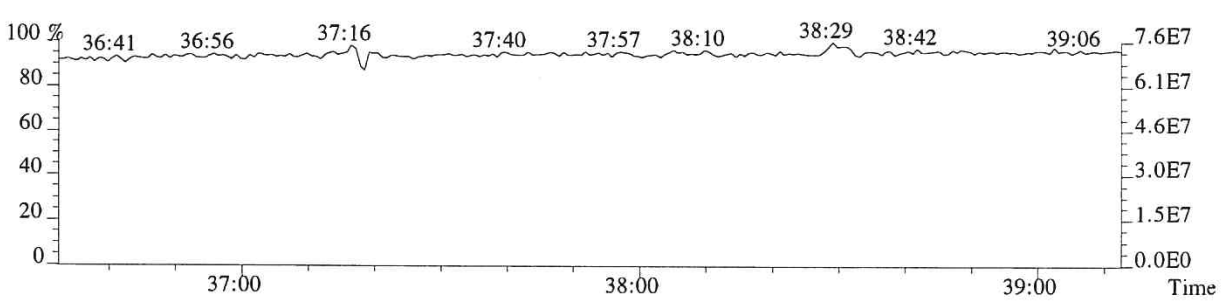
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,516.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1356.0,0.40%,F,T)

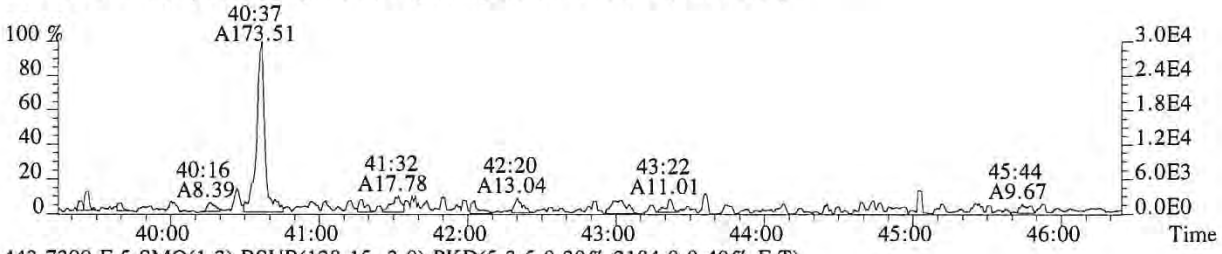


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

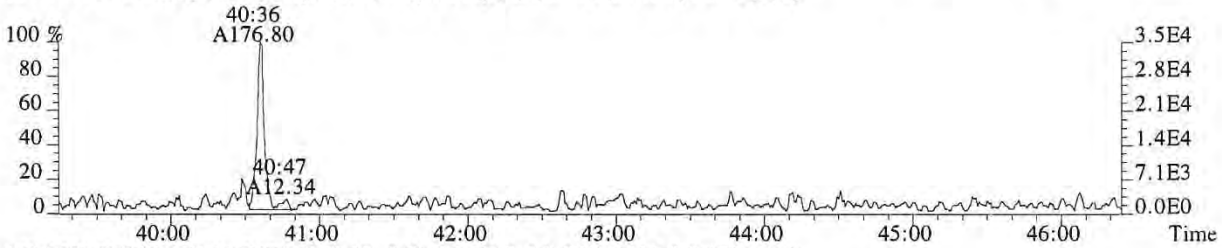


060374

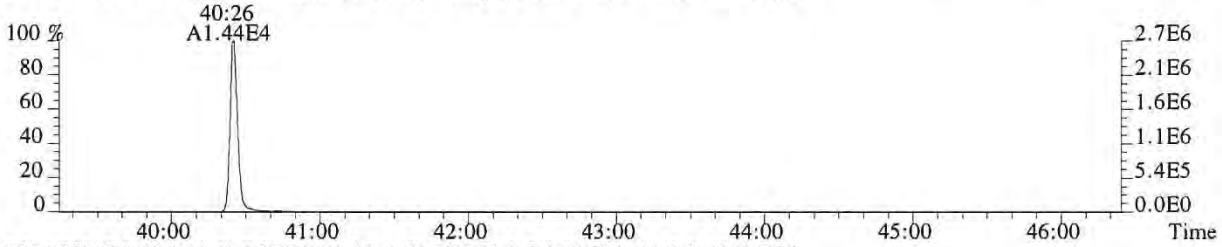
File:P616287 #1-645 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,760.0,0.40%,F,T)



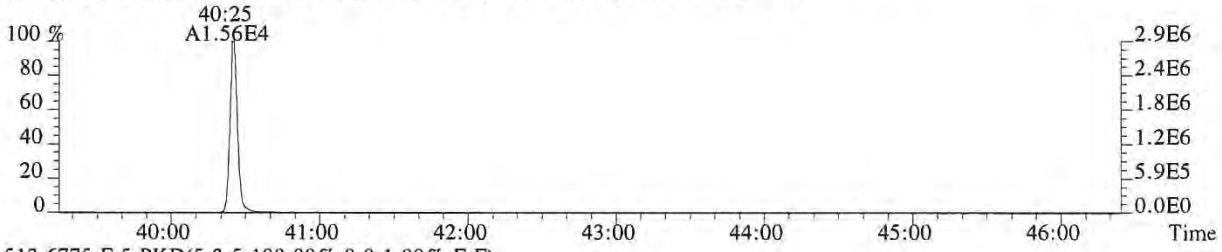
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2184.0,0.40%,F,T)



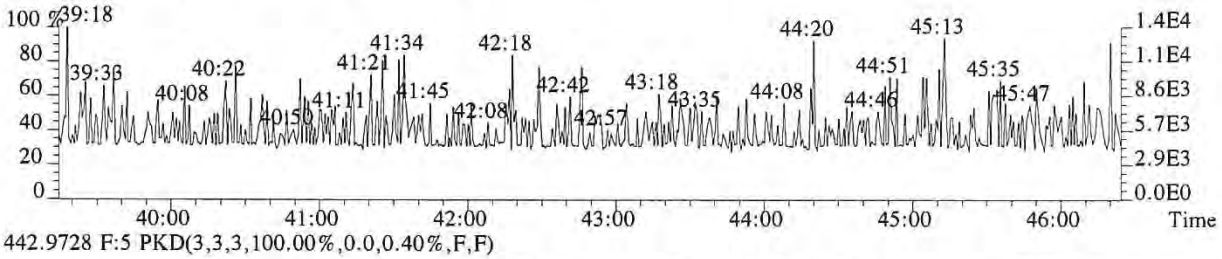
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1516.0,0.40%,F,T)



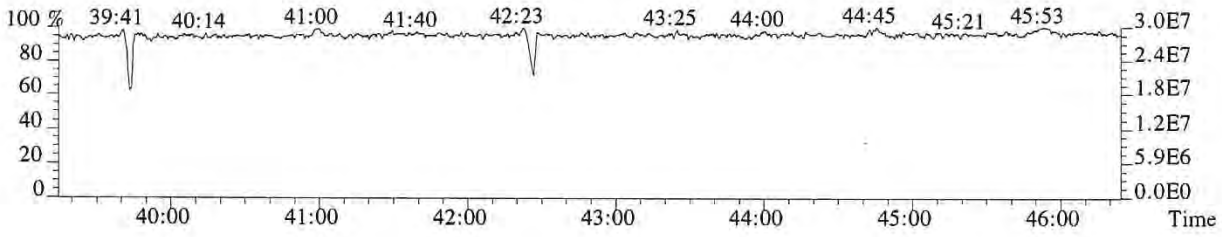
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1108.0,0.40%,F,T)



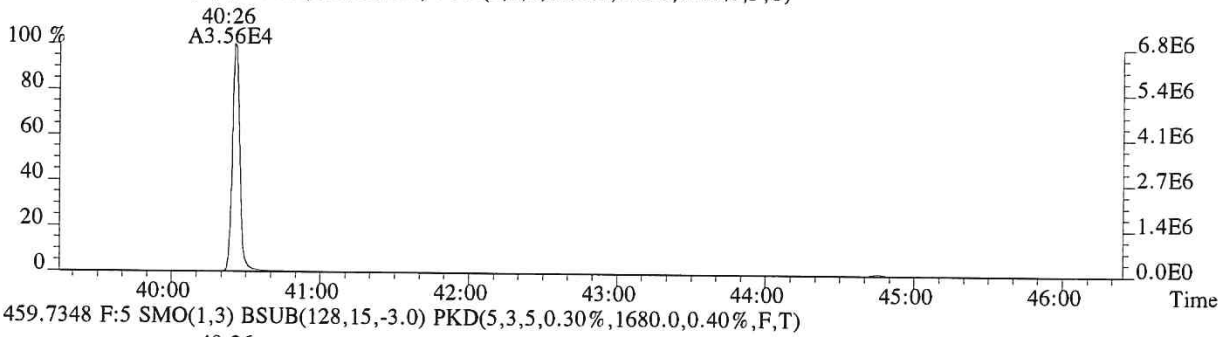
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



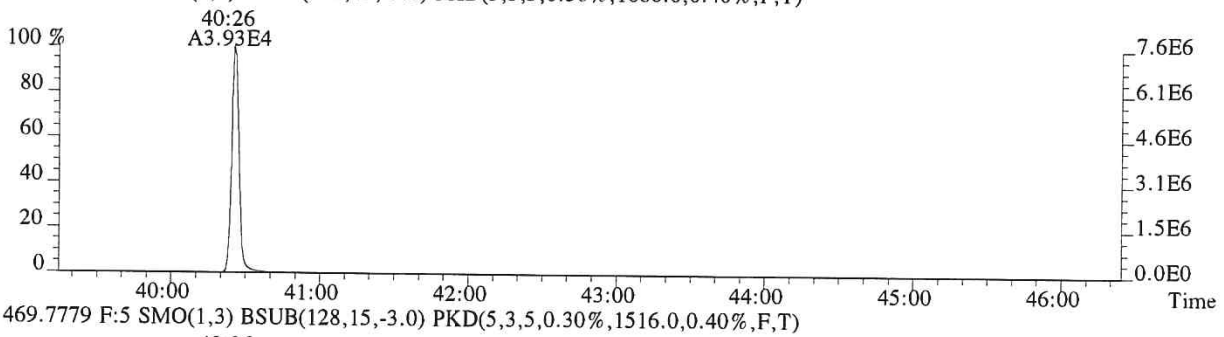
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



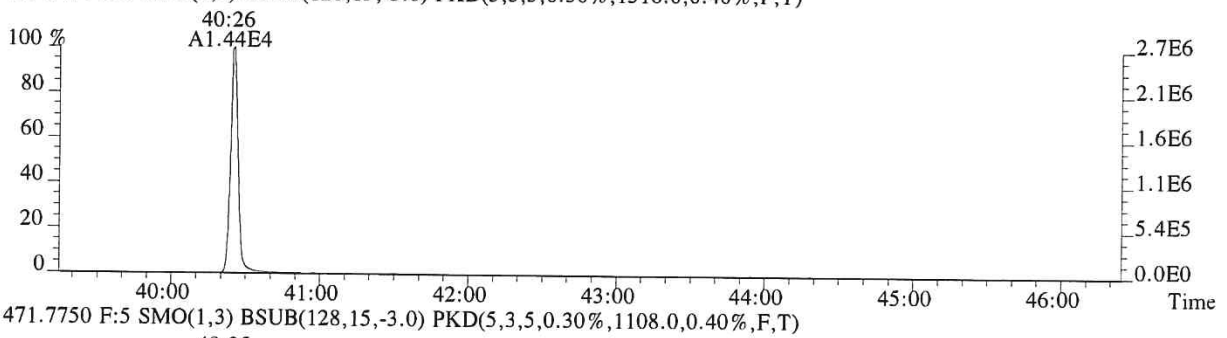
File:P616287 #1-645 Acq:29-DEC-2018 21:48:57 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-017
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,408.0,0.40%,F,T)



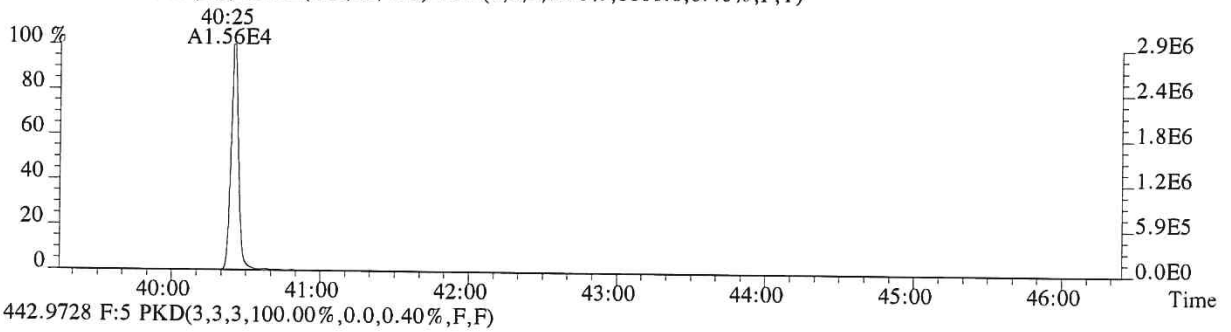
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1680.0,0.40%,F,T)



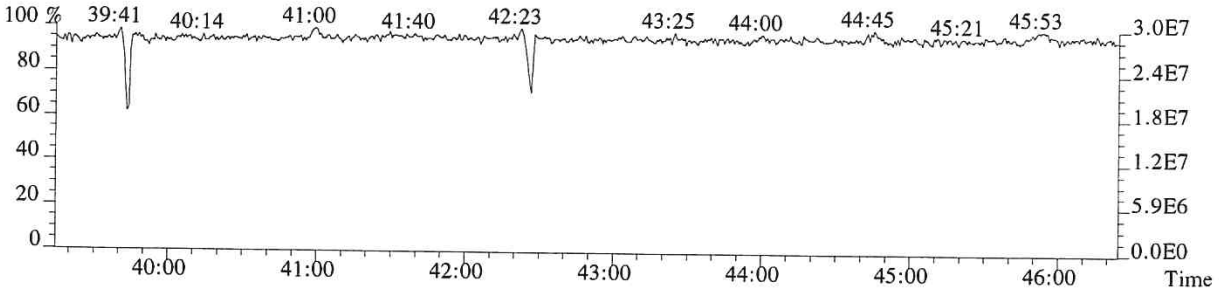
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1516.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1108.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060376

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0141

Run #17 Filename P616288 Samp: 1 Inj: 1 Acquired: 29-DEC-18 22:38:03
Processed: 30-DEC-18 09:22:25 Sample ID: E1801136-018

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:27	3.039e+02	4.619e+02	0.66	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:29	5.346e+01	5.565e+01	0.96	no	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:32	9.783e+01	6.448e+01	1.52	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:22	1.186e+02	7.311e+01	1.62	no	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	1.271e+02	6.593e+01	1.93	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:02	1.190e+02	7.125e+01	1.67	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	yes	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:04	8.687e+02	8.434e+02	1.03	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	4.008e+01	5.410e+01	0.74	no	no	1.463
10	Unk	OCDF	40:36	1.084e+03	1.230e+03	0.88	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:29	9.564e+01	9.903e+01	0.97	no	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:50	1.338e+02	9.466e+01	1.41	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:10	1.956e+02	1.420e+02	1.38	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:16	3.393e+02	2.961e+02	1.15	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:30	3.474e+02	2.952e+02	1.18	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:59	1.500e+04	1.384e+04	1.08	yes	no	1.112
17	Unk	OCDD	40:26	2.025e+06	2.271e+06	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:26	2.783e+04	3.494e+04	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:28	4.429e+04	2.781e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:31	4.033e+04	2.532e+04	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:21	1.664e+04	3.113e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:29	1.844e+04	3.486e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	1.573e+04	3.023e+04	0.52	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	1.414e+04	2.664e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	9.044e+03	2.062e+04	0.44	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	7.070e+03	1.578e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:27	1.481e+04	1.875e+04	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:49	3.148e+04	2.044e+04	1.54	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	2.285e+04	1.781e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	2.169e+04	1.683e+04	1.29	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	1.679e+04	1.629e+04	1.03	yes	no	0.857
32	IS	13C-OCDD	40:26	1.255e+04	1.350e+04	0.93	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:40	3.907e+04	4.987e+04	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	4.329e+04	3.444e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:29	2.237e+04				no	1.086

$$\text{OCDD} = \frac{(2.025e+06 + 2.271e+06) \times 4000\ \text{pg} \times 1}{(1.255e+04 + 1.350e+04) \times 10.04\ \text{g} \times 78.1 / 100 \times 1.157} = 92410.7176\ \text{ng/kg}$$

LG 12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0141

Run #17 Filename P616288 Samp: 1 Inj: 1 Acquired: 29-DEC-18 22:38:03
Processed: 30-DEC-18 09:22:25 LAB. ID: E1801136-018

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.98e+04	1.18e+03	3.4e+01	6.09e+04	3.75e+03	1.6e+01
2	1,2,3,7,8-PeCDF	1.00e+04	1.49e+03	6.8e+00	8.28e+03	1.82e+03	4.5e+00
3	2,3,4,7,8-PeCDF	1.67e+04	1.49e+03	1.1e+01	1.24e+04	1.82e+03	6.8e+00
4	1,2,3,4,7,8-HxCDF	2.84e+04	2.67e+03	1.1e+01	1.52e+04	2.71e+03	5.6e+00
5	1,2,3,6,7,8-HxCDF	2.98e+04	2.67e+03	1.1e+01	1.39e+04	2.71e+03	5.1e+00
6	2,3,4,6,7,8-HxCDF	3.11e+04	2.67e+03	1.2e+01	1.27e+04	2.71e+03	4.7e+00
7	1,2,3,7,8,9-HxCDF	*	2.67e+03	*	*	2.71e+03	*
8	1,2,3,4,6,7,8-HpCDF	1.98e+05	1.13e+03	1.8e+02	1.88e+05	1.31e+03	1.4e+02
9	1,2,3,4,7,8,9-HpCDF	8.18e+03	1.13e+03	7.3e+00	8.46e+03	1.31e+03	6.5e+00
10	OCDF	2.26e+05	1.43e+03	1.6e+02	2.61e+05	1.75e+03	1.5e+02
11	2,3,7,8-TCDD	1.70e+04	2.94e+03	5.8e+00	1.40e+04	1.10e+03	1.3e+01
12	1,2,3,7,8-PeCDD	2.25e+04	1.07e+03	2.1e+01	1.20e+04	8.52e+02	1.4e+01
13	1,2,3,4,7,8-HxCDD	4.04e+04	1.16e+03	3.5e+01	3.35e+04	1.55e+03	2.2e+01
14	1,2,3,6,7,8-HxCDD	7.59e+04	1.16e+03	6.5e+01	6.89e+04	1.55e+03	4.4e+01
15	1,2,3,7,8,9-HxCDD	8.25e+04	1.16e+03	7.1e+01	6.40e+04	1.55e+03	4.1e+01
16	1,2,3,4,6,7,8-HpCDD	3.44e+06	1.13e+04	3.0e+02	3.15e+06	6.53e+03	4.8e+02
17	OCDD	4.25e+08	1.03e+03	4.1e+05	4.74e+08	1.95e+03	2.4e+05
18	13C-2,3,7,8-TCDF	3.92e+06	6.85e+03	5.7e+02	4.86e+06	3.19e+03	1.5e+03
19	13C-1,2,3,7,8-PeCDF	7.89e+06	6.08e+02	1.3e+04	4.93e+06	1.28e+03	3.9e+03
20	13C-2,3,4,7,8-PeCDF	7.59e+06	6.08e+02	1.2e+04	4.74e+06	1.28e+03	3.7e+03
21	13C-1,2,3,4,7,8-HxCDF	3.51e+06	1.27e+03	2.8e+03	6.70e+06	1.62e+03	4.1e+03
22	13C-1,2,3,6,7,8-HxCDF	4.00e+06	1.27e+03	3.1e+03	7.45e+06	1.62e+03	4.6e+03
23	13C-2,3,4,6,7,8-HxCDF	3.30e+06	1.27e+03	2.6e+03	6.48e+06	1.62e+03	4.0e+03
24	13C-1,2,3,7,8,9-HxCDF	3.13e+06	1.27e+03	2.5e+03	5.87e+06	1.62e+03	3.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.03e+06	1.67e+03	1.2e+03	4.55e+06	2.48e+03	1.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.60e+06	1.67e+03	9.6e+02	3.63e+06	2.48e+03	1.5e+03
27	13C-2,3,7,8-TCDD	2.38e+06	1.52e+04	1.6e+02	2.97e+06	5.25e+03	5.7e+02
28	13C-1,2,3,7,8-PeCDD	6.05e+06	9.72e+02	6.2e+03	3.87e+06	1.22e+03	3.2e+03
29	13C-1,2,3,4,7,8-HxCDD	5.18e+06	1.62e+03	3.2e+03	4.09e+06	6.44e+02	6.4e+03
30	13C-1,2,3,6,7,8-HxCDD	4.60e+06	1.62e+03	2.8e+03	3.62e+06	6.44e+02	5.6e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.81e+06	1.45e+03	2.6e+03	3.63e+06	7.12e+02	5.1e+03
32	13C-OCDD	2.54e+06	8.52e+02	3.0e+03	2.79e+06	5.08e+02	5.5e+03
33	13C-1,2,3,4-TCDD	5.76e+06	1.52e+04	3.8e+02	7.38e+06	5.25e+03	1.4e+03
34	13C-1,2,3,7,8,9-HxCDD	9.45e+06	1.62e+03	5.8e+03	7.49e+06	6.44e+02	1.2e+04
35	37Cl-2,3,7,8-TCDD	3.55e+06	1.57e+03	2.3e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.940e{+}03 + 1.096e{+}03) \times 2000}{(2.382e{+}06 + 2.973e{+}06) \times (\quad) \times 1.049} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0141

Entry: 36 Totals Name: Total Tetra-Furans

Run: 17 File: P616288 Sample:1 Injection:1 Function:1

Acquired: 29-DEC-18 22:38:03 Processed: 30-DEC-18 09:22:25

Mass: 303.9020 305.8990 Tot Response: 1.53e+03 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:50	1.41e+02	1.85e+02	0.76	yes	3.26e+02		n	n
2	24:25	1.30e+02	1.53e+02	0.85	yes	2.83e+02		n	n
3	25:27	3.04e+02	4.62e+02	0.66	yes	7.66e+02	2,3,7,8-TCDF	n	n
4	25:53	7.15e+01	8.66e+01	0.83	yes	1.58e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0141

Entry: 39 Totals Name: Total Penta-Furans2

Run: 17 File: P616288 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 22:38:03 Processed: 30-DEC-18 09:22:25

Mass: 339.8600 341.8570 Tot Response: 3.02e+02 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:17	8.87e+01	5.09e+01	1.74	yes	1.40e+02		n	y
2	31:32	9.78e+01	6.45e+01	1.52	yes	1.62e+02	2,3,4,7,8-PeCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0141

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 17 File: P616288 Sample:1 Injection:1 Function:2

Acquired: 29-DEC-18 22:38:03 Processed: 30-DEC-18 09:22:25

Mass: 355.8550 357.8520 Tot Response: 6.09e+02 RRF: 0.9288

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:28	1.11e+02	7.35e+01 1.51	yes	1.85e+02		n	n
2	31:02	1.19e+02	7.68e+01 1.55	yes	1.96e+02		n	n
3	31:50	1.34e+02	9.47e+01 1.41	yes	2.28e+02	1,2,3,7,8-PeCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0141

Entry: 41 Totals Name: Total Hexa-Furans

Run: 17 File: P616288 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 22:38:03 Processed: 30-DEC-18 09:22:25

Mass: 373.8210 375.8180 Tot Response: 2.19e+03 RRF: 1.324

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:11	1.74e+02	1.38e+02	1.26	yes	3.12e+02	n	n
2	33:21	5.78e+02	4.17e+02	1.38	yes	9.95e+02	n	n
3	33:55	4.44e+02	3.91e+02	1.13	yes	8.35e+02	n	n
4	34:16	2.80e+01	2.29e+01	1.23	yes	5.09e+01	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0141

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 17 File: P616288 Sample:1 Injection:1 Function:3

Acquired: 29-DEC-18 22:38:03 Processed: 30-DEC-18 09:22:25

Mass: 389.8160 391.8130 Tot Response: 8.71e+03 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:45	2.23e+03	1.78e+03	1.25	yes	4.00e+03		n n
2	34:33	1.78e+03	1.31e+03	1.36	yes	3.10e+03		n n
3	35:10	1.96e+02	1.42e+02	1.38	yes	3.38e+02	1,2,3,4,7,8-HxCDD	n n
4	35:16	3.39e+02	2.96e+02	1.15	yes	6.35e+02	1,2,3,6,7,8-HxCDD	n n
5	35:30	3.47e+02	2.95e+02	1.18	yes	6.43e+02	1,2,3,7,8,9-HxCDD	n n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0141

Entry: 43 Totals Name: Total Hepta-Furans

Run: 17 File: P616288 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 22:38:03 Processed: 30-DEC-18 09:22:25

Mass: 407.7820 409.7790 Tot Response: 4.01e+03 RRF: 1.495

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:04	8.69e+02	8.43e+02 1.03	yes	1.71e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:28	1.10e+03	1.20e+03 0.91	yes	2.30e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0141

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 17 File: P616288 Sample:1 Injection:1 Function:4

Acquired: 29-DEC-18 22:38:03 Processed: 30-DEC-18 09:22:25

Mass: 423.7770 425.7740 Tot Response: 7.61e+04 RRF: 1.112

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:20	2.41e+04	2.32e+04 1.04	yes	4.73e+04		n	n
2	37:59	1.50e+04	1.38e+04 1.08	yes	2.88e+04	1,2,3,4,6,7,8-HpCDD	n	n

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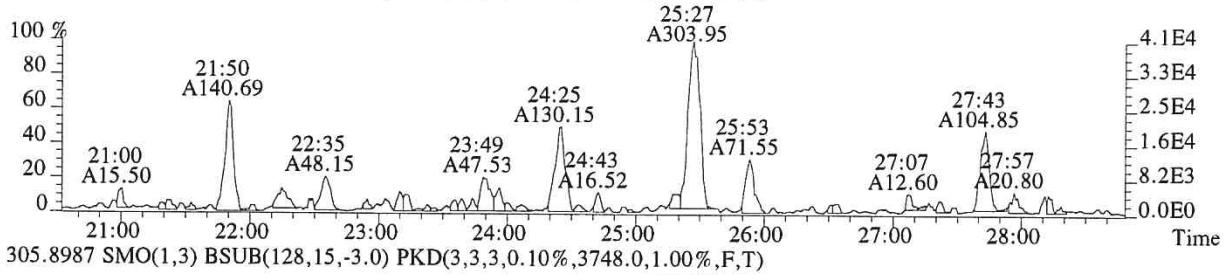
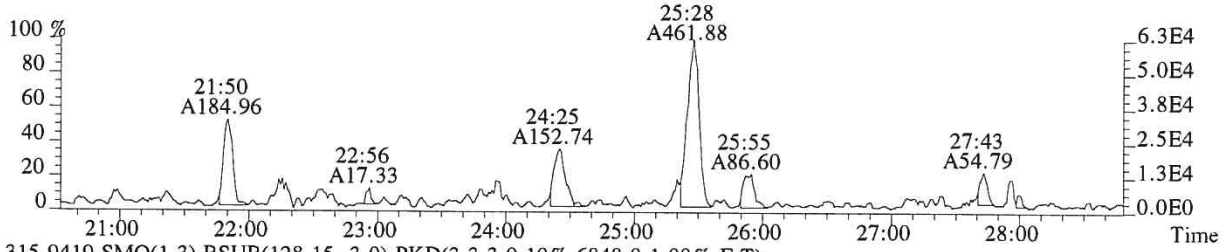
File:P616288 #1-587 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018

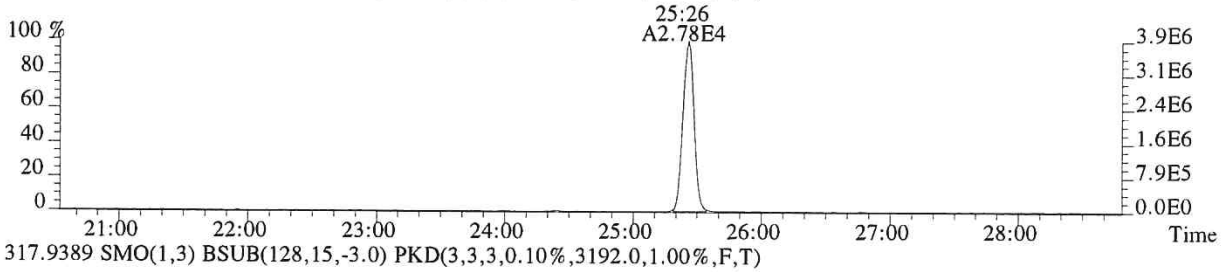
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1184.0,1.00%,F,T)



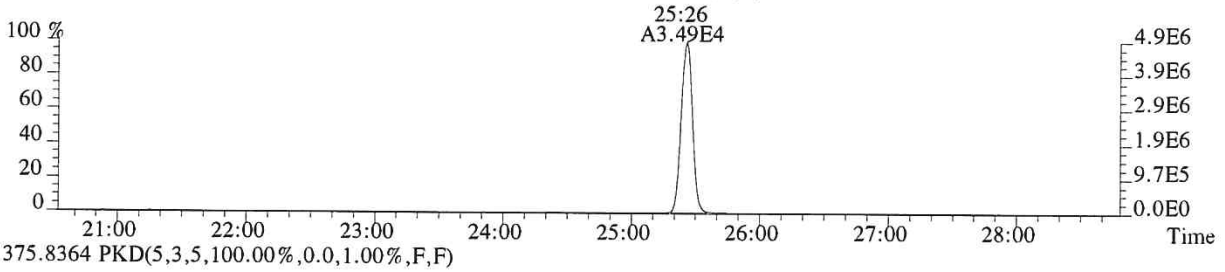
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3748.0,1.00%,F,T)



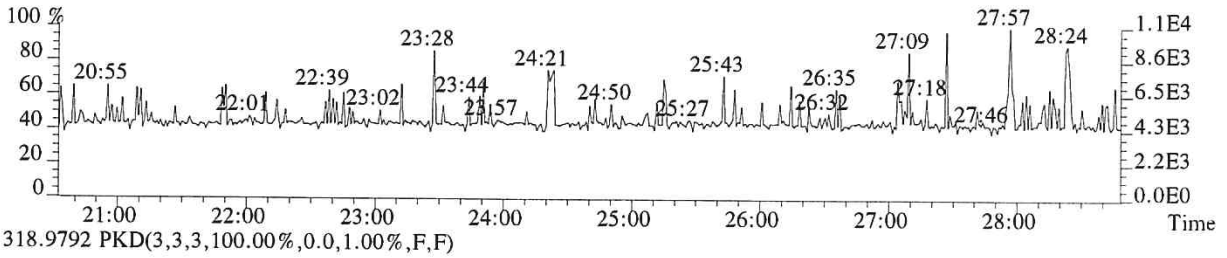
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6848.0,1.00%,F,T)



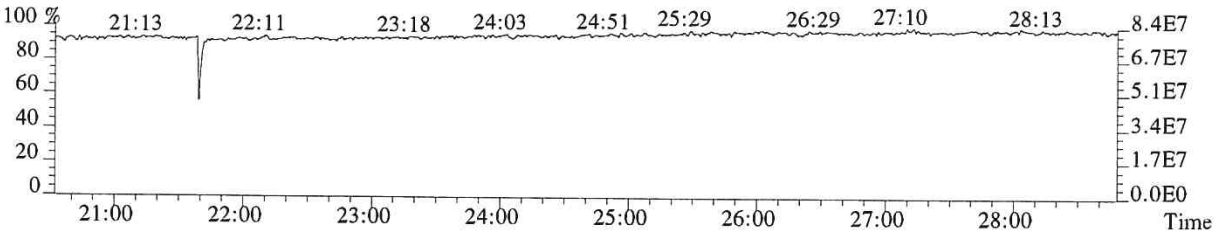
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3192.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



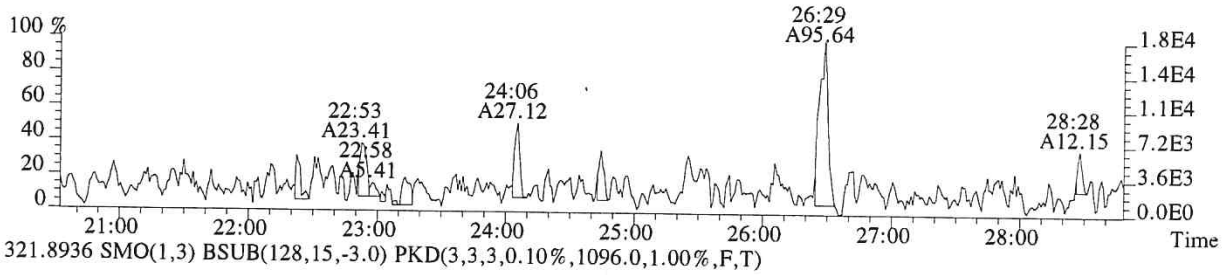
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



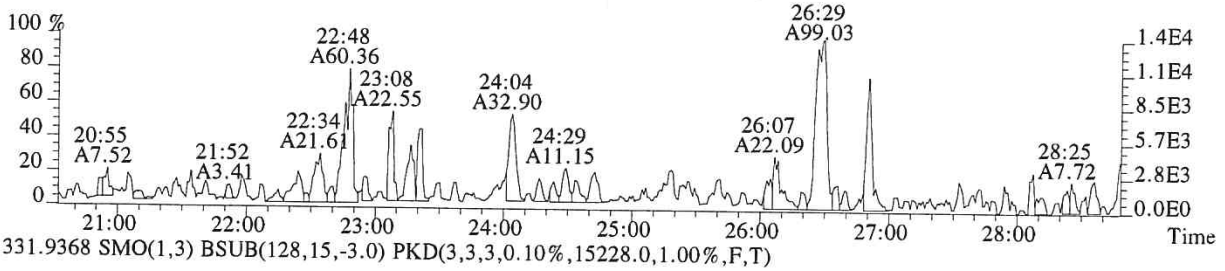
060386

File:P616288 #1-587 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018

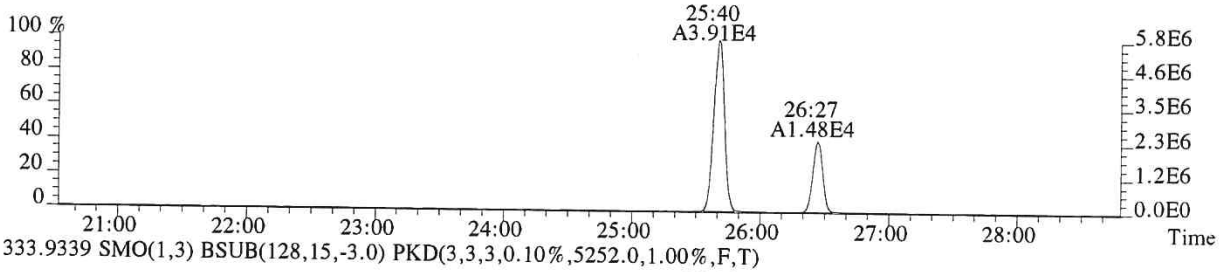
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2940.0,1.00%,F,T)



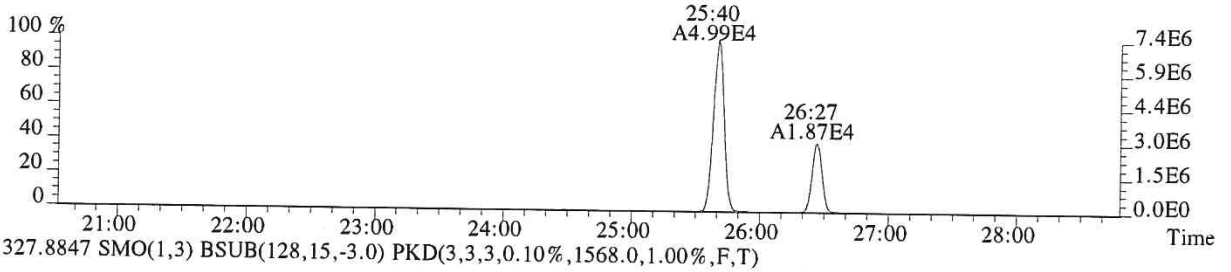
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1096.0,1.00%,F,T)



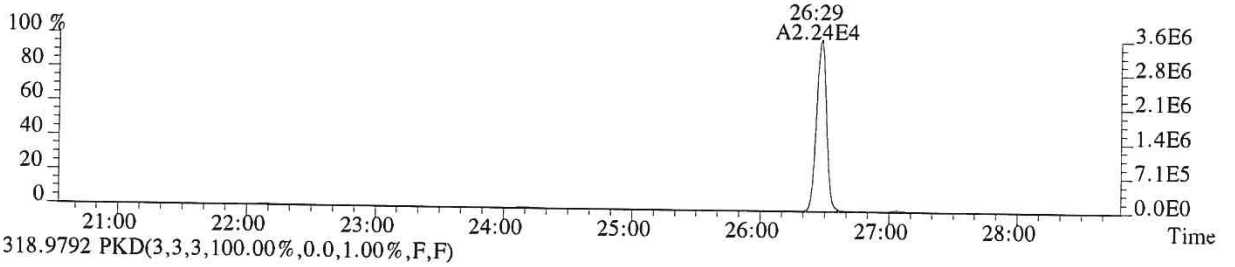
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15228.0,1.00%,F,T)



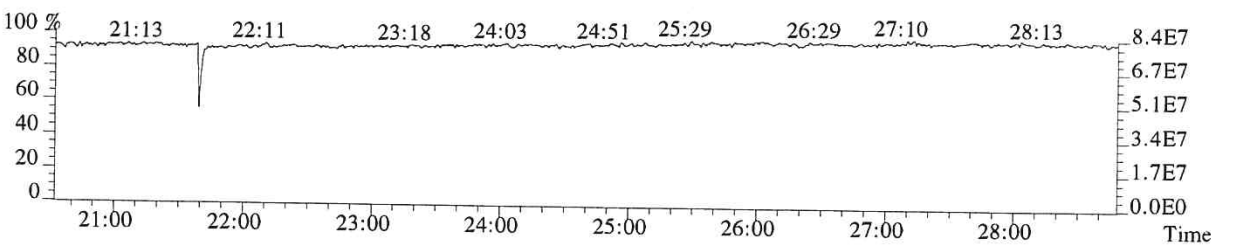
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5252.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1568.0,1.00%,F,T)

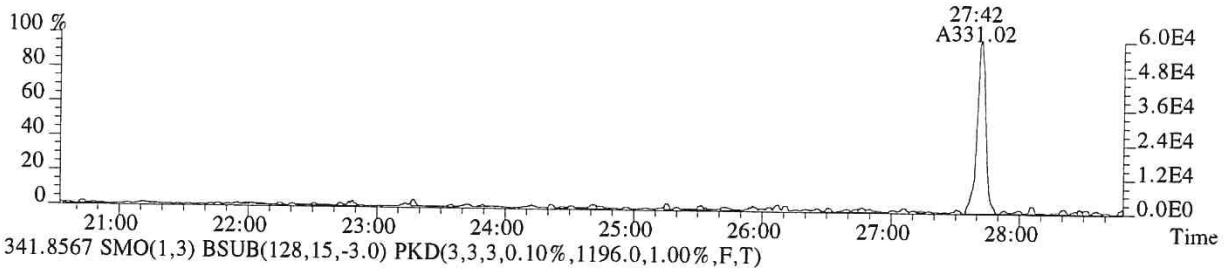


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

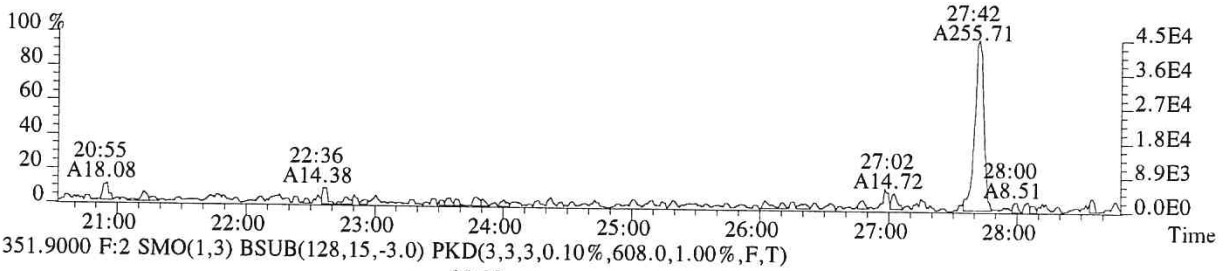


060387

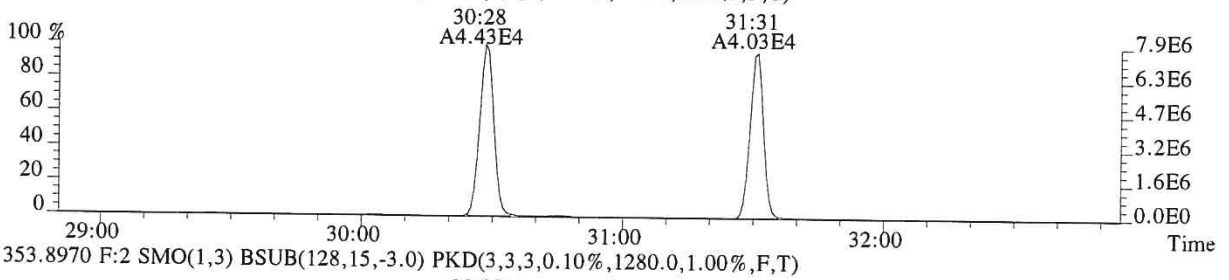
File:P616288 #1-587 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,512.0,1.00%,F,T)



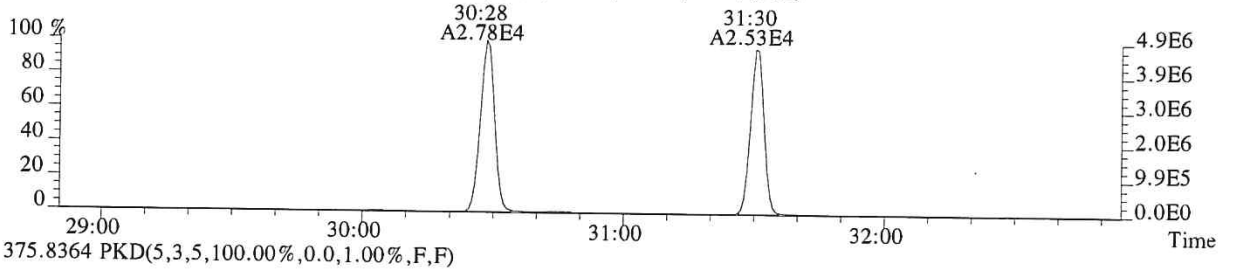
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1196.0,1.00%,F,T)



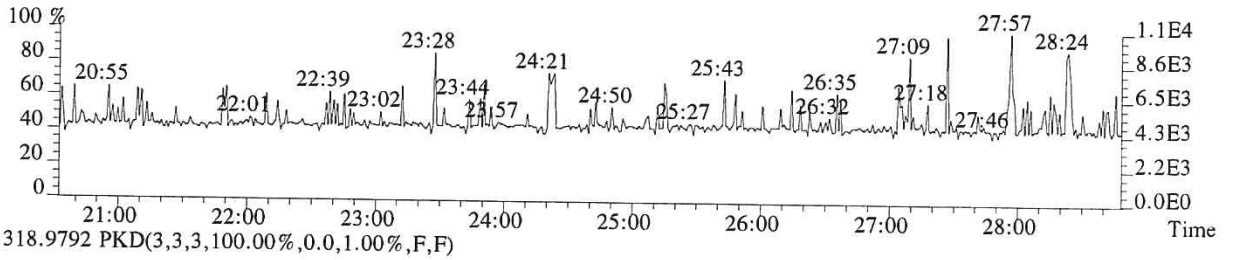
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,608.0,1.00%,F,T)



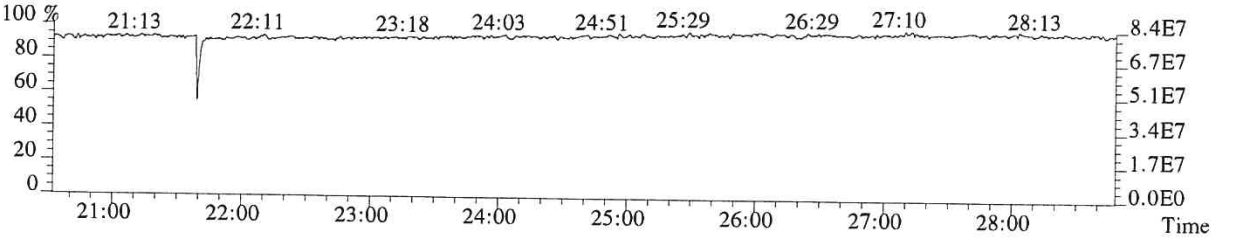
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1280.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

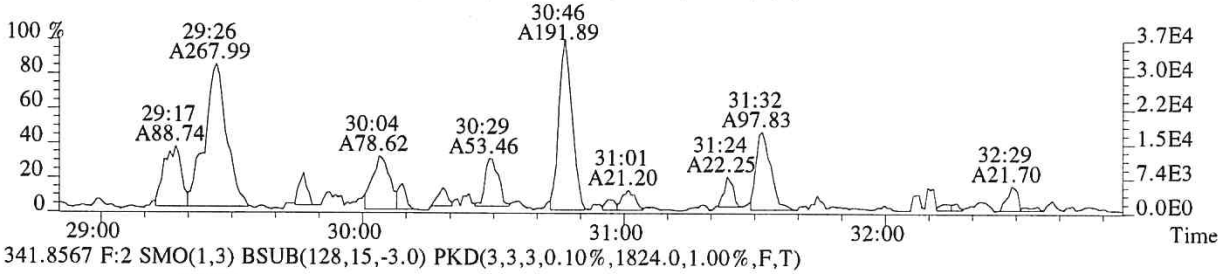


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

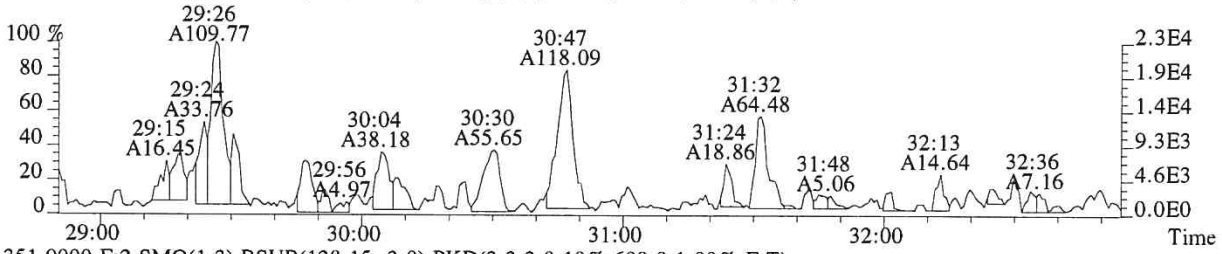


060388

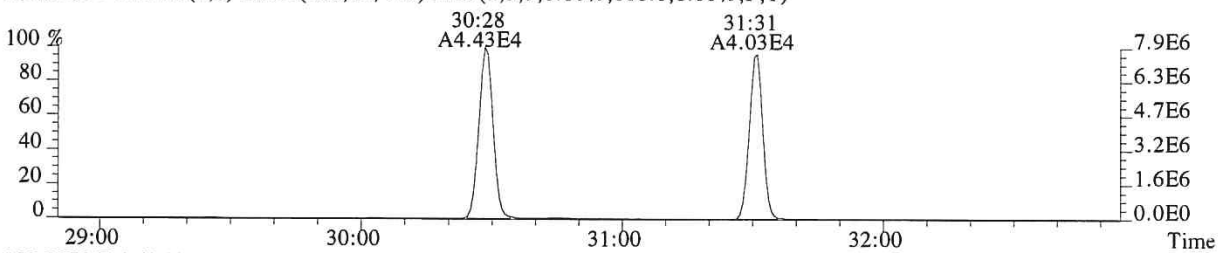
File:P616288 #1-367 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1488.0,1.00%,F,T)



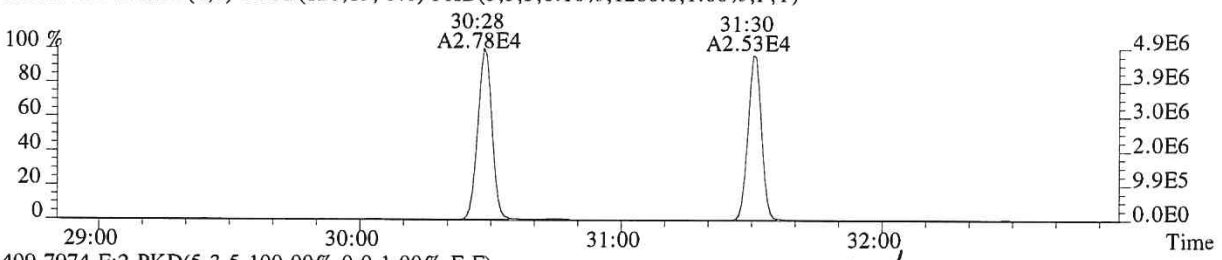
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1824.0,1.00%,F,T)



351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,608.0,1.00%,F,T)



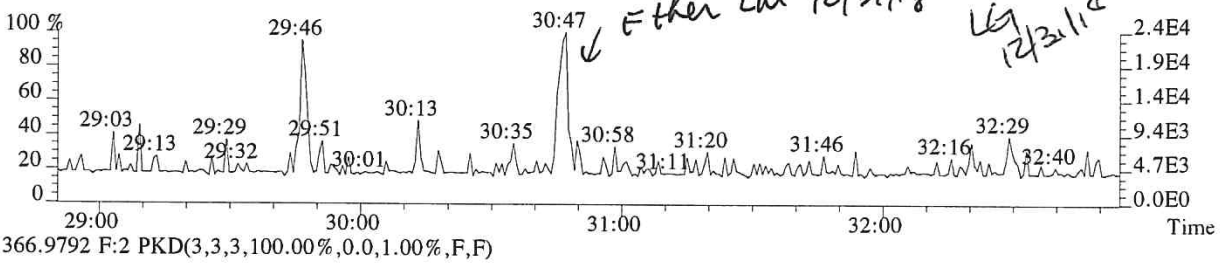
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1280.0,1.00%,F,T)



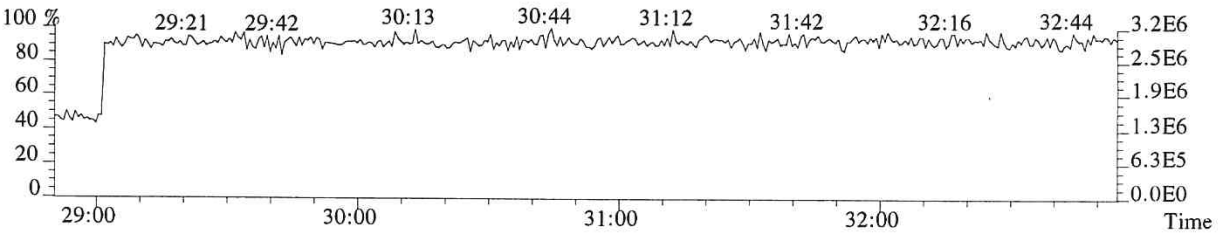
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

Ether cm 12/31/18

LG 12/31/18

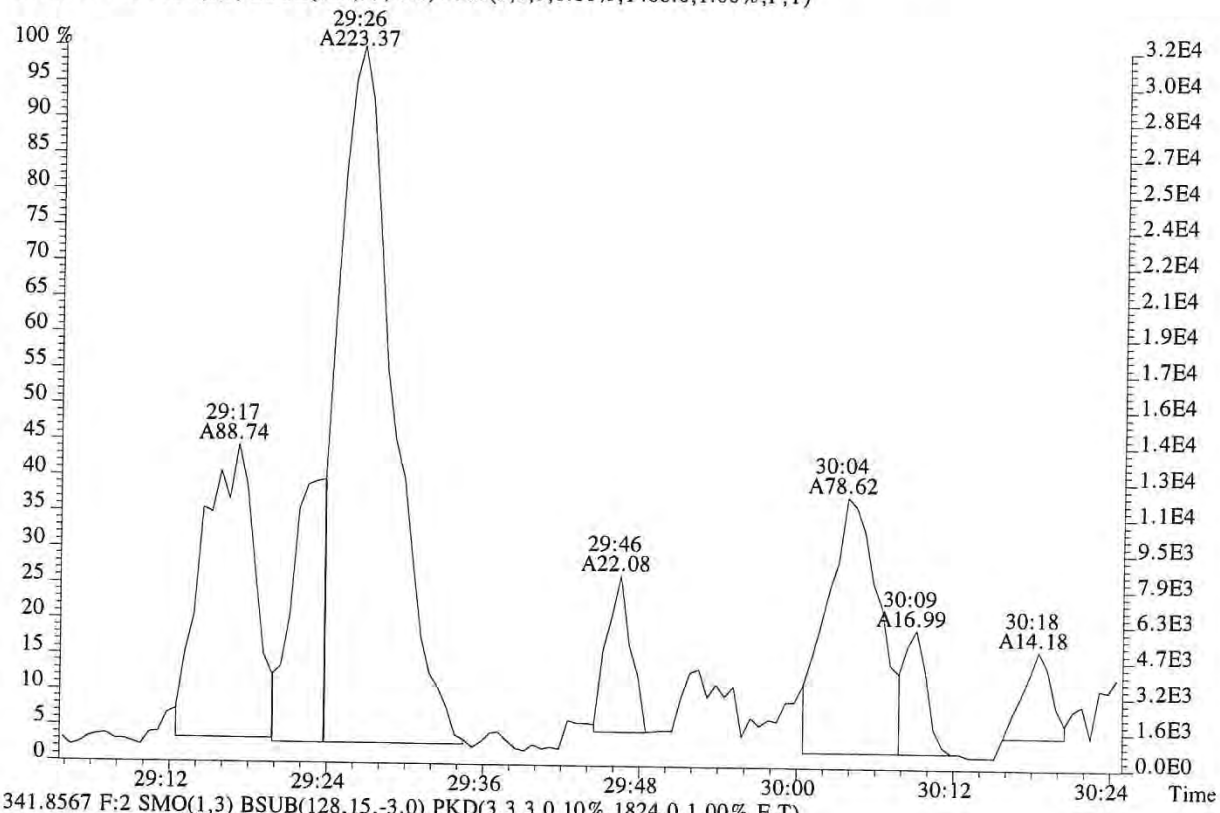


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

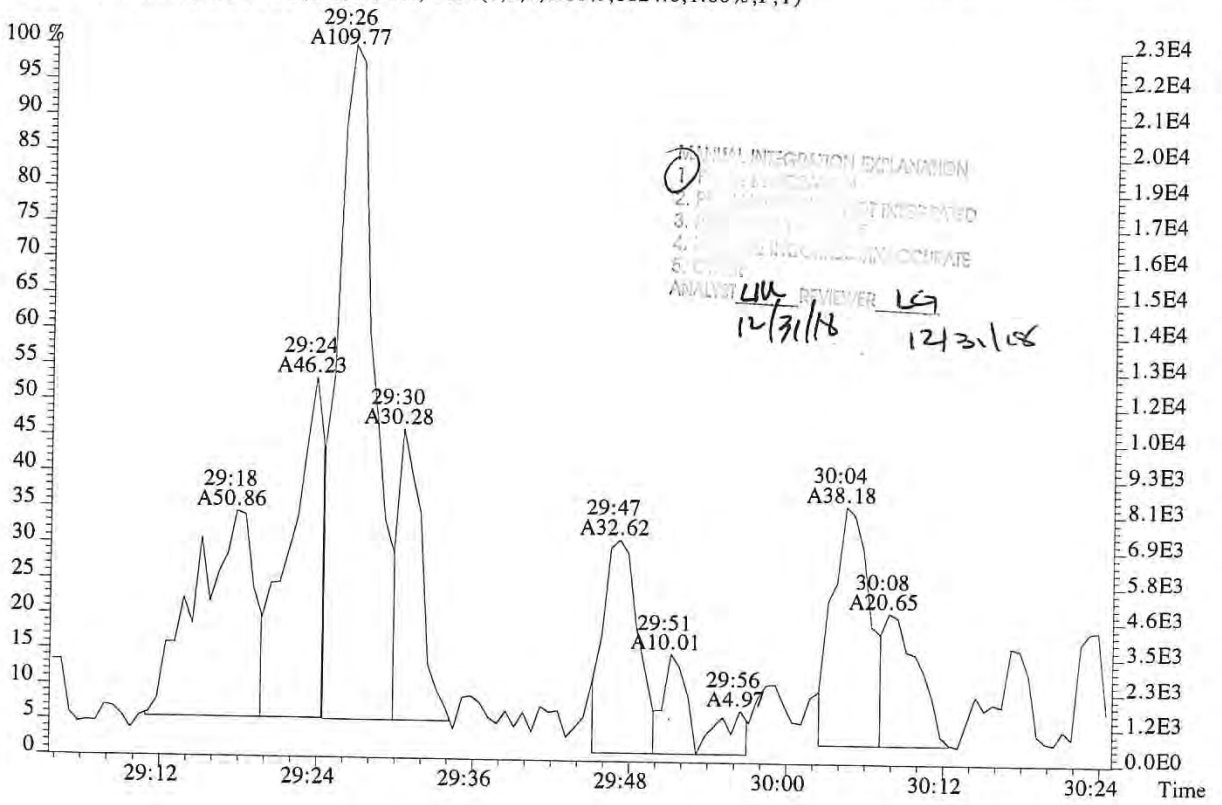


060389

File:P616288 #1-367 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1488.0,1.00%,F,T)



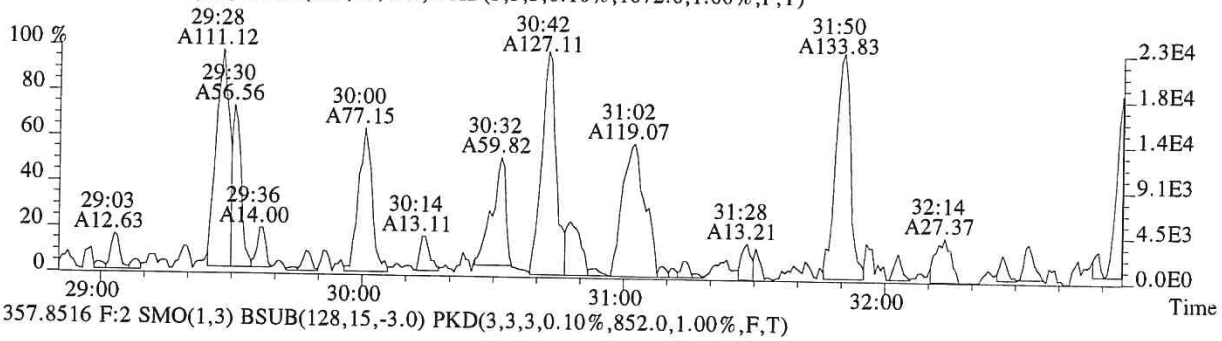
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1824.0,1.00%,F,T)



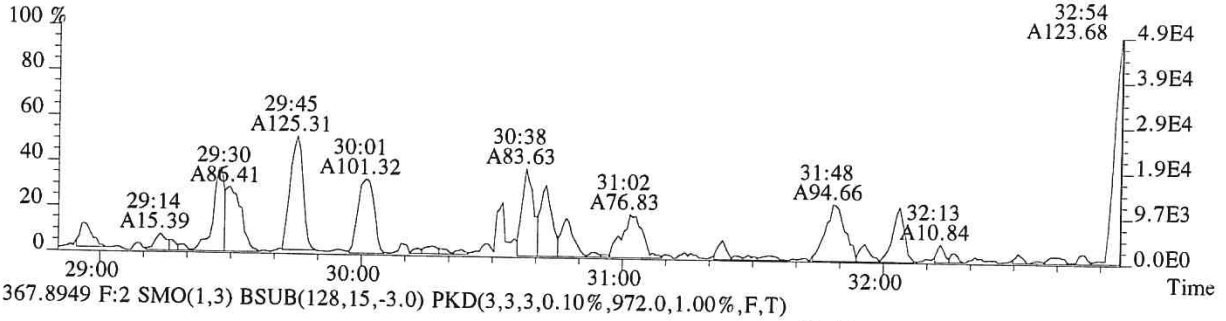
MANUAL INTEGRATION EXPLANATION
1. [illegible]
2. [illegible] NOT INTEGRATED
3. [illegible]
4. [illegible] INCORRECT/INAccURATE
5. [illegible]
ANALYST LW 12/31/18 REVIEWER LG 12/31/18

060390

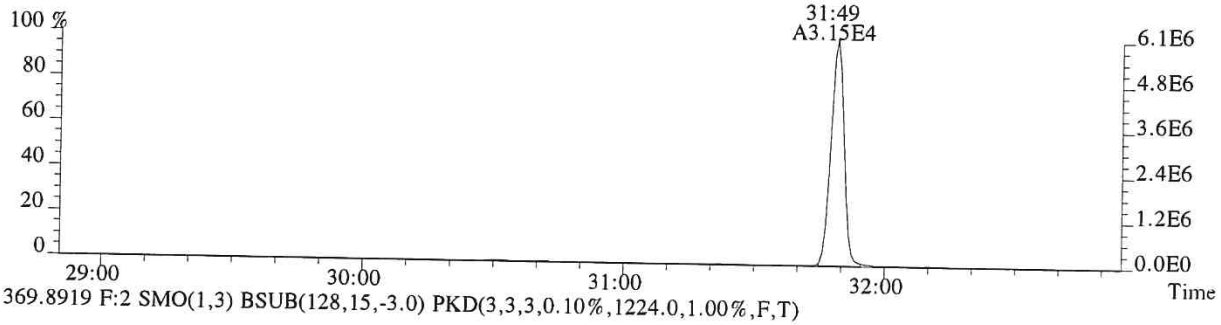
File:P616288 #1-367 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1072.0,1.00%,F,T)



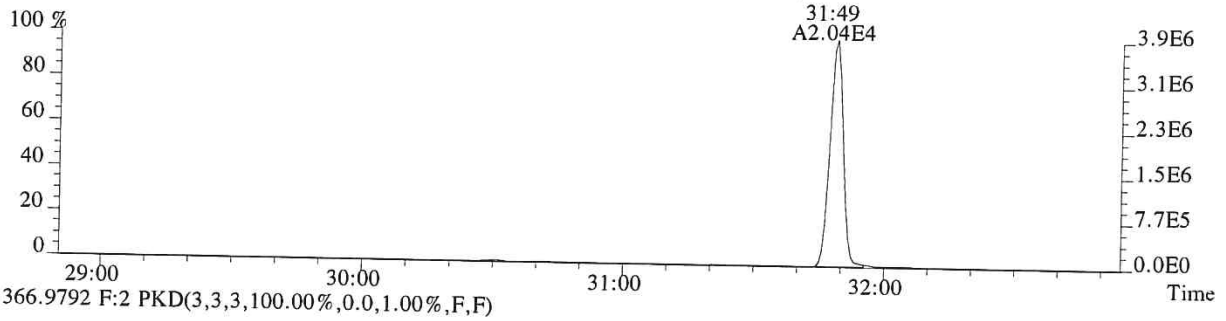
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,852.0,1.00%,F,T)



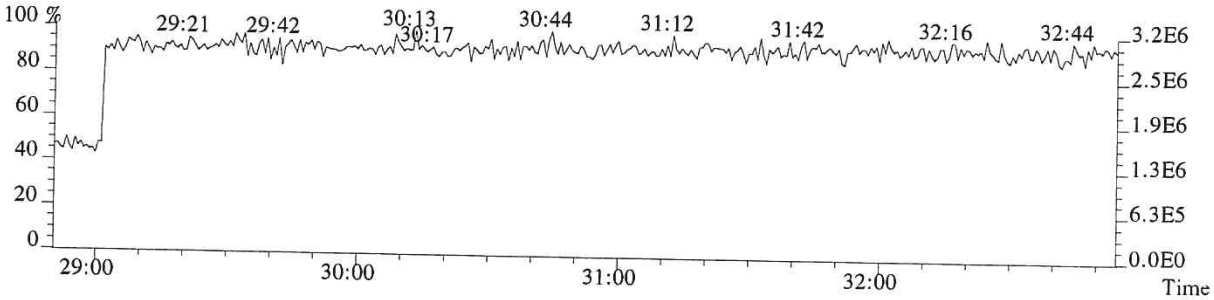
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,972.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1224.0,1.00%,F,T)

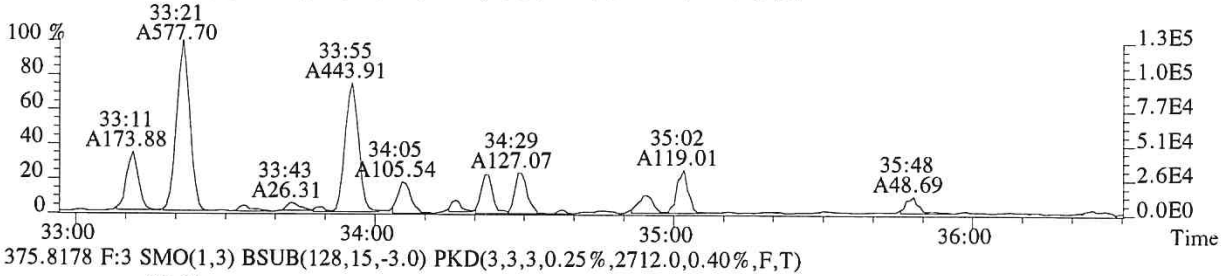


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

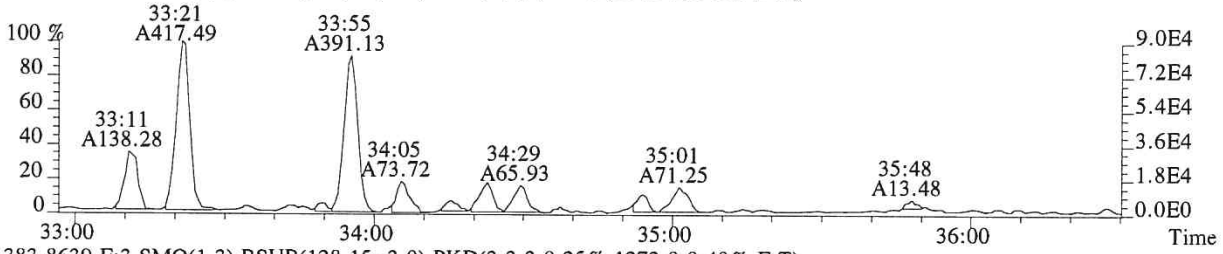


File:P616288 #1-321 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018

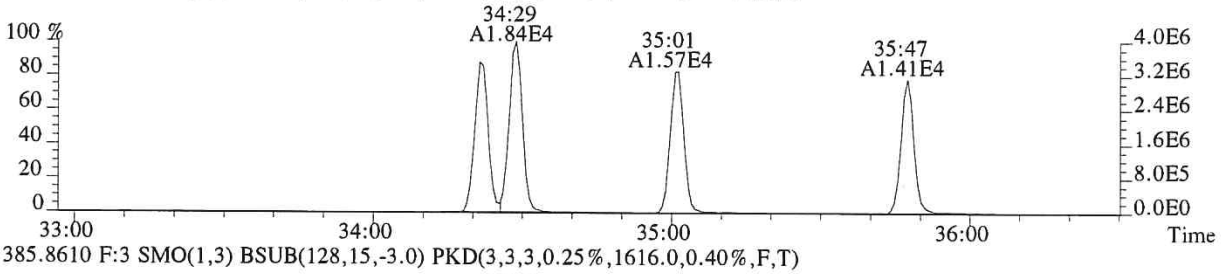
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2668.0,0.40%,F,T)



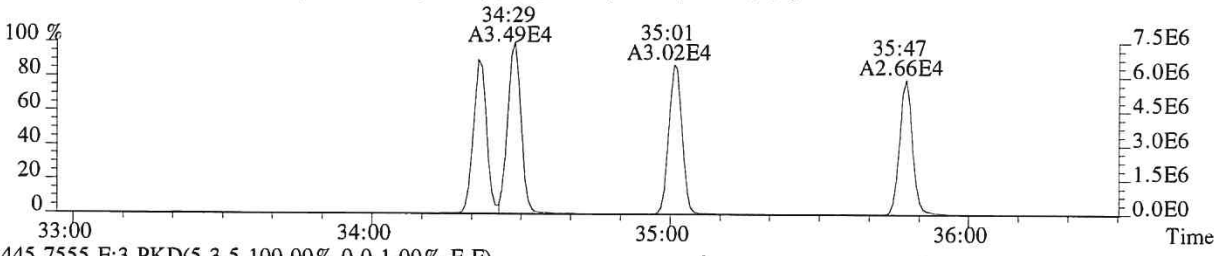
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2712.0,0.40%,F,T)



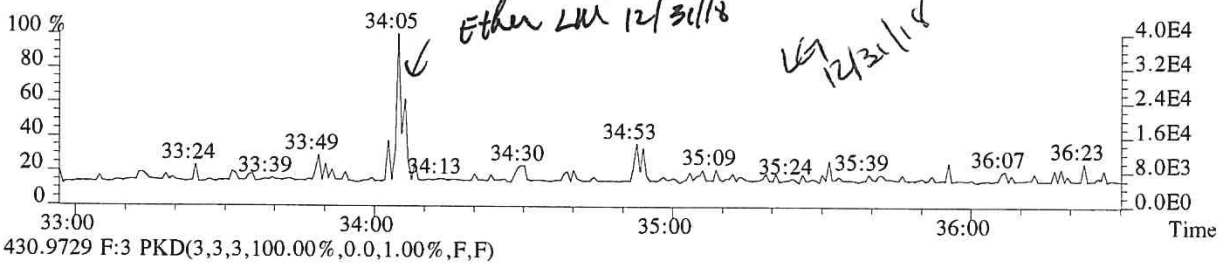
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1272.0,0.40%,F,T)



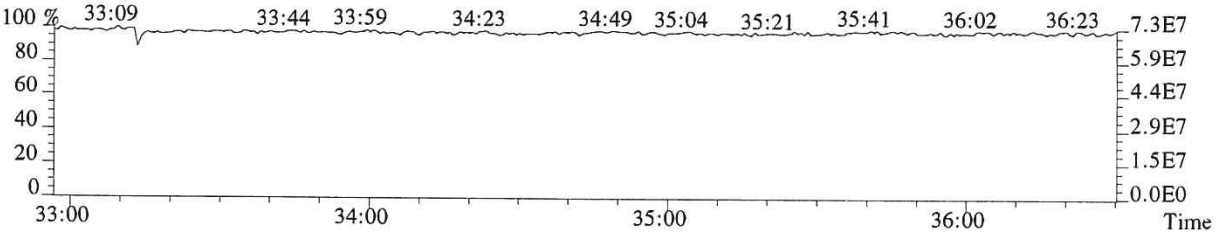
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1616.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

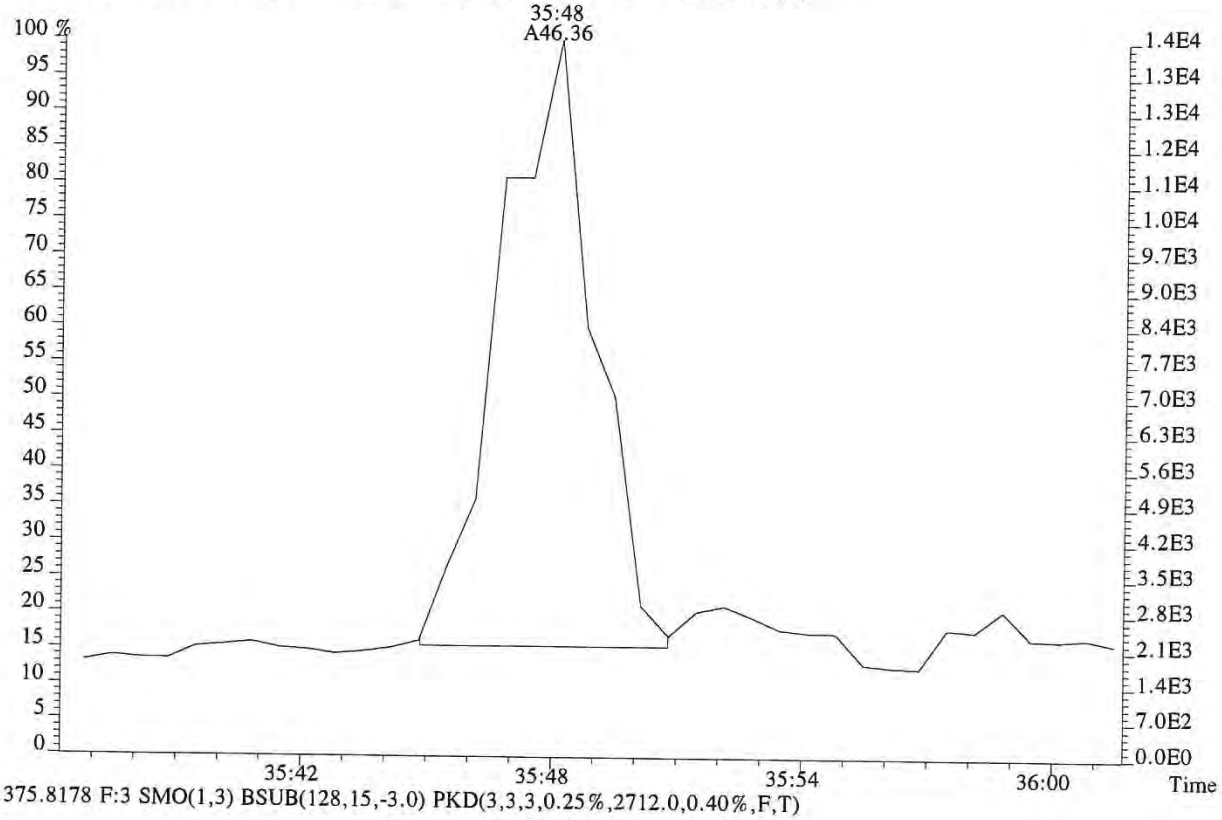


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

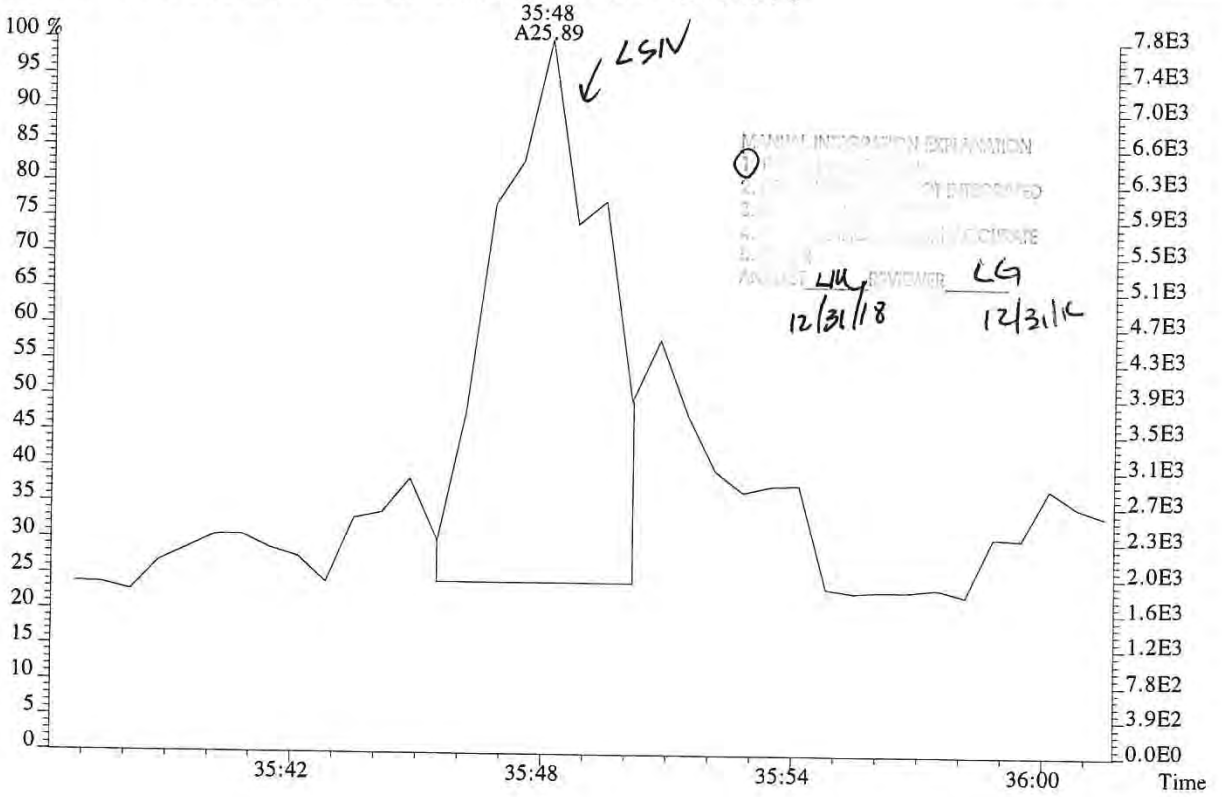


060392

File:P616288 #1-321 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2668.0,0.40%,F,T)



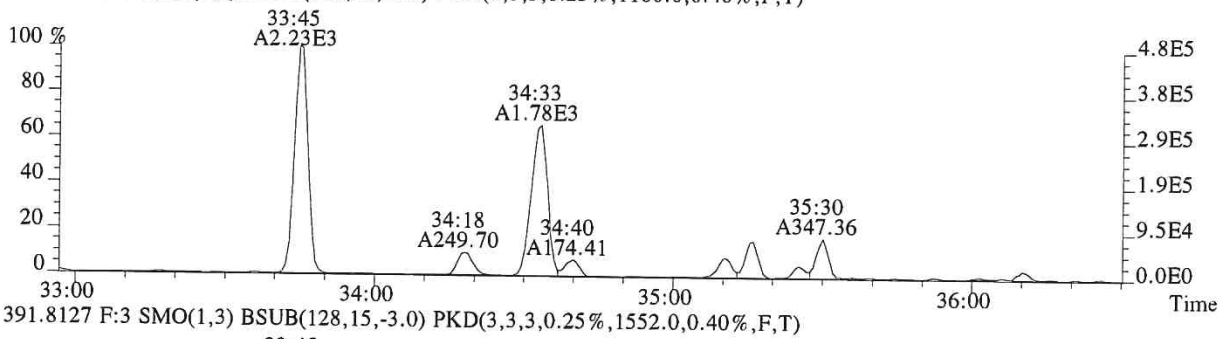
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2712.0,0.40%,F,T)



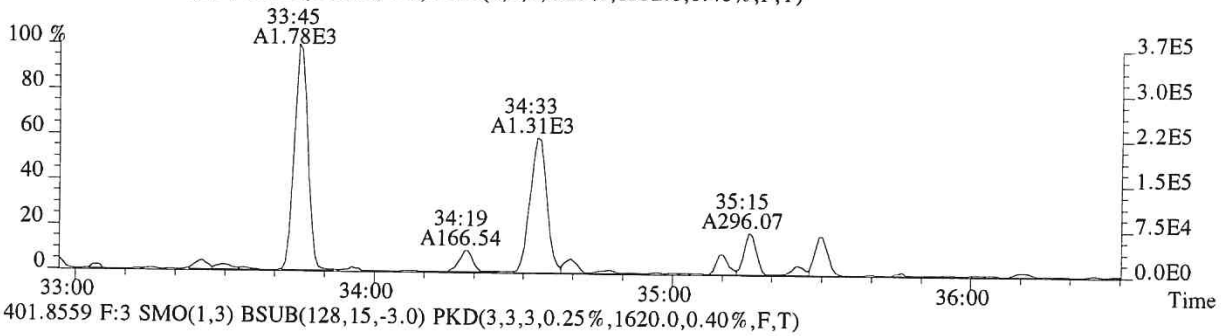
12/31/18 12/31/18

060393

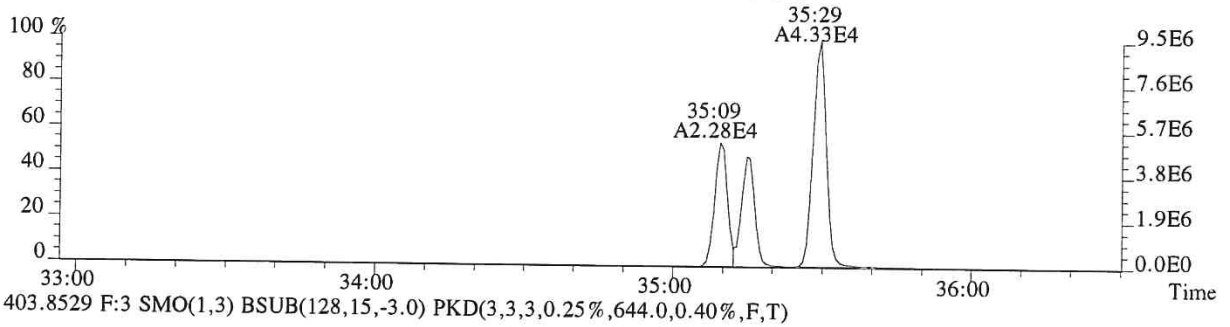
File:P616288 #1-321 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1160.0,0.40%,F,T)



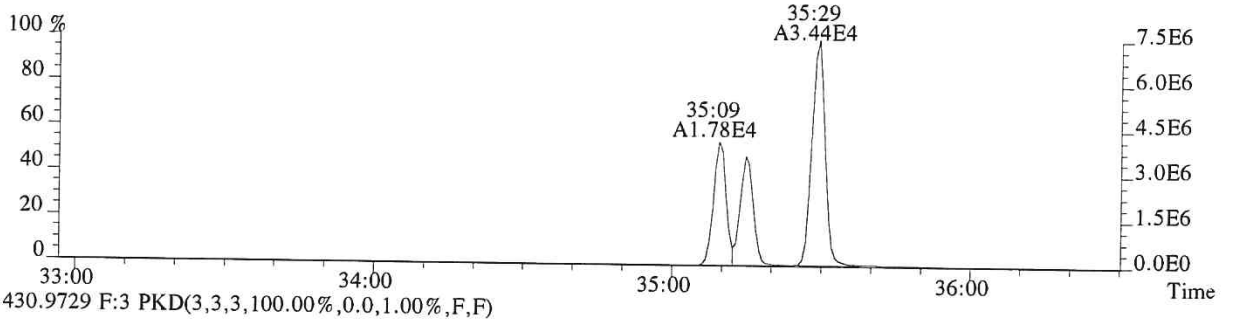
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1552.0,0.40%,F,T)



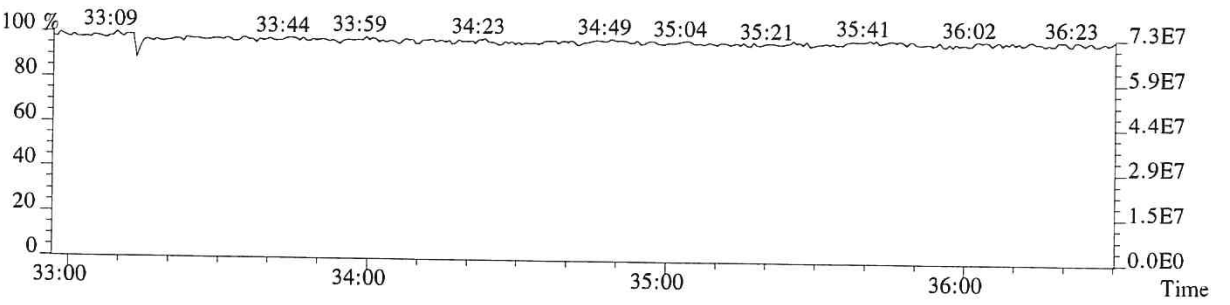
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1620.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,644.0,0.40%,F,T)

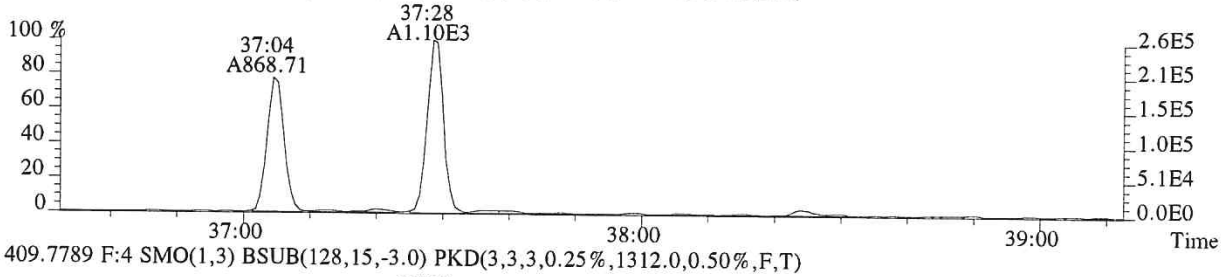


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

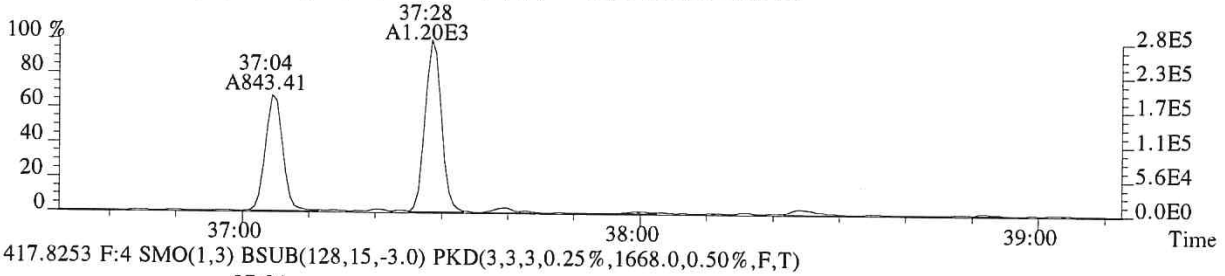


File:P616288 #1-241 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018

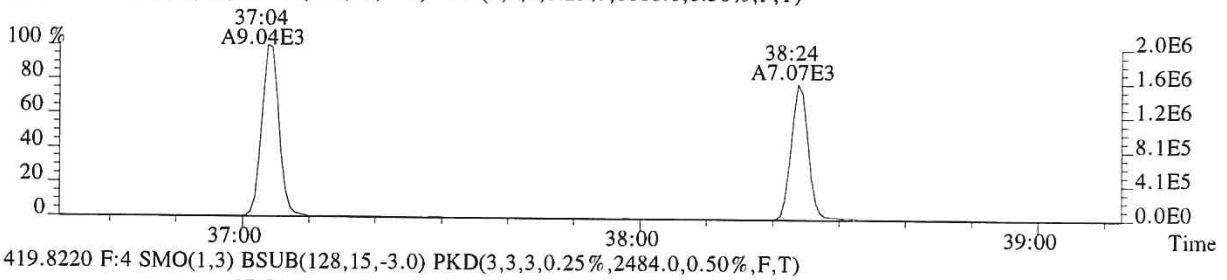
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1128.0,0.50%,F,T)



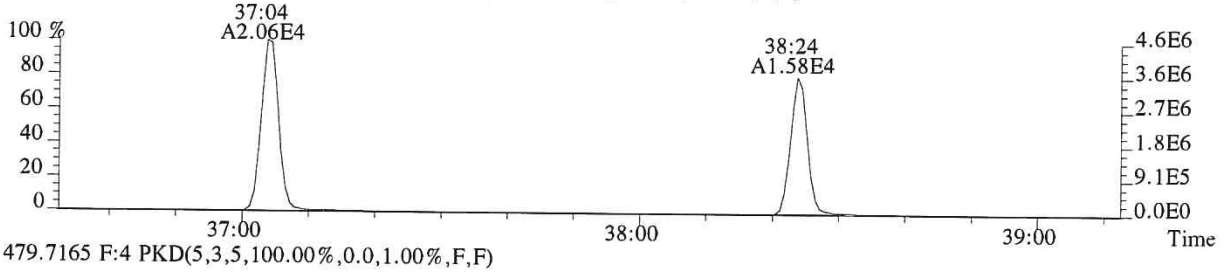
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1312.0,0.50%,F,T)



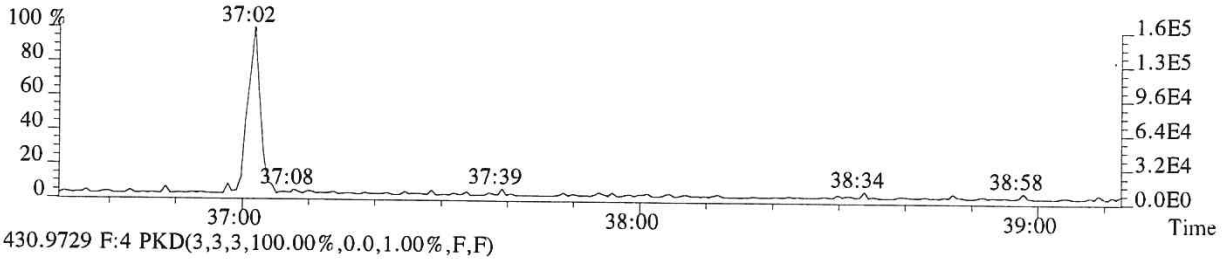
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1668.0,0.50%,F,T)



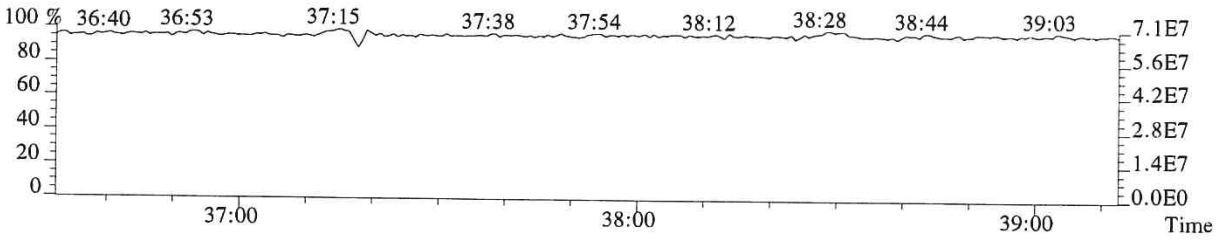
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2484.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



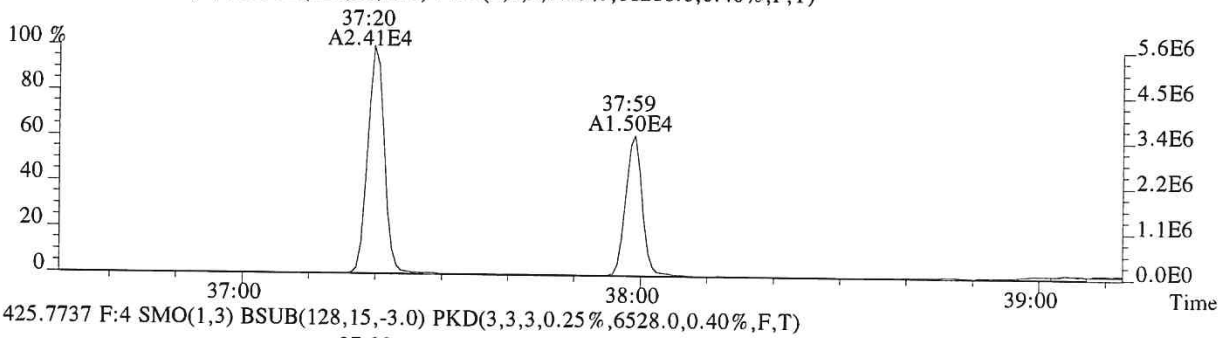
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



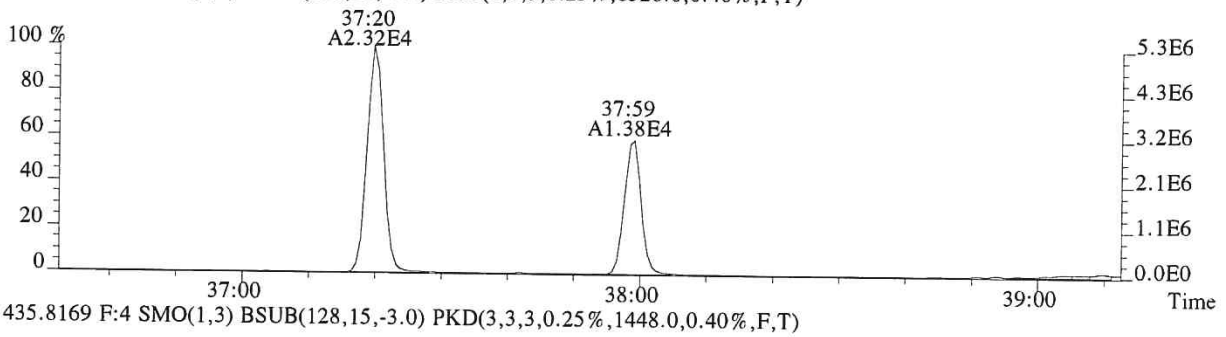
060395

File:P616288 #1-241 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018

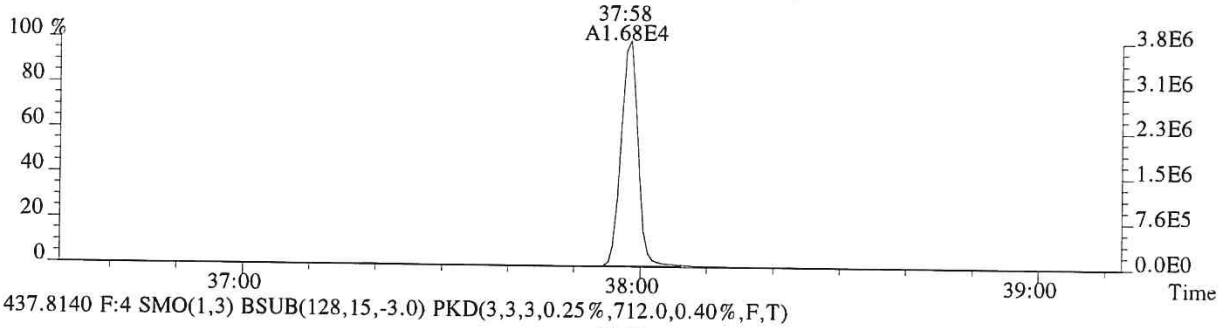
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11288.0,0.40%,F,T)



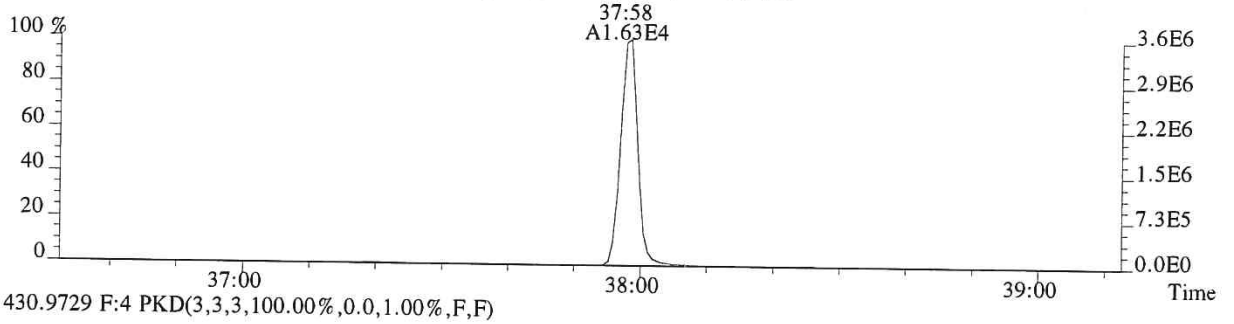
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6528.0,0.40%,F,T)



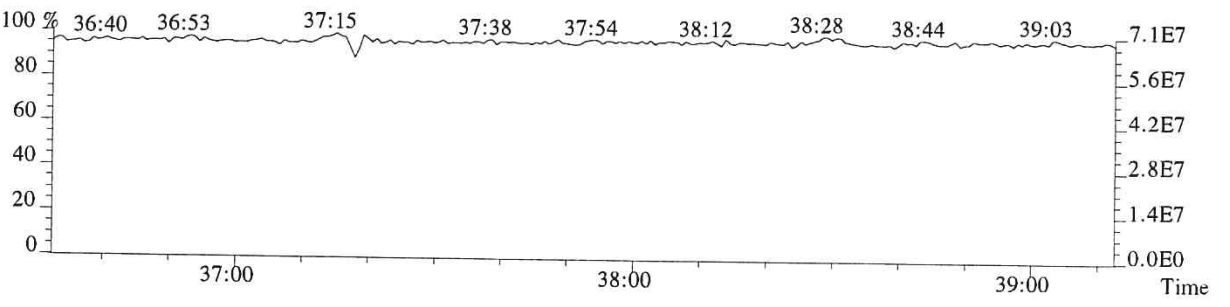
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1448.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,712.0,0.40%,F,T)



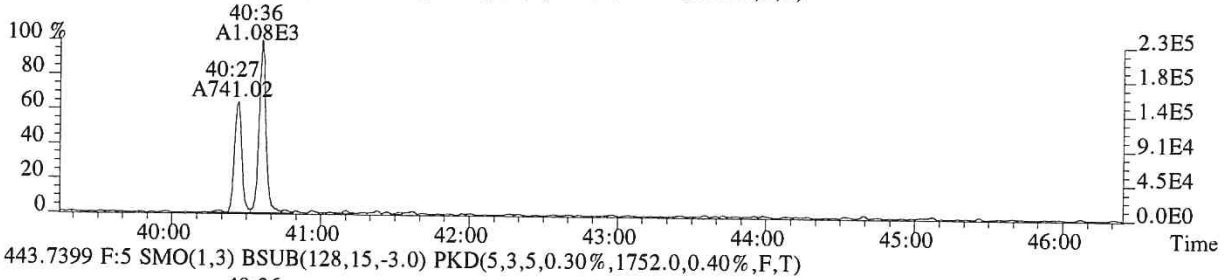
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



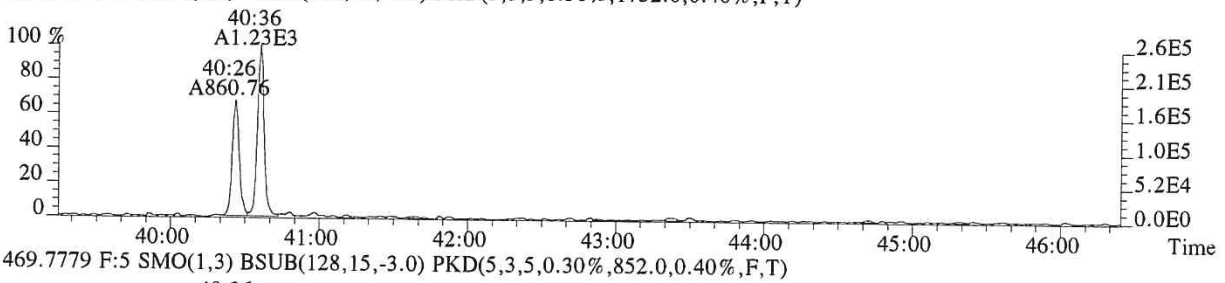
060396

File:P616288 #1-645 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018

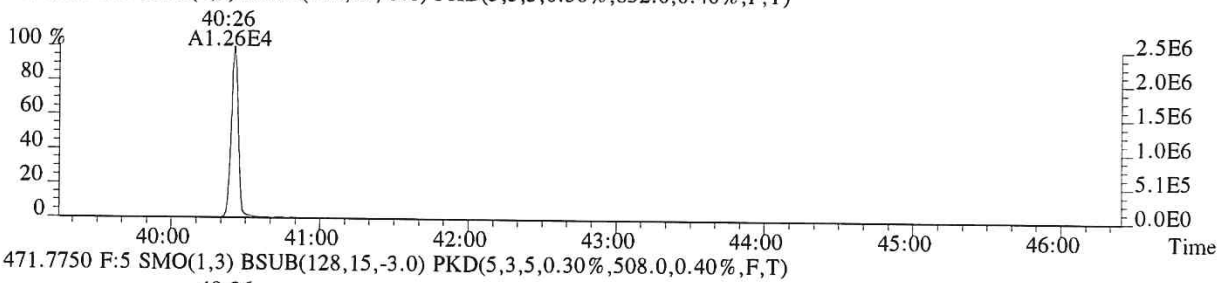
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1428.0,0.40%,F,T)



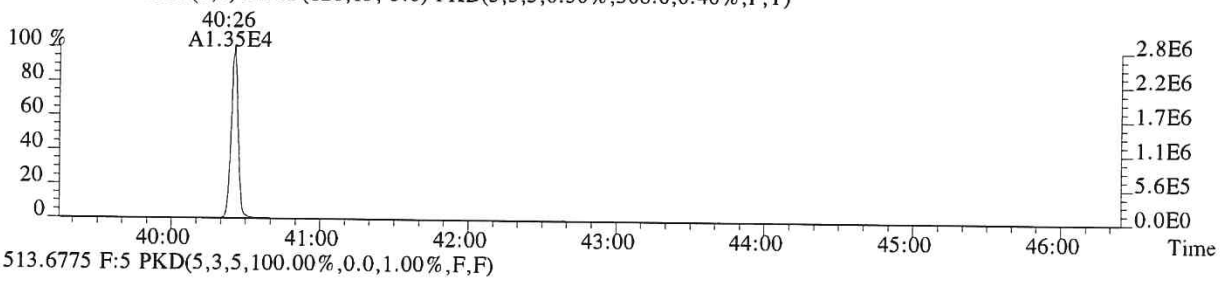
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1752.0,0.40%,F,T)



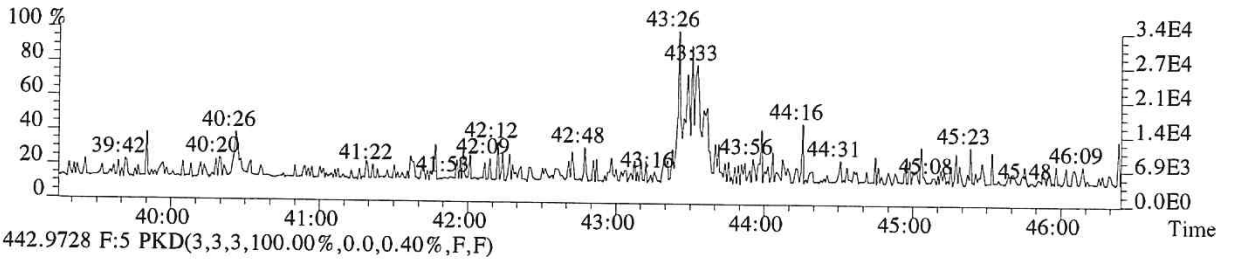
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,852.0,0.40%,F,T)



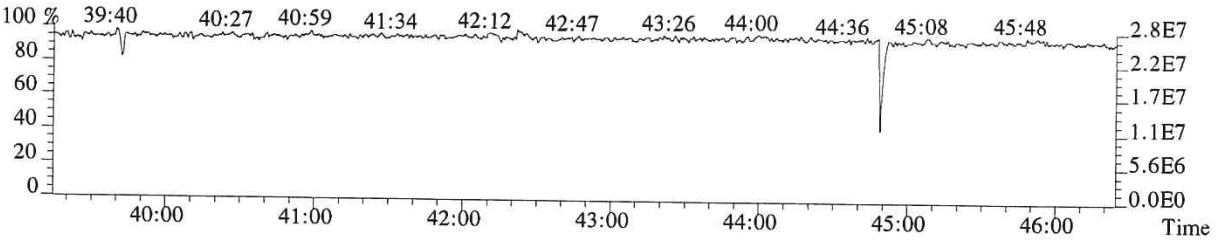
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



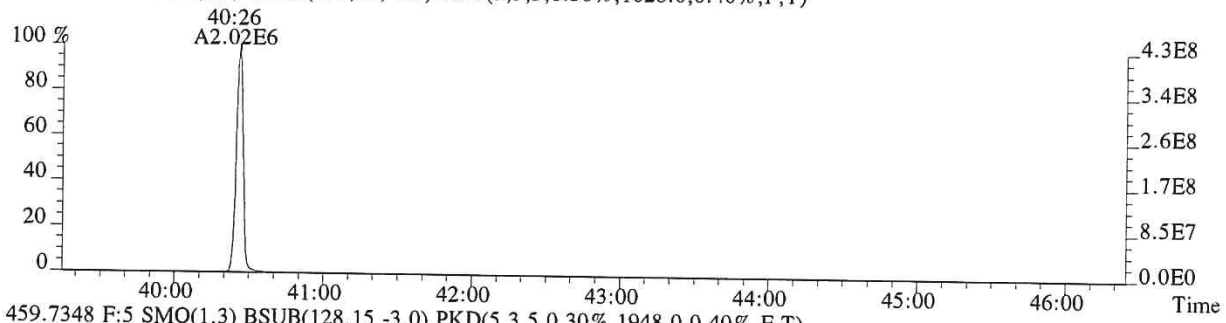
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



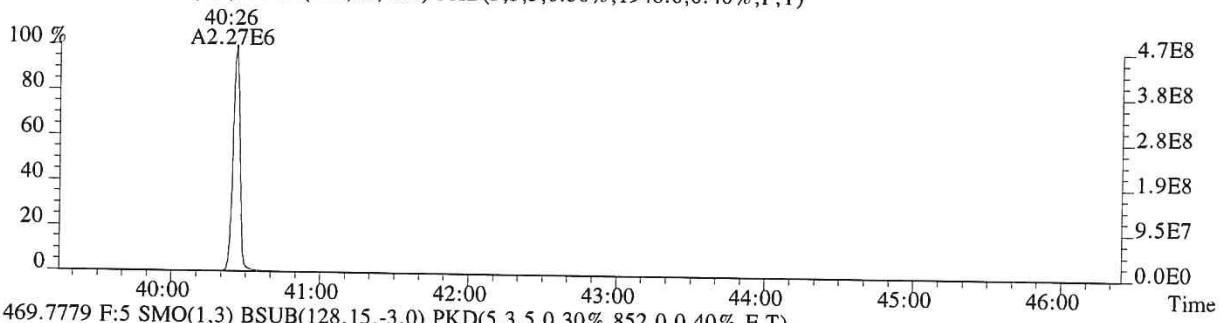
060397

File:P616288 #1-645 Acq:29-DEC-2018 22:38:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-018

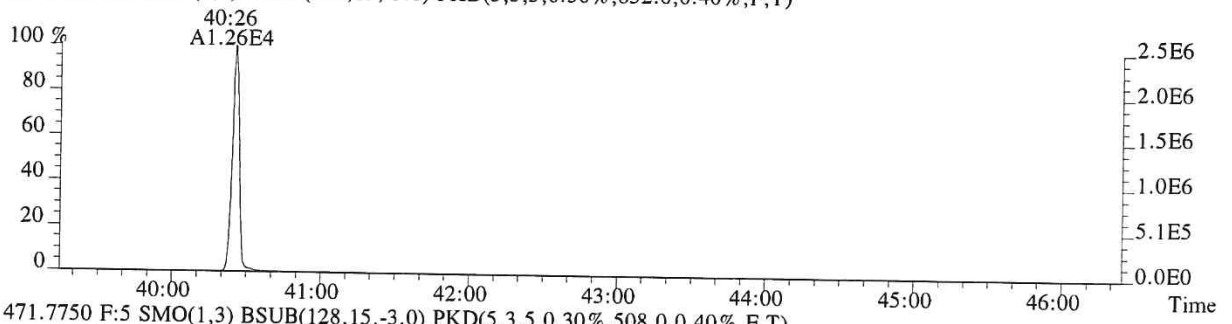
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1028.0,0.40%,F,T)



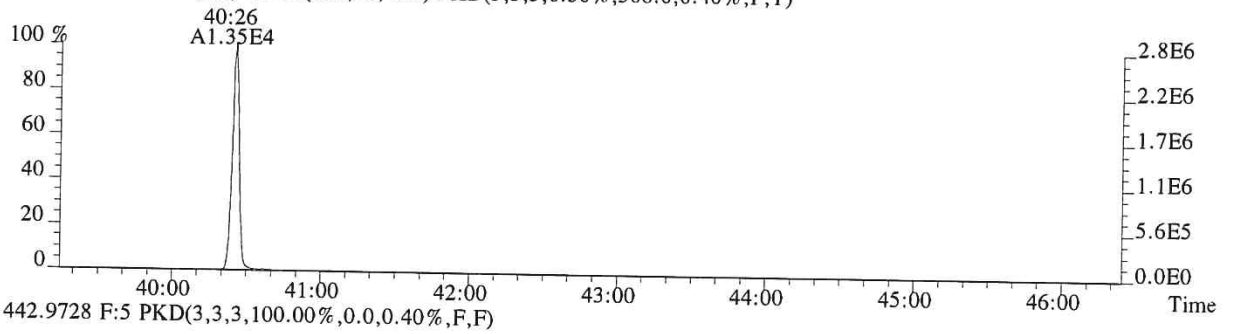
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1948.0,0.40%,F,T)



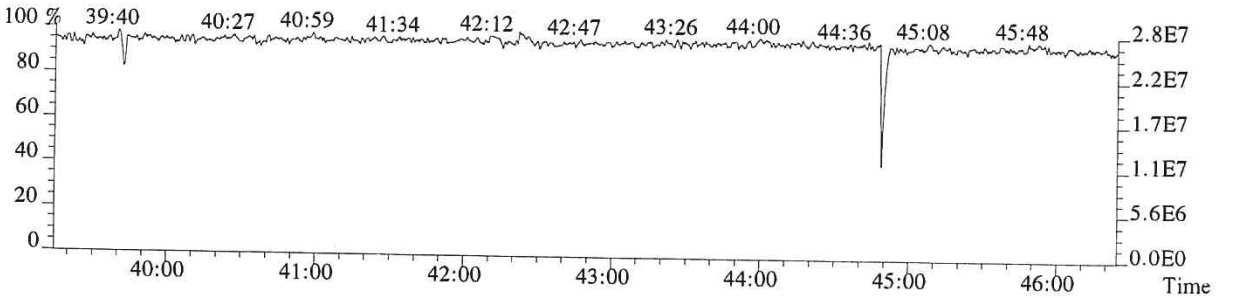
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,852.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0142

Run #9 Filename P519703 Samp: 1 Inj: 1 Acquired: 30-DEC-18 01:31:32
Processed: 30-DEC-18 11:46:49 Sample ID: E1801136-019

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:07	2.594e+02	3.904e+02	0.66	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:00	1.022e+02	5.300e+01	1.93	no	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	1.831e+02	1.194e+02	1.53	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:56	1.768e+02	1.577e+02	1.12	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:03	1.681e+02	1.475e+02	1.14	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:36	1.977e+02	1.608e+02	1.23	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	yes	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	2.492e+03	2.393e+03	1.04	yes	yes	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.258
10	Unk	OCDF	41:55	6.260e+03	7.318e+03	0.86	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:06	8.014e+01	1.231e+02	0.65	no	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:19	8.237e+01	7.597e+01	1.08	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:46	7.985e+01	6.828e+01	1.17	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:52	4.738e+02	3.976e+02	1.19	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:06	2.403e+02	1.705e+02	1.41	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:48	1.807e+04	1.736e+04	1.04	yes	no	1.025
17	Unk	OCDD	41:45	1.713e+05	1.924e+05	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:05	2.450e+04	3.133e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	3.841e+04	2.445e+04	1.57	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:59	3.581e+04	2.268e+04	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.523e+04	3.008e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:02	1.802e+04	3.503e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.605e+04	3.130e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.565e+04	3.077e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:48	1.189e+04	2.681e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:15	1.073e+04	2.482e+04	0.43	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	1.261e+04	1.566e+04	0.81	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.886e+04	1.777e+04	1.62	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	2.372e+04	1.741e+04	1.36	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:51	2.386e+04	2.018e+04	1.18	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:48	2.650e+04	2.479e+04	1.07	yes	no	0.858
32	IS	13C-OCDD	41:44	2.578e+04	2.881e+04	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:22	3.829e+04	4.764e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	5.013e+04	3.921e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	1.796e+04				no	1.014

$$\text{OCDD} = \frac{(1.713e+05 + 1.924e+05) \times 4000\ \text{pg} \times 1}{(2.578e+04 + 2.881e+04) \times 10.284\ \text{g} \times 83.6/100 \times 1.118} = 2772.5342\ \text{ng/kg}$$

LG 12/31/18

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0142

Run #9 Filename P519703 Samp: 1 Inj: 1 Acquired: 30-DEC-18 01:31:32
Processed: 30-DEC-18 11:46:49 LAB. ID: E1801136-019

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.66e+04	6.56e+02	5.6e+01	5.36e+04	1.12e+03	4.8e+01
2	1,2,3,7,8-PeCDF	1.91e+04	6.56e+02	2.9e+01	7.61e+03	1.45e+03	5.3e+00
3	2,3,4,7,8-PeCDF	2.48e+04	6.56e+02	3.8e+01	1.60e+04	1.45e+03	1.1e+01
4	1,2,3,4,7,8-HxCDF	3.25e+04	2.14e+03	1.5e+01	2.43e+04	9.32e+02	2.6e+01
5	1,2,3,6,7,8-HxCDF	3.17e+04	2.14e+03	1.5e+01	2.65e+04	9.32e+02	2.8e+01
6	2,3,4,6,7,8-HxCDF	3.69e+04	2.14e+03	1.7e+01	2.78e+04	9.32e+02	3.0e+01
7	1,2,3,7,8,9-HxCDF	*	2.14e+03	*	*	9.32e+02	*
8	1,2,3,4,6,7,8-HpCDF	3.33e+05	1.34e+03	2.5e+02	3.09e+05	4.62e+02	6.7e+02
9	1,2,3,4,7,8,9-HpCDF	*	1.34e+03	*	*	4.62e+02	*
10	OCDF	3.91e+05	3.32e+02	1.2e+03	4.68e+05	5.28e+02	8.9e+02
11	2,3,7,8-TCDD	1.26e+04	1.28e+03	9.8e+00	1.96e+04	7.92e+02	2.5e+01
12	1,2,3,7,8-PeCDD	1.58e+04	9.20e+02	1.7e+01	1.16e+04	4.80e+02	2.4e+01
13	1,2,3,4,7,8-HxCDD	1.60e+04	6.68e+02	2.4e+01	1.54e+04	1.05e+03	1.5e+01
14	1,2,3,6,7,8-HxCDD	7.23e+04	6.68e+02	1.1e+02	6.33e+04	1.05e+03	6.0e+01
15	1,2,3,7,8,9-HxCDD	3.71e+04	6.68e+02	5.6e+01	2.44e+04	1.05e+03	2.3e+01
16	1,2,3,4,6,7,8-HpCDD	1.89e+06	6.60e+02	2.9e+03	1.85e+06	3.88e+02	4.8e+03
17	OCDD	1.02e+07	3.44e+02	3.0e+04	1.14e+07	4.68e+02	2.4e+04
18	13C-2,3,7,8-TCDF	3.72e+06	4.30e+03	8.6e+02	4.71e+06	1.96e+03	2.4e+03
19	13C-1,2,3,7,8-PeCDF	6.45e+06	5.32e+02	1.2e+04	4.11e+06	7.20e+02	5.7e+03
20	13C-2,3,4,7,8-PeCDF	6.31e+06	5.32e+02	1.2e+04	4.02e+06	7.20e+02	5.6e+03
21	13C-1,2,3,4,7,8-HxCDF	2.65e+06	6.08e+02	4.4e+03	5.26e+06	9.04e+02	5.8e+03
22	13C-1,2,3,6,7,8-HxCDF	2.95e+06	6.08e+02	4.8e+03	5.76e+06	9.04e+02	6.4e+03
23	13C-2,3,4,6,7,8-HxCDF	2.68e+06	6.08e+02	4.4e+03	5.13e+06	9.04e+02	5.7e+03
24	13C-1,2,3,7,8,9-HxCDF	2.41e+06	6.08e+02	4.0e+03	4.70e+06	9.04e+02	5.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.54e+06	1.58e+03	9.7e+02	3.50e+06	2.84e+03	1.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.07e+06	1.58e+03	6.8e+02	2.48e+06	2.84e+03	8.7e+02
27	13C-2,3,7,8-TCDD	2.06e+06	5.05e+03	4.1e+02	2.60e+06	1.53e+03	1.7e+03
28	13C-1,2,3,7,8-PeCDD	5.04e+06	8.88e+02	5.7e+03	3.10e+06	7.60e+02	4.1e+03
29	13C-1,2,3,4,7,8-HxCDD	4.04e+06	9.04e+02	4.5e+03	3.22e+06	1.10e+03	2.9e+03
30	13C-1,2,3,6,7,8-HxCDD	3.67e+06	9.04e+02	4.1e+03	2.97e+06	1.10e+03	2.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.77e+06	4.64e+02	6.0e+03	2.64e+06	3.84e+02	6.9e+03
32	13C-OCDD	1.55e+06	4.12e+02	3.8e+03	1.69e+06	3.40e+02	5.0e+03
33	13C-1,2,3,4-TCDD	6.05e+06	5.05e+03	1.2e+03	7.57e+06	1.53e+03	4.9e+03
34	13C-1,2,3,7,8,9-HxCDD	7.54e+06	9.04e+02	8.3e+03	6.02e+06	1.10e+03	5.5e+03
35	37Cl-2,3,7,8-TCDD	3.02e+06	1.48e+03	2.0e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.284e+03 + 7.920e+02) \times 2000}{(2.062e+06 + 2.596e+06) \times (\quad) \times 1.085} =$$

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Peak List Summary

CLIENT ID.
SL0142

Entry: 36 Totals Name: Total Tetra-Furans

Run: 9 File: P519703 Sample:1 Injection:1 Function:1

Acquired: 30-DEC-18 01:31:32 Processed: 30-DEC-18 11:46:49

Mass: 303.9020 305.8990 Tot Response: 1.34e+03 RRF: 0.9417

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:33	2.76e+01	3.86e+01	0.71	yes	6.62e+01		n	n
2	21:59	4.43e+01	5.19e+01	0.85	yes	9.62e+01		n	n
3	22:26	7.54e+01	9.97e+01	0.76	yes	1.75e+02		n	n
4	22:54	1.19e+02	1.68e+02	0.71	yes	2.87e+02		n	n
5	23:42	2.75e+01	3.39e+01	0.81	yes	6.14e+01		n	n
6	26:07	2.59e+02	3.90e+02	0.66	yes	6.50e+02	2,3,7,8-TCDF	n	n

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CLIENT ID.
SL0142

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 9 File: P519703 Sample:1 Injection:1 Function:1

Acquired: 30-DEC-18 01:31:32 Processed: 30-DEC-18 11:46:49

Mass: 319.8970 321.8940 Tot Response: 1.56e+02 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:12	4.09e+01	4.80e+01 0.85	yes	8.90e+01		n	n
2	25:14	2.89e+01	3.76e+01 0.77	yes	6.65e+01		n	n

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Peak List Summary

CLIENT ID.
SL0142

Entry: 38 Totals Name: Total Penta-Furans1

Run: 9 File: P519703 Sample:1 Injection:1 Function:1

Acquired: 30-DEC-18 01:31:32 Processed: 30-DEC-18 11:46:49

Mass: 339.8600 341.8570 Tot Response: 1.12e+03 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:17	6.68e+02	4.54e+02 1.47	yes	1.12e+03		n	n

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Peak List Summary

CLIENT ID.
SL0142

Entry: 39 Totals Name: Total Penta-Furans2

Run: 9 File: P519703 Sample:1 Injection:1 Function:2

Acquired: 30-DEC-18 01:31:32 Processed: 30-DEC-18 11:46:49

Mass: 339.8600 341.8570 Tot Response: 1.82e+03 RRF: 0.9857

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:48	1.92e+02	1.16e+02	1.66	yes	3.09e+02		n	n
2	29:57	4.52e+02	3.43e+02	1.32	yes	7.94e+02		n	n
3	30:34	1.58e+02	9.09e+01	1.74	yes	2.49e+02		n	n
4	31:54	1.05e+02	6.26e+01	1.68	yes	1.68e+02		n	n
5	32:00	1.83e+02	1.19e+02	1.53	yes	3.02e+02	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.
SL0142

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 9 File: P519703 Sample:1 Injection:1 Function:2

Acquired: 30-DEC-18 01:31:32 Processed: 30-DEC-18 11:46:49

Mass: 355.8550 357.8520 Tot Response: 4.19e+02 RRF: 0.9565

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:00	1.86e+02	1.26e+02 1.48	yes	3.11e+02		n	n
2	31:18	4.45e+01	2.83e+01 1.57	yes	7.28e+01		n	n
3	32:45	2.09e+01	1.39e+01 1.51	yes	3.48e+01		n	n

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Peak List Summary

CLIENT ID.
SL0142

Entry: 41 Totals Name: Total Hexa-Furans

Run: 9 File: P519703 Sample:1 Injection:1 Function:3

Acquired: 30-DEC-18 01:31:32 Processed: 30-DEC-18 11:46:49

Mass: 373.8210 375.8180 Tot Response: 6.11e+03 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:44	2.95e+02	2.21e+02	1.33	yes	5.16e+02		n	n
2	33:54	1.10e+03	9.78e+02	1.13	yes	2.08e+03		n	n
3	34:28	1.35e+03	1.16e+03	1.16	yes	2.51e+03		n	n
4	34:56	1.77e+02	1.58e+02	1.12	yes	3.35e+02	1,2,3,4,7,8-HxCDF	n	n
5	35:03	1.68e+02	1.48e+02	1.14	yes	3.16e+02	1,2,3,6,7,8-HxCDF	n	n
6	35:36	1.98e+02	1.61e+02	1.23	yes	3.58e+02	2,3,4,6,7,8-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0142

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 9 File: P519703 Sample:1 Injection:1 Function:3

Acquired: 30-DEC-18 01:31:32 Processed: 30-DEC-18 11:46:49

Mass: 389.8160 391.8130 Tot Response: 7.50e+03 RRF: 1.047

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:18	1.51e+03	1.20	yes	2.77e+03		n	n
2	34:52	2.37e+02	1.25	yes	4.26e+02		n	n
3	35:08	1.62e+03	1.37	yes	2.80e+03		n	n
4	35:46	7.99e+01	1.17	yes	1.48e+02	1,2,3,4,7,8-HxCDD	n	n
5	35:52	4.74e+02	1.19	yes	8.71e+02	1,2,3,6,7,8-HxCDD	n	n
6	36:01	4.95e+01	1.41	yes	8.46e+01		n	n
7	36:06	2.40e+02	1.70e+02	1.41	yes	4.11e+02	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0142

Entry: 43 Totals Name: Total Hepta-Furans

Run: 9 File: P519703 Sample:1 Injection:1 Function:4

Acquired: 30-DEC-18 01:31:32 Processed: 30-DEC-18 11:46:49

Mass: 407.7820 409.7790 Tot Response: 1.64e+04 RRF: 1.308

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:48	2.49e+03	1.04	yes	4.88e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	38:15	5.72e+03	0.99	yes	1.15e+04		n	n

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SL0142

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 9 File: P519703 Sample:1 Injection:1 Function:4

Acquired: 30-DEC-18 01:31:32 Processed: 30-DEC-18 11:46:49

Mass: 423.7770 425.7740 Tot Response: 1.13e+05 RRF: 1.025

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:06	3.98e+04	3.78e+04 1.05	yes	7.76e+04		n	n
2	38:48	1.81e+04	1.74e+04 1.04	yes	3.54e+04	1,2,3,4,6,7,8-HpCDD	n	n

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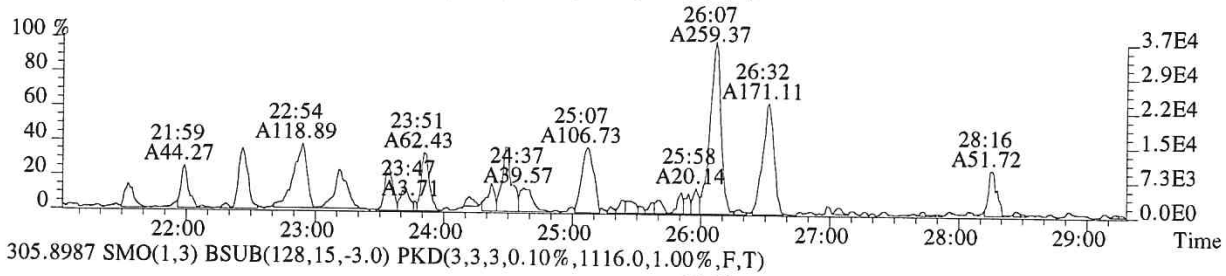
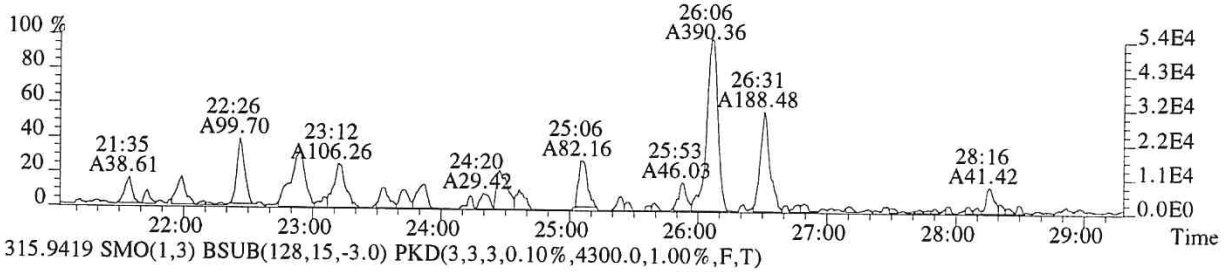
File:P519703 #1-587 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019

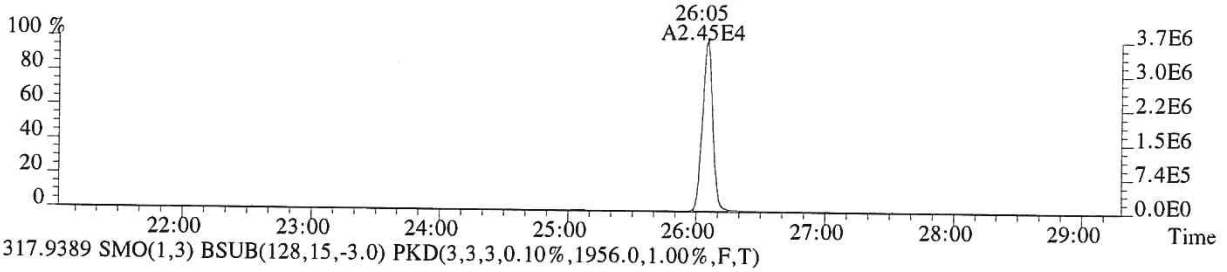
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,656.0,1.00%,F,T)



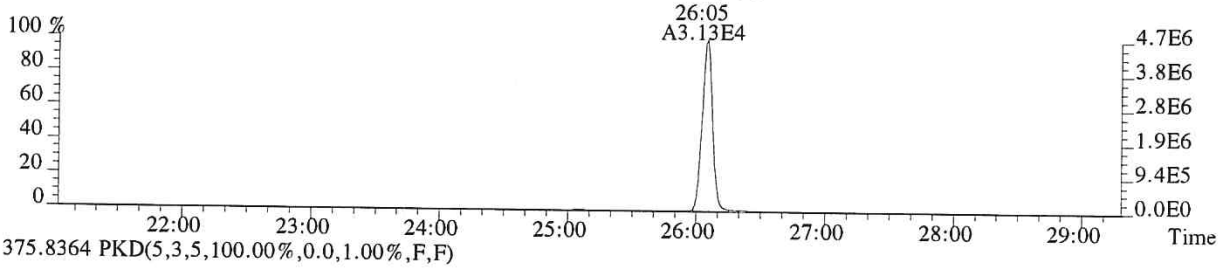
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1116.0,1.00%,F,T)



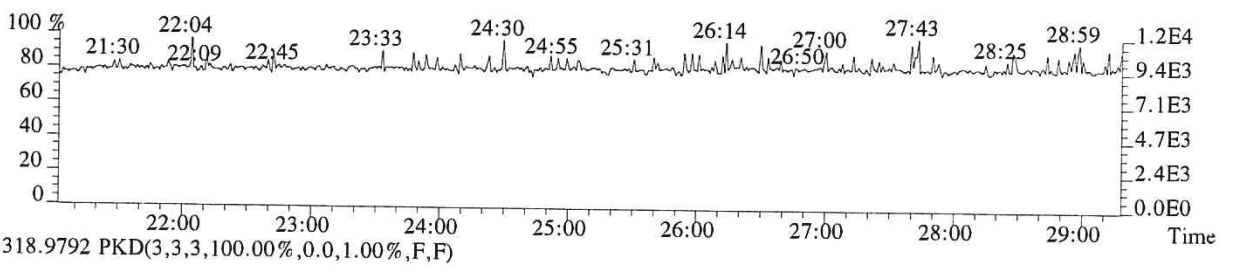
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4300.0,1.00%,F,T)



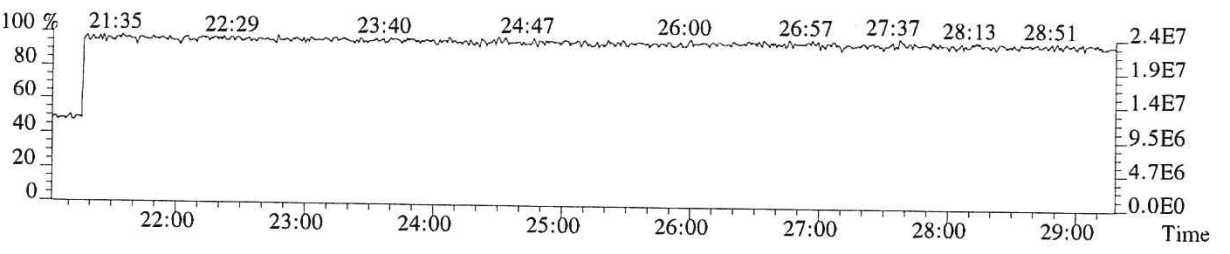
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1956.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



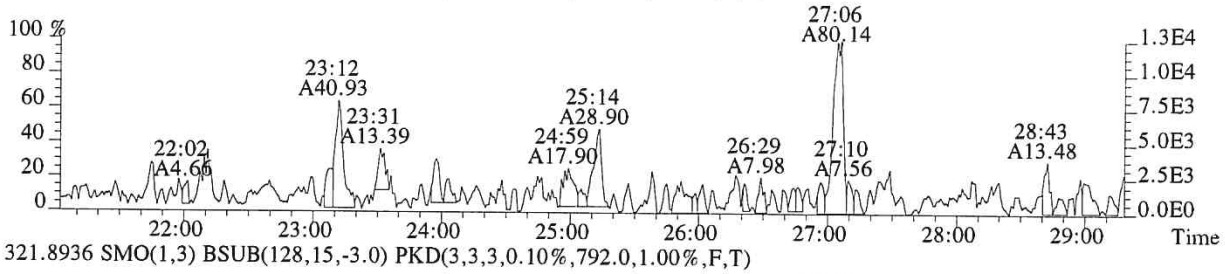
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



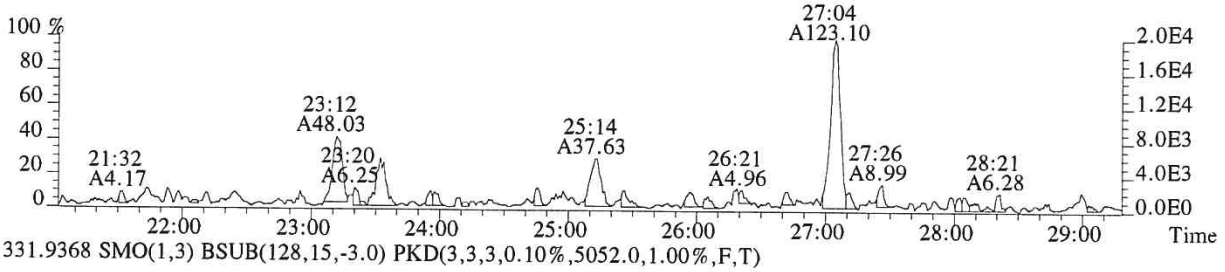
060410

File:P519703 #1-587 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019

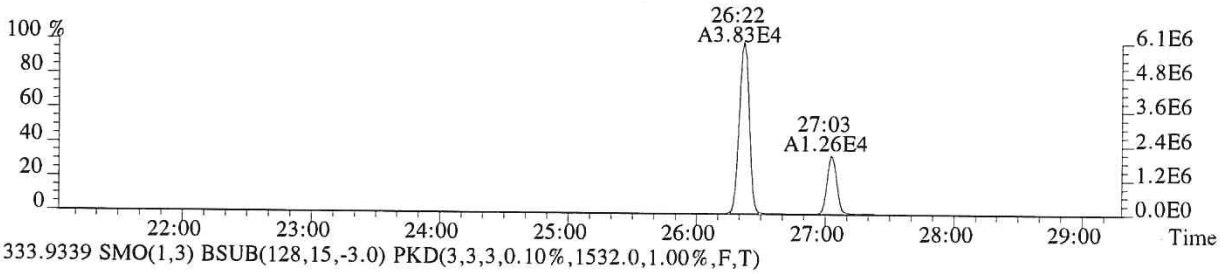
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1284.0,1.00%,F,T)



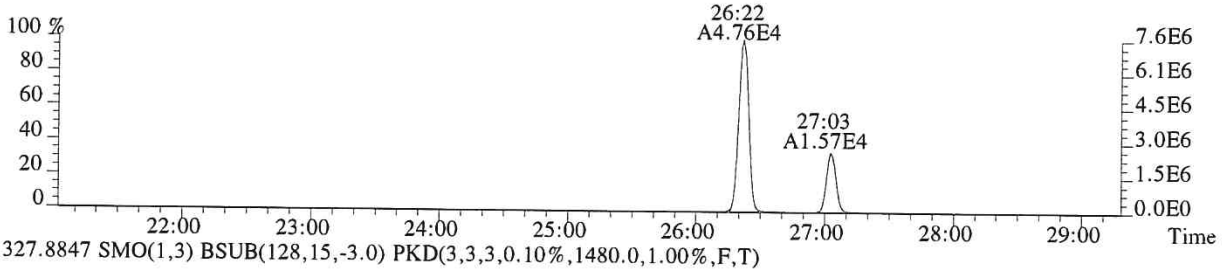
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,792.0,1.00%,F,T)



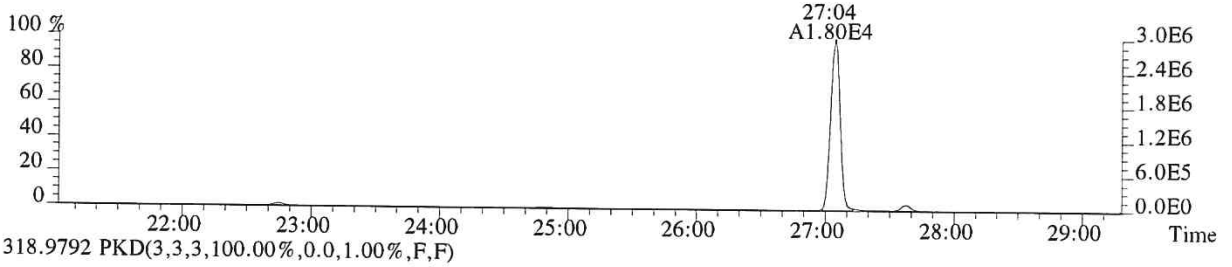
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5052.0,1.00%,F,T)



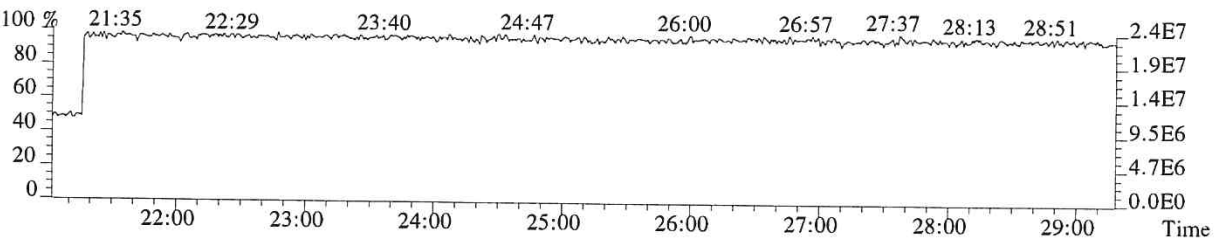
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1532.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1480.0,1.00%,F,T)



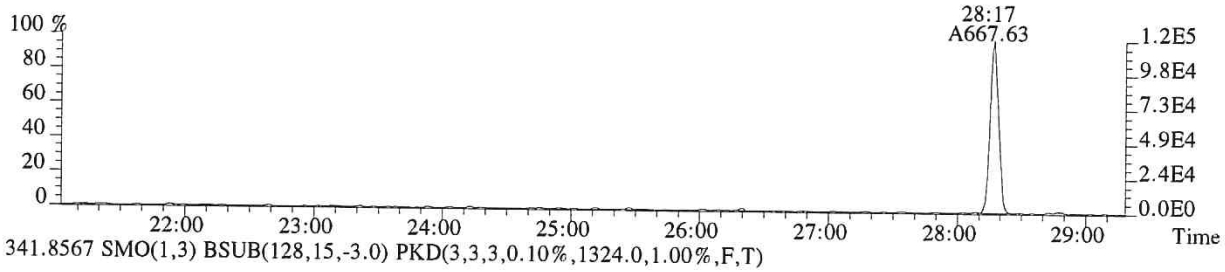
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



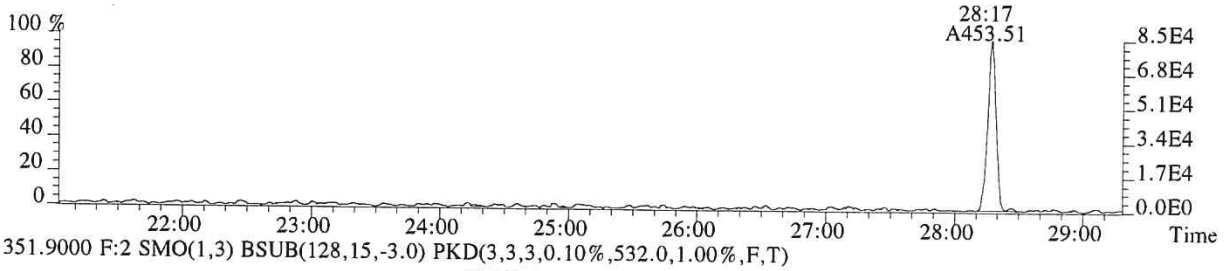
060411

File:P519703 #1-587 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019

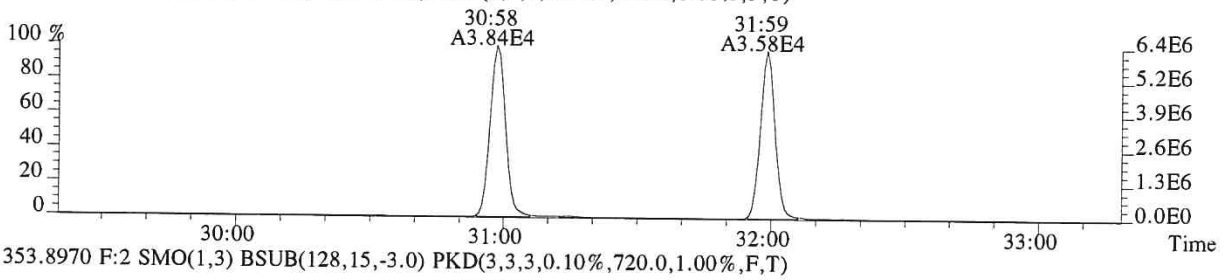
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,496.0,1.00%,F,T)



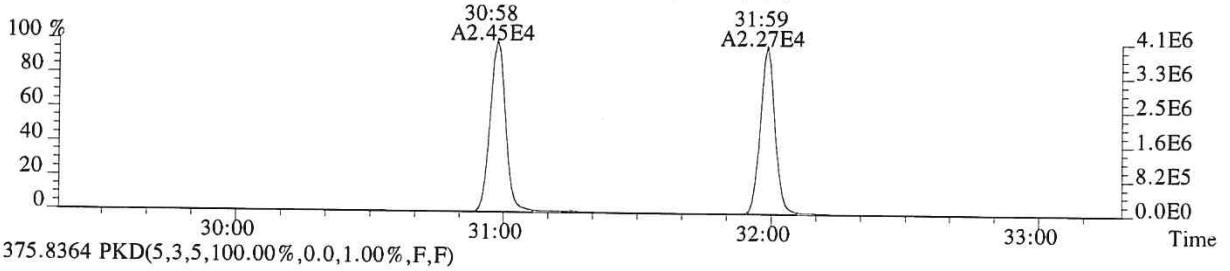
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1324.0,1.00%,F,T)



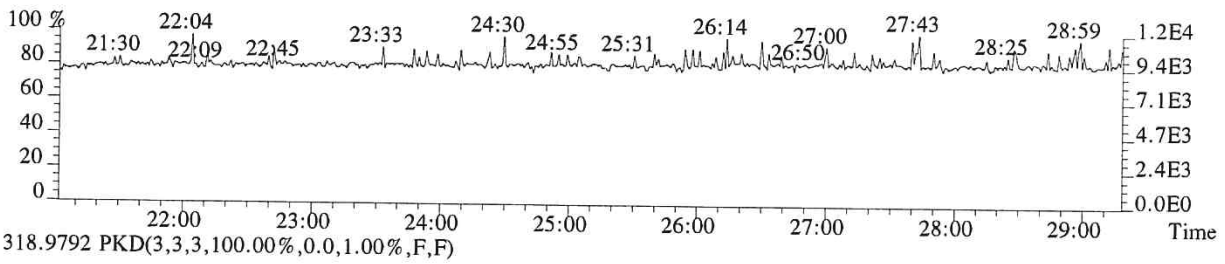
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,532.0,1.00%,F,T)



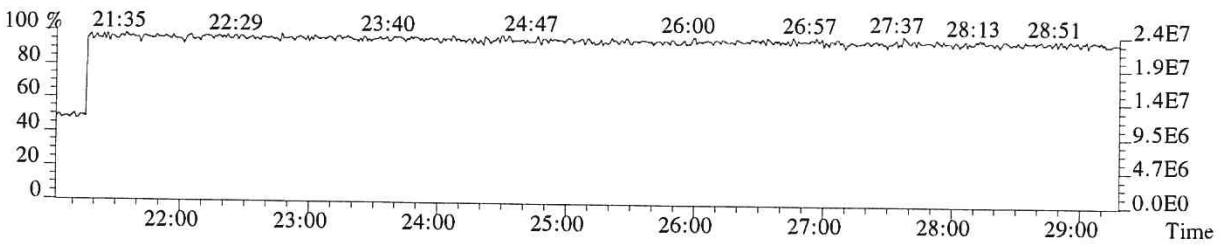
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,720.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



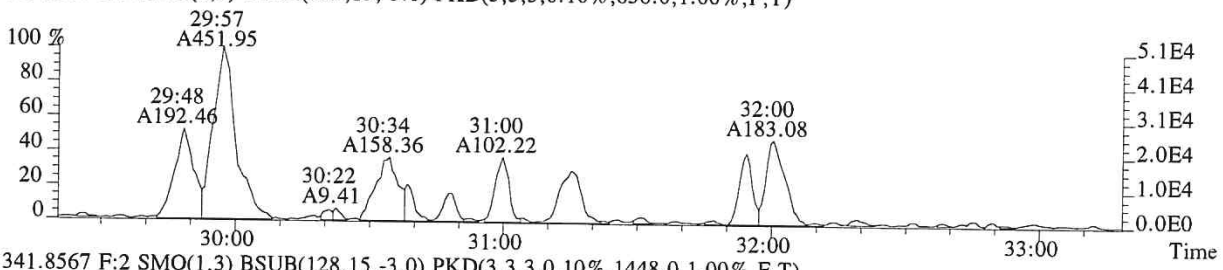
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



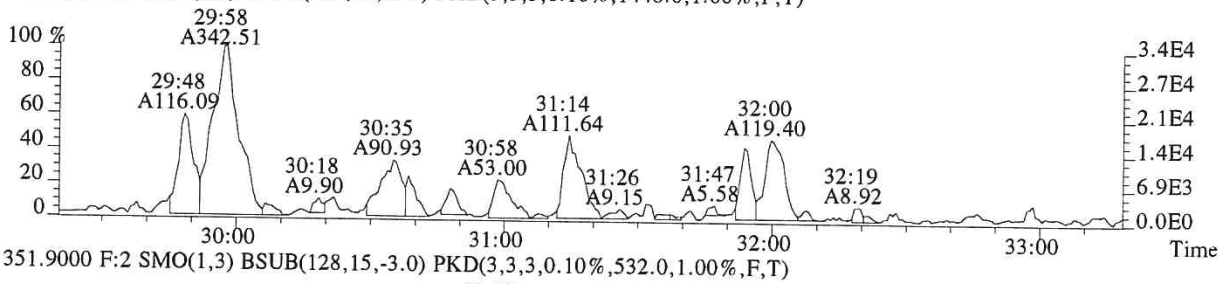
060412

File:P519703 #1-358 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019

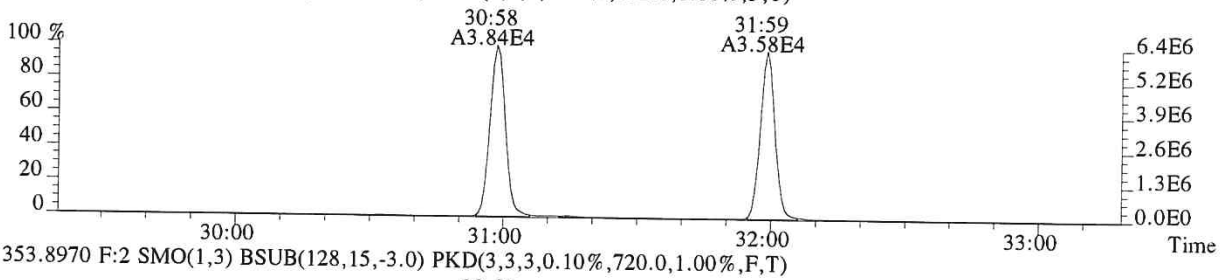
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,656.0,1.00%,F,T)



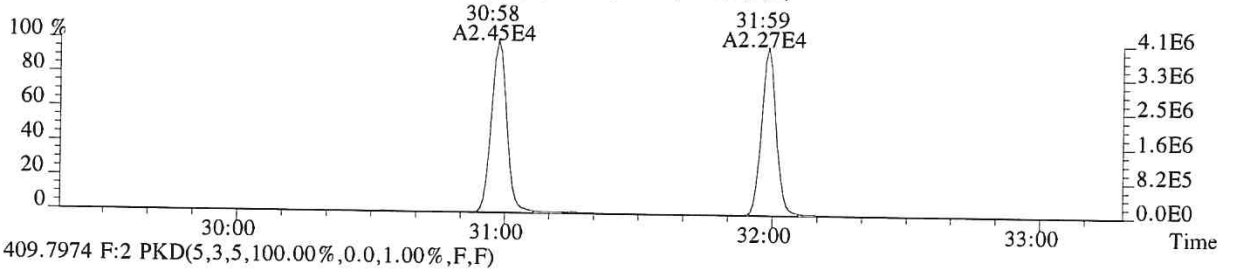
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1448.0,1.00%,F,T)



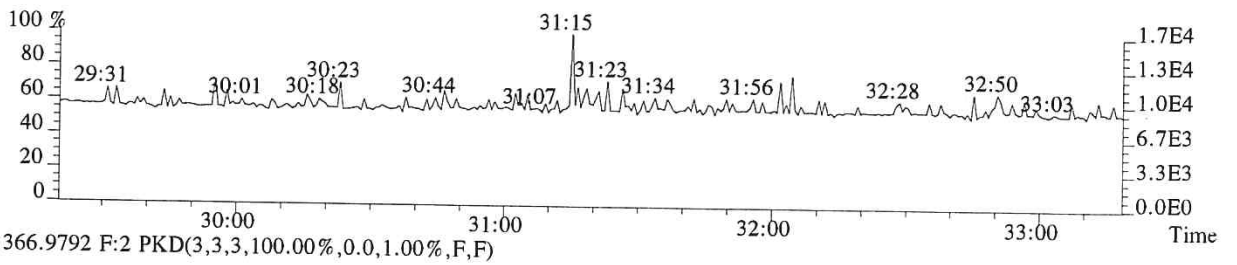
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,532.0,1.00%,F,T)



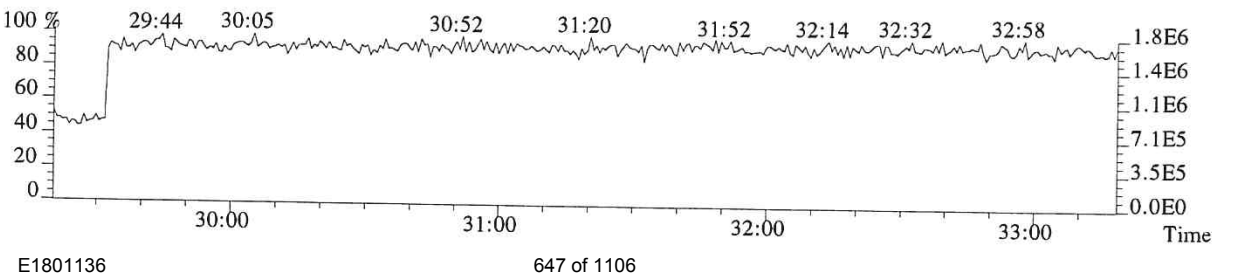
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,720.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

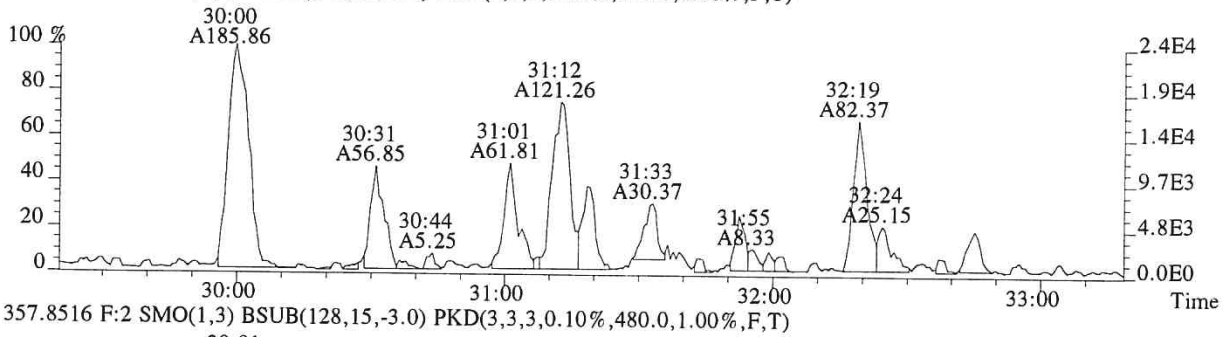


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

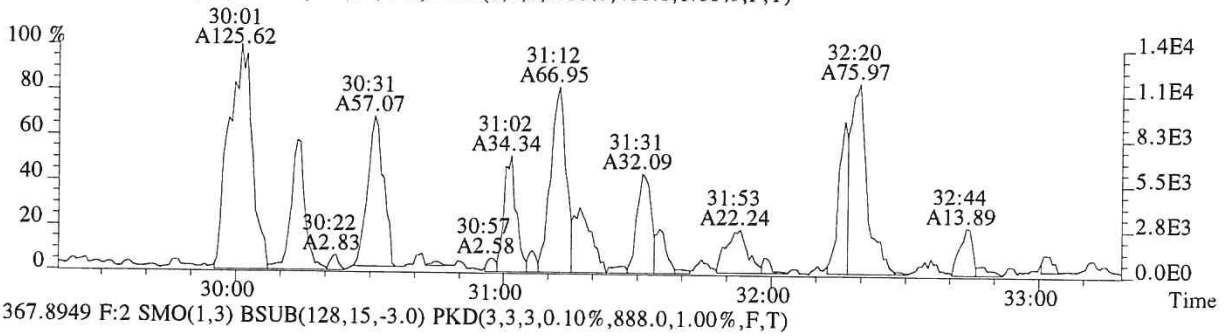


060413

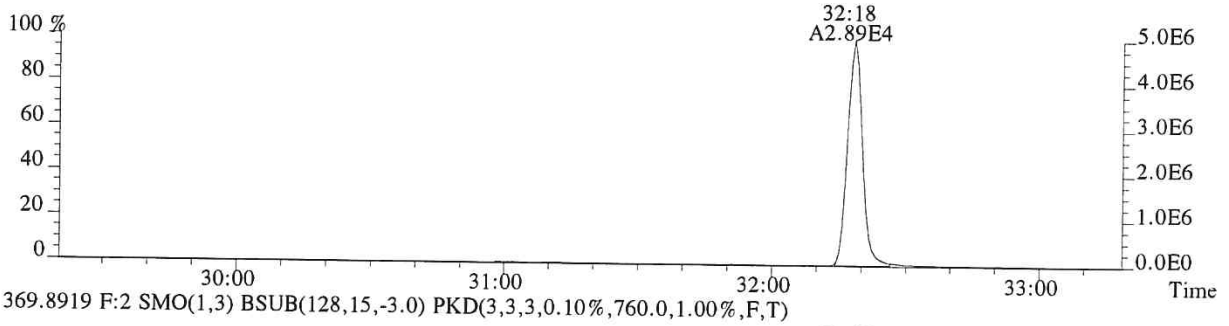
File:P519703 #1-358 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,920.0,1.00%,F,T)



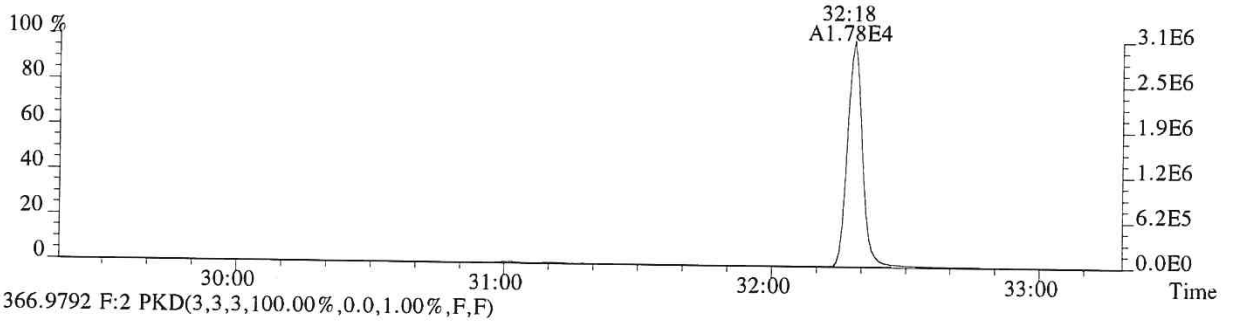
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,480.0,1.00%,F,T)



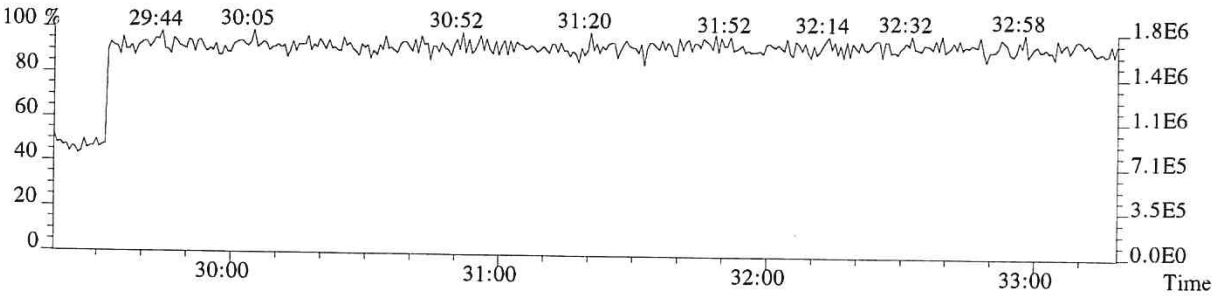
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,888.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,760.0,1.00%,F,T)

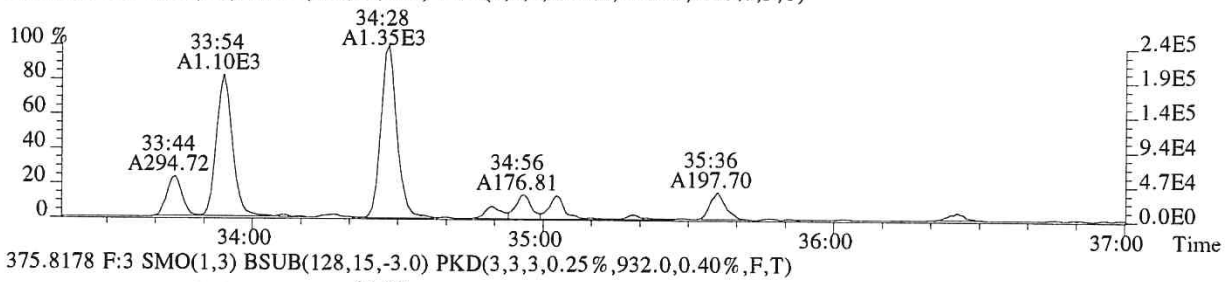


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

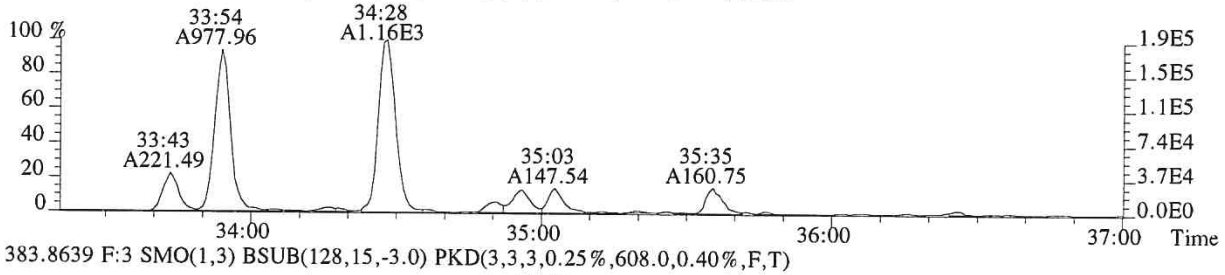


060414

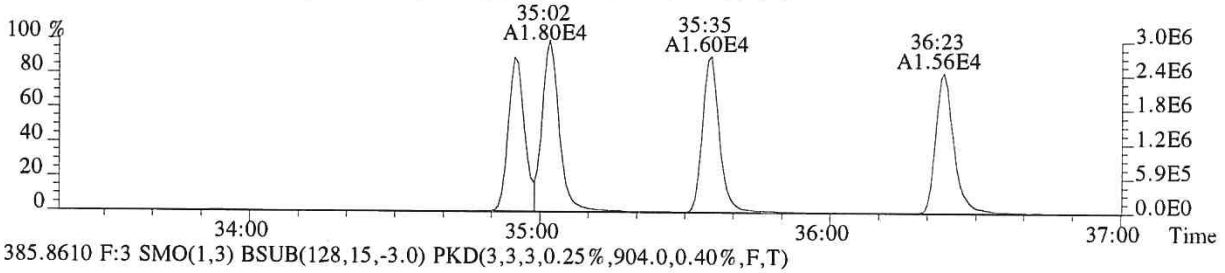
File:P519703 #1-330 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2136.0,0.40%,F,T)



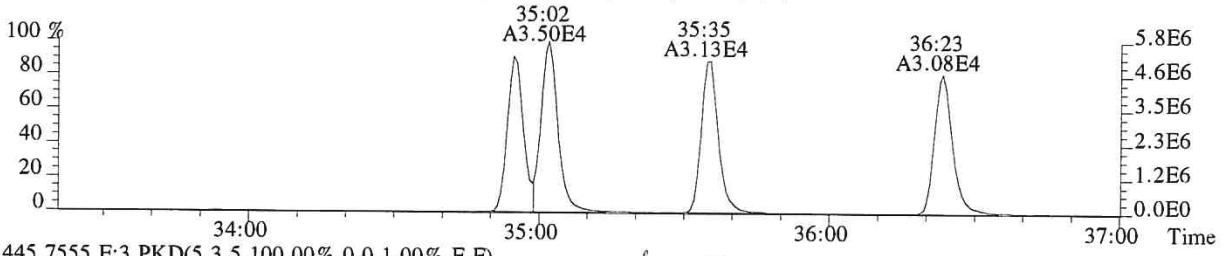
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,932.0,0.40%,F,T)



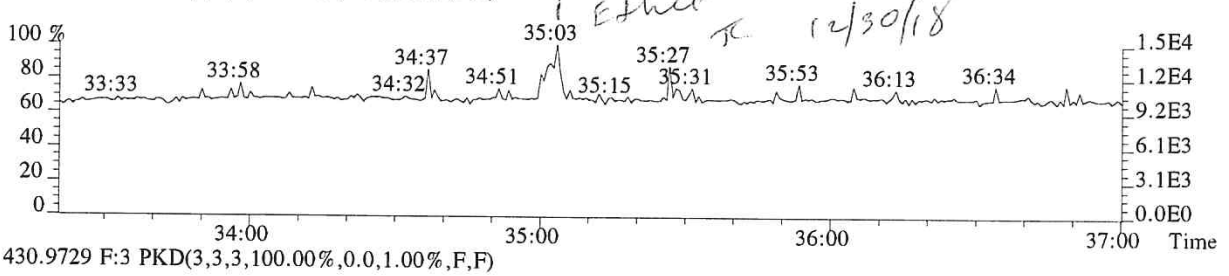
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,608.0,0.40%,F,T)



385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,904.0,0.40%,F,T)

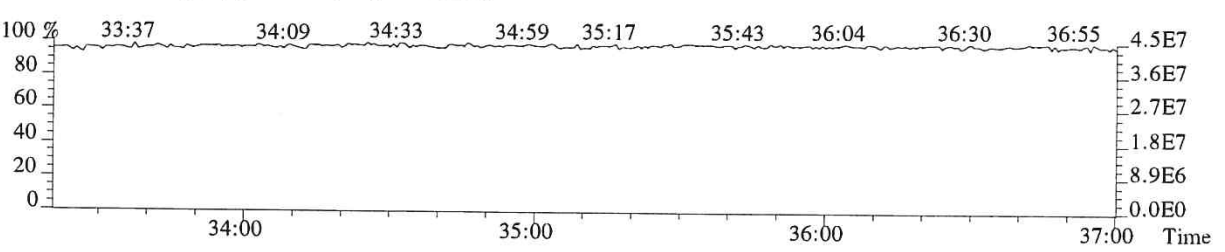


445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



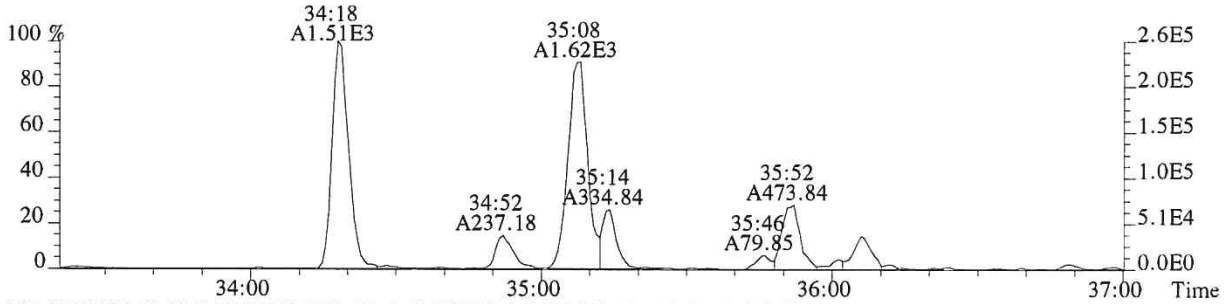
1 Ether TC 12/30/18

430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

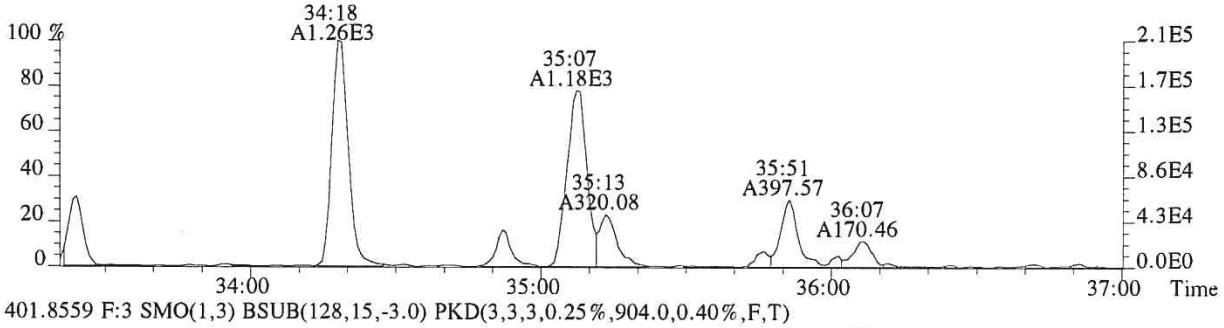


060415

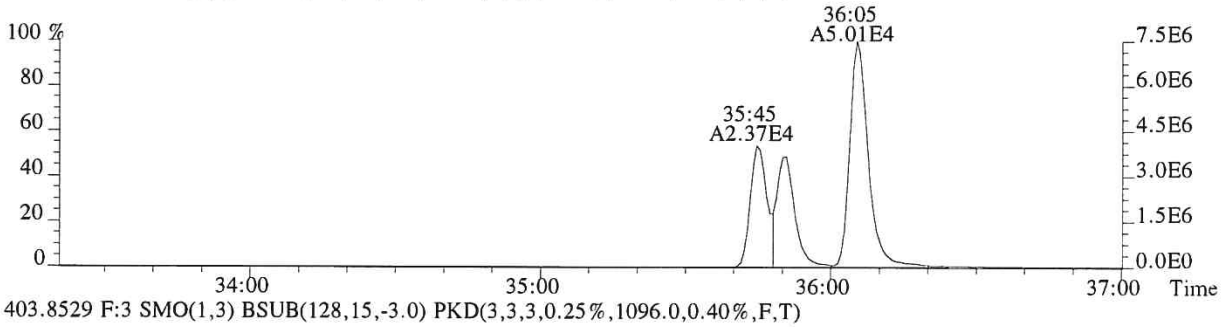
File:P519703 #1-330 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,668.0,0.40%,F,T)



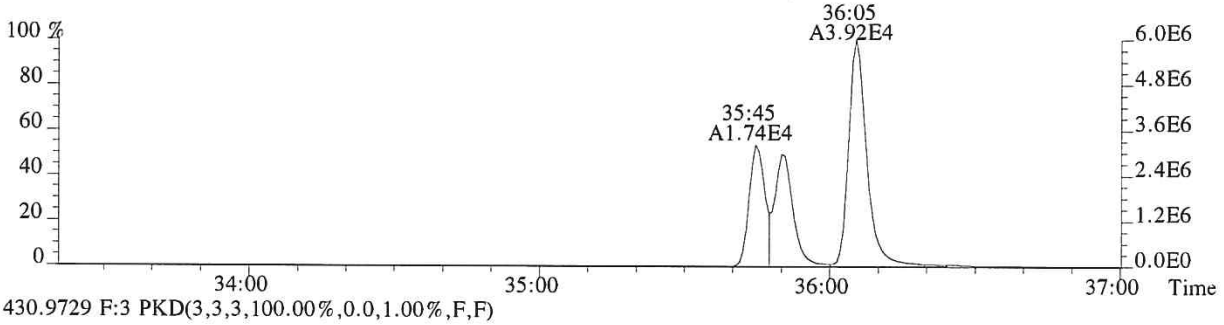
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1048.0,0.40%,F,T)



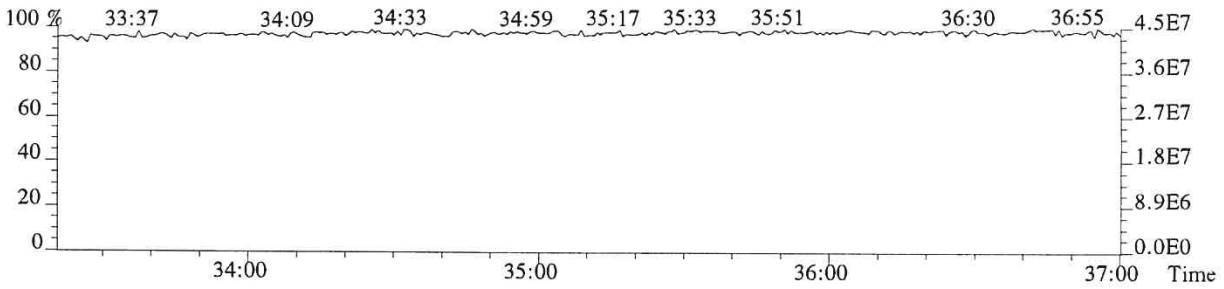
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,904.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1096.0,0.40%,F,T)



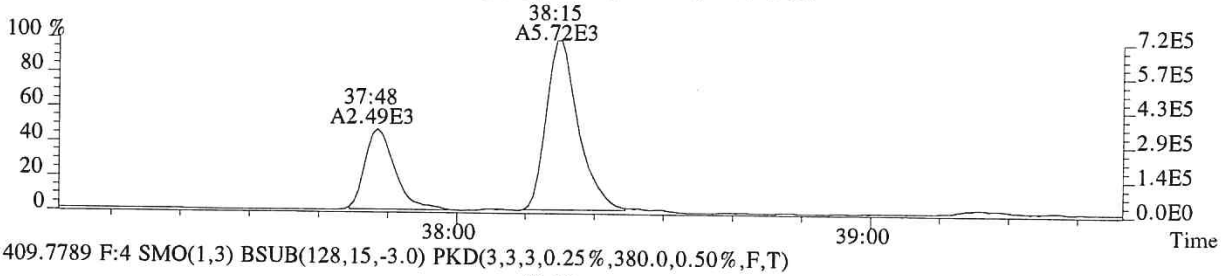
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



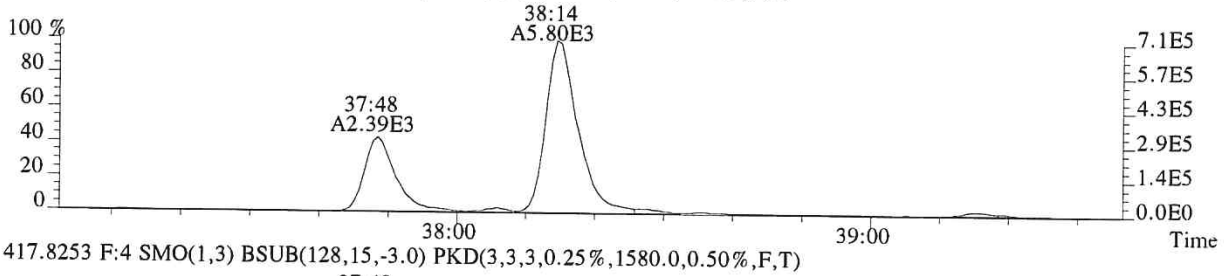
060416

File:P519703 #1-232 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019

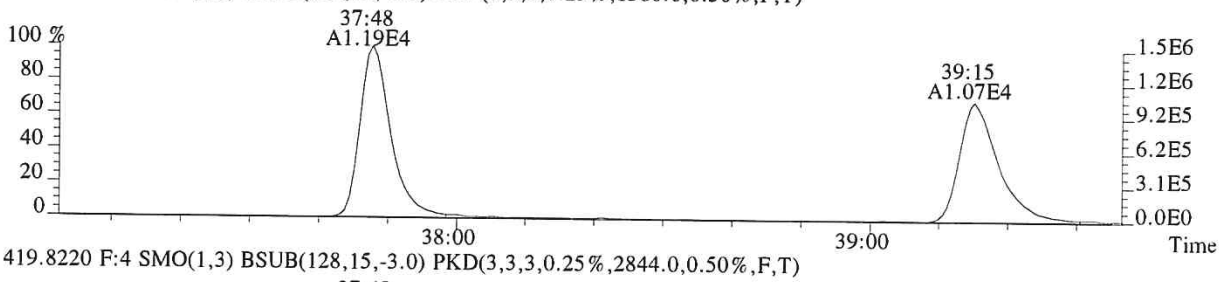
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11872.0,0.50%,F,T)



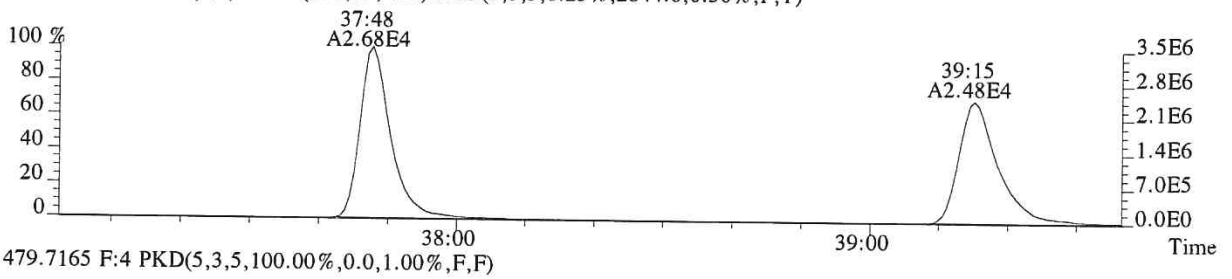
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,380.0,0.50%,F,T)



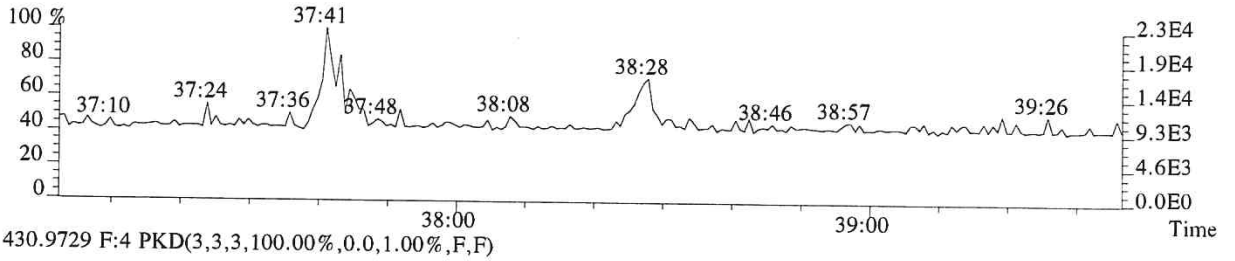
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1580.0,0.50%,F,T)



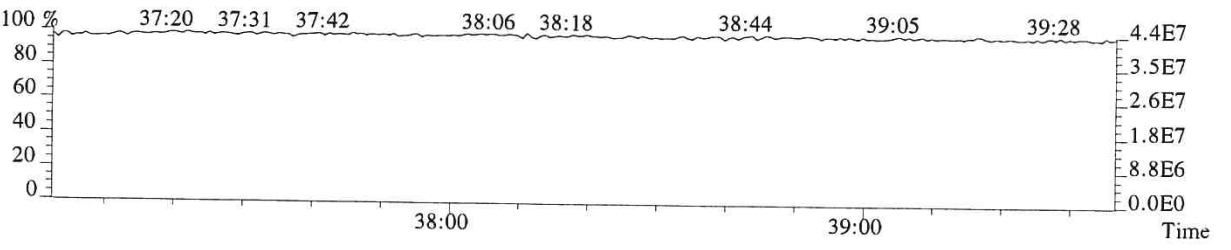
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2844.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

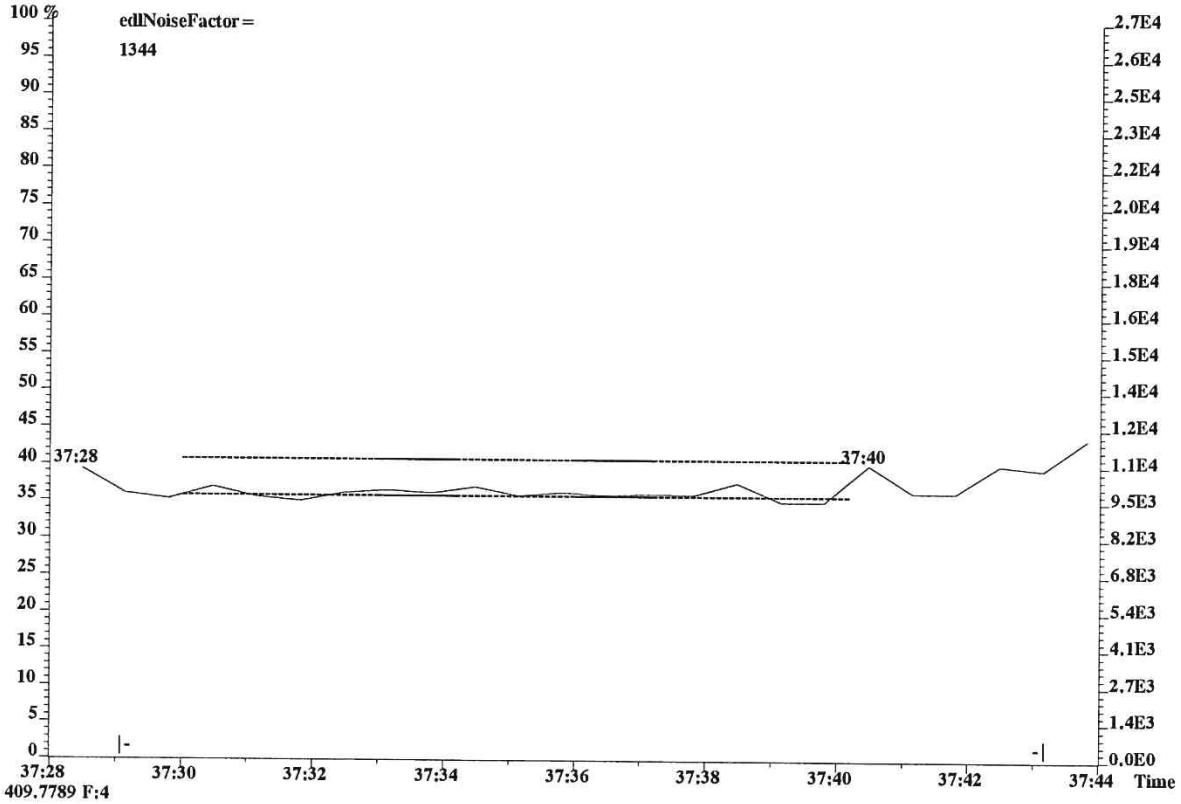


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

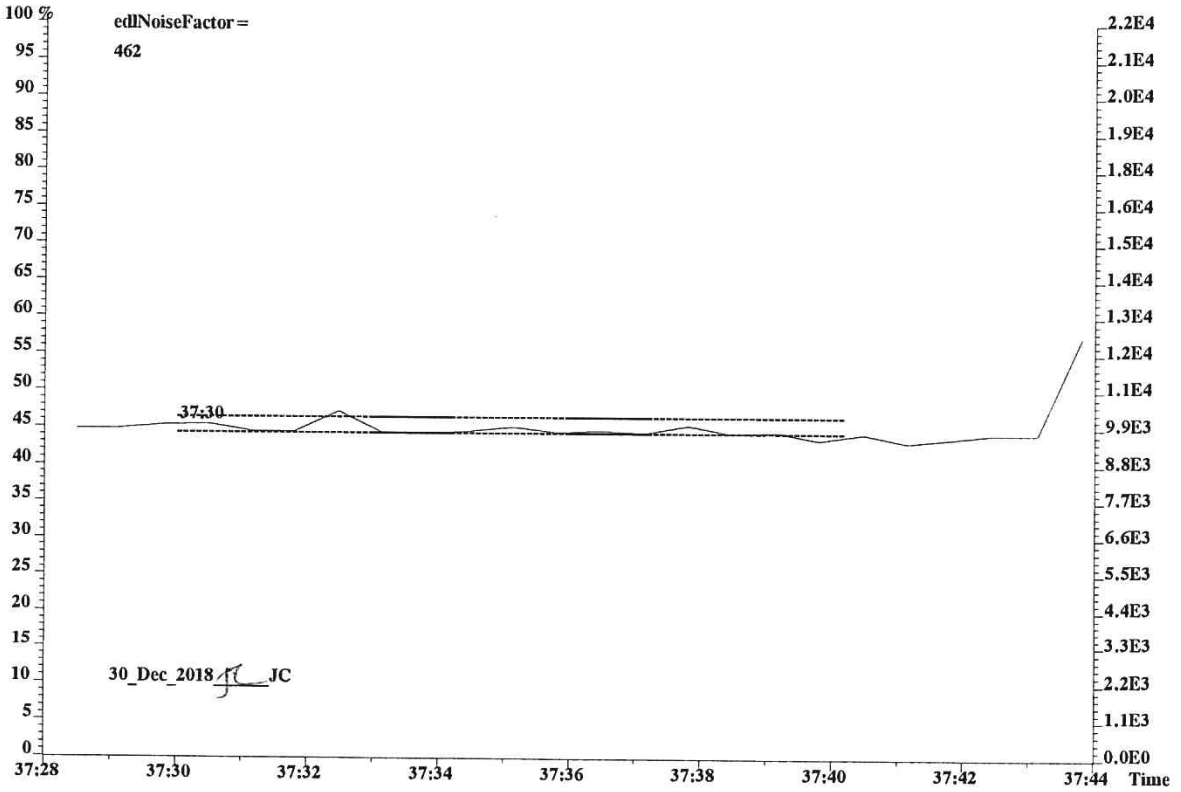


060417

File:P519703 #1-232 Acq;30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spectrom
Sample#1 Exp:E1801136-019
407.7818 F:4



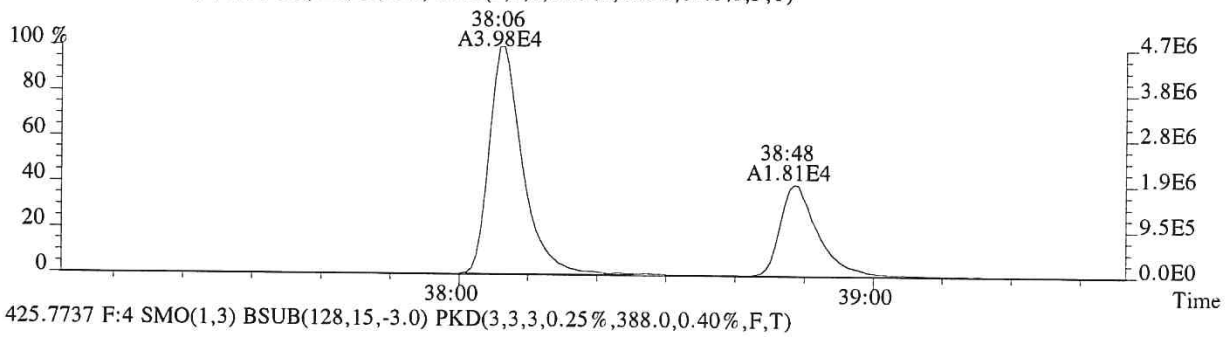
409.7789 F:4



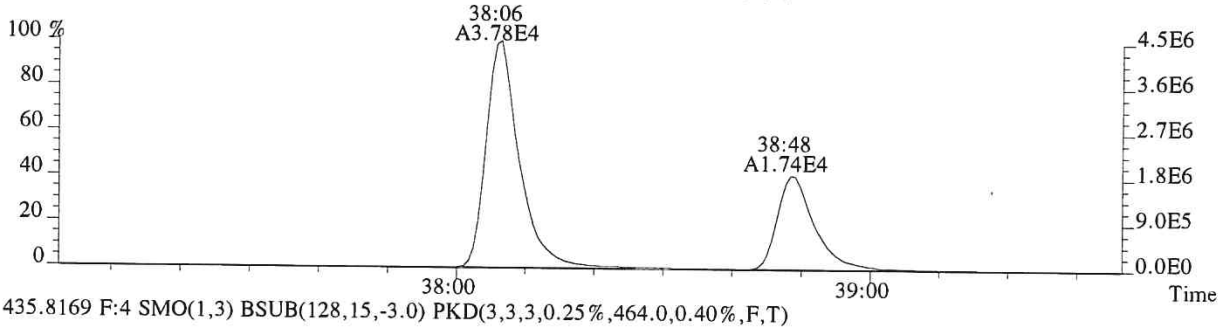
060418

File:P519703 #1-232 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019

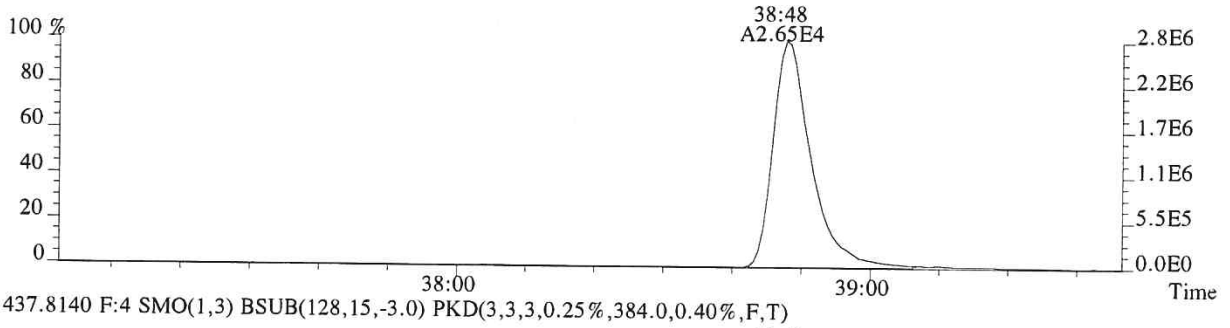
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,660.0,0.40%,F,T)



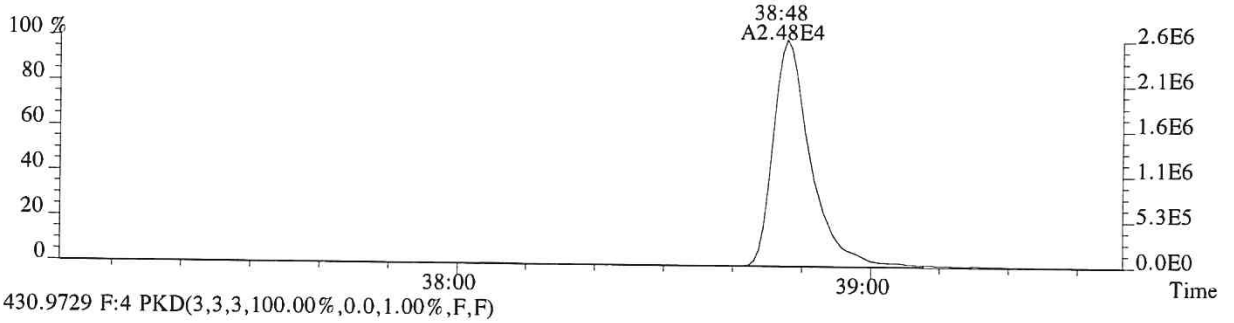
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,388.0,0.40%,F,T)



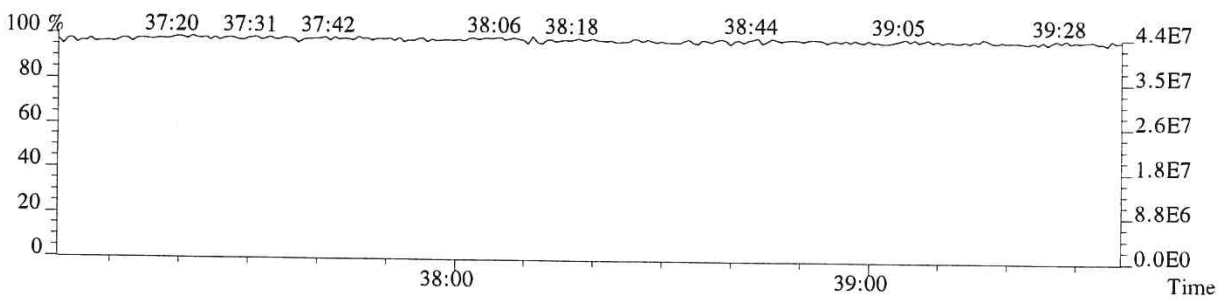
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,464.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,384.0,0.40%,F,T)



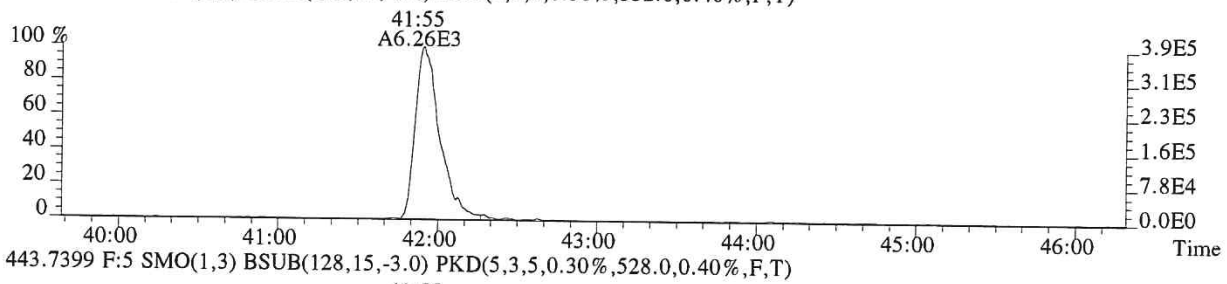
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



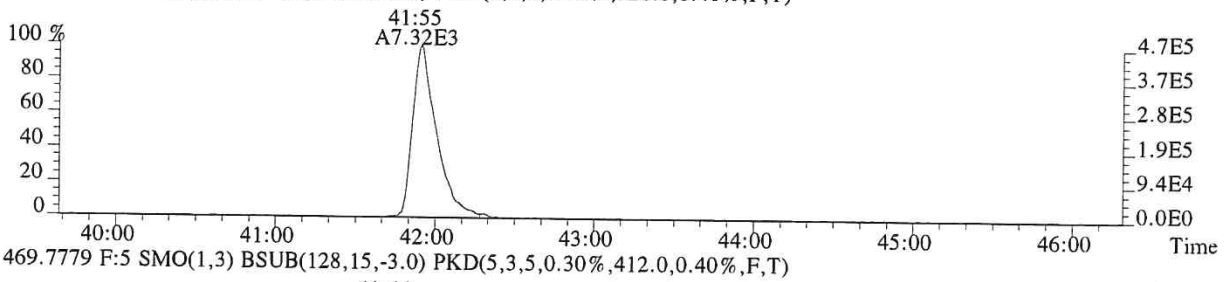
060419

File:P519703 #1-601 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019

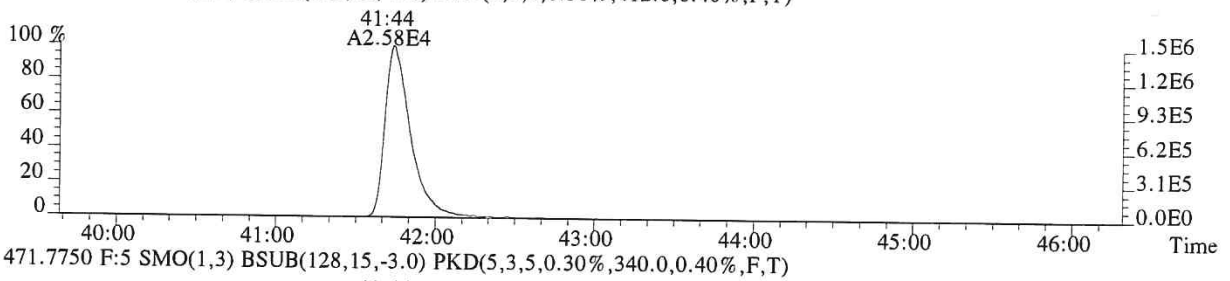
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,332.0,0.40%,F,T)



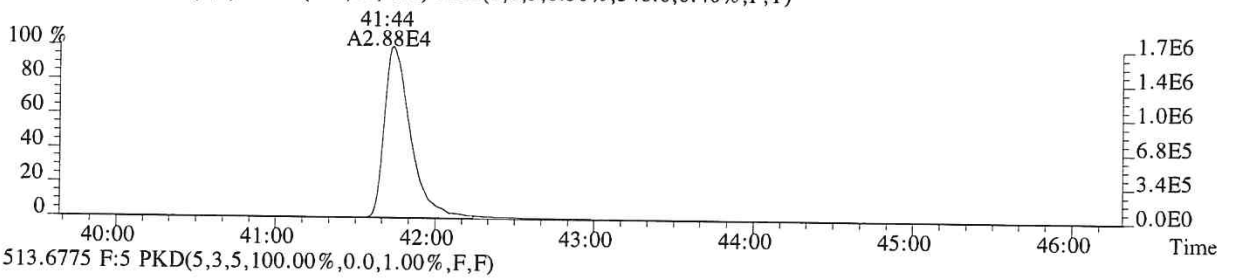
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,528.0,0.40%,F,T)



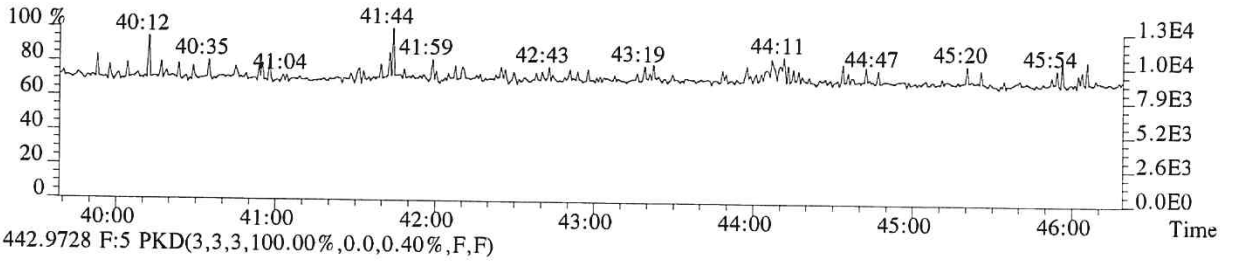
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



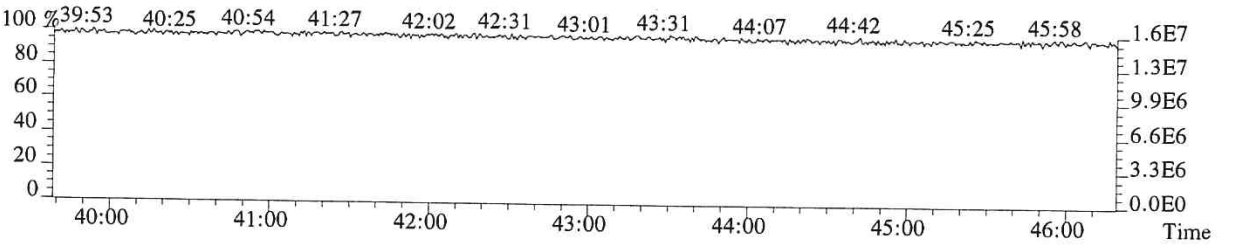
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,340.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

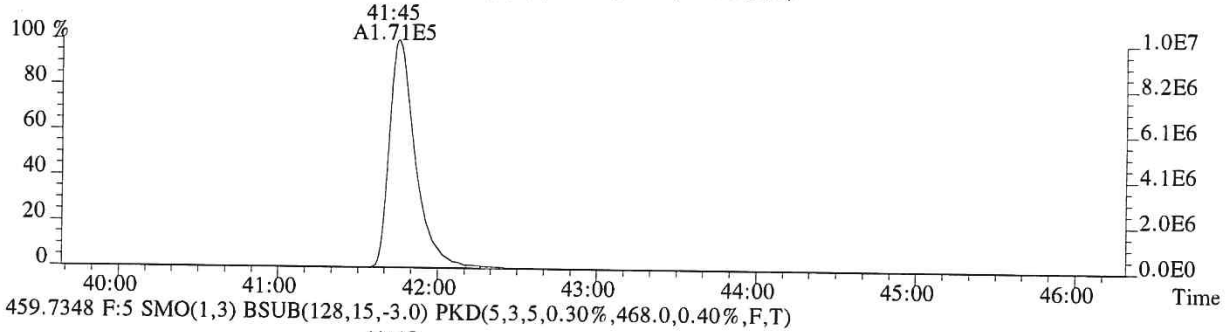


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

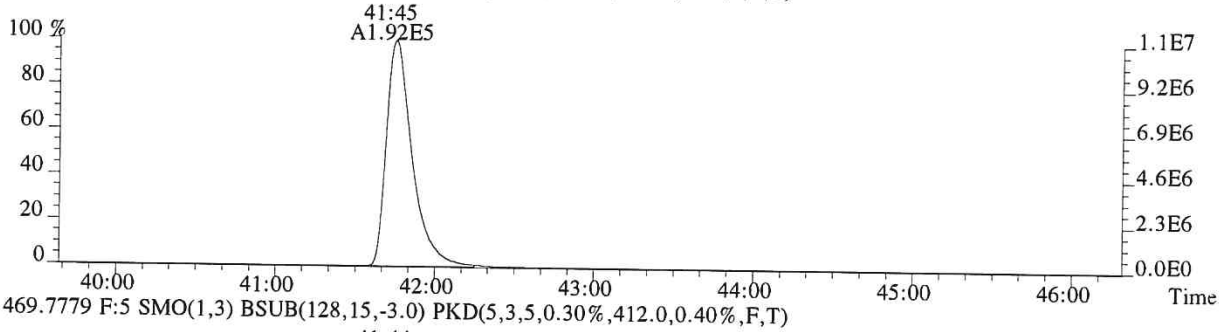


060420

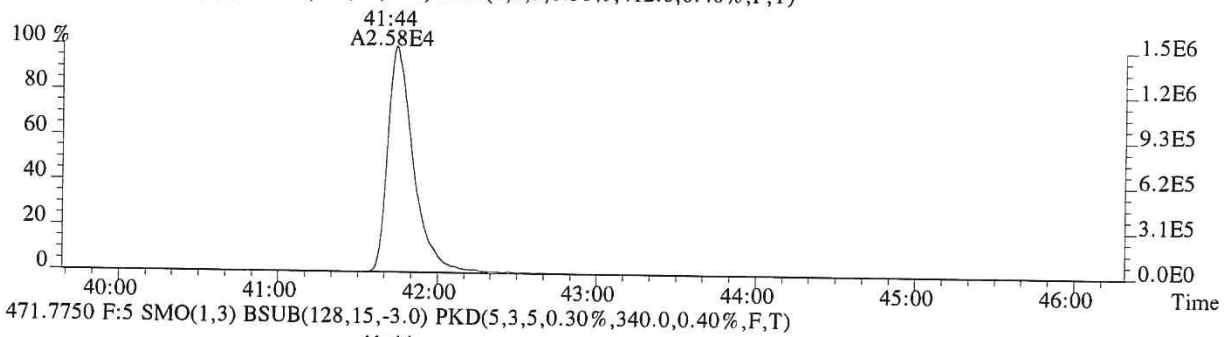
File:P519703 #1-601 Acq:30-DEC-2018 01:31:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-019
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,344.0,0.40%,F,T)



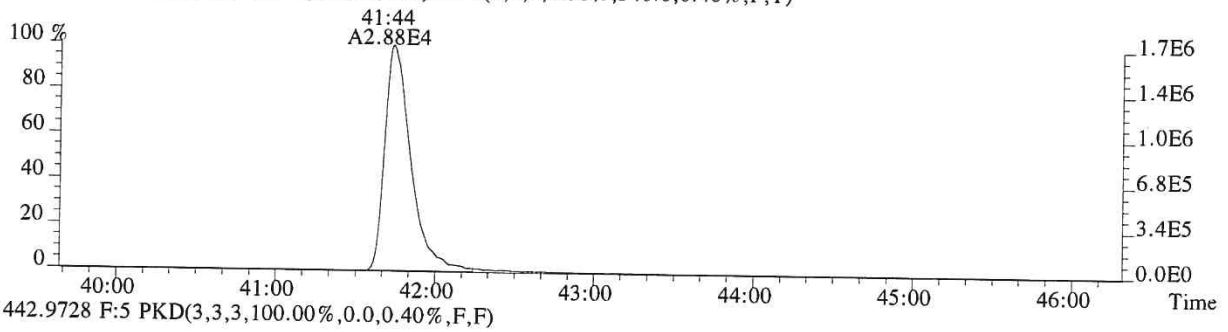
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,468.0,0.40%,F,T)



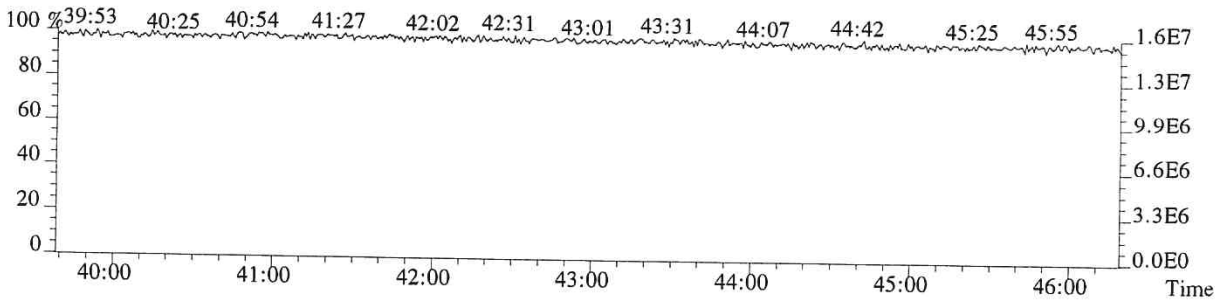
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,340.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060421

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0143

Run #10 Filename P519704 Samp: 1 Inj: 1 Acquired: 30-DEC-18 02:20:17
Processed: 30-DEC-18 12:09:30 Sample ID: E1801136-020

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:06	3.604e+03	4.908e+03	0.73	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	2.535e+02	1.456e+02	1.74	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	3.687e+02	2.533e+02	1.46	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	4.939e+02	4.333e+02	1.14	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:03	3.729e+02	3.484e+02	1.07	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	3.455e+02	2.705e+02	1.28	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	1.224e+02	9.968e+01	1.23	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	5.093e+03	5.001e+03	1.02	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:16	2.503e+02	2.388e+02	1.05	yes	no	1.258
10	Unk	OCDF	41:55	1.667e+04	1.921e+04	0.87	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	8.939e+02	1.112e+03	0.80	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:19	1.790e+02	1.982e+02	0.90	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:45	2.016e+02	1.753e+02	1.15	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:51	9.256e+02	8.525e+02	1.09	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	5.607e+02	4.274e+02	1.31	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:48	2.315e+04	2.259e+04	1.02	yes	no	1.025
17	Unk	OCDD	41:45	2.247e+05	2.538e+05	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:05	2.721e+04	3.468e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	4.099e+04	2.627e+04	1.56	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:59	3.829e+04	2.443e+04	1.57	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.541e+04	2.981e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	1.830e+04	3.533e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.615e+04	3.163e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.565e+04	3.122e+04	0.50	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:47	1.009e+04	2.363e+04	0.43	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	9.442e+03	2.128e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	1.387e+04	1.753e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	3.076e+04	1.944e+04	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	2.364e+04	1.855e+04	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:50	2.402e+04	1.914e+04	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:47	2.257e+04	2.125e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	41:44	1.785e+04	2.003e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:22	4.004e+04	5.050e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	4.870e+04	3.855e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	2.262e+04				no	1.014

$$\text{OCDD} = \frac{(2.247e+05 + 2.538e+05) \times 4000\ \text{pg} \times 1}{(1.785e+04 + 2.003e+04) \times 10.443\ \text{g} \times 58.8/100 \times 1.118} = 73160.1651\ \text{ng/kg}$$

LG
12/31/18

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0143

Run #10 Filename P519704 Samp: 1 Inj: 1 Acquired: 30-DEC-18 02:20:17
Processed: 30-DEC-18 12:09:30 LAB. ID: E1801136-020

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.04e+05	4.48e+02	1.1e+03	6.85e+05	1.01e+03	6.8e+02
2	1,2,3,7,8-PeCDF	4.29e+04	9.12e+02	4.7e+01	2.33e+04	2.34e+03	9.9e+00
3	2,3,4,7,8-PeCDF	5.27e+04	9.12e+02	5.8e+01	3.04e+04	2.34e+03	1.3e+01
4	1,2,3,4,7,8-HxCDF	8.10e+04	1.61e+03	5.0e+01	7.52e+04	1.05e+03	7.2e+01
5	1,2,3,6,7,8-HxCDF	6.29e+04	1.61e+03	3.9e+01	5.69e+04	1.05e+03	5.4e+01
6	2,3,4,6,7,8-HxCDF	5.74e+04	1.61e+03	3.6e+01	4.37e+04	1.05e+03	4.2e+01
7	1,2,3,7,8,9-HxCDF	1.88e+04	1.61e+03	1.2e+01	1.58e+04	1.05e+03	1.5e+01
8	1,2,3,4,6,7,8-HpCDF	6.67e+05	2.83e+03	2.4e+02	6.56e+05	2.32e+03	2.8e+02
9	1,2,3,4,7,8,9-HpCDF	3.15e+04	2.83e+03	1.1e+01	2.40e+04	2.32e+03	1.0e+01
10	OCDF	1.01e+06	2.40e+02	4.2e+03	1.16e+06	6.80e+02	1.7e+03
11	2,3,7,8-TCDD	1.48e+05	2.08e+03	7.1e+01	1.86e+05	1.48e+03	1.3e+02
12	1,2,3,7,8-PeCDD	3.11e+04	7.28e+02	4.3e+01	2.33e+04	1.53e+03	1.5e+01
13	1,2,3,4,7,8-HxCDD	3.48e+04	1.28e+03	2.7e+01	3.37e+04	1.78e+03	1.9e+01
14	1,2,3,6,7,8-HxCDD	1.50e+05	1.28e+03	1.2e+02	1.22e+05	1.78e+03	6.9e+01
15	1,2,3,7,8,9-HxCDD	8.83e+04	1.28e+03	6.9e+01	5.78e+04	1.78e+03	3.2e+01
16	1,2,3,4,6,7,8-HpCDD	2.44e+06	4.60e+02	5.3e+03	2.39e+06	7.64e+02	3.1e+03
17	OCDD	1.33e+07	3.24e+02	4.1e+04	1.49e+07	9.56e+02	1.6e+04
18	13C-2,3,7,8-TCDF	4.11e+06	3.97e+03	1.0e+03	5.20e+06	2.45e+03	2.1e+03
19	13C-1,2,3,7,8-PeCDF	6.94e+06	1.32e+03	5.3e+03	4.40e+06	2.52e+03	1.7e+03
20	13C-2,3,4,7,8-PeCDF	6.76e+06	1.32e+03	5.1e+03	4.25e+06	2.52e+03	1.7e+03
21	13C-1,2,3,4,7,8-HxCDF	2.74e+06	6.40e+02	4.3e+03	5.19e+06	1.15e+03	4.5e+03
22	13C-1,2,3,6,7,8-HxCDF	3.02e+06	6.40e+02	4.7e+03	5.76e+06	1.15e+03	5.0e+03
23	13C-2,3,4,6,7,8-HxCDF	2.66e+06	6.40e+02	4.1e+03	5.14e+06	1.15e+03	4.5e+03
24	13C-1,2,3,7,8,9-HxCDF	2.42e+06	6.40e+02	3.8e+03	4.88e+06	1.15e+03	4.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.30e+06	1.56e+03	8.3e+02	3.04e+06	4.36e+03	7.0e+02
26	13C-1,2,3,4,7,8,9-HpCDF	9.24e+05	1.56e+03	5.9e+02	2.14e+06	4.36e+03	4.9e+02
27	13C-2,3,7,8-TCDD	2.44e+06	4.84e+03	5.0e+02	3.06e+06	1.31e+03	2.3e+03
28	13C-1,2,3,7,8-PeCDD	5.26e+06	7.24e+02	7.3e+03	3.34e+06	9.76e+02	3.4e+03
29	13C-1,2,3,4,7,8-HxCDD	4.25e+06	5.64e+02	7.5e+03	3.30e+06	1.05e+03	3.1e+03
30	13C-1,2,3,6,7,8-HxCDD	3.65e+06	5.64e+02	6.5e+03	2.94e+06	1.05e+03	2.8e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.44e+06	5.16e+02	4.7e+03	2.29e+06	3.64e+02	6.3e+03
32	13C-OCDD	1.09e+06	7.20e+02	1.5e+03	1.17e+06	3.48e+02	3.4e+03
33	13C-1,2,3,4-TCDD	6.55e+06	4.84e+03	1.4e+03	8.14e+06	1.31e+03	6.2e+03
34	13C-1,2,3,7,8,9-HxCDD	7.18e+06	5.64e+02	1.3e+04	5.70e+06	1.05e+03	5.4e+03
35	37Cl-2,3,7,8-TCDD	3.83e+06	1.12e+03	3.4e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.084e{+}03 + 1.484e{+}03) \times 2000}{(2.436e{+}06 + 3.063e{+}06) \times (\quad) \times 1.085} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0143

Entry: 36 Totals Name: Total Tetra-Furans

Run: 10 File: P519704 Sample:1 Injection:1 Function:1

Acquired: 30-DEC-18 02:20:17 Processed: 30-DEC-18 12:09:30

Mass: 303.9020 305.8990 Tot Response: 2.10e+04 RRF: 0.9417

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:59	1.14e+02	1.53e+02	0.74	yes	2.67e+02		n	n
2	22:27	2.35e+02	2.87e+02	0.82	yes	5.22e+02		n	n
3	22:51	7.66e+02	9.96e+02	0.77	yes	1.76e+03		n	n
4	23:12	8.01e+02	9.67e+02	0.83	yes	1.77e+03		n	n
5	23:42	1.81e+02	2.54e+02	0.71	yes	4.34e+02		n	n
6	23:51	3.14e+02	3.83e+02	0.82	yes	6.97e+02		n	n
7	24:14	7.59e+01	8.88e+01	0.85	yes	1.65e+02		n	n
8	24:29	4.02e+02	4.94e+02	0.82	yes	8.96e+02		n	n
9	24:37	3.31e+02	3.99e+02	0.83	yes	7.30e+02		n	n
10	25:06	1.60e+03	2.21e+03	0.72	yes	3.82e+03		n	n
11	25:25	1.46e+02	2.18e+02	0.67	yes	3.64e+02		n	n
12	26:06	3.60e+03	4.91e+03	0.73	yes	8.51e+03	2,3,7,8-TCDF	n	n
13	26:31	4.28e+02	5.54e+02	0.77	yes	9.82e+02		n	n
14	26:48	5.29e+01	6.74e+01	0.79	yes	1.20e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0143

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 10 File: P519704 Sample:1 Injection:1 Function:1

Acquired: 30-DEC-18 02:20:17 Processed: 30-DEC-18 12:09:30

Mass: 319.8970 321.8940 Tot Response: 3.10e+03 RRF: 1.085

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	23:32	1.06e+02	1.45e+02	0.73	yes	2.51e+02		n	n
2	23:57	6.43e+01	8.15e+01	0.79	yes	1.46e+02		n	n
3	24:44	3.09e+01	4.23e+01	0.73	yes	7.32e+01		n	n
4	24:58	6.76e+01	9.82e+01	0.69	yes	1.66e+02		n	n
5	25:44	1.30e+01	1.88e+01	0.69	yes	3.18e+01		n	n
6	26:48	8.37e+01	1.05e+02	0.80	yes	1.89e+02		n	n
7	27:04	8.94e+02	1.11e+03	0.80	yes	2.01e+03	2,3,7,8-TCDD	n	n
8	27:26	1.11e+02	1.29e+02	0.86	yes	2.40e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0143

Entry: 38 Totals Name: Total Penta-Furans1

Run: 10 File: P519704 Sample:1 Injection:1 Function:1

Acquired: 30-DEC-18 02:20:17 Processed: 30-DEC-18 12:09:30

Mass: 339.8600 341.8570 Tot Response: 2.10e+03 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:17	1.31e+03	7.93e+02	1.65	yes	2.10e+03	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0143

Entry: 39 Totals Name: Total Penta-Furans2

Run: 10 File: P519704 Sample:1 Injection:1 Function:2

Acquired: 30-DEC-18 02:20:17 Processed: 30-DEC-18 12:09:30

Mass: 339.8600 341.8570 Tot Response: 4.67e+03 RRF: 0.9857

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:49	6.85e+02	4.26e+02	1.61	yes	1.11e+03		n	n
2	29:58	1.08e+03	6.53e+02	1.65	yes	1.73e+03		n	n
3	30:33	3.70e+02	2.21e+02	1.68	yes	5.91e+02		n	n
4	30:59	2.53e+02	1.46e+02	1.74	yes	3.99e+02	1,2,3,7,8-PeCDF	n	n
5	31:54	1.25e+02	8.97e+01	1.40	yes	2.15e+02		n	n
6	32:00	3.69e+02	2.53e+02	1.46	yes	6.22e+02	2,3,4,7,8-PeCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0143

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 10 File: P519704 Sample:1 Injection:1 Function:2

Acquired: 30-DEC-18 02:20:17 Processed: 30-DEC-18 12:09:30

Mass: 355.8550 357.8520 Tot Response: 3.09e+03 RRF: 0.9565

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:01	7.90e+02	4.83e+02	1.63	yes	1.27e+03	n	n
2	31:01	2.25e+02	1.68e+02	1.34	yes	3.93e+02	n	n
3	31:12	2.35e+02	1.50e+02	1.57	yes	3.86e+02	n	n
4	31:18	1.64e+02	9.85e+01	1.66	yes	2.62e+02	n	n
5	31:32	3.68e+02	2.45e+02	1.50	yes	6.13e+02	n	n
6	32:44	9.69e+01	7.15e+01	1.35	yes	1.68e+02	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0143

Entry: 41 Totals Name: Total Hexa-Furans

Run: 10 File: P519704 Sample:1 Injection:1 Function:3

Acquired: 30-DEC-18 02:20:17 Processed: 30-DEC-18 12:09:30

Mass: 373.8210 375.8180 Tot Response: 1.37e+04 RRF: 1.141

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:43	5.85e+02	4.65e+02	1.26	yes	1.05e+03		n	n
2	33:53	2.02e+03	1.75e+03	1.15	yes	3.77e+03		n	n
3	34:06	2.77e+01	1.99e+01	1.40	yes	4.76e+01		n	n
4	34:16	1.78e+02	1.36e+02	1.30	yes	3.15e+02		n	n
5	34:27	3.15e+03	2.72e+03	1.16	yes	5.86e+03		n	n
6	34:49	1.02e+02	8.56e+01	1.19	yes	1.88e+02		n	n
7	34:55	4.94e+02	4.33e+02	1.14	yes	9.27e+02	1,2,3,4,7,8-HxCDF	n	n
8	35:03	3.73e+02	3.48e+02	1.07	yes	7.21e+02	1,2,3,6,7,8-HxCDF	n	n
9	35:35	3.46e+02	2.71e+02	1.28	yes	6.16e+02	2,3,4,6,7,8-HxCDF	n	n
10	36:25	1.22e+02	9.97e+01	1.23	yes	2.22e+02	1,2,3,7,8,9-HxCDF	n	n

ALS ENVIRONMENTAL
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Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0143

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 10 File: P519704 Sample:1 Injection:1 Function:3

Acquired: 30-DEC-18 02:20:17 Processed: 30-DEC-18 12:09:30

Mass: 389.8160 391.8130 Tot Response: 1.85e+04 RRF: 1.047

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:18	3.46e+03	2.69e+03	1.29	yes	6.16e+03		n	n
2	34:52	6.22e+02	5.14e+02	1.21	yes	1.14e+03		n	n
3	35:07	4.32e+03	3.31e+03	1.31	yes	7.62e+03		n	n
4	35:45	2.02e+02	1.75e+02	1.15	yes	3.77e+02	1,2,3,4,7,8-HxCDD	n	n
5	35:51	9.26e+02	8.53e+02	1.09	yes	1.78e+03	1,2,3,6,7,8-HxCDD	n	n
6	36:01	2.33e+02	1.89e+02	1.23	yes	4.22e+02		n	n
7	36:05	5.61e+02	4.27e+02	1.31	yes	9.88e+02	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0143

Entry: 43 Totals Name: Total Hepta-Furans

Run: 10 File: P519704 Sample:1 Injection:1 Function:4

Acquired: 30-DEC-18 02:20:17 Processed: 30-DEC-18 12:09:30

Mass: 407.7820 409.7790 Tot Response: 2.86e+04 RRF: 1.308

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:48	5.09e+03	5.00e+03	1.02	yes	1.01e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	38:04	1.24e+02	1.09e+02	1.14	yes	2.32e+02		n	n
3	38:14	8.94e+03	8.83e+03	1.01	yes	1.78e+04		n	n
4	39:16	2.50e+02	2.39e+02	1.05	yes	4.89e+02	1,2,3,4,7,8,9-HpCDF	n	n

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Peak List Summary

CLIENT ID.
SL0143

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 10 File: P519704 Sample:1 Injection:1 Function:4

Acquired: 30-DEC-18 02:20:17 Processed: 30-DEC-18 12:09:30

Mass: 423.7770 425.7740 Tot Response: 1.02e+05 RRF: 1.025

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:05	2.88e+04	2.73e+04	1.05	yes	5.62e+04		n	n
2	38:48	2.31e+04	2.26e+04	1.02	yes	4.57e+04	1,2,3,4,6,7,8-HpCDD	n	n

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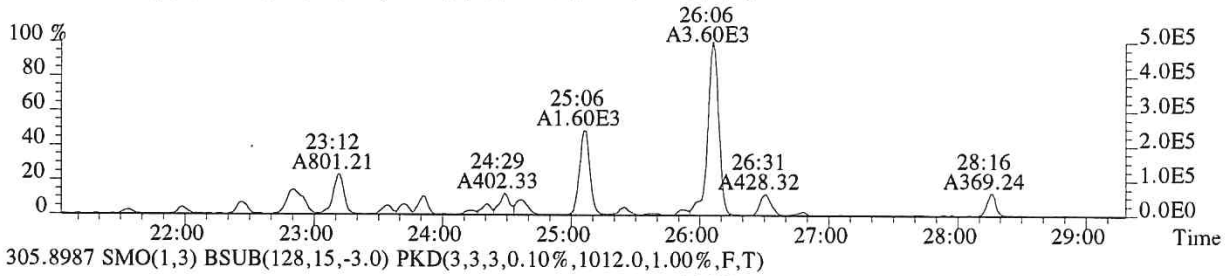
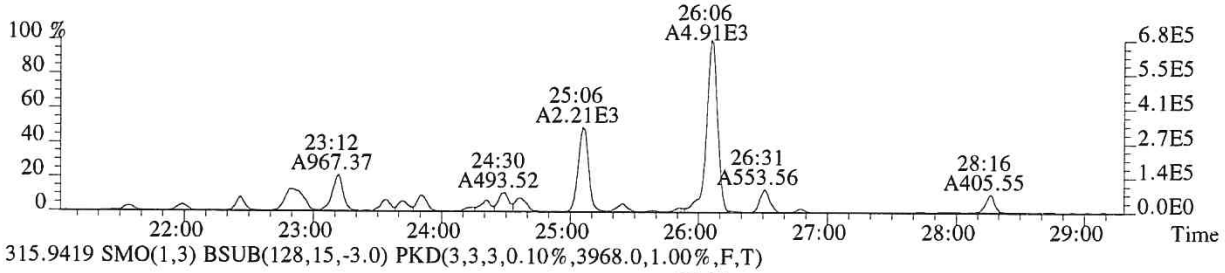
File:P519704 #1-587 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020

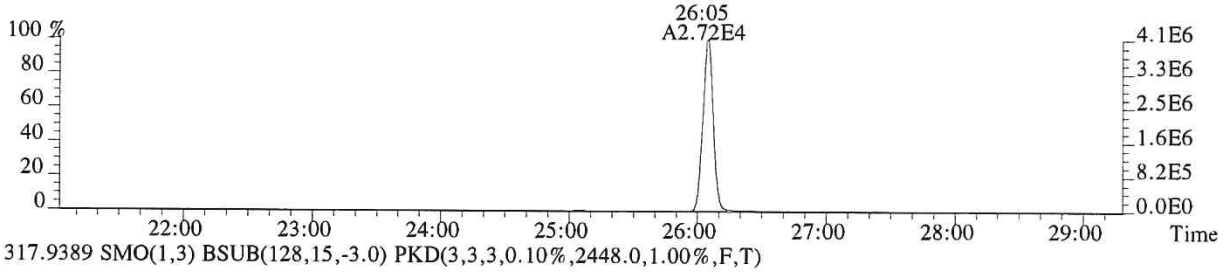
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,448.0,1.00%,F,T)



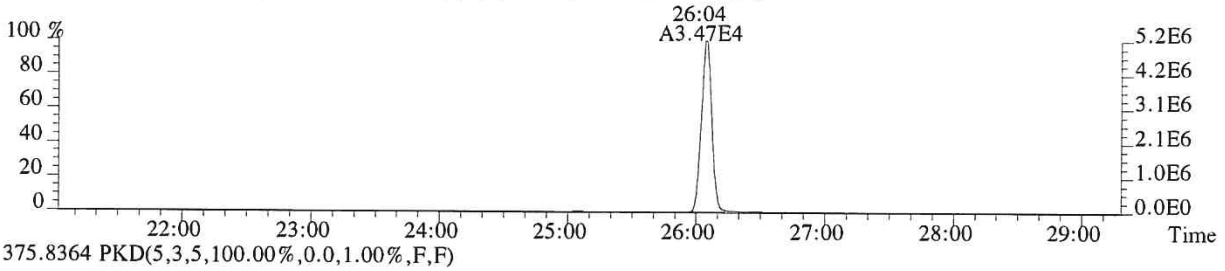
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1012.0,1.00%,F,T)



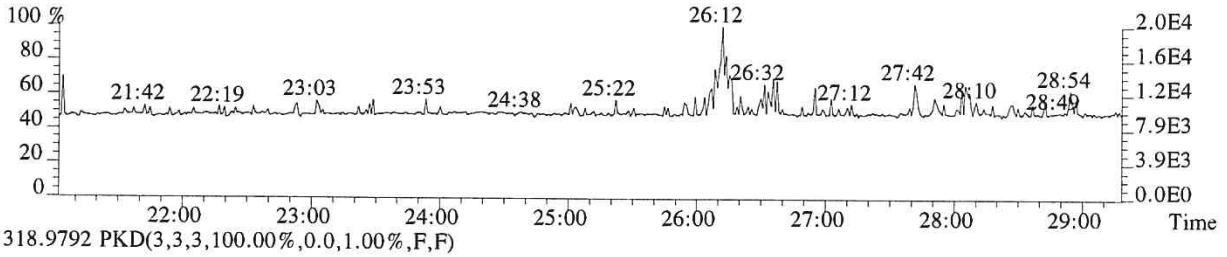
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3968.0,1.00%,F,T)



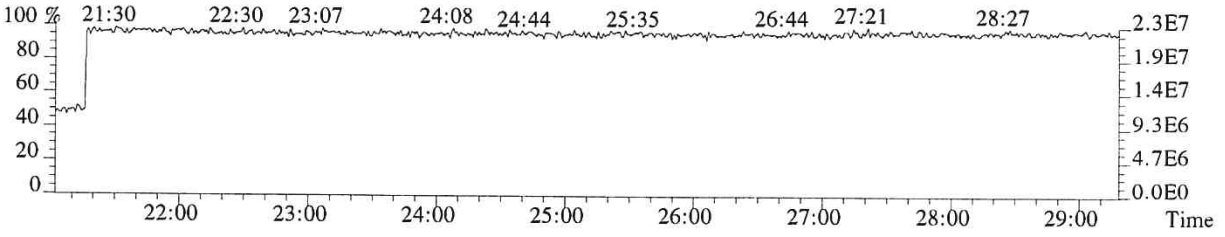
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2448.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



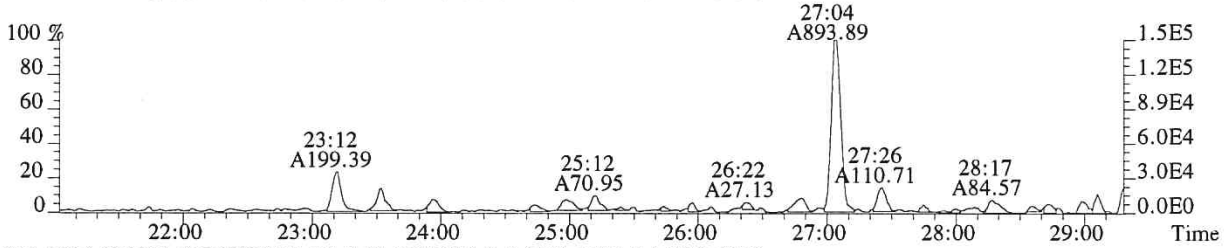
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



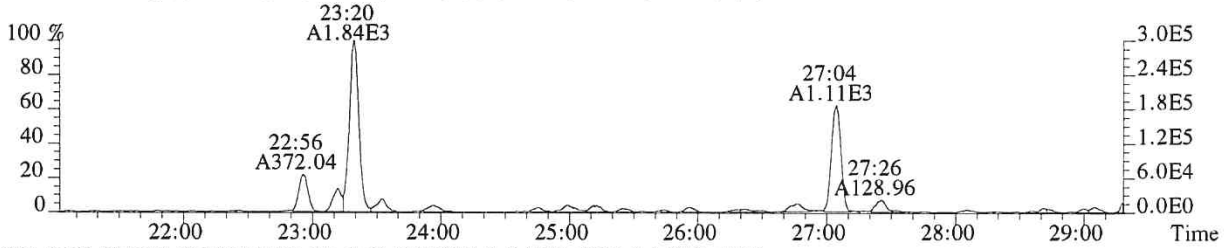
060433

File:P519704 #1-587 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020

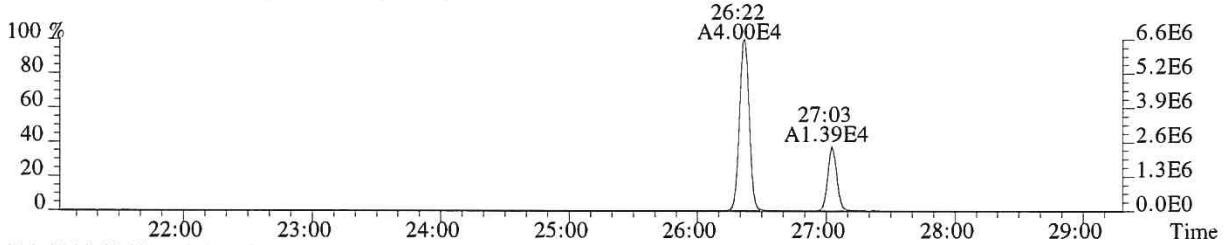
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2084.0,1.00%,F,T)



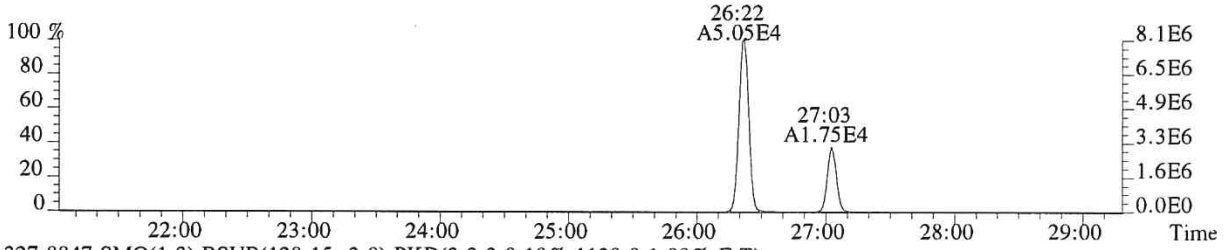
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1484.0,1.00%,F,T)



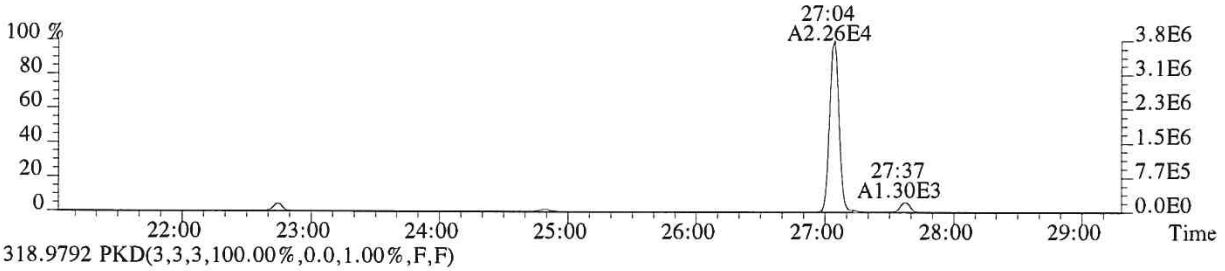
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4836.0,1.00%,F,T)



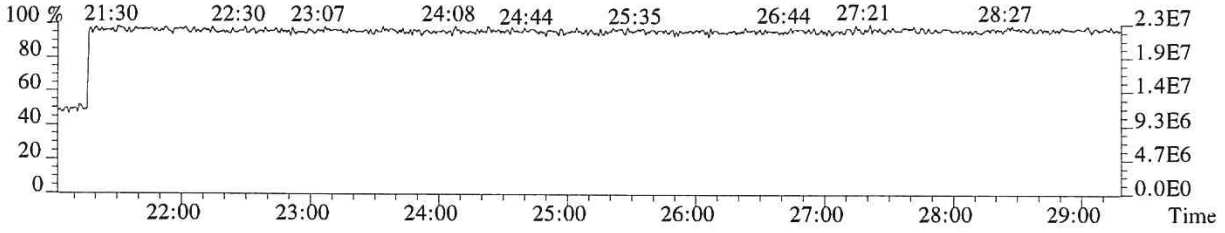
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1312.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1120.0,1.00%,F,T)

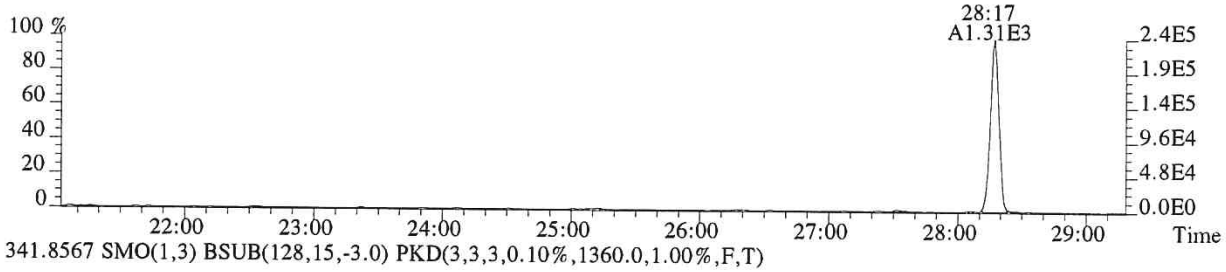


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

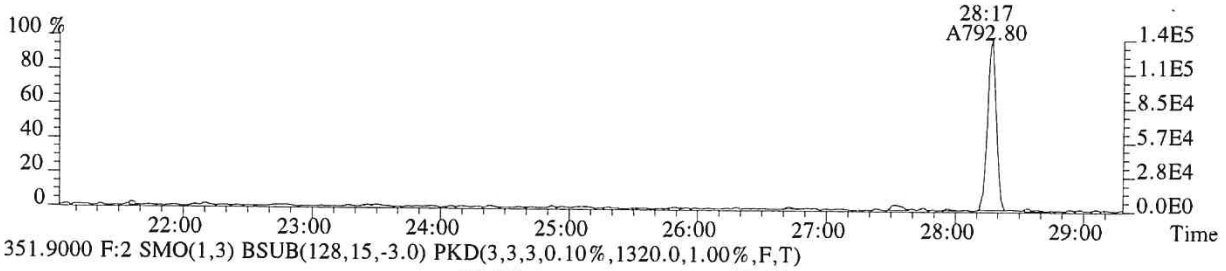


060434

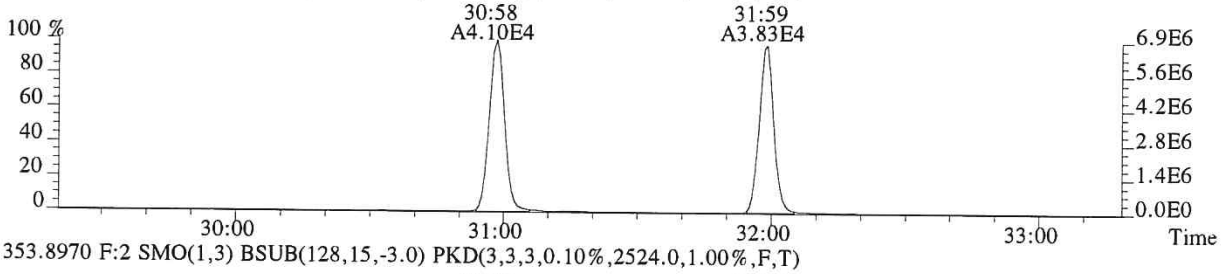
File:P519704 #1-587 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,912.0,1.00%,F,T)



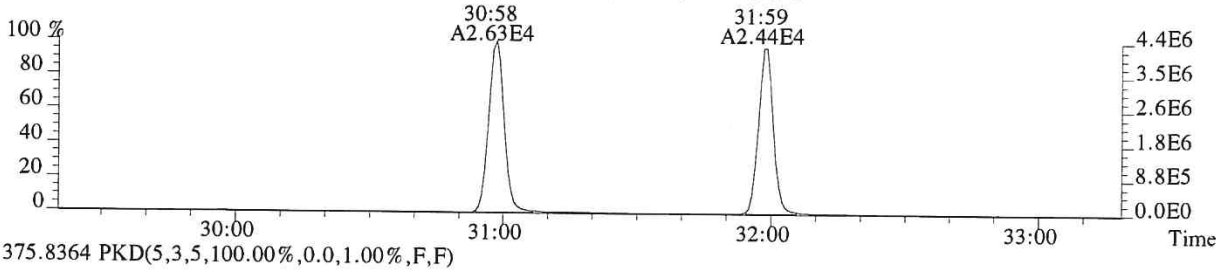
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1360.0,1.00%,F,T)



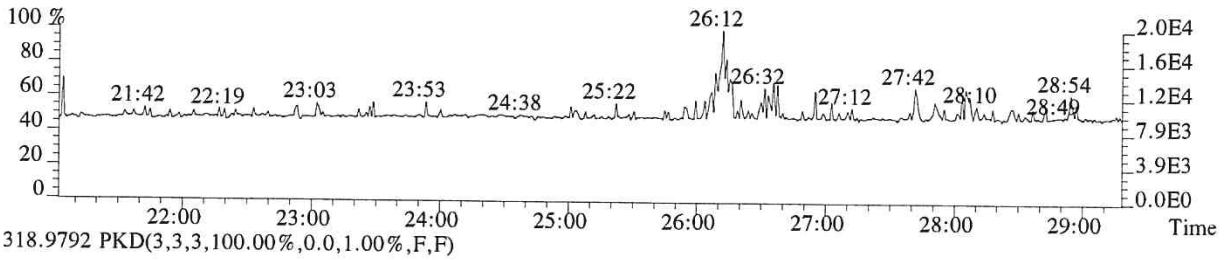
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1320.0,1.00%,F,T)



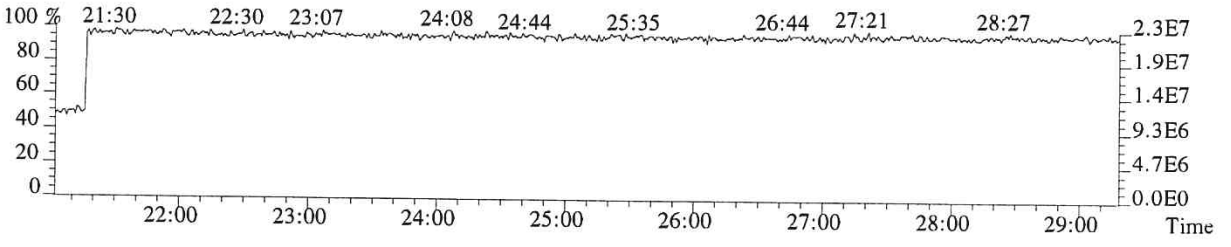
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2524.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



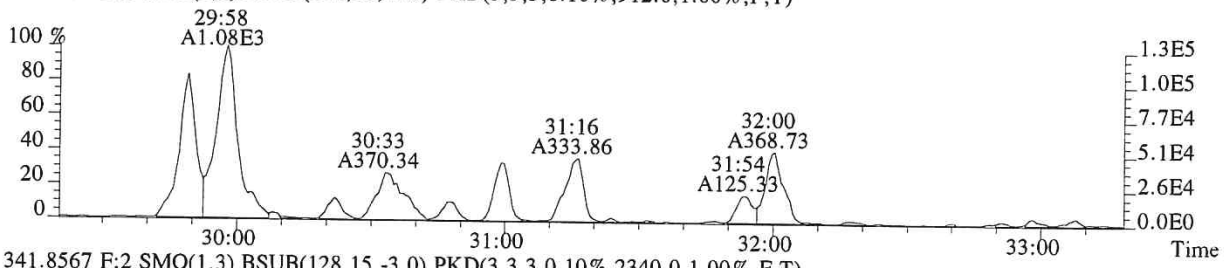
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



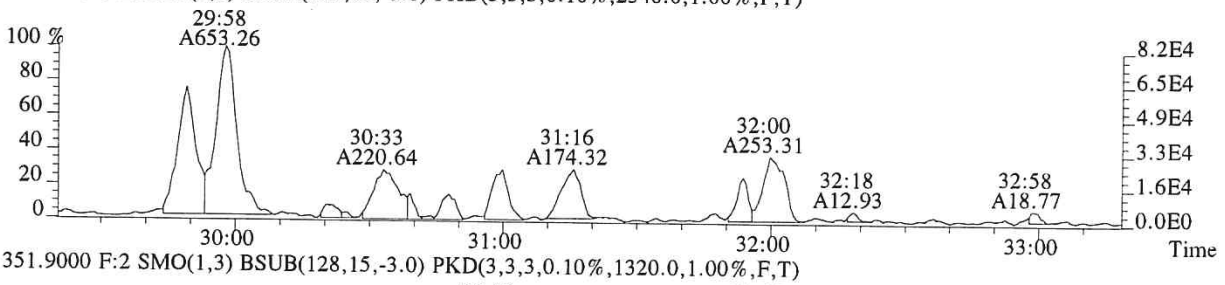
060435

File:P519704 #1-358 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020

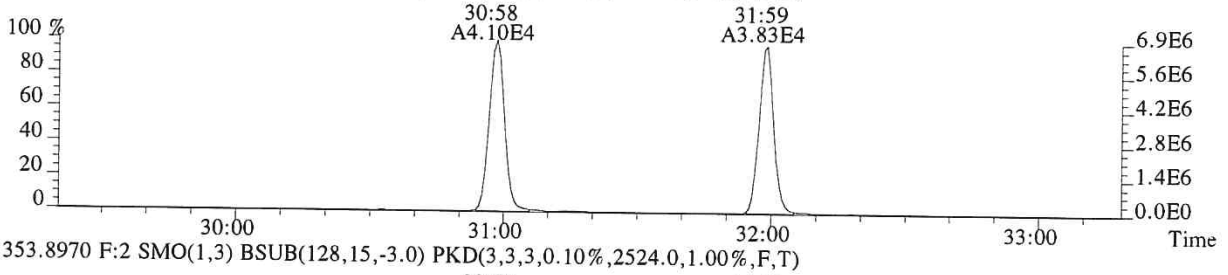
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,912.0,1.00%,F,T)



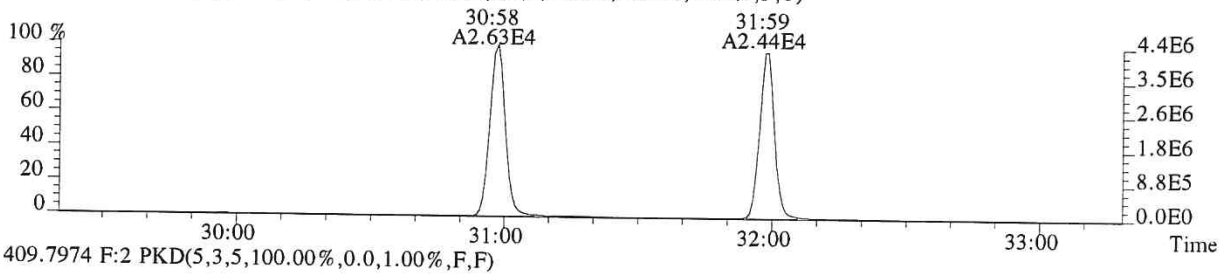
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2340.0,1.00%,F,T)



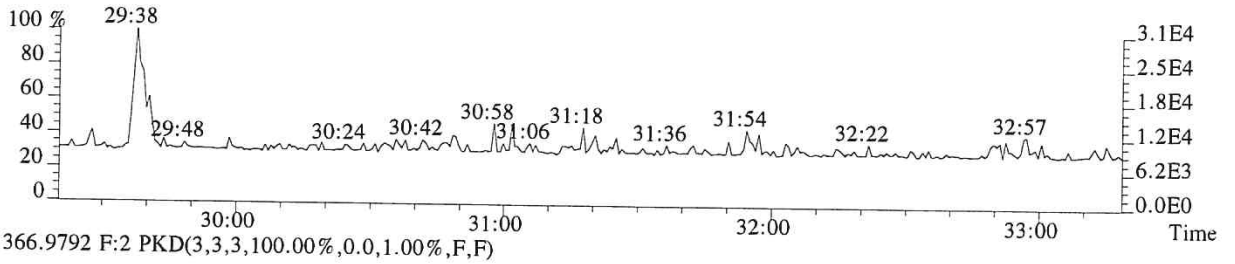
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1320.0,1.00%,F,T)



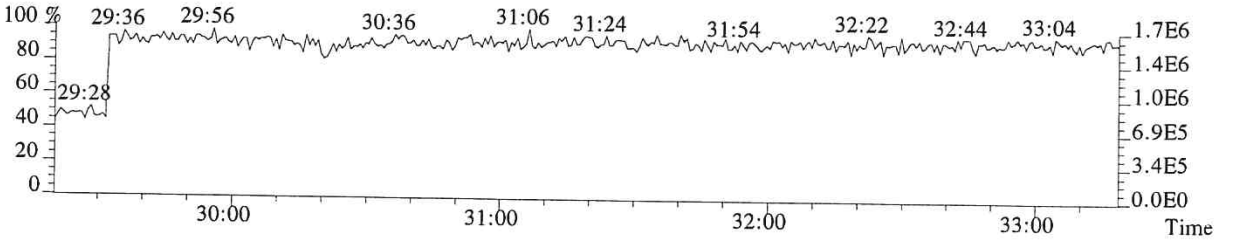
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2524.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

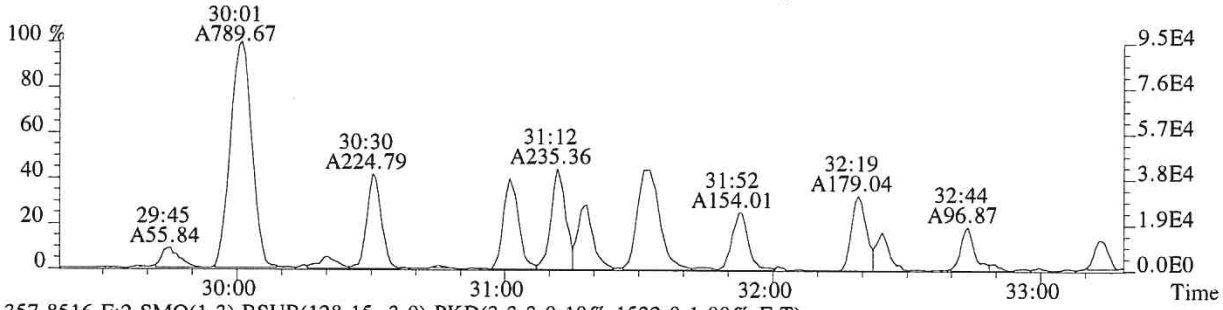


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

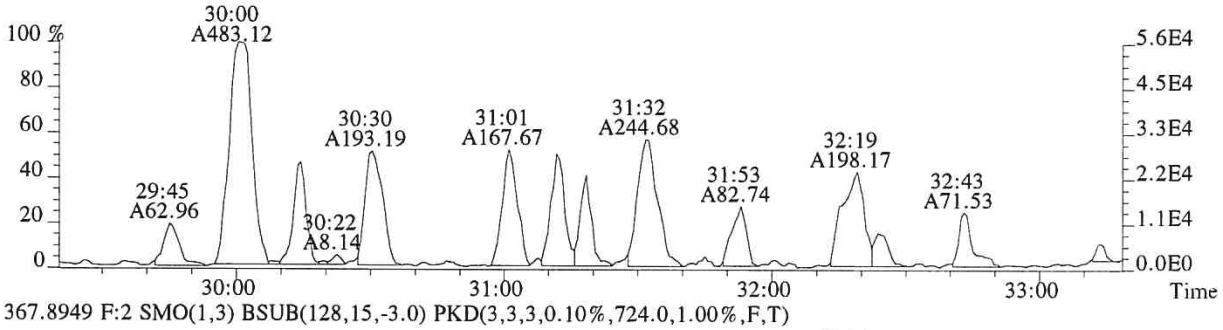


060436

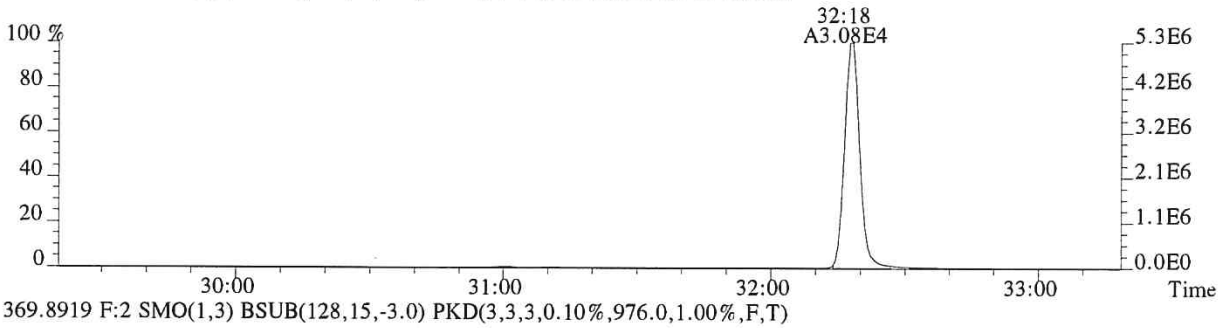
File:P519704 #1-358 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,T)



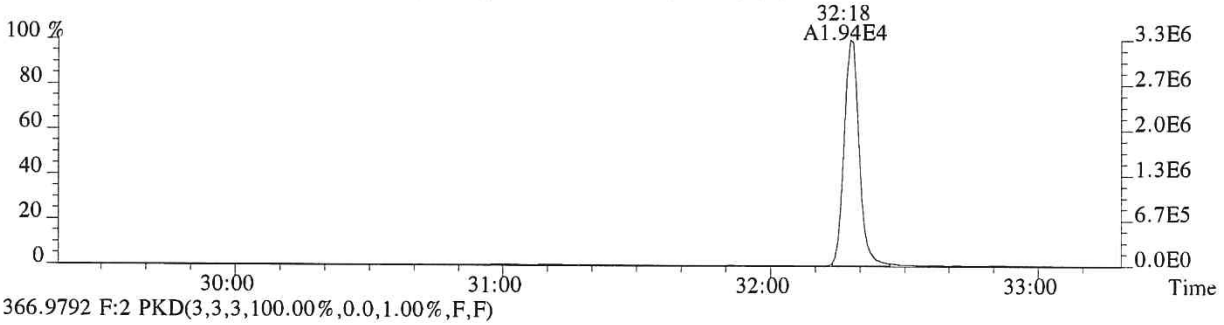
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1532.0,1.00%,F,T)



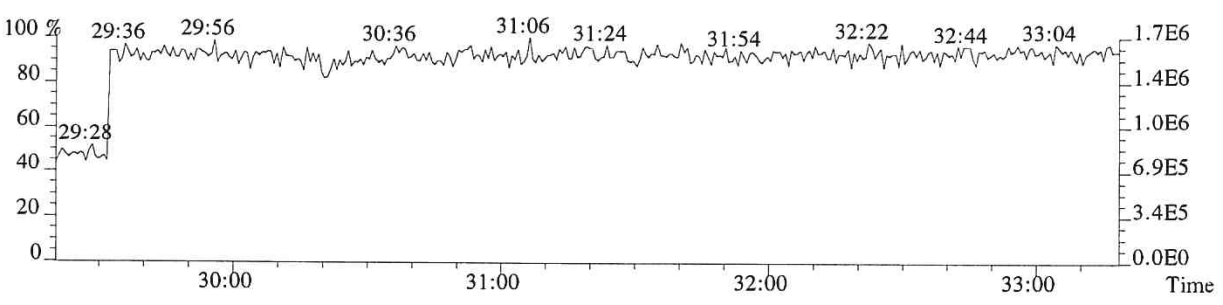
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,724.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,976.0,1.00%,F,T)

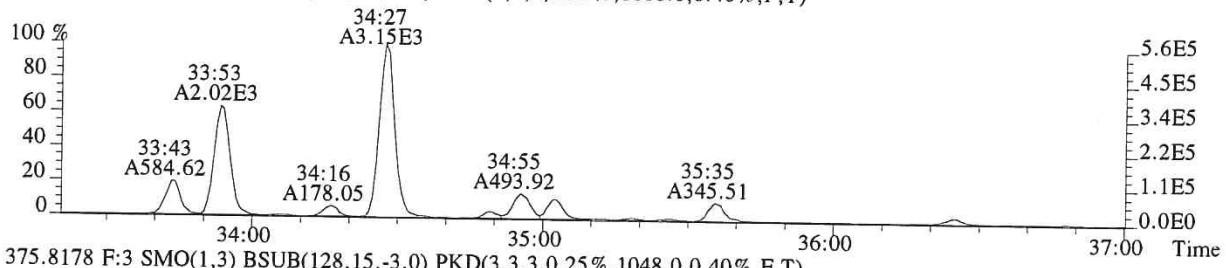


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

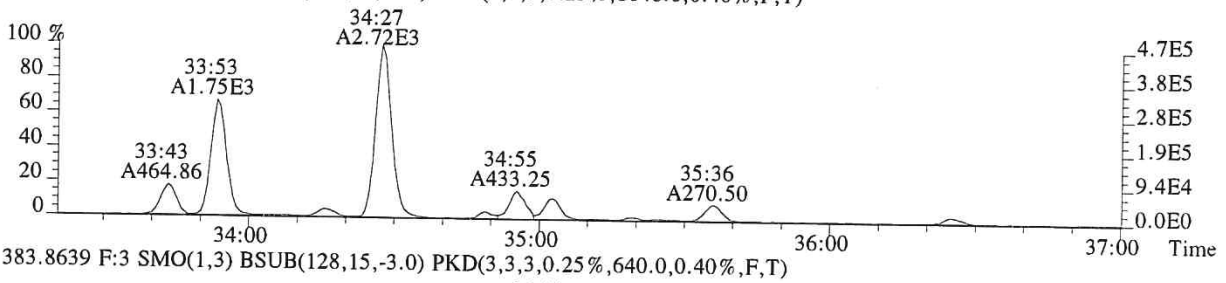


File:P519704 #1-330 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020

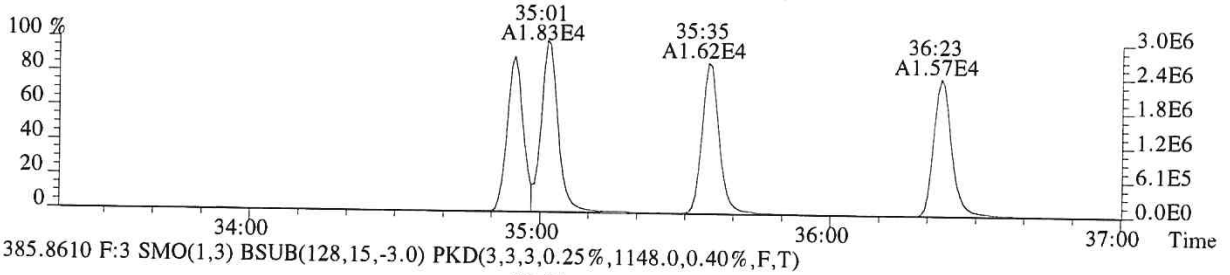
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1608.0,0.40%,F,T)



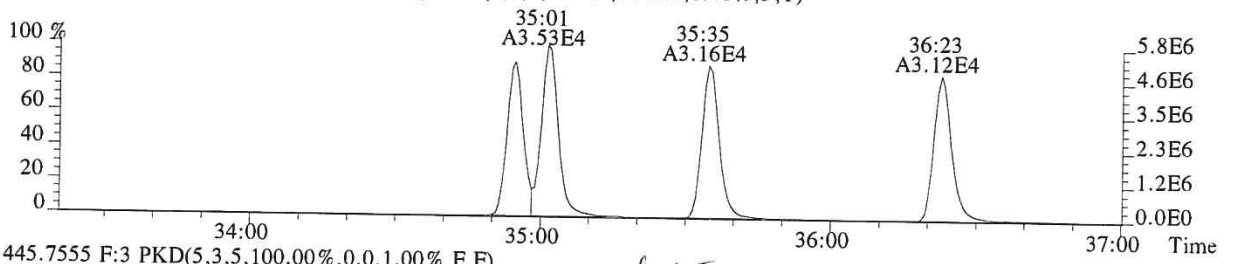
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1048.0,0.40%,F,T)



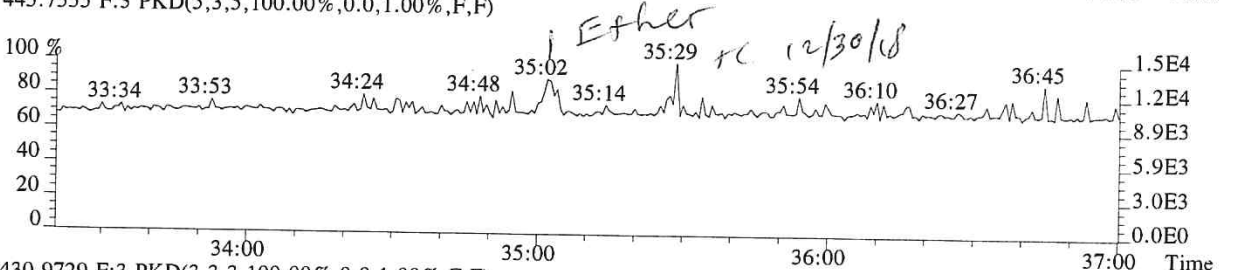
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,640.0,0.40%,F,T)



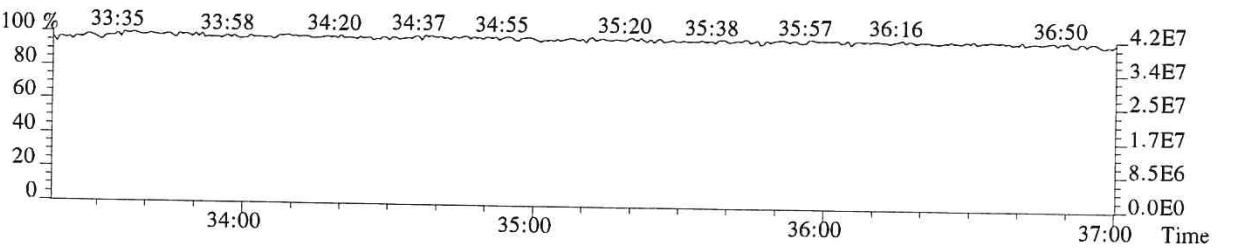
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1148.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

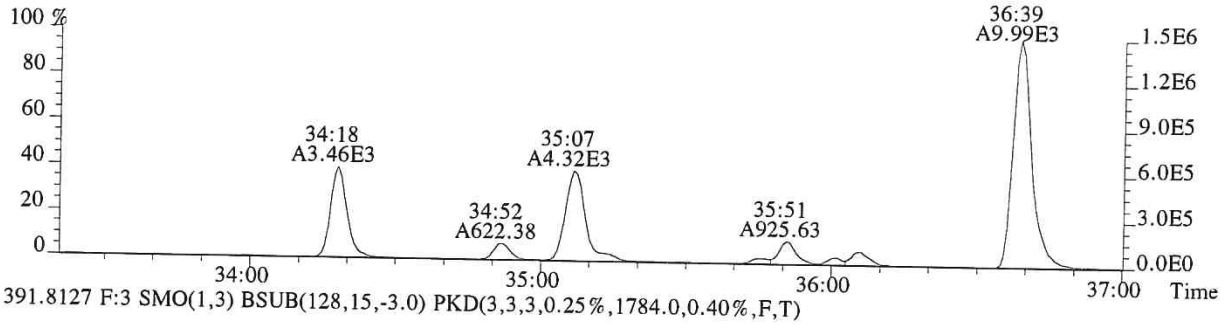


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

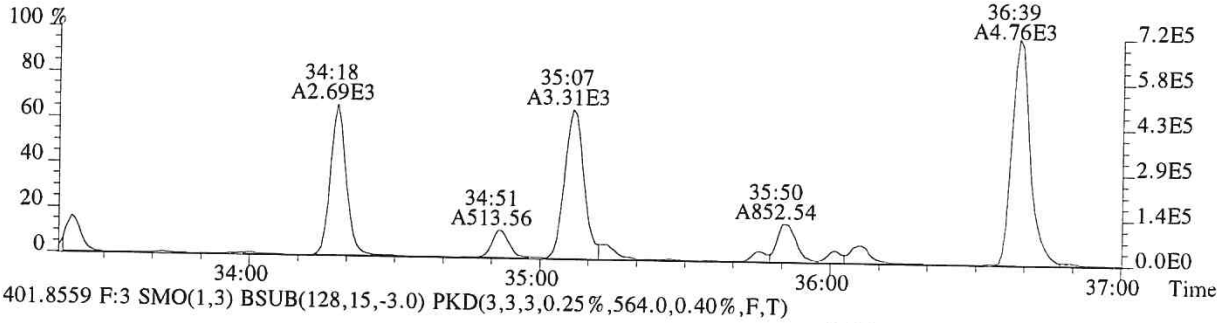


060438

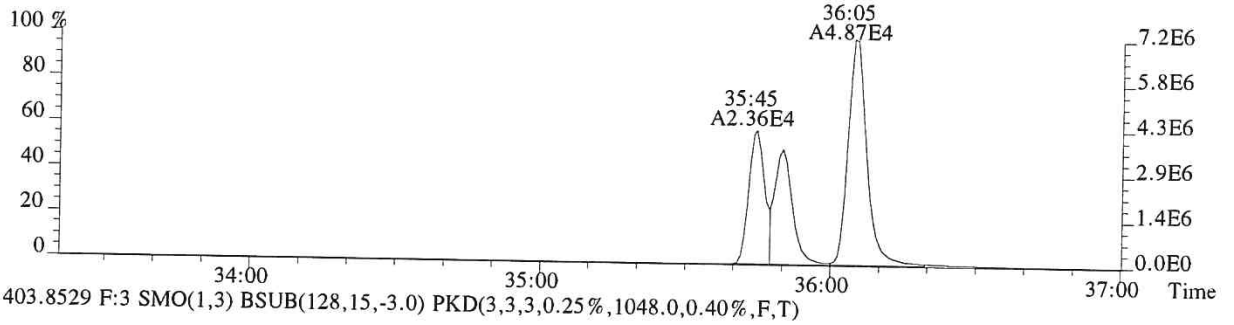
File:P519704 #1-330 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1276.0,0.40%,F,T)



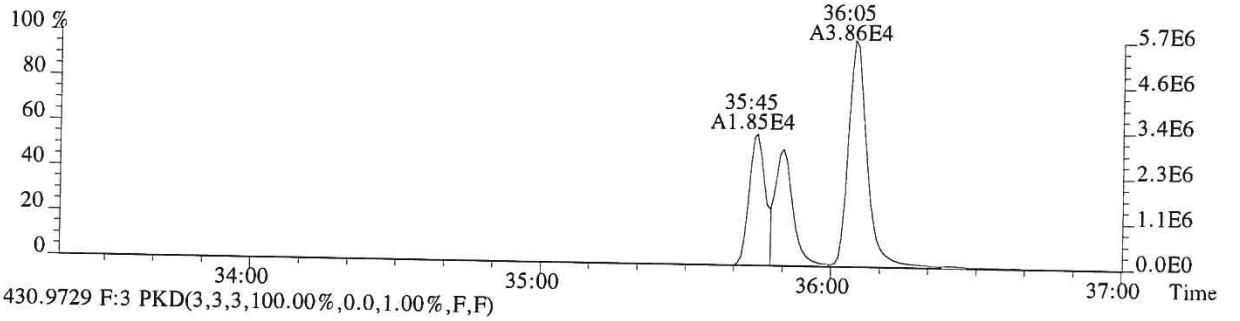
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1784.0,0.40%,F,T)



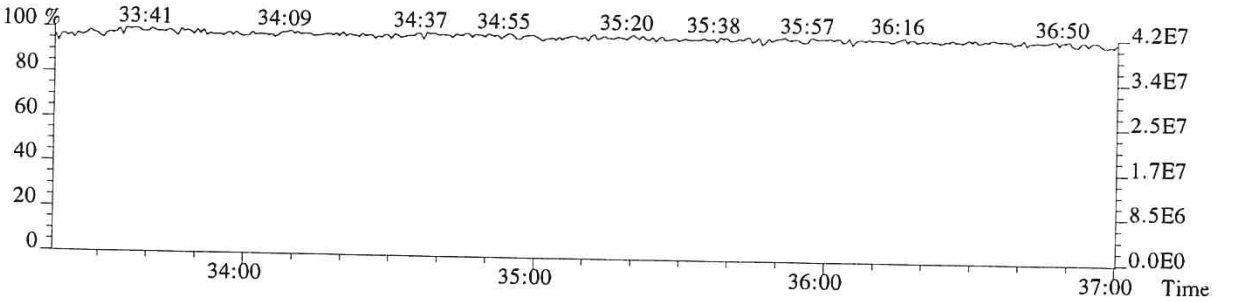
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,564.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1048.0,0.40%,F,T)



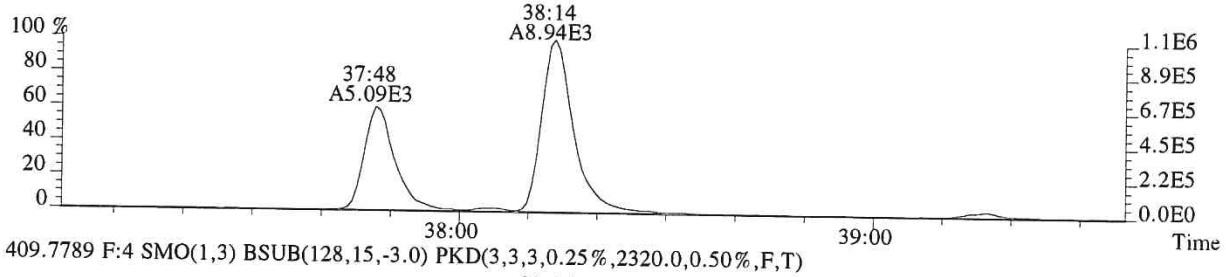
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



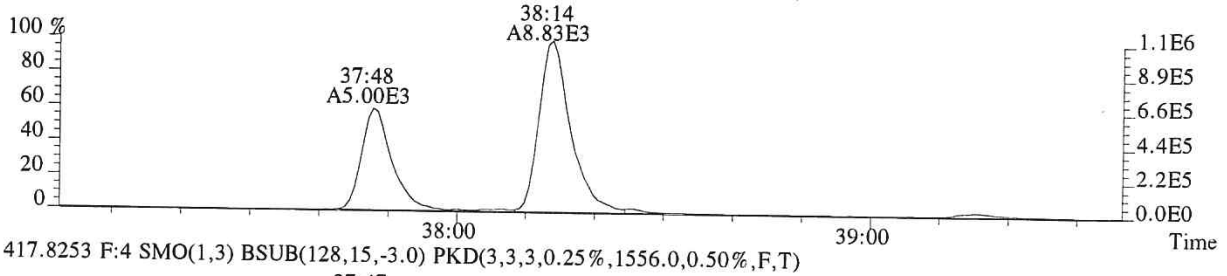
060439

File:P519704 #1-232 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020

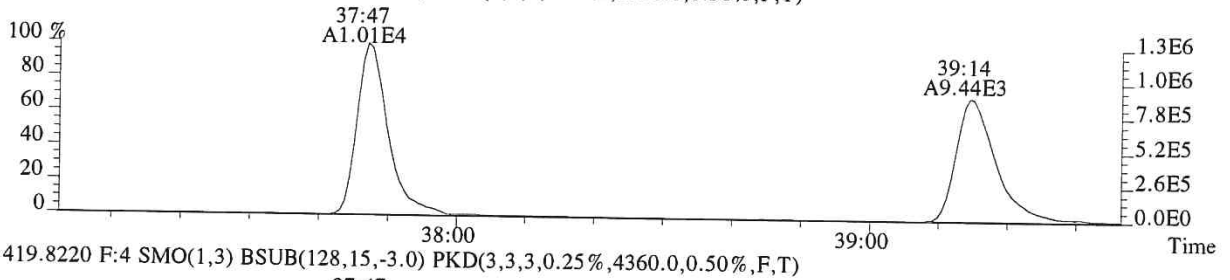
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2828.0,0.50%,F,T)



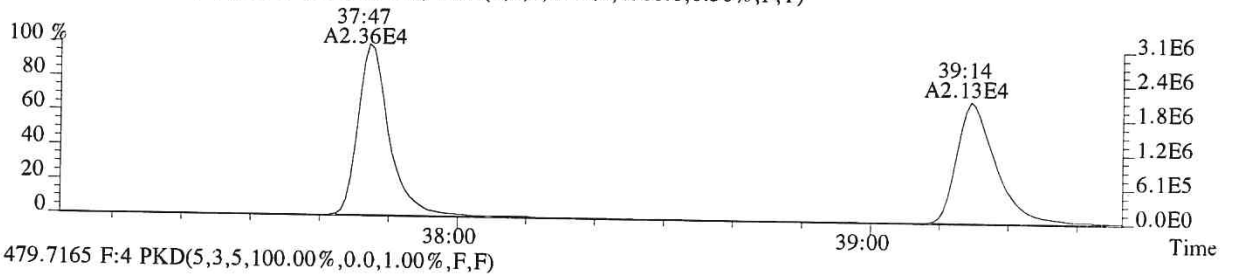
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2320.0,0.50%,F,T)



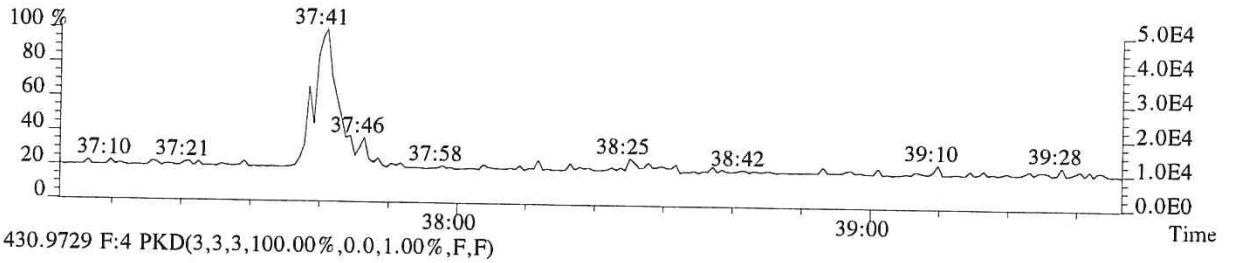
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1556.0,0.50%,F,T)



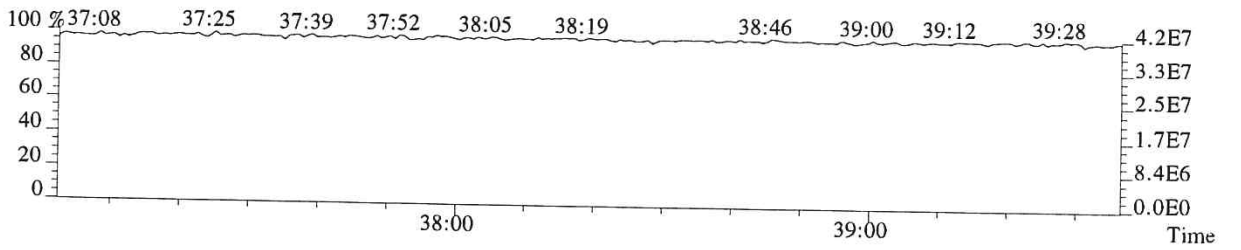
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4360.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

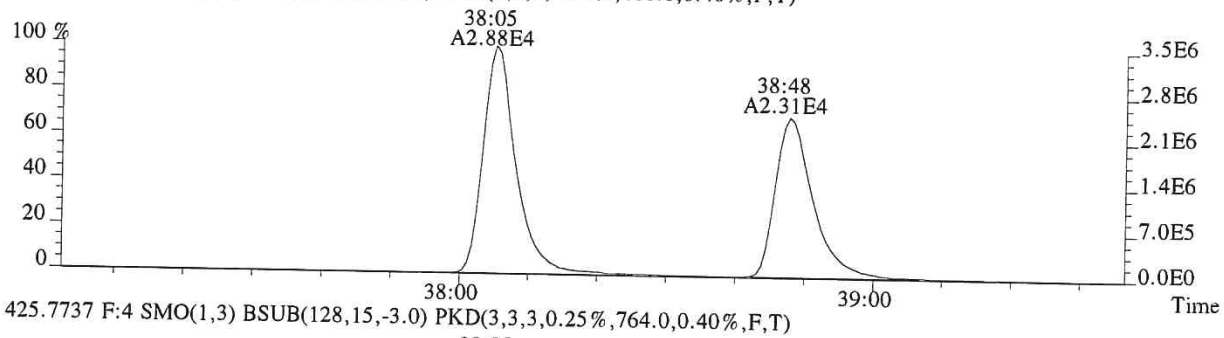


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

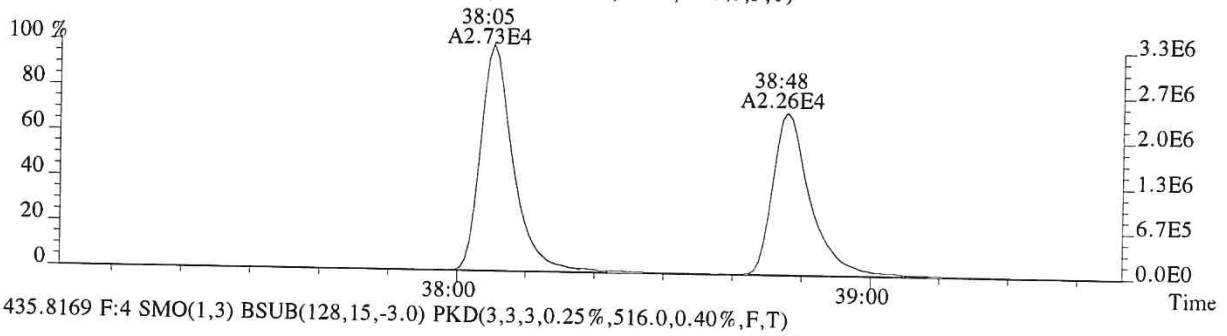


060440

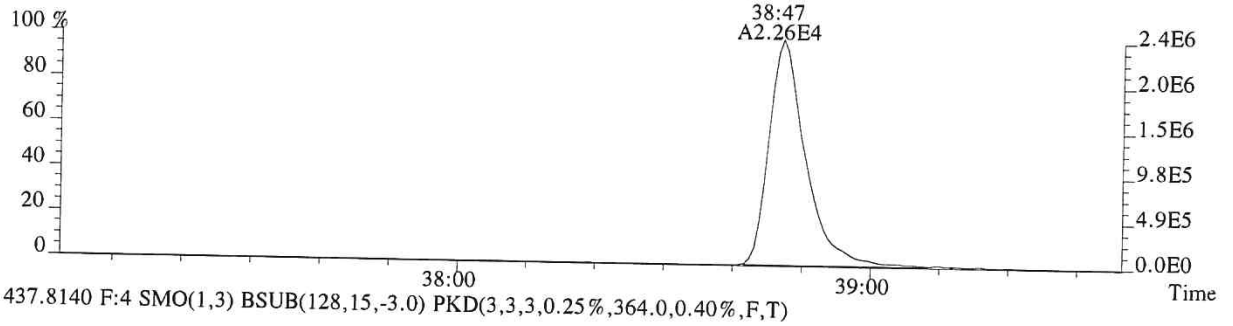
File:P519704 #1-232 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,460.0,0.40%,F,T)



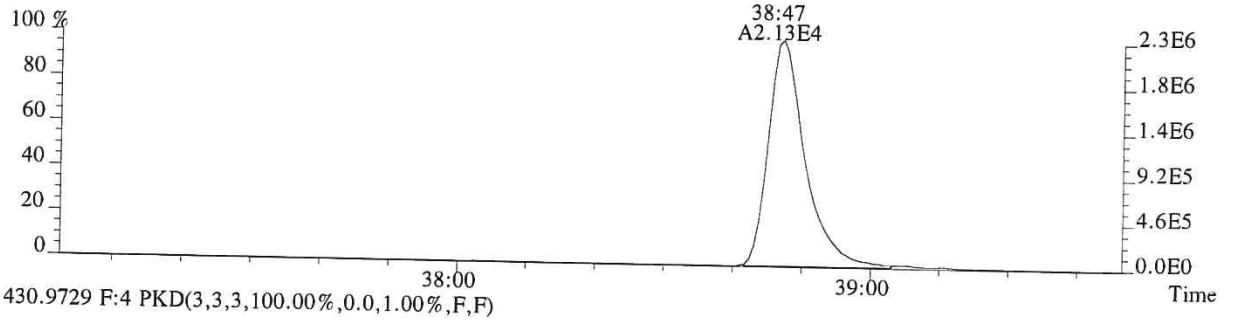
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,764.0,0.40%,F,T)



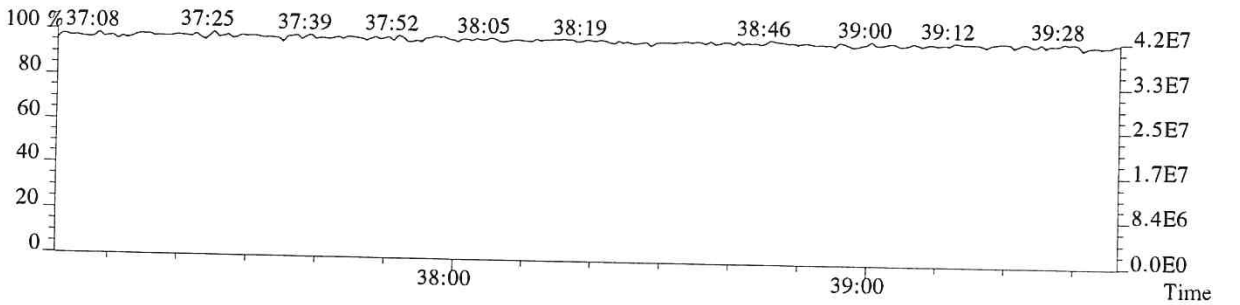
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,516.0,0.40%,F,T)



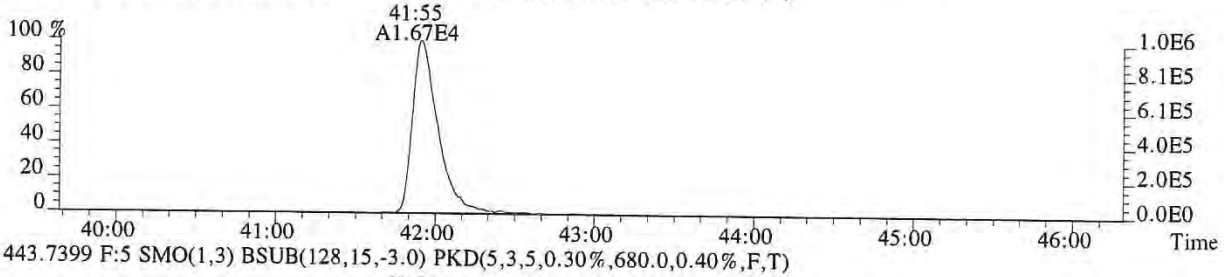
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,364.0,0.40%,F,T)



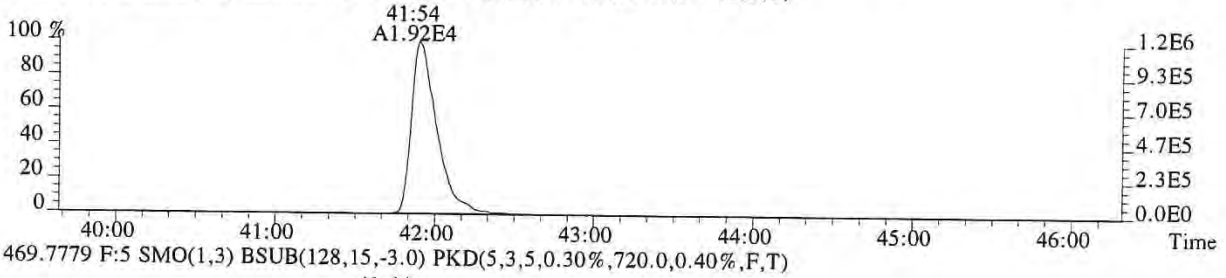
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



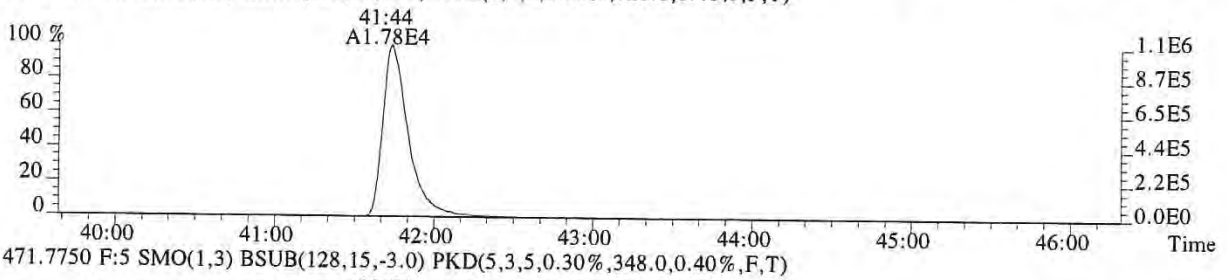
File:P519704 #1-601 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,240.0,0.40%,F,T)



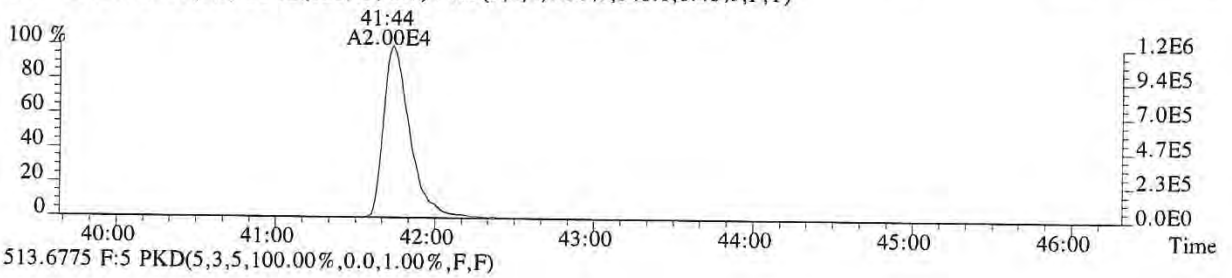
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,680.0,0.40%,F,T)



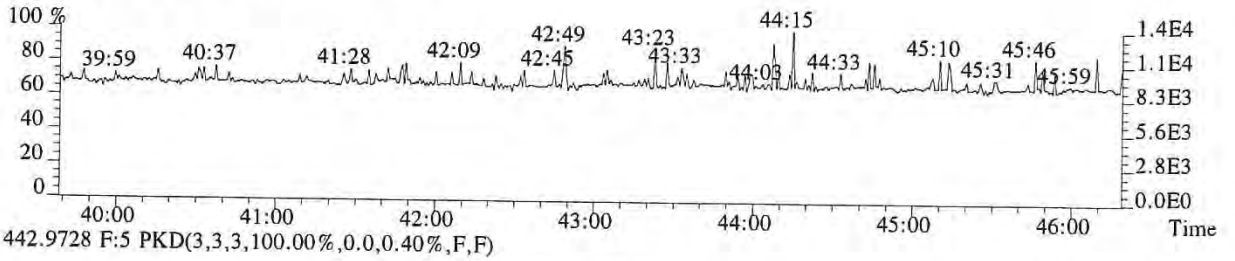
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,720.0,0.40%,F,T)



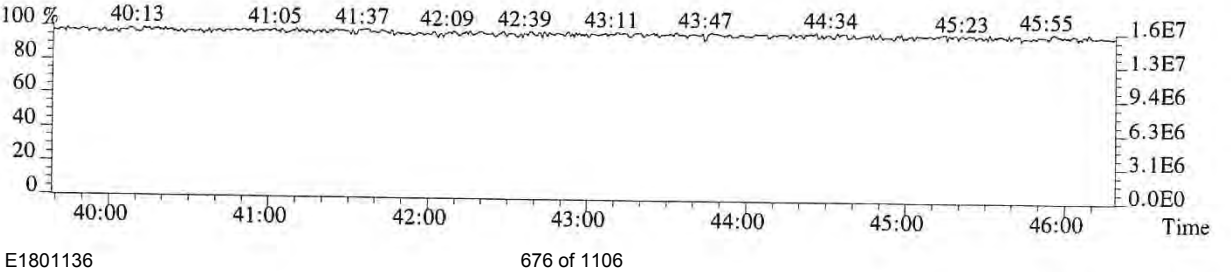
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,348.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

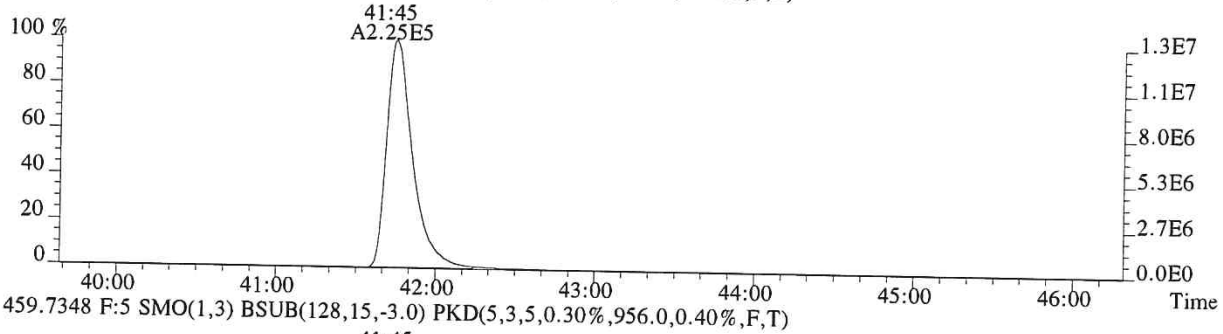


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

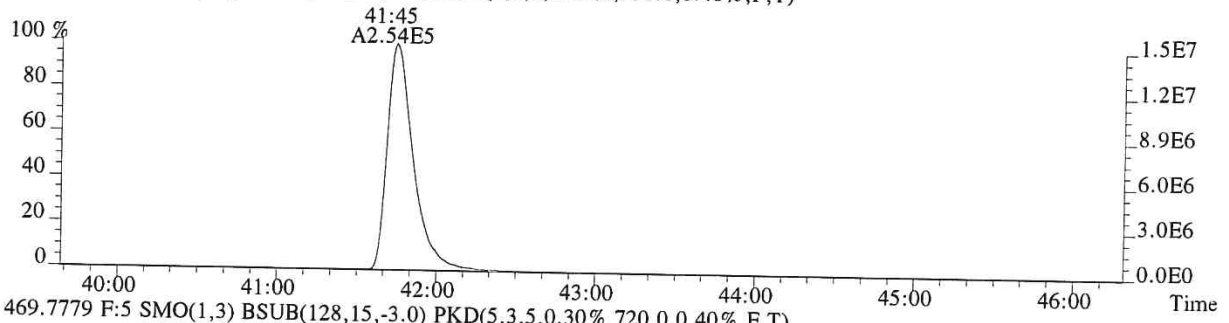


060442

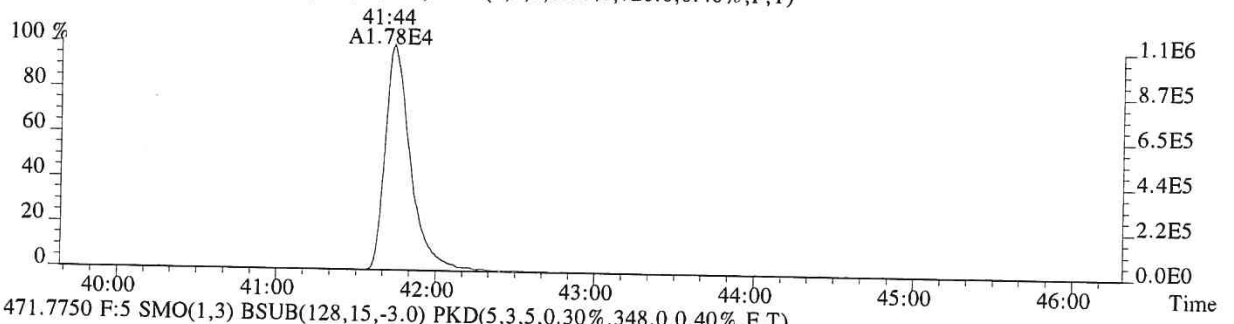
File:P519704 #1-601 Acq:30-DEC-2018 02:20:17 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801136-020
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,324.0,0.40%,F,T)



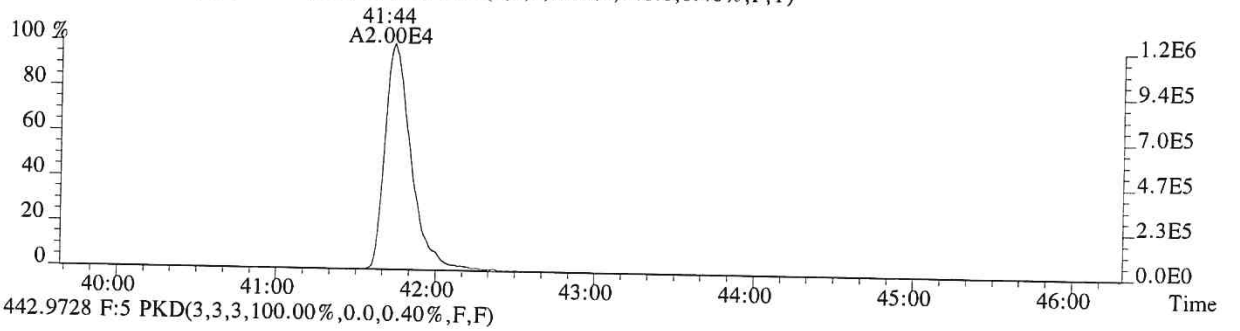
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,956.0,0.40%,F,T)



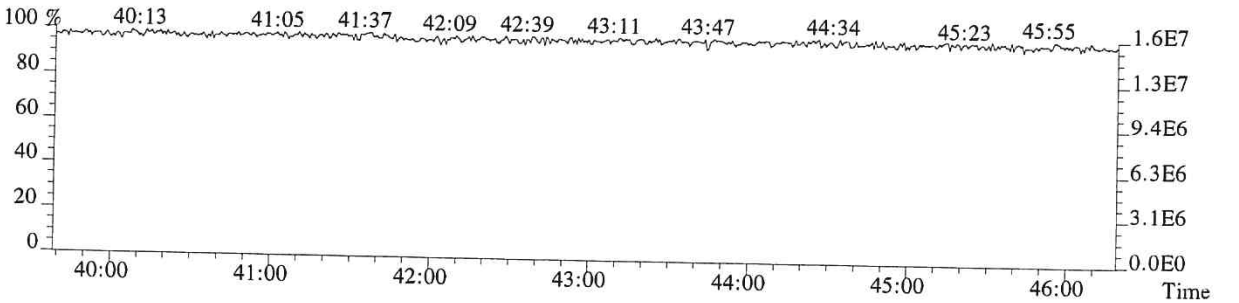
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,720.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,348.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
METHOD BLANK

Run #9 Filename P519713 Samp: 1 Inj: 1 Acquired: 30-DEC-18 10:14:56
Processed: 31-DEC-18 09:45:59 Sample ID: EQ1800529-01

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	yes	0.942
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	1.012
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	yes	0.959
4	Unk	1,2,3,4,7,8-HxCDF	NotFnd	*	*	*	no	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	NotFnd	*	*	*	no	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	yes	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	NotFnd	*	*	*	no	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	no	1.258
10	Unk	OCDF	NotFnd	*	*	*	no	no	1.359
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.085
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:49	2.029e+01	1.981e+01	1.02	yes	no	1.025
17	Unk	OCDD	41:47	2.620e+02	2.640e+02	0.99	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	4.252e+04	5.416e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	7.703e+04	4.843e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	7.442e+04	4.682e+04	1.59	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	3.302e+04	6.422e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	4.036e+04	7.791e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	3.593e+04	6.922e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	3.433e+04	6.682e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:48	2.527e+04	5.704e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:16	2.293e+04	5.231e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	2.194e+04	2.771e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	5.986e+04	3.796e+04	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	5.181e+04	3.778e+04	1.37	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:50	5.297e+04	4.525e+04	1.17	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:49	5.611e+04	5.317e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	41:46	4.929e+04	5.542e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	4.281e+04	5.452e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	5.522e+04	4.370e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	1.750e+04				no	1.014

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
METHOD BLANK

Run #9 Filename P519713 Samp: 1 Inj: 1 Acquired: 30-DEC-18 10:14:56
Processed: 31-DEC-18 09:45:59 LAB. ID: EQ1800529-01

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	8.68e+02	*	*	3.00e+03	*
2	1,2,3,7,8-PeCDF	*	1.15e+03	*	*	1.85e+03	*
3	2,3,4,7,8-PeCDF	*	1.15e+03	*	*	1.85e+03	*
4	1,2,3,4,7,8-HxCDF	*	1.24e+03	*	*	1.12e+03	*
5	1,2,3,6,7,8-HxCDF	*	1.24e+03	*	*	1.12e+03	*
6	2,3,4,6,7,8-HxCDF	*	1.24e+03	*	*	1.12e+03	*
7	1,2,3,7,8,9-HxCDF	*	1.24e+03	*	*	1.12e+03	*
8	1,2,3,4,6,7,8-HpCDF	*	5.76e+02	*	*	6.40e+02	*
9	1,2,3,4,7,8,9-HpCDF	*	5.76e+02	*	*	6.40e+02	*
10	OCDF	*	6.84e+02	*	*	1.70e+03	*
11	2,3,7,8-TCDD	*	4.66e+03	*	*	2.62e+03	*
12	1,2,3,7,8-PeCDD	*	1.20e+03	*	*	6.40e+02	*
13	1,2,3,4,7,8-HxCDD	*	8.80e+02	*	*	1.10e+03	*
14	1,2,3,6,7,8-HxCDD	*	8.80e+02	*	*	1.10e+03	*
15	1,2,3,7,8,9-HxCDD	*	8.80e+02	*	*	1.10e+03	*
16	1,2,3,4,6,7,8-HpCDD	3.26e+03	5.68e+02	5.7e+00	4.02e+03	4.48e+02	9.0e+00
17	OCDD	1.81e+04	4.72e+02	3.8e+01	1.49e+04	4.92e+02	3.0e+01
18	13C-2,3,7,8-TCDF	6.47e+06	1.16e+04	5.6e+02	8.19e+06	9.56e+03	8.6e+02
19	13C-1,2,3,7,8-PeCDF	1.29e+07	6.64e+02	1.9e+04	8.13e+06	6.12e+02	1.3e+04
20	13C-2,3,4,7,8-PeCDF	1.32e+07	6.64e+02	2.0e+04	8.41e+06	6.12e+02	1.4e+04
21	13C-1,2,3,4,7,8-HxCDF	6.03e+06	1.32e+03	4.6e+03	1.17e+07	2.51e+03	4.6e+03
22	13C-1,2,3,6,7,8-HxCDF	6.57e+06	1.32e+03	5.0e+03	1.26e+07	2.51e+03	5.0e+03
23	13C-2,3,4,6,7,8-HxCDF	5.67e+06	1.32e+03	4.3e+03	1.10e+07	2.51e+03	4.4e+03
24	13C-1,2,3,7,8,9-HxCDF	5.06e+06	1.32e+03	3.8e+03	9.85e+06	2.51e+03	3.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	3.24e+06	1.68e+03	1.9e+03	7.30e+06	5.49e+03	1.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.24e+06	1.68e+03	1.3e+03	5.07e+06	5.49e+03	9.2e+02
27	13C-2,3,7,8-TCDD	3.67e+06	9.76e+03	3.8e+02	4.59e+06	3.20e+03	1.4e+03
28	13C-1,2,3,7,8-PeCDD	9.95e+06	1.30e+03	7.7e+03	6.35e+06	1.74e+03	3.7e+03
29	13C-1,2,3,4,7,8-HxCDD	8.53e+06	2.01e+03	4.2e+03	6.84e+06	1.37e+03	5.0e+03
30	13C-1,2,3,6,7,8-HxCDD	8.43e+06	2.01e+03	4.2e+03	6.72e+06	1.37e+03	4.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	5.80e+06	1.43e+03	4.1e+03	5.54e+06	4.60e+02	1.2e+04
32	13C-OCDD	2.81e+06	1.31e+03	2.1e+03	3.17e+06	6.40e+02	5.0e+03
33	13C-1,2,3,4-TCDD	7.01e+06	9.76e+03	7.2e+02	9.05e+06	3.20e+03	2.8e+03
34	13C-1,2,3,7,8,9-HxCDD	7.70e+06	2.01e+03	3.8e+03	6.12e+06	1.37e+03	4.5e+03
35	37Cl-2,3,7,8-TCDD	2.92e+06	1.90e+03	1.5e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (4.664e{+}03 + 2.620e{+}03) \times 2000}{(3.671e{+}06 + 4.587e{+}06) \times (\quad) \times 1.085} =$$

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office:(281)530-5656. Fax:(281)530-5887

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
METHOD BLANK

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 9 File: P519713 Sample:1 Injection:1 Function:4

Acquired: 30-DEC-18 10:14:56 Processed: 31-DEC-18 09:45:59

Mass: 423.7770 425.7740 Tot Response: 1.07e+02 RRF: 1.025

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:06	3.33e+01	3.32e+01	1.00	yes	6.65e+01		n	n
2	38:49	2.03e+01	1.98e+01	1.02	yes	4.01e+01	1,2,3,4,6,7,8-HpCDD	n	n

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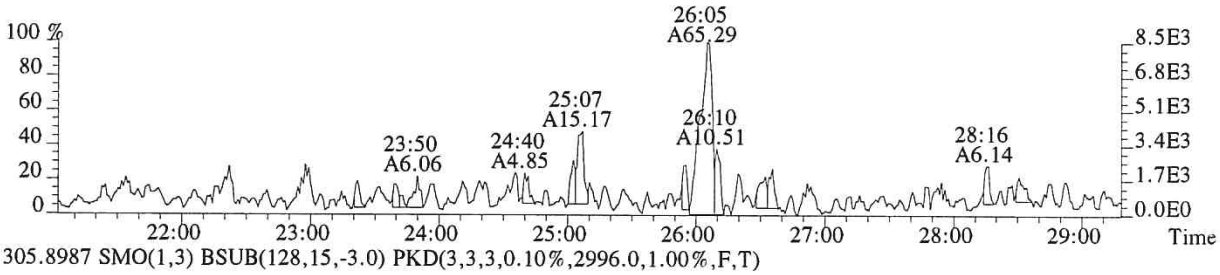
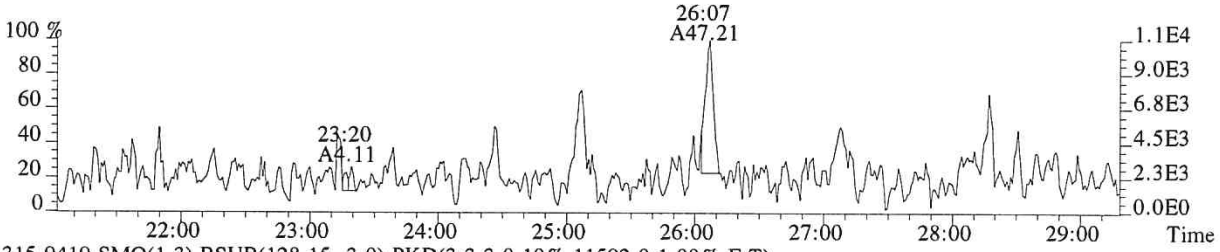
File:P519713 #1-587 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01

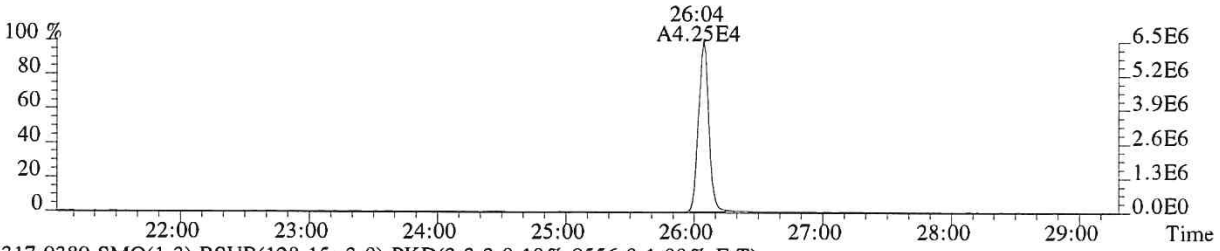
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,868.0,1.00%,F,T)



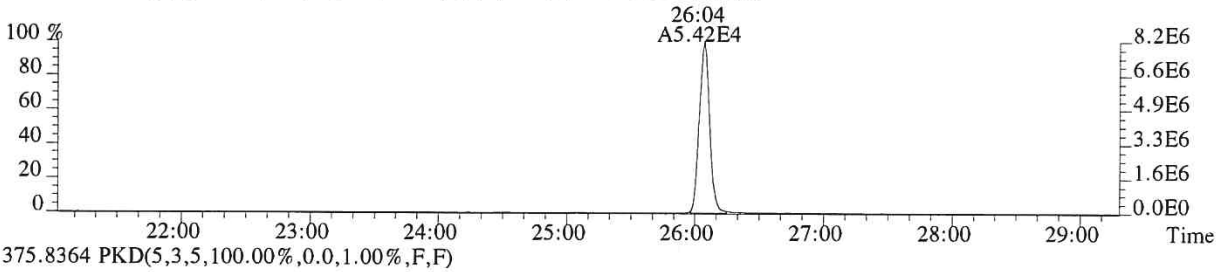
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2996.0,1.00%,F,T)



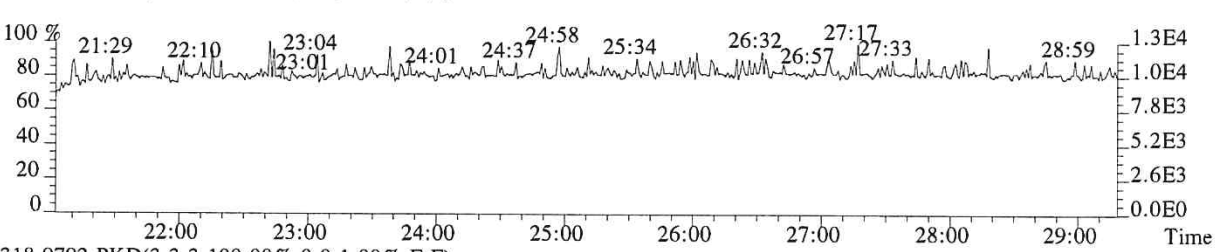
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11592.0,1.00%,F,T)



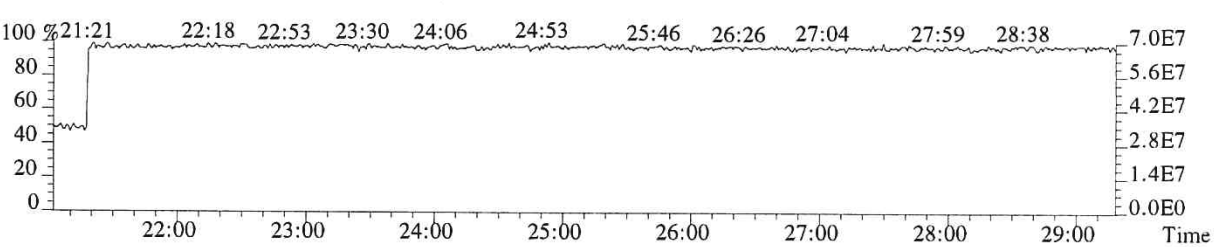
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9556.0,1.00%,F,T)



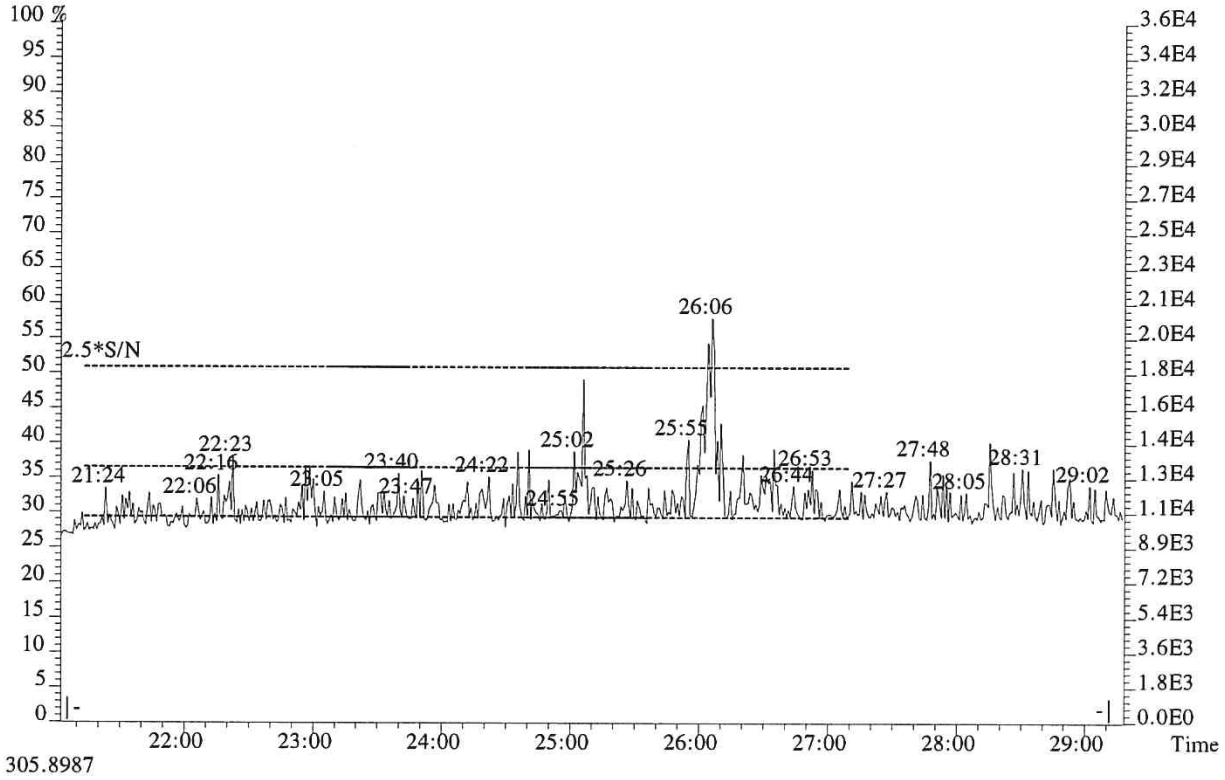
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



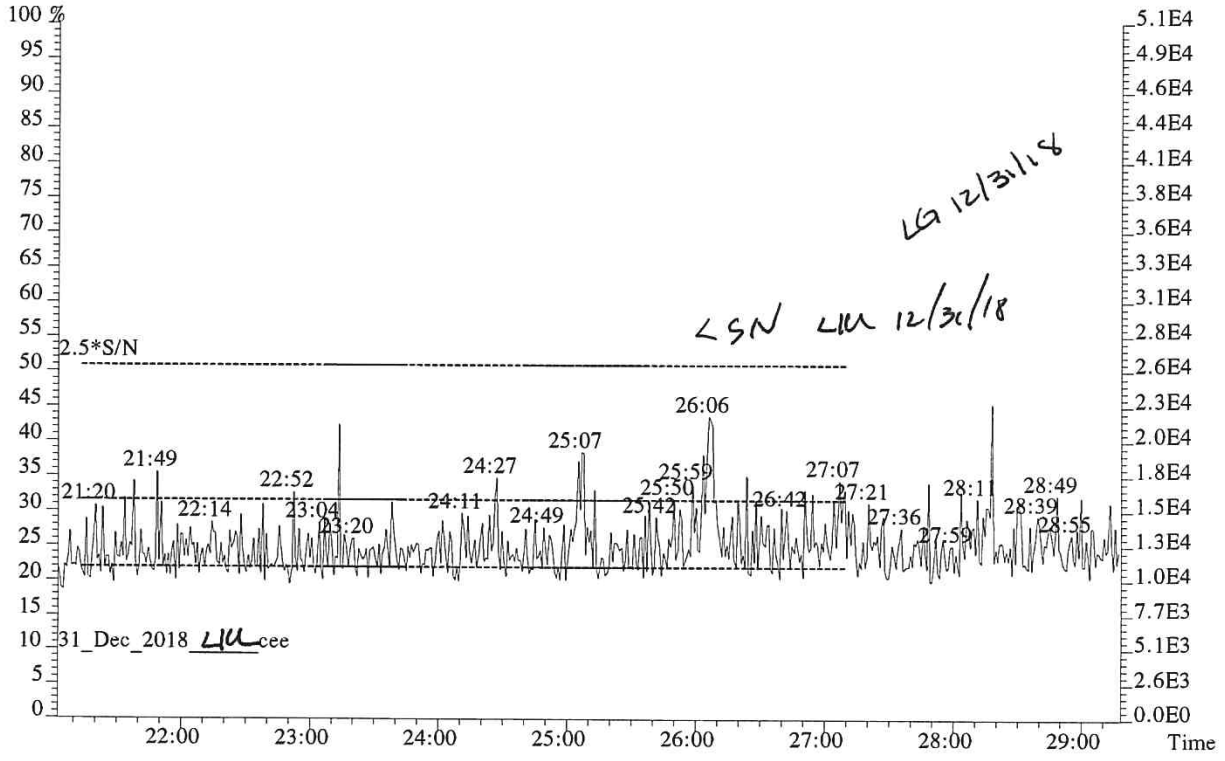
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



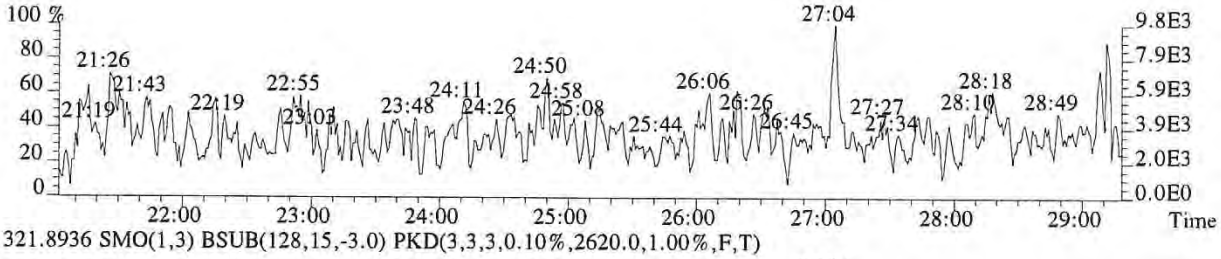
File:P519713 #1-587 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
303.9016



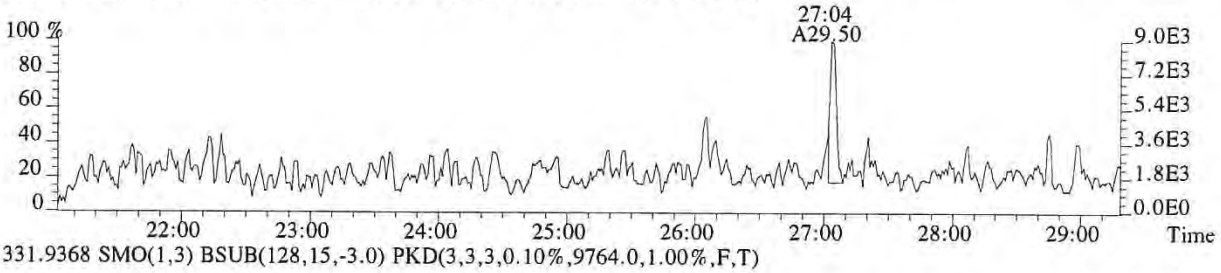
305.8987



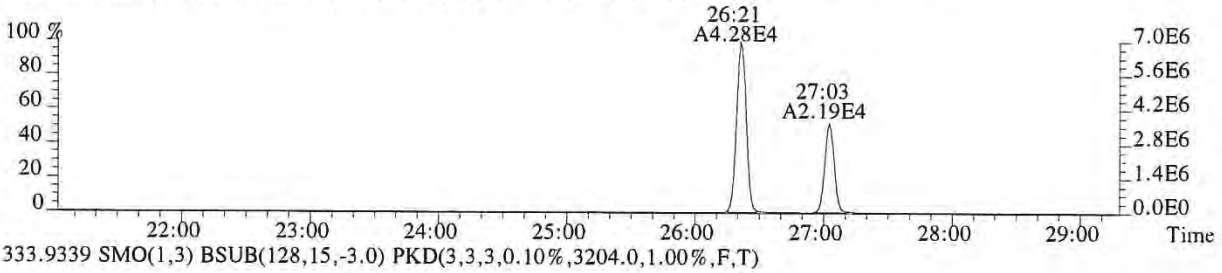
File:P519713 #1-587 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4664.0,1.00%,F,T)



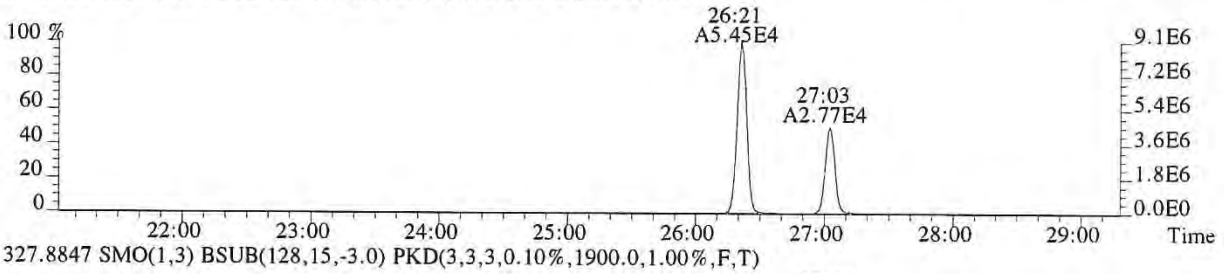
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2620.0,1.00%,F,T)



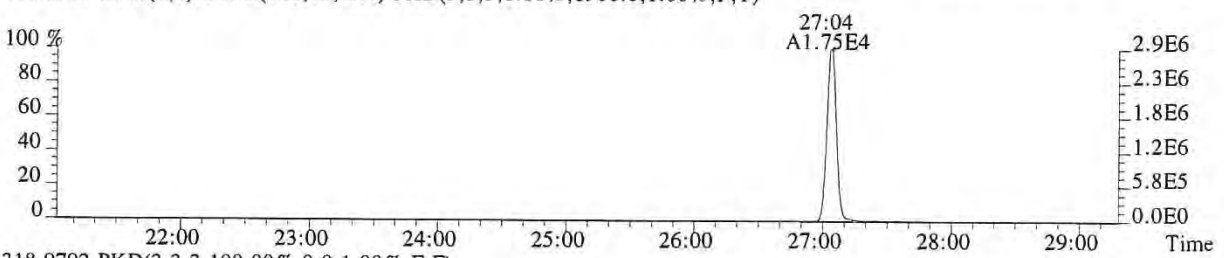
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9764.0,1.00%,F,T)



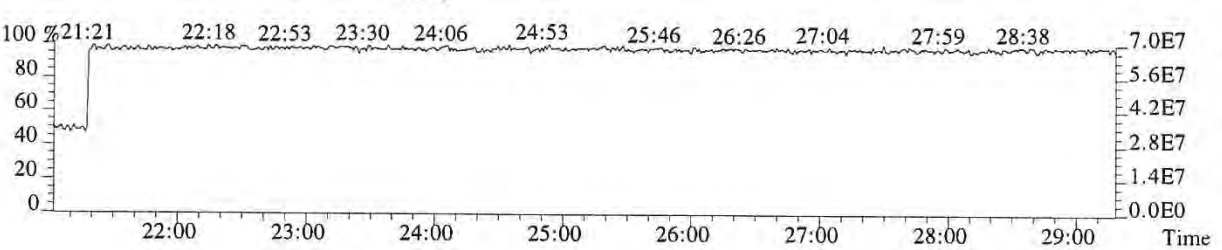
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3204.0,1.00%,F,T)



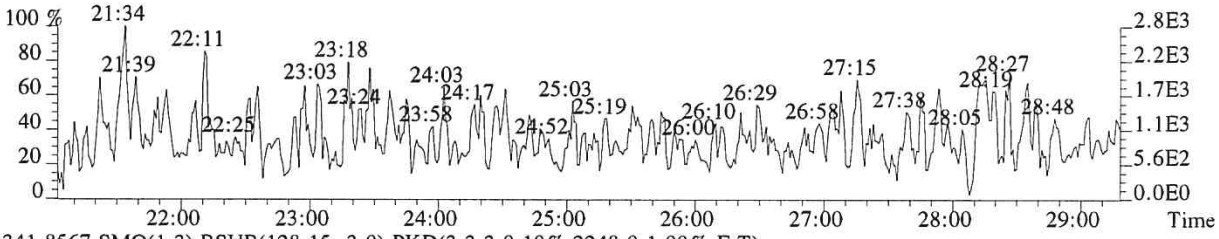
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1900.0,1.00%,F,T)



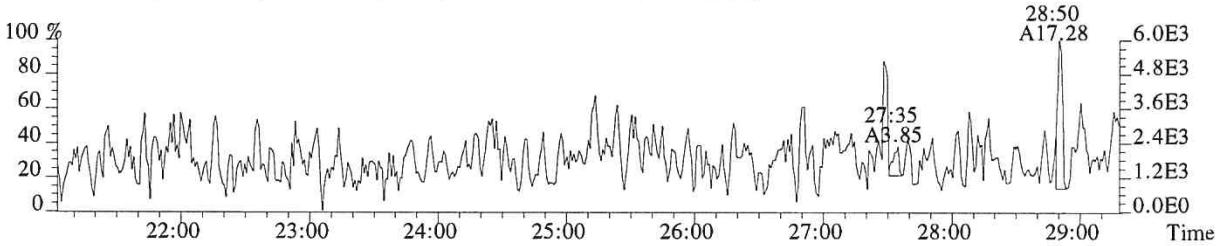
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



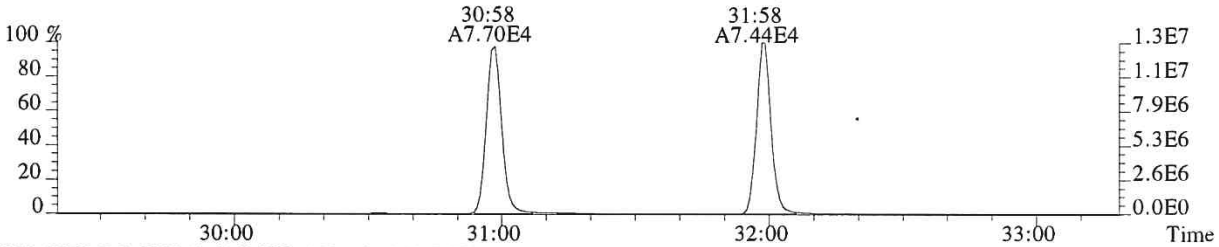
File:P519713 #1-587 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1196.0,1.00%,F,T)



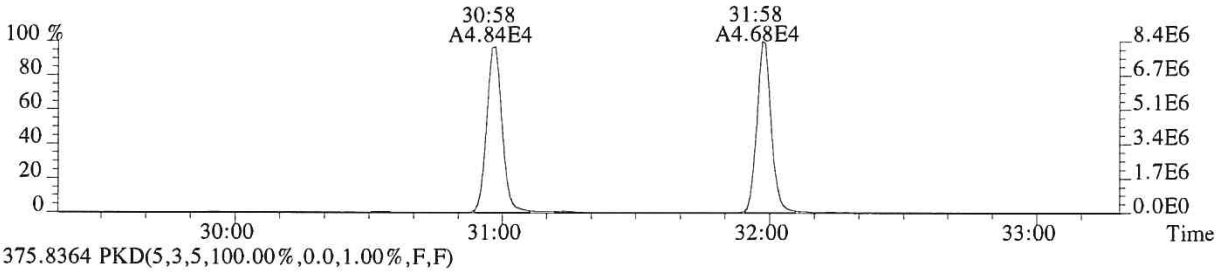
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2248.0,1.00%,F,T)



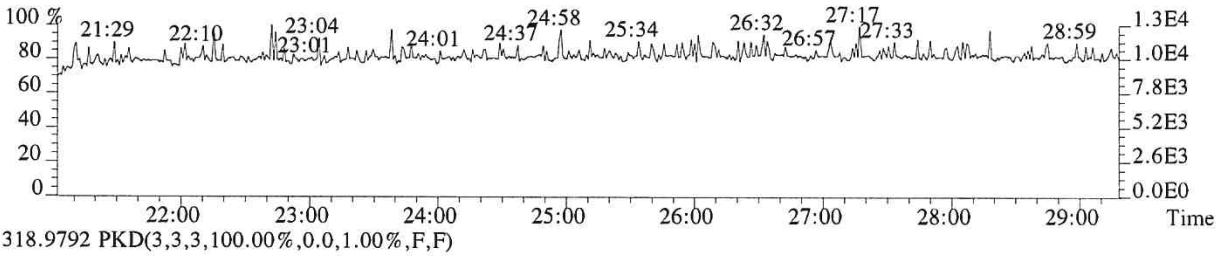
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,664.0,1.00%,F,T)



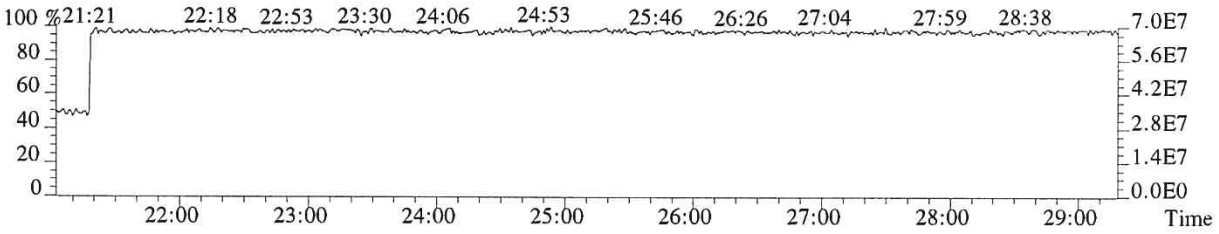
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,612.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

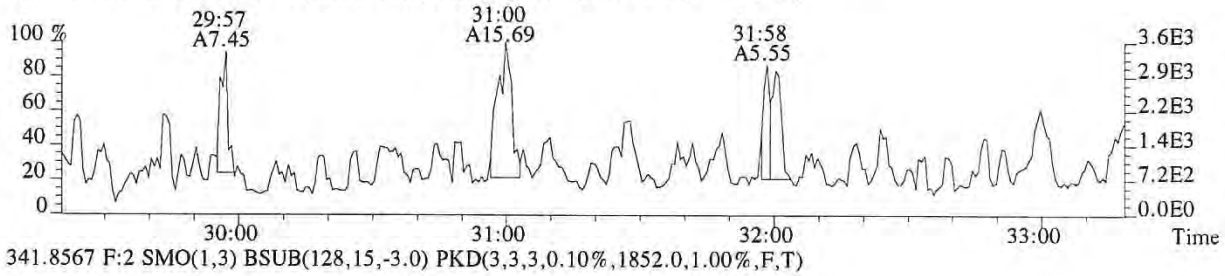


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

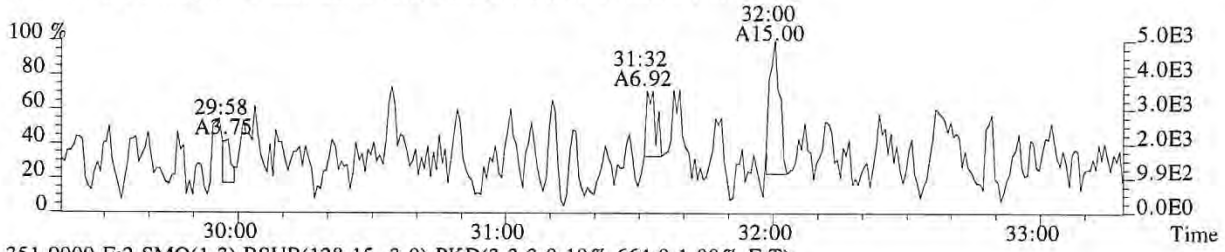


060450

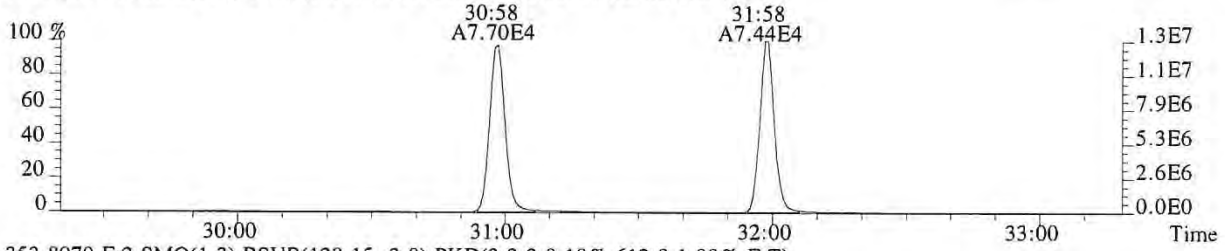
File:P519713 #1-358 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1148.0,1.00%,F,T)



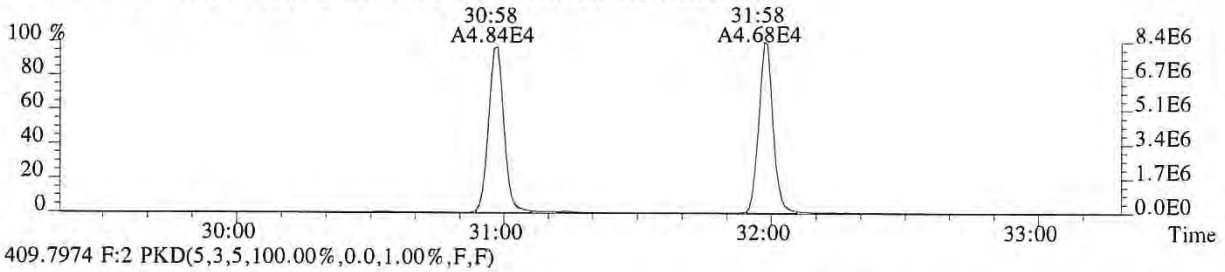
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1852.0,1.00%,F,T)



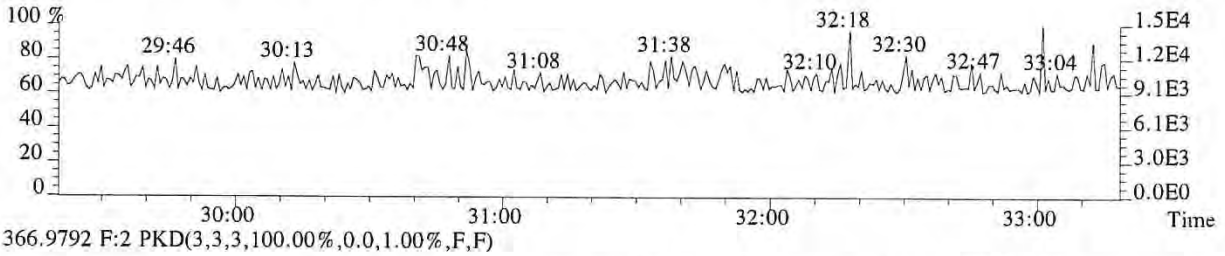
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,664.0,1.00%,F,T)



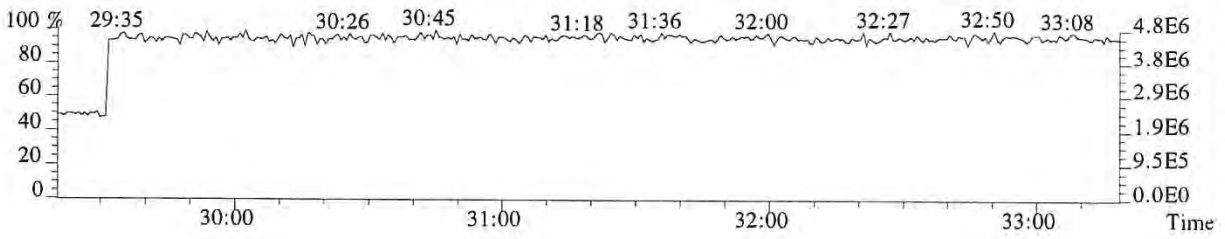
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,612.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

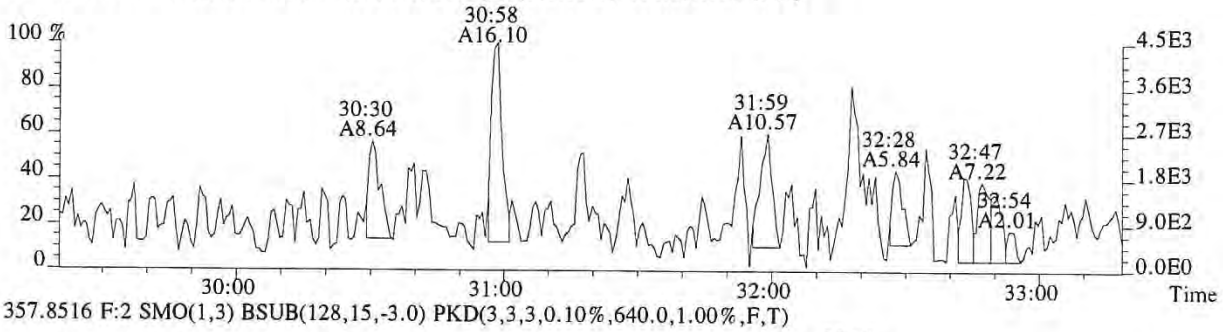


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

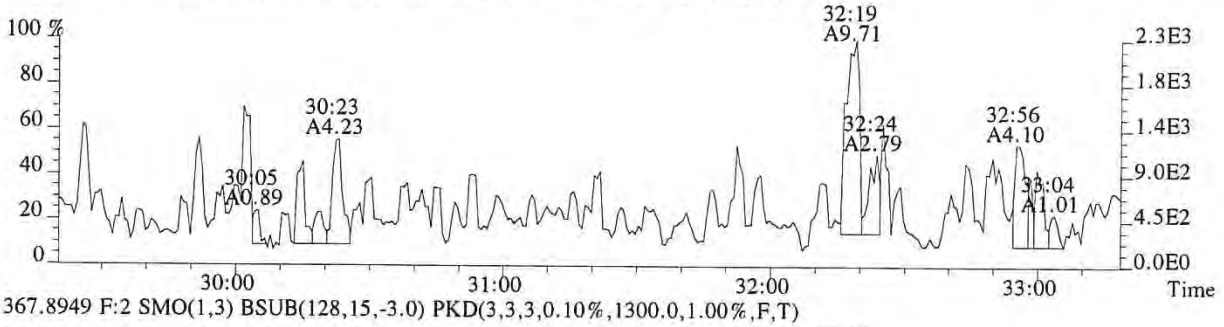


060451

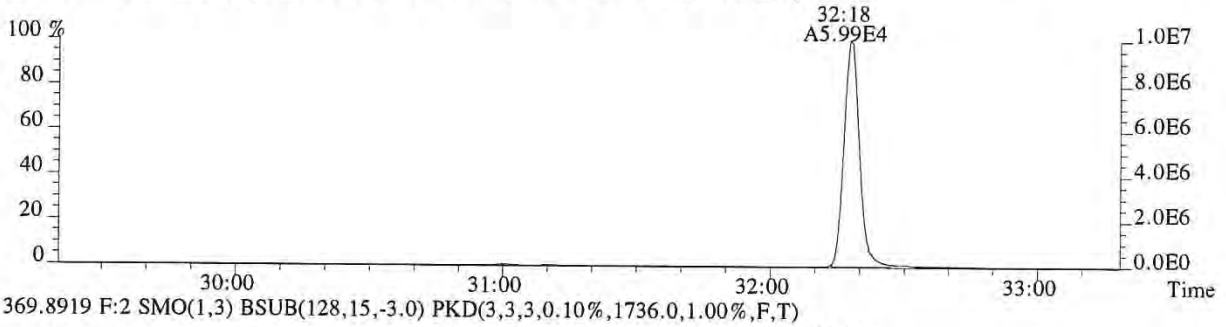
File:P519713 #1-358 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1196.0,1.00%,F,T)



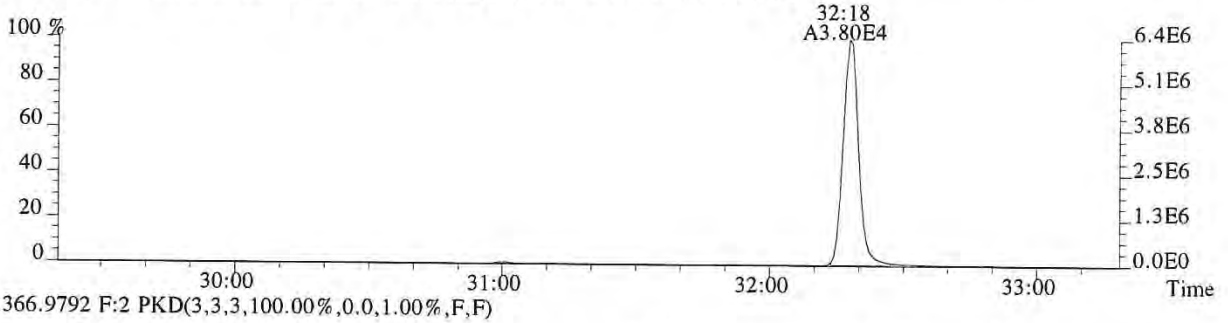
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,640.0,1.00%,F,T)



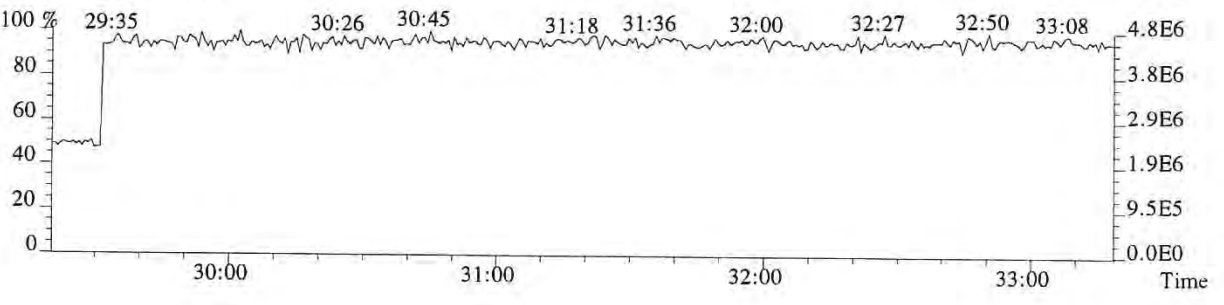
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1300.0,1.00%,F,T)



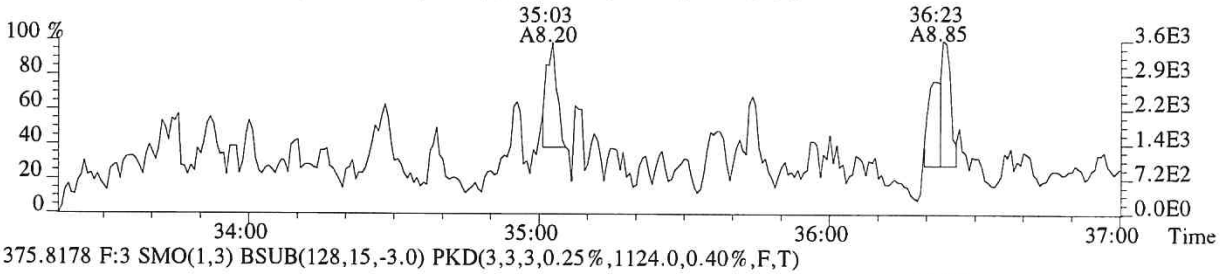
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1736.0,1.00%,F,T)



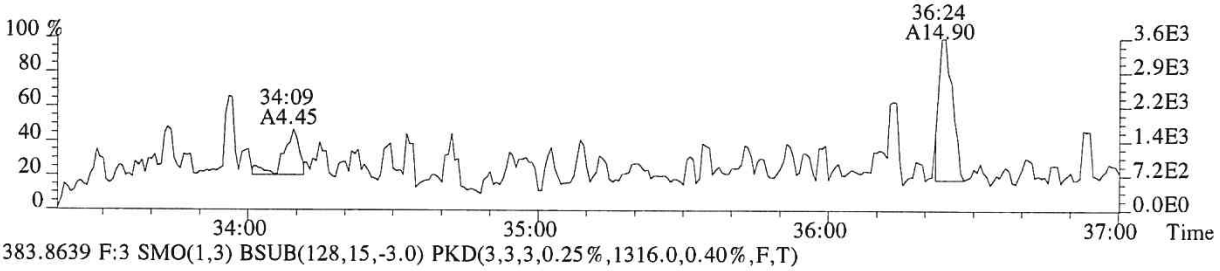
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



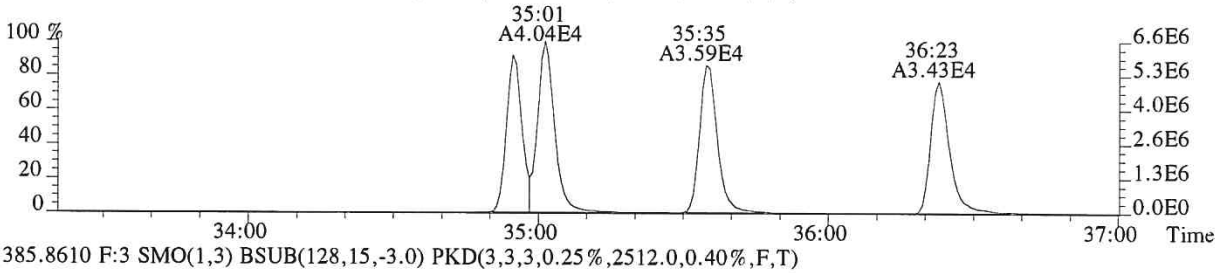
File:P519713 #1-330 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1244.0,0.40%,F,T)



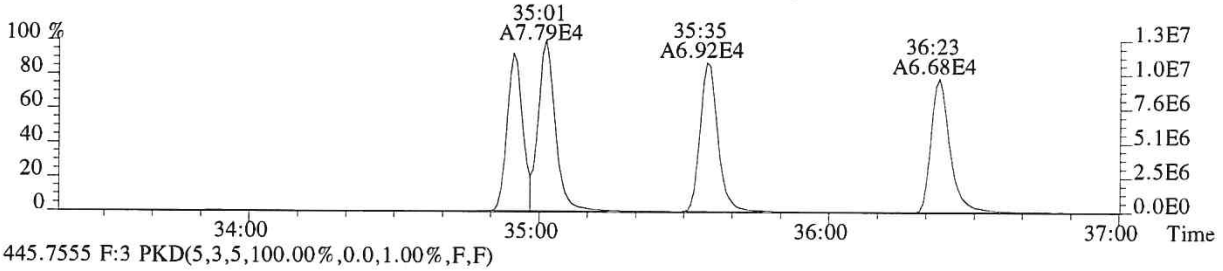
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1124.0,0.40%,F,T)



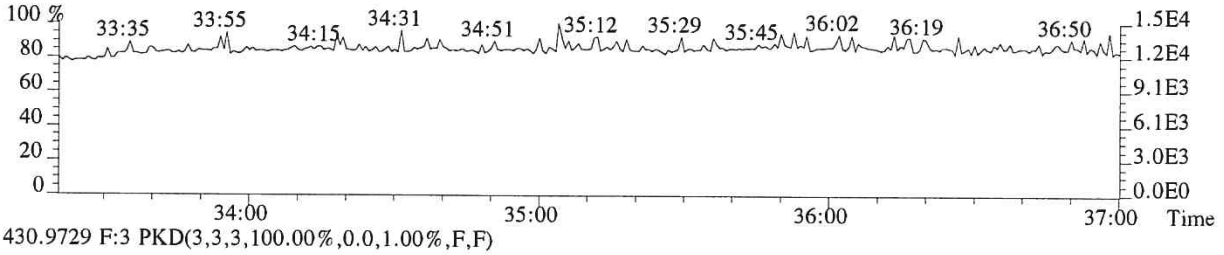
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1316.0,0.40%,F,T)



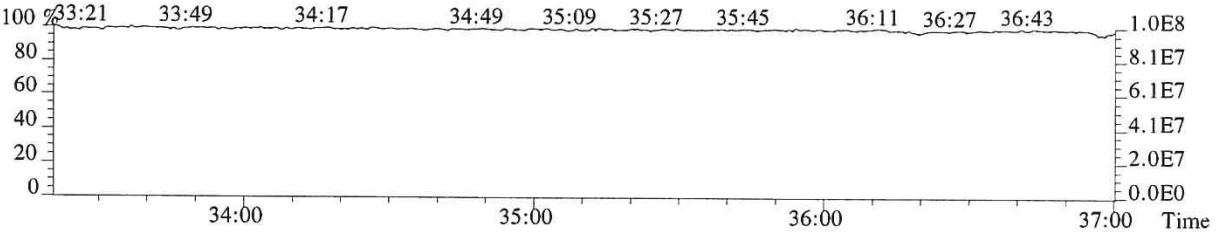
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2512.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

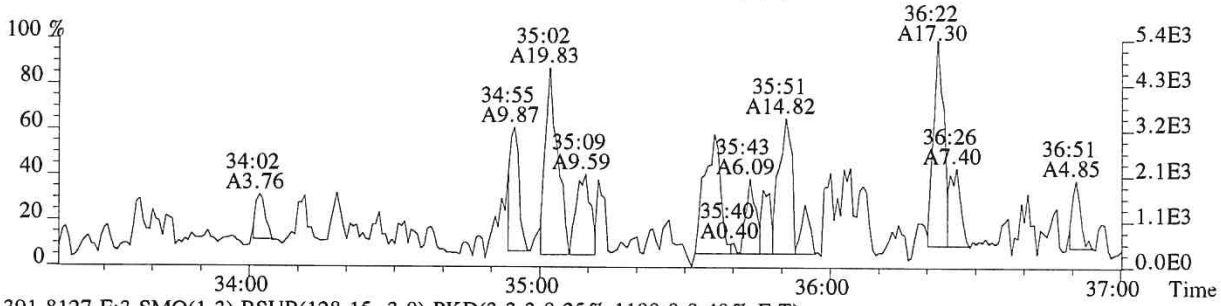


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

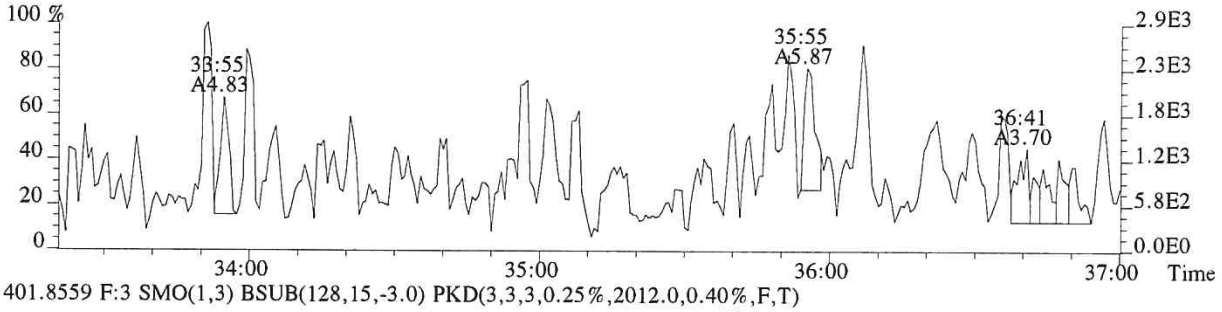


060453

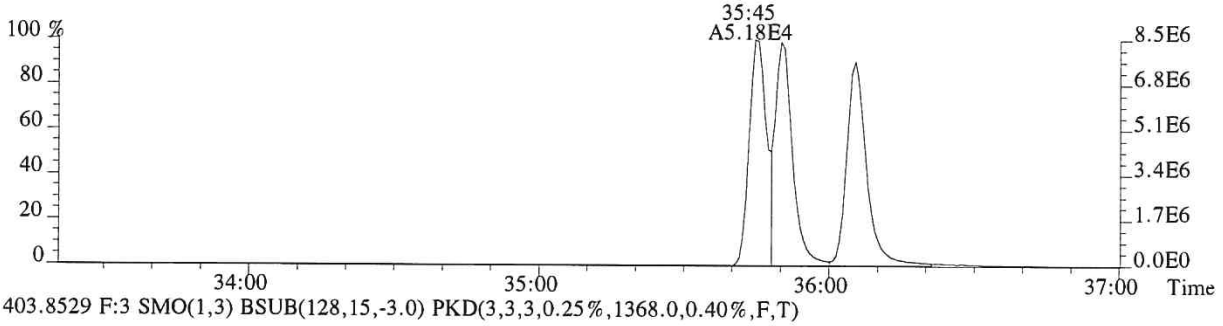
File:P519713 #1-330 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,880.0,0.40%,F,T)



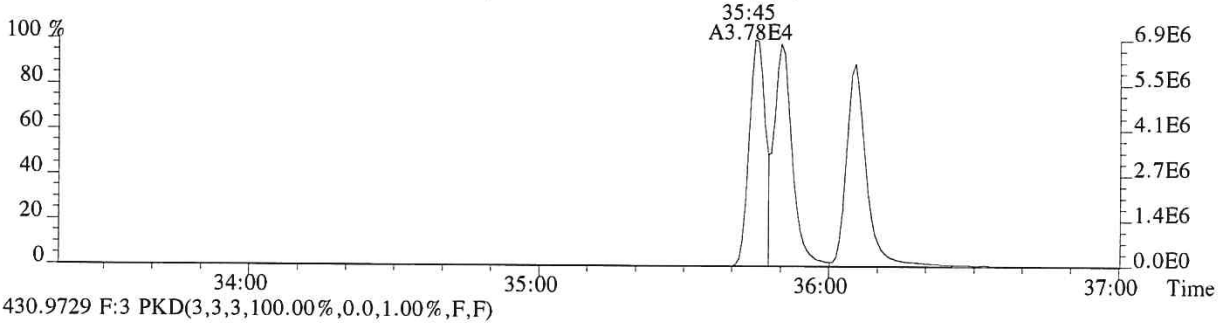
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1100.0,0.40%,F,T)



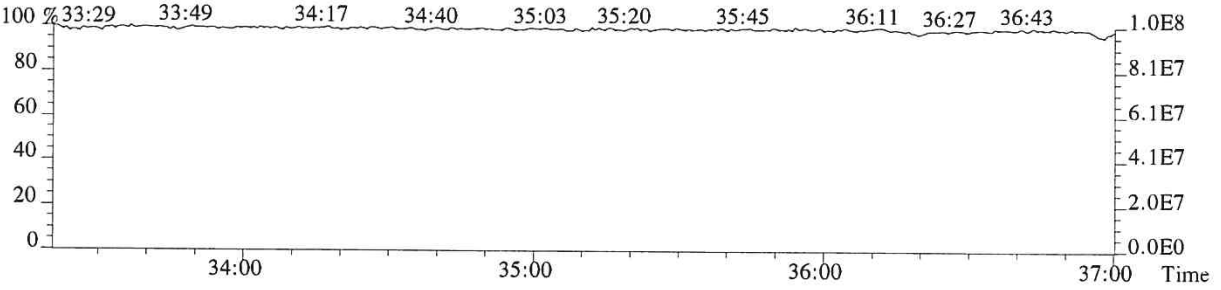
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2012.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1368.0,0.40%,F,T)

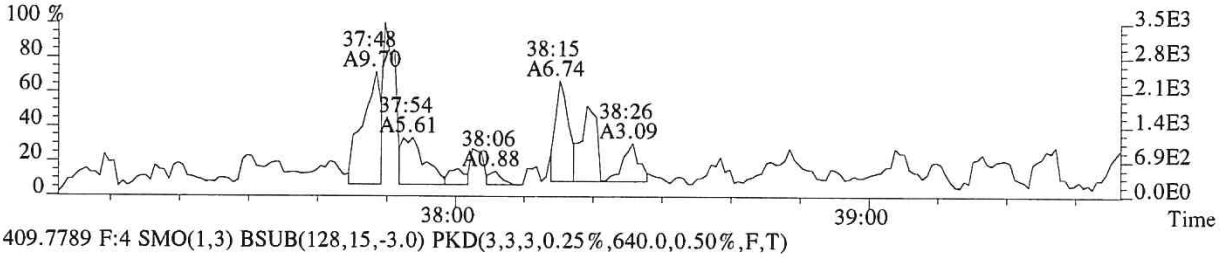


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

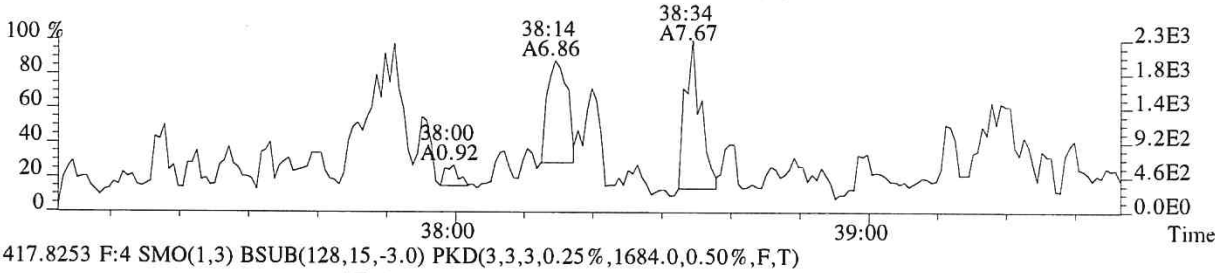


060454

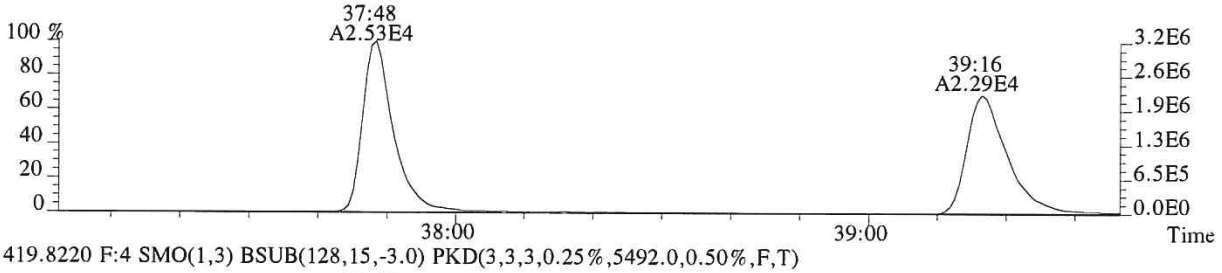
File:P519713 #1-232 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,576.0,0.50%,F,T)



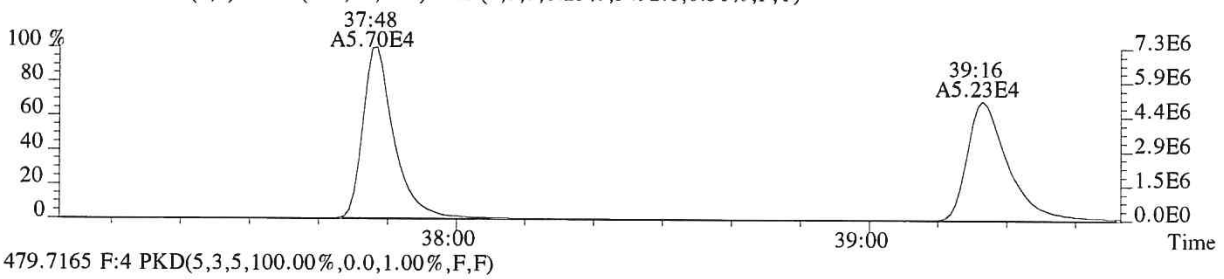
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,640.0,0.50%,F,T)



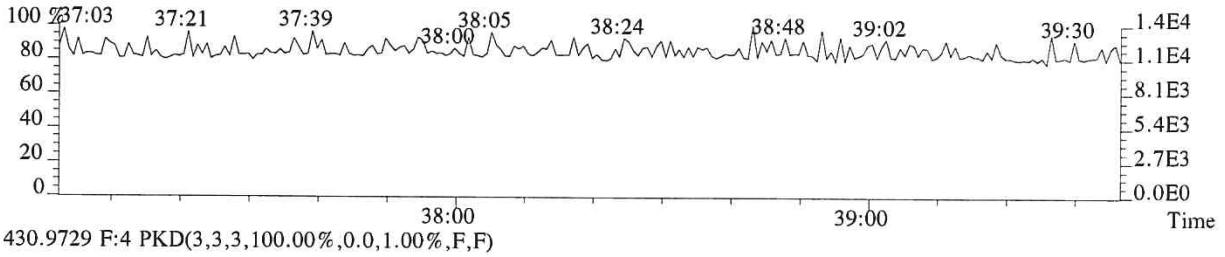
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1684.0,0.50%,F,T)



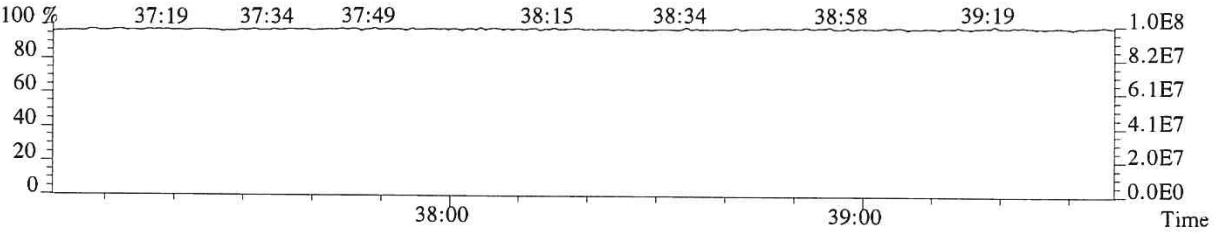
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5492.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

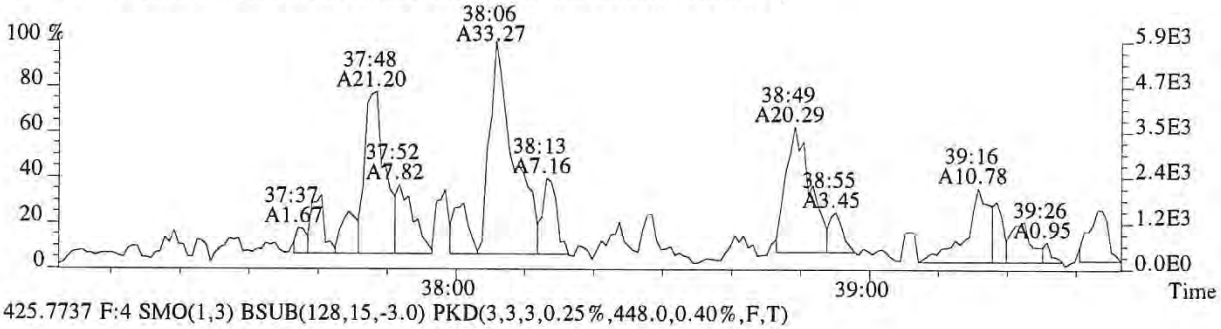


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

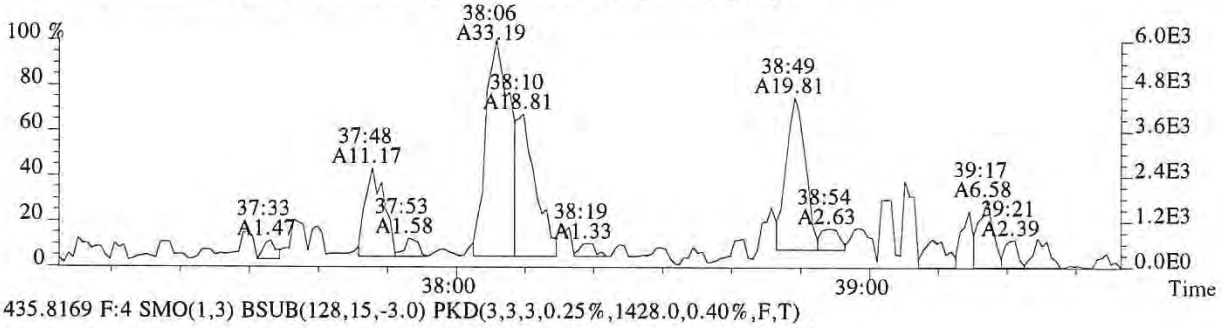


060455

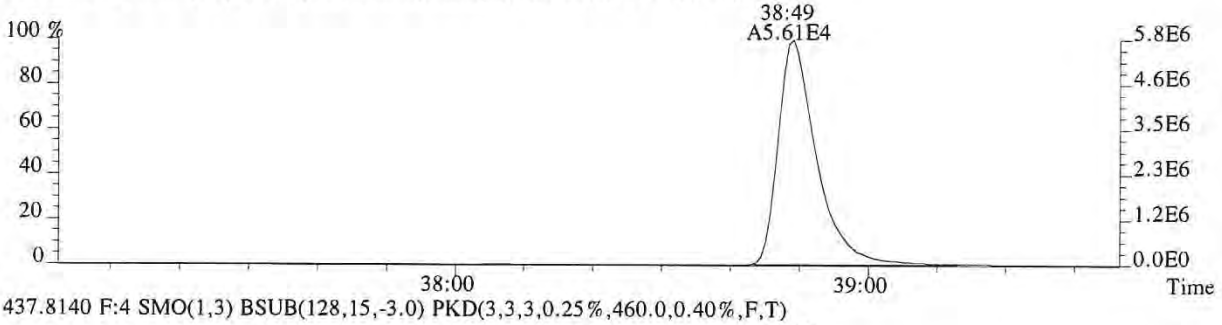
File:P519713 #1-232 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,568.0,0.40%,F,T)



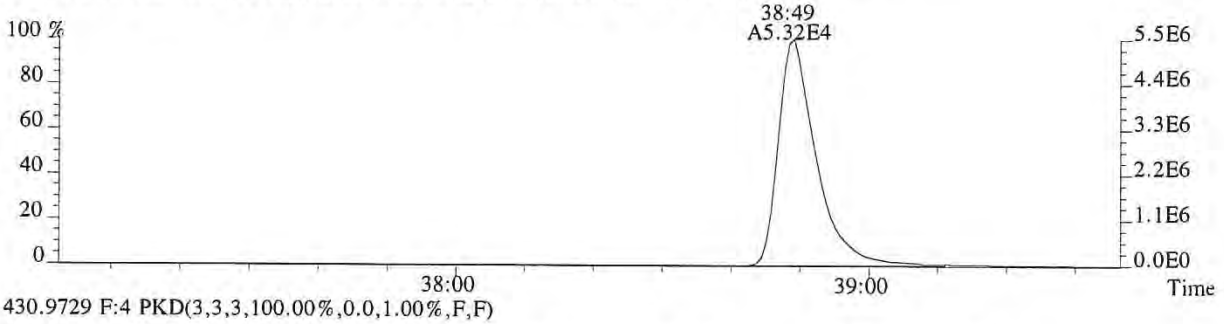
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,448.0,0.40%,F,T)



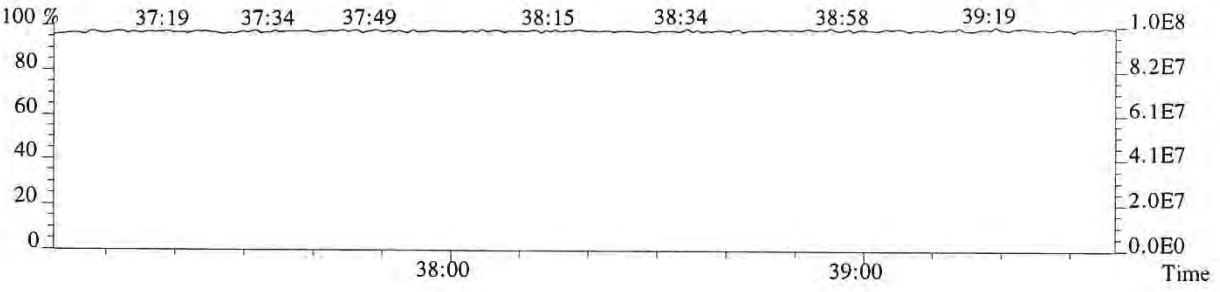
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1428.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,460.0,0.40%,F,T)

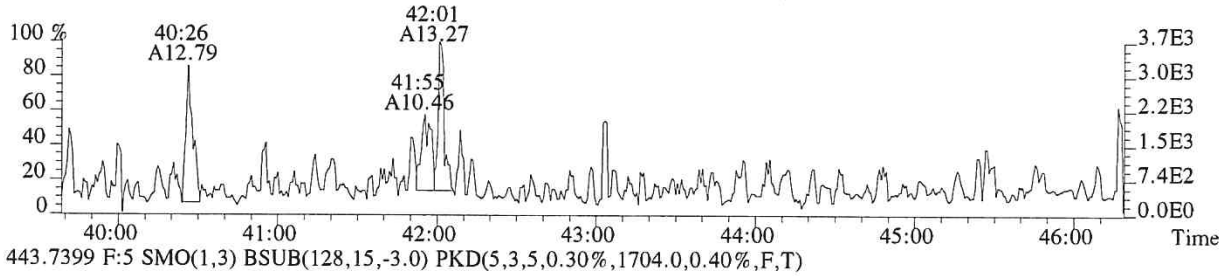


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

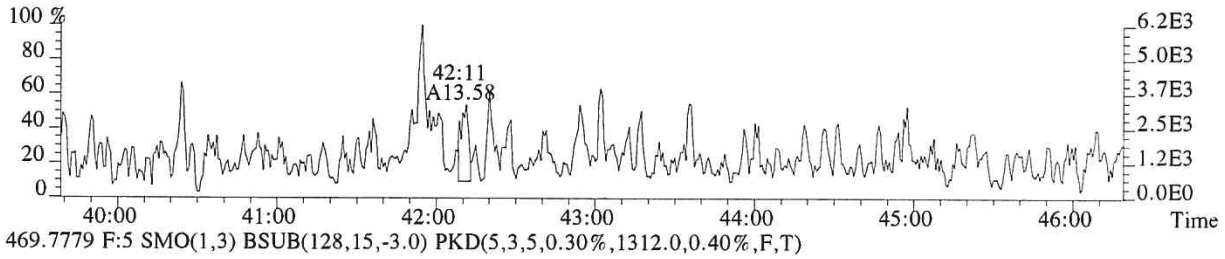


060456

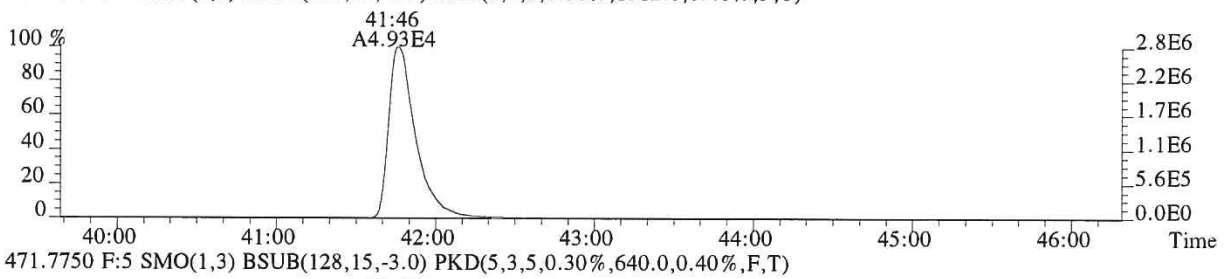
File:P519713 #1-601 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,684.0,0.40%,F,T)



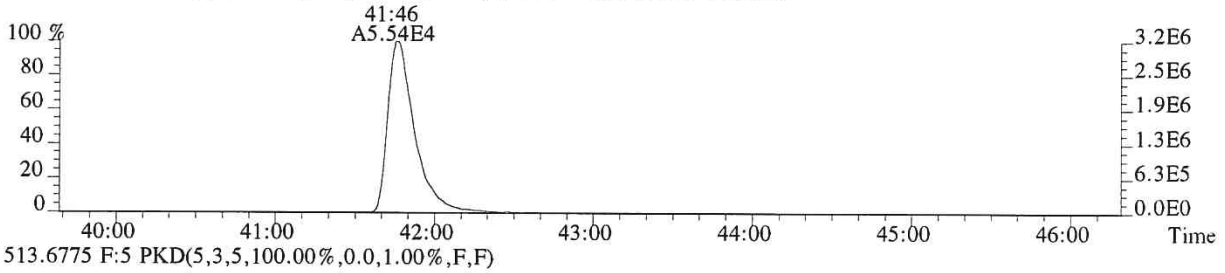
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1704.0,0.40%,F,T)



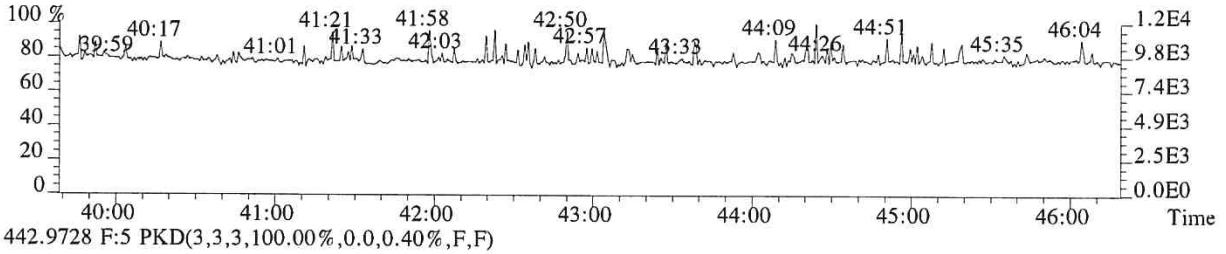
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1312.0,0.40%,F,T)



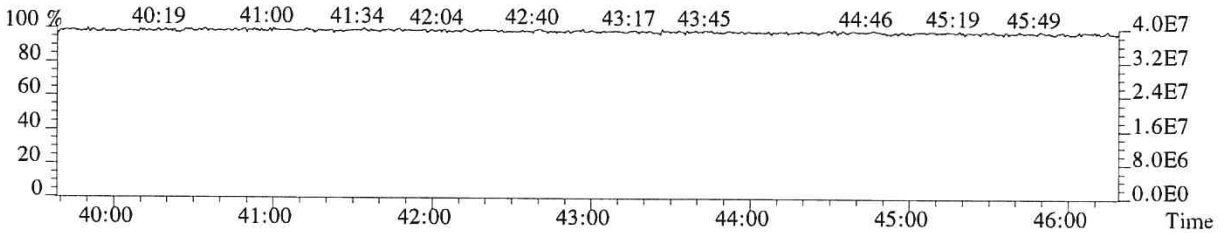
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,640.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

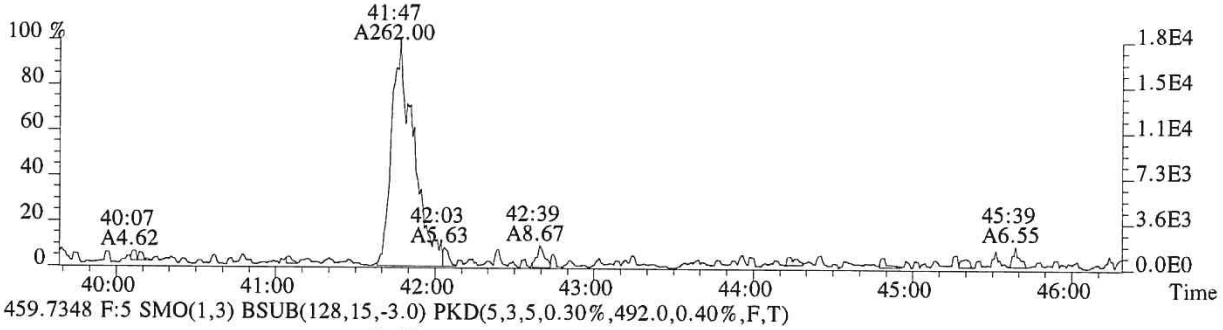


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

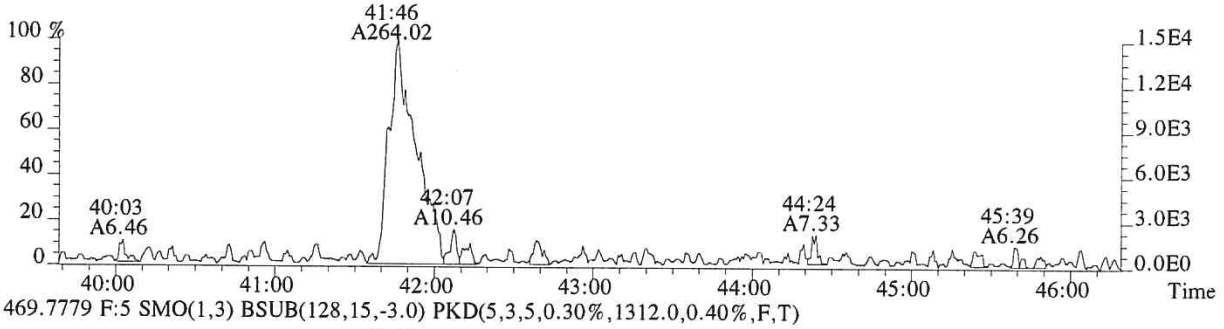


060457

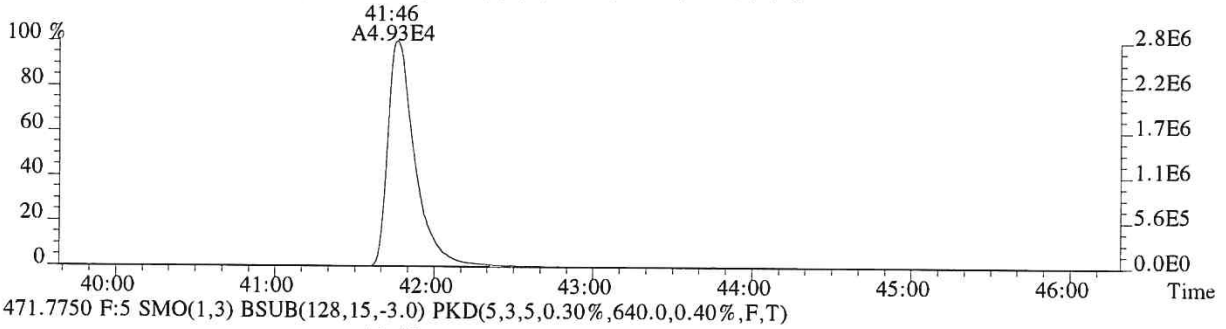
File:P519713 #1-601 Acq:30-DEC-2018 10:14:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1800529-01
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,472.0,0.40%,F,T)



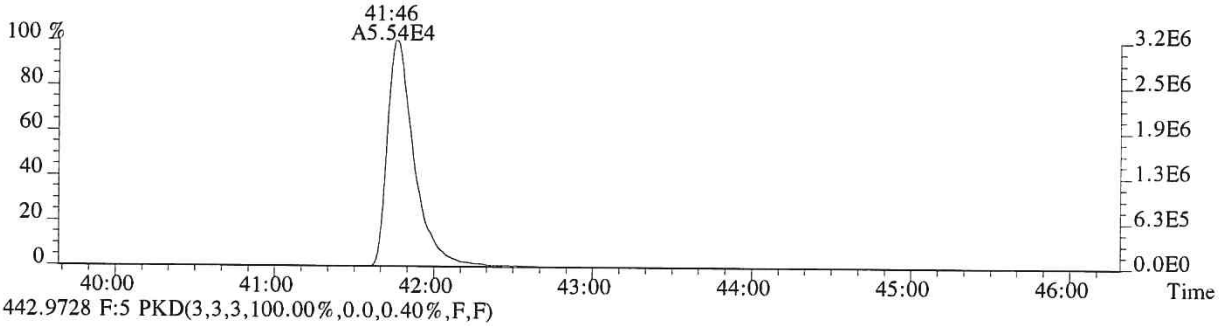
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,492.0,0.40%,F,T)



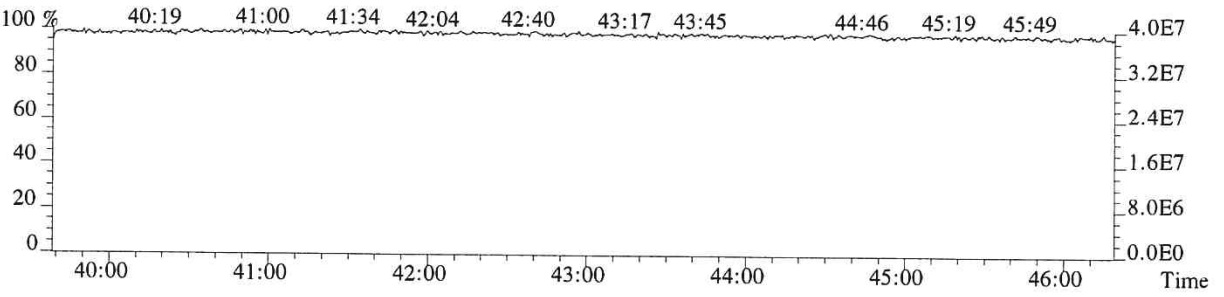
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1312.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,640.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060458

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
LCS

Run #18 Filename P616289 Samp: 1 Inj: 1 Acquired: 29-DEC-18 23:27:13
Processed: 30-DEC-18 09:23:53 Sample ID: EQ1800529-02

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:28	2.361e+03	3.014e+03	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:30	2.019e+04	1.284e+04	1.57	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:32	2.035e+04	1.320e+04	1.54	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:23	1.813e+04	1.478e+04	1.23	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	1.882e+04	1.521e+04	1.24	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:02	1.731e+04	1.389e+04	1.25	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:48	1.584e+04	1.286e+04	1.23	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:05	1.311e+04	1.251e+04	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	1.161e+04	1.177e+04	0.99	yes	no	1.463
10	Unk	OCDF	40:36	1.447e+04	1.570e+04	0.92	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:29	1.837e+03	2.458e+03	0.75	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:50	1.488e+04	9.489e+03	1.57	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:11	1.324e+04	1.051e+04	1.26	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:16	1.326e+04	1.018e+04	1.30	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:30	1.361e+04	1.078e+04	1.26	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:59	9.550e+03	9.208e+03	1.04	yes	no	1.112
17	Unk	OCDD	40:26	1.235e+04	1.373e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:26	2.399e+04	3.091e+04	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:28	4.145e+04	2.610e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:31	4.058e+04	2.520e+04	1.61	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:22	1.862e+04	3.558e+04	0.52	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:29	2.010e+04	3.849e+04	0.52	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	1.848e+04	3.473e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	1.715e+04	3.306e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	1.207e+04	2.628e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	1.061e+04	2.351e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:27	1.280e+04	1.634e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:49	3.120e+04	2.020e+04	1.54	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:10	2.732e+04	2.186e+04	1.25	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	2.413e+04	1.943e+04	1.24	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	2.451e+04	2.331e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:25	2.128e+04	2.378e+04	0.89	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:40	3.619e+04	4.527e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	4.612e+04	3.662e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:29	1.756e+04				no	1.086

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Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary CLIENT ID.
LCS

Run #18 Filename P616289 Samp: 1 Inj: 1 Acquired: 29-DEC-18 23:27:13
Processed: 30-DEC-18 09:23:53 LAB. ID: EQ1800529-02

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.29e+05	5.52e+02	6.0e+02	4.12e+05	1.71e+03	2.4e+02
2	1,2,3,7,8-PeCDF	3.63e+06	6.36e+02	5.7e+03	2.33e+06	1.01e+03	2.3e+03
3	2,3,4,7,8-PeCDF	3.96e+06	6.36e+02	6.2e+03	2.55e+06	1.01e+03	2.5e+03
4	1,2,3,4,7,8-HxCDF	3.94e+06	8.44e+02	4.7e+03	3.19e+06	3.80e+02	8.4e+03
5	1,2,3,6,7,8-HxCDF	4.03e+06	8.44e+02	4.8e+03	3.27e+06	3.80e+02	8.6e+03
6	2,3,4,6,7,8-HxCDF	3.85e+06	8.44e+02	4.6e+03	3.08e+06	3.80e+02	8.1e+03
7	1,2,3,7,8,9-HxCDF	3.50e+06	8.44e+02	4.1e+03	2.81e+06	3.80e+02	7.4e+03
8	1,2,3,4,6,7,8-HpCDF	2.96e+06	1.76e+03	1.7e+03	2.79e+06	1.28e+03	2.2e+03
9	1,2,3,4,7,8,9-HpCDF	2.59e+06	1.76e+03	1.5e+03	2.70e+06	1.28e+03	2.1e+03
10	OCDF	2.90e+06	5.20e+02	5.6e+03	3.00e+06	1.08e+03	2.8e+03
11	2,3,7,8-TCDD	3.02e+05	2.41e+03	1.3e+02	3.95e+05	1.52e+03	2.6e+02
12	1,2,3,7,8-PeCDD	2.82e+06	5.44e+02	5.2e+03	1.84e+06	5.36e+02	3.4e+03
13	1,2,3,4,7,8-HxCDD	2.87e+06	3.92e+02	7.3e+03	2.26e+06	6.04e+02	3.7e+03
14	1,2,3,6,7,8-HxCDD	2.98e+06	3.92e+02	7.6e+03	2.30e+06	6.04e+02	3.8e+03
15	1,2,3,7,8,9-HxCDD	3.00e+06	3.92e+02	7.7e+03	2.37e+06	6.04e+02	3.9e+03
16	1,2,3,4,6,7,8-HpCDD	2.15e+06	9.00e+02	2.4e+03	2.07e+06	6.24e+02	3.3e+03
17	OCDD	2.43e+06	1.24e+03	2.0e+03	2.72e+06	2.74e+03	9.9e+02
18	13C-2,3,7,8-TCDF	3.45e+06	6.74e+03	5.1e+02	4.43e+06	4.20e+03	1.1e+03
19	13C-1,2,3,7,8-PeCDF	7.36e+06	7.04e+02	1.0e+04	4.60e+06	7.64e+02	6.0e+03
20	13C-2,3,4,7,8-PeCDF	7.80e+06	7.04e+02	1.1e+04	4.80e+06	7.64e+02	6.3e+03
21	13C-1,2,3,4,7,8-HxCDF	4.01e+06	8.84e+02	4.5e+03	7.55e+06	1.64e+03	4.6e+03
22	13C-1,2,3,6,7,8-HxCDF	4.39e+06	8.84e+02	5.0e+03	8.46e+06	1.64e+03	5.2e+03
23	13C-2,3,4,6,7,8-HxCDF	4.07e+06	8.84e+02	4.6e+03	7.60e+06	1.64e+03	4.6e+03
24	13C-1,2,3,7,8,9-HxCDF	3.77e+06	8.84e+02	4.3e+03	7.35e+06	1.64e+03	4.5e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.75e+06	2.09e+03	1.3e+03	5.91e+06	4.18e+03	1.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.40e+06	2.09e+03	1.2e+03	5.35e+06	4.18e+03	1.3e+03
27	13C-2,3,7,8-TCDD	2.02e+06	1.11e+04	1.8e+02	2.62e+06	3.68e+03	7.1e+02
28	13C-1,2,3,7,8-PeCDD	6.15e+06	7.40e+02	8.3e+03	3.98e+06	1.00e+03	4.0e+03
29	13C-1,2,3,4,7,8-HxCDD	5.88e+06	1.35e+03	4.4e+03	4.67e+06	6.88e+02	6.8e+03
30	13C-1,2,3,6,7,8-HxCDD	5.38e+06	1.35e+03	4.0e+03	4.36e+06	6.88e+02	6.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	5.57e+06	5.00e+02	1.1e+04	5.24e+06	6.00e+02	8.7e+03
32	13C-OCDD	4.25e+06	1.47e+03	2.9e+03	4.73e+06	2.80e+02	1.7e+04
33	13C-1,2,3,4-TCDD	5.36e+06	1.11e+04	4.8e+02	6.76e+06	3.68e+03	1.8e+03
34	13C-1,2,3,7,8,9-HxCDD	1.03e+07	1.35e+03	7.6e+03	8.13e+06	6.88e+02	1.2e+04
35	37Cl-2,3,7,8-TCDD	2.79e+06	1.60e+03	1.7e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.412e{+}03 + 1.520e{+}03) \times 2000}{(2.024e{+}06 + 2.618e{+}06) \times (\quad) \times 1.049}$$

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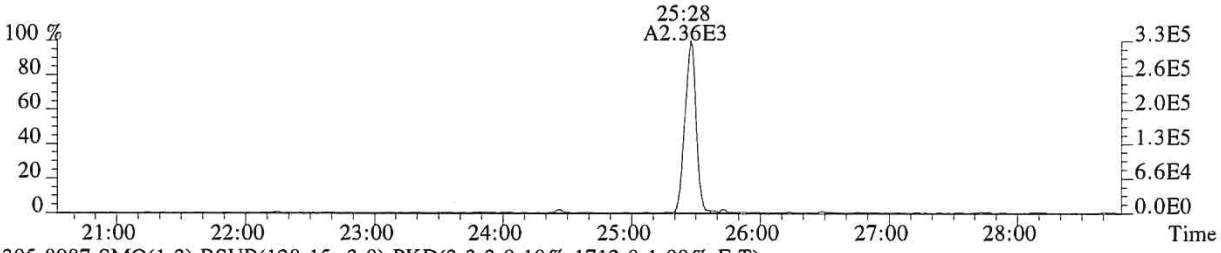
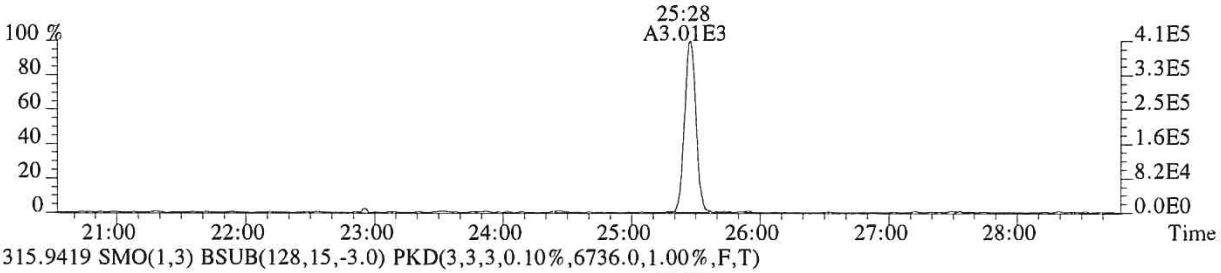
File:P616289 #1-587 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

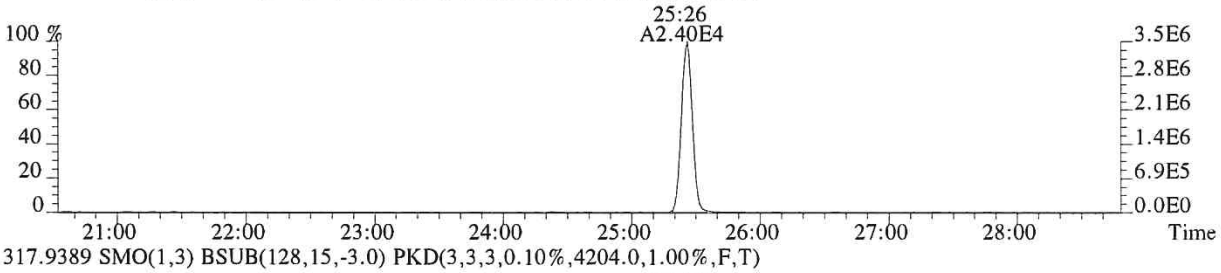
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,552.0,1.00%,F,T)



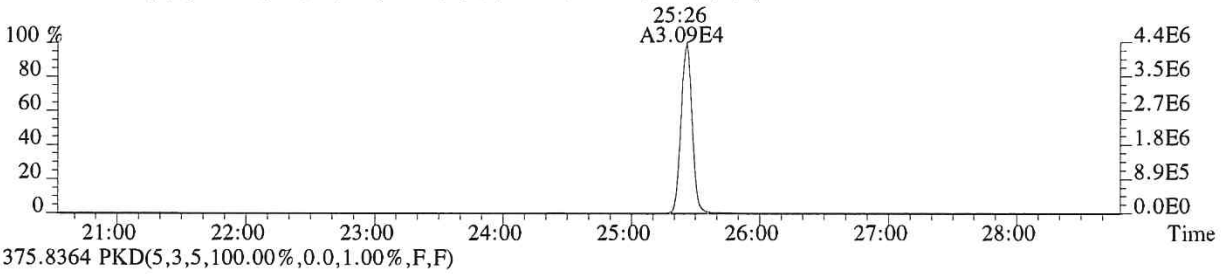
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1712.0,1.00%,F,T)



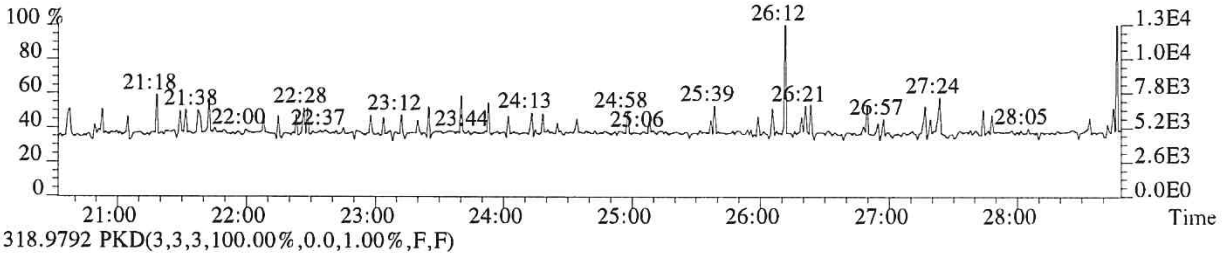
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6736.0,1.00%,F,T)



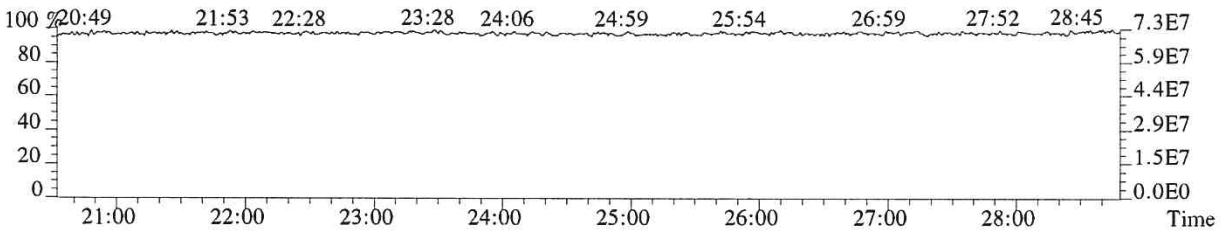
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4204.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

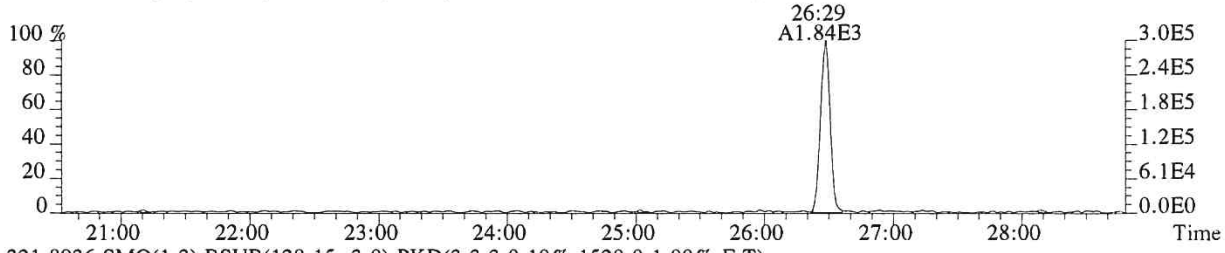


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

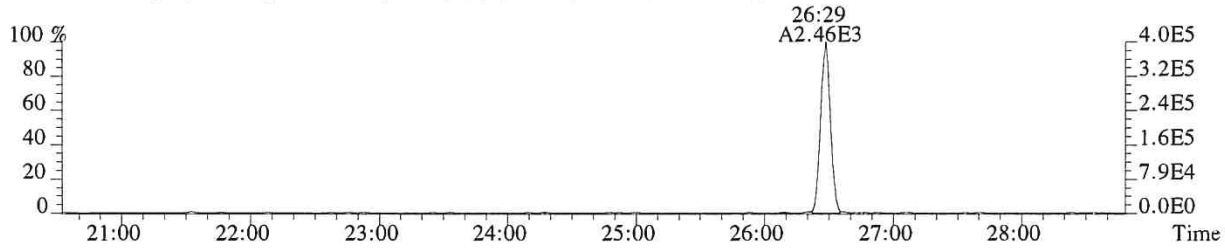


060461

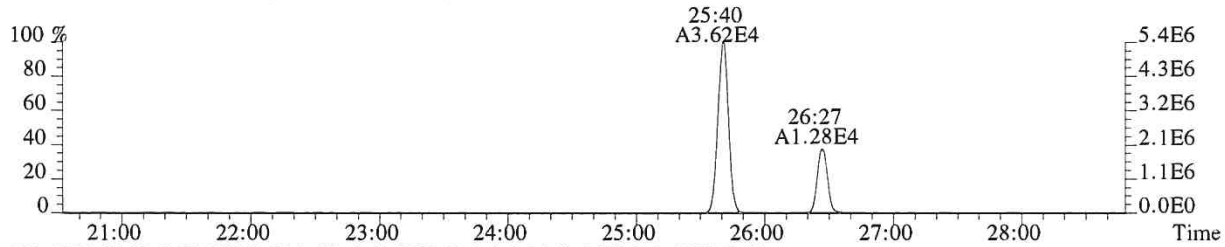
File:P616289 #1-587 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2412.0,1.00%,F,T)



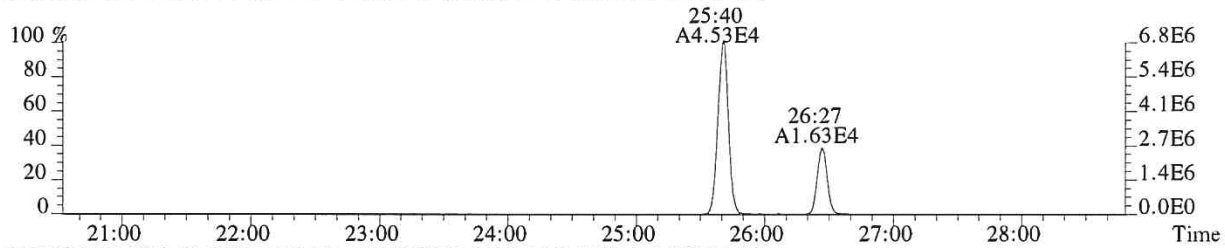
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1520.0,1.00%,F,T)



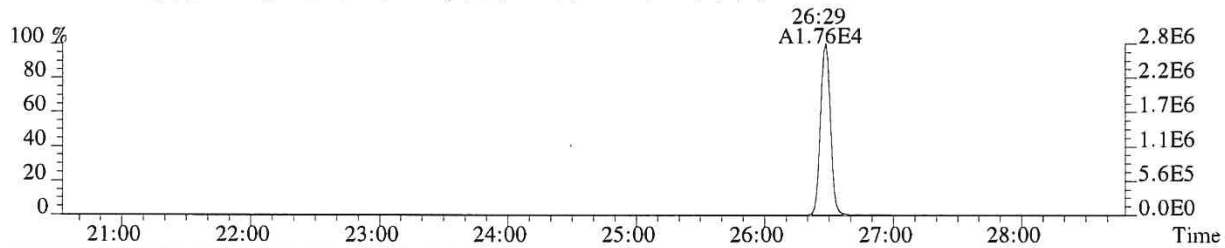
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11096.0,1.00%,F,T)



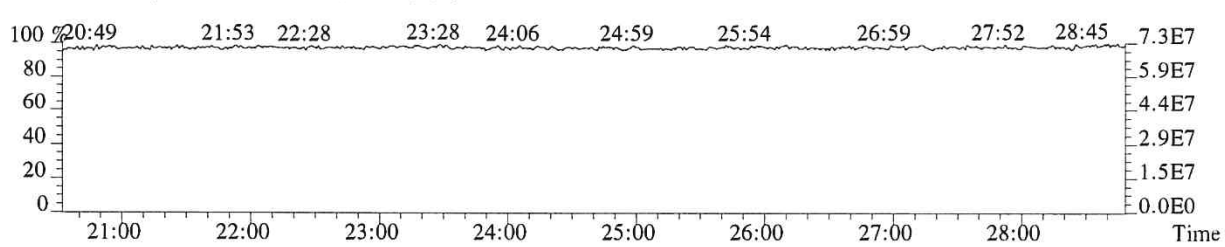
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3676.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1600.0,1.00%,F,T)

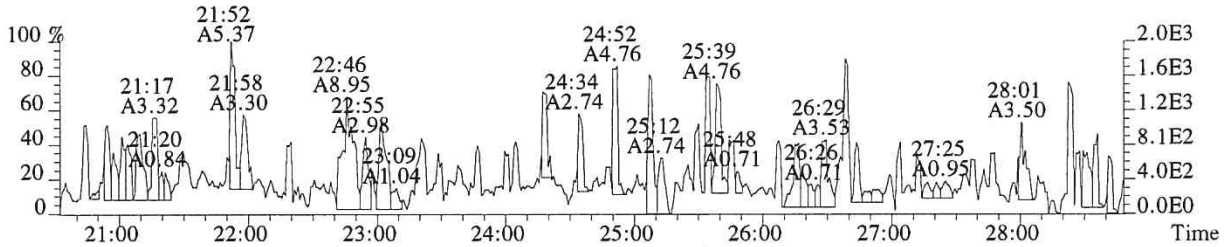


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

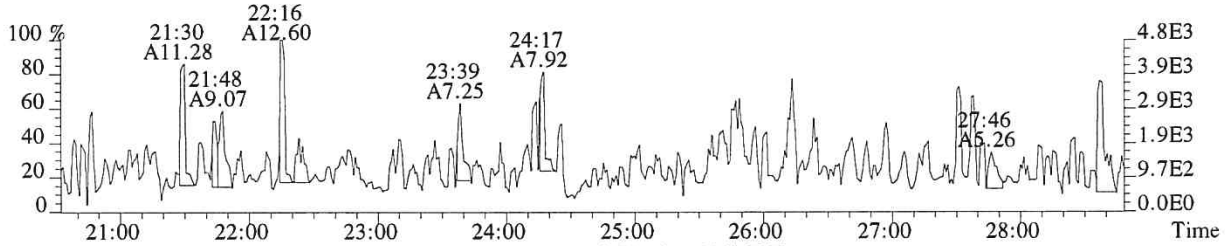


060462

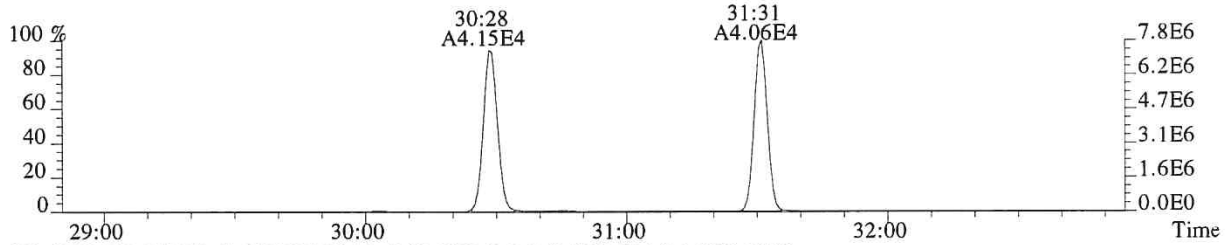
File:P616289 #1-587 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,400.0,1.00%,F,T)



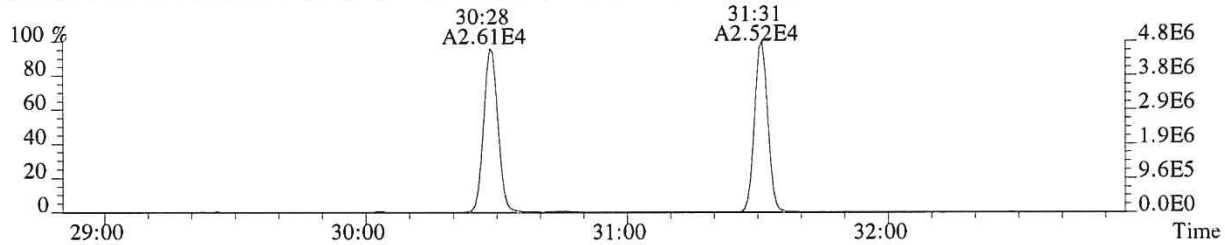
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1556.0,1.00%,F,T)



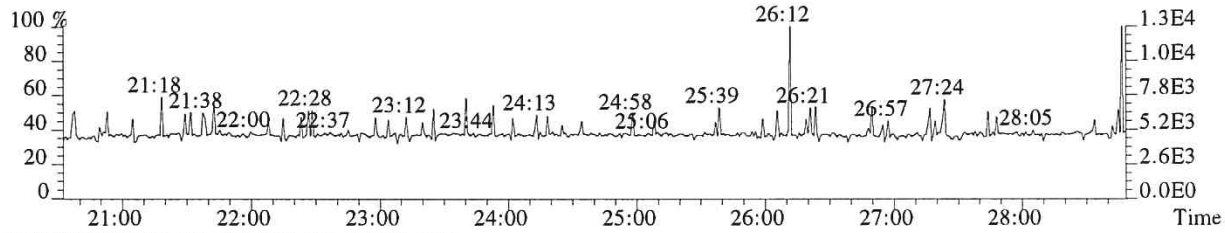
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)



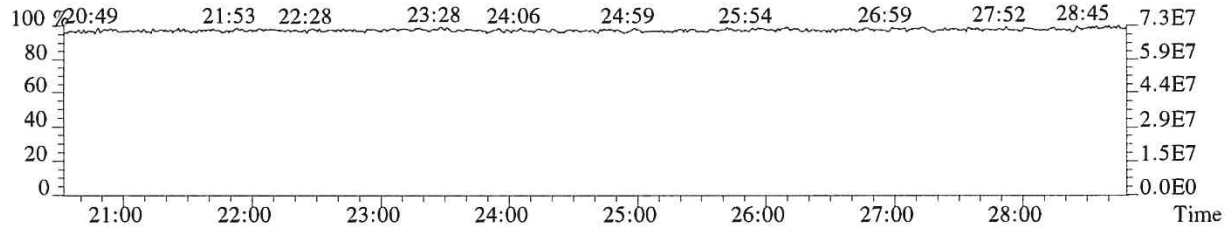
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,764.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



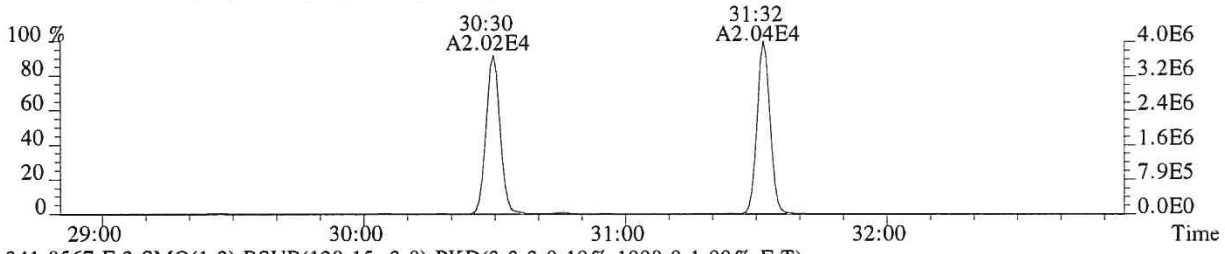
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



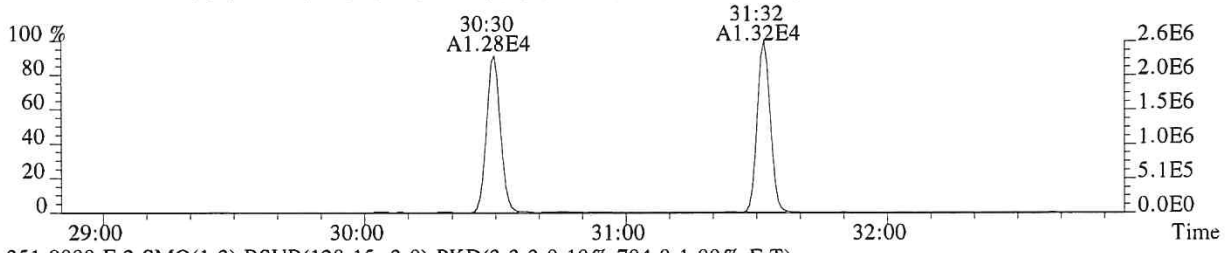
060463

File:P616289 #1-367 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

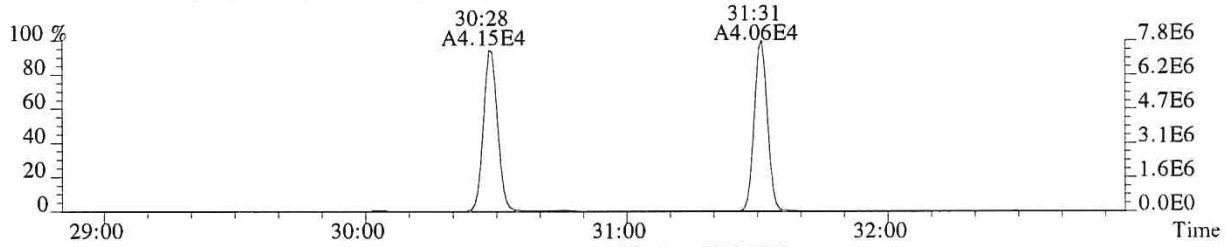
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,636.0,1.00%,F,T)



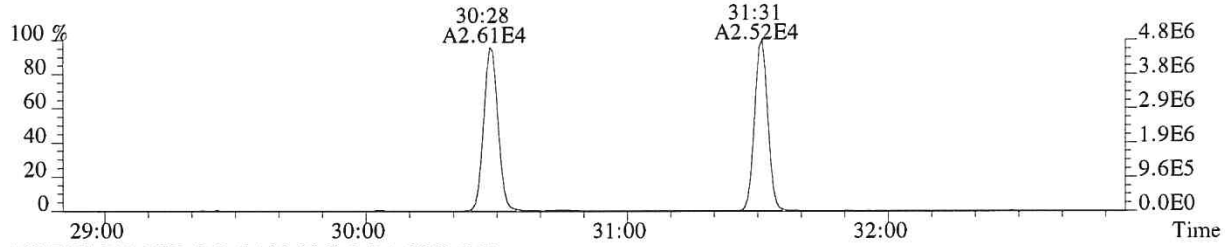
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1008.0,1.00%,F,T)



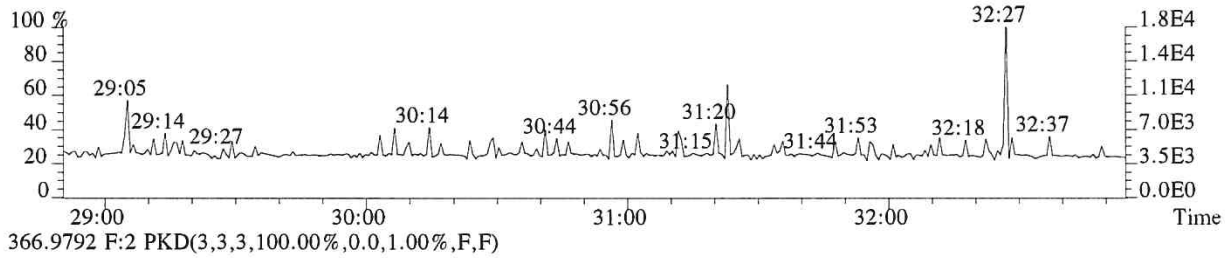
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)



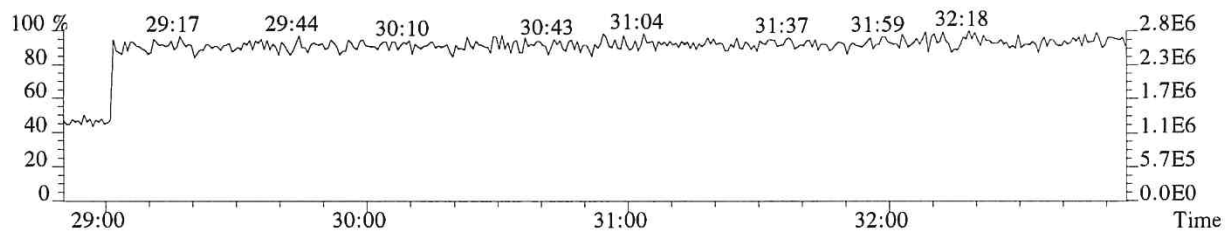
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,764.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

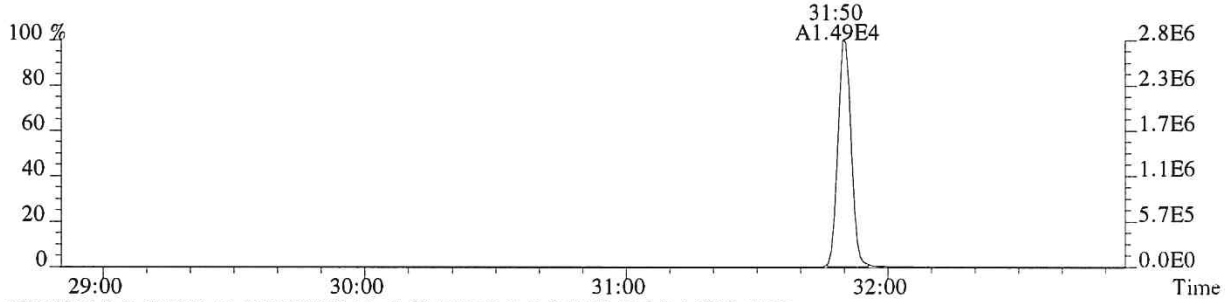


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

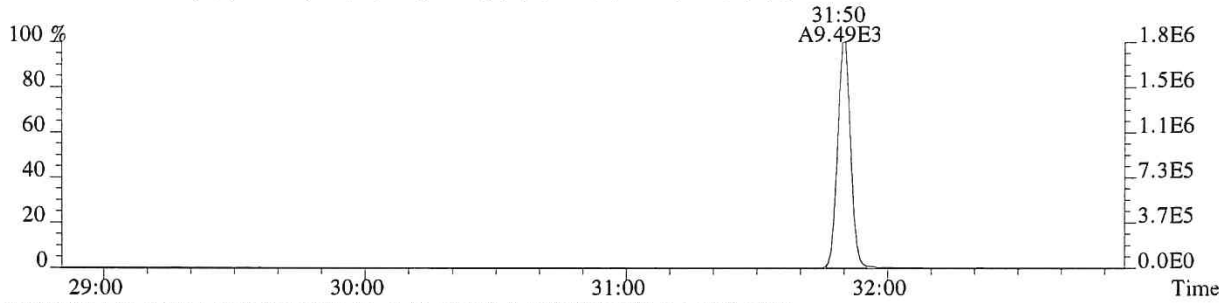


060464

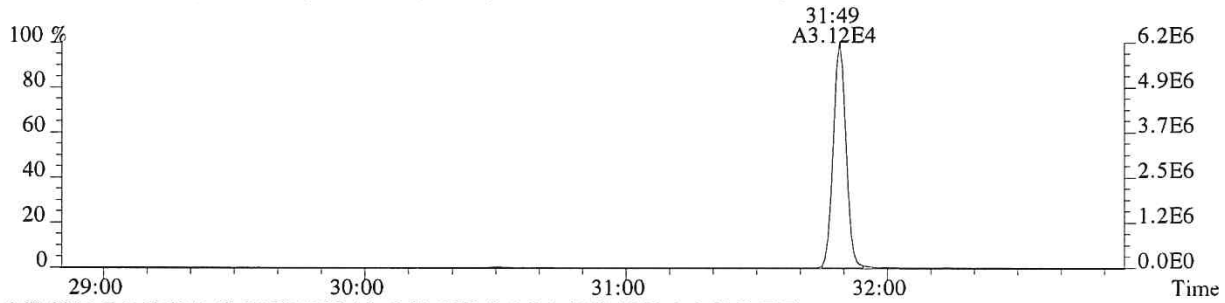
File:P616289 #1-367 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:LCS
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,544.0,1.00%,F,T)



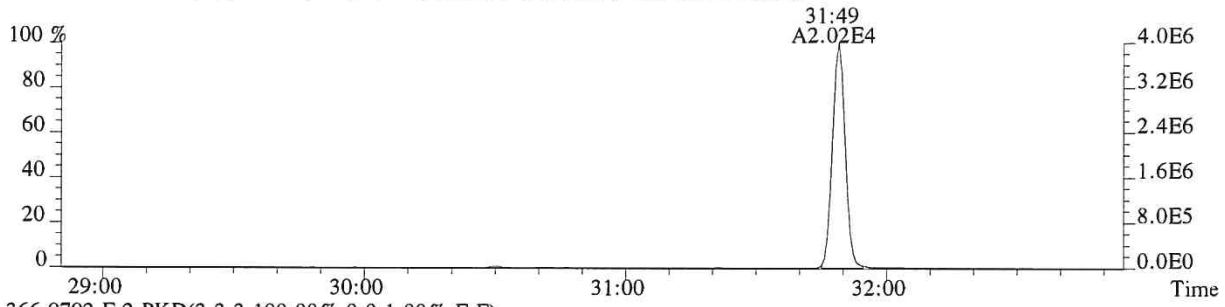
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,536.0,1.00%,F,T)



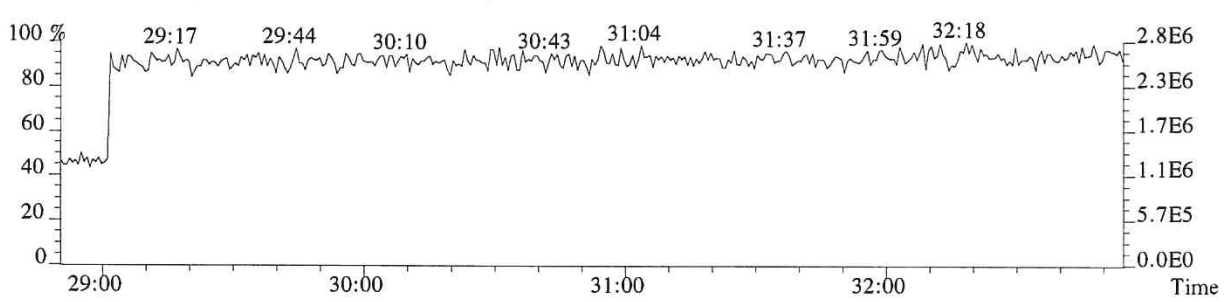
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,740.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1004.0,1.00%,F,T)



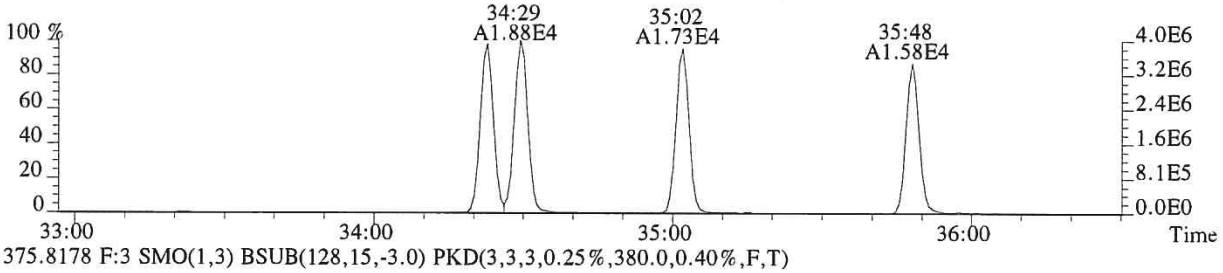
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



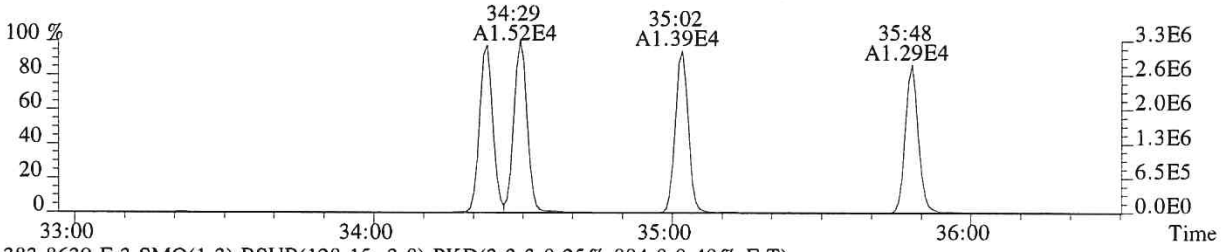
060465

File:P616289 #1-321 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

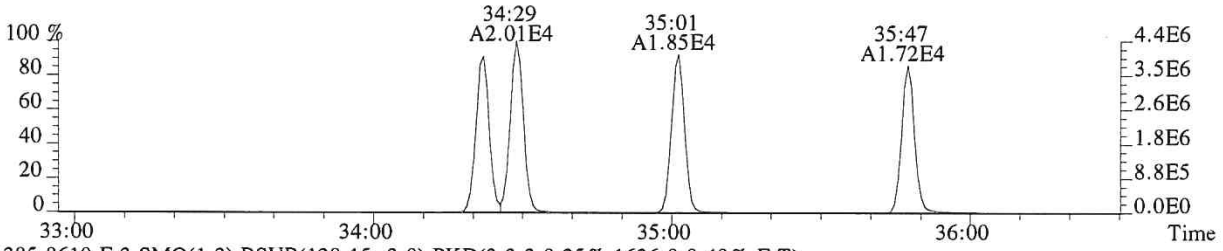
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,844.0,0.40%,F,T)



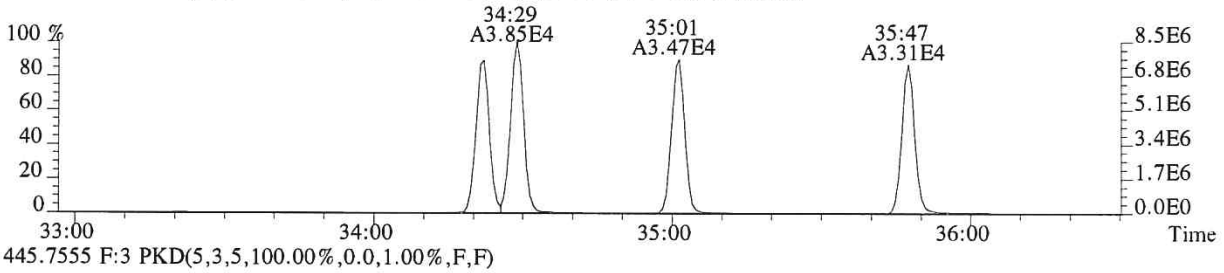
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,380.0,0.40%,F,T)



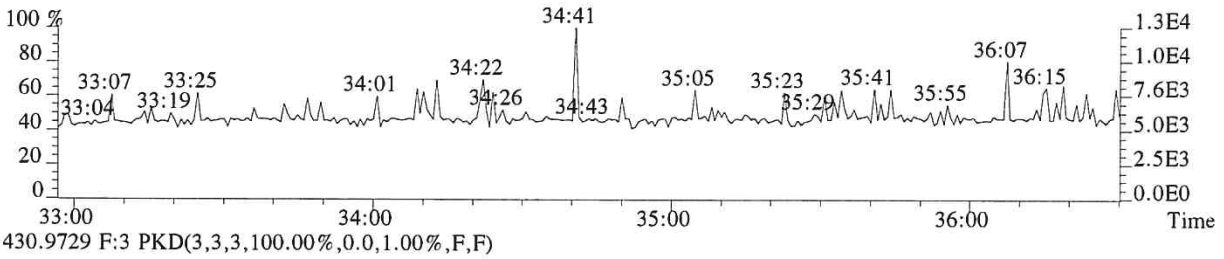
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,884.0,0.40%,F,T)



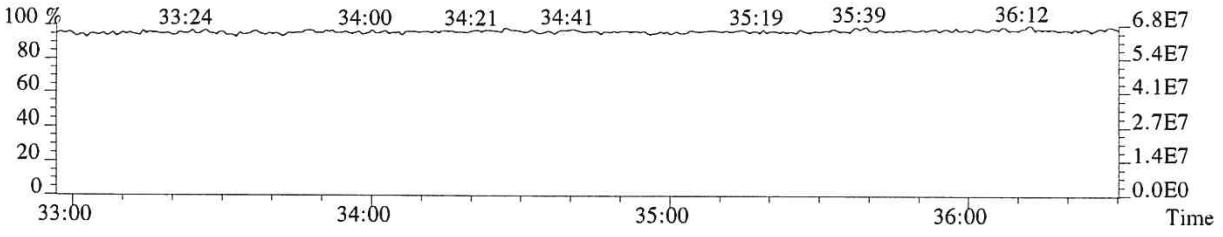
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1636.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

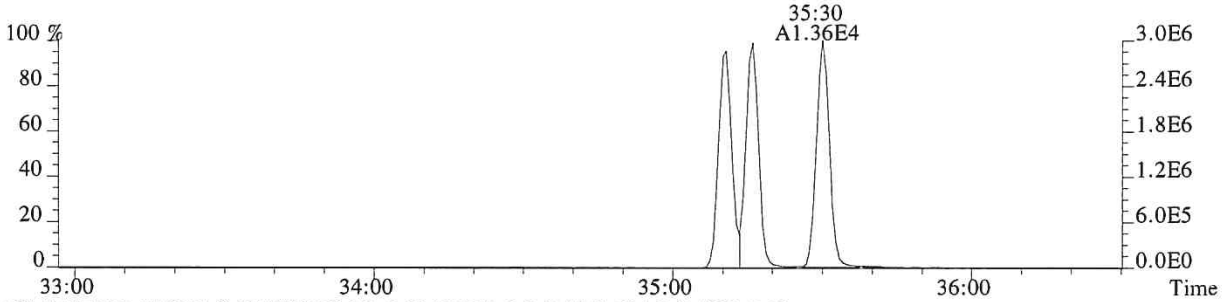


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

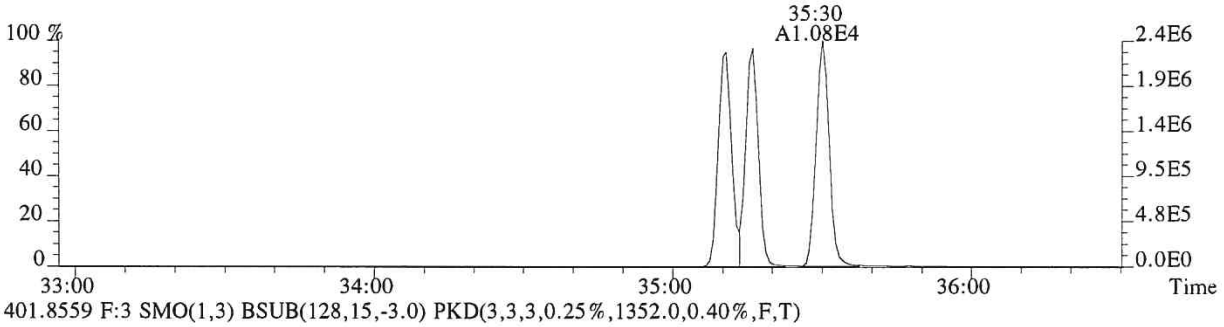


060466

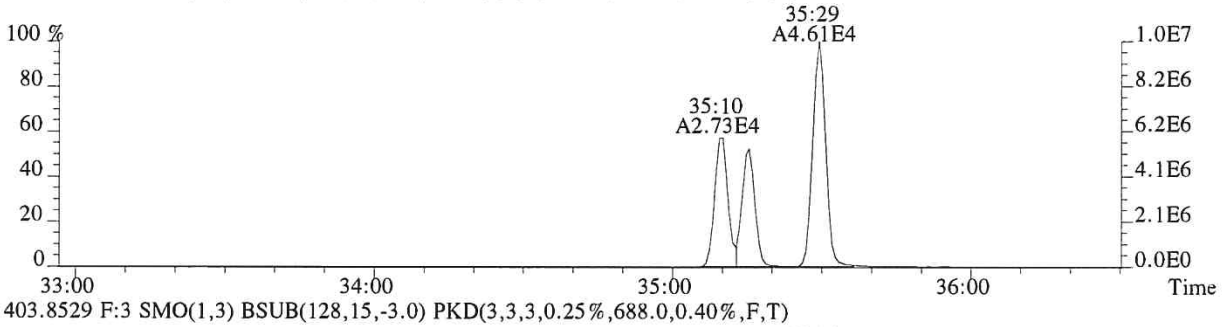
File:P616289 #1-321 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,392.0,0.40%,F,T)



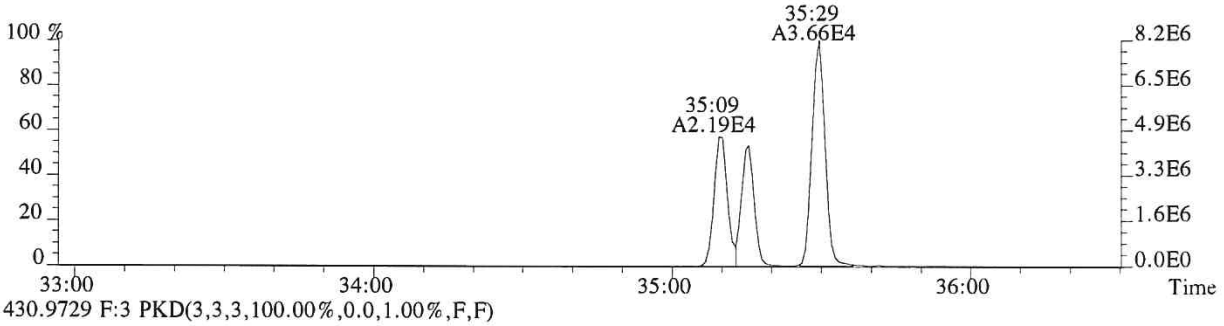
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,604.0,0.40%,F,T)



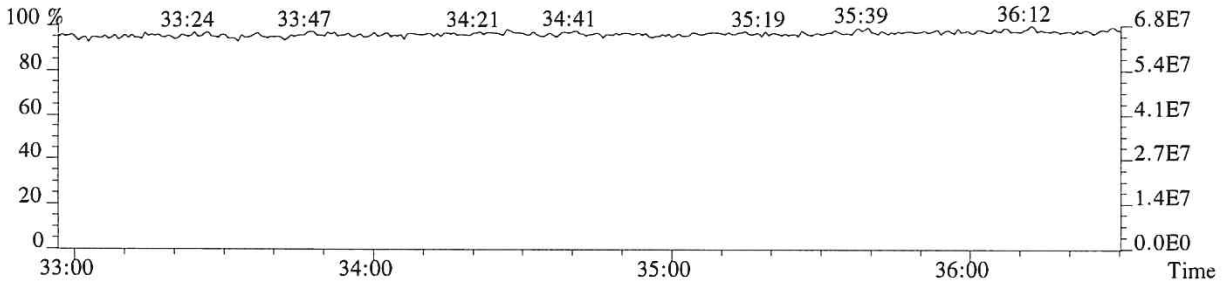
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1352.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,688.0,0.40%,F,T)

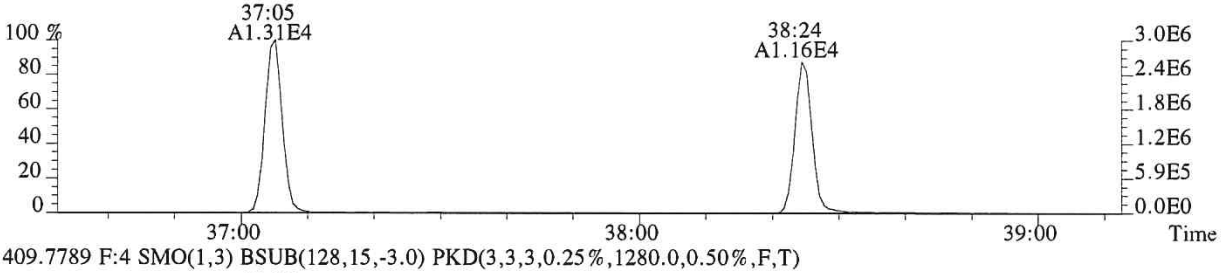


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

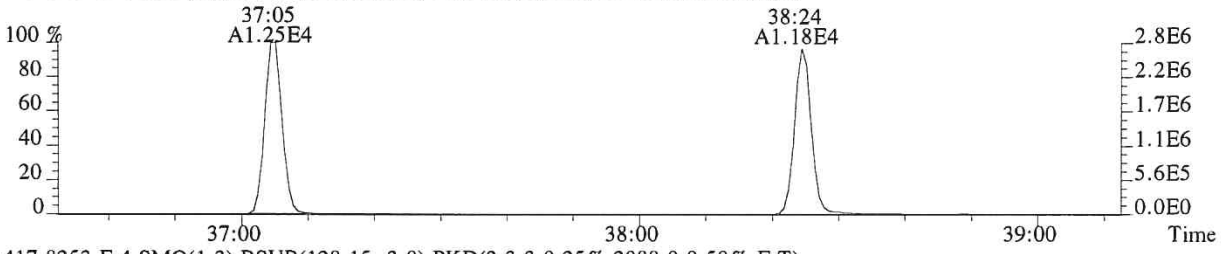


060467

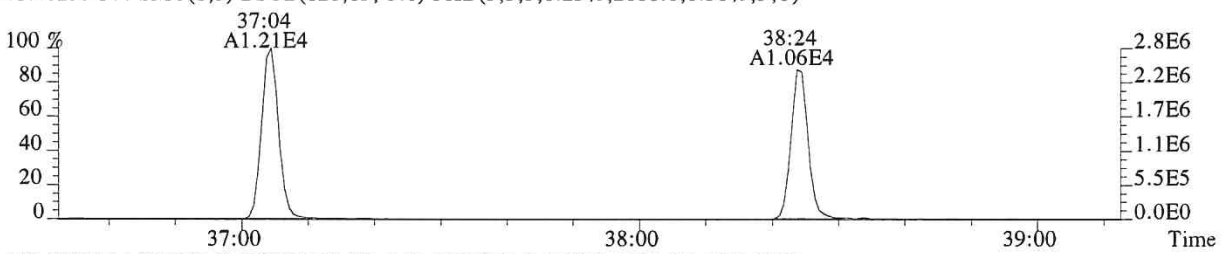
File:P616289 #1-241 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1764.0,0.50%,F,T)



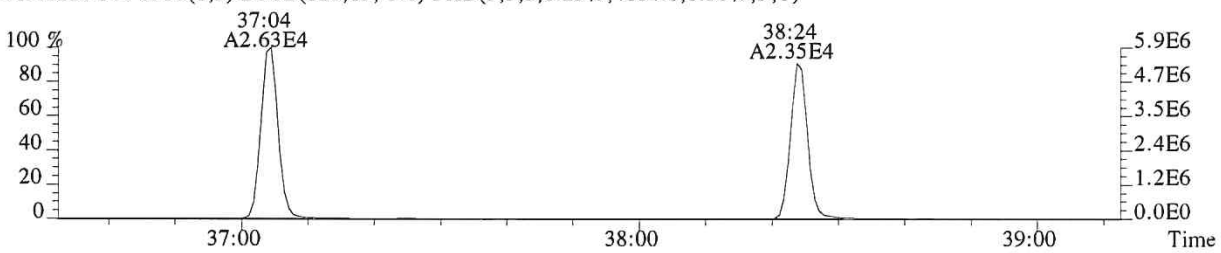
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1280.0,0.50%,F,T)



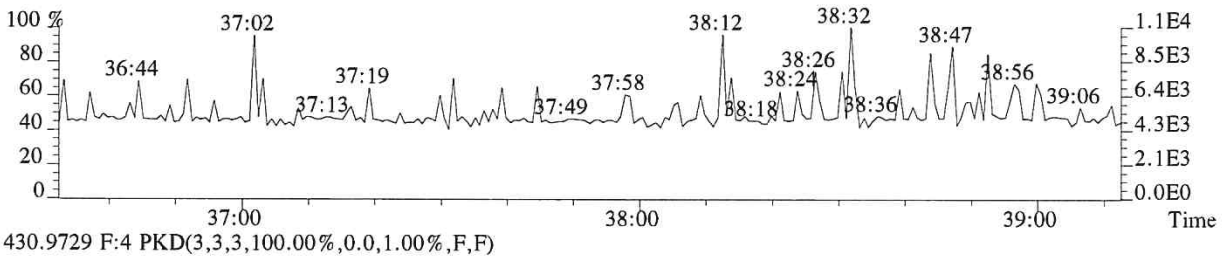
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2088.0,0.50%,F,T)



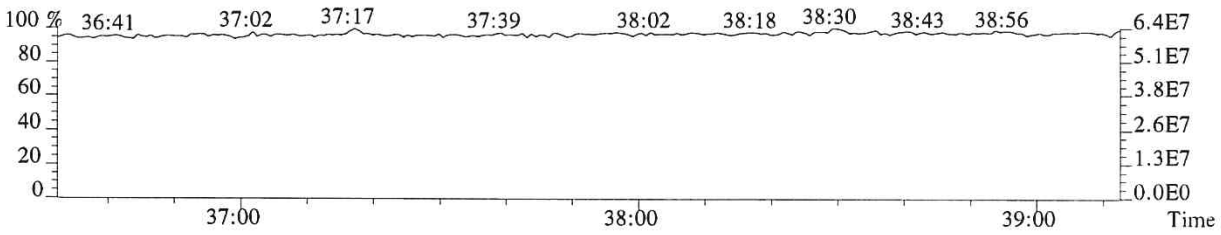
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4184.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

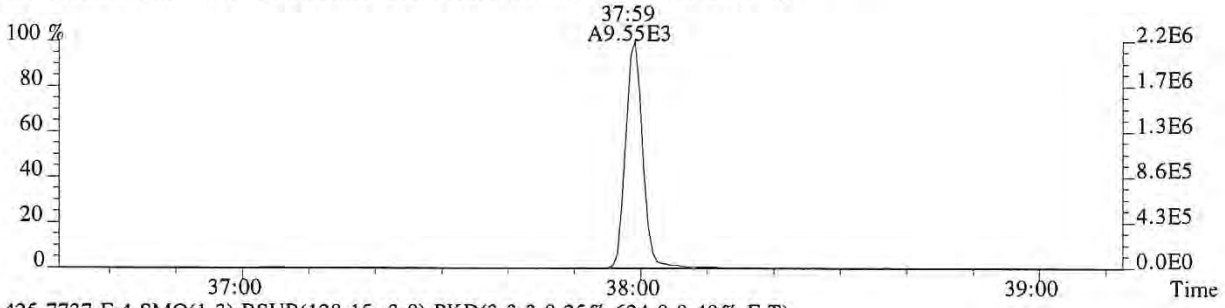


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

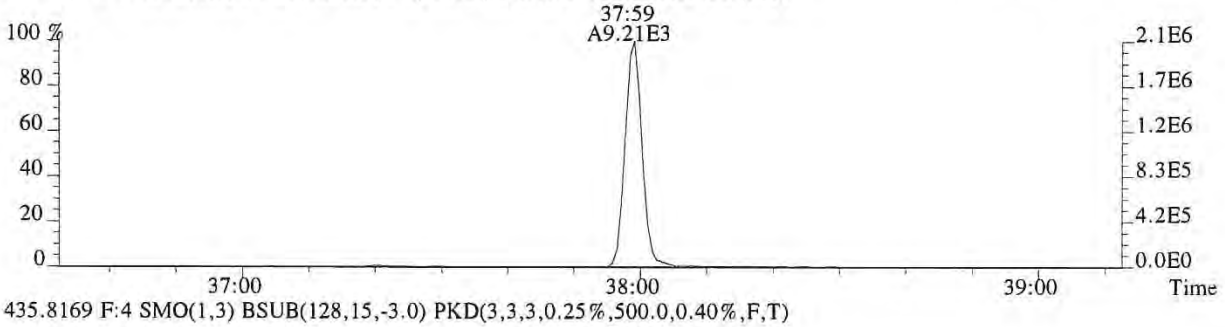


060468

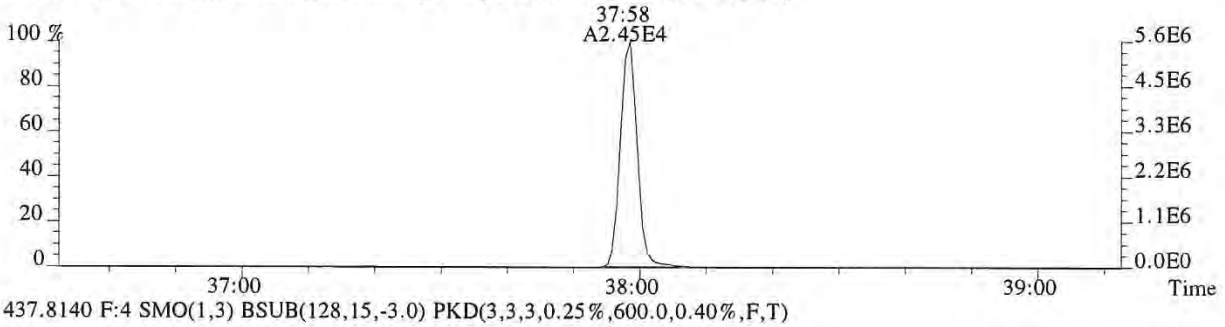
File:P616289 #1-241 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,900.0,0.40%,F,T)



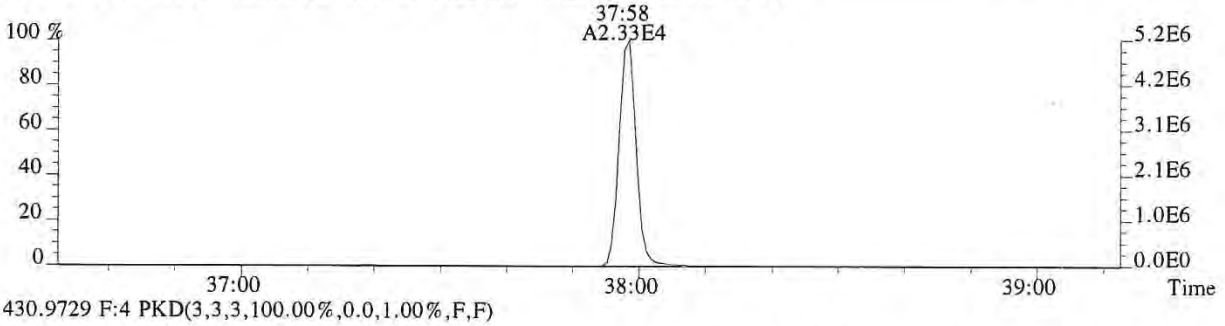
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,624.0,0.40%,F,T)



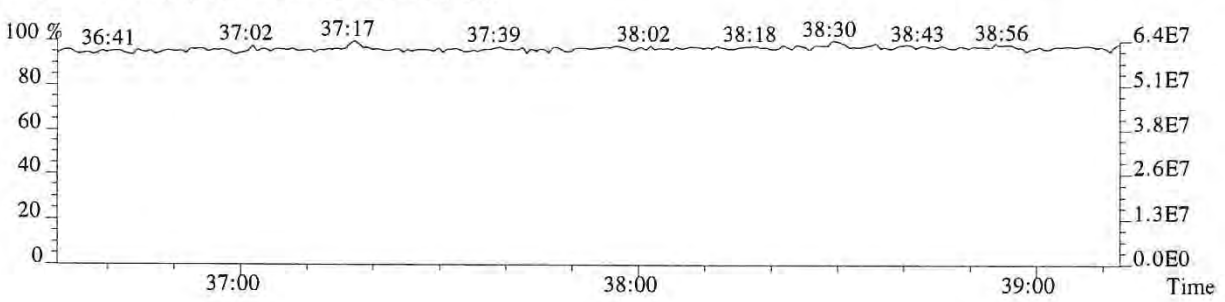
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,500.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.40%,F,T)

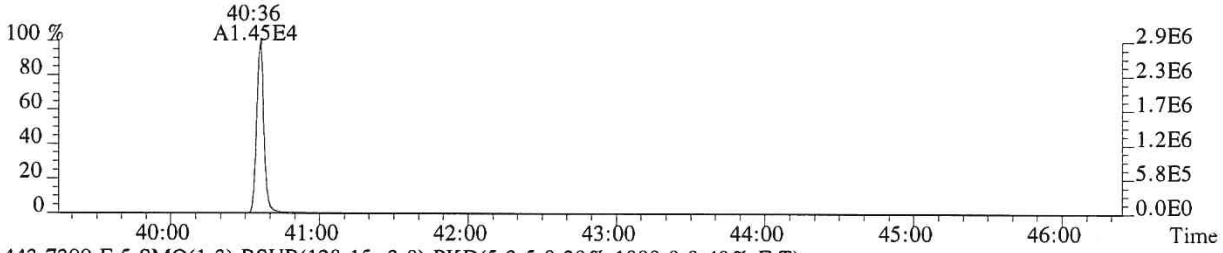


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

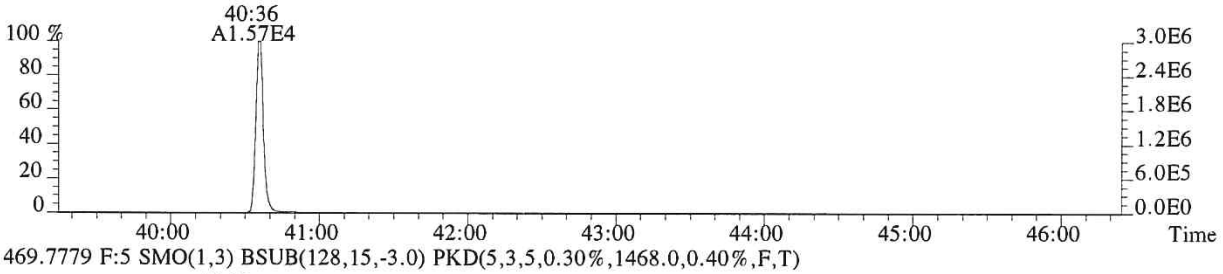


File:P616289 #1-645 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

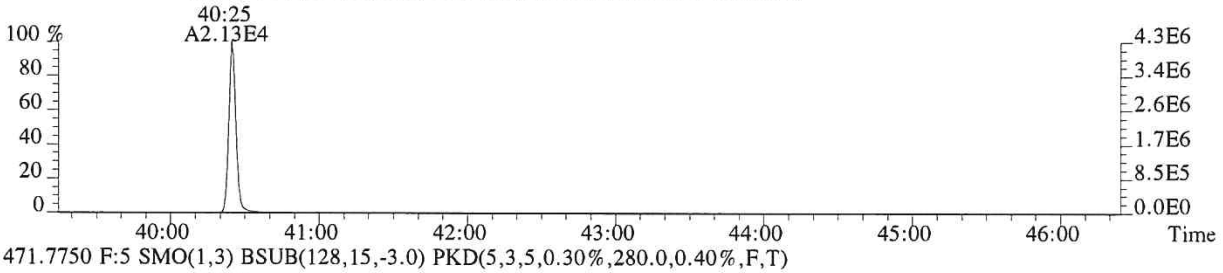
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,520.0,0.40%,F,T)



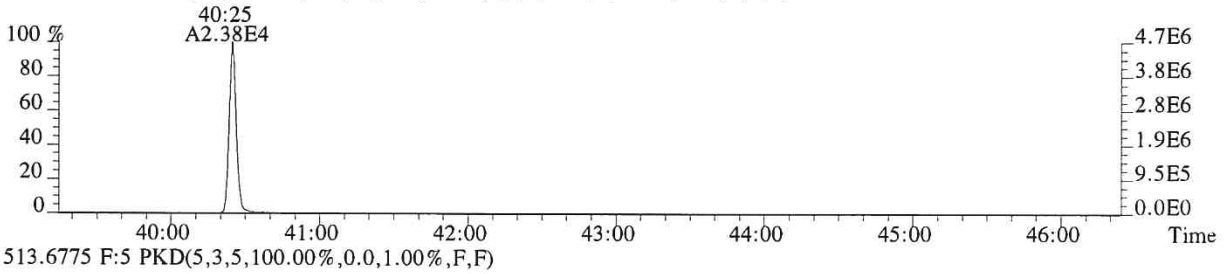
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1080.0,0.40%,F,T)



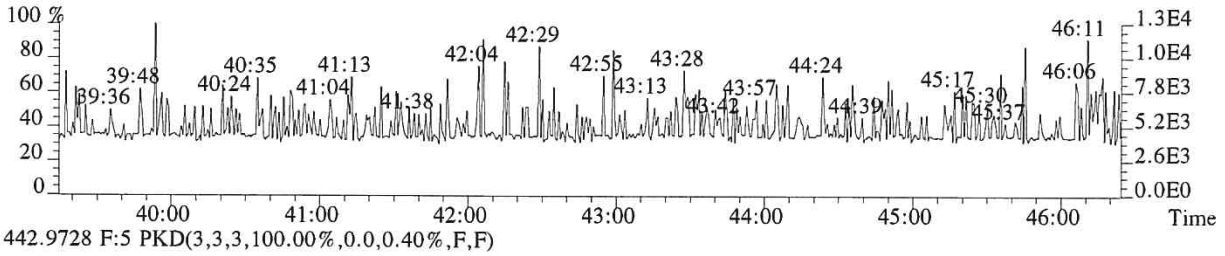
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1468.0,0.40%,F,T)



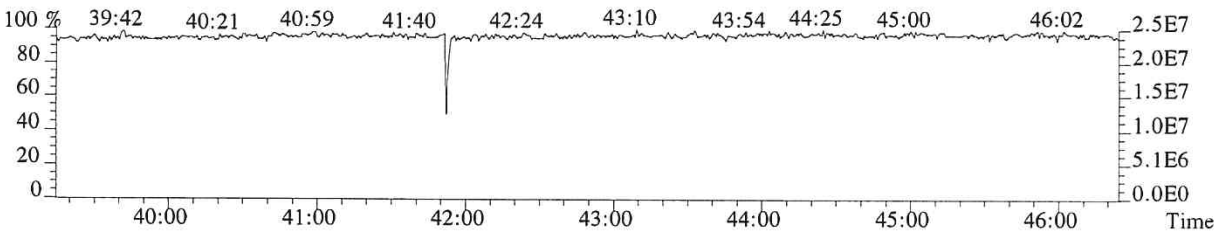
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,280.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

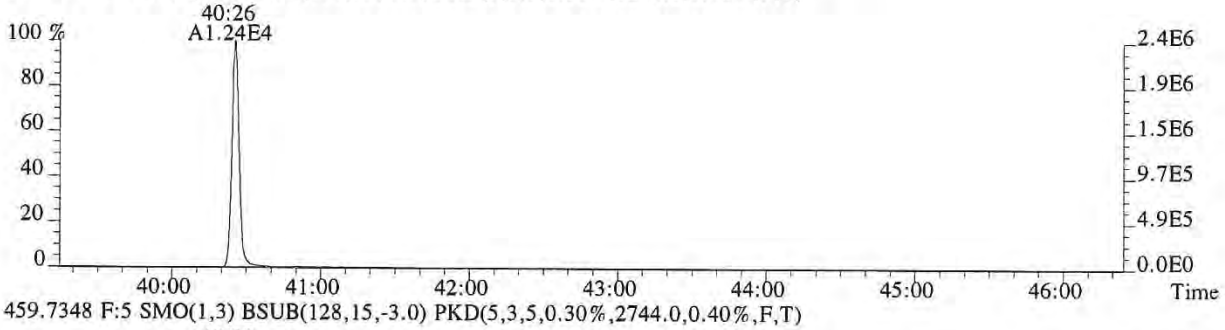


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

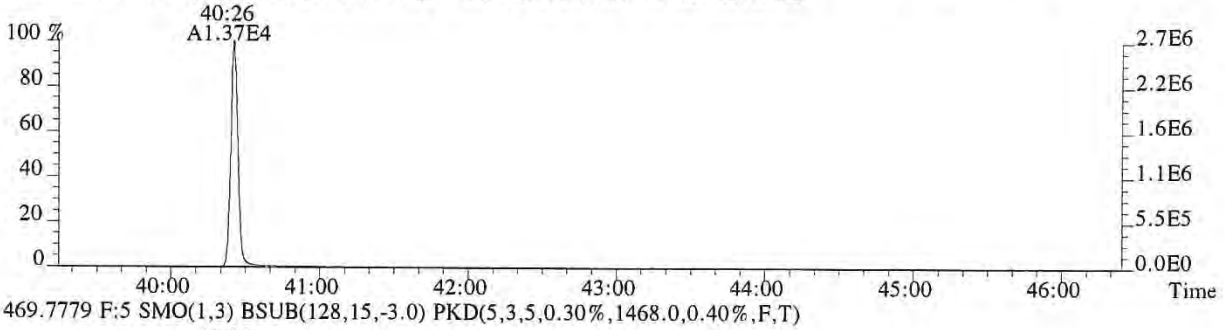


060470

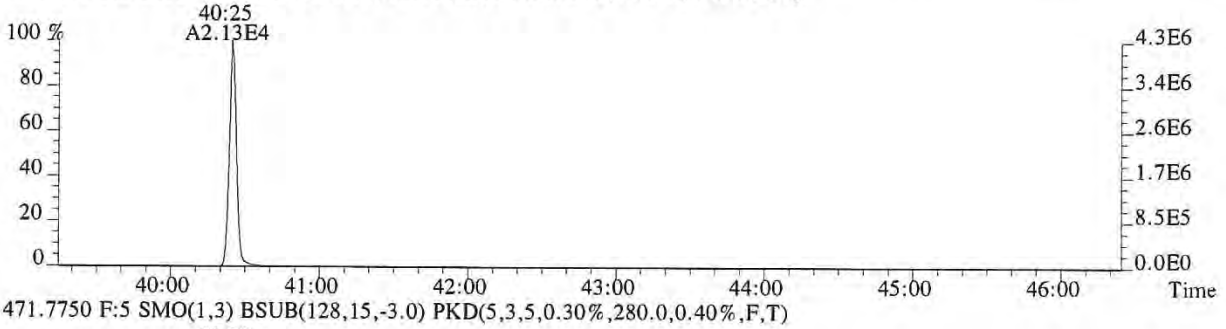
File:P616289 #1-645 Acq:29-DEC-2018 23:27:13 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1244.0,0.40%,F,T)



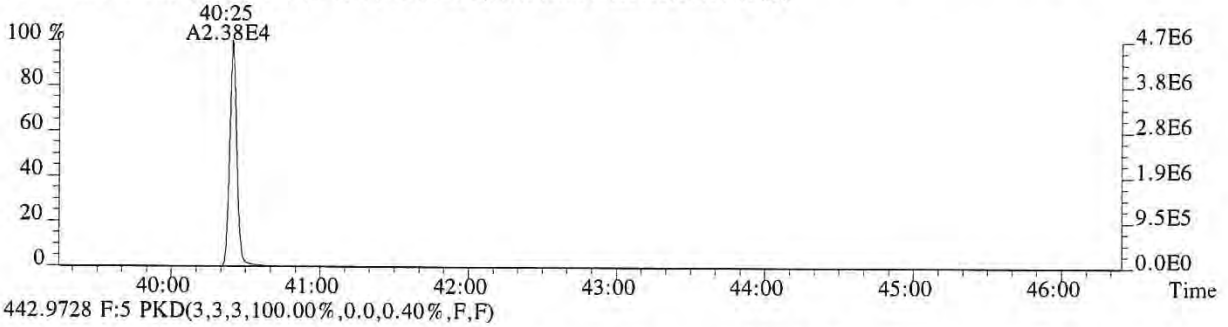
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2744.0,0.40%,F,T)



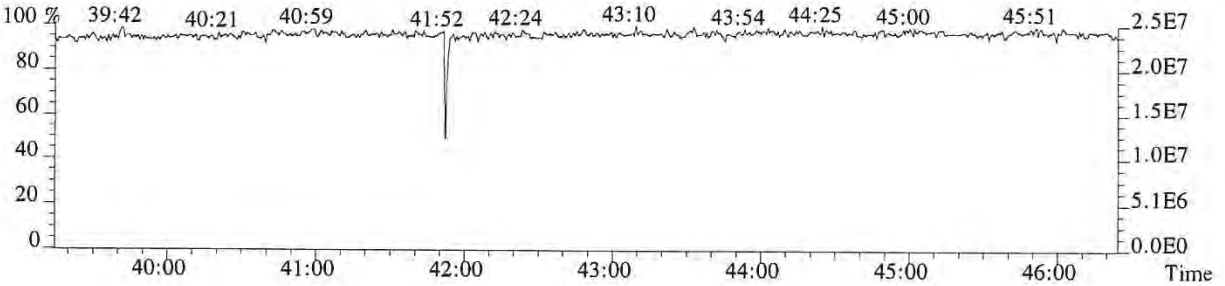
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1468.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,280.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060471

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
DLCS

Run #19 Filename P616290 Samp: 1 Inj: 1 Acquired: 30-DEC-18 00:16:25
Processed: 30-DEC-18 09:24:48 Sample ID: EQ1800529-03

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:28	2.580e+03	3.309e+03	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:30	2.308e+04	1.504e+04	1.53	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:32	2.304e+04	1.475e+04	1.56	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:23	2.005e+04	1.601e+04	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	2.032e+04	1.679e+04	1.21	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:02	1.943e+04	1.575e+04	1.23	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:48	1.714e+04	1.425e+04	1.20	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:05	1.413e+04	1.370e+04	1.03	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:25	1.203e+04	1.186e+04	1.01	yes	no	1.463
10	Unk	OCDF	40:36	1.431e+04	1.605e+04	0.89	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:29	2.099e+03	2.810e+03	0.75	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:50	1.690e+04	1.101e+04	1.53	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:11	1.451e+04	1.126e+04	1.29	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:16	1.430e+04	1.150e+04	1.24	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:30	1.479e+04	1.190e+04	1.24	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:59	1.016e+04	1.006e+04	1.01	yes	no	1.112
17	Unk	OCDD	40:26	1.227e+04	1.348e+04	0.91	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:26	2.577e+04	3.267e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:29	4.614e+04	2.934e+04	1.57	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:31	4.450e+04	2.813e+04	1.58	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:22	1.975e+04	3.718e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:29	2.195e+04	4.066e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	1.971e+04	3.708e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	1.831e+04	3.406e+04	0.54	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	1.248e+04	2.792e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	1.068e+04	2.386e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:27	1.436e+04	1.803e+04	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:49	3.460e+04	2.205e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:10	2.909e+04	2.288e+04	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	2.558e+04	2.038e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	2.532e+04	2.363e+04	1.07	yes	no	0.857
32	IS	13C-OCDD	40:25	2.133e+04	2.326e+04	0.92	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:40	3.624e+04	4.531e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	4.509e+04	3.590e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:29	1.961e+04				no	1.086

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
DLCS

Run #19 Filename P616290 Samp: 1 Inj: 1 Acquired: 30-DEC-18 00:16:25
Processed: 30-DEC-18 09:24:48 LAB. ID: EQ1800529-03

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.57e+05	4.32e+02	8.3e+02	4.50e+05	1.64e+03	2.7e+02
2	1,2,3,7,8-PeCDF	4.21e+06	4.48e+02	9.4e+03	2.77e+06	6.76e+02	4.1e+03
3	2,3,4,7,8-PeCDF	4.43e+06	4.48e+02	9.9e+03	2.84e+06	6.76e+02	4.2e+03
4	1,2,3,4,7,8-HxCDF	4.32e+06	5.36e+02	8.1e+03	3.46e+06	5.64e+02	6.1e+03
5	1,2,3,6,7,8-HxCDF	4.31e+06	5.36e+02	8.0e+03	3.51e+06	5.64e+02	6.2e+03
6	2,3,4,6,7,8-HxCDF	4.35e+06	5.36e+02	8.1e+03	3.51e+06	5.64e+02	6.2e+03
7	1,2,3,7,8,9-HxCDF	3.76e+06	5.36e+02	7.0e+03	3.05e+06	5.64e+02	5.4e+03
8	1,2,3,4,6,7,8-HpCDF	3.21e+06	2.00e+03	1.6e+03	3.13e+06	1.78e+03	1.8e+03
9	1,2,3,4,7,8,9-HpCDF	2.66e+06	2.00e+03	1.3e+03	2.62e+06	1.78e+03	1.5e+03
10	OCDF	2.86e+06	4.68e+02	6.1e+03	3.20e+06	1.45e+03	2.2e+03
11	2,3,7,8-TCDD	3.37e+05	2.37e+03	1.4e+02	4.45e+05	1.23e+03	3.6e+02
12	1,2,3,7,8-PeCDD	3.24e+06	1.53e+03	2.1e+03	2.09e+06	6.00e+02	3.5e+03
13	1,2,3,4,7,8-HxCDD	3.24e+06	8.96e+02	3.6e+03	2.56e+06	6.56e+02	3.9e+03
14	1,2,3,6,7,8-HxCDD	3.13e+06	8.96e+02	3.5e+03	2.54e+06	6.56e+02	3.9e+03
15	1,2,3,7,8,9-HxCDD	3.21e+06	8.96e+02	3.6e+03	2.58e+06	6.56e+02	3.9e+03
16	1,2,3,4,6,7,8-HpCDD	2.33e+06	9.80e+02	2.4e+03	2.30e+06	8.20e+02	2.8e+03
17	OCDD	2.47e+06	8.32e+02	3.0e+03	2.71e+06	1.09e+03	2.5e+03
18	13C-2,3,7,8-TCDF	3.70e+06	6.19e+03	6.0e+02	4.61e+06	3.54e+03	1.3e+03
19	13C-1,2,3,7,8-PeCDF	8.04e+06	4.76e+02	1.7e+04	5.07e+06	1.42e+03	3.6e+03
20	13C-2,3,4,7,8-PeCDF	8.59e+06	4.76e+02	1.8e+04	5.44e+06	1.42e+03	3.8e+03
21	13C-1,2,3,4,7,8-HxCDF	4.23e+06	8.12e+02	5.2e+03	7.94e+06	1.36e+03	5.8e+03
22	13C-1,2,3,6,7,8-HxCDF	4.71e+06	8.12e+02	5.8e+03	8.65e+06	1.36e+03	6.4e+03
23	13C-2,3,4,6,7,8-HxCDF	4.40e+06	8.12e+02	5.4e+03	8.26e+06	1.36e+03	6.1e+03
24	13C-1,2,3,7,8,9-HxCDF	3.94e+06	8.12e+02	4.9e+03	7.42e+06	1.36e+03	5.5e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.84e+06	2.22e+03	1.3e+03	6.34e+06	1.80e+03	3.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.43e+06	2.22e+03	1.1e+03	5.35e+06	1.80e+03	3.0e+03
27	13C-2,3,7,8-TCDD	2.27e+06	1.11e+04	2.0e+02	2.88e+06	3.82e+03	7.5e+02
28	13C-1,2,3,7,8-PeCDD	6.63e+06	1.27e+03	5.2e+03	4.29e+06	9.56e+02	4.5e+03
29	13C-1,2,3,4,7,8-HxCDD	6.56e+06	1.23e+03	5.3e+03	5.17e+06	7.00e+02	7.4e+03
30	13C-1,2,3,6,7,8-HxCDD	5.59e+06	1.23e+03	4.5e+03	4.54e+06	7.00e+02	6.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	5.91e+06	4.56e+02	1.3e+04	5.54e+06	5.64e+02	9.8e+03
32	13C-OCDD	4.17e+06	7.24e+02	5.8e+03	4.59e+06	7.64e+02	6.0e+03
33	13C-1,2,3,4-TCDD	5.30e+06	1.11e+04	4.8e+02	6.64e+06	3.82e+03	1.7e+03
34	13C-1,2,3,7,8,9-HxCDD	9.85e+06	1.23e+03	8.0e+03	7.87e+06	7.00e+02	1.1e+04
35	37Cl-2,3,7,8-TCDD	3.11e+06	1.78e+03	1.7e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.372e{+}03 + 1.228e{+}03) \times 2000}{(2.267e{+}06 + 2.880e{+}06) \times (\quad) \times 1.049} =$$

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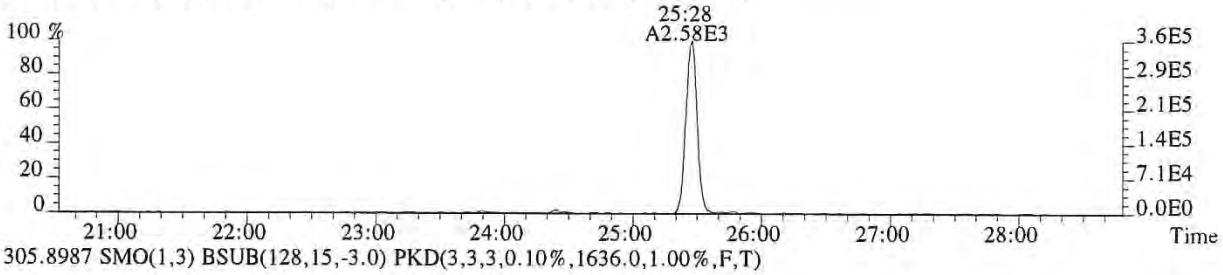
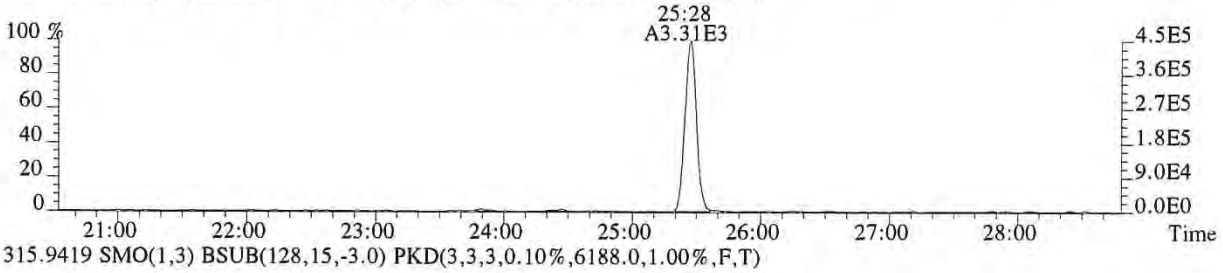
File:P616290 #1-587 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

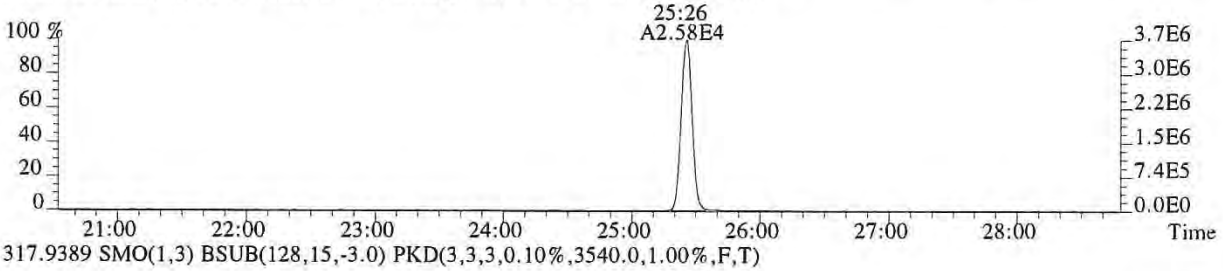
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,432.0,1.00%,F,T)



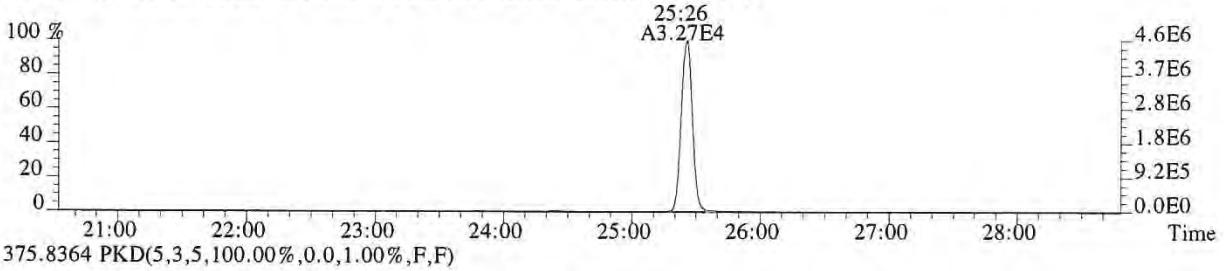
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1636.0,1.00%,F,T)



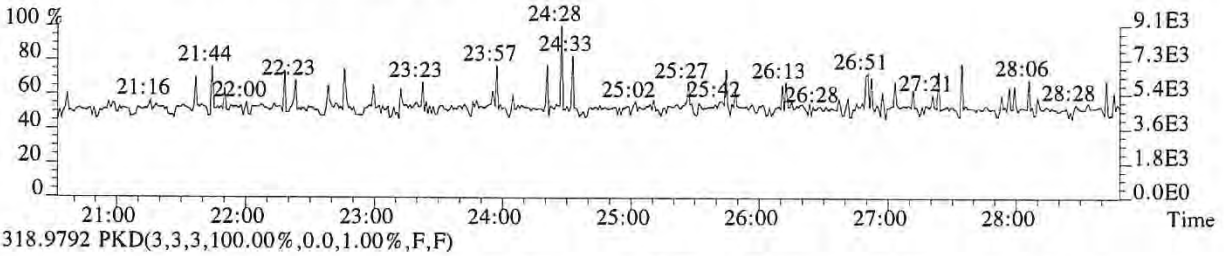
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6188.0,1.00%,F,T)



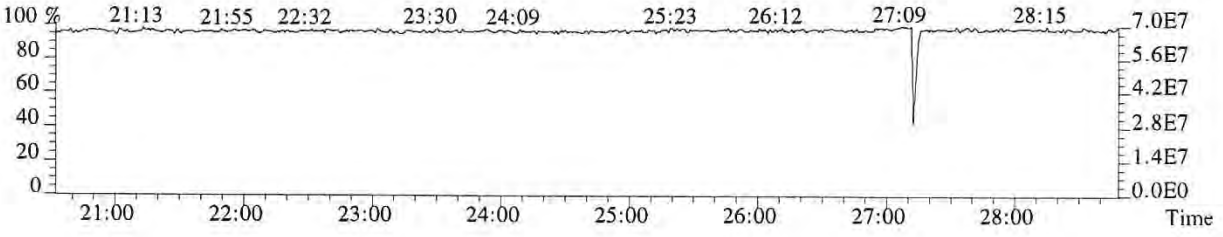
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3540.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

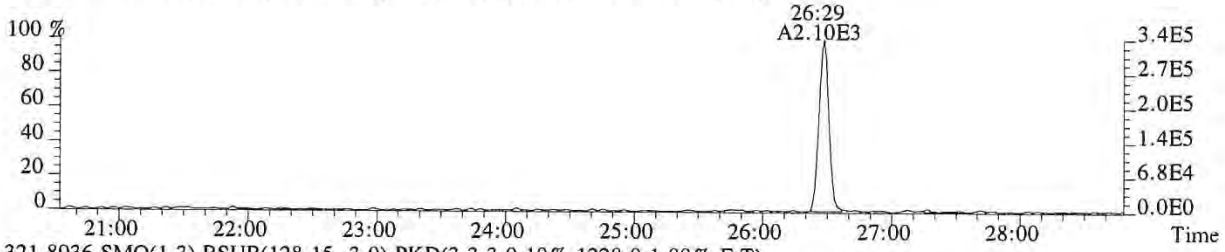


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

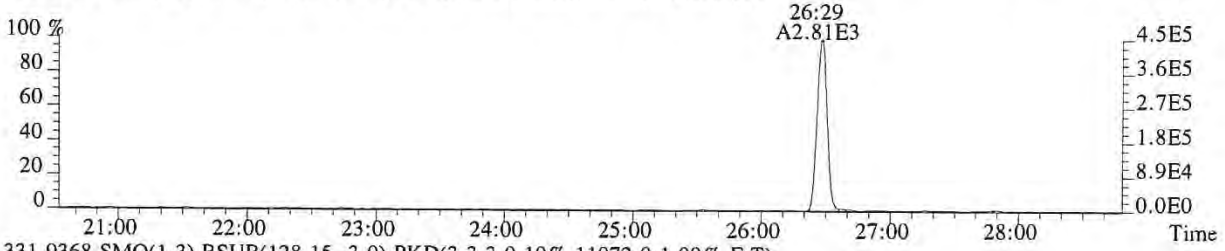


060474

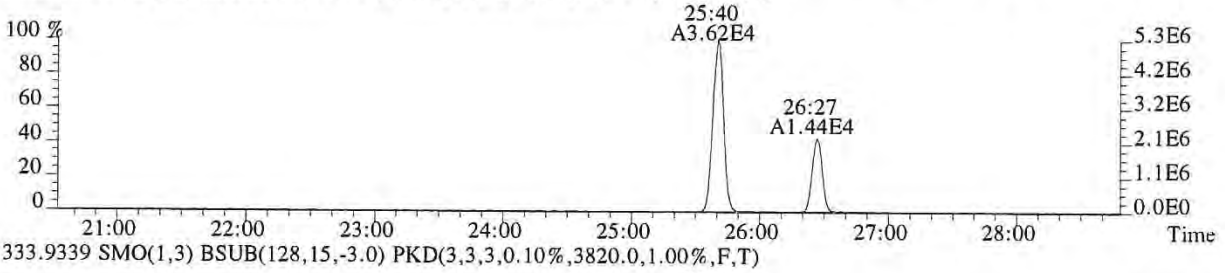
File:P616290 #1-587 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2372.0,1.00%,F,T)



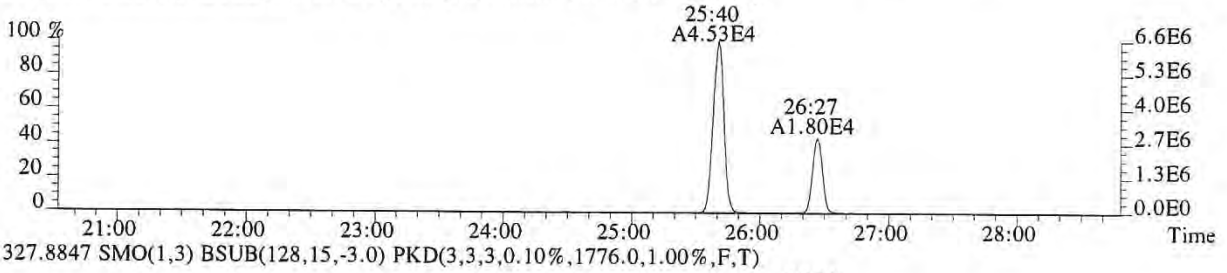
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1228.0,1.00%,F,T)



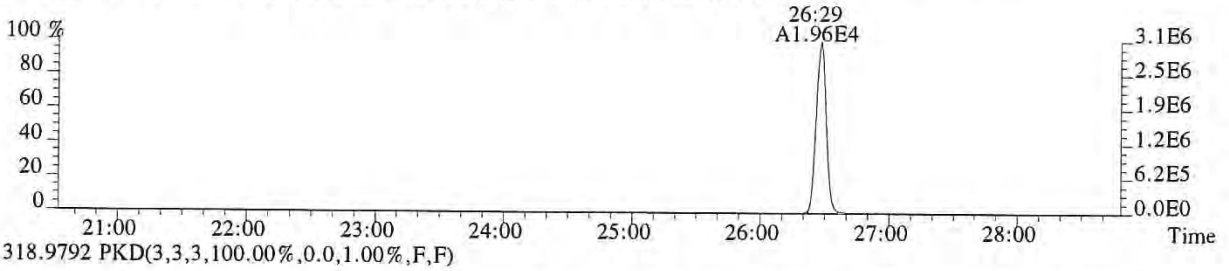
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11072.0,1.00%,F,T)



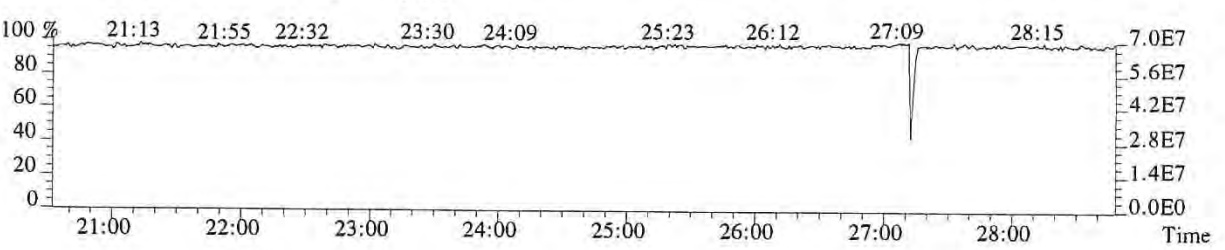
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3820.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1776.0,1.00%,F,T)

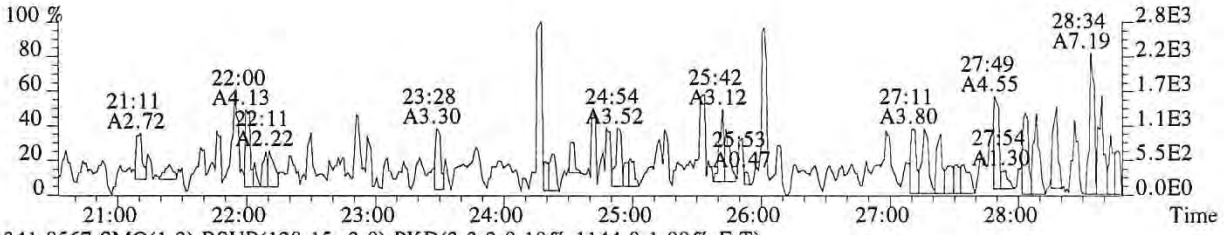


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

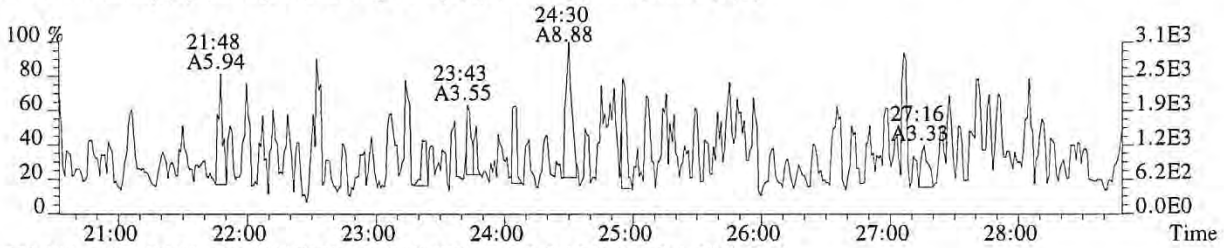


060475

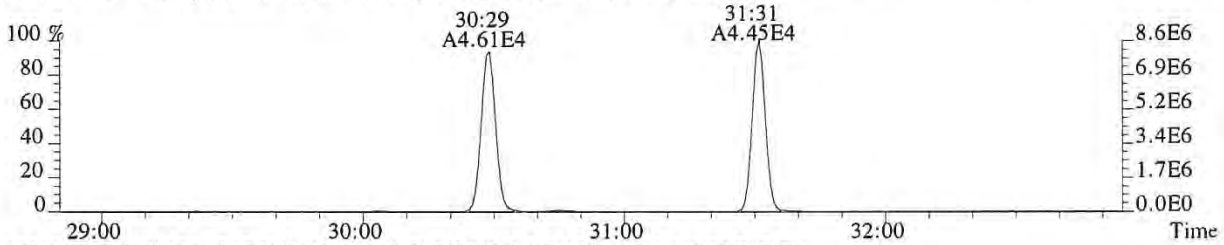
File:P616290 #1-587 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,500.0,1.00%,F,T)



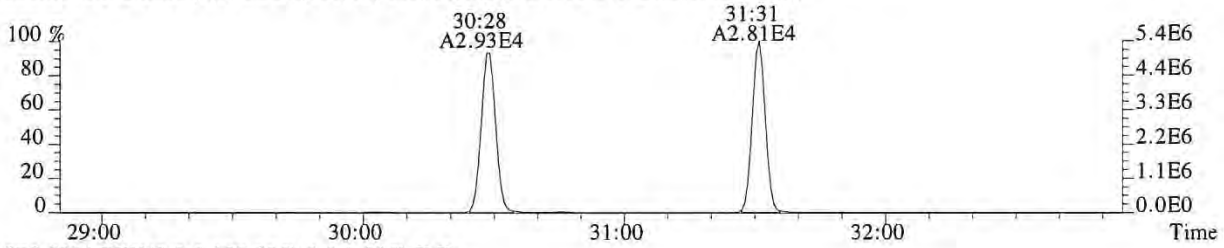
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1144.0,1.00%,F,T)



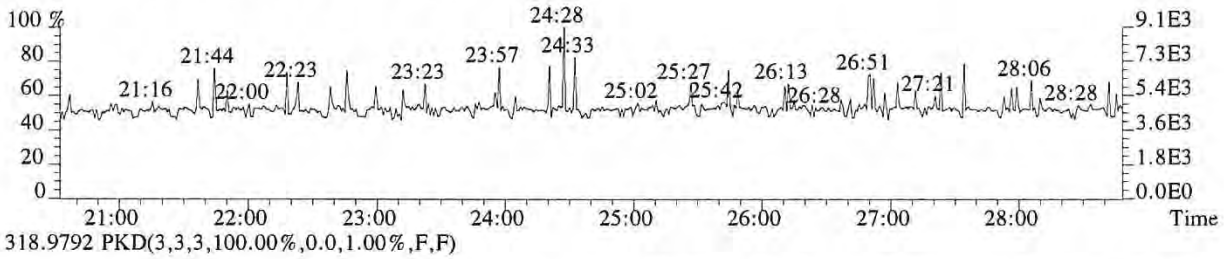
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,476.0,1.00%,F,T)



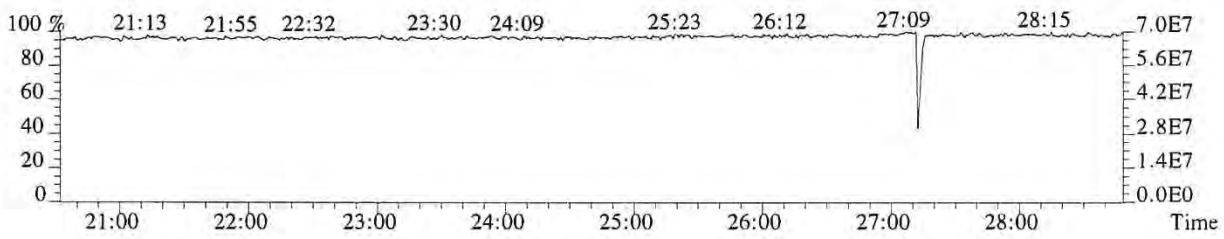
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1424.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



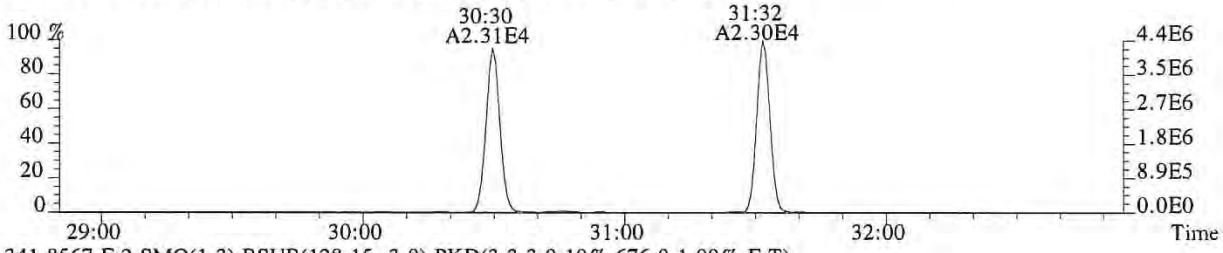
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



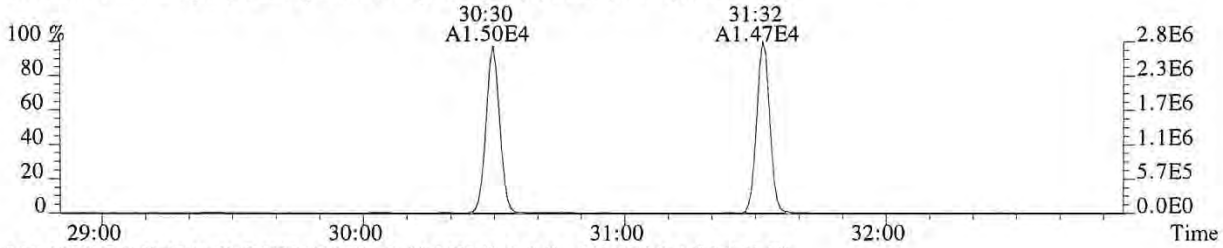
060476

File:P616290 #1-367 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

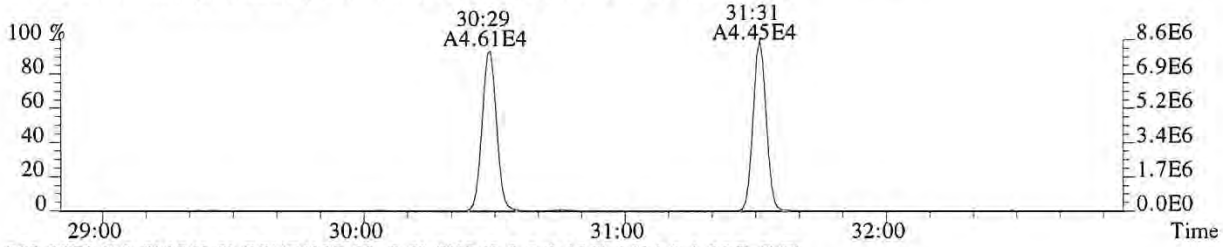
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,448.0,1.00%,F,T)



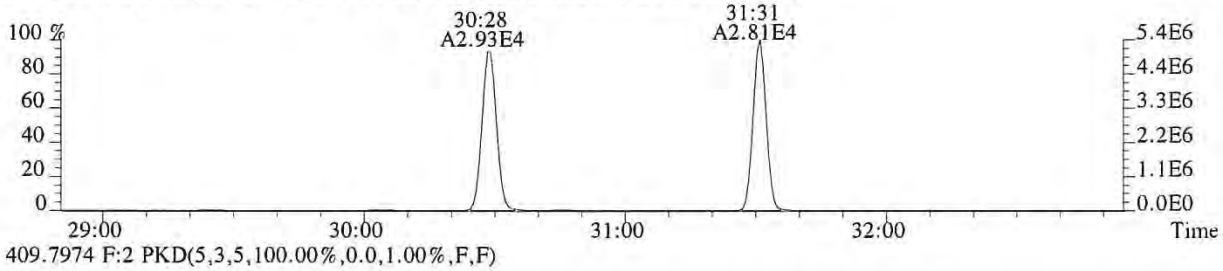
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,676.0,1.00%,F,T)



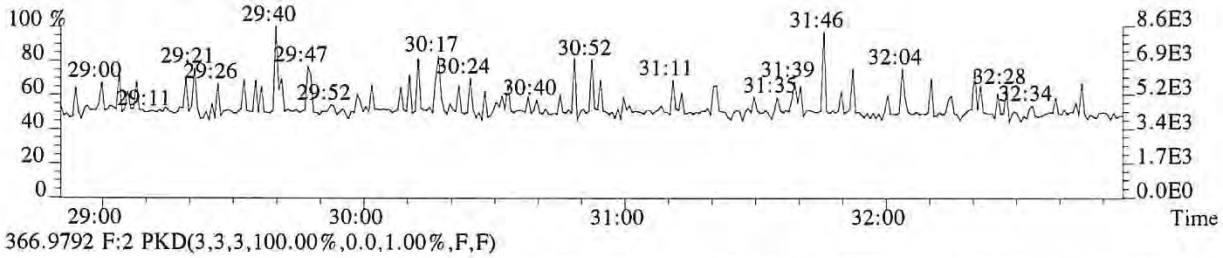
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,476.0,1.00%,F,T)



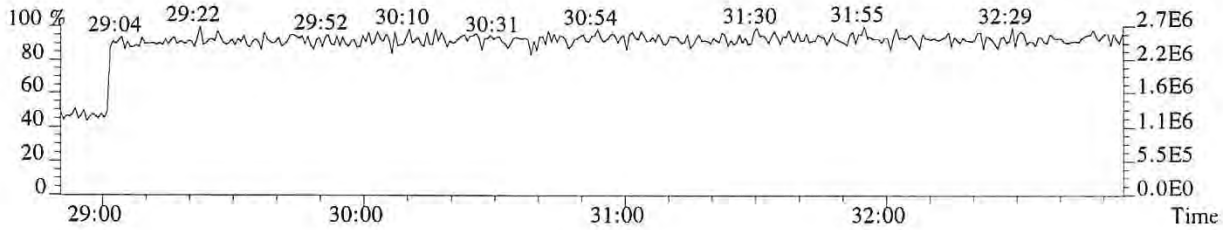
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1424.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

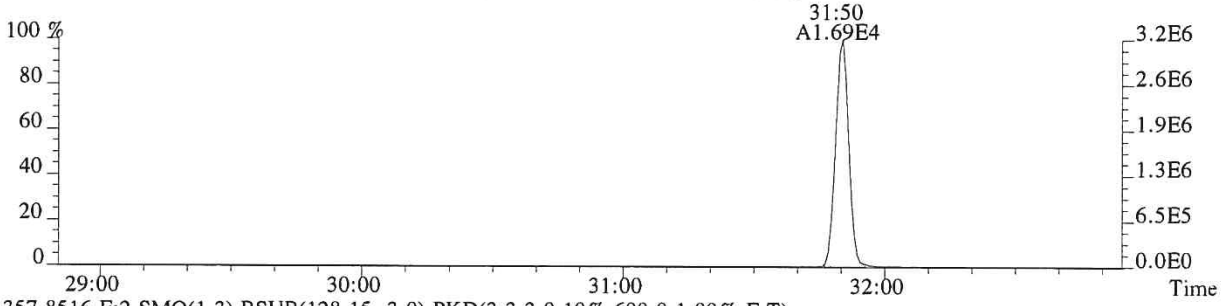


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

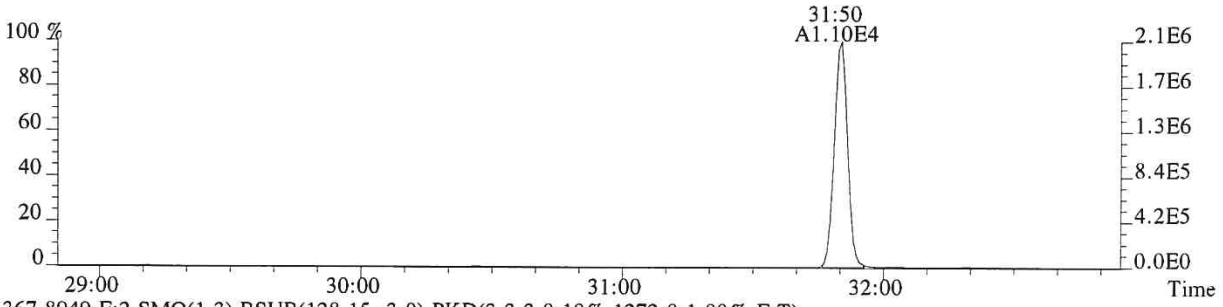


060477

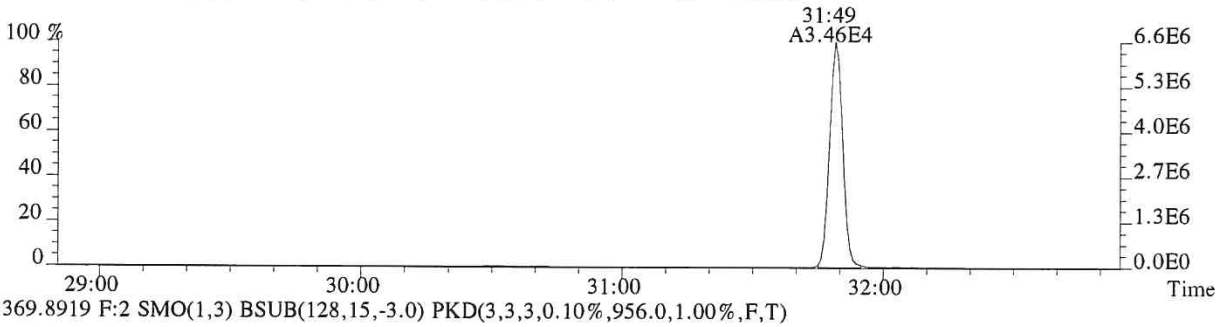
File:P616290 #1-367 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1532.0,1.00%,F,T)



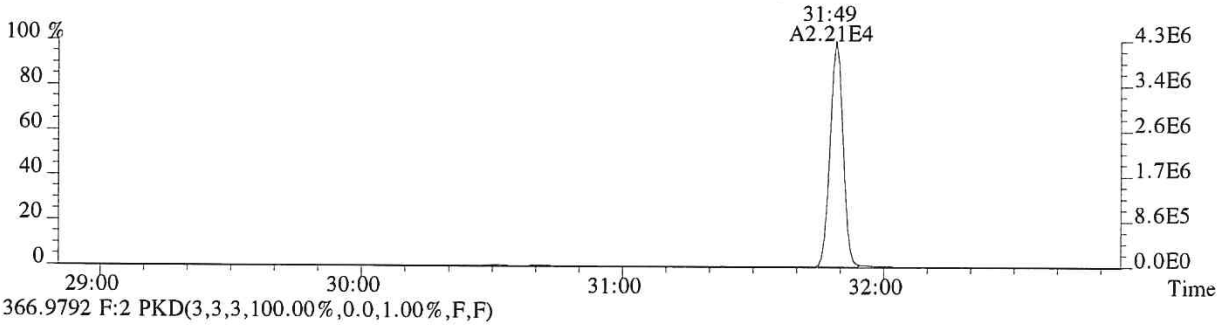
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,600.0,1.00%,F,T)



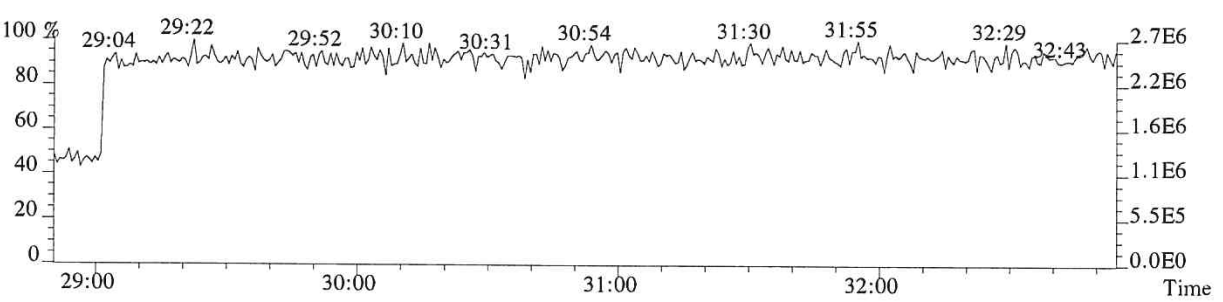
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1272.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,956.0,1.00%,F,T)



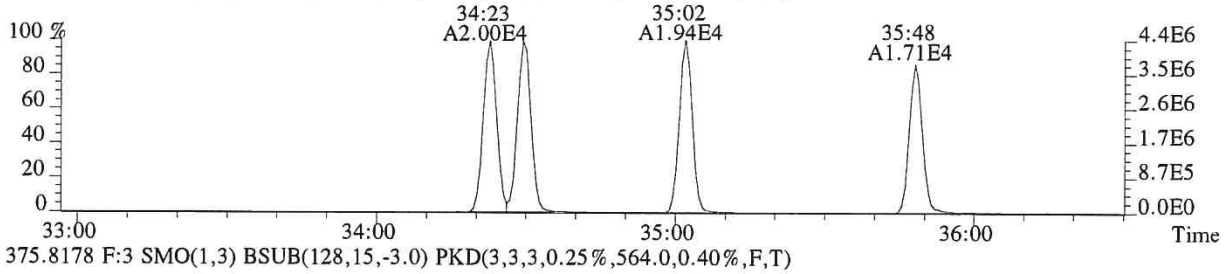
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



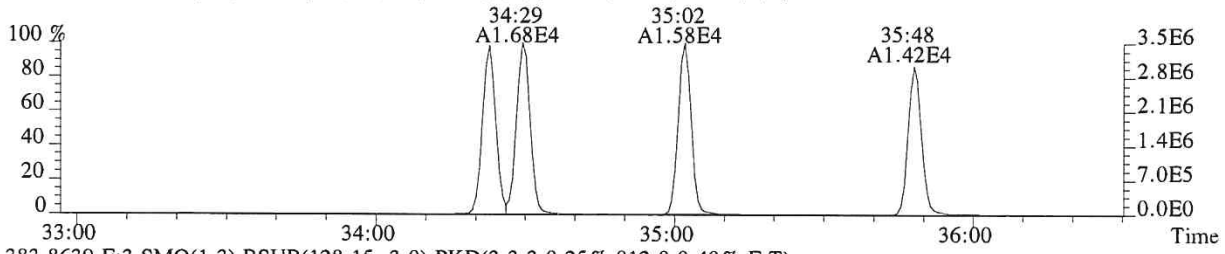
060478

File:P616290 #1-321 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

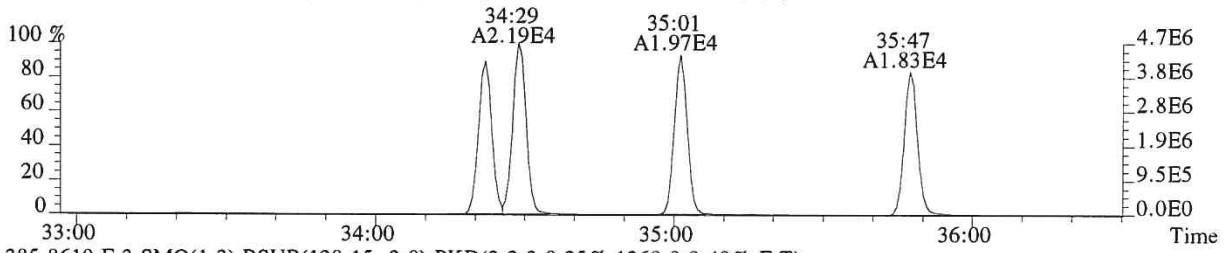
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,536.0,0.40%,F,T)



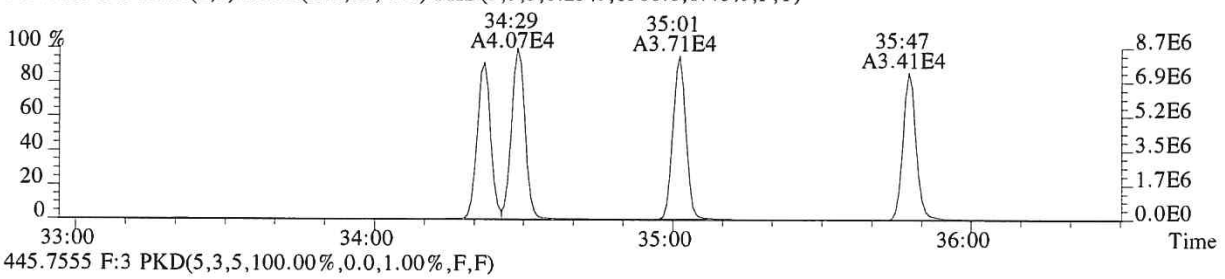
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,564.0,0.40%,F,T)



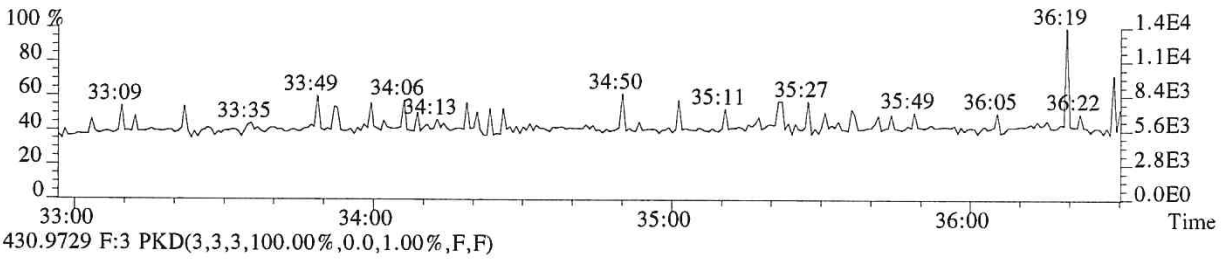
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,812.0,0.40%,F,T)



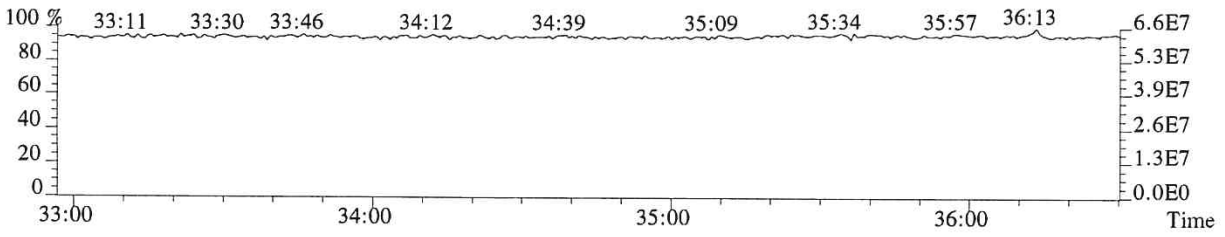
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1360.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

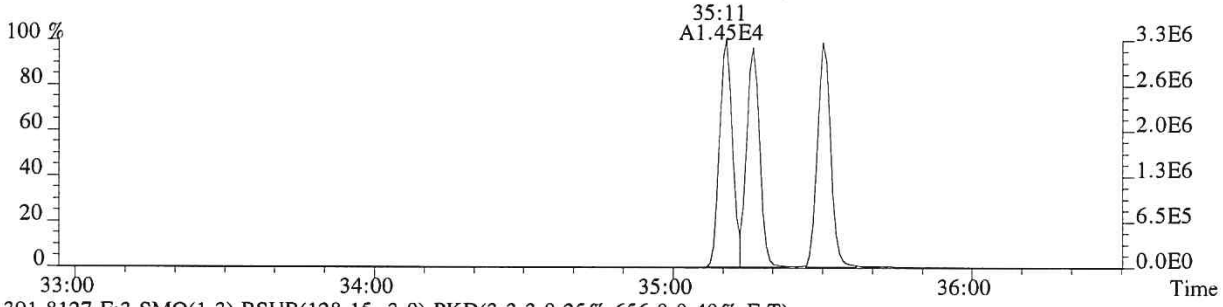


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

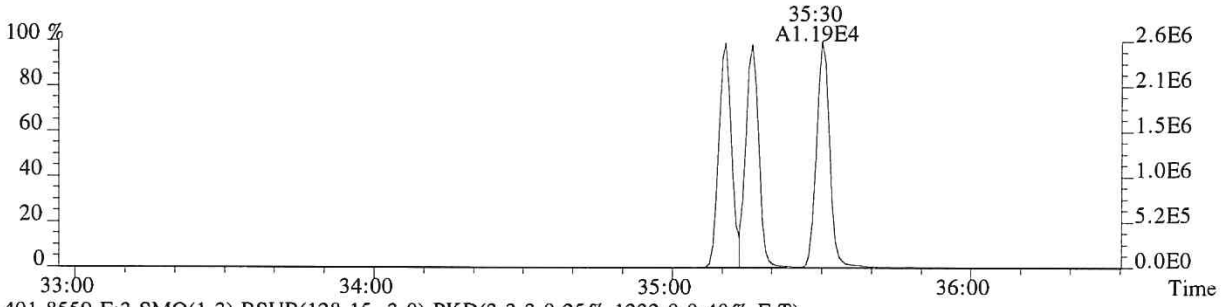


060479

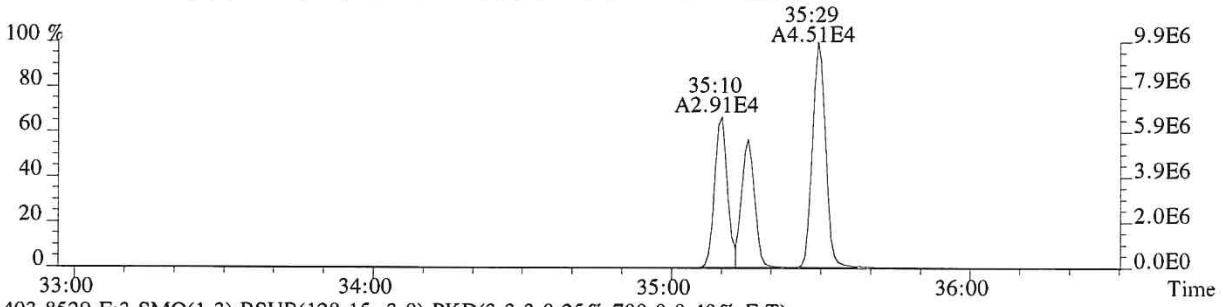
File:P616290 #1-321 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,896.0,0.40%,F,T)



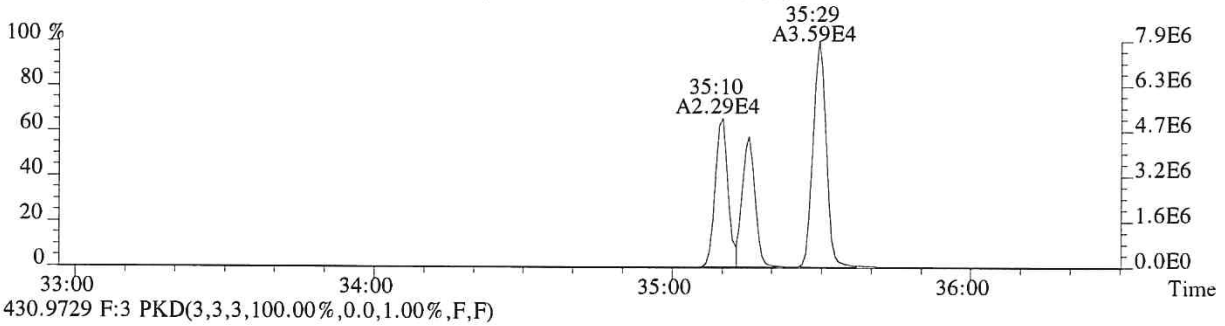
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,656.0,0.40%,F,T)



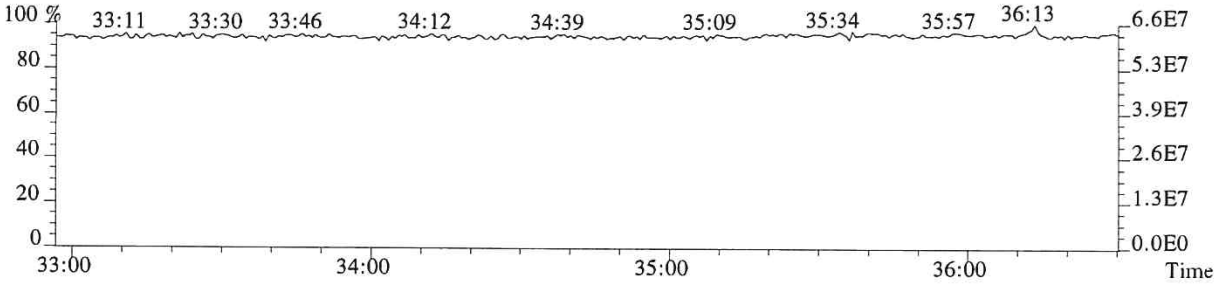
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1232.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,700.0,0.40%,F,T)

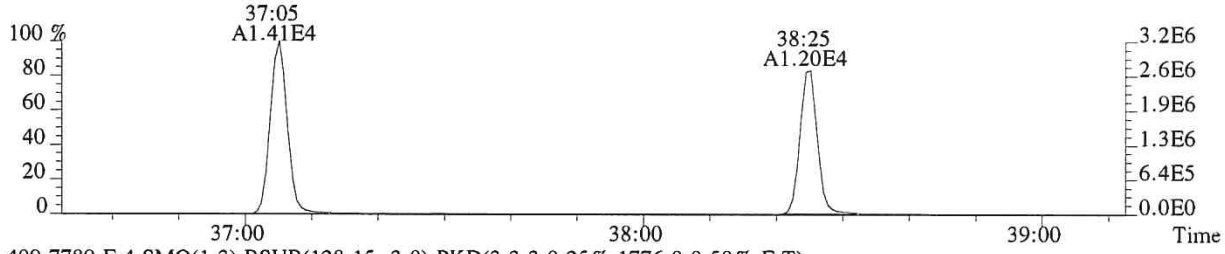


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

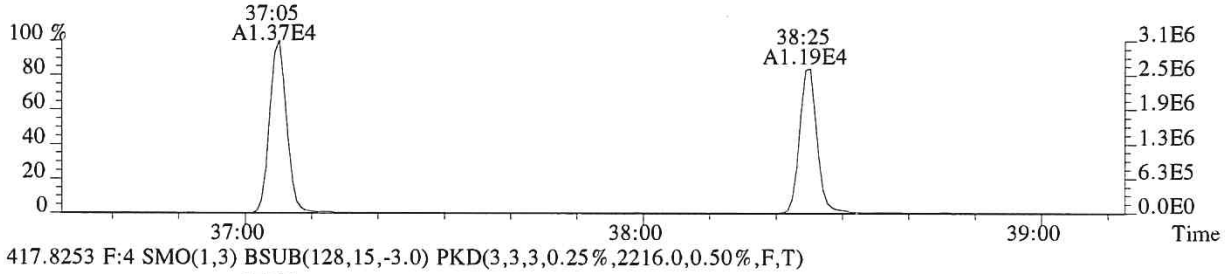


File:P616290 #1-241 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

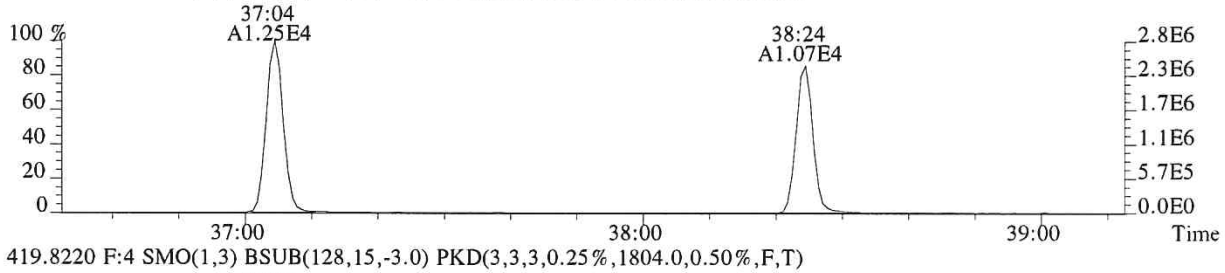
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2004.0,0.50%,F,T)



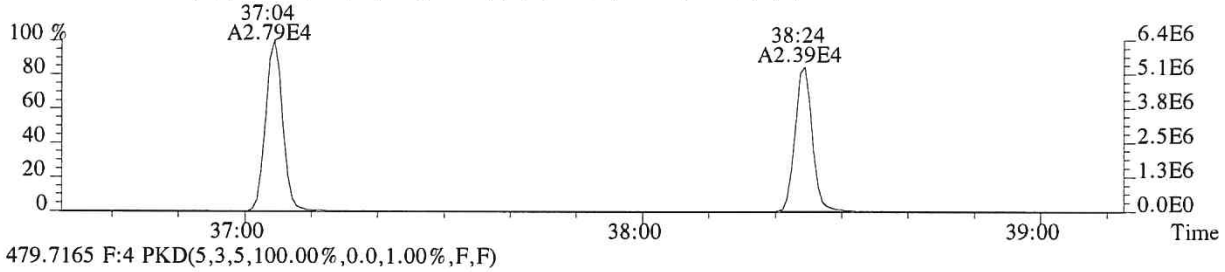
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1776.0,0.50%,F,T)



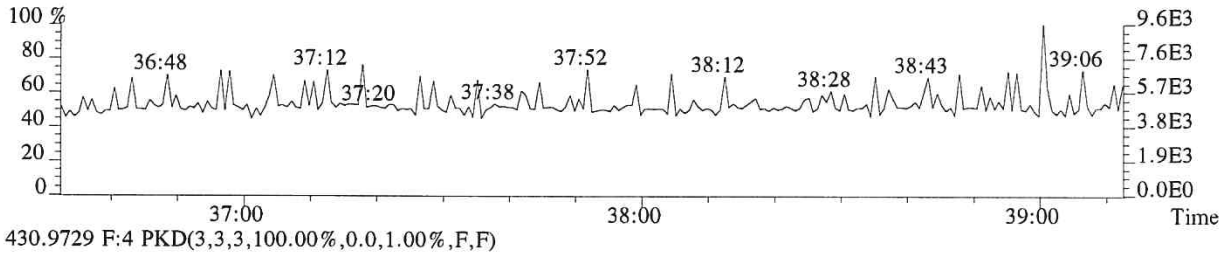
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2216.0,0.50%,F,T)



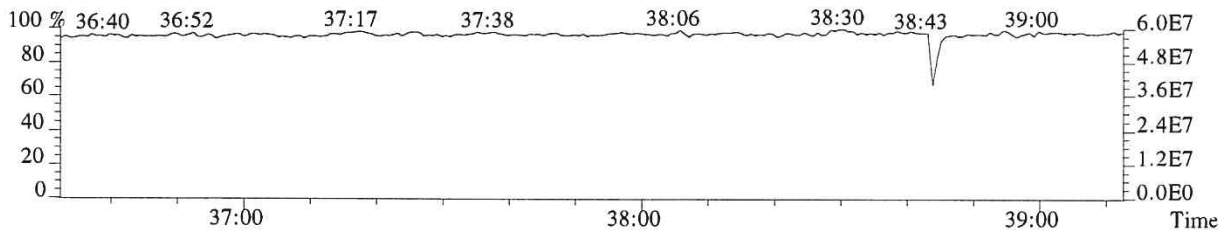
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1804.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

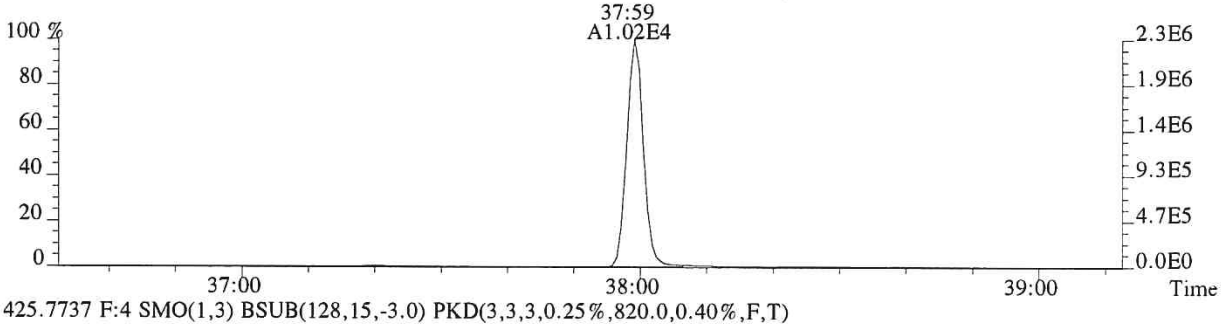


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

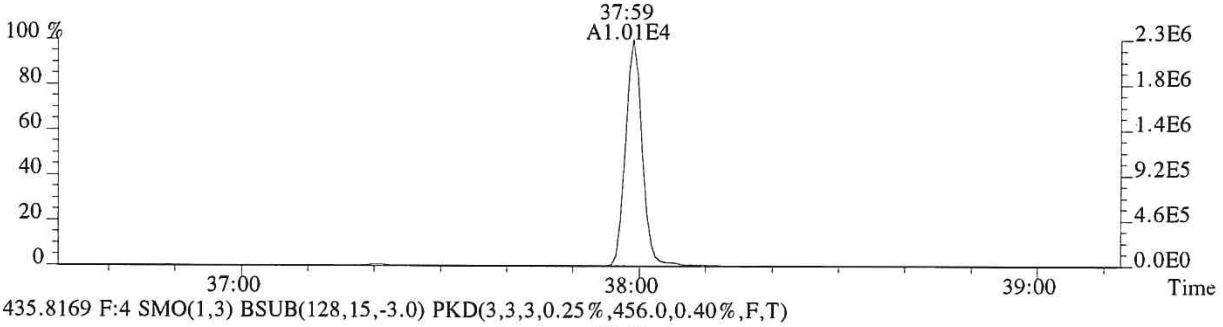


060481

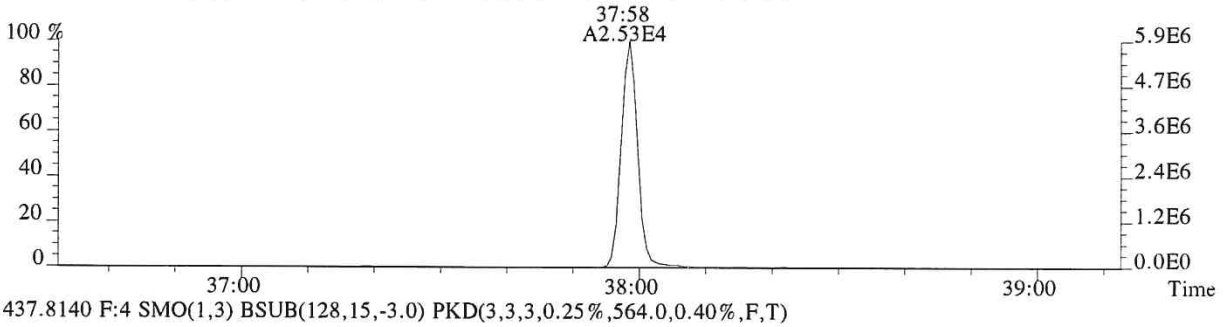
File:P616290 #1-241 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,980.0,0.40%,F,T)



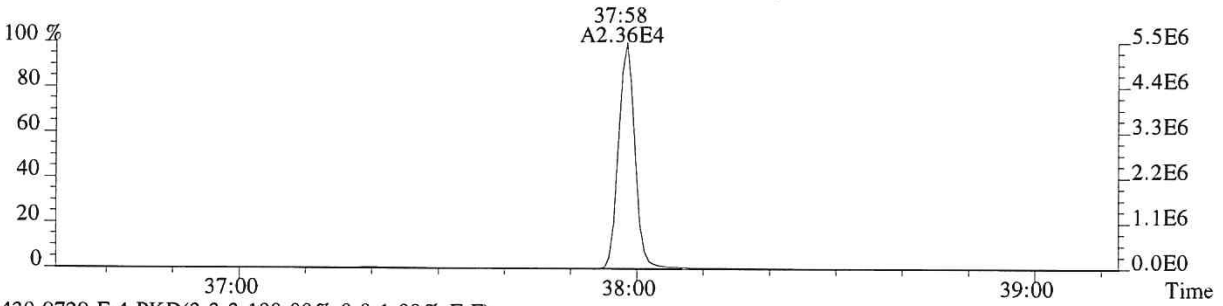
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,820.0,0.40%,F,T)



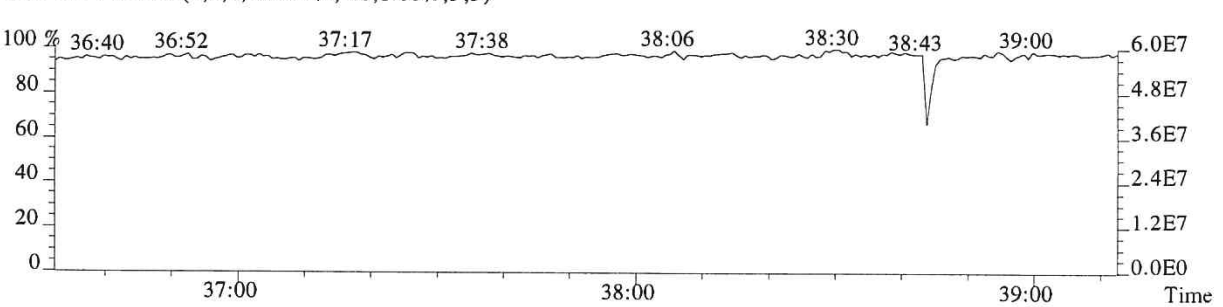
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,456.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,564.0,0.40%,F,T)

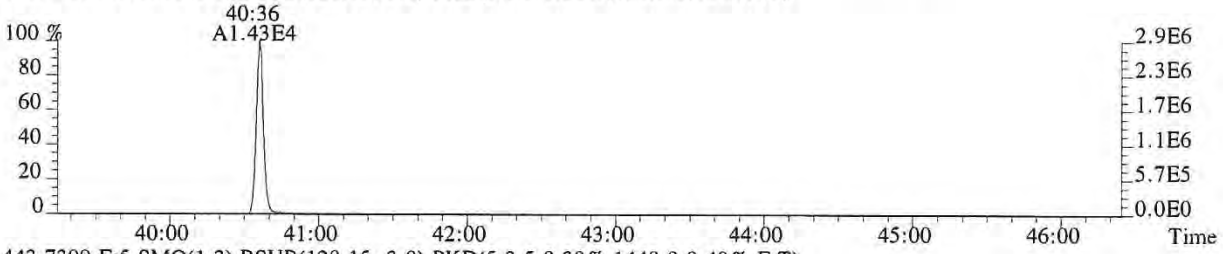


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

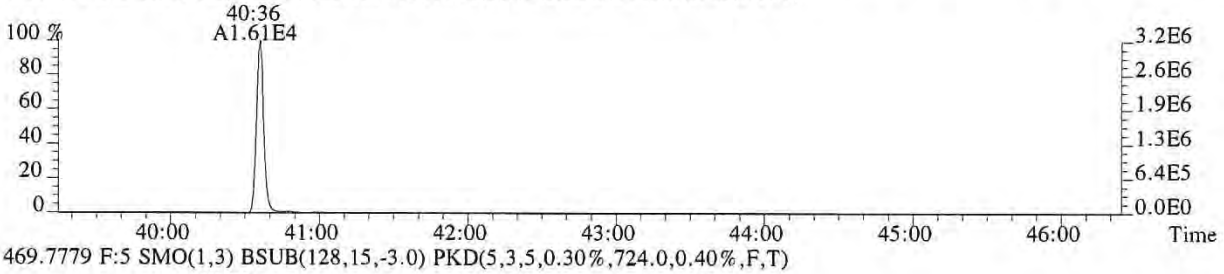


File:P616290 #1-645 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

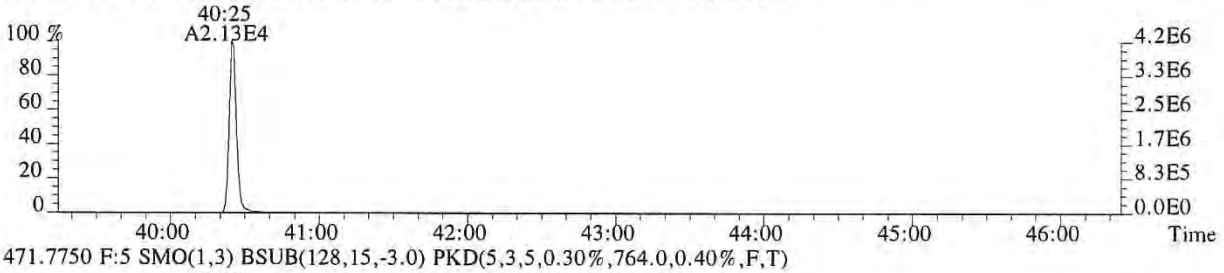
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,468.0,0.40%,F,T)



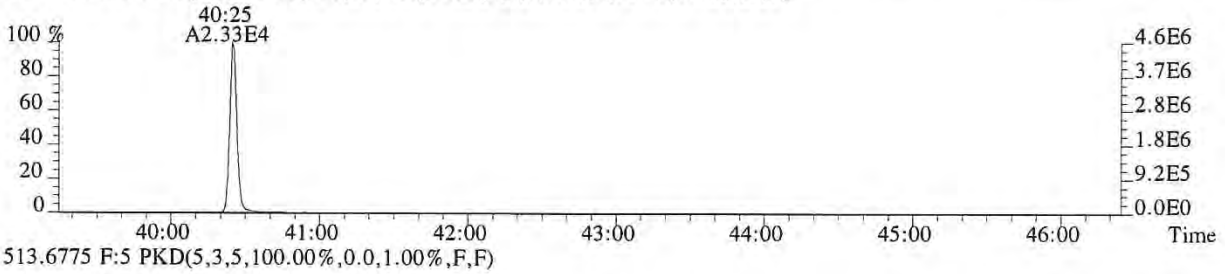
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1448.0,0.40%,F,T)



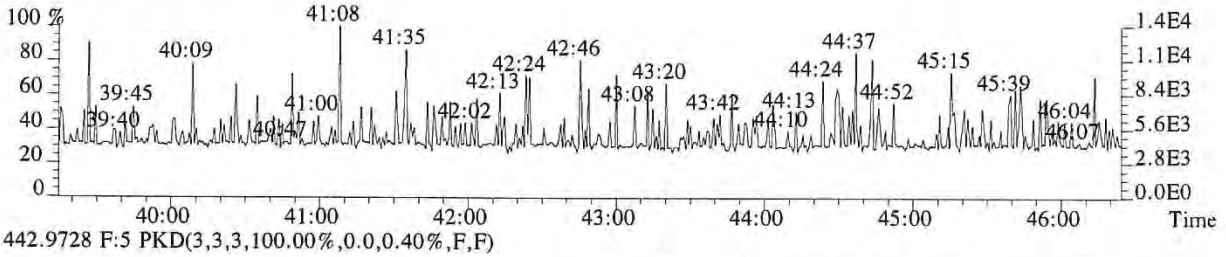
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,724.0,0.40%,F,T)



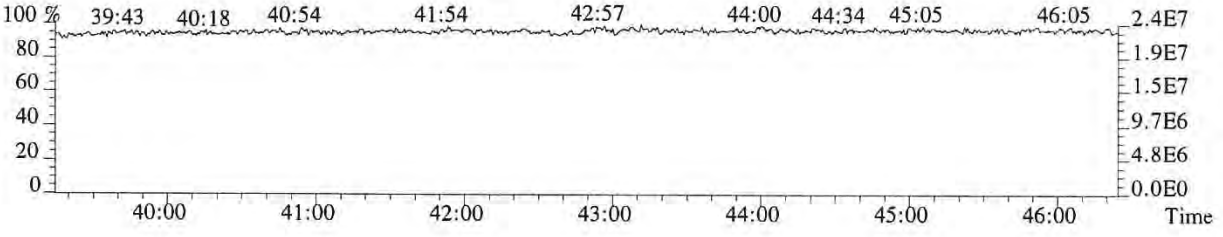
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,764.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

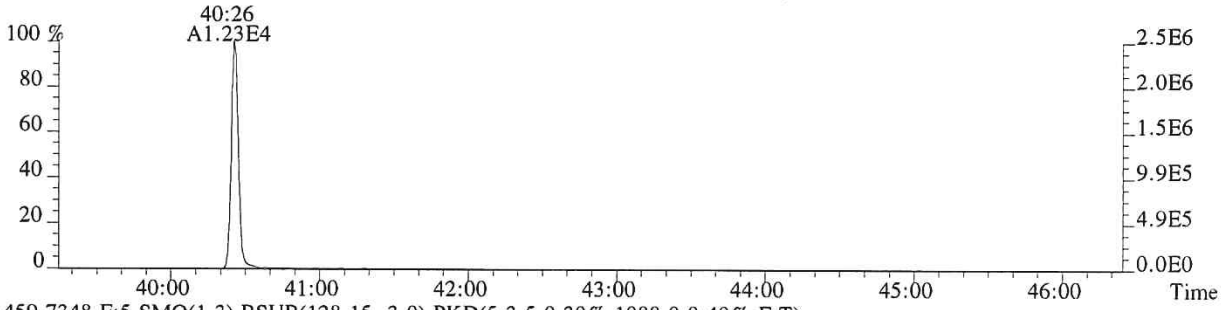


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

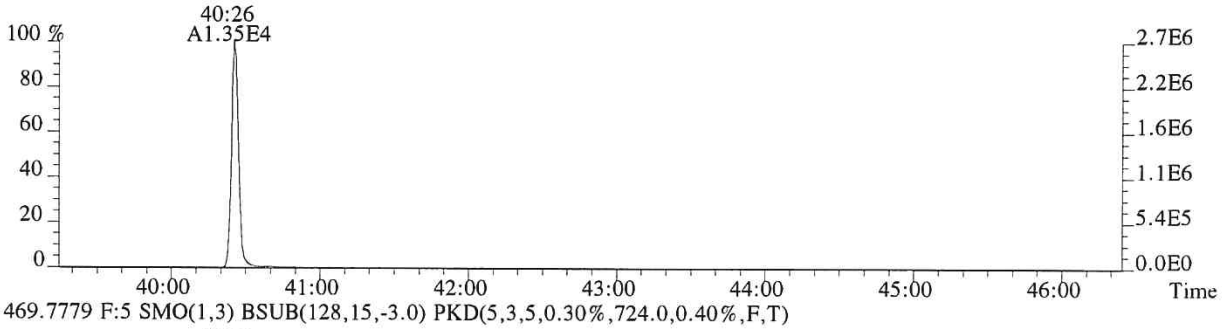


060483

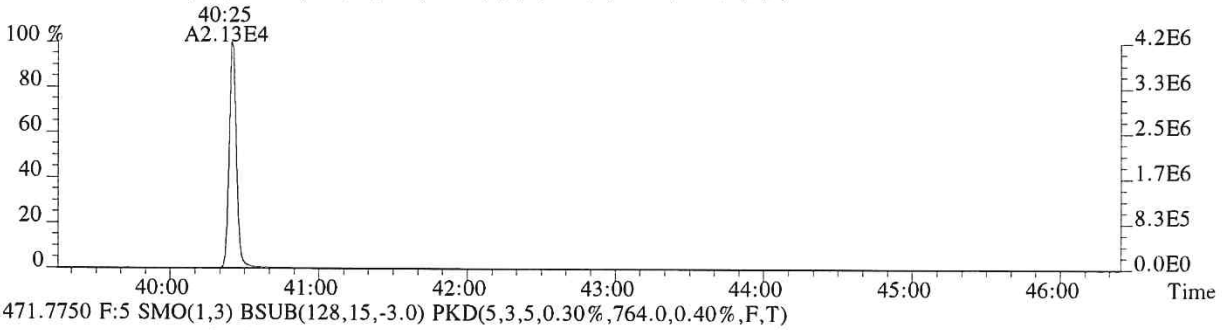
File:P616290 #1-645 Acq:30-DEC-2018 00:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,832.0,0.40%,F,T)



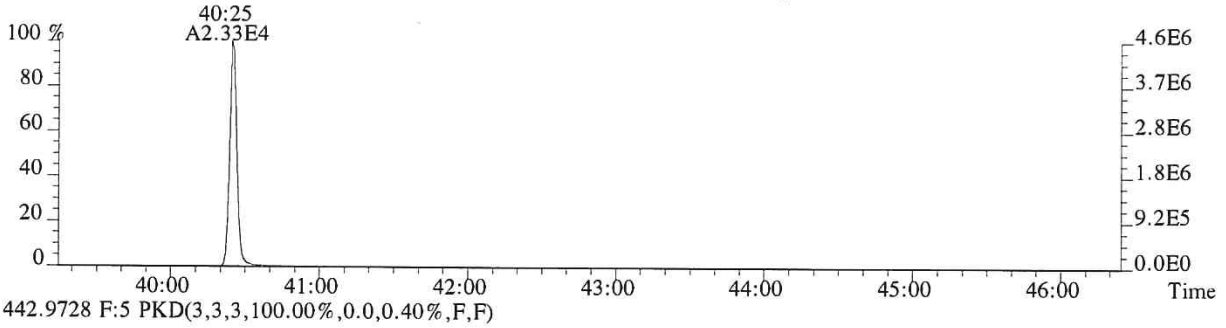
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1088.0,0.40%,F,T)



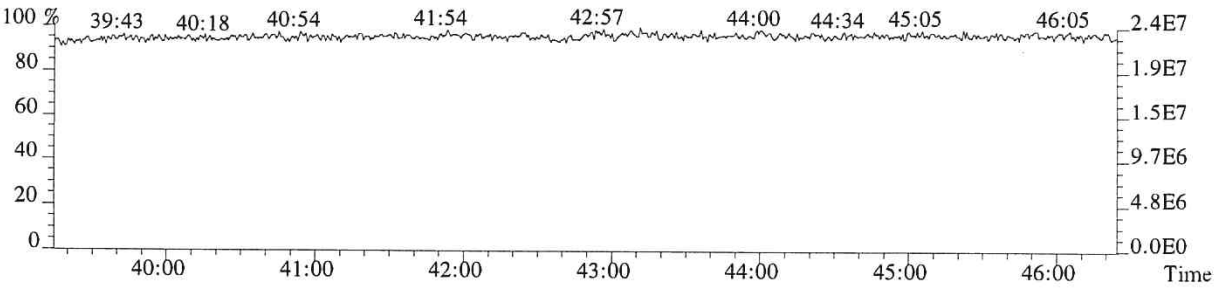
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,724.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,764.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060484

Continuing Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: P519683

Date: 12/29/18

Circle one: (Beginning) / Ending

Method: (1613) 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: LKL

Second QC: LG

ccalqc.xls 07/17/12

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 01/24/18

Init. Calib.Times: 11:44

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P519684	29-DEC-18	09:51:48
194503	CS3	P519683	29-DEC-18	08:59:21
METHOD BLANK	EQ1800520-01	P519685	29-DEC-18	10:39:37
METHOD BLANK	EQ1800529-01	P519686	29-DEC-18	11:28:49
SL0079	E1801136-001	P519687	29-DEC-18	12:16:54
SL0080	E1801136-002	P519688	29-DEC-18	13:08:12
SL0081	E1801136-003	P519689	29-DEC-18	13:56:01
SL0082	E1801136-004	P519690	29-DEC-18	14:45:25
SL0083	E1801136-005	P519691	29-DEC-18	15:33:21
SL0085	E1801136-006	P519692	29-DEC-18	16:21:57
SL0086	E1801136-007	P519693	29-DEC-18	17:10:35
SL0087	E1801136-008	P519694	29-DEC-18	17:59:13
SL0088	E1801136-009	P519695	29-DEC-18	18:47:50
LCS	EQ1800527-02	P519696	29-DEC-18	19:36:27
DLCS	EQ1800527-03	P519697	29-DEC-18	20:25:05

E1801136

Sample List Report — **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS07.PRO\SampleDB\20181229A.SPL
Last Modified: Sunday, December 30, 2018 06:55:41 Central Standard Time
Printed: Sunday, December 30, 2018 06:55:44 Central Standard Time

Page Position (1, 1)

OPUS5NET: P519683RES

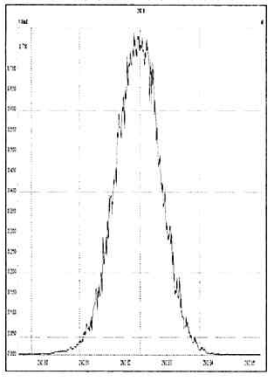
	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/29/18	08:59	P519683	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2	LG	HRMS check 08:53
2		09:51	P519684	WINDOWDEFINE	192977	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		10:39	P519685	MB	EQ1800520-01	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4		11:28	P519686	MB	EQ1800529-01	EPA1613_ALS	Dioxin_ALS	Tray1:4		
5		12:16	P519687	E1801136-001	E1801136-001	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		13:08	P519688	E1801136-002	E1801136-002	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		13:56	P519689	E1801136-003	E1801136-003	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		14:45	P519690	E1801136-004	E1801136-004	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		15:33	P519691	E1801136-005	E1801136-005	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		16:21	P519692	E1801136-006	E1801136-006	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		17:10	P519693	E1801136-007	E1801136-007	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12		17:59	P519694	E1801136-008	E1801136-008	EPA1613_ALS	Dioxin_ALS	Tray1:12		
13		18:47	P519695	E1801136-009	E1801136-009	EPA1613_ALS	Dioxin_ALS	Tray1:13		
14		19:36	P519696	LCS	EQ1800527-02	EPA1613_ALS	Dioxin_ALS	Tray1:14		
15		20:25	P519697	DLCS	EQ1800527-03	EPA1613_ALS	Dioxin_ALS	Tray1:15		HRMS check 21:21
16	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2	---	---
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---
20	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:20	---	---
21	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:21	---	---

LKL 12/30/18

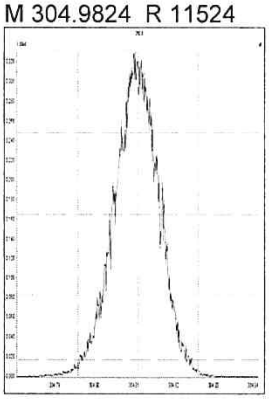
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Saturday, December 29, 2018 08:53:31 Central Standard Time

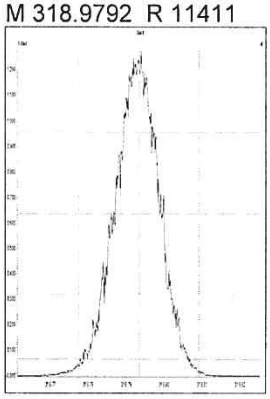
M 292.9824 R 11111



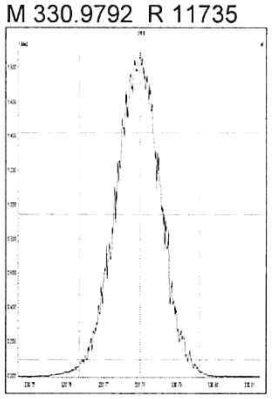
M 304.9824 R 11524



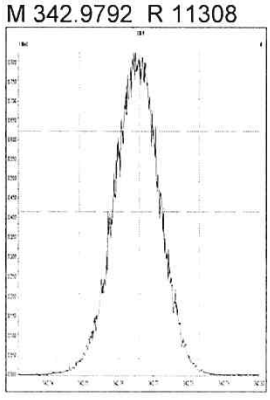
M 318.9792 R 11411



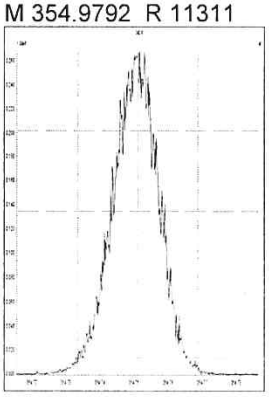
M 330.9792 R 11735



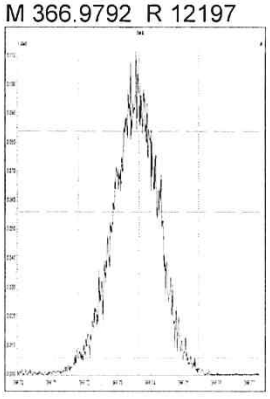
M 342.9792 R 11308



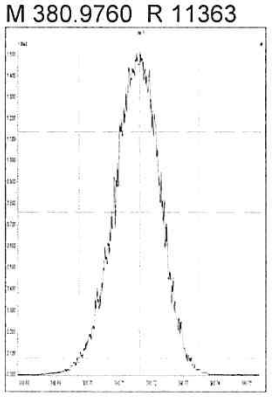
M 354.9792 R 11311



M 366.9792 R 12197



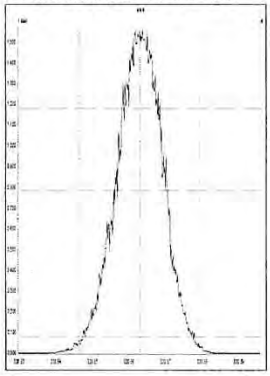
M 380.9760 R 11363



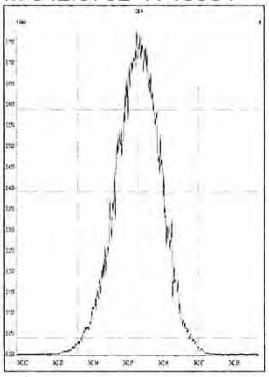
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Saturday, December 29, 2018 08:54:23 Central Standard Time

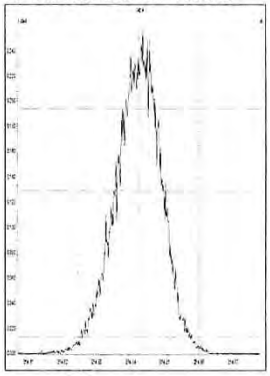
M 330.9792 R 11257



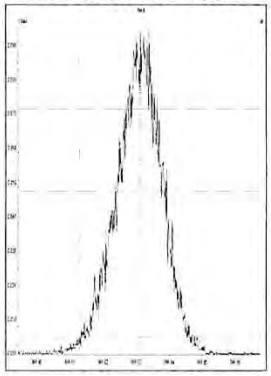
M 342.9792 R 10964



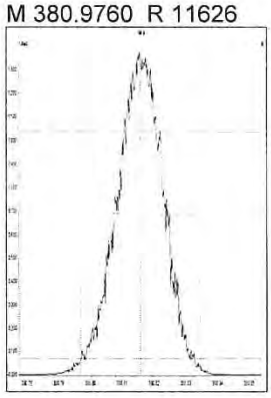
M 354.9792 R 10820



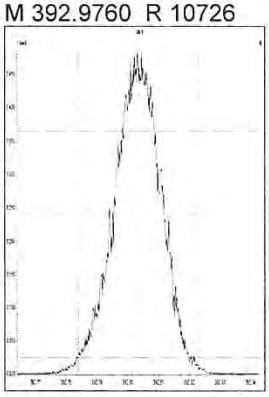
M 366.9792 R 11062



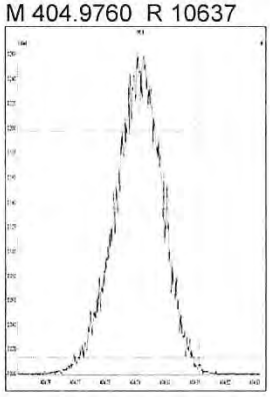
M 380.9760 R 11626



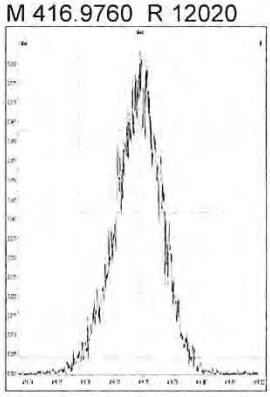
M 392.9760 R 10726



M 404.9760 R 10637



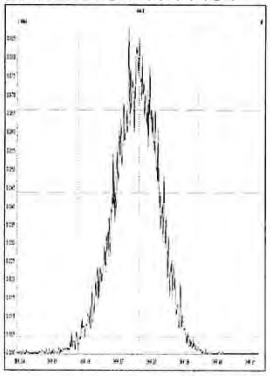
M 416.9760 R 12020



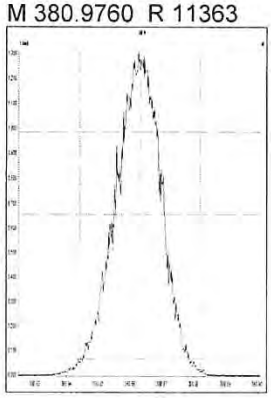
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Saturday, December 29, 2018 08:55:02 Central Standard Time

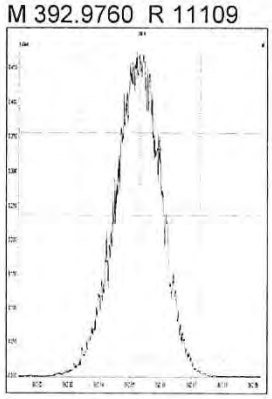
M 366.9792 R 11464



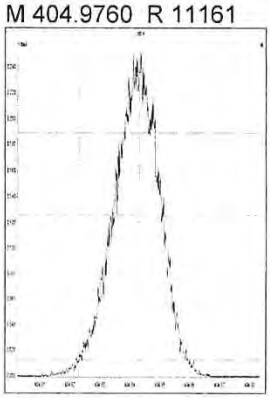
M 380.9760 R 11363



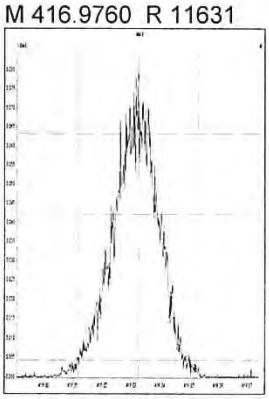
M 392.9760 R 11109



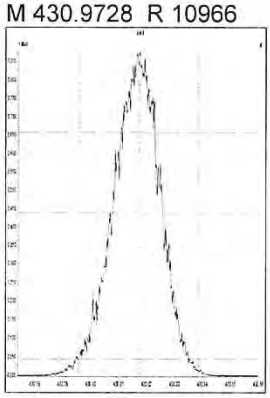
M 404.9760 R 11161



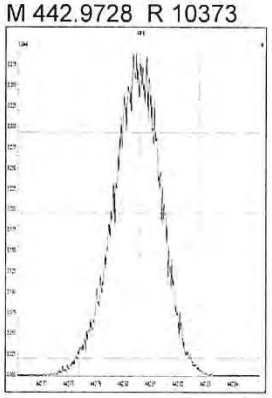
M 416.9760 R 11631



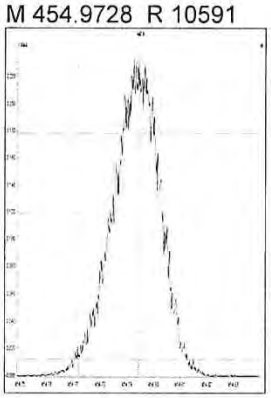
M 430.9728 R 10966



M 442.9728 R 10373



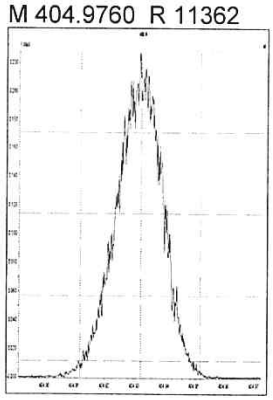
M 454.9728 R 10591



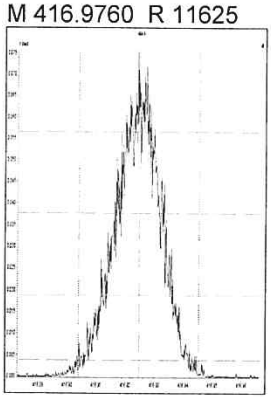
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Saturday, December 29, 2018 08:56:30 Central Standard Time

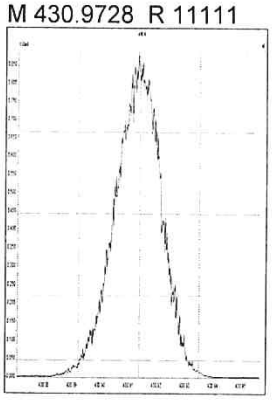
M 404.9760 R 11362



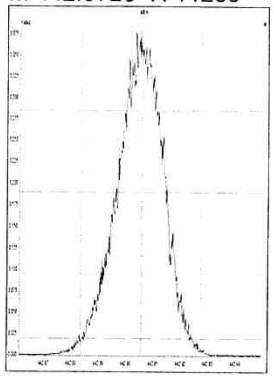
M 416.9760 R 11625



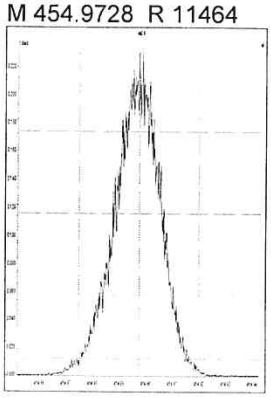
M 430.9728 R 11111



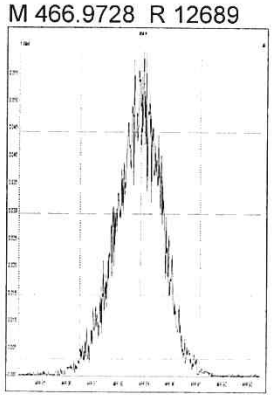
M 442.9728 R 11259



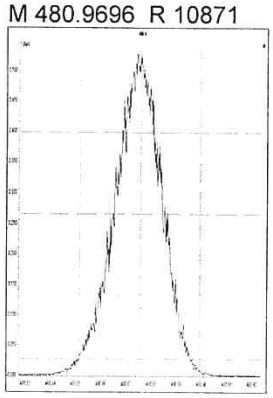
M 454.9728 R 11464



M 466.9728 R 12689



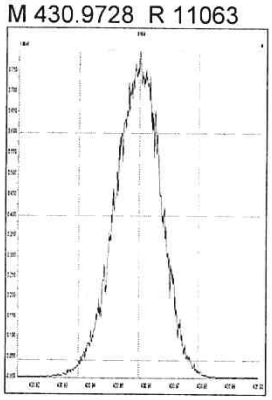
M 480.9696 R 10871



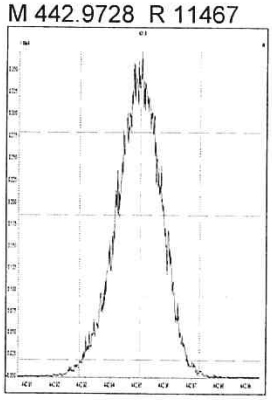
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Saturday, December 29, 2018 08:57:04 Central Standard Time

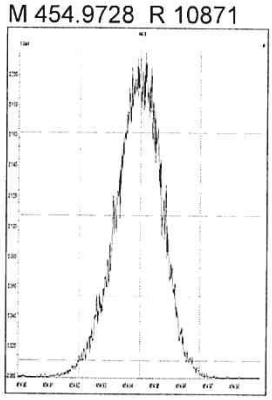
M 430.9728 R 11063



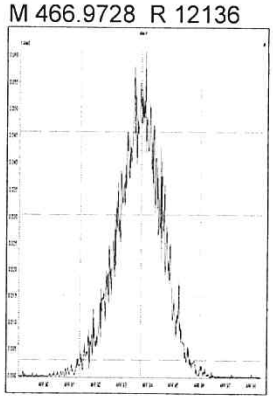
M 442.9728 R 11467



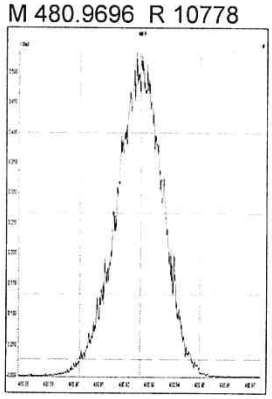
M 454.9728 R 10871



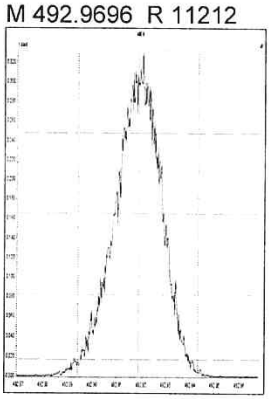
M 466.9728 R 12136



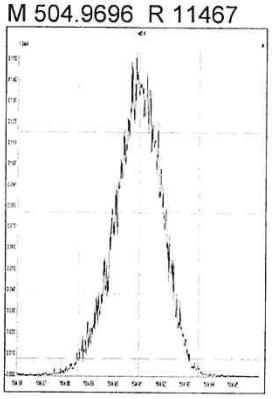
M 480.9696 R 10778



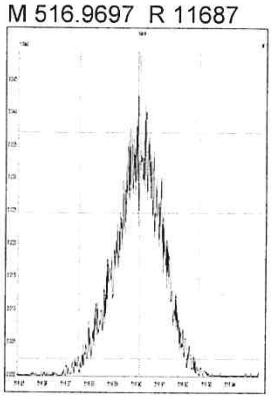
M 492.9696 R 11212



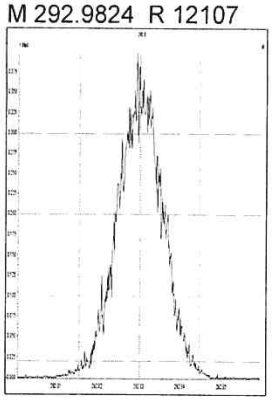
M 504.9696 R 11467



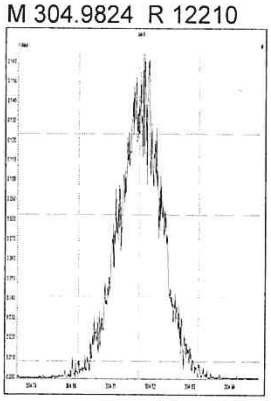
M 516.9697 R 11687



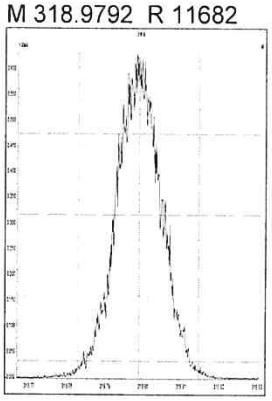
M 292.9824 R 12107



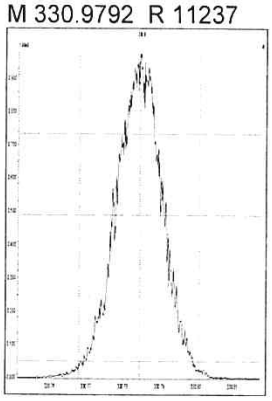
M 304.9824 R 12210



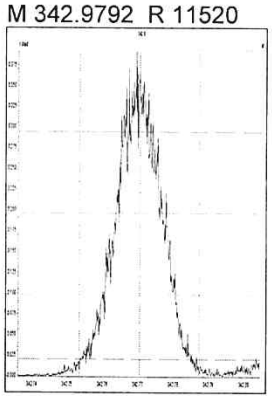
M 318.9792 R 11682



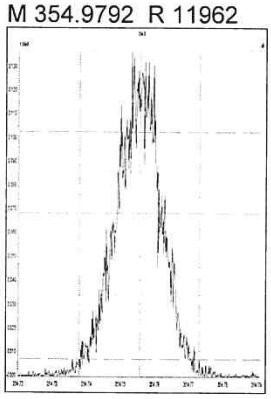
M 330.9792 R 11237



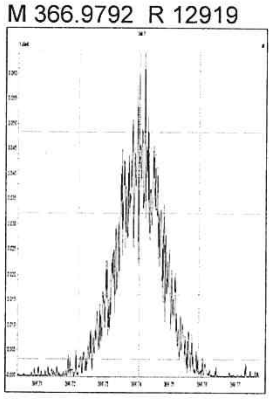
M 342.9792 R 11520



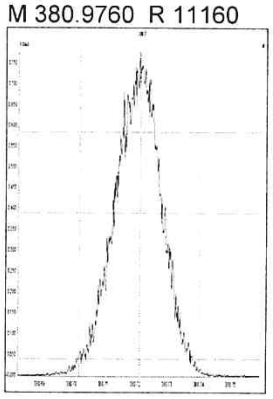
M 354.9792 R 11962



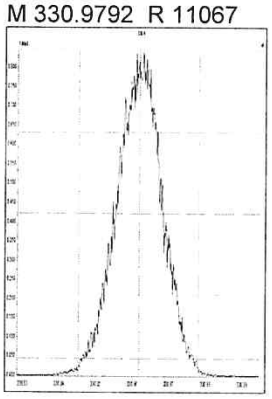
M 366.9792 R 12919



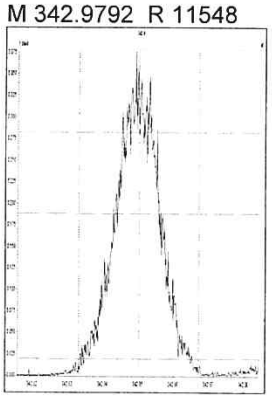
M 380.9760 R 11160



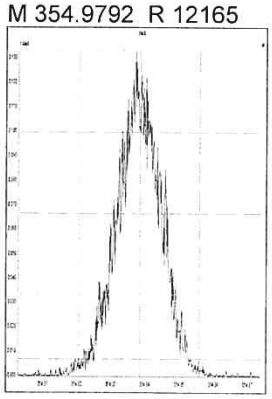
M 330.9792 R 11067



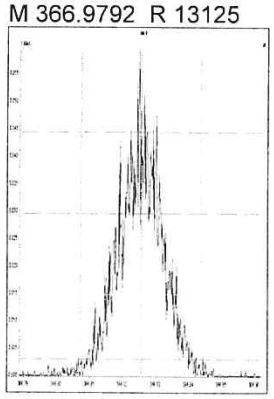
M 342.9792 R 11548



M 354.9792 R 12165



M 366.9792 R 13125



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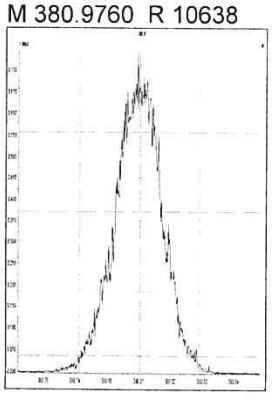

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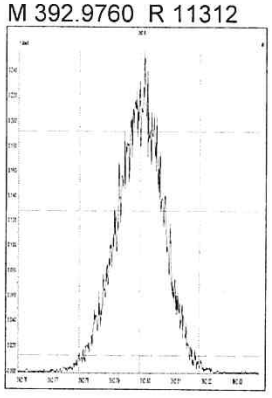

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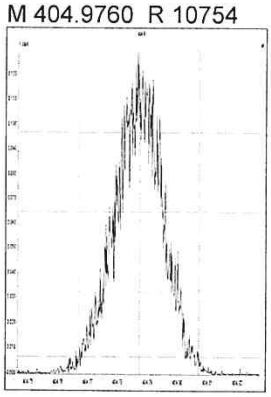

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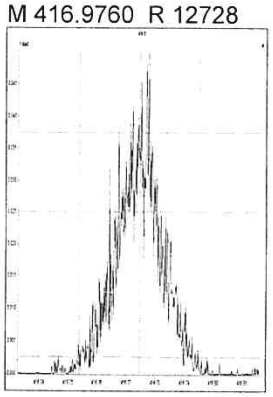

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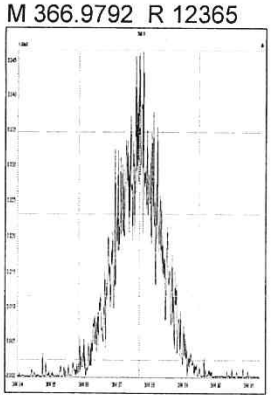

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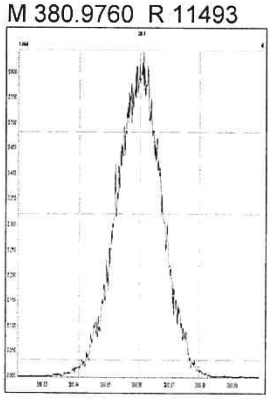
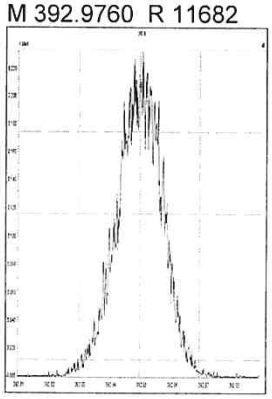
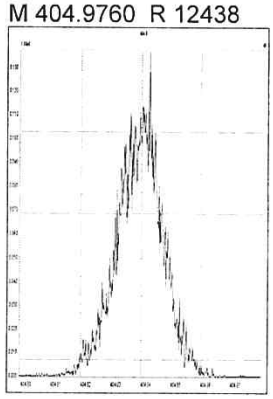


M 392.9760 R 11682



M 404.9760 R 12438



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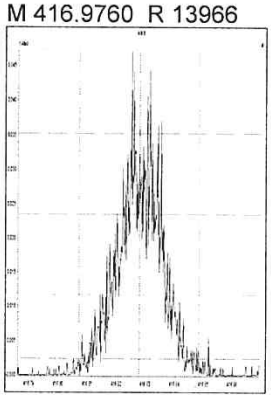
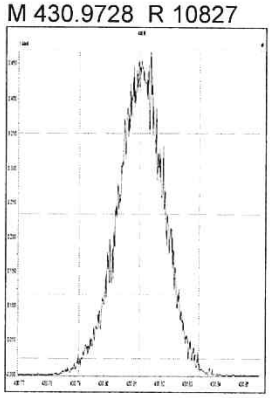
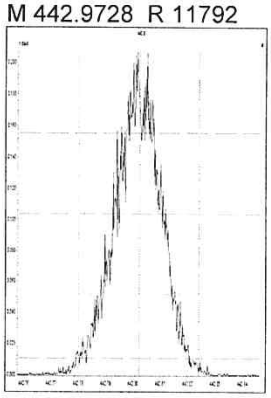


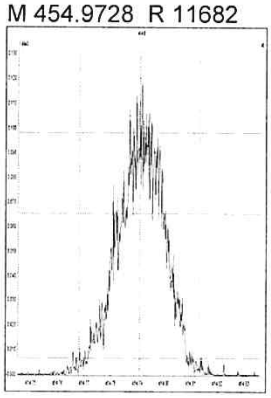
M 430.9728 R 10827



M 442.9728 R 11792



M 454.9728 R 11682



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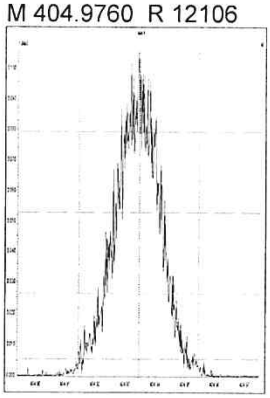

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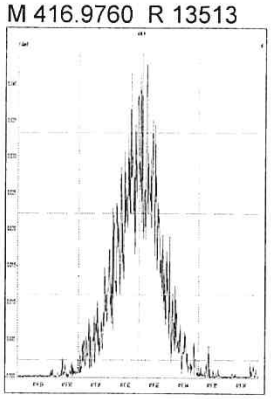

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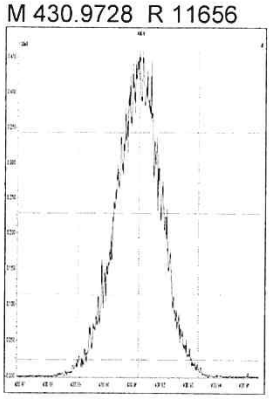
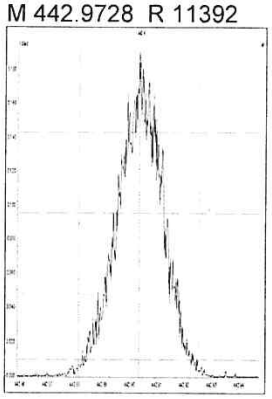


M 442.9728 R 11392



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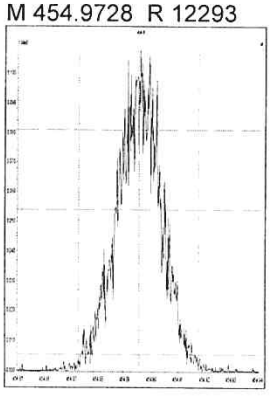

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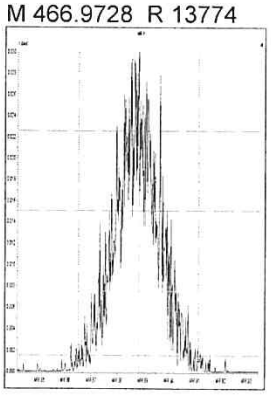

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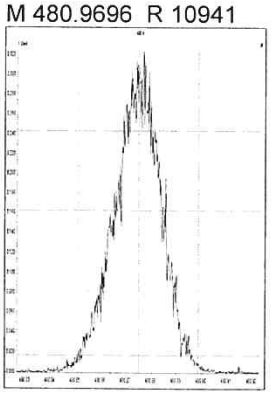

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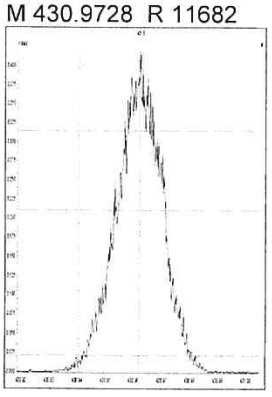
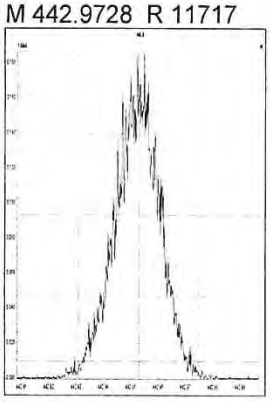


M 442.9728 R 11717



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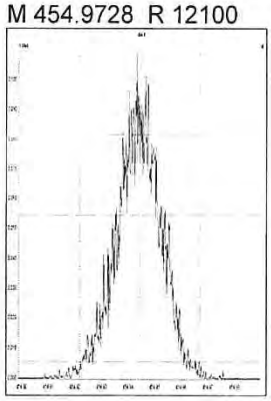
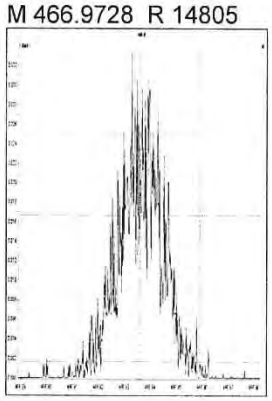
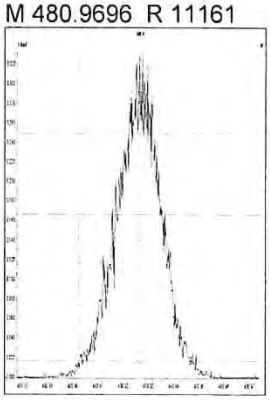


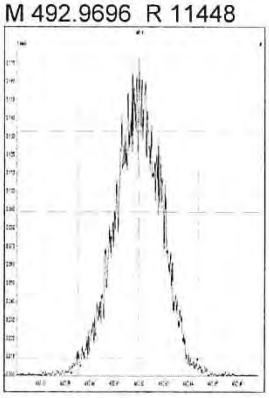
M 466.9728 R 14805



M 480.9696 R 11161



M 492.9696 R 11448



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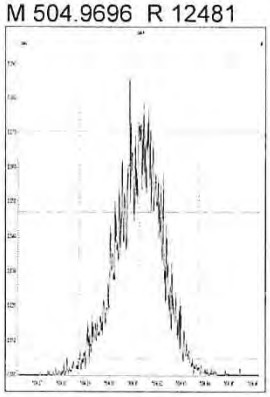

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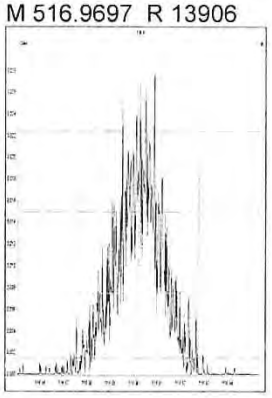


WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

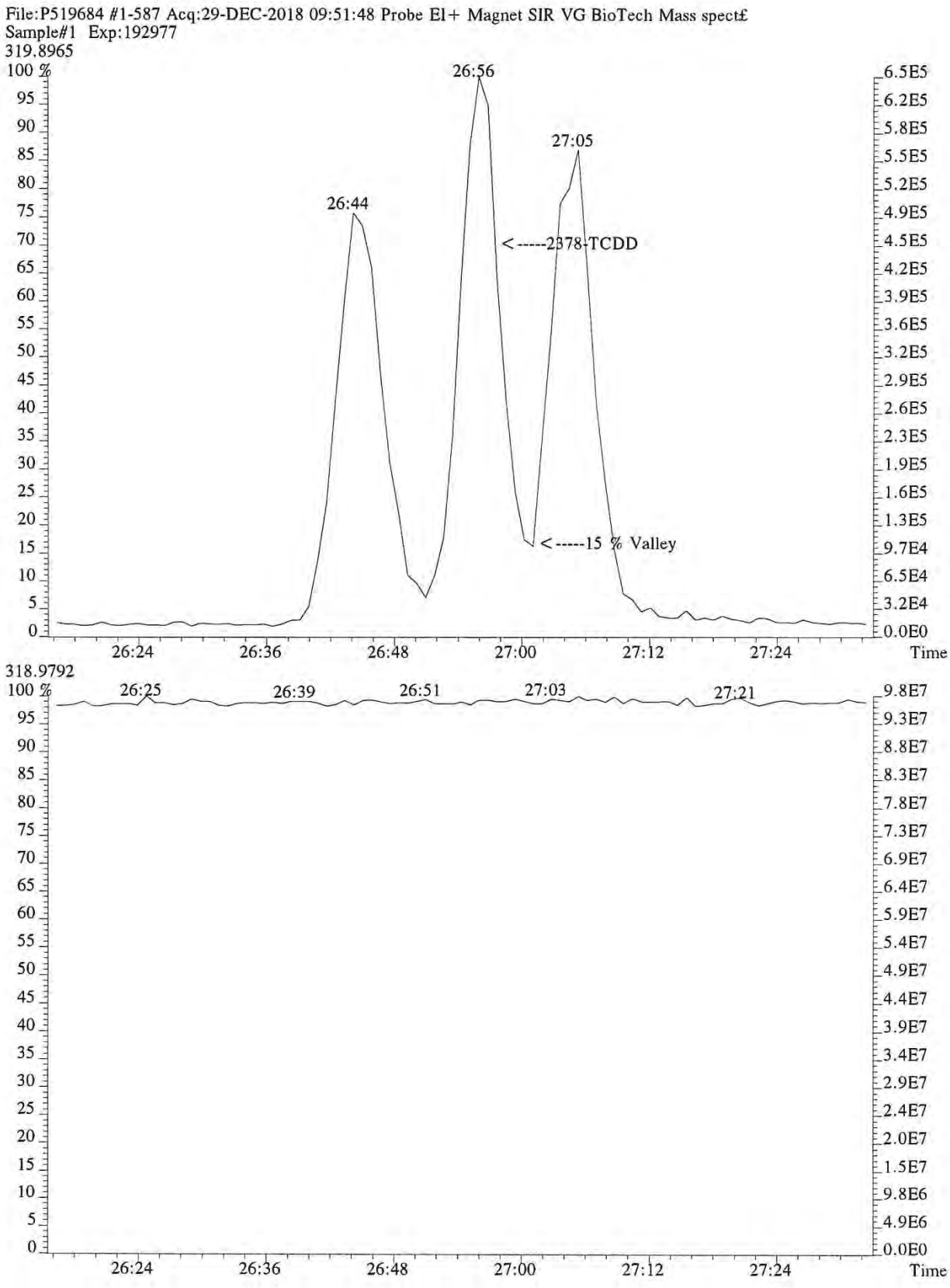
Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

Case No.: _____ SDG No.:
ID: 0.25 (mm) Lab File ID: P519684
Date Analyzed: 29-DEC-18
Time Analyzed: 09:51:48

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	21:35	28:17
TCDD	23:12	28:07
PeCDF	28:16	32:58
PeCDD	30:00	32:43
HxCDF	33:43	36:25
HxCDD	34:17	36:00
HpCDF	37:47	39:13
HpCDD	38:04	38:47

% Valley 2378-TCDD: 15 %

060497


File:P519684 #1-587 Acq:29-DEC-2018 09:51:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
319.8965
100 %
26:56
27:05
26:44
<-----2378-TCDD
<-----15 % Valley
6.5E5
6.2E5
5.8E5
5.5E5
5.2E5
4.9E5
4.5E5
4.2E5
3.9E5
3.6E5
3.2E5
2.9E5
2.6E5
2.3E5
1.9E5
1.6E5
1.3E5
9.7E4
6.5E4
3.2E4
0.0E0
26:24
26:36
26:48
27:00
27:12
27:24
Time
318.9792
100 %
26:25
26:39
26:51
27:03
27:21
9.8E7
9.3E7
8.8E7
8.3E7
7.8E7
7.3E7
6.9E7
6.4E7
5.9E7
5.4E7
4.9E7
4.4E7
3.9E7
3.4E7
2.9E7
2.4E7
2.0E7
1.5E7
9.8E6
4.9E6
0.0E0
26:24
26:36
26:48
27:00
27:12
27:24
Time

060498

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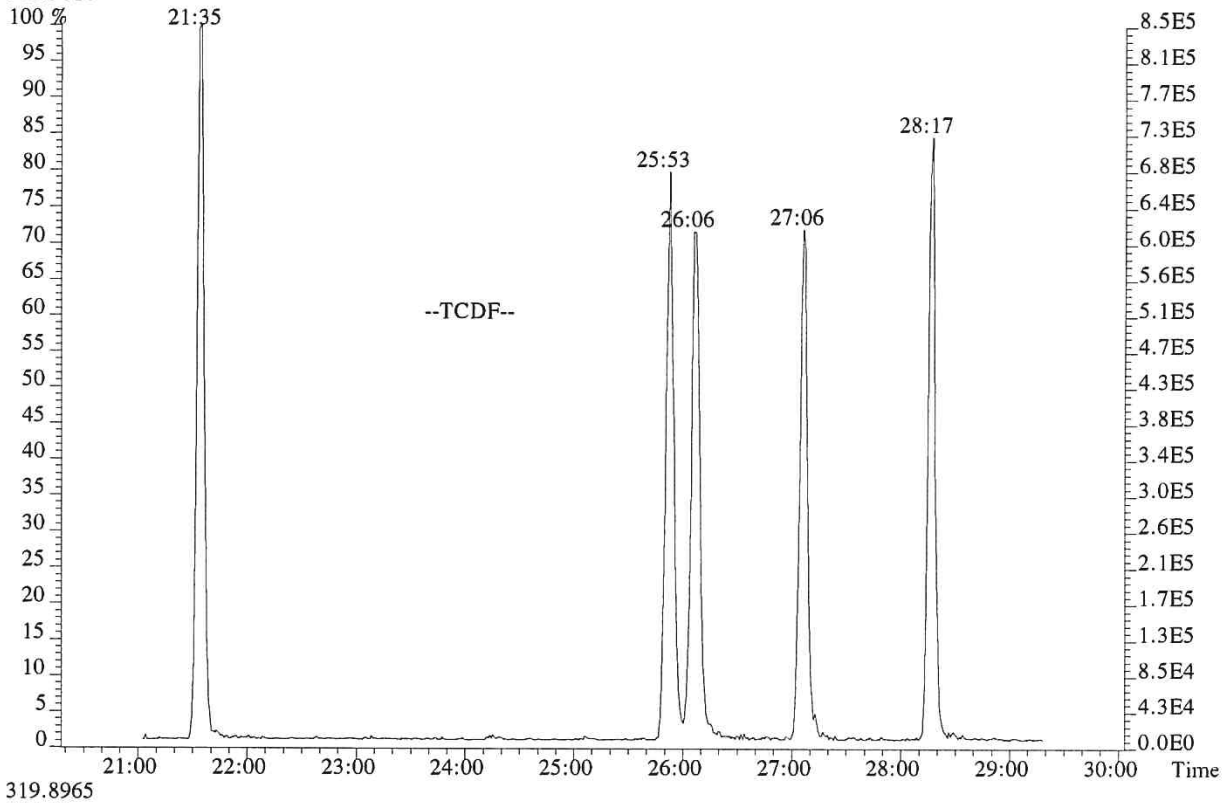
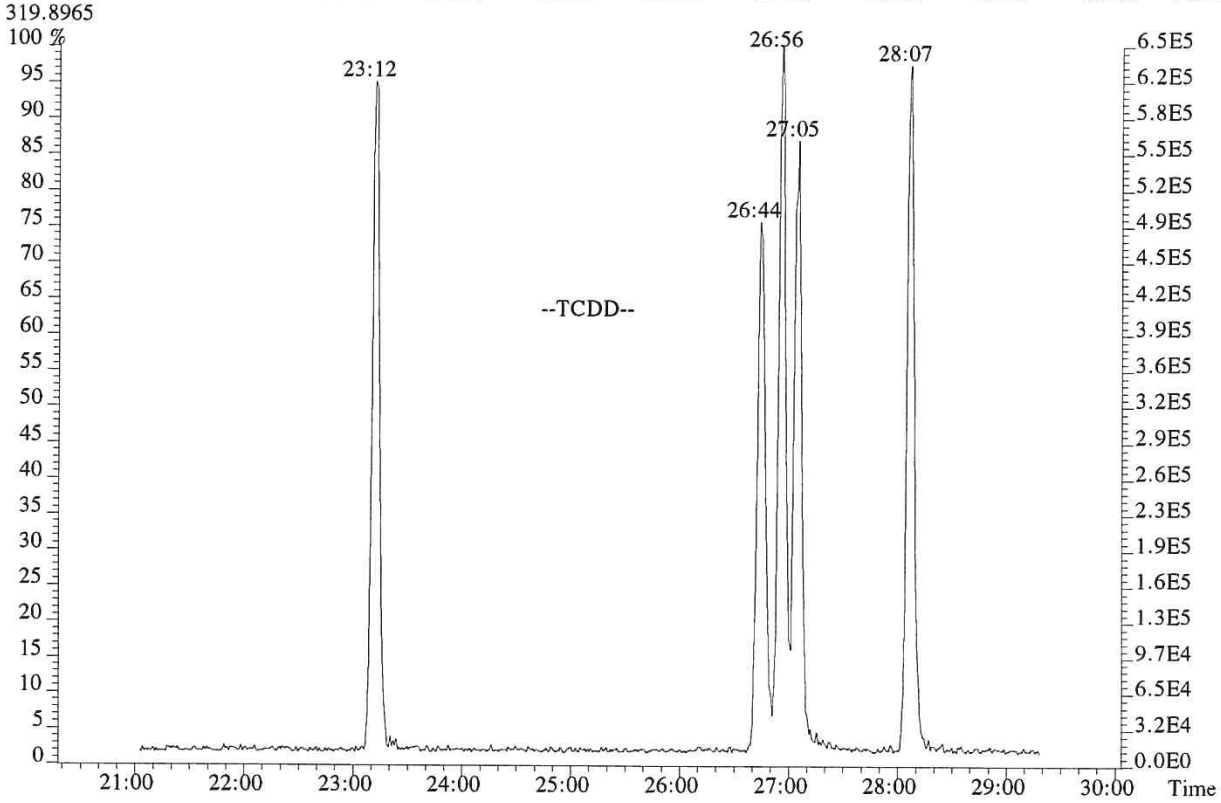
Sample#1 Exp:192977

303.9016

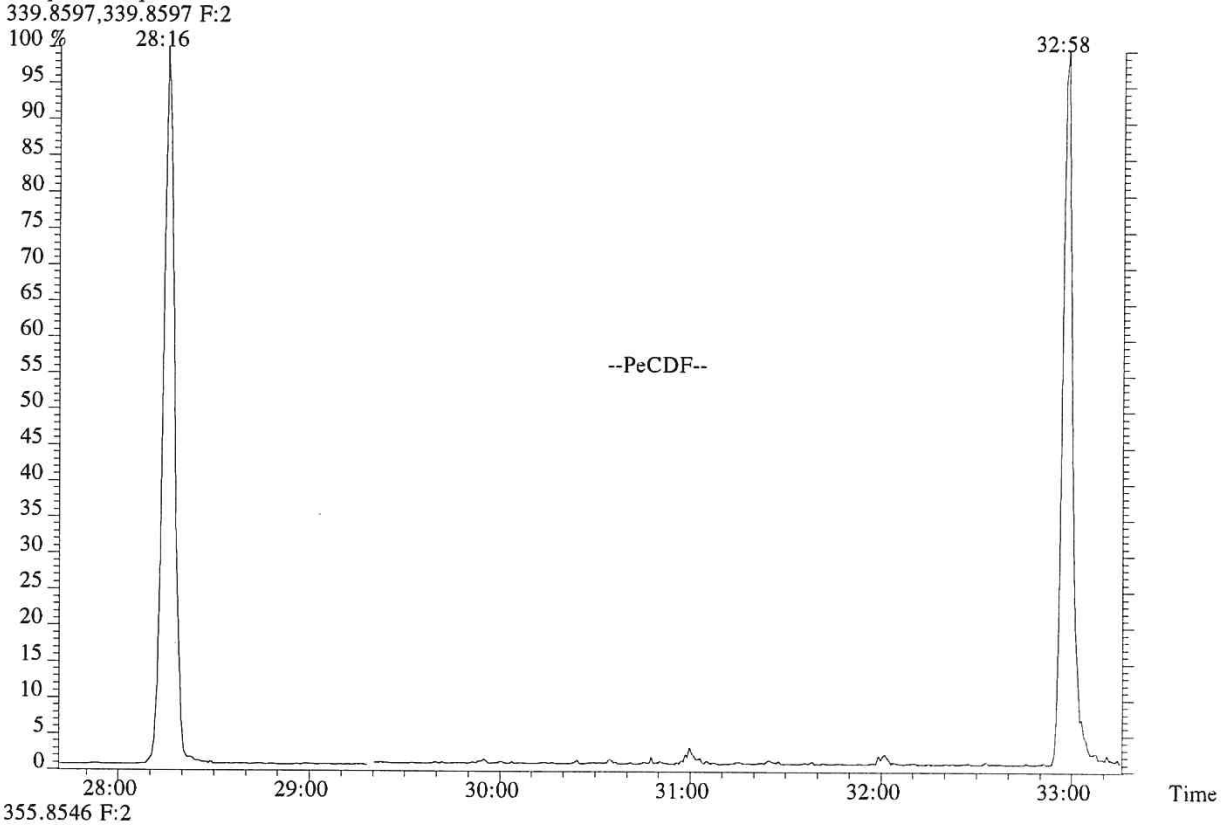


319.8965

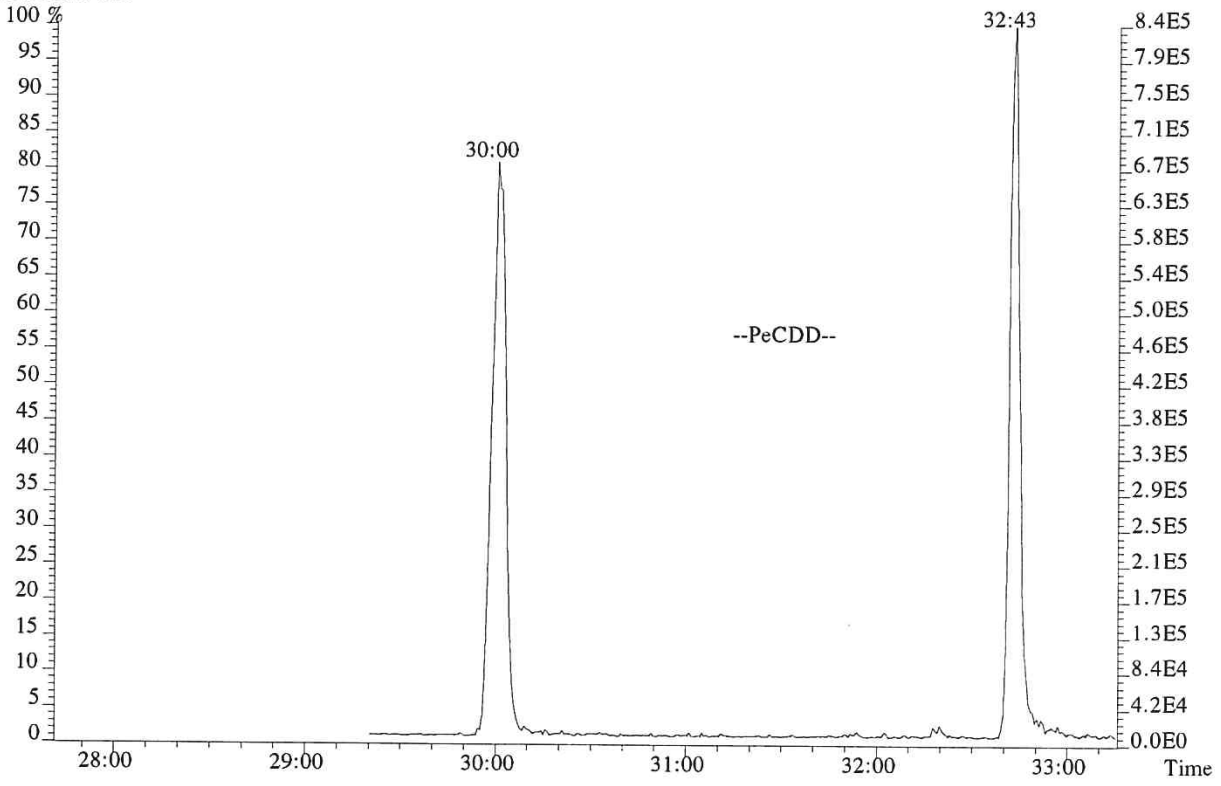


060499

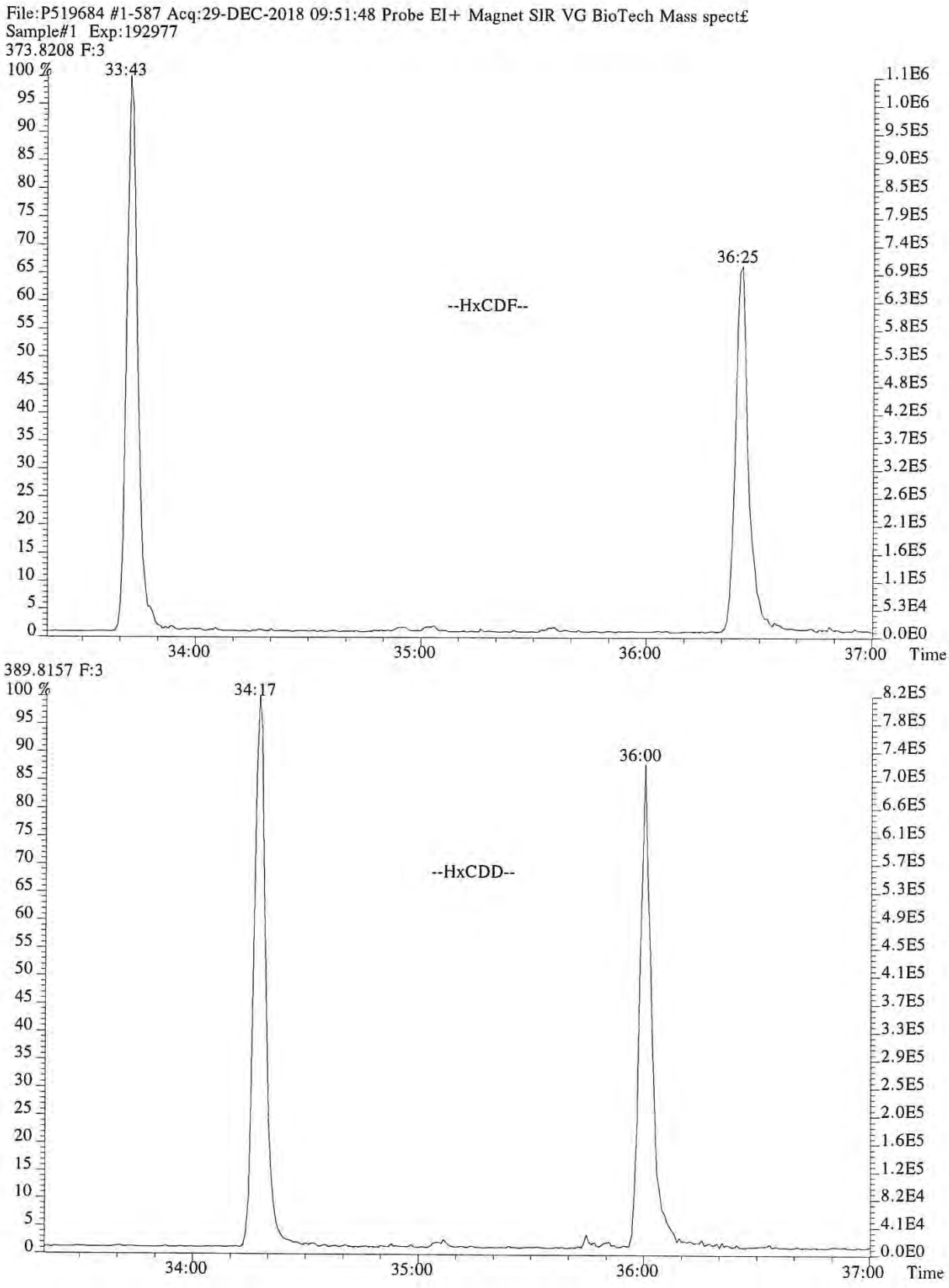
File:P519684 #1-587 Acq:29-DEC-2018 09:51:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
339.8597,339.8597 F:2



355.8546 F:2

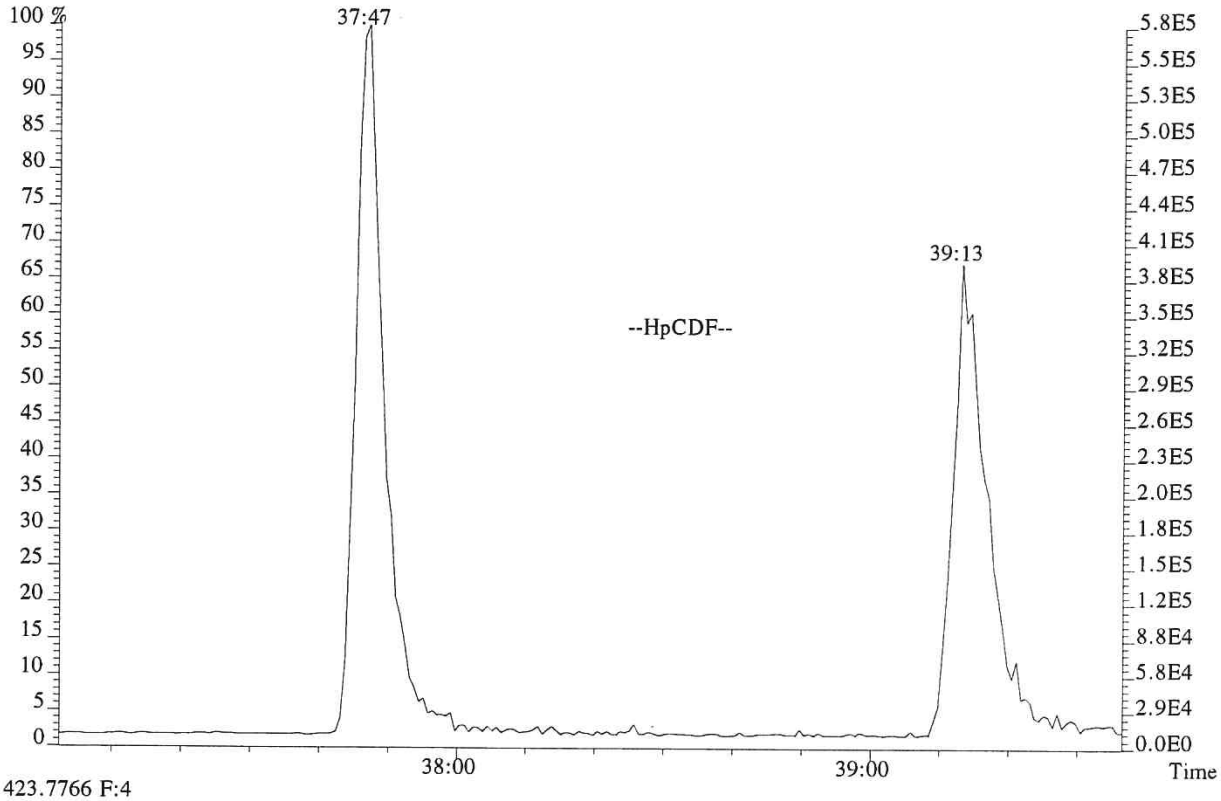


060500

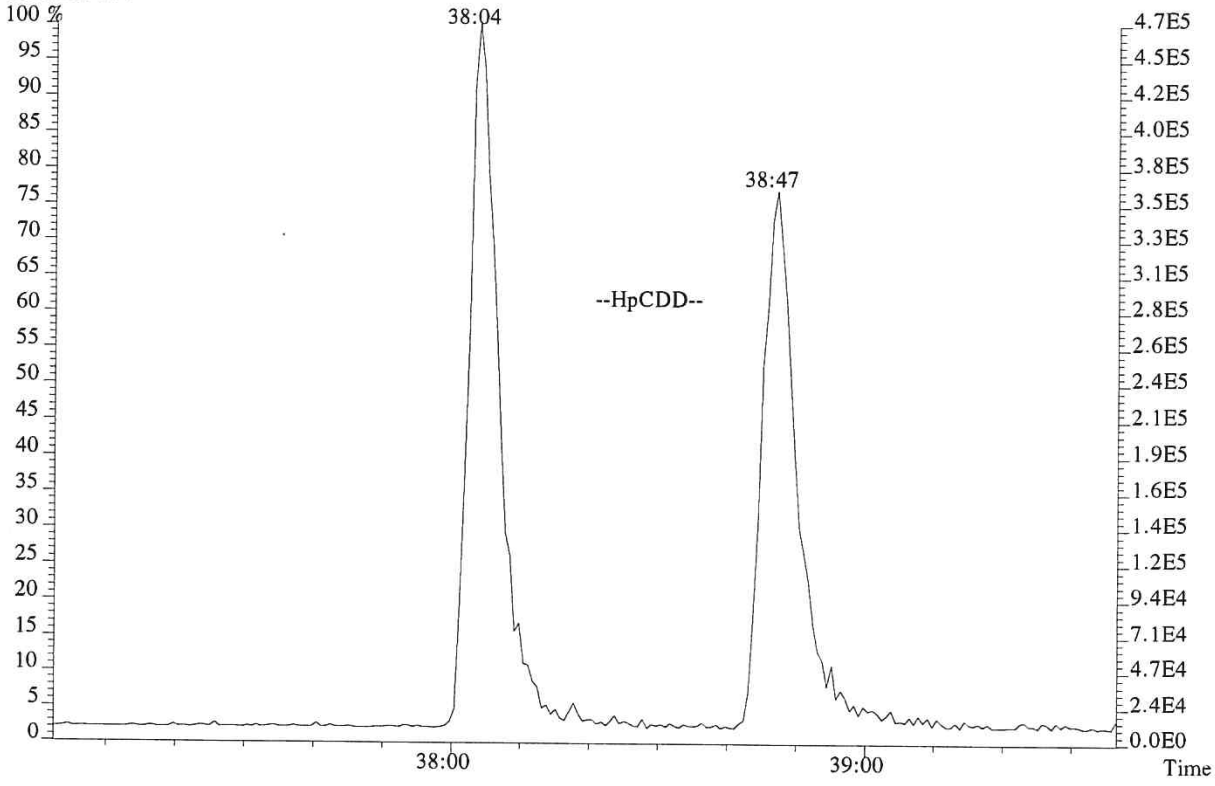

File:P519684 #1-587 Acq:29-DEC-2018 09:51:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
373.8208 F:3
33:43
36:25
--HxCDF--
389.8157 F:3
34:17
36:00
--HxCDD--
Time

060501

File:P519684 #1-587 Acq:29-DEC-2018 09:51:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
407.7818 F:4



423.7766 F:4



060502

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519683 Analysis Date: 29-DEC-18 Time: 08:59:21

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	9.1	7.8 - 12.9	-9.4
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	48	39 - 65	-4.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	47	39 - 64	-6.2
1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	48	39 - 64	-3.9
1,2,3,7,8,9-HxCDD	M+2/M+4	1.28	1.05-1.43	49	41 - 61	-1.4
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	49	43 - 58	-2.6
OCDD	M+2/M+4	0.89	0.76-1.02	96	79 - 126	-4.5
2,3,7,8-TCDF	M/M+2	0.74	0.65-0.89	9.1	8.4 - 12.0	-8.8
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	48	41 - 60	-4.8
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.32-1.78	47	41 - 61	-5.1
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	49	45 - 56	-1.3
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	49	44 - 57	-1.6
1,2,3,7,8,9-HxCDF	M+2/M+4	1.19	1.05-1.43	48	45 - 56	-4.3
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	49	44 - 57	-2.6
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	49	45 - 55	-1.8
1,2,3,4,7,8,9-HpCDF	M+2/M+4	0.99	0.88-1.20	49	43 - 58	-1.4
OCDF	M+2/M+4	0.90	0.76-1.02	88	63 - 159	-12.0

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519683 Analysis Date: 29-DEC-18 Time: 08:59:21

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	100	82 - 121	-0.2
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	101	62 - 160	1.1
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	88	85 - 117	-12.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	107	85 - 118	7.2
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	96	72 - 138	-3.6
13C-OCDD	M+2/M+4	0.91	0.76-1.02	241	96 - 415	20.6
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	85	71 - 140	-14.8
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	91	76 - 130	-9.2
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	91	77 - 130	-8.5
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	76	76 - 131	-23.9
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	92	70 - 143	-7.7
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	82	74 - 135	-18.2
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	87	73 - 137	-13.1
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	89	78 - 129	-11.5
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	87	77 - 129	-12.7
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			9.3	7.8 - 12.7	-6.5

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
194503

Run #7 Filename P519683 Samp: 1 Inj: 1 Acquired: 29-DEC-18 08:59:21
Processed: 30-DEC-18 07:55:10 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:08	4.657e+03	6.330e+03	0.74	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	31:00	3.866e+04	2.517e+04	1.54	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	3.621e+04	2.386e+04	1.52	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	2.775e+04	2.268e+04	1.22	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	3.590e+04	2.933e+04	1.22	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	2.964e+04	2.433e+04	1.22	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:23	2.413e+04	2.035e+04	1.19	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:47	2.636e+04	2.553e+04	1.03	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:14	2.025e+04	2.036e+04	0.99	yes	no	1.258
10	Unk	OCDF	41:53	3.646e+04	4.032e+04	0.90	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:06	3.941e+03	5.052e+03	0.78	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:20	2.747e+04	1.742e+04	1.58	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:45	1.999e+04	1.624e+04	1.23	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:51	2.557e+04	2.084e+04	1.23	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	2.467e+04	1.921e+04	1.28	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:48	1.940e+04	1.833e+04	1.06	yes	no	1.025
17	Unk	OCDD	41:43	3.226e+04	3.639e+04	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:06	5.625e+04	7.164e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:59	8.070e+04	5.173e+04	1.56	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:60	8.072e+04	5.138e+04	1.57	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	2.909e+04	5.680e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	4.029e+04	7.784e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	3.392e+04	6.598e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	2.758e+04	5.365e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:46	2.443e+04	5.381e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	1.996e+04	4.551e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:04	4.035e+04	5.107e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:19	5.995e+04	3.785e+04	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	4.151e+04	3.291e+04	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:50	5.170e+04	4.133e+04	1.25	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:47	3.881e+04	3.683e+04	1.05	yes	no	0.858
32	IS	13C-OCDD	41:43	6.118e+04	6.734e+04	0.91	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:23	4.395e+04	5.523e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	5.130e+04	4.018e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:06	9.396e+03				no	1.014

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
194503

Run #7 Filename P519683 Samp: 1 Inj: 1 Acquired: 29-DEC-18 08:59:21
Processed: 30-DEC-18 07:55:10 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	7.26e+05	9.36e+02	7.8e+02	1.01e+06	1.32e+03	7.7e+02
2	1,2,3,7,8-PeCDF	5.98e+06	7.80e+02	7.7e+03	3.84e+06	1.44e+03	2.7e+03
3	2,3,4,7,8-PeCDF	5.96e+06	7.80e+02	7.6e+03	3.94e+06	1.44e+03	2.7e+03
4	1,2,3,4,7,8-HxCDF	5.08e+06	1.01e+03	5.0e+03	4.12e+06	9.64e+02	4.3e+03
5	1,2,3,6,7,8-HxCDF	5.20e+06	1.01e+03	5.1e+03	4.29e+06	9.64e+02	4.4e+03
6	2,3,4,6,7,8-HxCDF	4.69e+06	1.01e+03	4.6e+03	3.87e+06	9.64e+02	4.0e+03
7	1,2,3,7,8,9-HxCDF	3.41e+06	1.01e+03	3.4e+03	2.87e+06	9.64e+02	3.0e+03
8	1,2,3,4,6,7,8-HpCDF	3.23e+06	2.52e+03	1.3e+03	3.11e+06	5.56e+03	5.6e+02
9	1,2,3,4,7,8,9-HpCDF	1.99e+06	2.52e+03	7.9e+02	1.98e+06	5.56e+03	3.6e+02
10	OCDF	2.15e+06	5.08e+02	4.2e+03	2.39e+06	1.26e+03	1.9e+03
11	2,3,7,8-TCDD	6.11e+05	2.88e+03	2.1e+02	8.07e+05	1.21e+03	6.7e+02
12	1,2,3,7,8-PeCDD	4.35e+06	1.03e+03	4.2e+03	2.75e+06	3.12e+02	8.8e+03
13	1,2,3,4,7,8-HxCDD	3.56e+06	5.80e+02	6.1e+03	2.87e+06	7.56e+02	3.8e+03
14	1,2,3,6,7,8-HxCDD	3.73e+06	5.80e+02	6.4e+03	3.06e+06	7.56e+02	4.0e+03
15	1,2,3,7,8,9-HxCDD	3.28e+06	5.80e+02	5.7e+03	2.63e+06	7.56e+02	3.5e+03
16	1,2,3,4,6,7,8-HpCDD	1.99e+06	7.36e+02	2.7e+03	1.89e+06	4.20e+02	4.5e+03
17	OCDD	1.91e+06	4.12e+02	4.6e+03	2.11e+06	3.52e+02	6.0e+03
18	13C-2,3,7,8-TCDF	8.52e+06	7.71e+03	1.1e+03	1.09e+07	7.18e+03	1.5e+03
19	13C-1,2,3,7,8-PeCDF	1.23e+07	7.32e+02	1.7e+04	7.91e+06	6.08e+02	1.3e+04
20	13C-2,3,4,7,8-PeCDF	1.31e+07	7.32e+02	1.8e+04	8.39e+06	6.08e+02	1.4e+04
21	13C-1,2,3,4,7,8-HxCDF	5.33e+06	1.13e+03	4.7e+03	1.04e+07	8.48e+02	1.2e+04
22	13C-1,2,3,6,7,8-HxCDF	5.86e+06	1.13e+03	5.2e+03	1.14e+07	8.48e+02	1.3e+04
23	13C-2,3,4,6,7,8-HxCDF	5.37e+06	1.13e+03	4.8e+03	1.04e+07	8.48e+02	1.2e+04
24	13C-1,2,3,7,8,9-HxCDF	3.87e+06	1.13e+03	3.4e+03	7.44e+06	8.48e+02	8.8e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.94e+06	2.56e+03	1.1e+03	6.57e+06	7.26e+03	9.1e+02
26	13C-1,2,3,4,7,8,9-HpCDF	1.90e+06	2.56e+03	7.4e+02	4.33e+06	7.26e+03	6.0e+02
27	13C-2,3,7,8-TCDD	6.39e+06	6.06e+03	1.1e+03	7.97e+06	1.56e+03	5.1e+03
28	13C-1,2,3,7,8-PeCDD	9.34e+06	1.05e+03	8.9e+03	5.80e+06	1.46e+03	4.0e+03
29	13C-1,2,3,4,7,8-HxCDD	7.28e+06	8.12e+02	9.0e+03	5.70e+06	9.60e+02	5.9e+03
30	13C-1,2,3,6,7,8-HxCDD	7.49e+06	8.12e+02	9.2e+03	5.93e+06	9.60e+02	6.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.94e+06	8.88e+02	4.4e+03	3.69e+06	5.52e+02	6.7e+03
32	13C-OCDD	3.55e+06	6.88e+02	5.2e+03	3.84e+06	4.88e+02	7.9e+03
33	13C-1,2,3,4-TCDD	6.88e+06	6.06e+03	1.1e+03	8.65e+06	1.56e+03	5.5e+03
34	13C-1,2,3,7,8,9-HxCDD	6.90e+06	8.12e+02	8.5e+03	5.42e+06	9.60e+02	5.7e+03
35	37Cl-2,3,7,8-TCDD	1.51e+06	1.30e+03	1.2e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.876e{+}03 + 1.212e{+}03\ ) \times 100}{(6.392e{+}06 + 7.972e{+}06\ ) \times (\qquad\qquad) \times 1.085} =$$

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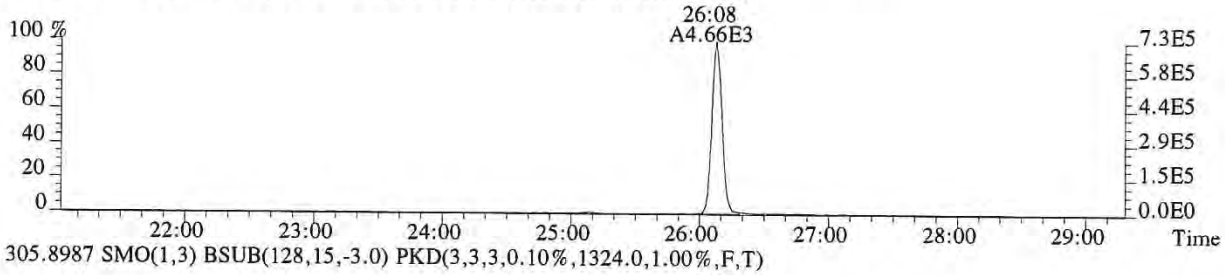
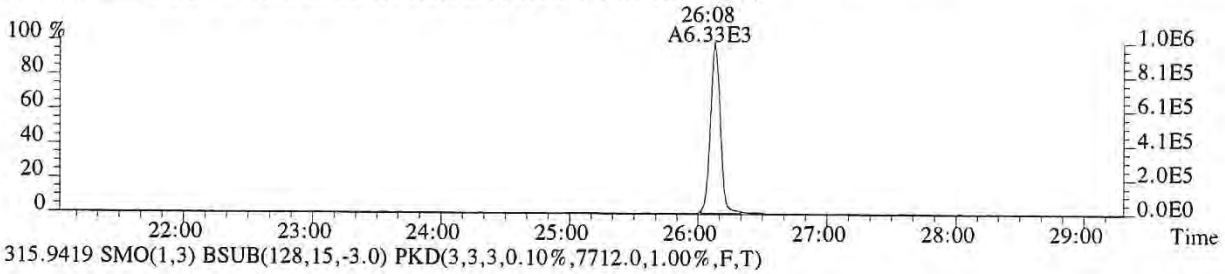
060506

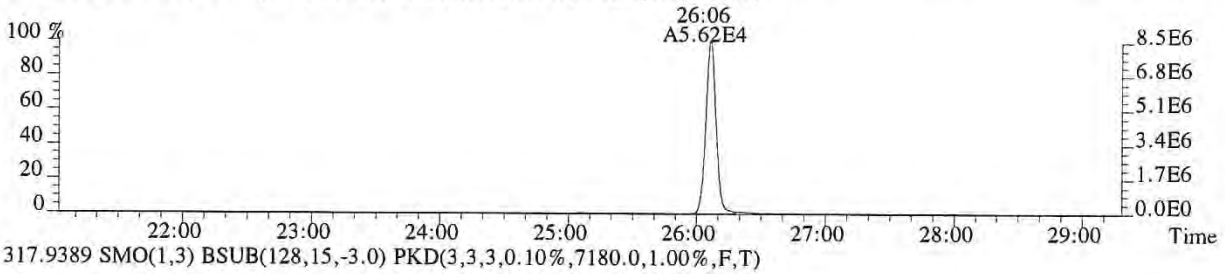
File:P519683 #1-587 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,936.0,1.00%,F,T)



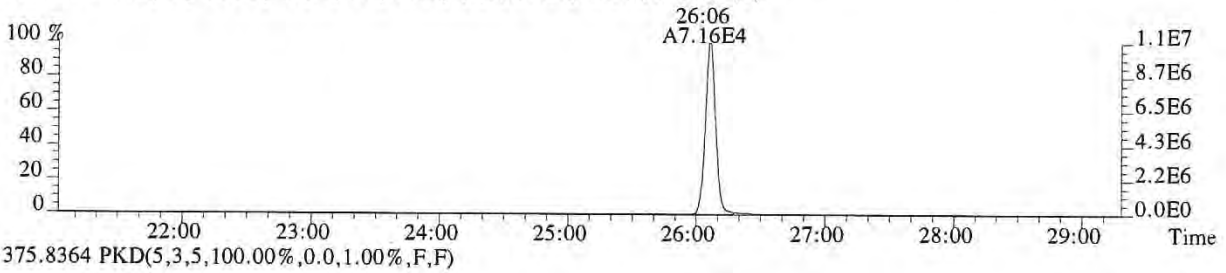
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1324.0,1.00%,F,T)



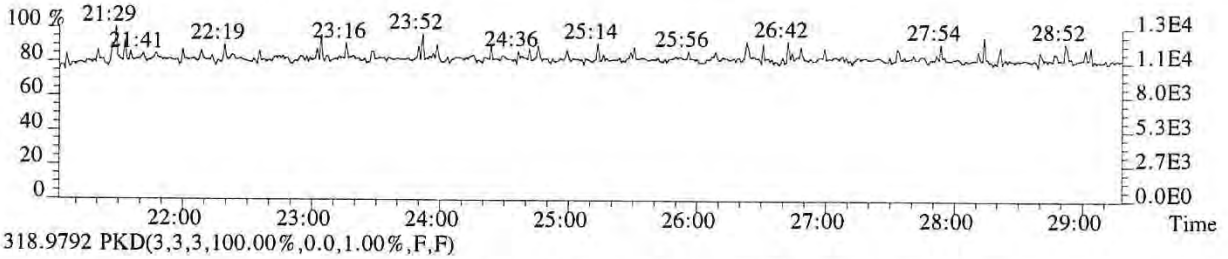
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7712.0,1.00%,F,T)



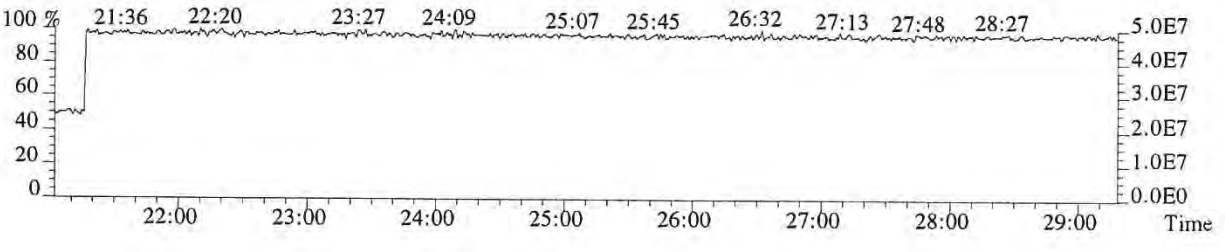
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7180.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



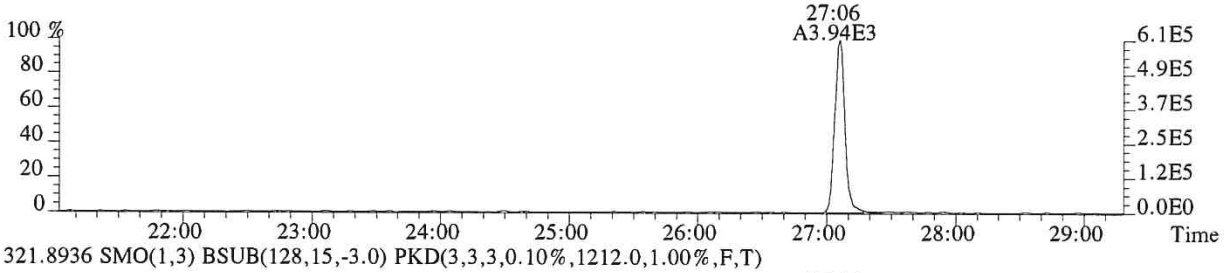
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



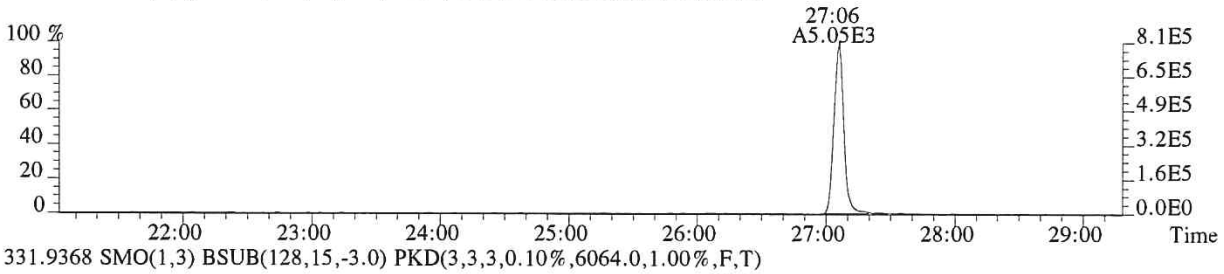
060507

File:P519683 #1-587 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

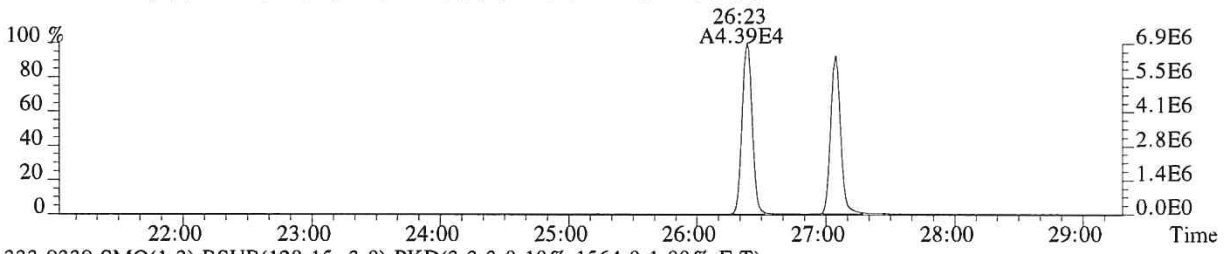
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2876.0,1.00%,F,T)



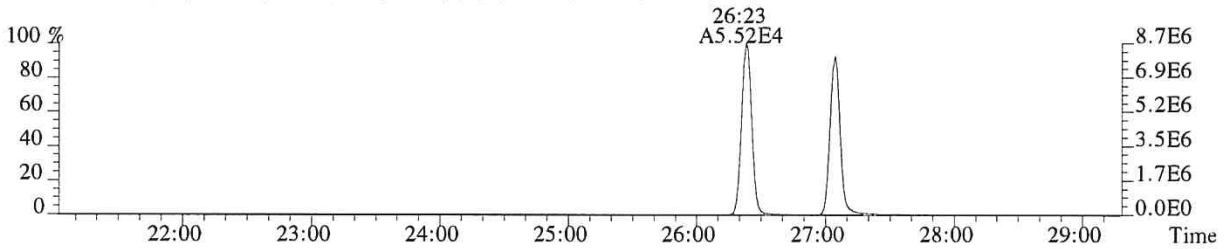
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1212.0,1.00%,F,T)



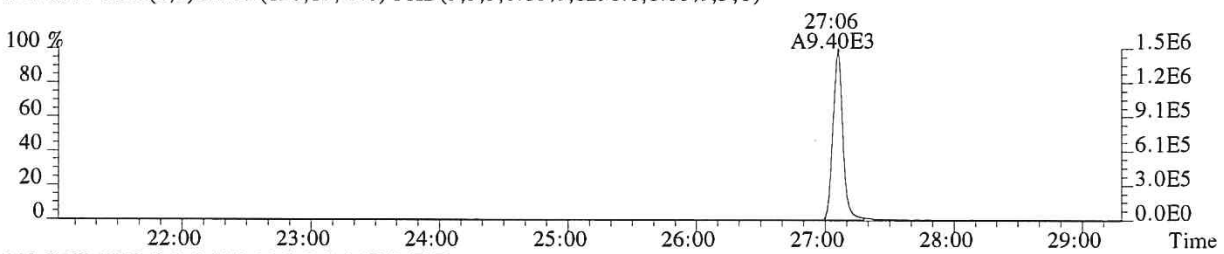
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6064.0,1.00%,F,T)



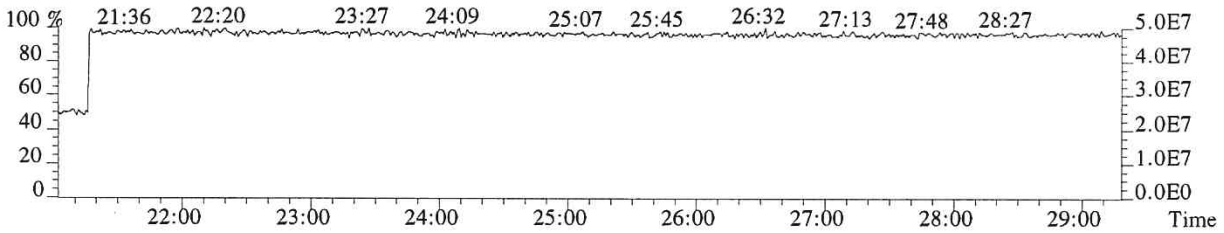
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1564.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1296.0,1.00%,F,T)

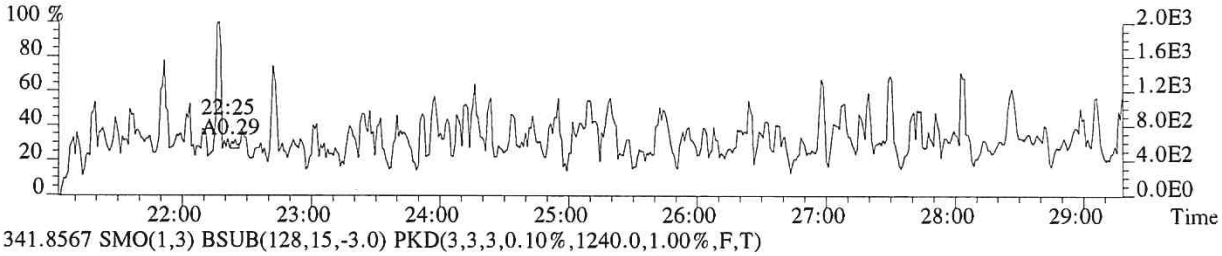


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

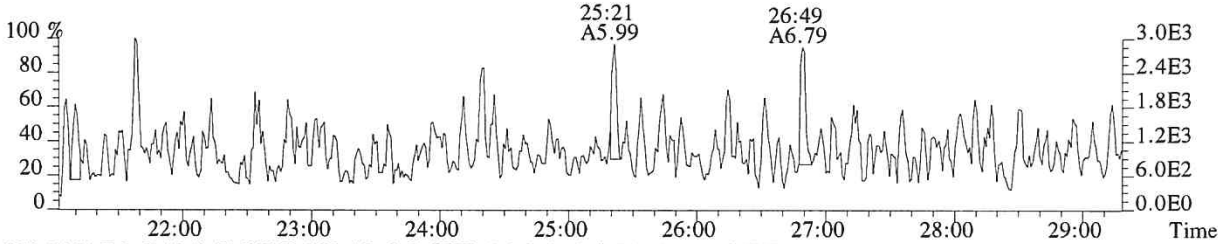


060508

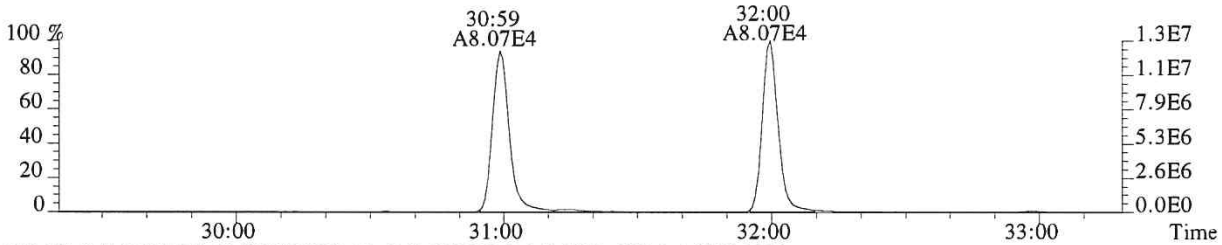
File:P519683 #1-587 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



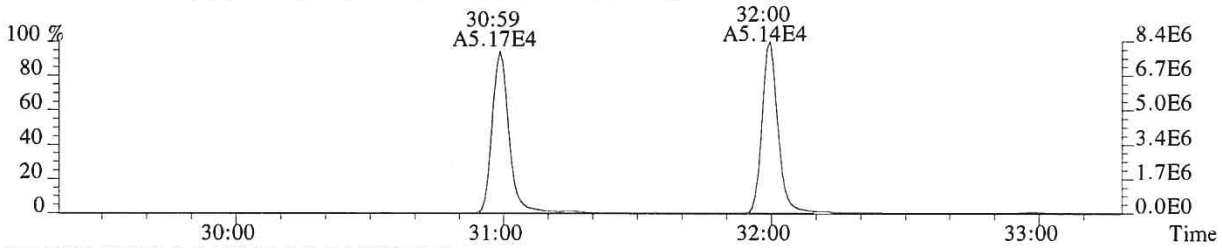
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1240.0,1.00%,F,T)



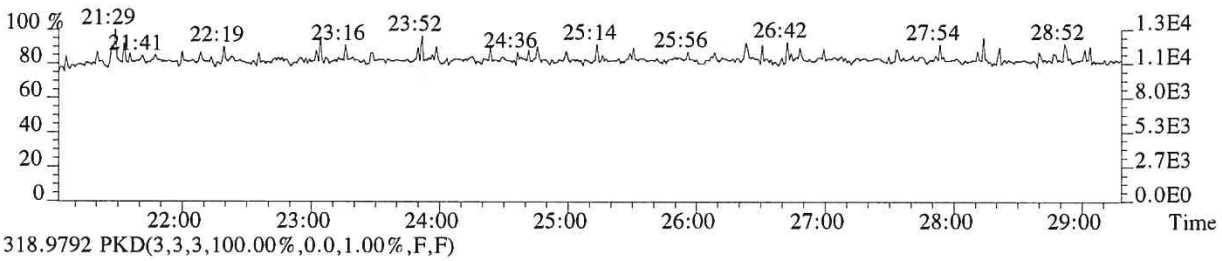
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,732.0,1.00%,F,T)



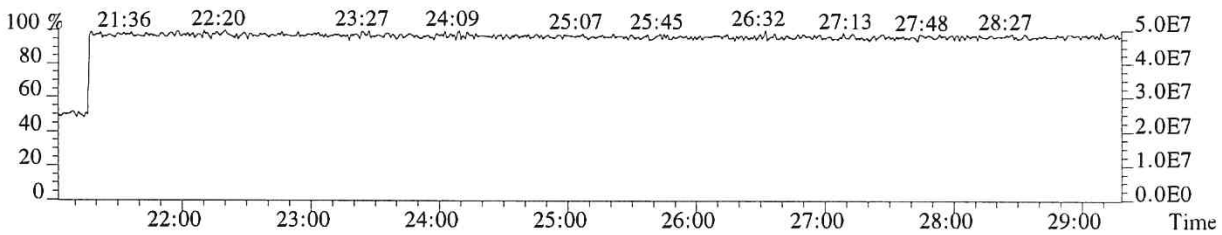
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,608.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

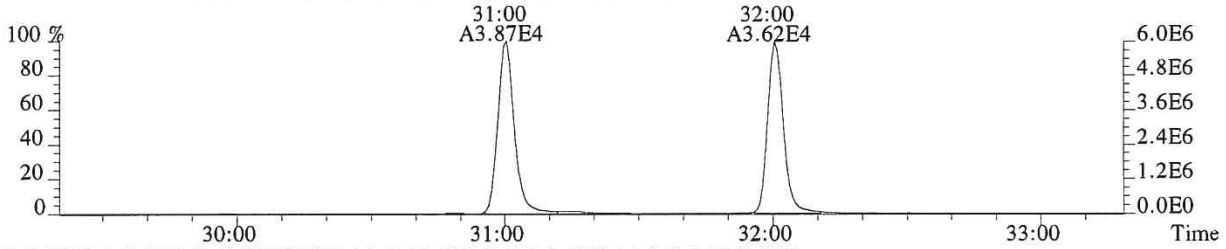


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

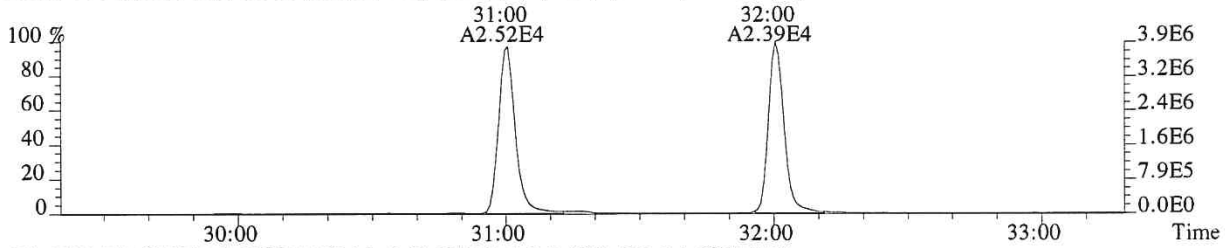


060509

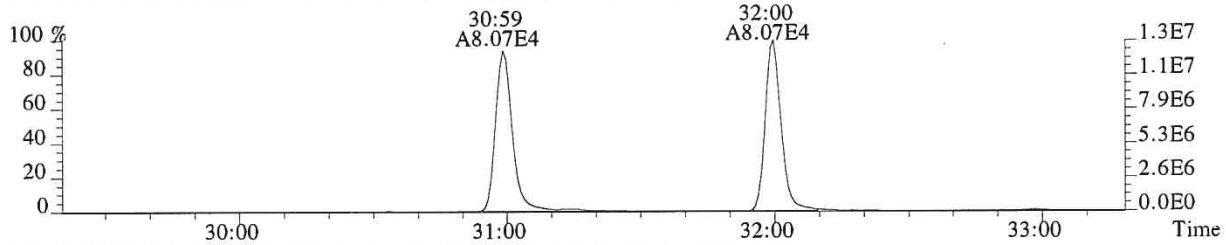
File:P519683 #1-358 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,780.0,1.00%,F,T)



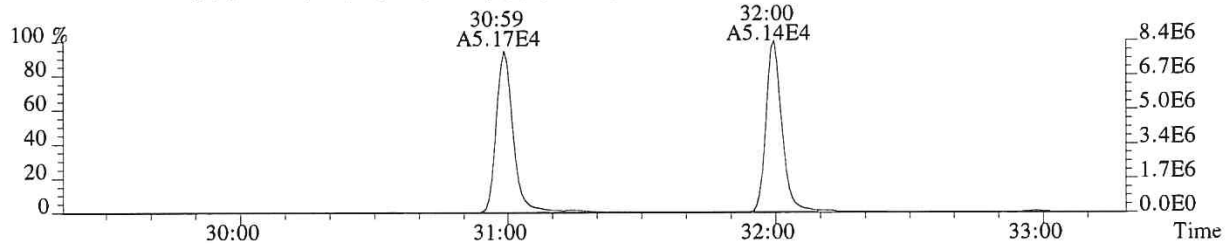
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1440.0,1.00%,F,T)



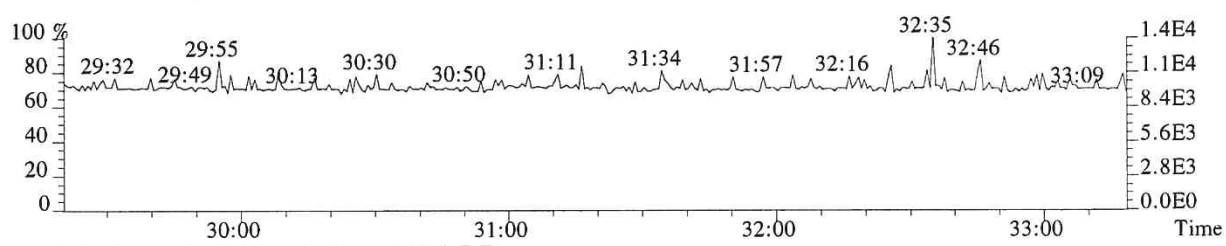
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,732.0,1.00%,F,T)



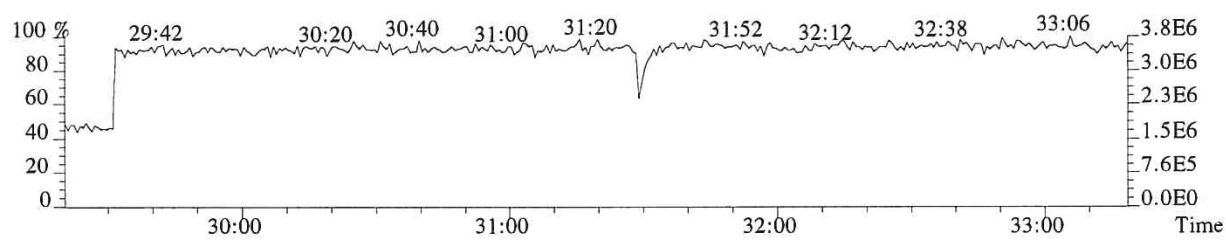
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,608.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

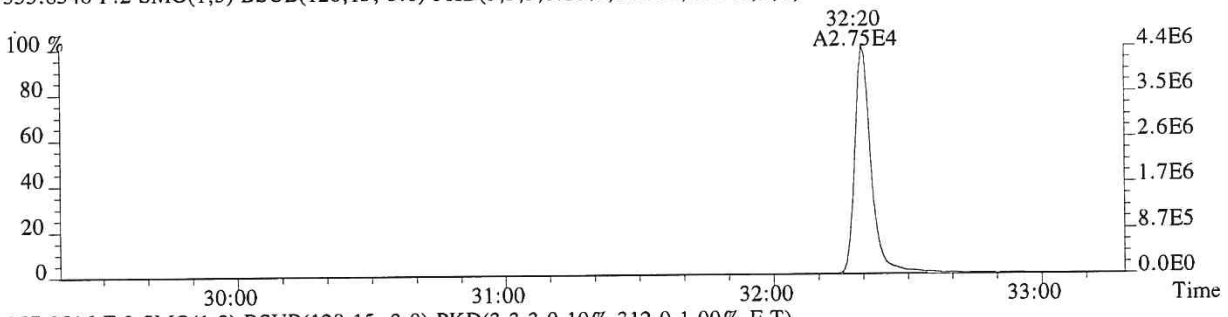


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

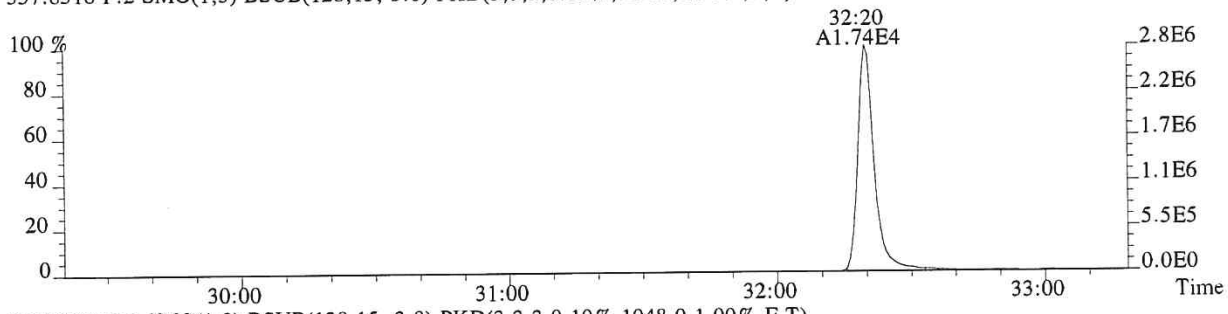


060510

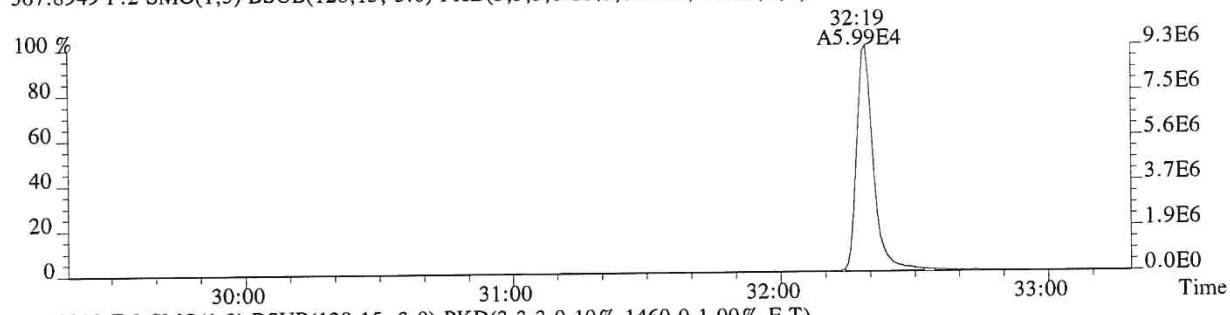
File:P519683 #1-358 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1032.0,1.00%,F,T)



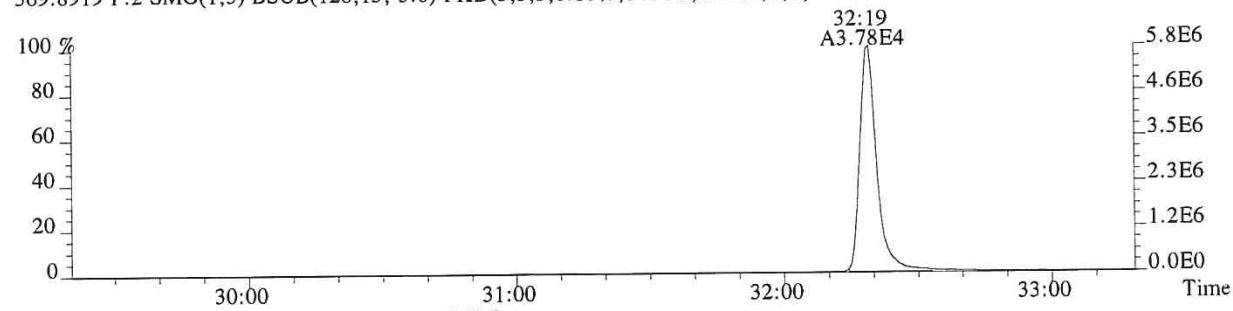
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,312.0,1.00%,F,T)



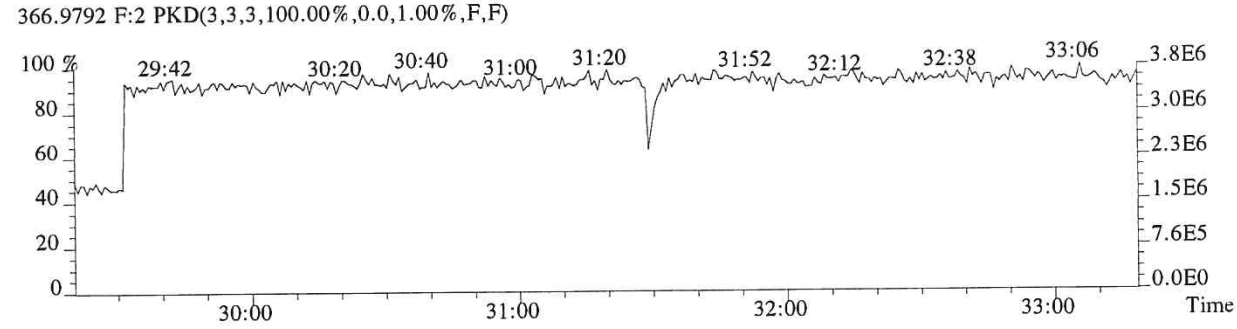
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1460.0,1.00%,F,T)

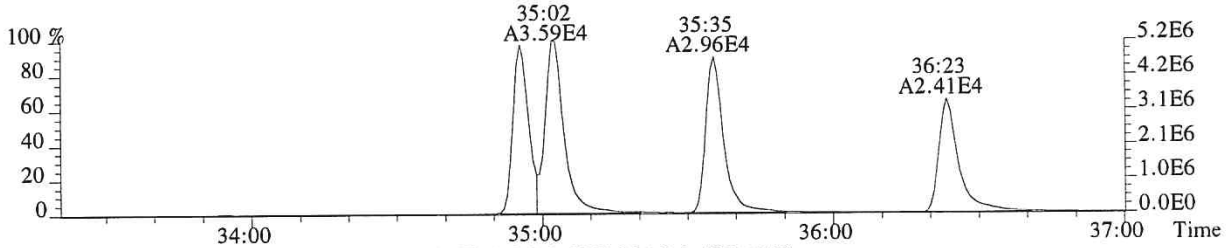


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

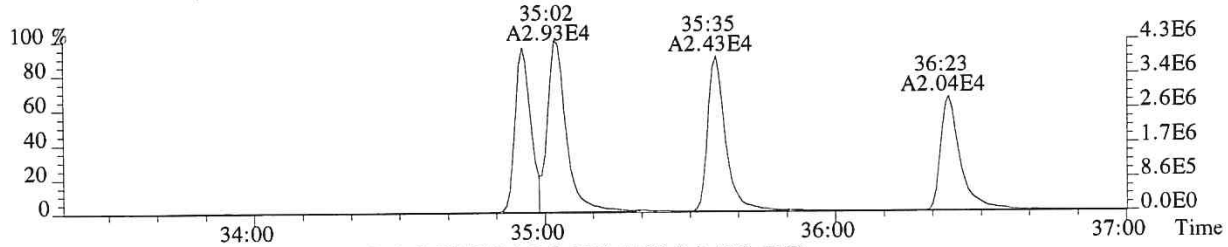


060511

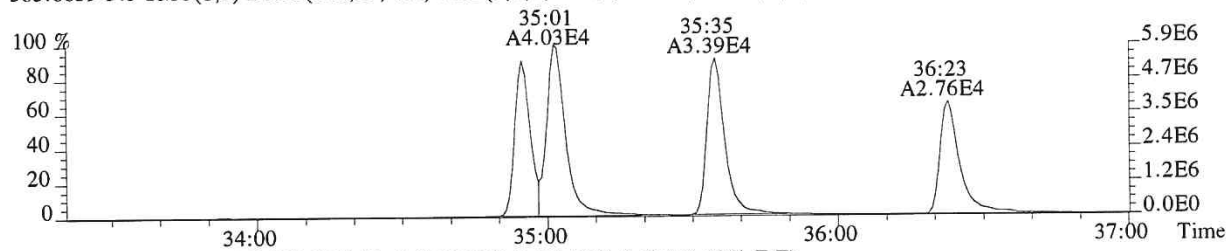
File:P519683 #1-330 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1012.0,0.40%,F,T)



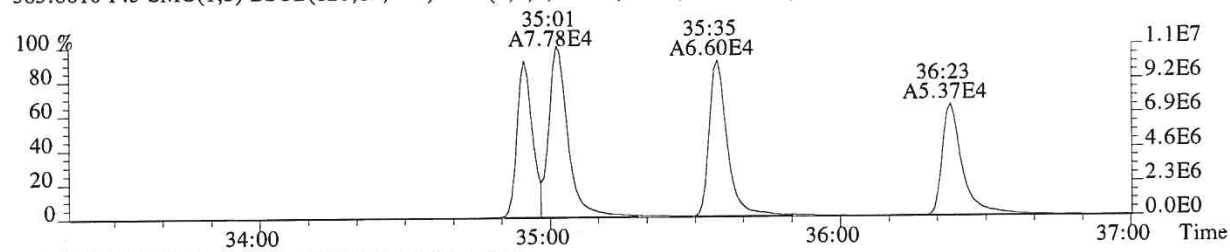
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,964.0,0.40%,F,T)



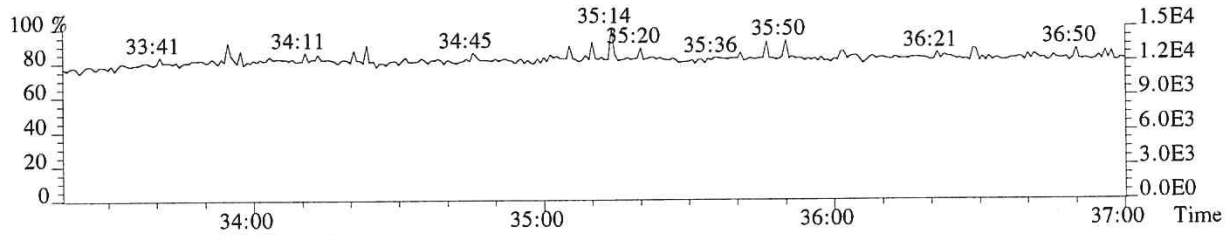
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1128.0,0.40%,F,T)



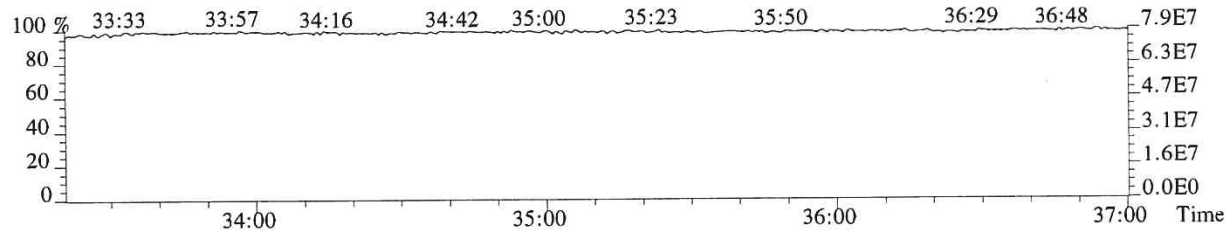
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,848.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

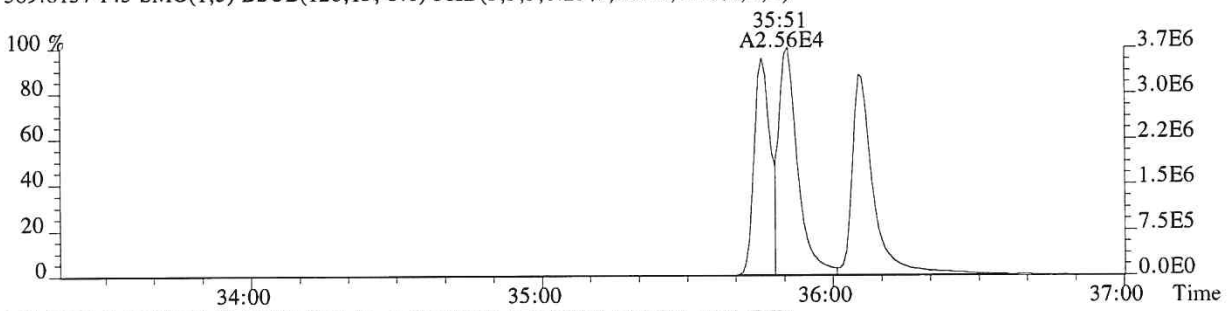


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

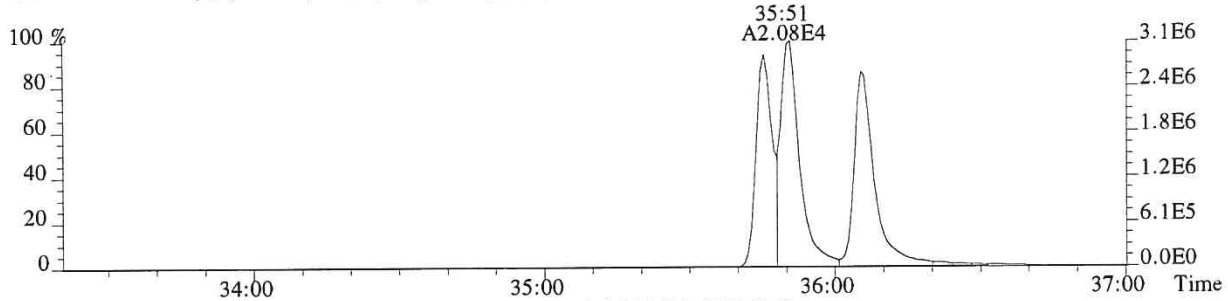


060512

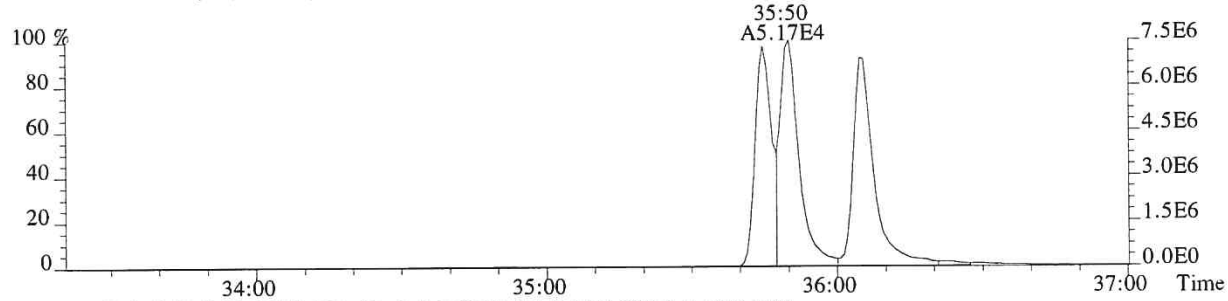
File:P519683 #1-330 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,580.0,0.40%,F,T)



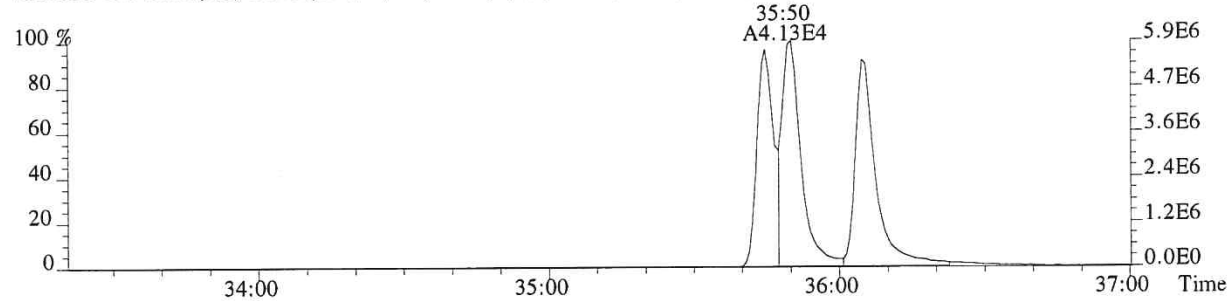
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,756.0,0.40%,F,T)



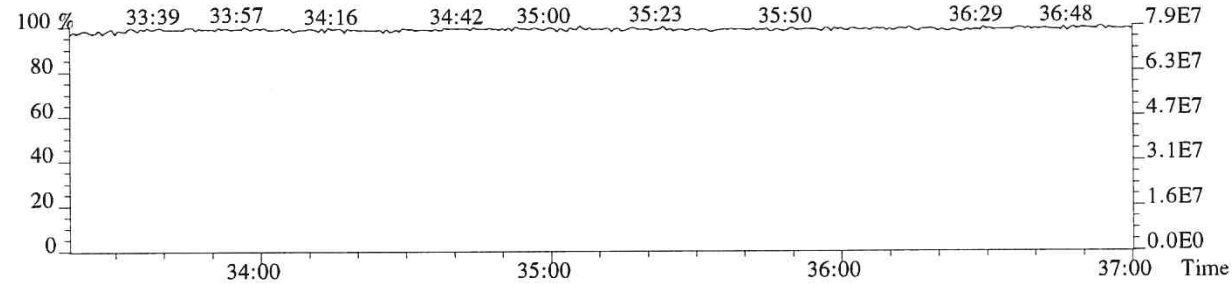
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,812.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,960.0,0.40%,F,T)

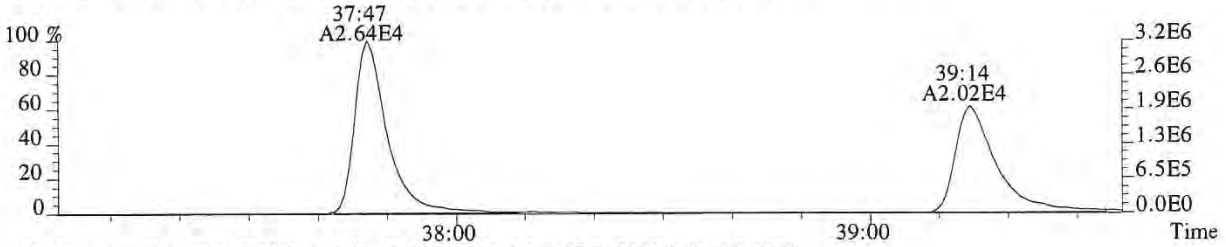


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



060513

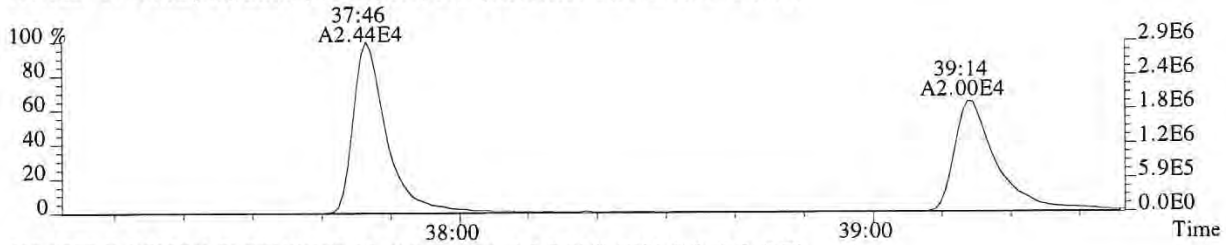
File:P519683 #1-232 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2520.0,0.50%,F,T)



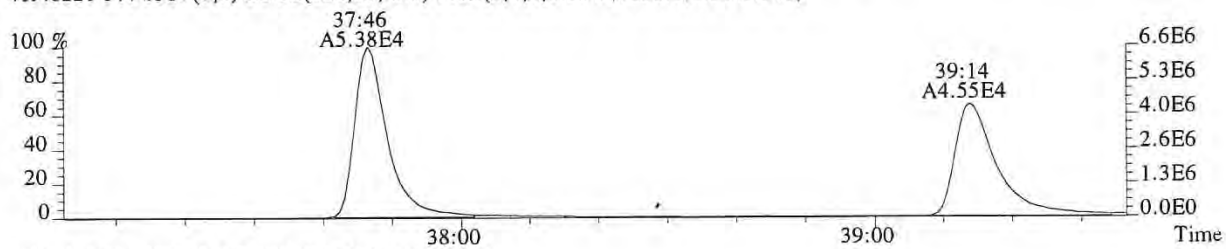
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5556.0,0.50%,F,T)



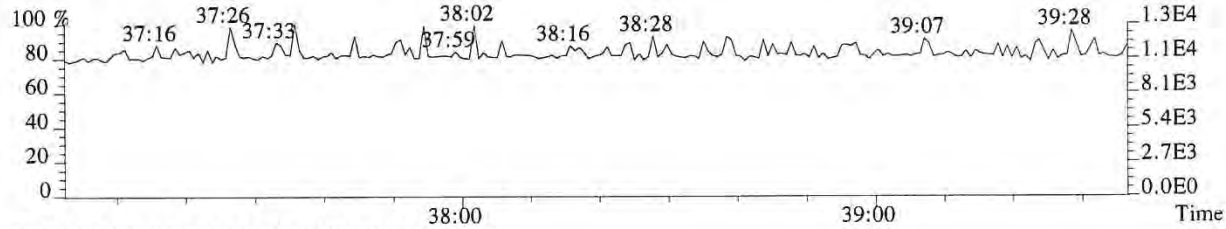
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2556.0,0.50%,F,T)



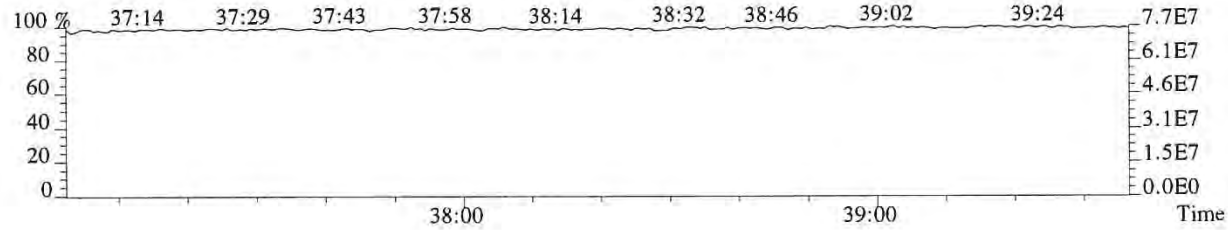
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7256.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

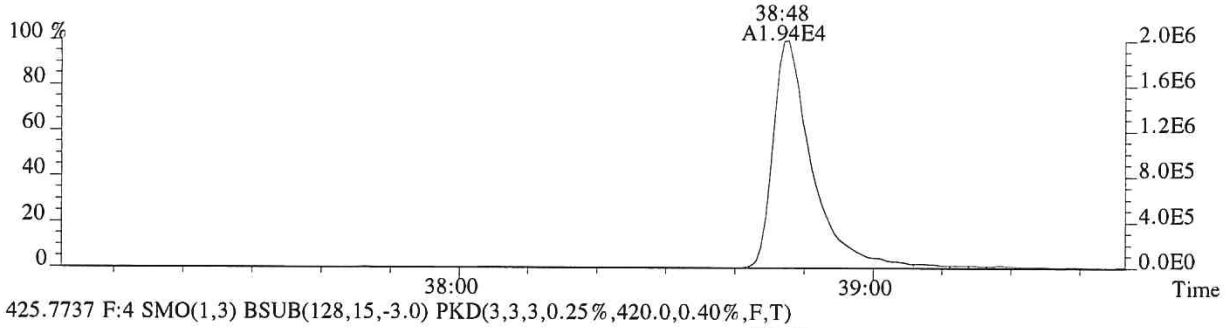


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

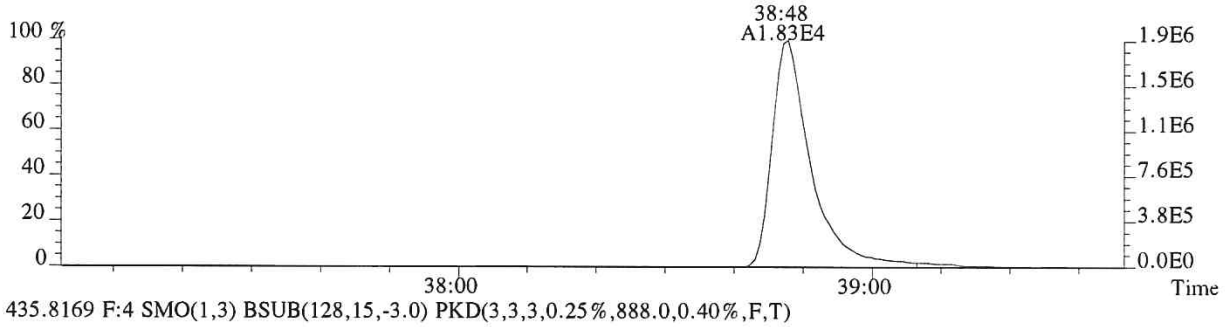


060514

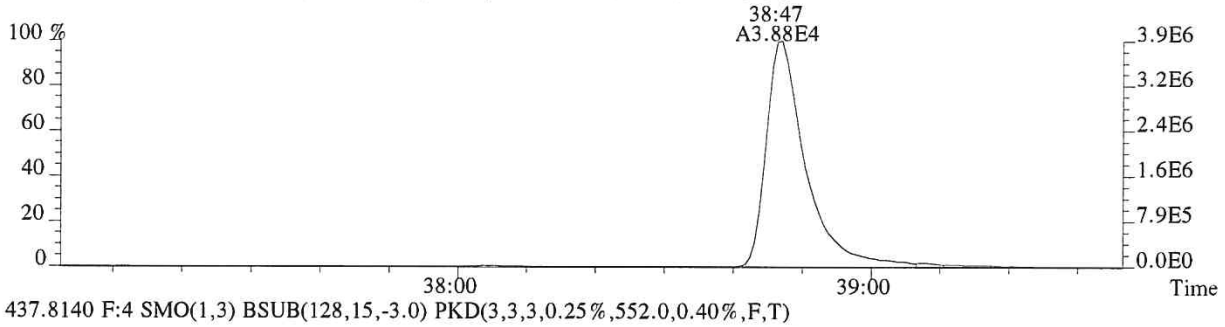
File:P519683 #1-232 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,736.0,0.40%,F,T)



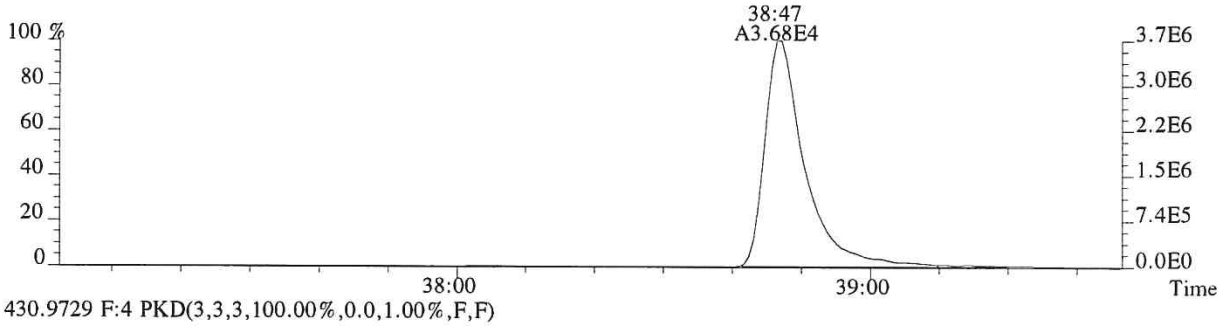
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,420.0,0.40%,F,T)



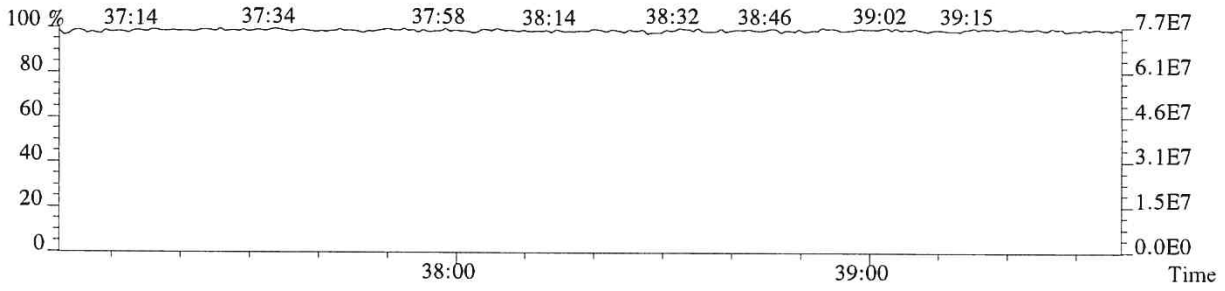
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,888.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,552.0,0.40%,F,T)



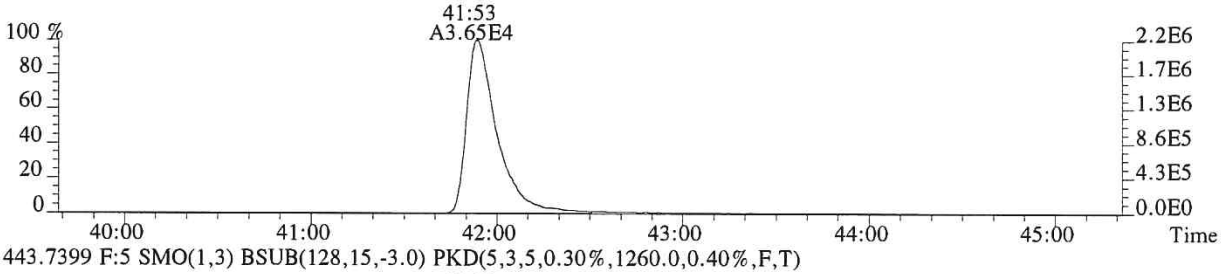
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



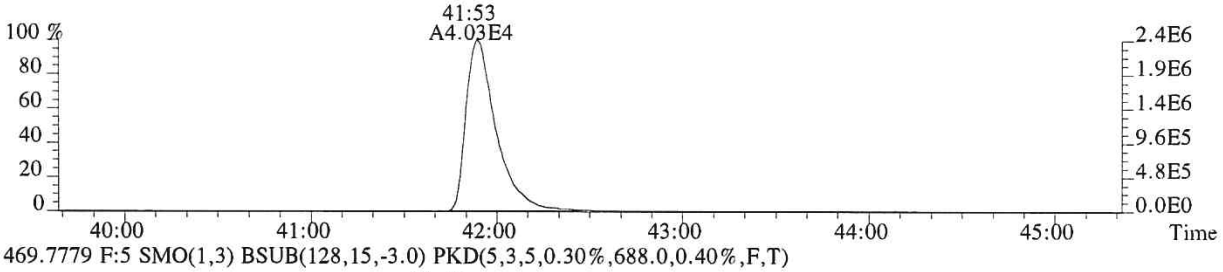
060515

File:P519683 #1-515 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

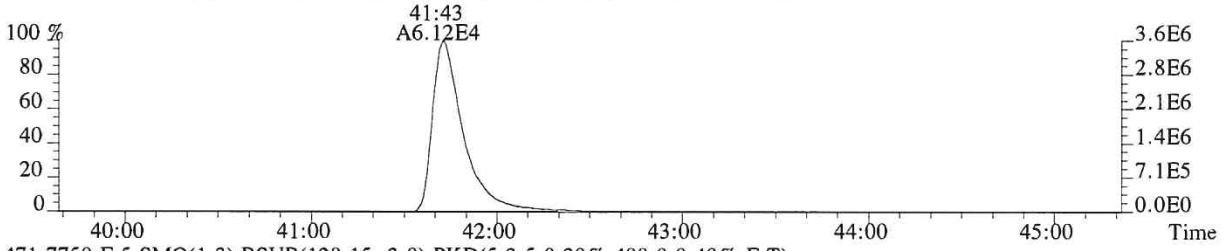
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



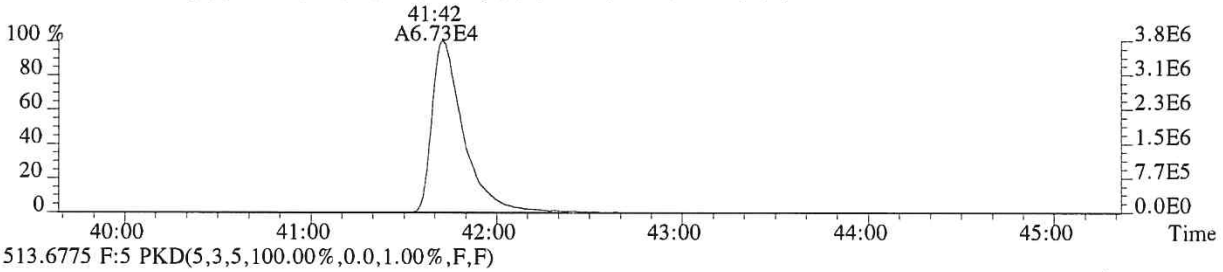
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1260.0,0.40%,F,T)



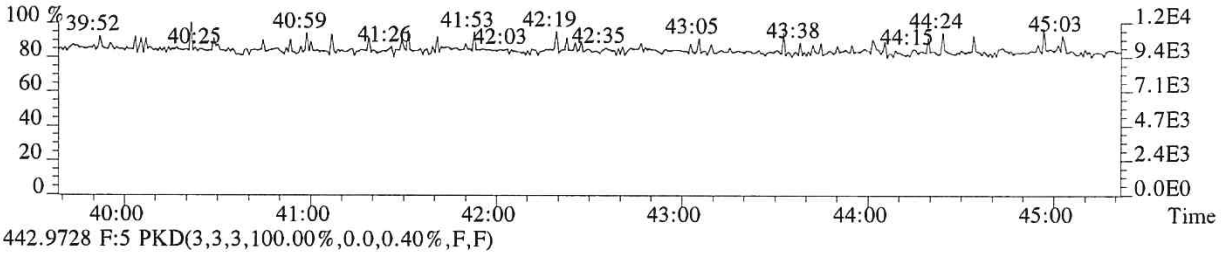
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,688.0,0.40%,F,T)



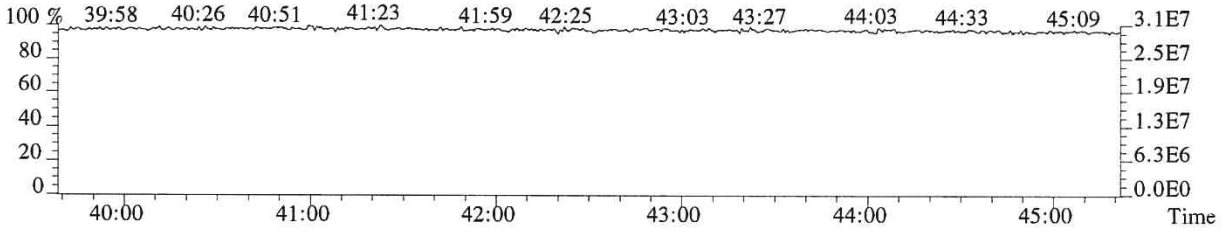
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,488.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

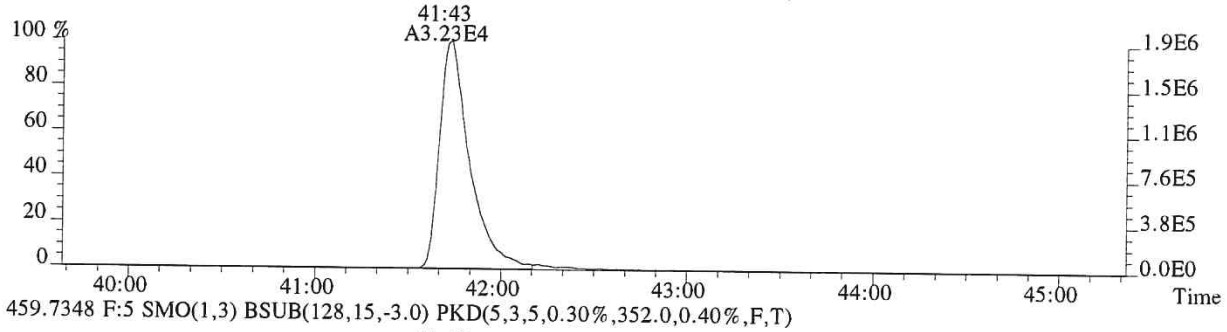


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060516

File:P519683 #1-515 Acq:29-DEC-2018 08:59:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



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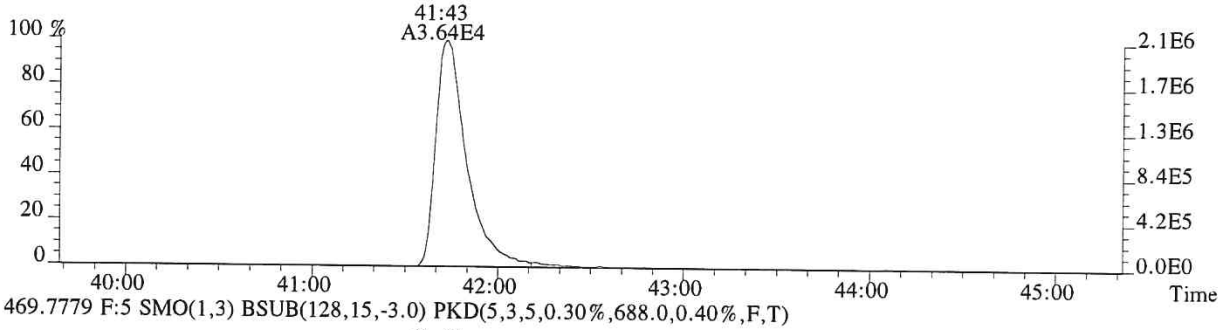

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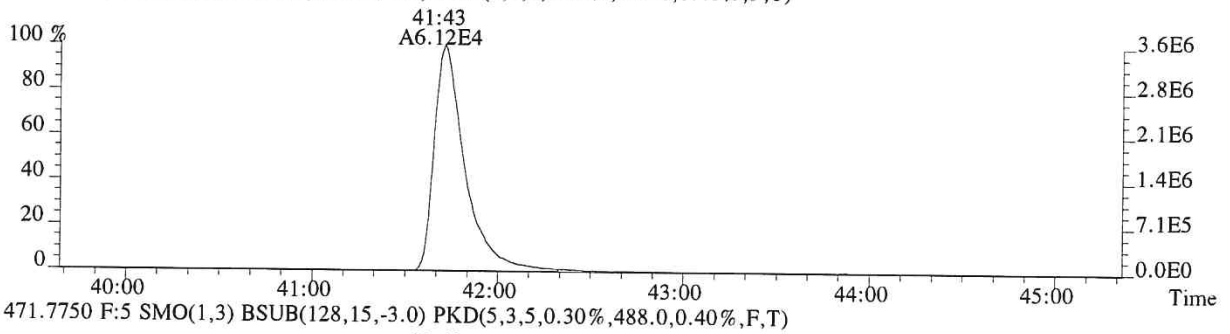
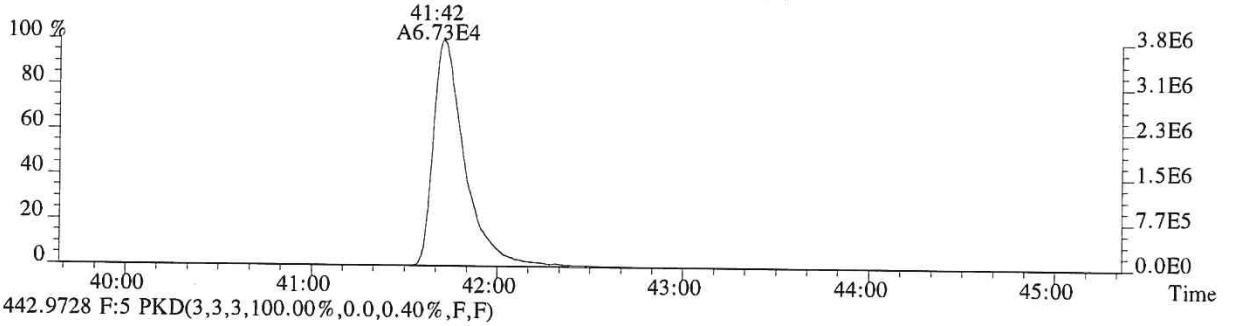
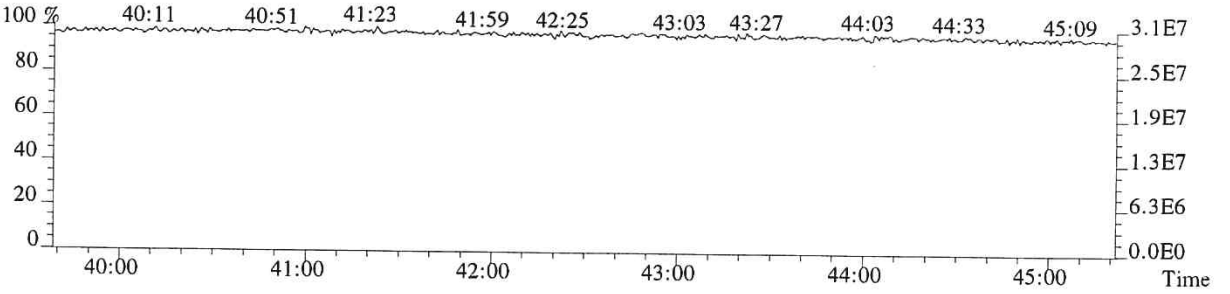


471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,488.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060517

CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: P519698

Date: 12/29/18

Circle one: (Beginning) / Ending

Method: (1613) / 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:

	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration

	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: TC

Second QC: LG

ccalqc.xls 07/17/12

5DBC
PCDD/PCDF/PCB ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS Environmental Contract:

Lab Code: ALS-TX Case No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm) Instrument ID:E-HRMS-07

Init. Calib. Date: 01/24/18

Init. Calib.Times: 11:44

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P519700	29-DEC-18	23:05:41
194503	CS3	P519698	29-DEC-18	21:21:54
METHOD BLANK	EQ1800528-01	P519702	30-DEC-18	00:42:56
SL0142	E1801136-019	P519703	30-DEC-18	01:31:32
SL0143	E1801136-020	P519704	30-DEC-18	02:20:17

E1801136

Sample List Report — **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS07.PRO\SampleDB\20181229B.SPL
Last Modified: Sunday, December 30, 2018 06:57:21 Central Standard Time
Printed: Sunday, December 30, 2018 06:57:23 Central Standard Time

Page Position (1, 1)

OPUS: P519698 RES

	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/29/18	21:21	P519698	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2	LCA	H2LS check 22:17
2		23:05	P519700	WINDOWDEFINE	192977	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		23:54	P519701	MB	EQ1800527-01	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4	12/30/18	00:42	P519702	MB	EQ1800528-01	EPA1613_ALS	Dioxin_ALS	Tray1:4		
5		01:31	P519703	E1801136-019	E1801136-019	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		02:20	P519704	E1801136-020	E1801136-020	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		03:08	P519705	E1801140-001	E1801140-001	EPA1613_ALS	Dioxin_ALS	Tray1:7		Need's Re_injection
8		03:57	P519706	E1801140-002	E1801140-002	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		04:46	P519707	E1801092-005	E1801092-005	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		05:35	P519708	E1801092-006	E1801092-006	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		06:23	P519709	LCS	EQ1800528-02	EPA1613_ALS	Dioxin_ALS	Tray1:11		H2LS check 07:13
12	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:12	---	---
13	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:13	---	---
14	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:14	---	---
15	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:15	---	---
16	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2	---	---
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1	---	---

JC 12/31/18

754 of 1106

060520

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

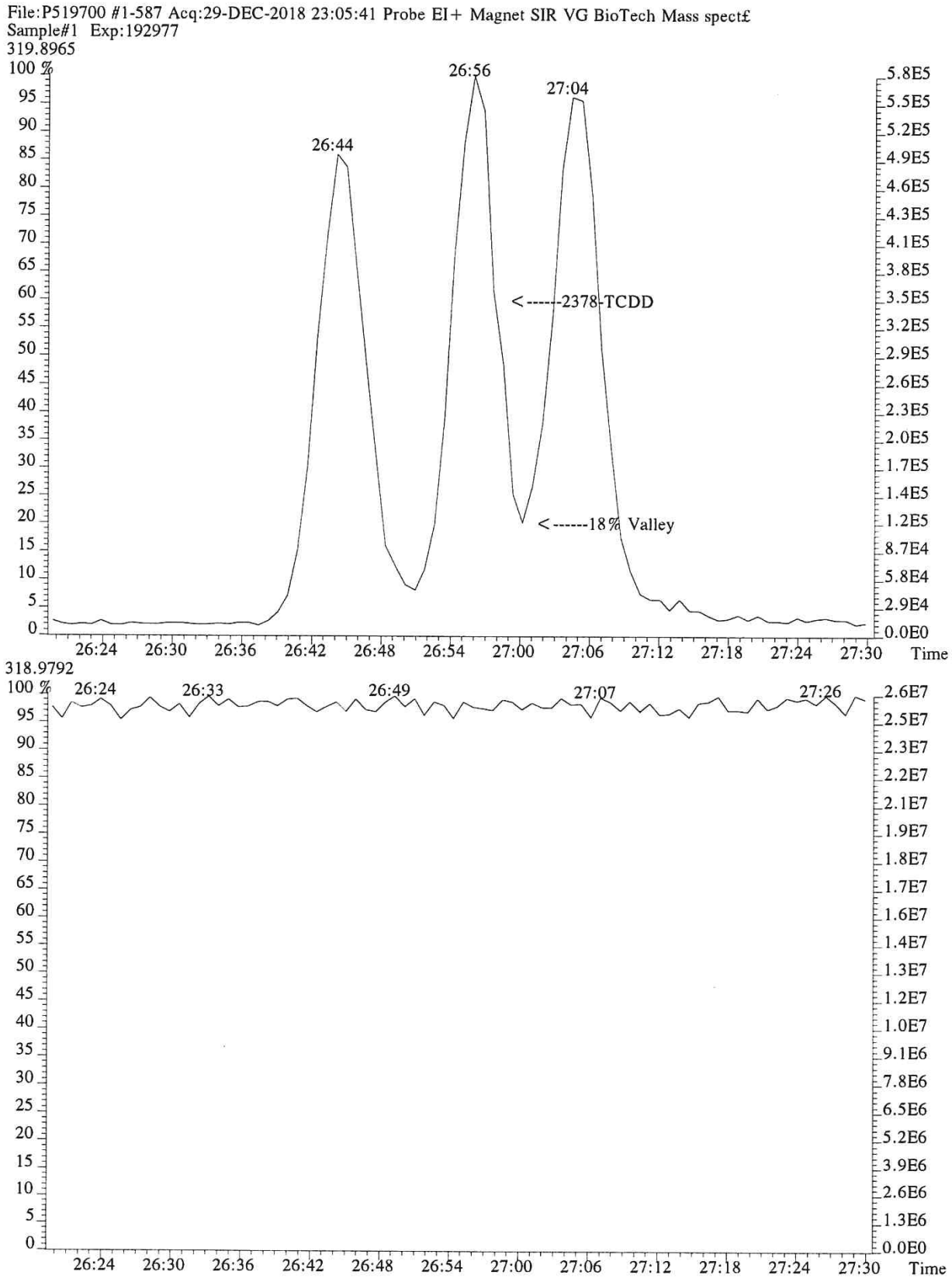
WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

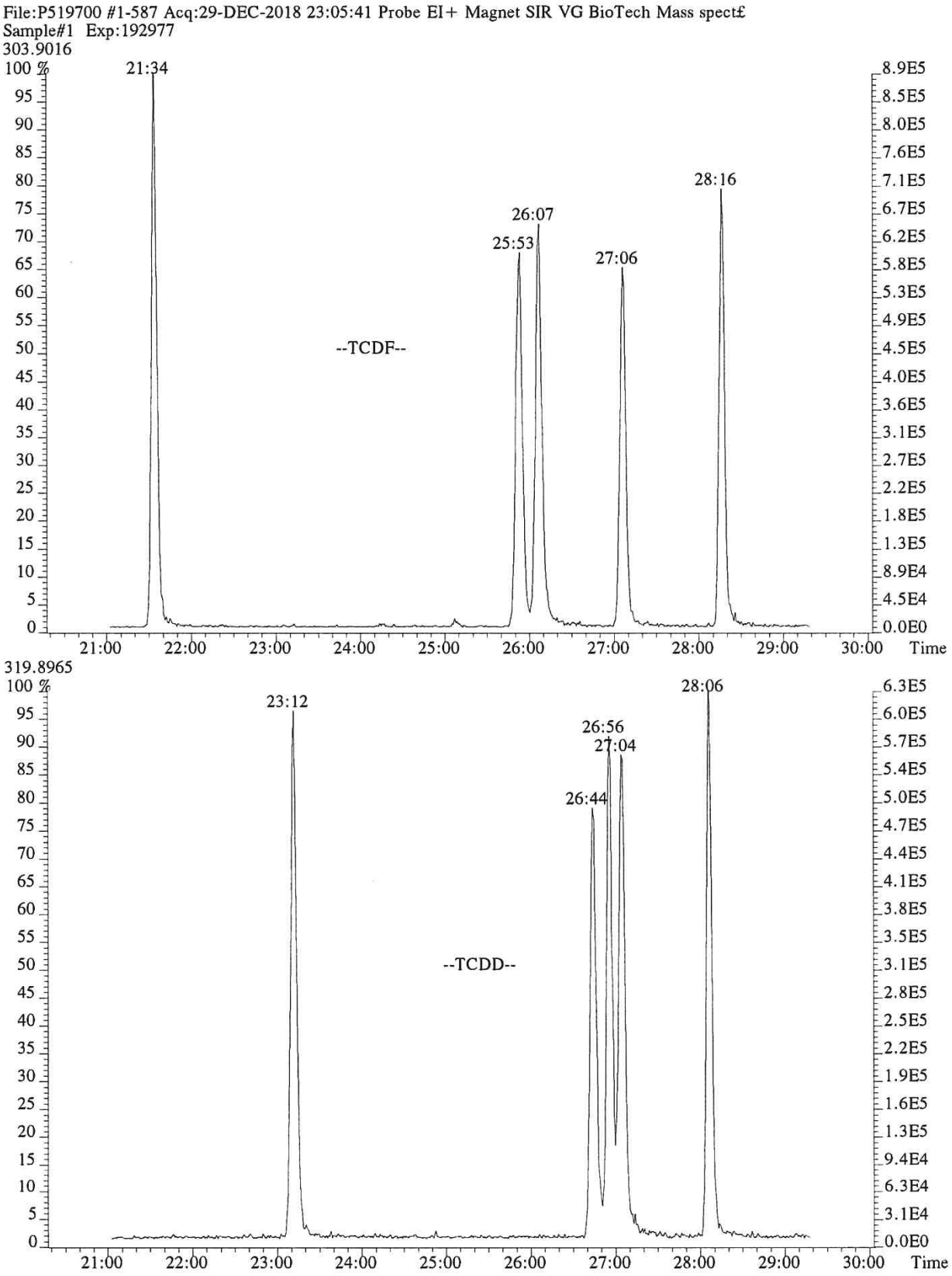
Case No.: _____ SDG No.:
ID: 0.25 (mm) Lab File ID: P519700
Date Analyzed: 29-DEC-2018
Time Analyzed: 23:05:41

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	21:34	28:16
TCDD	23:12	28:06
PeCDF	28:16	32:59
PeCDD	30:02	32:44
HxCDF	33:43	36:25
HxCDD	34:18	36:01
HpCDF	37:48	39:16
HpCDD	38:06	38:48

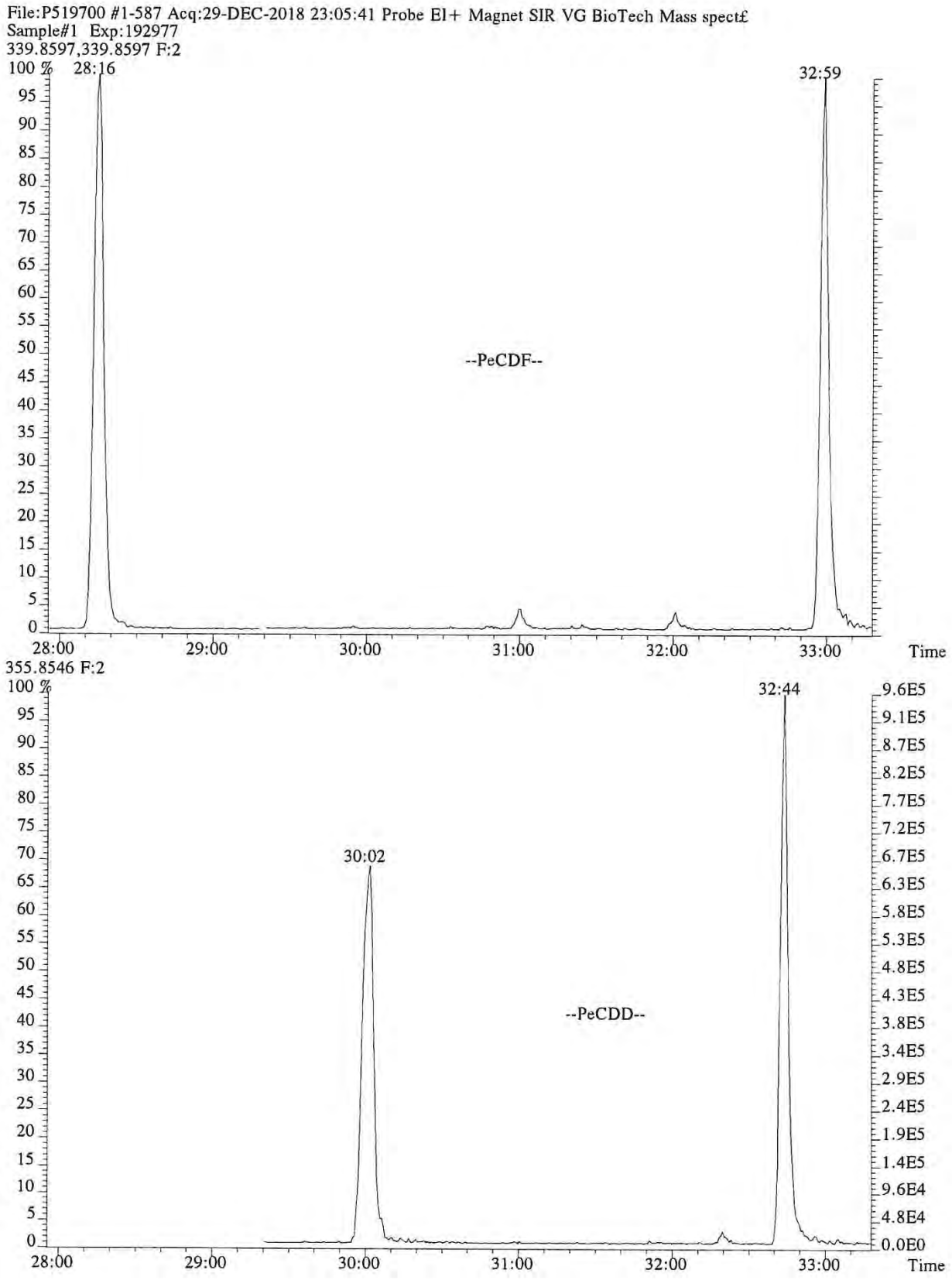
% Valley 2378-TCDD: 18 %


File:P519700 #1-587 Acq:29-DEC-2018 23:05:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
319.8965
26:44
26:56
27:04
<------2378-TCDD
<------18% Valley
318.9792
26:24
26:33
26:49
27:07
27:26
Time

060522

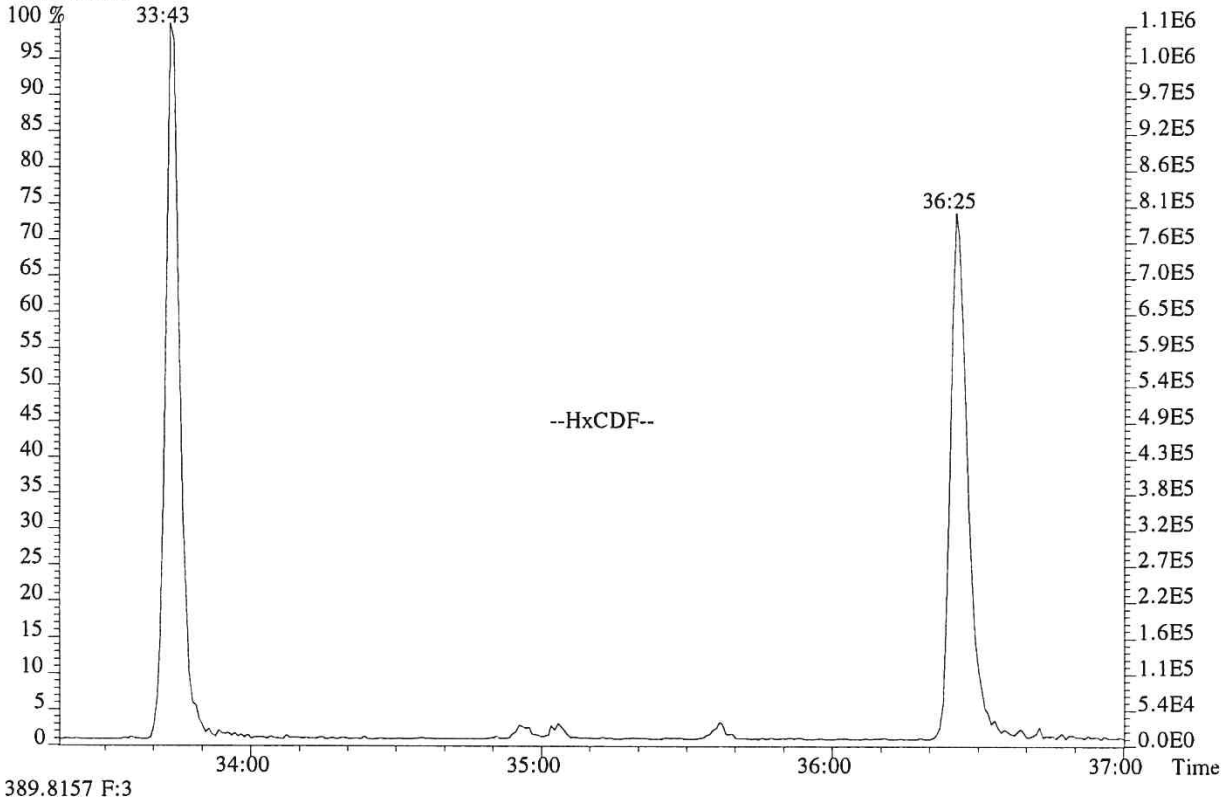

File:P519700 #1-587 Acq:29-DEC-2018 23:05:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
303.9016
21:34
25:53
26:07
27:06
28:16
--TCDF--
319.8965
23:12
26:44
26:56
27:04
28:06
--TCDD--
Time

060523

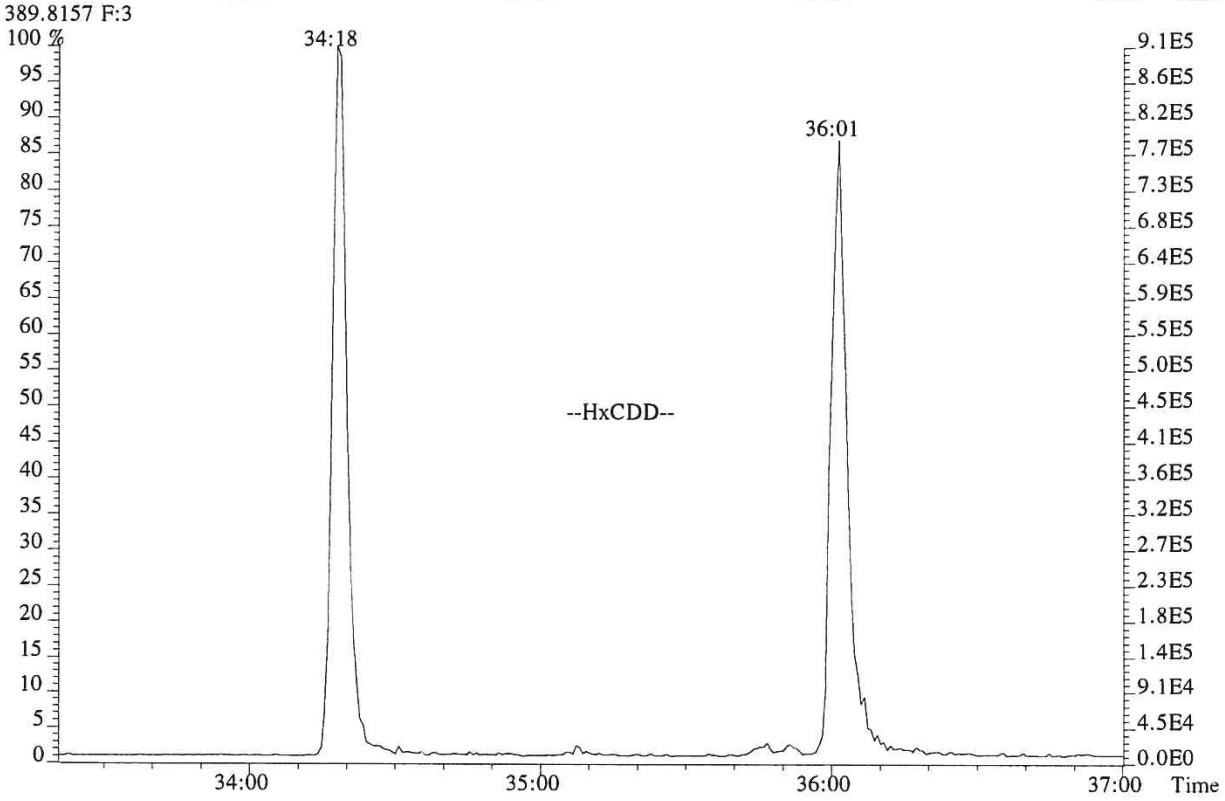

File:P519700 #1-587 Acq:29-DEC-2018 23:05:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
339.8597,339.8597 F:2
100 %
28:16
32:59
--PeCDF--
28:00
29:00
30:00
31:00
32:00
33:00
Time
355.8546 F:2
100 %
32:44
30:02
--PeCDD--
9.6E5
9.1E5
8.7E5
8.2E5
7.7E5
7.2E5
6.7E5
6.3E5
5.8E5
5.3E5
4.8E5
4.3E5
3.8E5
3.4E5
2.9E5
2.4E5
1.9E5
1.4E5
9.6E4
4.8E4
0.0E0
28:00
29:00
30:00
31:00
32:00
33:00
Time

060524

File:P519700 #1-330 Acq:29-DEC-2018 23:05:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
373.8208 F:3



389.8157 F:3



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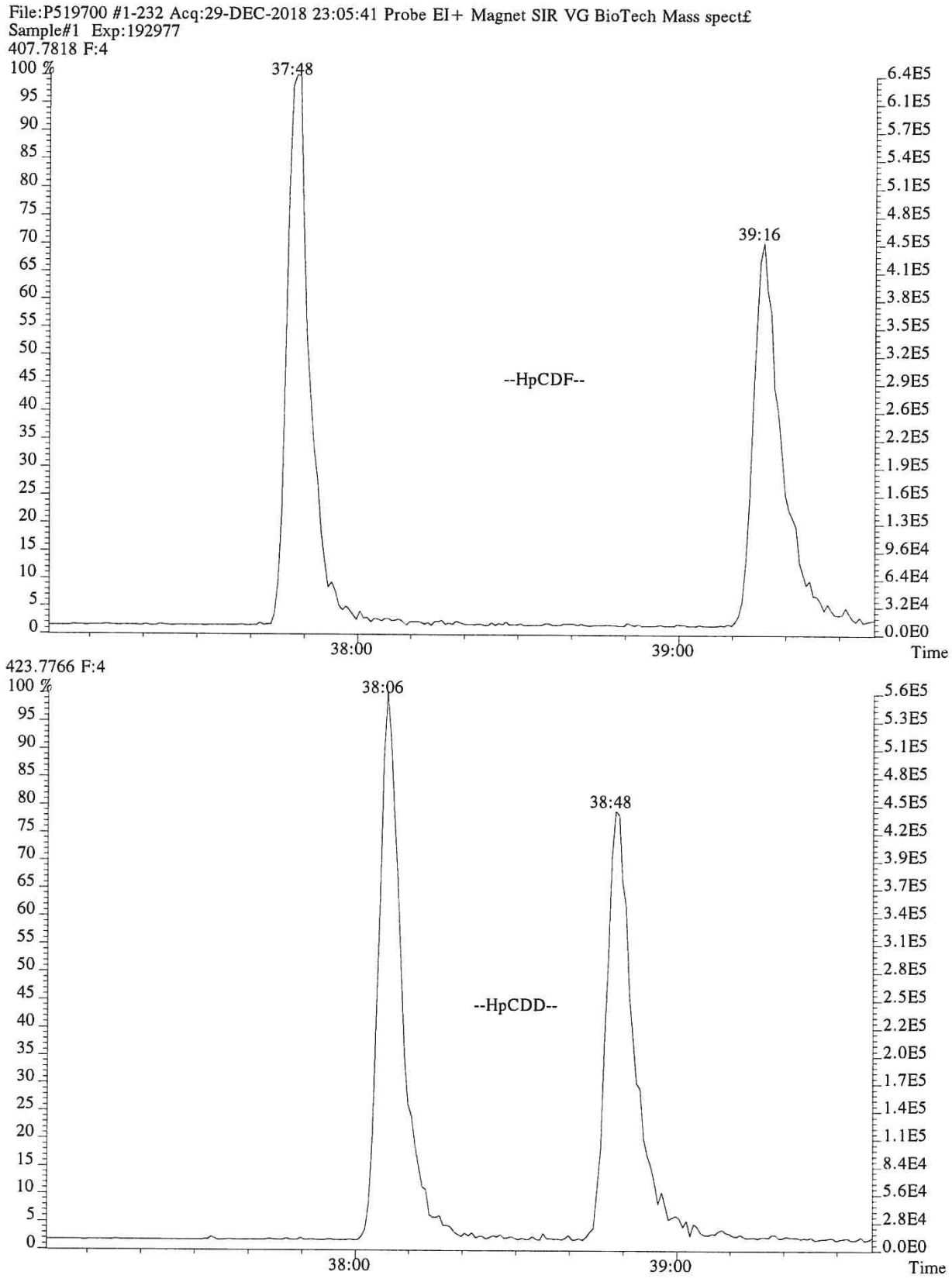
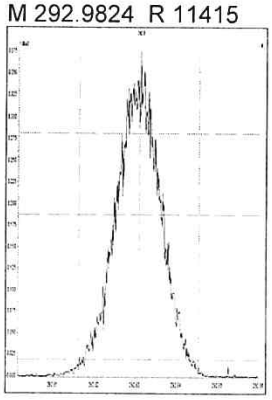
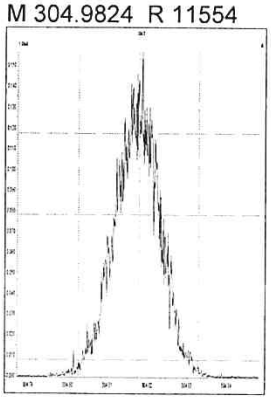

File:P519700 #1-232 Acq:29-DEC-2018 23:05:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
407.7818 F:4
37:48
39:16
--HpCDF--
38:00
39:00
Time
423.7766 F:4
38:06
38:48
--HpCDD--
38:00
39:00
Time

060526

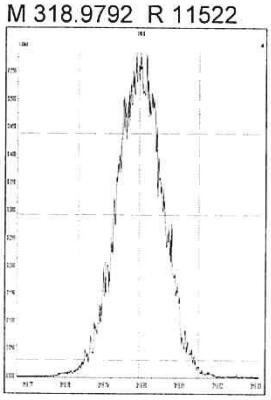
M 292.9824 R 11415



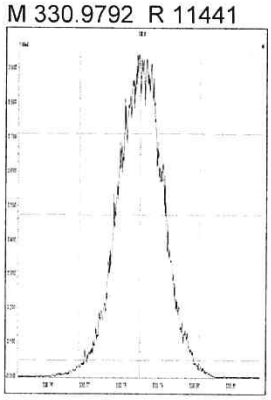
M 304.9824 R 11554



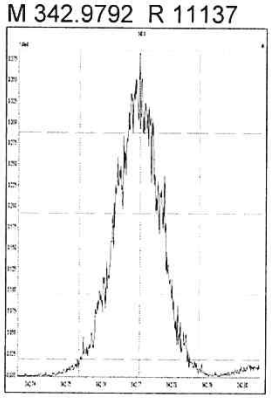
M 318.9792 R 11522



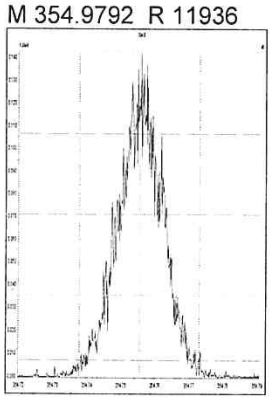
M 330.9792 R 11441



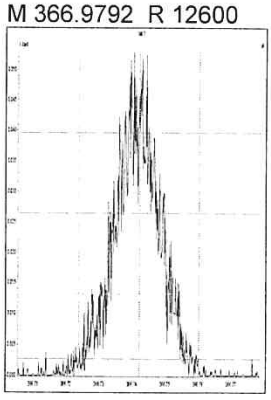
M 342.9792 R 11137



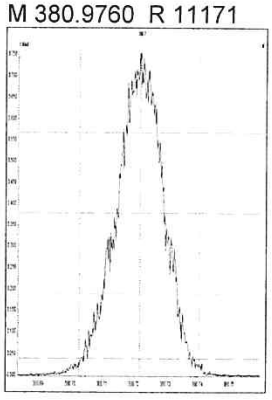
M 354.9792 R 11936



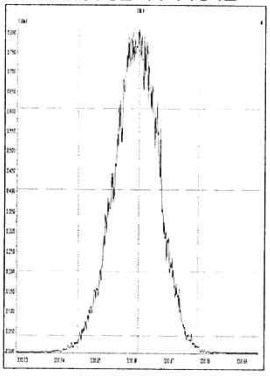
M 366.9792 R 12600



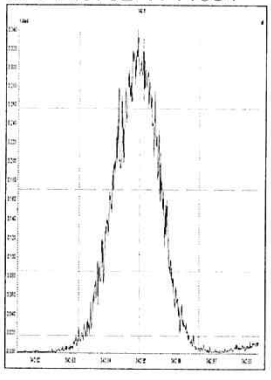
M 380.9760 R 11171



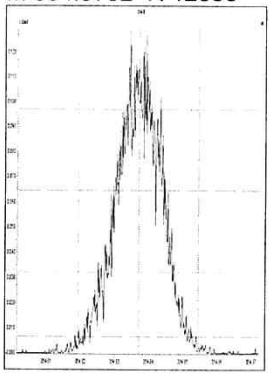
M 330.9792 R 11342



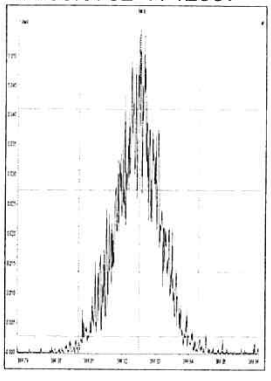
M 342.9792 R 11684



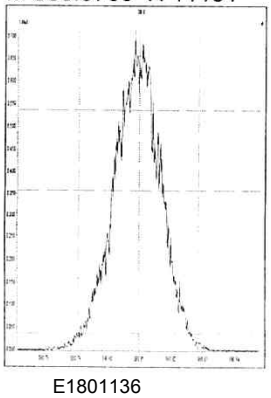
M 354.9792 R 12660



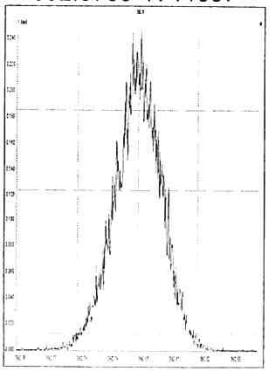
M 366.9792 R 12997



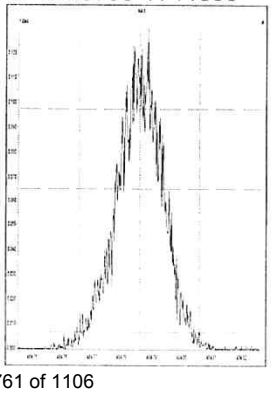
M 380.9760 R 11161



M 392.9760 R 11037



M 404.9760 R 11390



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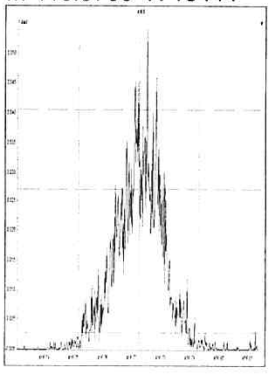
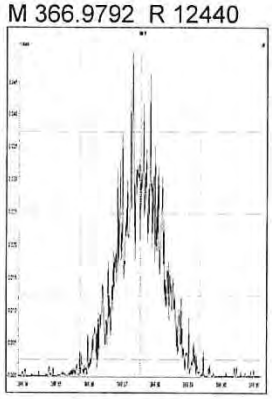
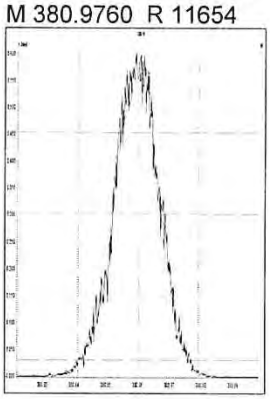


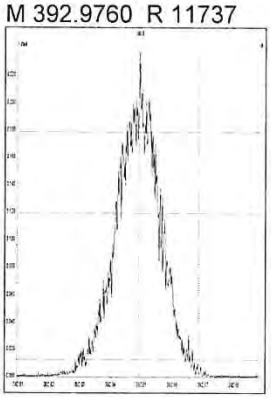
M 366.9792 R 12440



M 380.9760 R 11654



M 392.9760 R 11737



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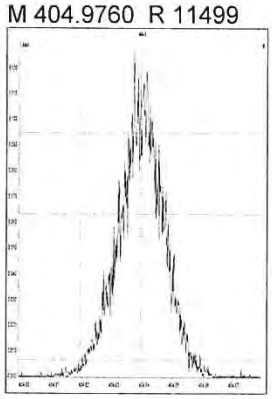
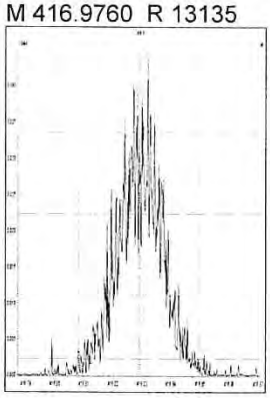


M 416.9760 R 13135



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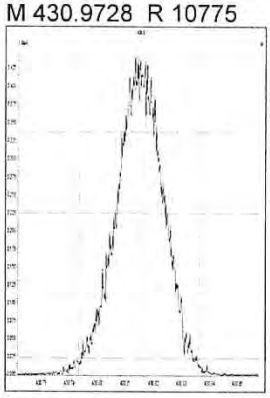

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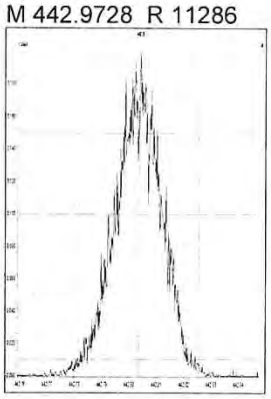

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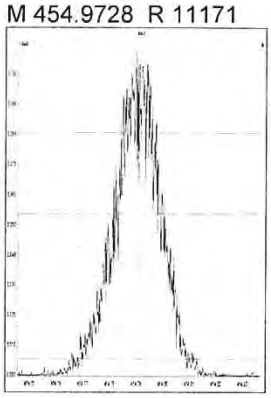

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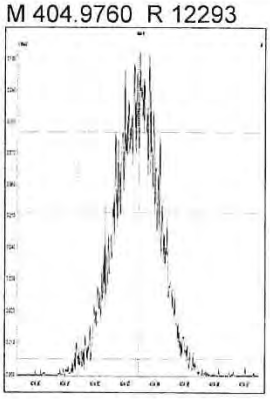
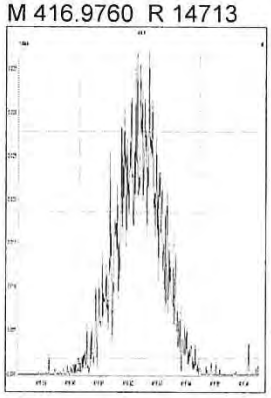
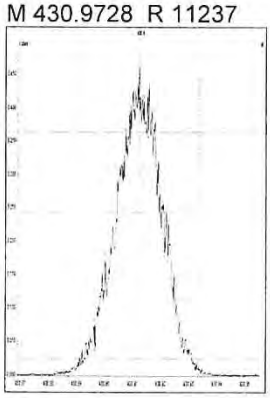


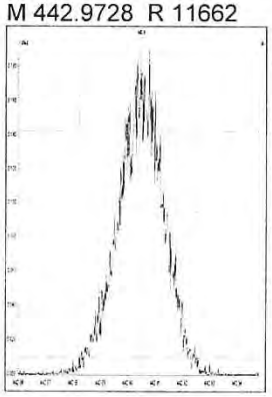
M 416.9760 R 14713



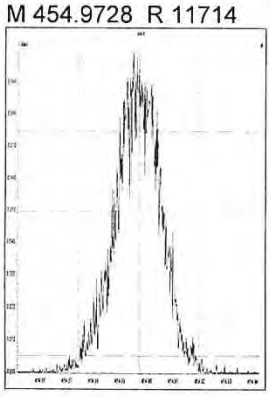
M 430.9728 R 11237



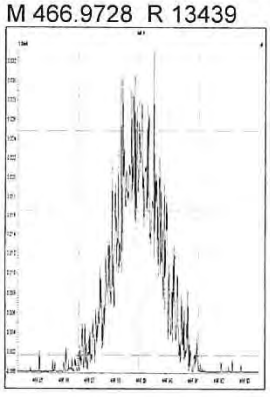
M 442.9728 R 11662



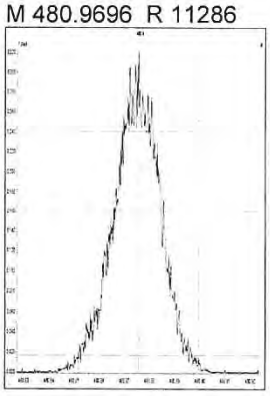
M 454.9728 R 11714



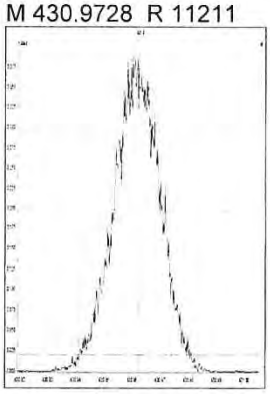
M 466.9728 R 13439



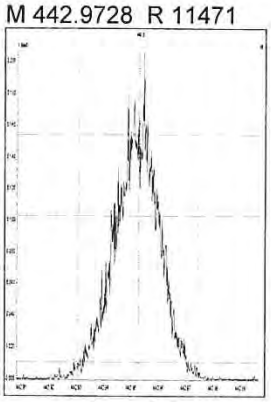
M 480.9696 R 11286



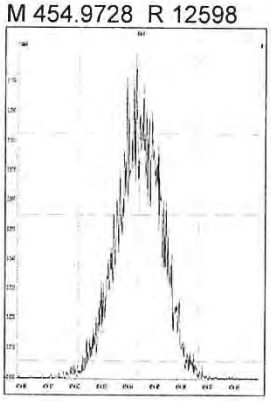
M 430.9728 R 11211



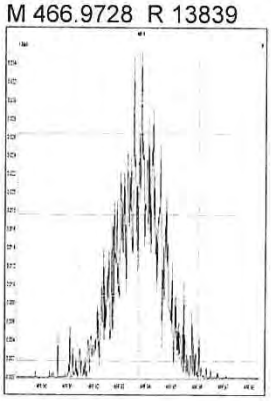
M 442.9728 R 11471



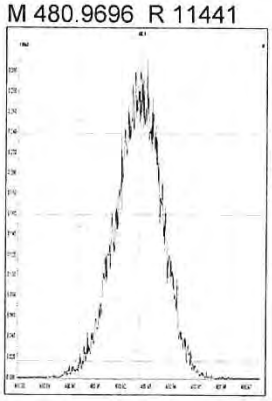
M 454.9728 R 12598



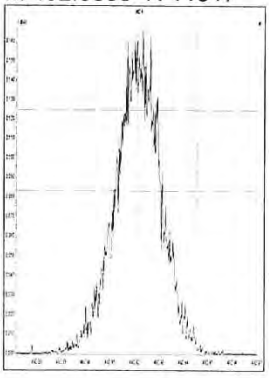
M 466.9728 R 13839



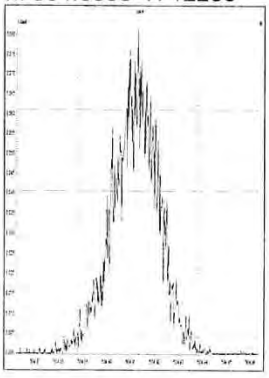
M 480.9696 R 11441



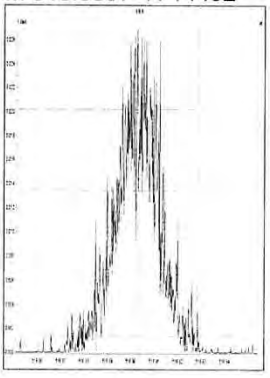
M 492.9696 R 11317



M 504.9696 R 12288



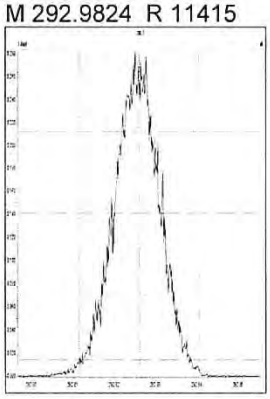
M 516.9697 R 14492



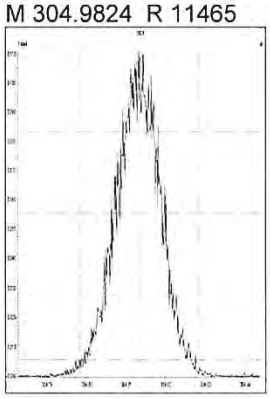
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Sunday, December 30, 2018 07:13:46 Central Standard Time

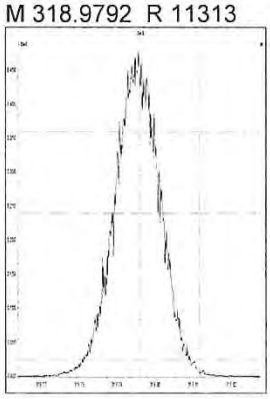
M 292.9824 R 11415



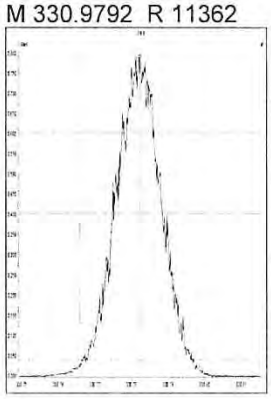
M 304.9824 R 11465



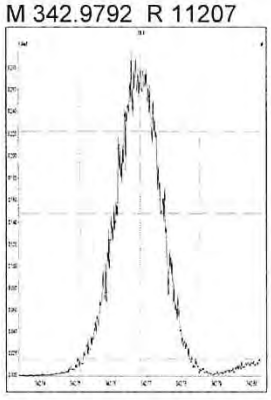
M 318.9792 R 11313



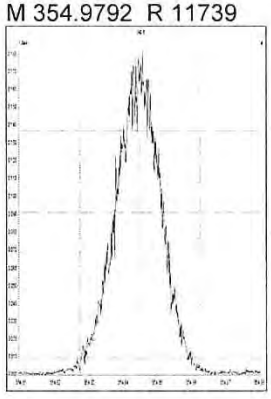
M 330.9792 R 11362



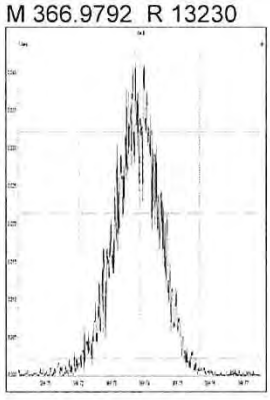
M 342.9792 R 11207



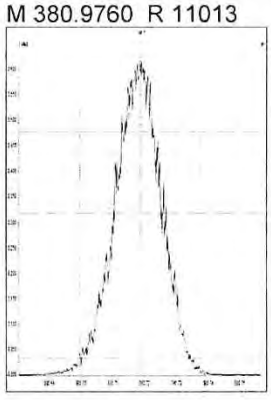
M 354.9792 R 11739



M 366.9792 R 13230



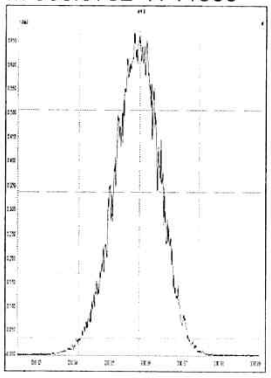
M 380.9760 R 11013



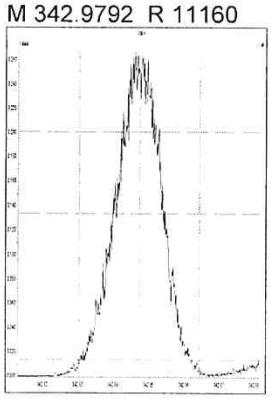
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Sunday, December 30, 2018 07:14:17 Central Standard Time

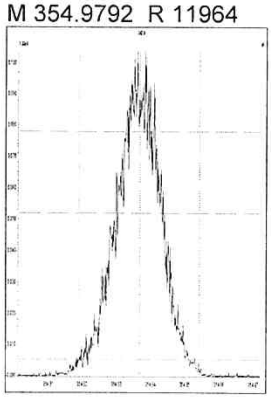
M 330.9792 R 11365



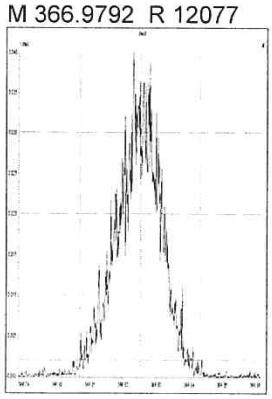
M 342.9792 R 11160



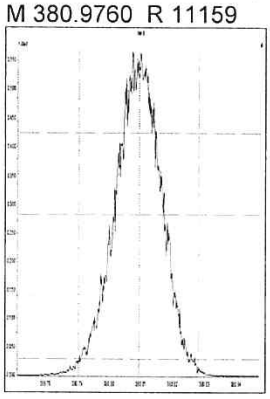
M 354.9792 R 11964



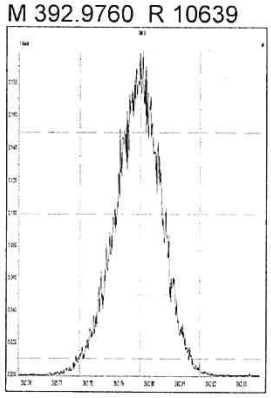
M 366.9792 R 12077



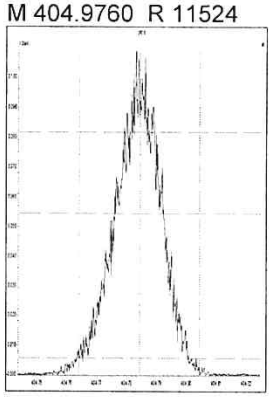
M 380.9760 R 11159



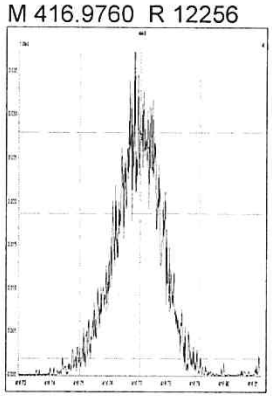
M 392.9760 R 10639



M 404.9760 R 11524



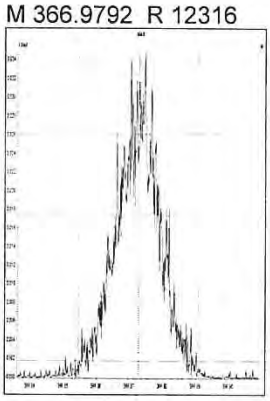
M 416.9760 R 12256



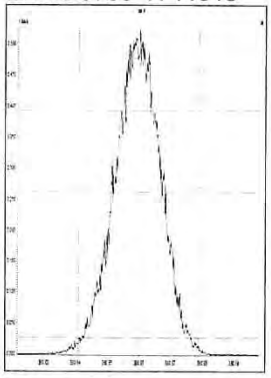
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Sunday, December 30, 2018 07:14:52 Central Standard Time

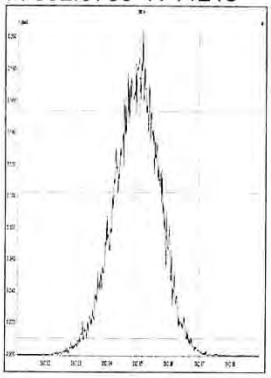
M 366.9792 R 12316



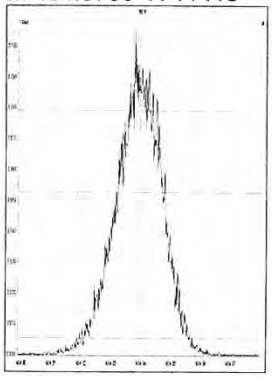
M 380.9760 R 11013



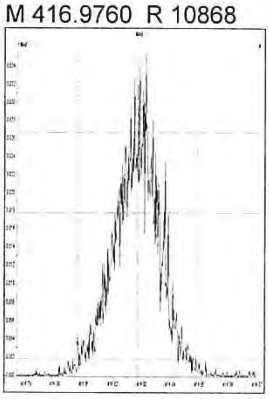
M 392.9760 R 11213



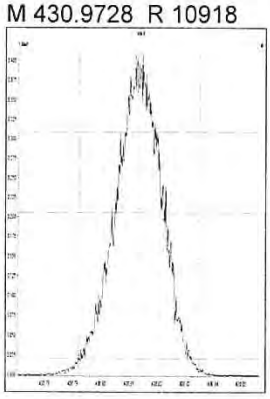
M 404.9760 R 11416



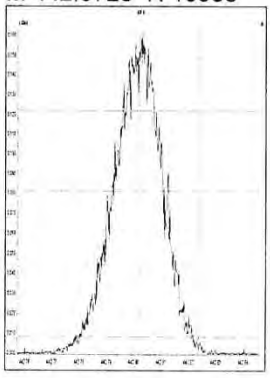
M 416.9760 R 10868



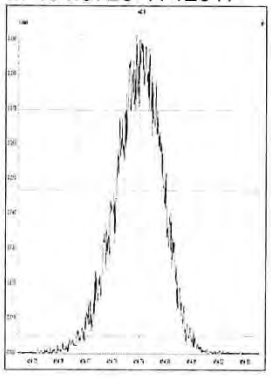
M 430.9728 R 10918



M 442.9728 R 10638



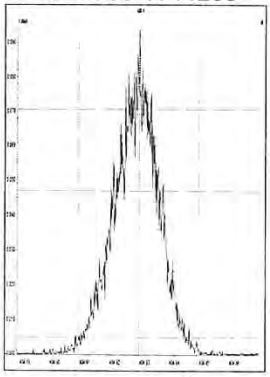
M 454.9728 R 12017



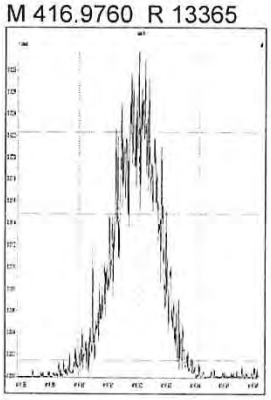
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Sunday, December 30, 2018 07:15:32 Central Standard Time

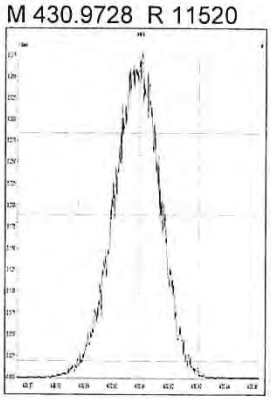
M 404.9760 R 11260



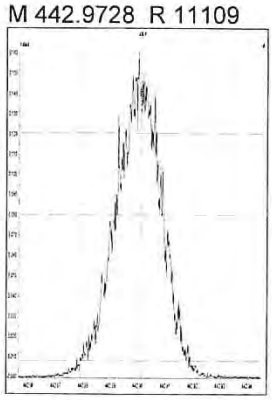
M 416.9760 R 13365



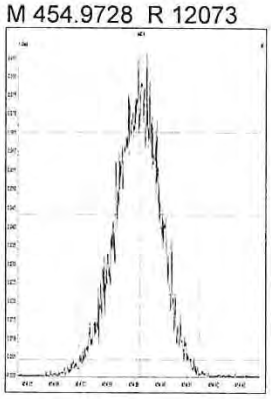
M 430.9728 R 11520



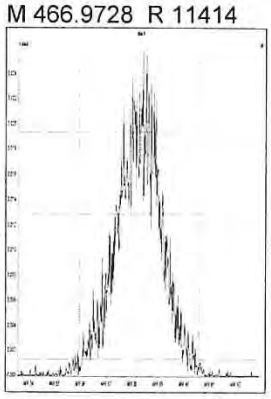
M 442.9728 R 11109



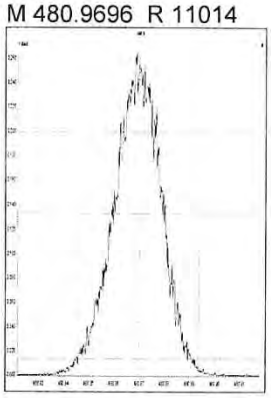
M 454.9728 R 12073



M 466.9728 R 11414



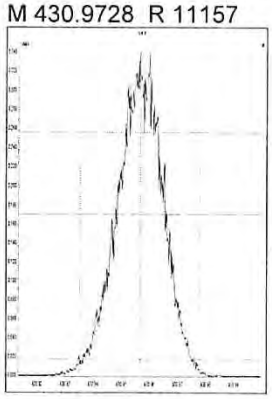
M 480.9696 R 11014



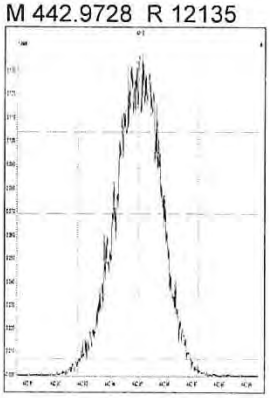
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Sunday, December 30, 2018 07:16:06 Central Standard Time

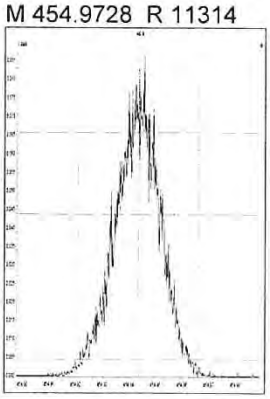
M 430.9728 R 11157



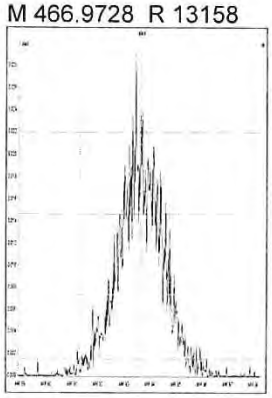
M 442.9728 R 12135



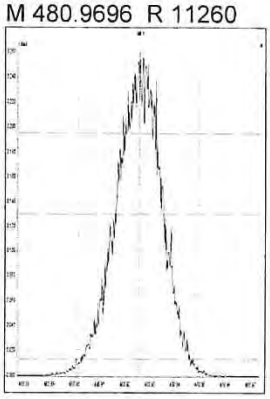
M 454.9728 R 11314



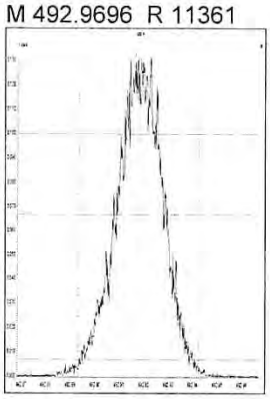
M 466.9728 R 13158



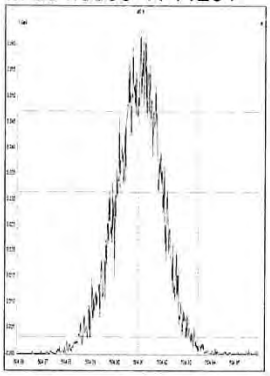
M 480.9696 R 11260



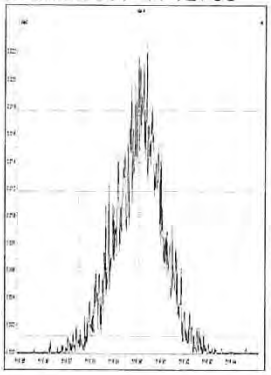
M 492.9696 R 11361



M 504.9696 R 11261



M 516.9697 R 12753



USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID : DB-5MSUI

VER Data Filename: P519698 Analysis Date: 29-DEC-18 Time: 21:21:54

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.74	0.65-0.89	9.1	7.8 - 12.9	-9.1
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	48	39 - 65	-4.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	48	39 - 64	-4.8
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	48	39 - 64	-4.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05-1.43	50	41 - 61	-0.5
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	49	43 - 58	-2.5
OCDD	M+2/M+4	0.88	0.76-1.02	97	79 - 126	-3.1
2,3,7,8-TCDF	M/M+2	0.75	0.65-0.89	9.5	8.4 - 12.0	-5.2
1,2,3,7,8-PeCDF	M+2/M+4	1.53	1.32-1.78	48	41 - 60	-3.8
2,3,4,7,8-PeCDF	M+2/M+4	1.50	1.32-1.78	48	41 - 61	-4.9
1,2,3,4,7,8-HxCDF	M+2/M+4	1.18	1.05-1.43	50	45 - 56	-0.7
1,2,3,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	49	44 - 57	-2.7
1,2,3,7,8,9-HxCDF	M+2/M+4	1.21	1.05-1.43	48	45 - 56	-3.2
2,3,4,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	49	44 - 57	-1.3
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.00	0.88-1.20	49	45 - 55	-2.4
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88-1.20	49	43 - 58	-2.3
OCDF	M+2/M+4	0.89	0.76-1.02	90	63 - 159	-10.1

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID : DB-5MSUI

VER Data Filename: P519698 Analysis Date: 29-DEC-18 Time: 21:21:54

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	100	82 - 121	-0.3
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	110	62 - 160	9.9
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	91	85 - 117	-9.4
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	101	85 - 118	1.3
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	108	72 - 138	8.3
13C-OCDD	M+2/M+4	0.90	0.76-1.02	292	96 - 415	46.0
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	83	71 - 140	-17.1
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	97	76 - 130	-3.3
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	99	77 - 130	-1.4
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	78	76 - 131	-21.9
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	83	70 - 143	-17.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	88	74 - 135	-12.4
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	85	73 - 137	-14.8
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	93	78 - 129	-7.1
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.43	0.37-0.51	102	77 - 129	2.1
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			9.4	7.8 - 12.7	-6.4

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
194503

Run #7 Filename P519698 Samp: 1 Inj: 1 Acquired: 29-DEC-18 21:21:54
Processed: 30-DEC-18 11:38:10 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:06	5.868e+03	7.777e+03	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	5.096e+04	3.340e+04	1.53	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	31:59	4.790e+04	3.188e+04	1.50	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	4.251e+04	3.601e+04	1.18	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	4.774e+04	3.973e+04	1.20	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	4.409e+04	3.677e+04	1.20	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:23	3.977e+04	3.287e+04	1.21	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	4.084e+04	4.082e+04	1.00	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:15	3.561e+04	3.534e+04	1.01	yes	no	1.258
10	Unk	OCDF	41:55	6.755e+04	7.567e+04	0.89	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	4.711e+03	6.362e+03	0.74	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:19	3.637e+04	2.352e+04	1.55	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:45	3.164e+04	2.546e+04	1.24	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:50	3.660e+04	2.946e+04	1.24	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	3.617e+04	2.949e+04	1.23	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:48	3.234e+04	3.167e+04	1.02	yes	no	1.025
17	Unk	OCDD	41:45	5.941e+04	6.770e+04	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	6.707e+04	8.573e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	1.059e+05	6.739e+04	1.57	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	1.070e+05	6.795e+04	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	4.509e+04	8.785e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	5.452e+04	1.056e+05	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	4.982e+04	9.787e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:22	4.446e+04	8.675e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:47	3.819e+04	8.567e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:14	3.499e+04	8.048e+04	0.43	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	4.941e+04	6.281e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	7.999e+04	5.052e+04	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:44	6.437e+04	5.115e+04	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	7.383e+04	5.881e+04	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:47	6.555e+04	6.261e+04	1.05	yes	no	0.858
32	IS	13C-OCDD	41:45	1.109e+05	1.236e+05	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	5.360e+04	6.820e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	7.669e+04	6.122e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	1.156e+04				no	1.014

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
194503

Run #7 Filename P519698 Samp: 1 Inj: 1 Acquired: 29-DEC-18 21:21:54
Processed: 30-DEC-18 11:38:10 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	8.87e+05	6.64e+02	1.3e+03	1.17e+06	1.31e+03	8.9e+02
2	1,2,3,7,8-PeCDF	8.56e+06	6.84e+02	1.3e+04	5.61e+06	2.18e+03	2.6e+03
3	2,3,4,7,8-PeCDF	8.53e+06	6.84e+02	1.2e+04	5.60e+06	2.18e+03	2.6e+03
4	1,2,3,4,7,8-HxCDF	7.53e+06	7.04e+02	1.1e+04	6.34e+06	6.08e+02	1.0e+04
5	1,2,3,6,7,8-HxCDF	8.00e+06	7.04e+02	1.1e+04	6.58e+06	6.08e+02	1.1e+04
6	2,3,4,6,7,8-HxCDF	7.52e+06	7.04e+02	1.1e+04	6.21e+06	6.08e+02	1.0e+04
7	1,2,3,7,8,9-HxCDF	6.16e+06	7.04e+02	8.8e+03	5.16e+06	6.08e+02	8.5e+03
8	1,2,3,4,6,7,8-HpCDF	5.45e+06	3.31e+03	1.6e+03	5.34e+06	3.48e+03	1.5e+03
9	1,2,3,4,7,8,9-HpCDF	3.75e+06	3.31e+03	1.1e+03	3.59e+06	3.48e+03	1.0e+03
10	OCDF	4.14e+06	4.60e+02	9.0e+03	4.61e+06	8.04e+02	5.7e+03
11	2,3,7,8-TCDD	7.59e+05	1.70e+03	4.5e+02	1.06e+06	5.88e+02	1.8e+03
12	1,2,3,7,8-PeCDD	6.39e+06	5.80e+02	1.1e+04	4.05e+06	4.32e+02	9.4e+03
13	1,2,3,4,7,8-HxCDD	5.92e+06	5.24e+02	1.1e+04	4.71e+06	5.12e+02	9.2e+03
14	1,2,3,6,7,8-HxCDD	5.72e+06	5.24e+02	1.1e+04	4.59e+06	5.12e+02	9.0e+03
15	1,2,3,7,8,9-HxCDD	5.65e+06	5.24e+02	1.1e+04	4.58e+06	5.12e+02	8.9e+03
16	1,2,3,4,6,7,8-HpCDD	3.56e+06	3.04e+02	1.2e+04	3.49e+06	3.80e+02	9.2e+03
17	OCDD	3.66e+06	3.60e+02	1.0e+04	4.14e+06	3.24e+02	1.3e+04
18	13C-2,3,7,8-TCDF	1.03e+07	4.66e+03	2.2e+03	1.32e+07	2.52e+03	5.2e+03
19	13C-1,2,3,7,8-PeCDF	1.80e+07	5.68e+02	3.2e+04	1.15e+07	9.28e+02	1.2e+04
20	13C-2,3,4,7,8-PeCDF	1.92e+07	5.68e+02	3.4e+04	1.21e+07	9.28e+02	1.3e+04
21	13C-1,2,3,4,7,8-HxCDF	7.98e+06	5.40e+02	1.5e+04	1.55e+07	2.96e+02	5.2e+04
22	13C-1,2,3,6,7,8-HxCDF	9.15e+06	5.40e+02	1.7e+04	1.77e+07	2.96e+02	6.0e+04
23	13C-2,3,4,6,7,8-HxCDF	8.52e+06	5.40e+02	1.6e+04	1.64e+07	2.96e+02	5.6e+04
24	13C-1,2,3,7,8,9-HxCDF	6.92e+06	5.40e+02	1.3e+04	1.36e+07	2.96e+02	4.6e+04
25	13C-1,2,3,4,6,7,8-HpCDF	5.05e+06	4.04e+03	1.3e+03	1.13e+07	5.36e+03	2.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.63e+06	4.04e+03	9.0e+02	8.16e+06	5.36e+03	1.5e+03
27	13C-2,3,7,8-TCDD	8.19e+06	5.75e+03	1.4e+03	1.04e+07	1.63e+03	6.4e+03
28	13C-1,2,3,7,8-PeCDD	1.41e+07	5.88e+02	2.4e+04	8.86e+06	1.04e+03	8.6e+03
29	13C-1,2,3,4,7,8-HxCDD	1.19e+07	8.88e+02	1.3e+04	9.39e+06	7.48e+02	1.3e+04
30	13C-1,2,3,6,7,8-HxCDD	1.16e+07	8.88e+02	1.3e+04	9.21e+06	7.48e+02	1.2e+04
31	13C-1,2,3,4,6,7,8-HpCDD	7.18e+06	5.52e+02	1.3e+04	6.79e+06	7.36e+02	9.2e+03
32	13C-OCDD	6.76e+06	5.68e+02	1.2e+04	7.43e+06	3.96e+02	1.9e+04
33	13C-1,2,3,4-TCDD	8.46e+06	5.75e+03	1.5e+03	1.07e+07	1.63e+03	6.6e+03
34	13C-1,2,3,7,8,9-HxCDD	1.17e+07	8.88e+02	1.3e+04	9.34e+06	7.48e+02	1.2e+04
35	37Cl-2,3,7,8-TCDD	1.91e+06	1.04e+03	1.8e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.704e{+}03 + 5.880e{+}02) \times 100}{(8.190e{+}06 + 1.038e{+}07) \times (\quad) \times 1.085} =$$

ALS ENVIRONMENTAL
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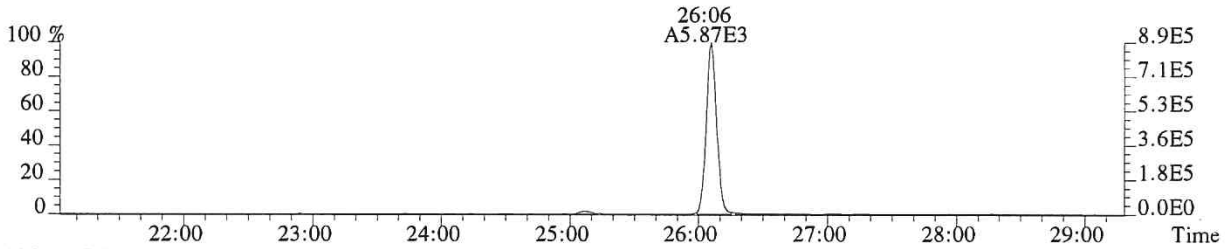
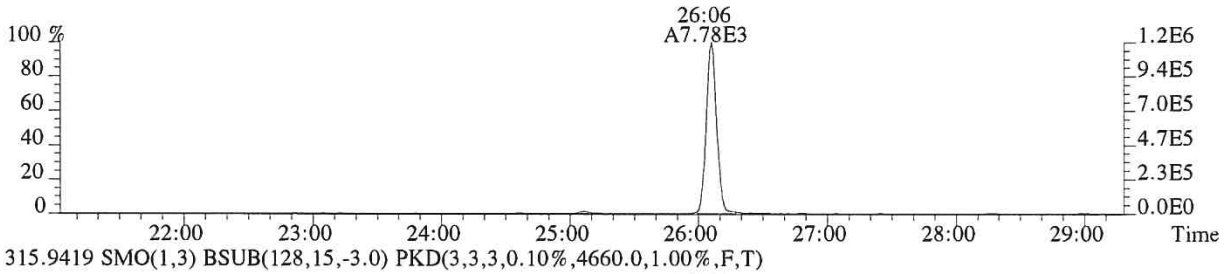
File:P519698 #1-587 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

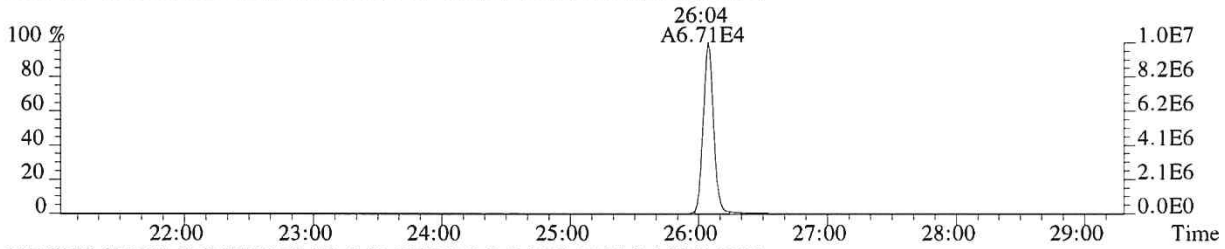
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,664.0,1.00%,F,T)



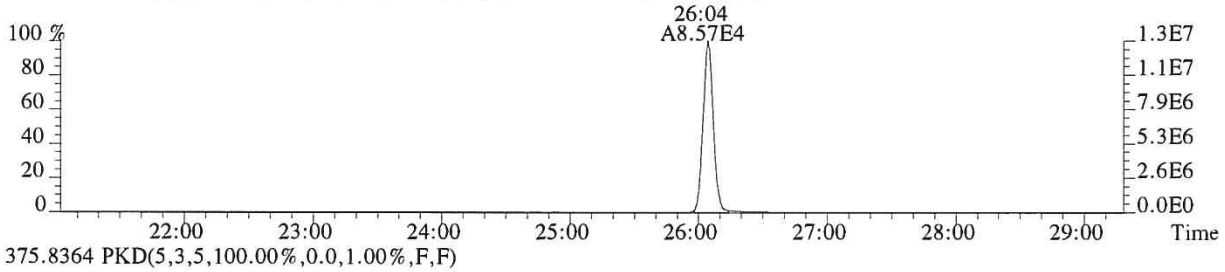
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1308.0,1.00%,F,T)



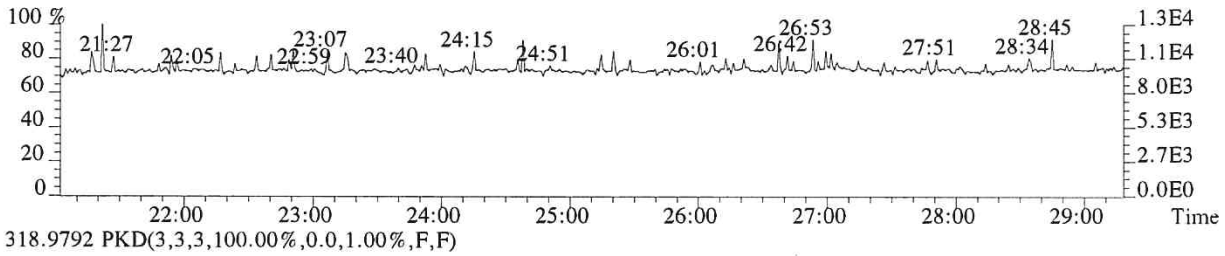
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4660.0,1.00%,F,T)



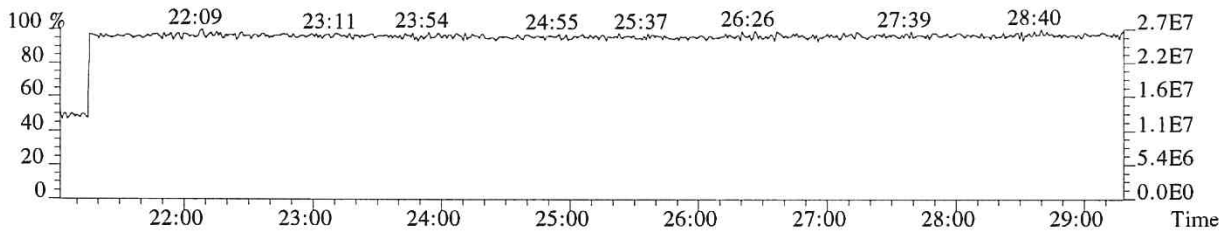
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2524.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

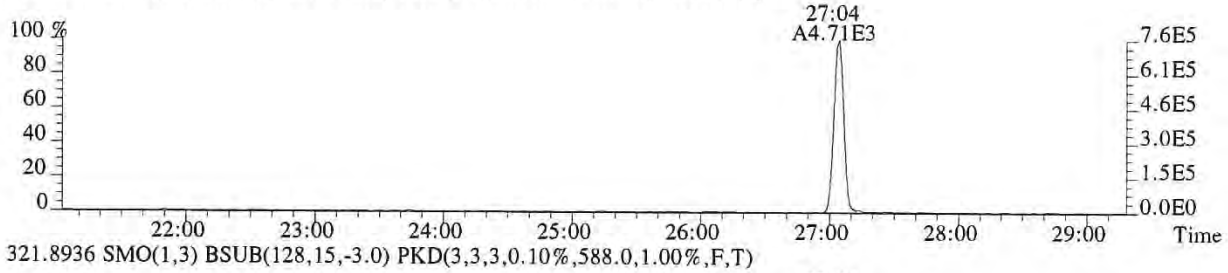


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

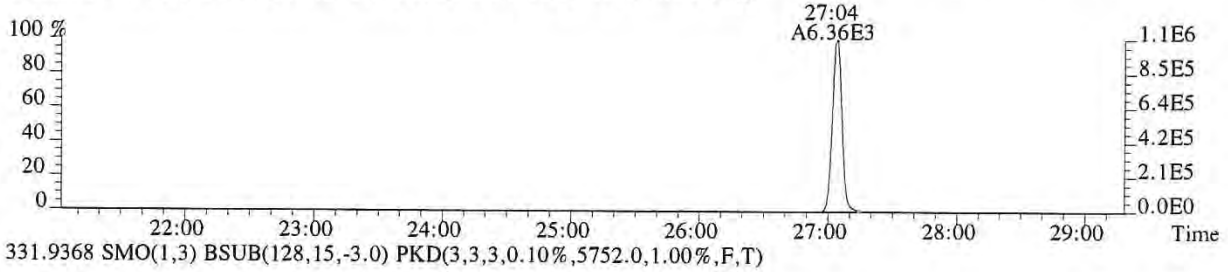


060539

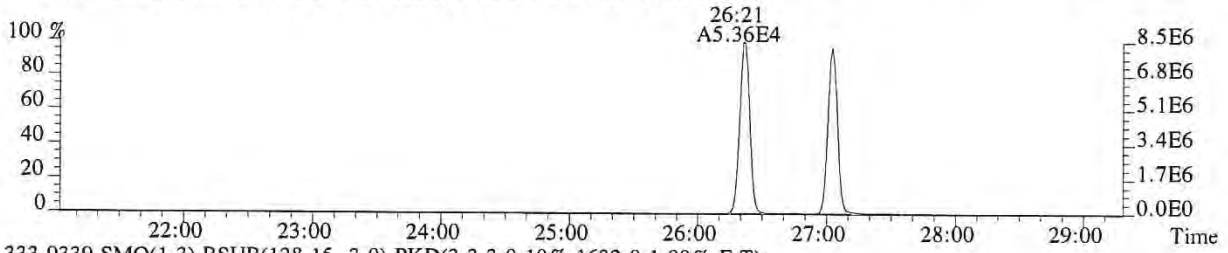
File:P519698 #1-587 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1704.0,1.00%,F,T)



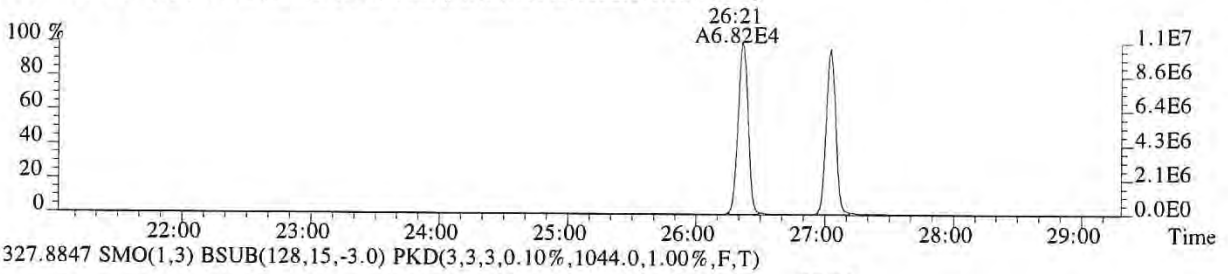
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,588.0,1.00%,F,T)



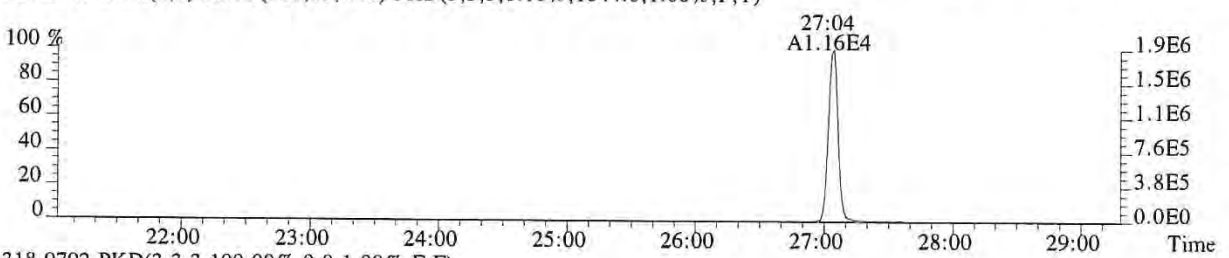
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5752.0,1.00%,F,T)



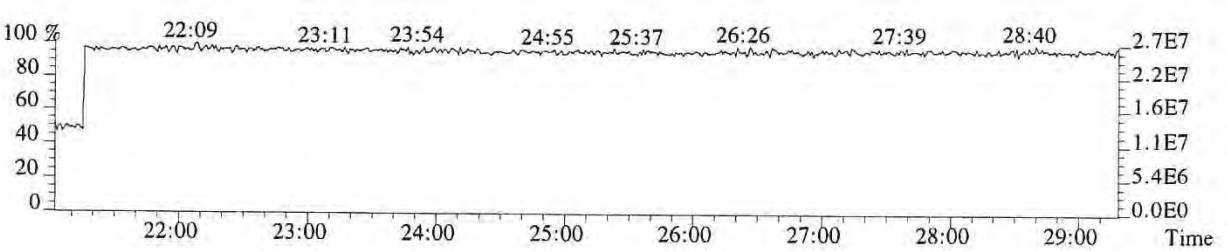
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1632.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1044.0,1.00%,F,T)

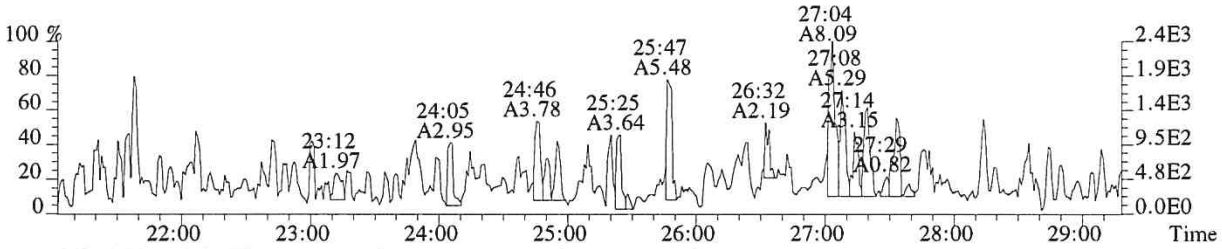


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

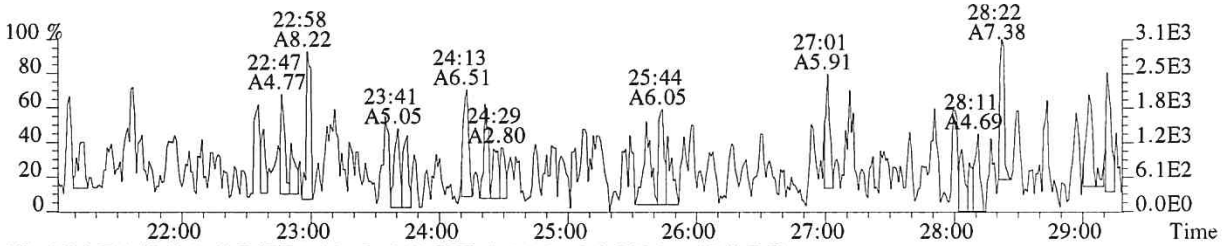


060540

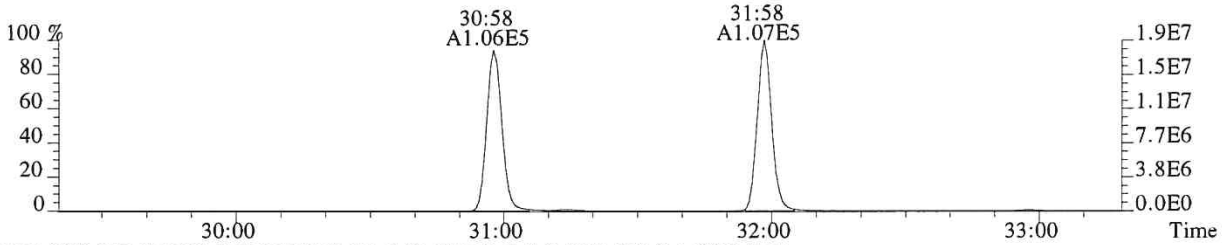
File:P519698 #1-587 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,T)



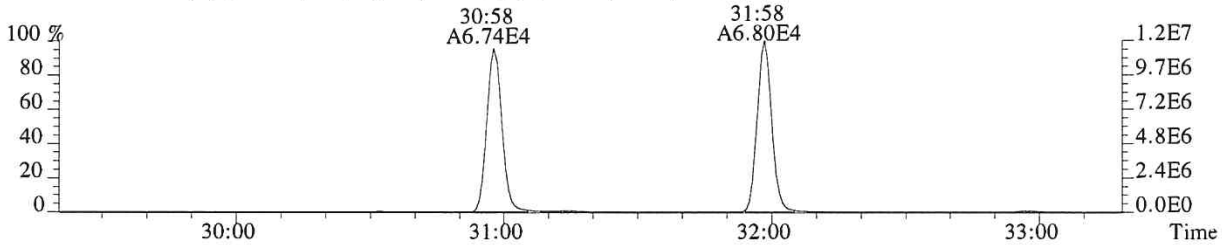
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,840.0,1.00%,F,T)



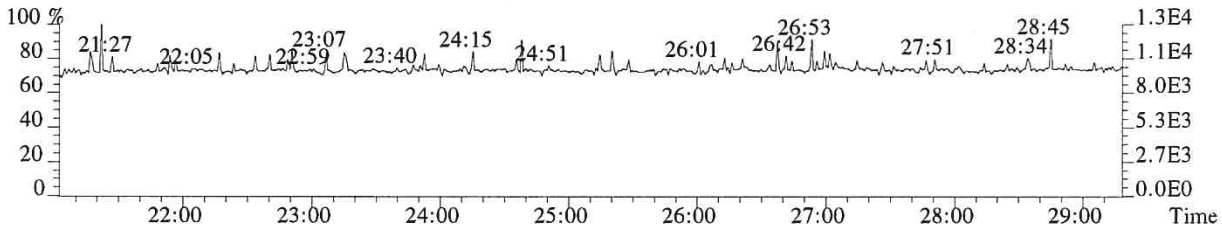
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,568.0,1.00%,F,T)



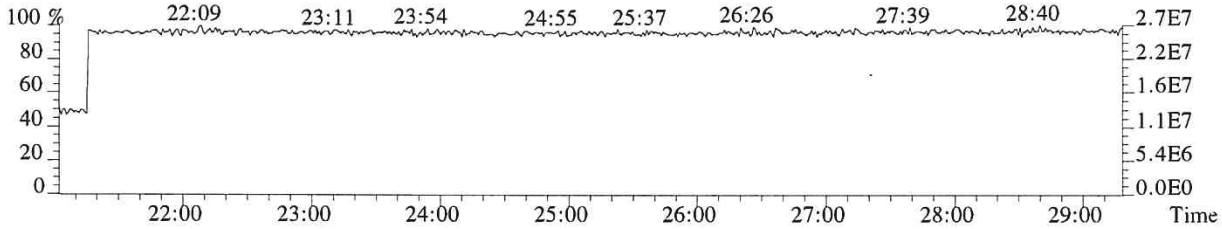
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,928.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



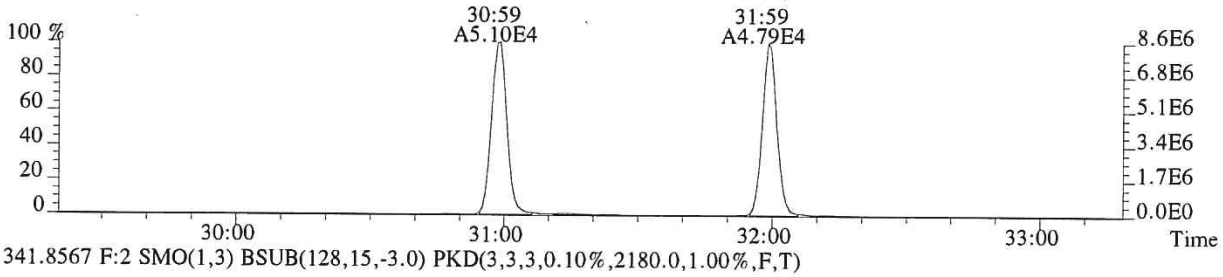
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



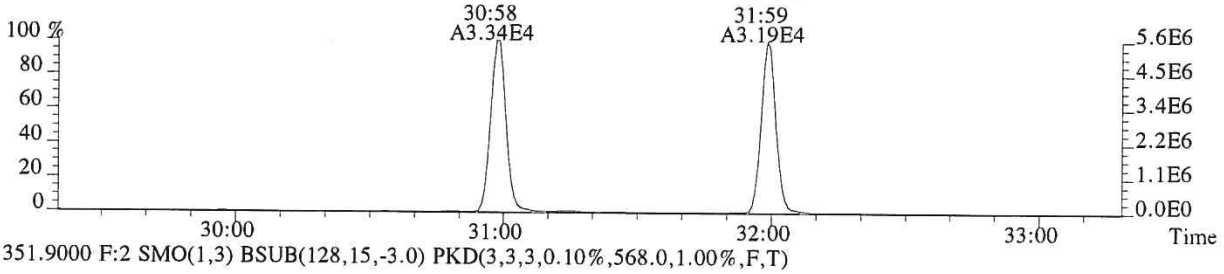
060541

File:P519698 #1-358 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

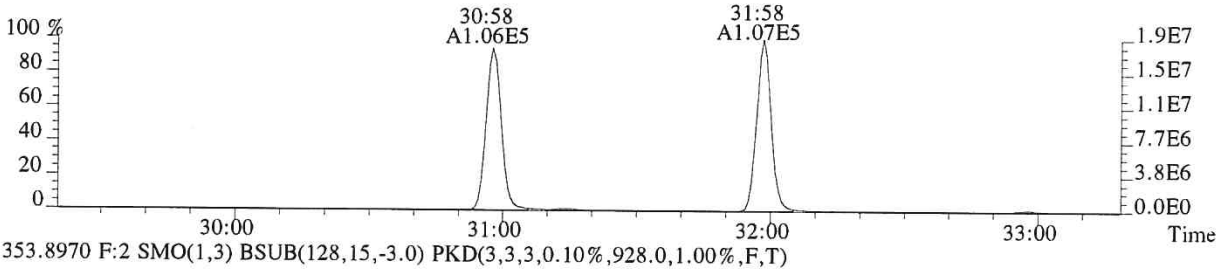
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



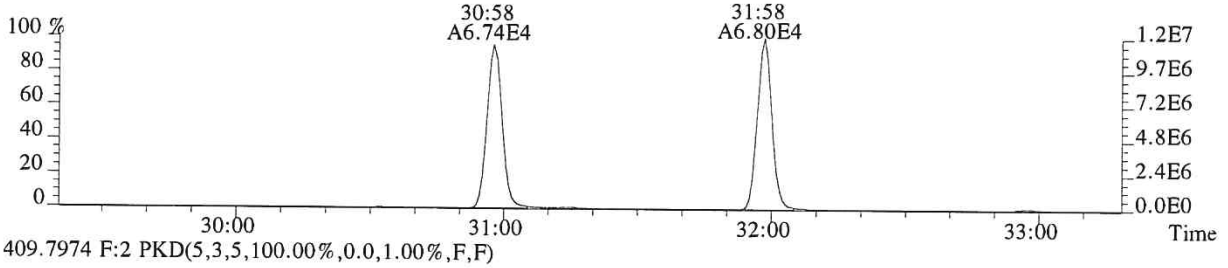
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2180.0,1.00%,F,T)



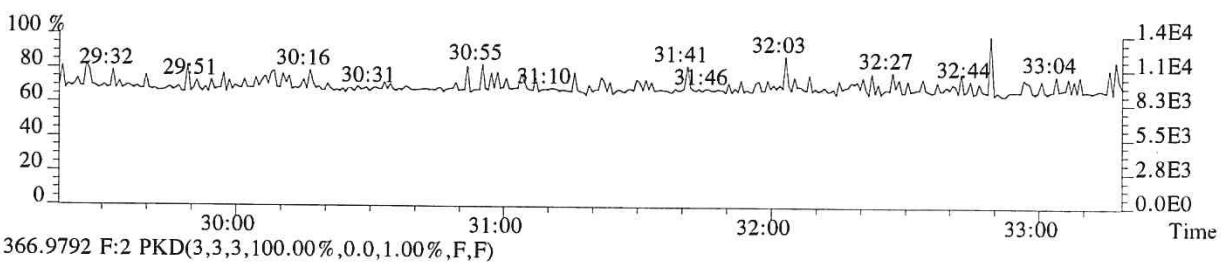
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,568.0,1.00%,F,T)



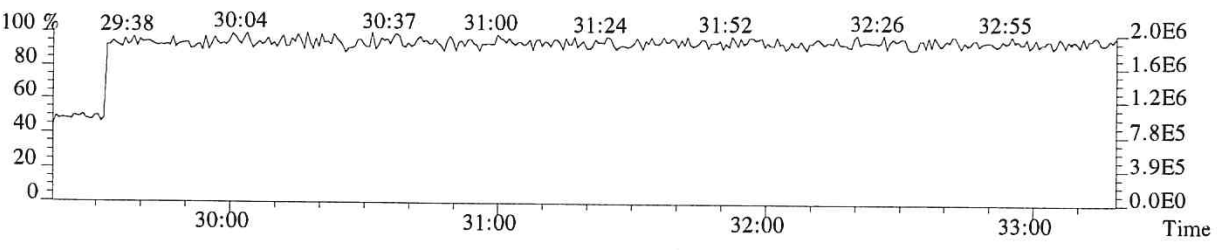
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,928.0,1.00%,F,T)



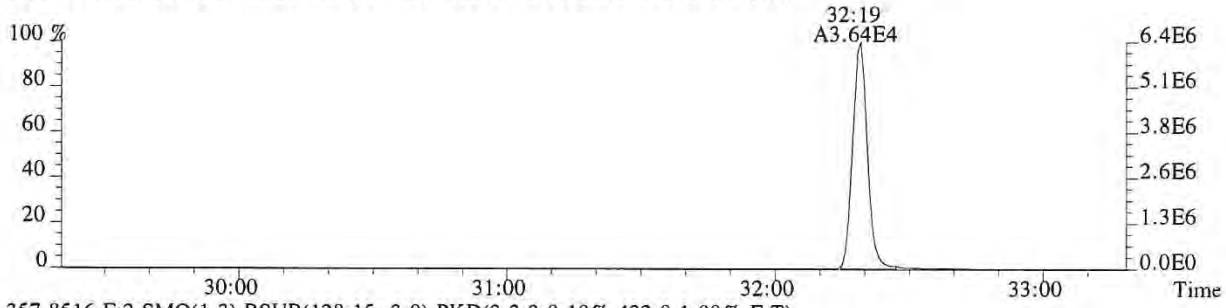
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



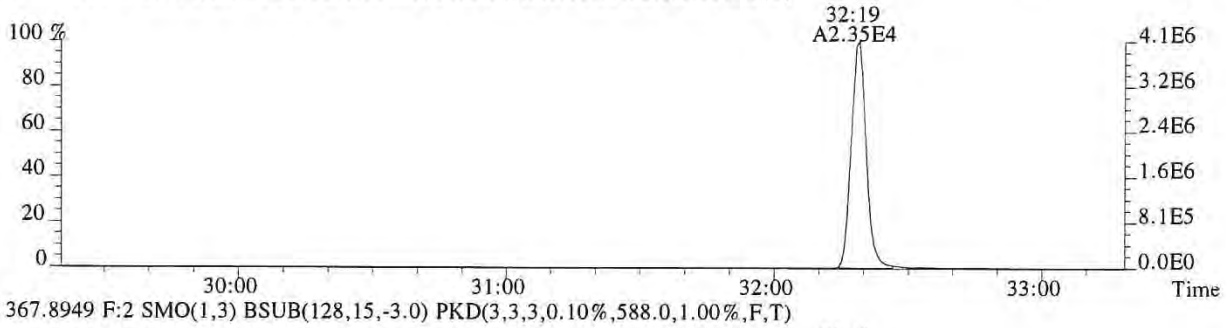
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



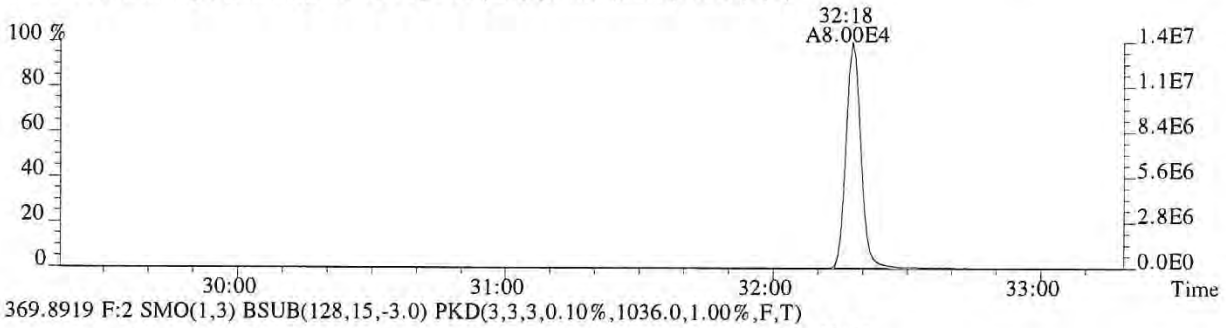
File:P519698 #1-358 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,580.0,1.00%,F,T)



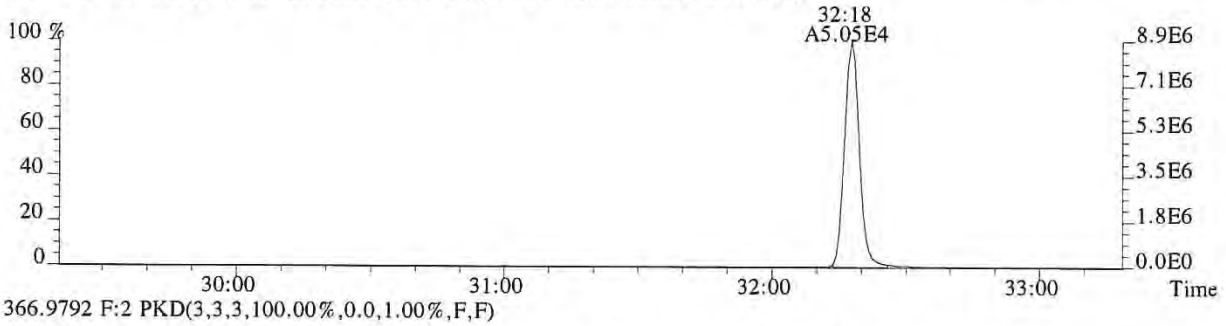
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,432.0,1.00%,F,T)



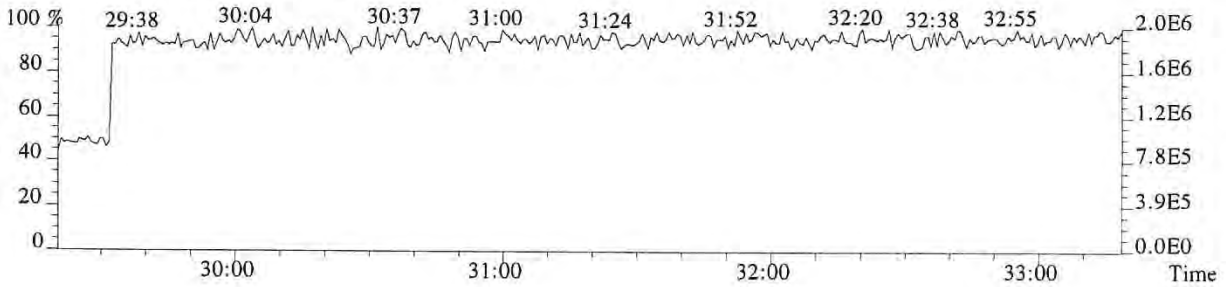
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,588.0,1.00%,F,T)



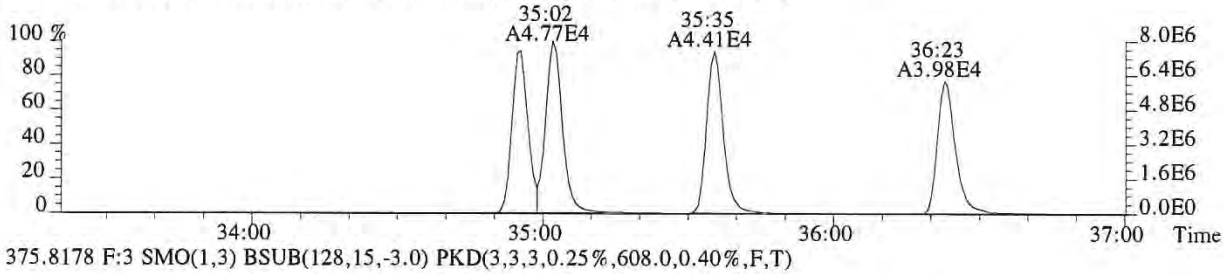
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1036.0,1.00%,F,T)



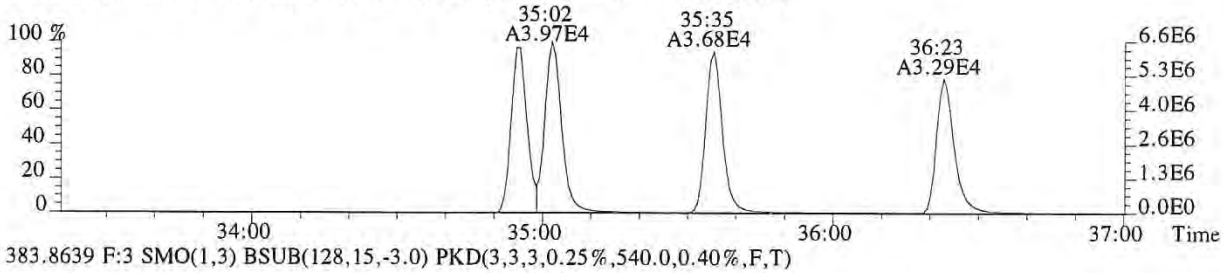
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



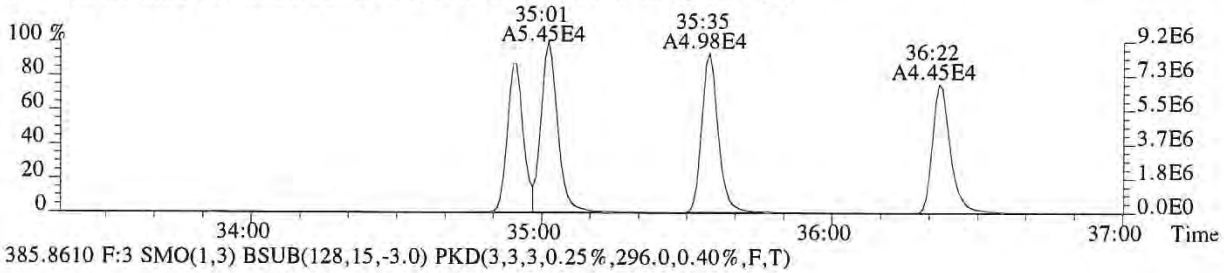
File:P519698 #1-330 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,704.0,0.40%,F,T)



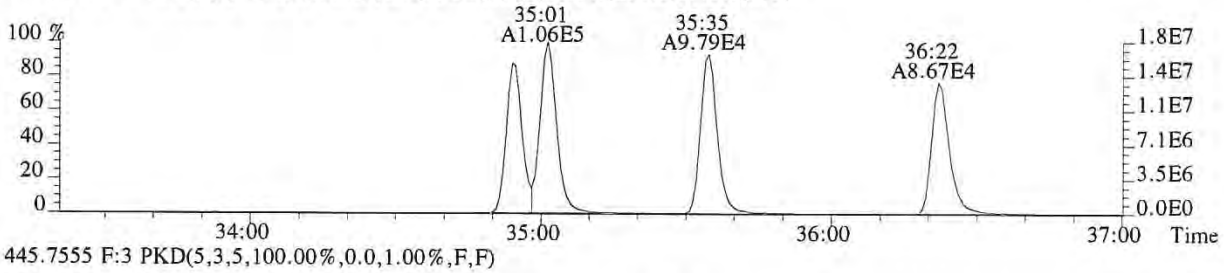
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,608.0,0.40%,F,T)



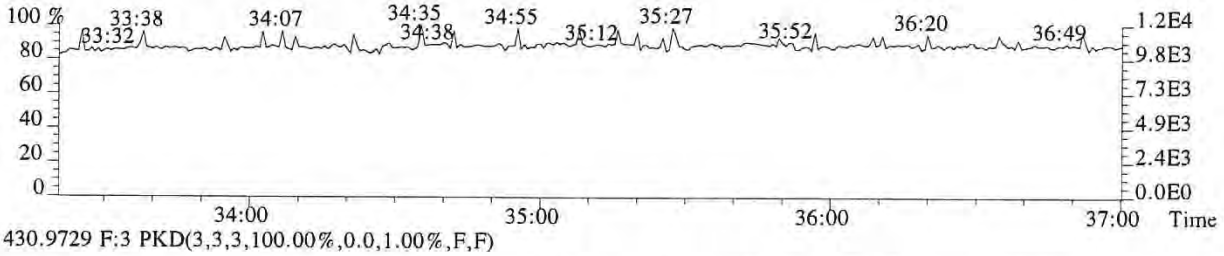
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,540.0,0.40%,F,T)



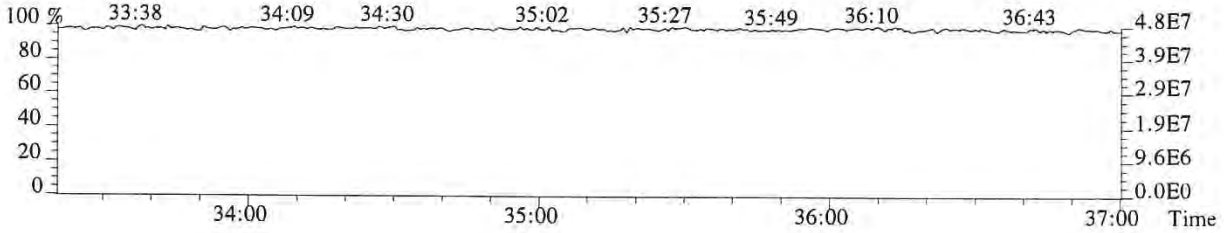
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,296.0,0.40%,F,T)



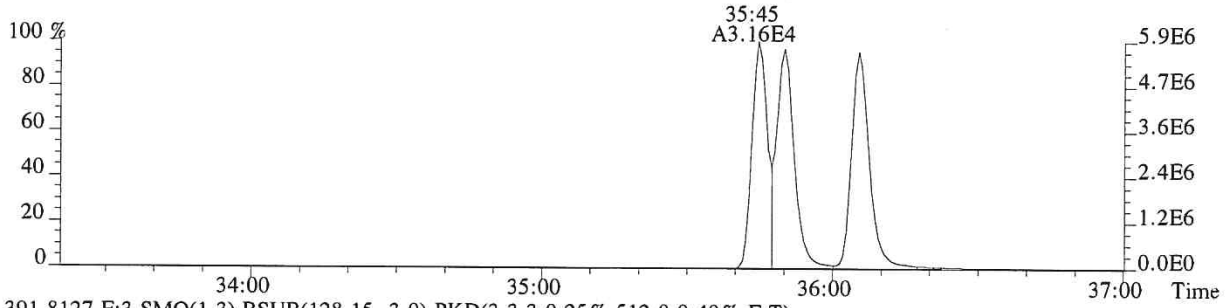
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



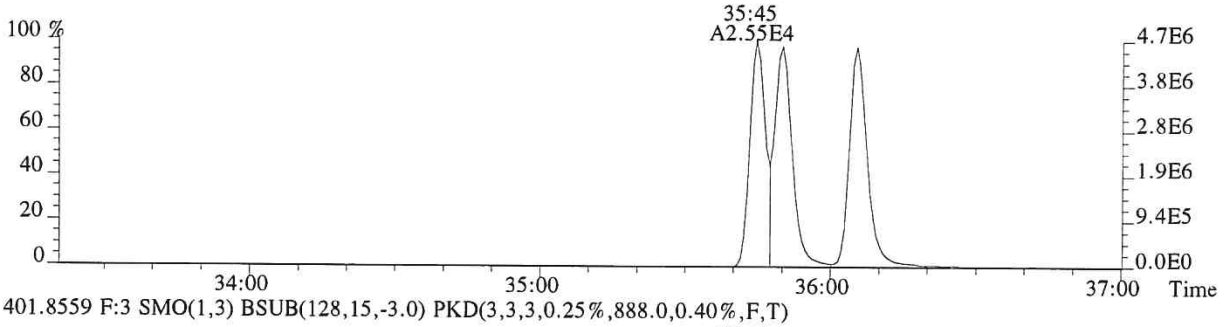
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



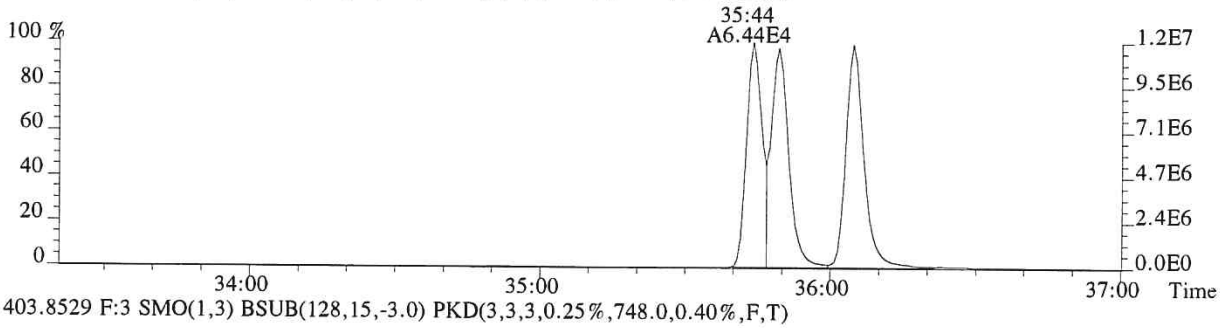
File:P519698 #1-330 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,524.0,0.40%,F,T)



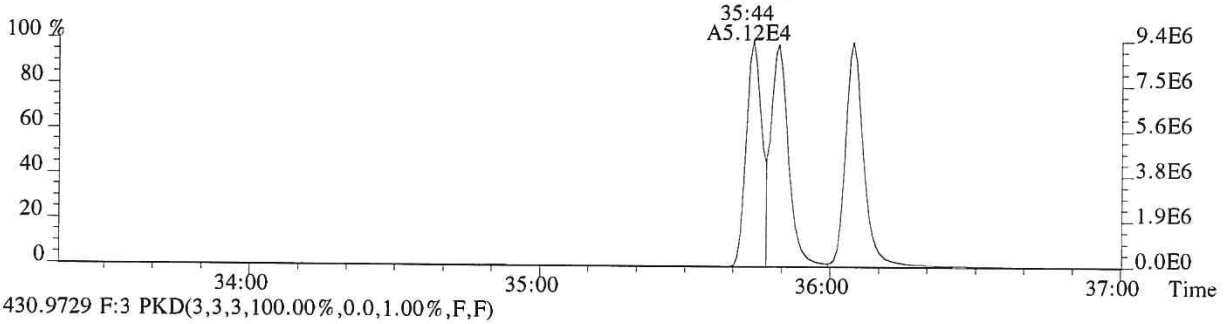
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,512.0,0.40%,F,T)



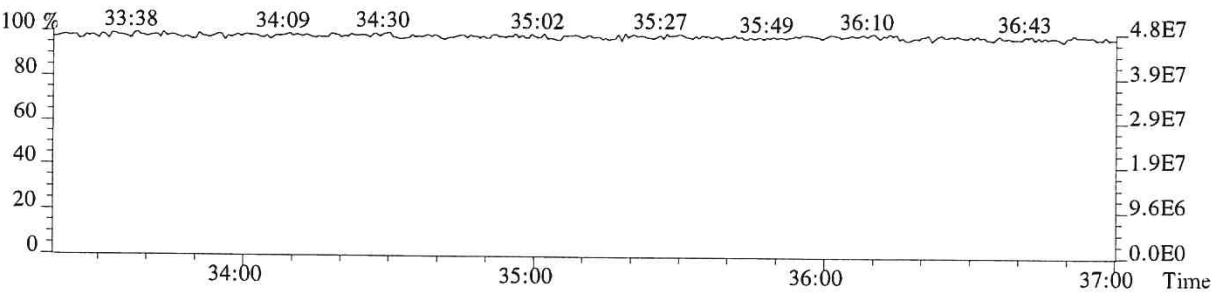
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,888.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,748.0,0.40%,F,T)



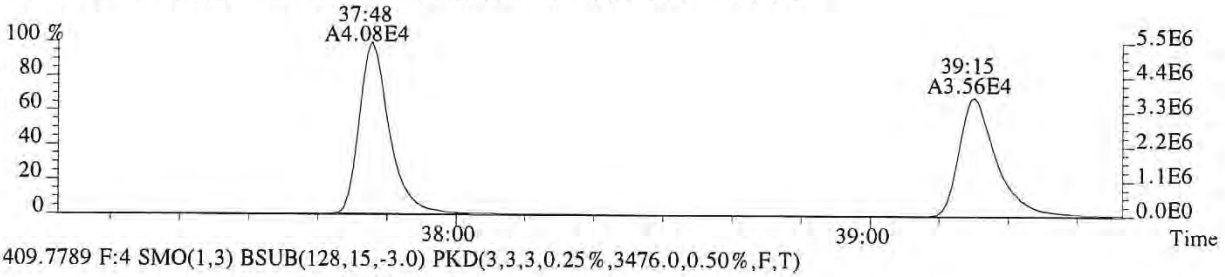
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



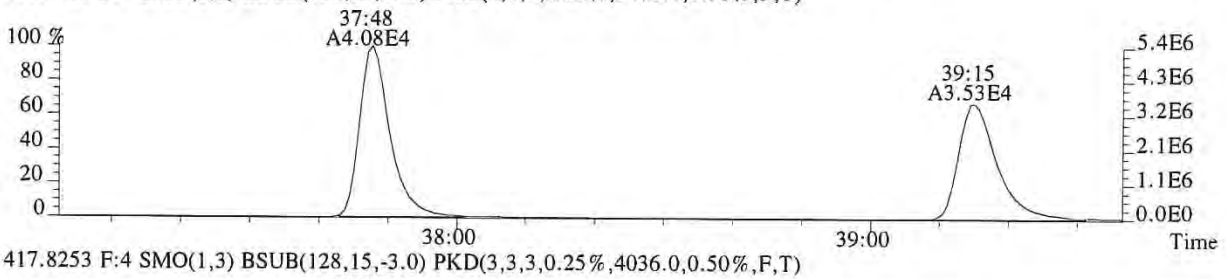
060545

File:P519698 #1-232 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

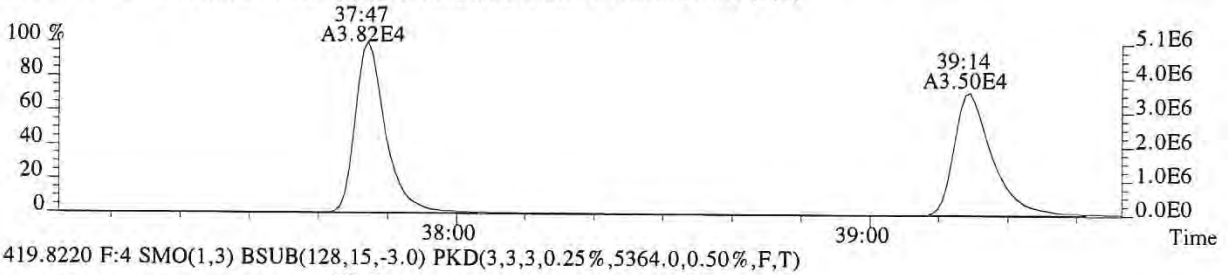
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3308.0,0.50%,F,T)



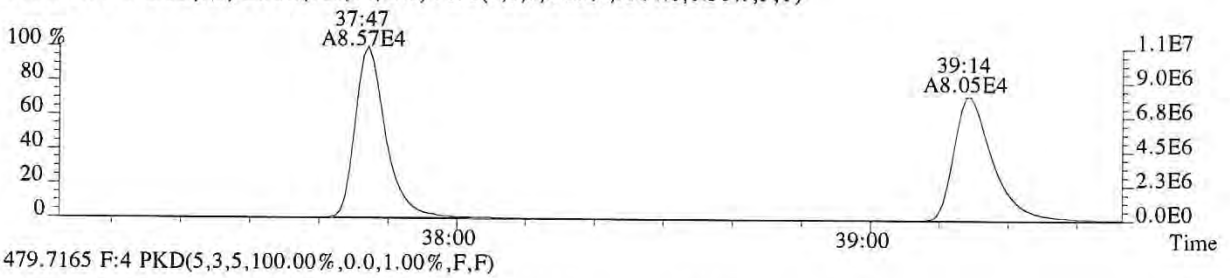
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3476.0,0.50%,F,T)



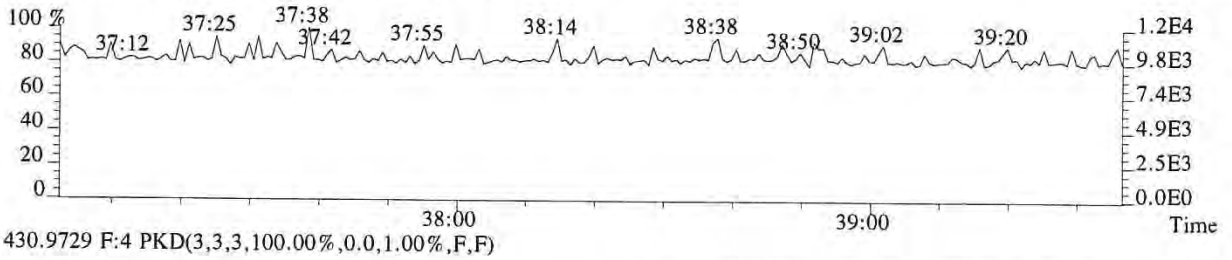
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4036.0,0.50%,F,T)



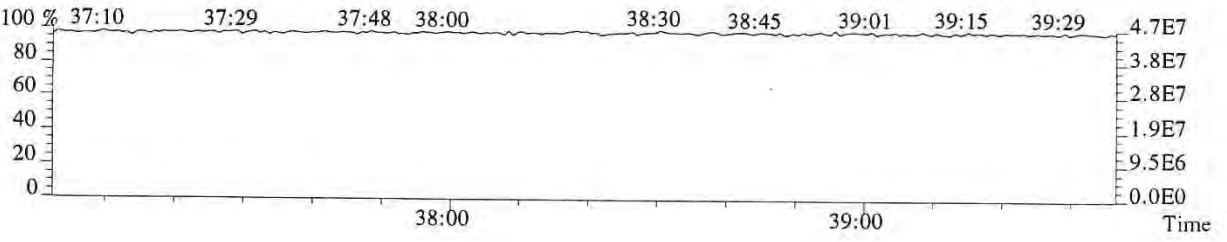
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5364.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

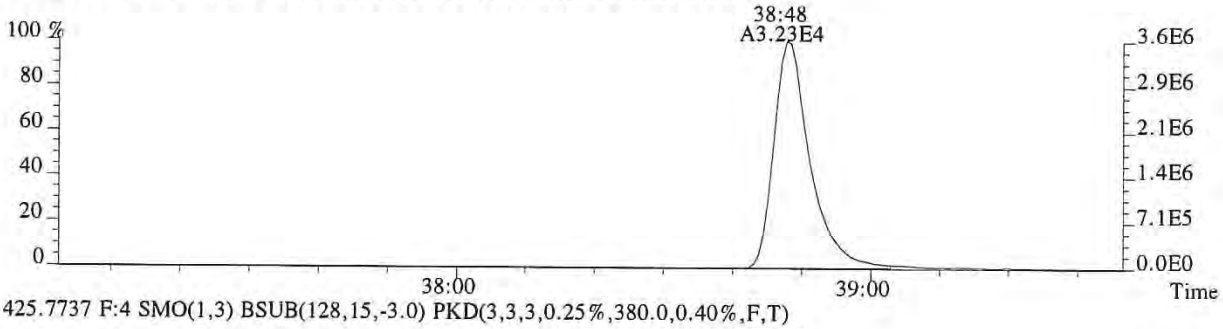


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

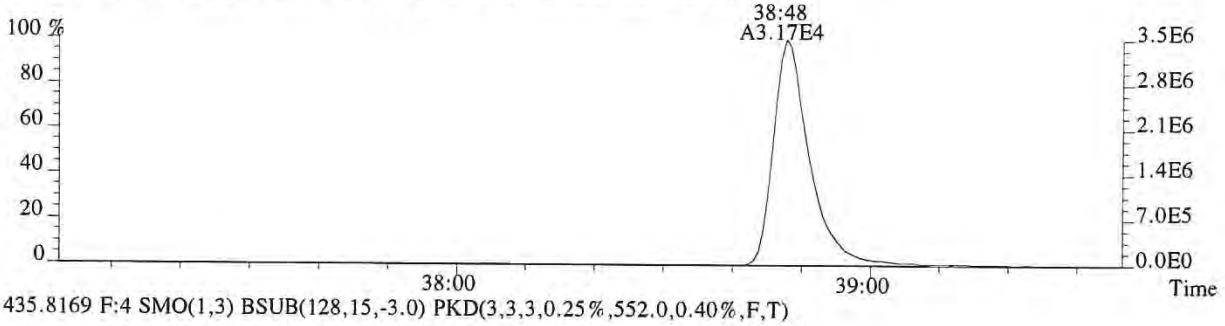


060546

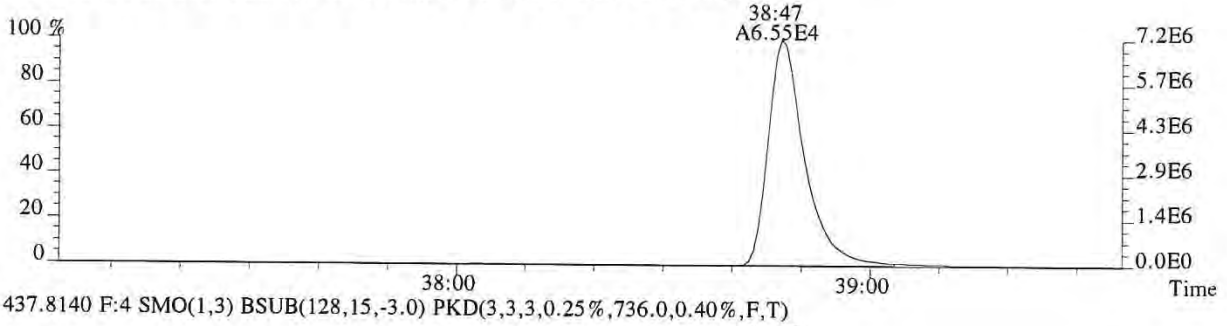
File:P519698 #1-232 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,304.0,0.40%,F,T)



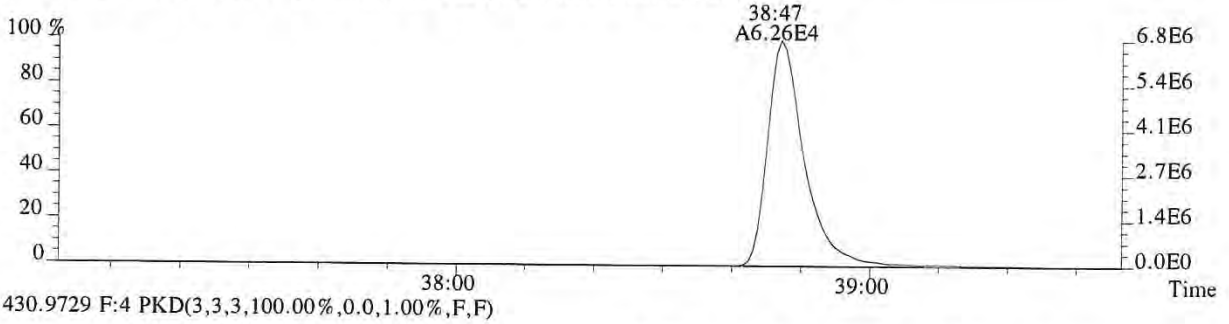
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,380.0,0.40%,F,T)



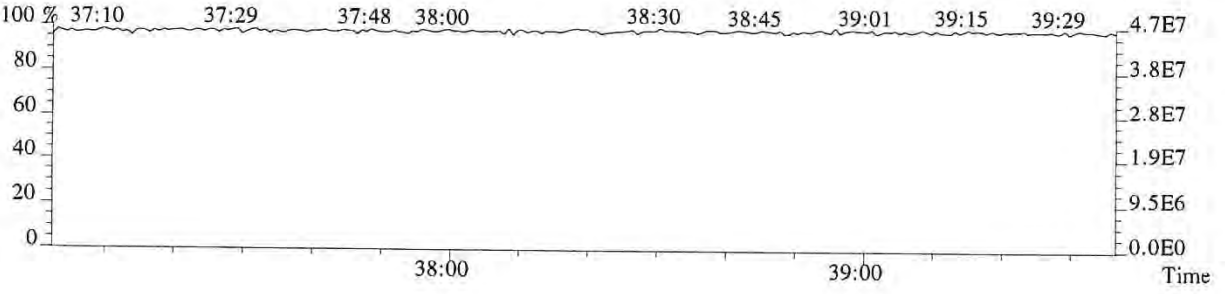
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,552.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,736.0,0.40%,F,T)



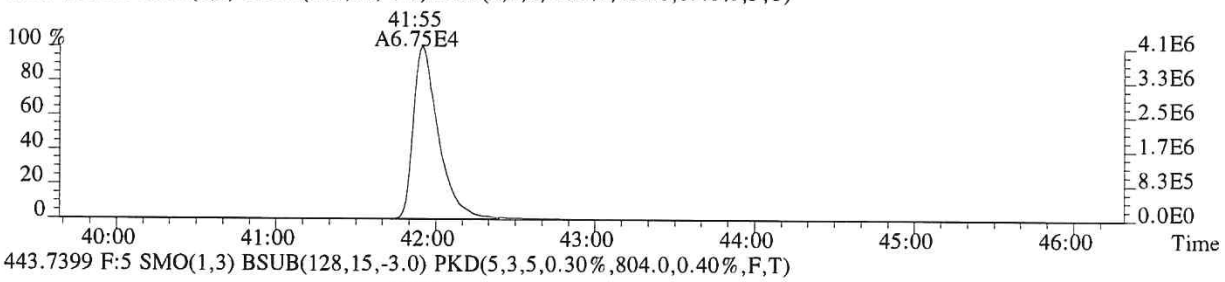
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



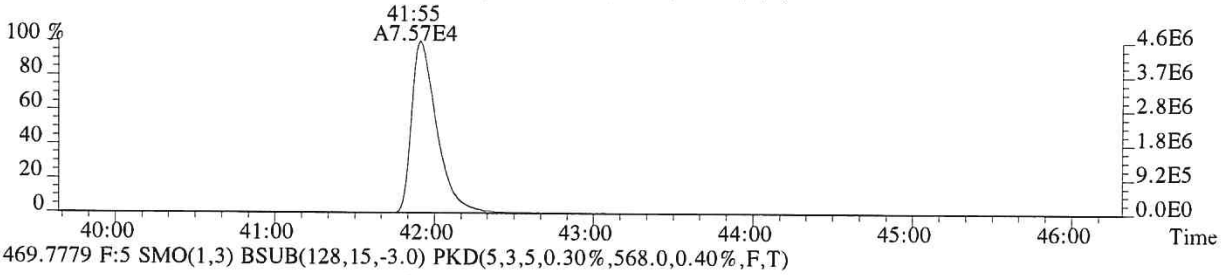
060547

File:P519698 #1-601 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

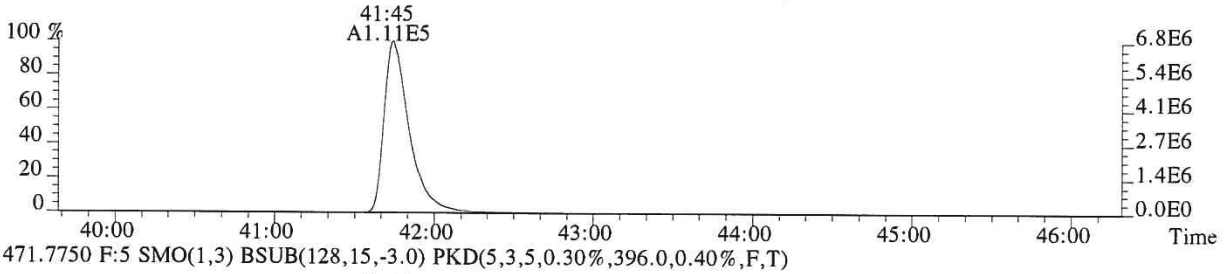
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,460.0,0.40%,F,T)



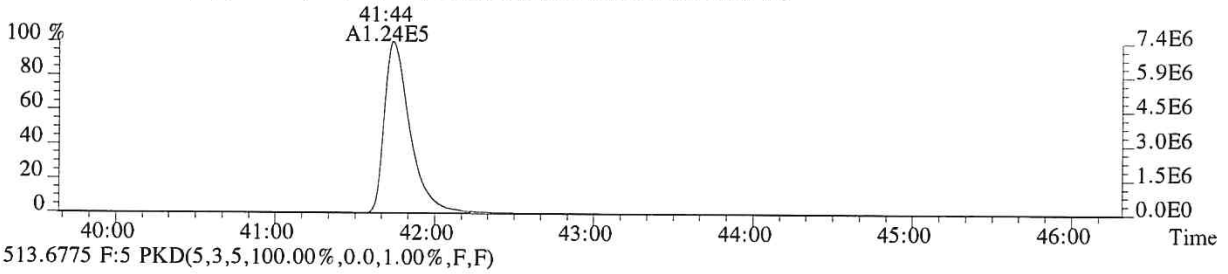
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,804.0,0.40%,F,T)



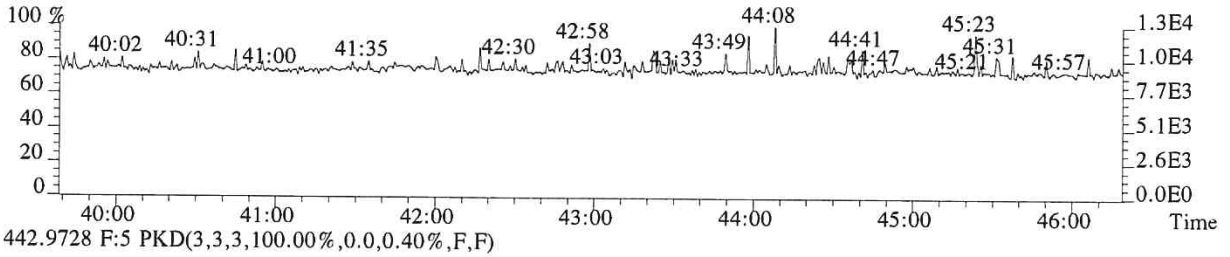
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,568.0,0.40%,F,T)



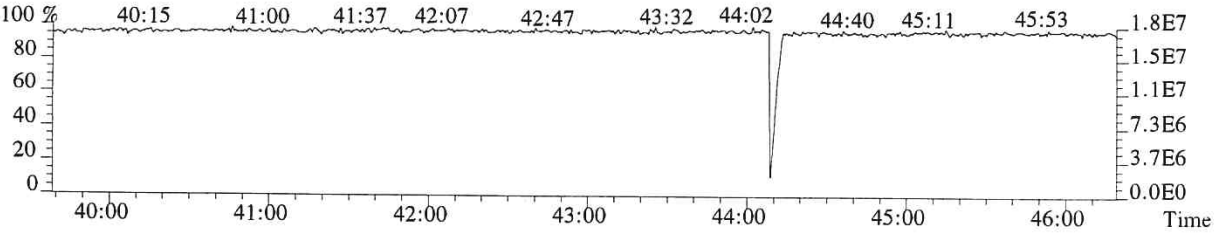
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,396.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

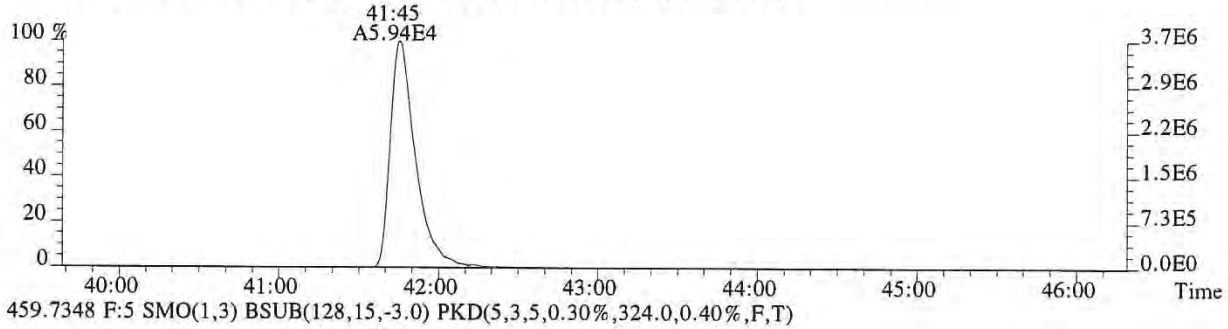


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

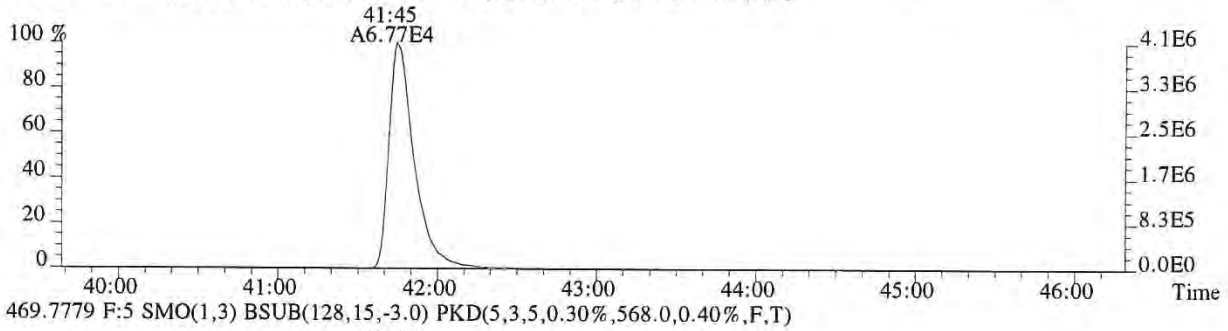


060548

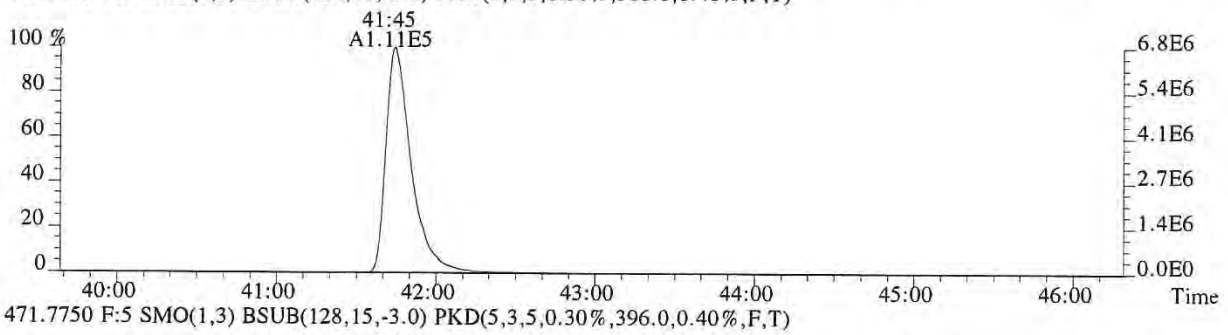
File:P519698 #1-601 Acq:29-DEC-2018 21:21:54 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,360.0,0.40%,F,T)



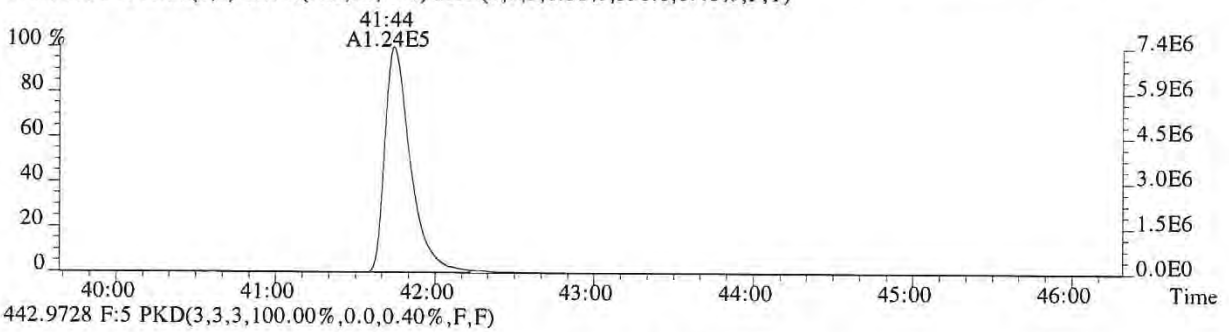
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,324.0,0.40%,F,T)



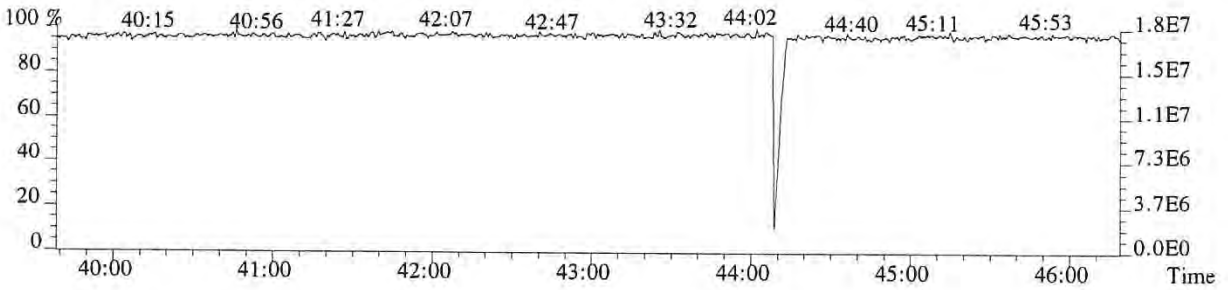
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,568.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,396.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060549

CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: 251970

Circle one: (Beginning) / Ending

Date: 12/30/18

Method: (1613) / 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: LKL

Second QC: LG

ccalqc.xls 07/17/12

060550

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 01/24/18

Init. Calib.Times: 11:44

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P519711	30-DEC-18	08:38:04
194503	CS3	P519710	30-DEC-18	07:48:10
METHOD BLANK	EQ1800523-01	P519712	30-DEC-18	09:25:53
METHOD BLANK	EQ1800529-01	P519713	30-DEC-18	10:14:56
BOILER/BOTTOM ASH	K1812282-002	P519714	30-DEC-18	11:03:16
BOILER/ESP ASH	K1812282-001DL	P519715	30-DEC-18	11:51:52
DU7-SS	E1801120-001DL	P519716	30-DEC-18	12:40:30
SL0080	E1801136-002DL	P519717	30-DEC-18	13:29:07
SL0081	E1801136-003DL	P519718	30-DEC-18	14:17:52
SL0082	E1801136-004DL	P519719	30-DEC-18	15:06:31
SL0086	E1801136-007DL	P519720	30-DEC-18	15:55:16
SL0087	E1801136-008DL	P519721	30-DEC-18	16:43:52
SL0088	E1801136-009DL	P519722	30-DEC-18	17:32:39
LCS	EQ1800522-02	P519723	30-DEC-18	18:21:15
DLCS	EQ1800522-03	P519724	30-DEC-18	19:10:01

E1801136

786 of 1106

Sample List Report — **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS07.PRO\SampleDB\20181230A.SPL
Last Modified: Monday, December 31, 2018 06:57:11 Central Standard Time
Printed: Monday, December 31, 2018 06:57:13 Central Standard Time

Page Position (1, 1)

OPUS 5 NET: P519710 RES

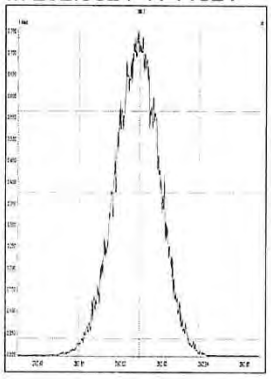
	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/30/18	07:28	P519710	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2	LG	HRMS check 07:43
2		08:38	P519711	WINDOWDEFINE	192977	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		09:25	P519712	MB	EQ1800523-01	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4		10:14	P519713	MB	EQ1800529-01	EPA1613_ALS	Dioxin_ALS	Tray1:4		
5		11:03	P519714	K1812282-002	K1812282-002	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		11:51	P519715	K1812282-001DL	K1812282-001DL	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		12:40	P519716	E1801120-001DL	E1801120-001DL	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		13:29	P519717	E1801136-002DL	E1801136-002DL	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		14:17	P519718	E1801136-003DL	E1801136-003DL	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		15:06	P519719	E1801136-004DL	E1801136-004DL	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		15:55	P519720	E1801136-007DL	E1801136-007DL	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12		16:43	P519721	E1801136-008DL	E1801136-008DL	EPA1613_ALS	Dioxin_ALS	Tray1:12		
13		17:32	P519722	E1801136-009DL	E1801136-009DL	EPA1613_ALS	Dioxin_ALS	Tray1:13		
14		18:21	P519723	LCS	EQ1800522-02	EPA1613_ALS	Dioxin_ALS	Tray1:14		
15		19:10	P519724	DLCS	EQ1800522-03	EPA1613_ALS	Dioxin_ALS	Tray1:15		
16	↓	20:00	P519725	CS3	194503	EPA1613_ALS	Dioxin_ALS	Tray1:2	↓	HRMS check 20:00
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---
20	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:20	---	---

LKL 12/31/18

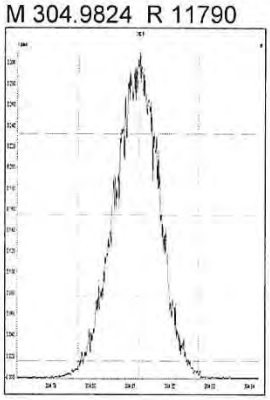
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Sunday, December 30, 2018 07:43:29 Central Standard Time

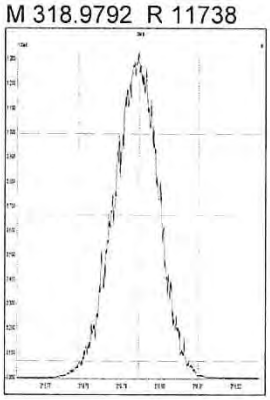
M 292.9824 R 11521



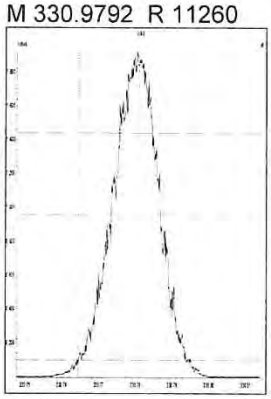
M 304.9824 R 11790



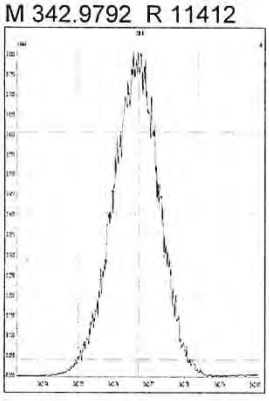
M 318.9792 R 11738



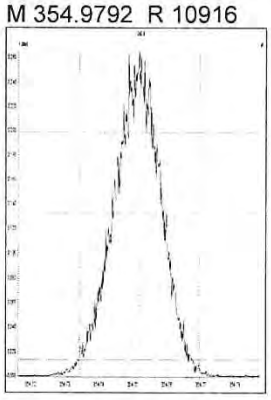
M 330.9792 R 11260



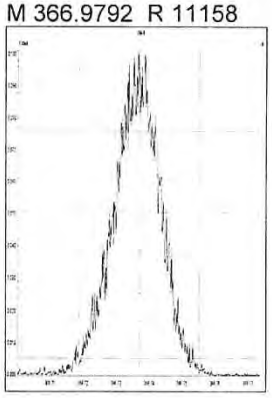
M 342.9792 R 11412



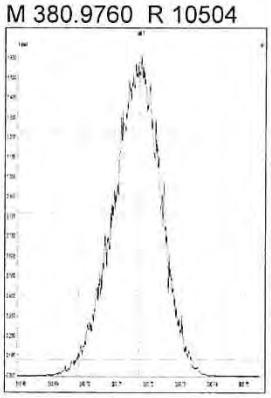
M 354.9792 R 10916



M 366.9792 R 11158



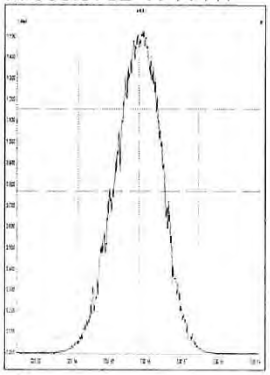
M 380.9760 R 10504



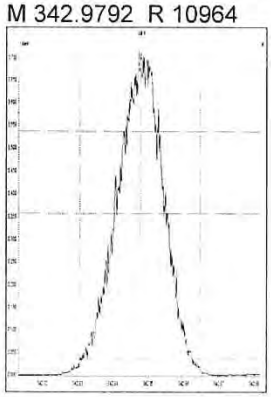
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Sunday, December 30, 2018 07:44:09 Central Standard Time

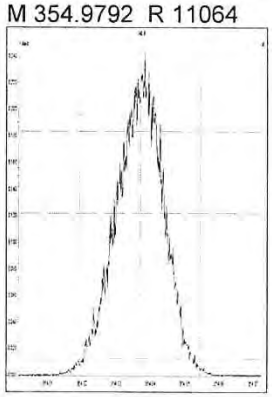
M 330.9792 R 11417



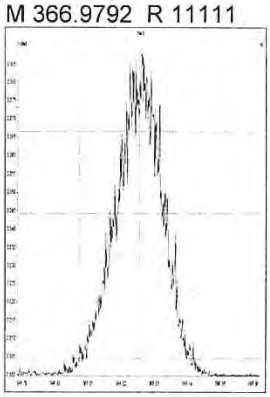
M 342.9792 R 10964



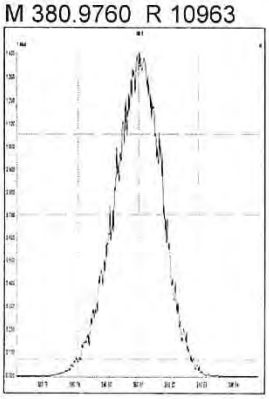
M 354.9792 R 11064



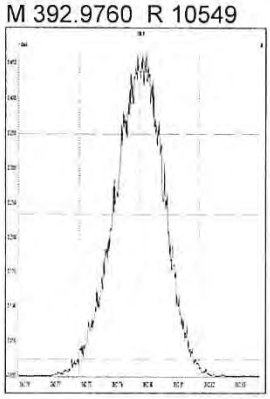
M 366.9792 R 11111



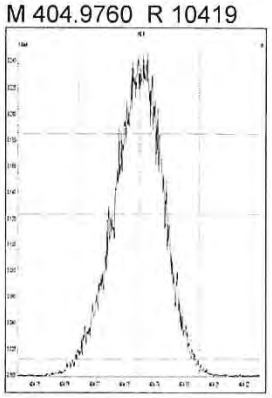
M 380.9760 R 10963



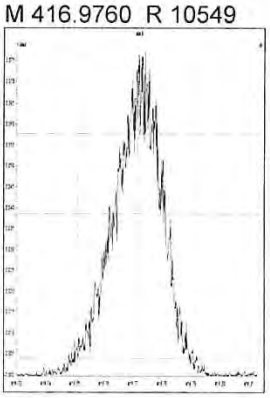
M 392.9760 R 10549



M 404.9760 R 10419



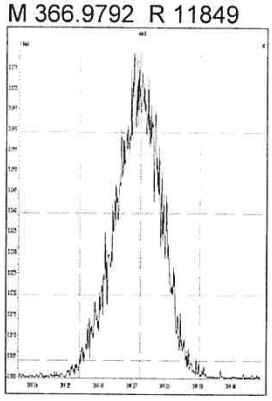
M 416.9760 R 10549



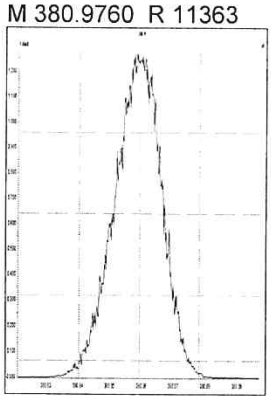
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Sunday, December 30, 2018 07:44:56 Central Standard Time

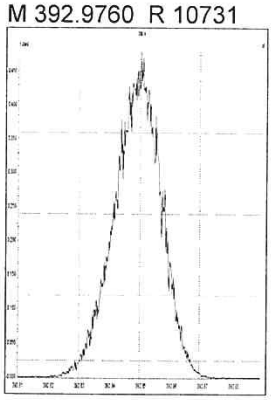
M 366.9792 R 11849



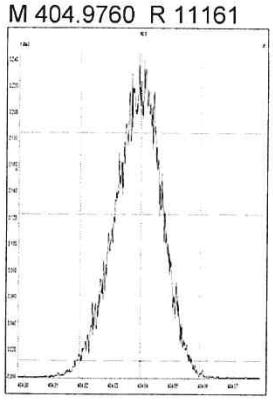
M 380.9760 R 11363



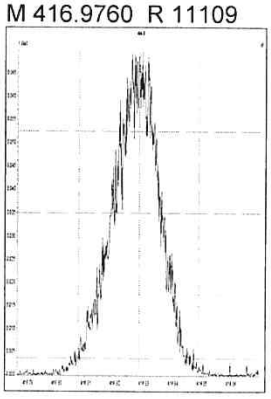
M 392.9760 R 10731



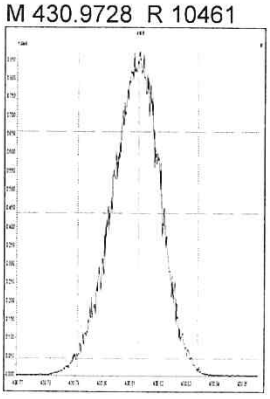
M 404.9760 R 11161



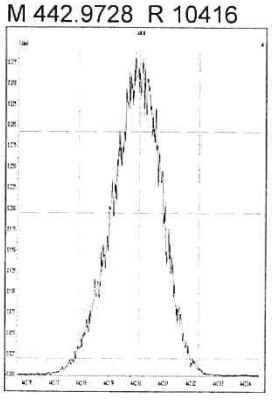
M 416.9760 R 11109



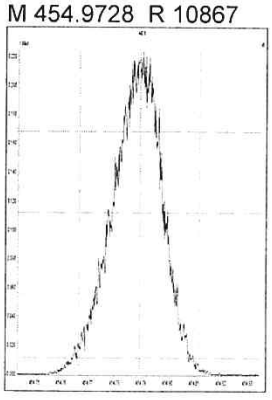
M 430.9728 R 10461



M 442.9728 R 10416



M 454.9728 R 10867

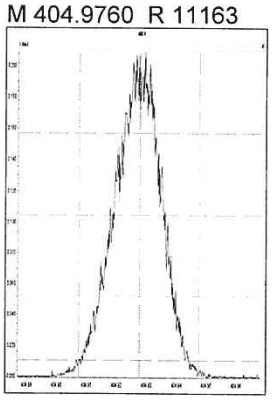


060555

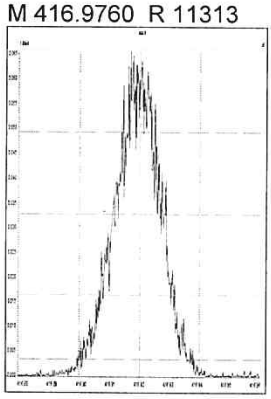
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Sunday, December 30, 2018 07:45:28 Central Standard Time

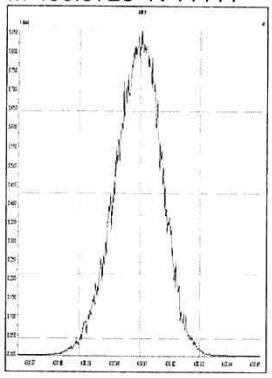
M 404.9760 R 11163



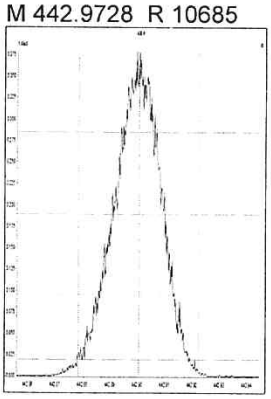
M 416.9760 R 11313



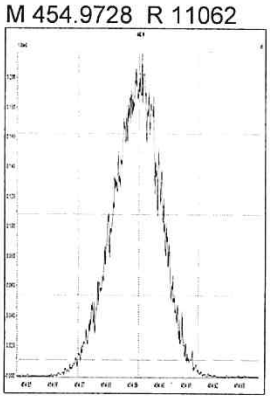
M 430.9728 R 11111



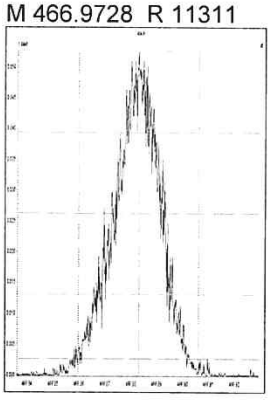
M 442.9728 R 10685



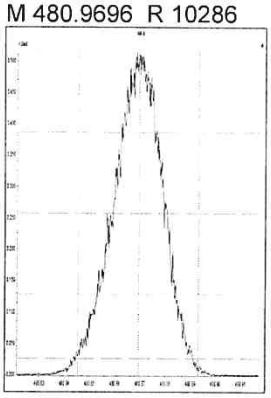
M 454.9728 R 11062



M 466.9728 R 11311



M 480.9696 R 10286



File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

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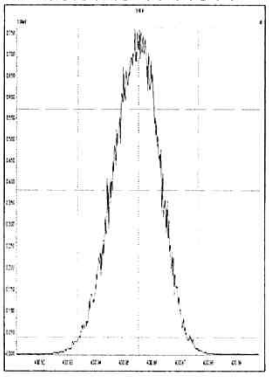
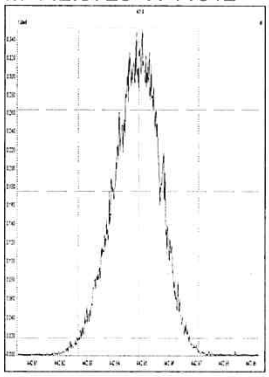
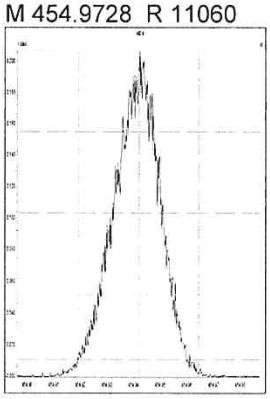
M 430.9728 R 11014



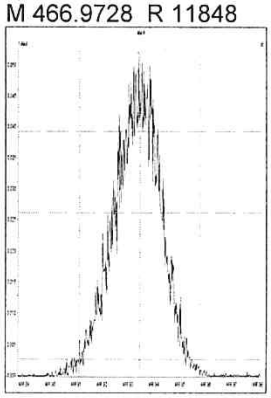
M 442.9728 R 11012



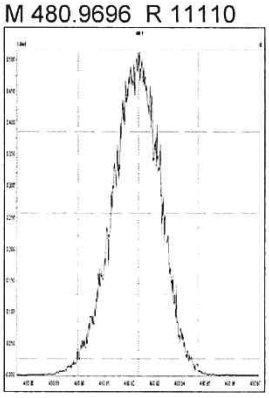
M 454.9728 R 11060



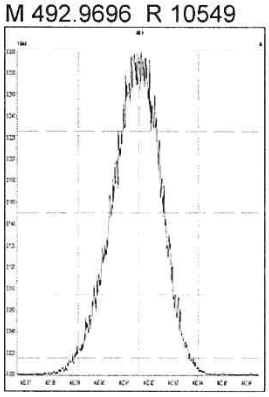
M 466.9728 R 11848



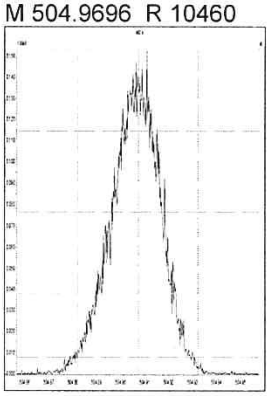
M 480.9696 R 11110



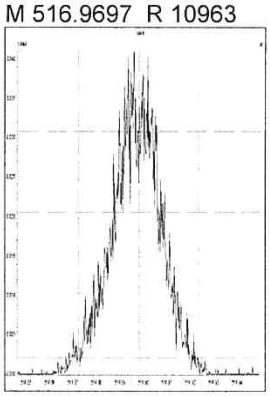
M 492.9696 R 10549



M 504.9696 R 10460



M 516.9697 R 10963



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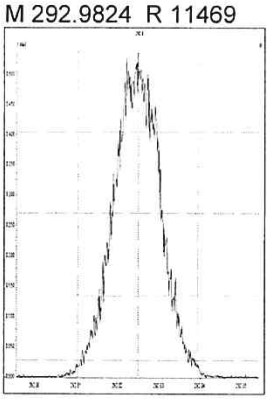
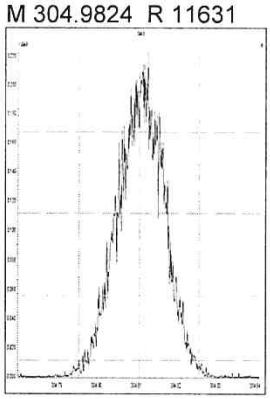
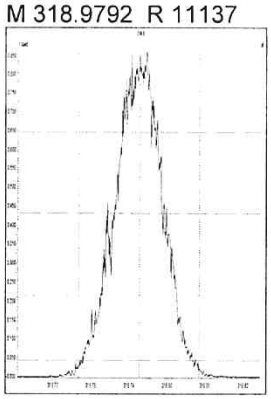
M 292.9824 R 11469



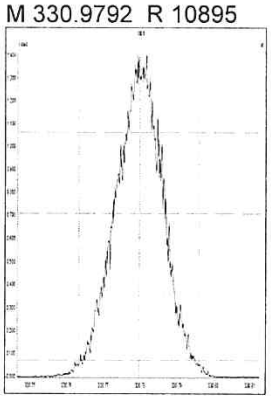
M 304.9824 R 11631



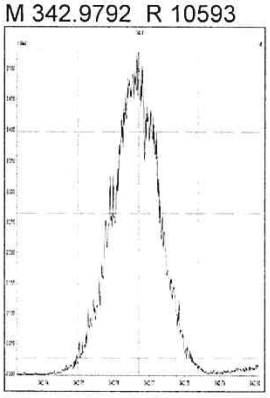
M 318.9792 R 11137



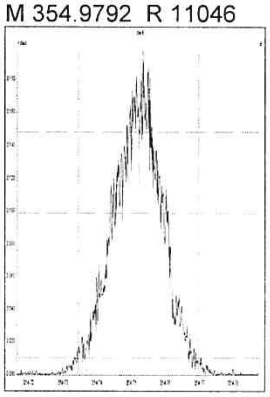
M 330.9792 R 10895



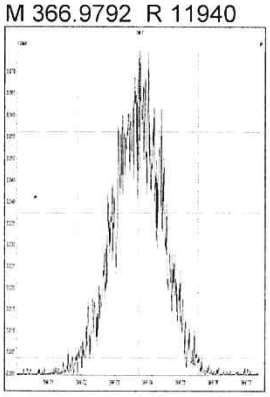
M 342.9792 R 10593



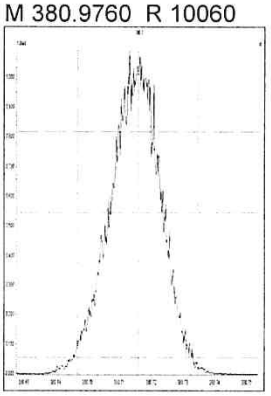
M 354.9792 R 11046



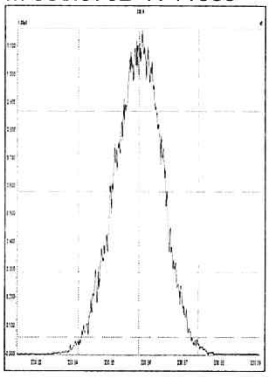
M 366.9792 R 11940



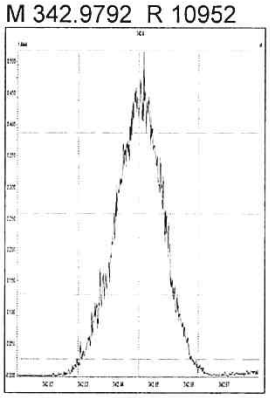
M 380.9760 R 10060



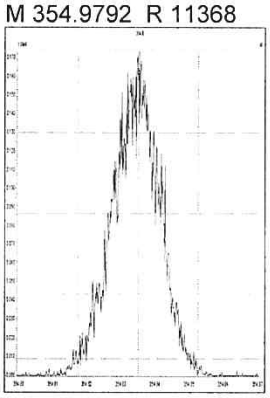
M 330.9792 R 11089



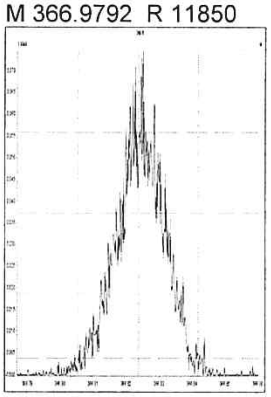
M 342.9792 R 10952



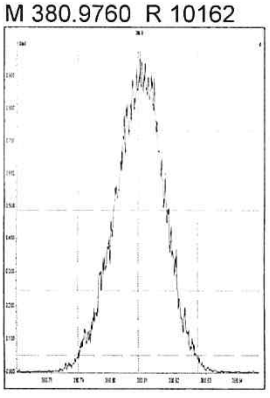
M 354.9792 R 11368



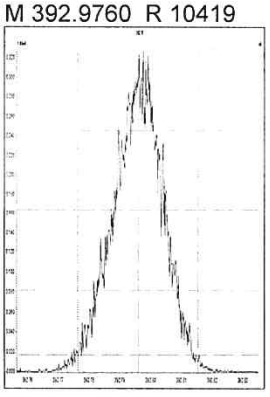
M 366.9792 R 11850



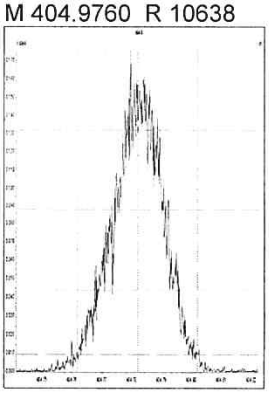
M 380.9760 R 10162



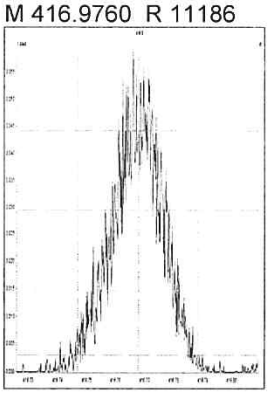
M 392.9760 R 10419



M 404.9760 R 10638



M 416.9760 R 11186



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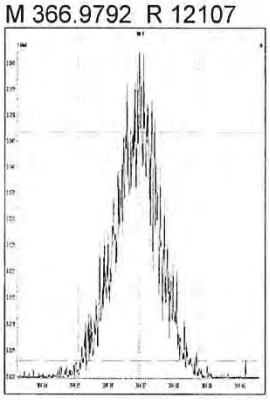
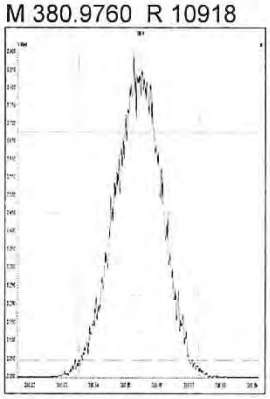
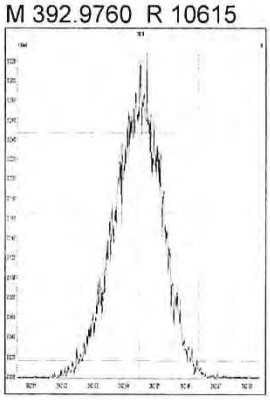
M 366.9792 R 12107



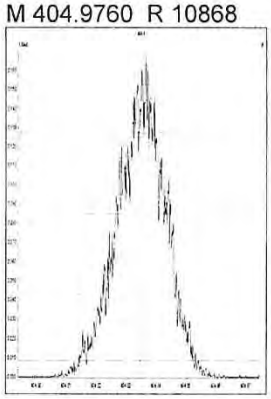
M 380.9760 R 10918



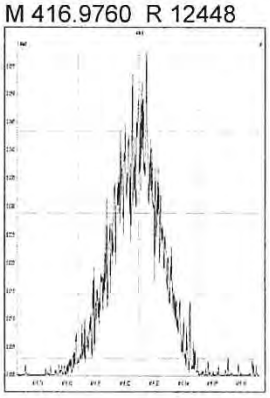
M 392.9760 R 10615



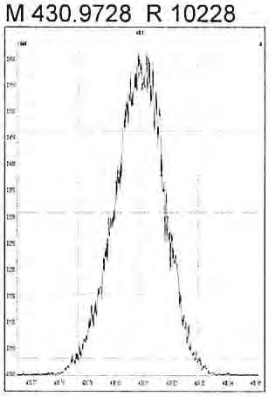
M 404.9760 R 10868



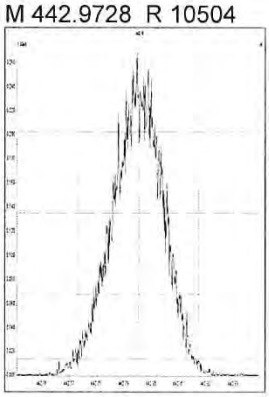
M 416.9760 R 12448



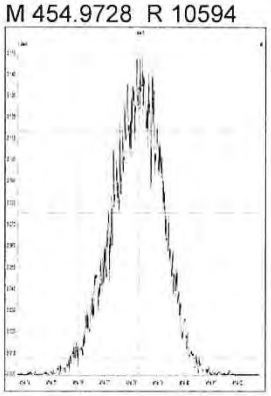
M 430.9728 R 10228



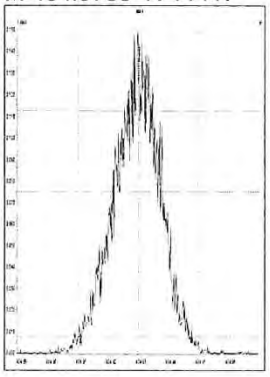
M 442.9728 R 10504



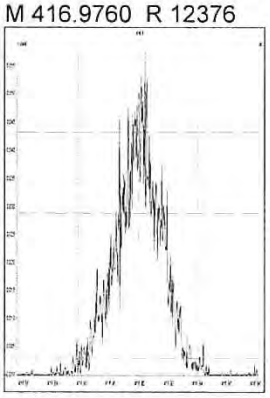
M 454.9728 R 10594



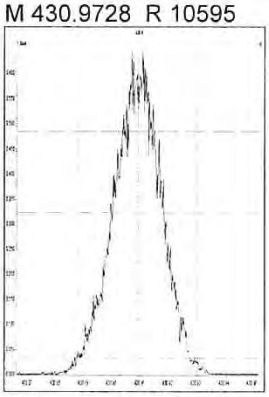
M 404.9760 R 11417



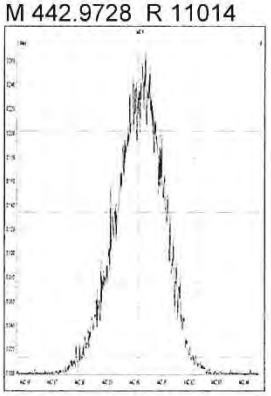
M 416.9760 R 12376



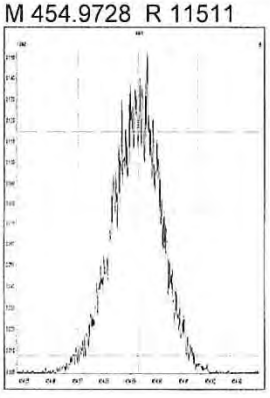
M 430.9728 R 10595



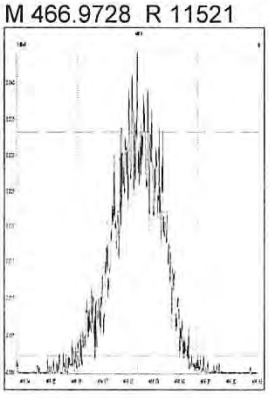
M 442.9728 R 11014



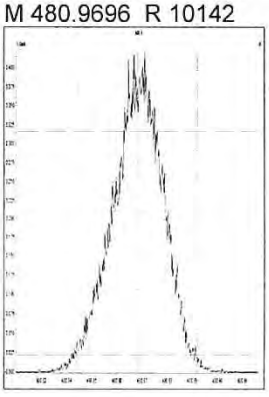
M 454.9728 R 11511



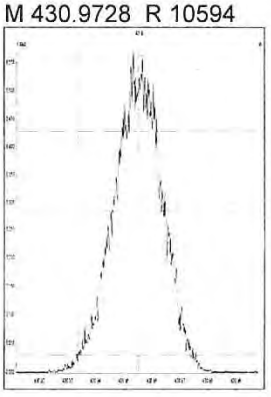
M 466.9728 R 11521



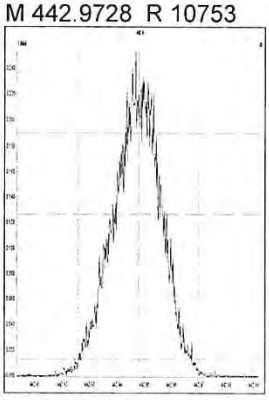
M 480.9696 R 10142



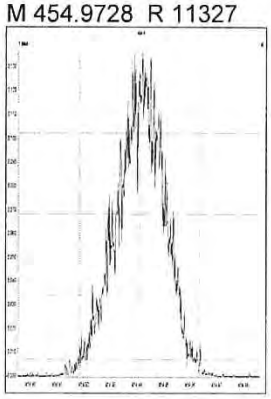
M 430.9728 R 10594



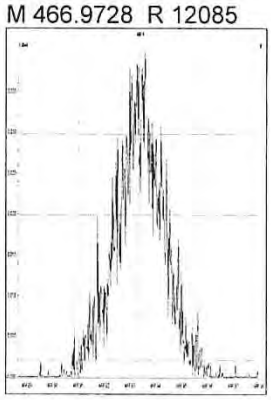
M 442.9728 R 10753



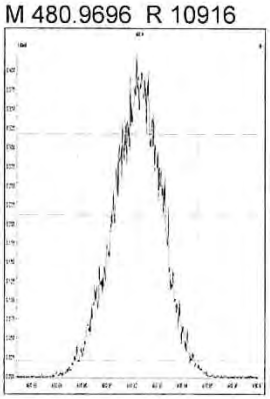
M 454.9728 R 11327



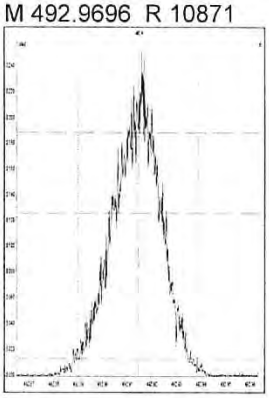
M 466.9728 R 12085



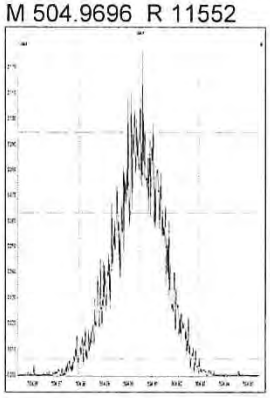
M 480.9696 R 10916



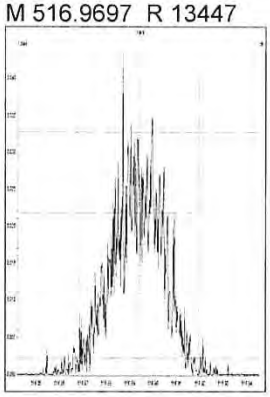
M 492.9696 R 10871



M 504.9696 R 11552



M 516.9697 R 13447



WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

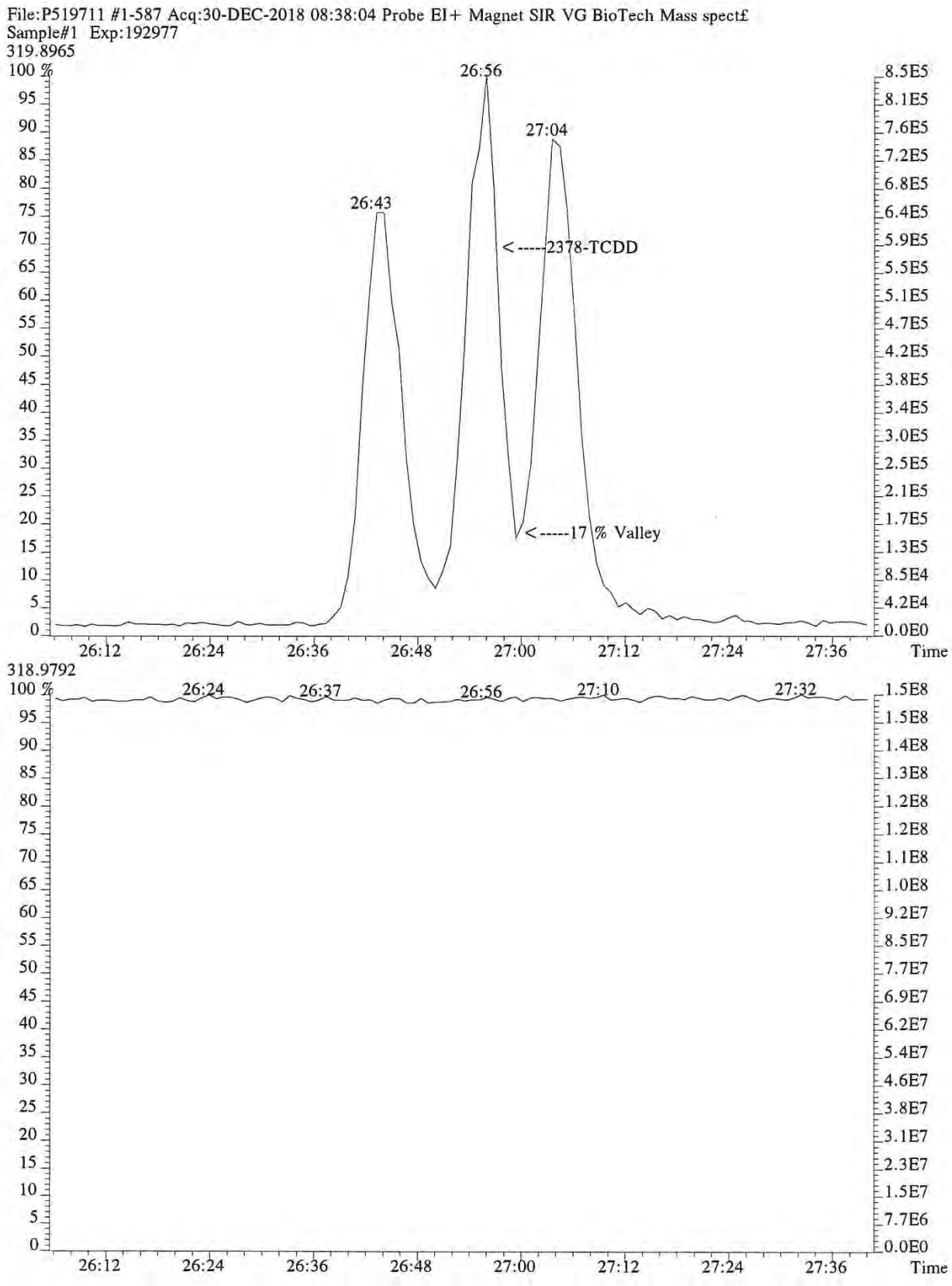
Case No.: _____ SDG No.:
ID: 0.25 (mm)

Lab File ID: P519711
Date Analyzed: 30-DEC-18
Time Analyzed: 08:38:04

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	21:33	28:16
TCDD	23:12	28:06
PeCDF	28:15	32:58
PeCDD	30:00	32:43
HxCDF	33:43	36:25
HxCDD	34:17	36:01
HpCDF	37:48	39:16
HpCDD	38:06	38:48

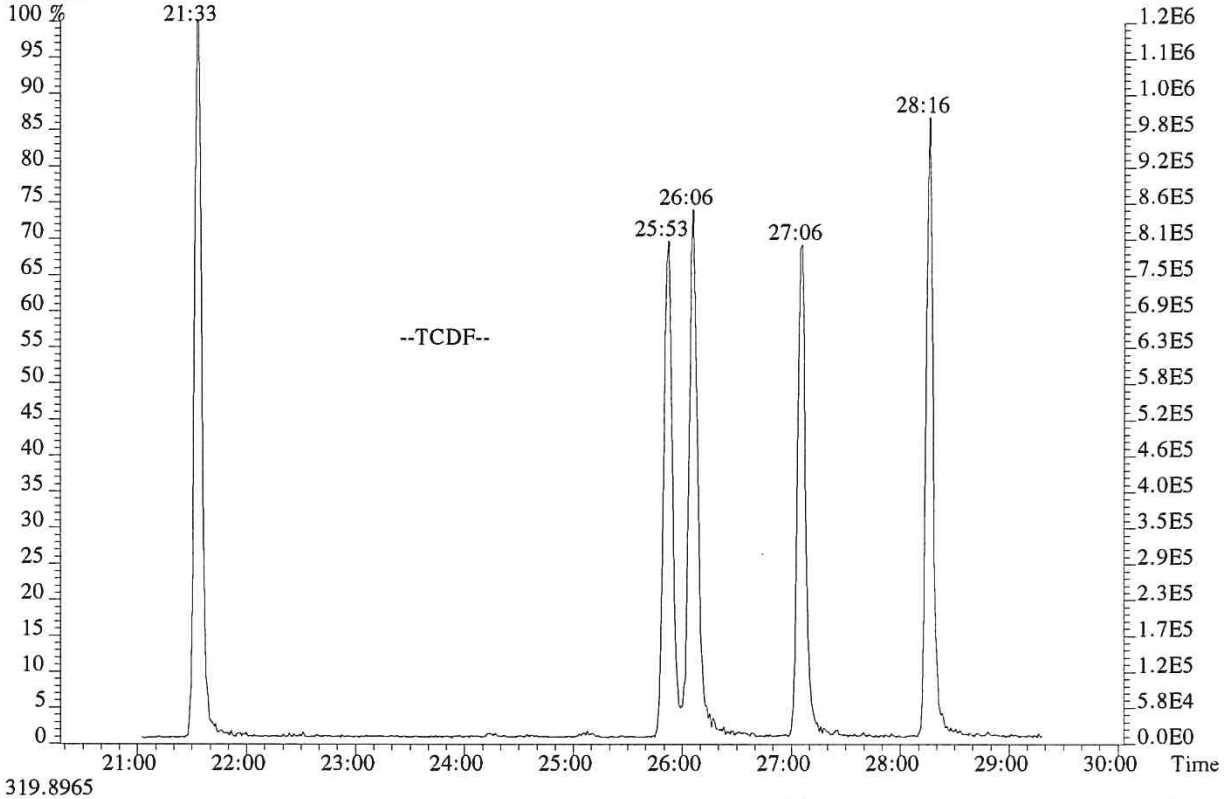
% Valley 2378-TCDD: 17 %

060561

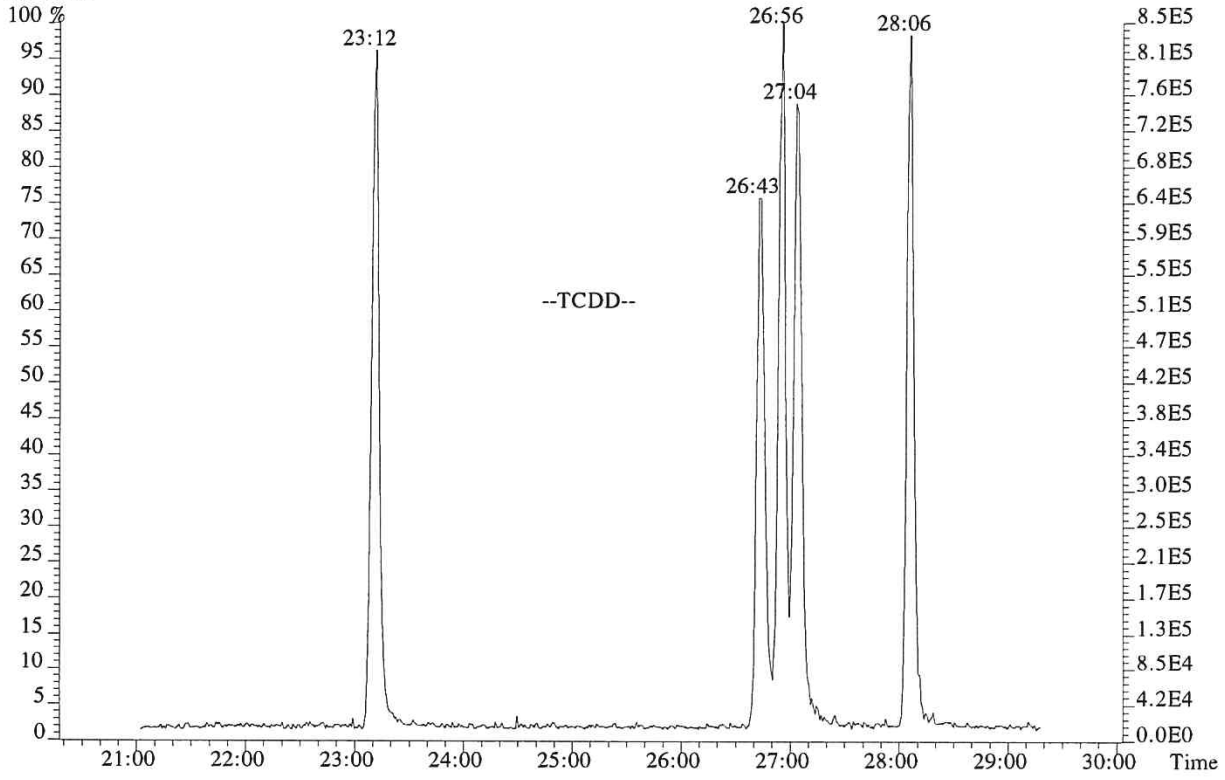

File:P519711 #1-587 Acq:30-DEC-2018 08:38:04 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:192977
319.8965
26:56
27:04
26:43
<-----2378-TCDD
<-----17 % Valley
318.9792
26:24
26:37
26:56
27:10
27:32
Time

060562

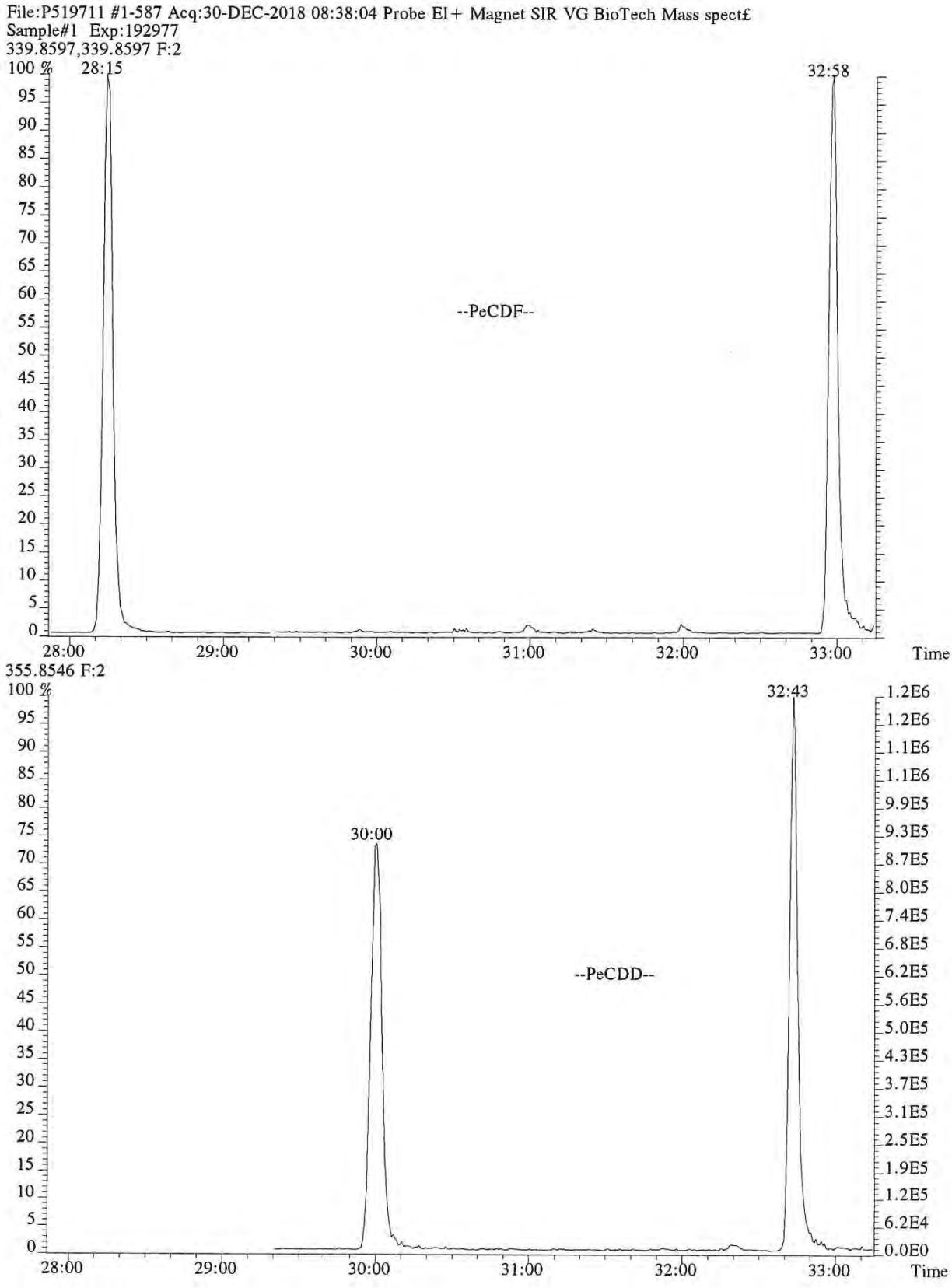
File:P519711 #1-587 Acq:30-DEC-2018 08:38:04 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
303.9016



319.8965

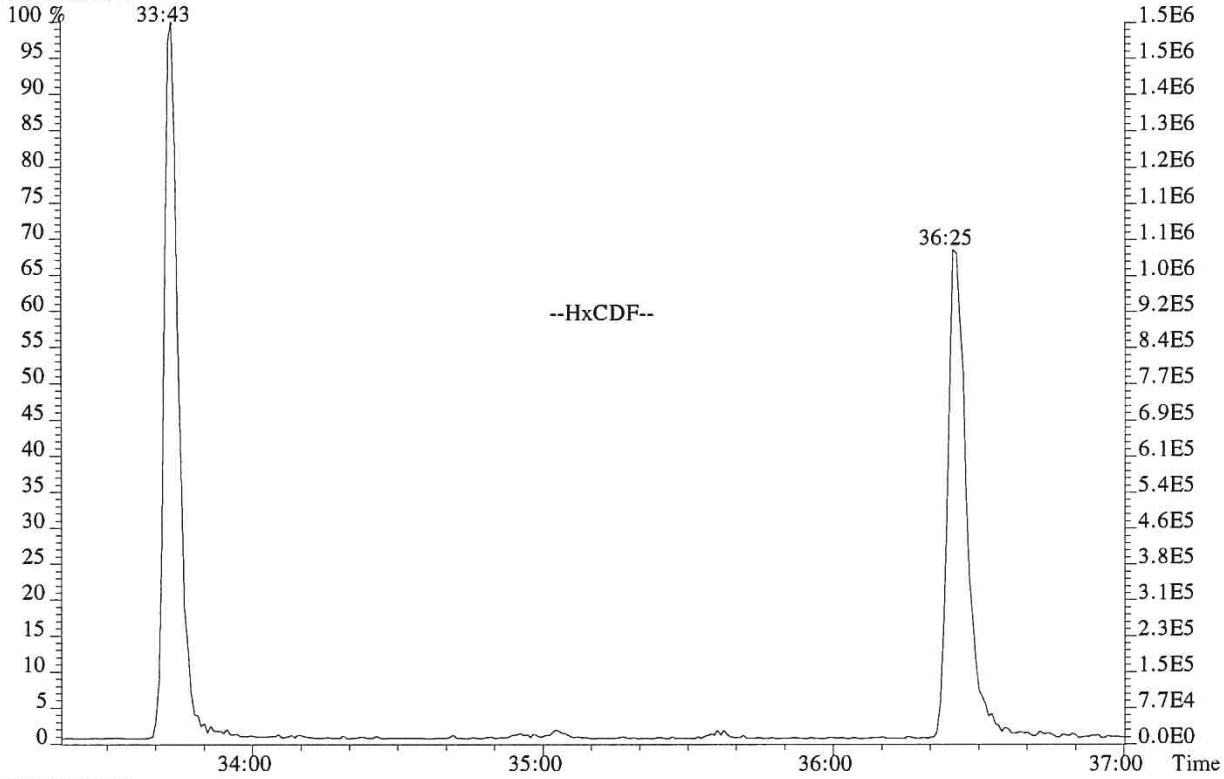


060563

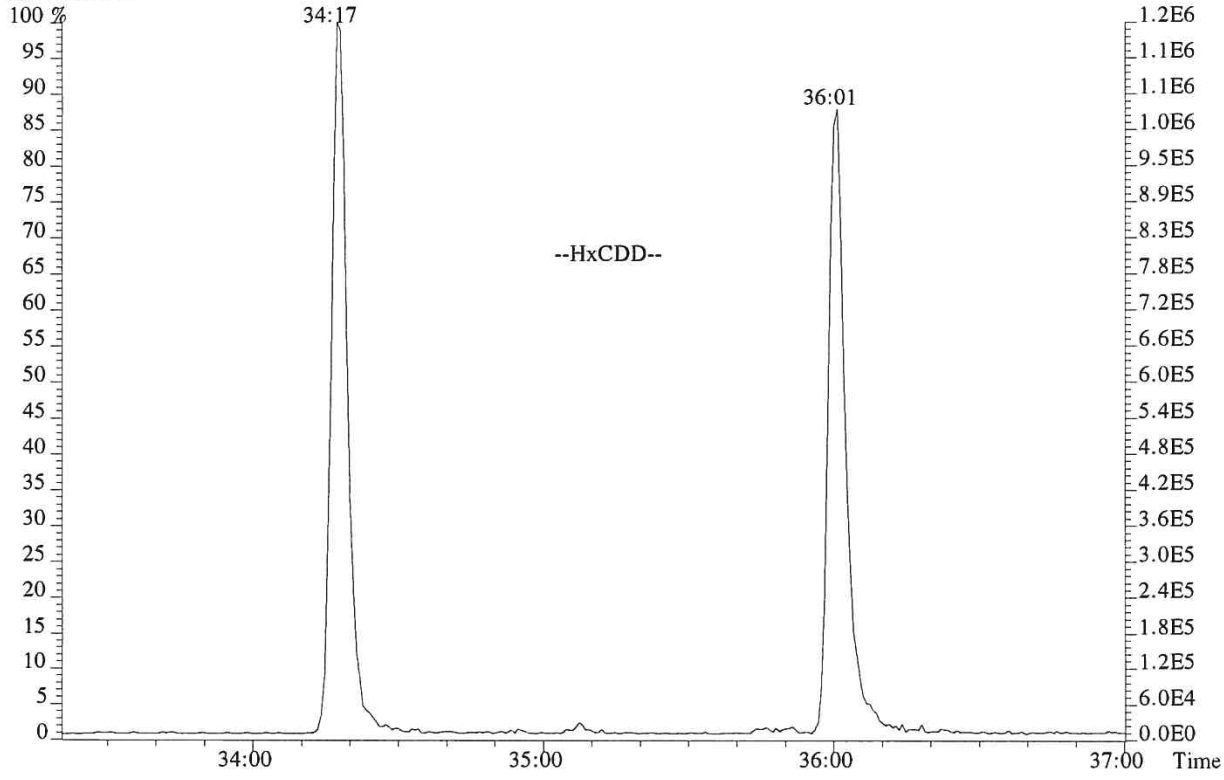

File:P519711 #1-587 Acq:30-DEC-2018 08:38:04 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
339.8597,339.8597 F:2
100 %
28:15
32:58
--PeCDF--
28:00
29:00
30:00
31:00
32:00
33:00
Time
355.8546 F:2
100 %
32:43
30:00
--PeCDD--
1.2E6
1.2E6
1.1E6
1.1E6
9.9E5
9.3E5
8.7E5
8.0E5
7.4E5
6.8E5
6.2E5
5.6E5
5.0E5
4.3E5
3.7E5
3.1E5
2.5E5
1.9E5
1.2E5
6.2E4
0.0E0
28:00
29:00
30:00
31:00
32:00
33:00
Time

060564

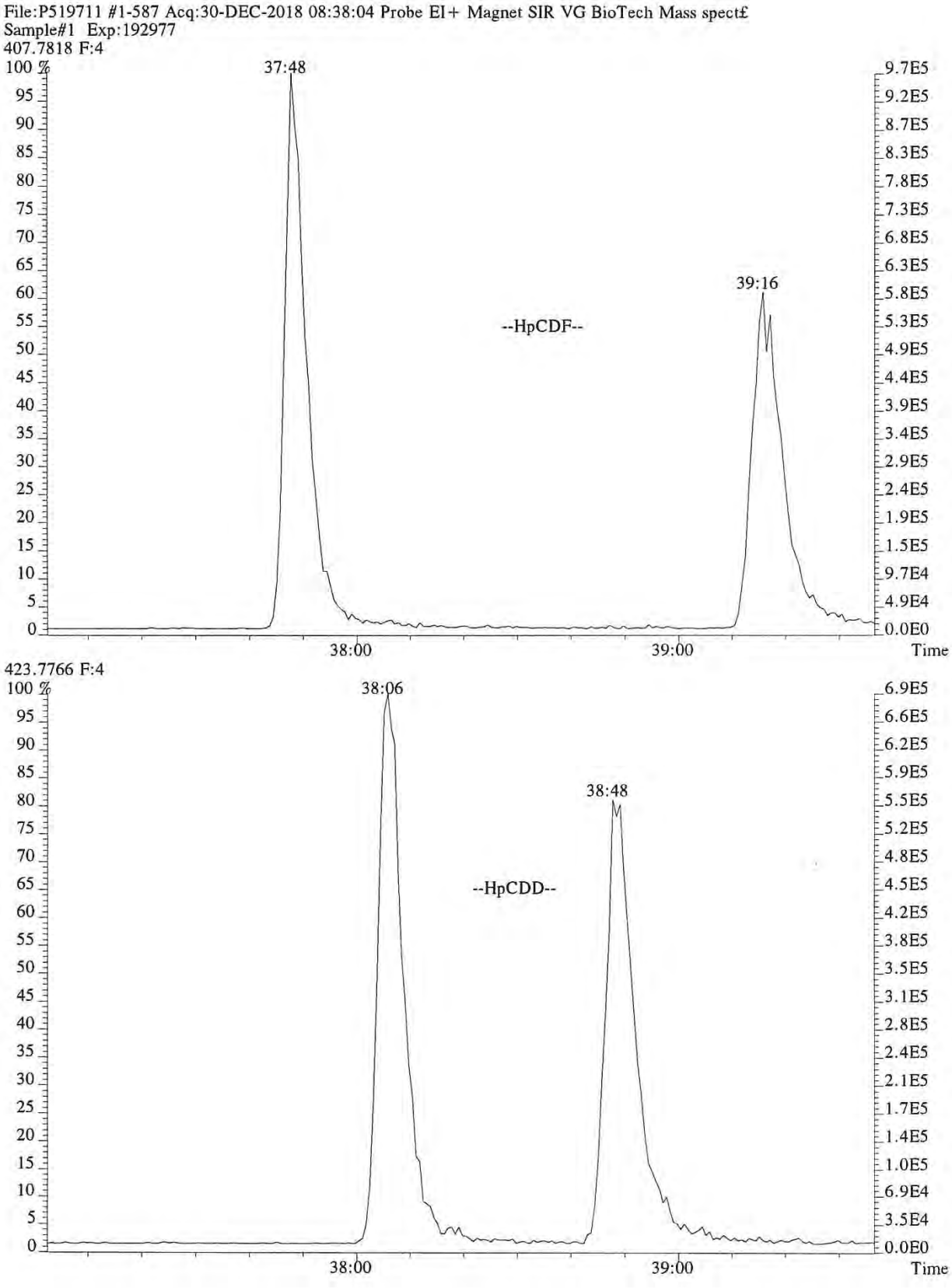
File:P519711 #1-587 Acq:30-DEC-2018 08:38:04 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
373.8208 F:3



389.8157 F:3



060565


File:P519711 #1-587 Acq:30-DEC-2018 08:38:04 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:192977
407.7818 F:4
37:48
39:16
--HpCDF--
423.7766 F:4
38:06
38:48
--HpCDD--
Time

060566

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519710 Analysis Date: 30-DEC-18 Time: 07:48:10

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	9.1	7.8 - 12.9	-9.2
1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	48	39 - 65	-4.5
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	48	39 - 64	-4.4
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	49	39 - 64	-2.3
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	51	41 - 61	1.9
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	49	43 - 58	-2.9
OCDD	M+2/M+4	0.88	0.76-1.02	97	79 - 126	-3.5
2,3,7,8-TCDF	M/M+2	0.71	0.65-0.89	9.2	8.4 - 12.0	-8.3
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	49	41 - 60	-3.0
2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32-1.78	48	41 - 61	-3.8
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	49	45 - 56	-1.8
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	50	44 - 57	0.5
1,2,3,7,8,9-HxCDF	M+2/M+4	1.22	1.05-1.43	49	45 - 56	-3.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	49	44 - 57	-2.5
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	49	45 - 55	-1.4
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	49	43 - 58	-1.5
OCDF	M+2/M+4	0.89	0.76-1.02	90	63 - 159	-9.8

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P519710 Analysis Date: 30-DEC-18 Time: 07:48:10

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	102	82 - 121	2.3
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	104	62 - 160	3.5
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	91	85 - 117	-9.4
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	100	85 - 118	0.2
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	103	72 - 138	3.1
13C-OCDD	M+2/M+4	0.88	0.76-1.02	251	96 - 415	25.6
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	86	71 - 140	-14.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	93	76 - 130	-7.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	94	77 - 130	-6.3
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	81	76 - 131	-19.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	84	70 - 143	-16.4
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	88	74 - 135	-12.3
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	88	73 - 137	-11.8
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37-0.51	92	78 - 129	-8.1
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37-0.51	96	77 - 129	-4.0
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			9.9	7.8 - 12.7	-0.9

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
194503

Run #7 Filename P519710 Samp: 1 Inj: 1 Acquired: 30-DEC-18 07:48:10
Processed: 31-DEC-18 09:39:24 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:06	4.162e+03	5.843e+03	0.71	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	3.629e+04	2.353e+04	1.54	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	31:59	3.389e+04	2.214e+04	1.53	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	2.853e+04	2.337e+04	1.22	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	3.215e+04	2.645e+04	1.22	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	2.905e+04	2.423e+04	1.20	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:23	2.580e+04	2.116e+04	1.22	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:48	2.668e+04	2.585e+04	1.03	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:16	2.195e+04	2.142e+04	1.02	yes	no	1.258
10	Unk	OCDF	41:57	3.742e+04	4.221e+04	0.89	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:04	3.607e+03	4.689e+03	0.77	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:19	2.532e+04	1.573e+04	1.61	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:45	2.037e+04	1.657e+04	1.23	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:50	2.403e+04	1.879e+04	1.28	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	2.402e+04	1.903e+04	1.26	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:49	1.996e+04	1.914e+04	1.04	yes	no	1.025
17	Unk	OCDD	41:48	3.290e+04	3.726e+04	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:05	5.114e+04	6.478e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	7.434e+04	4.747e+04	1.57	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	7.451e+04	4.703e+04	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	3.005e+04	5.877e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:01	3.533e+04	6.854e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	3.341e+04	6.506e+04	0.51	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	2.862e+04	5.600e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:48	2.411e+04	5.478e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:16	2.160e+04	4.839e+04	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:03	3.697e+04	4.721e+04	0.78	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	5.495e+04	3.495e+04	1.57	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:44	4.160e+04	3.283e+04	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:49	4.728e+04	3.721e+04	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:48	4.041e+04	3.816e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	41:47	6.096e+04	6.902e+04	0.88	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:22	3.945e+04	4.960e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:05	4.949e+04	3.939e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	8.947e+03				no	1.014

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
194503

Run #7 Filename P519710 Samp: 1 Inj: 1 Acquired: 30-DEC-18 07:48:10
Processed: 31-DEC-18 09:39:24 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.94e+05	1.15e+03	5.2e+02	8.59e+05	2.58e+03	3.3e+02
2	1,2,3,7,8-PeCDF	6.32e+06	7.04e+02	9.0e+03	4.09e+06	2.02e+03	2.0e+03
3	2,3,4,7,8-PeCDF	6.01e+06	7.04e+02	8.5e+03	3.88e+06	2.02e+03	1.9e+03
4	1,2,3,4,7,8-HxCDF	5.16e+06	1.47e+03	3.5e+03	4.21e+06	1.14e+03	3.7e+03
5	1,2,3,6,7,8-HxCDF	5.22e+06	1.47e+03	3.5e+03	4.28e+06	1.14e+03	3.8e+03
6	2,3,4,6,7,8-HxCDF	4.94e+06	1.47e+03	3.4e+03	4.08e+06	1.14e+03	3.6e+03
7	1,2,3,7,8,9-HxCDF	4.02e+06	1.47e+03	2.7e+03	3.28e+06	1.14e+03	2.9e+03
8	1,2,3,4,6,7,8-HpCDF	3.32e+06	1.74e+03	1.9e+03	3.21e+06	3.21e+03	1.0e+03
9	1,2,3,4,7,8,9-HpCDF	2.16e+06	1.74e+03	1.2e+03	2.12e+06	3.21e+03	6.6e+02
10	OCDF	2.24e+06	5.96e+02	3.8e+03	2.52e+06	1.88e+03	1.3e+03
11	2,3,7,8-TCDD	6.09e+05	3.86e+03	1.6e+02	7.52e+05	1.44e+03	5.2e+02
12	1,2,3,7,8-PeCDD	4.45e+06	1.22e+03	3.6e+03	2.76e+06	7.52e+02	3.7e+03
13	1,2,3,4,7,8-HxCDD	3.67e+06	6.96e+02	5.3e+03	2.96e+06	1.12e+03	2.6e+03
14	1,2,3,6,7,8-HxCDD	3.46e+06	6.96e+02	5.0e+03	2.71e+06	1.12e+03	2.4e+03
15	1,2,3,7,8,9-HxCDD	3.71e+06	6.96e+02	5.3e+03	2.96e+06	1.12e+03	2.6e+03
16	1,2,3,4,6,7,8-HpCDD	2.07e+06	4.40e+02	4.7e+03	2.04e+06	5.96e+02	3.4e+03
17	OCDD	2.00e+06	4.20e+02	4.8e+03	2.25e+06	3.72e+02	6.1e+03
18	13C-2,3,7,8-TCDF	7.34e+06	1.00e+04	7.3e+02	9.35e+06	8.21e+03	1.1e+03
19	13C-1,2,3,7,8-PeCDF	1.26e+07	1.15e+03	1.1e+04	7.97e+06	5.92e+02	1.3e+04
20	13C-2,3,4,7,8-PeCDF	1.35e+07	1.15e+03	1.2e+04	8.53e+06	5.92e+02	1.4e+04
21	13C-1,2,3,4,7,8-HxCDF	5.36e+06	1.06e+03	5.0e+03	1.04e+07	1.76e+03	5.9e+03
22	13C-1,2,3,6,7,8-HxCDF	5.83e+06	1.06e+03	5.5e+03	1.12e+07	1.76e+03	6.4e+03
23	13C-2,3,4,6,7,8-HxCDF	5.66e+06	1.06e+03	5.3e+03	1.09e+07	1.76e+03	6.2e+03
24	13C-1,2,3,7,8,9-HxCDF	4.48e+06	1.06e+03	4.2e+03	8.70e+06	1.76e+03	4.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.92e+06	2.39e+03	1.2e+03	6.79e+06	2.88e+03	2.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.12e+06	2.39e+03	8.9e+02	4.78e+06	2.88e+03	1.7e+03
27	13C-2,3,7,8-TCDD	6.12e+06	7.47e+03	8.2e+02	7.65e+06	2.71e+03	2.8e+03
28	13C-1,2,3,7,8-PeCDD	9.85e+06	1.90e+03	5.2e+03	6.26e+06	1.70e+03	3.7e+03
29	13C-1,2,3,4,7,8-HxCDD	7.49e+06	1.33e+03	5.6e+03	5.86e+06	1.04e+03	5.6e+03
30	13C-1,2,3,6,7,8-HxCDD	6.98e+06	1.33e+03	5.3e+03	5.56e+06	1.04e+03	5.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.27e+06	8.52e+02	5.0e+03	4.02e+06	7.04e+02	5.7e+03
32	13C-OCDD	3.63e+06	7.88e+02	4.6e+03	4.08e+06	3.76e+02	1.1e+04
33	13C-1,2,3,4-TCDD	6.09e+06	7.47e+03	8.2e+02	7.65e+06	2.71e+03	2.8e+03
34	13C-1,2,3,7,8,9-HxCDD	7.63e+06	1.33e+03	5.7e+03	6.07e+06	1.04e+03	5.8e+03
35	37Cl-2,3,7,8-TCDD	1.44e+06	1.70e+03	8.5e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.860e+03 + 1.444e+03) \times 100}{(6.118e+06 + 7.653e+06) \times (\quad) \times 1.085} =$$

ALS ENVIRONMENTAL
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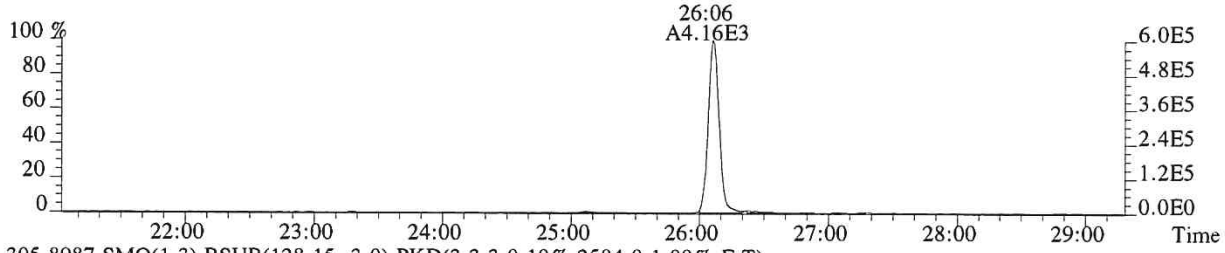
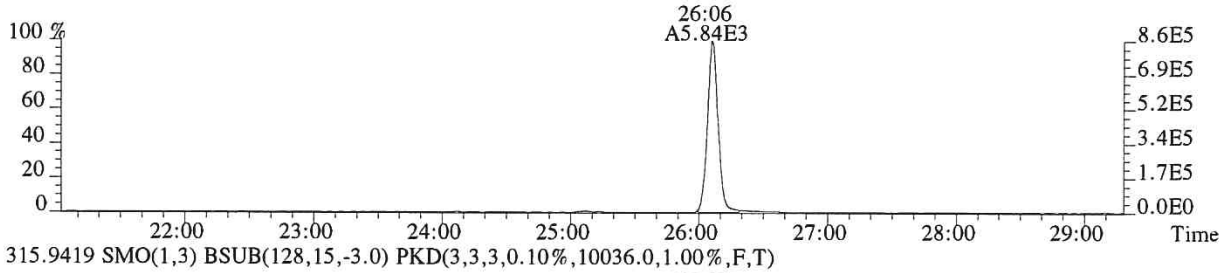
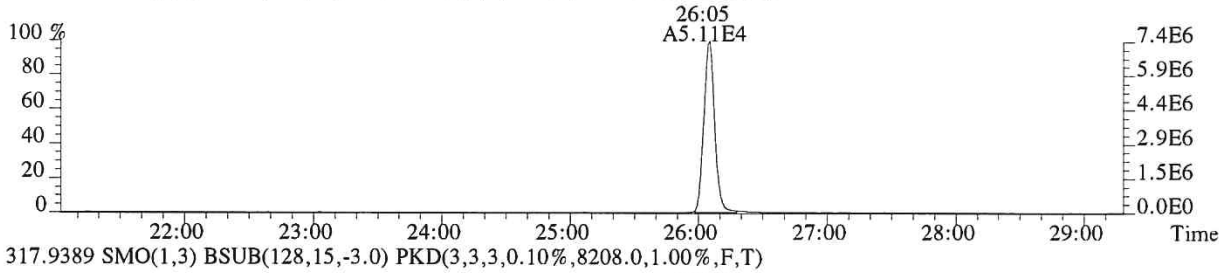
File:P519710 #1-587 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1148.0,1.00%,F,T)



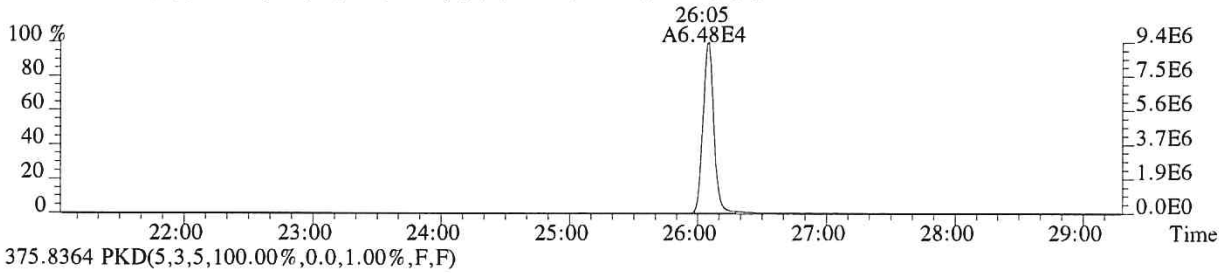
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2584.0,1.00%,F,T)



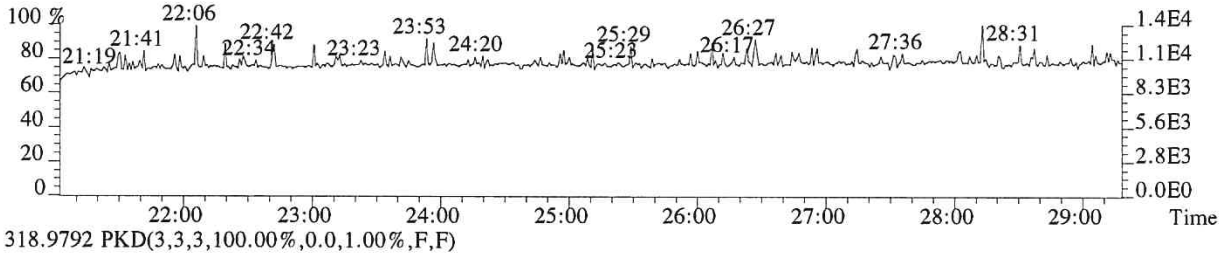
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10036.0,1.00%,F,T)



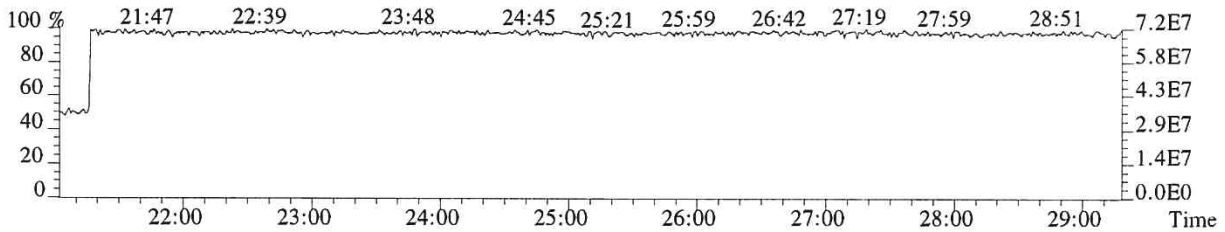
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8208.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



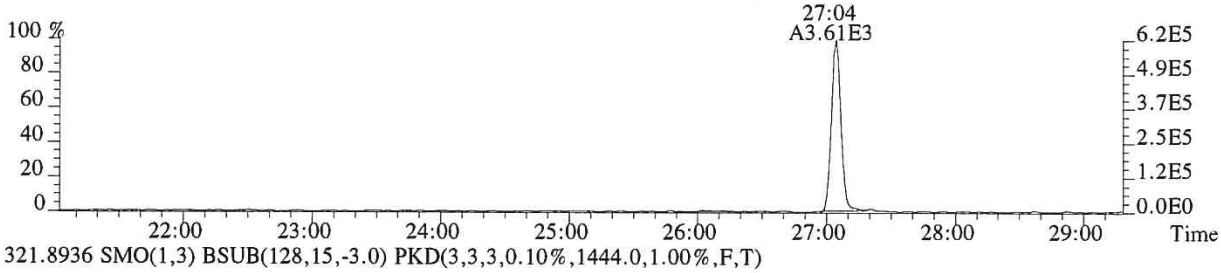
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



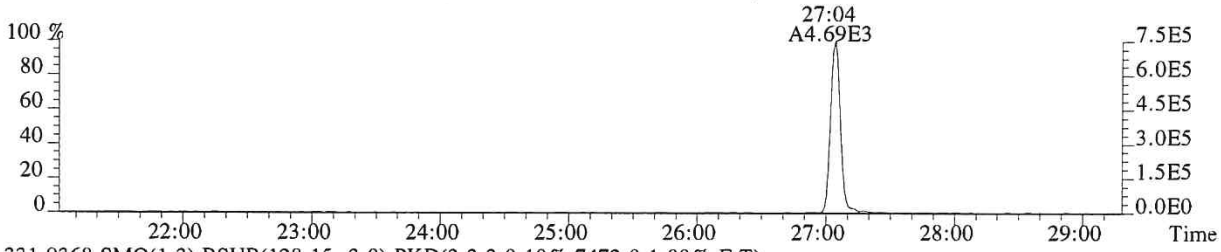
060571

File:P519710 #1-587 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

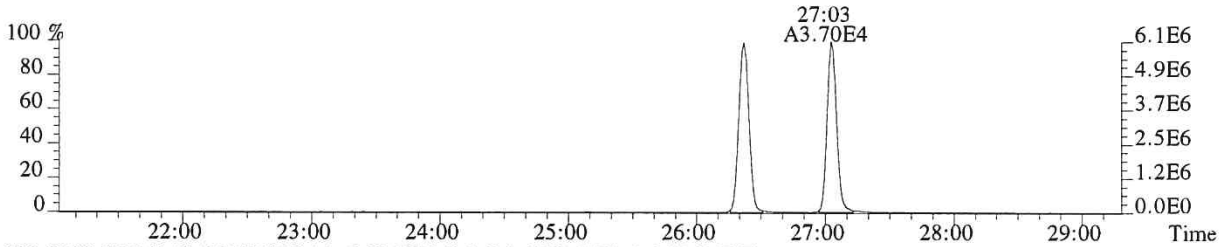
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3860.0,1.00%,F,T)



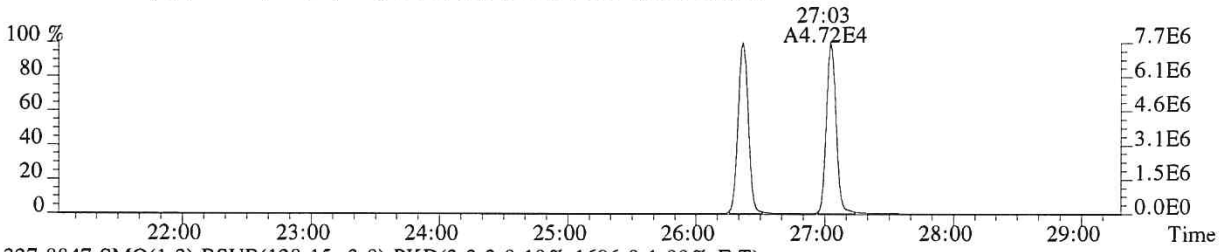
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1444.0,1.00%,F,T)



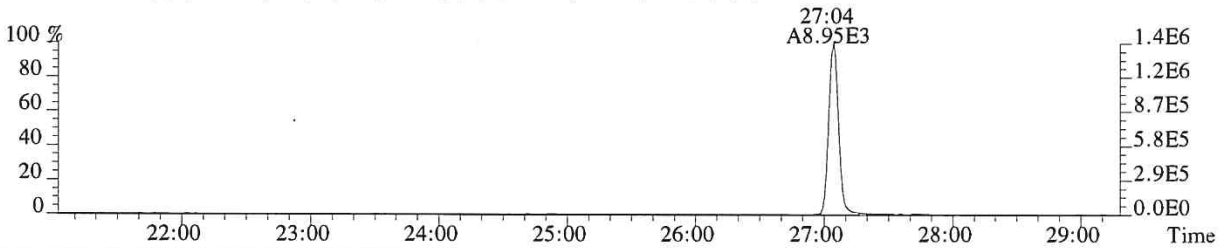
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7472.0,1.00%,F,T)



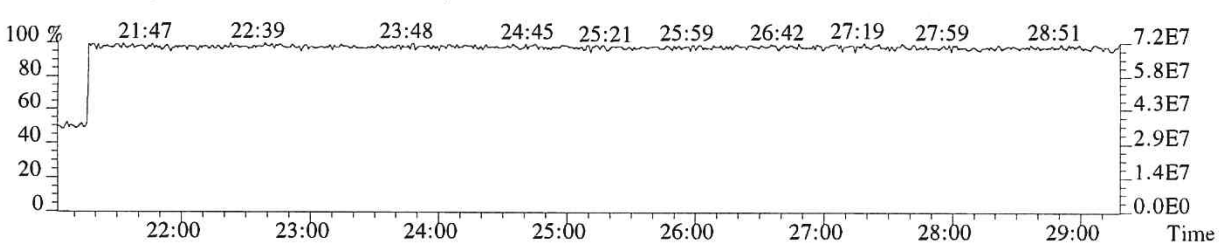
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2708.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1696.0,1.00%,F,T)



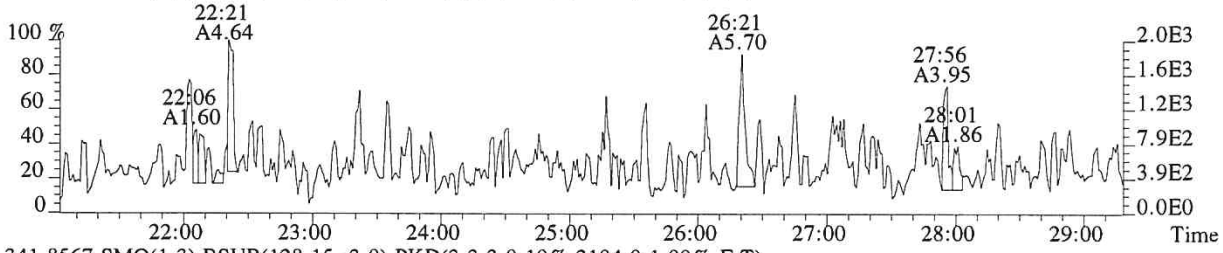
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



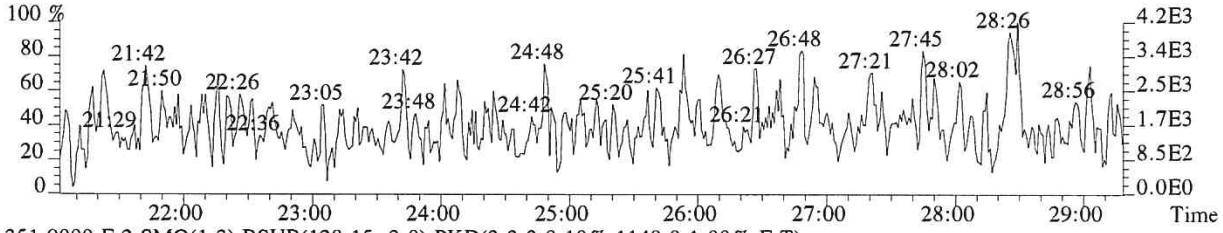
060572

File:P519710 #1-587 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

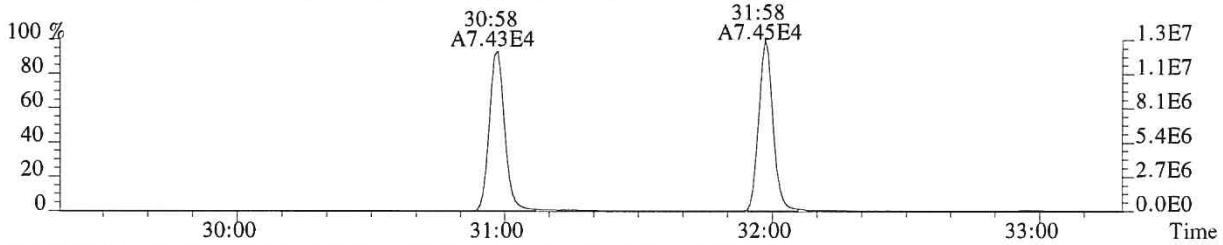
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,656.0,1.00%,F,T)



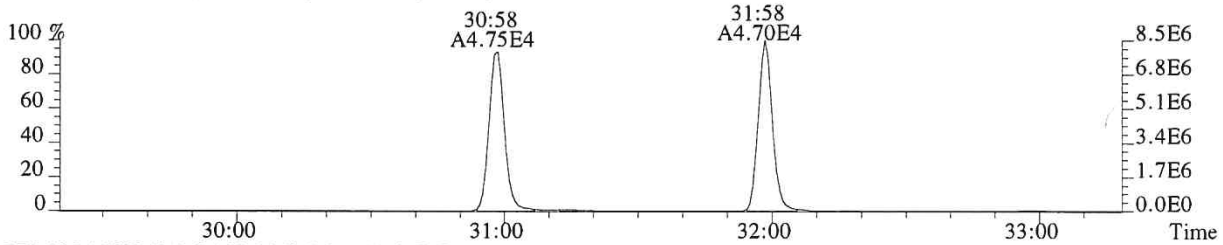
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2104.0,1.00%,F,T)



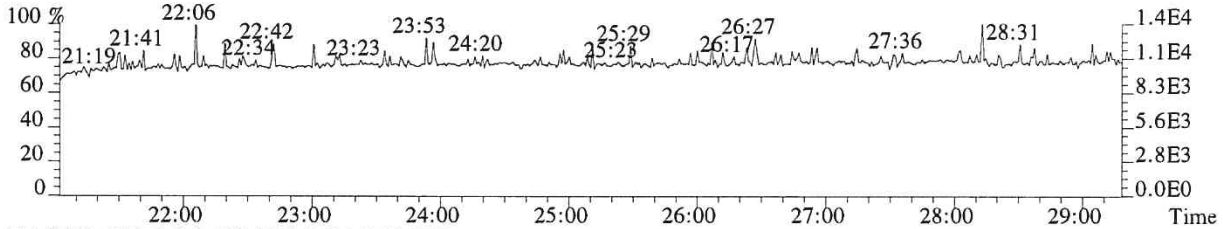
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1148.0,1.00%,F,T)



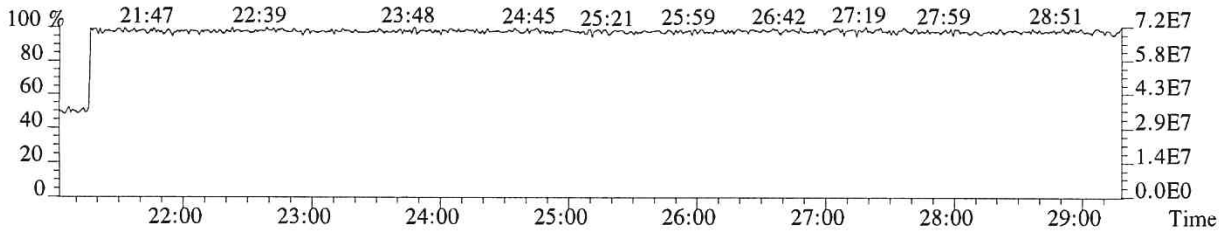
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,592.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



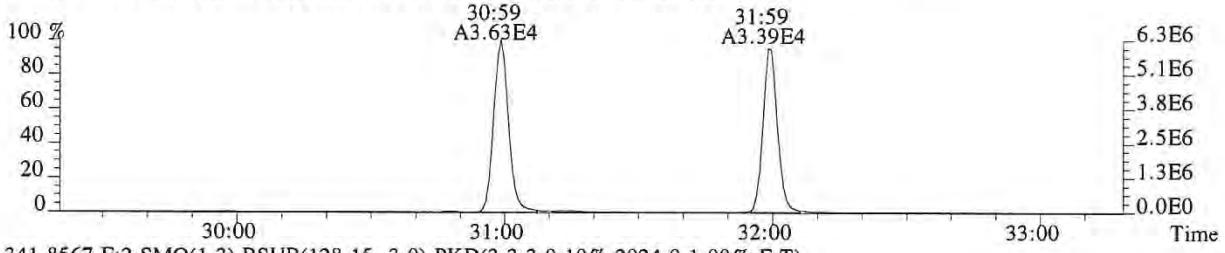
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



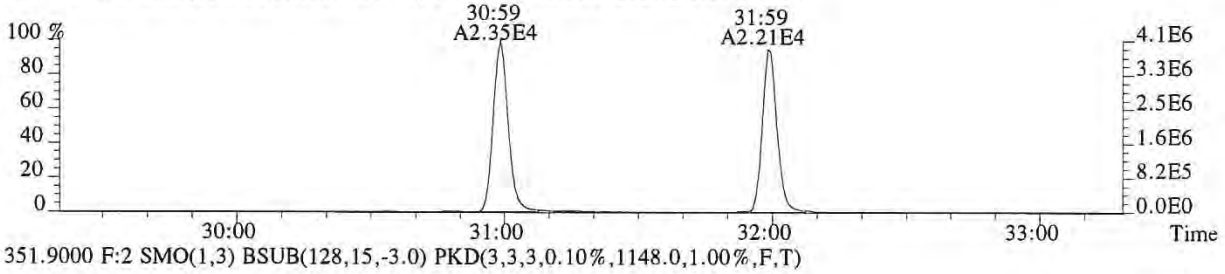
060573

File:P519710 #1-358 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

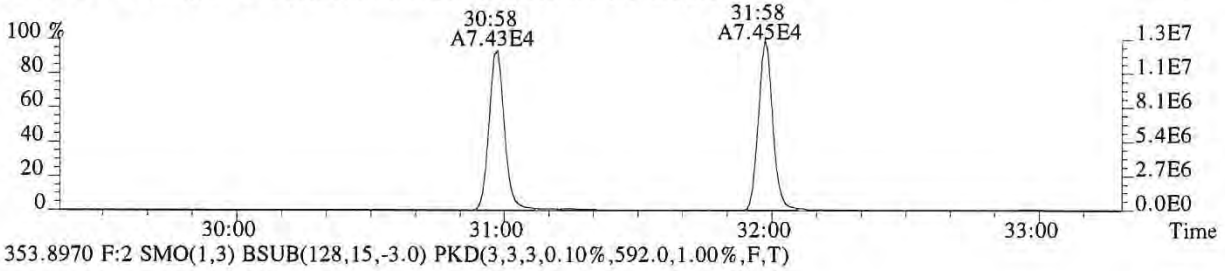
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)



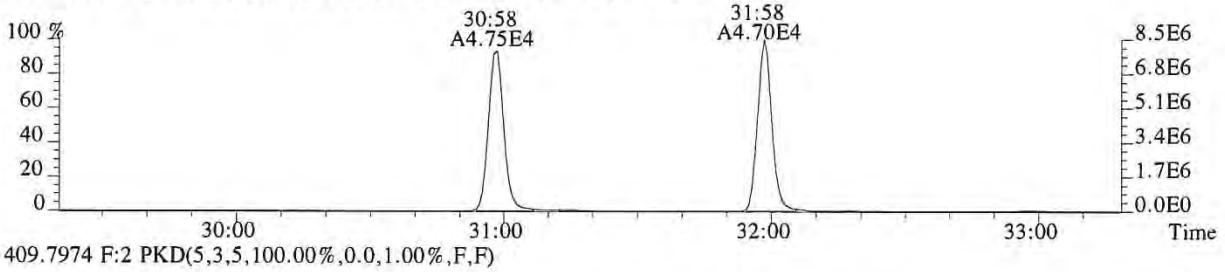
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2024.0,1.00%,F,T)



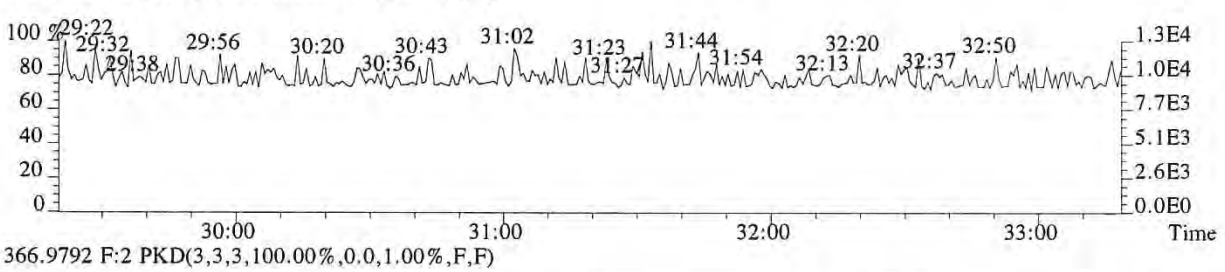
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1148.0,1.00%,F,T)



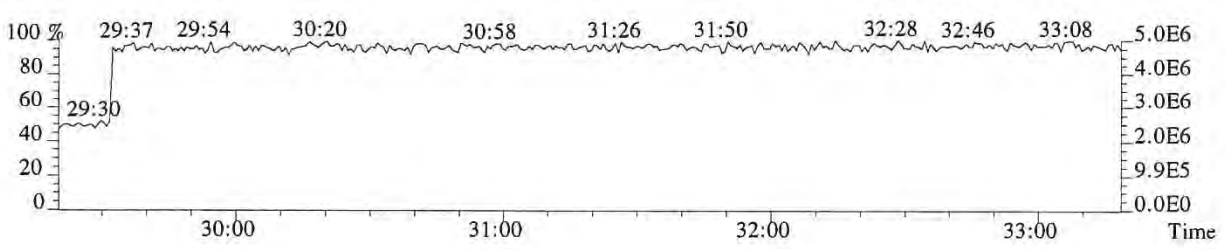
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,592.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

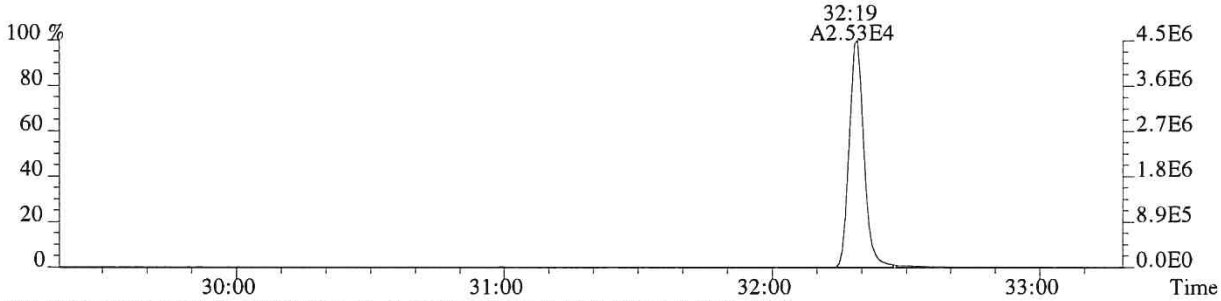


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

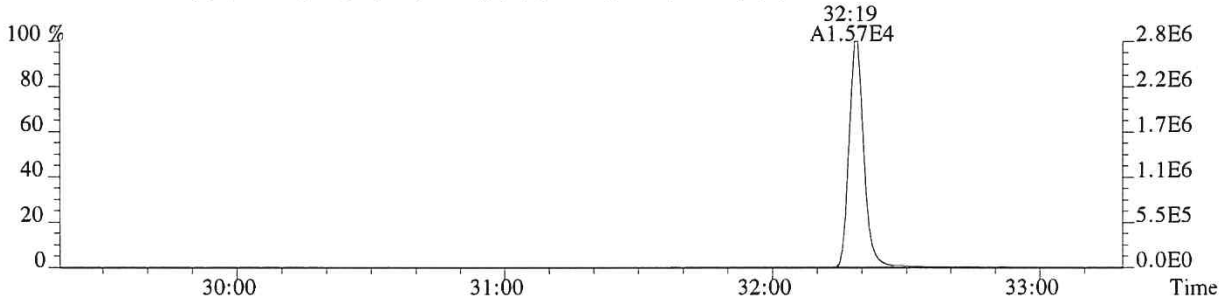


060574

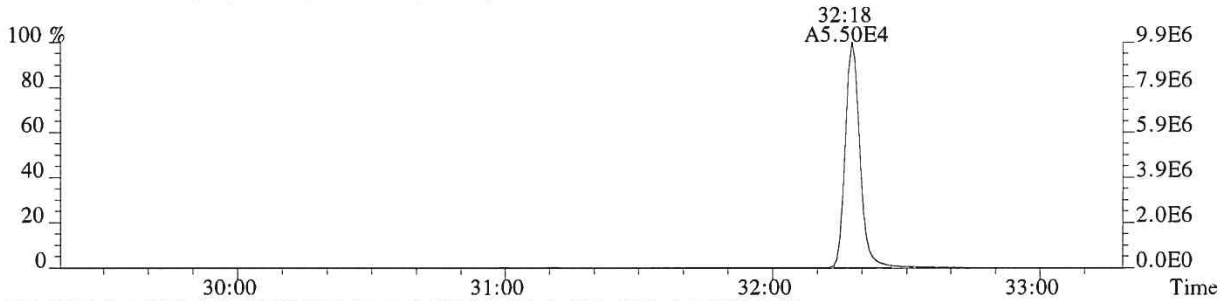
File:P519710 #1-358 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1224.0,1.00%,F,T)



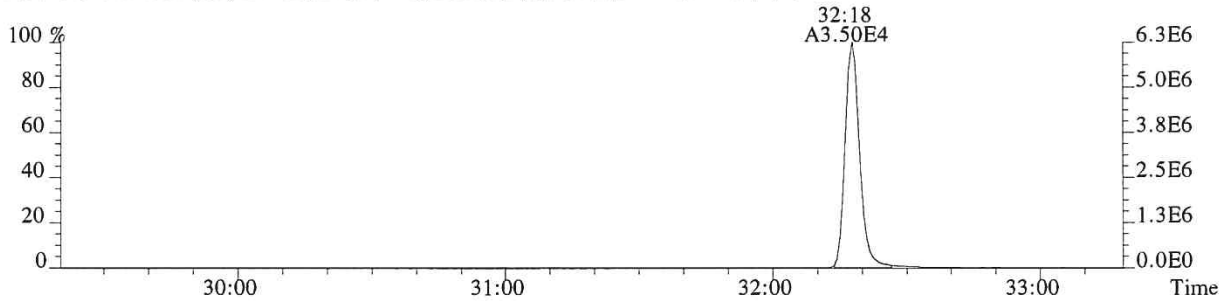
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,752.0,1.00%,F,T)



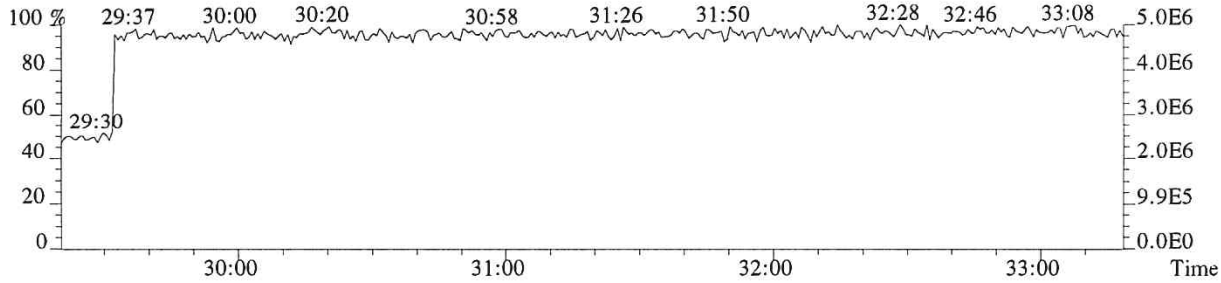
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1896.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1704.0,1.00%,F,T)

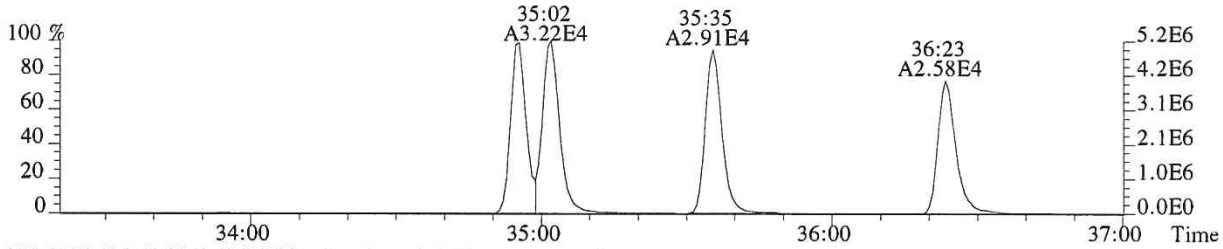


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

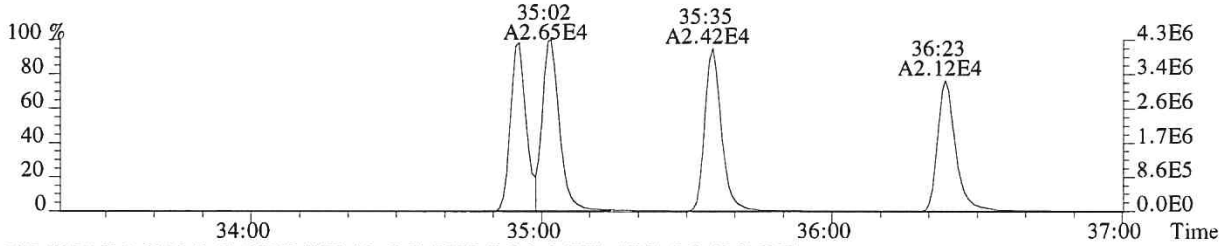


File:P519710 #1-330 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

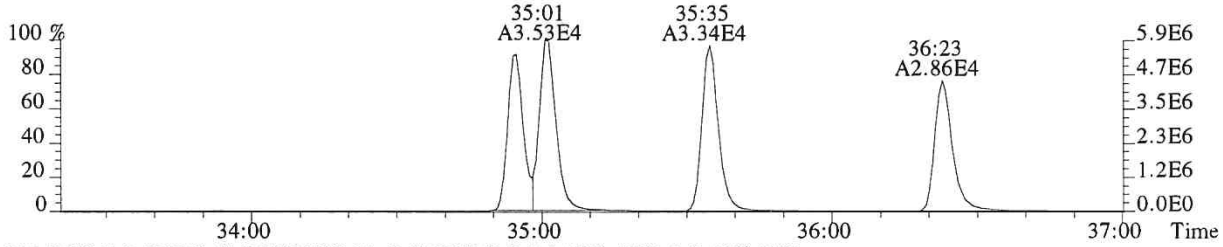
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1472.0,0.40%,F,T)



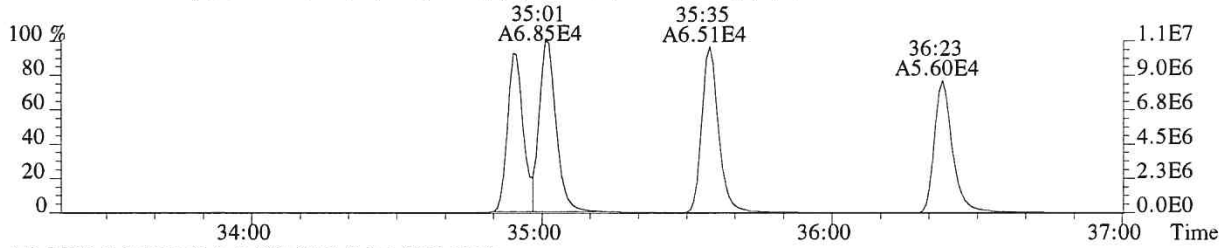
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1136.0,0.40%,F,T)



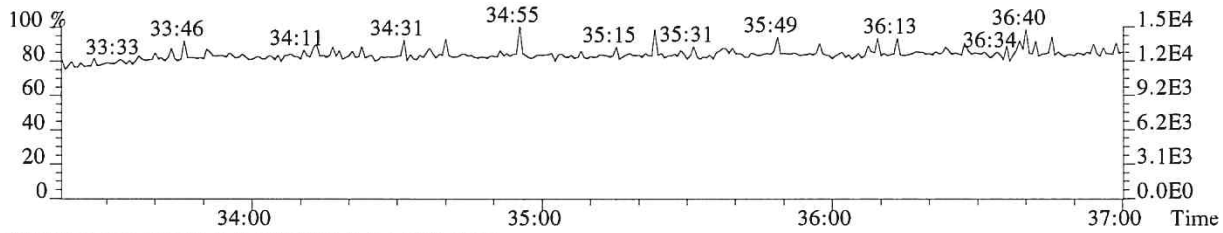
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1064.0,0.40%,F,T)



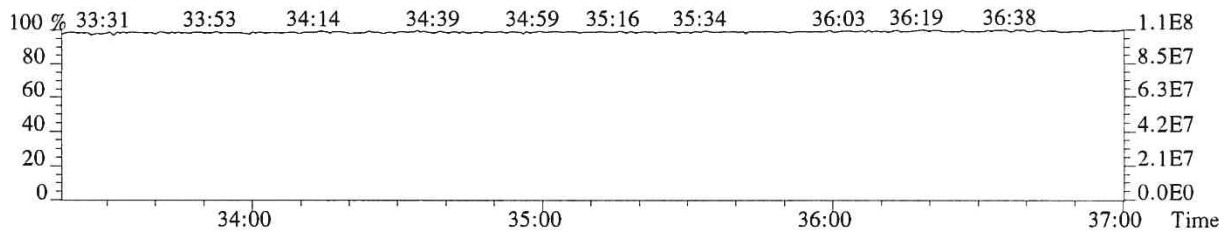
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1764.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

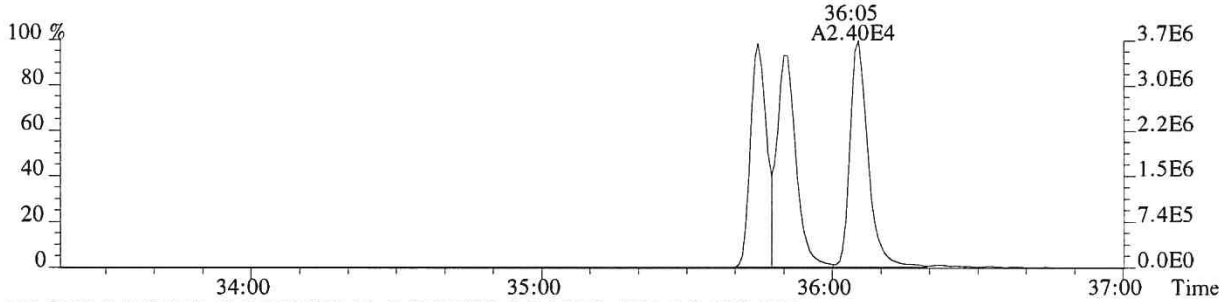


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

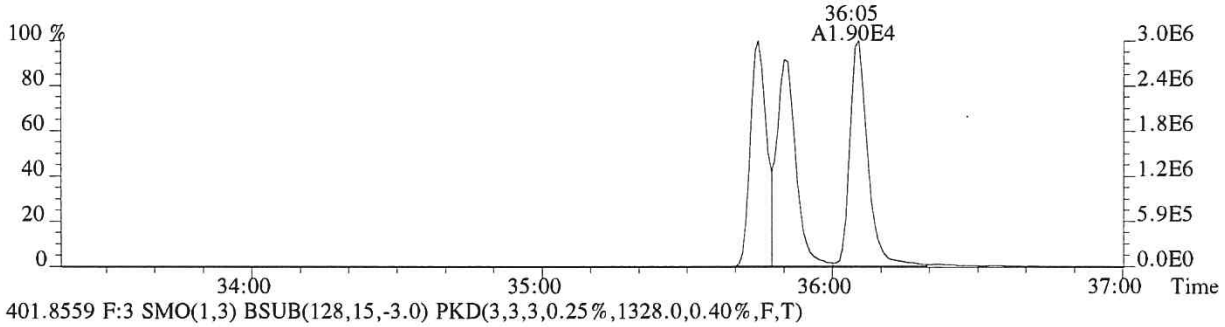


060576

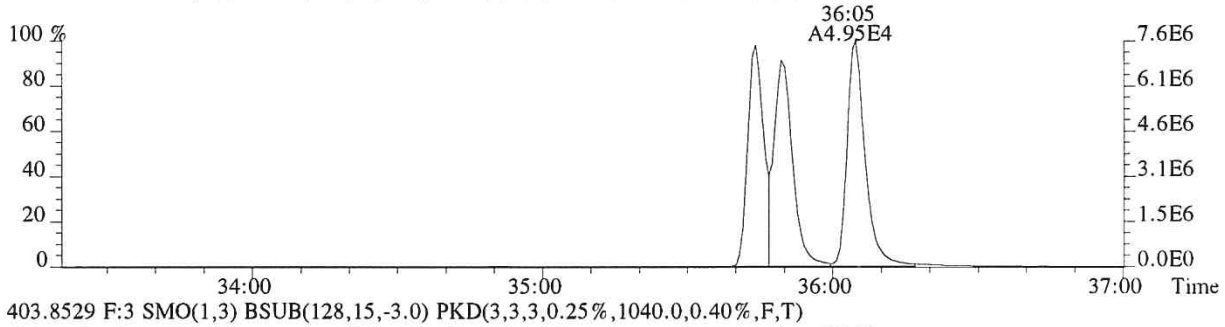
File:P519710 #1-330 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,696.0,0.40%,F,T)



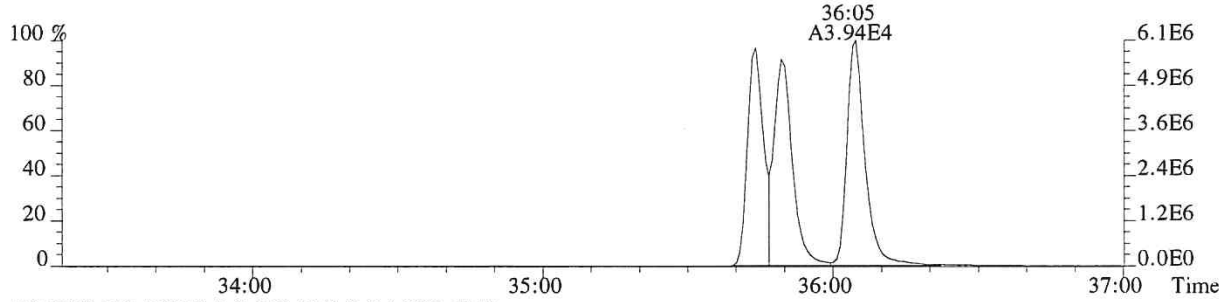
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1120.0,0.40%,F,T)



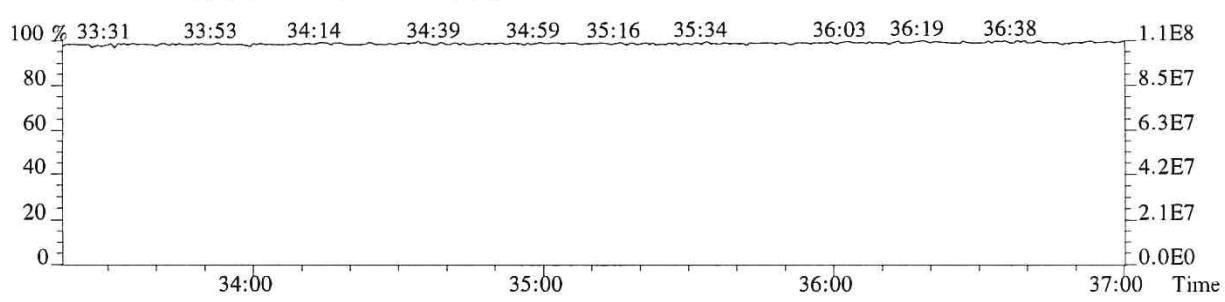
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1328.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1040.0,0.40%,F,T)



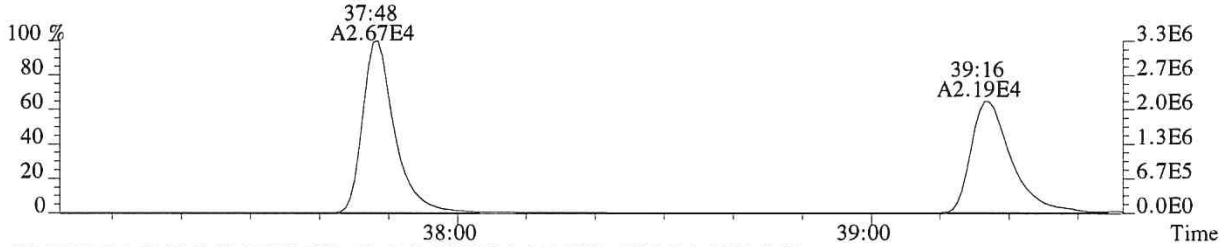
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



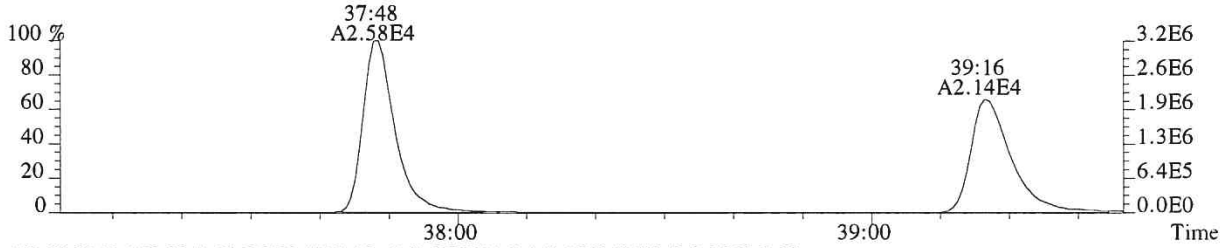
060577

File:P519710 #1-232 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

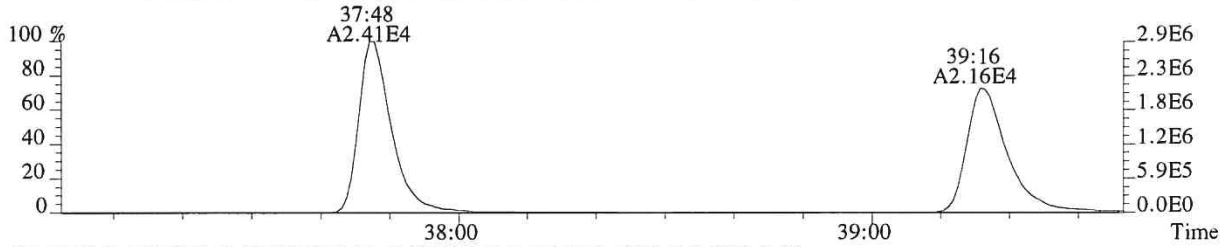
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1744.0,0.50%,F,T)



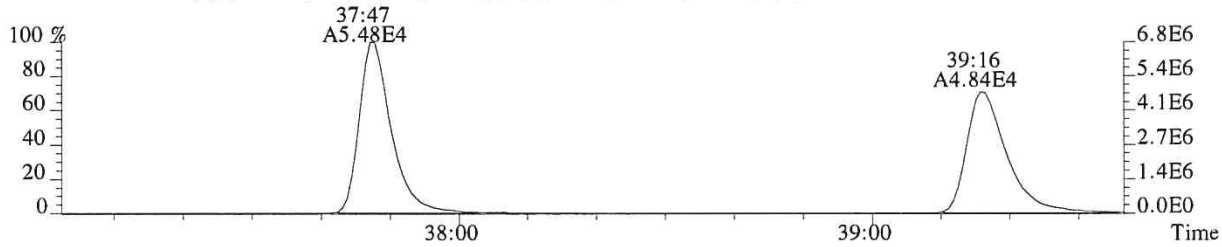
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3208.0,0.50%,F,T)



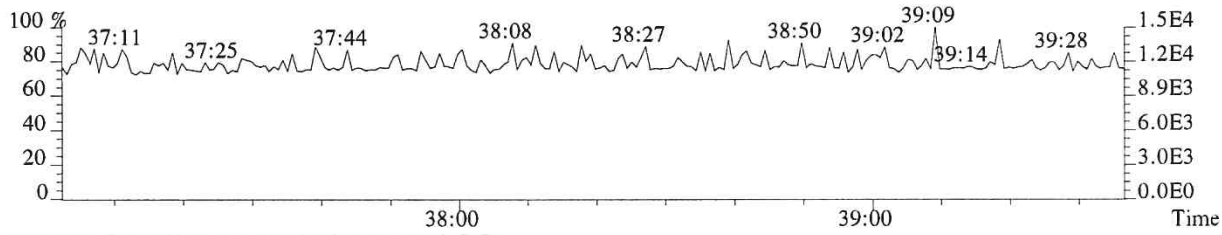
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2388.0,0.50%,F,T)



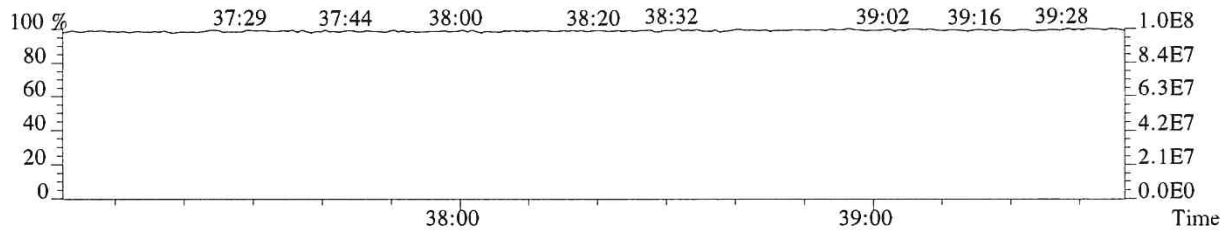
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2884.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

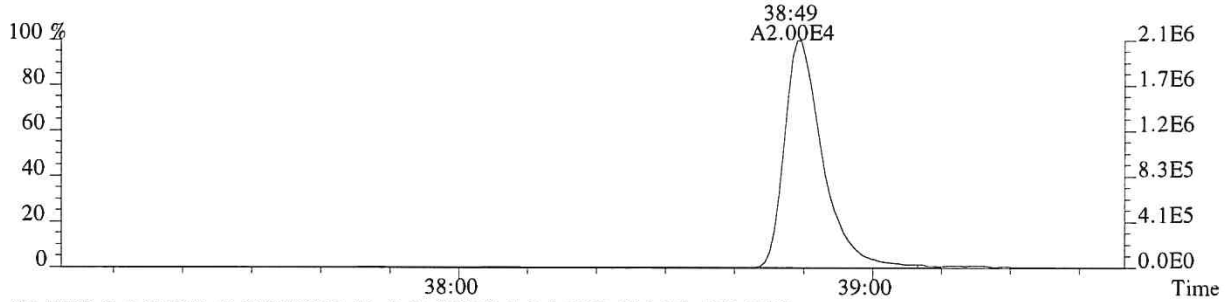


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

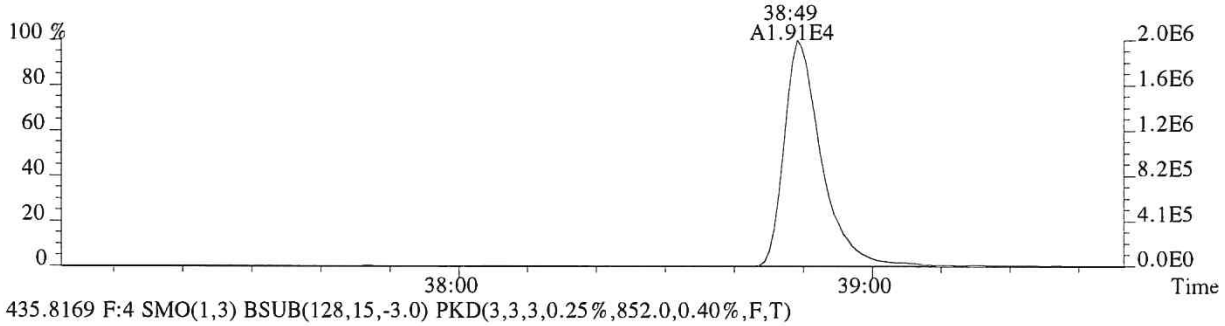


060578

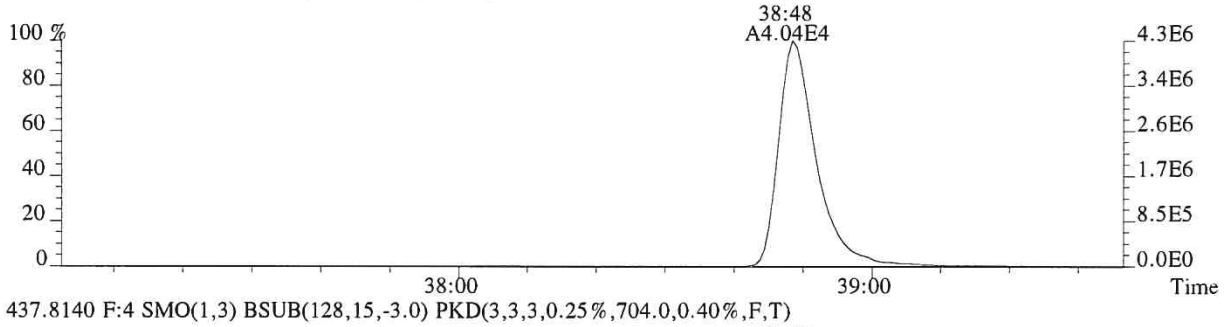
File:P519710 #1-232 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,440.0,0.40%,F,T)



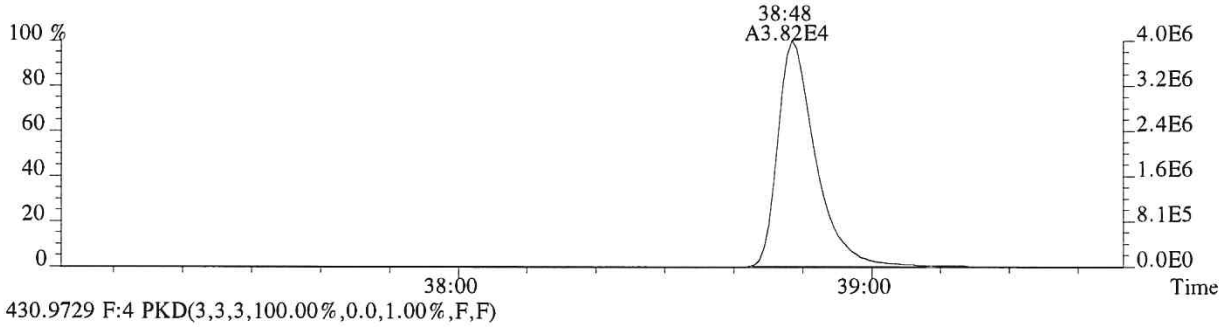
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,596.0,0.40%,F,T)



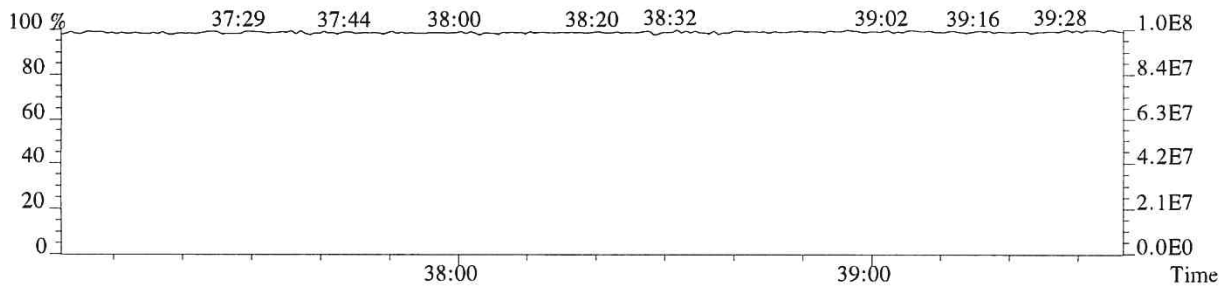
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,852.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,704.0,0.40%,F,T)

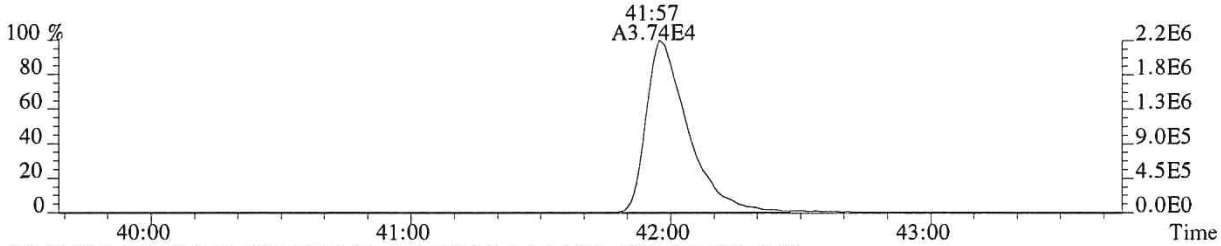


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

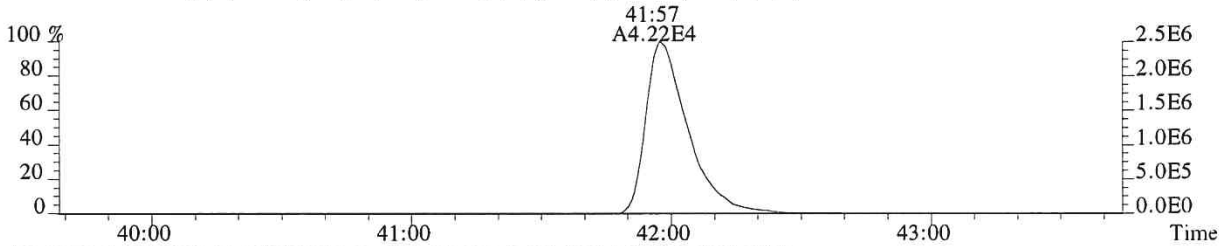


File:P519710 #1-369 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503

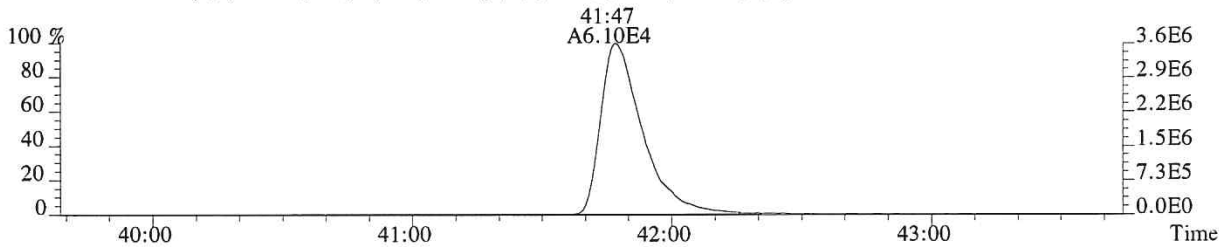
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,596.0,0.40%,F,T)



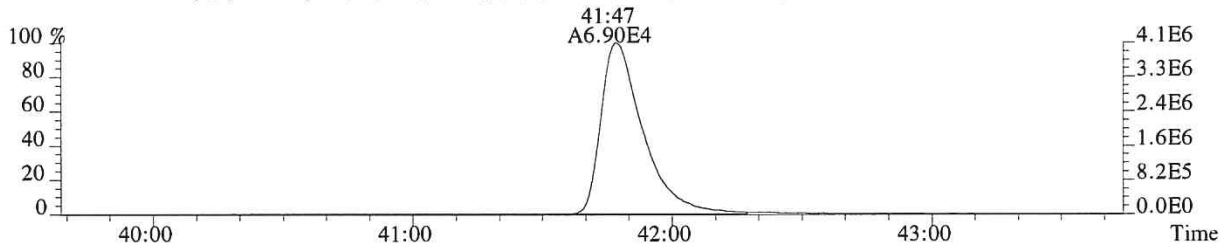
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1880.0,0.40%,F,T)



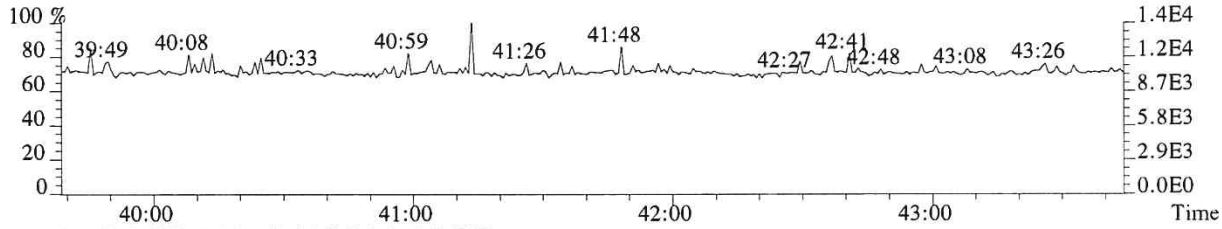
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,788.0,0.40%,F,T)



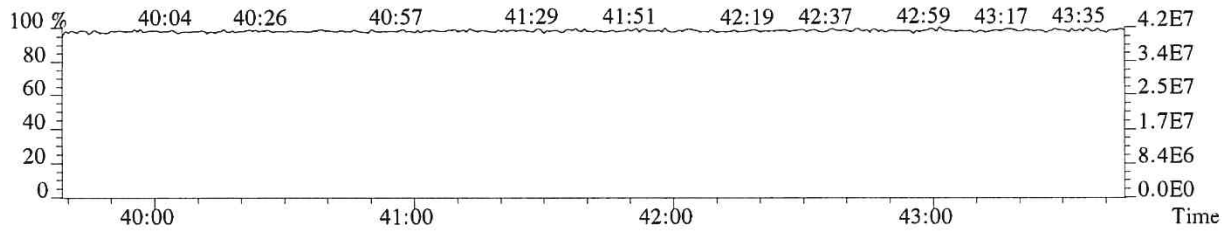
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,376.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

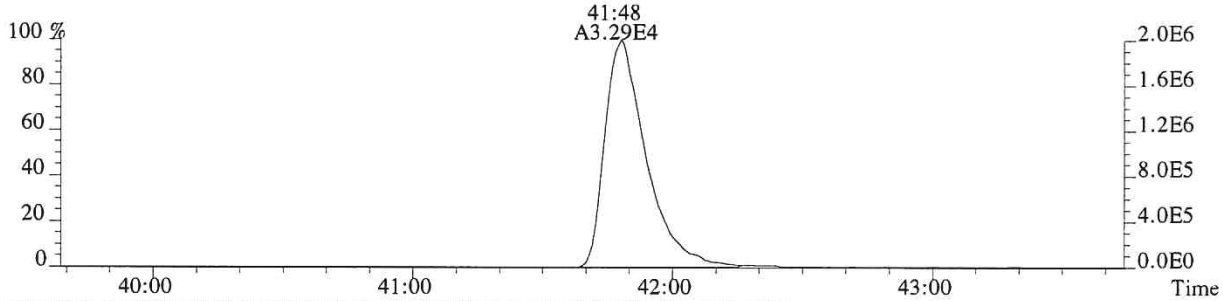


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

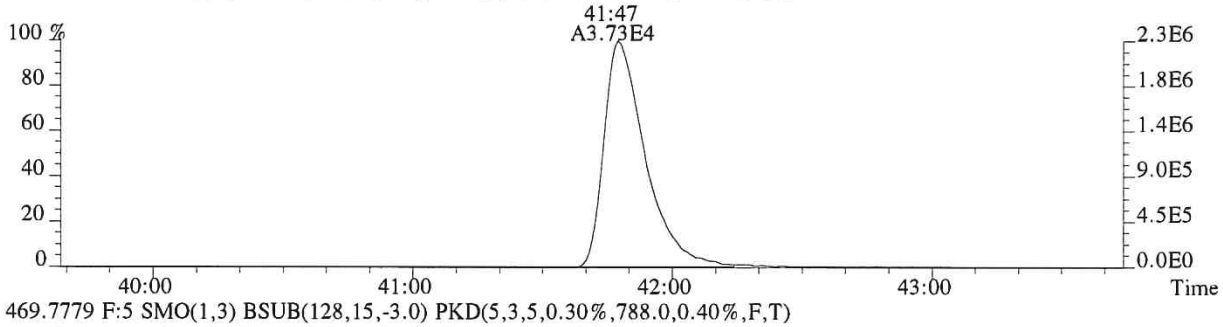


060580

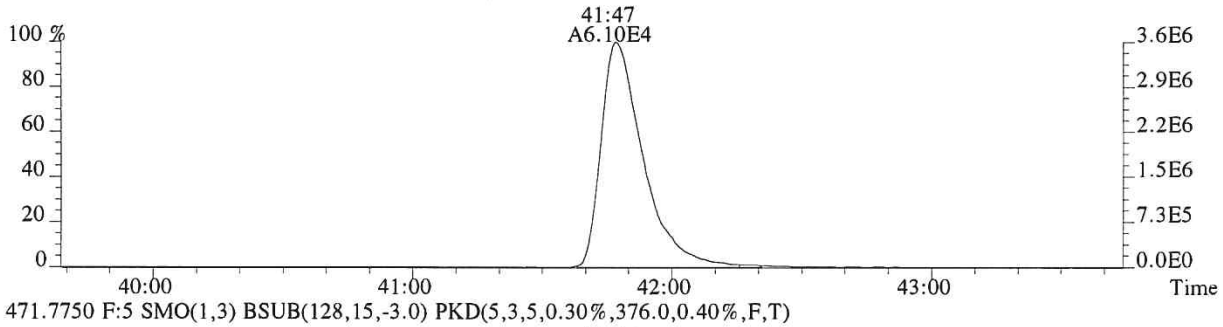
File:P519710 #1-369 Acq:30-DEC-2018 07:48:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:194503
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



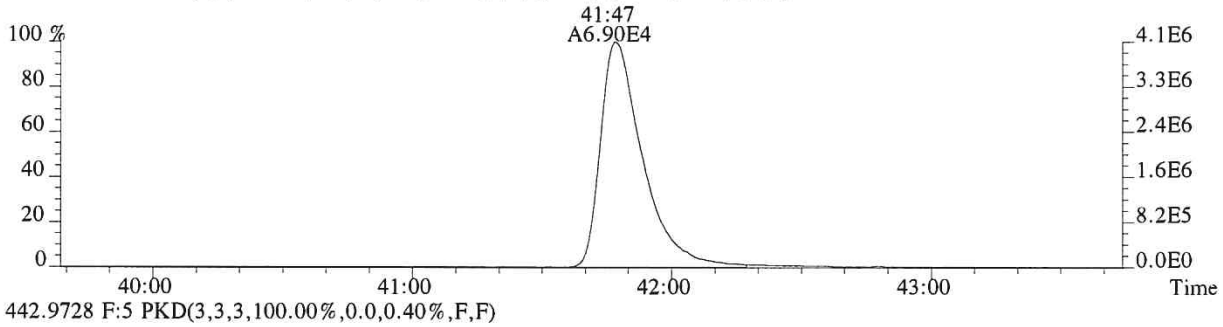
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,372.0,0.40%,F,T)



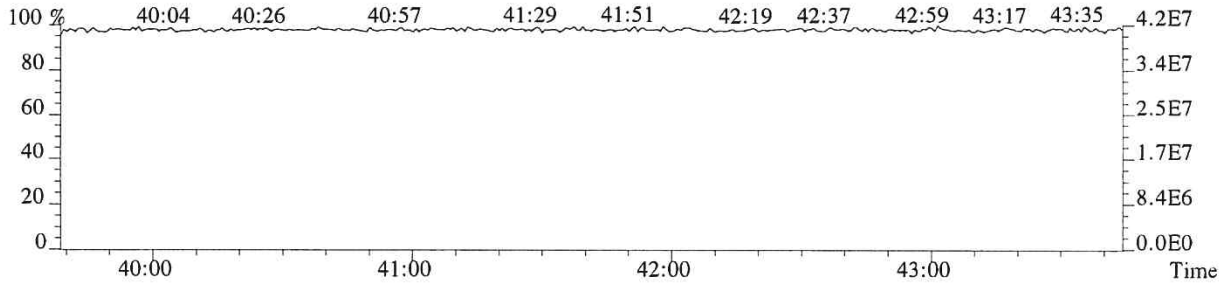
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,788.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,376.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060581

CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: P616277

Date: 12/29 - 12/30/18

Circle one: (Beginning) / Ending

Method: (1613) 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: LKL Second QC: LG

ccalqc.xls 07/17/12

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 09/25/18

Init. Calib.Times: 12:13

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P616278	29-DEC-18	14:27:35
194503	CS3	P616277	29-DEC-18	13:37:25
METHOD BLANK	EQ1800523-01	P616279	29-DEC-18	15:15:54
SL0089	E1801136-010	P616280	29-DEC-18	16:05:05
SL0116	E1801136-011	P616281	29-DEC-18	16:54:09
SL0117	E1801136-012	P616282	29-DEC-18	17:43:21
SL0118	E1801136-013	P616283	29-DEC-18	18:32:25
SL0124	E1801136-014	P616284	29-DEC-18	19:21:33
SL0126	E1801136-015	P616285	29-DEC-18	20:10:46
SL0127	E1801136-016	P616286	29-DEC-18	20:59:50
SL0128	E1801136-017	P616287	29-DEC-18	21:48:57
SL0141	E1801136-018	P616288	29-DEC-18	22:38:03
LCS	EQ1800529-02	P616289	29-DEC-18	23:27:13
DLCS	EQ1800529-03	P616290	30-DEC-18	00:16:25

E1801136

Sample List Report — **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20181229A.SPL
Last Modified: Sunday, December 30, 2018 07:24:02 Central Standard Time
Printed: Sunday, December 30, 2018 07:24:04 Central Standard Time

Page Position (1, 1)

OPUS 5 NET: P616277 RES

	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/28/18	13:37	P616277	194503	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:2	LCL	H2LS check 13:25
2		14:27	P616278	192977	WINDOW DEFINE	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		15:15	P616279	EQ1800523-01	MB	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4		16:05	P616280	E1801136-010	E1801136-010	EPA1613_ALS	Dioxin_ALS	Tray1:4		
5		16:54	P616281	E1801136-011	E1801136-011	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		17:43	P616282	E1801136-012	E1801136-012	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		18:32	P616283	E1801136-013	E1801136-013	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		19:21	P616284	E1801136-014	E1801136-014	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		20:10	P616285	E1801136-015	E1801136-015	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		20:59	P616286	E1801136-016	E1801136-016	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		21:48	P616287	E1801136-017	E1801136-017	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12		22:38	P616288	E1801136-018	E1801136-018	EPA1613_ALS	Dioxin_ALS	Tray1:12		
13	↓	23:27	P616289	EQ1800529-02	LCS	EPA1613_ALS	Dioxin_ALS	Tray1:13		
14	12/30/18	00:16	P616290	EQ1800529-03	DLCS	EPA1613_ALS	Dioxin_ALS	Tray1:14	↓	H2LS check 01:13
15	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2	---	---
16	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2	---	---
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:18	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---

LKL 12/31/18

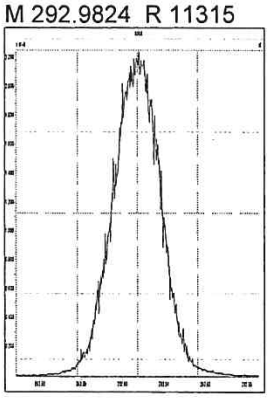
818 of 1106

060584

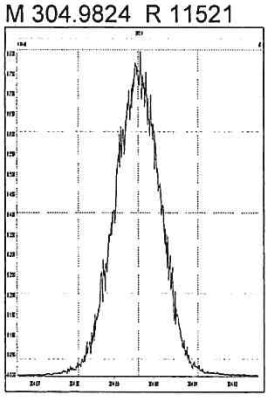
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Saturday, December 29, 2018 13:25:31 Central Standard Time

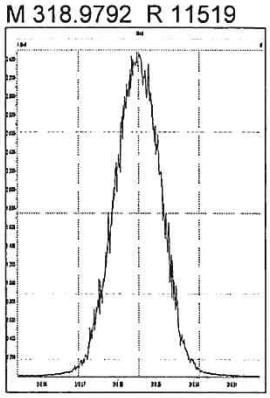
M 292.9824 R 11315



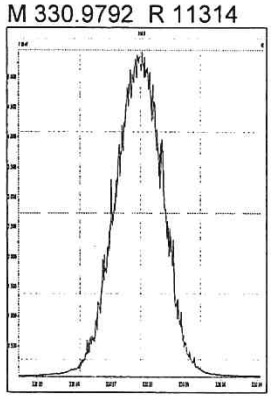
M 304.9824 R 11521



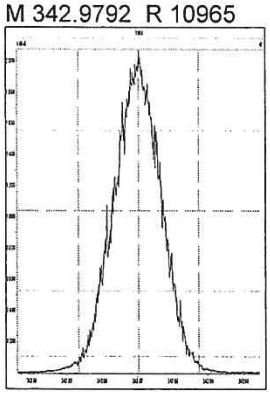
M 318.9792 R 11519



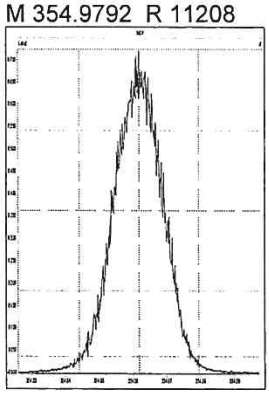
M 330.9792 R 11314



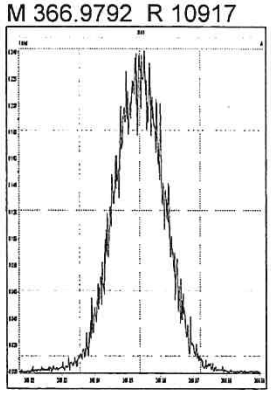
M 342.9792 R 10965



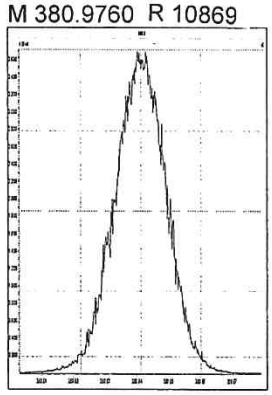
M 354.9792 R 11208



M 366.9792 R 10917



M 380.9760 R 10869



File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

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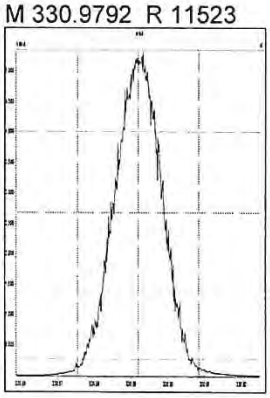
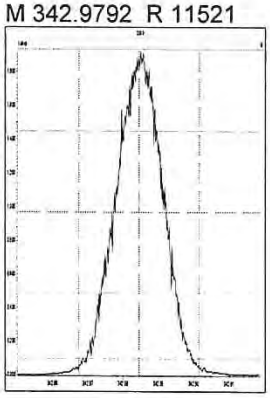
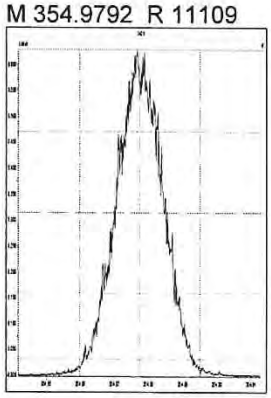
M 330.9792 R 11523



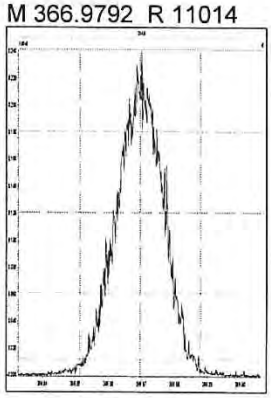
M 342.9792 R 11521



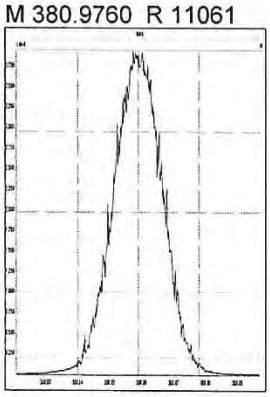
M 354.9792 R 11109



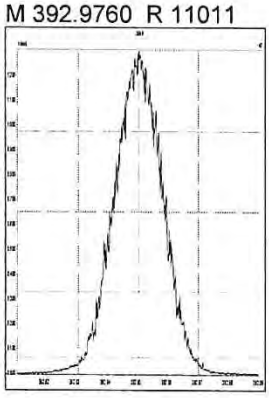
M 366.9792 R 11014



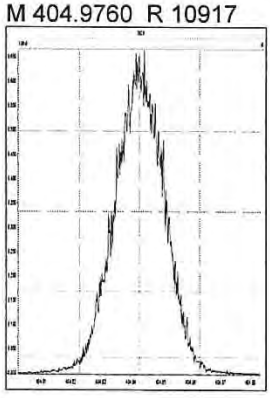
M 380.9760 R 11061



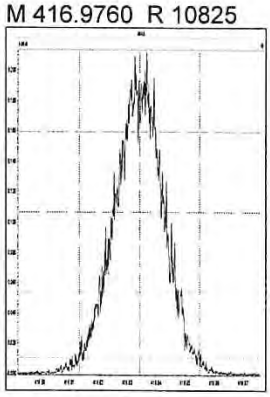
M 392.9760 R 11011



M 404.9760 R 10917



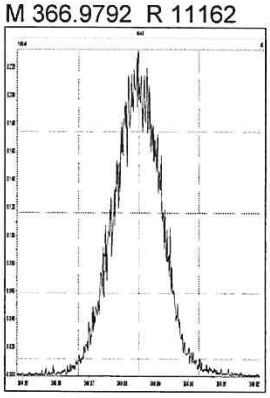
M 416.9760 R 10825



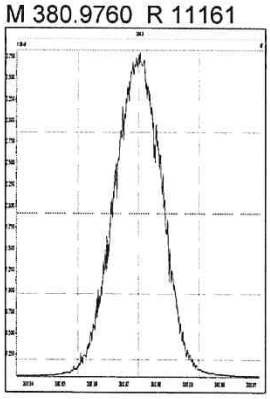
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Saturday, December 29, 2018 13:27:15 Central Standard Time

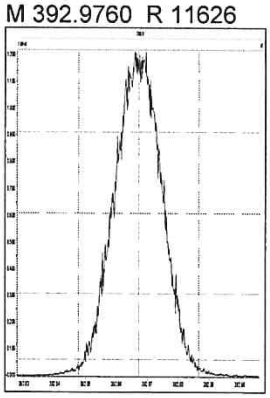
M 366.9792 R 11162



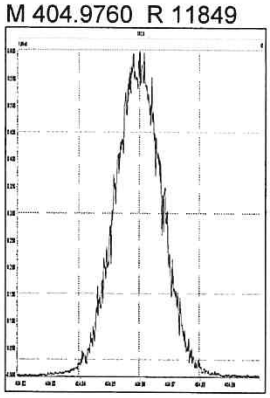
M 380.9760 R 11161



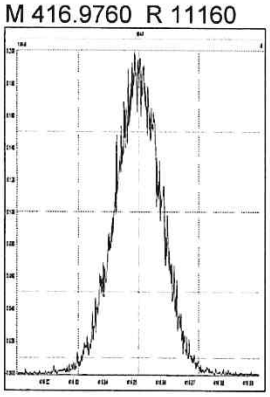
M 392.9760 R 11626



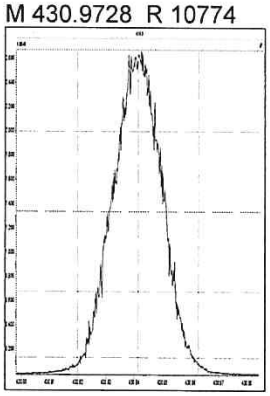
M 404.9760 R 11849



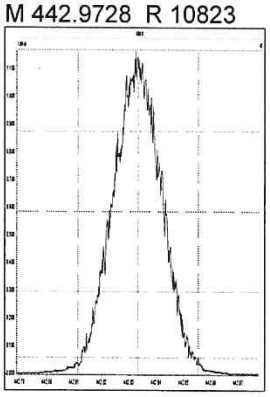
M 416.9760 R 11160



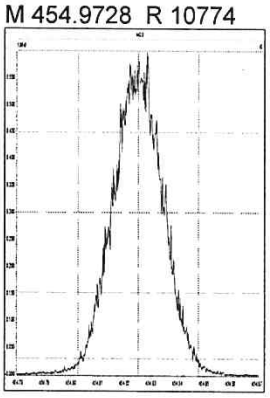
M 430.9728 R 10774



M 442.9728 R 10823



M 454.9728 R 10774



File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

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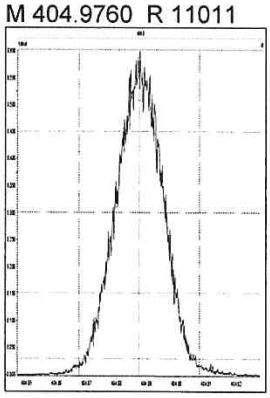
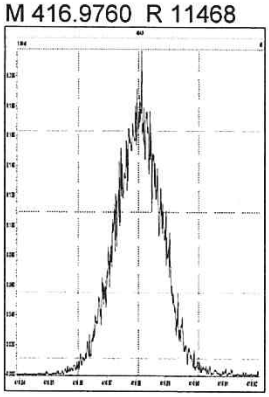
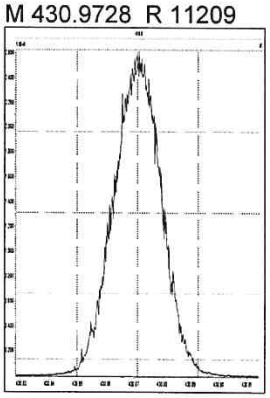
M 404.9760 R 11011



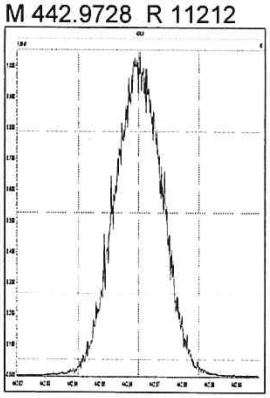
M 416.9760 R 11468



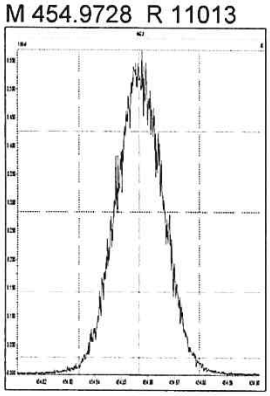
M 430.9728 R 11209



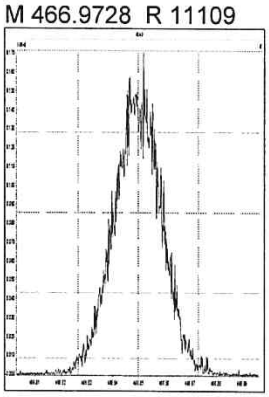
M 442.9728 R 11212



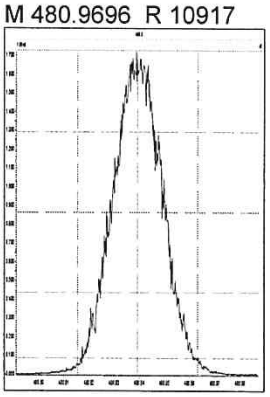
M 454.9728 R 11013



M 466.9728 R 11109



M 480.9696 R 10917



File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

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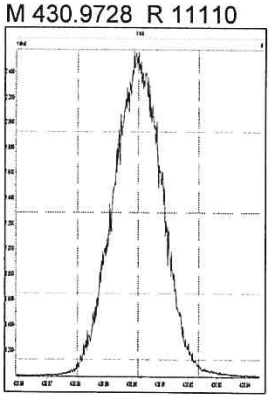
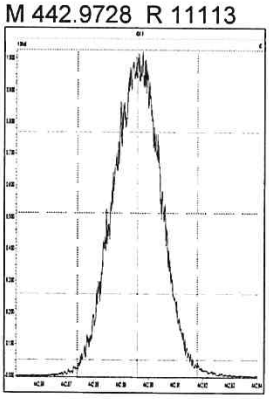
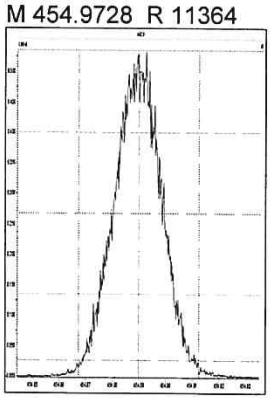
M 430.9728 R 11110



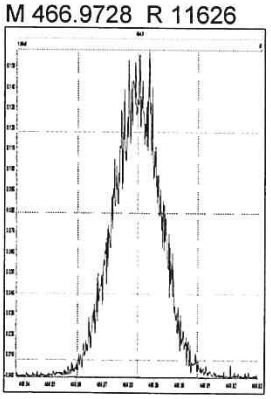
M 442.9728 R 11113



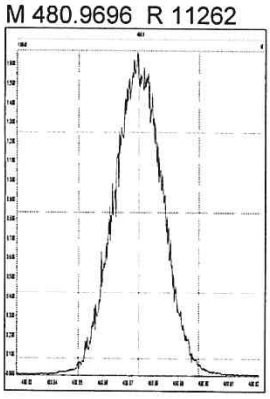
M 454.9728 R 11364



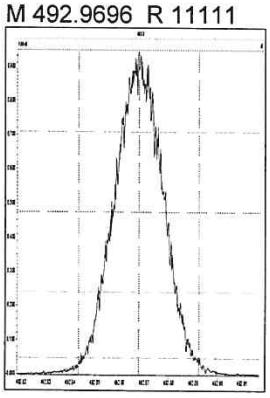
M 466.9728 R 11626



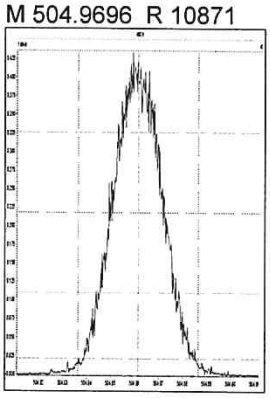
M 480.9696 R 11262



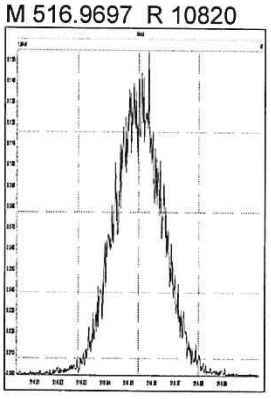
M 492.9696 R 11111



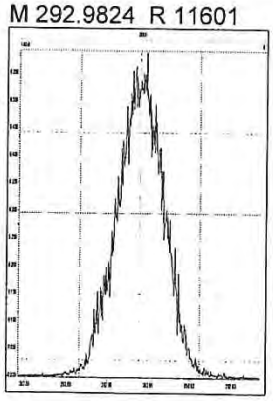
M 504.9696 R 10871



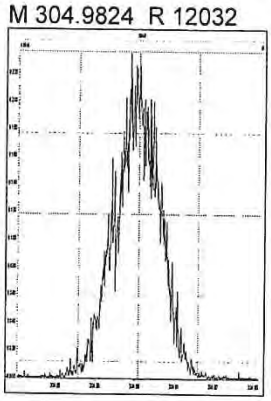
M 516.9697 R 10820



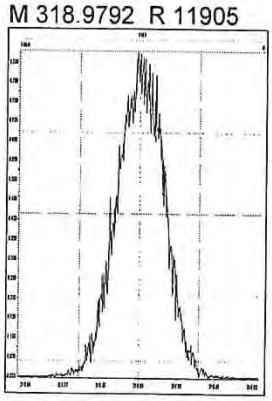
M 292.9824 R 11601



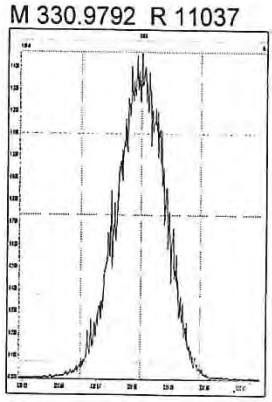
M 304.9824 R 12032



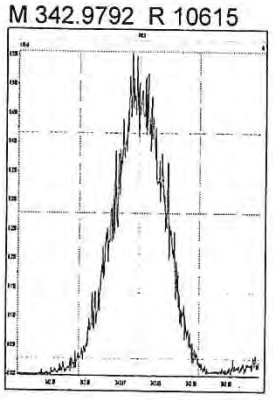
M 318.9792 R 11905



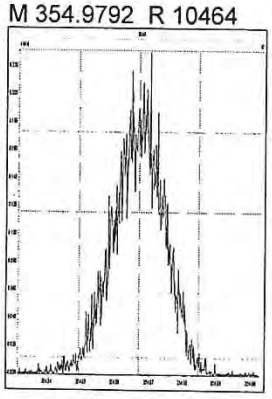
M 330.9792 R 11037



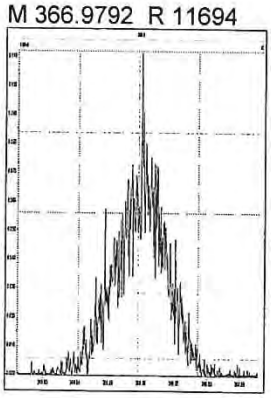
M 342.9792 R 10615



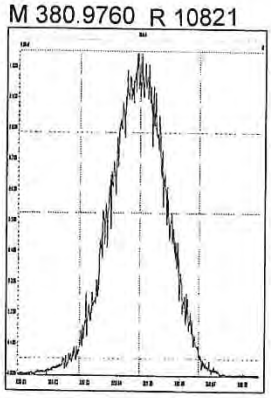
M 354.9792 R 10464



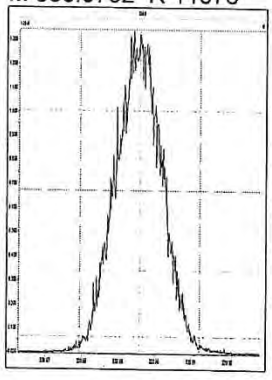
M 366.9792 R 11694



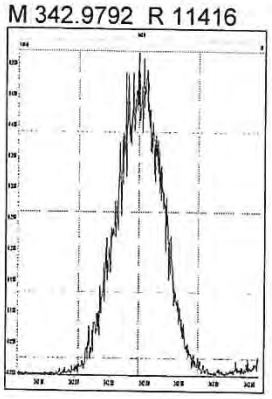
M 380.9760 R 10821



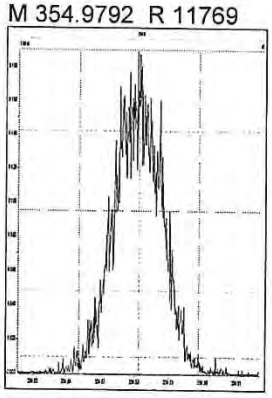
M 330.9792 R 11576



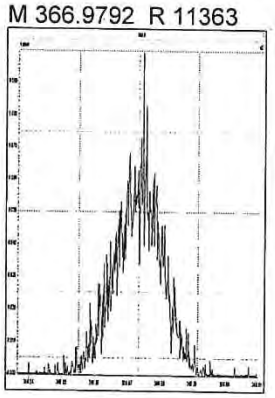
M 342.9792 R 11416



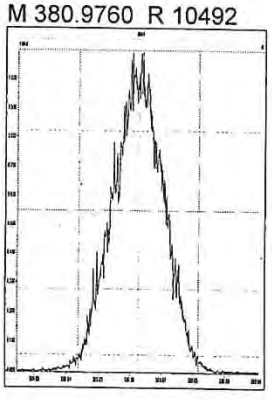
M 354.9792 R 11769



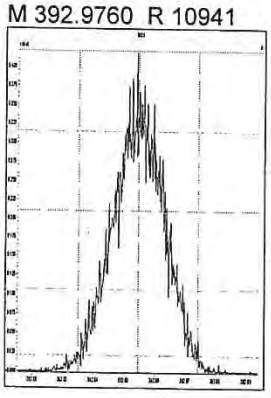
M 366.9792 R 11363



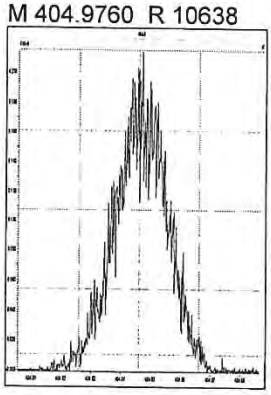
M 380.9760 R 10492



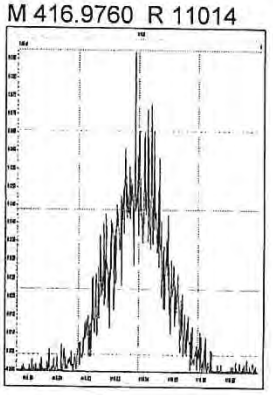
M 392.9760 R 10941



M 404.9760 R 10638

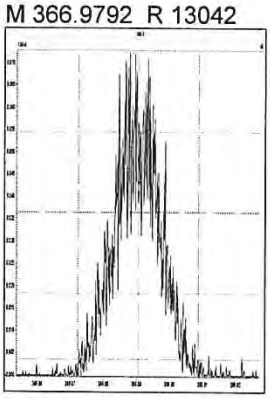


M 416.9760 R 11014

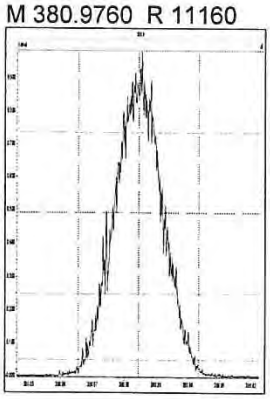


060590

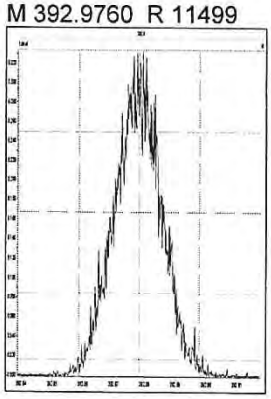
M 366.9792 R 13042



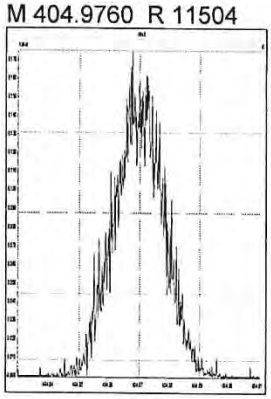
M 380.9760 R 11160



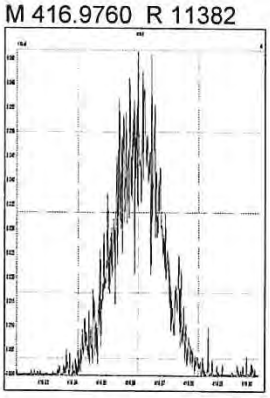
M 392.9760 R 11499



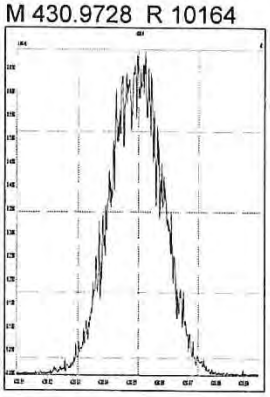
M 404.9760 R 11504



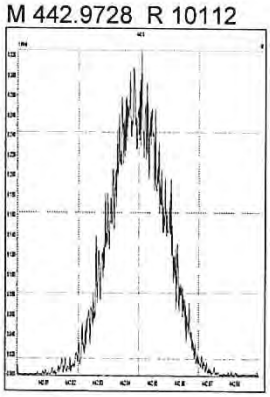
M 416.9760 R 11382



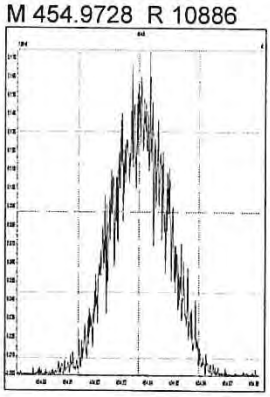
M 430.9728 R 10164



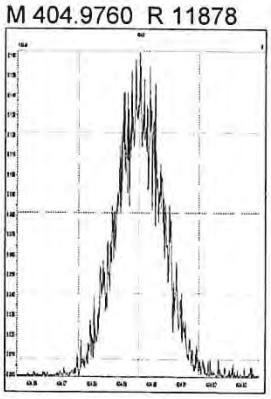
M 442.9728 R 10112



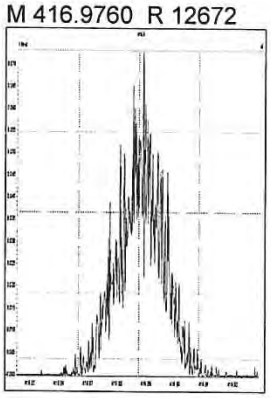
M 454.9728 R 10886



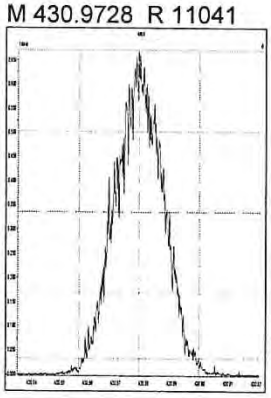
M 404.9760 R 11878



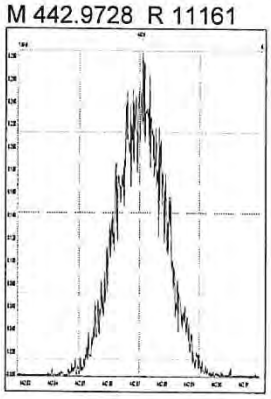
M 416.9760 R 12672



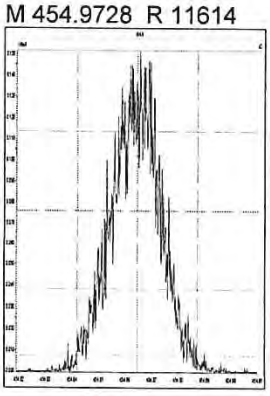
M 430.9728 R 11041



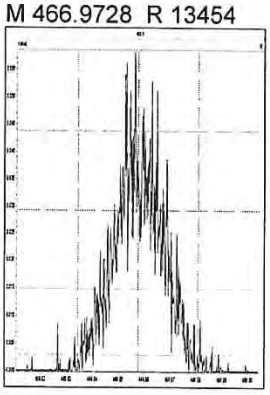
M 442.9728 R 11161



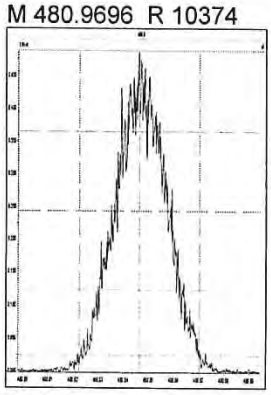
M 454.9728 R 11614



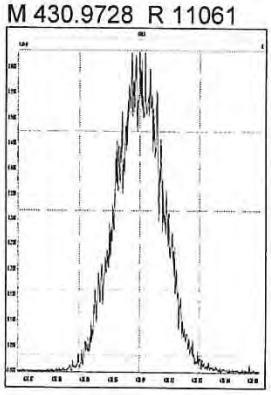
M 466.9728 R 13454



M 480.9696 R 10374

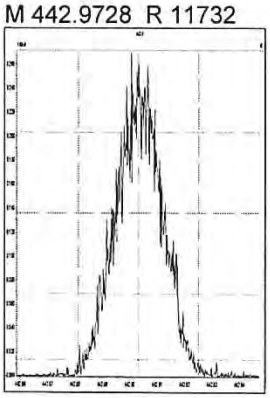


M 430.9728 R 11061

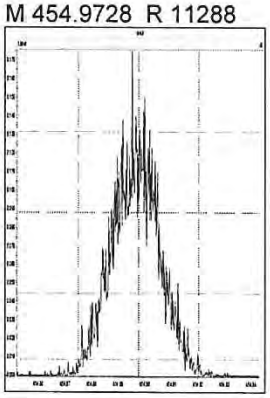


060591

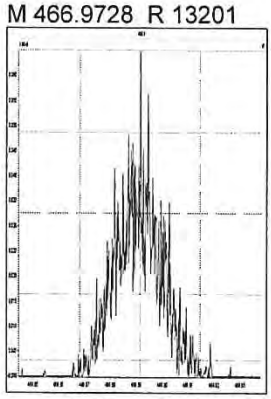
M 442.9728 R 11732



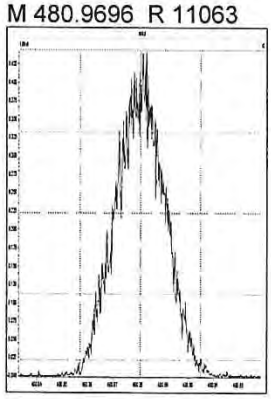
M 454.9728 R 11288



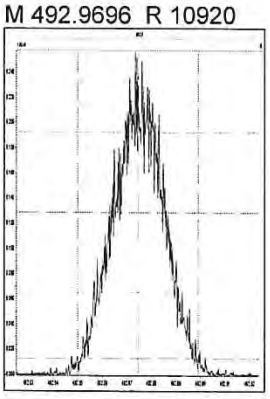
M 466.9728 R 13201



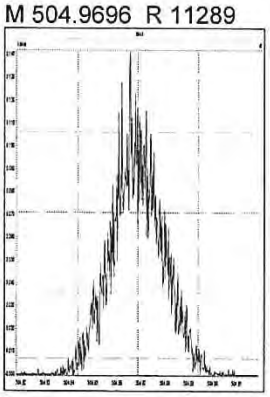
M 480.9696 R 11063



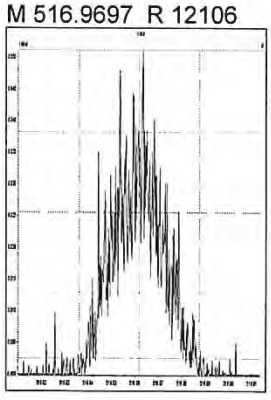
M 492.9696 R 10920



M 504.9696 R 11289



M 516.9697 R 12106



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

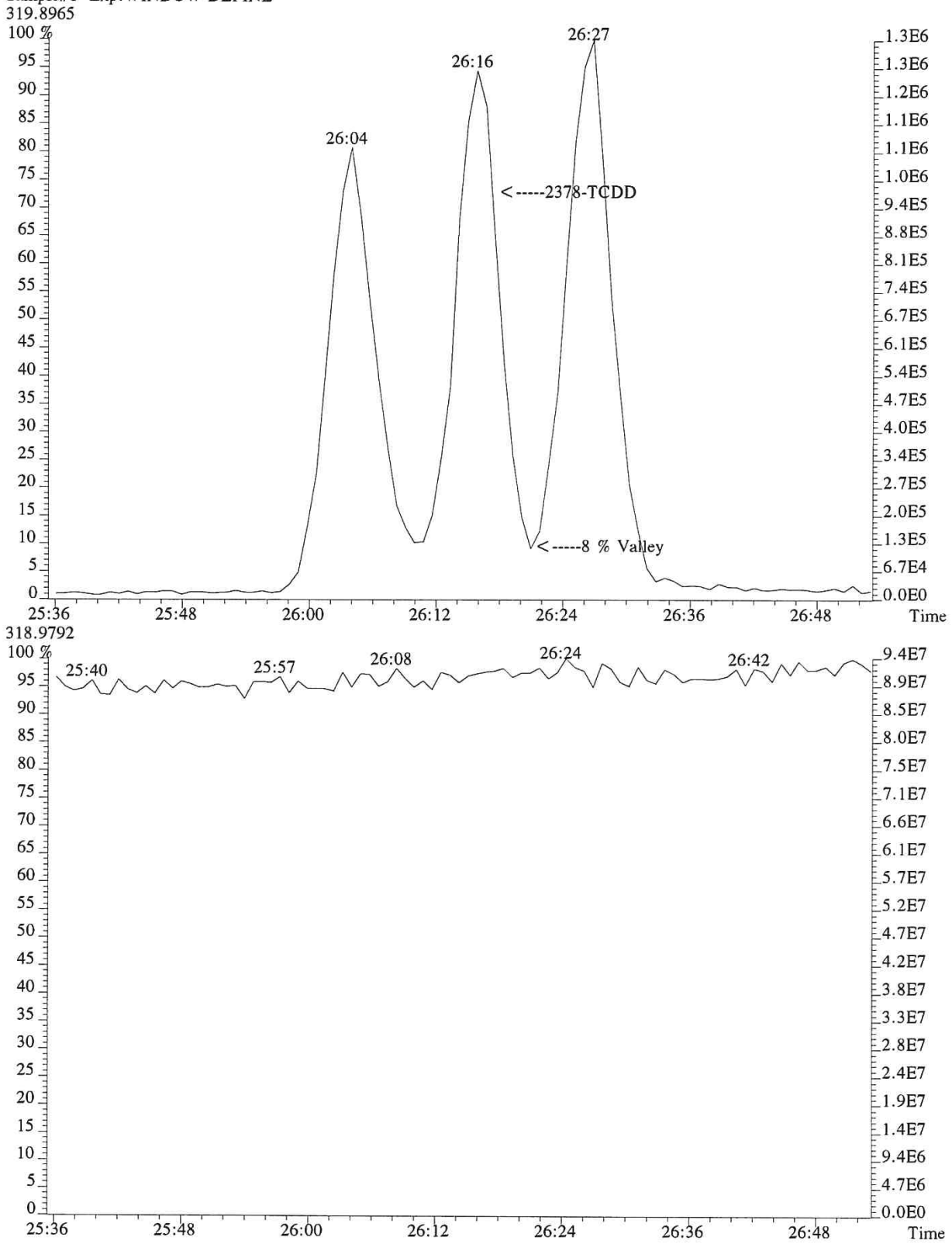
Case No.: _____ SDG No.:
ID: 0.25 (mm)
Lab File ID: P616278
Date Analyzed: 29-DEC-18
Time Analyzed: 14:27:35

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	20:56	27:43
TCDD	22:31	27:31
PeCDF	27:38	32:39
PeCDD	29:28	32:13
HxCDF	33:10	35:49
HxCDD	32:44	35:24
HpCDF	37:04	38:24
HpCDD	37:19	37:58

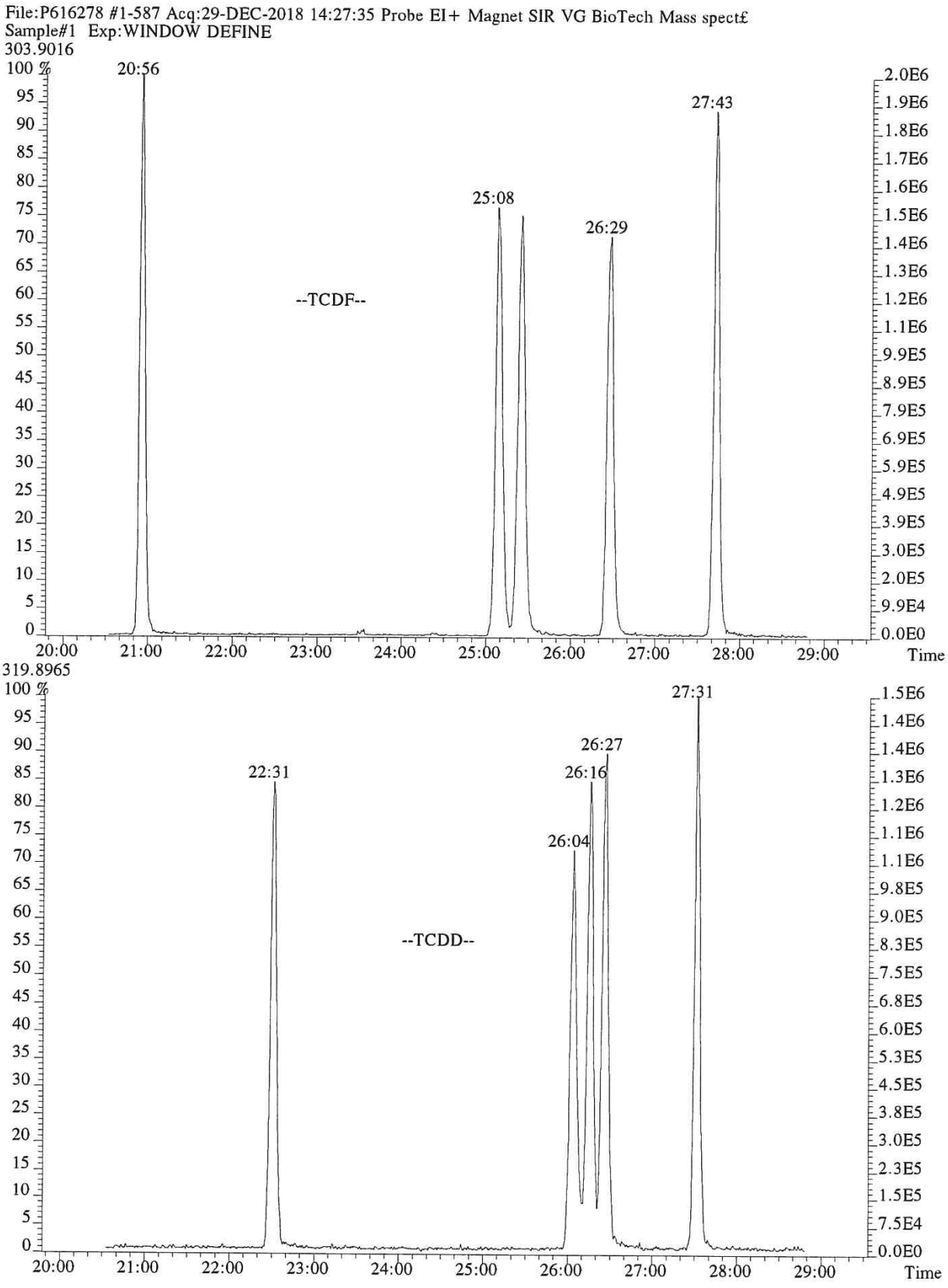
% Valley 2378-TCDD: 8 %

060593

File:P616278 #1-587 Acq:29-DEC-2018 14:27:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE

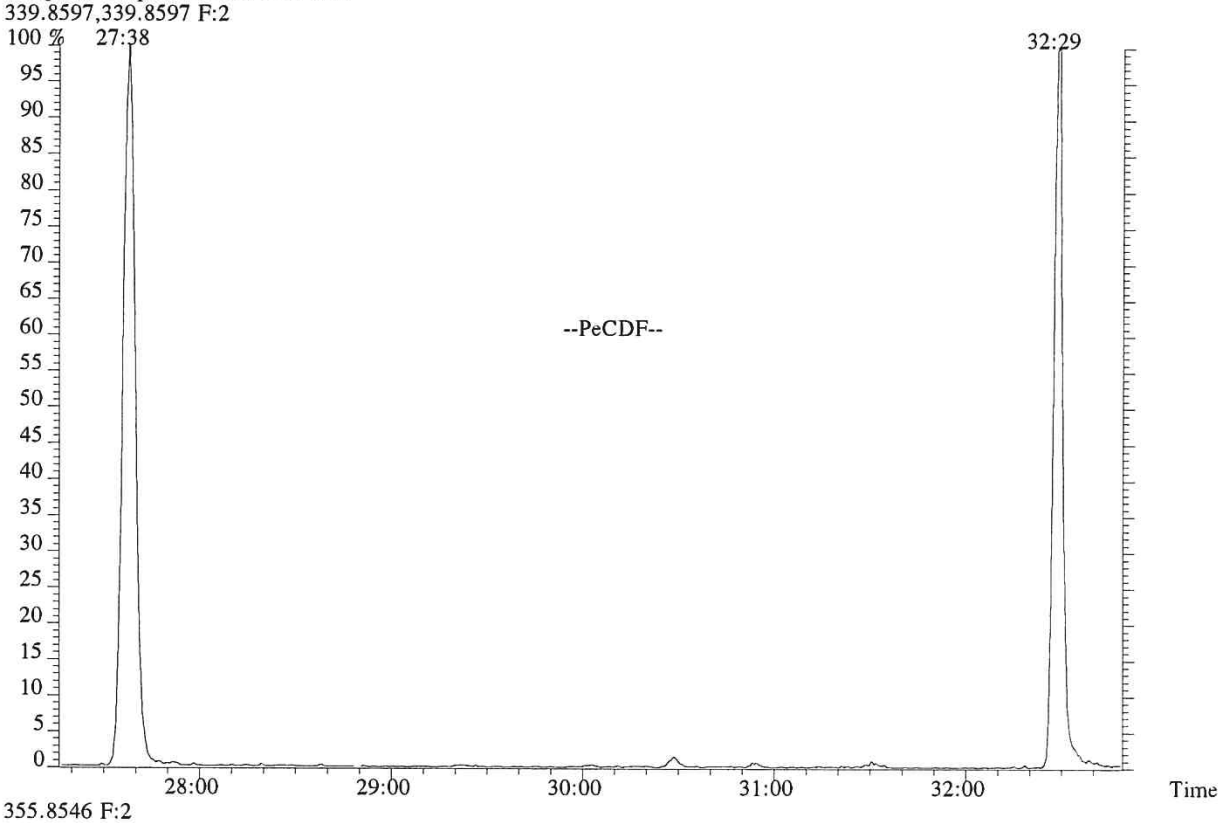


060594

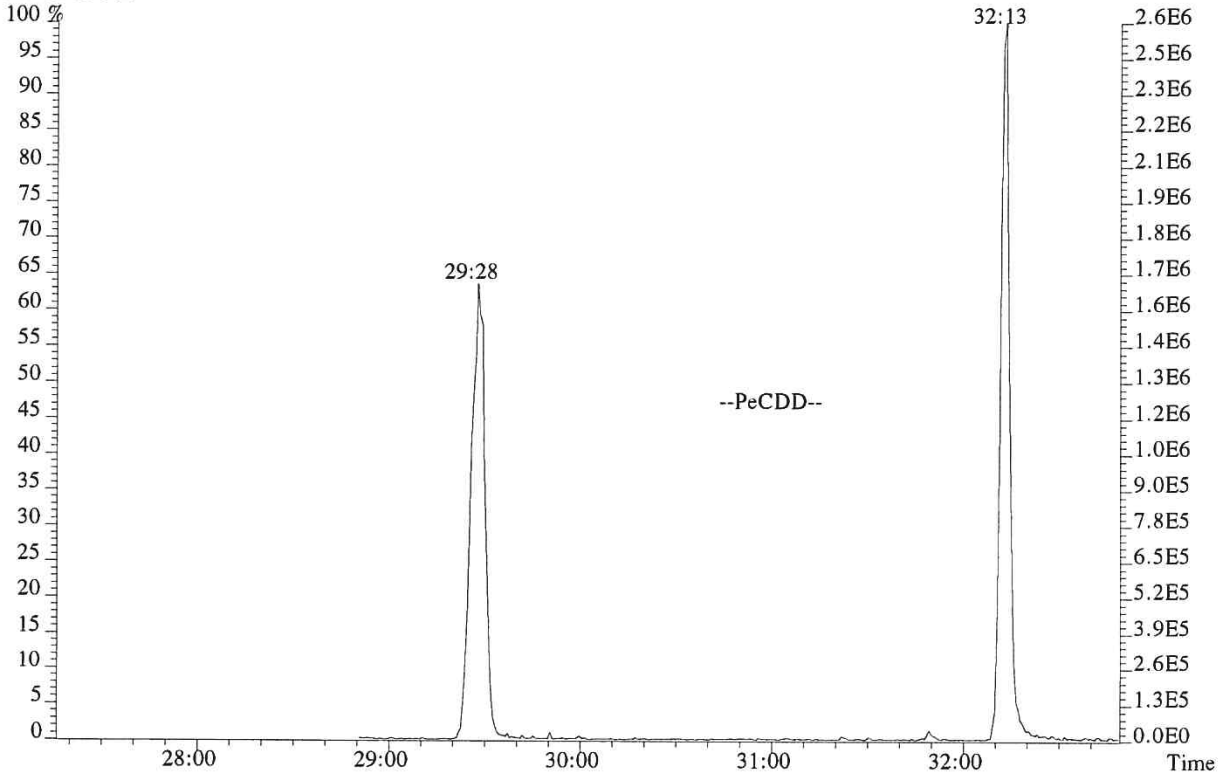

File:P616278 #1-587 Acq:29-DEC-2018 14:27:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
303.9016
20:56
25:08
26:29
27:43
--TCDF--
319.8965
22:31
26:04
26:16
26:27
27:31
--TCDD--
Time

060595

File:P616278 #1-587 Acq:29-DEC-2018 14:27:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
339.8597,339.8597 F:2

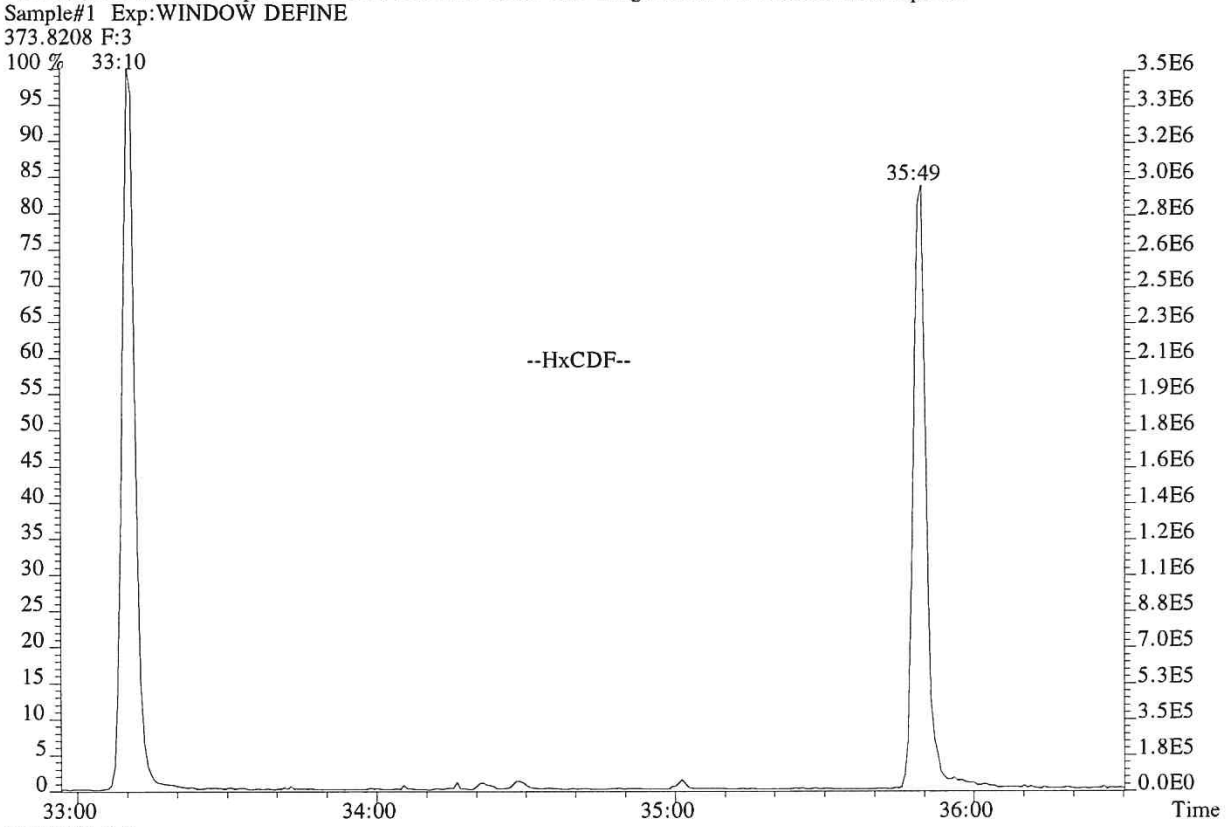


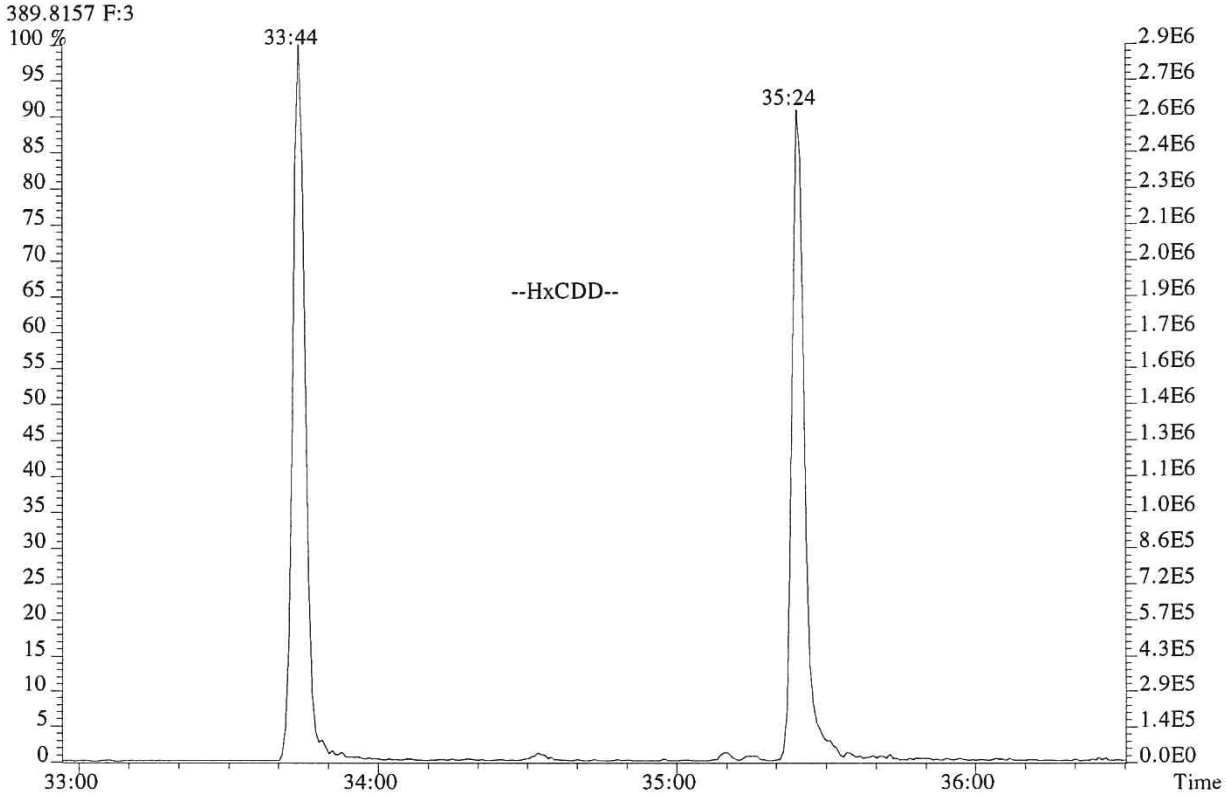
355.8546 F:2



060596

File:P616278 #1-587 Acq:29-DEC-2018 14:27:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE





060597

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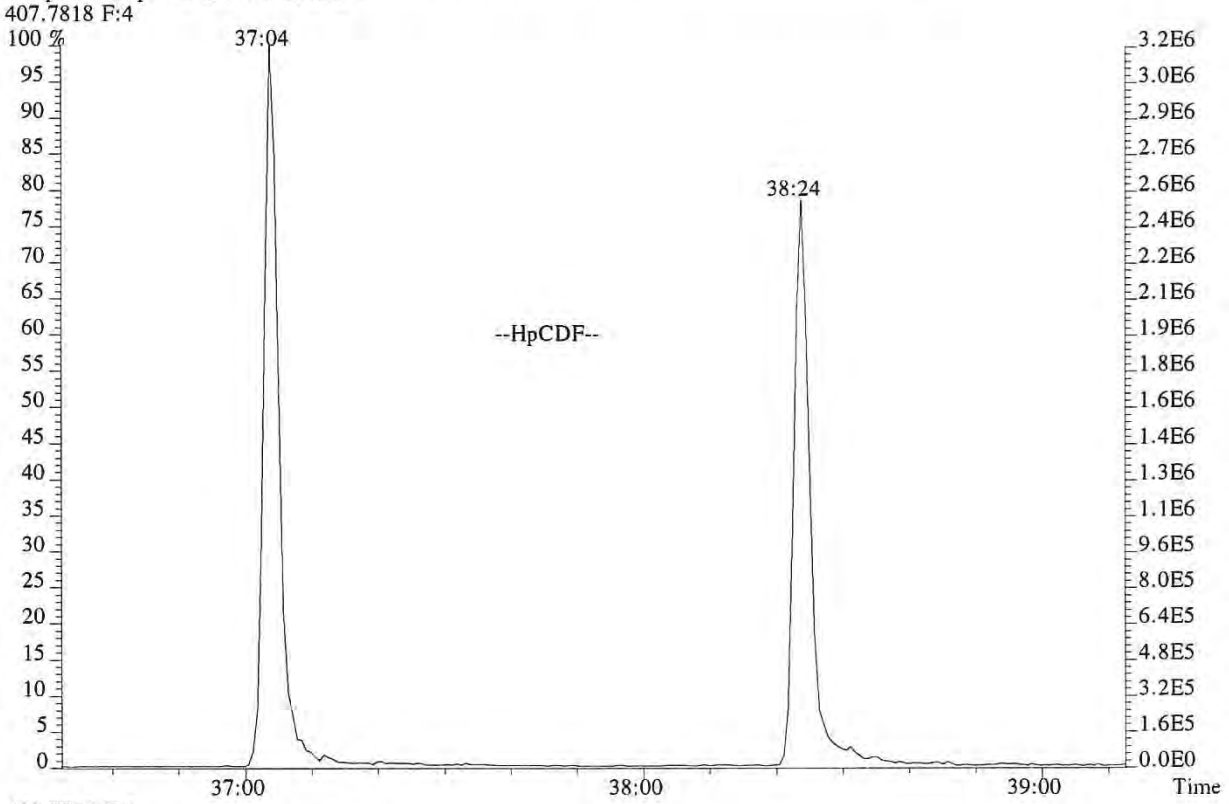
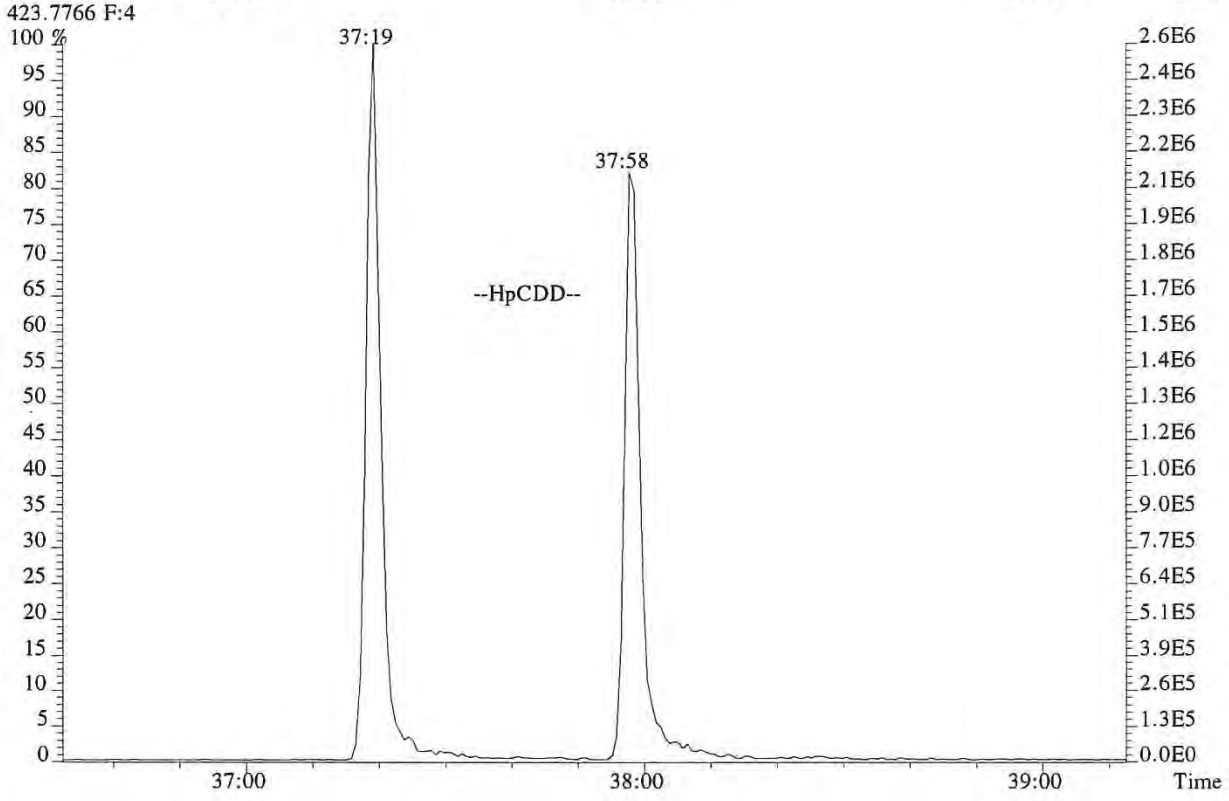
Sample#1 Exp:WINDOW DEFINE





060598

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P616277 Analysis Date: 29-DEC-18 Time: 13:37:25

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.82	0.65-0.89	10.2	7.8 - 12.9	1.7
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	52	39 - 65	4.4
1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	51	39 - 64	2.4
1,2,3,6,7,8-HxCDD	M+2/M+4	1.18	1.05-1.43	49	39 - 64	-1.3
1,2,3,7,8,9-HxCDD	M+2/M+4	1.22	1.05-1.43	51	41 - 61	1.2
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	50	43 - 58	-0.4
OCDD	M+2/M+4	0.89	0.76-1.02	103	79 - 126	3.1
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	9.2	8.4 - 12.0	-8.2
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	46	41 - 60	-7.1
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	46	41 - 61	-7.9
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	46	45 - 56	-8.2
1,2,3,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	47	44 - 57	-5.9
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	48	45 - 56	-3.1
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	47	44 - 57	-5.9
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	47	45 - 55	-6.8
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	48	43 - 58	-4.5
OCDF	M+2/M+4	0.89	0.76-1.02	90	63 - 159	-9.7

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P616277 Analysis Date: 29-DEC-18 Time: 13:37:25

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	105	82 - 121	4.5
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	114	62 - 160	14.1
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	96	85 - 117	-3.8
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	105	85 - 118	5.0
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	99	72 - 138	-0.5
13C-OCDD	M+2/M+4	0.90	0.76-1.02	216	96 - 415	8.0
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	94	71 - 140	-5.8
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	107	76 - 130	6.9
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	110	77 - 130	9.8
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	90	76 - 131	-9.7
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	92	70 - 143	-7.7
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	87	74 - 135	-12.8
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	90	73 - 137	-10.4
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	90	78 - 129	-9.5
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37-0.51	89	77 - 129	-11.1
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			10.3	7.8 - 12.7	3.1

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
194503

Run #7 Filename P616277 Samp: 1 Inj: 1 Acquired: 29-DEC-18 13:37:25
Processed: 30-DEC-18 08:57:49 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:25	5.476e+03	7.004e+03	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:28	5.250e+04	3.384e+04	1.55	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:31	5.061e+04	3.199e+04	1.58	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:22	4.486e+04	3.616e+04	1.24	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	4.942e+04	3.990e+04	1.24	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:01	4.444e+04	3.600e+04	1.23	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:47	4.137e+04	3.344e+04	1.24	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:04	3.982e+04	3.890e+04	1.02	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	3.385e+04	3.317e+04	1.02	yes	no	1.463
10	Unk	OCDF	40:36	5.651e+04	6.378e+04	0.89	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:27	4.644e+03	5.680e+03	0.82	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:49	3.563e+04	2.294e+04	1.55	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:09	3.203e+04	2.472e+04	1.30	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:15	3.196e+04	2.713e+04	1.18	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:29	3.445e+04	2.826e+04	1.22	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:58	2.865e+04	2.764e+04	1.04	yes	no	1.112
17	Unk	OCDD	40:25	4.749e+04	5.366e+04	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:24	5.545e+04	7.030e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:28	9.925e+04	6.140e+04	1.62	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:30	9.918e+04	6.327e+04	1.57	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:21	4.276e+04	8.196e+04	0.52	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:28	5.051e+04	9.636e+04	0.52	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	4.554e+04	8.791e+04	0.52	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	4.039e+04	7.716e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	3.441e+04	7.652e+04	0.45	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:23	2.978e+04	6.622e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:25	4.271e+04	5.403e+04	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:48	7.373e+04	4.711e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	5.795e+04	4.557e+04	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	6.321e+04	4.978e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	5.227e+04	4.935e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:24	8.035e+04	8.917e+04	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:39	4.165e+04	5.253e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	6.667e+04	5.247e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:27	1.054e+04				no	1.086

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
194503

Run #7 Filename P616277 Samp: 1 Inj: 1 Acquired: 29-DEC-18 13:37:25
Processed: 30-DEC-18 08:57:49 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	7.67e+05	1.79e+03	4.3e+02	9.68e+05	3.88e+03	2.5e+02
2	1,2,3,7,8-PeCDF	9.06e+06	1.18e+03	7.7e+03	5.83e+06	6.68e+03	8.7e+02
3	2,3,4,7,8-PeCDF	9.33e+06	1.18e+03	7.9e+03	5.85e+06	6.68e+03	8.8e+02
4	1,2,3,4,7,8-HxCDF	9.05e+06	4.84e+03	1.9e+03	7.26e+06	3.18e+03	2.3e+03
5	1,2,3,6,7,8-HxCDF	9.89e+06	4.84e+03	2.0e+03	7.94e+06	3.18e+03	2.5e+03
6	2,3,4,6,7,8-HxCDF	9.11e+06	4.84e+03	1.9e+03	7.31e+06	3.18e+03	2.3e+03
7	1,2,3,7,8,9-HxCDF	8.30e+06	4.84e+03	1.7e+03	6.57e+06	3.18e+03	2.1e+03
8	1,2,3,4,6,7,8-HpCDF	8.19e+06	6.50e+03	1.3e+03	8.06e+06	8.36e+03	9.6e+02
9	1,2,3,4,7,8,9-HpCDF	7.05e+06	6.50e+03	1.1e+03	6.91e+06	8.36e+03	8.3e+02
10	OCDF	9.95e+06	1.61e+03	6.2e+03	1.13e+07	3.65e+03	3.1e+03
11	2,3,7,8-TCDD	7.20e+05	5.36e+03	1.3e+02	9.08e+05	6.56e+02	1.4e+03
12	1,2,3,7,8-PeCDD	6.73e+06	2.23e+03	3.0e+03	4.23e+06	8.52e+02	5.0e+03
13	1,2,3,4,7,8-HxCDD	6.72e+06	2.09e+03	3.2e+03	5.42e+06	3.76e+03	1.4e+03
14	1,2,3,6,7,8-HxCDD	6.47e+06	2.09e+03	3.1e+03	5.28e+06	3.76e+03	1.4e+03
15	1,2,3,7,8,9-HxCDD	6.89e+06	2.09e+03	3.3e+03	5.52e+06	3.76e+03	1.5e+03
16	1,2,3,4,6,7,8-HpCDD	5.91e+06	5.23e+03	1.1e+03	5.69e+06	3.20e+03	1.8e+03
17	OCDD	8.67e+06	1.60e+03	5.4e+03	9.57e+06	2.07e+03	4.6e+03
18	13C-2,3,7,8-TCDF	7.91e+06	1.19e+04	6.6e+02	1.00e+07	8.08e+03	1.2e+03
19	13C-1,2,3,7,8-PeCDF	1.72e+07	1.70e+03	1.0e+04	1.06e+07	1.59e+03	6.7e+03
20	13C-2,3,4,7,8-PeCDF	1.80e+07	1.70e+03	1.1e+04	1.17e+07	1.59e+03	7.4e+03
21	13C-1,2,3,4,7,8-HxCDF	8.73e+06	1.83e+03	4.8e+03	1.66e+07	3.34e+03	5.0e+03
22	13C-1,2,3,6,7,8-HxCDF	1.01e+07	1.83e+03	5.5e+03	1.91e+07	3.34e+03	5.7e+03
23	13C-2,3,4,6,7,8-HxCDF	9.32e+06	1.83e+03	5.1e+03	1.77e+07	3.34e+03	5.3e+03
24	13C-1,2,3,7,8,9-HxCDF	8.21e+06	1.83e+03	4.5e+03	1.54e+07	3.34e+03	4.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	7.06e+06	1.55e+03	4.6e+03	1.55e+07	9.12e+03	1.7e+03
26	13C-1,2,3,4,7,8,9-HpCDF	5.95e+06	1.55e+03	3.8e+03	1.34e+07	9.12e+03	1.5e+03
27	13C-2,3,7,8-TCDD	6.77e+06	1.67e+04	4.0e+02	8.57e+06	5.08e+03	1.7e+03
28	13C-1,2,3,7,8-PeCDD	1.37e+07	2.02e+03	6.8e+03	8.68e+06	3.19e+03	2.7e+03
29	13C-1,2,3,4,7,8-HxCDD	1.29e+07	4.34e+03	3.0e+03	1.01e+07	2.33e+03	4.3e+03
30	13C-1,2,3,6,7,8-HxCDD	1.22e+07	4.34e+03	2.8e+03	9.72e+06	2.33e+03	4.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.08e+07	3.50e+03	3.1e+03	1.01e+07	2.32e+03	4.3e+03
32	13C-OCDD	1.47e+07	1.64e+03	9.0e+03	1.60e+07	8.92e+02	1.8e+04
33	13C-1,2,3,4-TCDD	5.91e+06	1.67e+04	3.5e+02	7.61e+06	5.08e+03	1.5e+03
34	13C-1,2,3,7,8,9-HxCDD	1.31e+07	4.34e+03	3.0e+03	1.04e+07	2.33e+03	4.5e+03
35	37Cl-2,3,7,8-TCDD	1.66e+06	3.15e+03	5.3e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (5.364e{+}03 + 6.560e{+}02) \times 100}{(6.767e{+}06 + 8.573e{+}06) \times (\quad) \times 1.049} =$$

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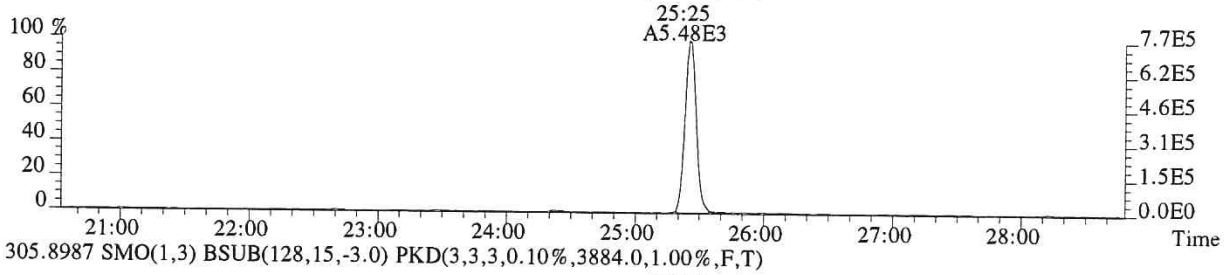
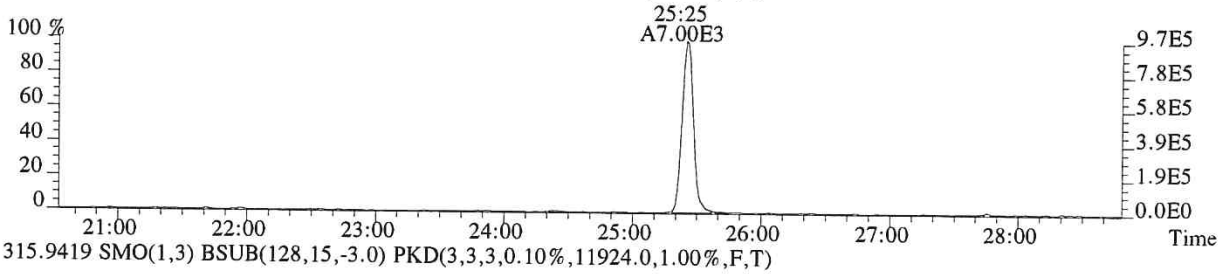
File:P616277 #1-587 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

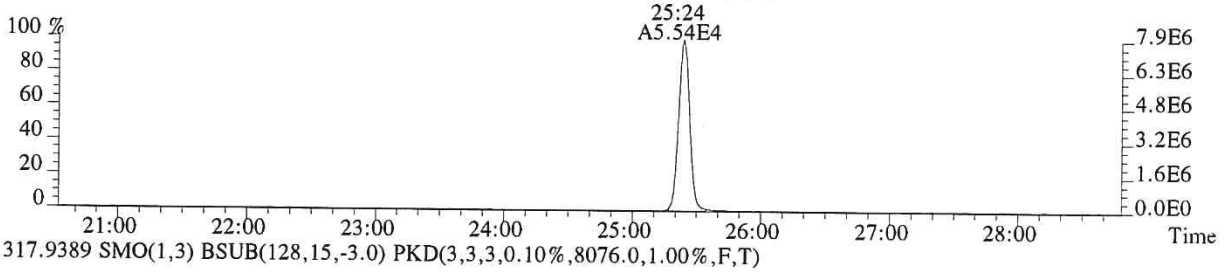
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1788.0,1.00%,F,T)



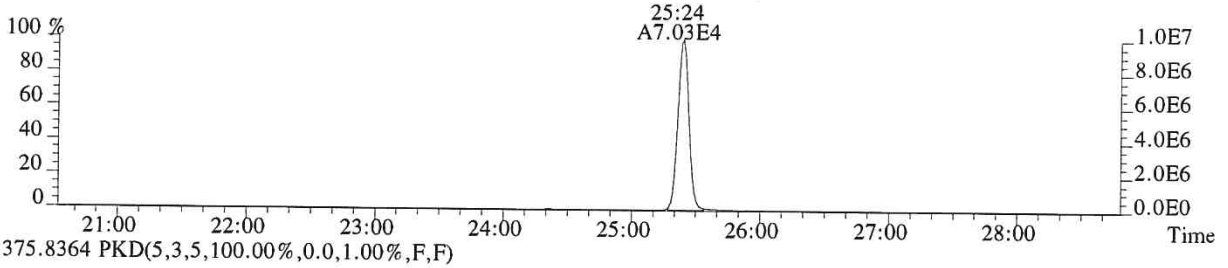
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3884.0,1.00%,F,T)



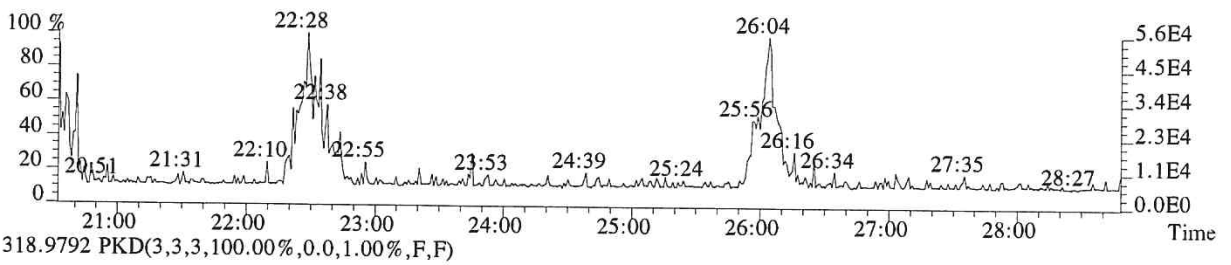
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11924.0,1.00%,F,T)



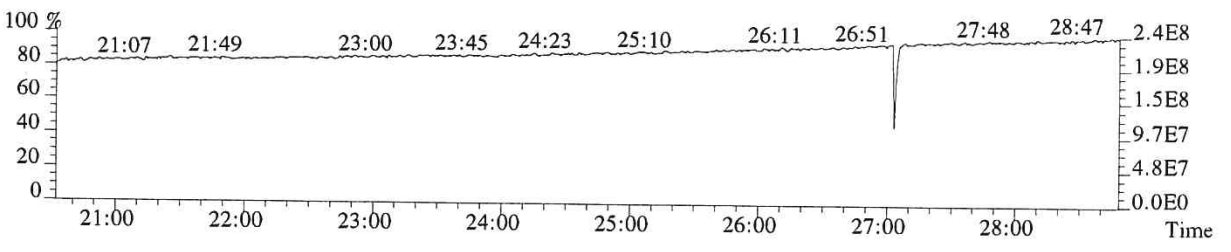
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8076.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

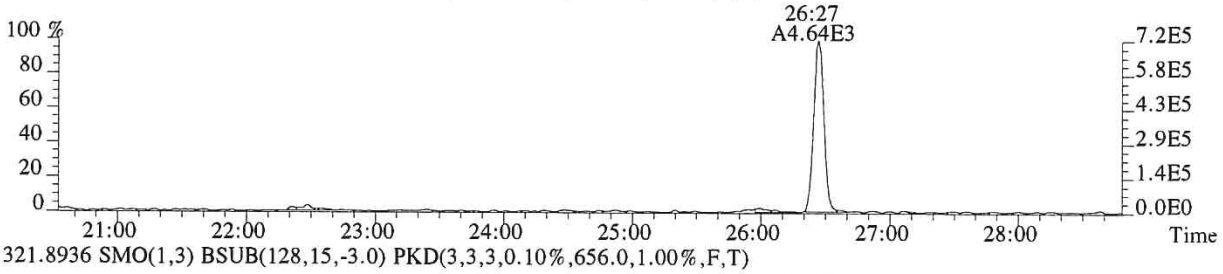


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

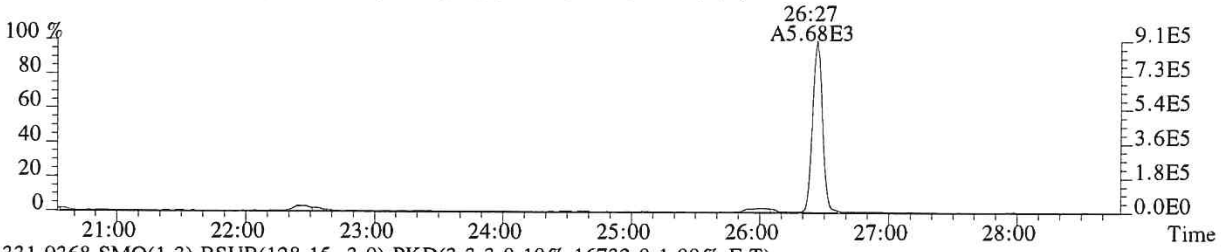


060603

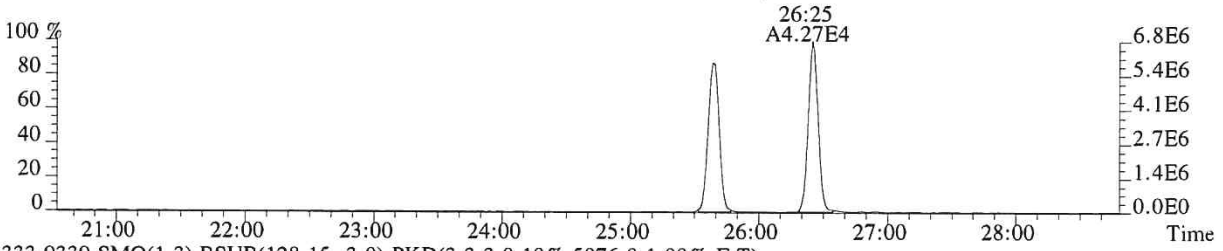
File:P616277 #1-587 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5364.0,1.00%,F,T)



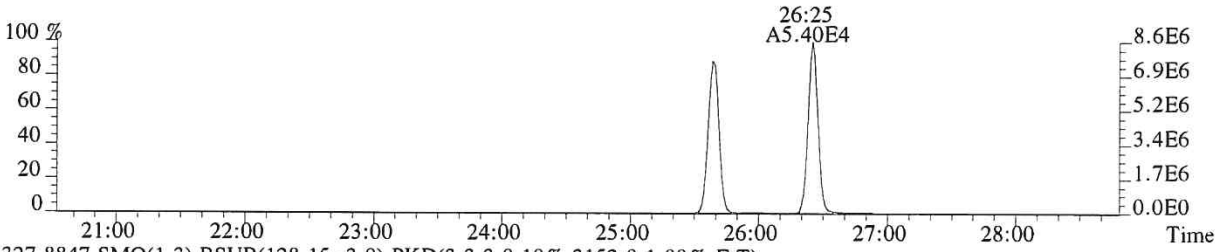
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,656.0,1.00%,F,T)



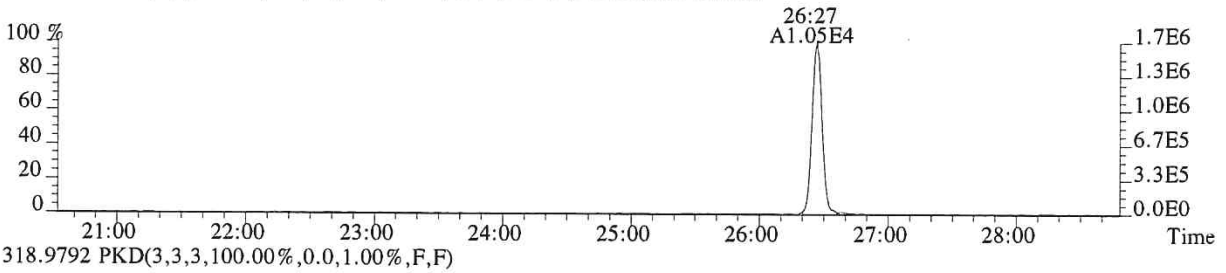
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16732.0,1.00%,F,T)



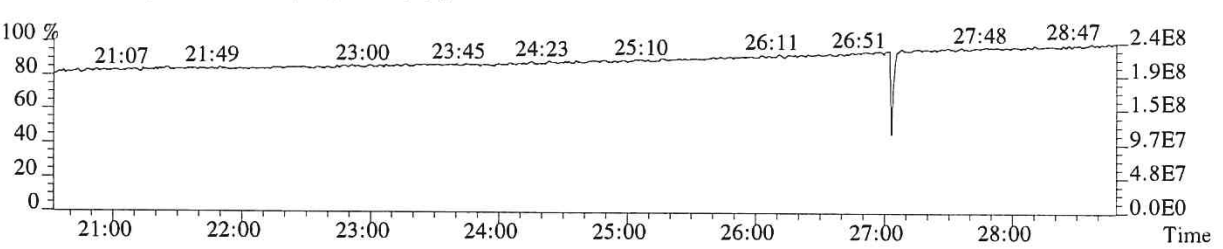
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5076.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3152.0,1.00%,F,T)

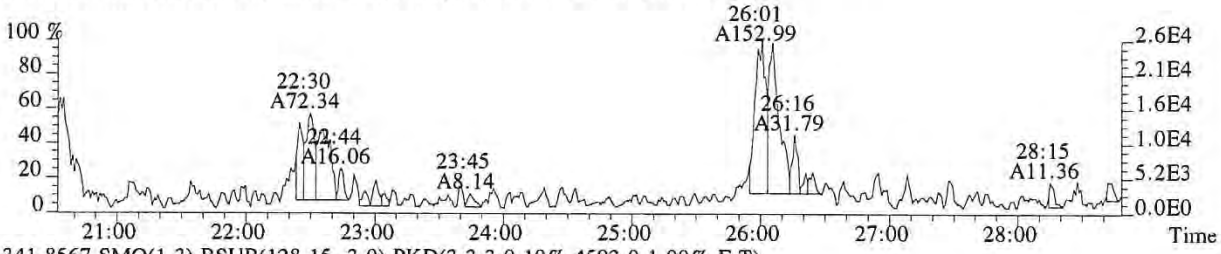


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

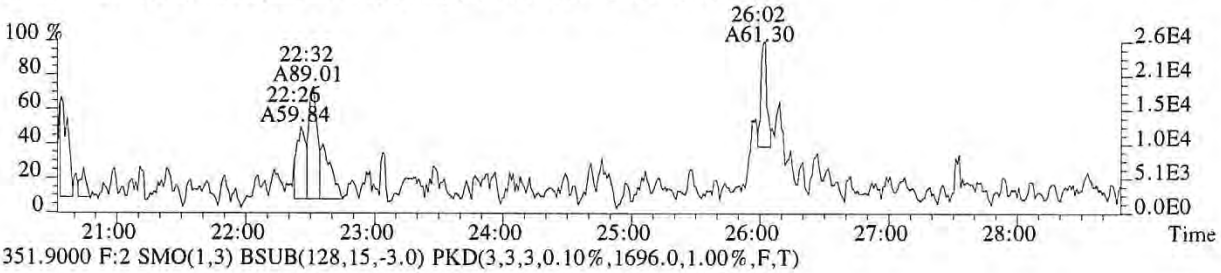


060604

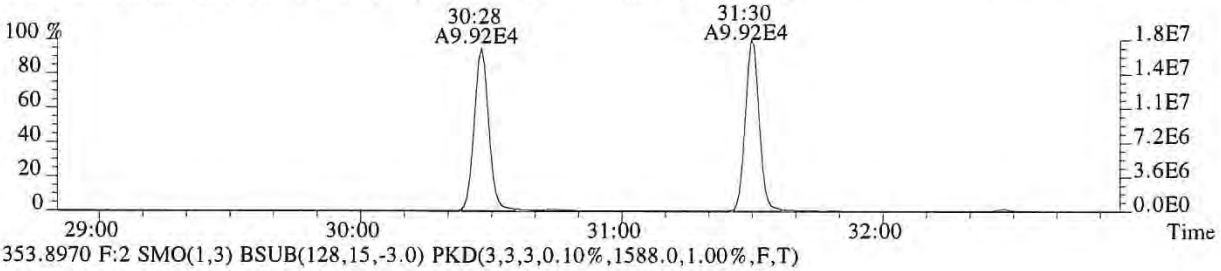
File:P616277 #1-587 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2508.0,1.00%,F,T)



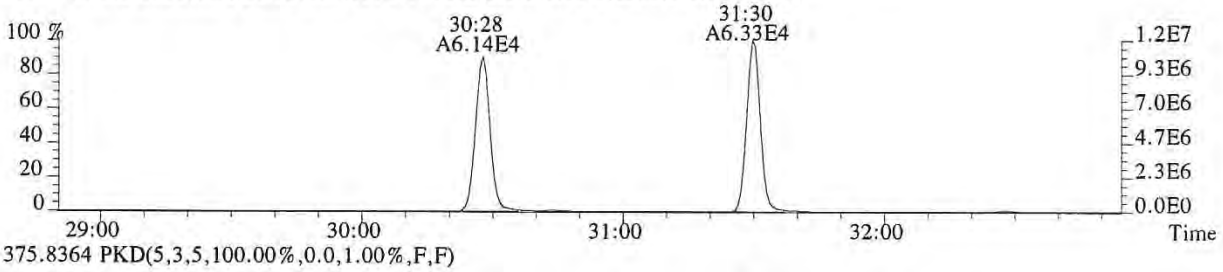
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4592.0,1.00%,F,T)



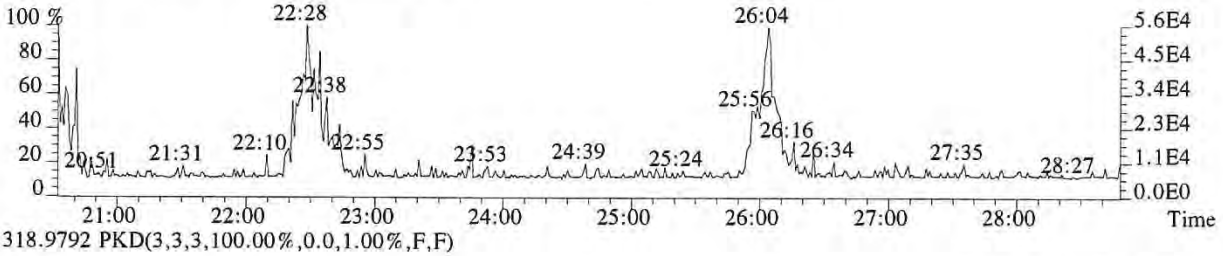
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1696.0,1.00%,F,T)



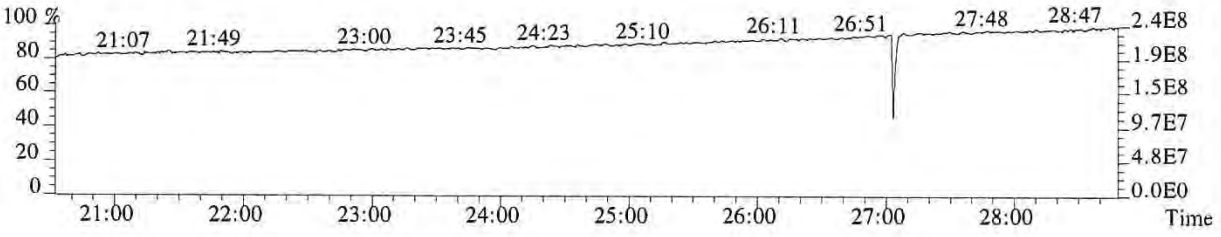
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1588.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



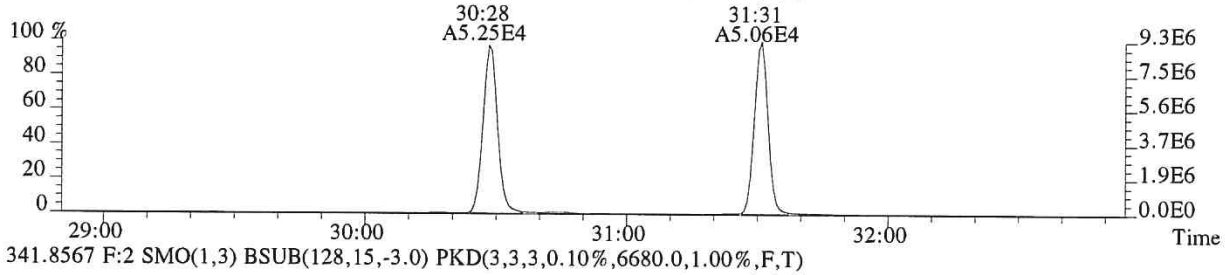
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



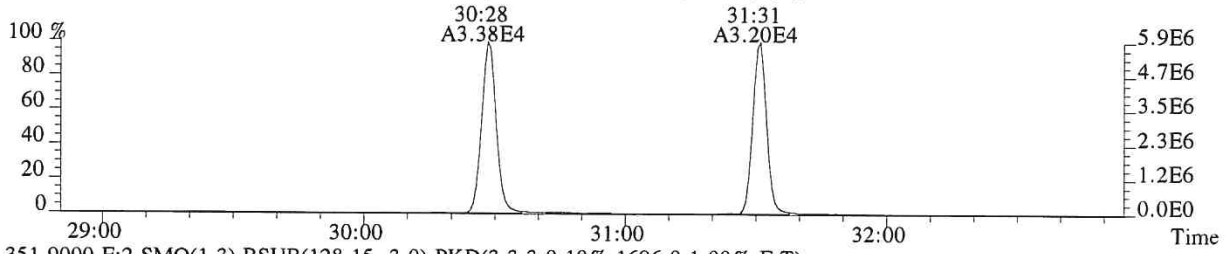
060605

File:P616277 #1-367 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

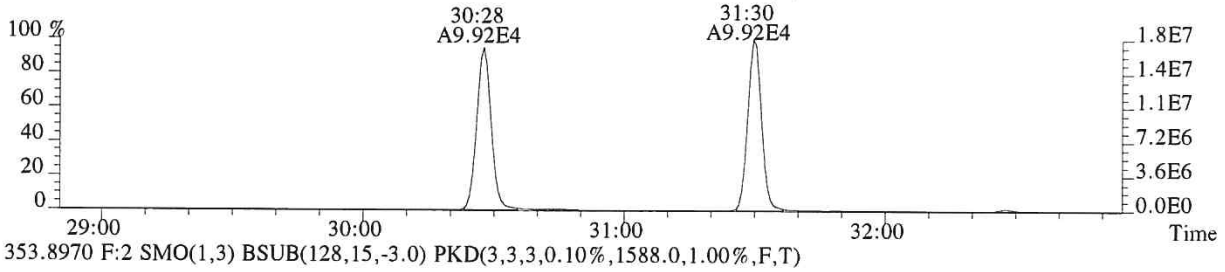
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1184.0,1.00%,F,T)



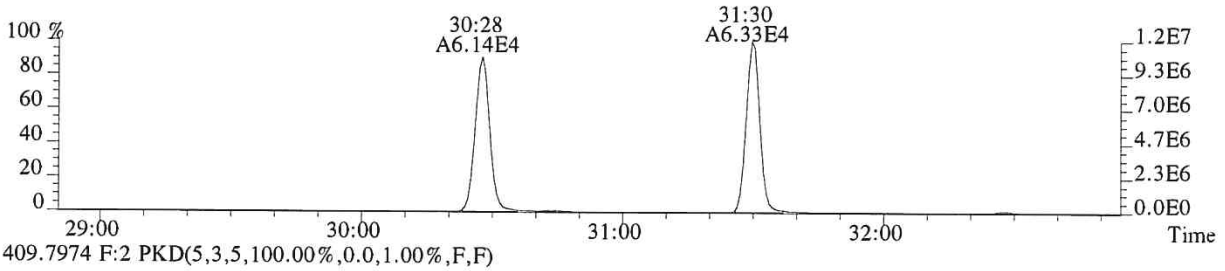
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6680.0,1.00%,F,T)



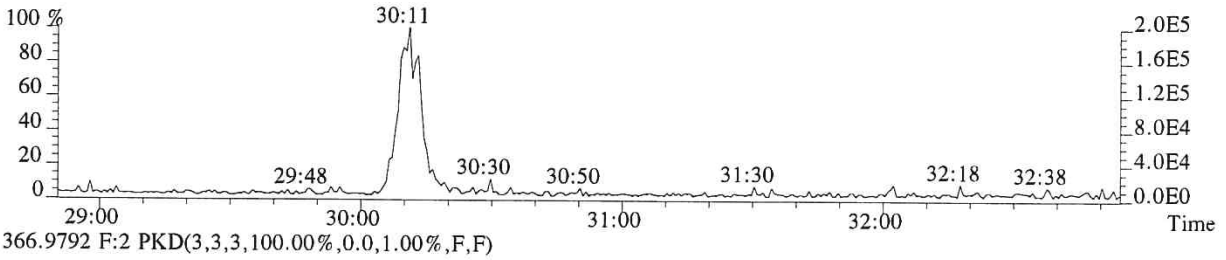
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1696.0,1.00%,F,T)



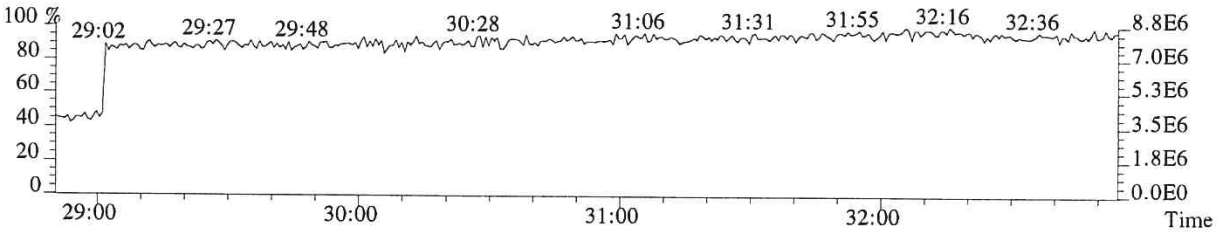
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1588.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

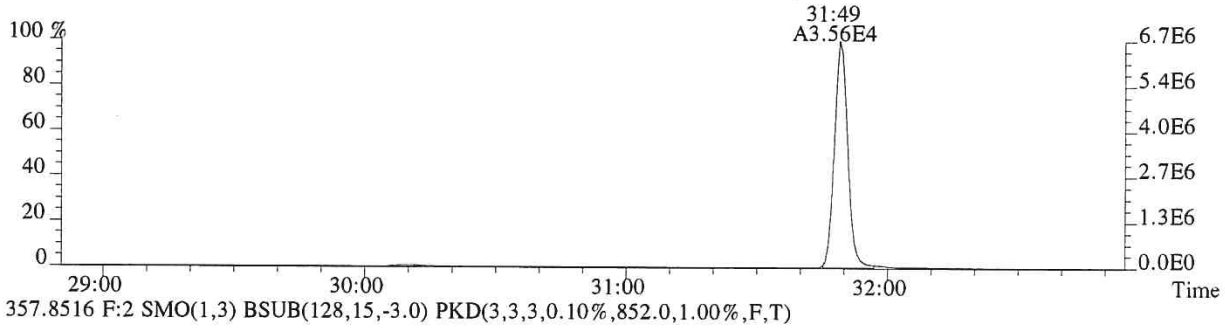


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

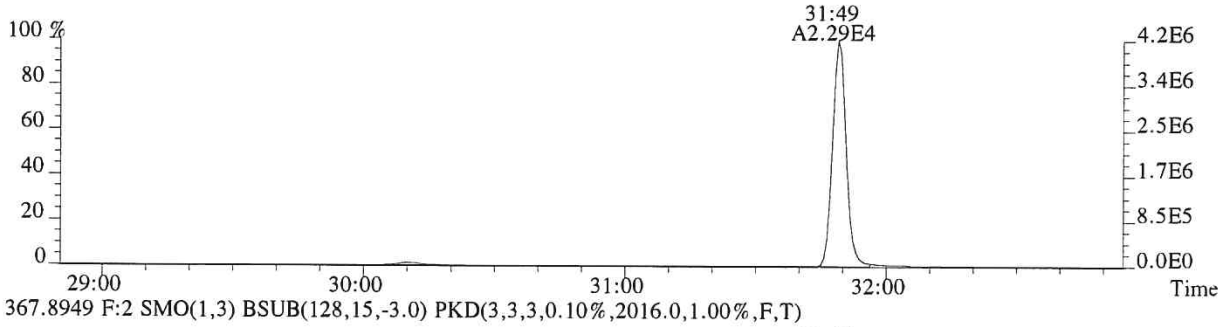


060606

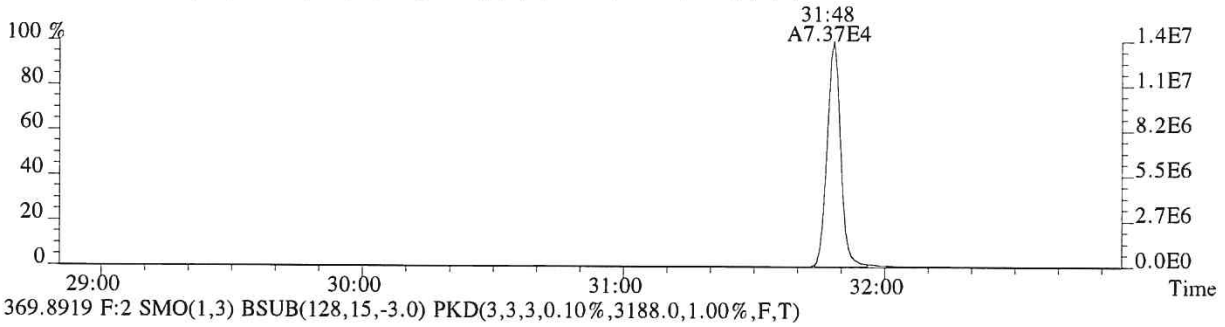
File:P616277 #1-367 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2232.0,1.00%,F,T)



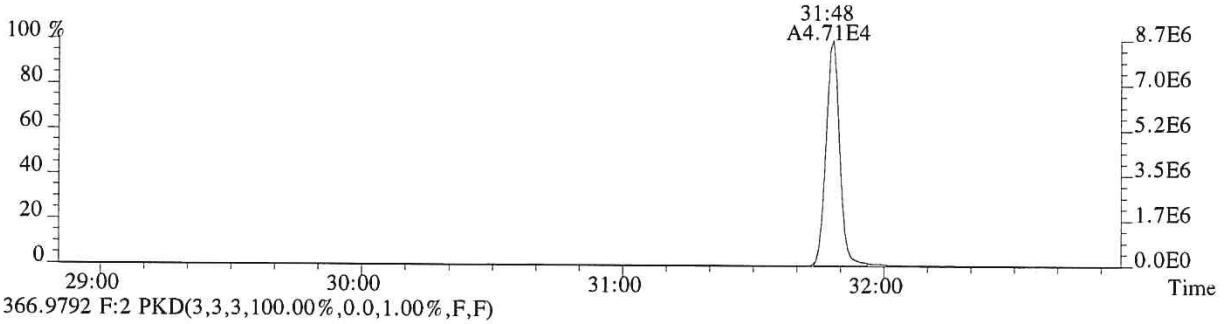
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,852.0,1.00%,F,T)



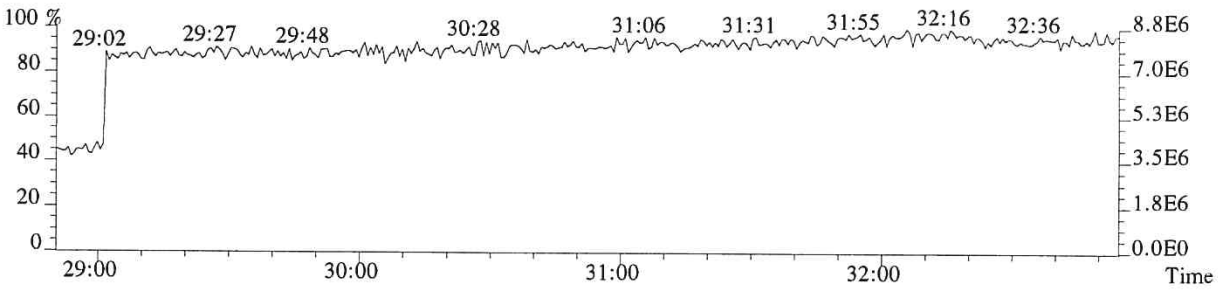
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2016.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3188.0,1.00%,F,T)



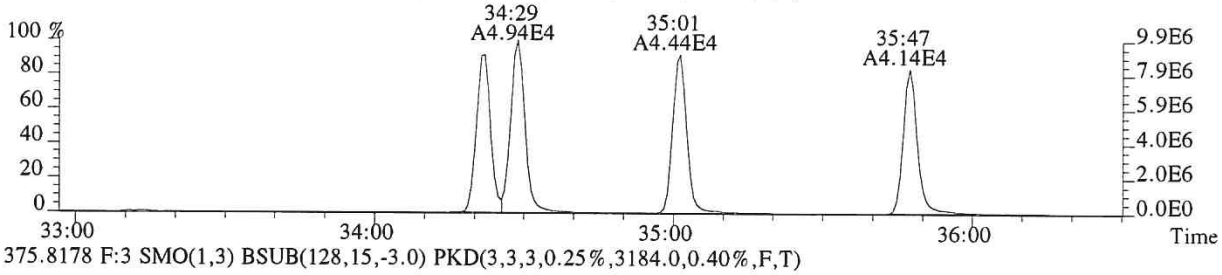
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



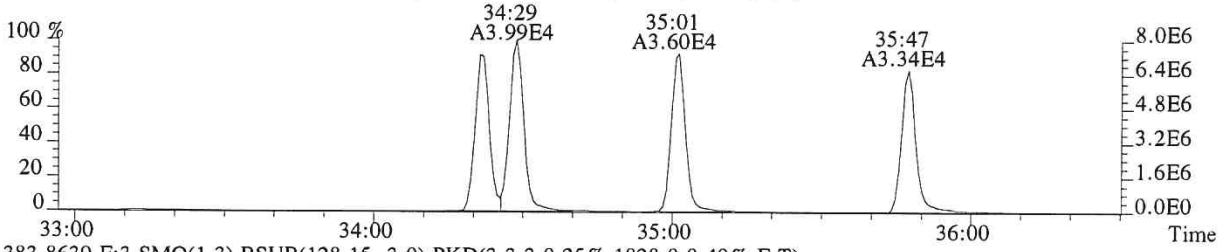
060607

File:P616277 #1-321 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

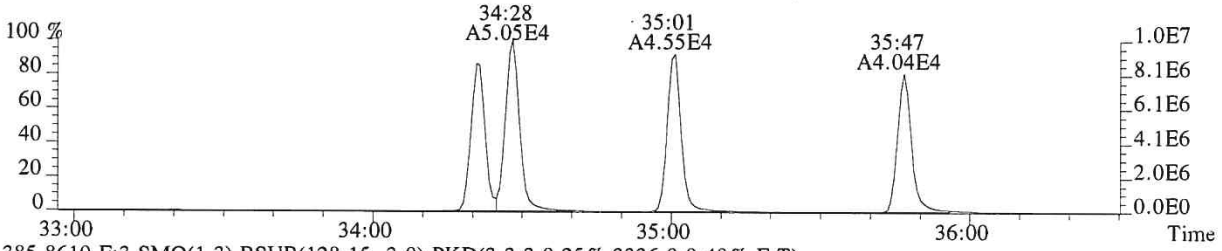
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4836.0,0.40%,F,T)



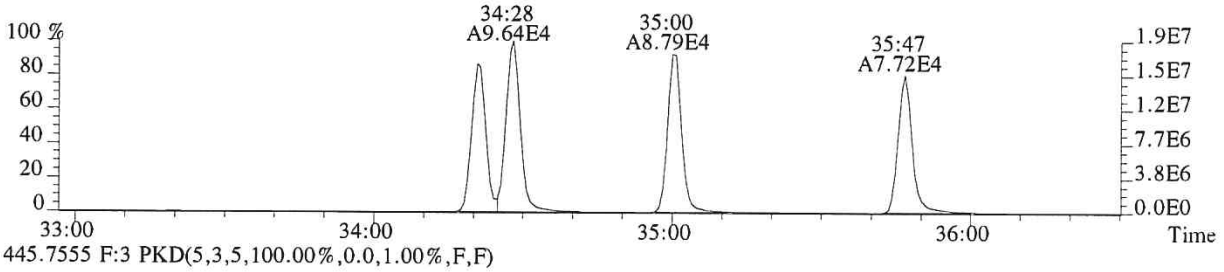
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3184.0,0.40%,F,T)



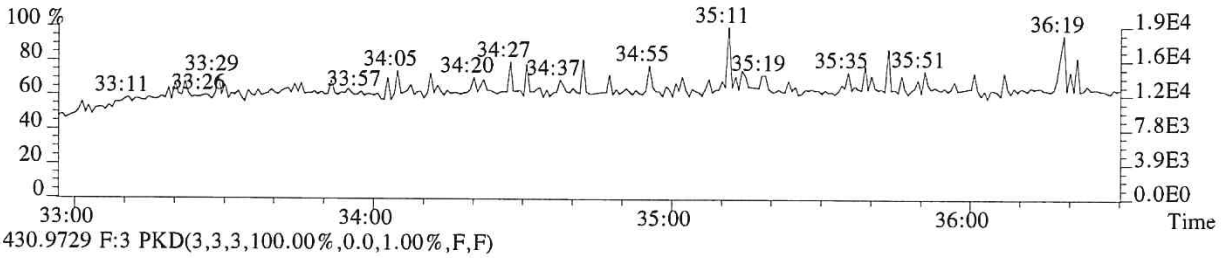
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1828.0,0.40%,F,T)



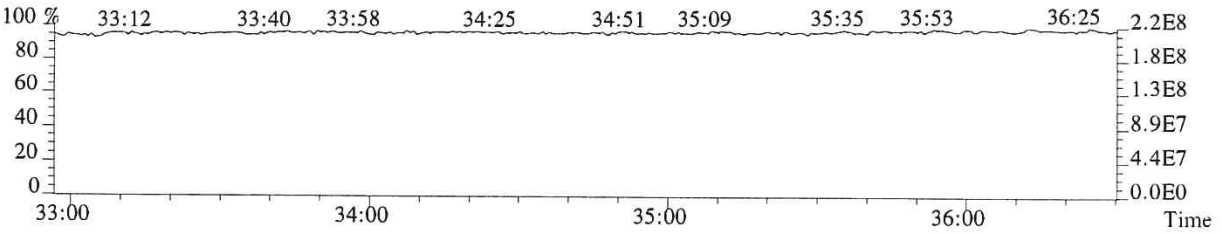
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3336.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

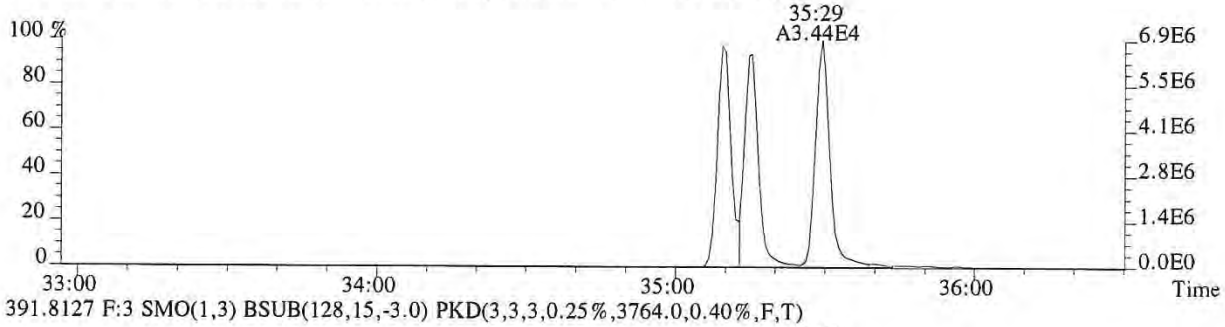


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

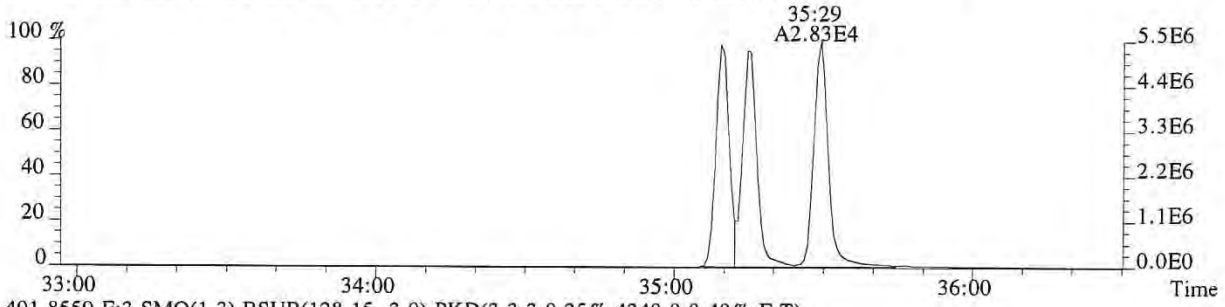


060608

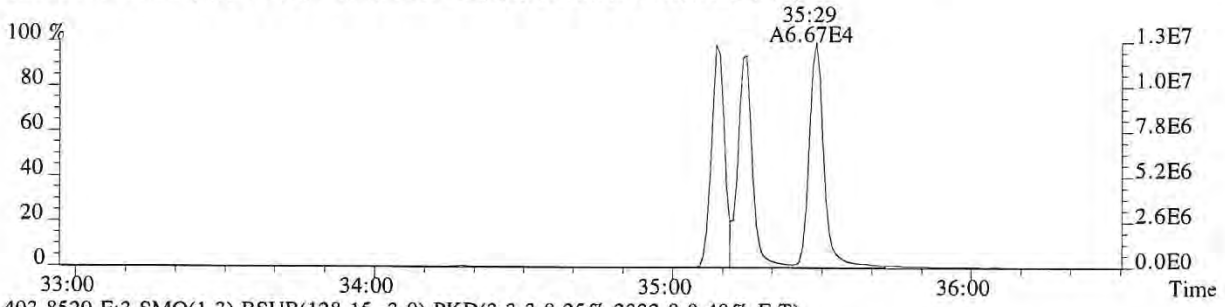
File:P616277 #1-321 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2088.0,0.40%,F,T)



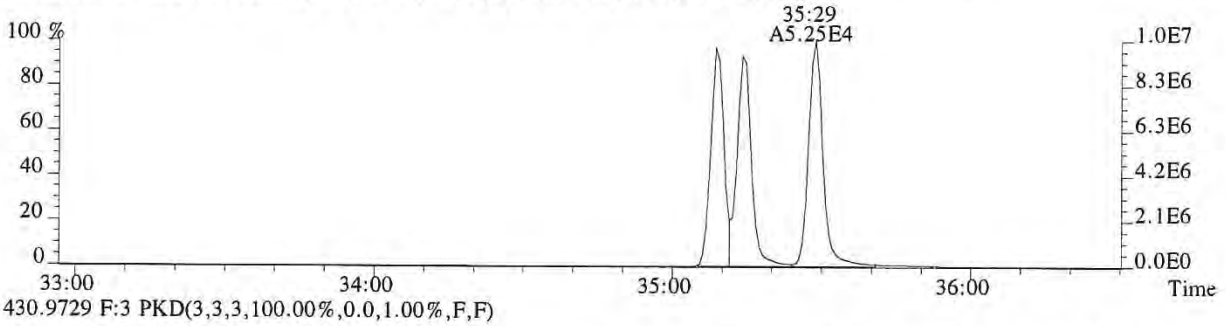
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3764.0,0.40%,F,T)



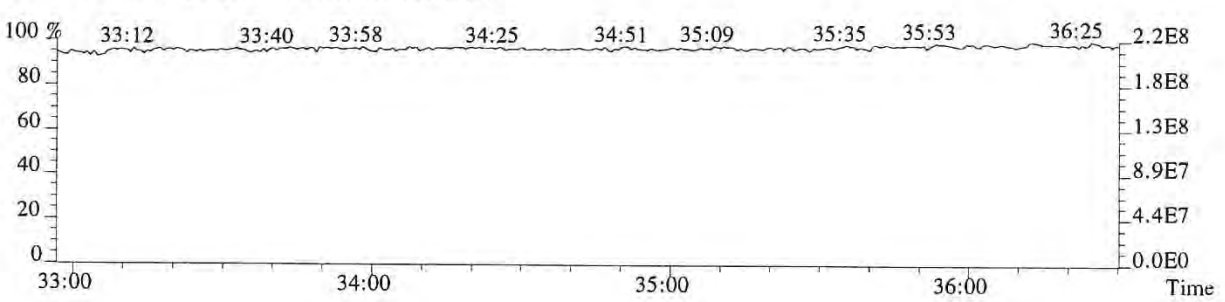
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4340.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2332.0,0.40%,F,T)



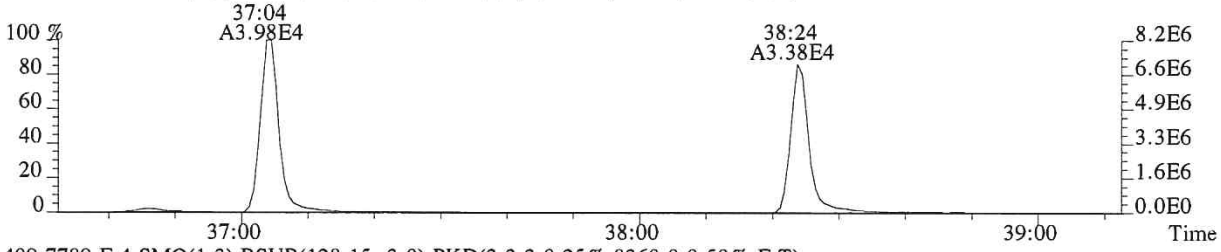
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



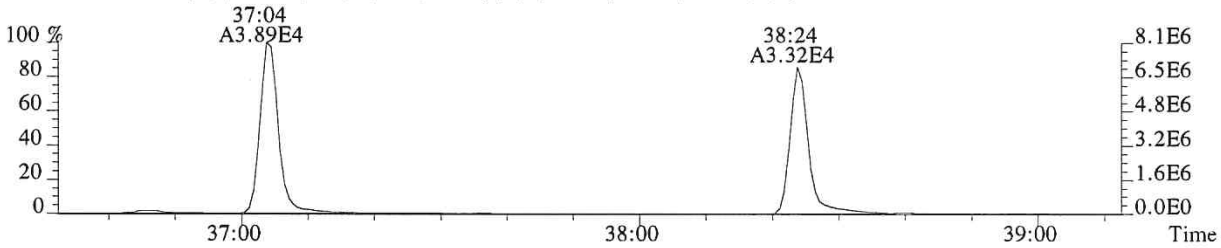
060609

File:P616277 #1-241 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

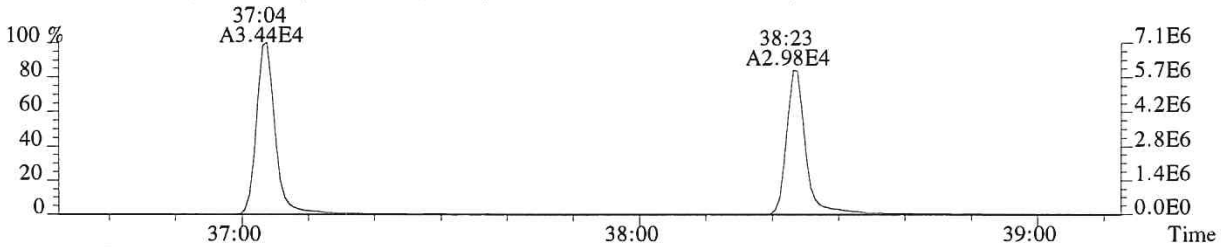
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6504.0,0.50%,F,T)



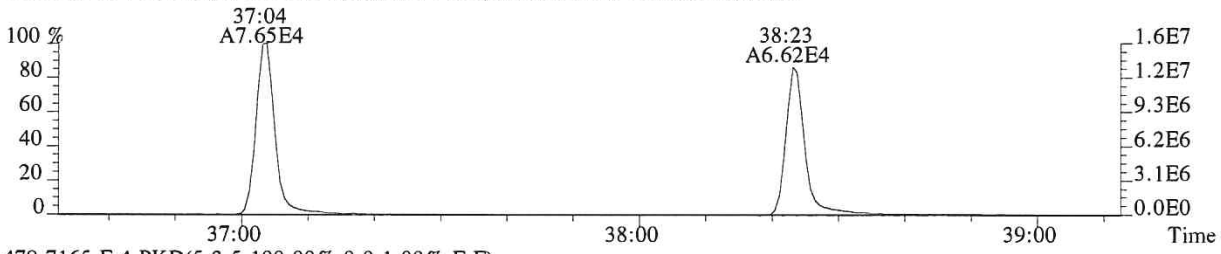
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8360.0,0.50%,F,T)



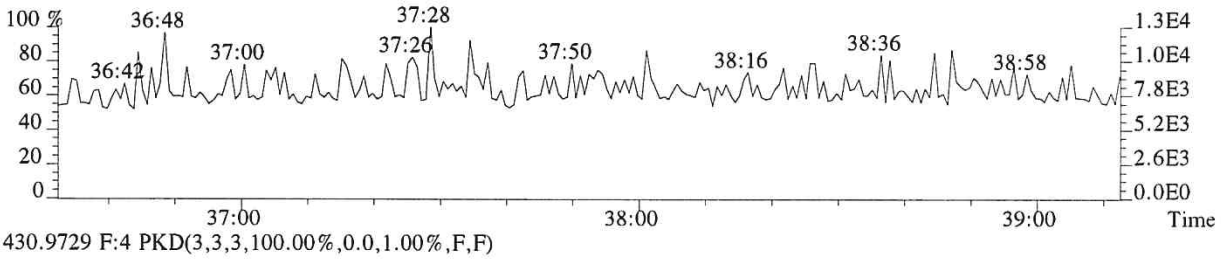
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1548.0,0.50%,F,T)



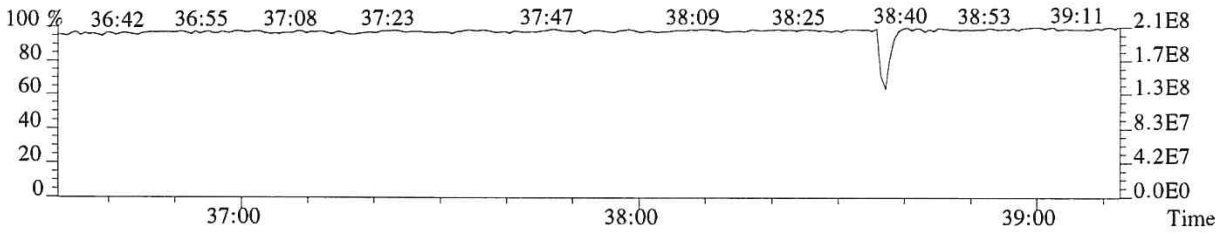
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9120.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

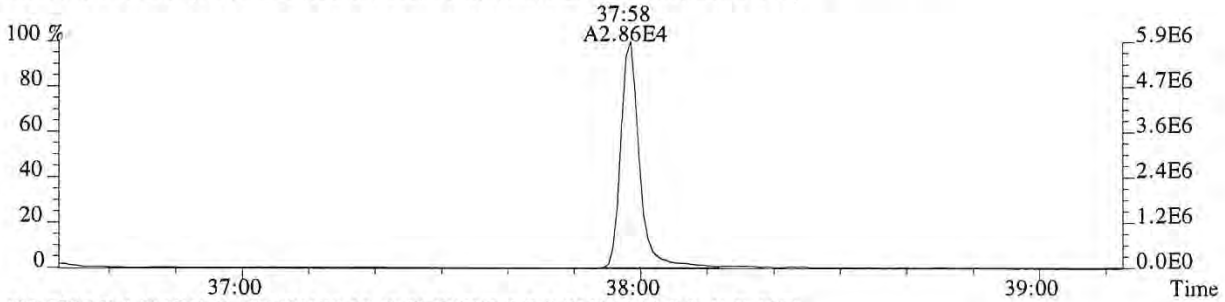


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

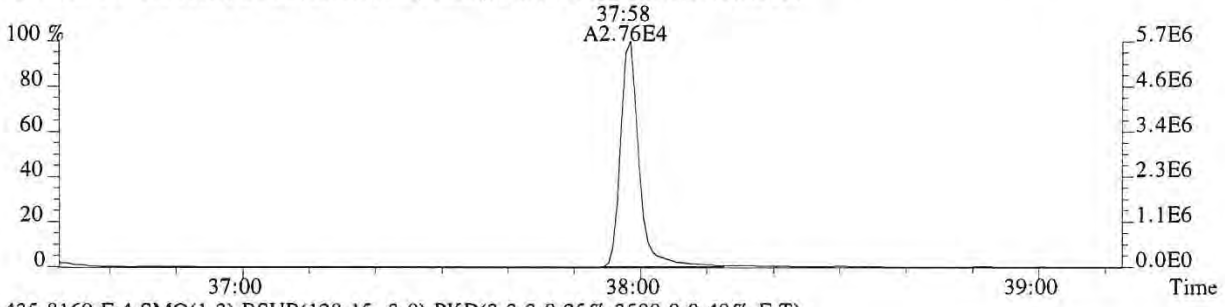


060610

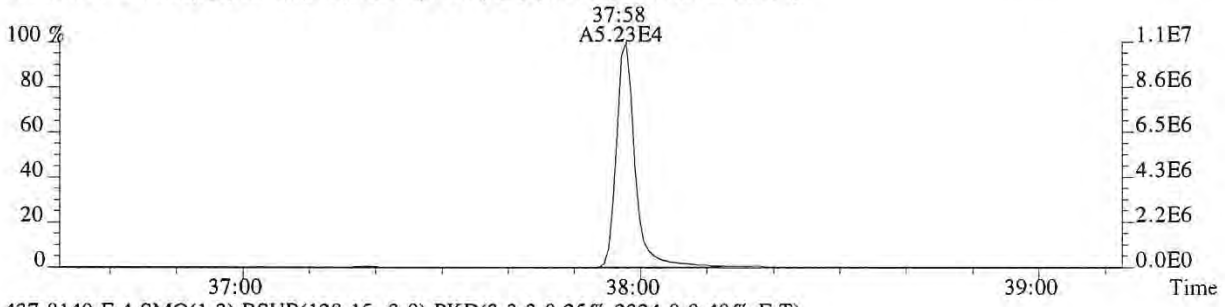
File:P616277 #1-241 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5228.0,0.40%,F,T)



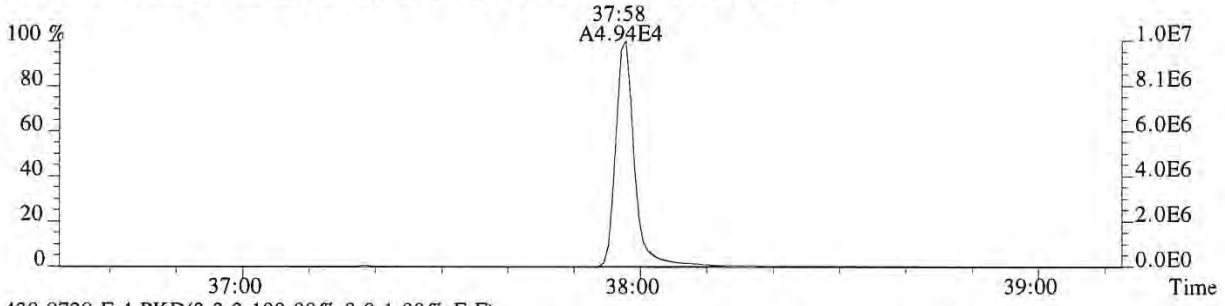
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3204.0,0.40%,F,T)



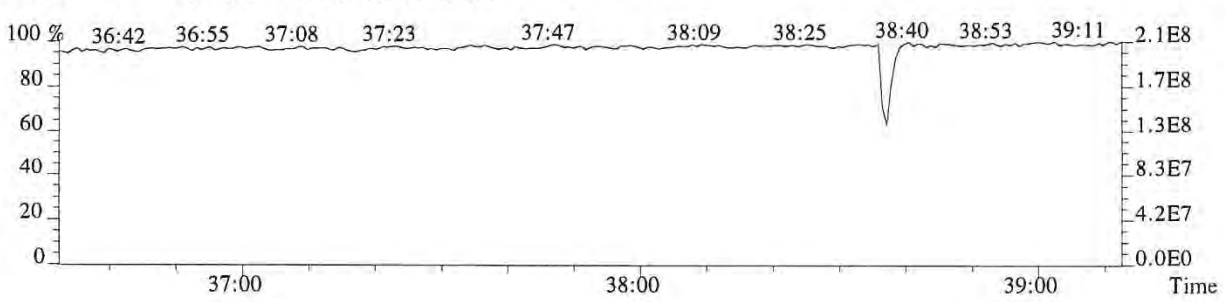
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3500.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2324.0,0.40%,F,T)

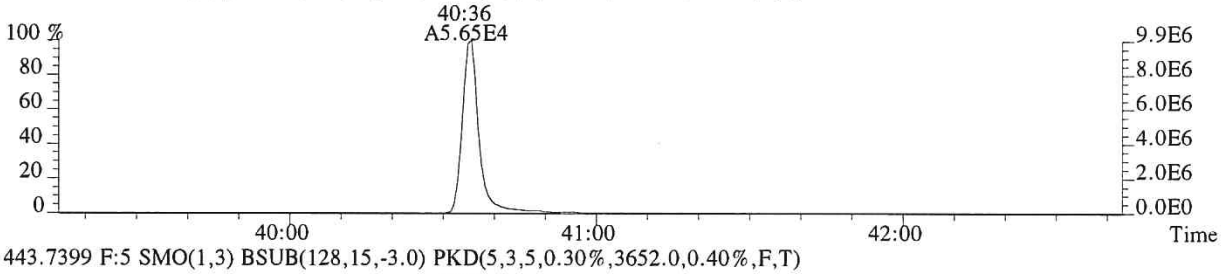


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

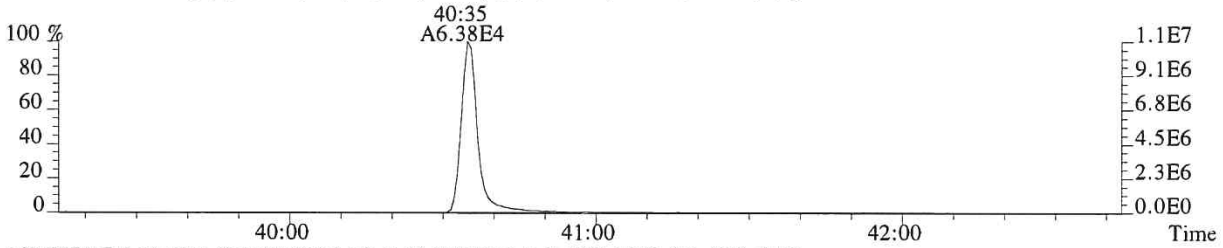


File:P616277 #1-313 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

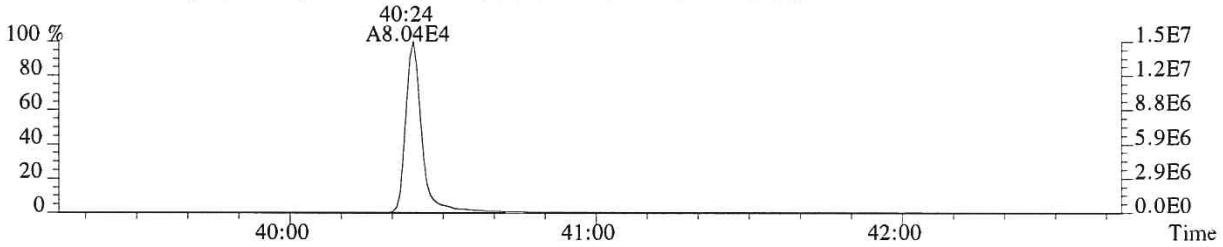
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1612.0,0.40%,F,T)



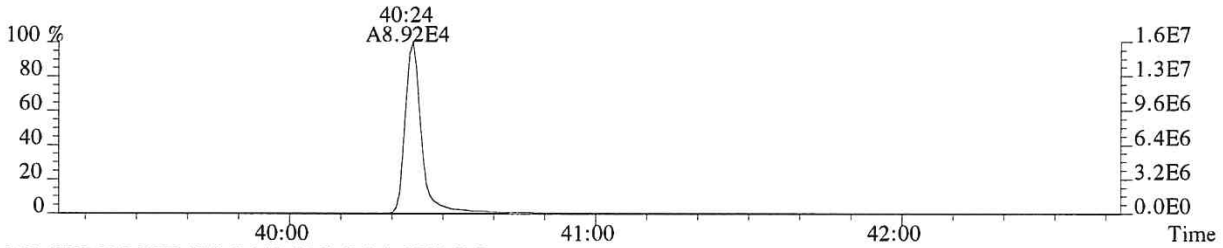
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3652.0,0.40%,F,T)



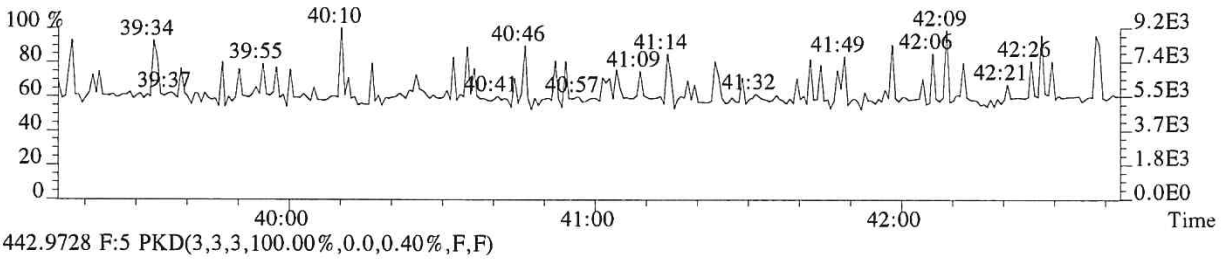
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1636.0,0.40%,F,T)



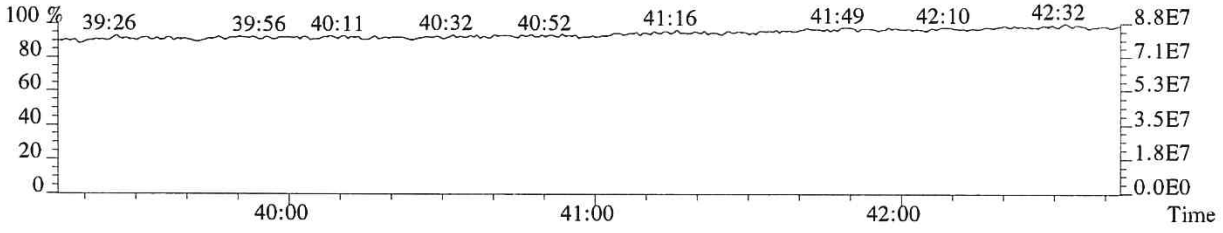
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,892.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



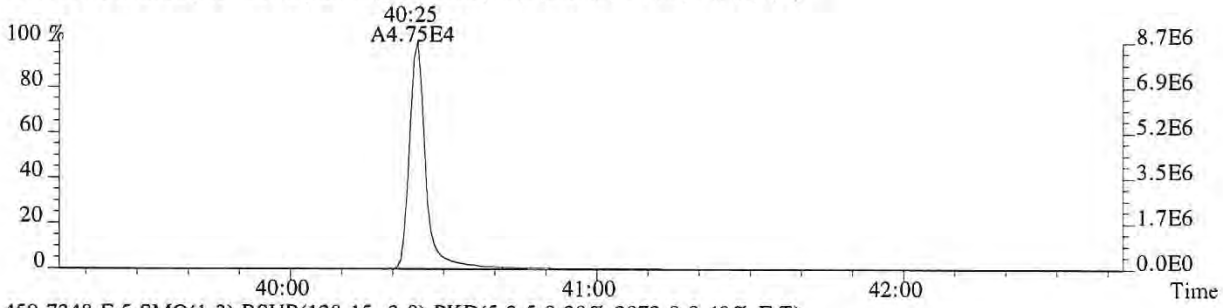
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



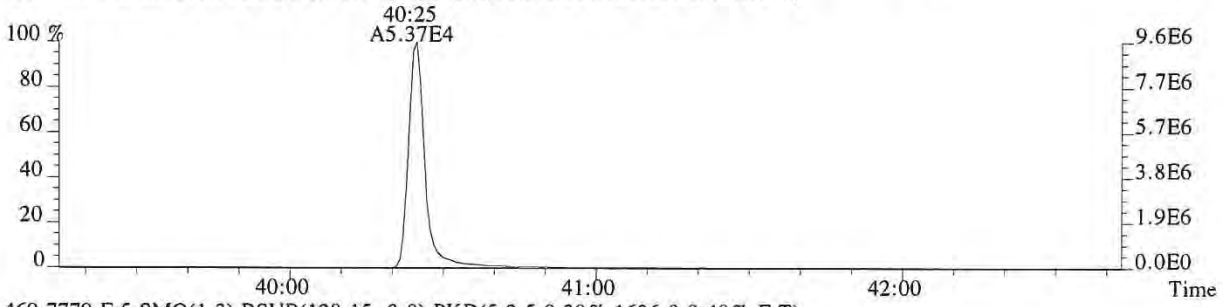
060612

File:P616277 #1-313 Acq:29-DEC-2018 13:37:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

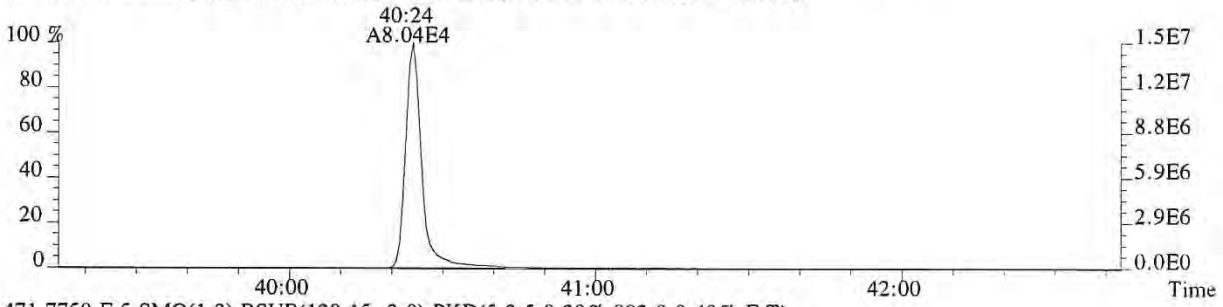
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1596.0,0.40%,F,T)



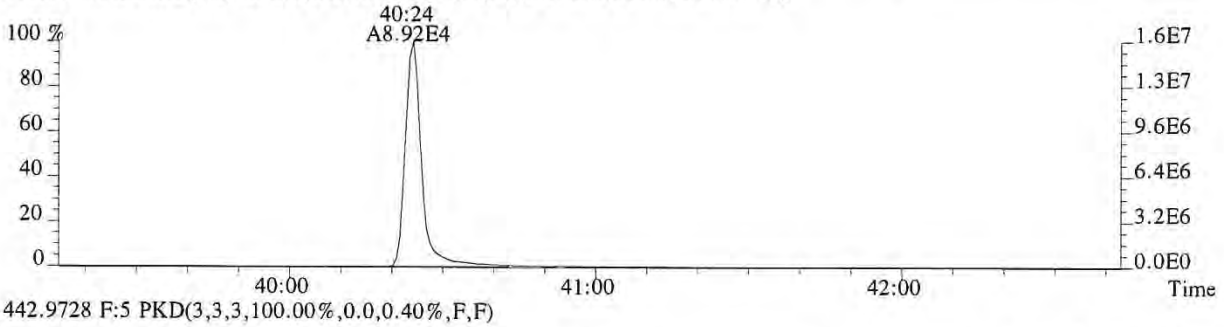
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2072.0,0.40%,F,T)



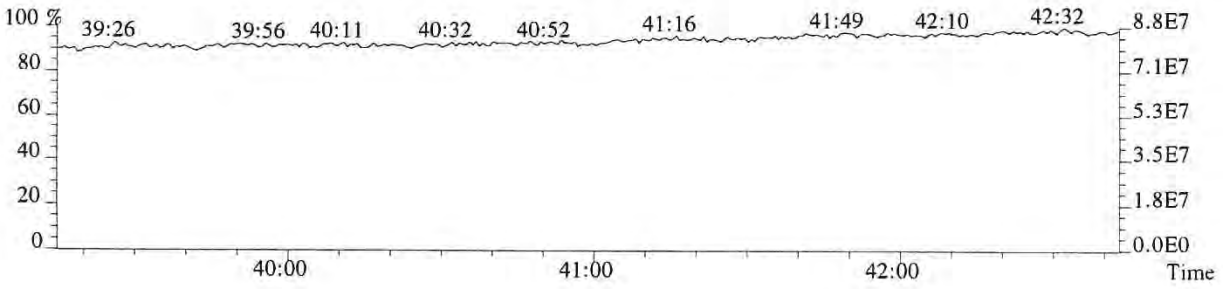
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1636.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,892.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060613

CCAL HRCC3/CS3 Daily Calibration QC Checklist

Calibration File Name: P616302

Date: 12/30/18

Circle one: (Beginning) / Ending

Method: (1613) 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: LKL Second QC: LG

ccalqc.xls 07/17/12

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 09/25/18

Init. Calib.Times: 12:13

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, AND LABORATORY CONTROL SAMPLES (LCSs) IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P616303	30-DEC-18	11:29:53
194503	CS3	P616302	30-DEC-18	10:30:56
METHOD BLANK	EQ1800506-01	P616304	30-DEC-18	12:18:13
SL0126	E1801136-015DL	P616306	30-DEC-18	13:56:24
SL0127	E1801136-016DL	P616307	30-DEC-18	14:45:31

E1801136

Sample List Report **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20181230A.SPL
Last Modified: Monday, December 31, 2018 06:49:50 Central Standard Time
Printed: Monday, December 31, 2018 06:49:52 Central Standard Time

Page Position (1, 1)

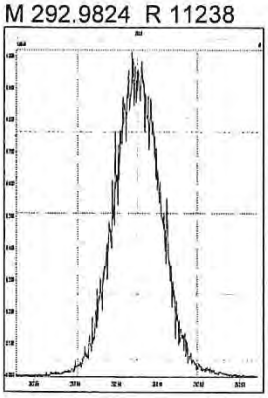
OPUS 5 NET: P616302 RES P616302 RES M23

	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	12/30/18	10:30	P616302	194503	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:2	LG	HRMS check 11:28
2		11:29	P616303	192977	WINDOW DEFINE	EPA1613_ALS	Dioxin_ALS	Tray1:1		
3		12:18	P616304	EQ1800506-01	MB	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4		13:07	P616305	EQ1800528-01	MB	EPA1613_ALS	Dioxin_ALS	Tray1:4		
5		13:56	P616306	E1801136-015DL	E1801136-015DL	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		14:43	P616307	E1801136-016DL	E1801136-016DL	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		15:34	P616308	E1801092-003	E1801092-003	EPA1613_ALS	Dioxin_ALS	Tray1:7		Needs Re-injection
8		16:23	P616309	E1801092-004	E1801092-004	EPA1613_ALS	Dioxin_ALS	Tray1:8		↓
9		17:12	P616310	E1801140-001	E1801140-001	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		18:02	P616311	E1801140-002	E1801140-002	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		18:51	P616312	EQ1800528-02	LCS	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12		19:40	P616313	EQ1800528-03	DLCS	EPA1613_ALS	Dioxin_ALS	Tray1:12		
13		20:37	P616314	194503	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:2		
14	↓	21:34	P616315	194503	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:2	↓	HRMS check 20:37
15	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:15	---	---
16	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:16	---	---
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:17	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:18	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---

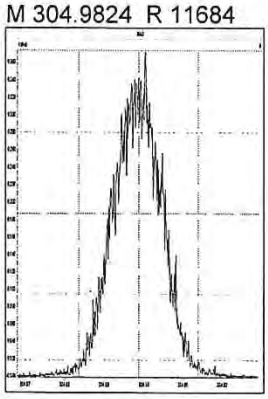
LKL 12/31/18

060616

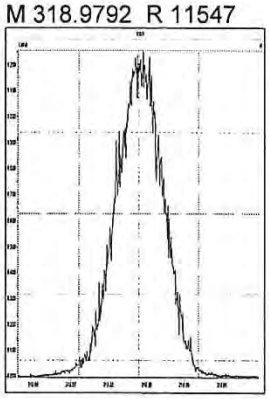
M 292.9824 R 11238



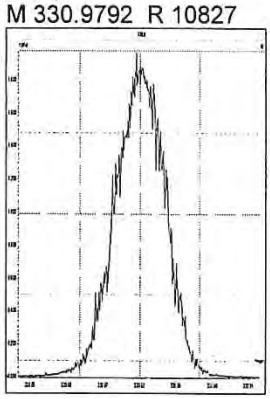
M 304.9824 R 11684



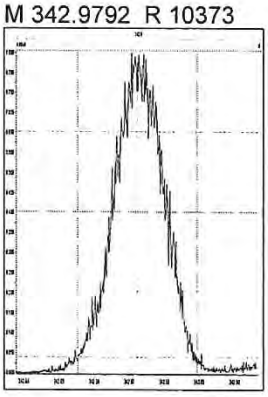
M 318.9792 R 11547



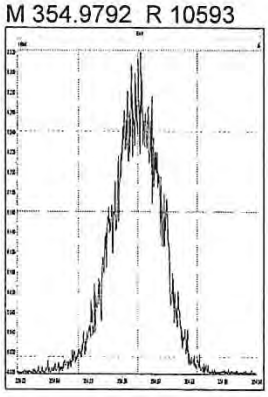
M 330.9792 R 10827



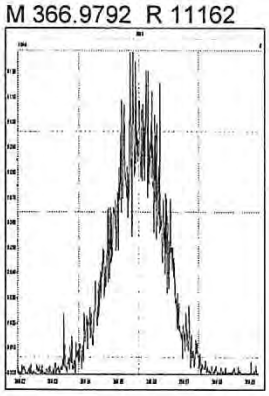
M 342.9792 R 10373



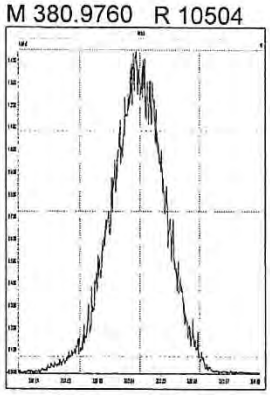
M 354.9792 R 10593



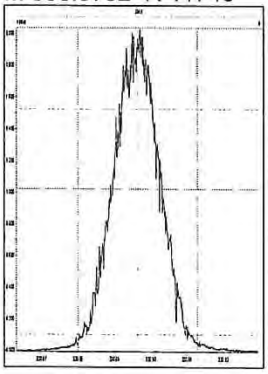
M 366.9792 R 11162



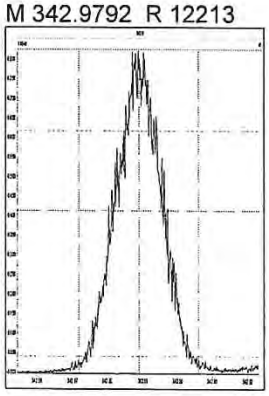
M 380.9760 R 10504



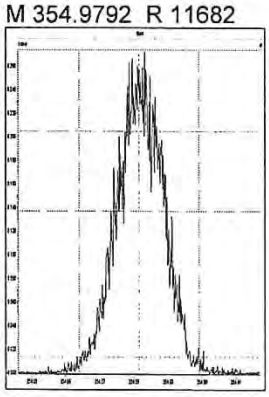
M 330.9792 R 11740



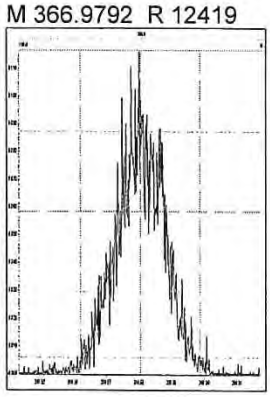
M 342.9792 R 12213



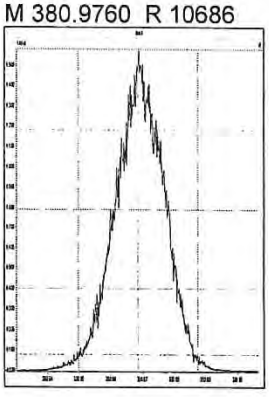
M 354.9792 R 11682



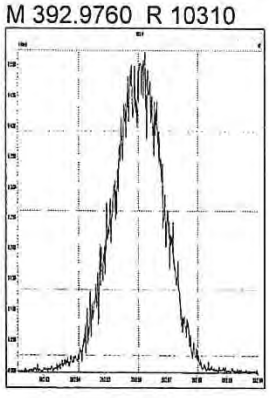
M 366.9792 R 12419



M 380.9760 R 10686



M 392.9760 R 10310



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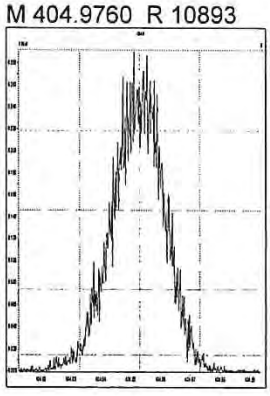
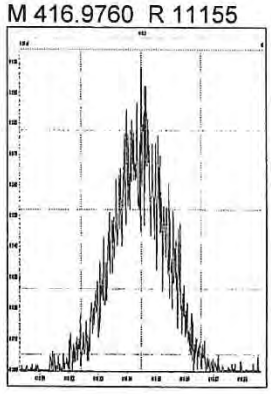


M 416.9760 R 11155



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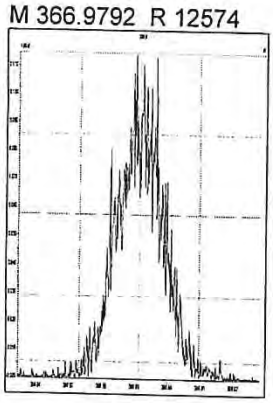
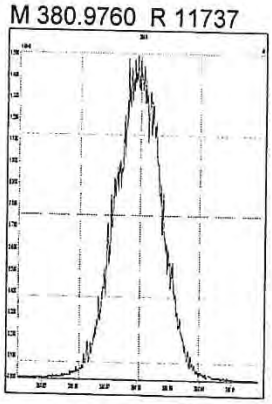
M 366.9792 R 12574



M 380.9760 R 11737



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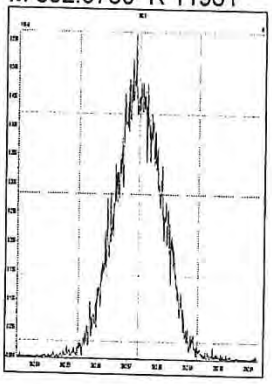
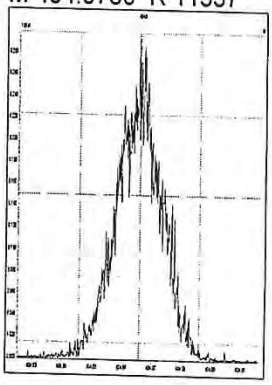
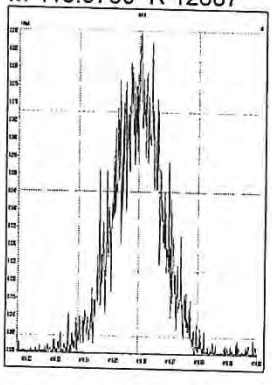


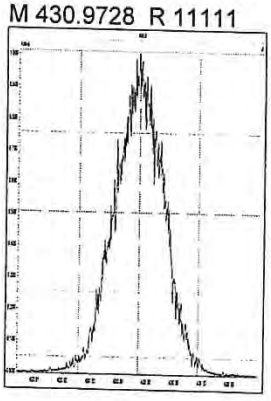
M 404.9760 R 11557



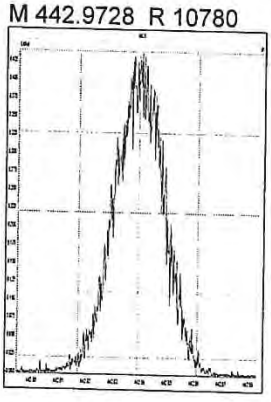
M 416.9760 R 12687



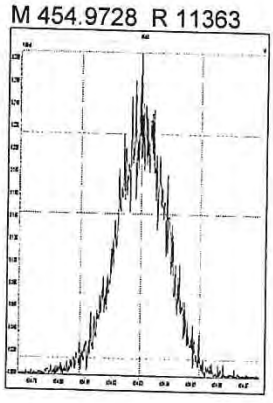
M 430.9728 R 11111



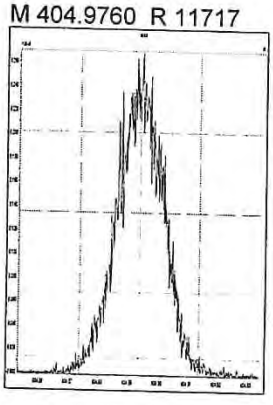
M 442.9728 R 10780



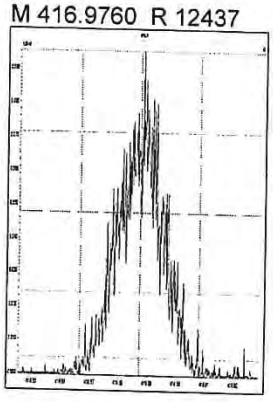
M 454.9728 R 11363



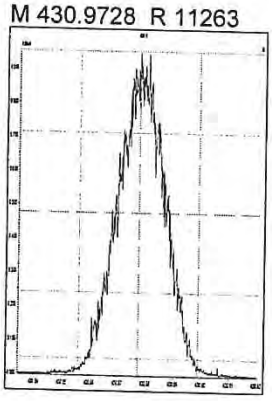
M 404.9760 R 11717



M 416.9760 R 12437



M 430.9728 R 11263



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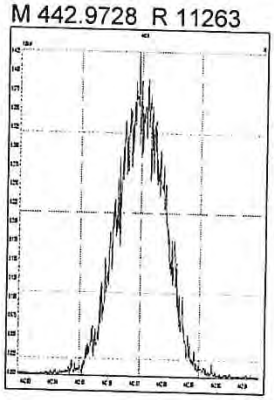
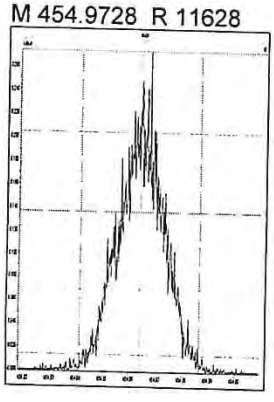
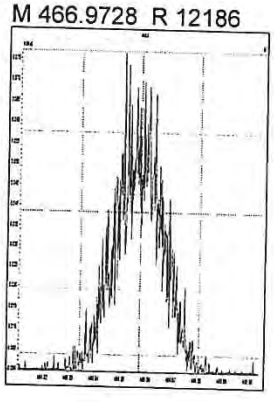


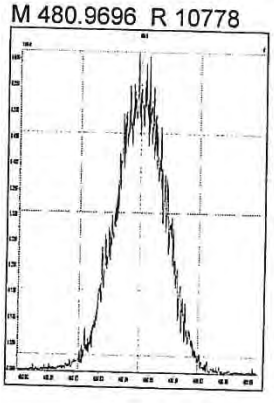
M 454.9728 R 11628



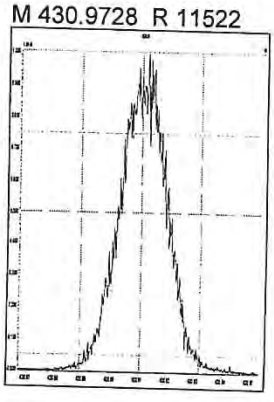
M 466.9728 R 12186



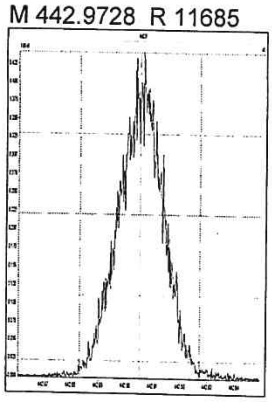
M 480.9696 R 10778



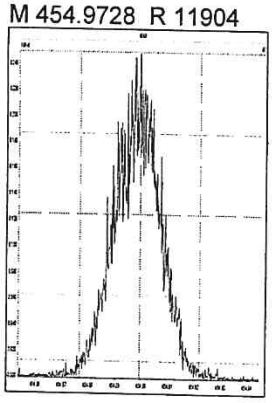
M 430.9728 R 11522



M 442.9728 R 11685



M 454.9728 R 11904



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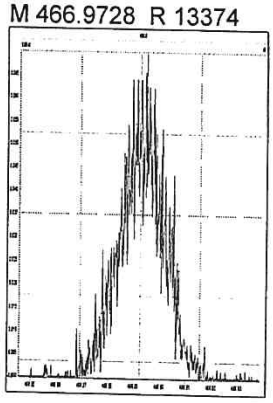
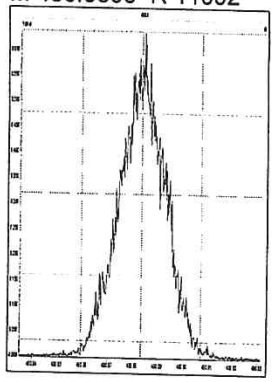
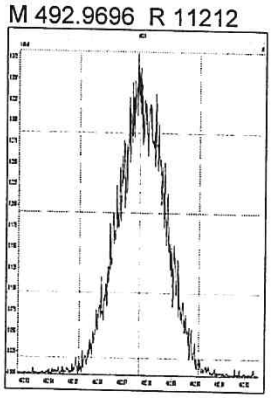


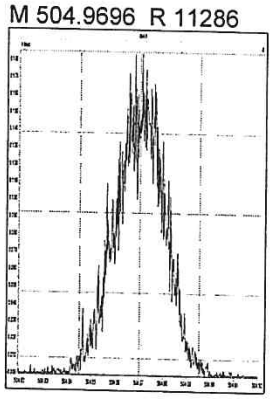
M 480.9696 R 11092



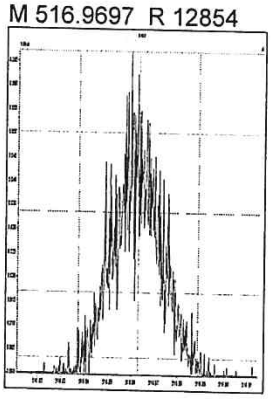
M 492.9696 R 11212



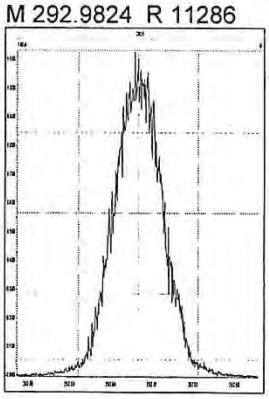
M 504.9696 R 11286



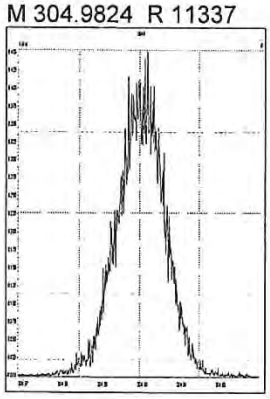
M 516.9697 R 12854



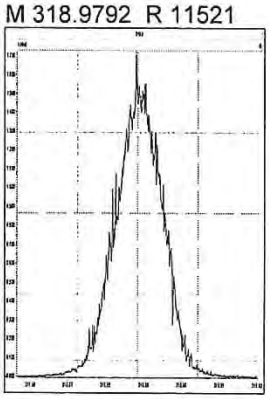
M 292.9824 R 11286



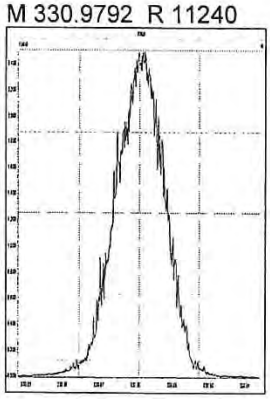
M 304.9824 R 11337



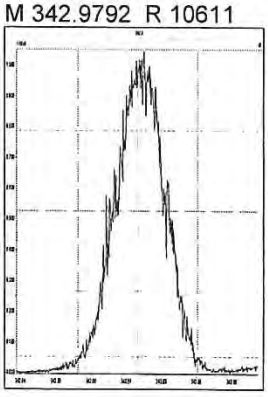
M 318.9792 R 11521



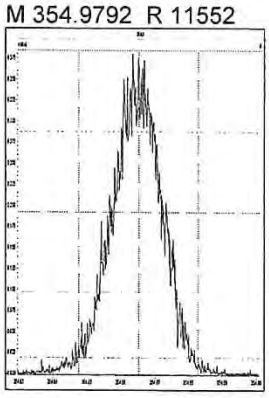
M 330.9792 R 11240



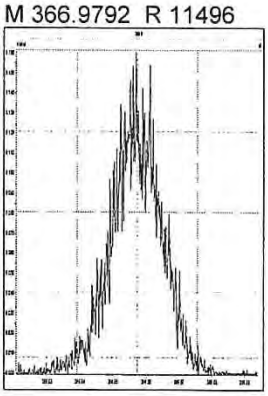
M 342.9792 R 10611



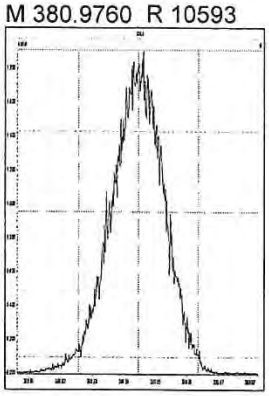
M 354.9792 R 11552



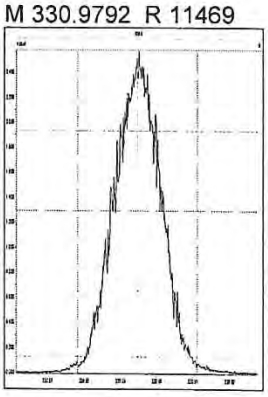
M 366.9792 R 11496



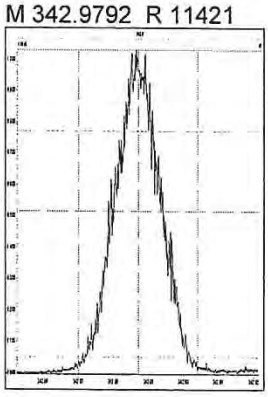
M 380.9760 R 10593



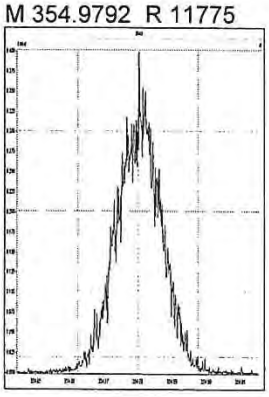
M 330.9792 R 11469



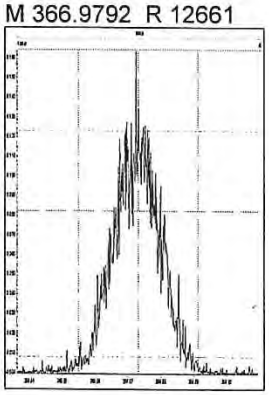
M 342.9792 R 11421



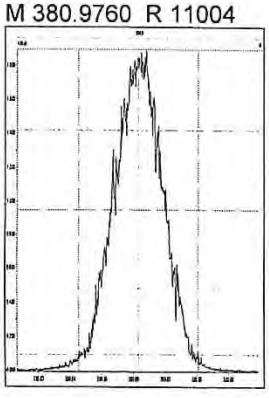
M 354.9792 R 11775



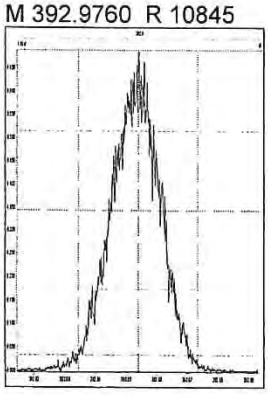
M 366.9792 R 12661



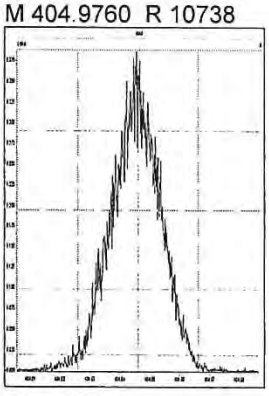
M 380.9760 R 11004



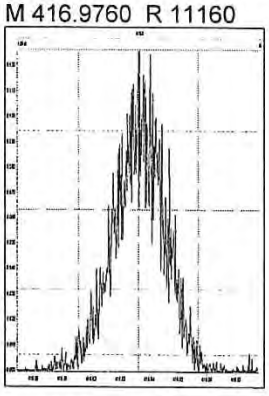
M 392.9760 R 10845



M 404.9760 R 10738

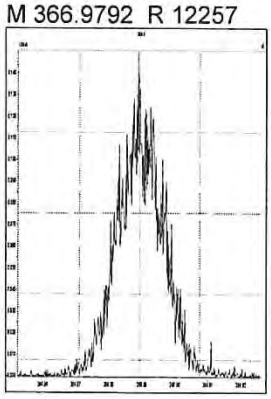


M 416.9760 R 11160

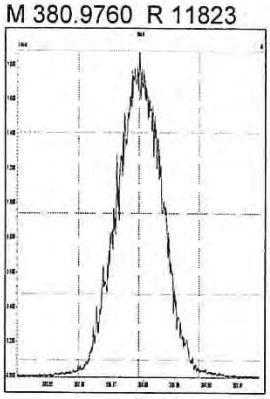


060620

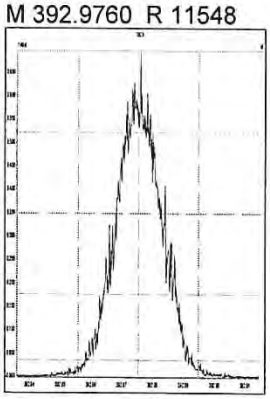
M 366.9792 R 12257



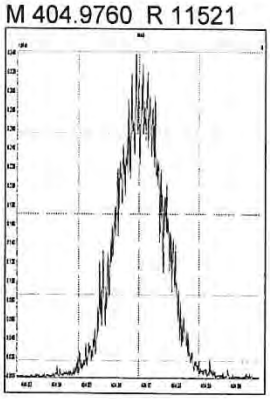
M 380.9760 R 11823



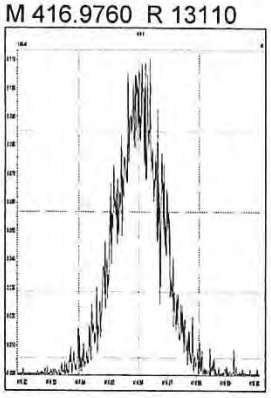
M 392.9760 R 11548



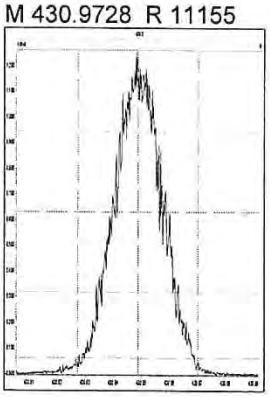
M 404.9760 R 11521



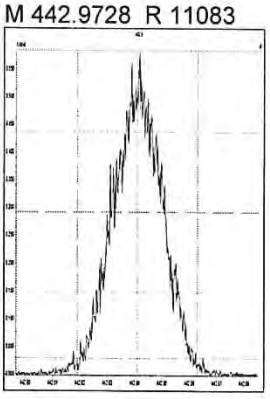
M 416.9760 R 13110



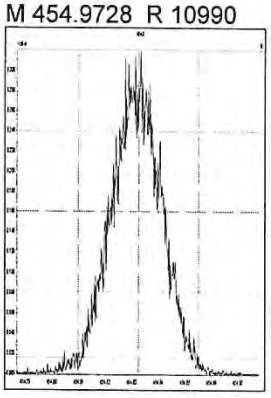
M 430.9728 R 11155



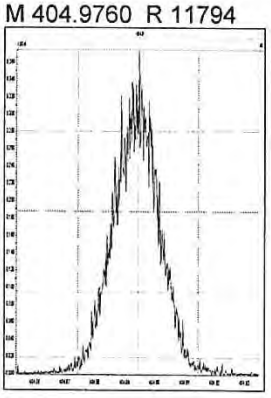
M 442.9728 R 11083



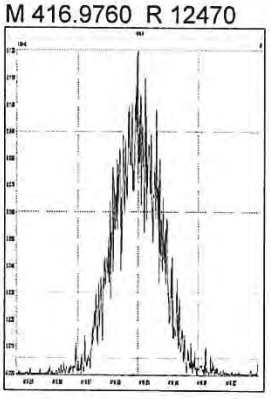
M 454.9728 R 10990



M 404.9760 R 11794



M 416.9760 R 12470



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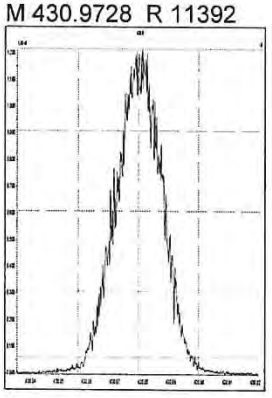
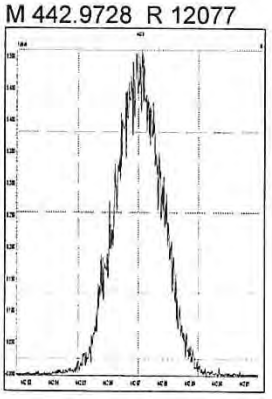


M 442.9728 R 12077



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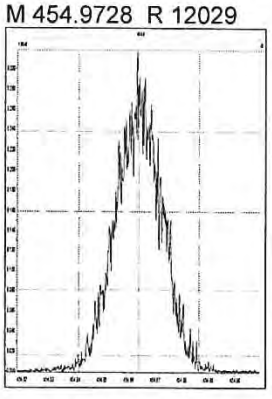

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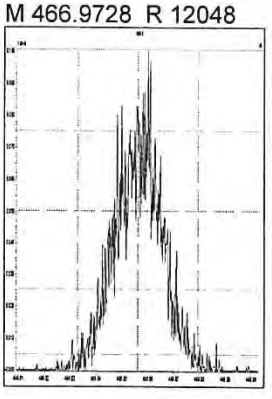
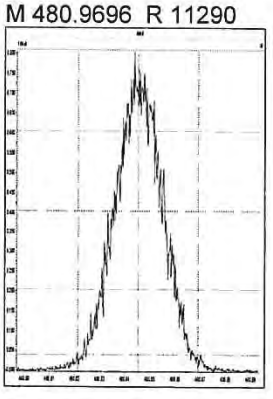
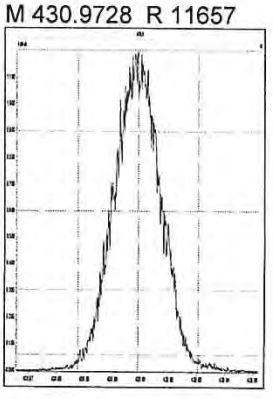


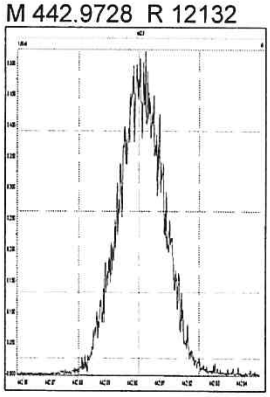
M 480.9696 R 11290



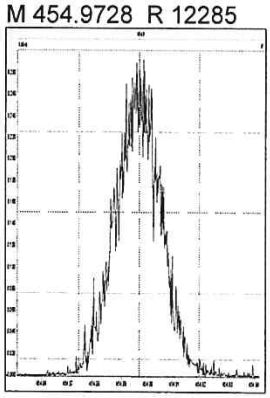
M 430.9728 R 11657



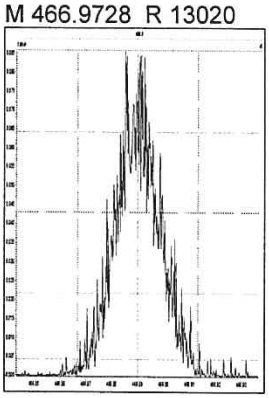
M 442.9728 R 12132



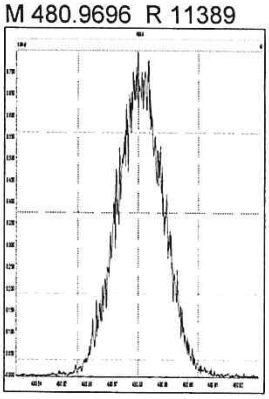
M 454.9728 R 12285



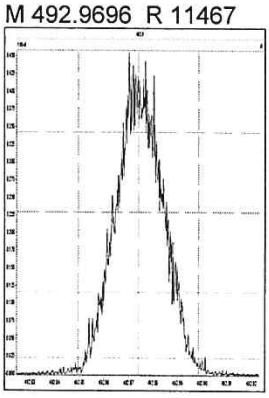
M 466.9728 R 13020



M 480.9696 R 11389



M 492.9696 R 11467



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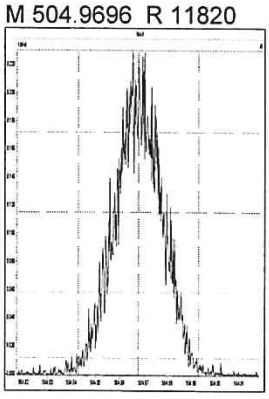

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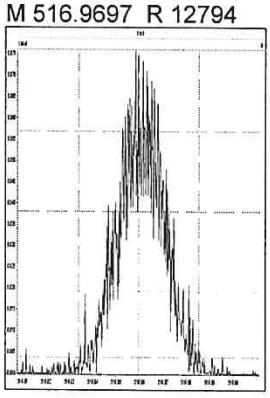


5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

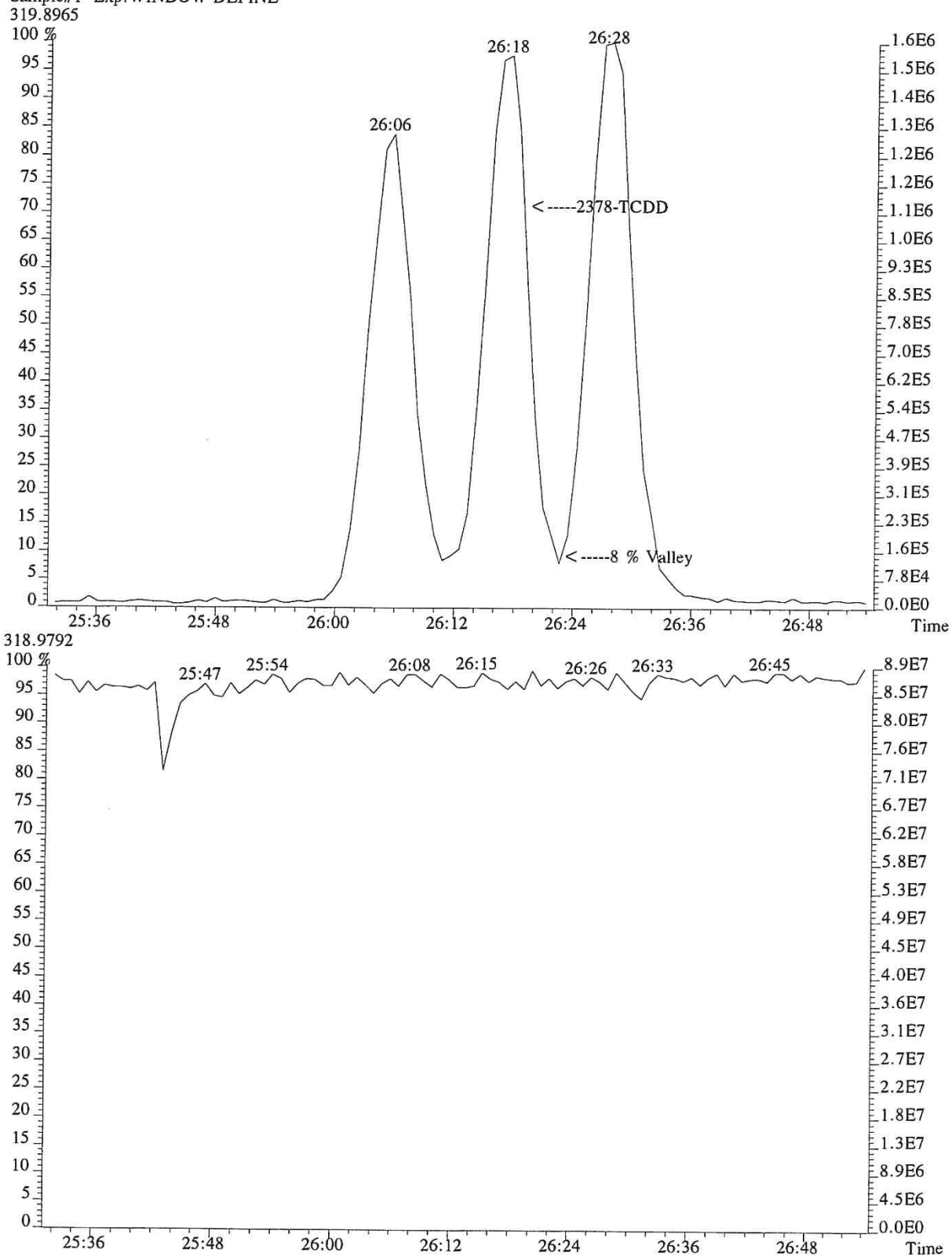
Case No.: _____ SDG No.:
ID: 0.25 (mm)
Lab File ID: P616303
Date Analyzed: 30-DEC-18
Time Analyzed: 11:29:53

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	20:58	27:44
TCDD	22:33	27:33
PeCDF	27:40	32:29
PeCDD	29:29	32:13
HxCDF	33:11	35:49
HxCDD	33:45	35:25
HpCDF	37:04	38:24
HpCDD	37:19	37:58

% Valley 2378-TCDD: 8 %

060623

File:P616303 #1-587 Acq:30-DEC-2018 11:29:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE



060624

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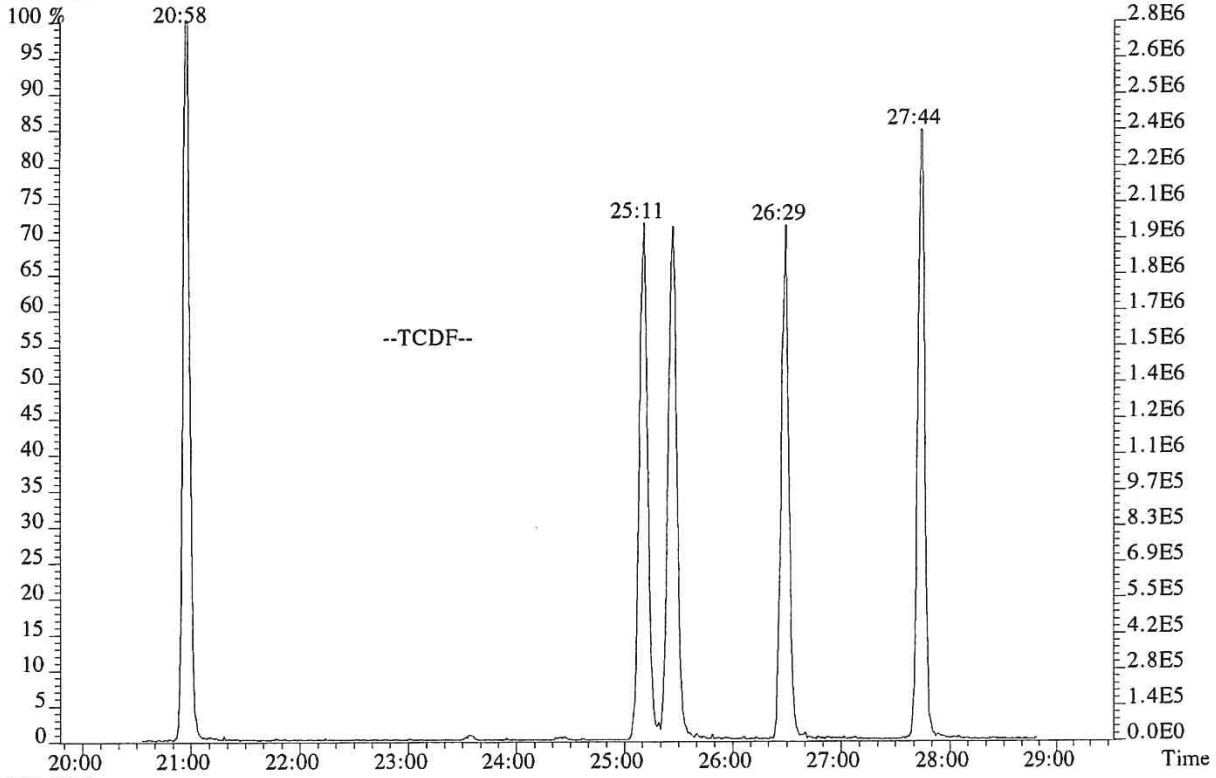
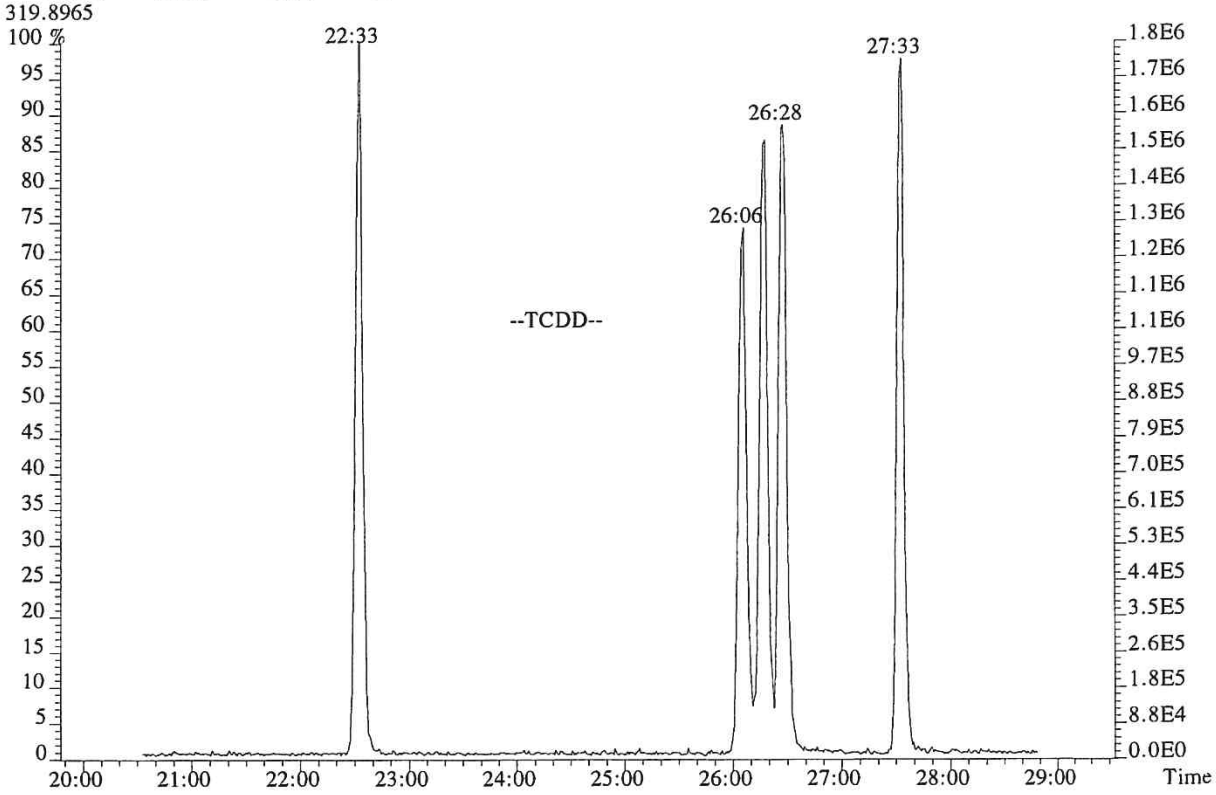
Sample#1 Exp:WINDOW DEFINE

303.9016



319.8965



060625

File:P616303 #1-587 Acq:30-DEC-2018 11:29:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
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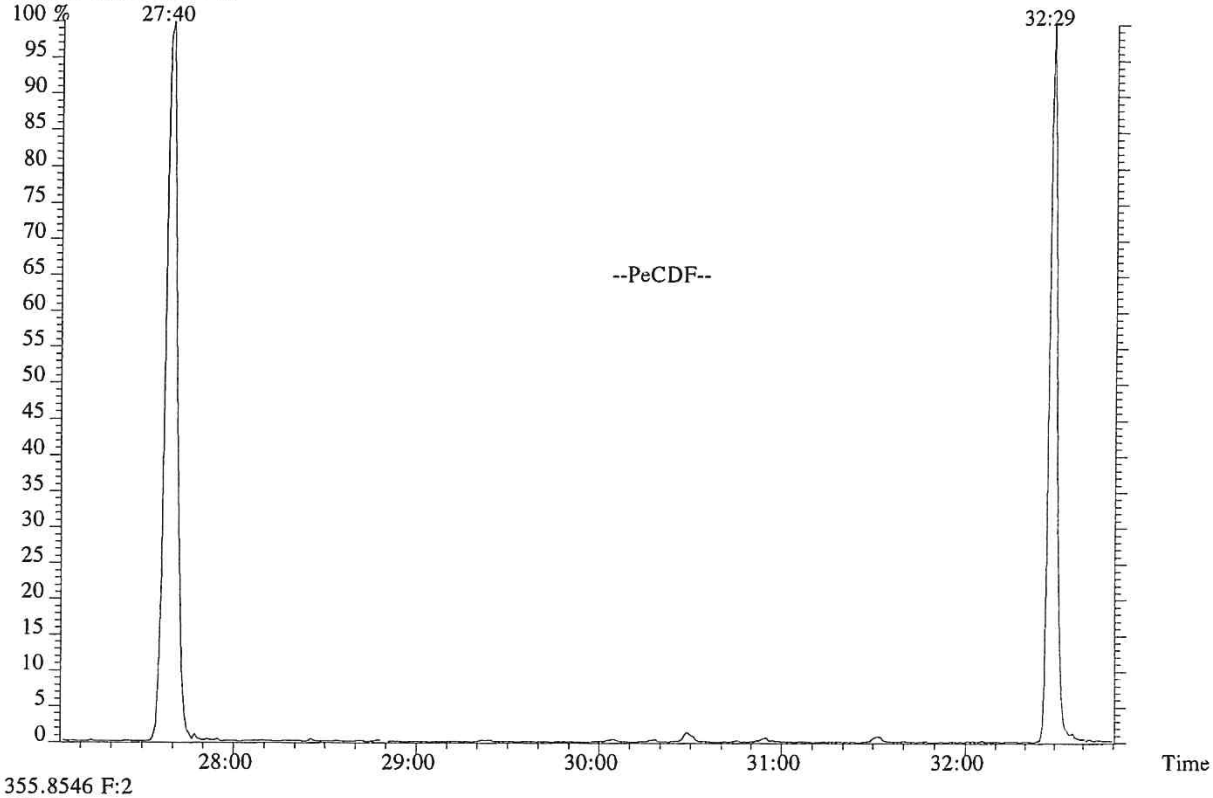
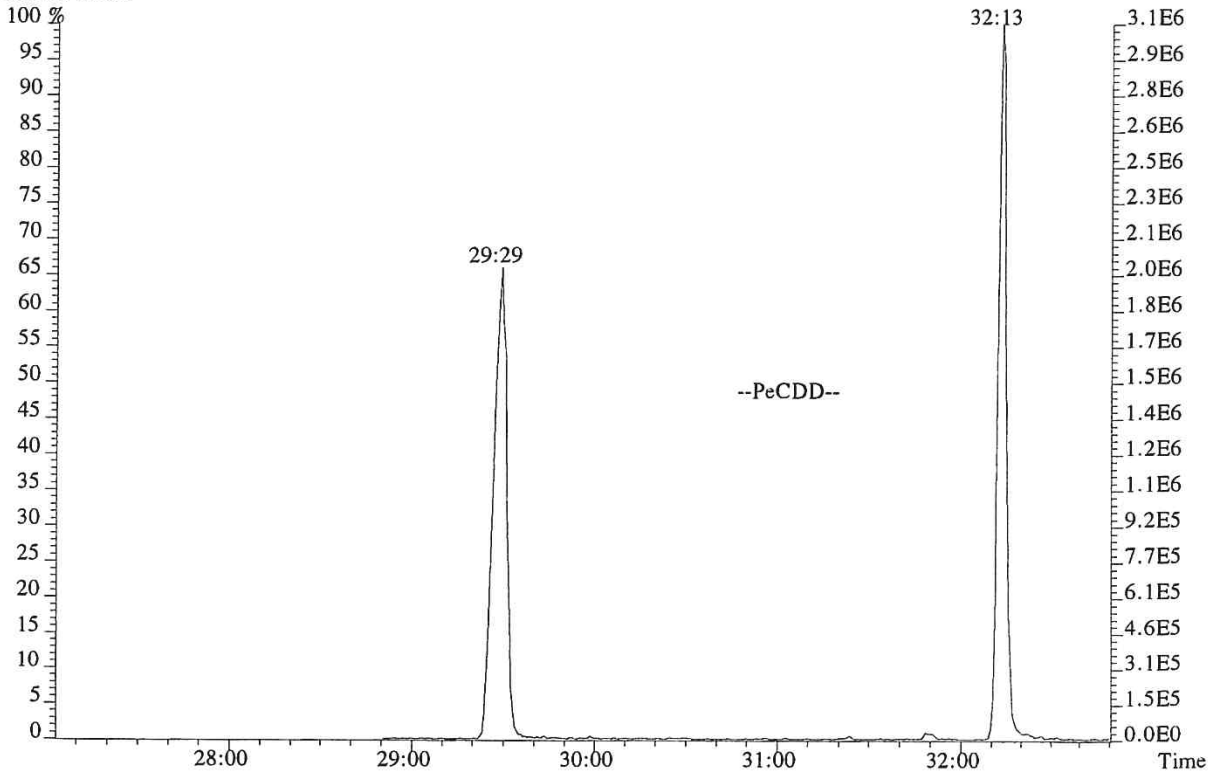
339.8597,339.8597 F:2



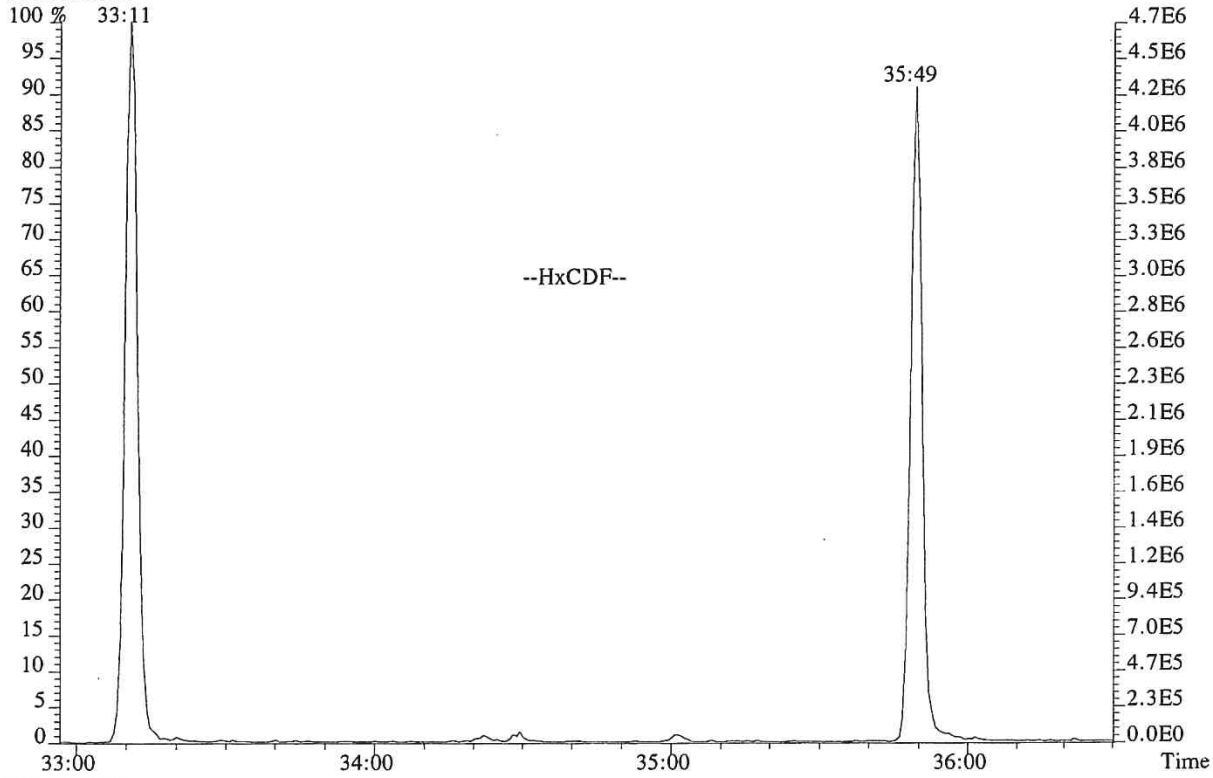
355.8546 F:2



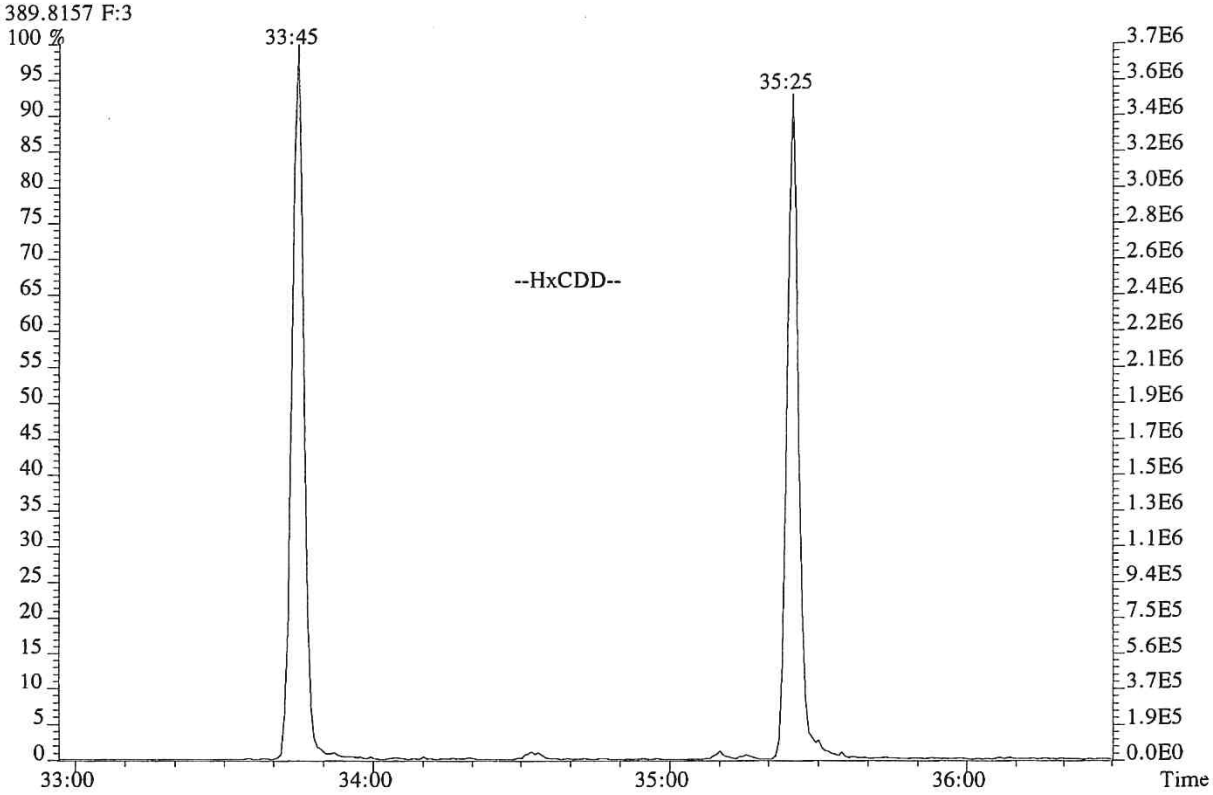
060626

File:P616303 #1-587 Acq:30-DEC-2018 11:29:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE

373.8208 F:3

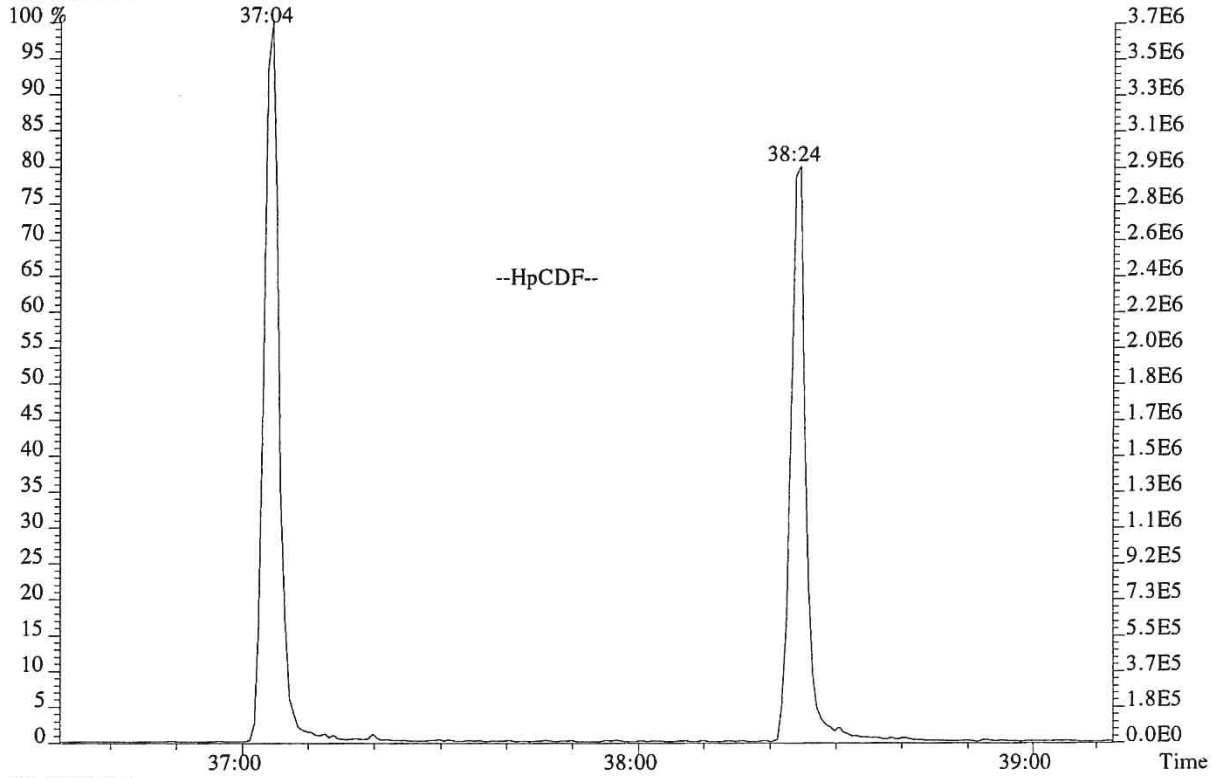


389.8157 F:3

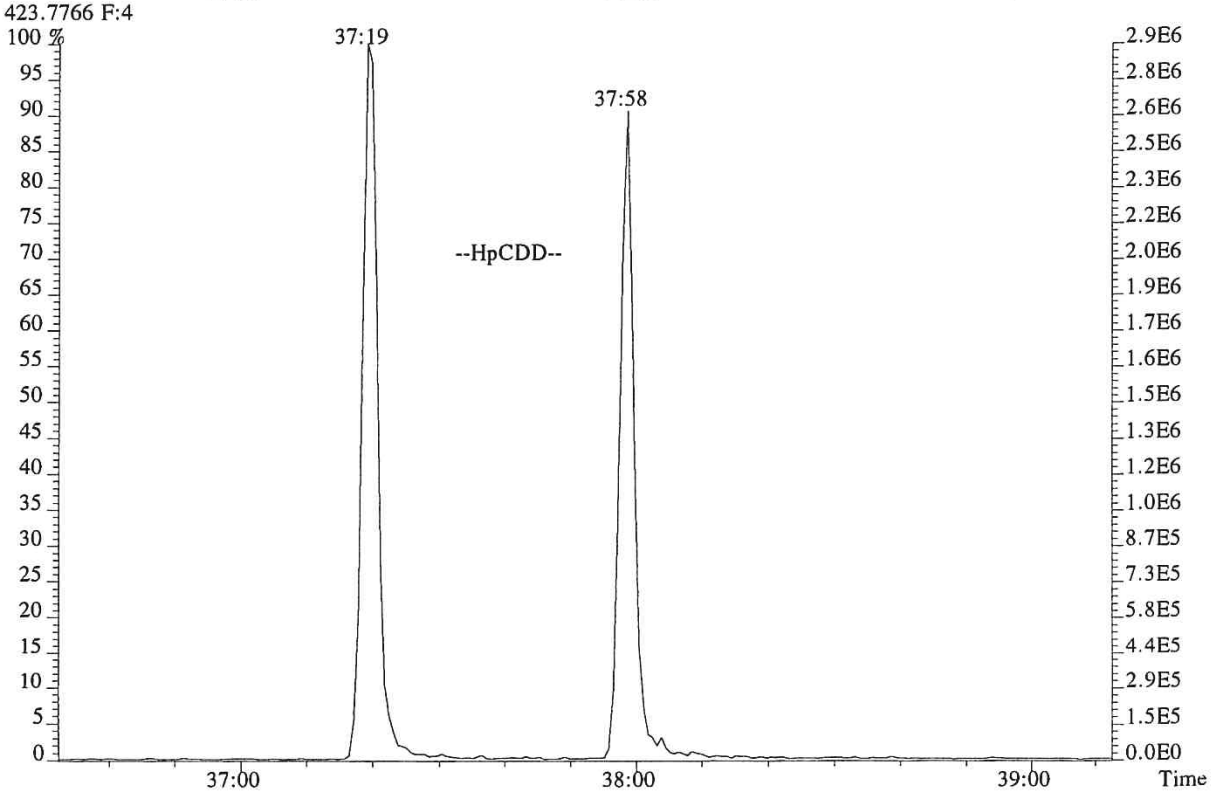


060627

File:P616303 #1-587 Acq:30-DEC-2018 11:29:53 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
407.7818 F:4



423.7766 F:4



060628

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P616302 Analysis Date: 30-DEC-18 Time: 10:30:56

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	9.9	7.8 - 12.9	-1.1
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32-1.78	53	39 - 65	6.5
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	51	39 - 64	2.1
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	52	39 - 64	4.6
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	53	41 - 61	6.3
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	50	43 - 58	-0.6
OCDD	M+2/M+4	0.89	0.76-1.02	106	79 - 126	6.0
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.7	8.4 - 12.0	-3.1
1,2,3,7,8-PeCDF	M+2/M+4	1.53	1.32-1.78	47	41 - 60	-5.9
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	47	41 - 61	-6.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	46	45 - 56	-7.5
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	47	44 - 57	-5.2
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	49	45 - 56	-1.8
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	48	44 - 57	-3.6
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	48	45 - 55	-3.9
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	49	43 - 58	-1.2
OCDF	M+2/M+4	0.91	0.76-1.02	89	63 - 159	-11.4

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P616302 Analysis Date: 30-DEC-18 Time: 10:30:56

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	103	82 - 121	3.4
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	101	62 - 160	1.2
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	100	85 - 117	-0.3
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	100	85 - 118	-0.2
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	92	72 - 138	-7.9
13C-OCDD	M+2/M+4	0.89	0.76-1.02	146	96 - 415	-26.9
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	98	71 - 140	-2.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	99	76 - 130	-1.3
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	101	77 - 130	1.3
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	96	76 - 131	-4.1
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	94	70 - 143	-6.1
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	92	74 - 135	-8.2
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	94	73 - 137	-6.2
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37-0.51	85	78 - 129	-14.7
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	77	77 - 129	-22.6
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			10.3	7.8 - 12.7	3.1

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
194503

Run #7 Filename P616302 Samp: 1 Inj: 1 Acquired: 30-DEC-18 10:30:56
Processed: 31-DEC-18 11:24:16 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:26	6.900e+03	8.933e+03	0.77	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:29	5.633e+04	3.686e+04	1.53	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:31	5.502e+04	3.481e+04	1.58	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:22	4.802e+04	3.831e+04	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	5.018e+04	4.097e+04	1.22	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:01	4.756e+04	3.831e+04	1.24	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:48	4.416e+04	3.521e+04	1.25	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:04	3.845e+04	3.772e+04	1.02	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	3.081e+04	2.936e+04	1.05	yes	no	1.463
10	Unk	OCDF	40:36	3.787e+04	4.167e+04	0.91	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:27	5.034e+03	6.430e+03	0.78	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:50	3.713e+04	2.415e+04	1.54	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:10	3.261e+04	2.573e+04	1.27	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:15	3.298e+04	2.628e+04	1.26	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:30	3.643e+04	2.859e+04	1.27	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:59	2.652e+04	2.526e+04	1.05	yes	no	1.112
17	Unk	OCDD	40:26	3.298e+04	3.711e+04	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:24	6.665e+04	8.446e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:28	1.054e+05	6.594e+04	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:30	1.062e+05	6.691e+04	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:21	4.569e+04	8.618e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:29	5.062e+04	9.809e+04	0.52	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	4.812e+04	9.095e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	4.231e+04	8.083e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	3.205e+04	7.204e+04	0.44	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	2.525e+04	5.800e+04	0.44	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:26	4.854e+04	6.198e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:48	7.538e+04	4.848e+04	1.55	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	5.982e+04	4.690e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	5.975e+04	4.716e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	4.806e+04	4.561e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:25	5.381e+04	6.045e+04	0.89	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:40	4.815e+04	6.063e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	6.633e+04	5.227e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:27	1.218e+04				no	1.086

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Signal/Noise Height Ratio Summary CLIENT ID.
194503

Run #7 Filename P616302 Samp: 1 Inj: 1 Acquired: 30-DEC-18 10:30:56
Processed: 31-DEC-18 11:24:16 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	9.77e+05	1.18e+03	8.3e+02	1.30e+06	1.97e+03	6.6e+02
2	1,2,3,7,8-PeCDF	1.01e+07	9.00e+02	1.1e+04	6.55e+06	2.88e+03	2.3e+03
3	2,3,4,7,8-PeCDF	1.04e+07	9.00e+02	1.2e+04	6.57e+06	2.88e+03	2.3e+03
4	1,2,3,4,7,8-HxCDF	1.04e+07	1.73e+03	6.0e+03	8.37e+06	1.20e+03	7.0e+03
5	1,2,3,6,7,8-HxCDF	1.08e+07	1.73e+03	6.2e+03	8.69e+06	1.20e+03	7.2e+03
6	2,3,4,6,7,8-HxCDF	1.03e+07	1.73e+03	6.0e+03	8.45e+06	1.20e+03	7.0e+03
7	1,2,3,7,8,9-HxCDF	9.50e+06	1.73e+03	5.5e+03	7.44e+06	1.20e+03	6.2e+03
8	1,2,3,4,6,7,8-HpCDF	8.51e+06	2.87e+03	3.0e+03	8.44e+06	7.05e+03	1.2e+03
9	1,2,3,4,7,8,9-HpCDF	6.91e+06	2.87e+03	2.4e+03	6.65e+06	7.05e+03	9.4e+02
10	OCDF	7.27e+06	8.32e+02	8.7e+03	8.11e+06	2.08e+03	3.9e+03
11	2,3,7,8-TCDD	7.80e+05	3.10e+03	2.5e+02	1.03e+06	1.36e+03	7.5e+02
12	1,2,3,7,8-PeCDD	7.21e+06	1.54e+03	4.7e+03	4.71e+06	6.80e+02	6.9e+03
13	1,2,3,4,7,8-HxCDD	7.38e+06	1.14e+03	6.5e+03	5.83e+06	1.47e+03	4.0e+03
14	1,2,3,6,7,8-HxCDD	7.09e+06	1.14e+03	6.2e+03	5.70e+06	1.47e+03	3.9e+03
15	1,2,3,7,8,9-HxCDD	7.90e+06	1.14e+03	6.9e+03	6.16e+06	1.47e+03	4.2e+03
16	1,2,3,4,6,7,8-HpCDD	5.91e+06	1.47e+03	4.0e+03	5.49e+06	1.09e+03	5.0e+03
17	OCDD	6.49e+06	6.28e+02	1.0e+04	7.31e+06	6.88e+02	1.1e+04
18	13C-2,3,7,8-TCDF	9.66e+06	1.31e+04	7.4e+02	1.22e+07	8.19e+03	1.5e+03
19	13C-1,2,3,7,8-PeCDF	1.85e+07	7.00e+02	2.6e+04	1.15e+07	1.49e+03	7.8e+03
20	13C-2,3,4,7,8-PeCDF	2.06e+07	7.00e+02	2.9e+04	1.29e+07	1.49e+03	8.7e+03
21	13C-1,2,3,4,7,8-HxCDF	9.87e+06	9.56e+02	1.0e+04	1.87e+07	1.92e+03	9.7e+03
22	13C-1,2,3,6,7,8-HxCDF	1.07e+07	9.56e+02	1.1e+04	2.05e+07	1.92e+03	1.1e+04
23	13C-2,3,4,6,7,8-HxCDF	1.05e+07	9.56e+02	1.1e+04	2.01e+07	1.92e+03	1.0e+04
24	13C-1,2,3,7,8,9-HxCDF	9.18e+06	9.56e+02	9.6e+03	1.74e+07	1.92e+03	9.0e+03
25	13C-1,2,3,4,6,7,8-HpCDF	6.95e+06	2.30e+03	3.0e+03	1.60e+07	3.47e+03	4.6e+03
26	13C-1,2,3,4,7,8,9-HpCDF	5.76e+06	2.30e+03	2.5e+03	1.30e+07	3.47e+03	3.7e+03
27	13C-2,3,7,8-TCDD	7.77e+06	1.07e+04	7.2e+02	9.83e+06	3.69e+03	2.7e+03
28	13C-1,2,3,7,8-PeCDD	1.44e+07	9.36e+02	1.5e+04	9.22e+06	1.23e+03	7.5e+03
29	13C-1,2,3,4,7,8-HxCDD	1.35e+07	9.52e+02	1.4e+04	1.06e+07	1.26e+03	8.4e+03
30	13C-1,2,3,6,7,8-HxCDD	1.29e+07	9.52e+02	1.4e+04	1.03e+07	1.26e+03	8.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.06e+07	1.29e+03	8.2e+03	9.94e+06	9.96e+02	1.0e+04
32	13C-OCDD	1.06e+07	8.68e+02	1.2e+04	1.19e+07	5.04e+02	2.4e+04
33	13C-1,2,3,4-TCDD	7.19e+06	1.07e+04	6.7e+02	9.08e+06	3.69e+03	2.5e+03
34	13C-1,2,3,7,8,9-HxCDD	1.40e+07	9.52e+02	1.5e+04	1.10e+07	1.26e+03	8.7e+03
35	37Cl-2,3,7,8-TCDD	1.92e+06	1.96e+03	9.8e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (3.104e{+}03 + 1.364e{+}03) \times 100}{(7.773e{+}06 + 9.826e{+}06) \times (\quad) \times 1.049} =$$

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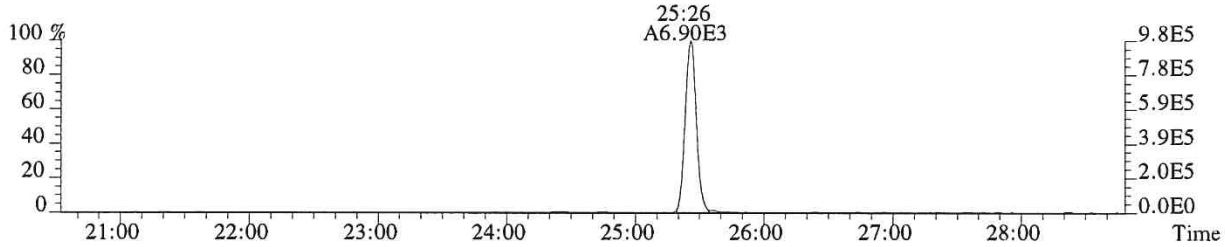
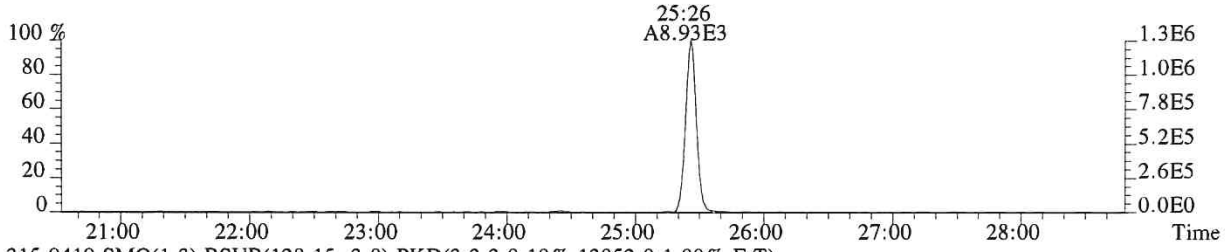
File:P616302 #1-587 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

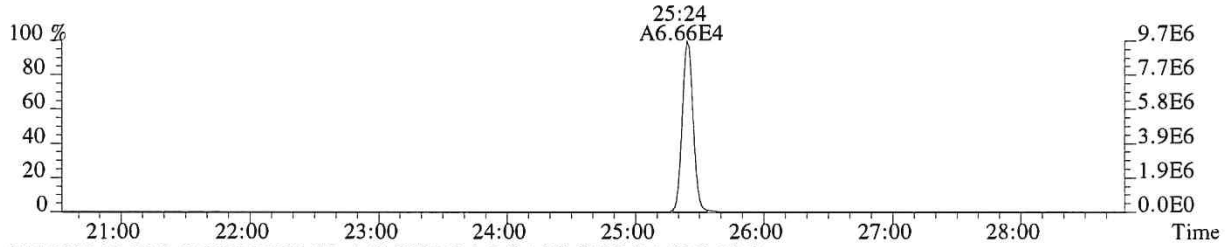
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1180.0,1.00%,F,T)



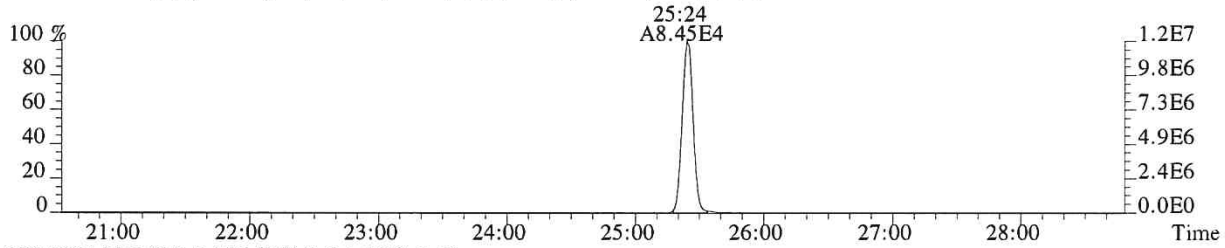
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1968.0,1.00%,F,T)



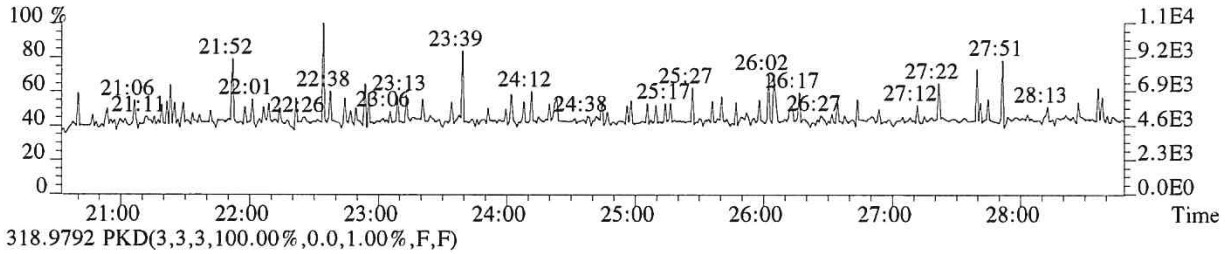
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13052.0,1.00%,F,T)



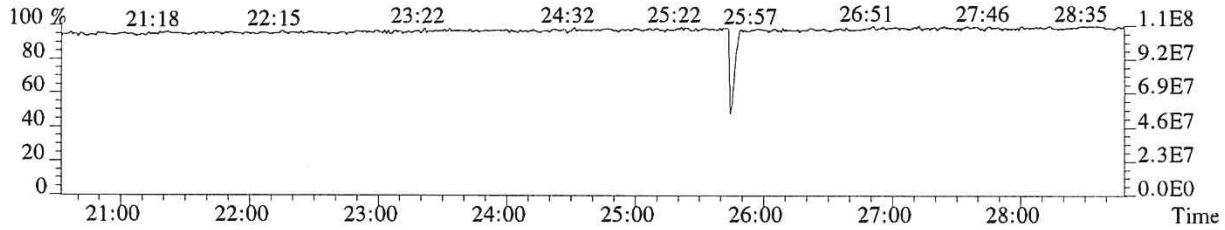
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8188.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



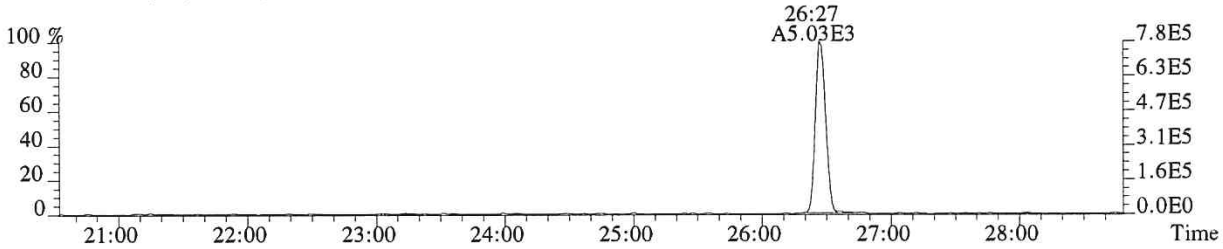
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



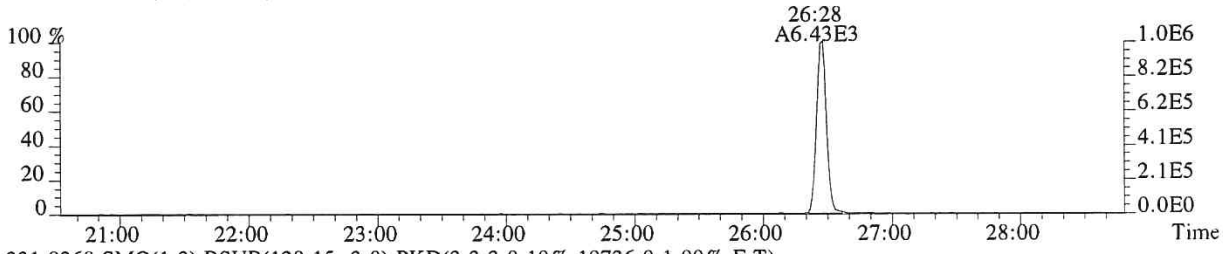
060633

File:P616302 #1-587 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

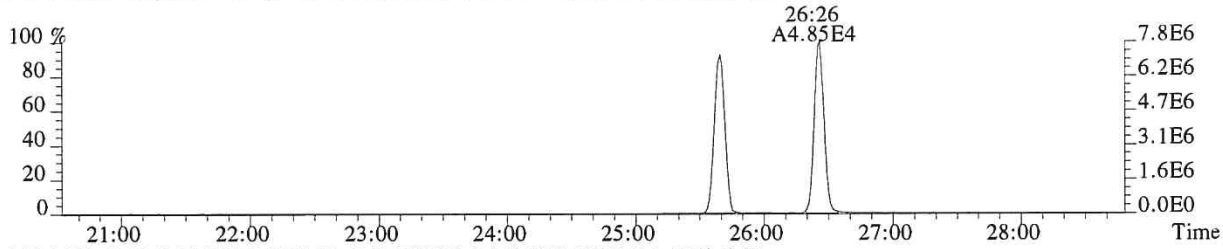
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3104.0,1.00%,F,T)



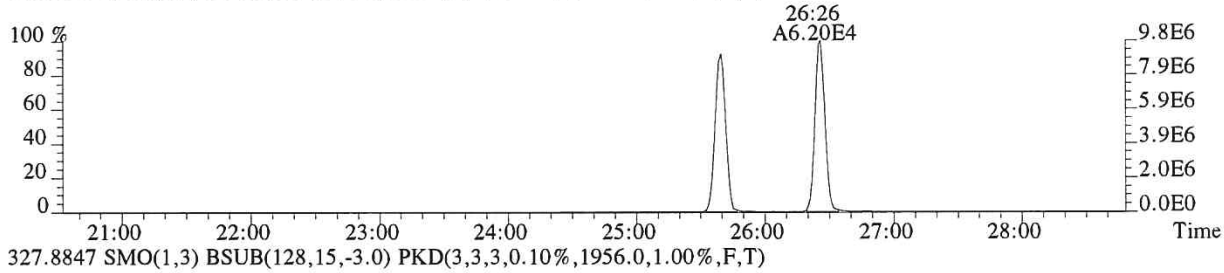
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1364.0,1.00%,F,T)



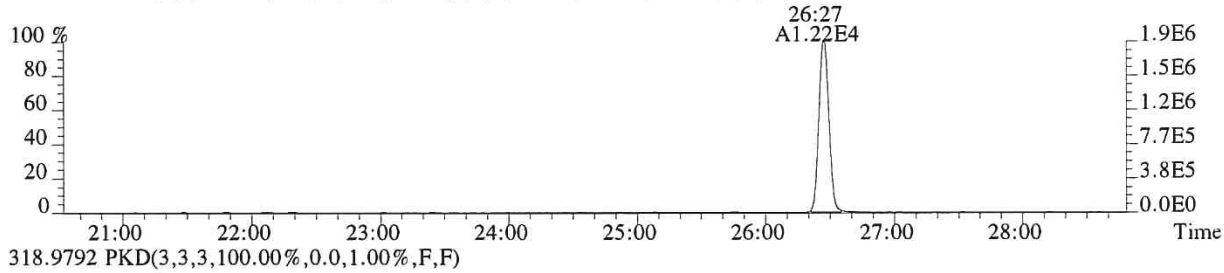
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10736.0,1.00%,F,T)



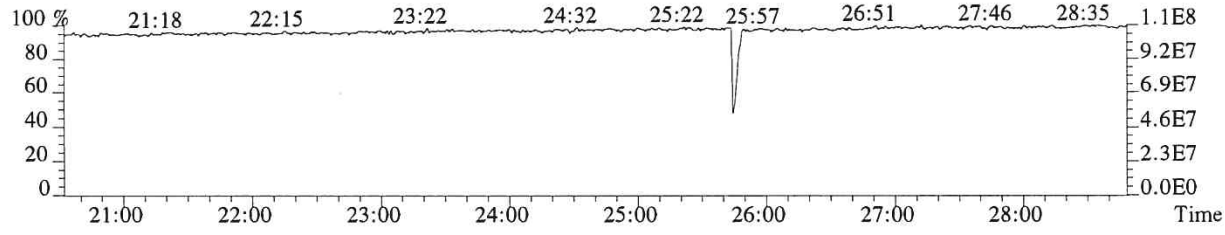
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3692.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1956.0,1.00%,F,T)



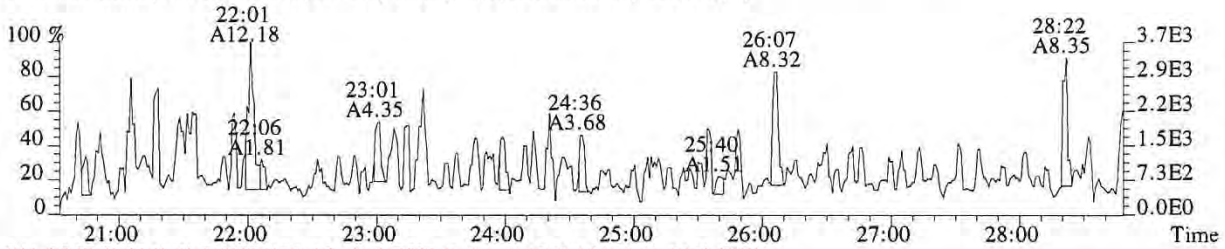
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



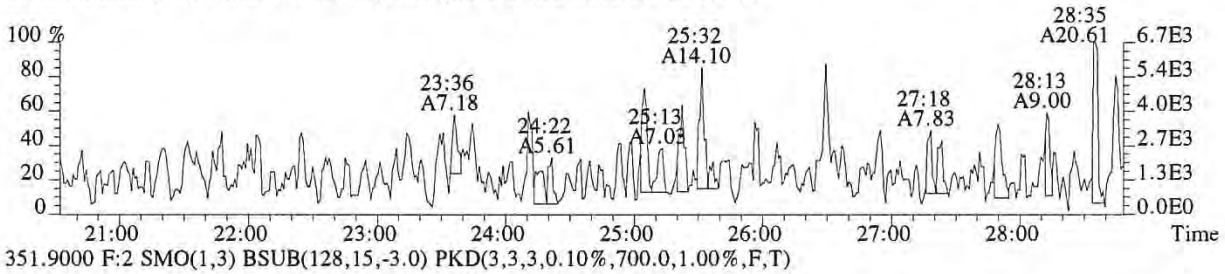
060634

File:P616302 #1-587 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:CS3

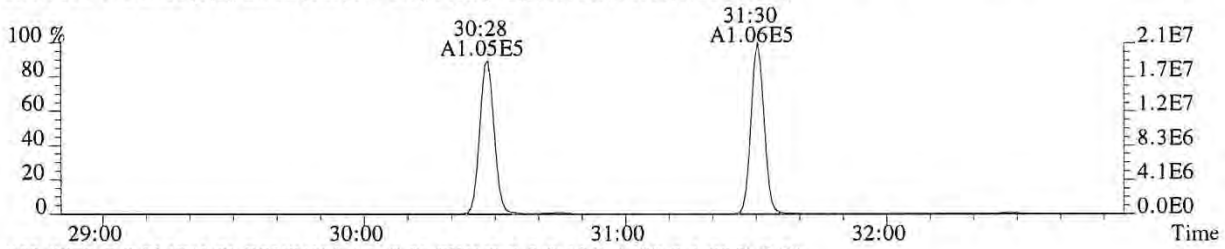
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,984.0,1.00%,F,T)



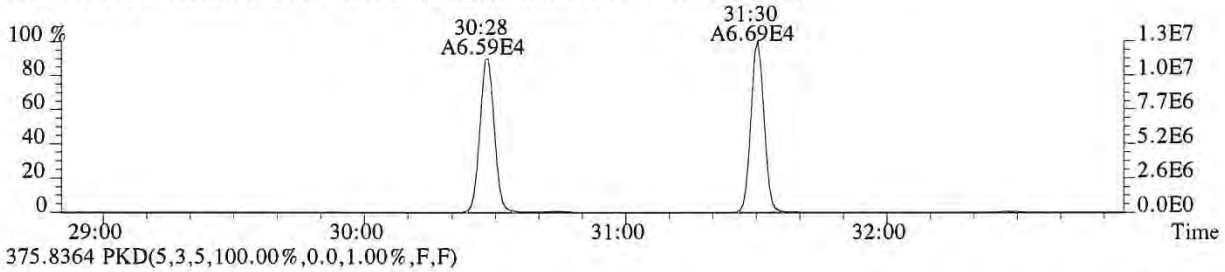
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1816.0,1.00%,F,T)



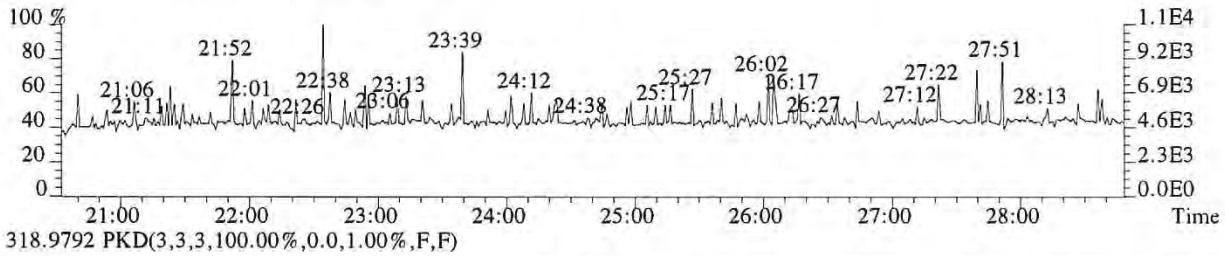
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,700.0,1.00%,F,T)



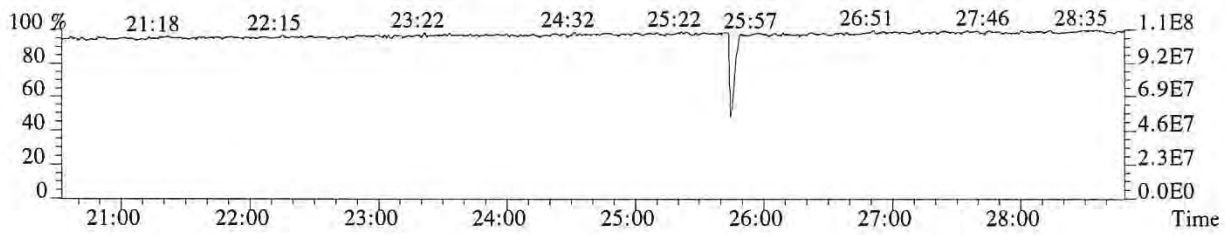
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1488.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

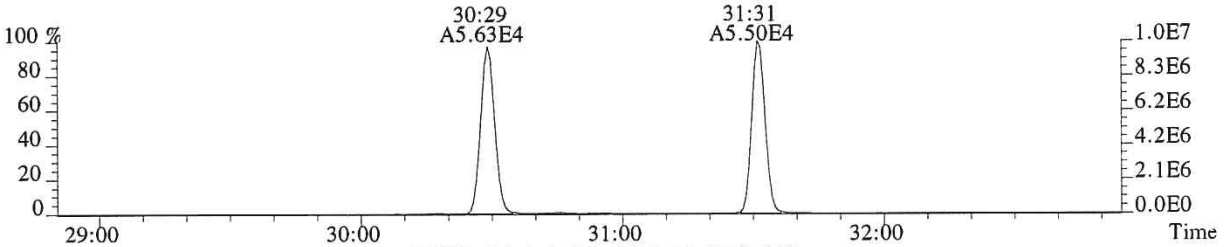


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

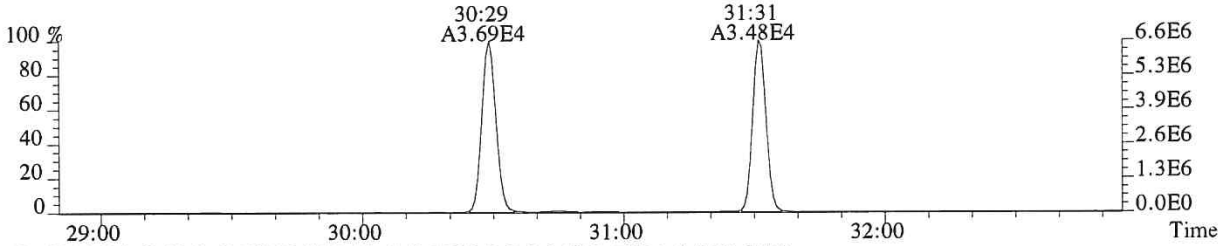


060635

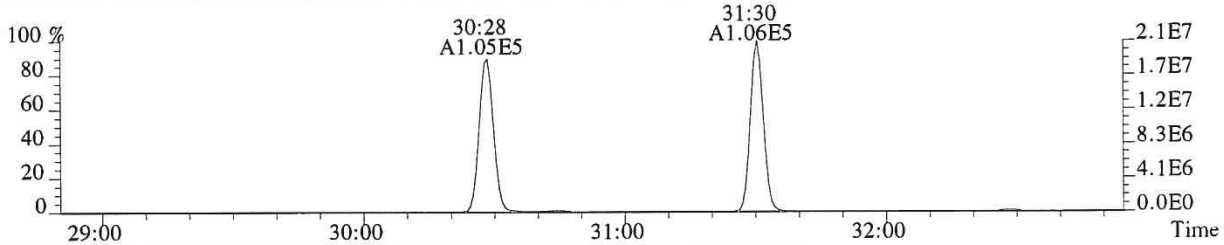
File:P616302 #1-367 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,900.0,1.00%,F,T)



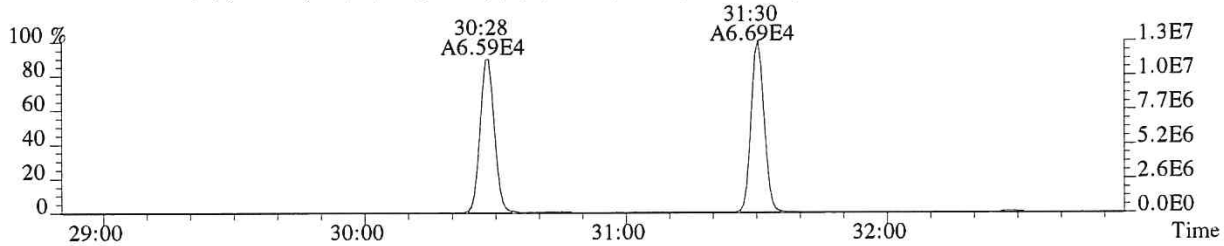
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2876.0,1.00%,F,T)



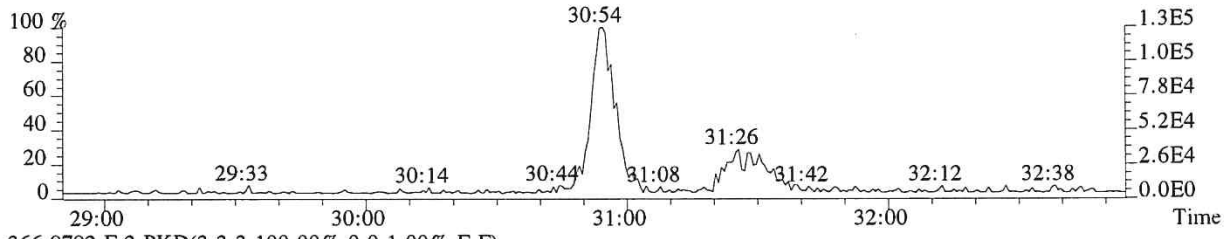
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,700.0,1.00%,F,T)



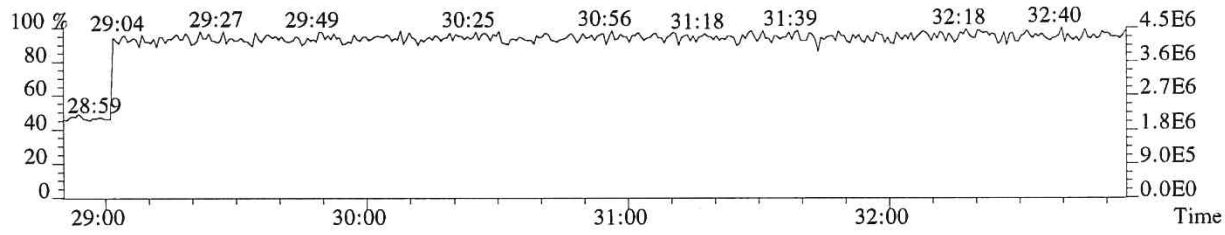
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1488.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

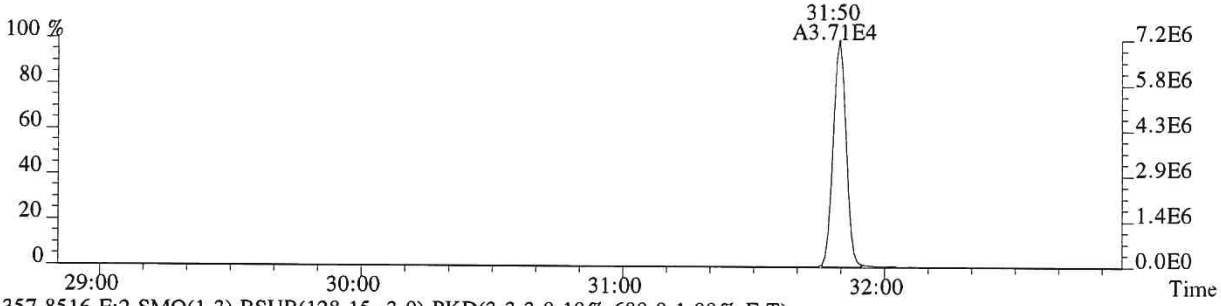


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

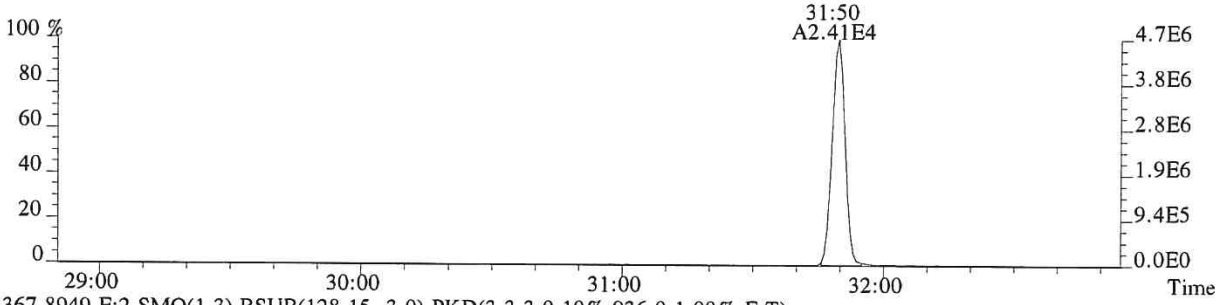


060636

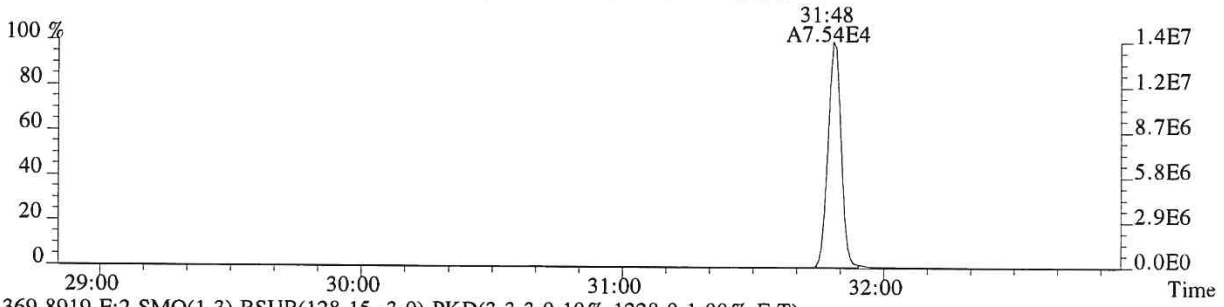
File:P616302 #1-367 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1540.0,1.00%,F,T)



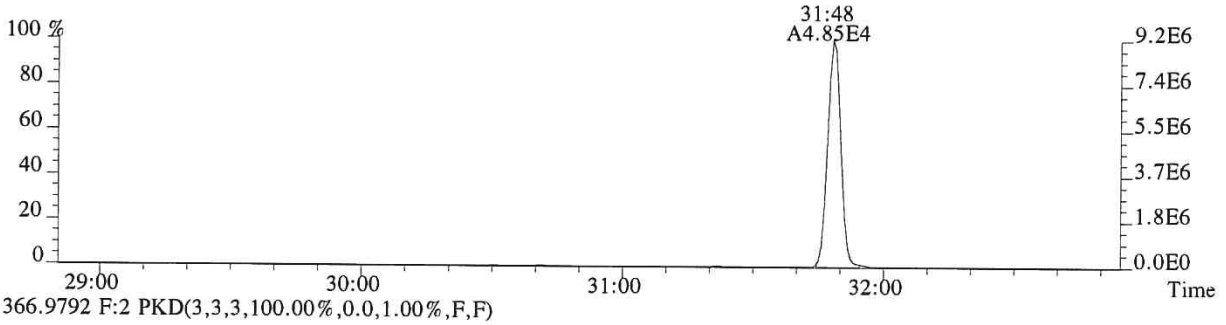
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,680.0,1.00%,F,T)



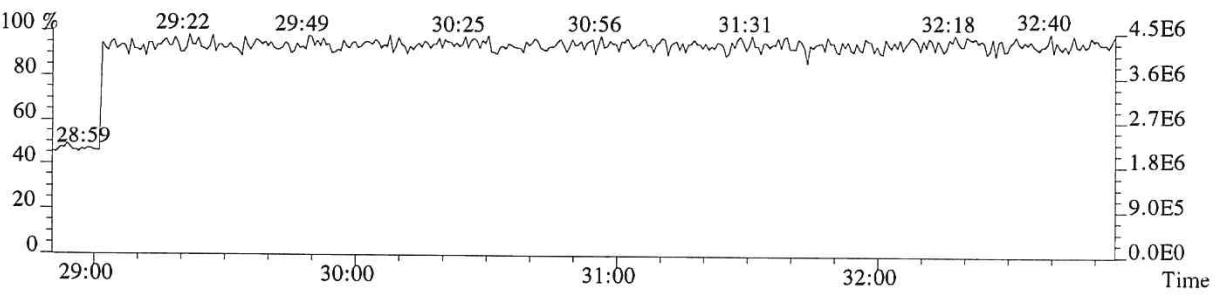
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,936.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1228.0,1.00%,F,T)

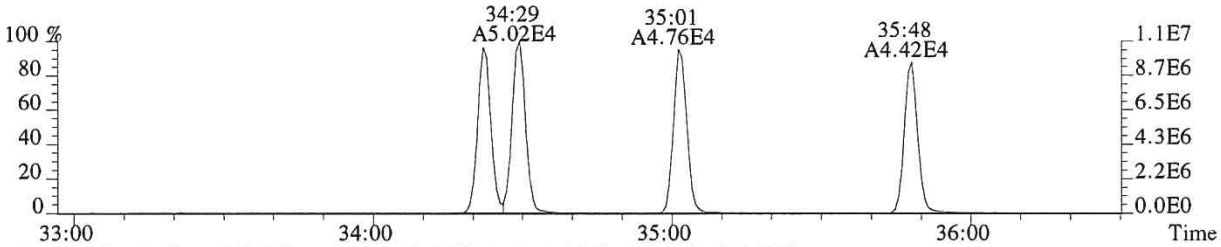


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

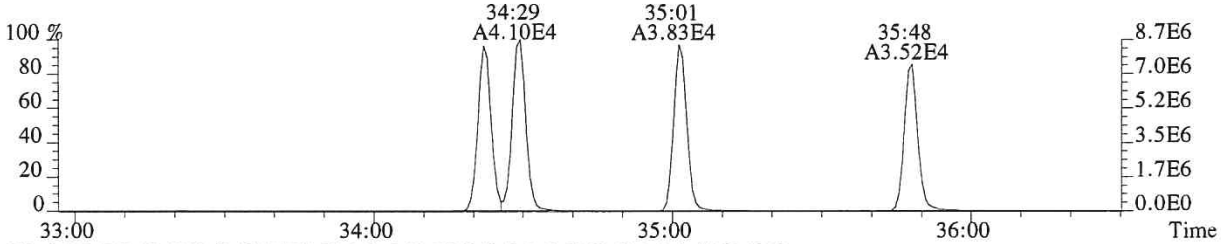


File:P616302 #1-321 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

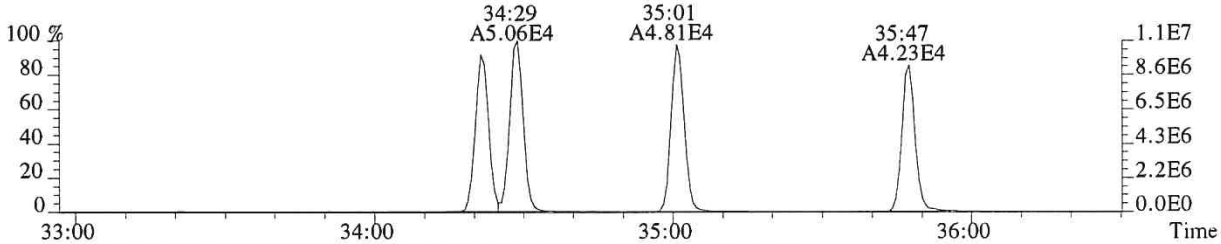
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1732.0,0.40%,F,T)



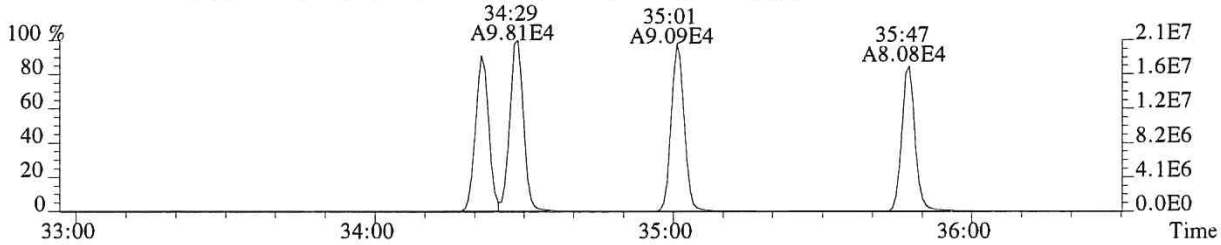
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1200.0,0.40%,F,T)



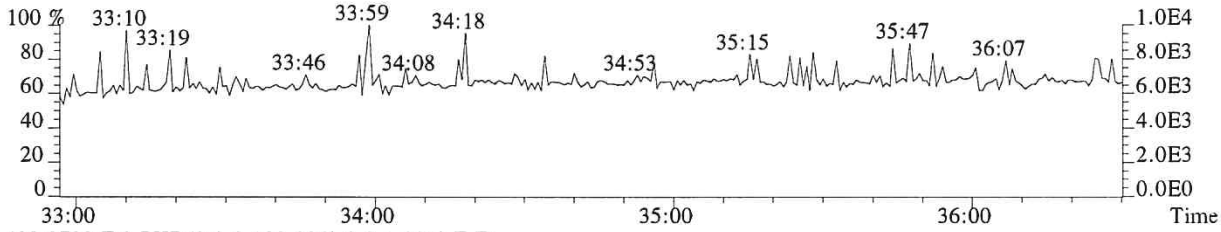
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,956.0,0.40%,F,T)



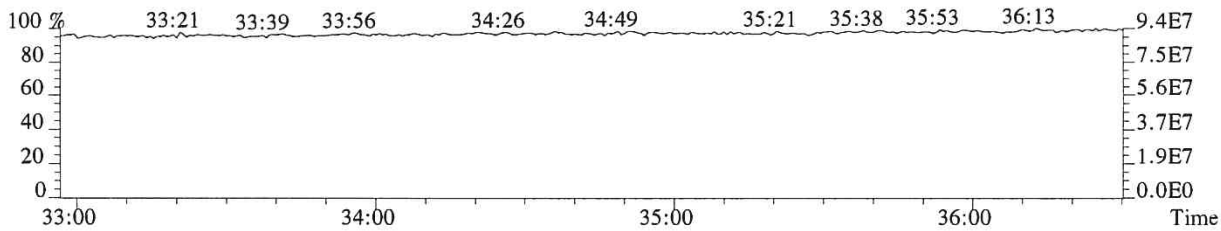
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1924.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

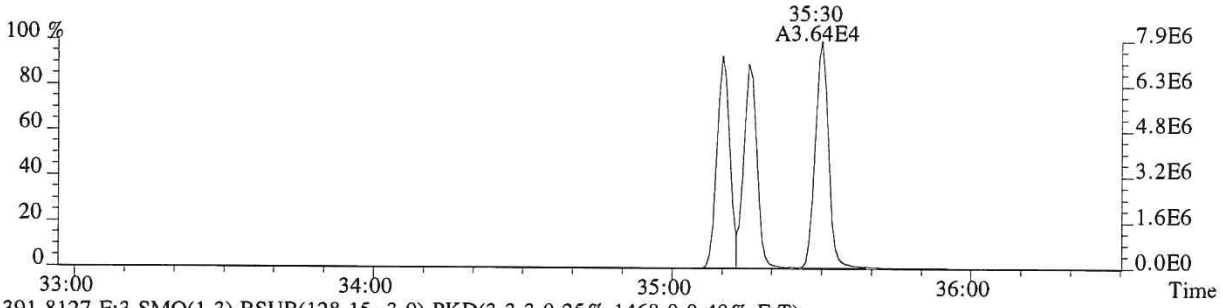


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

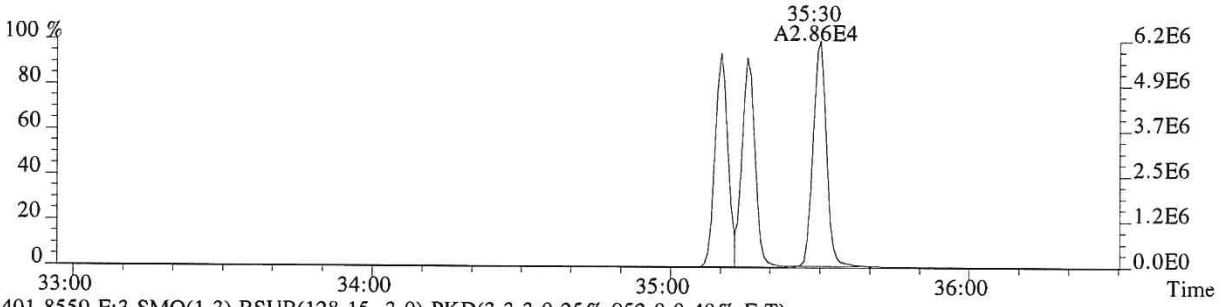


060638

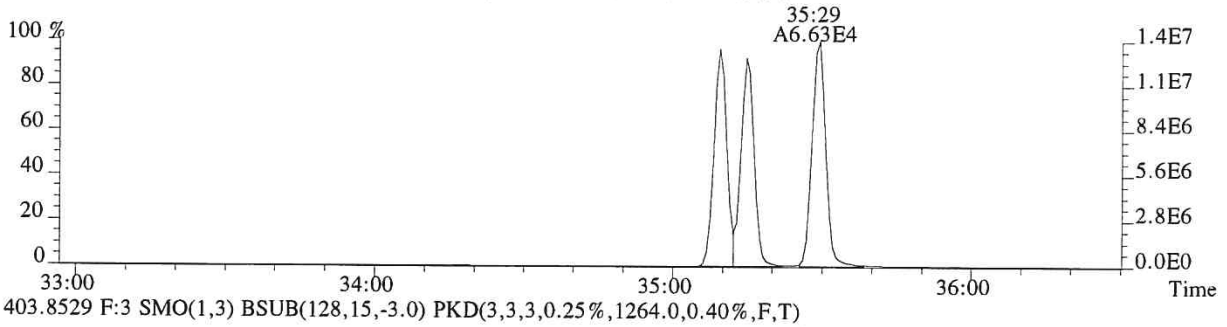
File:P616302 #1-321 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1140.0,0.40%,F,T)



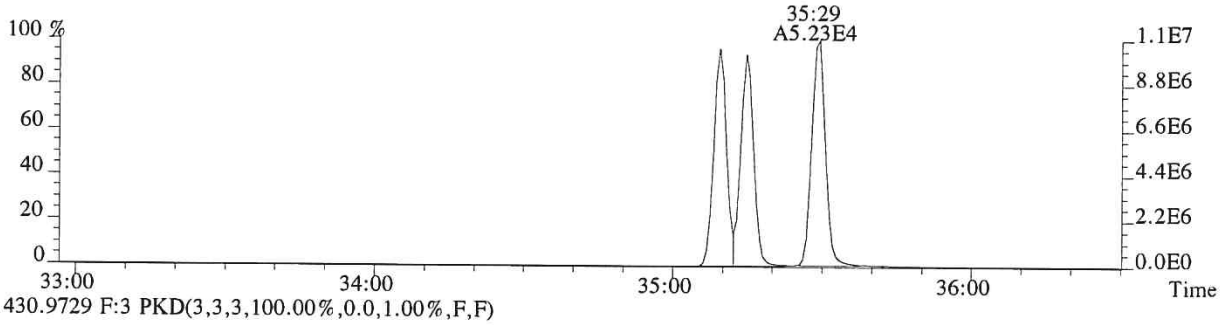
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1468.0,0.40%,F,T)



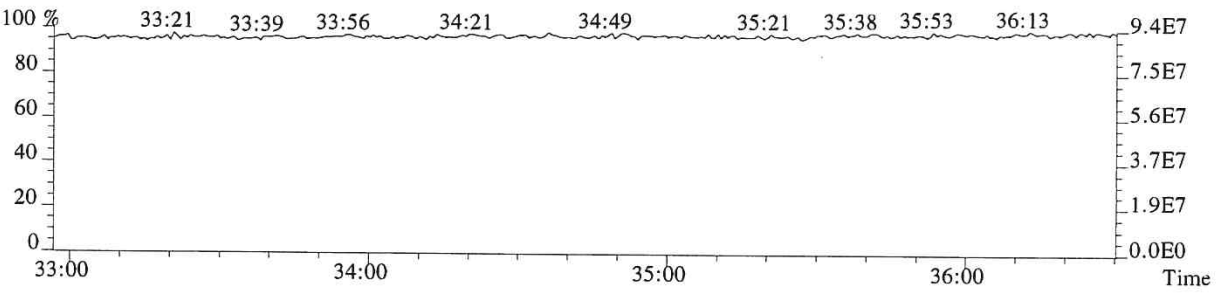
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,952.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1264.0,0.40%,F,T)



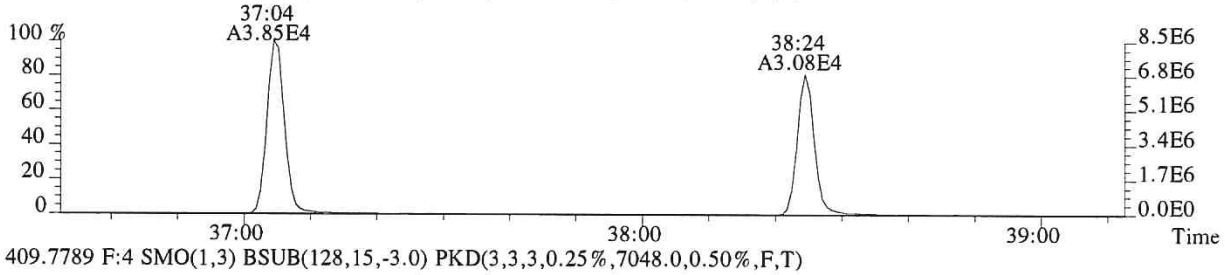
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



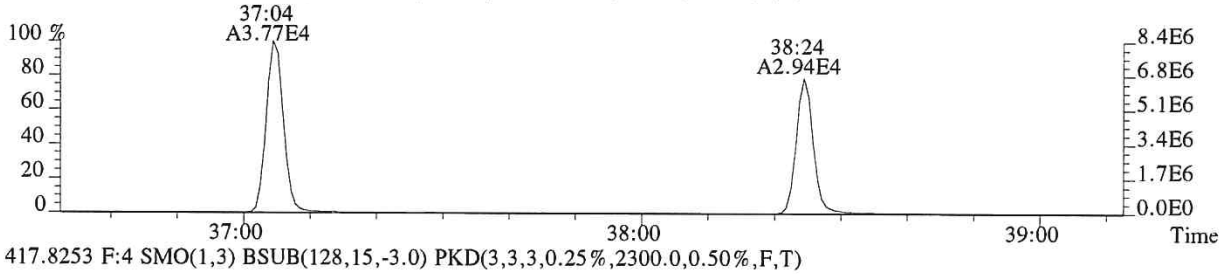
060639

File:P616302 #1-241 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

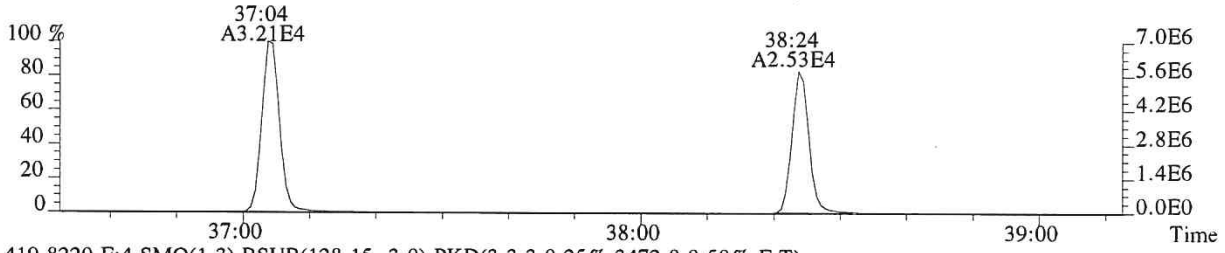
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2868.0,0.50%,F,T)



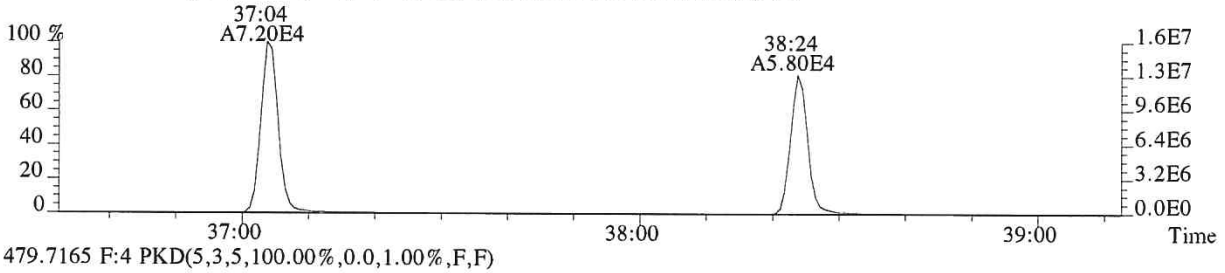
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7048.0,0.50%,F,T)



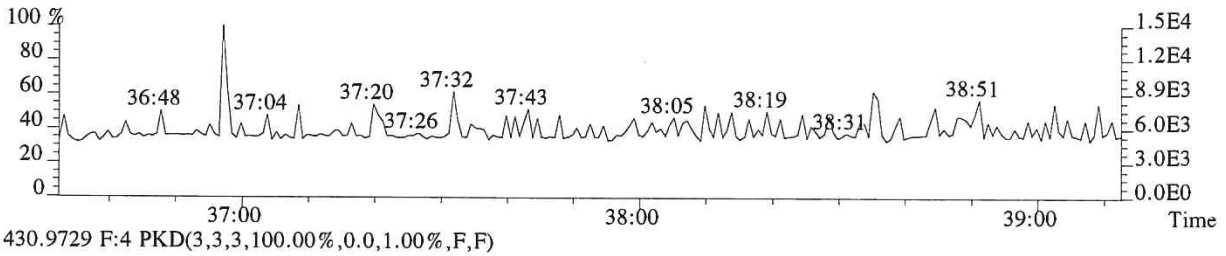
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2300.0,0.50%,F,T)



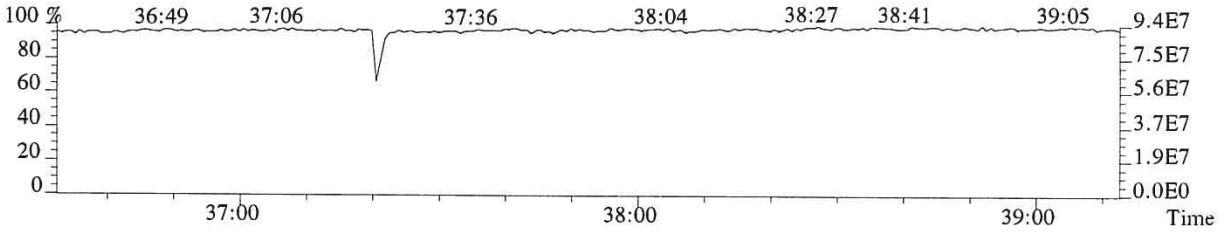
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3472.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



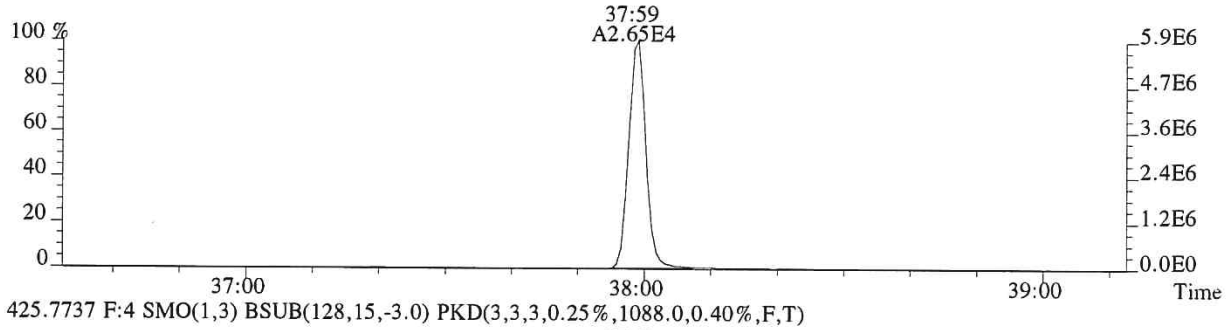
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



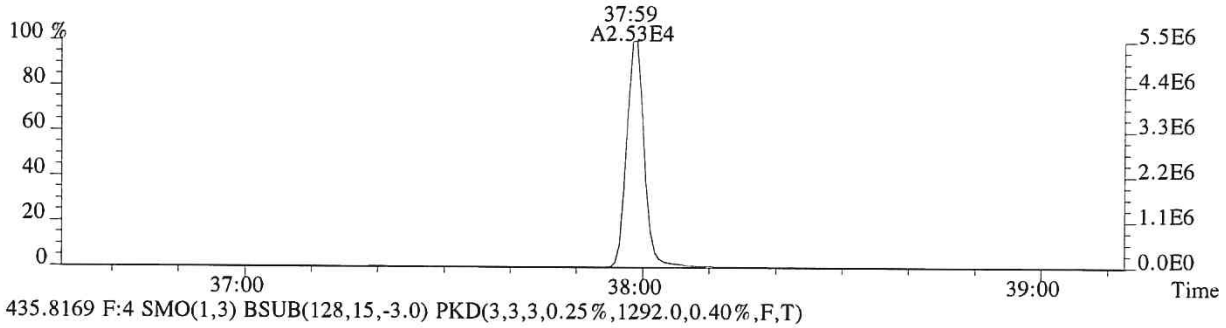
060640

File:P616302 #1-241 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

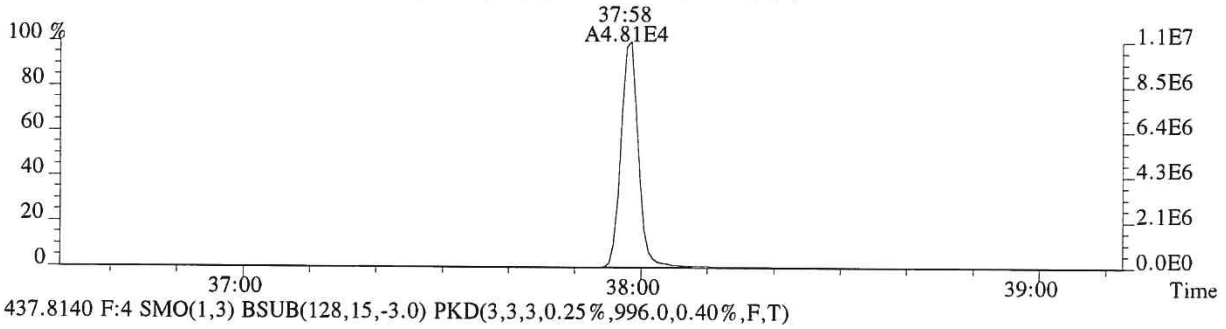
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1468.0,0.40%,F,T)



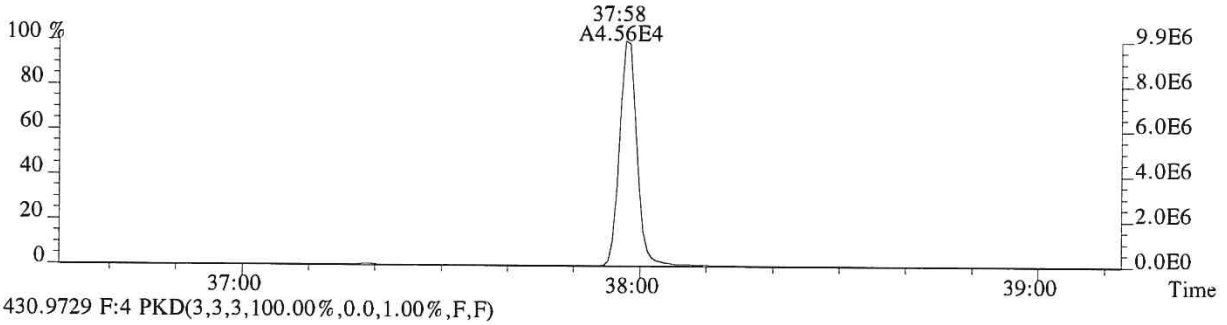
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1088.0,0.40%,F,T)



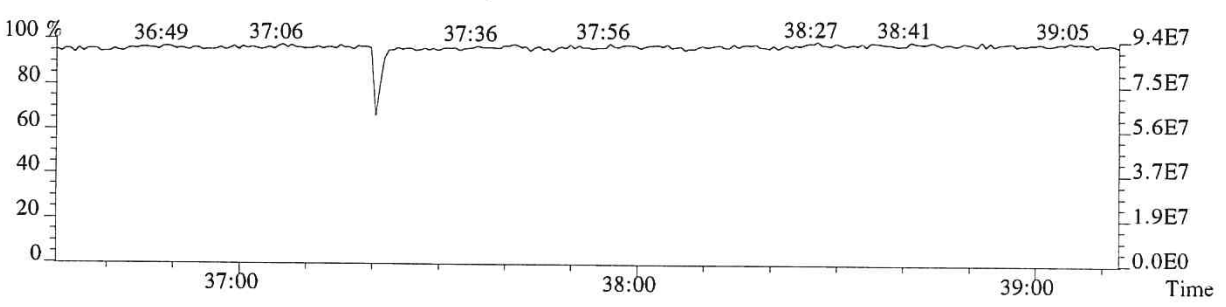
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1292.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,996.0,0.40%,F,T)



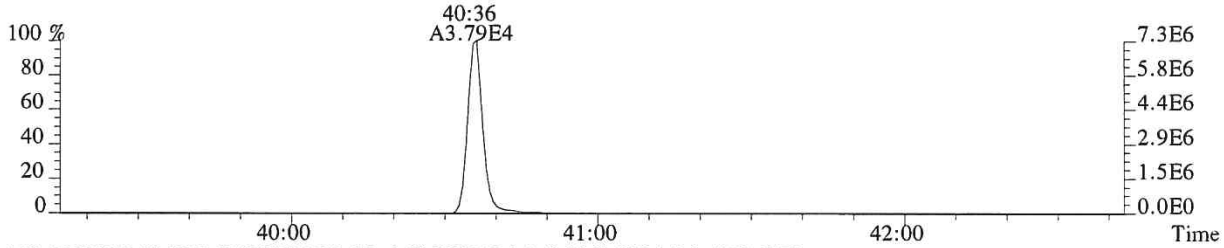
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



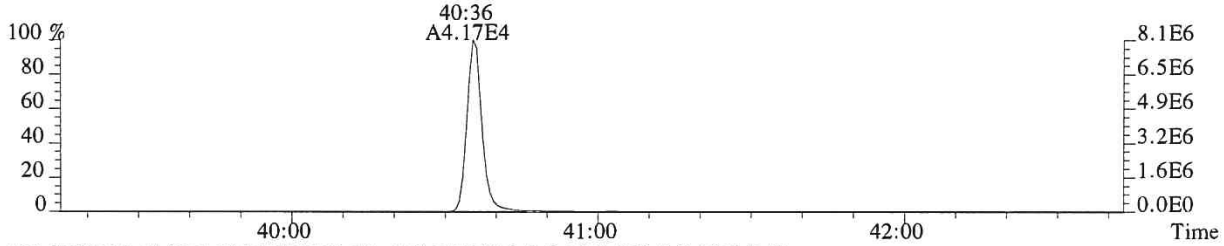
060641

File:P616302 #1-313 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

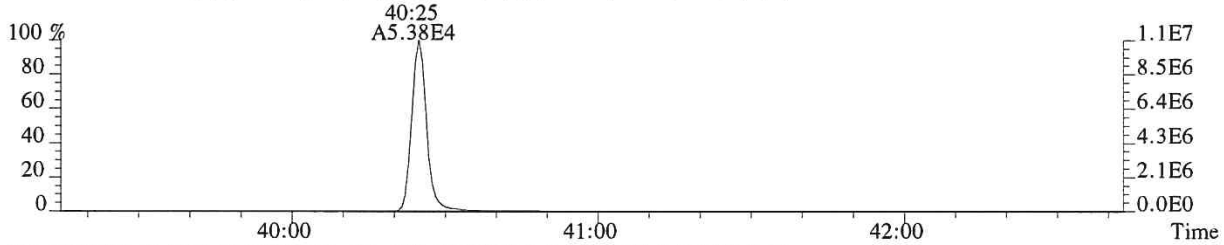
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,832.0,0.40%,F,T)



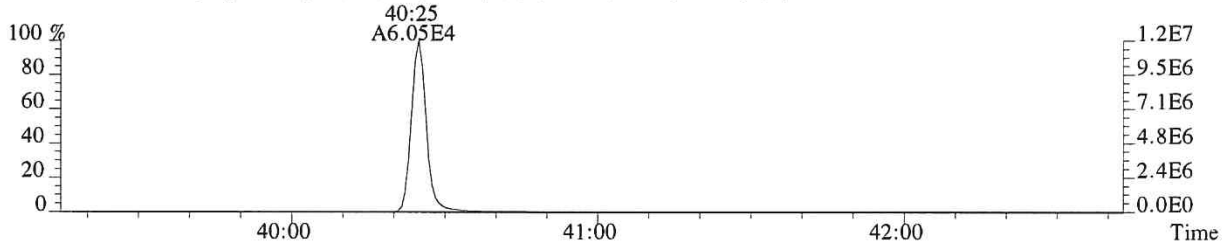
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2084.0,0.40%,F,T)



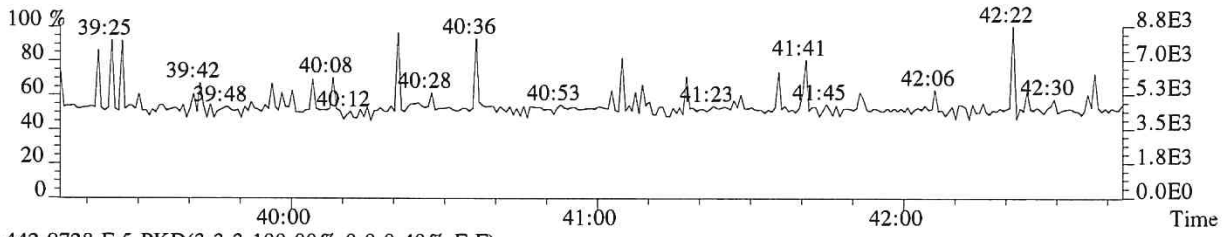
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,868.0,0.40%,F,T)



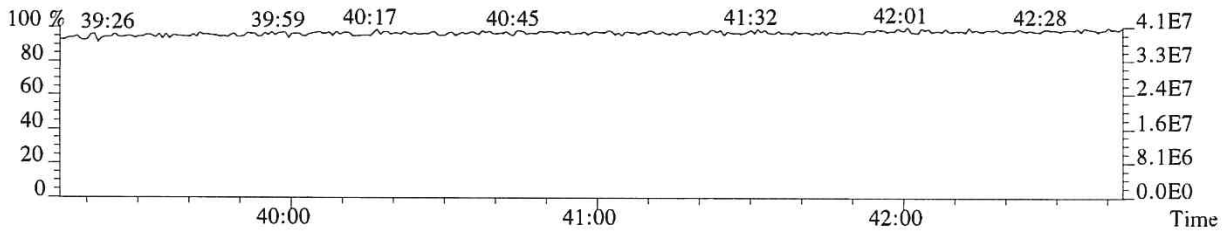
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,504.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

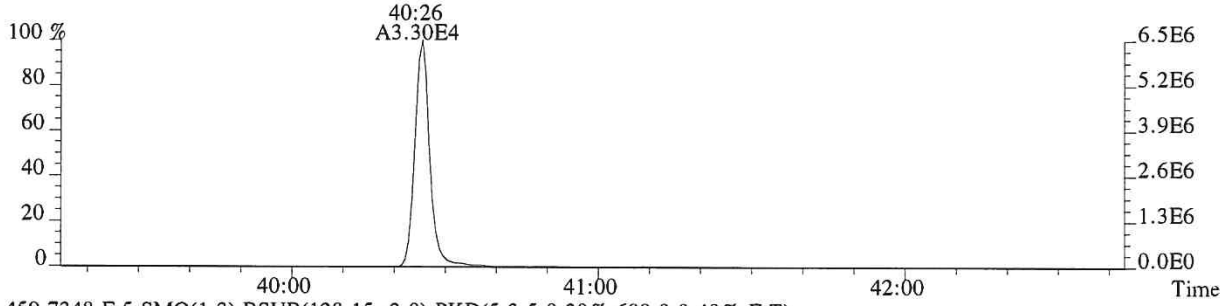


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

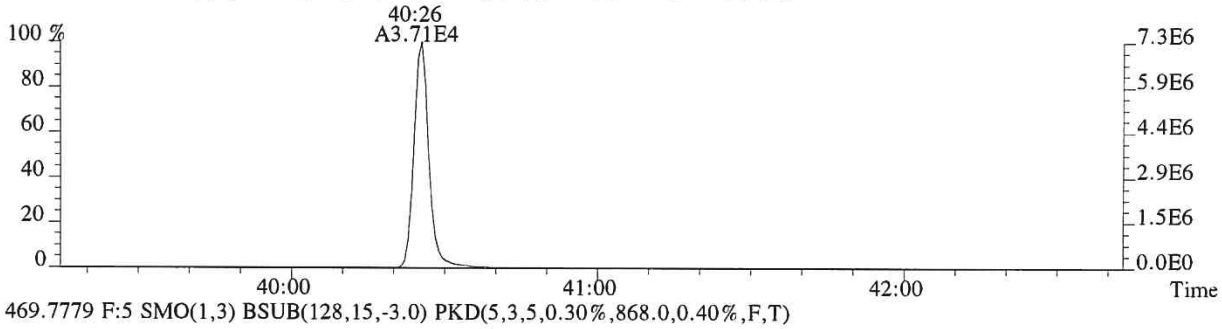


060642

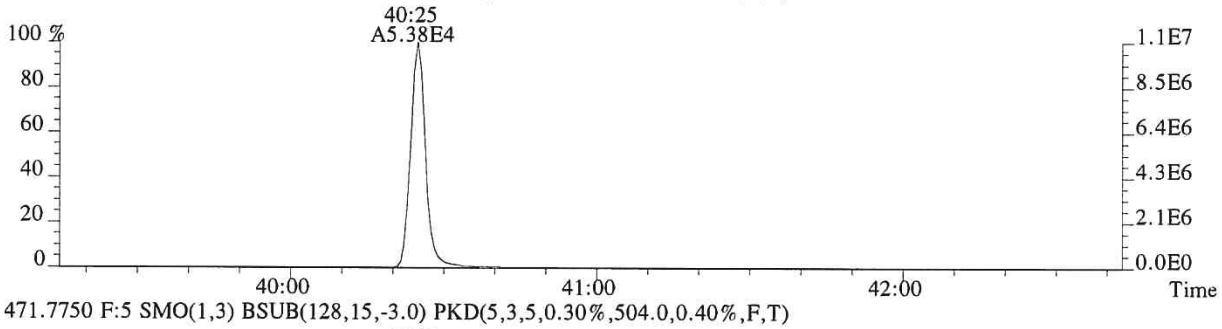
File:P616302 #1-313 Acq:30-DEC-2018 10:30:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,628.0,0.40%,F,T)



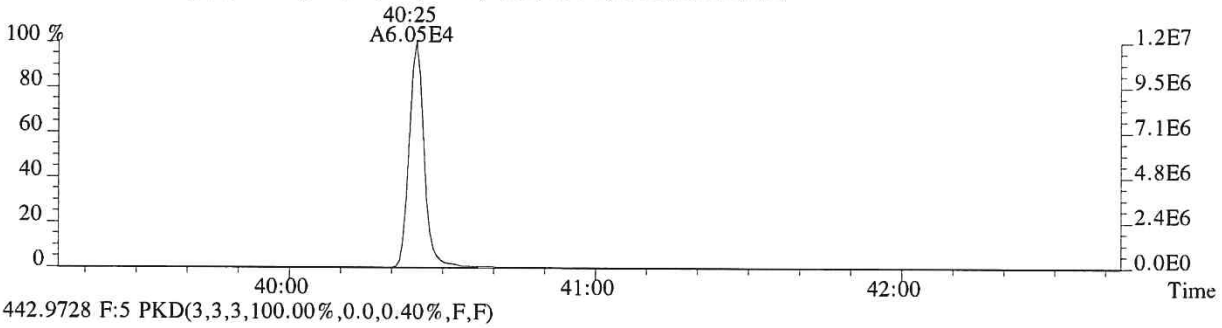
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,688.0,0.40%,F,T)



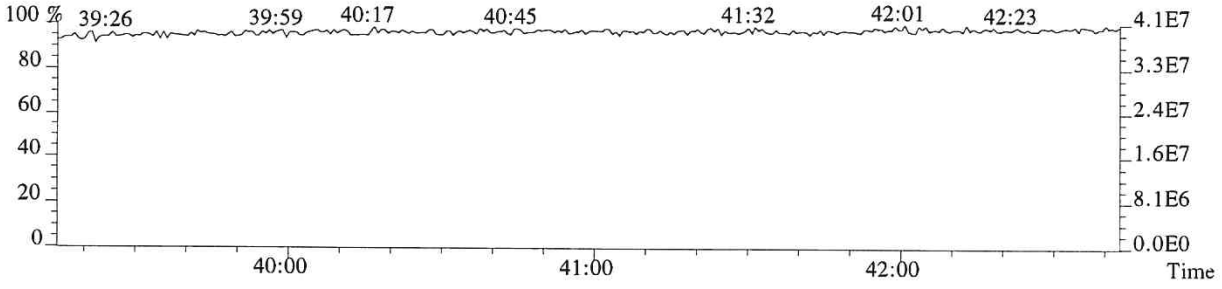
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,868.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,504.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290	Process Date: 01/25/18
Instrument Name: E-HRMS-07	Calibration File Name: P5-1801241613I
Processor Name: Gisela Cruz	Reviewer Name: Loan Leung
Supervisor: Kristin Neir	

Description	Yes	No	NA	NR	ER#
Analytical Sequence					
Does the analytical sequence summary accurately reflect the instrument run log, including ICV?	√				
Was a Mass Resolution Check performed at the beginning and end of the 12-hour sequence?	√				
Were all calibration standards and the ICV analyzed within the same 12-hour sequence?	√				
Were all calibration standards analyzed only once?	√				
Was the ICV analyzed after the ICAL, before analyzing samples?	√				
	√				
Mass Resolution Check					
Are beginning and ending resolution checks provided and legible?	√				
Were all target masses >10,000 resolving power at the beginning of the sequence?	√				
Were all target masses >10,000 resolving power at the end of the sequence?	√				
For PCB analysis, were masses at the low and high end of each function mass range >8,000?			√		
Where automatic printout of the mass resolution were not >10,000, was the resolution inspected by a trained analyst, including manual calculation of the resolution, if warranted?			√		
Window Define/209					
Is the window defining mix summary present, and accompanied by SICPs/Chromatograms for the WDM?	√				
Was the WDM/Column Performance/209 solution analyzed prior to the analysis of the calibration standards?	√				
Was 2,3,7,8-TCDD peak valley <25% to any other TCDD?	√				
Were all first and last eluters adequately resolved in each function?	√				
If first and last eluters were not resolved, was corrective action performed and documented, followed by a reanalysis of the WDM?			√		
Was the retention time of PCB 209 >55 min?			√		
Were the following congeners uniquely resolved (valley height <40% of the shortest peak)? PCB-34 and PCB-23 PCB-187 and PCB-182			√		
Did PCB 156/157 co-elute within 2 seconds at peak maximum?			√		
Calibration Standards					
Were there at least 5 calibration standards analyzed?	√				
If not all calibration standards were used, were the omitted standards either the lowest or highest calibration standard?			√		

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290	Process Date: 01/25/18
Instrument Name: E-HRMS-07	Calibration File Name: P5-180124161 3I
Processor Name: Gisela Cruz	Reviewer Name: Loan Luong
Supervisor: Kristin Neir	

Description	Yes	No	NA	NR	ER#
Are all sample response summaries, S/N height summaries, and SICPs included (and legible) for the entire sequence?	√				
Did each calibration point meet method criteria for Ion Abundance Ratio for all analytes and labeled standards?	√				
Did each calibration point meet method criteria for signal-to-noise ratios (S/N)?	√				
Were area counts for the highest calibration standard below levels of saturation?	√				
Were manual integrations technically justified to correct for poor software integration?		√			
Response Factors					
Is the ICAL Response Factor Summary present, including RR/RF values for each native/labeled analyte at each level of calibration?	√				
Were all calibration standards used in determining response factors?	√				
Were relative response factors (RR) for each native analyte calculated at each calibration point?	√				
Did the RSD for RRFs for each native analyte meet method criteria?	√				
Were response factors (RF) for each native analyte not having a corresponding labeled compound calculated at each calibration point?	√				
Were RFs for each labeled compound calculated for each calibration point?	√				
Did the RSD for RF for each labeled compound meet method criteria?	√				
Initial Calibration Verification					
Is the calibration verification present, including form 4A/B reflecting results for the ICV (Conc. or %D)	√				
Did all analytes meet method criteria for the ICV.	√				

Laboratory Review Checklist: Initial Calibration

Method: 1613/8290	Process Date: 01/25/18
Instrument Name: E-HRMS-07	Calibration File Name: P5-180124161 3I
Processor Name: Gisela Cruz	Reviewer Name: Loan Luong

ER#[5]	Description

NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: TX01411 Episode No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm) Instrument ID: E-HRMS-07

Init. Calib. Date: 01/24/18

Init. Calib.Times: 11:44

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, SPIKES AND DUPLICATES IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
183360	WINDOW DEFINE	P513848	24-JAN-18	11:44:47
76554	CS0.5	P513850	24-JAN-18	13:32:06
76555	CS1	P513851	24-JAN-18	14:23:56
76556	CS2	P513852	24-JAN-18	15:18:44
76557	CS3	P513853	24-JAN-18	16:06:29
76558	CS4	P513854	24-JAN-18	16:55:09
185657	CS5	P513855	24-JAN-18	17:43:48
75080	2ND SOURCE	P513857	24-JAN-18	19:21:06

Sample List Report — **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS07.PRO\SampleDB\20180124A.SPL
Last Modified: Thursday, January 25, 2018 07:09:10 Eastern Standard Time
Printed: Thursday, January 25, 2018 07:24:00 Eastern Standard Time

Page Position (1, 1)

E1801136

Opus 4: P5-180124I613I P513857res

*Opus 4: P5-180124m23I P513857resm23

	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	1/24/18	10:39	P513847	CS3	186061	EPA1613_ALS	Dioxin_ALS	Tray1:1	YY	not used
2		11:44	P513848	WINDOWDEFINE	183360	EPA1613_ALS	Dioxin_ALS	Tray1:2		HRMS check 11:10
3		12:35	P513849	CS0.5	76554	EPA1613_ALS	Dioxin_ALS	Tray1:3		not used
4		13:32	P513850	CS0.5	76554	EPA1613_ALS	Dioxin_ALS	Tray1:4		~~not used~~ YY 1/25/18
5		14:23	P513851	CS1	76555	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		15:18	P513852	CS2	76556	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		16:06	P513853	CS3	76557	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		16:55	P513854	CS4	76558	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		17:43	P513855	CS5	185657	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		18:32	P513856	NONANE	NONANE	EPA1613_ALS	Dioxin_ALS	Tray1:10		
11		19:21	P513857	2ND SOURCE	75080	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12			---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1		
13			---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:1		
14			---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:2		
15			---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:15		HRMS check 1/25/18 00:51
16		19:21	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:16	---	---
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:17	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:18	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---
20	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:20	---	---
21	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:21	---	---
22	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:22	---	---
23	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:23	---	---
24	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:24	---	---
25	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:25	---	---

882 of 1106

gc 01/25/18

* gc 01/25/18

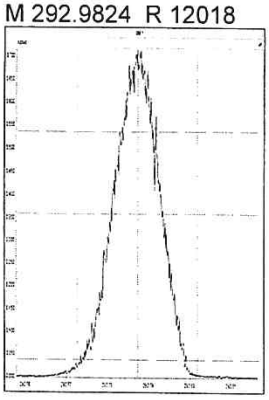
062

060648

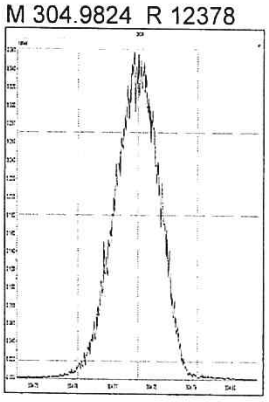
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, January 24, 2018 11:40:23 Eastern Standard Time

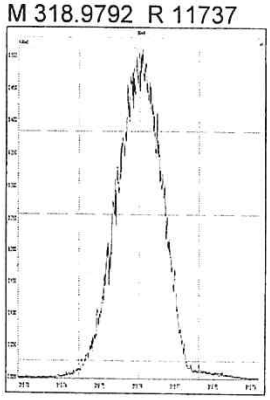
M 292.9824 R 12018



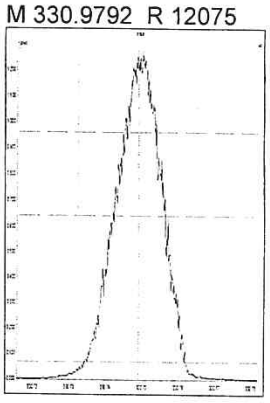
M 304.9824 R 12378



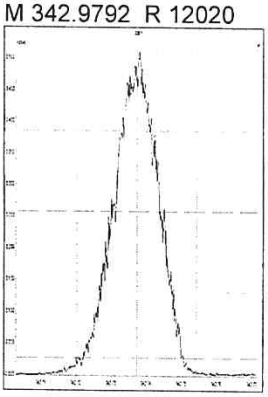
M 318.9792 R 11737



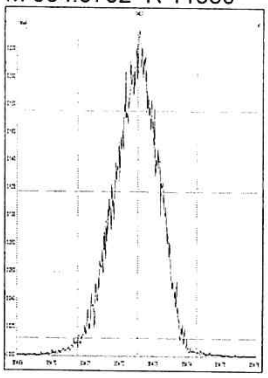
M 330.9792 R 12075



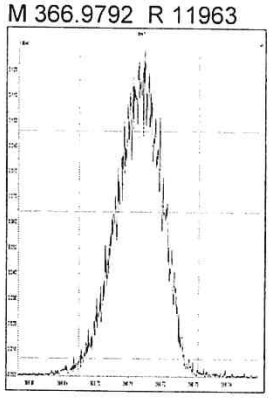
M 342.9792 R 12020



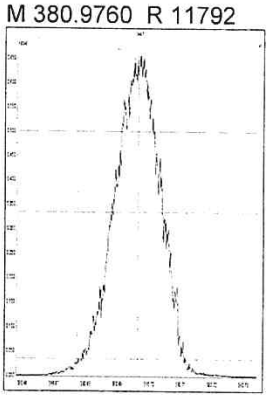
M 354.9792 R 11680



M 366.9792 R 11963



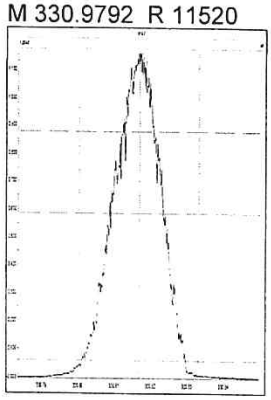
M 380.9760 R 11792



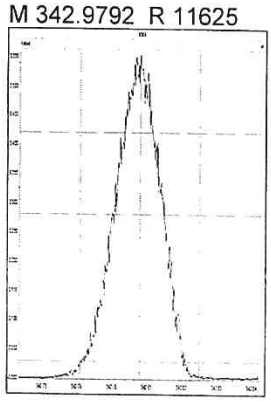
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, January 24, 2018 11:41:23 Eastern Standard Time

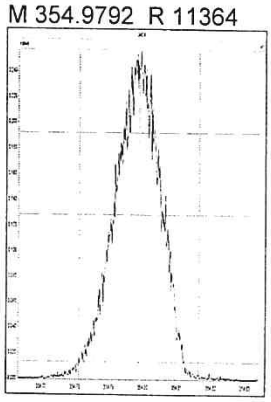
M 330.9792 R 11520



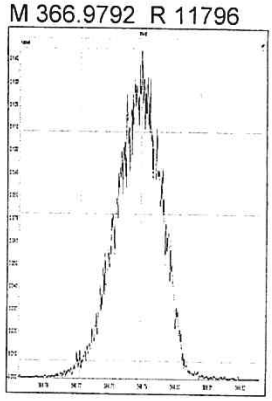
M 342.9792 R 11625



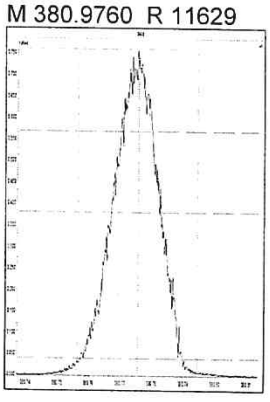
M 354.9792 R 11364



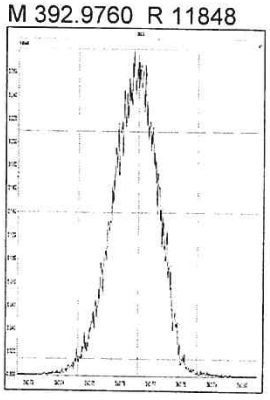
M 366.9792 R 11796



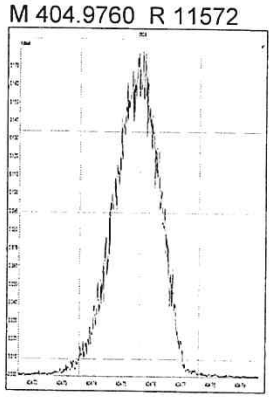
M 380.9760 R 11629



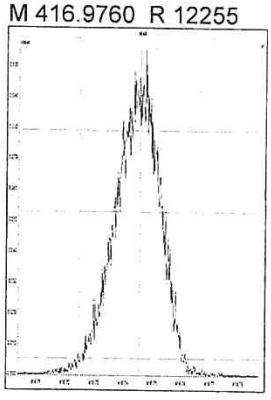
M 392.9760 R 11848



M 404.9760 R 11572



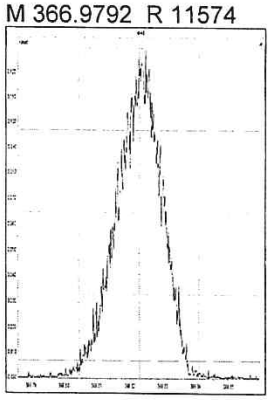
M 416.9760 R 12255



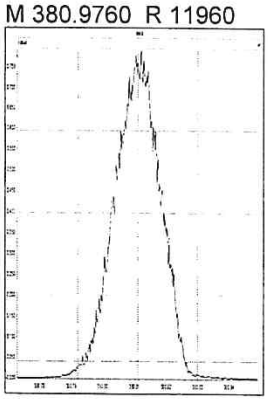
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, January 24, 2018 11:42:15 Eastern Standard Time

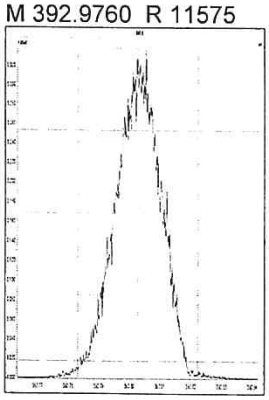
M 366.9792 R 11574



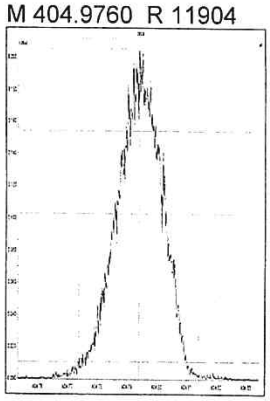
M 380.9760 R 11960



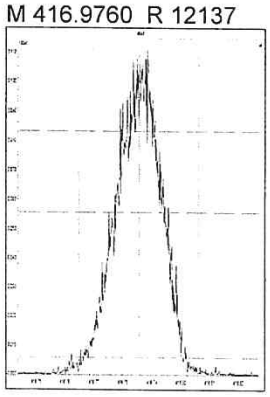
M 392.9760 R 11575



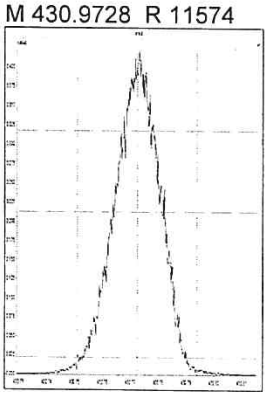
M 404.9760 R 11904



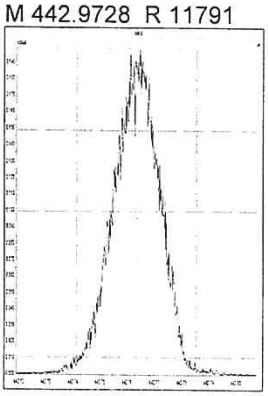
M 416.9760 R 12137



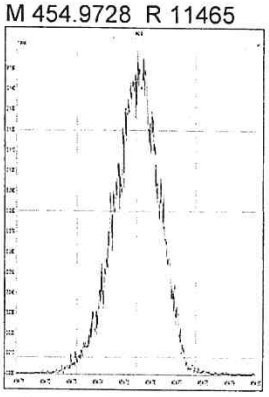
M 430.9728 R 11574



M 442.9728 R 11791



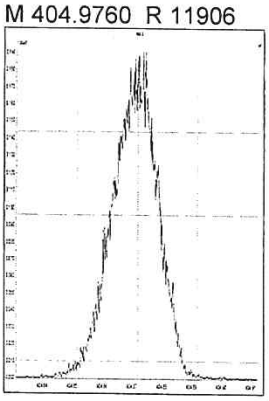
M 454.9728 R 11465



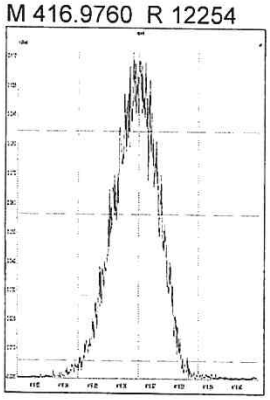
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, January 24, 2018 11:43:11 Eastern Standard Time

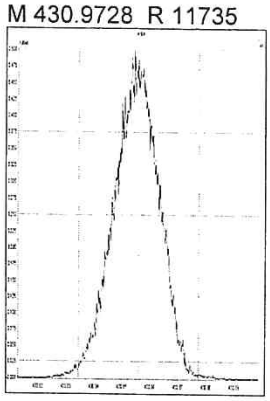
M 404.9760 R 11906



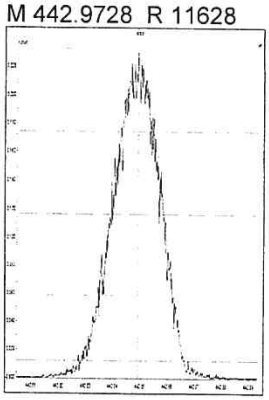
M 416.9760 R 12254



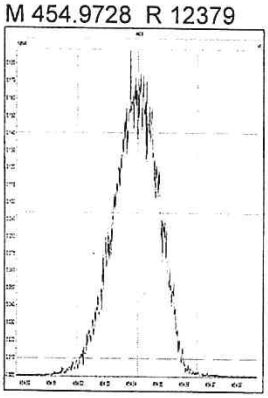
M 430.9728 R 11735



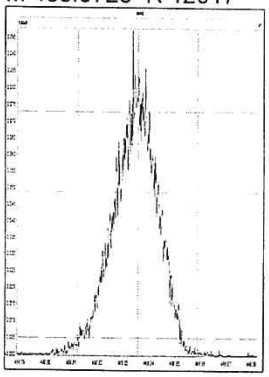
M 442.9728 R 11628



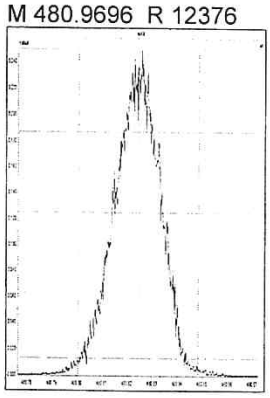
M 454.9728 R 12379



M 466.9728 R 12017



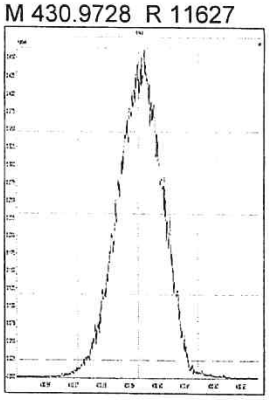
M 480.9696 R 12376



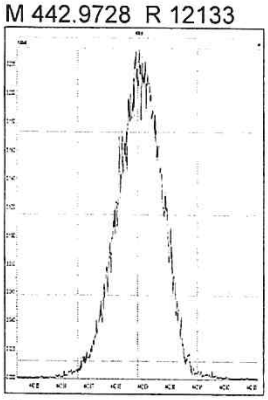
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, January 24, 2018 11:43:57 Eastern Standard Time

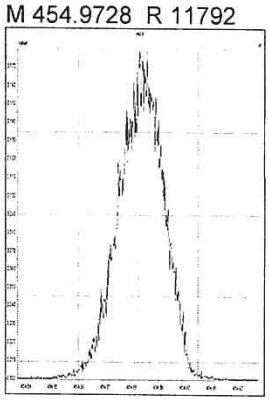
M 430.9728 R 11627



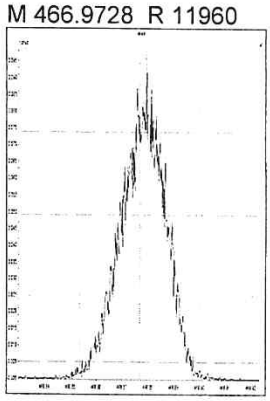
M 442.9728 R 12133



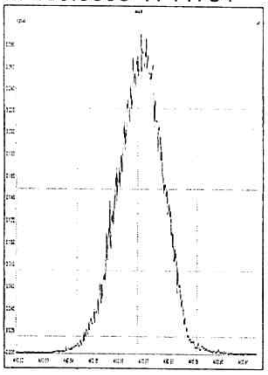
M 454.9728 R 11792



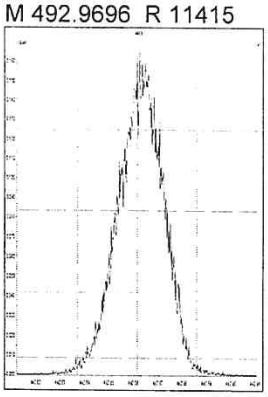
M 466.9728 R 11960



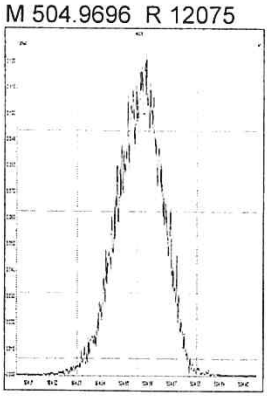
M 480.9696 R 11734



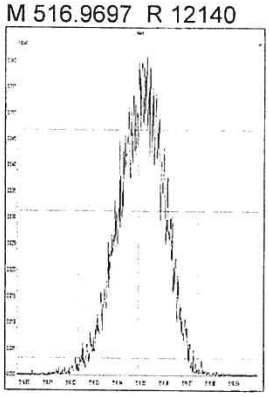
M 492.9696 R 11415



M 504.9696 R 12075



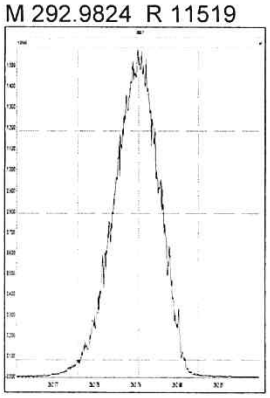
M 516.9697 R 12140



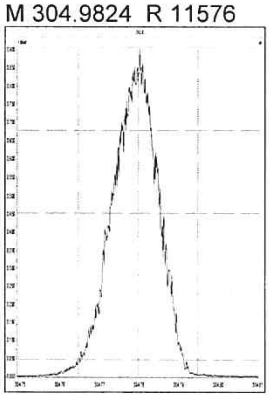
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, January 25, 2018 06:51:19 Eastern Standard Time

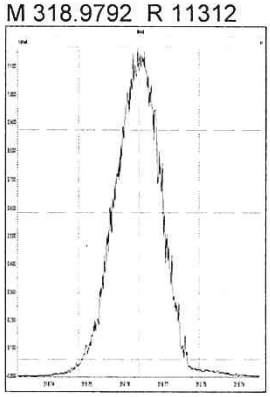
M 292.9824 R 11519



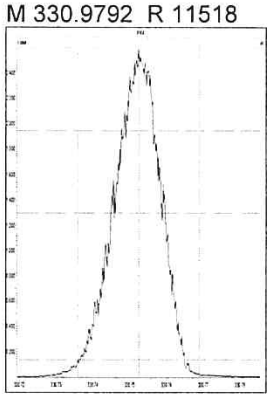
M 304.9824 R 11576



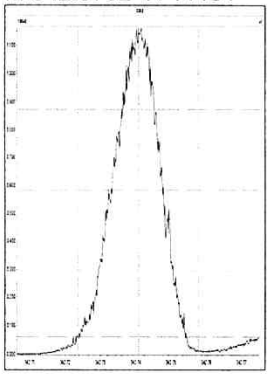
M 318.9792 R 11312



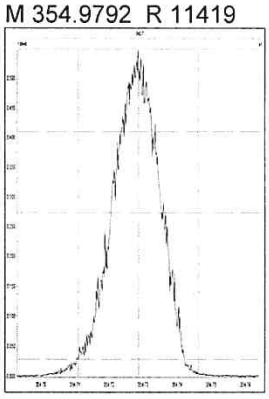
M 330.9792 R 11518



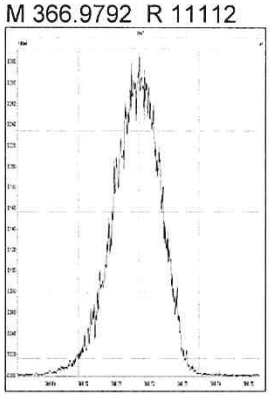
M 342.9792 R 11161



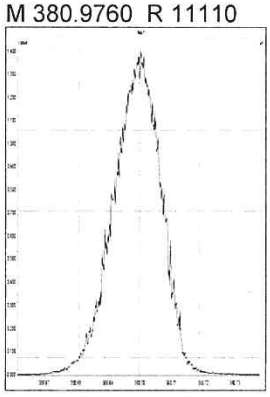
M 354.9792 R 11419



M 366.9792 R 11112



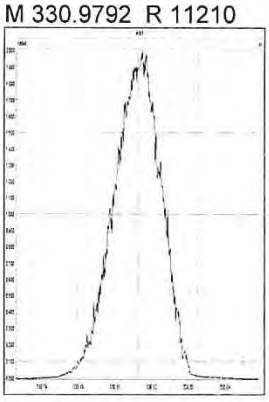
M 380.9760 R 11110



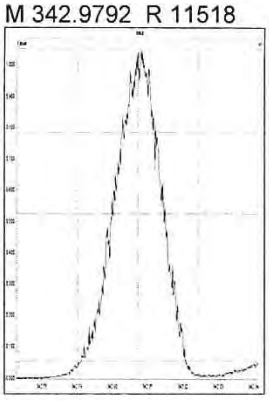
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Thursday, January 25, 2018 06:52:11 Eastern Standard Time

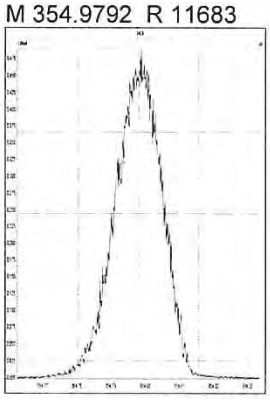
M 330.9792 R 11210



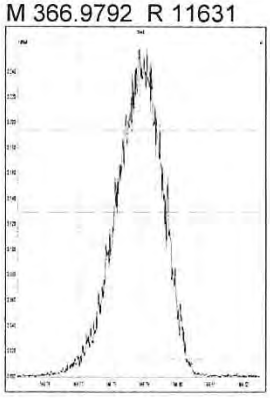
M 342.9792 R 11518



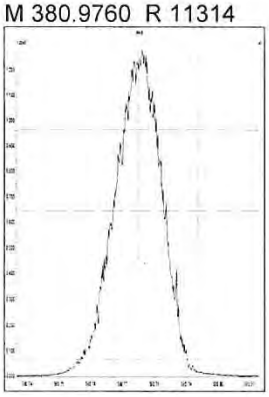
M 354.9792 R 11683



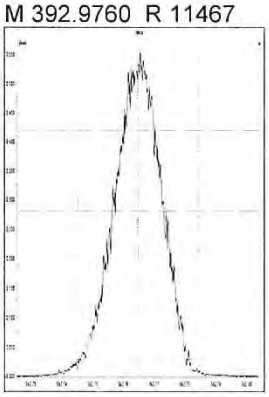
M 366.9792 R 11631



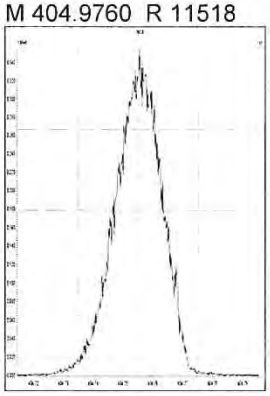
M 380.9760 R 11314



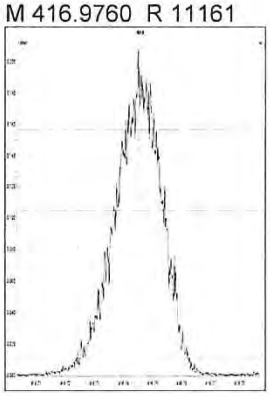
M 392.9760 R 11467



M 404.9760 R 11518



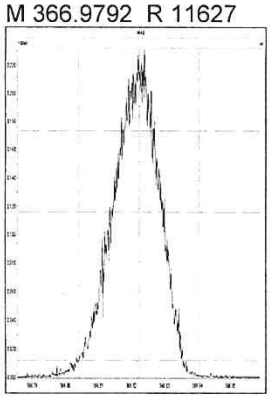
M 416.9760 R 11161



File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, January 25, 2018 06:52:51 Eastern Standard Time

M 366.9792 R 11627



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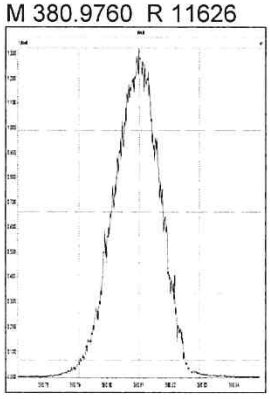
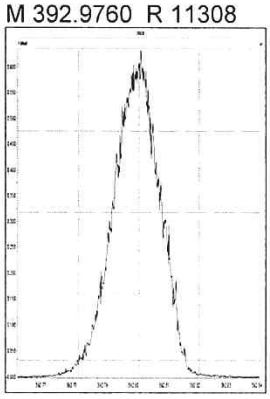
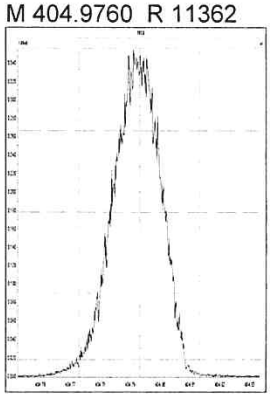


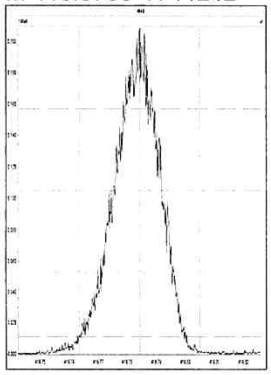
M 392.9760 R 11308



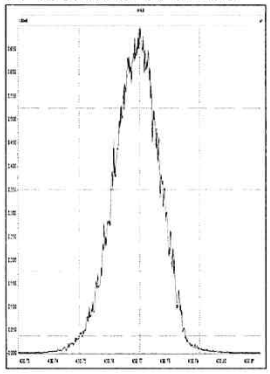
M 404.9760 R 11362



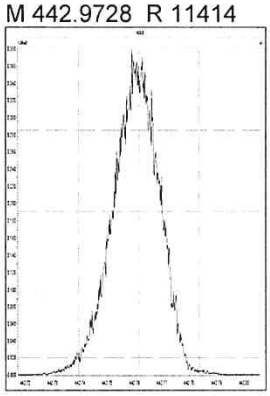
M 416.9760 R 11212



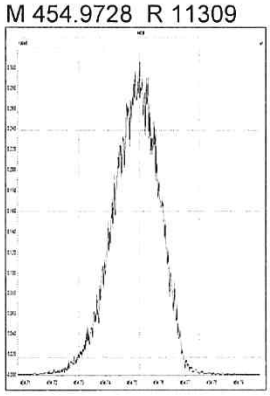
M 430.9728 R 11363



M 442.9728 R 11414



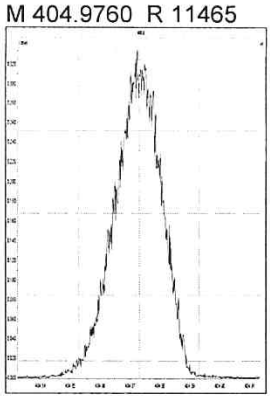
M 454.9728 R 11309



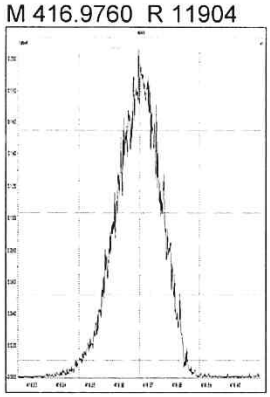
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Thursday, January 25, 2018 06:53:26 Eastern Standard Time

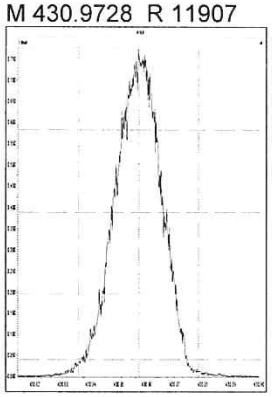
M 404.9760 R 11465



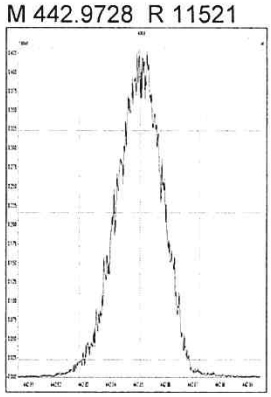
M 416.9760 R 11904



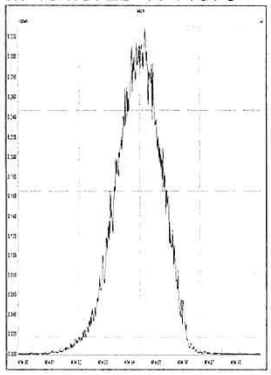
M 430.9728 R 11907



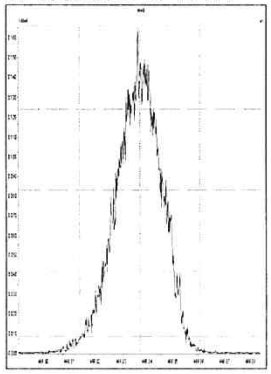
M 442.9728 R 11521



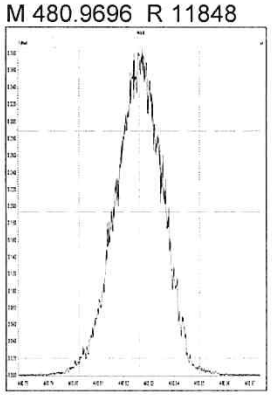
M 454.9728 R 11573



M 466.9728 R 11417



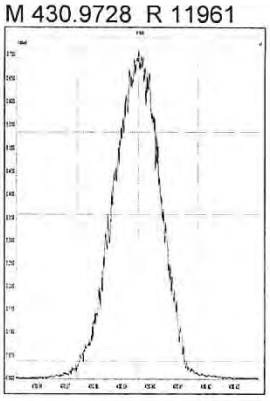
M 480.9696 R 11848



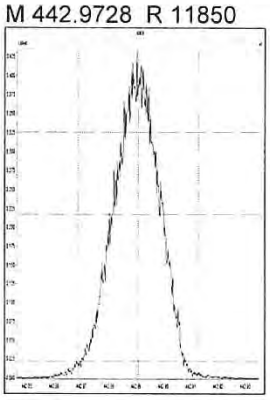
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, January 25, 2018 06:53:57 Eastern Standard Time

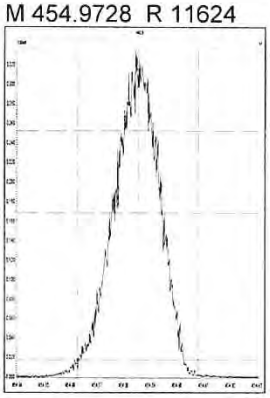
M 430.9728 R 11961



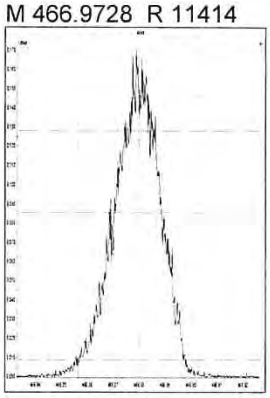
M 442.9728 R 11850



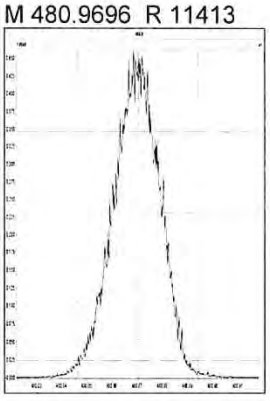
M 454.9728 R 11624



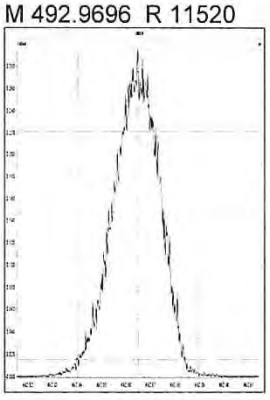
M 466.9728 R 11414



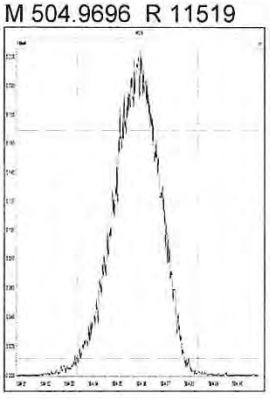
M 480.9696 R 11413



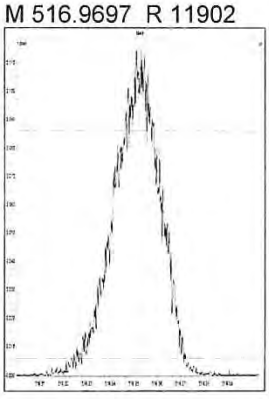
M 492.9696 R 11520



M 504.9696 R 11519



M 516.9697 R 11902



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

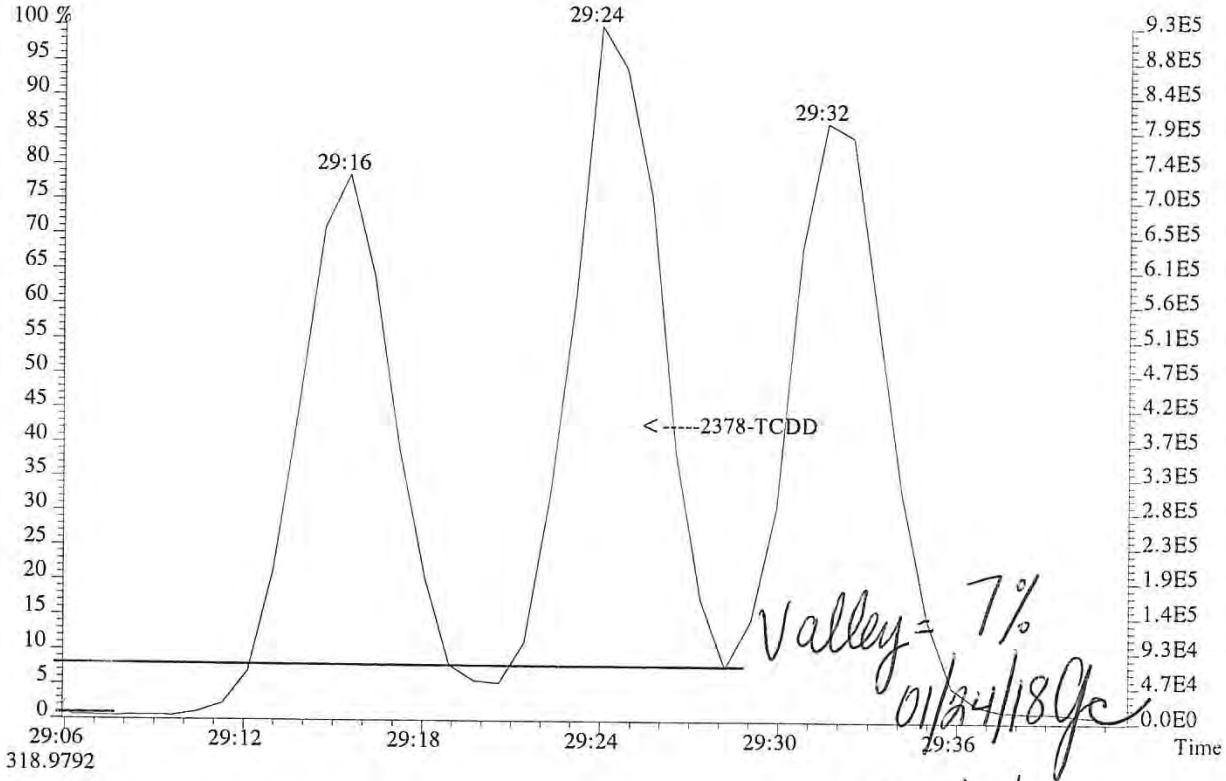
Case No.: _____ SDG No.:
ID: 0.25 (mm)
Lab File ID: P513848
Date Analyzed: 24-JAN-2018
Time Analyzed: 11:44:47

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	24:25	30:32
TCDD	26:17	30:22
PeCDF	30:27	34:34
PeCDD	31:55	34:19
HxCDF	35:11	37:38
HxCDD	35:41	37:14
HpCDF	38:49	40:14
HpCDD	39:04	39:44

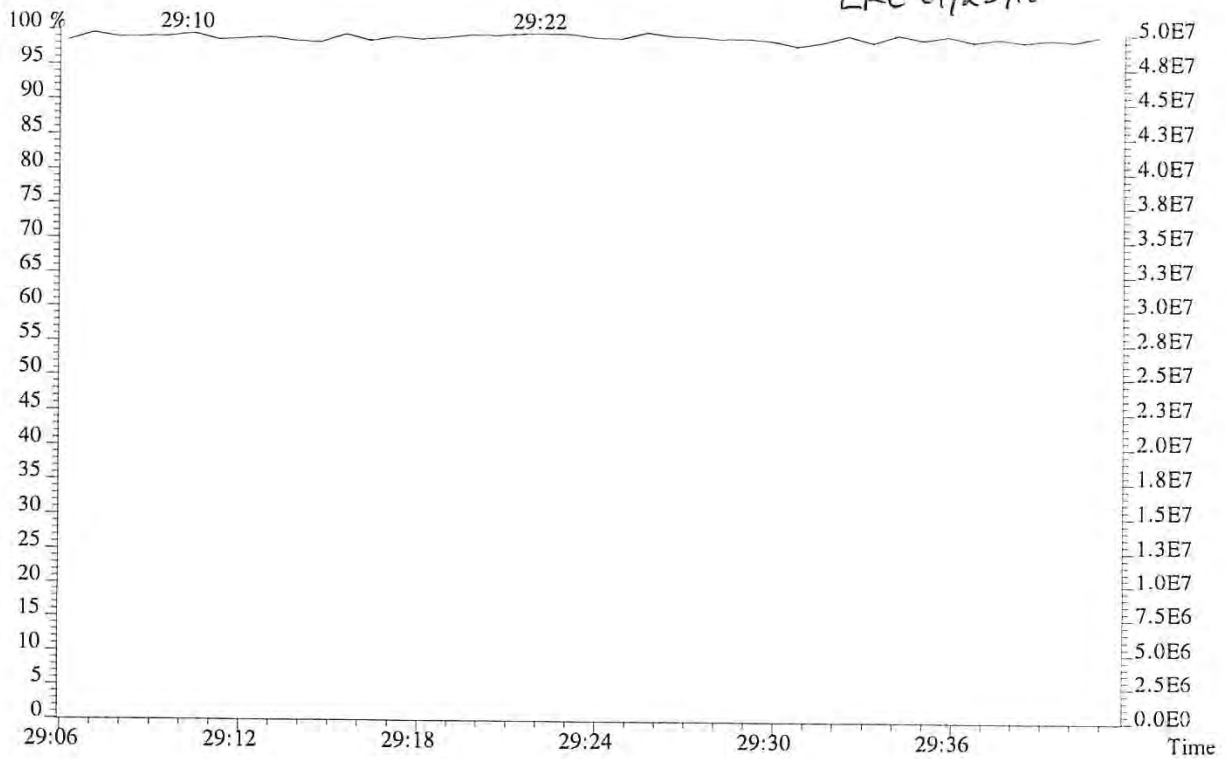
% Valley 2378-TCDD: 7 %

060659

File:P513848 #1-665 Acq:24-JAN-2018 11:44:47 Probe EI+ Magnet SIR VG BioTech Mass spectt
Sample#1 Exp:183360
319.8965

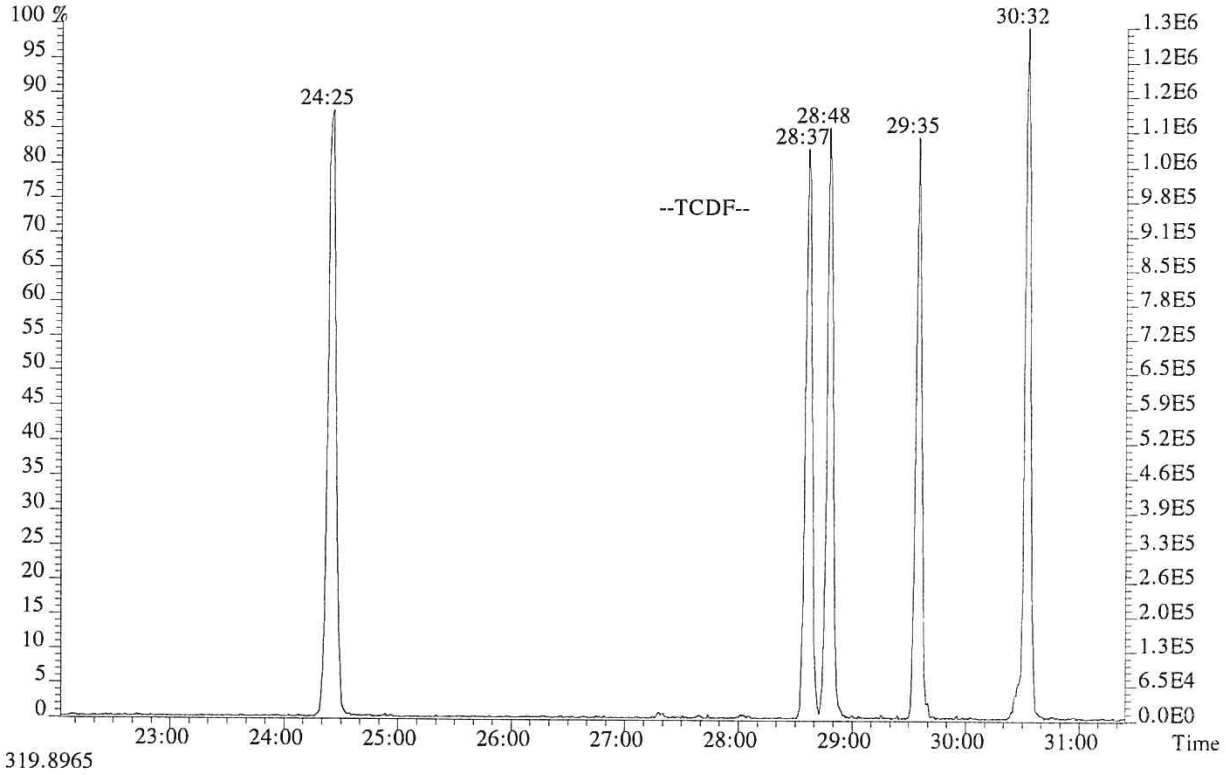


LKL 01/25/18

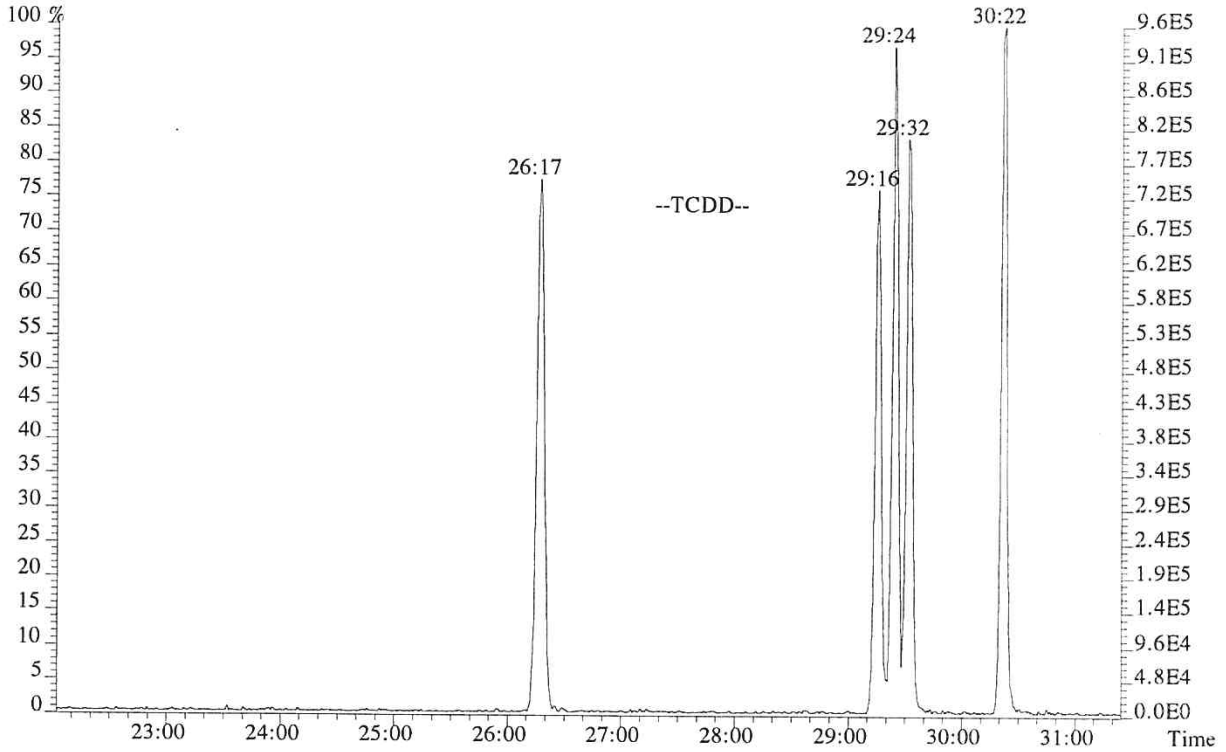


060660

File:P513848 #1-665 Acq:24-JAN-2018 11:44:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:183360
303.9016

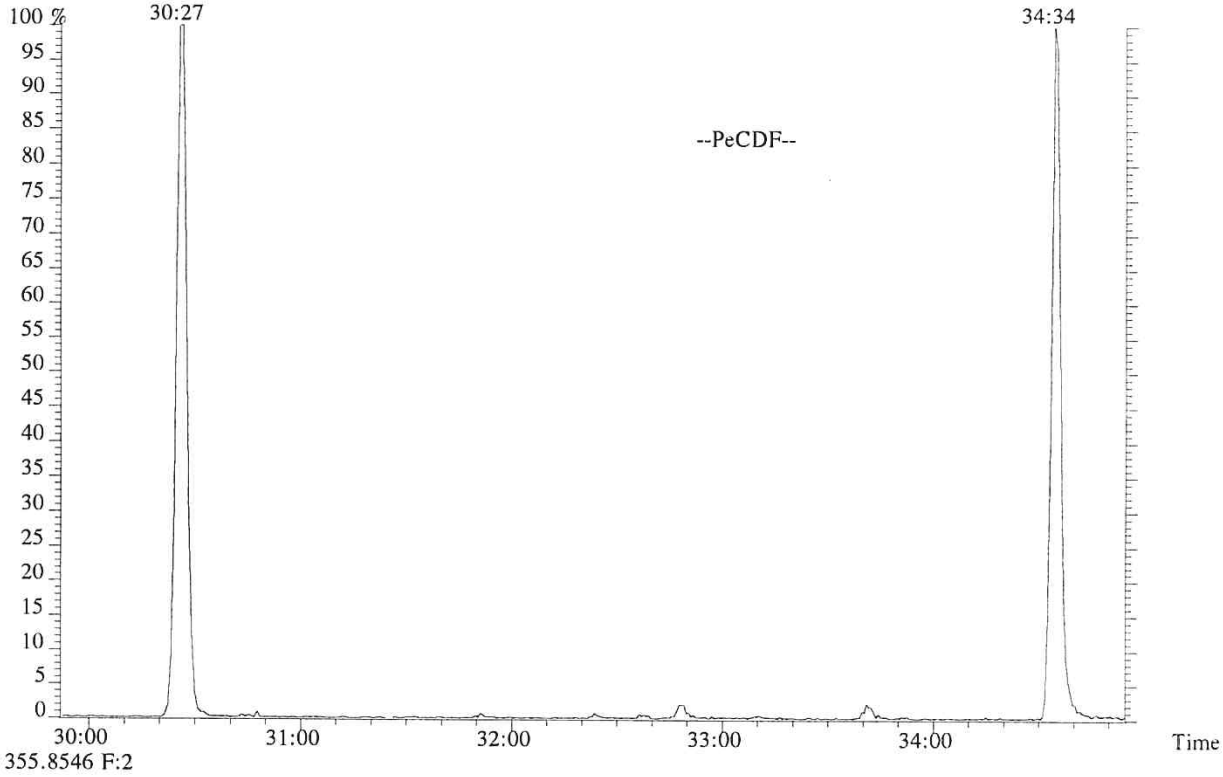


319.8965

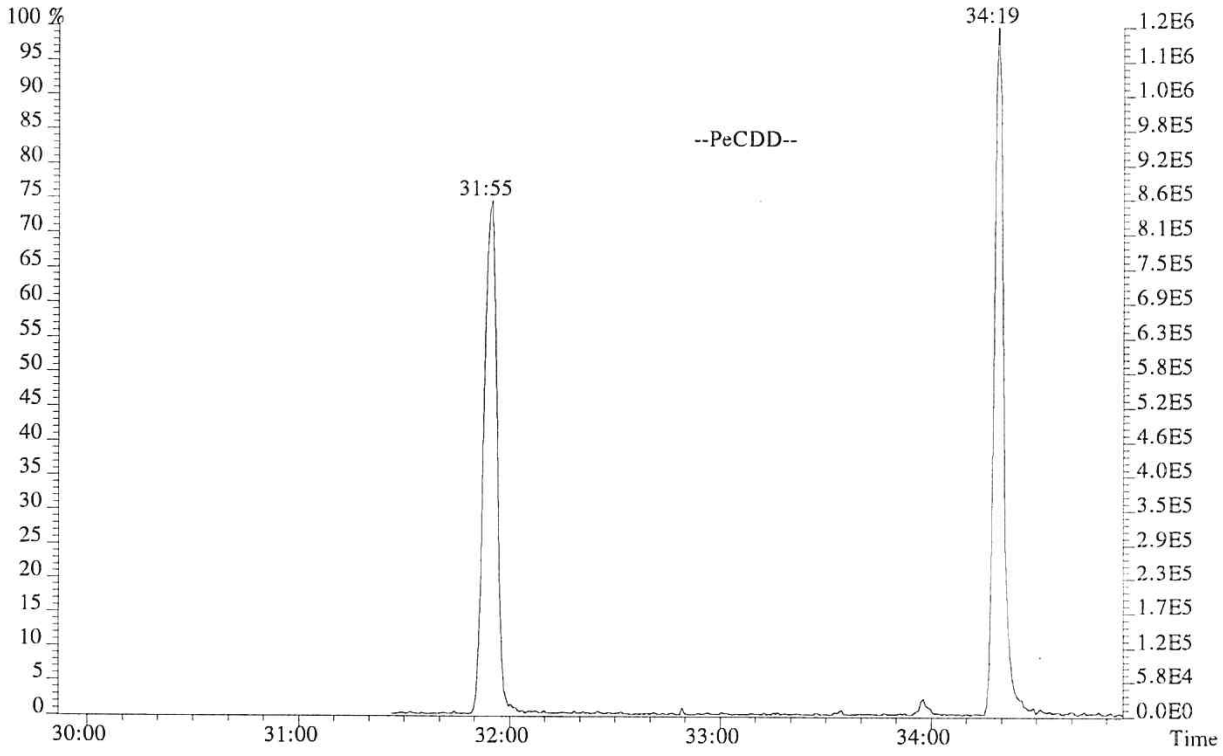


060661

File:P513848 #1-665 Acq:24-JAN-2018 11:44:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:183360
339.8597,339.8597 F:2

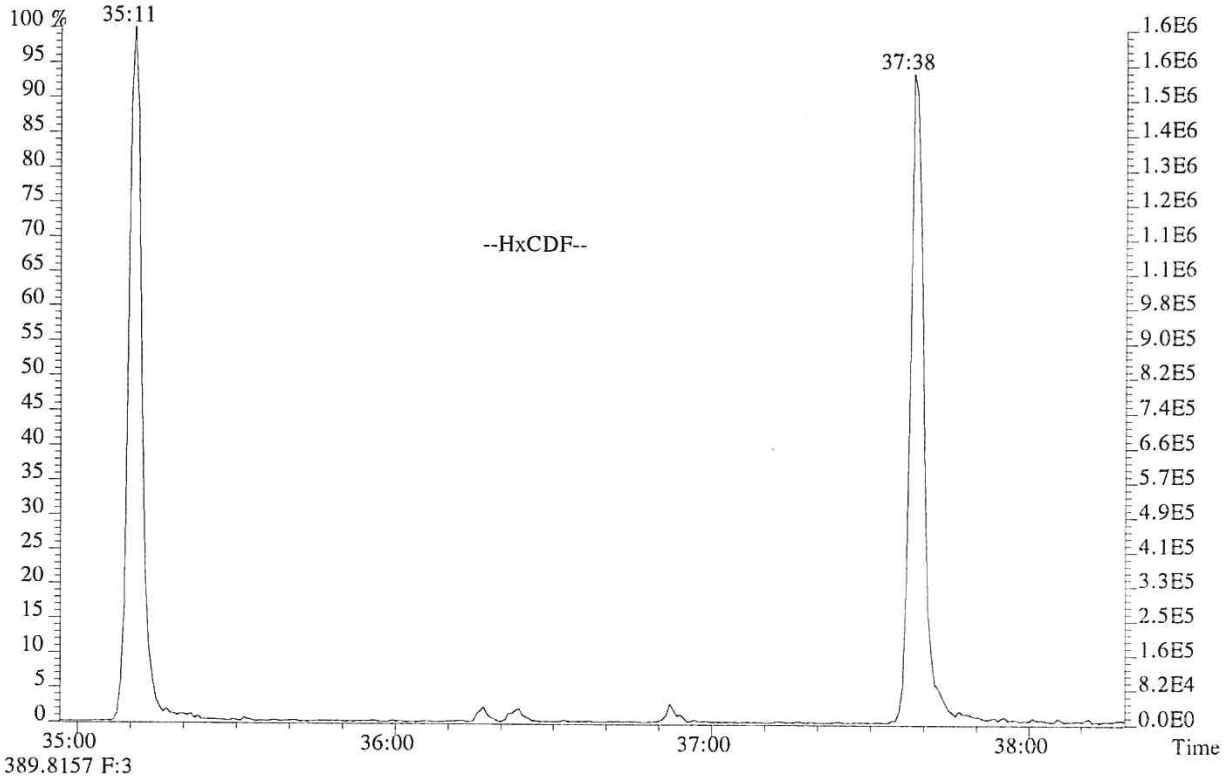


355.8546 F:2

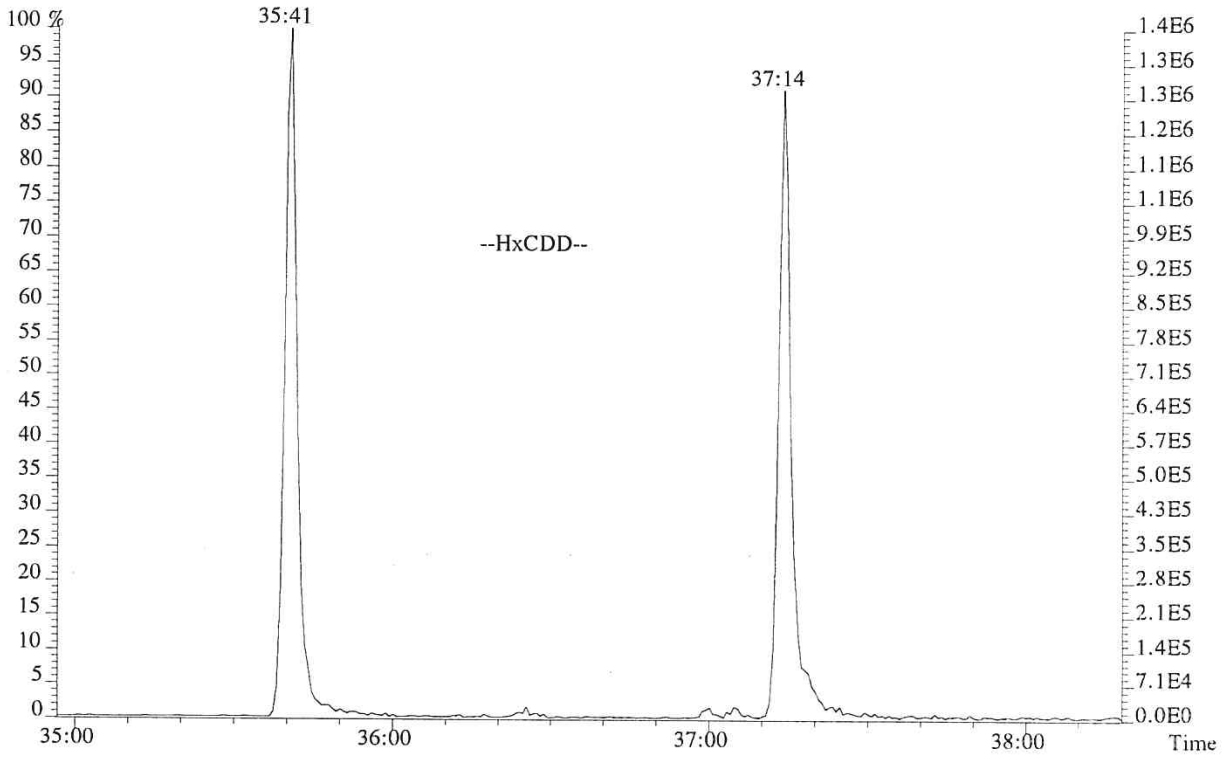


060662

File:P513848 #1-303 Acq:24-JAN-2018 11:44:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:183360
373.8208 F:3

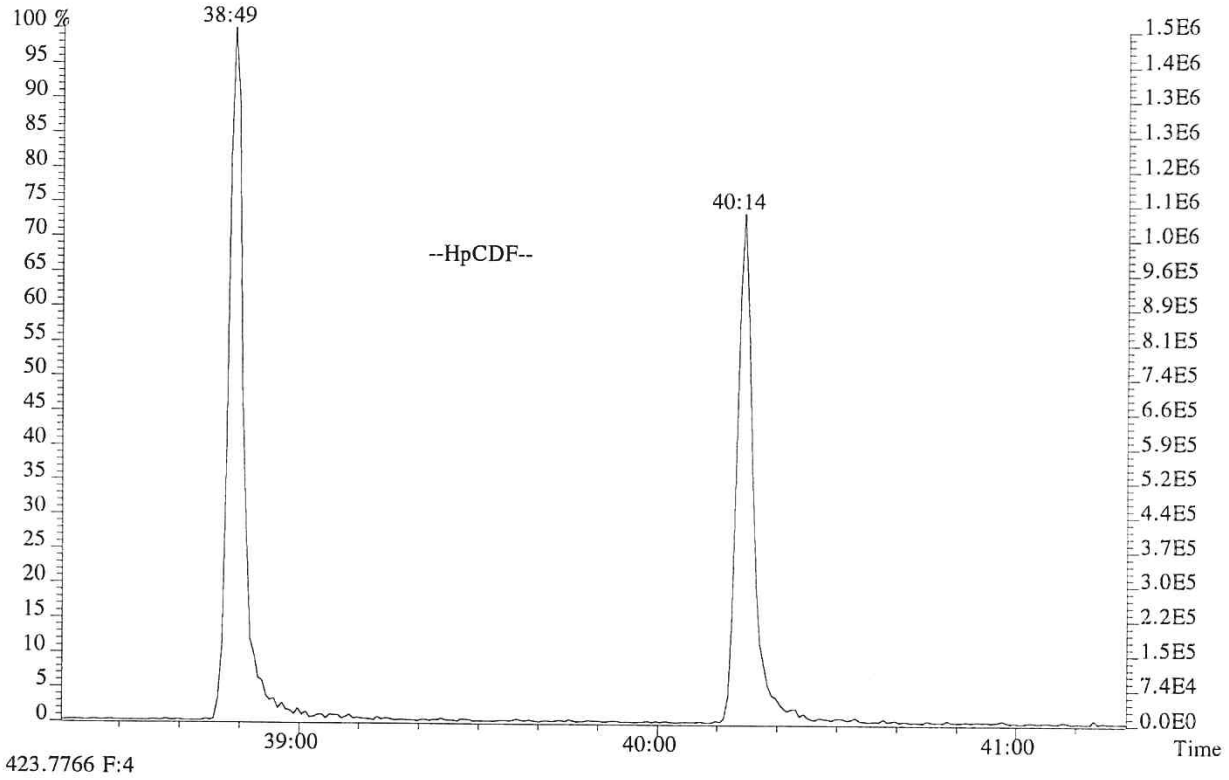


389.8157 F:3

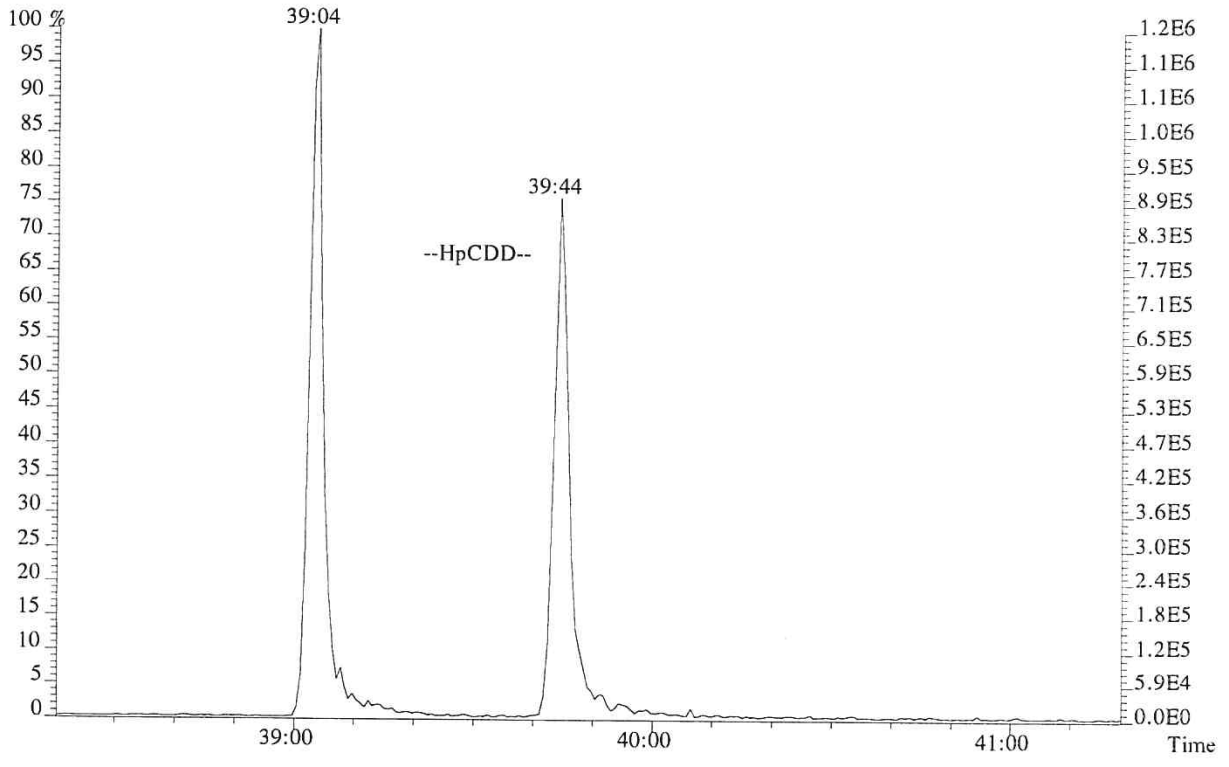


060663

File:P513848 #1-268 Acq:24-JAN-2018 11:44:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:183360
407.7818 F:4



423.7766 F:4



060664

USEPA - CLP
6DFA6
CDD/CDF INITIAL CALIBRATION RESPONSE FACTOR SUMMARY
HIGH RESOLUTION

Lab Name: ALS Environmental Contract No.:
Lab Code: ALSTX Case No.: TO No.: SDG No.:
GC Column: DB-5MSUI ID: 0.25(mm) Instrument ID: E-HRMS-07
Init. Calib. Date(s).: 01/24/18 Method 1613/8290
Init. Calib. Time.: 11:44

RR/RRF

Target Analytes	CS0.5	CS1	CS2	CS3	CS4	CS5	MEAN RR/RRF	%RSD	QC LIMITS
2,3,7,8-TCDD	1.10	1.07	1.06	1.07	1.10	1.11	1.09	1.96	+/-20%
2,3,7,8-TCDF	0.89	0.96	0.91	0.94	0.96	0.99	0.94	4.09	+/-20%
1,2,3,7,8-PeCDF	0.93	0.98	1.02	1.03	1.06	1.06	1.01	5.02	+/-20%
1,2,3,7,8-PeCDD	0.92	0.97	0.96	0.95	0.97	0.97	0.96	2.08	+/-20%
2,3,4,7,8-PeCDF	0.87	0.94	0.98	0.97	0.99	1.00	0.96	4.97	+/-20%
1,2,3,4,7,8-HxCDF	1.07	1.13	1.22	1.21	1.25	1.26	1.19	6.34	+/-20%
1,2,3,6,7,8-HxCDF	1.06	1.07	1.13	1.13	1.17	1.17	1.12	4.28	+/-20%
1,2,3,4,7,8-HxCDD	0.96	1.04	1.03	1.06	1.06	1.07	1.04	3.78	+/-20%
1,2,3,6,7,8-HxCDD	1.00	1.06	1.03	1.03	1.05	1.06	1.04	2.33	+/-20%
1,2,3,7,8,9-HxCDD	0.98	1.06	1.10	1.06	1.07	1.10	1.06	4.09	+/-20%
2,3,4,6,7,8-HxCDF	1.01	1.09	1.12	1.13	1.15	1.17	1.11	5.18	+/-20%
1,2,3,7,8,9-HxCDF	1.08	1.10	1.15	1.17	1.18	1.18	1.14	3.94	+/-20%
1,2,3,4,6,7,8-HpCDF	1.31	1.32	1.36	1.37	1.37	1.38	1.35	2.22	+/-20%
1,2,3,4,6,7,8-HpCDD	1.00	0.98	1.05	1.03	1.05	1.04	1.02	2.88	+/-20%
1,2,3,4,7,8,9-HpCDF	1.18	1.23	1.29	1.30	1.28	1.27	1.26	3.68	+/-20%
OCDD	1.05	1.14	1.14	1.13	1.12	1.12	1.12	2.97	+/-20%
OCDF	1.26	1.39	1.35	1.33	1.39	1.43	1.36	4.36	+/-20%
Labeled Compounds									
13C-2,3,7,8-TCDD	0.91	0.87	0.93	0.90	0.94	0.98	0.92	4.14	+/-35%
13C-1,2,3,7,8-PeCDD	0.91	0.83	1.03	0.99	1.01	1.08	0.98	9.21	+/-35%
13C-1,2,3,4,7,8-HxCDD	0.94	0.90	0.90	0.95	0.93	0.92	0.92	2.06	+/-35%
13C-1,2,3,6,7,8-HxCDD	0.96	0.96	0.94	0.97	0.97	0.91	0.95	2.50	+/-35%
13C-1,2,3,4,6,7,8-HpCDD	0.81	0.92	0.79	0.88	0.90	0.85	0.86	5.83	+/-35%
13C-OCDD	0.52	0.63	0.58	0.58	0.62	0.57	0.58	6.90	+/-35%
13C-2,3,7,8-TCDF	1.45	1.48	1.53	1.60	1.53	1.49	1.51	3.54	+/-35%
13C-1,2,3,7,8-PeCDF	1.37	1.32	1.50	1.50	1.52	1.62	1.47	7.34	+/-35%
13C-2,3,4,7,8-PeCDF	1.36	1.29	1.50	1.46	1.52	1.61	1.46	7.94	+/-35%
13C-1,2,3,4,7,8-HxCDF	1.22	1.27	1.18	1.29	1.25	1.19	1.23	3.63	+/-35%
13C-1,2,3,6,7,8-HxCDF	1.40	1.48	1.34	1.42	1.41	1.34	1.40	3.84	+/-35%
13C-2,3,4,6,7,8-HxCDF	1.26	1.26	1.23	1.27	1.28	1.23	1.26	1.87	+/-35%
13C-1,2,3,7,8,9-HxCDF	1.03	1.17	1.06	1.00	1.17	1.08	1.09	6.47	+/-35%
13C-1,2,3,4,6,7,8-HpCDF	0.96	1.02	0.92	0.99	0.98	0.93	0.97	3.83	+/-35%
13C-1,2,3,4,7,8,9-HpCDF	0.76	0.95	0.79	0.74	0.86	0.82	0.82	9.19	+/-35%
37Cl-2,3,7,8-TCDD	0.93	0.96	1.03	1.00	1.05	1.11	1.01	6.21	+/-35%

1.123789-HxCDD Relative Response (RR) is calculated based on the labeled analog of the other two HxCDDs.
2. OCDF RR is calculated based on the labeled analog of OCDD

USEPA - CLP
6DFB6
CDD/CDF INITIAL CALIBRATION ION ABUNDANCE RATIO SUMMARY
HIGH RESOLUTION

Lab Name: ALS Environmental Contract No.:
Lab Code: ALSTX Case No.: TO No.: SDG No.:
GC Column: DB-5MSUI ID: 0.25(mm) Instrument ID: E-HRMS-07
Init. Calib. Date(s).: 01/24/18 Method 1613/8290
Init. Calib. Time.: 11:44

Target Analytes	SELECTED IONS	ION ABUNDANCE RATIO CS0.5	CS1	CS2	CS3	CS4	CS5	FLAG	ION RATIO QC LIMITS
2,3,7,8-TCDF	304/306	0.76	0.72	0.74	0.75	0.77	0.77		0.65-0.89
2,3,7,8-TCDD	320/322	0.73	0.88	0.76	0.79	0.78	0.78		0.65-0.89
1,2,3,7,8-PeCDF	340/342	1.42	1.54	1.48	1.53	1.54	1.55		1.32-1.78
2,3,4,7,8-PeCDF	340/342	1.48	1.46	1.50	1.52	1.53	1.54		1.32-1.78
1,2,3,7,8-PeCDD	356/358	1.64	1.66	1.58	1.56	1.56	1.57		1.32-1.78
1,2,3,4,7,8-HxCDF	374/376	1.18	1.20	1.20	1.22	1.22	1.23		1.05-1.43
1,2,3,6,7,8-HxCDF	374/376	1.28	1.17	1.21	1.21	1.22	1.24		1.05-1.43
2,3,4,6,7,8-HxCDF	374/376	1.12	1.24	1.22	1.22	1.21	1.22		1.05-1.43
1,2,3,7,8,9-HxCDF	374/376	1.19	1.33	1.22	1.21	1.24	1.23		1.05-1.43
1,2,3,4,7,8-HxCDD	390/392	1.32	1.26	1.25	1.25	1.25	1.26		1.05-1.43
1,2,3,6,7,8-HxCDD	390/392	1.09	1.35	1.26	1.26	1.26	1.26		1.05-1.43
1,2,3,7,8,9-HxCDD	390/392	1.23	1.21	1.24	1.28	1.26	1.25		1.05-1.43
1,2,3,4,6,7,8-HpCDF	408/410	0.98	1.03	1.02	1.02	1.03	1.04		0.88-1.20
1,2,3,4,7,8,9-HpCDF	408/410	1.03	0.96	1.01	1.03	1.03	1.04		0.88-1.20
1,2,3,4,6,7,8-HpCDD	424/426	0.99	1.11	1.04	1.05	1.05	1.05		0.88-1.20
OCDF	442/444	0.88	0.95	0.89	0.90	0.91	0.91		0.76-1.02
OCDD	458/460	0.86	0.88	0.89	0.89	0.89	0.89		0.76-1.02
13C-2,3,7,8-TCDD	332/334	0.81	0.80	0.80	0.80	0.81	0.80		0.65-0.89
13C-1,2,3,7,8-PeCDD	368/370	1.60	1.59	1.59	1.58	1.59	1.59		1.32-1.78
13C-1,2,3,4,7,8-HxCDD	402/404	1.29	1.27	1.26	1.33	1.27	1.28		1.05-1.43
13C-1,2,3,6,7,8-HxCDD	402/404	1.26	1.28	1.27	1.20	1.26	1.26		1.05-1.43
13C-1,2,3,4,6,7,8-HpCDD	436/438	1.06	1.04	1.06	1.06	1.08	1.06		0.88-1.20
13C-OCDD	470/472	0.90	0.91	0.90	0.89	0.90	0.89		0.76-1.02
13C-2,3,7,8-TCDF	316/318	0.79	0.79	0.80	0.79	0.79	0.79		0.65-0.89
13C-1,2,3,7,8-PeCDF	352/354	1.58	1.60	1.59	1.58	1.58	1.59		1.32-1.78
13C-2,3,4,7,8-PeCDF	352/354	1.58	1.58	1.58	1.58	1.58	1.58		1.32-1.78
13C-1,2,3,4,7,8-HxCDF	384/386	0.53	0.52	0.52	0.53	0.53	0.53		0.43-0.59
13C-1,2,3,6,7,8-HxCDF	384/386	0.53	0.53	0.53	0.53	0.53	0.53		0.43-0.59
13C-2,3,4,6,7,8-HxCDF	384/386	0.52	0.52	0.52	0.52	0.53	0.52		0.43-0.59
13C-1,2,3,7,8,9-HxCDF	384/386	0.52	0.52	0.53	0.53	0.52	0.52		0.43-0.59
13C-1,2,3,4,6,7,8-HpCDF	418/420	0.45	0.45	0.45	0.45	0.45	0.45		0.37-0.51
13C-1,2,3,4,7,8,9-HpCDF	418/420	0.45	0.44	0.45	0.45	0.45	0.45		0.37-0.51
13C-1,2,3,4-TCDD	332/334	0.81	0.82	0.81	0.81	0.82	0.82		0.65-0.89
13C-1,2,3,7,8,9-HxCDD	402/404	1.26	1.25	1.27	1.23	1.25	1.25		1.05-1.43

Quality Control (QC) limits represent +/- 15% window around the theoretical ion abundance ratio. The laboratory must flag any analyte in any calibration solution which does not meet the ion abundance ratio QC limit by placing an asterisk in the flag column.

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76554

Run #1 Filename P513850 Samp: 1 Inj: 1 Acquired: 24-JAN-18 13:32:06
Processed: 24-JAN-18 15:49:37 Sample ID: CS0.5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:48	3.276e+02	4.332e+02	0.76	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	2.212e+03	1.557e+03	1.42	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:42	2.093e+03	1.410e+03	1.48	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:17	1.728e+03	1.459e+03	1.18	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:23	2.025e+03	1.584e+03	1.28	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:53	1.636e+03	1.459e+03	1.12	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	1.473e+03	1.234e+03	1.19	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:49	1.513e+03	1.543e+03	0.98	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	1.104e+03	1.067e+03	1.03	yes	no	1.258
10	Unk	OCDF	42:45	1.481e+03	1.680e+03	0.88	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:32	2.508e+02	3.419e+02	0.73	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:58	1.543e+03	9.381e+02	1.64	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	37:00	1.247e+03	9.443e+02	1.32	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:05	1.208e+03	1.105e+03	1.09	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:19	1.245e+03	1.015e+03	1.23	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:44	9.700e+02	9.817e+02	0.99	yes	no	1.025
17	Unk	OCDD	42:31	1.223e+03	1.416e+03	0.86	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:47	1.518e+05	1.920e+05	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:48	1.987e+05	1.259e+05	1.58	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:41	1.969e+05	1.249e+05	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:16	8.196e+04	1.558e+05	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:23	9.429e+04	1.782e+05	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:52	8.377e+04	1.622e+05	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:37	6.829e+04	1.322e+05	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:48	5.778e+04	1.288e+05	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	4.552e+04	1.019e+05	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:31	9.630e+04	1.195e+05	0.81	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	1.330e+05	8.317e+04	1.60	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	1.026e+05	7.962e+04	1.29	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:04	1.036e+05	8.231e+04	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:44	8.056e+04	7.625e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	42:31	9.520e+04	1.052e+05	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:58	1.055e+05	1.310e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:18	1.085e+05	8.606e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:32	5.518e+02				no	1.014

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www.alsglobal.com

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76554

Run #1 Filename P513850 Samp: 1 Inj: 1 Acquired: 24-JAN-18 13:32:06
Processed: 24-JAN-18 15:49:37 LAB. ID: CS0.5

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.43e+04	7.40e+02	8.7e+01	8.19e+04	1.58e+03	5.2e+01
2	1,2,3,7,8-PeCDF	4.30e+05	1.01e+03	4.3e+02	3.00e+05	2.96e+03	1.0e+02
3	2,3,4,7,8-PeCDF	4.25e+05	1.01e+03	4.2e+02	2.98e+05	2.96e+03	1.0e+02
4	1,2,3,4,7,8-HxCDF	3.96e+05	8.76e+02	4.5e+02	3.10e+05	2.44e+02	1.3e+03
5	1,2,3,6,7,8-HxCDF	4.08e+05	8.76e+02	4.7e+02	3.20e+05	2.44e+02	1.3e+03
6	2,3,4,6,7,8-HxCDF	3.56e+05	8.76e+02	4.1e+02	3.17e+05	2.44e+02	1.3e+03
7	1,2,3,7,8,9-HxCDF	3.08e+05	8.76e+02	3.5e+02	2.40e+05	2.44e+02	9.9e+02
8	1,2,3,4,6,7,8-HpCDF	3.07e+05	8.60e+02	3.6e+02	3.29e+05	5.36e+02	6.1e+02
9	1,2,3,4,7,8,9-HpCDF	2.09e+05	8.60e+02	2.4e+02	1.94e+05	5.36e+02	3.6e+02
10	OCDF	2.59e+05	6.40e+02	4.0e+02	2.85e+05	1.05e+03	2.7e+02
11	2,3,7,8-TCDD	4.96e+04	1.22e+03	4.1e+01	7.37e+04	7.32e+02	1.0e+02
12	1,2,3,7,8-PeCDD	3.05e+05	1.17e+03	2.6e+02	1.78e+05	1.88e+02	9.5e+02
13	1,2,3,4,7,8-HxCDD	2.70e+05	5.20e+02	5.2e+02	2.09e+05	4.64e+02	4.5e+02
14	1,2,3,6,7,8-HxCDD	2.52e+05	5.20e+02	4.8e+02	2.26e+05	4.64e+02	4.9e+02
15	1,2,3,7,8,9-HxCDD	2.55e+05	5.20e+02	4.9e+02	2.09e+05	4.64e+02	4.5e+02
16	1,2,3,4,6,7,8-HpCDD	1.84e+05	1.72e+02	1.1e+03	2.04e+05	1.92e+02	1.1e+03
17	OCDD	1.95e+05	1.24e+02	1.6e+03	2.29e+05	1.76e+03	1.3e+02
18	13C-2,3,7,8-TCDF	2.97e+07	7.00e+03	4.2e+03	3.74e+07	3.24e+03	1.2e+04
19	13C-1,2,3,7,8-PeCDF	3.75e+07	6.04e+02	6.2e+04	2.38e+07	1.03e+03	2.3e+04
20	13C-2,3,4,7,8-PeCDF	3.92e+07	6.04e+02	6.5e+04	2.45e+07	1.03e+03	2.4e+04
21	13C-1,2,3,4,7,8-HxCDF	1.77e+07	4.00e+02	4.4e+04	3.34e+07	1.14e+03	2.9e+04
22	13C-1,2,3,6,7,8-HxCDF	1.91e+07	4.00e+02	4.8e+04	3.65e+07	1.14e+03	3.2e+04
23	13C-2,3,4,6,7,8-HxCDF	1.78e+07	4.00e+02	4.5e+04	3.38e+07	1.14e+03	3.0e+04
24	13C-1,2,3,7,8,9-HxCDF	1.38e+07	4.00e+02	3.5e+04	2.65e+07	1.14e+03	2.3e+04
25	13C-1,2,3,4,6,7,8-HpCDF	1.16e+07	1.44e+03	8.1e+03	2.60e+07	5.60e+03	4.6e+03
26	13C-1,2,3,4,7,8,9-HpCDF	8.60e+06	1.44e+03	6.0e+03	1.92e+07	5.60e+03	3.4e+03
27	13C-2,3,7,8-TCDD	1.97e+07	6.10e+03	3.2e+03	2.45e+07	2.10e+03	1.2e+04
28	13C-1,2,3,7,8-PeCDD	2.62e+07	9.88e+02	2.7e+04	1.65e+07	6.72e+02	2.4e+04
29	13C-1,2,3,4,7,8-HxCDD	2.25e+07	4.24e+03	5.3e+03	1.74e+07	9.28e+02	1.9e+04
30	13C-1,2,3,6,7,8-HxCDD	2.12e+07	4.24e+03	5.0e+03	1.71e+07	9.28e+02	1.8e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.57e+07	9.20e+02	1.7e+04	1.49e+07	8.32e+02	1.8e+04
32	13C-OCDD	1.56e+07	1.68e+02	9.3e+04	1.71e+07	3.40e+02	5.0e+04
33	13C-1,2,3,4-TCDD	2.11e+07	6.10e+03	3.5e+03	2.60e+07	2.10e+03	1.2e+04
34	13C-1,2,3,7,8,9-HxCDD	2.13e+07	4.24e+03	5.0e+03	1.71e+07	9.28e+02	1.8e+04
35	37Cl-2,3,7,8-TCDD	1.10e+05	1.04e+03	1.1e+02			

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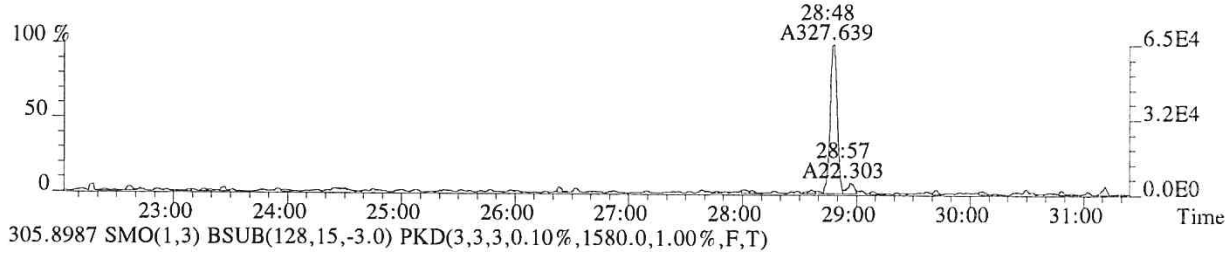
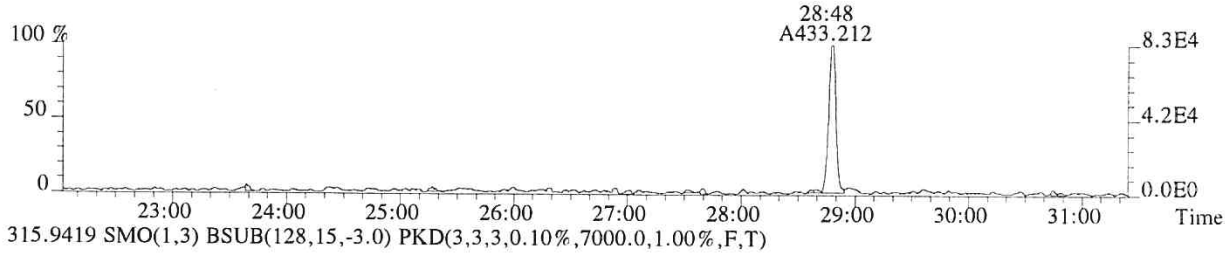
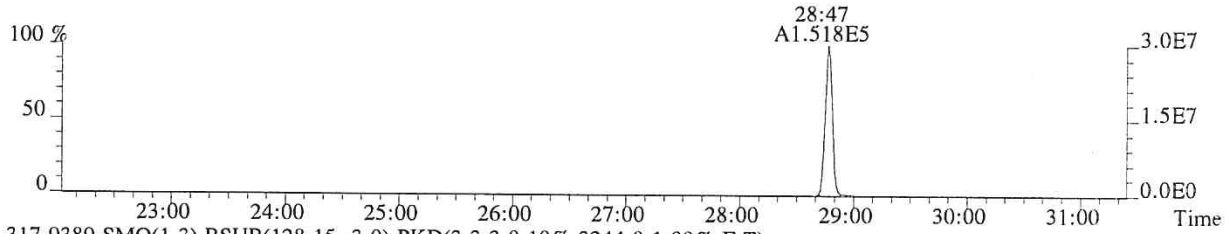
File:P513850 #1-665 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,740.0,1.00%,F,T)



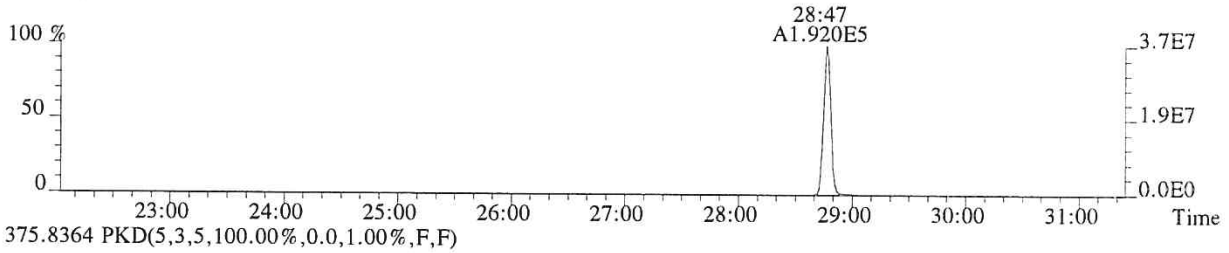
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1580.0,1.00%,F,T)



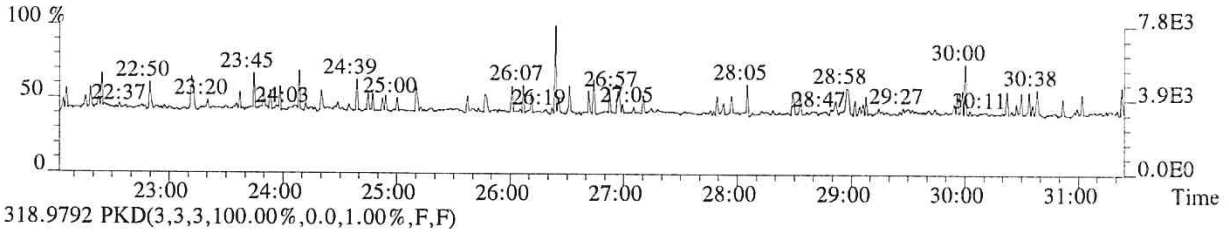
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7000.0,1.00%,F,T)



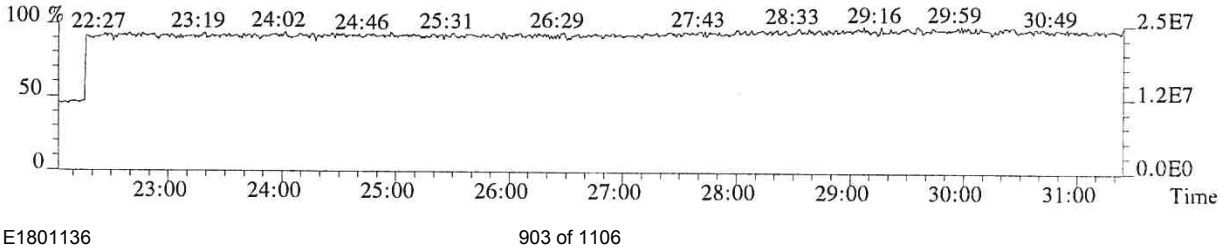
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3244.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

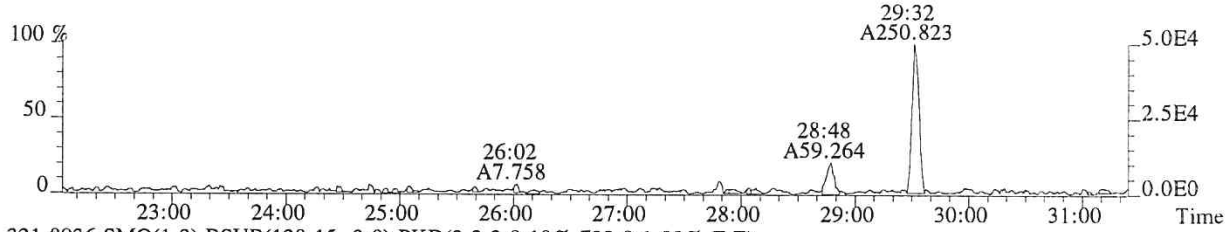


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

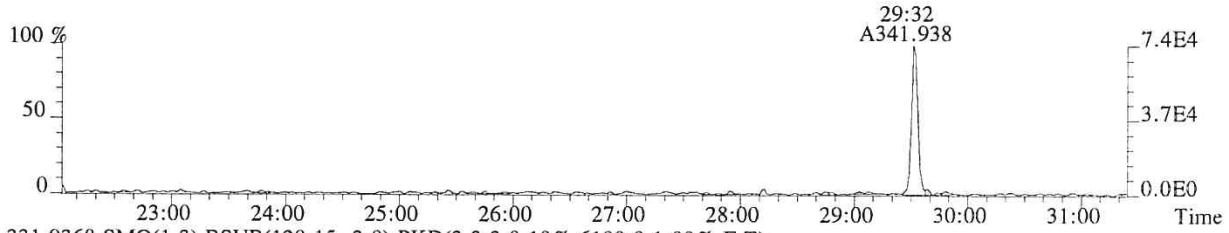


060669

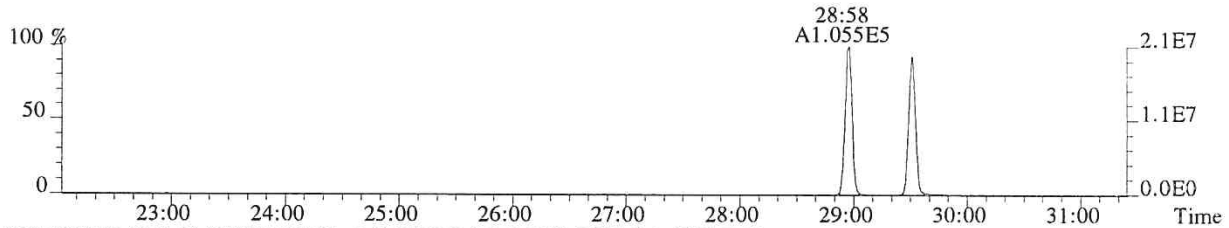
File:P513850 #1-665 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1220.0,1.00%,F,T)



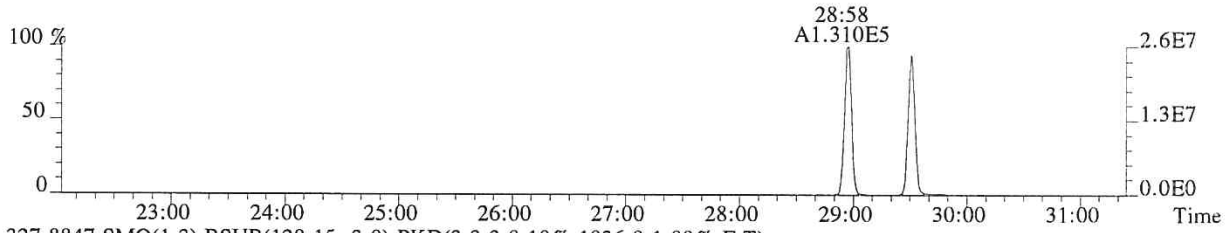
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,732.0,1.00%,F,T)



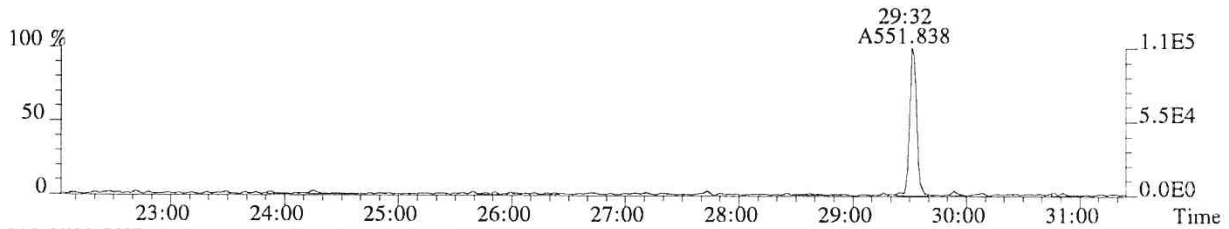
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6100.0,1.00%,F,T)



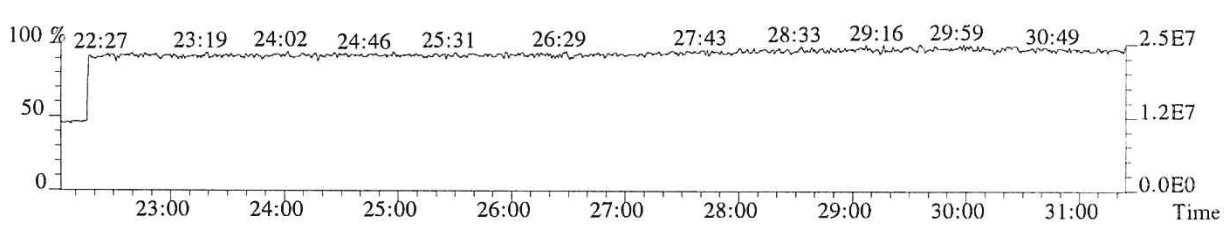
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2096.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1036.0,1.00%,F,T)

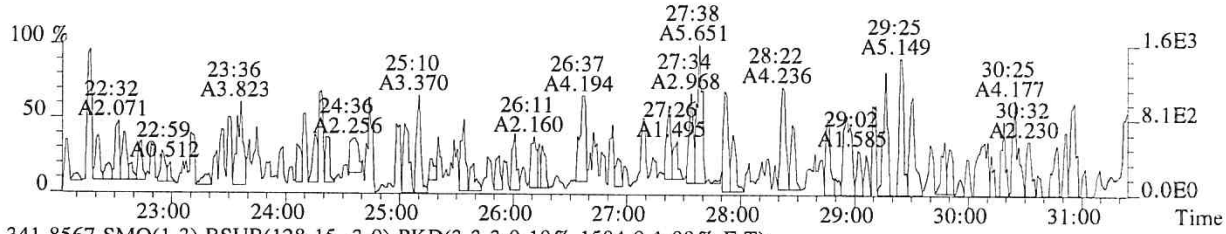


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

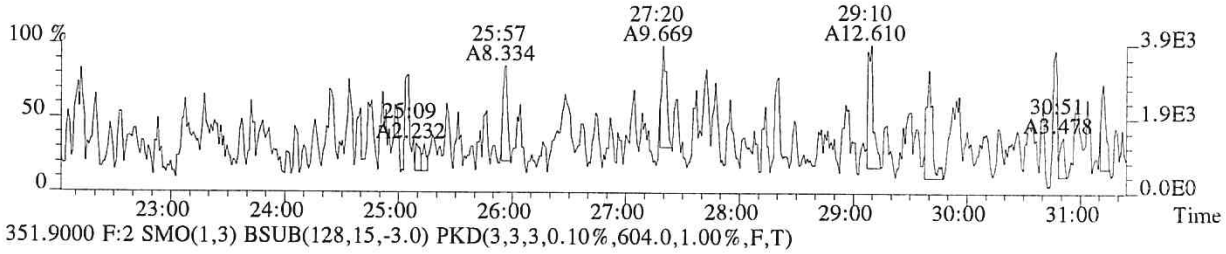


060670

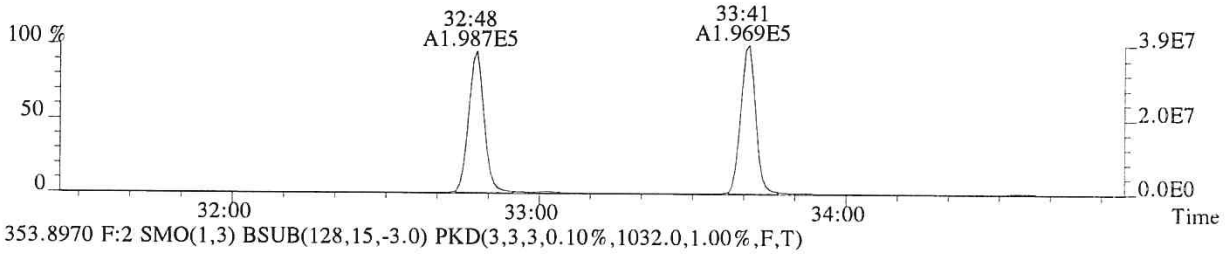
File:P513850 #1-665 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,244.0,1.00%,F,T)



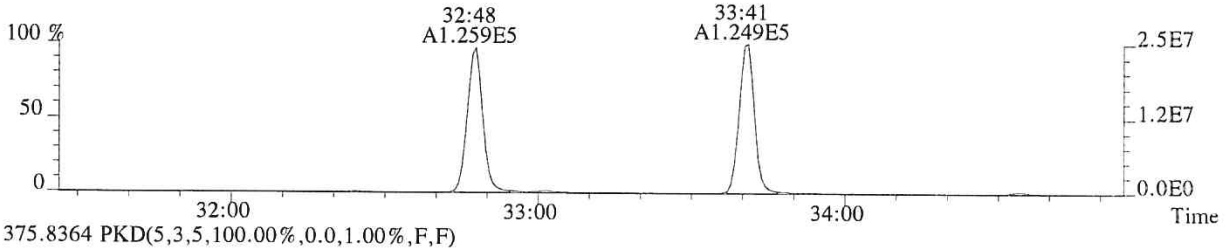
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1504.0,1.00%,F,T)



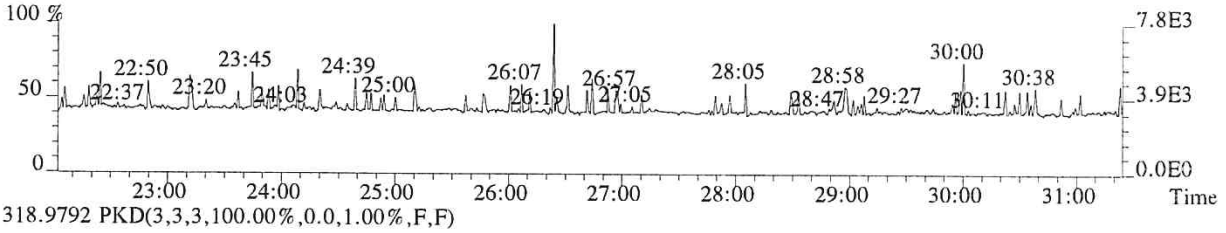
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,T)



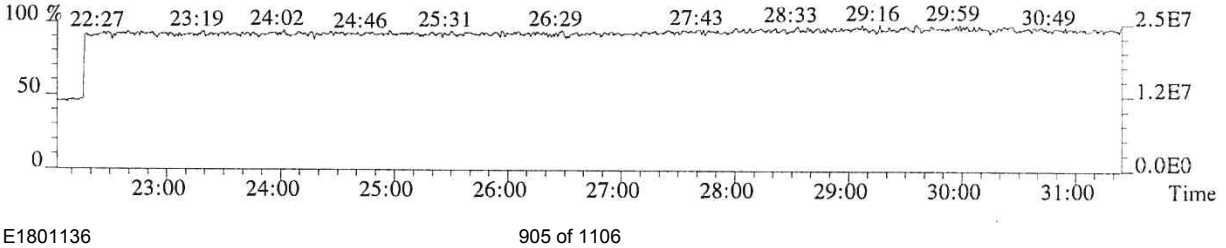
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1032.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

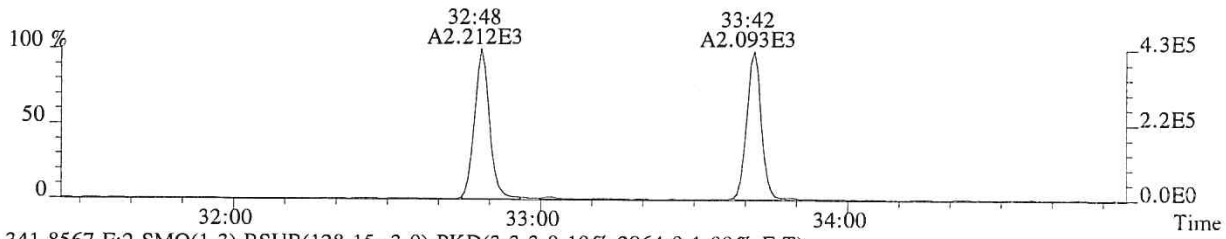


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

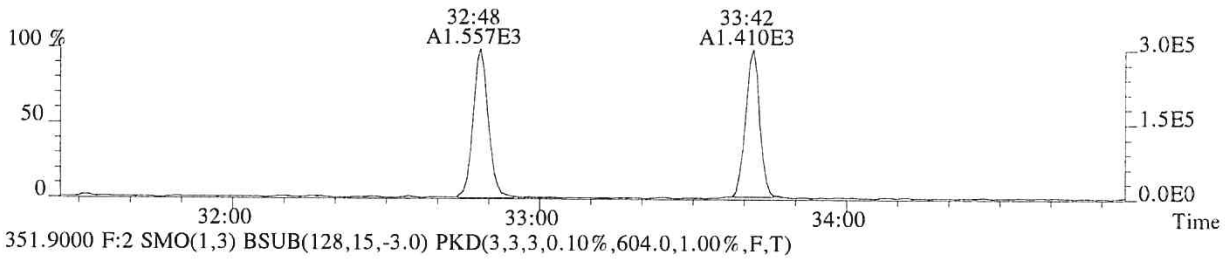


060671

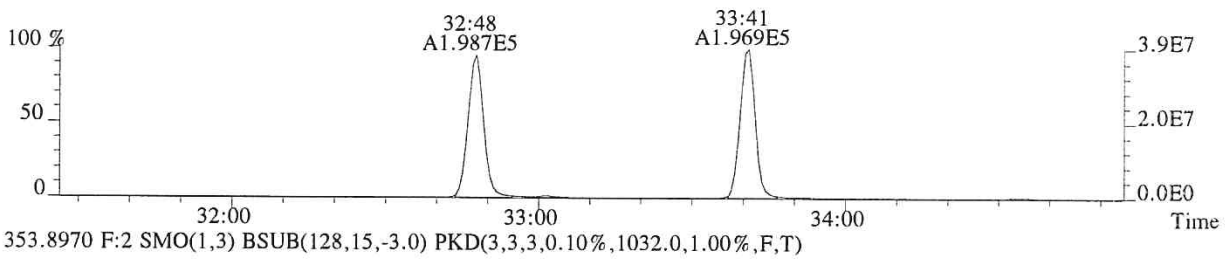
File:P513850 #1-313 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1008.0,1.00%,F,T)



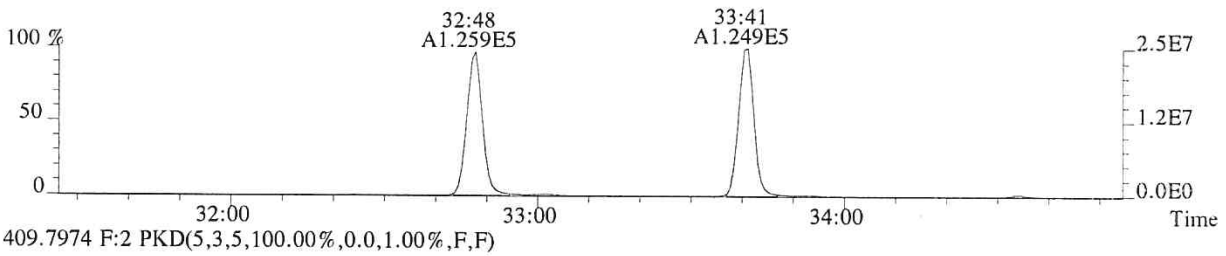
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2964.0,1.00%,F,T)



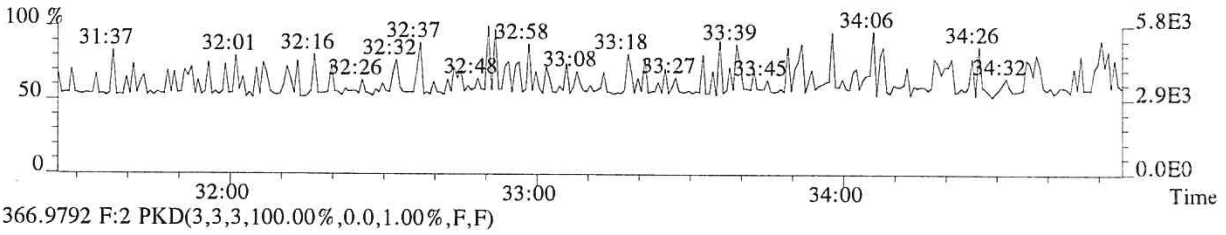
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,T)



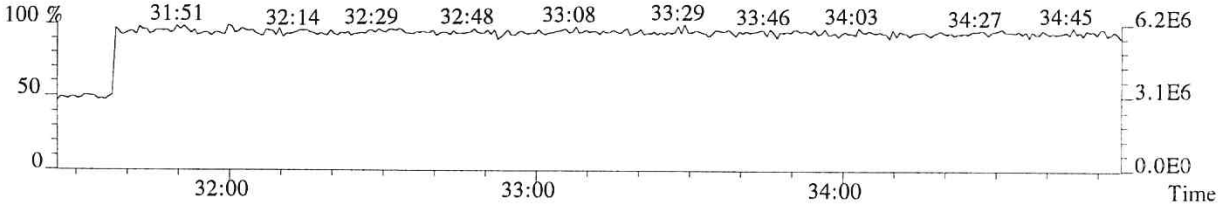
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1032.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

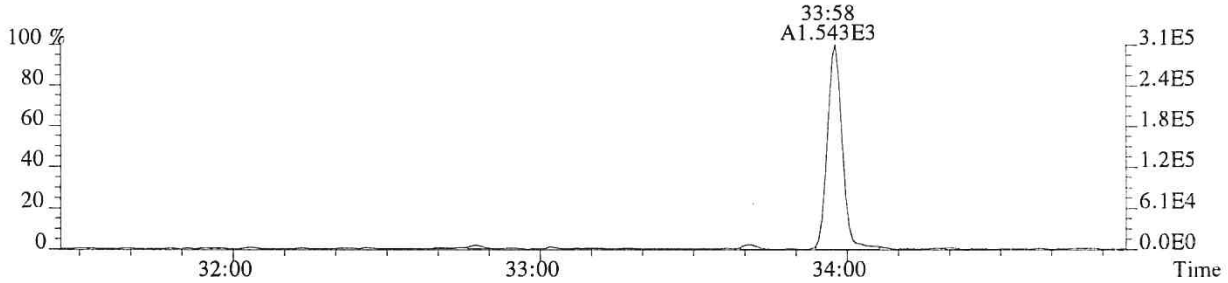


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

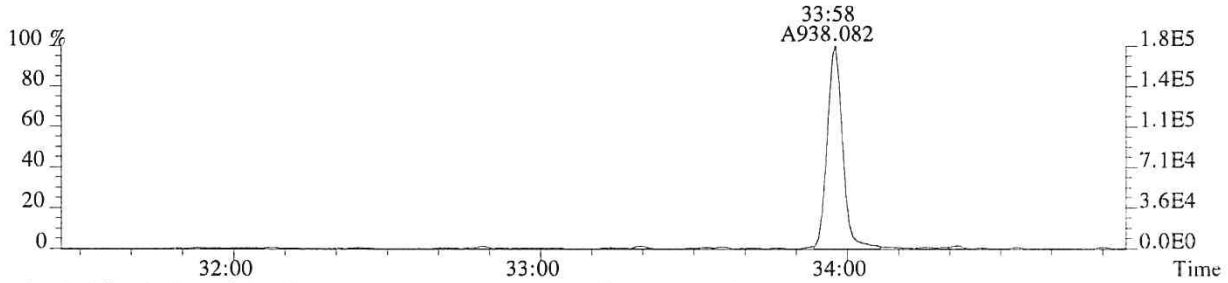


060672

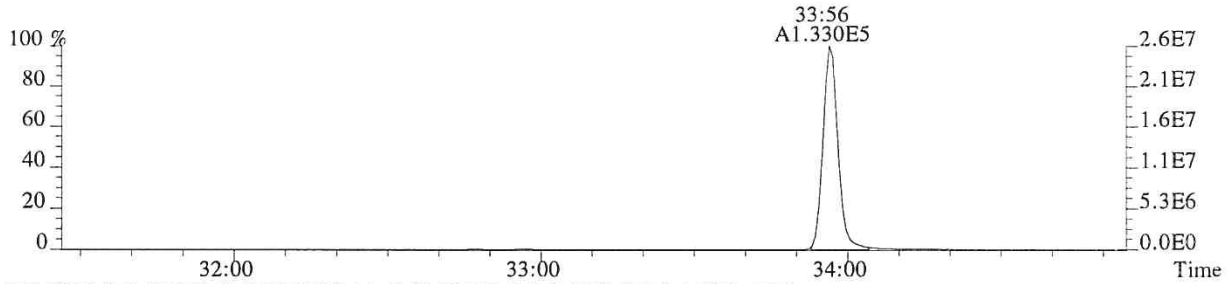
File:P513850 #1-313 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1172.0,1.00%,F,T)



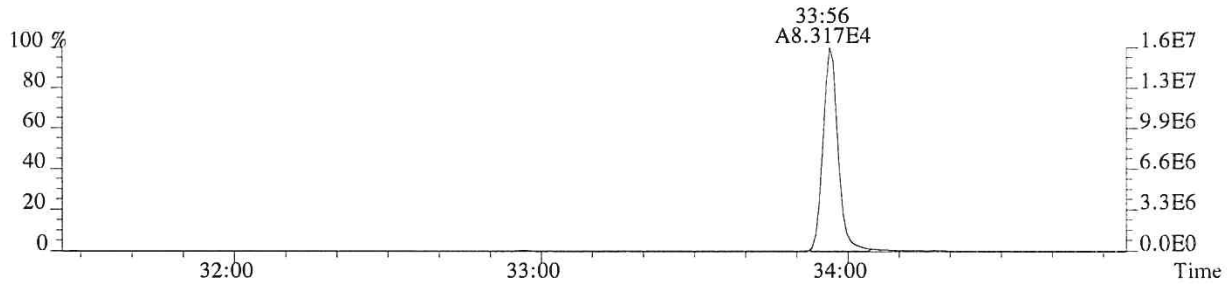
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,188.0,1.00%,F,T)



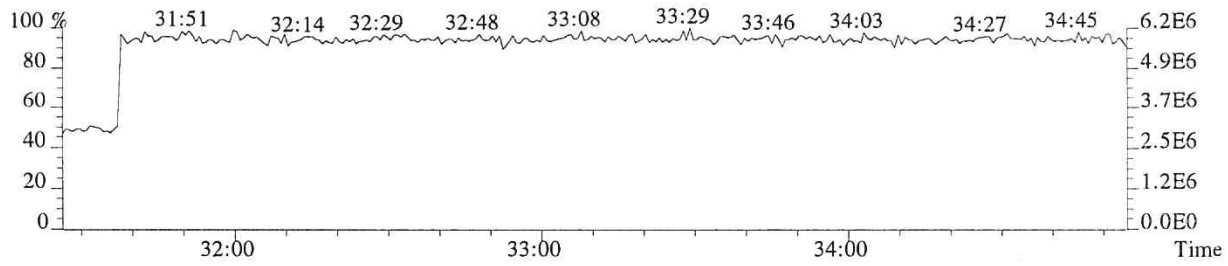
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,988.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,672.0,1.00%,F,T)

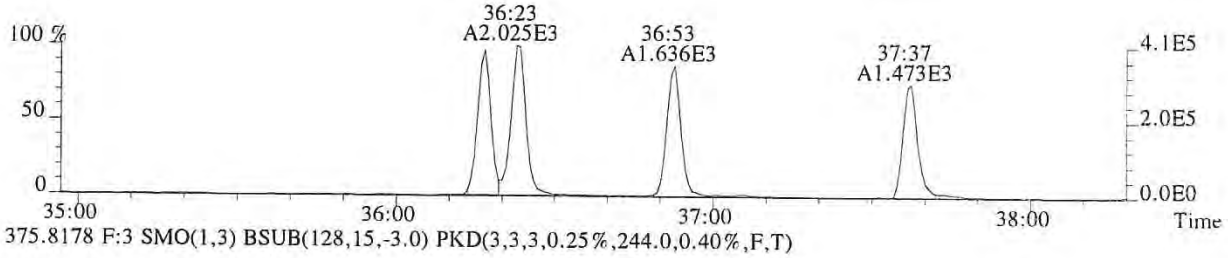


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

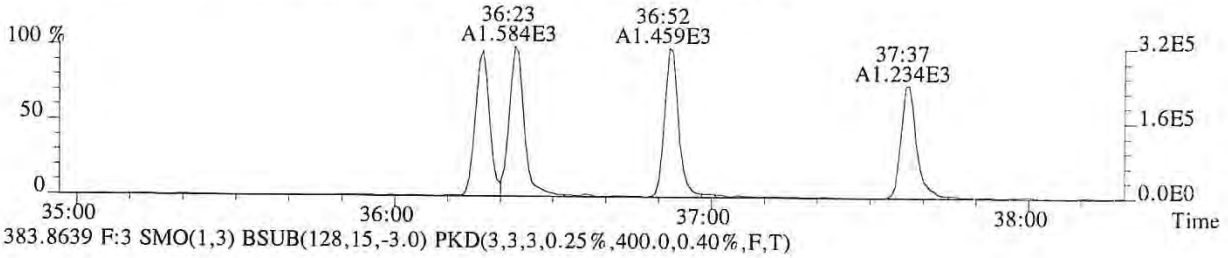


060673

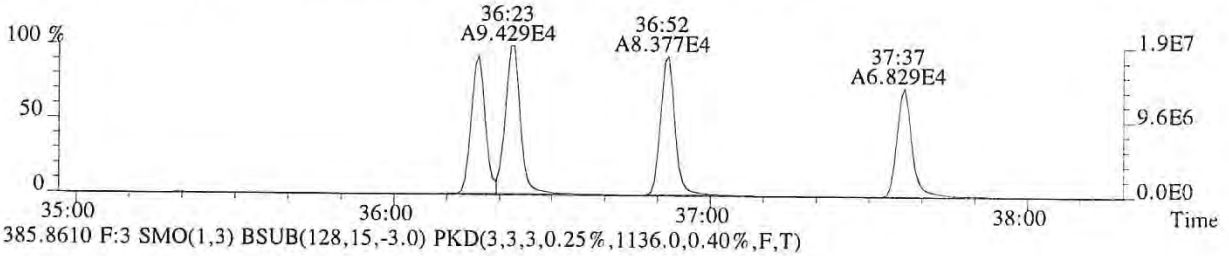
File:P513850 #1-303 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,876.0,0.40%,F,T)



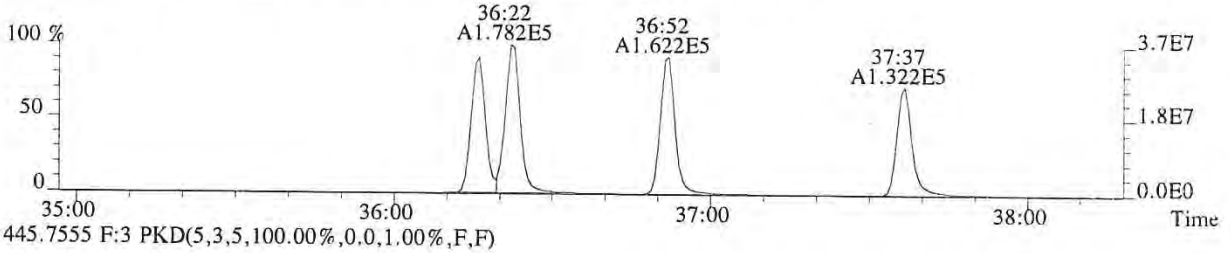
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,244.0,0.40%,F,T)



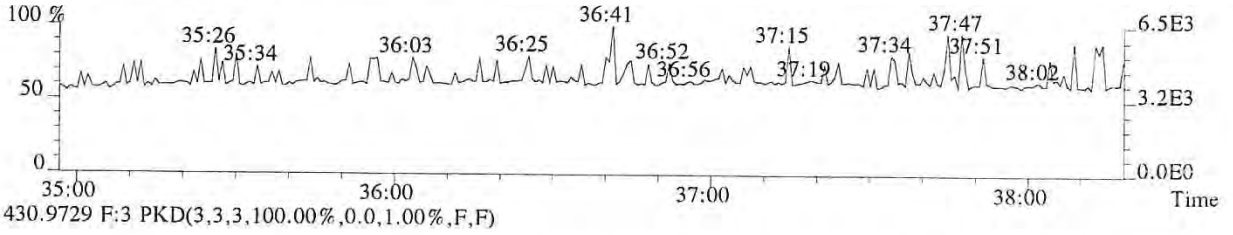
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,400.0,0.40%,F,T)



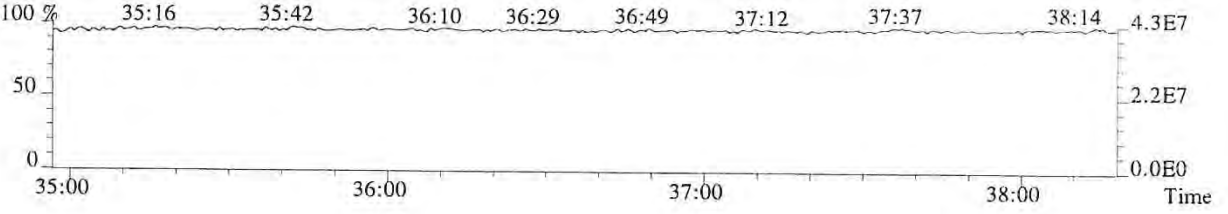
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1136.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

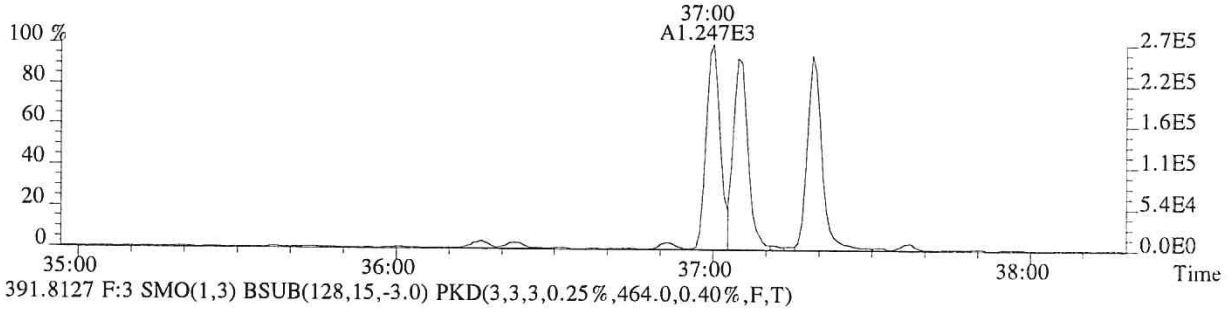


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

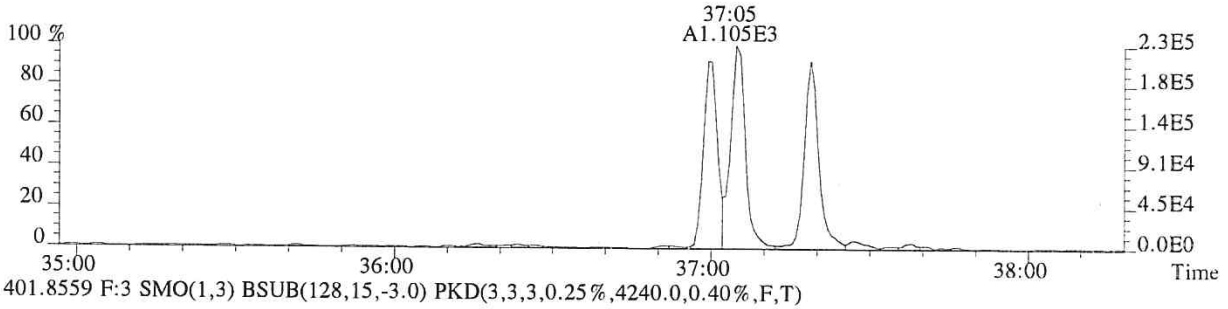


060674

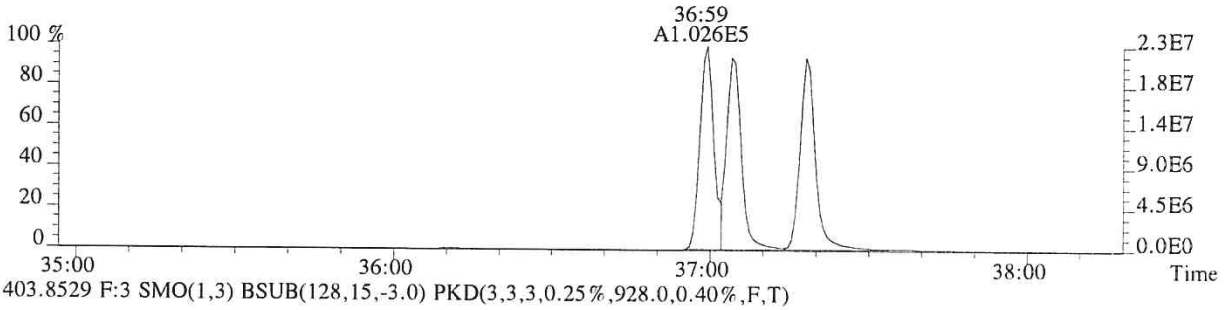
File:P513850 #1-303 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,520.0,0.40%,F,T)



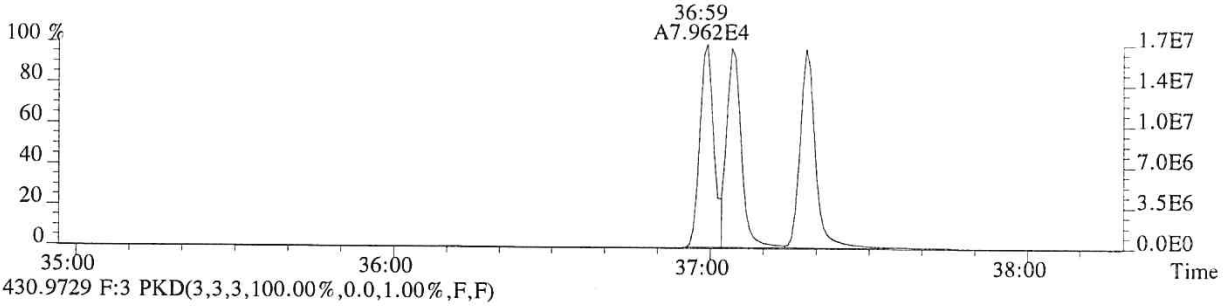
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,464.0,0.40%,F,T)



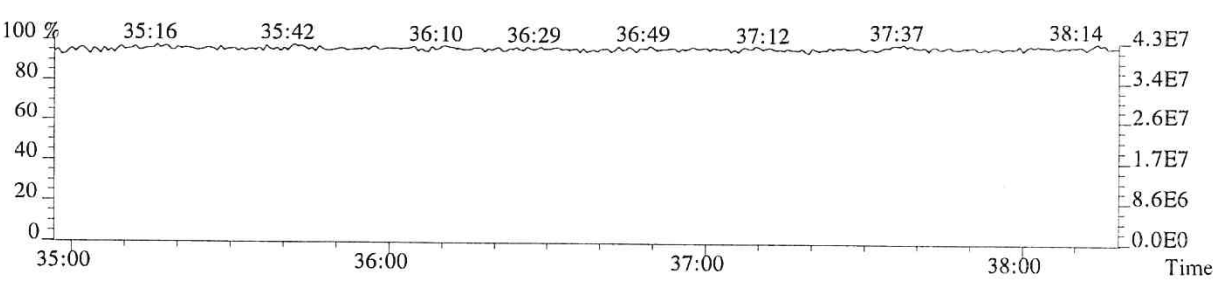
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4240.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,928.0,0.40%,F,T)

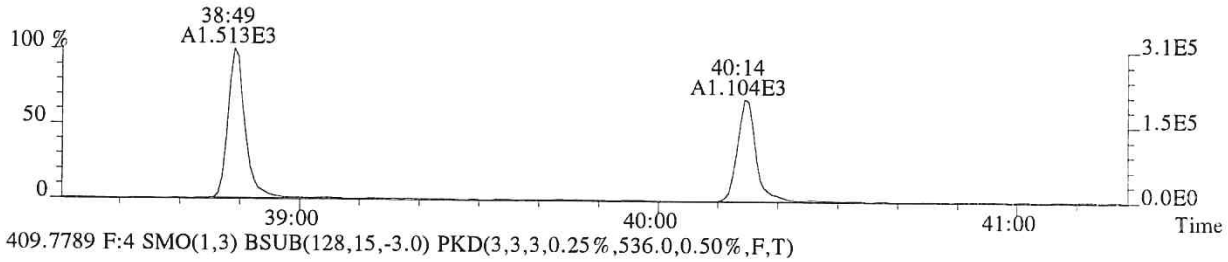


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

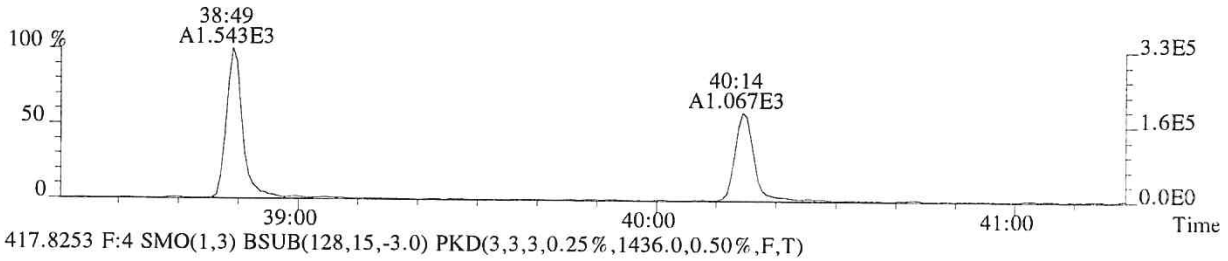


060675

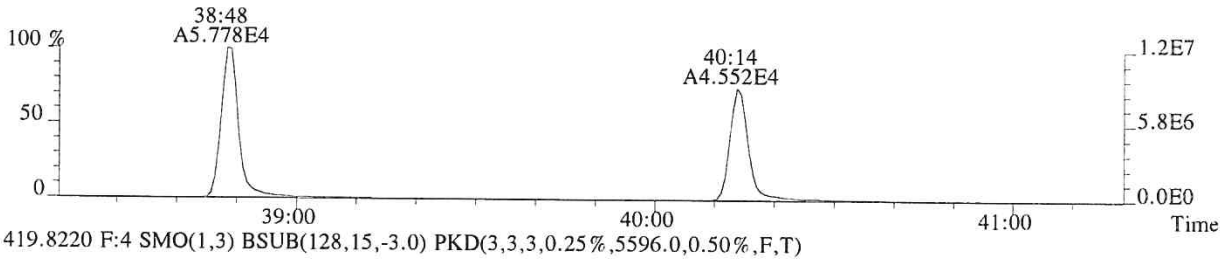
File:P513850 #1-268 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,860.0,0.50%,F,T)



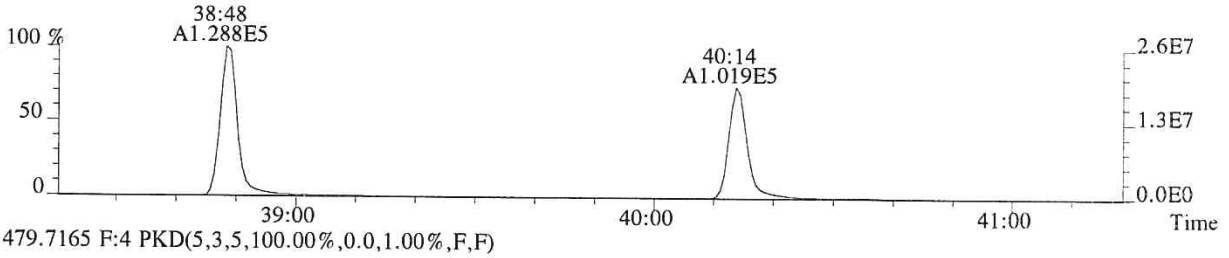
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,536.0,0.50%,F,T)



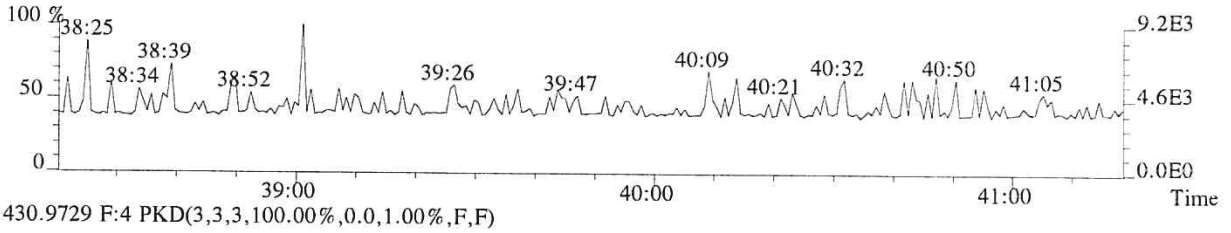
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1436.0,0.50%,F,T)



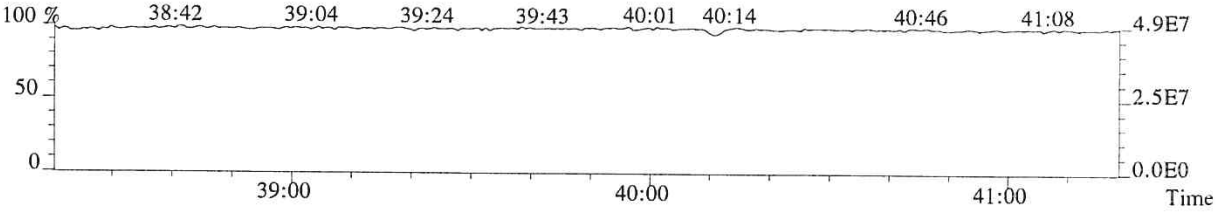
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5596.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

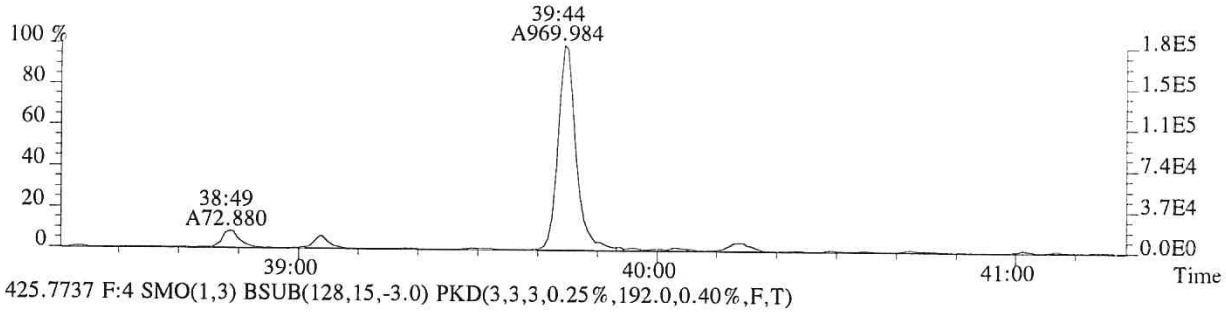


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

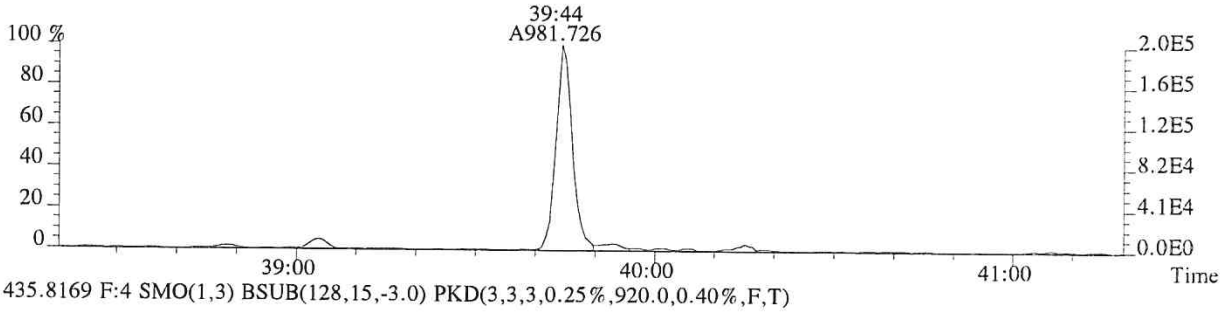


060676

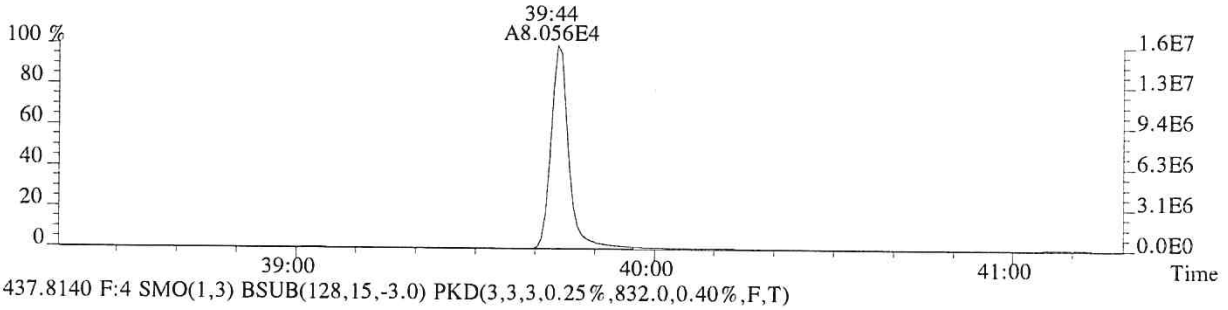
File:P513850 #1-268 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,172.0,0.40%,F,T)



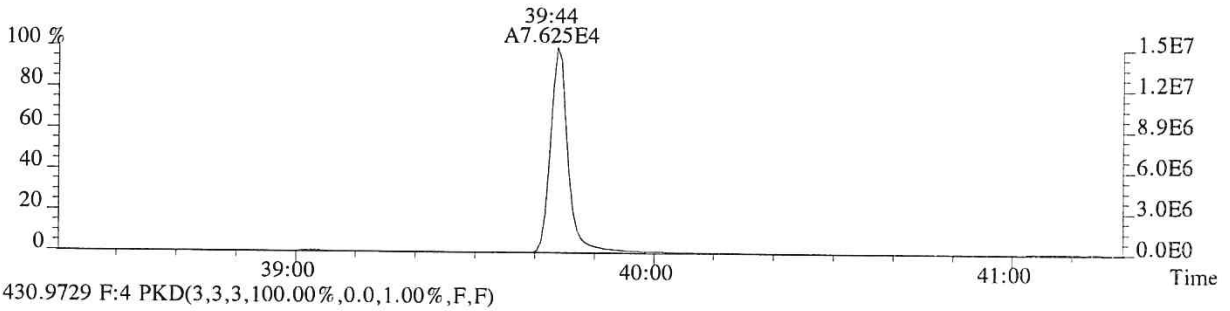
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,192.0,0.40%,F,T)



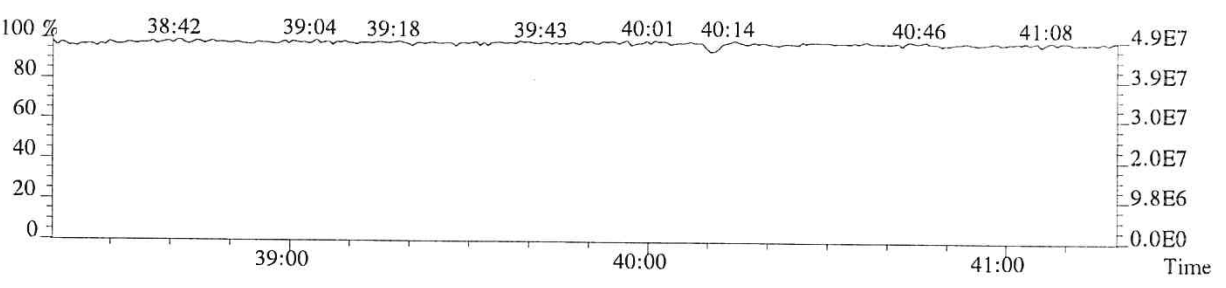
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,920.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,832.0,0.40%,F,T)

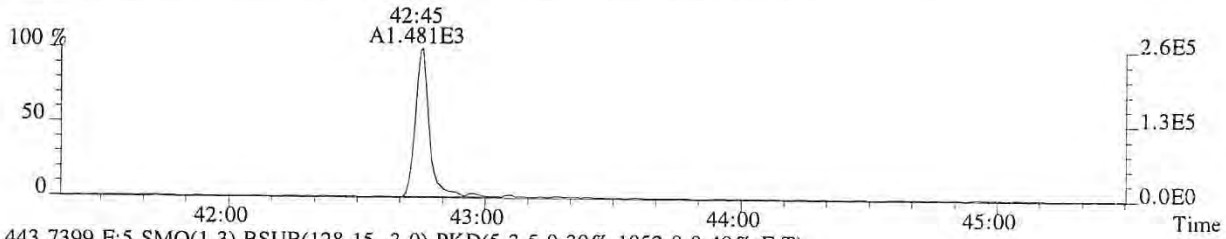


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

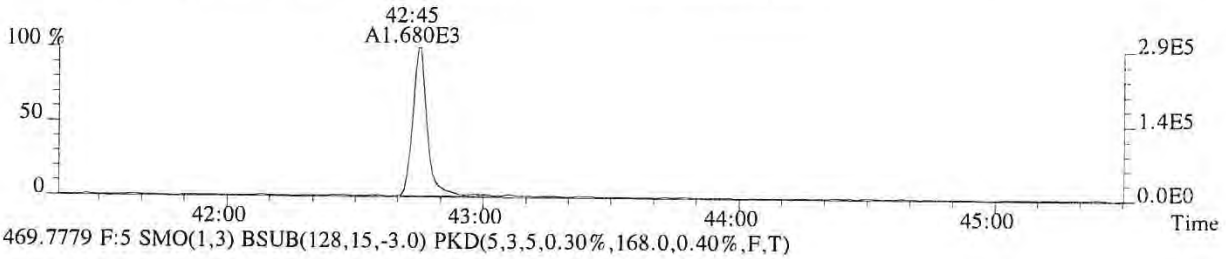


060677

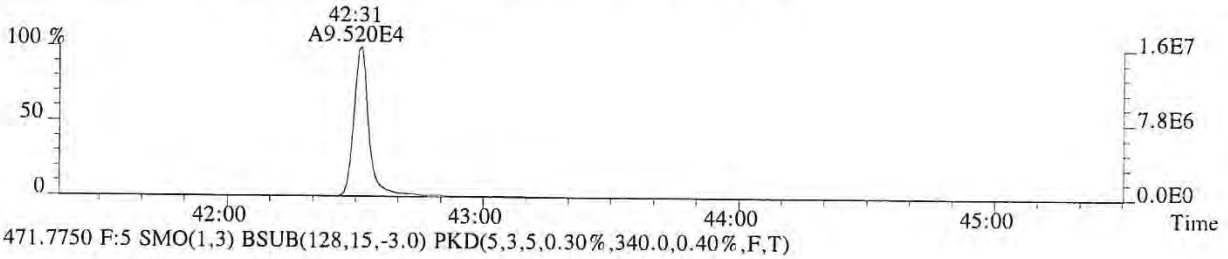
File:P513850 #1-375 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,640.0,0.40%,F,T)



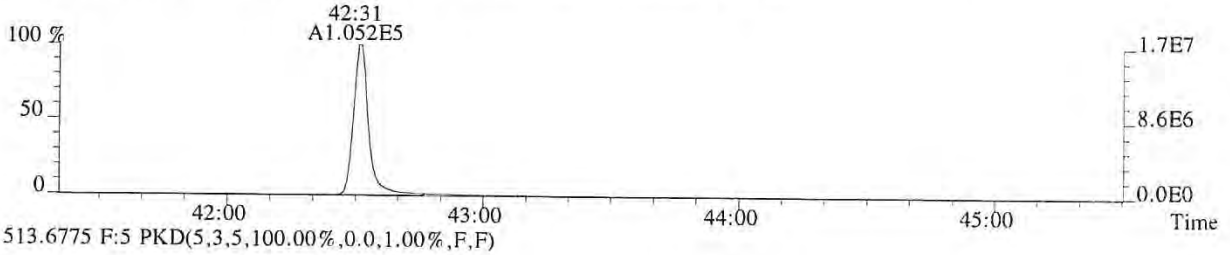
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1052.0,0.40%,F,T)



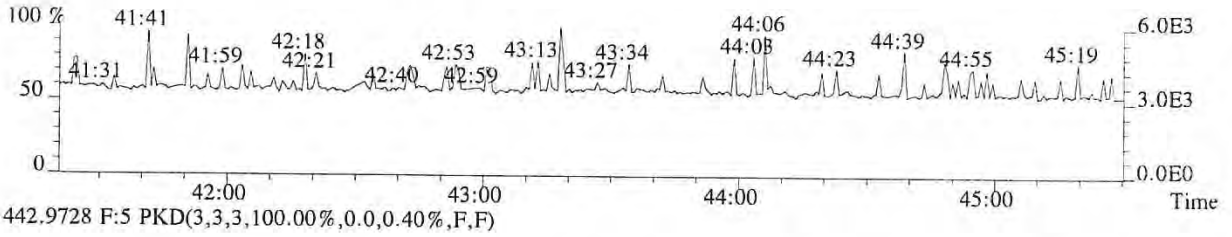
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,168.0,0.40%,F,T)



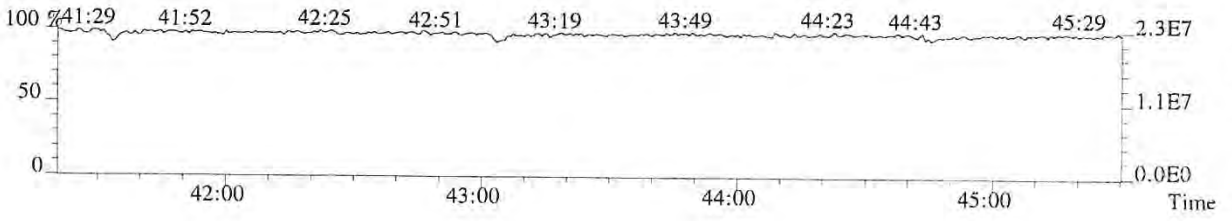
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,340.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

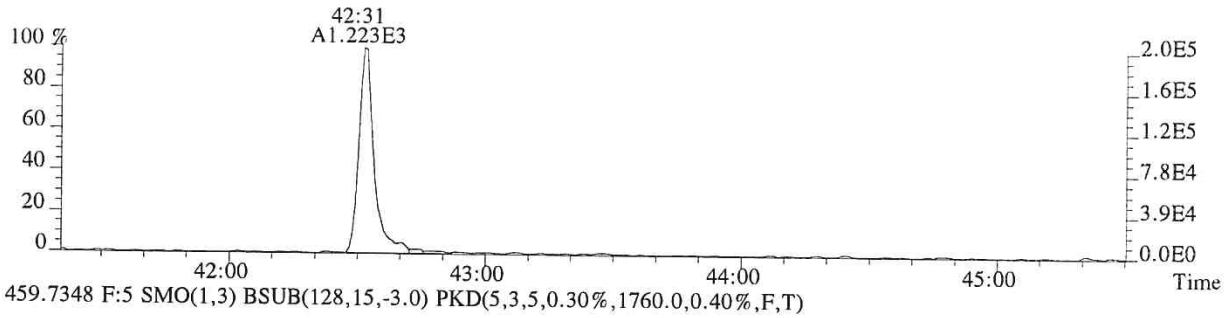


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

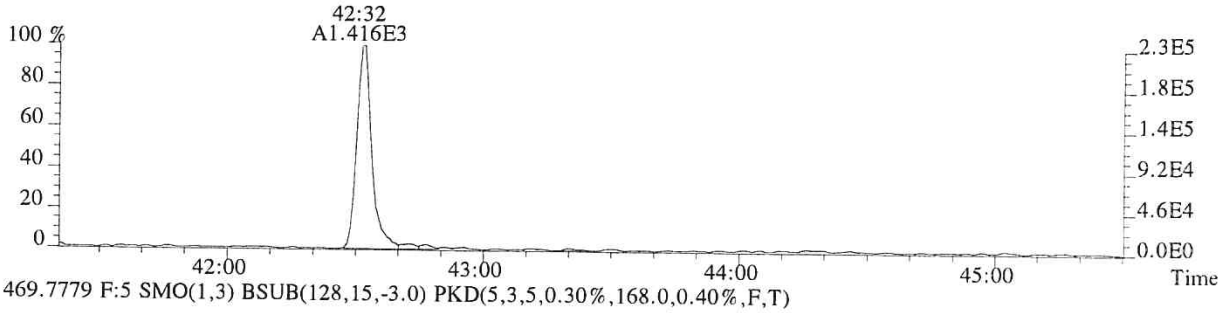


060678

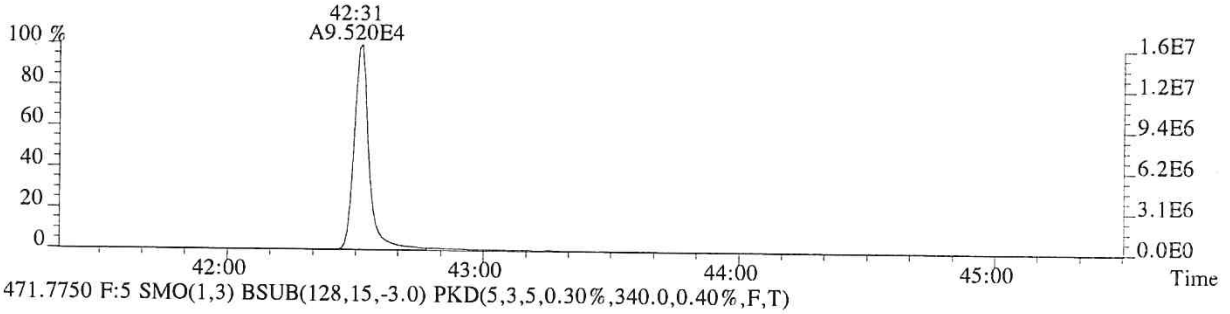
File:P513850 #1-375 Acq:24-JAN-2018 13:32:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,124.0,0.40%,F,T)



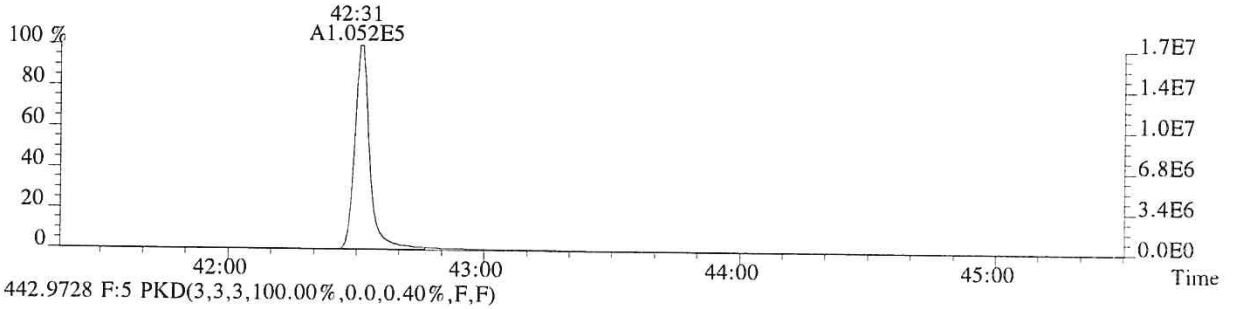
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1760.0,0.40%,F,T)



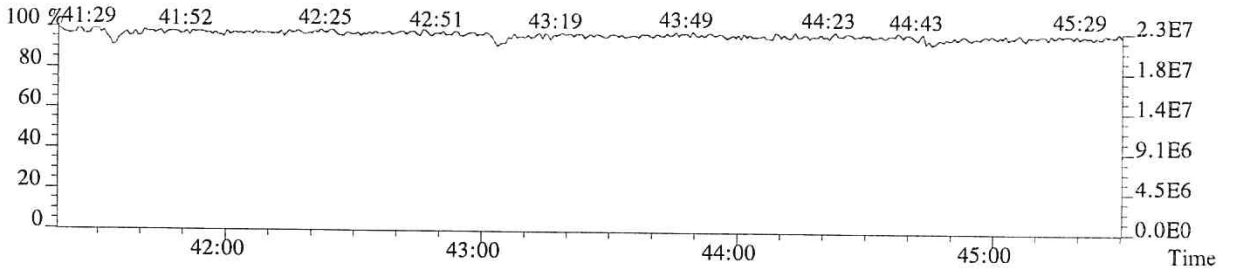
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,168.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,340.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060679

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76555

Run #2 Filename P513851 Samp: 1 Inj: 1 Acquired: 24-JAN-18 14:23:56
Processed: 24-JAN-18 15:49:38 Sample ID: CS1

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:48	3.265e+02	4.510e+02	0.72	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	2.143e+03	1.390e+03	1.54	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:41	1.966e+03	1.345e+03	1.46	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:16	1.692e+03	1.406e+03	1.20	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:23	1.851e+03	1.586e+03	1.17	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:52	1.642e+03	1.320e+03	1.24	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	1.587e+03	1.193e+03	1.33	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:49	1.464e+03	1.425e+03	1.03	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	1.230e+03	1.277e+03	0.96	yes	no	1.258
10	Unk	OCDF	42:45	1.832e+03	1.936e+03	0.95	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:32	2.385e+02	2.700e+02	0.88	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:57	1.365e+03	8.234e+02	1.66	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:59	1.134e+03	9.001e+02	1.26	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:05	1.250e+03	9.288e+02	1.35	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:19	1.168e+03	9.616e+02	1.21	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:44	1.020e+03	9.210e+02	1.11	yes	no	1.025
17	Unk	OCDD	42:31	1.446e+03	1.652e+03	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:47	7.137e+04	9.000e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:47	8.867e+04	5.547e+04	1.60	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	8.638e+04	5.480e+04	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:15	3.777e+04	7.232e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:22	4.414e+04	8.392e+04	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:51	3.753e+04	7.150e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:36	3.488e+04	6.647e+04	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:48	2.710e+04	6.070e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	2.509e+04	5.658e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:31	4.231e+04	5.302e+04	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	5.560e+04	3.503e+04	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	4.358e+04	3.432e+04	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:04	4.635e+04	3.621e+04	1.28	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:44	4.039e+04	3.882e+04	1.04	yes	no	0.858
32	IS	13C-OCDD	42:31	5.166e+04	5.687e+04	0.91	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:57	4.919e+04	6.018e+04	0.82	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:18	4.800e+04	3.836e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:32	5.257e+02				no	1.014

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Houston, TX 77099
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www.alsglobal.com

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76555

Run #2 Filename P513851 Samp: 1 Inj: 1 Acquired: 24-JAN-18 14:23:56
Processed: 24-JAN-18 15:49:38 LAB. ID: CS1

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.11e+04	5.52e+02	1.1e+02	8.10e+04	1.82e+03	4.5e+01
2	1,2,3,7,8-PeCDF	4.20e+05	1.32e+03	3.2e+02	2.59e+05	1.41e+03	1.8e+02
3	2,3,4,7,8-PeCDF	4.04e+05	1.32e+03	3.1e+02	2.67e+05	1.41e+03	1.9e+02
4	1,2,3,4,7,8-HxCDF	3.58e+05	5.32e+02	6.7e+02	3.14e+05	1.28e+02	2.5e+03
5	1,2,3,6,7,8-HxCDF	3.97e+05	5.32e+02	7.5e+02	3.35e+05	1.28e+02	2.6e+03
6	2,3,4,6,7,8-HxCDF	3.52e+05	5.32e+02	6.6e+02	2.91e+05	1.28e+02	2.3e+03
7	1,2,3,7,8,9-HxCDF	3.28e+05	5.32e+02	6.2e+02	2.40e+05	1.28e+02	1.9e+03
8	1,2,3,4,6,7,8-HpCDF	3.00e+05	3.04e+02	9.9e+02	3.07e+05	7.12e+02	4.3e+02
9	1,2,3,4,7,8,9-HpCDF	2.35e+05	3.04e+02	7.7e+02	2.45e+05	7.12e+02	3.4e+02
10	OCDF	3.05e+05	4.12e+02	7.4e+02	3.13e+05	8.20e+02	3.8e+02
11	2,3,7,8-TCDD	5.05e+04	1.50e+03	3.4e+01	5.68e+04	1.02e+03	5.5e+01
12	1,2,3,7,8-PeCDD	2.75e+05	9.88e+02	2.8e+02	1.65e+05	1.80e+02	9.2e+02
13	1,2,3,4,7,8-HxCDD	2.60e+05	5.96e+02	4.4e+02	2.09e+05	7.60e+02	2.7e+02
14	1,2,3,6,7,8-HxCDD	2.55e+05	5.96e+02	4.3e+02	1.96e+05	7.60e+02	2.6e+02
15	1,2,3,7,8,9-HxCDD	2.36e+05	5.96e+02	4.0e+02	1.94e+05	7.60e+02	2.6e+02
16	1,2,3,4,6,7,8-HpCDD	1.99e+05	6.88e+02	2.9e+02	1.95e+05	5.68e+02	3.4e+02
17	OCDD	2.63e+05	1.92e+02	1.4e+03	2.88e+05	1.59e+03	1.8e+02
18	13C-2,3,7,8-TCDF	1.42e+07	6.97e+03	2.0e+03	1.79e+07	2.86e+03	6.3e+03
19	13C-1,2,3,7,8-PeCDF	1.70e+07	6.48e+02	2.6e+04	1.08e+07	1.59e+03	6.8e+03
20	13C-2,3,4,7,8-PeCDF	1.78e+07	6.48e+02	2.7e+04	1.13e+07	1.59e+03	7.1e+03
21	13C-1,2,3,4,7,8-HxCDF	8.20e+06	9.16e+02	9.0e+03	1.58e+07	1.42e+03	1.1e+04
22	13C-1,2,3,6,7,8-HxCDF	9.34e+06	9.16e+02	1.0e+04	1.79e+07	1.42e+03	1.3e+04
23	13C-2,3,4,6,7,8-HxCDF	8.09e+06	9.16e+02	8.8e+03	1.56e+07	1.42e+03	1.1e+04
24	13C-1,2,3,7,8,9-HxCDF	7.17e+06	9.16e+02	7.8e+03	1.36e+07	1.42e+03	9.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.66e+06	2.69e+03	2.1e+03	1.28e+07	9.09e+03	1.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.79e+06	2.69e+03	1.8e+03	1.07e+07	9.09e+03	1.2e+03
27	13C-2,3,7,8-TCDD	8.84e+06	4.39e+03	2.0e+03	1.11e+07	2.59e+03	4.3e+03
28	13C-1,2,3,7,8-PeCDD	1.13e+07	1.11e+03	1.0e+04	7.15e+06	7.88e+02	9.1e+03
29	13C-1,2,3,4,7,8-HxCDD	9.90e+06	2.00e+03	4.9e+03	7.79e+06	1.42e+03	5.5e+03
30	13C-1,2,3,6,7,8-HxCDD	9.60e+06	2.00e+03	4.8e+03	7.47e+06	1.42e+03	5.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.95e+06	1.15e+03	6.9e+03	7.67e+06	8.88e+02	8.6e+03
32	13C-OCDD	8.56e+06	6.00e+01	1.4e+05	9.50e+06	8.00e+02	1.2e+04
33	13C-1,2,3,4-TCDD	9.96e+06	4.39e+03	2.3e+03	1.22e+07	2.59e+03	4.7e+03
34	13C-1,2,3,7,8,9-HxCDD	9.63e+06	2.00e+03	4.8e+03	7.67e+06	1.42e+03	5.4e+03
35	37Cl-2,3,7,8-TCDD	1.07e+05	1.30e+03	8.2e+01			

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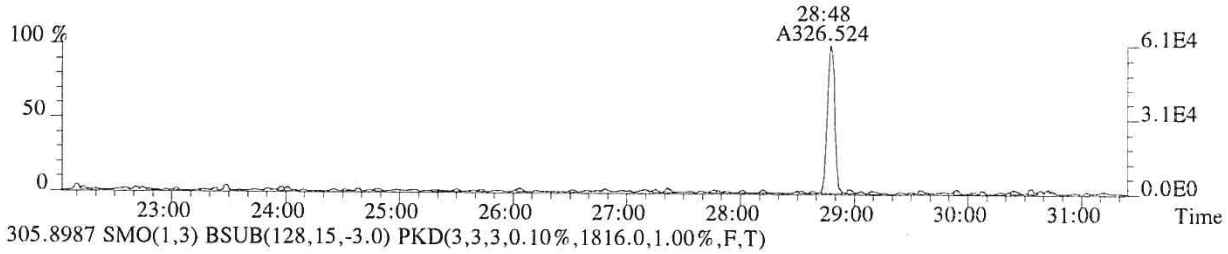
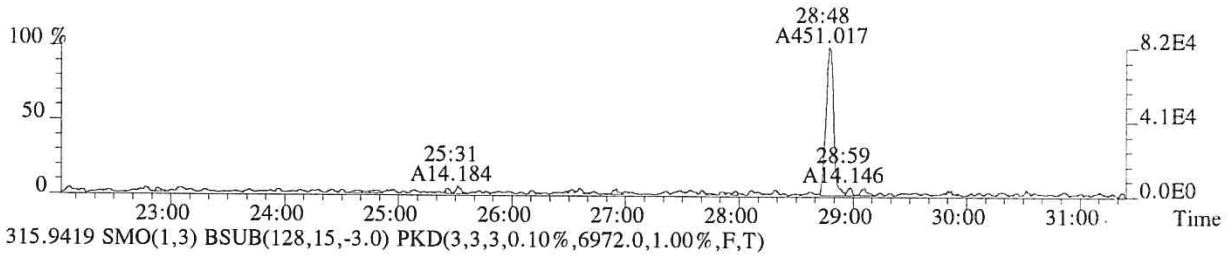
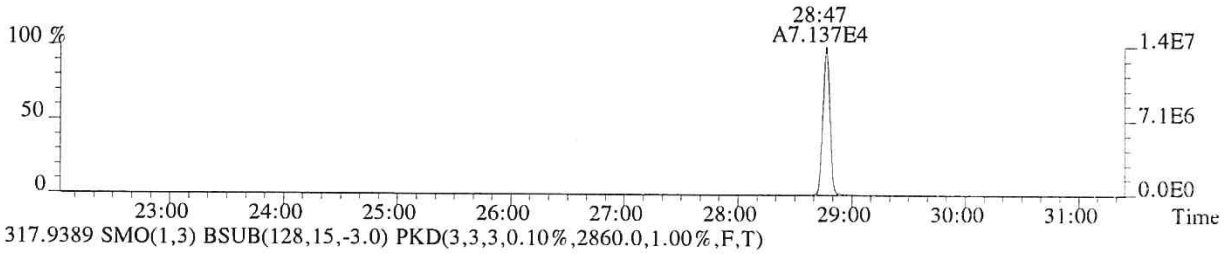
File:P513851 #1-665 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,552.0,1.00%,F,T)



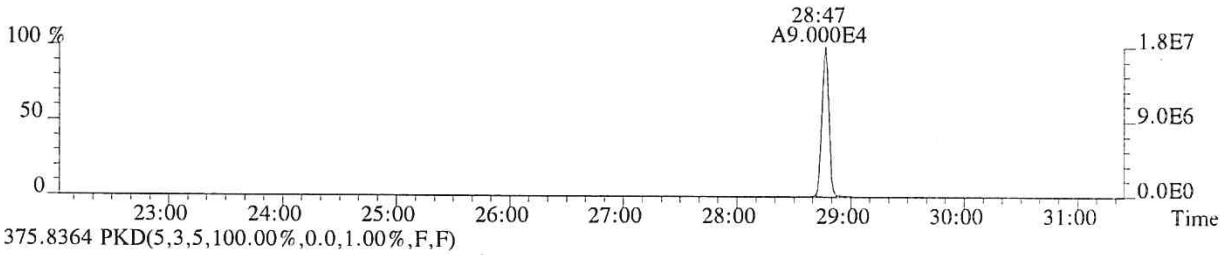
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1816.0,1.00%,F,T)



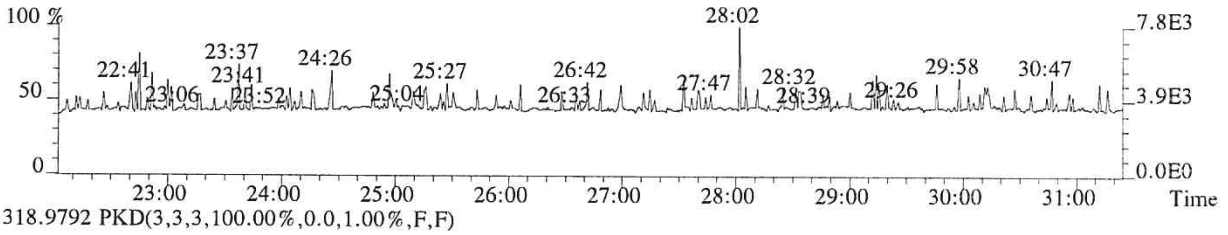
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6972.0,1.00%,F,T)



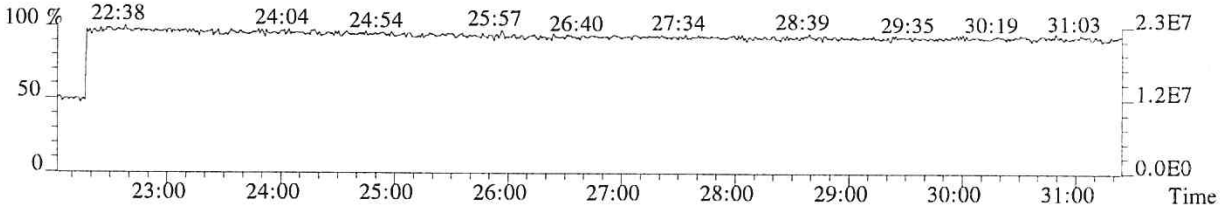
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2860.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

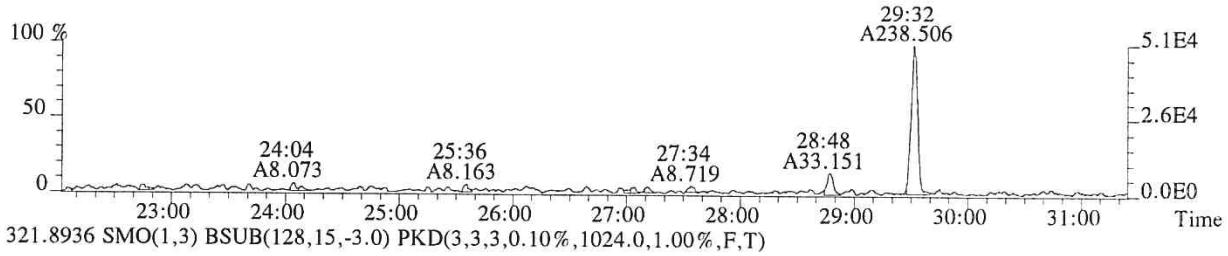


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

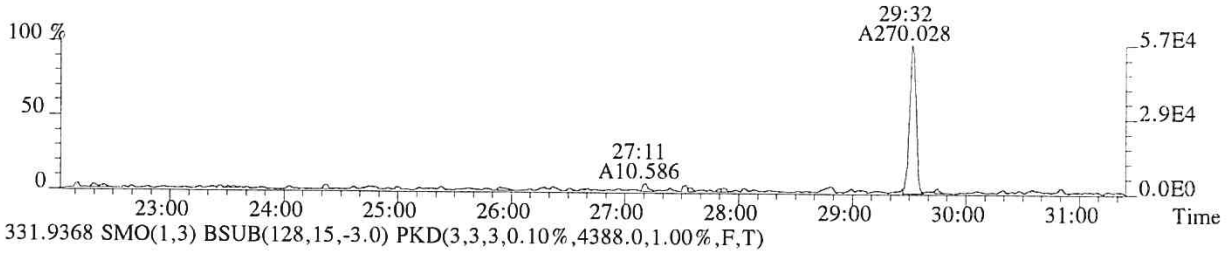


060682

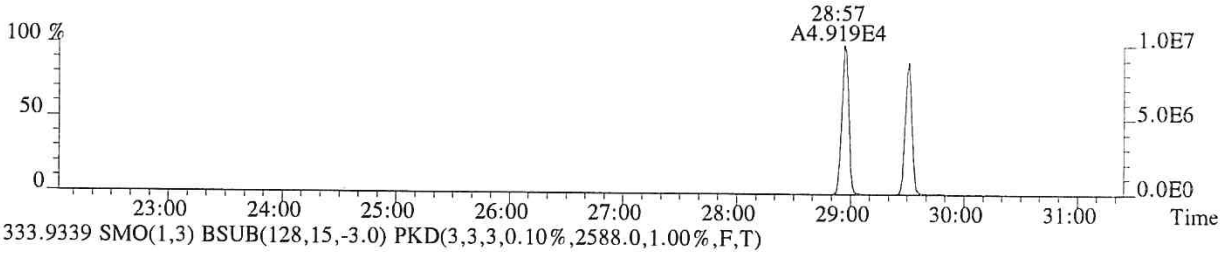
File:P513851 #1-665 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:76555
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1496.0,1.00%,F,T)



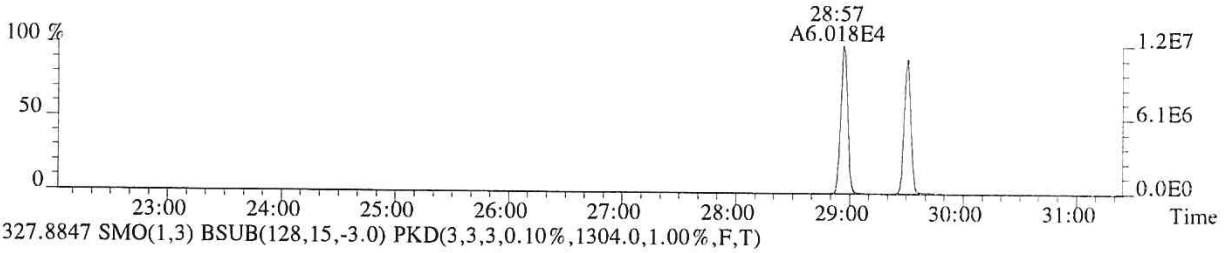
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1024.0,1.00%,F,T)



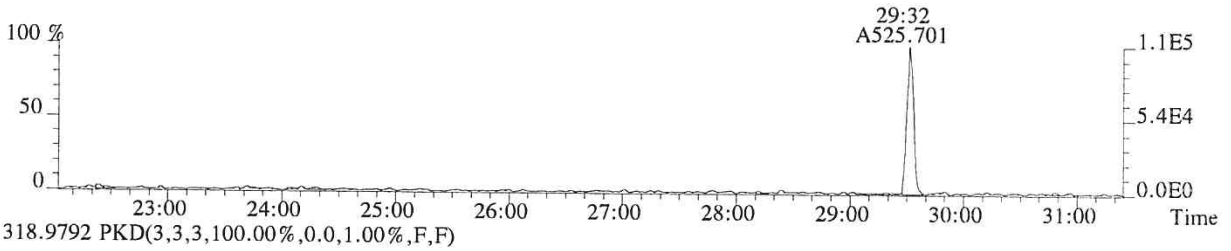
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4388.0,1.00%,F,T)



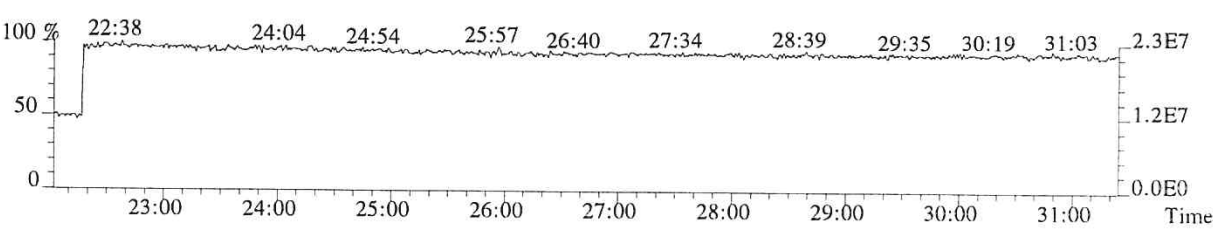
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2588.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1304.0,1.00%,F,T)

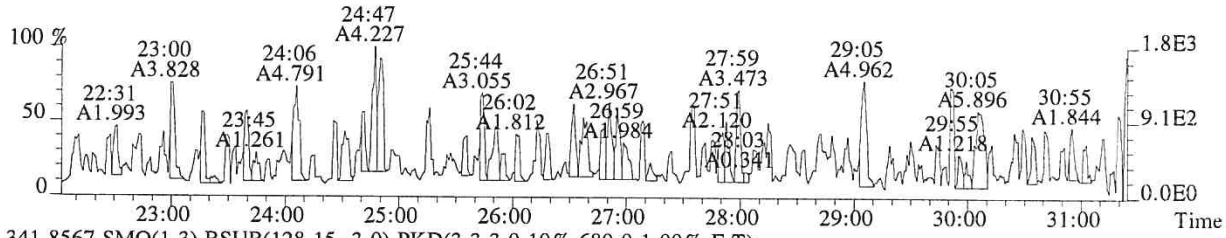


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

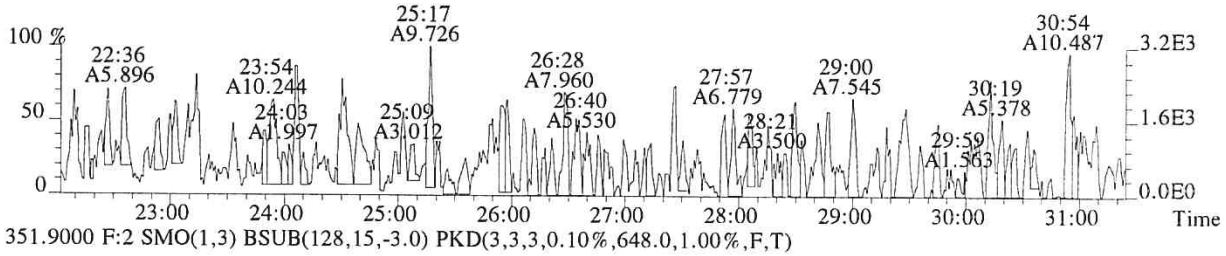


060683

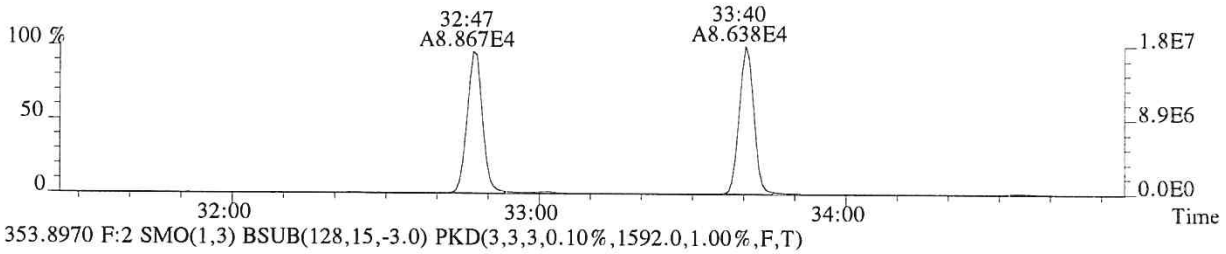
File:P513851 #1-665 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:76555
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,388.0,1.00%,F,T)



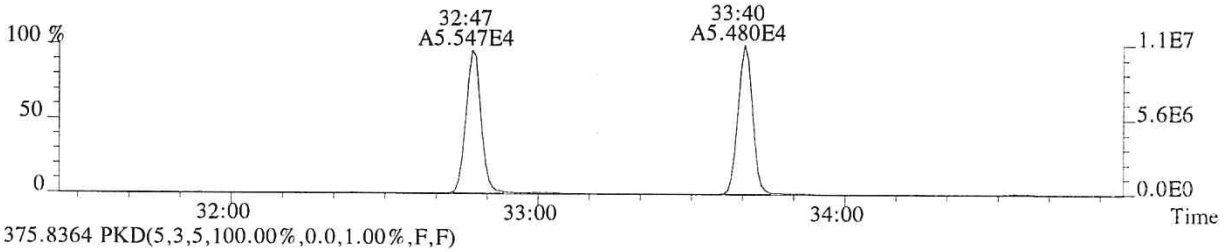
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,680.0,1.00%,F,T)



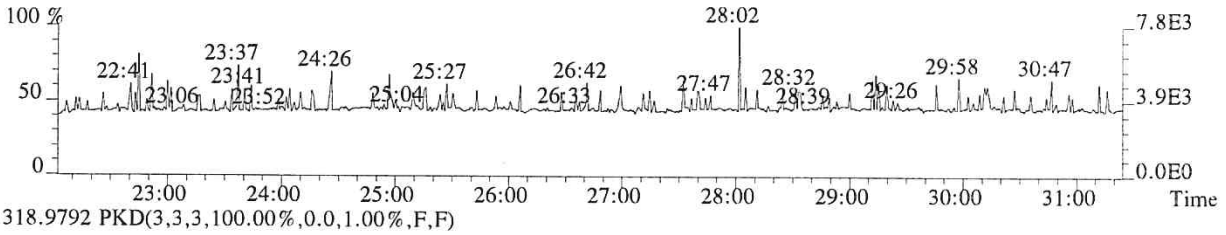
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,648.0,1.00%,F,T)



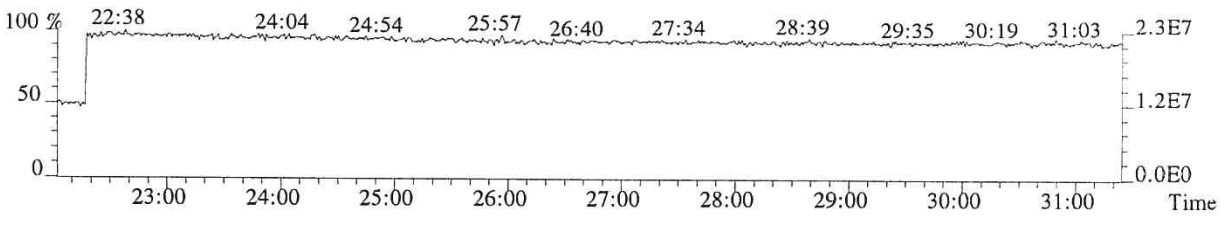
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1592.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

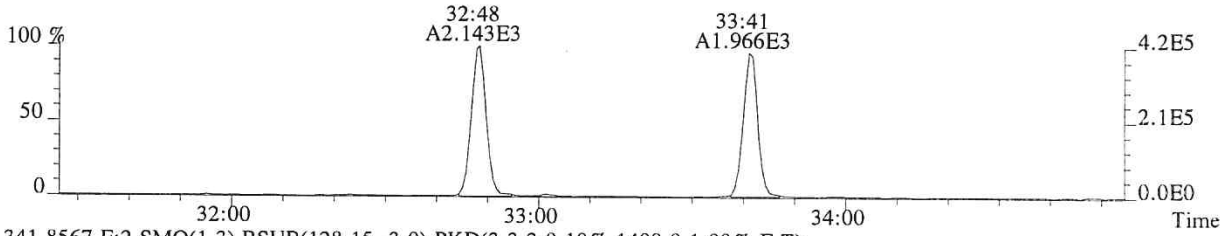


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

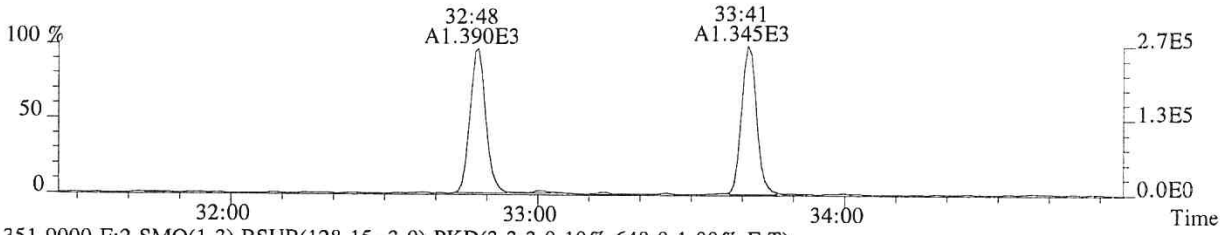


060684

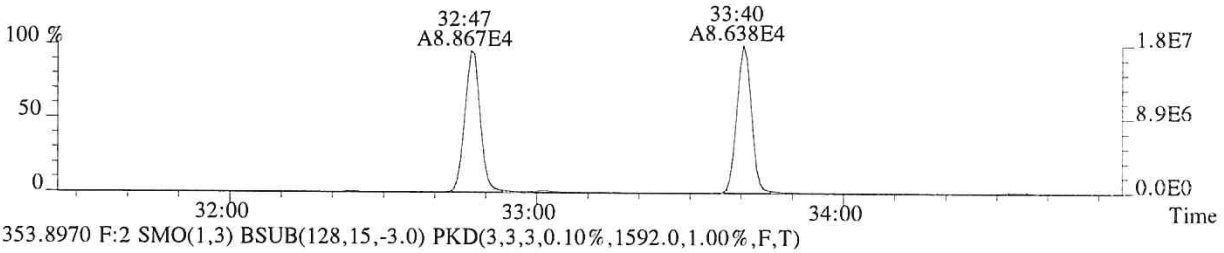
File:P513851 #1-313 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1316.0,1.00%,F,T)



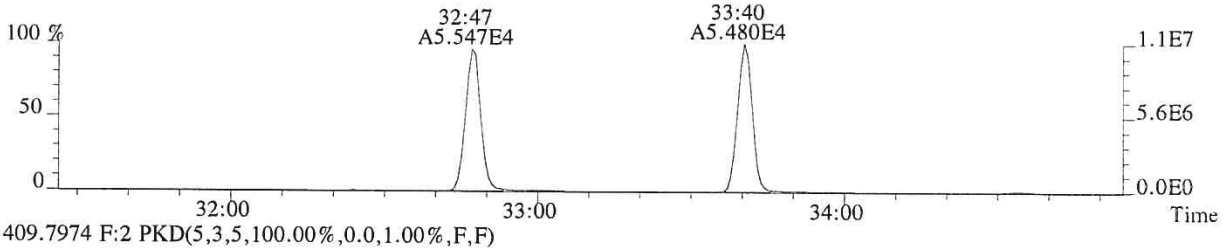
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1408.0,1.00%,F,T)



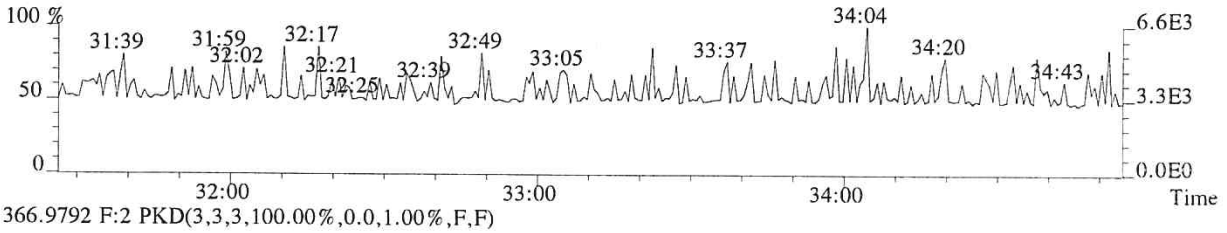
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,648.0,1.00%,F,T)



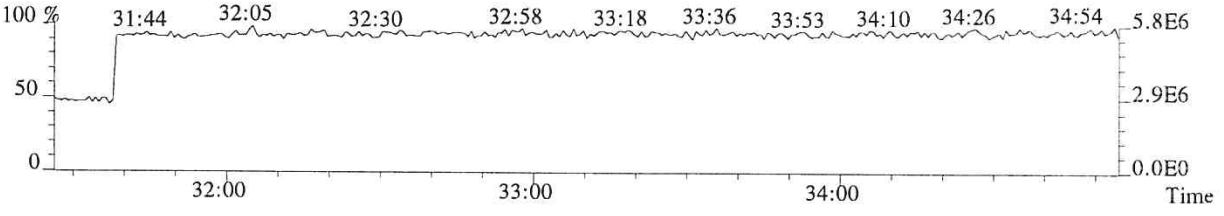
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1592.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

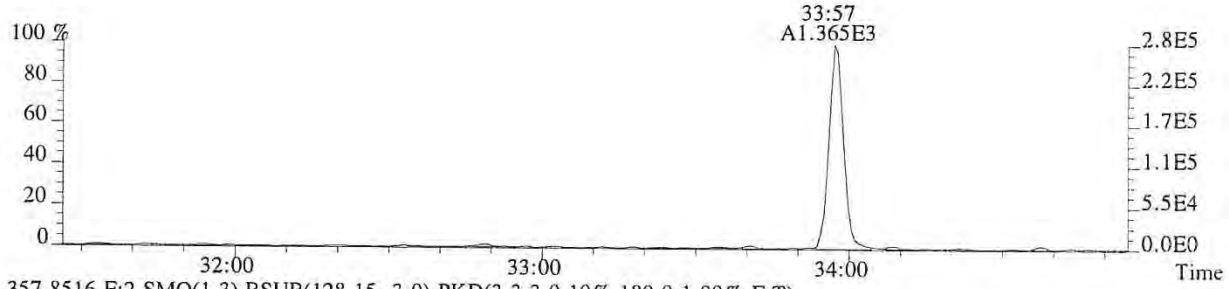


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

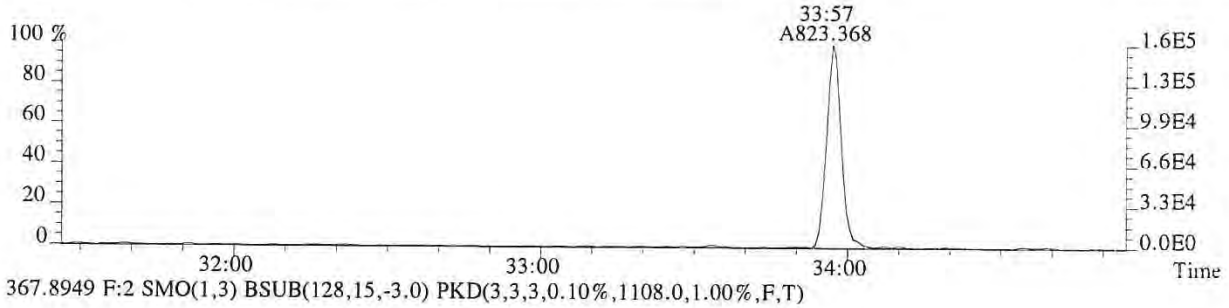


060685

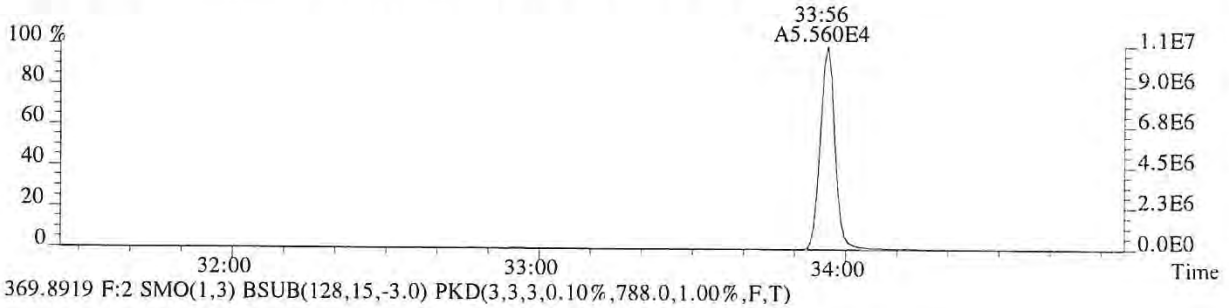
File:P513851 #1-313 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,988.0,1.00%,F,T)



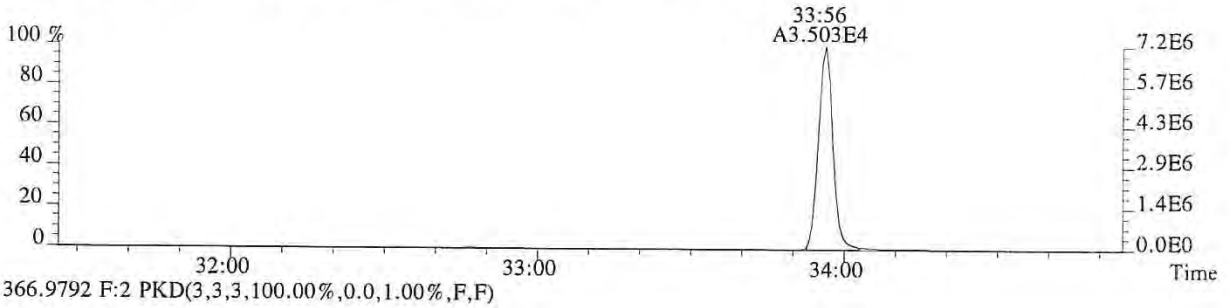
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,180.0,1.00%,F,T)



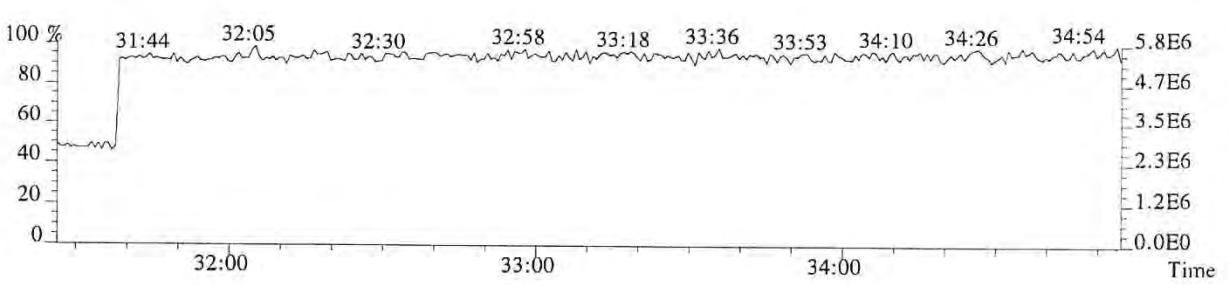
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1108.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



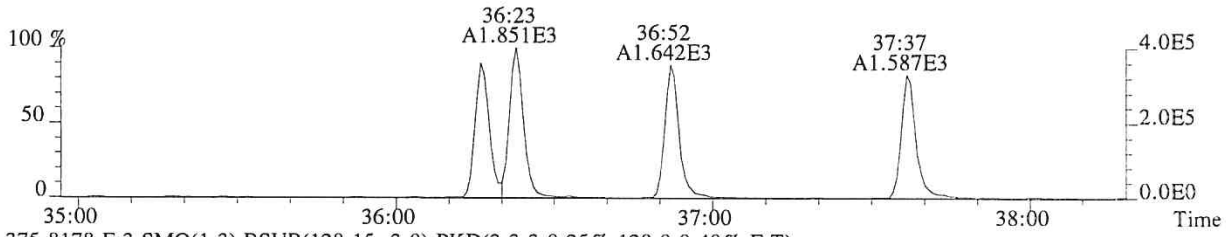
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



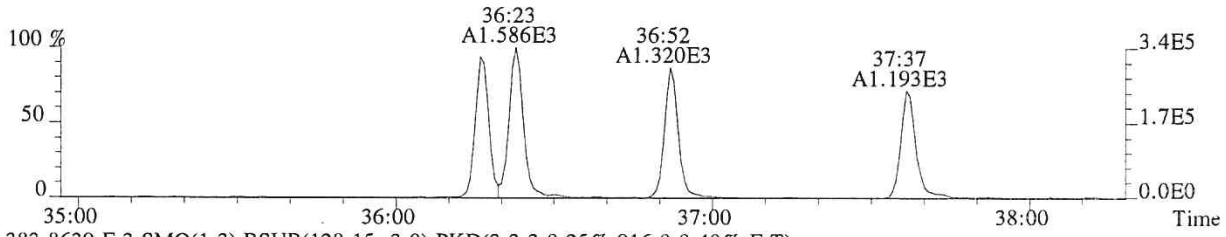
060686

File:P513851 #1-303 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

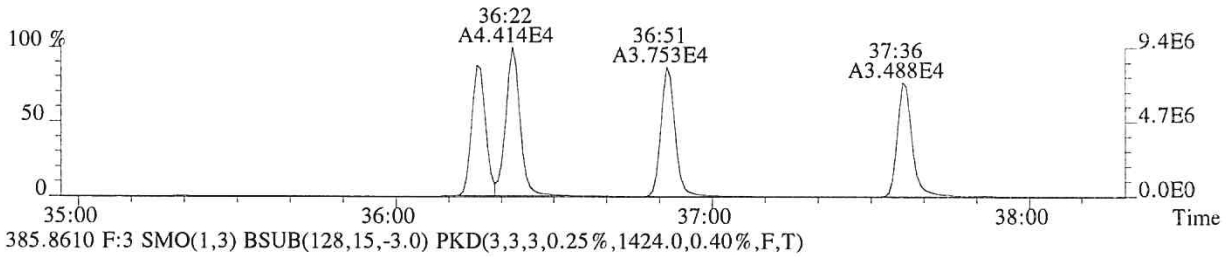
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,532.0,0.40%,F,T)



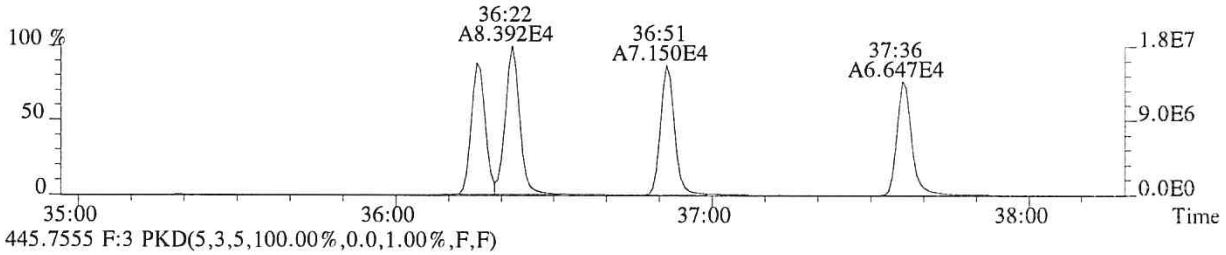
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,128.0,0.40%,F,T)



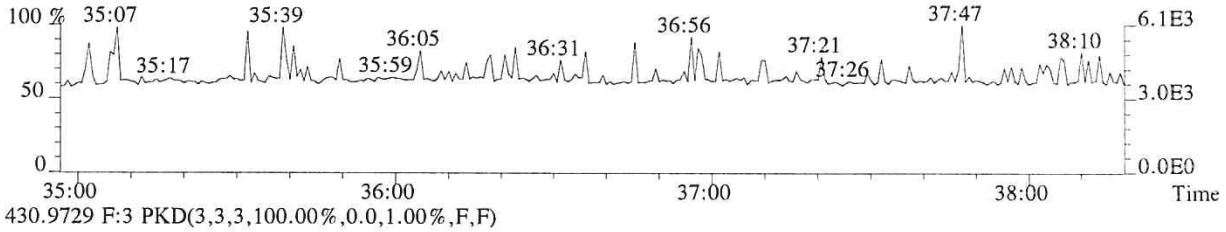
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,916.0,0.40%,F,T)



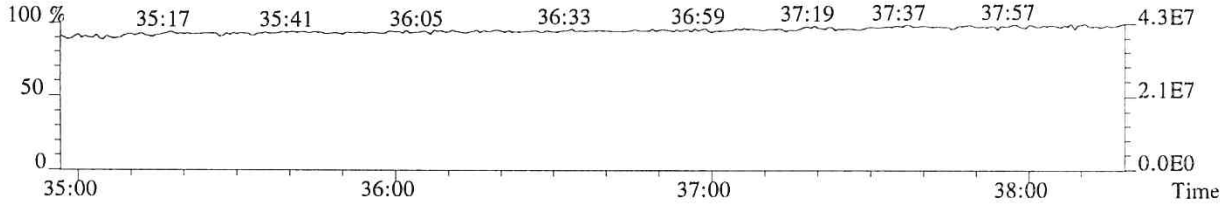
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1424.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

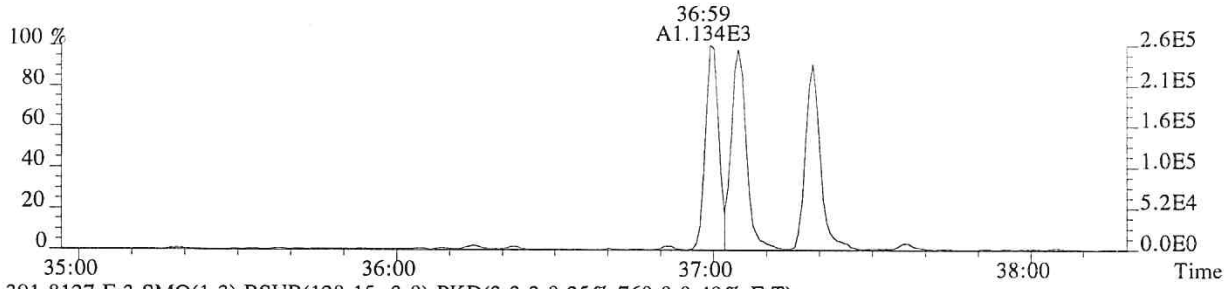


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

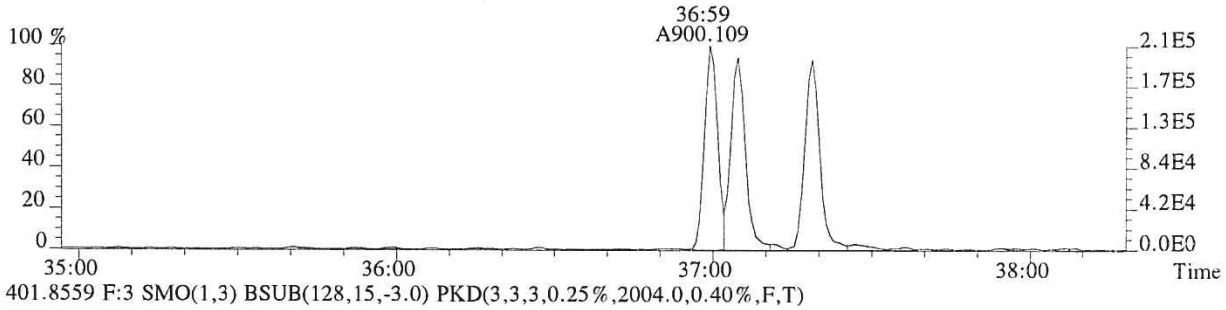


060687

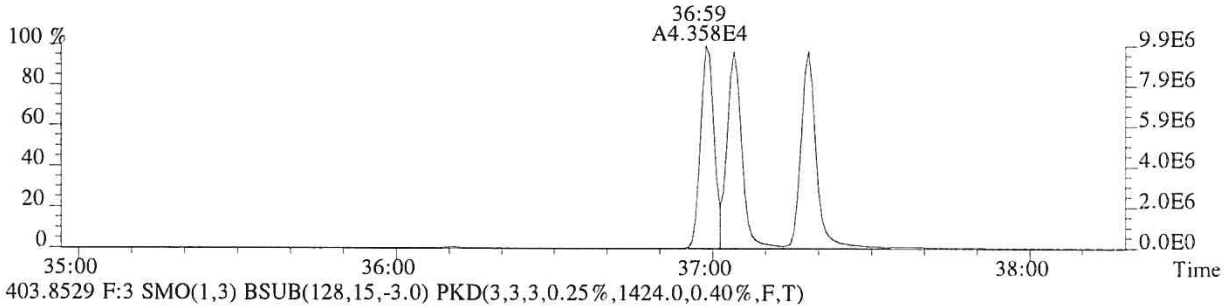
File:P513851 #1-303 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,596.0,0.40%,F,T)



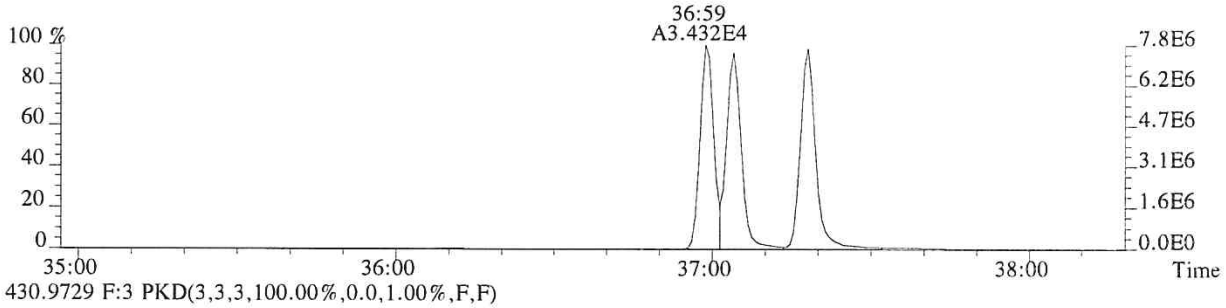
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,760.0,0.40%,F,T)



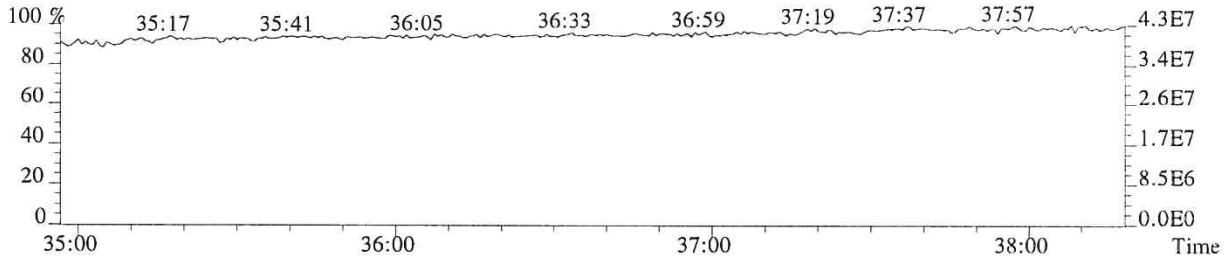
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2004.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1424.0,0.40%,F,T)

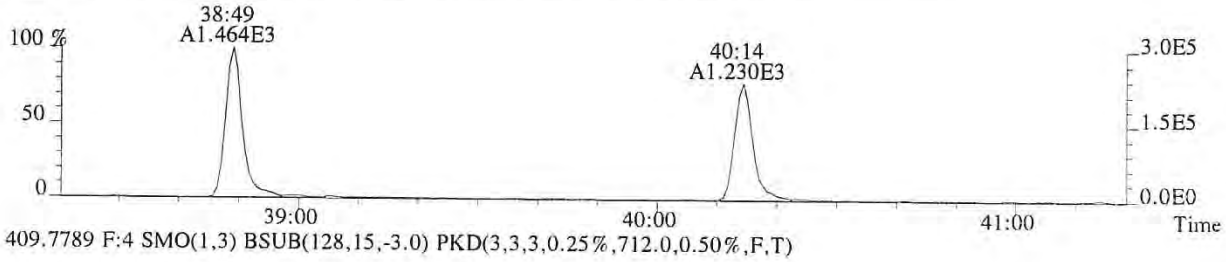


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

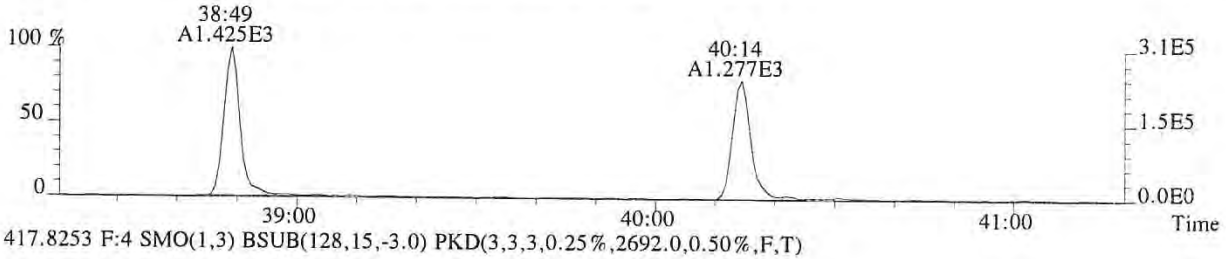


060688

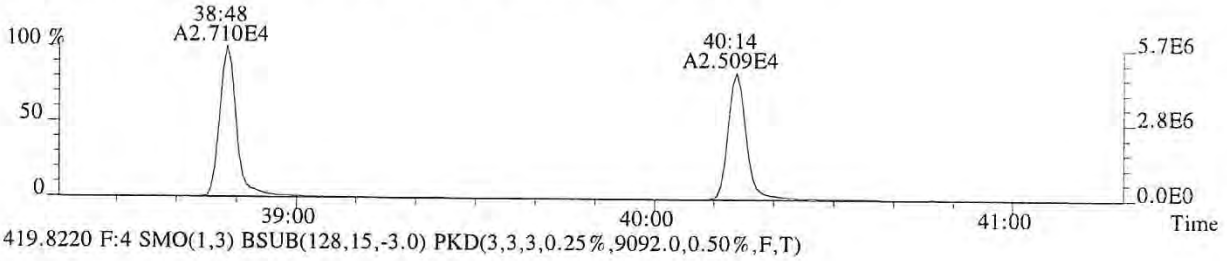
File:P513851 #1-268 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,304.0,0.50%,F,T)



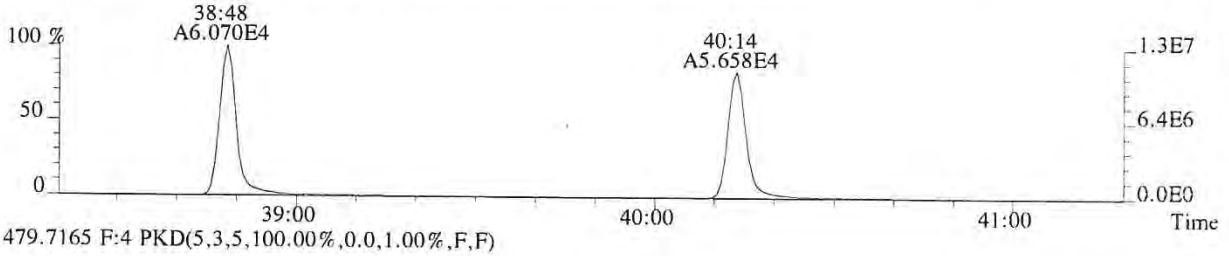
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,712.0,0.50%,F,T)



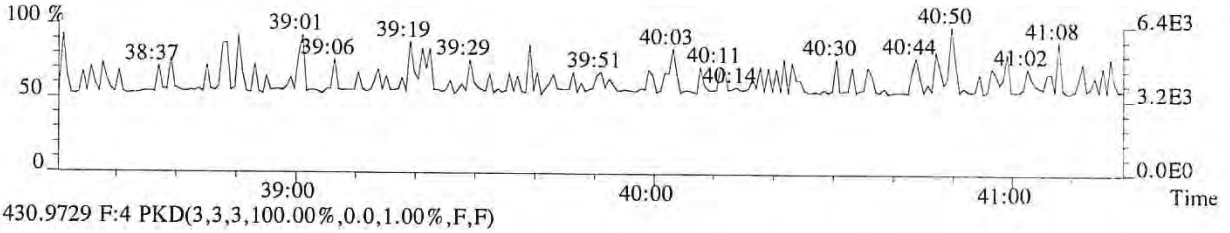
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2692.0,0.50%,F,T)



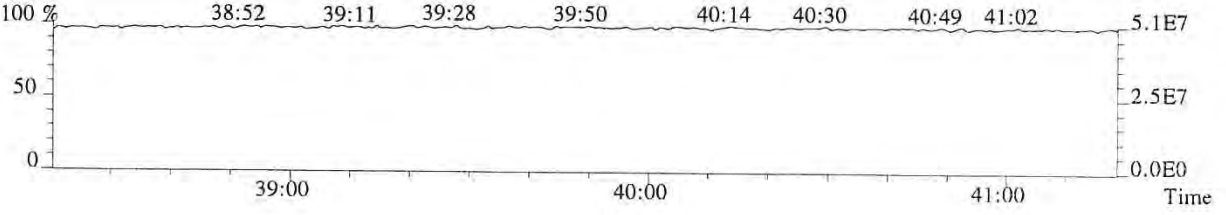
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9092.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

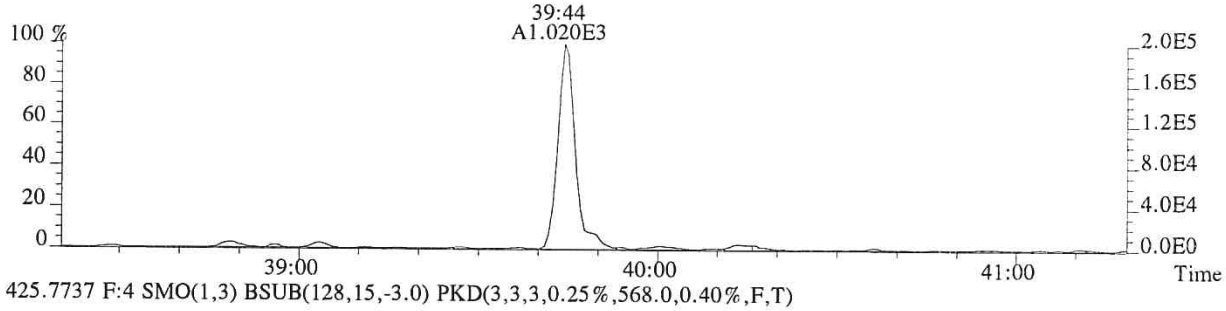


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

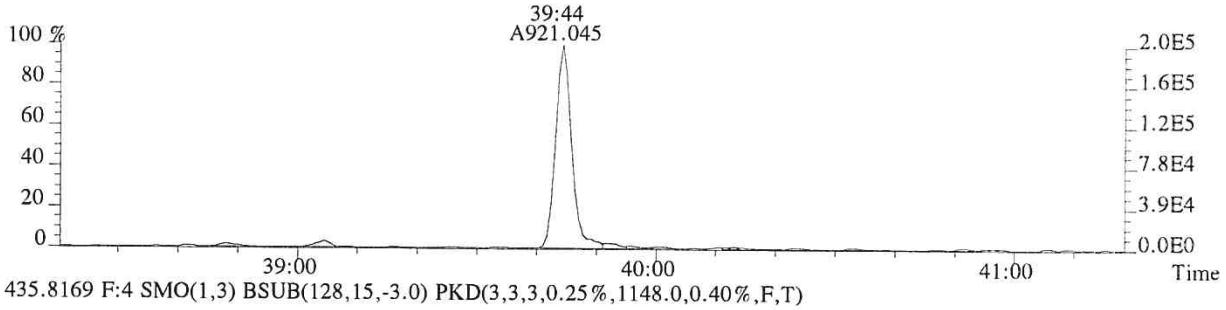


060689

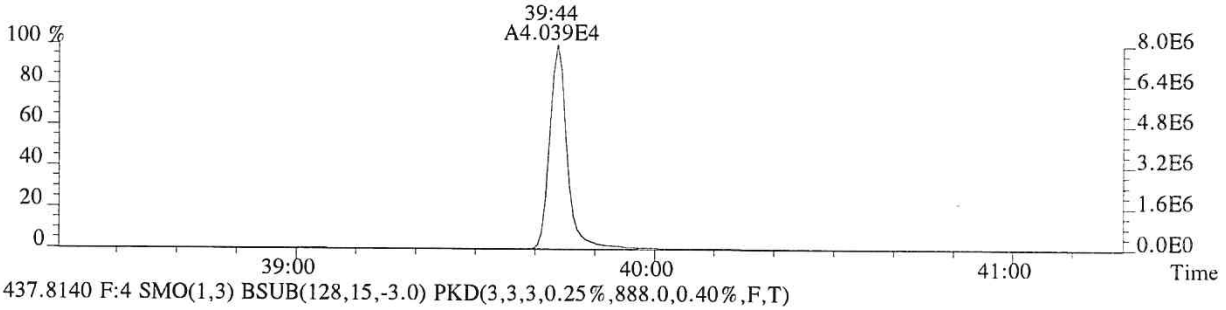
File:P513851 #1-268 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,688.0,0.40%,F,T)



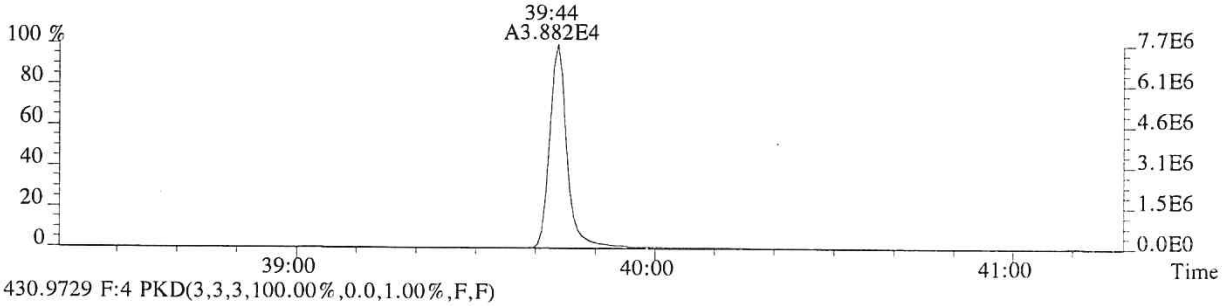
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,568.0,0.40%,F,T)



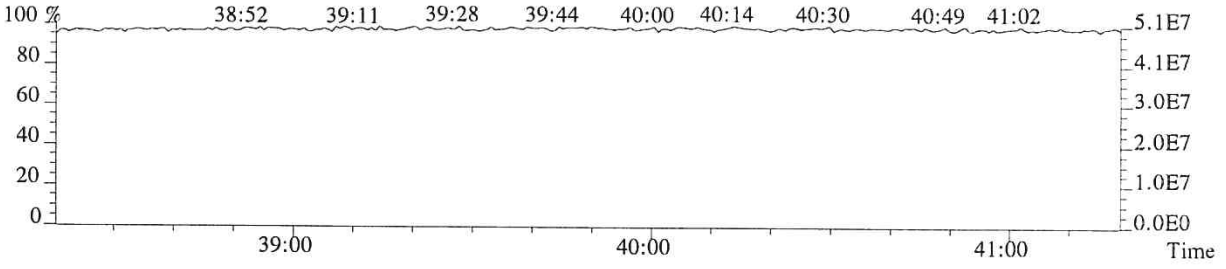
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1148.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,888.0,0.40%,F,T)

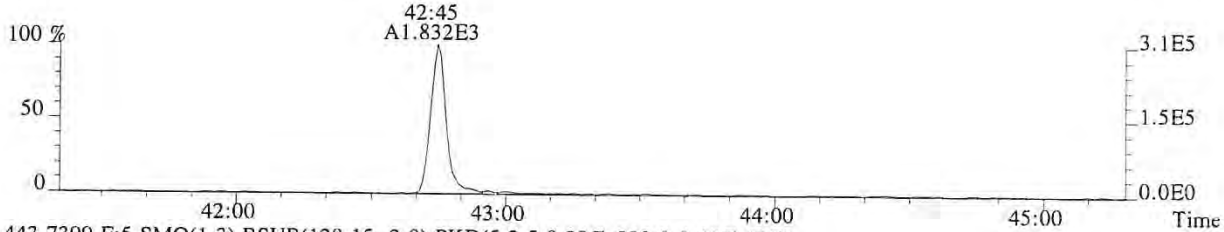


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

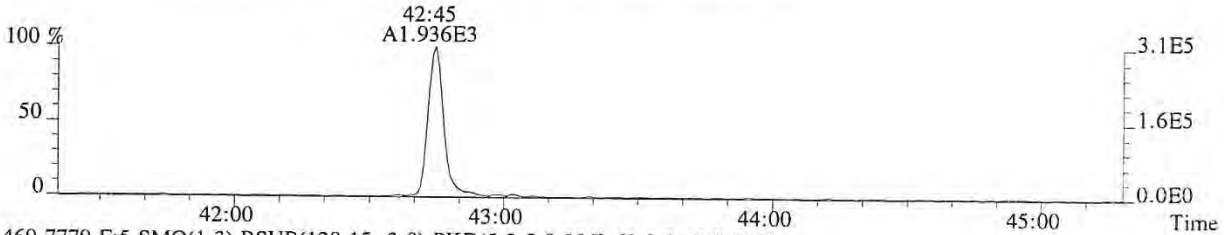


060690

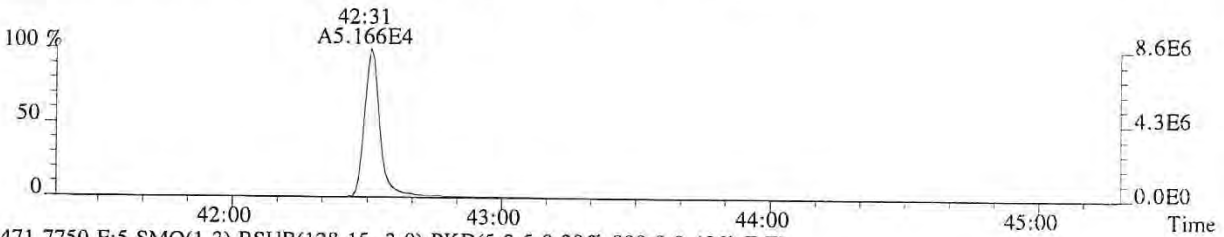
File:P513851 #1-357 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



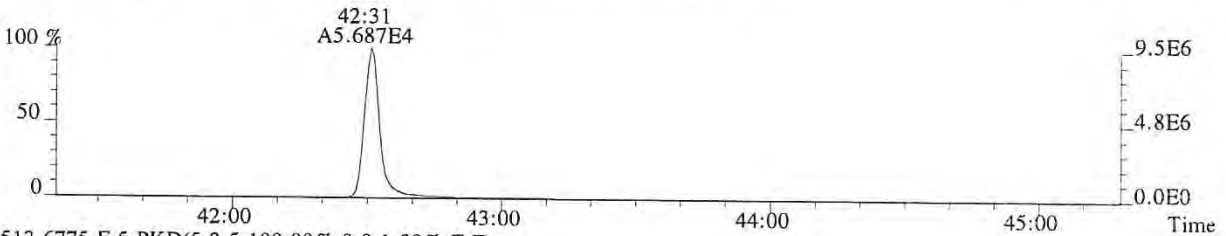
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,820.0,0.40%,F,T)



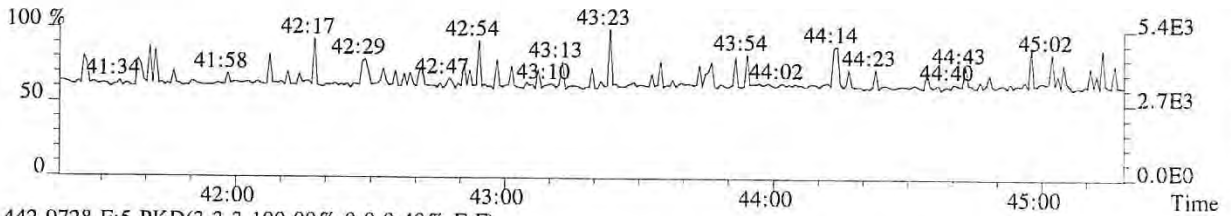
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,60.0,0.40%,F,T)



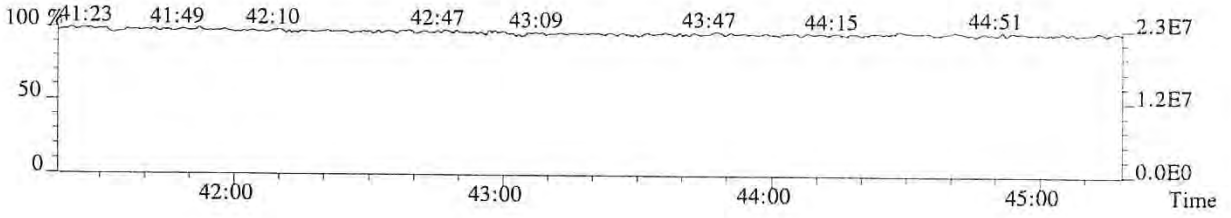
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,800.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

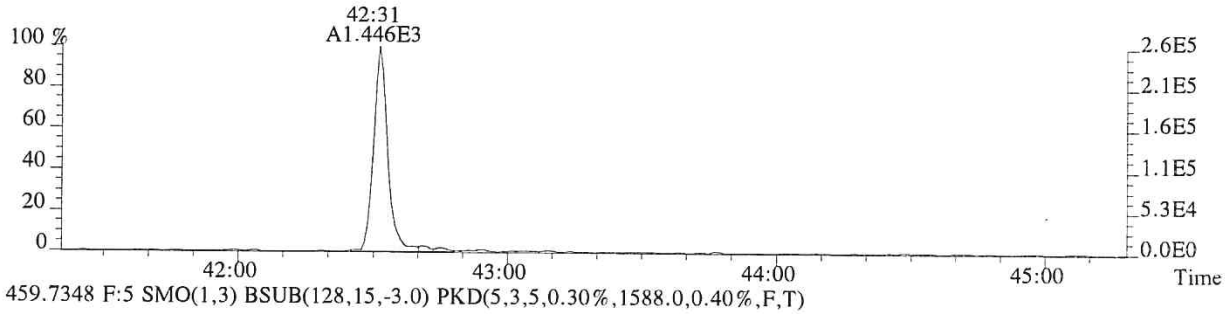


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

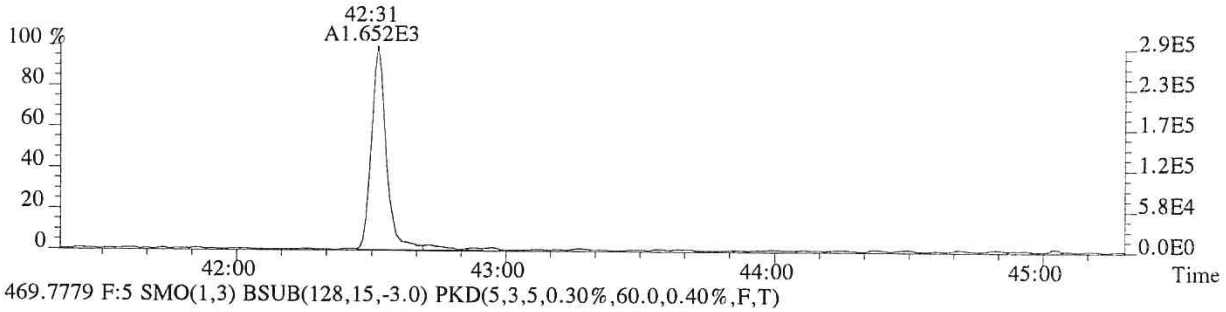


060691

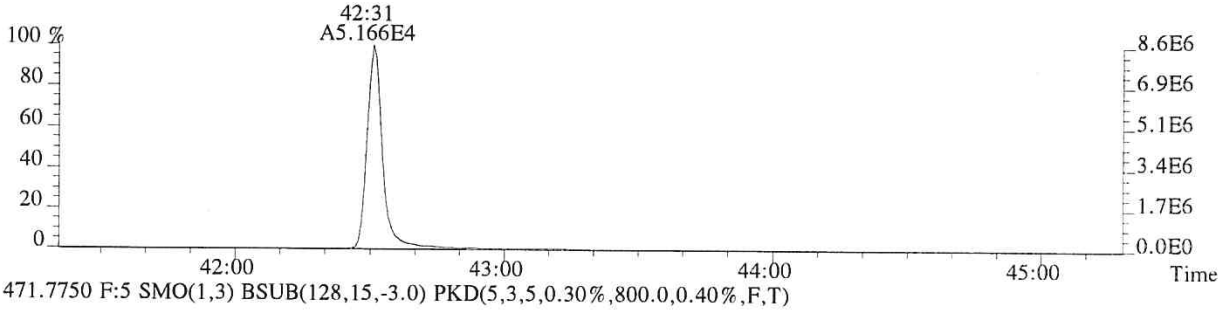
File:P513851 #1-357 Acq:24-JAN-2018 14:23:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,192.0,0.40%,F,T)



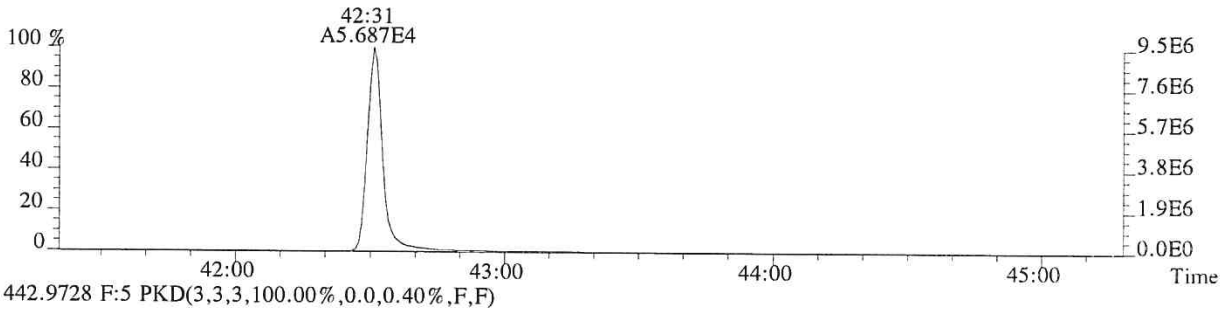
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1588.0,0.40%,F,T)



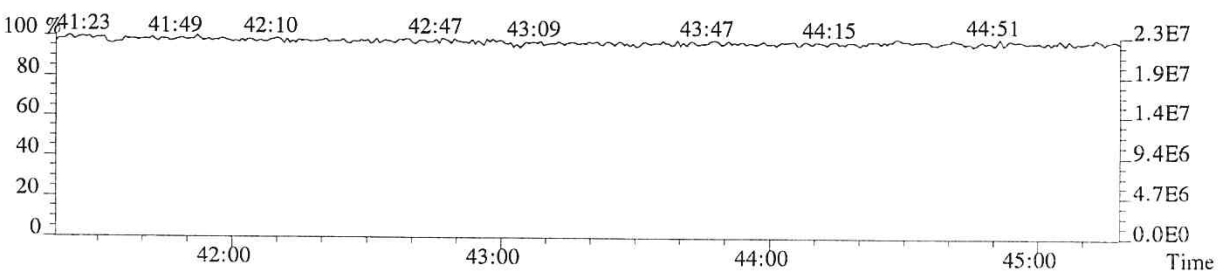
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,60.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,800.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060692

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76556

Run #3 Filename P513852 Samp: 1 Inj: 1 Acquired: 24-JAN-18 15:18:44
Processed: 24-JAN-18 16:27:06 Sample ID: CS2

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:48	5.859e+03	7.932e+03	0.74	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	4.499e+04	3.047e+04	1.48	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:42	4.356e+04	2.901e+04	1.50	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:17	4.061e+04	3.382e+04	1.20	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:23	4.295e+04	3.562e+04	1.21	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:53	3.905e+04	3.212e+04	1.22	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	3.479e+04	2.862e+04	1.22	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:49	3.262e+04	3.207e+04	1.02	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	2.654e+04	2.632e+04	1.01	yes	no	1.258
10	Unk	OCDF	42:45	3.789e+04	4.247e+04	0.89	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:32	4.192e+03	5.525e+03	0.76	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:58	2.973e+04	1.886e+04	1.58	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	37:00	2.687e+04	2.156e+04	1.25	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:05	2.801e+04	2.223e+04	1.26	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:19	2.898e+04	2.343e+04	1.24	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:45	2.194e+04	2.114e+04	1.04	yes	no	1.025
17	Unk	OCDD	42:32	3.213e+04	3.615e+04	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:47	3.357e+05	4.220e+05	0.80	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:48	4.551e+05	2.871e+05	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	4.534e+05	2.868e+05	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:16	2.091e+05	4.014e+05	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:23	2.405e+05	4.554e+05	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:52	2.176e+05	4.192e+05	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:37	1.900e+05	3.615e+05	0.53	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:49	1.476e+05	3.275e+05	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	1.279e+05	2.823e+05	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:31	2.035e+05	2.546e+05	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	3.112e+05	1.963e+05	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	2.611e+05	2.071e+05	1.26	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:05	2.721e+05	2.137e+05	1.27	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:44	2.118e+05	1.999e+05	1.06	yes	no	0.858
32	IS	13C-OCDD	42:31	2.824e+05	3.150e+05	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:57	2.212e+05	2.732e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:19	2.902e+05	2.282e+05	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:32	1.018e+04				no	1.014

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76556

Run #3 Filename P513852 Samp: 1 Inj: 1 Acquired: 24-JAN-18 15:18:44
Processed: 24-JAN-18 16:27:06 LAB. ID: CS2

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.20e+06	7.00e+02	1.7e+03	1.59e+06	1.72e+03	9.3e+02
2	1,2,3,7,8-PeCDF	9.02e+06	1.92e+02	4.7e+04	6.06e+06	3.56e+03	1.7e+03
3	2,3,4,7,8-PeCDF	8.94e+06	1.92e+02	4.7e+04	5.88e+06	3.56e+03	1.7e+03
4	1,2,3,4,7,8-HxCDF	9.11e+06	1.02e+03	9.0e+03	7.52e+06	1.04e+03	7.2e+03
5	1,2,3,6,7,8-HxCDF	8.86e+06	1.02e+03	8.7e+03	7.32e+06	1.04e+03	7.0e+03
6	2,3,4,6,7,8-HxCDF	8.62e+06	1.02e+03	8.5e+03	6.97e+06	1.04e+03	6.7e+03
7	1,2,3,7,8,9-HxCDF	7.31e+06	1.02e+03	7.2e+03	6.00e+06	1.04e+03	5.7e+03
8	1,2,3,4,6,7,8-HpCDF	6.83e+06	3.67e+03	1.9e+03	6.77e+06	3.04e+03	2.2e+03
9	1,2,3,4,7,8,9-HpCDF	5.23e+06	3.67e+03	1.4e+03	5.30e+06	3.04e+03	1.7e+03
10	OCDF	6.47e+06	1.08e+03	6.0e+03	7.24e+06	1.74e+03	4.2e+03
11	2,3,7,8-TCDD	8.47e+05	1.35e+03	6.3e+02	1.14e+06	7.40e+02	1.5e+03
12	1,2,3,7,8-PeCDD	6.05e+06	5.16e+02	1.2e+04	3.80e+06	5.04e+02	7.5e+03
13	1,2,3,4,7,8-HxCDD	6.06e+06	7.48e+02	8.1e+03	4.85e+06	1.29e+03	3.8e+03
14	1,2,3,6,7,8-HxCDD	5.88e+06	7.48e+02	7.9e+03	4.64e+06	1.29e+03	3.6e+03
15	1,2,3,7,8,9-HxCDD	5.73e+06	7.48e+02	7.7e+03	4.69e+06	1.29e+03	3.6e+03
16	1,2,3,4,6,7,8-HpCDD	4.40e+06	1.68e+03	2.6e+03	4.18e+06	7.28e+02	5.7e+03
17	OCDD	5.55e+06	1.60e+02	3.5e+04	6.20e+06	1.07e+03	5.8e+03
18	13C-2,3,7,8-TCDF	6.63e+07	8.64e+03	7.7e+03	8.31e+07	4.36e+03	1.9e+04
19	13C-1,2,3,7,8-PeCDF	8.82e+07	9.44e+02	9.3e+04	5.54e+07	2.55e+03	2.2e+04
20	13C-2,3,4,7,8-PeCDF	9.11e+07	9.44e+02	9.6e+04	5.80e+07	2.55e+03	2.3e+04
21	13C-1,2,3,4,7,8-HxCDF	4.63e+07	1.33e+03	3.5e+04	8.84e+07	3.58e+03	2.5e+04
22	13C-1,2,3,6,7,8-HxCDF	4.97e+07	1.33e+03	3.7e+04	9.31e+07	3.58e+03	2.6e+04
23	13C-2,3,4,6,7,8-HxCDF	4.74e+07	1.33e+03	3.6e+04	9.03e+07	3.58e+03	2.5e+04
24	13C-1,2,3,7,8,9-HxCDF	3.91e+07	1.33e+03	2.9e+04	7.44e+07	3.58e+03	2.1e+04
25	13C-1,2,3,4,6,7,8-HpCDF	3.05e+07	5.18e+03	5.9e+03	6.68e+07	7.38e+03	9.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.48e+07	5.18e+03	4.8e+03	5.51e+07	7.38e+03	7.5e+03
27	13C-2,3,7,8-TCDD	4.21e+07	6.43e+03	6.5e+03	5.22e+07	3.34e+03	1.6e+04
28	13C-1,2,3,7,8-PeCDD	6.30e+07	1.05e+03	6.0e+04	3.99e+07	1.24e+03	3.2e+04
29	13C-1,2,3,4,7,8-HxCDD	5.84e+07	4.36e+03	1.3e+04	4.60e+07	2.04e+03	2.3e+04
30	13C-1,2,3,6,7,8-HxCDD	5.57e+07	4.36e+03	1.3e+04	4.34e+07	2.04e+03	2.1e+04
31	13C-1,2,3,4,6,7,8-HpCDD	4.12e+07	2.07e+03	2.0e+04	3.91e+07	2.18e+03	1.8e+04
32	13C-OCDD	4.87e+07	6.80e+01	7.2e+05	5.40e+07	9.12e+02	5.9e+04
33	13C-1,2,3,4-TCDD	4.48e+07	6.43e+03	7.0e+03	5.57e+07	3.34e+03	1.7e+04
34	13C-1,2,3,7,8,9-HxCDD	5.61e+07	4.36e+03	1.3e+04	4.47e+07	2.04e+03	2.2e+04
35	37Cl-2,3,7,8-TCDD	2.10e+06	1.00e+03	2.1e+03			

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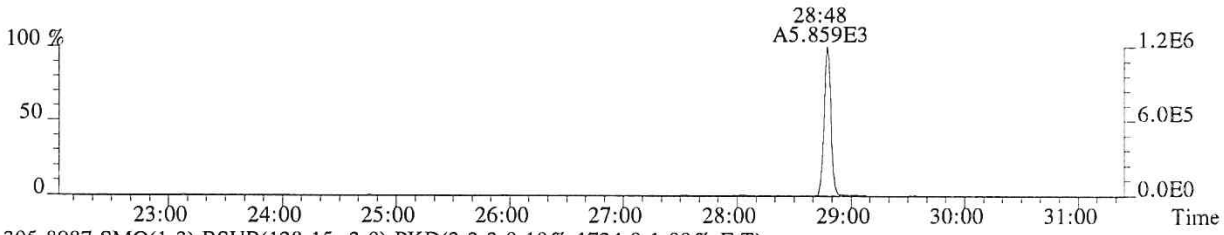
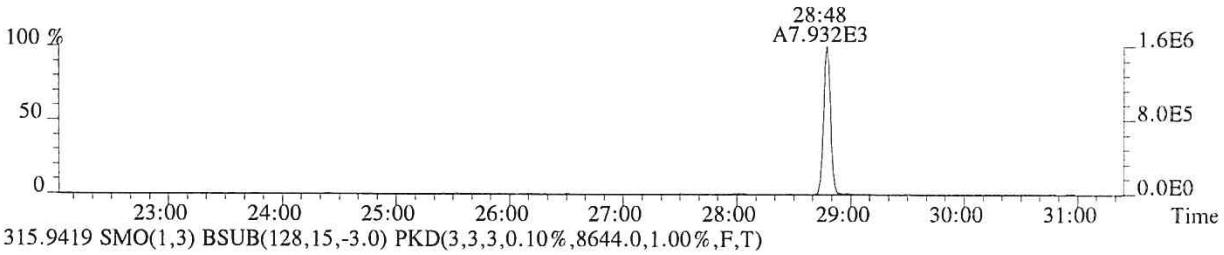
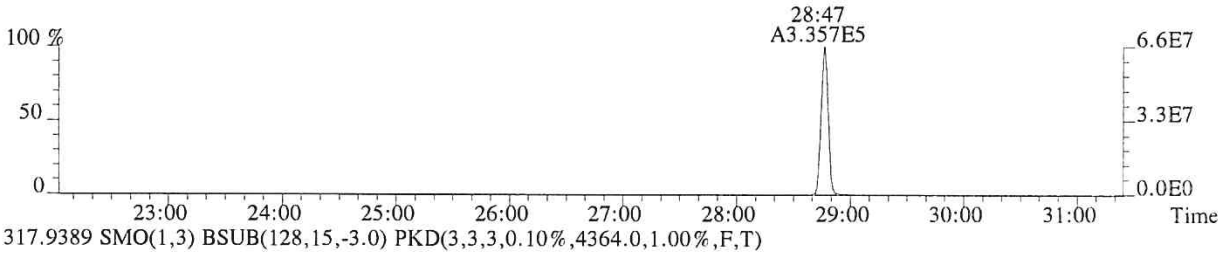
File:P513852 #1-665 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,700.0,1.00%,F,T)



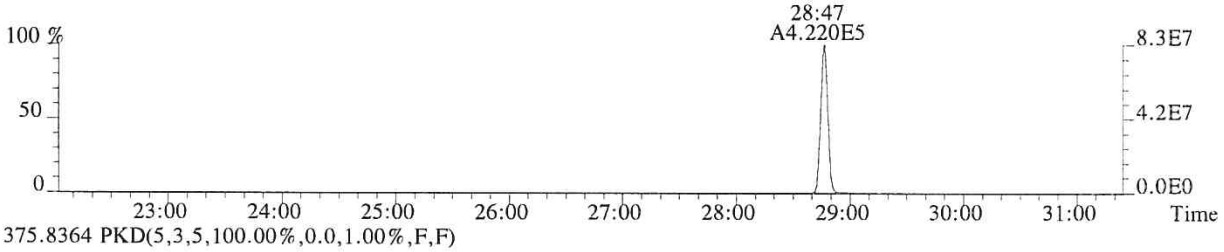
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1724.0,1.00%,F,T)



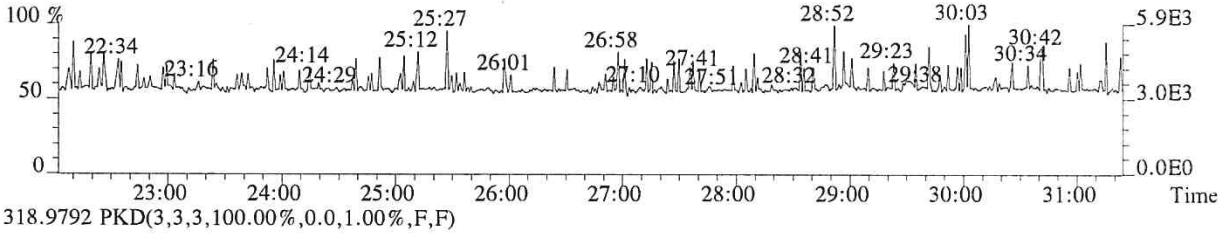
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8644.0,1.00%,F,T)



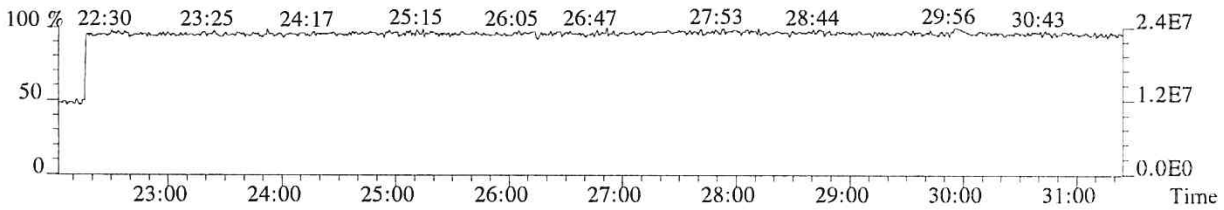
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4364.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

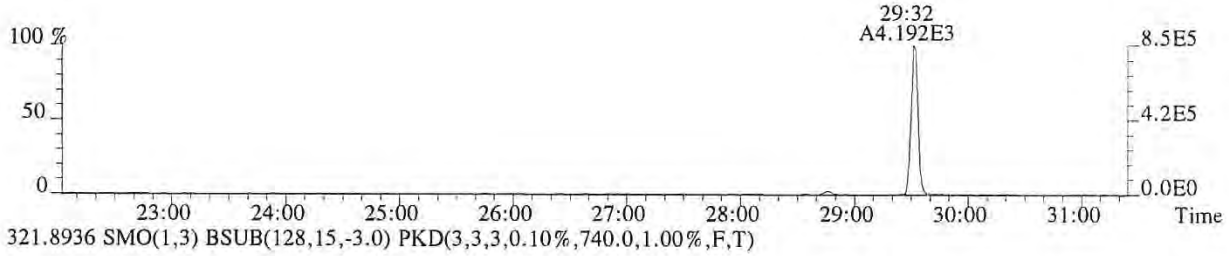


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

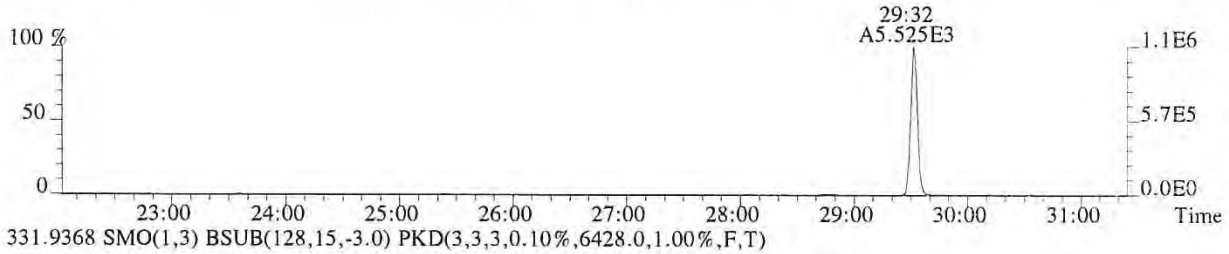


060695

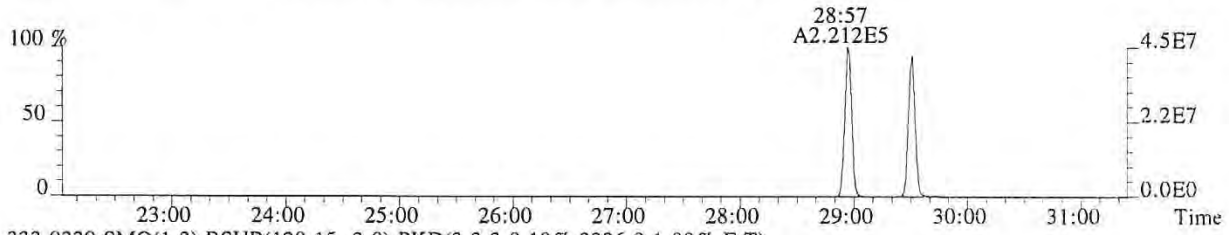
File:P513852 #1-665 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1348.0,1.00%,F,T)



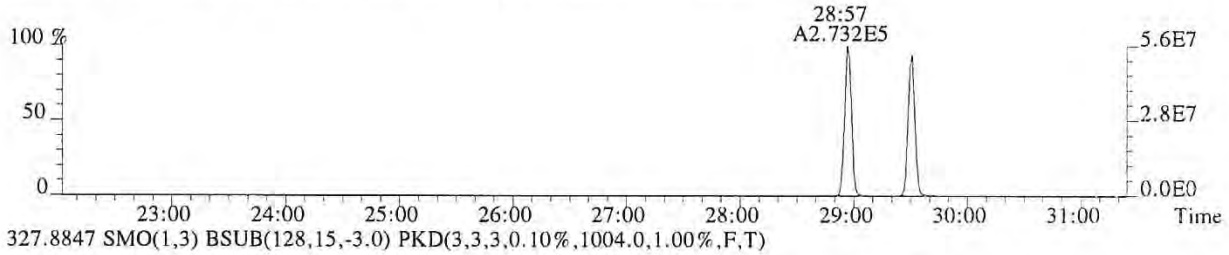
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,740.0,1.00%,F,T)



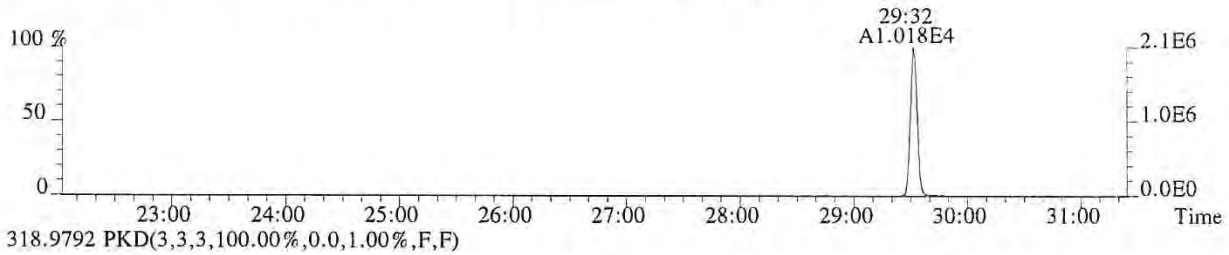
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6428.0,1.00%,F,T)



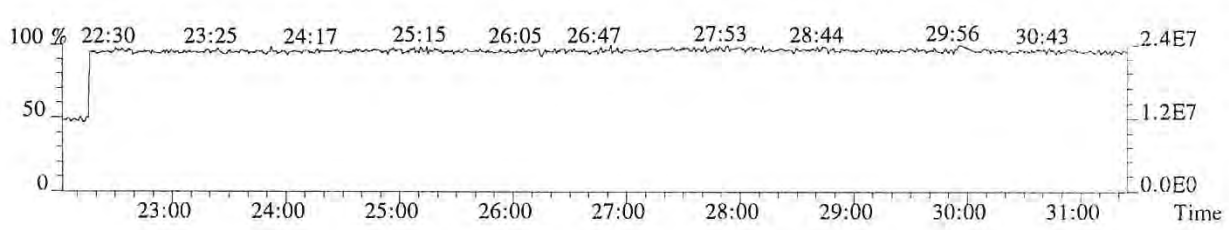
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3336.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1004.0,1.00%,F,T)

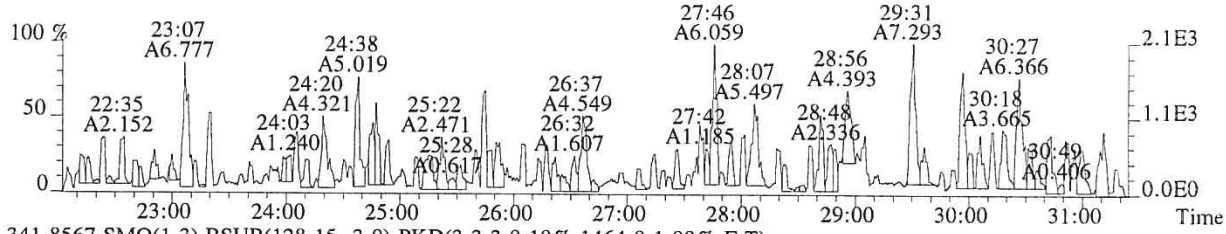


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

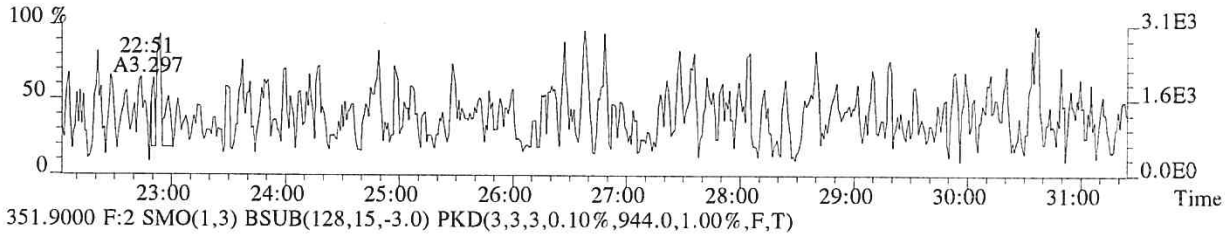


060696

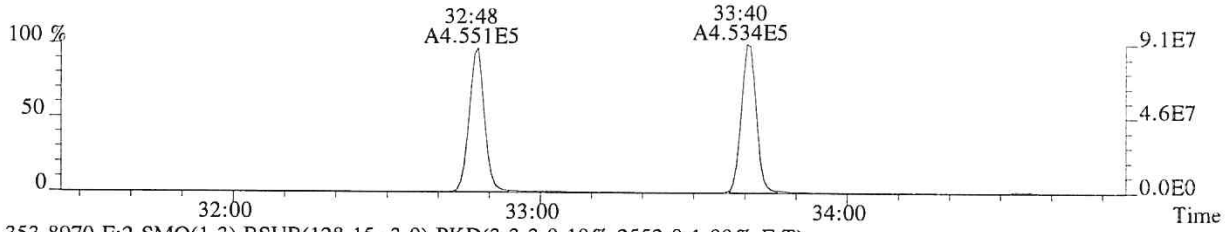
File:P513852 #1-665 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,196.0,1.00%,F,T)



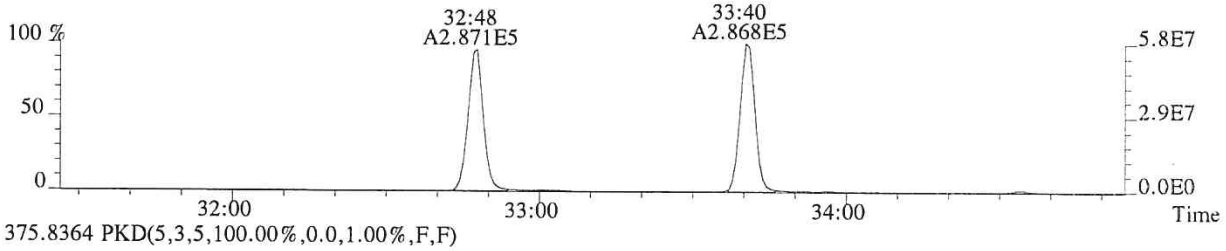
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1464.0,1.00%,F,T)



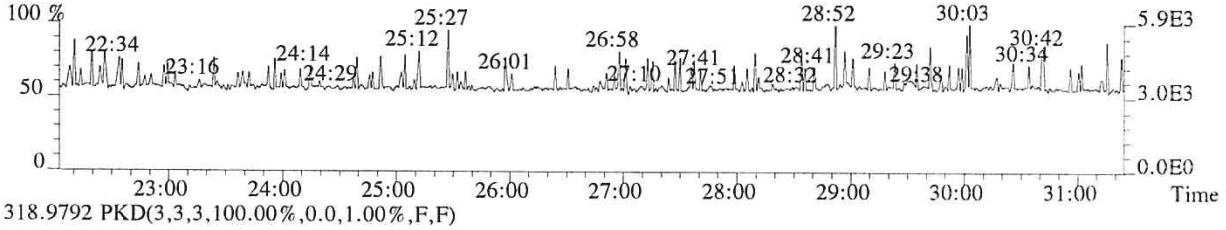
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,944.0,1.00%,F,T)



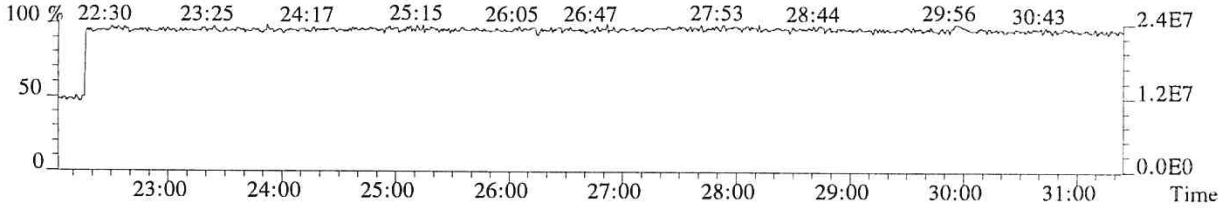
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2552.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

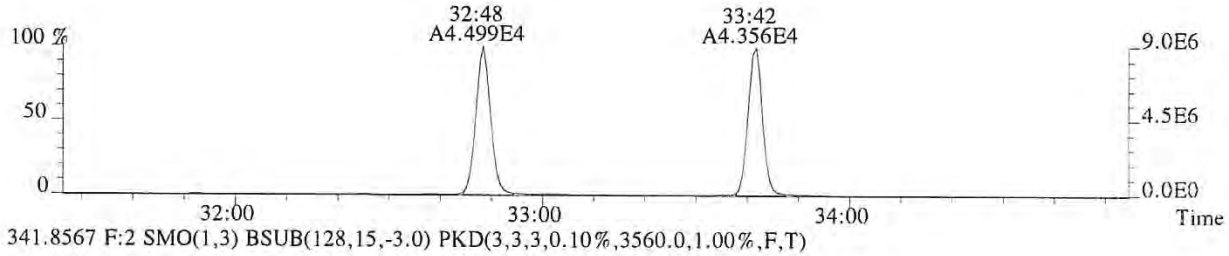


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

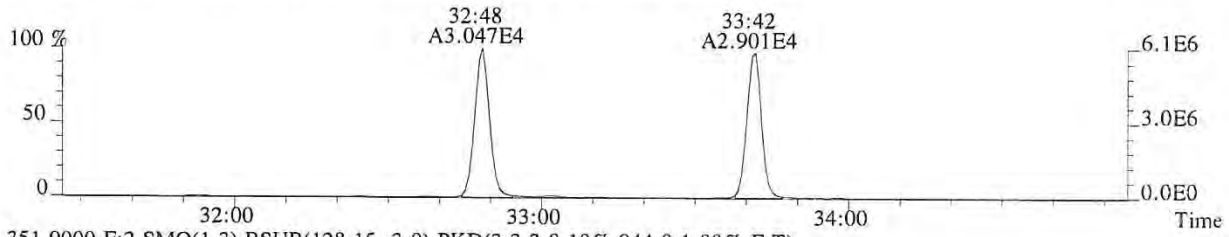


060697

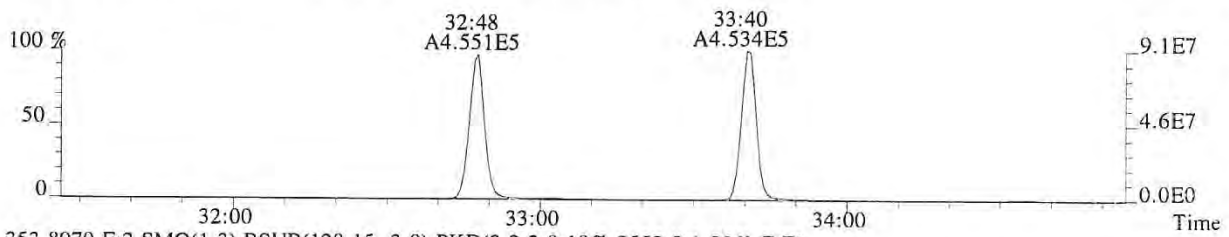
File:P513852 #1-313 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,192.0,1.00%,F,T)



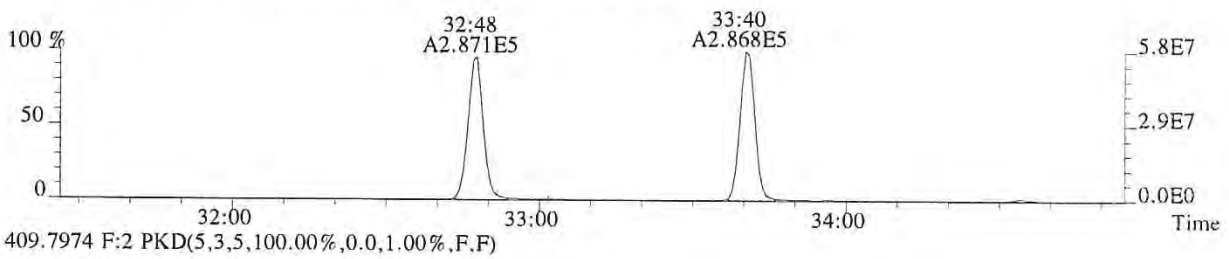
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3560.0,1.00%,F,T)



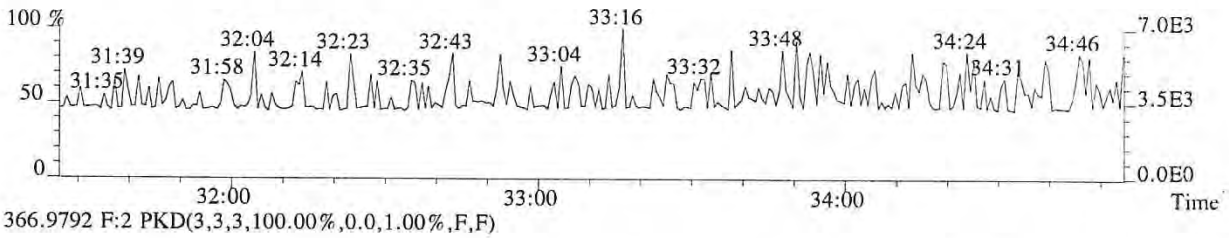
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,944.0,1.00%,F,T)



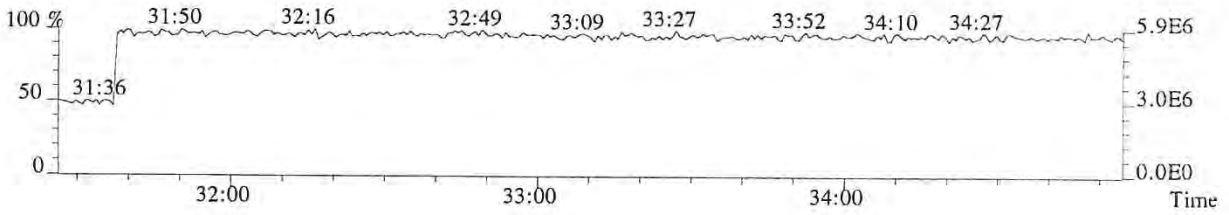
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2552.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

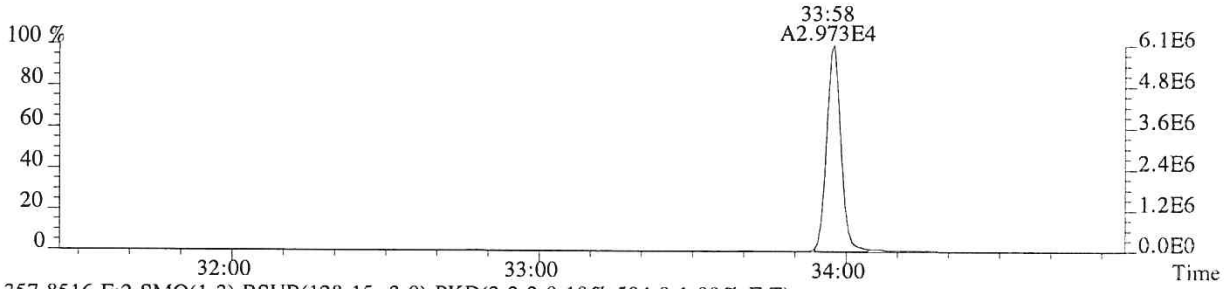


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

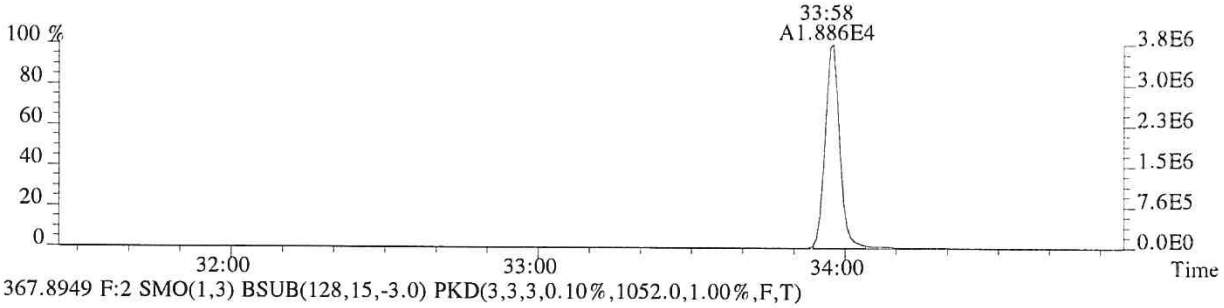


060698

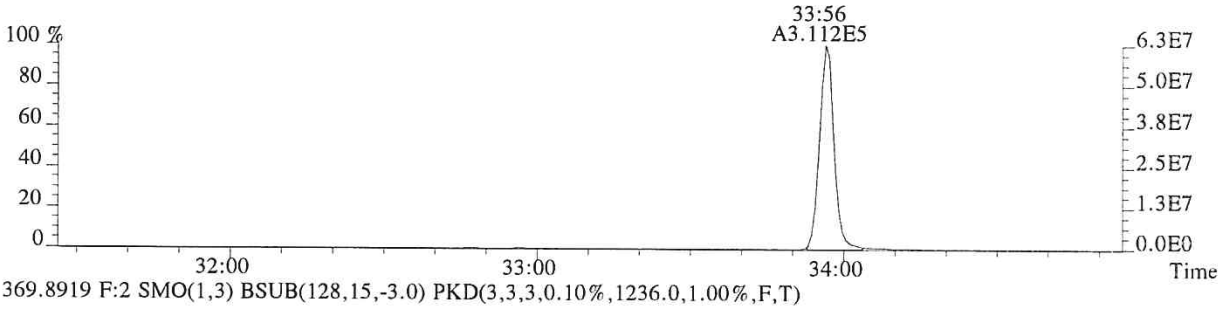
File:P513852 #1-313 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,516.0,1.00%,F,T)



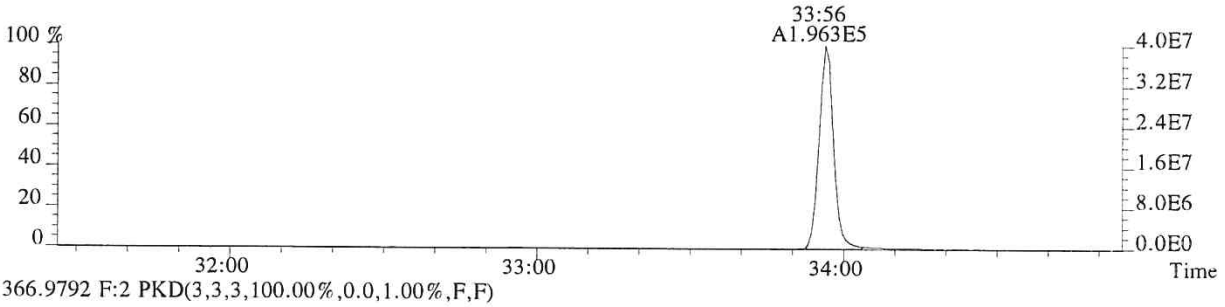
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,504.0,1.00%,F,T)



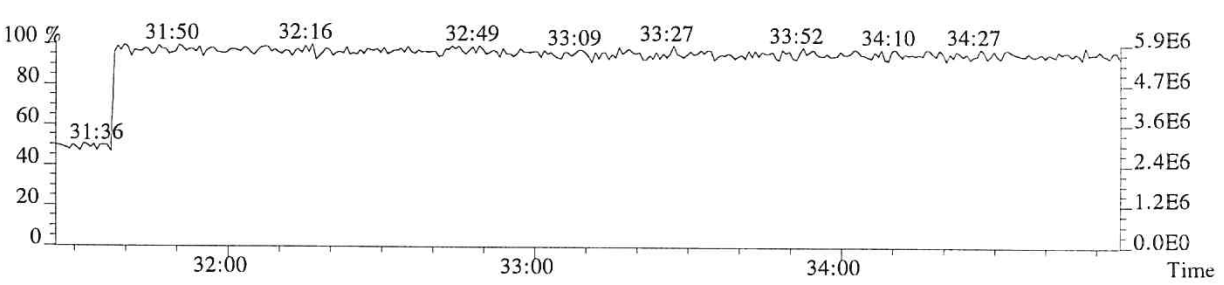
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1052.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1236.0,1.00%,F,T)

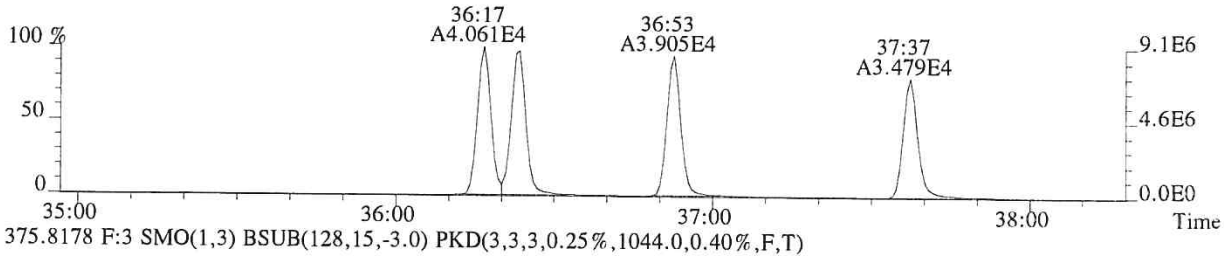


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

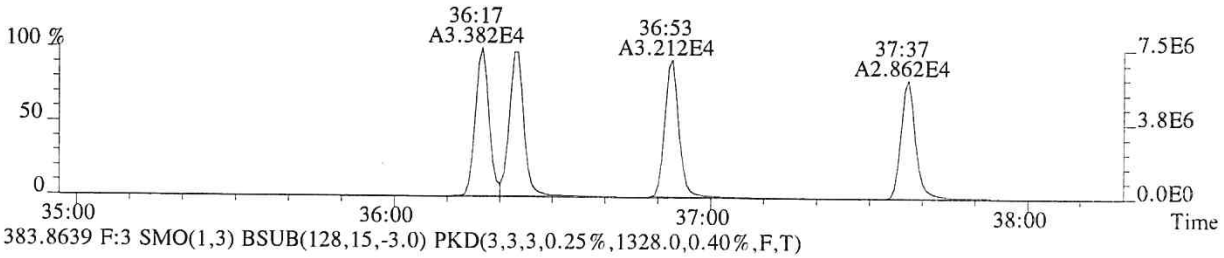


060699

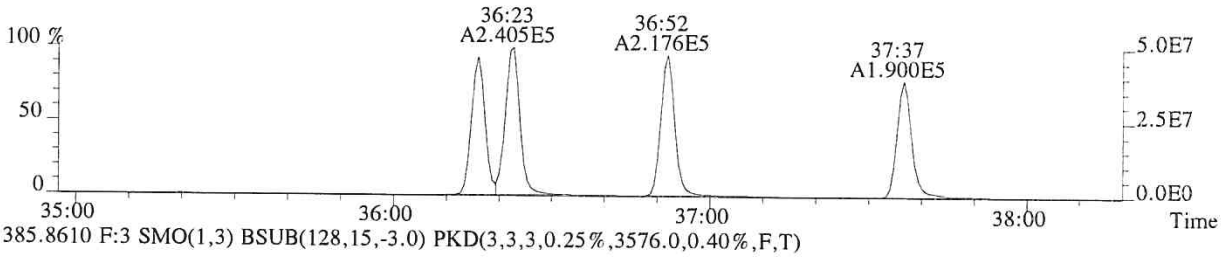
File:P513852 #1-303 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:76556
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1016.0,0.40%,F,T)



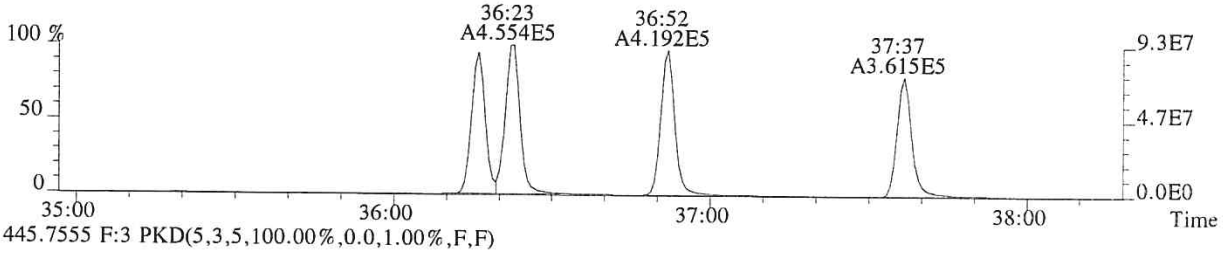
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1044.0,0.40%,F,T)



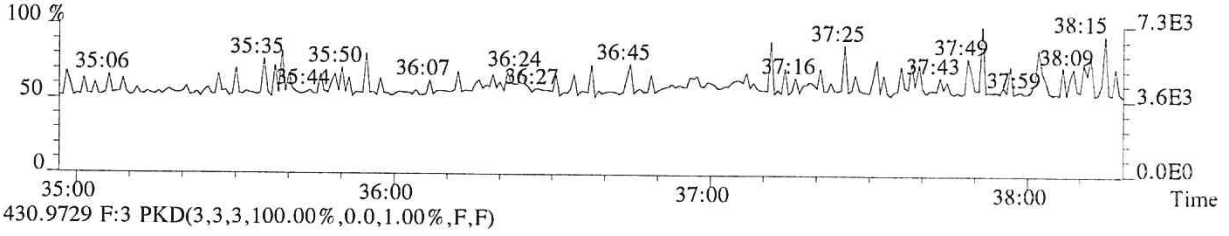
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1328.0,0.40%,F,T)



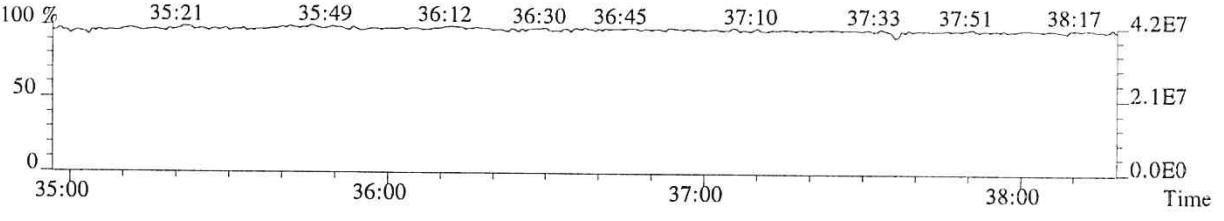
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3576.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

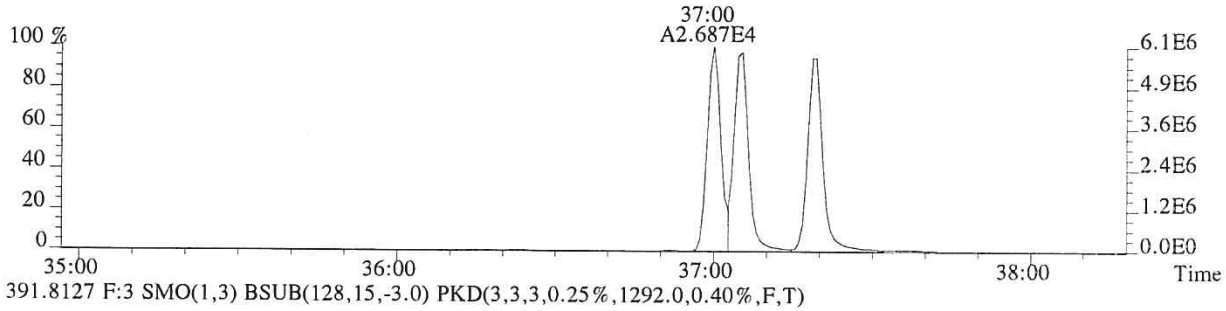


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

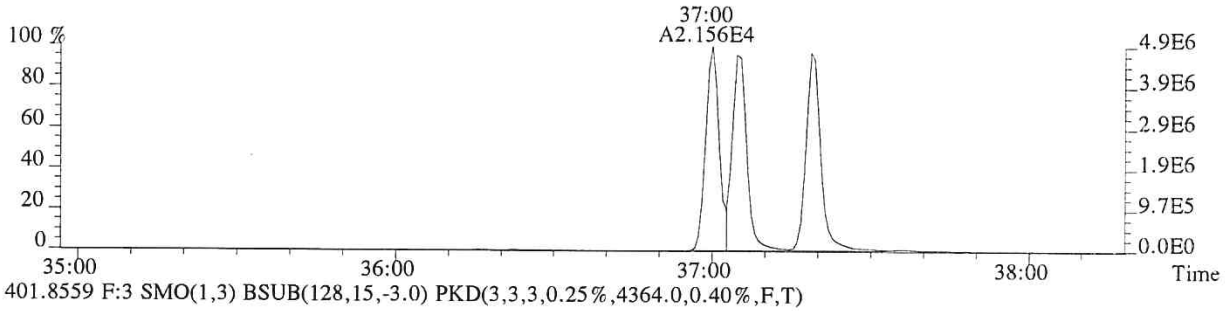


060700

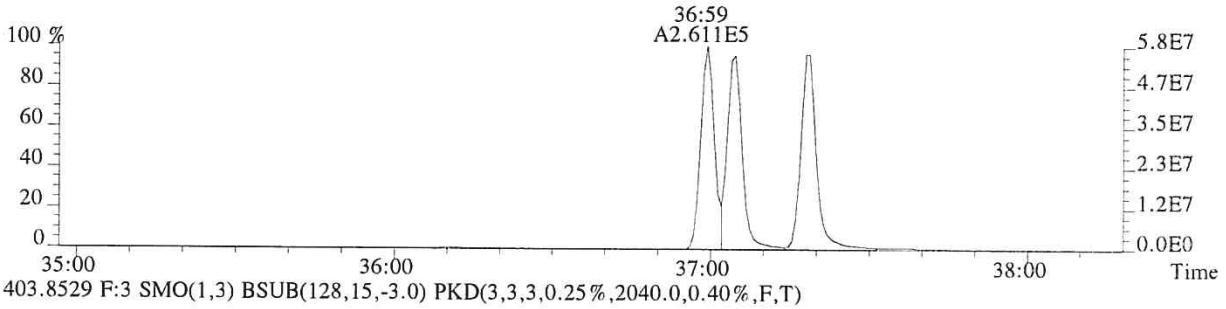
File:P513852 #1-303 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,748.0,0.40%,F,T)



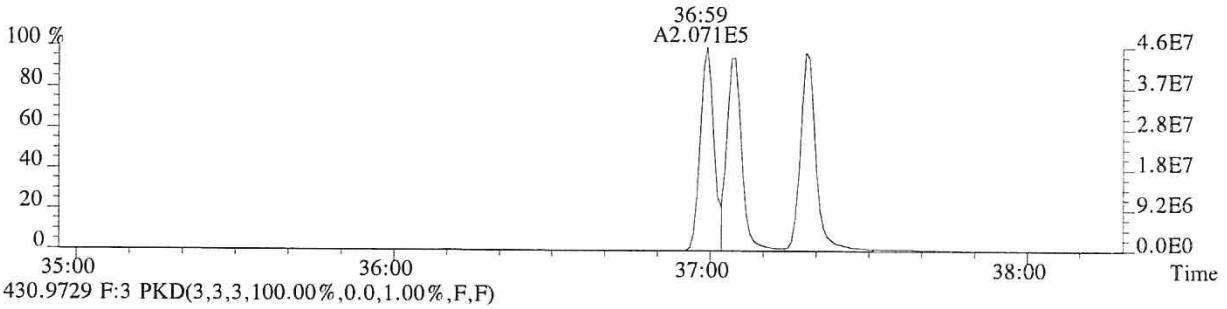
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1292.0,0.40%,F,T)



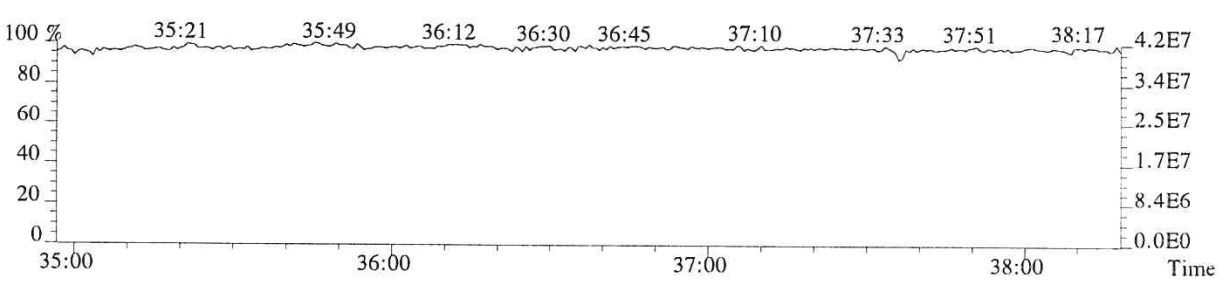
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4364.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2040.0,0.40%,F,T)

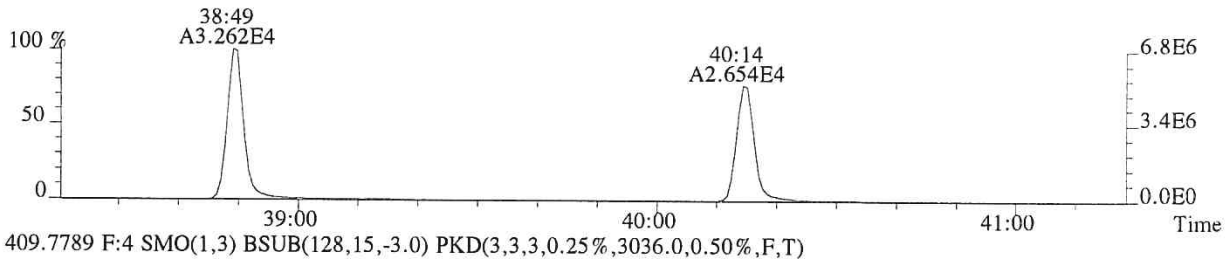


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

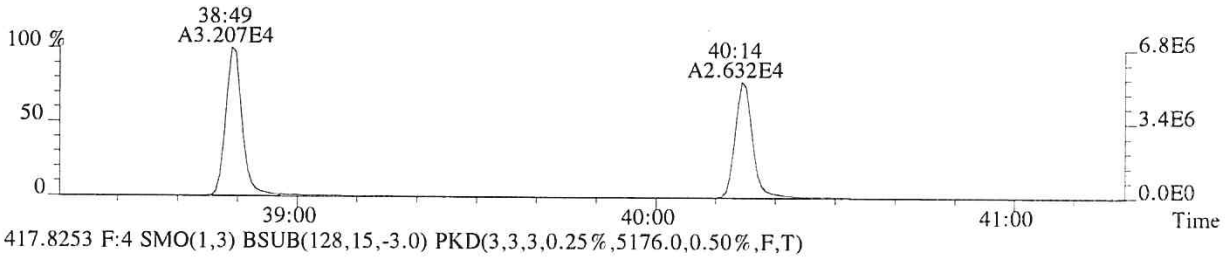


060701

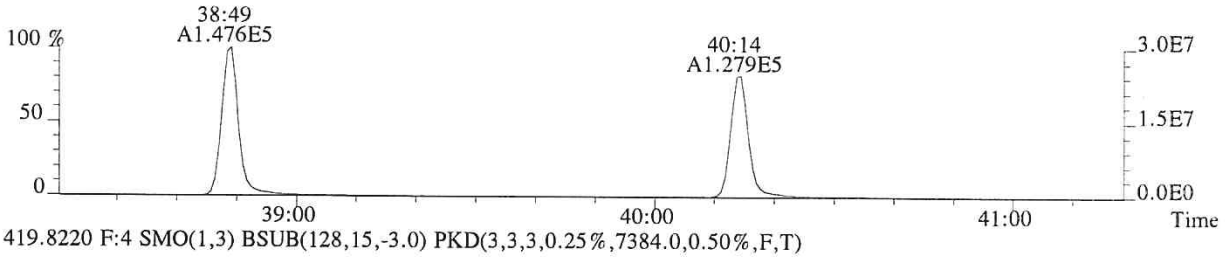
File:P513852 #1-268 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3668.0,0.50%,F,T)



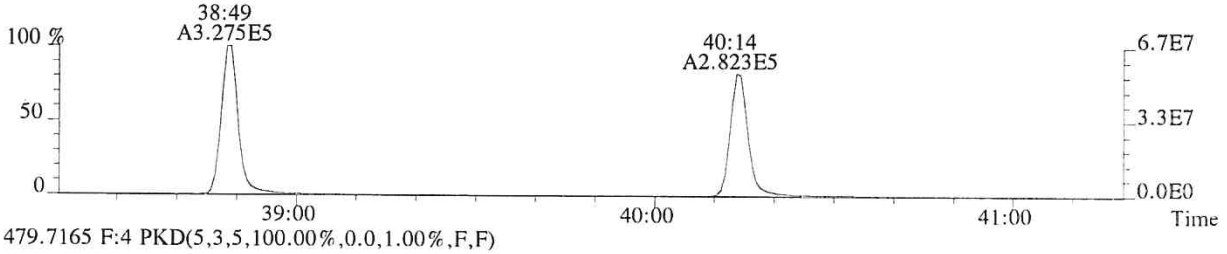
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3036.0,0.50%,F,T)



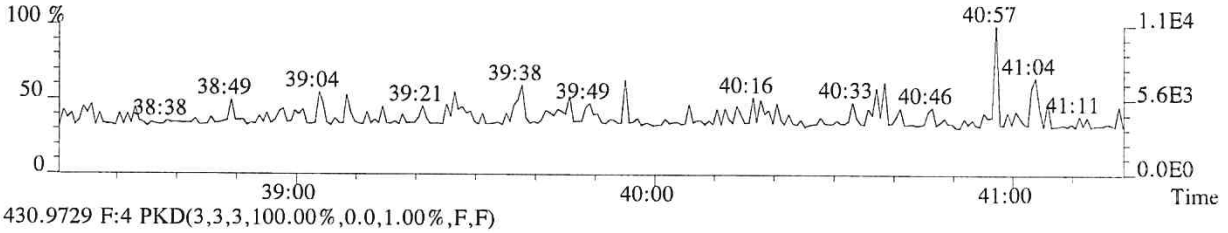
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5176.0,0.50%,F,T)



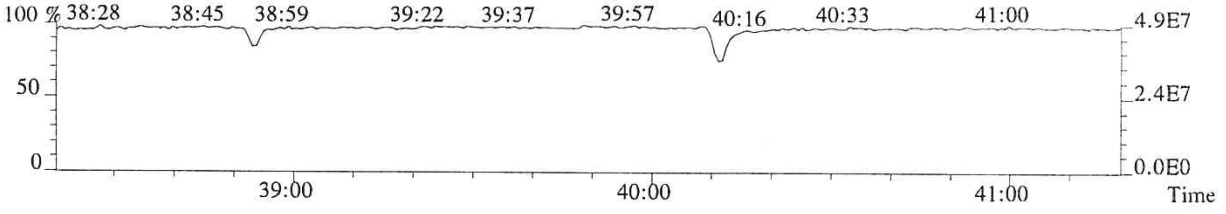
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7384.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

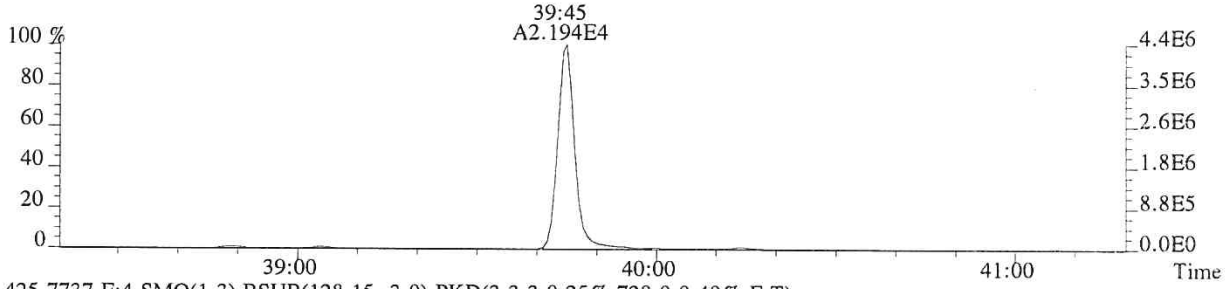


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

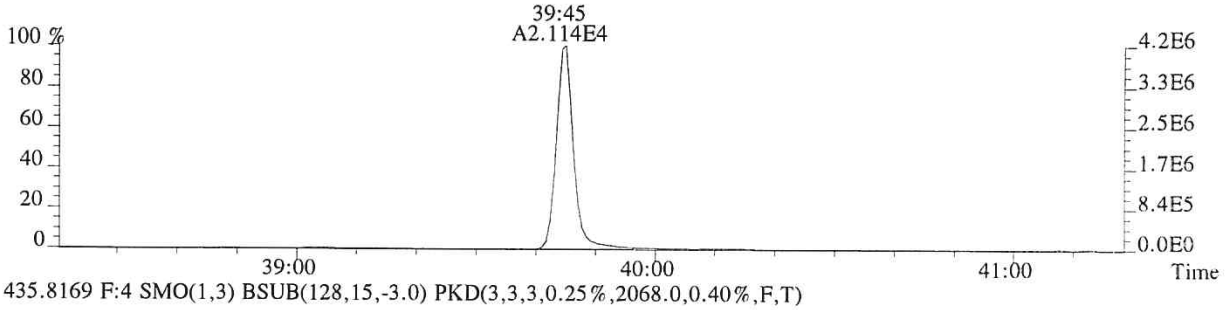


060702

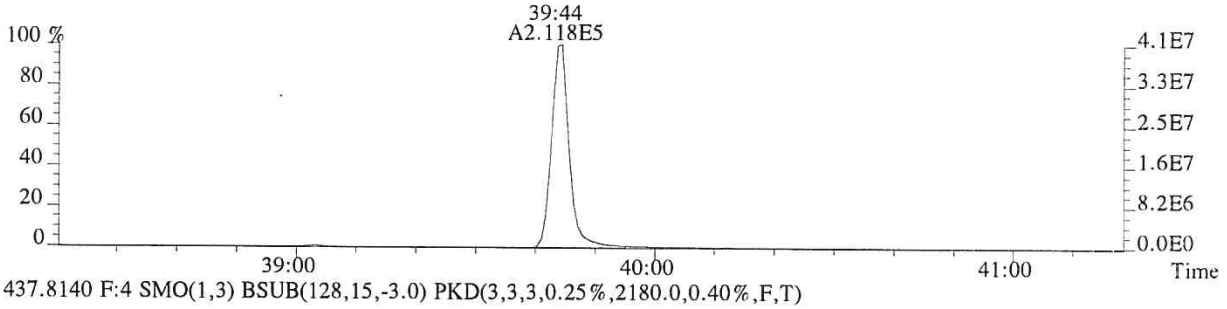
File:P513852 #1-268 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1676.0,0.40%,F,T)



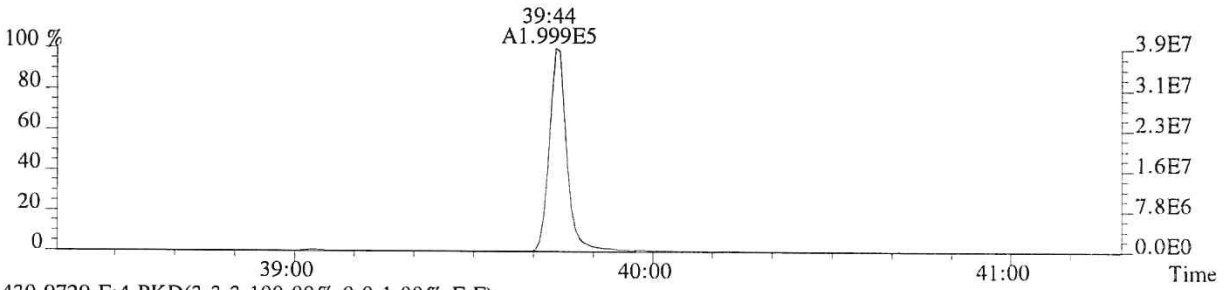
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,728.0,0.40%,F,T)



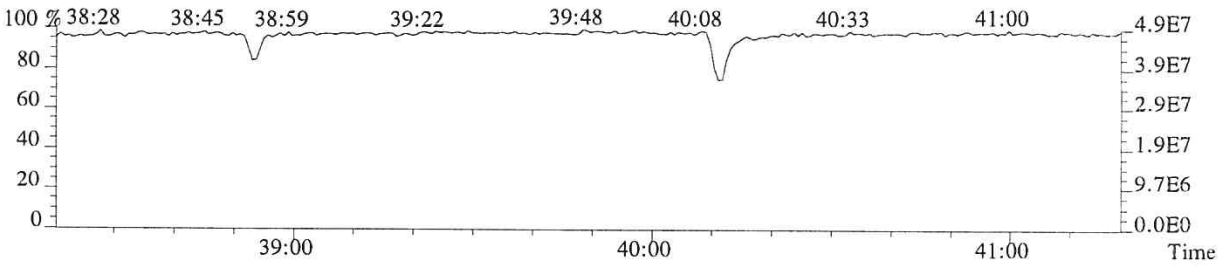
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2068.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2180.0,0.40%,F,T)

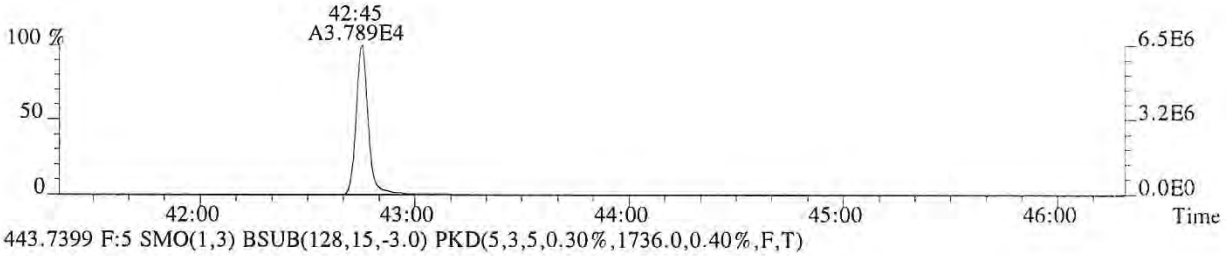


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

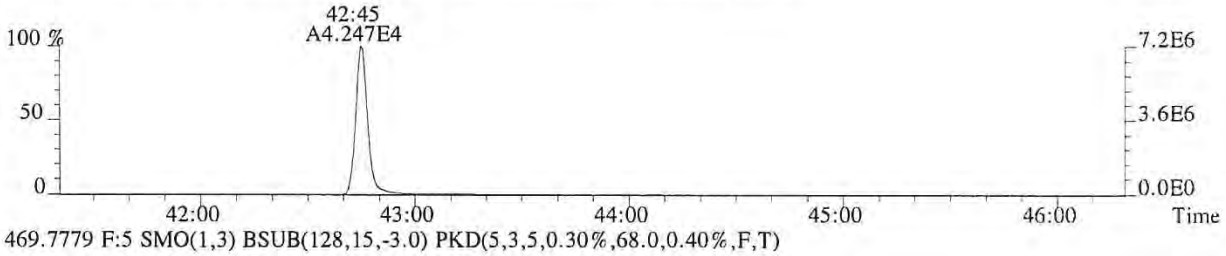


060703

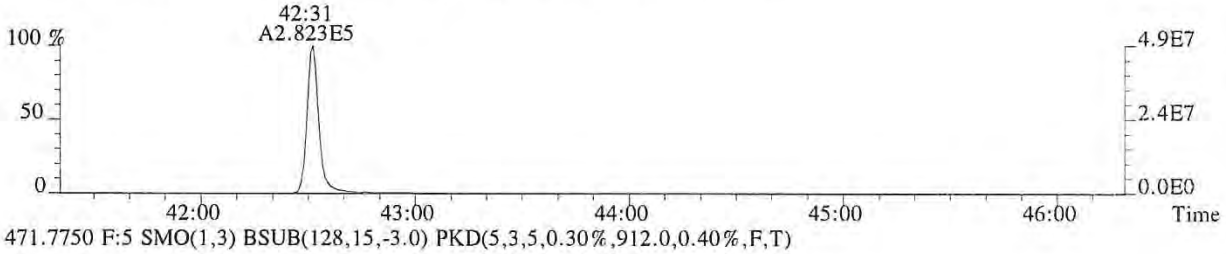
File:P513852 #1-448 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1076.0,0.40%,F,T)



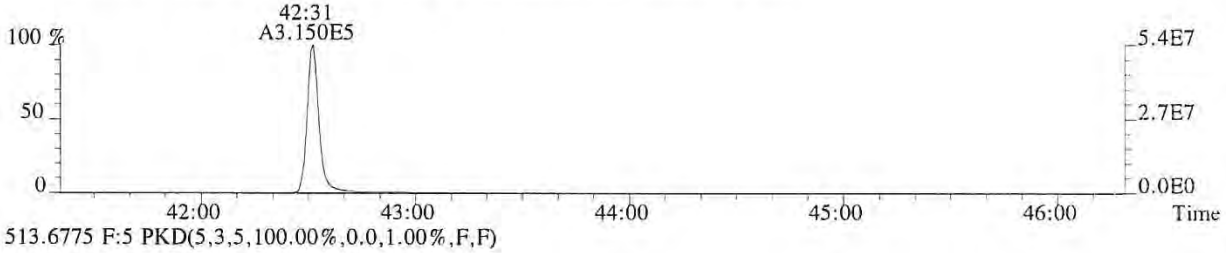
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1736.0,0.40%,F,T)



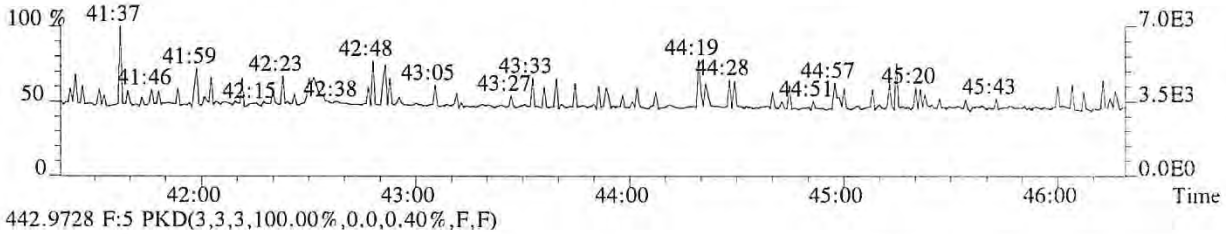
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,68.0,0.40%,F,T)



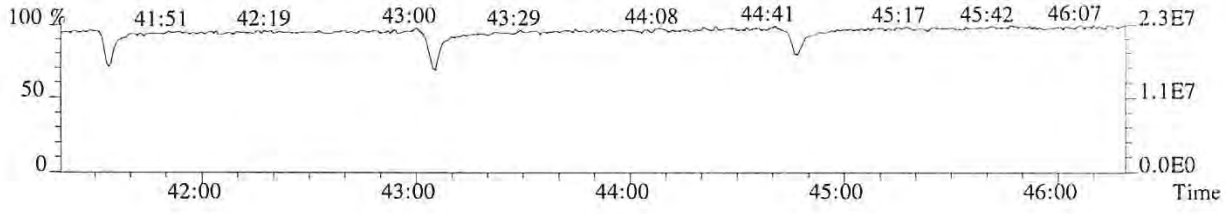
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,912.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

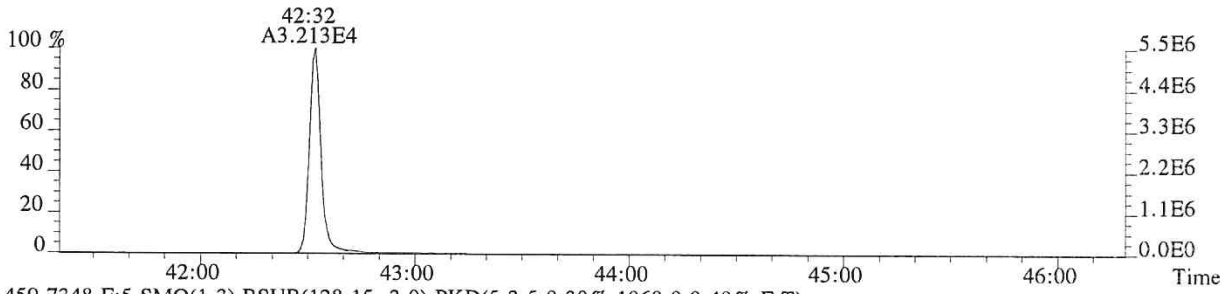


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

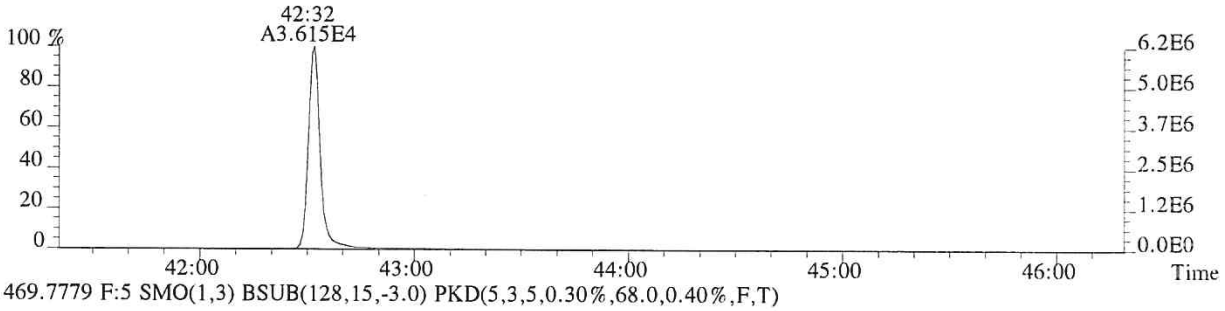


060704

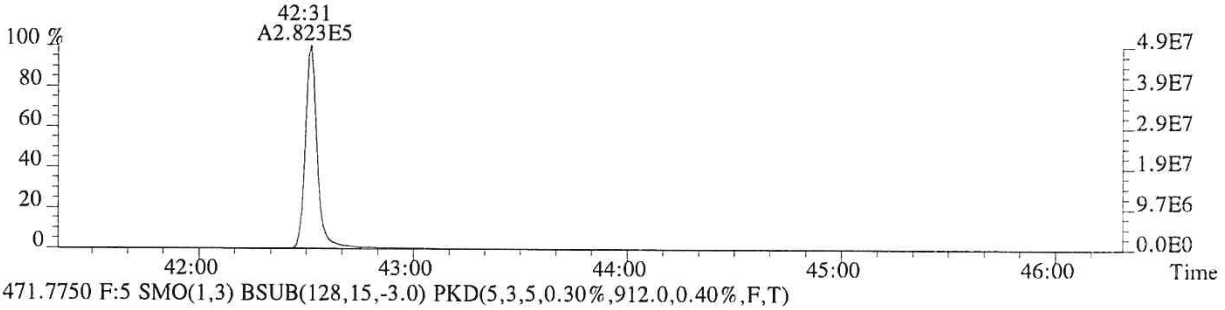
File:P513852 #1-448 Acq:24-JAN-2018 15:18:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,160.0,0.40%,F,T)



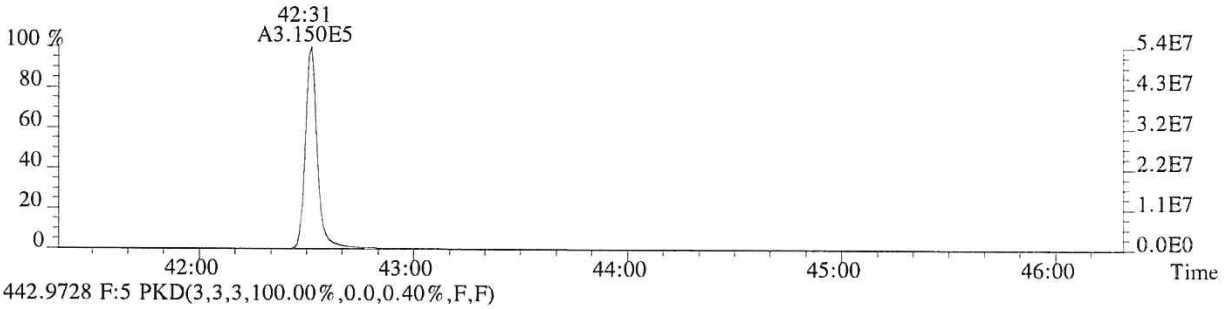
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1068.0,0.40%,F,T)



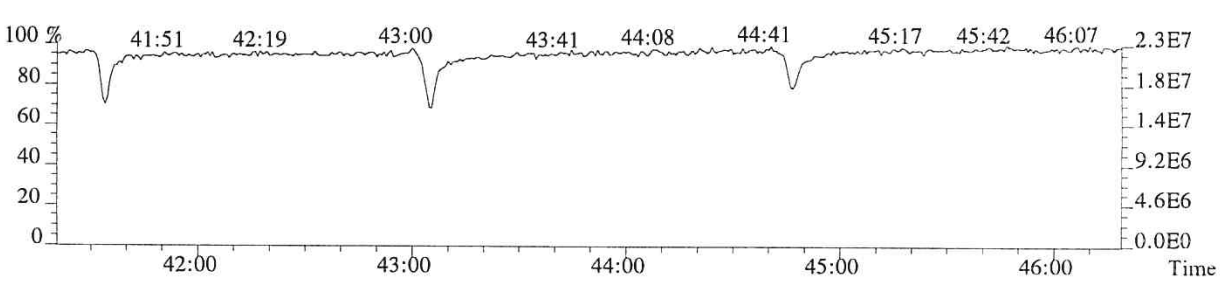
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,68.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,912.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060705

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76557

Run #4 Filename P513853 Samp: 1 Inj: 1 Acquired: 24-JAN-18 16:06:29
Processed: 24-JAN-18 17:13:42 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:47	4.270e+04	5.692e+04	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	3.077e+05	2.016e+05	1.53	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:41	2.833e+05	1.864e+05	1.52	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:16	2.625e+05	2.158e+05	1.22	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:22	2.702e+05	2.228e+05	1.21	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:52	2.439e+05	2.001e+05	1.22	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	1.977e+05	1.631e+05	1.21	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:48	2.099e+05	2.057e+05	1.02	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	1.509e+05	1.470e+05	1.03	yes	no	1.258
10	Unk	OCDF	42:45	2.260e+05	2.525e+05	0.90	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:31	2.824e+04	3.588e+04	0.79	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:57	1.903e+05	1.221e+05	1.56	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:59	1.727e+05	1.384e+05	1.25	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:04	1.705e+05	1.356e+05	1.26	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:18	1.758e+05	1.371e+05	1.28	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:44	1.431e+05	1.365e+05	1.05	yes	no	1.025
17	Unk	OCDD	42:31	1.906e+05	2.140e+05	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:46	4.689e+05	5.926e+05	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:47	6.073e+05	3.832e+05	1.58	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	5.900e+05	3.740e+05	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:15	2.738e+05	5.189e+05	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:21	3.023e+05	5.708e+05	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:51	2.671e+05	5.167e+05	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:36	2.133e+05	4.042e+05	0.53	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:48	1.882e+05	4.188e+05	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	1.419e+05	3.155e+05	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:30	2.668e+05	3.316e+05	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	4.009e+05	2.534e+05	1.58	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	3.335e+05	2.508e+05	1.33	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:03	3.244e+05	2.699e+05	1.20	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:43	2.779e+05	2.632e+05	1.06	yes	no	0.858
32	IS	13C-OCDD	42:31	3.375e+05	3.799e+05	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:56	2.956e+05	3.663e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:17	3.390e+05	2.761e+05	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:31	6.612e+04				no	1.014

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76557

Run #4 Filename P513853 Samp: 1 Inj: 1 Acquired: 24-JAN-18 16:06:29
Processed: 24-JAN-18 17:13:42 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	8.50e+06	6.40e+02	1.3e+04	1.14e+07	2.11e+03	5.4e+03
2	1,2,3,7,8-PeCDF	6.16e+07	1.61e+03	3.8e+04	4.01e+07	2.10e+03	1.9e+04
3	2,3,4,7,8-PeCDF	5.79e+07	1.61e+03	3.6e+04	3.78e+07	2.10e+03	1.8e+04
4	1,2,3,4,7,8-HxCDF	5.83e+07	1.86e+03	3.1e+04	4.74e+07	2.55e+03	1.9e+04
5	1,2,3,6,7,8-HxCDF	5.80e+07	1.86e+03	3.1e+04	4.80e+07	2.55e+03	1.9e+04
6	2,3,4,6,7,8-HxCDF	5.37e+07	1.86e+03	2.9e+04	4.34e+07	2.55e+03	1.7e+04
7	1,2,3,7,8,9-HxCDF	4.12e+07	1.86e+03	2.2e+04	3.39e+07	2.55e+03	1.3e+04
8	1,2,3,4,6,7,8-HpCDF	4.57e+07	4.44e+03	1.0e+04	4.52e+07	1.05e+04	4.3e+03
9	1,2,3,4,7,8,9-HpCDF	3.06e+07	4.44e+03	6.9e+03	2.99e+07	1.05e+04	2.8e+03
10	OCDF	3.93e+07	1.44e+02	2.7e+05	4.34e+07	1.38e+03	3.1e+04
11	2,3,7,8-TCDD	5.83e+06	1.92e+03	3.0e+03	7.39e+06	1.30e+03	5.7e+03
12	1,2,3,7,8-PeCDD	3.83e+07	1.45e+03	2.6e+04	2.46e+07	7.04e+02	3.5e+04
13	1,2,3,4,7,8-HxCDD	3.89e+07	5.12e+02	7.6e+04	3.08e+07	1.23e+03	2.5e+04
14	1,2,3,6,7,8-HxCDD	3.74e+07	5.12e+02	7.3e+04	3.02e+07	1.23e+03	2.5e+04
15	1,2,3,7,8,9-HxCDD	3.75e+07	5.12e+02	7.3e+04	3.01e+07	1.23e+03	2.5e+04
16	1,2,3,4,6,7,8-HpCDD	2.89e+07	1.84e+03	1.6e+04	2.78e+07	1.41e+03	2.0e+04
17	OCDD	3.41e+07	6.32e+02	5.4e+04	3.81e+07	1.31e+03	2.9e+04
18	13C-2,3,7,8-TCDF	9.47e+07	6.52e+03	1.5e+04	1.19e+08	4.12e+03	2.9e+04
19	13C-1,2,3,7,8-PeCDF	1.17e+08	1.28e+03	9.1e+04	7.33e+07	8.08e+02	9.1e+04
20	13C-2,3,4,7,8-PeCDF	1.21e+08	1.28e+03	9.4e+04	7.72e+07	8.08e+02	9.6e+04
21	13C-1,2,3,4,7,8-HxCDF	6.01e+07	1.97e+03	3.1e+04	1.13e+08	1.75e+03	6.5e+04
22	13C-1,2,3,6,7,8-HxCDF	6.52e+07	1.97e+03	3.3e+04	1.24e+08	1.75e+03	7.1e+04
23	13C-2,3,4,6,7,8-HxCDF	5.86e+07	1.97e+03	3.0e+04	1.11e+08	1.75e+03	6.4e+04
24	13C-1,2,3,7,8,9-HxCDF	4.44e+07	1.97e+03	2.3e+04	8.35e+07	1.75e+03	4.8e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.03e+07	8.48e+03	4.8e+03	9.01e+07	6.21e+03	1.5e+04
26	13C-1,2,3,4,7,8,9-HpCDF	2.83e+07	8.48e+03	3.3e+03	6.33e+07	6.21e+03	1.0e+04
27	13C-2,3,7,8-TCDD	5.56e+07	5.87e+03	9.5e+03	6.88e+07	2.90e+03	2.4e+04
28	13C-1,2,3,7,8-PeCDD	8.27e+07	1.46e+03	5.7e+04	5.24e+07	1.17e+03	4.5e+04
29	13C-1,2,3,4,7,8-HxCDD	7.51e+07	3.07e+03	2.4e+04	5.90e+07	2.67e+03	2.2e+04
30	13C-1,2,3,6,7,8-HxCDD	7.07e+07	3.07e+03	2.3e+04	5.69e+07	2.67e+03	2.1e+04
31	13C-1,2,3,4,6,7,8-HpCDD	5.63e+07	2.93e+03	1.9e+04	5.39e+07	1.32e+03	4.1e+04
32	13C-OCDD	5.98e+07	1.07e+03	5.6e+04	6.69e+07	9.36e+02	7.1e+04
33	13C-1,2,3,4-TCDD	5.97e+07	5.87e+03	1.0e+04	7.42e+07	2.90e+03	2.6e+04
34	13C-1,2,3,7,8,9-HxCDD	7.31e+07	3.07e+03	2.4e+04	5.89e+07	2.67e+03	2.2e+04
35	37Cl-2,3,7,8-TCDD	1.36e+07	1.25e+03	1.1e+04			

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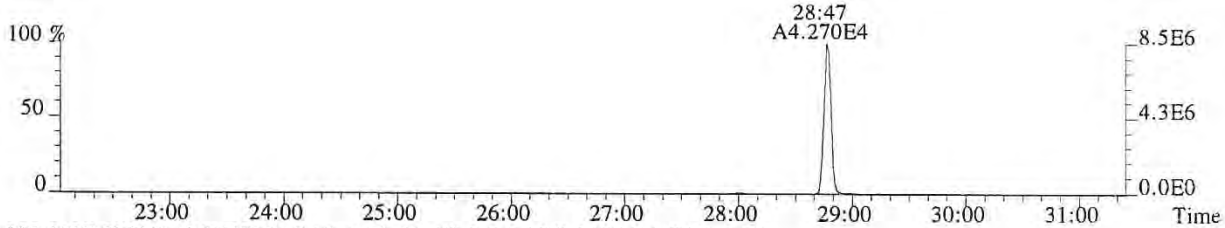
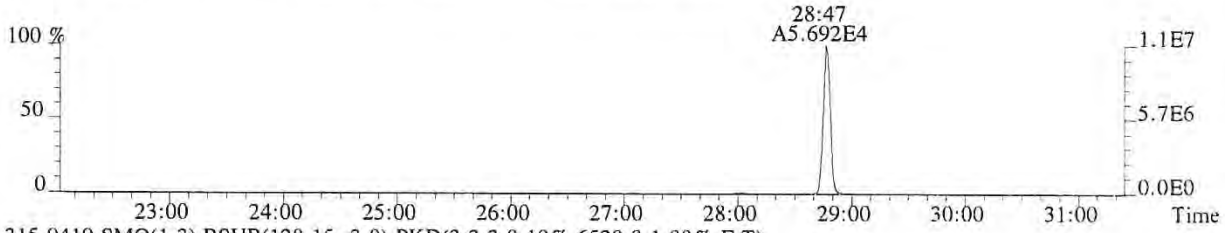
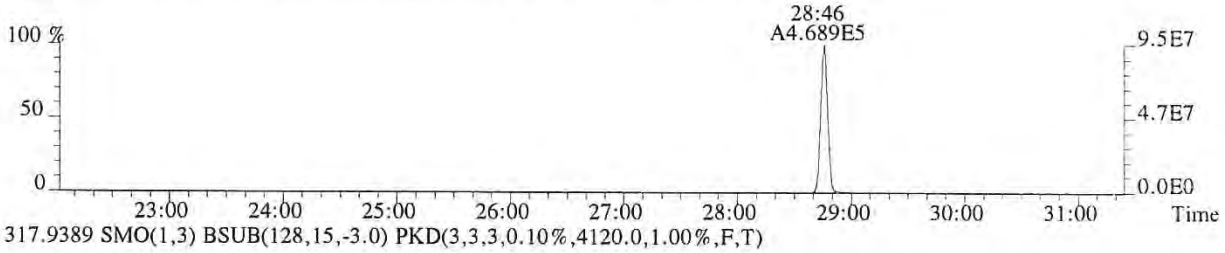
File:P513853 #1-665 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,640.0,1.00%,F,T)



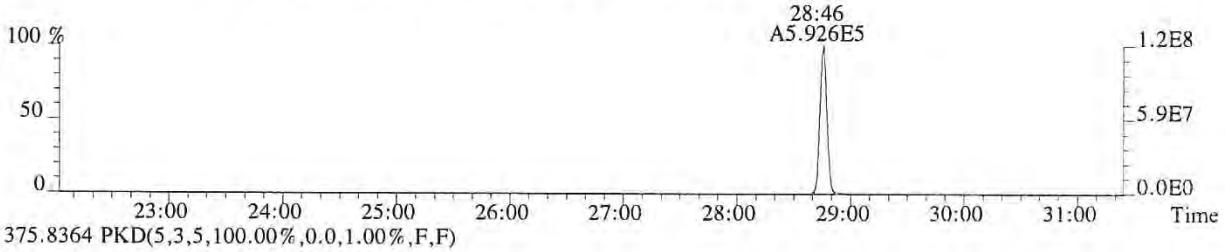
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2108.0,1.00%,F,T)



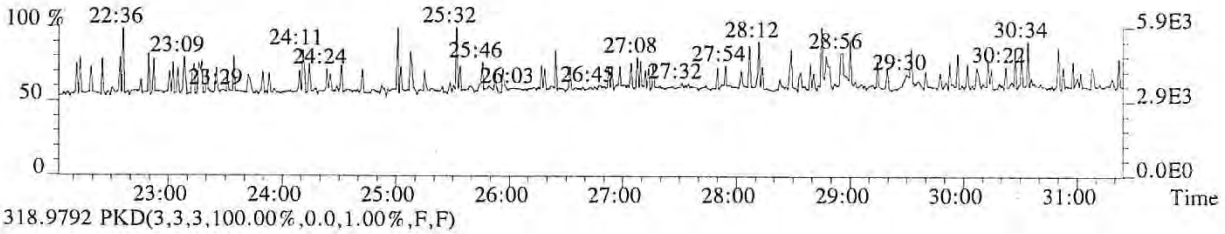
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6520.0,1.00%,F,T)



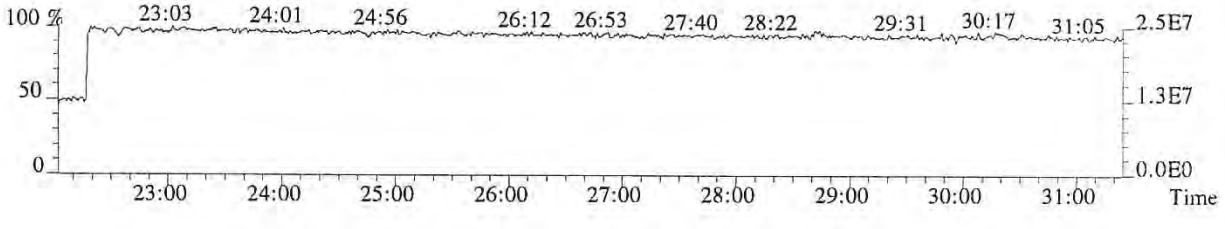
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4120.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

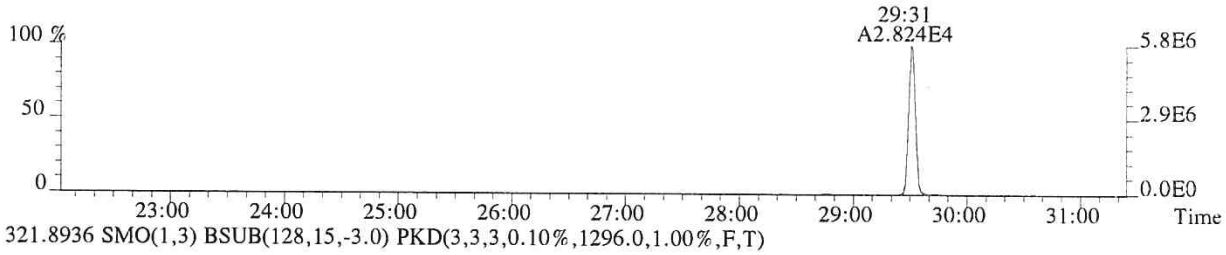


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

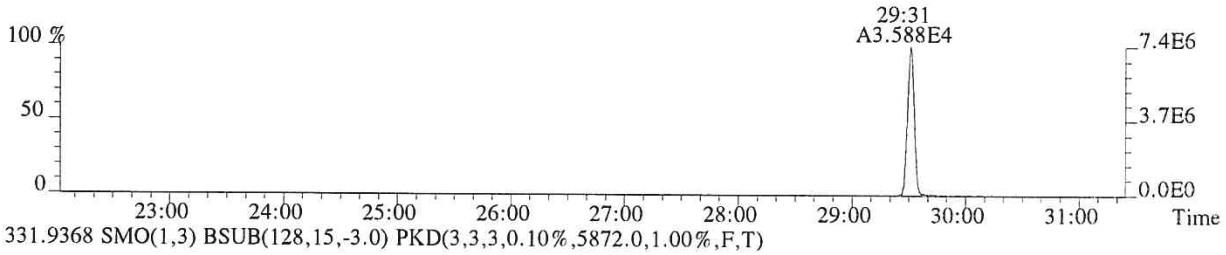


060708

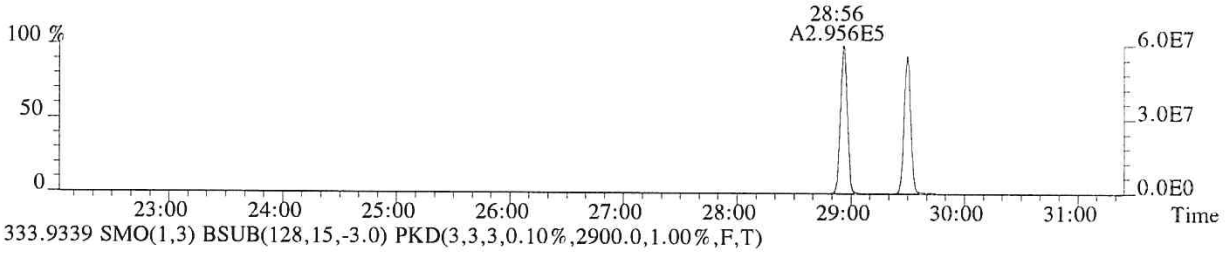
File:P513853 #1-665 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1924.0,1.00%,F,T)



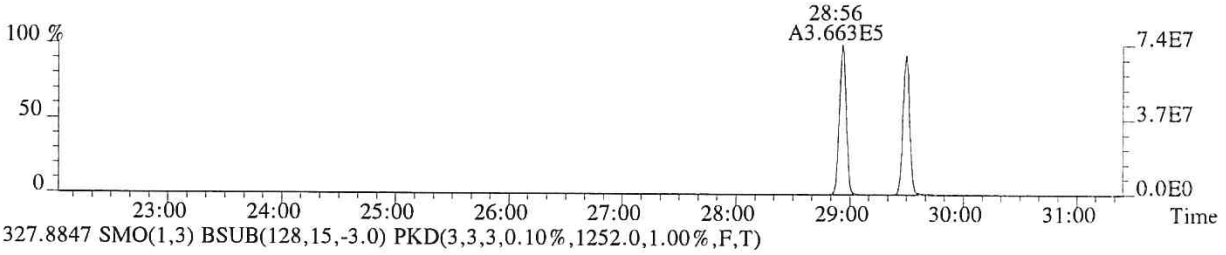
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1296.0,1.00%,F,T)



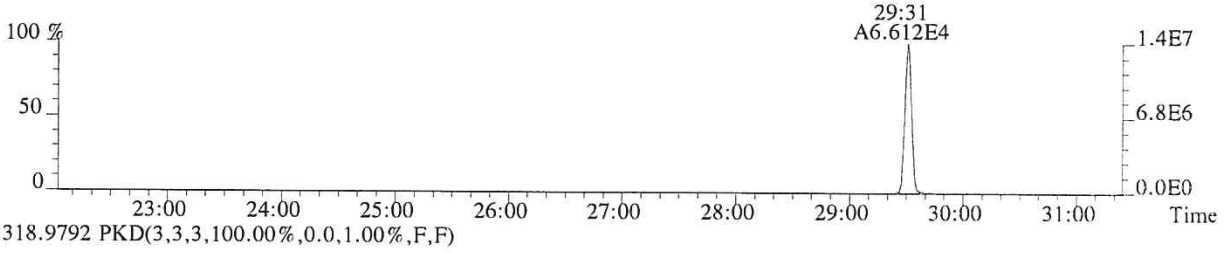
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5872.0,1.00%,F,T)



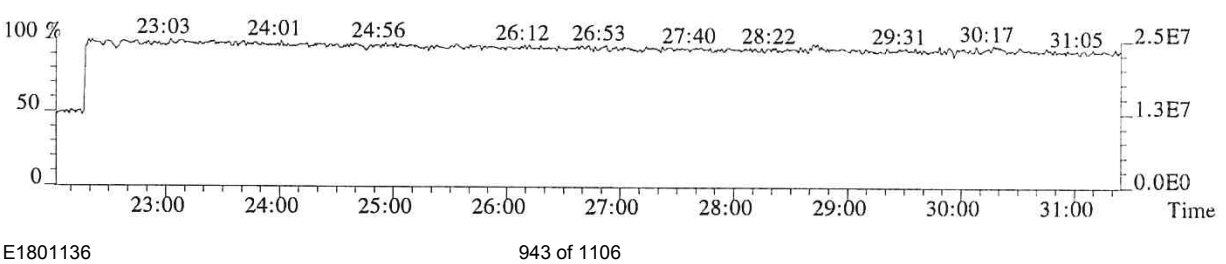
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2900.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1252.0,1.00%,F,T)

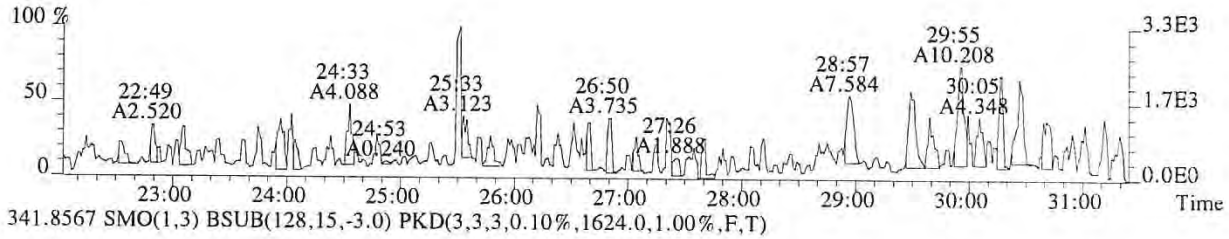


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

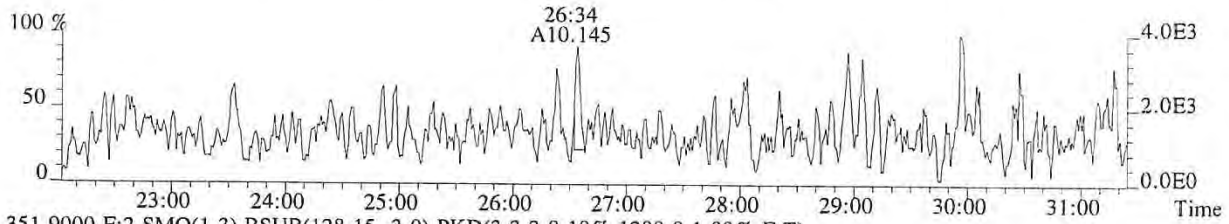


060709

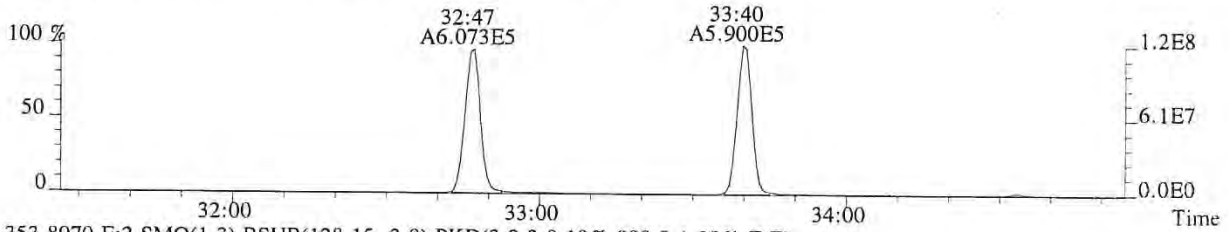
File:P513853 #1-665 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,452.0,1.00%,F,T)



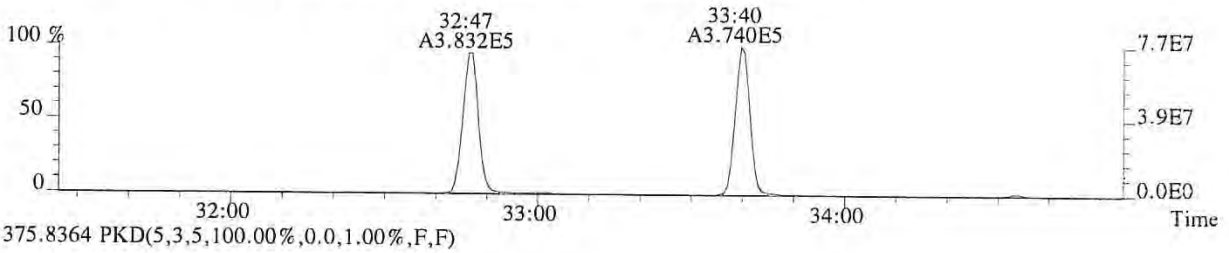
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1624.0,1.00%,F,T)



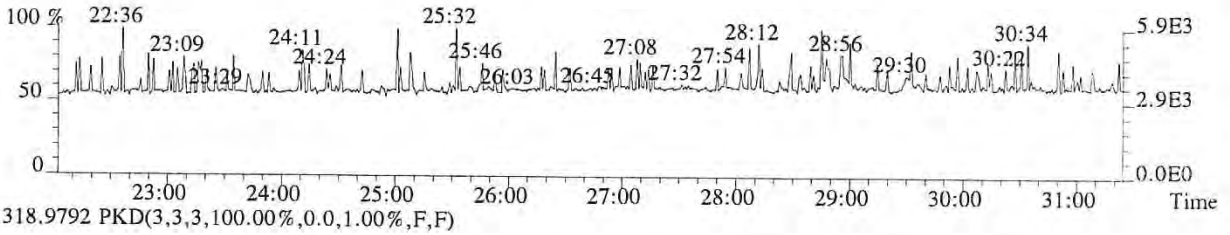
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1280.0,1.00%,F,T)



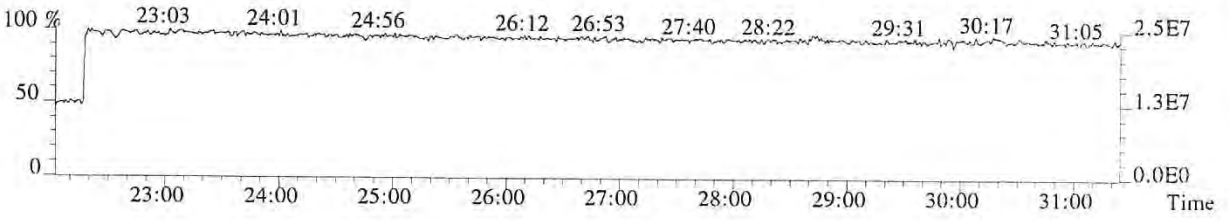
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,808.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

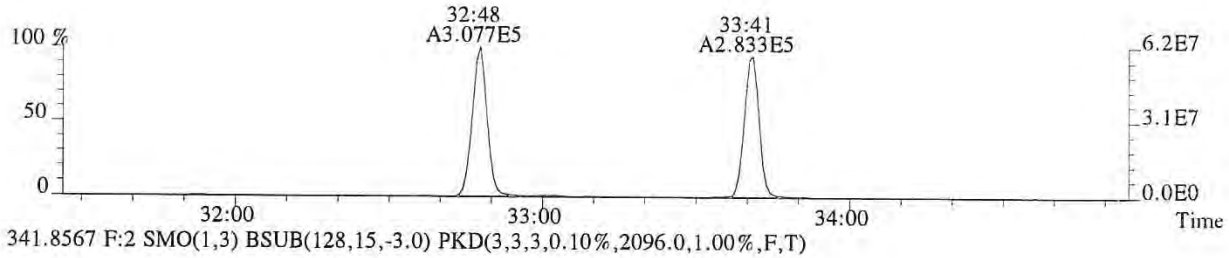


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

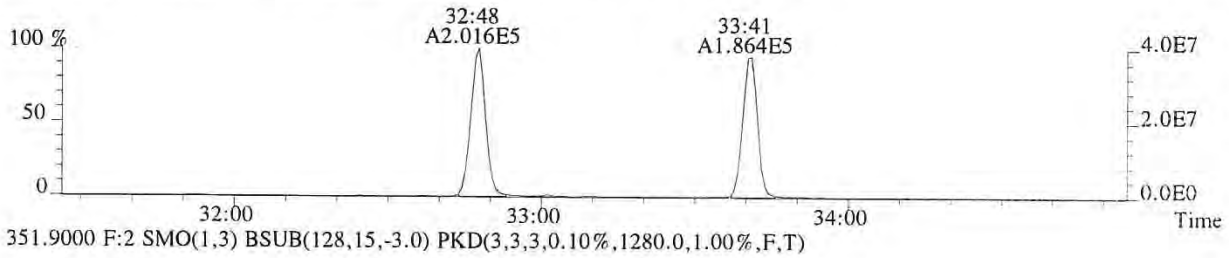


060710

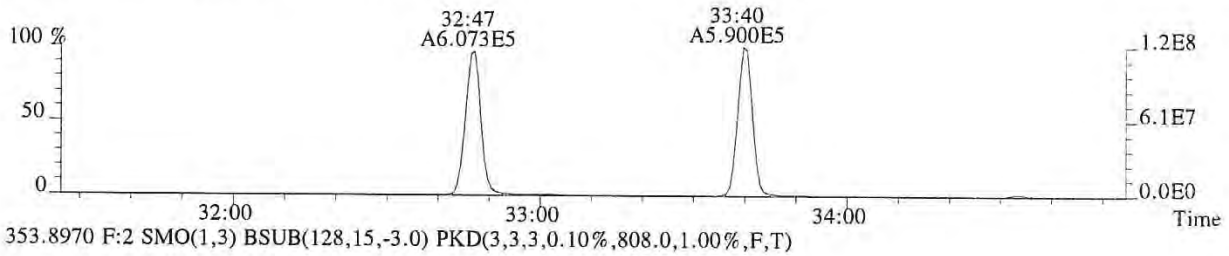
File:P513853 #1-313 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1612.0,1.00%,F,T)



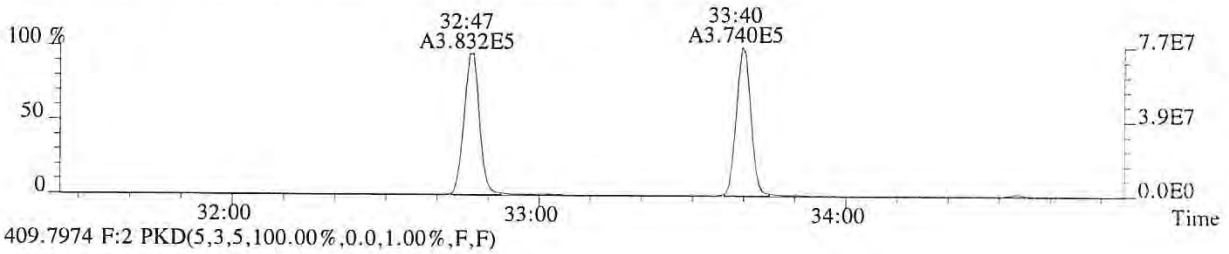
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2096.0,1.00%,F,T)



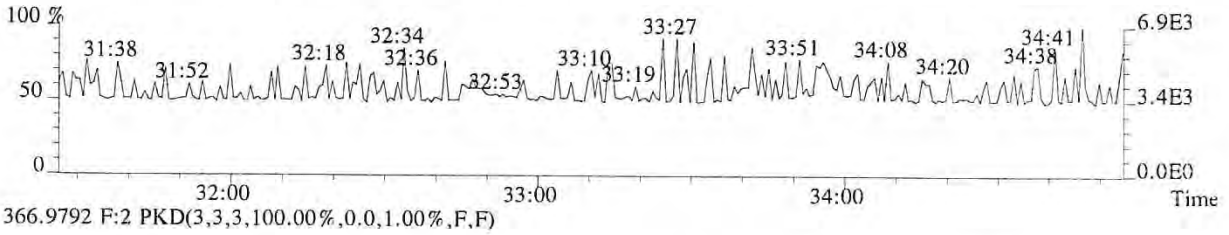
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1280.0,1.00%,F,T)



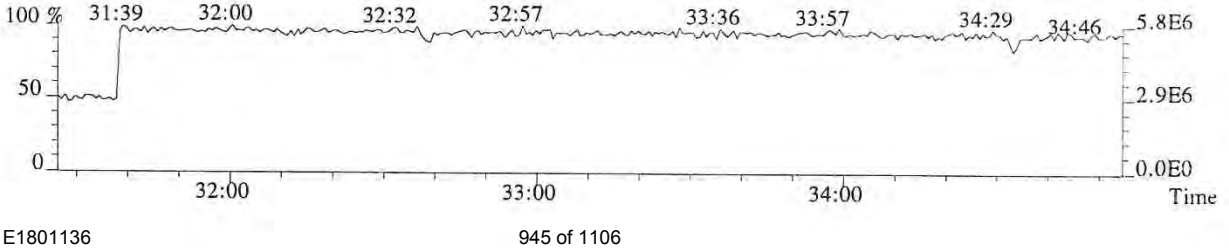
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,808.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

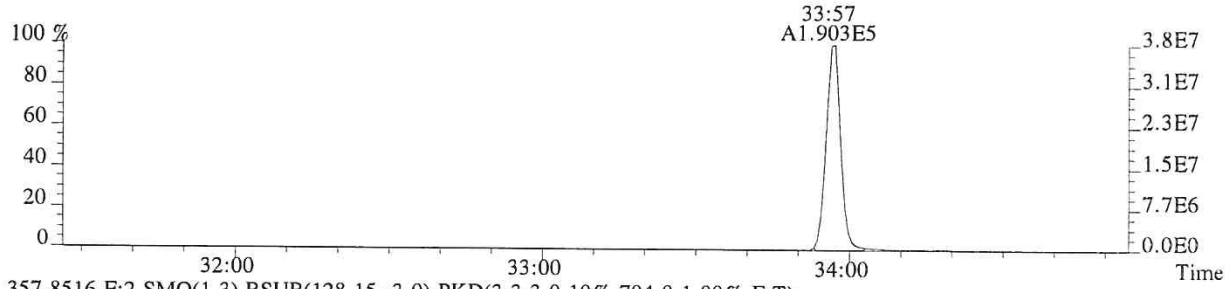


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

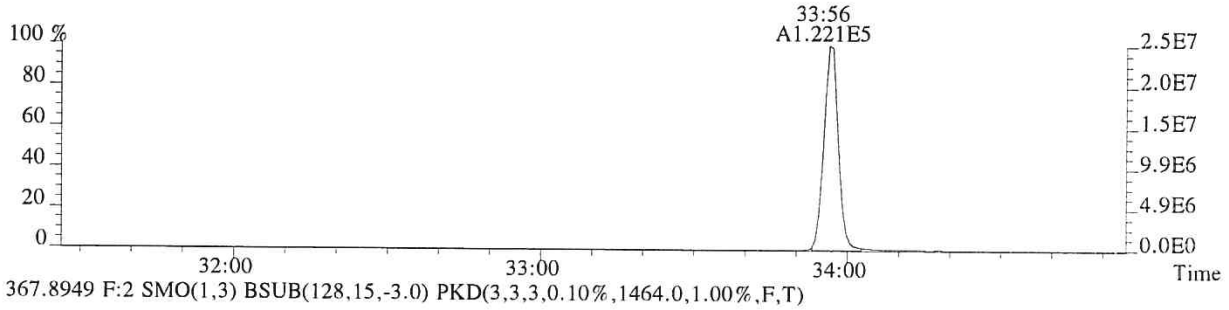


060711

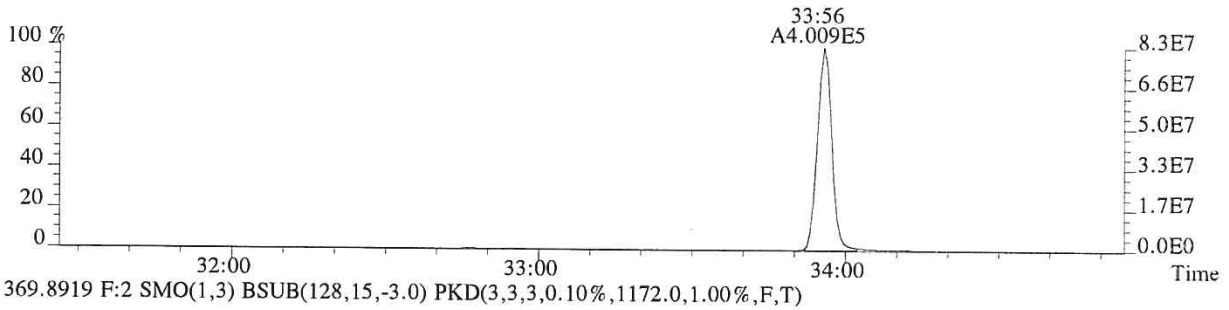
File:P513853 #1-313 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1452.0,1.00%,F,T)



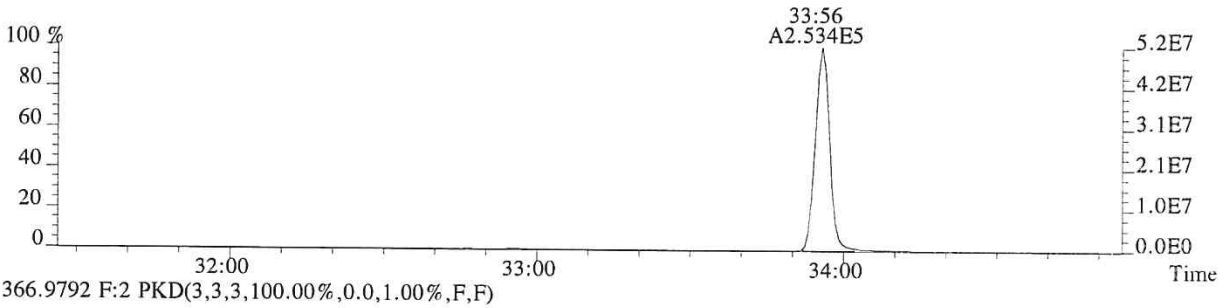
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)



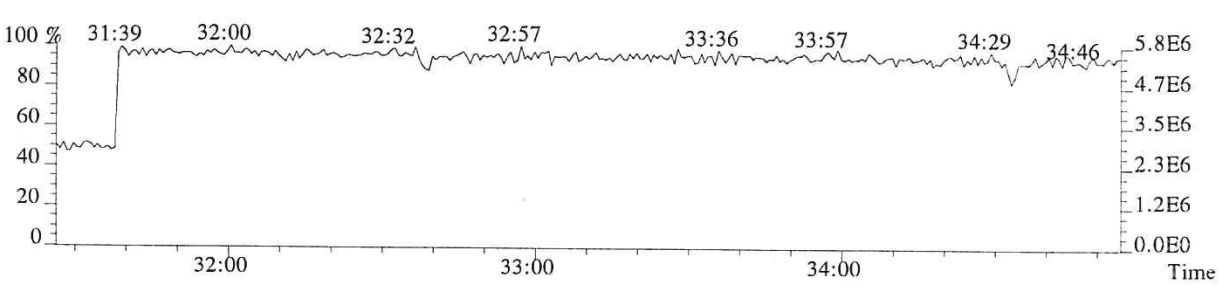
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1464.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1172.0,1.00%,F,T)

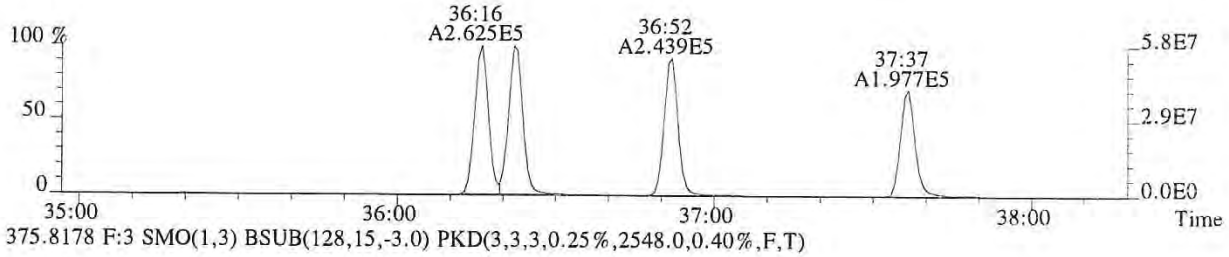


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

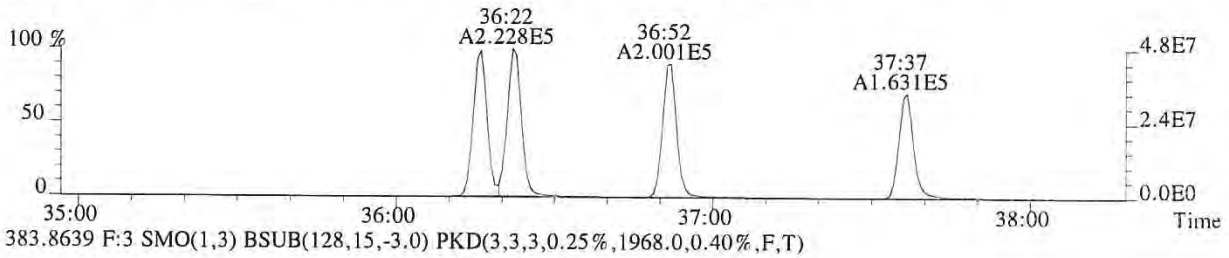


060712

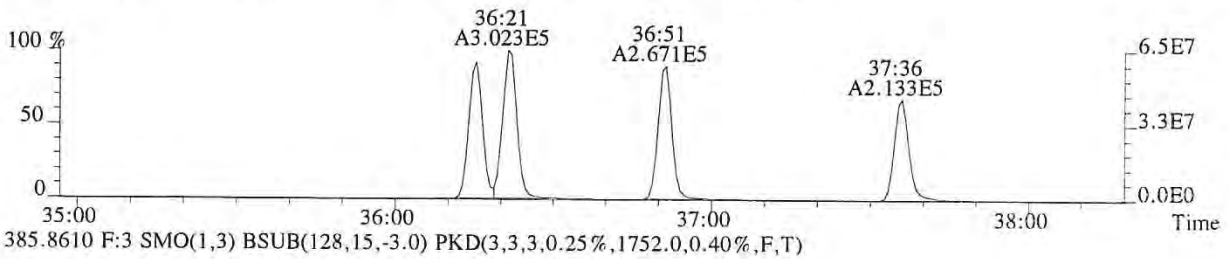
File:P513853 #1-303 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1856.0,0.40%,F,T)



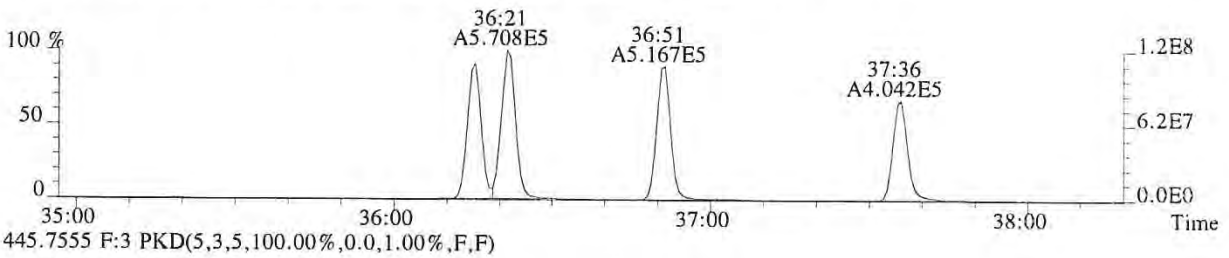
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2548.0,0.40%,F,T)



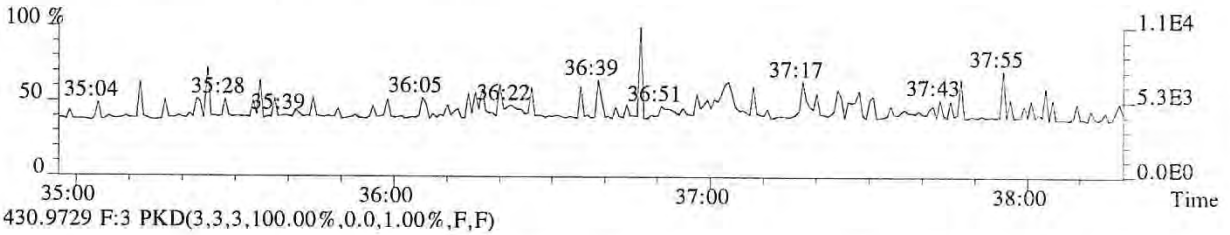
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1968.0,0.40%,F,T)



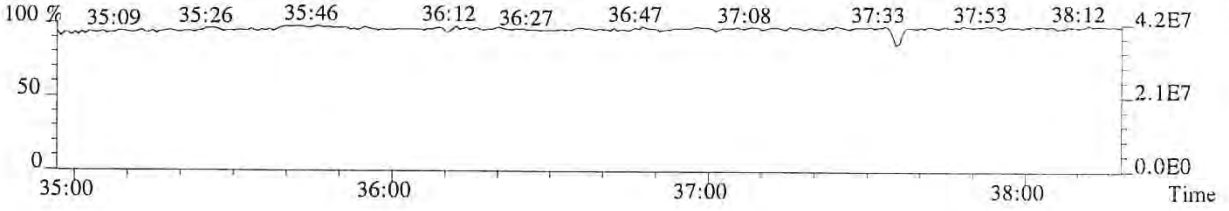
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1752.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

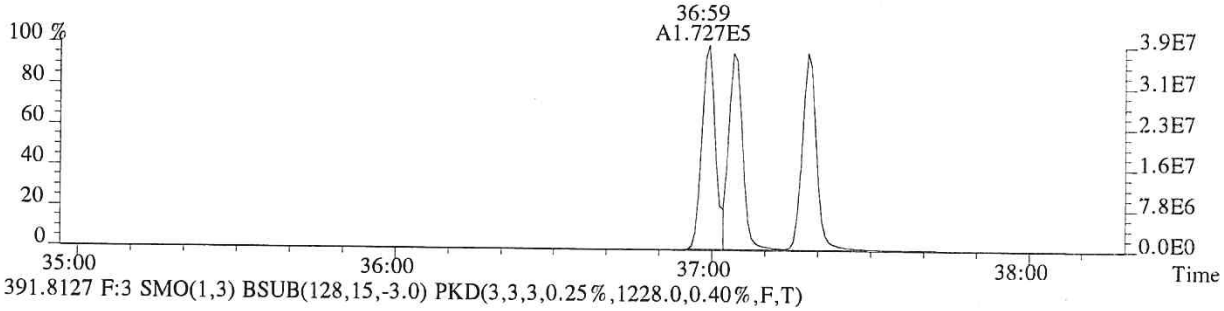


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

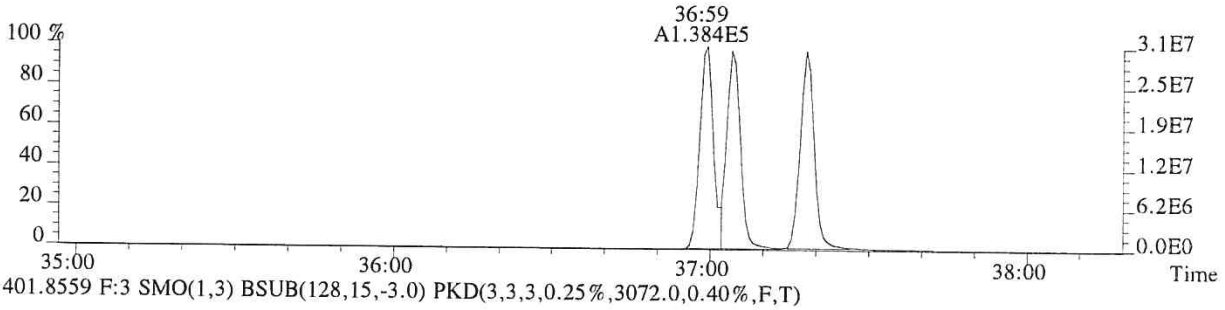


060713

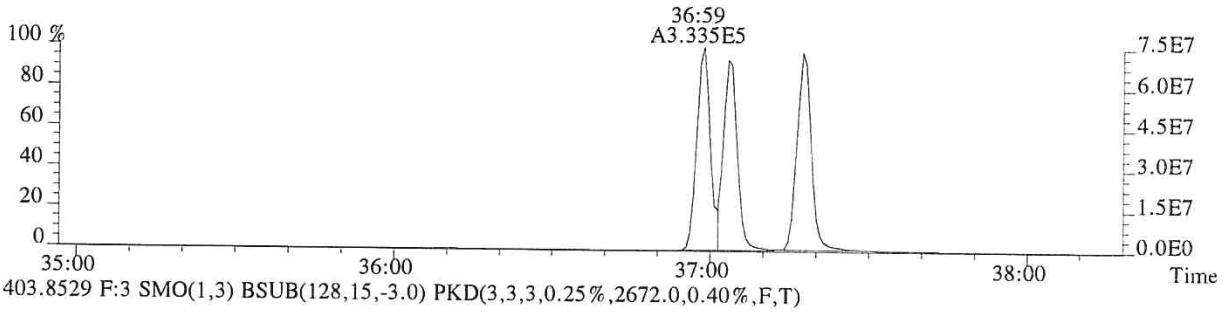
File:P513853 #1-303 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,512.0,0.40%,F,T)



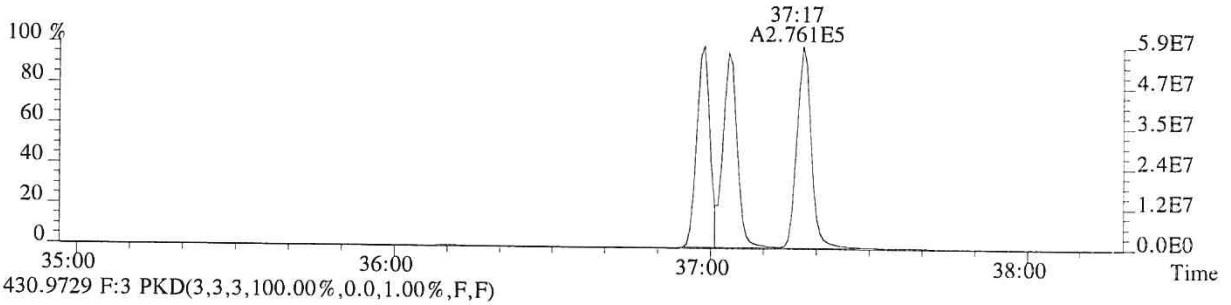
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1228.0,0.40%,F,T)



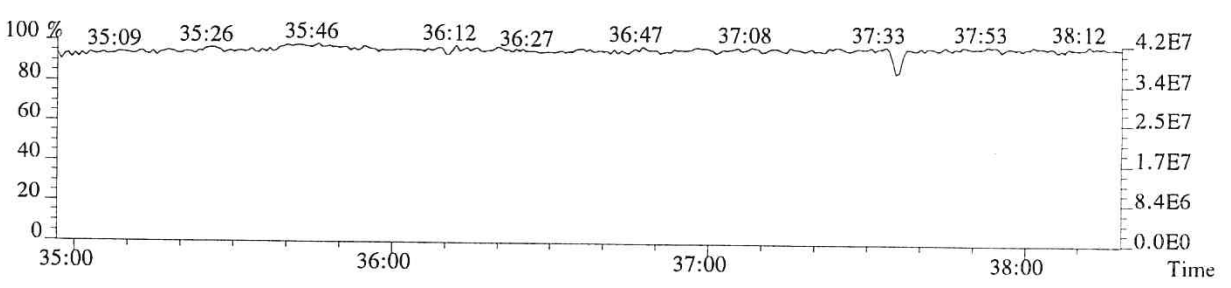
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3072.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2672.0,0.40%,F,T)

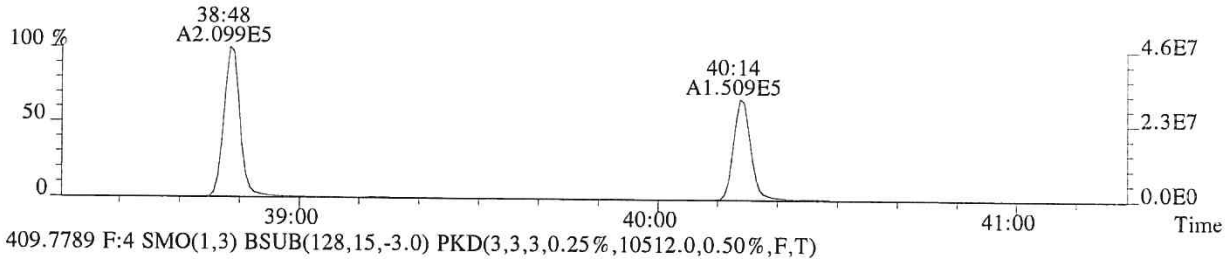


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

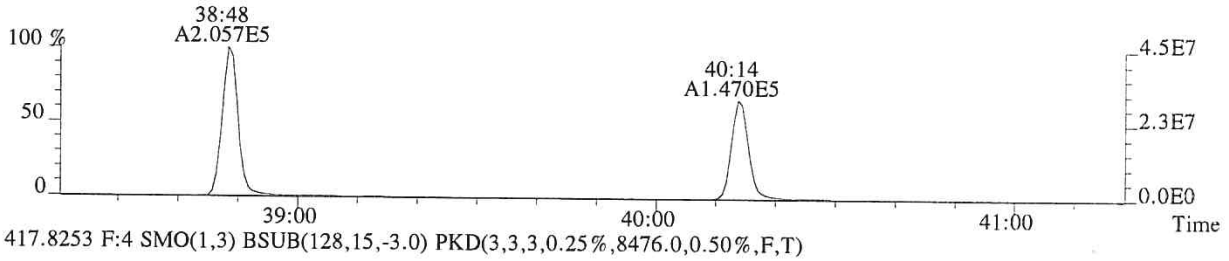


060714

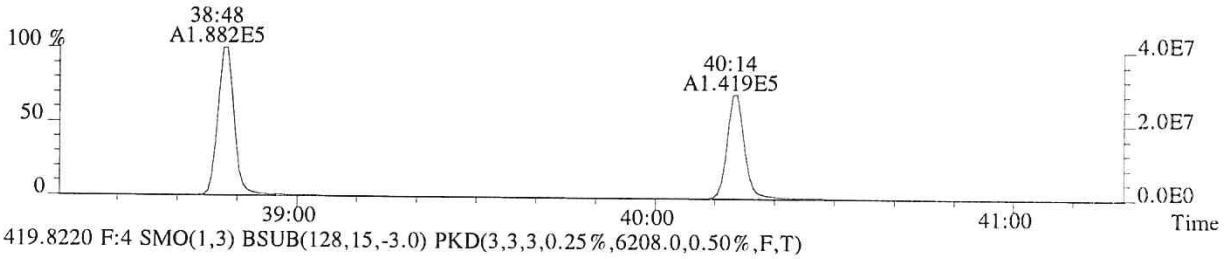
File:P513853 #1-268 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4436.0,0.50%,F,T)



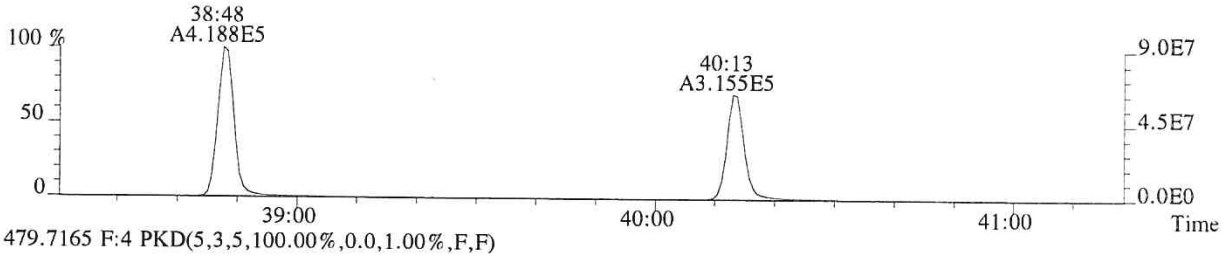
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10512.0,0.50%,F,T)



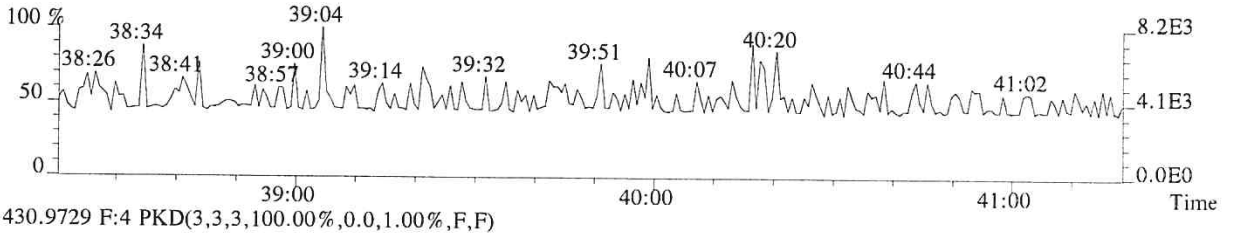
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8476.0,0.50%,F,T)



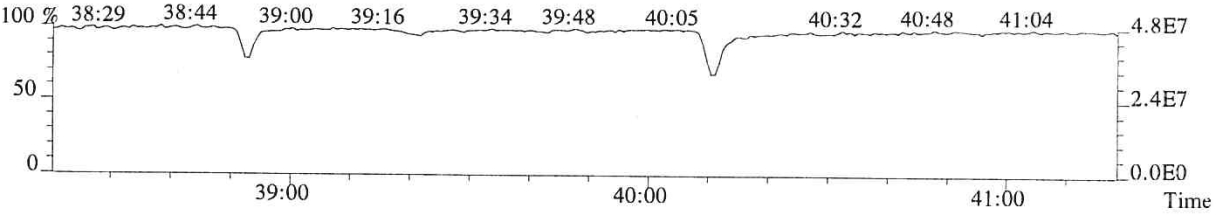
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6208.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

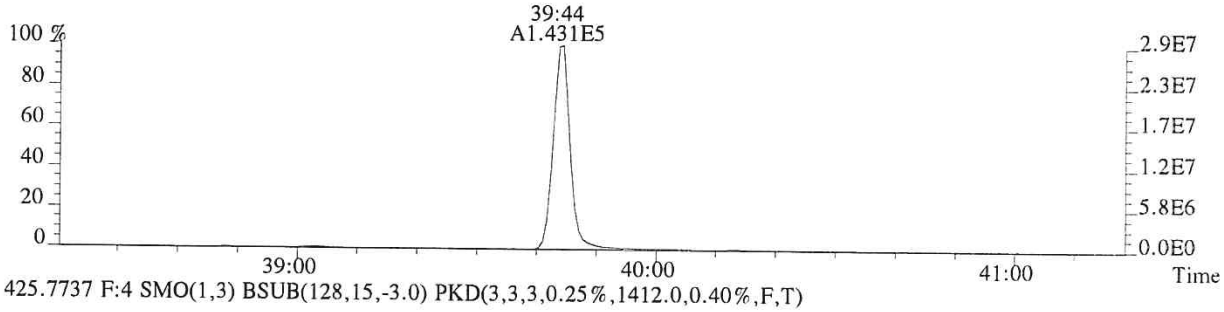


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

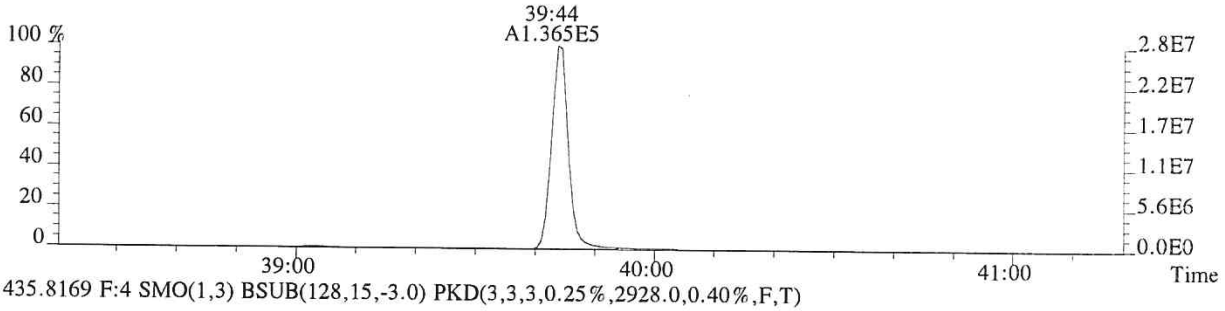


060715

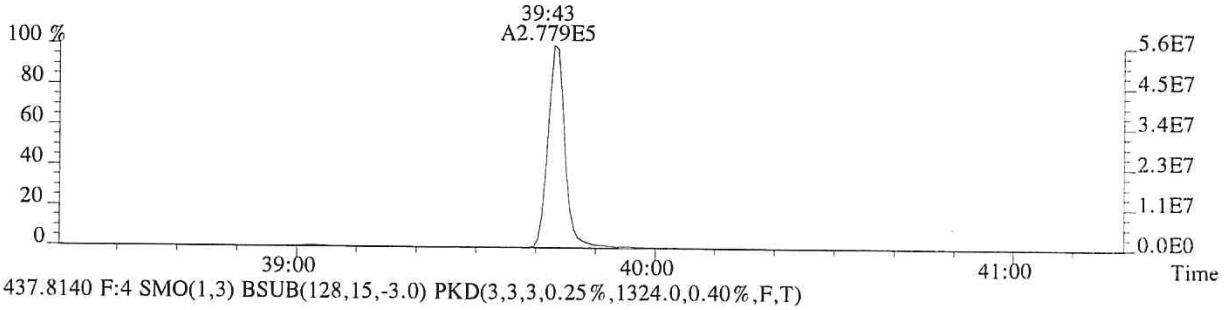
File:P513853 #1-268 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1840.0,0.40%,F,T)



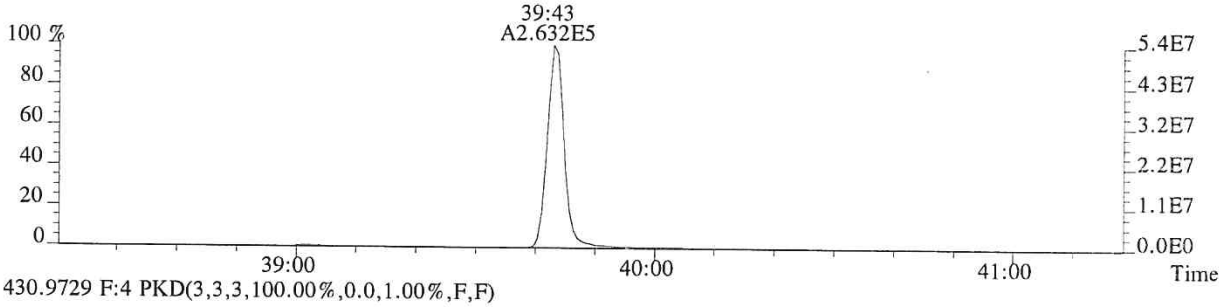
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1412.0,0.40%,F,T)



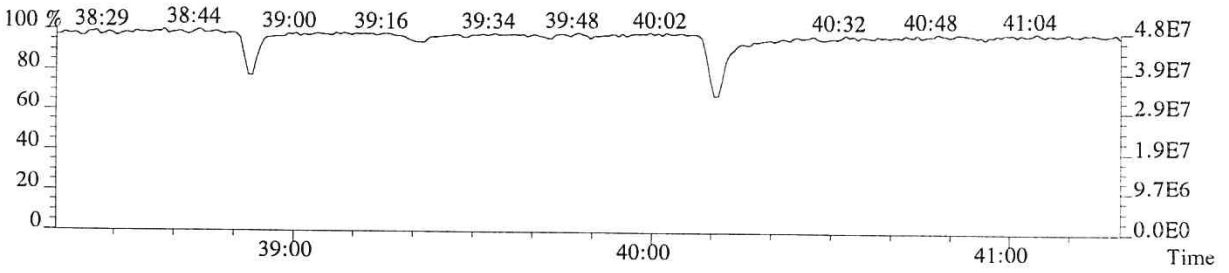
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2928.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1324.0,0.40%,F,T)

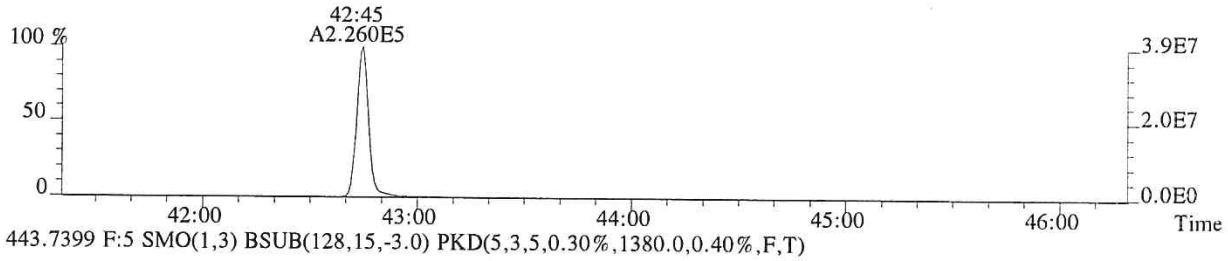


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

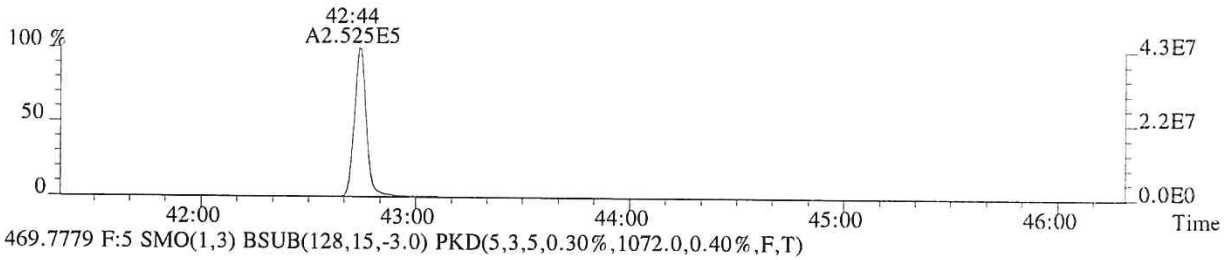


060716

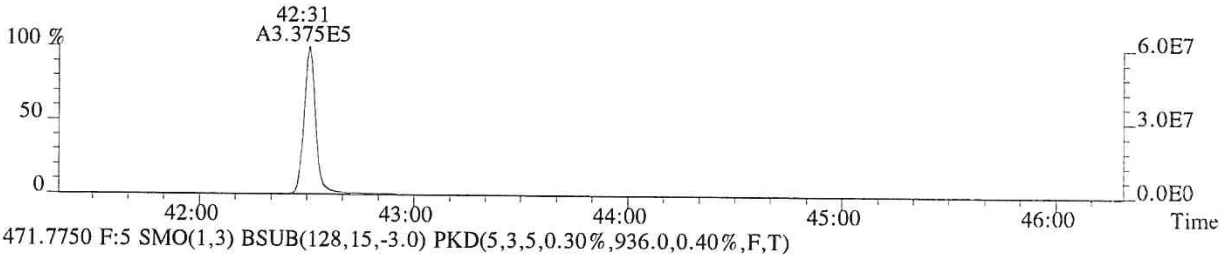
File:P513853 #1-448 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,144.0,0.40%,F,T)



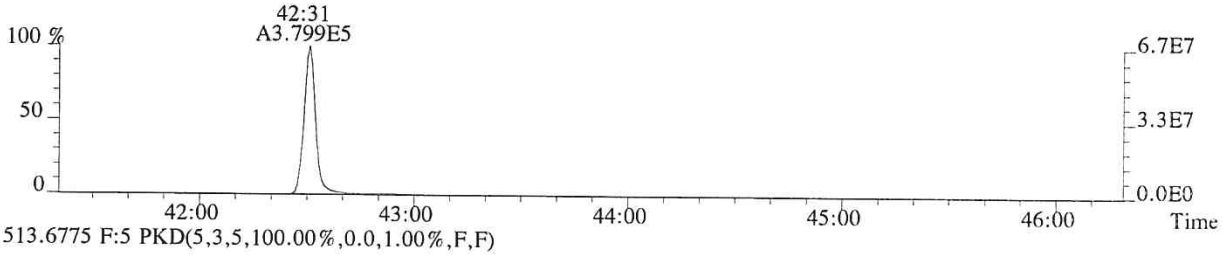
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1380.0,0.40%,F,T)



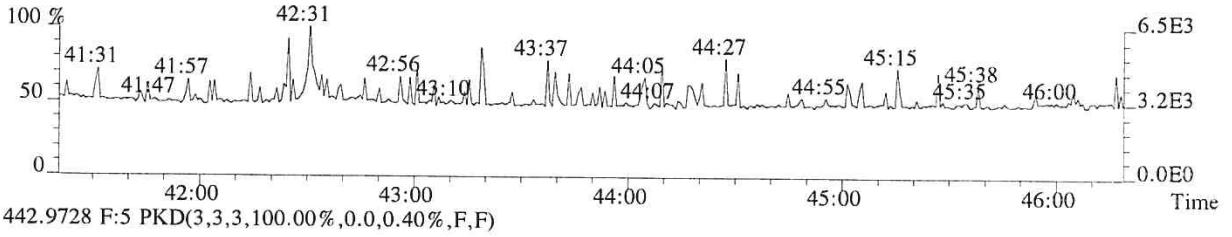
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1072.0,0.40%,F,T)



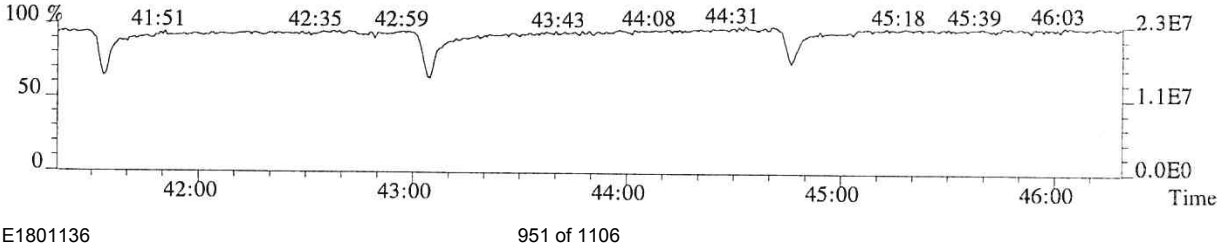
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,936.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

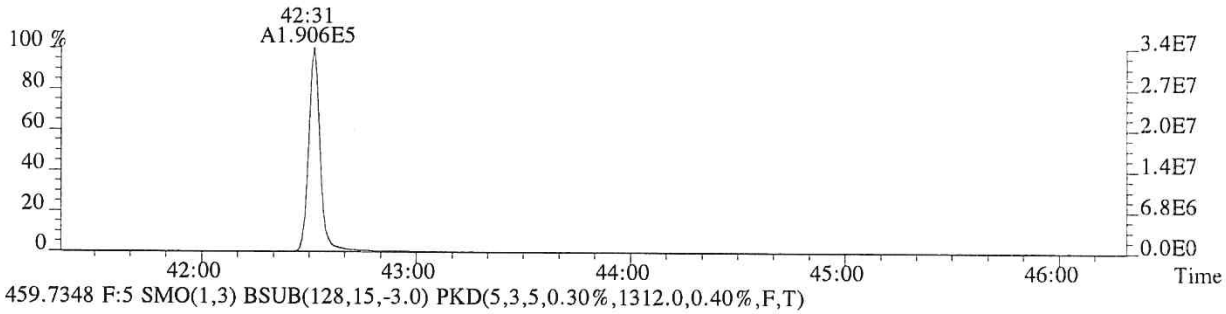


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

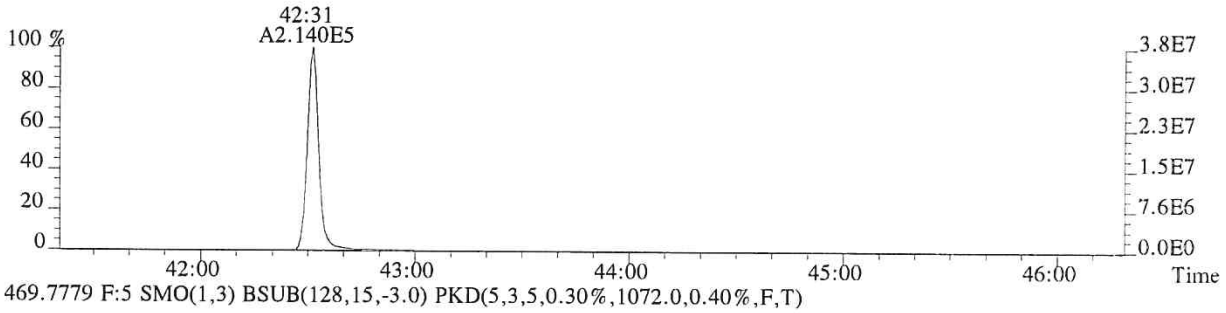


060717

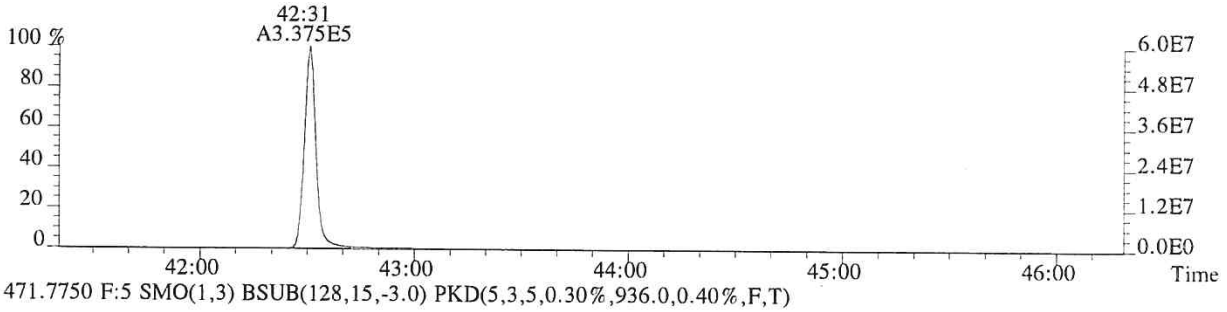
File:P513853 #1-448 Acq:24-JAN-2018 16:06:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,632.0,0.40%,F,T)



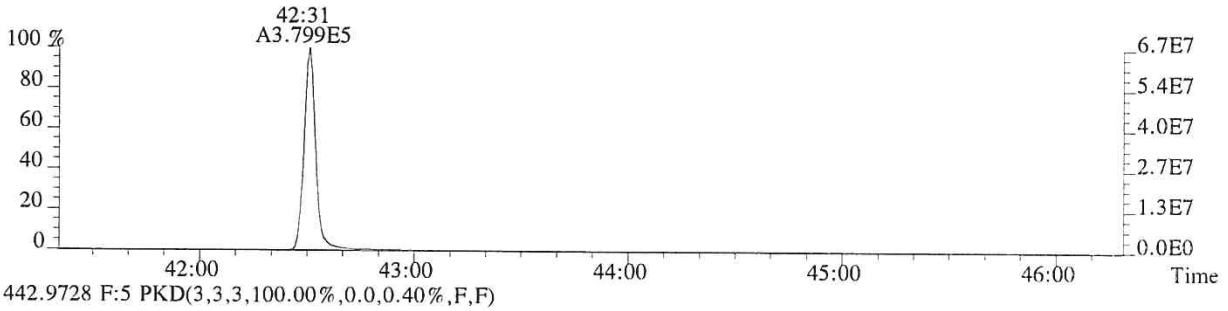
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1312.0,0.40%,F,T)



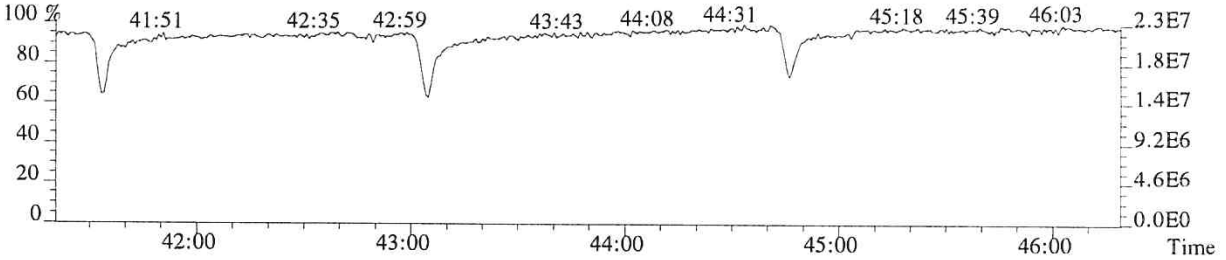
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1072.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,936.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060718

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76558

Run #5 Filename P513854 Samp: 1 Inj: 1 Acquired: 24-JAN-18 16:55:09
Processed: 24-JAN-18 17:50:33 Sample ID: CS4

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:47	9.367e+04	1.218e+05	0.77	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:47	7.158e+05	4.652e+05	1.54	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:40	6.668e+05	4.362e+05	1.53	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:15	6.097e+05	4.979e+05	1.22	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:22	6.415e+05	5.246e+05	1.22	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:51	5.685e+05	4.706e+05	1.21	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:36	5.397e+05	4.367e+05	1.24	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:48	4.833e+05	4.698e+05	1.03	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	3.955e+05	3.845e+05	1.03	yes	no	1.258
10	Unk	OCDF	42:44	5.770e+05	6.374e+05	0.91	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:31	6.699e+04	8.569e+04	0.78	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:56	4.394e+05	2.817e+05	1.56	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:59	3.869e+05	3.085e+05	1.25	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:04	4.031e+05	3.210e+05	1.26	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:18	4.024e+05	3.196e+05	1.26	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:44	3.425e+05	3.252e+05	1.05	yes	no	1.025
17	Unk	OCDD	42:31	4.623e+05	5.191e+05	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:46	2.467e+05	3.121e+05	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:46	3.414e+05	2.167e+05	1.58	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	3.412e+05	2.161e+05	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:15	1.522e+05	2.895e+05	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:21	1.720e+05	3.253e+05	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:51	1.562e+05	2.969e+05	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:36	1.406e+05	2.715e+05	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:48	1.081e+05	2.395e+05	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:13	9.438e+04	2.110e+05	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:30	1.544e+05	1.910e+05	0.81	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	2.282e+05	1.431e+05	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	1.841e+05	1.451e+05	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:03	1.915e+05	1.516e+05	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:43	1.646e+05	1.528e+05	1.08	yes	no	0.858
32	IS	13C-OCDD	42:31	2.072e+05	2.298e+05	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:56	1.645e+05	2.018e+05	0.82	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:17	1.964e+05	1.566e+05	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:31	1.545e+05				no	1.014

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Signal/Noise Height Ratio Summary

CLIENT ID.
76558

Run #5 Filename P513854 Samp: 1 Inj: 1 Acquired: 24-JAN-18 16:55:09
Processed: 24-JAN-18 17:50:33 LAB. ID: CS4

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.89e+07	1.00e+03	1.9e+04	2.44e+07	1.90e+03	1.3e+04
2	1,2,3,7,8-PeCDF	1.40e+08	2.03e+03	6.9e+04	9.16e+07	1.47e+03	6.2e+04
3	2,3,4,7,8-PeCDF	1.39e+08	2.03e+03	6.9e+04	9.17e+07	1.47e+03	6.2e+04
4	1,2,3,4,7,8-HxCDF	1.35e+08	1.80e+03	7.5e+04	1.11e+08	2.10e+03	5.3e+04
5	1,2,3,6,7,8-HxCDF	1.41e+08	1.80e+03	7.8e+04	1.16e+08	2.10e+03	5.5e+04
6	2,3,4,6,7,8-HxCDF	1.27e+08	1.80e+03	7.0e+04	1.06e+08	2.10e+03	5.0e+04
7	1,2,3,7,8,9-HxCDF	1.14e+08	1.80e+03	6.3e+04	9.30e+07	2.10e+03	4.4e+04
8	1,2,3,4,6,7,8-HpCDF	1.07e+08	1.75e+04	6.1e+03	1.05e+08	2.93e+04	3.6e+03
9	1,2,3,4,7,8,9-HpCDF	8.10e+07	1.75e+04	4.6e+03	7.89e+07	2.93e+04	2.7e+03
10	OCDF	1.02e+08	5.04e+02	2.0e+05	1.14e+08	1.72e+03	6.6e+04
11	2,3,7,8-TCDD	1.41e+07	2.20e+03	6.4e+03	1.80e+07	1.38e+03	1.3e+04
12	1,2,3,7,8-PeCDD	9.08e+07	1.42e+03	6.4e+04	5.86e+07	1.44e+02	4.1e+05
13	1,2,3,4,7,8-HxCDD	8.77e+07	1.20e+03	7.3e+04	7.06e+07	1.58e+03	4.5e+04
14	1,2,3,6,7,8-HxCDD	8.80e+07	1.20e+03	7.3e+04	7.05e+07	1.58e+03	4.5e+04
15	1,2,3,7,8,9-HxCDD	8.97e+07	1.20e+03	7.5e+04	7.13e+07	1.58e+03	4.5e+04
16	1,2,3,4,6,7,8-HpCDD	7.19e+07	1.52e+03	4.7e+04	6.86e+07	1.50e+03	4.6e+04
17	OCDD	8.05e+07	7.36e+02	1.1e+05	9.09e+07	1.16e+03	7.8e+04
18	13C-2,3,7,8-TCDF	4.92e+07	8.28e+03	5.9e+03	6.18e+07	3.78e+03	1.6e+04
19	13C-1,2,3,7,8-PeCDF	6.78e+07	1.09e+03	6.2e+04	4.35e+07	7.12e+02	6.1e+04
20	13C-2,3,4,7,8-PeCDF	7.11e+07	1.09e+03	6.5e+04	4.54e+07	7.12e+02	6.4e+04
21	13C-1,2,3,4,7,8-HxCDF	3.32e+07	1.94e+03	1.7e+04	6.39e+07	1.54e+03	4.2e+04
22	13C-1,2,3,6,7,8-HxCDF	3.76e+07	1.94e+03	1.9e+04	7.17e+07	1.54e+03	4.7e+04
23	13C-2,3,4,6,7,8-HxCDF	3.46e+07	1.94e+03	1.8e+04	6.63e+07	1.54e+03	4.3e+04
24	13C-1,2,3,7,8,9-HxCDF	2.97e+07	1.94e+03	1.5e+04	5.66e+07	1.54e+03	3.7e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.37e+07	7.11e+03	3.3e+03	5.25e+07	1.03e+04	5.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.95e+07	7.11e+03	2.7e+03	4.34e+07	1.03e+04	4.2e+03
27	13C-2,3,7,8-TCDD	3.25e+07	6.40e+03	5.1e+03	3.99e+07	2.77e+03	1.4e+04
28	13C-1,2,3,7,8-PeCDD	4.73e+07	1.13e+03	4.2e+04	2.97e+07	8.40e+02	3.5e+04
29	13C-1,2,3,4,7,8-HxCDD	4.15e+07	3.03e+03	1.4e+04	3.28e+07	2.40e+03	1.4e+04
30	13C-1,2,3,6,7,8-HxCDD	4.14e+07	3.03e+03	1.4e+04	3.31e+07	2.40e+03	1.4e+04
31	13C-1,2,3,4,6,7,8-HpCDD	3.45e+07	1.55e+03	2.2e+04	3.21e+07	1.32e+03	2.4e+04
32	13C-OCDD	3.61e+07	1.25e+03	2.9e+04	4.00e+07	1.19e+03	3.4e+04
33	13C-1,2,3,4-TCDD	3.34e+07	6.40e+03	5.2e+03	4.12e+07	2.77e+03	1.5e+04
34	13C-1,2,3,7,8,9-HxCDD	4.34e+07	3.03e+03	1.4e+04	3.46e+07	2.40e+03	1.4e+04
35	37Cl-2,3,7,8-TCDD	3.25e+07	1.28e+03	2.5e+04			

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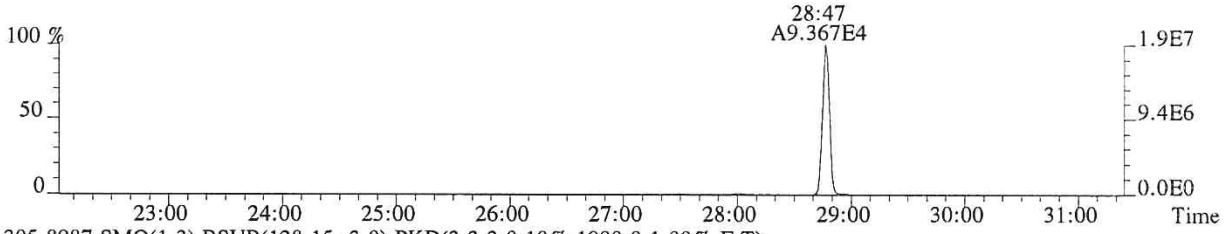
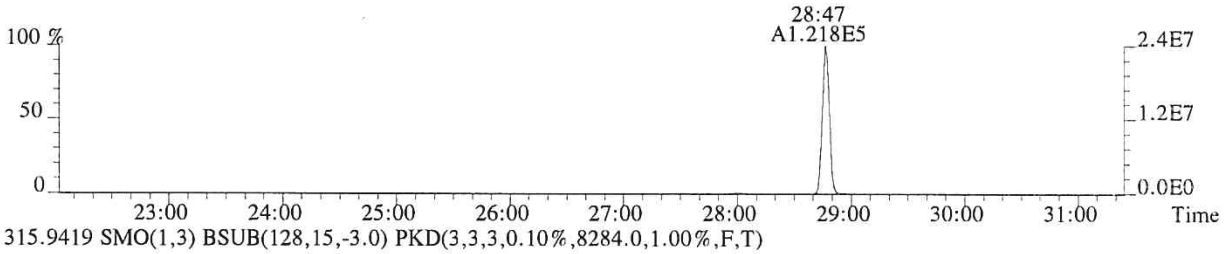
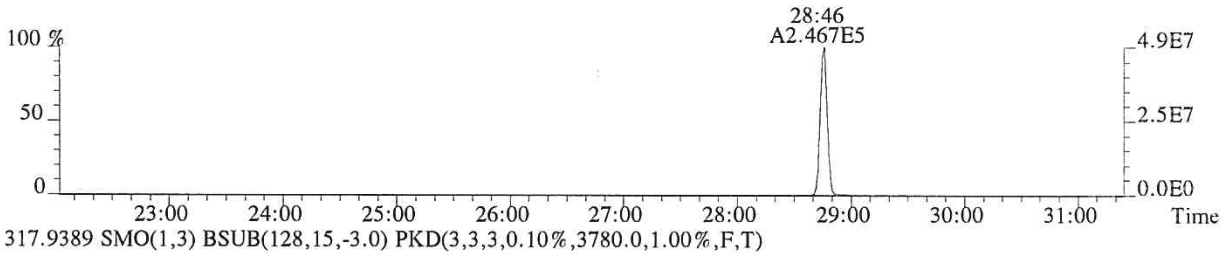
File:P513854 #1-665 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1004.0,1.00%,F,T)



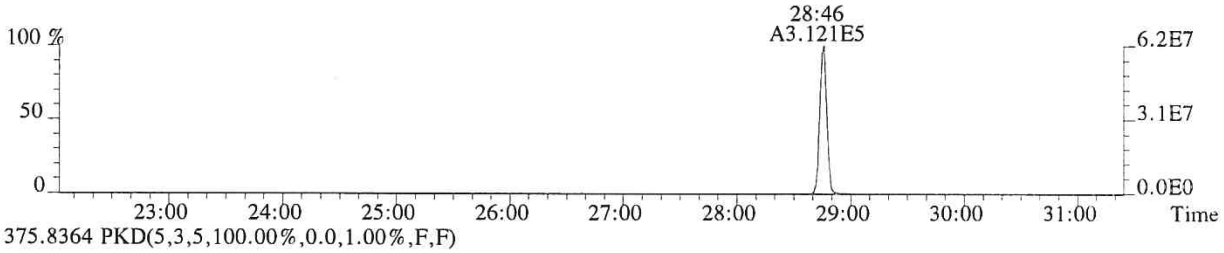
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1900.0,1.00%,F,T)



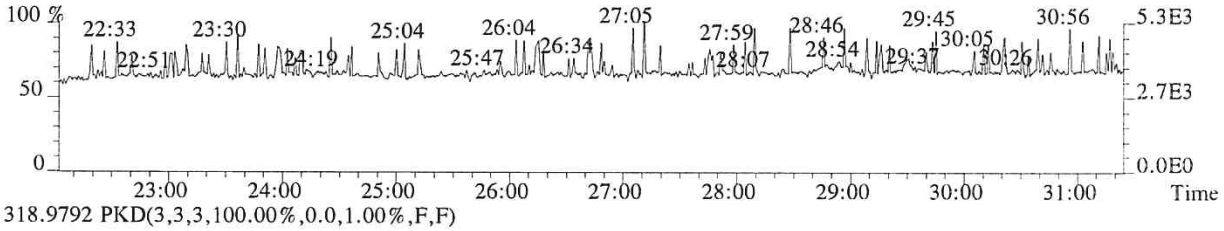
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8284.0,1.00%,F,T)



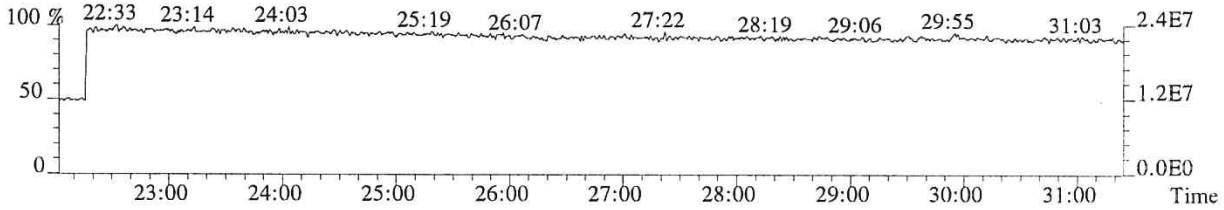
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3780.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

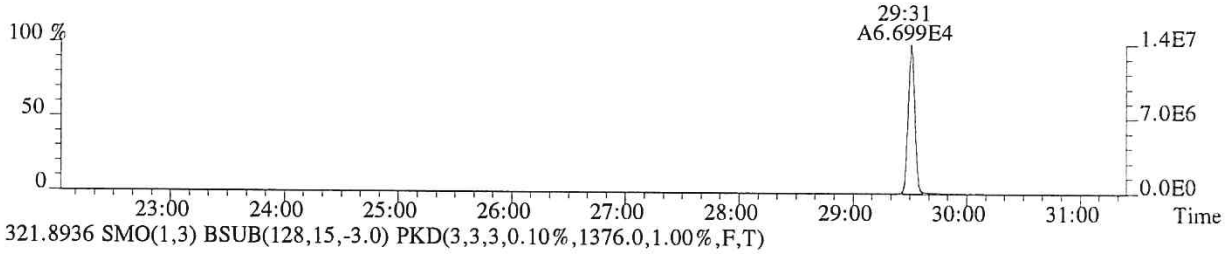


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

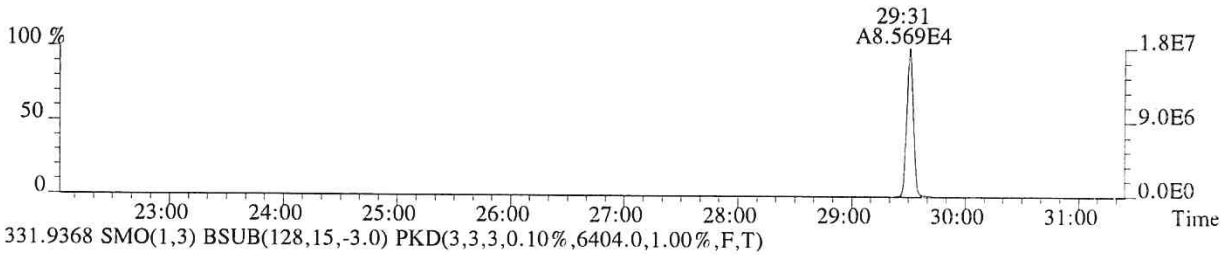


060721

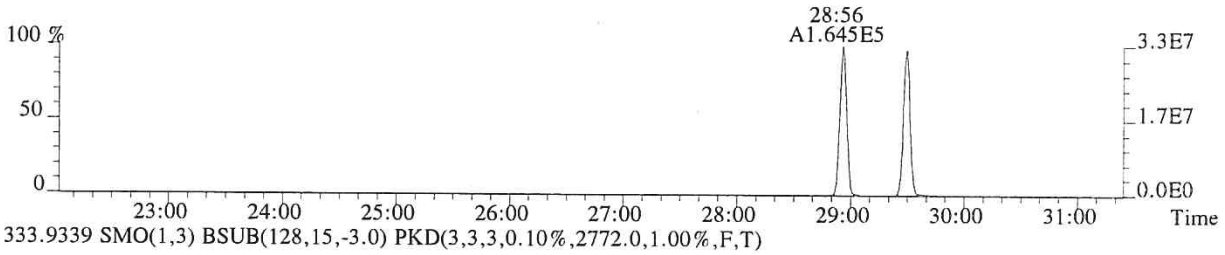
File:P513854 #1-665 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2200.0,1.00%,F,T)



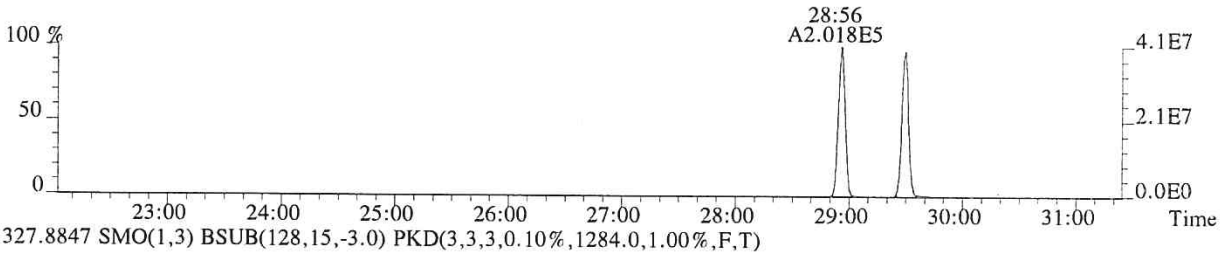
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1376.0,1.00%,F,T)



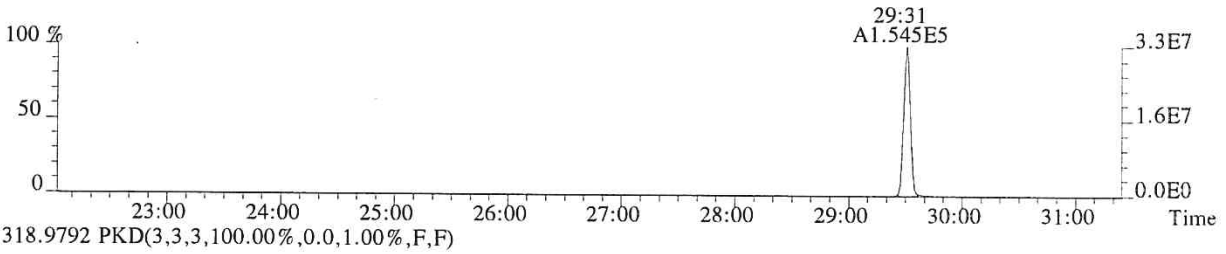
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6404.0,1.00%,F,T)



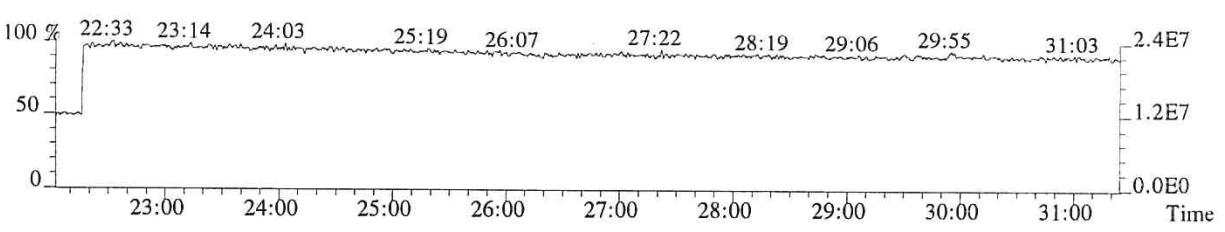
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2772.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1284.0,1.00%,F,T)

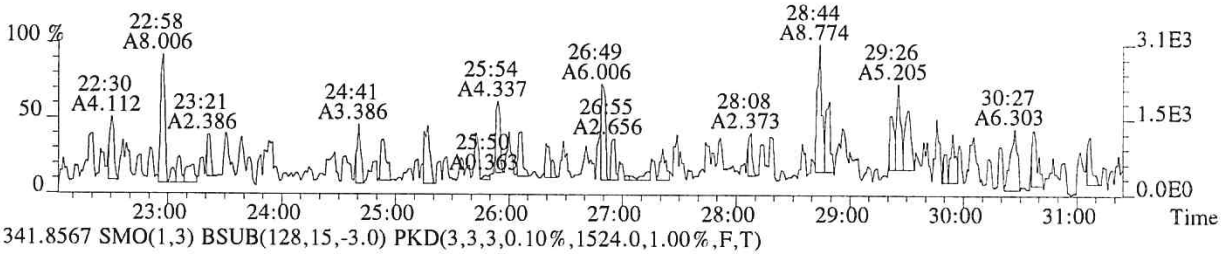


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

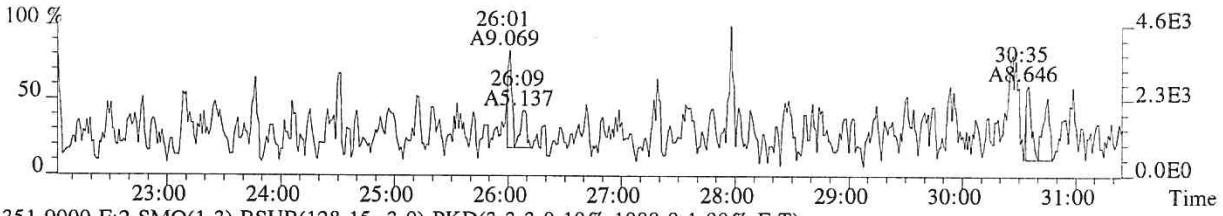


060722

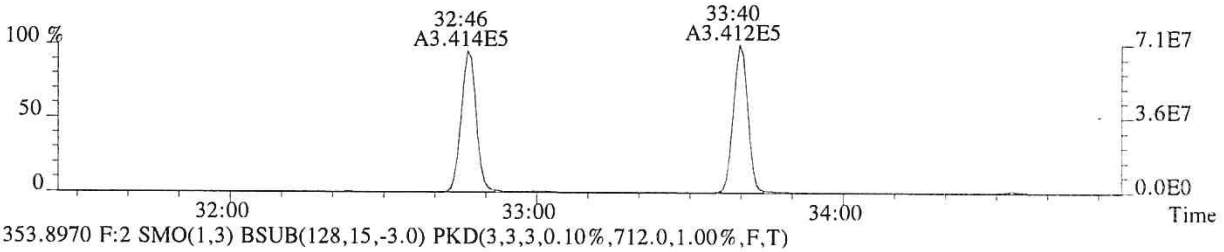
File:P513854 #1-665 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,600.0,1.00%,F,T)



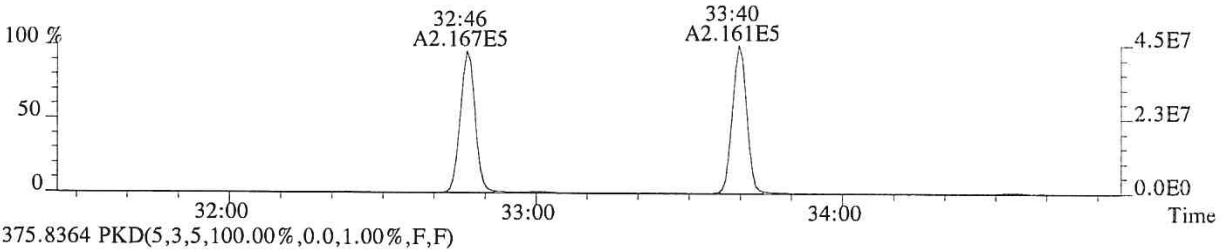
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1524.0,1.00%,F,T)



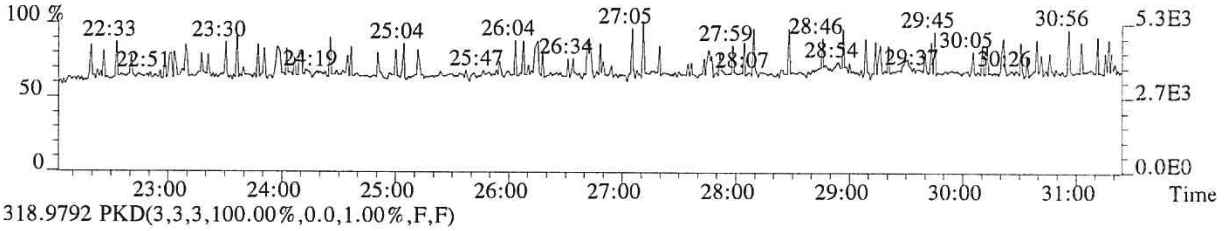
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1088.0,1.00%,F,T)



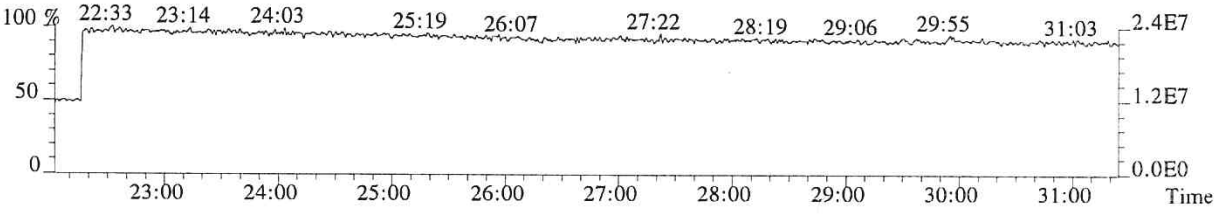
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,712.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

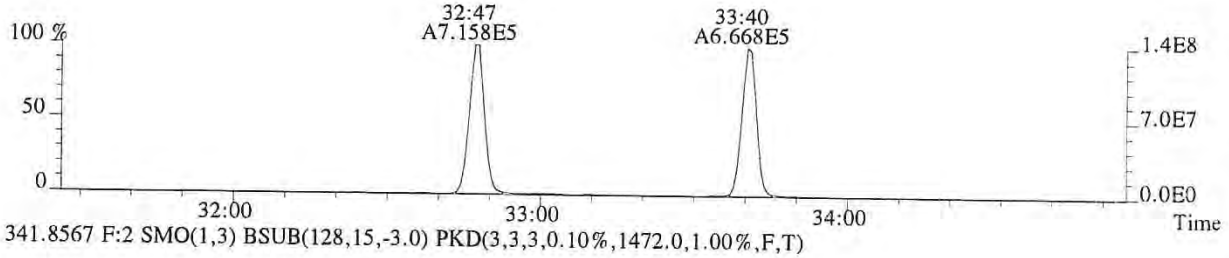


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

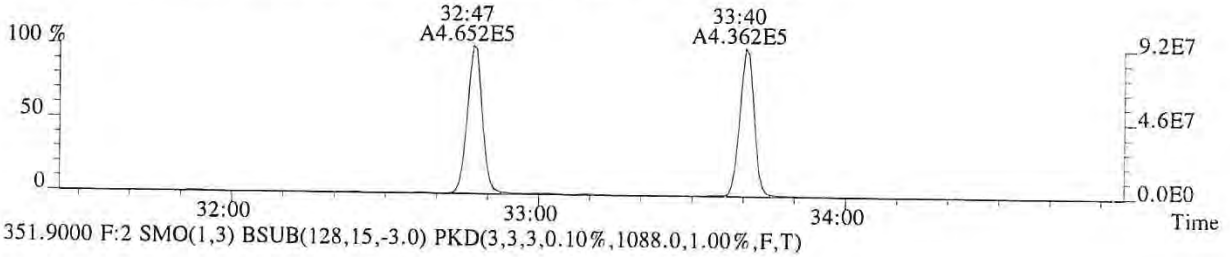


060723

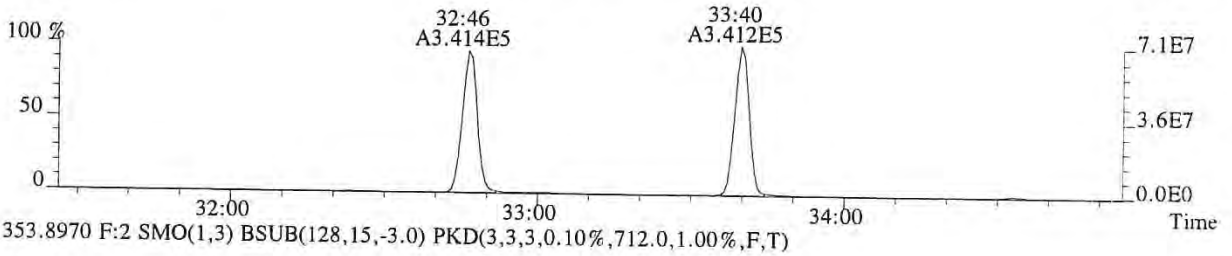
File:P513854 #1-313 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2028.0,1.00%,F,T)



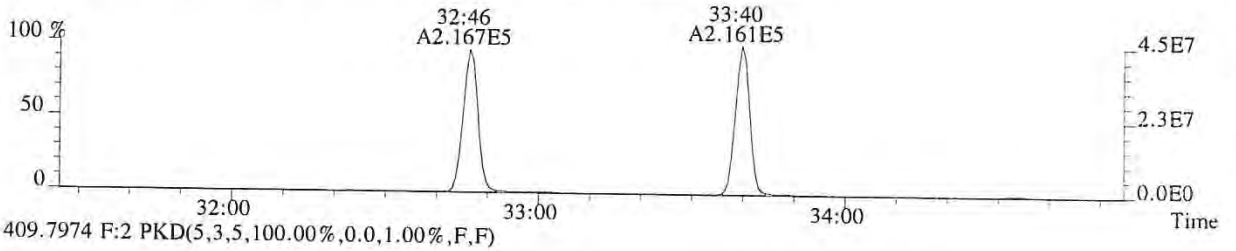
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1472.0,1.00%,F,T)



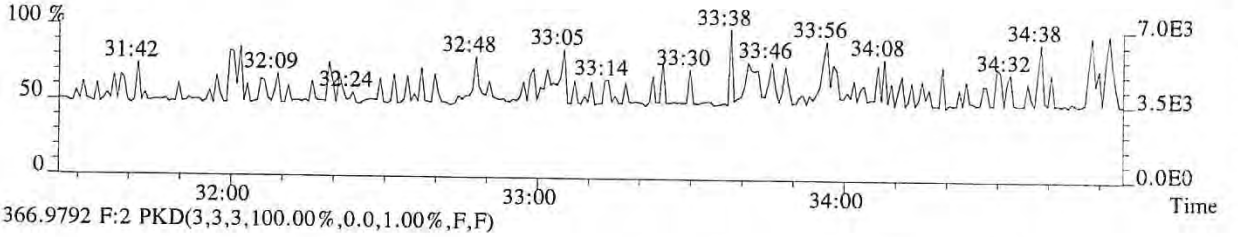
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1088.0,1.00%,F,T)



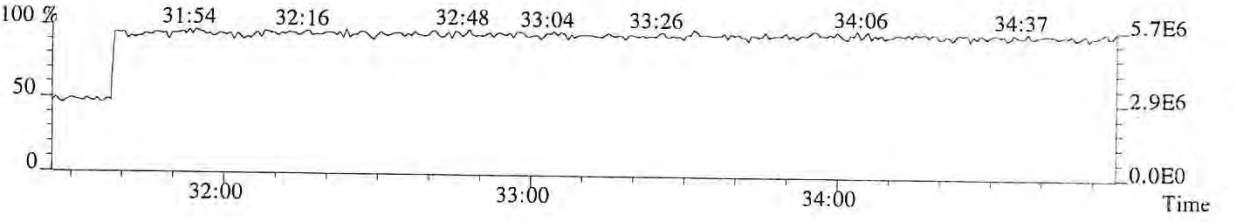
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,712.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

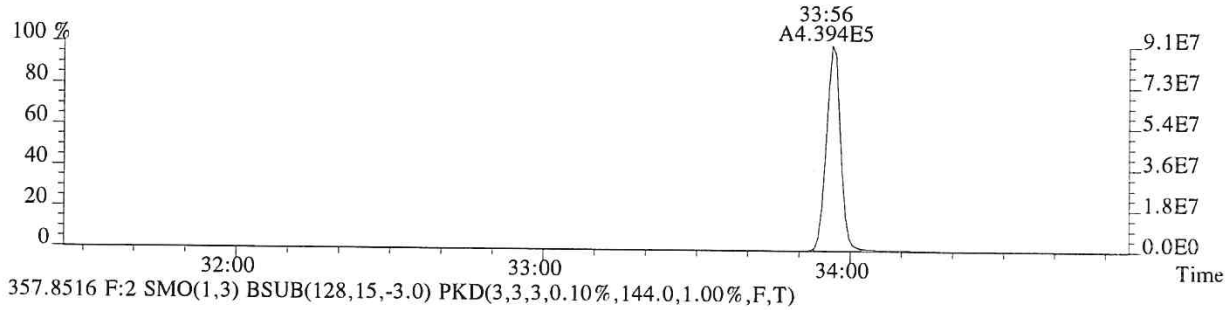


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

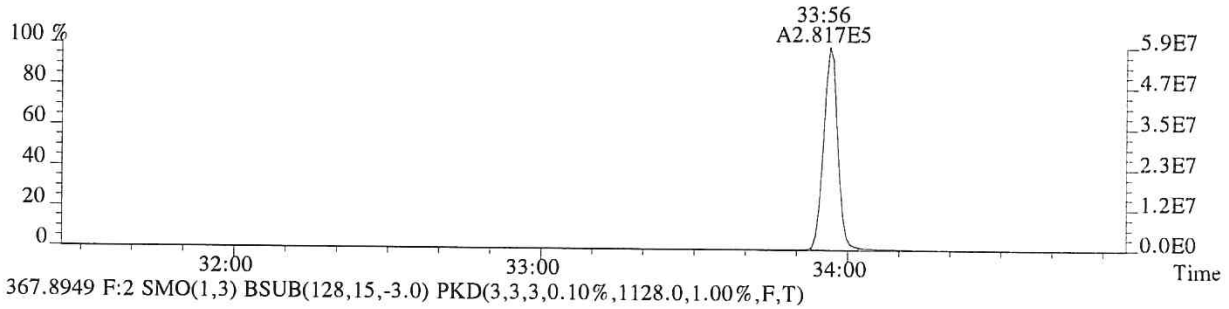


060724

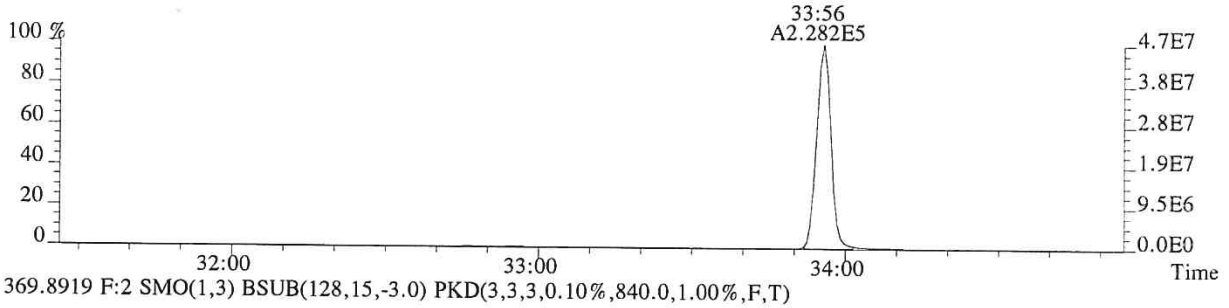
File:P513854 #1-313 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1420.0,1.00%,F,T)



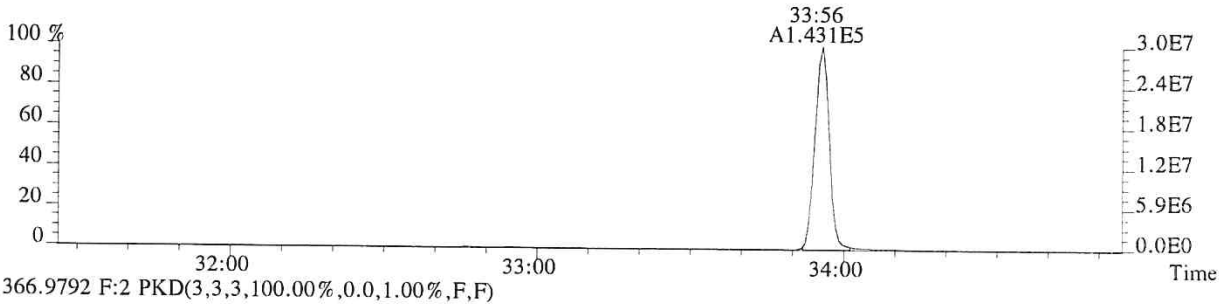
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,144.0,1.00%,F,T)



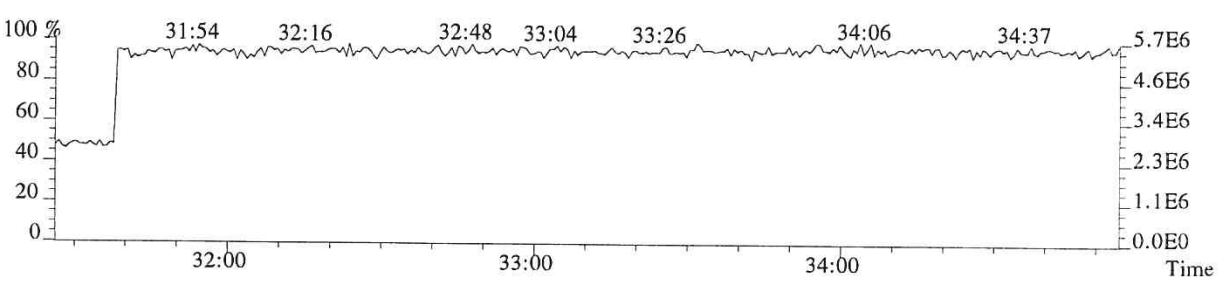
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1128.0,1.00%,F,T)



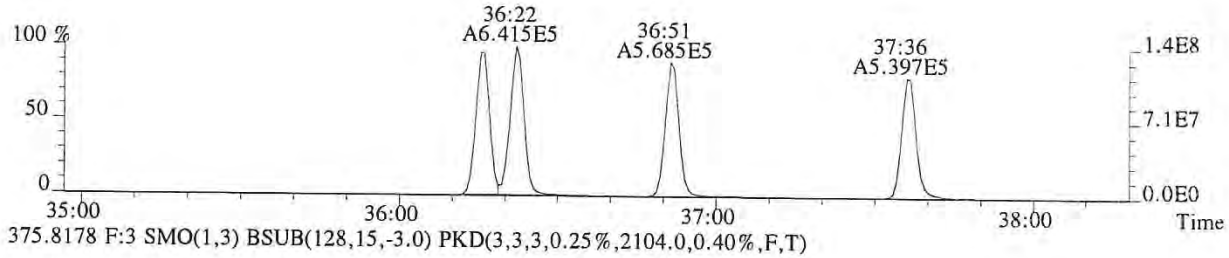
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,840.0,1.00%,F,T)



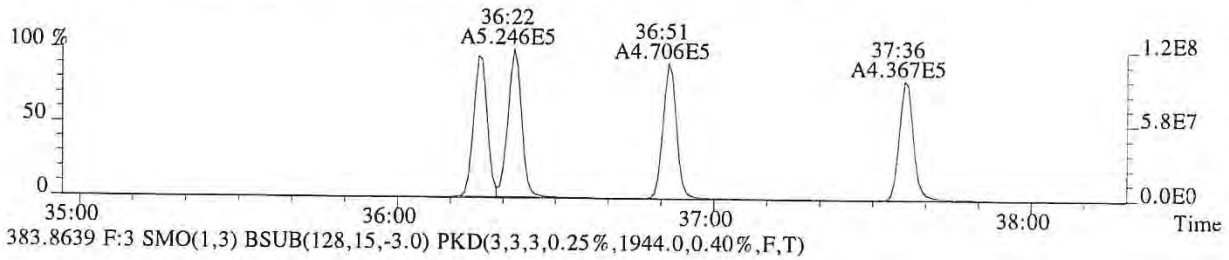
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



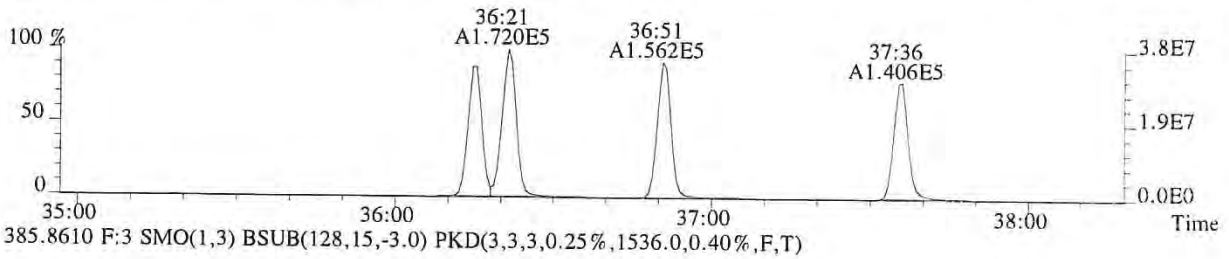
File:P513854 #1-303 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1804.0,0.40%,F,T)



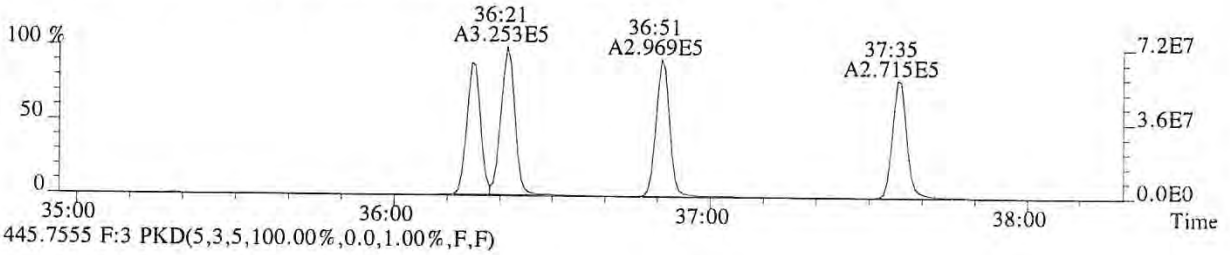
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2104.0,0.40%,F,T)



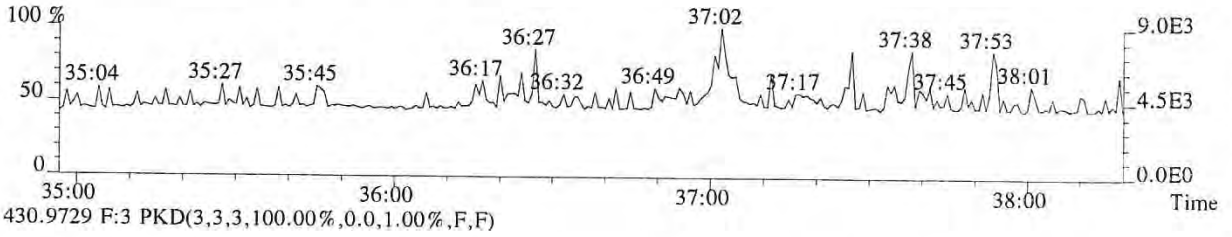
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1944.0,0.40%,F,T)



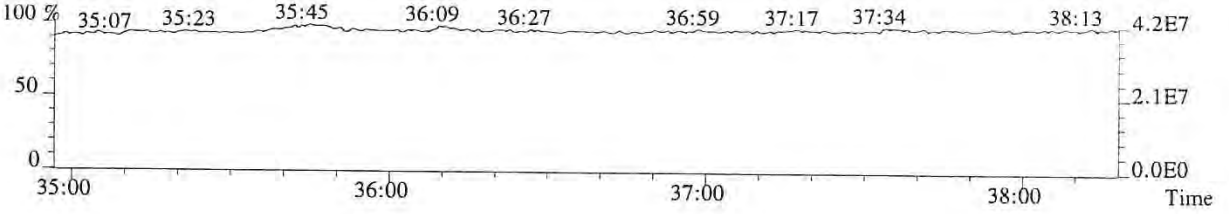
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1536.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

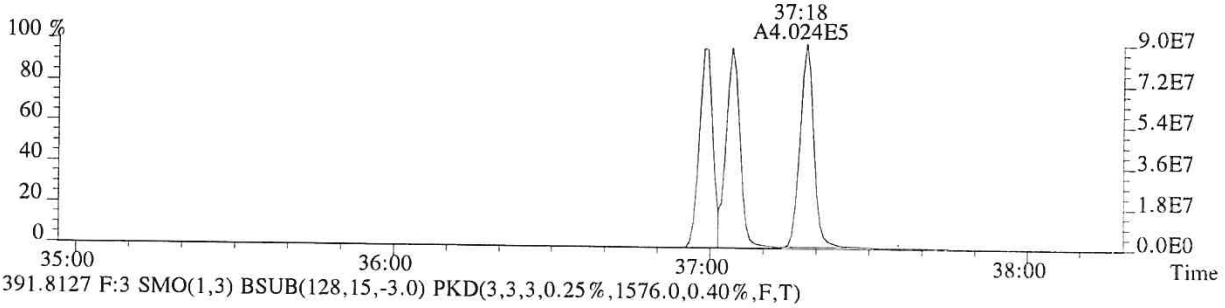


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

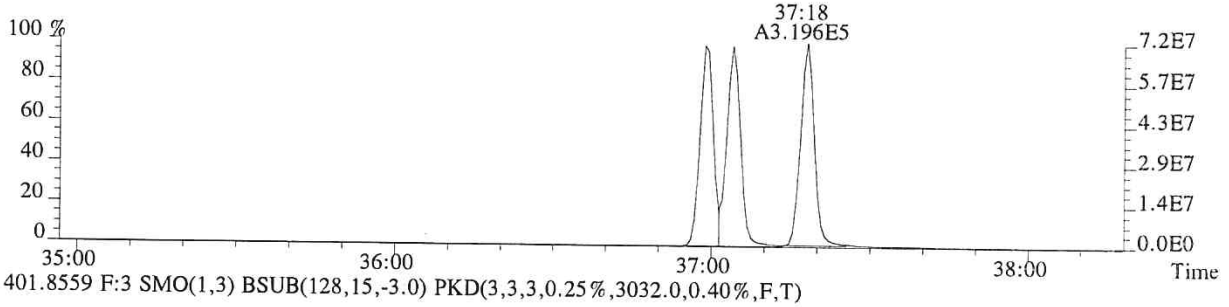


060726

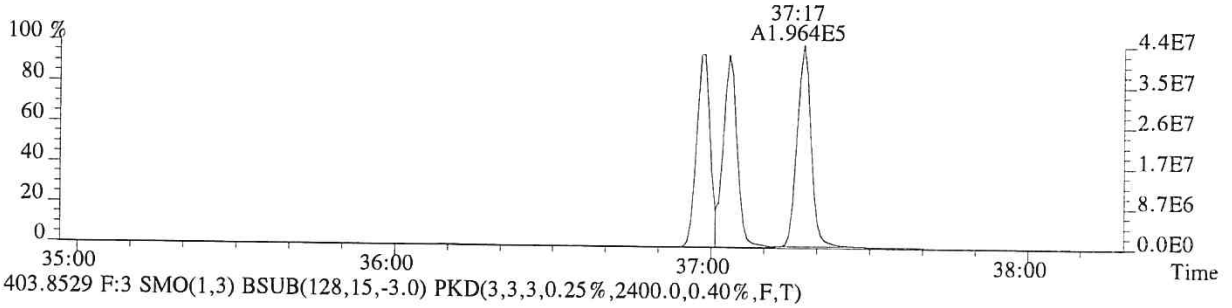
File:P513854 #1-303 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1200.0,0.40%,F,T)



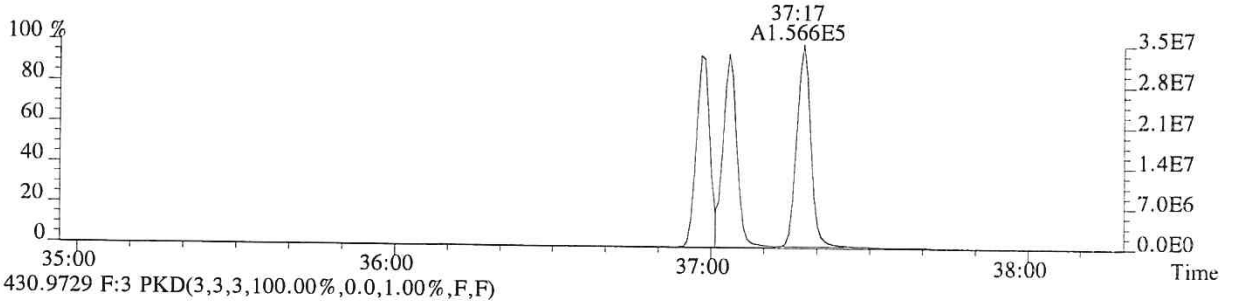
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1576.0,0.40%,F,T)



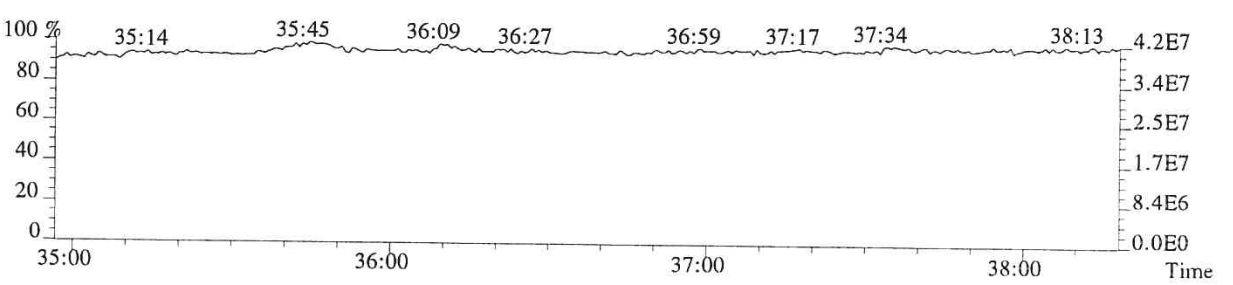
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3032.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2400.0,0.40%,F,T)

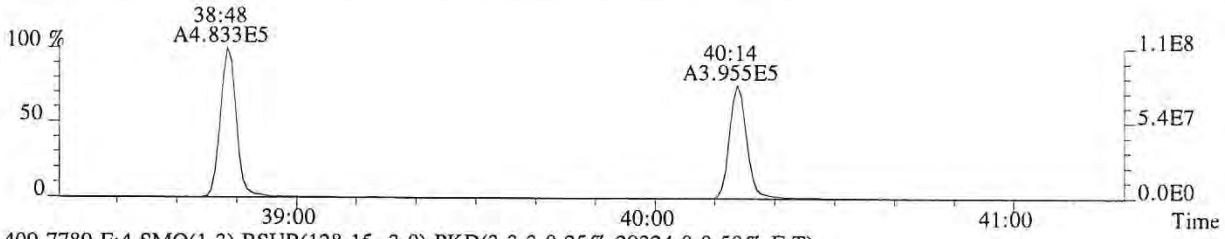


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

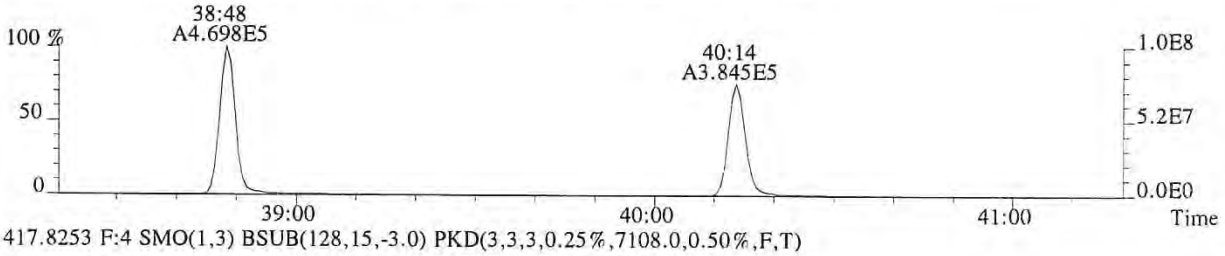


060727

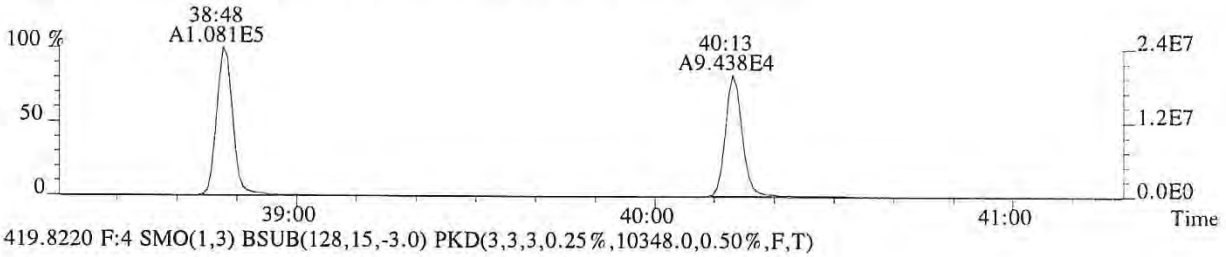
File:P513854 #1-268 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,17516.0,0.50%,F,T)



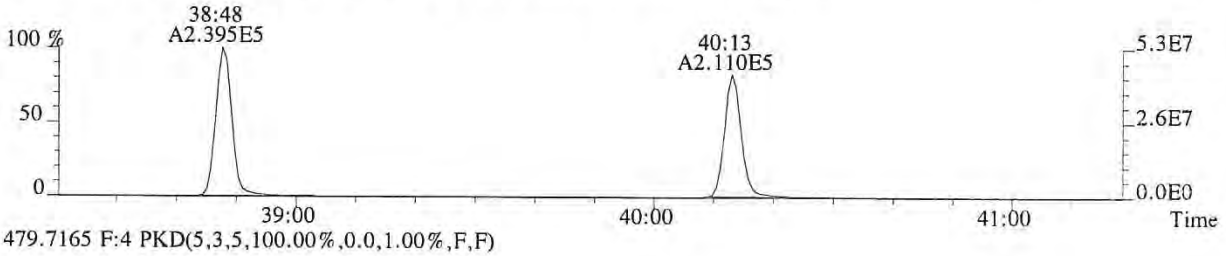
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,29324.0,0.50%,F,T)



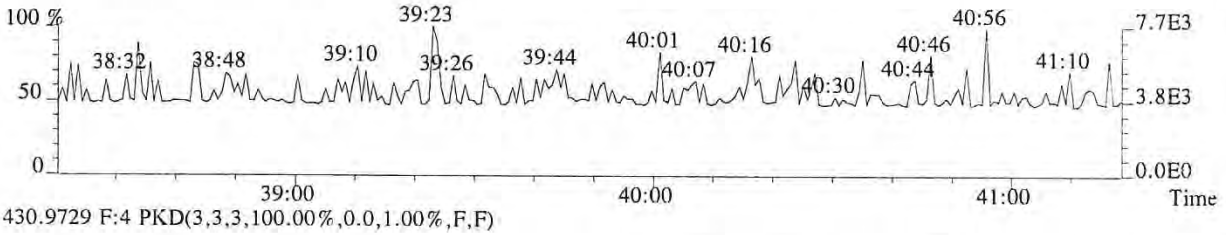
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7108.0,0.50%,F,T)



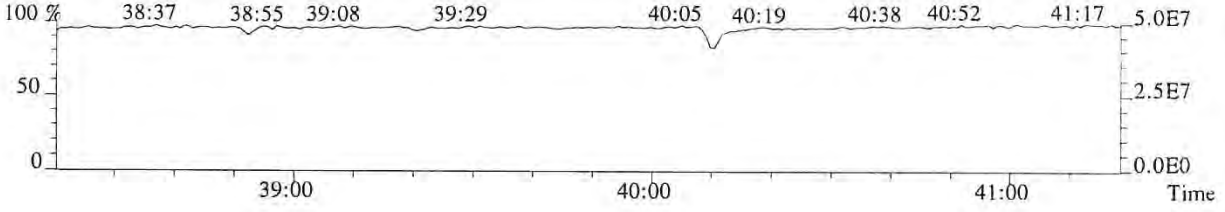
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10348.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

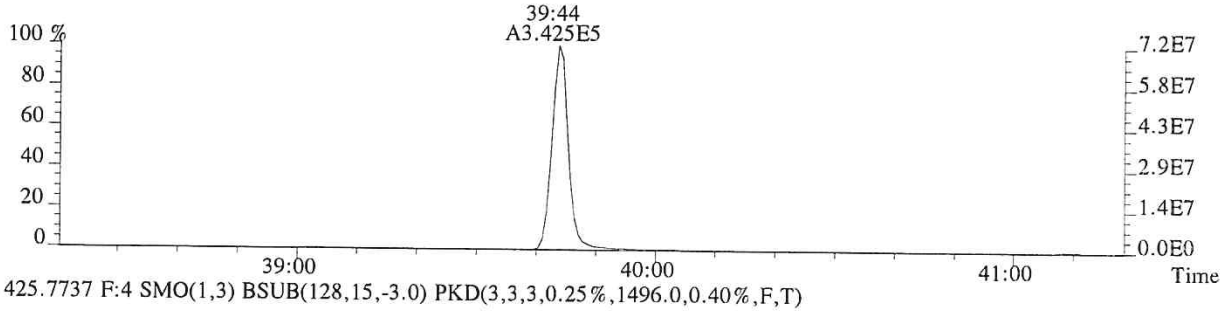


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

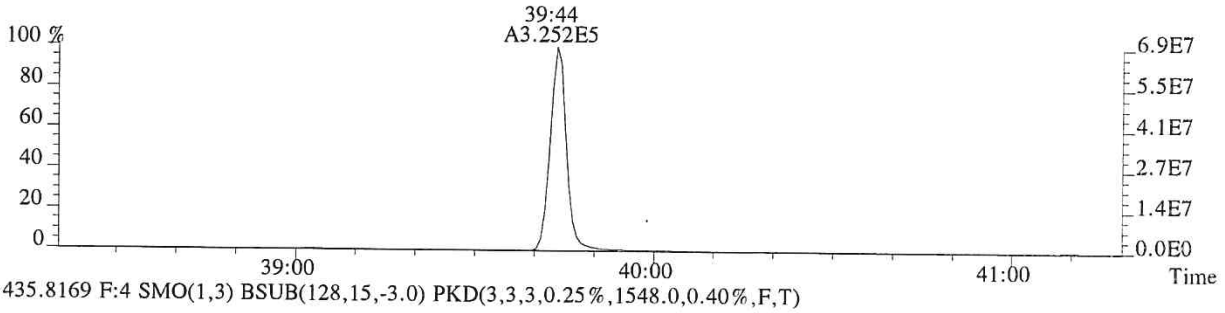


060728

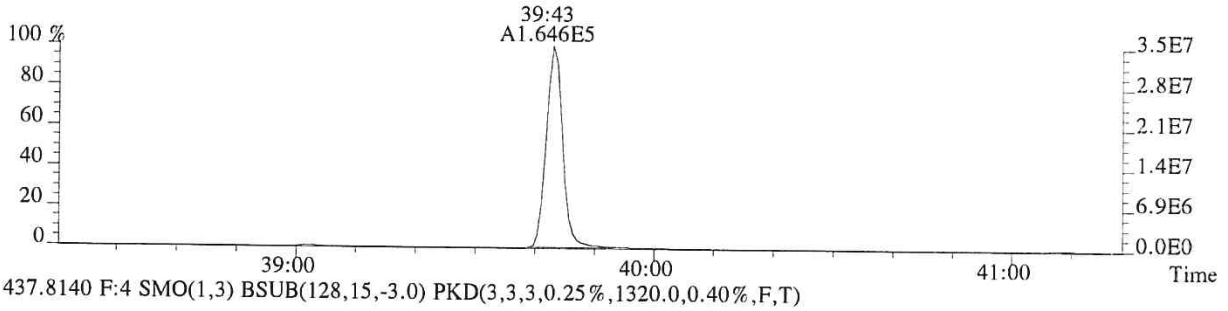
File:P513854 #1-268 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1516.0,0.40%,F,T)



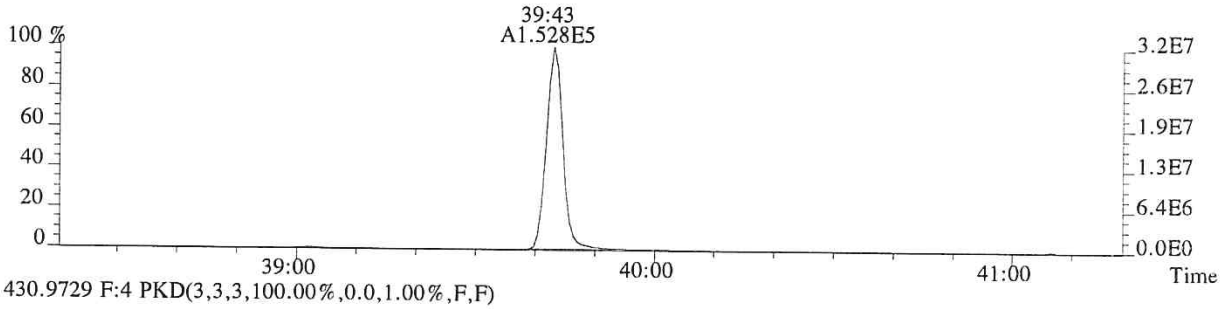
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1496.0,0.40%,F,T)



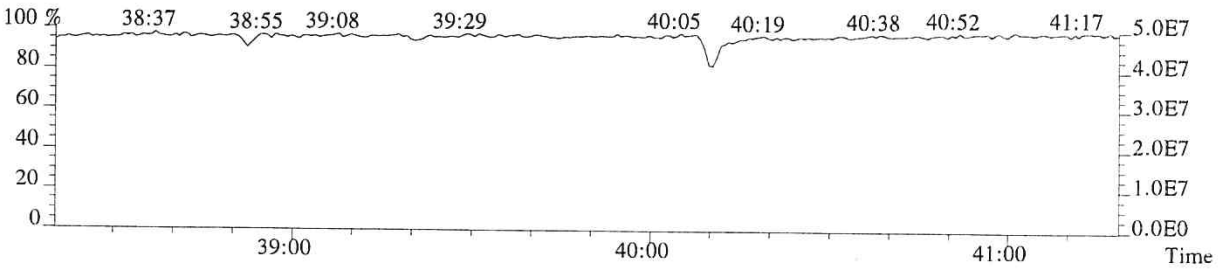
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1548.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1320.0,0.40%,F,T)

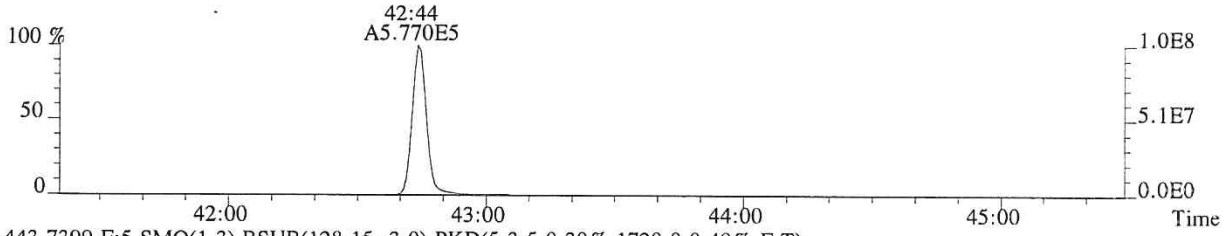


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

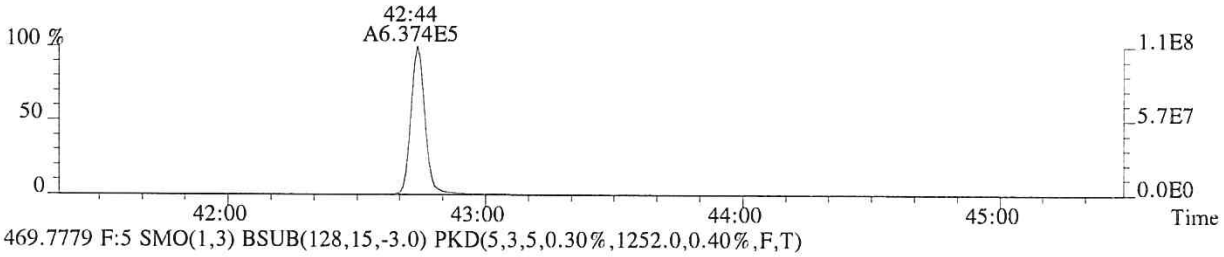


060729

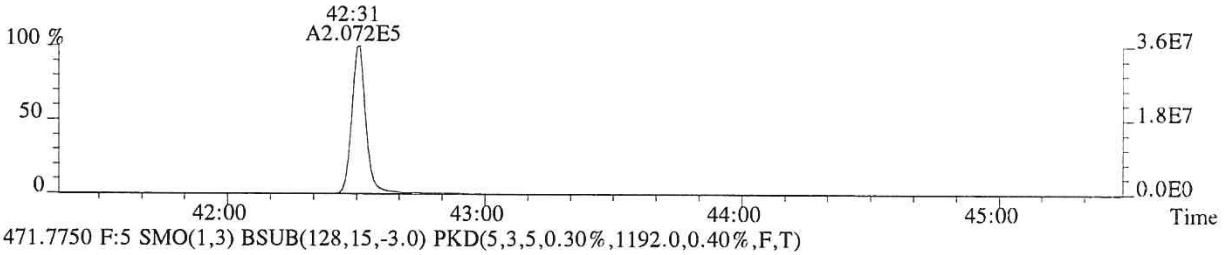
File:P513854 #1-373 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,504.0,0.40%,F,T)



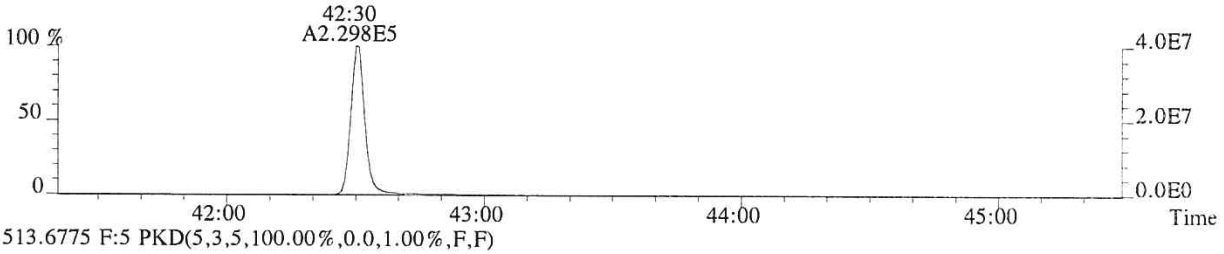
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1720.0,0.40%,F,T)



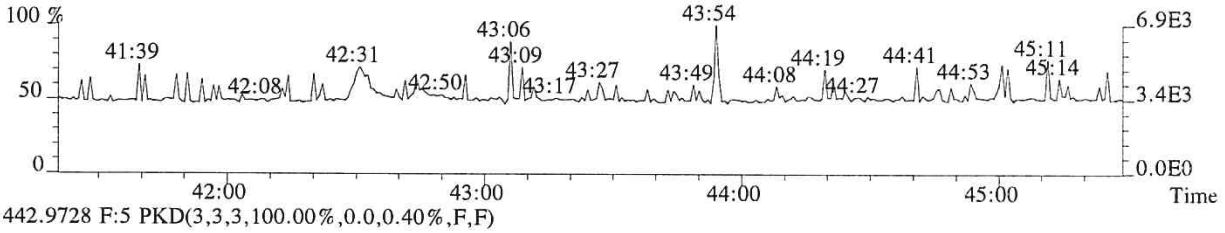
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1252.0,0.40%,F,T)



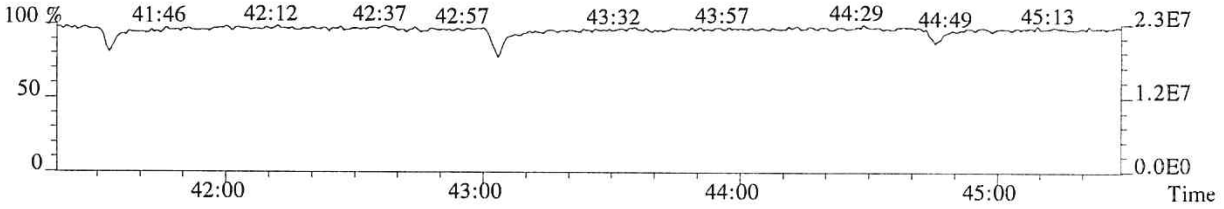
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1192.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

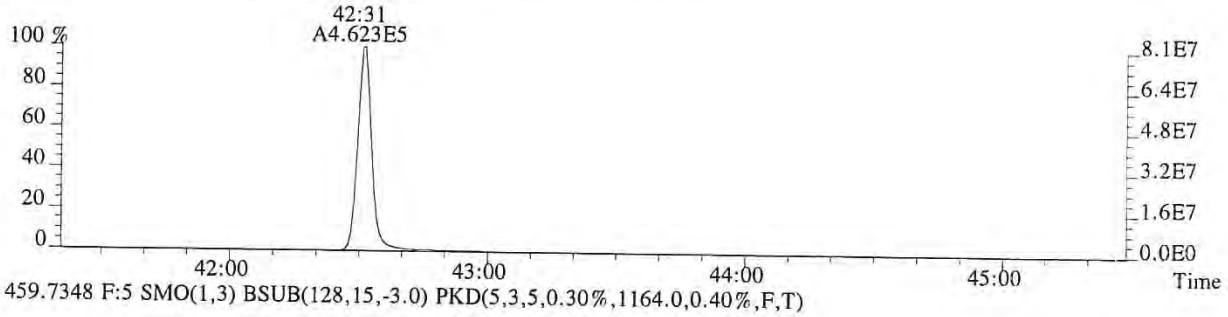


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

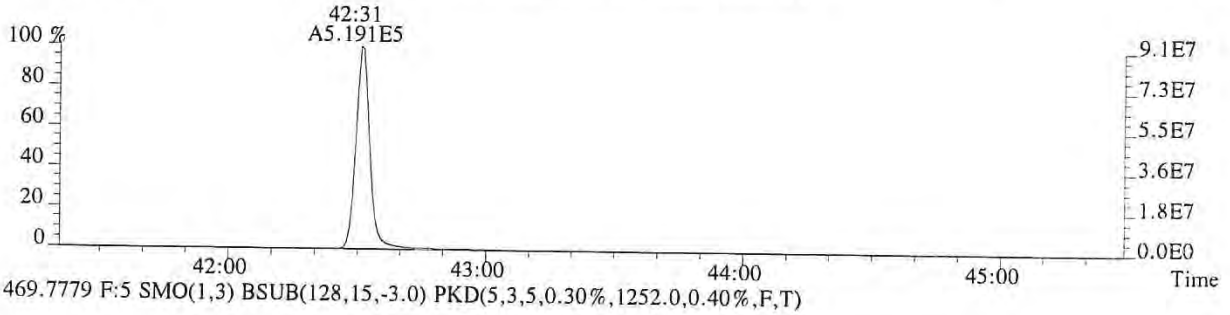


060730

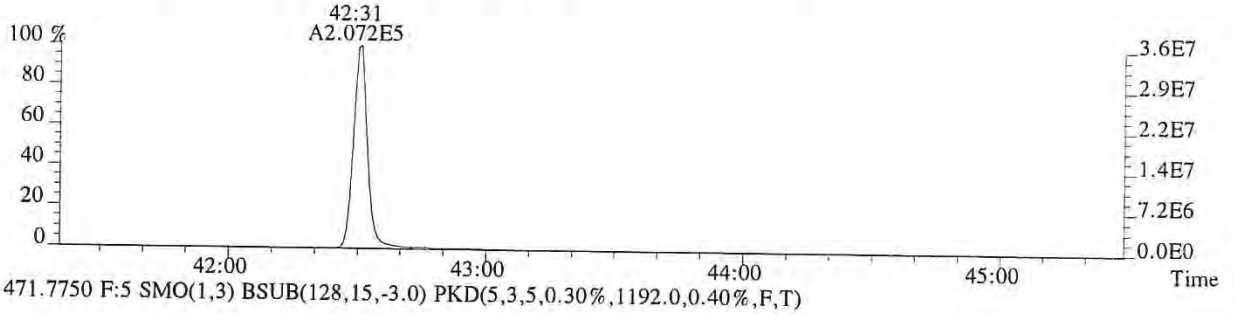
File:P513854 #1-373 Acq:24-JAN-2018 16:55:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,736.0,0.40%,F,T)



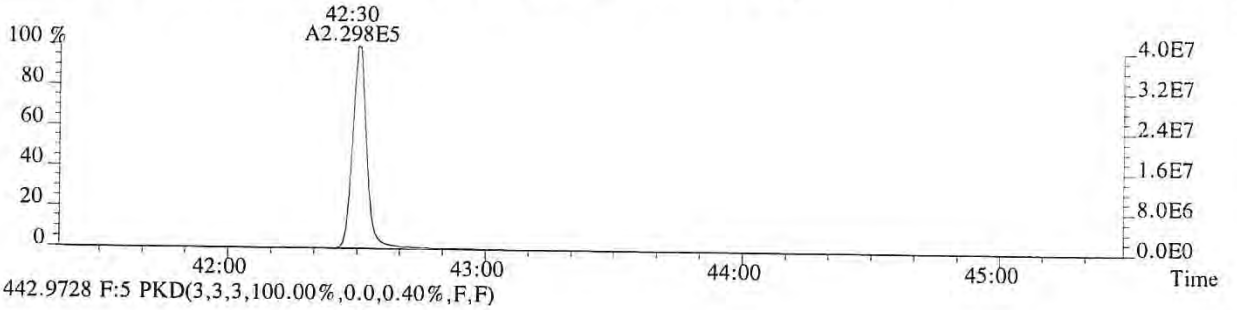
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1164.0,0.40%,F,T)



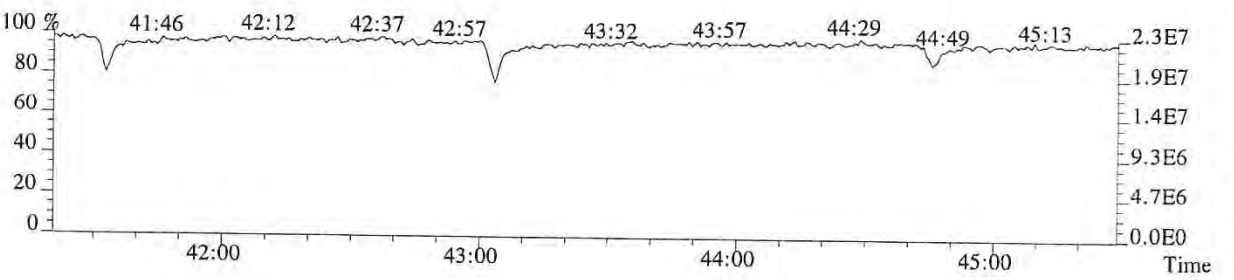
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1252.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1192.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
185657

Run #6 Filename P513855 Samp: 1 Inj: 1 Acquired: 24-JAN-18 17:43:48
Processed: 25-JAN-18 08:12:42 Sample ID: CS5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:48	2.519e+05	3.290e+05	0.77	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	2.059e+06	1.330e+06	1.55	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:42	1.928e+06	1.251e+06	1.54	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:17	1.692e+06	1.377e+06	1.23	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:23	1.772e+06	1.434e+06	1.24	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:53	1.608e+06	1.317e+06	1.22	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	1.433e+06	1.167e+06	1.23	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:49	1.339e+06	1.290e+06	1.04	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	1.080e+06	1.042e+06	1.04	yes	no	1.258
10	Unk	OCDF	42:45	1.595e+06	1.756e+06	0.91	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:32	1.888e+05	2.423e+05	0.78	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:58	1.263e+06	8.057e+05	1.57	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	37:00	1.121e+06	8.925e+05	1.26	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:05	1.092e+06	8.671e+05	1.26	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:19	1.145e+06	9.139e+05	1.25	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:45	9.236e+05	8.810e+05	1.05	yes	no	1.025
17	Unk	OCDD	42:32	1.236e+06	1.384e+06	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:47	1.298e+05	1.639e+05	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:48	1.958e+05	1.231e+05	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	1.948e+05	1.236e+05	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:16	8.374e+04	1.594e+05	0.53	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:23	9.521e+04	1.780e+05	0.53	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:52	8.554e+04	1.650e+05	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:37	7.556e+04	1.441e+05	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:49	5.927e+04	1.314e+05	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	5.166e+04	1.153e+05	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:31	8.633e+04	1.080e+05	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	1.308e+05	8.218e+04	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	1.058e+05	8.279e+04	1.28	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:04	1.031e+05	8.205e+04	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:44	8.934e+04	8.409e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	42:31	1.103e+05	1.236e+05	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:57	8.893e+04	1.085e+05	0.82	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:18	1.136e+05	9.051e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:32	4.366e+05				no	1.014

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Signal/Noise Height Ratio Summary

CLIENT ID.
185657

Run #6 Filename P513855 Samp: 1 Inj: 1 Acquired: 24-JAN-18 17:43:48
Processed: 25-JAN-18 08:12:42 LAB. ID: CS5

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.13e+07	1.02e+03	5.0e+04	6.69e+07	2.00e+03	3.3e+04
2	1,2,3,7,8-PeCDF	4.18e+08	1.72e+03	2.4e+05	2.69e+08	4.25e+03	6.3e+04
3	2,3,4,7,8-PeCDF	4.06e+08	1.72e+03	2.4e+05	2.60e+08	4.25e+03	6.1e+04
4	1,2,3,4,7,8-HxCDF	3.87e+08	3.18e+03	1.2e+05	3.12e+08	2.28e+03	1.4e+05
5	1,2,3,6,7,8-HxCDF	3.87e+08	3.18e+03	1.2e+05	3.14e+08	2.28e+03	1.4e+05
6	2,3,4,6,7,8-HxCDF	3.59e+08	3.18e+03	1.1e+05	2.88e+08	2.28e+03	1.3e+05
7	1,2,3,7,8,9-HxCDF	3.14e+08	3.18e+03	9.9e+04	2.53e+08	2.28e+03	1.1e+05
8	1,2,3,4,6,7,8-HpCDF	2.94e+08	4.87e+04	6.0e+03	2.86e+08	4.51e+04	6.3e+03
9	1,2,3,4,7,8,9-HpCDF	2.17e+08	4.87e+04	4.5e+03	2.12e+08	4.51e+04	4.7e+03
10	OCDF	2.95e+08	6.68e+02	4.4e+05	3.20e+08	1.53e+03	2.1e+05
11	2,3,7,8-TCDD	4.01e+07	1.56e+03	2.6e+04	5.16e+07	1.78e+03	2.9e+04
12	1,2,3,7,8-PeCDD	2.63e+08	1.48e+03	1.8e+05	1.68e+08	6.04e+02	2.8e+05
13	1,2,3,4,7,8-HxCDD	2.57e+08	1.76e+03	1.5e+05	2.02e+08	1.10e+03	1.8e+05
14	1,2,3,6,7,8-HxCDD	2.40e+08	1.76e+03	1.4e+05	1.94e+08	1.10e+03	1.8e+05
15	1,2,3,7,8,9-HxCDD	2.55e+08	1.76e+03	1.5e+05	2.05e+08	1.10e+03	1.9e+05
16	1,2,3,4,6,7,8-HpCDD	1.92e+08	4.16e+03	4.6e+04	1.82e+08	2.40e+03	7.6e+04
17	OCDD	2.24e+08	1.92e+02	1.2e+06	2.52e+08	1.77e+03	1.4e+05
18	13C-2,3,7,8-TCDF	2.56e+07	8.72e+03	2.9e+03	3.23e+07	4.65e+03	7.0e+03
19	13C-1,2,3,7,8-PeCDF	3.90e+07	1.47e+03	2.7e+04	2.42e+07	1.14e+03	2.1e+04
20	13C-2,3,4,7,8-PeCDF	3.95e+07	1.47e+03	2.7e+04	2.53e+07	1.14e+03	2.2e+04
21	13C-1,2,3,4,7,8-HxCDF	1.87e+07	1.28e+03	1.5e+04	3.55e+07	3.08e+03	1.2e+04
22	13C-1,2,3,6,7,8-HxCDF	2.06e+07	1.28e+03	1.6e+04	3.85e+07	3.08e+03	1.3e+04
23	13C-2,3,4,6,7,8-HxCDF	1.90e+07	1.28e+03	1.5e+04	3.60e+07	3.08e+03	1.2e+04
24	13C-1,2,3,7,8,9-HxCDF	1.65e+07	1.28e+03	1.3e+04	3.12e+07	3.08e+03	1.0e+04
25	13C-1,2,3,4,6,7,8-HpCDF	1.32e+07	1.18e+04	1.1e+03	2.87e+07	5.77e+03	5.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.03e+07	1.18e+04	8.7e+02	2.29e+07	5.77e+03	4.0e+03
27	13C-2,3,7,8-TCDD	1.81e+07	7.00e+03	2.6e+03	2.26e+07	3.08e+03	7.3e+03
28	13C-1,2,3,7,8-PeCDD	2.76e+07	1.47e+03	1.9e+04	1.74e+07	7.76e+02	2.2e+04
29	13C-1,2,3,4,7,8-HxCDD	2.40e+07	2.43e+03	9.9e+03	1.87e+07	1.70e+03	1.1e+04
30	13C-1,2,3,6,7,8-HxCDD	2.24e+07	2.43e+03	9.2e+03	1.82e+07	1.70e+03	1.1e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.84e+07	1.79e+03	1.0e+04	1.72e+07	1.40e+03	1.2e+04
32	13C-OCDD	1.97e+07	1.62e+03	1.2e+04	2.22e+07	1.42e+03	1.6e+04
33	13C-1,2,3,4-TCDD	1.83e+07	7.00e+03	2.6e+03	2.22e+07	3.08e+03	7.2e+03
34	13C-1,2,3,7,8,9-HxCDD	2.50e+07	2.43e+03	1.0e+04	1.99e+07	1.70e+03	1.2e+04
35	37Cl-2,3,7,8-TCDD	9.29e+07	1.57e+03	5.9e+04			

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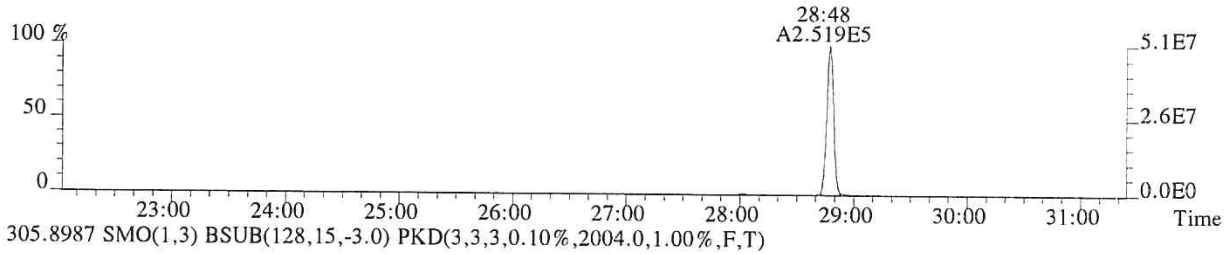
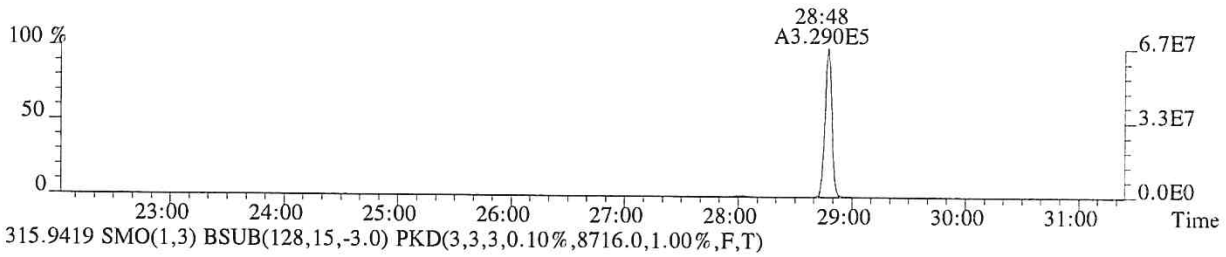
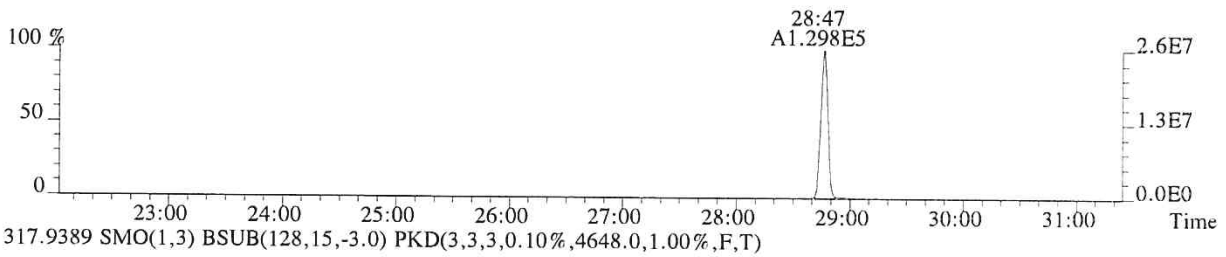
File:P513855 #1-665 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1024.0,1.00%,F,T)



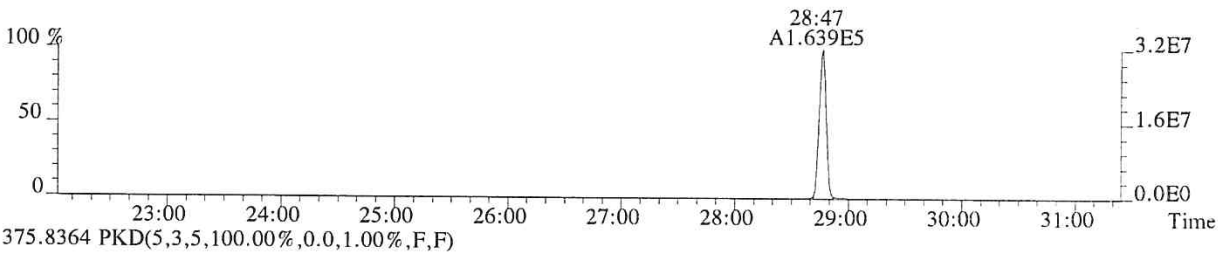
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2004.0,1.00%,F,T)



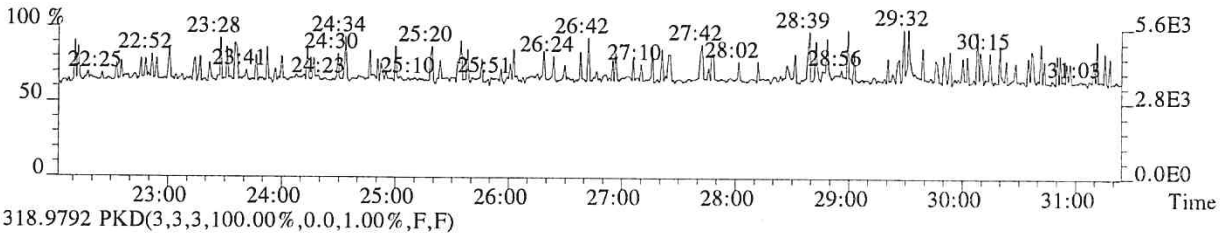
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8716.0,1.00%,F,T)



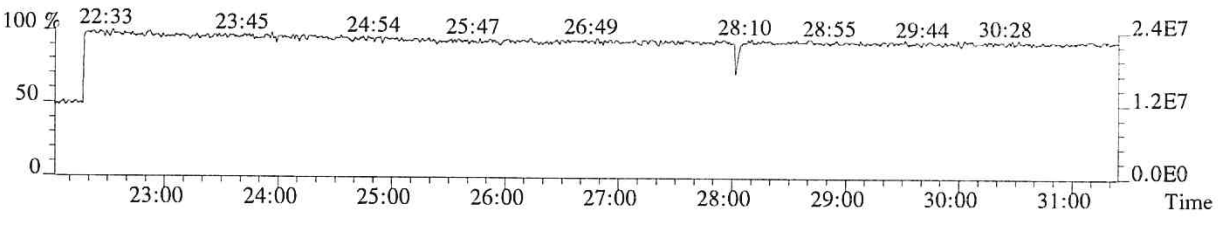
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4648.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

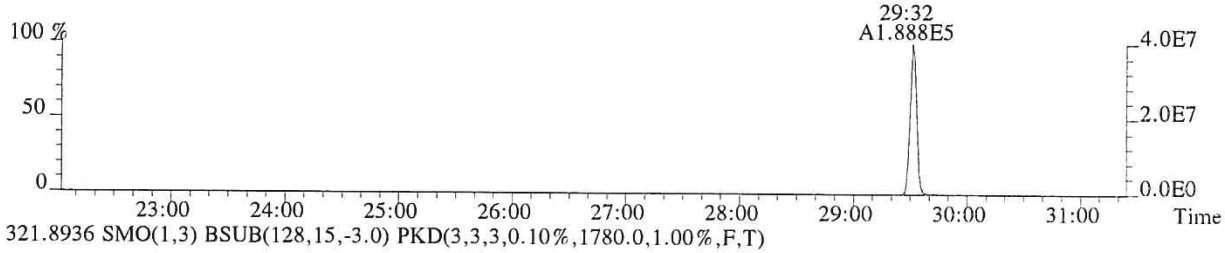


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

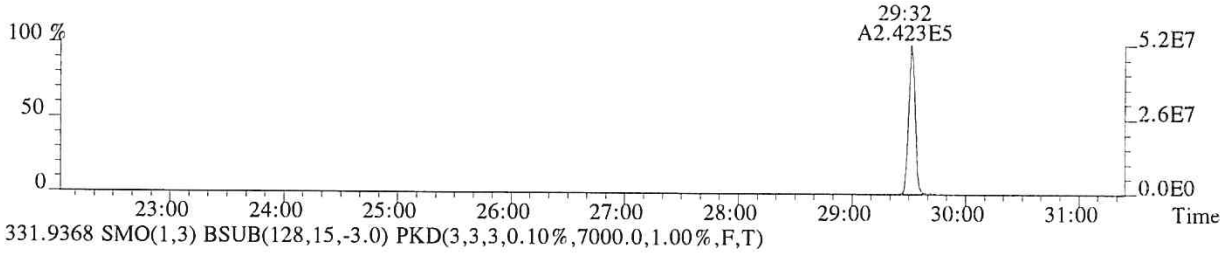


060734

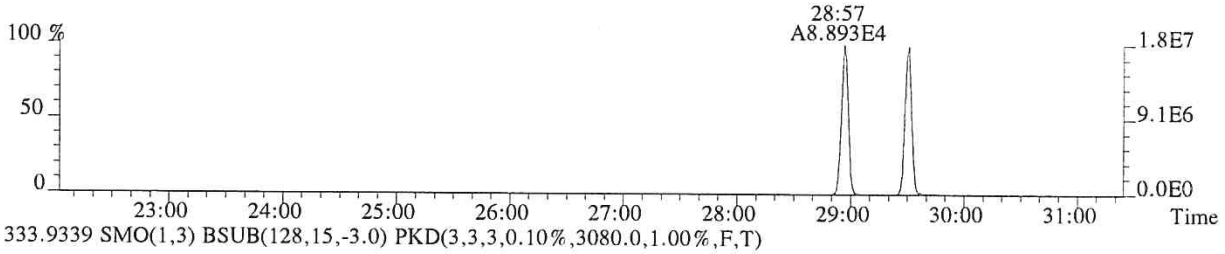
File:P513855 #1-665 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1556.0,1.00%,F,T)



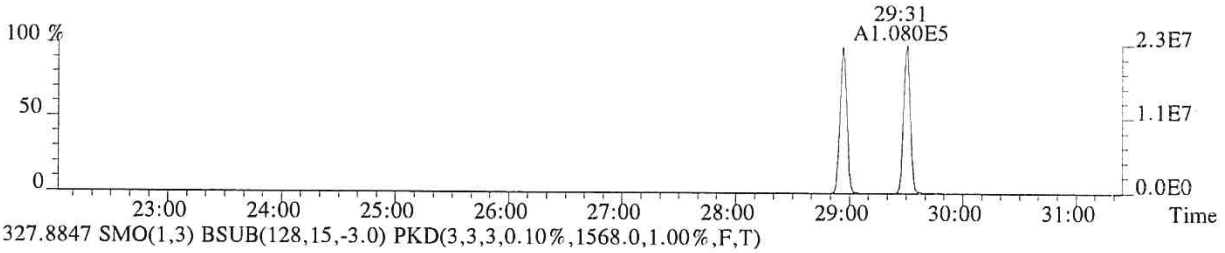
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1780.0,1.00%,F,T)



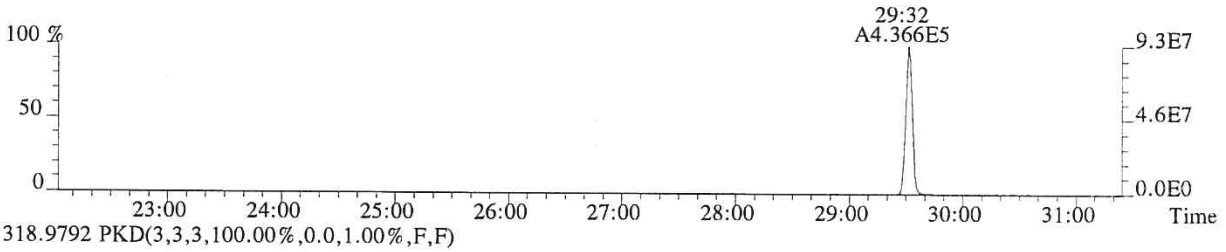
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7000.0,1.00%,F,T)



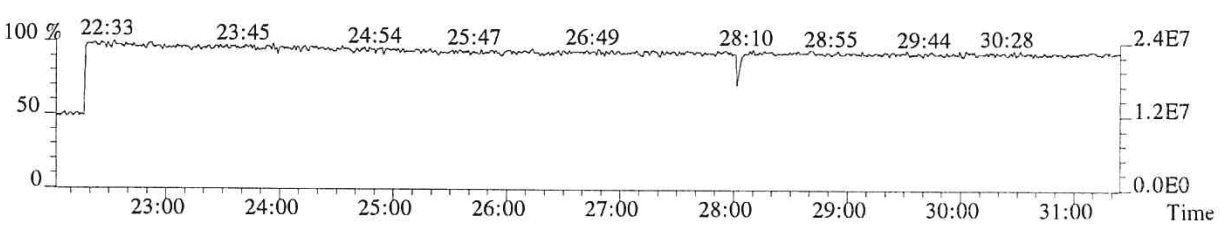
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3080.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1568.0,1.00%,F,T)

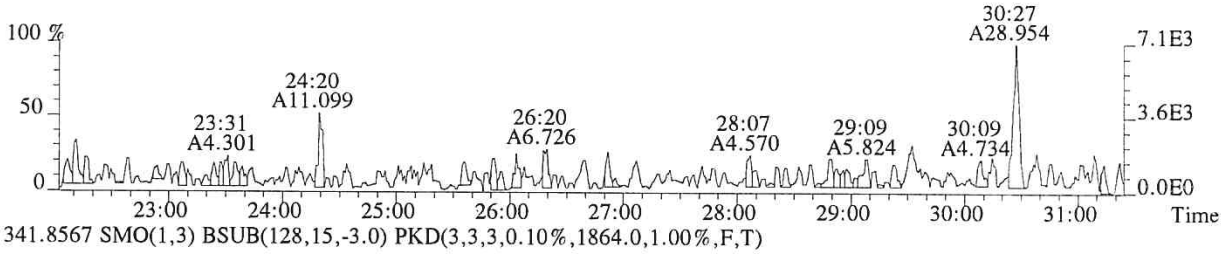


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

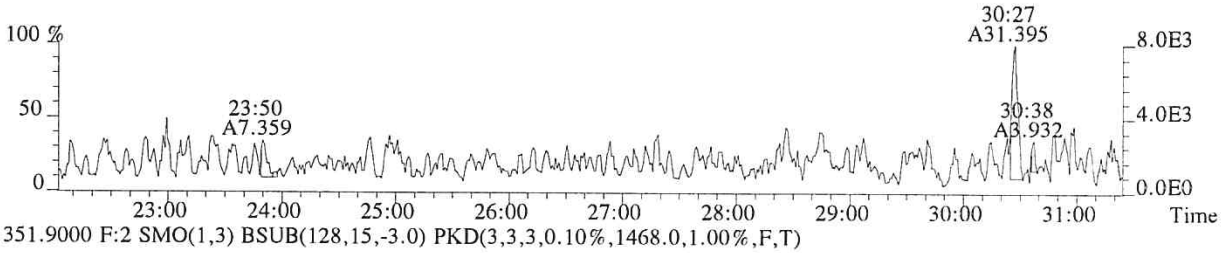


060735

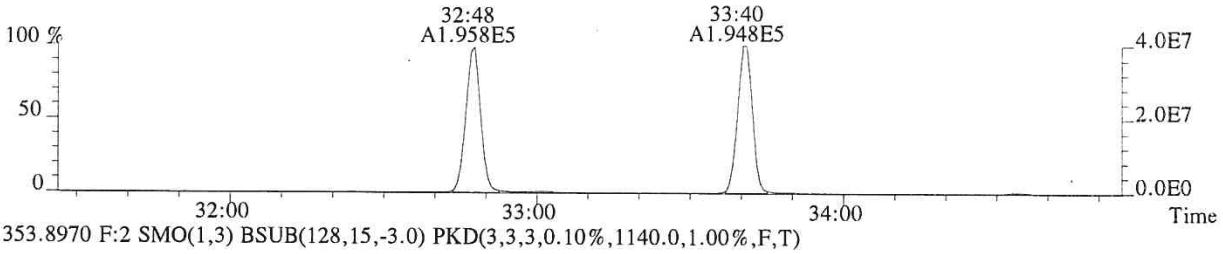
File:P513855 #1-665 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,696.0,1.00%,F,T)



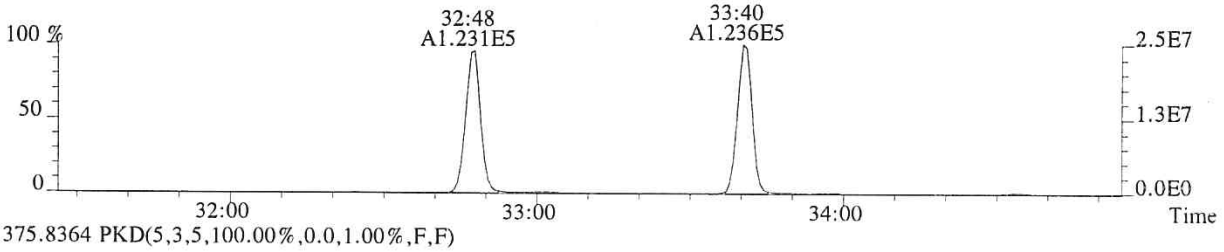
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1864.0,1.00%,F,T)



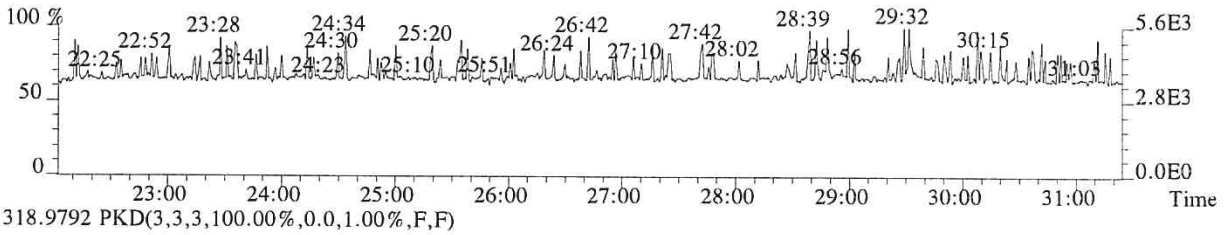
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1468.0,1.00%,F,T)



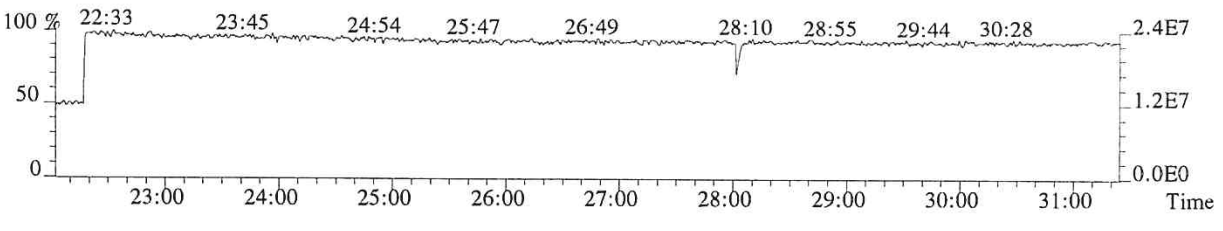
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1140.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

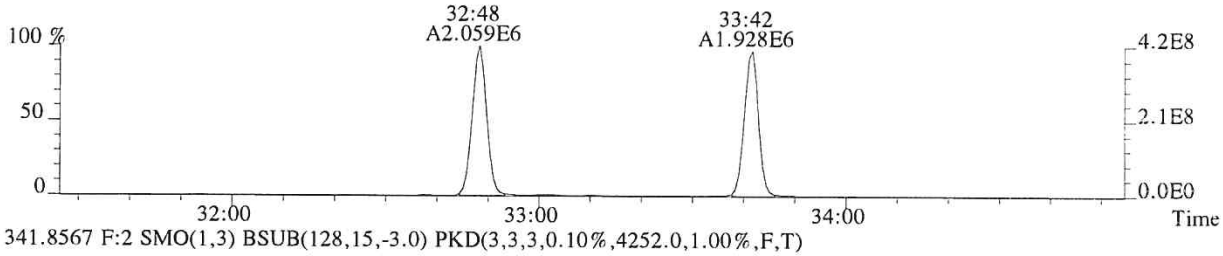


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

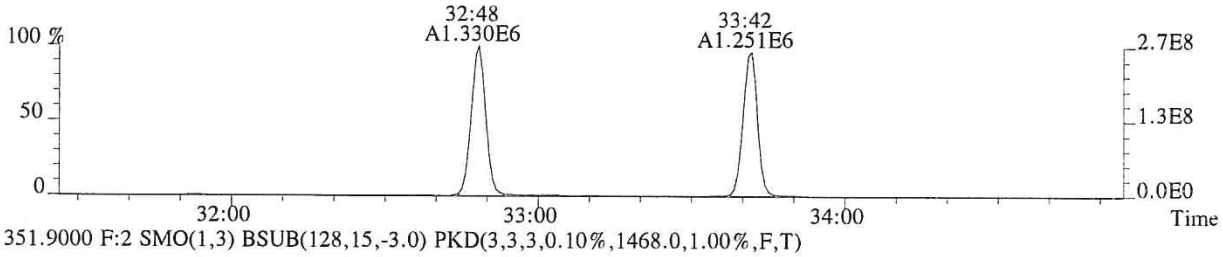


060736

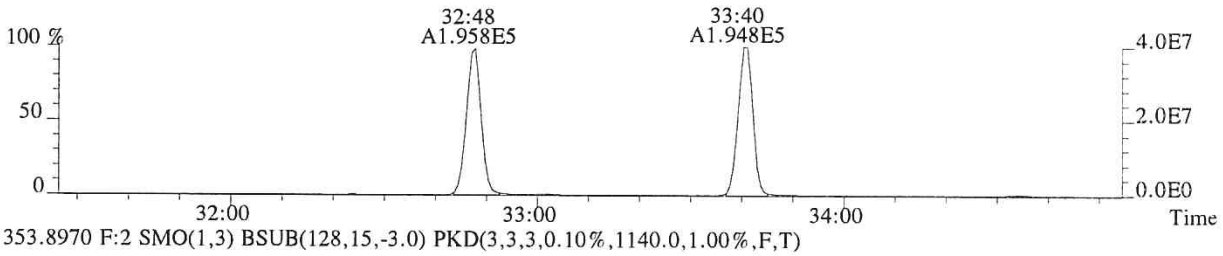
File:P513855 #1-313 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1724.0,1.00%,F,T)



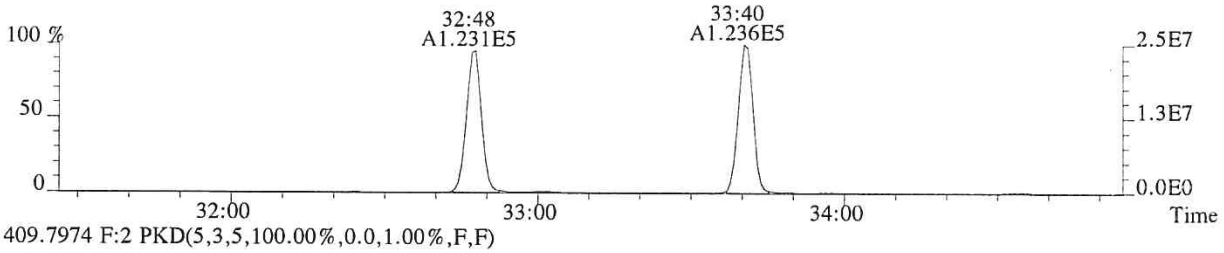
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4252.0,1.00%,F,T)



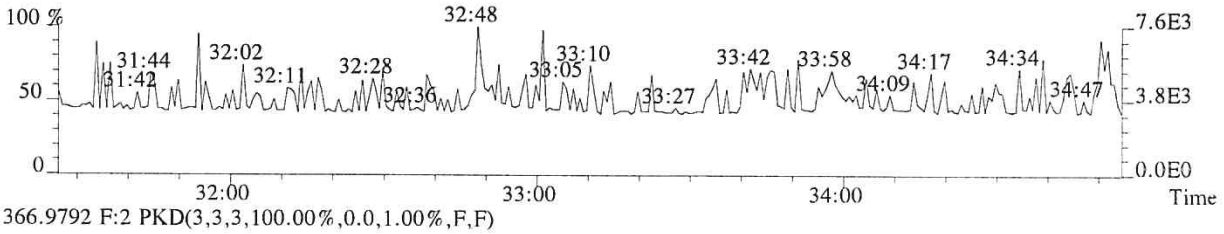
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1468.0,1.00%,F,T)



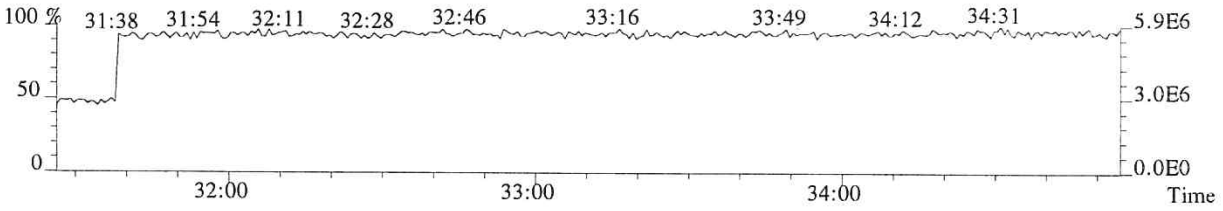
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1140.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

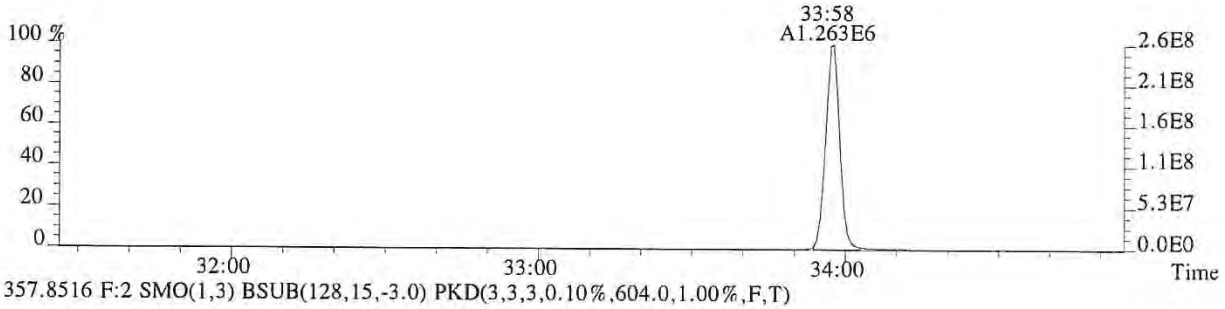


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

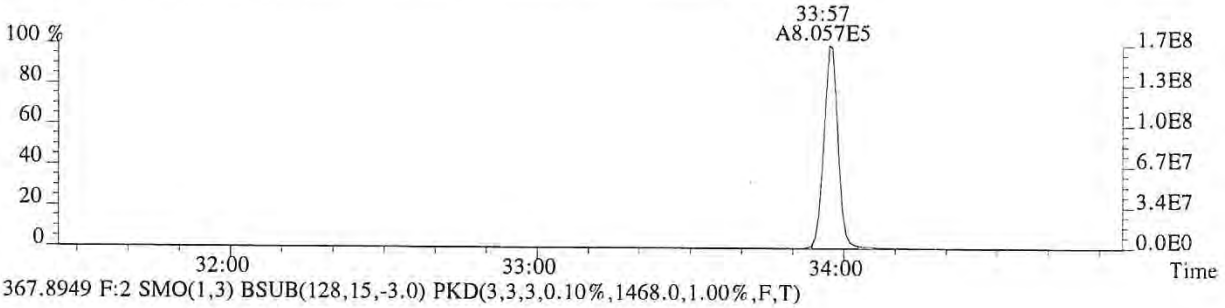


060737

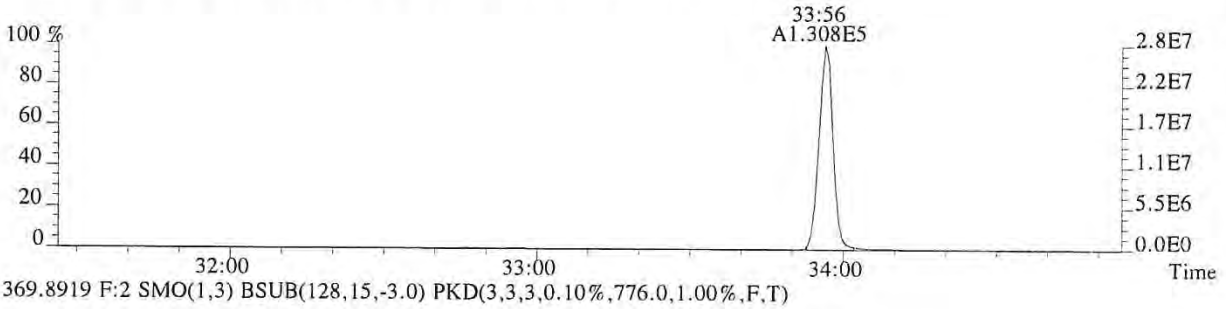
File:P513855 #1-313 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1476.0,1.00%,F,T)



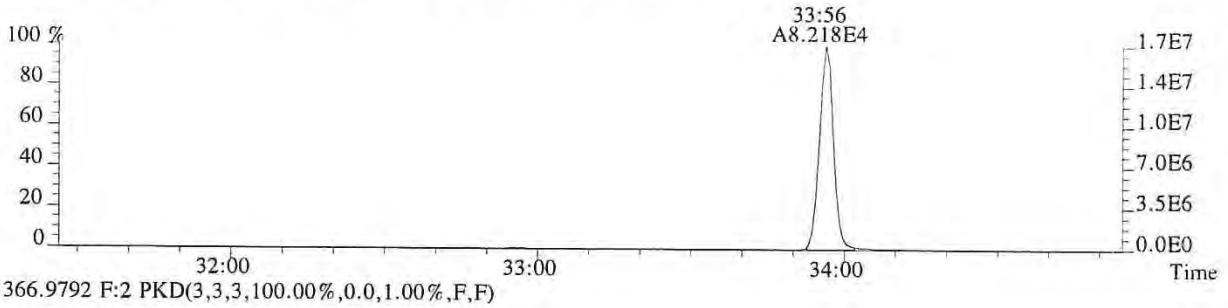
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,T)



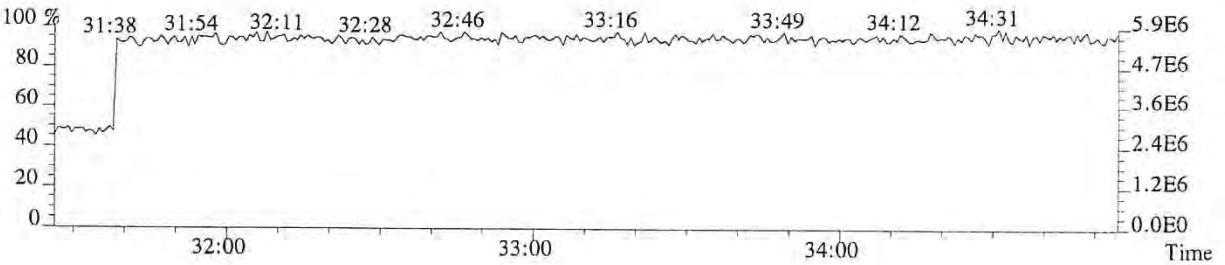
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1468.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,776.0,1.00%,F,T)

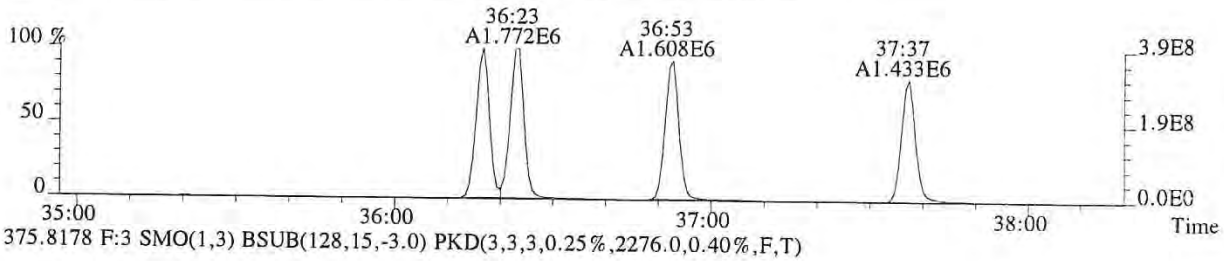


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

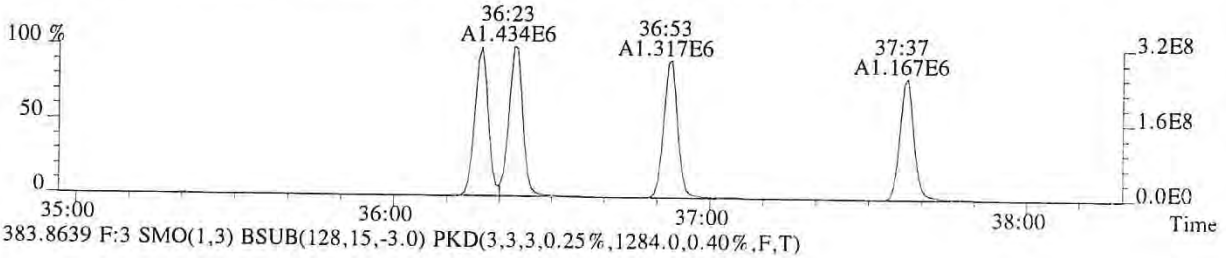


060738

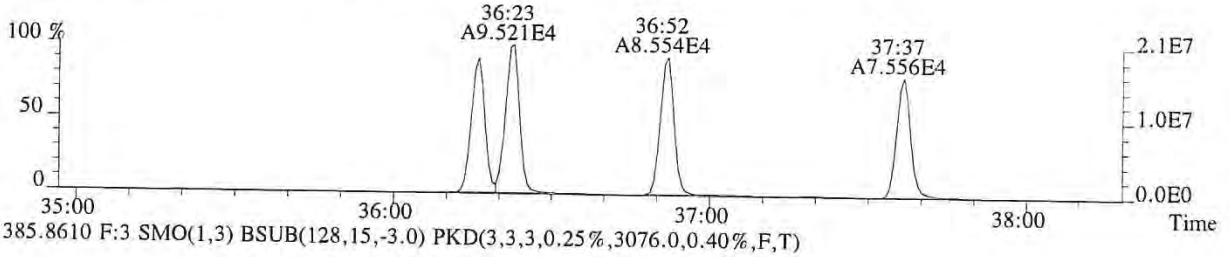
File:P513855 #1-303 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:185657
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3180.0,0.40%,F,T)



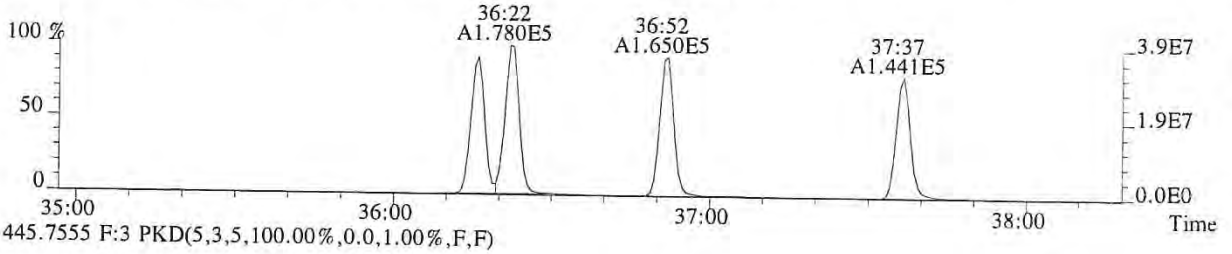
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2276.0,0.40%,F,T)



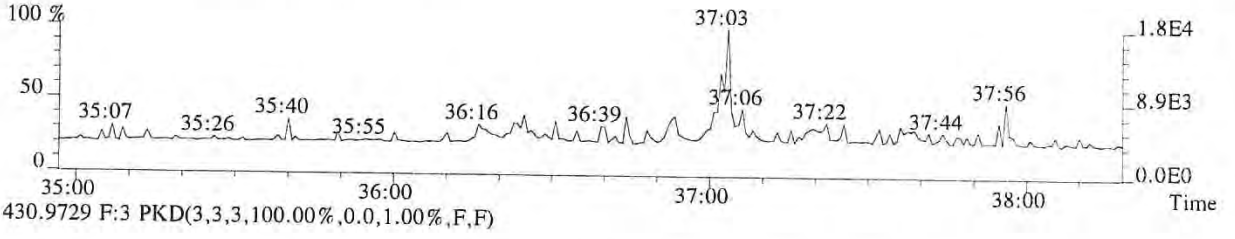
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1284.0,0.40%,F,T)



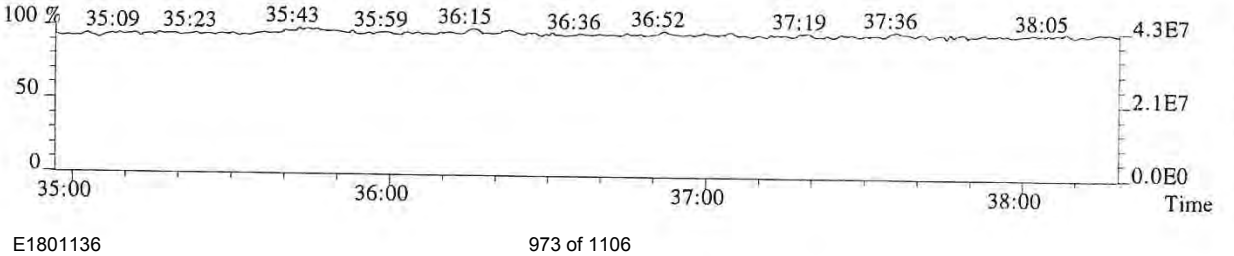
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3076.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

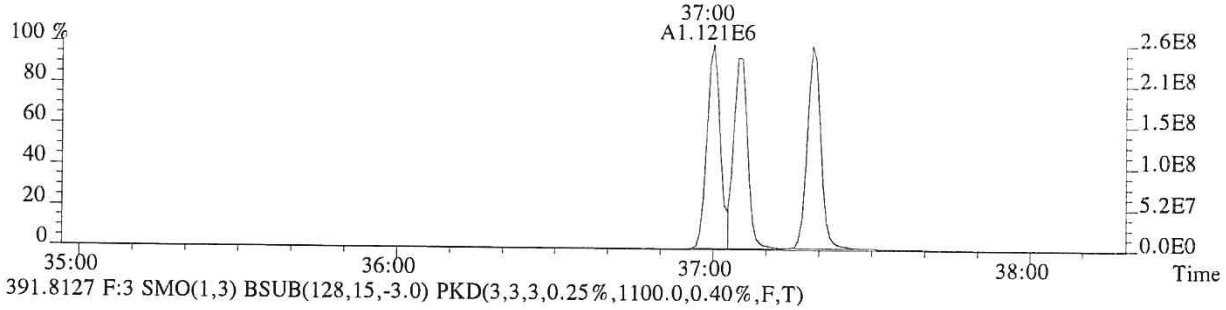


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

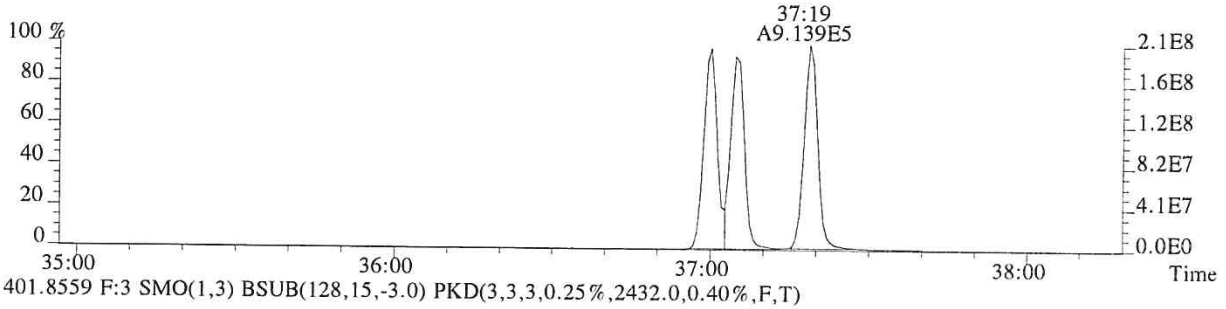


060739

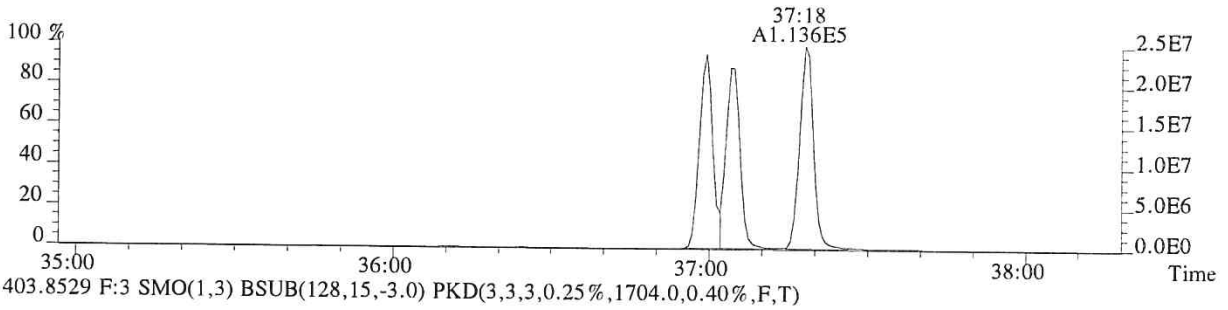
File:P513855 #1-303 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1760.0,0.40%,F,T)



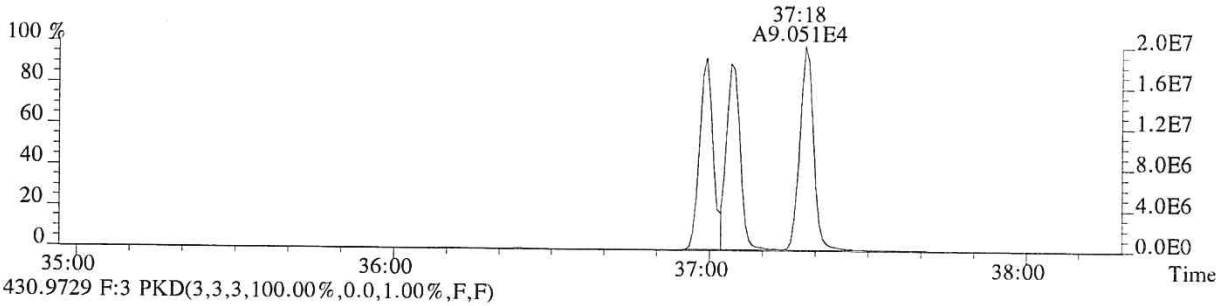
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1100.0,0.40%,F,T)



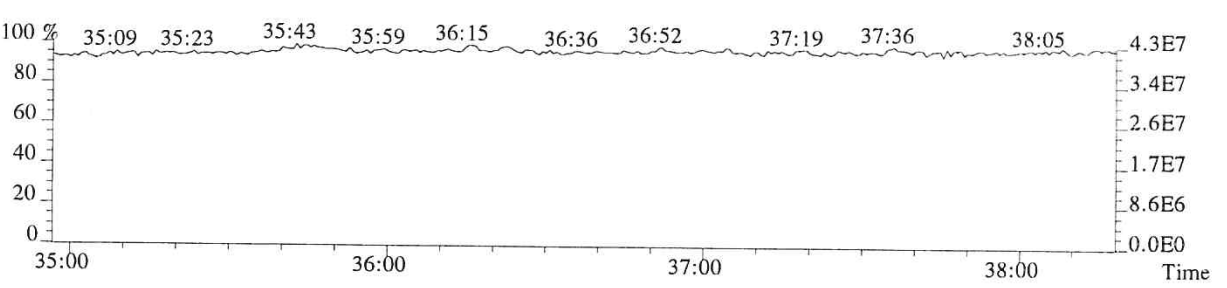
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2432.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1704.0,0.40%,F,T)

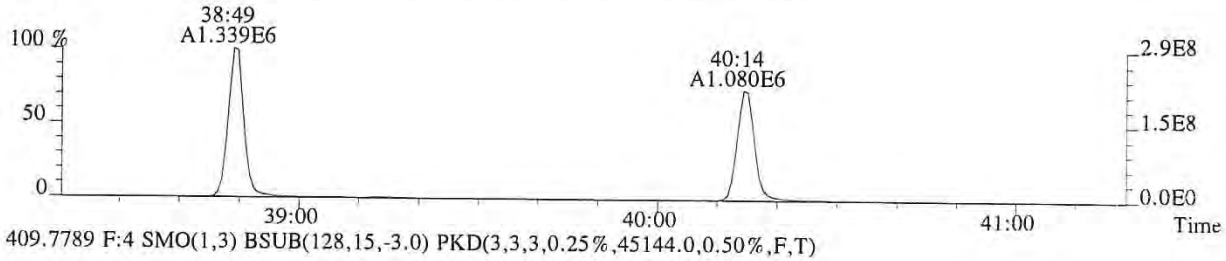


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

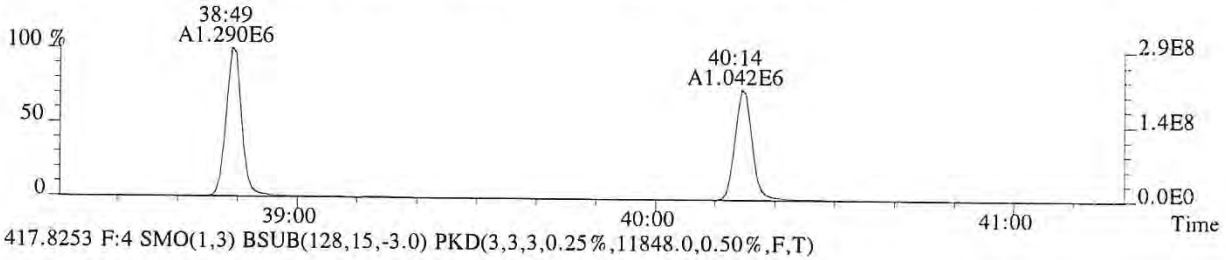


060740

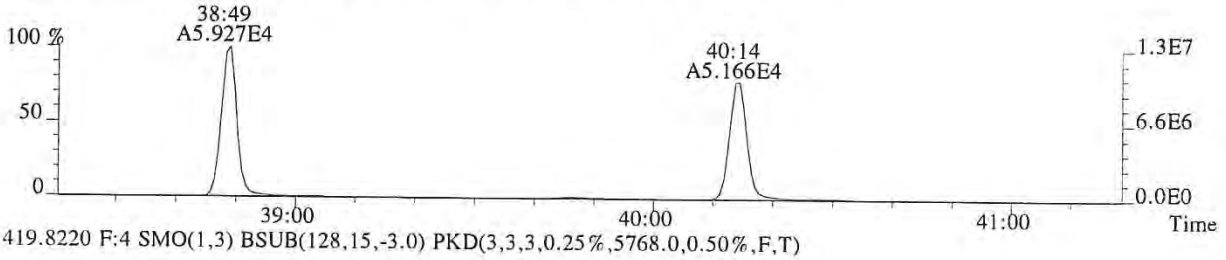
File:P513855 #1-268 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:185657
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,48736.0,0.50%,F,T)



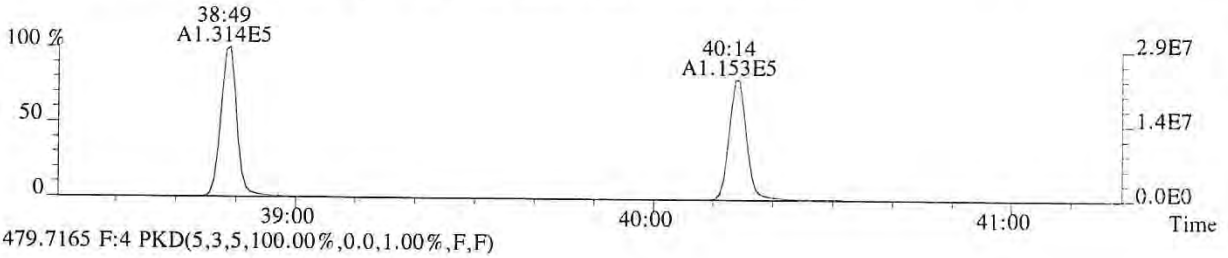
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,45144.0,0.50%,F,T)



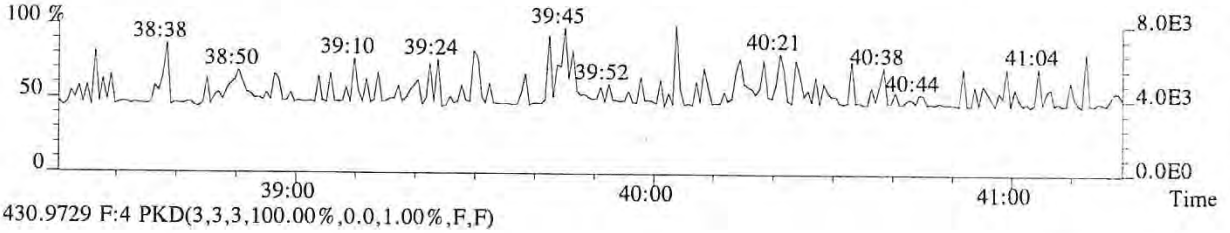
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11848.0,0.50%,F,T)



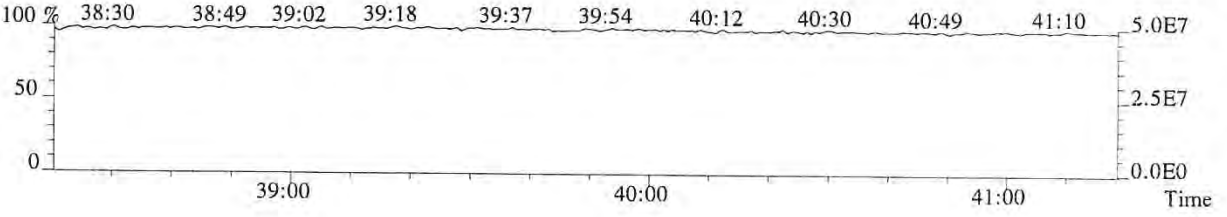
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5768.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

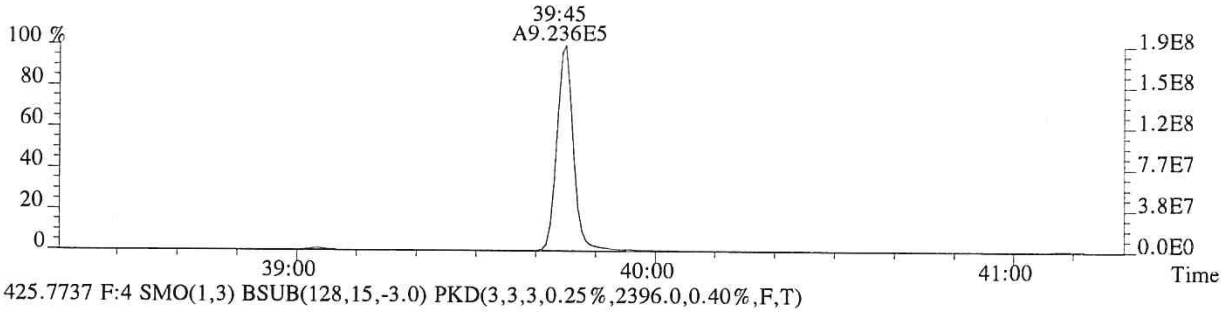


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

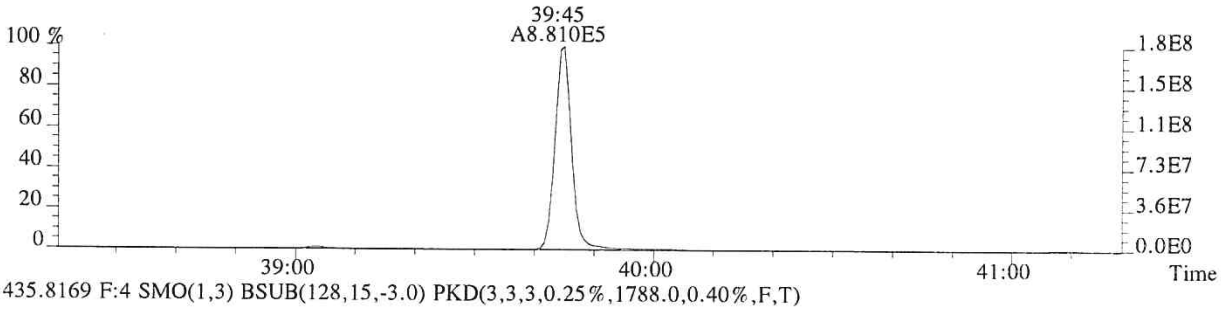


060741

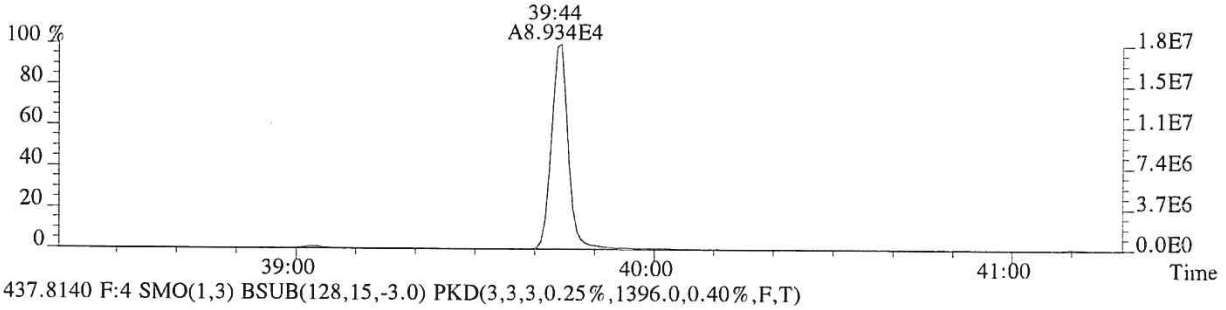
File:P513855 #1-268 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4156.0,0.40%,F,T)



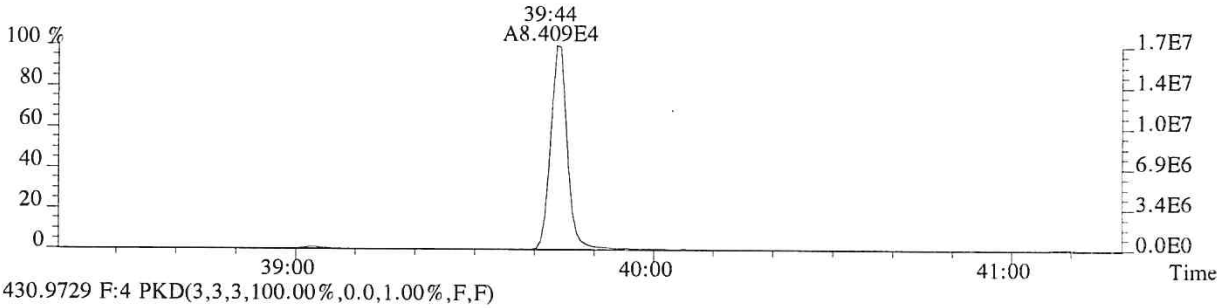
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2396.0,0.40%,F,T)



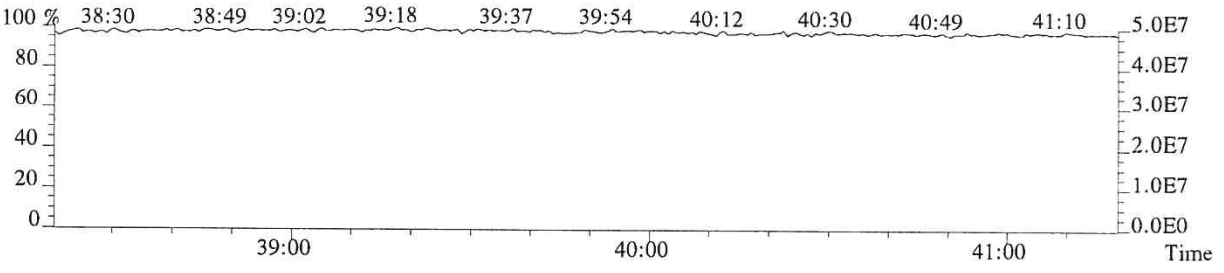
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1788.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1396.0,0.40%,F,T)

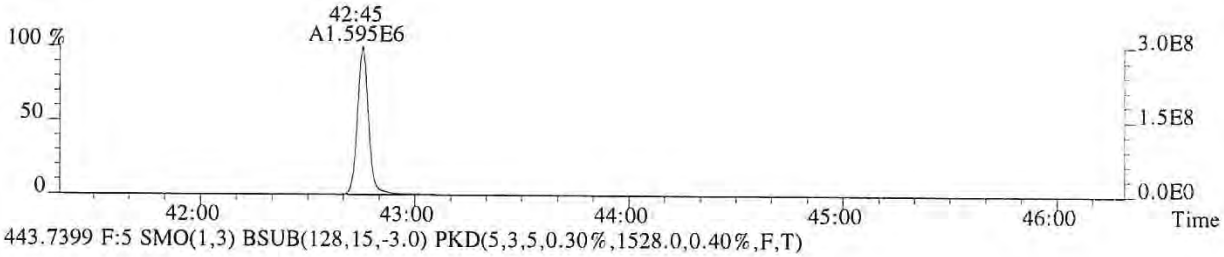


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

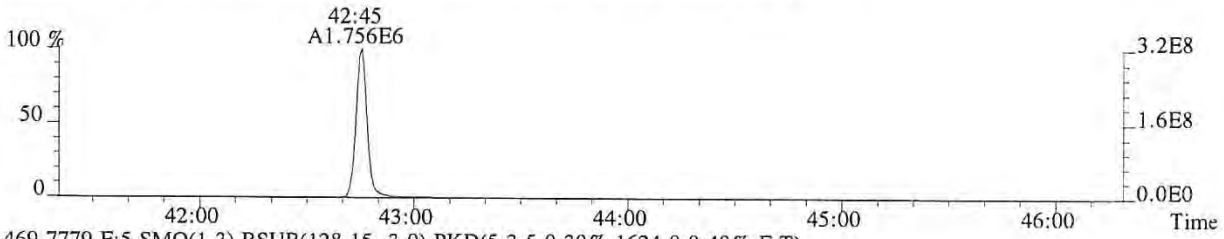


060742

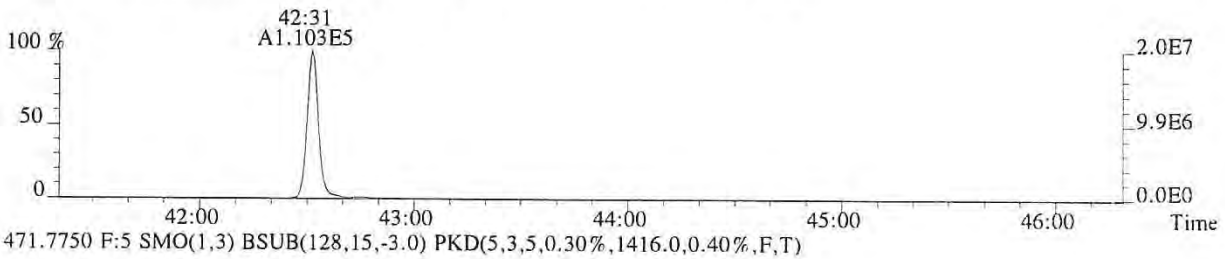
File:P513855 #1-448 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,668.0,0.40%,F,T)



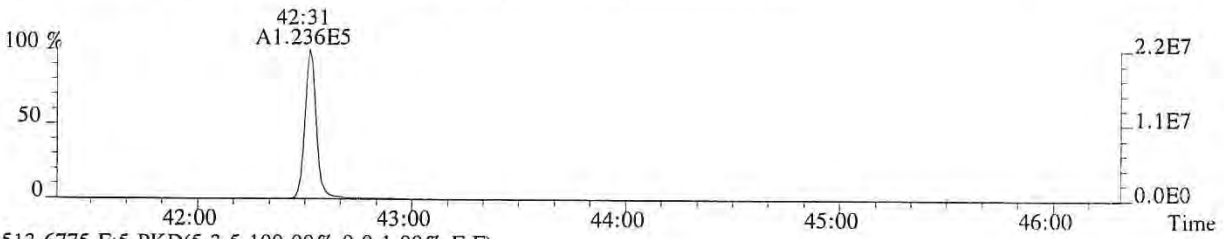
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1528.0,0.40%,F,T)



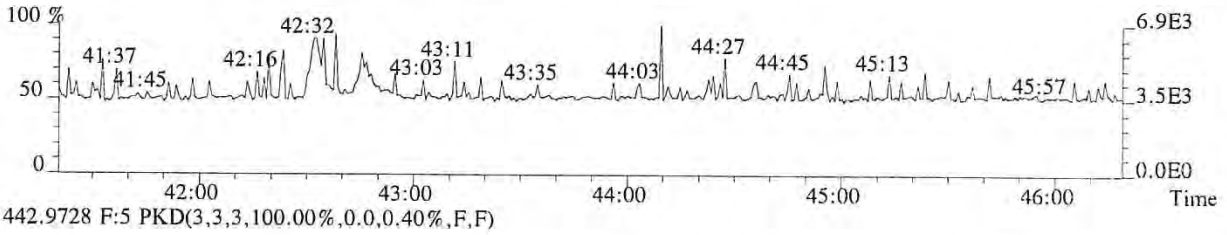
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1624.0,0.40%,F,T)



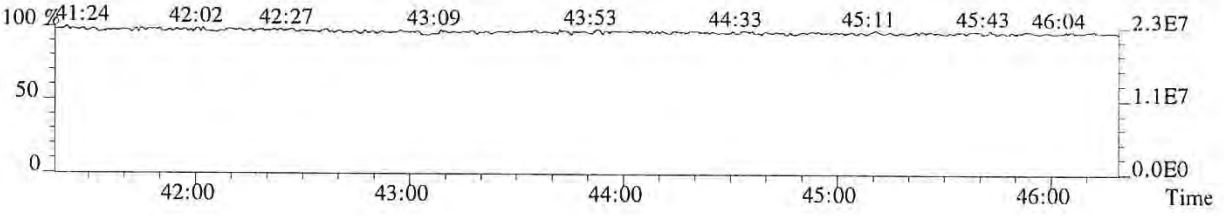
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1416.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

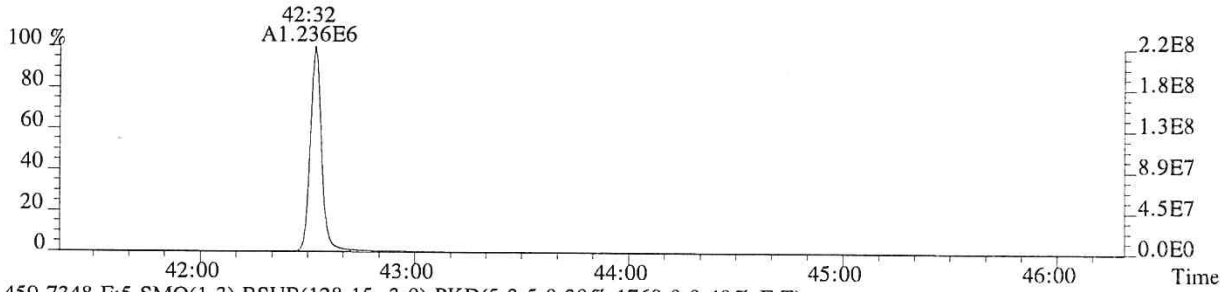


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

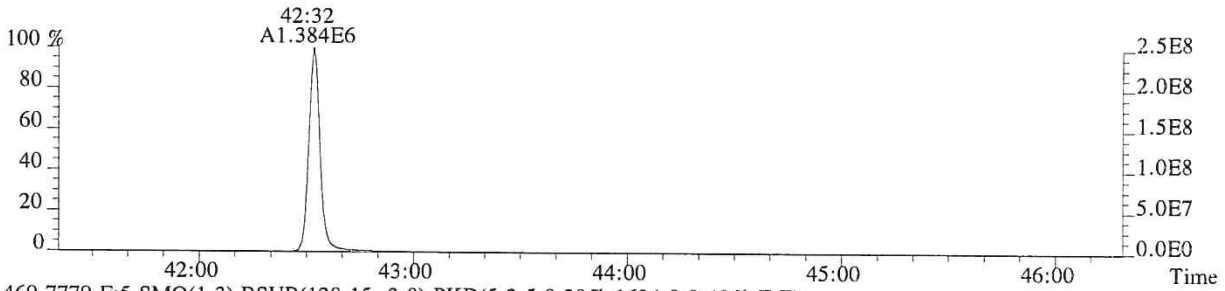


060743

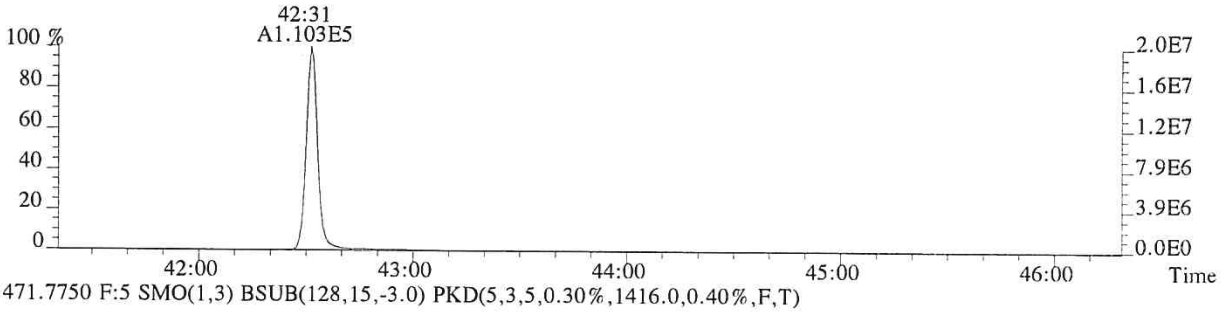
File:P513855 #1-448 Acq:24-JAN-2018 17:43:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:185657
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,192.0,0.40%,F,T)



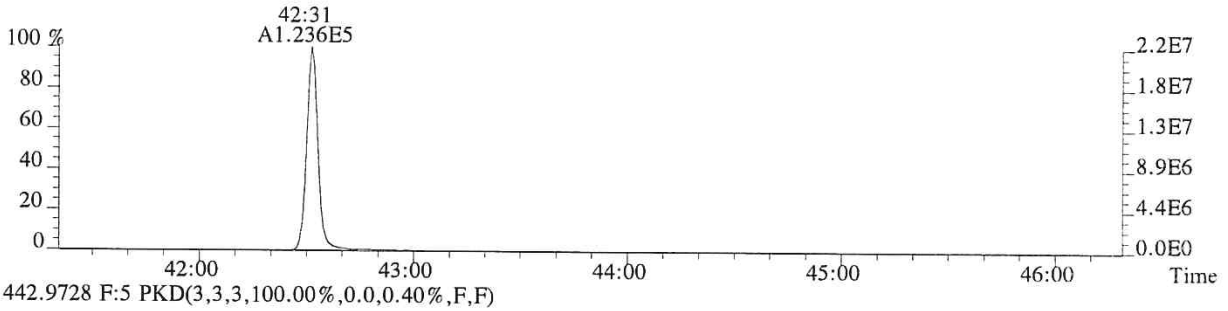
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1768.0,0.40%,F,T)



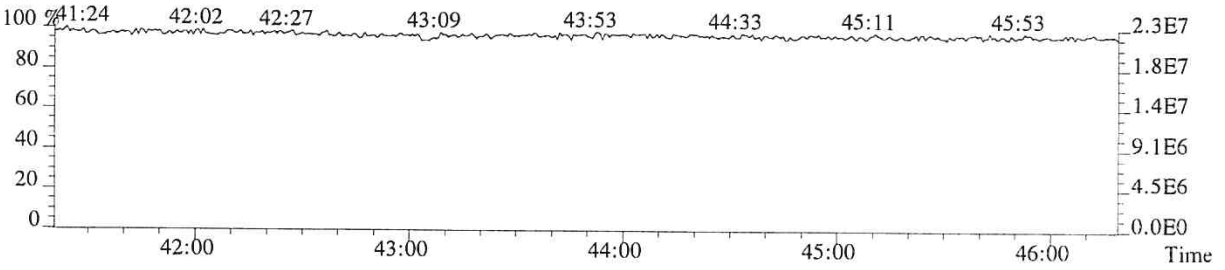
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1624.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1416.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060744

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P513857 Analysis Date: 24-JAN-18 Time: 19:21:06

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.76	0.65-0.89	9.9	7.8 - 12.9	-0.8
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	50	39 - 65	0.9
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	50	39 - 64	0.2
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	50	39 - 64	0.8
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	50	41 - 61	-0.7
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	51	43 - 58	1.6
OCDD	M+2/M+4	0.89	0.76-1.02	101	79 - 126	1.5
2,3,7,8-TCDF	M/M+2	0.71	0.65-0.89	10.2	8.4 - 12.0	2.1
1,2,3,7,8-PeCDF	M+2/M+4	1.51	1.32-1.78	51	41 - 60	2.7
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.32-1.78	50	41 - 61	0.8
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	52	45 - 56	4.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	50	44 - 57	-0.1
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05-1.43	51	45 - 56	2.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	50	44 - 57	0.8
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.00	0.88-1.20	50	45 - 55	0.3
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.00	0.88-1.20	50	43 - 58	0.1
OCDF	M+2/M+4	0.89	0.76-1.02	100	63 - 159	0.0

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 01/24/18

Instrument ID: E-HRMS-07 GC Column ID: DB-5MSUI

VER Data Filename: P513857 Analysis Date: 24-JAN-18 Time: 19:21:06

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	98	82 - 121	-1.7
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32-1.78	92	62 - 160	-8.5
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	101	85 - 117	1.4
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	103	85 - 118	2.7
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	113	72 - 138	13.3
13C-OCDD	M+2/M+4	0.89	0.76-1.02	253	96 - 415	26.3
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	94	71 - 140	-6.2
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	94	76 - 130	-6.3
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	94	77 - 130	-6.4
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	97	76 - 131	-2.6
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	102	70 - 143	1.7
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	104	74 - 135	3.6
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	105	73 - 137	4.9
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	112	78 - 129	11.6
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	116	77 - 129	16.1
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				10.1	7.8 - 12.7	0.9

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
75080

Run #7 Filename P513857 Samp: 1 Inj: 1 Acquired: 24-JAN-18 19:21:06
Processed: 25-JAN-18 08:41:26 Sample ID: 2ND SOURCE

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:48	5.152e+03	7.223e+03	0.71	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	32:48	3.916e+04	2.586e+04	1.51	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	33:41	3.607e+04	2.366e+04	1.52	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	36:16	3.202e+04	2.632e+04	1.22	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	36:23	3.416e+04	2.839e+04	1.20	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	36:52	3.150e+04	2.633e+04	1.20	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	37:37	2.836e+04	2.314e+04	1.23	yes	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	38:49	2.874e+04	2.862e+04	1.00	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	40:14	2.352e+04	2.346e+04	1.00	yes	no	1.258
10	Unk	OCDF	42:45	3.688e+04	4.148e+04	0.89	yes	no	1.359
11	Unk	2,3,7,8-TCDD	29:32	3.845e+03	5.032e+03	0.76	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	33:57	2.377e+04	1.531e+04	1.55	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	36:59	2.145e+04	1.680e+04	1.28	yes	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	37:05	2.240e+04	1.756e+04	1.28	yes	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	37:19	2.219e+04	1.741e+04	1.27	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	39:44	2.034e+04	1.933e+04	1.05	yes	no	1.025
17	Unk	OCDD	42:31	3.083e+04	3.462e+04	0.89	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	28:46	5.681e+04	7.189e+04	0.79	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	32:47	7.678e+04	4.833e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	33:40	7.550e+04	4.814e+04	1.57	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	36:15	3.216e+04	6.216e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	36:22	3.808e+04	7.348e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	36:51	3.589e+04	6.747e+04	0.53	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	37:36	3.054e+04	5.771e+04	0.53	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:48	2.616e+04	5.845e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:14	2.287e+04	5.181e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	29:30	3.654e+04	4.587e+04	0.80	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	33:56	4.972e+04	3.125e+04	1.59	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	36:59	4.147e+04	3.207e+04	1.29	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	37:04	4.264e+04	3.379e+04	1.26	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:44	3.921e+04	3.703e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	42:31	5.445e+04	6.090e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	28:57	4.052e+04	5.019e+04	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:18	4.325e+04	3.518e+04	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:32	9.276e+03				no	1.014

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
75080

Run #7 Filename P513857 Samp: 1 Inj: 1 Acquired: 24-JAN-18 19:21:06
Processed: 25-JAN-18 08:41:26 LAB. ID: 2ND SOURCE

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.04e+06	1.03e+03	1.0e+03	1.42e+06	2.00e+03	7.1e+02
2	1,2,3,7,8-PeCDF	7.88e+06	8.44e+02	9.3e+03	5.19e+06	1.52e+03	3.4e+03
3	2,3,4,7,8-PeCDF	7.53e+06	8.44e+02	8.9e+03	4.93e+06	1.52e+03	3.2e+03
4	1,2,3,4,7,8-HxCDF	7.21e+06	1.53e+03	4.7e+03	5.89e+06	1.36e+03	4.3e+03
5	1,2,3,6,7,8-HxCDF	7.34e+06	1.53e+03	4.8e+03	6.08e+06	1.36e+03	4.5e+03
6	2,3,4,6,7,8-HxCDF	7.02e+06	1.53e+03	4.6e+03	5.88e+06	1.36e+03	4.3e+03
7	1,2,3,7,8,9-HxCDF	6.10e+06	1.53e+03	4.0e+03	4.95e+06	1.36e+03	3.6e+03
8	1,2,3,4,6,7,8-HpCDF	6.16e+06	5.00e+03	1.2e+03	6.13e+06	6.59e+03	9.3e+02
9	1,2,3,4,7,8,9-HpCDF	4.58e+06	5.00e+03	9.1e+02	4.45e+06	6.59e+03	6.7e+02
10	OCDF	6.54e+06	1.44e+02	4.5e+04	7.12e+06	8.36e+02	8.5e+03
11	2,3,7,8-TCDD	8.13e+05	1.92e+03	4.2e+02	1.05e+06	1.26e+03	8.3e+02
12	1,2,3,7,8-PeCDD	4.95e+06	8.52e+02	5.8e+03	3.18e+06	2.84e+02	1.1e+04
13	1,2,3,4,7,8-HxCDD	4.98e+06	7.64e+02	6.5e+03	3.93e+06	4.12e+02	9.5e+03
14	1,2,3,6,7,8-HxCDD	4.78e+06	7.64e+02	6.3e+03	3.77e+06	4.12e+02	9.2e+03
15	1,2,3,7,8,9-HxCDD	4.67e+06	7.64e+02	6.1e+03	3.64e+06	4.12e+02	8.8e+03
16	1,2,3,4,6,7,8-HpCDD	4.20e+06	1.17e+03	3.6e+03	3.99e+06	7.20e+01	5.5e+04
17	OCDD	5.25e+06	1.60e+02	3.3e+04	5.90e+06	1.22e+03	4.8e+03
18	13C-2,3,7,8-TCDF	1.11e+07	9.00e+03	1.2e+03	1.40e+07	3.76e+03	3.7e+03
19	13C-1,2,3,7,8-PeCDF	1.52e+07	6.36e+02	2.4e+04	9.62e+06	1.34e+03	7.2e+03
20	13C-2,3,4,7,8-PeCDF	1.56e+07	6.36e+02	2.5e+04	9.99e+06	1.34e+03	7.5e+03
21	13C-1,2,3,4,7,8-HxCDF	7.22e+06	7.60e+02	9.5e+03	1.40e+07	1.60e+03	8.8e+03
22	13C-1,2,3,6,7,8-HxCDF	8.16e+06	7.60e+02	1.1e+04	1.57e+07	1.60e+03	9.8e+03
23	13C-2,3,4,6,7,8-HxCDF	7.92e+06	7.60e+02	1.0e+04	1.49e+07	1.60e+03	9.3e+03
24	13C-1,2,3,7,8,9-HxCDF	6.41e+06	7.60e+02	8.4e+03	1.22e+07	1.60e+03	7.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.67e+06	2.84e+03	2.0e+03	1.26e+07	6.70e+03	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.44e+06	2.84e+03	1.6e+03	1.00e+07	6.70e+03	1.5e+03
27	13C-2,3,7,8-TCDD	7.51e+06	5.77e+03	1.3e+03	9.42e+06	2.25e+03	4.2e+03
28	13C-1,2,3,7,8-PeCDD	1.01e+07	1.06e+03	9.5e+03	6.31e+06	5.88e+02	1.1e+04
29	13C-1,2,3,4,7,8-HxCDD	9.57e+06	2.66e+03	3.6e+03	7.40e+06	1.57e+03	4.7e+03
30	13C-1,2,3,6,7,8-HxCDD	9.03e+06	2.66e+03	3.4e+03	7.14e+06	1.57e+03	4.6e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.97e+06	1.17e+03	6.8e+03	7.51e+06	7.00e+02	1.1e+04
32	13C-OCDD	9.30e+06	2.60e+02	3.6e+04	1.03e+07	4.00e+02	2.6e+04
33	13C-1,2,3,4-TCDD	8.25e+06	5.77e+03	1.4e+03	1.02e+07	2.25e+03	4.5e+03
34	13C-1,2,3,7,8,9-HxCDD	9.23e+06	2.66e+03	3.5e+03	7.29e+06	1.57e+03	4.6e+03
35	37Cl-2,3,7,8-TCDD	1.94e+06	1.18e+03	1.6e+03			

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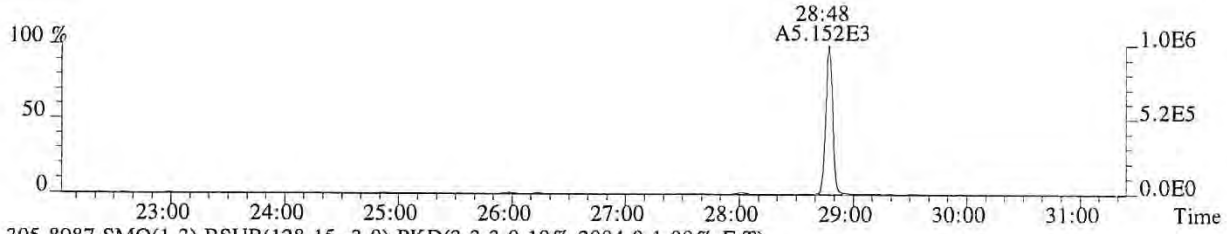
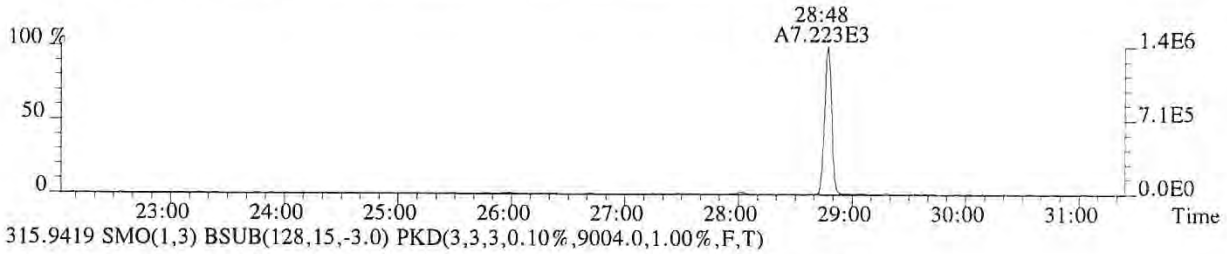
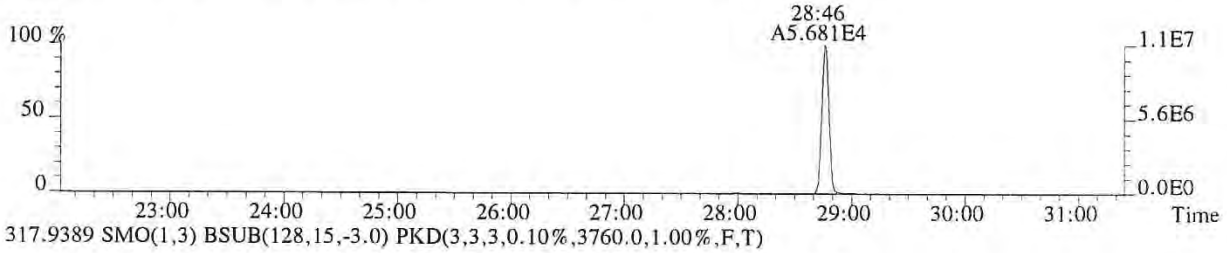
File:P513857 #1-665 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1032.0,1.00%,F,T)



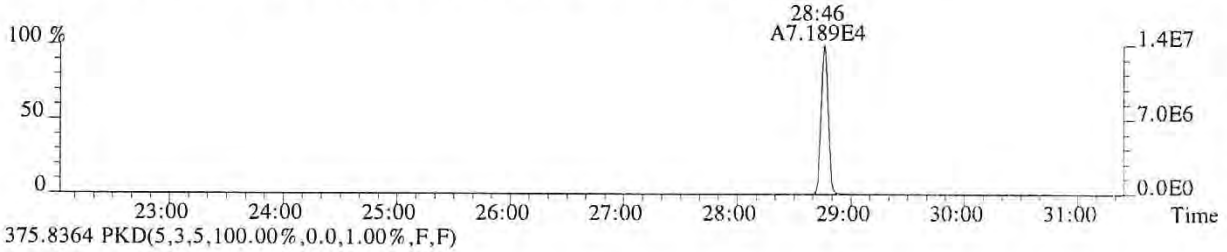
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2004.0,1.00%,F,T)



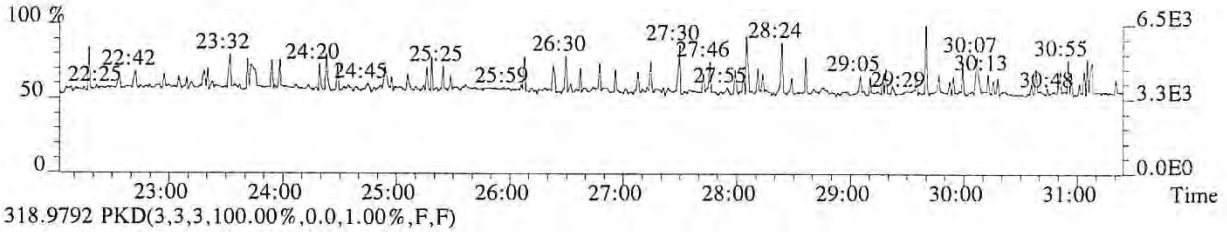
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9004.0,1.00%,F,T)



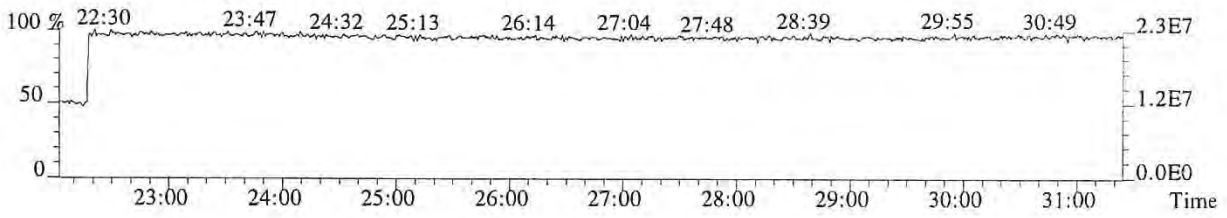
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3760.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

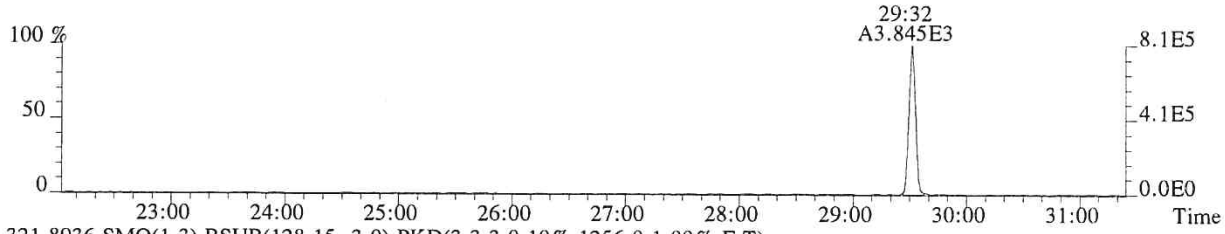


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

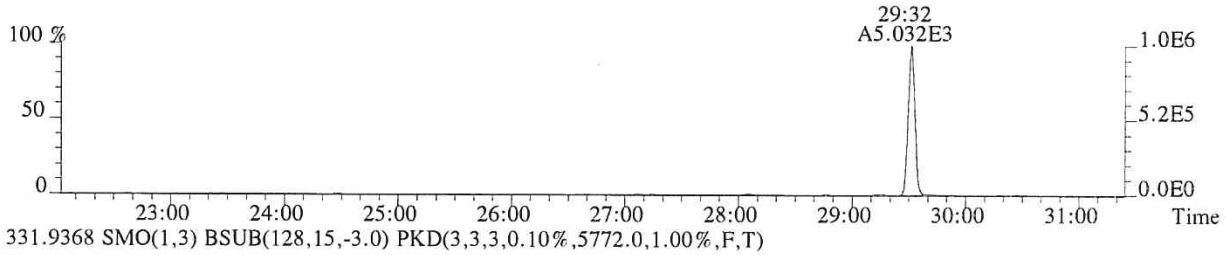


060749

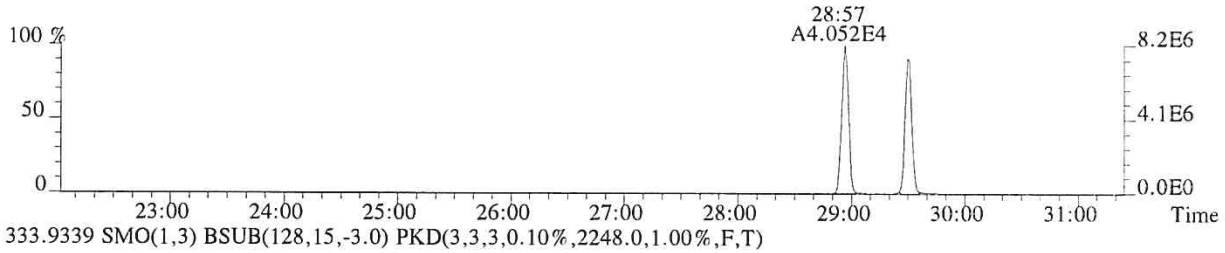
File:P513857 #1-665 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1924.0,1.00%,F,T)



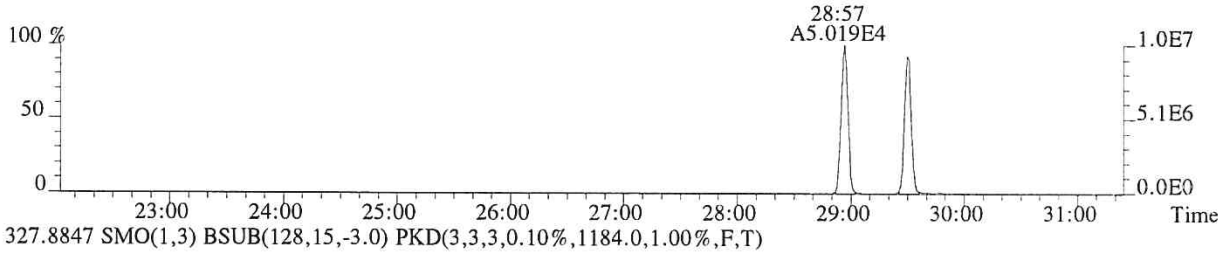
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1256.0,1.00%,F,T)



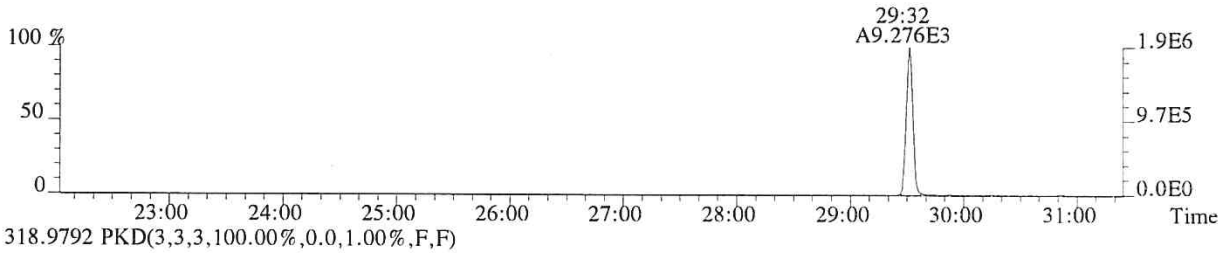
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5772.0,1.00%,F,T)



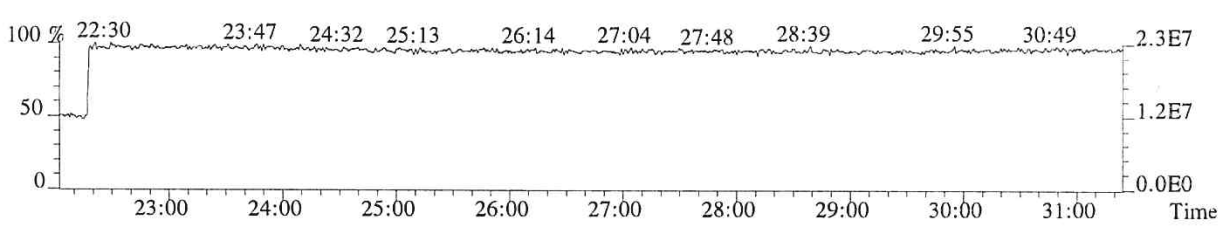
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2248.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1184.0,1.00%,F,T)

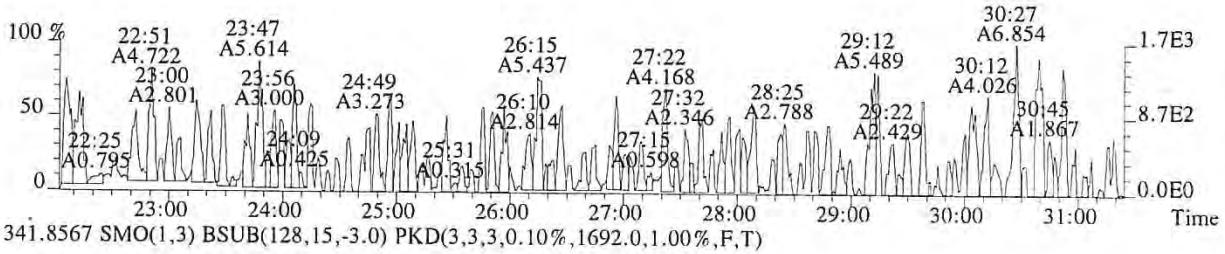


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

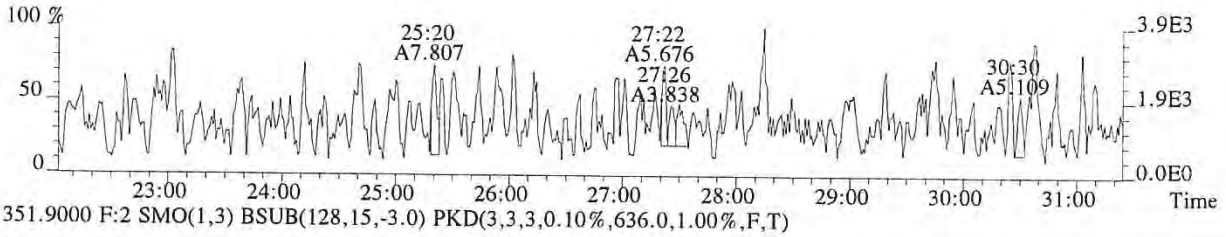


060750

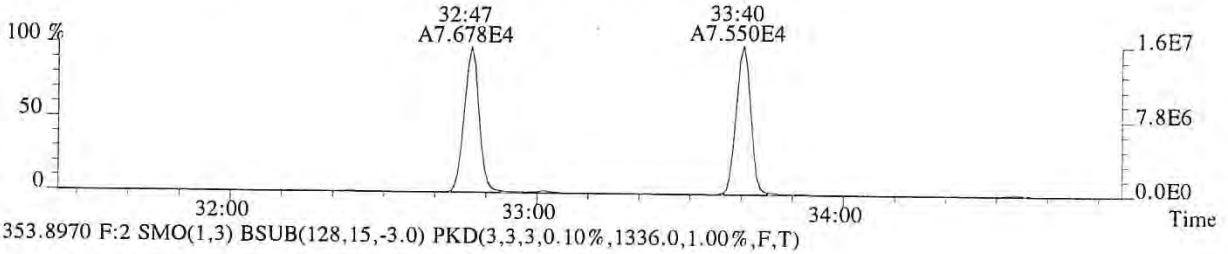
File:P513857 #1-665 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,188.0,1.00%,F,T)



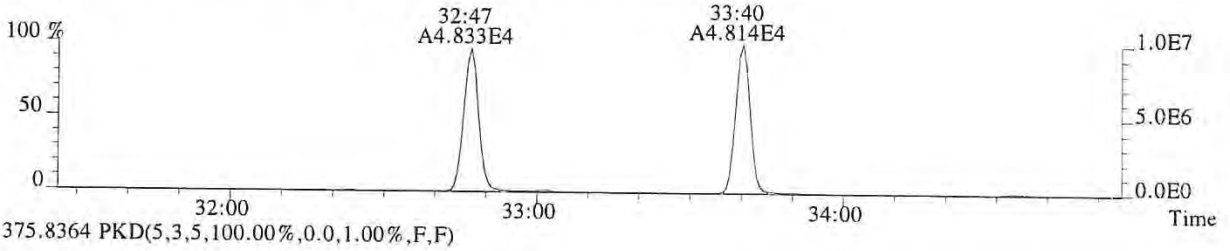
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1692.0,1.00%,F,T)



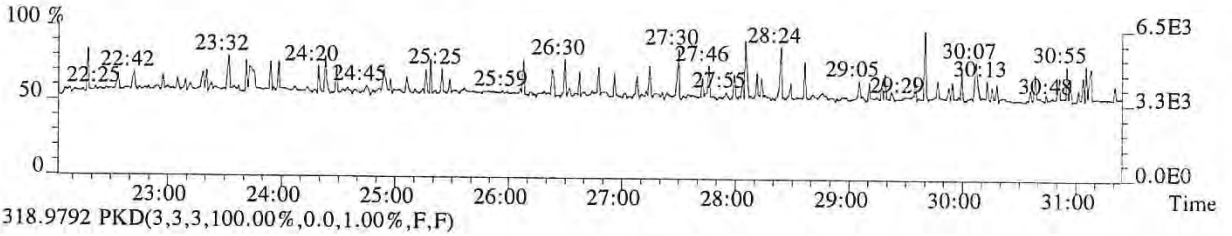
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,636.0,1.00%,F,T)



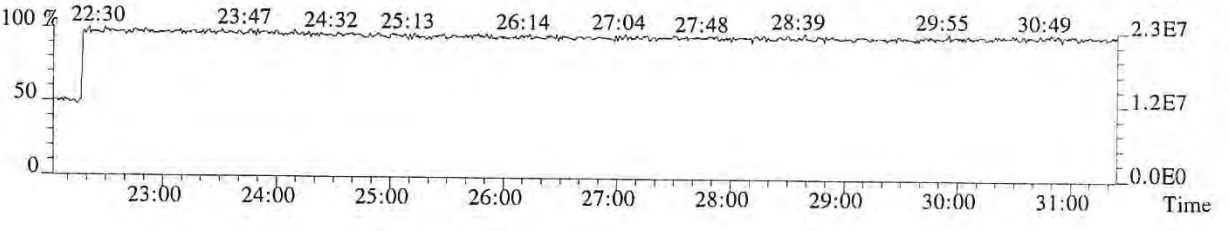
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1336.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

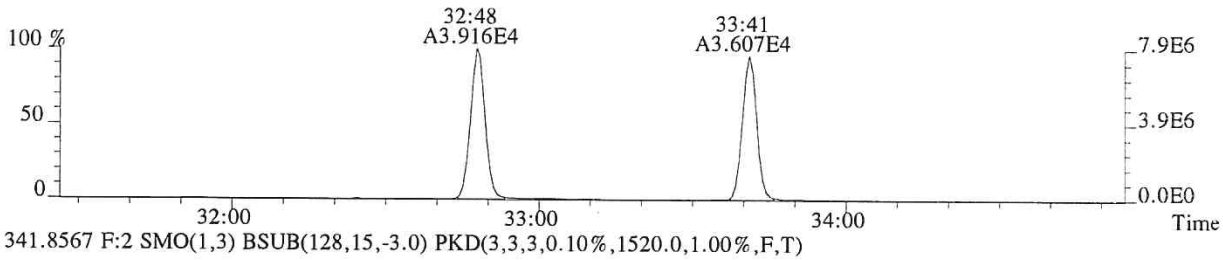


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

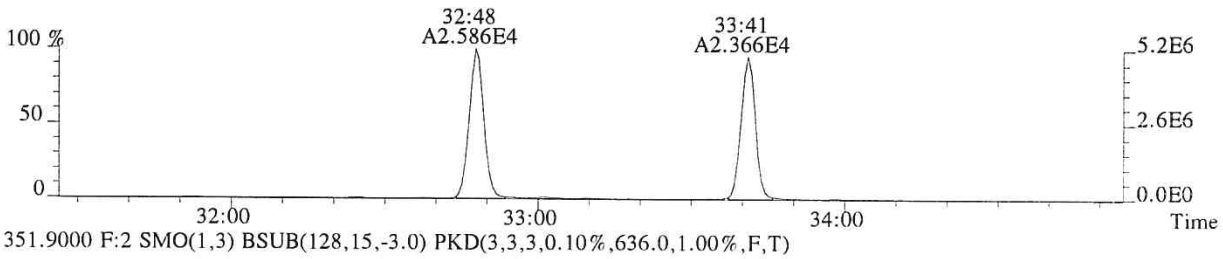


060751

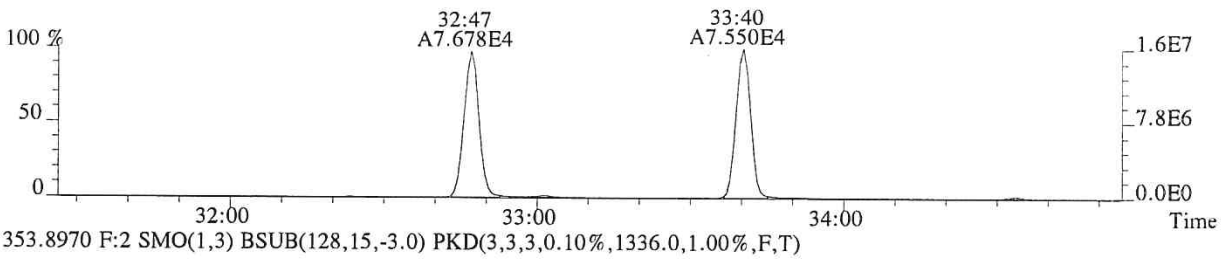
File:P513857 #1-313 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,844.0,1.00%,F,T)



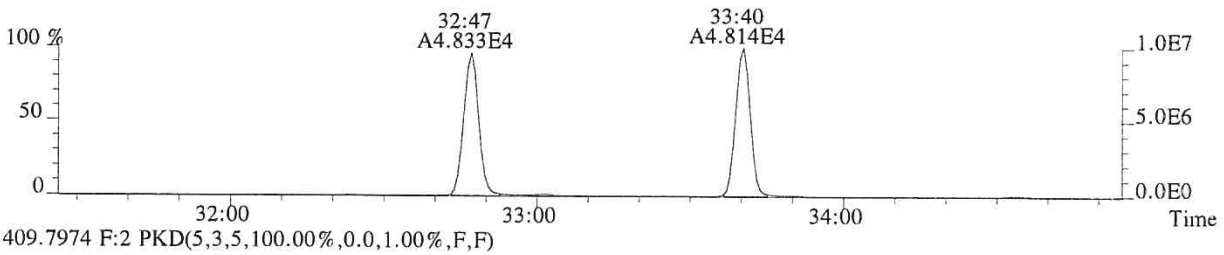
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1520.0,1.00%,F,T)



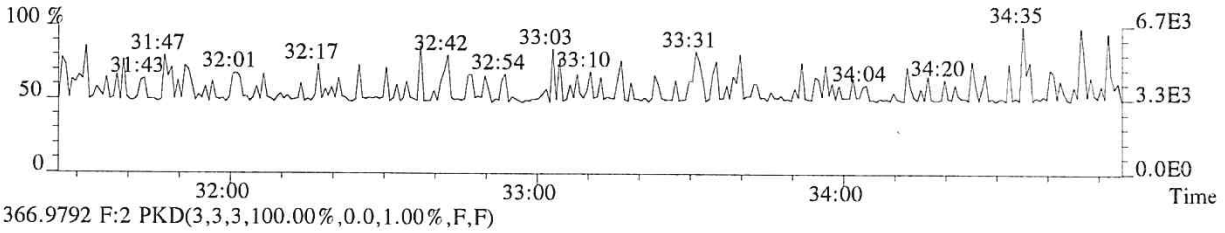
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,636.0,1.00%,F,T)



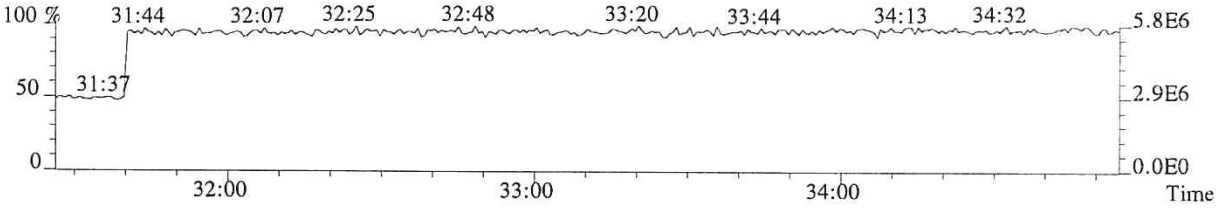
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1336.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

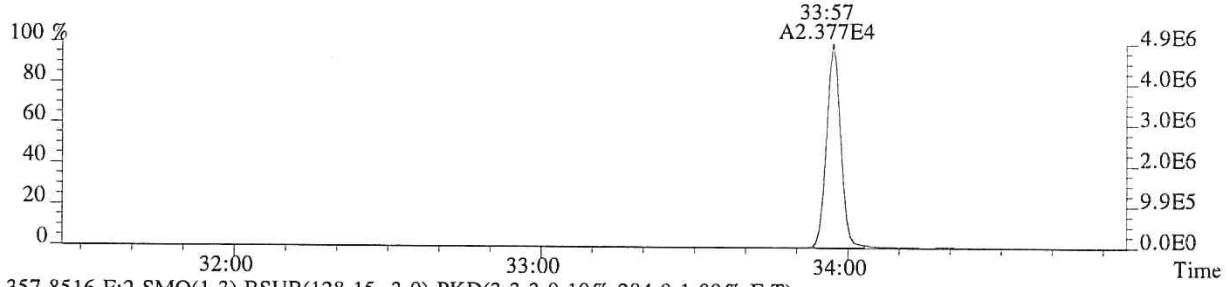


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

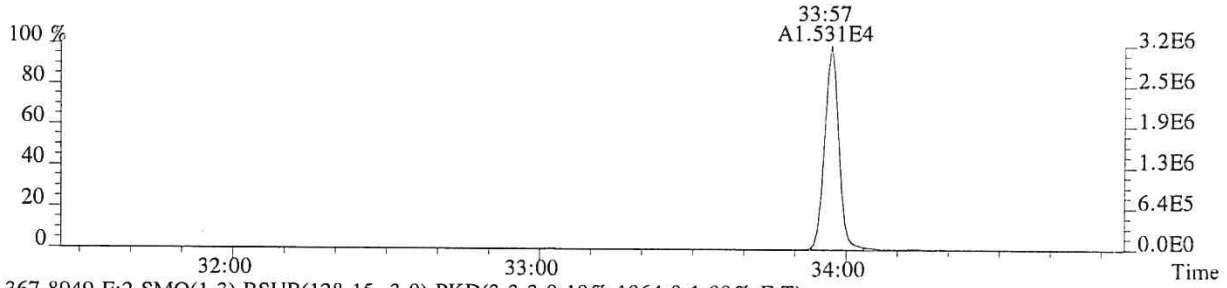


060752

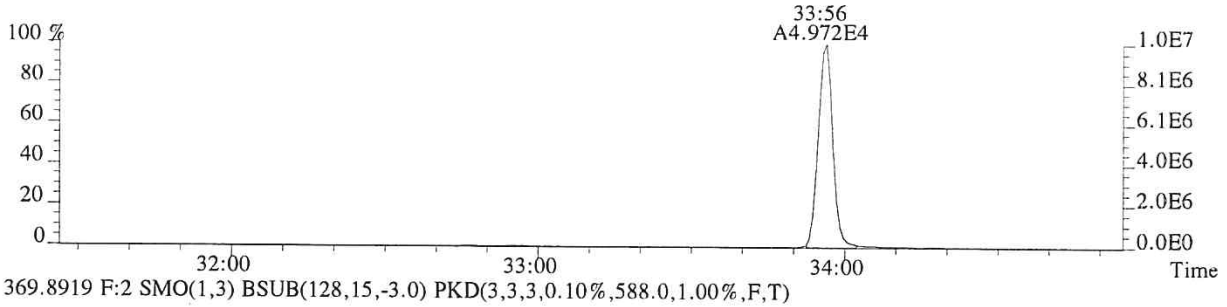
File:P513857 #1-313 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,852.0,1.00%,F,T)



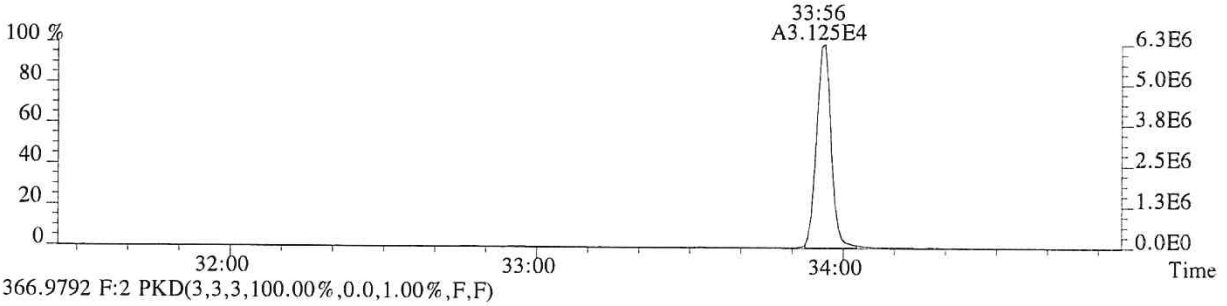
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,284.0,1.00%,F,T)



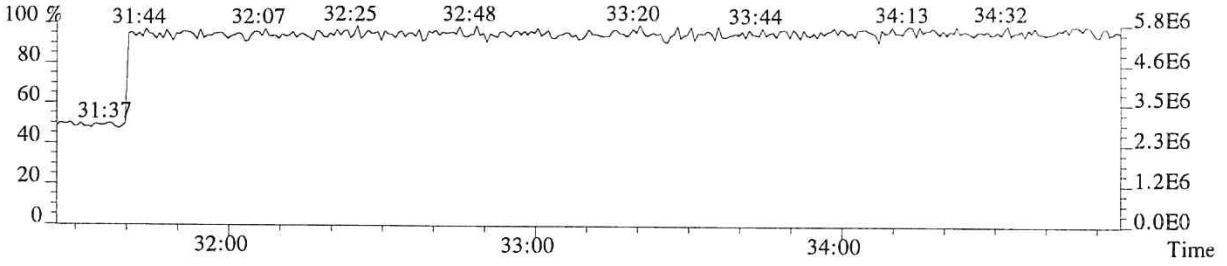
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1064.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,588.0,1.00%,F,T)

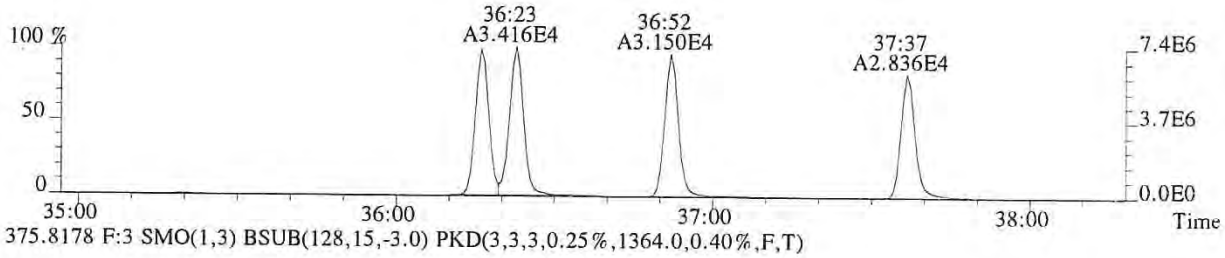


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

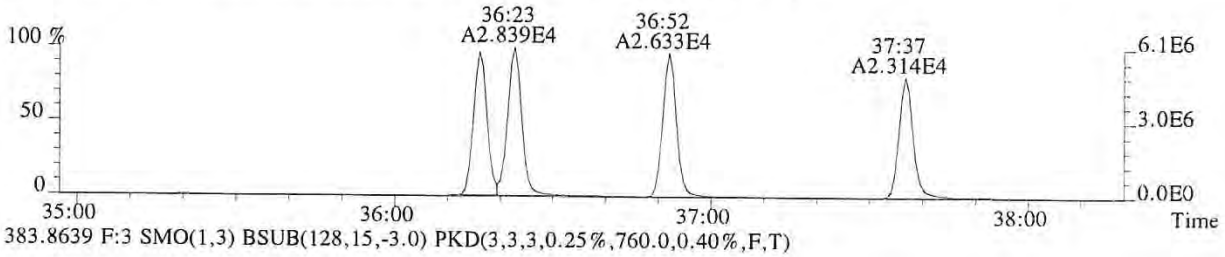


060753

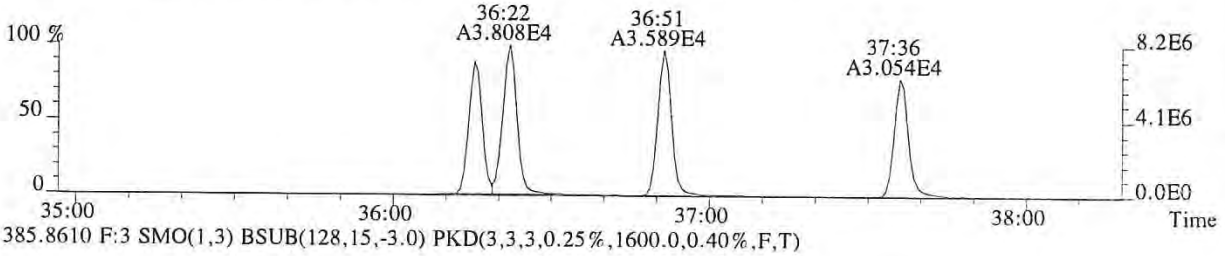
File:P513857 #1-303 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1528.0,0.40%,F,T)



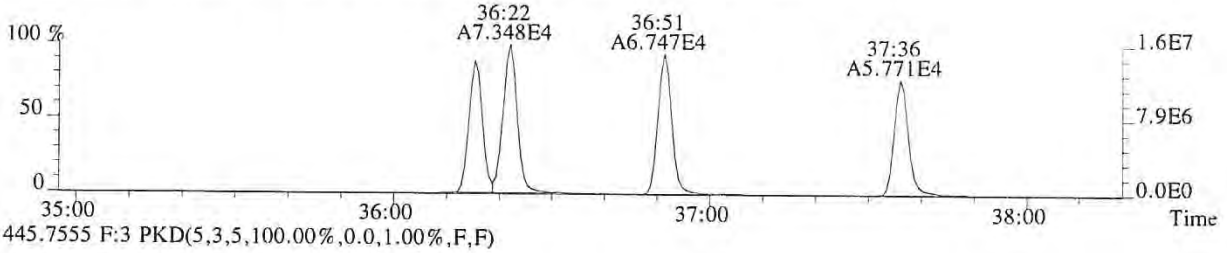
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1364.0,0.40%,F,T)



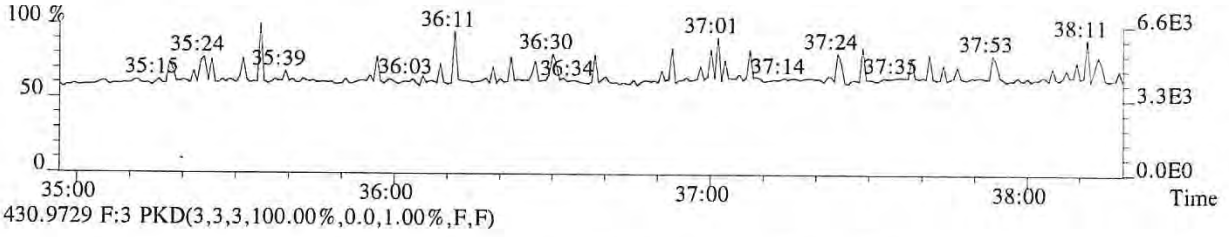
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,760.0,0.40%,F,T)



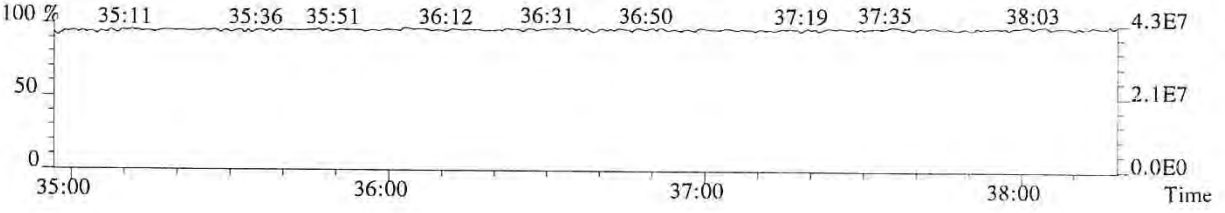
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1600.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

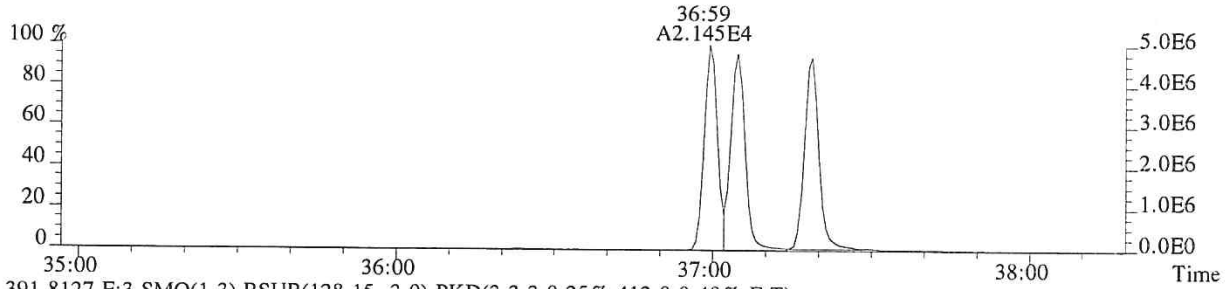


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

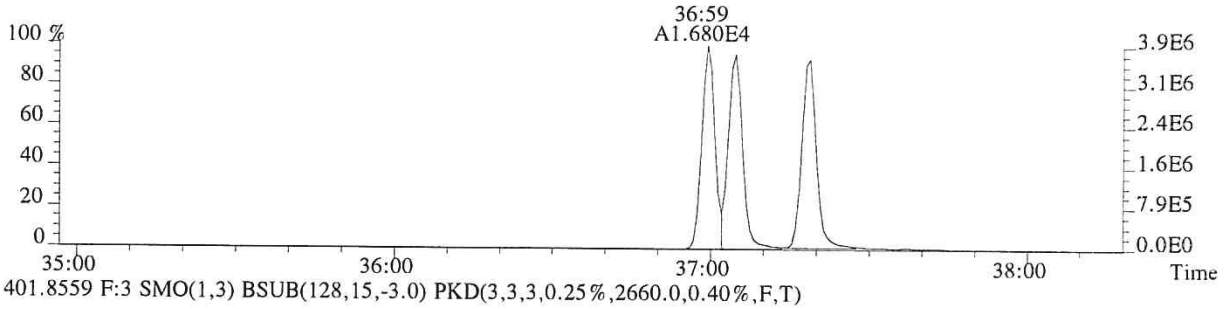


060754

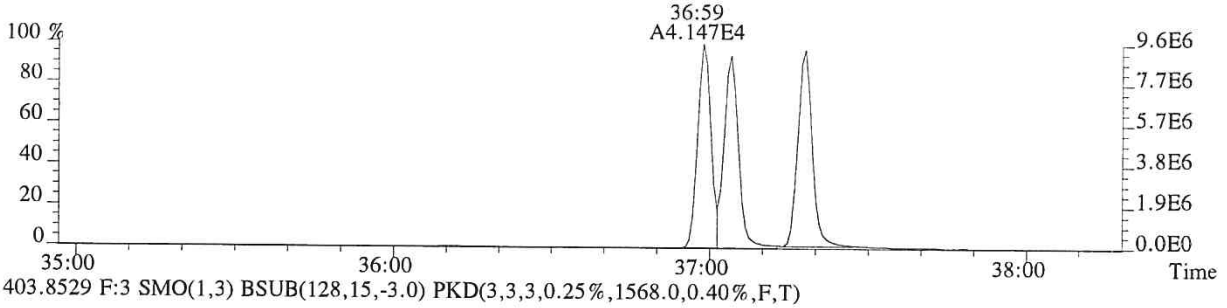
File:P513857 #1-303 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,764.0,0.40%,F,T)



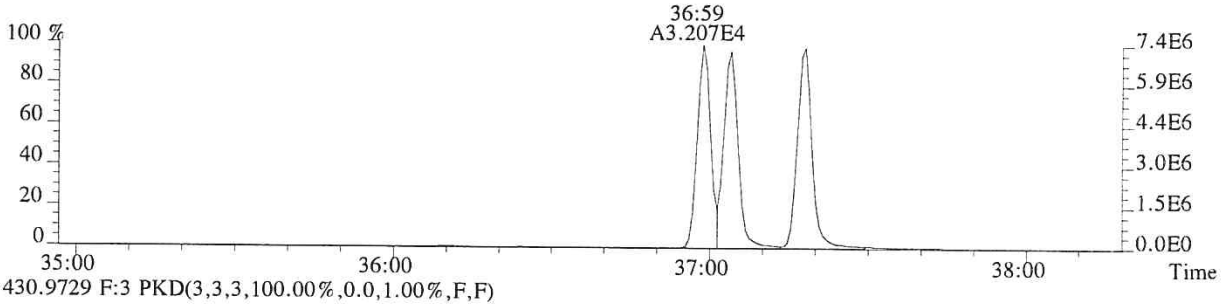
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,412.0,0.40%,F,T)



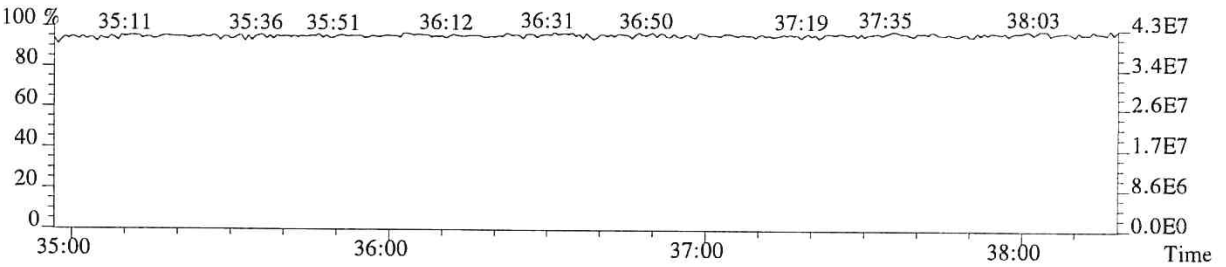
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2660.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1568.0,0.40%,F,T)

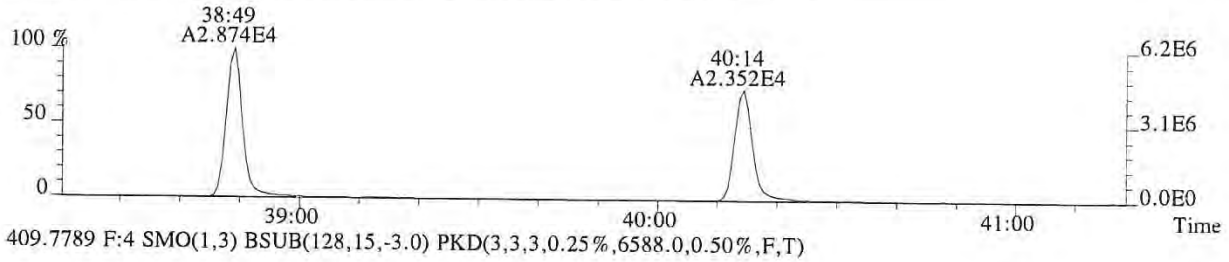


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

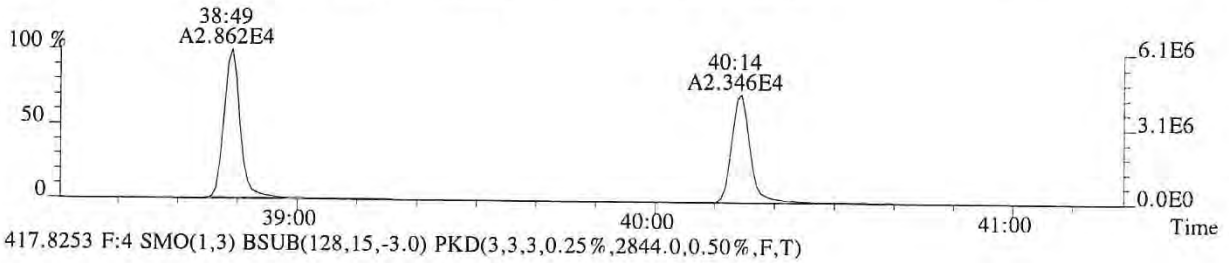


060755

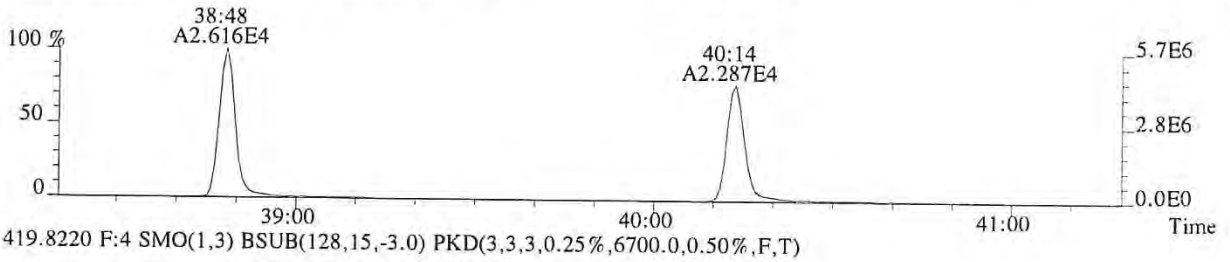
File:P513857 #1-268 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:75080
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5004.0,0.50%,F,T)



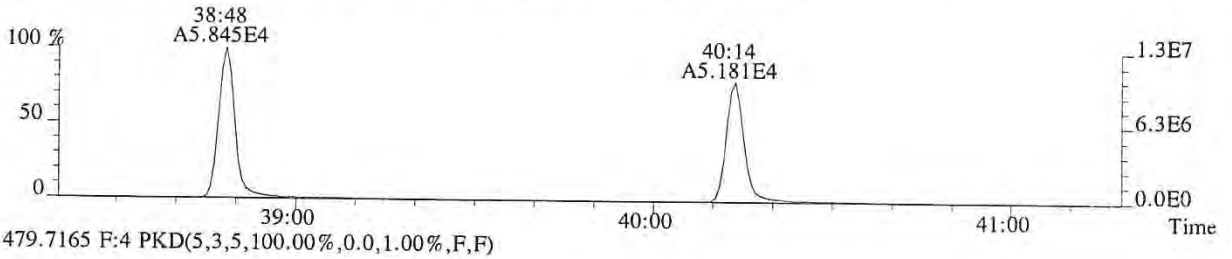
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6588.0,0.50%,F,T)



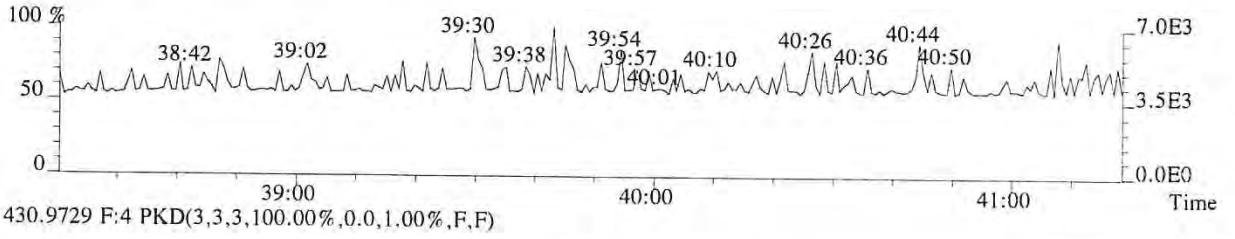
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2844.0,0.50%,F,T)



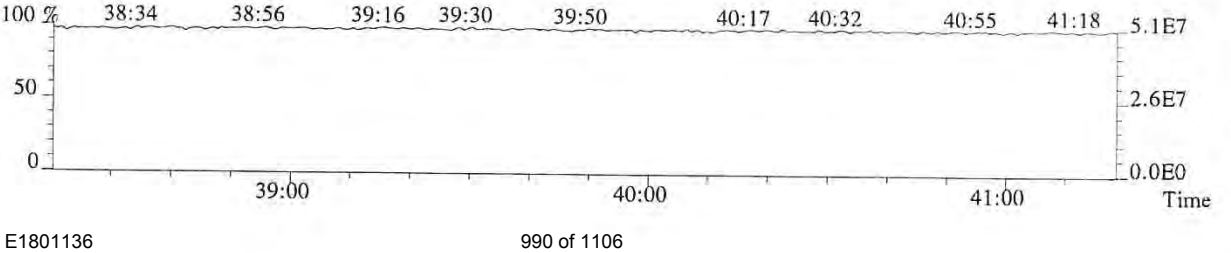
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6700.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

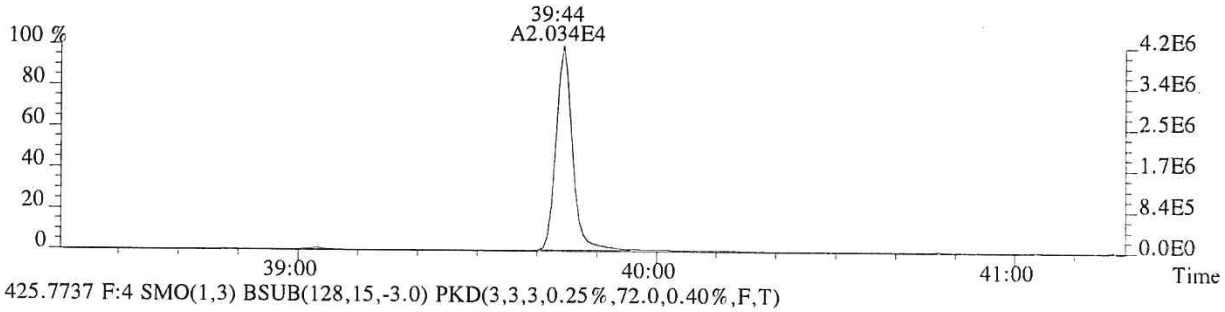


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

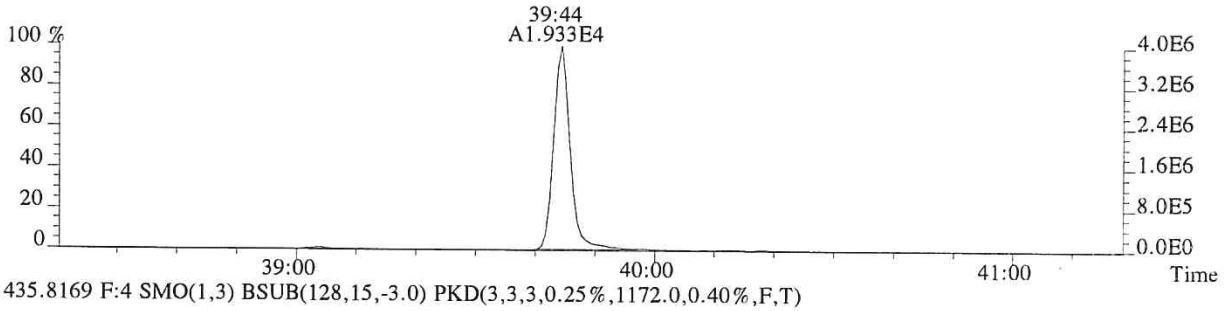


060756

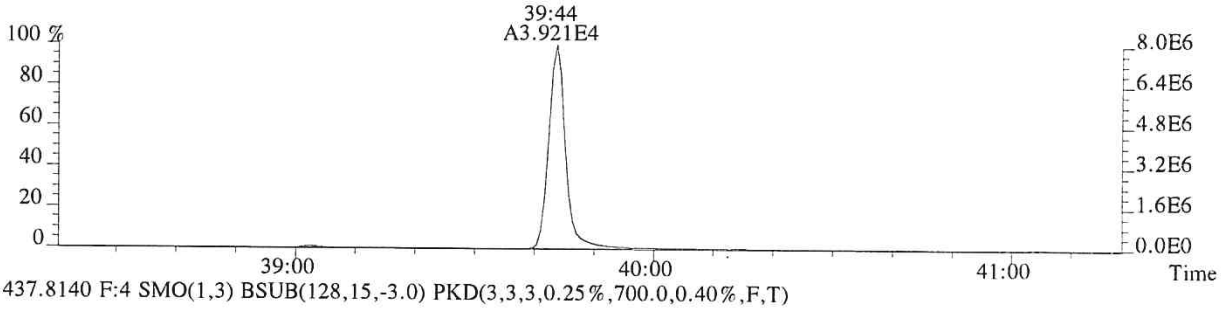
File:P513857 #1-268 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1168.0,0.40%,F,T)



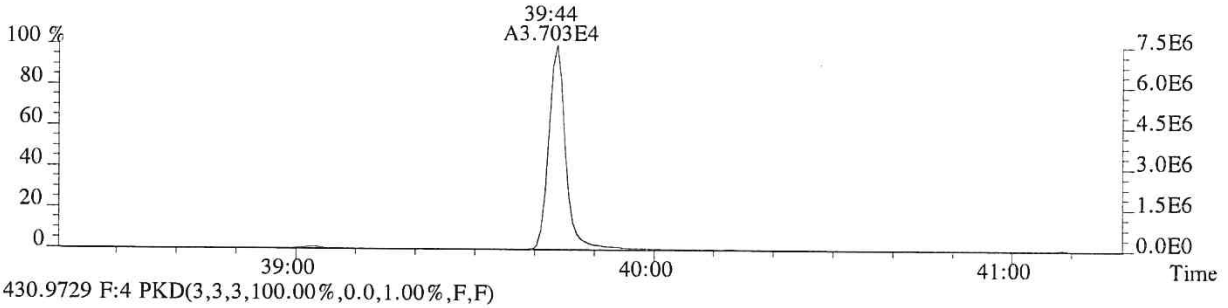
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,72.0,0.40%,F,T)



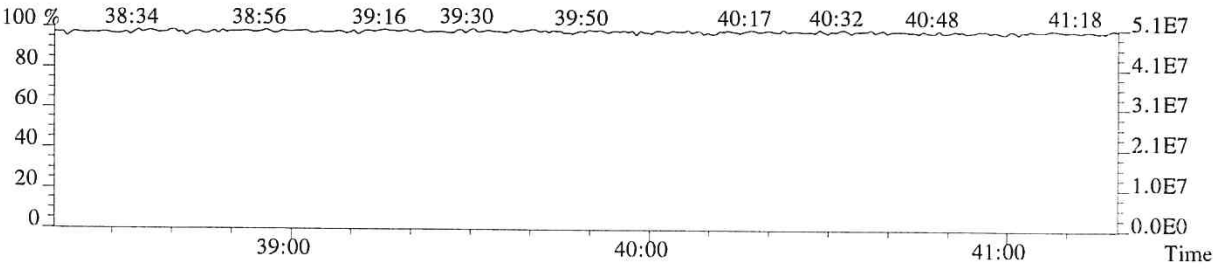
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1172.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,700.0,0.40%,F,T)

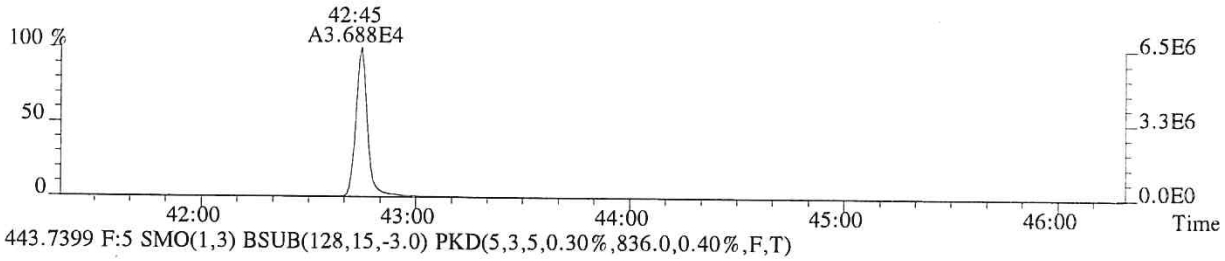


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

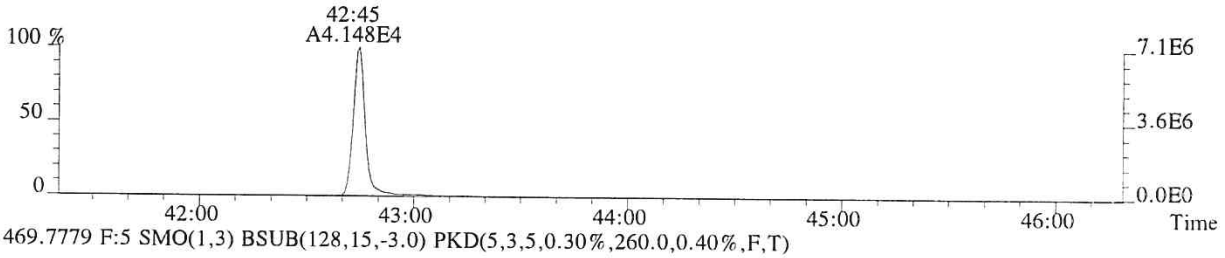


060757

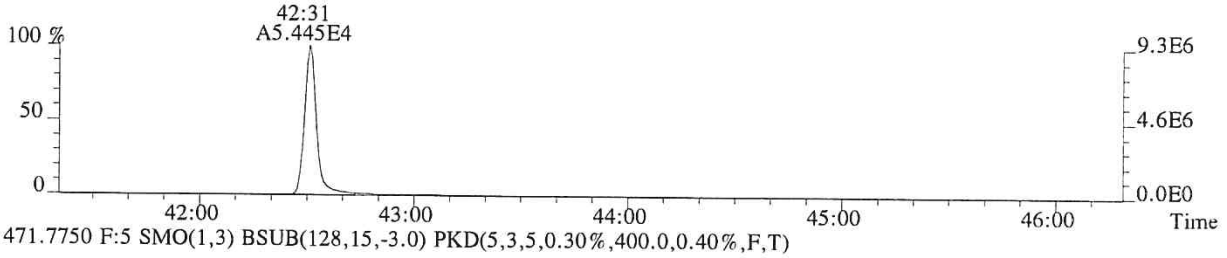
File:P513857 #1-448 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,144.0,0.40%,F,T)



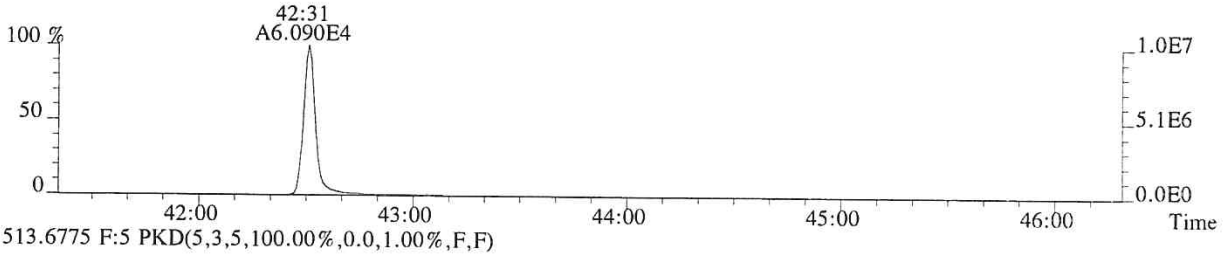
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,836.0,0.40%,F,T)



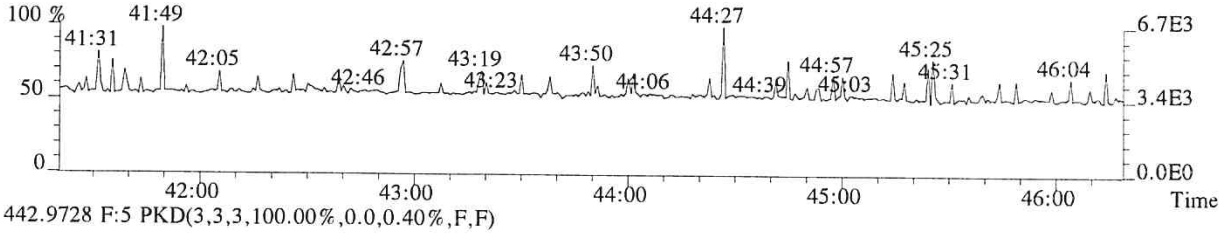
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,260.0,0.40%,F,T)



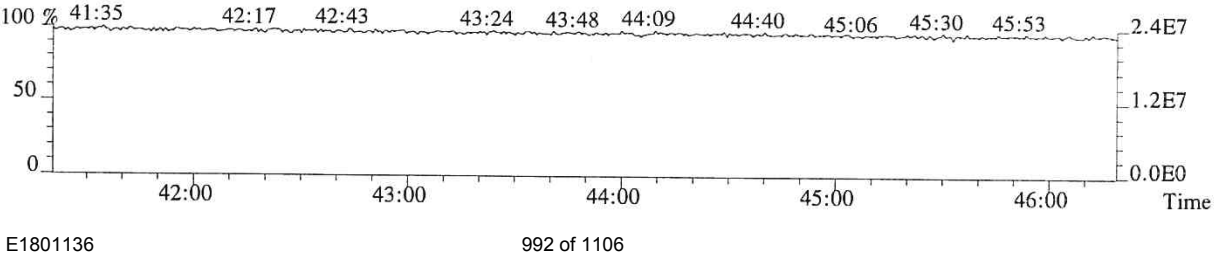
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,400.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

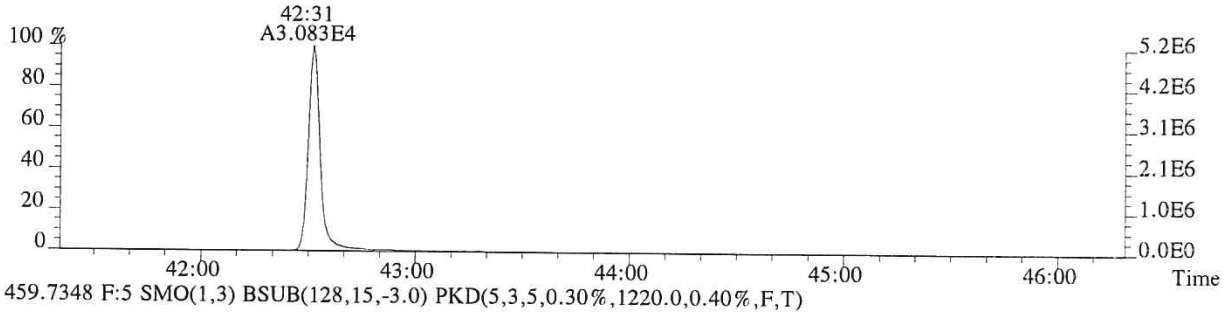


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

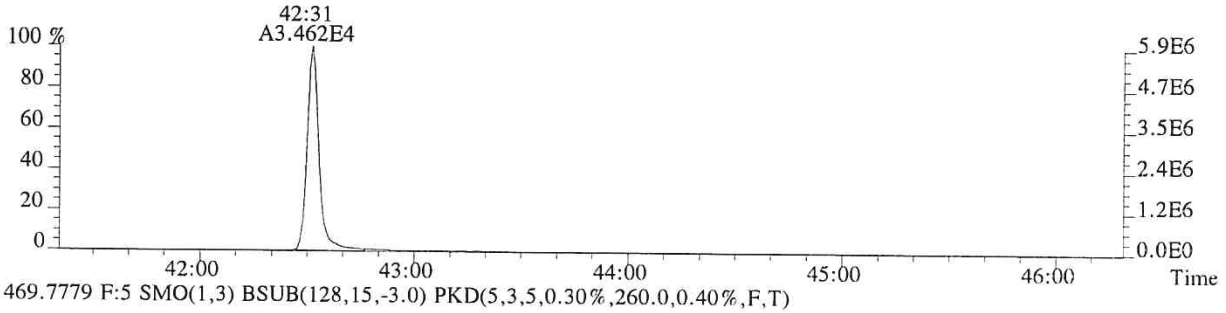


060758

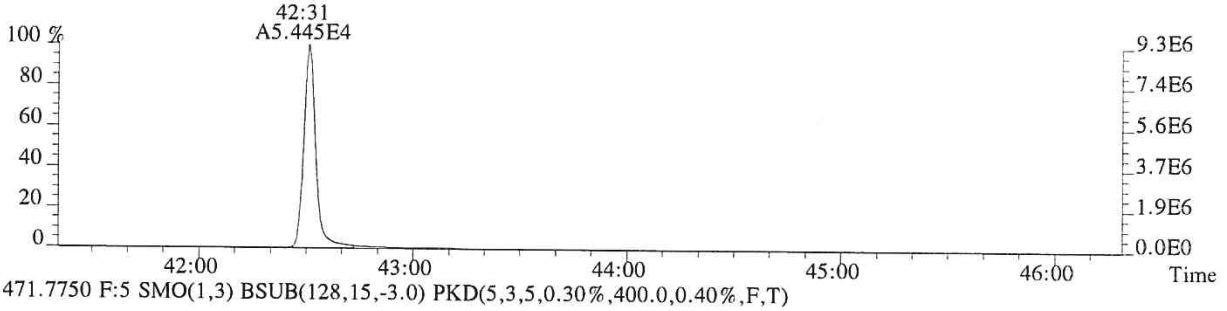
File:P513857 #1-448 Acq:24-JAN-2018 19:21:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:75080
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,160.0,0.40%,F,T)



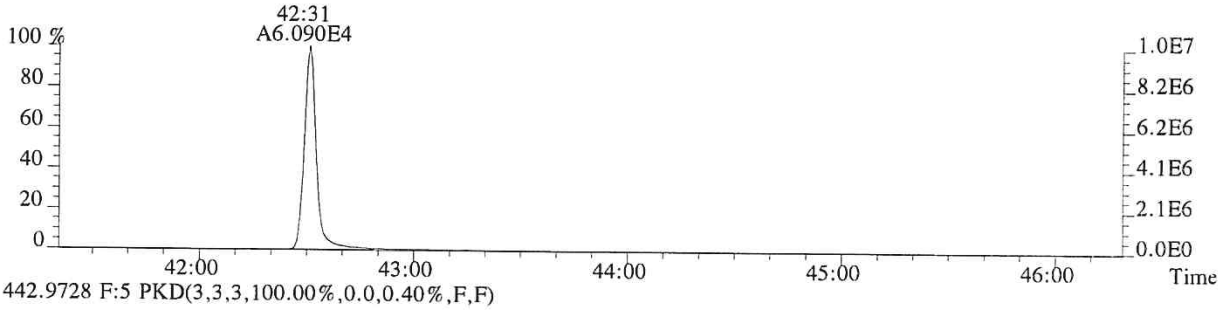
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1220.0,0.40%,F,T)



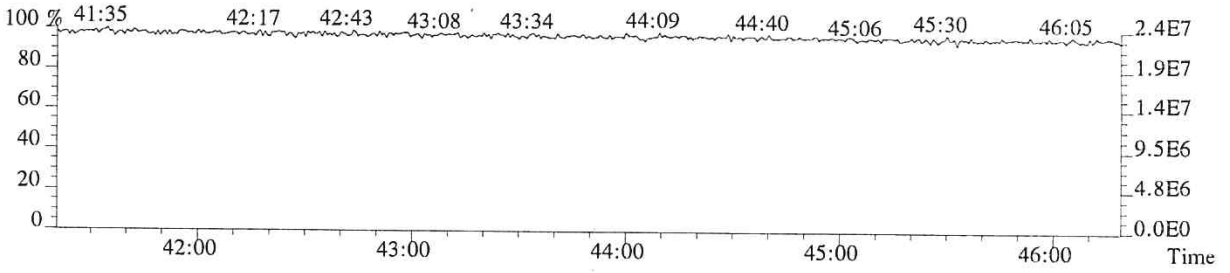
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,260.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,400.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060759

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290		Process Date: 09/26/2018				
Instrument Name: E-HRMS-08		Calibration File Name: P6-18092516131				
Processor Name: Gisela Cruz		Reviewer Name: Loan Luong				
Supervisor Signature: Kristin Neir						
Description		**Yes**	**No**	**NA**	**NR**	**ER#**
Analytical Sequence						
Does the analytical sequence summary accurately reflect the instrument run log, including ICV?		√				
Was a Mass Resolution Check performed at the beginning and end of the 12-hour sequence?		√				
Were all calibration standards and the ICV analyzed within the same 12-hour sequence?		√				
Were all calibration standards analyzed only once?		√				
Was the ICV analyzed after the ICAL, before analyzing samples?		√				
Mass Resolution Check						
Are beginning and ending resolution checks provided and legible?		√				
Were all target masses >10,000 resolving power at the beginning of the sequence?		√				
Were all target masses >10,000 resolving power at the end of the sequence?		√				
For PCB analysis, were masses at the low and high end of each function mass range >8,000?				√		
Where automatic printout of the mass resolution were not >10,000, was the resolution inspected by a trained analyst, including manual calculation of the resolution, if warranted?				√		
Window Define/209						
Is the window defining mix summary present, and accompanied by SICPs/Chromatograms for the WDM?		√				
Was the WDM/Column Performance/209 solution analyzed prior to the analysis of the calibration standards?		√				
Was 2,3,7,8-TCDD peak valley <25% to any other TCDD?		√				
Were all first and last eluters adequately resolved in each function?		√				
If first and last eluters were not resolved, was corrective action performed and documented, followed by a reanalysis of the WDM?				√		
Was the retention time of PCB 209 >55 min?				√		
Were the following congeners uniquely resolved (valley height <40% of the shortest peak)? PCB-34 and PCB-23 PCB-187 and PCB-182				√		
Did PCB 156/157 co-elute within 2 seconds at peak maximum?				√		
Calibration Standards						
Were there at least 5 calibration standards analyzed?		√				
If not all calibration standards were used, were the omitted standards either the lowest or highest calibration standard?				√		
Are all sample response summaries, S/N height summaries, and SICPs included (and legible) for the entire sequence?		√				

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290		Process Date: 09/26/2018				
Instrument Name: E-HRMS-08		Calibration File Name: P6-180925161 3I				
Processor Name: Gisela Cruz		Reviewer Name: Loan Luong				
Supervisor Signature: Kristin Neir		Yes	No	NA	NR	ER#
Description						
Did each calibration point meet method criteria for Ion Abundance Ratio for all analytes and labeled standards?		√				
Did each calibration point meet method criteria for signal-to-noise ratios (S/N)?		√				
Were area counts for the highest calibration standard below levels of saturation?		√				
Were manual integrations technically justified to correct for poor software integration?				√		
Response Factors						
Is the ICAL Response Factor Summary present, including RR/RF values for each native/labeled analyte at each level of calibration?		√				
Were all calibration standards used in determining response factors?		√				
Were relative response factors (RR) for each native analyte calculated at each calibration point?		√				
Did the RSD for RRFs for each native analyte meet method criteria?		√				
Were response factors (RF) for each native analyte not having a corresponding labeled compound calculated at each calibration point?		√				
Were RFs for each labeled compound calculated for each calibration point?		√				
Did the RSD for RF for each labeled compound meet method criteria?		√				
Initial Calibration Verification						
Is the calibration verification present, including form 4A/B reflecting results for the ICV (Conc. or %D)		√				
Did all analytes meet method criteria for the ICV.		√				

Laboratory Review Checklist: Initial Calibration			
Method: 1613/8290		Process Date: 09/26/2018	
Instrument Name: E-HRMS-08		Calibration File Name: P6-180925161 3I	
Processor Name: Gisela Cruz		Reviewer Name: Loan Luong	
ER#[5]	**Description**		

NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: TX01411 Episode No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm) Instrument ID: E-HRMS-08

Init. Calib. Date: 09/25/18

Init. Calib.Times: 12:13

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, SPIKES AND DUPLICATES IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
192977	WINDOW DEFINE	P614680	25-SEP-18	12:13:01
76554	CS0.5	P614682	25-SEP-18	14:18:27
82614	CS1	P614683	25-SEP-18	15:08:49
193434	CS2	P614684	25-SEP-18	15:59:37
76557	CS3	P614685	25-SEP-18	16:52:47
82167	CS4	P614686	25-SEP-18	17:41:03
185657	CS5	P614687	25-SEP-18	18:30:08
188969	2ND SOURCE	P614690	25-SEP-18	20:57:19

E1801136

Sample List Report **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20180925A.SPL
Last Modified: Wednesday, September 26, 2018 06:14:12 Central Daylight Time
Printed: Wednesday, September 26, 2018 06:14:14 Central Daylight Time

Page Position (1, 1)

OPUS4: P6-180925161 3I
P614690res

	Date	Time	File Name	Sample ID	File Text	MS File	Inlet File	Bottle	Analyst	Comments
1	9/25/18	12:13	P614680	192977	WINDOW DEFINE	EPA1613_ALS	Dioxin_ALS	Tray1:1	LG	HRMScheck 12:08
2		13:01	P614681	192807	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:2		
3		14:18	P614682	76554	CS0.5	EPA1613_ALS	Dioxin_ALS	Tray1:3		
4		15:08	P614683	82614	CS1	EPA1613_ALS	Dioxin_ALS	Tray1:4		
5		15:59	P614684	193434	CS2	EPA1613_ALS	Dioxin_ALS	Tray1:5		
6		16:52	P614685	76557	CS3	EPA1613_ALS	Dioxin_ALS	Tray1:6		
7		17:41	P614686	82167	CS4	EPA1613_ALS	Dioxin_ALS	Tray1:7		
8		18:30	P614687	185657	CS5	EPA1613_ALS	Dioxin_ALS	Tray1:8		
9		19:19	P614688	NONANE	NONANE	EPA1613_ALS	Dioxin_ALS	Tray1:9		
10		20:08	P614689	188969	2ND SOURCE	EPA1613_ALS	Dioxin_ALS	Tray1:10		Do not use
11		20:57	P614690	188969	2ND SOURCE	EPA1613_ALS	Dioxin_ALS	Tray1:11		
12		21:52	P614691	NONANE	NONANE	EPA1613_ALS	Dioxin_ALS	Tray1:12		HRMScheck 22:51
13	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:13	---	---
14	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:14	---	---
15	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:15	---	---
16	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:16	---	---
17	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:17	---	---
18	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:18	---	---
19	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:19	---	---
20	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:20	---	---
21	---	---	---	---	---	EPA1613_ALS	Dioxin_ALS	Tray1:21	---	---

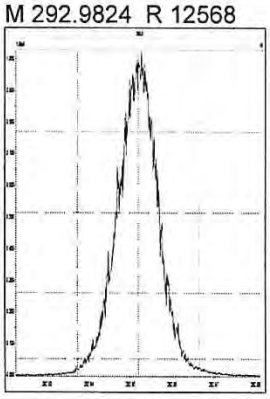
997 of 1106

LG 09/26/18

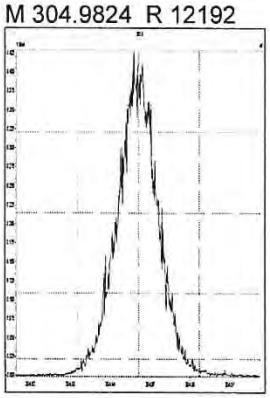
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, September 25, 2018 12:08:26 Central Daylight Time

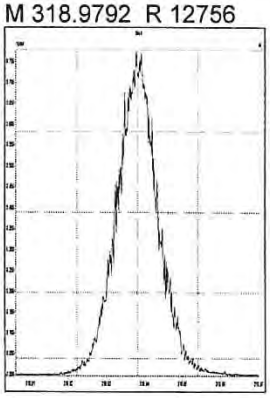
M 292.9824 R 12568



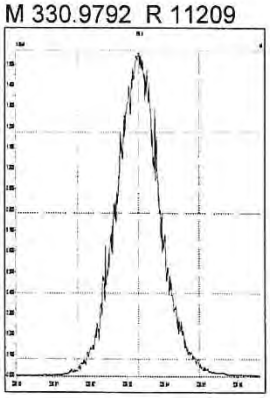
M 304.9824 R 12192



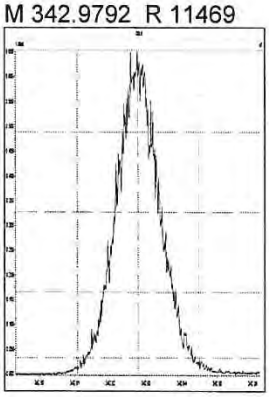
M 318.9792 R 12756



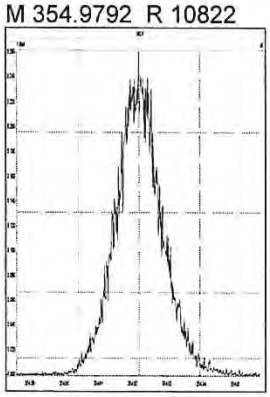
M 330.9792 R 11209



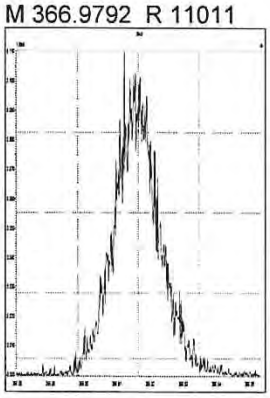
M 342.9792 R 11469



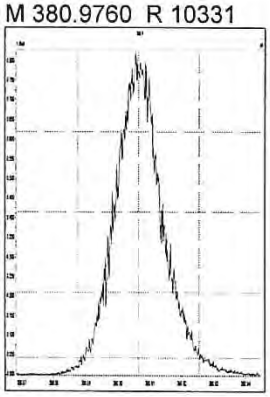
M 354.9792 R 10822



M 366.9792 R 11011



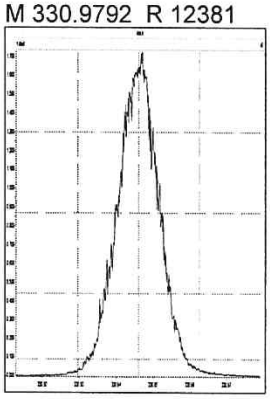
M 380.9760 R 10331



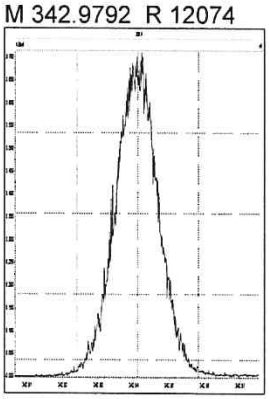
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, September 25, 2018 12:09:22 Central Daylight Time

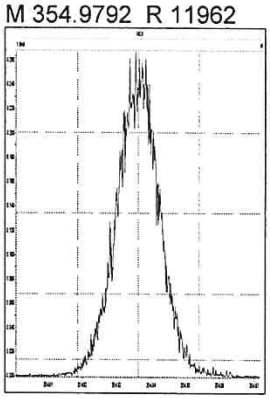
M 330.9792 R 12381



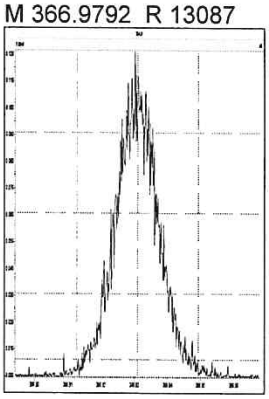
M 342.9792 R 12074



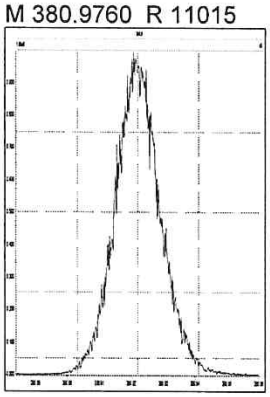
M 354.9792 R 11962



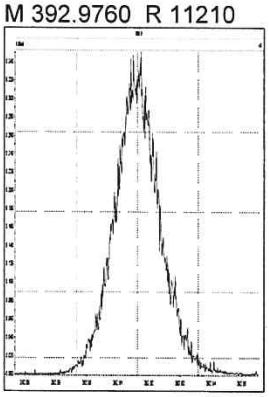
M 366.9792 R 13087



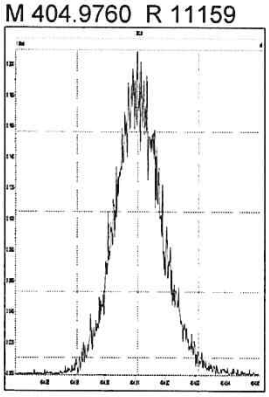
M 380.9760 R 11015



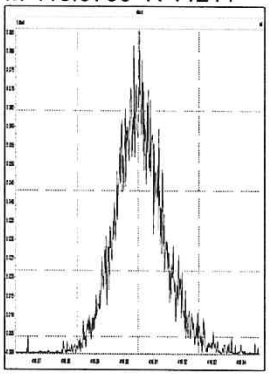
M 392.9760 R 11210



M 404.9760 R 11159



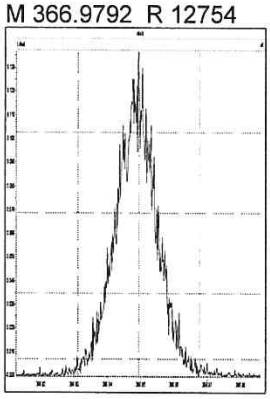
M 416.9760 R 11211



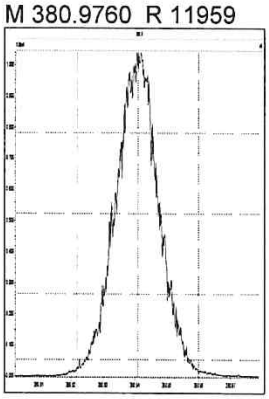
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, September 25, 2018 12:10:10 Central Daylight Time

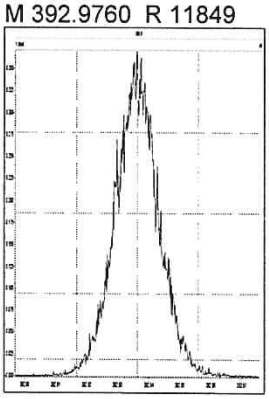
M 366.9792 R 12754



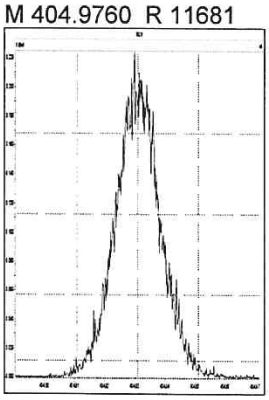
M 380.9760 R 11959



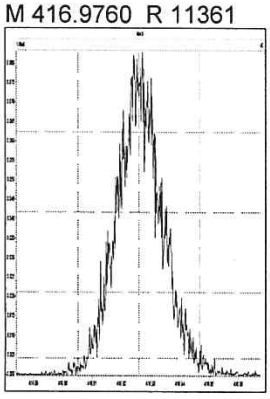
M 392.9760 R 11849



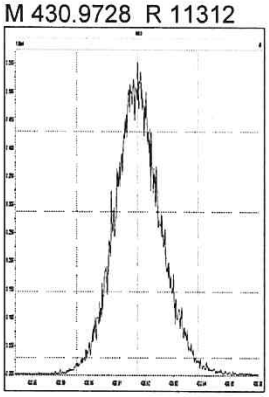
M 404.9760 R 11681



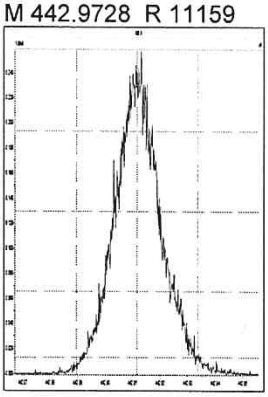
M 416.9760 R 11361



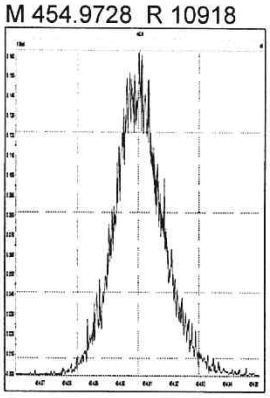
M 430.9728 R 11312



M 442.9728 R 11159



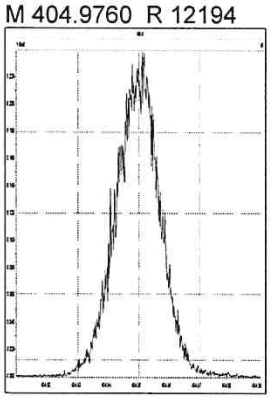
M 454.9728 R 10918



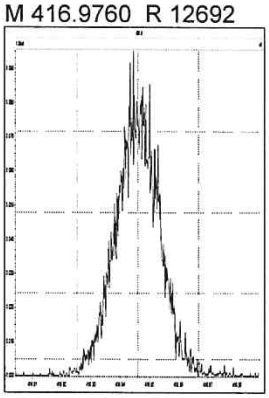
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Tuesday, September 25, 2018 12:10:51 Central Daylight Time

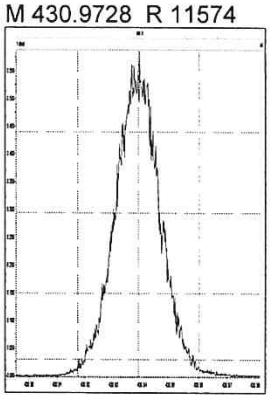
M 404.9760 R 12194



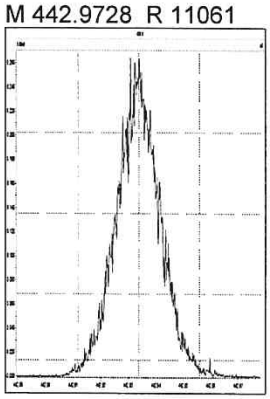
M 416.9760 R 12692



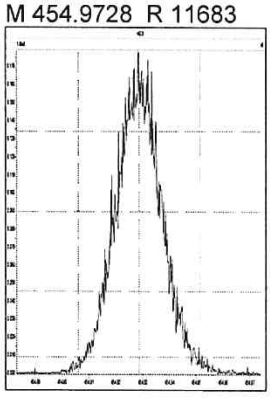
M 430.9728 R 11574



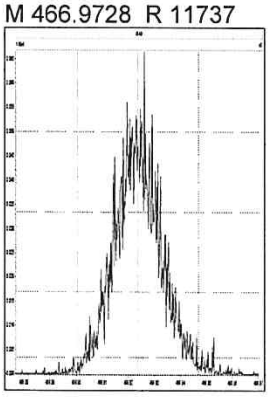
M 442.9728 R 11061



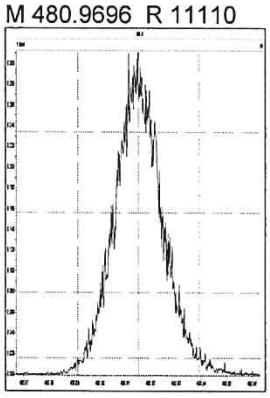
M 454.9728 R 11683



M 466.9728 R 11737



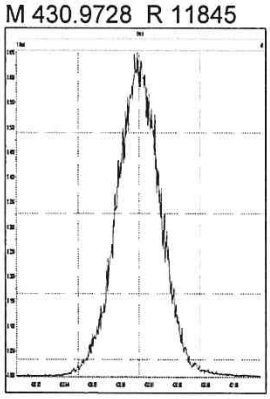
M 480.9696 R 11110



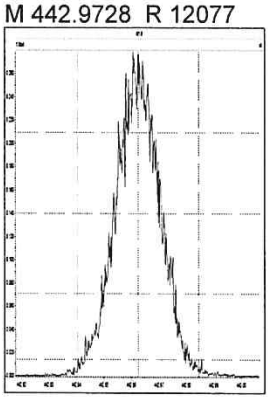
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, September 25, 2018 12:11:41 Central Daylight Time

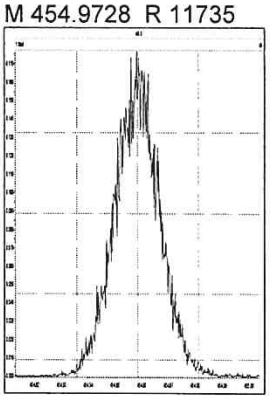
M 430.9728 R 11845



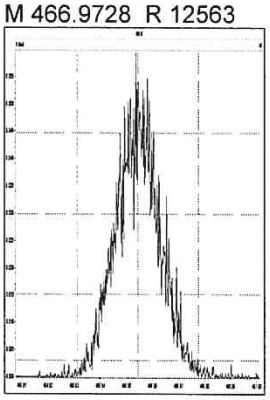
M 442.9728 R 12077



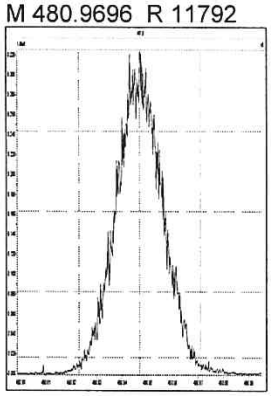
M 454.9728 R 11735



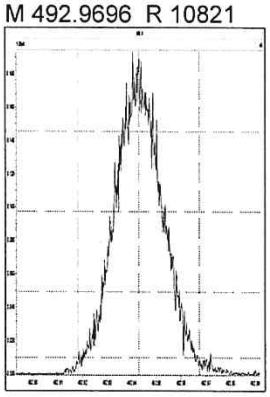
M 466.9728 R 12563



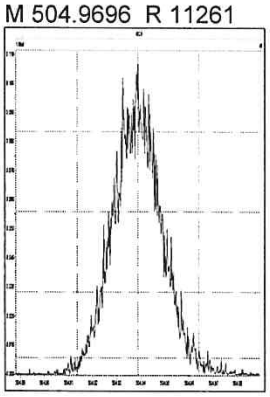
M 480.9696 R 11792



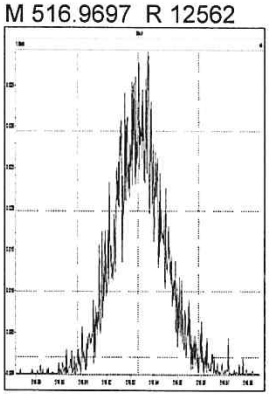
M 492.9696 R 10821



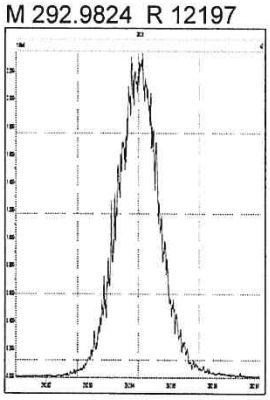
M 504.9696 R 11261



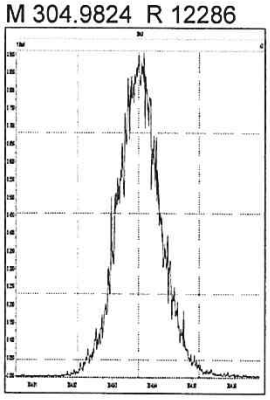
M 516.9697 R 12562



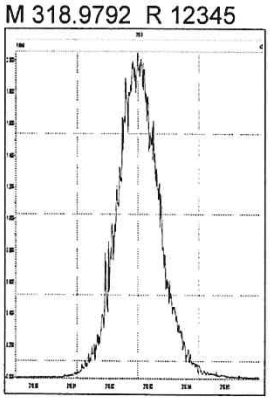
M 292.9824 R 12197



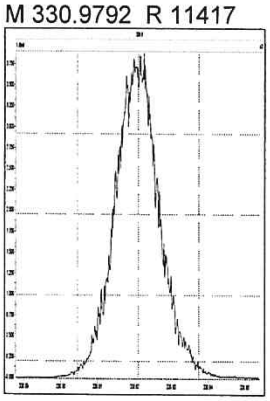
M 304.9824 R 12286



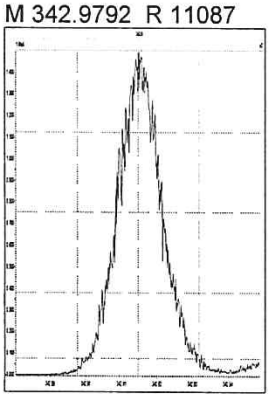
M 318.9792 R 12345



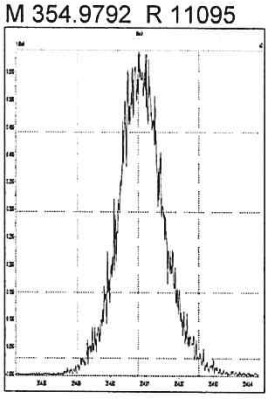
M 330.9792 R 11417



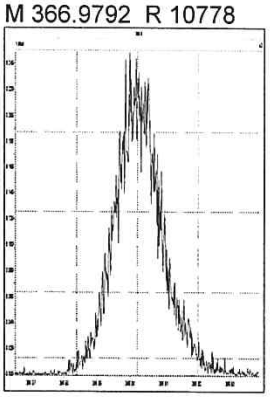
M 342.9792 R 11087



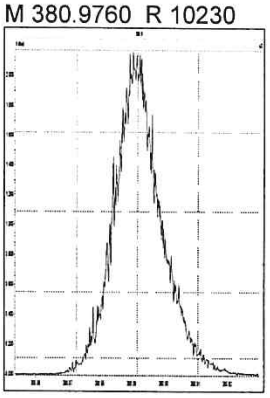
M 354.9792 R 11095



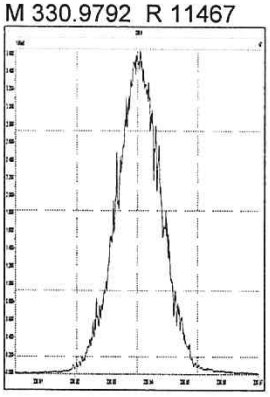
M 366.9792 R 10778



M 380.9760 R 10230



M 330.9792 R 11467



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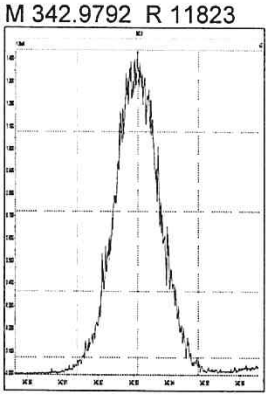
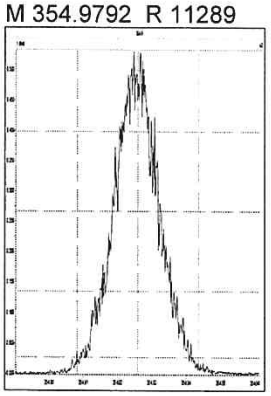
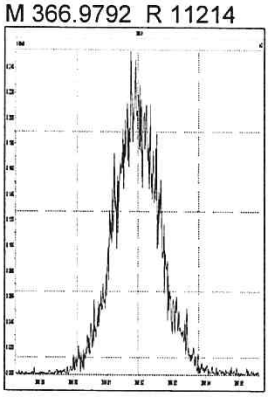


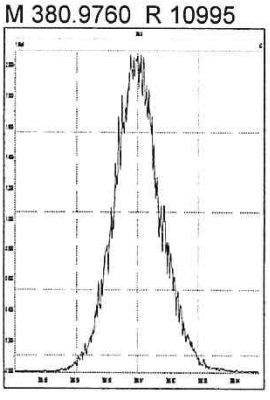
M 354.9792 R 11289



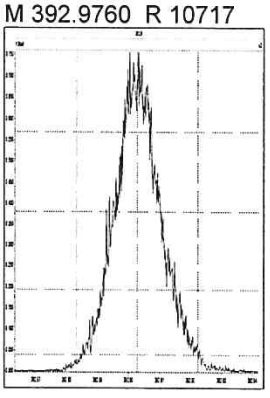
M 366.9792 R 11214



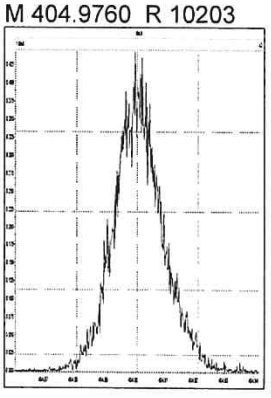
M 380.9760 R 10995



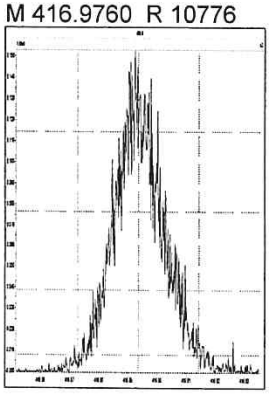
M 392.9760 R 10717



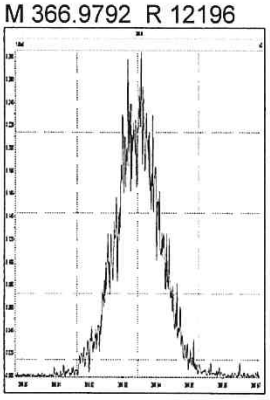
M 404.9760 R 10203



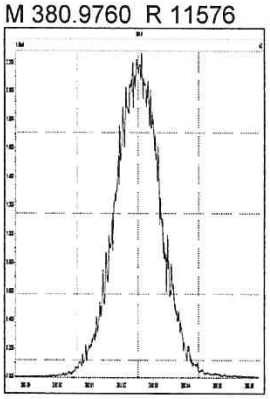
M 416.9760 R 10776



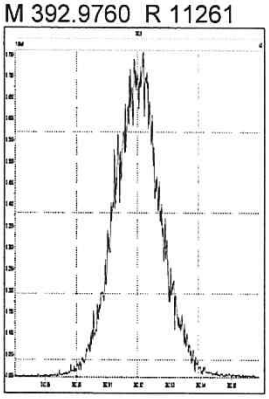
M 366.9792 R 12196



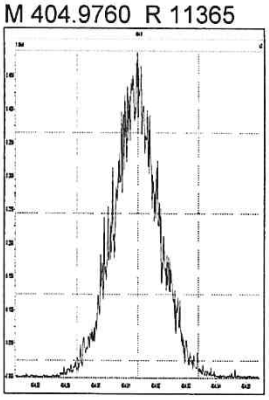
M 380.9760 R 11576



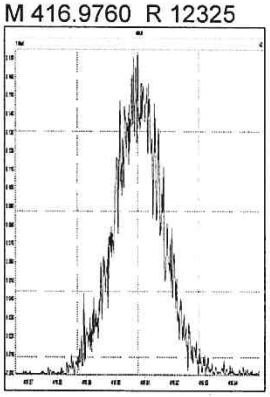
M 392.9760 R 11261



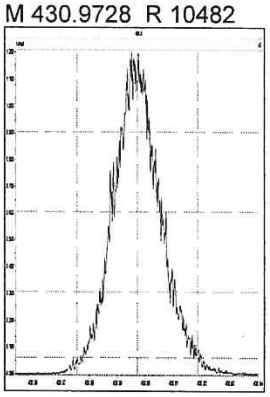
M 404.9760 R 11365



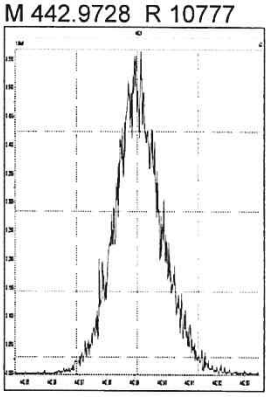
M 416.9760 R 12325



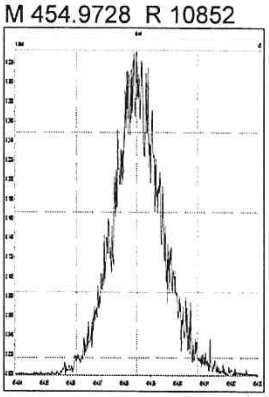
M 430.9728 R 10482



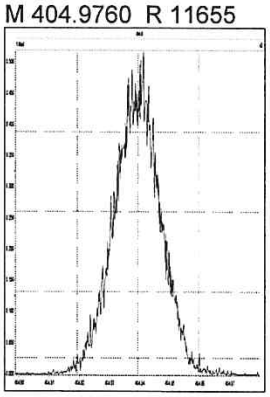
M 442.9728 R 10777



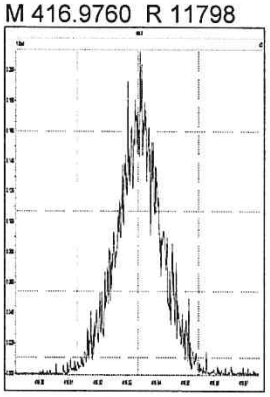
M 454.9728 R 10852



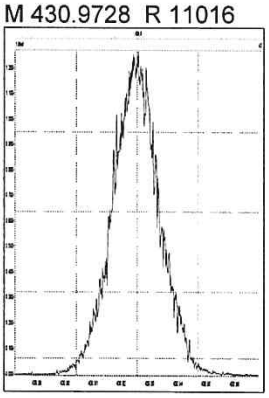
M 404.9760 R 11655



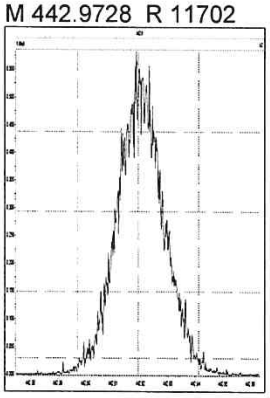
M 416.9760 R 11798



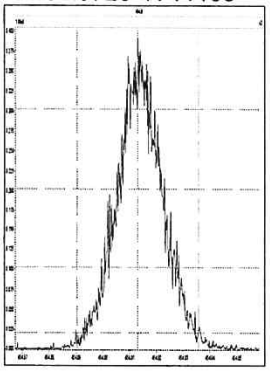
M 430.9728 R 11016



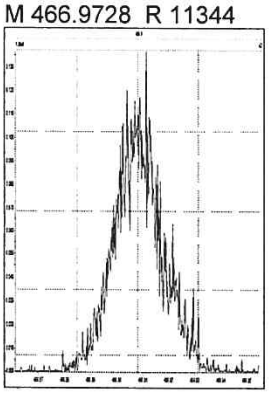
M 442.9728 R 11702



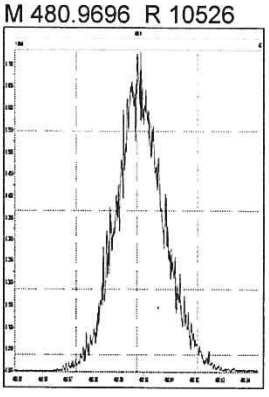
M 454.9728 R 11188



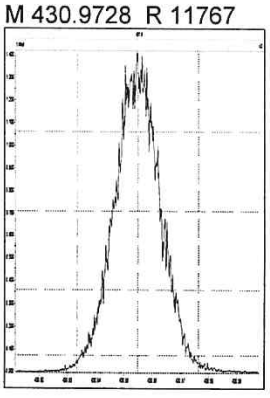
M 466.9728 R 11344



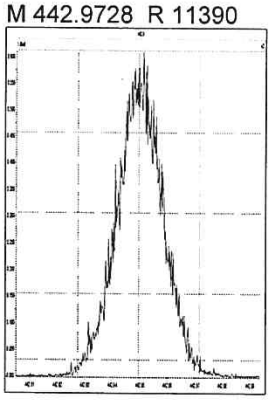
M 480.9696 R 10526



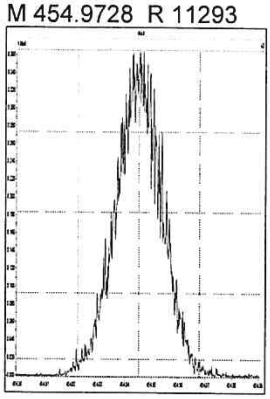
M 430.9728 R 11767



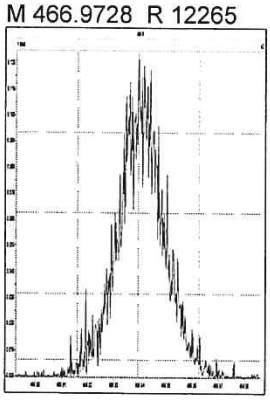
M 442.9728 R 11390



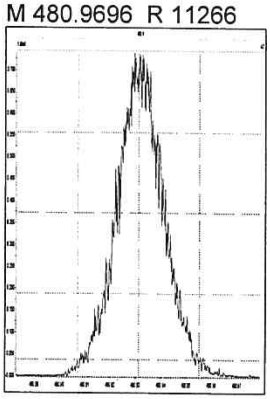
M 454.9728 R 11293



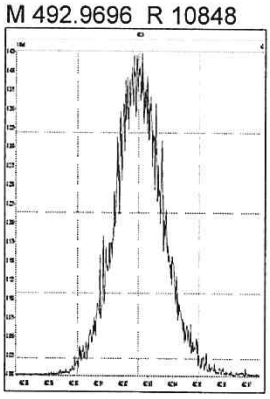
M 466.9728 R 12265



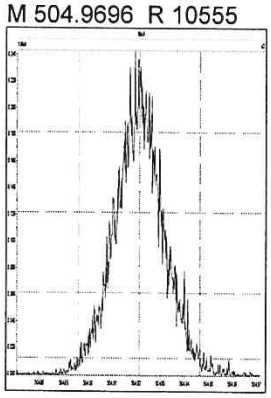
M 480.9696 R 11266



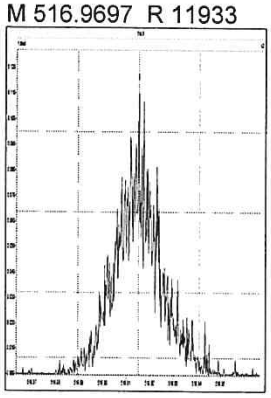
M 492.9696 R 10848



M 504.9696 R 10555



M 516.9697 R 11933



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

Case No.: _____ SDG No.:
ID: 0.25 (mm)

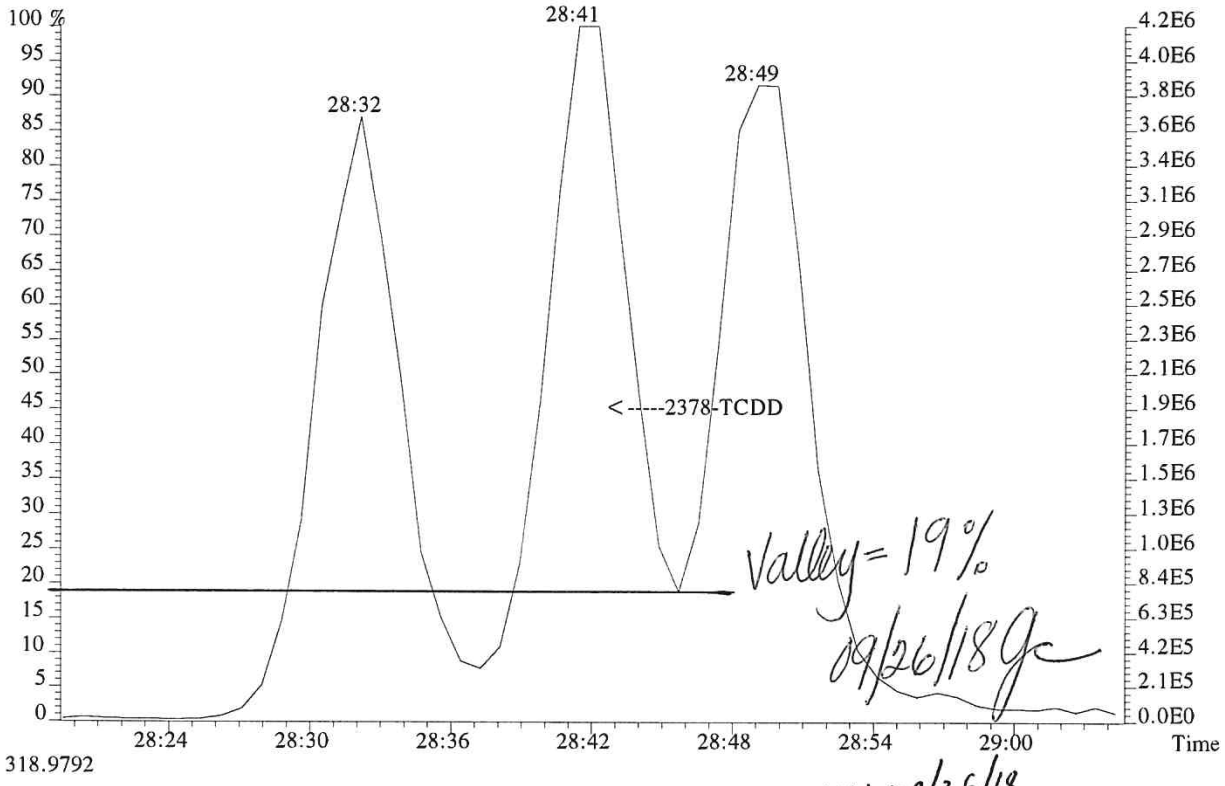
Lab File ID: P614680
Date Analyzed: 25-SEP-18
Time Analyzed: 12:13:01

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	23:28	29:52
TCDD	25:18	29:42
PeCDF	29:48	34:04
PeCDD	31:21	33:49
HxCDF	34:43	37:12
HxCDD	35:14	36:49
HpCDF	38:24	39:46
HpCDD	38:39	39:18

% Valley 2378-TCDD: 19 %

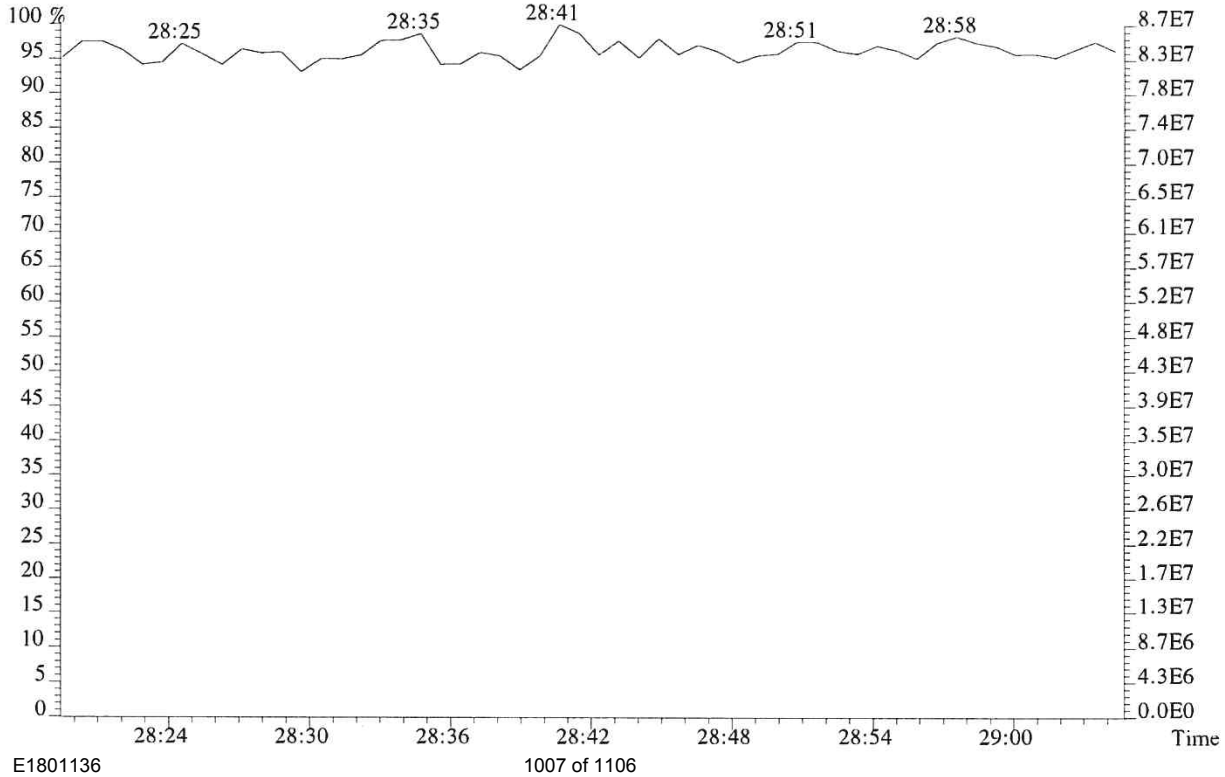
060772

File:P614680 #1-552 Acq:25-SEP-2018 12:13:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
319.8965



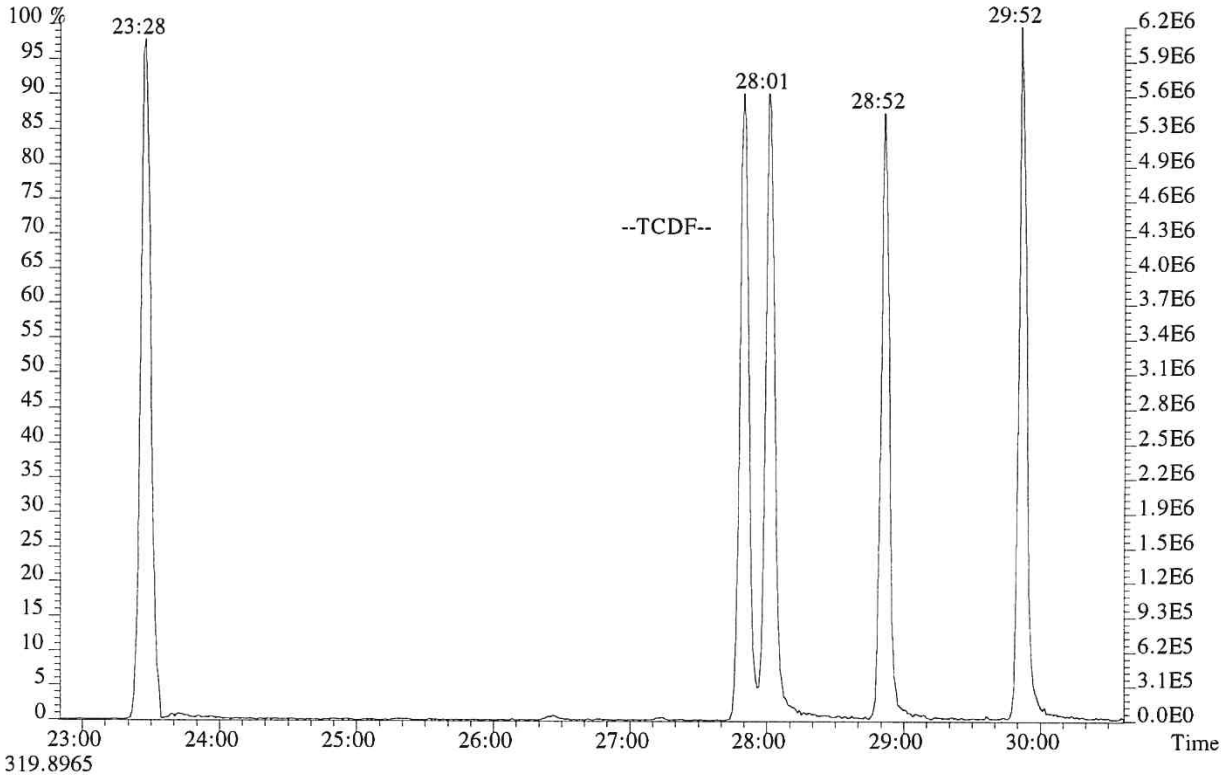
318.9792

LKL 09/26/18

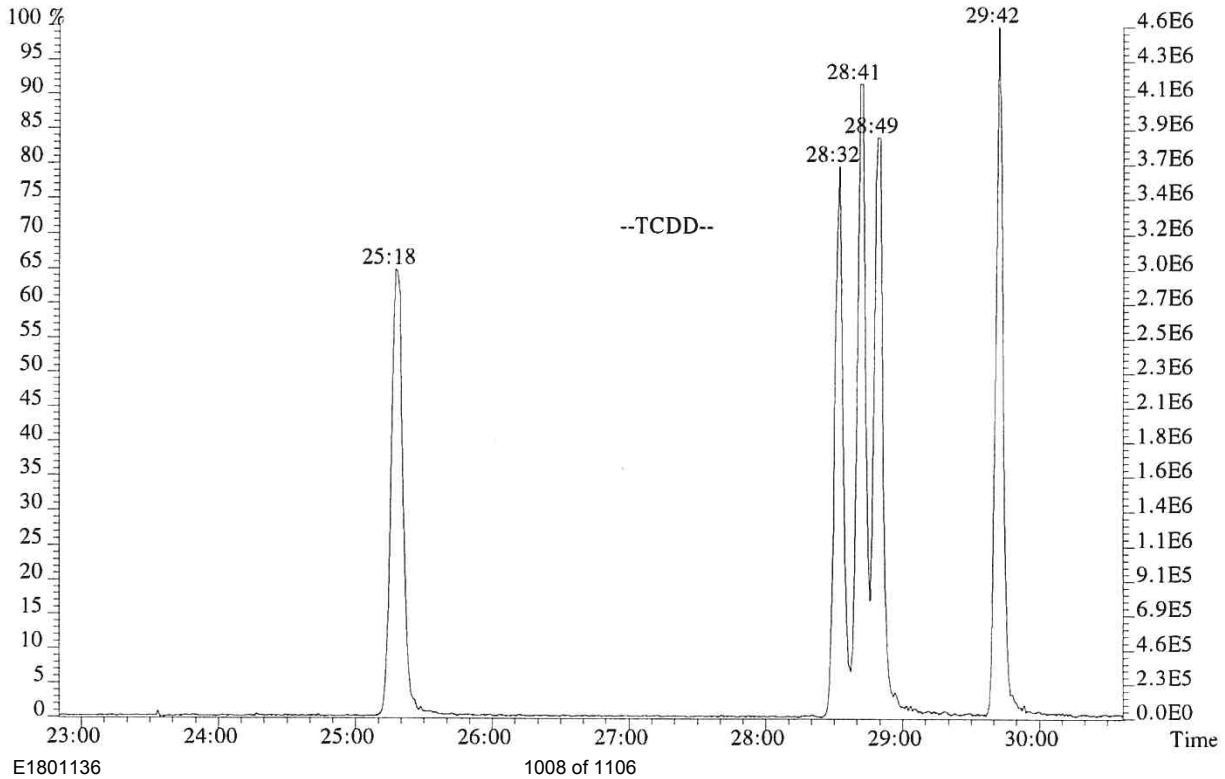


060773

File:P614680 #1-552 Acq:25-SEP-2018 12:13:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
303.9016

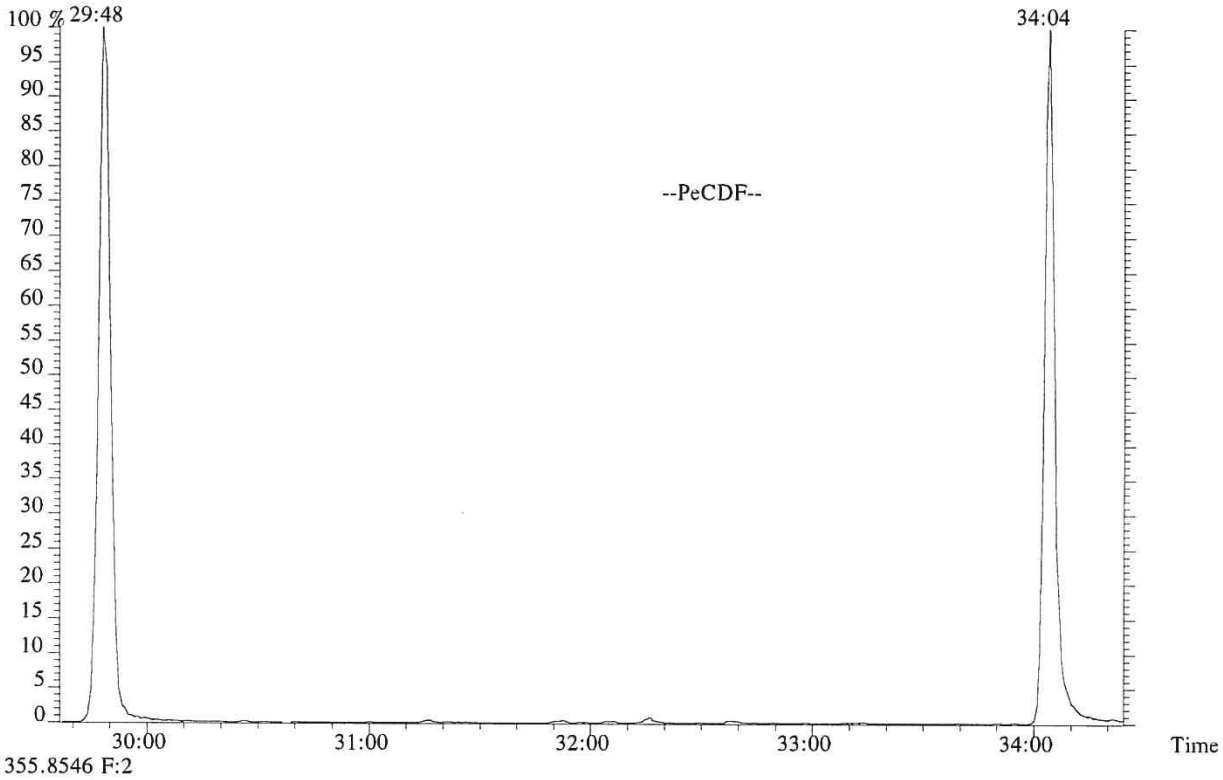


319.8965

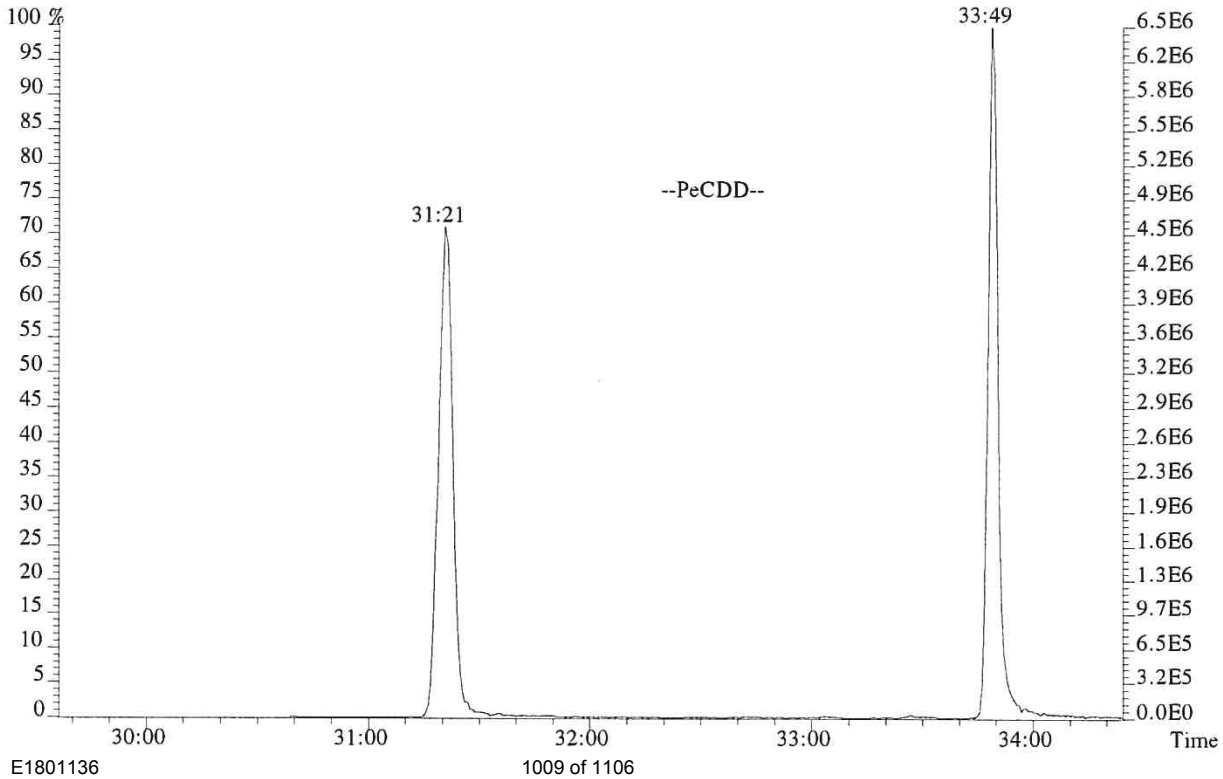


060774

File:P614680 #1-552 Acq:25-SEP-2018 12:13:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
339.8597,339.8597 F:2

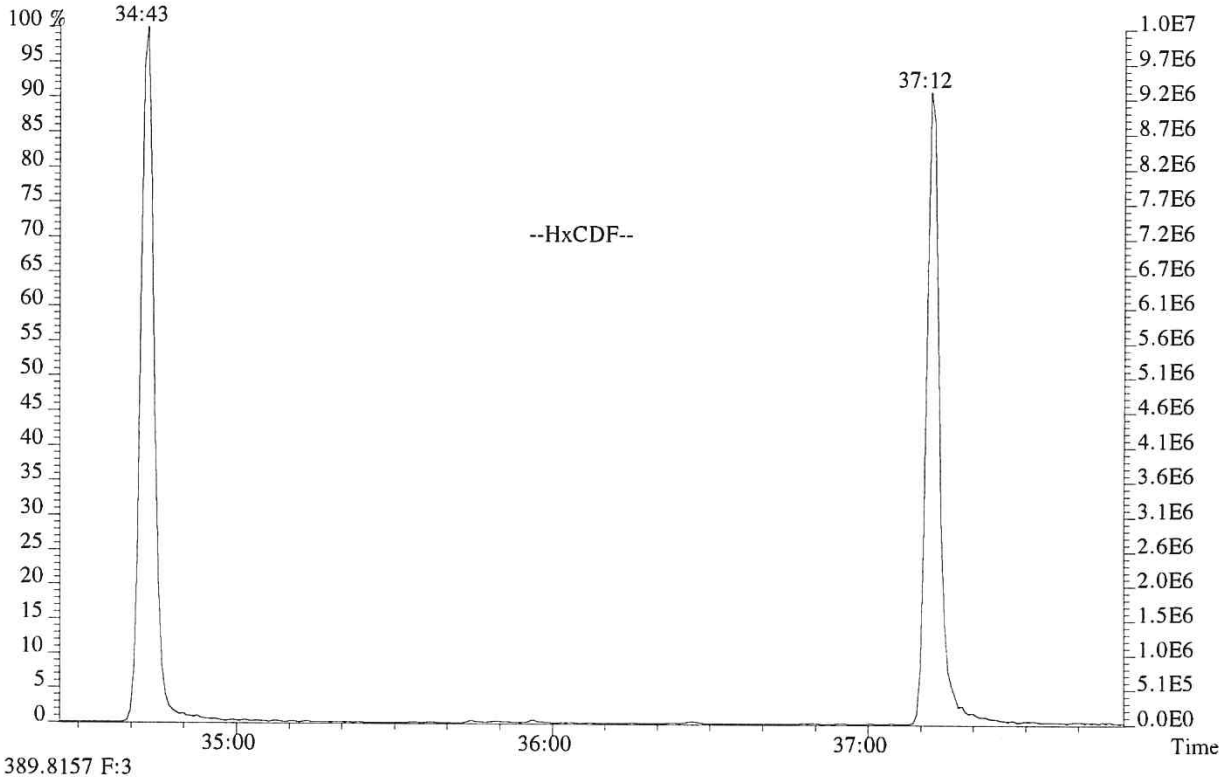


355.8546 F:2

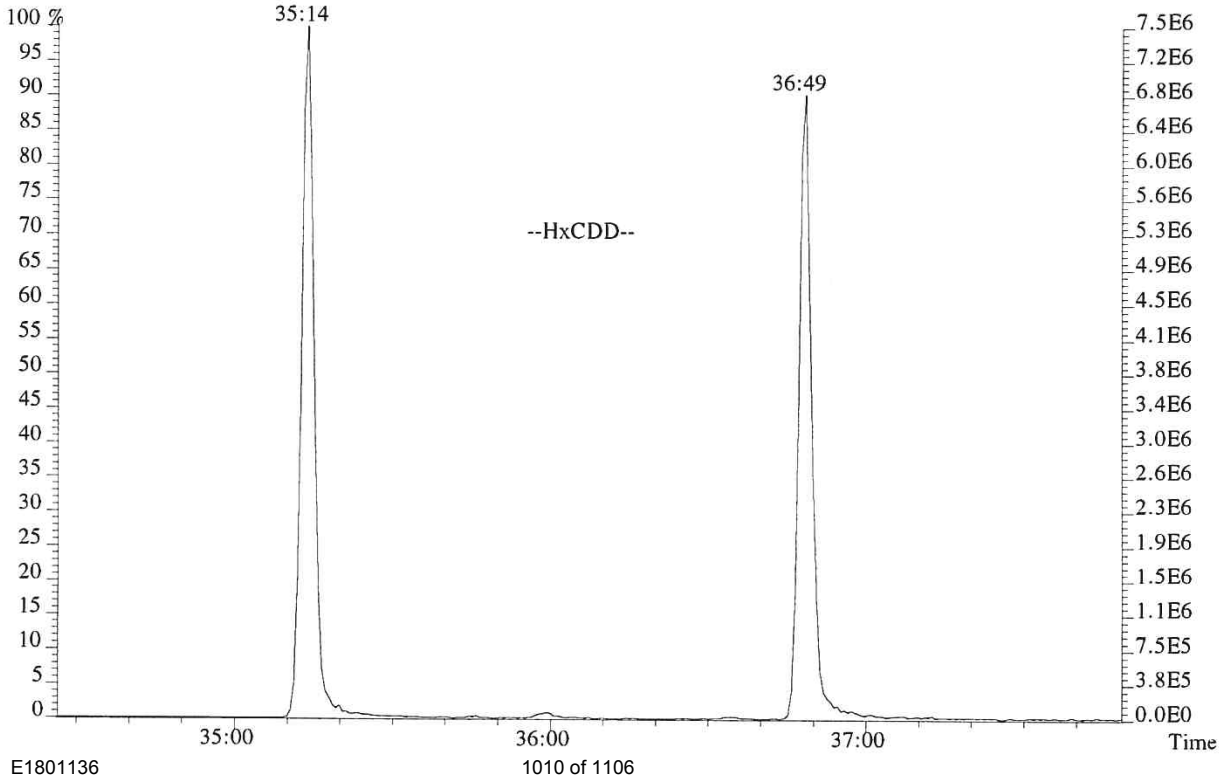


060775

File:P614680 #1-304 Acq:25-SEP-2018 12:13:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
373.8208 F:3

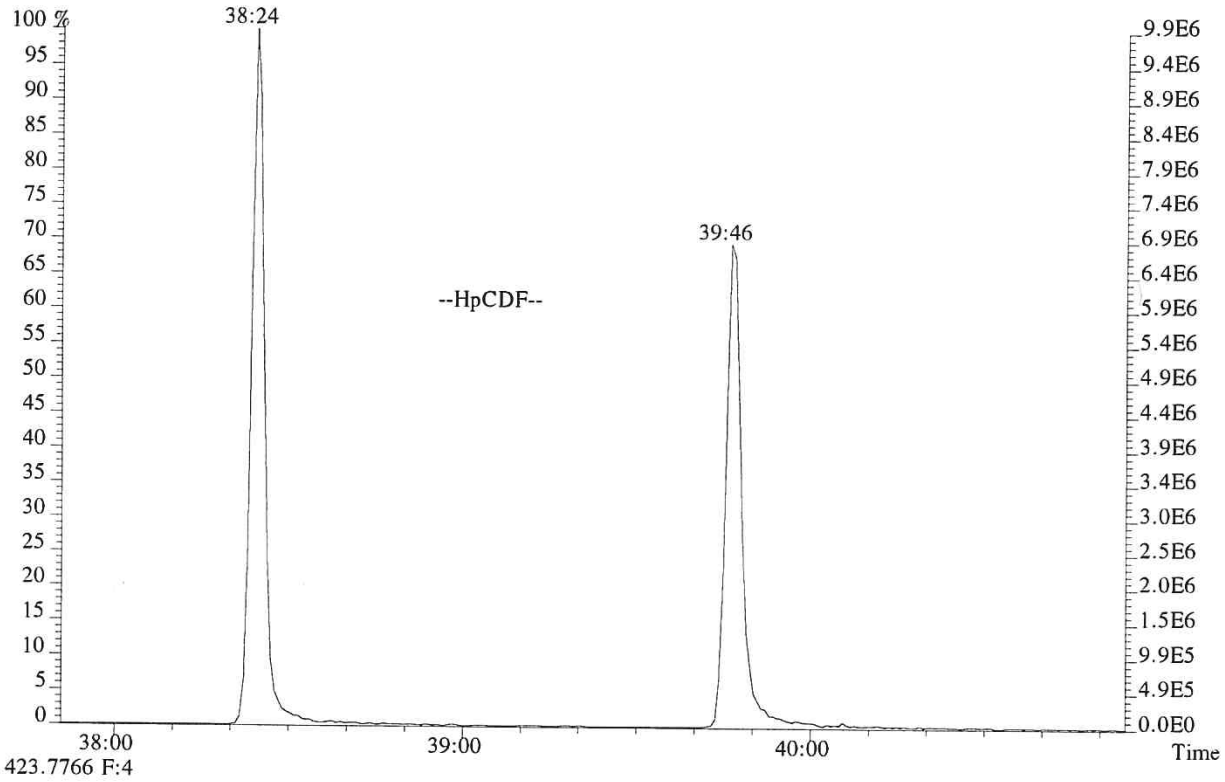


389.8157 F:3

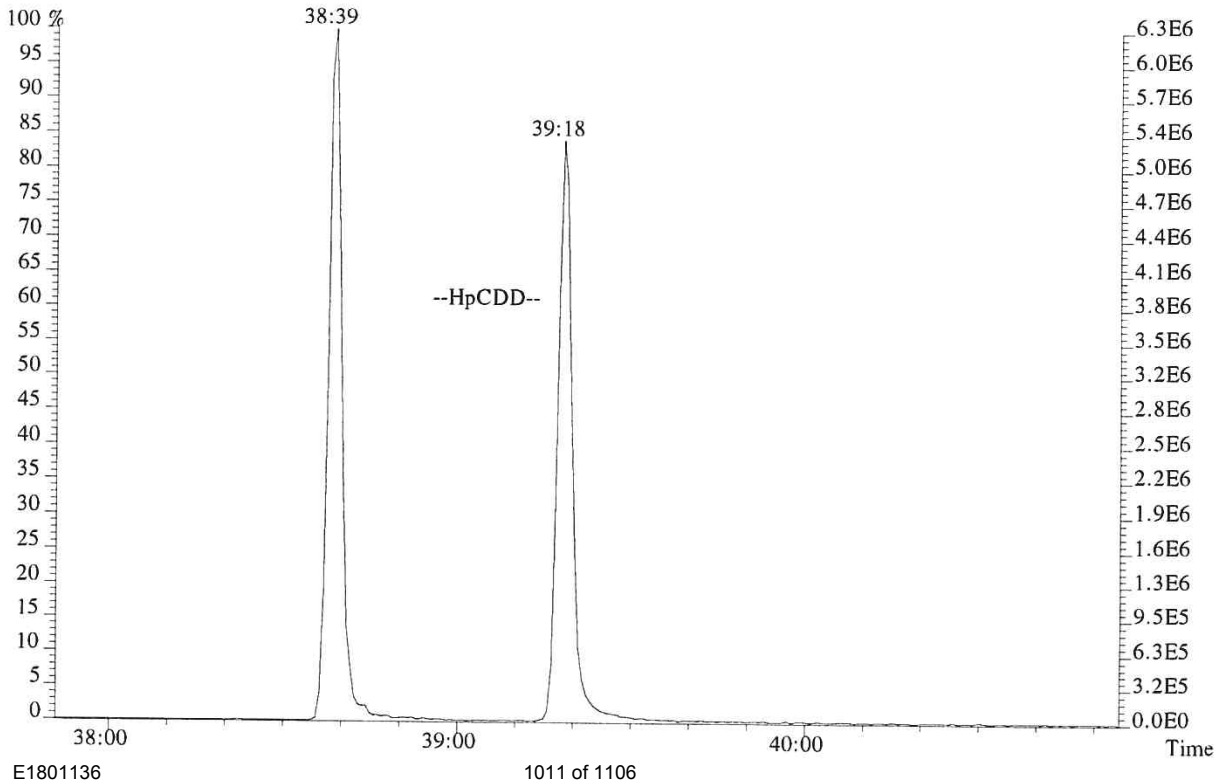


060776

File:P614680 #1-276 Acq:25-SEP-2018 12:13:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
407.7818 F:4



423.7766 F:4



060777

USEPA - CLP
6DFA6
CDD/CDF INITIAL CALIBRATION RESPONSE FACTOR SUMMARY
HIGH RESOLUTION

Lab Name: ALS Environmental Contract No.:
Lab Code: ALSTX Case No.: TO No.: SDG No.:
GC Column: DB-5MSUI ID: 0.25(mm) Instrument ID: E-HRMS-08
Init. Calib. Date(s).: 09/25/18 Method 1613/8290
Init. Calib. Time.: 12:13

	RR/RRF						MEAN		
Target Analytes	CS0.5	CS1	CS2	CS3	CS4	CS5	RR/RRF	%RSD	QC LIMITS
2,3,7,8-TCDD	1.15	1.00	1.00	1.03	1.05	1.06	1.05	5.38	+/-20%
2,3,7,8-TCDF	1.13	1.08	1.12	1.05	1.06	1.05	1.08	3.07	+/-20%
1,2,3,7,8-PeCDF	1.16	1.17	1.12	1.15	1.16	1.18	1.16	1.72	+/-20%
1,2,3,7,8-PeCDD	0.89	0.95	0.95	0.91	0.93	0.93	0.93	2.61	+/-20%
2,3,4,7,8-PeCDF	1.10	1.13	1.10	1.08	1.10	1.11	1.10	1.49	+/-20%
1,2,3,4,7,8-HxCDF	1.47	1.46	1.39	1.36	1.38	1.42	1.42	3.10	+/-20%
1,2,3,6,7,8-HxCDF	1.27	1.36	1.30	1.28	1.28	1.28	1.29	2.52	+/-20%
1,2,3,4,7,8-HxCDD	1.11	1.11	1.04	1.06	1.05	1.06	1.07	3.00	+/-20%
1,2,3,6,7,8-HxCDD	1.06	1.07	1.06	1.06	1.06	1.05	1.06	0.70	+/-20%
1,2,3,7,8,9-HxCDD	1.17	1.18	1.12	1.13	1.14	1.12	1.15	2.24	+/-20%
2,3,4,6,7,8-HxCDF	1.27	1.32	1.29	1.28	1.27	1.27	1.28	1.52	+/-20%
1,2,3,7,8,9-HxCDF	1.34	1.34	1.29	1.30	1.30	1.30	1.31	1.68	+/-20%
1,2,3,4,6,7,8-HpCDF	1.56	1.60	1.46	1.50	1.51	1.51	1.52	3.15	+/-20%
1,2,3,4,6,7,8-HpCDD	1.14	1.13	1.09	1.10	1.10	1.11	1.11	1.85	+/-20%
1,2,3,4,7,8,9-HpCDF	1.47	1.54	1.46	1.45	1.43	1.43	1.46	2.80	+/-20%
OCDD	1.22	1.21	1.10	1.14	1.14	1.14	1.16	4.23	+/-20%
OCDF	1.60	1.61	1.49	1.57	1.57	1.59	1.57	2.60	+/-20%
Labeled Compounds									
13C-2,3,7,8-TCDD	0.96	0.98	0.97	0.97	1.00	1.01	0.98	2.13	+/-35%
13C-1,2,3,7,8-PeCDD	1.09	1.05	1.16	1.13	1.16	1.15	1.12	3.77	+/-35%
13C-1,2,3,4,7,8-HxCDD	0.91	0.90	0.91	0.90	0.90	0.89	0.90	0.67	+/-35%
13C-1,2,3,6,7,8-HxCDD	0.92	0.92	0.89	0.89	0.91	0.90	0.90	1.52	+/-35%
13C-1,2,3,4,6,7,8-HpCDD	0.86	0.88	0.85	0.86	0.84	0.84	0.86	1.91	+/-35%
13C-OCDD	0.65	0.69	0.65	0.67	0.65	0.65	0.66	2.45	+/-35%
13C-2,3,7,8-TCDF	1.40	1.41	1.42	1.44	1.40	1.43	1.42	1.24	+/-35%
13C-1,2,3,7,8-PeCDF	1.52	1.54	1.61	1.61	1.65	1.63	1.60	3.24	+/-35%
13C-2,3,4,7,8-PeCDF	1.52	1.49	1.60	1.57	1.63	1.61	1.57	3.42	+/-35%
13C-1,2,3,4,7,8-HxCDF	1.18	1.19	1.14	1.21	1.18	1.06	1.16	4.58	+/-35%
13C-1,2,3,6,7,8-HxCDF	1.39	1.34	1.33	1.35	1.31	1.29	1.34	2.46	+/-35%
13C-2,3,4,6,7,8-HxCDF	1.27	1.25	1.24	1.24	1.25	1.24	1.25	1.06	+/-35%
13C-1,2,3,7,8,9-HxCDF	1.13	1.13	1.12	1.15	1.15	1.10	1.13	1.66	+/-35%
13C-1,2,3,4,6,7,8-HpCDF	1.04	1.06	1.02	1.04	1.01	1.01	1.03	1.93	+/-35%
13C-1,2,3,4,7,8,9-HpCDF	0.94	0.95	0.90	0.86	0.90	0.88	0.91	3.64	+/-35%
37Cl-2,3,7,8-TCDD	1.06	1.11	1.07	1.05	1.11	1.13	1.09	3.15	+/-35%

1.123789-HxCDD Relative Response (RR) is calculated based on the labeled analog of the other two HxCDDs.
2. OCDF RR is calculated based on the labeled analog of OCDD

USEPA - CLP
6DFB6
CDD/CDF INITIAL CALIBRATION ION ABUNDANCE RATIO SUMMARY
HIGH RESOLUTION

Lab Name: ALS Environmental Contract No.:
Lab Code: ALSTX Case No.: TO No.: SDG No.:
GC Column: DB-5MSUI ID: 0.25(mm) Instrument ID: E-HRMS-08
Init. Calib. Date(s).: 09/25/18 Method 1613/8290
Init. Calib. Time.: 12:13

Target Analytes	SELECTED IONS	ION ABUNDANCE RATIO CS0.5	CS1	CS2	CS3	CS4	CS5	FLAG	ION RATIO QC lIMITS
2,3,7,8-TCDF	304/306	0.75	0.75	0.83	0.80	0.79	0.80		0.65-0.89
2,3,7,8-TCDD	320/322	0.78	0.83	0.80	0.78	0.79	0.77		0.65-0.89
1,2,3,7,8-PeCDF	340/342	1.65	1.58	1.57	1.58	1.60	1.60		1.32-1.78
2,3,4,7,8-PeCDF	340/342	1.57	1.61	1.57	1.58	1.59	1.59		1.32-1.78
1,2,3,7,8-PeCDD	356/358	1.56	1.52	1.53	1.55	1.55	1.57		1.32-1.78
1,2,3,4,7,8-HxCDF	374/376	1.26	1.29	1.25	1.26	1.28	1.29		1.05-1.43
1,2,3,6,7,8-HxCDF	374/376	1.29	1.24	1.25	1.27	1.27	1.27		1.05-1.43
2,3,4,6,7,8-HxCDF	374/376	1.29	1.25	1.28	1.28	1.26	1.26		1.05-1.43
1,2,3,7,8,9-HxCDF	374/376	1.22	1.29	1.23	1.28	1.28	1.27		1.05-1.43
1,2,3,4,7,8-HxCDD	390/392	1.21	1.20	1.26	1.33	1.26	1.27		1.05-1.43
1,2,3,6,7,8-HxCDD	390/392	1.41	1.27	1.25	1.23	1.27	1.26		1.05-1.43
1,2,3,7,8,9-HxCDD	390/392	1.20	1.22	1.25	1.24	1.27	1.26		1.05-1.43
1,2,3,4,6,7,8-HpCDF	408/410	1.04	1.02	1.06	1.05	1.04	1.05		0.88-1.20
1,2,3,4,7,8,9-HpCDF	408/410	0.89	1.07	1.05	1.04	1.05	1.05		0.88-1.20
1,2,3,4,6,7,8-HpCDD	424/426	1.10	1.07	1.07	1.06	1.06	1.06		0.88-1.20
OCDF	442/444	0.90	0.87	0.91	0.92	0.93	0.92		0.76-1.02
OCDD	458/460	0.93	0.89	0.88	0.90	0.90	0.90		0.76-1.02
13C-2,3,7,8-TCDD	332/334	0.79	0.80	0.80	0.80	0.80	0.79		0.65-0.89
13C-1,2,3,7,8-PeCDD	368/370	1.58	1.58	1.57	1.58	1.56	1.57		1.32-1.78
13C-1,2,3,4,7,8-HxCDD	402/404	1.27	1.26	1.26	1.32	1.25	1.26		1.05-1.43
13C-1,2,3,6,7,8-HxCDD	402/404	1.27	1.26	1.26	1.20	1.25	1.26		1.05-1.43
13C-1,2,3,4,6,7,8-HpCDD	436/438	1.06	1.06	1.04	1.06	1.05	1.05		0.88-1.20
13C-OCDD	470/472	0.90	0.90	0.90	0.91	0.90	0.89		0.76-1.02
13C-2,3,7,8-TCDF	316/318	0.78	0.80	0.79	0.79	0.79	0.79		0.65-0.89
13C-1,2,3,7,8-PeCDF	352/354	1.61	1.62	1.60	1.60	1.60	1.60		1.32-1.78
13C-2,3,4,7,8-PeCDF	352/354	1.59	1.59	1.62	1.61	1.59	1.61		1.32-1.78
13C-1,2,3,4,7,8-HxCDF	384/386	0.54	0.53	0.53	0.53	0.53	0.54		0.43-0.59
13C-1,2,3,6,7,8-HxCDF	384/386	0.53	0.54	0.53	0.54	0.54	0.54		0.43-0.59
13C-2,3,4,6,7,8-HxCDF	384/386	0.54	0.54	0.53	0.54	0.54	0.53		0.43-0.59
13C-1,2,3,7,8,9-HxCDF	384/386	0.52	0.53	0.53	0.54	0.53	0.53		0.43-0.59
13C-1,2,3,4,6,7,8-HpCDF	418/420	0.46	0.46	0.46	0.46	0.46	0.46		0.37-0.51
13C-1,2,3,4,7,8,9-HpCDF	418/420	0.46	0.46	0.45	0.46	0.45	0.46		0.37-0.51
13C-1,2,3,4-TCDD	332/334	0.81	0.81	0.81	0.80	0.79	0.81		0.65-0.89
13C-1,2,3,7,8,9-HxCDD	402/404	1.24	1.26	1.26	1.24	1.25	1.25		1.05-1.43

Quality Control (QC) limits represent +/- 15% window around the theoretical ion abundance ratio. The laboratory must flag any analyte in any calibration solution which does not meet the ion abundance ratio QC limit by placing an asterisk in the flag column.

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76554

Run #1 Filename P614682 Samp: 1 Inj: 1 Acquired: 25-SEP-18 14:18:27
Processed: 26-SEP-18 07:39:04 Sample ID: CS0.5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:01	3.991e+02	5.332e+02	0.75	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:15	3.245e+03	1.970e+03	1.65	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:10	3.017e+03	1.917e+03	1.57	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	2.964e+03	2.360e+03	1.26	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	3.032e+03	2.349e+03	1.29	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	2.788e+03	2.154e+03	1.29	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:10	2.544e+03	2.080e+03	1.22	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	2.520e+03	2.421e+03	1.04	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	1.988e+03	2.226e+03	0.89	yes	no	1.463
10	Unk	OCDF	42:13	3.006e+03	3.322e+03	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:49	2.873e+02	3.690e+02	0.78	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	1.757e+03	1.126e+03	1.56	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	1.695e+03	1.402e+03	1.21	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:39	1.736e+03	1.234e+03	1.41	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:53	1.790e+03	1.494e+03	1.20	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	1.575e+03	1.438e+03	1.10	yes	no	1.112
17	Unk	OCDD	42:01	2.333e+03	2.510e+03	0.93	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	28:00	1.453e+05	1.860e+05	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	2.225e+05	1.378e+05	1.61	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	2.208e+05	1.389e+05	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:49	1.017e+05	1.873e+05	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:55	1.172e+05	2.227e+05	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:25	1.097e+05	2.020e+05	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	9.463e+04	1.814e+05	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:24	7.990e+04	1.736e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:46	7.243e+04	1.569e+05	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	1.005e+05	1.270e+05	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:26	1.588e+05	1.004e+05	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:33	1.251e+05	9.838e+04	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:38	1.252e+05	9.893e+04	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:18	1.083e+05	1.026e+05	1.06	yes	no	0.857
32	IS	13C-OCDD	42:01	1.503e+05	1.668e+05	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:14	1.058e+05	1.311e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:52	1.355e+05	1.094e+05	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:49	6.272e+02				no	1.086

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76554

Run #1 Filename P614682 Samp: 1 Inj: 1 Acquired: 25-SEP-18 14:18:27
Processed: 26-SEP-18 07:39:04 LAB. ID: CS0.5

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.55e+04	1.79e+03	3.7e+01	1.00e+05	4.41e+03	2.3e+01
2	1,2,3,7,8-PeCDF	5.99e+05	1.18e+03	5.1e+02	3.57e+05	4.28e+03	8.3e+01
3	2,3,4,7,8-PeCDF	5.69e+05	1.18e+03	4.8e+02	3.70e+05	4.28e+03	8.7e+01
4	1,2,3,4,7,8-HxCDF	6.38e+05	3.25e+03	2.0e+02	4.85e+05	1.42e+03	3.4e+02
5	1,2,3,6,7,8-HxCDF	6.38e+05	3.25e+03	2.0e+02	4.95e+05	1.42e+03	3.5e+02
6	2,3,4,6,7,8-HxCDF	6.03e+05	3.25e+03	1.9e+02	4.83e+05	1.42e+03	3.4e+02
7	1,2,3,7,8,9-HxCDF	4.97e+05	3.25e+03	1.5e+02	4.13e+05	1.42e+03	2.9e+02
8	1,2,3,4,6,7,8-HpCDF	5.62e+05	1.66e+03	3.4e+02	5.47e+05	1.04e+03	5.3e+02
9	1,2,3,4,7,8,9-HpCDF	4.02e+05	1.66e+03	2.4e+02	4.51e+05	1.04e+03	4.3e+02
10	OCDF	5.23e+05	1.34e+03	3.9e+02	5.81e+05	4.02e+03	1.4e+02
11	2,3,7,8-TCDD	6.18e+04	5.07e+03	1.2e+01	6.68e+04	2.40e+03	2.8e+01
12	1,2,3,7,8-PeCDD	3.47e+05	2.36e+03	1.5e+02	2.20e+05	2.64e+02	8.3e+02
13	1,2,3,4,7,8-HxCDD	3.95e+05	1.84e+03	2.1e+02	3.18e+05	1.66e+03	1.9e+02
14	1,2,3,6,7,8-HxCDD	3.64e+05	1.84e+03	2.0e+02	2.60e+05	1.66e+03	1.6e+02
15	1,2,3,7,8,9-HxCDD	4.06e+05	1.84e+03	2.2e+02	3.23e+05	1.66e+03	1.9e+02
16	1,2,3,4,6,7,8-HpCDD	3.19e+05	2.32e+03	1.4e+02	3.31e+05	1.19e+03	2.8e+02
17	OCDD	4.28e+05	8.48e+02	5.0e+02	4.37e+05	1.30e+03	3.4e+02
18	13C-2,3,7,8-TCDF	2.54e+07	1.52e+04	1.7e+03	3.22e+07	1.06e+04	3.1e+03
19	13C-1,2,3,7,8-PeCDF	4.04e+07	2.12e+03	1.9e+04	2.49e+07	3.13e+03	8.0e+03
20	13C-2,3,4,7,8-PeCDF	4.23e+07	2.12e+03	2.0e+04	2.67e+07	3.13e+03	8.5e+03
21	13C-1,2,3,4,7,8-HxCDF	2.18e+07	3.28e+03	6.7e+03	4.05e+07	3.71e+03	1.1e+04
22	13C-1,2,3,6,7,8-HxCDF	2.40e+07	3.28e+03	7.3e+03	4.55e+07	3.71e+03	1.2e+04
23	13C-2,3,4,6,7,8-HxCDF	2.42e+07	3.28e+03	7.4e+03	4.44e+07	3.71e+03	1.2e+04
24	13C-1,2,3,7,8,9-HxCDF	1.91e+07	3.28e+03	5.8e+03	3.68e+07	3.71e+03	9.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.81e+07	5.66e+03	3.2e+03	3.90e+07	2.05e+04	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.45e+07	5.66e+03	2.6e+03	3.15e+07	2.05e+04	1.5e+03
27	13C-2,3,7,8-TCDD	1.84e+07	1.55e+04	1.2e+03	2.34e+07	5.32e+03	4.4e+03
28	13C-1,2,3,7,8-PeCDD	3.10e+07	3.24e+03	9.6e+03	1.95e+07	2.82e+03	6.9e+03
29	13C-1,2,3,4,7,8-HxCDD	2.85e+07	5.20e+03	5.5e+03	2.24e+07	3.08e+03	7.3e+03
30	13C-1,2,3,6,7,8-HxCDD	2.65e+07	5.20e+03	5.1e+03	2.10e+07	3.08e+03	6.8e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.26e+07	2.60e+03	8.7e+03	2.13e+07	2.03e+03	1.1e+04
32	13C-OCDD	2.73e+07	1.56e+03	1.8e+04	2.99e+07	4.32e+02	6.9e+04
33	13C-1,2,3,4-TCDD	1.96e+07	1.55e+04	1.3e+03	2.41e+07	5.32e+03	4.5e+03
34	13C-1,2,3,7,8,9-HxCDD	3.00e+07	5.20e+03	5.8e+03	2.40e+07	3.08e+03	7.8e+03
35	37Cl-2,3,7,8-TCDD	1.12e+05	4.66e+03	2.4e+01			

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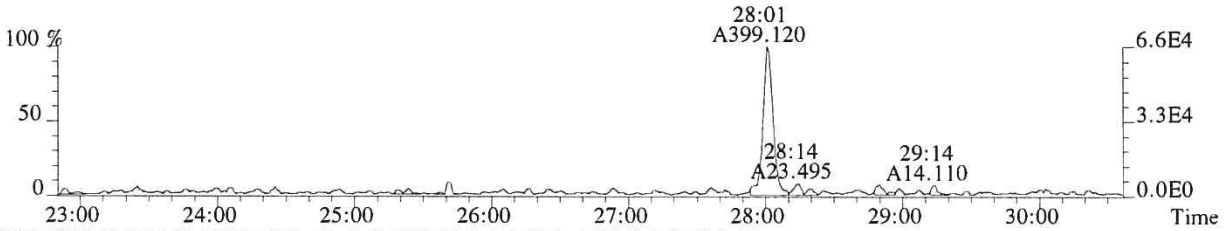
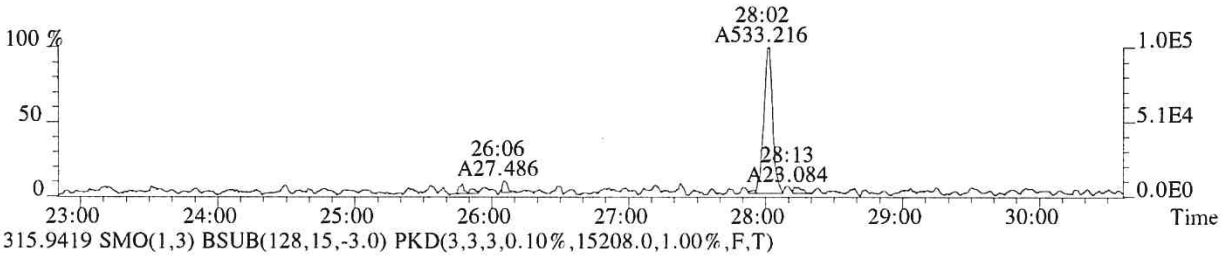
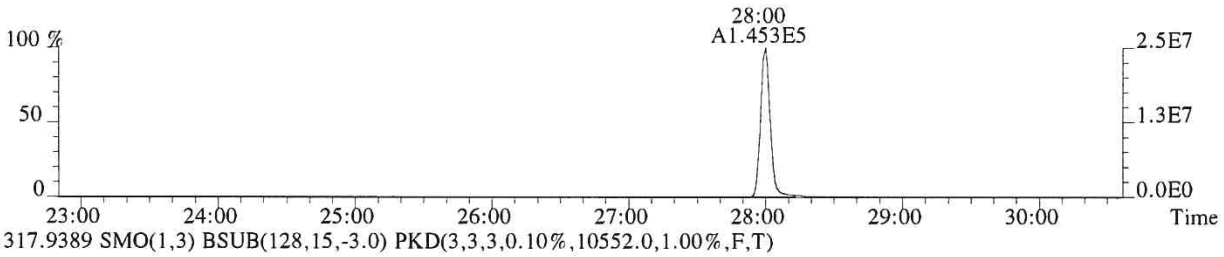
File:P614682 #1-552 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1788.0,1.00%,F,T)



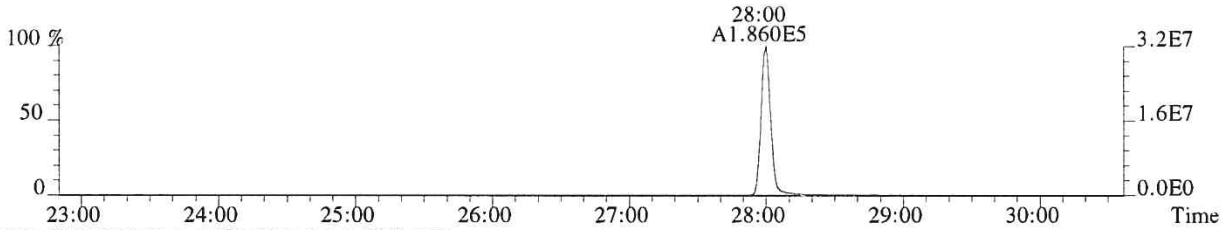
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4408.0,1.00%,F,T)



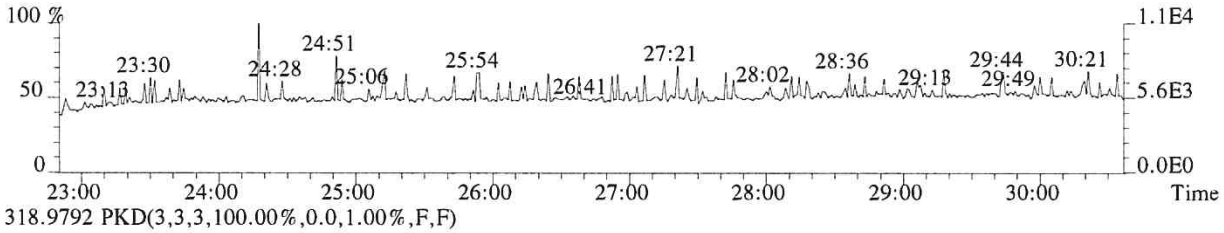
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15208.0,1.00%,F,T)



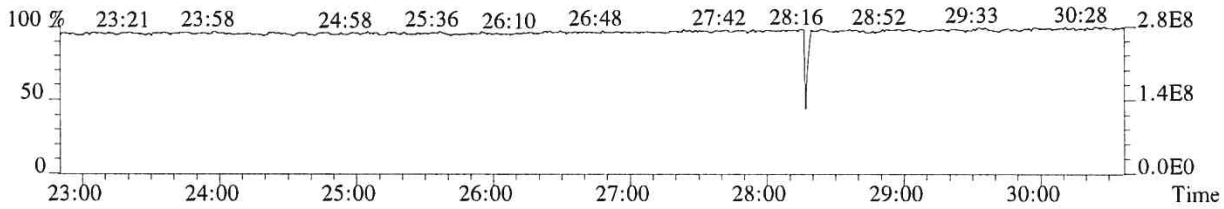
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10552.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

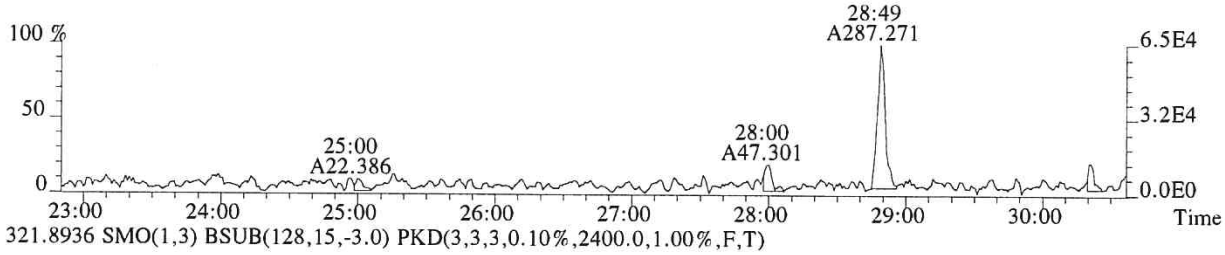


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

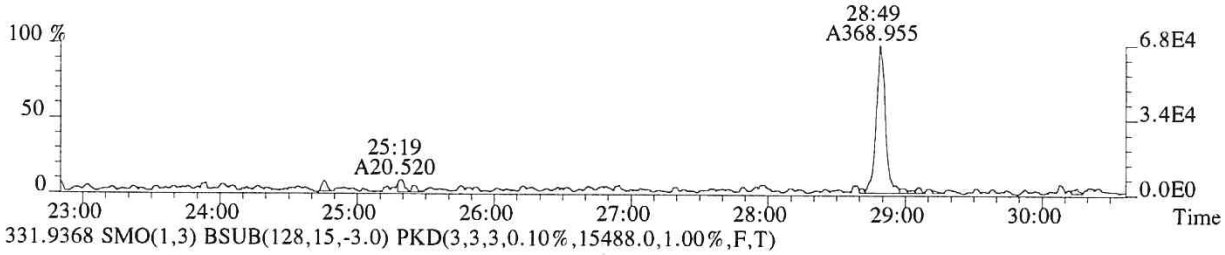


060782

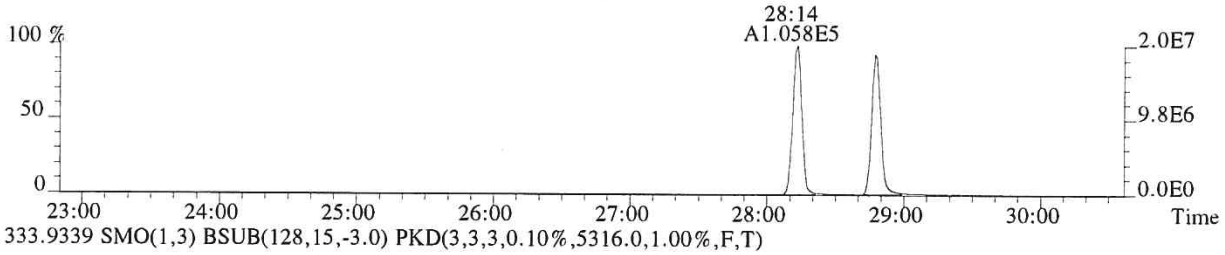
File:P614682 #1-552 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5072.0,1.00%,F,T)



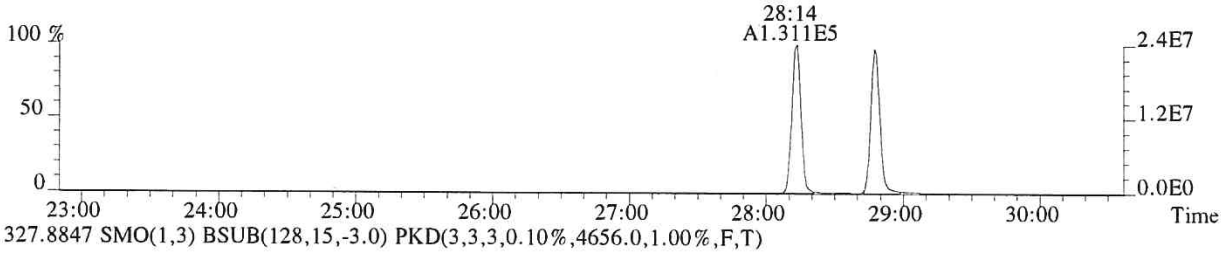
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2400.0,1.00%,F,T)



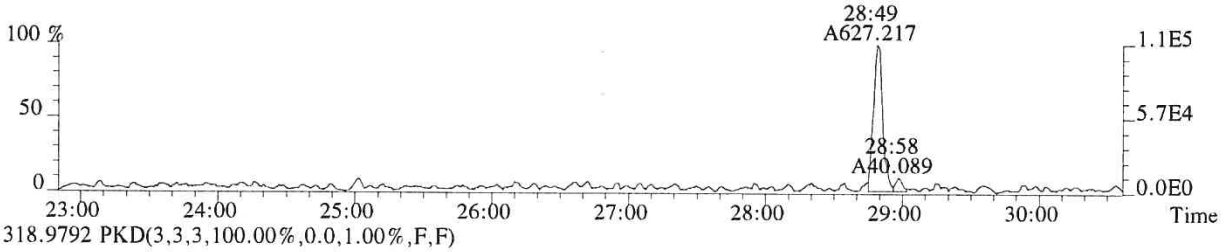
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15488.0,1.00%,F,T)



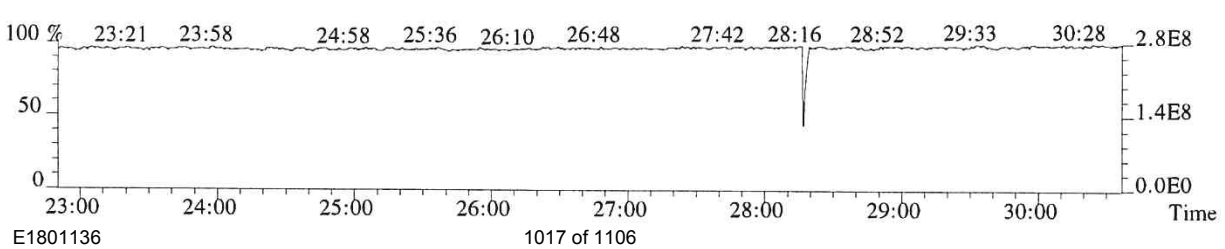
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5316.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4656.0,1.00%,F,T)

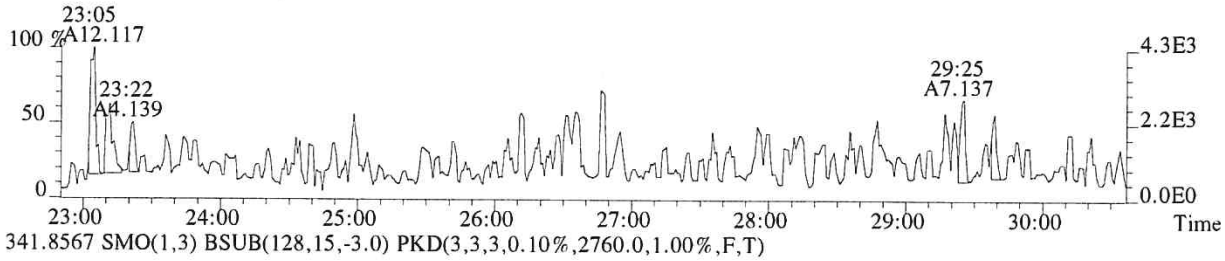


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

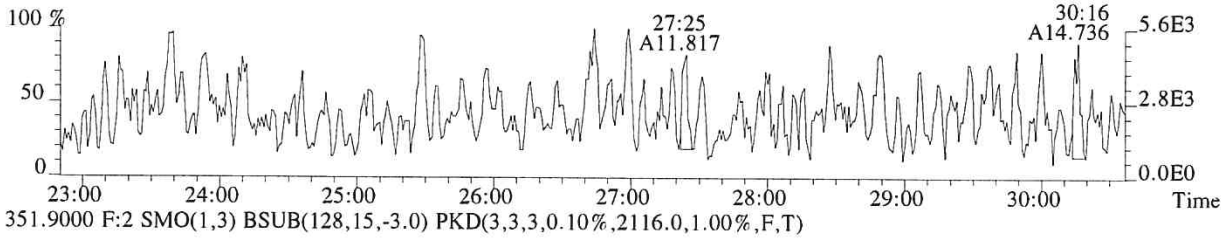


060783

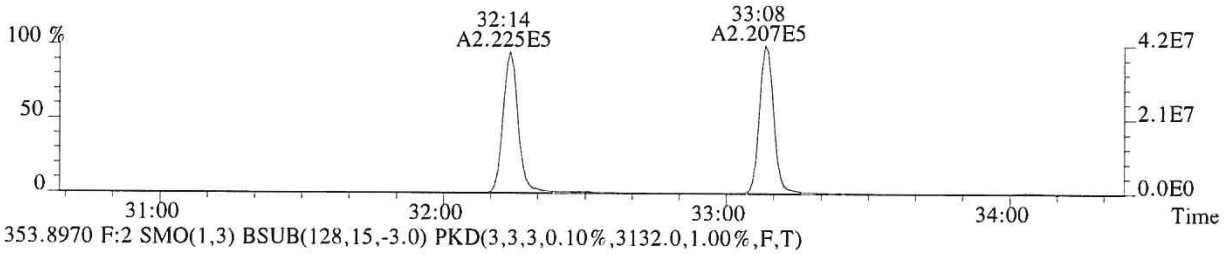
File:P614682 #1-552 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1072.0,1.00%,F,T)



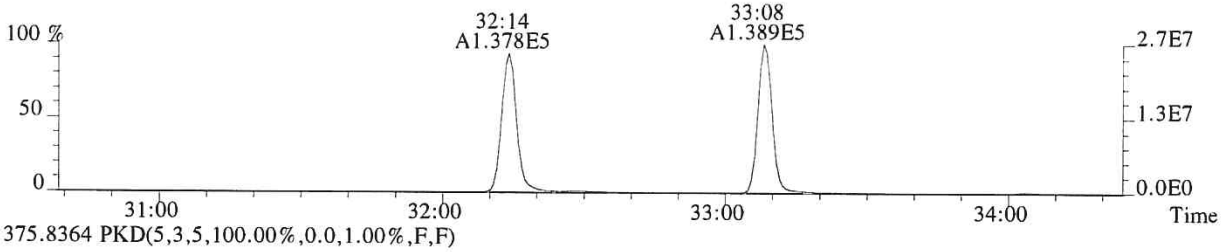
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2760.0,1.00%,F,T)



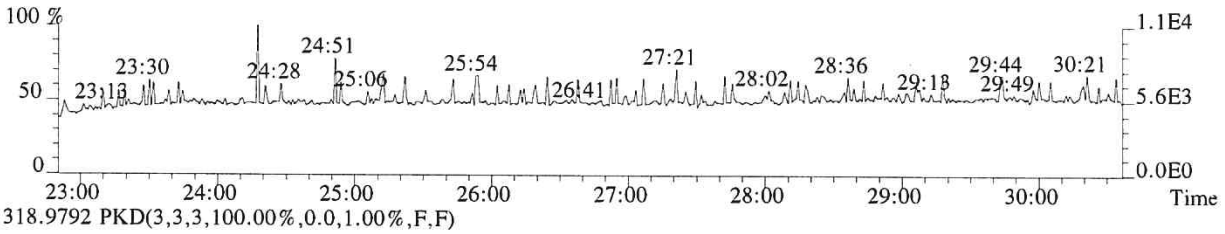
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2116.0,1.00%,F,T)



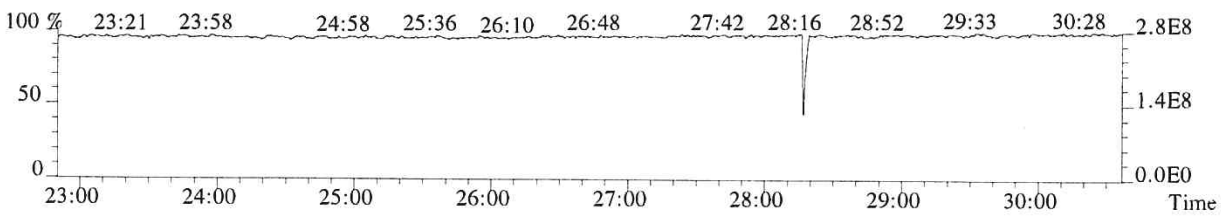
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3132.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

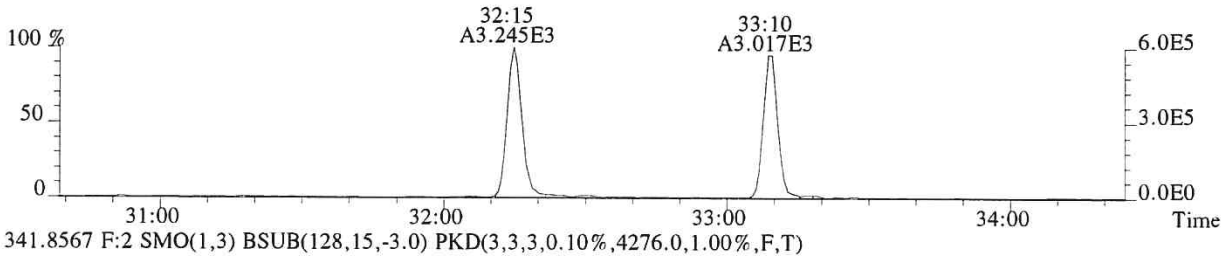


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

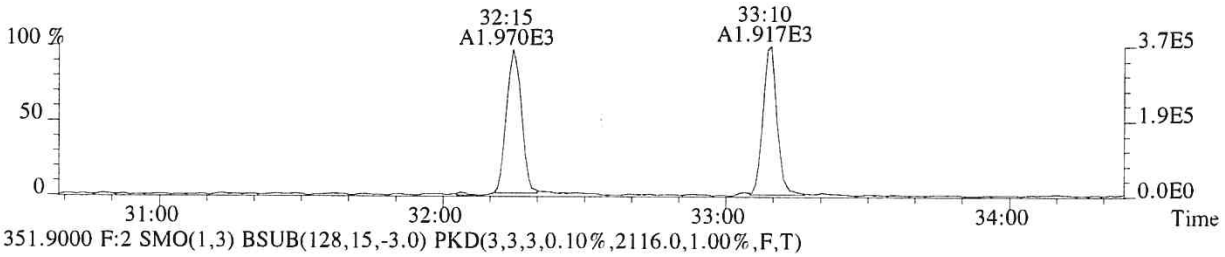


060784

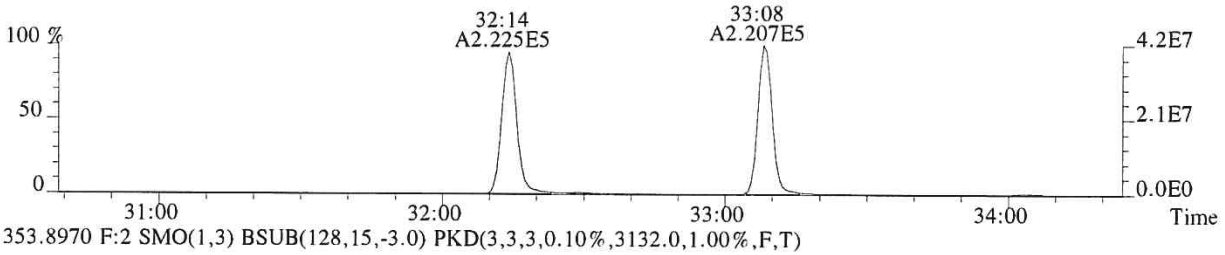
File:P614682 #1-339 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1180.0,1.00%,F,T)



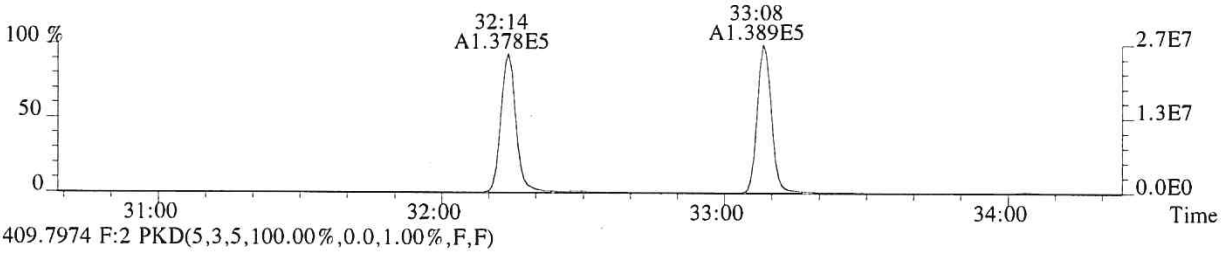
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4276.0,1.00%,F,T)



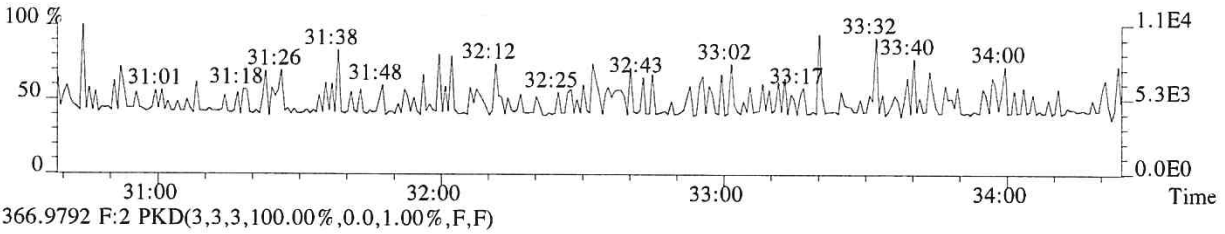
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2116.0,1.00%,F,T)



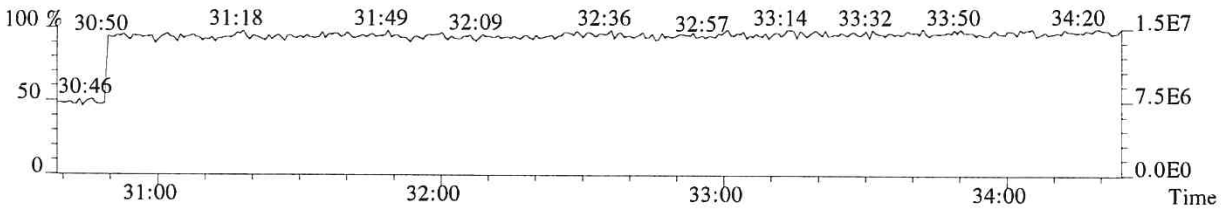
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3132.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

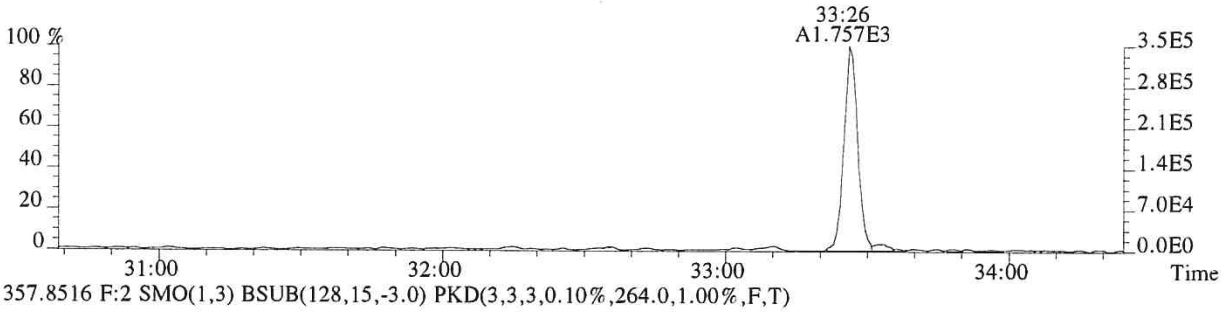


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

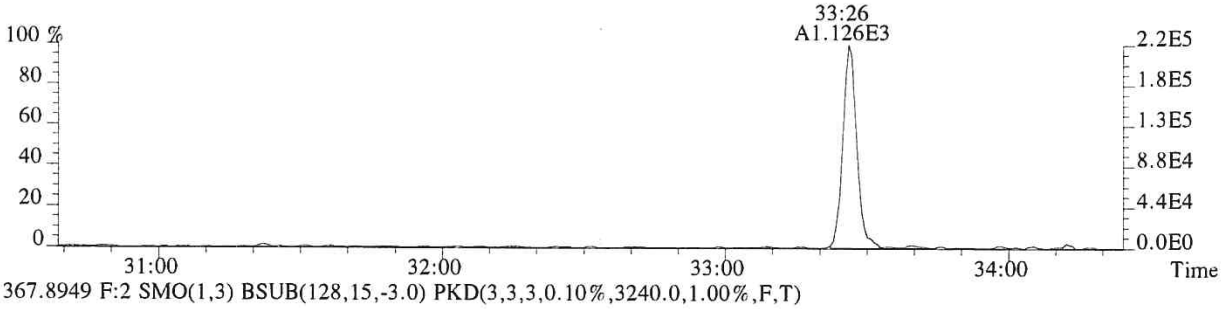


060785

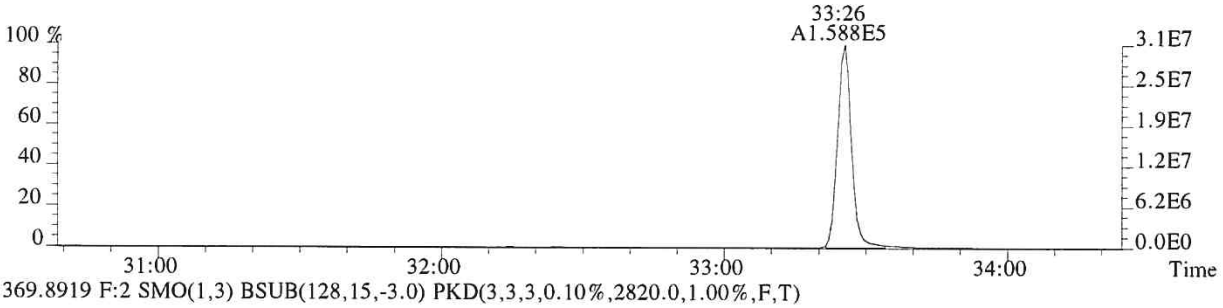
File:P614682 #1-339 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2356.0,1.00%,F,T)



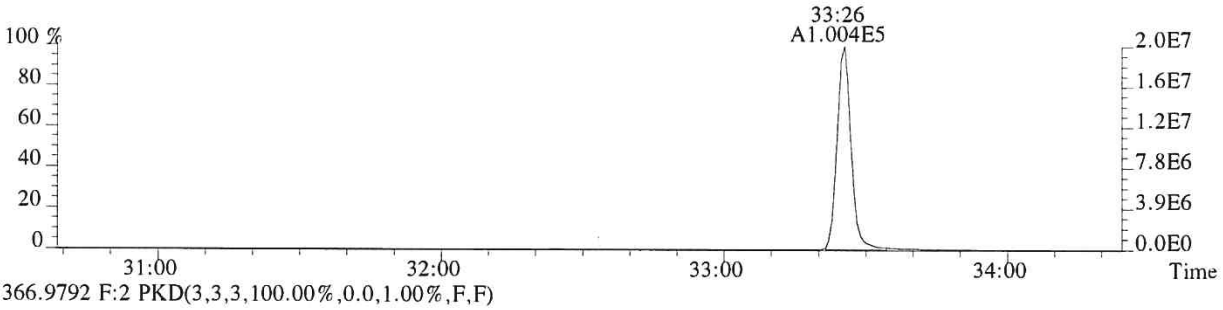
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,264.0,1.00%,F,T)



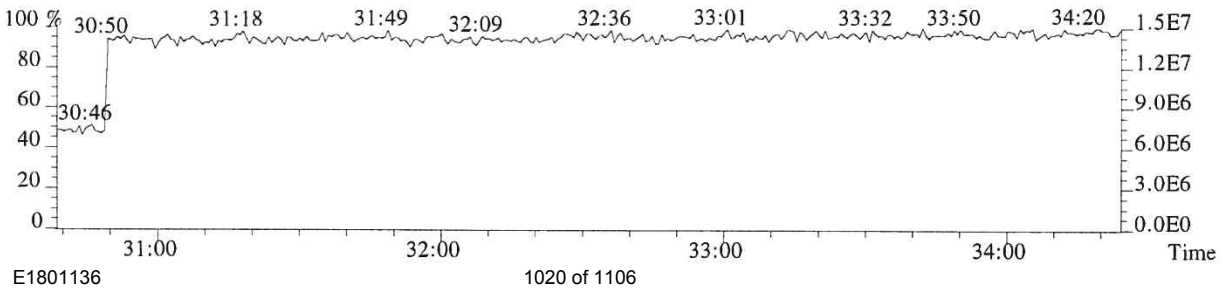
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3240.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2820.0,1.00%,F,T)

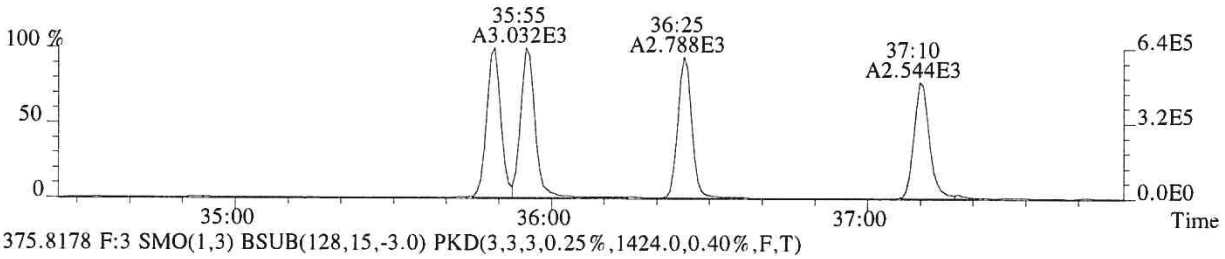


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

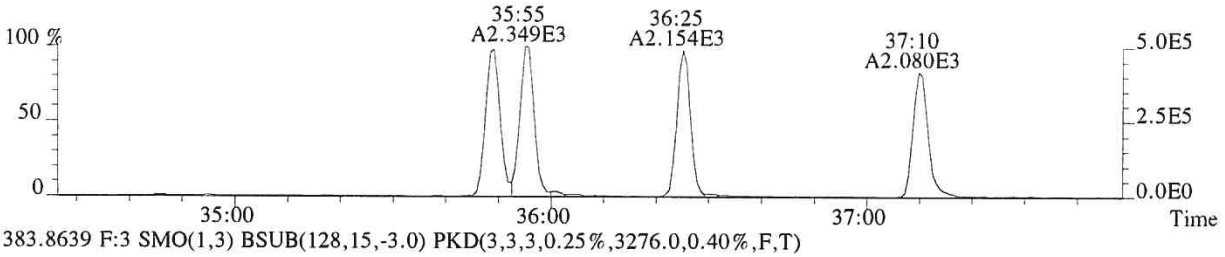


060786

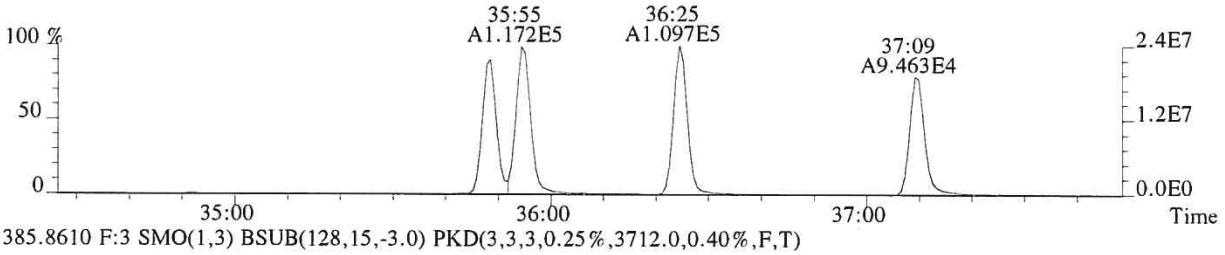
File:P614682 #1-304 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3252.0,0.40%,F,T)



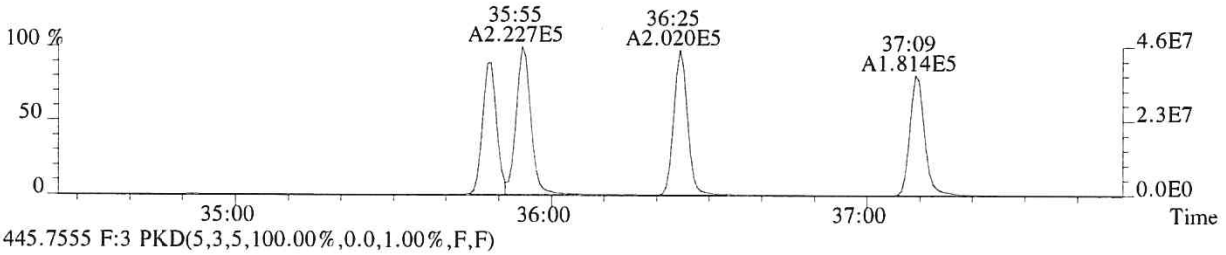
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1424.0,0.40%,F,T)



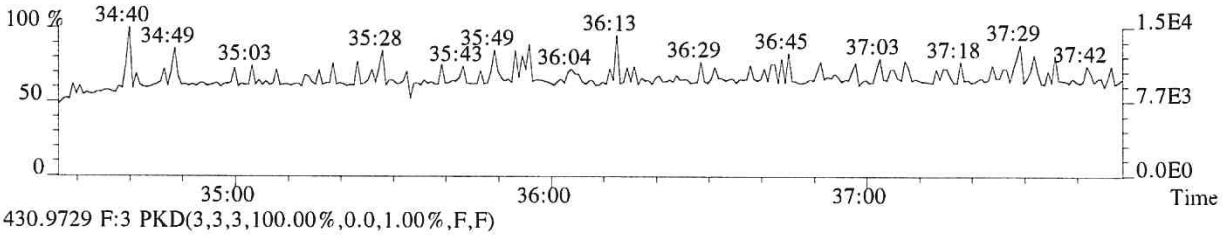
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3276.0,0.40%,F,T)



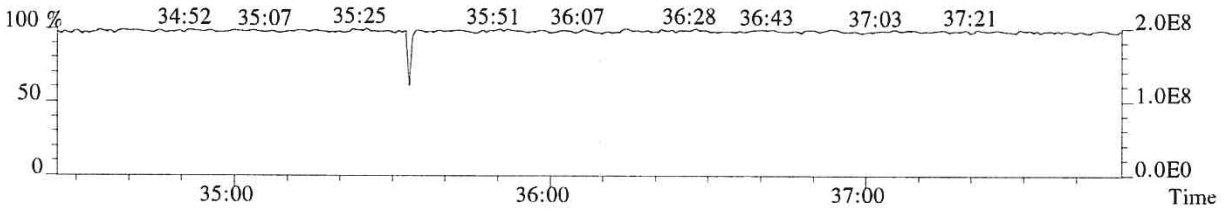
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3712.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

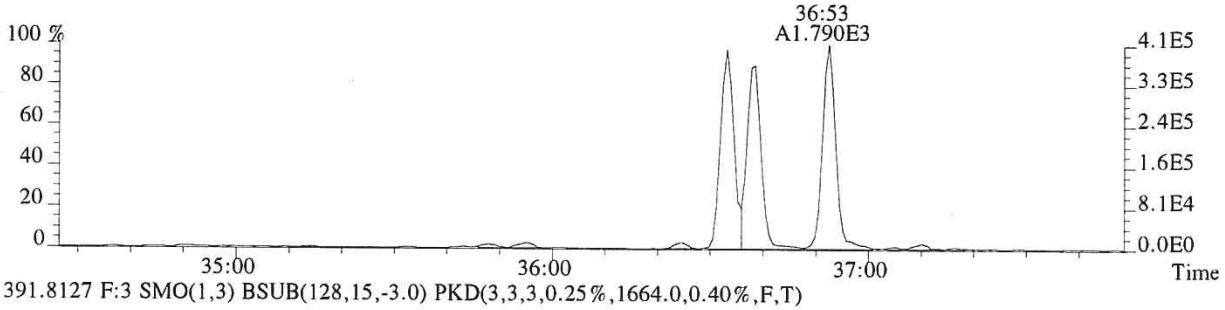


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

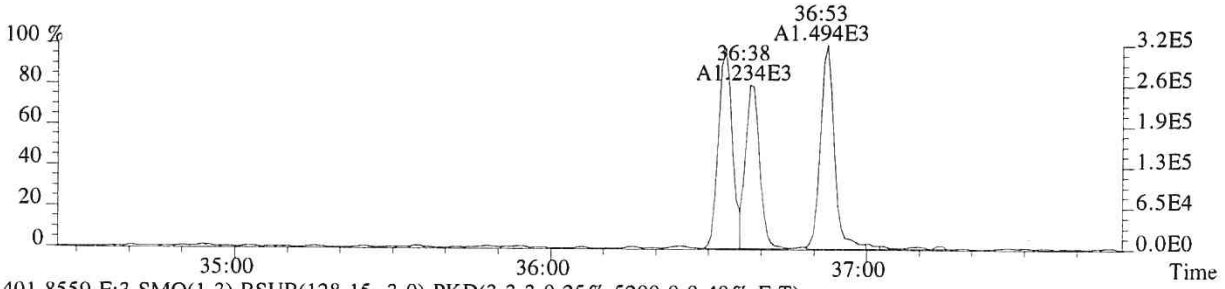


060787

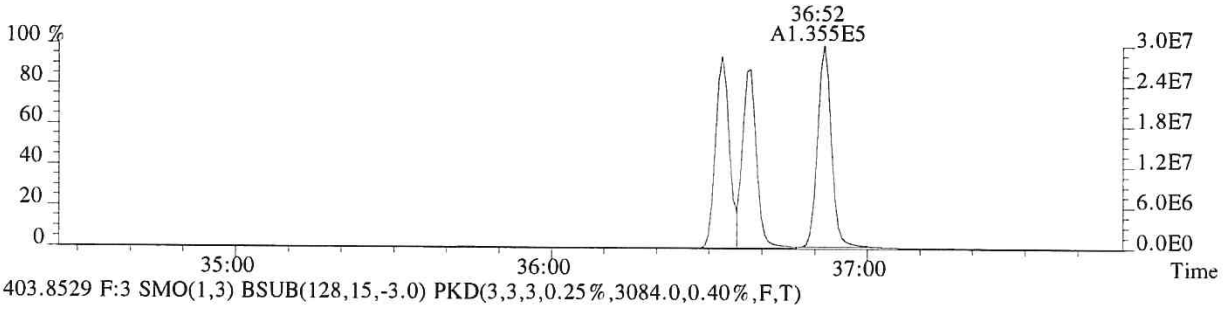
File:P614682 #1-304 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1840.0,0.40%,F,T)



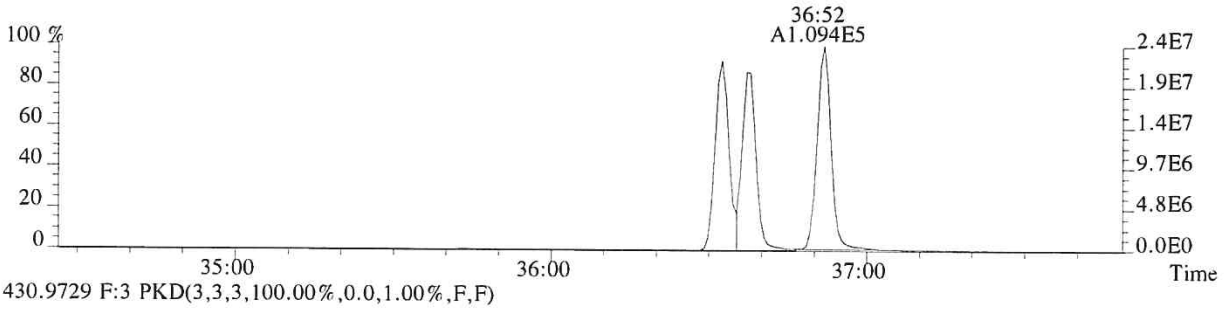
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1664.0,0.40%,F,T)



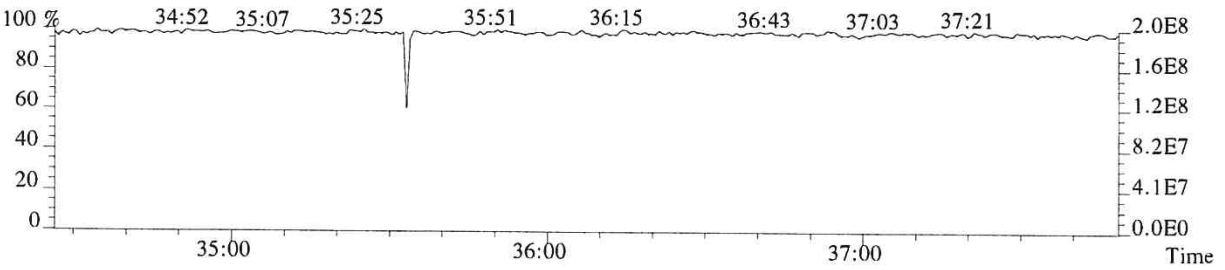
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5200.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3084.0,0.40%,F,T)

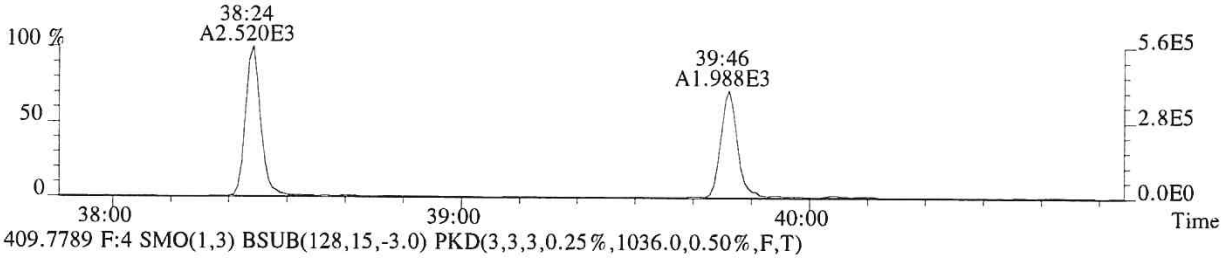


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

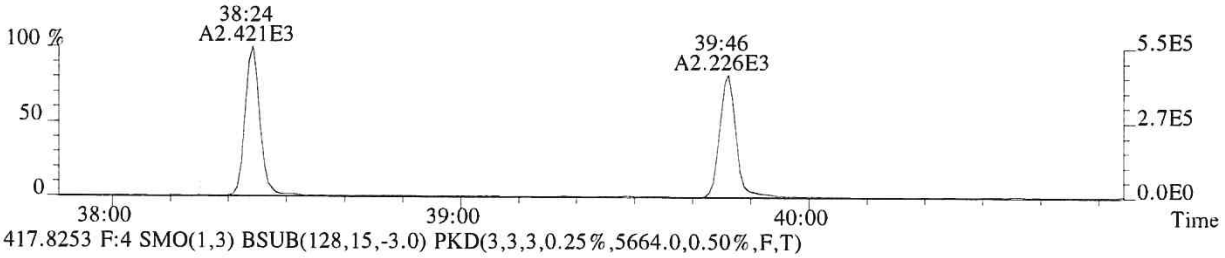


060788

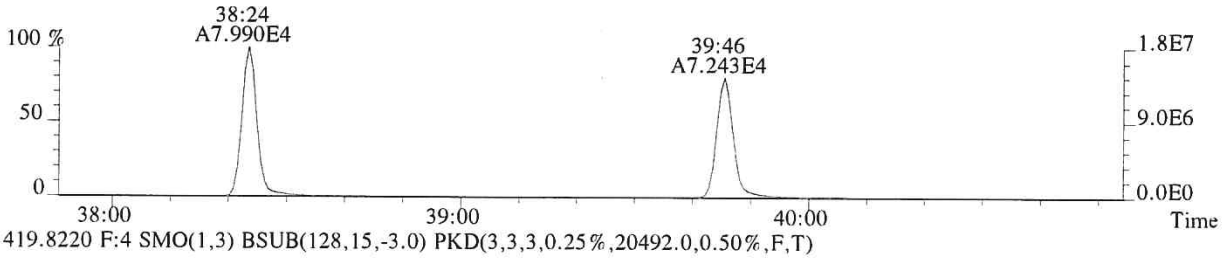
File:P614682 #1-276 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1664.0,0.50%,F,T)



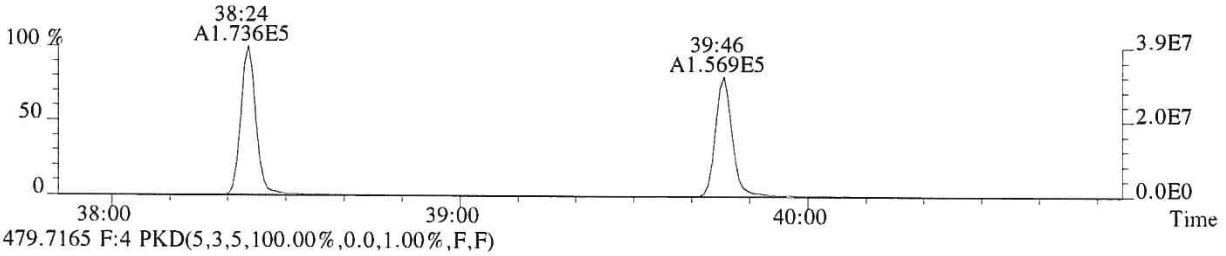
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1036.0,0.50%,F,T)



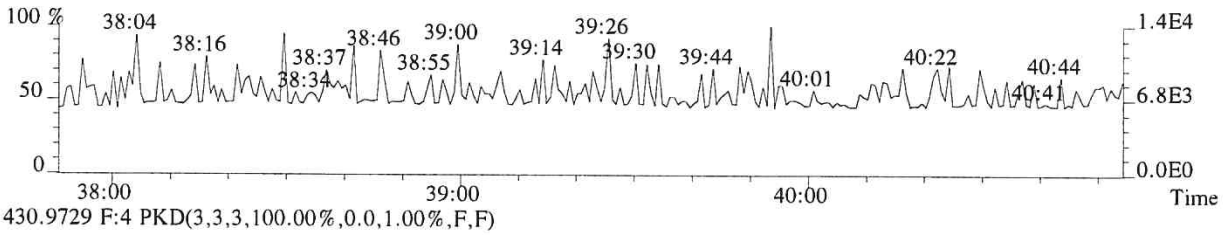
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5664.0,0.50%,F,T)



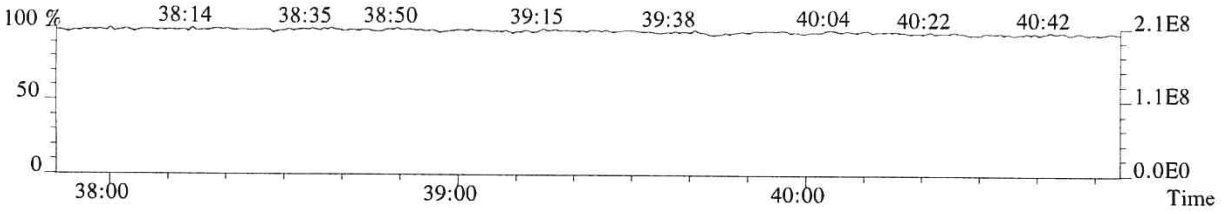
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,20492.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

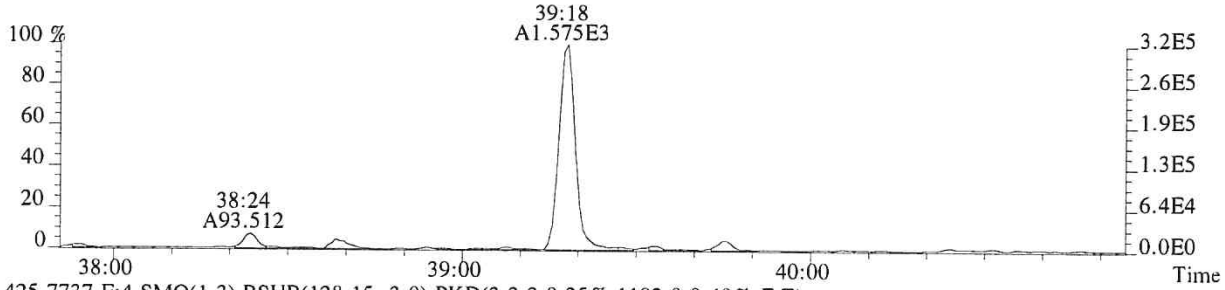


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

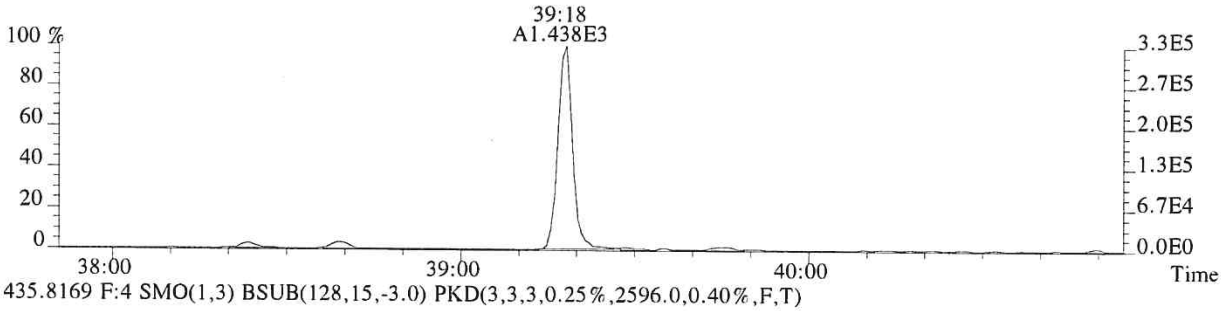


060789

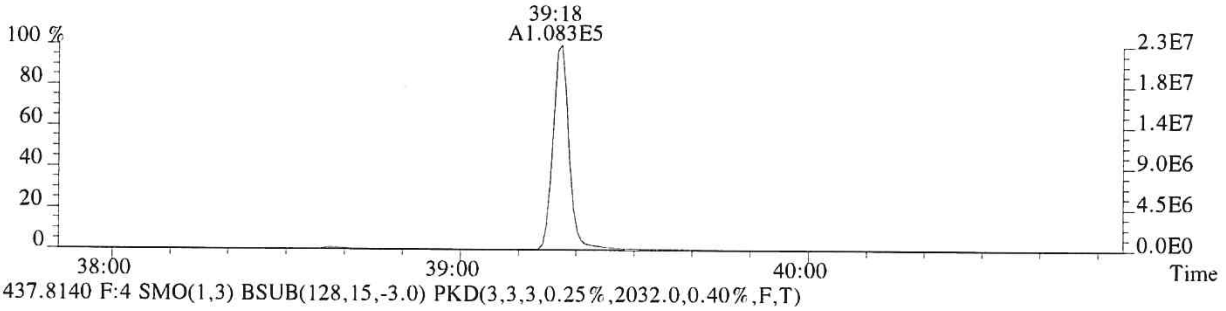
File:P614682 #1-276 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2320.0,0.40%,F,T)



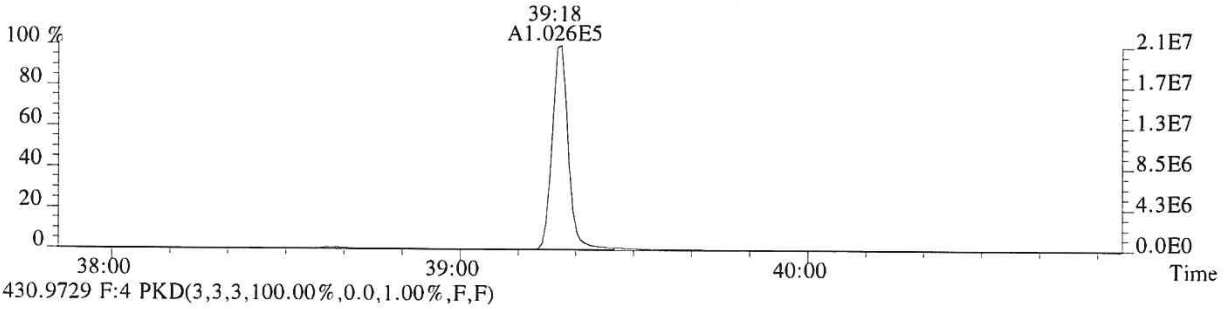
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1192.0,0.40%,F,T)



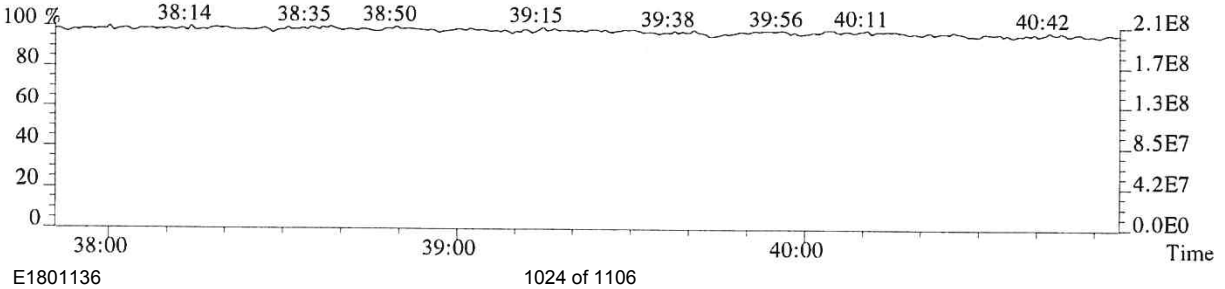
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2596.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2032.0,0.40%,F,T)

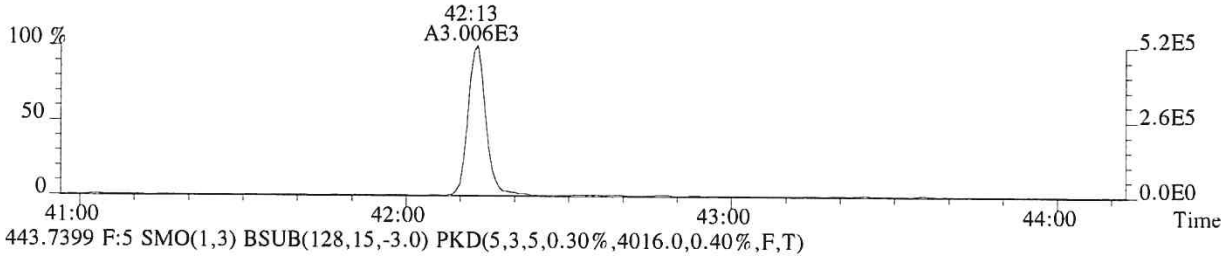


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

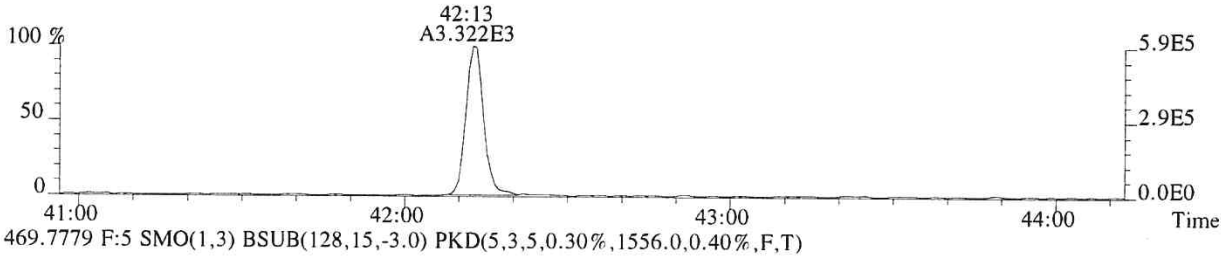


060790

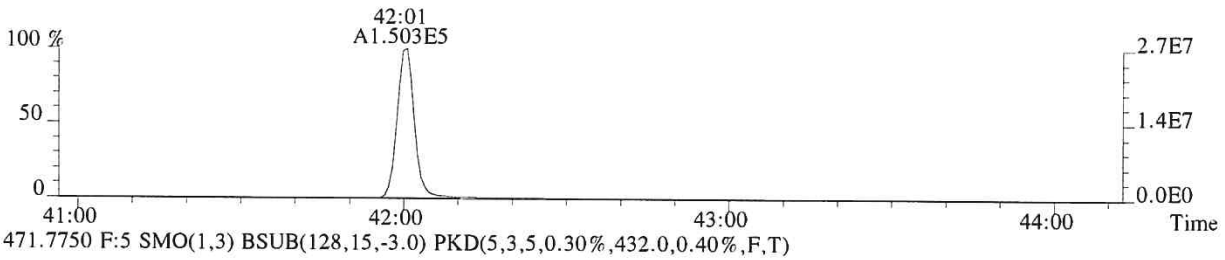
File:P614682 #1-295 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1340.0,0.40%,F,T)



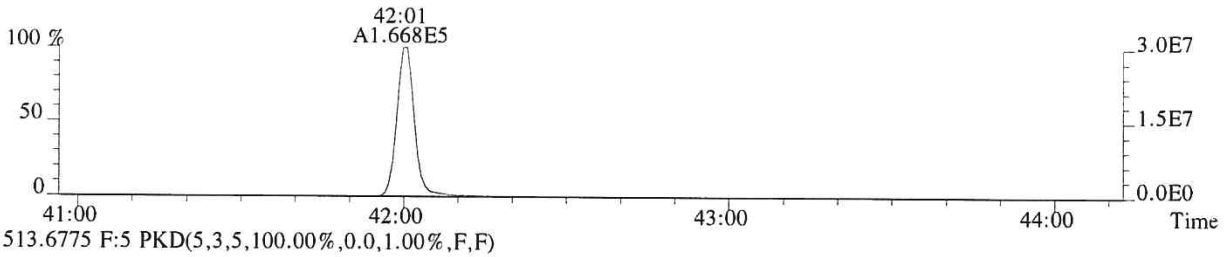
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4016.0,0.40%,F,T)



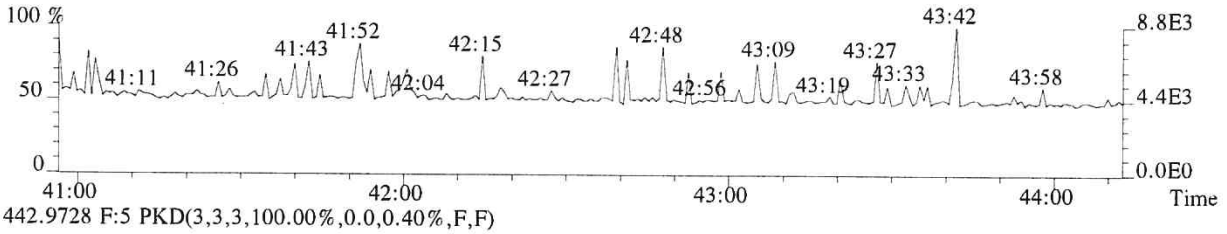
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1556.0,0.40%,F,T)



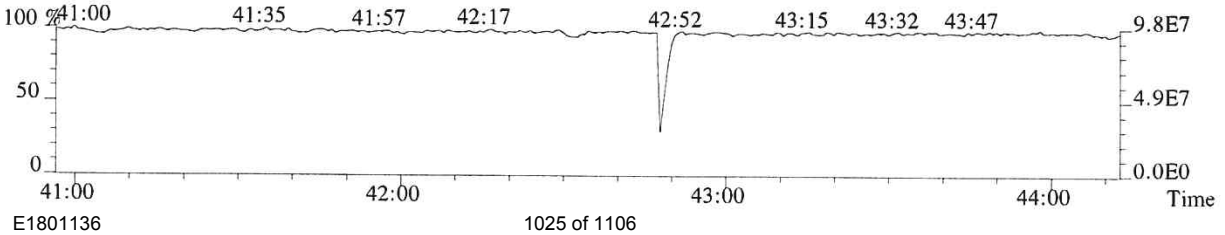
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,432.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

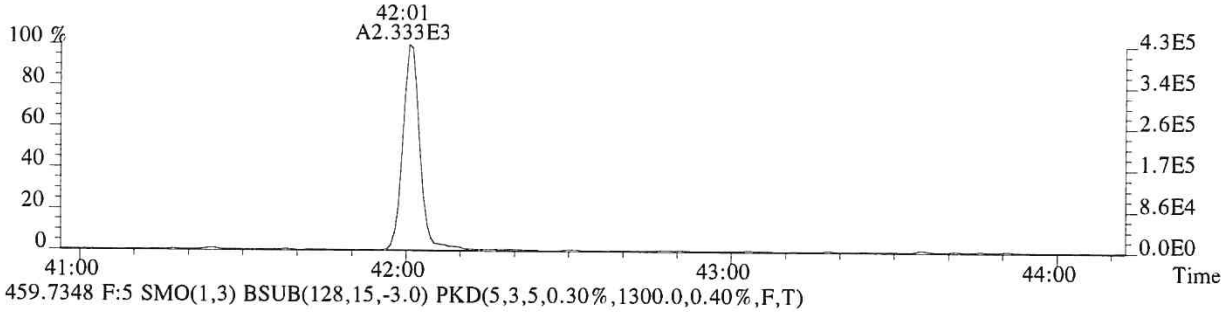


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

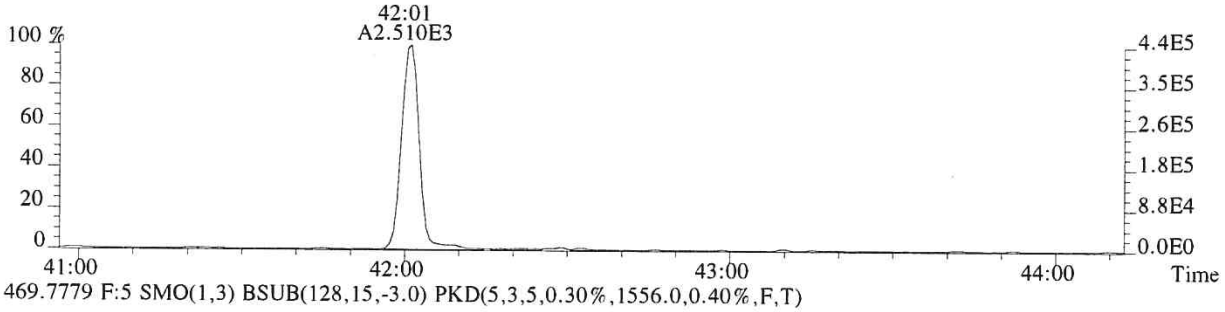


060791

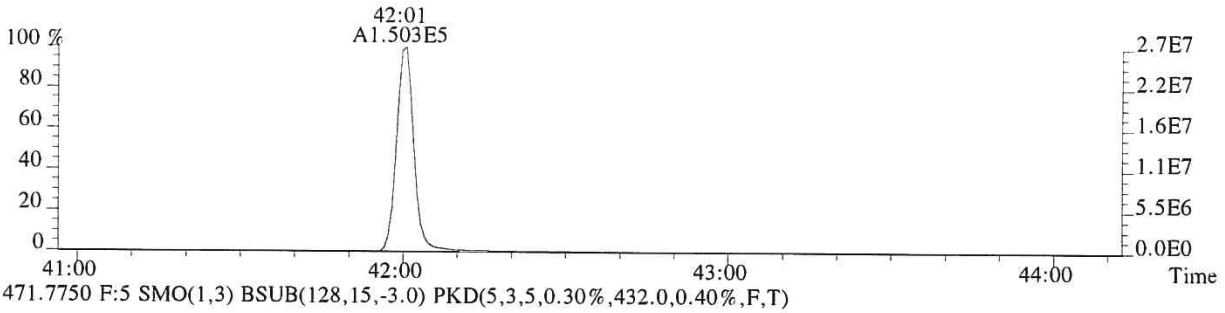
File:P614682 #1-295 Acq:25-SEP-2018 14:18:27 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,848.0,0.40%,F,T)



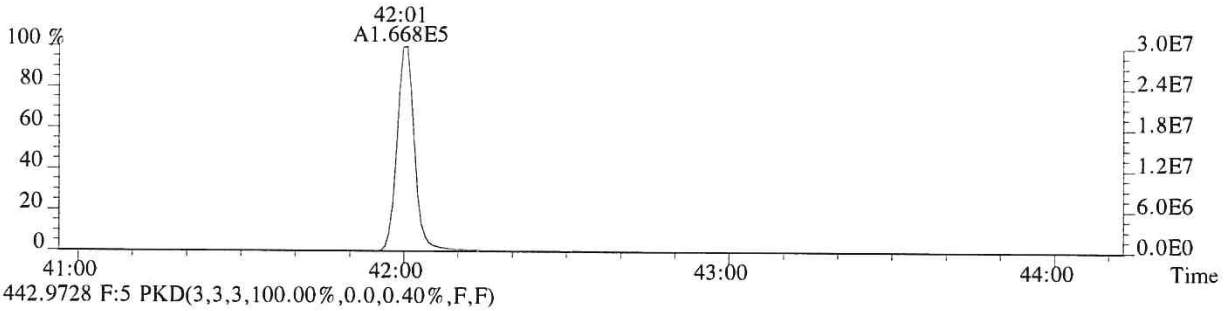
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1300.0,0.40%,F,T)



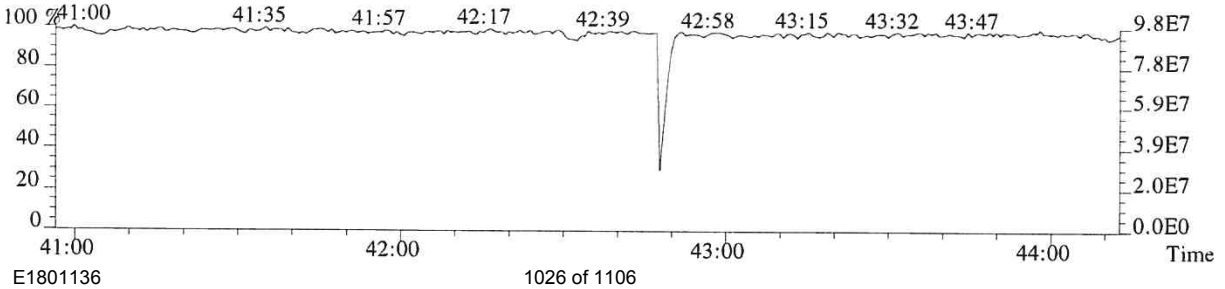
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1556.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,432.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060792

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
82614

Run #2 Filename P614683 Samp: 1 Inj: 1 Acquired: 25-SEP-18 15:08:49
Processed: 26-SEP-18 07:39:06 Sample ID: CS1

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:00	9.696e+02	1.301e+03	0.75	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:14	8.209e+03	5.211e+03	1.58	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:09	7.782e+03	4.847e+03	1.61	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	7.580e+03	5.860e+03	1.29	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	7.826e+03	6.295e+03	1.24	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	7.149e+03	5.707e+03	1.25	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:10	6.633e+03	5.137e+03	1.29	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	6.668e+03	6.509e+03	1.02	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	5.874e+03	5.515e+03	1.07	yes	no	1.463
10	Unk	OCDF	42:13	7.957e+03	9.190e+03	0.87	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	6.591e+02	7.969e+02	0.83	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	4.521e+03	2.979e+03	1.52	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	4.250e+03	3.535e+03	1.20	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	4.303e+03	3.394e+03	1.27	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:52	4.586e+03	3.767e+03	1.22	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	4.011e+03	3.764e+03	1.07	yes	no	1.112
17	Unk	OCDD	42:01	6.097e+03	6.815e+03	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	1.863e+05	2.330e+05	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	2.845e+05	1.757e+05	1.62	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	2.739e+05	1.718e+05	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:48	1.281e+05	2.407e+05	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:55	1.461e+05	2.703e+05	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:25	1.362e+05	2.538e+05	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	1.215e+05	2.294e+05	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:23	1.041e+05	2.259e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:45	9.345e+04	2.024e+05	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	1.293e+05	1.616e+05	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	1.924e+05	1.218e+05	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:32	1.556e+05	1.239e+05	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	1.601e+05	1.267e+05	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	1.414e+05	1.336e+05	1.06	yes	no	0.857
32	IS	13C-OCDD	42:00	2.022e+05	2.237e+05	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:13	1.337e+05	1.646e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:51	1.731e+05	1.377e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	1.653e+03				no	1.086

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
82614

Run #2 Filename P614683 Samp: 1 Inj: 1 Acquired: 25-SEP-18 15:08:49
Processed: 26-SEP-18 07:39:06 LAB. ID: CS1

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.73e+05	2.52e+03	6.9e+01	2.26e+05	4.68e+03	4.8e+01
2	1,2,3,7,8-PeCDF	1.49e+06	1.07e+03	1.4e+03	9.88e+05	5.47e+03	1.8e+02
3	2,3,4,7,8-PeCDF	1.55e+06	1.07e+03	1.5e+03	9.81e+05	5.47e+03	1.8e+02
4	1,2,3,4,7,8-HxCDF	1.64e+06	3.19e+03	5.1e+02	1.29e+06	1.24e+03	1.0e+03
5	1,2,3,6,7,8-HxCDF	1.65e+06	3.19e+03	5.2e+02	1.30e+06	1.24e+03	1.0e+03
6	2,3,4,6,7,8-HxCDF	1.53e+06	3.19e+03	4.8e+02	1.19e+06	1.24e+03	9.6e+02
7	1,2,3,7,8,9-HxCDF	1.37e+06	3.19e+03	4.3e+02	1.06e+06	1.24e+03	8.5e+02
8	1,2,3,4,6,7,8-HpCDF	1.48e+06	1.97e+03	7.5e+02	1.45e+06	1.25e+03	1.2e+03
9	1,2,3,4,7,8,9-HpCDF	1.19e+06	1.97e+03	6.0e+02	1.11e+06	1.25e+03	8.9e+02
10	OCDF	1.45e+06	1.15e+03	1.3e+03	1.64e+06	2.28e+03	7.2e+02
11	2,3,7,8-TCDD	1.20e+05	6.88e+03	1.7e+01	1.48e+05	2.99e+03	5.0e+01
12	1,2,3,7,8-PeCDD	8.64e+05	2.37e+03	3.6e+02	5.83e+05	1.39e+03	4.2e+02
13	1,2,3,4,7,8-HxCDD	9.60e+05	1.02e+03	9.4e+02	8.07e+05	1.68e+03	4.8e+02
14	1,2,3,6,7,8-HxCDD	9.46e+05	1.02e+03	9.3e+02	7.52e+05	1.68e+03	4.5e+02
15	1,2,3,7,8,9-HxCDD	1.01e+06	1.02e+03	9.9e+02	8.34e+05	1.68e+03	5.0e+02
16	1,2,3,4,6,7,8-HpCDD	8.38e+05	1.17e+03	7.2e+02	8.29e+05	4.84e+02	1.7e+03
17	OCDD	1.16e+06	3.14e+03	3.7e+02	1.30e+06	1.96e+03	6.6e+02
18	13C-2,3,7,8-TCDF	3.28e+07	1.64e+04	2.0e+03	4.11e+07	1.27e+04	3.2e+03
19	13C-1,2,3,7,8-PeCDF	5.29e+07	3.44e+03	1.5e+04	3.26e+07	2.57e+03	1.3e+04
20	13C-2,3,4,7,8-PeCDF	5.43e+07	3.44e+03	1.6e+04	3.38e+07	2.57e+03	1.3e+04
21	13C-1,2,3,4,7,8-HxCDF	2.86e+07	3.47e+03	8.3e+03	5.39e+07	4.48e+03	1.2e+04
22	13C-1,2,3,6,7,8-HxCDF	3.07e+07	3.47e+03	8.8e+03	5.68e+07	4.48e+03	1.3e+04
23	13C-2,3,4,6,7,8-HxCDF	2.95e+07	3.47e+03	8.5e+03	5.46e+07	4.48e+03	1.2e+04
24	13C-1,2,3,7,8,9-HxCDF	2.51e+07	3.47e+03	7.2e+03	4.72e+07	4.48e+03	1.1e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.28e+07	1.29e+04	1.8e+03	4.99e+07	2.56e+04	2.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.87e+07	1.29e+04	1.5e+03	4.06e+07	2.56e+04	1.6e+03
27	13C-2,3,7,8-TCDD	2.37e+07	1.79e+04	1.3e+03	2.98e+07	7.48e+03	4.0e+03
28	13C-1,2,3,7,8-PeCDD	3.81e+07	3.05e+03	1.3e+04	2.43e+07	1.79e+03	1.4e+04
29	13C-1,2,3,4,7,8-HxCDD	3.53e+07	4.99e+03	7.1e+03	2.84e+07	2.28e+03	1.2e+04
30	13C-1,2,3,6,7,8-HxCDD	3.46e+07	4.99e+03	6.9e+03	2.73e+07	2.28e+03	1.2e+04
31	13C-1,2,3,4,6,7,8-HpCDD	3.08e+07	3.94e+03	7.8e+03	2.93e+07	1.60e+03	1.8e+04
32	13C-OCDD	3.85e+07	1.12e+03	3.4e+04	4.22e+07	1.86e+03	2.3e+04
33	13C-1,2,3,4-TCDD	2.49e+07	1.79e+04	1.4e+03	3.07e+07	7.48e+03	4.1e+03
34	13C-1,2,3,7,8,9-HxCDD	3.76e+07	4.99e+03	7.5e+03	3.01e+07	2.28e+03	1.3e+04
35	37Cl-2,3,7,8-TCDD	3.03e+05	3.87e+03	7.8e+01			

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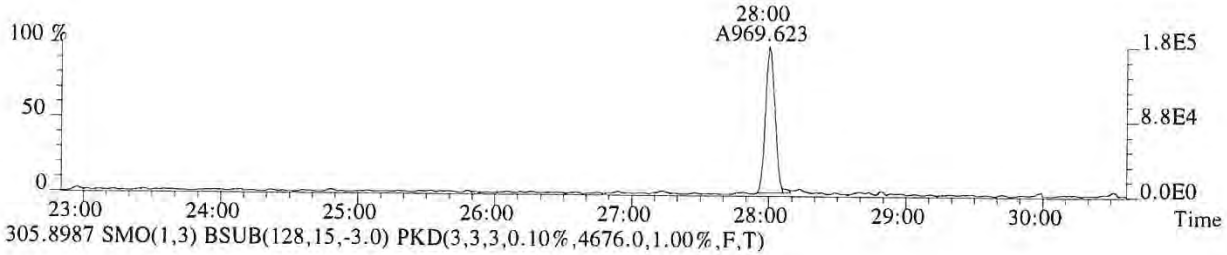
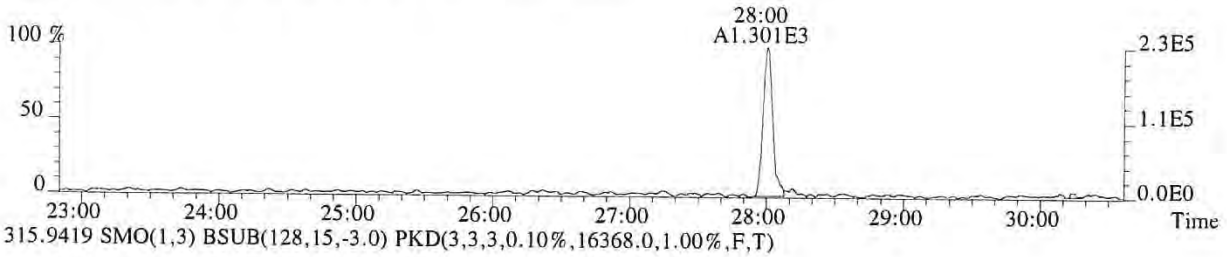
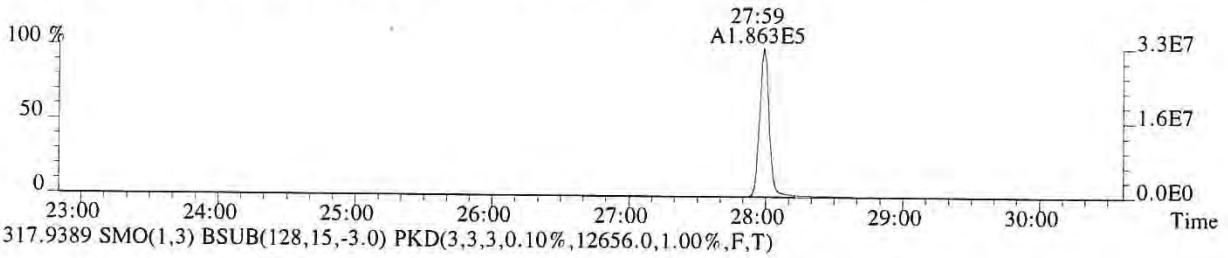
File:P614683 #1-552 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spectr
Sample#1 Exp:CS1
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2516.0,1.00%,F,T)



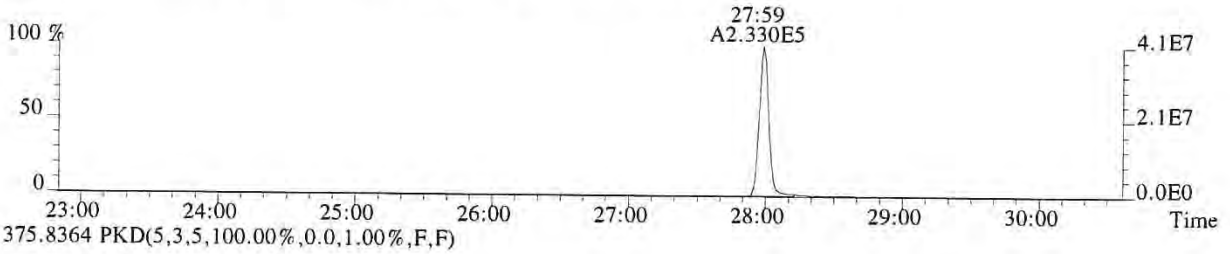
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4676.0,1.00%,F,T)



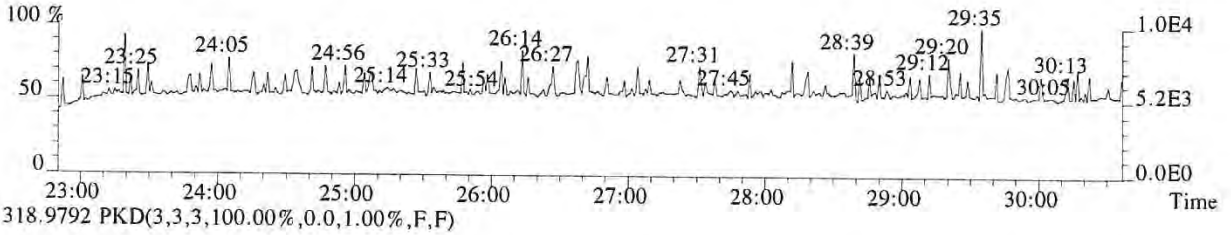
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16368.0,1.00%,F,T)



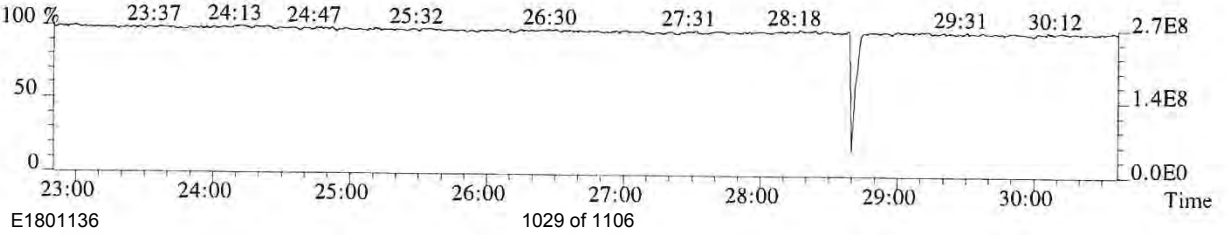
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12656.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

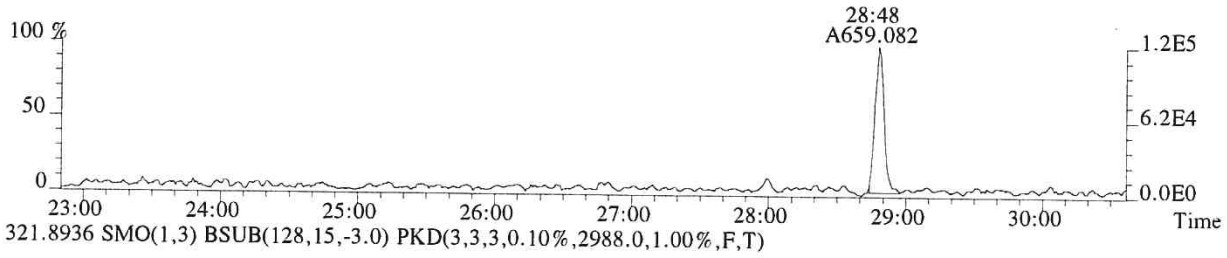


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

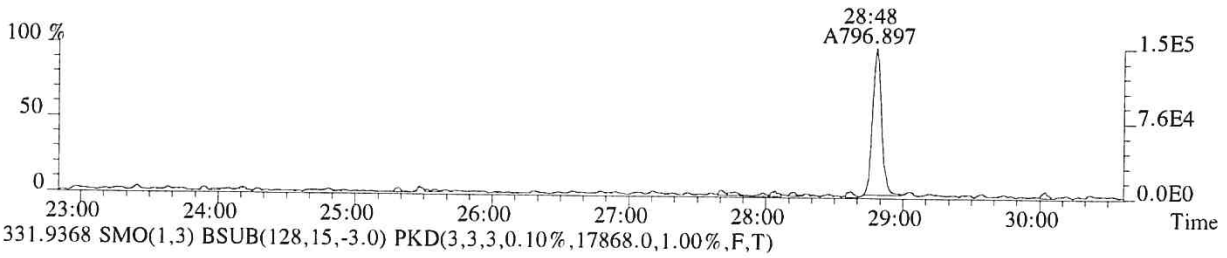


060795

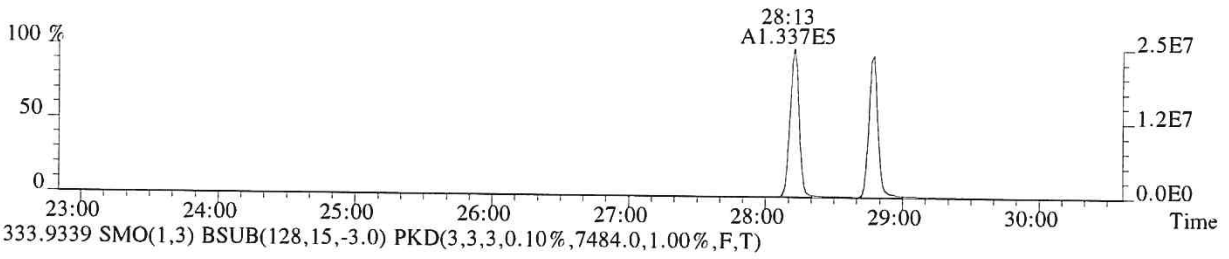
File:P614683 #1-552 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6880.0,1.00%,F,T)



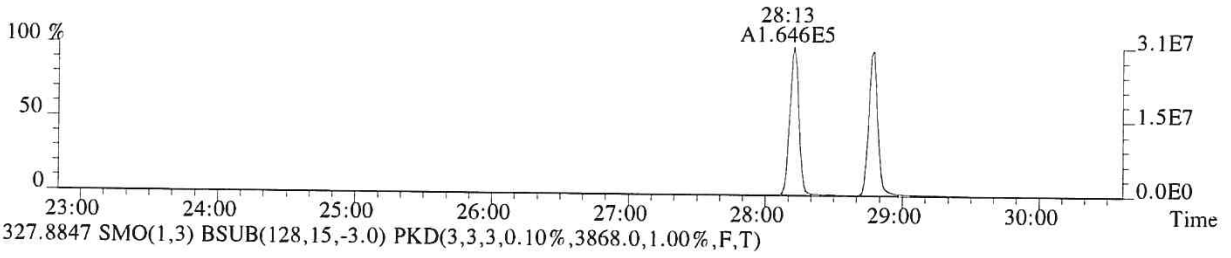
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2988.0,1.00%,F,T)



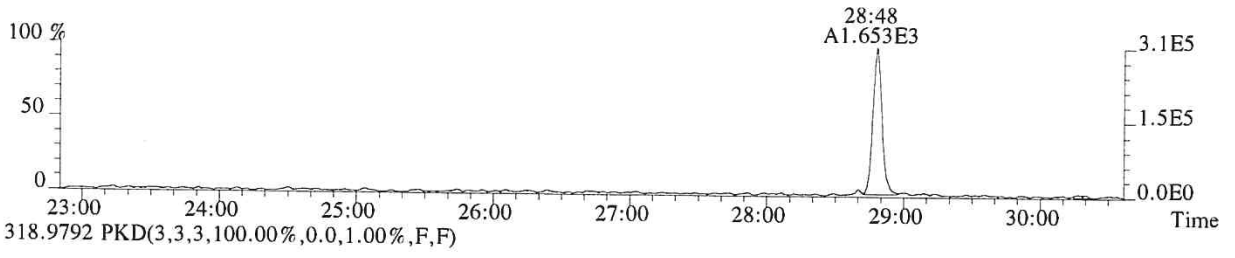
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,17868.0,1.00%,F,T)



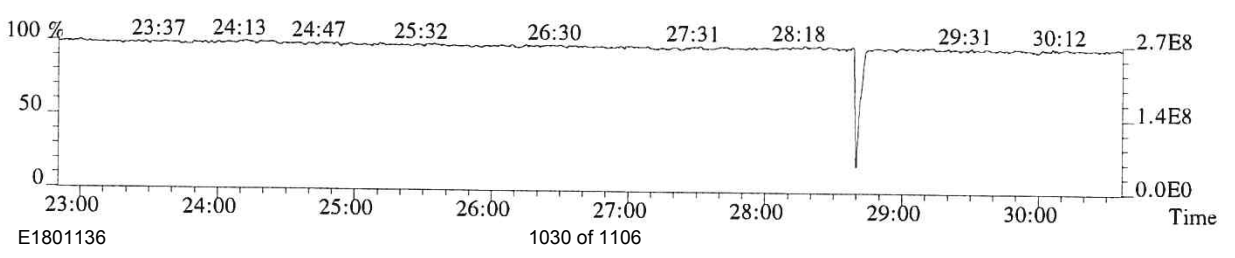
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7484.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3868.0,1.00%,F,T)

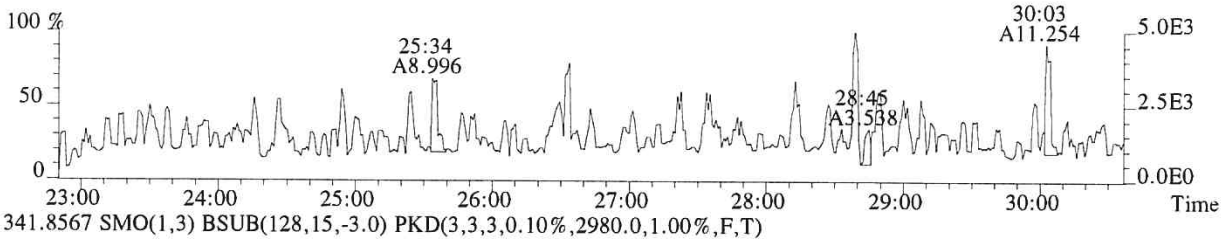


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

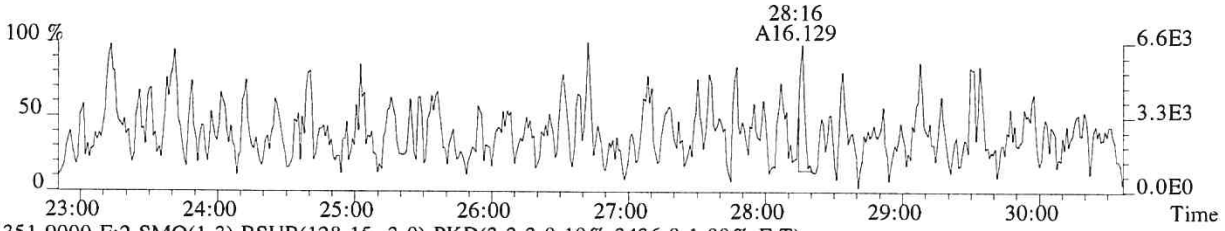


060796

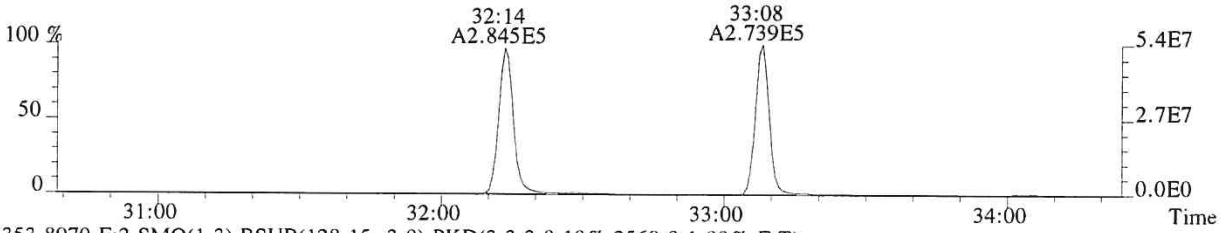
File:P614683 #1-552 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1796.0,1.00%,F,T)



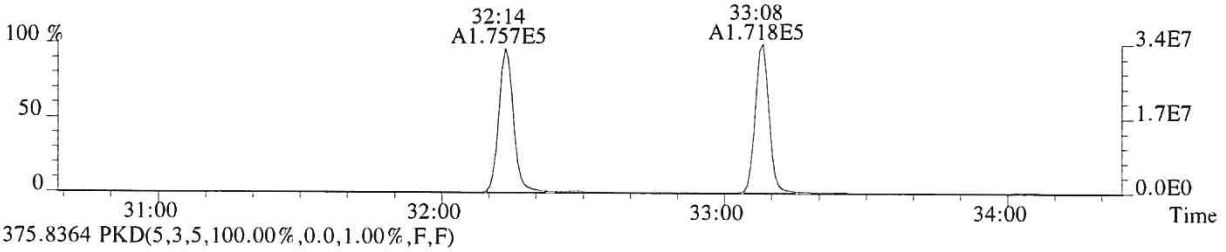
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2980.0,1.00%,F,T)



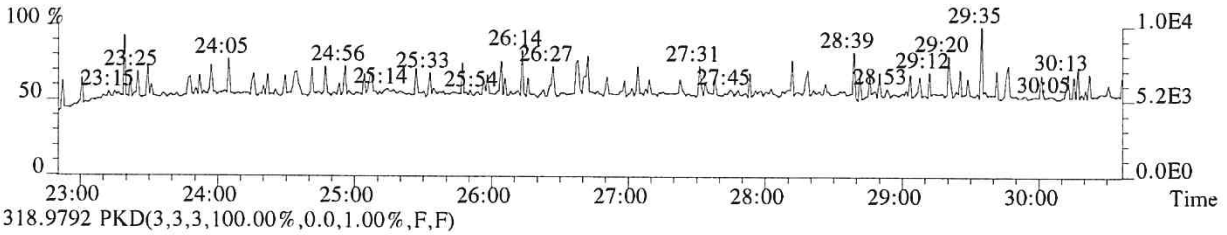
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3436.0,1.00%,F,T)



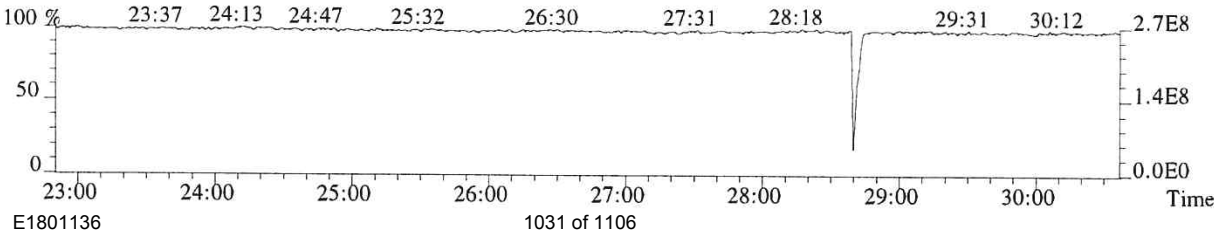
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2568.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



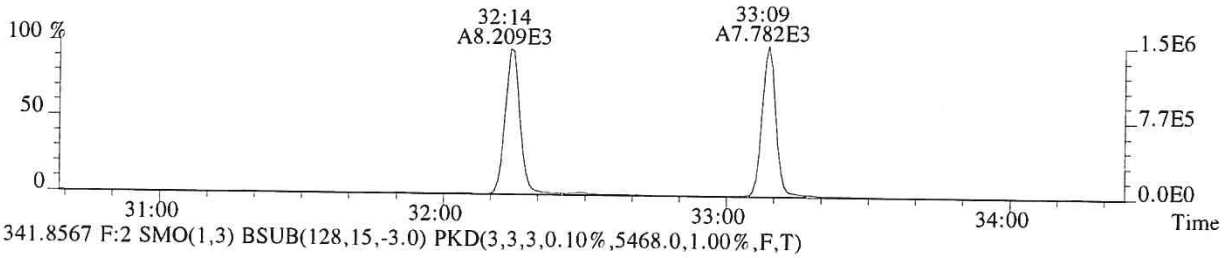
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



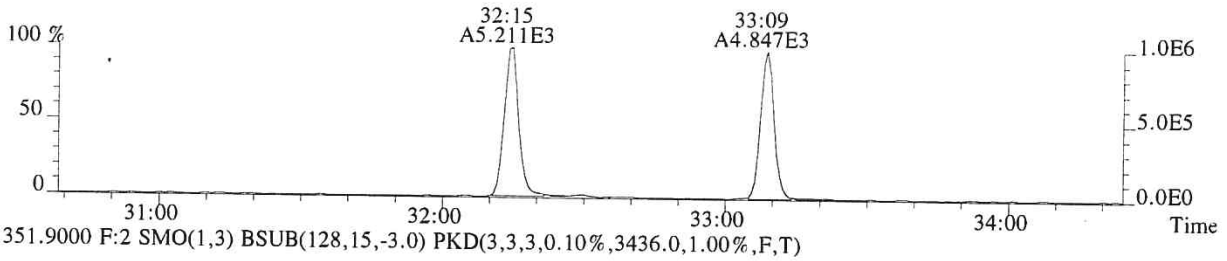
060797

File:P614683 #1-339 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1

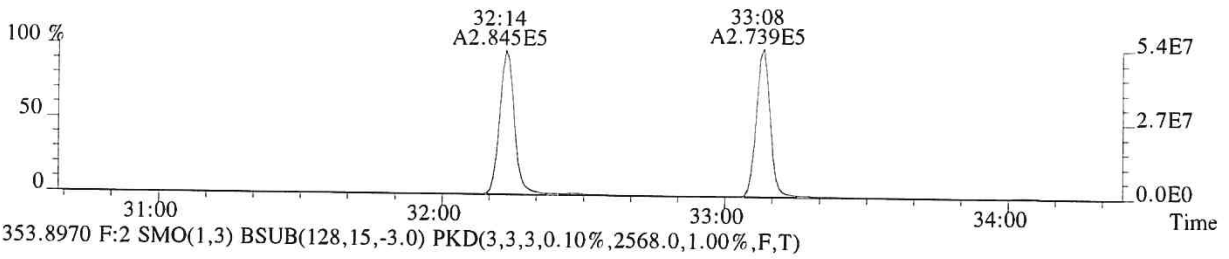
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1068.0,1.00%,F,T)



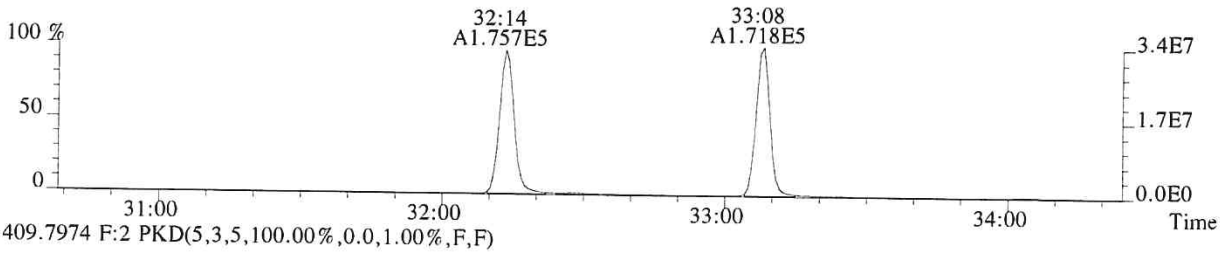
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5468.0,1.00%,F,T)



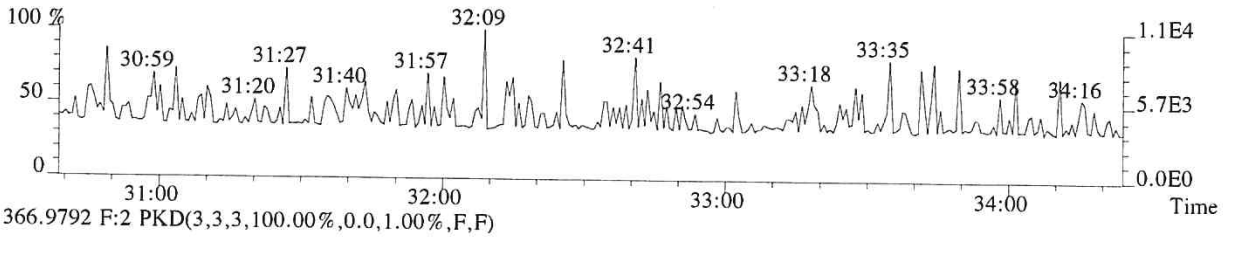
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3436.0,1.00%,F,T)



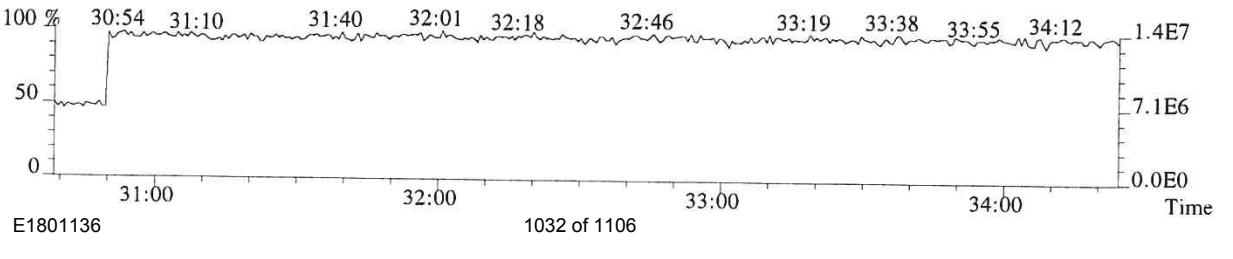
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2568.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

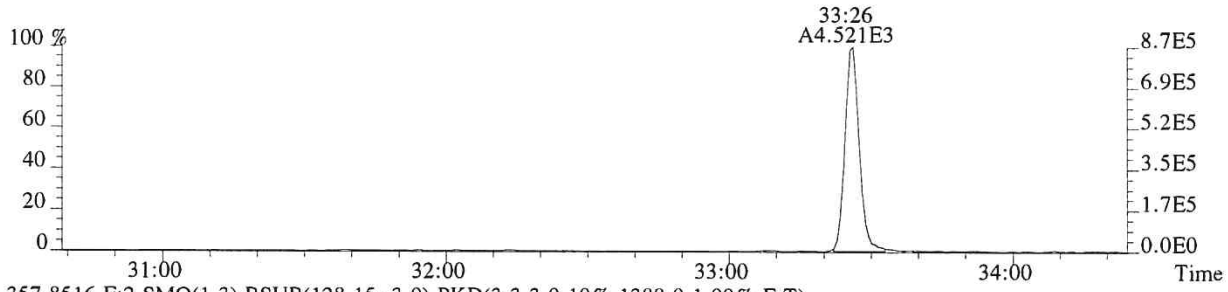


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

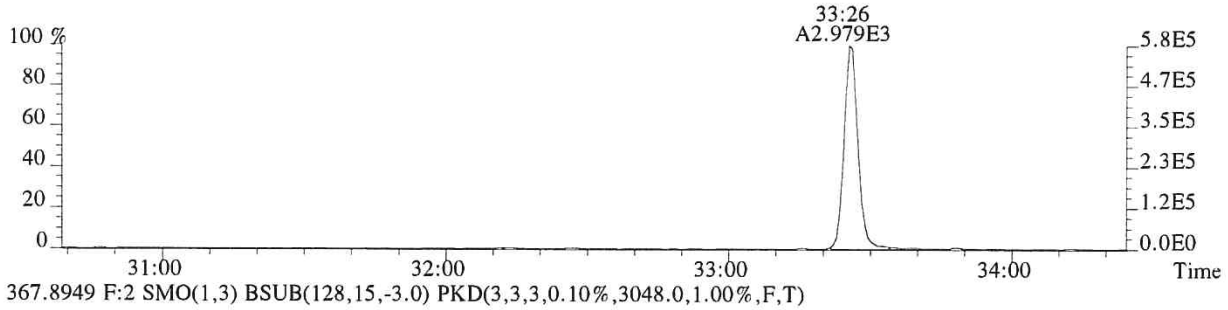


060798

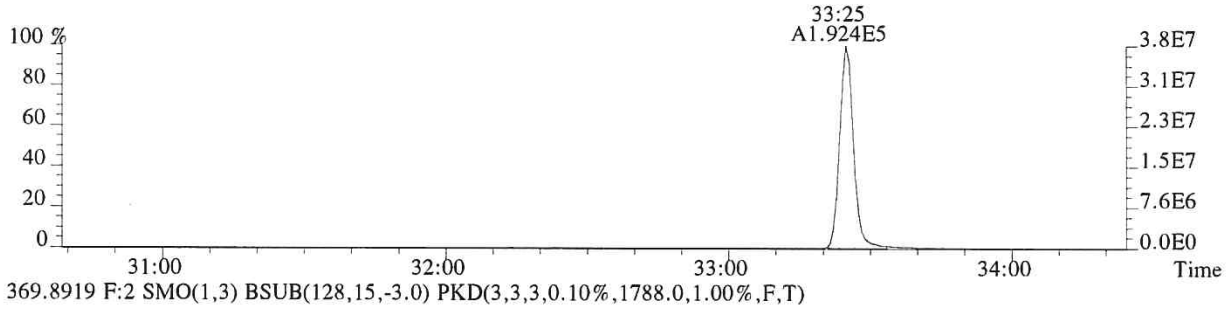
File:P614683 #1-339 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2368.0,1.00%,F,T)



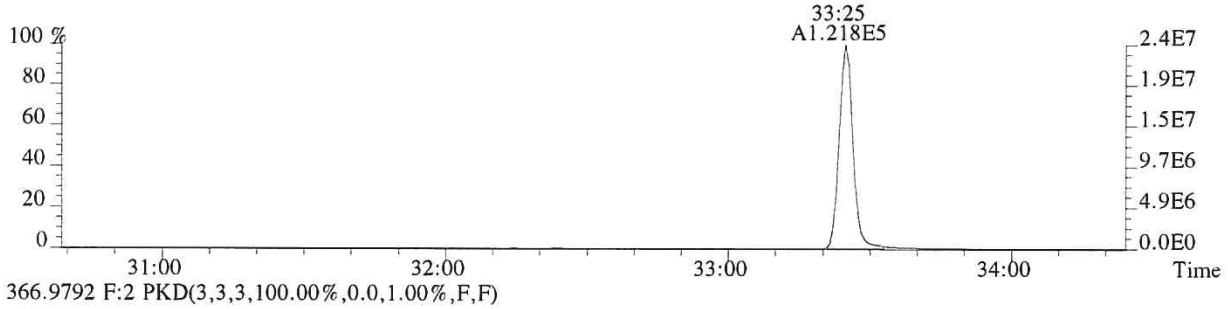
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1388.0,1.00%,F,T)



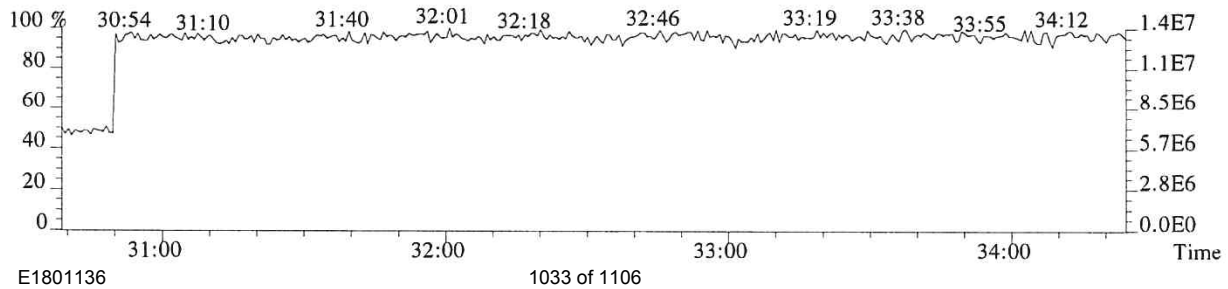
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3048.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1788.0,1.00%,F,T)

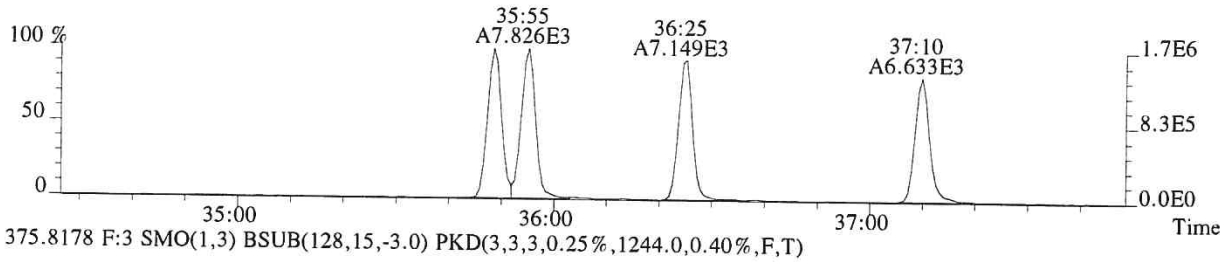


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

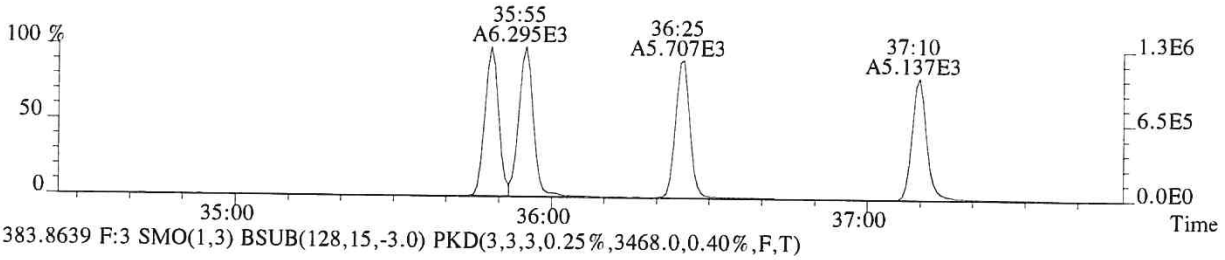


060799

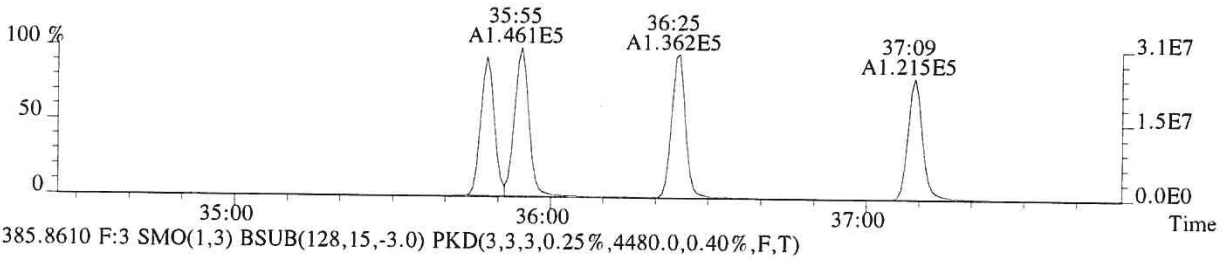
File:P614683 #1-304 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3192.0,0.40%,F,T)



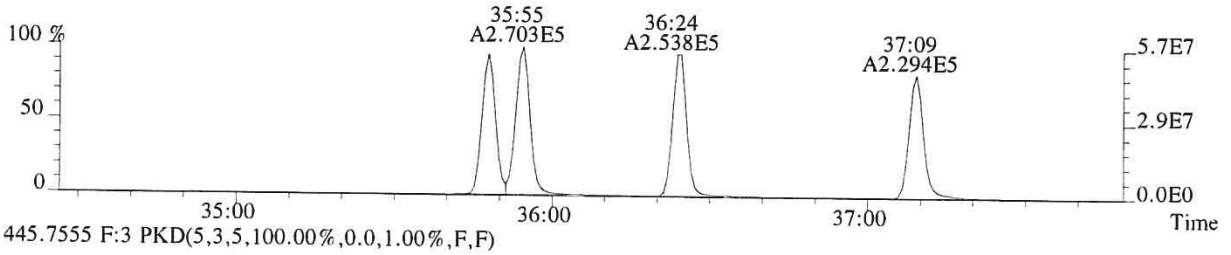
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1244.0,0.40%,F,T)



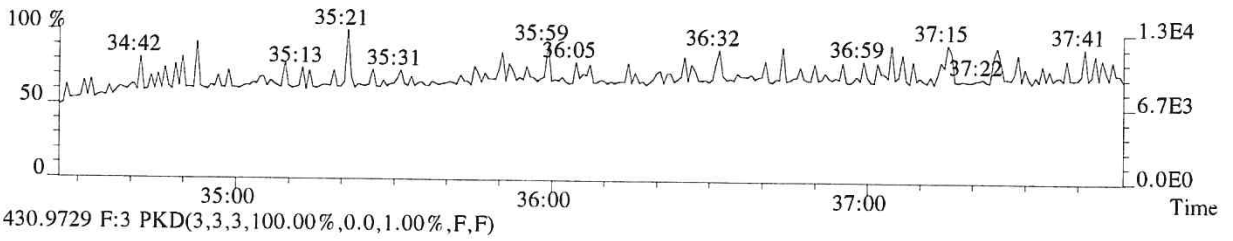
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3468.0,0.40%,F,T)



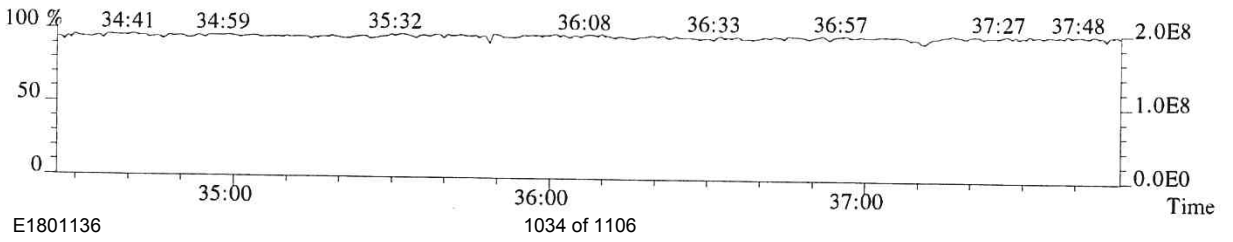
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4480.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

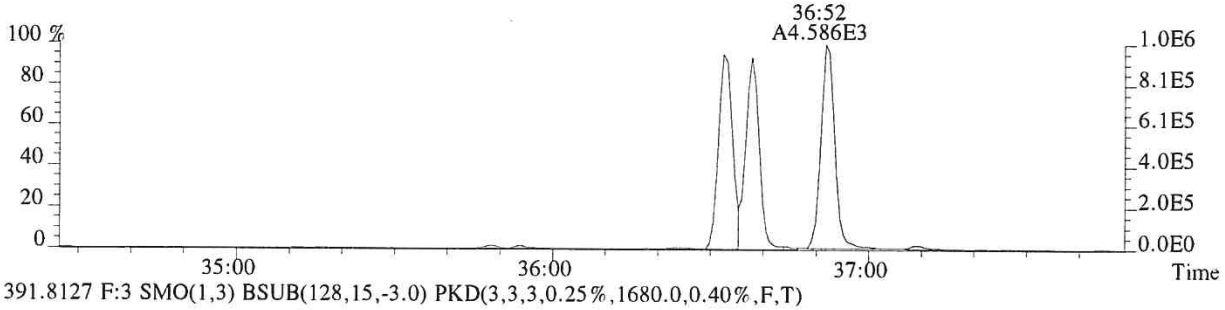


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

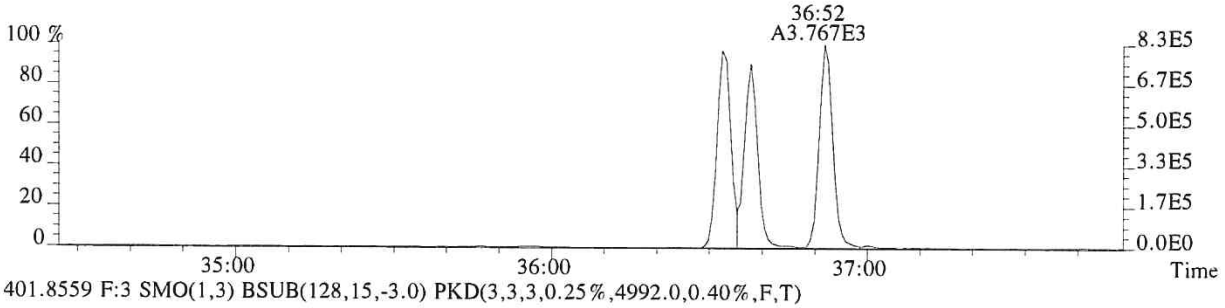


060800

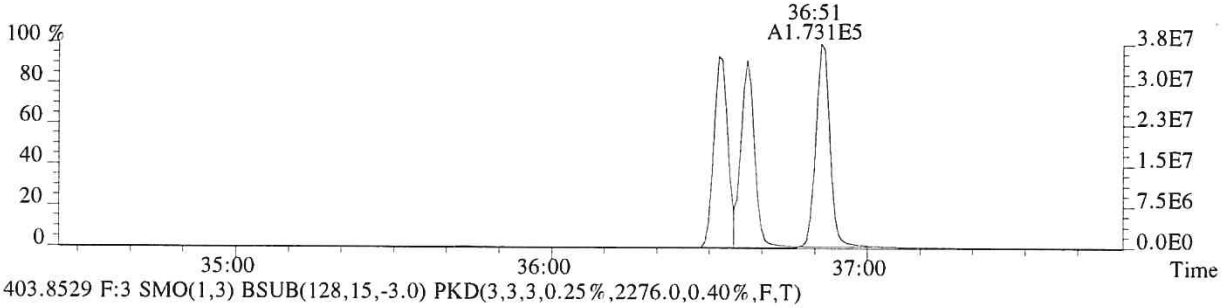
File:P614683 #1-304 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1020.0,0.40%,F,T)



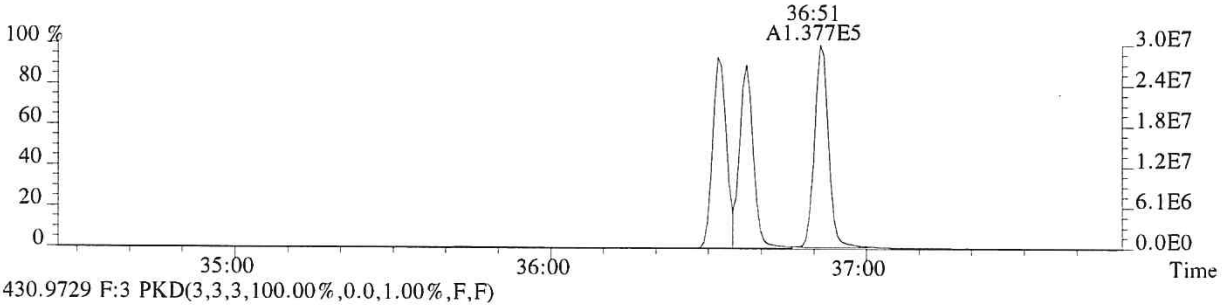
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1680.0,0.40%,F,T)



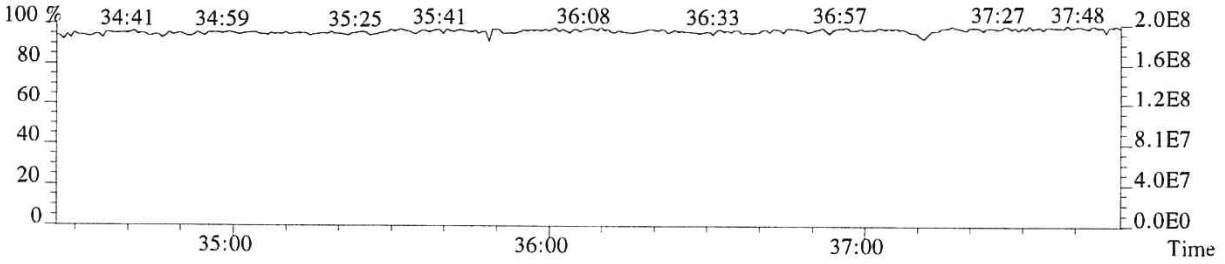
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4992.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2276.0,0.40%,F,T)

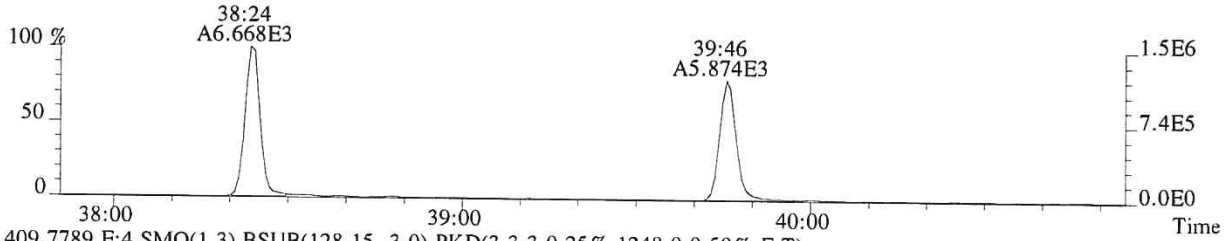


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

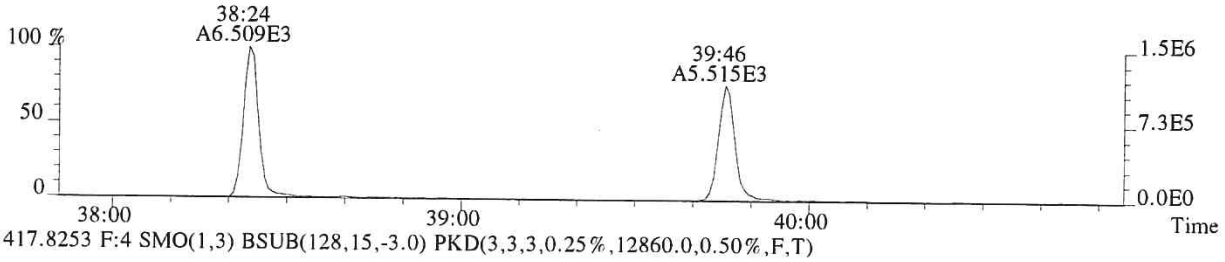


060801

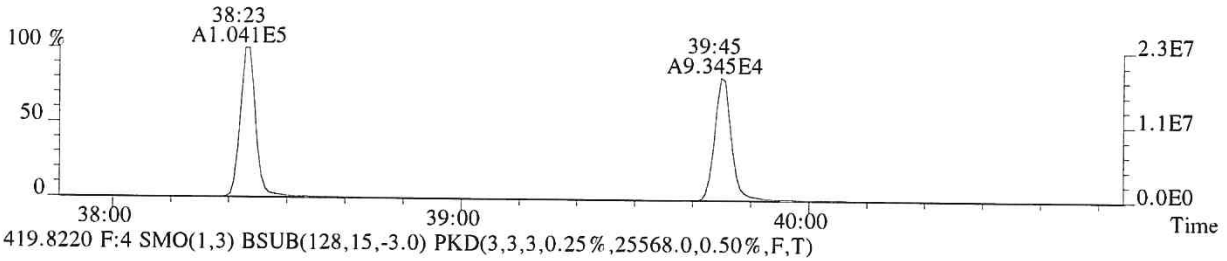
File:P614683 #1-276 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1968.0,0.50%,F,T)



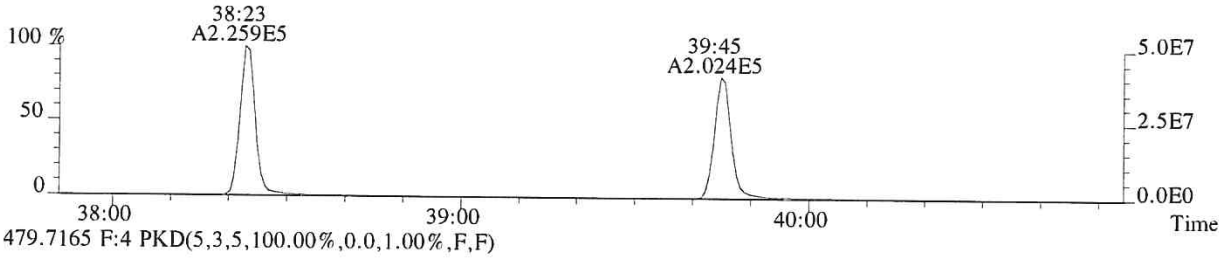
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1248.0,0.50%,F,T)



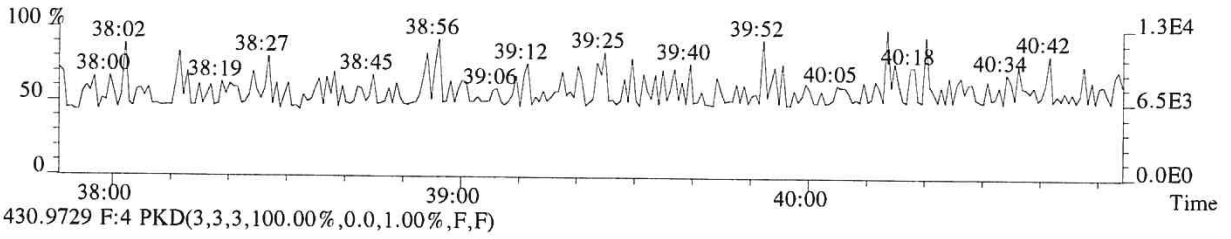
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12860.0,0.50%,F,T)



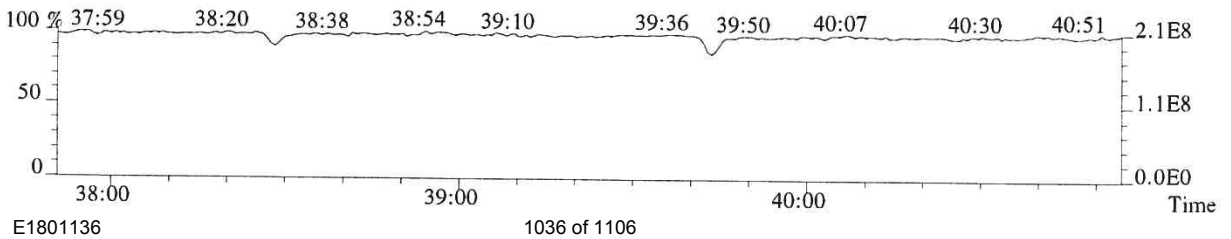
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,25568.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

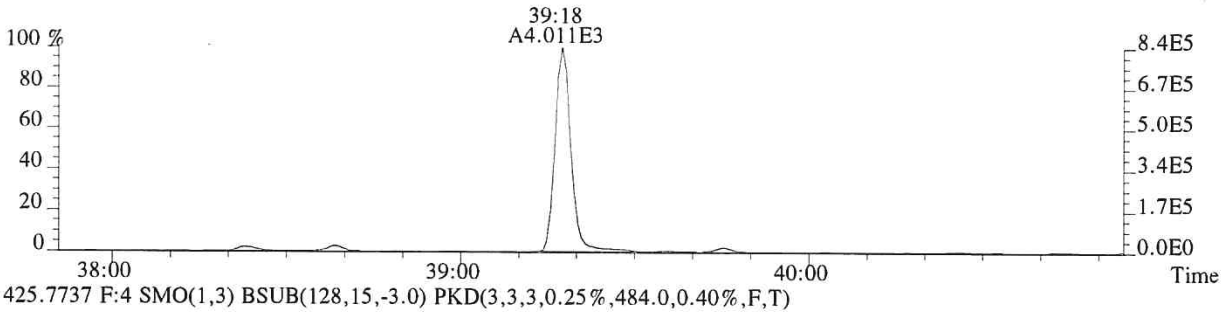


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

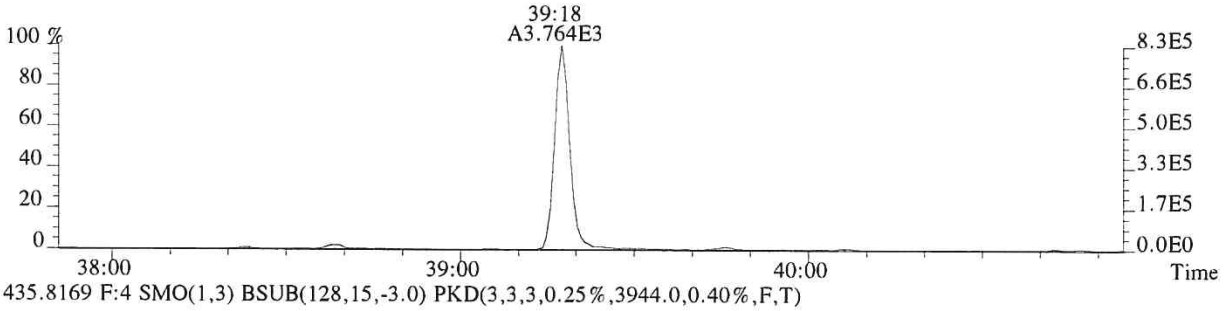


060802

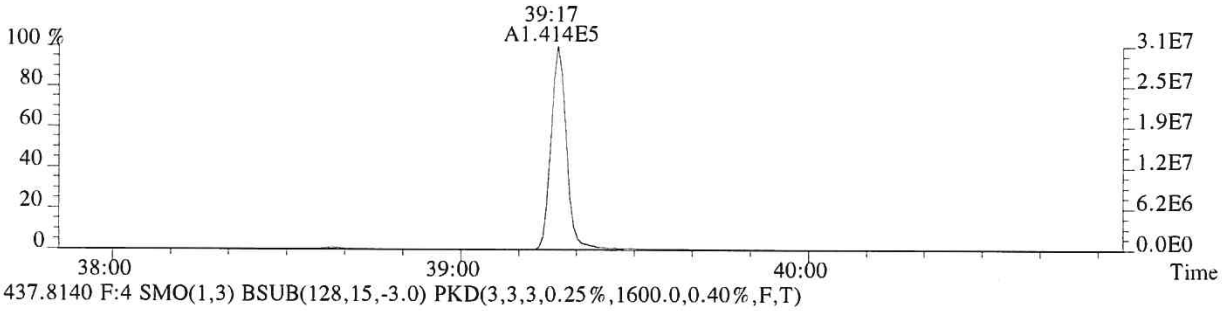
File:P614683 #1-276 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1168.0,0.40%,F,T)



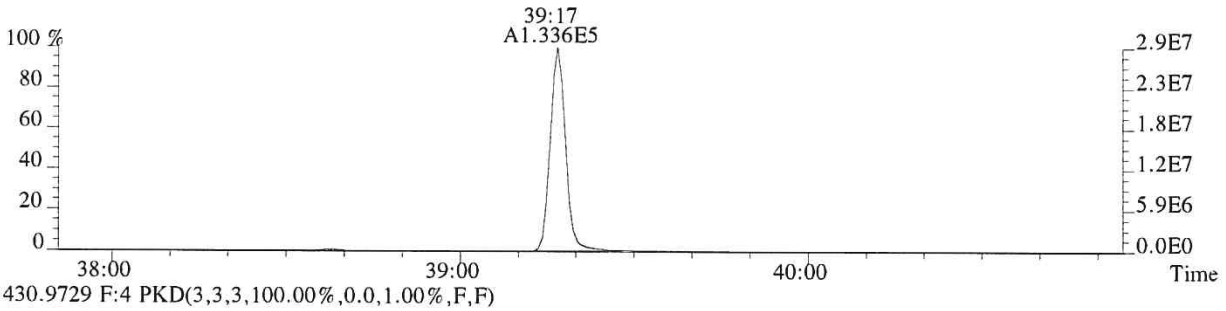
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,484.0,0.40%,F,T)



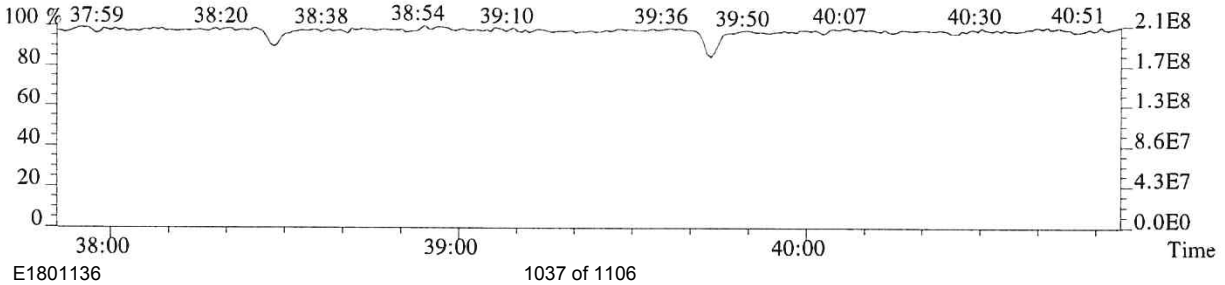
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3944.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1600.0,0.40%,F,T)



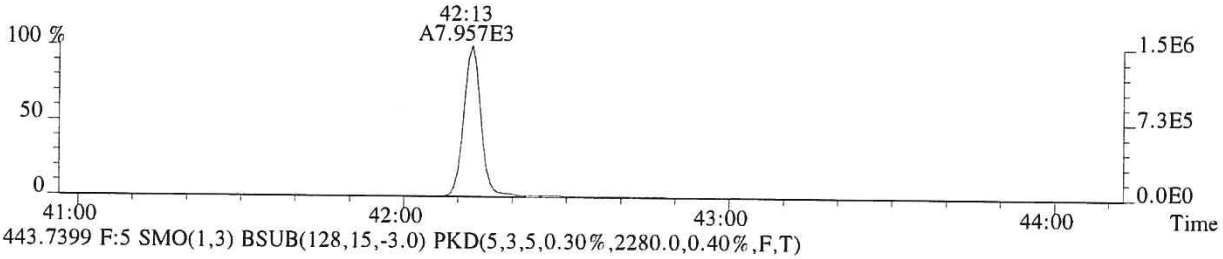
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



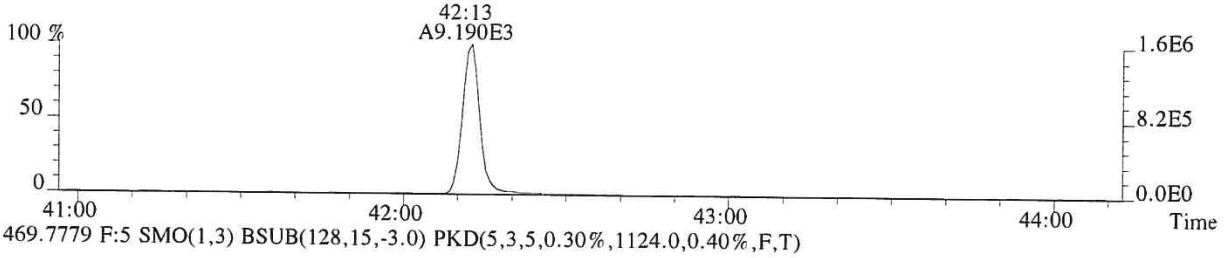
060803

File:P614683 #1-295 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1

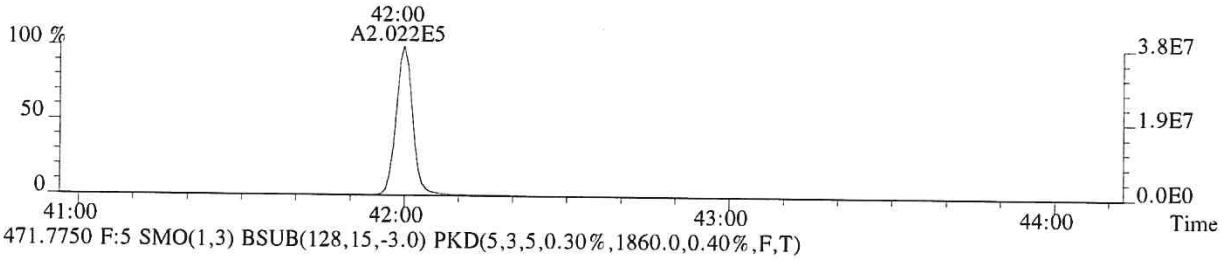
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1152.0,0.40%,F,T)



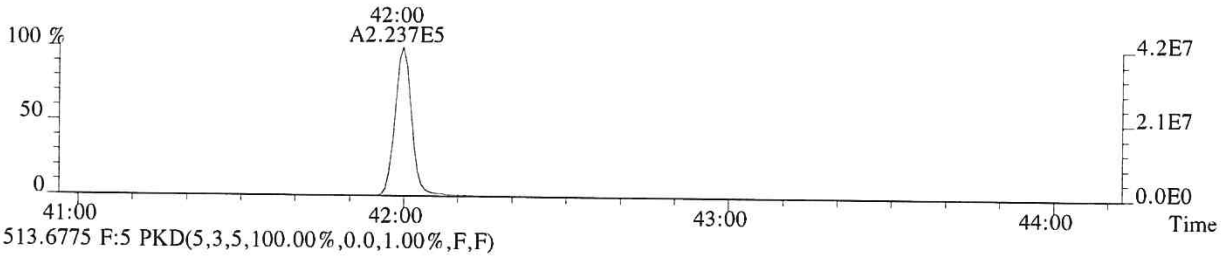
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2280.0,0.40%,F,T)



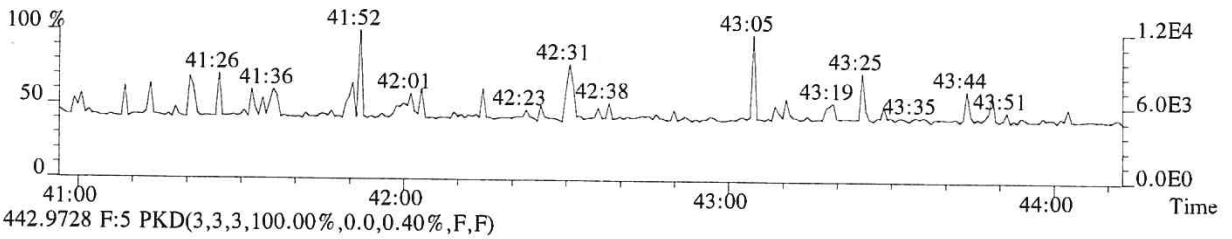
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1124.0,0.40%,F,T)



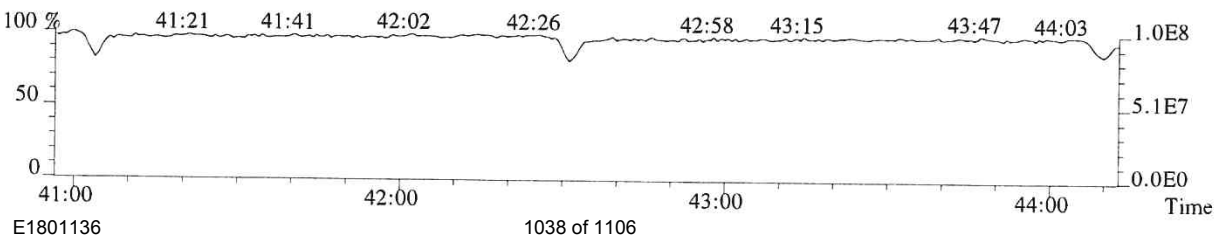
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1860.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

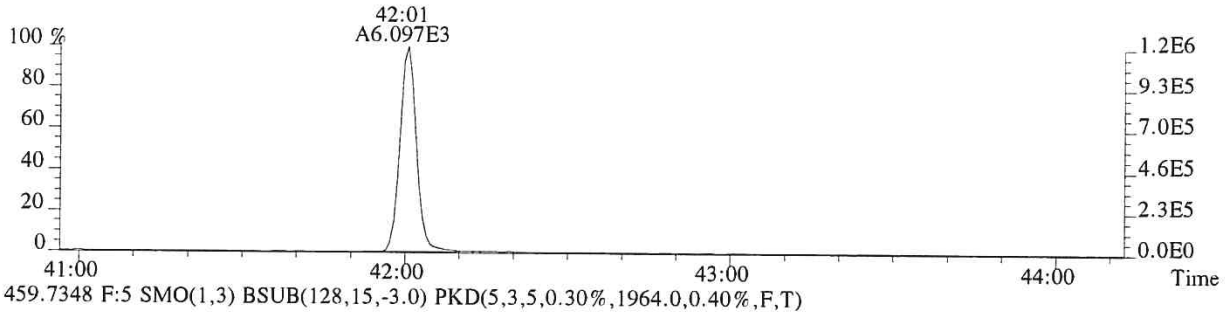


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

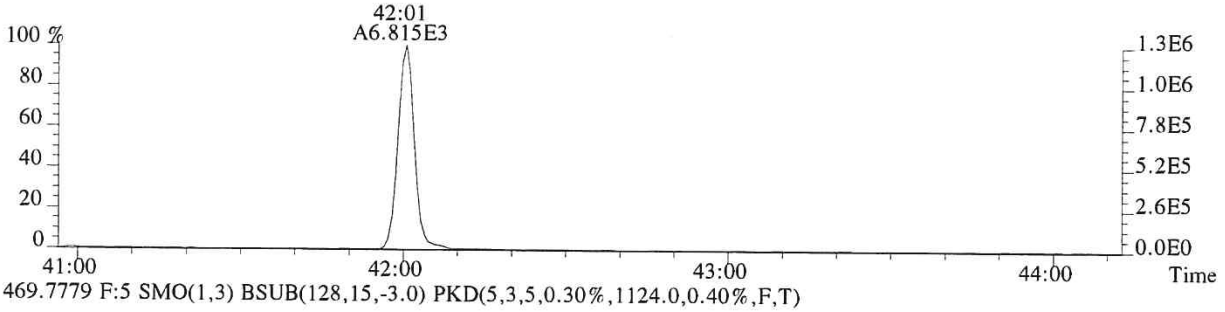


060804

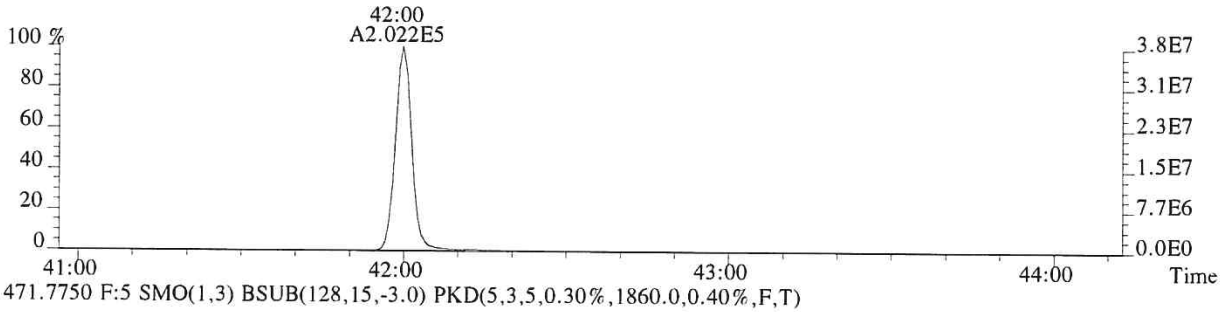
File:P614683 #1-295 Acq:25-SEP-2018 15:08:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3136.0,0.40%,F,T)



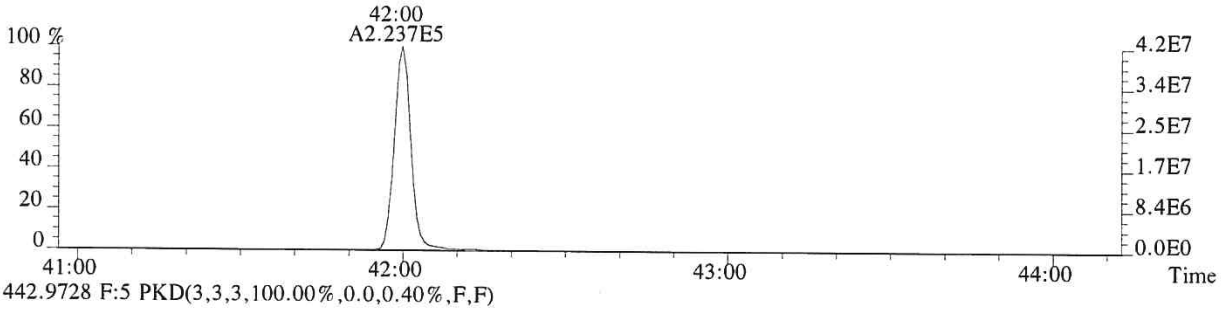
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1964.0,0.40%,F,T)



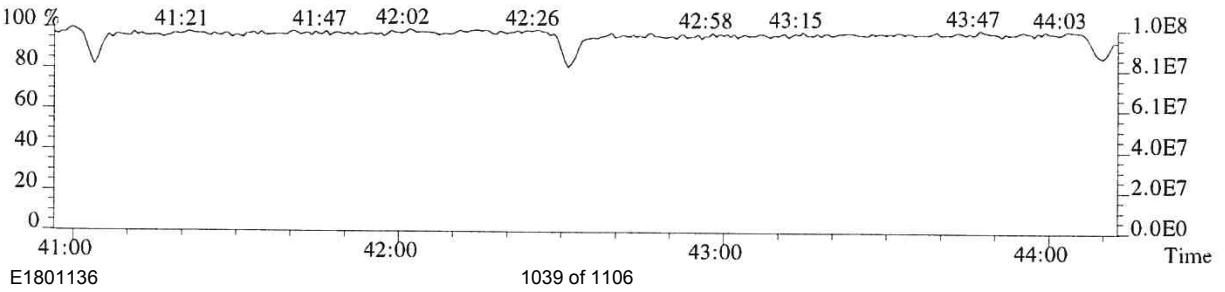
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1124.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1860.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060805

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
193434

Run #3 Filename P614684 Samp: 1 Inj: 1 Acquired: 25-SEP-18 15:59:37
Processed: 26-SEP-18 07:39:08 Sample ID: CS2

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:00	3.102e+03	3.732e+03	0.83	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:14	2.387e+04	1.519e+04	1.57	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:08	2.329e+04	1.484e+04	1.57	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	2.143e+04	1.713e+04	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	2.340e+04	1.874e+04	1.25	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	2.188e+04	1.713e+04	1.28	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:09	1.950e+04	1.588e+04	1.23	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	1.863e+04	1.764e+04	1.06	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	1.650e+04	1.567e+04	1.05	yes	no	1.463
10	Unk	OCDF	42:12	2.250e+04	2.478e+04	0.91	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	1.874e+03	2.328e+03	0.80	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	1.440e+04	9.416e+03	1.53	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	1.279e+04	1.013e+04	1.26	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	1.275e+04	1.020e+04	1.25	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:52	1.359e+04	1.091e+04	1.25	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	1.169e+04	1.088e+04	1.07	yes	no	1.112
17	Unk	OCDD	42:01	1.626e+04	1.848e+04	0.88	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	1.350e+05	1.713e+05	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	2.144e+05	1.340e+05	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	2.142e+05	1.318e+05	1.62	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:47	9.603e+04	1.811e+05	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:54	1.132e+05	2.120e+05	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:24	1.055e+05	1.978e+05	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	9.513e+04	1.787e+05	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:23	7.767e+04	1.706e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:45	6.849e+04	1.521e+05	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	9.327e+04	1.167e+05	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	1.531e+05	9.729e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:32	1.232e+05	9.748e+04	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	1.208e+05	9.608e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	1.060e+05	1.018e+05	1.04	yes	no	0.857
32	IS	13C-OCDD	42:00	1.501e+05	1.663e+05	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:12	9.647e+04	1.194e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:51	1.360e+05	1.078e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	4.600e+03				no	1.086

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Signal/Noise Height Ratio Summary

CLIENT ID.
193434

Run #3 Filename P614684 Samp: 1 Inj: 1 Acquired: 25-SEP-18 15:59:37
Processed: 26-SEP-18 07:39:08 LAB. ID: CS2

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.46e+05	1.35e+03	4.0e+02	6.81e+05	4.17e+03	1.6e+02
2	1,2,3,7,8-PeCDF	4.40e+06	1.19e+03	3.7e+03	2.83e+06	5.62e+03	5.0e+02
3	2,3,4,7,8-PeCDF	4.45e+06	1.19e+03	3.7e+03	2.83e+06	5.62e+03	5.0e+02
4	1,2,3,4,7,8-HxCDF	4.64e+06	2.66e+03	1.7e+03	3.65e+06	1.33e+03	2.7e+03
5	1,2,3,6,7,8-HxCDF	4.85e+06	2.66e+03	1.8e+03	3.88e+06	1.33e+03	2.9e+03
6	2,3,4,6,7,8-HxCDF	4.77e+06	2.66e+03	1.8e+03	3.75e+06	1.33e+03	2.8e+03
7	1,2,3,7,8,9-HxCDF	3.92e+06	2.66e+03	1.5e+03	3.16e+06	1.33e+03	2.4e+03
8	1,2,3,4,6,7,8-HpCDF	4.16e+06	4.06e+03	1.0e+03	3.98e+06	5.19e+03	7.7e+02
9	1,2,3,4,7,8,9-HpCDF	3.43e+06	4.06e+03	8.5e+02	3.23e+06	5.19e+03	6.2e+02
10	OCDF	4.02e+06	1.02e+03	3.9e+03	4.45e+06	3.18e+03	1.4e+03
11	2,3,7,8-TCDD	3.59e+05	5.08e+03	7.1e+01	4.49e+05	2.84e+03	1.6e+02
12	1,2,3,7,8-PeCDD	2.79e+06	2.23e+03	1.3e+03	1.83e+06	1.03e+03	1.8e+03
13	1,2,3,4,7,8-HxCDD	2.90e+06	1.16e+03	2.5e+03	2.30e+06	2.22e+03	1.0e+03
14	1,2,3,6,7,8-HxCDD	2.75e+06	1.16e+03	2.4e+03	2.20e+06	2.22e+03	9.9e+02
15	1,2,3,7,8,9-HxCDD	2.97e+06	1.16e+03	2.6e+03	2.38e+06	2.22e+03	1.1e+03
16	1,2,3,4,6,7,8-HpCDD	2.45e+06	1.22e+03	2.0e+03	2.30e+06	1.43e+03	1.6e+03
17	OCDD	3.03e+06	8.24e+02	3.7e+03	3.48e+06	2.34e+03	1.5e+03
18	13C-2,3,7,8-TCDF	2.30e+07	1.44e+04	1.6e+03	2.91e+07	8.40e+03	3.5e+03
19	13C-1,2,3,7,8-PeCDF	3.88e+07	2.39e+03	1.6e+04	2.43e+07	1.71e+03	1.4e+04
20	13C-2,3,4,7,8-PeCDF	4.22e+07	2.39e+03	1.8e+04	2.60e+07	1.71e+03	1.5e+04
21	13C-1,2,3,4,7,8-HxCDF	2.07e+07	2.16e+03	9.6e+03	3.93e+07	5.29e+03	7.4e+03
22	13C-1,2,3,6,7,8-HxCDF	2.36e+07	2.16e+03	1.1e+04	4.45e+07	5.29e+03	8.4e+03
23	13C-2,3,4,6,7,8-HxCDF	2.32e+07	2.16e+03	1.1e+04	4.39e+07	5.29e+03	8.3e+03
24	13C-1,2,3,7,8,9-HxCDF	1.94e+07	2.16e+03	8.9e+03	3.69e+07	5.29e+03	7.0e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.76e+07	7.69e+03	2.3e+03	3.85e+07	2.07e+04	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.41e+07	7.69e+03	1.8e+03	3.12e+07	2.07e+04	1.5e+03
27	13C-2,3,7,8-TCDD	1.74e+07	1.66e+04	1.0e+03	2.17e+07	7.77e+03	2.8e+03
28	13C-1,2,3,7,8-PeCDD	2.92e+07	3.94e+03	7.4e+03	1.87e+07	3.45e+03	5.4e+03
29	13C-1,2,3,4,7,8-HxCDD	2.82e+07	5.37e+03	5.3e+03	2.21e+07	2.98e+03	7.4e+03
30	13C-1,2,3,6,7,8-HxCDD	2.61e+07	5.37e+03	4.9e+03	2.11e+07	2.98e+03	7.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.24e+07	3.06e+03	7.3e+03	2.12e+07	2.68e+03	7.9e+03
32	13C-OCDD	2.74e+07	2.09e+03	1.3e+04	3.02e+07	1.61e+03	1.9e+04
33	13C-1,2,3,4-TCDD	1.78e+07	1.66e+04	1.1e+03	2.20e+07	7.77e+03	2.8e+03
34	13C-1,2,3,7,8,9-HxCDD	2.99e+07	5.37e+03	5.6e+03	2.35e+07	2.98e+03	7.9e+03
35	37Cl-2,3,7,8-TCDD	8.73e+05	3.54e+03	2.5e+02			

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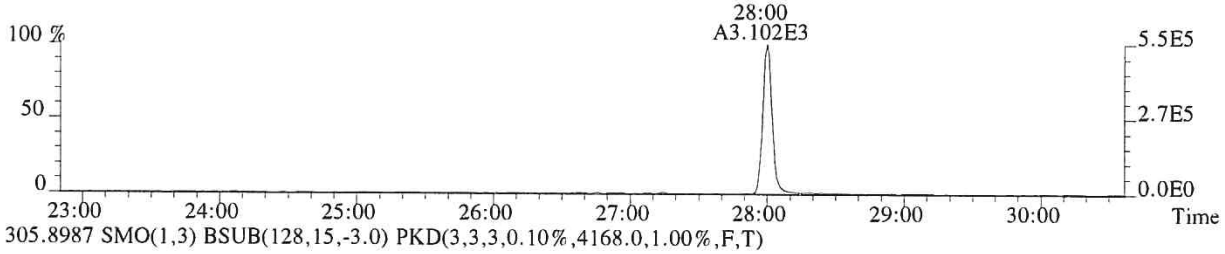
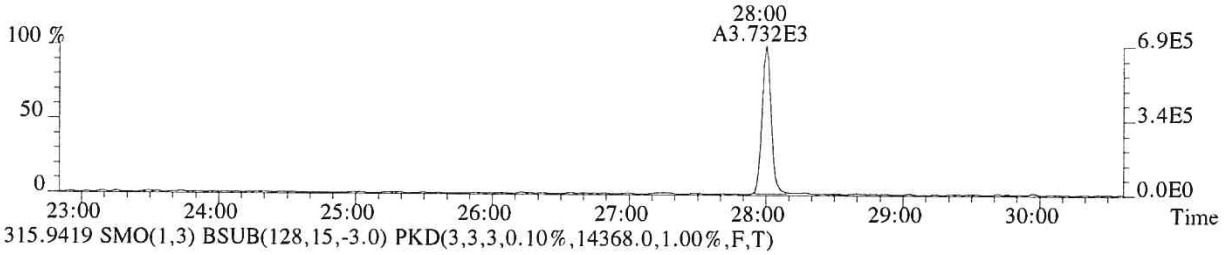
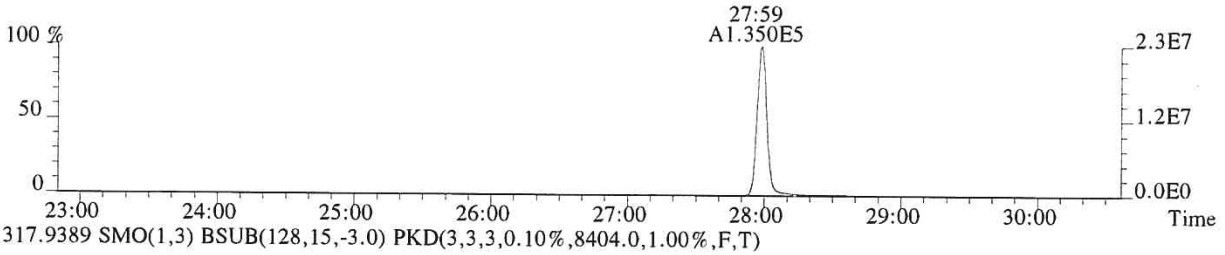
File:P614684 #1-552 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1352.0,1.00%,F,T)



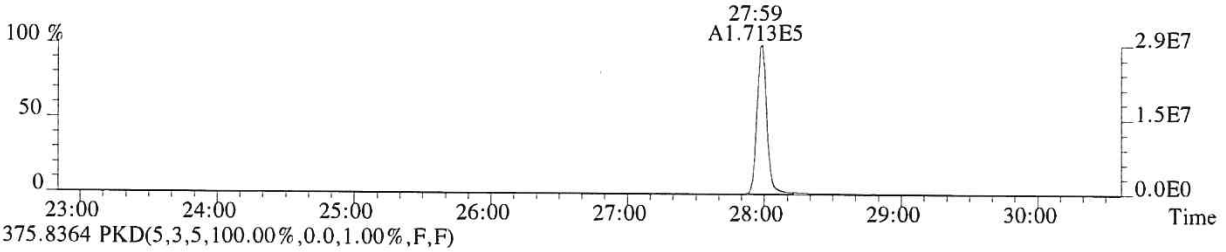
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4168.0,1.00%,F,T)



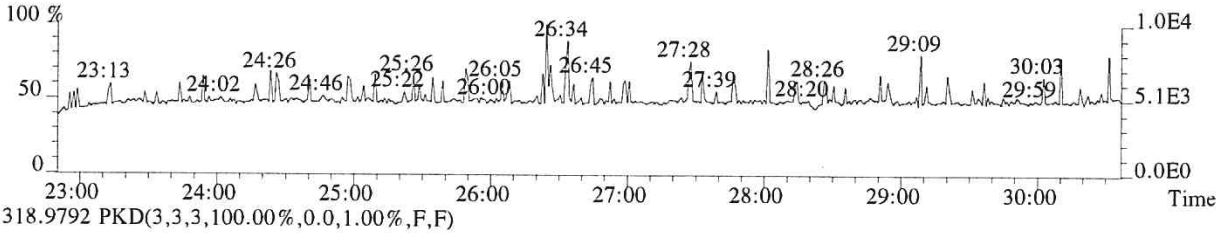
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,14368.0,1.00%,F,T)



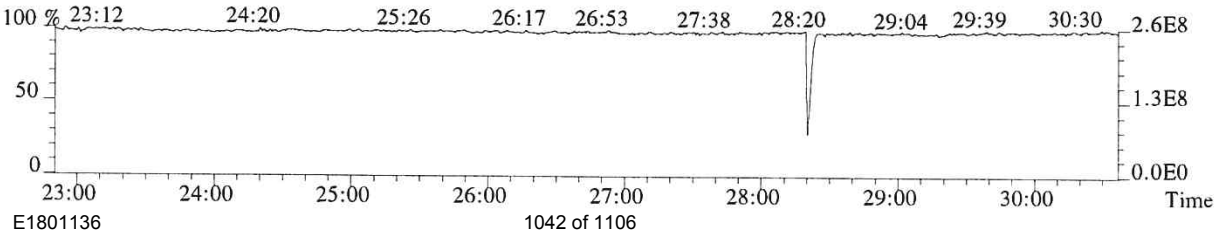
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8404.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

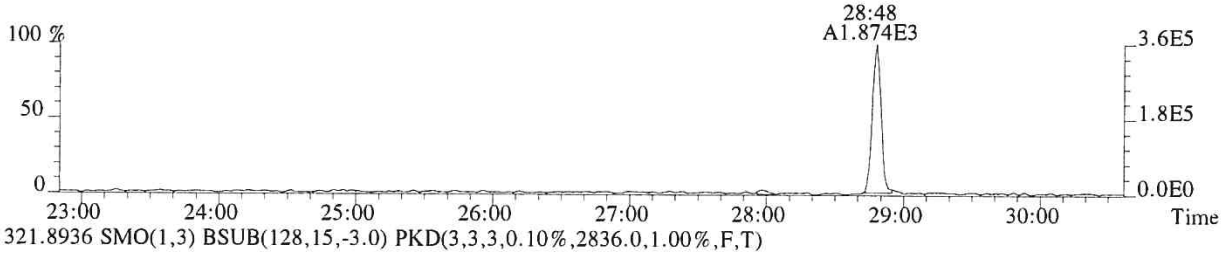


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

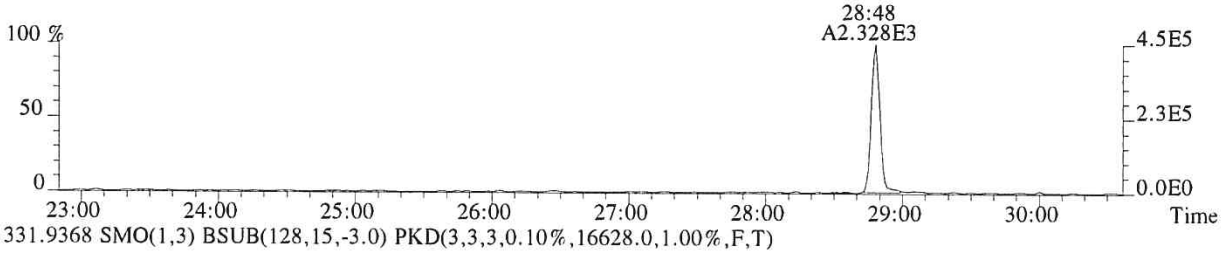


060808

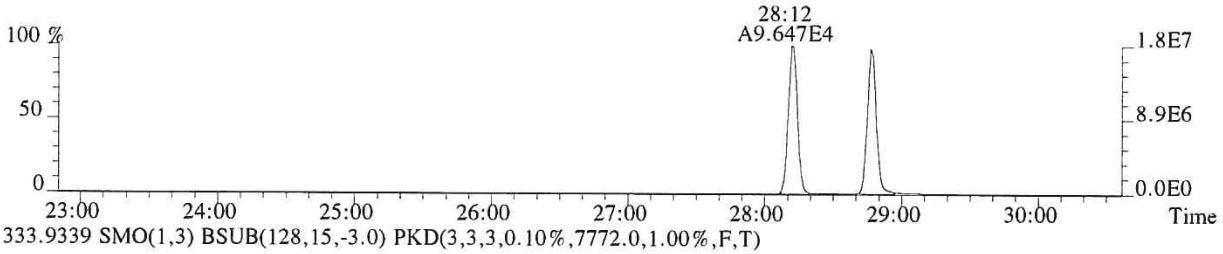
File:P614684 #1-552 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5080.0,1.00%,F,T)



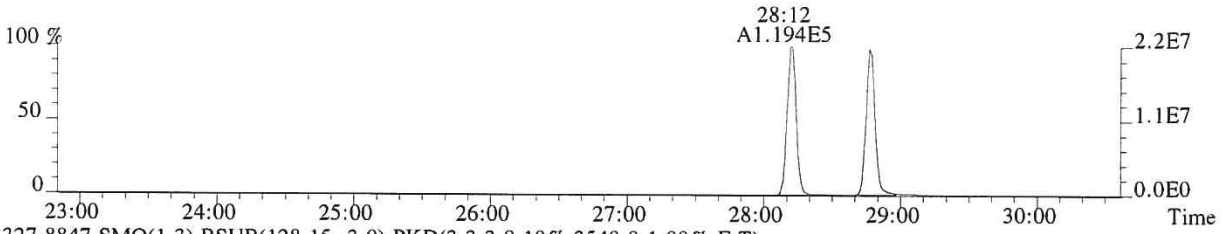
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2836.0,1.00%,F,T)



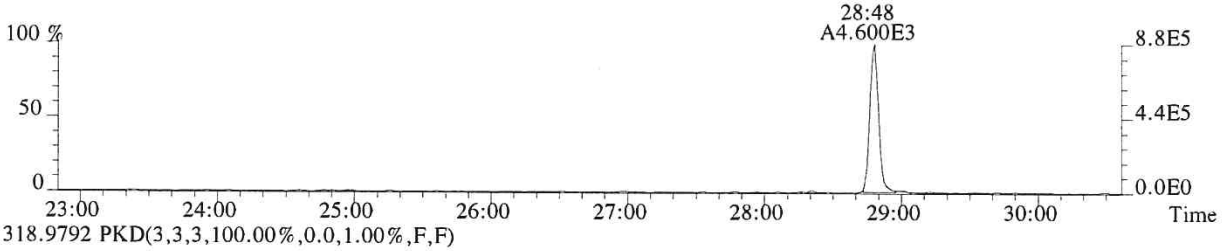
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16628.0,1.00%,F,T)



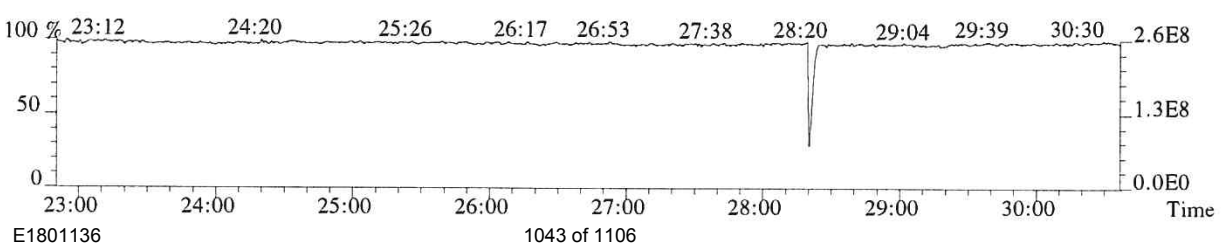
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7772.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3540.0,1.00%,F,T)

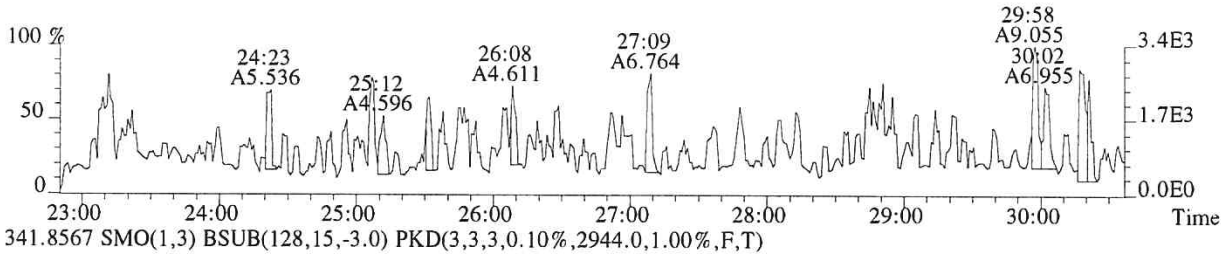


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

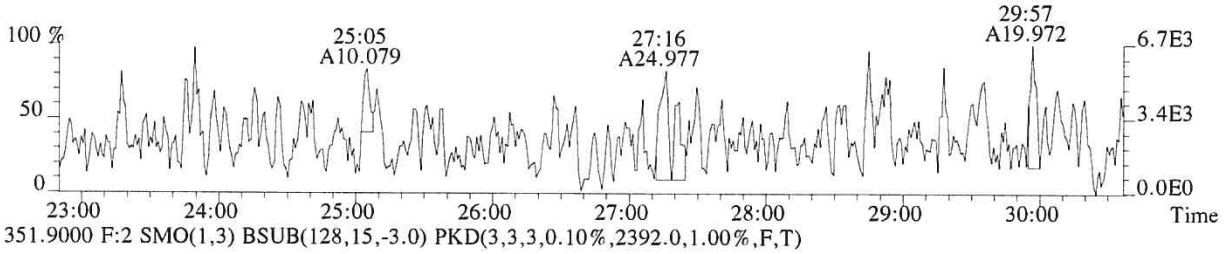


060809

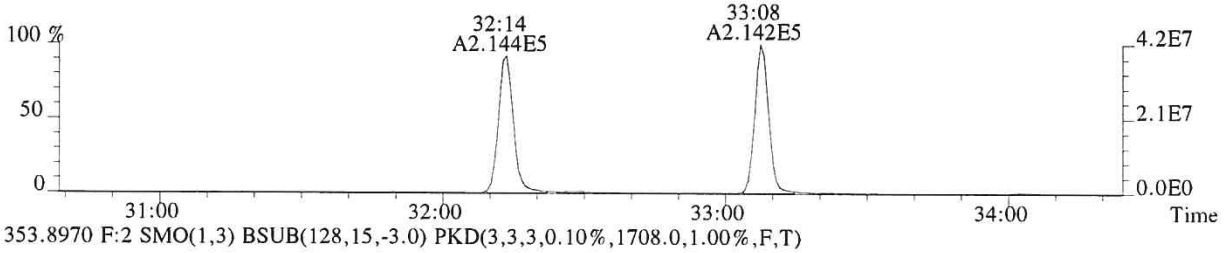
File:P614684 #1-552 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1084.0,1.00%,F,T)



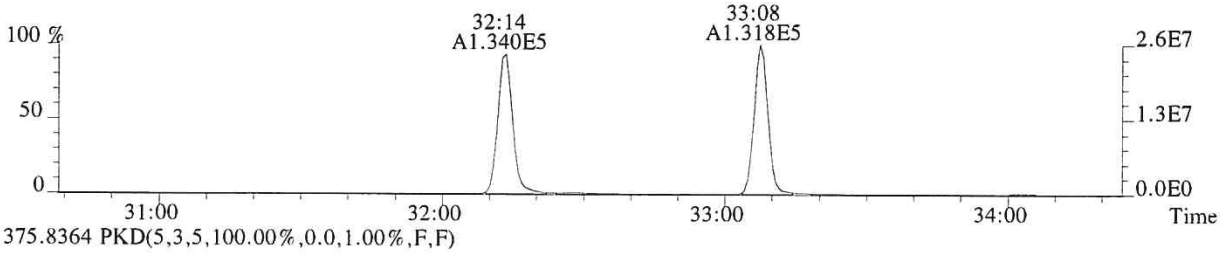
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2944.0,1.00%,F,T)



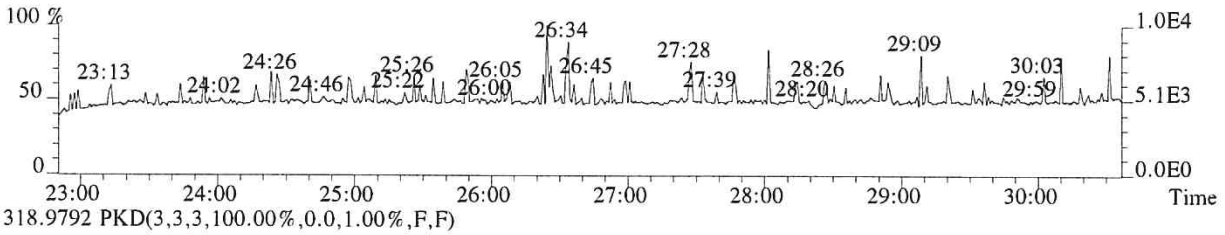
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2392.0,1.00%,F,T)



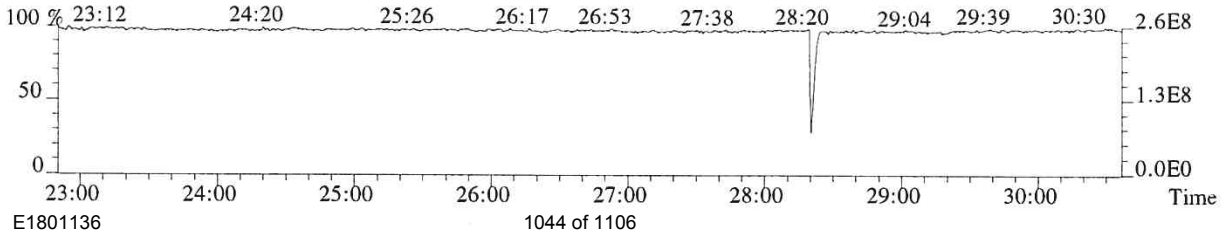
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1708.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

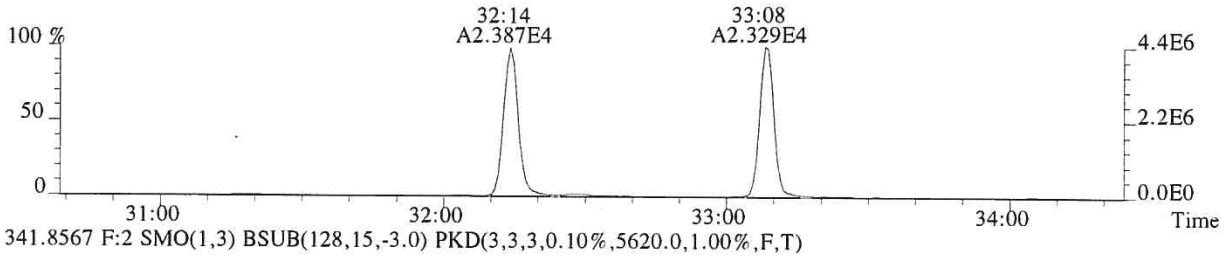


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

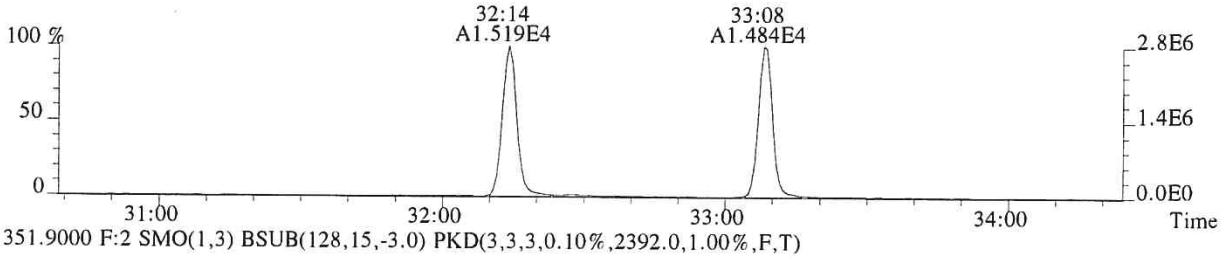


060810

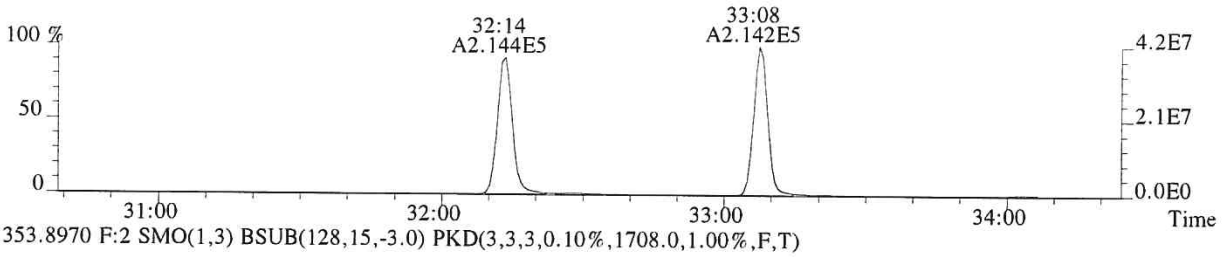
File:P614684 #1-339 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1188.0,1.00%,F,T)



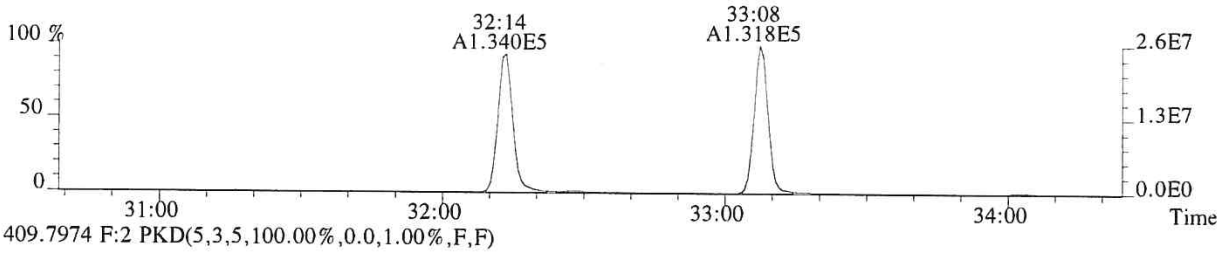
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5620.0,1.00%,F,T)



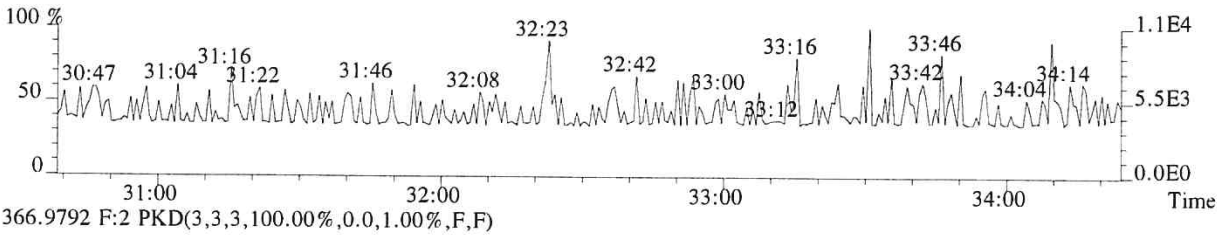
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2392.0,1.00%,F,T)



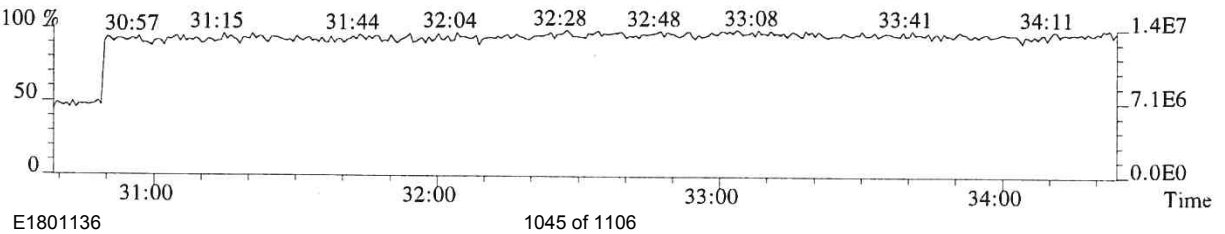
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1708.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

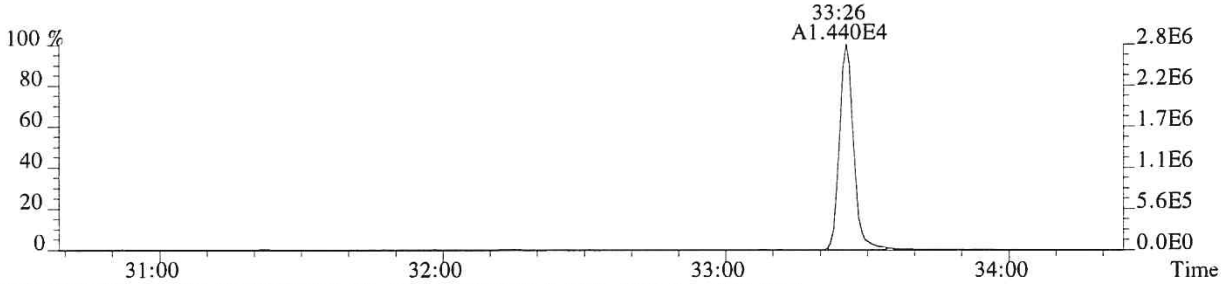


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

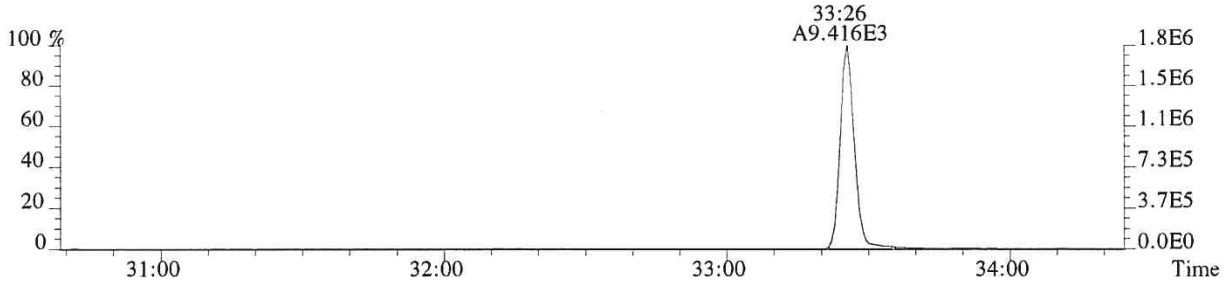


060811

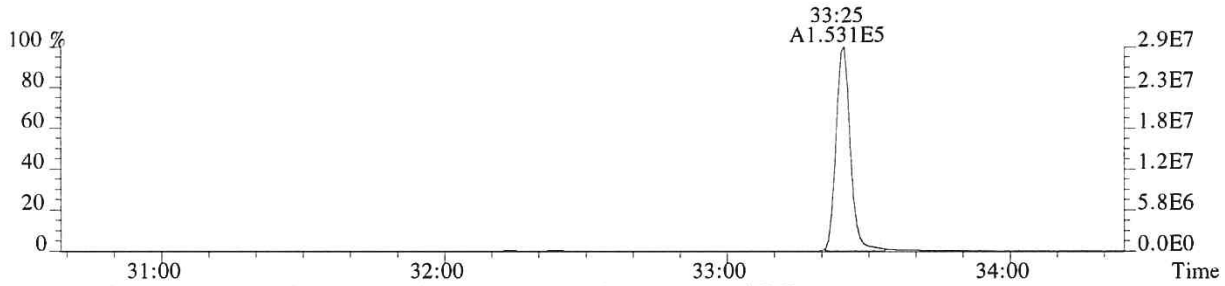
File:P614684 #1-339 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2228.0,1.00%,F,T)



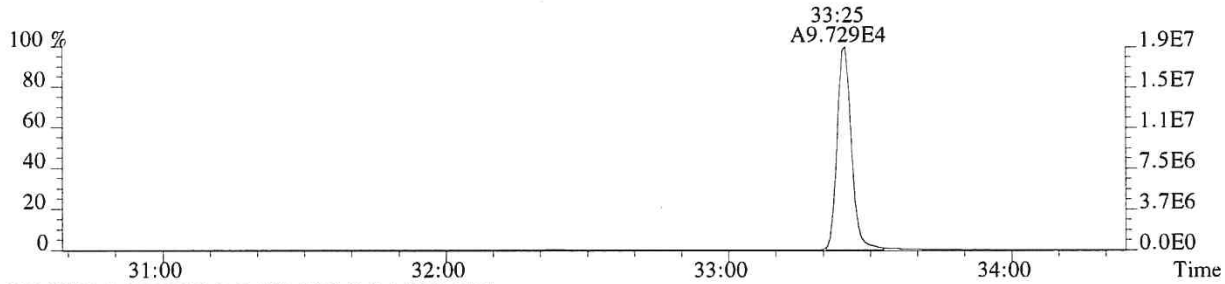
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1032.0,1.00%,F,T)



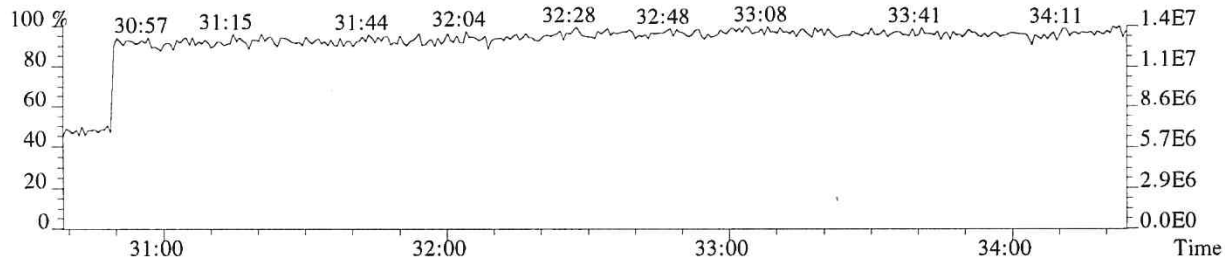
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3936.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3448.0,1.00%,F,T)

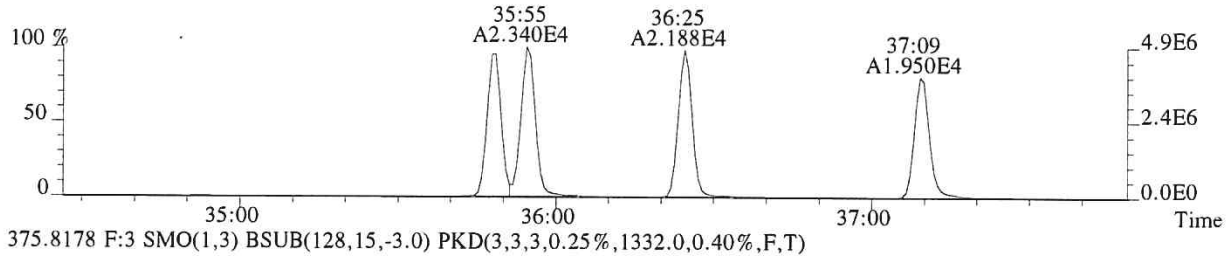


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

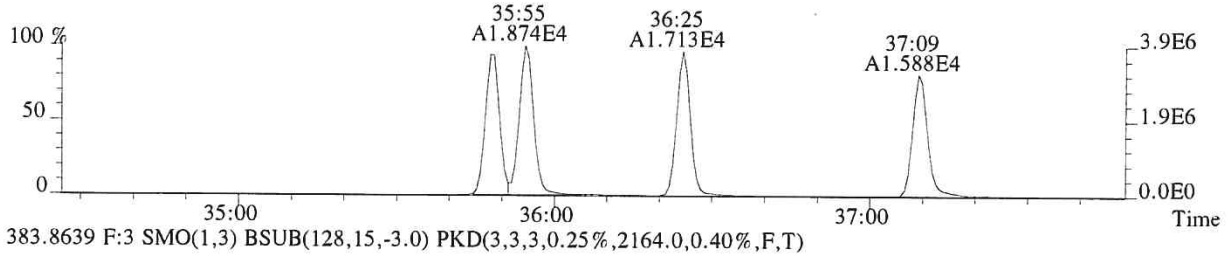


060812

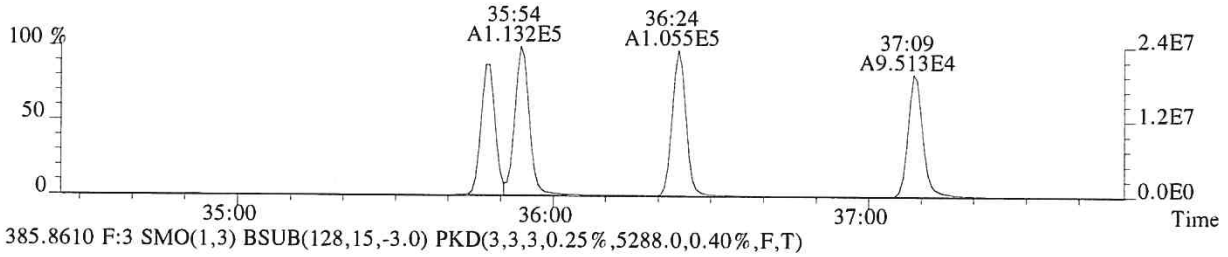
File:P614684 #1-304 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2656.0,0.40%,F,T)



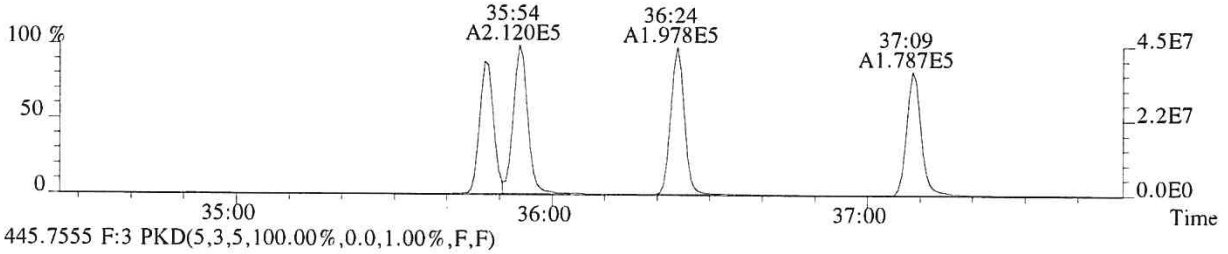
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1332.0,0.40%,F,T)



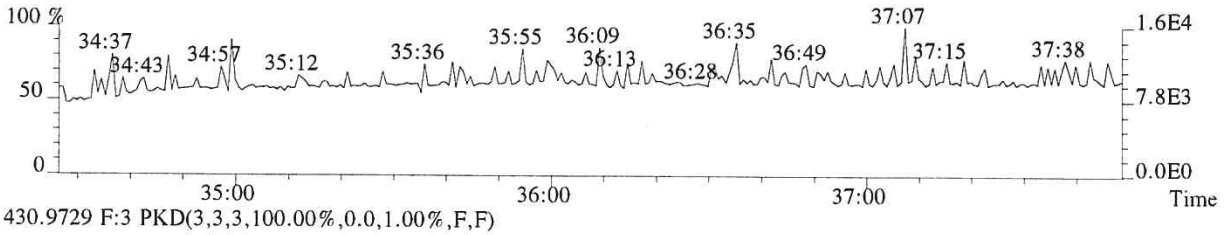
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2164.0,0.40%,F,T)



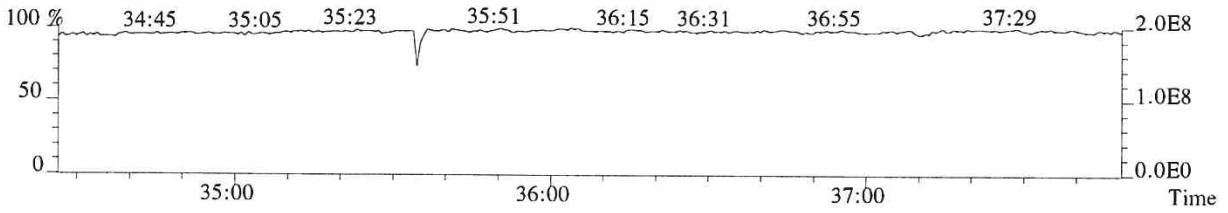
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5288.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

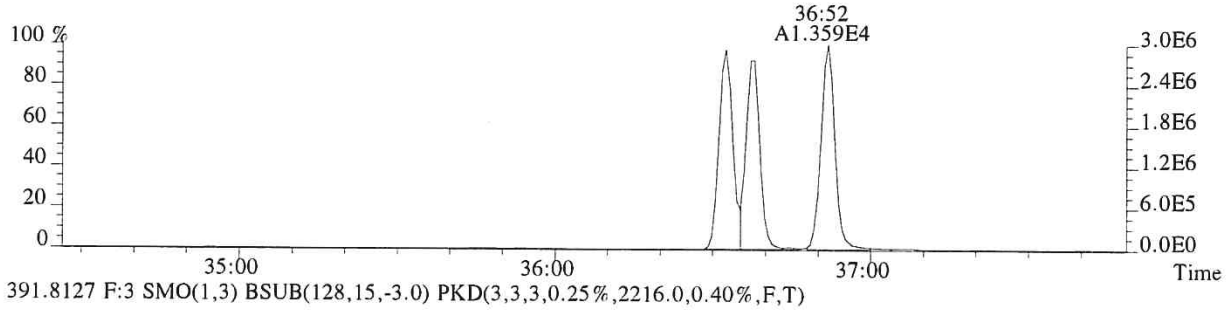


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

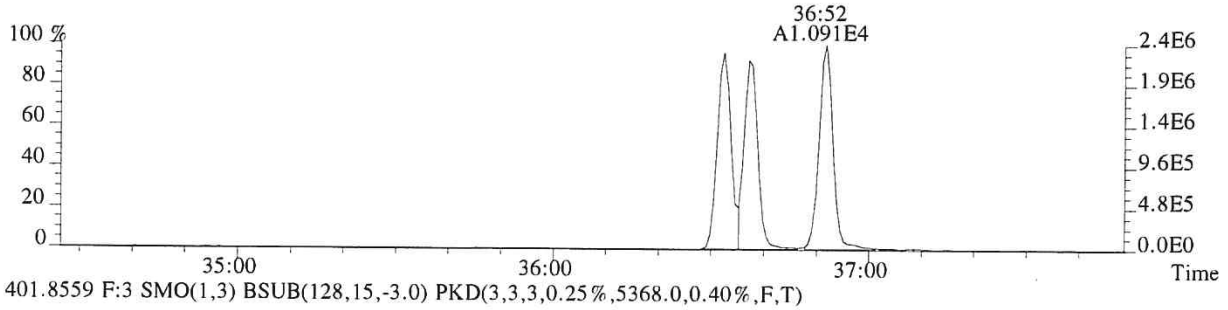


060813

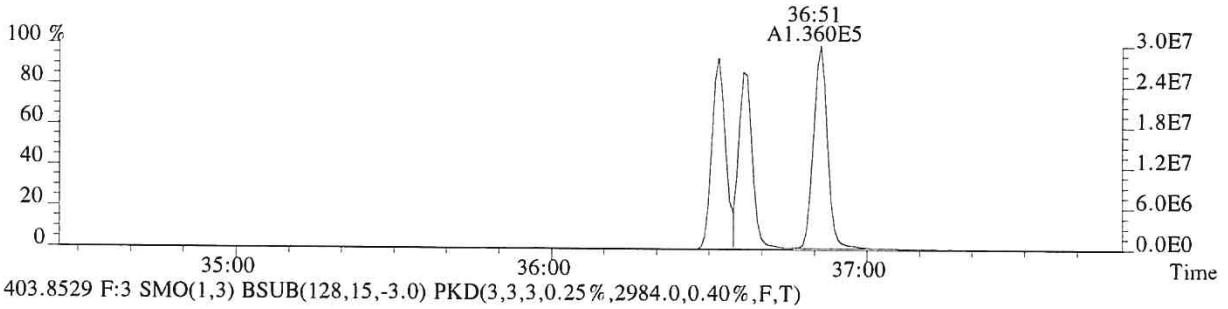
File:P614684 #1-304 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1156.0,0.40%,F,T)



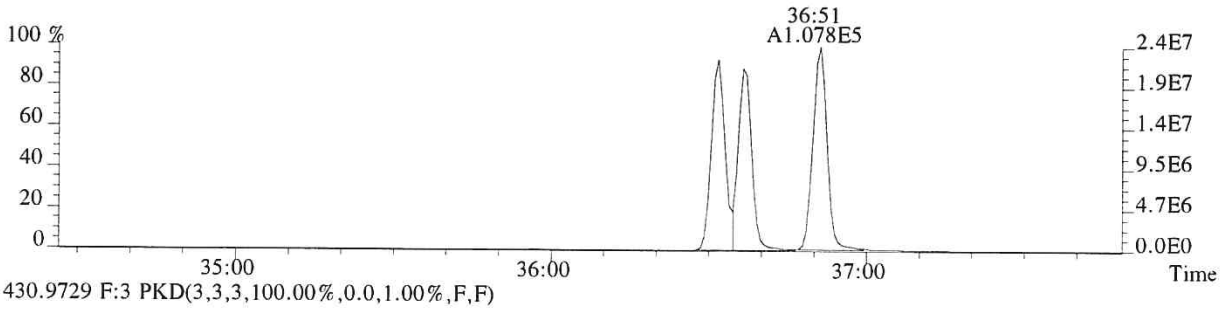
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2216.0,0.40%,F,T)



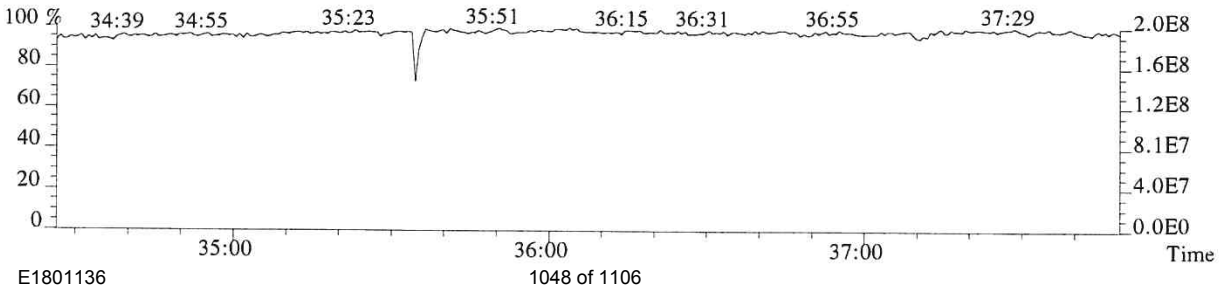
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5368.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2984.0,0.40%,F,T)

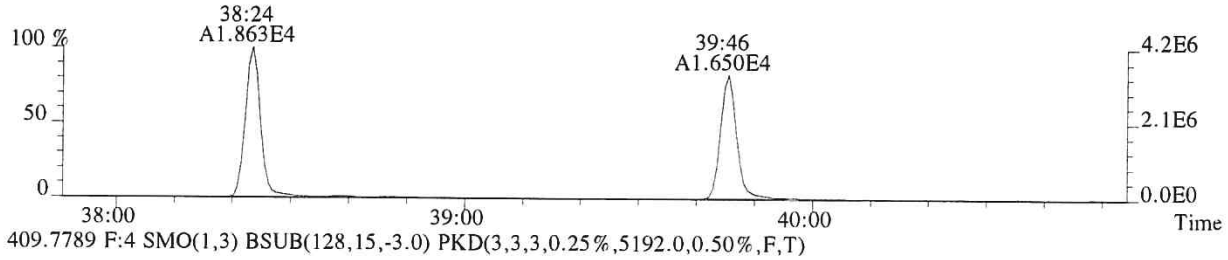


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

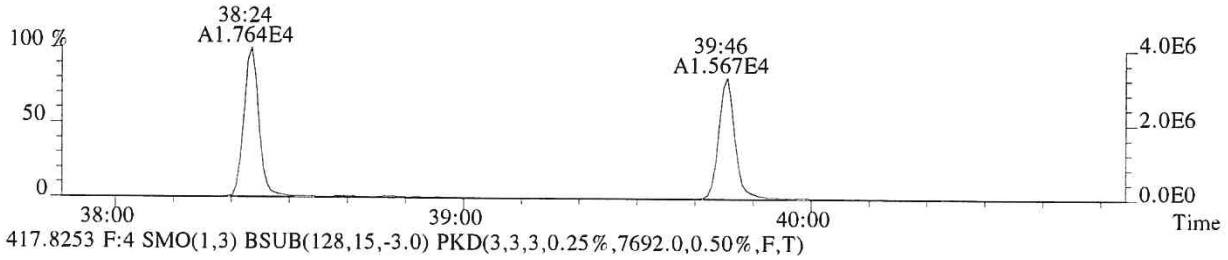


060814

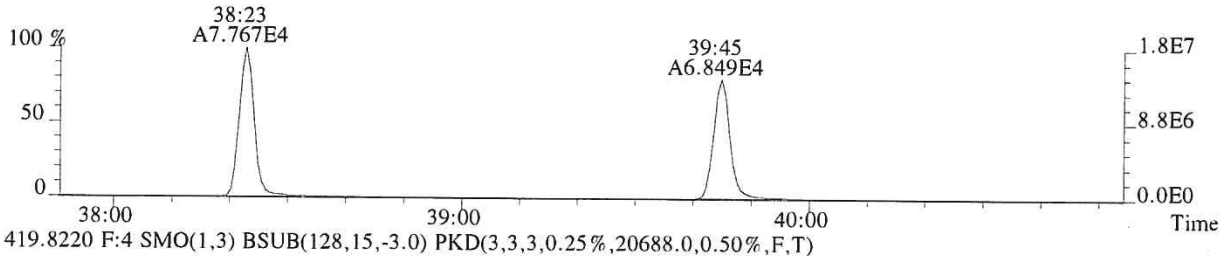
File:P614684 #1-276 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4060.0,0.50%,F,T)



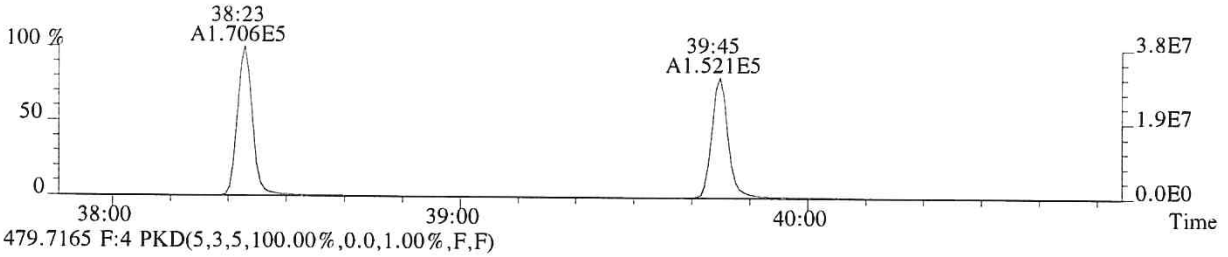
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5192.0,0.50%,F,T)



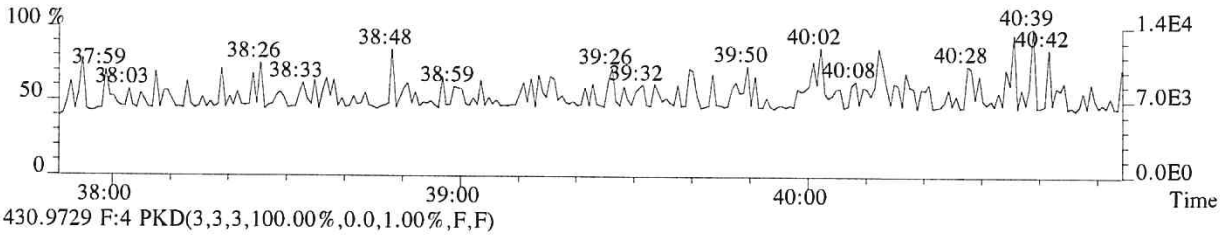
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7692.0,0.50%,F,T)



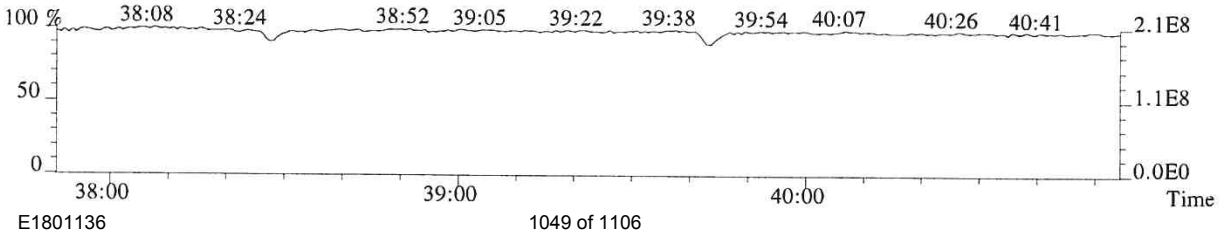
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,20688.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

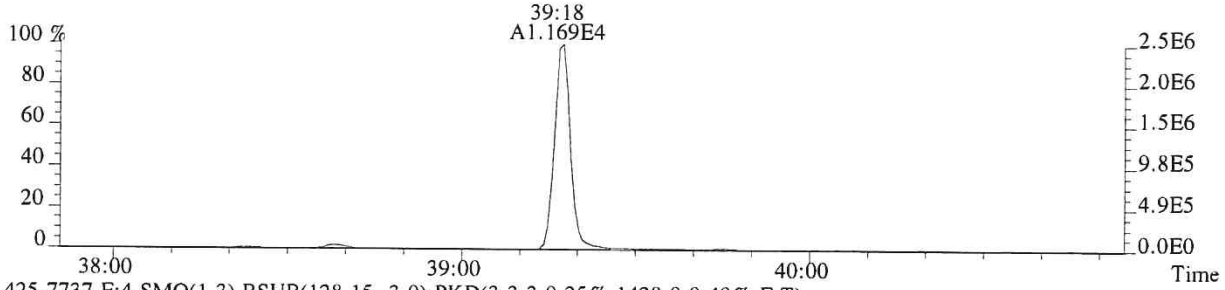


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

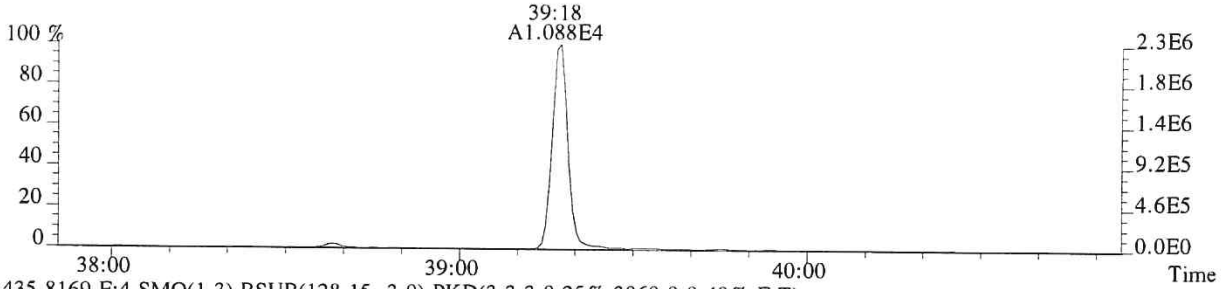


060815

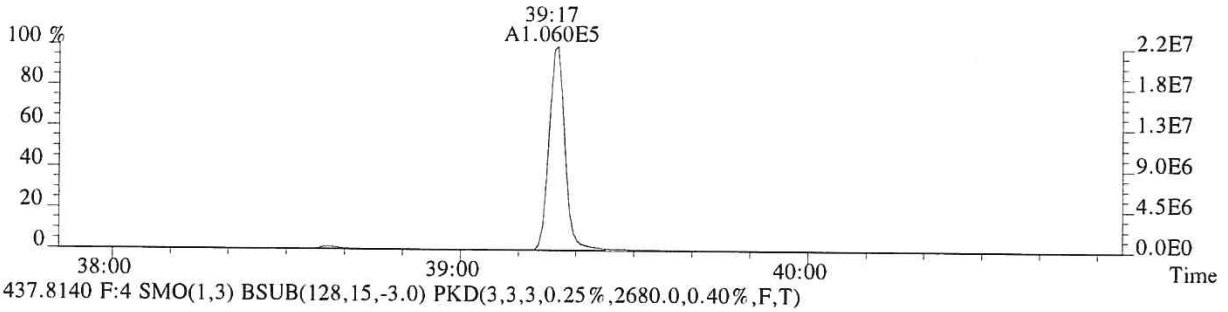
File:P614684 #1-276 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1224.0,0.40%,F,T)



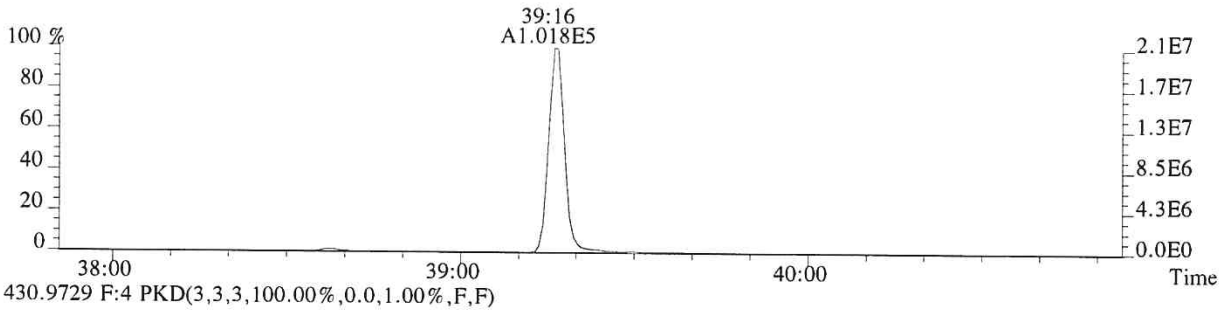
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1428.0,0.40%,F,T)



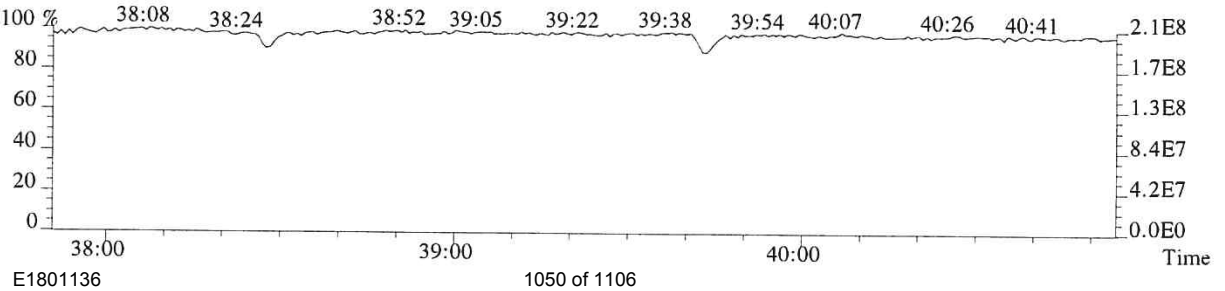
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3060.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2680.0,0.40%,F,T)

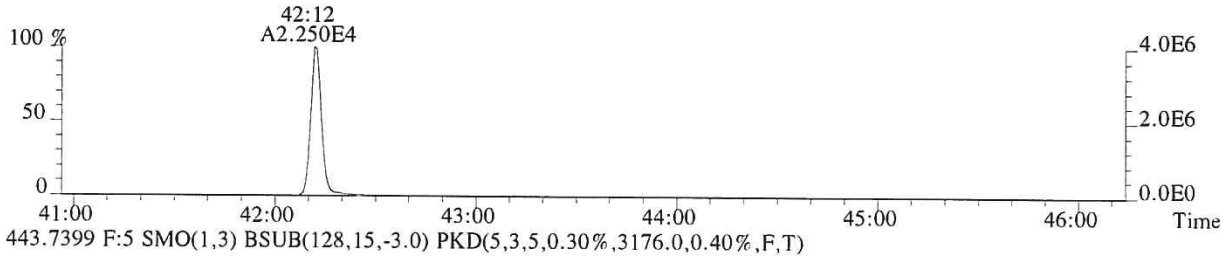


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

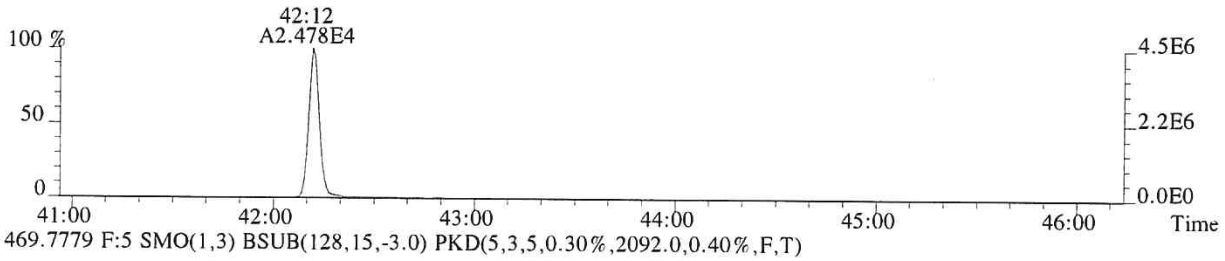


060816

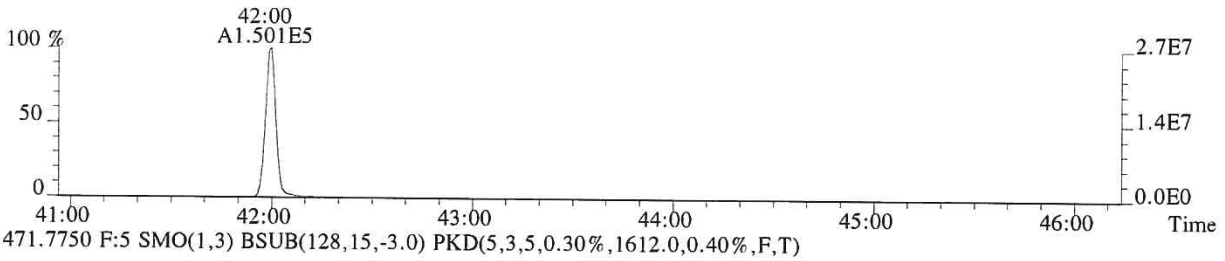
File:P614684 #1-477 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1020.0,0.40%,F,T)



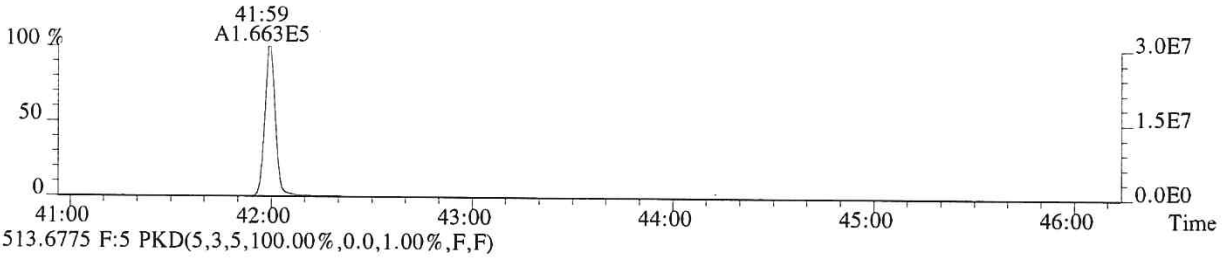
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3176.0,0.40%,F,T)



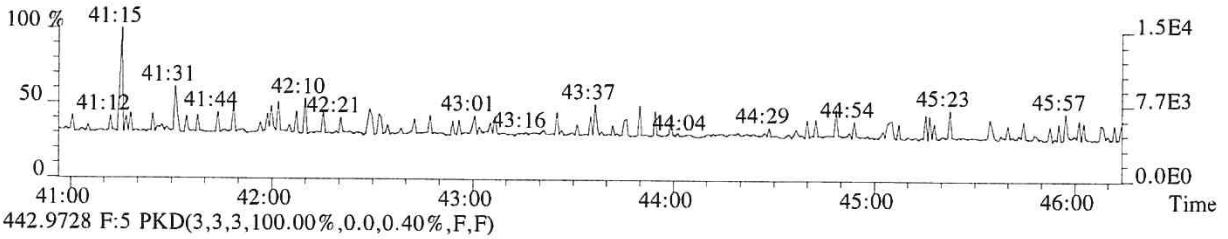
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2092.0,0.40%,F,T)



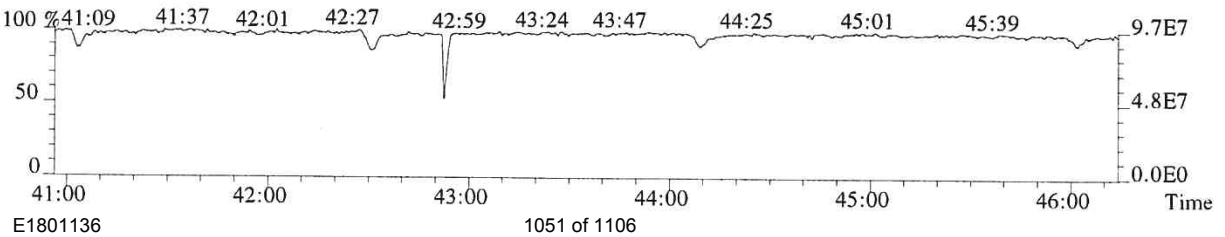
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1612.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

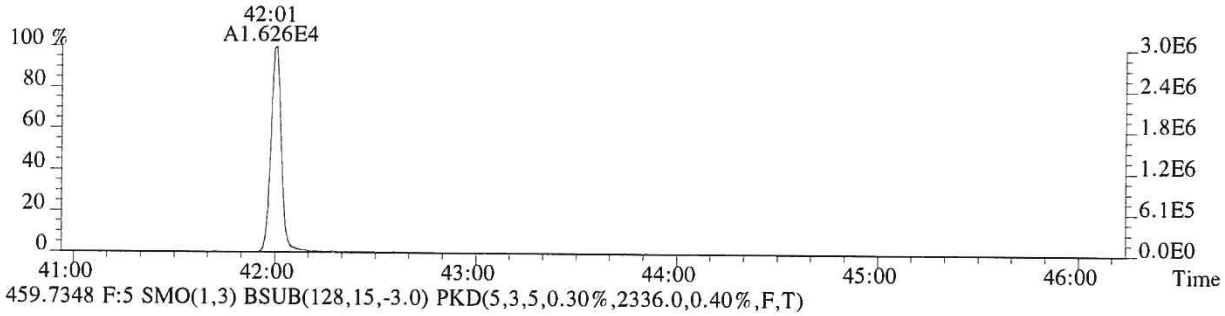


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

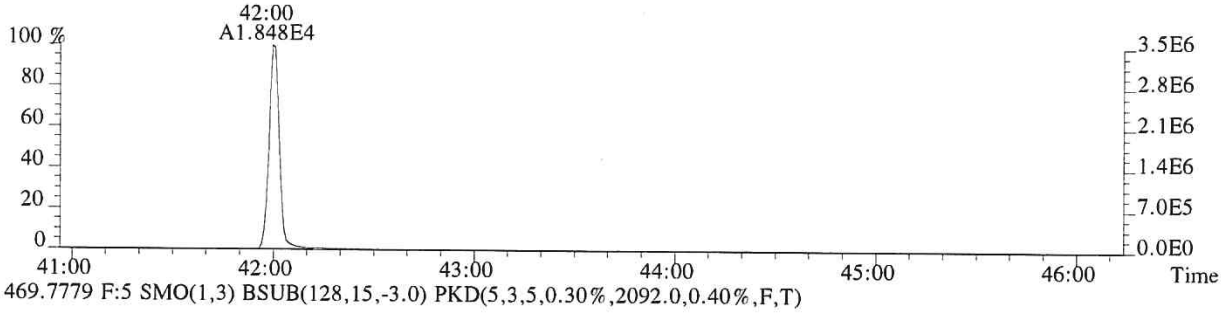


060817

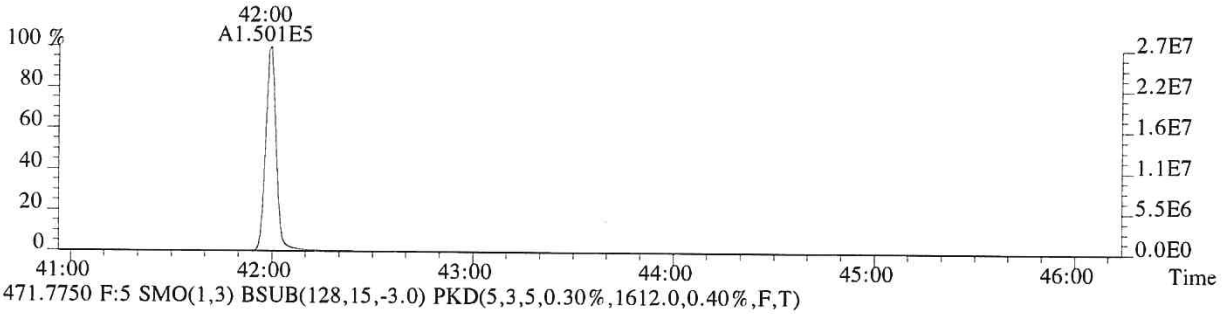
File:P614684 #1-477 Acq:25-SEP-2018 15:59:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,824.0,0.40%,F,T)



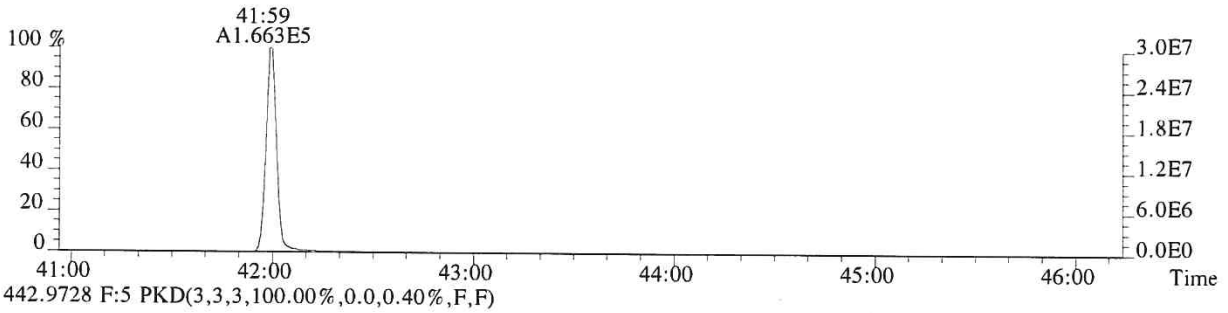
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2336.0,0.40%,F,T)



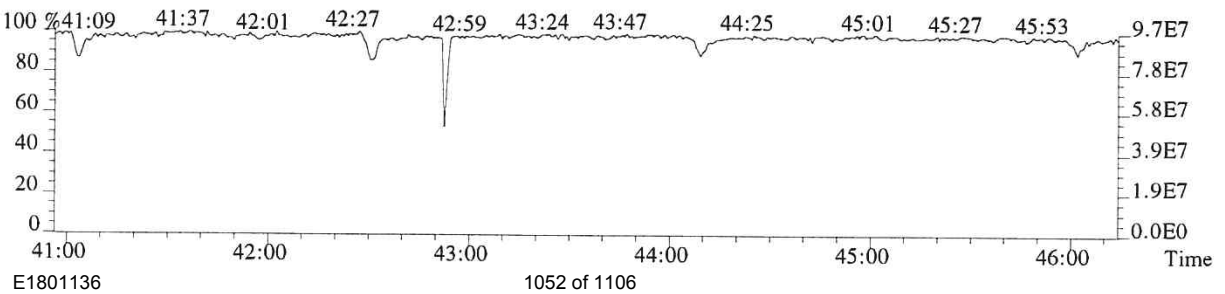
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2092.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1612.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060818

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76557

Run #4 Filename P614685 Samp: 1 Inj: 1 Acquired: 25-SEP-18 16:52:47
Processed: 26-SEP-18 07:39:09 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:01	3.637e+04	4.546e+04	0.80	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:15	3.073e+05	1.939e+05	1.58	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:09	2.818e+05	1.782e+05	1.58	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	2.774e+05	2.200e+05	1.26	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	2.905e+05	2.295e+05	1.27	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	2.685e+05	2.105e+05	1.28	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:10	2.537e+05	1.982e+05	1.28	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	2.407e+05	2.292e+05	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	1.925e+05	1.847e+05	1.04	yes	no	1.463
10	Unk	OCDF	42:13	3.041e+05	3.309e+05	0.92	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	2.365e+04	3.051e+04	0.78	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	1.706e+05	1.098e+05	1.55	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	1.645e+05	1.238e+05	1.33	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	1.567e+05	1.272e+05	1.23	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:53	1.702e+05	1.368e+05	1.24	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	1.477e+05	1.392e+05	1.06	yes	no	1.112
17	Unk	OCDD	42:01	2.180e+05	2.422e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	3.444e+05	4.352e+05	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	5.358e+05	3.352e+05	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	5.234e+05	3.254e+05	1.61	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:48	2.524e+05	4.773e+05	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:55	2.834e+05	5.294e+05	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:25	2.621e+05	4.867e+05	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	2.431e+05	4.520e+05	0.54	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:24	1.967e+05	4.289e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:46	1.638e+05	3.571e+05	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	2.330e+05	2.909e+05	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	3.758e+05	2.372e+05	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:33	3.106e+05	2.345e+05	1.32	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	2.932e+05	2.439e+05	1.20	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	2.673e+05	2.524e+05	1.06	yes	no	0.857
32	IS	13C-OCDD	42:00	3.863e+05	4.247e+05	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:13	2.395e+05	3.006e+05	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:52	3.335e+05	2.694e+05	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	5.645e+04				no	1.086

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Signal/Noise Height Ratio Summary

CLIENT ID.
76557

Run #4 Filename P614685 Samp: 1 Inj: 1 Acquired: 25-SEP-18 16:52:47
Processed: 26-SEP-18 07:39:09 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.55e+06	2.18e+03	3.0e+03	8.17e+06	4.39e+03	1.9e+03
2	1,2,3,7,8-PeCDF	5.78e+07	2.87e+03	2.0e+04	3.64e+07	4.35e+03	8.4e+03
3	2,3,4,7,8-PeCDF	5.79e+07	2.87e+03	2.0e+04	3.65e+07	4.35e+03	8.4e+03
4	1,2,3,4,7,8-HxCDF	6.15e+07	2.89e+03	2.1e+04	4.93e+07	2.08e+03	2.4e+04
5	1,2,3,6,7,8-HxCDF	6.26e+07	2.89e+03	2.2e+04	4.97e+07	2.08e+03	2.4e+04
6	2,3,4,6,7,8-HxCDF	6.14e+07	2.89e+03	2.1e+04	4.79e+07	2.08e+03	2.3e+04
7	1,2,3,7,8,9-HxCDF	5.42e+07	2.89e+03	1.9e+04	4.26e+07	2.08e+03	2.0e+04
8	1,2,3,4,6,7,8-HpCDF	5.56e+07	1.47e+04	3.8e+03	5.23e+07	1.66e+04	3.1e+03
9	1,2,3,4,7,8,9-HpCDF	3.99e+07	1.47e+04	2.7e+03	3.80e+07	1.66e+04	2.3e+03
10	OCDF	5.72e+07	1.23e+03	4.7e+04	6.22e+07	3.01e+03	2.1e+04
11	2,3,7,8-TCDD	4.49e+06	5.36e+03	8.4e+02	5.78e+06	2.64e+03	2.2e+03
12	1,2,3,7,8-PeCDD	3.45e+07	2.46e+03	1.4e+04	2.21e+07	1.02e+03	2.2e+04
13	1,2,3,4,7,8-HxCDD	3.72e+07	9.04e+02	4.1e+04	2.90e+07	1.56e+03	1.9e+04
14	1,2,3,6,7,8-HxCDD	3.60e+07	9.04e+02	4.0e+04	2.81e+07	1.56e+03	1.8e+04
15	1,2,3,7,8,9-HxCDD	3.80e+07	9.04e+02	4.2e+04	3.00e+07	1.56e+03	1.9e+04
16	1,2,3,4,6,7,8-HpCDD	3.19e+07	1.58e+03	2.0e+04	3.06e+07	1.63e+03	1.9e+04
17	OCDD	4.21e+07	1.71e+03	2.5e+04	4.66e+07	1.53e+03	3.0e+04
18	13C-2,3,7,8-TCDF	6.23e+07	1.55e+04	4.0e+03	7.90e+07	1.02e+04	7.8e+03
19	13C-1,2,3,7,8-PeCDF	1.00e+08	2.14e+03	4.7e+04	6.28e+07	2.18e+03	2.9e+04
20	13C-2,3,4,7,8-PeCDF	1.07e+08	2.14e+03	5.0e+04	6.66e+07	2.18e+03	3.1e+04
21	13C-1,2,3,4,7,8-HxCDF	5.63e+07	2.92e+03	1.9e+04	1.07e+08	4.60e+03	2.3e+04
22	13C-1,2,3,6,7,8-HxCDF	6.12e+07	2.92e+03	2.1e+04	1.15e+08	4.60e+03	2.5e+04
23	13C-2,3,4,6,7,8-HxCDF	5.95e+07	2.92e+03	2.0e+04	1.10e+08	4.60e+03	2.4e+04
24	13C-1,2,3,7,8,9-HxCDF	5.22e+07	2.92e+03	1.8e+04	9.74e+07	4.60e+03	2.1e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.59e+07	1.18e+04	3.9e+03	9.95e+07	3.82e+04	2.6e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.37e+07	1.18e+04	2.9e+03	7.29e+07	3.82e+04	1.9e+03
27	13C-2,3,7,8-TCDD	4.45e+07	1.91e+04	2.3e+03	5.53e+07	7.70e+03	7.2e+03
28	13C-1,2,3,7,8-PeCDD	7.50e+07	3.59e+03	2.1e+04	4.74e+07	2.50e+03	1.9e+04
29	13C-1,2,3,4,7,8-HxCDD	6.95e+07	5.55e+03	1.3e+04	5.43e+07	3.18e+03	1.7e+04
30	13C-1,2,3,6,7,8-HxCDD	6.70e+07	5.55e+03	1.2e+04	5.36e+07	3.18e+03	1.7e+04
31	13C-1,2,3,4,6,7,8-HpCDD	5.80e+07	4.72e+03	1.2e+04	5.53e+07	2.63e+03	2.1e+04
32	13C-OCDD	7.33e+07	1.86e+03	4.0e+04	8.10e+07	5.92e+02	1.4e+05
33	13C-1,2,3,4-TCDD	4.48e+07	1.91e+04	2.3e+03	5.67e+07	7.70e+03	7.4e+03
34	13C-1,2,3,7,8,9-HxCDD	7.38e+07	5.55e+03	1.3e+04	5.89e+07	3.18e+03	1.9e+04
35	37Cl-2,3,7,8-TCDD	1.08e+07	3.52e+03	3.1e+03			

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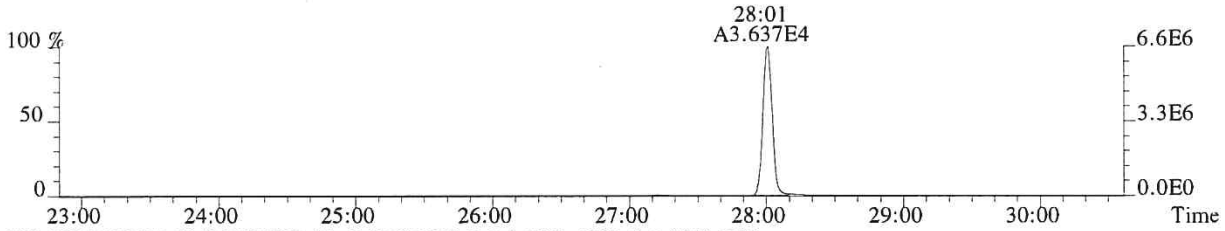
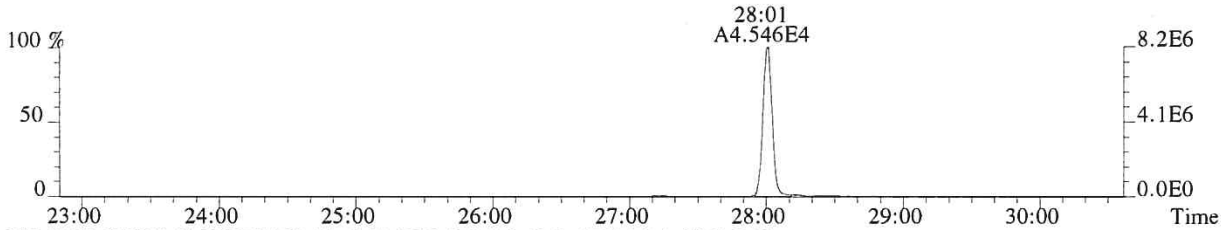
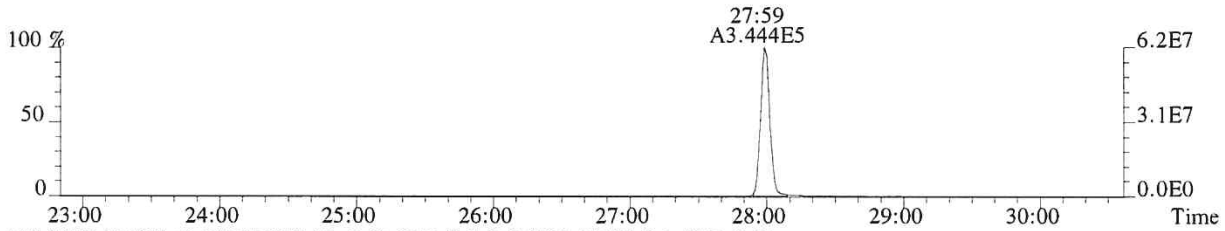
File:P614685 #1-552 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,T)



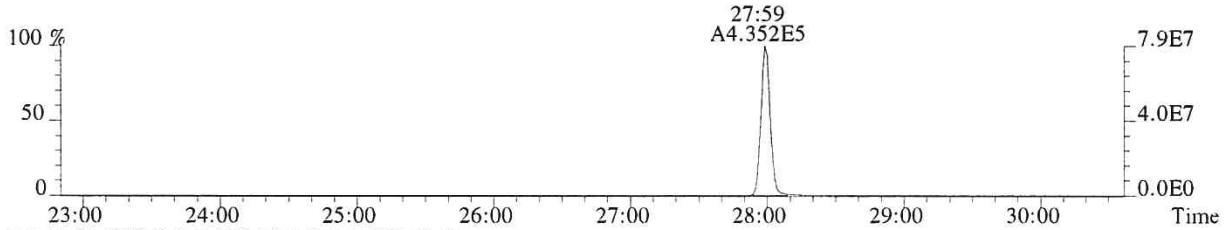
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4392.0,1.00%,F,T)



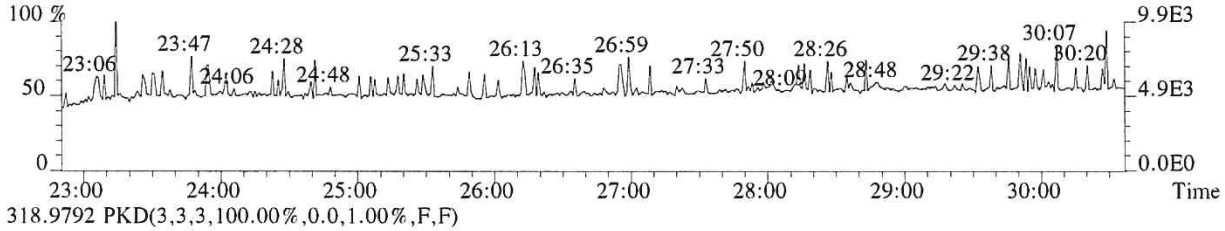
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15516.0,1.00%,F,T)



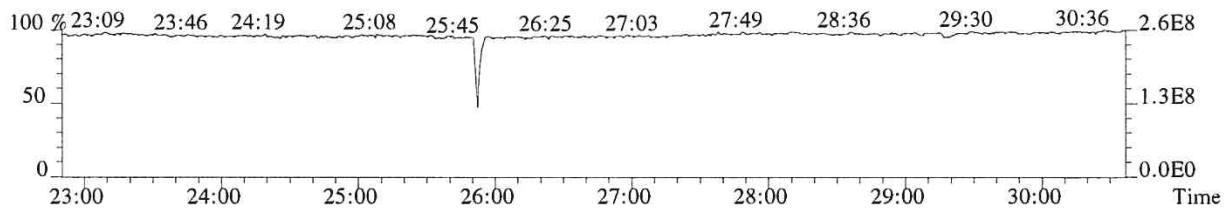
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10180.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

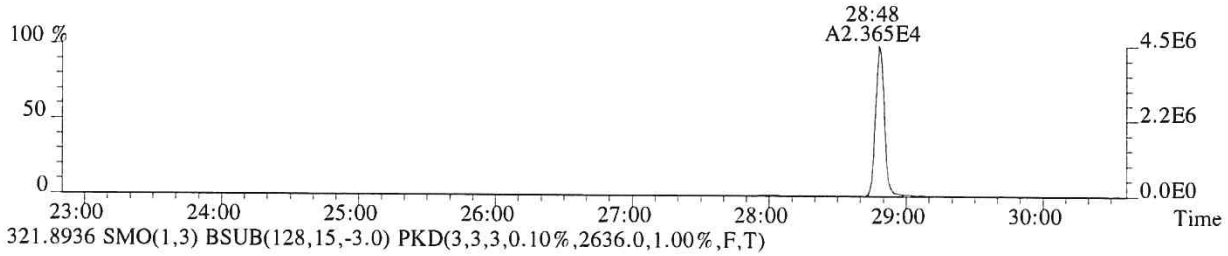


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

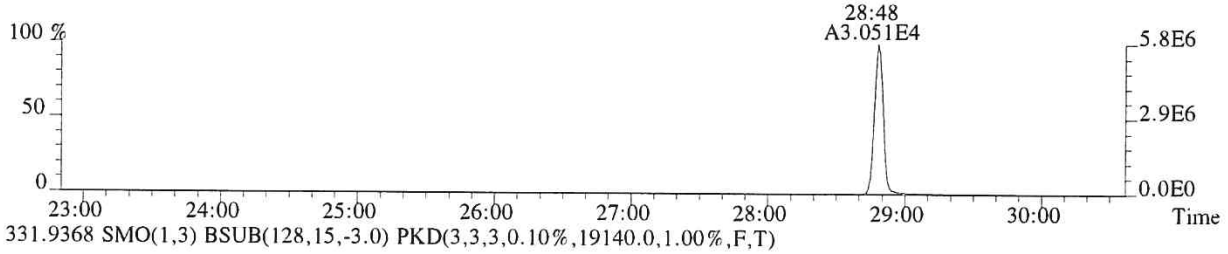


060821

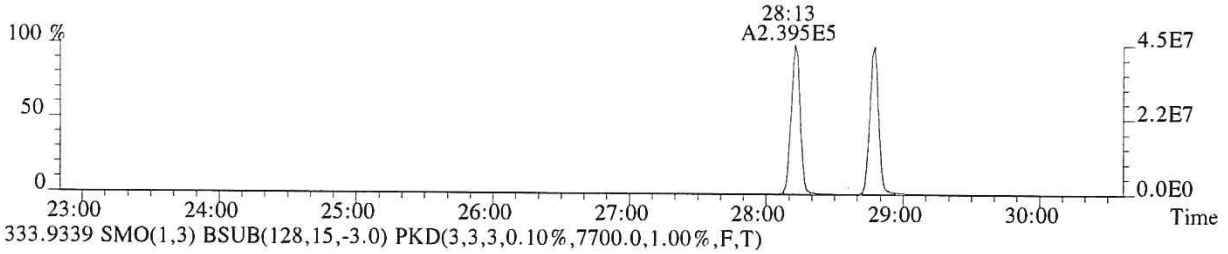
File:P614685 #1-552 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5364.0,1.00%,F,T)



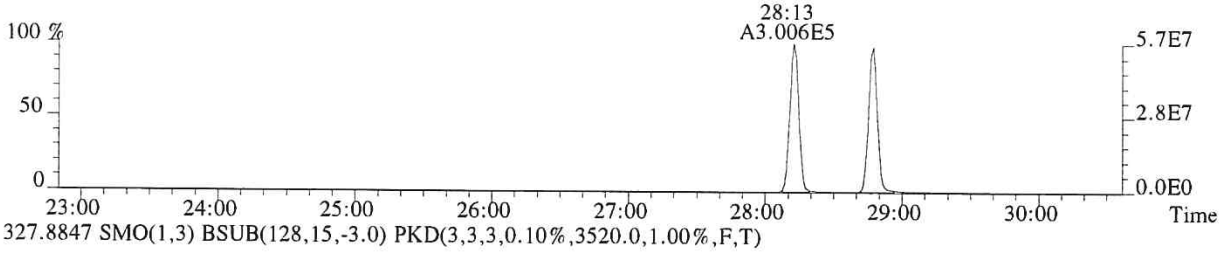
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2636.0,1.00%,F,T)



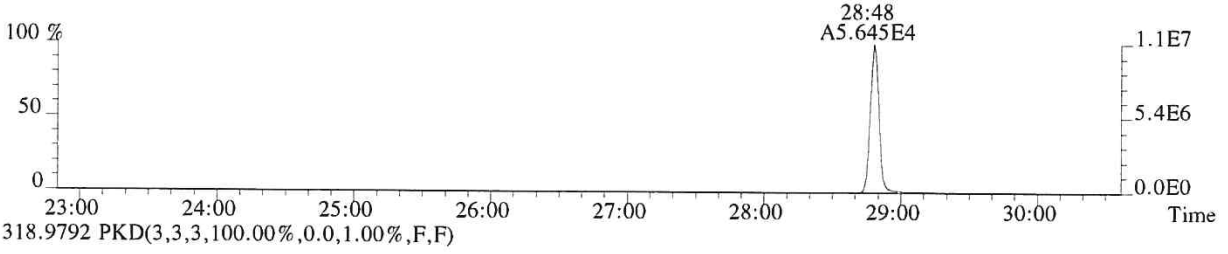
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,19140.0,1.00%,F,T)



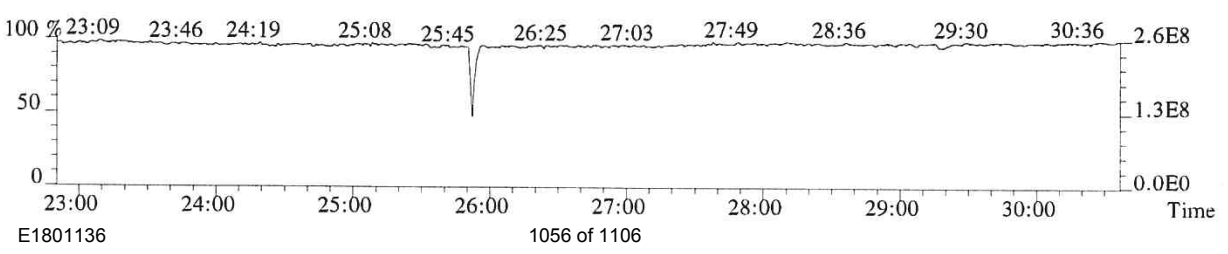
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7700.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3520.0,1.00%,F,T)

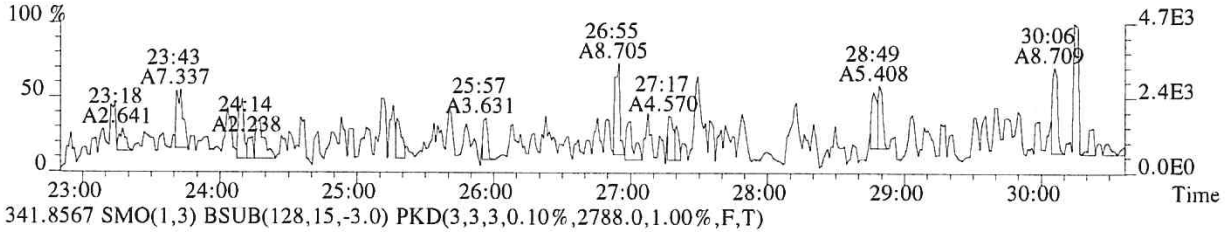


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

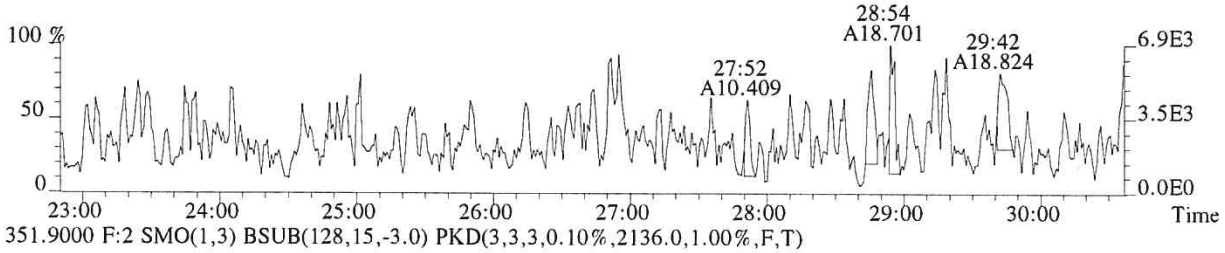


060822

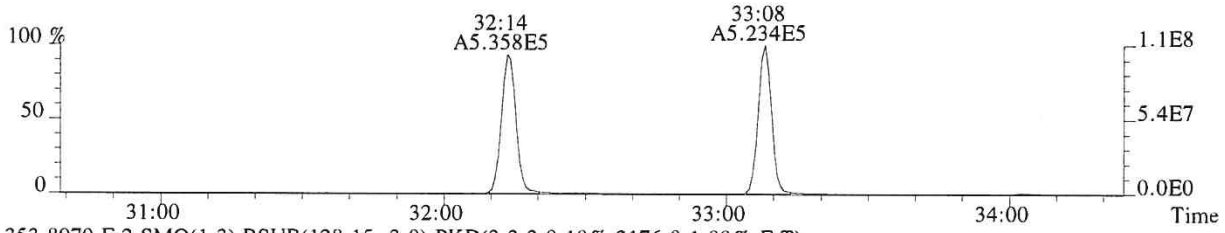
File:P614685 #1-552 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1116.0,1.00%,F,T)



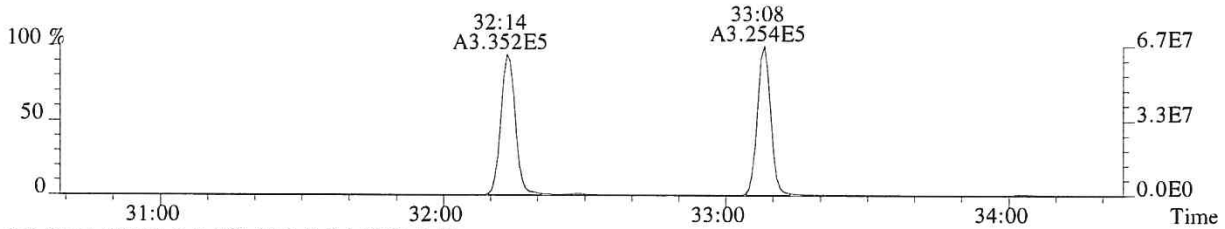
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2788.0,1.00%,F,T)



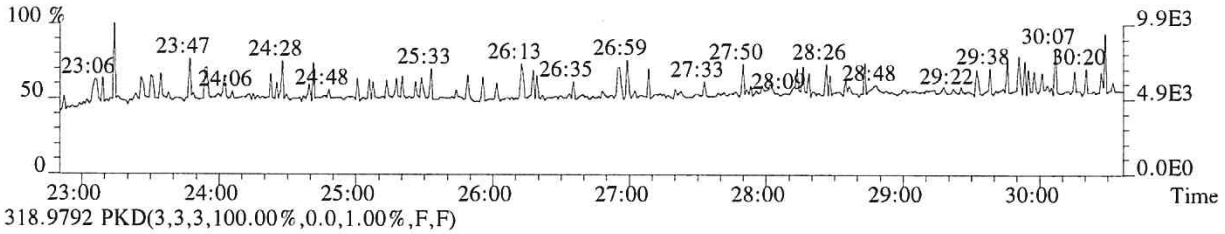
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2136.0,1.00%,F,T)



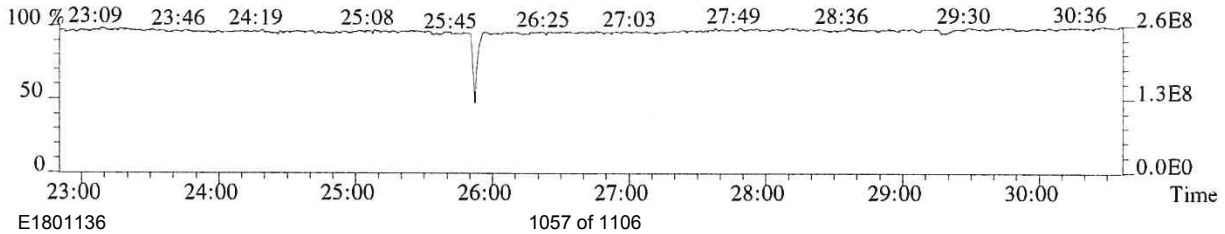
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



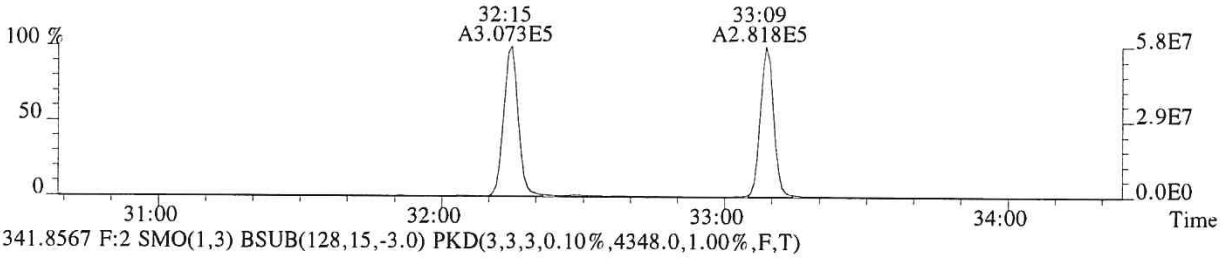
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



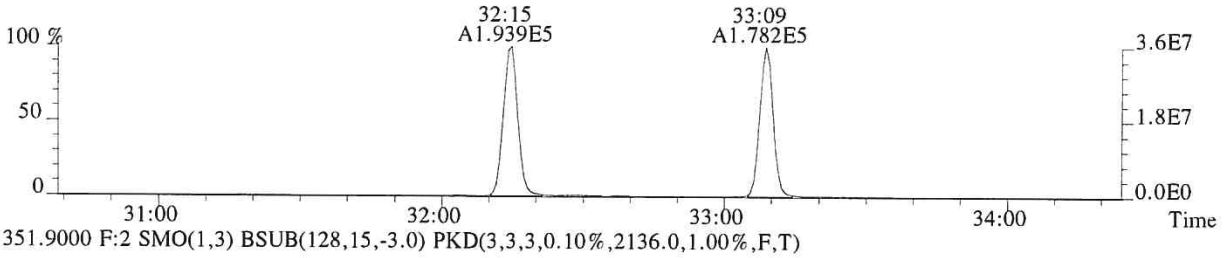
060823

File:P614685 #1-339 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

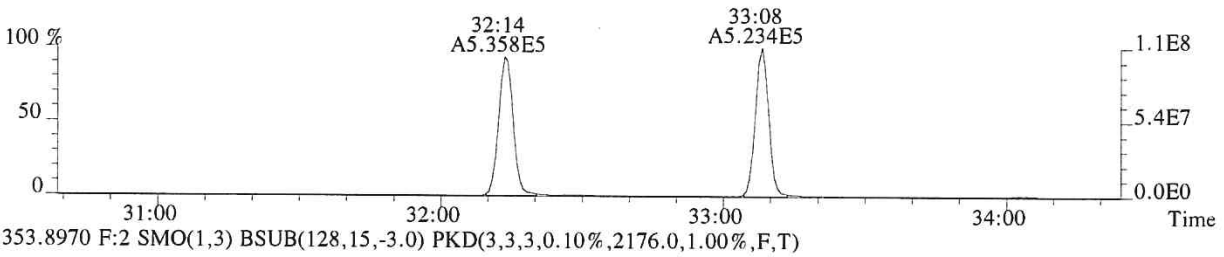
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2872.0,1.00%,F,T)



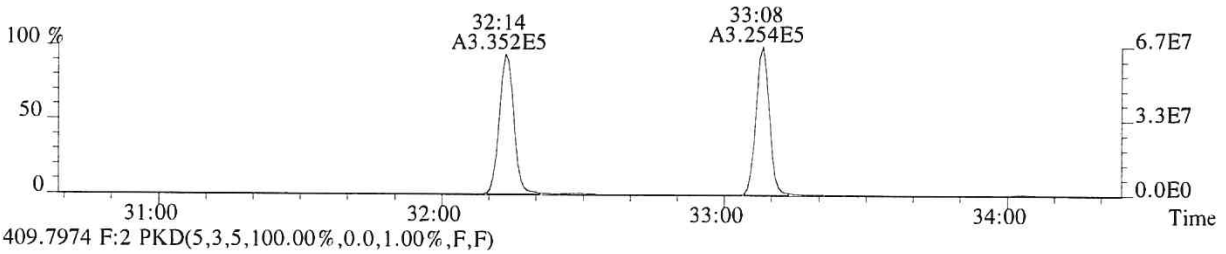
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4348.0,1.00%,F,T)



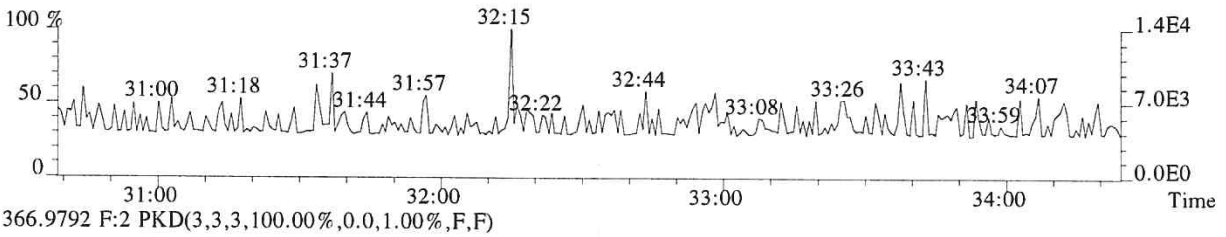
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2136.0,1.00%,F,T)



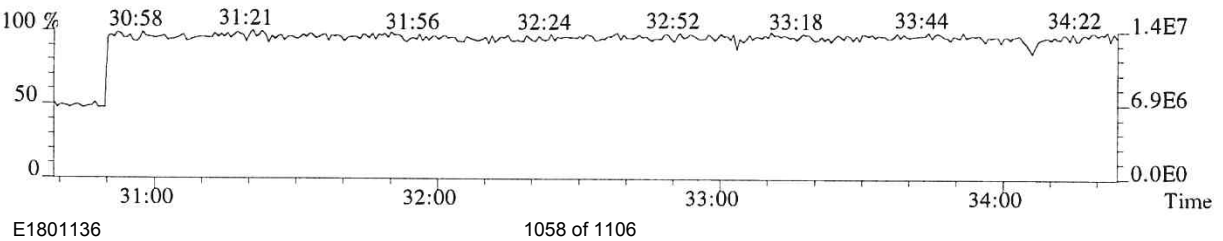
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

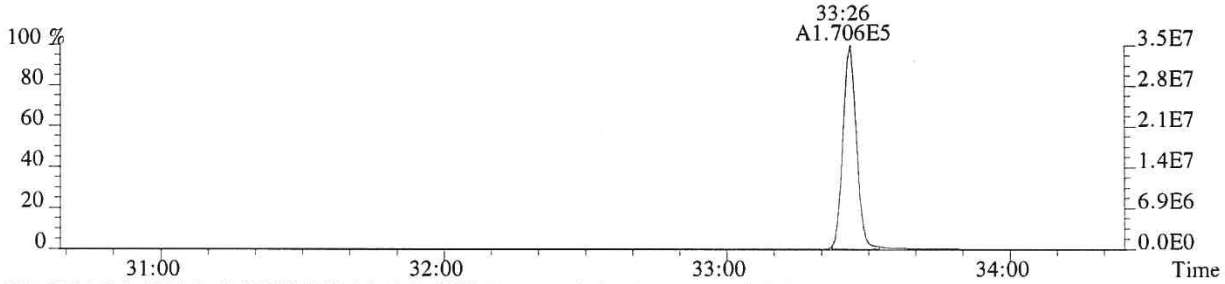


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

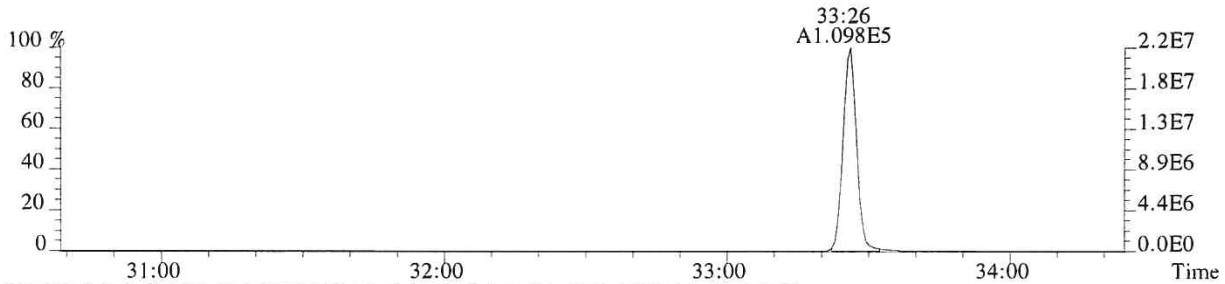


060824

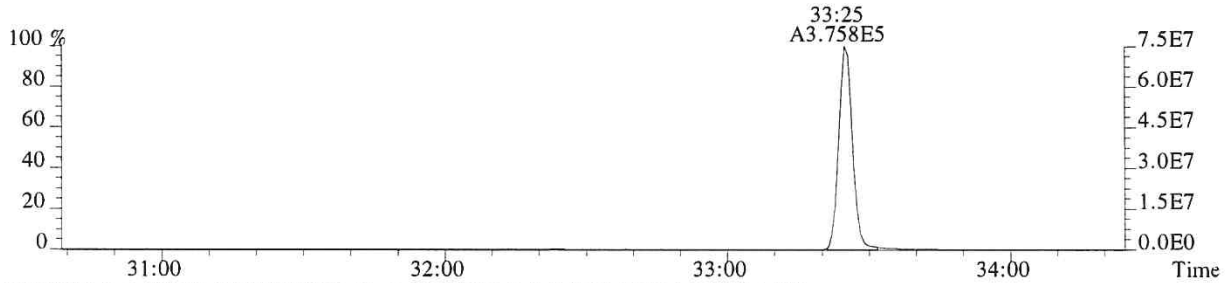
File:P614685 #1-339 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2460.0,1.00%,F,T)



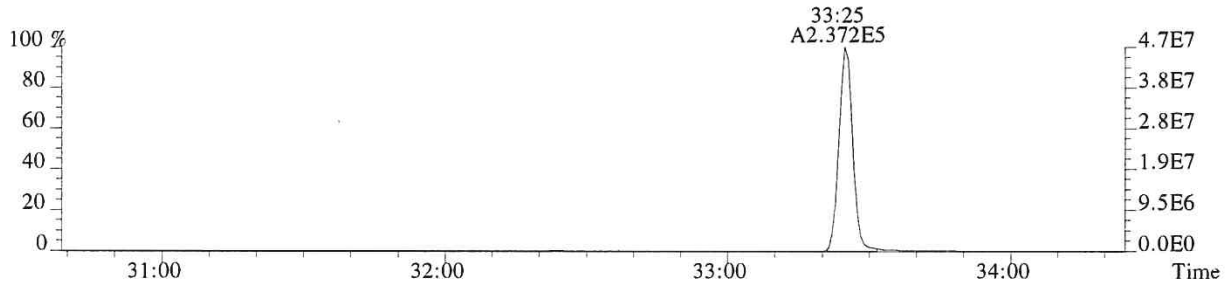
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1020.0,1.00%,F,T)



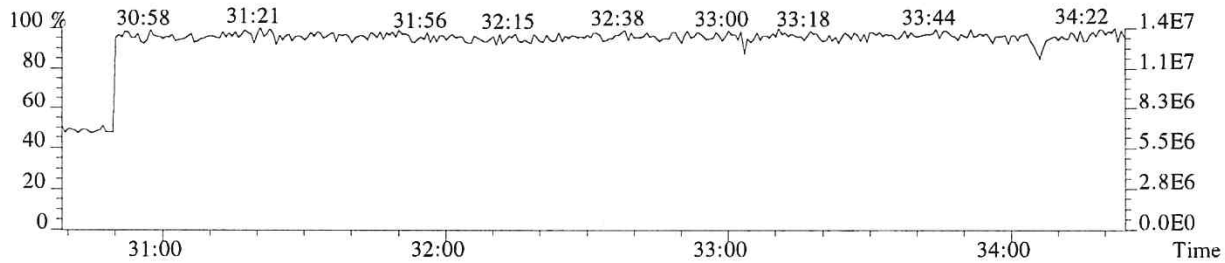
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3592.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2496.0,1.00%,F,T)

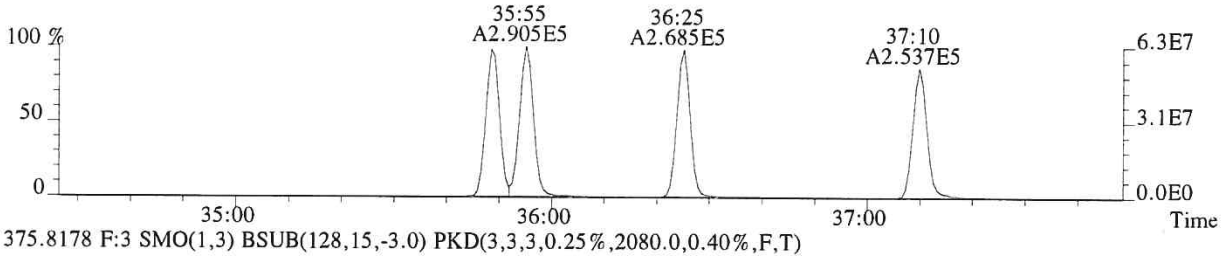


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

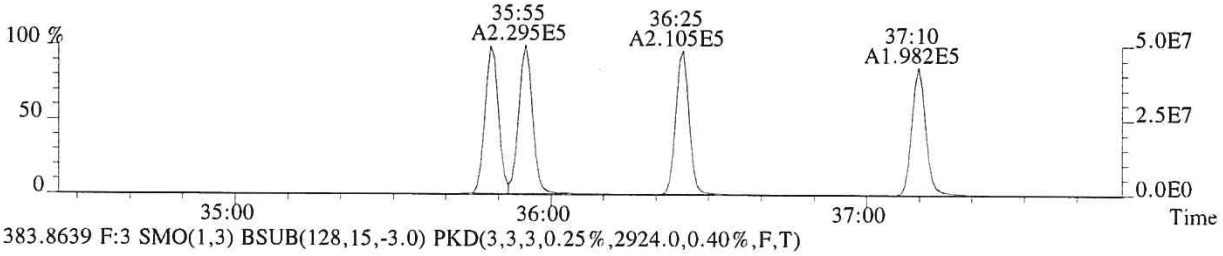


060825

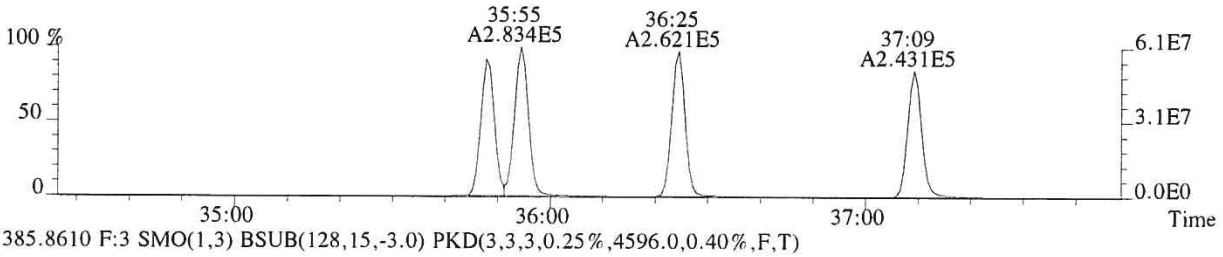
File:P614685 #1-304 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2888.0,0.40%,F,T)



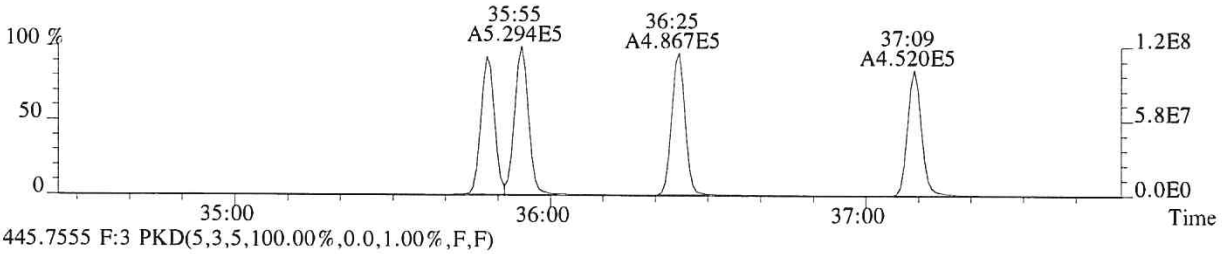
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2080.0,0.40%,F,T)



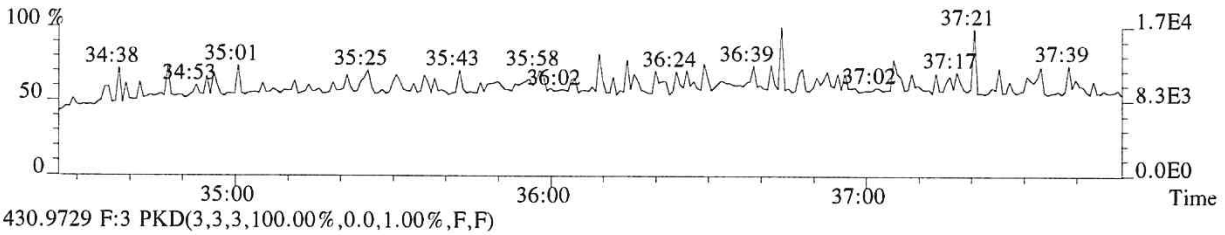
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2924.0,0.40%,F,T)



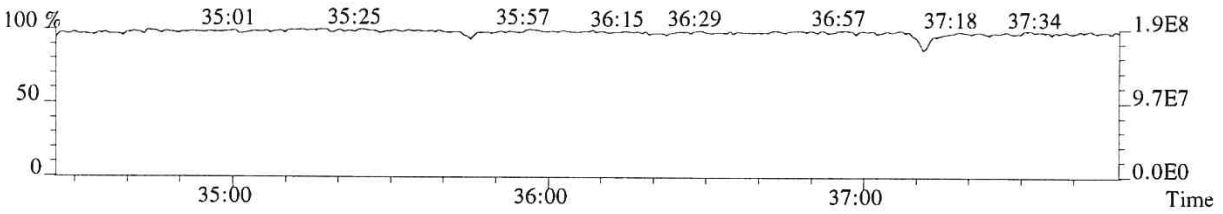
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4596.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

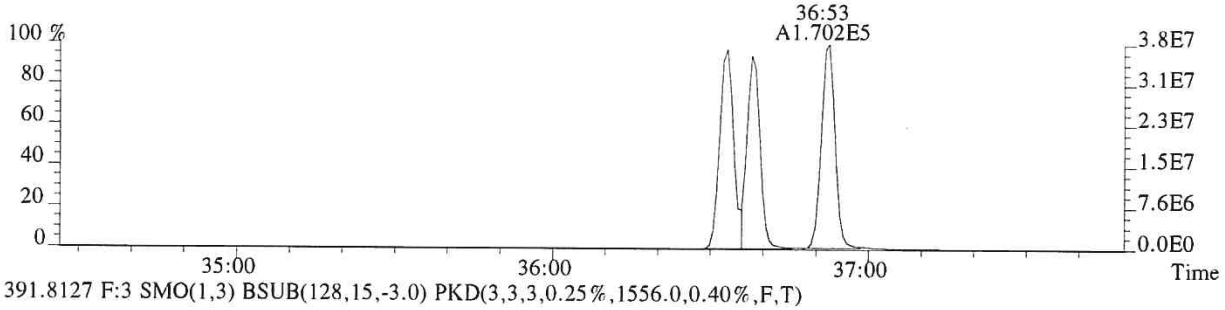


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

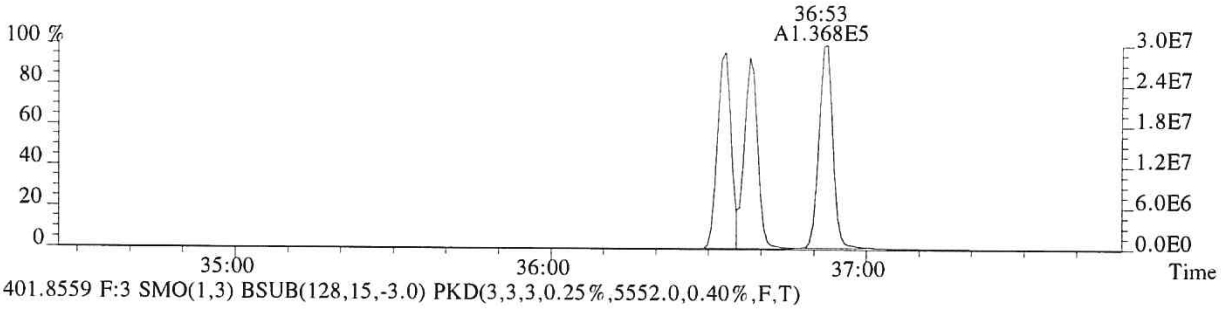


060826

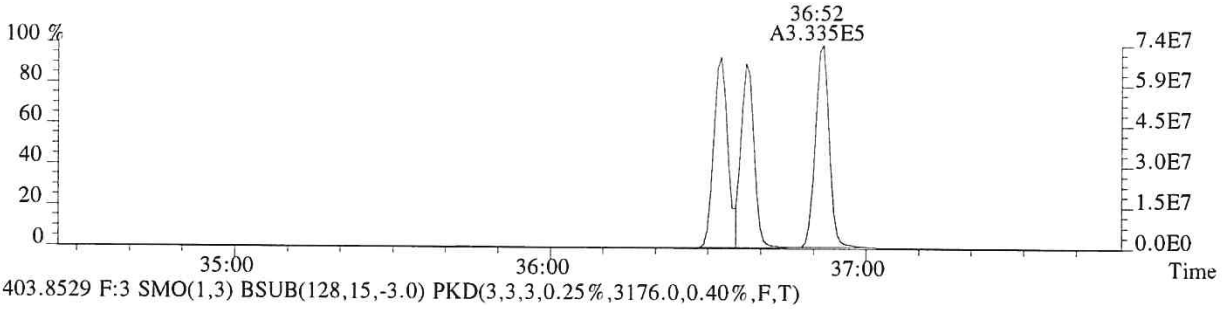
File:P614685 #1-304 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,904.0,0.40%,F,T)



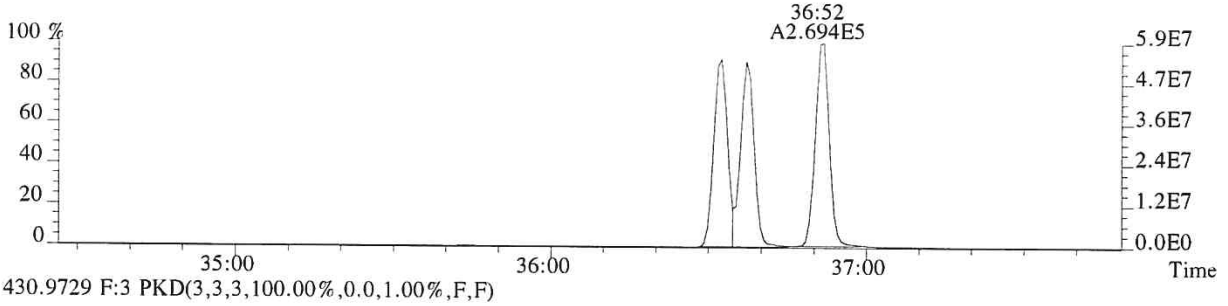
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1556.0,0.40%,F,T)



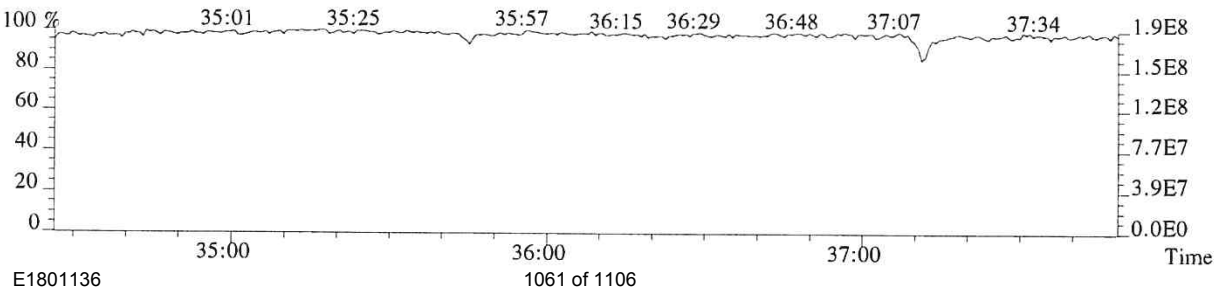
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5552.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3176.0,0.40%,F,T)

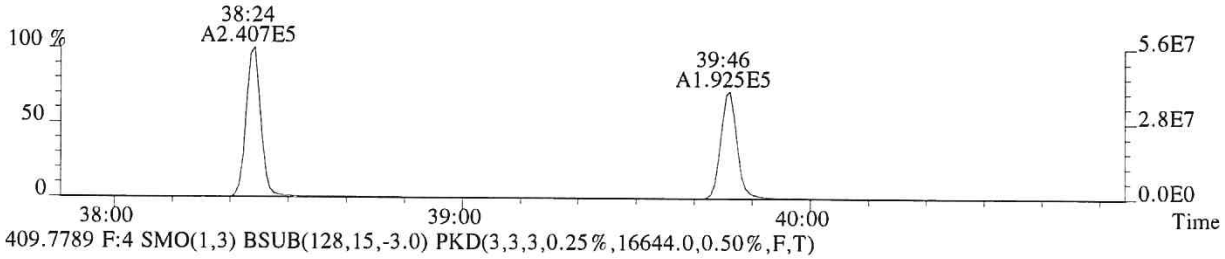


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

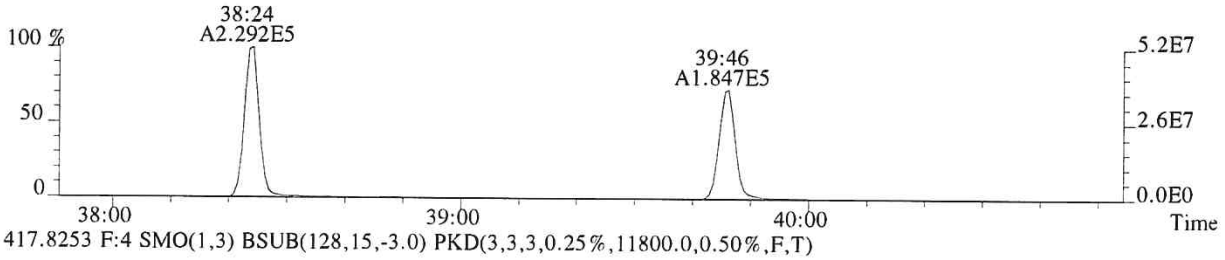


060827

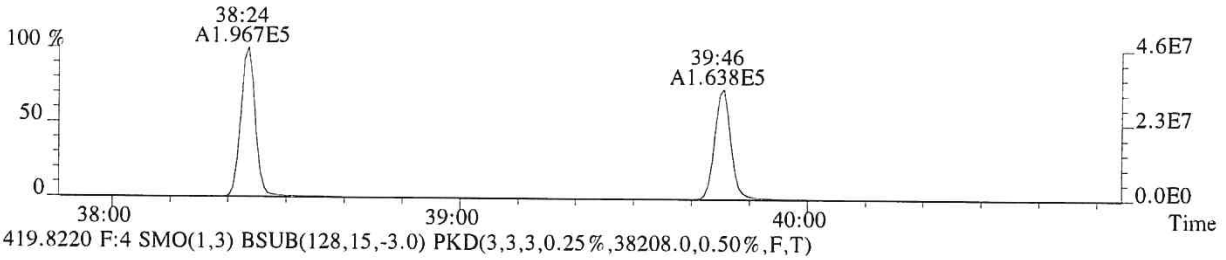
File:P614685 #1-276 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,14728.0,0.50%,F,T)



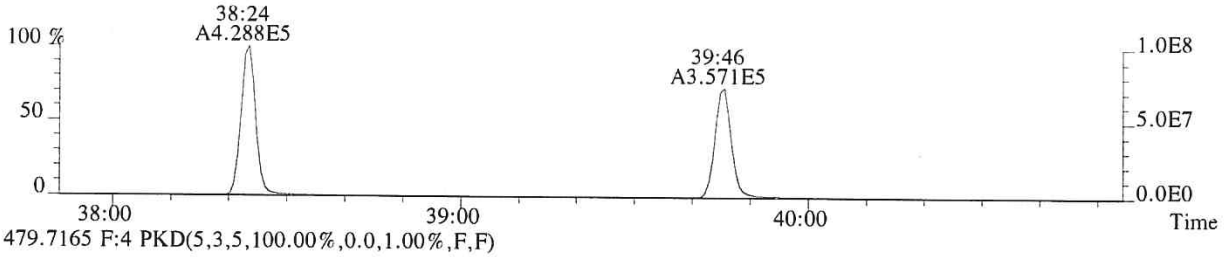
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,16644.0,0.50%,F,T)



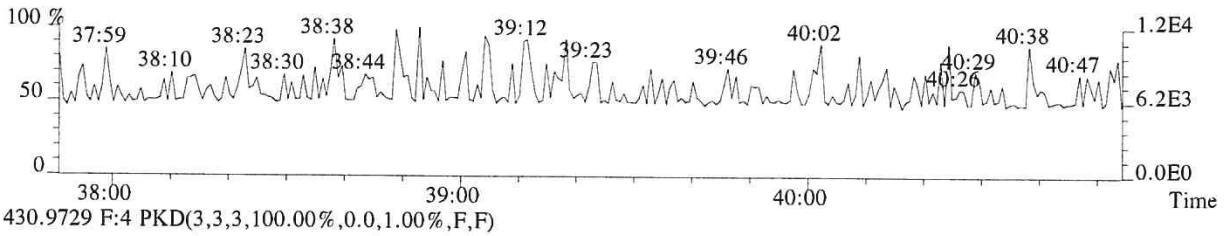
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11800.0,0.50%,F,T)



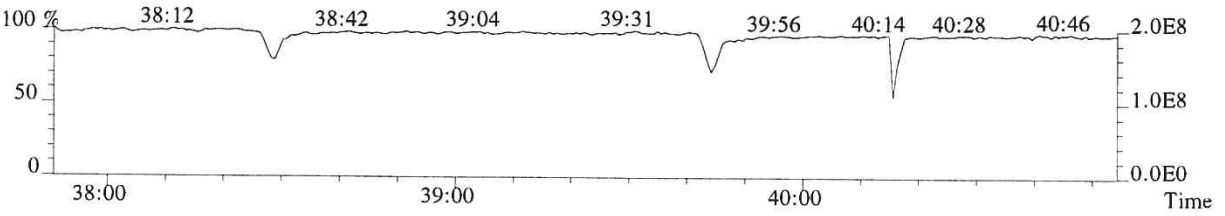
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,38208.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

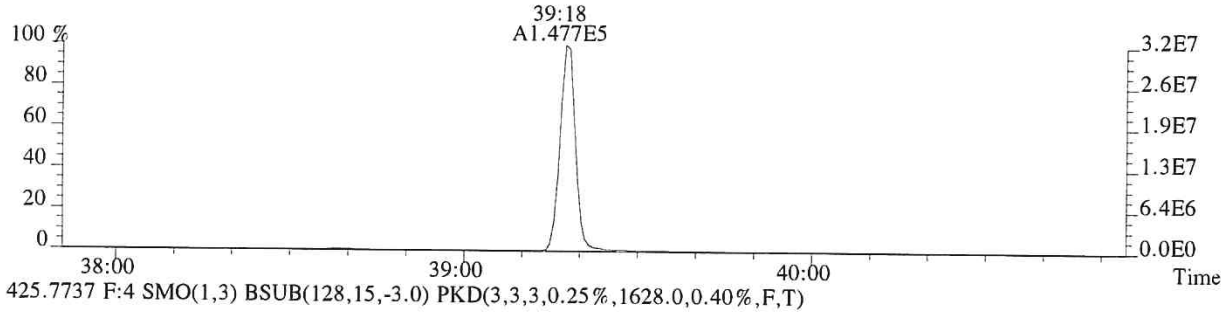


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

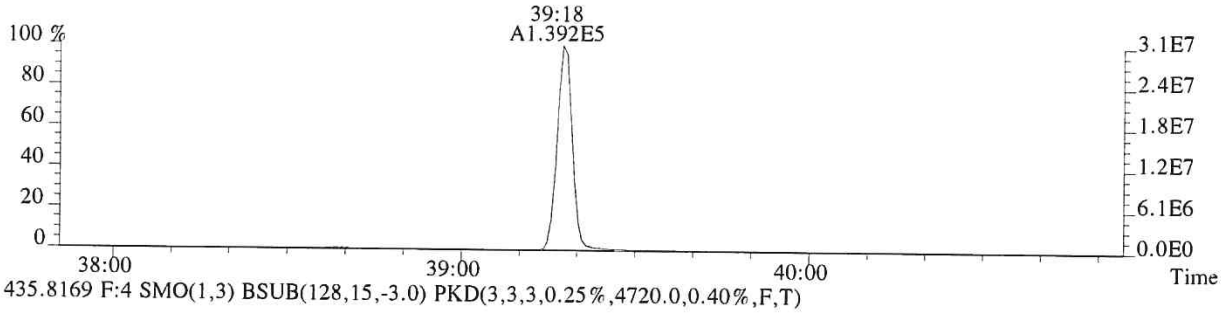


060828

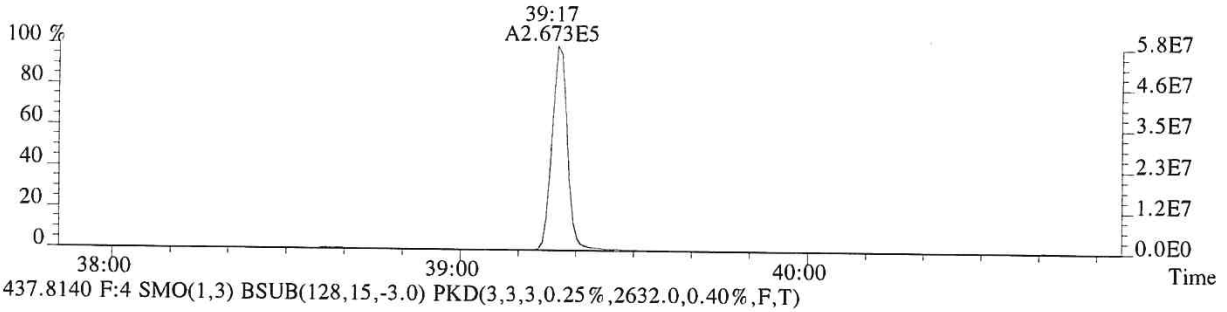
File:P614685 #1-276 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1576.0,0.40%,F,T)



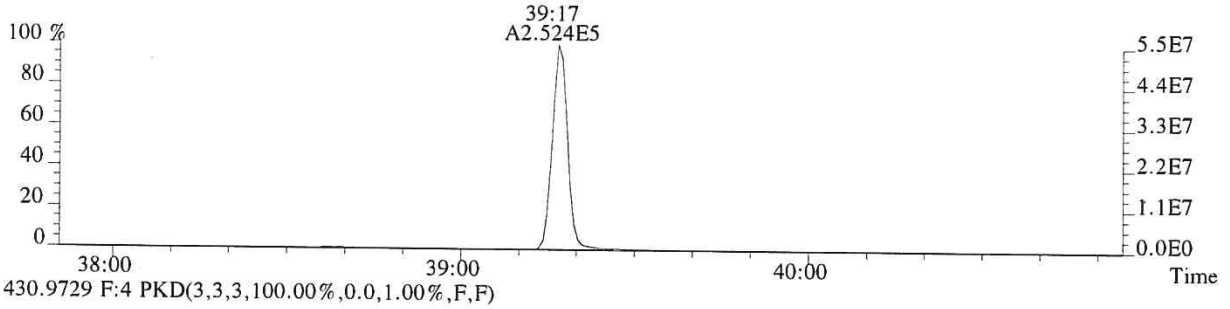
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1628.0,0.40%,F,T)



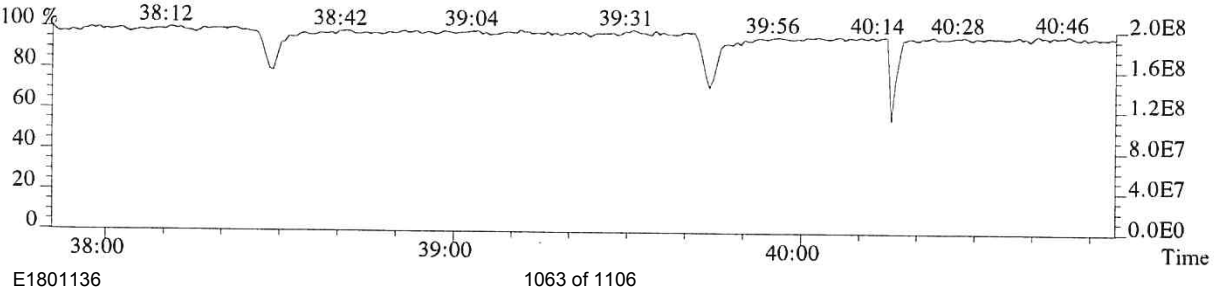
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4720.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2632.0,0.40%,F,T)

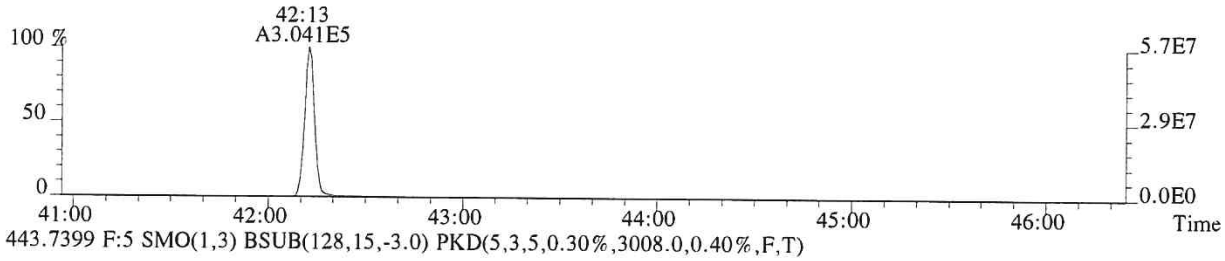


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

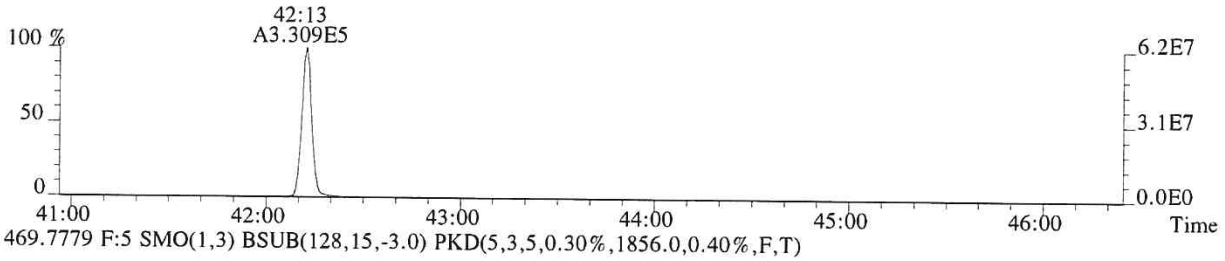


060829

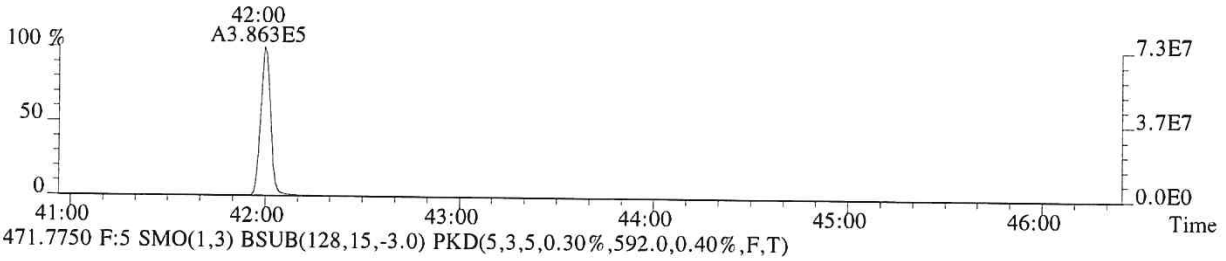
File:P614685 #1-493 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:CS3
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1228.0,0.40%,F,T)



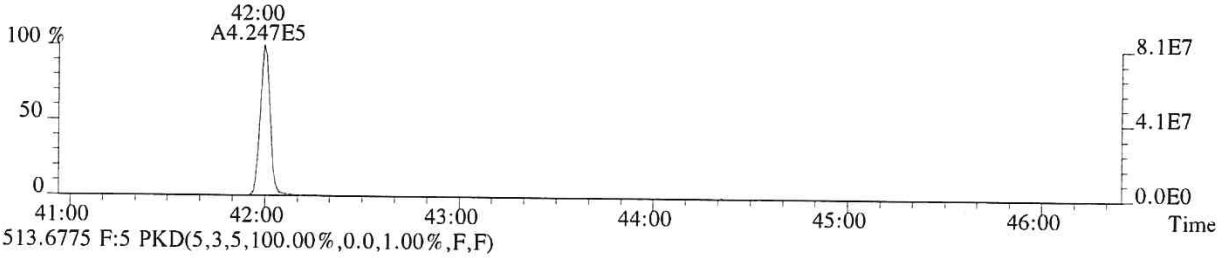
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3008.0,0.40%,F,T)



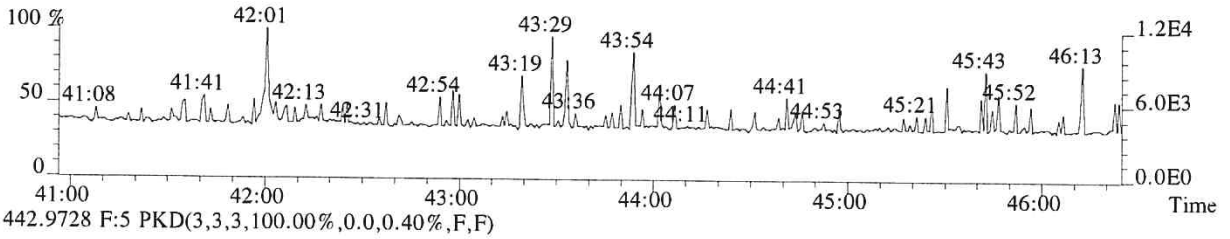
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1856.0,0.40%,F,T)



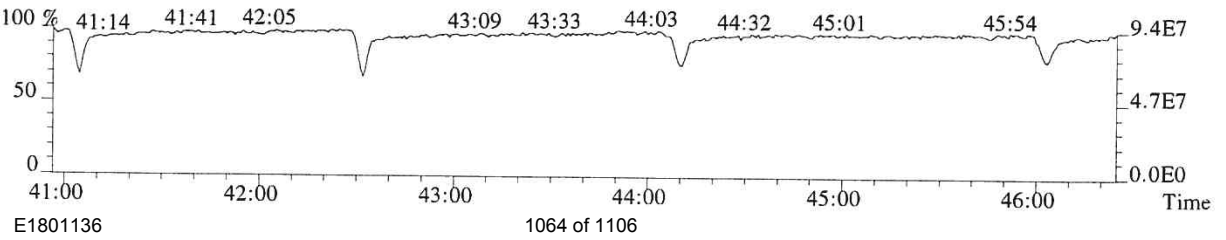
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,592.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

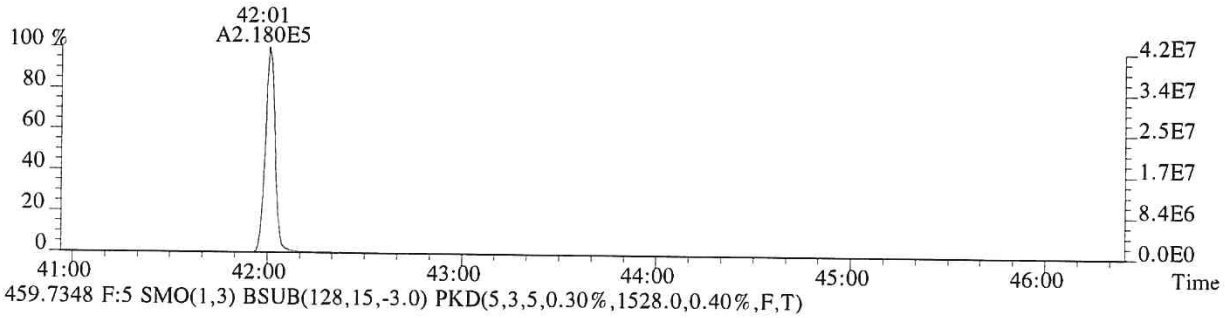


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

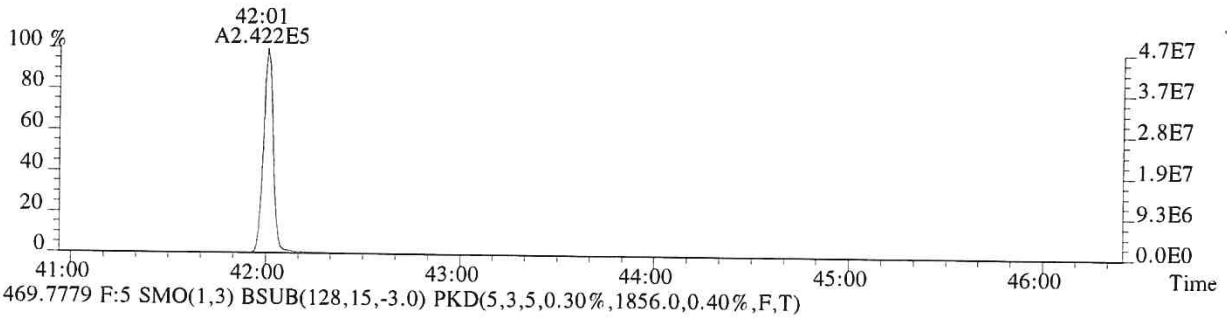


060830

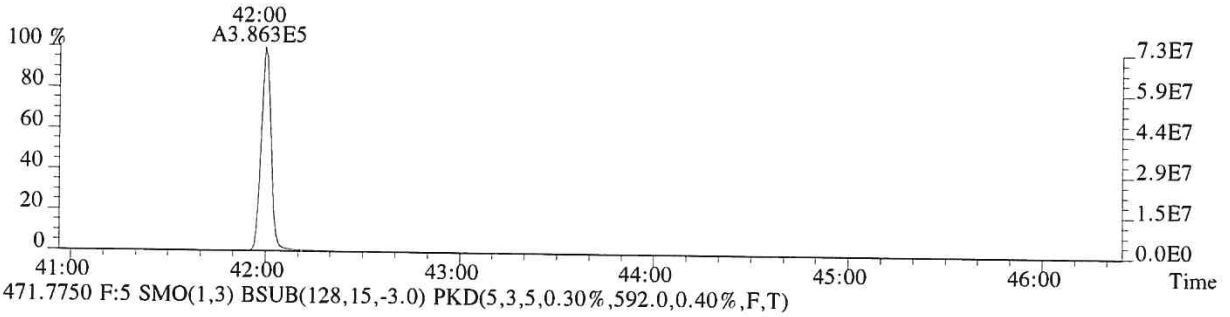
File:P614685 #1-493 Acq:25-SEP-2018 16:52:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1708.0,0.40%,F,T)



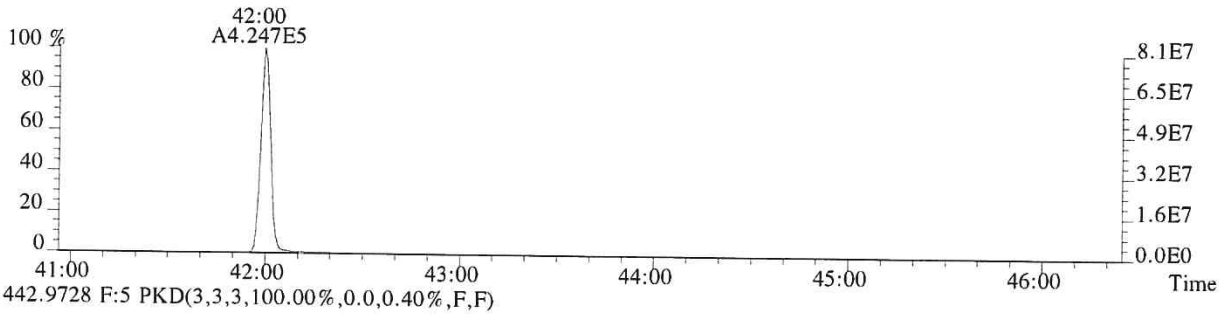
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1528.0,0.40%,F,T)



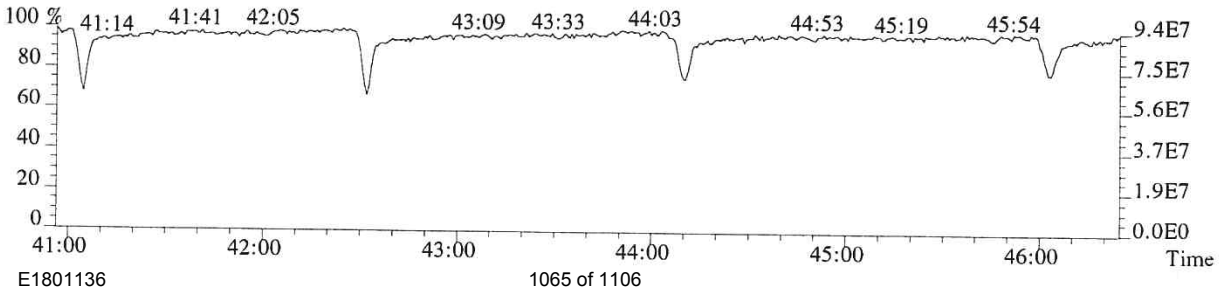
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1856.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,592.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060831

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
82167

Run #5 Filename P614686 Samp: 1 Inj: 1 Acquired: 25-SEP-18 17:41:03
Processed: 26-SEP-18 07:39:11 Sample ID: CS4

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:00	1.186e+05	1.498e+05	0.79	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:14	1.070e+06	6.680e+05	1.60	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:09	9.931e+05	6.255e+05	1.59	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	9.336e+05	7.318e+05	1.28	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	9.546e+05	7.530e+05	1.27	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	9.004e+05	7.134e+05	1.26	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:10	8.574e+05	6.711e+05	1.28	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	7.924e+05	7.640e+05	1.04	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	6.712e+05	6.389e+05	1.05	yes	no	1.463
10	Unk	OCDF	42:13	9.999e+05	1.075e+06	0.93	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	8.371e+04	1.065e+05	0.79	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	5.908e+05	3.807e+05	1.55	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	5.387e+05	4.268e+05	1.26	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	5.444e+05	4.299e+05	1.27	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:52	5.850e+05	4.610e+05	1.27	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	4.859e+05	4.568e+05	1.06	yes	no	1.112
17	Unk	OCDD	42:01	7.127e+05	7.901e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	2.799e+05	3.543e+05	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	4.595e+05	2.875e+05	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	4.523e+05	2.842e+05	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:48	2.092e+05	3.928e+05	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:55	2.332e+05	4.327e+05	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:25	2.224e+05	4.139e+05	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	2.041e+05	3.825e+05	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:24	1.626e+05	3.528e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:46	1.431e+05	3.159e+05	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	2.012e+05	2.528e+05	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	3.193e+05	2.044e+05	1.56	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:33	2.552e+05	2.035e+05	1.25	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	2.565e+05	2.045e+05	1.25	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	2.187e+05	2.081e+05	1.05	yes	no	0.857
32	IS	13C-OCDD	42:00	3.133e+05	3.464e+05	0.90	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:13	2.000e+05	2.518e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:51	2.828e+05	2.264e+05	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	2.003e+05				no	1.086

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
82167

Run #5 Filename P614686 Samp: 1 Inj: 1 Acquired: 25-SEP-18 17:41:03
Processed: 26-SEP-18 07:39:11 LAB. ID: CS4

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.13e+07	2.15e+03	9.9e+03	2.70e+07	4.22e+03	6.4e+03
2	1,2,3,7,8-PeCDF	2.03e+08	3.06e+03	6.6e+04	1.29e+08	4.95e+03	2.6e+04
3	2,3,4,7,8-PeCDF	2.04e+08	3.06e+03	6.7e+04	1.28e+08	4.95e+03	2.6e+04
4	1,2,3,4,7,8-HxCDF	2.14e+08	1.85e+03	1.2e+05	1.68e+08	4.92e+03	3.4e+04
5	1,2,3,6,7,8-HxCDF	2.12e+08	1.85e+03	1.1e+05	1.67e+08	4.92e+03	3.4e+04
6	2,3,4,6,7,8-HxCDF	2.02e+08	1.85e+03	1.1e+05	1.59e+08	4.92e+03	3.2e+04
7	1,2,3,7,8,9-HxCDF	1.88e+08	1.85e+03	1.0e+05	1.47e+08	4.92e+03	3.0e+04
8	1,2,3,4,6,7,8-HpCDF	1.78e+08	2.61e+04	6.8e+03	1.72e+08	1.83e+04	9.4e+03
9	1,2,3,4,7,8,9-HpCDF	1.41e+08	2.61e+04	5.4e+03	1.35e+08	1.83e+04	7.4e+03
10	OCDF	1.94e+08	1.46e+03	1.3e+05	2.08e+08	3.00e+03	6.9e+04
11	2,3,7,8-TCDD	1.62e+07	6.38e+03	2.5e+03	2.06e+07	2.42e+03	8.5e+03
12	1,2,3,7,8-PeCDD	1.19e+08	3.22e+03	3.7e+04	7.64e+07	1.02e+03	7.5e+04
13	1,2,3,4,7,8-HxCDD	1.25e+08	9.48e+02	1.3e+05	9.78e+07	1.64e+03	5.9e+04
14	1,2,3,6,7,8-HxCDD	1.22e+08	9.48e+02	1.3e+05	9.73e+07	1.64e+03	5.9e+04
15	1,2,3,7,8,9-HxCDD	1.31e+08	9.48e+02	1.4e+05	1.04e+08	1.64e+03	6.3e+04
16	1,2,3,4,6,7,8-HpCDD	1.10e+08	2.46e+03	4.5e+04	1.04e+08	2.38e+03	4.4e+04
17	OCDD	1.42e+08	1.24e+03	1.1e+05	1.57e+08	1.46e+03	1.1e+05
18	13C-2,3,7,8-TCDF	5.06e+07	1.14e+04	4.4e+03	6.41e+07	7.28e+03	8.8e+03
19	13C-1,2,3,7,8-PeCDF	8.88e+07	3.08e+03	2.9e+04	5.58e+07	3.54e+03	1.6e+04
20	13C-2,3,4,7,8-PeCDF	9.15e+07	3.08e+03	3.0e+04	5.70e+07	3.54e+03	1.6e+04
21	13C-1,2,3,4,7,8-HxCDF	4.76e+07	3.01e+03	1.6e+04	8.96e+07	4.64e+03	1.9e+04
22	13C-1,2,3,6,7,8-HxCDF	5.17e+07	3.01e+03	1.7e+04	9.54e+07	4.64e+03	2.1e+04
23	13C-2,3,4,6,7,8-HxCDF	4.99e+07	3.01e+03	1.7e+04	9.21e+07	4.64e+03	2.0e+04
24	13C-1,2,3,7,8,9-HxCDF	4.48e+07	3.01e+03	1.5e+04	8.44e+07	4.64e+03	1.8e+04
25	13C-1,2,3,4,6,7,8-HpCDF	3.73e+07	8.80e+03	4.2e+03	8.02e+07	1.92e+04	4.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.97e+07	8.80e+03	3.4e+03	6.54e+07	1.92e+04	3.4e+03
27	13C-2,3,7,8-TCDD	3.77e+07	1.85e+04	2.0e+03	4.78e+07	7.81e+03	6.1e+03
28	13C-1,2,3,7,8-PeCDD	6.47e+07	3.56e+03	1.8e+04	4.18e+07	3.26e+03	1.3e+04
29	13C-1,2,3,4,7,8-HxCDD	5.86e+07	4.66e+03	1.3e+04	4.67e+07	3.04e+03	1.5e+04
30	13C-1,2,3,6,7,8-HxCDD	5.76e+07	4.66e+03	1.2e+04	4.61e+07	3.04e+03	1.5e+04
31	13C-1,2,3,4,6,7,8-HpCDD	4.94e+07	3.14e+03	1.6e+04	4.74e+07	1.71e+03	2.8e+04
32	13C-OCDD	6.18e+07	1.83e+03	3.4e+04	6.87e+07	9.56e+02	7.2e+04
33	13C-1,2,3,4-TCDD	3.76e+07	1.85e+04	2.0e+03	4.73e+07	7.81e+03	6.1e+03
34	13C-1,2,3,7,8,9-HxCDD	6.25e+07	4.66e+03	1.3e+04	5.04e+07	3.04e+03	1.7e+04
35	37Cl-2,3,7,8-TCDD	3.86e+07	4.32e+03	9.0e+03			

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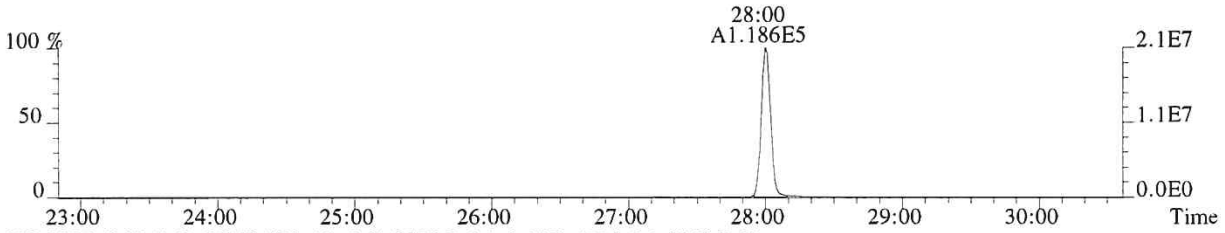
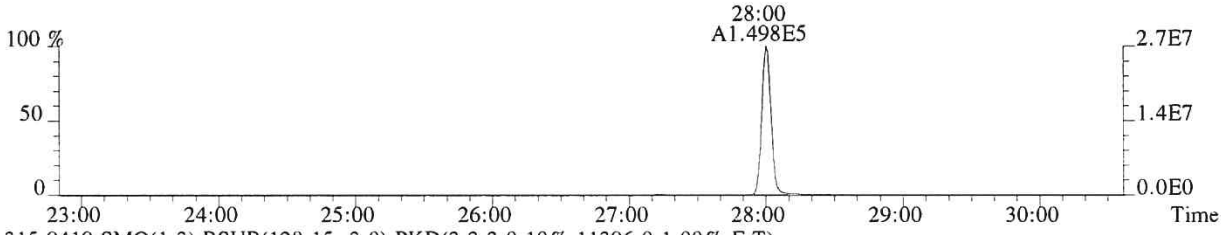
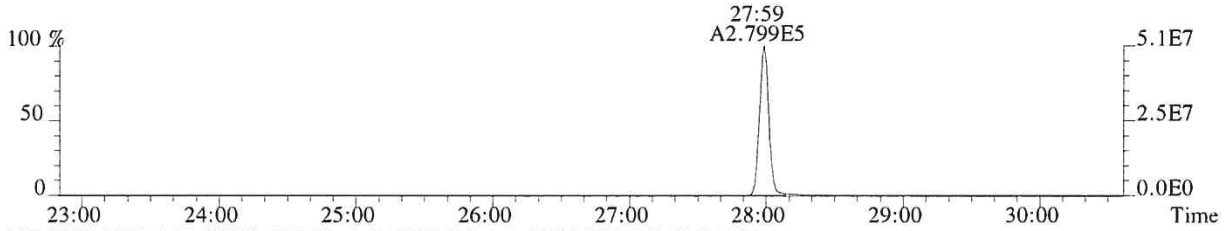
File:P614686 #1-552 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2148.0,1.00%,F,T)



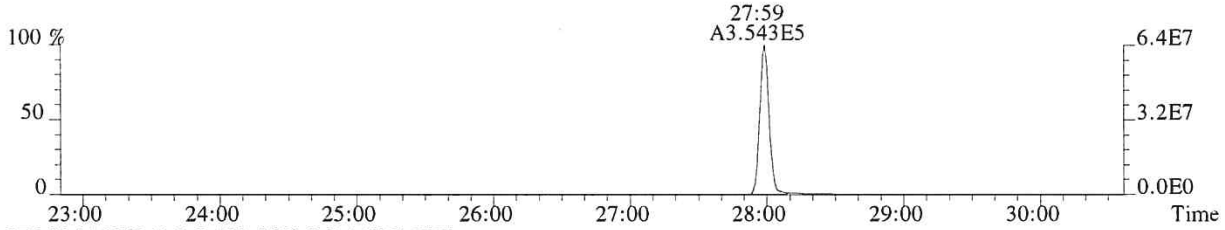
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4220.0,1.00%,F,T)



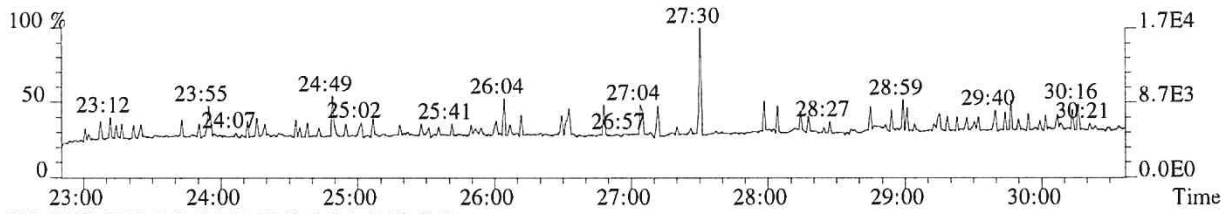
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11396.0,1.00%,F,T)



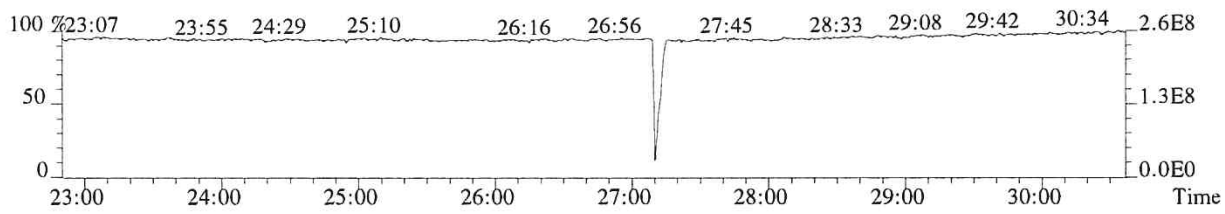
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7276.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

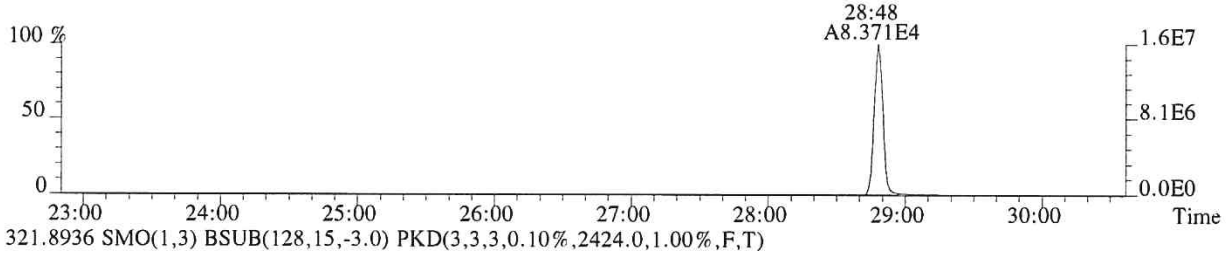


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

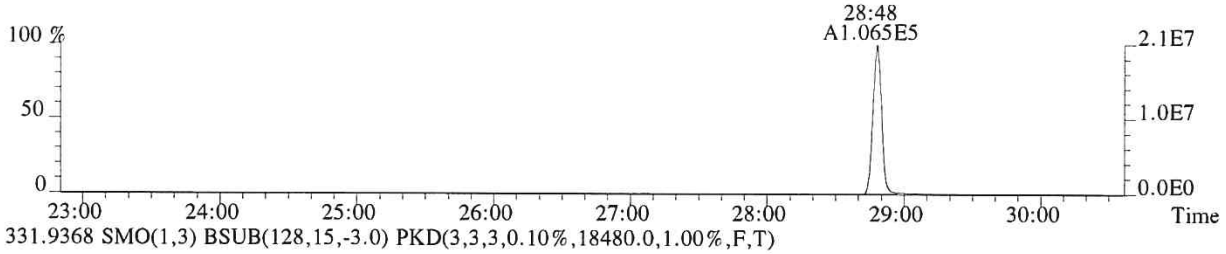


060834

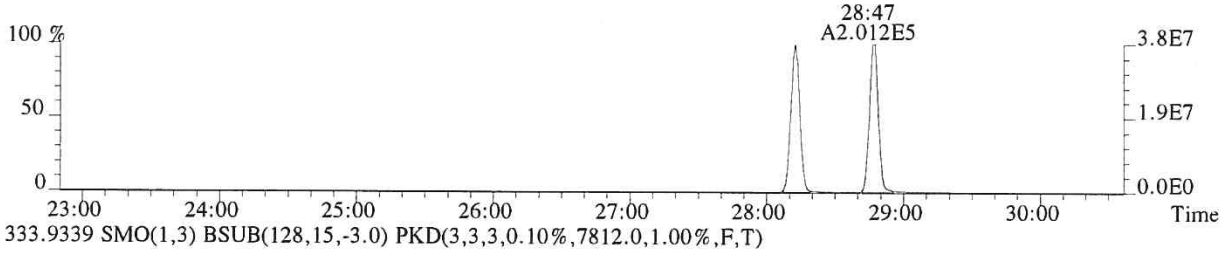
File:P614686 #1-552 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6384.0,1.00%,F,T)



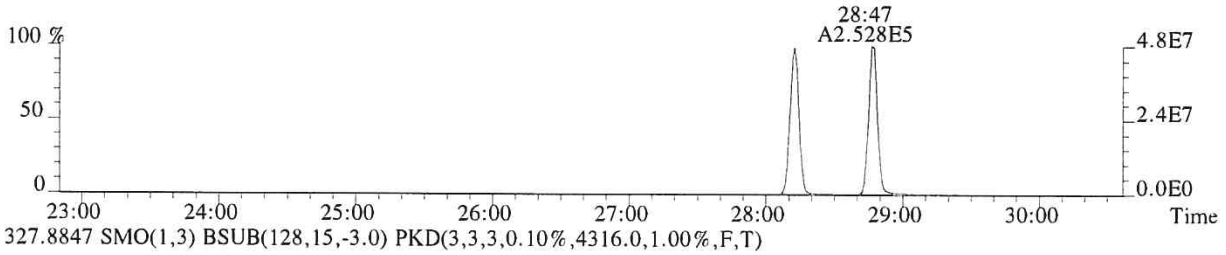
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2424.0,1.00%,F,T)



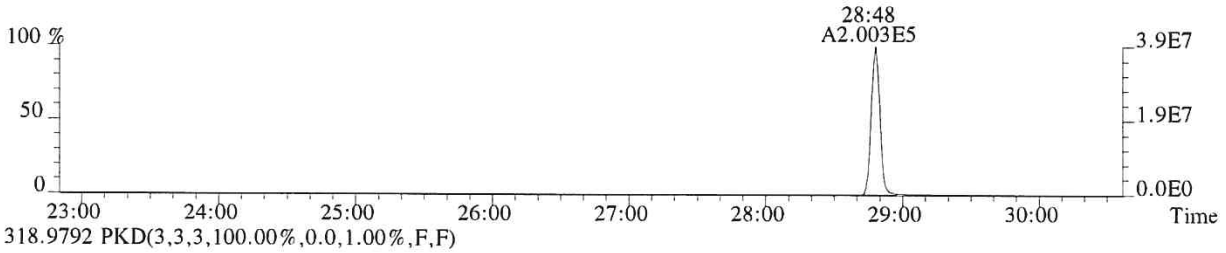
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18480.0,1.00%,F,T)



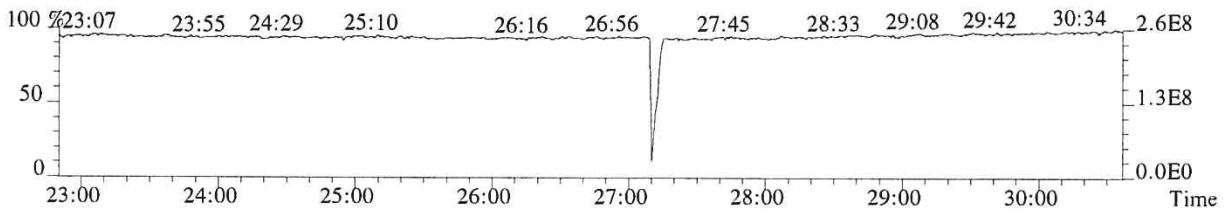
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7812.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4316.0,1.00%,F,T)

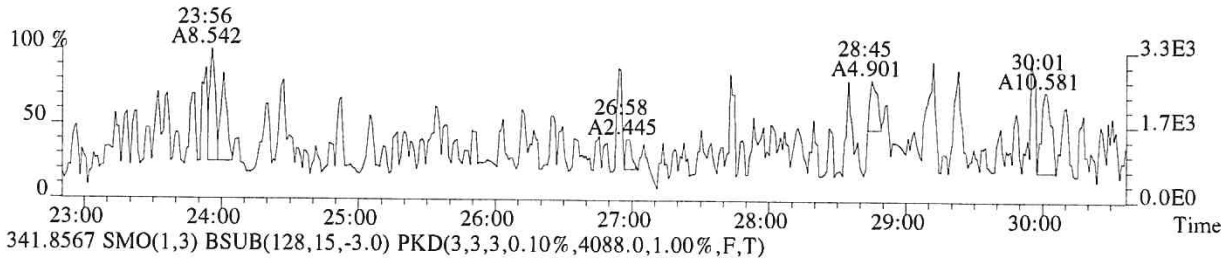


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

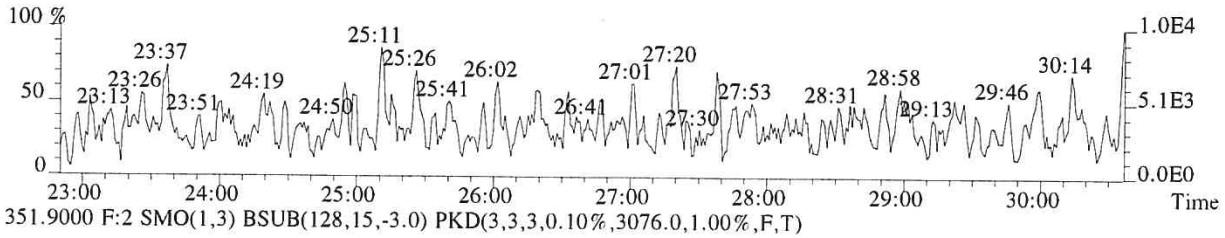


060835

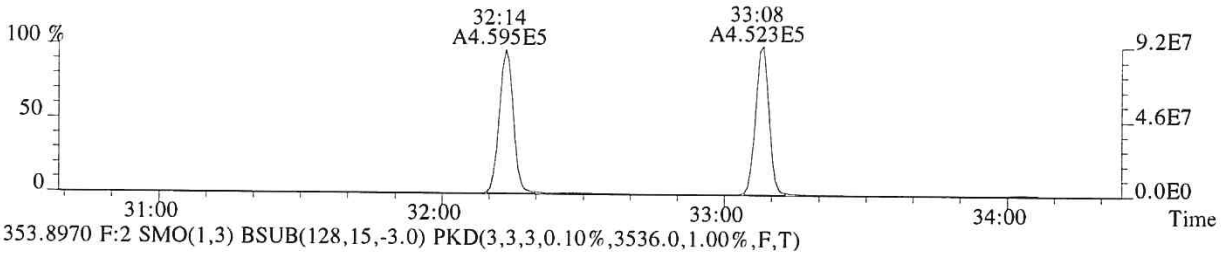
File:P614686 #1-552 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1356.0,1.00%,F,T)



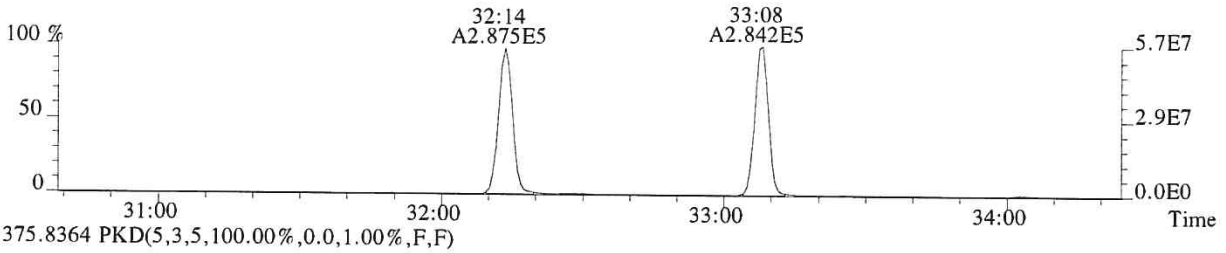
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4088.0,1.00%,F,T)



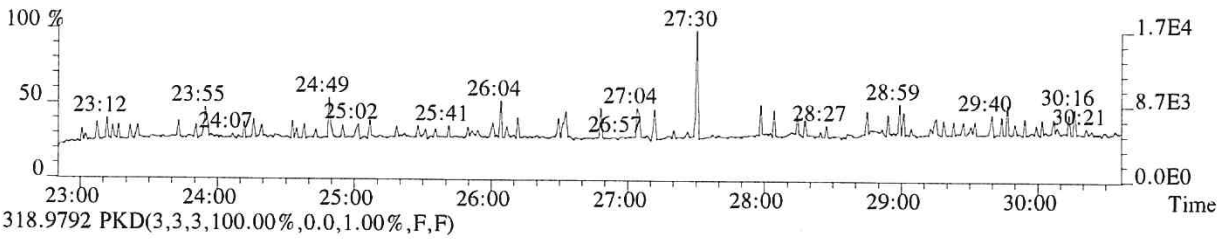
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3076.0,1.00%,F,T)



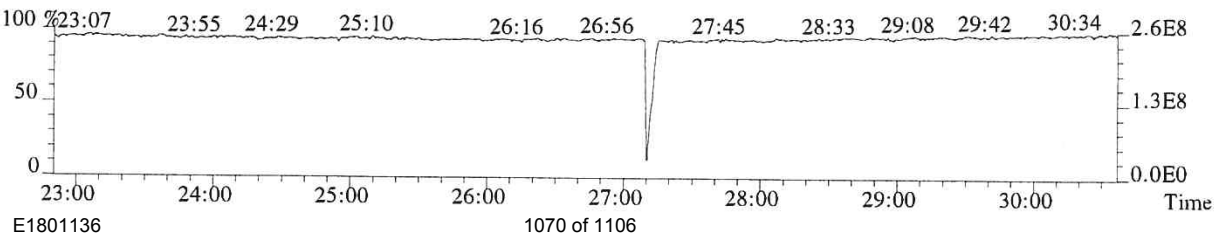
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3536.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

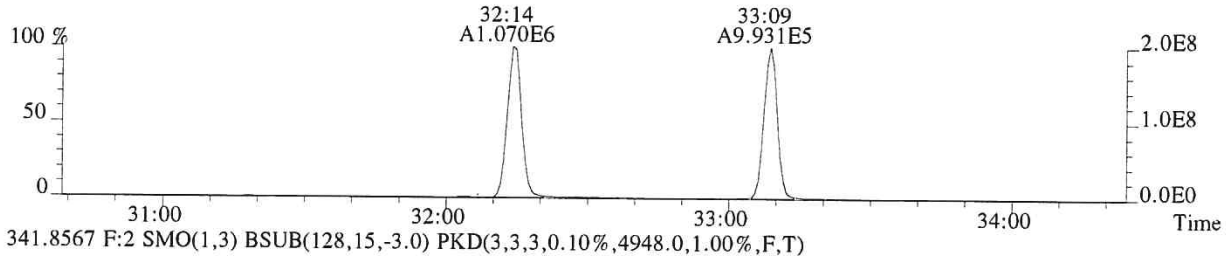


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

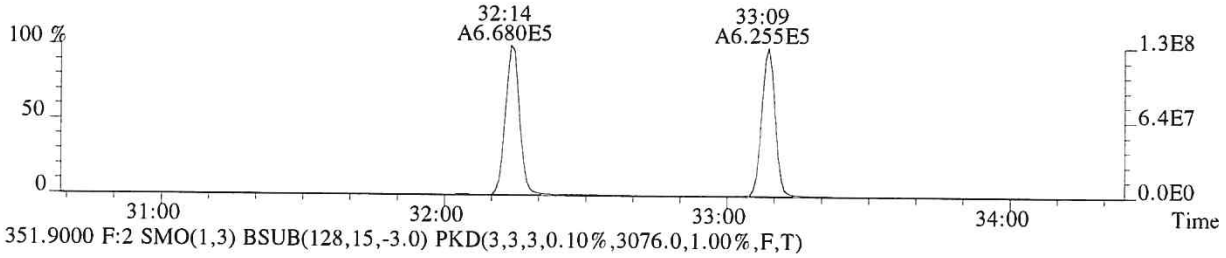


060836

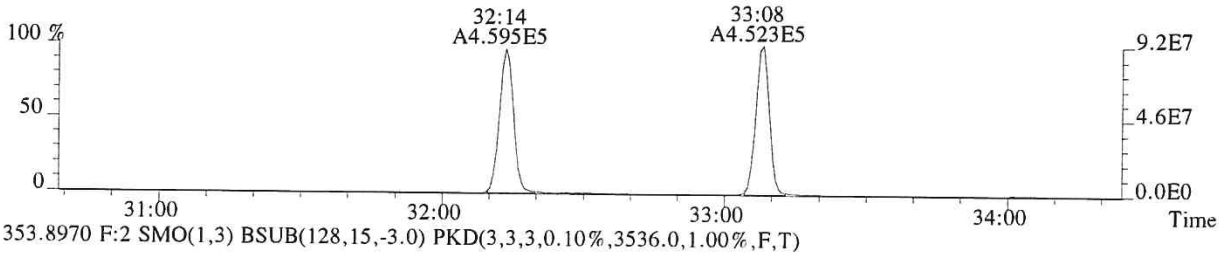
File:P614686 #1-339 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3064.0,1.00%,F,T)



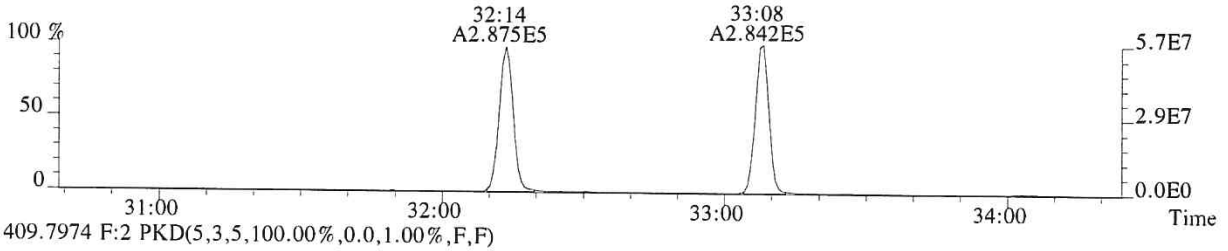
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4948.0,1.00%,F,T)



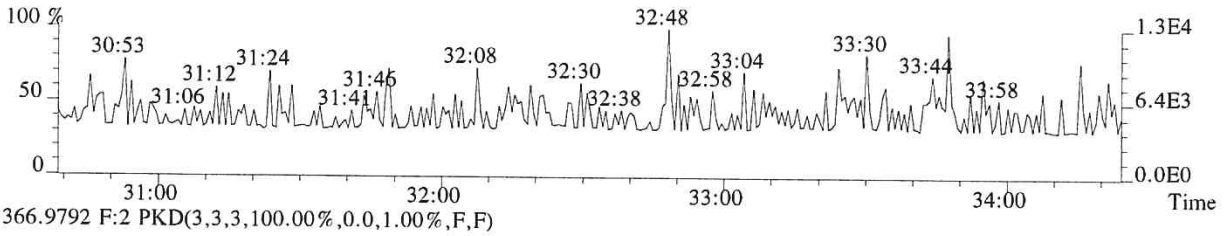
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3076.0,1.00%,F,T)



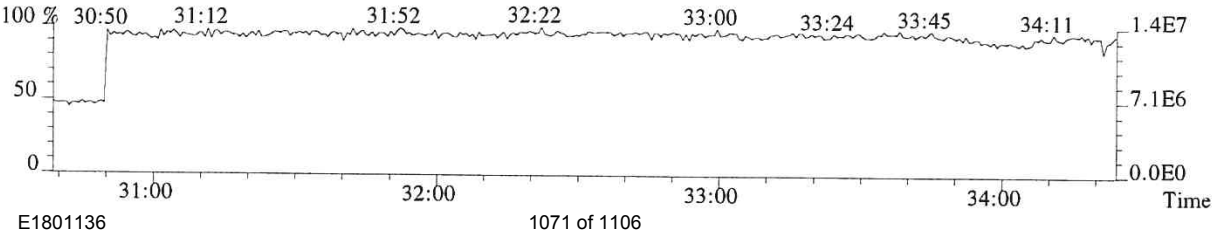
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3536.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

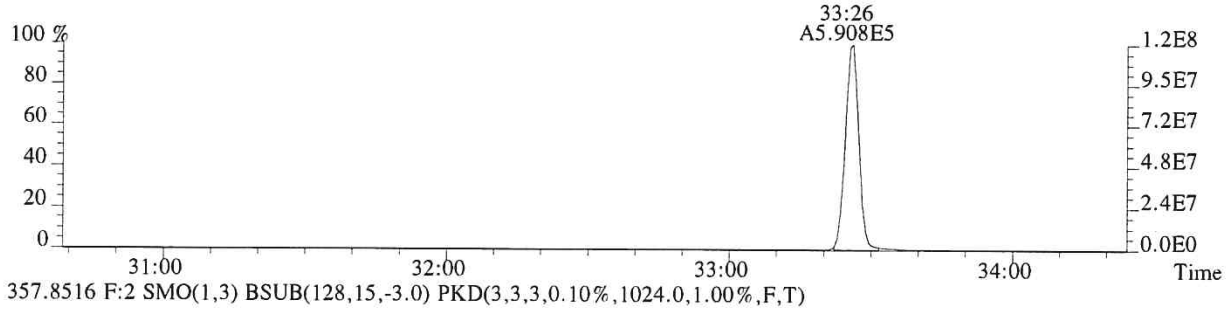


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

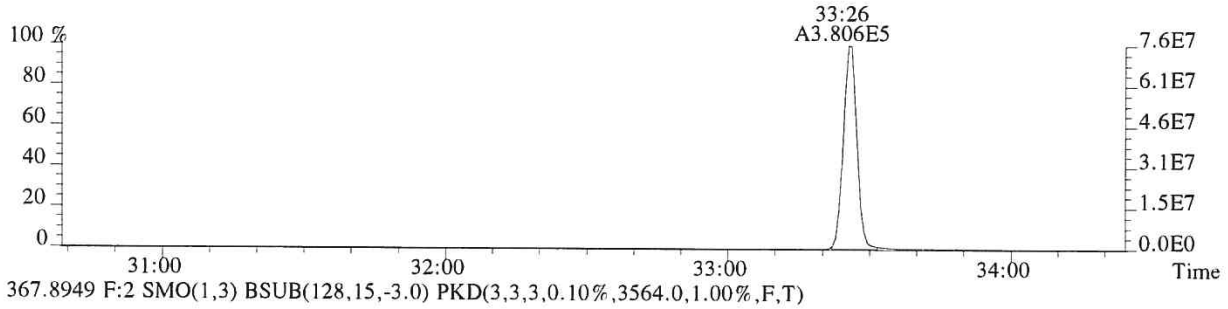


060837

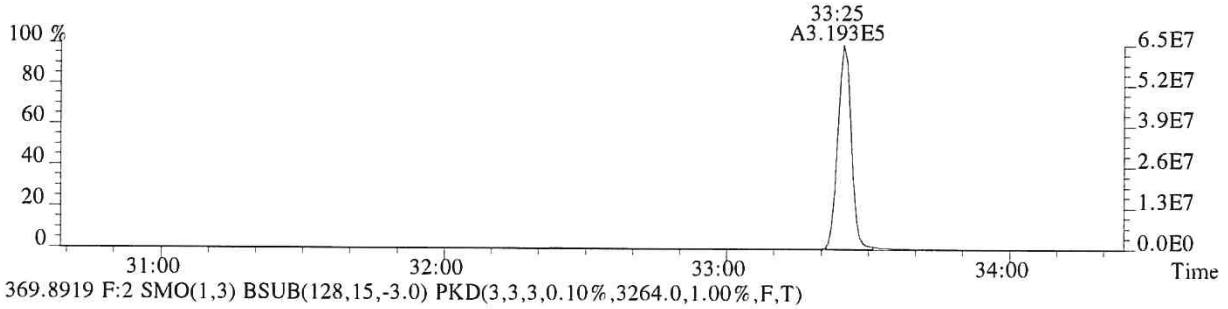
File:P614686 #1-339 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3220.0,1.00%,F,T)



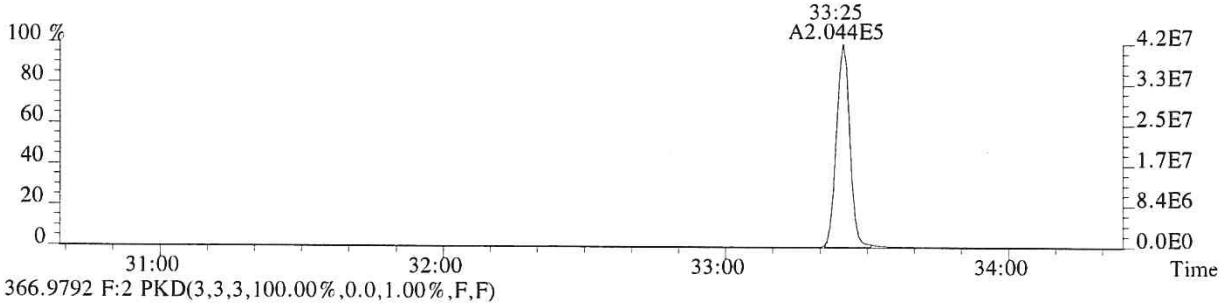
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1024.0,1.00%,F,T)



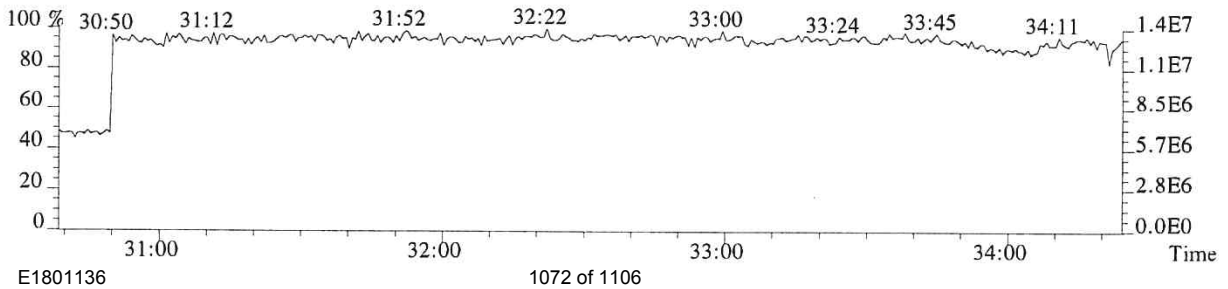
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3564.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3264.0,1.00%,F,T)

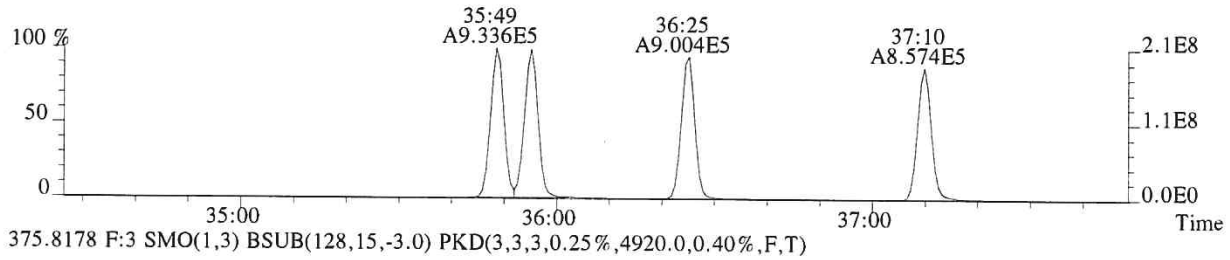


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

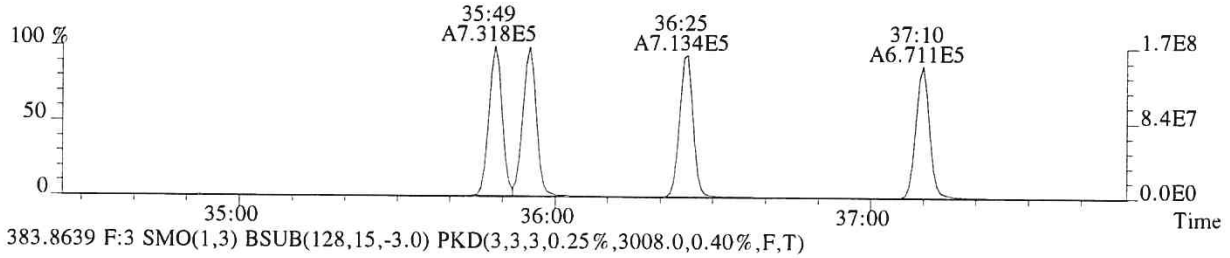


060838

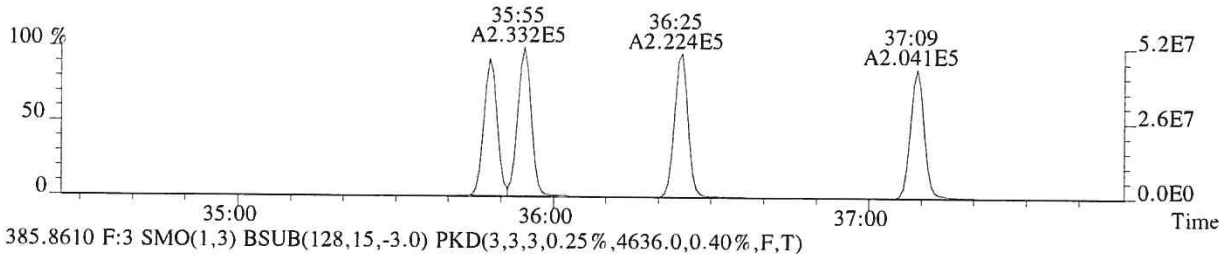
File:P614686 #1-304 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1848.0,0.40%,F,T)



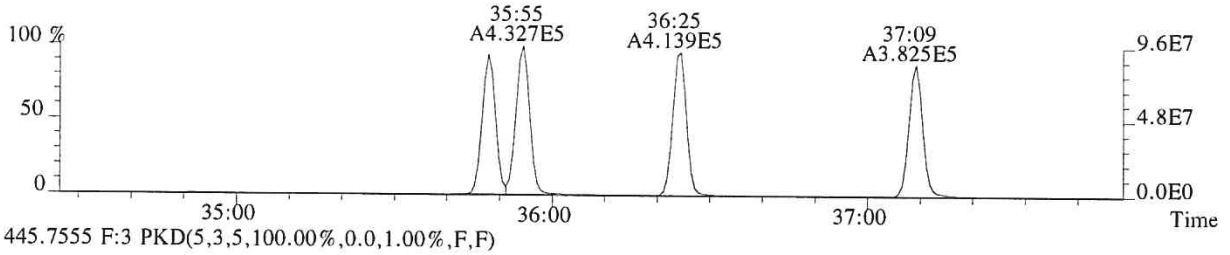
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4920.0,0.40%,F,T)



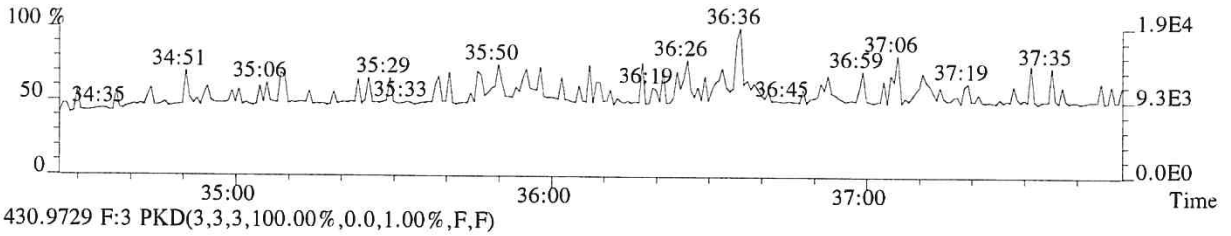
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3008.0,0.40%,F,T)



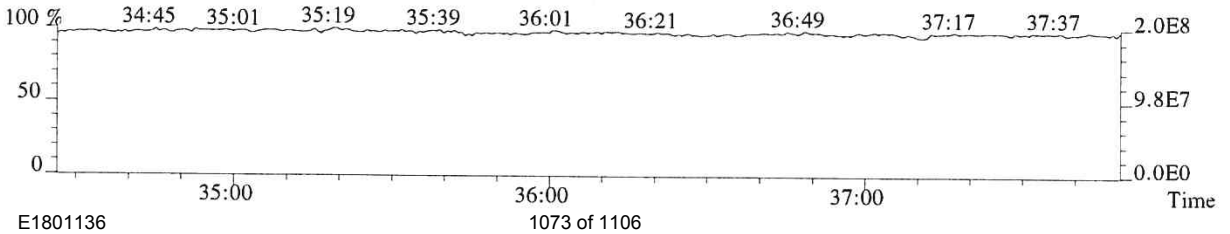
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4636.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

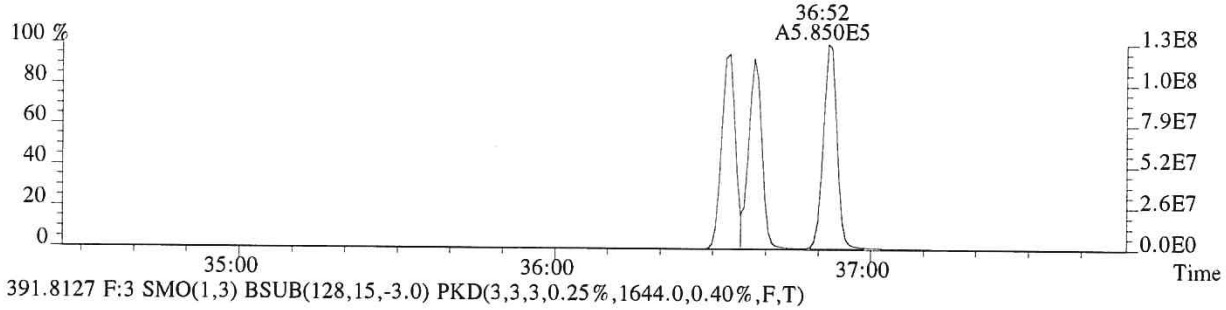


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

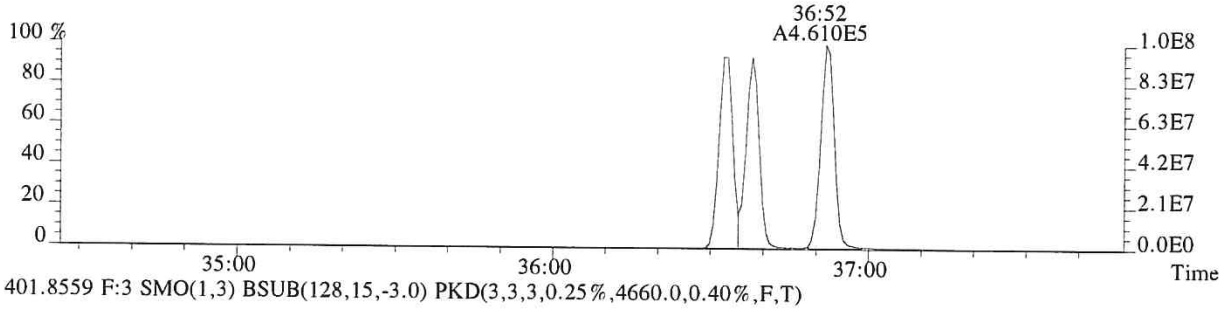


060839

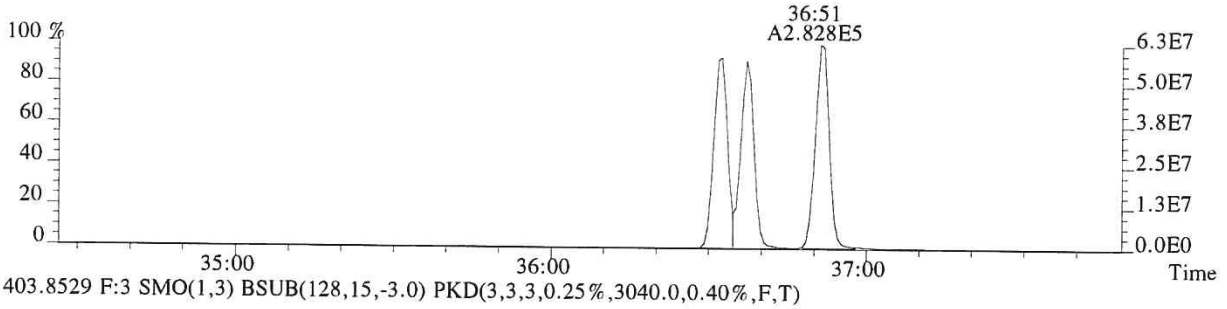
File:P614686 #1-304 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,948.0,0.40%,F,T)



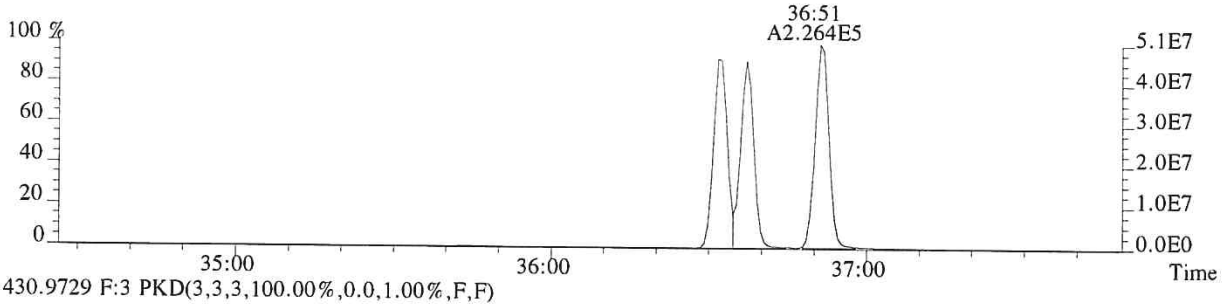
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1644.0,0.40%,F,T)



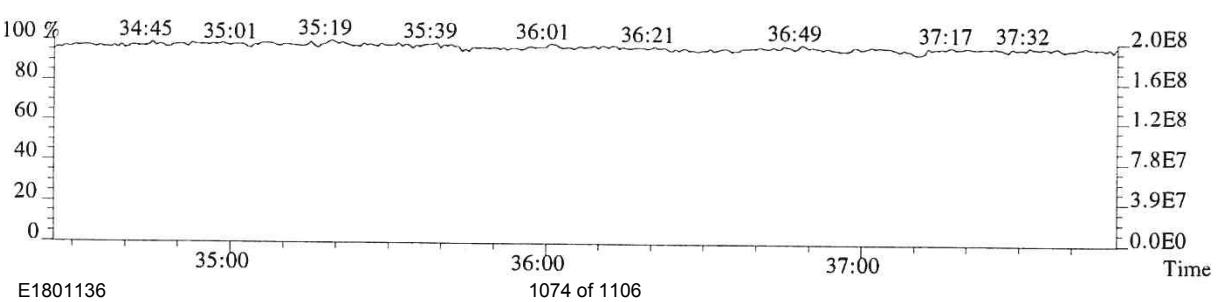
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4660.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3040.0,0.40%,F,T)

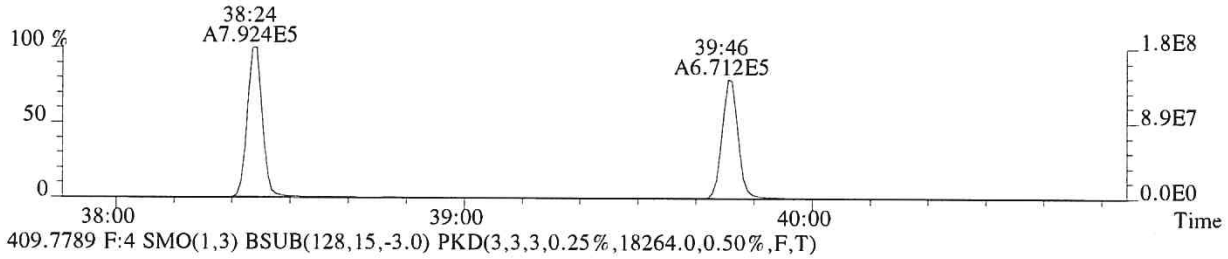


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

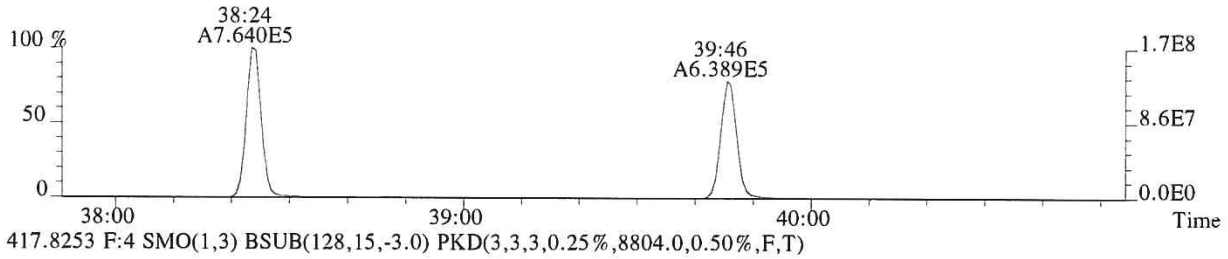


060840

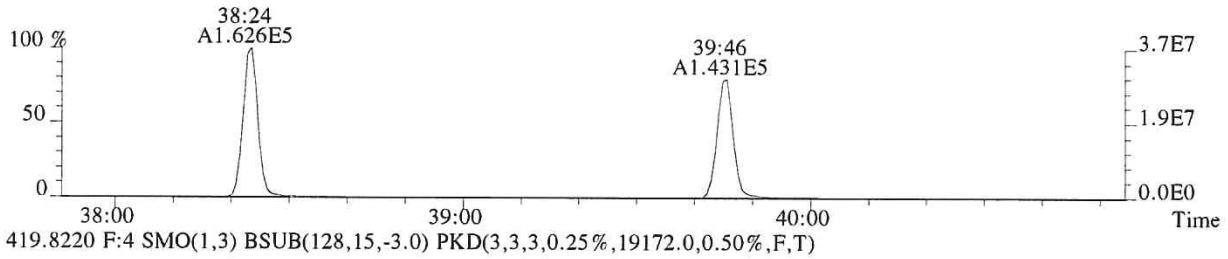
File:P614686 #1-276 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,26056.0,0.50%,F,T)



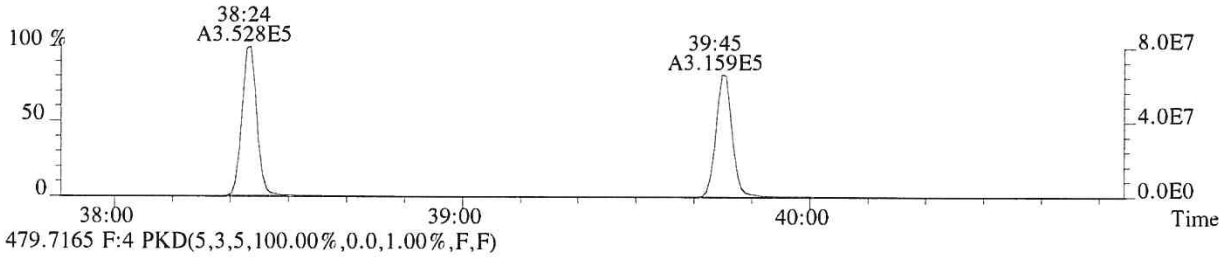
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,18264.0,0.50%,F,T)



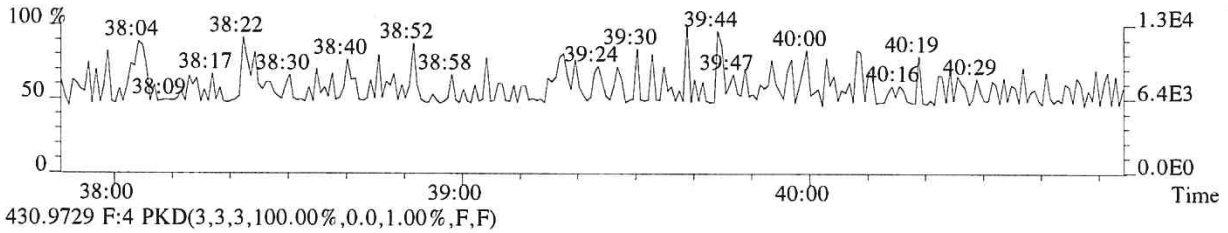
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8804.0,0.50%,F,T)



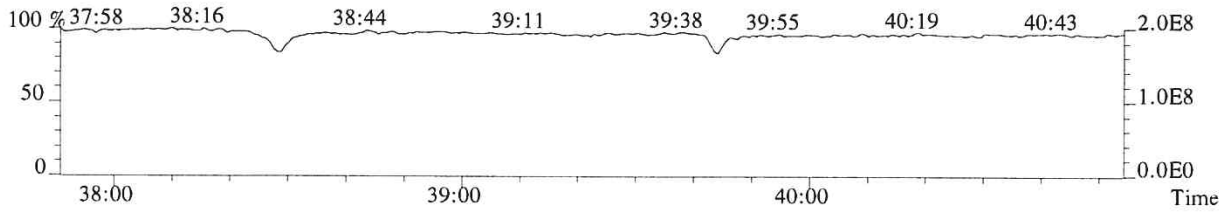
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,19172.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

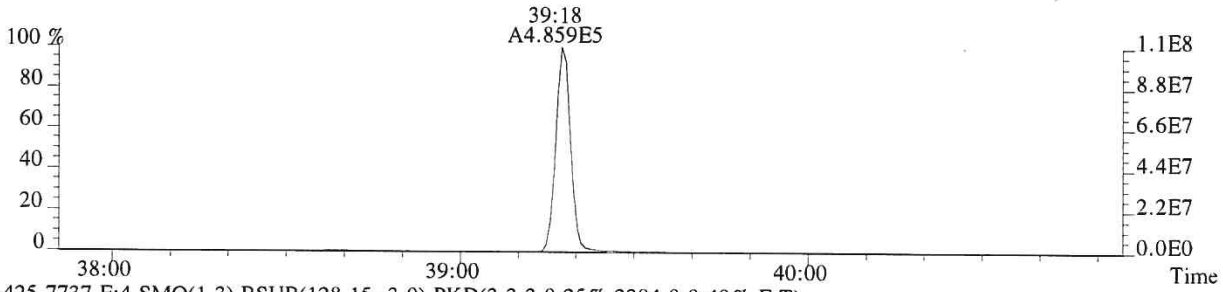


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

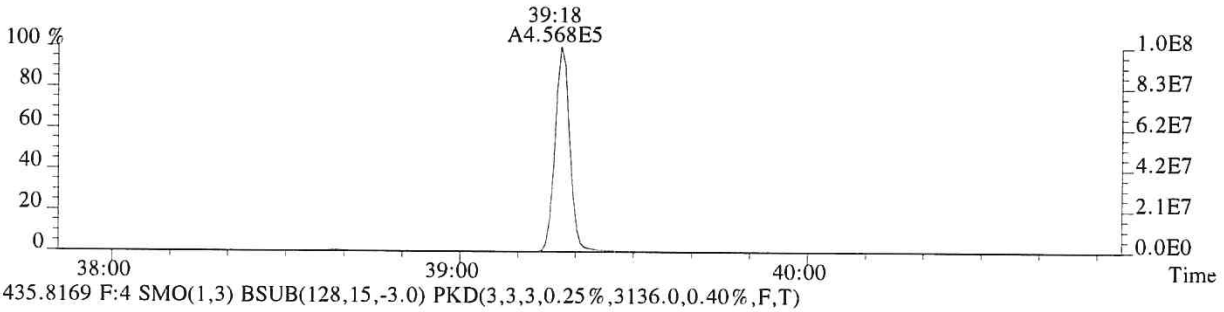


060841

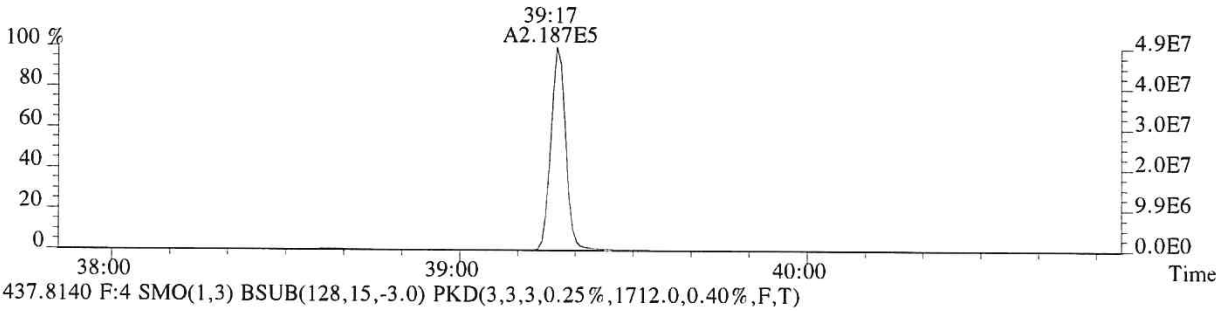
File:P614686 #1-276 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2456.0,0.40%,F,T)



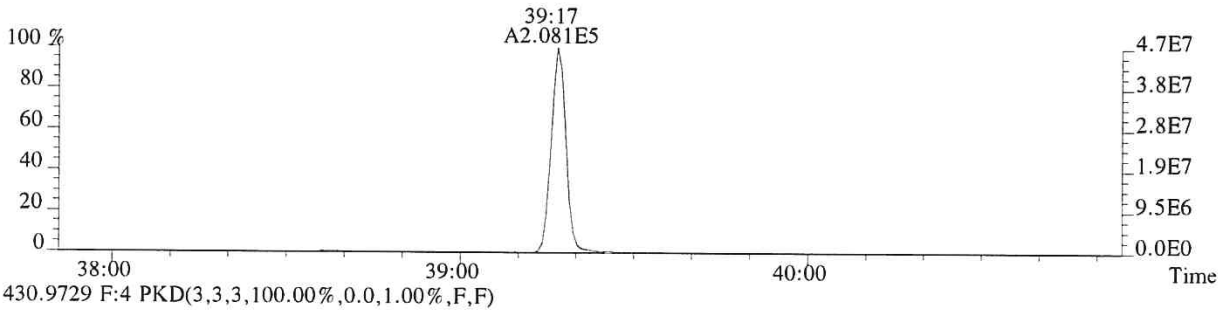
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2384.0,0.40%,F,T)



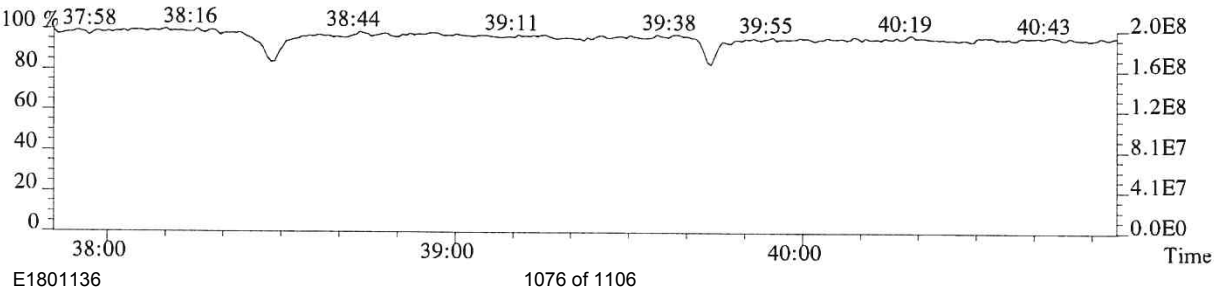
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3136.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1712.0,0.40%,F,T)

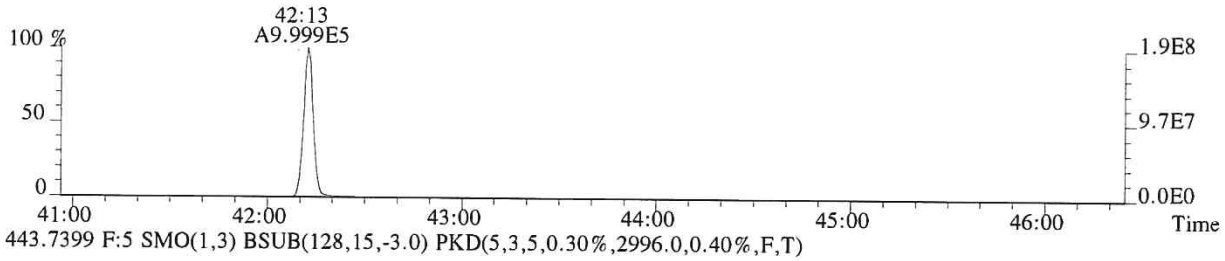


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

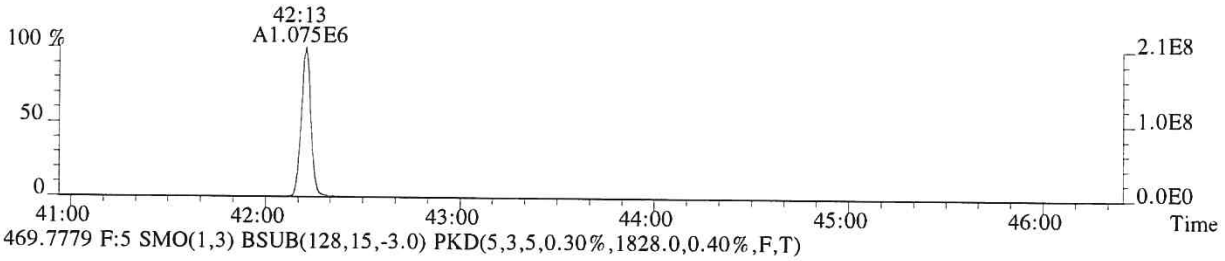


060842

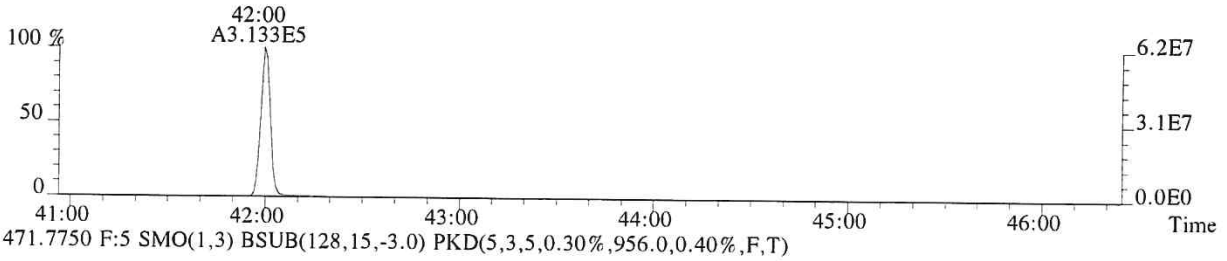
File:P614686 #1-493 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1464.0,0.40%,F,T)



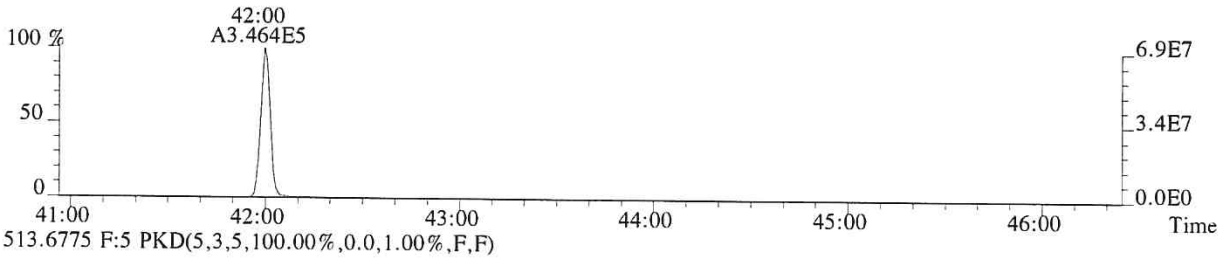
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2996.0,0.40%,F,T)



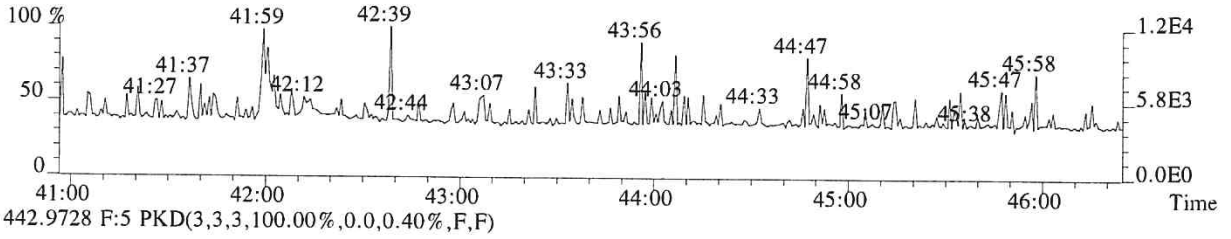
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1828.0,0.40%,F,T)



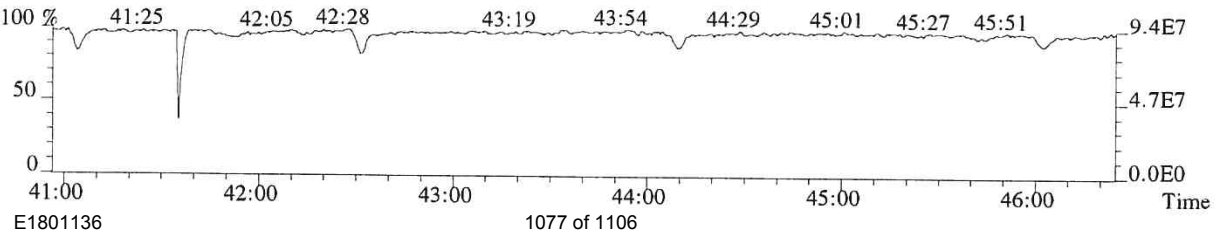
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,956.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

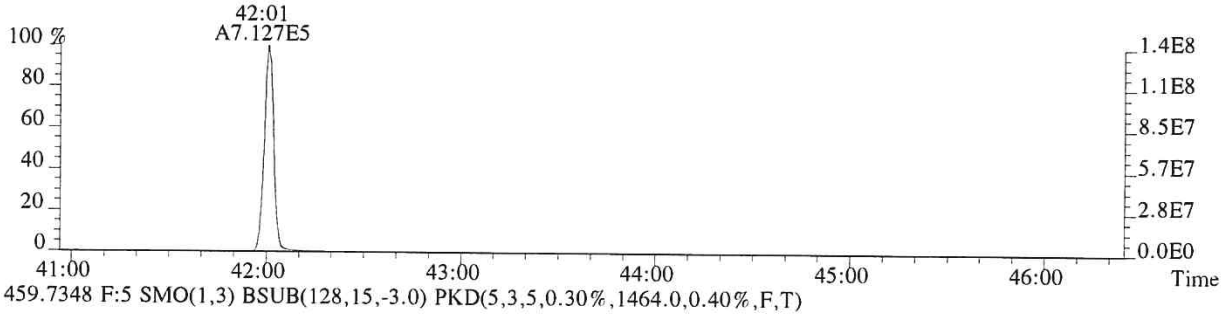


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

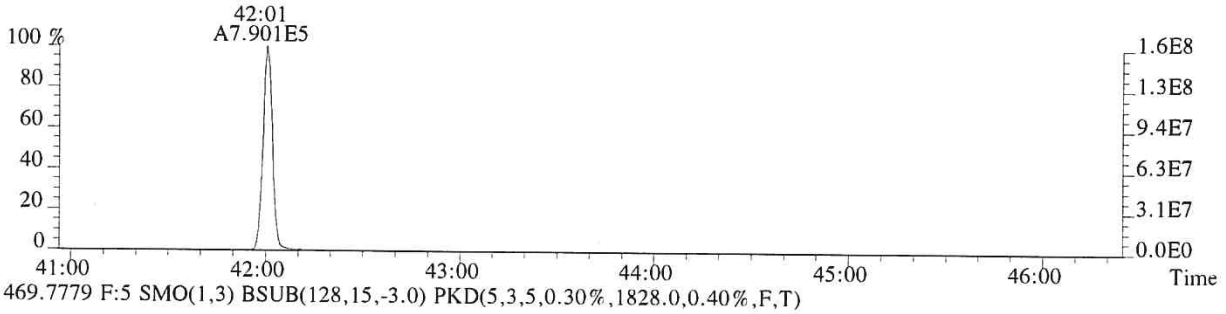


060843

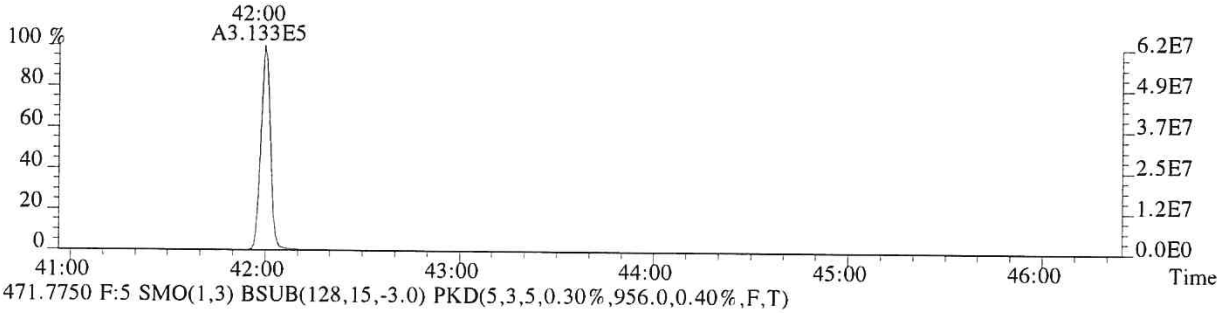
File:P614686 #1-493 Acq:25-SEP-2018 17:41:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1244.0,0.40%,F,T)



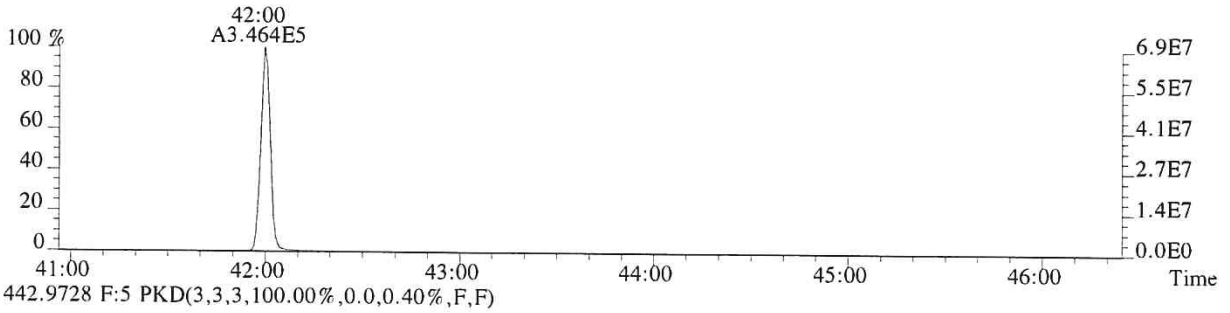
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1464.0,0.40%,F,T)



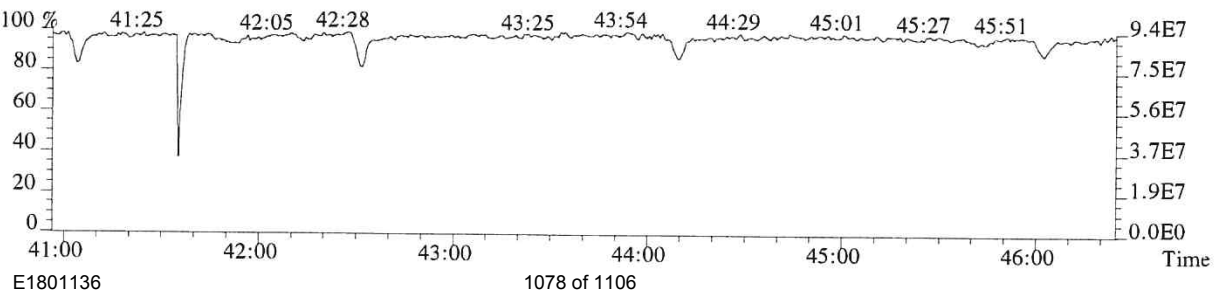
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1828.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,956.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060844

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
185657

Run #6 Filename P614687 Samp: 1 Inj: 1 Acquired: 25-SEP-18 18:30:08
Processed: 26-SEP-18 07:39:13 Sample ID: CS5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:00	4.651e+05	5.844e+05	0.80	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:14	4.117e+06	2.575e+06	1.60	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:09	3.795e+06	2.391e+06	1.59	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	3.313e+06	2.571e+06	1.29	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	3.588e+06	2.836e+06	1.27	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	3.399e+06	2.690e+06	1.26	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:10	3.119e+06	2.463e+06	1.27	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	3.035e+06	2.883e+06	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	2.518e+06	2.388e+06	1.05	yes	no	1.463
10	Unk	OCDF	42:13	3.855e+06	4.175e+06	0.92	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	3.257e+05	4.207e+05	0.77	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	2.277e+06	1.455e+06	1.57	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	2.053e+06	1.616e+06	1.27	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	2.042e+06	1.617e+06	1.26	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:52	2.180e+06	1.732e+06	1.26	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	1.868e+06	1.765e+06	1.06	yes	no	1.112
17	Unk	OCDD	42:01	2.725e+06	3.028e+06	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	2.197e+05	2.785e+05	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	3.496e+05	2.178e+05	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	3.453e+05	2.138e+05	1.61	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:48	1.447e+05	2.684e+05	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:55	1.758e+05	3.274e+05	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:25	1.668e+05	3.132e+05	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	1.489e+05	2.799e+05	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:23	1.241e+05	2.682e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:45	1.078e+05	2.346e+05	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	1.558e+05	1.966e+05	0.79	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	2.439e+05	1.553e+05	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:32	1.940e+05	1.538e+05	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	1.938e+05	1.542e+05	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	1.682e+05	1.601e+05	1.05	yes	no	0.857
32	IS	13C-OCDD	42:00	2.375e+05	2.681e+05	0.89	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:13	1.555e+05	1.925e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:51	2.160e+05	1.725e+05	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	7.877e+05				no	1.086

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Signal/Noise Height Ratio Summary

CLIENT ID.
185657

Run #6 Filename P614687 Samp: 1 Inj: 1 Acquired: 25-SEP-18 18:30:08
Processed: 26-SEP-18 07:39:13 LAB. ID: CS5

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	8.41e+07	1.94e+03	4.3e+04	1.06e+08	4.26e+03	2.5e+04
2	1,2,3,7,8-PeCDF	8.11e+08	8.46e+03	9.6e+04	5.11e+08	9.13e+03	5.6e+04
3	2,3,4,7,8-PeCDF	7.87e+08	8.46e+03	9.3e+04	4.93e+08	9.13e+03	5.4e+04
4	1,2,3,4,7,8-HxCDF	7.76e+08	1.23e+04	6.3e+04	6.07e+08	9.42e+03	6.4e+04
5	1,2,3,6,7,8-HxCDF	8.10e+08	1.23e+04	6.6e+04	6.40e+08	9.42e+03	6.8e+04
6	2,3,4,6,7,8-HxCDF	7.65e+08	1.23e+04	6.2e+04	6.05e+08	9.42e+03	6.4e+04
7	1,2,3,7,8,9-HxCDF	6.96e+08	1.23e+04	5.6e+04	5.46e+08	9.42e+03	5.8e+04
8	1,2,3,4,6,7,8-HpCDF	7.09e+08	9.68e+04	7.3e+03	6.78e+08	6.15e+04	1.1e+04
9	1,2,3,4,7,8,9-HpCDF	5.55e+08	9.68e+04	5.7e+03	5.29e+08	6.15e+04	8.6e+03
10	OCDF	7.55e+08	1.43e+03	5.3e+05	8.22e+08	2.80e+03	2.9e+05
11	2,3,7,8-TCDD	6.32e+07	4.52e+03	1.4e+04	8.21e+07	2.67e+03	3.1e+04
12	1,2,3,7,8-PeCDD	4.67e+08	3.26e+03	1.4e+05	2.98e+08	1.54e+03	1.9e+05
13	1,2,3,4,7,8-HxCDD	4.65e+08	2.34e+03	2.0e+05	3.68e+08	1.99e+03	1.8e+05
14	1,2,3,6,7,8-HxCDD	4.59e+08	2.34e+03	2.0e+05	3.67e+08	1.99e+03	1.8e+05
15	1,2,3,7,8,9-HxCDD	4.96e+08	2.34e+03	2.1e+05	3.98e+08	1.99e+03	2.0e+05
16	1,2,3,4,6,7,8-HpCDD	4.28e+08	1.10e+04	3.9e+04	4.06e+08	8.82e+03	4.6e+04
17	OCDD	5.24e+08	9.60e+02	5.5e+05	5.87e+08	1.87e+03	3.1e+05
18	13C-2,3,7,8-TCDF	3.91e+07	1.53e+04	2.6e+03	4.94e+07	1.22e+04	4.0e+03
19	13C-1,2,3,7,8-PeCDF	6.89e+07	2.06e+03	3.3e+04	4.27e+07	4.55e+03	9.4e+03
20	13C-2,3,4,7,8-PeCDF	6.95e+07	2.06e+03	3.4e+04	4.34e+07	4.55e+03	9.5e+03
21	13C-1,2,3,4,7,8-HxCDF	3.33e+07	2.62e+03	1.3e+04	6.22e+07	4.07e+03	1.5e+04
22	13C-1,2,3,6,7,8-HxCDF	3.91e+07	2.62e+03	1.5e+04	7.31e+07	4.07e+03	1.8e+04
23	13C-2,3,4,6,7,8-HxCDF	3.74e+07	2.62e+03	1.4e+04	6.98e+07	4.07e+03	1.7e+04
24	13C-1,2,3,7,8,9-HxCDF	3.36e+07	2.62e+03	1.3e+04	6.29e+07	4.07e+03	1.5e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.82e+07	6.76e+03	4.2e+03	6.20e+07	1.14e+04	5.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.34e+07	6.76e+03	3.5e+03	5.11e+07	1.14e+04	4.5e+03
27	13C-2,3,7,8-TCDD	3.04e+07	1.91e+04	1.6e+03	3.86e+07	8.85e+03	4.4e+03
28	13C-1,2,3,7,8-PeCDD	5.04e+07	1.98e+03	2.5e+04	3.21e+07	2.85e+03	1.1e+04
29	13C-1,2,3,4,7,8-HxCDD	4.39e+07	4.70e+03	9.3e+03	3.50e+07	2.24e+03	1.6e+04
30	13C-1,2,3,6,7,8-HxCDD	4.37e+07	4.70e+03	9.3e+03	3.49e+07	2.24e+03	1.6e+04
31	13C-1,2,3,4,6,7,8-HpCDD	3.82e+07	2.97e+03	1.3e+04	3.65e+07	2.54e+03	1.4e+04
32	13C-OCDD	4.50e+07	3.46e+03	1.3e+04	5.10e+07	1.82e+03	2.8e+04
33	13C-1,2,3,4-TCDD	2.93e+07	1.91e+04	1.5e+03	3.60e+07	8.85e+03	4.1e+03
34	13C-1,2,3,7,8,9-HxCDD	4.90e+07	4.70e+03	1.0e+04	3.94e+07	2.24e+03	1.8e+04
35	37Cl-2,3,7,8-TCDD	1.54e+08	4.95e+03	3.1e+04			

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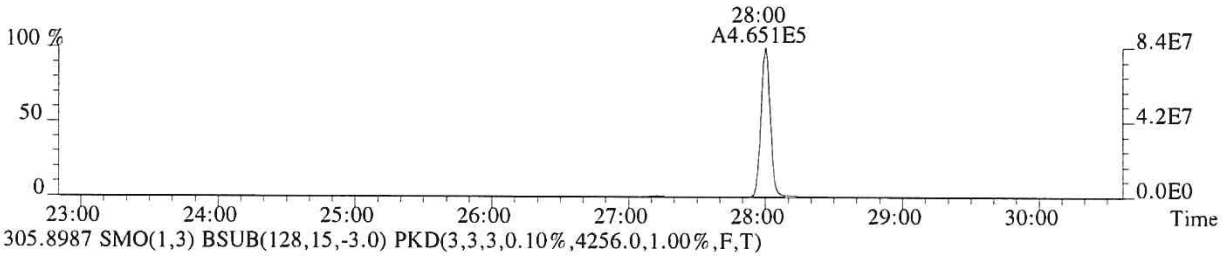
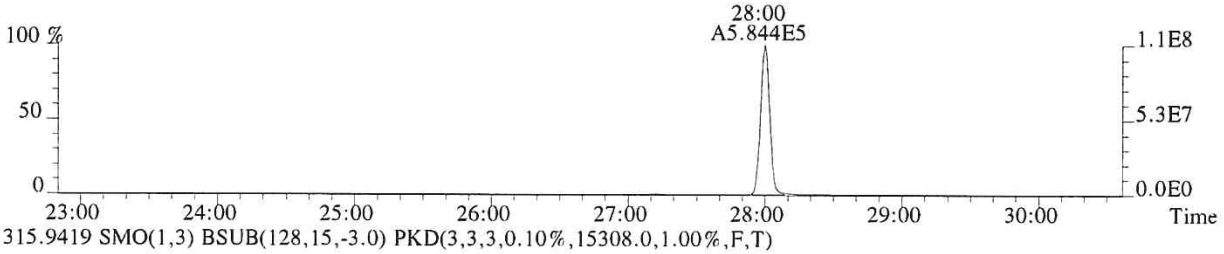
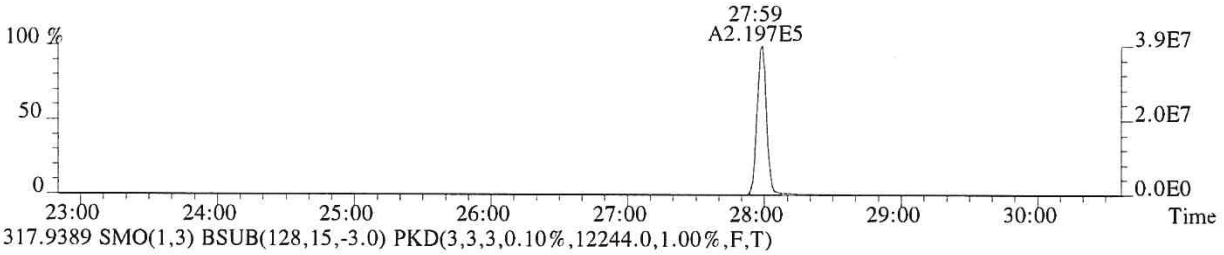
File:P614687 #1-552 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1940.0,1.00%,F,T)



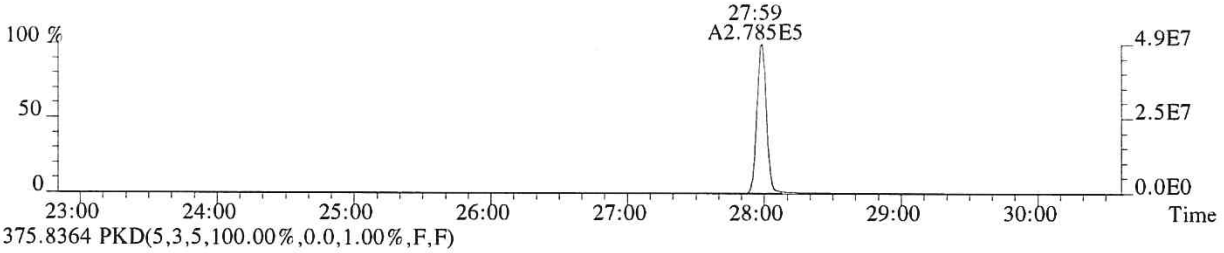
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4256.0,1.00%,F,T)



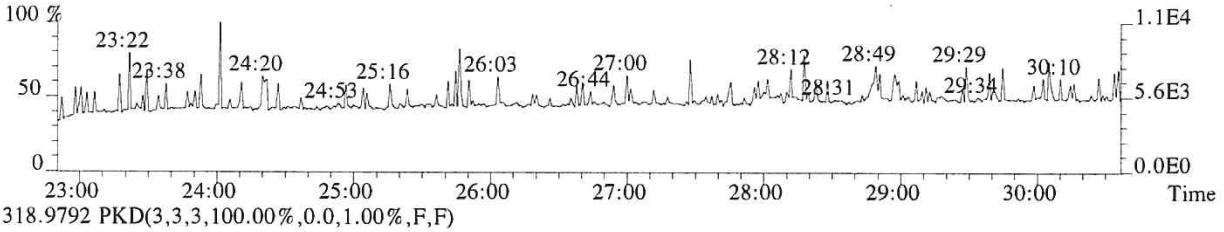
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15308.0,1.00%,F,T)



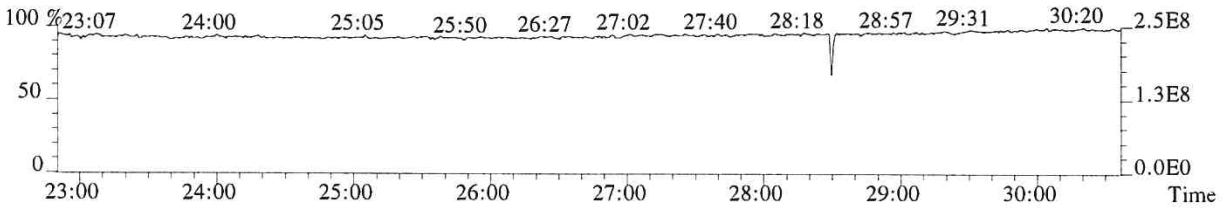
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12244.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

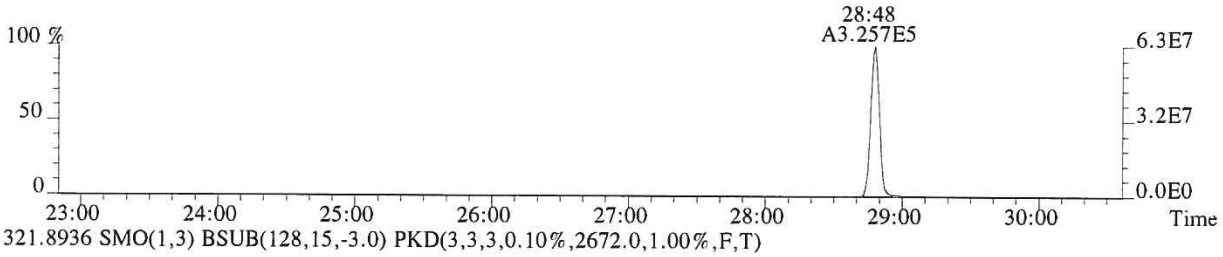


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

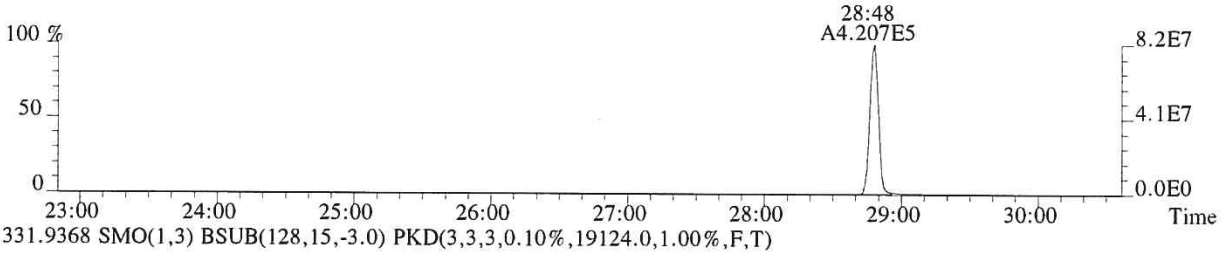


060847

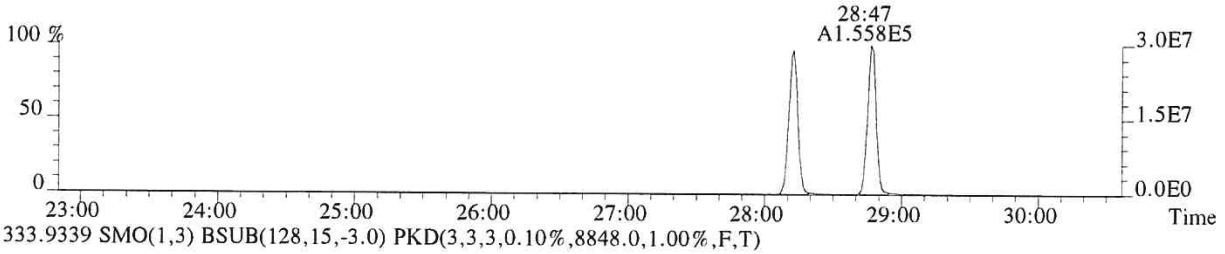
File:P614687 #1-552 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4516.0,1.00%,F,T)



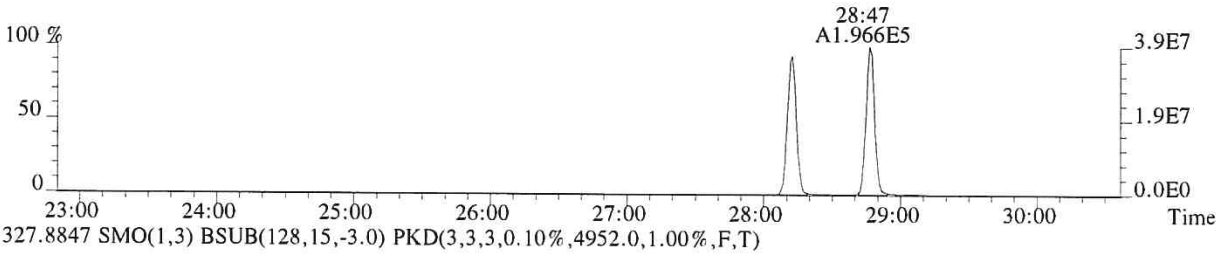
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2672.0,1.00%,F,T)



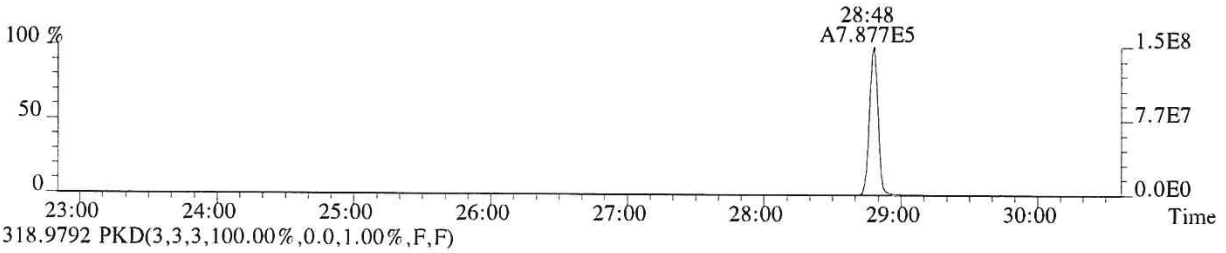
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,19124.0,1.00%,F,T)



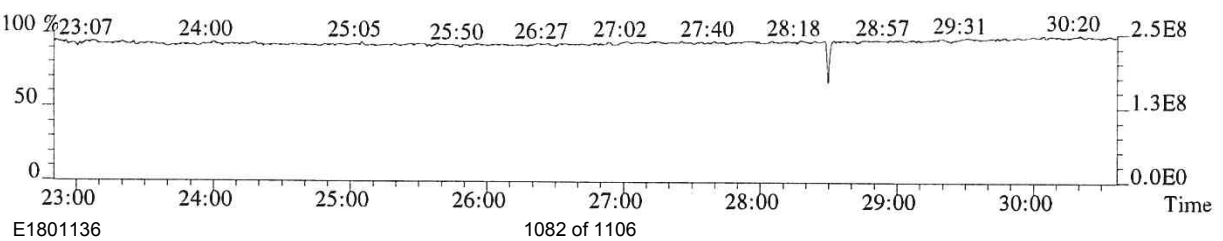
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8848.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4952.0,1.00%,F,T)

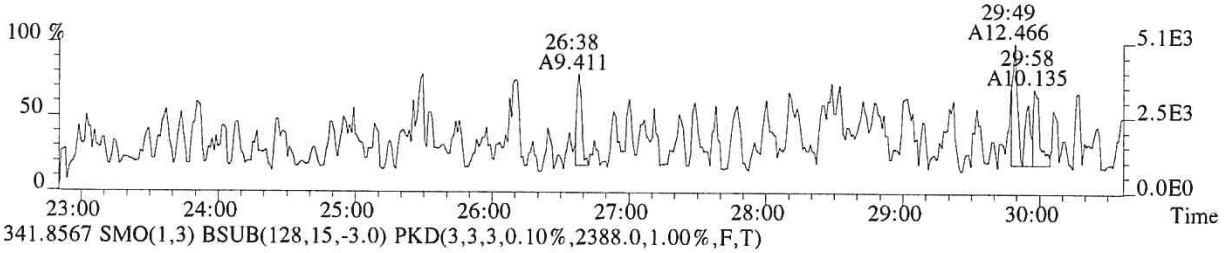


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

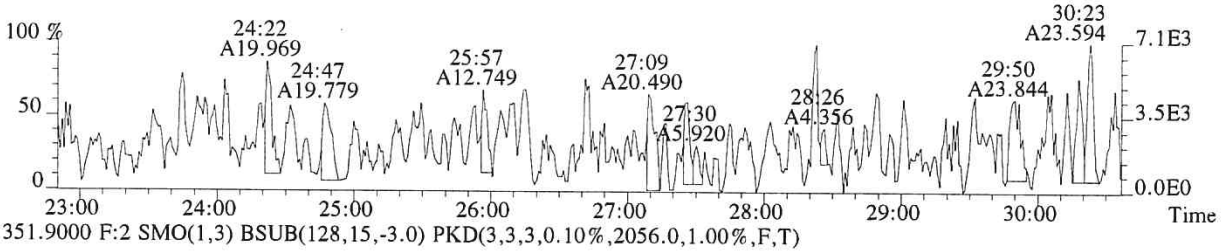


060848

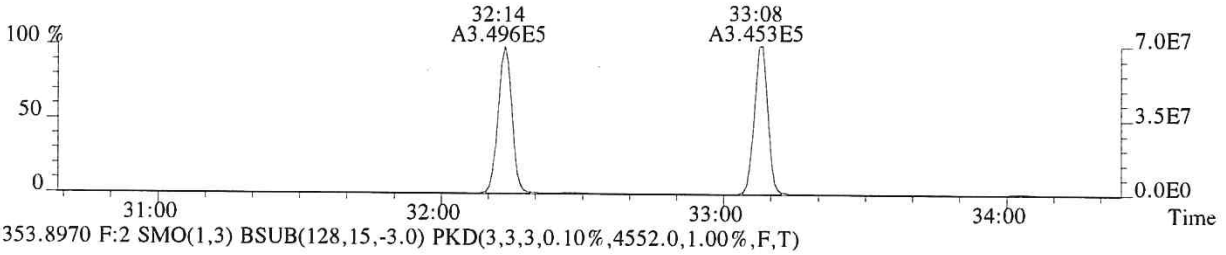
File:P614687 #1-552 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1884.0,1.00%,F,T)



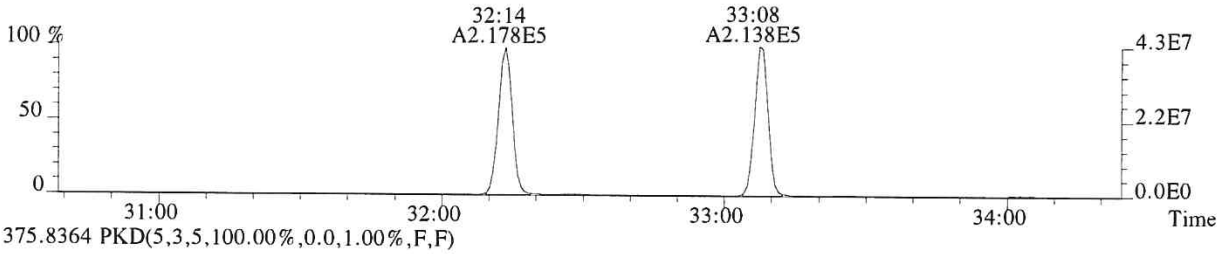
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2388.0,1.00%,F,T)



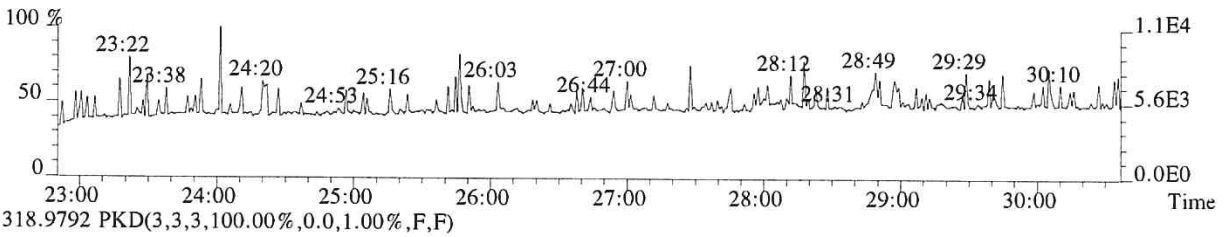
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2056.0,1.00%,F,T)



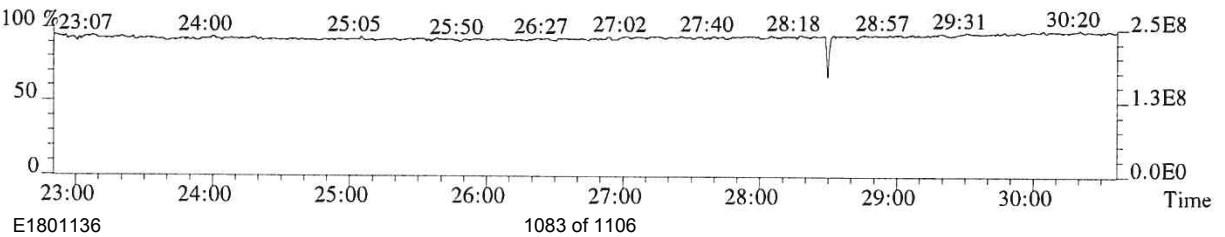
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4552.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

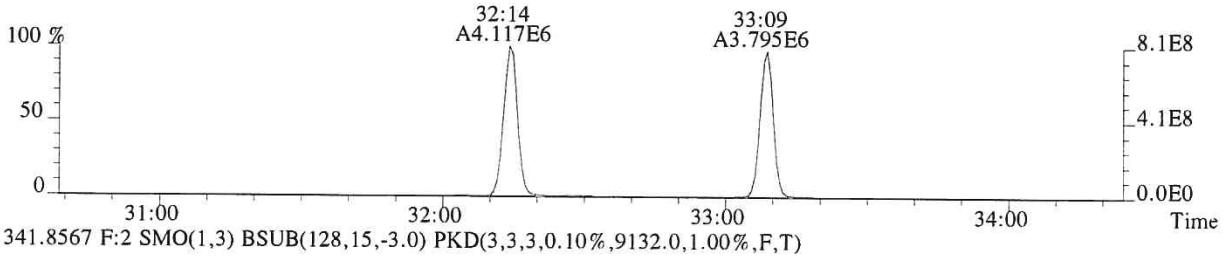


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

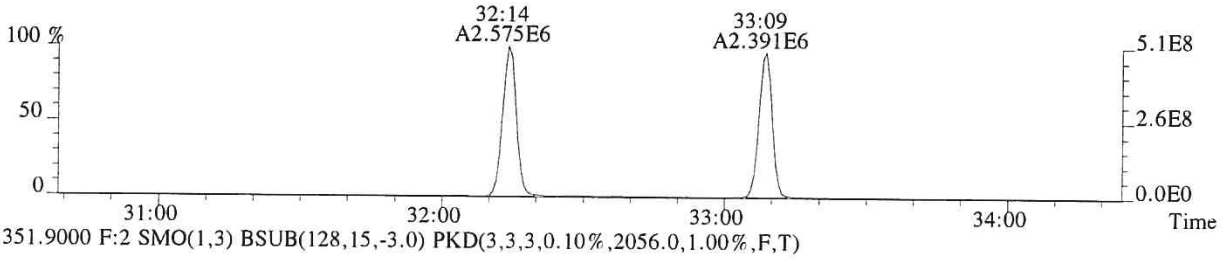


060849

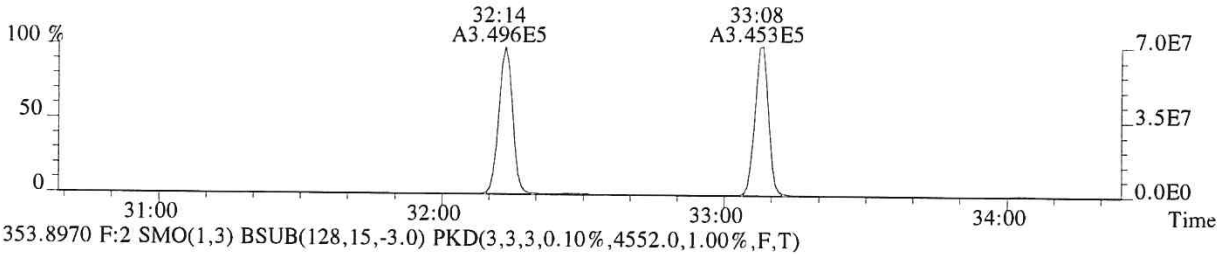
File:P614687 #1-339 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8456.0,1.00%,F,T)



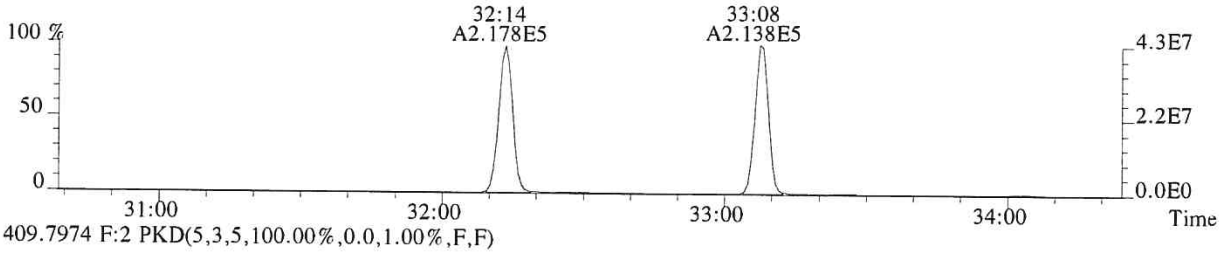
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9132.0,1.00%,F,T)



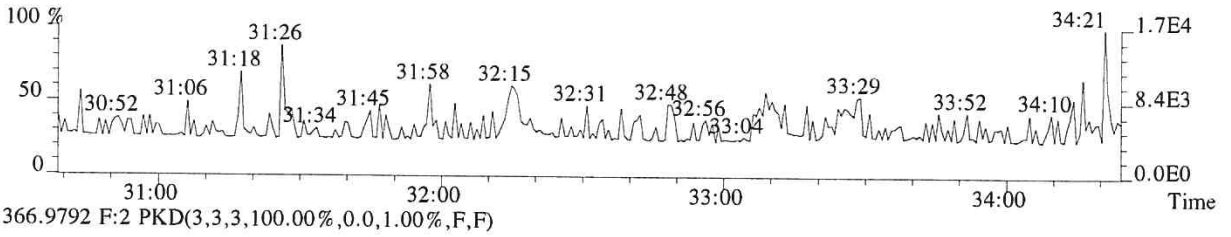
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2056.0,1.00%,F,T)



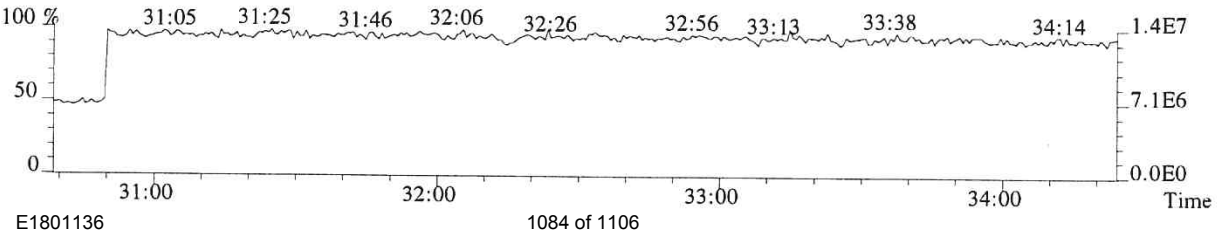
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4552.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

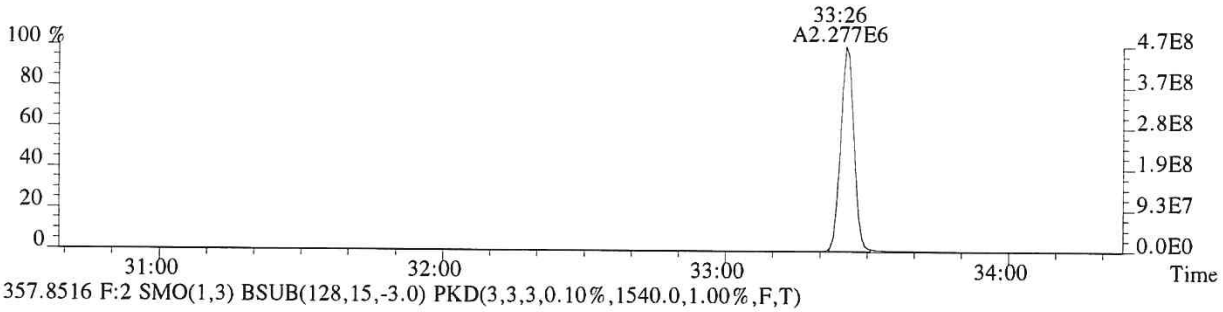


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

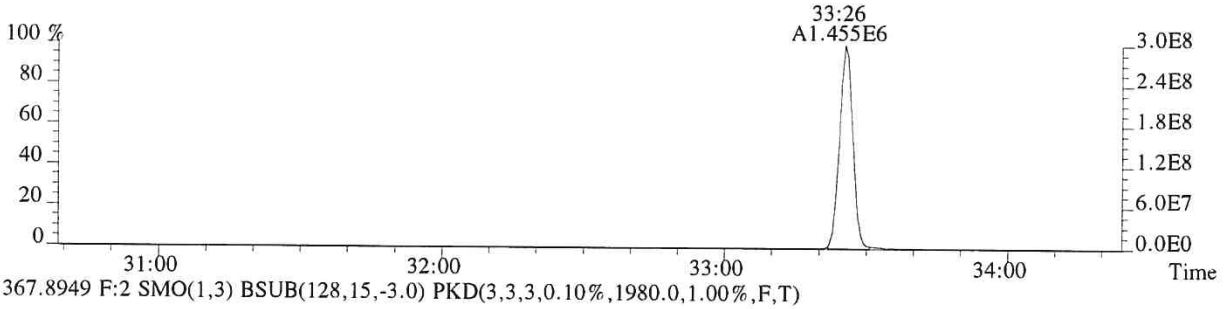


060850

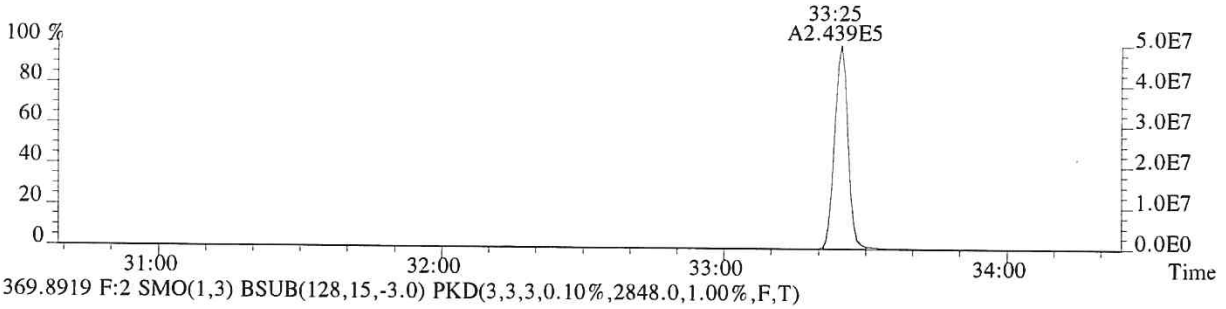
File:P614687 #1-339 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3264.0,1.00%,F,T)



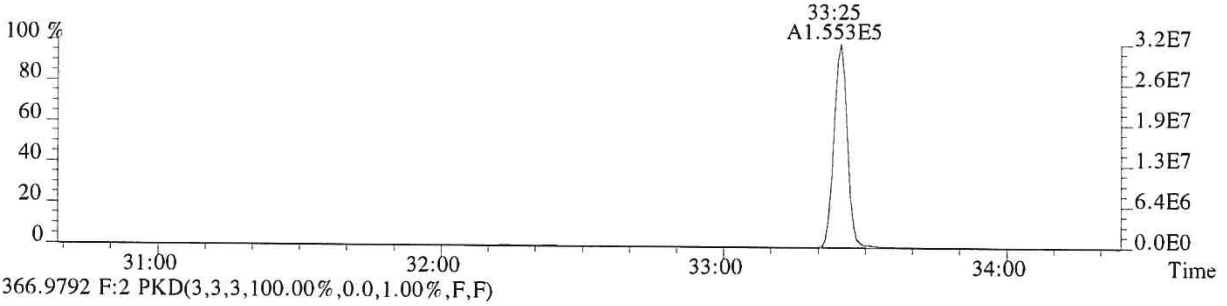
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1540.0,1.00%,F,T)



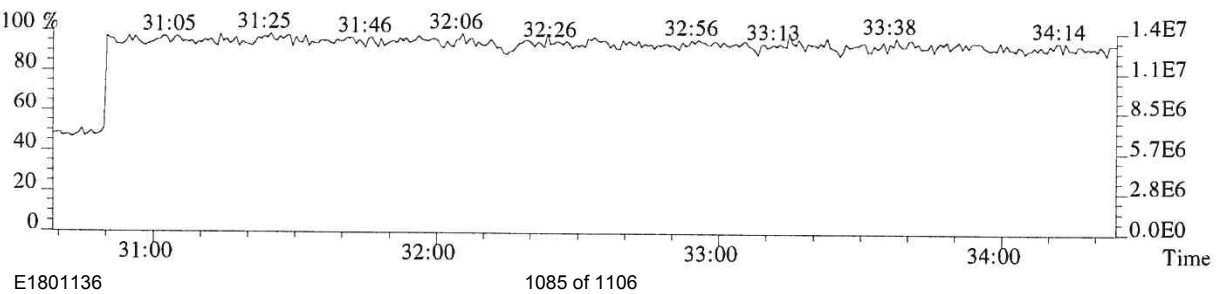
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1980.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2848.0,1.00%,F,T)

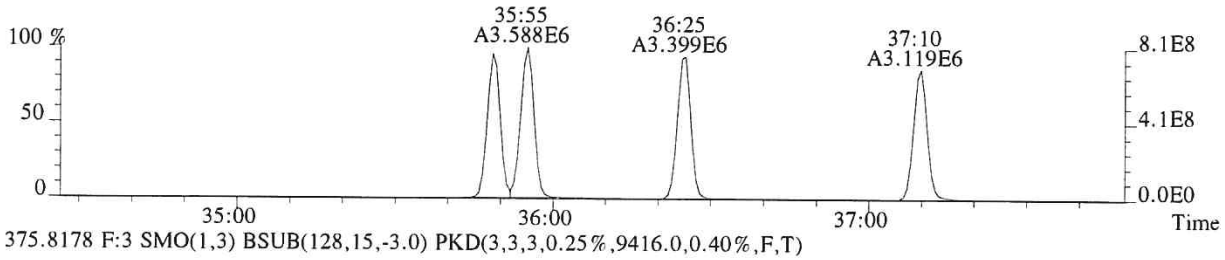


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

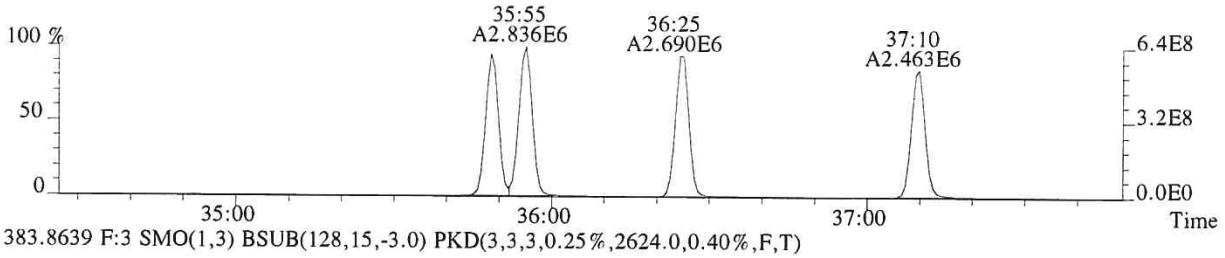


060851

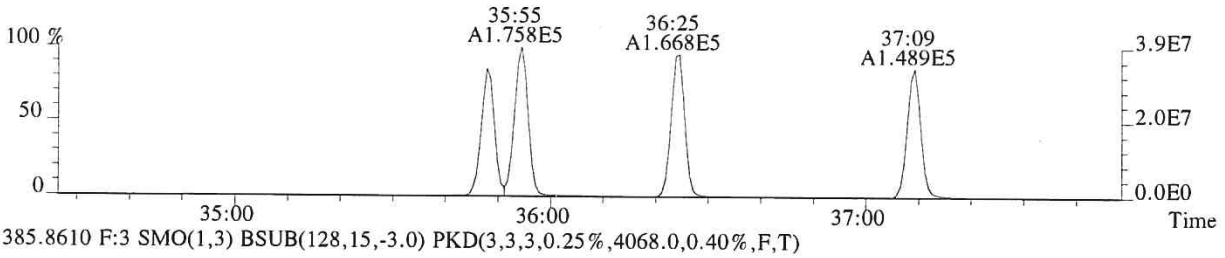
File:P614687 #1-304 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12332.0,0.40%,F,T)



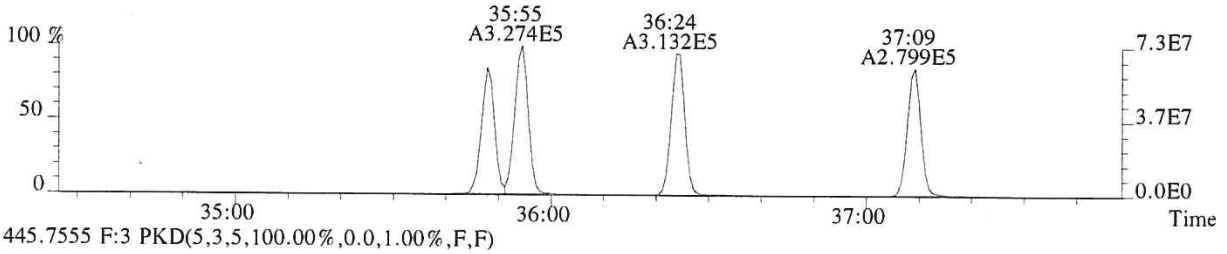
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9416.0,0.40%,F,T)



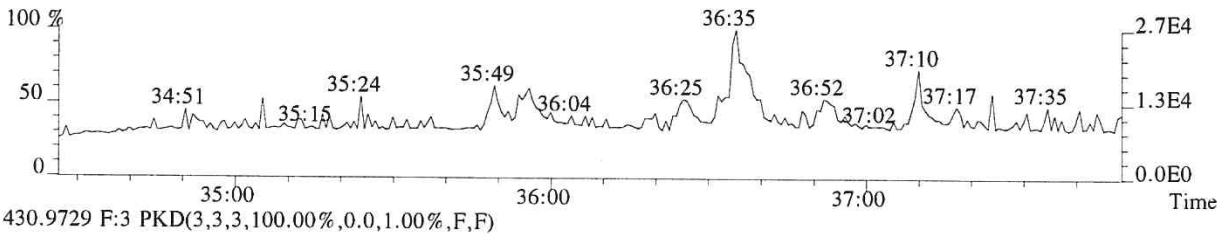
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2624.0,0.40%,F,T)



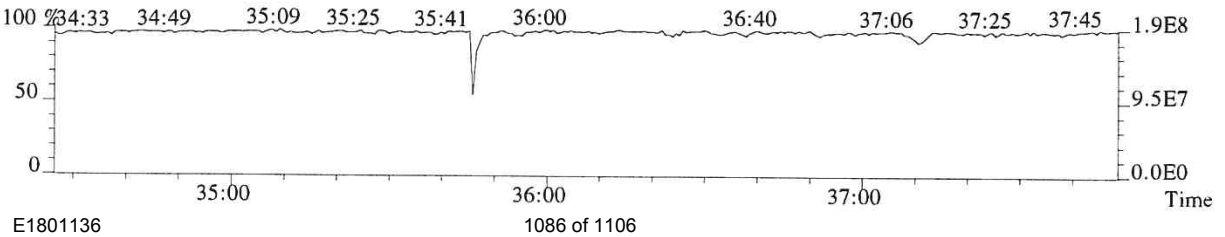
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4068.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

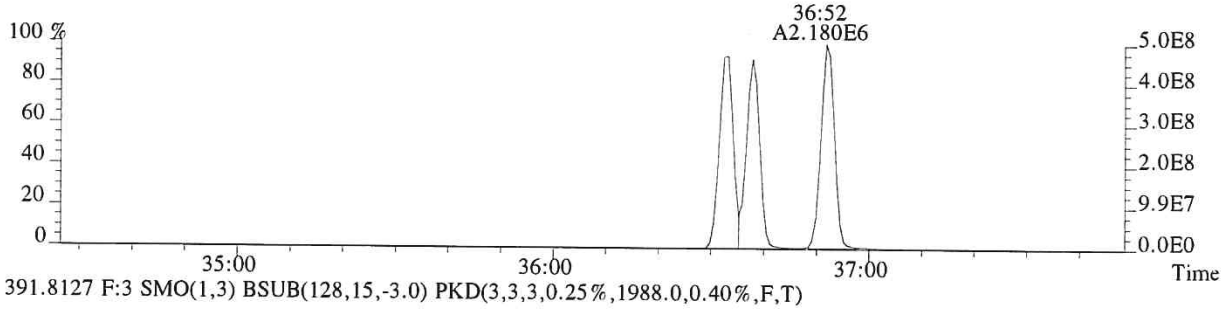


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

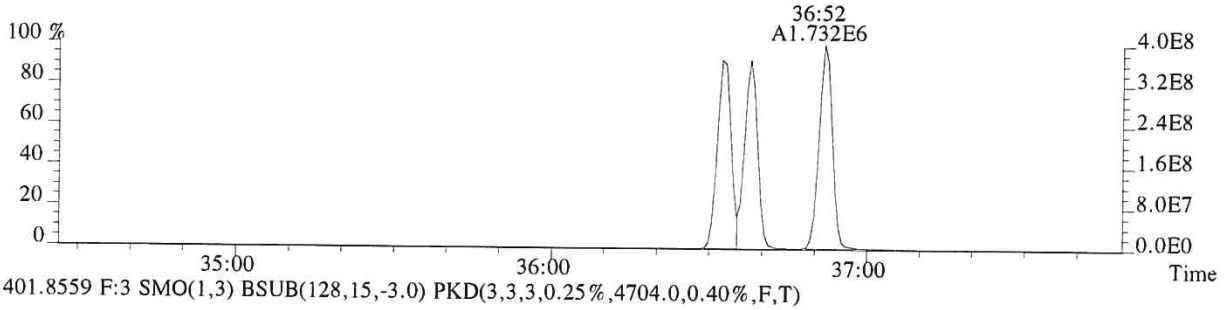


060852

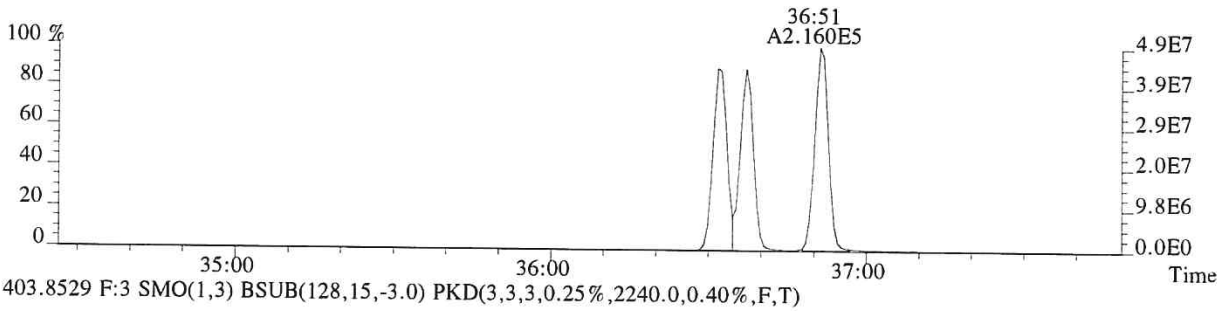
File:P614687 #1-304 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2336.0,0.40%,F,T)



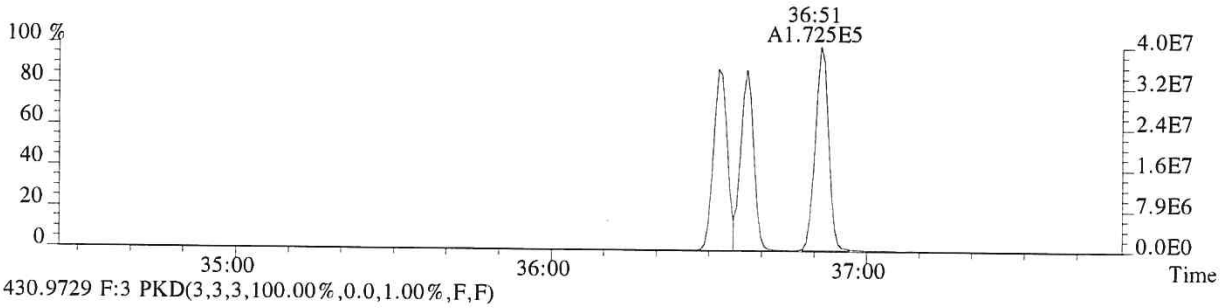
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1988.0,0.40%,F,T)



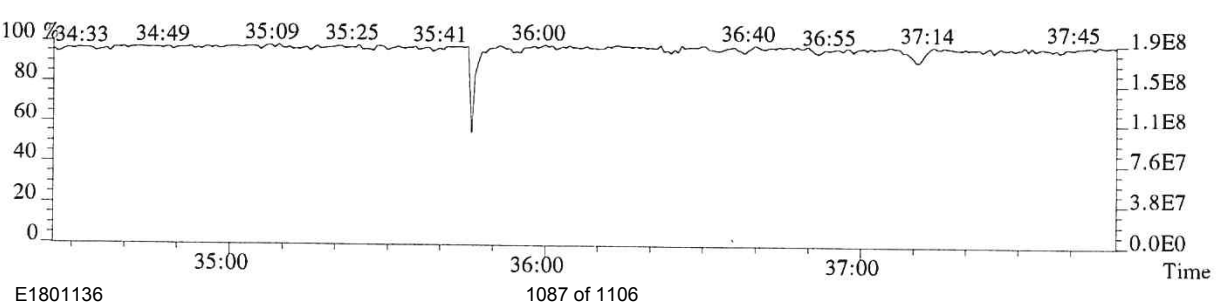
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4704.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2240.0,0.40%,F,T)

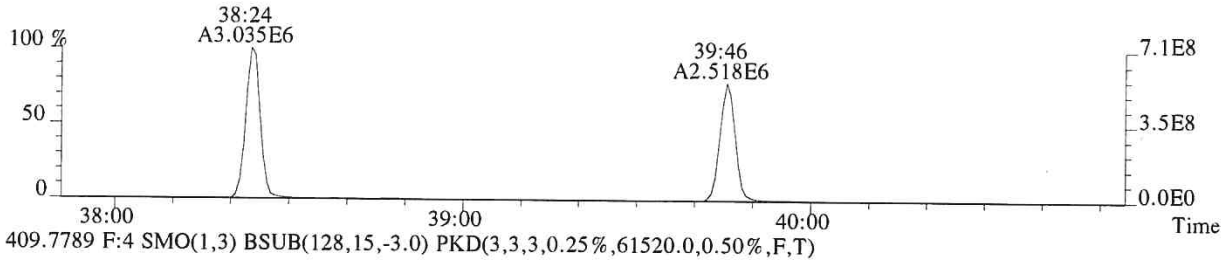


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

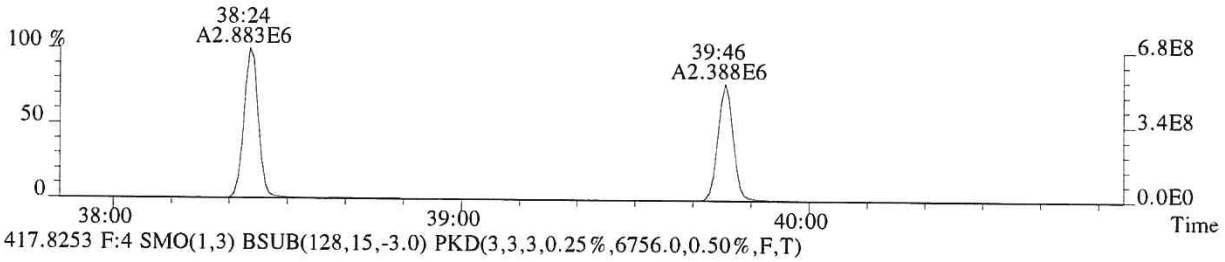


060853

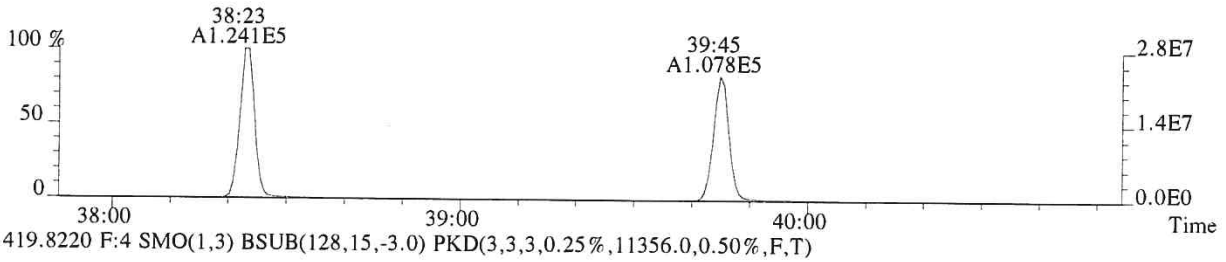
File:P614687 #1-276 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,96804.0,0.50%,F,T)



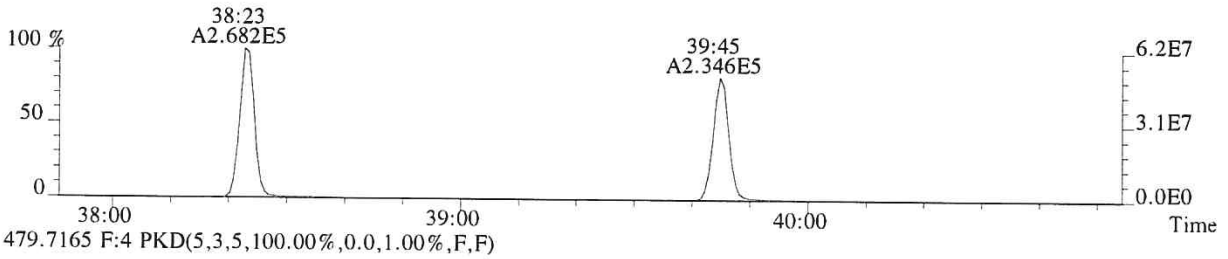
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,61520.0,0.50%,F,T)



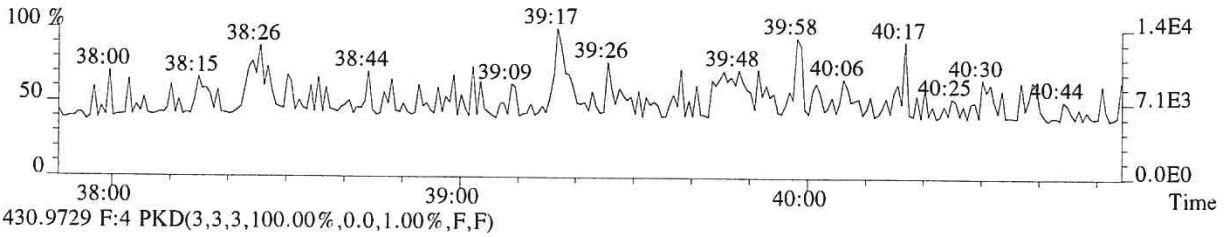
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6756.0,0.50%,F,T)



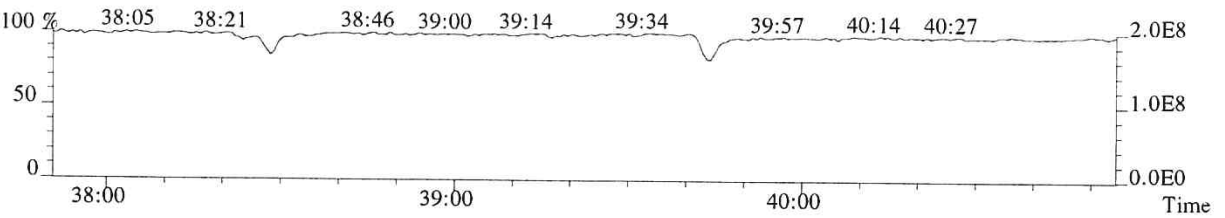
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11356.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

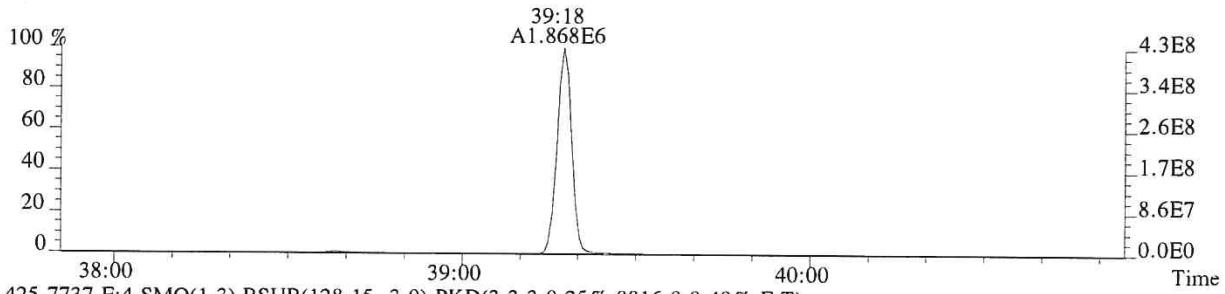


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

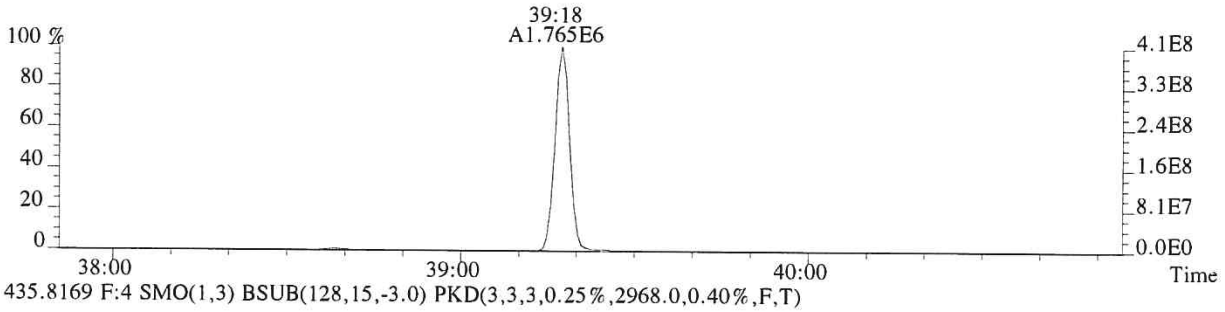


060854

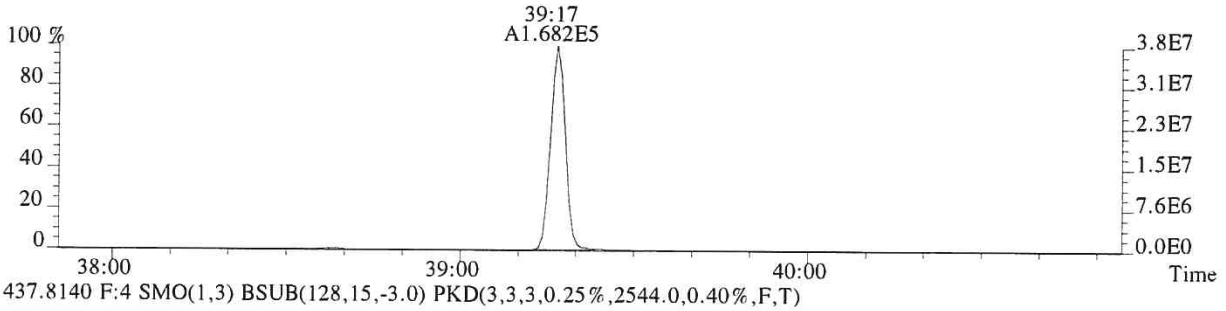
File:P614687 #1-276 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11044.0,0.40%,F,T)



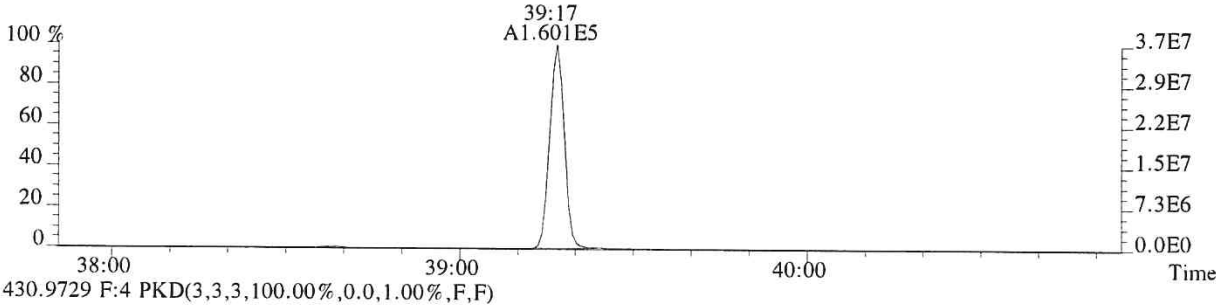
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8816.0,0.40%,F,T)



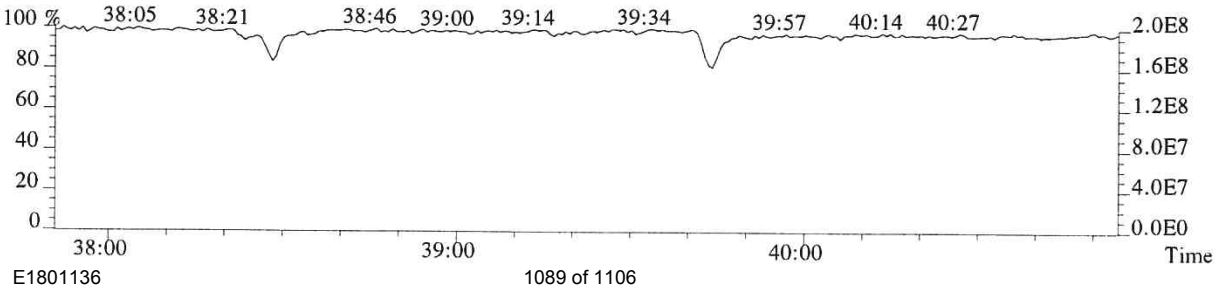
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2968.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2544.0,0.40%,F,T)

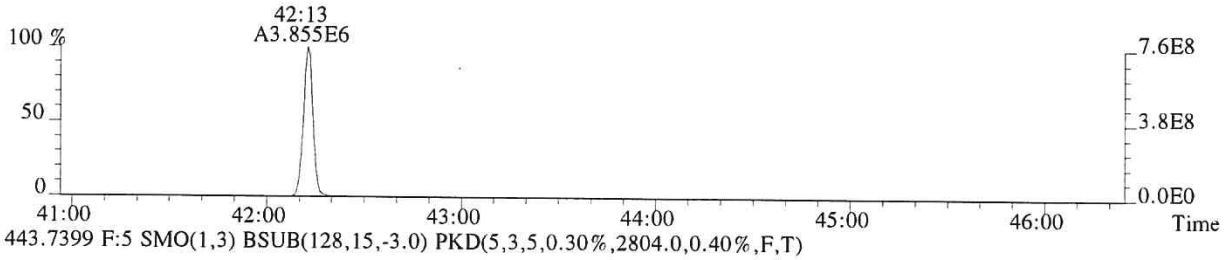


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

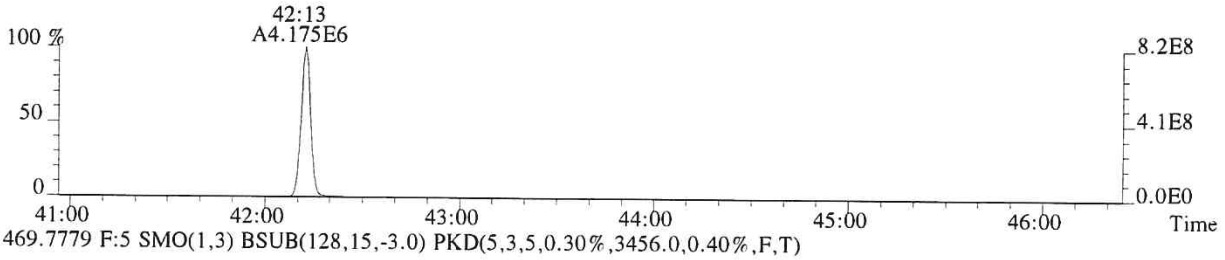


060855

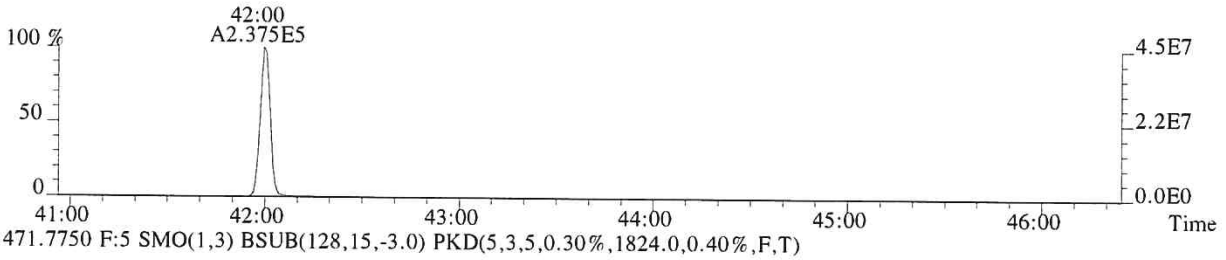
File:P614687 #1-493 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1428.0,0.40%,F,T)



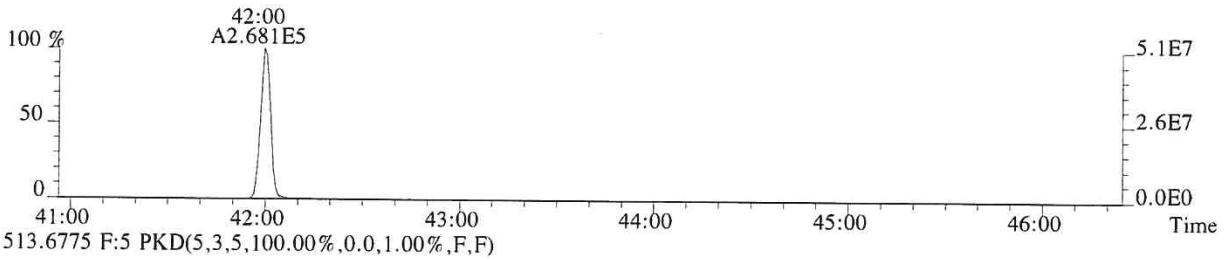
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2804.0,0.40%,F,T)



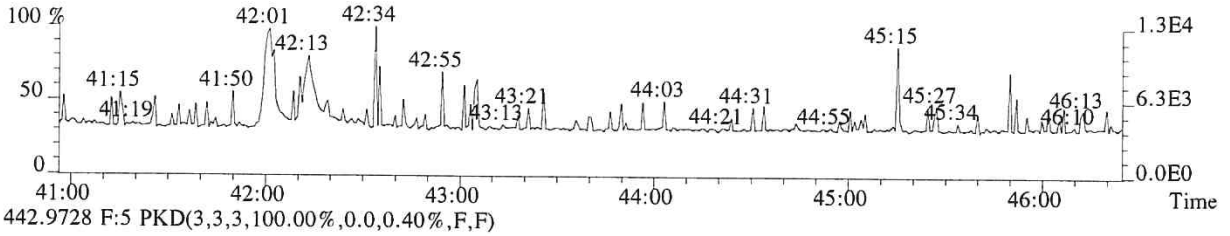
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3456.0,0.40%,F,T)



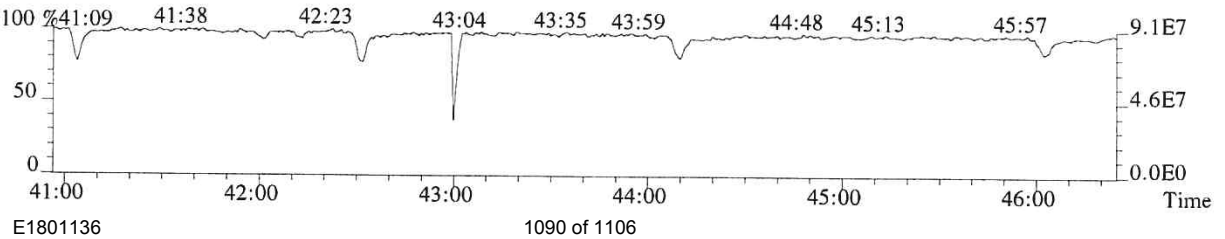
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1824.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

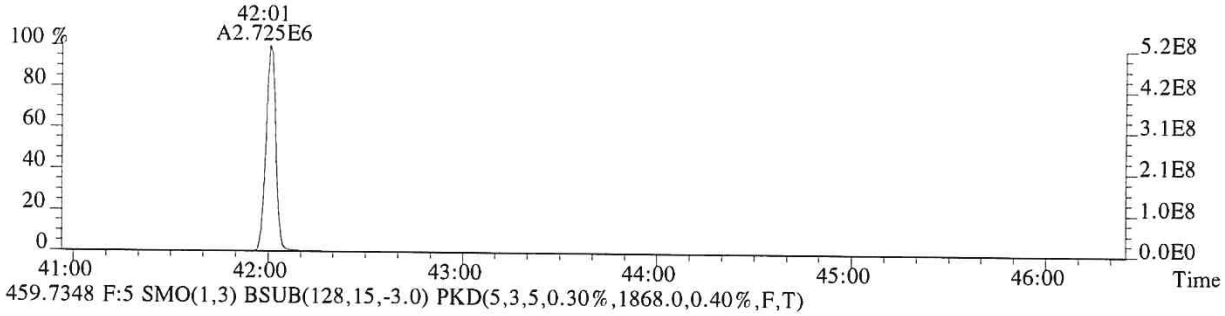


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

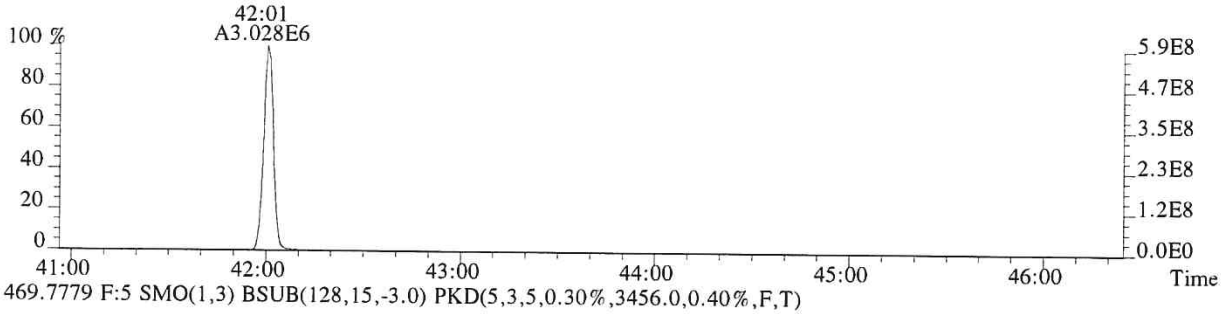


060856

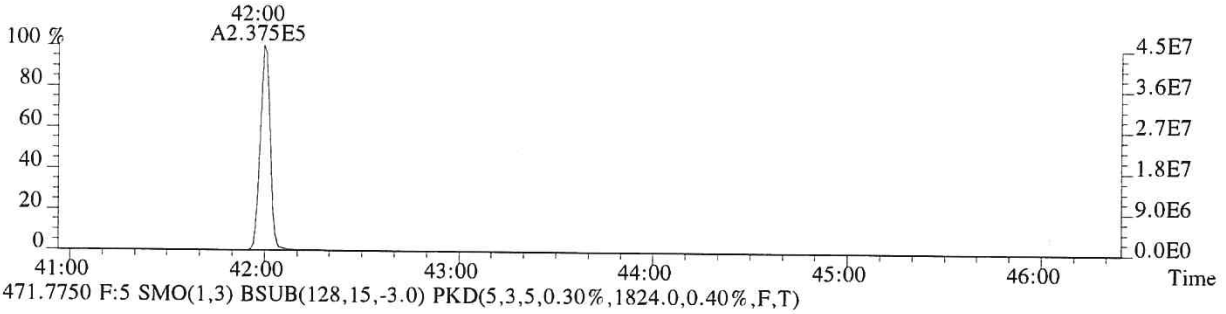
File:P614687 #1-493 Acq:25-SEP-2018 18:30:08 Probe EI+ Magnet SIR VG BioTech Mass spectℓ
Sample#1 Exp:CS5
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,960.0,0.40%,F,T)



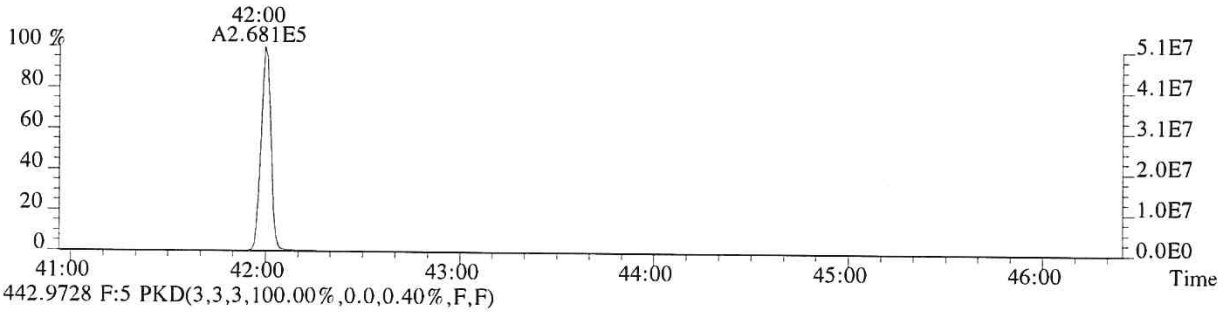
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1868.0,0.40%,F,T)



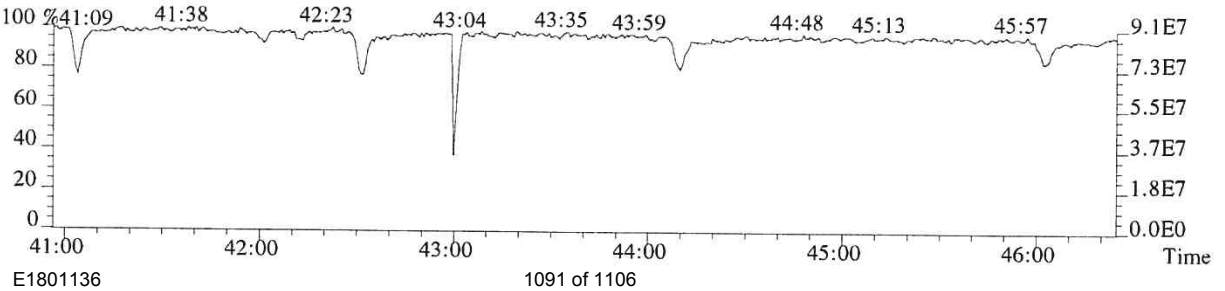
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3456.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1824.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060857

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P614690 Analysis Date: 25-SEP-18 Time: 20:57:19

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	9.7	7.8 - 12.9	-2.5
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	49	39 - 65	-2.2
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	49	39 - 64	-2.2
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	50	39 - 64	-0.1
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	49	41 - 61	-1.9
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	50	43 - 58	-0.9
OCDD	M+2/M+4	0.91	0.76-1.02	98	79 - 126	-2.1
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	9.7	8.4 - 12.0	-2.7
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	49	41 - 60	-1.1
2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	49	41 - 61	-1.4
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	49	45 - 56	-2.6
1,2,3,6,7,8-HxCDF	M+2/M+4	1.28	1.05-1.43	49	44 - 57	-2.3
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05-1.43	50	45 - 56	0.3
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	50	44 - 57	-0.4
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	50	45 - 55	-0.6
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	48	43 - 58	-3.5
OCDF	M+2/M+4	0.93	0.76-1.02	100	63 - 159	-0.4

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

060858

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 09/25/18

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P614690 Analysis Date: 25-SEP-18 Time: 20:57:19

LABELED COMPOUNDS	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	99	82 - 121	-0.7
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	97	62 - 160	-2.6
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	102	85 - 117	1.5
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	100	85 - 118	-0.2
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	105	72 - 138	5.2
13C-OCDD	M+2/M+4	0.89	0.76-1.02	224	96 - 415	11.9
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	99	71 - 140	-0.7
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	98	76 - 130	-2.1
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	96	77 - 130	-3.8
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43-0.59	102	76 - 131	2.1
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	101	70 - 143	0.6
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	100	74 - 135	0.4
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43-0.59	100	73 - 137	0.2
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	103	78 - 129	2.7
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	109	77 - 129	9.0
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				9.9	7.8 - 12.7	-1.0

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

12/2012
1613F4B.FRM

060859

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
188969

Run #7 Filename P614690 Samp: 1 Inj: 1 Acquired: 25-SEP-18 20:57:19
Processed: 26-SEP-18 08:08:37 Sample ID: 2ND SOURCE

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:00	1.742e+04	2.239e+04	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	32:14	1.470e+05	9.342e+04	1.57	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	33:09	1.362e+05	8.490e+04	1.60	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	35:49	1.308e+05	1.044e+05	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	35:55	1.371e+05	1.074e+05	1.28	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	36:25	1.285e+05	1.018e+05	1.26	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	37:09	1.211e+05	9.459e+04	1.28	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	38:24	1.180e+05	1.126e+05	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	39:46	1.018e+05	9.931e+04	1.02	yes	no	1.463
10	Unk	OCDF	42:12	1.605e+05	1.721e+05	0.93	yes	no	1.571
11	Unk	2,3,7,8-TCDD	28:48	1.193e+04	1.490e+04	0.80	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	33:26	8.164e+04	5.215e+04	1.57	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	36:33	7.752e+04	6.082e+04	1.27	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	36:38	7.678e+04	6.066e+04	1.27	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	36:52	8.213e+04	6.494e+04	1.26	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	39:18	7.382e+04	6.944e+04	1.06	yes	no	1.112
17	Unk	OCDD	42:01	1.146e+05	1.261e+05	0.91	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	27:59	1.682e+05	2.104e+05	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	32:14	2.590e+05	1.613e+05	1.61	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	33:08	2.497e+05	1.565e+05	1.60	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	35:48	1.202e+05	2.212e+05	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	35:54	1.342e+05	2.529e+05	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	36:24	1.258e+05	2.350e+05	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	37:09	1.132e+05	2.142e+05	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:23	9.579e+04	2.089e+05	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:45	8.964e+04	1.952e+05	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	28:47	1.166e+05	1.457e+05	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	33:25	1.797e+05	1.149e+05	1.56	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	36:32	1.476e+05	1.165e+05	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	36:37	1.453e+05	1.145e+05	1.27	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:17	1.336e+05	1.263e+05	1.06	yes	no	0.857
32	IS	13C-OCDD	42:00	2.007e+05	2.242e+05	0.89	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	28:13	1.202e+05	1.487e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:51	1.598e+05	1.284e+05	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:48	2.893e+04				no	1.086

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
188969

Run #7 Filename P614690 Samp: 1 Inj: 1 Acquired: 25-SEP-18 20:57:19
Processed: 26-SEP-18 08:08:37 LAB. ID: 2ND SOURCE

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.08e+06	2.16e+03	1.4e+03	3.95e+06	5.67e+03	7.0e+02
2	1,2,3,7,8-PeCDF	2.75e+07	1.50e+03	1.8e+04	1.74e+07	8.24e+03	2.1e+03
3	2,3,4,7,8-PeCDF	2.67e+07	1.50e+03	1.8e+04	1.67e+07	8.24e+03	2.0e+03
4	1,2,3,4,7,8-HxCDF	2.88e+07	2.35e+03	1.2e+04	2.29e+07	2.48e+03	9.3e+03
5	1,2,3,6,7,8-HxCDF	2.88e+07	2.35e+03	1.2e+04	2.30e+07	2.48e+03	9.3e+03
6	2,3,4,6,7,8-HxCDF	2.86e+07	2.35e+03	1.2e+04	2.28e+07	2.48e+03	9.2e+03
7	1,2,3,7,8,9-HxCDF	2.47e+07	2.35e+03	1.1e+04	1.95e+07	2.48e+03	7.9e+03
8	1,2,3,4,6,7,8-HpCDF	2.70e+07	4.46e+03	6.0e+03	2.58e+07	1.29e+04	2.0e+03
9	1,2,3,4,7,8,9-HpCDF	2.12e+07	4.46e+03	4.8e+03	2.03e+07	1.29e+04	1.6e+03
10	OCDF	3.01e+07	1.50e+03	2.0e+04	3.28e+07	3.09e+03	1.1e+04
11	2,3,7,8-TCDD	2.20e+06	4.04e+03	5.4e+02	2.73e+06	2.27e+03	1.2e+03
12	1,2,3,7,8-PeCDD	1.64e+07	3.14e+03	5.2e+03	1.06e+07	2.92e+02	3.6e+04
13	1,2,3,4,7,8-HxCDD	1.79e+07	1.59e+03	1.1e+04	1.41e+07	2.43e+03	5.8e+03
14	1,2,3,6,7,8-HxCDD	1.70e+07	1.59e+03	1.1e+04	1.34e+07	2.43e+03	5.5e+03
15	1,2,3,7,8,9-HxCDD	1.85e+07	1.59e+03	1.2e+04	1.48e+07	2.43e+03	6.1e+03
16	1,2,3,4,6,7,8-HpCDD	1.59e+07	2.28e+03	7.0e+03	1.49e+07	8.84e+02	1.7e+04
17	OCDD	2.16e+07	1.17e+03	1.8e+04	2.38e+07	1.31e+03	1.8e+04
18	13C-2,3,7,8-TCDF	2.88e+07	1.57e+04	1.8e+03	3.60e+07	9.18e+03	3.9e+03
19	13C-1,2,3,7,8-PeCDF	4.79e+07	4.01e+03	1.2e+04	3.00e+07	3.41e+03	8.8e+03
20	13C-2,3,4,7,8-PeCDF	4.95e+07	4.01e+03	1.2e+04	3.12e+07	3.41e+03	9.1e+03
21	13C-1,2,3,4,7,8-HxCDF	2.65e+07	2.99e+03	8.9e+03	4.93e+07	3.83e+03	1.3e+04
22	13C-1,2,3,6,7,8-HxCDF	2.83e+07	2.99e+03	9.5e+03	5.32e+07	3.83e+03	1.4e+04
23	13C-2,3,4,6,7,8-HxCDF	2.80e+07	2.99e+03	9.4e+03	5.25e+07	3.83e+03	1.4e+04
24	13C-1,2,3,7,8,9-HxCDF	2.35e+07	2.99e+03	7.9e+03	4.43e+07	3.83e+03	1.2e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.19e+07	7.32e+03	3.0e+03	4.77e+07	1.38e+04	3.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.88e+07	7.32e+03	2.6e+03	4.06e+07	1.38e+04	2.9e+03
27	13C-2,3,7,8-TCDD	2.17e+07	2.56e+04	8.4e+02	2.71e+07	6.97e+03	3.9e+03
28	13C-1,2,3,7,8-PeCDD	3.57e+07	3.26e+03	1.1e+04	2.28e+07	2.28e+03	1.0e+04
29	13C-1,2,3,4,7,8-HxCDD	3.37e+07	5.66e+03	6.0e+03	2.64e+07	3.42e+03	7.7e+03
30	13C-1,2,3,6,7,8-HxCDD	3.18e+07	5.66e+03	5.6e+03	2.51e+07	3.42e+03	7.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.85e+07	3.13e+03	9.1e+03	2.68e+07	1.88e+03	1.4e+04
32	13C-OCDD	3.77e+07	2.72e+03	1.4e+04	4.17e+07	9.60e+02	4.3e+04
33	13C-1,2,3,4-TCDD	2.21e+07	2.56e+04	8.6e+02	2.72e+07	6.97e+03	3.9e+03
34	13C-1,2,3,7,8,9-HxCDD	3.62e+07	5.66e+03	6.4e+03	2.92e+07	3.42e+03	8.5e+03
35	37Cl-2,3,7,8-TCDD	5.28e+06	4.24e+03	1.2e+03			

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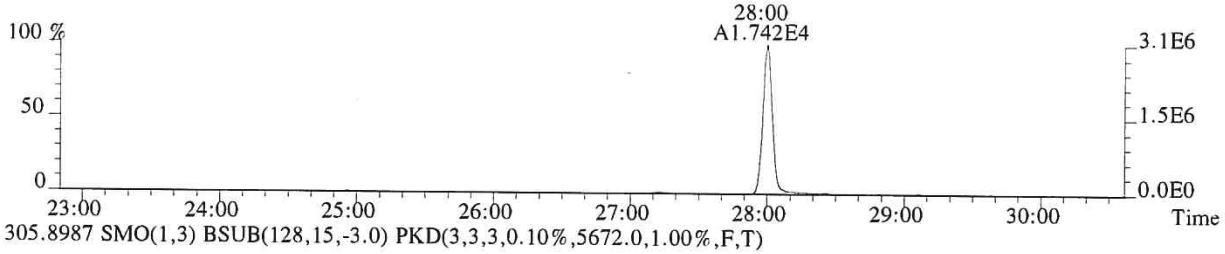
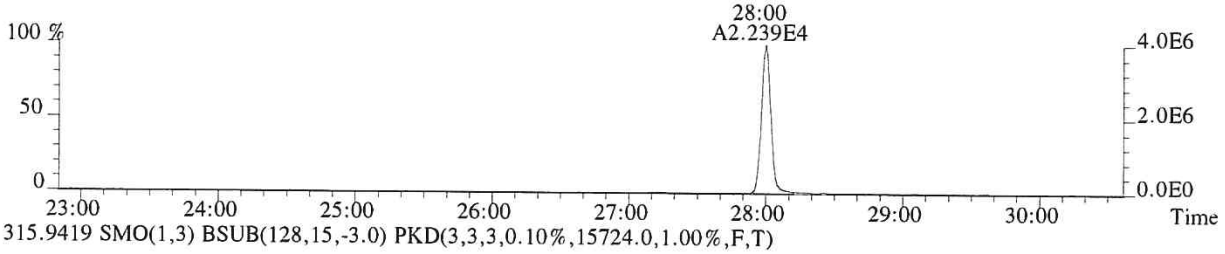
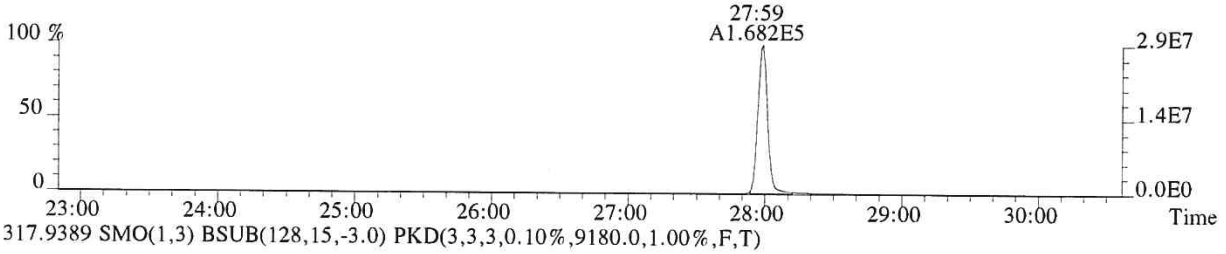
File:P614690 #1-552 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2160.0,1.00%,F,T)



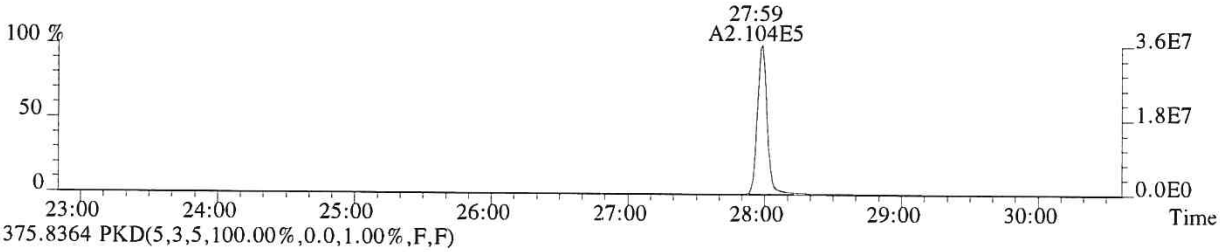
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5672.0,1.00%,F,T)



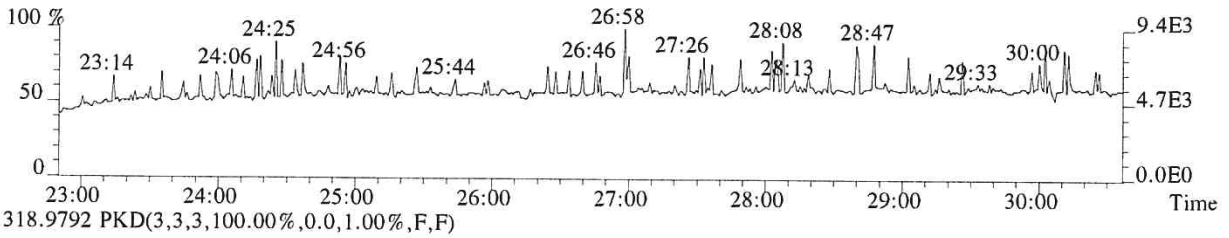
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15724.0,1.00%,F,T)



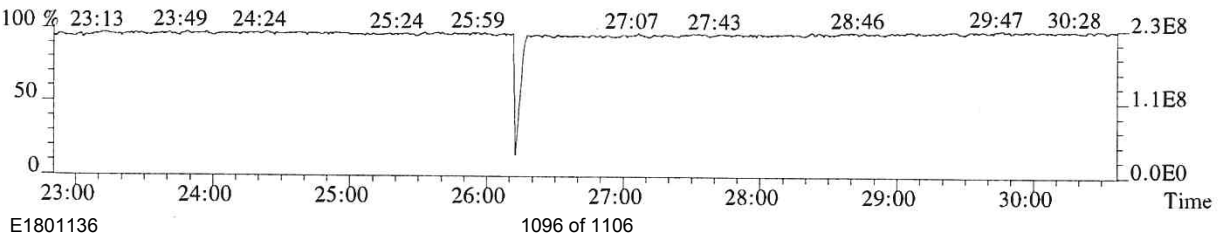
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9180.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

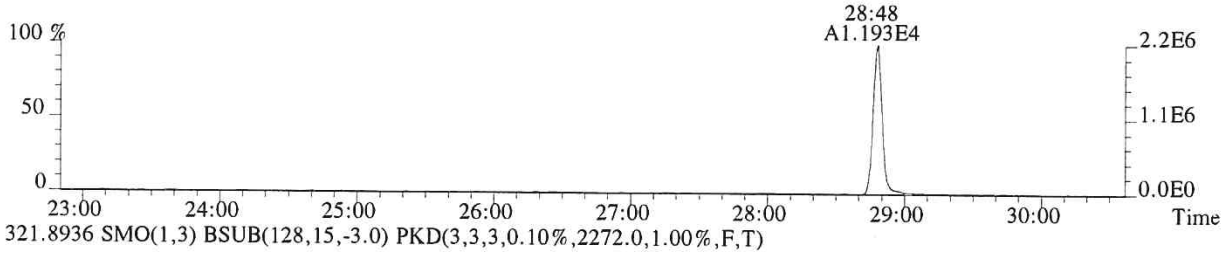


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

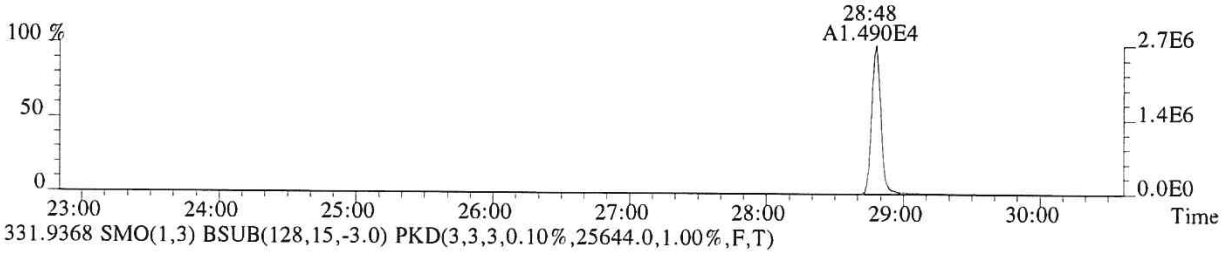


060862

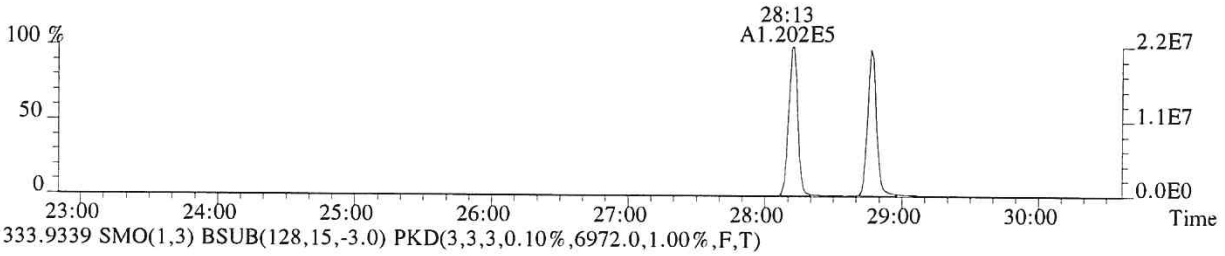
File:P614690 #1-552 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4040.0,1.00%,F,T)



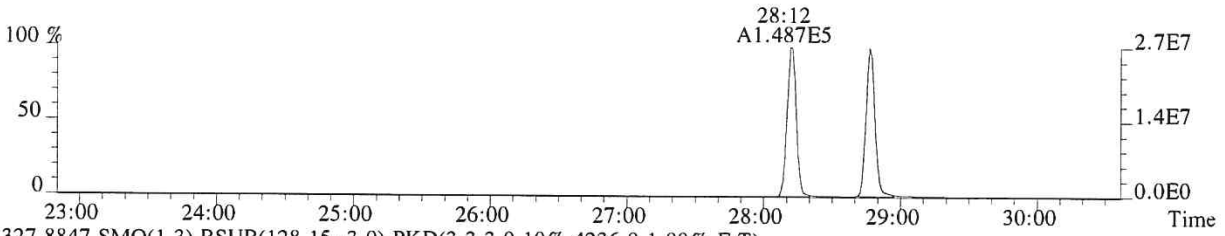
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2272.0,1.00%,F,T)



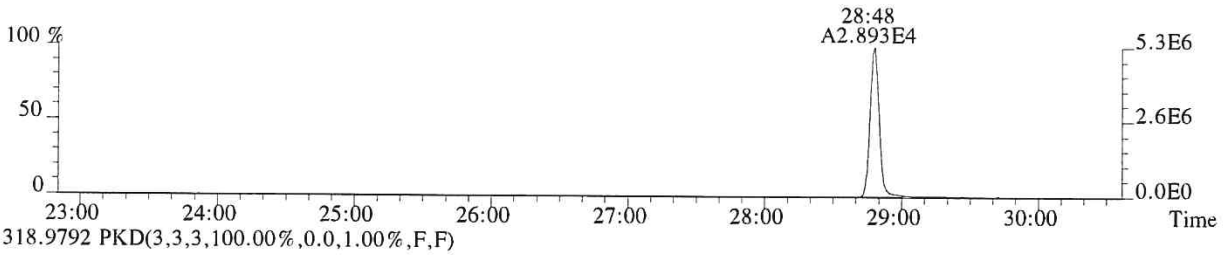
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,25644.0,1.00%,F,T)



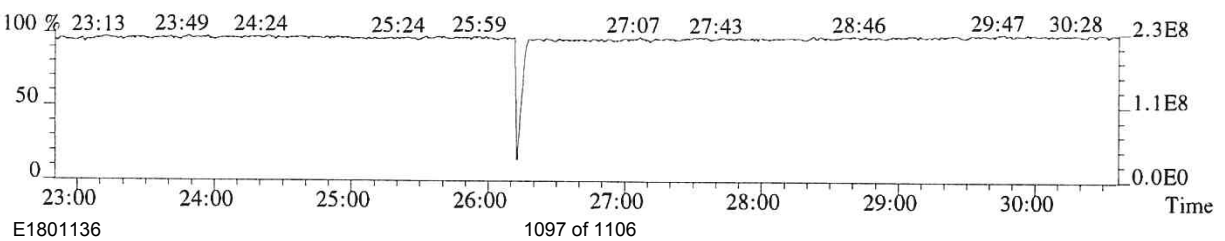
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6972.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4236.0,1.00%,F,T)

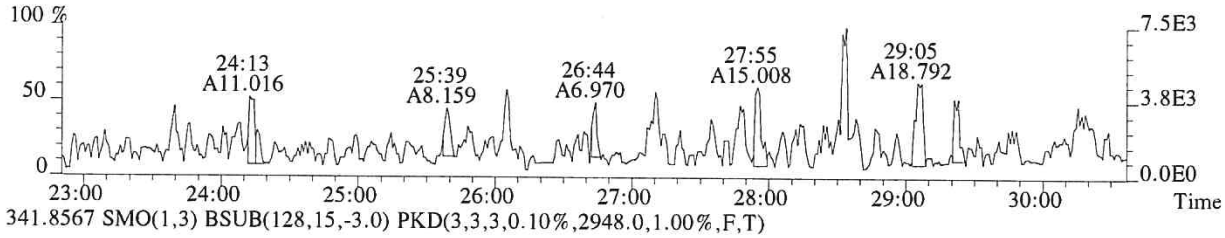


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

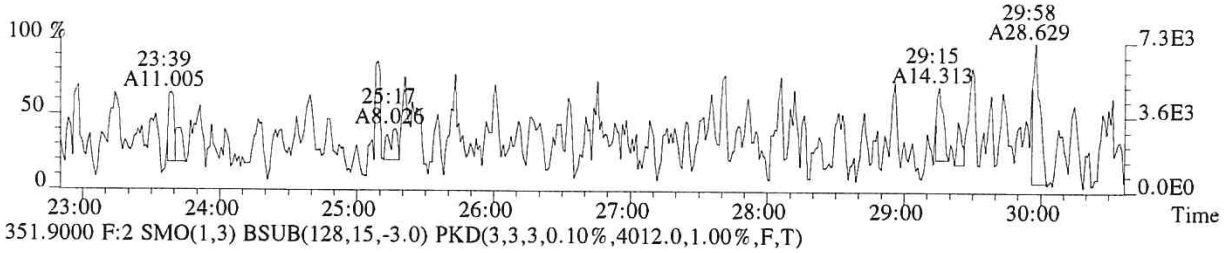


060863

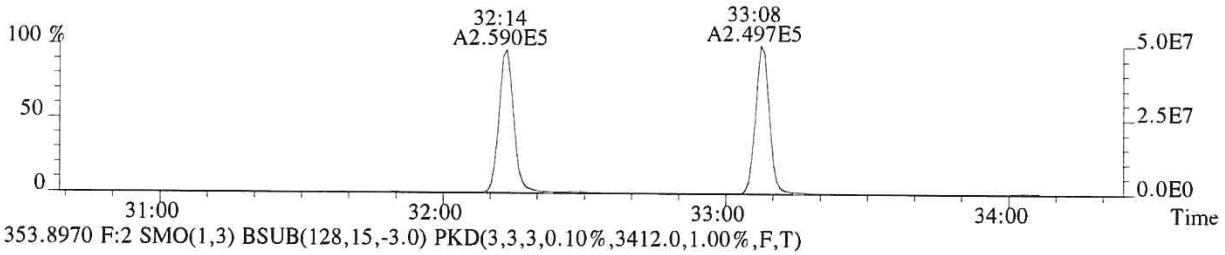
File:P614690 #1-552 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spectℓ
Sample#1 Exp:2ND SOURCE
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1588.0,1.00%,F,T)



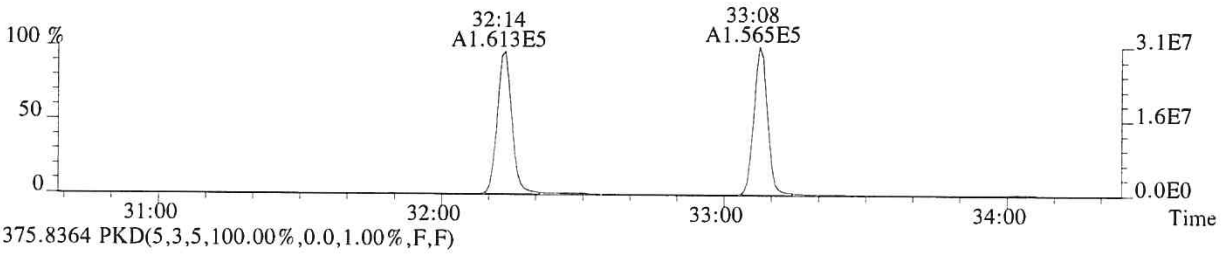
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2948.0,1.00%,F,T)



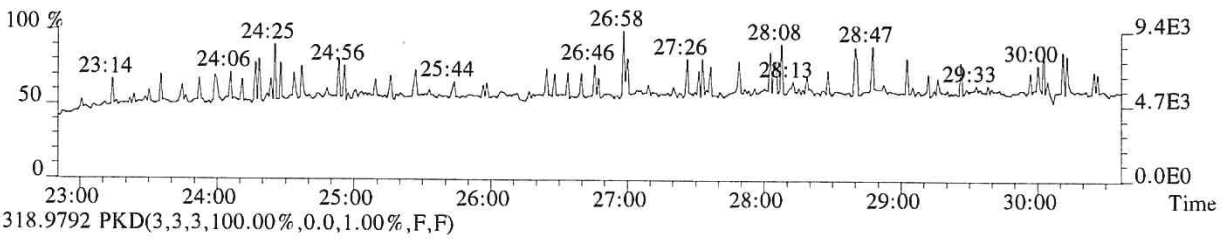
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4012.0,1.00%,F,T)



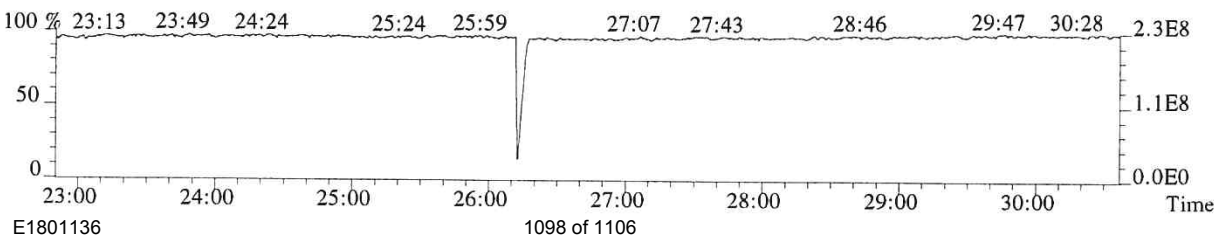
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3412.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

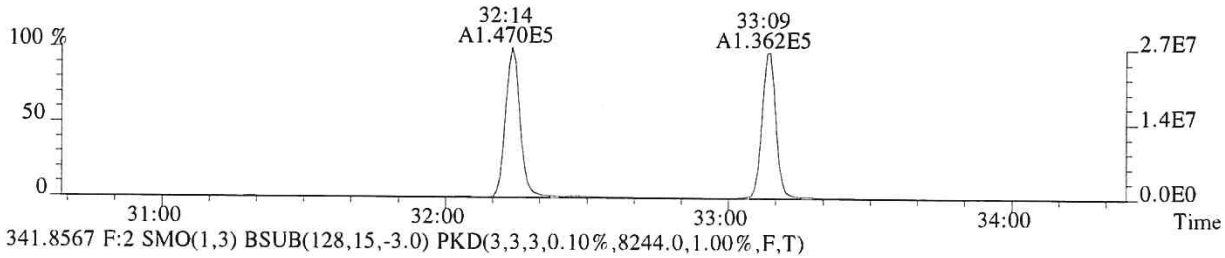


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

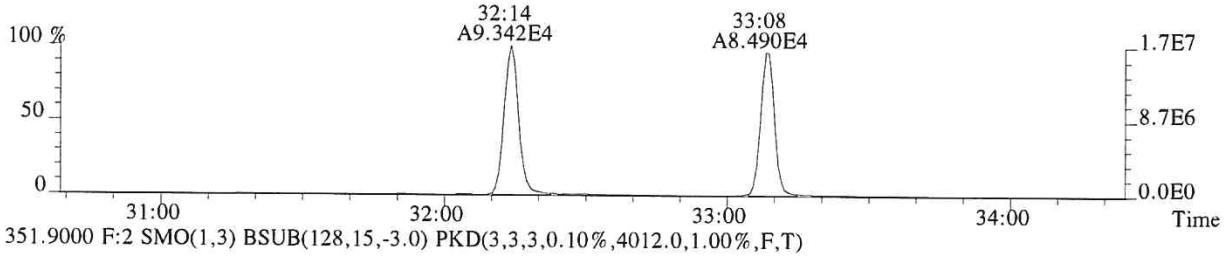


060864

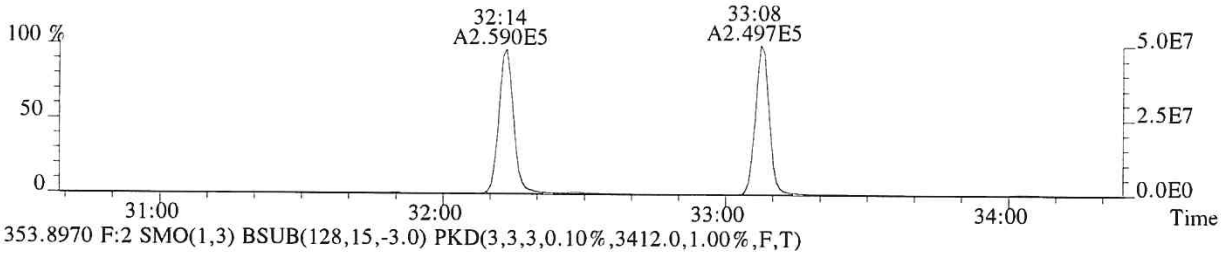
File:P614690 #1-339 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1504.0,1.00%,F,T)



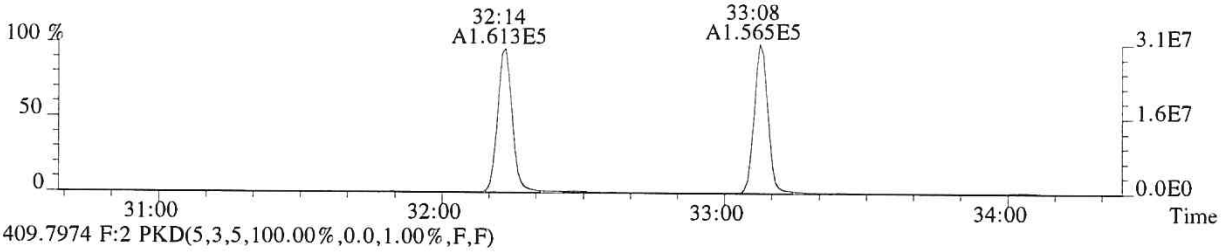
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8244.0,1.00%,F,T)



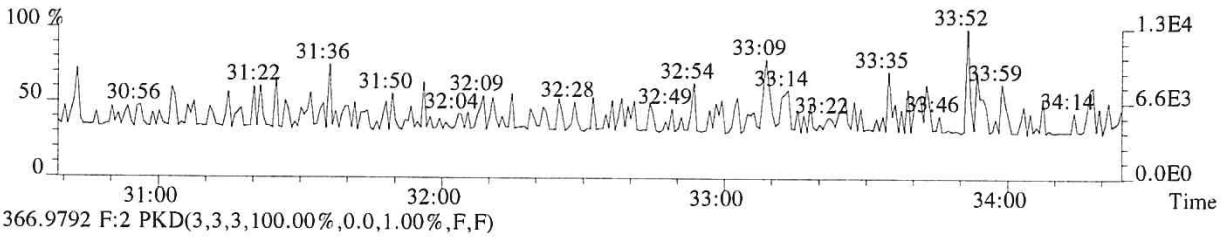
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4012.0,1.00%,F,T)



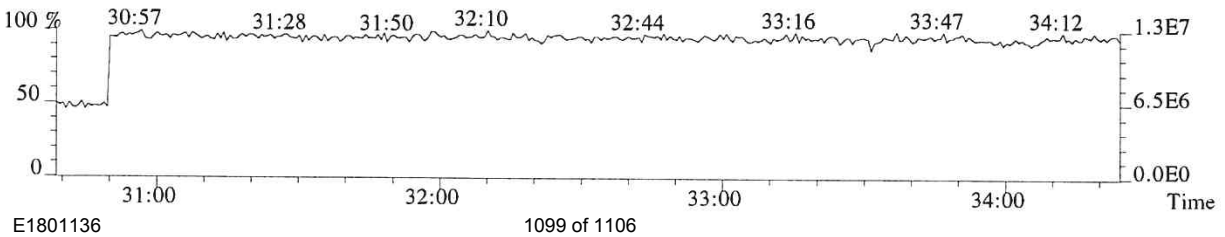
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3412.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

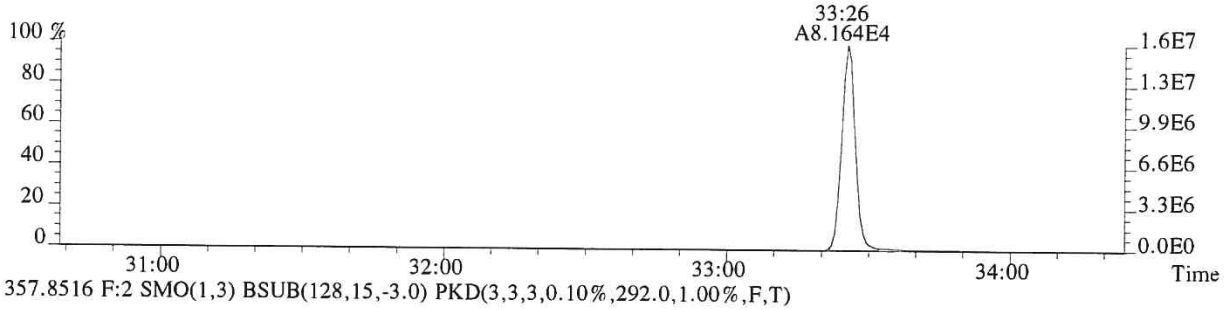


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

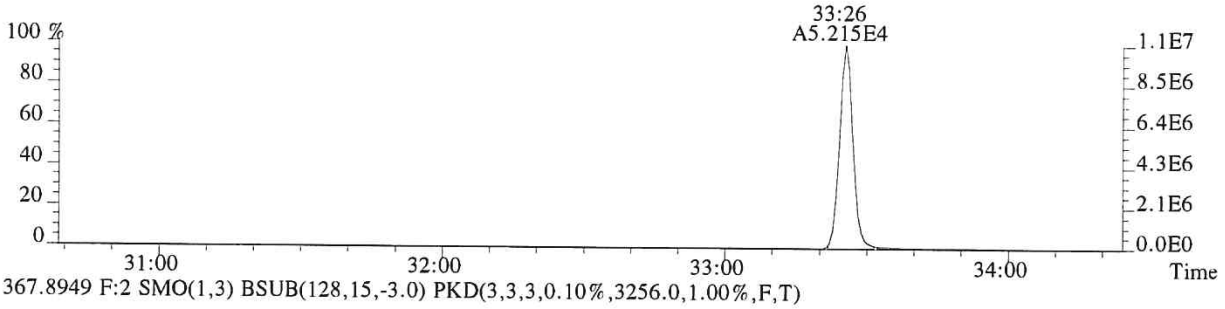


060865

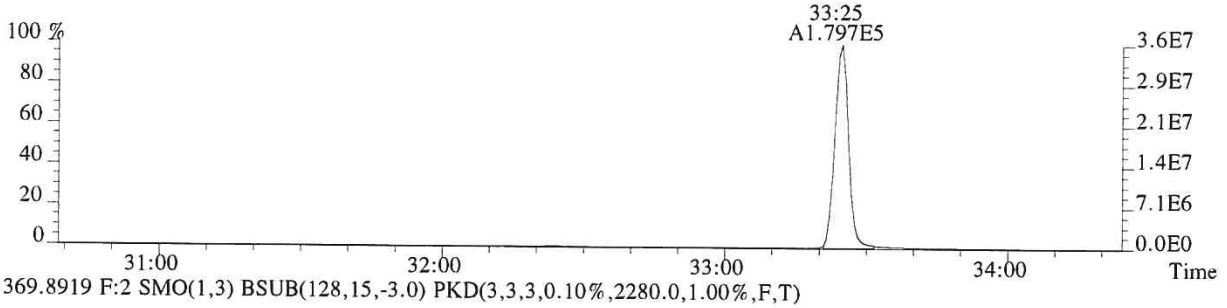
File:P614690 #1-339 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3144.0,1.00%,F,T)



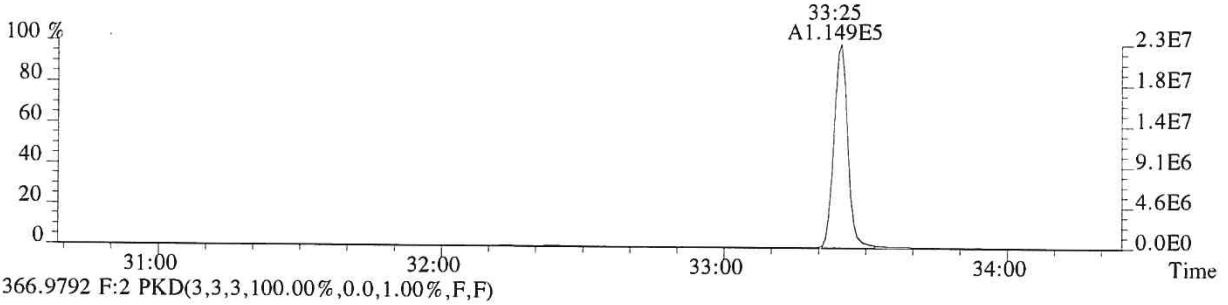
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,292.0,1.00%,F,T)



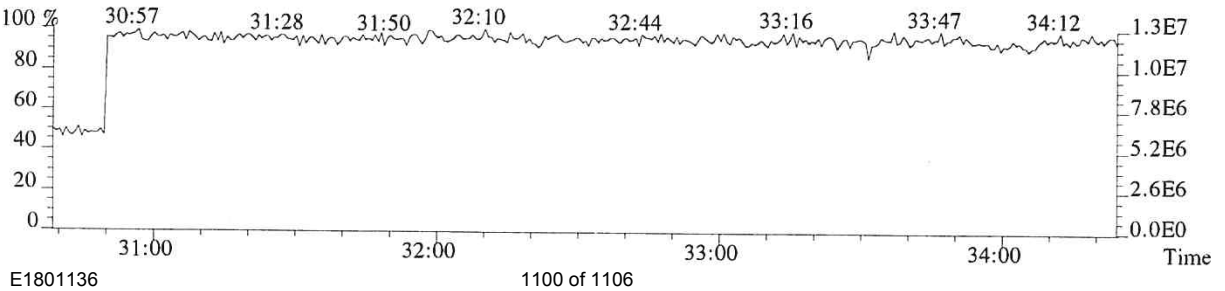
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3256.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2280.0,1.00%,F,T)

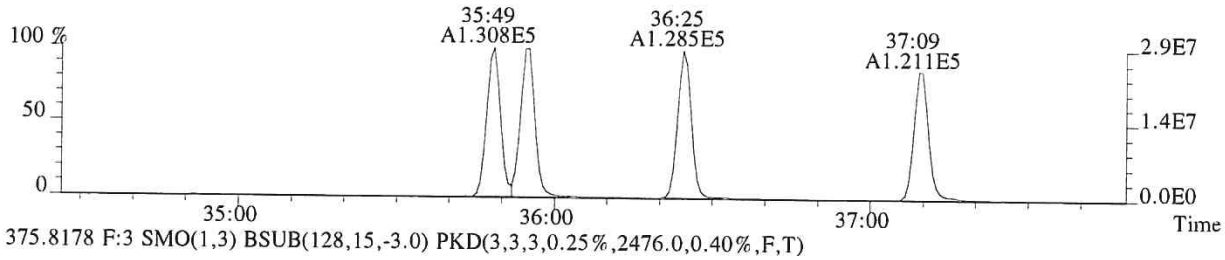


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

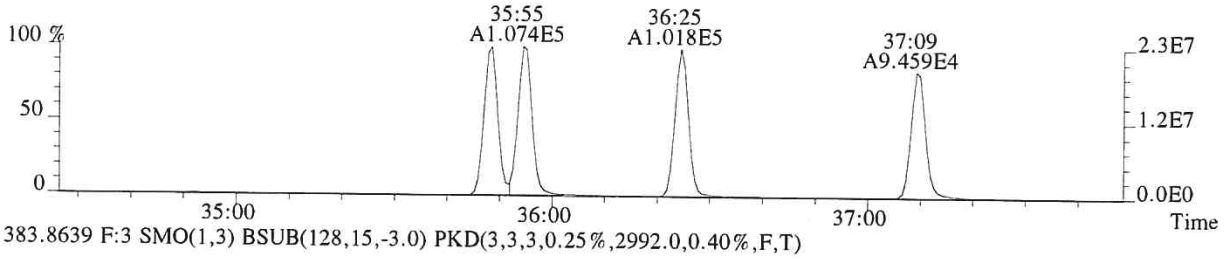


060866

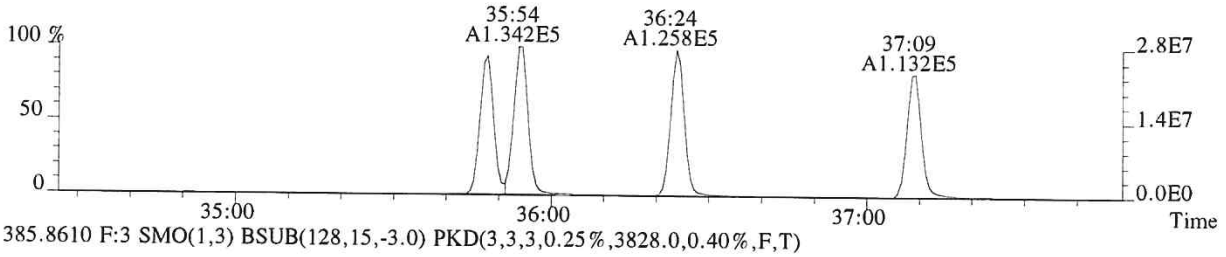
File:P614690 #1-304 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2352.0,0.40%,F,T)



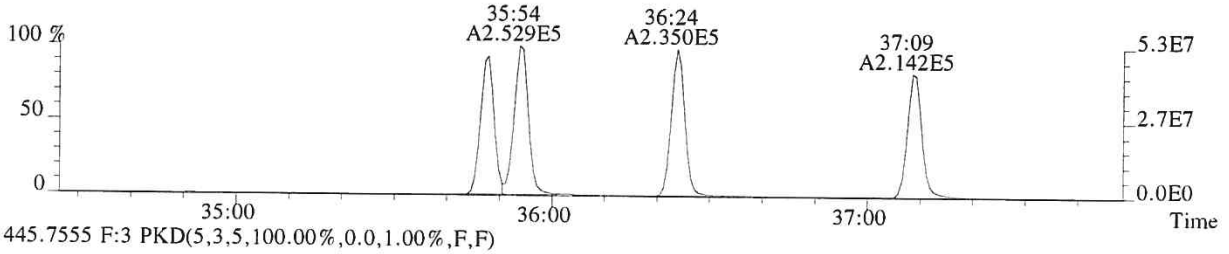
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2476.0,0.40%,F,T)



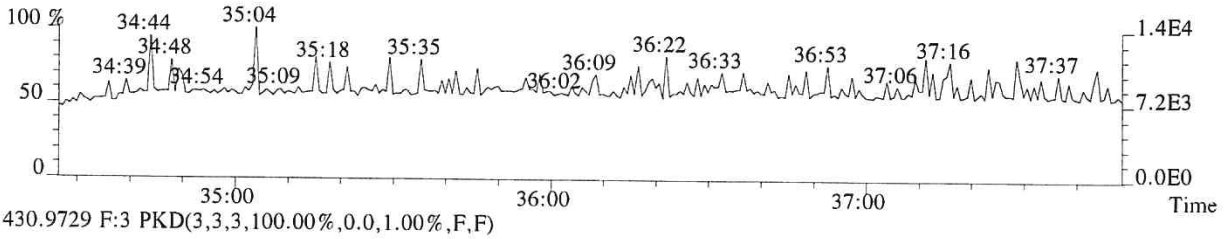
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2992.0,0.40%,F,T)



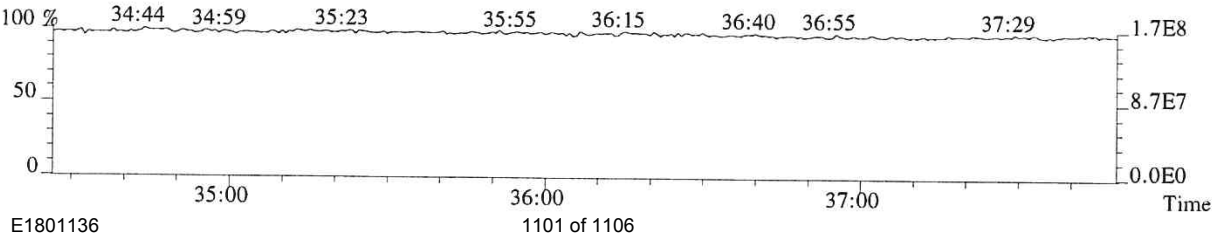
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3828.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

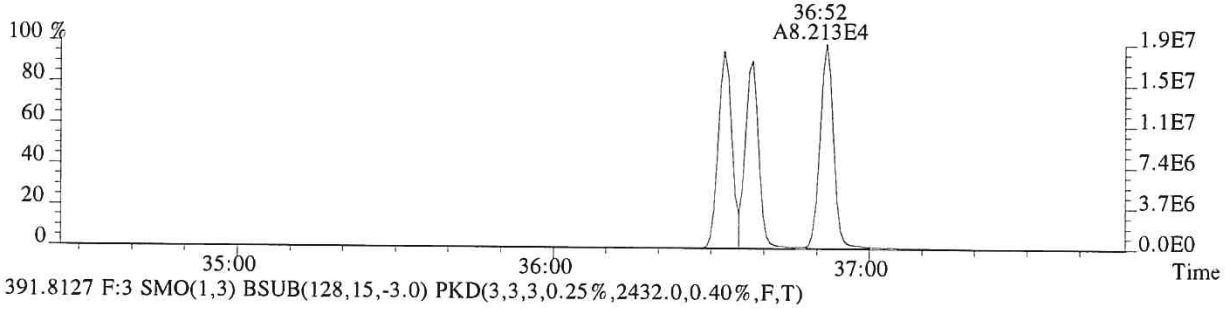


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

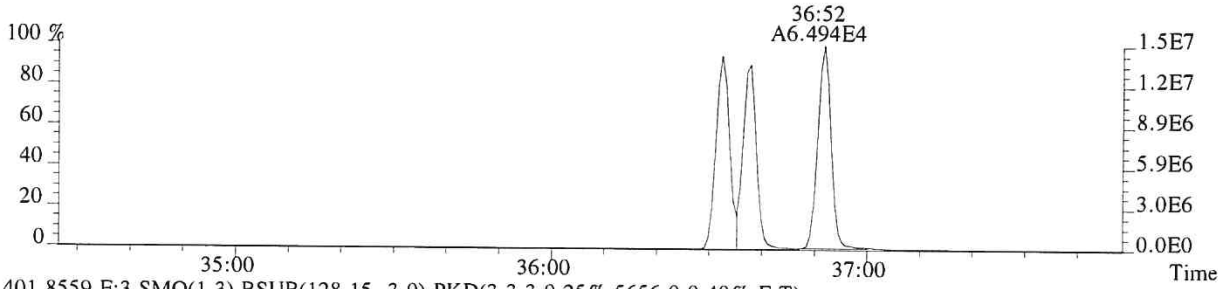


060867

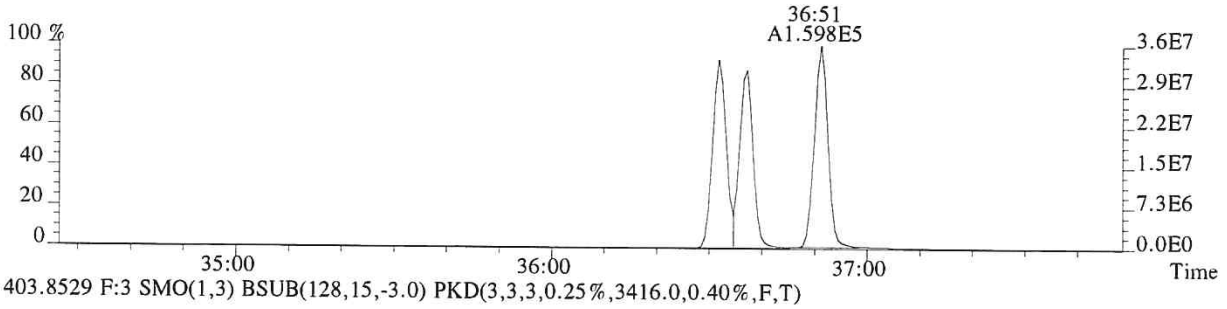
File:P614690 #1-304 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1588.0,0.40%,F,T)



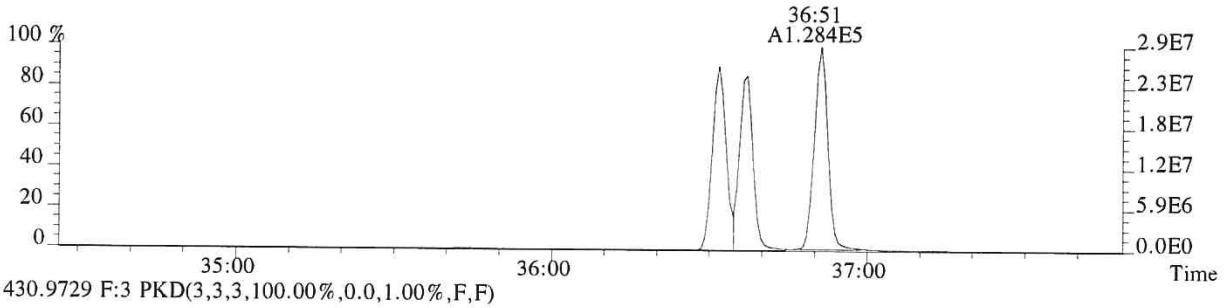
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2432.0,0.40%,F,T)



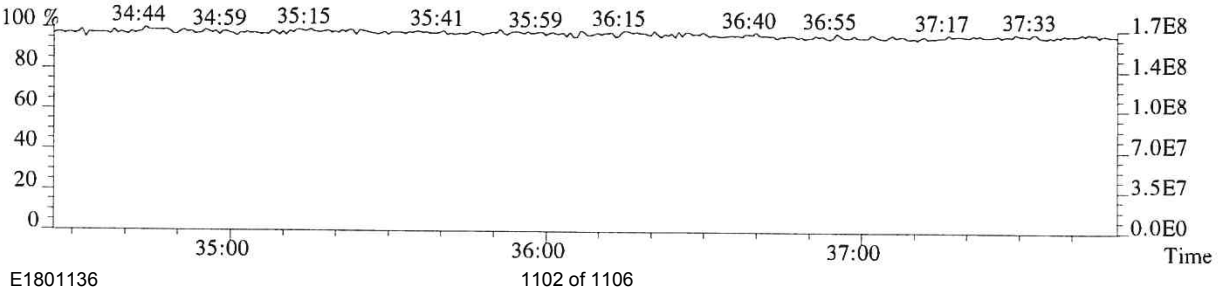
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5656.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3416.0,0.40%,F,T)

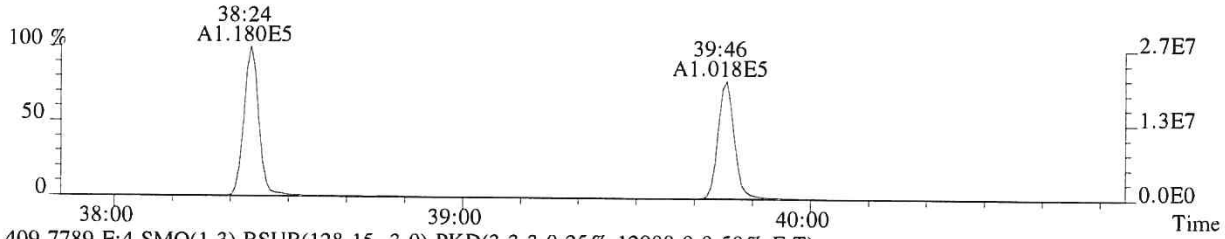


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

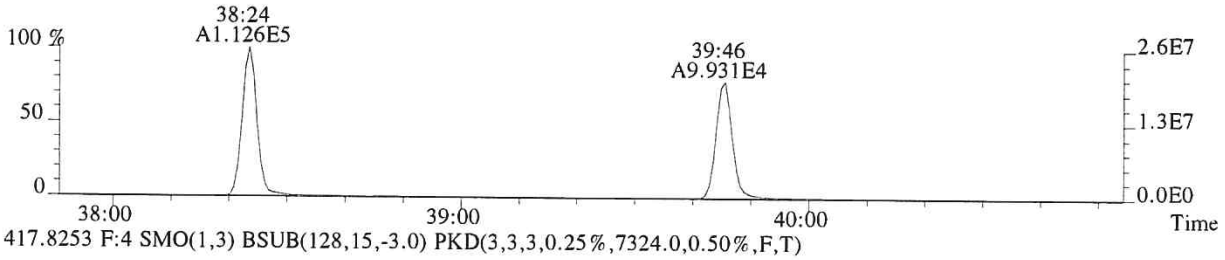


060868

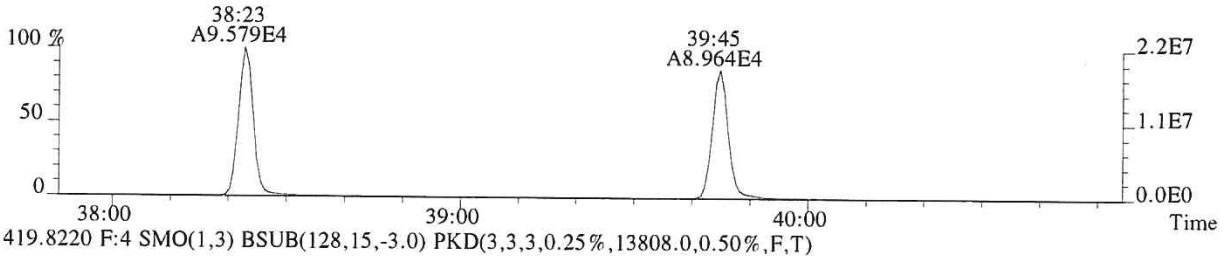
File:P614690 #1-276 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4460.0,0.50%,F,T)



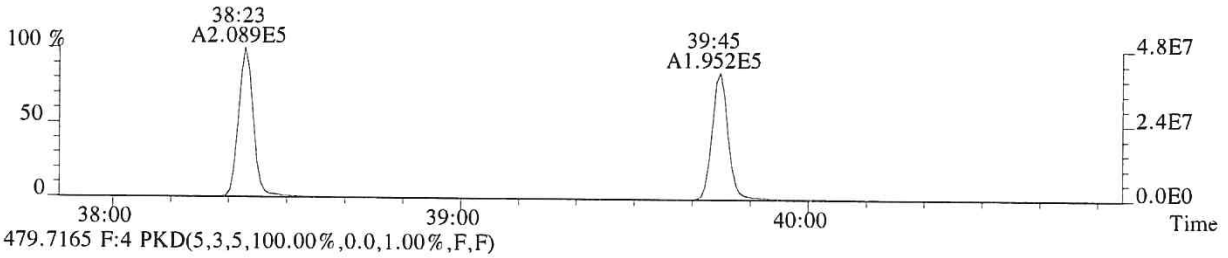
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12908.0,0.50%,F,T)



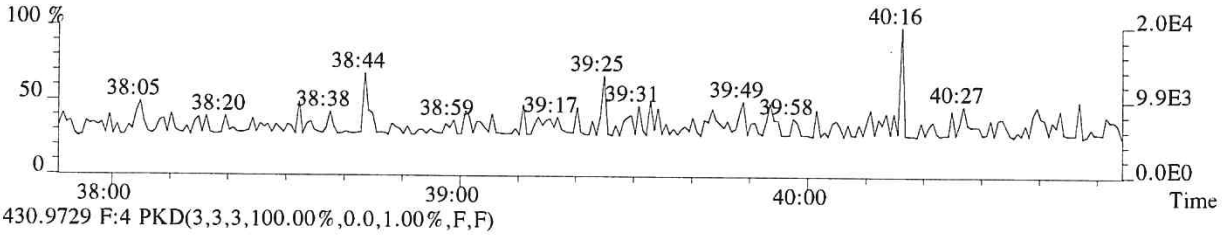
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7324.0,0.50%,F,T)



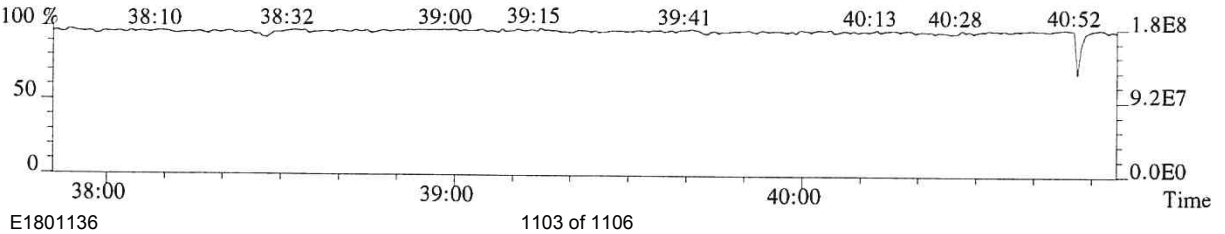
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,13808.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

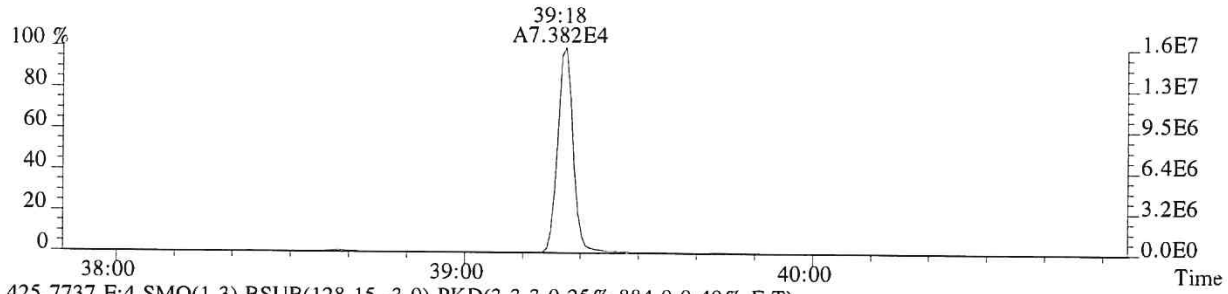


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

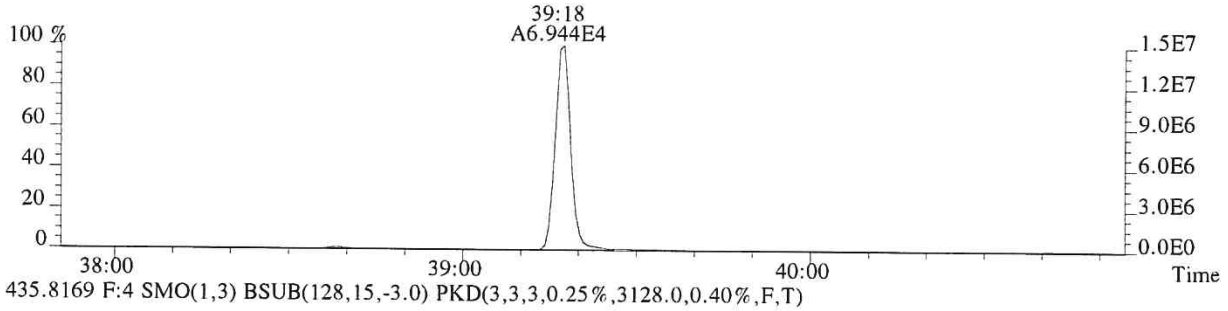


060869

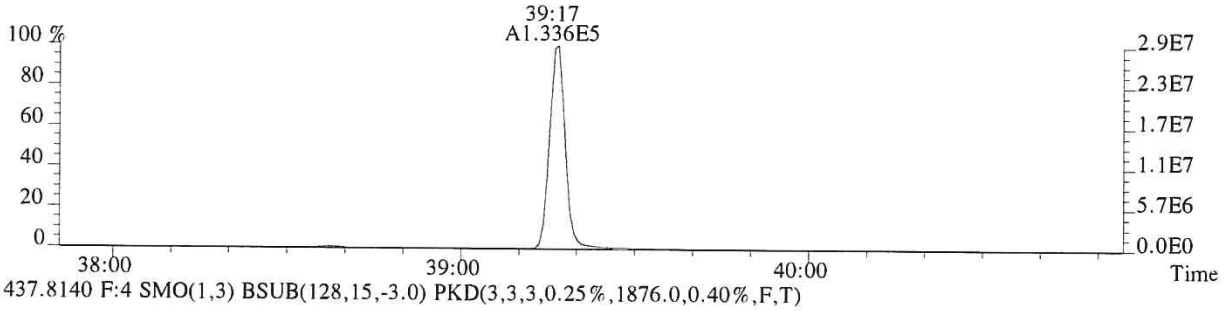
File:P614690 #1-276 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2280.0,0.40%,F,T)



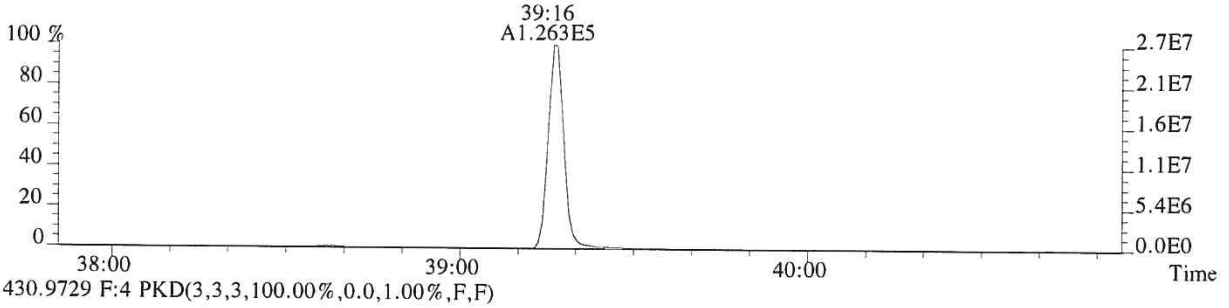
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,884.0,0.40%,F,T)



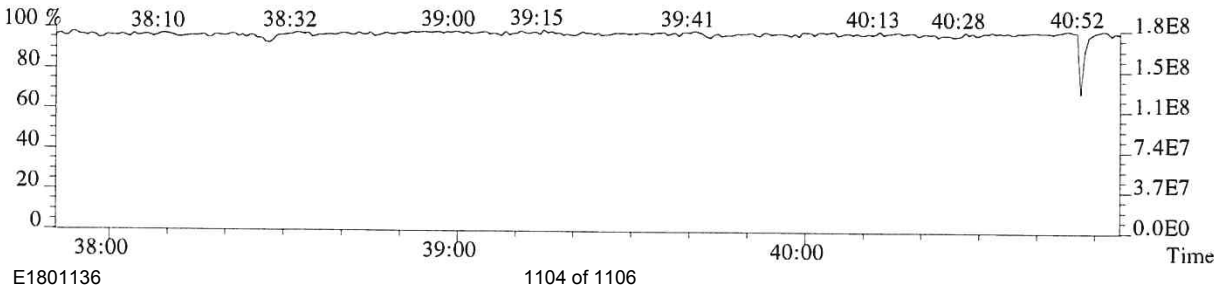
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3128.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1876.0,0.40%,F,T)

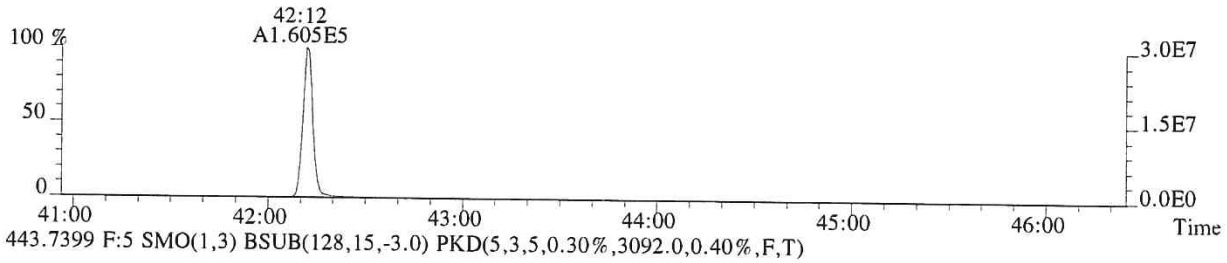


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

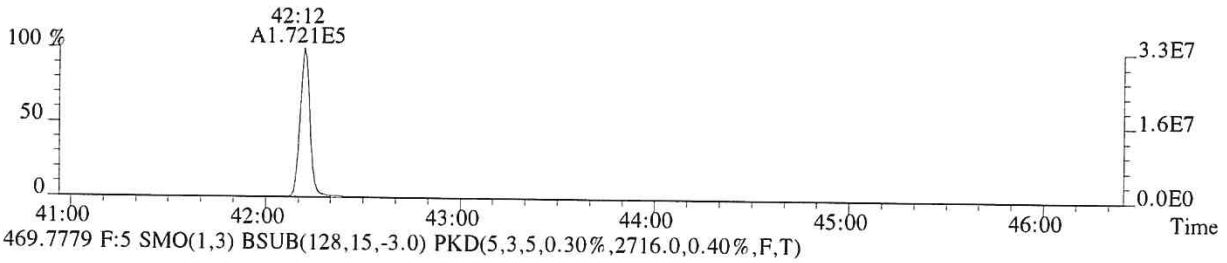


060870

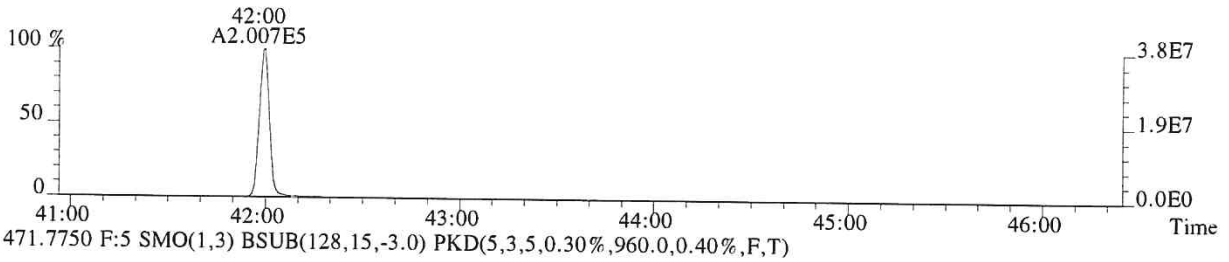
File:P614690 #1-493 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1500.0,0.40%,F,T)



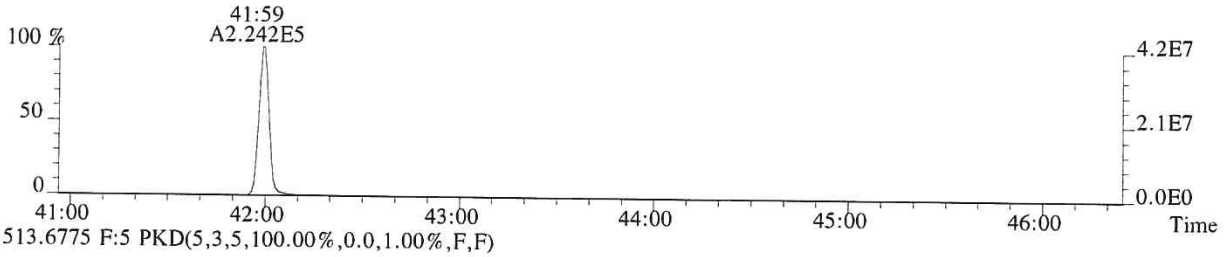
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3092.0,0.40%,F,T)



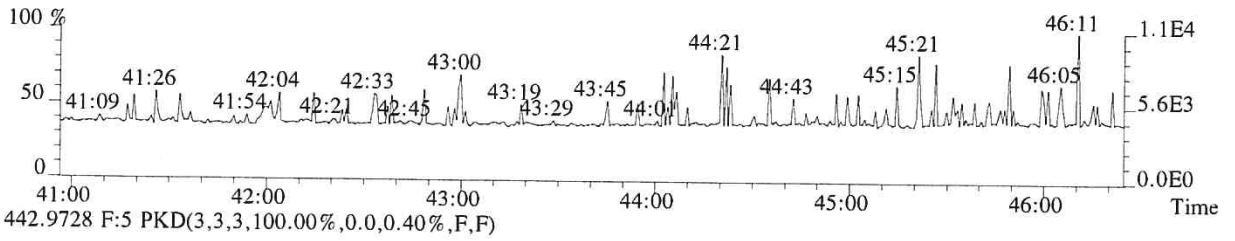
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2716.0,0.40%,F,T)



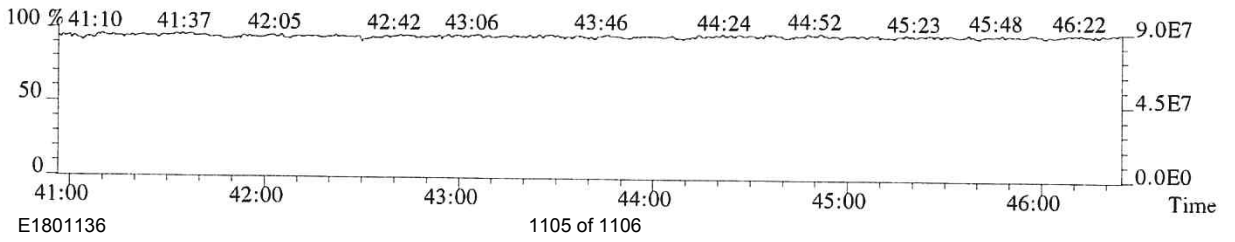
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,960.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

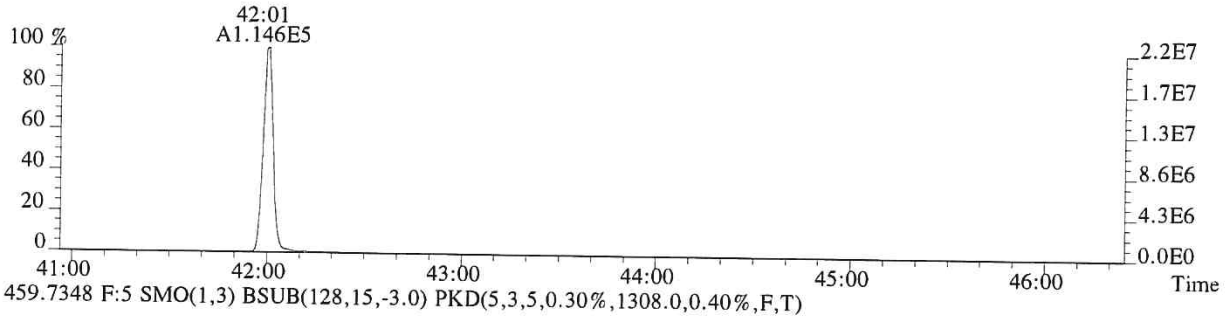


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

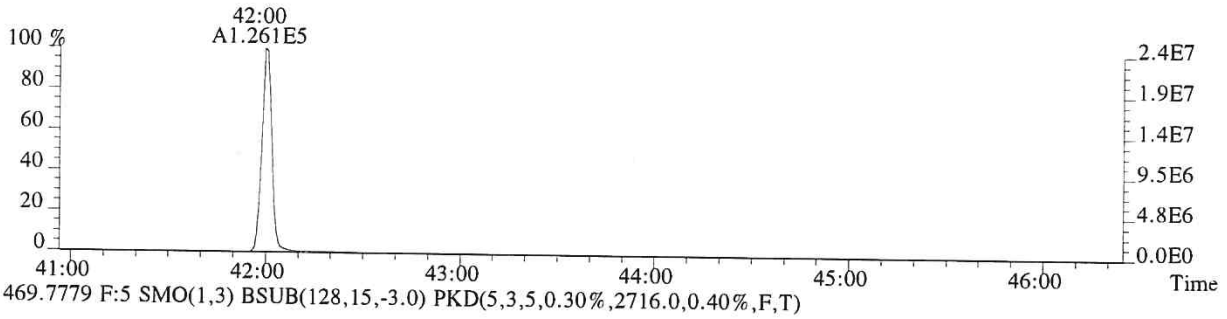


060871

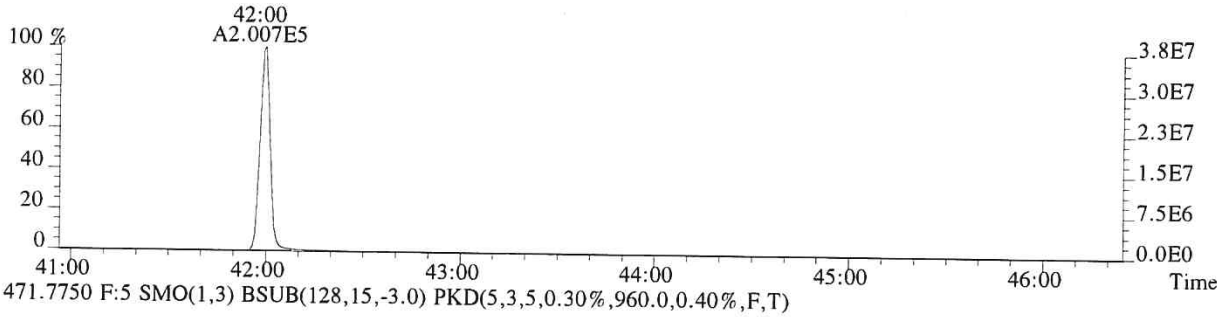
File:P614690 #1-493 Acq:25-SEP-2018 20:57:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1172.0,0.40%,F,T)



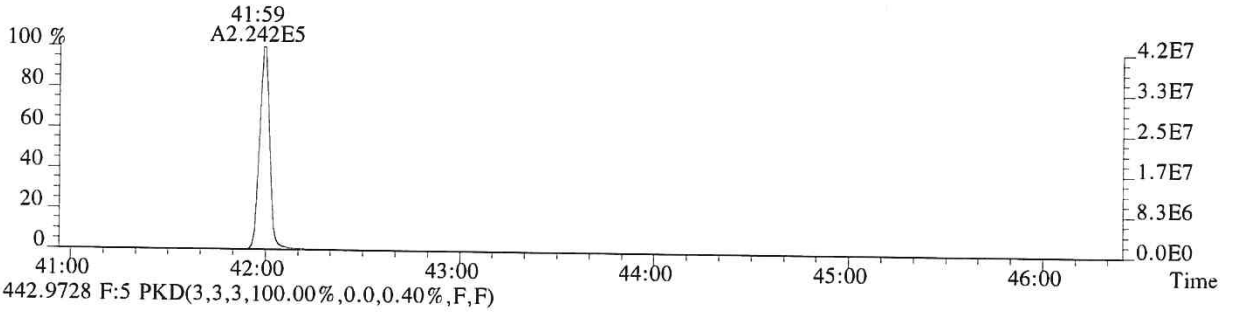
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1308.0,0.40%,F,T)



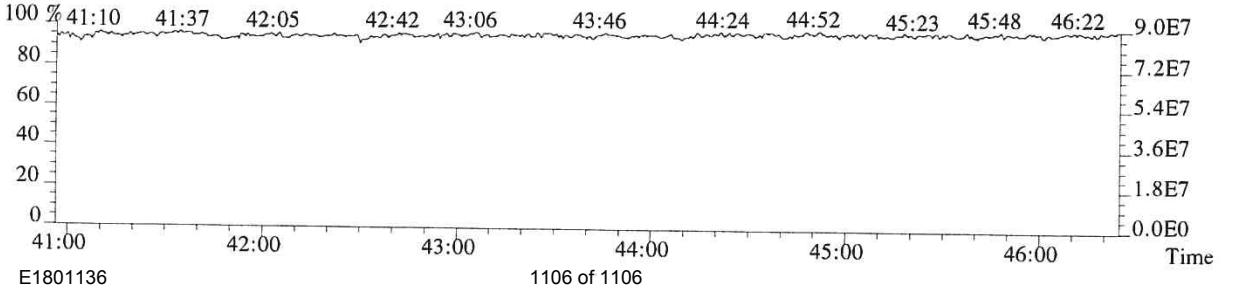
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2716.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,960.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



060872

January 17, 2019 Service Request No:E1801137

Craig Hutchings
Integral Consulting, Inc.
1205 West Bay Drive NW
Olympia, WA 98502-4670

Laboratory Results for: C1887-0501

Dear Craig,

Enclosed are the results of the sample(s) submitted to our laboratory November 16, 2018
For your reference, these analyses have been assigned our service request number **E1801137.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kristin Brown

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

060873

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	Integral	**Service Request No.:**	E1801137
Project:	C1887-0501		
Sample Matrix:	Sediment		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Sample on hold originally reported on a separate ALS service request number; samples were activated and reported under E1801137.

Data Validation Notes and Discussion

Re-extraction

Sample 009 "SL0132" was re-extracted and re-analyzed due to very low labeled standard recoveries below 10%. The initial results are not included in this report.

B flags – Method Blanks

The Method Blanks EQ1800532-01 and EQ1900017-01 contained low levels of various dioxins furans compounds below the Method Reporting Limit (MRL). The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

Precision and Accuracy:

EQ1800532 and EQ1900017: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within control limits.

Y flags – Labeled Standards

Various labeled standards recovered below control limits in sample E1801137-001, 005, 006, 007, 017.

Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

E flags

When OCDD exceed the upper method calibration limit (MCL), we use an 'E' flag on the Sample Analytical Report results page when the detector is not saturated. Samples E1801137-003 and 008 are reported with an 'E' flag to denote that they had concentration greater than the highest calibration point. The process of dilution is counter to

the isotopic dilution technique that the laboratory uses to determine recovery and produces variability in the final value. The laboratory only dilutes when detector saturation occurs.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

P flags

Chlorodiphenyl ether interference was present at the retention time of the target analyte 1,2,3,6,7,8-HxCDF in samples E1801137-010. Reported result should be considered an estimate.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

Dilutions

The samples E1801137-001, 006, 007, 015, 016 had elevated levels of target analytes and required a dilution. The undiluted and diluted results were combined into one Total TEQ summary report for each sample. This reports a 'Total' result that includes the most appropriate concentration found for the associated target analyte.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

Manual Integrations

For this type of instrumentation and software, manual integration may be required frequently to correct inaccurate integrations performed by the processing software. These manual integrations are indicated in the raw data with a before and after chromatogram and are stamped with the reason for integration.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds are not included in the 'Total'
- The 1:1 and associated dilution have been combined into one TEQ Summary report

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole

discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1801137-001	SL0144	11/13/2018	0955
E1801137-002	SL0145	11/13/2018	1000
E1801137-003	SL0136	11/12/2018	1525
E1801137-004	SL0137	11/12/2018	1530
E1801137-005	SL0138	11/12/2018	1535
E1801137-006	SL0139	11/12/2018	1540
E1801137-007	SL0140	11/12/2018	1545
E1801137-008	SL0131	11/12/2018	1405
E1801137-009	SL0132	11/12/2018	1410
E1801137-010	SL0133	11/12/2018	1415
E1801137-011	SL0134	11/12/2018	1420
E1801137-012	SL0135	11/12/2018	1425
E1801137-013	SL0186	11/14/2018	1440
E1801137-014	SL0187	11/14/2018	1445
E1801137-015	SL0188	11/14/2018	1450
E1801137-016	SL0189	11/14/2018	1455
E1801137-017	SL0190	11/14/2018	1500
E1801137-018	SL0192	11/14/2018	1600
E1801137-019	SL0193	11/14/2018	1605
E1801137-020	SL0194	11/14/2018	1610

Service Request Summary

Folder #: **E1801137**
Client Name: Integral Consulting, Incorporated
Project Name: C1887-0501
Project Number:

Report To: Craig Hutchings
Integral Consulting, Inc.
1205 West Bay Drive NW
Olympia, WA 98502-4670
USA
Phone Number: 360-705-3534
Cell Number:
Fax Number:
E-mail: chutchings@integral-corp.com

Project Chemist: Kristin Brown
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 11/14/18 - 11/16/18
Internal Due Date: 1/11/2019
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N, Y
Report to MDL?: N, Y
P.O. Number:
EDD: Integral-UCR

20 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 1A, EHRMS-WIC 2E
Pressure Gas:

				HOUSTON	
				Dioxins Furans/1613B	Total Solids/ALS SOP
Lab Samp No.	**Client Samp No**	**Matrix**	**Collected**		
E1801137-001	SL0144	Sediment	11/13/18 0955	**IV**	**IV**
E1801137-002	SL0145	Sediment	11/13/18 1000	**IV**	**IV**
E1801137-003	SL0136	Sediment	11/12/18 1525	**IV**	**IV**
E1801137-004	SL0137	Sediment	11/12/18 1530	**IV**	**IV**
E1801137-005	SL0138	Sediment	11/12/18 1535	**IV**	**IV**
E1801137-006	SL0139	Sediment	11/12/18 1540	**IV**	**IV**
E1801137-007	SL0140	Sediment	11/12/18 1545	**IV**	**IV**
E1801137-008	SL0131	Sediment	11/12/18 1405	**IV**	**IV**
E1801137-009	SL0132	Sediment	11/12/18 1410	**IV**	**IV**
E1801137-010	SL0133	Sediment	11/12/18 1415	**IV**	**IV**
E1801137-011	SL0134	Sediment	11/12/18 1420	**IV**	**IV**
E1801137-012	SL0135	Sediment	11/12/18 1425	**IV**	**IV**
E1801137-013	SL0186	Sediment	11/14/18 1440	**IV**	**IV**
E1801137-014	SL0187	Sediment	11/14/18 1445	**IV**	**IV**
E1801137-015	SL0188	Sediment	11/14/18 1450	**IV**	**IV**
E1801137-016	SL0189	Sediment	11/14/18 1455	**IV**	**IV**

Service Request Summary

Folder #: **E1801137**
Client Name: Integral Consulting, Incorporated
Project Name: C1887-0501
Project Number:

Report To: Craig Hutchings
Integral Consulting, Inc.
1205 West Bay Drive NW
Olympia, WA 98502-4670
USA
Phone Number: 360-705-3534
Cell Number:
Fax Number:
E-mail: chutchings@integral-corp.com

Project Chemist: Kristin Brown
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 11/14/18 - 11/16/18
Internal Due Date: 1/11/2019
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N, Y
Report to MDL?: N, Y
P.O. Number:
EDD: Integral-UCR

20 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 1A, EHRMS-WIC 2E
Pressure Gas:

				HOUSTON	
				Dioxins Furans/1613B	Total Solids/ALS SOP
Lab Samp No.	**Client Samp No**	**Matrix**	**Collected**		
E1801137-017	SL0190	Sediment	11/14/18 1500	**IV**	**IV**
E1801137-018	SL0192	Sediment	11/14/18 1600	**IV**	**IV**
E1801137-019	SL0193	Sediment	11/14/18 1605	**IV**	**IV**
E1801137-020	SL0194	Sediment	11/14/18 1610	**IV**	**IV**

Service Request Summary

Folder #:	**E1801137**
Client Name:	Integral Consulting, Incorporated
Project Name:	C1887-0501
Project Number:	

Report To:	Craig Hutchings Integral Consulting, Inc. 1205 West Bay Drive NW Olympia, WA 98502-4670 USA
Phone Number:	360-705-3534
Cell Number:	
Fax Number:	
E-mail:	chutchings@integral-corp.com

Project Chemist:	Kristin Brown
Originating Lab:	HOUSTON
Logged By:	ALOPEZ
Date Received:	11/14/18 - 11/16/18
Internal Due Date:	1/11/2019
QAP:	LAB QAP
Qualifier Set:	HRMS Qualifier Set
Formset:	Lab Standard
Merged?:	N, Y
Report to MDL?:	N, Y
P.O. Number:	
EDD:	Integral-UCR

20 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 1A, EHRMS-WIC 2E

Pressure Gas:

Superset Summary

Service Request: E1801137 **SuperSet Reference:** 19-0000493769 rev 00

Analytical Method: **1613B**

Calibrations: 01/24/18

Data Files:

Raw Data	Begin CCAL	Method Blank	Lab ID
P519768	P519760	P616319	E1801137-001
P519769	P519760	P616319	E1801137-006
P519770	P519760	P616319	E1801137-007
P519765	P519760	P616319	E1801137-008
P520000	P519996	P519999	E1801137-009
P519771	P519760	P616319	E1801137-010
P519734	P519731	P616319	E1801137-010.R01
P519735	P519731	P616319	E1801137-011
P519736	P519731	P616319	E1801137-012
P519737	P519731	P616319	E1801137-013
P519738	P519731	P616319	E1801137-014
P519772	P519760	P616319	E1801137-015
P519739	P519731	P616319	E1801137-015.R01
P519773	P519760	P616319	E1801137-016
P519740	P519731	P616319	E1801137-016.R01
P519767	P519760	P616319	E1801137-017
P519742	P519731	P616319	E1801137-018
P519743	P519731	P616319	E1801137-019
P519744	P519731	P616319	E1801137-020
P519774	P519760	P616319	EQ1800532-02
P519999	P519996	P519999	EQ1900017-01
P520007	P519996	P519999	EQ1900017-02
P520008	P519996	P519999	EQ1900017-03

Calibrations: 09/25/18

Data Files:

Raw Data	Begin CCAL	Method Blank	Lab ID
P616320	P616316	P616319	E1801137-001.R01
P616321	P616316	P616319	E1801137-002
P616322	P616316	P616319	E1801137-003
P616323	P616316	P616319	E1801137-004
P616324	P616316	P616319	E1801137-005
P616325	P616316	P616319	E1801137-006.R01
P616326	P616316	P616319	E1801137-007.R01
P616319	P616316	P616319	EQ1800532-01
P616330	P616316	P616319	EQ1800532-03

Data Qualifiers

HRMS Qualifier Set

B	Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E	Estimated value. The reported concentration is above the calibration range of the instrument.
H	Sample extracted and/or analyzed out of suggested holding time.
J	Estimated value. The reported concentration is below the MRL.
K	The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P	Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q	Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S	Signal saturated detector. Result reported from dilution.
U	Compound was analyzed for, but was not detected (ND).
X	See Case Narrative.
Y	Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i	The MDL/MRL have been elevated due to a matrix interference.

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E 180 1137 | DB-5MSUI | SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
01/03/19	[signature]	001-008

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
01/03/19	LKL	001 008

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E1801137

DB-5MSUI (SPB-Octyl)

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
01/03/19	JC	010-016 018-020

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
01/03/19	LKL	010 – 016 018 – 020

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E1801137 | DB-5MSUI (circled) | SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
01/04/19	JC	008, 017, 001DL, 006DL, 007DL, 010DL, 015DL, 016DL

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
1/7/19	LG	008, 017, 001DL, 006DL, 007DL, 010DL, 015DL, 016DL

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E1801137 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date: 01/17/19	Analyst: JC	Samples: 009RE

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
01/17/19	LKL	009RE

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 329059 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/JGUIN **Prep Method:** Method Soxhlet **Prep Date/Time:** 12/28/18 03:22 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1801137-001	SL0144	.01	1613B/Dioxins Furans			Sediment	10.043g	dark
2	E1801137-002	SL0145	.01	1613B/Dioxins Furans			Sediment	10.147g	dark smooth mud
3	E1801137-003	SL0136	.01	1613B/Dioxins Furans			Sediment	10.001g	brown soil
4	E1801137-004	SL0137	.01	1613B/Dioxins Furans			Sediment	10.214g	tan and grey wet soil
5	E1801137-005	SL0138	.01	1613B/Dioxins Furans			Sediment	10.255g	dark mud
6	E1801137-006	SL0139	.01	1613B/Dioxins Furans			Sediment	10.212g	dark mud
7	E1801137-007	SL0140	.01	1613B/Dioxins Furans			Sediment	10.372g	dark smooth mud
8	E1801137-008	SL0131	.01	1613B/Dioxins Furans			Sediment	10.140g	redish brown mud
9	E1801137-010	SL0133	.01	1613B/Dioxins Furans			Sediment	10.240g	dark mud
10	E1801137-011	SL0134	.01	1613B/Dioxins Furans			Sediment	10.000g	grey smooth mud
11	E1801137-012	SL0135	.01	1613B/Dioxins Furans			Sediment	10.088g	dark mud
12	E1801137-013	SL0186	.01	1613B/Dioxins Furans			Sediment	10.053g	brown soil chunks
13	E1801137-014	SL0187	.01	1613B/Dioxins Furans			Sediment	10.092g	red clay
14	E1801137-015	SL0188	.01	1613B/Dioxins Furans			Sediment	10.314g	red and brown mud
15	E1801137-016	SL0189	.01	1613B/Dioxins Furans			Sediment	10.410g	dark mud
16	E1801137-017	SL0190	.01	1613B/Dioxins Furans			Sediment	10.004g	brown smooth mud
17	E1801137-018	SL0192	.01	1613B/Dioxins Furans			Sediment	10.310g	broen redish soil chunks
18	E1801137-019	SL0193	.01	1613B/Dioxins Furans			Sediment	10.053g	redish mud
19	E1801137-020	SL0194	.01	1613B/Dioxins Furans			Sediment	10.144g	brown soil
20	EQ1800532-01	MB		1613B/Dioxins Furans			Solid	10.131g	
21	EQ1800532-02	LCS		1613B/Dioxins Furans			Solid	10.043g	
22	EQ1800532-03	DLCS		1613B/Dioxins Furans			Solid	10.111g	

Spiking Solutions

Name: 8290/1613B Cleanup Working Standard Inventory ID 195630 Logbook Ref: 195630 tw012/14/18 8ng/ml Expires On: 04/27/2019

E1801137-001	100.00µL	E1801137-002	100.00µL	E1801137-003	100.00µL	E1801137-004	100.00µL	E1801137-005	100.00µL	E1801137-006	100.00µL
E1801137-007	100.00µL	E1801137-008	100.00µL	E1801137-009.R	100.00µL	E1801137-010	100.00µL	E1801137-010.R	100.00µL	E1801137-011	100.00µL
E1801137-012	100.00µL	E1801137-013	100.00µL	E1801137-014	100.00µL	E1801137-015	100.00µL	E1801137-015.R	100.00µL	E1801137-016	100.00µL
E1801137-016.R	100.00µL	E1801137-017	100.00µL	E1801137-018	100.00µL	E1801137-019	100.00µL	E1801137-020	100.00µL	EQ1800532-01	100.00µL
EQ1800532-02	100.00µL	EQ1800532-03	100.00µL								

Name: 1613B Matrix Working Standard Inventory ID 195855 Logbook Ref: 195855 AL 12/26/18 2-20 ng/mL Expires On: 06/24/2019

EQ1800532-02	100.00µL	EQ1800532-03	100.00µL

Preparation Information Benchsheet

Prep Run#: 329059 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/JGUIN **Prep Method:** Method Soxhlet **Prep Date/Time:** 12/28/18 03:22 PM

Name:	1613B Labeled Working Standard	Inventory ID	195954	Logbook Ref:	195953 JG 12/28/18 2-4ngml	Expires On:	01/31/2019

E1801137-001	1,000.00µL	E1801137-002	1,000.00µL	E1801137-003	1,000.00µL	E1801137-004	1,000.00µL	E1801137-005	1,000.00µL	E1801137-006	1,000.00µL
E1801137-007	1,000.00µL	E1801137-008	1,000.00µL	E1801137-009.R	1,000.00µL	E1801137-010	1,000.00µL	E1801137-010.R	1,000.00µL	E1801137-011	1,000.00µL
E1801137-012	1,000.00µL	E1801137-013	1,000.00µL	E1801137-014	1,000.00µL	E1801137-015	1,000.00µL	E1801137-015.R	1,000.00µL	E1801137-016	1,000.00µL
E1801137-016.R	1,000.00µL	E1801137-017	1,000.00µL	E1801137-018	1,000.00µL	E1801137-019	1,000.00µL	E1801137-020	1,000.00µL	EQ1800532-01	1,000.00µL
EQ1800532-02	1,000.00µL	EQ1800532-03	1,000.00µL								

Preparation Materials

Carbon, High Purity	12/7/18 carbon tw (195519)	Ethyl Acetate 99.9% Minimum EtOAc	tw ethyl acet 080218 (192158)	Glass Wool	112018 tw glasswool (195079)
Hexanes 95%	JG 12/17/18 #2 (195674)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	AL (195005)	Tridecane (n-Tridecane)	AL 12/12/18 (195585)
Toluene 99.9% Minimum	10/31/18 tw toluene (194571)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)	Sodium Sulfate Anhydrous Reagent Grade Na2SO4	AL 10/12/18 (194060)
Silica Gel	AL 10/11/18 (194005)	sulfuric acid	AL 10/11/18 (194007)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	12/28/18 15:22	Started:	12/29/18 10:00	Started:	12/31/18 09:00	Started:	1/2/19 08:00
Finished:	12/29/18 08:00	Finished:	12/29/18 11:00	Finished:	12/31/18 12:00	Finished:	1/2/19 11:00
By:	TWOODS	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

E1801137 19 of 1131

060891

Preparation Information Benchsheet

Prep Run#: 329747 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/TWOODS **Prep Method:** Method Soxhlet **Prep Date/Time:** 1/14/19 11:02 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1801137-009RE	SL0132	.01	1613B/Dioxins Furans			Sediment	10.108g	brown mud
2	E1801139-021RE	SL0247	.01	1613B/Dioxins Furans			Sediment	10.248g	Black Mud
3	E1801139-022RE	SL0248	.01	1613B/Dioxins Furans			Sediment	10.247g	Black Mud
4	EQ1900017-01	MB		1613B/Dioxins Furans			Solid	10.410g	
5	EQ1900017-02	LCS		1613B/Dioxins Furans			Solid	10.032g	
6	EQ1900017-03	DLCS		1613B/Dioxins Furans			Solid	10.110g	

Spiking Solutions

Name: 8290/1613B Cleanup Working Standard Inventory ID 196034 Logbook Ref: tw 010319 196034 8ng/ml Expires On: 04/27/2019

E1801137-009 100.00µL E1801139-021 100.00µL E1801139-022 100.00µL EQ1900017-01 100.00µL EQ1900017-02 100.00µL EQ1900017-03 100.00µL

Name: 1613B Labeled Working Standard Inventory ID 196104 Logbook Ref: 196102 JG 1/7/18 2-4ngml Expires On: 01/31/2019

E1801137-009 1,000.00µL E1801139-021 1,000.00µL E1801139-022 1,000.00µL EQ1900017-01 1,000.00µL EQ1900017-02 1,000.00µL EQ1900017-03 1,000.00µL

Name: 1613B Matrix Working Standard Inventory ID 196207 Logbook Ref: 196207 JG 01/11/19 2-20ngml Expires On: 07/10/2019

EQ1900017-02 100.00µL EQ1900017-03 100.00µL

Preparation Materials

Carbon, High Purity	JG 12/17/18 (195653)	Ethyl Acetate 99.9% Minimum EtOAc	AL 12/31/18 (195971)	Glass Wool	AL 8/20/18 (192604)
Hexanes 95%	JG 12/17/18 #2 (195674)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	AL (195005)	Tridecane (n-Tridecane)	AL 12/12/18 (195585)
Silica Gel	tw 12/31/18 (195984)	Toluene 99.9% Minimum	tw 011119 toluene (196224)	sulfuric acid	AL 10/11/18 (194007)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	AL 10/12/18 (194060)				

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	1/14/19 11:02	Started:	1/15/19 10:00	Started:	1/15/19 12:00	Started:	1/16/19 09:00
Finished:	1/15/19 08:00	Finished:	1/15/19 11:00	Finished:	1/15/19 15:00	Finished:	1/16/19 12:00
By:	JGUIN	By:	JGUIN	By:	JGUIN	By:	JGUIN
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: _____ Date: _____

Preparation Information Benchsheet

Prep Run#: 329747
Team: Semivoa GCMS/TWOODS

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 1/14/19 11:02 AM

Chain of Custody

Relinquished By:	LKL	Date:	01/17/19	Extracts Examined
Received By:		Date:		Yes No

E1801137 21 of 1131

060893

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/13/18 09:55
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0144	**Units:**	ng/Kg
Lab Code:	E1801137-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 15:22
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.043g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616320	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	513		1.48	1.48	0.79	1.001	1
1,2,3,7,8-PeCDD	8.69		1.84	4.73	1.34	1.001	1
1,2,3,4,7,8-HxCDD	4.42	**JK**	0.375	4.73	0.91	1.001	1
1,2,3,6,7,8-HxCDD	26.6		0.435	4.73	1.20	1.000	1
1,2,3,7,8,9-HxCDD	10.4	**K**	0.375	4.73	1.02	1.007	1
1,2,3,4,6,7,8-HpCDD	472		0.847	4.73	1.06	1.000	1
OCDD	32700		52.1	94.7	0.88	1.000	10
2,3,7,8-TCDF	1390		7.04	9.47	0.73	1.001	10
1,2,3,7,8-PeCDF	20.2		2.08	4.73	1.63	1.001	1
2,3,4,7,8-PeCDF	30.1		2.27	4.73	1.55	1.001	1
1,2,3,4,7,8-HxCDF	35.2		0.901	4.73	1.26	1.000	1
1,2,3,6,7,8-HxCDF	12.1		0.988	4.73	1.17	1.000	1
1,2,3,7,8,9-HxCDF	5.69		0.977	4.73	1.12	1.001	1
2,3,4,6,7,8-HxCDF	10.4		0.946	4.73	1.12	1.000	1
1,2,3,4,6,7,8-HpCDF	270		0.868	4.73	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	23.2		1.07	4.73	0.99	1.000	1
OCDF	30100		66.0	94.7	0.83	1.004	10

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/13/18 09:55
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0144	**Units:**	ng/Kg
Lab Code:	E1801137-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 15:22
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.043g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616320	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	571		1.48	1.48	0.66		1
Total Penta-Dioxins	46.3		1.84	4.73	1.64		1
Total Hexa-Dioxins	282		0.393	4.73	1.25		1
Total Hepta-Dioxins	1260		0.847	4.73	1.04		1
Total Tetra-Furans	1990		0.862	0.947	0.78		1
Total Penta-Furans	154		2.17	4.73	1.57		1
Total Hexa-Furans	254		0.953	4.73	1.31		1
Total Hepta-Furans	668		0.955	4.73	1.16		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/13/18 09:55
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0144	**Units:**	Percent
Lab Code:	E1801137-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 15:22
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.043g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616320	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	613.820	31		25-164	0.78	1.030
13C-1,2,3,7,8-PeCDD	2000	876.042	44		25-181	1.60	1.238
13C-1,2,3,4,7,8-HxCDD	2000	969.530	48		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	850.764	43		28-130	1.21	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	790.092	40		23-140	1.05	1.069
13C-OCDD	4000	573.637	14	Y	17-157	0.91	1.138
13C-2,3,7,8-TCDF	2000	787.514	39		24-169	0.79	0.990
13C-1,2,3,7,8-PeCDF	2000	862.674	43		24-185	1.56	1.186
13C-2,3,4,7,8-PeCDF	2000	778.423	39		21-178	1.53	1.226
13C-1,2,3,4,7,8-HxCDF	2000	839.922	42		26-152	0.54	0.969
13C-1,2,3,6,7,8-HxCDF	2000	767.539	38		26-123	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	764.542	38		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	768.744	38		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	565.169	28		28-143	0.48	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	522.587	26		26-138	0.45	1.081
37Cl-2,3,7,8-TCDD	800	362.873	45		35-197	NA	1.030

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/13/18 09:55
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0144	**Units:**	ng/Kg
Lab Code:	E1801137-001	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**513**	1.48	1.48	1	1	513
1,2,3,7,8-PeCDD	**8.69**	1.84	4.73	1	1	8.69
1,2,3,4,7,8-HxCDD	**4.42**	0.375	4.73	1	0.1	0.442
1,2,3,6,7,8-HxCDD	**26.6**	0.435	4.73	1	0.1	2.66
1,2,3,7,8,9-HxCDD	**10.4**	0.375	4.73	1	0.1	1.04
1,2,3,4,6,7,8-HpCDD	**472**	0.847	4.73	1	0.01	4.72
OCDD	**32700**	52.1	94.7	10	0.0003	9.81
2,3,7,8-TCDF	**1390**	7.04	9.47	10	0.1	139
1,2,3,7,8-PeCDF	**20.2**	2.08	4.73	1	0.03	0.606
2,3,4,7,8-PeCDF	**30.1**	2.27	4.73	1	0.3	9.03
1,2,3,4,7,8-HxCDF	**35.2**	0.901	4.73	1	0.1	3.52
1,2,3,6,7,8-HxCDF	**12.1**	0.988	4.73	1	0.1	1.21
1,2,3,7,8,9-HxCDF	**5.69**	0.977	4.73	1	0.1	0.569
2,3,4,6,7,8-HxCDF	**10.4**	0.946	4.73	1	0.1	1.04
1,2,3,4,6,7,8-HpCDF	**270**	0.868	4.73	1	0.01	2.70
1,2,3,4,7,8,9-HpCDF	**23.2**	1.07	4.73	1	0.01	0.232
OCDF	**30100**	66.0	94.7	10	0.0003	9.03
		Total TEQ				707

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/13/18 09:55
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0144	**Units:**	Percent
Lab Code:	E1801137-001	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	6.135g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	52.6		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/13/18 10:00
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0145	**Units:**	ng/Kg
Lab Code:	E1801137-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 16:15
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.147g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616321	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	314		1.97	1.97	0.76	1.001	1
1,2,3,7,8-PeCDD	5.03		0.851	4.38	1.34	1.001	1
1,2,3,4,7,8-HxCDD	2.99	**J**	0.548	4.38	1.17	1.000	1
1,2,3,6,7,8-HxCDD	13.5		0.626	4.38	1.38	1.000	1
1,2,3,7,8,9-HxCDD	5.60		0.544	4.38	1.06	1.007	1
1,2,3,4,6,7,8-HpCDD	177		0.406	4.38	1.06	1.000	1
OCDD	4070		0.493	8.75	0.90	1.000	1
2,3,7,8-TCDF	678		0.949	0.949	0.81	1.001	1
1,2,3,7,8-PeCDF	13.1		0.582	4.38	1.52	1.001	1
2,3,4,7,8-PeCDF	18.6		0.650	4.38	1.54	1.001	1
1,2,3,4,7,8-HxCDF	21.2		0.485	4.38	1.08	1.000	1
1,2,3,6,7,8-HxCDF	7.81		0.504	4.38	1.42	1.000	1
1,2,3,7,8,9-HxCDF	4.37	**J**	0.540	4.38	1.18	1.001	1
2,3,4,6,7,8-HxCDF	6.90		0.520	4.38	1.26	1.000	1
1,2,3,4,6,7,8-HpCDF	131		0.429	4.38	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	11.4		0.559	4.38	0.95	1.000	1
OCDF	5760		1.21	8.75	0.90	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/13/18 10:00
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0145	**Units:**	ng/Kg
Lab Code:	E1801137-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 16:15
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.147g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616321	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	343		1.97	1.97	0.76		1
Total Penta-Dioxins	22.7		0.851	4.38	1.42		1
Total Hexa-Dioxins	123		0.571	4.38	1.19		1
Total Hepta-Dioxins	430		0.406	4.38	1.05		1
Total Tetra-Furans	1200		0.949	0.949	0.77		1
Total Penta-Furans	108		0.614	4.38	1.44		1
Total Hexa-Furans	134		0.511	4.38	1.08		1
Total Hepta-Furans	283		0.486	4.38	1.06		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/13/18 10:00
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0145	**Units:**	Percent
Lab Code:	E1801137-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 16:15
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.147g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616321	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	725.461	36		25-164	0.78	1.030
13C-1,2,3,7,8-PeCDD	2000	1081.255	54		25-181	1.60	1.238
13C-1,2,3,4,7,8-HxCDD	2000	1098.248	55		32-141	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	972.575	49		28-130	1.22	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	989.623	49		23-140	1.06	1.070
13C-OCDD	4000	786.095	20		17-157	0.88	1.139
13C-2,3,7,8-TCDF	2000	1036.095	52		24-169	0.82	0.990
13C-1,2,3,7,8-PeCDF	2000	1048.360	52		24-185	1.56	1.187
13C-2,3,4,7,8-PeCDF	2000	998.983	50		21-178	1.62	1.227
13C-1,2,3,4,7,8-HxCDF	2000	948.372	47		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	883.665	44		26-123	0.54	0.972
13C-1,2,3,7,8,9-HxCDF	2000	899.257	45		29-147	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	882.227	44		28-136	0.55	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	734.254	37		28-143	0.46	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	662.022	33		26-138	0.48	1.082
37Cl-2,3,7,8-TCDD	800	415.762	52		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/13/18 10:00
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0145	**Units:**	ng/Kg
Lab Code:	E1801137-002	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**314**	1.97	1.97	1	1	314
1,2,3,7,8-PeCDD	**5.03**	0.851	4.38	1	1	5.03
1,2,3,4,7,8-HxCDD	**2.99**	0.548	4.38	1	0.1	0.299
1,2,3,6,7,8-HxCDD	**13.5**	0.626	4.38	1	0.1	1.35
1,2,3,7,8,9-HxCDD	**5.60**	0.544	4.38	1	0.1	0.560
1,2,3,4,6,7,8-HpCDD	**177**	0.406	4.38	1	0.01	1.77
OCDD	**4070**	0.493	8.75	1	0.0003	1.22
2,3,7,8-TCDF	**678**	0.949	0.949	1	0.1	67.8
1,2,3,7,8-PeCDF	**13.1**	0.582	4.38	1	0.03	0.393
2,3,4,7,8-PeCDF	**18.6**	0.650	4.38	1	0.3	5.58
1,2,3,4,7,8-HxCDF	**21.2**	0.485	4.38	1	0.1	2.12
1,2,3,6,7,8-HxCDF	**7.81**	0.504	4.38	1	0.1	0.781
1,2,3,7,8,9-HxCDF	**4.37**	0.540	4.38	1	0.1	0.437
2,3,4,6,7,8-HxCDF	**6.90**	0.520	4.38	1	0.1	0.690
1,2,3,4,6,7,8-HpCDF	**131**	0.429	4.38	1	0.01	1.31
1,2,3,4,7,8,9-HpCDF	**11.4**	0.559	4.38	1	0.01	0.114
OCDF	**5760**	1.21	8.75	1	0.0003	1.73
		Total TEQ				405

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/13/18 10:00
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0145	**Units:**	Percent
Lab Code:	E1801137-002	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	5.45g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	56.3		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:25
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0136	**Units:**	ng/Kg
Lab Code:	E1801137-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 17:03
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.001g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616322	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	3.50		1.13	1.13	0.81	1.001	1
1,2,3,7,8-PeCDD	1.01**JK**		0.208	3.05	1.20	1.000	1
1,2,3,4,7,8-HxCDD	1.24**JK**		0.208	3.05	1.52	1.000	1
1,2,3,6,7,8-HxCDD	2.66**JK**		0.244	3.05	0.90	1.000	1
1,2,3,7,8,9-HxCDD	2.09**JK**		0.209	3.05	1.02	1.007	1
1,2,3,4,6,7,8-HpCDD	95.1		0.851	3.05	1.04	1.000	1
OCDD	22700**E**		0.634	6.10	0.90	1.000	1
2,3,7,8-TCDF	7.96		0.655	0.655	0.78	1.001	1
1,2,3,7,8-PeCDF	1.13**J**		0.220	3.05	1.50	1.001	1
2,3,4,7,8-PeCDF	1.77**J**		0.224	3.05	1.58	1.001	1
1,2,3,4,7,8-HxCDF	1.60**J**		0.205	3.05	1.33	1.001	1
1,2,3,6,7,8-HxCDF	0.927**JK**		0.200	3.05	0.86	1.000	1
1,2,3,7,8,9-HxCDF	0.382**JK**		0.239	3.05	0.89	1.001	1
2,3,4,6,7,8-HxCDF	1.17**JK**		0.224	3.05	1.45	1.000	1
1,2,3,4,6,7,8-HpCDF	10.9		0.124	3.05	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	1.01**JK**		0.163	3.05	0.85	1.000	1
OCDF	34.7		0.768	6.10	0.87	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:25
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0136	**Units:**	ng/Kg
Lab Code:	E1801137-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 17:03
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.001g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616322	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	3.50		1.13	1.13	0.81		1
Total Penta-Dioxins	0.931	**J**	0.208	3.05	1.61		1
Total Hexa-Dioxins	26.0		0.220	3.05	1.38		1
Total Hepta-Dioxins	248		0.851	3.05	1.04		1
Total Tetra-Furans	19.3		0.655	0.655	0.73		1
Total Penta-Furans	8.27		0.222	3.05	1.76		1
Total Hexa-Furans	14.9		0.216	3.05	1.20		1
Total Hepta-Furans	32.8		0.141	3.05	1.04		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:25
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0136	**Units:**	Percent
Lab Code:	E1801137-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 17:03
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.001g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616322	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	782.726	39		25-164	0.77	1.030
13C-1,2,3,7,8-PeCDD	2000	1186.559	59		25-181	1.59	1.240
13C-1,2,3,4,7,8-HxCDD	2000	1176.896	59		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1027.010	51		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1059.754	53		23-140	1.07	1.070
13C-OCDD	4000	908.824	23		17-157	0.94	1.140
13C-2,3,7,8-TCDF	2000	1099.249	55		24-169	0.79	0.990
13C-1,2,3,7,8-PeCDF	2000	1163.157	58		24-185	1.60	1.187
13C-2,3,4,7,8-PeCDF	2000	1094.373	55		21-178	1.56	1.227
13C-1,2,3,4,7,8-HxCDF	2000	1017.925	51		26-152	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	993.174	50		26-123	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	981.034	49		29-147	0.52	1.009
13C-2,3,4,6,7,8-HxCDF	2000	947.120	47		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	775.659	39		28-143	0.46	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	712.686	36		26-138	0.46	1.082
37Cl-2,3,7,8-TCDD	800	439.037	55		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:25
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0136	**Units:**	ng/Kg
Lab Code:	E1801137-003	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**3.50**	1.13	1.13	1	1	3.50
1,2,3,7,8-PeCDD	**1.01**	0.208	3.05	1	1	1.01
1,2,3,4,7,8-HxCDD	**1.24**	0.208	3.05	1	0.1	0.124
1,2,3,6,7,8-HxCDD	**2.66**	0.244	3.05	1	0.1	0.266
1,2,3,7,8,9-HxCDD	**2.09**	0.209	3.05	1	0.1	0.209
1,2,3,4,6,7,8-HpCDD	**95.1**	0.851	3.05	1	0.01	0.951
OCDD	**22700**	0.634	6.10	1	0.0003	6.81
2,3,7,8-TCDF	**7.96**	0.655	0.655	1	0.1	0.796
1,2,3,7,8-PeCDF	**1.13**	0.220	3.05	1	0.03	0.0339
2,3,4,7,8-PeCDF	**1.77**	0.224	3.05	1	0.3	0.531
1,2,3,4,7,8-HxCDF	**1.60**	0.205	3.05	1	0.1	0.160
1,2,3,6,7,8-HxCDF	**0.927**	0.200	3.05	1	0.1	0.0927
1,2,3,7,8,9-HxCDF	**0.382**	0.239	3.05	1	0.1	0.0382
2,3,4,6,7,8-HxCDF	**1.17**	0.224	3.05	1	0.1	0.117
1,2,3,4,6,7,8-HpCDF	**10.9**	0.124	3.05	1	0.01	0.109
1,2,3,4,7,8,9-HpCDF	**1.01**	0.163	3.05	1	0.01	0.0101
OCDF	**34.7**	0.768	6.10	1	0.0003	0.0104
		Total TEQ				14.8

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:25
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0136	**Units:**	Percent
Lab Code:	E1801137-003	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	7.287g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	82.0		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:30
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0137	**Units:**	ng/Kg
Lab Code:	E1801137-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 17:52
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.214g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616323	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	3.41		1.39	1.39	0.82	1.002	1
1,2,3,7,8-PeCDD	1.09**JK**		0.307	3.18	0.84	1.000	1
1,2,3,4,7,8-HxCDD	1.14**JK**		0.212	3.18	0.90	1.000	1
1,2,3,6,7,8-HxCDD	5.19		0.240	3.18	1.16	1.000	1
1,2,3,7,8,9-HxCDD	2.61**J**		0.210	3.18	1.21	1.008	1
1,2,3,4,6,7,8-HpCDD	114		0.314	3.18	0.99	1.000	1
OCDD	1780		0.525	6.37	0.90	1.000	1
2,3,7,8-TCDF	4.80**K**		0.967	0.967	0.97	1.001	1
1,2,3,7,8-PeCDF	1.08**J**		0.480	3.18	1.66	1.001	1
2,3,4,7,8-PeCDF	0.909**JK**		0.500	3.18	0.76	1.001	1
1,2,3,4,7,8-HxCDF	2.14**JK**		0.451	3.18	1.56	1.000	1
1,2,3,6,7,8-HxCDF	4.72		0.450	3.18	1.06	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.549	3.18			1
2,3,4,6,7,8-HxCDF	2.19**J**		0.472	3.18	1.41	1.000	1
1,2,3,4,6,7,8-HpCDF	68.7		0.184	3.18	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	1.77**J**		0.251	3.18	0.91	1.000	1
OCDF	77.4		0.773	6.37	0.91	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:30
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0137	**Units:**	ng/Kg
Lab Code:	E1801137-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 17:52
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.214g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616323	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	3.41		1.39	1.39	0.82		1
Total Penta-Dioxins	1.51	**J**	0.307	3.18	1.64		1
Total Hexa-Dioxins	45.4		0.220	3.18	1.20		1
Total Hepta-Dioxins	279		0.314	3.18	1.09		1
Total Tetra-Furans	4.27		0.967	0.967	0.76		1
Total Penta-Furans	5.91		0.490	3.18	1.66		1
Total Hexa-Furans	50.2		0.478	3.18	1.25		1
Total Hepta-Furans	160		0.213	3.18	1.05		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:30
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0137	**Units:**	Percent
Lab Code:	E1801137-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 17:52
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.214g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616323	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	661.903	33		25-164	0.76	1.030
13C-1,2,3,7,8-PeCDD	2000	965.823	48		25-181	1.57	1.240
13C-1,2,3,4,7,8-HxCDD	2000	1024.153	51		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	943.021	47		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	996.092	50		23-140	1.08	1.070
13C-OCDD	4000	895.332	22		17-157	0.91	1.140
13C-2,3,7,8-TCDF	2000	919.085	46		24-169	0.82	0.990
13C-1,2,3,7,8-PeCDF	2000	964.222	48		24-185	1.60	1.187
13C-2,3,4,7,8-PeCDF	2000	924.204	46		21-178	1.59	1.228
13C-1,2,3,4,7,8-HxCDF	2000	914.250	46		26-152	0.51	0.969
13C-1,2,3,6,7,8-HxCDF	2000	898.888	45		26-123	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	843.804	42		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	888.902	44		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	733.508	37		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	633.105	32		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	378.409	47		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:30
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0137	**Units:**	ng/Kg
Lab Code:	E1801137-004	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**3.41**	1.39	1.39	1	1	3.41
1,2,3,7,8-PeCDD	**1.09**	0.307	3.18	1	1	1.09
1,2,3,4,7,8-HxCDD	**1.14**	0.212	3.18	1	0.1	0.114
1,2,3,6,7,8-HxCDD	**5.19**	0.240	3.18	1	0.1	0.519
1,2,3,7,8,9-HxCDD	**2.61**	0.210	3.18	1	0.1	0.261
1,2,3,4,6,7,8-HpCDD	**114**	0.314	3.18	1	0.01	1.14
OCDD	**1780**	0.525	6.37	1	0.0003	0.534
2,3,7,8-TCDF	**4.80**	0.967	0.967	1	0.1	0.480
1,2,3,7,8-PeCDF	**1.08**	0.480	3.18	1	0.03	0.0324
2,3,4,7,8-PeCDF	**0.909**	0.500	3.18	1	0.3	0.273
1,2,3,4,7,8-HxCDF	**2.14**	0.451	3.18	1	0.1	0.214
1,2,3,6,7,8-HxCDF	**4.72**	0.450	3.18	1	0.1	0.472
1,2,3,7,8,9-HxCDF	ND	0.549	3.18	1	0.1	
2,3,4,6,7,8-HxCDF	**2.19**	0.472	3.18	1	0.1	0.219
1,2,3,4,6,7,8-HpCDF	**68.7**	0.184	3.18	1	0.01	0.687
1,2,3,4,7,8,9-HpCDF	**1.77**	0.251	3.18	1	0.01	0.0177
OCDF	**77.4**	0.773	6.37	1	0.0003	0.0232
		Total TEQ				9.49

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:30
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0137	**Units:**	Percent
Lab Code:	E1801137-004	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	9.382g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	76.9		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:35
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0138	**Units:**	ng/Kg
Lab Code:	E1801137-005	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 18:41
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.255g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616324	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	25.0	**K**	2.39	2.39	0.63	1.001	1
1,2,3,7,8-PeCDD	1.71	**JK**	0.361	3.69	1.05	1.000	1
1,2,3,4,7,8-HxCDD	1.69	**JK**	0.429	3.69	0.87	1.000	1
1,2,3,6,7,8-HxCDD	11.8		0.493	3.69	1.14	1.000	1
1,2,3,7,8,9-HxCDD	5.78		0.428	3.69	1.39	1.007	1
1,2,3,4,6,7,8-HpCDD	250		0.701	3.69	1.09	1.000	1
OCDD	3990		1.63	7.39	0.89	1.000	1
2,3,7,8-TCDF	45.9	**K**	1.45	1.45	0.95	1.002	1
1,2,3,7,8-PeCDF	3.09	**J**	0.722	3.69	1.65	1.001	1
2,3,4,7,8-PeCDF	5.79		0.868	3.69	1.52	1.001	1
1,2,3,4,7,8-HxCDF	6.84		0.839	3.69	1.12	1.000	1
1,2,3,6,7,8-HxCDF	5.82	**K**	0.820	3.69	1.59	1.000	1
1,2,3,7,8,9-HxCDF	1.39	**J**	0.926	3.69	1.19	1.001	1
2,3,4,6,7,8-HxCDF	7.77		1.01	3.69	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	62.0		0.355	3.69	1.10	1.000	1
1,2,3,4,7,8,9-HpCDF	4.18	**K**	0.449	3.69	1.43	1.000	1
OCDF	109		2.91	7.39	0.88	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:35
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0138	**Units:**	ng/Kg
Lab Code:	E1801137-005	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 18:41
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.255g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616324	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	9.11		2.39	2.39	0.71		1
Total Penta-Dioxins	9.72		0.361	3.69	1.54		1
Total Hexa-Dioxins	105		0.449	3.69	1.16		1
Total Hepta-Dioxins	575		0.701	3.69	1.02		1
Total Tetra-Furans	16.0		1.45	1.45	0.80		1
Total Penta-Furans	36.4		0.788	3.69	1.36		1
Total Hexa-Furans	71.5		0.892	3.69	1.26		1
Total Hepta-Furans	186		0.397	3.69	1.10		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:35
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0138	**Units:**	Percent
Lab Code:	E1801137-005	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 18:41
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.255g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616324	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	543.352	27		25-164	0.80	1.030
13C-1,2,3,7,8-PeCDD	2000	739.732	37		25-181	1.51	1.240
13C-1,2,3,4,7,8-HxCDD	2000	703.719	35		32-141	1.38	0.991
13C-1,2,3,6,7,8-HxCDD	2000	660.341	33		28-130	1.22	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	576.211	29		23-140	1.08	1.070
13C-OCDD	4000	382.906	10	**Y**	17-157	0.82	1.139
13C-2,3,7,8-TCDF	2000	707.893	35		24-169	0.80	0.990
13C-1,2,3,7,8-PeCDF	2000	764.579	38		24-185	1.56	1.187
13C-2,3,4,7,8-PeCDF	2000	632.110	32		21-178	1.59	1.227
13C-1,2,3,4,7,8-HxCDF	2000	657.950	33		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	632.068	32		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	641.258	32		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	563.148	28		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	441.979	22	**Y**	28-143	0.46	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	421.211	21	**Y**	26-138	0.46	1.082
37Cl-2,3,7,8-TCDD	800	312.276	39		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:35
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0138	**Units:**	ng/Kg
Lab Code:	E1801137-005	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**25.0**	2.39	2.39	1	1	25.0
1,2,3,7,8-PeCDD	**1.71**	0.361	3.69	1	1	1.71
1,2,3,4,7,8-HxCDD	**1.69**	0.429	3.69	1	0.1	0.169
1,2,3,6,7,8-HxCDD	**11.8**	0.493	3.69	1	0.1	1.18
1,2,3,7,8,9-HxCDD	**5.78**	0.428	3.69	1	0.1	0.578
1,2,3,4,6,7,8-HpCDD	**250**	0.701	3.69	1	0.01	2.50
OCDD	**3990**	1.63	7.39	1	0.0003	1.20
2,3,7,8-TCDF	**45.9**	1.45	1.45	1	0.1	4.59
1,2,3,7,8-PeCDF	**3.09**	0.722	3.69	1	0.03	0.0927
2,3,4,7,8-PeCDF	**5.79**	0.868	3.69	1	0.3	1.74
1,2,3,4,7,8-HxCDF	**6.84**	0.839	3.69	1	0.1	0.684
1,2,3,6,7,8-HxCDF	**5.82**	0.820	3.69	1	0.1	0.582
1,2,3,7,8,9-HxCDF	**1.39**	0.926	3.69	1	0.1	0.139
2,3,4,6,7,8-HxCDF	**7.77**	1.01	3.69	1	0.1	0.777
1,2,3,4,6,7,8-HpCDF	**62.0**	0.355	3.69	1	0.01	0.620
1,2,3,4,7,8,9-HpCDF	**4.18**	0.449	3.69	1	0.01	0.0418
OCDF	**109**	2.91	7.39	1	0.0003	0.0327
		Total TEQ				41.6

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:35
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0138	**Units:**	Percent
Lab Code:	E1801137-005	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	6.585g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	66.0		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:40
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0139	**Units:**	ng/Kg
Lab Code:	E1801137-006	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 06:40
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.212g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519769	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	13300		182	182	0.72	1.001	100
1,2,3,7,8-PeCDD	132		0.789	4.35	1.63	1.001	1
1,2,3,4,7,8-HxCDD	20.9		1.03	4.35	1.34	1.000	1
1,2,3,6,7,8-HxCDD	69.3		1.15	4.35	1.21	1.000	1
1,2,3,7,8,9-HxCDD	36.5		1.01	4.35	1.24	1.007	1
1,2,3,4,6,7,8-HpCDD	1300		1.74	4.35	1.05	1.000	1
OCDD	26900		346	870	0.92	1.001	100
2,3,7,8-TCDF	17500		59.0	87.0	0.75	1.000	100
1,2,3,7,8-PeCDF	876		1.53	4.35	1.61	1.001	1
2,3,4,7,8-PeCDF	738		1.76	4.35	1.57	1.001	1
1,2,3,4,7,8-HxCDF	1310		1.54	4.35	1.25	1.000	1
1,2,3,6,7,8-HxCDF	340		1.60	4.35	1.25	1.000	1
1,2,3,7,8,9-HxCDF	113		1.90	4.35	1.24	1.001	1
2,3,4,6,7,8-HxCDF	85.3		1.81	4.35	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	592		1.20	4.35	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	141		1.69	4.35	1.09	1.000	1
OCDF	943		2.21	8.70	0.90	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:40
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0139	**Units:**	ng/Kg
Lab Code:	E1801137-006	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 06:40
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.212g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519769	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	17900		2.09	2.09	0.74		1
Total Penta-Dioxins	333		0.789	4.35	1.53		1
Total Hexa-Dioxins	963		1.06	4.35	1.26		1
Total Hepta-Dioxins	3850		1.74	4.35	1.05		1
Total Tetra-Furans	48500		1.48	1.48	0.75		1
Total Penta-Furans	2630		1.64	4.35	1.50		1
Total Hexa-Furans	2330		1.70	4.35	1.25		1
Total Hepta-Furans	1490		1.41	4.35	1.04		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:40
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0139	**Units:**	Percent
Lab Code:	E1801137-006	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 19:30
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.212g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616325	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	560.638	28		25-164	0.75	1.030
13C-1,2,3,7,8-PeCDD	2000	787.943	39		25-181	1.58	1.236
13C-1,2,3,4,7,8-HxCDD	2000	877.329	44		32-141	1.32	0.991
13C-1,2,3,6,7,8-HxCDD	2000	792.691	40		28-130	1.21	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	603.044	30		23-140	1.07	1.069
13C-OCDD	4000	463.166	12	**Y**	17-157	0.91	1.138
13C-2,3,7,8-TCDF	2000	809.240	40		24-169	0.78	0.990
13C-1,2,3,7,8-PeCDF	2000	779.188	39		24-185	1.57	1.184
13C-2,3,4,7,8-PeCDF	2000	708.349	35		21-178	1.62	1.224
13C-1,2,3,4,7,8-HxCDF	2000	790.379	40		26-152	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	748.263	37		26-123	0.54	0.971
13C-1,2,3,7,8,9-HxCDF	2000	724.386	36		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	709.949	35		28-136	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	469.139	23	**Y**	28-143	0.47	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	397.707	20	**Y**	26-138	0.44	1.081
37Cl-2,3,7,8-TCDD	800	447.096	56		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:40
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0139	**Units:**	ng/Kg
Lab Code:	E1801137-006	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**13300**	182	182	100	1	13300
1,2,3,7,8-PeCDD	**132**	0.789	4.35	1	1	132
1,2,3,4,7,8-HxCDD	**20.9**	1.03	4.35	1	0.1	2.09
1,2,3,6,7,8-HxCDD	**69.3**	1.15	4.35	1	0.1	6.93
1,2,3,7,8,9-HxCDD	**36.5**	1.01	4.35	1	0.1	3.65
1,2,3,4,6,7,8-HpCDD	**1300**	1.74	4.35	1	0.01	13.0
OCDD	**26900**	346	870	100	0.0003	8.07
2,3,7,8-TCDF	**17500**	59.0	87.0	100	0.1	1750
1,2,3,7,8-PeCDF	**876**	1.53	4.35	1	0.03	26.3
2,3,4,7,8-PeCDF	**738**	1.76	4.35	1	0.3	221
1,2,3,4,7,8-HxCDF	**1310**	1.54	4.35	1	0.1	131
1,2,3,6,7,8-HxCDF	**340**	1.60	4.35	1	0.1	34.0
1,2,3,7,8,9-HxCDF	**113**	1.90	4.35	1	0.1	11.3
2,3,4,6,7,8-HxCDF	**85.3**	1.81	4.35	1	0.1	8.53
1,2,3,4,6,7,8-HpCDF	**592**	1.20	4.35	1	0.01	5.92
1,2,3,4,7,8,9-HpCDF	**141**	1.69	4.35	1	0.01	1.41
OCDF	**943**	2.21	8.70	1	0.0003	0.283
		Total TEQ				15700

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:40
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0139	**Units:**	Percent
Lab Code:	E1801137-006	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	6.374g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	56.3		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:45
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0140	**Units:**	ng/Kg
Lab Code:	E1801137-007	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 07:29
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.372g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519770	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	10500		112	112	0.76	1.001	50
1,2,3,7,8-PeCDD	67.2		0.813	4.41	1.56	1.001	1
1,2,3,4,7,8-HxCDD	4.40	**J**	0.577	4.41	1.21	1.000	1
1,2,3,6,7,8-HxCDD	23.7		0.635	4.41	1.22	1.000	1
1,2,3,7,8,9-HxCDD	9.66		0.562	4.41	1.22	1.007	1
1,2,3,4,6,7,8-HpCDD	319		1.09	4.41	1.04	1.000	1
OCDD	20000		179	441	0.91	1.001	50
2,3,7,8-TCDF	14400		38.6	44.1	0.75	1.001	50
1,2,3,7,8-PeCDF	417		0.610	4.41	1.60	1.001	1
2,3,4,7,8-PeCDF	387		0.702	4.41	1.58	1.001	1
1,2,3,4,7,8-HxCDF	618		0.877	4.41	1.27	1.000	1
1,2,3,6,7,8-HxCDF	159		0.949	4.41	1.23	1.000	1
1,2,3,7,8,9-HxCDF	57.8		1.14	4.41	1.29	1.001	1
2,3,4,6,7,8-HxCDF	41.2		0.998	4.41	1.26	1.000	1
1,2,3,4,6,7,8-HpCDF	364		0.691	4.41	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	80.9		1.06	4.41	1.13	1.000	1
OCDF	23200		168	441	0.85	1.004	50

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:45
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0140	**Units:**	ng/Kg
Lab Code:	E1801137-007	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 07:29
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.372g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519770	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	8820		2.06	2.06	0.78		1
Total Penta-Dioxins	114		0.813	4.41	1.63		1
Total Hexa-Dioxins	202		0.589	4.41	1.31		1
Total Hepta-Dioxins	815		1.09	4.41	1.04		1
Total Tetra-Furans	26800		1.44	1.44	0.79		1
Total Penta-Furans	1370		0.653	4.41	1.43		1
Total Hexa-Furans	1100		0.981	4.41	1.17		1
Total Hepta-Furans	741		0.839	4.41	1.05		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:45
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0140	**Units:**	Percent
Lab Code:	E1801137-007	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 20:20
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.372g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616326	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	648.823	32		25-164	0.78	1.030
13C-1,2,3,7,8-PeCDD	2000	882.546	44		25-181	1.58	1.236
13C-1,2,3,4,7,8-HxCDD	2000	1062.867	53		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	937.818	47		28-130	1.23	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	751.065	38		23-140	1.08	1.069
13C-OCDD	4000	547.422	14	**Y**	17-157	0.95	1.138
13C-2,3,7,8-TCDF	2000	953.599	48		24-169	0.78	0.990
13C-1,2,3,7,8-PeCDF	2000	884.512	44		24-185	1.59	1.185
13C-2,3,4,7,8-PeCDF	2000	811.584	41		21-178	1.59	1.225
13C-1,2,3,4,7,8-HxCDF	2000	998.538	50		26-152	0.52	0.968
13C-1,2,3,6,7,8-HxCDF	2000	918.087	46		26-123	0.55	0.971
13C-1,2,3,7,8,9-HxCDF	2000	828.661	41		29-147	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	899.742	45		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	615.820	31		28-143	0.46	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	486.299	24	**Y**	26-138	0.45	1.081
37Cl-2,3,7,8-TCDD	800	471.033	59		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:45
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0140	**Units:**	ng/Kg
Lab Code:	E1801137-007	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**10500**	112	112	50	1	10500
1,2,3,7,8-PeCDD	**67.2**	0.813	4.41	1	1	67.2
1,2,3,4,7,8-HxCDD	**4.40**	0.577	4.41	1	0.1	0.440
1,2,3,6,7,8-HxCDD	**23.7**	0.635	4.41	1	0.1	2.37
1,2,3,7,8,9-HxCDD	**9.66**	0.562	4.41	1	0.1	0.966
1,2,3,4,6,7,8-HpCDD	**319**	1.09	4.41	1	0.01	3.19
OCDD	**20000**	179	441	50	0.0003	6.00
2,3,7,8-TCDF	**14400**	38.6	44.1	50	0.1	1440
1,2,3,7,8-PeCDF	**417**	0.610	4.41	1	0.03	12.5
2,3,4,7,8-PeCDF	**387**	0.702	4.41	1	0.3	116
1,2,3,4,7,8-HxCDF	**618**	0.877	4.41	1	0.1	61.8
1,2,3,6,7,8-HxCDF	**159**	0.949	4.41	1	0.1	15.9
1,2,3,7,8,9-HxCDF	**57.8**	1.14	4.41	1	0.1	5.78
2,3,4,6,7,8-HxCDF	**41.2**	0.998	4.41	1	0.1	4.12
1,2,3,4,6,7,8-HpCDF	**364**	0.691	4.41	1	0.01	3.64
1,2,3,4,7,8,9-HpCDF	**80.9**	1.06	4.41	1	0.01	0.809
OCDF	**23200**	168	441	50	0.0003	6.96
		Total TEQ				12200

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 15:45
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0140	**Units:**	Percent
Lab Code:	E1801137-007	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	5.325g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	54.6		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:05
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0131	**Units:**	ng/Kg
Lab Code:	E1801137-008	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 03:26
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.140g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519765	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	2.28		0.487	0.649	0.78	1.001	1
1,2,3,7,8-PeCDD	0.861**JK**		0.111	3.24	2.47	1.001	1
1,2,3,4,7,8-HxCDD	1.39**JK**		0.160	3.24	0.91	1.000	1
1,2,3,6,7,8-HxCDD	2.07**J**		0.157	3.24	1.10	1.000	1
1,2,3,7,8,9-HxCDD	2.53**J**		0.155	3.24	1.36	1.007	1
1,2,3,4,6,7,8-HpCDD	112		0.124	3.24	1.04	1.000	1
OCDD	32700**E**		0.348	6.49	0.89	1.000	1
2,3,7,8-TCDF	2.47		0.280	0.649	0.77	1.001	1
1,2,3,7,8-PeCDF	ND	U	0.183	3.24			1
2,3,4,7,8-PeCDF	0.235**JK**		0.213	3.24	0.99	1.001	1
1,2,3,4,7,8-HxCDF	0.119**JK**		0.103	3.24	2.61	1.000	1
1,2,3,6,7,8-HxCDF	0.198**JK**		0.0958	3.24	0.90	1.000	1
1,2,3,7,8,9-HxCDF	0.314**J**		0.148	3.24	1.24	1.000	1
2,3,4,6,7,8-HxCDF	0.270**J**		0.116	3.24	1.07	1.001	1
1,2,3,4,6,7,8-HpCDF	0.786**BJ**		0.156	3.24	1.16	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.234	3.24			1
OCDF	ND	U	0.439	6.49			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:05
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0131	**Units:**	ng/Kg
Lab Code:	E1801137-008	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 03:26
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.140g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519765	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	2.28		0.487	0.649	0.78		1
Total Penta-Dioxins	2.40**J**		0.111	3.24	1.42		1
Total Hexa-Dioxins	25.9		0.157	3.24	1.32		1
Total Hepta-Dioxins	276		0.124	3.24	1.06		1
Total Tetra-Furans	6.47		0.280	0.649	0.82		1
Total Penta-Furans	2.82**J**		0.197	3.24	1.55		1
Total Hexa-Furans	2.54**J**		0.114	3.24	1.13		1
Total Hepta-Furans	0.786**J**		0.190	3.24	1.16		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:05
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0131	**Units:**	Percent
Lab Code:	E1801137-008	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 03:26
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.140g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519765	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	502.088	25		25-164	0.78	1.026
13C-1,2,3,7,8-PeCDD	2000	854.455	43		25-181	1.58	1.225
13C-1,2,3,4,7,8-HxCDD	2000	783.964	39		32-141	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	866.954	43		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1040.336	52		23-140	1.05	1.075
13C-OCDD	4000	1706.716	43		17-157	0.90	1.158
13C-2,3,7,8-TCDF	2000	586.321	29		24-169	0.77	0.989
13C-1,2,3,7,8-PeCDF	2000	797.850	40		24-185	1.58	1.175
13C-2,3,4,7,8-PeCDF	2000	741.931	37		21-178	1.58	1.213
13C-1,2,3,4,7,8-HxCDF	2000	670.302	34		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	764.548	38		26-123	0.52	0.970
13C-1,2,3,7,8,9-HxCDF	2000	746.000	37		29-147	0.49	1.008
13C-2,3,4,6,7,8-HxCDF	2000	741.512	37		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	758.994	38		28-143	0.43	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	760.903	38		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	376.406	47		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:05
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0131	**Units:**	ng/Kg
Lab Code:	E1801137-008	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**2.28**	0.487	0.649	1	1	2.28
1,2,3,7,8-PeCDD	**0.861**	0.111	3.24	1	1	0.861
1,2,3,4,7,8-HxCDD	**1.39**	0.160	3.24	1	0.1	0.139
1,2,3,6,7,8-HxCDD	**2.07**	0.157	3.24	1	0.1	0.207
1,2,3,7,8,9-HxCDD	**2.53**	0.155	3.24	1	0.1	0.253
1,2,3,4,6,7,8-HpCDD	**112**	0.124	3.24	1	0.01	1.12
OCDD	**32700**	0.348	6.49	1	0.0003	9.81
2,3,7,8-TCDF	**2.47**	0.280	0.649	1	0.1	0.247
1,2,3,7,8-PeCDF	ND	0.183	3.24	1	0.03	
2,3,4,7,8-PeCDF	**0.235**	0.213	3.24	1	0.3	0.0705
1,2,3,4,7,8-HxCDF	**0.119**	0.103	3.24	1	0.1	0.0119
1,2,3,6,7,8-HxCDF	**0.198**	0.0958	3.24	1	0.1	0.0198
1,2,3,7,8,9-HxCDF	**0.314**	0.148	3.24	1	0.1	0.0314
2,3,4,6,7,8-HxCDF	**0.270**	0.116	3.24	1	0.1	0.0270
1,2,3,4,6,7,8-HpCDF	**0.786**	0.156	3.24	1	0.01	0.00786
1,2,3,4,7,8,9-HpCDF	ND	0.234	3.24	1	0.01	
OCDF	ND	0.439	6.49	1	0.0003	
		Total TEQ				15.1

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:05
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0131	**Units:**	Percent
Lab Code:	E1801137-008	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	5.154g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	76.0		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:10
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0132	**Units:**	ng/Kg
Lab Code:	E1801137-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 15:22
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.108g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520000	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	0.798	**K**	0.329	0.645	0.64	1.001	1
1,2,3,7,8-PeCDD	0.305	**JK**	0.0685	3.22	0.81	1.000	1
1,2,3,4,7,8-HxCDD	0.418	**JK**	0.0633	3.22	1.48	1.000	1
1,2,3,6,7,8-HxCDD	1.29	**J**	0.0725	3.22	1.22	1.000	1
1,2,3,7,8,9-HxCDD	0.674	**J**	0.0662	3.22	1.31	1.006	1
1,2,3,4,6,7,8-HpCDD	34.9		0.170	3.22	0.98	1.000	1
OCDD	4470		0.110	6.45	0.90	1.000	1
2,3,7,8-TCDF	1.89		0.116	0.645	0.67	1.000	1
1,2,3,7,8-PeCDF	0.369	**J**	0.124	3.22	1.74	1.001	1
2,3,4,7,8-PeCDF	0.689	**J**	0.132	3.22	1.36	1.001	1
1,2,3,4,7,8-HxCDF	0.554	**J**	0.106	3.22	1.21	1.000	1
1,2,3,6,7,8-HxCDF	0.266	**JK**	0.103	3.22	0.69	1.000	1
1,2,3,7,8,9-HxCDF	0.228	**BJ**	0.118	3.22	1.07	1.000	1
2,3,4,6,7,8-HxCDF	0.477	**J**	0.110	3.22	1.31	1.000	1
1,2,3,4,6,7,8-HpCDF	4.57		0.120	3.22	0.97	1.000	1
1,2,3,4,7,8,9-HpCDF	0.382	**J**	0.156	3.22	1.09	1.000	1
OCDF	17.7		0.125	6.45	0.93	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:10
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0132	**Units:**	ng/Kg
Lab Code:	E1801137-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 15:22
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.108g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520000	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.329	0.645			1
Total Penta-Dioxins	1.88**J**		0.0685	3.22	1.45		1
Total Hexa-Dioxins	12.0		0.0673	3.22	1.29		1
Total Hepta-Dioxins	93.4		0.170	3.22	1.07		1
Total Tetra-Furans	4.07		0.116	0.645	0.77		1
Total Penta-Furans	3.03**J**		0.128	3.22	1.54		1
Total Hexa-Furans	6.05		0.109	3.22	1.26		1
Total Hepta-Furans	13.6		0.136	3.22	0.97		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:10
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0132	**Units:**	Percent
Lab Code:	E1801137-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 15:22
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.108g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520000	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	840.559	42		25-164	0.79	1.019
13C-1,2,3,7,8-PeCDD	2000	1495.285	75		25-181	1.61	1.181
13C-1,2,3,4,7,8-HxCDD	2000	1473.500	74		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1380.823	69		28-130	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1660.630	83		23-140	1.07	1.067
13C-OCDD	4000	2333.135	58		17-157	0.90	1.142
13C-2,3,7,8-TCDF	2000	991.120	50		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1323.687	66		24-185	1.57	1.139
13C-2,3,4,7,8-PeCDF	2000	1279.037	64		21-178	1.57	1.170
13C-1,2,3,4,7,8-HxCDF	2000	1194.626	60		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1185.578	59		26-123	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1292.054	65		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1219.443	61		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1171.639	59		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1304.757	65		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	500.623	63		35-197	NA	1.020

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:10
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0132	**Units:**	ng/Kg
Lab Code:	E1801137-009	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**0.798**	0.329	0.645	1	1	0.798
1,2,3,7,8-PeCDD	**0.305**	0.0685	3.22	1	1	0.305
1,2,3,4,7,8-HxCDD	**0.418**	0.0633	3.22	1	0.1	0.0418
1,2,3,6,7,8-HxCDD	**1.29**	0.0725	3.22	1	0.1	0.129
1,2,3,7,8,9-HxCDD	**0.674**	0.0662	3.22	1	0.1	0.0674
1,2,3,4,6,7,8-HpCDD	**34.9**	0.170	3.22	1	0.01	0.349
OCDD	**4470**	0.110	6.45	1	0.0003	1.34
2,3,7,8-TCDF	**1.89**	0.116	0.645	1	0.1	0.189
1,2,3,7,8-PeCDF	**0.369**	0.124	3.22	1	0.03	0.0111
2,3,4,7,8-PeCDF	**0.689**	0.132	3.22	1	0.3	0.207
1,2,3,4,7,8-HxCDF	**0.554**	0.106	3.22	1	0.1	0.0554
1,2,3,6,7,8-HxCDF	**0.266**	0.103	3.22	1	0.1	0.0266
1,2,3,7,8,9-HxCDF	**0.228**	0.118	3.22	1	0.1	0.0228
2,3,4,6,7,8-HxCDF	**0.477**	0.110	3.22	1	0.1	0.0477
1,2,3,4,6,7,8-HpCDF	**4.57**	0.120	3.22	1	0.01	0.0457
1,2,3,4,7,8,9-HpCDF	**0.382**	0.156	3.22	1	0.01	0.00382
OCDF	**17.7**	0.125	6.45	1	0.0003	0.00531
		Total TEQ				3.64

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:10
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0132	**Units:**	Percent
Lab Code:	E1801137-009	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	6.1g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	76.7		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:15
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0133	**Units:**	ng/Kg
Lab Code:	E1801137-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 08:17
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.240g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519771	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	15100		162	162	0.75	1.001	100
1,2,3,7,8-PeCDD	86.8		0.664	4.38	1.61	1.001	1
1,2,3,4,7,8-HxCDD	5.42		0.531	4.38	1.07	1.000	1
1,2,3,6,7,8-HxCDD	27.7		0.583	4.38	1.18	1.000	1
1,2,3,7,8,9-HxCDD	13.4		0.545	4.38	1.28	1.007	1
1,2,3,4,6,7,8-HpCDD	735		0.759	4.38	1.03	1.000	1
OCDD	11900		96.7	877	0.88	1.001	100
2,3,7,8-TCDF	24200		51.1	87.7	0.72	1.001	100
1,2,3,7,8-PeCDF	690		2.56	4.38	1.52	1.001	1
2,3,4,7,8-PeCDF	629		2.82	4.38	1.54	1.001	1
1,2,3,4,7,8-HxCDF	1190		1.32	4.38	1.20	1.000	1
1,2,3,6,7,8-HxCDF	308	**P**	1.27	4.38	1.22	1.000	1
1,2,3,7,8,9-HxCDF	80.8		1.74	4.38	1.22	1.001	1
2,3,4,6,7,8-HxCDF	62.0		1.42	4.38	1.27	1.000	1
1,2,3,4,6,7,8-HpCDF	497		1.88	4.38	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	121		3.04	4.38	0.98	1.000	1
OCDF	5960		0.905	8.77	0.88	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:15
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0133	**Units:**	ng/Kg
Lab Code:	E1801137-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 08:17
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.240g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519771	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	13200		0.497	0.877	0.76		1
Total Penta-Dioxins	165		0.664	4.38	1.59		1
Total Hexa-Dioxins	438		0.554	4.38	1.23		1
Total Hepta-Dioxins	1620		0.759	4.38	1.03		1
Total Tetra-Furans	40000		0.404	0.877	0.75		1
Total Penta-Furans	1910		2.68	4.38	1.71		1
Total Hexa-Furans	1900		1.43	4.38	1.21		1
Total Hepta-Furans	983		2.40	4.38	1.02		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:15
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0133	**Units:**	Percent
Lab Code:	E1801137-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 16:58
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.240g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519734	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	824.350	41		25-164	0.79	1.025
13C-1,2,3,7,8-PeCDD	2000	1328.716	66		25-181	1.58	1.223
13C-1,2,3,4,7,8-HxCDD	2000	1122.103	56		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1204.304	60		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1305.184	65		23-140	1.07	1.075
13C-OCDD	4000	1652.572	41		17-157	0.92	1.157
13C-2,3,7,8-TCDF	2000	1026.636	51		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	1184.063	59		24-185	1.59	1.173
13C-2,3,4,7,8-PeCDF	2000	1098.388	55		21-178	1.57	1.211
13C-1,2,3,4,7,8-HxCDF	2000	937.670	47		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	989.374	49		26-123	0.51	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1029.982	51		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	992.914	50		28-136	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	923.875	46		28-143	0.45	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	955.620	48		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	582.912	73		35-197	NA	1.026

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:15
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0133	**Units:**	ng/Kg
Lab Code:	E1801137-010	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**15100**	162	162	100	1	15100
1,2,3,7,8-PeCDD	**86.8**	0.664	4.38	1	1	86.8
1,2,3,4,7,8-HxCDD	**5.42**	0.531	4.38	1	0.1	0.542
1,2,3,6,7,8-HxCDD	**27.7**	0.583	4.38	1	0.1	2.77
1,2,3,7,8,9-HxCDD	**13.4**	0.545	4.38	1	0.1	1.34
1,2,3,4,6,7,8-HpCDD	**735**	0.759	4.38	1	0.01	7.35
OCDD	**11900**	96.7	877	100	0.0003	3.57
2,3,7,8-TCDF	**24200**	51.1	87.7	100	0.1	2420
1,2,3,7,8-PeCDF	**690**	2.56	4.38	1	0.03	20.7
2,3,4,7,8-PeCDF	**629**	2.82	4.38	1	0.3	189
1,2,3,4,7,8-HxCDF	**1190**	1.32	4.38	1	0.1	119
1,2,3,6,7,8-HxCDF	**308**	1.27	4.38	1	0.1	30.8
1,2,3,7,8,9-HxCDF	**80.8**	1.74	4.38	1	0.1	8.08
2,3,4,6,7,8-HxCDF	**62.0**	1.42	4.38	1	0.1	6.20
1,2,3,4,6,7,8-HpCDF	**497**	1.88	4.38	1	0.01	4.97
1,2,3,4,7,8,9-HpCDF	**121**	3.04	4.38	1	0.01	1.21
OCDF	**5960**	0.905	8.77	1	0.0003	1.79
		Total TEQ				18000

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:15
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0133	**Units:**	Percent
Lab Code:	E1801137-010	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	6.579g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	55.7		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:20
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0134	**Units:**	ng/Kg
Lab Code:	E1801137-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 17:47
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.000g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519735	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	11.9		0.720	0.720	0.70	1.001	1
1,2,3,7,8-PeCDD	0.680	**J**	0.153	3.22	1.43	1.001	1
1,2,3,4,7,8-HxCDD	0.259	**JK**	0.205	3.22	1.66	1.000	1
1,2,3,6,7,8-HxCDD	0.533	**JK**	0.215	3.22	0.95	1.000	1
1,2,3,7,8,9-HxCDD	0.581	**JK**	0.205	3.22	2.31	1.007	1
1,2,3,4,6,7,8-HpCDD	8.89		0.254	3.22	1.14	1.000	1
OCDD	270		0.372	6.44	0.87	1.000	1
2,3,7,8-TCDF	24.3		0.361	0.644	0.78	1.001	1
1,2,3,7,8-PeCDF	0.981	**J**	0.170	3.22	1.68	1.001	1
2,3,4,7,8-PeCDF	0.970	**J**	0.172	3.22	1.38	1.001	1
1,2,3,4,7,8-HxCDF	1.07	**J**	0.0816	3.22	1.31	1.000	1
1,2,3,6,7,8-HxCDF	0.613	**J**	0.0807	3.22	1.23	1.000	1
1,2,3,7,8,9-HxCDF	0.488	**JK**	0.111	3.22	0.87	1.000	1
2,3,4,6,7,8-HxCDF	0.445	**J**	0.0865	3.22	1.25	1.000	1
1,2,3,4,6,7,8-HpCDF	1.82	**J**	0.207	3.22	1.07	1.000	1
1,2,3,4,7,8,9-HpCDF	0.483	**J**	0.339	3.22	1.09	1.001	1
OCDF	14.9		0.426	6.44	0.78	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:20
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0134	**Units:**	ng/Kg
Lab Code:	E1801137-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 17:47
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.000g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519735	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	15.8		0.720	0.720	0.71		1
Total Penta-Dioxins	1.73**J**		0.153	3.22	1.73		1
Total Hexa-Dioxins	9.84		0.209	3.22	1.18		1
Total Hepta-Dioxins	28.8		0.254	3.22	0.98		1
Total Tetra-Furans	40.8		0.361	0.644	0.87		1
Total Penta-Furans	1.95**J**		0.171	3.22	1.68		1
Total Hexa-Furans	2.53**J**		0.0891	3.22	1.37		1
Total Hepta-Furans	3.91		0.266	3.22	1.07		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:20
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0134	**Units:**	Percent
Lab Code:	E1801137-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 17:47
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.000g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519735	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	506.530	25		25-164	0.79	1.026
13C-1,2,3,7,8-PeCDD	2000	1085.363	54		25-181	1.60	1.225
13C-1,2,3,4,7,8-HxCDD	2000	1063.289	53		32-141	1.26	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1150.798	58		28-130	1.25	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1430.466	72		23-140	1.05	1.075
13C-OCDD	4000	2065.255	52		17-157	0.89	1.157
13C-2,3,7,8-TCDF	2000	579.826	29		24-169	0.77	0.989
13C-1,2,3,7,8-PeCDF	2000	925.729	46		24-185	1.58	1.175
13C-2,3,4,7,8-PeCDF	2000	915.162	46		21-178	1.56	1.213
13C-1,2,3,4,7,8-HxCDF	2000	832.514	42		26-152	0.52	0.967
13C-1,2,3,6,7,8-HxCDF	2000	898.982	45		26-123	0.50	0.970
13C-1,2,3,7,8,9-HxCDF	2000	933.810	47		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	911.520	46		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	999.103	50		28-143	0.43	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	1020.823	51		26-138	0.44	1.087
37Cl-2,3,7,8-TCDD	800	300.023	38		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:20
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0134	**Units:**	ng/Kg
Lab Code:	E1801137-011	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**11.9**	0.720	0.720	1	1	11.9
1,2,3,7,8-PeCDD	**0.680**	0.153	3.22	1	1	0.680
1,2,3,4,7,8-HxCDD	**0.259**	0.205	3.22	1	0.1	0.0259
1,2,3,6,7,8-HxCDD	**0.533**	0.215	3.22	1	0.1	0.0533
1,2,3,7,8,9-HxCDD	**0.581**	0.205	3.22	1	0.1	0.0581
1,2,3,4,6,7,8-HpCDD	**8.89**	0.254	3.22	1	0.01	0.0889
OCDD	**270**	0.372	6.44	1	0.0003	0.0810
2,3,7,8-TCDF	**24.3**	0.361	0.644	1	0.1	2.43
1,2,3,7,8-PeCDF	**0.981**	0.170	3.22	1	0.03	0.0294
2,3,4,7,8-PeCDF	**0.970**	0.172	3.22	1	0.3	0.291
1,2,3,4,7,8-HxCDF	**1.07**	0.0816	3.22	1	0.1	0.107
1,2,3,6,7,8-HxCDF	**0.613**	0.0807	3.22	1	0.1	0.0613
1,2,3,7,8,9-HxCDF	**0.488**	0.111	3.22	1	0.1	0.0488
2,3,4,6,7,8-HxCDF	**0.445**	0.0865	3.22	1	0.1	0.0445
1,2,3,4,6,7,8-HpCDF	**1.82**	0.207	3.22	1	0.01	0.0182
1,2,3,4,7,8,9-HpCDF	**0.483**	0.339	3.22	1	0.01	0.00483
OCDF	**14.9**	0.426	6.44	1	0.0003	0.00447
		Total TEQ				15.9

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:20
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0134	**Units:**	Percent
Lab Code:	E1801137-011	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	9.651g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	77.6		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:25
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0135	**Units:**	ng/Kg
Lab Code:	E1801137-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 18:36
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.088g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519736	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	4.34		0.589	0.713	0.68	1.001	1
1,2,3,7,8-PeCDD	0.665**J**		0.142	3.57	1.36	1.001	1
1,2,3,4,7,8-HxCDD	0.325**JK**		0.178	3.57	0.99	1.000	1
1,2,3,6,7,8-HxCDD	0.493**JK**		0.193	3.57	1.94	1.000	1
1,2,3,7,8,9-HxCDD	0.582**JK**		0.181	3.57	0.82	1.007	1
1,2,3,4,6,7,8-HpCDD	8.38		0.239	3.57	0.92	1.000	1
OCDD	427		0.449	7.13	0.89	1.000	1
2,3,7,8-TCDF	6.03		0.248	0.713	0.76	1.001	1
1,2,3,7,8-PeCDF	0.423**JK**		0.194	3.57	0.98	1.001	1
2,3,4,7,8-PeCDF	0.523**J**		0.183	3.57	1.75	1.001	1
1,2,3,4,7,8-HxCDF	0.398**JK**		0.0853	3.57	1.67	1.000	1
1,2,3,6,7,8-HxCDF	0.450**J**		0.0809	3.57	1.06	1.000	1
1,2,3,7,8,9-HxCDF	0.441**JK**		0.118	3.57	1.00	1.001	1
2,3,4,6,7,8-HxCDF	0.292**JK**		0.0851	3.57	0.81	1.000	1
1,2,3,4,6,7,8-HpCDF	5.75		0.111	3.57	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.182	3.57			1
OCDF	3.02**J**		0.422	7.13	0.82	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:25
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0135	**Units:**	ng/Kg
Lab Code:	E1801137-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 18:36
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.088g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519736	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	4.34		0.589	0.713	0.68		1
Total Penta-Dioxins	1.43**J**		0.142	3.57	1.41		1
Total Hexa-Dioxins	9.80		0.184	3.57	1.28		1
Total Hepta-Dioxins	30.2		0.239	3.57	1.08		1
Total Tetra-Furans	8.95		0.248	0.713	0.77		1
Total Penta-Furans	0.523**J**		0.189	3.57	1.75		1
Total Hexa-Furans	1.34**J**		0.0909	3.57	1.31		1
Total Hepta-Furans	8.88		0.142	3.57	1.01		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:25
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0135	**Units:**	Percent
Lab Code:	E1801137-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 18:36
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.088g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519736	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	533.555	27		25-164	0.81	1.026
13C-1,2,3,7,8-PeCDD	2000	1163.013	58		25-181	1.58	1.225
13C-1,2,3,4,7,8-HxCDD	2000	1156.053	58		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1159.010	58		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1425.769	71		23-140	1.06	1.076
13C-OCDD	4000	2023.489	51		17-157	0.88	1.158
13C-2,3,7,8-TCDF	2000	663.591	33		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	962.800	48		24-185	1.59	1.175
13C-2,3,4,7,8-PeCDF	2000	999.847	50		21-178	1.59	1.213
13C-1,2,3,4,7,8-HxCDF	2000	876.686	44		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	943.978	47		26-123	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	922.915	46		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	964.223	48		28-136	0.50	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	979.974	49		28-143	0.45	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	988.452	49		26-138	0.45	1.088
37Cl-2,3,7,8-TCDD	800	333.906	42		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:25
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0135	**Units:**	ng/Kg
Lab Code:	E1801137-012	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**4.34**	0.589	0.713	1	1	4.34
1,2,3,7,8-PeCDD	**0.665**	0.142	3.57	1	1	0.665
1,2,3,4,7,8-HxCDD	**0.325**	0.178	3.57	1	0.1	0.0325
1,2,3,6,7,8-HxCDD	**0.493**	0.193	3.57	1	0.1	0.0493
1,2,3,7,8,9-HxCDD	**0.582**	0.181	3.57	1	0.1	0.0582
1,2,3,4,6,7,8-HpCDD	**8.38**	0.239	3.57	1	0.01	0.0838
OCDD	**427**	0.449	7.13	1	0.0003	0.128
2,3,7,8-TCDF	**6.03**	0.248	0.713	1	0.1	0.603
1,2,3,7,8-PeCDF	**0.423**	0.194	3.57	1	0.03	0.0127
2,3,4,7,8-PeCDF	**0.523**	0.183	3.57	1	0.3	0.157
1,2,3,4,7,8-HxCDF	**0.398**	0.0853	3.57	1	0.1	0.0398
1,2,3,6,7,8-HxCDF	**0.450**	0.0809	3.57	1	0.1	0.0450
1,2,3,7,8,9-HxCDF	**0.441**	0.118	3.57	1	0.1	0.0441
2,3,4,6,7,8-HxCDF	**0.292**	0.0851	3.57	1	0.1	0.0292
1,2,3,4,6,7,8-HpCDF	**5.75**	0.111	3.57	1	0.01	0.0575
1,2,3,4,7,8,9-HpCDF	ND	0.182	3.57	1	0.01	
OCDF	**3.02**	0.422	7.13	1	0.0003	0.000906
		Total TEQ				6.35

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/12/18 14:25
Sample Matrix:	Sediment	**Date Received:**	11/14/18 12:12
Sample Name:	SL0135	**Units:**	Percent
Lab Code:	E1801137-012	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	6.667g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	69.5		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:40
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0186	**Units:**	ng/Kg
Lab Code:	E1801137-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 19:24
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.053g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519737	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	11.0		0.424	0.610	0.74	1.001	1
1,2,3,7,8-PeCDD	0.717**J**		0.155	3.05	1.78	1.001	1
1,2,3,4,7,8-HxCDD	0.589**J**		0.201	3.05	1.13	1.000	1
1,2,3,6,7,8-HxCDD	2.63**J**		0.217	3.05	1.32	1.000	1
1,2,3,7,8,9-HxCDD	1.55**J**		0.204	3.05	1.20	1.007	1
1,2,3,4,6,7,8-HpCDD	54.4		0.150	3.05	1.10	1.000	1
OCDD	984		0.447	6.10	0.88	1.000	1
2,3,7,8-TCDF	28.1		0.151	0.610	0.73	1.001	1
1,2,3,7,8-PeCDF	1.59**J**		0.166	3.05	1.45	1.000	1
2,3,4,7,8-PeCDF	1.63**J**		0.177	3.05	1.58	1.000	1
1,2,3,4,7,8-HxCDF	3.01**J**		0.176	3.05	1.12	1.000	1
1,2,3,6,7,8-HxCDF	1.19**J**		0.170	3.05	1.36	1.001	1
1,2,3,7,8,9-HxCDF	0.643**J**		0.233	3.05	1.28	1.001	1
2,3,4,6,7,8-HxCDF	0.944**JK**		0.202	3.05	0.81	1.000	1
1,2,3,4,6,7,8-HpCDF	12.3		0.326	3.05	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	0.941**JK**		0.520	3.05	0.76	1.000	1
OCDF	45.9		0.571	6.10	0.85	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:40
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0186	**Units:**	ng/Kg
Lab Code:	E1801137-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 19:24
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.053g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519737	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	11.5		0.424	0.610	0.86		1
Total Penta-Dioxins	1.12	**J**	0.155	3.05	1.50		1
Total Hexa-Dioxins	28.0		0.207	3.05	1.31		1
Total Hepta-Dioxins	138		0.150	3.05	1.05		1
Total Tetra-Furans	47.4		0.151	0.610	0.76		1
Total Penta-Furans	9.83		0.171	3.05	1.62		1
Total Hexa-Furans	17.2		0.194	3.05	1.12		1
Total Hepta-Furans	32.7		0.413	3.05	1.03		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:40
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0186	**Units:**	Percent
Lab Code:	E1801137-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 19:24
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.053g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519737	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	557.756	28		25-164	0.80	1.026
13C-1,2,3,7,8-PeCDD	2000	1006.832	50		25-181	1.58	1.225
13C-1,2,3,4,7,8-HxCDD	2000	940.219	47		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	924.882	46		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1092.826	55		23-140	1.06	1.075
13C-OCDD	4000	1445.730	36		17-157	0.89	1.158
13C-2,3,7,8-TCDF	2000	659.937	33		24-169	0.77	0.989
13C-1,2,3,7,8-PeCDF	2000	876.040	44		24-185	1.57	1.175
13C-2,3,4,7,8-PeCDF	2000	823.389	41		21-178	1.58	1.213
13C-1,2,3,4,7,8-HxCDF	2000	743.653	37		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	763.057	38		26-123	0.51	0.971
13C-1,2,3,7,8,9-HxCDF	2000	792.106	40		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	704.864	35		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	770.004	39		28-143	0.44	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	802.741	40		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	337.421	42		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:40
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0186	**Units:**	ng/Kg
Lab Code:	E1801137-013	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**11.0**	0.424	0.610	1	1	11.0
1,2,3,7,8-PeCDD	**0.717**	0.155	3.05	1	1	0.717
1,2,3,4,7,8-HxCDD	**0.589**	0.201	3.05	1	0.1	0.0589
1,2,3,6,7,8-HxCDD	**2.63**	0.217	3.05	1	0.1	0.263
1,2,3,7,8,9-HxCDD	**1.55**	0.204	3.05	1	0.1	0.155
1,2,3,4,6,7,8-HpCDD	**54.4**	0.150	3.05	1	0.01	0.544
OCDD	**984**	0.447	6.10	1	0.0003	0.295
2,3,7,8-TCDF	**28.1**	0.151	0.610	1	0.1	2.81
1,2,3,7,8-PeCDF	**1.59**	0.166	3.05	1	0.03	0.0477
2,3,4,7,8-PeCDF	**1.63**	0.177	3.05	1	0.3	0.489
1,2,3,4,7,8-HxCDF	**3.01**	0.176	3.05	1	0.1	0.301
1,2,3,6,7,8-HxCDF	**1.19**	0.170	3.05	1	0.1	0.119
1,2,3,7,8,9-HxCDF	**0.643**	0.233	3.05	1	0.1	0.0643
2,3,4,6,7,8-HxCDF	**0.944**	0.202	3.05	1	0.1	0.0944
1,2,3,4,6,7,8-HpCDF	**12.3**	0.326	3.05	1	0.01	0.123
1,2,3,4,7,8,9-HpCDF	**0.941**	0.520	3.05	1	0.01	0.00941
OCDF	**45.9**	0.571	6.10	1	0.0003	0.0138
		Total TEQ				17.1

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:40
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0186	**Units:**	Percent
Lab Code:	E1801137-013	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	7.962g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	81.5		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:45
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0187	**Units:**	ng/Kg
Lab Code:	E1801137-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 20:13
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.092g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519738	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	14.8		0.391	0.603	0.80	1.001	1
1,2,3,7,8-PeCDD	0.794	**JK**	0.0725	3.01	0.97	1.001	1
1,2,3,4,7,8-HxCDD	0.860	**J**	0.109	3.01	1.28	1.000	1
1,2,3,6,7,8-HxCDD	2.53	**J**	0.127	3.01	1.12	1.000	1
1,2,3,7,8,9-HxCDD	1.92	**J**	0.115	3.01	1.32	1.008	1
1,2,3,4,6,7,8-HpCDD	66.9		0.106	3.01	1.02	1.000	1
OCDD	1530		0.174	6.03	0.88	1.000	1
2,3,7,8-TCDF	33.7		0.180	0.603	0.74	1.000	1
1,2,3,7,8-PeCDF	1.59	**J**	0.169	3.01	1.46	1.001	1
2,3,4,7,8-PeCDF	1.63	**J**	0.177	3.01	1.51	1.001	1
1,2,3,4,7,8-HxCDF	2.84	**J**	0.110	3.01	1.25	1.000	1
1,2,3,6,7,8-HxCDF	1.09	**JK**	0.106	3.01	1.01	1.000	1
1,2,3,7,8,9-HxCDF	0.445	**JK**	0.143	3.01	1.61	1.001	1
2,3,4,6,7,8-HxCDF	0.960	**J**	0.108	3.01	1.31	1.000	1
1,2,3,4,6,7,8-HpCDF	13.1		0.371	3.01	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	0.994	**J**	0.586	3.01	1.14	1.000	1
OCDF	67.5		0.288	6.03	0.90	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:45
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0187	**Units:**	ng/Kg
Lab Code:	E1801137-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 20:13
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.092g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519738	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	18.3		0.391	0.603	0.80		1
Total Penta-Dioxins	4.09		0.0725	3.01	1.49		1
Total Hexa-Dioxins	31.0		0.117	3.01	1.25		1
Total Hepta-Dioxins	220		0.106	3.01	1.06		1
Total Tetra-Furans	51.2		0.180	0.603	0.74		1
Total Penta-Furans	6.74		0.173	3.01	1.45		1
Total Hexa-Furans	14.9		0.116	3.01	1.15		1
Total Hepta-Furans	39.5		0.468	3.01	0.99		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:45
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0187	**Units:**	Percent
Lab Code:	E1801137-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 20:13
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.092g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519738	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	755.581	38		25-164	0.79	1.025
13C-1,2,3,7,8-PeCDD	2000	1267.038	63		25-181	1.58	1.225
13C-1,2,3,4,7,8-HxCDD	2000	1111.370	56		32-141	1.24	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1182.550	59		28-130	1.28	0.992
13C-1,2,3,4,6,7,8-HpCDD	2000	1478.238	74		23-140	1.05	1.074
13C-OCDD	4000	2319.893	58		17-157	0.89	1.156
13C-2,3,7,8-TCDF	2000	893.434	45		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	1123.423	56		24-185	1.58	1.175
13C-2,3,4,7,8-PeCDF	2000	1067.780	53		21-178	1.57	1.213
13C-1,2,3,4,7,8-HxCDF	2000	944.162	47		26-152	0.52	0.967
13C-1,2,3,6,7,8-HxCDF	2000	959.087	48		26-123	0.51	0.970
13C-1,2,3,7,8,9-HxCDF	2000	1024.905	51		29-147	0.51	1.007
13C-2,3,4,6,7,8-HxCDF	2000	979.714	49		28-136	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1009.748	50		28-143	0.45	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	1057.742	53		26-138	0.44	1.087
37Cl-2,3,7,8-TCDD	800	436.555	55		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:45
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0187	**Units:**	ng/Kg
Lab Code:	E1801137-014	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**14.8**	0.391	0.603	1	1	14.8
1,2,3,7,8-PeCDD	**0.794**	0.0725	3.01	1	1	0.794
1,2,3,4,7,8-HxCDD	**0.860**	0.109	3.01	1	0.1	0.0860
1,2,3,6,7,8-HxCDD	**2.53**	0.127	3.01	1	0.1	0.253
1,2,3,7,8,9-HxCDD	**1.92**	0.115	3.01	1	0.1	0.192
1,2,3,4,6,7,8-HpCDD	**66.9**	0.106	3.01	1	0.01	0.669
OCDD	**1530**	0.174	6.03	1	0.0003	0.459
2,3,7,8-TCDF	**33.7**	0.180	0.603	1	0.1	3.37
1,2,3,7,8-PeCDF	**1.59**	0.169	3.01	1	0.03	0.0477
2,3,4,7,8-PeCDF	**1.63**	0.177	3.01	1	0.3	0.489
1,2,3,4,7,8-HxCDF	**2.84**	0.110	3.01	1	0.1	0.284
1,2,3,6,7,8-HxCDF	**1.09**	0.106	3.01	1	0.1	0.109
1,2,3,7,8,9-HxCDF	**0.445**	0.143	3.01	1	0.1	0.0445
2,3,4,6,7,8-HxCDF	**0.960**	0.108	3.01	1	0.1	0.0960
1,2,3,4,6,7,8-HpCDF	**13.1**	0.371	3.01	1	0.01	0.131
1,2,3,4,7,8,9-HpCDF	**0.994**	0.586	3.01	1	0.01	0.00994
OCDF	**67.5**	0.288	6.03	1	0.0003	0.0203
		Total TEQ				21.9

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:45
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0187	**Units:**	Percent
Lab Code:	E1801137-014	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	5.648g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	82.2		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:50
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0188	**Units:**	ng/Kg
Lab Code:	E1801137-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 09:06
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.314g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519772	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	710		18.7	18.7	0.83	1.001	10
1,2,3,7,8-PeCDD	5.10		0.191	2.99	1.61	1.001	1
1,2,3,4,7,8-HxCDD	1.75	**JK**	0.178	2.99	1.44	1.001	1
1,2,3,6,7,8-HxCDD	7.69		0.191	2.99	1.18	1.000	1
1,2,3,7,8,9-HxCDD	4.37		0.180	2.99	1.09	1.007	1
1,2,3,4,6,7,8-HpCDD	211		0.215	2.99	1.06	1.000	1
OCDD	4400		0.952	5.97	0.89	1.000	1
2,3,7,8-TCDF	1200		4.45	5.97	0.73	1.001	10
1,2,3,7,8-PeCDF	47.5		0.635	2.99	1.50	1.001	1
2,3,4,7,8-PeCDF	34.3		0.718	2.99	1.51	1.001	1
1,2,3,4,7,8-HxCDF	98.1		0.468	2.99	1.23	1.000	1
1,2,3,6,7,8-HxCDF	23.4		0.460	2.99	1.26	1.000	1
1,2,3,7,8,9-HxCDF	7.58		0.584	2.99	1.30	1.001	1
2,3,4,6,7,8-HxCDF	6.78		0.525	2.99	1.29	1.000	1
1,2,3,4,6,7,8-HpCDF	72.6		0.489	2.99	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	14.2		0.702	2.99	1.07	1.000	1
OCDF	235		1.07	5.97	0.87	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:50
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0188	**Units:**	ng/Kg
Lab Code:	E1801137-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 09:06
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.314g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519772	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	572		0.350	0.597	0.70		1
Total Penta-Dioxins	11.0		0.191	2.99	1.67		1
Total Hexa-Dioxins	75.5		0.183	2.99	1.26		1
Total Hepta-Dioxins	609		0.215	2.99	1.04		1
Total Tetra-Furans	1810		0.164	0.597	0.81		1
Total Penta-Furans	115		0.674	2.99	1.52		1
Total Hexa-Furans	185		0.507	2.99	1.15		1
Total Hepta-Furans	208		0.589	2.99	0.99		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:50
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0188	**Units:**	Percent
Lab Code:	E1801137-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 21:01
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.314g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519739	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	636.306	32		25-164	0.79	1.025
13C-1,2,3,7,8-PeCDD	2000	1002.297	50		25-181	1.58	1.225
13C-1,2,3,4,7,8-HxCDD	2000	797.681	40		32-141	1.28	0.990
13C-1,2,3,6,7,8-HxCDD	2000	785.667	39		28-130	1.25	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	811.667	41		23-140	1.06	1.076
13C-OCDD	4000	885.739	22		17-157	0.91	1.158
13C-2,3,7,8-TCDF	2000	756.621	38		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	894.957	45		24-185	1.58	1.175
13C-2,3,4,7,8-PeCDF	2000	802.203	40		21-178	1.57	1.213
13C-1,2,3,4,7,8-HxCDF	2000	648.395	32		26-152	0.51	0.967
13C-1,2,3,6,7,8-HxCDF	2000	659.483	33		26-123	0.52	0.971
13C-1,2,3,7,8,9-HxCDF	2000	737.994	37		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	640.466	32		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	559.900	28		28-143	0.44	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	639.450	32		26-138	0.43	1.088
37Cl-2,3,7,8-TCDD	800	394.432	49		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:50
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0188	**Units:**	ng/Kg
Lab Code:	E1801137-015	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**710**	18.7	18.7	10	1	710
1,2,3,7,8-PeCDD	**5.10**	0.191	2.99	1	1	5.10
1,2,3,4,7,8-HxCDD	**1.75**	0.178	2.99	1	0.1	0.175
1,2,3,6,7,8-HxCDD	**7.69**	0.191	2.99	1	0.1	0.769
1,2,3,7,8,9-HxCDD	**4.37**	0.180	2.99	1	0.1	0.437
1,2,3,4,6,7,8-HpCDD	**211**	0.215	2.99	1	0.01	2.11
OCDD	**4400**	0.952	5.97	1	0.0003	1.32
2,3,7,8-TCDF	**1200**	4.45	5.97	10	0.1	120
1,2,3,7,8-PeCDF	**47.5**	0.635	2.99	1	0.03	1.43
2,3,4,7,8-PeCDF	**34.3**	0.718	2.99	1	0.3	10.3
1,2,3,4,7,8-HxCDF	**98.1**	0.468	2.99	1	0.1	9.81
1,2,3,6,7,8-HxCDF	**23.4**	0.460	2.99	1	0.1	2.34
1,2,3,7,8,9-HxCDF	**7.58**	0.584	2.99	1	0.1	0.758
2,3,4,6,7,8-HxCDF	**6.78**	0.525	2.99	1	0.1	0.678
1,2,3,4,6,7,8-HpCDF	**72.6**	0.489	2.99	1	0.01	0.726
1,2,3,4,7,8,9-HpCDF	**14.2**	0.702	2.99	1	0.01	0.142
OCDF	**235**	1.07	5.97	1	0.0003	0.0705
		Total TEQ				866

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:50
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0188	**Units:**	Percent
Lab Code:	E1801137-015	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	5.913g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	81.2		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:55
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0189	**Units:**	ng/Kg
Lab Code:	E1801137-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 09:55
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.410g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519773	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	5940		75.2	75.2	0.82	1.002	40
1,2,3,7,8-PeCDD	29.1		0.256	3.63	1.50	1.000	1
1,2,3,4,7,8-HxCDD	1.91	**J**	0.456	3.63	1.16	1.000	1
1,2,3,6,7,8-HxCDD	9.55		0.493	3.63	1.29	1.000	1
1,2,3,7,8,9-HxCDD	4.56	**K**	0.464	3.63	1.62	1.007	1
1,2,3,4,6,7,8-HpCDD	267		0.437	3.63	1.06	1.000	1
OCDD	8090		58.5	291	0.88	1.000	40
2,3,7,8-TCDF	10200		17.6	29.1	0.77	1.001	40
1,2,3,7,8-PeCDF	333		0.786	3.63	1.49	1.001	1
2,3,4,7,8-PeCDF	298		0.829	3.63	1.54	1.001	1
1,2,3,4,7,8-HxCDF	650		0.779	3.63	1.22	1.000	1
1,2,3,6,7,8-HxCDF	143		0.789	3.63	1.23	1.000	1
1,2,3,7,8,9-HxCDF	45.6		1.06	3.63	1.33	1.001	1
2,3,4,6,7,8-HxCDF	30.2		0.856	3.63	1.20	1.000	1
1,2,3,4,6,7,8-HpCDF	243		1.68	3.63	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	74.0		2.71	3.63	0.98	1.000	1
OCDF	1950		0.663	7.27	0.87	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:55
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0189	**Units:**	ng/Kg
Lab Code:	E1801137-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 09:55
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.410g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519773	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	4720		0.495	0.727	0.75		1
Total Penta-Dioxins	42.0		0.256	3.63	1.45		1
Total Hexa-Dioxins	92.2		0.471	3.63	1.26		1
Total Hepta-Dioxins	743		0.437	3.63	1.03		1
Total Tetra-Furans	16100		0.322	0.727	0.76		1
Total Penta-Furans	1010		0.807	3.63	1.51		1
Total Hexa-Furans	978		0.863	3.63	1.24		1
Total Hepta-Furans	474		2.14	3.63	1.02		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:55
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0189	**Units:**	Percent
Lab Code:	E1801137-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 21:50
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.410g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519740	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	649.312	32		25-164	0.78	1.025
13C-1,2,3,7,8-PeCDD	2000	1031.170	52		25-181	1.57	1.225
13C-1,2,3,4,7,8-HxCDD	2000	902.609	45		32-141	1.25	0.990
13C-1,2,3,6,7,8-HxCDD	2000	949.321	47		28-130	1.25	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1042.104	52		23-140	1.06	1.075
13C-OCDD	4000	1293.427	32		17-157	0.91	1.158
13C-2,3,7,8-TCDF	2000	815.795	41		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	914.764	46		24-185	1.59	1.174
13C-2,3,4,7,8-PeCDF	2000	889.240	44		21-178	1.58	1.212
13C-1,2,3,4,7,8-HxCDF	2000	753.121	38		26-152	0.51	0.967
13C-1,2,3,6,7,8-HxCDF	2000	799.437	40		26-123	0.52	0.970
13C-1,2,3,7,8,9-HxCDF	2000	817.032	41		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	796.517	40		28-136	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	735.371	37		28-143	0.43	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	763.241	38		26-138	0.43	1.087
37Cl-2,3,7,8-TCDD	800	439.787	55		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:55
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0189	**Units:**	ng/Kg
Lab Code:	E1801137-016	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**5940**	75.2	75.2	40	1	5940
1,2,3,7,8-PeCDD	**29.1**	0.256	3.63	1	1	29.1
1,2,3,4,7,8-HxCDD	**1.91**	0.456	3.63	1	0.1	0.191
1,2,3,6,7,8-HxCDD	**9.55**	0.493	3.63	1	0.1	0.955
1,2,3,7,8,9-HxCDD	**4.56**	0.464	3.63	1	0.1	0.456
1,2,3,4,6,7,8-HpCDD	**267**	0.437	3.63	1	0.01	2.67
OCDD	**8090**	58.5	291	40	0.0003	2.43
2,3,7,8-TCDF	**10200**	17.6	29.1	40	0.1	1020
1,2,3,7,8-PeCDF	**333**	0.786	3.63	1	0.03	9.99
2,3,4,7,8-PeCDF	**298**	0.829	3.63	1	0.3	89.4
1,2,3,4,7,8-HxCDF	**650**	0.779	3.63	1	0.1	65.0
1,2,3,6,7,8-HxCDF	**143**	0.789	3.63	1	0.1	14.3
1,2,3,7,8,9-HxCDF	**45.6**	1.06	3.63	1	0.1	4.56
2,3,4,6,7,8-HxCDF	**30.2**	0.856	3.63	1	0.1	3.02
1,2,3,4,6,7,8-HpCDF	**243**	1.68	3.63	1	0.01	2.43
1,2,3,4,7,8,9-HpCDF	**74.0**	2.71	3.63	1	0.01	0.740
OCDF	**1950**	0.663	7.27	1	0.0003	0.585
		Total TEQ				7190

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 14:55
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0189	**Units:**	Percent
Lab Code:	E1801137-016	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	5.614g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	66.1		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 15:00
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0190	**Units:**	ng/Kg
Lab Code:	E1801137-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 05:03
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.004g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519767	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	7.95		0.933	0.933	0.73	1.001	1
1,2,3,7,8-PeCDD	0.279**J**		0.137	3.14	1.39	1.001	1
1,2,3,4,7,8-HxCDD	ND	U	0.382	3.14			1
1,2,3,6,7,8-HxCDD	ND	U	0.399	3.14			1
1,2,3,7,8,9-HxCDD	0.755**JK**		0.381	3.14	2.10	1.007	1
1,2,3,4,6,7,8-HpCDD	13.5		0.129	3.14	0.95	1.000	1
OCDD	441		0.338	6.27	0.87	1.000	1
2,3,7,8-TCDF	15.7		0.391	0.627	0.76	1.001	1
1,2,3,7,8-PeCDF	0.701**J**		0.154	3.14	1.50	1.001	1
2,3,4,7,8-PeCDF	0.418**JK**		0.152	3.14	2.05	1.001	1
1,2,3,4,7,8-HxCDF	0.845**J**		0.0739	3.14	1.06	1.000	1
1,2,3,6,7,8-HxCDF	0.328**JK**		0.0733	3.14	0.96	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.0956	3.14			1
2,3,4,6,7,8-HxCDF	0.0934**J**		0.0776	3.14	1.41	1.000	1
1,2,3,4,6,7,8-HpCDF	0.398**BJK**		0.0778	3.14	1.28	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.131	3.14			1
OCDF	0.985**JK**		0.326	6.27	1.27	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 15:00
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0190	**Units:**	ng/Kg
Lab Code:	E1801137-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 05:03
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.004g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519767	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	19.8		0.933	0.933	0.86		1
Total Penta-Dioxins	7.43		0.137	3.14	1.49		1
Total Hexa-Dioxins	46.9		0.387	3.14	1.19		1
Total Hepta-Dioxins	60.9		0.129	3.14	1.00		1
Total Tetra-Furans	21.5		0.391	0.627	0.67		1
Total Penta-Furans	0.701**J**		0.153	3.14	1.50		1
Total Hexa-Furans	0.938**J**		0.0798	3.14	1.06		1
Total Hepta-Furans	ND	U	0.102	3.14			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 15:00
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0190	**Units:**	Percent
Lab Code:	E1801137-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 05:03
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.004g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519767	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	346.756	17	**Y**	25-164	0.84	1.027
13C-1,2,3,7,8-PeCDD	2000	898.638	45		25-181	1.59	1.226
13C-1,2,3,4,7,8-HxCDD	2000	905.463	45		32-141	1.29	0.990
13C-1,2,3,6,7,8-HxCDD	2000	949.862	47		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1220.998	61		23-140	1.08	1.075
13C-OCDD	4000	1795.277	45		17-157	0.88	1.158
13C-2,3,7,8-TCDF	2000	405.587	20	**Y**	24-169	0.76	0.989
13C-1,2,3,7,8-PeCDF	2000	748.196	37		24-185	1.56	1.175
13C-2,3,4,7,8-PeCDF	2000	764.322	38		21-178	1.59	1.214
13C-1,2,3,4,7,8-HxCDF	2000	747.360	37		26-152	0.52	0.967
13C-1,2,3,6,7,8-HxCDF	2000	795.396	40		26-123	0.52	0.971
13C-1,2,3,7,8,9-HxCDF	2000	871.318	44		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	814.036	41		28-136	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	854.896	43		28-143	0.42	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	866.680	43		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	207.015	26	**Y**	35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 15:00
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0190	**Units:**	ng/Kg
Lab Code:	E1801137-017	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**7.95**	0.933	0.933	1	1	7.95
1,2,3,7,8-PeCDD	**0.279**	0.137	3.14	1	1	0.279
1,2,3,4,7,8-HxCDD	ND	0.382	3.14	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.399	3.14	1	0.1	
1,2,3,7,8,9-HxCDD	**0.755**	0.381	3.14	1	0.1	0.0755
1,2,3,4,6,7,8-HpCDD	**13.5**	0.129	3.14	1	0.01	0.135
OCDD	**441**	0.338	6.27	1	0.0003	0.132
2,3,7,8-TCDF	**15.7**	0.391	0.627	1	0.1	1.57
1,2,3,7,8-PeCDF	**0.701**	0.154	3.14	1	0.03	0.0210
2,3,4,7,8-PeCDF	**0.418**	0.152	3.14	1	0.3	0.125
1,2,3,4,7,8-HxCDF	**0.845**	0.0739	3.14	1	0.1	0.0845
1,2,3,6,7,8-HxCDF	**0.328**	0.0733	3.14	1	0.1	0.0328
1,2,3,7,8,9-HxCDF	ND	0.0956	3.14	1	0.1	
2,3,4,6,7,8-HxCDF	**0.0934**	0.0776	3.14	1	0.1	0.00934
1,2,3,4,6,7,8-HpCDF	**0.398**	0.0778	3.14	1	0.01	0.00398
1,2,3,4,7,8,9-HpCDF	ND	0.131	3.14	1	0.01	
OCDF	**0.985**	0.326	6.27	1	0.0003	0.000296
		Total TEQ				10.4

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 15:00
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0190	**Units:**	Percent
Lab Code:	E1801137-017	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	6.532g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	79.7		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:00
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0192	**Units:**	ng/Kg
Lab Code:	E1801137-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 23:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.310g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519742	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	16.6		0.448	0.610	0.75	1.001	1
1,2,3,7,8-PeCDD	0.605	**JK**	0.0733	3.05	1.27	1.001	1
1,2,3,4,7,8-HxCDD	0.538	**JK**	0.179	3.05	1.01	1.000	1
1,2,3,6,7,8-HxCDD	2.35	**J**	0.194	3.05	1.32	1.000	1
1,2,3,7,8,9-HxCDD	1.37	**J**	0.182	3.05	1.41	1.007	1
1,2,3,4,6,7,8-HpCDD	51.9		0.0562	3.05	1.02	1.000	1
OCDD	988		0.368	6.10	0.88	1.000	1
2,3,7,8-TCDF	38.5		0.241	0.610	0.75	1.001	1
1,2,3,7,8-PeCDF	1.91	**JK**	0.112	3.05	1.93	1.001	1
2,3,4,7,8-PeCDF	2.19	**J**	0.116	3.05	1.61	1.001	1
1,2,3,4,7,8-HxCDF	5.05		0.279	3.05	1.24	1.000	1
1,2,3,6,7,8-HxCDF	1.23	**JK**	0.272	3.05	1.01	1.000	1
1,2,3,7,8,9-HxCDF	0.502	**JK**	0.361	3.05	1.04	1.000	1
2,3,4,6,7,8-HxCDF	0.703	**JK**	0.290	3.05	0.89	1.000	1
1,2,3,4,6,7,8-HpCDF	12.3		0.442	3.05	0.97	1.000	1
1,2,3,4,7,8,9-HpCDF	1.16	**J**	0.654	3.05	0.98	1.000	1
OCDF	47.6		0.396	6.10	0.85	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:00
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0192	**Units:**	ng/Kg
Lab Code:	E1801137-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 23:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.310g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519742	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	20.2		0.448	0.610	0.88		1
Total Penta-Dioxins	1.21	**J**	0.0733	3.05	1.34		1
Total Hexa-Dioxins	22.7		0.185	3.05	1.24		1
Total Hepta-Dioxins	135		0.0562	3.05	1.04		1
Total Tetra-Furans	59.6		0.241	0.610	0.87		1
Total Penta-Furans	5.77		0.114	3.05	1.59		1
Total Hexa-Furans	14.8		0.298	3.05	1.26		1
Total Hepta-Furans	38.2		0.540	3.05	0.97		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:00
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0192	**Units:**	Percent
Lab Code:	E1801137-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 23:27
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.310g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519742	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	714.935	36		25-164	0.81	1.026
13C-1,2,3,7,8-PeCDD	2000	1201.956	60		25-181	1.60	1.225
13C-1,2,3,4,7,8-HxCDD	2000	1076.857	54		32-141	1.24	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1070.193	54		28-130	1.29	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1264.399	63		23-140	1.07	1.075
13C-OCDD	4000	1767.787	44		17-157	0.90	1.157
13C-2,3,7,8-TCDF	2000	875.786	44		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	1062.755	53		24-185	1.57	1.175
13C-2,3,4,7,8-PeCDF	2000	1018.305	51		21-178	1.61	1.213
13C-1,2,3,4,7,8-HxCDF	2000	870.946	44		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	898.745	45		26-123	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	944.678	47		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	913.184	46		28-136	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	865.590	43		28-143	0.45	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	956.164	48		26-138	0.44	1.088
37Cl-2,3,7,8-TCDD	800	401.810	50		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:00
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0192	**Units:**	ng/Kg
Lab Code:	E1801137-018	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**16.6**	0.448	0.610	1	1	16.6
1,2,3,7,8-PeCDD	**0.605**	0.0733	3.05	1	1	0.605
1,2,3,4,7,8-HxCDD	**0.538**	0.179	3.05	1	0.1	0.0538
1,2,3,6,7,8-HxCDD	**2.35**	0.194	3.05	1	0.1	0.235
1,2,3,7,8,9-HxCDD	**1.37**	0.182	3.05	1	0.1	0.137
1,2,3,4,6,7,8-HpCDD	**51.9**	0.0562	3.05	1	0.01	0.519
OCDD	**988**	0.368	6.10	1	0.0003	0.296
2,3,7,8-TCDF	**38.5**	0.241	0.610	1	0.1	3.85
1,2,3,7,8-PeCDF	**1.91**	0.112	3.05	1	0.03	0.0573
2,3,4,7,8-PeCDF	**2.19**	0.116	3.05	1	0.3	0.657
1,2,3,4,7,8-HxCDF	**5.05**	0.279	3.05	1	0.1	0.505
1,2,3,6,7,8-HxCDF	**1.23**	0.272	3.05	1	0.1	0.123
1,2,3,7,8,9-HxCDF	**0.502**	0.361	3.05	1	0.1	0.0502
2,3,4,6,7,8-HxCDF	**0.703**	0.290	3.05	1	0.1	0.0703
1,2,3,4,6,7,8-HpCDF	**12.3**	0.442	3.05	1	0.01	0.123
1,2,3,4,7,8,9-HpCDF	**1.16**	0.654	3.05	1	0.01	0.0116
OCDF	**47.6**	0.396	6.10	1	0.0003	0.0143
		Total TEQ				23.9

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:00
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0192	**Units:**	Percent
Lab Code:	E1801137-018	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	8.596g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	79.5		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:05
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0193	**Units:**	ng/Kg
Lab Code:	E1801137-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/03/19 00:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.053g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519743	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	23.5		0.322	0.634	0.76	1.001	1
1,2,3,7,8-PeCDD	0.931	**JK**	0.0748	3.17	1.01	1.001	1
1,2,3,4,7,8-HxCDD	0.974	**J**	0.103	3.17	1.38	1.000	1
1,2,3,6,7,8-HxCDD	2.83	**JK**	0.111	3.17	1.04	1.000	1
1,2,3,7,8,9-HxCDD	2.33	**J**	0.105	3.17	1.17	1.007	1
1,2,3,4,6,7,8-HpCDD	85.5		0.0826	3.17	1.07	1.000	1
OCDD	1670		0.358	6.34	0.88	1.000	1
2,3,7,8-TCDF	52.2		0.0979	0.634	0.74	1.001	1
1,2,3,7,8-PeCDF	3.56		0.207	3.17	1.38	1.000	1
2,3,4,7,8-PeCDF	3.01	**J**	0.224	3.17	1.45	1.001	1
1,2,3,4,7,8-HxCDF	6.28		0.198	3.17	1.20	1.000	1
1,2,3,6,7,8-HxCDF	1.77	**J**	0.197	3.17	1.19	1.000	1
1,2,3,7,8,9-HxCDF	0.680	**J**	0.265	3.17	1.24	1.000	1
2,3,4,6,7,8-HxCDF	1.26	**J**	0.211	3.17	1.12	1.000	1
1,2,3,4,6,7,8-HpCDF	22.1		0.195	3.17	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	1.65	**JK**	0.320	3.17	1.24	1.000	1
OCDF	83.6		0.252	6.34	0.89	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:05
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0193	**Units:**	ng/Kg
Lab Code:	E1801137-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/03/19 00:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.053g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519743	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	23.5		0.322	0.634	0.76		1
Total Penta-Dioxins	3.37		0.0748	3.17	1.65		1
Total Hexa-Dioxins	36.3		0.106	3.17	1.32		1
Total Hepta-Dioxins	230		0.0826	3.17	1.03		1
Total Tetra-Furans	83.2		0.0979	0.634	0.68		1
Total Penta-Furans	15.7		0.215	3.17	1.52		1
Total Hexa-Furans	26.9		0.216	3.17	1.23		1
Total Hepta-Furans	67.8		0.251	3.17	1.00		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:05
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0193	**Units:**	Percent
Lab Code:	E1801137-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/03/19 00:16
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.053g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519743	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	731.331	37		25-164	0.81	1.026
13C-1,2,3,7,8-PeCDD	2000	1192.196	60		25-181	1.59	1.226
13C-1,2,3,4,7,8-HxCDD	2000	1082.609	54		32-141	1.28	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1128.606	56		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1356.944	68		23-140	1.06	1.075
13C-OCDD	4000	1924.044	48		17-157	0.92	1.157
13C-2,3,7,8-TCDF	2000	871.664	44		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	1059.376	53		24-185	1.57	1.175
13C-2,3,4,7,8-PeCDF	2000	1002.245	50		21-178	1.58	1.213
13C-1,2,3,4,7,8-HxCDF	2000	892.011	45		26-152	0.51	0.967
13C-1,2,3,6,7,8-HxCDF	2000	941.546	47		26-123	0.52	0.970
13C-1,2,3,7,8,9-HxCDF	2000	967.490	48		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	954.495	48		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	951.367	48		28-143	0.44	1.047
13C-1,2,3,4,7,8,9-HpCDF	2000	965.565	48		26-138	0.45	1.088
37Cl-2,3,7,8-TCDD	800	441.627	55		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:05
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0193	**Units:**	ng/Kg
Lab Code:	E1801137-019	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**23.5**	0.322	0.634	1	1	23.5
1,2,3,7,8-PeCDD	**0.931**	0.0748	3.17	1	1	0.931
1,2,3,4,7,8-HxCDD	**0.974**	0.103	3.17	1	0.1	0.0974
1,2,3,6,7,8-HxCDD	**2.83**	0.111	3.17	1	0.1	0.283
1,2,3,7,8,9-HxCDD	**2.33**	0.105	3.17	1	0.1	0.233
1,2,3,4,6,7,8-HpCDD	**85.5**	0.0826	3.17	1	0.01	0.855
OCDD	**1670**	0.358	6.34	1	0.0003	0.501
2,3,7,8-TCDF	**52.2**	0.0979	0.634	1	0.1	5.22
1,2,3,7,8-PeCDF	**3.56**	0.207	3.17	1	0.03	0.107
2,3,4,7,8-PeCDF	**3.01**	0.224	3.17	1	0.3	0.903
1,2,3,4,7,8-HxCDF	**6.28**	0.198	3.17	1	0.1	0.628
1,2,3,6,7,8-HxCDF	**1.77**	0.197	3.17	1	0.1	0.177
1,2,3,7,8,9-HxCDF	**0.680**	0.265	3.17	1	0.1	0.0680
2,3,4,6,7,8-HxCDF	**1.26**	0.211	3.17	1	0.1	0.126
1,2,3,4,6,7,8-HpCDF	**22.1**	0.195	3.17	1	0.01	0.221
1,2,3,4,7,8,9-HpCDF	**1.65**	0.320	3.17	1	0.01	0.0165
OCDF	**83.6**	0.252	6.34	1	0.0003	0.0251
		Total TEQ				33.9

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:05
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0193	**Units:**	Percent
Lab Code:	E1801137-019	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	6.02g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	78.4		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:10
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0194	**Units:**	ng/Kg
Lab Code:	E1801137-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/03/19 01:05
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.144g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519744	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	41.5		0.359	0.667	0.77	1.001	1
1,2,3,7,8-PeCDD	1.54	**J**	0.0928	3.33	1.43	1.001	1
1,2,3,4,7,8-HxCDD	1.43	**JK**	0.145	3.33	0.96	1.000	1
1,2,3,6,7,8-HxCDD	7.11		0.158	3.33	1.33	1.000	1
1,2,3,7,8,9-HxCDD	4.16		0.148	3.33	1.31	1.007	1
1,2,3,4,6,7,8-HpCDD	181		0.113	3.33	1.02	1.000	1
OCDD	3370		0.568	6.67	0.88	1.000	1
2,3,7,8-TCDF	89.7		0.186	0.667	0.72	1.001	1
1,2,3,7,8-PeCDF	4.57		0.0977	3.33	1.46	1.001	1
2,3,4,7,8-PeCDF	4.16		0.105	3.33	1.35	1.001	1
1,2,3,4,7,8-HxCDF	9.12		0.139	3.33	1.19	1.000	1
1,2,3,6,7,8-HxCDF	2.74	**J**	0.135	3.33	1.06	1.000	1
1,2,3,7,8,9-HxCDF	0.905	**JK**	0.186	3.33	0.97	1.001	1
2,3,4,6,7,8-HxCDF	1.98	**J**	0.147	3.33	1.33	1.000	1
1,2,3,4,6,7,8-HpCDF	54.4		0.0880	3.33	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	3.09	**J**	0.142	3.33	1.02	1.000	1
OCDF	202		0.549	6.67	0.81	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:10
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0194	**Units:**	ng/Kg
Lab Code:	E1801137-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/03/19 01:05
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.144g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519744	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	54.2		0.359	0.667	0.75		1
Total Penta-Dioxins	10.6		0.0928	3.33	1.63		1
Total Hexa-Dioxins	75.6		0.150	3.33	1.23		1
Total Hepta-Dioxins	439		0.113	3.33	1.04		1
Total Tetra-Furans	142		0.186	0.667	0.66		1
Total Penta-Furans	24.8		0.102	3.33	1.35		1
Total Hexa-Furans	57.4		0.150	3.33	1.27		1
Total Hepta-Furans	185		0.113	3.33	1.04		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:10
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0194	**Units:**	Percent
Lab Code:	E1801137-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/03/19 01:05
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.144g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519744	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519731

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	821.434	41		25-164	0.78	1.027
13C-1,2,3,7,8-PeCDD	2000	1263.129	63		25-181	1.59	1.226
13C-1,2,3,4,7,8-HxCDD	2000	1155.742	58		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1159.203	58		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1180.062	59		23-140	1.04	1.075
13C-OCDD	4000	1270.195	32		17-157	0.90	1.158
13C-2,3,7,8-TCDF	2000	984.141	49		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1138.062	57		24-185	1.57	1.175
13C-2,3,4,7,8-PeCDF	2000	1074.863	54		21-178	1.58	1.213
13C-1,2,3,4,7,8-HxCDF	2000	946.285	47		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	981.577	49		26-123	0.51	0.970
13C-1,2,3,7,8,9-HxCDF	2000	992.017	50		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	977.910	49		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	791.175	40		28-143	0.44	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	842.031	42		26-138	0.45	1.088
37Cl-2,3,7,8-TCDD	800	474.052	59		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:10
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0194	**Units:**	ng/Kg
Lab Code:	E1801137-020	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**41.5**	0.359	0.667	1	1	41.5
1,2,3,7,8-PeCDD	**1.54**	0.0928	3.33	1	1	1.54
1,2,3,4,7,8-HxCDD	**1.43**	0.145	3.33	1	0.1	0.143
1,2,3,6,7,8-HxCDD	**7.11**	0.158	3.33	1	0.1	0.711
1,2,3,7,8,9-HxCDD	**4.16**	0.148	3.33	1	0.1	0.416
1,2,3,4,6,7,8-HpCDD	**181**	0.113	3.33	1	0.01	1.81
OCDD	**3370**	0.568	6.67	1	0.0003	1.01
2,3,7,8-TCDF	**89.7**	0.186	0.667	1	0.1	8.97
1,2,3,7,8-PeCDF	**4.57**	0.0977	3.33	1	0.03	0.137
2,3,4,7,8-PeCDF	**4.16**	0.105	3.33	1	0.3	1.25
1,2,3,4,7,8-HxCDF	**9.12**	0.139	3.33	1	0.1	0.912
1,2,3,6,7,8-HxCDF	**2.74**	0.135	3.33	1	0.1	0.274
1,2,3,7,8,9-HxCDF	**0.905**	0.186	3.33	1	0.1	0.0905
2,3,4,6,7,8-HxCDF	**1.98**	0.147	3.33	1	0.1	0.198
1,2,3,4,6,7,8-HpCDF	**54.4**	0.0880	3.33	1	0.01	0.544
1,2,3,4,7,8,9-HpCDF	**3.09**	0.142	3.33	1	0.01	0.0309
OCDF	**202**	0.549	6.67	1	0.0003	0.0606
		Total TEQ				59.6

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	11/14/18 16:10
Sample Matrix:	Sediment	**Date Received:**	11/16/18 14:00
Sample Name:	SL0194	**Units:**	Percent
Lab Code:	E1801137-020	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	01/04/19 13:32
	5.699g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	73.9		-	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1800532-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 14:33
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.131g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616319	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.855	0.855			1
1,2,3,7,8-PeCDD	ND	U	0.189	2.47			1
1,2,3,4,7,8-HxCDD	ND	U	0.120	2.47			1
1,2,3,6,7,8-HxCDD	ND	U	0.136	2.47			1
1,2,3,7,8,9-HxCDD	ND	U	0.119	2.47			1
1,2,3,4,6,7,8-HpCDD	0.118**JK**		0.0905	2.47	1.30	1.000	1
OCDD	0.976**JK**		0.183	4.94	0.64	1.000	1
2,3,7,8-TCDF	ND	U	0.539	0.539			1
1,2,3,7,8-PeCDF	ND	U	0.149	2.47			1
2,3,4,7,8-PeCDF	ND	U	0.146	2.47			1
1,2,3,4,7,8-HxCDF	ND	U	0.0904	2.47			1
1,2,3,6,7,8-HxCDF	ND	U	0.0872	2.47			1
1,2,3,7,8,9-HxCDF	ND	U	0.103	2.47			1
2,3,4,6,7,8-HxCDF	ND	U	0.0968	2.47			1
1,2,3,4,6,7,8-HpCDF	0.0885**JK**		0.0585	2.47	1.62	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0751	2.47			1
OCDF	ND	U	0.347	4.94			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1800532-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 14:33
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.131g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616319	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.855	0.855			1
Total Penta-Dioxins	ND	U	0.189	2.47			1
Total Hexa-Dioxins	ND	U	0.125	2.47			1
Total Hepta-Dioxins	ND	U	0.0905	2.47			1
Total Tetra-Furans	ND	U	0.539	0.539			1
Total Penta-Furans	ND	U	0.147	2.47			1
Total Hexa-Furans	ND	U	0.0938	2.47			1
Total Hepta-Furans	ND	U	0.0659	2.47			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1800532-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 14:33
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.131g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616319	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	640.890	32		25-164	0.80	1.030
13C-1,2,3,7,8-PeCDD	2000	1058.406	53		25-181	1.58	1.240
13C-1,2,3,4,7,8-HxCDD	2000	1097.949	55		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1088.265	54		28-130	1.25	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1256.529	63		23-140	1.04	1.070
13C-OCDD	4000	1355.351	34		17-157	0.89	1.139
13C-2,3,7,8-TCDF	2000	854.306	43		24-169	0.77	0.990
13C-1,2,3,7,8-PeCDF	2000	1023.660	51		24-185	1.58	1.187
13C-2,3,4,7,8-PeCDF	2000	983.058	49		21-178	1.60	1.227
13C-1,2,3,4,7,8-HxCDF	2000	954.899	48		26-152	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	967.002	48		26-123	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	950.210	48		29-147	0.55	1.008
13C-2,3,4,6,7,8-HxCDF	2000	930.127	47		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	880.804	44		28-143	0.45	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	836.787	42		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	364.376	46		35-197	NA	1.031

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900017-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 14:33
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.410g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519999	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.151	0.480			1
1,2,3,7,8-PeCDD	ND	U	0.0250	2.40			1
1,2,3,4,7,8-HxCDD	ND	U	0.0228	2.40			1
1,2,3,6,7,8-HxCDD	0.0275**JK**		0.0251	2.40	1.48	1.000	1
1,2,3,7,8,9-HxCDD	ND	U	0.0234	2.40			1
1,2,3,4,6,7,8-HpCDD	0.0422**JK**		0.0303	2.40	1.78	1.000	1
OCDD	0.309**J**		0.0499	4.80	0.87	1.000	1
2,3,7,8-TCDF	ND	U	0.0512	0.480			1
1,2,3,7,8-PeCDF	ND	U	0.0322	2.40			1
2,3,4,7,8-PeCDF	ND	U	0.0346	2.40			1
1,2,3,4,7,8-HxCDF	ND	U	0.0328	2.40			1
1,2,3,6,7,8-HxCDF	ND	U	0.0314	2.40			1
1,2,3,7,8,9-HxCDF	0.0565**JK**		0.0384	2.40	0.91	1.000	1
2,3,4,6,7,8-HxCDF	ND	U	0.0336	2.40			1
1,2,3,4,6,7,8-HpCDF	0.0397**JK**		0.0260	2.40	1.21	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0343	2.40			1
OCDF	ND	U	0.0594	4.80			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900017-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 14:33
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.410g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519999	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.151	0.480			1
Total Penta-Dioxins	ND	U	0.0250	2.40			1
Total Hexa-Dioxins	ND	U	0.0238	2.40			1
Total Hepta-Dioxins	ND	U	0.0303	2.40			1
Total Tetra-Furans	ND	U	0.0512	0.480			1
Total Penta-Furans	ND	U	0.0334	2.40			1
Total Hexa-Furans	ND	U	0.0339	2.40			1
Total Hepta-Furans	ND	U	0.0297	2.40			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900017-01	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 14:33
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.410g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519999	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1299.702	65		25-164	0.78	1.019
13C-1,2,3,7,8-PeCDD	2000	2102.193	105		25-181	1.59	1.180
13C-1,2,3,4,7,8-HxCDD	2000	1995.051	100		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1914.846	96		28-130	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	2372.519	119		23-140	1.06	1.067
13C-OCDD	4000	3452.845	86		17-157	0.89	1.143
13C-2,3,7,8-TCDF	2000	1587.349	79		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1919.249	96		24-185	1.57	1.139
13C-2,3,4,7,8-PeCDF	2000	1815.984	91		21-178	1.59	1.170
13C-1,2,3,4,7,8-HxCDF	2000	1635.230	82		26-152	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1649.840	82		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1731.636	87		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1688.116	84		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1679.119	84		28-143	0.46	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1766.537	88		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	706.124	88		35-197	NA	1.020

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QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Analyzed:**	01/04/19 - 01/02/19
Sample Matrix:	Sediment	**Date Extracted:**	12/28/18

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	Dry
		Analysis Lot:	621144

	Lab Control Sample EQ1800532-02			Duplicate Lab Control Sample EQ1800532-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	72.9	99.6	73	72.0	98.9	73	70-140	1	50
1,2,3,4,7,8-HxCDD	88.2	99.6	89	89.6	98.9	91	70-164	2	50
1,2,3,6,7,8-HxCDD	96.2	99.6	97	96.9	98.9	98	76-134	<1	50
1,2,3,7,8,9-HxCDD	96.3	99.6	97	89.6	98.9	91	64-162	7	50
1,2,3,7,8-PeCDD	94.8	99.6	95	101	98.9	102	70-142	6	50
2,3,7,8-TCDD	29.4	19.9	148	30.8	19.8	156	67-158	5	50
OCDD	194	199	98	192	198	97	78-144	1	50
1,2,3,4,6,7,8-HpCDF	91.2	99.6	92	92.9	98.9	94	82-122	2	50
1,2,3,4,7,8,9-HpCDF	98.3	99.6	99	93.5	98.9	95	78-138	5	50
1,2,3,4,7,8-HxCDF	93.6	99.6	94	93.1	98.9	94	72-134	<1	50
1,2,3,6,7,8-HxCDF	96.9	99.6	97	93.5	98.9	95	84-130	4	50
1,2,3,7,8,9-HxCDF	92.8	99.6	93	91.0	98.9	92	78-130	2	50
1,2,3,7,8-PeCDF	87.2	99.6	88	85.5	98.9	86	80-134	2	50
2,3,4,6,7,8-HxCDF	94.9	99.6	95	95.6	98.9	97	70-156	<1	50
2,3,4,7,8-PeCDF	98.5	99.6	99	94.4	98.9	95	68-160	4	50
2,3,7,8-TCDF	20.2	19.9	101	21.0	19.8	106	75-158	4	50
OCDF	197	199	99	183	198	92	63-170	7	50

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800532-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 10:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.043g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519774	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	29.4		0.412	0.498	0.78	1.001	1
1,2,3,7,8-PeCDD	94.8		0.0902	2.49	1.57	1.001	1
1,2,3,4,7,8-HxCDD	88.2		0.0886	2.49	1.23	1.000	1
1,2,3,6,7,8-HxCDD	96.2		0.0923	2.49	1.23	1.000	1
1,2,3,7,8,9-HxCDD	96.3		0.0885	2.49	1.32	1.007	1
1,2,3,4,6,7,8-HpCDD	72.9		0.106	2.49	1.02	1.000	1
OCDD	194		0.334	4.98	0.89	1.000	1
2,3,7,8-TCDF	20.2		0.184	0.498	0.72	1.001	1
1,2,3,7,8-PeCDF	87.2		0.122	2.49	1.55	1.001	1
2,3,4,7,8-PeCDF	98.5		0.126	2.49	1.54	1.001	1
1,2,3,4,7,8-HxCDF	93.6		0.0571	2.49	1.21	1.000	1
1,2,3,6,7,8-HxCDF	96.9		0.0554	2.49	1.18	1.000	1
1,2,3,7,8,9-HxCDF	92.8		0.0779	2.49	1.19	1.000	1
2,3,4,6,7,8-HxCDF	94.9		0.0602	2.49	1.18	1.000	1
1,2,3,4,6,7,8-HpCDF	91.2		0.140	2.49	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	98.3		0.240	2.49	1.04	1.000	1
OCDF	197		0.295	4.98	0.90	1.005	1

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800532-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 10:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.043g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519774	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	29.4		0.412	0.498	0.78		1
Total Penta-Dioxins	94.8		0.0902	2.49	1.57		1
Total Hexa-Dioxins	281		0.0899	2.49	1.23		1
Total Hepta-Dioxins	72.9		0.106	2.49	1.02		1
Total Tetra-Furans	21.7		0.184	0.498	0.82		1
Total Penta-Furans	186		0.124	2.49	1.76		1
Total Hexa-Furans	378		0.0621	2.49	1.21		1
Total Hepta-Furans	190		0.184	2.49	0.99		1

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1800532-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/04/19 10:43
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.043g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519774	**Blank File Name:**	P616319
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519760

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	605.386	30		25-164	0.79	1.026
13C-1,2,3,7,8-PeCDD	2000	1207.819	60		25-181	1.61	1.226
13C-1,2,3,4,7,8-HxCDD	2000	973.868	49		32-141	1.27	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1119.124	56		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1321.106	66		23-140	1.04	1.076
13C-OCDD	4000	2057.265	51		17-157	0.88	1.157
13C-2,3,7,8-TCDF	2000	759.097	38		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1039.296	52		24-185	1.56	1.175
13C-2,3,4,7,8-PeCDF	2000	1026.826	51		21-178	1.59	1.213
13C-1,2,3,4,7,8-HxCDF	2000	854.112	43		26-152	0.51	0.967
13C-1,2,3,6,7,8-HxCDF	2000	945.843	47		26-123	0.52	0.970
13C-1,2,3,7,8,9-HxCDF	2000	951.173	48		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	918.600	46		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	979.876	49		28-143	0.45	1.048
13C-1,2,3,4,7,8,9-HpCDF	2000	969.511	48		26-138	0.44	1.089
37Cl-2,3,7,8-TCDD	800	353.215	44		35-197	NA	1.027

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800532-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 23:36
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.111g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616330	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	30.8		0.871	0.871	0.76	1.001	1
1,2,3,7,8-PeCDD	101		0.212	2.47	1.58	1.001	1
1,2,3,4,7,8-HxCDD	89.6		0.101	2.47	1.29	1.000	1
1,2,3,6,7,8-HxCDD	96.9		0.116	2.47	1.28	1.000	1
1,2,3,7,8,9-HxCDD	89.6		0.101	2.47	1.25	1.007	1
1,2,3,4,6,7,8-HpCDD	72.0		0.114	2.47	1.06	1.000	1
OCDD	192		0.291	4.95	0.89	1.000	1
2,3,7,8-TCDF	21.0		0.471	0.495	0.80	1.001	1
1,2,3,7,8-PeCDF	85.5		0.141	2.47	1.59	1.001	1
2,3,4,7,8-PeCDF	94.4		0.145	2.47	1.59	1.001	1
1,2,3,4,7,8-HxCDF	93.1		0.113	2.47	1.27	1.000	1
1,2,3,6,7,8-HxCDF	93.5		0.111	2.47	1.28	1.000	1
1,2,3,7,8,9-HxCDF	91.0		0.134	2.47	1.25	1.000	1
2,3,4,6,7,8-HxCDF	95.6		0.120	2.47	1.30	1.000	1
1,2,3,4,6,7,8-HpCDF	92.9		0.125	2.47	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	93.5		0.160	2.47	1.00	1.000	1
OCDF	183		0.453	4.95	0.93	1.005	1

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800532-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 23:36
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.111g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616330	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	30.8		0.871	0.871	0.76		1
Total Penta-Dioxins	101		0.212	2.47	1.58		1
Total Hexa-Dioxins	276		0.106	2.47	1.29		1
Total Hepta-Dioxins	72.5		0.114	2.47	1.11		1
Total Tetra-Furans	21.2		0.471	0.495	0.80		1
Total Penta-Furans	180		0.143	2.47	1.59		1
Total Hexa-Furans	373		0.119	2.47	1.27		1
Total Hepta-Furans	186		0.140	2.47	1.05		1

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1800532-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/02/19 23:36
Prep Method:	Method Soxhlet	**Date Extracted:**	12/28/18
Sample Amount:	10.111g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616330	**Blank File Name:**	P616319
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616316

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	641.615	32		25-164	0.79	1.030
13C-1,2,3,7,8-PeCDD	2000	1048.005	52		25-181	1.61	1.239
13C-1,2,3,4,7,8-HxCDD	2000	1164.194	58		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1107.522	55		28-130	1.30	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1140.021	57		23-140	1.05	1.070
13C-OCDD	4000	1163.505	29		17-157	0.91	1.139
13C-2,3,7,8-TCDF	2000	855.667	43		24-169	0.81	0.990
13C-1,2,3,7,8-PeCDF	2000	1025.338	51		24-185	1.58	1.187
13C-2,3,4,7,8-PeCDF	2000	962.894	48		21-178	1.59	1.227
13C-1,2,3,4,7,8-HxCDF	2000	1040.453	52		26-152	0.55	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1013.165	51		26-123	0.55	0.972
13C-1,2,3,7,8,9-HxCDF	2000	967.368	48		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	981.763	49		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	859.972	43		28-143	0.47	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	752.883	38		26-138	0.47	1.082
37Cl-2,3,7,8-TCDD	800	362.564	45		35-197	NA	1.031

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QA/QC Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Analyzed:**	01/16/19
Sample Matrix:	Sediment	**Date Extracted:**	01/14/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	Dry
		Analysis Lot:	622327

	Lab Control Sample EQ1900017-02			Duplicate Lab Control Sample EQ1900017-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	77.7	99.7	78	78.0	98.9	79	70-140	<1	50
1,2,3,4,7,8-HxCDD	92.6	99.7	93	92.1	98.9	93	70-164	<1	50
1,2,3,6,7,8-HxCDD	102	99.7	103	101	98.9	102	76-134	2	50
1,2,3,7,8,9-HxCDD	98.1	99.7	98	99.1	98.9	100	64-162	1	50
1,2,3,7,8-PeCDD	100	99.7	101	99.9	98.9	101	70-142	<1	50
2,3,7,8-TCDD	27.3	19.9	137	29.4	19.8	148	67-158	7	50
OCDD	207	199	104	232	198	118	78-144	12	50
1,2,3,4,6,7,8-HpCDF	98.9	99.7	99	99.3	98.9	100	82-122	<1	50
1,2,3,4,7,8,9-HpCDF	103	99.7	103	102	98.9	103	78-138	<1	50
1,2,3,4,7,8-HxCDF	102	99.7	102	100	98.9	101	72-134	1	50
1,2,3,6,7,8-HxCDF	100	99.7	100	101	98.9	102	84-130	<1	50
1,2,3,7,8,9-HxCDF	98.6	99.7	99	96.4	98.9	97	78-130	2	50
1,2,3,7,8-PeCDF	94.7	99.7	95	91.9	98.9	93	80-134	3	50
2,3,4,6,7,8-HxCDF	105	99.7	106	101	98.9	102	70-156	4	50
2,3,4,7,8-PeCDF	104	99.7	104	102	98.9	103	68-160	1	50
2,3,7,8-TCDF	20.0	19.9	101	23.8	19.8	120	75-158	17	50
OCDF	216	199	108	213	198	107	63-170	2	50

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900017-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 21:02
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.032g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520007	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	27.3		0.186	0.498	0.77	1.001	1
1,2,3,7,8-PeCDD	100		0.0478	2.49	1.58	1.000	1
1,2,3,4,7,8-HxCDD	92.6		0.0306	2.49	1.24	1.000	1
1,2,3,6,7,8-HxCDD	102		0.0345	2.49	1.27	1.000	1
1,2,3,7,8,9-HxCDD	98.1		0.0317	2.49	1.30	1.006	1
1,2,3,4,6,7,8-HpCDD	77.7		0.0314	2.49	1.08	1.000	1
OCDD	207		0.0646	4.98	0.89	1.000	1
2,3,7,8-TCDF	20.0		0.0479	0.498	0.72	1.000	1
1,2,3,7,8-PeCDF	94.7		0.0510	2.49	1.51	1.001	1
2,3,4,7,8-PeCDF	104		0.0547	2.49	1.49	1.000	1
1,2,3,4,7,8-HxCDF	102		0.0342	2.49	1.23	1.000	1
1,2,3,6,7,8-HxCDF	100		0.0338	2.49	1.20	1.000	1
1,2,3,7,8,9-HxCDF	98.6		0.0416	2.49	1.21	1.000	1
2,3,4,6,7,8-HxCDF	105		0.0382	2.49	1.18	1.000	1
1,2,3,4,6,7,8-HpCDF	98.9		0.0463	2.49	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	103		0.0619	2.49	1.03	1.000	1
OCDF	216		0.0894	4.98	0.88	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900017-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 21:02
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.032g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520007	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	27.3		0.186	0.498	0.77		1
Total Penta-Dioxins	100		0.0478	2.49	1.58		1
Total Hexa-Dioxins	293		0.0322	2.49	1.24		1
Total Hepta-Dioxins	77.7		0.0314	2.49	1.08		1
Total Tetra-Furans	20.6		0.0479	0.498	0.86		1
Total Penta-Furans	201		0.0528	2.49	1.46		1
Total Hexa-Furans	406		0.0368	2.49	1.23		1
Total Hepta-Furans	202		0.0534	2.49	1.01		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900017-02	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 21:02
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.032g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520007	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1129.372	56		25-164	0.79	1.019
13C-1,2,3,7,8-PeCDD	2000	1947.941	97		25-181	1.57	1.181
13C-1,2,3,4,7,8-HxCDD	2000	1731.739	87		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1588.820	79		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	2038.238	102		23-140	1.06	1.067
13C-OCDD	4000	2797.415	70		17-157	0.90	1.142
13C-2,3,7,8-TCDF	2000	1361.199	68		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1785.973	89		24-185	1.57	1.139
13C-2,3,4,7,8-PeCDF	2000	1676.579	84		21-178	1.57	1.170
13C-1,2,3,4,7,8-HxCDF	2000	1441.676	72		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1420.618	71		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1521.195	76		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1410.166	71		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1452.498	73		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1555.326	78		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	653.729	82		35-197	NA	1.020

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900017-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 21:59
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.110g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520008	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	29.4		0.124	0.495	0.77	1.001	1
1,2,3,7,8-PeCDD	99.9		0.0318	2.47	1.58	1.000	1
1,2,3,4,7,8-HxCDD	92.1		0.0198	2.47	1.28	1.000	1
1,2,3,6,7,8-HxCDD	101		0.0229	2.47	1.28	1.000	1
1,2,3,7,8,9-HxCDD	99.1		0.0208	2.47	1.24	1.007	1
1,2,3,4,6,7,8-HpCDD	78.0		0.0253	2.47	1.04	1.000	1
OCDD	232		0.0592	4.95	0.88	1.000	1
2,3,7,8-TCDF	23.8		0.0429	0.495	0.73	1.001	1
1,2,3,7,8-PeCDF	91.9		0.0440	2.47	1.51	1.001	1
2,3,4,7,8-PeCDF	102		0.0460	2.47	1.50	1.000	1
1,2,3,4,7,8-HxCDF	100		0.0334	2.47	1.19	1.000	1
1,2,3,6,7,8-HxCDF	101		0.0336	2.47	1.21	1.000	1
1,2,3,7,8,9-HxCDF	96.4		0.0385	2.47	1.21	1.000	1
2,3,4,6,7,8-HxCDF	101		0.0356	2.47	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	99.3		0.0919	2.47	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	102		0.113	2.47	1.00	1.000	1
OCDF	213		0.0754	4.95	0.90	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900017-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 21:59
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.110g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520008	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	29.4		0.124	0.495	0.77		1
Total Penta-Dioxins	99.9		0.0318	2.47	1.58		1
Total Hexa-Dioxins	292		0.0211	2.47	1.28		1
Total Hepta-Dioxins	83.1		0.0253	2.47	1.05		1
Total Tetra-Furans	27.9		0.0429	0.495	0.70		1
Total Penta-Furans	195		0.0450	2.47	1.72		1
Total Hexa-Furans	399		0.0352	2.47	1.30		1
Total Hepta-Furans	203		0.102	2.47	1.02		1

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Analytical Report

Client:	Integral Consulting, Incorporated	**Service Request:**	E1801137
Project:	C1887-0501	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900017-03	**Basis:**	Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/16/19 21:59
Prep Method:	Method Soxhlet	**Date Extracted:**	1/14/19
Sample Amount:	10.110g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520008	**Blank File Name:**	P519999
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519996

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1210.602	61		25-164	0.79	1.019
13C-1,2,3,7,8-PeCDD	2000	2091.933	105		25-181	1.59	1.180
13C-1,2,3,4,7,8-HxCDD	2000	1940.082	97		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1772.686	89		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	2144.037	107		23-140	1.06	1.067
13C-OCDD	4000	2973.979	74		17-157	0.89	1.143
13C-2,3,7,8-TCDF	2000	1512.707	76		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1919.196	96		24-185	1.57	1.139
13C-2,3,4,7,8-PeCDF	2000	1834.395	92		21-178	1.57	1.170
13C-1,2,3,4,7,8-HxCDF	2000	1597.881	80		26-152	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1557.862	78		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1750.061	88		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1648.008	82		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1477.802	74		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1687.100	84		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	695.386	87		35-197	NA	1.020

Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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Sample Response Summary

CLIENT ID.
SL0144

Run #11 Filename P616320 Samp: 1 Inj: 1 Acquired: 2-JAN-19 15:22:33
Processed: 3-JAN-19 13:33:48 Sample ID: E1801137-001

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:32	5.084e+04	6.479e+04	0.78	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:33	1.688e+03	1.033e+03	1.63	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:36	2.093e+03	1.346e+03	1.55	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:27	2.190e+03	1.741e+03	1.26	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:34	7.017e+02	5.988e+02	1.17	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:06	5.451e+02	4.880e+02	1.12	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:53	2.767e+02	2.469e+02	1.12	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:08	9.954e+03	9.444e+03	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:27	6.475e+02	6.546e+02	0.99	yes	no	1.463
10	Unk	OCDF	40:39	1.072e+05	1.186e+05	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:33	1.213e+04	1.540e+04	0.79	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:54	3.856e+02	2.888e+02	1.34	yes	yes	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:15	1.861e+02	2.041e+02	0.91	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:20	9.557e+02	7.987e+02	1.20	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:34	4.383e+02	4.280e+02	1.02	no	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:02	1.481e+04	1.404e+04	1.06	yes	no	1.112
17	Unk	OCDD	40:28	9.280e+04	1.026e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:30	1.586e+04	1.996e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:32	2.690e+04	1.729e+04	1.56	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:34	2.372e+04	1.553e+04	1.53	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:26	1.051e+04	1.938e+04	0.54	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:33	1.088e+04	2.057e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:05	1.016e+04	1.932e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:51	9.033e+03	1.751e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:08	5.770e+03	1.208e+04	0.48	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:26	4.533e+03	1.001e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:31	8.463e+03	1.090e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:52	1.948e+04	1.215e+04	1.60	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:13	1.510e+04	1.177e+04	1.28	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:19	1.293e+04	1.066e+04	1.21	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:01	1.064e+04	1.015e+04	1.05	yes	no	0.857
32	IS	13C-OCDD	40:28	5.537e+03	6.060e+03	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:45	2.841e+04	3.579e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:33	3.450e+04	2.687e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:32	1.265e+04				no	1.086

$$\text{OCDD} = \frac{(9.280e+04 + 1.026e+05) \times 4000\ \text{pg} \times 1}{(5.537e+03 + 6.060e+03) \times 10.043 \times 52.6 / 100 \times 1.157} = 11026\ \text{ng/Kg}$$

LMc 01/04/19

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0144

Run #11 Filename P616320 Samp: 1 Inj: 1 Acquired: 2-JAN-19 15:22:33
Processed: 3-JAN-19 13:33:48 LAB. ID: E1801137-001

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.74e+06	1.71e+03	3.9e+03	8.51e+06	3.12e+03	2.7e+03
2	1,2,3,7,8-PeCDF	3.15e+05	1.37e+04	2.3e+01	1.77e+05	5.93e+03	3.0e+01
3	2,3,4,7,8-PeCDF	3.52e+05	1.37e+04	2.6e+01	2.31e+05	5.93e+03	3.9e+01
4	1,2,3,4,7,8-HxCDF	4.37e+05	3.49e+03	1.3e+02	3.51e+05	4.79e+03	7.3e+01
5	1,2,3,6,7,8-HxCDF	1.46e+05	3.49e+03	4.2e+01	1.01e+05	4.79e+03	2.1e+01
6	2,3,4,6,7,8-HxCDF	1.13e+05	3.49e+03	3.2e+01	9.95e+04	4.79e+03	2.1e+01
7	1,2,3,7,8,9-HxCDF	5.95e+04	3.49e+03	1.7e+01	5.36e+04	4.79e+03	1.1e+01
8	1,2,3,4,6,7,8-HpCDF	2.31e+06	1.90e+03	1.2e+03	2.14e+06	3.70e+03	5.8e+02
9	1,2,3,4,7,8,9-HpCDF	1.57e+05	1.90e+03	8.3e+01	1.51e+05	3.70e+03	4.1e+01
10	OCDF	2.18e+07	1.21e+03	1.8e+04	2.37e+07	2.26e+03	1.0e+04
11	2,3,7,8-TCDD	1.94e+06	3.21e+03	6.0e+02	2.41e+06	1.82e+03	1.3e+03
12	1,2,3,7,8-PeCDD	6.28e+04	2.66e+03	2.4e+01	4.41e+04	7.85e+03	5.6e+00
13	1,2,3,4,7,8-HxCDD	4.08e+04	9.96e+02	4.1e+01	4.42e+04	1.51e+03	2.9e+01
14	1,2,3,6,7,8-HxCDD	2.18e+05	9.96e+02	2.2e+02	1.74e+05	1.51e+03	1.2e+02
15	1,2,3,7,8,9-HxCDD	9.79e+04	9.96e+02	9.8e+01	9.10e+04	1.51e+03	6.0e+01
16	1,2,3,4,6,7,8-HpCDD	3.47e+06	2.39e+03	1.5e+03	3.27e+06	2.50e+03	1.3e+03
17	OCDD	1.97e+07	1.17e+03	1.7e+04	2.16e+07	6.40e+02	3.4e+04
18	13C-2,3,7,8-TCDF	2.17e+06	1.45e+04	1.5e+02	2.72e+06	1.22e+04	2.2e+02
19	13C-1,2,3,7,8-PeCDF	4.71e+06	1.48e+04	3.2e+02	3.01e+06	1.03e+04	2.9e+02
20	13C-2,3,4,7,8-PeCDF	4.45e+06	1.48e+04	3.0e+02	2.95e+06	1.03e+04	2.9e+02
21	13C-1,2,3,4,7,8-HxCDF	2.15e+06	1.86e+03	1.2e+03	3.97e+06	1.51e+04	2.6e+02
22	13C-1,2,3,6,7,8-HxCDF	2.12e+06	1.86e+03	1.1e+03	3.99e+06	1.51e+04	2.7e+02
23	13C-2,3,4,6,7,8-HxCDF	2.23e+06	1.86e+03	1.2e+03	4.20e+06	1.51e+04	2.8e+02
24	13C-1,2,3,7,8,9-HxCDF	2.10e+06	1.86e+03	1.1e+03	3.96e+06	1.51e+04	2.6e+02
25	13C-1,2,3,4,6,7,8-HpCDF	1.27e+06	3.75e+03	3.4e+02	2.75e+06	3.80e+03	7.2e+02
26	13C-1,2,3,4,7,8,9-HpCDF	1.07e+06	3.75e+03	2.9e+02	2.30e+06	3.80e+03	6.1e+02
27	13C-2,3,7,8-TCDD	1.35e+06	1.28e+04	1.1e+02	1.71e+06	4.62e+03	3.7e+02
28	13C-1,2,3,7,8-PeCDD	3.60e+06	2.63e+03	1.4e+03	2.22e+06	2.00e+03	1.1e+03
29	13C-1,2,3,4,7,8-HxCDD	3.25e+06	2.28e+03	1.4e+03	2.63e+06	1.06e+03	2.5e+03
30	13C-1,2,3,6,7,8-HxCDD	2.87e+06	2.28e+03	1.3e+03	2.28e+06	1.06e+03	2.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.53e+06	1.02e+03	2.5e+03	2.37e+06	5.80e+02	4.1e+03
32	13C-OCDD	1.15e+06	1.96e+03	5.9e+02	1.30e+06	5.76e+02	2.3e+03
33	13C-1,2,3,4-TCDD	4.01e+06	1.28e+04	3.1e+02	5.01e+06	4.62e+03	1.1e+03
34	13C-1,2,3,7,8,9-HxCDD	7.65e+06	2.28e+03	3.3e+03	5.99e+06	1.06e+03	5.6e+03
35	37Cl-2,3,7,8-TCDD	1.95e+06	1.84e+03	1.1e+03			

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Peak List Summary

CLIENT ID.
SL0144

Entry: 36 Totals Name: Total Tetra-Furans

Run: 11 File: P616320 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 15:22:33 Processed: 3-JAN-19 13:33:48

Mass: 303.9020 305.8990 Tot Response: 2.04e+05 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:54	4.61e+02	5.93e+02	0.78	yes	1.05e+03		n	n
2	22:20	6.45e+02	7.84e+02	0.82	yes	1.43e+03		n	n
3	22:37	2.11e+03	2.73e+03	0.77	yes	4.83e+03		n	n
4	22:58	9.03e+02	1.10e+03	0.82	yes	2.01e+03		n	n
5	23:06	1.68e+02	2.27e+02	0.74	yes	3.96e+02		n	n
6	23:16	1.74e+03	2.00e+03	0.87	yes	3.74e+03		n	n
7	23:39	4.53e+02	5.83e+02	0.78	yes	1.04e+03		n	n
8	23:45	9.76e+01	1.19e+02	0.82	yes	2.17e+02		n	n
9	23:58	3.17e+03	3.94e+03	0.80	yes	7.11e+03		n	n
10	24:29	2.19e+04	2.80e+04	0.78	yes	4.99e+04		n	n
11	25:32	5.08e+04	6.48e+04	0.78	yes	1.16e+05	2,3,7,8-TCDF	n	n
12	25:57	3.52e+03	4.21e+03	0.84	yes	7.73e+03		n	n
13	26:13	3.95e+02	4.56e+02	0.87	yes	8.51e+02		n	n
14	27:47	3.49e+03	4.30e+03	0.81	yes	7.79e+03		n	n

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Peak List Summary

CLIENT ID.
SL0144

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 11 File: P616320 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 15:22:33 Processed: 3-JAN-19 13:33:48

Mass: 319.8970 321.8940 Tot Response: 3.06e+04 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:37	2.16e+02	3.29e+02	0.66	yes	5.45e+02		n	n
2	22:56	9.39e+01	1.16e+02	0.81	yes	2.10e+02		n	n
3	25:44	7.41e+01	1.02e+02	0.73	yes	1.76e+02		n	n
4	26:33	1.21e+04	1.54e+04	0.79	yes	2.75e+04	2,3,7,8-TCDD	n	n
5	26:54	9.55e+02	1.19e+03	0.80	yes	2.15e+03		n	n

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CLIENT ID.
SL0144

Entry: 38 Totals Name: Total Penta-Furans1

Run: 11 File: P616320 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 15:22:33 Processed: 3-JAN-19 13:33:48

Mass: 339.8600 341.8570 Tot Response: 5.62e+03 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:47	3.53e+03	2.09e+03 1.69	yes	5.62e+03		n	n

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Peak List Summary

CLIENT ID.
SL0144

Entry: 39 Totals Name: Total Penta-Furans2

Run: 11 File: P616320 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 15:22:33 Processed: 3-JAN-19 13:33:48

Mass: 339.8600 341.8570 Tot Response: 1.34e+04 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:22	3.88e+02	2.47e+02	1.57	yes	6.35e+02		n	n
2	29:32	2.91e+03	1.91e+03	1.52	yes	4.81e+03		n	n
3	30:08	9.57e+02	6.30e+02	1.52	yes	1.59e+03		n	n
4	30:33	1.69e+03	1.03e+03	1.63	yes	2.72e+03	1,2,3,7,8-PeCDF	n	n
5	31:36	2.09e+03	1.35e+03	1.55	yes	3.44e+03	2,3,4,7,8-PeCDF	n	n
6	32:24	1.30e+02	7.94e+01	1.64	yes	2.09e+02		n	n

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Peak List Summary

CLIENT ID.
SL0144

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 11 File: P616320 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 15:22:33 Processed: 3-JAN-19 13:33:48

Mass: 355.8550 357.8520 Tot Response: 3.59e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:36	9.40e+02	5.73e+02	1.64	yes	1.51e+03		n	y
2	30:35	3.34e+02	2.39e+02	1.40	yes	5.73e+02		n	y
3	30:52	2.09e+02	1.40e+02	1.49	yes	3.49e+02		n	y
4	31:06	2.78e+02	2.04e+02	1.36	yes	4.82e+02		n	y
5	31:54	3.86e+02	2.89e+02	1.34	yes	6.74e+02	1,2,3,7,8-PeCDD	y	y

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SL0144

Entry: 41 Totals Name: Total Hexa-Furans

Run: 11 File: P616320 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 15:22:33 Processed: 3-JAN-19 13:33:48

Mass: 373.8210 375.8180 Tot Response: 2.64e+04 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:16	1.18e+03	8.96e+02	1.31	yes	2.07e+03		n	n
2	33:26	3.70e+03	2.77e+03	1.33	yes	6.47e+03		n	n
3	33:48	2.49e+02	1.87e+02	1.33	yes	4.36e+02		n	n
4	33:59	5.26e+03	4.24e+03	1.24	yes	9.50e+03		n	n
5	34:20	3.05e+02	2.83e+02	1.08	yes	5.88e+02		n	n
6	34:27	2.19e+03	1.74e+03	1.26	yes	3.93e+03	1,2,3,4,7,8-HxCDF	n	n
7	34:34	7.02e+02	5.99e+02	1.17	yes	1.30e+03	1,2,3,6,7,8-HxCDF	n	n
8	34:48	2.73e+02	2.37e+02	1.15	yes	5.10e+02		n	n
9	35:06	5.45e+02	4.88e+02	1.12	yes	1.03e+03	2,3,4,6,7,8-HxCDF	n	n
10	35:53	2.77e+02	2.47e+02	1.12	yes	5.24e+02	1,2,3,7,8,9-HxCDF	n	n

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SL0144

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 11 File: P616320 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 15:22:33 Processed: 3-JAN-19 13:33:48

Mass: 389.8160 391.8130 Tot Response: 2.04e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:49	6.00e+03	4.81e+03	1.25	yes	1.08e+04		n	n
2	34:23	7.53e+02	5.83e+02	1.29	yes	1.34e+03		n	n
3	34:37	3.28e+03	2.61e+03	1.26	yes	5.89e+03		n	n
4	34:43	3.15e+02	2.47e+02	1.27	yes	5.62e+02		n	n
5	35:20	9.56e+02	7.99e+02	1.20	yes	1.75e+03	1,2,3,6,7,8-HxCDD	n	n

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Entry: 43 Totals Name: Total Hepta-Furans

Run: 11 File: P616320 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 15:22:33 Processed: 3-JAN-19 13:33:48

Mass: 407.7820 409.7790 Tot Response: 4.47e+04 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:04	2.08e+02	1.80e+02	1.16	yes	3.89e+02		n	n
2	37:08	9.95e+03	9.44e+03	1.05	yes	1.94e+04	1,2,3,4,6,7,8-HpCDF	n	n
3	37:24	5.73e+02	5.67e+02	1.01	yes	1.14e+03		n	n
4	37:32	1.15e+04	1.09e+04	1.05	yes	2.25e+04		n	n
5	38:27	6.47e+02	6.55e+02	0.99	yes	1.30e+03	1,2,3,4,7,8,9-HpCDF	n	n

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SL0144

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 11 File: P616320 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 15:22:33 Processed: 3-JAN-19 13:33:48

Mass: 423.7770 425.7740 Tot Response: 7.71e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:24	2.46e+04	2.36e+04	1.04	yes	4.83e+04		n	n
2	38:02	1.48e+04	1.40e+04	1.06	yes	2.88e+04	1,2,3,4,6,7,8-HpCDD	n	n

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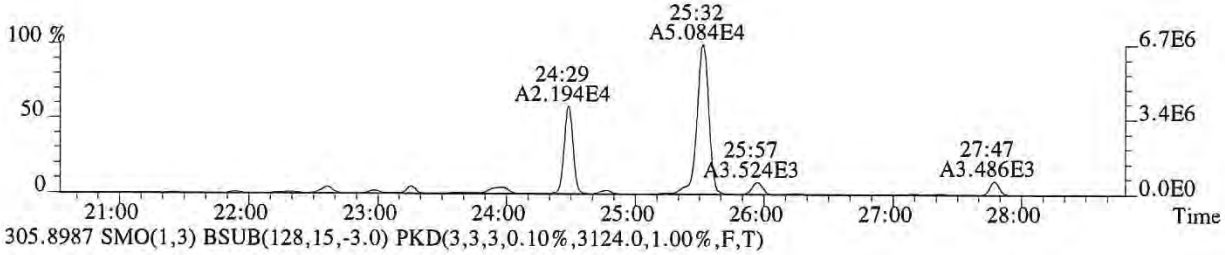
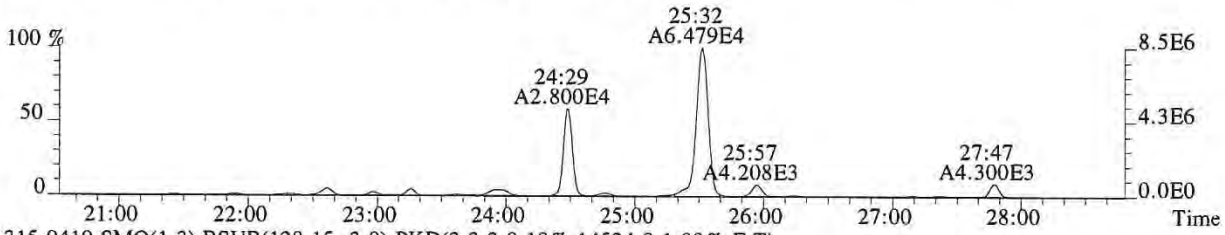
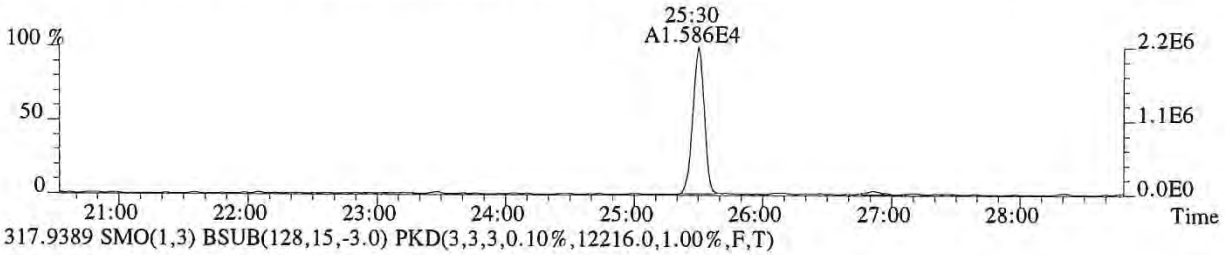
File:P616320 #1-587 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1712.0,1.00%,F,T)



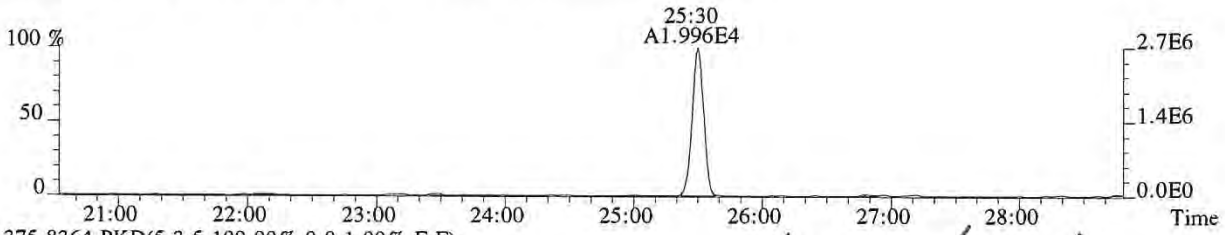
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3124.0,1.00%,F,T)



315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,14524.0,1.00%,F,T)

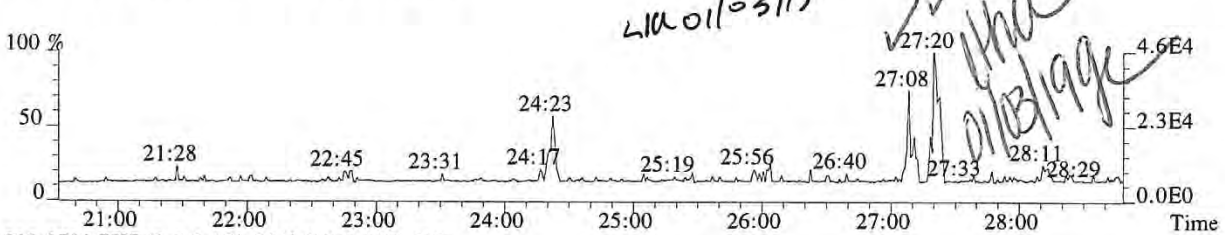


317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12216.0,1.00%,F,T)

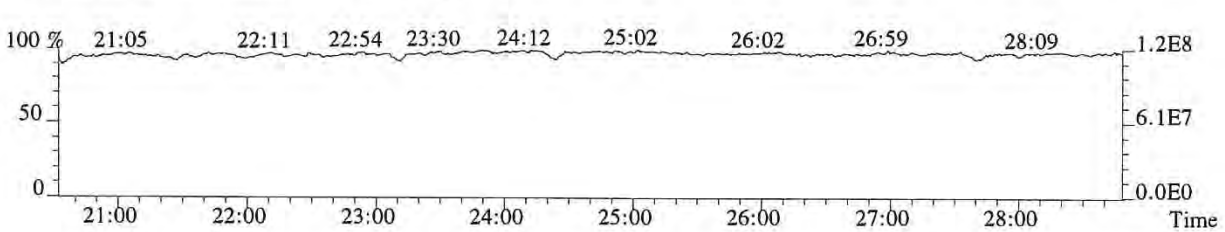


375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

LMC 01/03/19

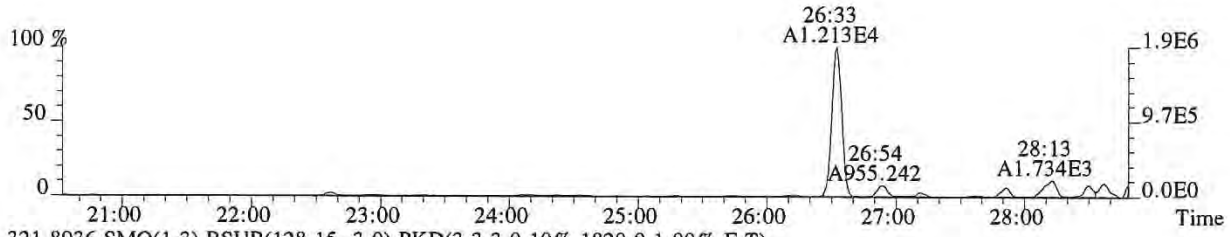


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

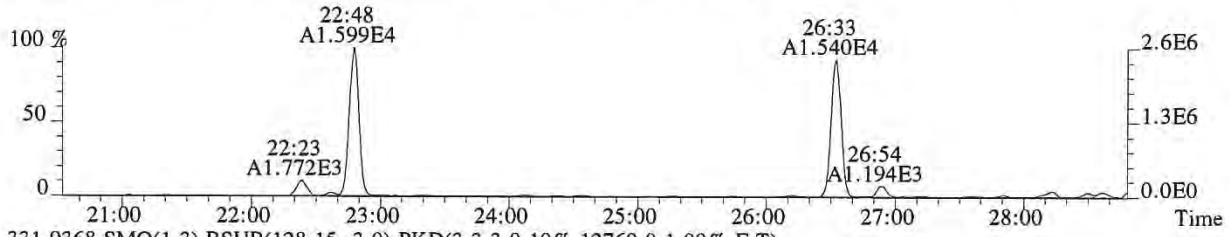


061028

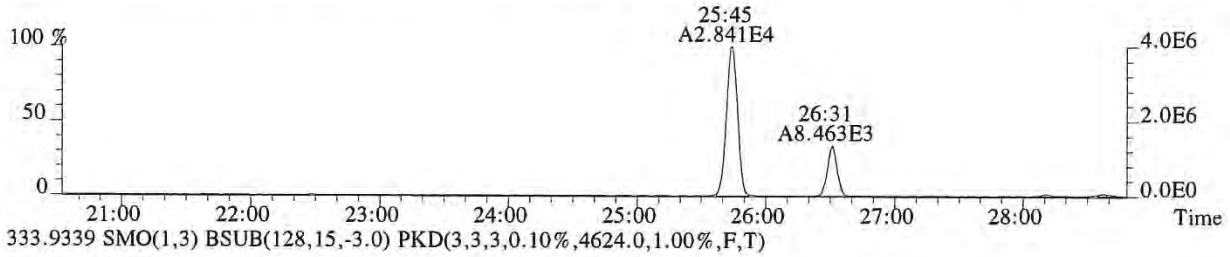
File:P616320 #1-587 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3212.0,1.00%,F,T)



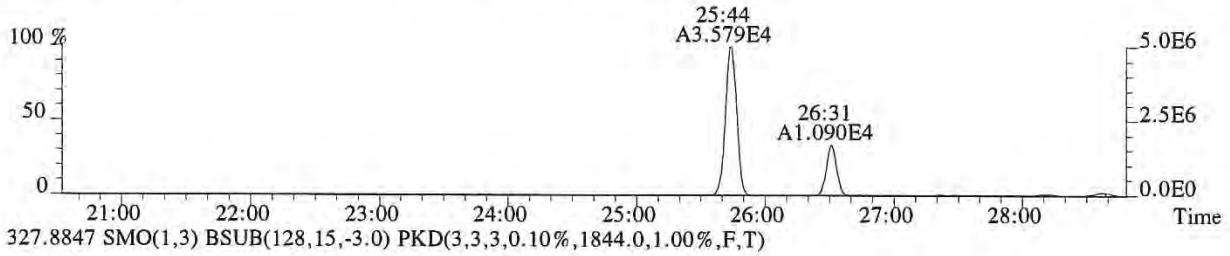
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1820.0,1.00%,F,T)



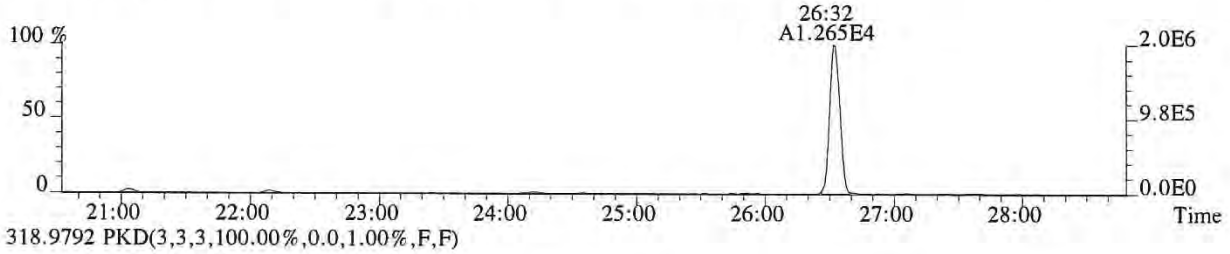
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12760.0,1.00%,F,T)



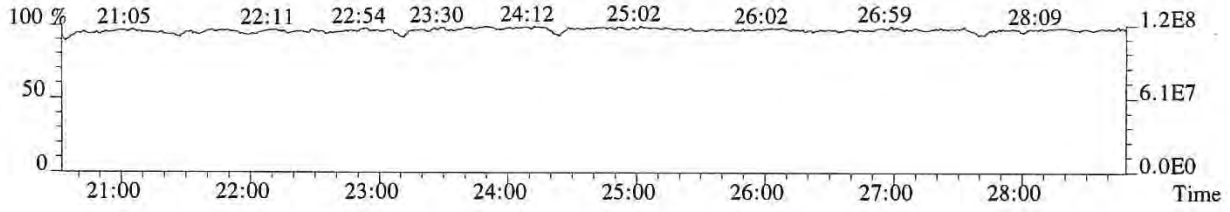
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4624.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1844.0,1.00%,F,T)

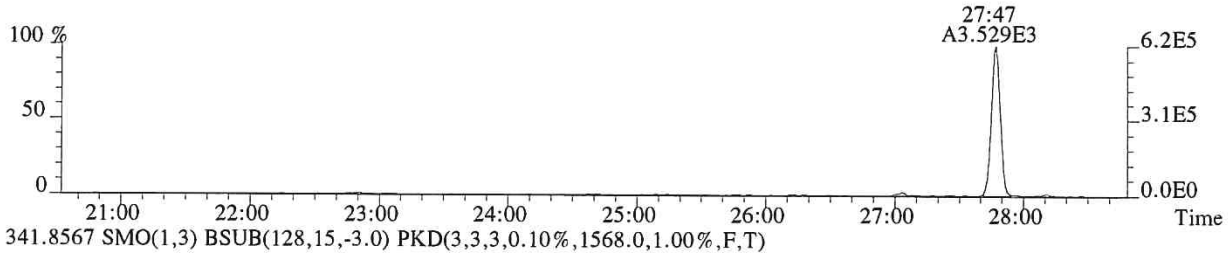


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

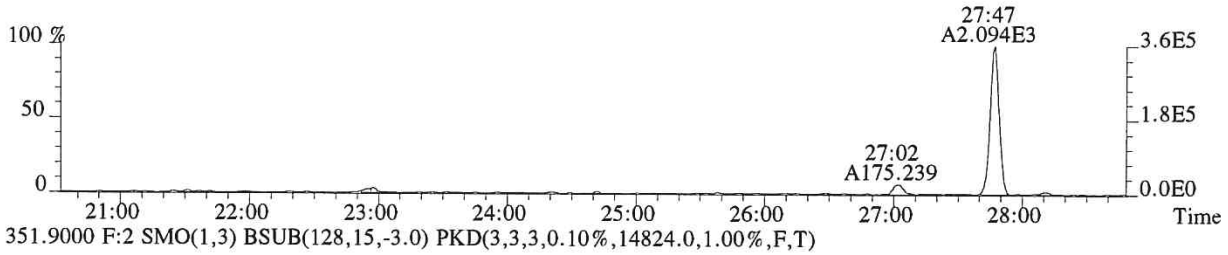


061029

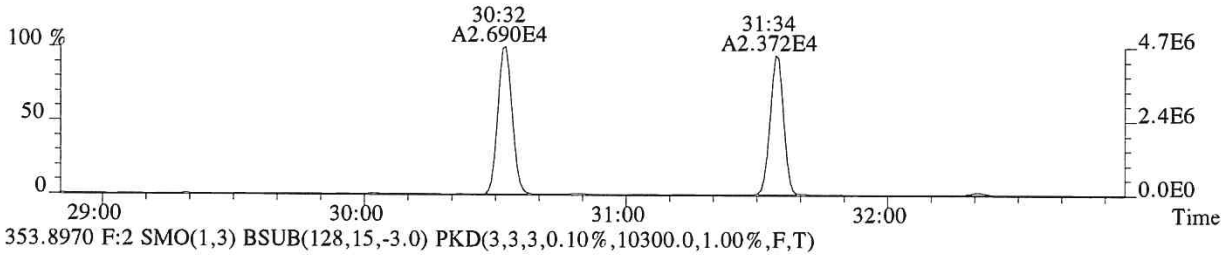
File:P616320 #1-587 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,T)



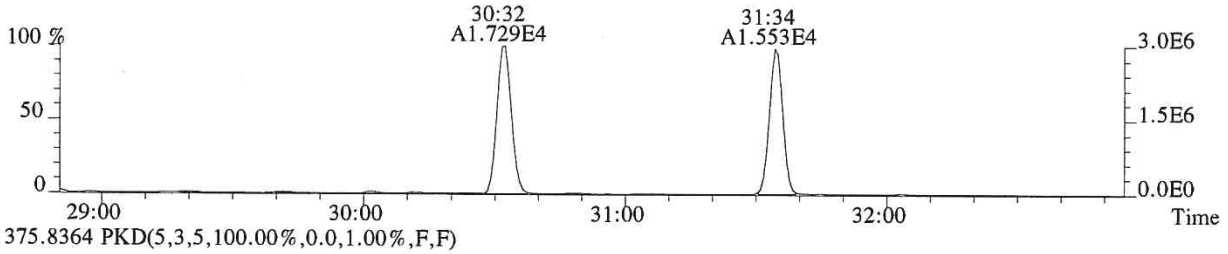
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1568.0,1.00%,F,T)



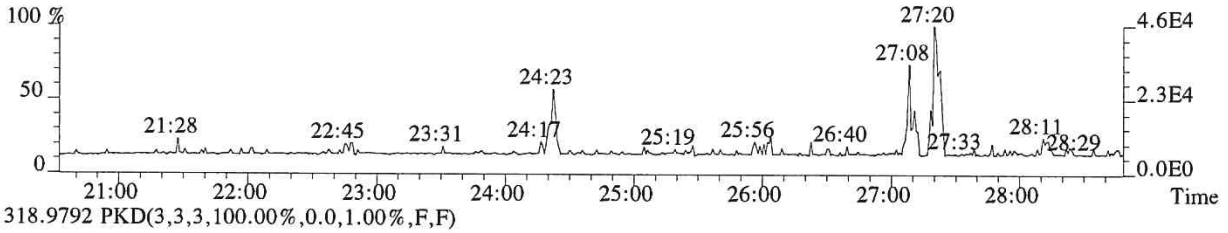
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,14824.0,1.00%,F,T)



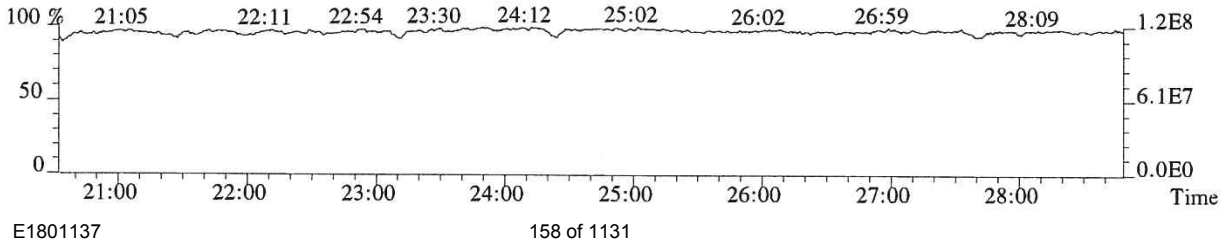
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10300.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

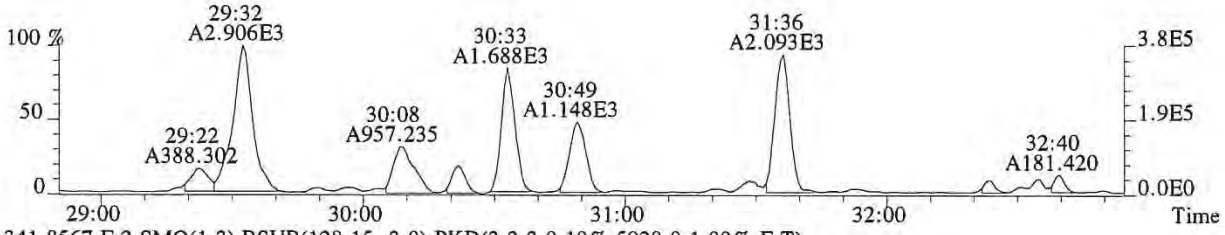


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

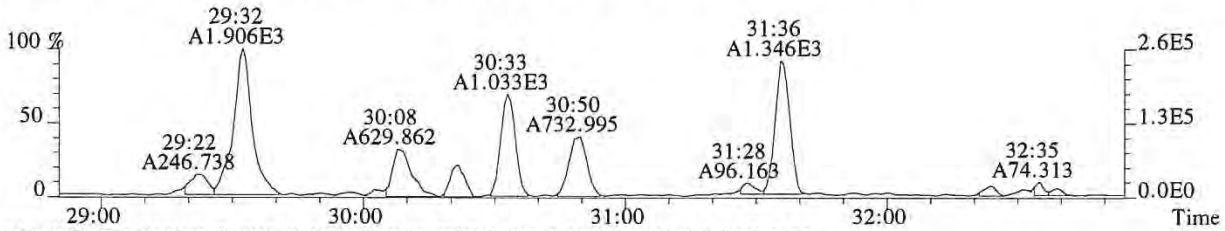


061030

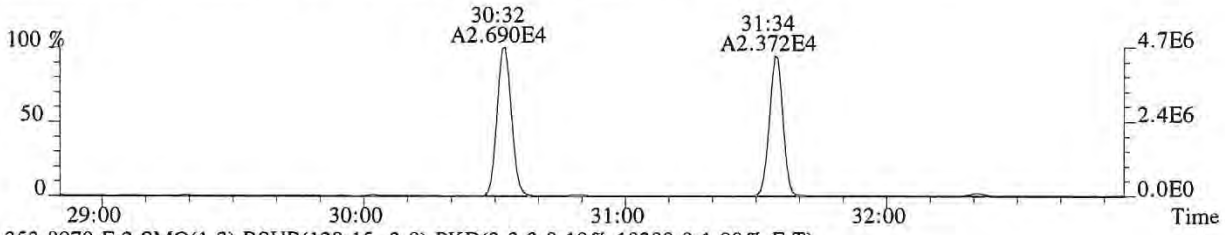
File:P616320 #1-367 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13724.0,1.00%,F,T)



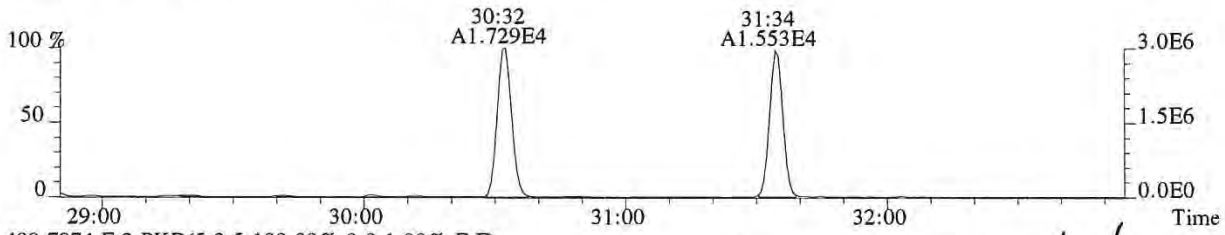
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5928.0,1.00%,F,T)



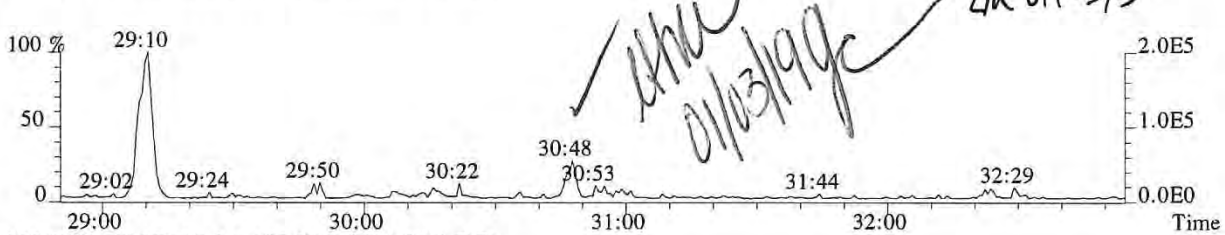
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,14824.0,1.00%,F,T)



353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10300.0,1.00%,F,T)



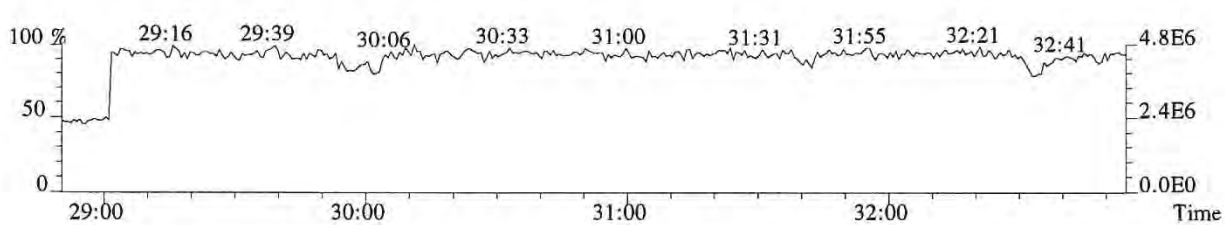
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



✓ 01/03/19 gc

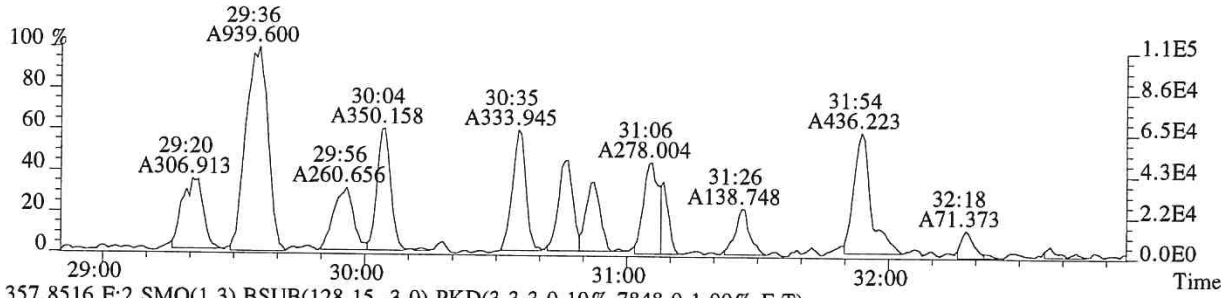
LM 01/03/19

366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

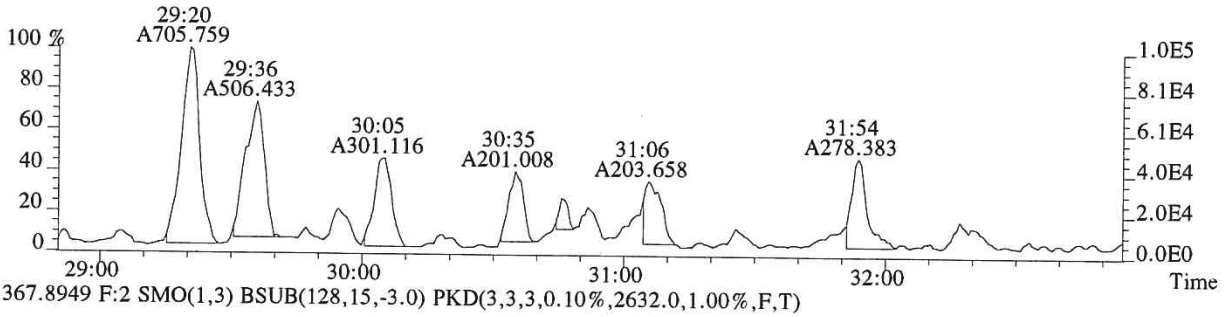


061031

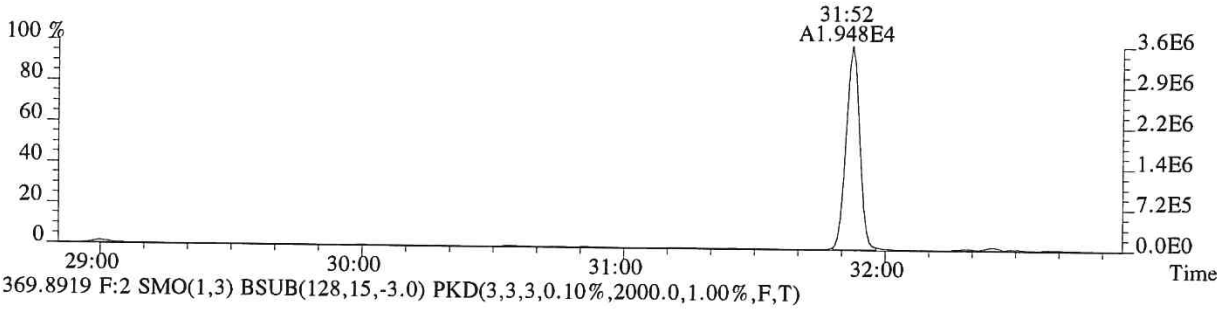
File:P616320 #1-367 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2664.0,1.00%,F,T)



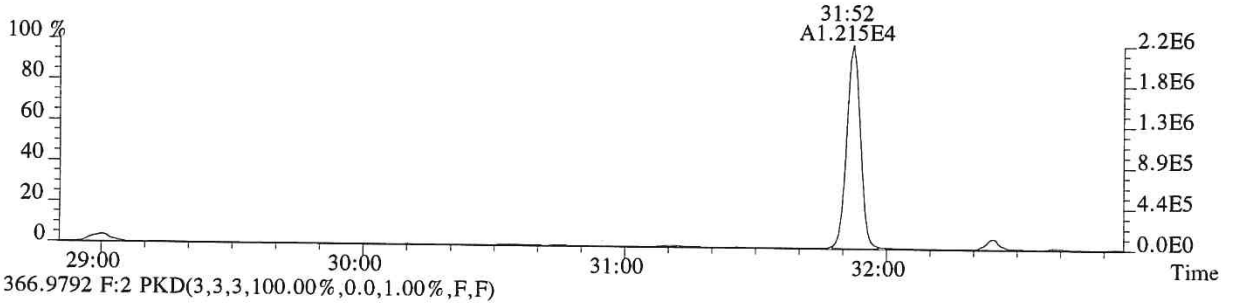
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7848.0,1.00%,F,T)



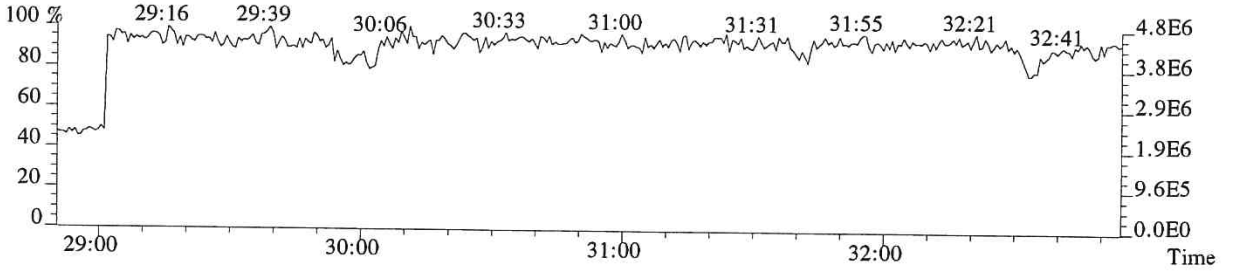
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2632.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2000.0,1.00%,F,T)

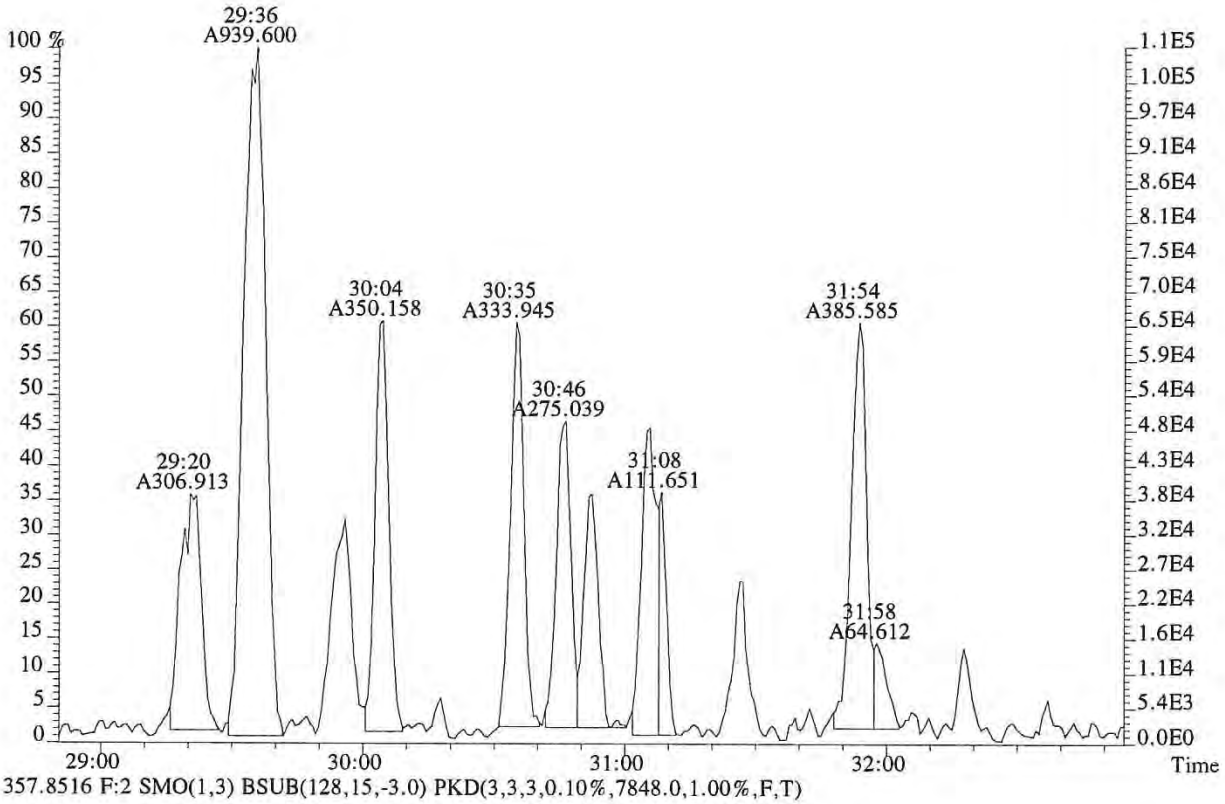


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

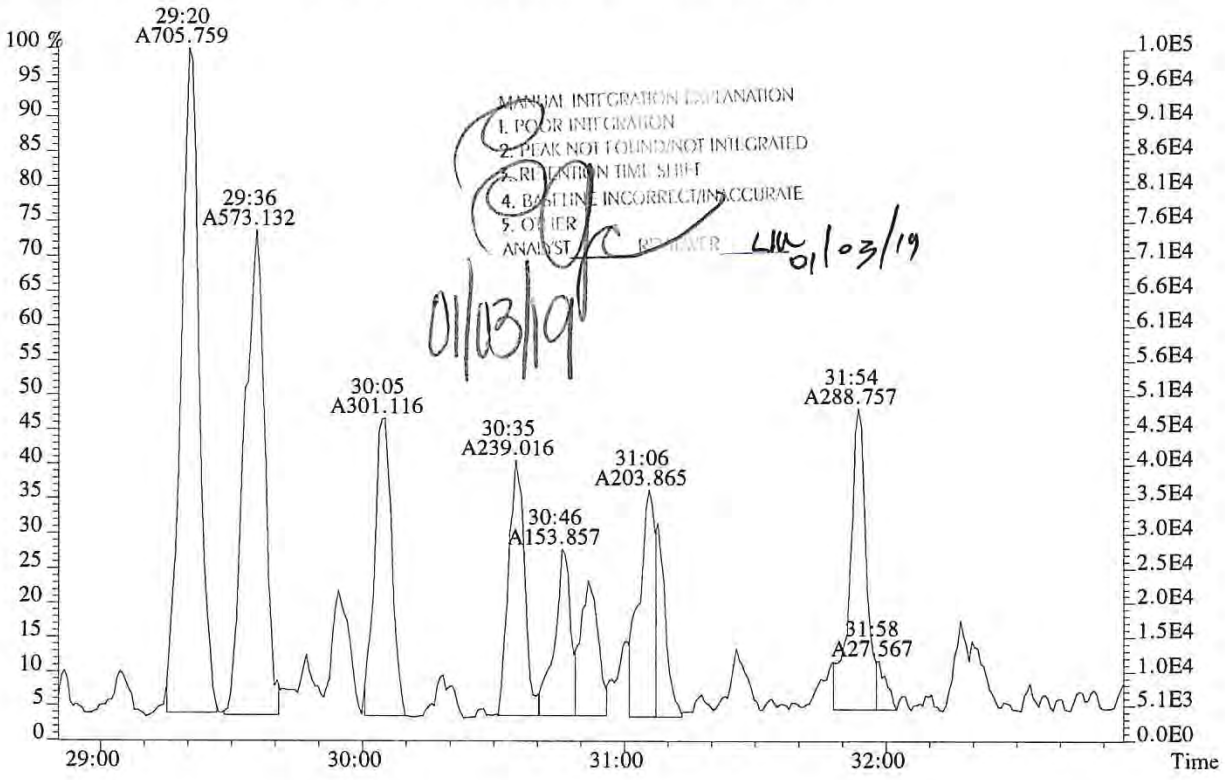


061032

File:P616320 #1-367 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2664.0,1.00%,F,T)

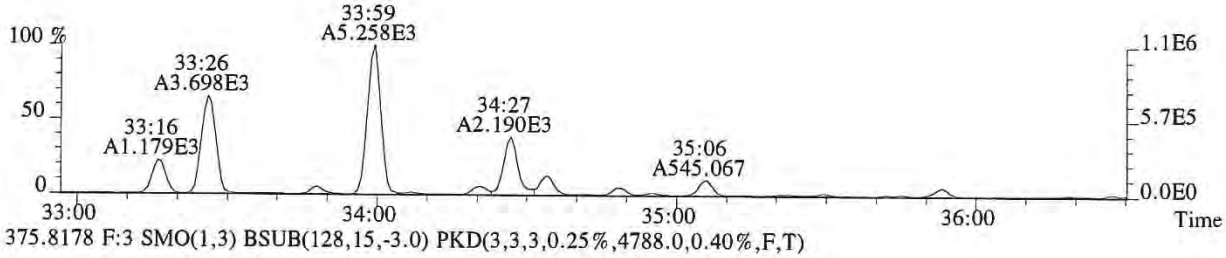


357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7848.0,1.00%,F,T)

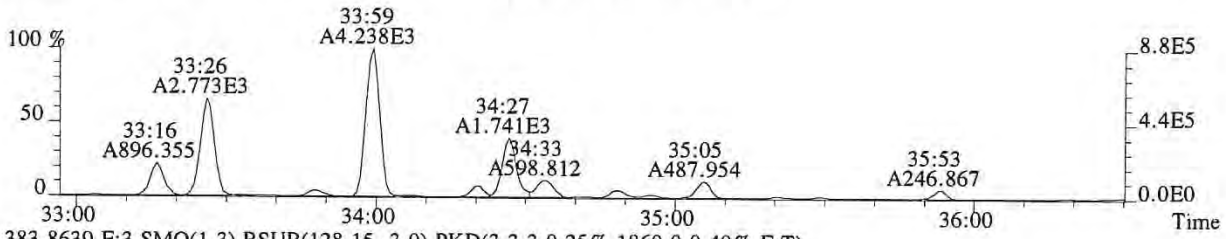


061033

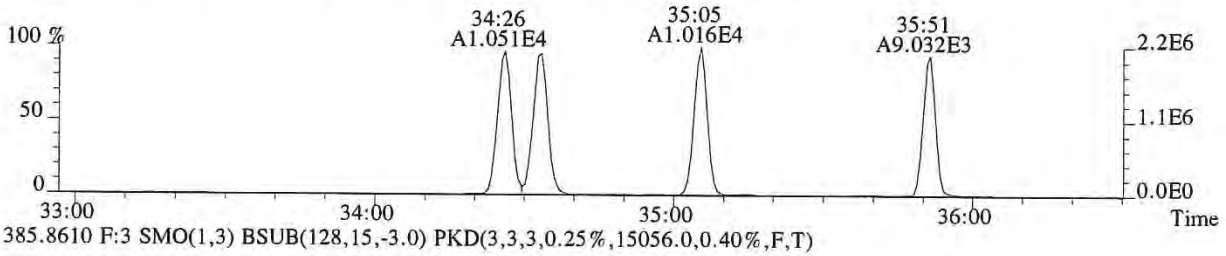
File:P616320 #1-321 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3492.0,0.40%,F,T)



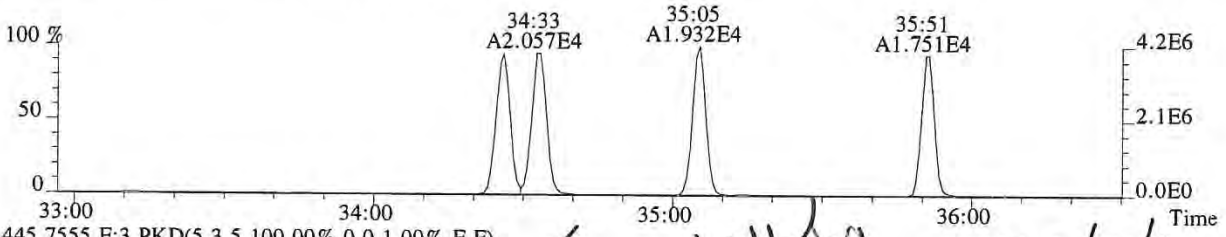
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4788.0,0.40%,F,T)



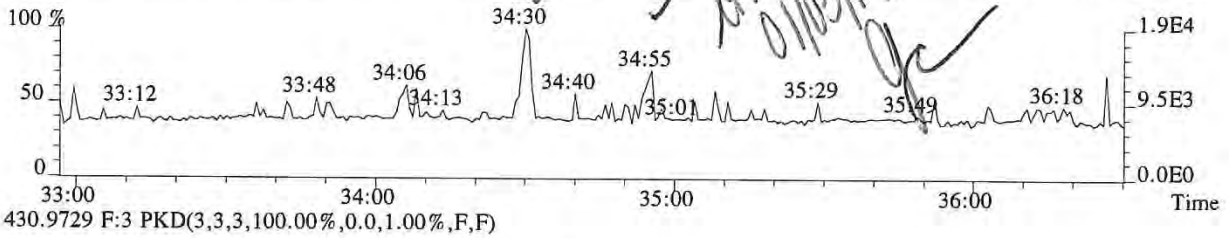
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1860.0,0.40%,F,T)



385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,15056.0,0.40%,F,T)



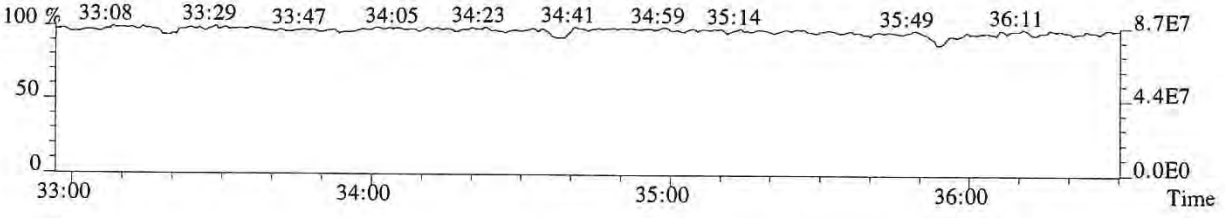
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



01/03/19

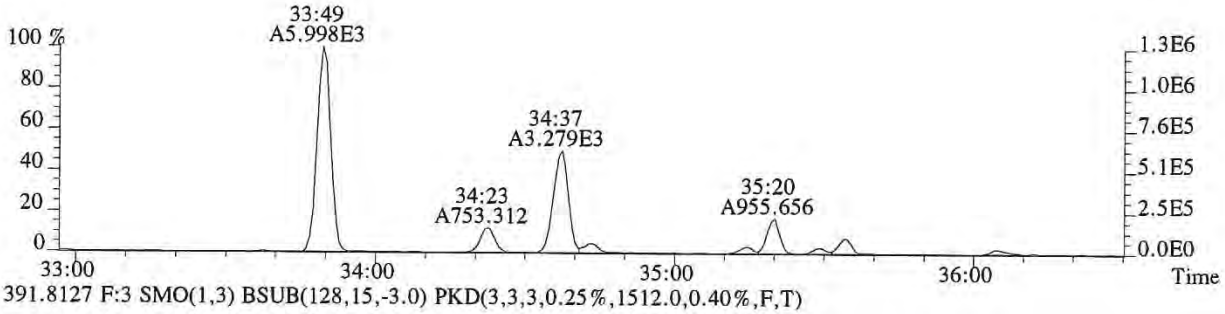
LM 01/03/19

430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

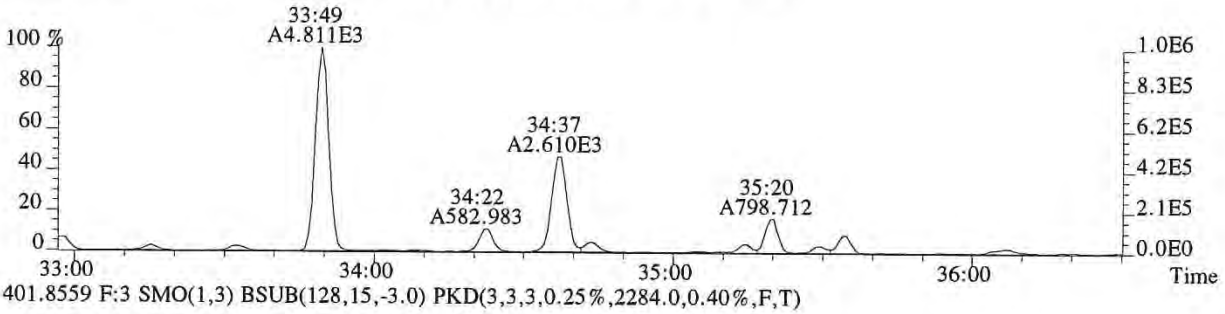


061034

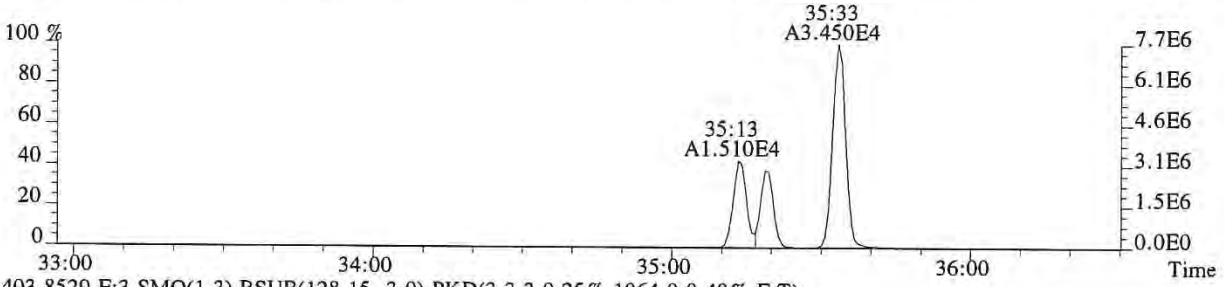
File:P616320 #1-321 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,996.0,0.40%,F,T)



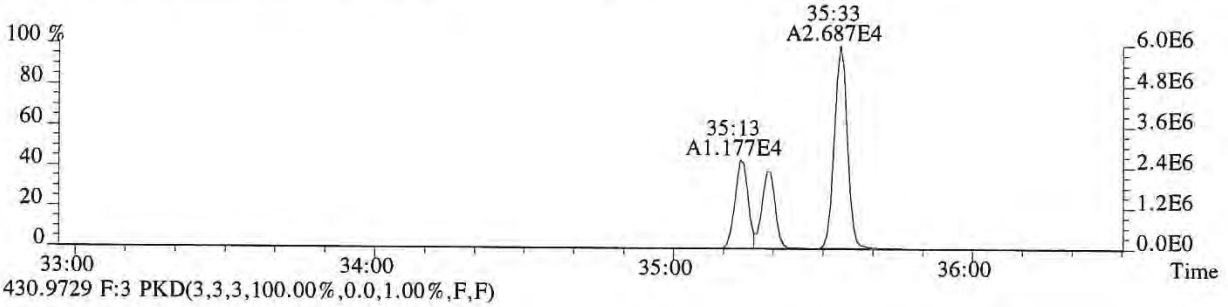
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1512.0,0.40%,F,T)



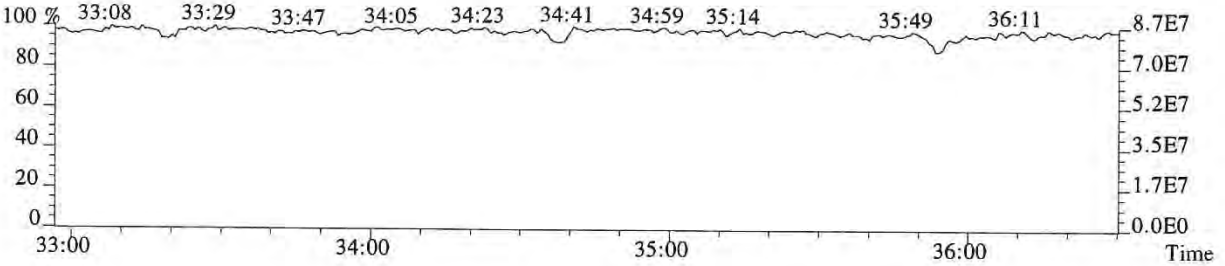
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2284.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1064.0,0.40%,F,T)

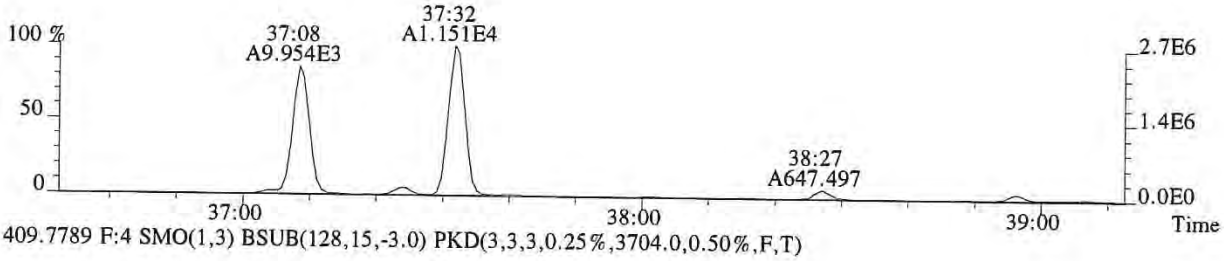


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

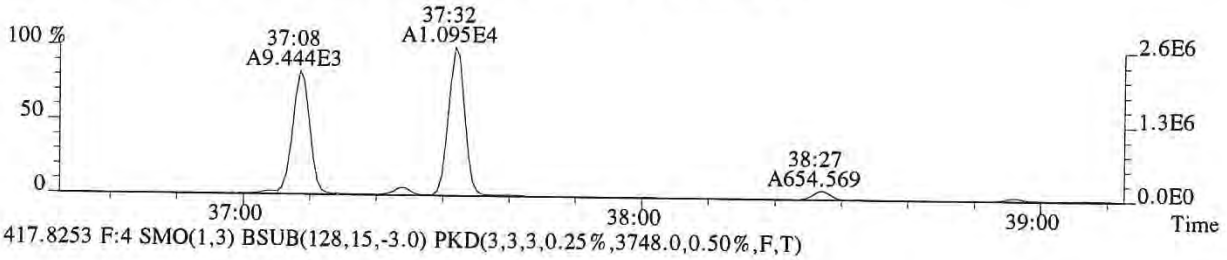


061035

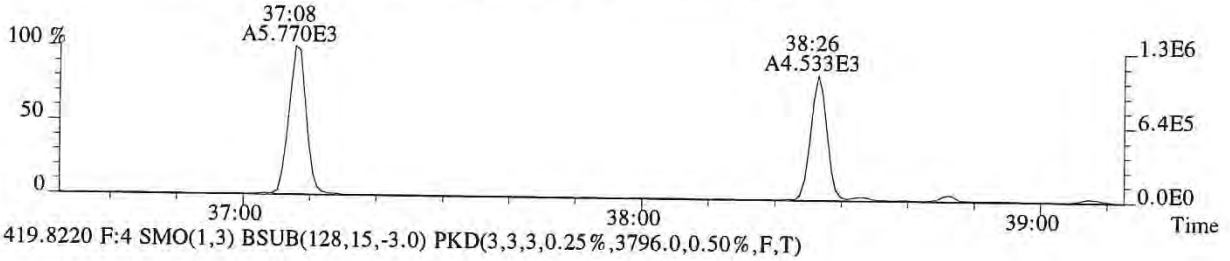
File:P616320 #1-241 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1896.0,0.50%,F,T)



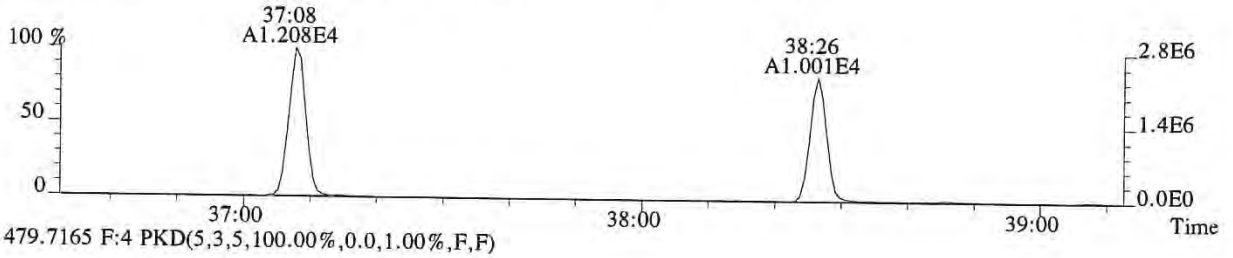
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3704.0,0.50%,F,T)



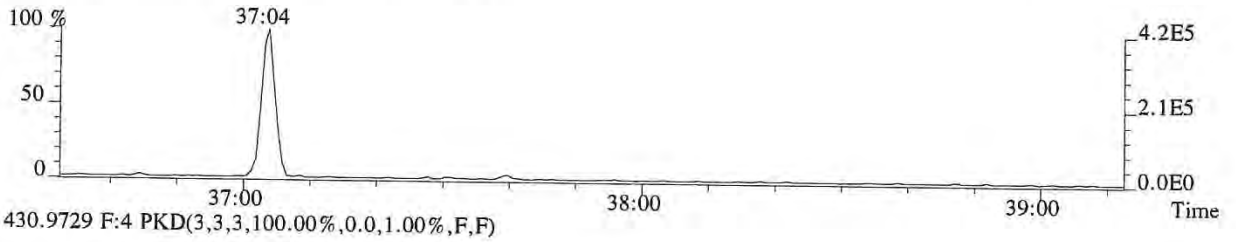
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3748.0,0.50%,F,T)



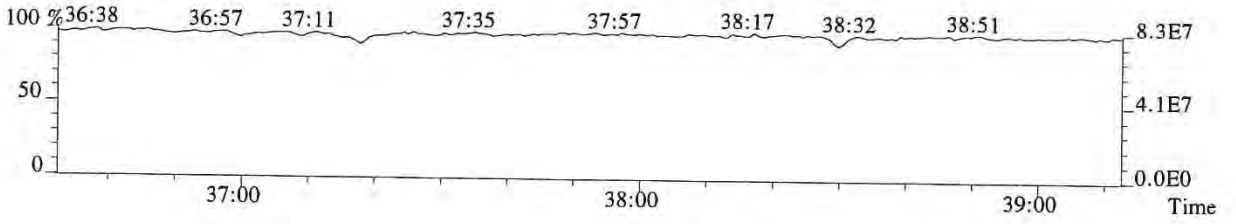
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3796.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

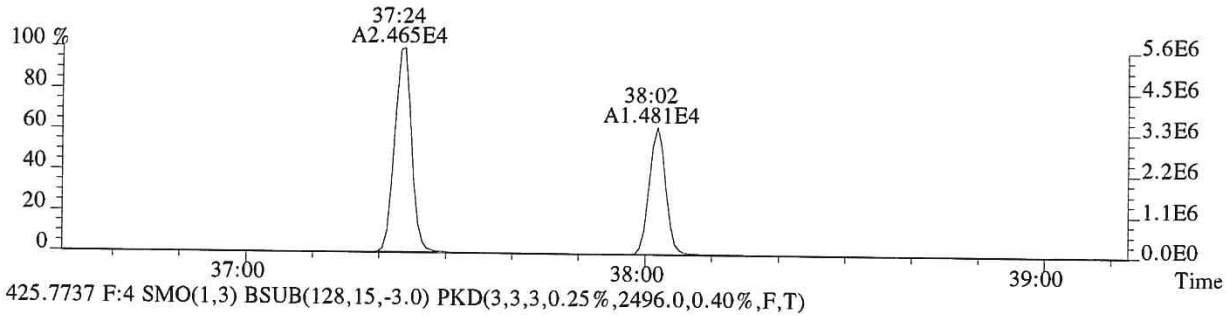


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

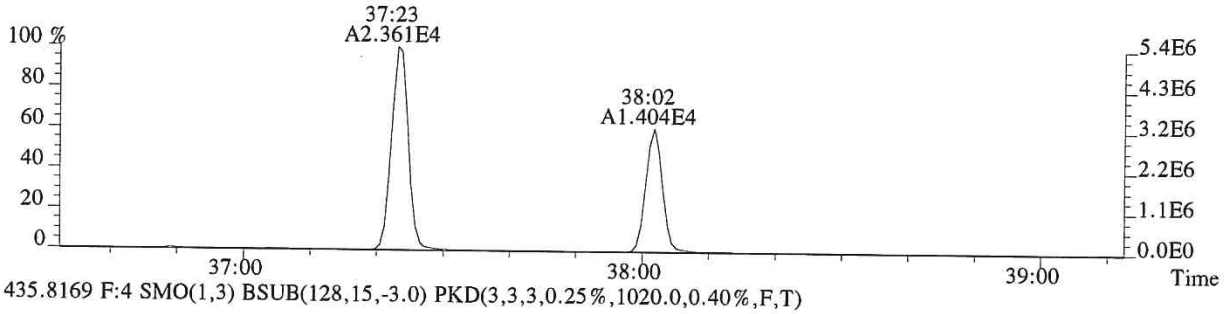


061036

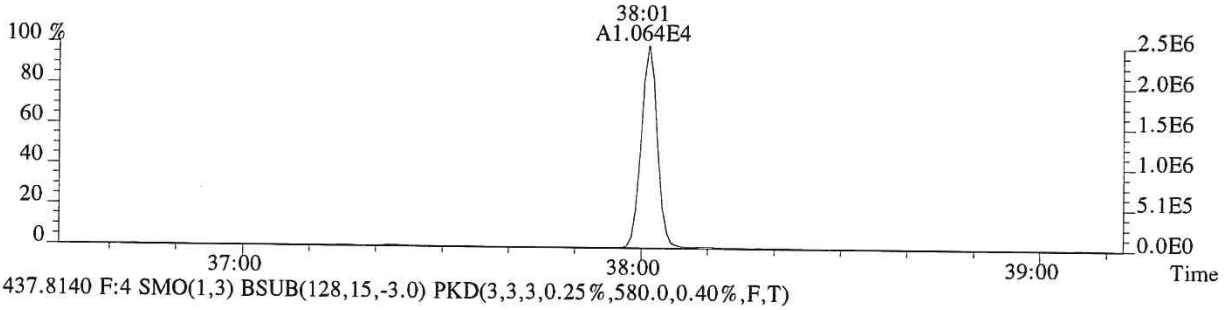
File:P616320 #1-241 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2392.0,0.40%,F,T)



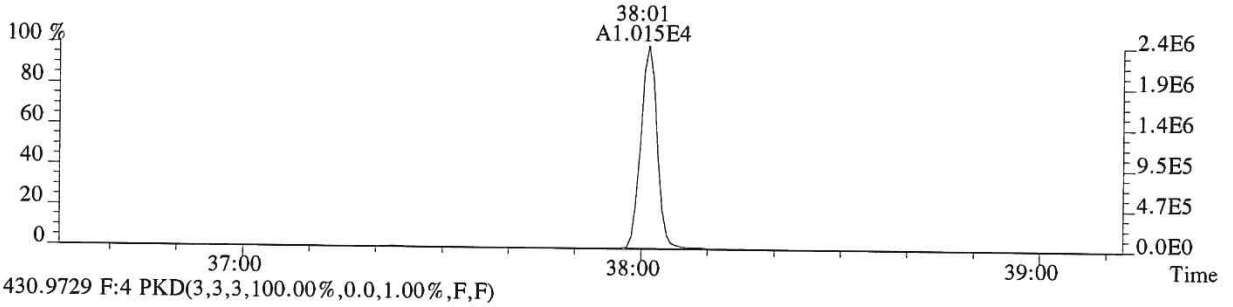
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2496.0,0.40%,F,T)



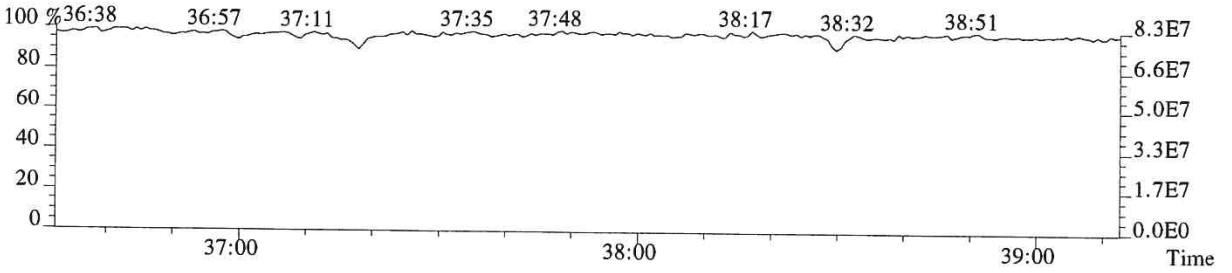
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1020.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,580.0,0.40%,F,T)

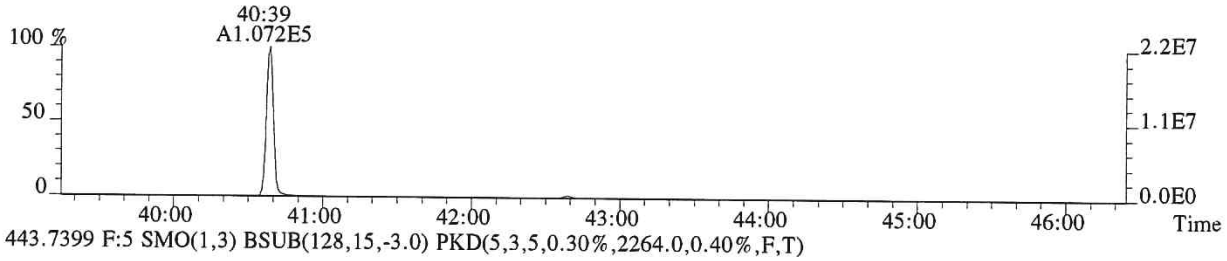


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

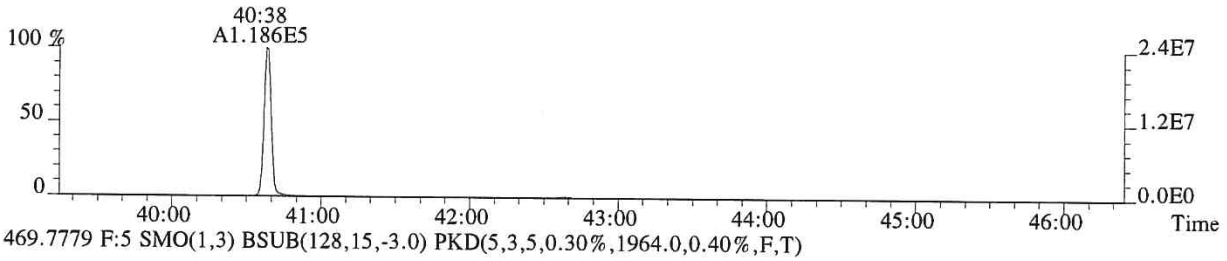


061037

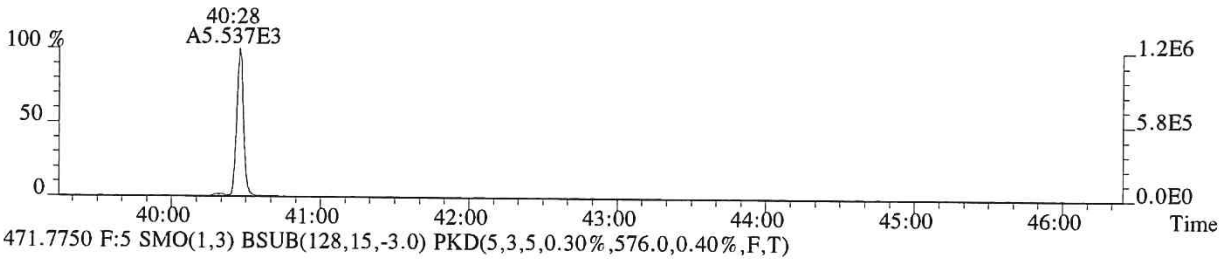
File:P616320 #1-645 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1212.0,0.40%,F,T)



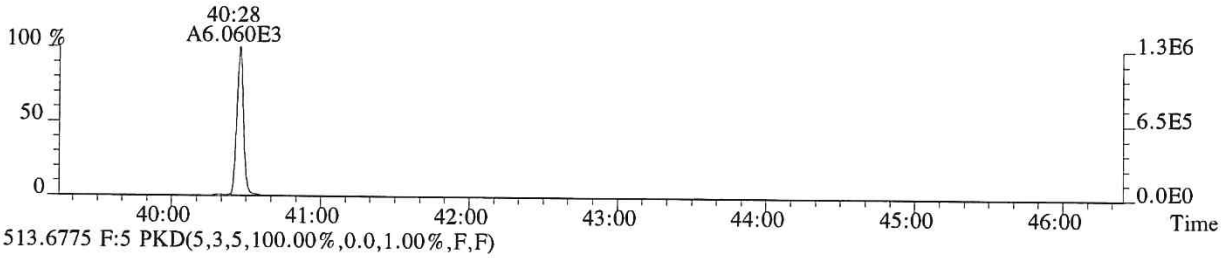
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2264.0,0.40%,F,T)



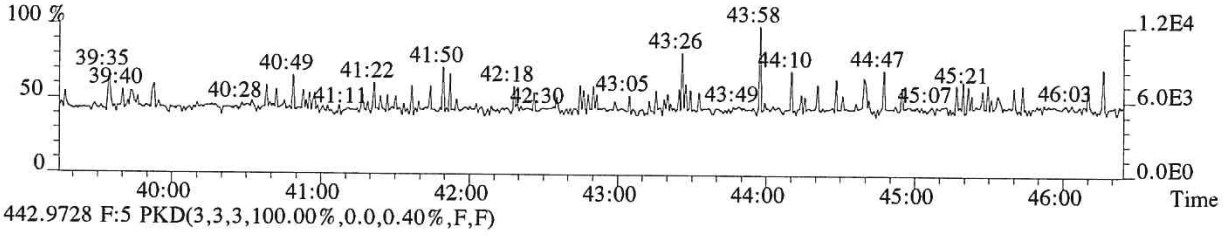
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1964.0,0.40%,F,T)



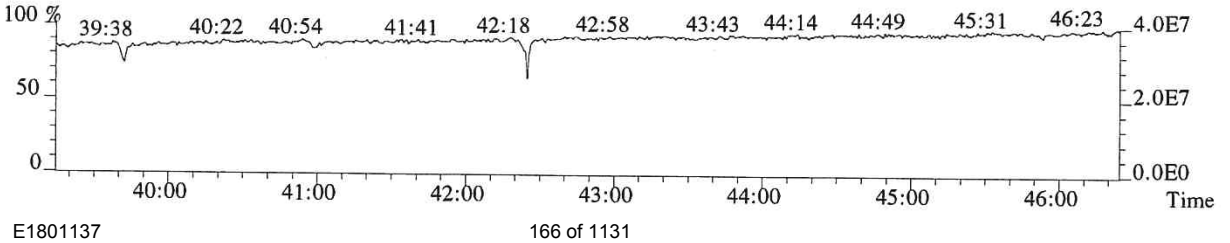
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,576.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

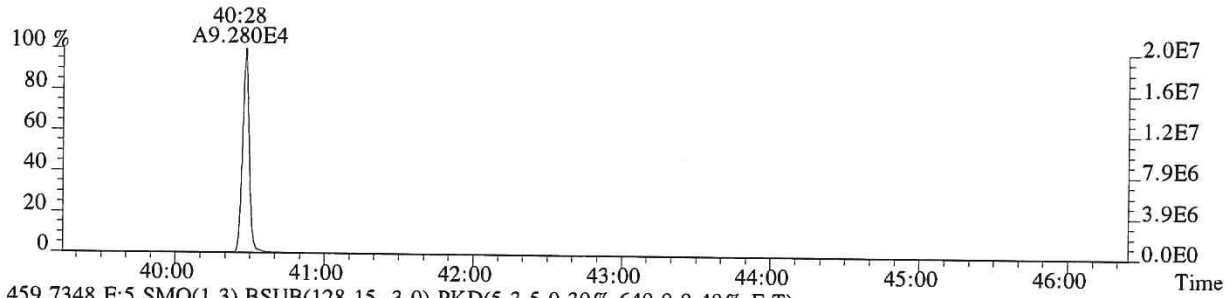


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

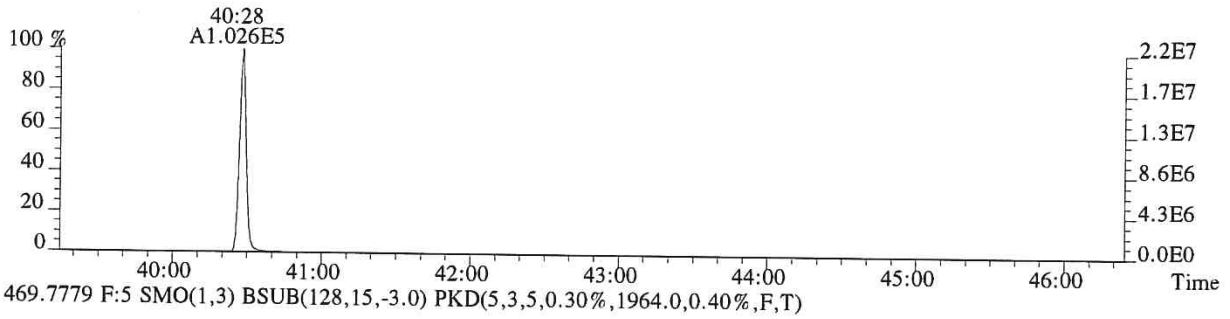


061038

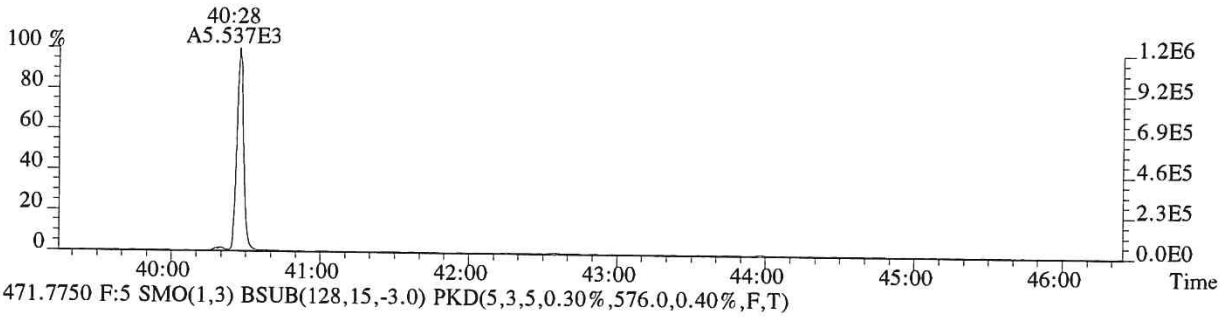
File:P616320 #1-645 Acq: 2-JAN-2019 15:22:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1172.0,0.40%,F,T)



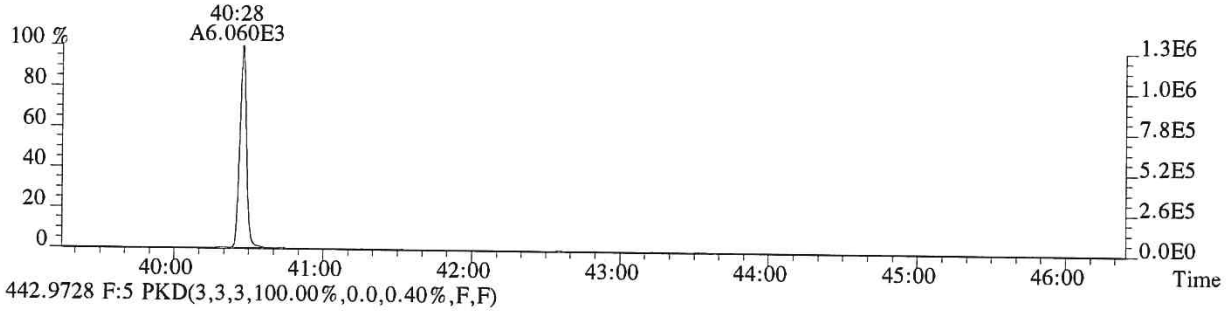
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,640.0,0.40%,F,T)



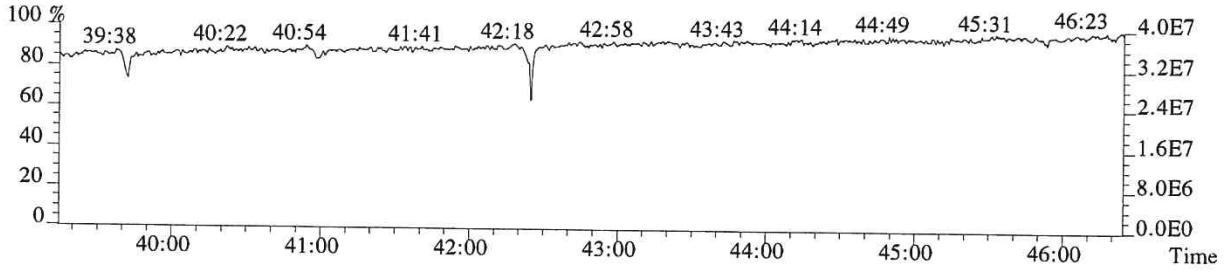
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1964.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,576.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



061039

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0144

Run #15 Filename P519768 Samp: 1 Inj: 1 Acquired: 4-JAN-19 05:51:56
Processed: 4-JAN-19 15:57:13 Sample ID: E1801137-001DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:05	2.998e+03	4.088e+03	0.73	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:59	1.050e+02	5.253e+01	2.00	no	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	1.372e+02	9.830e+01	1.40	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	1.434e+02	1.424e+02	1.01	no	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:03	6.177e+01	5.673e+01	1.09	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:36	4.293e+01	4.804e+01	0.89	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	2.275e+01	3.062e+01	0.74	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:50	7.447e+02	6.763e+02	1.10	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:17	4.339e+01	1.426e+01	3.04	no	no	1.258
10	Unk	OCDF	42:00	1.602e+04	1.935e+04	0.83	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:03	7.615e+02	9.190e+02	0.83	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:19	2.646e+01	3.168e+01	0.84	no	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	35:44	4.502e+00	7.712e+00	0.58	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:51	8.638e+01	4.950e+01	1.75	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:05	2.619e+01	2.256e+01	1.16	yes	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:51	1.346e+03	1.223e+03	1.10	yes	no	1.025
17	Unk	OCDD	41:51	1.485e+04	1.684e+04	0.88	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	2.312e+04	2.955e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	3.628e+04	2.282e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	3.423e+04	2.167e+04	1.58	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.385e+04	2.682e+04	0.52	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:02	1.688e+04	3.288e+04	0.51	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.517e+04	3.006e+04	0.50	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.402e+04	2.714e+04	0.52	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:49	1.097e+04	2.509e+04	0.44	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:18	9.189e+03	2.065e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:01	1.127e+04	1.446e+04	0.78	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.621e+04	1.619e+04	1.62	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	2.006e+04	1.581e+04	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:51	2.265e+04	1.773e+04	1.28	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:50	2.191e+04	2.080e+04	1.05	yes	no	0.858
32	IS	13C-OCDD	41:50	2.199e+04	2.484e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	2.044e+04	2.600e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:06	2.688e+04	2.137e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:03	8.198e+02				no	1.014

$$\text{OCDD} = \frac{(1.485e+04 + 1.684e+04) \times 4000\ \text{pg} \times 10}{(2.199e+04 + 2.484e+04) \times 10.043\text{g} \times 52\%/100 \times 1.118} = 32737.0112\ \text{ng/kg}$$

LG 1/7/19

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0144

Run #15 Filename P519768 Samp: 1 Inj: 1 Acquired: 4-JAN-19 05:51:56
Processed: 4-JAN-19 15:57:13 LAB. ID: E1801137-001DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	4.19e+05	5.28e+02	7.9e+02	5.75e+05	1.58e+03	3.6e+02
2	1,2,3,7,8-PeCDF	1.95e+04	6.04e+02	3.2e+01	8.52e+03	1.62e+03	5.2e+00
3	2,3,4,7,8-PeCDF	1.59e+04	6.04e+02	2.6e+01	1.14e+04	1.62e+03	7.0e+00
4	1,2,3,4,7,8-HxCDF	2.43e+04	3.64e+02	6.7e+01	2.54e+04	4.56e+02	5.6e+01
5	1,2,3,6,7,8-HxCDF	9.47e+03	3.64e+02	2.6e+01	8.82e+03	4.56e+02	1.9e+01
6	2,3,4,6,7,8-HxCDF	8.34e+03	3.64e+02	2.3e+01	7.26e+03	4.56e+02	1.6e+01
7	1,2,3,7,8,9-HxCDF	6.57e+03	3.64e+02	1.8e+01	4.13e+03	4.56e+02	9.1e+00
8	1,2,3,4,6,7,8-HpCDF	9.51e+04	3.60e+02	2.6e+02	8.29e+04	2.01e+03	4.1e+01
9	1,2,3,4,7,8,9-HpCDF	6.43e+03	3.60e+02	1.8e+01	5.34e+03	2.01e+03	2.7e+00
10	OCDF	9.63e+05	4.20e+02	2.3e+03	1.08e+06	1.33e+03	8.1e+02
11	2,3,7,8-TCDD	1.19e+05	1.50e+03	7.9e+01	1.46e+05	5.04e+02	2.9e+02
12	1,2,3,7,8-PeCDD	5.41e+03	1.08e+03	5.0e+00	5.59e+03	6.04e+02	9.3e+00
13	1,2,3,4,7,8-HxCDD	2.10e+03	3.52e+02	6.0e+00	1.64e+03	5.28e+02	3.1e+00
14	1,2,3,6,7,8-HxCDD	1.01e+04	3.52e+02	2.9e+01	7.97e+03	5.28e+02	1.5e+01
15	1,2,3,7,8,9-HxCDD	5.48e+03	3.52e+02	1.6e+01	3.60e+03	5.28e+02	6.8e+00
16	1,2,3,4,6,7,8-HpCDD	1.33e+05	5.84e+02	2.3e+02	1.20e+05	1.71e+03	7.1e+01
17	OCDD	8.39e+05	6.28e+02	1.3e+03	9.33e+05	5.08e+02	1.8e+03
18	13C-2,3,7,8-TCDF	3.36e+06	4.14e+03	8.1e+02	4.34e+06	2.24e+03	1.9e+03
19	13C-1,2,3,7,8-PeCDF	5.92e+06	1.11e+03	5.3e+03	3.76e+06	3.15e+03	1.2e+03
20	13C-2,3,4,7,8-PeCDF	5.94e+06	1.11e+03	5.4e+03	3.74e+06	3.15e+03	1.2e+03
21	13C-1,2,3,4,7,8-HxCDF	2.36e+06	6.44e+02	3.7e+03	4.64e+06	1.57e+03	3.0e+03
22	13C-1,2,3,6,7,8-HxCDF	2.63e+06	6.44e+02	4.1e+03	5.13e+06	1.57e+03	3.3e+03
23	13C-2,3,4,6,7,8-HxCDF	2.46e+06	6.44e+02	3.8e+03	4.85e+06	1.57e+03	3.1e+03
24	13C-1,2,3,7,8,9-HxCDF	2.00e+06	6.44e+02	3.1e+03	3.82e+06	1.57e+03	2.4e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.36e+06	1.96e+03	6.9e+02	3.12e+06	2.85e+03	1.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	8.84e+05	1.96e+03	4.5e+02	1.95e+06	2.85e+03	6.8e+02
27	13C-2,3,7,8-TCDD	1.83e+06	4.00e+03	4.6e+02	2.34e+06	2.06e+03	1.1e+03
28	13C-1,2,3,7,8-PeCDD	4.24e+06	4.44e+02	9.5e+03	2.68e+06	5.52e+02	4.8e+03
29	13C-1,2,3,4,7,8-HxCDD	3.54e+06	1.02e+03	3.5e+03	2.72e+06	2.80e+02	9.7e+03
30	13C-1,2,3,6,7,8-HxCDD	3.26e+06	1.02e+03	3.2e+03	2.57e+06	2.80e+02	9.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.20e+06	7.16e+02	3.1e+03	2.09e+06	5.76e+02	3.6e+03
32	13C-OCDD	1.25e+06	6.84e+02	1.8e+03	1.37e+06	2.92e+02	4.7e+03
33	13C-1,2,3,4-TCDD	3.28e+06	4.00e+03	8.2e+02	4.25e+06	2.06e+03	2.1e+03
34	13C-1,2,3,7,8,9-HxCDD	3.68e+06	1.02e+03	3.6e+03	2.95e+06	2.80e+02	1.1e+04
35	37Cl-2,3,7,8-TCDD	1.33e+05	1.21e+03	1.1e+02			

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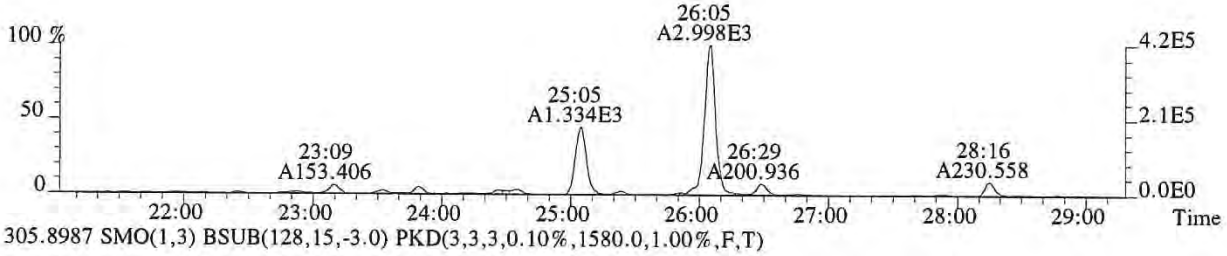
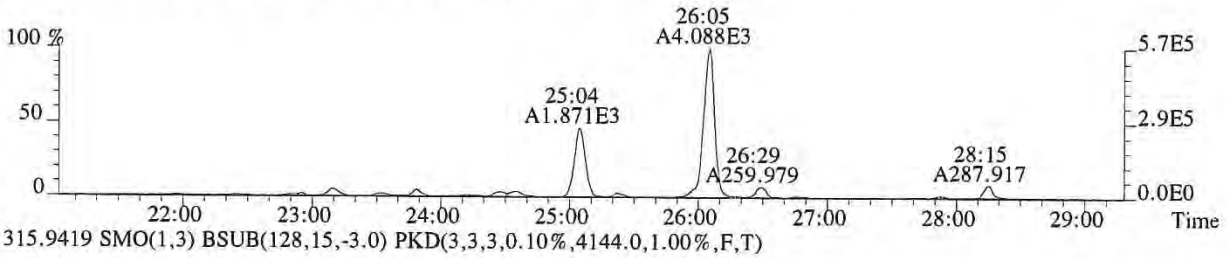
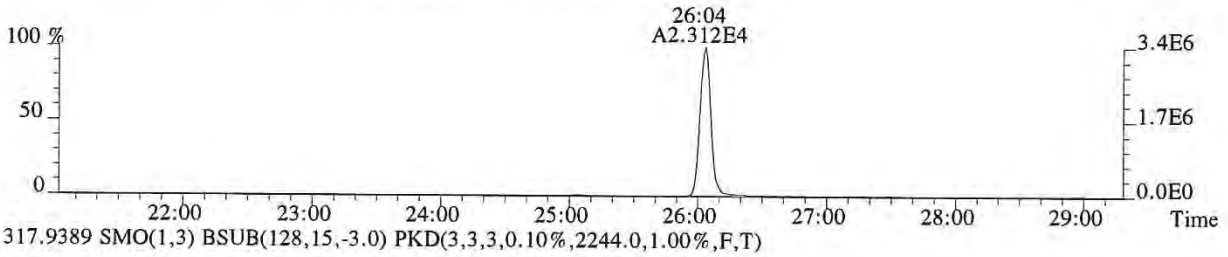
File:P519768 #1-587 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,528.0,1.00%,F,T)



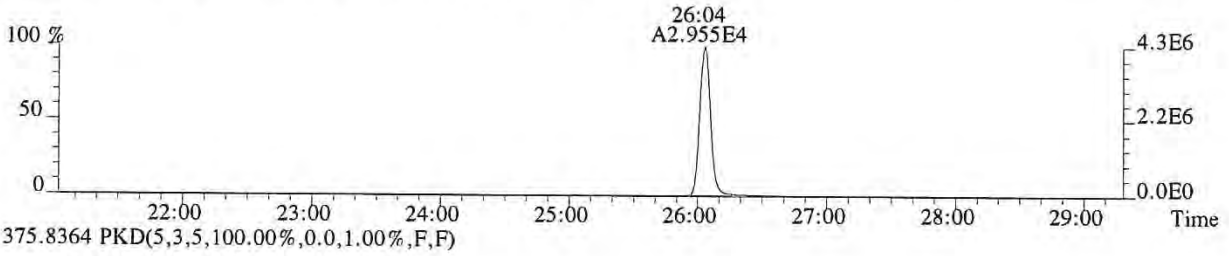
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1580.0,1.00%,F,T)



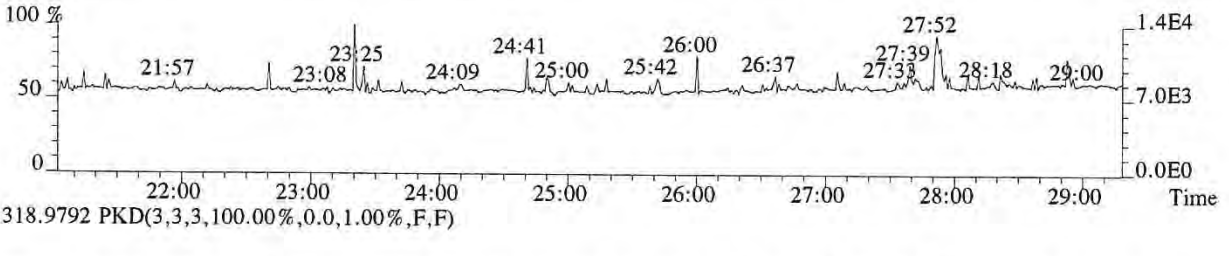
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4144.0,1.00%,F,T)



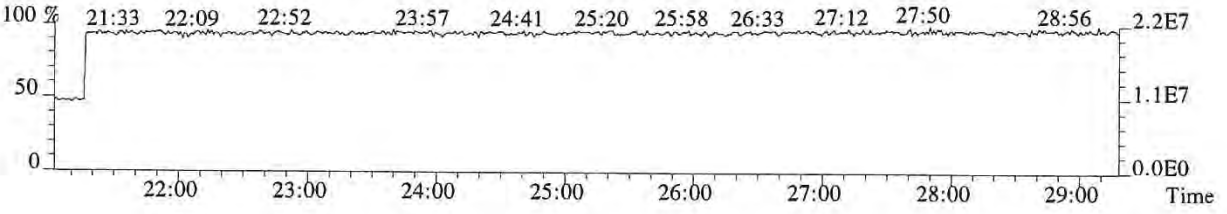
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2244.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

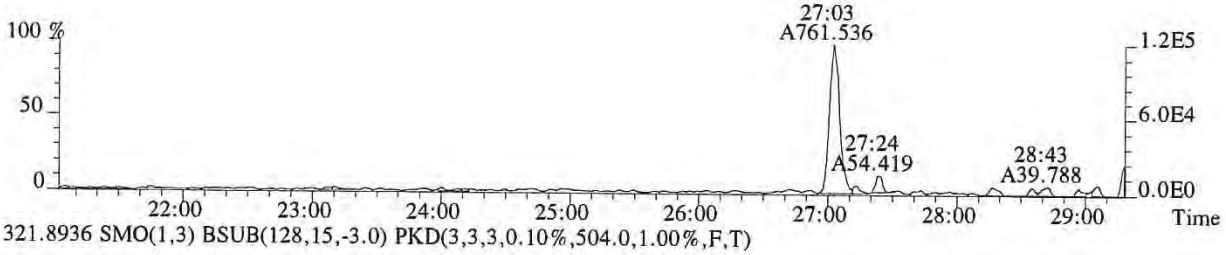


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

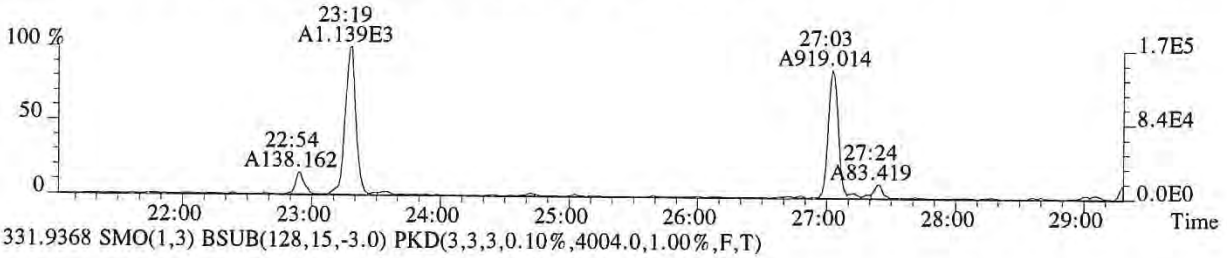


061042

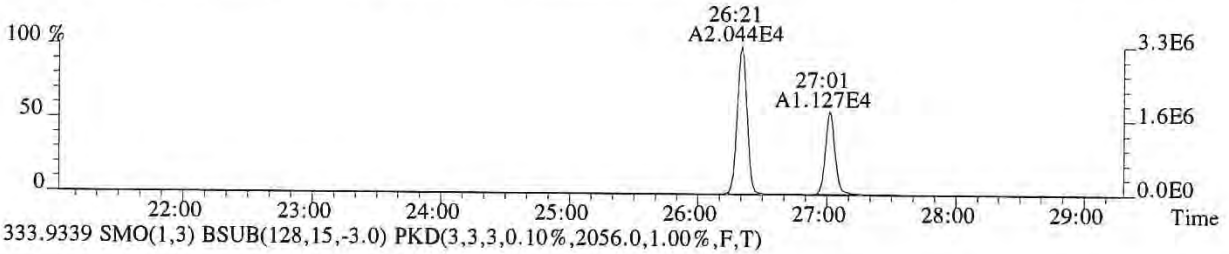
File:P519768 #1-587 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1496.0,1.00%,F,T)



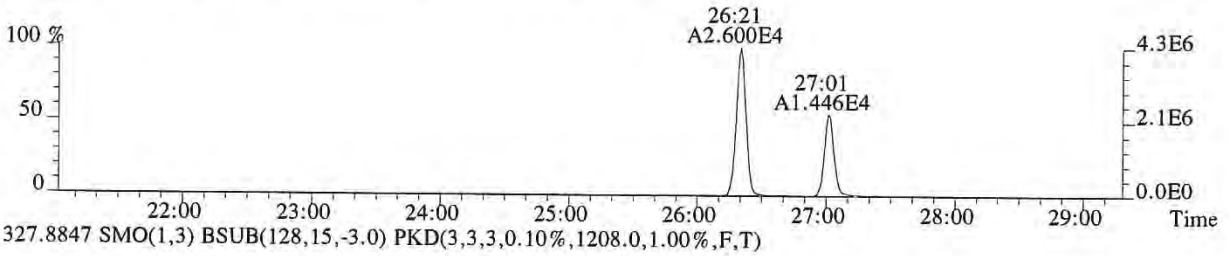
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,504.0,1.00%,F,T)



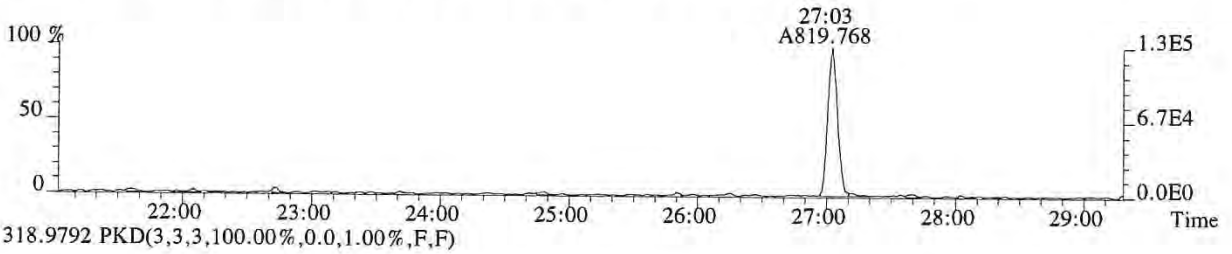
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4004.0,1.00%,F,T)



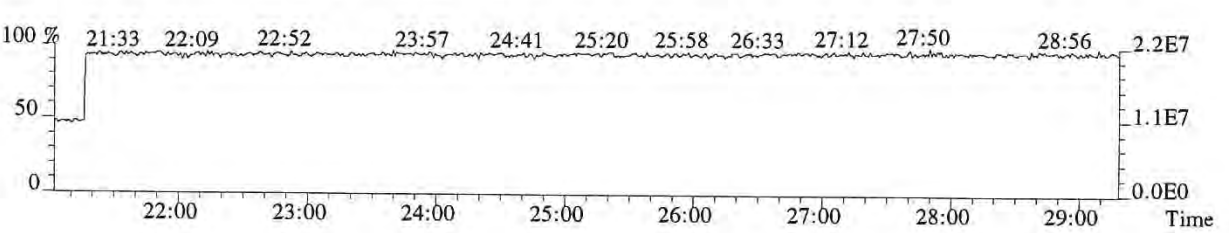
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2056.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1208.0,1.00%,F,T)

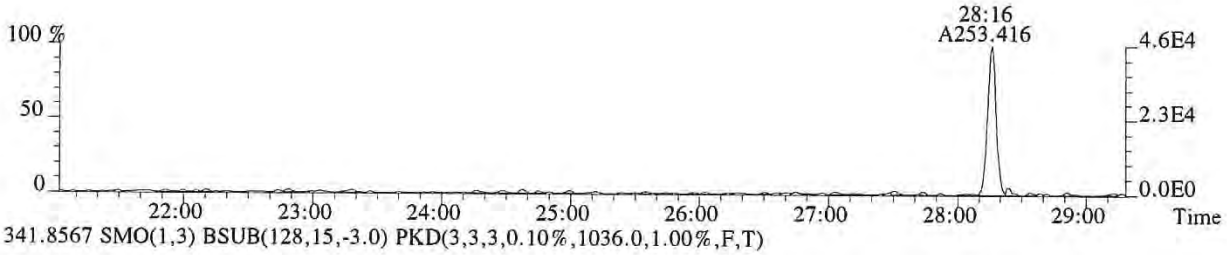


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

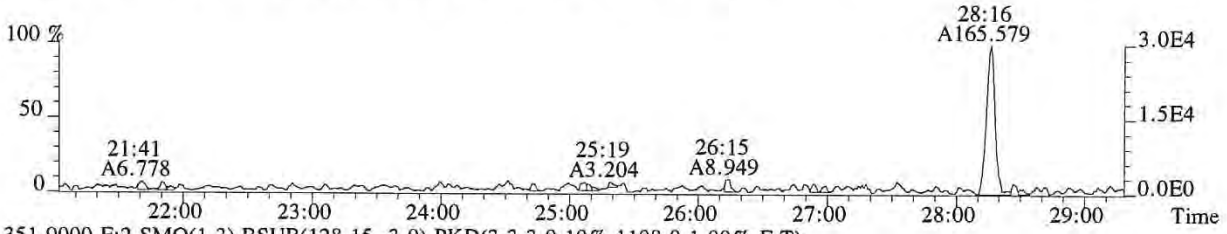


061043

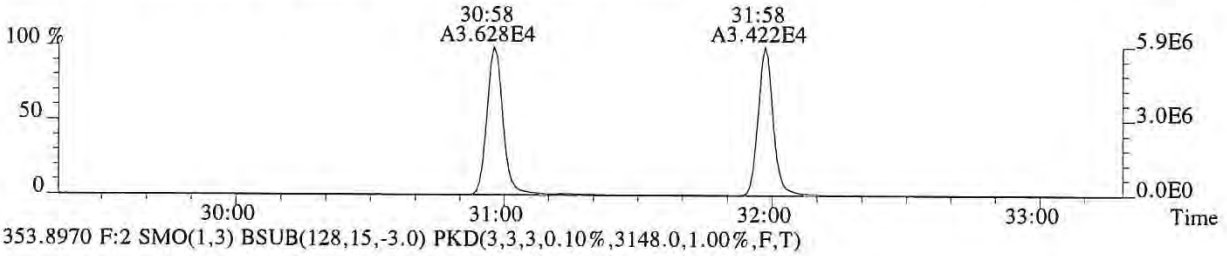
File:P519768 #1-587 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,304.0,1.00%,F,T)



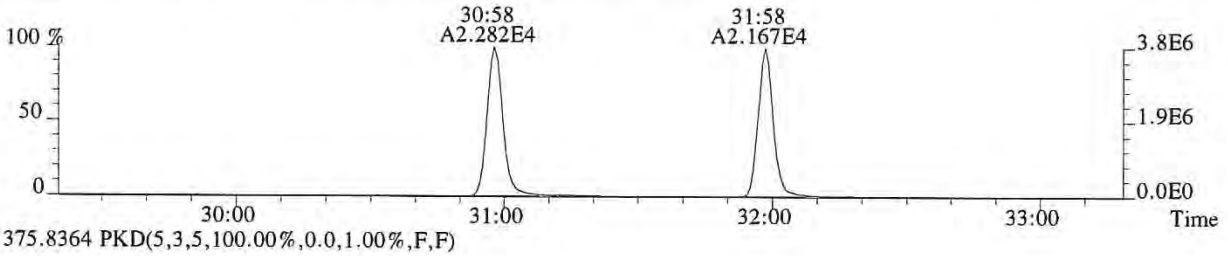
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1036.0,1.00%,F,T)



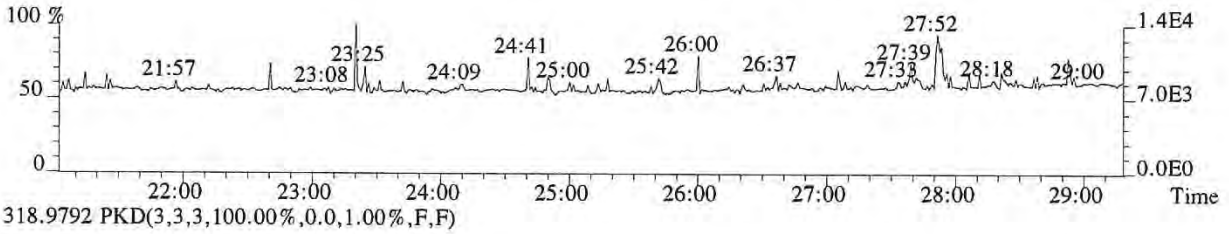
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1108.0,1.00%,F,T)



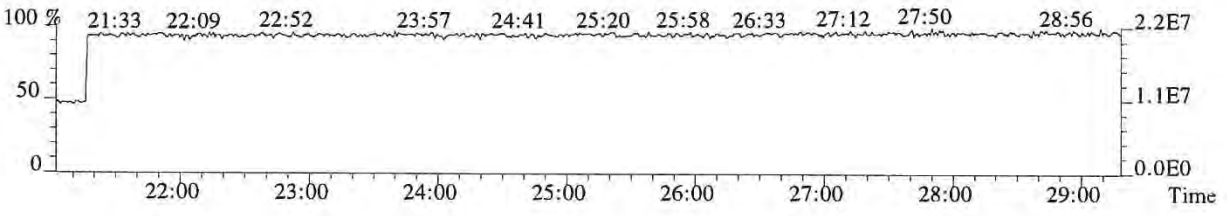
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3148.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

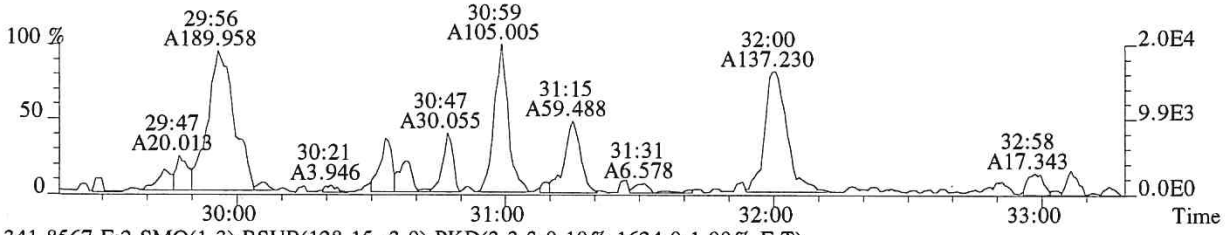


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

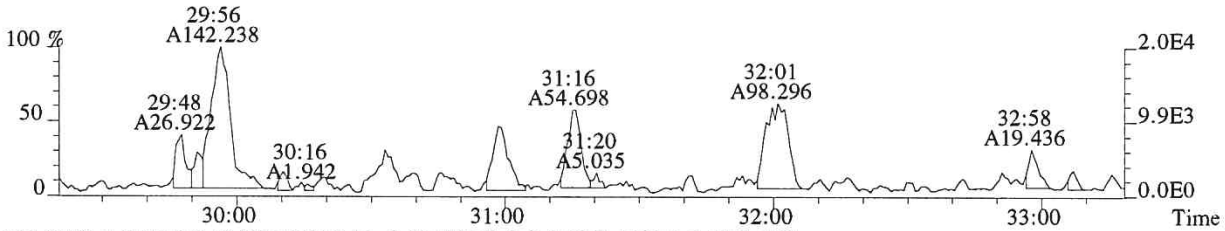


061044

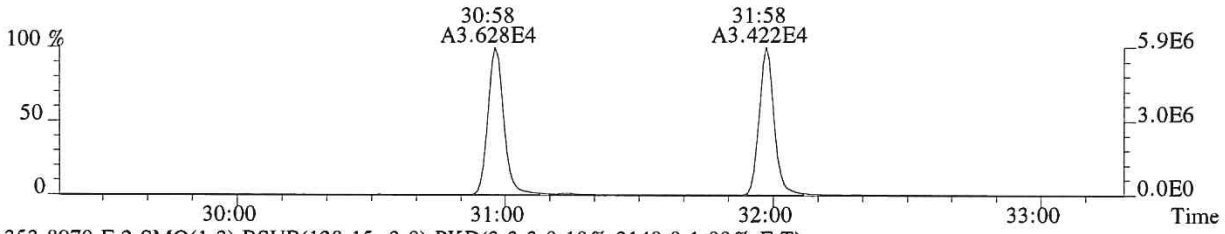
File:P519768 #1-358 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,T)



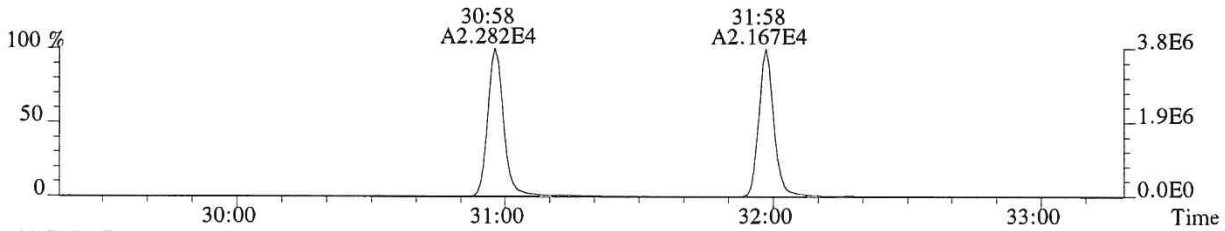
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1624.0,1.00%,F,T)



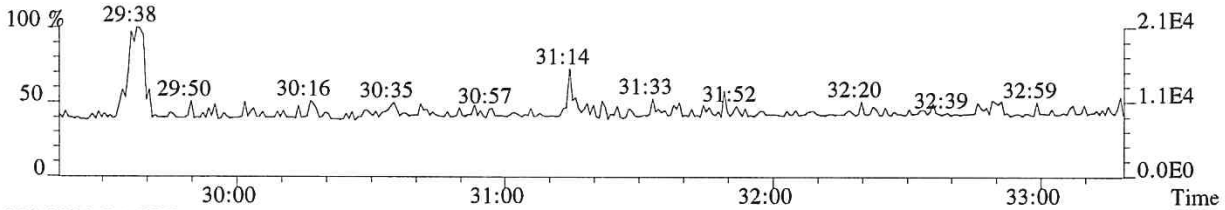
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1108.0,1.00%,F,T)



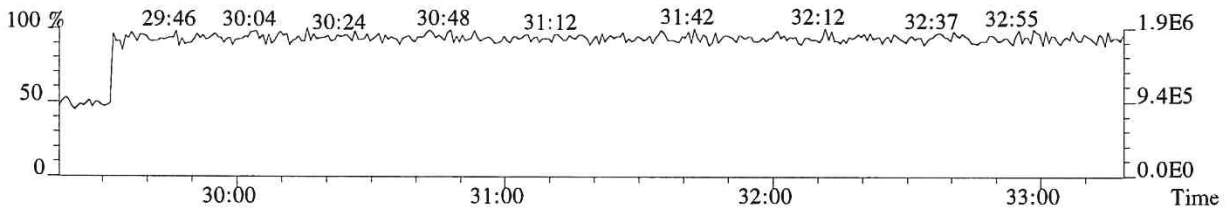
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3148.0,1.00%,F,T)



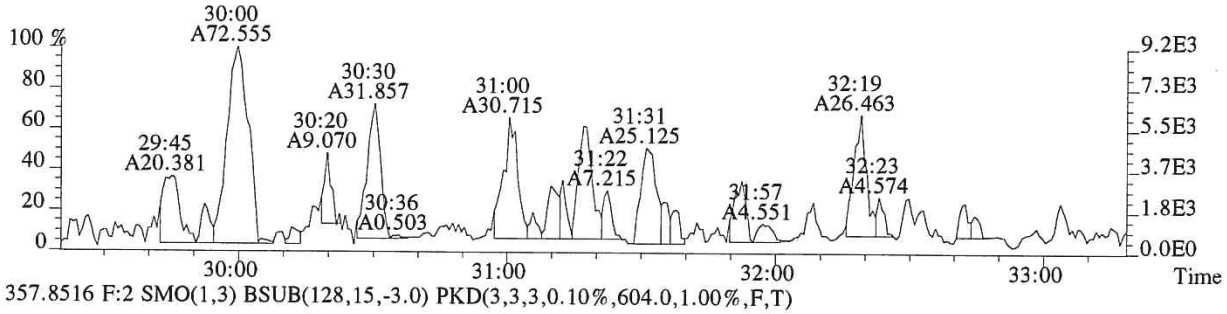
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



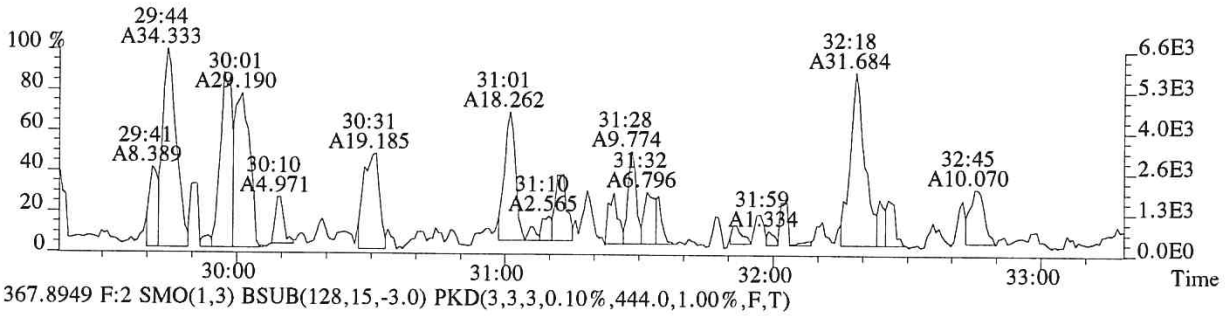
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



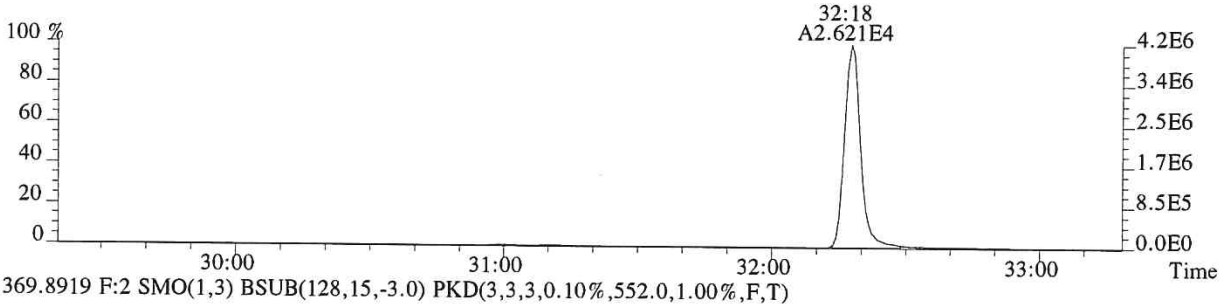
File:P519768 #1-358 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1076.0,1.00%,F,T)



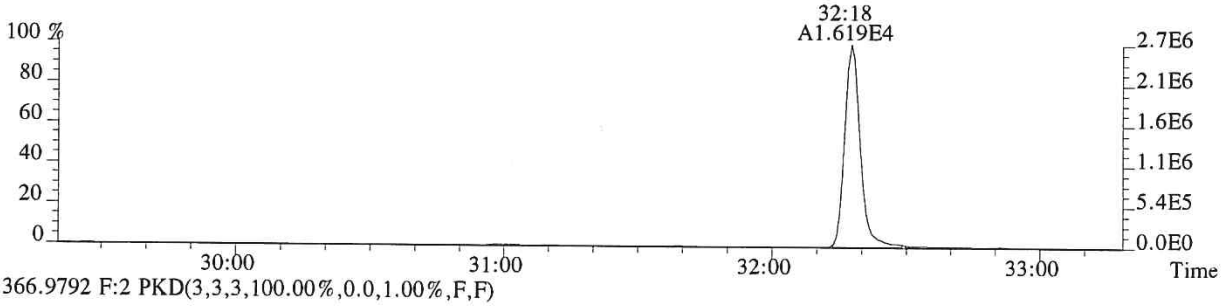
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,T)



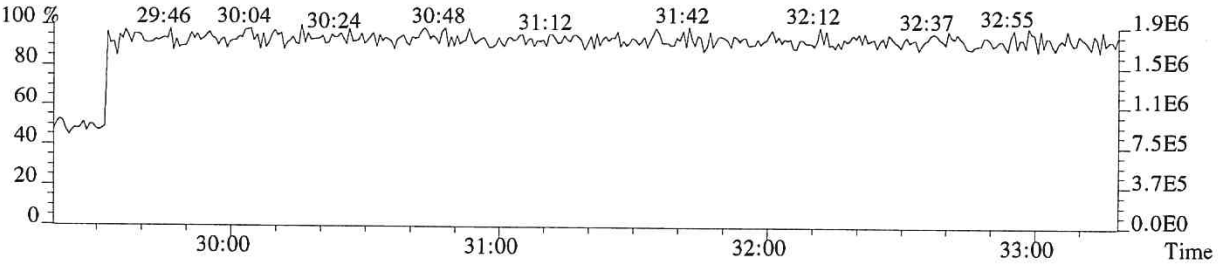
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,552.0,1.00%,F,T)

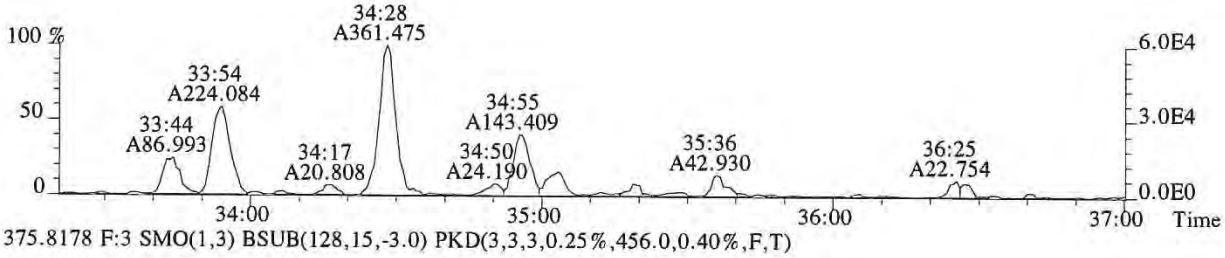


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

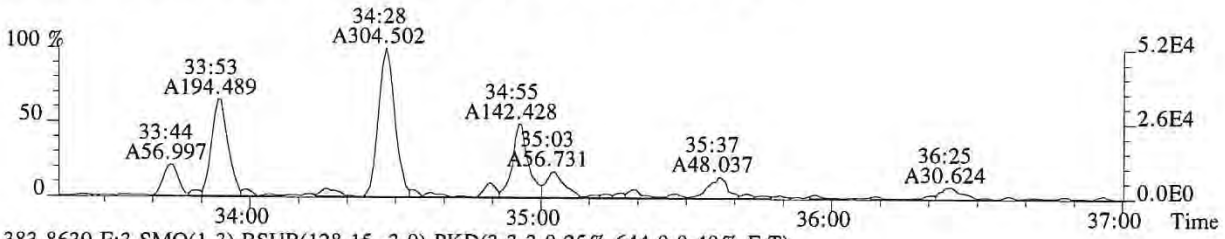


061046

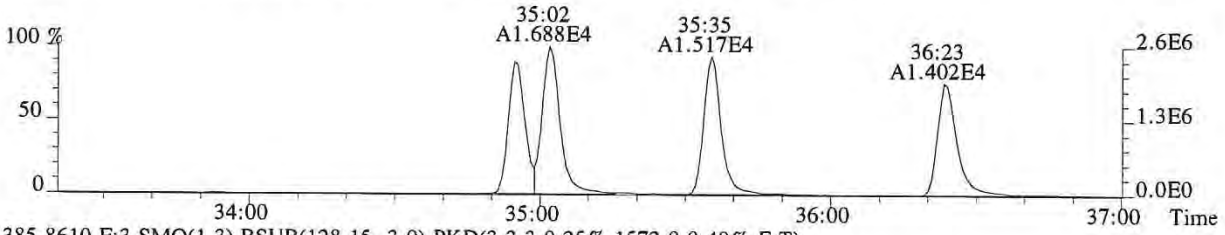
File:P519768 #1-330 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,364.0,0.40%,F,T)



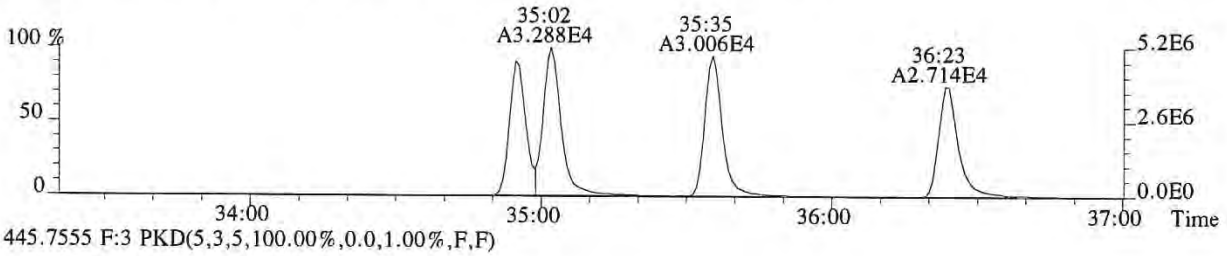
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,456.0,0.40%,F,T)



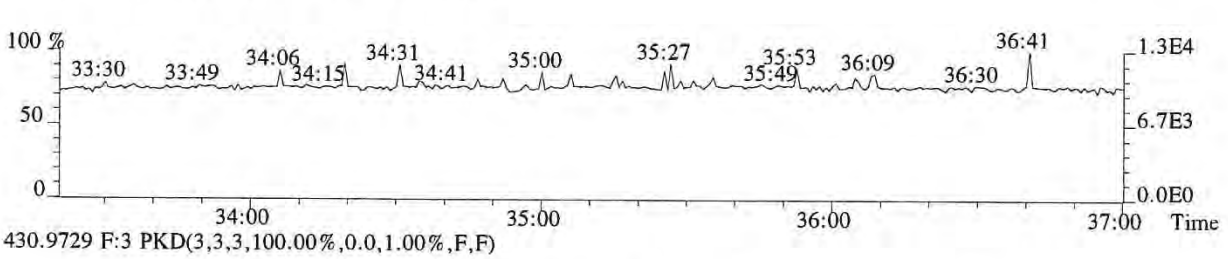
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,644.0,0.40%,F,T)



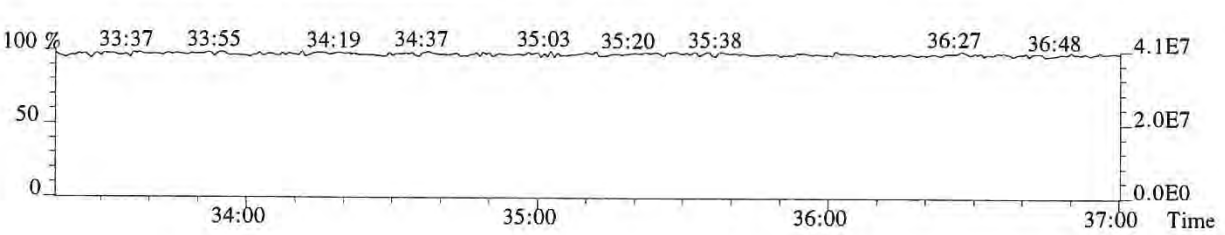
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1572.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

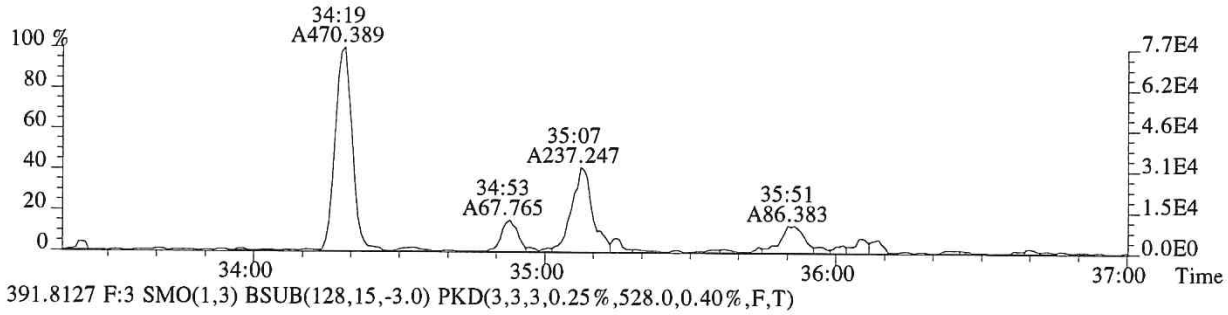


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

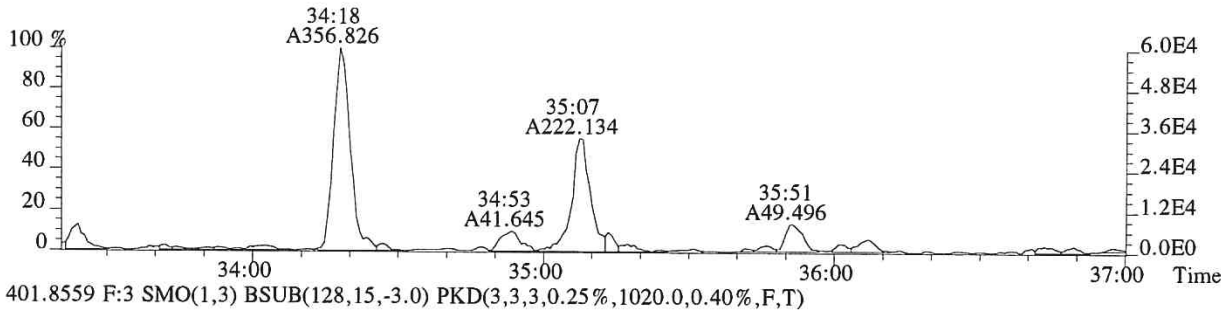


061047

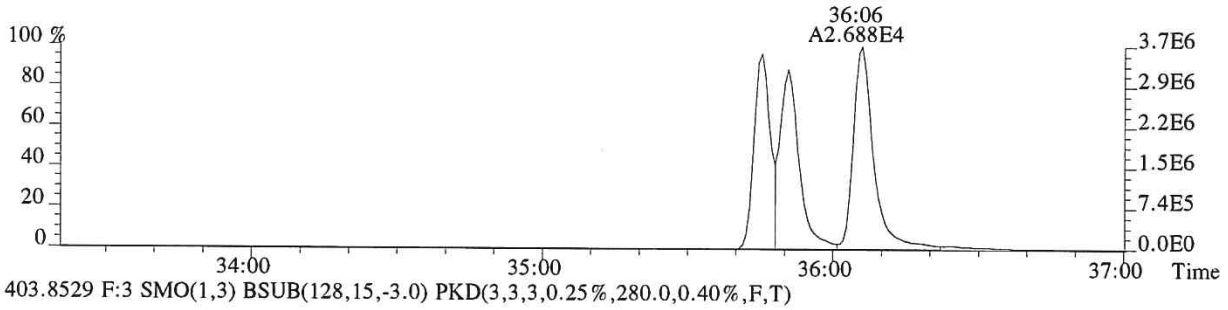
File:P519768 #1-330 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,352.0,0.40%,F,T)



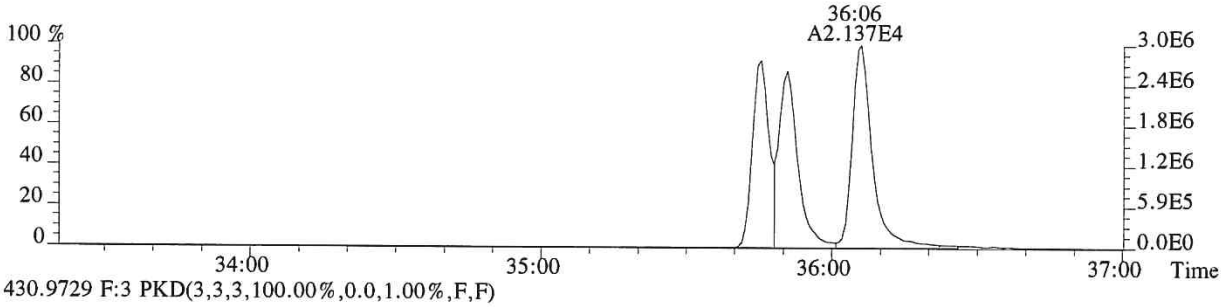
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,528.0,0.40%,F,T)



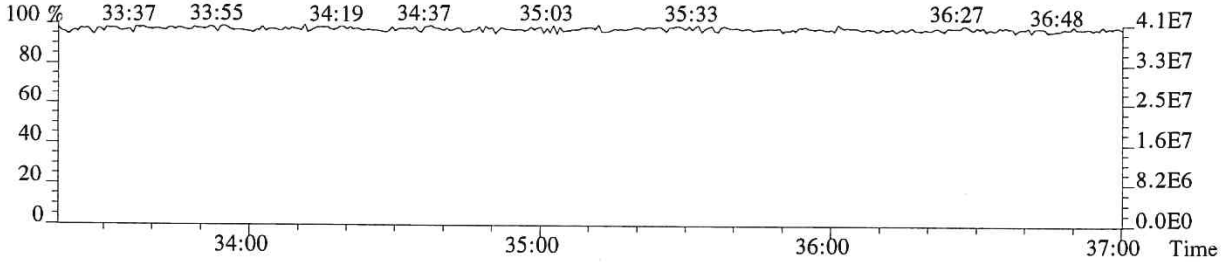
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1020.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,280.0,0.40%,F,T)

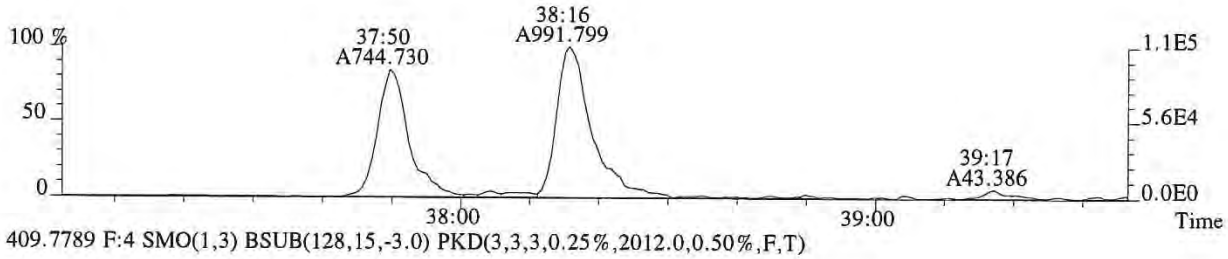


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

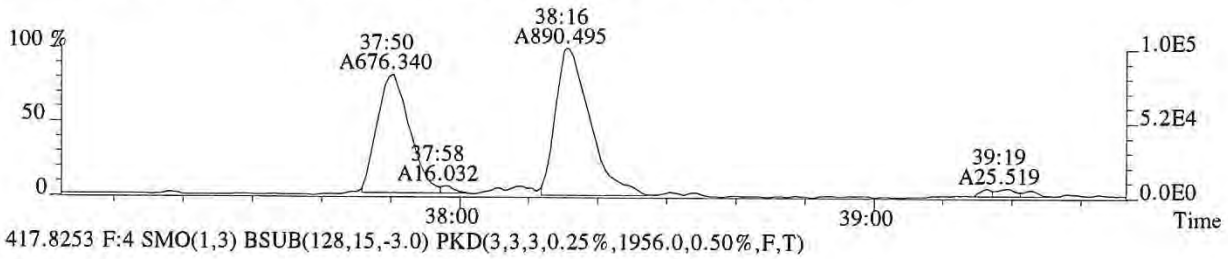


061048

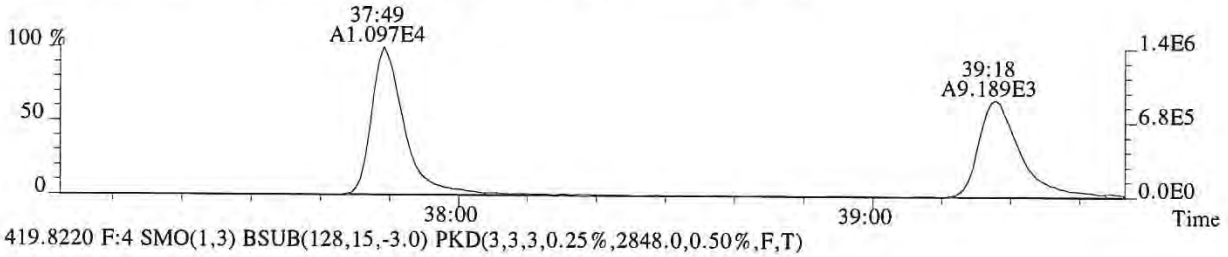
File:P519768 #1-232 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,360.0,0.50%,F,T)



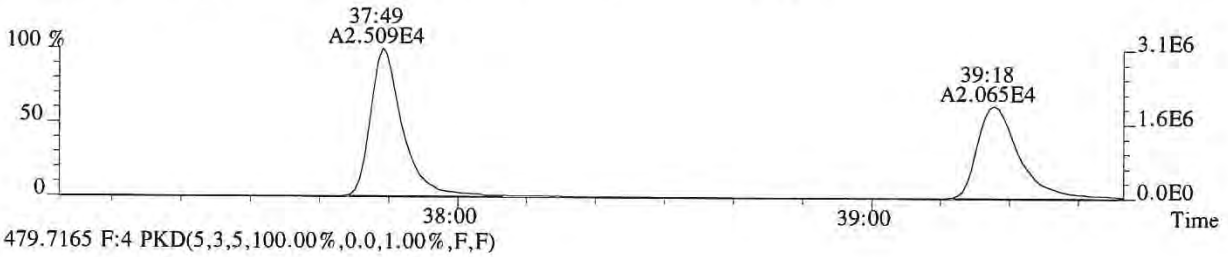
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2012.0,0.50%,F,T)



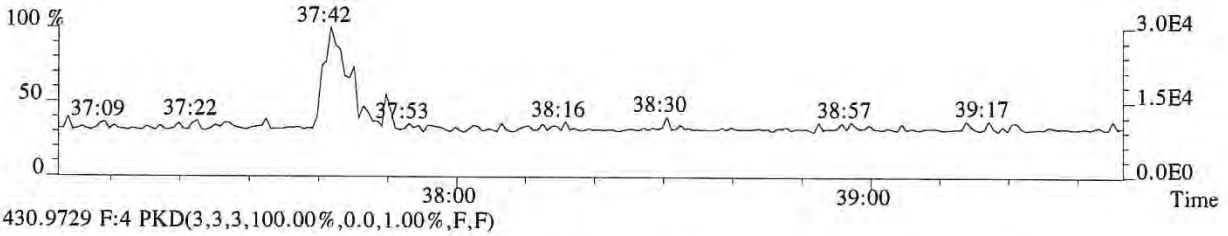
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1956.0,0.50%,F,T)



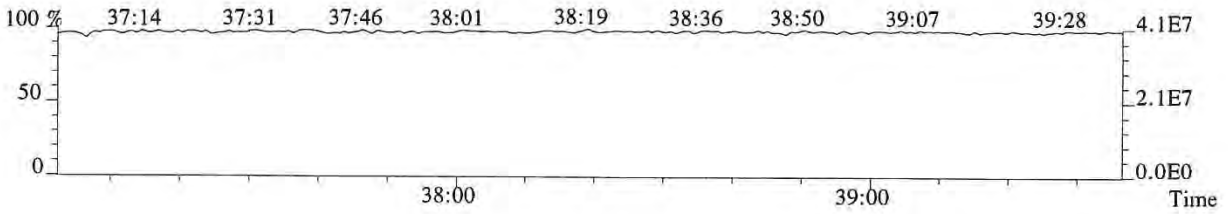
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2848.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

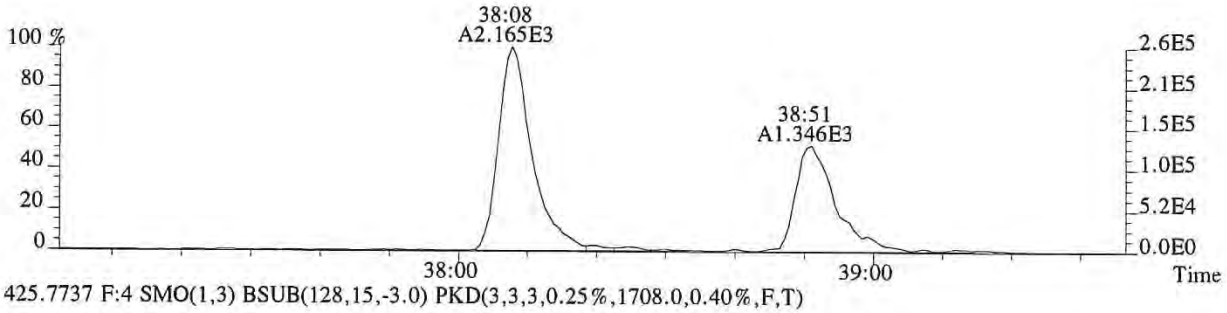


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

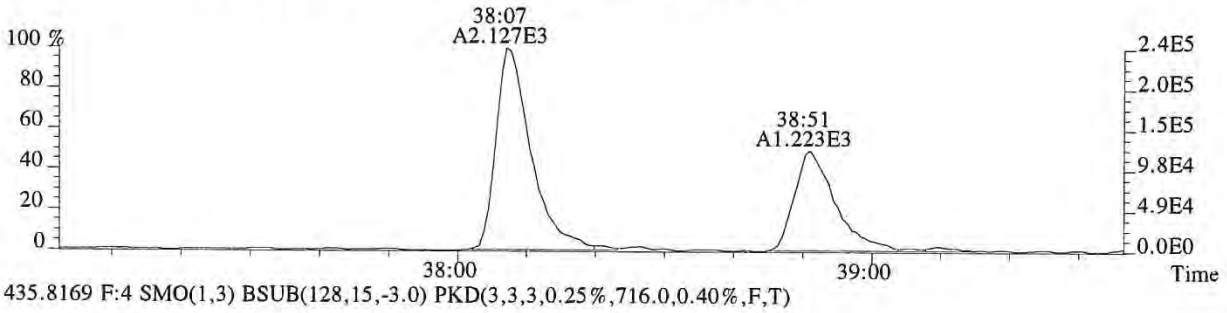


061049

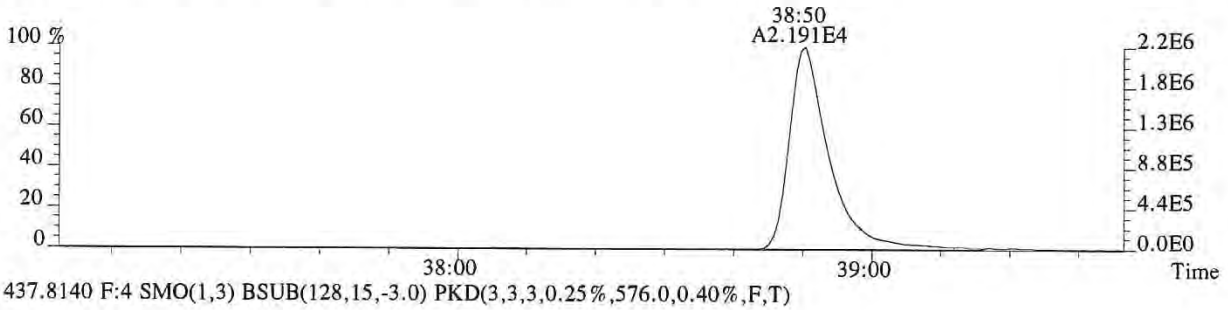
File:P519768 #1-232 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,584.0,0.40%,F,T)



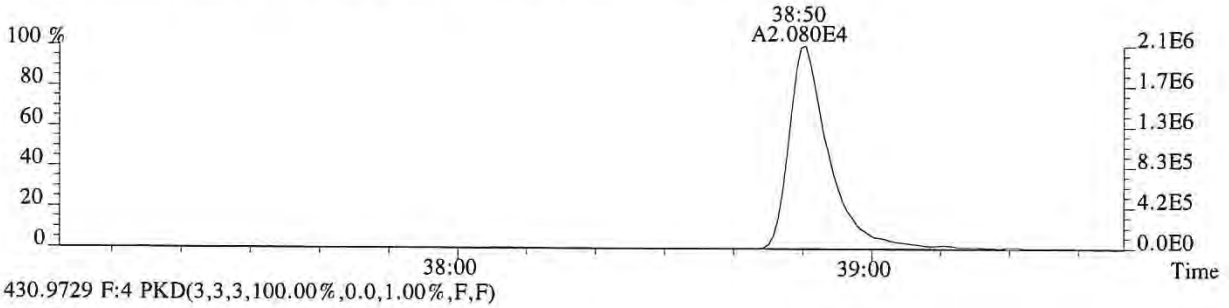
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1708.0,0.40%,F,T)



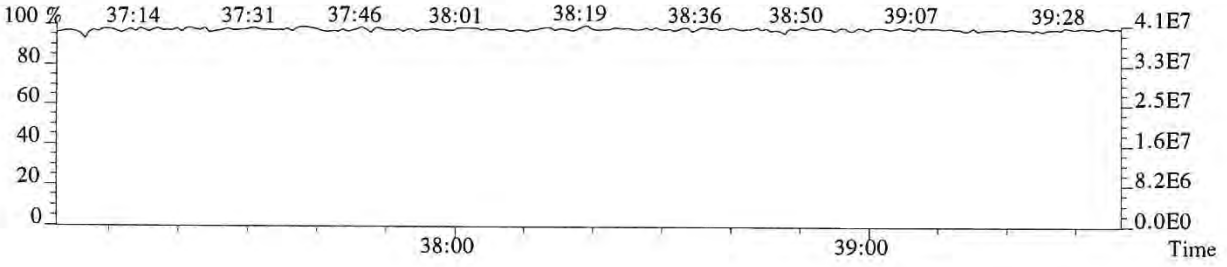
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,716.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,576.0,0.40%,F,T)

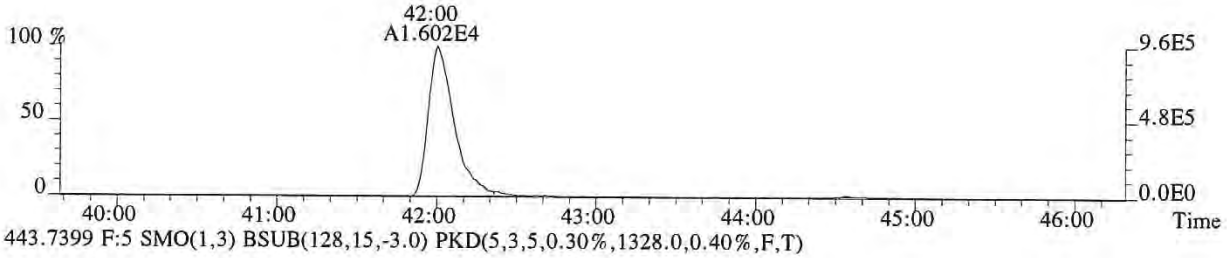


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

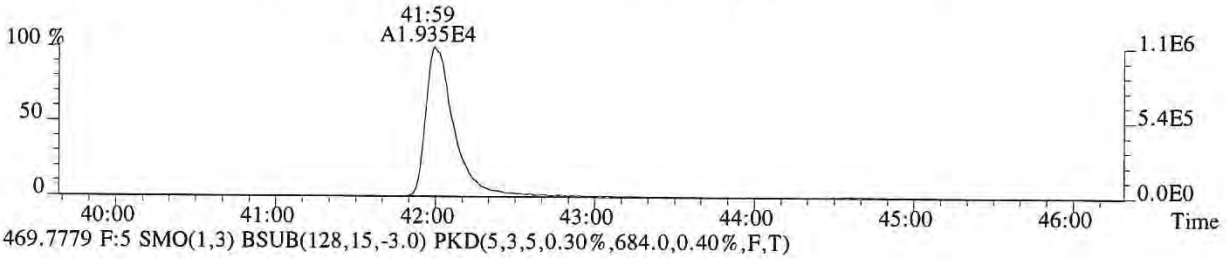


061050

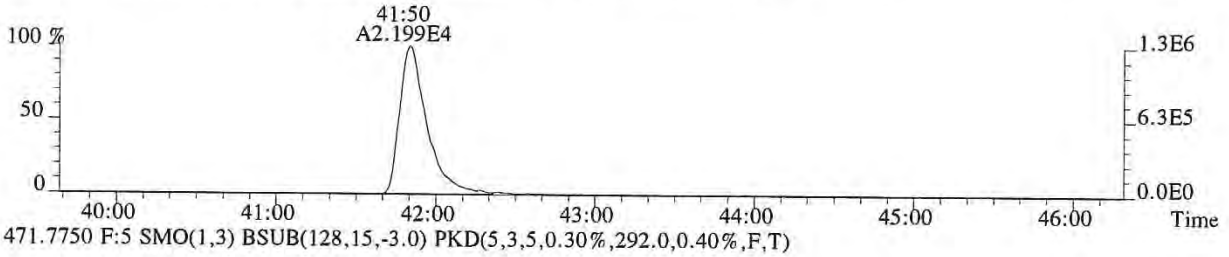
File:P519768 #1-601 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



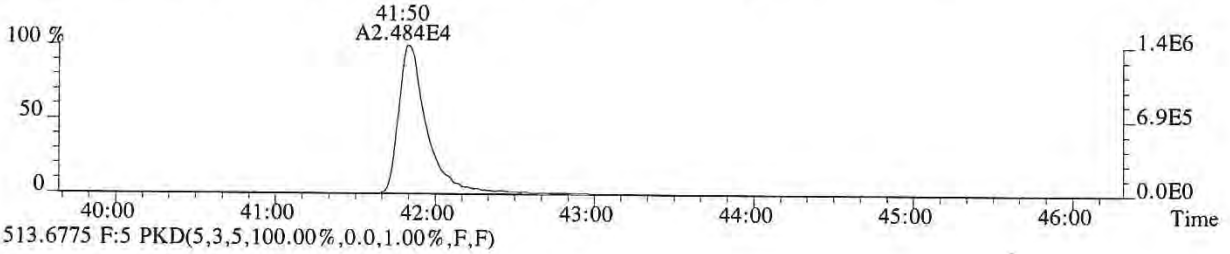
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1328.0,0.40%,F,T)



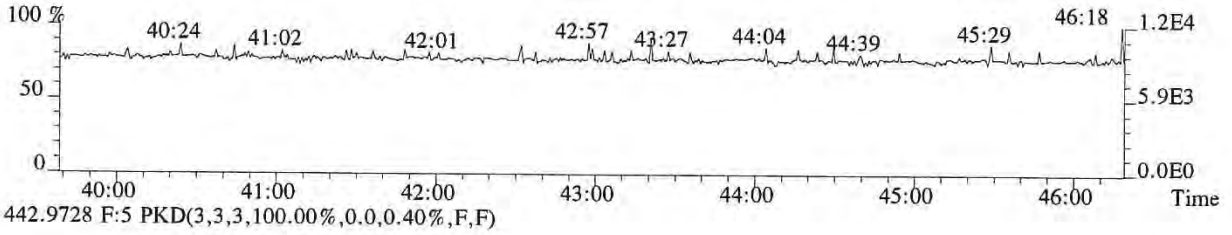
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,684.0,0.40%,F,T)



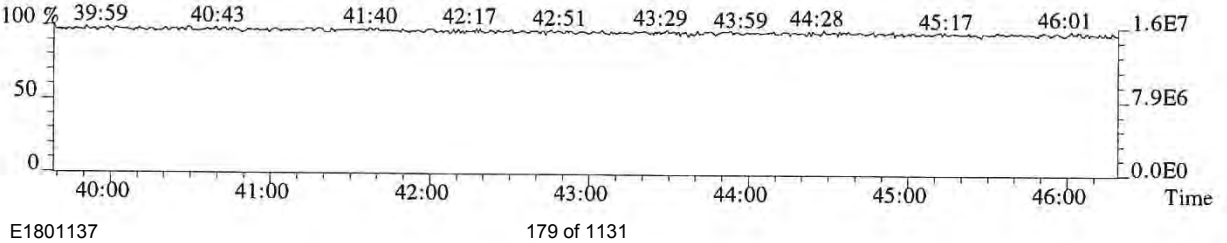
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,292.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

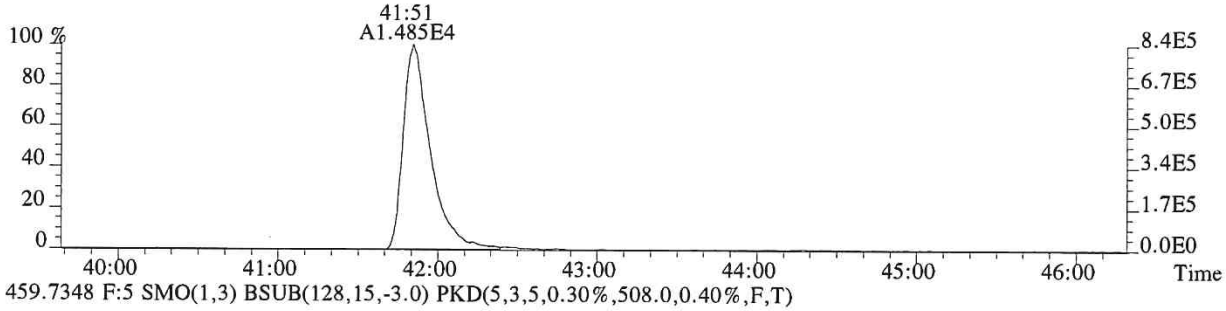


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

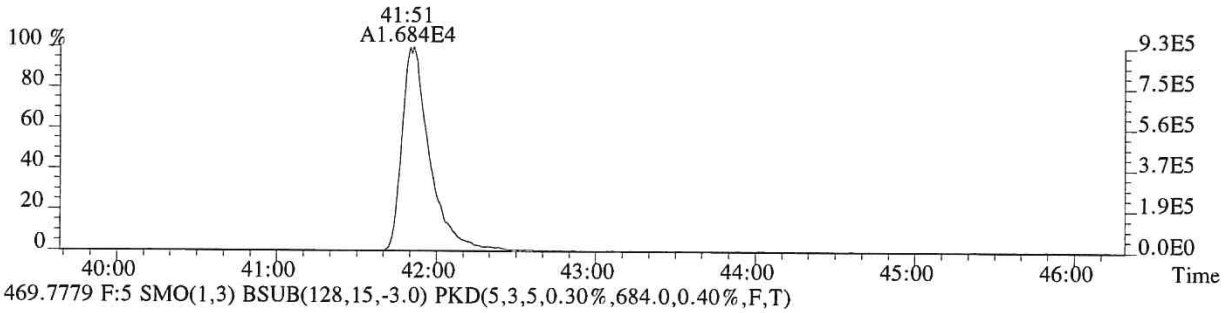


061051

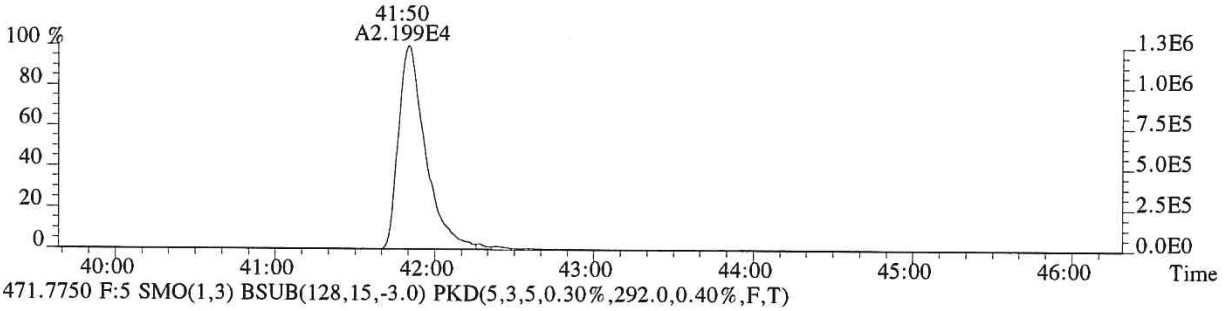
File:P519768 #1-601 Acq: 4-JAN-2019 05:51:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-001DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,628.0,0.40%,F,T)



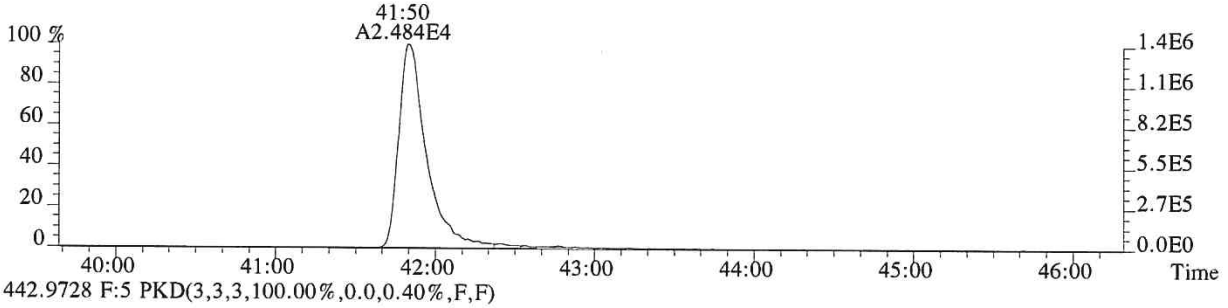
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



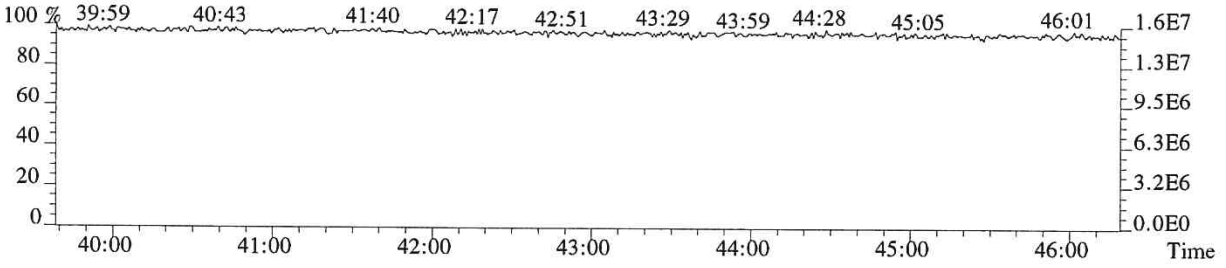
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,684.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,292.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



061052

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0145

Run #12 Filename P616321 Samp: 1 Inj: 1 Acquired: 2-JAN-19 16:15:01
Processed: 3-JAN-19 13:33:50 Sample ID: E1801137-002

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:29	3.919e+04	4.824e+04	0.81	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:32	1.245e+03	8.177e+02	1.52	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:34	1.585e+03	1.029e+03	1.54	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:25	1.497e+03	1.384e+03	1.08	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:31	6.112e+02	4.293e+02	1.42	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:04	4.744e+02	3.770e+02	1.26	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:51	2.753e+02	2.341e+02	1.18	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:07	6.767e+03	6.394e+03	1.06	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:26	4.259e+02	4.471e+02	0.95	yes	no	1.463
10	Unk	OCDF	40:38	9.689e+04	1.078e+05	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:31	8.239e+03	1.083e+04	0.76	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:52	2.646e+02	1.974e+02	1.34	yes	yes	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:13	1.497e+02	1.277e+02	1.17	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:18	6.360e+02	4.593e+02	1.38	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:32	2.697e+02	2.539e+02	1.06	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:01	7.501e+03	7.062e+03	1.06	yes	no	1.112
17	Unk	OCDD	40:28	5.053e+04	5.607e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:28	1.884e+04	2.291e+04	0.82	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:31	2.901e+04	1.857e+04	1.56	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:33	2.759e+04	1.704e+04	1.62	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:24	1.160e+04	2.203e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:31	1.271e+04	2.338e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:03	1.197e+04	2.174e+04	0.55	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:49	1.092e+04	2.019e+04	0.54	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:06	7.315e+03	1.579e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:26	5.990e+03	1.236e+04	0.48	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:29	8.866e+03	1.141e+04	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:51	2.127e+04	1.332e+04	1.60	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:12	1.683e+04	1.348e+04	1.25	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:17	1.478e+04	1.208e+04	1.22	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:00	1.338e+04	1.256e+04	1.06	yes	no	0.857
32	IS	13C-OCDD	40:27	7.430e+03	8.403e+03	0.88	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:43	2.548e+04	3.140e+04	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:31	3.422e+04	2.693e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:31	1.285e+04				no	1.086

$$\text{OCDD} = \frac{(5.053e+04 + 5.607e+04) \times 4000 \text{ pg} \times 1}{(7.430e+03 + 8.403e+03) \times 10.147 \text{ g} \times 56.3 / 100 \times 1.157} = 4074 \text{ ng/kg}$$

LMO 1/04/19

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0145

Run #12 Filename P616321 Samp: 1 Inj: 1 Acquired: 2-JAN-19 16:15:01
Processed: 3-JAN-19 13:33:50 LAB. ID: E1801137-002

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.20e+06	1.82e+03	2.9e+03	6.48e+06	5.08e+03	1.3e+03
2	1,2,3,7,8-PeCDF	2.34e+05	2.66e+03	8.8e+01	1.44e+05	4.38e+03	3.3e+01
3	2,3,4,7,8-PeCDF	2.31e+05	2.66e+03	8.7e+01	1.68e+05	4.38e+03	3.8e+01
4	1,2,3,4,7,8-HxCDF	3.25e+05	3.56e+03	9.1e+01	2.91e+05	2.09e+03	1.4e+02
5	1,2,3,6,7,8-HxCDF	1.20e+05	3.56e+03	3.4e+01	8.58e+04	2.09e+03	4.1e+01
6	2,3,4,6,7,8-HxCDF	9.99e+04	3.56e+03	2.8e+01	7.46e+04	2.09e+03	3.6e+01
7	1,2,3,7,8,9-HxCDF	5.16e+04	3.56e+03	1.4e+01	3.94e+04	2.09e+03	1.9e+01
8	1,2,3,4,6,7,8-HpCDF	1.59e+06	1.60e+03	9.9e+02	1.49e+06	2.45e+03	6.1e+02
9	1,2,3,4,7,8,9-HpCDF	1.03e+05	1.60e+03	6.4e+01	1.07e+05	2.45e+03	4.4e+01
10	OCDF	1.96e+07	1.62e+03	1.2e+04	2.22e+07	2.02e+03	1.1e+04
11	2,3,7,8-TCDD	1.30e+06	4.76e+03	2.7e+02	1.71e+06	2.81e+03	6.1e+02
12	1,2,3,7,8-PeCDD	4.74e+04	1.72e+03	2.7e+01	3.80e+04	4.30e+03	8.8e+00
13	1,2,3,4,7,8-HxCDD	3.64e+04	1.62e+03	2.2e+01	3.04e+04	2.86e+03	1.1e+01
14	1,2,3,6,7,8-HxCDD	1.43e+05	1.62e+03	8.8e+01	1.06e+05	2.86e+03	3.7e+01
15	1,2,3,7,8,9-HxCDD	6.50e+04	1.62e+03	4.0e+01	6.05e+04	2.86e+03	2.1e+01
16	1,2,3,4,6,7,8-HpCDD	1.75e+06	1.25e+03	1.4e+03	1.62e+06	1.87e+03	8.7e+02
17	OCDD	1.06e+07	5.52e+02	1.9e+04	1.15e+07	5.40e+02	2.1e+04
18	13C-2,3,7,8-TCDF	2.67e+06	1.82e+04	1.5e+02	3.20e+06	1.29e+04	2.5e+02
19	13C-1,2,3,7,8-PeCDF	5.58e+06	8.36e+03	6.7e+02	3.55e+06	9.38e+03	3.8e+02
20	13C-2,3,4,7,8-PeCDF	5.28e+06	8.36e+03	6.3e+02	3.28e+06	9.38e+03	3.5e+02
21	13C-1,2,3,4,7,8-HxCDF	2.46e+06	1.69e+03	1.5e+03	4.75e+06	6.03e+03	7.9e+02
22	13C-1,2,3,6,7,8-HxCDF	2.65e+06	1.69e+03	1.6e+03	4.93e+06	6.03e+03	8.2e+02
23	13C-2,3,4,6,7,8-HxCDF	2.62e+06	1.69e+03	1.6e+03	4.79e+06	6.03e+03	8.0e+02
24	13C-1,2,3,7,8,9-HxCDF	2.44e+06	1.69e+03	1.4e+03	4.53e+06	6.03e+03	7.5e+02
25	13C-1,2,3,4,6,7,8-HpCDF	1.70e+06	3.58e+03	4.7e+02	3.73e+06	3.26e+03	1.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.42e+06	3.58e+03	4.0e+02	2.90e+06	3.26e+03	8.9e+02
27	13C-2,3,7,8-TCDD	1.43e+06	1.27e+04	1.1e+02	1.78e+06	5.10e+03	3.5e+02
28	13C-1,2,3,7,8-PeCDD	4.12e+06	2.59e+03	1.6e+03	2.54e+06	2.95e+03	8.6e+02
29	13C-1,2,3,4,7,8-HxCDD	3.74e+06	2.28e+03	1.6e+03	2.92e+06	1.74e+03	1.7e+03
30	13C-1,2,3,6,7,8-HxCDD	3.25e+06	2.28e+03	1.4e+03	2.64e+06	1.74e+03	1.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.13e+06	1.12e+03	2.8e+03	2.90e+06	1.06e+03	2.7e+03
32	13C-OCDD	1.57e+06	2.28e+03	6.9e+02	1.77e+06	1.10e+03	1.6e+03
33	13C-1,2,3,4-TCDD	3.74e+06	1.27e+04	3.0e+02	4.61e+06	5.10e+03	9.1e+02
34	13C-1,2,3,7,8,9-HxCDD	7.49e+06	2.28e+03	3.3e+03	6.01e+06	1.74e+03	3.4e+03
35	37Cl-2,3,7,8-TCDD	2.02e+06	2.42e+03	8.3e+02			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

SL0145

Entry: 36 Totals Name: Total Tetra-Furans

Run: 12 File: P616321 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 16:15:01 Processed: 3-JAN-19 13:33:50

Mass: 303.9020 305.8990 Tot Response: 1.55e+05 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:24	1.56e+02	2.03e+02	0.77	yes	3.59e+02		n	n
2	21:52	4.90e+02	5.89e+02	0.83	yes	1.08e+03		n	n
3	22:17	5.71e+02	7.58e+02	0.75	yes	1.33e+03		n	n
4	22:35	1.90e+03	2.49e+03	0.76	yes	4.39e+03		n	n
5	22:56	8.22e+02	1.06e+03	0.78	yes	1.88e+03		n	n
6	23:03	1.21e+02	1.80e+02	0.67	yes	3.01e+02		n	n
7	23:13	1.47e+03	1.94e+03	0.76	yes	3.40e+03		n	n
8	24:27	1.76e+04	2.19e+04	0.80	yes	3.96e+04		n	n
9	24:45	8.92e+02	1.07e+03	0.84	yes	1.96e+03		n	n
10	25:29	3.92e+04	4.82e+04	0.81	yes	8.74e+04	2,3,7,8-TCDF	n	n
11	25:56	2.97e+03	3.37e+03	0.88	yes	6.34e+03		n	n
12	26:13	3.94e+02	4.59e+02	0.86	yes	8.53e+02		n	n
13	27:46	2.69e+03	3.32e+03	0.81	yes	6.01e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0145

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 12 File: P616321 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 16:15:01 Processed: 3-JAN-19 13:33:50

Mass: 319.8970 321.8940 Tot Response: 2.08e+04 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:22	6.92e+01	9.13e+01	0.76	yes	1.61e+02		n	n
2	26:31	8.24e+03	1.08e+04	0.76	yes	1.91e+04	2,3,7,8-TCDD	n	n
3	26:53	7.37e+02	8.46e+02	0.87	yes	1.58e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0145

Entry: 38 Totals Name: Total Penta-Furans1

Run: 12 File: P616321 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 16:15:01 Processed: 3-JAN-19 13:33:50

Mass: 339.8600 341.8570 Tot Response: 4.36e+03 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:45	2.68e+03	1.68e+03	1.59	yes	4.36e+03	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0145

Entry: 39 Totals Name: Total Penta-Furans2

Run: 12 File: P616321 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 16:15:01 Processed: 3-JAN-19 13:33:50

Mass: 339.8600 341.8570 Tot Response: 1.16e+04 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:20	3.29e+02	2.29e+02	1.44	yes	5.58e+02		y	y
2	29:30	2.18e+03	1.47e+03	1.48	yes	3.65e+03		y	y
3	30:07	6.95e+02	4.13e+02	1.68	yes	1.11e+03		y	y
4	30:20	3.29e+02	1.95e+02	1.68	yes	5.25e+02		n	y
5	30:32	1.25e+03	8.18e+02	1.52	yes	2.06e+03	1,2,3,7,8-PeCDF	n	n
6	30:48	6.66e+02	4.36e+02	1.52	yes	1.10e+03		n	n
7	31:34	1.59e+03	1.03e+03	1.54	yes	2.61e+03	2,3,4,7,8-PeCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0145

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 12 File: P616321 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 16:15:01 Processed: 3-JAN-19 13:33:50

Mass: 355.8550 357.8520 Tot Response: 2.09e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:33	4.83e+02	3.39e+02	1.42	yes	8.22e+02		n	n
2	30:02	2.29e+02	1.46e+02	1.57	yes	3.75e+02		n	n
3	30:34	2.67e+02	1.60e+02	1.66	yes	4.27e+02		n	y
4	31:52	2.65e+02	1.97e+02	1.34	yes	4.62e+02	1,2,3,7,8-PeCDD	n	y

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0145

Entry: 41 Totals Name: Total Hexa-Furans

Run: 12 File: P616321 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 16:15:01 Processed: 3-JAN-19 13:33:50

Mass: 373.8210 375.8180 Tot Response: 1.72e+04 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:14	7.33e+02	6.80e+02	1.08	yes	1.41e+03		n	n
2	33:24	2.65e+03	2.15e+03	1.23	yes	4.79e+03		n	n
3	33:46	1.40e+02	1.19e+02	1.18	yes	2.59e+02		n	n
4	33:57	2.80e+03	2.23e+03	1.25	yes	5.04e+03		n	n
5	34:19	2.34e+02	1.86e+02	1.25	yes	4.20e+02		n	n
6	34:25	1.50e+03	1.38e+03	1.08	yes	2.88e+03	1,2,3,4,7,8-HxCDF	n	n
7	34:31	6.11e+02	4.29e+02	1.42	yes	1.04e+03	1,2,3,6,7,8-HxCDF	n	n
8	35:04	4.74e+02	3.77e+02	1.26	yes	8.51e+02	2,3,4,6,7,8-HxCDF	n	n
9	35:51	2.75e+02	2.34e+02	1.18	yes	5.09e+02	1,2,3,7,8,9-HxCDF	n	n

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Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0145

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 12 File: P616321 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 16:15:01 Processed: 3-JAN-19 13:33:50

Mass: 389.8160 391.8130 Tot Response: 1.09e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:47	2.60e+03	2.19e+03	1.19	yes	4.80e+03		n	n
2	34:21	3.81e+02	3.12e+02	1.22	yes	6.93e+02		n	n
3	34:35	1.99e+03	1.57e+03	1.27	yes	3.55e+03		n	n
4	35:13	1.50e+02	1.28e+02	1.17	yes	2.77e+02	1,2,3,4,7,8-HxCDD	n	n
5	35:18	6.36e+02	4.59e+02	1.38	yes	1.10e+03	1,2,3,6,7,8-HxCDD	n	n
6	35:32	2.70e+02	2.54e+02	1.06	yes	5.24e+02	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0145

Entry: 43 Totals Name: Total Hepta-Furans

Run: 12 File: P616321 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 16:15:01 Processed: 3-JAN-19 13:33:50

Mass: 407.7820 409.7790 Tot Response: 2.65e+04 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:07	6.77e+03	6.39e+03	1.06	yes	1.32e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	37:22	4.19e+02	4.40e+02	0.95	yes	8.60e+02		n	n
3	37:31	6.00e+03	5.57e+03	1.08	yes	1.16e+04		n	n
4	38:26	4.26e+02	4.47e+02	0.95	yes	8.73e+02	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0145

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 12 File: P616321 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 16:15:01 Processed: 3-JAN-19 13:33:50

Mass: 423.7770 425.7740 Tot Response: 3.55e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:22	1.07e+04	1.02e+04	1.05	yes	2.09e+04		n	n
2	38:01	7.50e+03	7.06e+03	1.06	yes	1.46e+04	1,2,3,4,6,7,8-HpCDD	n	n

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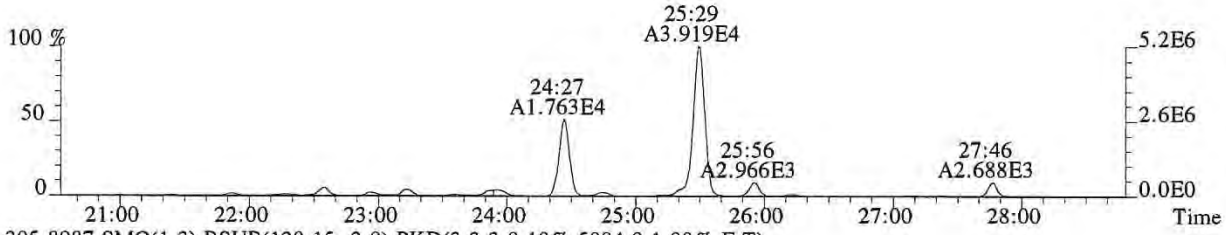
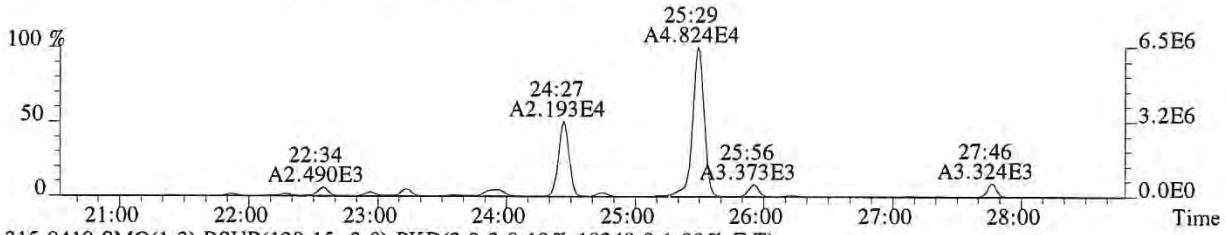
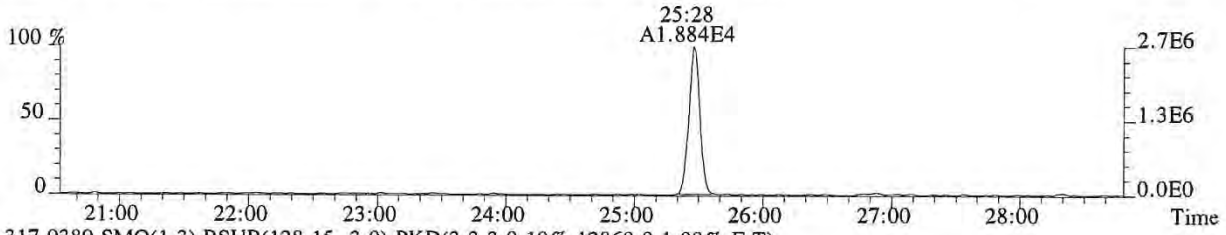
File:P616321 #1-587 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1816.0,1.00%,F,T)



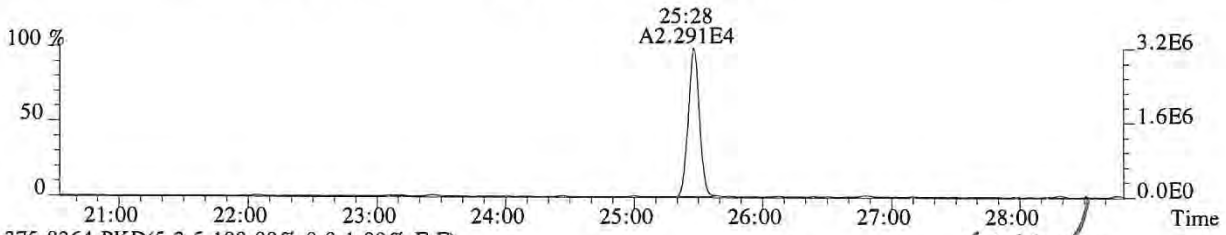
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5084.0,1.00%,F,T)



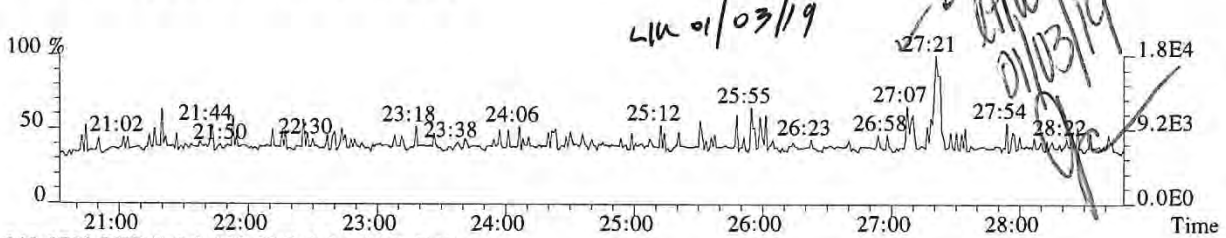
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18248.0,1.00%,F,T)



317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12860.0,1.00%,F,T)

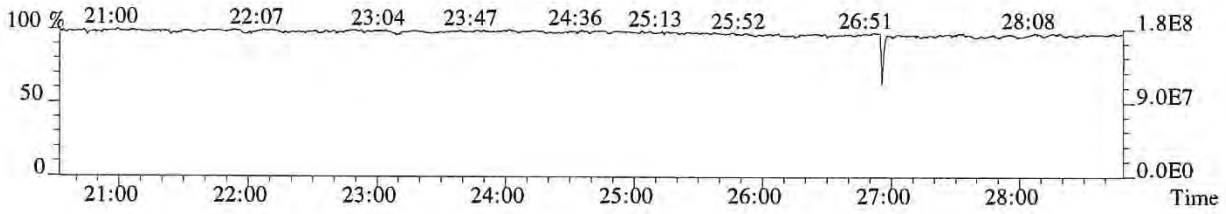


375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



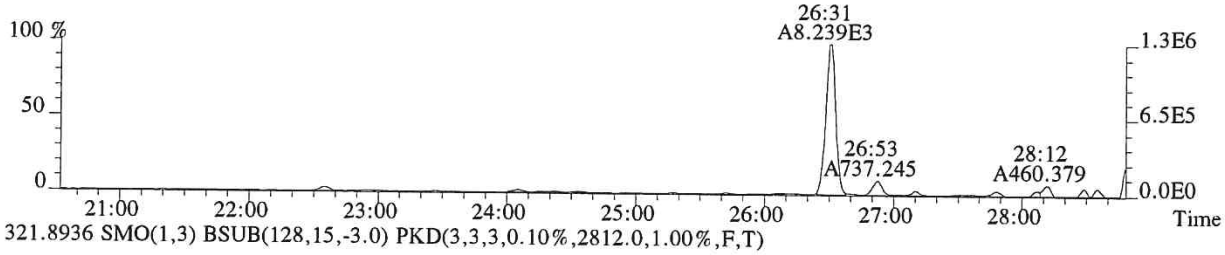
LM 01/03/19

318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

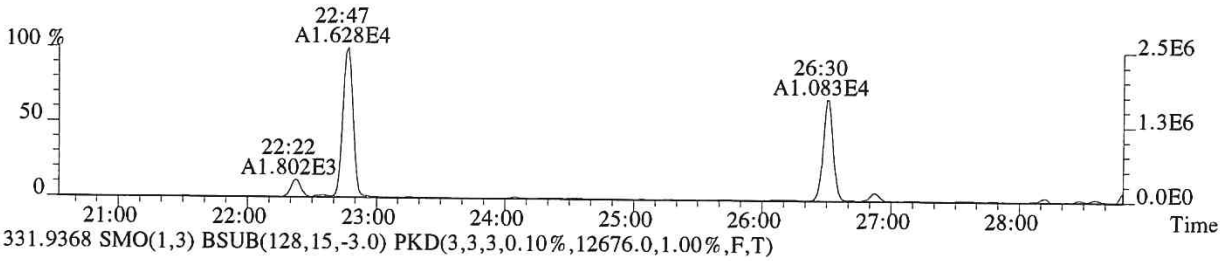


061064

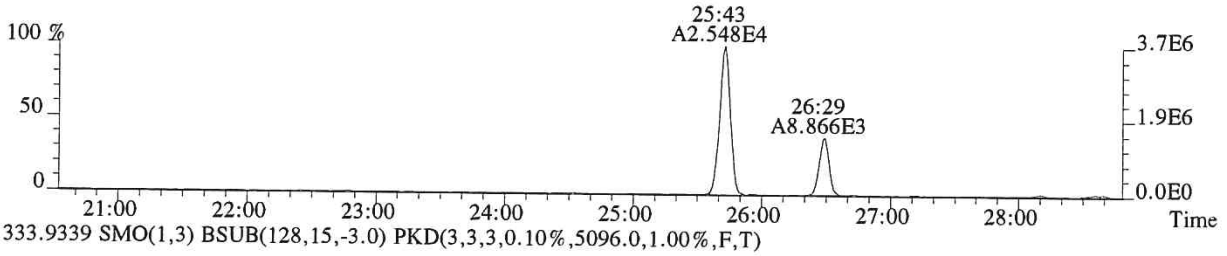
File:P616321 #1-587 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4764.0,1.00%,F,T)



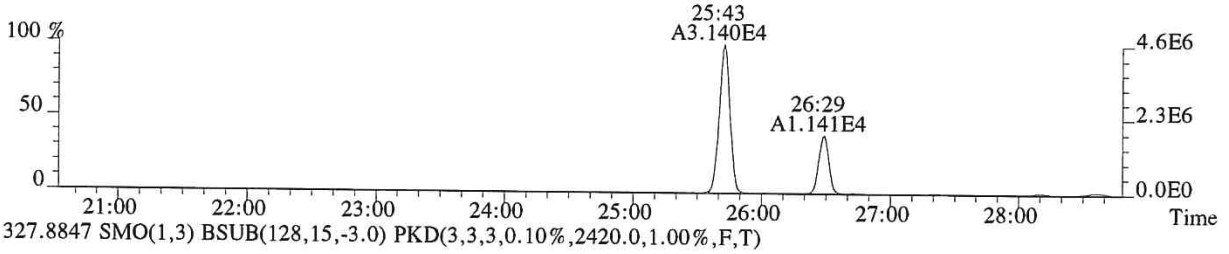
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2812.0,1.00%,F,T)



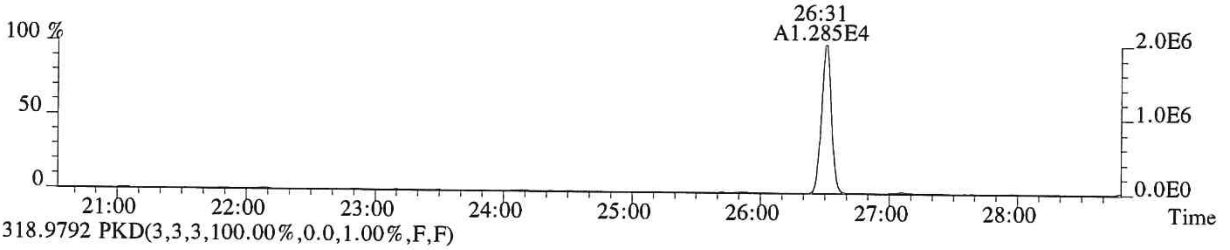
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12676.0,1.00%,F,T)



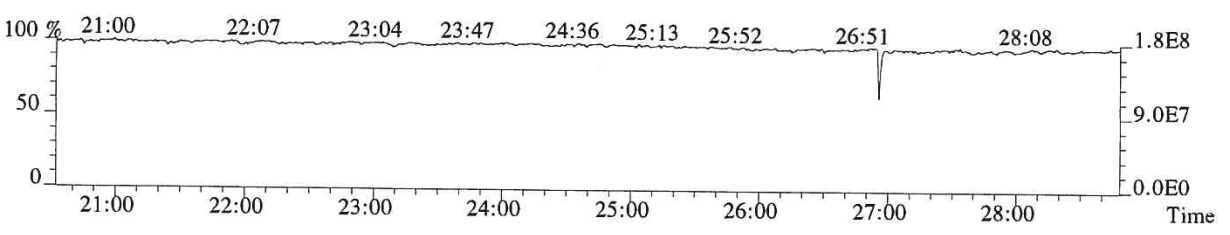
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5096.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2420.0,1.00%,F,T)

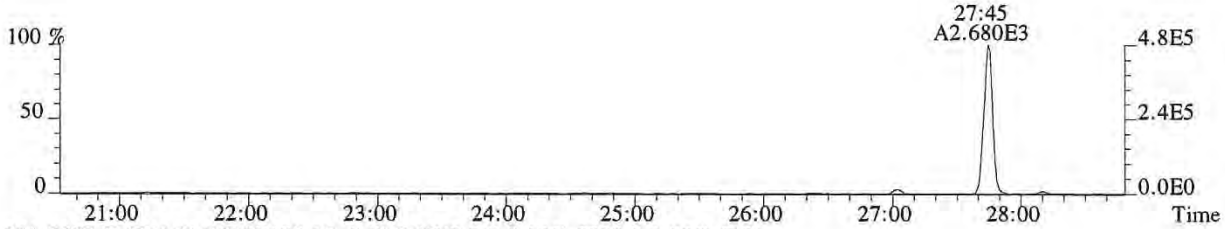


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

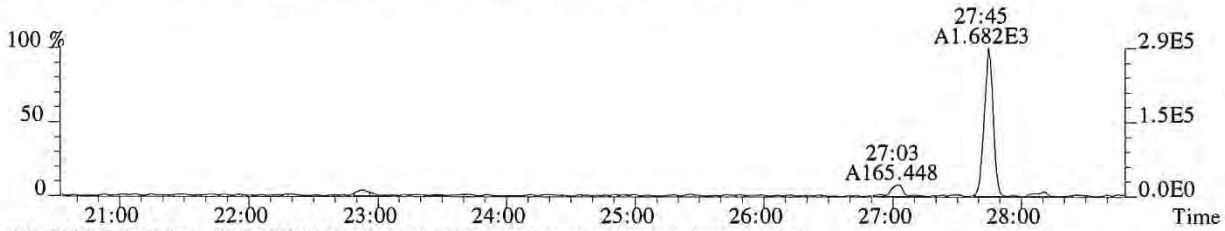


061065

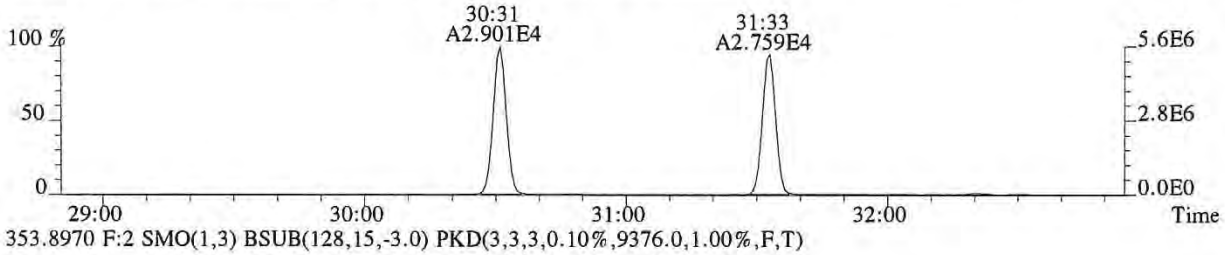
File:P616321 #1-587 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1340.0,1.00%,F,T)



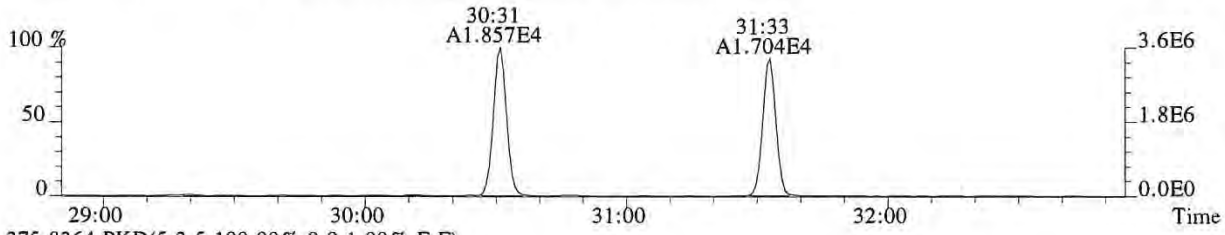
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2332.0,1.00%,F,T)



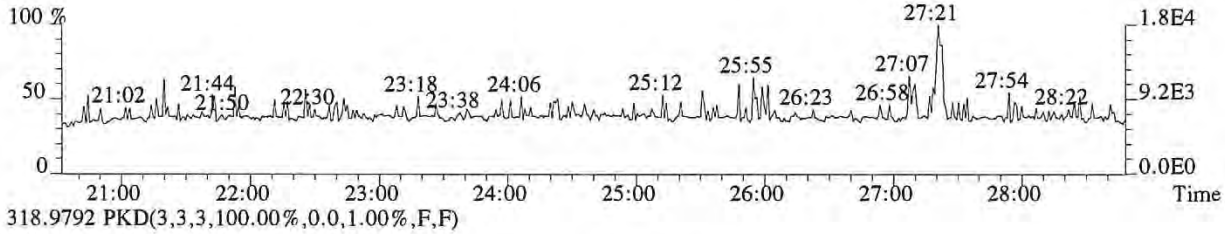
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8360.0,1.00%,F,T)



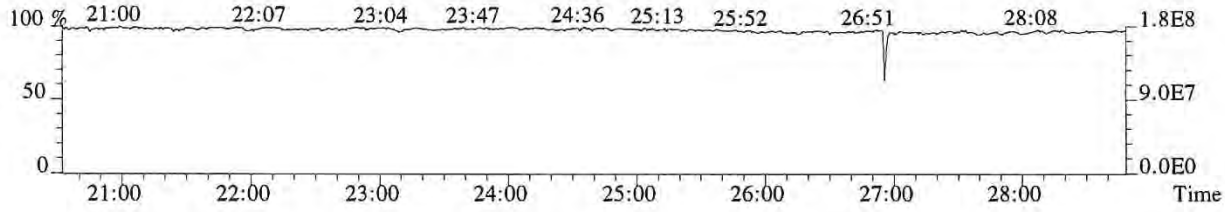
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9376.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

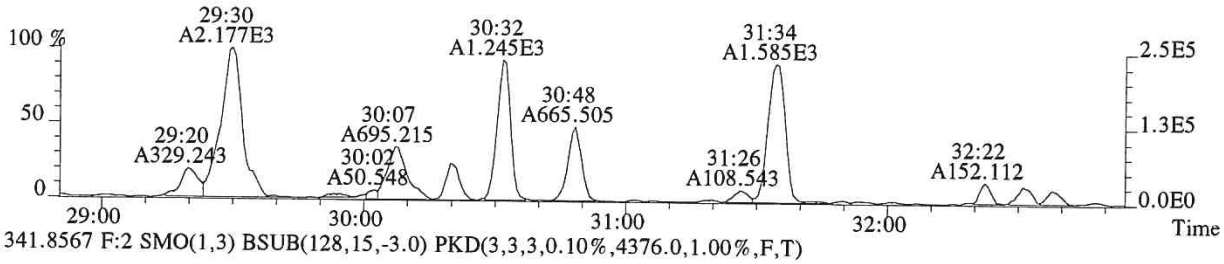


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

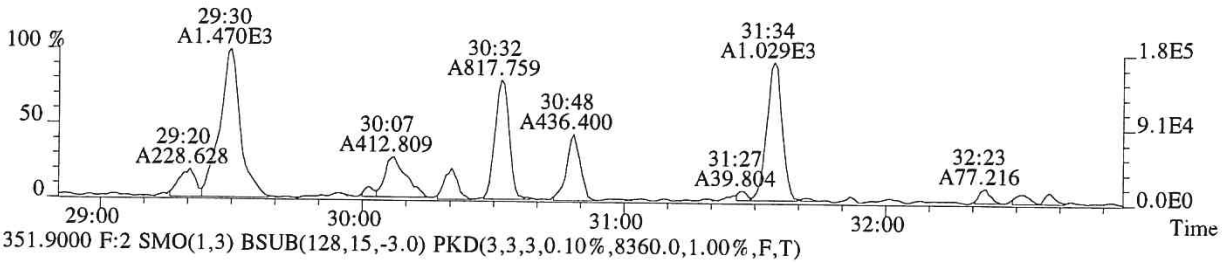


061066

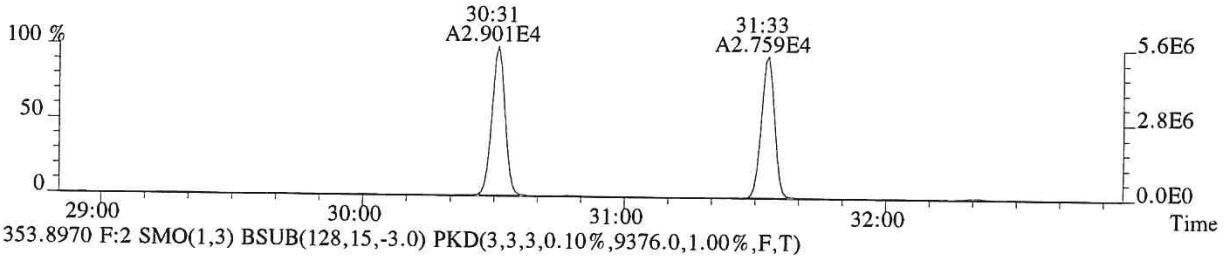
File:P616321 #1-367 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2660.0,1.00%,F,T)



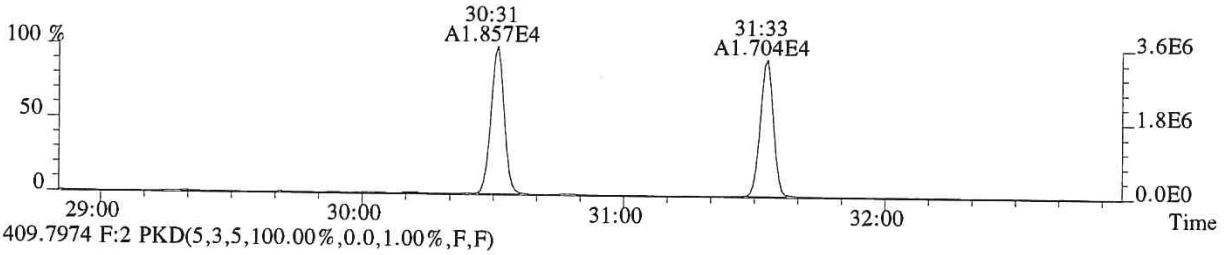
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4376.0,1.00%,F,T)



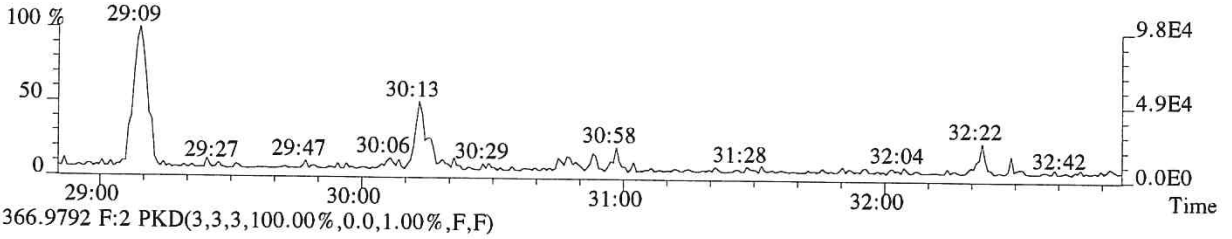
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8360.0,1.00%,F,T)



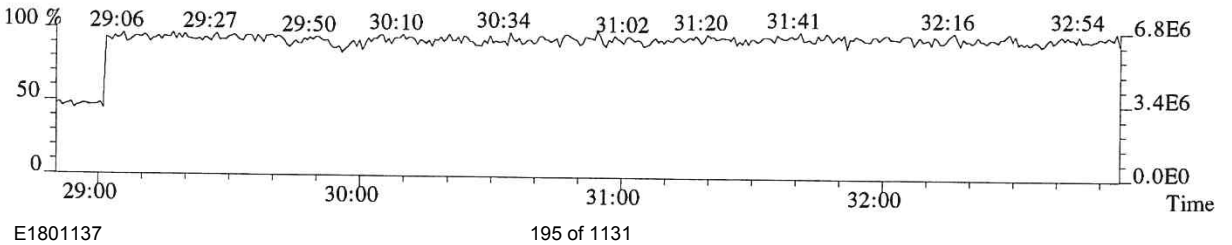
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9376.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

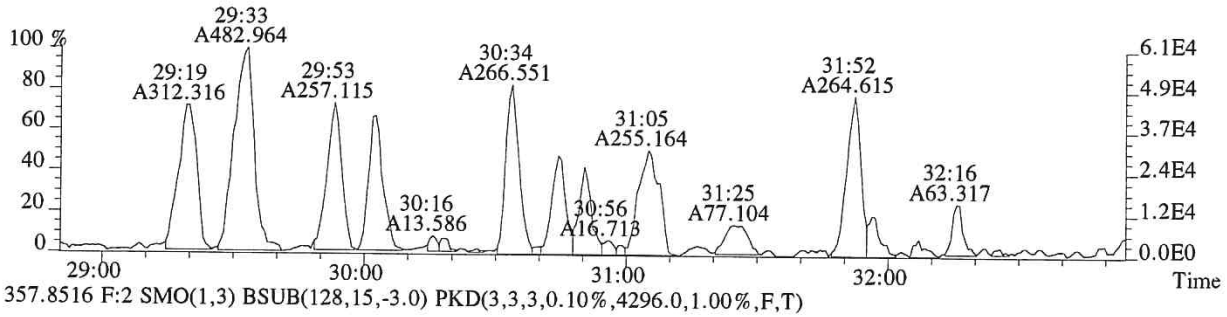


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

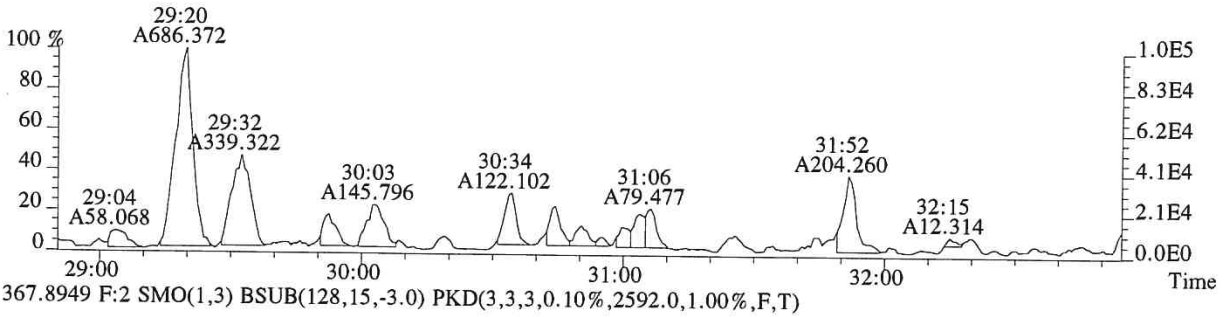


061067

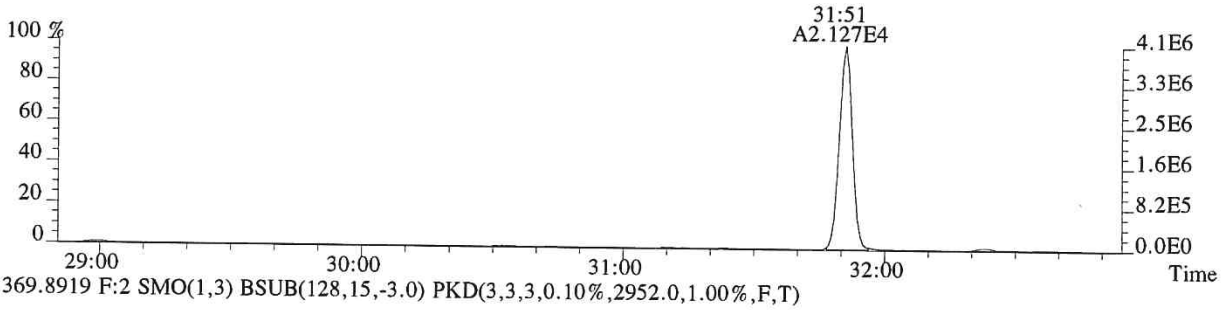
File:P616321 #1-367 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1724.0,1.00%,F,T)



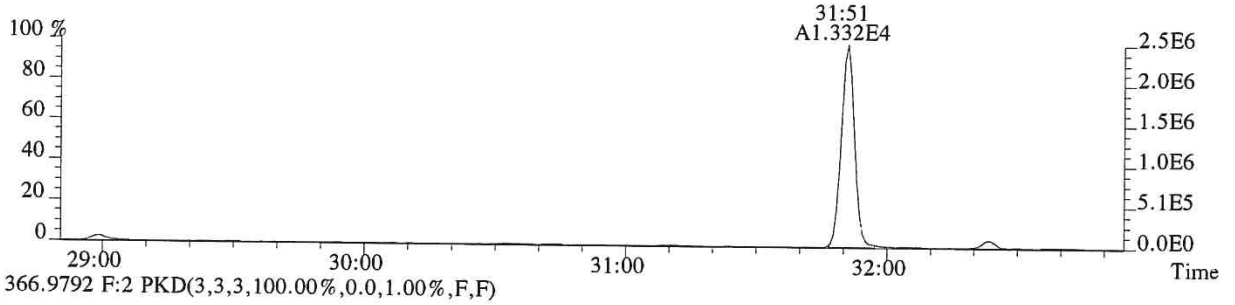
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4296.0,1.00%,F,T)



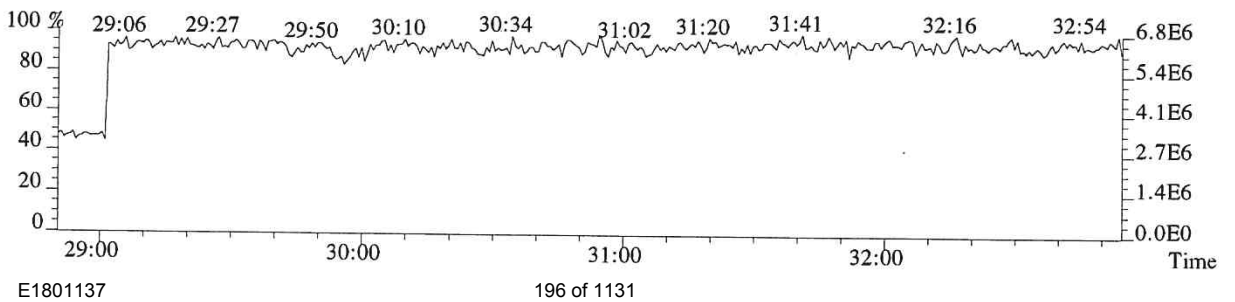
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2592.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2952.0,1.00%,F,T)

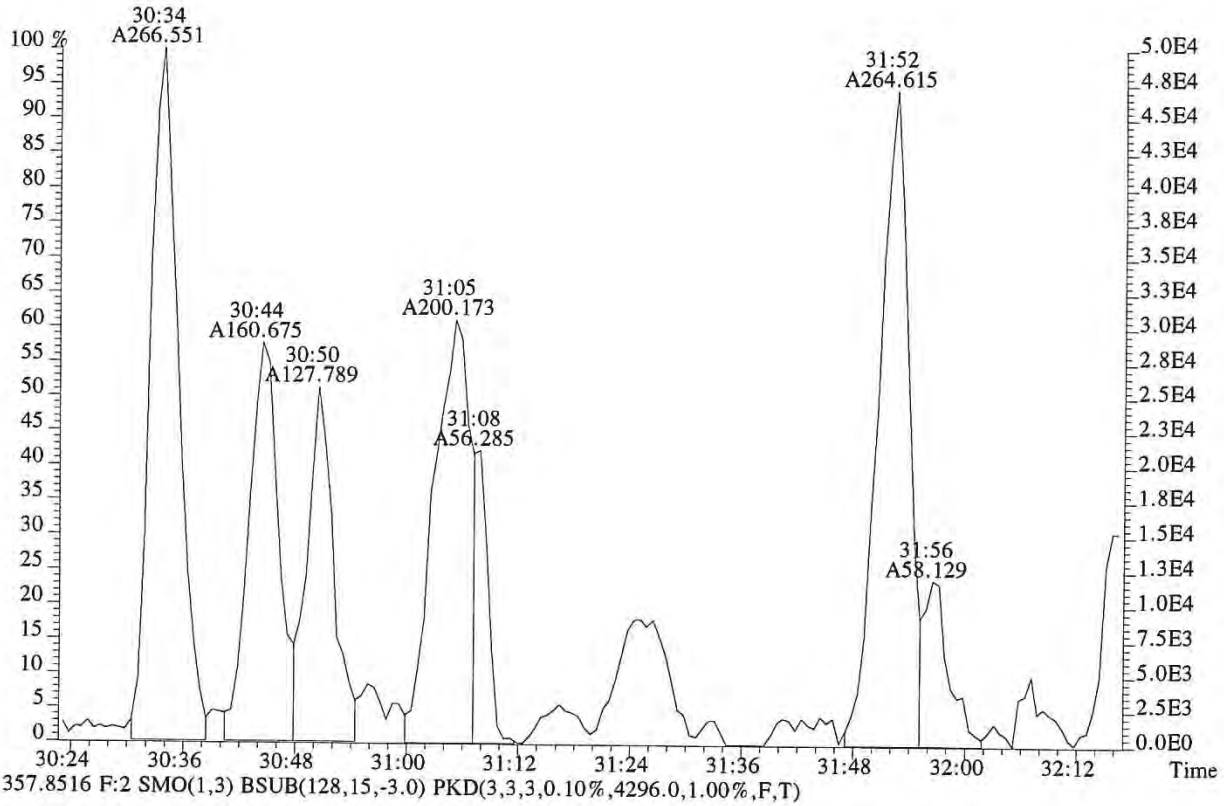


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

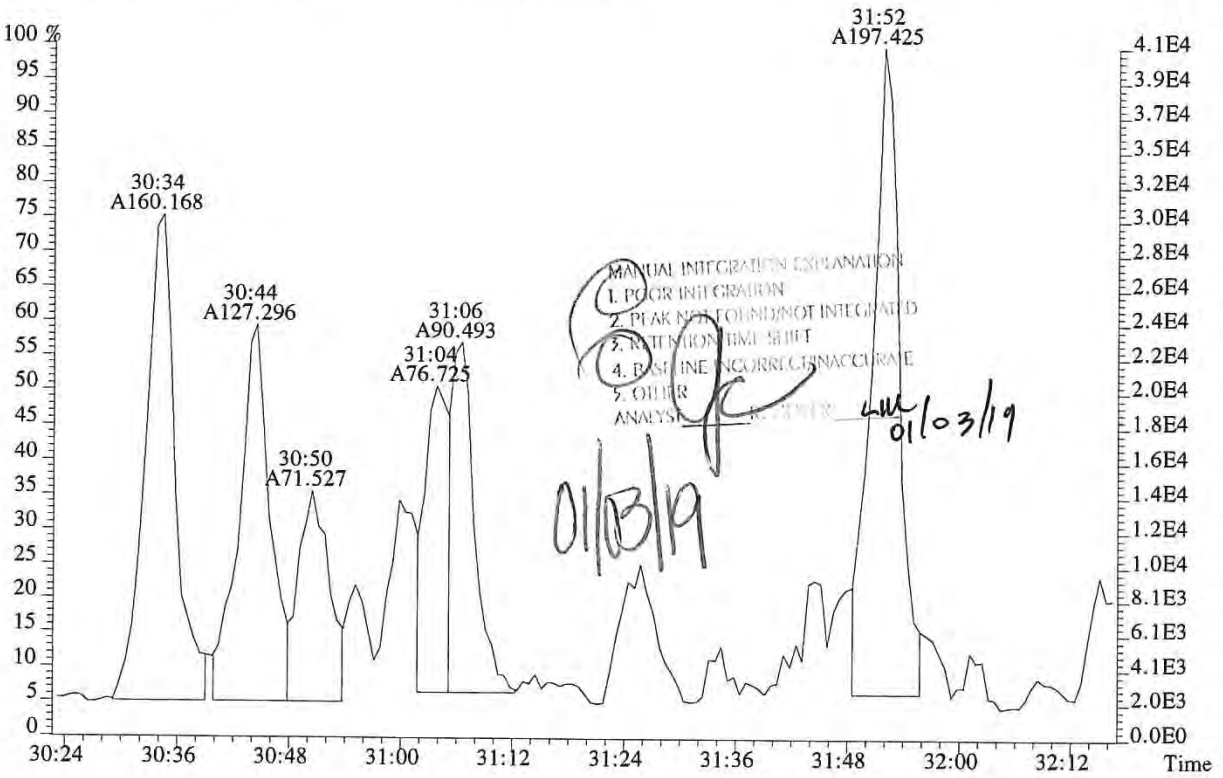


061068

File:P616321 #1-367 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1724.0,1.00%,F,T)

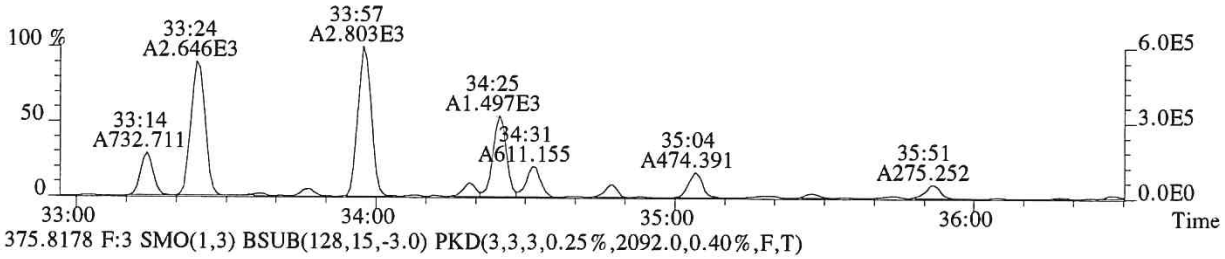


357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4296.0,1.00%,F,T)

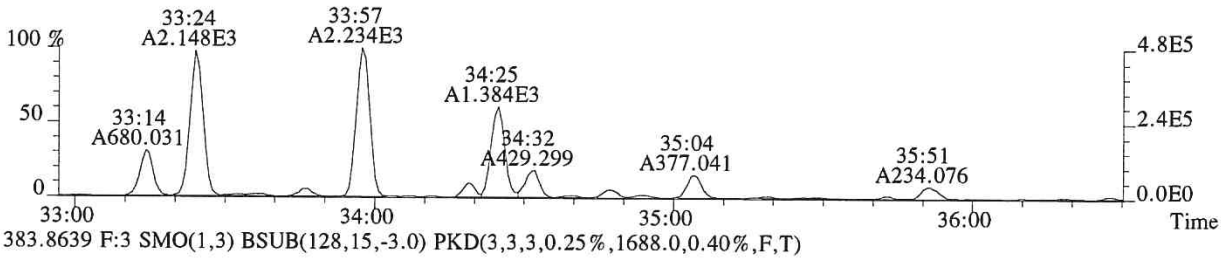


061069

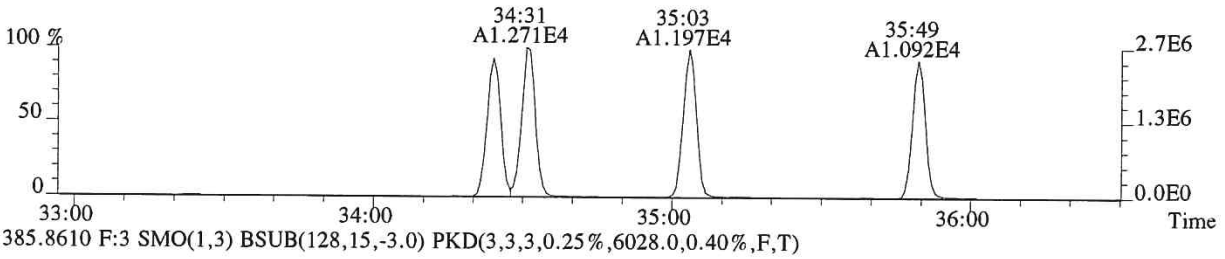
File:P616321 #1-321 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3560.0,0.40%,F,T)



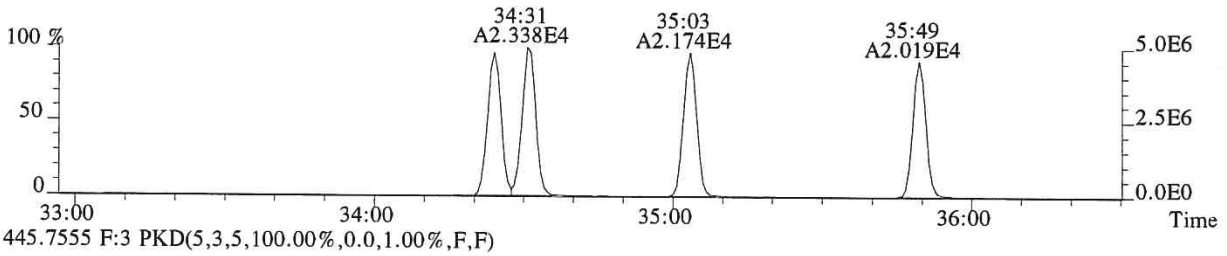
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2092.0,0.40%,F,T)



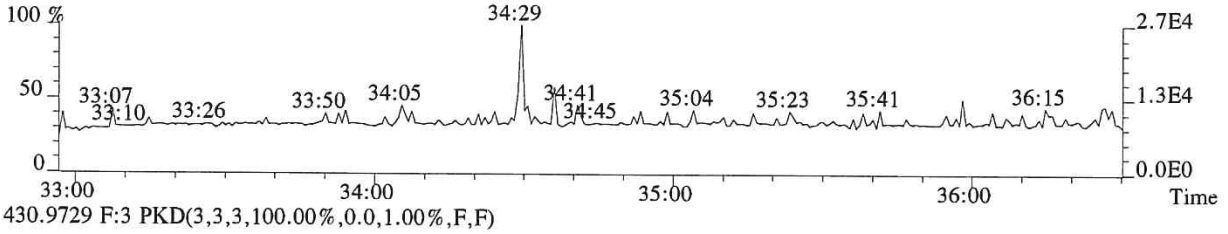
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1688.0,0.40%,F,T)



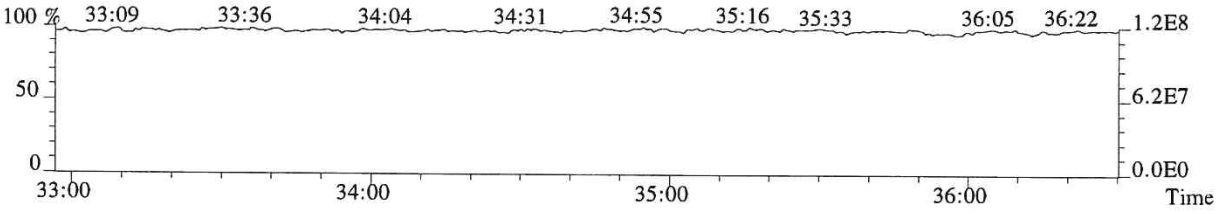
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6028.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

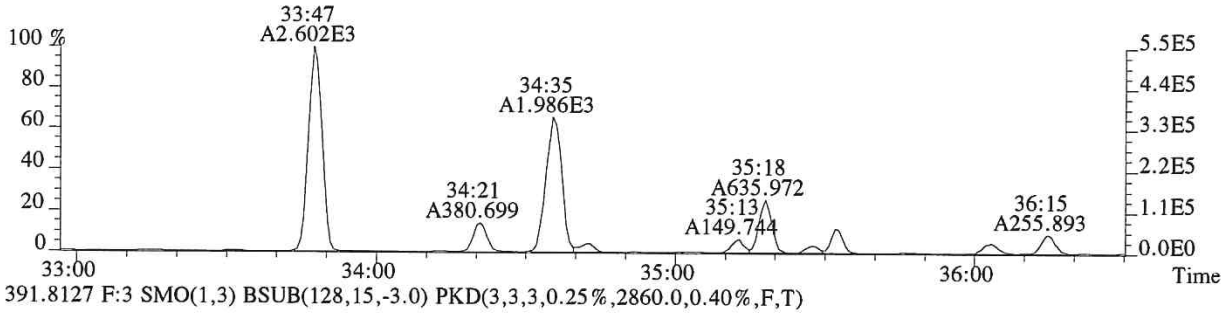


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

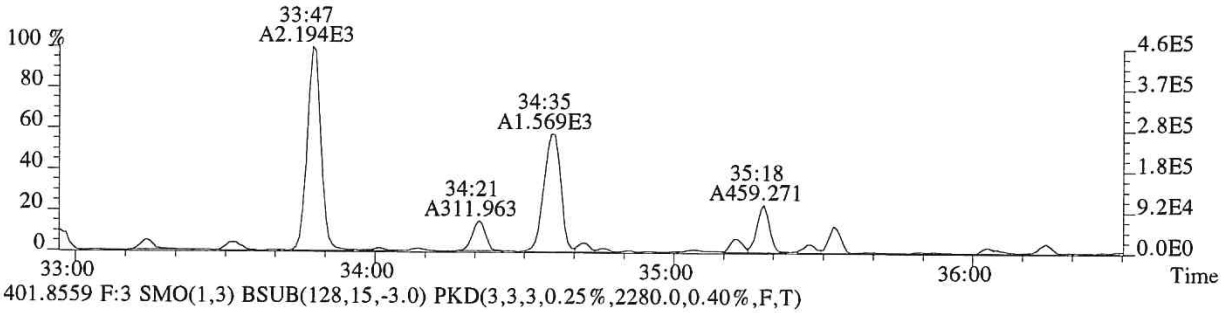


061070

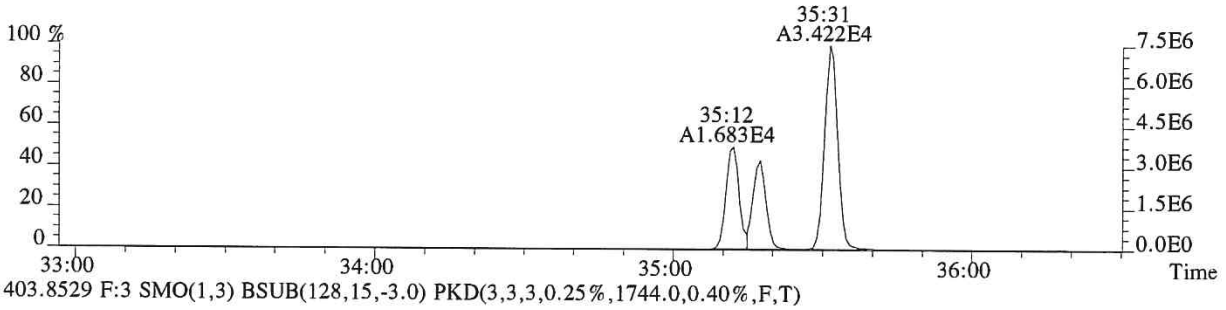
File:P616321 #1-321 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1620.0,0.40%,F,T)



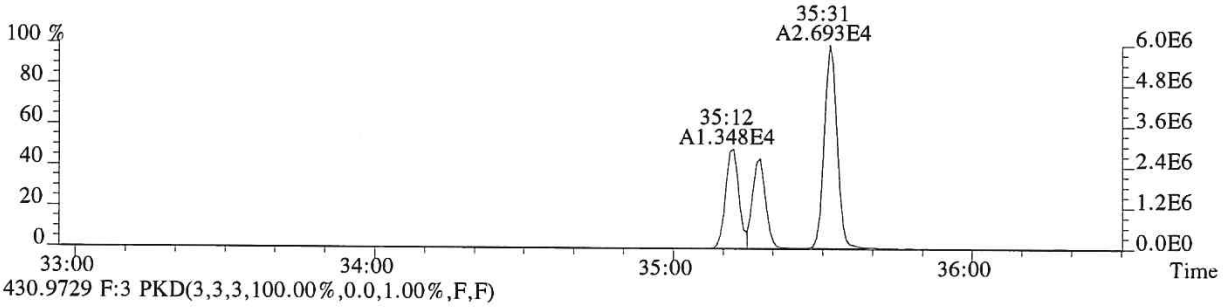
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2860.0,0.40%,F,T)



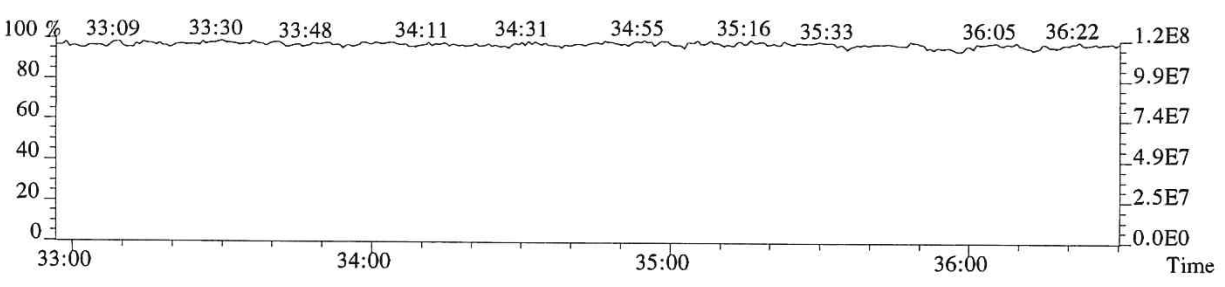
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2280.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1744.0,0.40%,F,T)

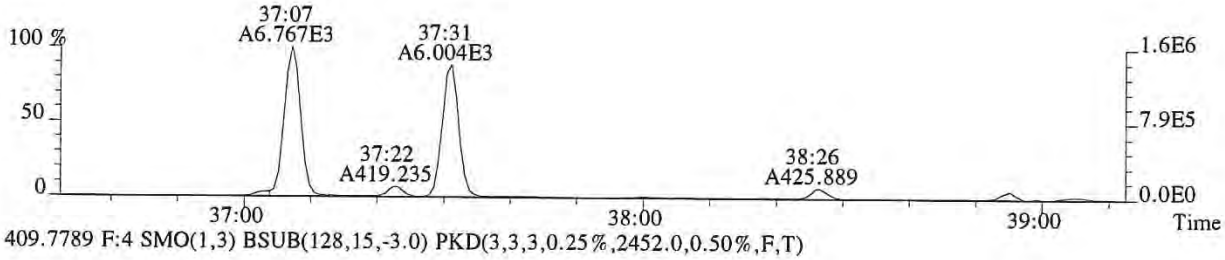


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

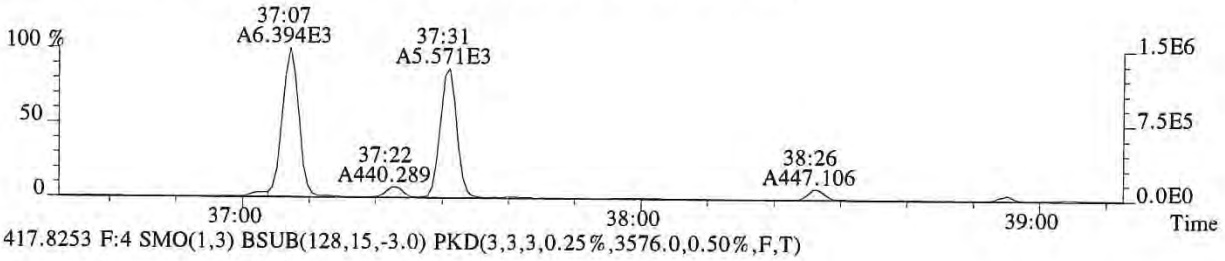


061071

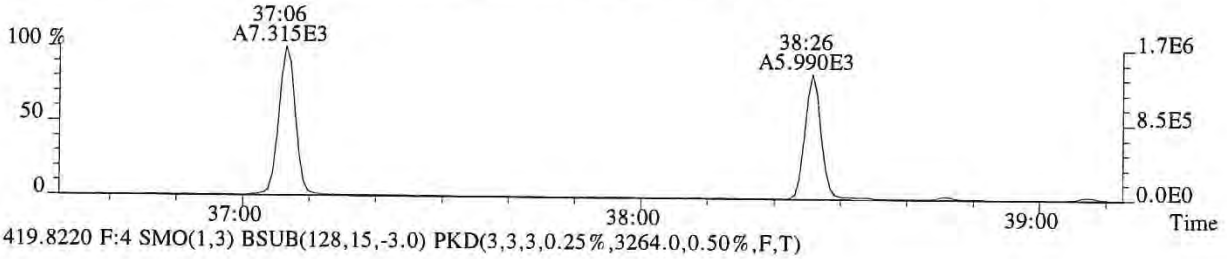
File:P616321 #1-241 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1600.0,0.50%,F,T)



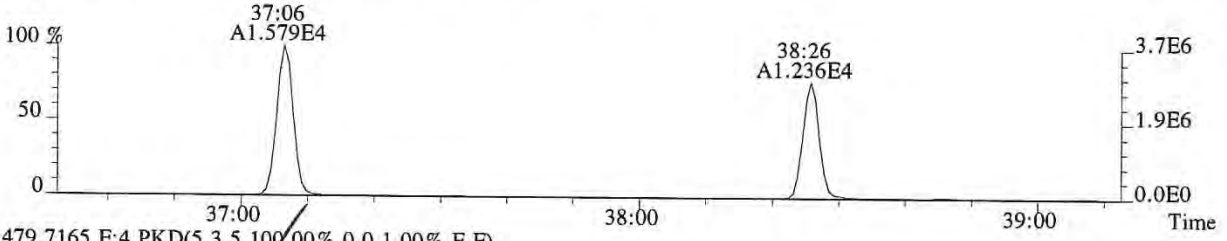
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2452.0,0.50%,F,T)



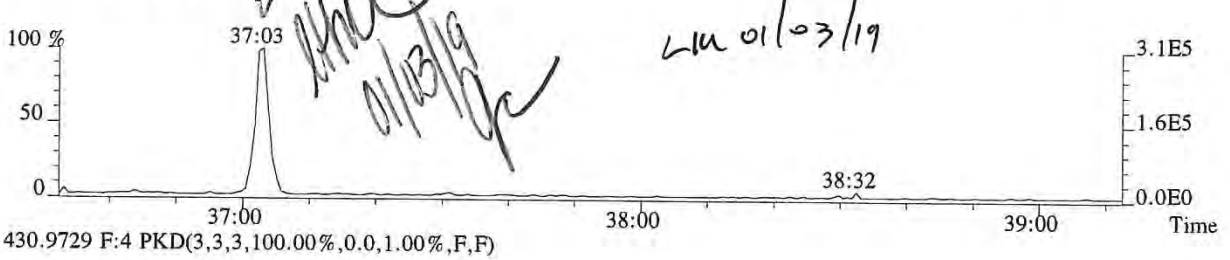
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3576.0,0.50%,F,T)



419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3264.0,0.50%,F,T)

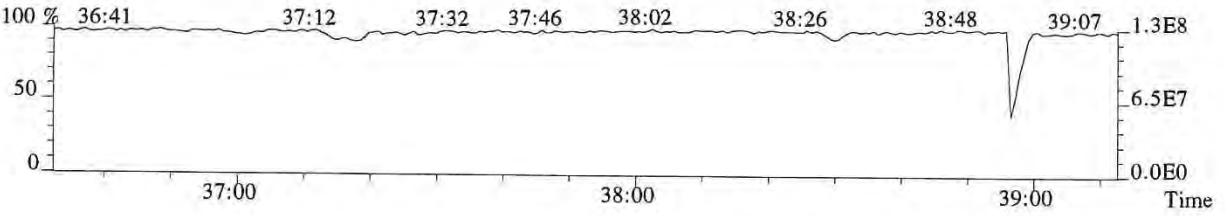


479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



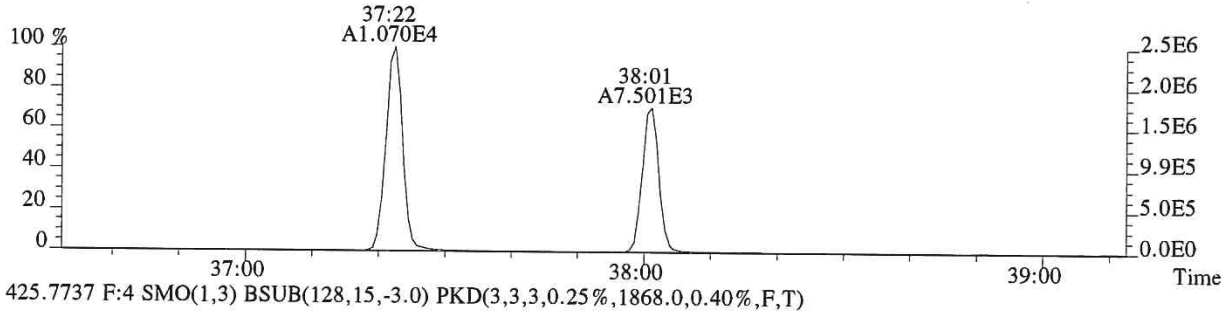
LM 01/03/19

430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

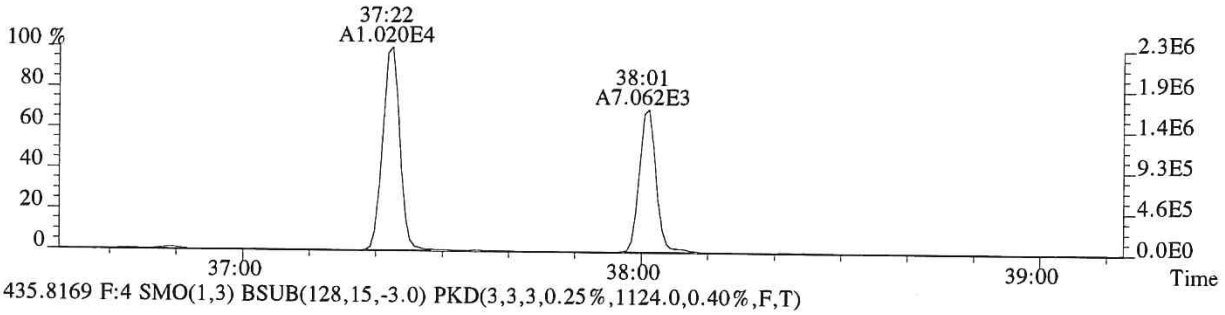


061072

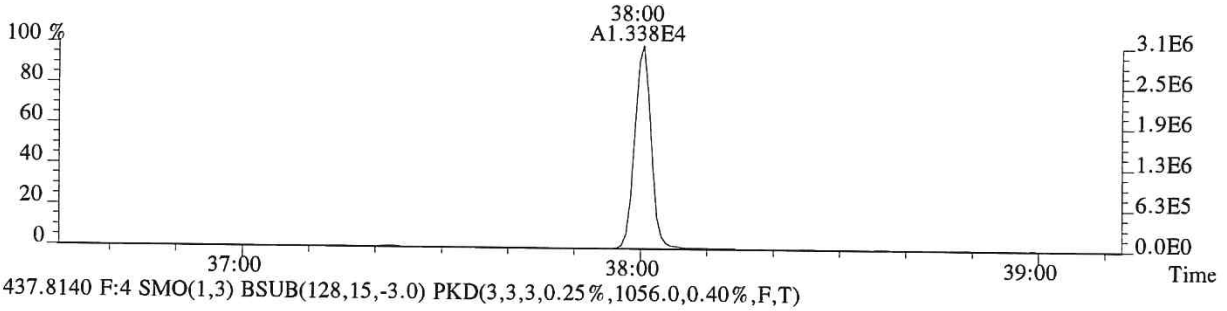
File:P616321 #1-241 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1252.0,0.40%,F,T)



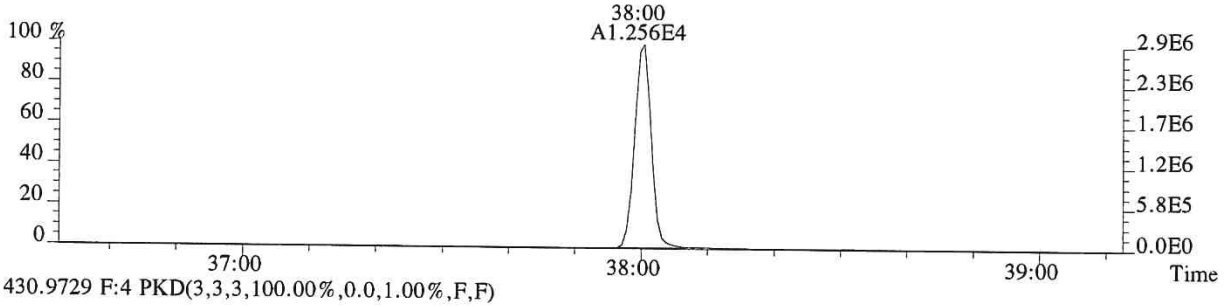
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1868.0,0.40%,F,T)



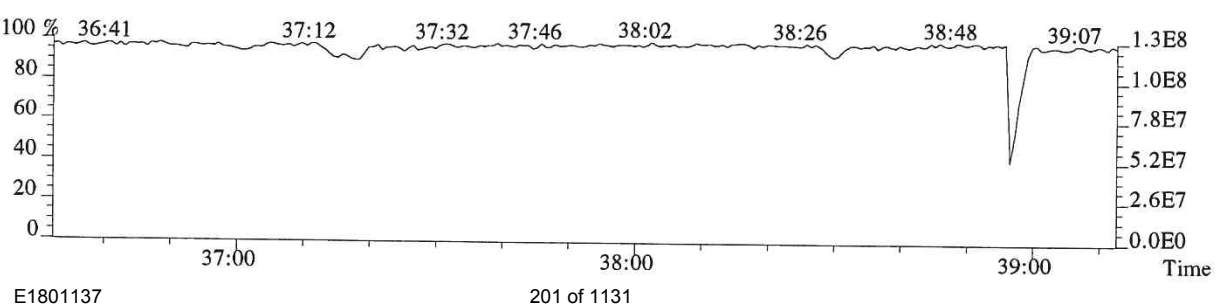
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1124.0,0.40%,F,T)



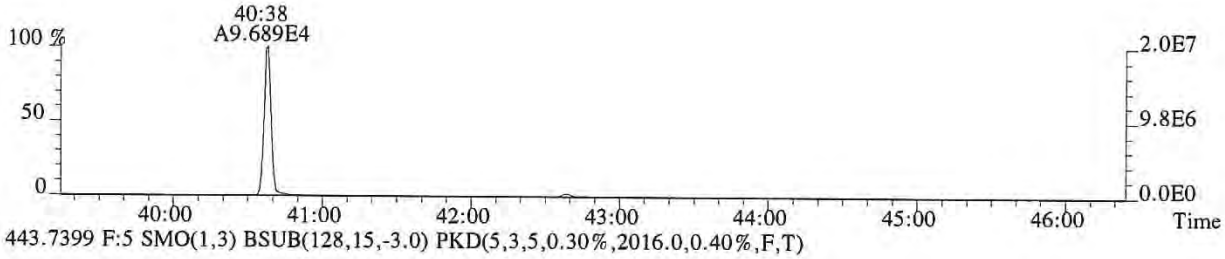
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1056.0,0.40%,F,T)



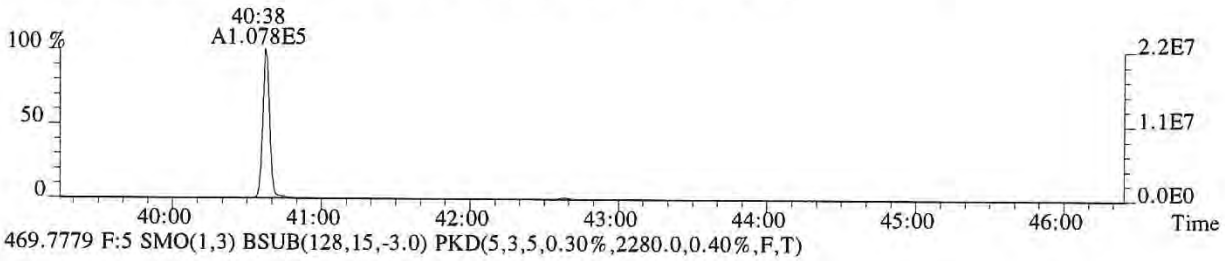
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



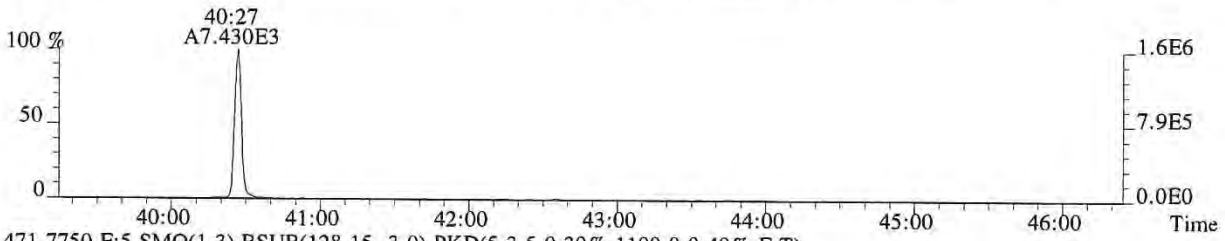
File:P616321 #1-645 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-002
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1624.0,0.40%,F,T)



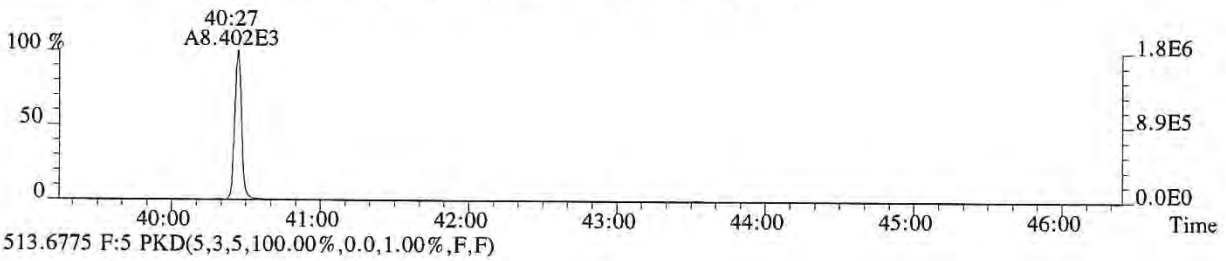
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2016.0,0.40%,F,T)



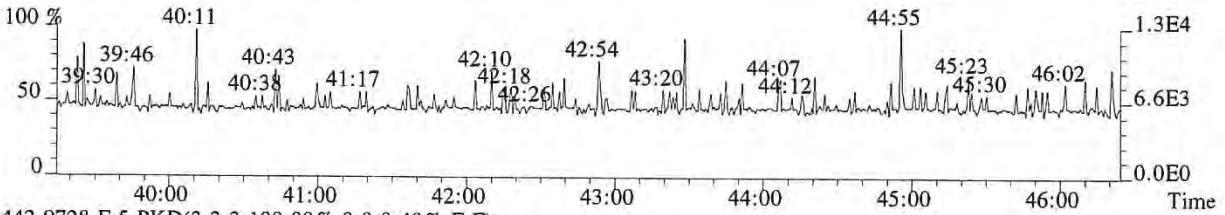
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2280.0,0.40%,F,T)



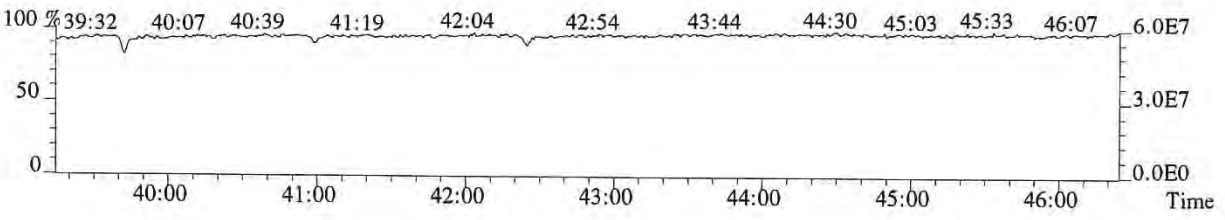
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1100.0,0.40%,F,T)



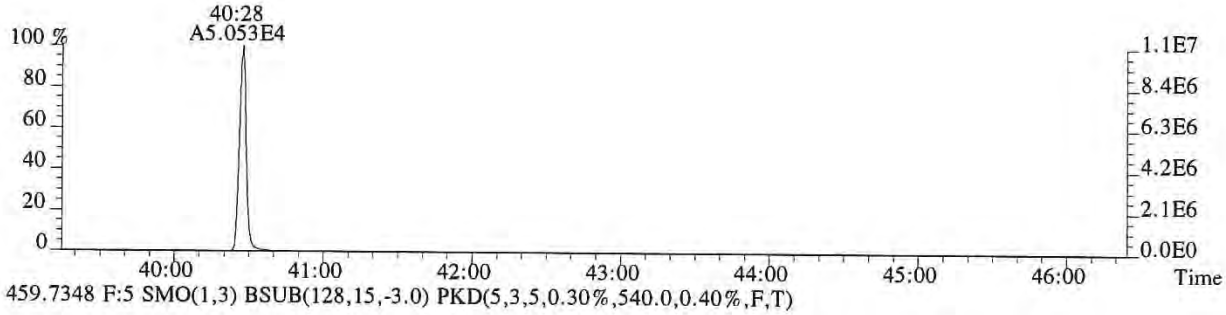
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



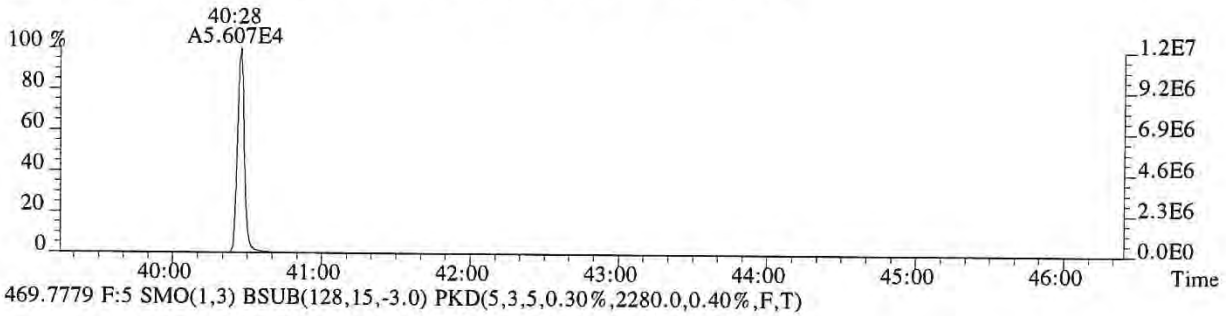
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



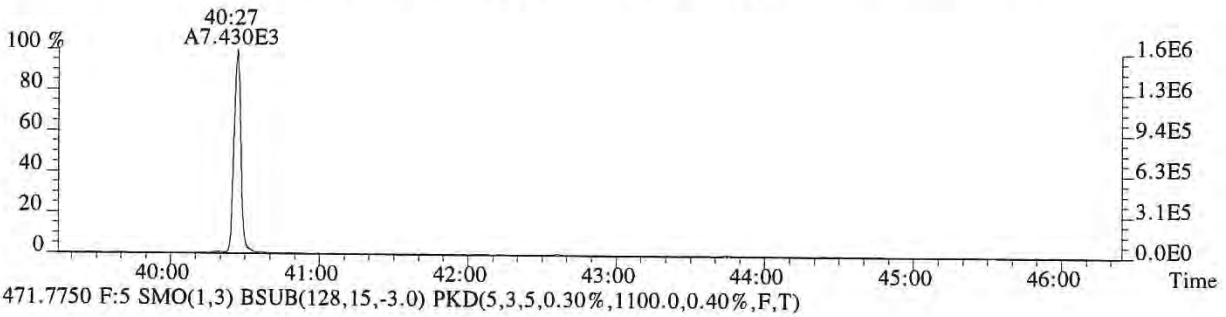
File:P616321 #1-645 Acq: 2-JAN-2019 16:15:01 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801137-002
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,552.0,0.40%,F,T)



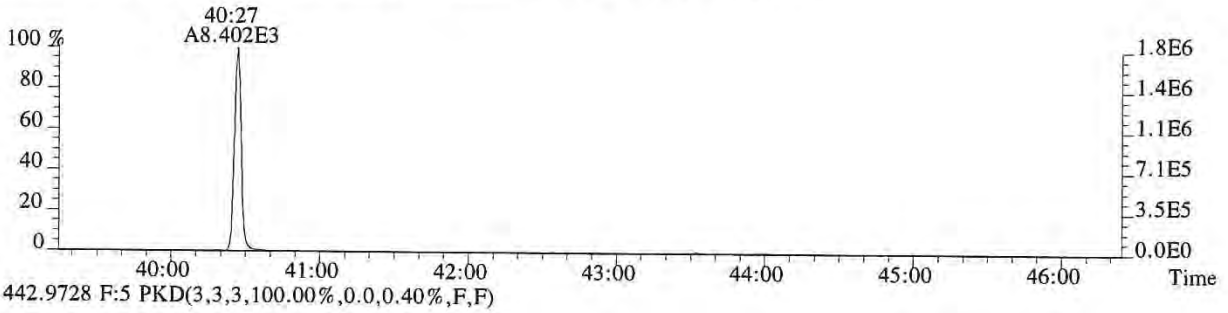
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,540.0,0.40%,F,T)



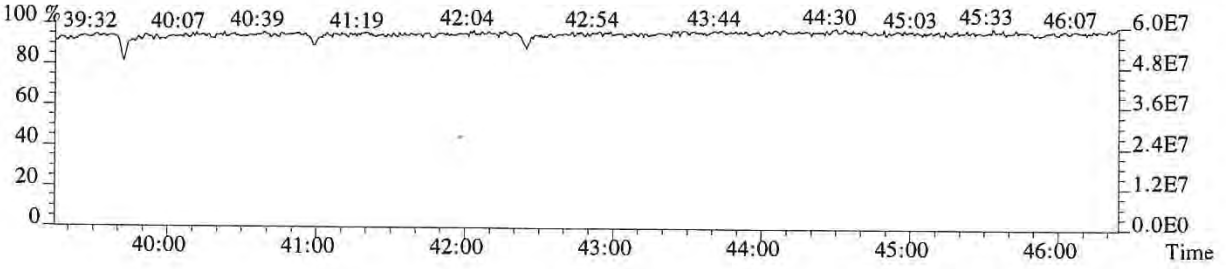
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2280.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1100.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0136

Run #13 Filename P616322 Samp: 1 Inj: 1 Acquired: 2-JAN-19 17:03:20
Processed: 3-JAN-19 13:33:52 Sample ID: E1801137-003

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:26	5.853e+02	7.508e+02	0.78	yes	yes	1.081
2	Unk	1,2,3,7,8-PeCDF	30:29	1.446e+02	9.667e+01	1.50	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:32	2.054e+02	1.298e+02	1.58	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:23	1.757e+02	1.324e+02	1.33	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	1.012e+02	1.175e+02	0.86	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:01	1.327e+02	9.145e+01	1.45	no	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:51	3.546e+01	3.997e+01	0.89	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:04	7.803e+02	7.486e+02	1.04	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:25	5.586e+01	6.562e+01	0.85	no	no	1.463
10	Unk	OCDF	40:36	8.715e+02	1.005e+03	0.87	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:28	1.262e+02	1.552e+02	0.81	yes	yes	1.049
12	Unk	1,2,3,7,8-PeCDD	31:49	7.612e+01	6.318e+01	1.20	no	yes	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:10	1.103e+02	7.239e+01	1.52	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:15	1.665e+02	1.847e+02	0.90	no	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:30	1.517e+02	1.483e+02	1.02	no	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:59	5.632e+03	5.427e+03	1.04	yes	no	1.112
17	Unk	OCDD	40:26	4.279e+05	4.778e+05	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:24	1.670e+04	2.115e+04	0.79	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:28	2.777e+04	1.733e+04	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:30	2.543e+04	1.634e+04	1.56	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:21	1.147e+04	2.167e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:29	1.284e+04	2.439e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	1.146e+04	2.176e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:48	1.064e+04	2.051e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	7.100e+03	1.530e+04	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	5.672e+03	1.246e+04	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:26	8.154e+03	1.054e+04	0.77	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:49	1.993e+04	1.250e+04	1.59	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:10	1.685e+04	1.297e+04	1.30	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	1.449e+04	1.154e+04	1.26	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	1.320e+04	1.231e+04	1.07	yes	no	0.857
32	IS	13C-OCDD	40:26	8.135e+03	8.669e+03	0.94	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:40	2.155e+04	2.705e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	3.072e+04	2.542e+04	1.21	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:28	1.159e+04				no	1.086

$$\text{OCDD} = \frac{(4.279e+05 + 4.778e+05) \times 4000\ \text{pg} \times 1}{(8.135e+03 + 8.669e+03) \times 10.001\ \text{g} \times 82.5 / 100 \times 1.157} = 22721\ \text{ng/kg}$$

LM 01/04/19

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0136

Run #13 Filename P616322 Samp: 1 Inj: 1 Acquired: 2-JAN-19 17:03:20
Processed: 3-JAN-19 13:33:52 LAB. ID: E1801137-003

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	8.13e+04	1.90e+03	4.3e+01	1.08e+05	4.43e+03	2.4e+01
2	1,2,3,7,8-PeCDF	2.49e+04	7.76e+02	3.2e+01	1.62e+04	2.51e+03	6.5e+00
3	2,3,4,7,8-PeCDF	2.99e+04	7.76e+02	3.9e+01	1.90e+04	2.51e+03	7.6e+00
4	1,2,3,4,7,8-HxCDF	3.41e+04	2.12e+03	1.6e+01	2.28e+04	1.24e+03	1.8e+01
5	1,2,3,6,7,8-HxCDF	2.10e+04	2.12e+03	9.9e+00	2.15e+04	1.24e+03	1.7e+01
6	2,3,4,6,7,8-HxCDF	2.69e+04	2.12e+03	1.3e+01	1.97e+04	1.24e+03	1.6e+01
7	1,2,3,7,8,9-HxCDF	7.06e+03	2.12e+03	3.3e+00	8.22e+03	1.24e+03	6.7e+00
8	1,2,3,4,6,7,8-HpCDF	1.73e+05	7.84e+02	2.2e+02	1.60e+05	7.92e+02	2.0e+02
9	1,2,3,4,7,8,9-HpCDF	1.06e+04	7.84e+02	1.3e+01	1.37e+04	7.92e+02	1.7e+01
10	OCDF	1.81e+05	5.16e+02	3.5e+02	1.85e+05	2.89e+03	6.4e+01
11	2,3,7,8-TCDD	1.88e+04	3.77e+03	5.0e+00	2.55e+04	2.06e+03	1.2e+01
12	1,2,3,7,8-PeCDD	1.27e+04	1.36e+03	9.3e+00	9.03e+03	5.72e+02	1.6e+01
13	1,2,3,4,7,8-HxCDD	2.29e+04	9.96e+02	2.3e+01	1.66e+04	1.37e+03	1.2e+01
14	1,2,3,6,7,8-HxCDD	3.85e+04	9.96e+02	3.9e+01	4.11e+04	1.37e+03	3.0e+01
15	1,2,3,7,8,9-HxCDD	2.92e+04	9.96e+02	2.9e+01	2.78e+04	1.37e+03	2.0e+01
16	1,2,3,4,6,7,8-HpCDD	1.30e+06	4.92e+03	2.6e+02	1.26e+06	4.06e+03	3.1e+02
17	OCDD	8.78e+07	6.80e+02	1.3e+05	9.94e+07	1.39e+03	7.2e+04
18	13C-2,3,7,8-TCDF	2.38e+06	1.14e+04	2.1e+02	3.06e+06	1.08e+04	2.8e+02
19	13C-1,2,3,7,8-PeCDF	4.88e+06	9.08e+02	5.4e+03	3.00e+06	1.40e+03	2.1e+03
20	13C-2,3,4,7,8-PeCDF	4.89e+06	9.08e+02	5.4e+03	3.17e+06	1.40e+03	2.3e+03
21	13C-1,2,3,4,7,8-HxCDF	2.43e+06	1.79e+03	1.4e+03	4.60e+06	2.36e+03	1.9e+03
22	13C-1,2,3,6,7,8-HxCDF	2.74e+06	1.79e+03	1.5e+03	5.15e+06	2.36e+03	2.2e+03
23	13C-2,3,4,6,7,8-HxCDF	2.48e+06	1.79e+03	1.4e+03	4.63e+06	2.36e+03	2.0e+03
24	13C-1,2,3,7,8,9-HxCDF	2.20e+06	1.79e+03	1.2e+03	4.29e+06	2.36e+03	1.8e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.61e+06	9.72e+02	1.7e+03	3.50e+06	2.96e+03	1.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.25e+06	9.72e+02	1.3e+03	2.78e+06	2.96e+03	9.4e+02
27	13C-2,3,7,8-TCDD	1.33e+06	1.30e+04	1.0e+02	1.68e+06	4.73e+03	3.6e+02
28	13C-1,2,3,7,8-PeCDD	3.72e+06	2.06e+03	1.8e+03	2.38e+06	3.55e+03	6.7e+02
29	13C-1,2,3,4,7,8-HxCDD	3.65e+06	1.93e+03	1.9e+03	2.81e+06	1.80e+03	1.6e+03
30	13C-1,2,3,6,7,8-HxCDD	3.10e+06	1.93e+03	1.6e+03	2.45e+06	1.80e+03	1.4e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.00e+06	1.08e+03	2.8e+03	2.77e+06	1.02e+03	2.7e+03
32	13C-OCDD	1.65e+06	1.97e+03	8.4e+02	1.78e+06	7.32e+02	2.4e+03
33	13C-1,2,3,4-TCDD	3.15e+06	1.30e+04	2.4e+02	3.96e+06	4.73e+03	8.4e+02
34	13C-1,2,3,7,8,9-HxCDD	6.57e+06	1.93e+03	3.4e+03	5.46e+06	1.80e+03	3.0e+03
35	37Cl-2,3,7,8-TCDD	1.83e+06	2.50e+03	7.3e+02			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0136

Entry: 36 Totals Name: Total Tetra-Furans

Run: 13 File: P616322 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 17:03:20 Processed: 3-JAN-19 13:33:52

Mass: 303.9020 305.8990 Tot Response: 3.24e+03 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:14	1.10e+02	1.51e+02	0.73	yes	2.61e+02		y	y
2	22:33	1.15e+02	1.52e+02	0.76	yes	2.68e+02		n	y
3	23:11	1.21e+02	1.75e+02	0.69	yes	2.96e+02		n	y
4	24:24	2.65e+02	3.46e+02	0.77	yes	6.11e+02		y	y
5	25:26	5.85e+02	7.51e+02	0.78	yes	1.34e+03	2,3,7,8-TCDF	n	y
6	25:51	1.99e+02	2.67e+02	0.75	yes	4.66e+02		n	n

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Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 13 File: P616322 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 17:03:20 Processed: 3-JAN-19 13:33:52

Mass: 319.8970 321.8940 Tot Response: 2.81e+02 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:28	1.26e+02	1.55e+02	0.81	yes	2.81e+02	2,3,7,8-TCDD	y	n

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CLIENT ID.
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Entry: 38 Totals Name: Total Penta-Furans1

Run: 13 File: P616322 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 17:03:20 Processed: 3-JAN-19 13:33:52

Mass: 339.8600 341.8570 Tot Response: 5.21e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:41	3.18e+02	2.03e+02	1.56	yes	5.21e+02	n	n

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Peak List Summary

CLIENT ID.
SL0136

Entry: 39 Totals Name: Total Penta-Furans2

Run: 13 File: P616322 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 17:03:20 Processed: 3-JAN-19 13:33:52

Mass: 339.8600 341.8570 Tot Response: 1.14e+03 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:18	2.22e+02	1.26e+02	1.76	yes	3.48e+02		n	n
2	30:29	1.45e+02	9.67e+01	1.50	yes	2.41e+02	1,2,3,7,8-PeCDF	n	n
3	31:24	1.34e+02	7.85e+01	1.70	yes	2.12e+02		n	n
4	31:32	2.05e+02	1.30e+02	1.58	yes	3.35e+02	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.
SL0136

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 13 File: P616322 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 17:03:20 Processed: 3-JAN-19 13:33:52

Mass: 355.8550 357.8520 Tot Response: 1.15e+02 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:00	4.70e+01	2.92e+01	1.61	yes	7.61e+01		n	n
2	31:01	2.31e+01	1.57e+01	1.47	yes	3.88e+01		y	n

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Peak List Summary

CLIENT ID.
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Entry: 41 Totals Name: Total Hexa-Furans

Run: 13 File: P616322 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 17:03:20 Processed: 3-JAN-19 13:33:52

Mass: 373.8210 375.8180 Tot Response: 2.73e+03 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:11	1.58e+02	1.32e+02	1.20	yes	2.89e+02		n	n
2	33:21	6.07e+02	4.69e+02	1.29	yes	1.08e+03		n	n
3	33:55	5.10e+02	4.32e+02	1.18	yes	9.42e+02		n	n
4	34:17	6.80e+01	4.97e+01	1.37	yes	1.18e+02		n	n
5	34:23	1.76e+02	1.32e+02	1.33	yes	3.08e+02	1,2,3,4,7,8-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0136

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 13 File: P616322 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 17:03:20 Processed: 3-JAN-19 13:33:52

Mass: 389.8160 391.8130 Tot Response: 3.25e+03 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:45	8.14e+02	5.89e+02	1.38	yes	1.40e+03		n	n
2	34:18	1.62e+02	1.16e+02	1.39	yes	2.78e+02		n	n
3	34:33	8.07e+02	6.59e+02	1.22	yes	1.47e+03		n	n
4	35:25	5.58e+01	4.48e+01	1.25	yes	1.01e+02		n	n

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Peak List Summary

CLIENT ID.
SL0136

Entry: 43 Totals Name: Total Hepta-Furans

Run: 13 File: P616322 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 17:03:20 Processed: 3-JAN-19 13:33:52

Mass: 407.7820 409.7790 Tot Response: 4.25e+03 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:04	7.80e+02	7.49e+02	1.04	yes	1.53e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:29	1.41e+03	1.31e+03	1.08	yes	2.72e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0136

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 13 File: P616322 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 17:03:20 Processed: 3-JAN-19 13:33:52

Mass: 423.7770 425.7740 Tot Response: 2.89e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:20	9.08e+03	8.74e+03	1.04	yes	1.78e+04		n	n
2	37:59	5.63e+03	5.43e+03	1.04	yes	1.11e+04	1,2,3,4,6,7,8-HpCDD	n	n

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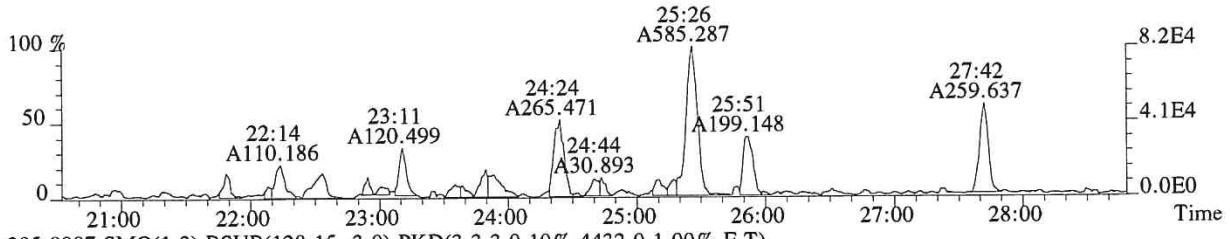
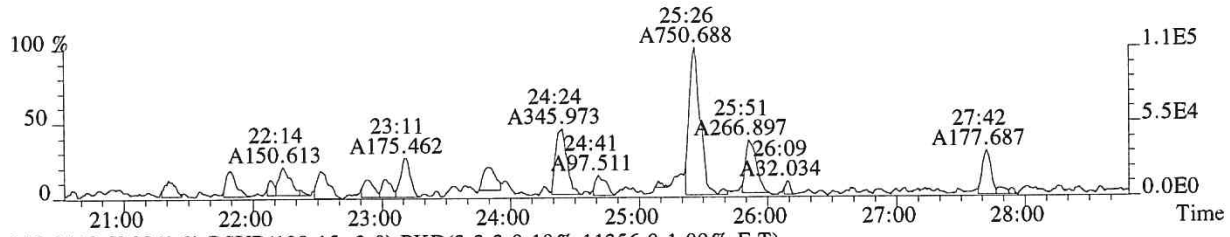
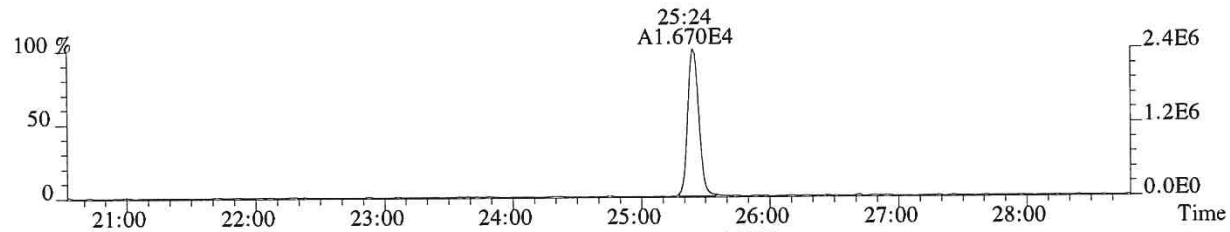
File:P616322 #1-587 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1896.0,1.00%,F,T)



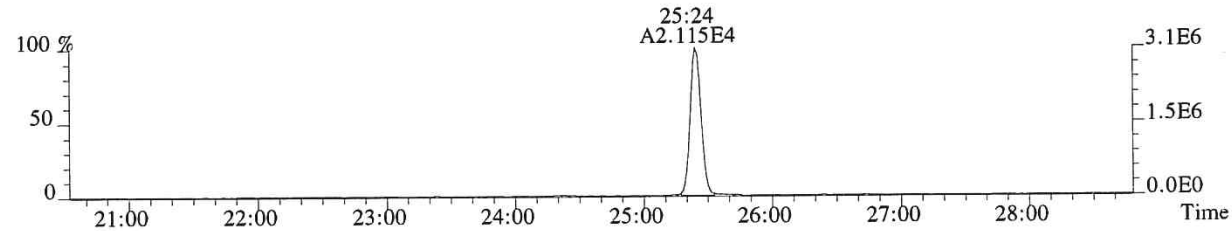
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4432.0,1.00%,F,T)



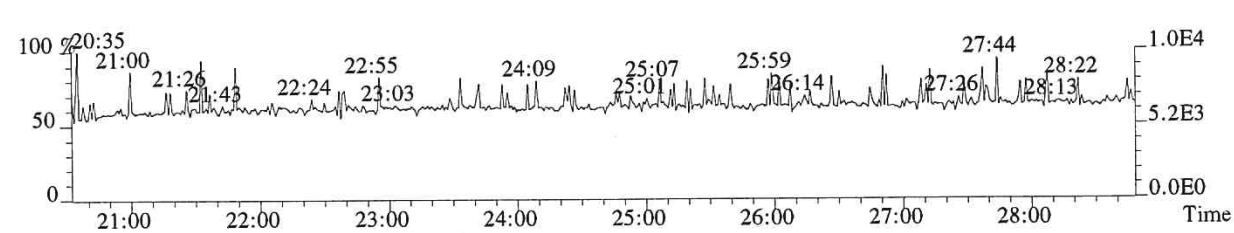
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11356.0,1.00%,F,T)



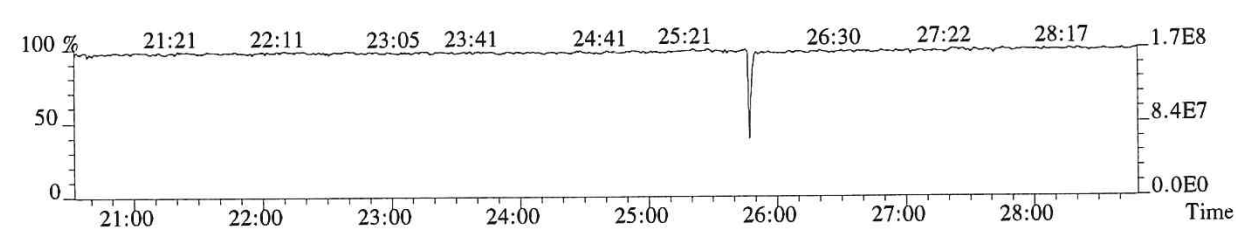
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10820.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

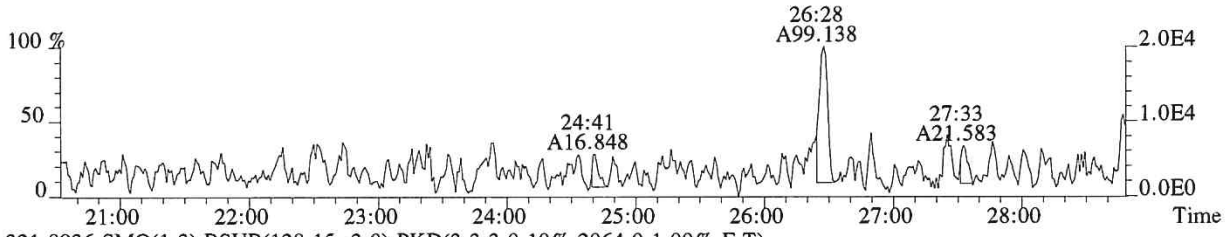


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

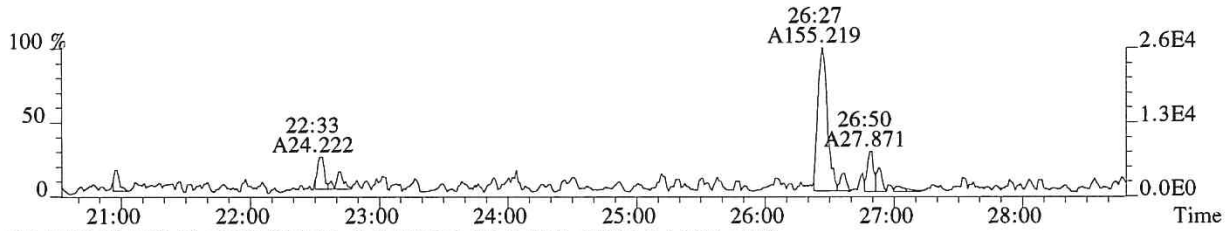


061087

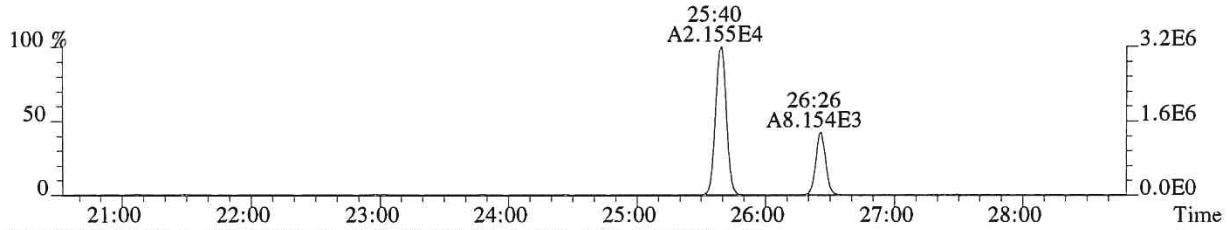
File:P616322 #1-587 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3772.0,1.00%,F,T)



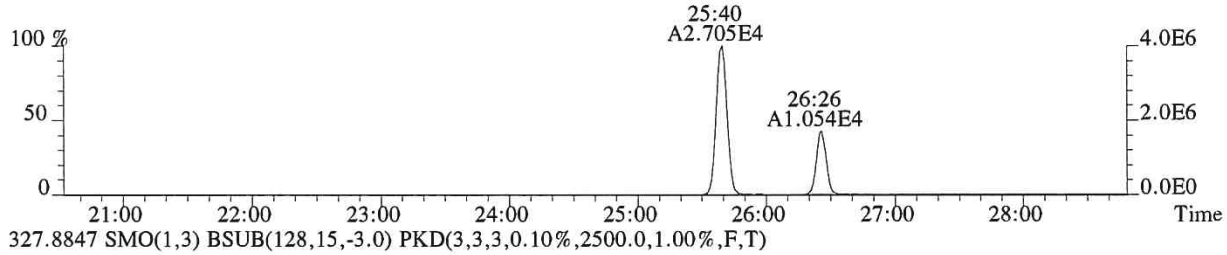
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2064.0,1.00%,F,T)



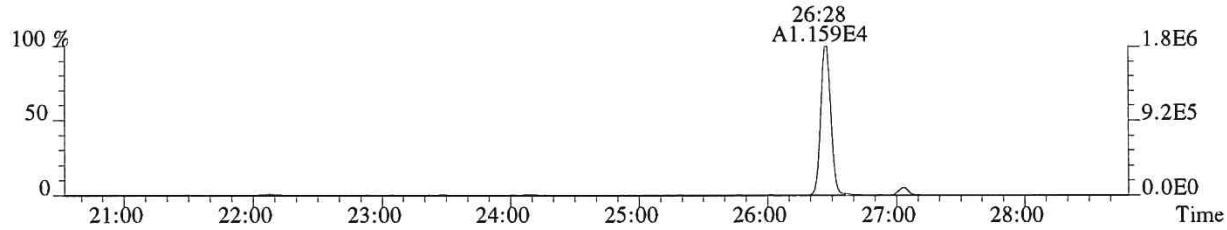
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12984.0,1.00%,F,T)



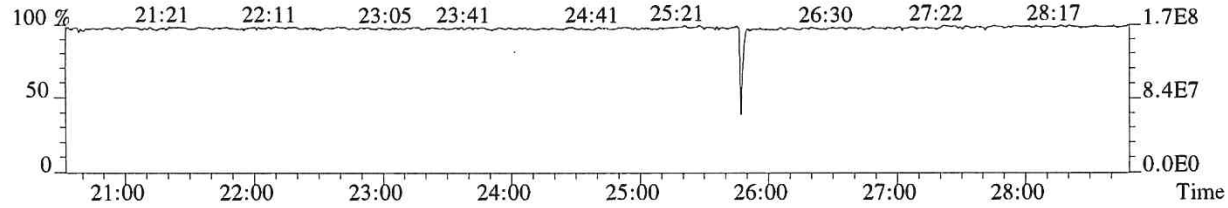
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4728.0,1.00%,F,T)



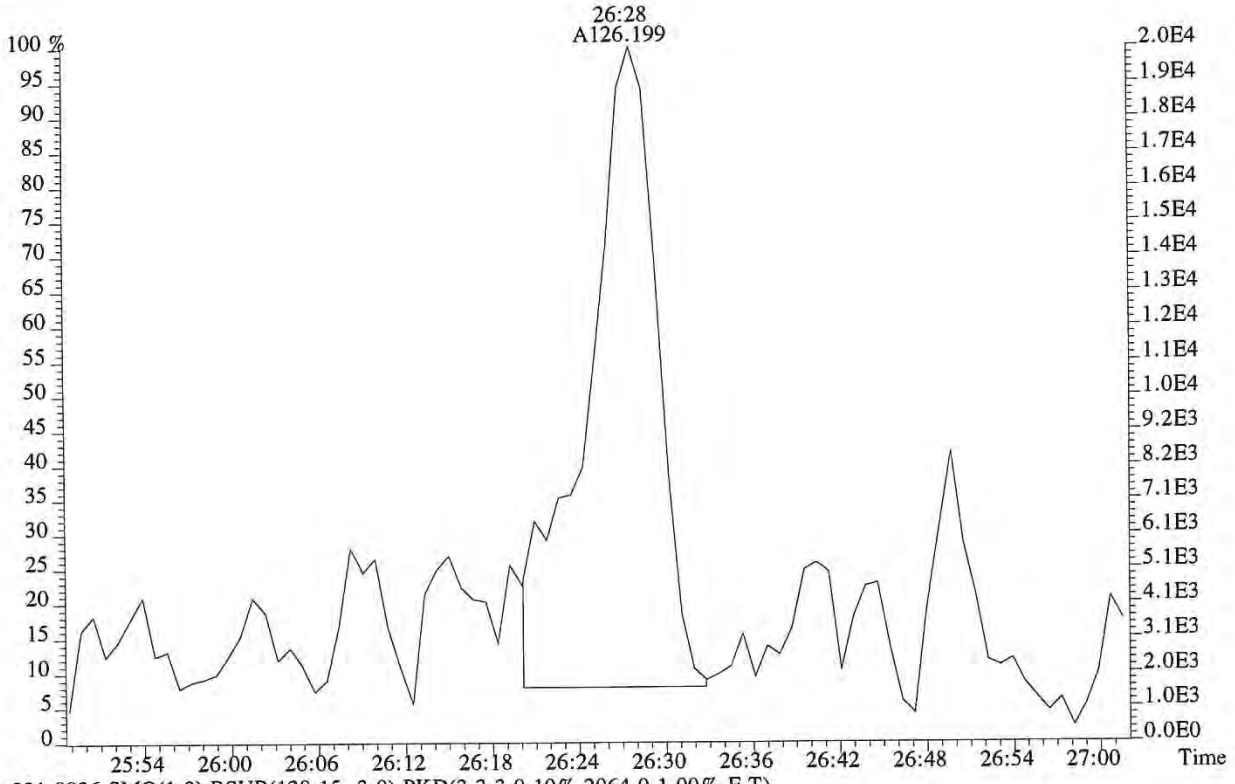
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2500.0,1.00%,F,T)



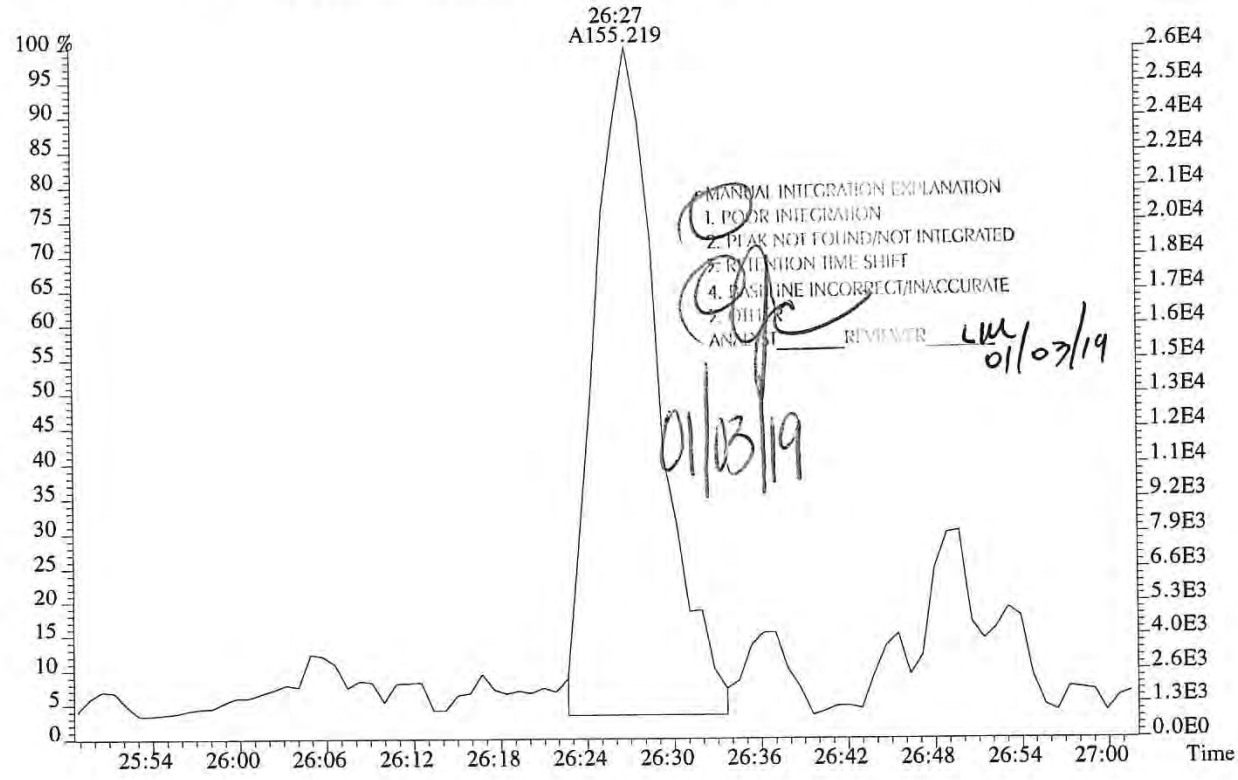
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P616322 #1-587 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3772.0,1.00%,F,T)

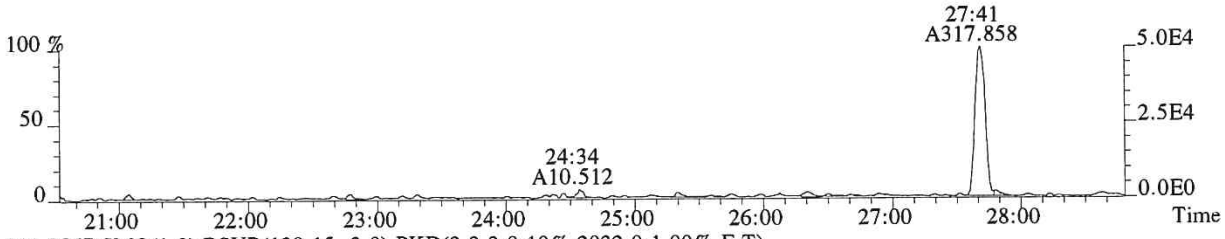


321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2064.0,1.00%,F,T)

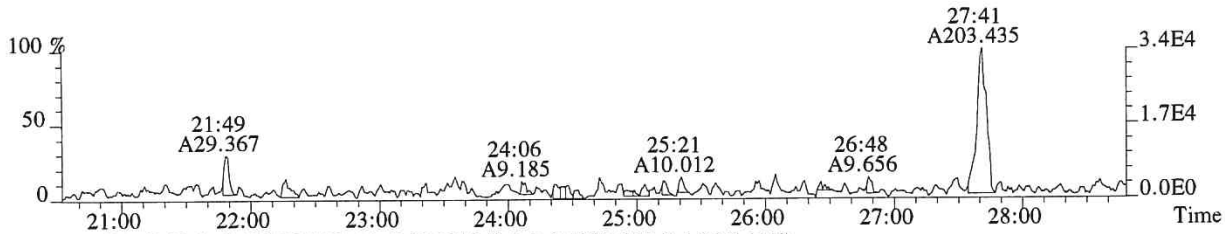


061089

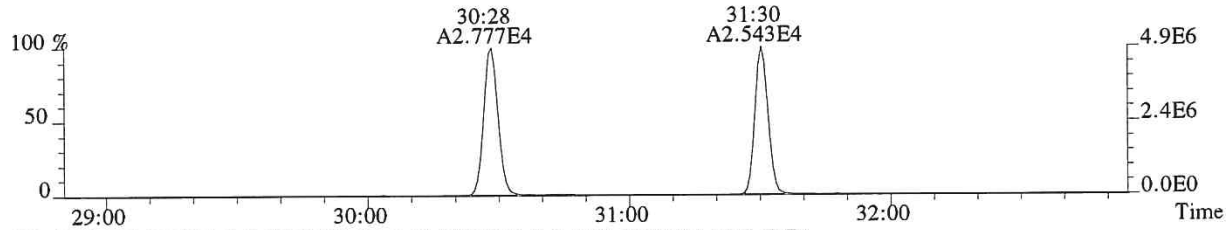
File:P616322 #1-587 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,T)



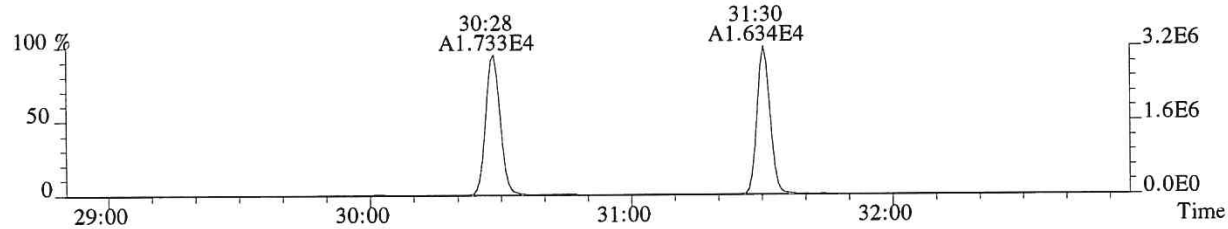
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2032.0,1.00%,F,T)



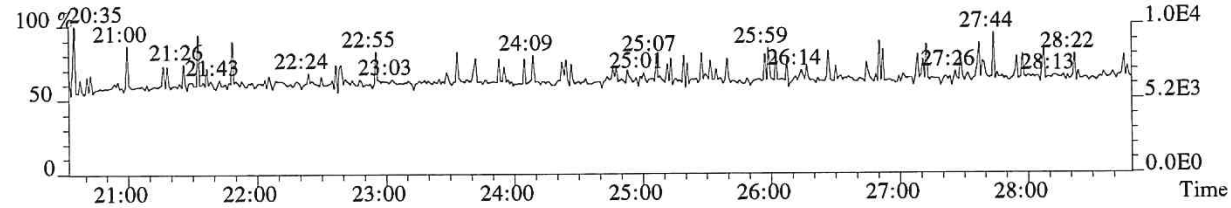
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,908.0,1.00%,F,T)



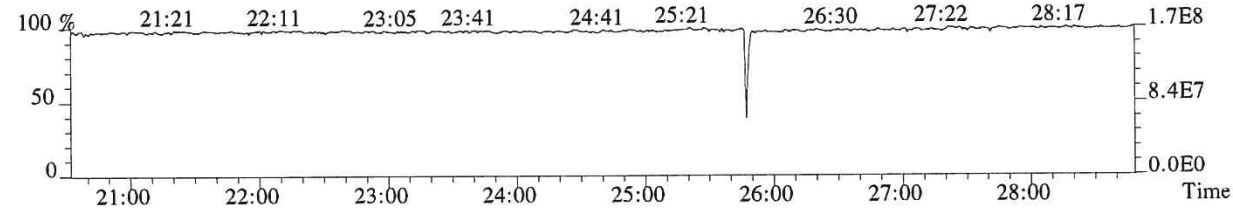
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1404.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

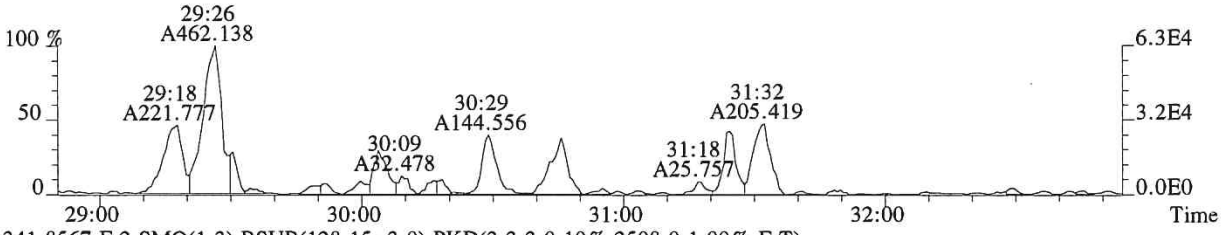


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

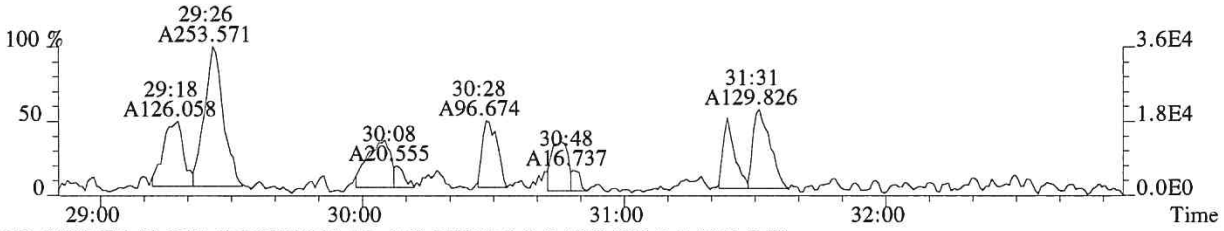


061090

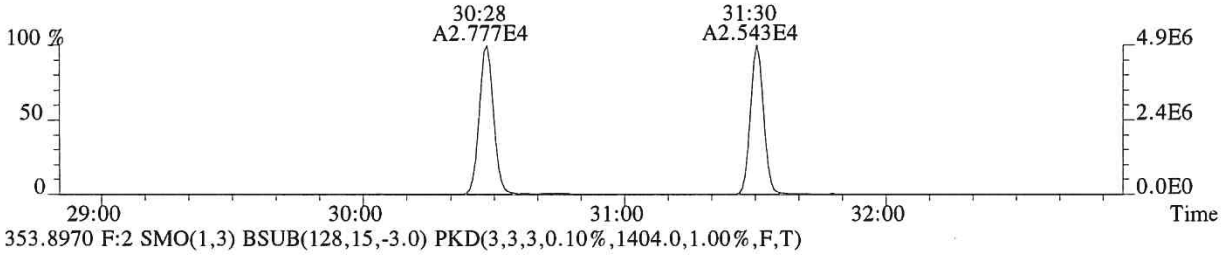
File:P616322 #1-367 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,776.0,1.00%,F,T)



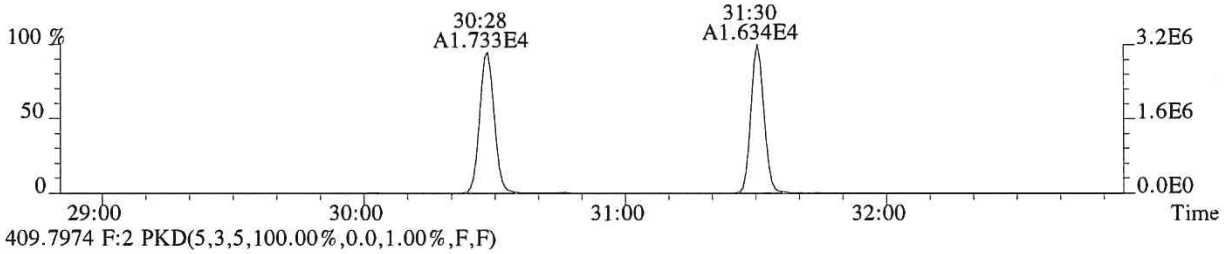
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2508.0,1.00%,F,T)



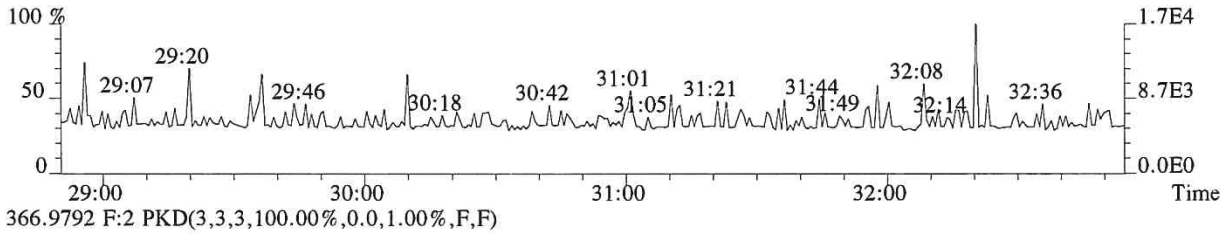
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,908.0,1.00%,F,T)



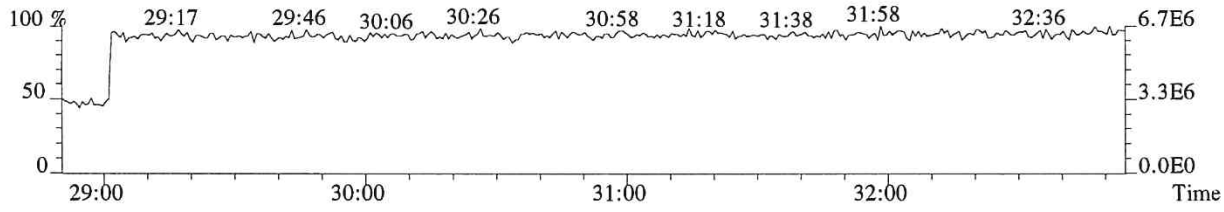
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1404.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

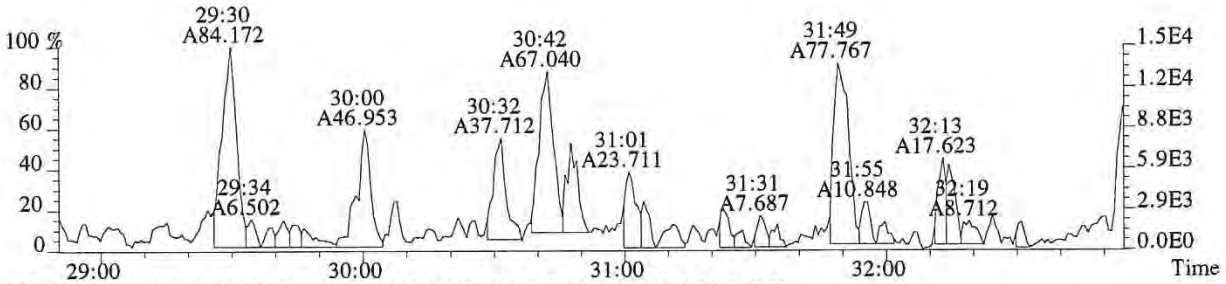


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

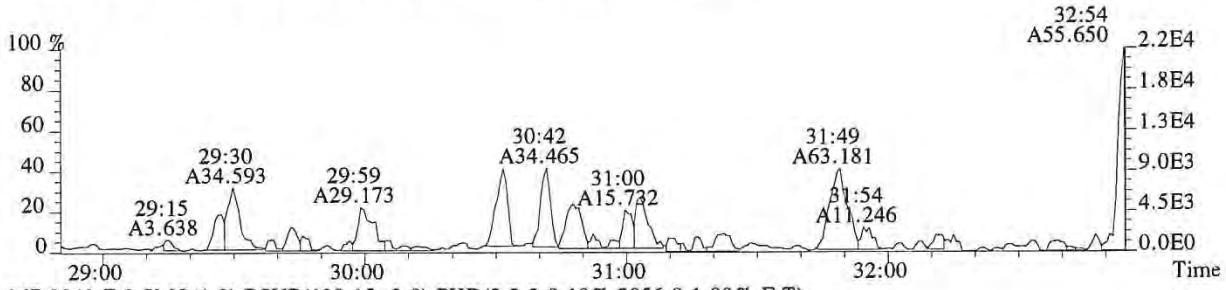


061091

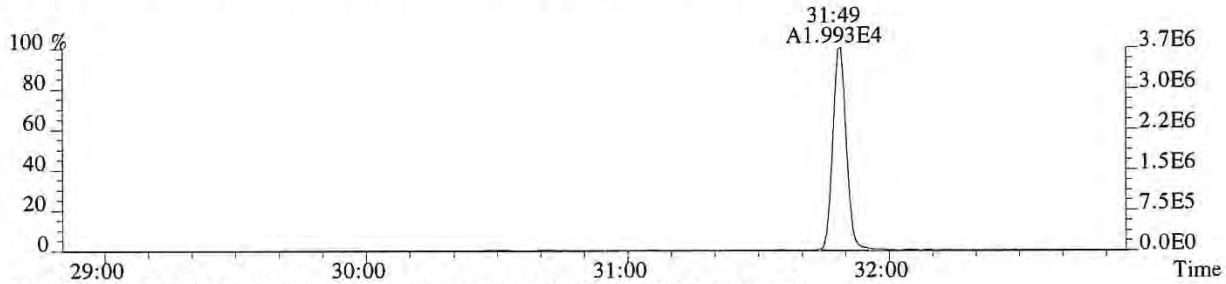
File:P616322 #1-367 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1364.0,1.00%,F,T)



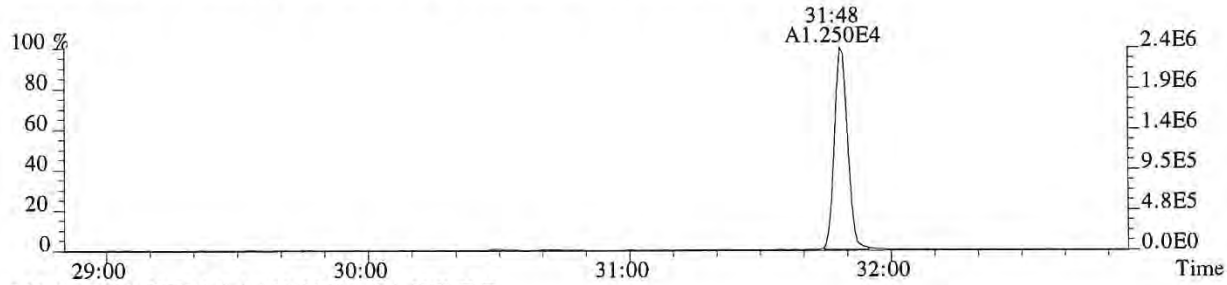
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,572.0,1.00%,F,T)



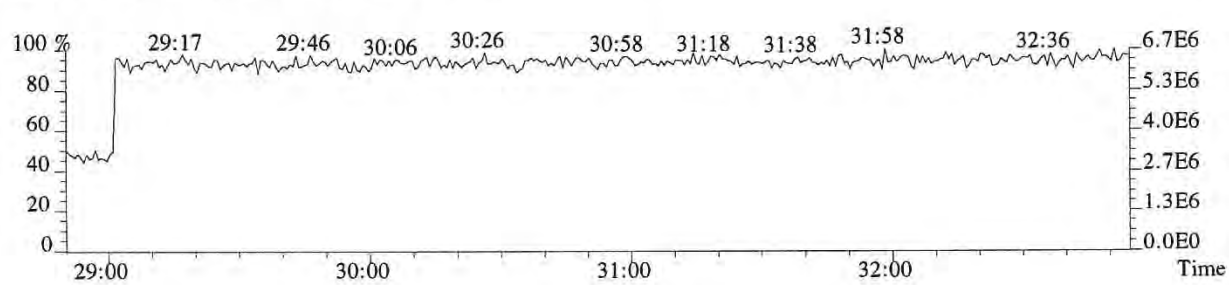
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2056.0,1.00%,F,T)



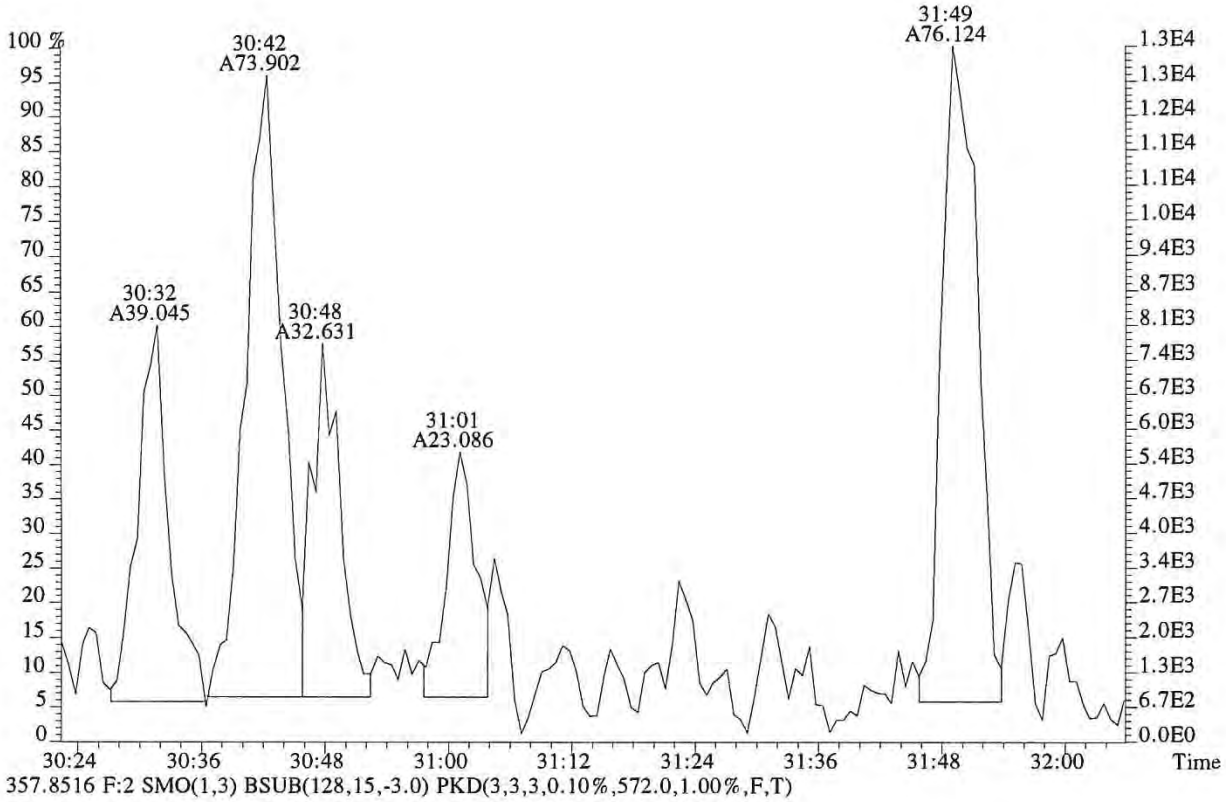
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3552.0,1.00%,F,T)



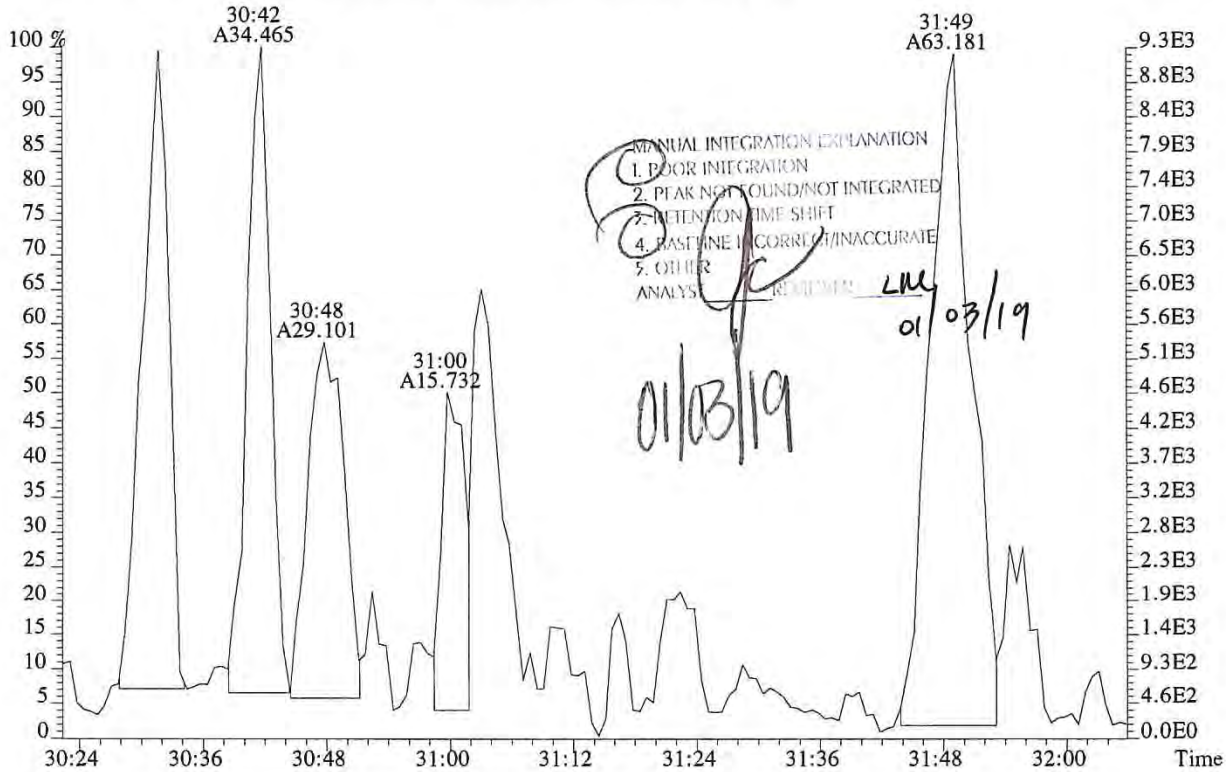
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P616322 #1-367 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1364.0,1.00%,F,T)

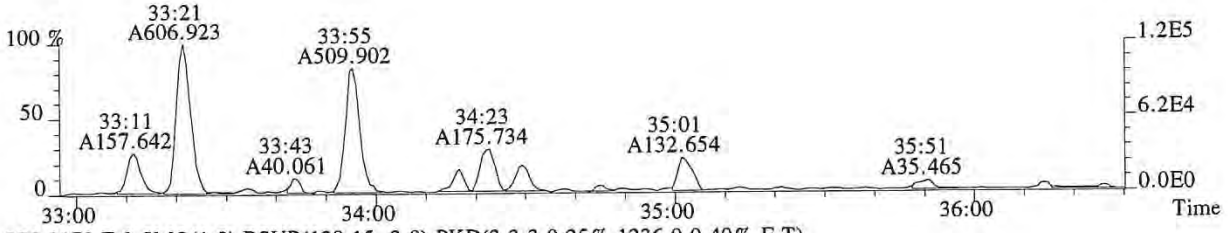


357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,572.0,1.00%,F,T)

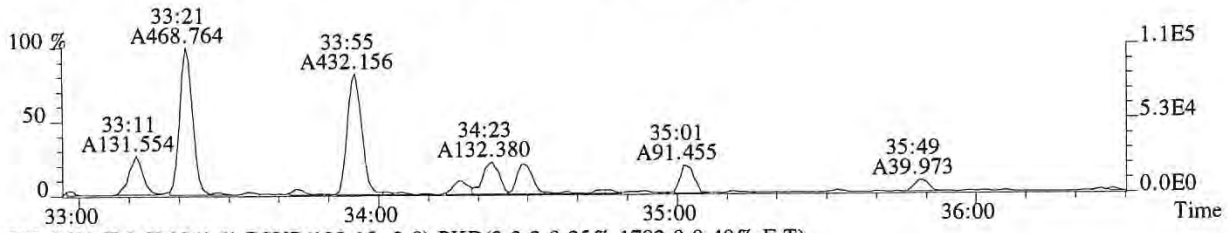


061093

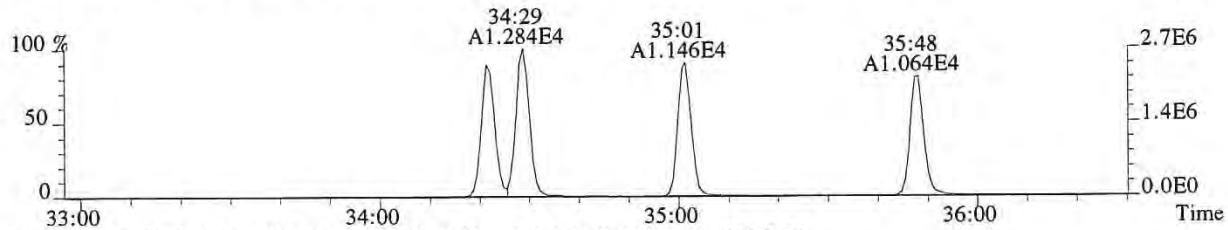
File:P616322 #1-321 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2116.0,0.40%,F,T)



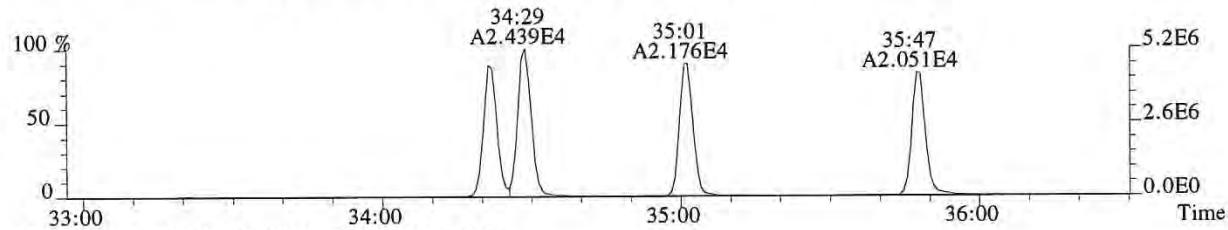
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1236.0,0.40%,F,T)



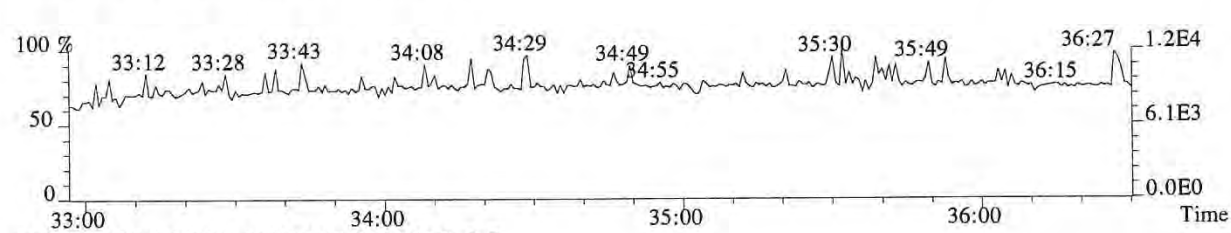
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1792.0,0.40%,F,T)



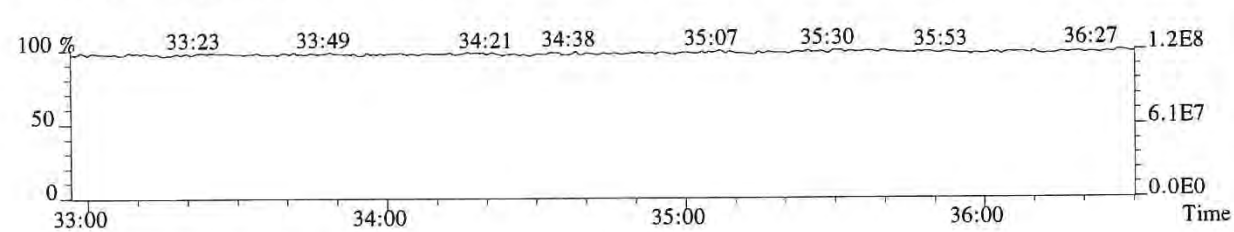
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2360.0,0.40%,F,T)



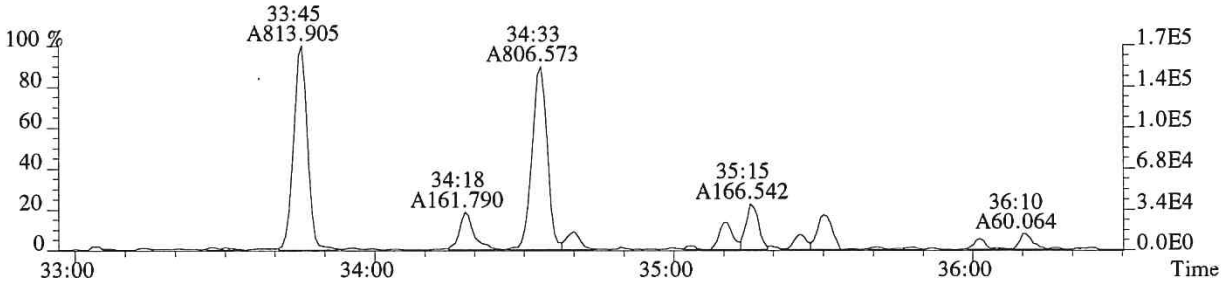
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



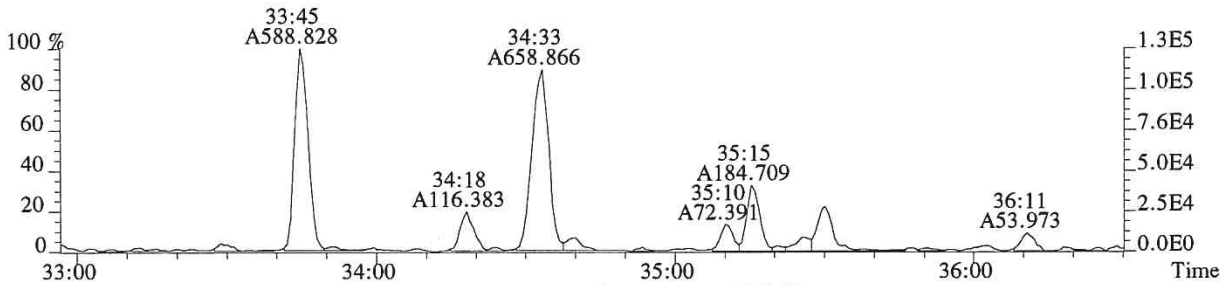
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



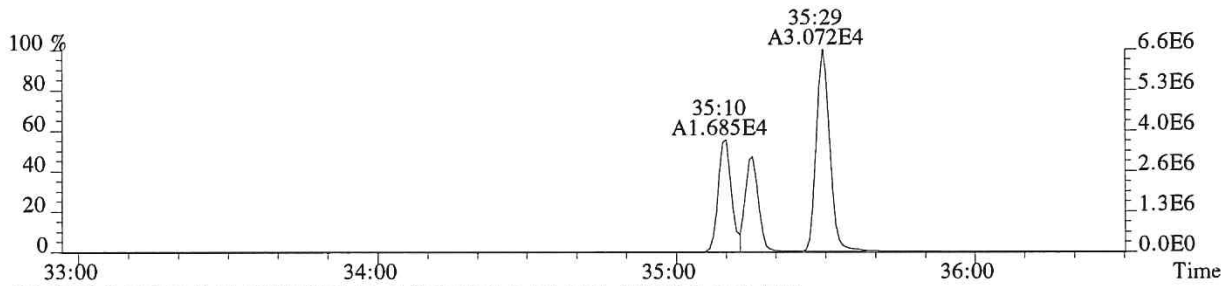
File:P616322 #1-321 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,996.0,0.40%,F,T)



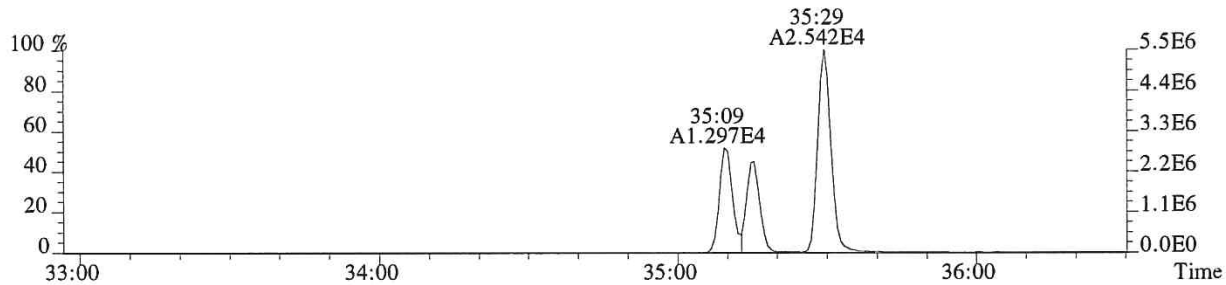
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1368.0,0.40%,F,T)



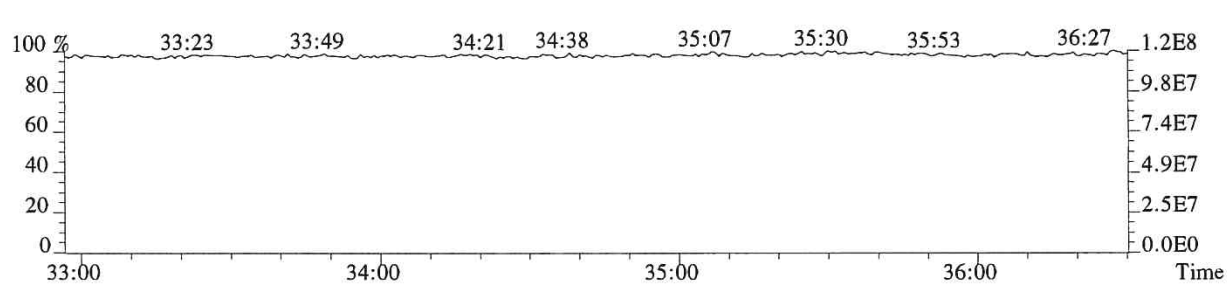
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1932.0,0.40%,F,T)



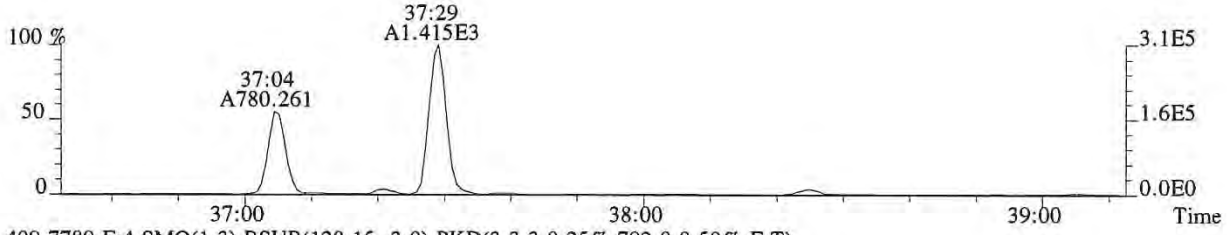
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1800.0,0.40%,F,T)



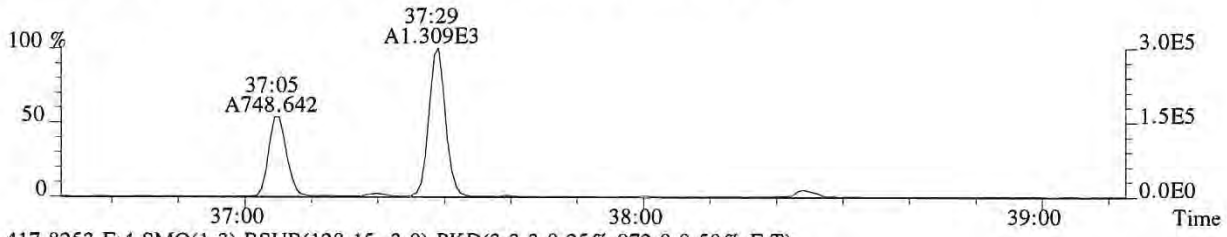
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



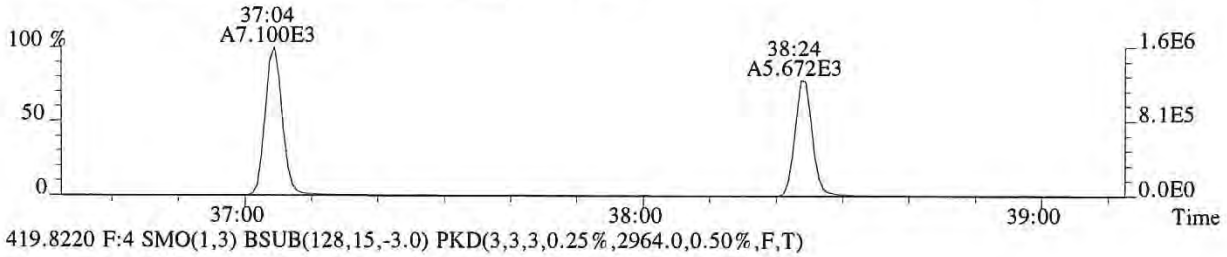
File:P616322 #1-241 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,784.0,0.50%,F,T)



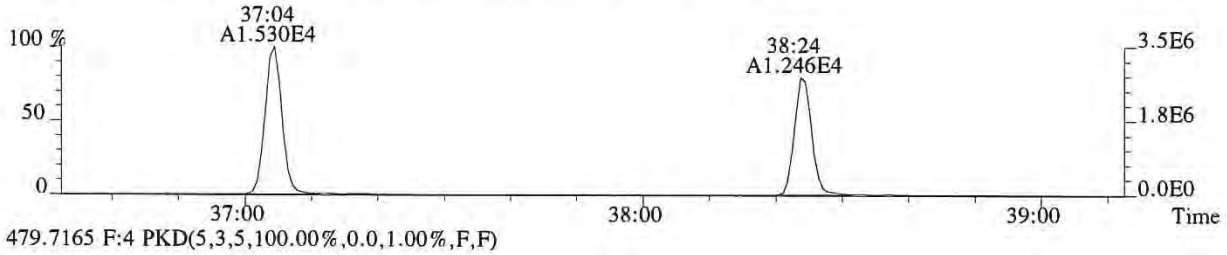
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,792.0,0.50%,F,T)



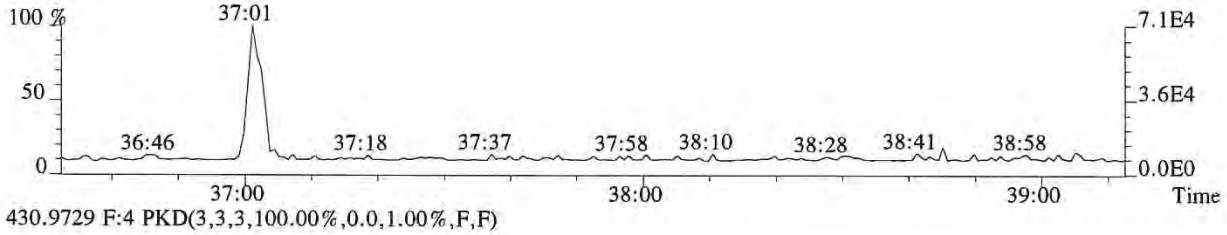
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,972.0,0.50%,F,T)



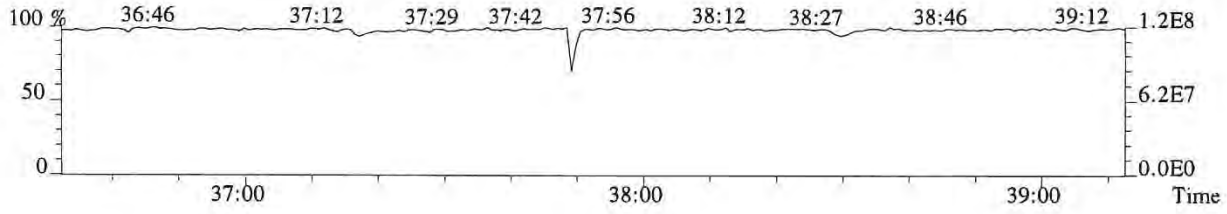
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2964.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

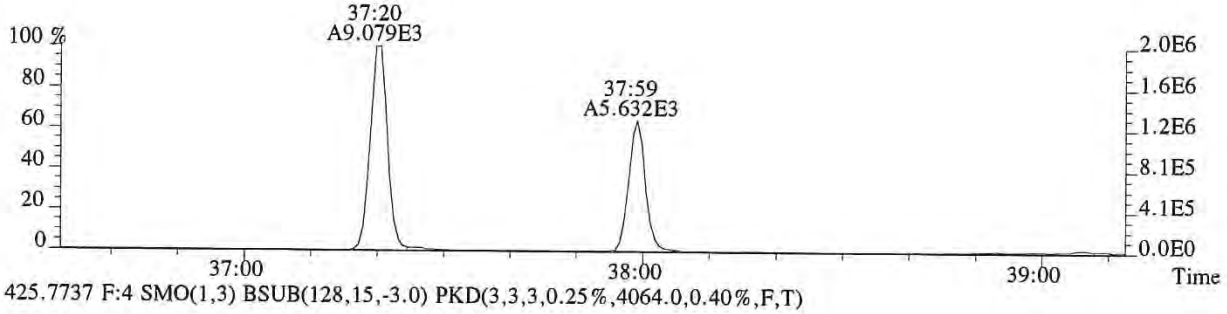


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

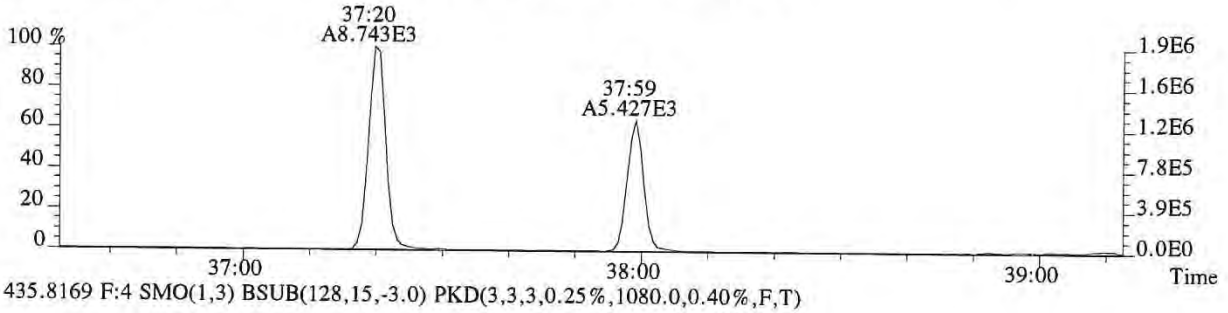


061096

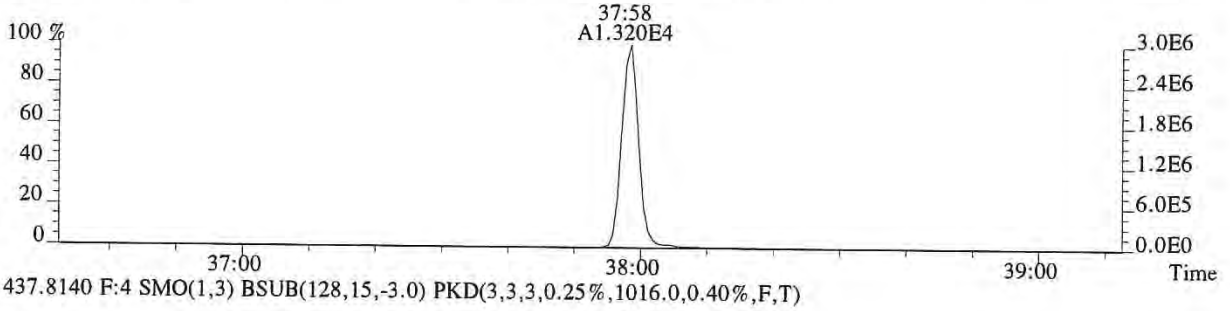
File:P616322 #1-241 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801137-003
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4920.0,0.40%,F,T)



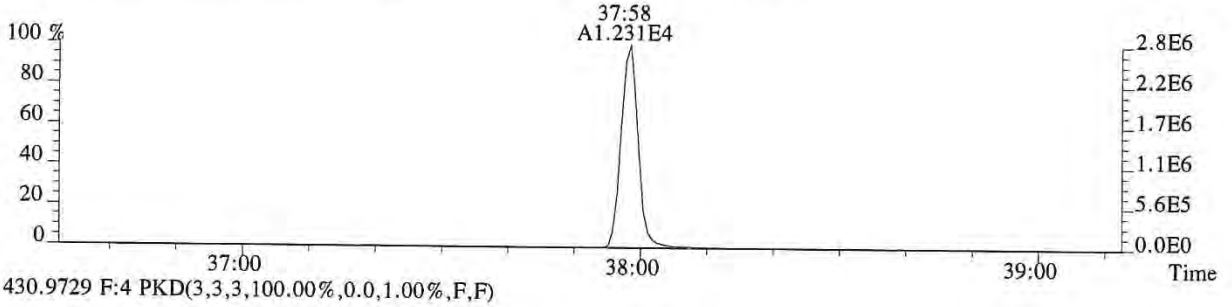
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4064.0,0.40%,F,T)



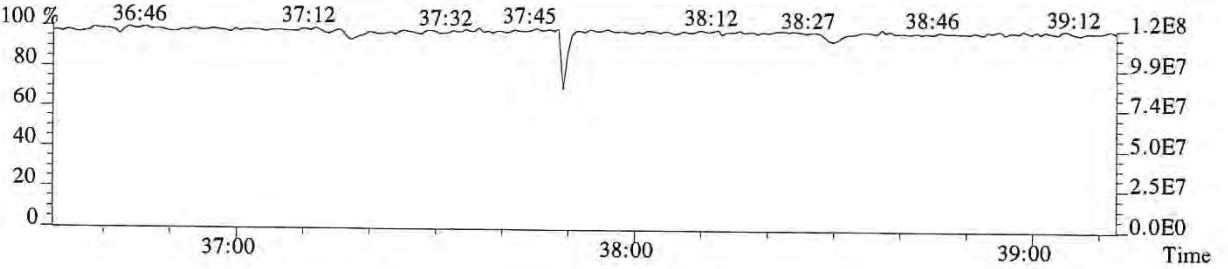
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1080.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1016.0,0.40%,F,T)

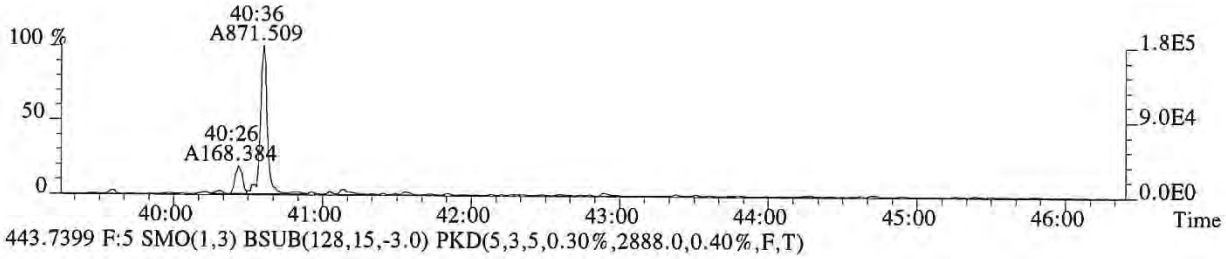


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

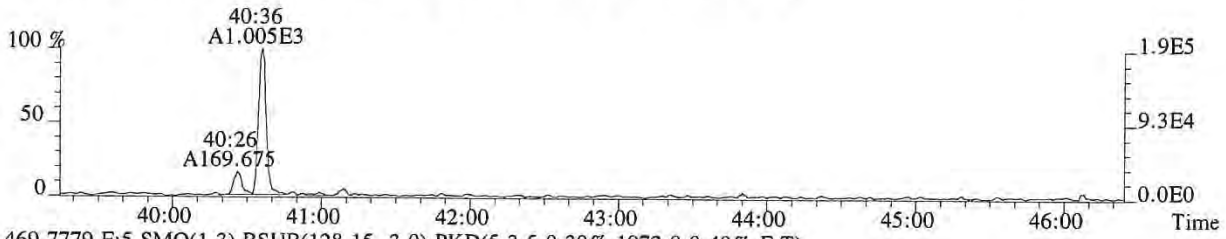


061097

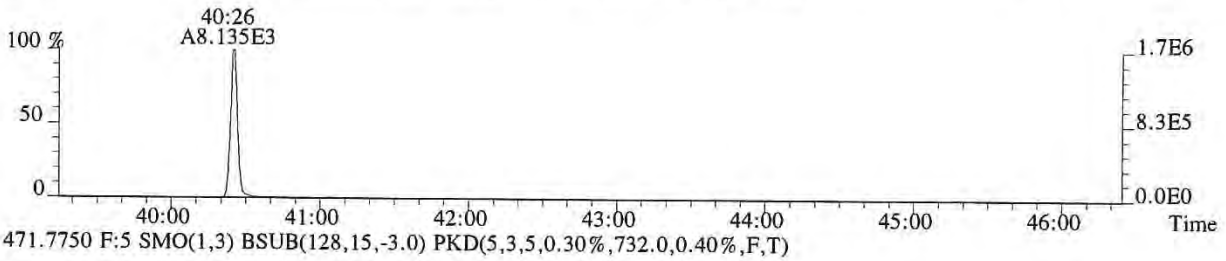
File:P616322 #1-645 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,516.0,0.40%,F,T)



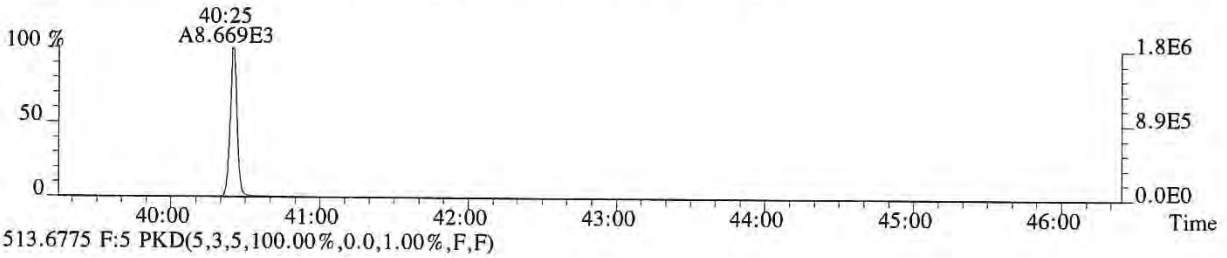
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2888.0,0.40%,F,T)



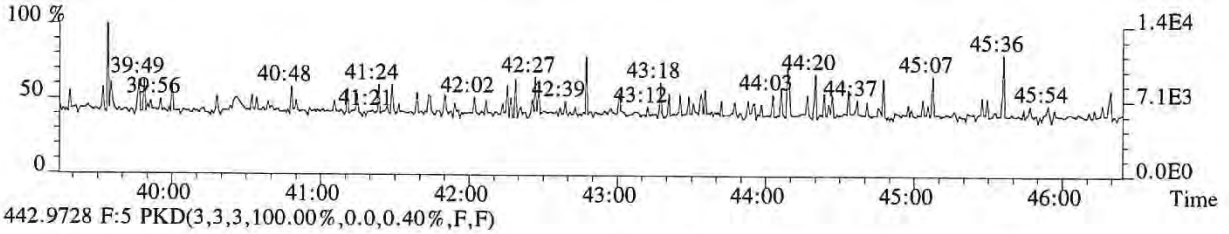
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1972.0,0.40%,F,T)



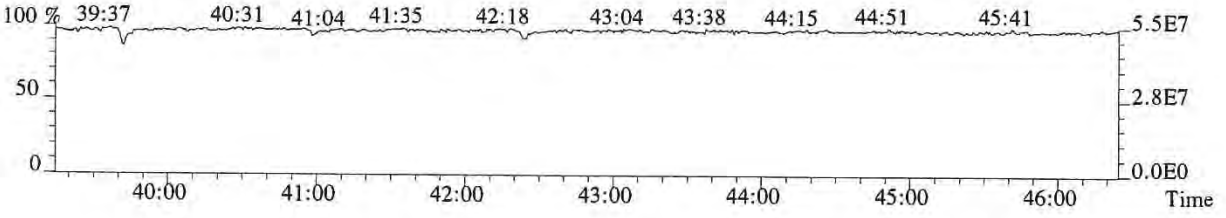
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,732.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

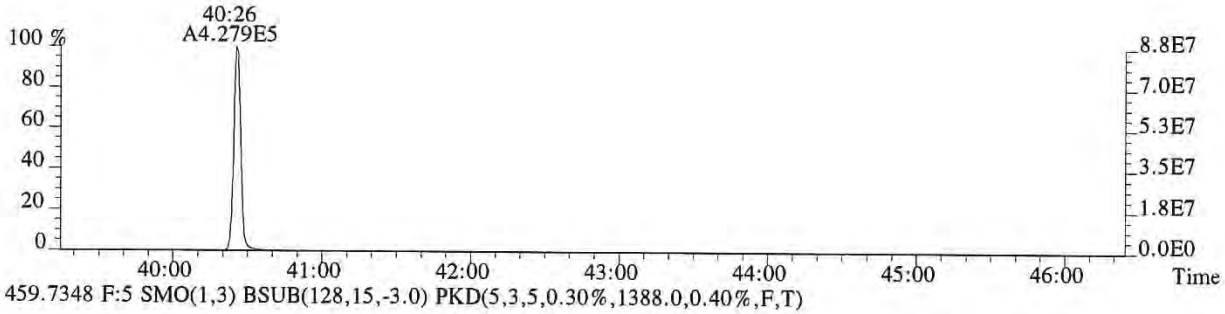


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

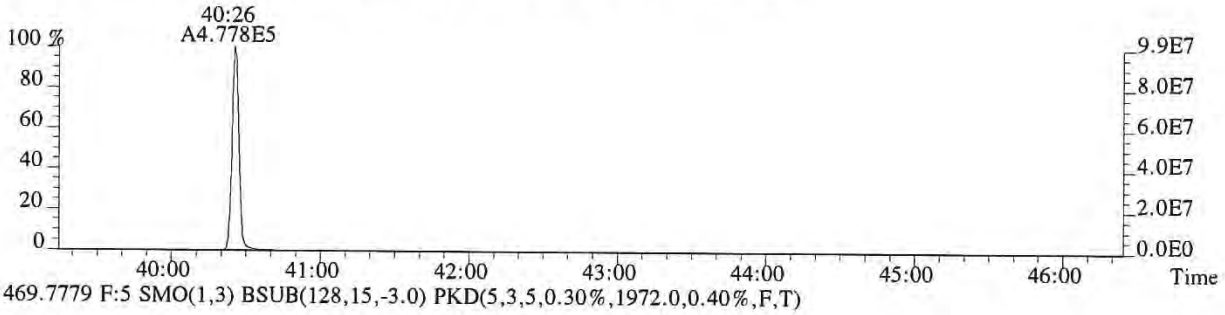


061098

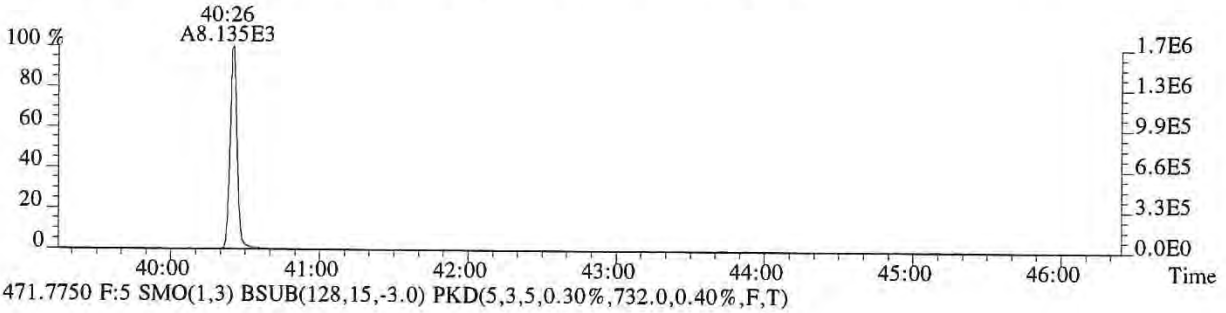
File:P616322 #1-645 Acq: 2-JAN-2019 17:03:20 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-003
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,680.0,0.40%,F,T)



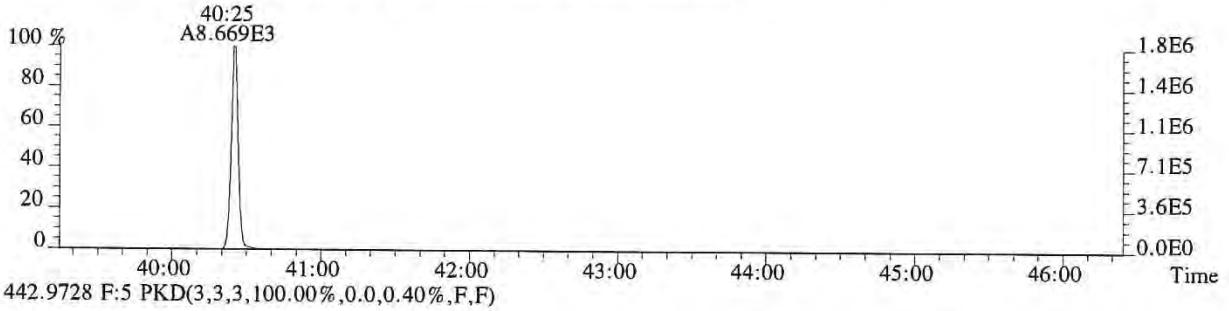
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1388.0,0.40%,F,T)



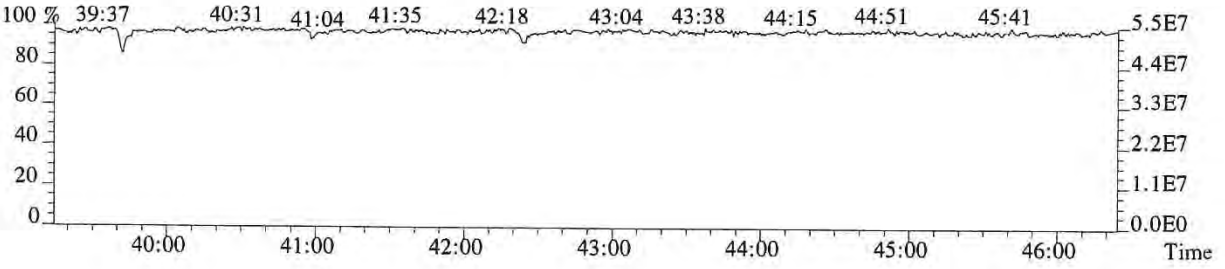
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1972.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,732.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0137

Run #14 Filename P616323 Samp: 1 Inj: 1 Acquired: 2-JAN-19 17:52:32
Processed: 3-JAN-19 13:33:53 Sample ID: E1801137-004

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:27	3.451e+02	3.554e+02	0.97	no	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:30	1.121e+02	6.751e+01	1.66	yes	yes	1.156
3	Unk	2,3,4,7,8-PeCDF	31:32	8.244e+01	1.087e+02	0.76	no	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:23	2.235e+02	1.436e+02	1.56	no	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	3.765e+02	3.558e+02	1.06	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:02	1.828e+02	1.296e+02	1.41	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:05	4.038e+03	3.854e+03	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	7.080e+01	7.755e+01	0.91	yes	no	1.463
10	Unk	OCDF	40:36	1.709e+03	1.878e+03	0.91	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:29	9.750e+01	1.190e+02	0.82	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:49	6.200e+01	7.380e+01	0.84	no	yes	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:10	6.272e+01	6.969e+01	0.90	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:16	2.512e+02	2.166e+02	1.16	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:31	1.452e+02	1.197e+02	1.21	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:59	5.380e+03	5.437e+03	0.99	yes	no	1.112
17	Unk	OCDD	40:26	2.871e+04	3.194e+04	0.90	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:25	1.395e+04	1.692e+04	0.82	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:28	2.243e+04	1.405e+04	1.60	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:31	2.113e+04	1.328e+04	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:22	9.150e+03	1.784e+04	0.51	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:29	1.055e+04	2.000e+04	0.53	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	9.798e+03	1.848e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	8.441e+03	1.586e+04	0.53	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	5.904e+03	1.331e+04	0.44	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	4.529e+03	1.008e+04	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:26	6.654e+03	8.765e+03	0.76	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:49	1.572e+04	1.004e+04	1.57	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:10	1.314e+04	1.040e+04	1.26	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	1.219e+04	9.494e+03	1.28	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	1.131e+04	1.043e+04	1.08	yes	no	0.857
32	IS	13C-OCDD	40:26	7.163e+03	7.850e+03	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:40	2.112e+04	2.629e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	2.835e+04	2.256e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:28	9.746e+03				no	1.086

$$\text{OCDD} = \frac{(2.871e+04 + 3.194e+04) \times 4000 \text{ pg} \times 1}{(7.163e+03 + 7.850e+03) \times 10.214 \text{ g} \times 76.9 / 100 \times 1.157} = 1778 \text{ ng/kg}$$

LMc 01/04/19

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0137

Run #14 Filename P616323 Samp: 1 Inj: 1 Acquired: 2-JAN-19 17:52:32
Processed: 3-JAN-19 13:33:53 LAB. ID: E1801137-004

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	4.55e+04	1.45e+03	3.1e+01	5.29e+04	5.74e+03	9.2e+00
2	1,2,3,7,8-PeCDF	1.97e+04	1.75e+03	1.1e+01	1.33e+04	3.86e+03	3.4e+00
3	2,3,4,7,8-PeCDF	1.45e+04	1.75e+03	8.3e+00	2.32e+04	3.86e+03	6.0e+00
4	1,2,3,4,7,8-HxCDF	5.04e+04	3.72e+03	1.4e+01	3.47e+04	2.11e+03	1.6e+01
5	1,2,3,6,7,8-HxCDF	8.33e+04	3.72e+03	2.2e+01	7.42e+04	2.11e+03	3.5e+01
6	2,3,4,6,7,8-HxCDF	4.77e+04	3.72e+03	1.3e+01	2.87e+04	2.11e+03	1.4e+01
7	1,2,3,7,8,9-HxCDF	*	3.72e+03	*	*	2.11e+03	*
8	1,2,3,4,6,7,8-HpCDF	9.16e+05	1.46e+03	6.3e+02	8.83e+05	4.72e+02	1.9e+03
9	1,2,3,4,7,8,9-HpCDF	1.57e+04	1.46e+03	1.1e+01	1.45e+04	4.72e+02	3.1e+01
10	OCDF	3.48e+05	3.52e+02	9.9e+02	3.74e+05	2.54e+03	1.5e+02
11	2,3,7,8-TCDD	1.63e+04	4.26e+03	3.8e+00	2.35e+04	1.44e+03	1.6e+01
12	1,2,3,7,8-PeCDD	1.38e+04	1.69e+03	8.1e+00	1.13e+04	4.84e+02	2.3e+01
13	1,2,3,4,7,8-HxCDD	1.36e+04	5.36e+02	2.5e+01	1.57e+04	1.33e+03	1.2e+01
14	1,2,3,6,7,8-HxCDD	4.97e+04	5.36e+02	9.3e+01	4.82e+04	1.33e+03	3.6e+01
15	1,2,3,7,8,9-HxCDD	3.00e+04	5.36e+02	5.6e+01	2.68e+04	1.33e+03	2.0e+01
16	1,2,3,4,6,7,8-HpCDD	1.26e+06	1.75e+03	7.2e+02	1.24e+06	1.00e+03	1.2e+03
17	OCDD	5.72e+06	9.00e+02	6.4e+03	6.28e+06	5.44e+02	1.2e+04
18	13C-2,3,7,8-TCDF	1.96e+06	1.37e+04	1.4e+02	2.41e+06	1.09e+04	2.2e+02
19	13C-1,2,3,7,8-PeCDF	3.92e+06	9.44e+02	4.2e+03	2.49e+06	1.03e+03	2.4e+03
20	13C-2,3,4,7,8-PeCDF	3.93e+06	9.44e+02	4.2e+03	2.51e+06	1.03e+03	2.4e+03
21	13C-1,2,3,4,7,8-HxCDF	1.97e+06	1.12e+03	1.8e+03	3.82e+06	1.46e+03	2.6e+03
22	13C-1,2,3,6,7,8-HxCDF	2.20e+06	1.12e+03	2.0e+03	4.16e+06	1.46e+03	2.8e+03
23	13C-2,3,4,6,7,8-HxCDF	2.12e+06	1.12e+03	1.9e+03	3.99e+06	1.46e+03	2.7e+03
24	13C-1,2,3,7,8,9-HxCDF	1.82e+06	1.12e+03	1.6e+03	3.29e+06	1.46e+03	2.3e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.34e+06	1.31e+03	1.0e+03	3.05e+06	2.45e+03	1.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.04e+06	1.31e+03	7.9e+02	2.31e+06	2.45e+03	9.4e+02
27	13C-2,3,7,8-TCDD	1.08e+06	1.60e+04	6.7e+01	1.41e+06	4.15e+03	3.4e+02
28	13C-1,2,3,7,8-PeCDD	2.95e+06	2.97e+03	9.9e+02	1.90e+06	2.38e+03	8.0e+02
29	13C-1,2,3,4,7,8-HxCDD	2.91e+06	1.76e+03	1.6e+03	2.31e+06	1.30e+03	1.8e+03
30	13C-1,2,3,6,7,8-HxCDD	2.61e+06	1.76e+03	1.5e+03	2.04e+06	1.30e+03	1.6e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.59e+06	1.13e+03	2.3e+03	2.42e+06	6.44e+02	3.8e+03
32	13C-OCDD	1.45e+06	1.72e+03	8.4e+02	1.56e+06	5.08e+02	3.1e+03
33	13C-1,2,3,4-TCDD	3.06e+06	1.60e+04	1.9e+02	3.83e+06	4.15e+03	9.2e+02
34	13C-1,2,3,7,8,9-HxCDD	5.94e+06	1.76e+03	3.4e+03	4.83e+06	1.30e+03	3.7e+03
35	37Cl-2,3,7,8-TCDD	1.56e+06	2.54e+03	6.1e+02			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0137

Entry: 36 Totals Name: Total Tetra-Furans

Run: 14 File: P616323 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 17:52:32 Processed: 3-JAN-19 13:33:53

Mass: 303.9020 305.8990 Tot Response: 5.60e+02 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	24:23	1.37e+02	1.79e+02	0.76	yes	3.15e+02		n	n
2	25:52	1.08e+02	1.36e+02	0.80	yes	2.44e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0137

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 14 File: P616323 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 17:52:32 Processed: 3-JAN-19 13:33:53

Mass: 319.8970 321.8940 Tot Response: 2.16e+02 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:29	9.75e+01	1.19e+02	0.82	yes	2.16e+02	2,3,7,8-TCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0137

Entry: 38 Totals Name: Total Penta-Furans1

Run: 14 File: P616323 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 17:52:32 Processed: 3-JAN-19 13:33:53

Mass: 339.8600 341.8570 Tot Response: 7.60e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:41	4.76e+02	2.84e+02 1.67	yes	7.60e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0137

Entry: 39 Totals Name: Total Penta-Furans2

Run: 14 File: P616323 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 17:52:32 Processed: 3-JAN-19 13:33:53

Mass: 339.8600 341.8570 Tot Response: 1.80e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:30	1.12e+02	6.75e+01 1.66	yes	1.80e+02	1,2,3,7,8-PeCDF	n	y

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0137

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 14 File: P616323 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 17:52:32 Processed: 3-JAN-19 13:33:53

Mass: 355.8550 357.8520 Tot Response: 1.42e+02 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:28	8.80e+01	5.38e+01	1.64	yes	1.42e+02		y	y

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0137

Entry: 41 Totals Name: Total Hexa-Furans

Run: 14 File: P616323 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 17:52:32 Processed: 3-JAN-19 13:33:53

Mass: 373.8210 375.8180 Tot Response: 7.24e+03 RRF: 1.324

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:11	3.75e+02	2.99e+02 1.25	yes	6.74e+02		n	n
2	33:21	1.26e+03	9.62e+02 1.31	yes	2.22e+03		n	n
3	33:55	1.90e+03	1.39e+03 1.37	yes	3.30e+03		n	n
4	34:29	3.76e+02	3.56e+02 1.06	yes	7.32e+02	1,2,3,6,7,8-HxCDF	n	n
5	35:02	1.83e+02	1.30e+02 1.41	yes	3.12e+02	2,3,4,6,7,8-HxCDF	n	n

ALS ENVIRONMENTAL
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0137

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 14 File: P616323 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 17:52:32 Processed: 3-JAN-19 13:33:53

Mass: 389.8160 391.8130 Tot Response: 4.38e+03 RRF: 1.092

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:45	8.65e+02	7.19e+02 1.20	yes	1.58e+03		n	n
2	34:33	1.02e+03	7.67e+02 1.33	yes	1.79e+03		n	n
3	34:40	1.08e+02	8.13e+01 1.32	yes	1.89e+02		n	n
4	35:16	2.51e+02	2.17e+02 1.16	yes	4.68e+02	1,2,3,6,7,8-HxCDD	n	n
5	35:26	4.56e+01	3.81e+01 1.20	yes	8.37e+01		n	n
6	35:31	1.45e+02	1.20e+02 1.21	yes	2.65e+02	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0137

Entry: 43 Totals Name: Total Hepta-Furans

Run: 14 File: P616323 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 17:52:32 Processed: 3-JAN-19 13:33:53

Mass: 407.7820 409.7790 Tot Response: 1.69e+04 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:05	4.04e+03	3.85e+03	1.05	yes	7.89e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:20	3.80e+01	3.80e+01	1.00	yes	7.60e+01		n	n
3	37:29	4.44e+03	4.38e+03	1.02	yes	8.82e+03		n	n
4	38:24	7.08e+01	7.76e+01	0.91	yes	1.48e+02	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0137

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 14 File: P616323 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 17:52:32 Processed: 3-JAN-19 13:33:53

Mass: 423.7770 425.7740 Tot Response: 2.65e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:20	8.20e+03	7.53e+03	1.09	yes	1.57e+04		n	n
2	37:59	5.38e+03	5.44e+03	0.99	yes	1.08e+04	1,2,3,4,6,7,8-HpCDD	n	n

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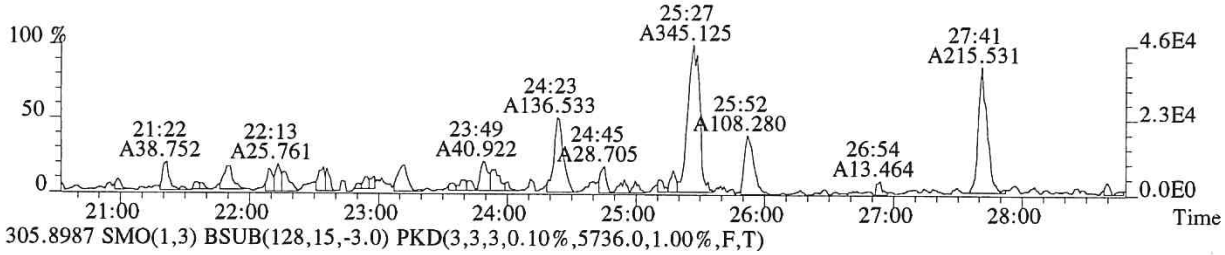
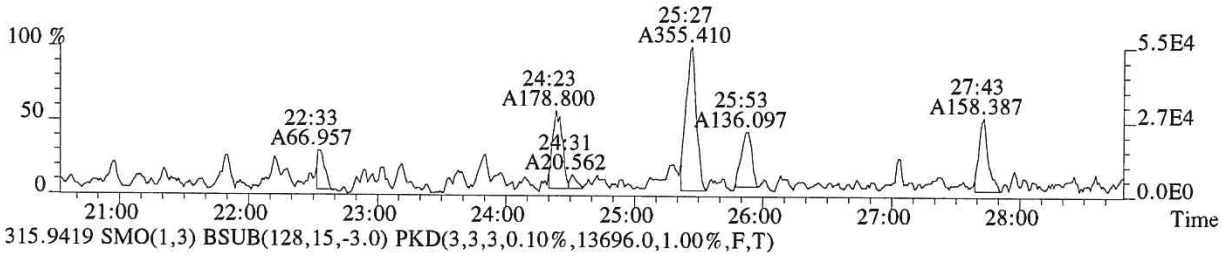
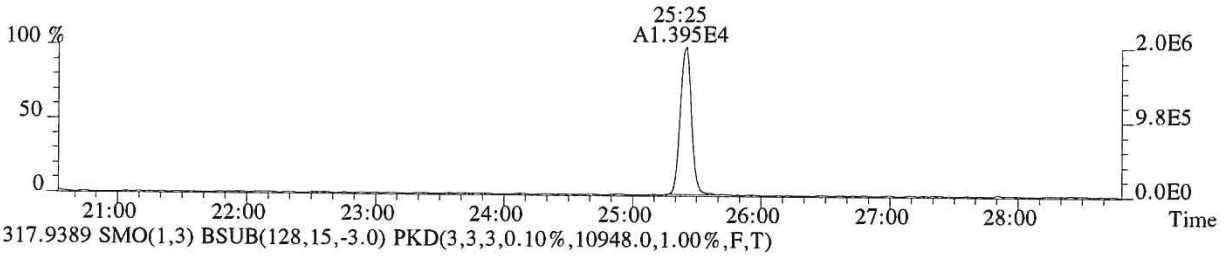
File:P616323 #1-587 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1448.0,1.00%,F,T)



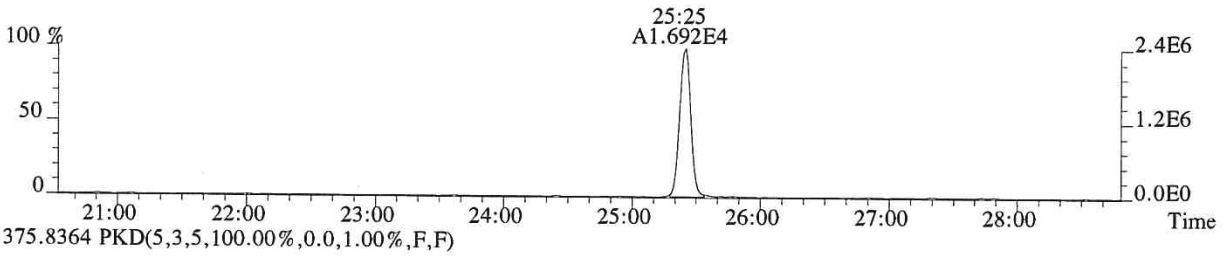
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5736.0,1.00%,F,T)



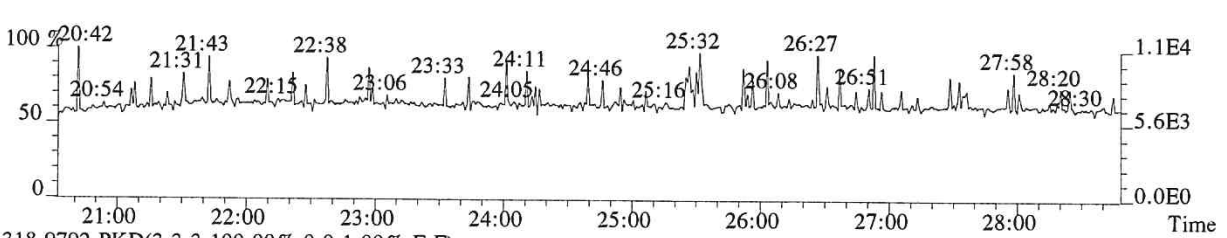
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13696.0,1.00%,F,T)



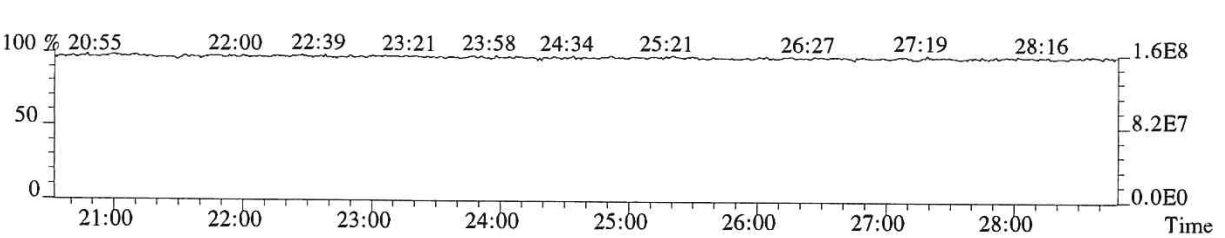
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10948.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

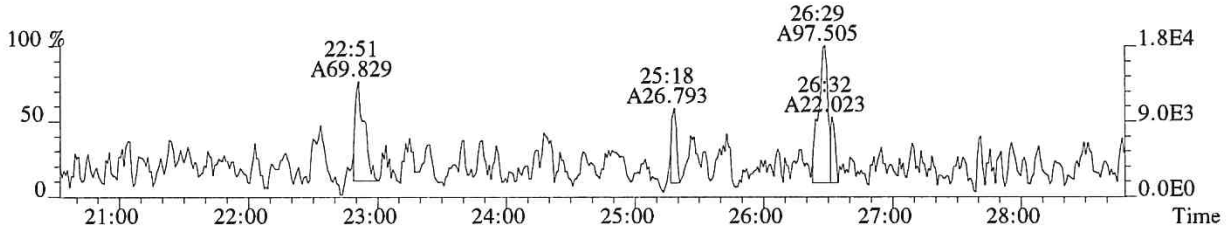


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

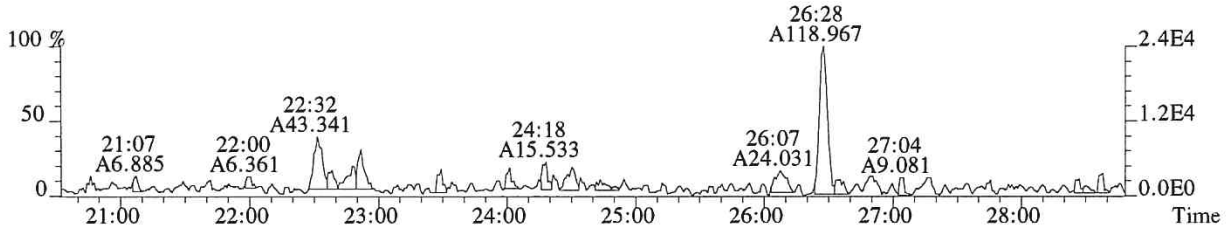


061111

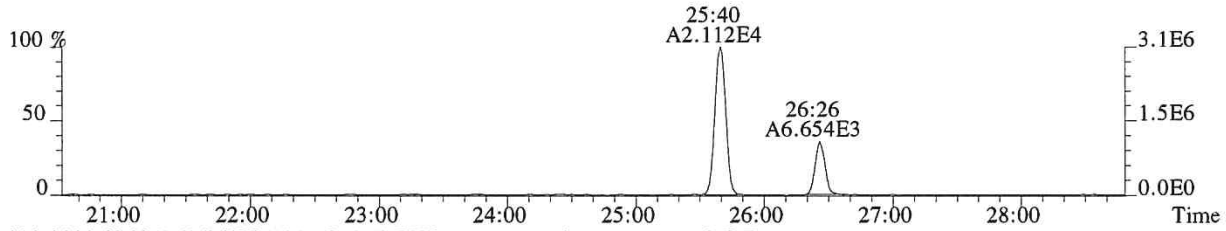
File:P616323 #1-587 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4264.0,1.00%,F,T)



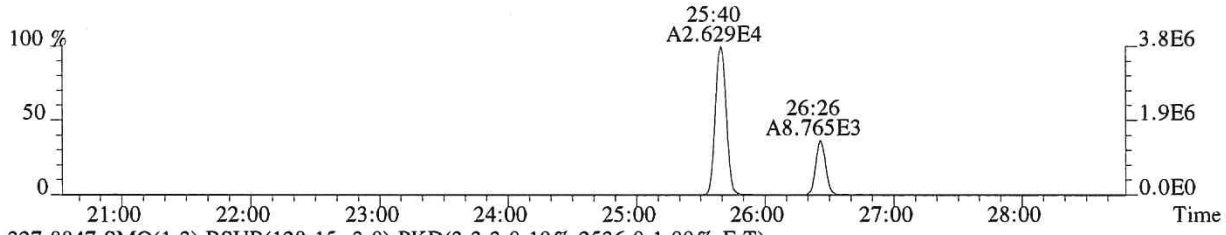
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1440.0,1.00%,F,T)



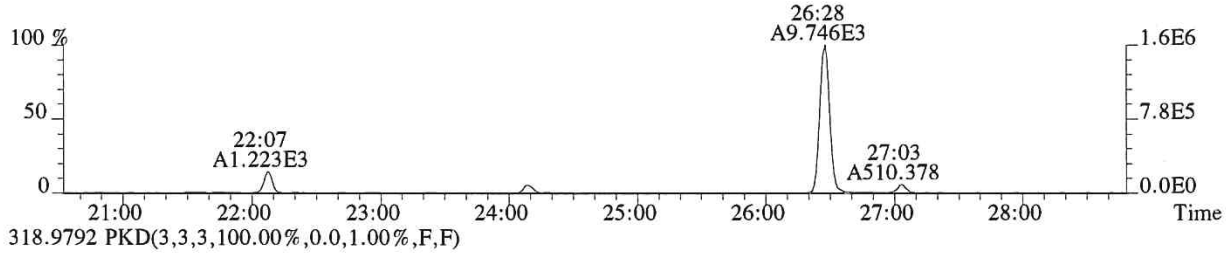
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16004.0,1.00%,F,T)



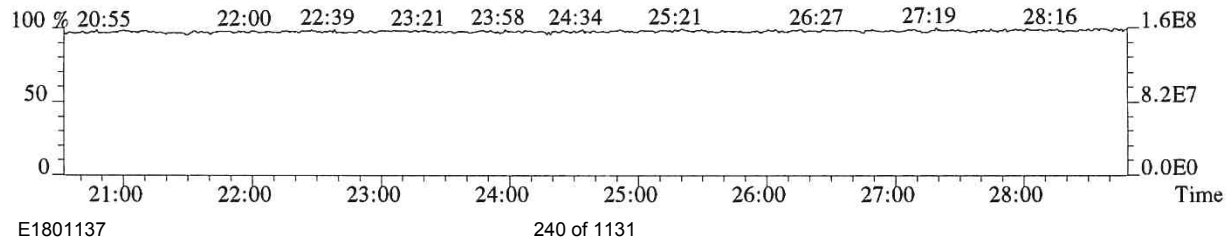
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4148.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2536.0,1.00%,F,T)

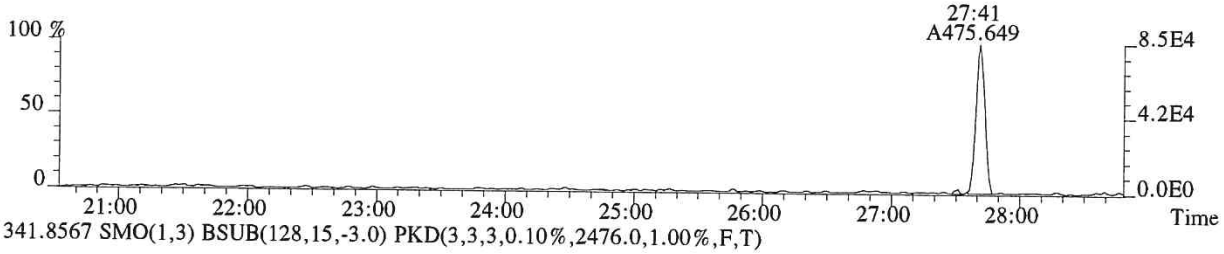


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

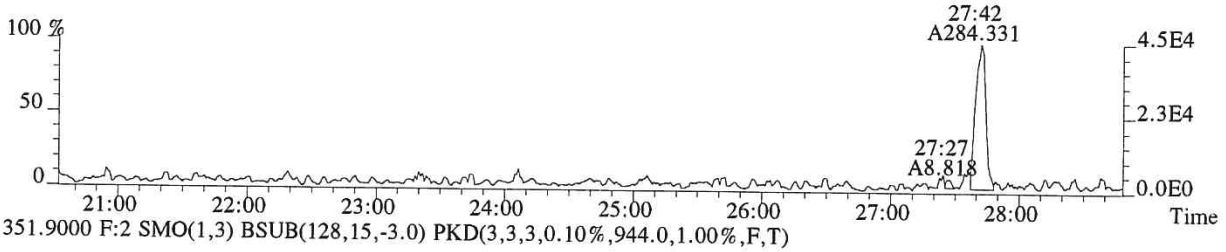


061112

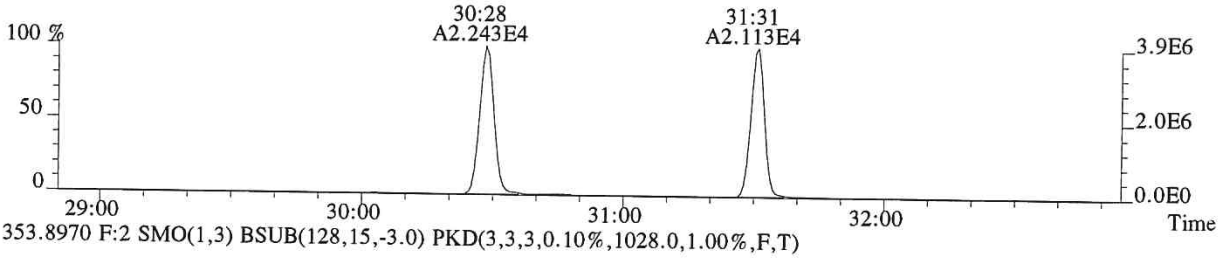
File:P616323 #1-587 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,964.0,1.00%,F,T)



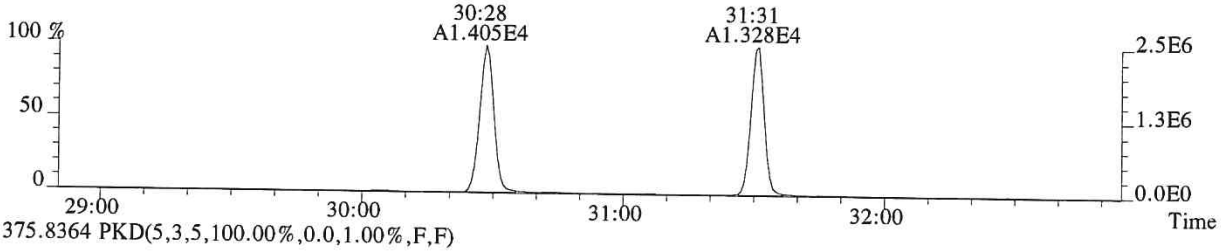
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2476.0,1.00%,F,T)



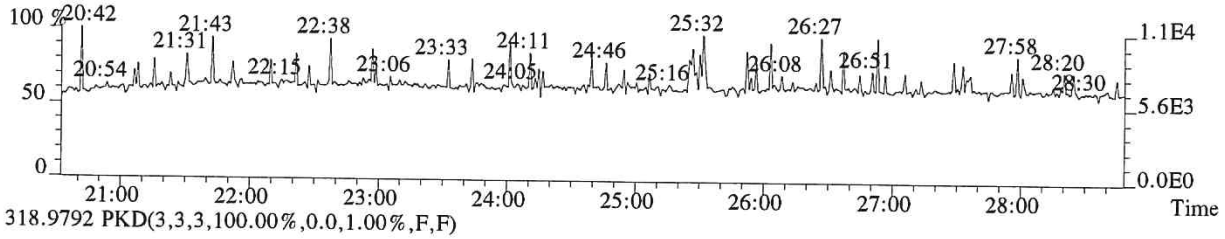
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,944.0,1.00%,F,T)



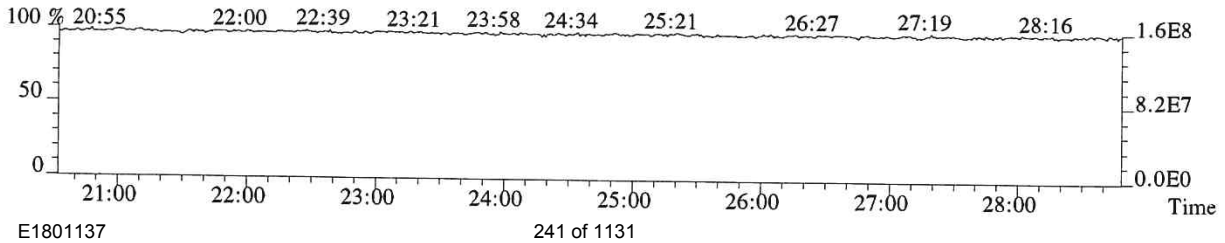
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1028.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

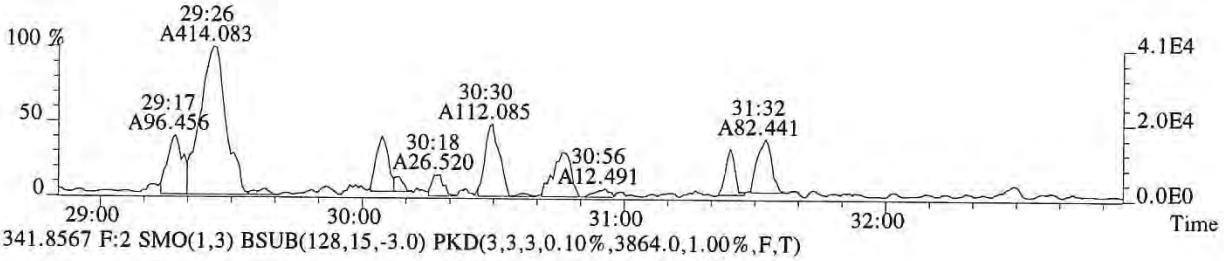


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

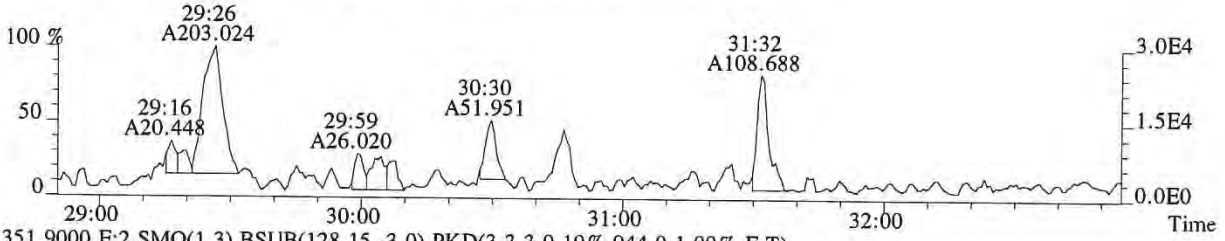


061113

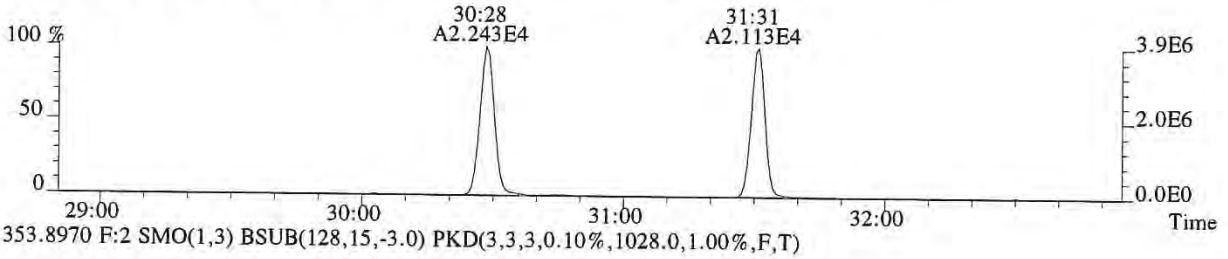
File:P616323 #1-367 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1748.0,1.00%,F,T)



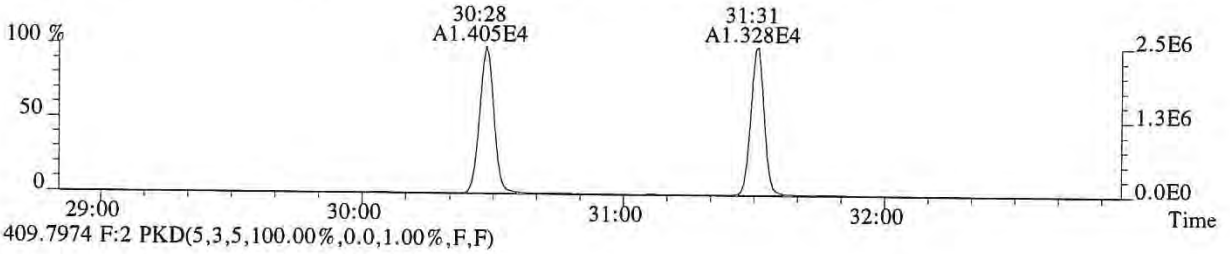
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3864.0,1.00%,F,T)



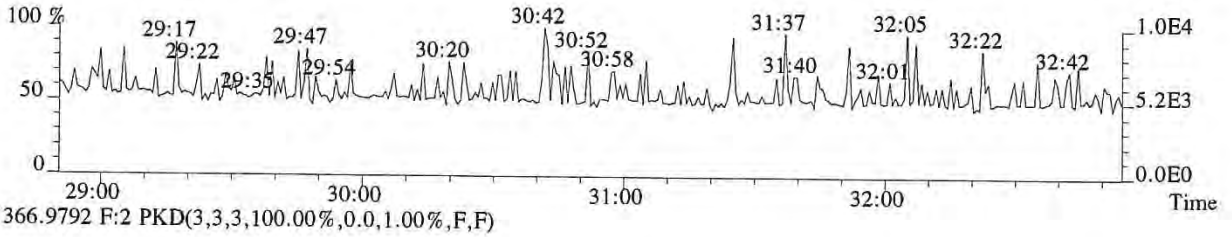
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,944.0,1.00%,F,T)



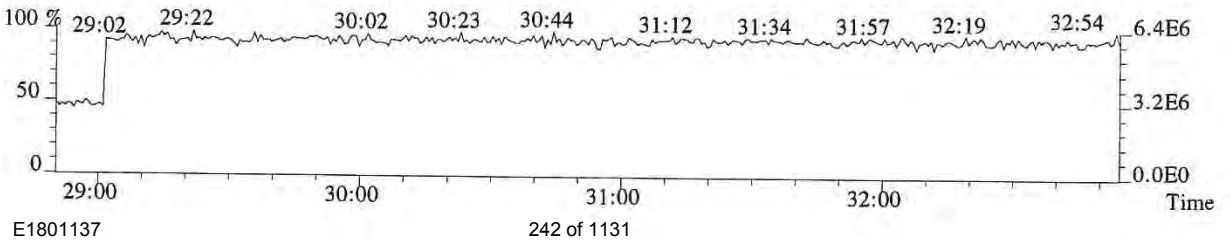
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1028.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

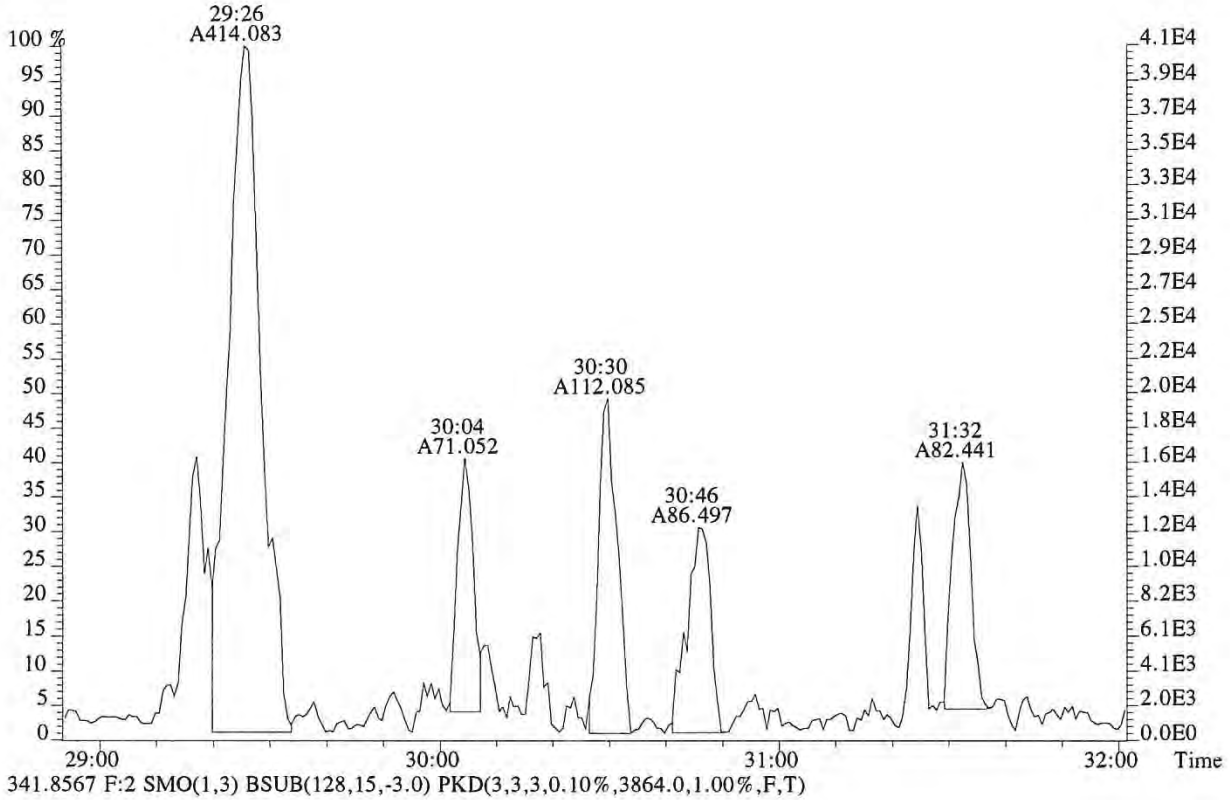


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

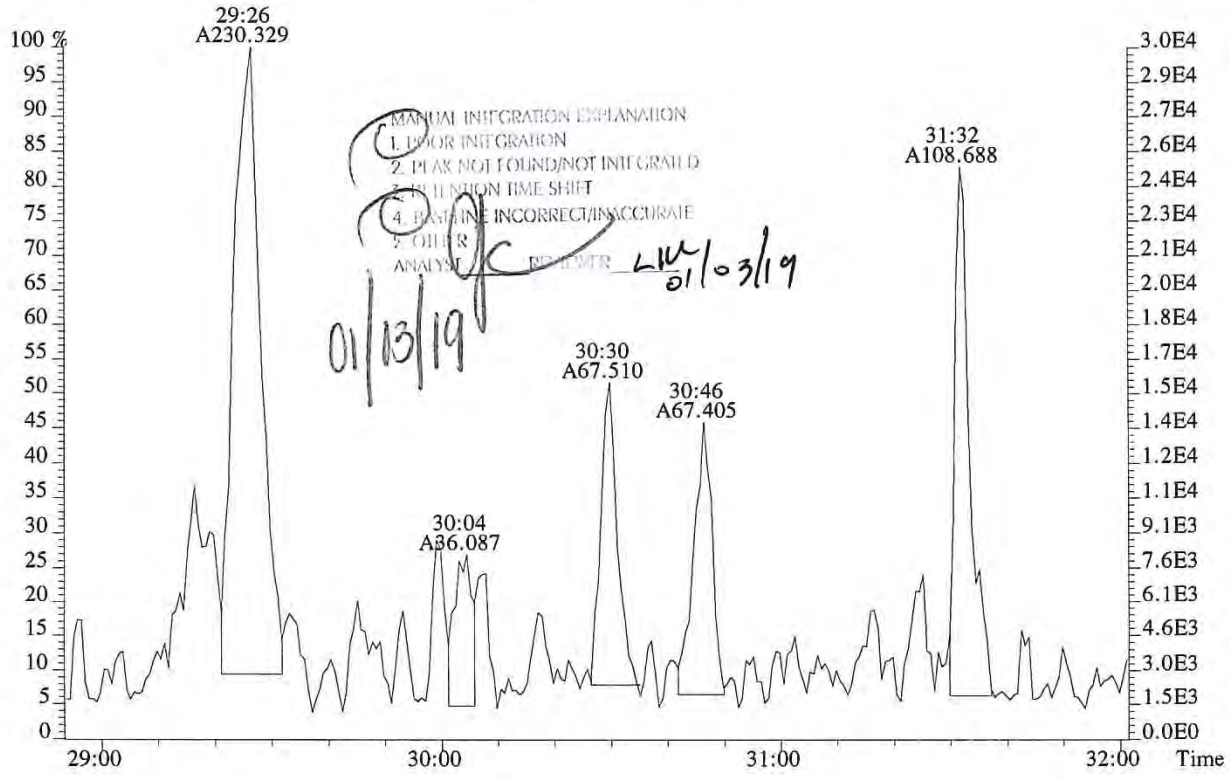


061114

File:P616323 #1-367 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1748.0,1.00%,F,T)



341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3864.0,1.00%,F,T)

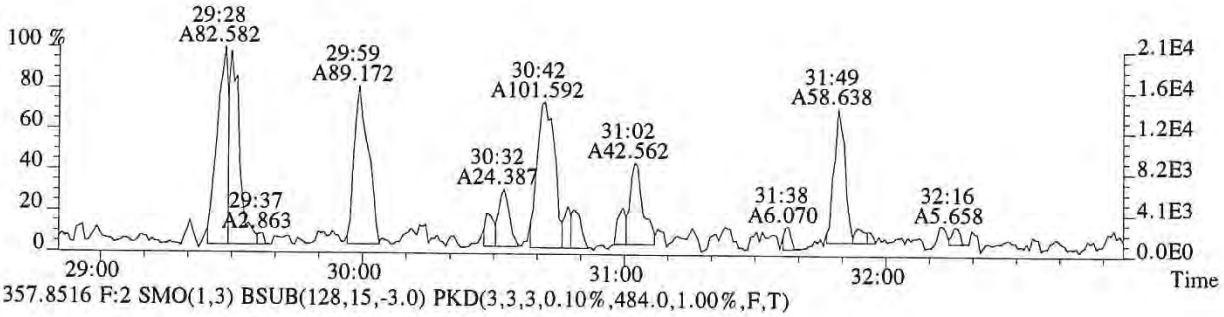


MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST JC REVIEWER LW 01/03/19

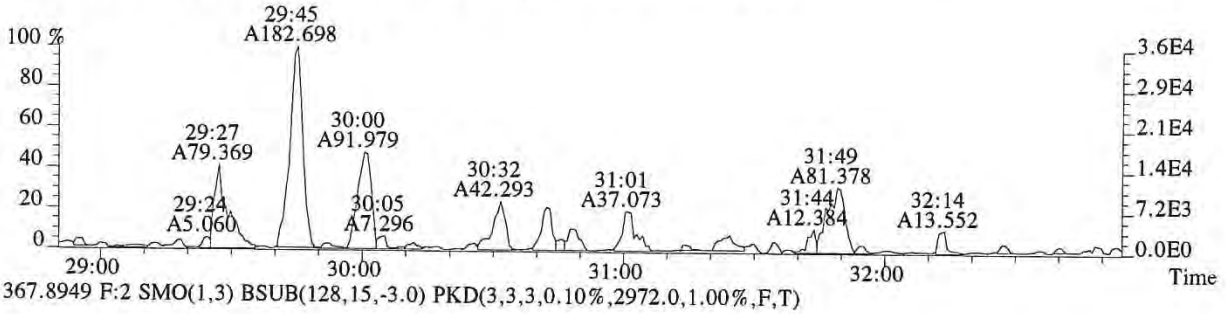
01/13/19

061115

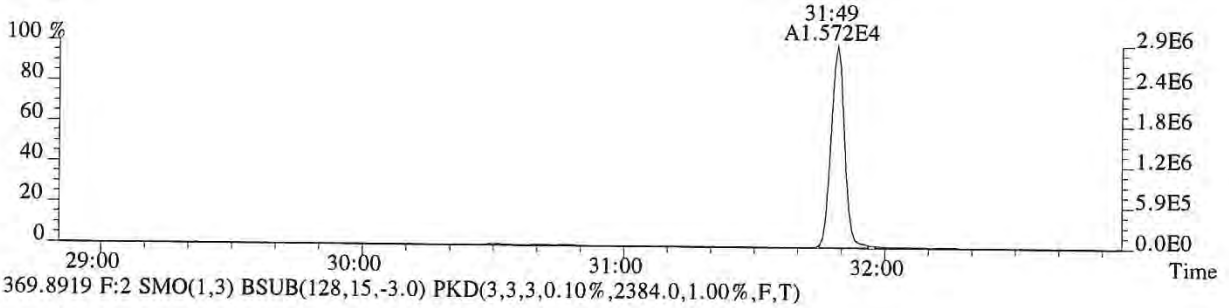
File:P616323 #1-367 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1692.0,1.00%,F,T)



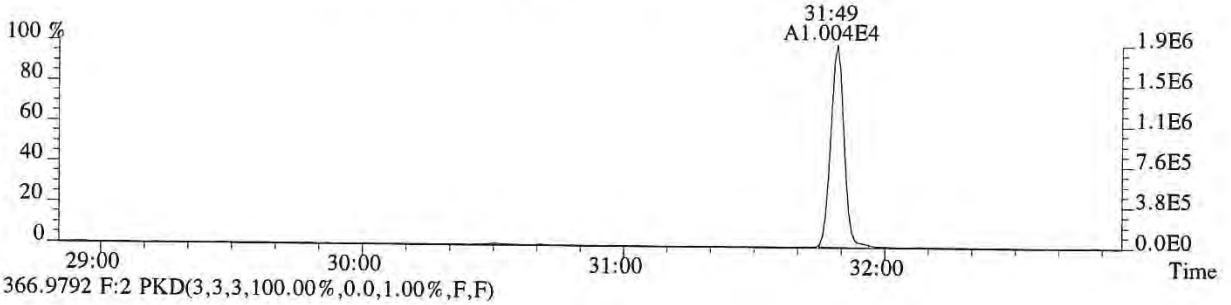
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,484.0,1.00%,F,T)



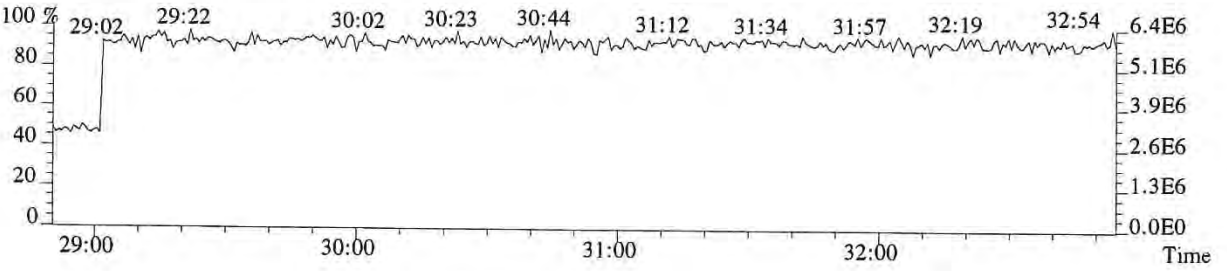
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2972.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2384.0,1.00%,F,T)

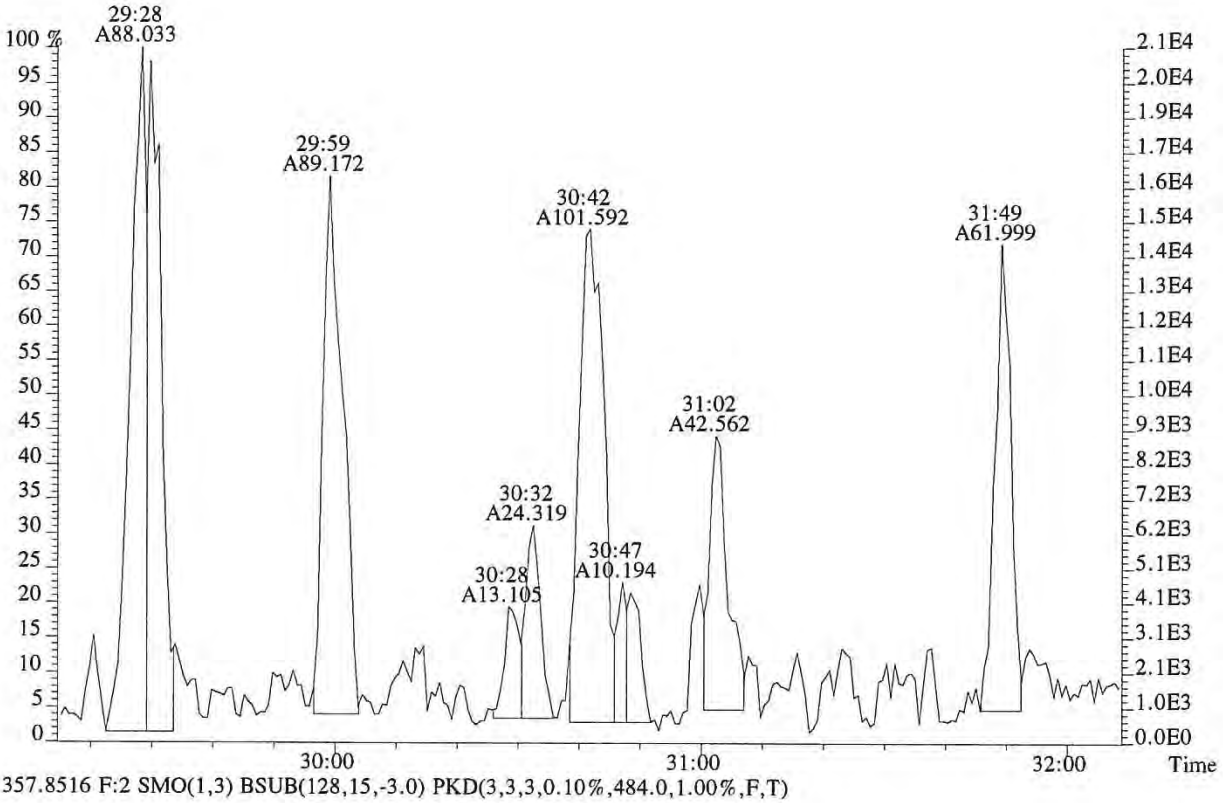


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

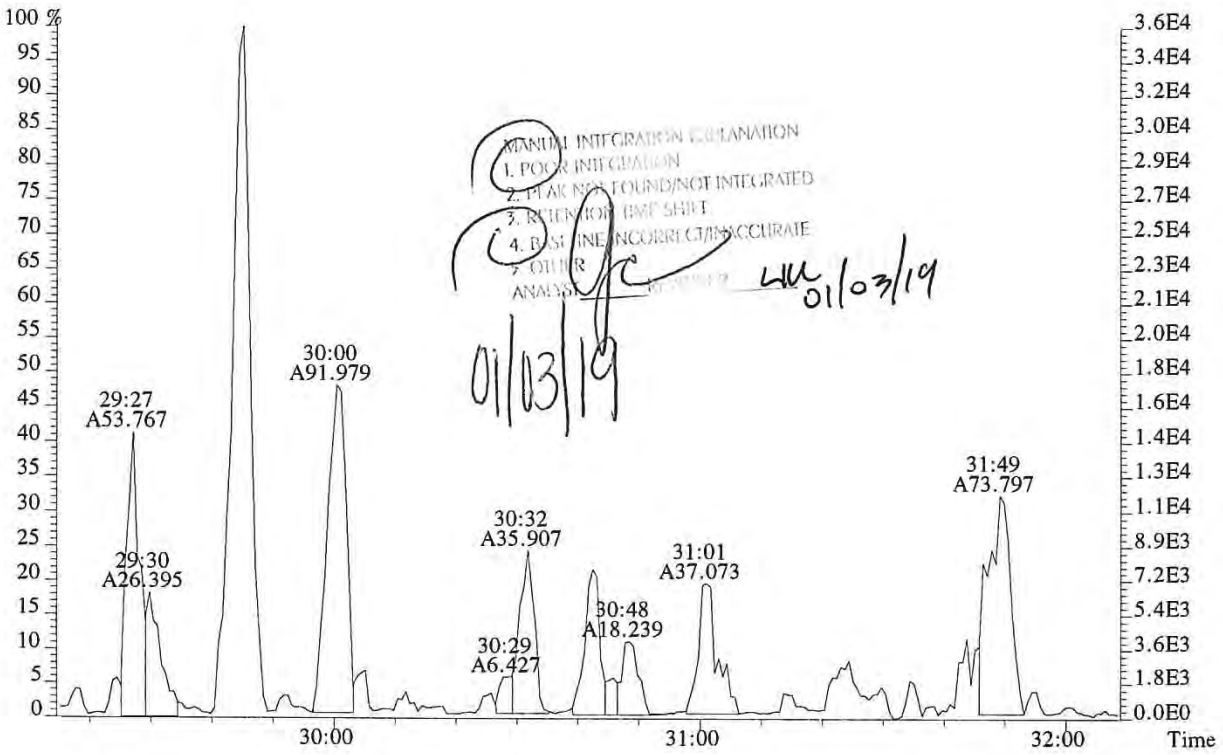


061116

File:P616323 #1-367 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1692.0,1.00%,F,T)

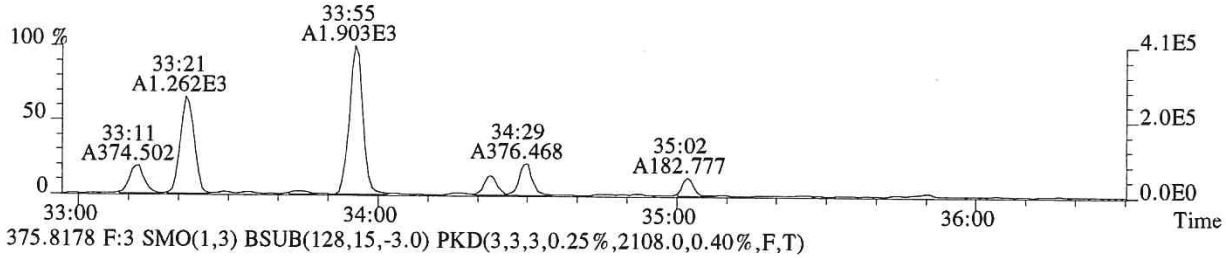


357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,484.0,1.00%,F,T)

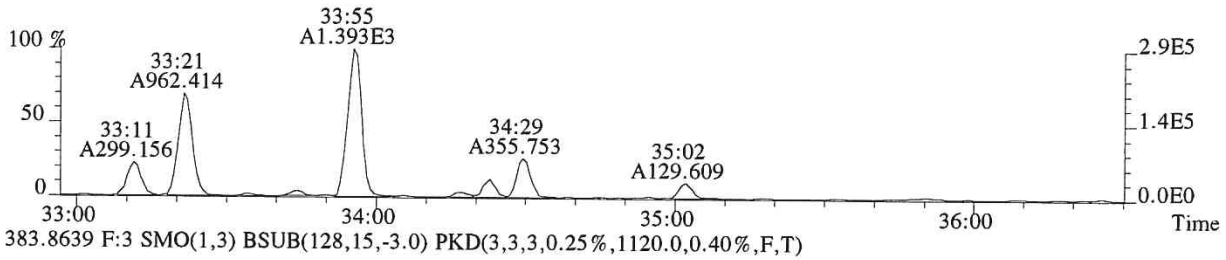


061117

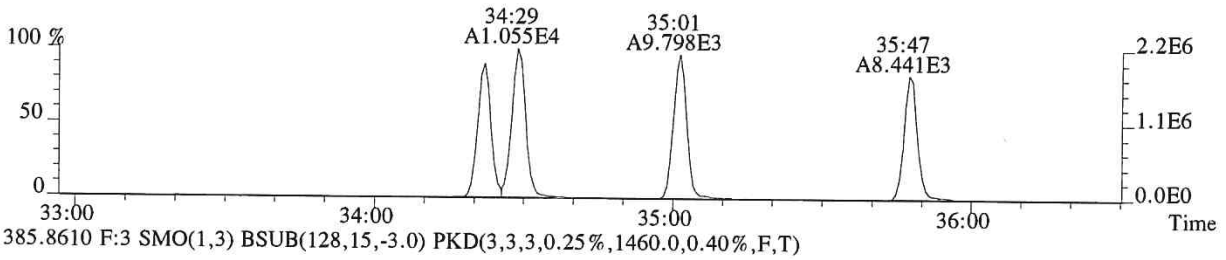
File:P616323 #1-321 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3720.0,0.40%,F,T)



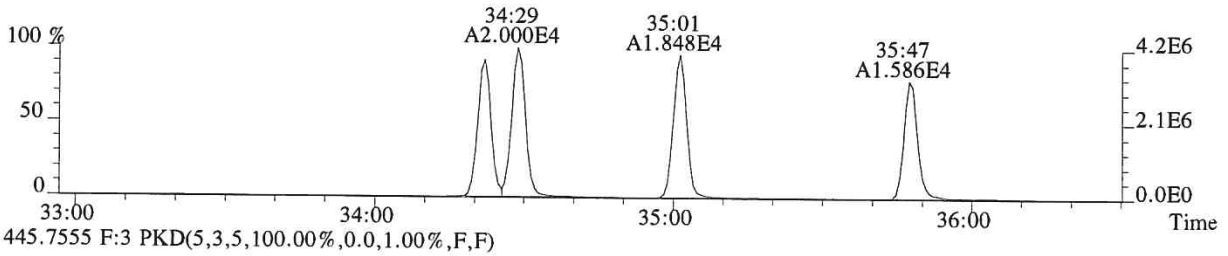
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2108.0,0.40%,F,T)



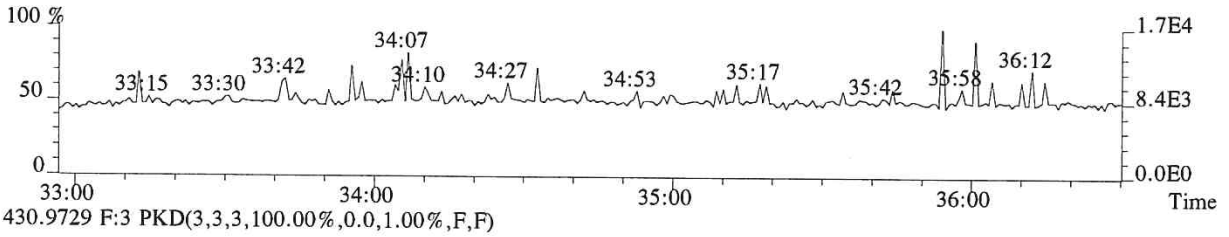
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1120.0,0.40%,F,T)



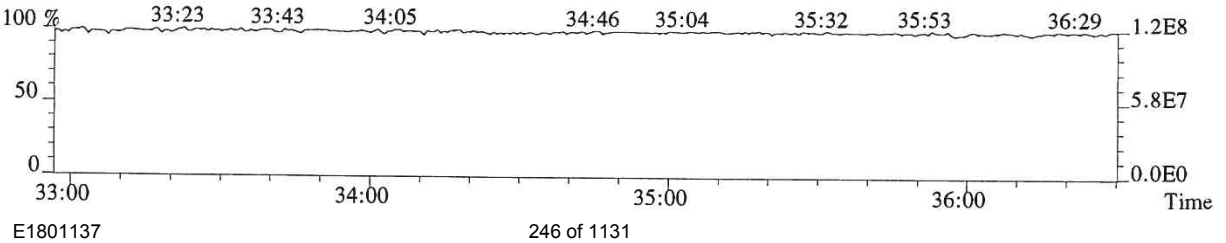
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1460.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

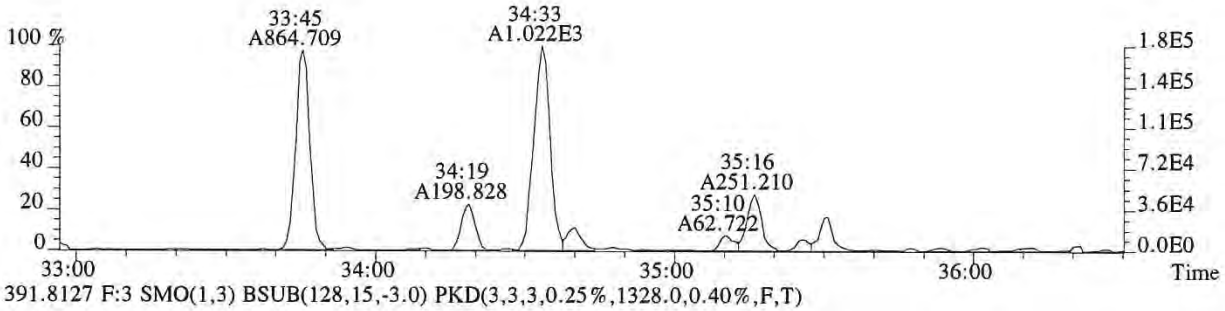


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

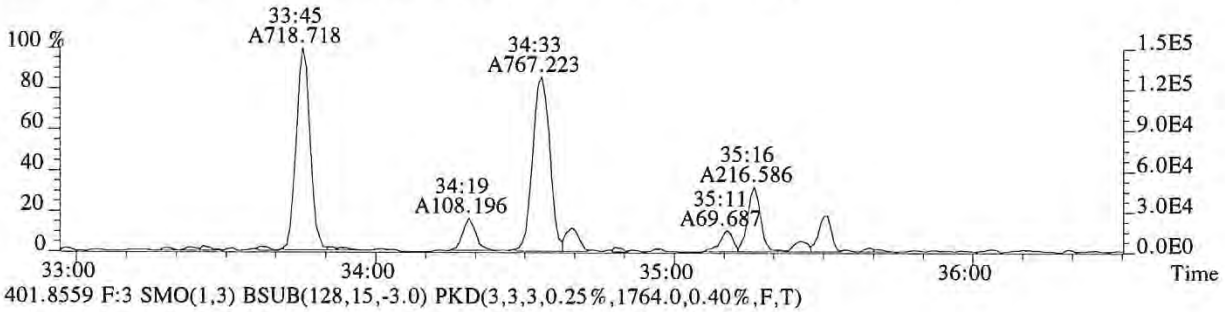


061118

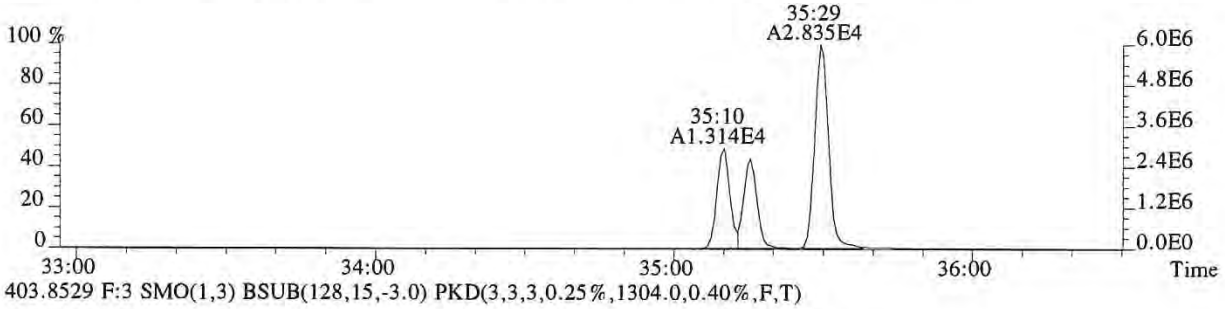
File:P616323 #1-321 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,536.0,0.40%,F,T)



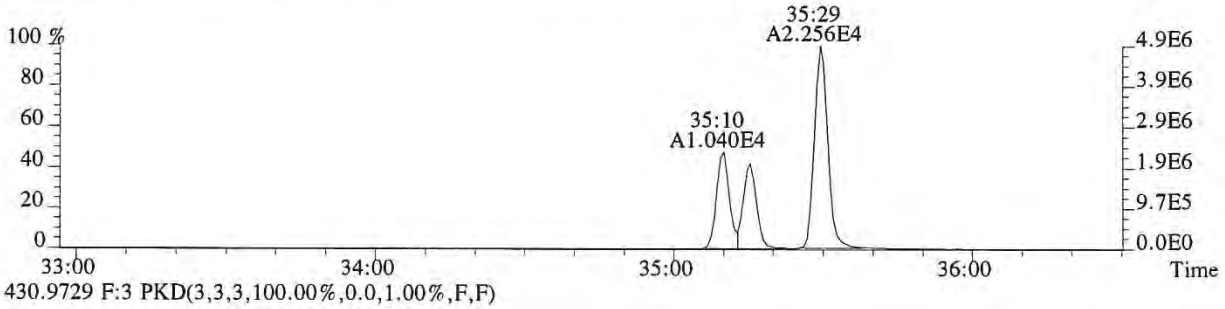
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1328.0,0.40%,F,T)



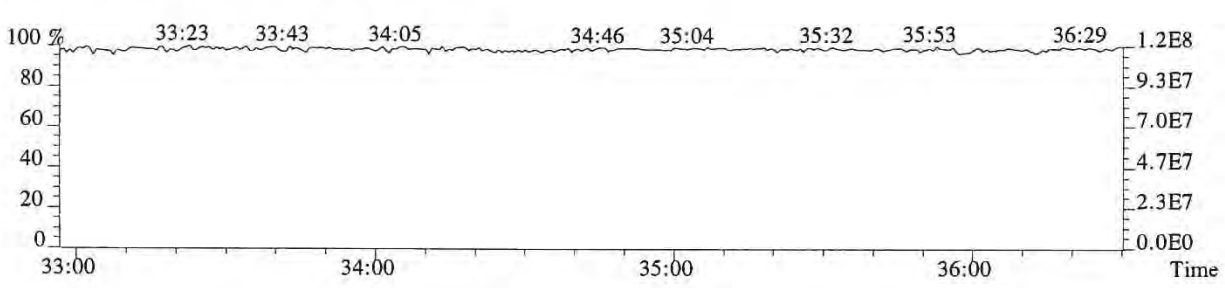
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1764.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1304.0,0.40%,F,T)

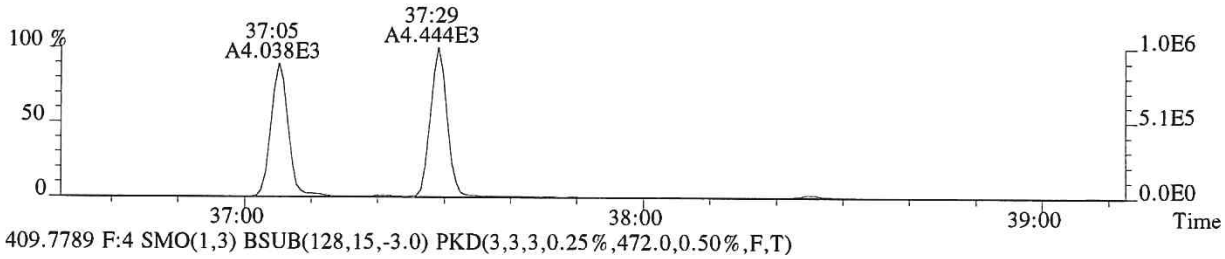


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

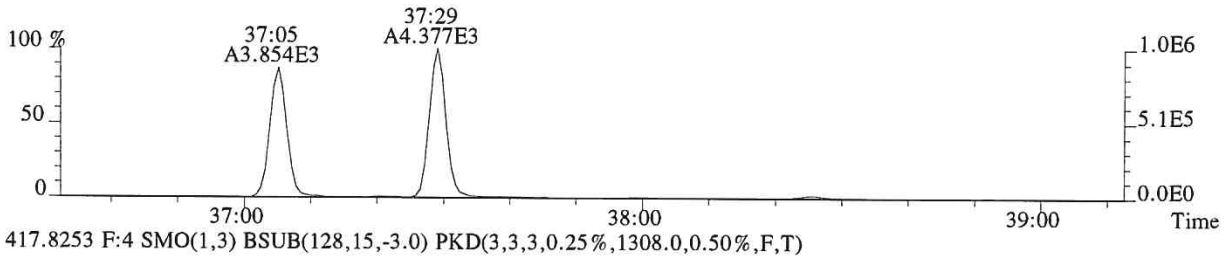


061119

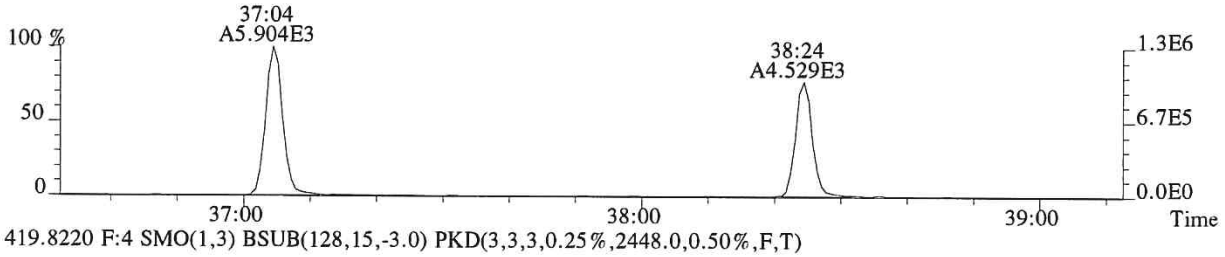
File:P616323 #1-241 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1464.0,0.50%,F,T)



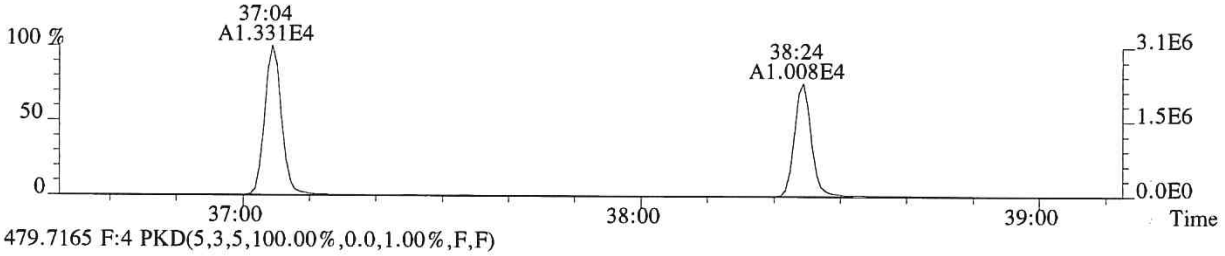
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,472.0,0.50%,F,T)



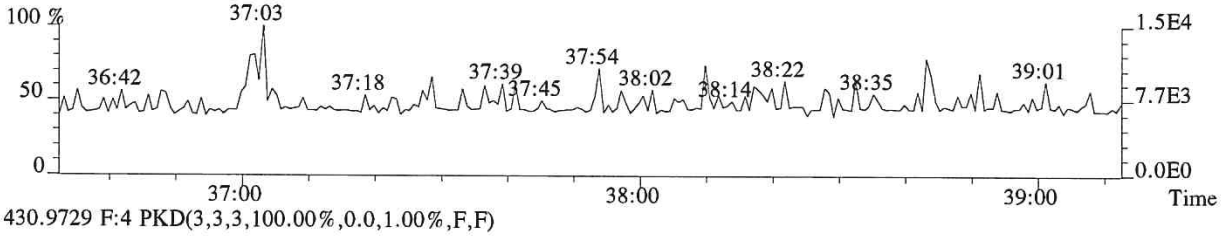
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1308.0,0.50%,F,T)



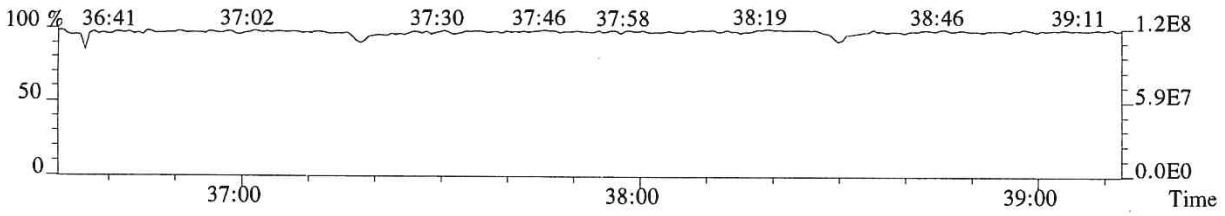
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2448.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

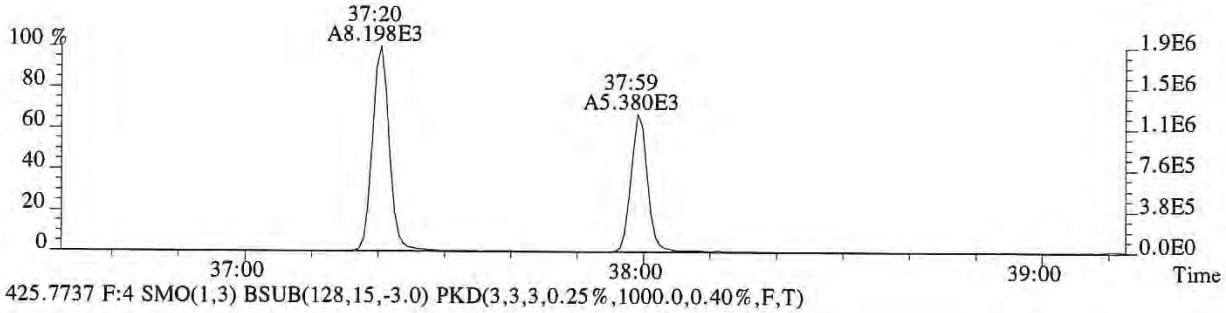


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

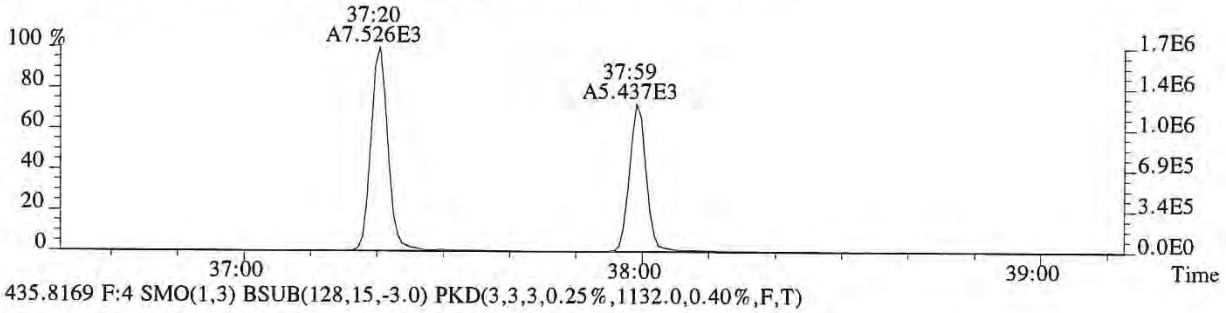


061120

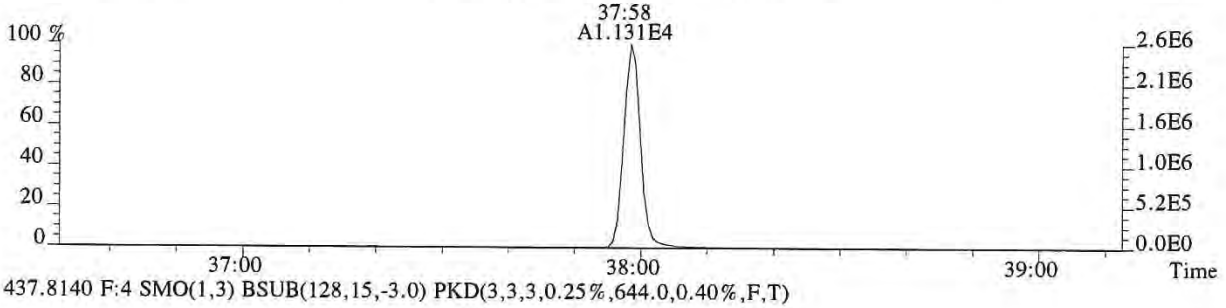
File:P616323 #1-241 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1752.0,0.40%,F,T)



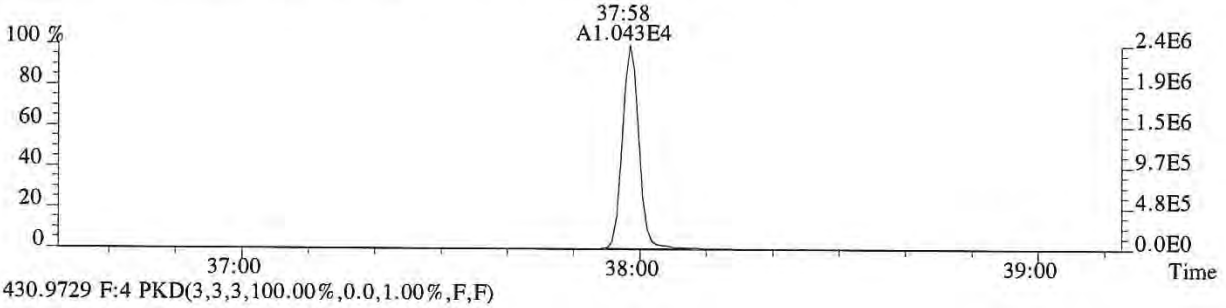
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1000.0,0.40%,F,T)



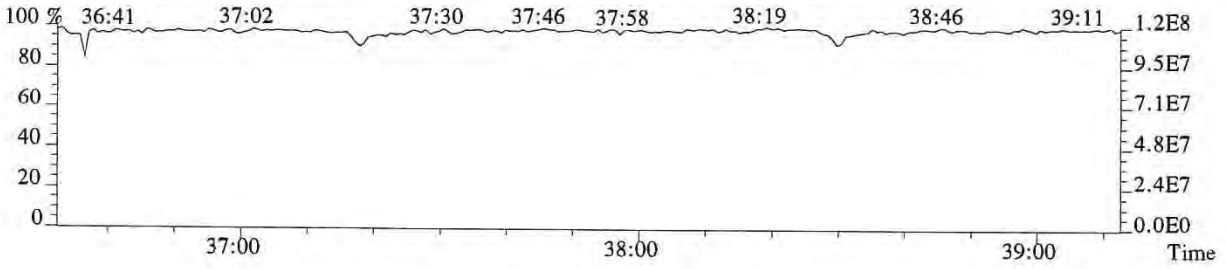
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1132.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,644.0,0.40%,F,T)

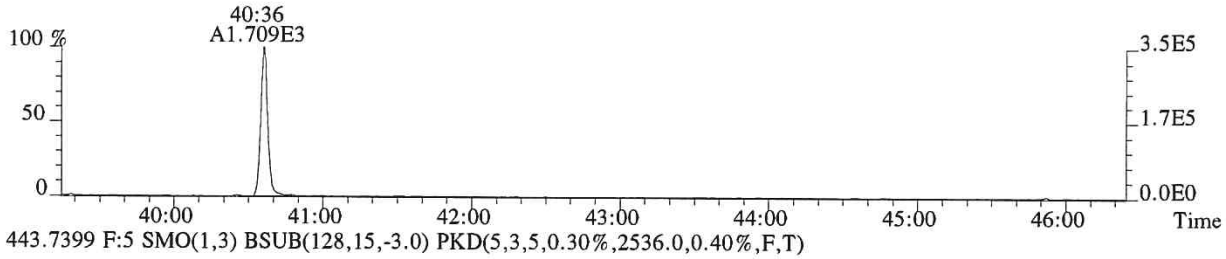


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

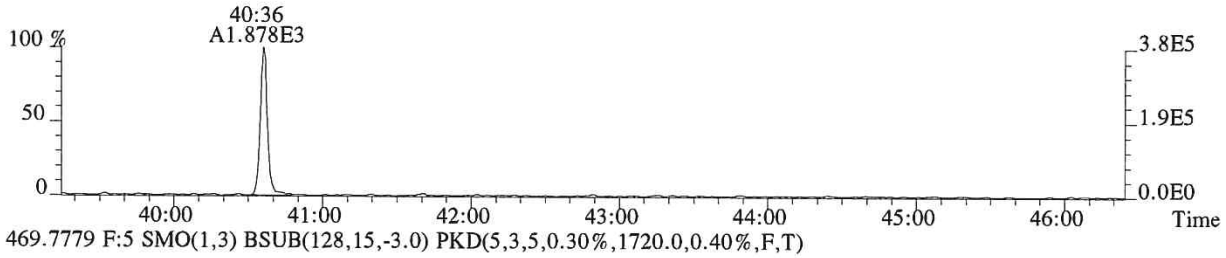


061121

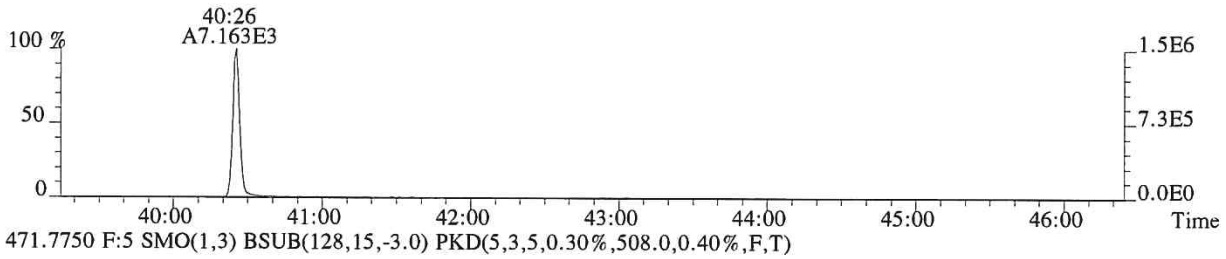
File:P616323 #1-645 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,352.0,0.40%,F,T)



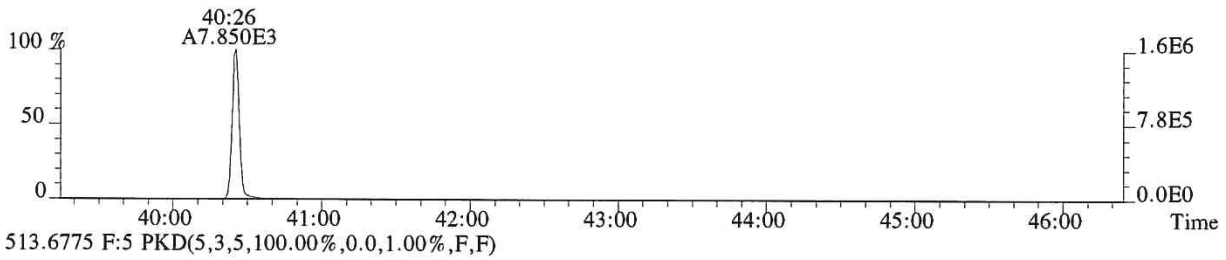
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2536.0,0.40%,F,T)



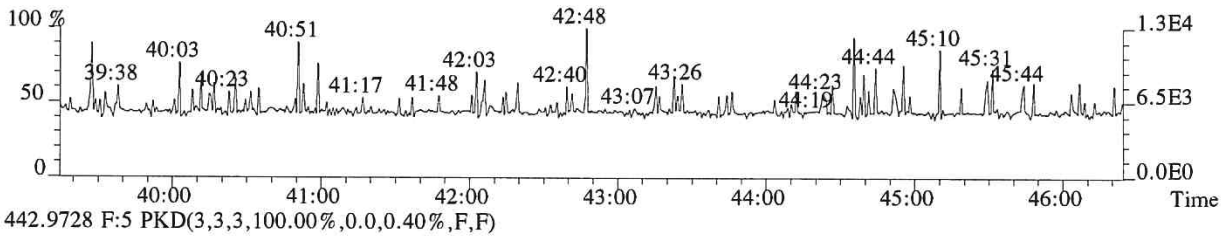
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1720.0,0.40%,F,T)



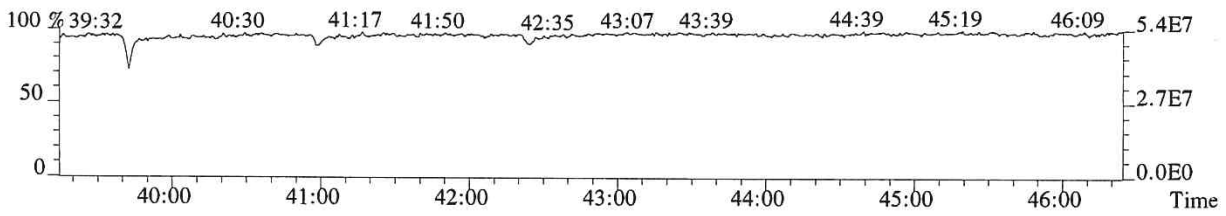
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

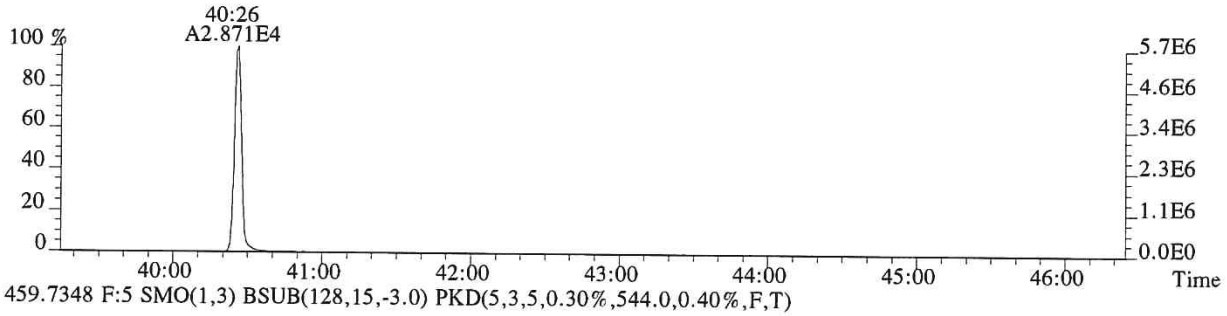


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

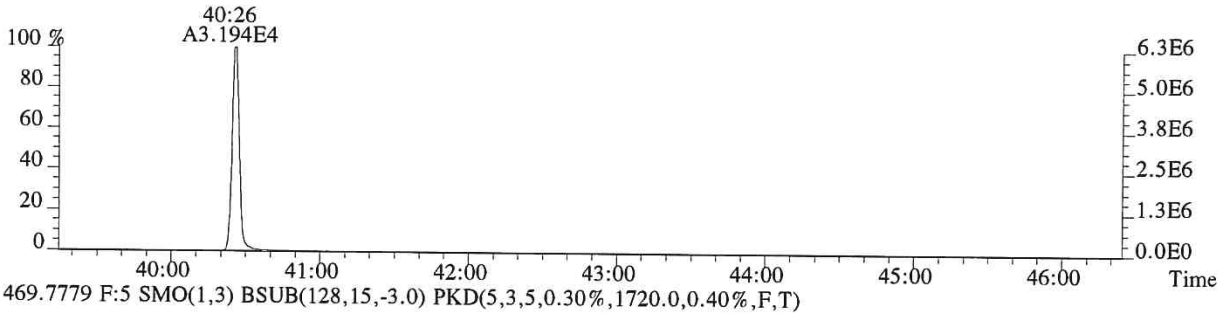


061122

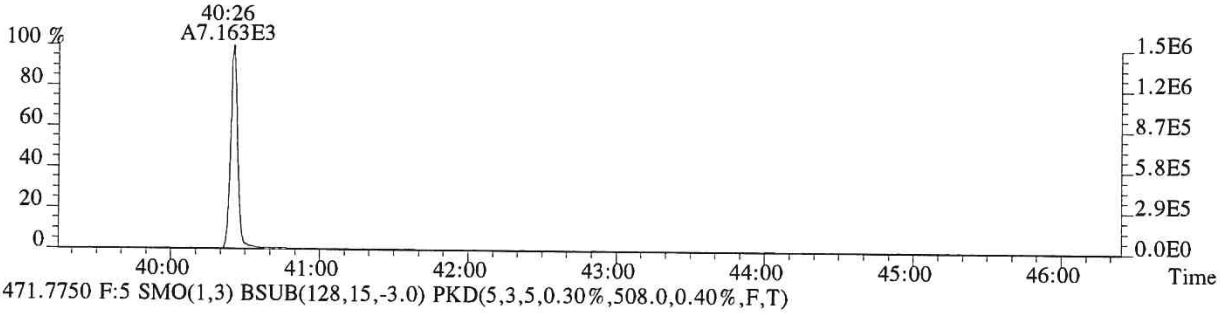
File:P616323 #1-645 Acq: 2-JAN-2019 17:52:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-004
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,900.0,0.40%,F,T)



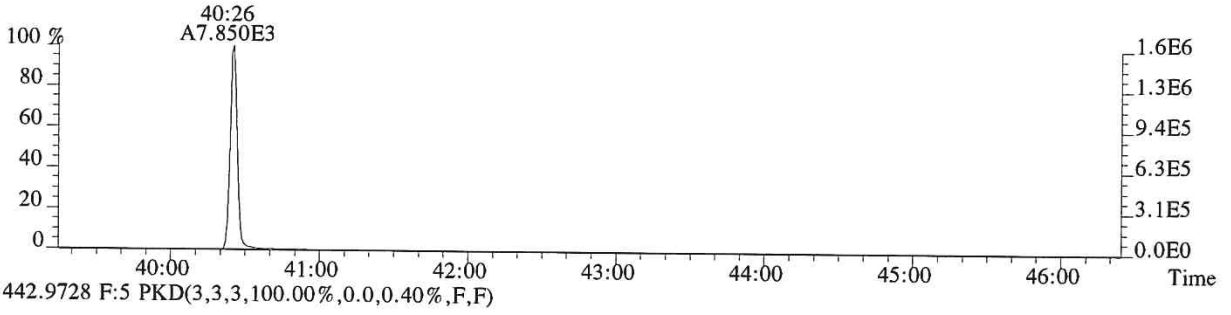
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,544.0,0.40%,F,T)



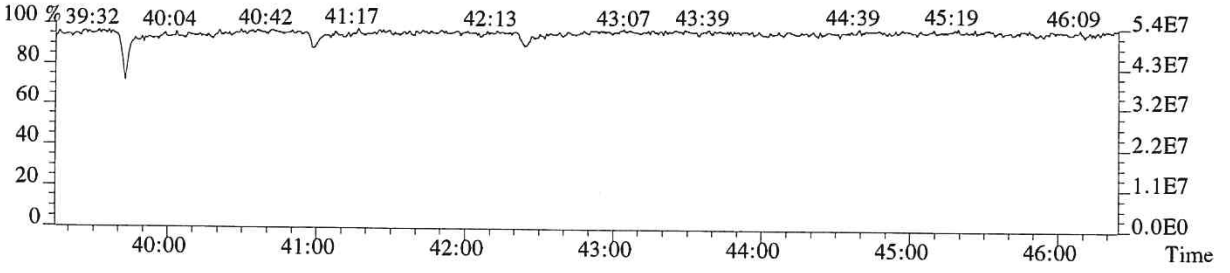
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1720.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



061123

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0138

Run #15 Filename P616324 Samp: 1 Inj: 1 Acquired: 2-JAN-19 18:41:39
Processed: 3-JAN-19 13:33:55 Sample ID: E1801137-005

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:27	2.030e+03	2.134e+03	0.95	no	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:30	2.060e+02	1.251e+02	1.65	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:32	2.909e+02	1.910e+02	1.52	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:23	3.024e+02	2.699e+02	1.12	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:29	3.493e+02	2.196e+02	1.59	no	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:02	2.997e+02	2.433e+02	1.23	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:49	5.589e+01	4.678e+01	1.19	yes	yes	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:05	1.743e+03	1.584e+03	1.10	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:24	1.270e+02	8.856e+01	1.43	no	no	1.463
10	Unk	OCDF	40:36	7.851e+02	8.889e+02	0.88	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:28	4.633e+02	7.359e+02	0.63	no	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:49	6.100e+01	5.817e+01	1.05	no	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:10	4.942e+01	5.687e+01	0.87	no	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:16	3.071e+02	2.686e+02	1.14	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:29	1.837e+02	1.318e+02	1.39	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	37:59	5.549e+03	5.102e+03	1.09	yes	no	1.112
17	Unk	OCDD	40:26	2.128e+04	2.387e+04	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:24	1.002e+04	1.248e+04	0.80	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:28	1.670e+04	1.067e+04	1.56	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:30	1.366e+04	8.611e+03	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:22	5.938e+03	1.153e+04	0.52	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:29	6.633e+03	1.269e+04	0.52	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:01	5.641e+03	1.047e+04	0.54	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:47	5.705e+03	1.090e+04	0.52	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:04	3.304e+03	7.107e+03	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	2.768e+03	5.973e+03	0.46	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:26	5.334e+03	6.645e+03	0.80	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:49	1.124e+04	7.427e+03	1.51	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:09	8.431e+03	6.112e+03	1.38	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:15	7.504e+03	6.147e+03	1.22	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:58	5.868e+03	5.440e+03	1.08	yes	no	0.857
32	IS	13C-OCDD	40:25	2.599e+03	3.174e+03	0.82	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:40	1.977e+04	2.510e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:29	2.565e+04	2.013e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:28	7.611e+03				no	1.086

$$\text{OCDD} = \frac{(2.128e+04 + 2.387e+04) \times 4000\ \text{pg} \times 1}{(2.599e+03 + 3.174e+03) \times 10.255\ \text{g} \times 66.0 / 100 \times 1.157} = 3944.8\ \text{ng/kg}$$

LMO 04/19

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0138

Run #15 Filename P616324 Samp: 1 Inj: 1 Acquired: 2-JAN-19 18:41:39
Processed: 3-JAN-19 13:33:55 LAB. ID: E1801137-005

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.59e+05	1.64e+03	1.6e+02	2.91e+05	5.18e+03	5.6e+01
2	1,2,3,7,8-PeCDF	3.50e+04	2.24e+03	1.6e+01	2.19e+04	3.16e+03	6.9e+00
3	2,3,4,7,8-PeCDF	4.61e+04	2.24e+03	2.1e+01	3.07e+04	3.16e+03	9.7e+00
4	1,2,3,4,7,8-HxCDF	6.54e+04	3.90e+03	1.7e+01	5.76e+04	1.90e+03	3.0e+01
5	1,2,3,6,7,8-HxCDF	7.59e+04	3.90e+03	1.9e+01	4.47e+04	1.90e+03	2.4e+01
6	2,3,4,6,7,8-HxCDF	6.33e+04	3.90e+03	1.6e+01	5.02e+04	1.90e+03	2.6e+01
7	1,2,3,7,8,9-HxCDF	1.11e+04	3.90e+03	2.8e+00	1.12e+04	1.90e+03	5.9e+00
8	1,2,3,4,6,7,8-HpCDF	4.02e+05	8.80e+02	4.6e+02	3.38e+05	8.16e+02	4.1e+02
9	1,2,3,4,7,8,9-HpCDF	2.93e+04	8.80e+02	3.3e+01	2.04e+04	8.16e+02	2.5e+01
10	OCDF	1.63e+05	6.96e+02	2.3e+02	1.72e+05	2.76e+03	6.2e+01
11	2,3,7,8-TCDD	7.76e+04	5.01e+03	1.5e+01	1.10e+05	1.52e+03	7.3e+01
12	1,2,3,7,8-PeCDD	1.24e+04	1.24e+03	1.0e+01	9.03e+03	3.32e+02	2.7e+01
13	1,2,3,4,7,8-HxCDD	1.35e+04	7.88e+02	1.7e+01	1.22e+04	1.21e+03	1.0e+01
14	1,2,3,6,7,8-HxCDD	6.62e+04	7.88e+02	8.4e+01	6.08e+04	1.21e+03	5.0e+01
15	1,2,3,7,8,9-HxCDD	3.72e+04	7.88e+02	4.7e+01	2.50e+04	1.21e+03	2.1e+01
16	1,2,3,4,6,7,8-HpCDD	1.27e+06	1.09e+03	1.2e+03	1.16e+06	1.56e+03	7.4e+02
17	OCDD	4.15e+06	1.00e+03	4.1e+03	4.67e+06	4.16e+02	1.1e+04
18	13C-2,3,7,8-TCDF	1.42e+06	1.09e+04	1.3e+02	1.79e+06	1.08e+04	1.7e+02
19	13C-1,2,3,7,8-PeCDF	2.91e+06	3.52e+02	8.3e+03	1.86e+06	7.60e+02	2.4e+03
20	13C-2,3,4,7,8-PeCDF	2.53e+06	3.52e+02	7.2e+03	1.62e+06	7.60e+02	2.1e+03
21	13C-1,2,3,4,7,8-HxCDF	1.22e+06	1.73e+03	7.0e+02	2.39e+06	1.19e+03	2.0e+03
22	13C-1,2,3,6,7,8-HxCDF	1.36e+06	1.73e+03	7.9e+02	2.70e+06	1.19e+03	2.3e+03
23	13C-2,3,4,6,7,8-HxCDF	1.16e+06	1.73e+03	6.7e+02	2.17e+06	1.19e+03	1.8e+03
24	13C-1,2,3,7,8,9-HxCDF	1.22e+06	1.73e+03	7.1e+02	2.28e+06	1.19e+03	1.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	7.27e+05	1.28e+03	5.7e+02	1.59e+06	1.86e+03	8.6e+02
26	13C-1,2,3,4,7,8,9-HpCDF	6.06e+05	1.28e+03	4.7e+02	1.29e+06	1.86e+03	7.0e+02
27	13C-2,3,7,8-TCDD	8.53e+05	1.40e+04	6.1e+01	1.07e+06	5.44e+03	2.0e+02
28	13C-1,2,3,7,8-PeCDD	2.10e+06	2.21e+03	9.5e+02	1.35e+06	2.55e+03	5.3e+02
29	13C-1,2,3,4,7,8-HxCDD	1.83e+06	2.68e+03	6.8e+02	1.36e+06	1.40e+03	9.7e+02
30	13C-1,2,3,6,7,8-HxCDD	1.56e+06	2.68e+03	5.8e+02	1.25e+06	1.40e+03	8.9e+02
31	13C-1,2,3,4,6,7,8-HpCDD	1.29e+06	6.08e+02	2.1e+03	1.22e+06	7.28e+02	1.7e+03
32	13C-OCDD	4.98e+05	9.96e+02	5.0e+02	6.16e+05	1.52e+03	4.1e+02
33	13C-1,2,3,4-TCDD	2.94e+06	1.40e+04	2.1e+02	3.67e+06	5.44e+03	6.7e+02
34	13C-1,2,3,7,8,9-HxCDD	5.44e+06	2.68e+03	2.0e+03	4.26e+06	1.40e+03	3.0e+03
35	37Cl-2,3,7,8-TCDD	1.15e+06	2.20e+03	5.3e+02			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0138

Entry: 36 Totals Name: Total Tetra-Furans

Run: 15 File: P616324 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 18:41:39 Processed: 3-JAN-19 13:33:55

Mass: 303.9020 305.8990 Tot Response: 1.32e+03 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:50	1.00e+02	1.25e+02	0.80	yes	2.25e+02		n	n
2	22:32	1.54e+02	2.21e+02	0.70	yes	3.76e+02		n	n
3	23:11	9.77e+01	1.34e+02	0.73	yes	2.32e+02		n	n
4	25:52	2.04e+02	2.84e+02	0.72	yes	4.88e+02		n	n

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Peak List Summary

CLIENT ID.
SL0138

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 15 File: P616324 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 18:41:39 Processed: 3-JAN-19 13:33:55

Mass: 319.8970 321.8940 Tot Response: 3.88e+02 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:33	9.38e+01	1.33e+02	0.71	yes	2.26e+02		n	n
2	22:52	6.72e+01	9.40e+01	0.71	yes	1.61e+02		n	n

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Peak List Summary

CLIENT ID.
SL0138

Entry: 38 Totals Name: Total Penta-Furans1

Run: 15 File: P616324 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 18:41:39 Processed: 3-JAN-19 13:33:55

Mass: 339.8600 341.8570 Tot Response: 9.52e+02 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:41	5.90e+02	3.62e+02 1.63	yes	9.52e+02		n	n

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Entry: 39 Totals Name: Total Penta-Furans2

Run: 15 File: P616324 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 18:41:39 Processed: 3-JAN-19 13:33:55

Mass: 339.8600 341.8570 Tot Response: 2.47e+03 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:16	1.91e+02	1.41e+02	1.36	yes	3.32e+02		n	y
2	29:26	6.49e+02	3.72e+02	1.75	yes	1.02e+03		n	y
3	30:30	2.06e+02	1.25e+02	1.65	yes	3.31e+02	1,2,3,7,8-PeCDF	n	n
4	31:24	1.94e+02	1.11e+02	1.74	yes	3.05e+02		n	n
5	31:32	2.91e+02	1.91e+02	1.52	yes	4.82e+02	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.
SL0138

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 15 File: P616324 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 18:41:39 Processed: 3-JAN-19 13:33:55

Mass: 355.8550 357.8520 Tot Response: 5.70e+02 RRF: 0.9288

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:29	3.46e+02	2.24e+02 1.54	yes	5.70e+02		n	n

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Peak List Summary

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SL0138

Entry: 41 Totals Name: Total Hexa-Furans

Run: 15 File: P616324 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 18:41:39 Processed: 3-JAN-19 13:33:55

Mass: 373.8210 375.8180 Tot Response: 5.54e+03 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:21	9.21e+02	7.32e+02	1.26	yes	1.65e+03		n	n
2	33:55	1.47e+03	1.20e+03	1.22	yes	2.67e+03		n	n
3	34:23	3.02e+02	2.70e+02	1.12	yes	5.72e+02	1,2,3,4,7,8-HxCDF	n	n
4	35:02	3.00e+02	2.43e+02	1.23	yes	5.43e+02	2,3,4,6,7,8-HxCDF	n	n
5	35:49	5.59e+01	4.68e+01	1.19	yes	1.03e+02	1,2,3,7,8,9-HxCDF	y	n

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Peak List Summary

CLIENT ID.
SL0138

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 15 File: P616324 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 18:41:39 Processed: 3-JAN-19 13:33:55

Mass: 389.8160 391.8130 Tot Response: 5.45e+03 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:45	1.34e+03	1.15e+03	1.16	yes	2.49e+03		n	n
2	34:33	1.15e+03	9.22e+02	1.25	yes	2.07e+03		n	n
3	35:16	3.07e+02	2.69e+02	1.14	yes	5.76e+02	1,2,3,6,7,8-HxCDD	n	n
4	35:29	1.84e+02	1.32e+02	1.39	yes	3.16e+02	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0138

Entry: 43 Totals Name: Total Hepta-Furans

Run: 15 File: P616324 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 18:41:39 Processed: 3-JAN-19 13:33:55

Mass: 407.7820 409.7790 Tot Response: 9.32e+03 RRF: 1.495

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:05	1.74e+03	1.58e+03	1.10	yes	3.33e+03	1,2,3,4,6,7,8-HpCDF	n	n
2	37:20	6.82e+01	6.60e+01	1.03	yes	1.34e+02		n	n
3	37:29	3.00e+03	2.86e+03	1.05	yes	5.86e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0138

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 15 File: P616324 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 18:41:39 Processed: 3-JAN-19 13:33:55

Mass: 423.7770 425.7740 Tot Response: 2.45e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:20	6.99e+03	6.85e+03	1.02	yes	1.38e+04		n	n
2	37:59	5.55e+03	5.10e+03	1.09	yes	1.07e+04	1,2,3,4,6,7,8-HpCDD	n	n

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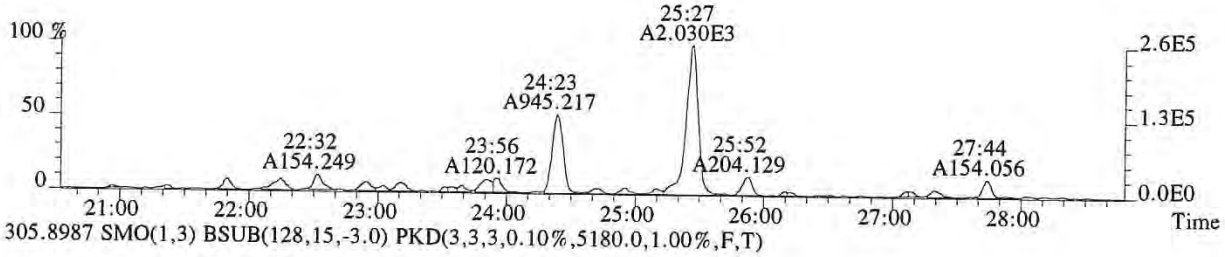
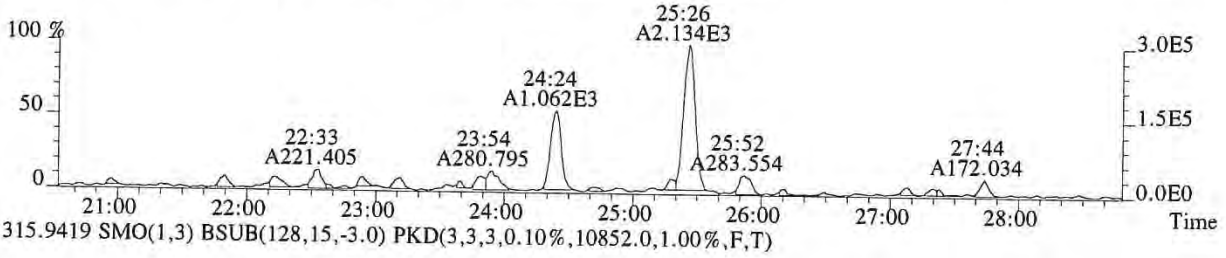
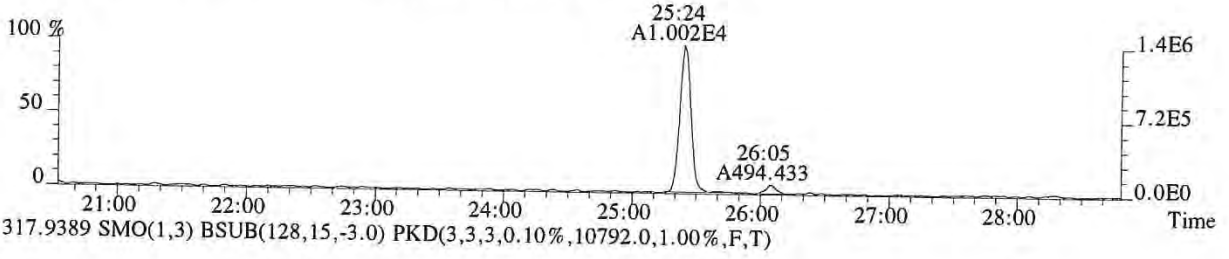
File:P616324 #1-587 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1644.0,1.00%,F,T)



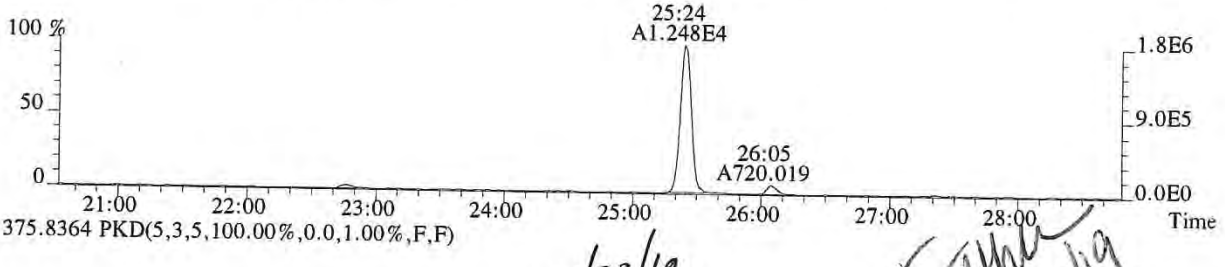
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5180.0,1.00%,F,T)



315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10852.0,1.00%,F,T)

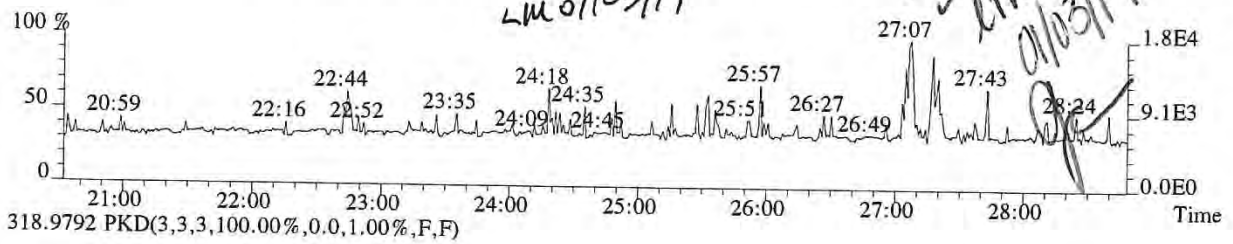


317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10792.0,1.00%,F,T)

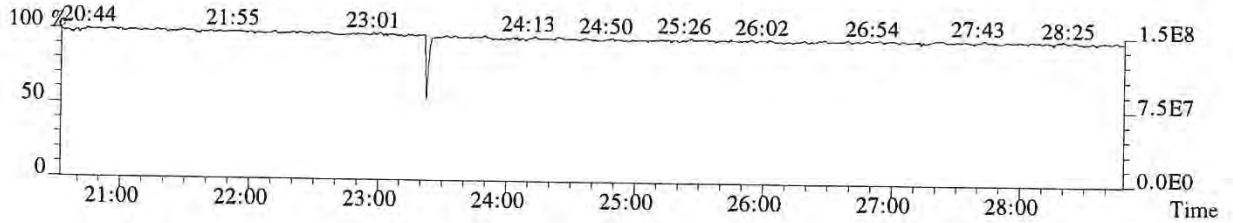


375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

LM 01/03/19

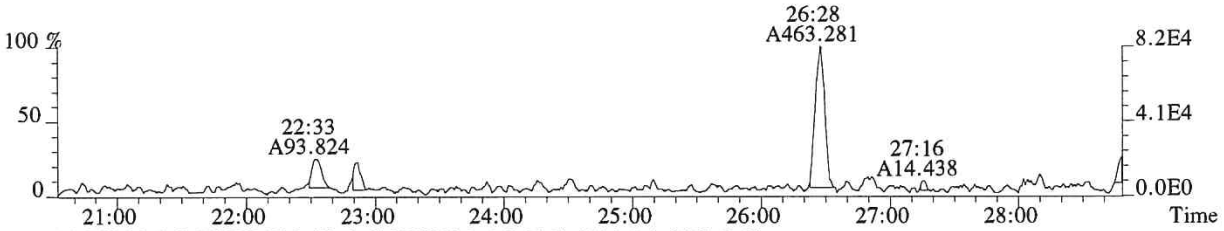


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

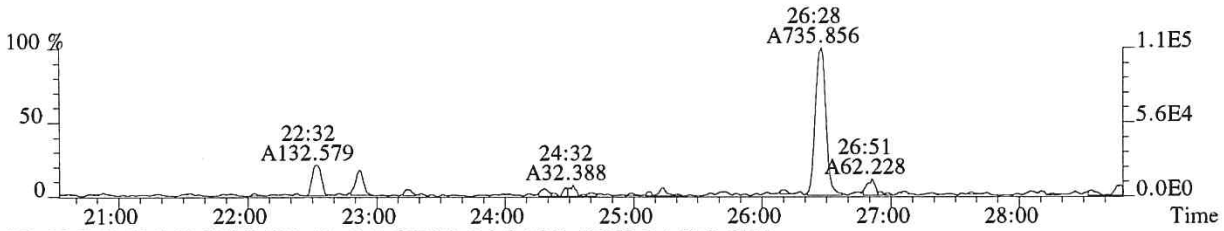


061135

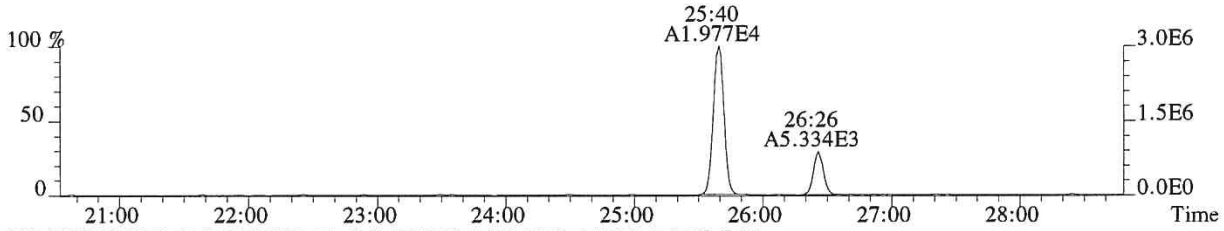
File:P616324 #1-587 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5008.0,1.00%,F,T)



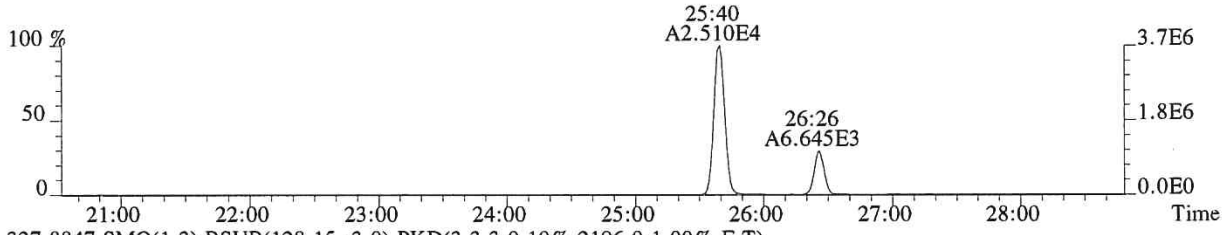
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1516.0,1.00%,F,T)



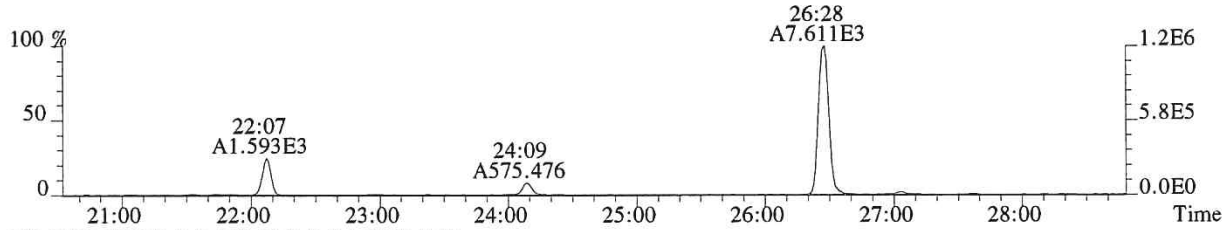
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13960.0,1.00%,F,T)



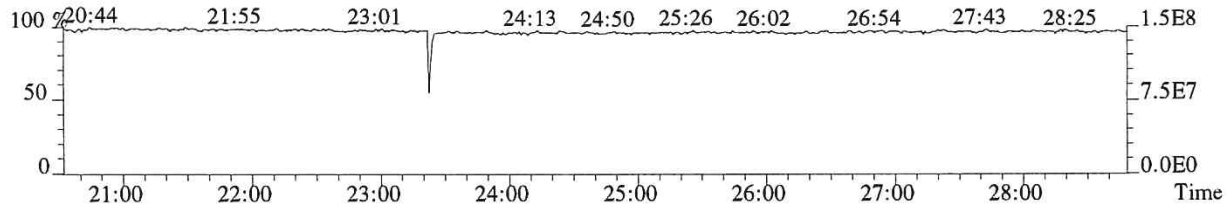
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5436.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2196.0,1.00%,F,T)

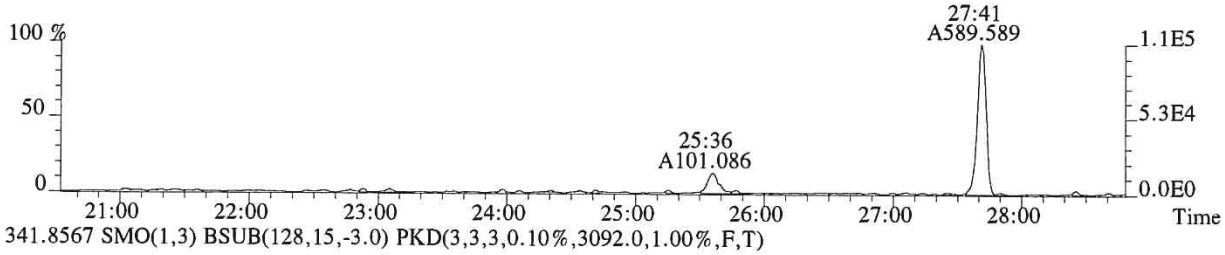


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

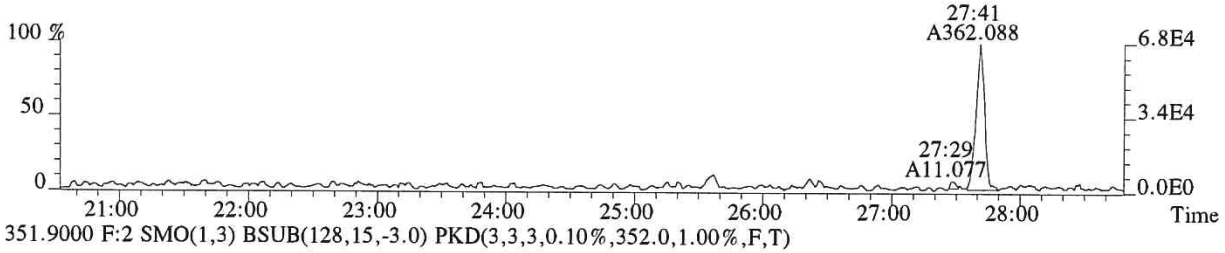


061136

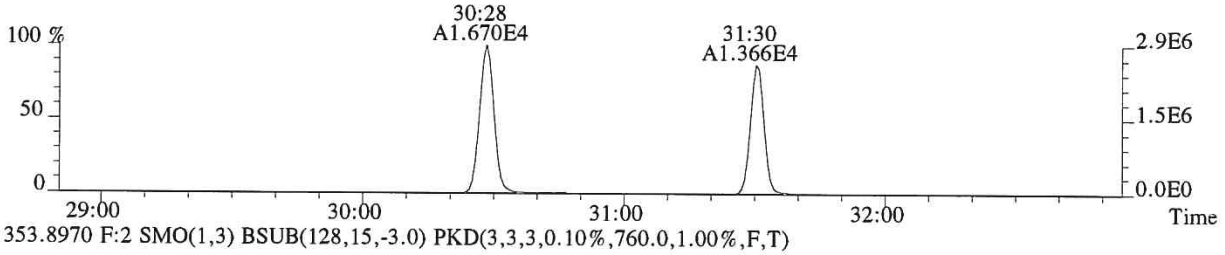
File:P616324 #1-587 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,944.0,1.00%,F,T)



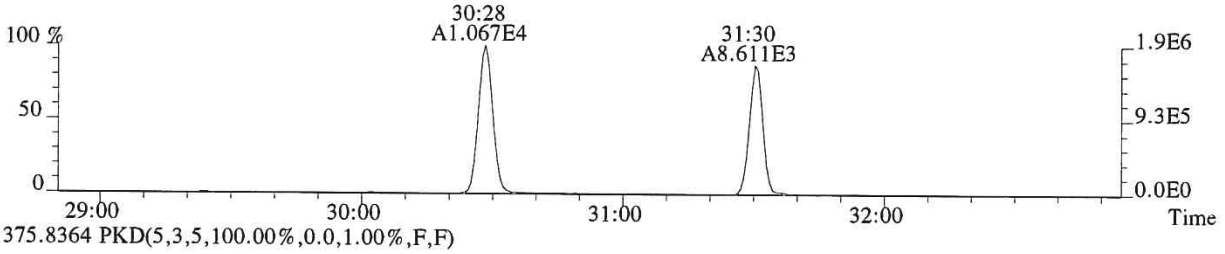
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3092.0,1.00%,F,T)



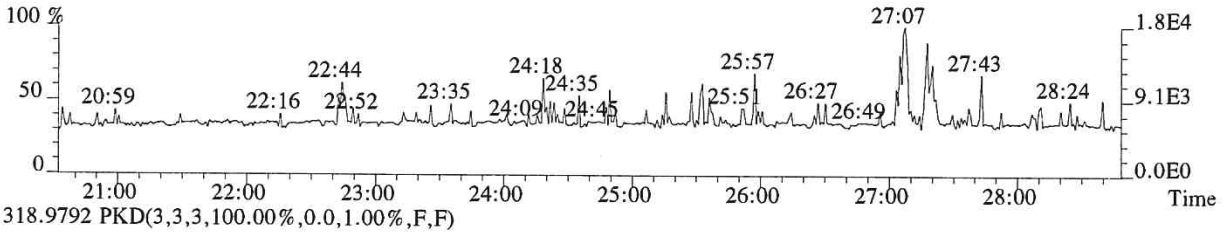
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,352.0,1.00%,F,T)



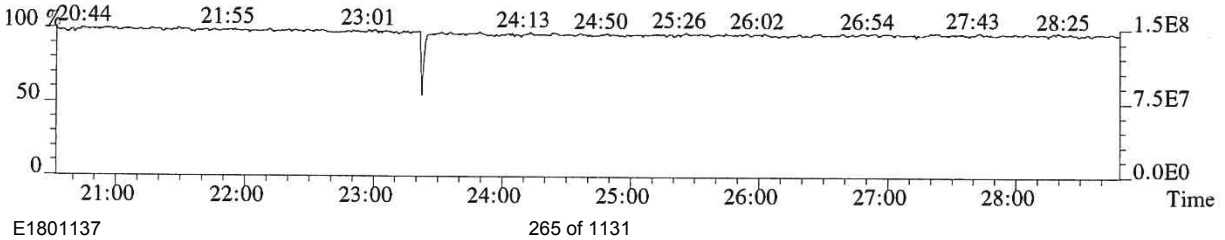
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,760.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

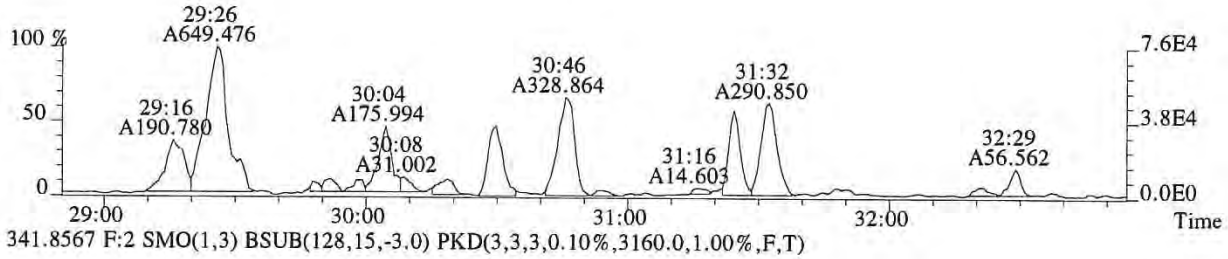


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

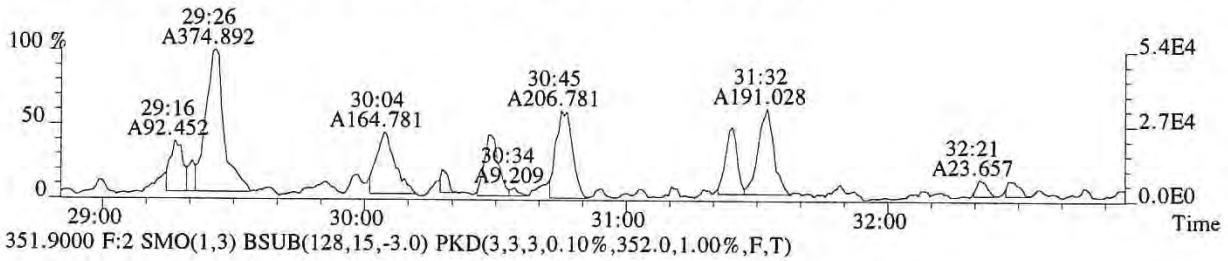


061137

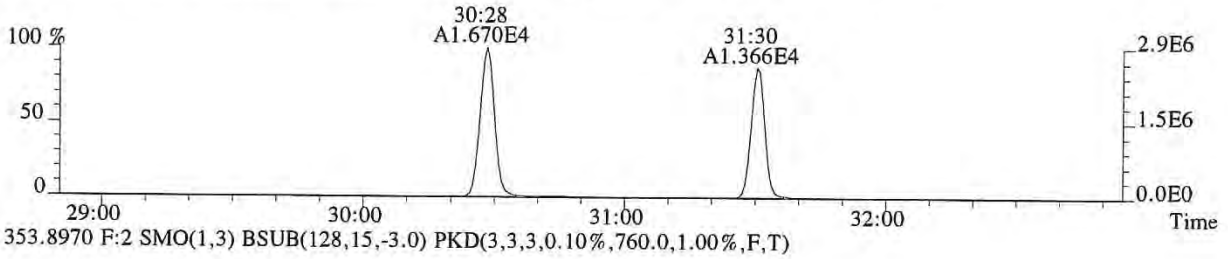
File:P616324 #1-367 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2244.0,1.00%,F,T)



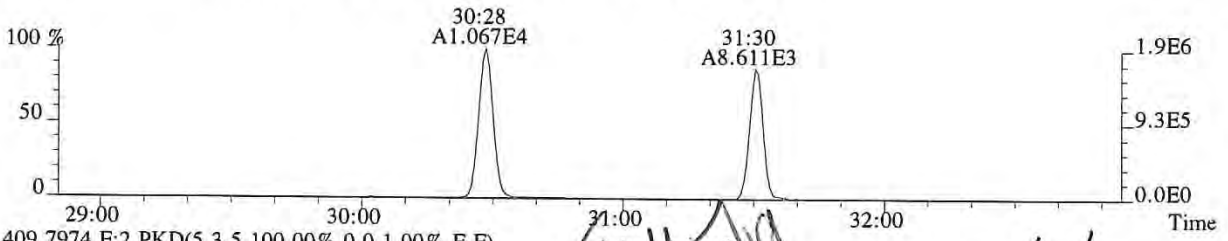
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3160.0,1.00%,F,T)



351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,352.0,1.00%,F,T)

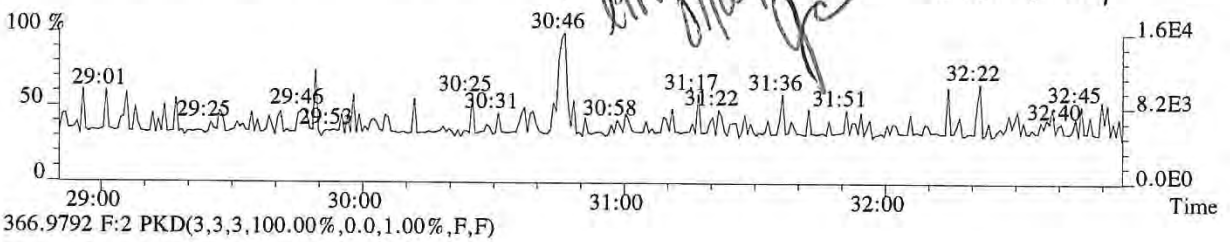


353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,760.0,1.00%,F,T)

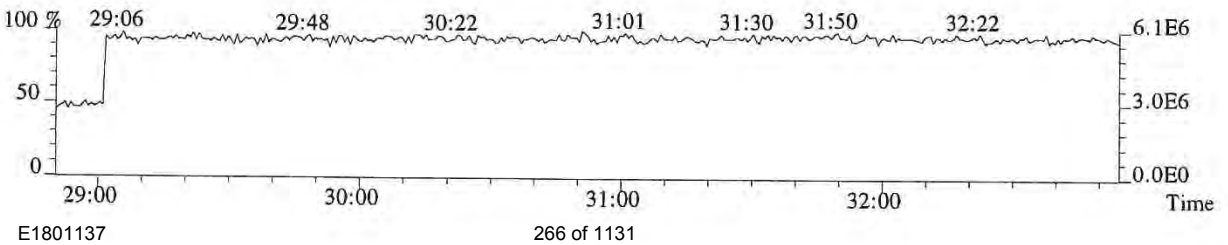


409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

KMW 01/03/19 QC LM 01/03/19

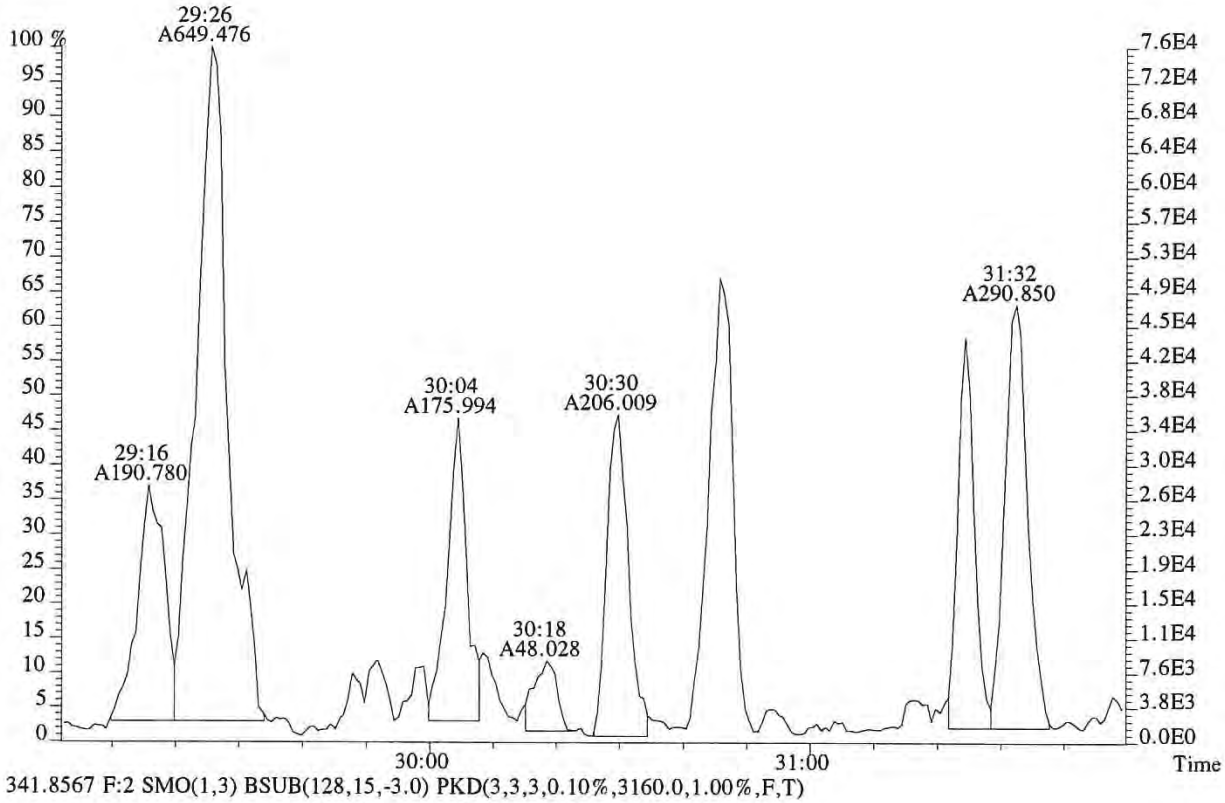


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

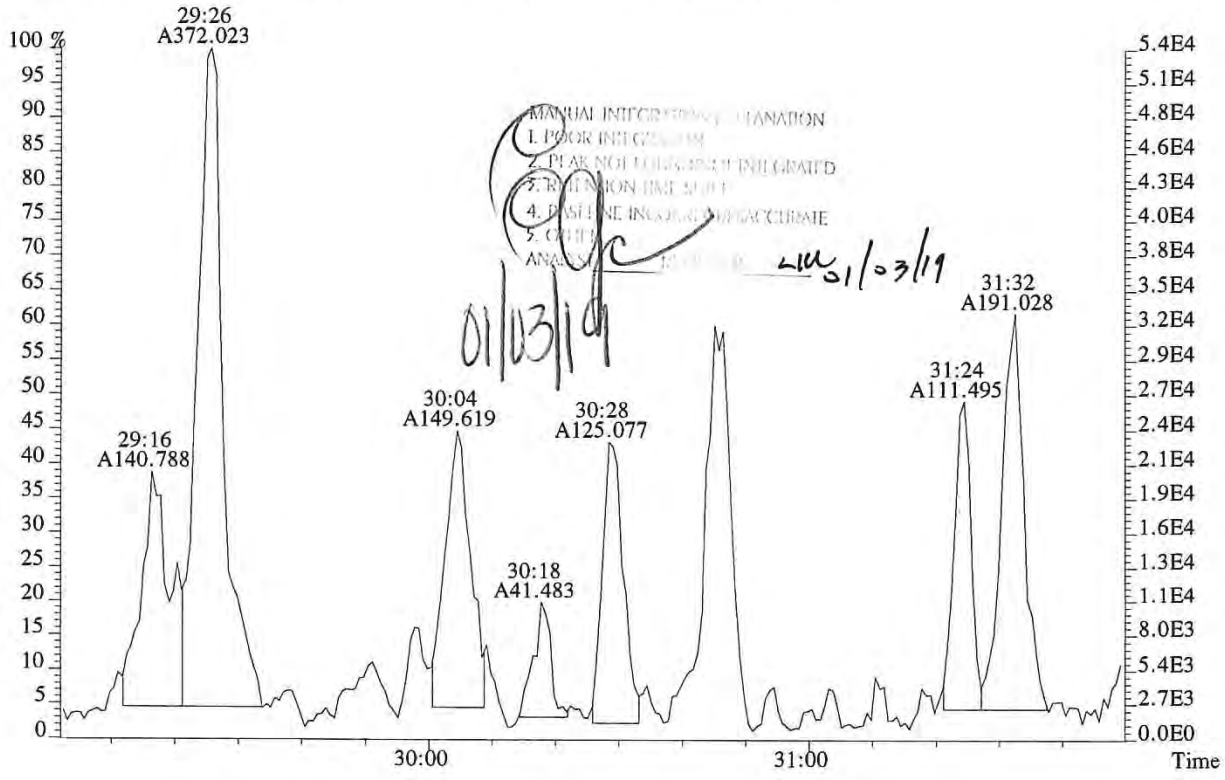


061138

File:P616324 #1-367 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2244.0,1.00%,F,T)

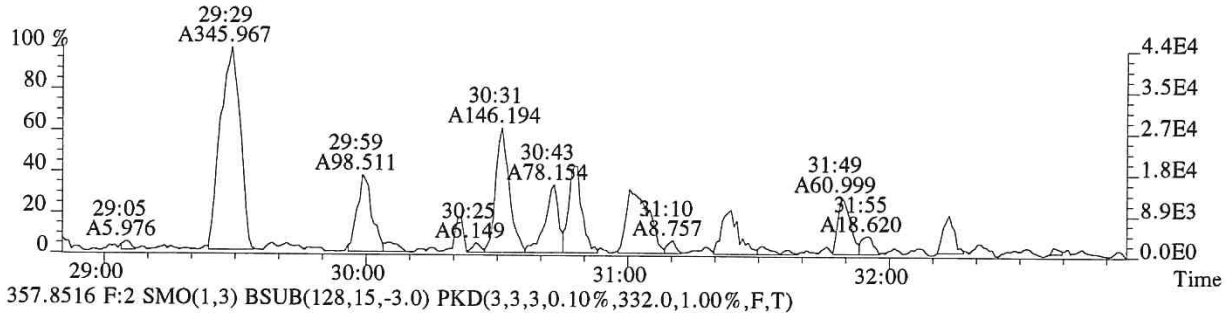


341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3160.0,1.00%,F,T)

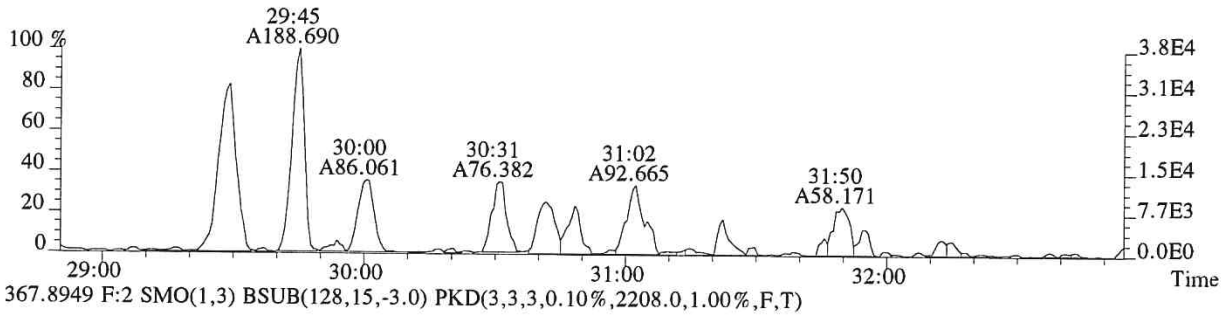


061139

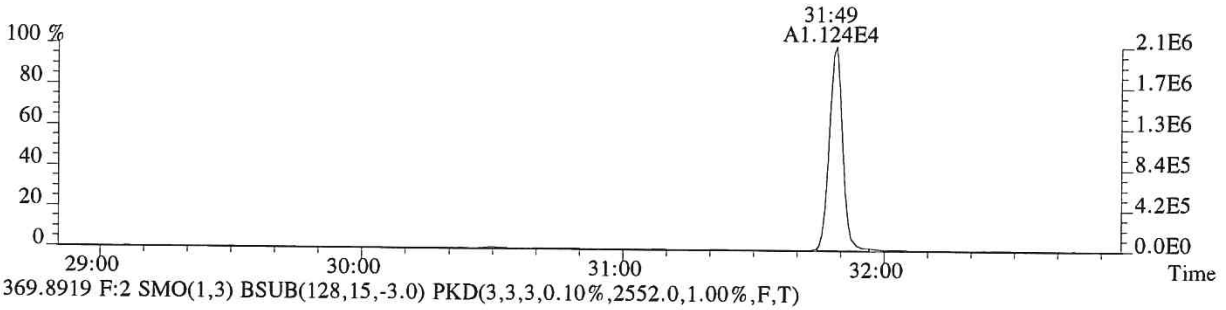
File:P616324 #1-367 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1236.0,1.00%,F,T)



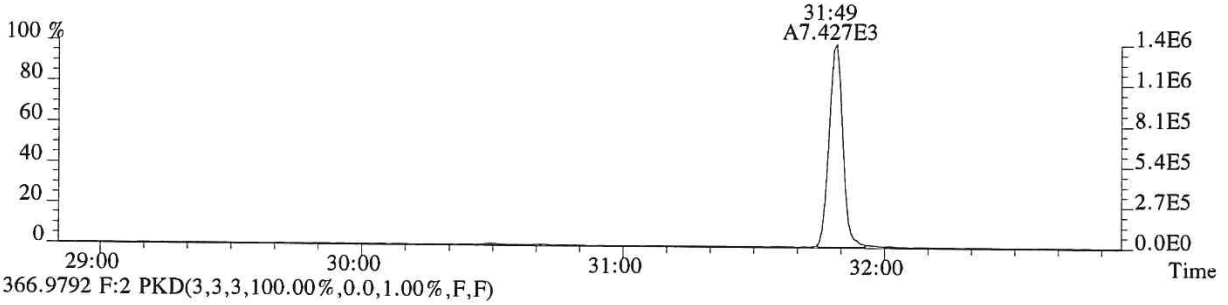
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,332.0,1.00%,F,T)



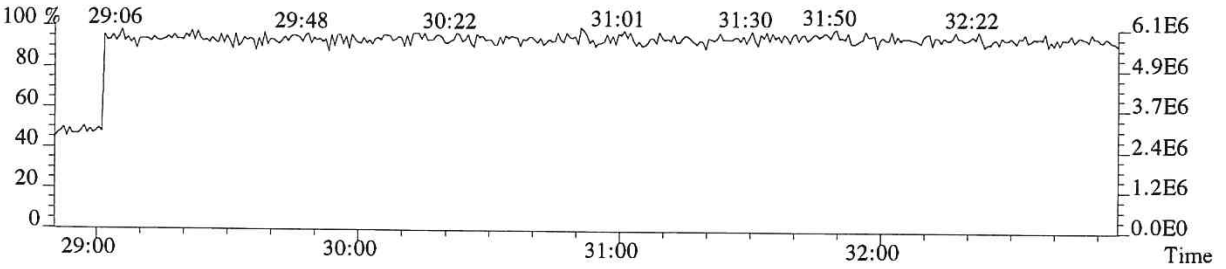
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2208.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2552.0,1.00%,F,T)

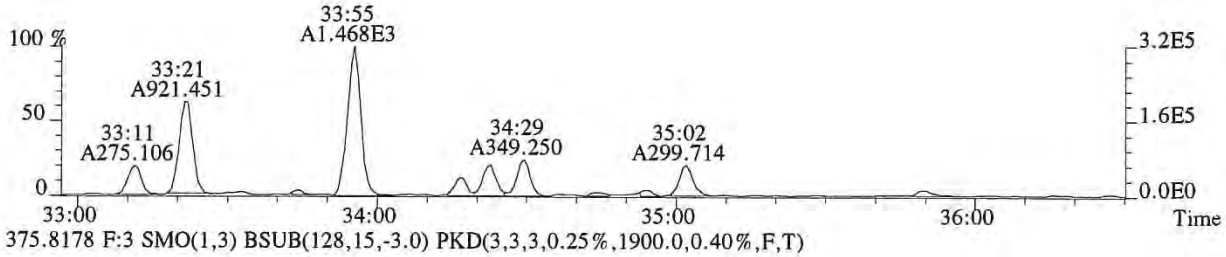


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

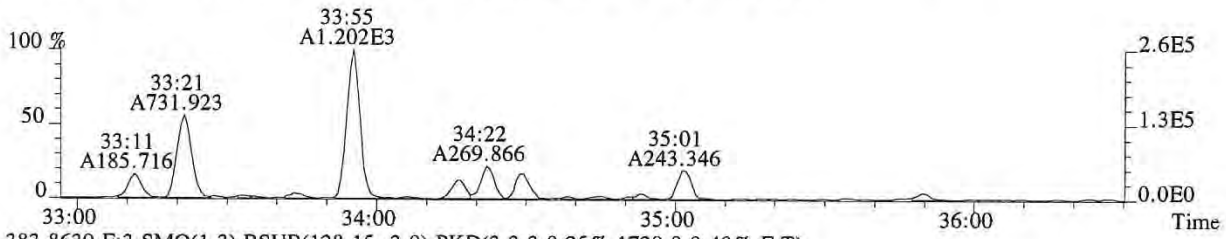


061140

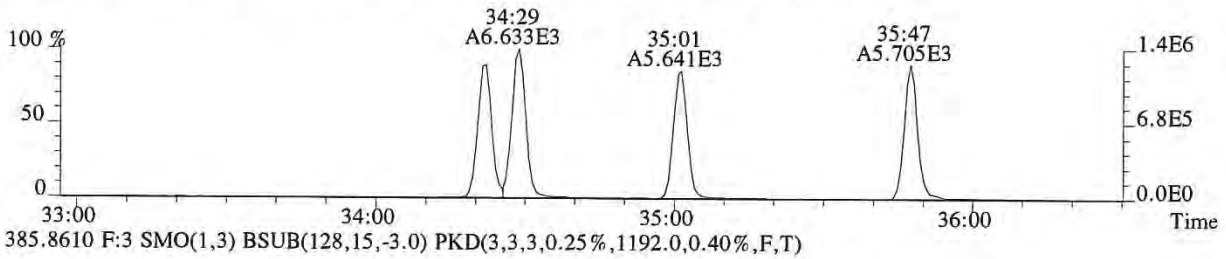
File:P616324 #1-321 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3904.0,0.40%,F,T)



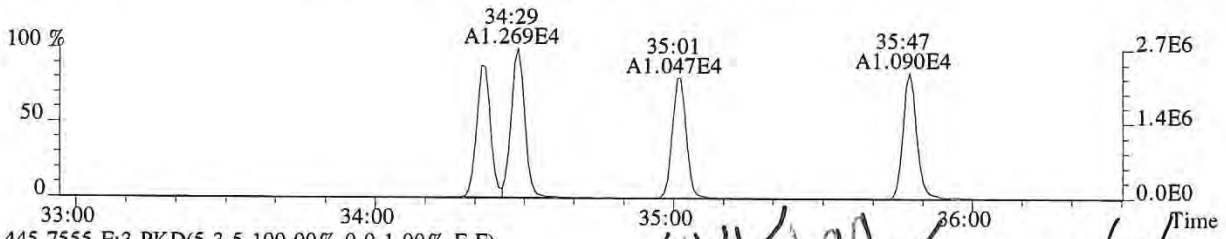
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1900.0,0.40%,F,T)



383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1728.0,0.40%,F,T)

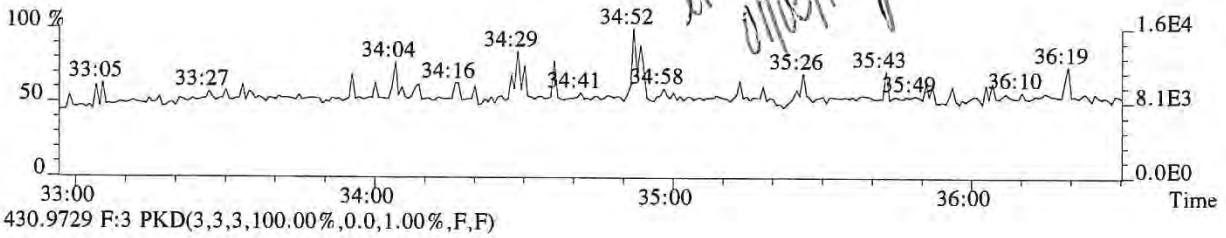


385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1192.0,0.40%,F,T)

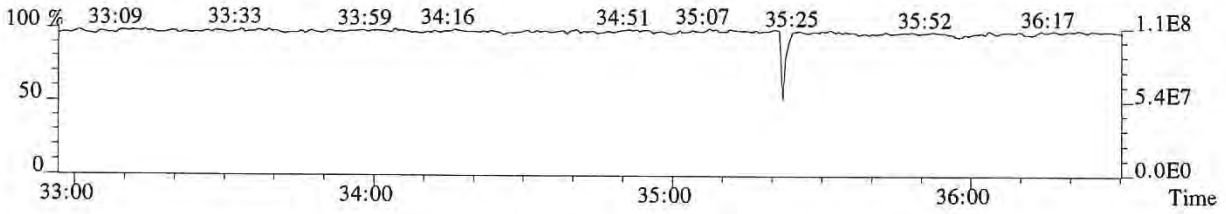


445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

✓ [signature] 01/03/19 [signature] LIU 01/03/19

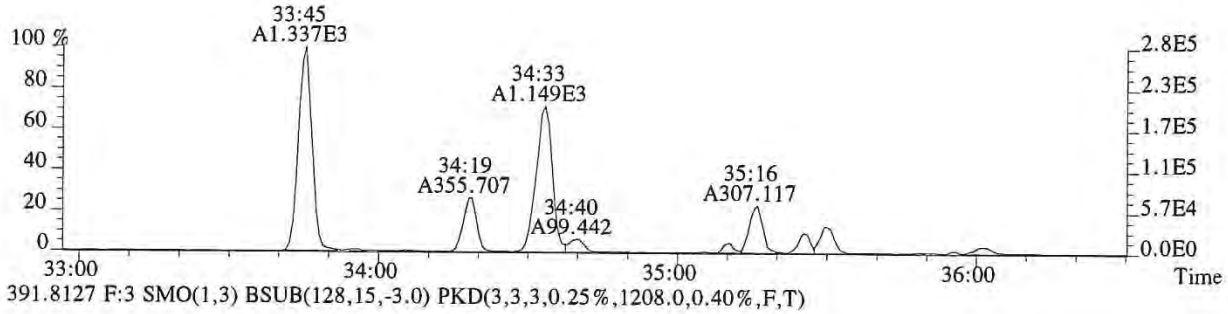


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

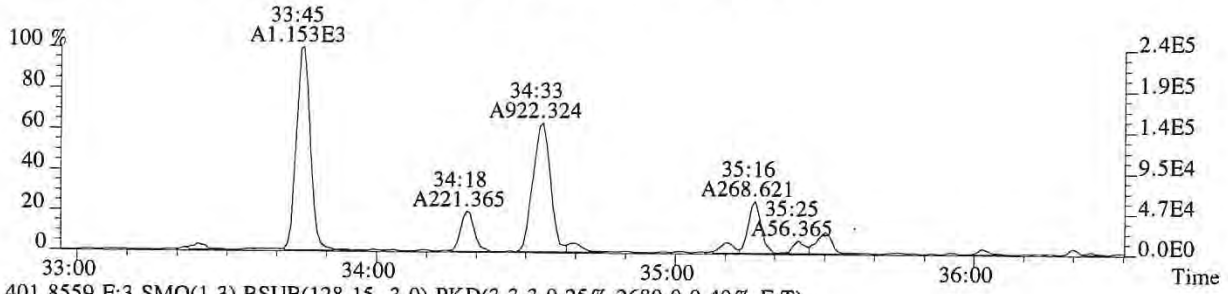


061141

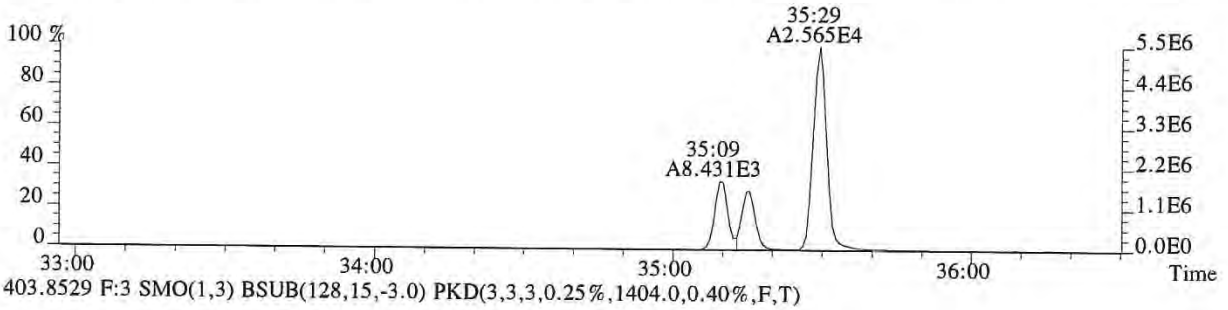
File:P616324 #1-321 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,788.0,0.40%,F,T)



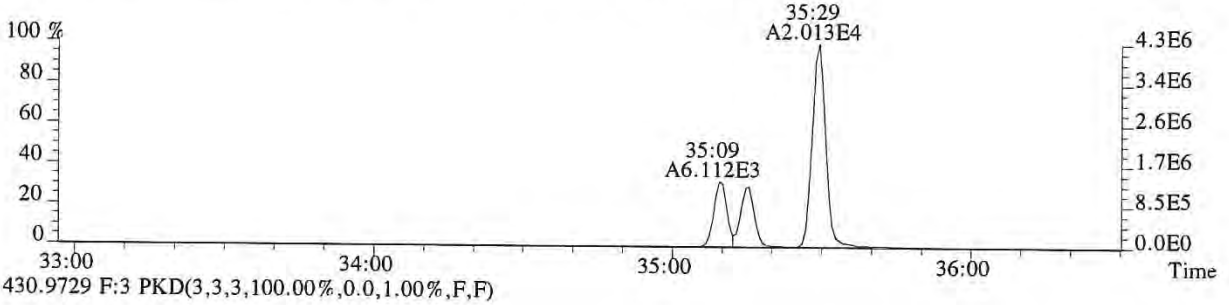
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1208.0,0.40%,F,T)



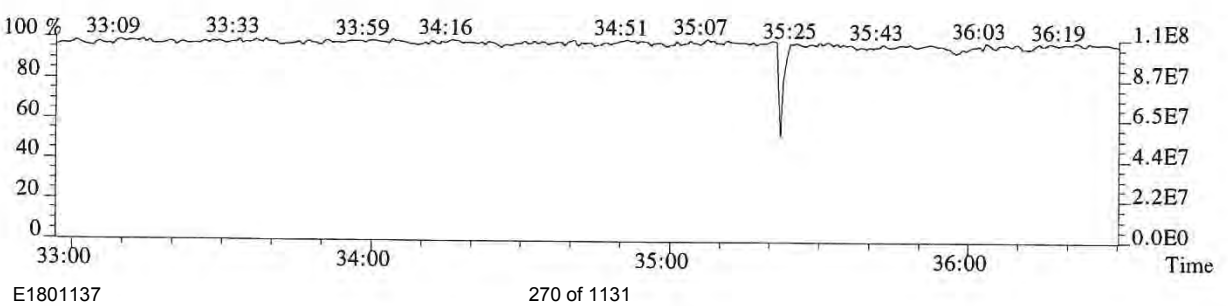
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2680.0,0.40%,F,T)



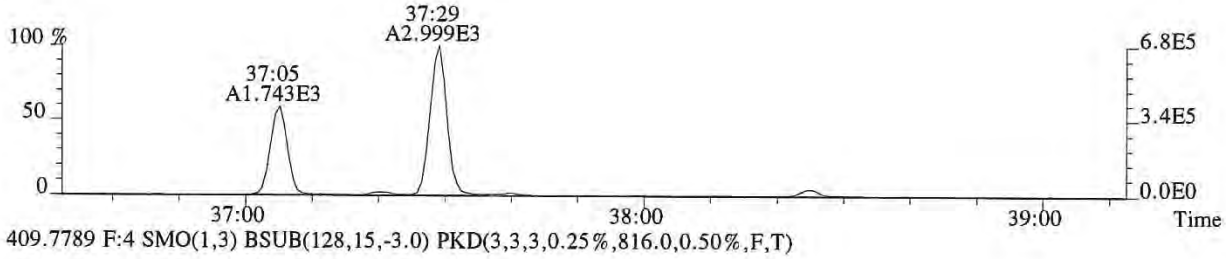
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1404.0,0.40%,F,T)



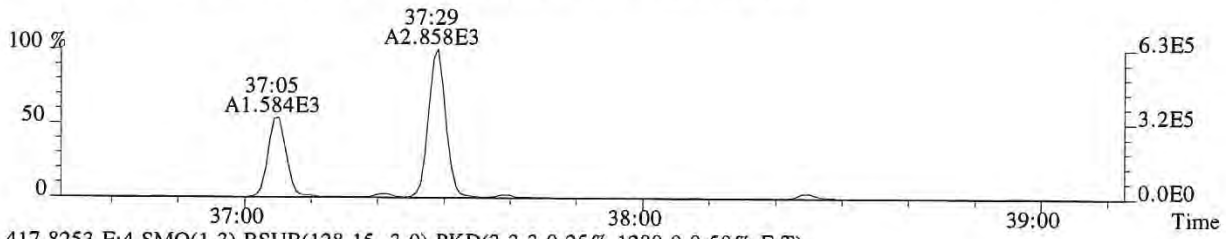
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



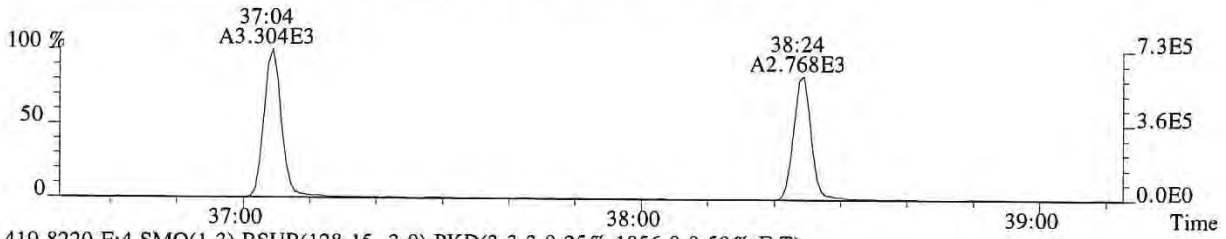
File:P616324 #1-241 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,880.0,0.50%,F,T)



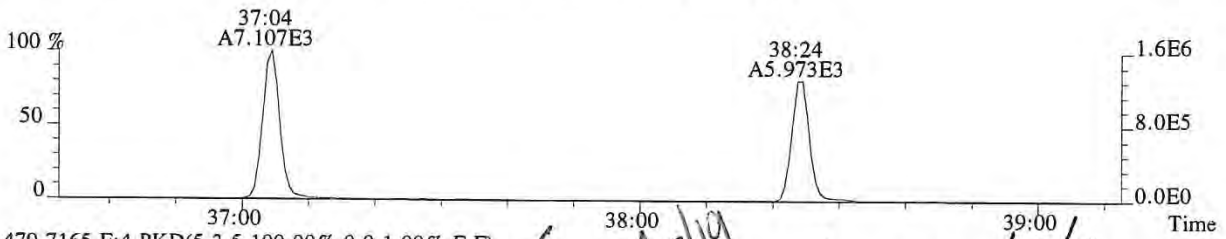
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,816.0,0.50%,F,T)



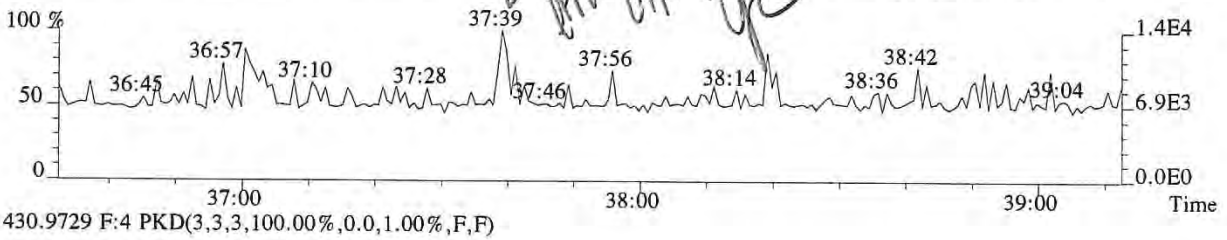
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1280.0,0.50%,F,T)



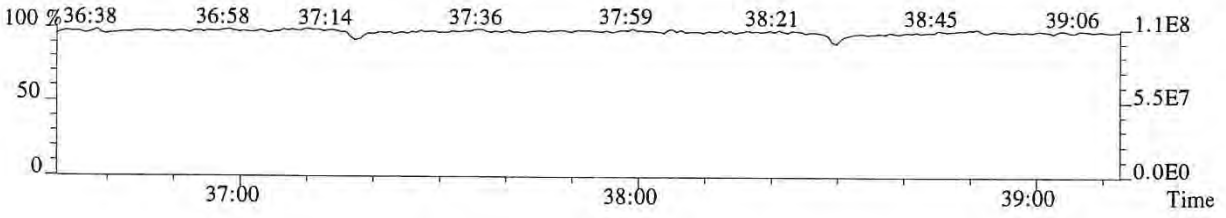
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1856.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

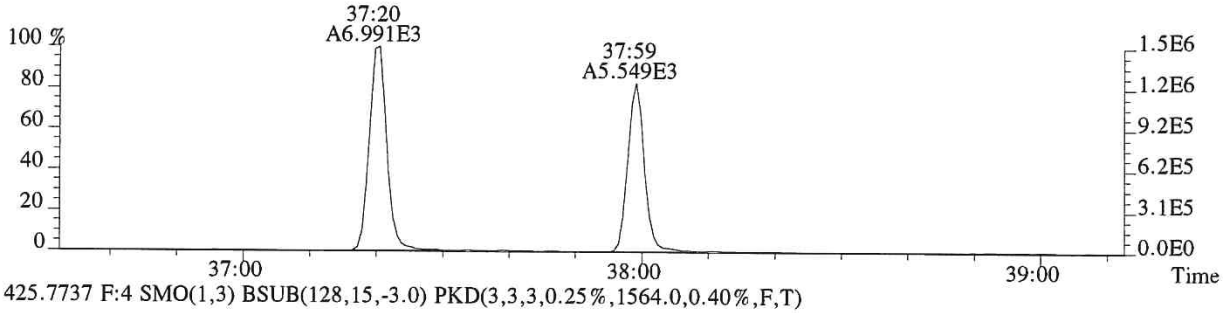


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

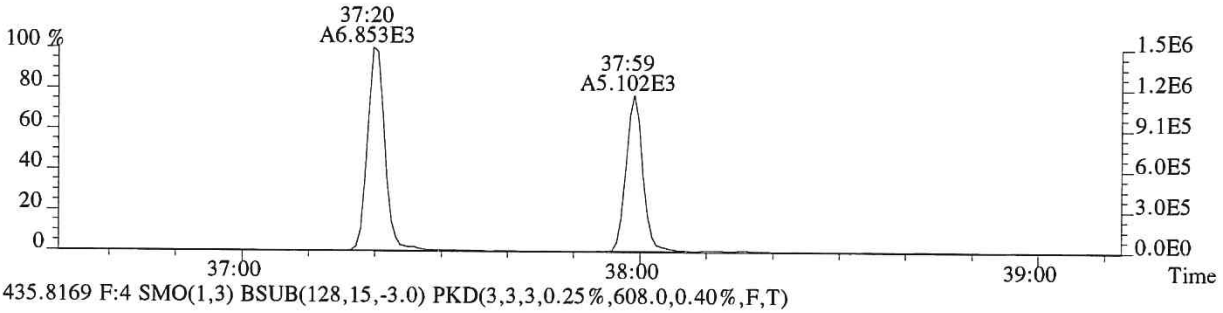


061143

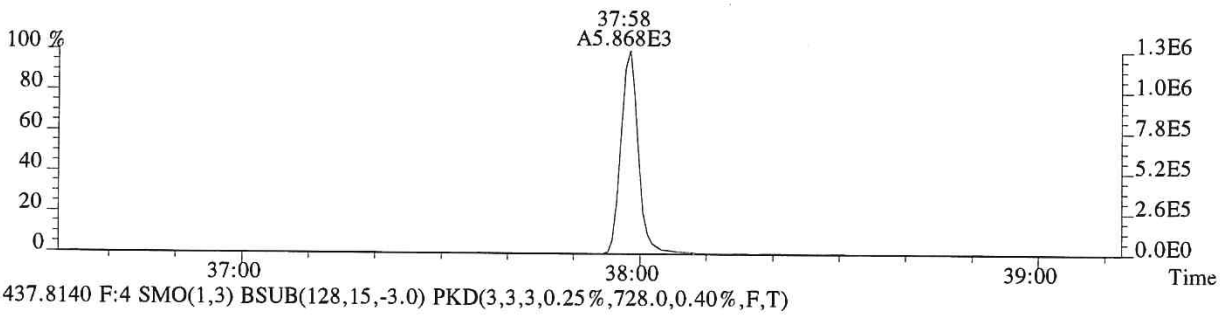
File:P616324 #1-241 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1092.0,0.40%,F,T)



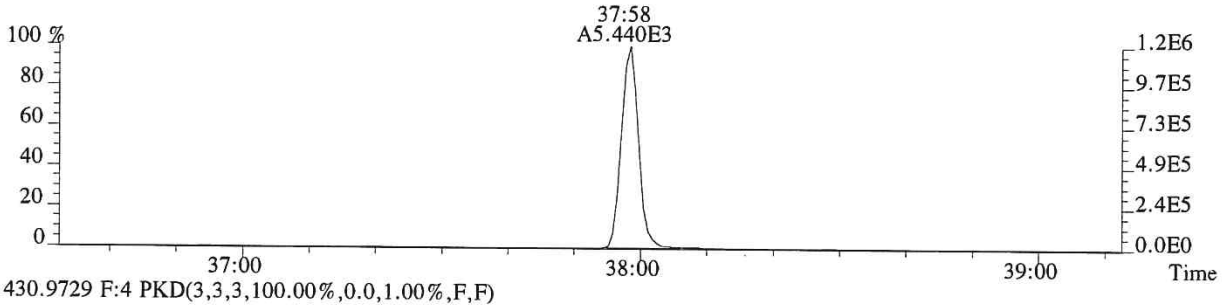
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1564.0,0.40%,F,T)



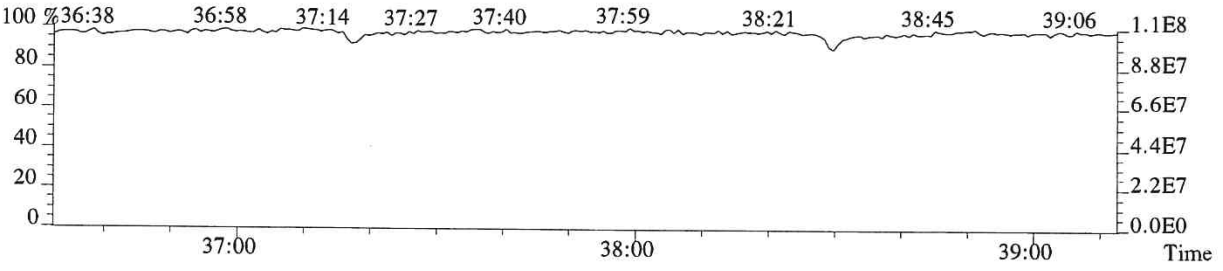
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,608.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,728.0,0.40%,F,T)

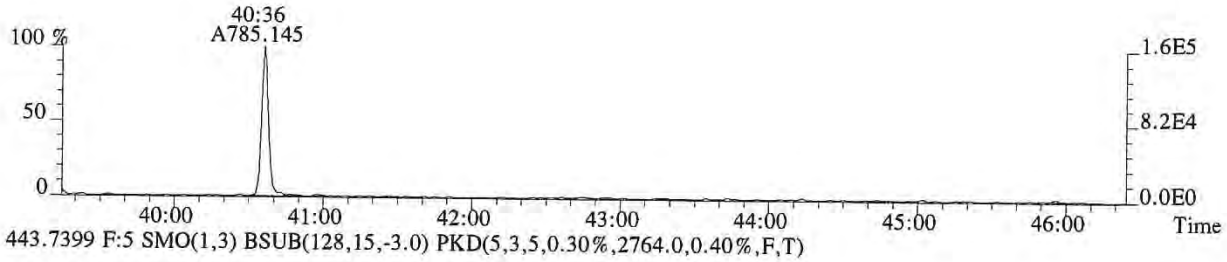


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

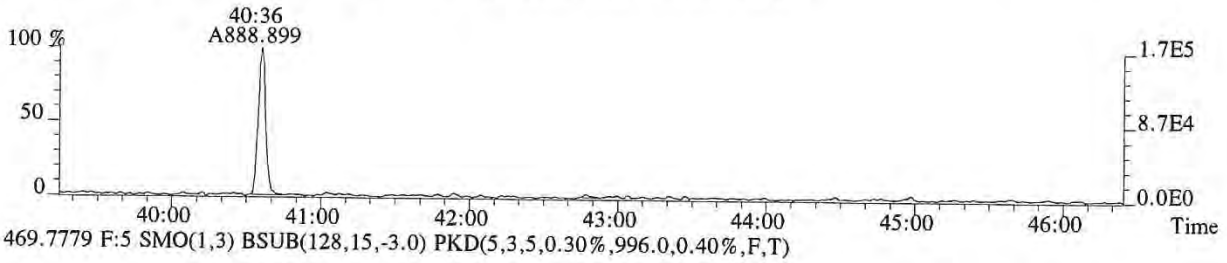


061144

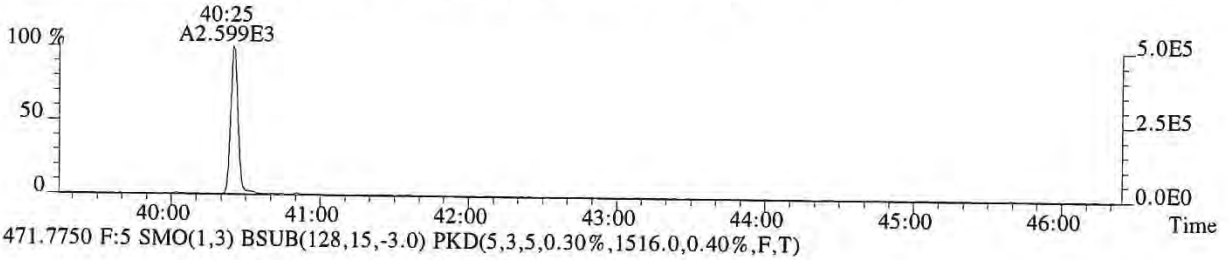
File:P616324 #1-645 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,696.0,0.40%,F,T)



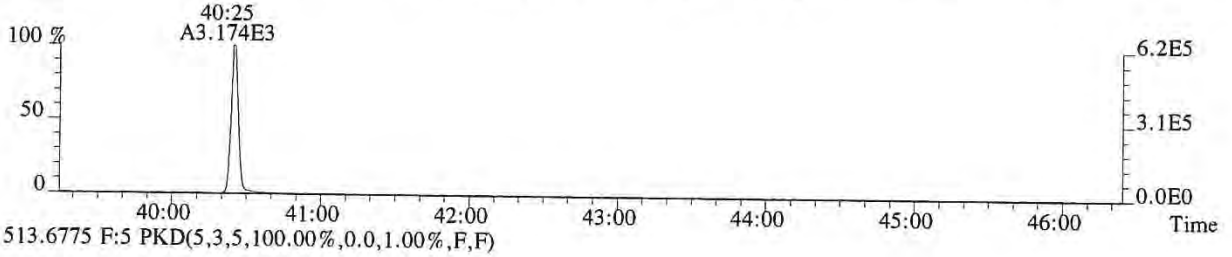
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2764.0,0.40%,F,T)



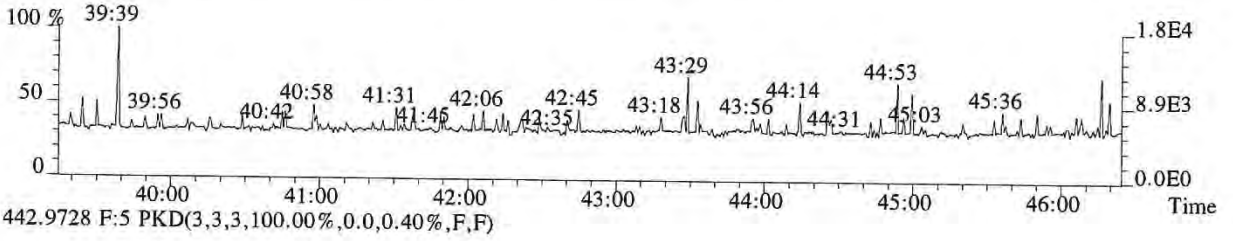
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,996.0,0.40%,F,T)



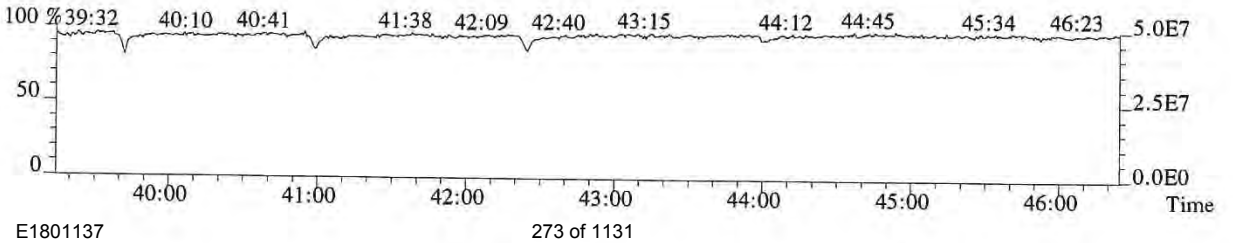
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1516.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

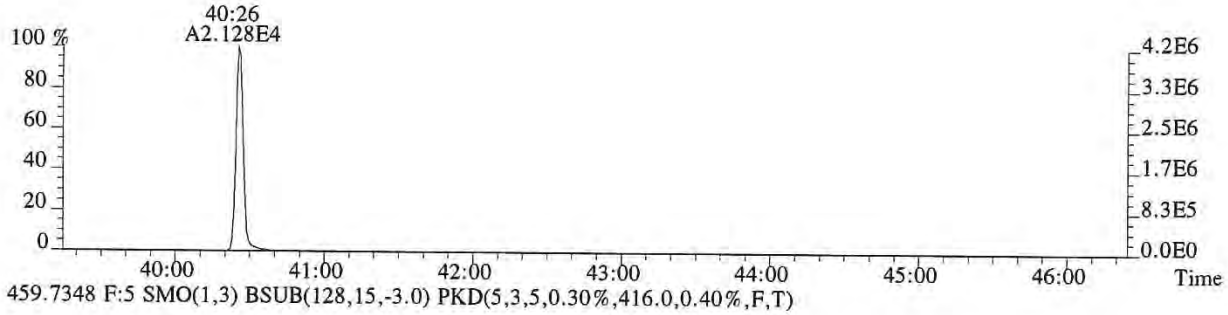


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

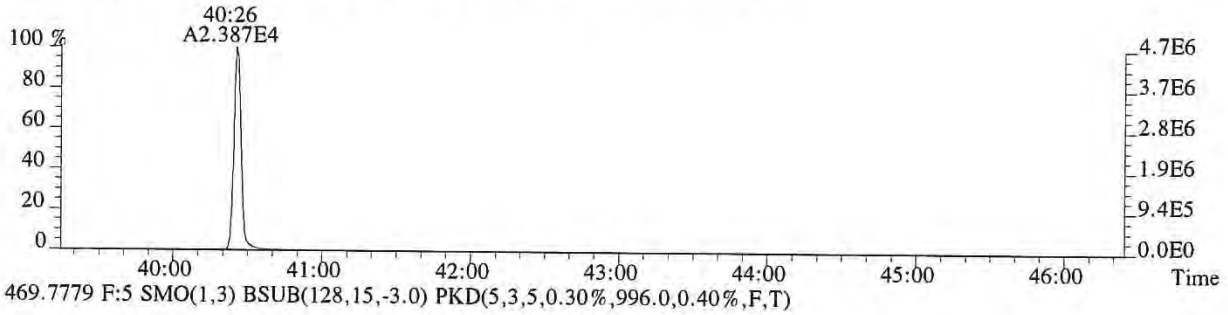


061145

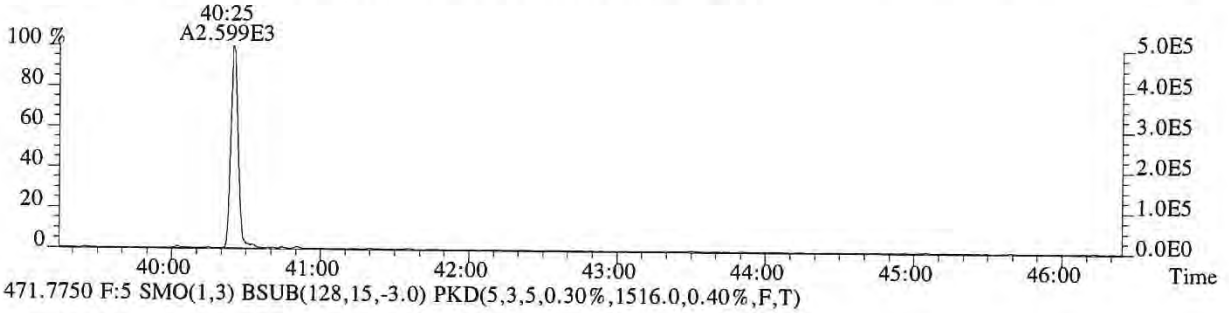
File:P616324 #1-645 Acq: 2-JAN-2019 18:41:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-005
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1004.0,0.40%,F,T)



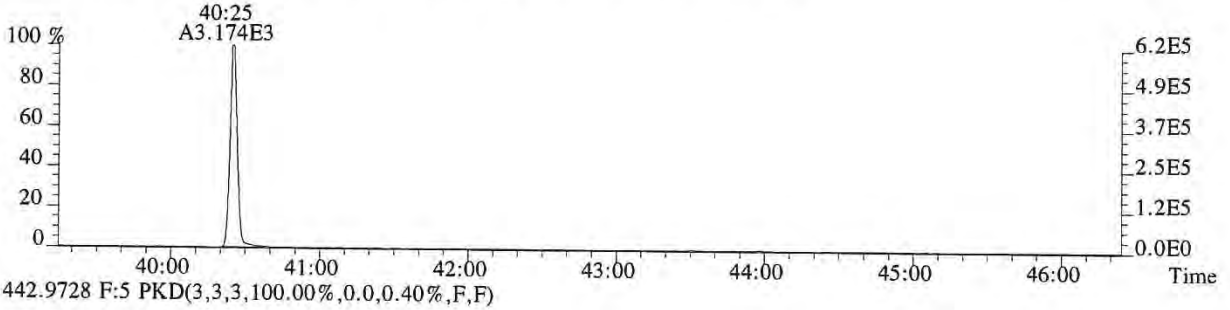
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,416.0,0.40%,F,T)



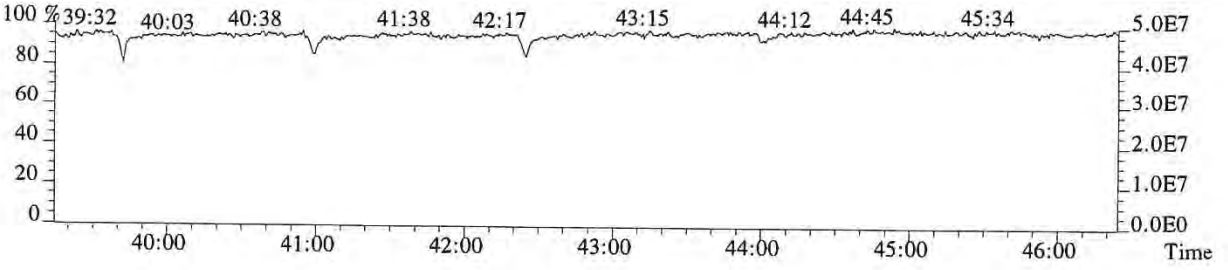
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,996.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1516.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



061146

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0139

Run #16 Filename P616325 Samp: 1 Inj: 1 Acquired: 2-JAN-19 19:30:50
Processed: 3-JAN-19 13:33:57 Sample ID: E1801137-006

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:33	1.024e+06	1.283e+06	0.80	yes	yes	1.081
2	Unk	1,2,3,7,8-PeCDF	30:34	5.434e+04	3.377e+04	1.61	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:35	3.876e+04	2.461e+04	1.57	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:24	5.000e+04	4.001e+04	1.25	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:31	1.289e+04	1.032e+04	1.25	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:03	2.805e+03	2.317e+03	1.21	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:51	3.563e+03	2.875e+03	1.24	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:06	1.171e+04	1.128e+04	1.04	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:25	2.046e+03	1.882e+03	1.09	yes	no	1.463
10	Unk	OCDF	40:37	5.643e+03	6.295e+03	0.90	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:35	2.941e+05	3.687e+05	0.80	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:53	4.696e+03	2.889e+03	1.63	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:12	5.383e+02	4.005e+02	1.34	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:17	1.521e+03	1.255e+03	1.21	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:31	9.211e+02	7.421e+02	1.24	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:00	2.026e+04	1.930e+04	1.05	yes	no	1.112
17	Unk	OCDD	40:26	8.006e+04	8.963e+04	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:31	1.226e+04	1.563e+04	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:32	1.850e+04	1.175e+04	1.57	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:34	1.674e+04	1.032e+04	1.62	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:23	5.802e+03	1.105e+04	0.53	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:30	6.427e+03	1.194e+04	0.54	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:02	5.637e+03	1.067e+04	0.53	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:49	5.115e+03	9.948e+03	0.51	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:05	2.832e+03	6.041e+03	0.47	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	2.026e+03	4.602e+03	0.44	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:34	5.736e+03	7.664e+03	0.75	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:52	1.320e+04	8.361e+03	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:11	8.270e+03	6.288e+03	1.32	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:17	7.203e+03	5.955e+03	1.21	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:59	4.918e+03	4.585e+03	1.07	yes	no	0.857
32	IS	13C-OCDD	40:26	2.673e+03	2.934e+03	0.91	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:47	2.138e+04	2.727e+04	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:31	2.044e+04	1.632e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:35	1.181e+04				no	1.086

$$\text{OCDD} = \frac{(8.006e+04 + 8.963e+04) \times 4000\ \text{pg} \times 1}{(2.673e+03 + 2.934e+03) \times 10.212\ \text{g} \times 56.3 / 100 \times 1.157} = 18198\ \text{ng/kg}$$

CM 02/04/19

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0139

Run #16 Filename P616325 Samp: 1 Inj: 1 Acquired: 2-JAN-19 19:30:50
Processed: 3-JAN-19 13:33:57 LAB. ID: E1801137-006

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.28e+08	2.78e+03	4.6e+04	1.61e+08	3.85e+03	4.2e+04
2	1,2,3,7,8-PeCDF	9.71e+06	4.84e+03	2.0e+03	6.03e+06	6.09e+03	9.9e+02
3	2,3,4,7,8-PeCDF	6.47e+06	4.84e+03	1.3e+03	4.06e+06	6.09e+03	6.7e+02
4	1,2,3,4,7,8-HxCDF	1.10e+07	6.14e+03	1.8e+03	8.82e+06	3.06e+03	2.9e+03
5	1,2,3,6,7,8-HxCDF	2.66e+06	6.14e+03	4.3e+02	2.16e+06	3.06e+03	7.1e+02
6	2,3,4,6,7,8-HxCDF	6.14e+05	6.14e+03	1.0e+02	5.10e+05	3.06e+03	1.7e+02
7	1,2,3,7,8,9-HxCDF	7.05e+05	6.14e+03	1.1e+02	5.66e+05	3.06e+03	1.8e+02
8	1,2,3,4,6,7,8-HpCDF	2.70e+06	2.94e+03	9.2e+02	2.57e+06	1.38e+03	1.9e+03
9	1,2,3,4,7,8,9-HpCDF	4.69e+05	2.94e+03	1.6e+02	4.47e+05	1.38e+03	3.2e+02
10	OCDF	1.12e+06	5.72e+02	2.0e+03	1.28e+06	1.73e+03	7.4e+02
11	2,3,7,8-TCDD	5.95e+07	4.40e+03	1.4e+04	7.47e+07	1.71e+03	4.4e+04
12	1,2,3,7,8-PeCDD	7.52e+05	2.13e+03	3.5e+02	4.91e+05	1.33e+03	3.7e+02
13	1,2,3,4,7,8-HxCDD	1.18e+05	2.06e+03	5.7e+01	9.92e+04	1.99e+03	5.0e+01
14	1,2,3,6,7,8-HxCDD	3.39e+05	2.06e+03	1.6e+02	2.84e+05	1.99e+03	1.4e+02
15	1,2,3,7,8,9-HxCDD	2.02e+05	2.06e+03	9.8e+01	1.68e+05	1.99e+03	8.4e+01
16	1,2,3,4,6,7,8-HpCDD	4.55e+06	3.77e+03	1.2e+03	4.41e+06	1.00e+03	4.4e+03
17	OCDD	1.62e+07	1.03e+03	1.6e+04	1.80e+07	7.52e+02	2.4e+04
18	13C-2,3,7,8-TCDF	1.58e+06	2.71e+04	5.8e+01	2.03e+06	1.43e+04	1.4e+02
19	13C-1,2,3,7,8-PeCDF	3.28e+06	3.76e+03	8.7e+02	2.10e+06	3.19e+03	6.6e+02
20	13C-2,3,4,7,8-PeCDF	3.03e+06	3.76e+03	8.1e+02	1.85e+06	3.19e+03	5.8e+02
21	13C-1,2,3,4,7,8-HxCDF	1.26e+06	3.56e+03	3.5e+02	2.41e+06	2.27e+03	1.1e+03
22	13C-1,2,3,6,7,8-HxCDF	1.34e+06	3.56e+03	3.8e+02	2.54e+06	2.27e+03	1.1e+03
23	13C-2,3,4,6,7,8-HxCDF	1.19e+06	3.56e+03	3.3e+02	2.25e+06	2.27e+03	9.9e+02
24	13C-1,2,3,7,8,9-HxCDF	1.11e+06	3.56e+03	3.1e+02	2.08e+06	2.27e+03	9.2e+02
25	13C-1,2,3,4,6,7,8-HpCDF	6.50e+05	2.23e+03	2.9e+02	1.41e+06	1.34e+03	1.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.71e+05	2.23e+03	2.1e+02	1.05e+06	1.34e+03	7.8e+02
27	13C-2,3,7,8-TCDD	1.06e+06	1.68e+04	6.3e+01	1.35e+06	5.45e+03	2.5e+02
28	13C-1,2,3,7,8-PeCDD	2.51e+06	2.70e+03	9.3e+02	1.58e+06	2.76e+03	5.7e+02
29	13C-1,2,3,4,7,8-HxCDD	1.78e+06	1.84e+03	9.7e+02	1.40e+06	9.96e+02	1.4e+03
30	13C-1,2,3,6,7,8-HxCDD	1.62e+06	1.84e+03	8.8e+02	1.29e+06	9.96e+02	1.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.08e+06	1.19e+03	9.1e+02	1.06e+06	7.44e+02	1.4e+03
32	13C-OCDD	5.56e+05	1.66e+03	3.4e+02	5.91e+05	9.72e+02	6.1e+02
33	13C-1,2,3,4-TCDD	2.87e+06	1.68e+04	1.7e+02	3.62e+06	5.45e+03	6.6e+02
34	13C-1,2,3,7,8,9-HxCDD	4.47e+06	1.84e+03	2.4e+03	3.53e+06	9.96e+02	3.5e+03
35	37Cl-2,3,7,8-TCDD	2.30e+06	2.82e+03	8.2e+02			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0139

Entry: 36 Totals Name: Total Tetra-Furans

Run: 16 File: P616325 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 19:30:50 Processed: 3-JAN-19 13:33:57

Mass: 303.9020 305.8990 Tot Response: 4.21e+06 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:18	1.93e+03	2.58e+03	0.75	yes	4.51e+03		n	n
2	22:23	2.79e+03	3.45e+03	0.81	yes	6.24e+03		n	n
3	22:39	3.73e+04	4.68e+04	0.80	yes	8.41e+04		n	n
4	23:00	1.22e+04	1.73e+04	0.71	yes	2.96e+04		n	n
5	23:17	3.11e+04	3.98e+04	0.78	yes	7.09e+04		n	n
6	23:40	9.00e+03	1.12e+04	0.80	yes	2.02e+04		n	n
7	24:01	6.78e+04	8.50e+04	0.80	yes	1.53e+05		n	n
8	24:29	4.60e+05	5.75e+05	0.80	yes	1.04e+06		n	n
9	24:49	1.96e+04	2.41e+04	0.81	yes	4.37e+04		n	n
10	25:19	7.93e+03	9.52e+03	0.83	yes	1.75e+04		y	y
11	25:25	4.13e+04	5.21e+04	0.79	yes	9.35e+04		y	y
12	25:33	1.02e+06	1.28e+06	0.80	yes	2.31e+06	2,3,7,8-TCDF	y	y
13	26:00	6.49e+04	8.10e+04	0.80	yes	1.46e+05		n	n
14	26:18	7.45e+03	8.88e+03	0.84	yes	1.63e+04		n	n
15	27:50	7.88e+04	9.84e+04	0.80	yes	1.77e+05		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0139

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 16 File: P616325 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 19:30:50 Processed: 3-JAN-19 13:33:57

Mass: 319.8970 321.8940 Tot Response: 7.25e+05 RRF: 1.049

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:14	3.30e+03	4.43e+03	0.74	yes	7.73e+03		n	n
2	26:35	2.94e+05	3.69e+05	0.80	yes	6.63e+05	2,3,7,8-TCDD	n	n
3	26:56	2.45e+04	3.02e+04	0.81	yes	5.47e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0139

Entry: 38 Totals Name: Total Penta-Furans1

Run: 16 File: P616325 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 19:30:50 Processed: 3-JAN-19 13:33:57

Mass: 339.8600 341.8570 Tot Response: 4.33e+03 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:48	2.74e+03	1.59e+03 1.72	yes	4.33e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0139

Entry: 39 Totals Name: Total Penta-Furans2

Run: 16 File: P616325 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 19:30:50 Processed: 3-JAN-19 13:33:57

Mass: 339.8600 341.8570 Tot Response: 2.42e+05 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:22	1.94e+03	1.30e+03	1.50	yes	3.24e+03		n	n
2	29:32	2.59e+04	1.65e+04	1.57	yes	4.24e+04		n	n
3	30:09	1.48e+03	1.04e+03	1.42	yes	2.52e+03		n	n
4	30:13	1.17e+03	7.26e+02	1.62	yes	1.90e+03		n	n
5	30:22	5.57e+03	3.53e+03	1.58	yes	9.11e+03		n	n
6	30:34	5.43e+04	3.38e+04	1.61	yes	8.81e+04	1,2,3,7,8-PeCDF	n	n
7	30:51	1.57e+04	9.74e+03	1.62	yes	2.55e+04		n	n
8	31:20	8.84e+01	5.83e+01	1.52	yes	1.47e+02		n	n
9	31:28	1.08e+03	7.05e+02	1.53	yes	1.78e+03		n	n
10	31:35	3.88e+04	2.46e+04	1.57	yes	6.34e+04	2,3,4,7,8-PeCDF	n	n
11	32:32	2.25e+03	1.34e+03	1.69	yes	3.59e+03		n	n

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Peak List Summary

CLIENT ID.
SL0139

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 16 File: P616325 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 19:30:50 Processed: 3-JAN-19 13:33:57

Mass: 355.8550 357.8520 Tot Response: 1.92e+04 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:34	2.10e+03	1.37e+03	1.53	yes	3.46e+03		n	n
2	30:06	7.42e+02	4.77e+02	1.56	yes	1.22e+03		n	n
3	30:36	8.52e+02	6.17e+02	1.38	yes	1.47e+03		n	n
4	30:47	8.73e+02	5.66e+02	1.54	yes	1.44e+03		n	n
5	30:52	5.78e+02	3.97e+02	1.46	yes	9.75e+02		n	n
6	31:05	1.14e+03	7.72e+02	1.47	yes	1.91e+03		n	n
7	31:26	3.38e+02	2.09e+02	1.62	yes	5.47e+02		n	n
8	31:53	4.70e+03	2.89e+03	1.63	yes	7.58e+03	1,2,3,7,8-PeCDD	n	n
9	32:16	3.45e+02	2.18e+02	1.58	yes	5.62e+02		n	n
10	32:24	1.28e+01	8.24e+00	1.55	yes	2.10e+01		n	n

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Peak List Summary

CLIENT ID.
SL0139

Entry: 41 Totals Name: Total Hexa-Furans

Run: 16 File: P616325 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 19:30:50 Processed: 3-JAN-19 13:33:57

Mass: 373.8210 375.8180 Tot Response: 1.55e+05 RRF: 1.324

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:14	1.49e+03	1.19e+03	1.25	yes	2.68e+03		n	n
2	33:24	7.87e+03	5.97e+03	1.32	yes	1.38e+04		n	n
3	33:57	7.48e+03	6.16e+03	1.22	yes	1.36e+04		n	n
4	34:24	5.00e+04	4.00e+04	1.25	yes	9.00e+04	1,2,3,4,7,8-HxCDF	n	n
5	34:31	1.29e+04	1.03e+04	1.25	yes	2.32e+04	1,2,3,6,7,8-HxCDF	n	n
6	35:03	2.81e+03	2.32e+03	1.21	yes	5.12e+03	2,3,4,6,7,8-HxCDF	n	n
7	35:51	3.56e+03	2.88e+03	1.24	yes	6.44e+03	1,2,3,7,8,9-HxCDF	n	n

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Peak List Summary

CLIENT ID.
SL0139

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 16 File: P616325 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 19:30:50 Processed: 3-JAN-19 13:33:57

Mass: 389.8160 391.8130 Tot Response: 4.18e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:47	9.02e+03	7.15e+03	1.26	yes	1.62e+04		n	n
2	34:20	1.66e+03	1.36e+03	1.22	yes	3.02e+03		n	n
3	34:35	7.70e+03	6.05e+03	1.27	yes	1.38e+04		n	n
4	34:41	1.00e+03	8.05e+02	1.25	yes	1.81e+03		n	n
5	35:12	5.38e+02	4.01e+02	1.34	yes	9.39e+02	1,2,3,4,7,8-HxCDD	n	n
6	35:17	1.52e+03	1.25e+03	1.21	yes	2.78e+03	1,2,3,6,7,8-HxCDD	n	n
7	35:27	8.80e+02	7.73e+02	1.14	yes	1.65e+03		n	n
8	35:31	9.21e+02	7.42e+02	1.24	yes	1.66e+03	1,2,3,7,8,9-HxCDD	n	n

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Peak List Summary

CLIENT ID.
SL0139

Entry: 43 Totals Name: Total Hepta-Furans

Run: 16 File: P616325 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 19:30:50 Processed: 3-JAN-19 13:33:57

Mass: 407.7820 409.7790 Tot Response: 5.21e+04 RRF: 1.495

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:06	1.17e+04	1.13e+04 1.04	yes	2.30e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	37:30	1.31e+04	1.21e+04 1.09	yes	2.52e+04		n	n
3	38:25	2.05e+03	1.88e+03 1.09	yes	3.93e+03	1,2,3,4,7,8,9-HpCDF	n	n

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Peak List Summary

CLIENT ID.
SL0139

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 16 File: P616325 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 19:30:50 Processed: 3-JAN-19 13:33:57

Mass: 423.7770 425.7740 Tot Response: 1.17e+05 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:21	3.98e+04	3.77e+04	1.05	yes	7.75e+04		n	n
2	38:00	2.03e+04	1.93e+04	1.05	yes	3.96e+04	1,2,3,4,6,7,8-HpCDD	n	n

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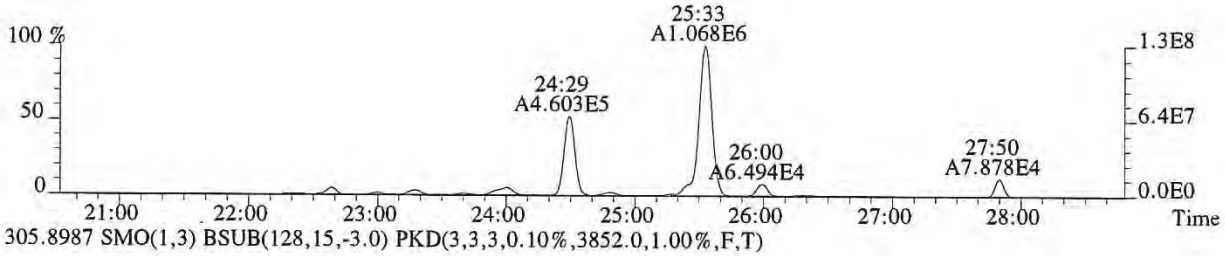
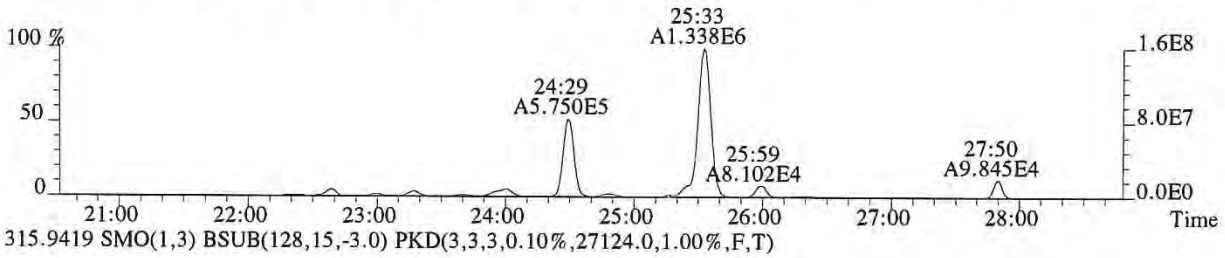
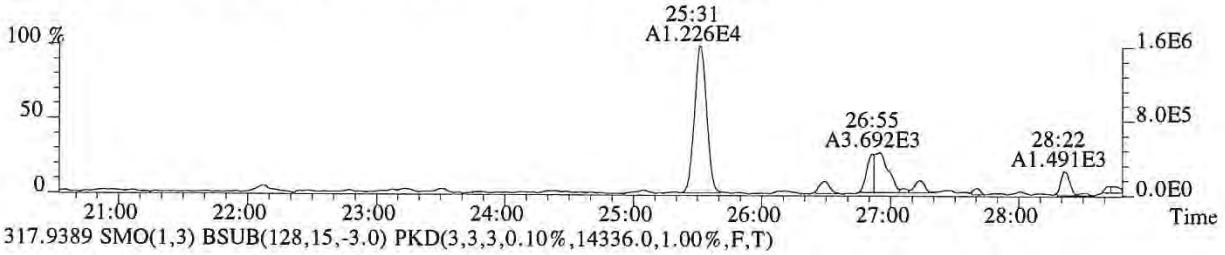
File:P616325 #1-587 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2784.0,1.00%,F,T)



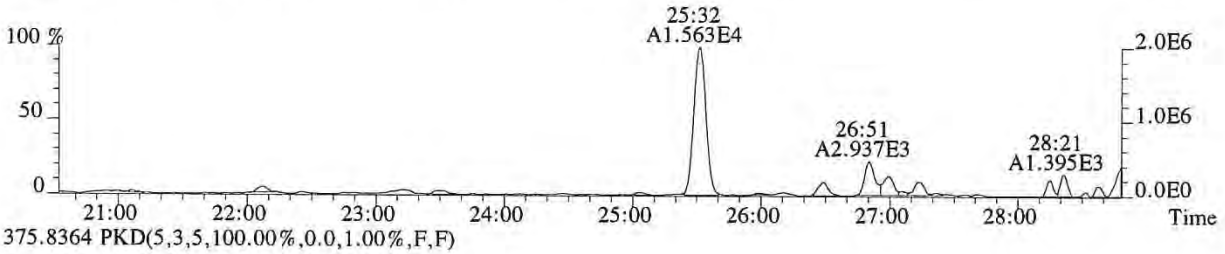
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3852.0,1.00%,F,T)



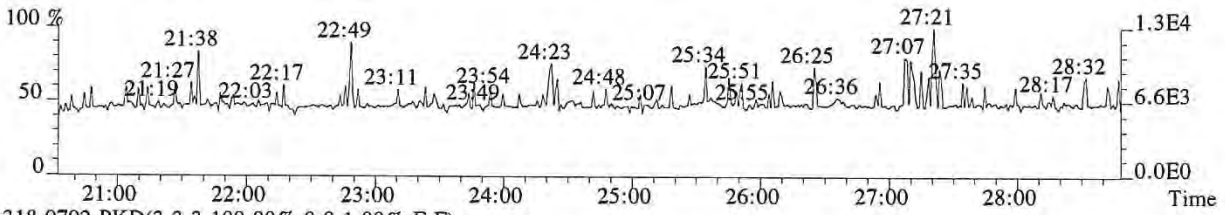
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,27124.0,1.00%,F,T)



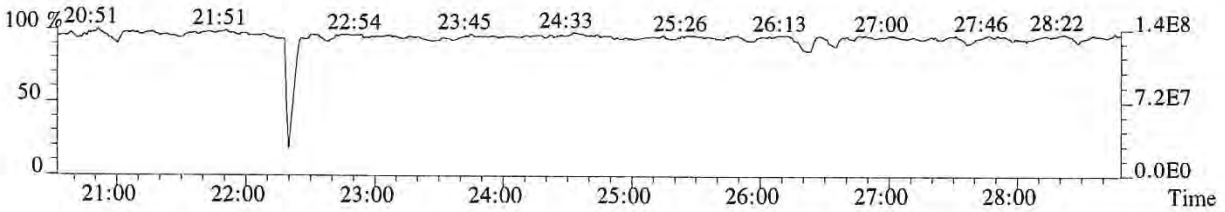
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,14336.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

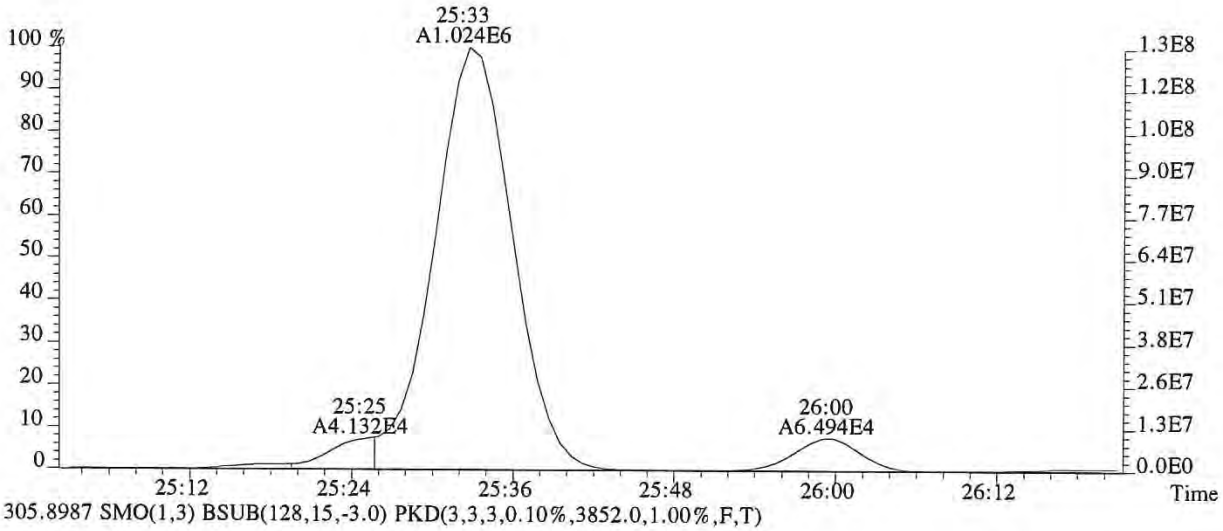


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

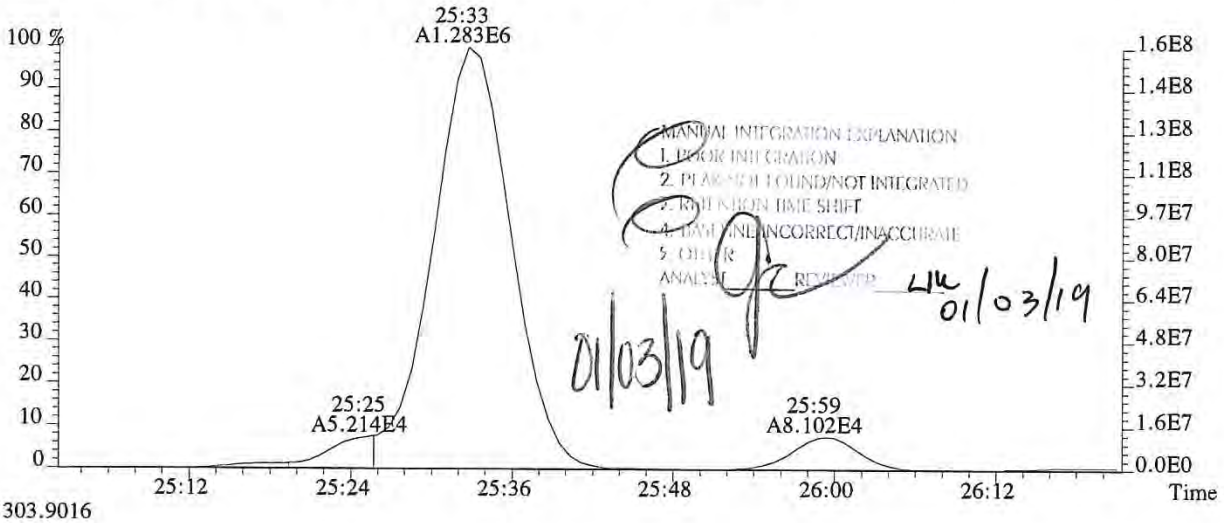


061158

File:P616325 #1-587 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801137-006
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2784.0,1.00%,F,T)



305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3852.0,1.00%,F,T)

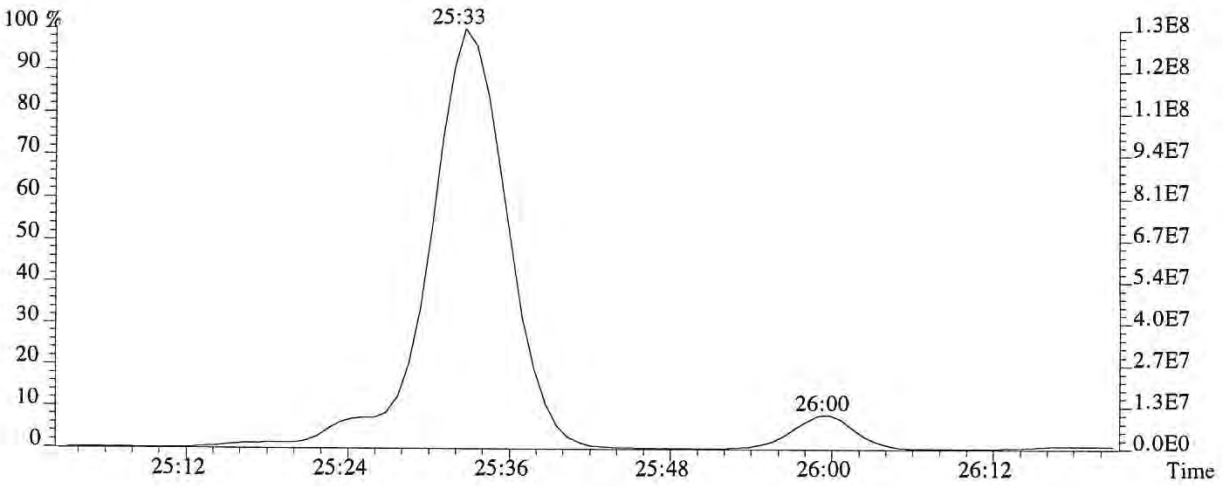


MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST REVIEWED

01/03/19

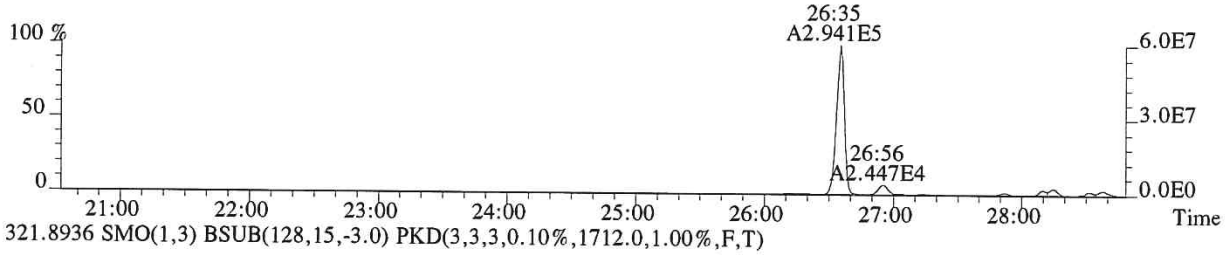
01/03/19

303.9016

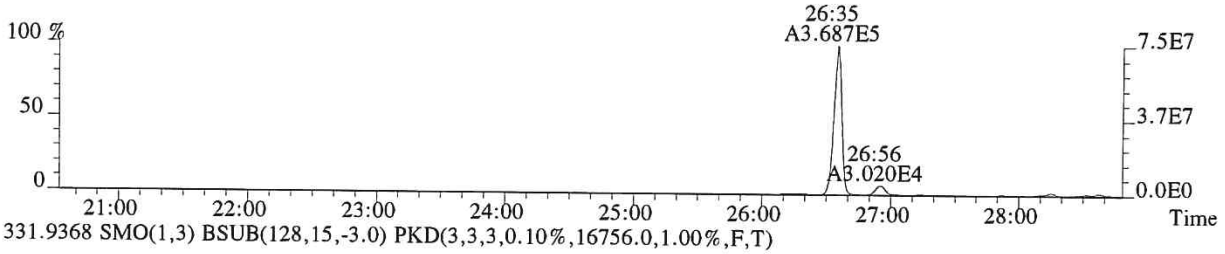


061159

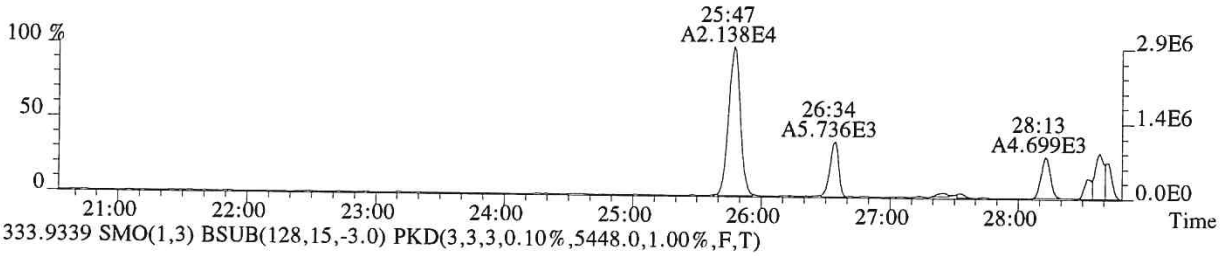
File:P616325 #1-587 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4404.0,1.00%,F,T)



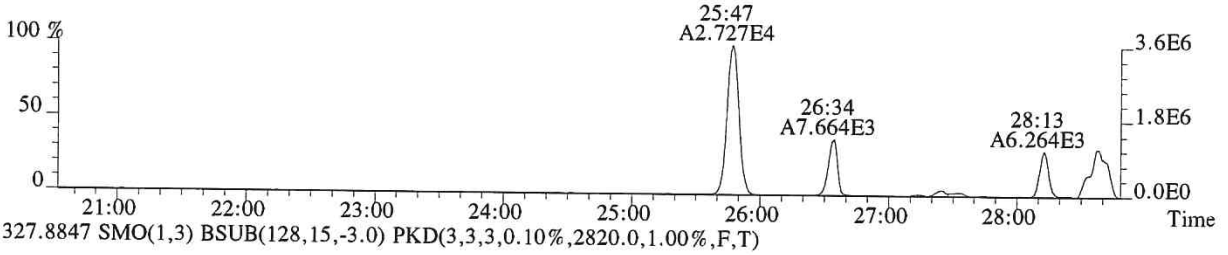
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1712.0,1.00%,F,T)



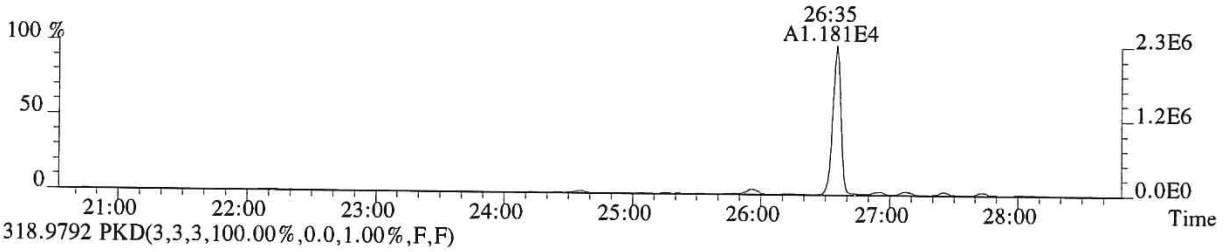
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16756.0,1.00%,F,T)



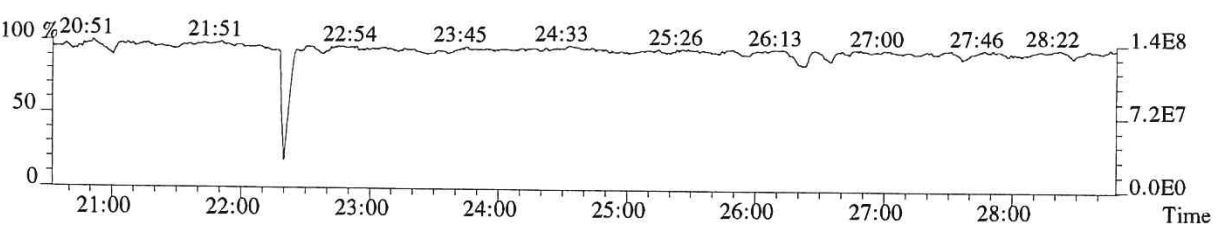
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5448.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2820.0,1.00%,F,T)

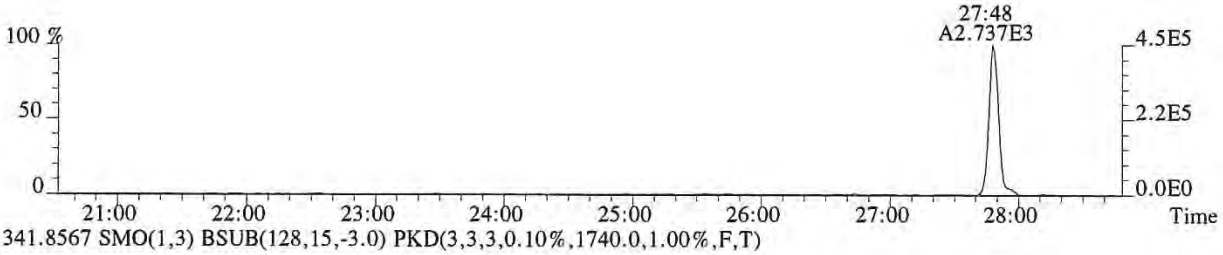


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

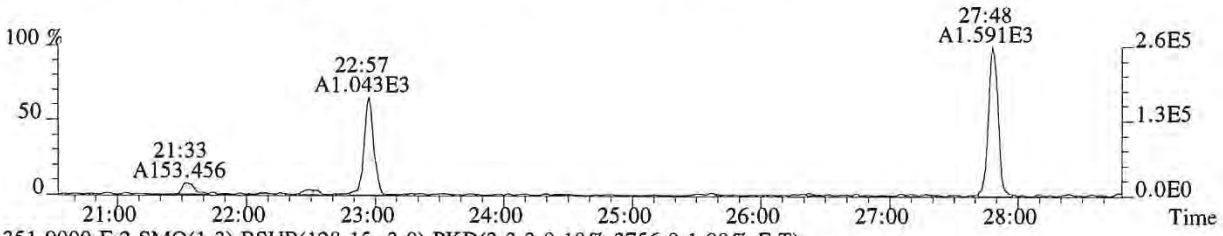


061160

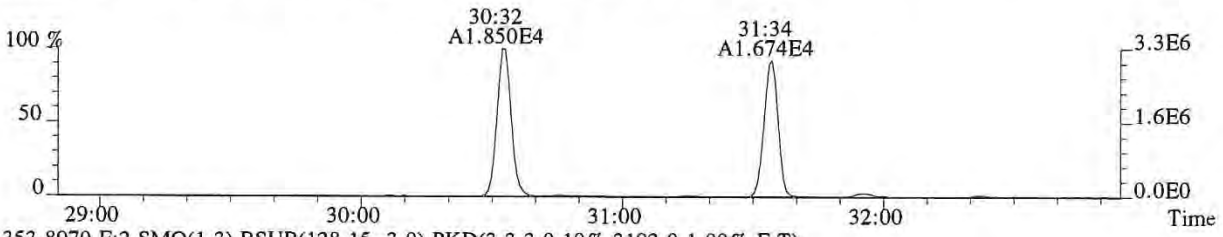
File:P616325 #1-587 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,T)



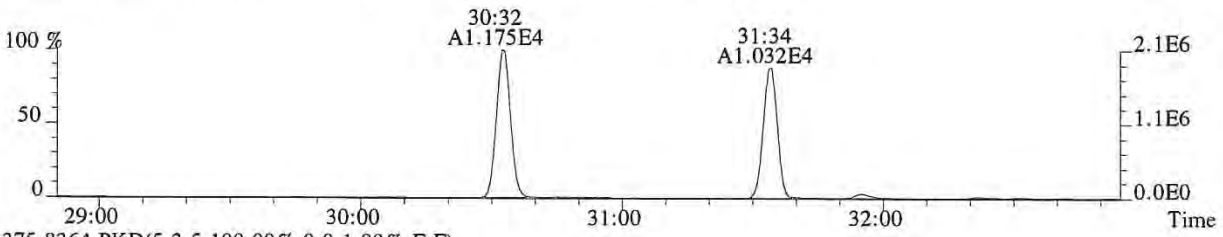
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1740.0,1.00%,F,T)



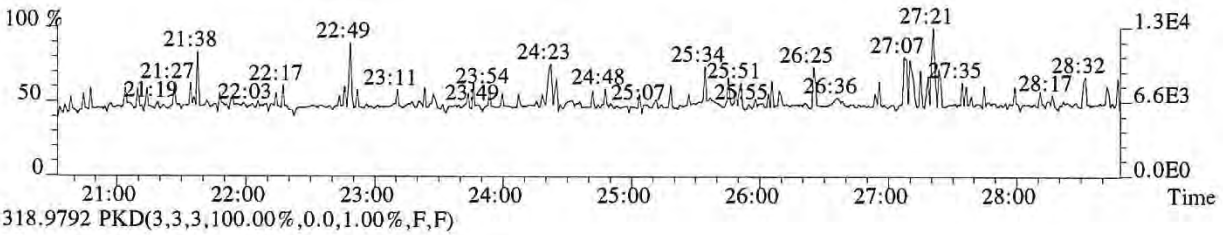
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3756.0,1.00%,F,T)



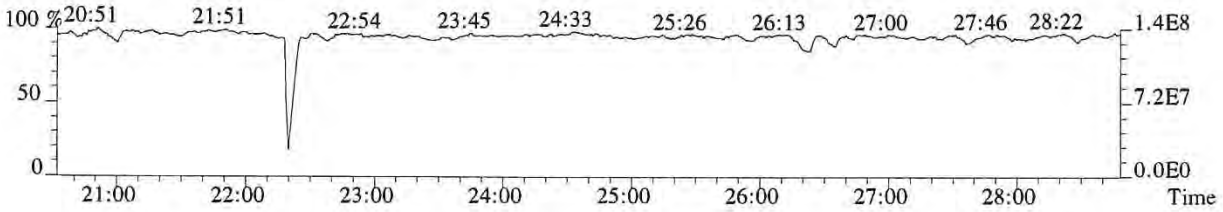
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3192.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

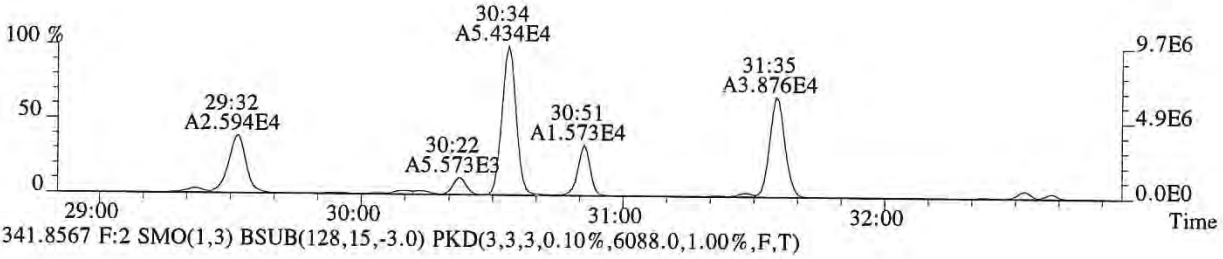


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

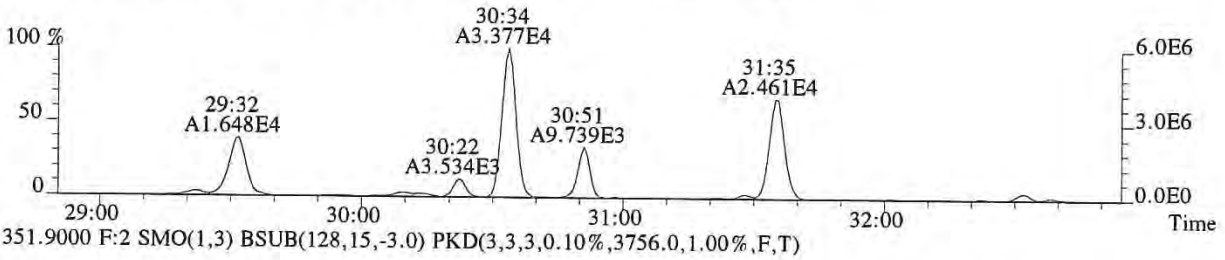


061161

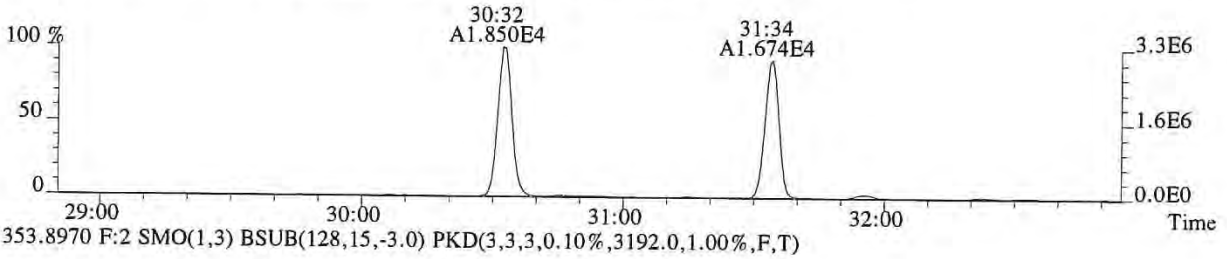
File:P616325 #1-367 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4840.0,1.00%,F,T)



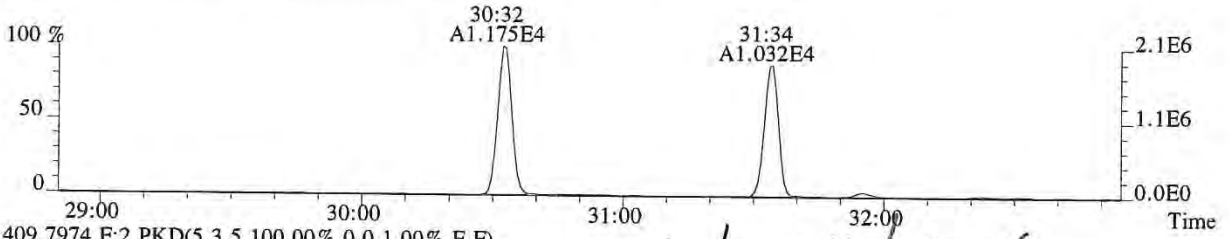
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6088.0,1.00%,F,T)



351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3756.0,1.00%,F,T)

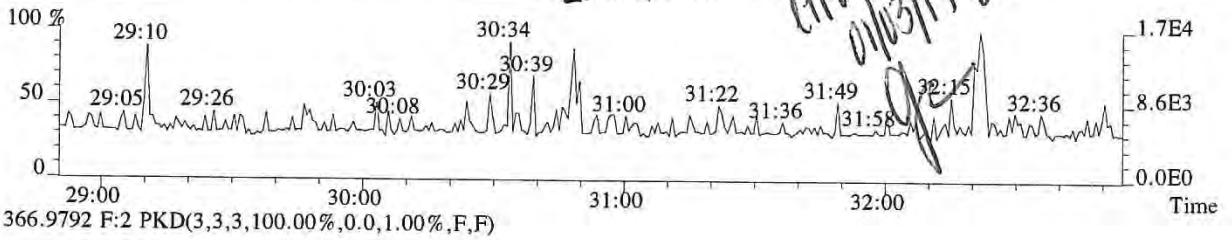


353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3192.0,1.00%,F,T)

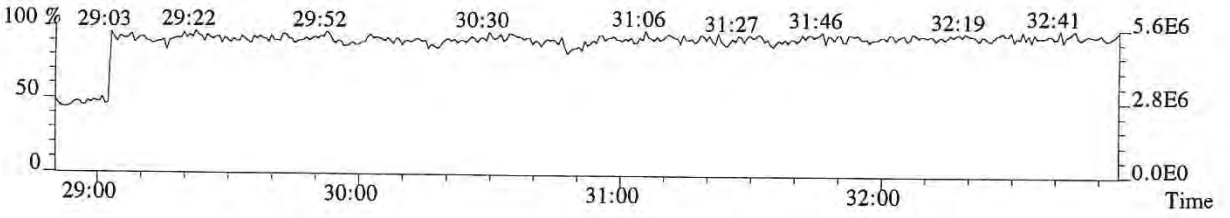


409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

LM 01/03/19 01/03/19

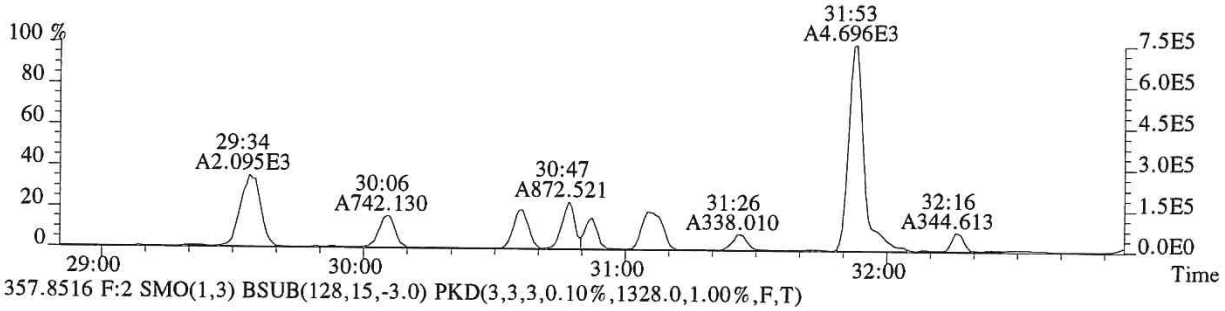


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

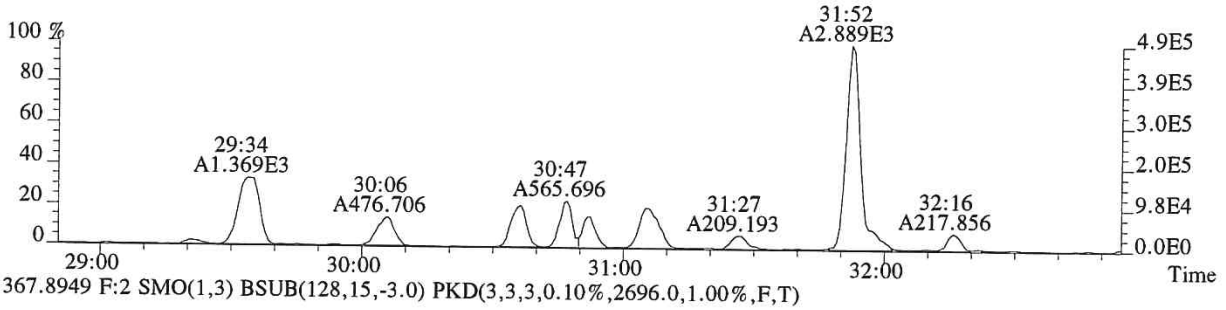


061162

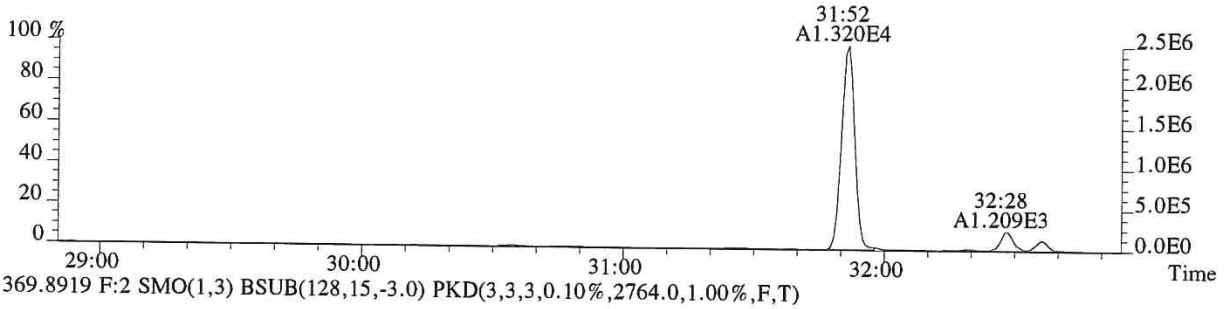
File:P616325 #1-367 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2128.0,1.00%,F,T)



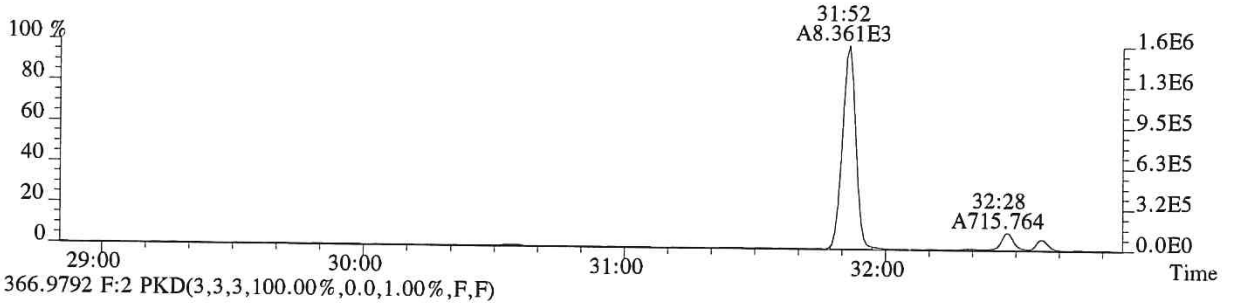
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1328.0,1.00%,F,T)



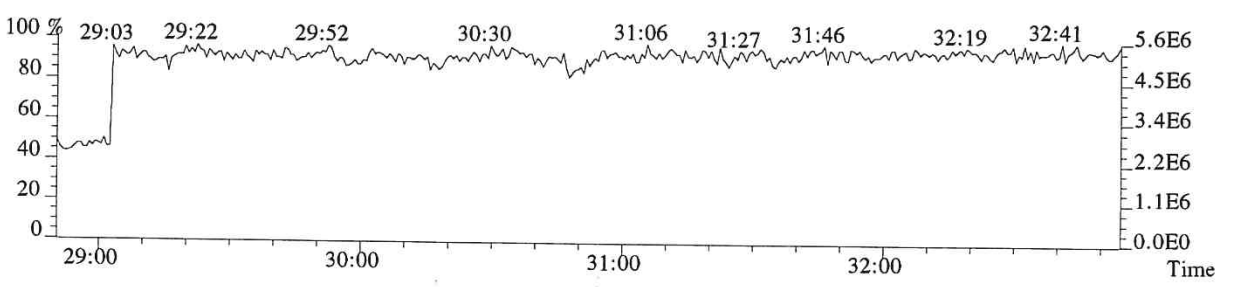
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2696.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2764.0,1.00%,F,T)

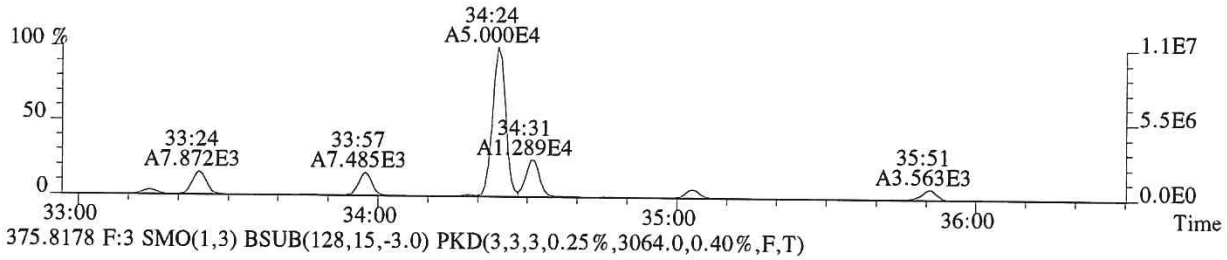


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

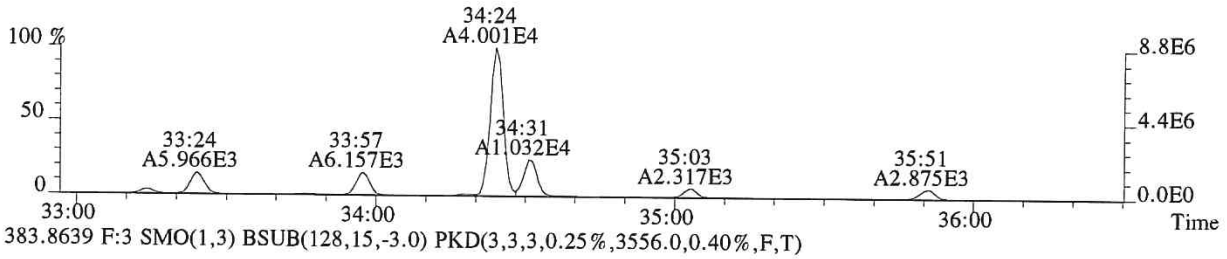


061163

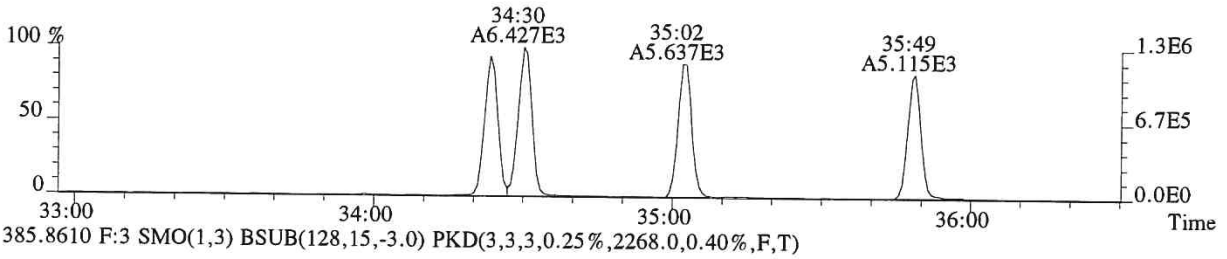
File:P616325 #1-321 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6136.0,0.40%,F,T)



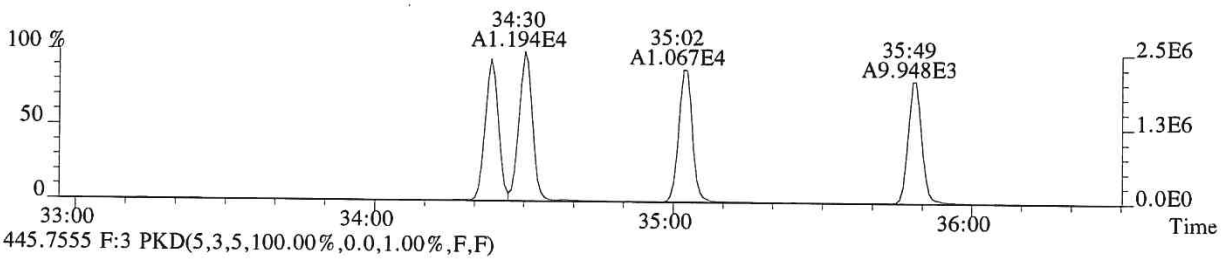
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3064.0,0.40%,F,T)



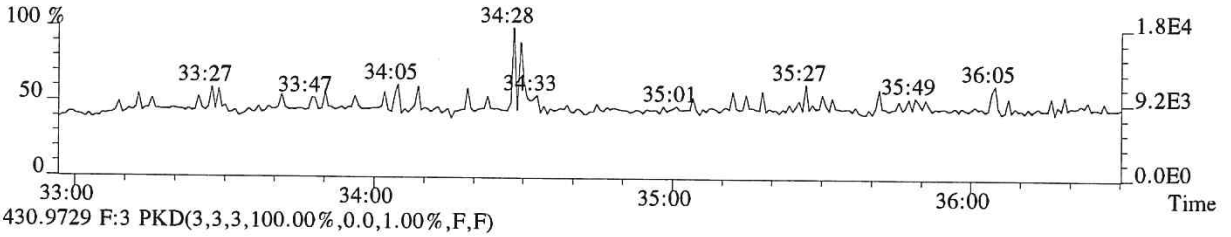
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3556.0,0.40%,F,T)



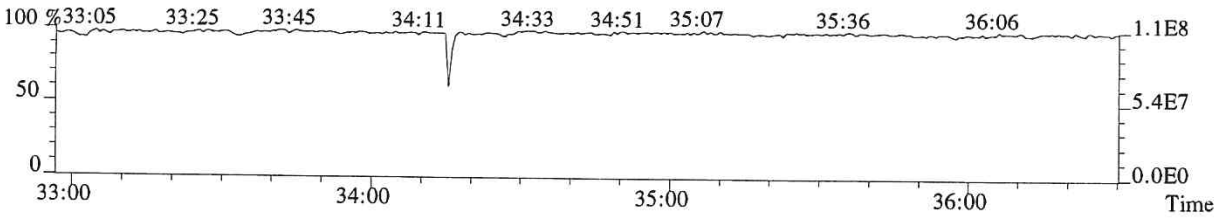
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2268.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

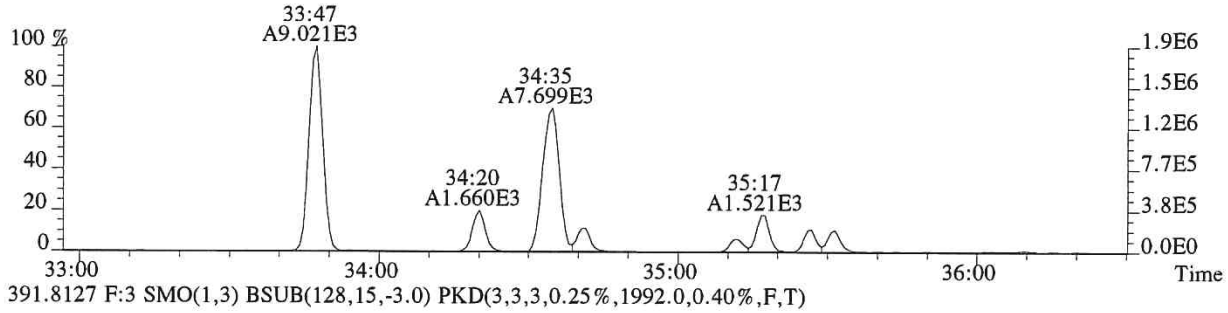


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

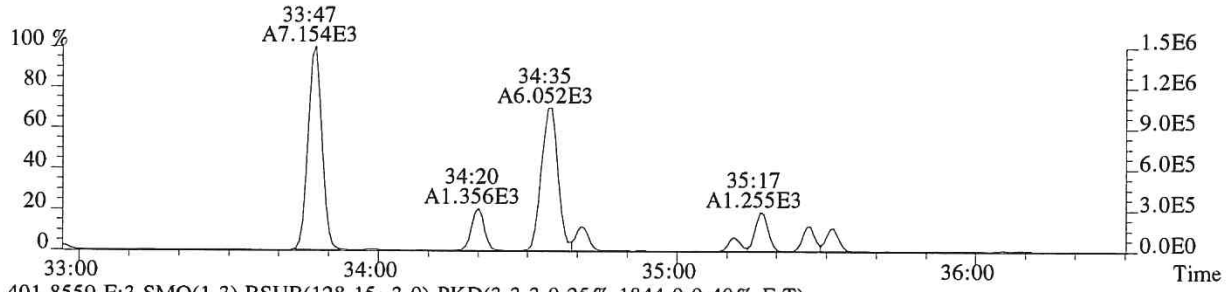


061164

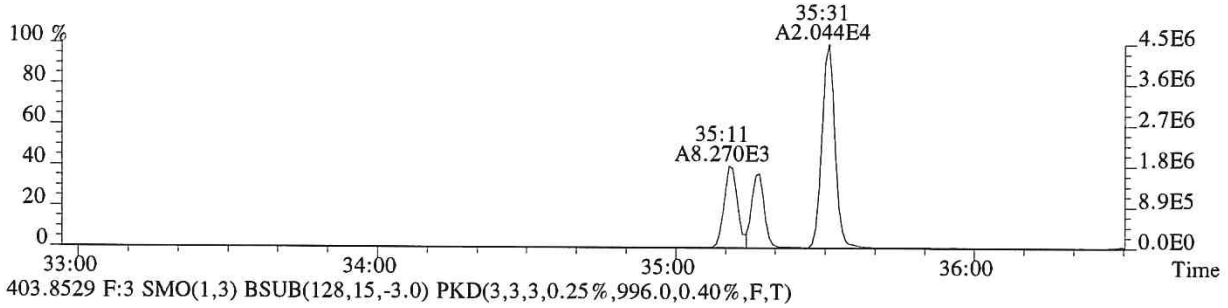
File:P616325 #1-321 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2064.0,0.40%,F,T)



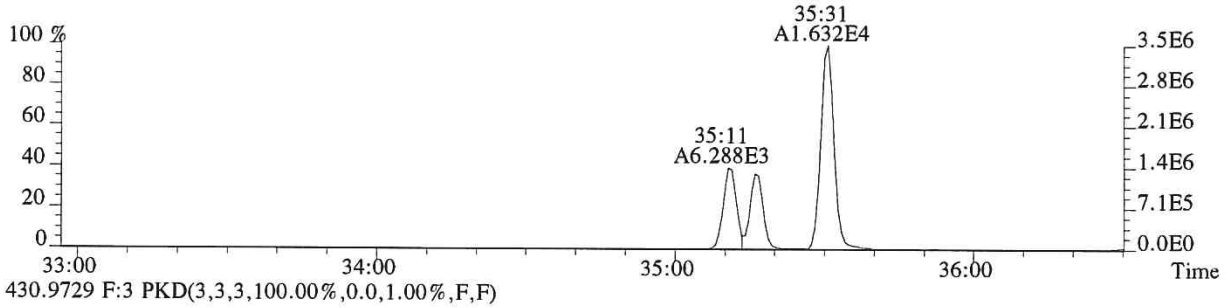
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1992.0,0.40%,F,T)



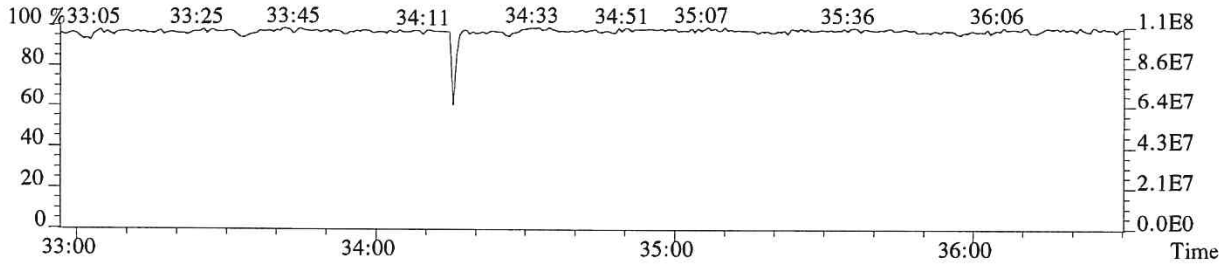
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1844.0,0.40%,F,T)



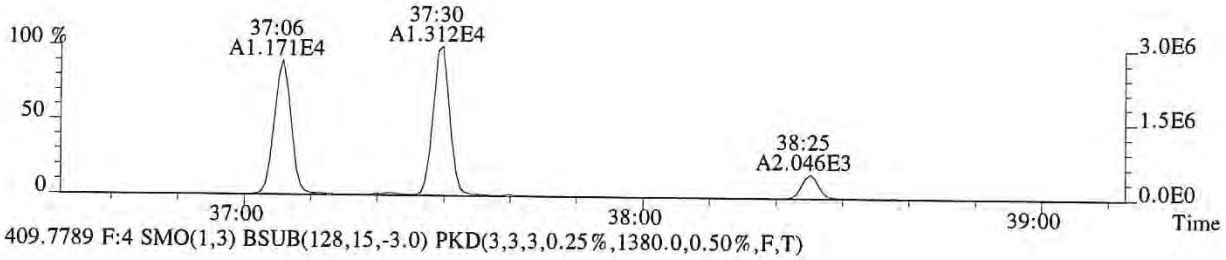
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,996.0,0.40%,F,T)



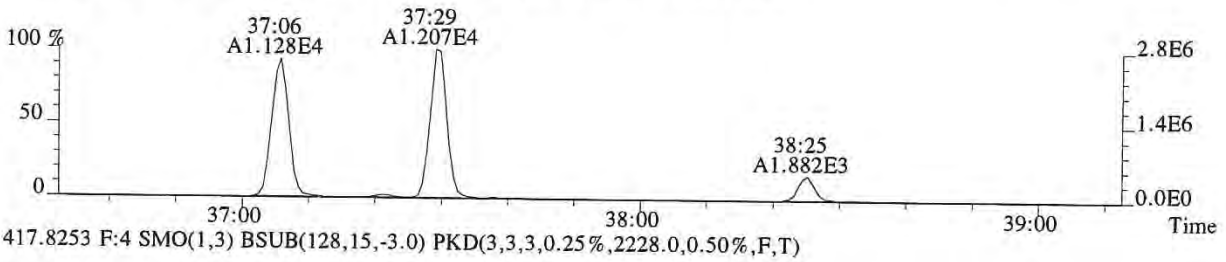
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



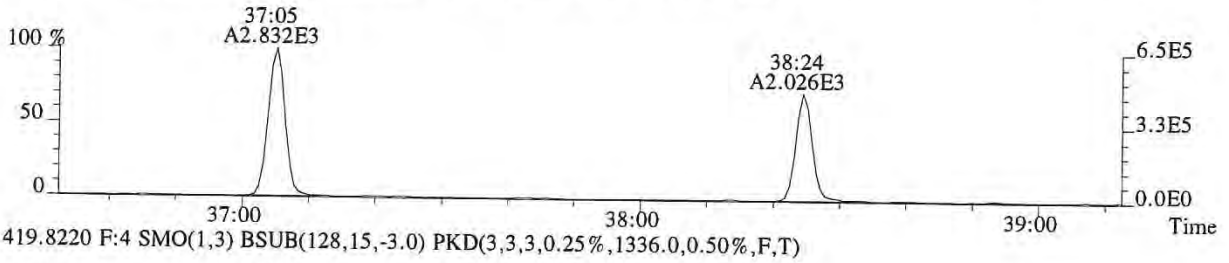
File:P616325 #1-241 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2944.0,0.50%,F,T)



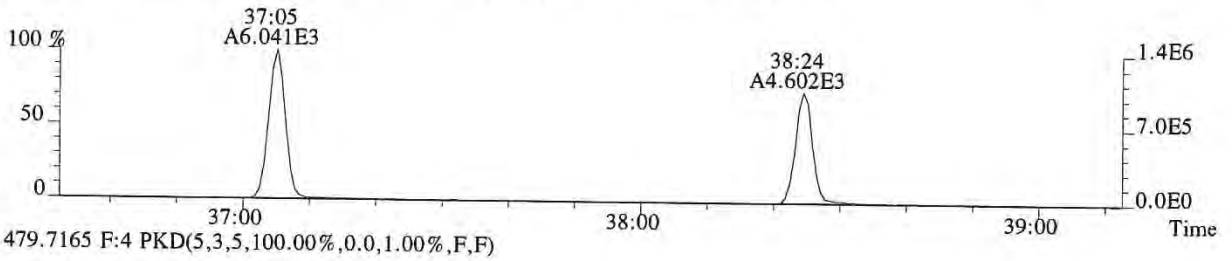
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1380.0,0.50%,F,T)



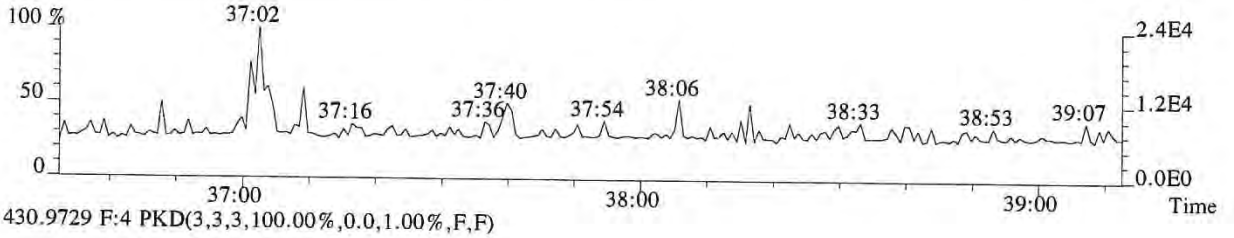
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2228.0,0.50%,F,T)



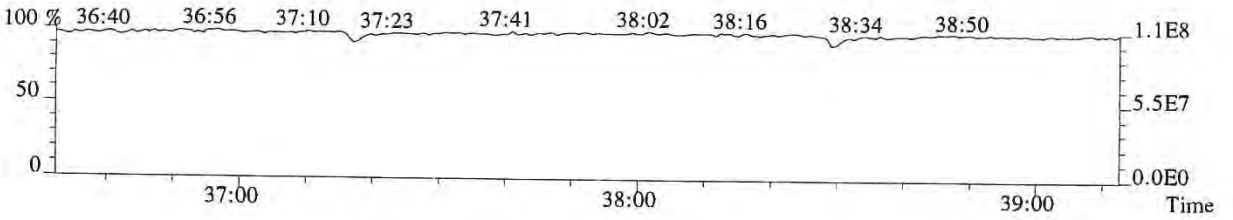
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1336.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

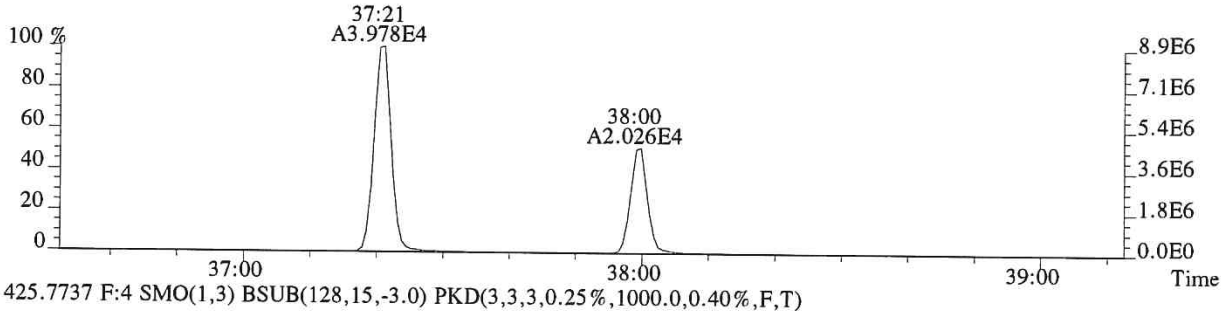


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

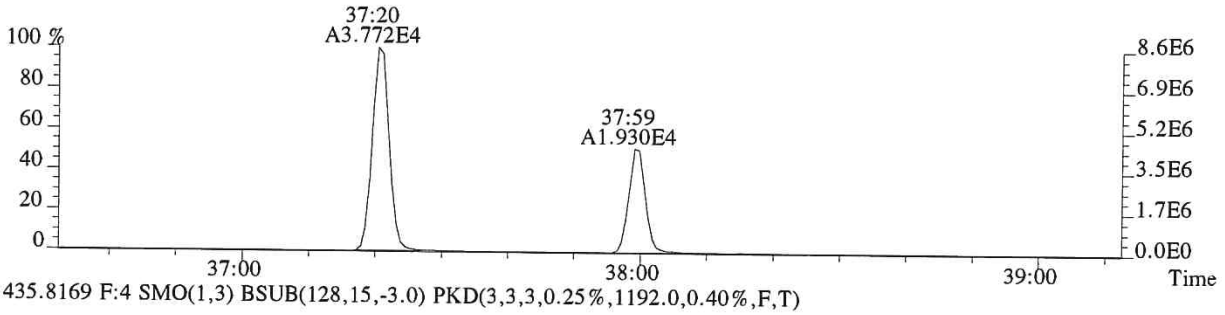


061166

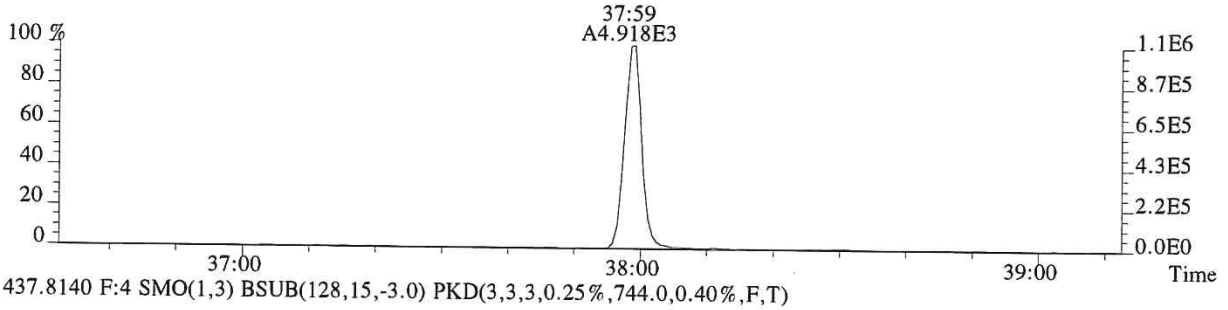
File:P616325 #1-241 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3768.0,0.40%,F,T)



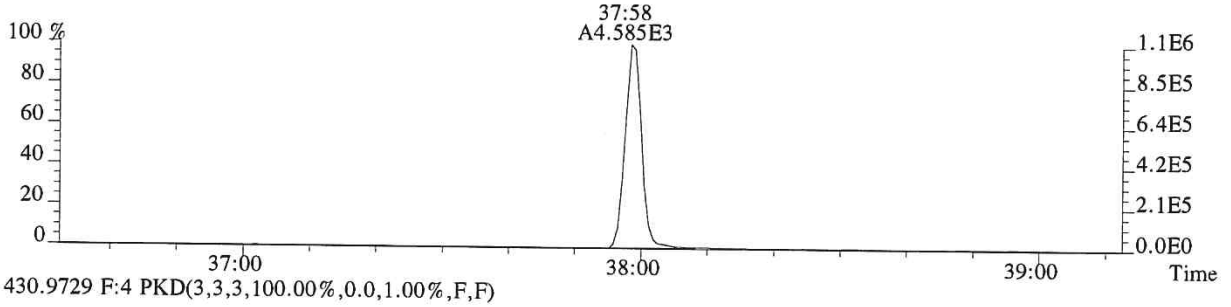
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1000.0,0.40%,F,T)



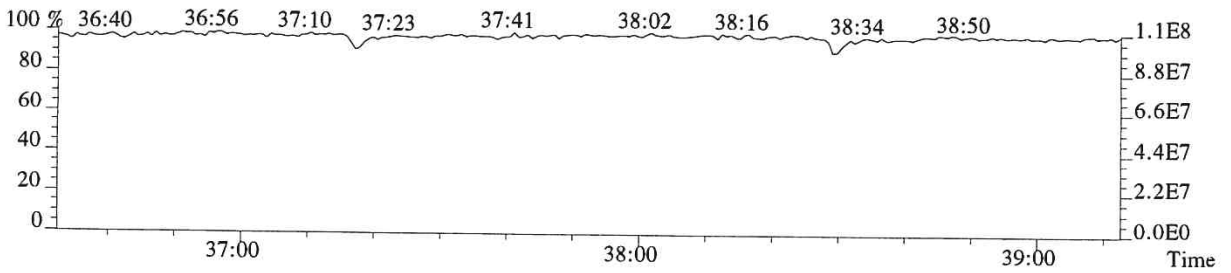
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1192.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,744.0,0.40%,F,T)

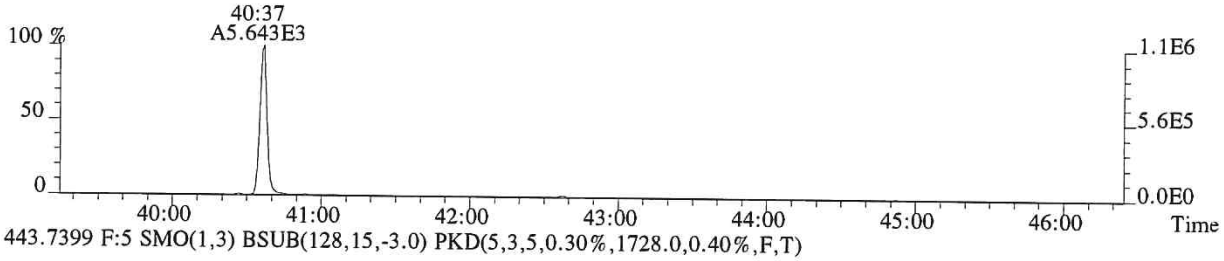


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

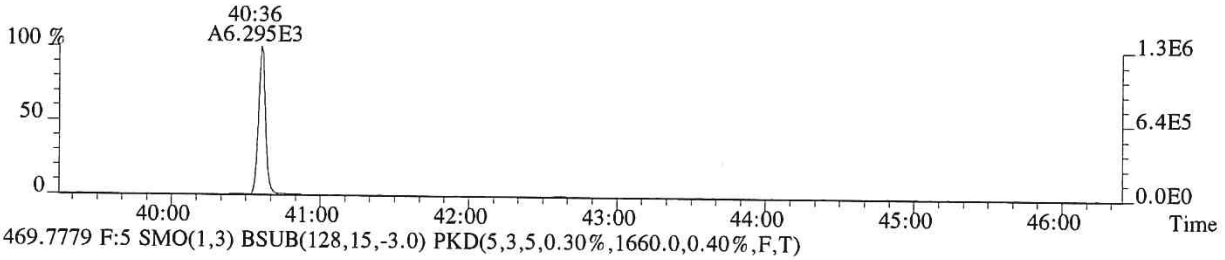


061167

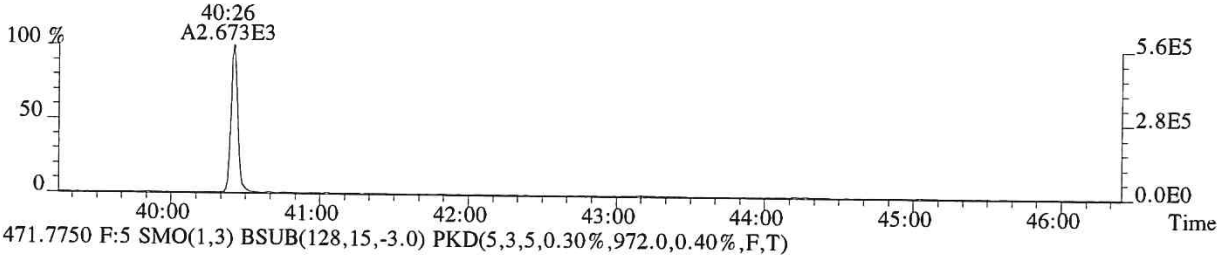
File:P616325 #1-645 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,572.0,0.40%,F,T)



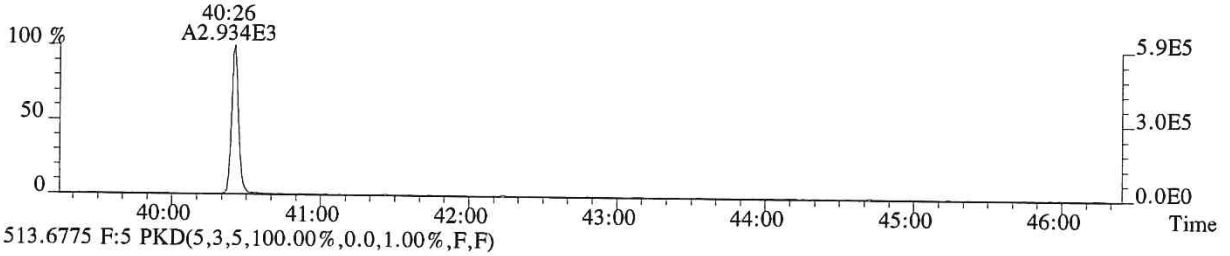
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1728.0,0.40%,F,T)



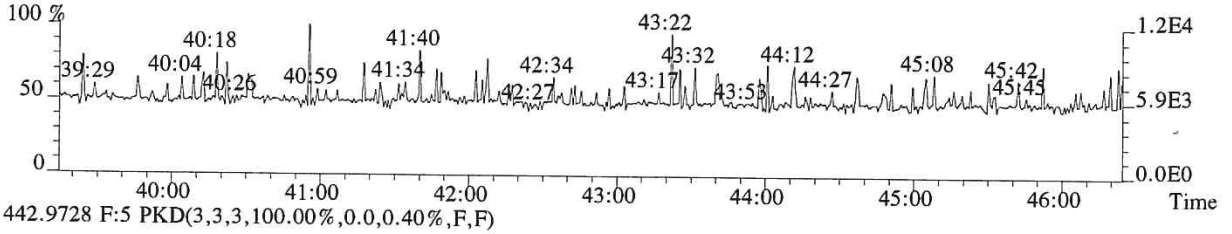
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1660.0,0.40%,F,T)



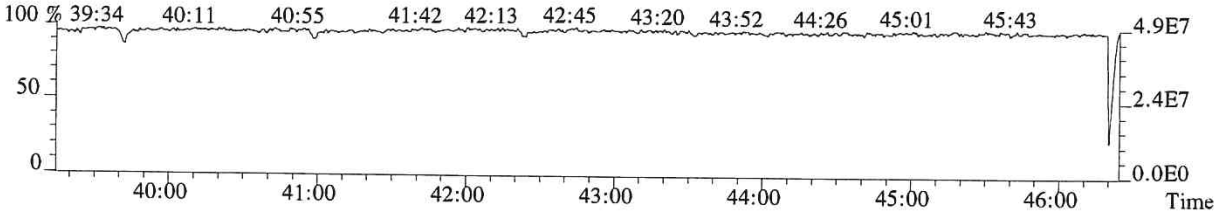
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,972.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

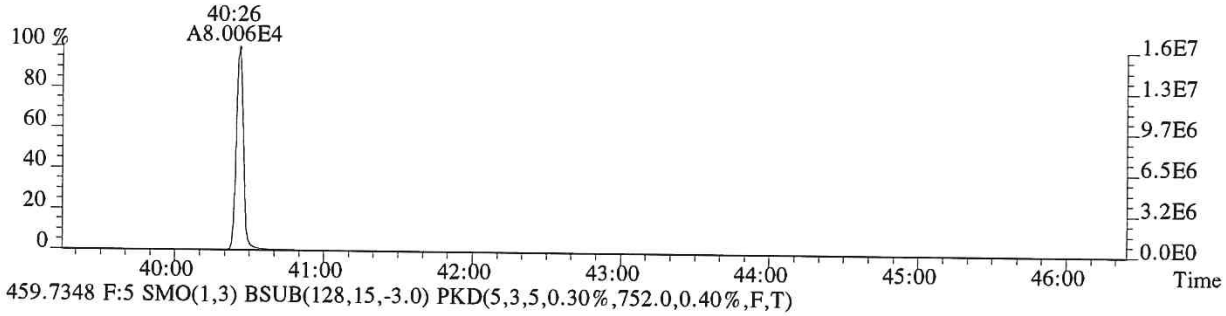


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

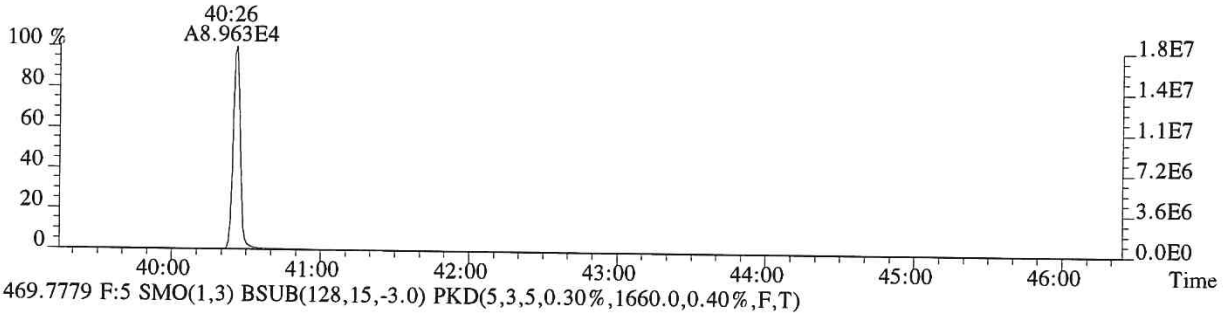


061168

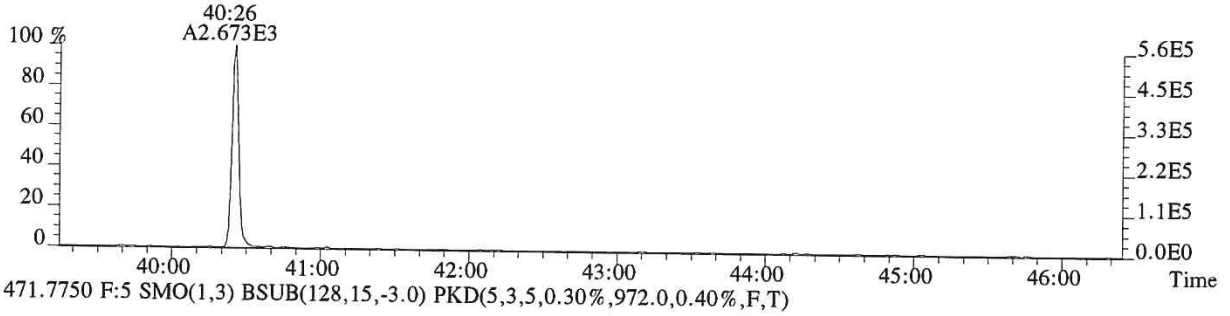
File:P616325 #1-645 Acq: 2-JAN-2019 19:30:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1032.0,0.40%,F,T)



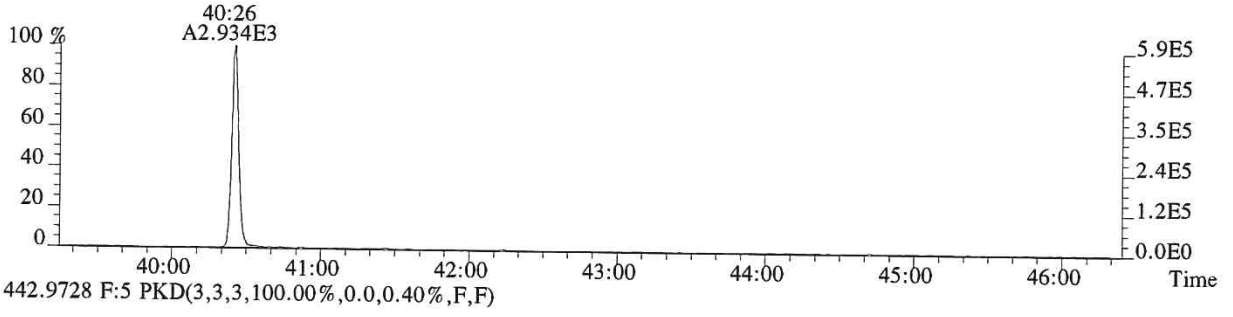
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,752.0,0.40%,F,T)



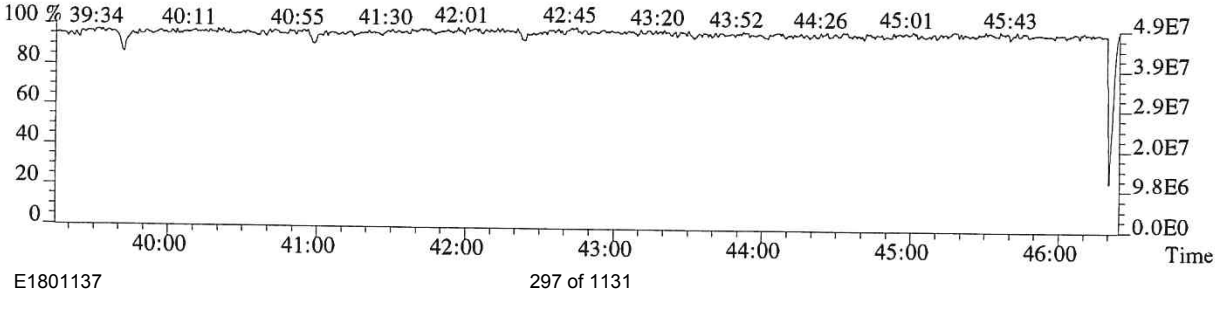
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1660.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,972.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0139

Run #16 Filename P519769 Samp: 1 Inj: 1 Acquired: 4-JAN-19 06:40:33
Processed: 4-JAN-19 15:57:14 Sample ID: E1801137-006DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:04	4.143e+03	5.538e+03	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:58	2.486e+02	1.347e+02	1.84	no	no	1.012
3	Unk	2,3,4,7,8-PeCDF	32:00	1.739e+02	1.167e+02	1.49	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:55	2.383e+02	2.112e+02	1.13	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:03	7.167e+01	6.169e+01	1.16	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:35	1.377e+01	1.847e+01	0.75	no	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:25	1.642e+01	7.626e+00	2.15	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:49	5.751e+01	8.043e+01	0.71	no	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:22	1.062e+01	8.391e+00	1.27	no	no	1.258
10	Unk	OCDF	42:00	3.750e+01	5.510e+01	0.68	no	no	1.359
11	Unk	2,3,7,8-TCDD	27:03	1.183e+03	1.646e+03	0.72	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:21	1.403e+01	8.876e+00	1.58	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:51	1.250e+01	1.335e+01	0.94	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:09	1.397e+01	4.089e+00	3.42	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:51	1.486e+02	1.616e+02	0.92	yes	no	1.025
17	Unk	OCDD	41:53	1.129e+03	1.223e+03	0.92	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:04	2.266e+04	2.850e+04	0.80	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:58	3.386e+04	2.180e+04	1.55	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	3.147e+04	2.005e+04	1.57	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.308e+04	2.387e+04	0.55	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:02	1.601e+04	3.108e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.413e+04	2.702e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:23	1.228e+04	2.403e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:49	1.014e+04	2.342e+04	0.43	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:18	8.426e+03	1.893e+04	0.45	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:02	1.059e+04	1.372e+04	0.77	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.398e+04	1.484e+04	1.62	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	1.827e+04	1.315e+04	1.39	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:51	1.988e+04	1.693e+04	1.17	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:50	2.065e+04	1.941e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	41:51	2.146e+04	2.394e+04	0.90	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:20	1.695e+04	2.152e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:06	2.135e+04	1.632e+04	1.31	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	6.538e+01				no	1.014

$$\text{OCDD} = \frac{(1.129e+03 + 1.223e+03) \times 4000\ \text{pg} \times 100}{(2.146e+04 + 2.394e+04) \times 10.252\text{g} \times 56.3 / 100 \times 1.118} = 26865.7646\ \text{ng/kg}$$

LG 1/7/19

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0139

Run #16 Filename P519769 Samp: 1 Inj: 1 Acquired: 4-JAN-19 06:40:33
Processed: 4-JAN-19 15:57:14 LAB. ID: E1801137-006DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.72e+05	9.36e+02	6.1e+02	7.46e+05	8.76e+02	8.5e+02
2	1,2,3,7,8-PeCDF	3.99e+04	9.68e+02	4.1e+01	2.40e+04	1.77e+03	1.4e+01
3	2,3,4,7,8-PeCDF	2.46e+04	9.68e+02	2.5e+01	1.82e+04	1.77e+03	1.0e+01
4	1,2,3,4,7,8-HxCDF	3.58e+04	3.16e+02	1.1e+02	3.36e+04	4.48e+02	7.5e+01
5	1,2,3,6,7,8-HxCDF	1.40e+04	3.16e+02	4.4e+01	1.17e+04	4.48e+02	2.6e+01
6	2,3,4,6,7,8-HxCDF	3.71e+03	3.16e+02	1.2e+01	2.72e+03	4.48e+02	6.1e+00
7	1,2,3,7,8,9-HxCDF	3.88e+03	3.16e+02	1.2e+01	1.72e+03	4.48e+02	3.8e+00
8	1,2,3,4,6,7,8-HpCDF	1.02e+04	4.96e+02	2.1e+01	1.11e+04	6.40e+02	1.7e+01
9	1,2,3,4,7,8,9-HpCDF	1.81e+03	4.96e+02	3.7e+00	1.69e+03	6.40e+02	2.6e+00
10	OCDF	6.06e+03	2.56e+02	2.4e+01	6.30e+03	3.88e+02	1.6e+01
11	2,3,7,8-TCDD	1.72e+05	1.53e+03	1.1e+02	2.54e+05	7.68e+02	3.3e+02
12	1,2,3,7,8-PeCDD	4.06e+03	5.48e+02	7.4e+00	1.86e+03	2.76e+02	6.8e+00
13	1,2,3,4,7,8-HxCDD	*	6.16e+02	*	*	5.24e+02	*
14	1,2,3,6,7,8-HxCDD	2.84e+03	6.16e+02	4.6e+00	3.29e+03	5.24e+02	6.3e+00
15	1,2,3,7,8,9-HxCDD	2.20e+03	6.16e+02	3.6e+00	1.28e+03	5.24e+02	2.4e+00
16	1,2,3,4,6,7,8-HpCDD	2.22e+04	4.12e+02	5.4e+01	2.08e+04	6.24e+02	3.3e+01
17	OCDD	7.12e+04	3.08e+02	2.3e+02	7.47e+04	3.60e+02	2.1e+02
18	13C-2,3,7,8-TCDF	3.14e+06	3.53e+03	8.9e+02	3.92e+06	2.20e+03	1.8e+03
19	13C-1,2,3,7,8-PeCDF	5.30e+06	4.56e+02	1.2e+04	3.38e+06	4.36e+02	7.7e+03
20	13C-2,3,4,7,8-PeCDF	5.10e+06	4.56e+02	1.1e+04	3.23e+06	4.36e+02	7.4e+03
21	13C-1,2,3,4,7,8-HxCDF	2.21e+06	7.40e+02	3.0e+03	4.13e+06	7.32e+02	5.6e+03
22	13C-1,2,3,6,7,8-HxCDF	2.39e+06	7.40e+02	3.2e+03	4.53e+06	7.32e+02	6.2e+03
23	13C-2,3,4,6,7,8-HxCDF	2.16e+06	7.40e+02	2.9e+03	4.08e+06	7.32e+02	5.6e+03
24	13C-1,2,3,7,8,9-HxCDF	1.60e+06	7.40e+02	2.2e+03	3.11e+06	7.32e+02	4.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.23e+06	3.91e+03	3.1e+02	2.83e+06	6.84e+02	4.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	7.78e+05	3.91e+03	2.0e+02	1.76e+06	6.84e+02	2.6e+03
27	13C-2,3,7,8-TCDD	1.58e+06	3.72e+03	4.2e+02	2.04e+06	1.31e+03	1.6e+03
28	13C-1,2,3,7,8-PeCDD	3.69e+06	4.96e+02	7.4e+03	2.29e+06	9.28e+02	2.5e+03
29	13C-1,2,3,4,7,8-HxCDD	3.01e+06	8.20e+02	3.7e+03	2.34e+06	9.44e+02	2.5e+03
30	13C-1,2,3,6,7,8-HxCDD	2.83e+06	8.20e+02	3.4e+03	2.27e+06	9.44e+02	2.4e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.94e+06	5.48e+02	3.5e+03	1.93e+06	3.60e+02	5.4e+03
32	13C-OCDD	1.18e+06	6.92e+02	1.7e+03	1.31e+06	4.72e+02	2.8e+03
33	13C-1,2,3,4-TCDD	2.53e+06	3.72e+03	6.8e+02	3.24e+06	1.31e+03	2.5e+03
34	13C-1,2,3,7,8,9-HxCDD	2.78e+06	8.20e+02	3.4e+03	2.15e+06	9.44e+02	2.3e+03
35	37Cl-2,3,7,8-TCDD	1.22e+04	1.26e+03	9.6e+00			

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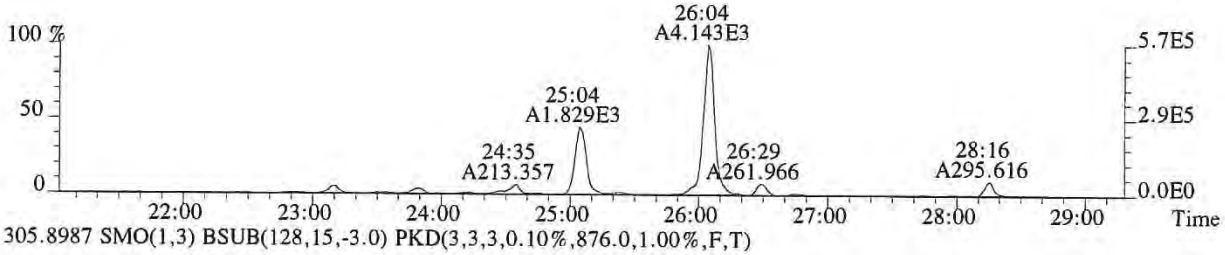
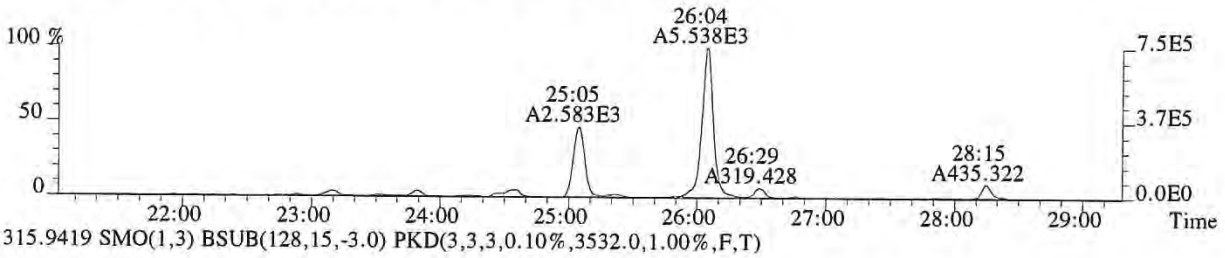
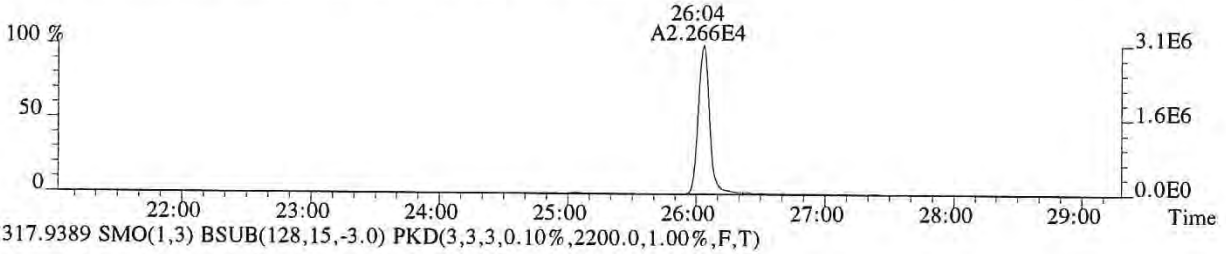
File:P519769 #1-587 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,936.0,1.00%,F,T)



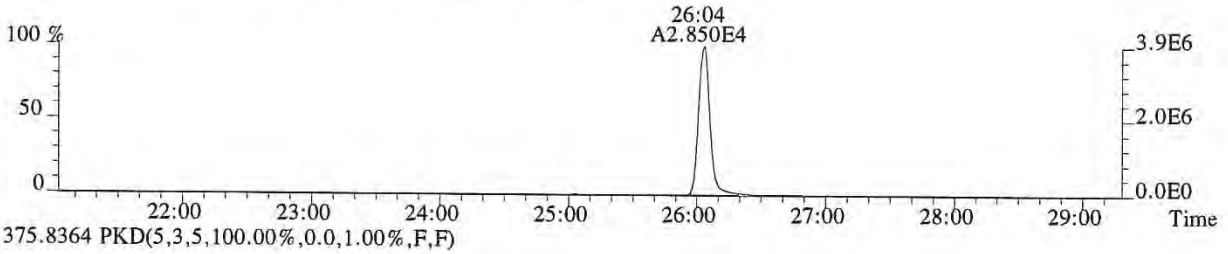
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,876.0,1.00%,F,T)



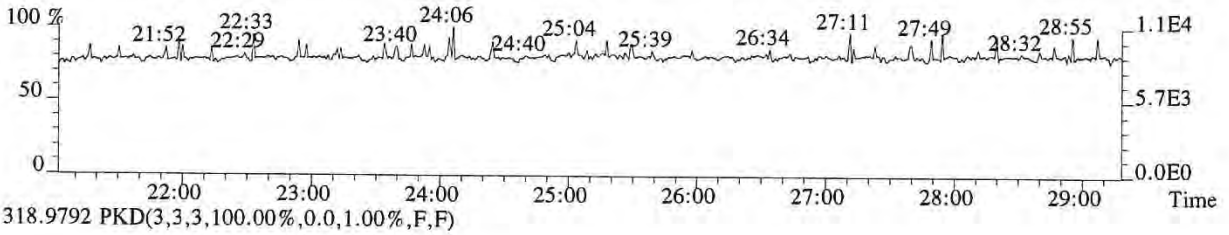
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3532.0,1.00%,F,T)



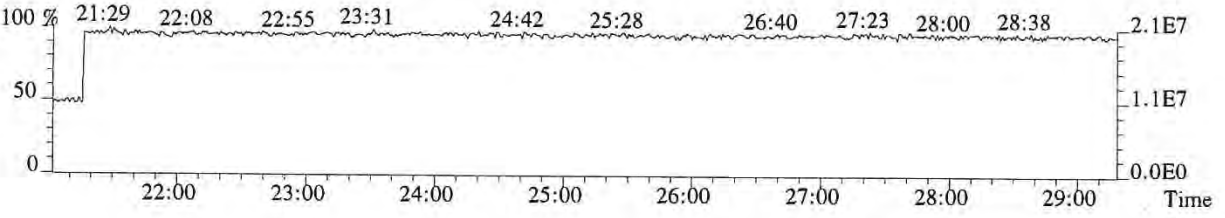
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2200.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

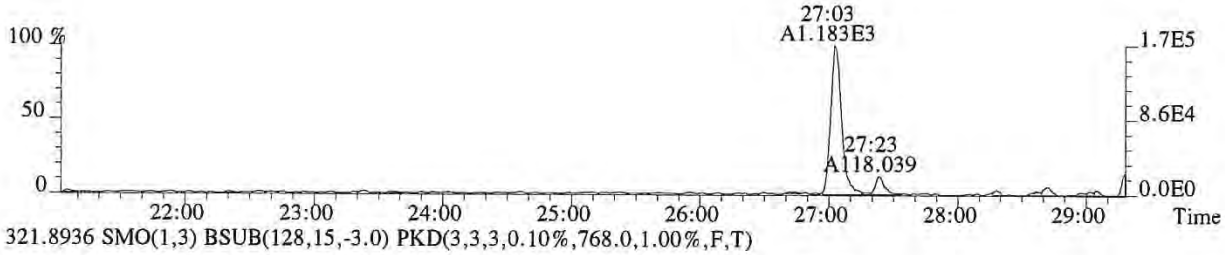


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

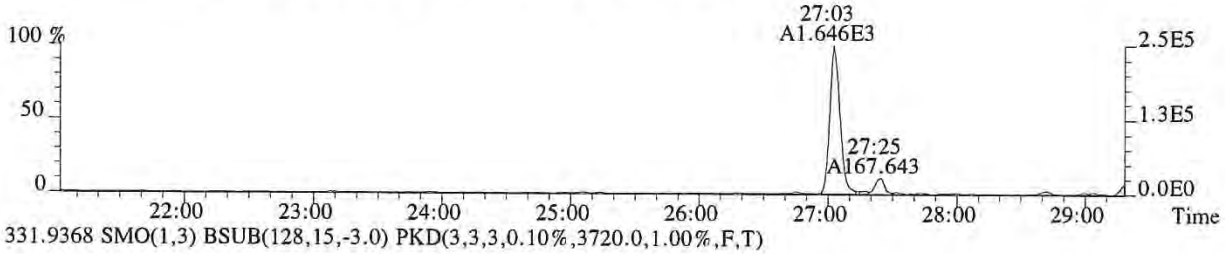


061172

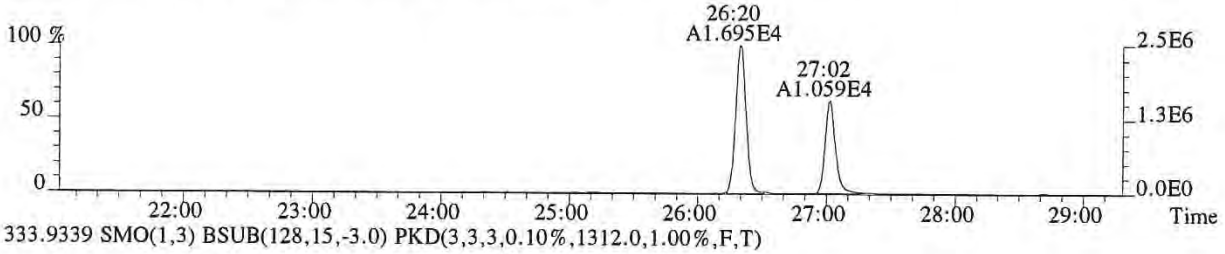
File:P519769 #1-587 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1532.0,1.00%,F,T)



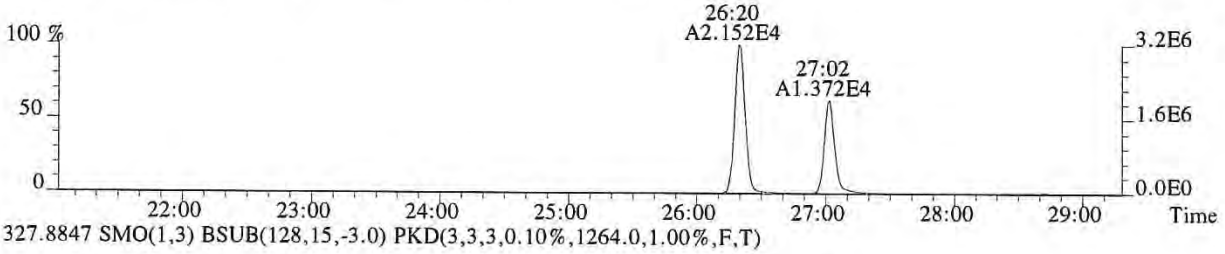
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,768.0,1.00%,F,T)



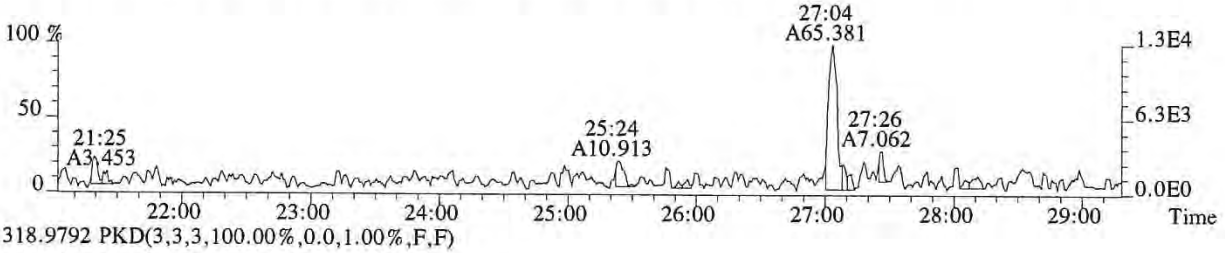
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3720.0,1.00%,F,T)



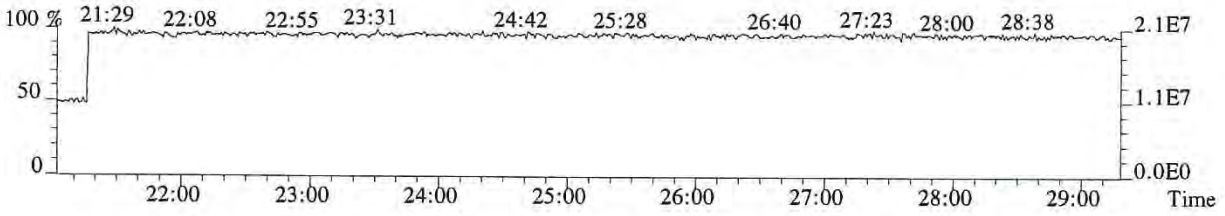
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1312.0,1.00%,F,T)



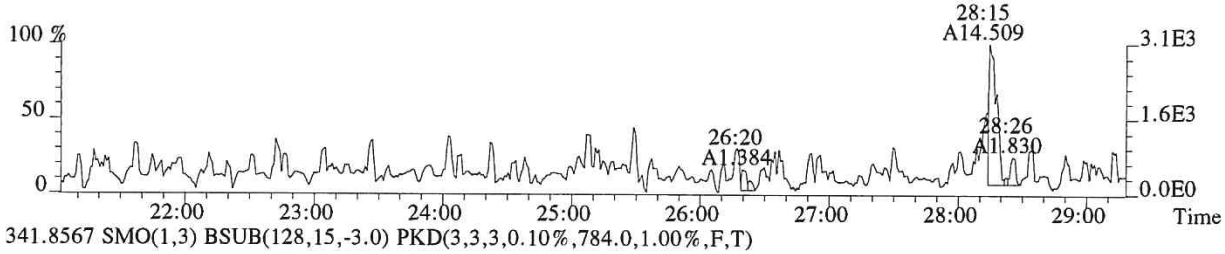
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1264.0,1.00%,F,T)



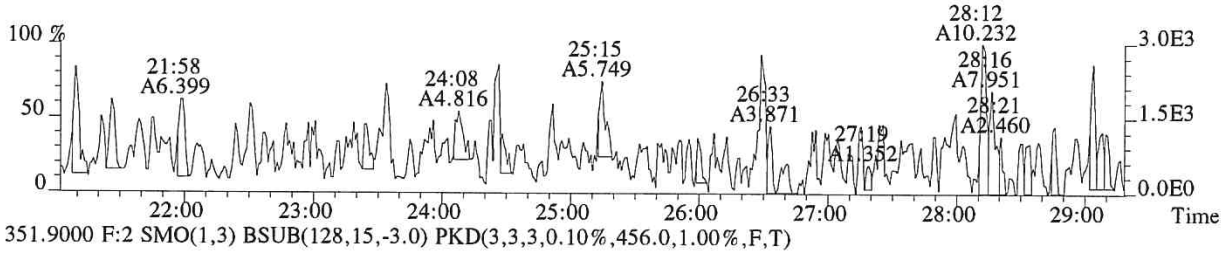
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



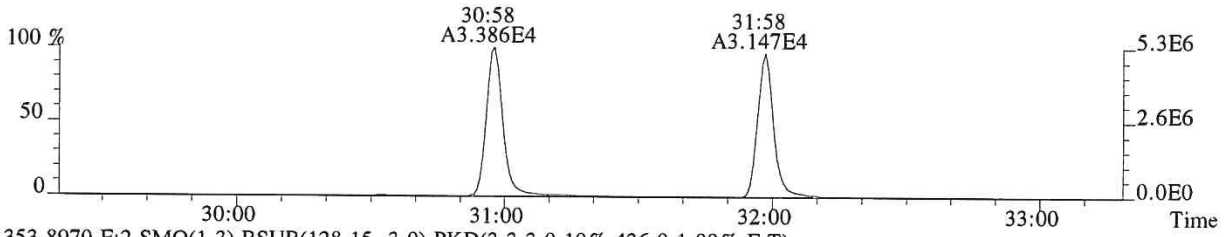
File:P519769 #1-587 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,524.0,1.00%,F,T)



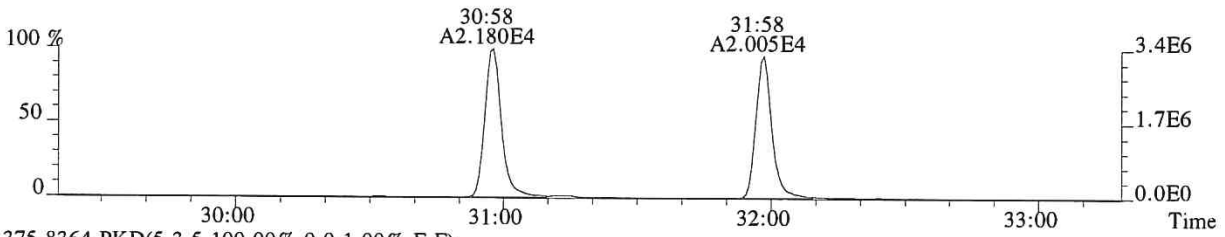
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,784.0,1.00%,F,T)



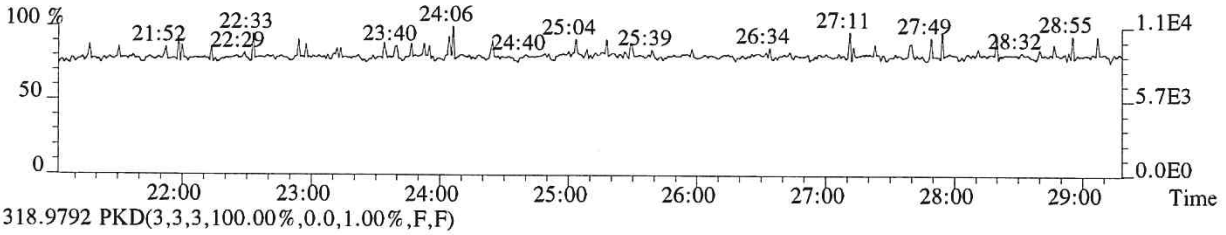
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,456.0,1.00%,F,T)



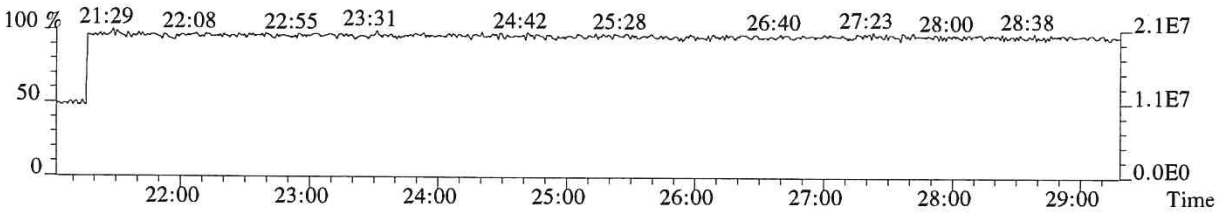
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,436.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

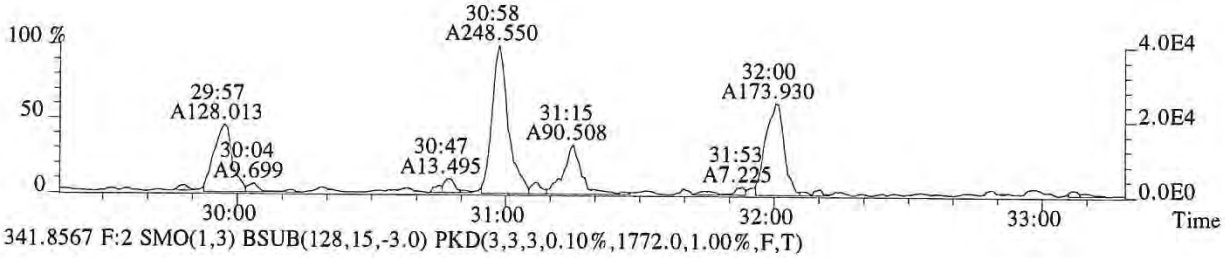


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

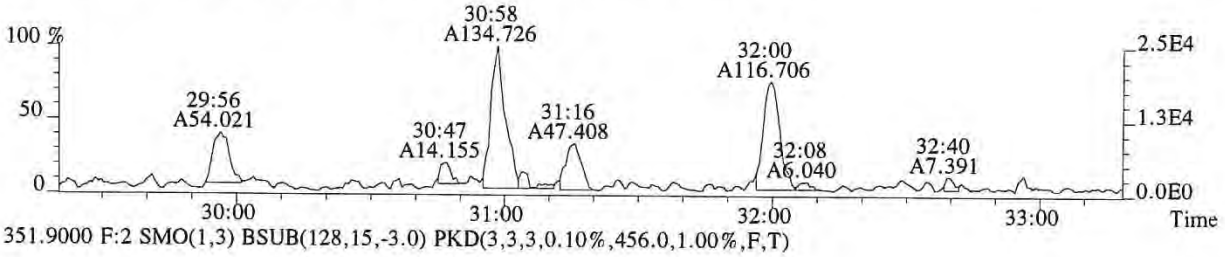


061174

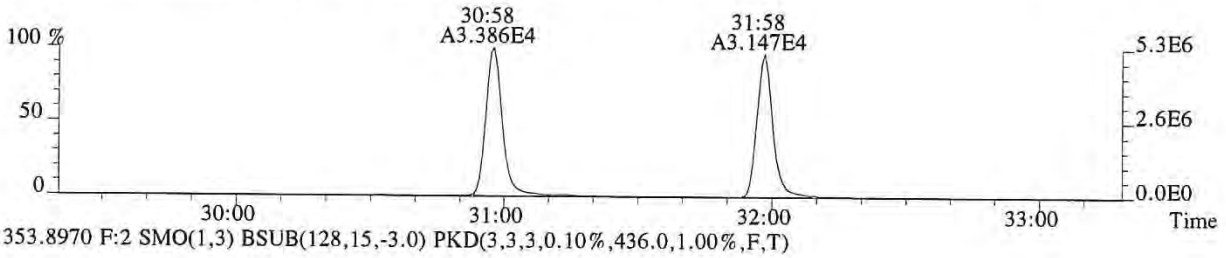
File:P519769 #1-358 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,968.0,1.00%,F,T)



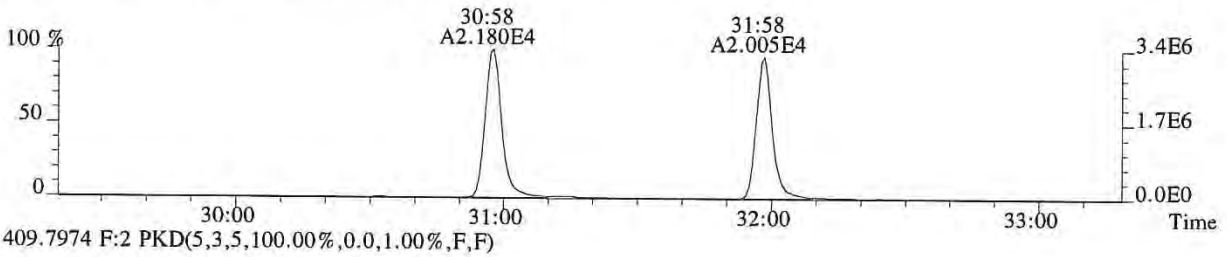
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1772.0,1.00%,F,T)



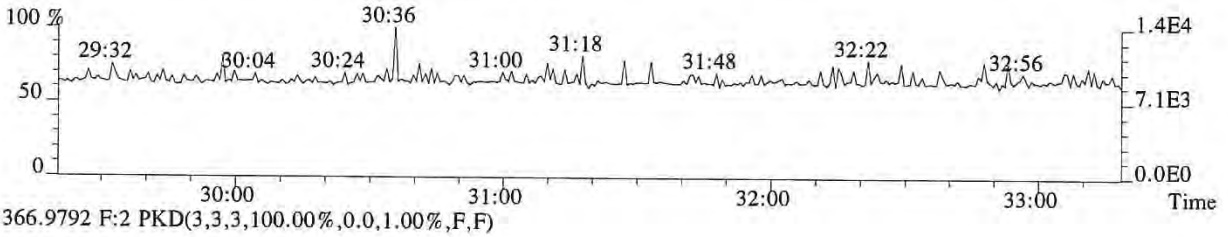
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,456.0,1.00%,F,T)



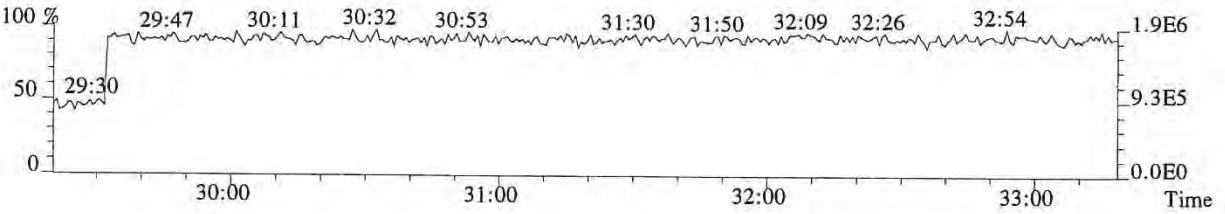
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,436.0,1.00%,F,T)



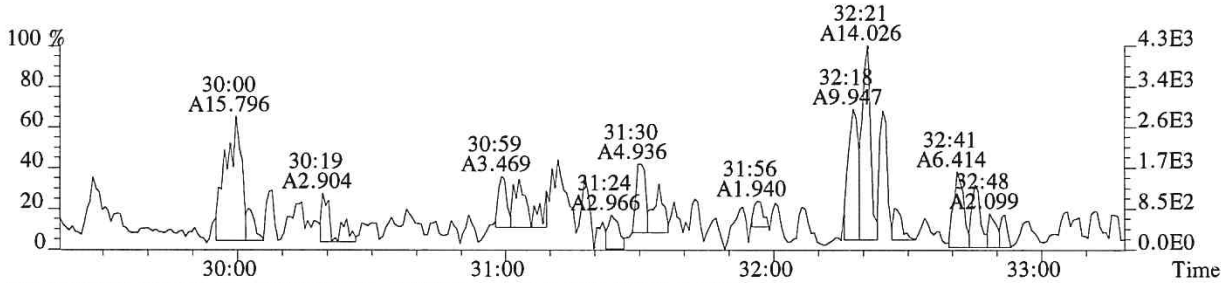
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



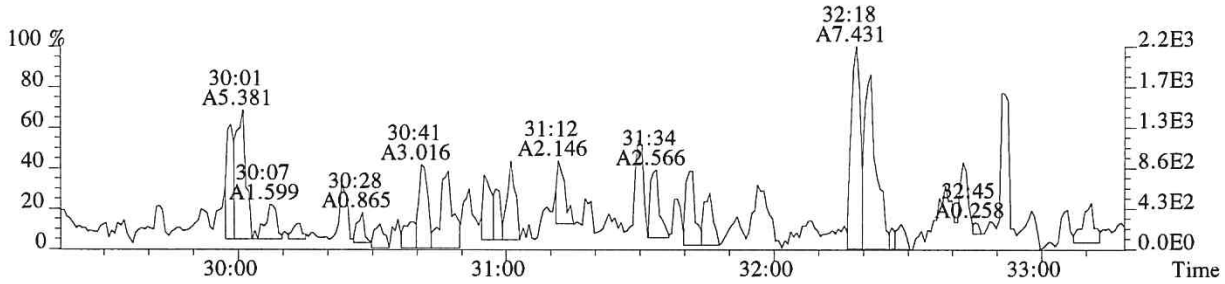
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



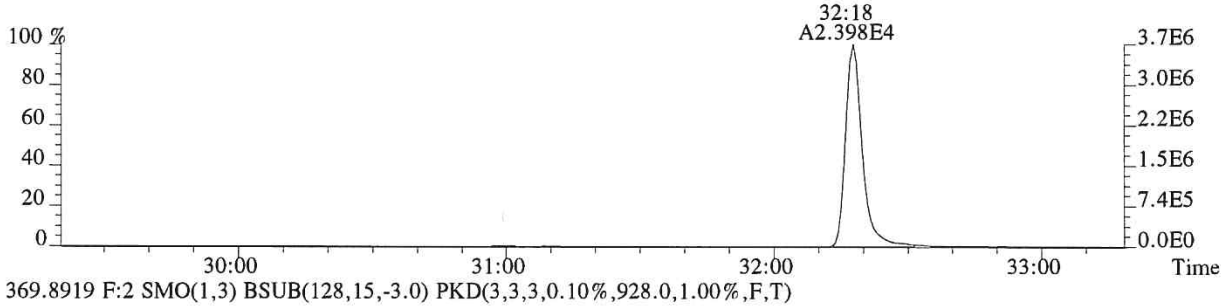
File:P519769 #1-358 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,548.0,1.00%,F,T)



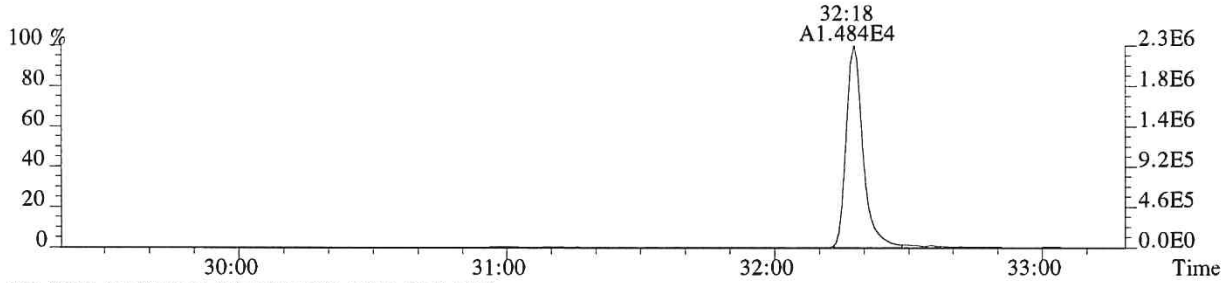
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,276.0,1.00%,F,T)



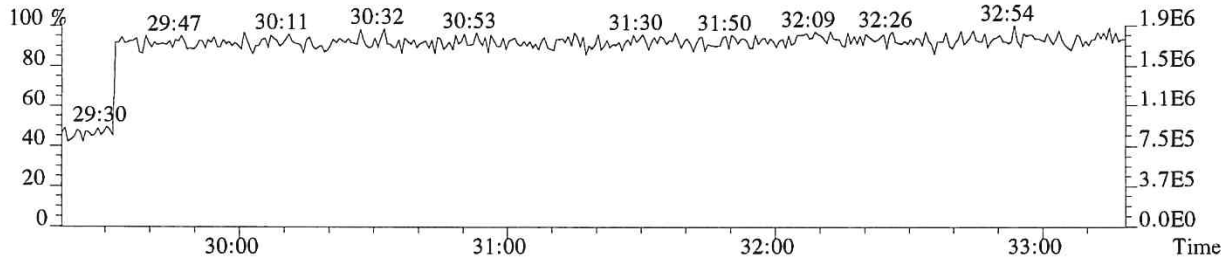
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,496.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,928.0,1.00%,F,T)

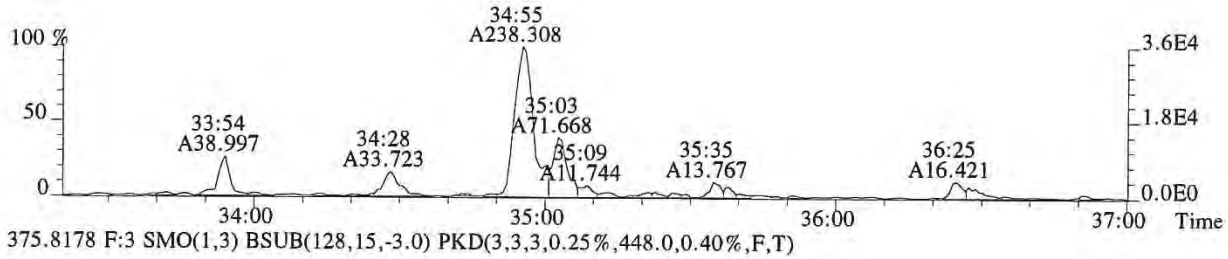


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

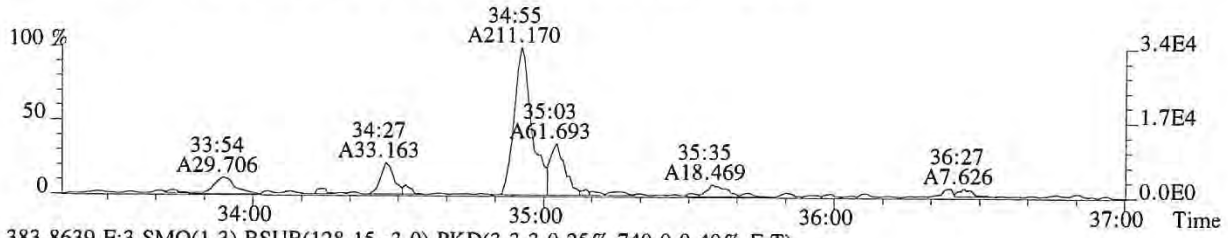


061176

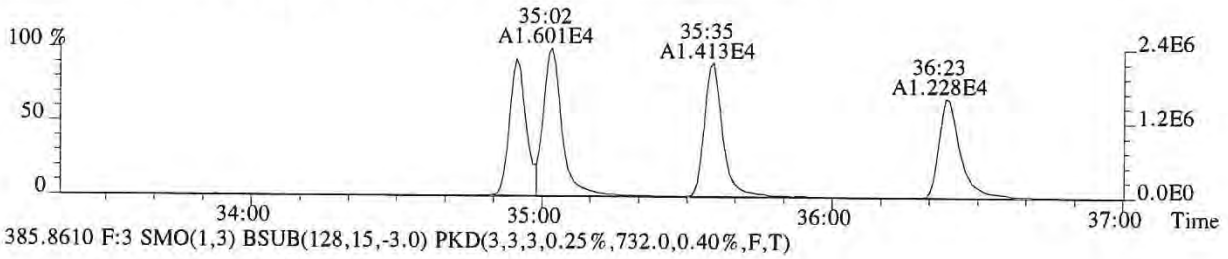
File:P519769 #1-330 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,316.0,0.40%,F,T)



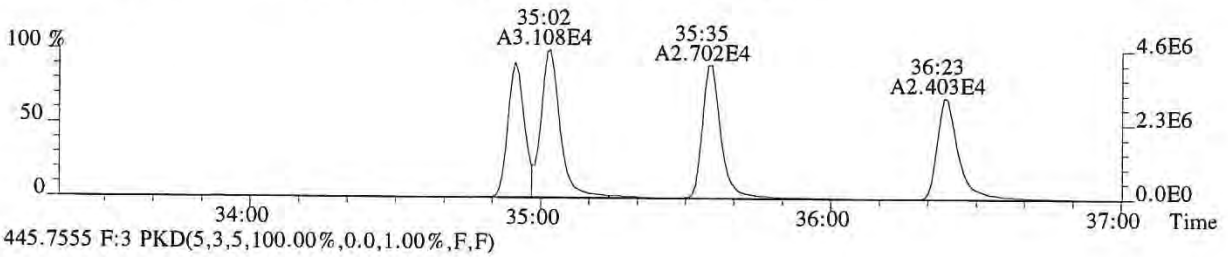
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,448.0,0.40%,F,T)



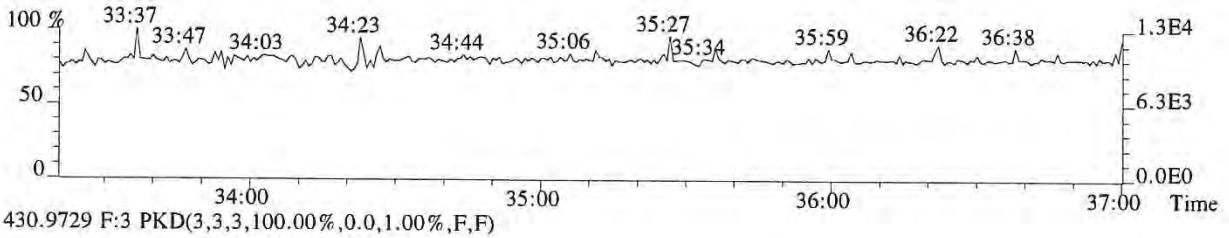
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,740.0,0.40%,F,T)



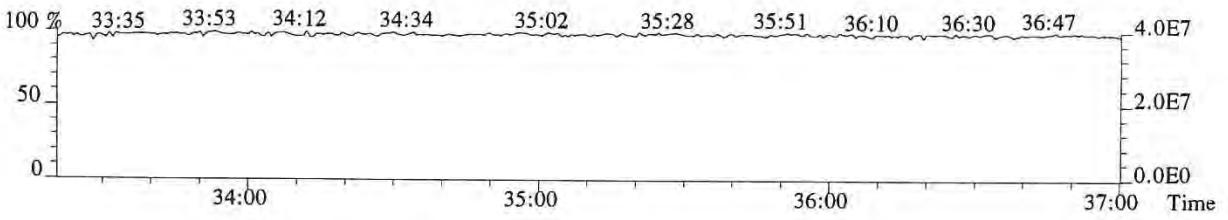
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,732.0,0.40%,F,T)



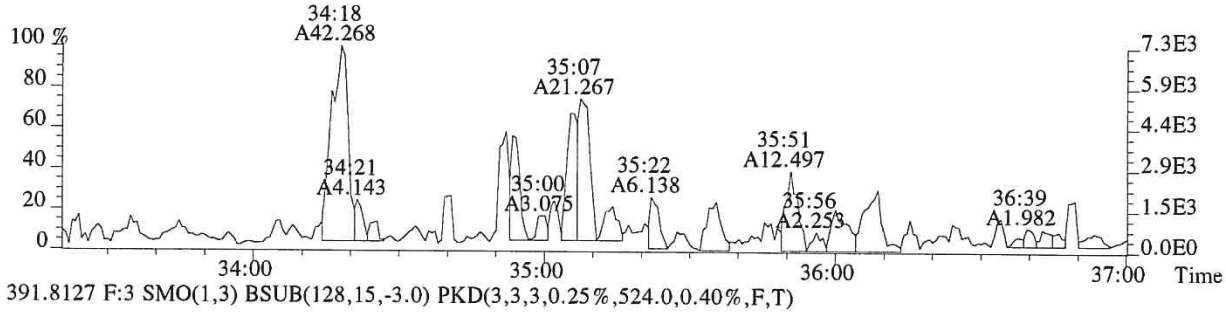
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



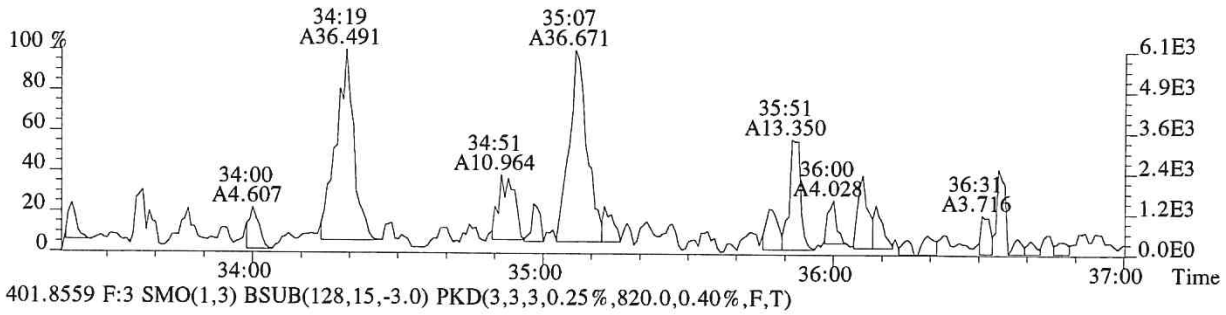
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



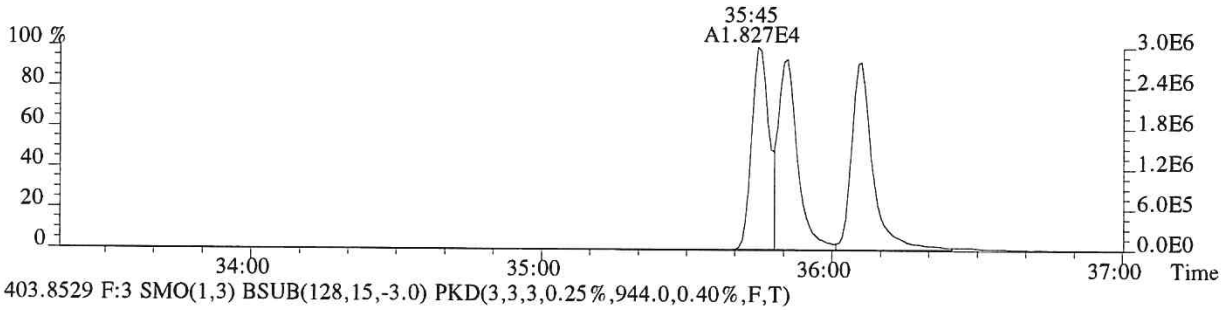
File:P519769 #1-330 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,616.0,0.40%,F,T)



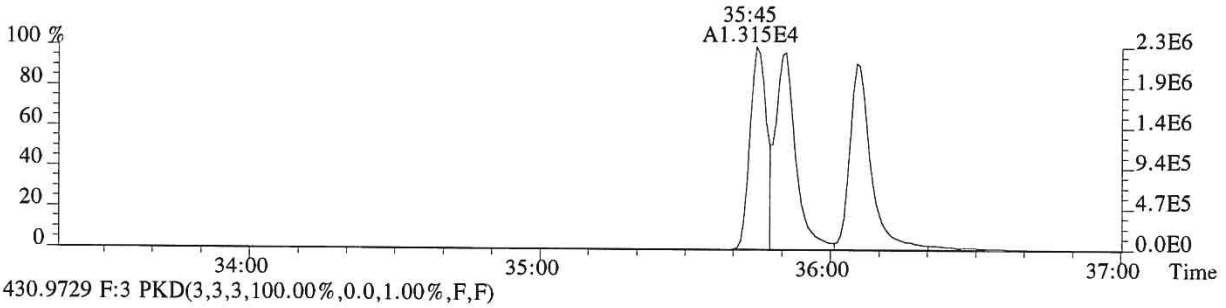
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,524.0,0.40%,F,T)



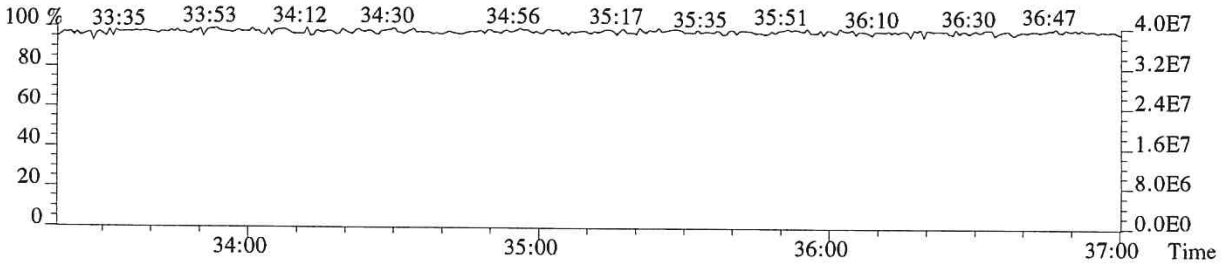
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,820.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,944.0,0.40%,F,T)

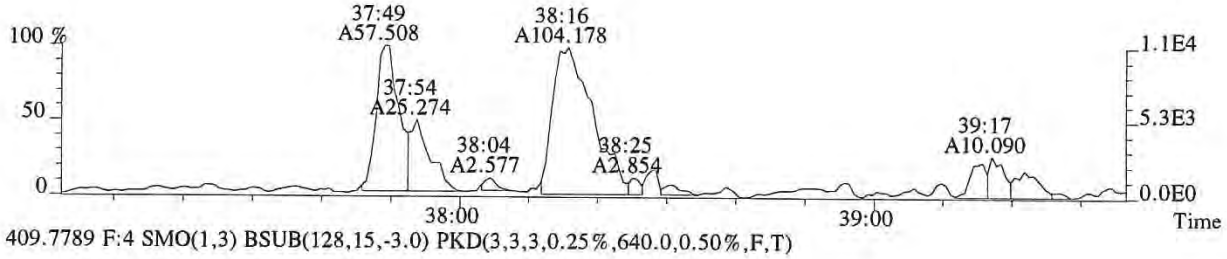


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

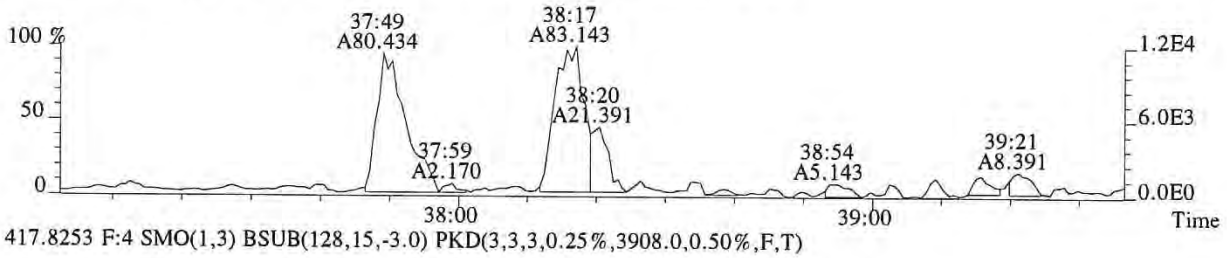


061178

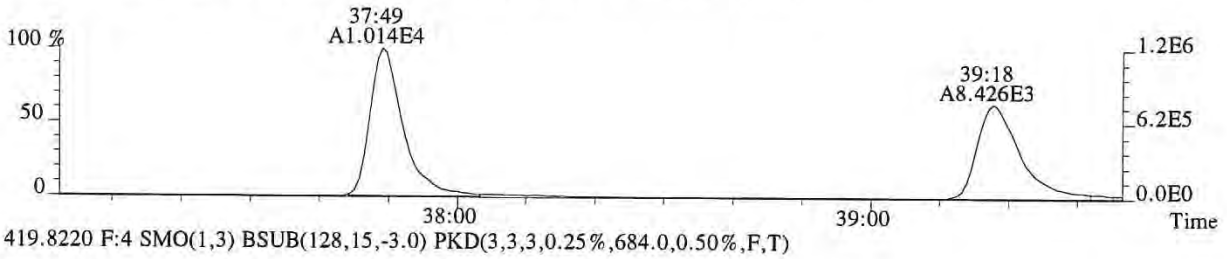
File:P519769 #1-232 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,496.0,0.50%,F,T)



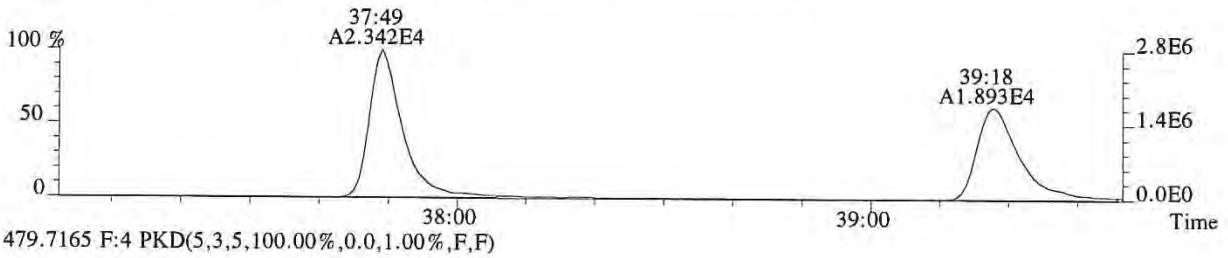
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,640.0,0.50%,F,T)



417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3908.0,0.50%,F,T)



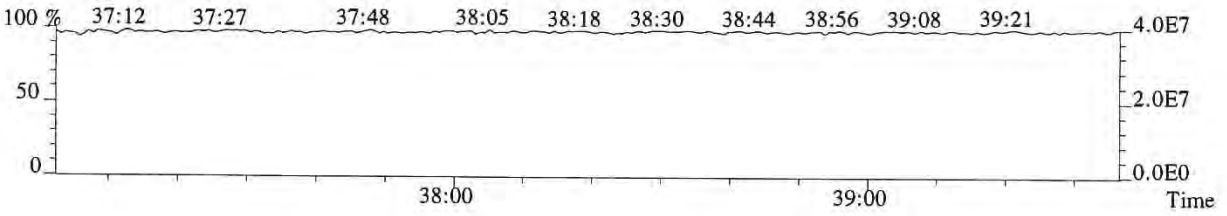
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,684.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

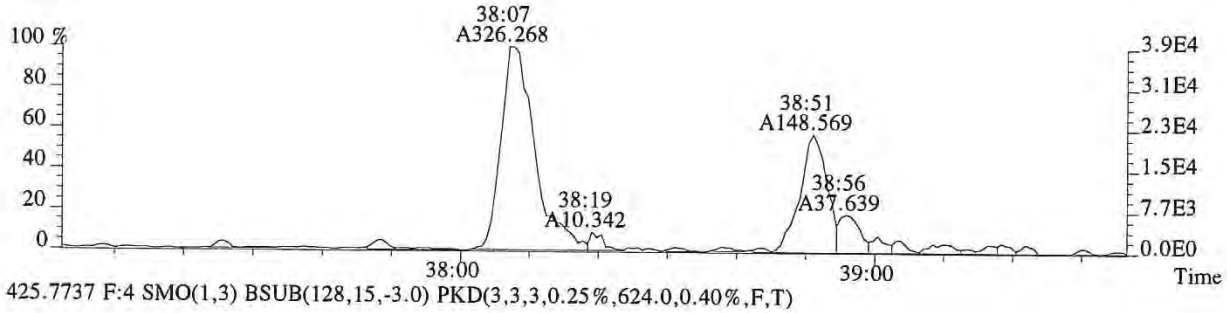


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

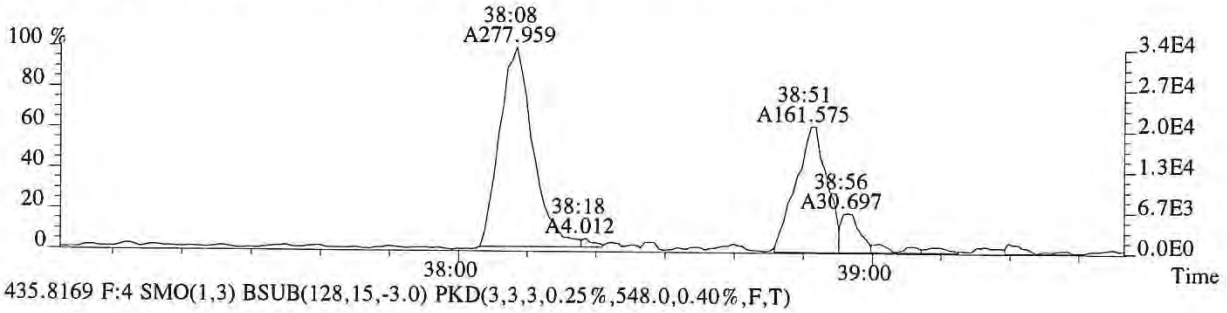


061179

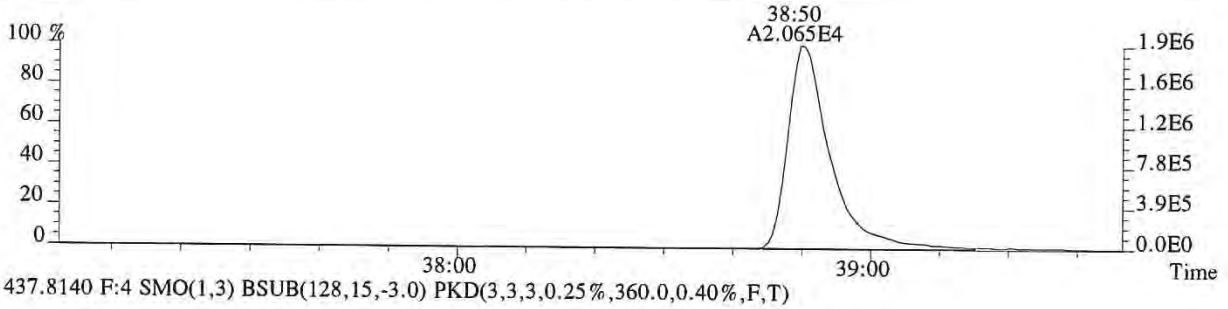
File:P519769 #1-232 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,412.0,0.40%,F,T)



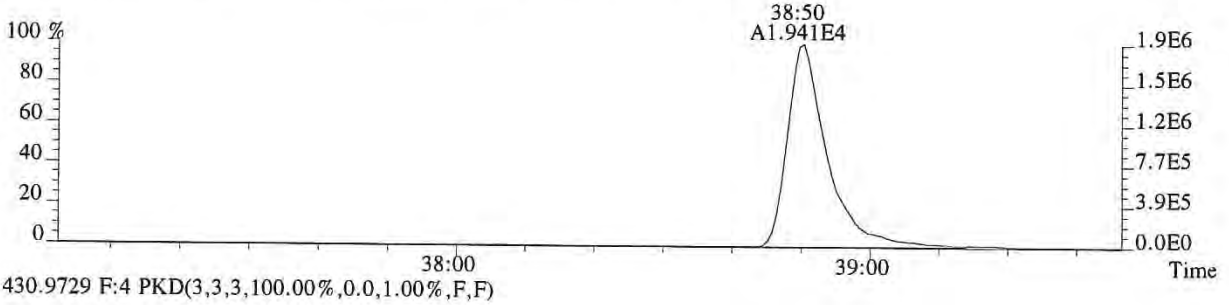
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,624.0,0.40%,F,T)



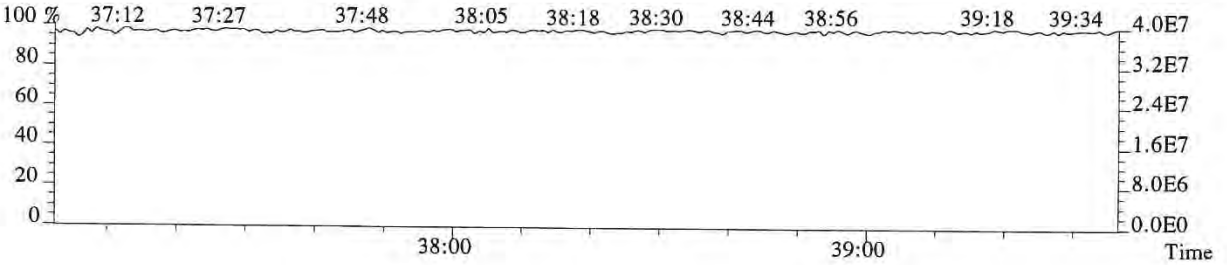
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,548.0,0.40%,F,T)



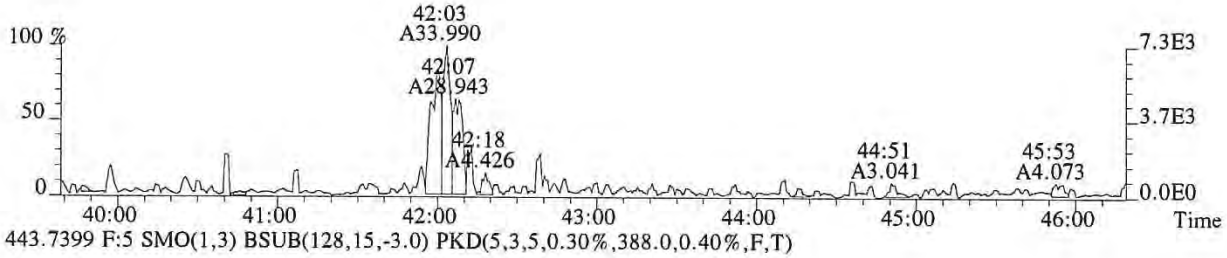
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,360.0,0.40%,F,T)



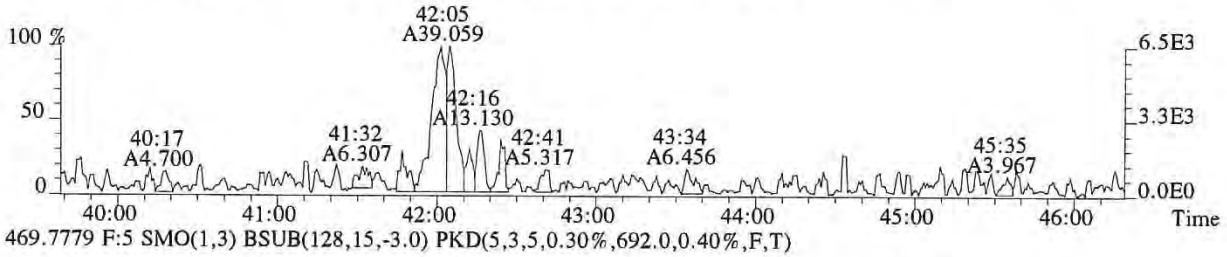
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



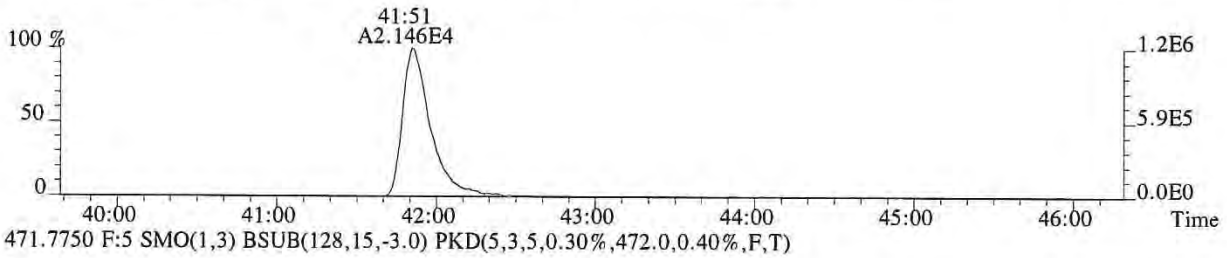
File:P519769 #1-601 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,256.0,0.40%,F,T)



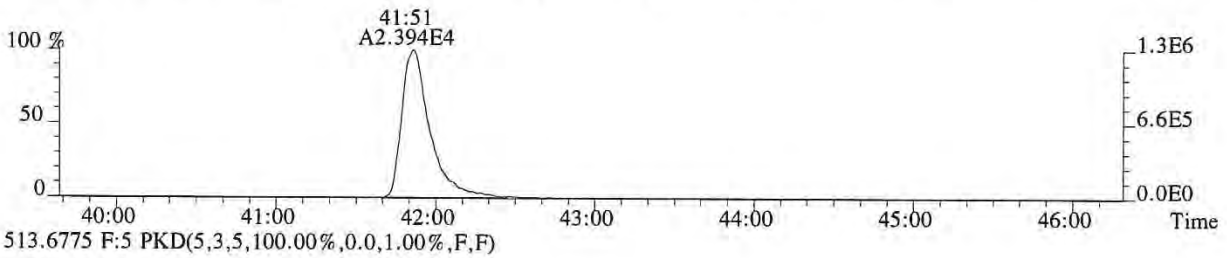
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,388.0,0.40%,F,T)



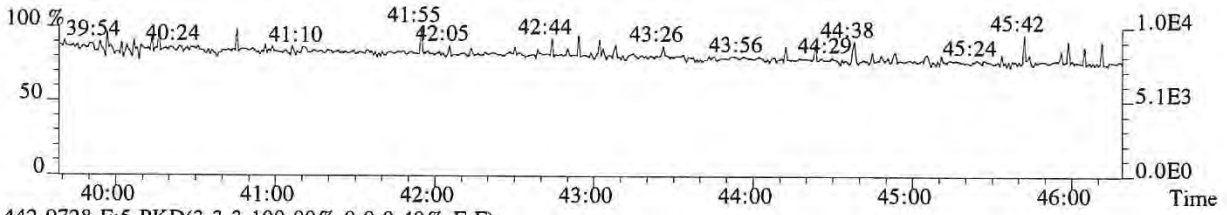
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,692.0,0.40%,F,T)



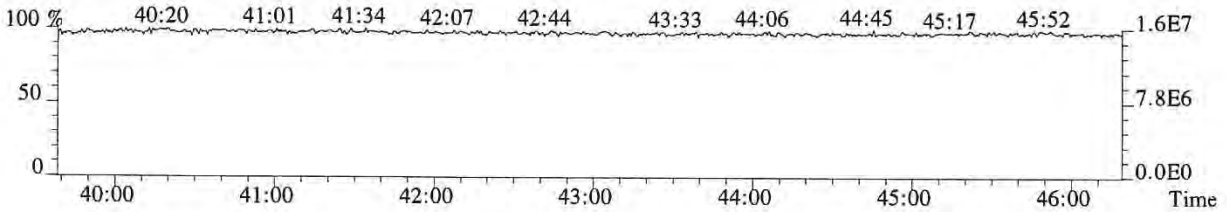
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,472.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

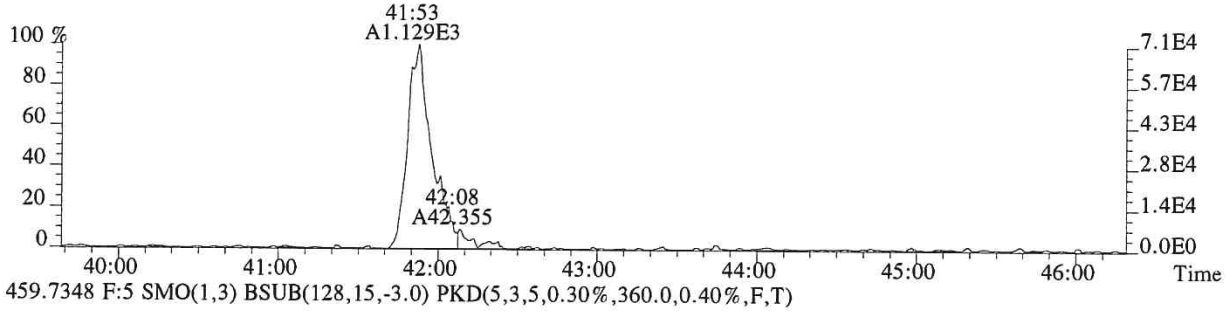


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

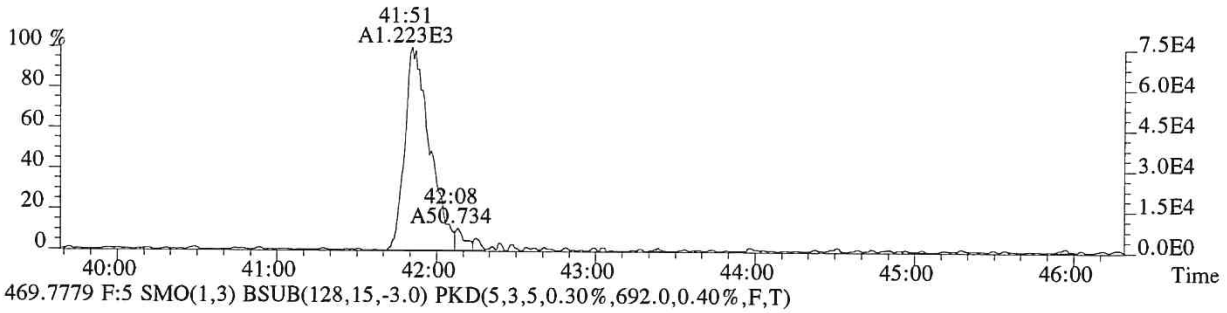


061181

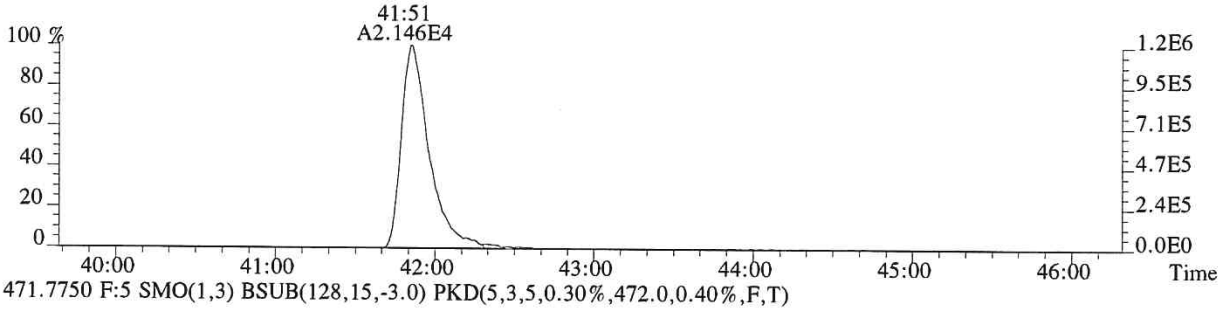
File:P519769 #1-601 Acq: 4-JAN-2019 06:40:33 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-006DL
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,308.0,0.40%,F,T)



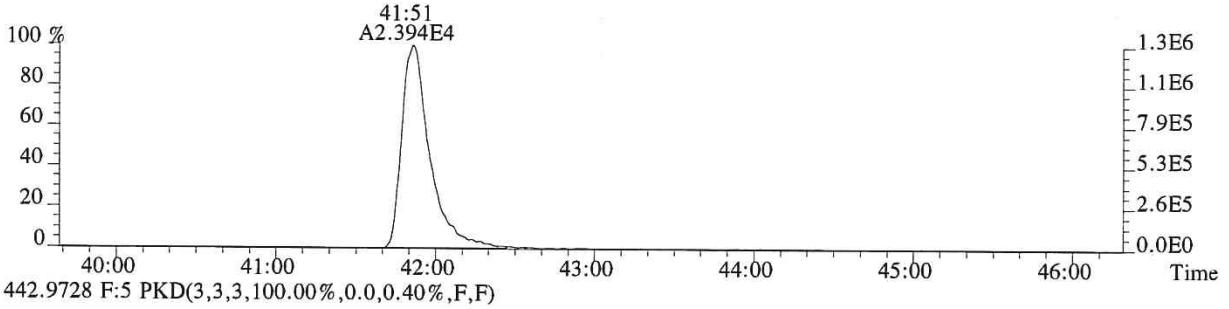
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,360.0,0.40%,F,T)



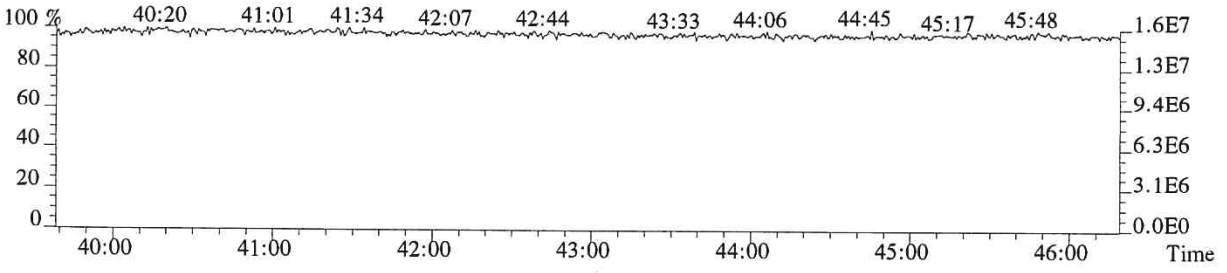
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,692.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,472.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



061182

ALS ENVIRONMENTAL

Sample Response Summary

CLIENT ID.
SL0140

Run #17 Filename P616326 Samp: 1 Inj: 1 Acquired: 2-JAN-19 20:20:03
Processed: 3-JAN-19 13:33:59 Sample ID: E1801137-007

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:33	7.501e+05	9.439e+05	0.79	yes	no	1.081
2	Unk	1,2,3,7,8-PeCDF	30:33	3.234e+04	2.027e+04	1.60	yes	no	1.156
3	Unk	2,3,4,7,8-PeCDF	31:35	2.579e+04	1.635e+04	1.58	yes	no	1.104
4	Unk	1,2,3,4,7,8-HxCDF	34:24	3.264e+04	2.567e+04	1.27	yes	no	1.416
5	Unk	1,2,3,6,7,8-HxCDF	34:31	7.999e+03	6.489e+03	1.23	yes	no	1.293
6	Unk	2,3,4,6,7,8-HxCDF	35:03	1.906e+03	1.512e+03	1.26	yes	no	1.281
7	Unk	1,2,3,7,8,9-HxCDF	35:51	2.311e+03	1.787e+03	1.29	yes	no	1.313
8	Unk	1,2,3,4,6,7,8-HpCDF	37:06	1.038e+04	9.861e+03	1.05	yes	no	1.523
9	Unk	1,2,3,4,7,8,9-HpCDF	38:25	1.595e+03	1.411e+03	1.13	yes	no	1.463
10	Unk	OCDF	40:36	5.829e+04	6.428e+04	0.91	yes	no	1.571
11	Unk	2,3,7,8-TCDD	26:34	1.838e+05	2.352e+05	0.78	yes	no	1.049
12	Unk	1,2,3,7,8-PeCDD	31:52	2.920e+03	1.870e+03	1.56	yes	no	0.929
13	Unk	1,2,3,4,7,8-HxCDD	35:12	1.427e+02	1.179e+02	1.21	yes	no	1.071
14	Unk	1,2,3,6,7,8-HxCDD	35:17	6.744e+02	5.523e+02	1.22	yes	no	1.060
15	Unk	1,2,3,7,8,9-HxCDD	35:31	3.158e+02	2.598e+02	1.22	yes	no	1.145
16	Unk	1,2,3,4,6,7,8-HpCDD	38:00	6.718e+03	6.444e+03	1.04	yes	no	1.112
17	Unk	OCDD	40:26	4.162e+04	4.680e+04	0.89	yes	no	1.157
18	IS	13C-2,3,7,8-TCDF	25:30	1.619e+04	2.072e+04	0.78	yes	no	1.417
19	IS	13C-1,2,3,7,8-PeCDF	30:32	2.366e+04	1.489e+04	1.59	yes	no	1.596
20	IS	13C-2,3,4,7,8-PeCDF	31:34	2.136e+04	1.346e+04	1.59	yes	no	1.571
21	IS	13C-1,2,3,4,7,8-HxCDF	34:23	8.013e+03	1.554e+04	0.52	yes	no	1.160
22	IS	13C-1,2,3,6,7,8-HxCDF	34:30	8.862e+03	1.607e+04	0.55	yes	no	1.336
23	IS	13C-2,3,4,6,7,8-HxCDF	35:03	7.826e+03	1.504e+04	0.52	yes	no	1.250
24	IS	13C-1,2,3,7,8,9-HxCDF	35:49	6.691e+03	1.237e+04	0.54	yes	no	1.131
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:05	4.038e+03	8.849e+03	0.46	yes	no	1.029
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:24	2.767e+03	6.199e+03	0.45	yes	no	0.907
27	IS	13C-2,3,7,8-TCDD	26:33	7.609e+03	9.805e+03	0.78	yes	no	0.983
28	IS	13C-1,2,3,7,8-PeCDD	31:51	1.659e+04	1.052e+04	1.58	yes	no	1.125
29	IS	13C-1,2,3,4,7,8-HxCDD	35:11	1.091e+04	8.600e+03	1.27	yes	no	0.903
30	IS	13C-1,2,3,6,7,8-HxCDD	35:17	9.499e+03	7.726e+03	1.23	yes	no	0.903
31	IS	13C-1,2,3,4,6,7,8-HpCDD	37:59	6.784e+03	6.311e+03	1.08	yes	no	0.857
32	IS	13C-OCDD	40:26	3.569e+03	3.764e+03	0.95	yes	no	0.659
33	RS/RT	13C-1,2,3,4-TCDD	25:46	2.428e+04	3.035e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:31	2.269e+04	1.798e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:34	1.398e+04				no	1.086

$$\text{OCDD} = \frac{(4.162e+04 + 4.680e+04) \times 4000\ \text{pg} \times 1}{(3.569e+03 + 3.764e+03) \times 10.372\ \text{g} \times 54.6 / 100 \times 1.157} = 7361\ \text{ng/kg}$$

LMM 01/04/19

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0140

Run #17 Filename P616326 Samp: 1 Inj: 1 Acquired: 2-JAN-19 20:20:03
Processed: 3-JAN-19 13:33:59 LAB. ID: E1801137-007

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	8.77e+07	2.19e+03	4.0e+04	1.10e+08	5.95e+03	1.9e+04
2	1,2,3,7,8-PeCDF	5.94e+06	3.50e+03	1.7e+03	3.74e+06	2.26e+03	1.7e+03
3	2,3,4,7,8-PeCDF	4.48e+06	3.50e+03	1.3e+03	2.78e+06	2.26e+03	1.2e+03
4	1,2,3,4,7,8-HxCDF	7.24e+06	3.93e+03	1.8e+03	5.60e+06	3.37e+03	1.7e+03
5	1,2,3,6,7,8-HxCDF	1.65e+06	3.93e+03	4.2e+02	1.37e+06	3.37e+03	4.1e+02
6	2,3,4,6,7,8-HxCDF	4.33e+05	3.93e+03	1.1e+02	3.36e+05	3.37e+03	1.0e+02
7	1,2,3,7,8,9-HxCDF	4.41e+05	3.93e+03	1.1e+02	3.61e+05	3.37e+03	1.1e+02
8	1,2,3,4,6,7,8-HpCDF	2.43e+06	2.88e+03	8.4e+02	2.27e+06	7.60e+02	3.0e+03
9	1,2,3,4,7,8,9-HpCDF	3.85e+05	2.88e+03	1.3e+02	3.35e+05	7.60e+02	4.4e+02
10	OCDF	1.15e+07	1.36e+03	8.5e+03	1.29e+07	2.19e+03	5.9e+03
11	2,3,7,8-TCDD	3.59e+07	5.52e+03	6.5e+03	4.60e+07	2.20e+03	2.1e+04
12	1,2,3,7,8-PeCDD	4.97e+05	1.52e+03	3.3e+02	3.36e+05	2.86e+03	1.2e+02
13	1,2,3,4,7,8-HxCDD	3.20e+04	1.15e+03	2.8e+01	2.80e+04	1.81e+03	1.5e+01
14	1,2,3,6,7,8-HxCDD	1.37e+05	1.15e+03	1.2e+02	1.24e+05	1.81e+03	6.8e+01
15	1,2,3,7,8,9-HxCDD	7.16e+04	1.15e+03	6.2e+01	5.23e+04	1.81e+03	2.9e+01
16	1,2,3,4,6,7,8-HpCDD	1.53e+06	2.20e+03	6.9e+02	1.49e+06	1.82e+03	8.2e+02
17	OCDD	8.47e+06	6.56e+02	1.3e+04	9.32e+06	6.36e+02	1.5e+04
18	13C-2,3,7,8-TCDF	2.01e+06	2.12e+04	9.4e+01	2.63e+06	1.94e+04	1.4e+02
19	13C-1,2,3,7,8-PeCDF	4.38e+06	1.11e+04	3.9e+02	2.80e+06	1.52e+04	1.8e+02
20	13C-2,3,4,7,8-PeCDF	4.01e+06	1.11e+04	3.6e+02	2.53e+06	1.52e+04	1.7e+02
21	13C-1,2,3,4,7,8-HxCDF	1.75e+06	1.78e+03	9.9e+02	3.43e+06	8.53e+03	4.0e+02
22	13C-1,2,3,6,7,8-HxCDF	1.83e+06	1.78e+03	1.0e+03	3.42e+06	8.53e+03	4.0e+02
23	13C-2,3,4,6,7,8-HxCDF	1.72e+06	1.78e+03	9.7e+02	3.30e+06	8.53e+03	3.9e+02
24	13C-1,2,3,7,8,9-HxCDF	1.52e+06	1.78e+03	8.5e+02	2.79e+06	8.53e+03	3.3e+02
25	13C-1,2,3,4,6,7,8-HpCDF	9.49e+05	3.19e+03	3.0e+02	2.10e+06	3.12e+03	6.7e+02
26	13C-1,2,3,4,7,8,9-HpCDF	6.32e+05	3.19e+03	2.0e+02	1.45e+06	3.12e+03	4.7e+02
27	13C-2,3,7,8-TCDD	1.37e+06	1.61e+04	8.5e+01	1.78e+06	5.14e+03	3.5e+02
28	13C-1,2,3,7,8-PeCDD	3.11e+06	1.59e+03	2.0e+03	1.98e+06	2.28e+03	8.7e+02
29	13C-1,2,3,4,7,8-HxCDD	2.38e+06	1.18e+03	2.0e+03	1.84e+06	1.34e+03	1.4e+03
30	13C-1,2,3,6,7,8-HxCDD	2.16e+06	1.18e+03	1.8e+03	1.71e+06	1.34e+03	1.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.52e+06	1.55e+03	9.8e+02	1.42e+06	1.06e+03	1.3e+03
32	13C-OCDD	7.34e+05	2.92e+03	2.5e+02	7.82e+05	1.27e+03	6.2e+02
33	13C-1,2,3,4-TCDD	3.34e+06	1.61e+04	2.1e+02	4.15e+06	5.14e+03	8.1e+02
34	13C-1,2,3,7,8,9-HxCDD	5.04e+06	1.18e+03	4.3e+03	4.02e+06	1.34e+03	3.0e+03
35	37Cl-2,3,7,8-TCDD	2.68e+06	2.14e+03	1.3e+03			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0140

Entry: 36 Totals Name: Total Tetra-Furans

Run: 17 File: P616326 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 20:20:03 Processed: 3-JAN-19 13:33:59

Mass: 303.9020 305.8990 Tot Response: 3.02e+06 RRF: 1.081

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	22:21	6.33e+03	8.04e+03	0.79	yes	1.44e+04		n	n
2	22:38	3.10e+04	3.94e+04	0.79	yes	7.04e+04		n	n
3	22:59	1.04e+04	1.44e+04	0.72	yes	2.48e+04		n	n
4	23:17	2.54e+04	3.23e+04	0.79	yes	5.76e+04		n	n
5	23:39	7.09e+03	8.05e+03	0.88	yes	1.51e+04		n	n
6	24:00	5.16e+04	6.49e+04	0.80	yes	1.16e+05		n	n
7	24:29	3.37e+05	4.23e+05	0.80	yes	7.61e+05		n	n
8	24:48	1.50e+04	1.92e+04	0.78	yes	3.42e+04		n	n
9	25:33	7.50e+05	9.44e+05	0.79	yes	1.69e+06	2,3,7,8-TCDF	n	n
10	25:58	4.95e+04	6.23e+04	0.79	yes	1.12e+05		n	n
11	27:49	5.46e+04	6.81e+04	0.80	yes	1.23e+05		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0140

Entry: 37 Totals Name: Total Tetra-Dioxins

Run: 17 File: P616326 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 20:20:03 Processed: 3-JAN-19 13:33:59

Mass: 319.8970 321.8940 Tot Response: 4.56e+05 RRF: 1.049

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	26:34	1.84e+05	2.35e+05 0.78	yes	4.19e+05	2,3,7,8-TCDD	n	n
2	26:55	1.70e+04	2.02e+04 0.84	yes	3.73e+04		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0140

Entry: 38 Totals Name: Total Penta-Furans1

Run: 17 File: P616326 Sample:1 Injection:1 Function:1

Acquired: 2-JAN-19 20:20:03 Processed: 3-JAN-19 13:33:59

Mass: 339.8600 341.8570 Tot Response: 6.17e+03 RRF: 1.130

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:48	3.84e+03	2.33e+03 1.65	yes	6.17e+03		n	n

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Peak List Summary

CLIENT ID.
SL0140

Entry: 39 Totals Name: Total Penta-Furans2

Run: 17 File: P616326 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 20:20:03 Processed: 3-JAN-19 13:33:59

Mass: 339.8600 341.8570 Tot Response: 1.55e+05 RRF: 1.130

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:22	8.15e+02	5.68e+02	1.43	yes	1.38e+03		n	n
2	29:32	1.76e+04	1.14e+04	1.55	yes	2.90e+04		n	n
3	30:09	1.51e+03	1.03e+03	1.46	yes	2.54e+03		n	n
4	30:12	7.94e+02	4.62e+02	1.72	yes	1.26e+03		n	n
5	30:22	3.88e+03	2.44e+03	1.59	yes	6.32e+03		n	n
6	30:33	3.23e+04	2.03e+04	1.60	yes	5.26e+04	1,2,3,7,8-PeCDF	n	n
7	30:50	1.02e+04	6.33e+03	1.61	yes	1.66e+04		n	n
8	31:28	5.32e+02	3.96e+02	1.34	yes	9.28e+02		n	n
9	31:35	2.58e+04	1.64e+04	1.58	yes	4.21e+04	2,3,4,7,8-PeCDF	n	n
10	32:32	1.40e+03	8.56e+02	1.64	yes	2.26e+03		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0140

Entry: 40 Totals Name: Total Penta-Dioxins

Run: 17 File: P616326 Sample:1 Injection:1 Function:2

Acquired: 2-JAN-19 20:20:03 Processed: 3-JAN-19 13:33:59

Mass: 355.8550 357.8520 Tot Response: 8.14e+03 RRF: 0.9288

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:34	5.74e+02	3.52e+02	1.63	yes	9.26e+02		n	n
2	30:05	2.89e+02	2.05e+02	1.41	yes	4.94e+02		n	n
3	30:35	3.39e+02	2.21e+02	1.53	yes	5.60e+02		n	n
4	30:46	3.12e+02	2.26e+02	1.38	yes	5.38e+02		n	n
5	30:52	1.70e+02	1.01e+02	1.69	yes	2.71e+02		n	n
6	31:06	3.35e+02	2.30e+02	1.46	yes	5.66e+02		n	n
7	31:52	2.92e+03	1.87e+03	1.56	yes	4.79e+03	1,2,3,7,8-PeCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0140

Entry: 41 Totals Name: Total Hexa-Furans

Run: 17 File: P616326 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 20:20:03 Processed: 3-JAN-19 13:33:59

Mass: 373.8210 375.8180 Tot Response: 9.93e+04 RRF: 1.324

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:14	1.20e+03	1.03e+03 1.17	yes	2.23e+03		n	n
2	33:24	5.22e+03	4.05e+03 1.29	yes	9.27e+03		n	n
3	33:57	4.21e+03	3.32e+03 1.27	yes	7.53e+03		n	n
4	34:24	3.26e+04	2.57e+04 1.27	yes	5.83e+04	1,2,3,4,7,8-HxCDF	n	n
5	34:31	8.00e+03	6.49e+03 1.23	yes	1.45e+04	1,2,3,6,7,8-HxCDF	n	n
6	35:03	1.91e+03	1.51e+03 1.26	yes	3.42e+03	2,3,4,6,7,8-HxCDF	n	n
7	35:51	2.31e+03	1.79e+03 1.29	yes	4.10e+03	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0140

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 17 File: P616326 Sample:1 Injection:1 Function:3

Acquired: 2-JAN-19 20:20:03 Processed: 3-JAN-19 13:33:59

Mass: 389.8160 391.8130 Tot Response: 1.14e+04 RRF: 1.092

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:47	2.91e+03	2.23e+03	1.31	yes	5.13e+03		n	n
2	34:35	2.22e+03	1.78e+03	1.25	yes	4.00e+03		n	n
3	35:12	1.43e+02	1.18e+02	1.21	yes	2.61e+02	1,2,3,4,7,8-HxCDD	n	n
4	35:17	6.74e+02	5.52e+02	1.22	yes	1.23e+03	1,2,3,6,7,8-HxCDD	n	n
5	35:27	1.04e+02	9.41e+01	1.10	yes	1.98e+02		n	n
6	35:31	3.16e+02	2.60e+02	1.22	yes	5.76e+02	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0140

Entry: 43 Totals Name: Total Hepta-Furans

Run: 17 File: P616326 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 20:20:03 Processed: 3-JAN-19 13:33:59

Mass: 407.7820 409.7790 Tot Response: 3.69e+04 RRF: 1.495

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:06	1.04e+04	9.86e+03 1.05	yes	2.02e+04	1,2,3,4,6,7,8-HpCDF	n	n
2	37:22	3.64e+02	3.17e+02 1.15	yes	6.81e+02		n	n
3	37:30	6.84e+03	6.17e+03 1.11	yes	1.30e+04		n	n
4	38:25	1.59e+03	1.41e+03 1.13	yes	3.01e+03	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
SL0140

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 17 File: P616326 Sample:1 Injection:1 Function:4

Acquired: 2-JAN-19 20:20:03 Processed: 3-JAN-19 13:33:59

Mass: 423.7770 425.7740 Tot Response: 3.36e+04 RRF: 1.112

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:21	1.04e+04	1.00e+04	1.04	yes	2.05e+04		n	n
2	38:00	6.72e+03	6.44e+03	1.04	yes	1.32e+04	1,2,3,4,6,7,8-HpCDD	n	n

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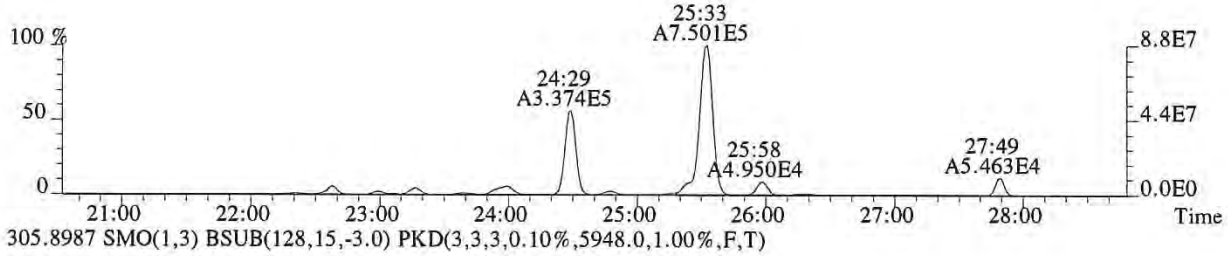
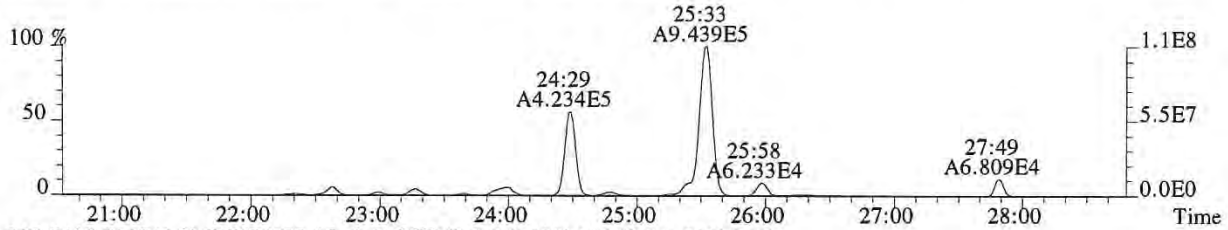
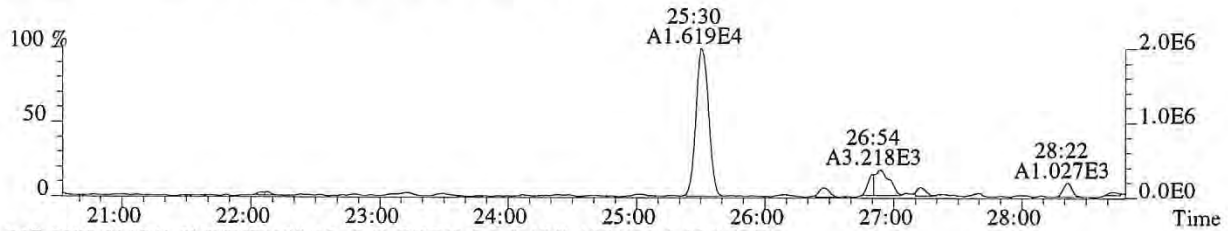
File:P616326 #1-587 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2188.0,1.00%,F,T)



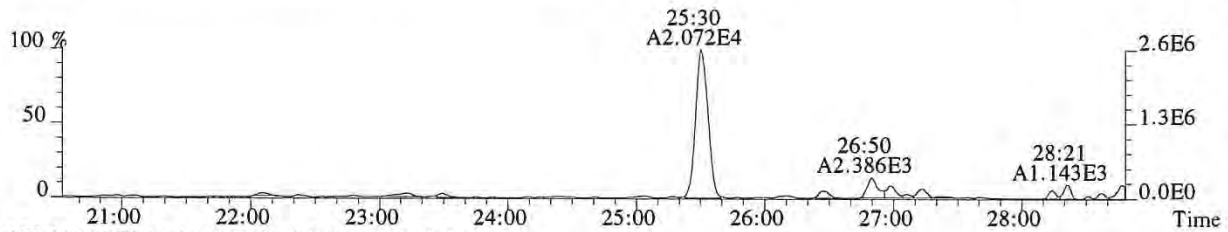
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5948.0,1.00%,F,T)



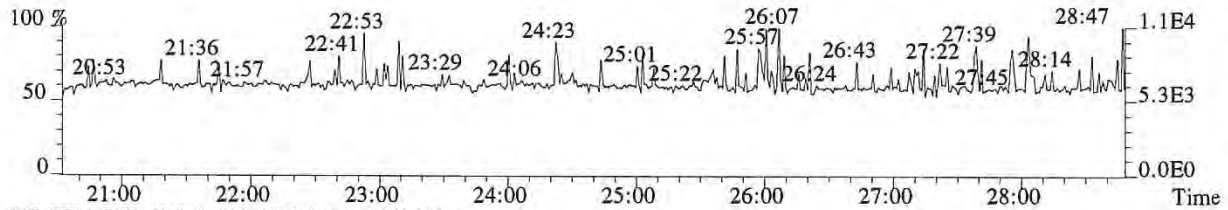
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,21248.0,1.00%,F,T)



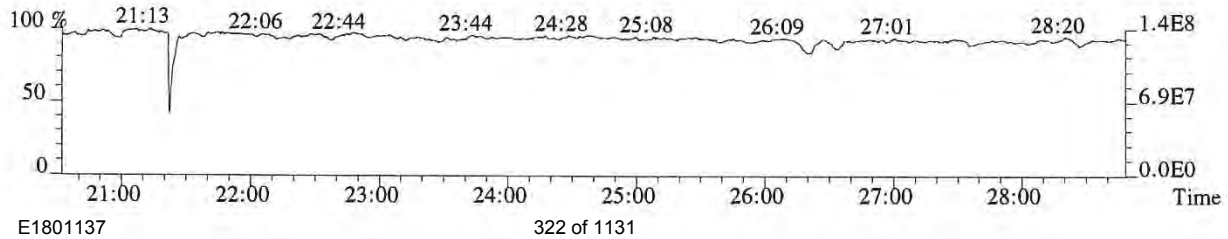
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,19444.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

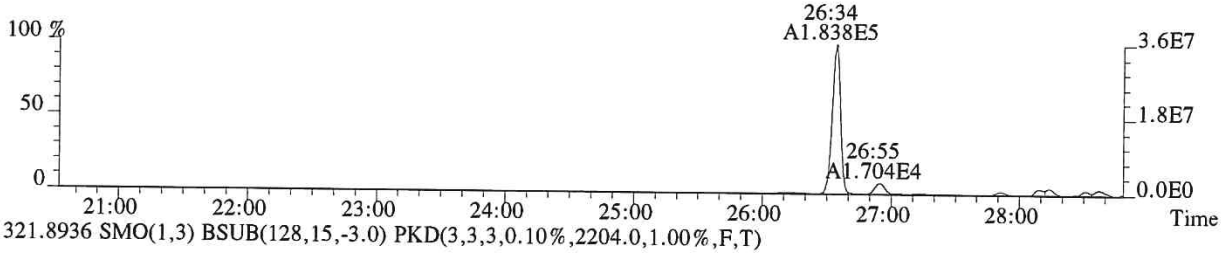


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

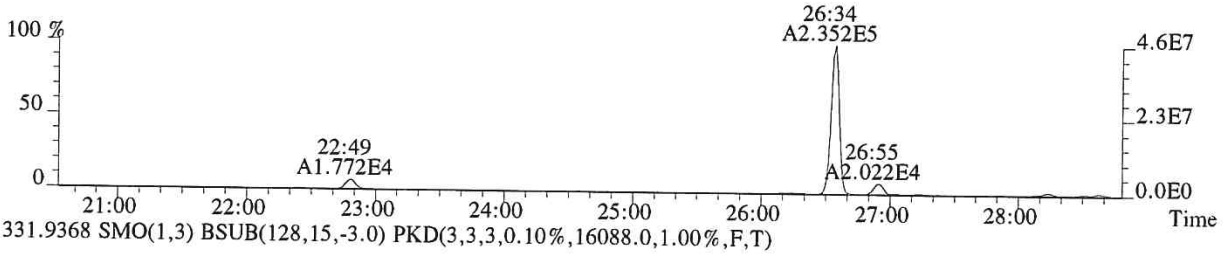


061194

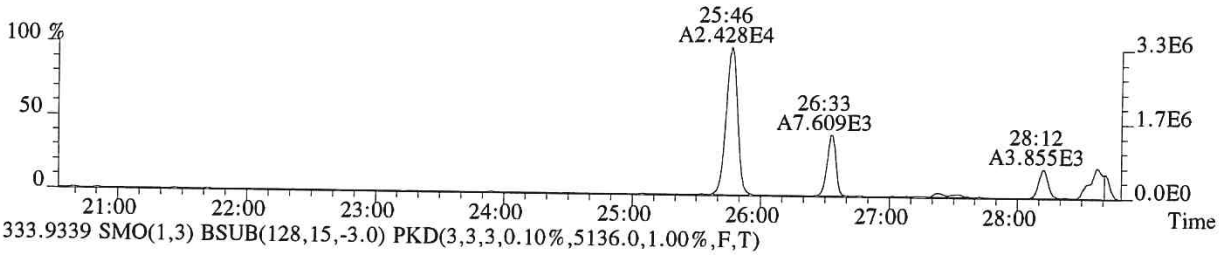
File:P616326 #1-587 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5516.0,1.00%,F,T)



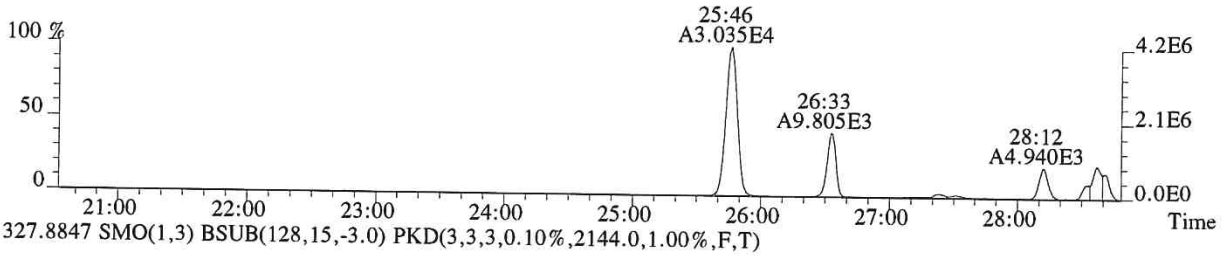
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2204.0,1.00%,F,T)



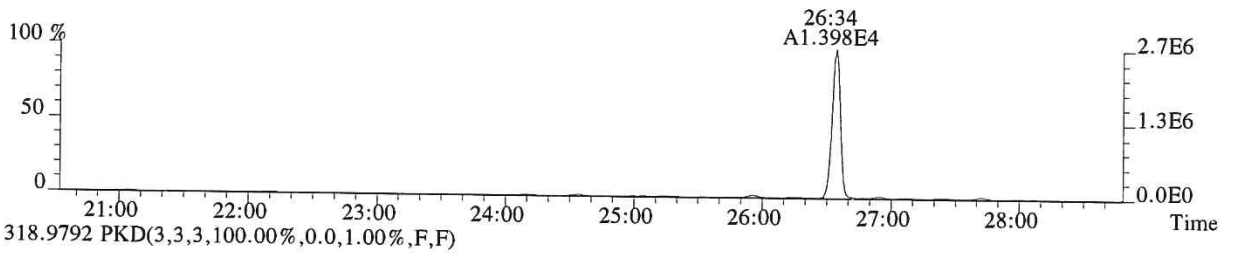
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16088.0,1.00%,F,T)



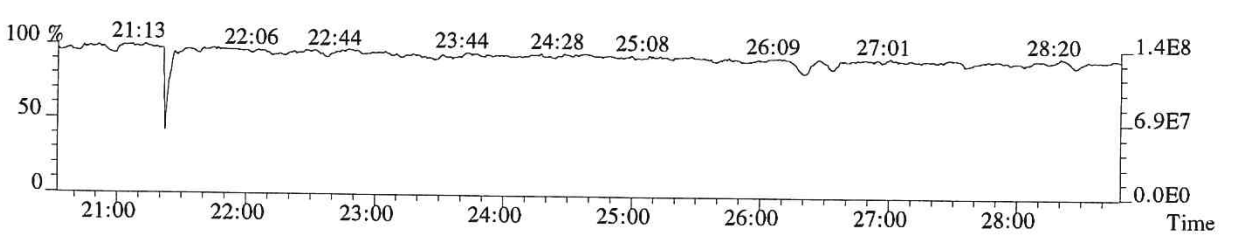
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5136.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2144.0,1.00%,F,T)

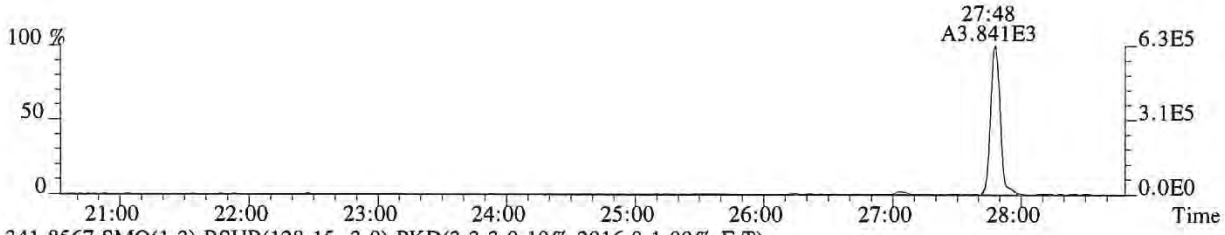


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

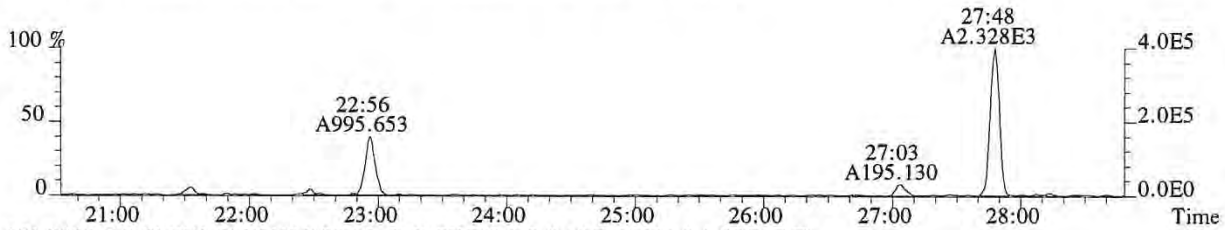


061195

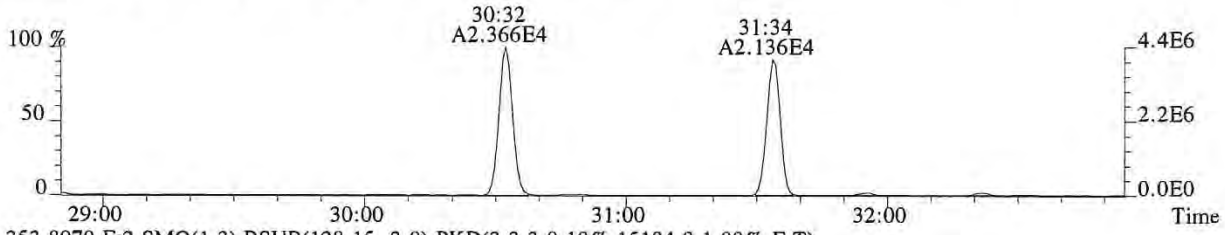
File:P616326 #1-587 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1080.0,1.00%,F,T)



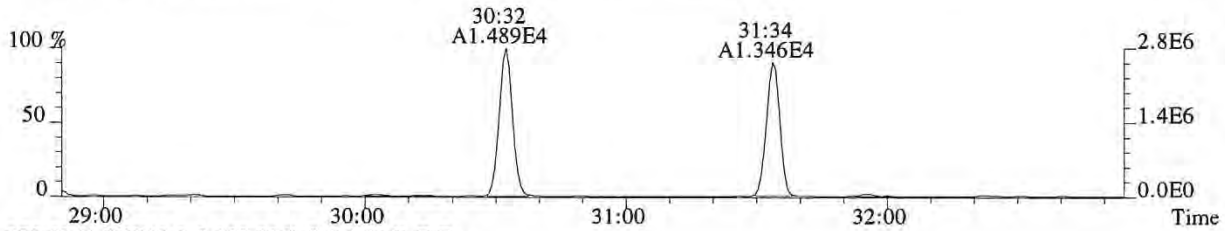
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2016.0,1.00%,F,T)



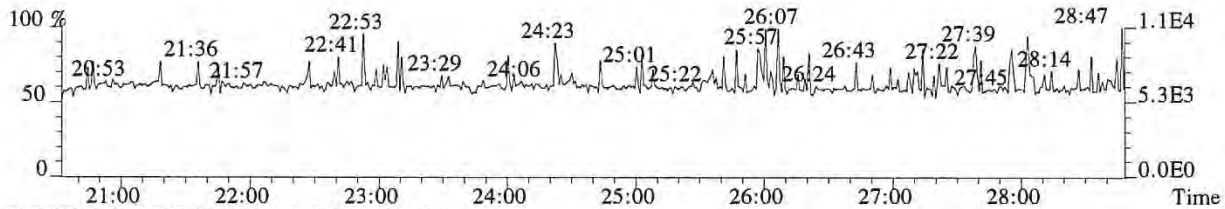
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11124.0,1.00%,F,T)



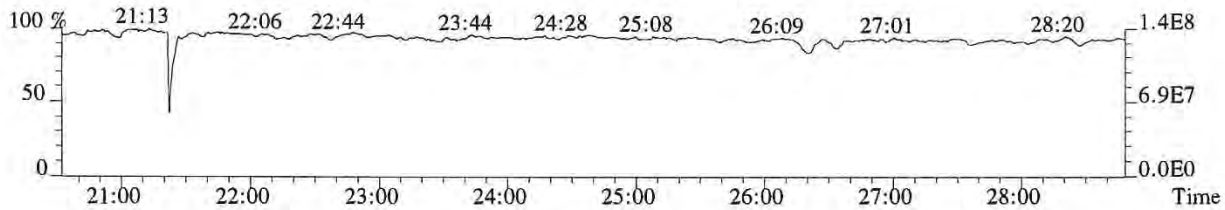
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15184.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

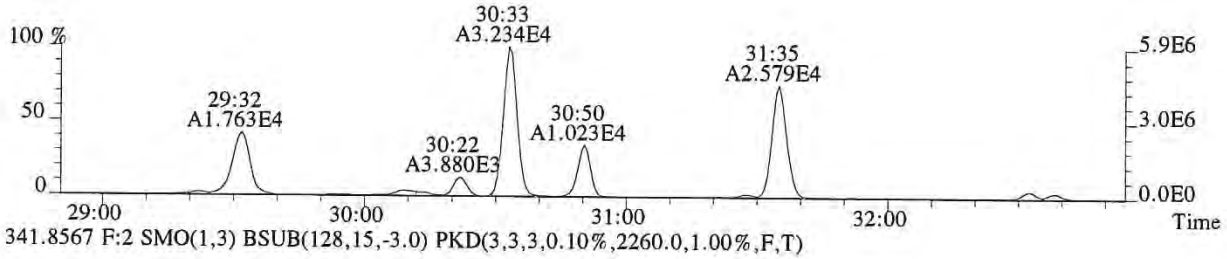


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

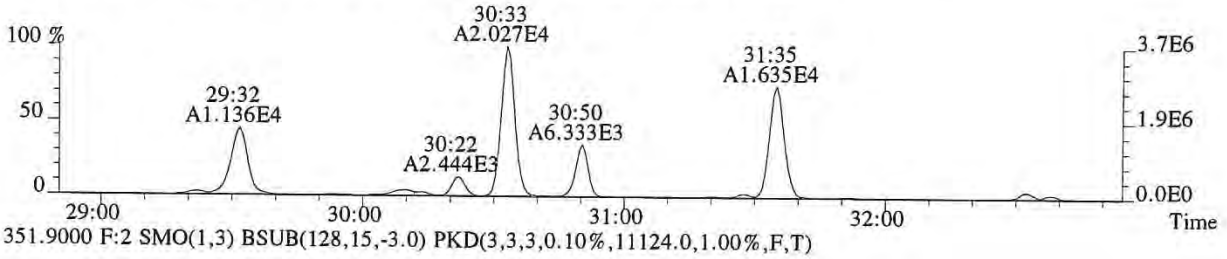


061196

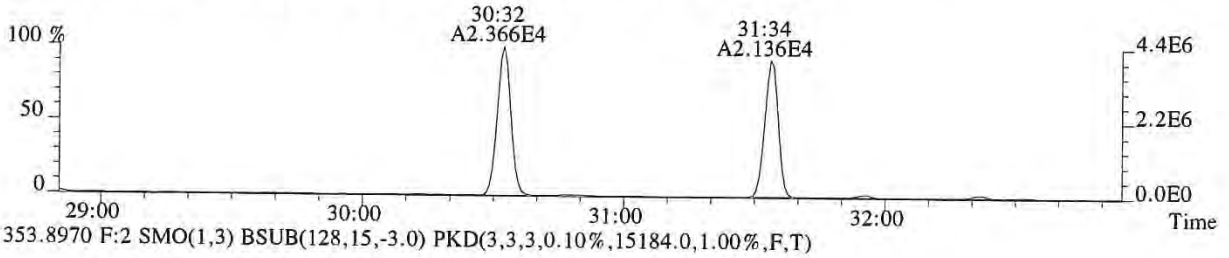
File:P616326 #1-367 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3500.0,1.00%,F,T)



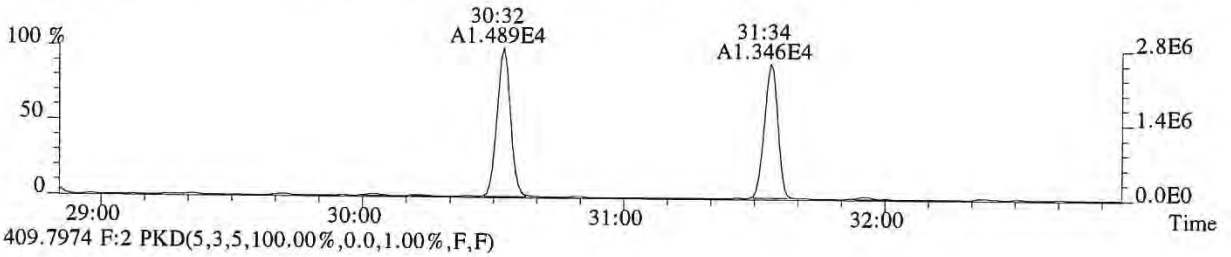
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2260.0,1.00%,F,T)



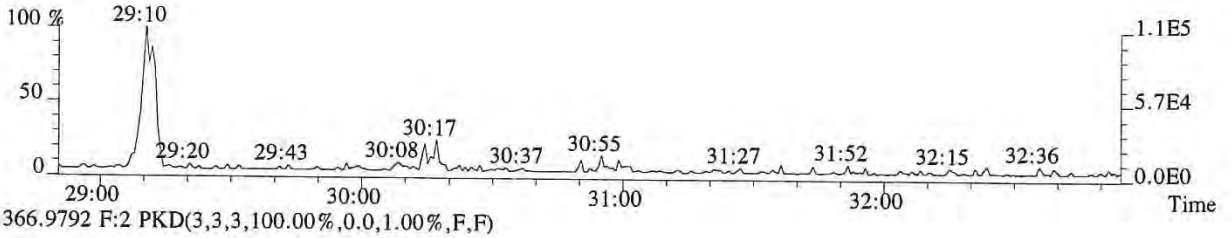
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11124.0,1.00%,F,T)



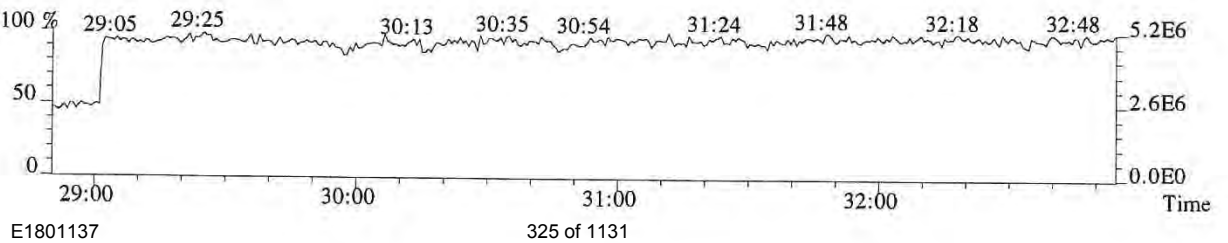
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15184.0,1.00%,F,T)



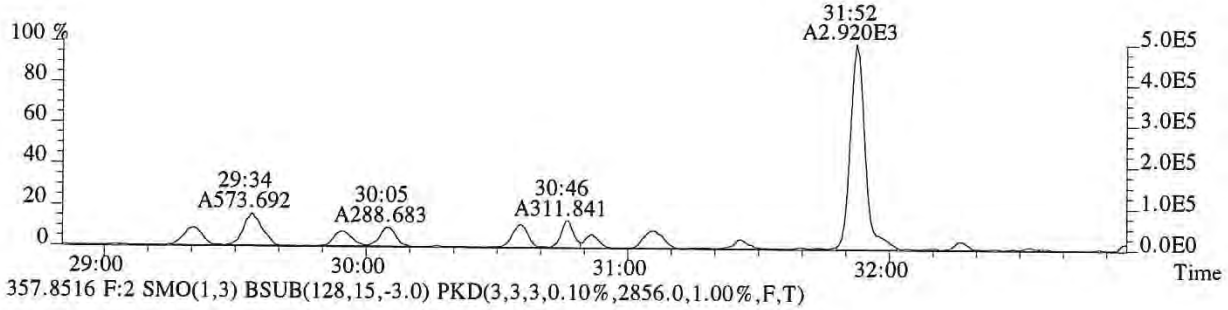
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



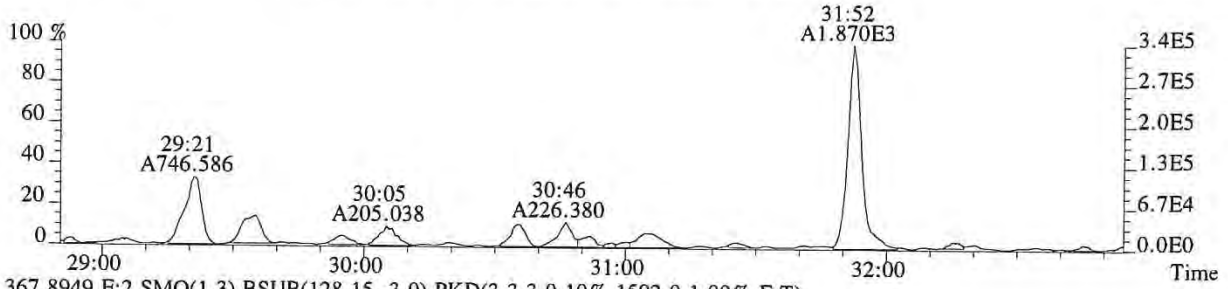
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



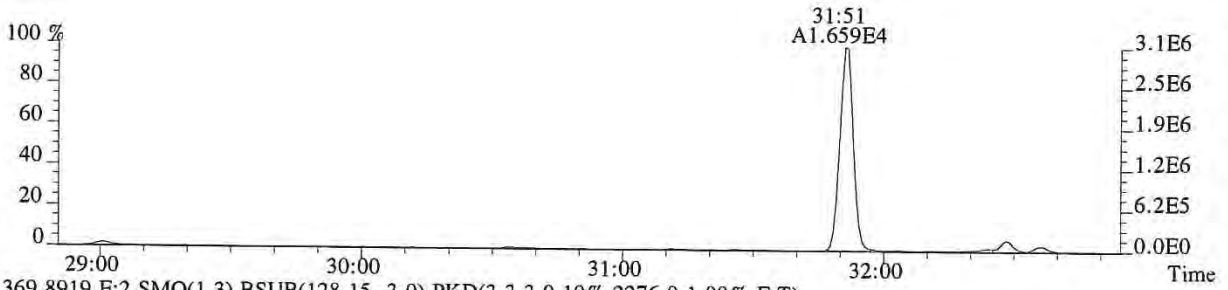
File:P616326 #1-367 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1520.0,1.00%,F,T)



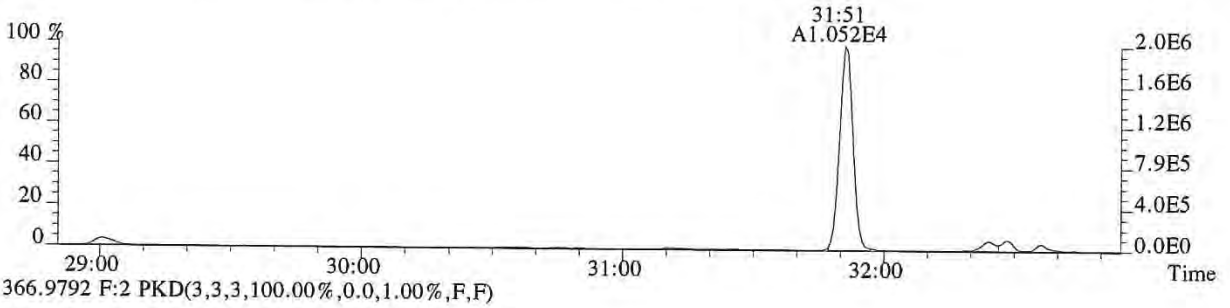
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2856.0,1.00%,F,T)



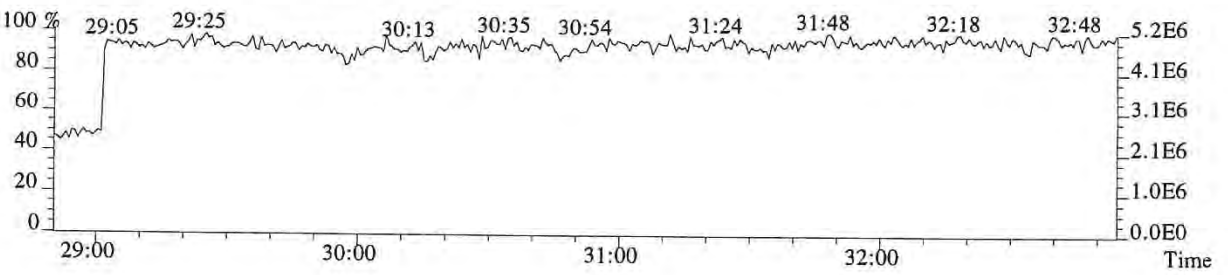
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1592.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2276.0,1.00%,F,T)

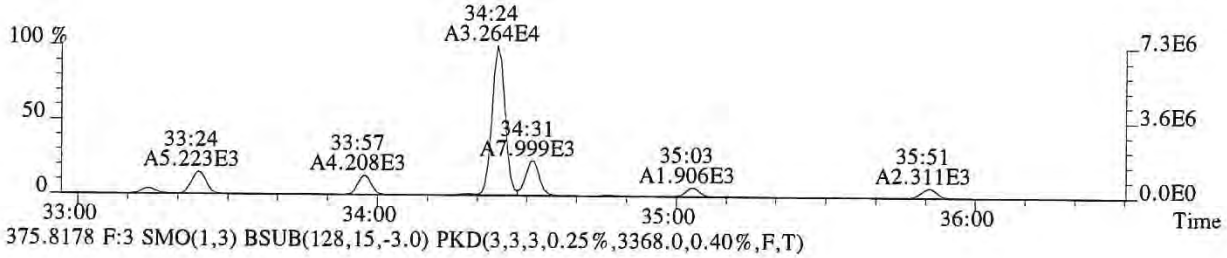


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

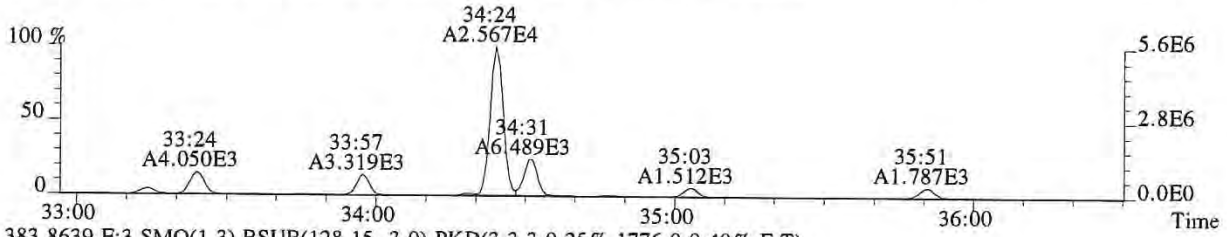


061198

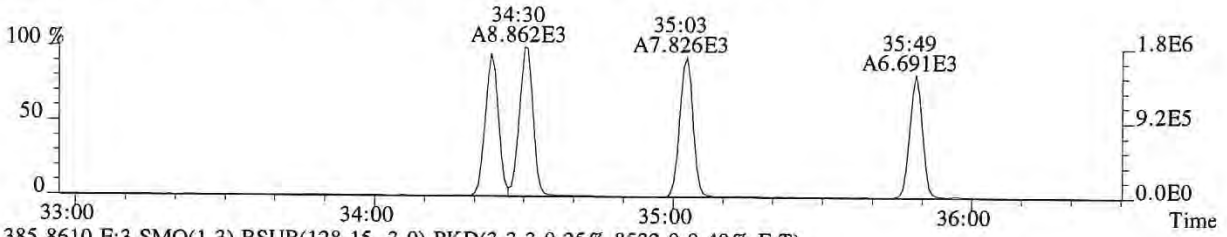
File:P616326 #1-321 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801137-007
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3928.0,0.40%,F,T)



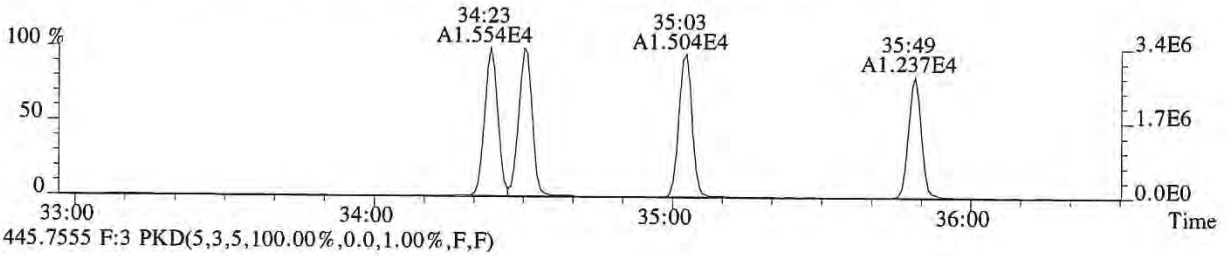
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3368.0,0.40%,F,T)



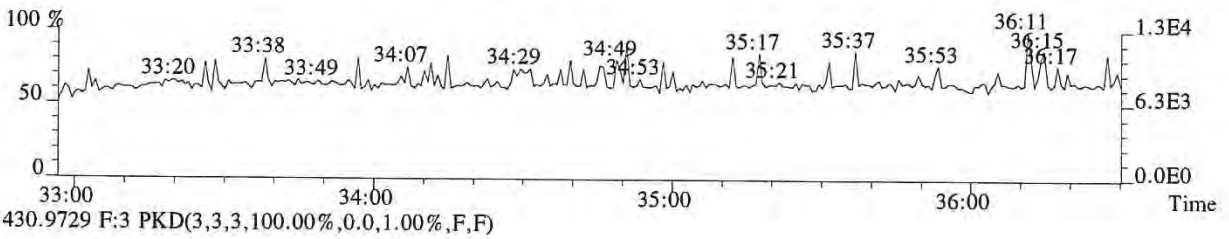
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1776.0,0.40%,F,T)



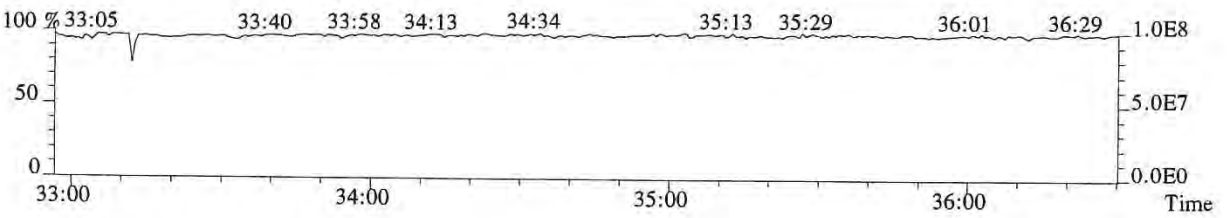
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8532.0,0.40%,F,T)



445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

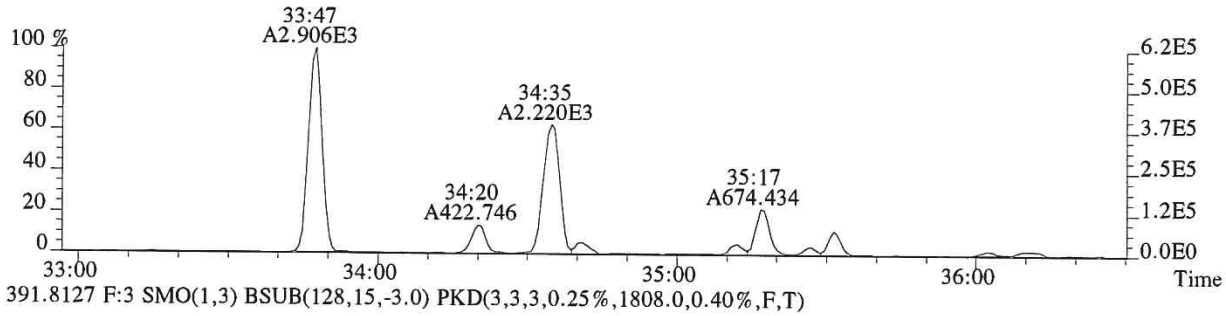


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

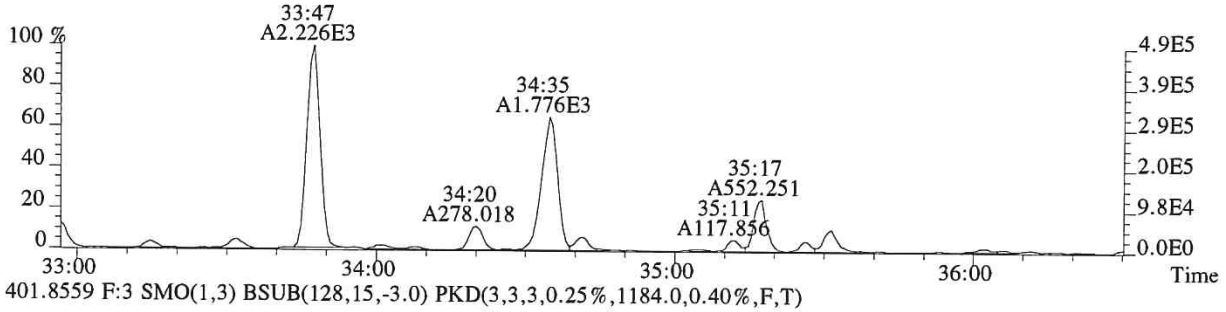


061199

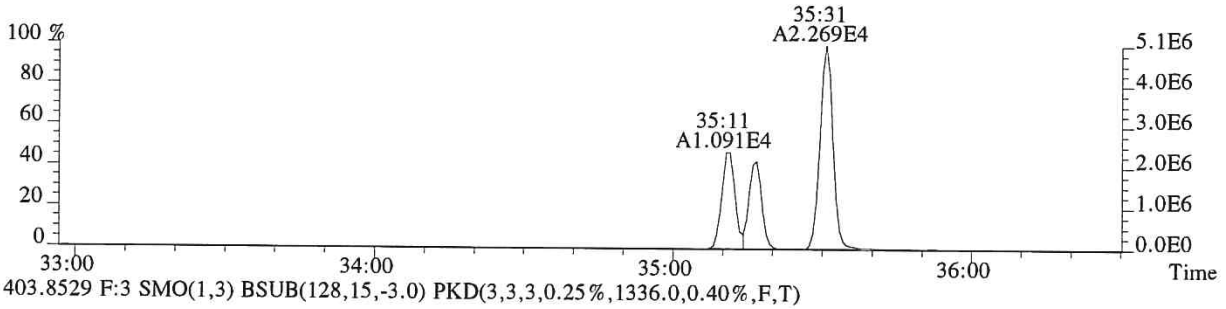
File:P616326 #1-321 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:E1801137-007
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1148.0,0.40%,F,T)



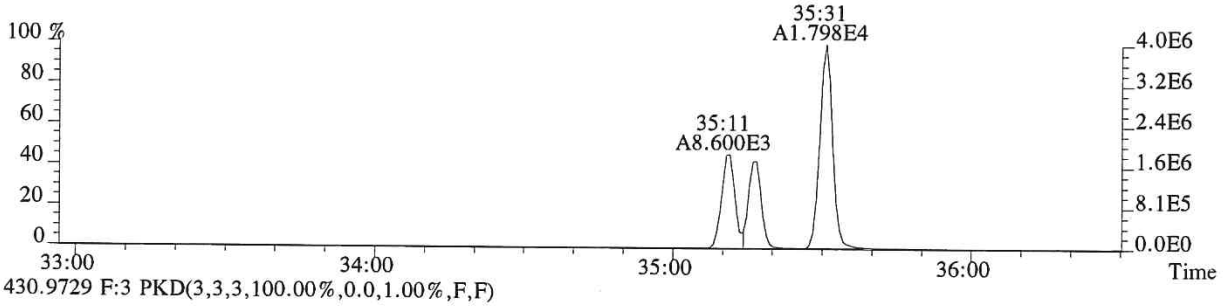
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1808.0,0.40%,F,T)



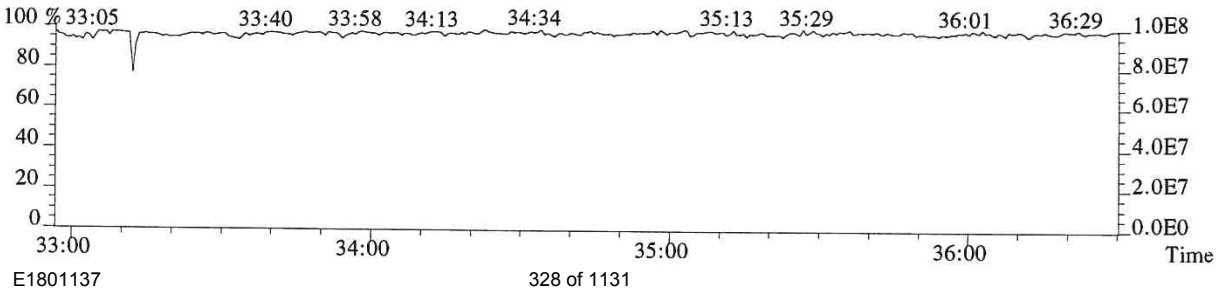
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1184.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1336.0,0.40%,F,T)

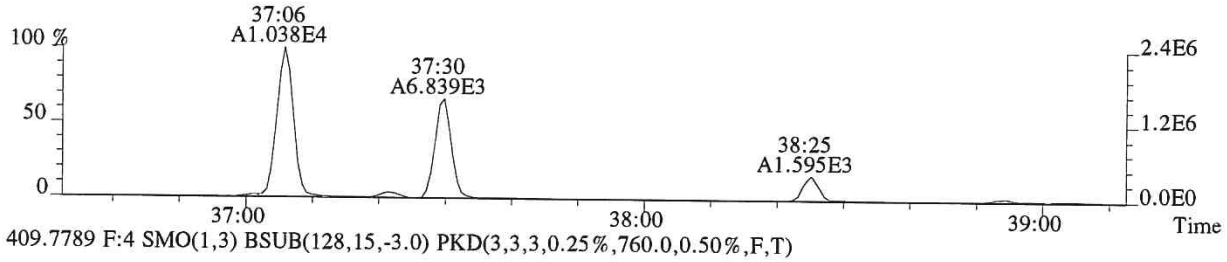


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

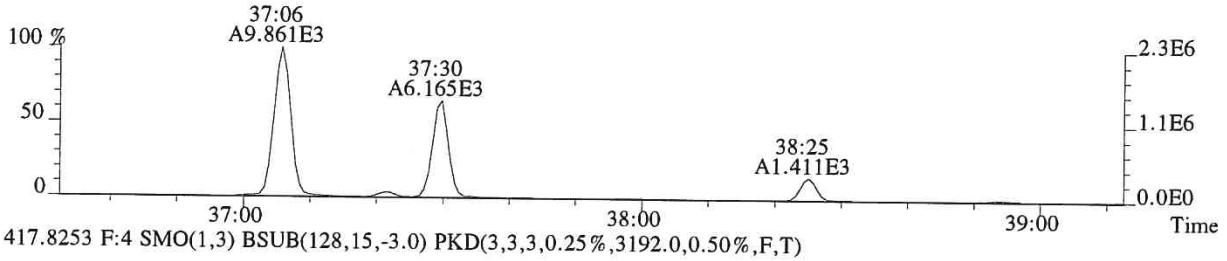


061200

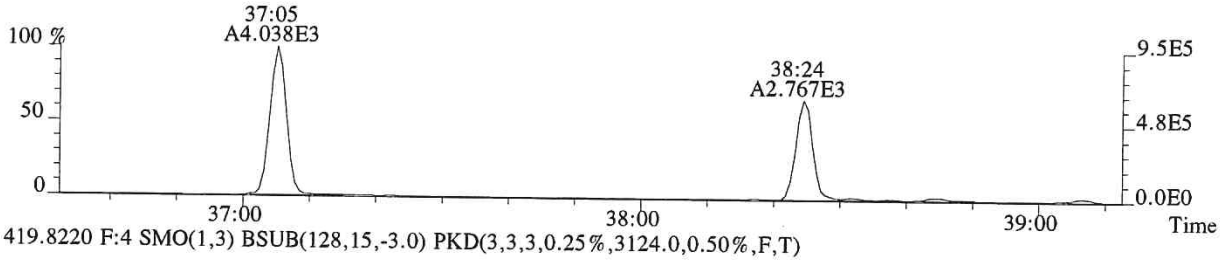
File:P616326 #1-241 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2880.0,0.50%,F,T)



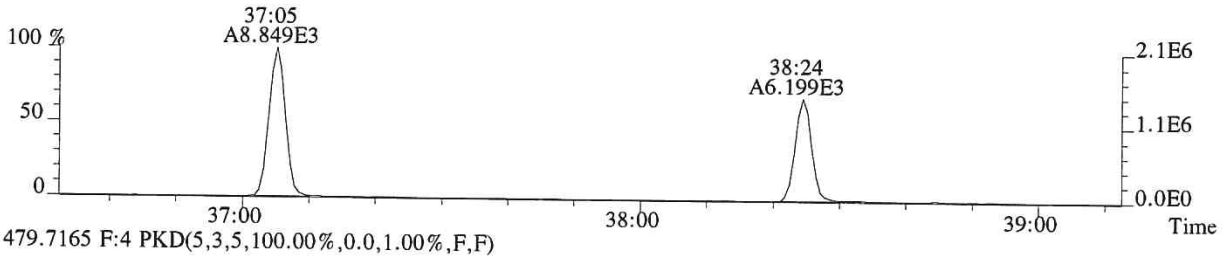
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,760.0,0.50%,F,T)



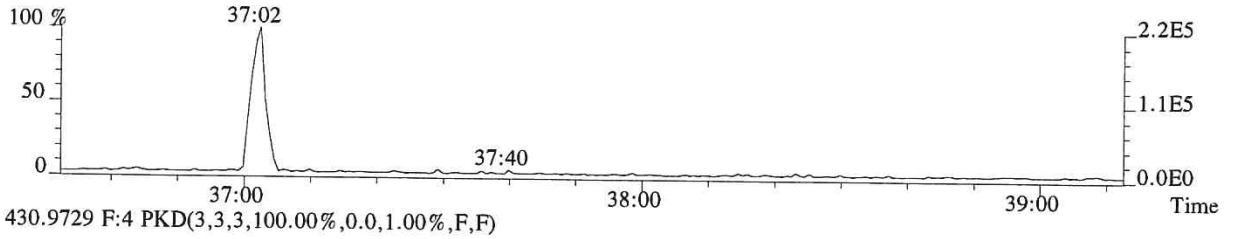
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3192.0,0.50%,F,T)



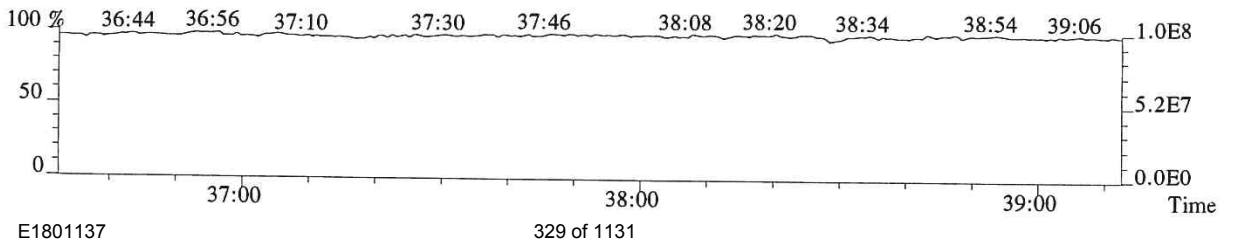
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3124.0,0.50%,F,T)



479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

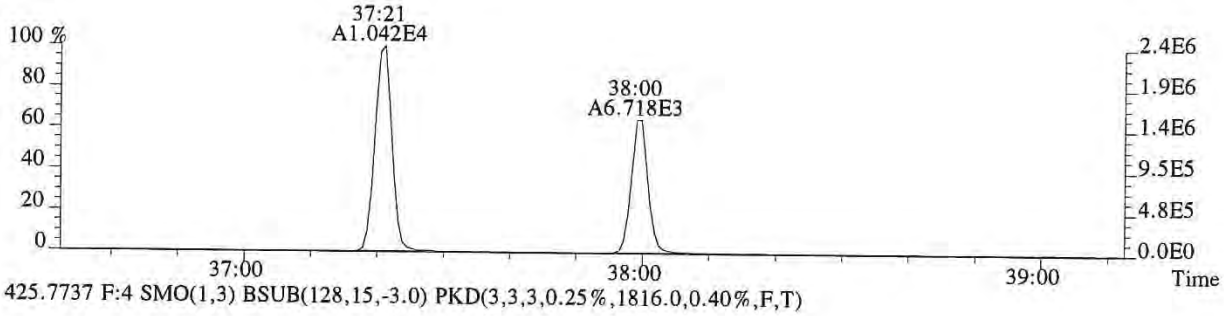


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

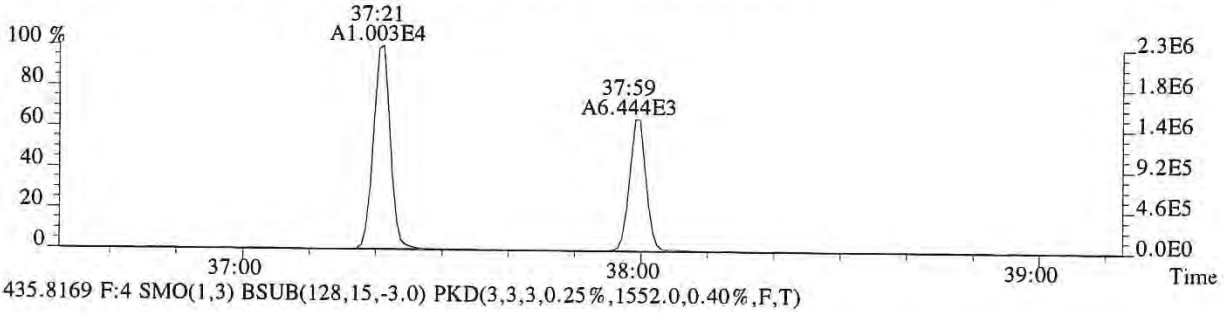


061201

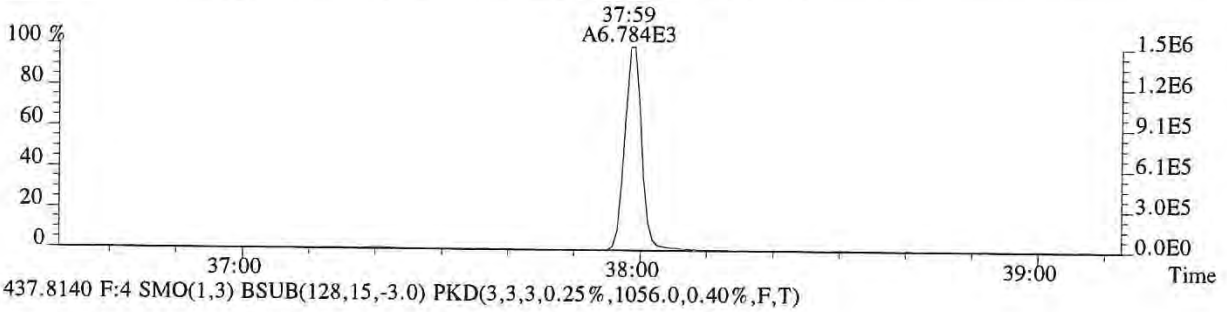
File:P616326 #1-241 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2204.0,0.40%,F,T)



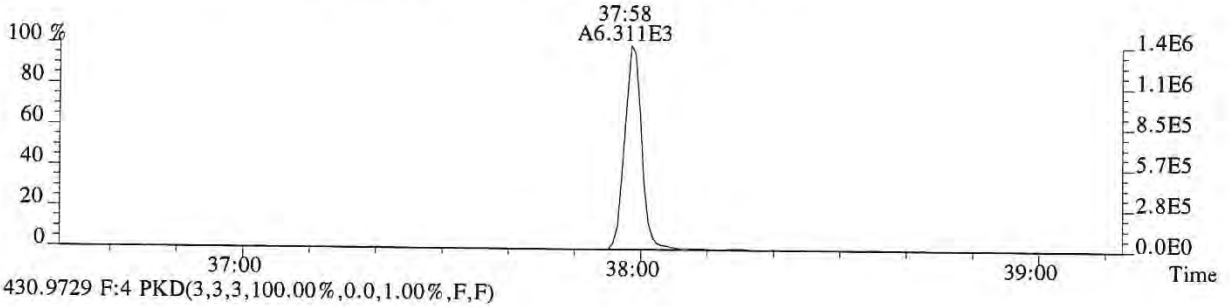
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1816.0,0.40%,F,T)



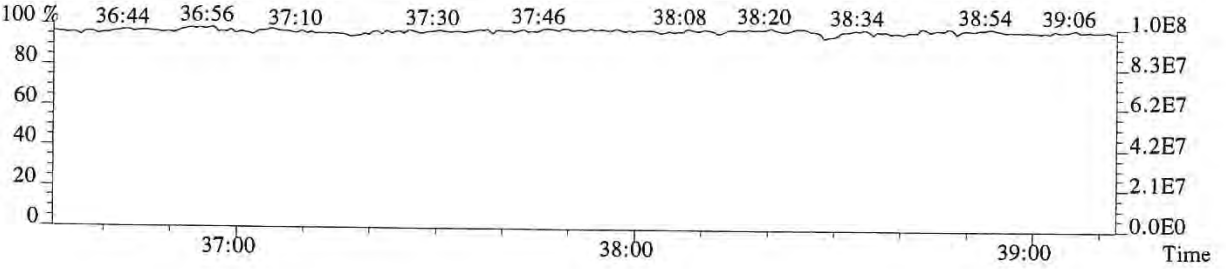
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1552.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1056.0,0.40%,F,T)

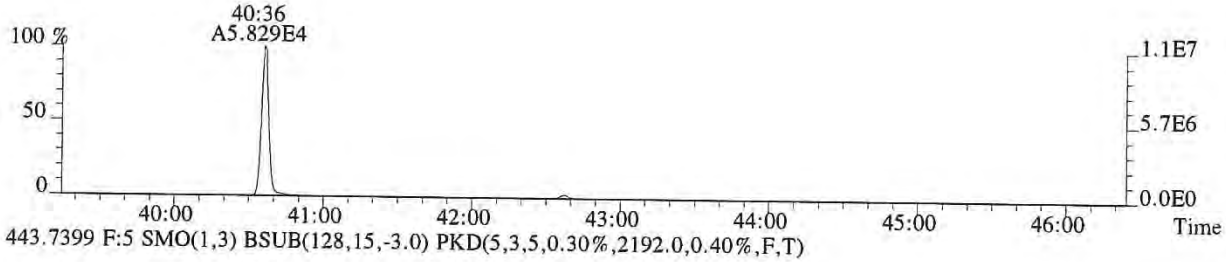


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

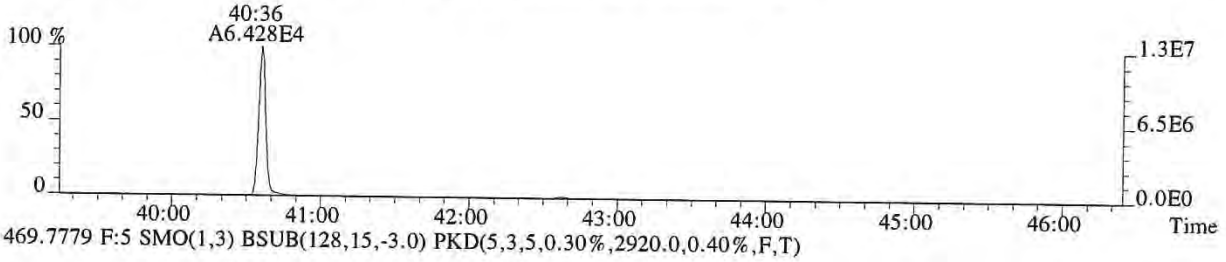


061202

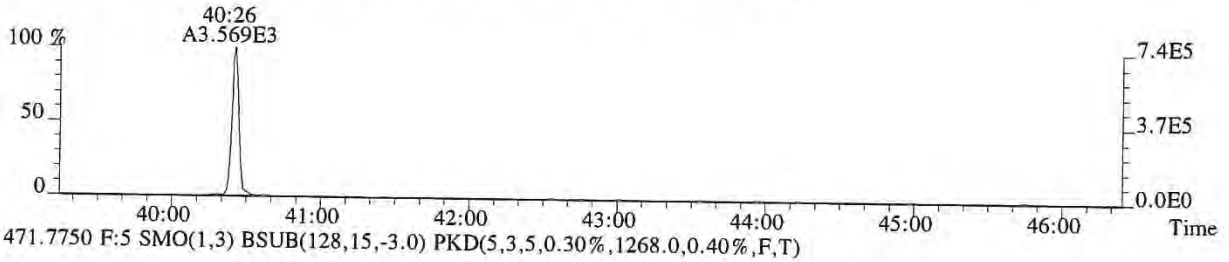
File:P616326 #1-645 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1356.0,0.40%,F,T)



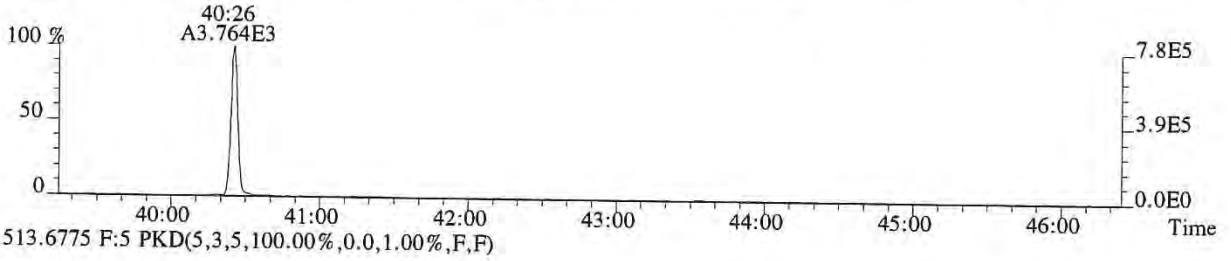
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2192.0,0.40%,F,T)



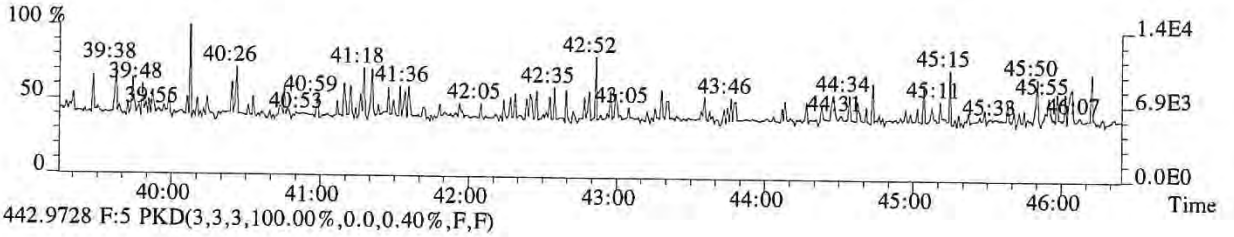
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2920.0,0.40%,F,T)



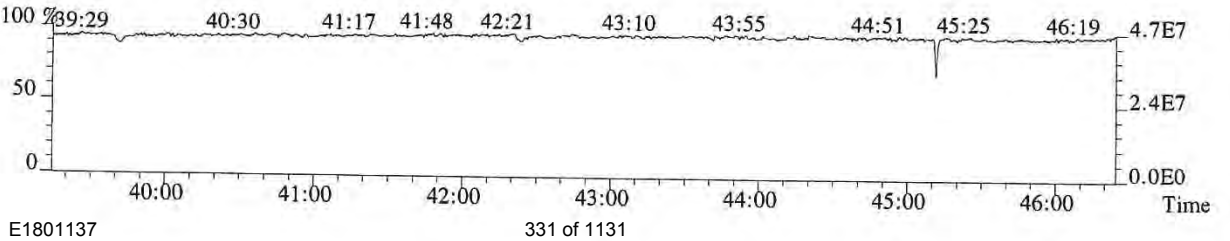
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1268.0,0.40%,F,T)



513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

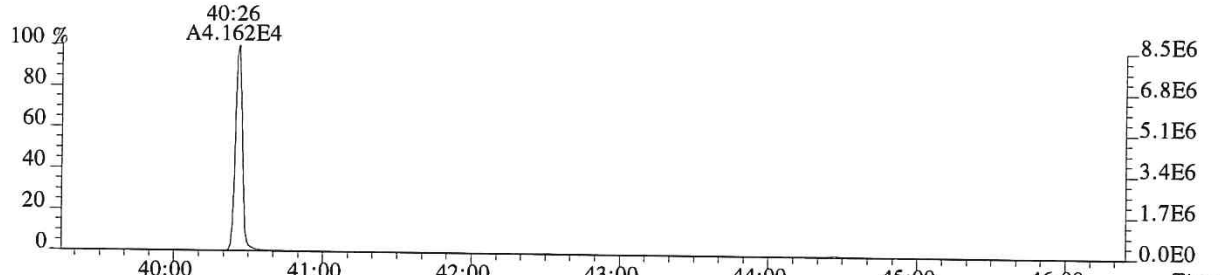


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

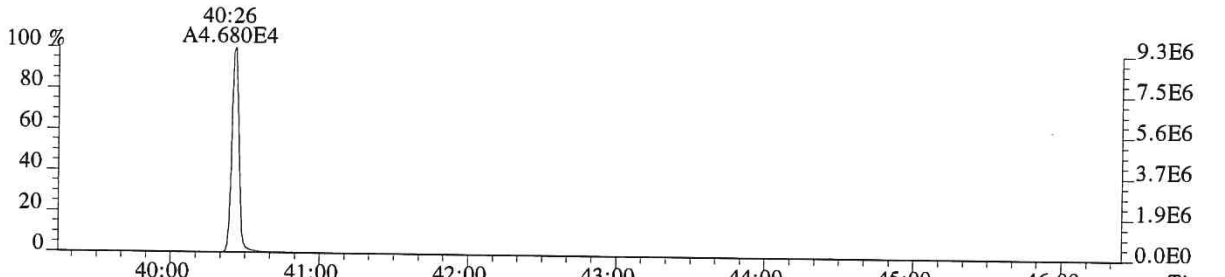


061203

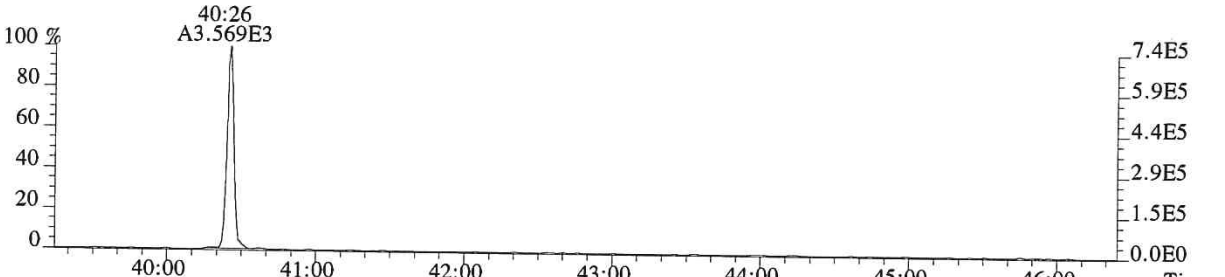
File:P616326 #1-645 Acq: 2-JAN-2019 20:20:03 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,656.0,0.40%,F,T)



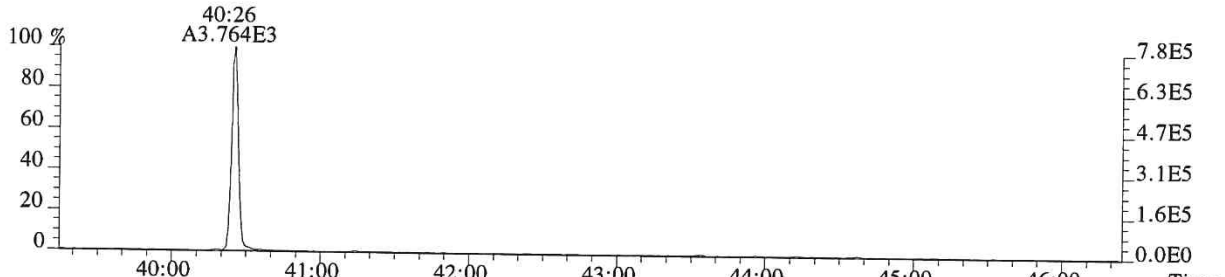
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,636.0,0.40%,F,T)



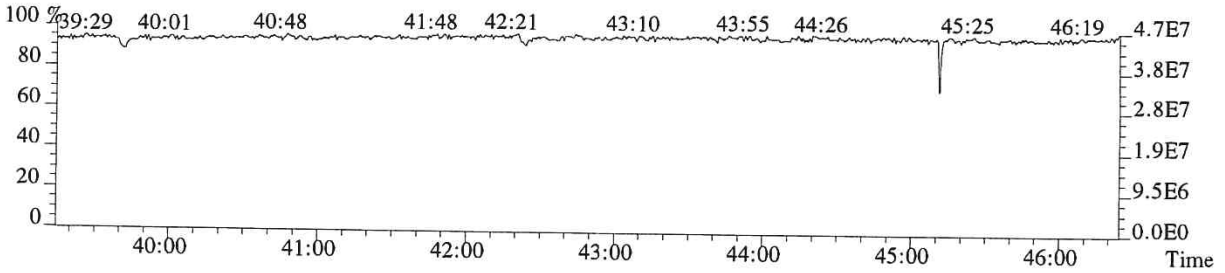
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2920.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1268.0,0.40%,F,T)



442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



061204

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
SL0140

Run #17 Filename P519770 Samp: 1 Inj: 1 Acquired: 4-JAN-19 07:29:10
Processed: 4-JAN-19 15:57:15 Sample ID: E1801137-007DL

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	26:04	7.163e+03	9.548e+03	0.75	yes	no	0.942
2	Unk	1,2,3,7,8-PeCDF	30:58	3.380e+02	2.247e+02	1.50	yes	no	1.012
3	Unk	2,3,4,7,8-PeCDF	31:59	3.064e+02	1.879e+02	1.63	yes	no	0.959
4	Unk	1,2,3,4,7,8-HxCDF	34:56	3.905e+02	3.055e+02	1.28	yes	no	1.190
5	Unk	1,2,3,6,7,8-HxCDF	35:02	1.223e+02	1.062e+02	1.15	yes	no	1.123
6	Unk	2,3,4,6,7,8-HxCDF	35:36	2.483e+01	2.118e+01	1.17	yes	no	1.110
7	Unk	1,2,3,7,8,9-HxCDF	36:27	2.695e+01	1.585e+01	1.70	no	no	1.144
8	Unk	1,2,3,4,6,7,8-HpCDF	37:51	1.888e+02	1.920e+02	0.98	yes	no	1.351
9	Unk	1,2,3,4,7,8,9-HpCDF	39:18	2.789e+01	4.447e+01	0.63	no	no	1.258
10	Unk	OCDF	42:00	2.749e+03	3.231e+03	0.85	yes	no	1.359
11	Unk	2,3,7,8-TCDD	27:03	1.973e+03	2.582e+03	0.76	yes	no	1.085
12	Unk	1,2,3,7,8-PeCDD	32:20	2.537e+01	1.761e+01	1.44	yes	no	0.956
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.038
14	Unk	1,2,3,6,7,8-HxCDD	35:50	1.009e+01	1.054e+01	0.96	no	no	1.038
15	Unk	1,2,3,7,8,9-HxCDD	36:07	6.338e+00	9.141e+00	0.69	no	no	1.063
16	Unk	1,2,3,4,6,7,8-HpCDD	38:51	1.877e+02	1.724e+02	1.09	yes	no	1.025
17	Unk	OCDD	41:51	2.024e+03	2.215e+03	0.91	yes	no	1.118
18	IS	13C-2,3,7,8-TCDF	26:03	1.991e+04	2.545e+04	0.78	yes	no	1.513
19	IS	13C-1,2,3,7,8-PeCDF	30:57	3.147e+04	1.977e+04	1.59	yes	no	1.471
20	IS	13C-2,3,4,7,8-PeCDF	31:58	2.965e+04	1.889e+04	1.57	yes	no	1.457
21	IS	13C-1,2,3,4,7,8-HxCDF	34:55	1.229e+04	2.392e+04	0.51	yes	no	1.234
22	IS	13C-1,2,3,6,7,8-HxCDF	35:02	1.588e+04	3.076e+04	0.52	yes	no	1.399
23	IS	13C-2,3,4,6,7,8-HxCDF	35:35	1.392e+04	2.676e+04	0.52	yes	no	1.257
24	IS	13C-1,2,3,7,8,9-HxCDF	36:24	1.230e+04	2.429e+04	0.51	yes	no	1.086
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:50	1.047e+04	2.341e+04	0.45	yes	no	0.966
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:18	8.871e+03	2.024e+04	0.44	yes	no	0.820
27	IS	13C-2,3,7,8-TCDD	27:02	9.690e+03	1.231e+04	0.79	yes	no	0.924
28	IS	13C-1,2,3,7,8-PeCDD	32:18	2.292e+04	1.435e+04	1.60	yes	no	0.975
29	IS	13C-1,2,3,4,7,8-HxCDD	35:45	1.696e+04	1.340e+04	1.27	yes	no	0.925
30	IS	13C-1,2,3,6,7,8-HxCDD	35:51	2.136e+04	1.623e+04	1.32	yes	no	0.949
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:50	2.051e+04	1.927e+04	1.06	yes	no	0.858
32	IS	13C-OCDD	41:49	2.255e+04	2.532e+04	0.89	yes	no	0.582
33	RS/RT	13C-1,2,3,4-TCDD	26:21	1.504e+04	1.933e+04	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:06	2.075e+04	1.627e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	27:04	1.897e+02				no	1.014

$$\text{OCDD} = \frac{(2.024e+03 + 2.215e+03) \times 4000\ \text{pg} \times 50}{(2.255e+04 + 2.532e+04) \times 10.372\text{g} \times 54.6/100 \times 1.118} = 19980.4376\ \text{ng/kg}$$

LG 1/7/19

ALS ENVIRONMENTAL -- HOUSTON HRMS
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Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
SL0140

Run #17 Filename P519770 Samp: 1 Inj: 1 Acquired: 4-JAN-19 07:29:10
Processed: 4-JAN-19 15:57:15 LAB. ID: E1801137-007DL

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	9.59e+05	5.92e+02	1.6e+03	1.30e+06	1.94e+03	6.7e+02
2	1,2,3,7,8-PeCDF	4.74e+04	3.60e+02	1.3e+02	3.46e+04	2.24e+03	1.5e+01
3	2,3,4,7,8-PeCDF	4.20e+04	3.60e+02	1.2e+02	2.90e+04	2.24e+03	1.3e+01
4	1,2,3,4,7,8-HxCDF	6.99e+04	2.72e+02	2.6e+02	4.35e+04	3.12e+02	1.4e+02
5	1,2,3,6,7,8-HxCDF	1.72e+04	2.72e+02	6.3e+01	1.80e+04	3.12e+02	5.8e+01
6	2,3,4,6,7,8-HxCDF	6.13e+03	2.72e+02	2.3e+01	4.84e+03	3.12e+02	1.6e+01
7	1,2,3,7,8,9-HxCDF	5.41e+03	2.72e+02	2.0e+01	3.72e+03	3.12e+02	1.2e+01
8	1,2,3,4,6,7,8-HpCDF	2.27e+04	3.28e+02	6.9e+01	2.62e+04	4.68e+02	5.6e+01
9	1,2,3,4,7,8,9-HpCDF	4.25e+03	3.28e+02	1.3e+01	8.38e+03	4.68e+02	1.8e+01
10	OCDF	1.52e+05	3.48e+02	4.4e+02	1.84e+05	6.24e+02	3.0e+02
11	2,3,7,8-TCDD	3.02e+05	1.86e+03	1.6e+02	4.03e+05	1.15e+03	3.5e+02
12	1,2,3,7,8-PeCDD	5.00e+03	8.24e+02	6.1e+00	4.01e+03	3.44e+02	1.2e+01
13	1,2,3,4,7,8-HxCDD	*	6.08e+02	*	*	6.08e+02	*
14	1,2,3,6,7,8-HxCDD	1.95e+03	6.08e+02	3.2e+00	2.41e+03	6.08e+02	4.0e+00
15	1,2,3,7,8,9-HxCDD	1.86e+03	6.08e+02	3.1e+00	1.39e+03	6.08e+02	2.3e+00
16	1,2,3,4,6,7,8-HpCDD	2.91e+04	2.08e+02	1.4e+02	1.79e+04	3.44e+02	5.2e+01
17	OCDD	1.13e+05	4.28e+02	2.6e+02	1.24e+05	4.24e+02	2.9e+02
18	13C-2,3,7,8-TCDF	2.80e+06	4.39e+03	6.4e+02	3.60e+06	2.84e+03	1.3e+03
19	13C-1,2,3,7,8-PeCDF	4.72e+06	7.36e+02	6.4e+03	3.03e+06	1.06e+03	2.9e+03
20	13C-2,3,4,7,8-PeCDF	5.19e+06	7.36e+02	7.1e+03	3.35e+06	1.06e+03	3.2e+03
21	13C-1,2,3,4,7,8-HxCDF	2.14e+06	6.52e+02	3.3e+03	4.16e+06	8.72e+02	4.8e+03
22	13C-1,2,3,6,7,8-HxCDF	2.33e+06	6.52e+02	3.6e+03	4.55e+06	8.72e+02	5.2e+03
23	13C-2,3,4,6,7,8-HxCDF	2.10e+06	6.52e+02	3.2e+03	4.07e+06	8.72e+02	4.7e+03
24	13C-1,2,3,7,8,9-HxCDF	1.63e+06	6.52e+02	2.5e+03	3.21e+06	8.72e+02	3.7e+03
25	13C-1,2,3,4,6,7,8-HpCDF	1.21e+06	3.54e+03	3.4e+02	2.80e+06	2.94e+03	9.5e+02
26	13C-1,2,3,4,7,8,9-HpCDF	8.04e+05	3.54e+03	2.3e+02	1.83e+06	2.94e+03	6.2e+02
27	13C-2,3,7,8-TCDD	1.52e+06	5.49e+03	2.8e+02	1.89e+06	2.15e+03	8.8e+02
28	13C-1,2,3,7,8-PeCDD	3.51e+06	4.44e+02	7.9e+03	2.16e+06	4.80e+02	4.5e+03
29	13C-1,2,3,4,7,8-HxCDD	3.02e+06	1.17e+03	2.6e+03	2.39e+06	4.16e+02	5.8e+03
30	13C-1,2,3,6,7,8-HxCDD	2.86e+06	1.17e+03	2.5e+03	2.21e+06	4.16e+02	5.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	2.01e+06	4.76e+02	4.2e+03	1.91e+06	5.52e+02	3.5e+03
32	13C-OCDD	1.27e+06	4.72e+02	2.7e+03	1.41e+06	3.08e+02	4.6e+03
33	13C-1,2,3,4-TCDD	2.32e+06	5.49e+03	4.2e+02	2.93e+06	2.15e+03	1.4e+03
34	13C-1,2,3,7,8,9-HxCDD	2.66e+06	1.17e+03	2.3e+03	2.15e+06	4.16e+02	5.2e+03
35	37Cl-2,3,7,8-TCDD	2.71e+04	1.34e+03	2.0e+01			

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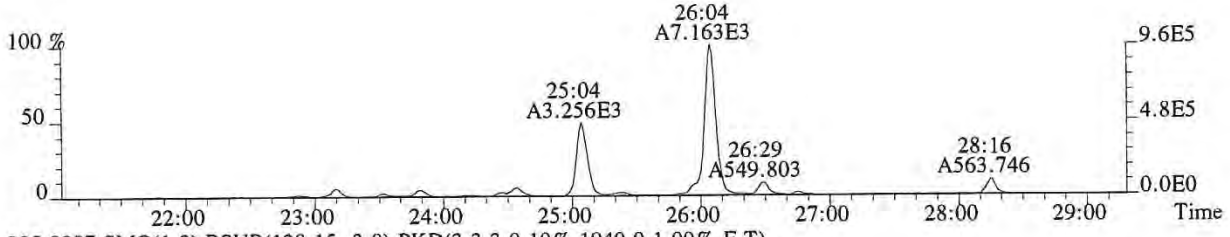
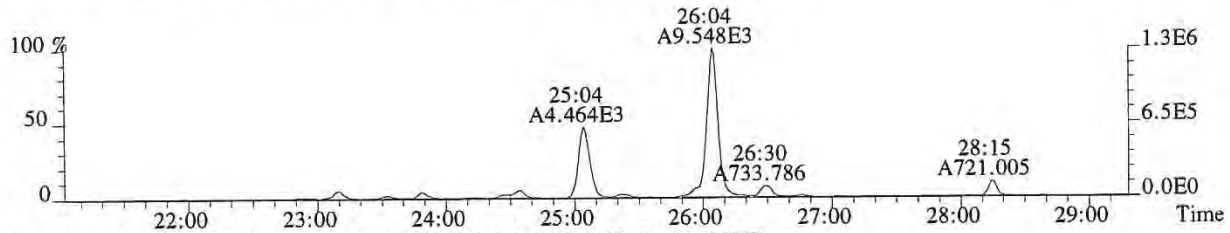
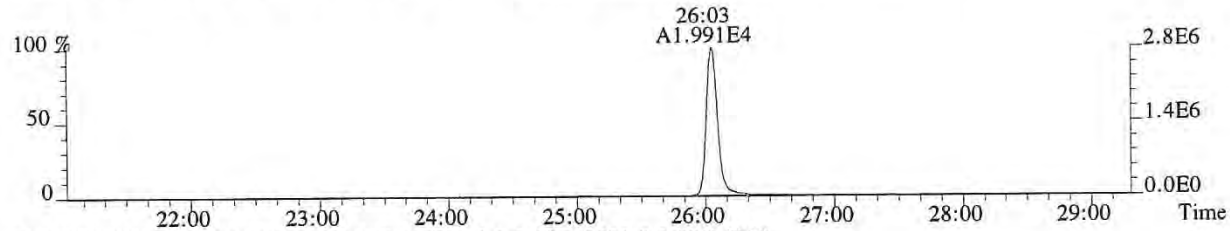
File:P519770 #1-587 Acq: 4-JAN-2019 07:29:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007DL
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,592.0,1.00%,F,T)



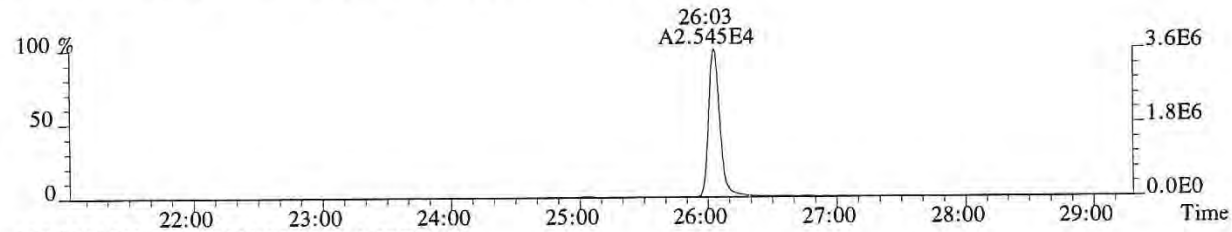
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1940.0,1.00%,F,T)



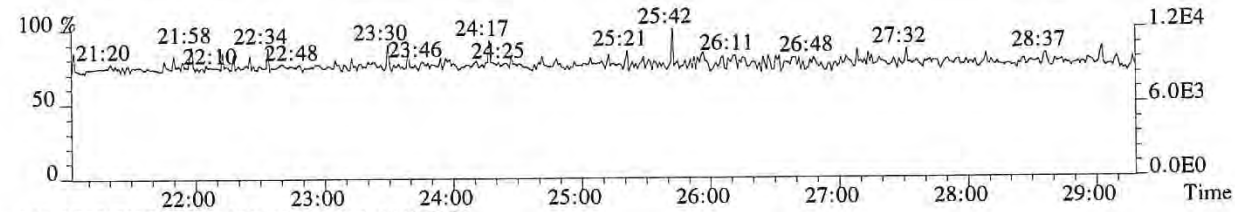
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4392.0,1.00%,F,T)



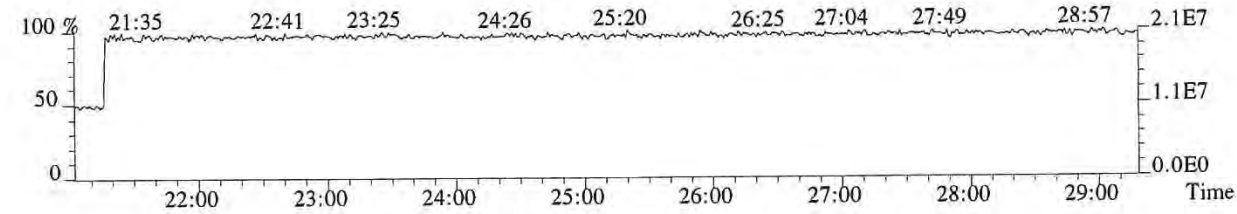
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2836.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

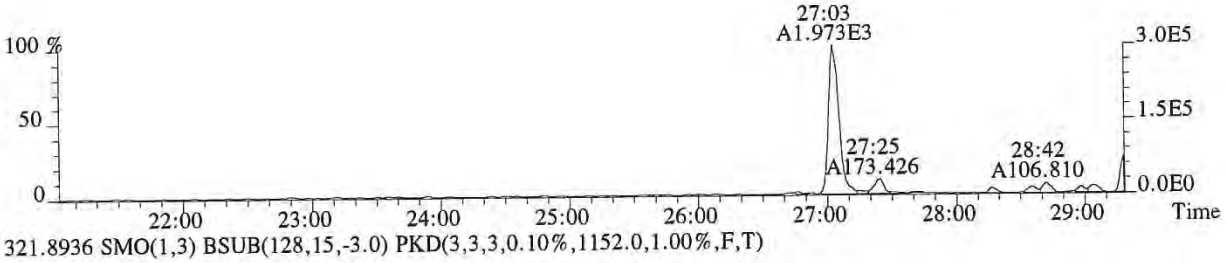


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

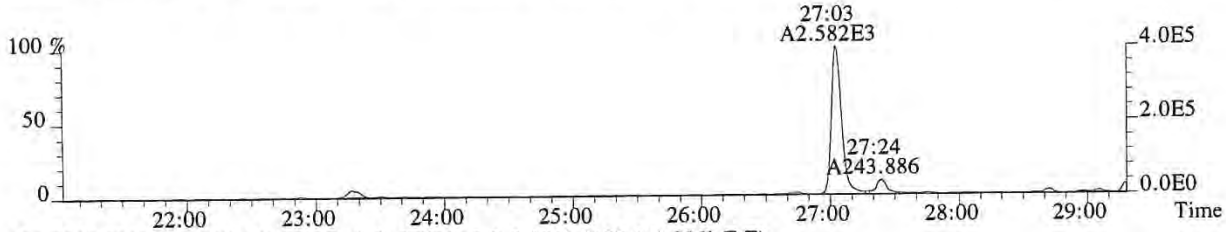


061207

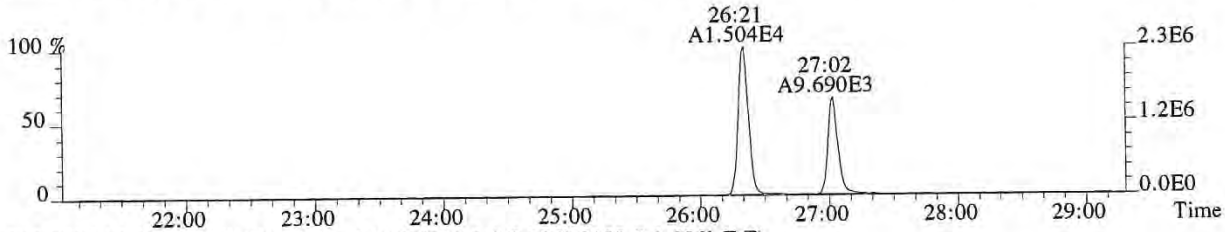
File:P519770 #1-587 Acq: 4-JAN-2019 07:29:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007DL
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1864.0,1.00%,F,T)



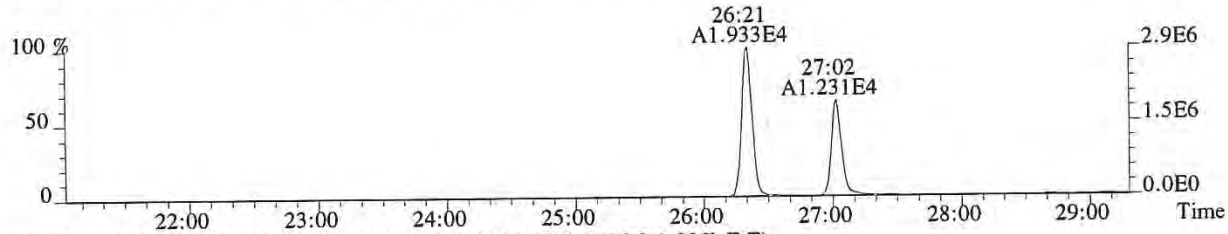
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1152.0,1.00%,F,T)



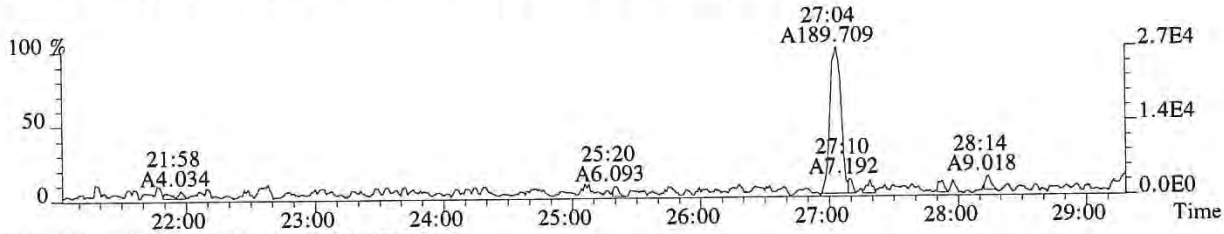
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5492.0,1.00%,F,T)



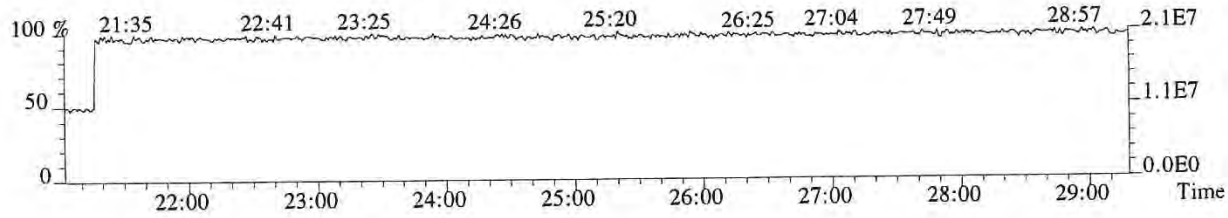
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2152.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1336.0,1.00%,F,T)

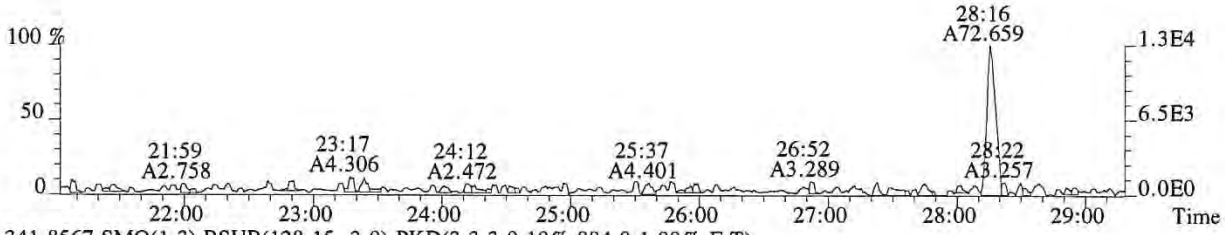


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

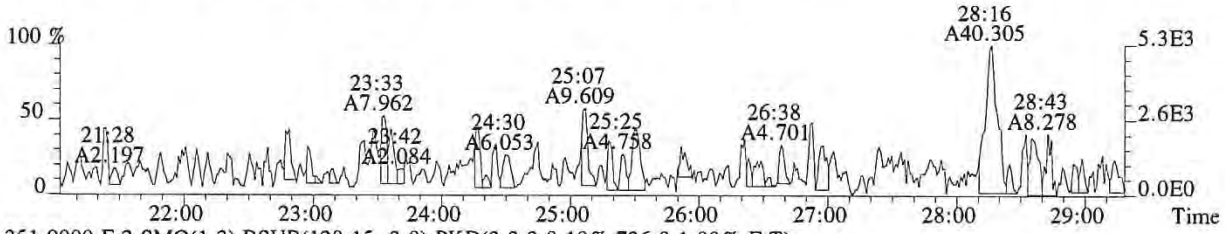


061208

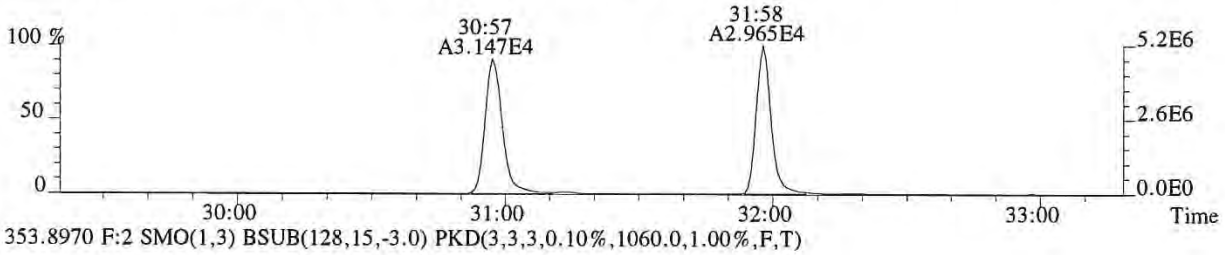
File:P519770 #1-587 Acq: 4-JAN-2019 07:29:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007DL
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,484.0,1.00%,F,T)



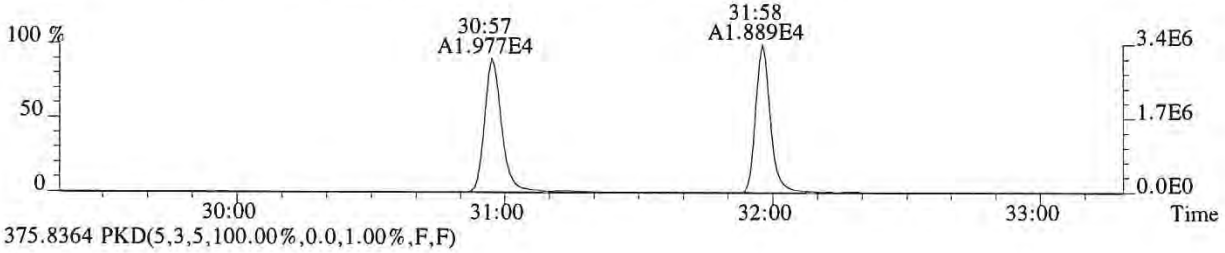
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,884.0,1.00%,F,T)



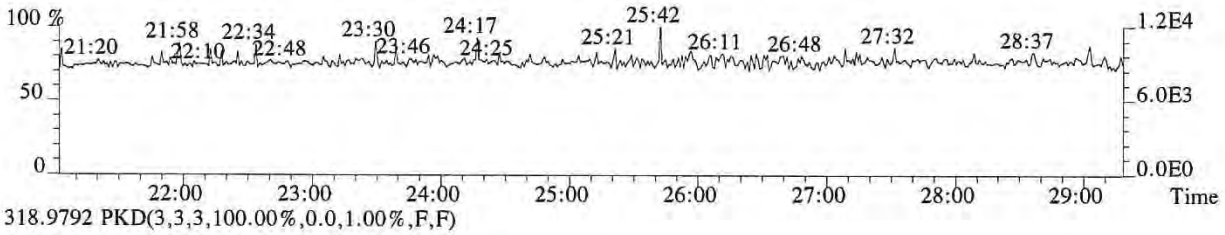
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,736.0,1.00%,F,T)



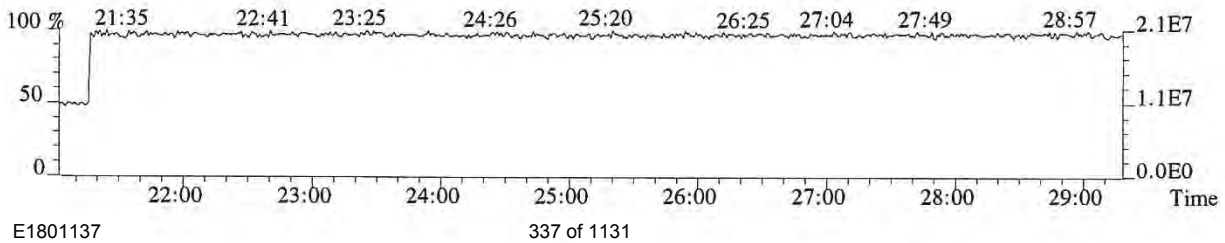
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1060.0,1.00%,F,T)



375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

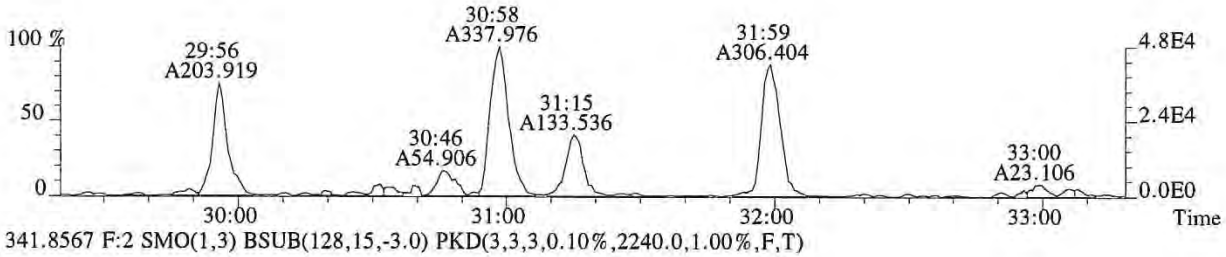


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

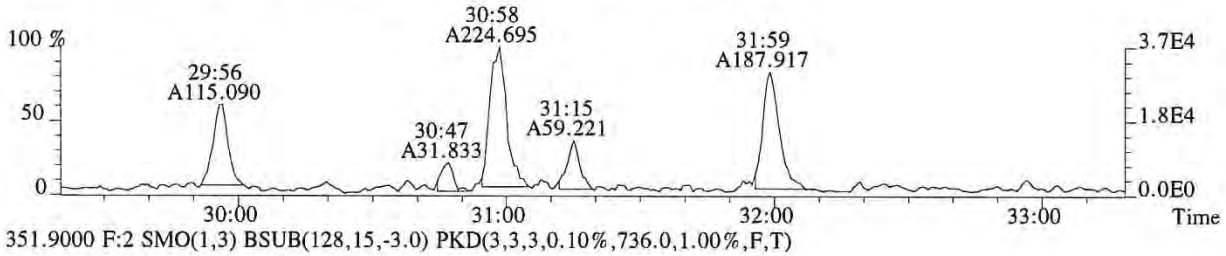


061209

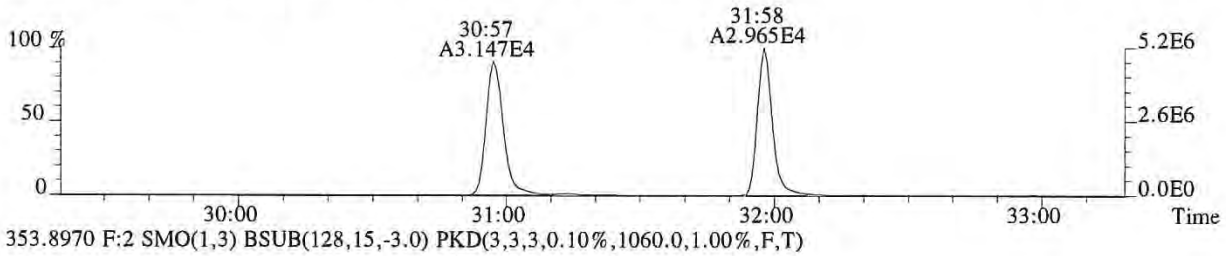
File:P519770 #1-358 Acq: 4-JAN-2019 07:29:10 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1801137-007DL
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,360.0,1.00%,F,T)



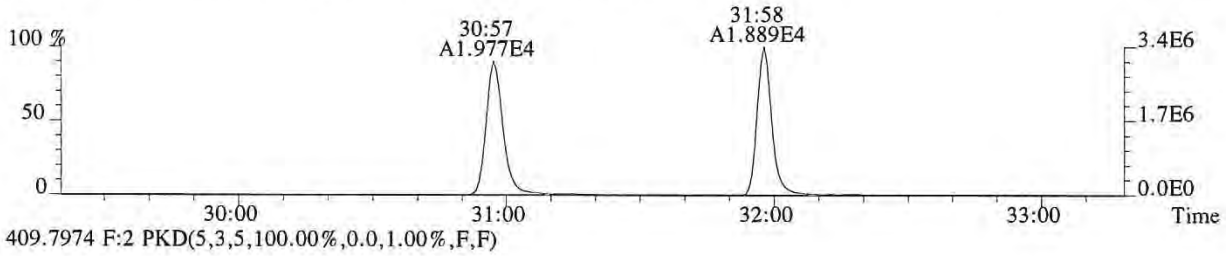
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2240.0,1.00%,F,T)



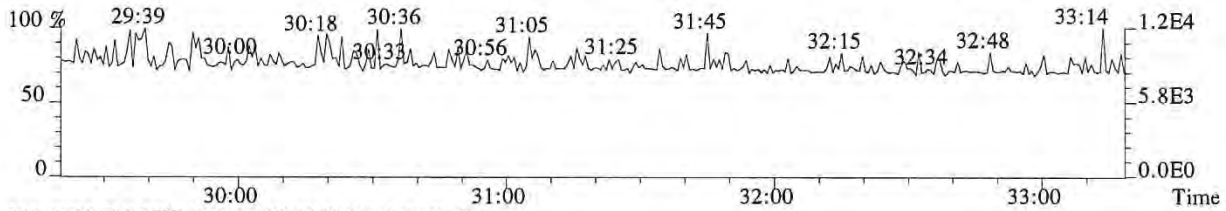
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,736.0,1.00%,F,T)



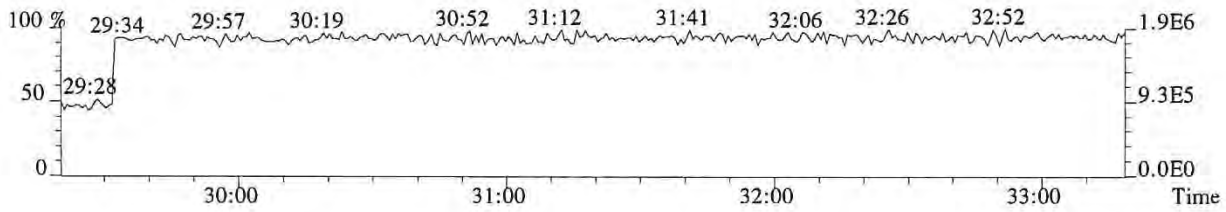
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1060.0,1.00%,F,T)



409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



061210