May 31, 2017 Service Request No:E1700483

Tina Green
BC Laboratories, Inc.
4100 Atlas Court
Bakersfield, CA 93308

Laboratory Results for: Naval Base Ventura County, CA

Dear Tina,

Enclosed are the results of the sample(s) submitted to our laboratory May 10, 2017
For your reference, these analyses have been assigned our service request number **E1700483.**

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.

Please contact me if you have any questions. My extension is 2284. You may also contact me via email at Nicole.Brown@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Nicole Brown

Nicole Brown
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 713 266 1599 | FAX +1 713 266 0130
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:	BC Laboratories	**Service Request No.:**	E1700483
Project:	Naval Base Ventura County, CA - 1711881	**Date Received:**	05/10/17
Sample Matrix:	Water		

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

Two water samples were received for analysis at ALS Environmental in Houston on 05/10/17.

The samples were received at 22.2 °C in good condition and are consistent with the accompanying chain of custody form. Dioxins Furans compounds are stable at room temperature. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

MS/MSD

EQ1700201: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of an MS/MSD for this extraction batch.

Y flags – Clean up Standard

The recoveries for the clean up standard, 37Cl-2,3,7,8-TCDD was below control limits. The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected, and is not used in quantitation of target analytes.

Y flags – Labeled Standards

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.

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.

The MRL = DoD LOQ, but the EDL is not directly correlated to LOD. The LOD is instrument and prep-method specific. ND compounds are reported to the LOD. LOD information can be found in the tables accompanying this report.

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 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.

Client: BC Laboratories, Incorporated **Service Request:**E1700483

Project: Naval Base Ventura County, CA/1711881

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1700483-001	EB16_170502	5/2/2017	1410
E1700483-002	M001A-R_170502	5/2/2017	0845

Service Request Summary

Folder #: **E1700483**
Client Name: BC Laboratories, Incorporated
Project Name: Naval Base Ventura County, CA
Project Number: 1711881

Report To: Tina Green
BC Laboratories, Inc.
4100 Atlas Court
Bakersfield, CA 93308
USA
Phone Number: 661-327-4911
Cell Number:
Fax Number: (661) 327-1918
E-mail: tina@bclabs.com

Project Chemist: Nicole Brown
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 05/10/17
Internal Due Date: 5/31/2017
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number: 1711881
EDD: EQUIS 5.0

2 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserved
Location: E-Disposed
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON PCDD PCDF/8290
E1700483-001	EB16_170502	Water	05/02/17 1410	**IV**
E1700483-002	M001A-R_170502	Water	05/02/17 0845	**IV**

Folder Comments:

arrived at ambient temp. Proceed with analysis per Tina Green with BC Labs approved. NB 5/11/17
8290 DOD Level 4 Equis EDD

Service Request Summary

Folder #:	**E1700483**	Project Chemist:	Nicole Brown
Client Name:	BC Laboratories, Incorporated	Originating Lab:	HOUSTON
Project Name:	Naval Base Ventura County, CA	Logged By:	ALOPEZ
Project Number:	1711881	Date Received:	05/10/17
		Internal Due Date:	5/31/2017
Report To:	Tina Green	QAP:	LAB QAP
	BC Laboratories, Inc.	Qualifier Set:	Lab Standard
	4100 Atlas Court	Formset:	Lab Standard
	Bakersfield, CA 93308 USA	Merged?:	N
Phone Number:	661-327-4911	Report to MDL?:	Y
Cell Number:		P.O. Number:	1711881
Fax Number:	(661) 327-1918	EDD:	EQUIS 5.0
E-mail:	tina@bclabs.com		

2 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserved

Location: E-Disposed

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	PCDD PCDF/8290	2	

Superset Summary

Service Request: E1700483 **SuperSet Reference:** 17-0000423681 rev 00

Analytical Method: **8290**

Calibrations: 04/28/16

Data Files:

Raw Data	Begin CCAL	Method Blank	Lab ID
P406872	P406868	P406871	E1700483-001
P406873	P406868	P406871	E1700483-002
P406871	P406868	P406871	EQ1700201-01
P406888	P406880	P406871	EQ1700201-02
P406889	P406880	P406871	EQ1700201-03

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

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01	11/30/2017
Arkansas Department of Environmental Quality	17-027-0	3/27/2018
California Department of Health Services	2452	4/30/2018
Florida Department of Health	E87611	6/30/2017
Illinois Environmental Protection Agency	004112	5/9/2018
Kansas Department of Health and Environment	E-10406	7/31/2017
Louisiana Department of Environmental Quality	03048	6/30/2017
Louisiana Department of Health and Hospitals	LA150026	12/31/2017
Maine Center for Disease Control and Prevention	2014019	6/5/2018
Maryland Department of the Environment	343	6/30/2017
Michigan Depratment of Environmental Quality	9971	6/5/2018
Minnesota Department of Health	840911	12/31/2017
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2018
Nevada Department of Concervation and Natural Resources	TX014112013-2	7/31/2017
New Jersey Department of Environmental Protection	NLC140001	6/30/2017
New York Department of Health	11707	3/31/2018
Oklahoma Department of Environmental Quality	2014 124	8/21/2017
Oregon Environmental Laboratory Accreditation Program	TX200002-009	3/24/2018
Pennsylvania Department of Environmental Protection	68-03441	6/30/2017
Tennessee Department of Environment and Concervation	04016	6/30/2017
Texas Commision on Environmental Quality	TX104704231-17-18	6/30/2017
United States Department of Agriculture	P330-14-00067	6/19/2018
Utah Department of Health Environmental Laboratory Certification	TX02694	7/31/2017
Washington Department of Health	c819	11/14/2017
West Virginia Department of Environmental Protection	347	6/30/2017

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E1700483 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date: 05/26/17	Analyst: Gc	Samples: 001, 002

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
05/26/17	LKL	001, 002

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

SUBCONTRACT ORDER
BC Laboratories
1711881

SENDING LABORATORY:

BC Laboratories
4100 Atlas Court
Bakersfield, CA 93308
Phone: 661-327-4911
FAX: 661-327-1918
Project Manager: Tina Green

RECEIVING LABORATORY:

ALS - Houston
10450 Stancliff Road
Houston, TX 77099
Phone: (713) 266-1599
FAX: (713) 266-0130

ALSHS

Analysis	Due	Expires	Comments
Sample ID: 1711881-04 Water	**Sampled:**	**05/02/17 14:10**	clp
EPA 8290 - CDDs & CDFs	05/16/17 17:00	06/01/17 14:10	DOD/Level IV/ Groundwater/ NEED EQUIS EDD
Containers supplied: 4 amber	Client ID: EB16-170502		
Sample ID: 1711881-07 Water	**Sampled:**	**05/02/17 08:45**	clp
EPA 8290 - CDDs & CDFs	05/16/17 17:00	06/01/17 08:45	DOD/Level IV/ Groundwater/ NEED EQUIS EDD
Containers supplied:	Client ID: MD01A-R-170502		

Use Client Sample ID's on report

E1700483 5
BC Laboratories, Inc.
Naval Base Ventura County, CA

Released By	Date	Received By	Date
	5.5.17		5/10/17 0844 ambient temp
Released By	Date	Received By	Date

E1700483

ALSHS

ALS Environmental

Cooler Receipt Form

Project Chemist NB

Client/Project BC Labs 1711881

Thermometer ID SM04

Date/Time Received: 5/10/17 1100 Initials: NB Date/Time Logged in: 5/10/17 1620 Initials

1. Method of delivery: ○ US Mail ○ Fed Ex ✓ UPS ○ DHL ○ Courier ○ Client
2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other
3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?
4. Packing Material: ○ Inserts ○ Baggies ✓ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other
5. Foreign or Regulated Soil? ○ Yes ✓ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
1Z 965 31603 6280 5859		5/10/17	1130	NB	21.2/22.2	☐
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

out of temp!
Proceed w/ analysis per client approval. NB 5/11/17
DIOXINS FURANS ARE STABLE AT ROOM TEMPERATURES
NB 5/11/17

Service request Label:

E1700483 5
BC Laboratories, Inc.
Naval Base Ventura County, CA

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Houston, TX 77099
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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 288161 **Prep WorkFlow:** OrgExtDioxAq-30 **Status:** Prepped
Team: Semivoa GCMS/JGHOSH **Prep Method:** Method Sep Funnel/Jar **Prep Date/Time:** 5/18/17 10:00 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1700483-001	EB16_170502	.01	8290/PCDD PCDF	6	x	Water	1051mL	Clear
2	E1700483-002	M001A-R_170502	.01	8290/PCDD PCDF	7	x	Water	961mL	Light brown; clear
3	E1700491-001	FC-PCD-SW01-05102017	.01	8290A/PCDD PCDF	7	x	Water	966mL	Clear
4	EQ1700201-01	MB		8290A/PCDD PCDF	5	x	Liquid	1000mL	
5	EQ1700201-02	LCS		8290A/PCDD PCDF	5	x	Liquid	1000mL	
6	EQ1700201-03	DLCS		8290A/PCDD PCDF	5	x	Liquid	1000mL	

Spiking Solutions

Name: 1613B Matrix Working Standard Inventory ID 181073 Logbook Ref: 181073 AL 5/3/17 2-20 ng/mL Expires On: 10/30/2017

EQ1700201-02	100.00µL	EQ1700201-02	100.00µL	EQ1700201-03	100.00µL	EQ1700201-03	100.00µL

Name: 8290/1613B Cleanup Working Standard Inventory ID 181201 Logbook Ref: TW 5/11/17 8NG/ML 181201 Expires On: 10/29/2017

E1700483-001	100.00µL	E1700483-002	100.00µL	E1700491-001	100.00µL	EQ1700201-01	100.00µL	EQ1700201-01	100.00µL	EQ1700201-02	100.00µL
EQ1700201-02	100.00µL	EQ1700201-03	100.00µL	EQ1700201-03	100.00µL						

Name: 1613B Labeled Working Standard Inventory ID 181346 Logbook Ref: 181346 JG 05/17/2017 Expires On: 10/31/2017

E1700483-001	1,000.00µL	E1700483-002	1,000.00µL	E1700491-001	1,000.00µL	EQ1700201-01	1,000.00µL	EQ1700201-01	1,000.00µL	EQ1700201-02	1,000.00µL
EQ1700201-02	1,000.00µL	EQ1700201-03	1,000.00µL	EQ1700201-03	1,000.00µL						

Preparation Materials

Carbon, High Purity	AL 4/28/17 (180914)	Ethyl Acetate 99.9% Minimum EtOAc	AL 3/3/17 (179750)	Glass Wool	AL 5/11/17 (181221)
Hexanes 95%	JG 05/10/2017 (181300)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	JP 1/10/16 (178535)	Sodium Hydroxide 1N NaOH	sodium hydroxide (180303)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	AL 3/6/17 2011359-07 (179771)	Tridecane (n-Tridecane)	AL 3/31/17 (180309)	ColorpHast pH-Indicator Strips	AL 8/17/16 (175089)
Silica Gel	tw 05/15/17 (181253)	sulfuric acid	CID 1/13/17 (178592)	Toluene 99.9% Minimum	JG 04/14/2017 (180610)

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	5/18/17 10:00	Started:	5/22/17 10:00	Started:	5/22/17 10:00	Started:	5/23/17 09:30
Finished:	5/18/17 13:00	Finished:	5/22/17 12:00	Finished:	5/22/17 12:00	Finished:	5/23/17 11:30
By:	JGHOSH	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Preparation Information Benchsheet

Prep Run#: 288161
Team: Semivoa GCMS/JGHOSH

Prep WorkFlow: OrgExtDioxAq-30
Prep Method: Method Sep Funnel/Jar

Status: Prepped
Prep Date/Time: 5/18/17 10:00 AM

Comments:

Reviewed By: kn Date: 5/25/17

Chain of Custody

Relinquished By: Date:

Received By: Date:

Extracts Examined
Yes No

Analytical Results

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	05/02/17 14:10
Sample Matrix:	Water	**Date Received:**	05/10/17 08:44
Sample Name:	EB16_170502	**Units:**	pg/L
Lab Code:	E1700483-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 06:35
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1051mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406872	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406868

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.29	3.00	4.76			1
1,2,3,7,8-PeCDD	ND	U	0.883	15.0	23.8			1
1,2,3,4,7,8-HxCDD	0.789**JK**		0.394	15.0	23.8	2.38	1.001	1
1,2,3,6,7,8-HxCDD	ND	U	0.425	15.0	23.8			1
1,2,3,7,8,9-HxCDD	0.514**JK**		0.384	15.0	23.8	2.69	1.006	1
1,2,3,4,6,7,8-HpCDD	1.36**J**		0.501	15.0	23.8	1.09	1.000	1
OCDD	3.22**JK**		0.785	30.0	47.6	0.56	1.000	1
2,3,7,8-TCDF	ND	U	1.38	3.00	4.76			1
1,2,3,7,8-PeCDF	ND	U	0.537	15.0	23.8			1
2,3,4,7,8-PeCDF	ND	U	0.436	15.0	23.8			1
1,2,3,4,7,8-HxCDF	0.751**J**		0.241	15.0	23.8	1.19	1.000	1
1,2,3,6,7,8-HxCDF	0.863**J**		0.243	15.0	23.8	1.43	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.261	15.0	23.8			1
2,3,4,6,7,8-HxCDF	0.694**JK**		0.246	15.0	23.8	1.04	1.001	1
1,2,3,4,6,7,8-HpCDF	ND	U	0.451	15.0	23.8			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.550	15.0	23.8			1
OCDF	1.33**JK**		0.765	30.0	47.6	0.66	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	05/02/17 14:10
Sample Matrix:	Water	**Date Received:**	05/10/17 08:44
Sample Name:	EB16_170502	**Units:**	pg/L
Lab Code:	E1700483-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 06:35
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1051mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406872	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406868

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	1.29	15.0	15.0			1
Total Penta-Dioxins	ND	U	0.883	15.0	23.8			1
Total Hexa-Dioxins	ND	U	0.401	45.0	45.0			1
Total Hepta-Dioxins	1.36**J**		0.501	15.0	23.8	1.09		1
Total Tetra-Furans	ND	U	1.38	15.0	15.0			1
Total Penta-Furans	ND	U	0.481	30.0	30.0			1
Total Hexa-Furans	1.61**J**		0.248	60.0	60.0	1.19		1
Total Hepta-Furans	ND	U	0.499	30.0	30.0			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	05/02/17 14:10
Sample Matrix:	Water	**Date Received:**	05/10/17 08:44
Sample Name:	EB16_170502	**Units:**	Percent
Lab Code:	E1700483-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 06:35
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1051mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406872	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406868

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	613.542	31	**Y**	40-135	0.79	1.022
13C-1,2,3,7,8-PeCDD	2000	763.806	38	**Y**	40-135	1.61	1.195
13C-1,2,3,4,7,8-HxCDD	2000	927.406	46		40-135	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	851.413	43		40-135	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	909.382	45		40-135	1.04	1.066
13C-OCDD	4000	1754.873	44		40-135	0.88	1.138
13C-2,3,7,8-TCDF	2000	606.517	30	**Y**	40-135	0.77	0.992
13C-1,2,3,7,8-PeCDF	2000	822.785	41		40-135	1.57	1.151
13C-2,3,4,7,8-PeCDF	2000	1020.380	51		40-135	1.58	1.185
13C-1,2,3,4,7,8-HxCDF	2000	992.951	50		40-135	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	929.029	46		40-135	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1080.927	54		40-135	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	968.019	48		40-135	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	985.609	49		40-135	0.44	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1069.121	53		40-135	0.44	1.078
37Cl-2,3,7,8-TCDD	800	281.512	35	**Y**	40-135	NA	1.023

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	05/02/17 14:10
Sample Matrix:	Water	**Date Received:**	05/10/17 08:44
Sample Name:	EB16_170502	**Units:**	pg/L
Lab Code:	E1700483-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290

Prep Method: Method Sep Funnel/Jar

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	1.29	4.76	1	1	
1,2,3,7,8-PeCDD	ND	0.883	23.8	1	1	
1,2,3,4,7,8-HxCDD	**0.789**	0.394	23.8	1	0.1	0.0789
1,2,3,6,7,8-HxCDD	ND	0.425	23.8	1	0.1	
1,2,3,7,8,9-HxCDD	**0.514**	0.384	23.8	1	0.1	0.0514
1,2,3,4,6,7,8-HpCDD	**1.36**	0.501	23.8	1	0.01	0.0136
OCDD	**3.22**	0.785	47.6	1	0.0003	0.000966
2,3,7,8-TCDF	ND	1.38	4.76	1	0.1	
1,2,3,7,8-PeCDF	ND	0.537	23.8	1	0.03	
2,3,4,7,8-PeCDF	ND	0.436	23.8	1	0.3	
1,2,3,4,7,8-HxCDF	**0.751**	0.241	23.8	1	0.1	0.0751
1,2,3,6,7,8-HxCDF	**0.863**	0.243	23.8	1	0.1	0.0863
1,2,3,7,8,9-HxCDF	ND	0.261	23.8	1	0.1	
2,3,4,6,7,8-HxCDF	**0.694**	0.246	23.8	1	0.1	0.0694
1,2,3,4,6,7,8-HpCDF	ND	0.451	23.8	1	0.01	
1,2,3,4,7,8,9-HpCDF	ND	0.550	23.8	1	0.01	
OCDF	**1.33**	0.765	47.6	1	0.0003	0.000399
		Total TEQ				0.376

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	05/02/17 08:45
Sample Matrix:	Water	**Date Received:**	05/10/17 08:44
Sample Name:	M001A-R_170502	**Units:**	pg/L
Lab Code:	E1700483-002	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 07:24
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	961mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406873	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406868

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.24	3.12	5.20			1
1,2,3,7,8-PeCDD	ND	U	2.42	15.6	26.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.528	15.6	26.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.555	15.6	26.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.508	15.6	26.0			1
1,2,3,4,6,7,8-HpCDD	3.15**JK**		0.618	15.6	26.0	1.21	1.000	1
OCDD	22.1**J**		1.09	31.2	52.0	0.80	1.000	1
2,3,7,8-TCDF	ND	U	2.32	3.12	5.20			1
1,2,3,7,8-PeCDF	ND	U	1.59	15.6	26.0			1
2,3,4,7,8-PeCDF	ND	U	1.09	15.6	26.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.449	15.6	26.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.459	15.6	26.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.471	15.6	26.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.453	15.6	26.0			1
1,2,3,4,6,7,8-HpCDF	1.39**J**		0.389	15.6	26.0	0.93	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.481	15.6	26.0			1
OCDF	2.73**J**		0.851	31.2	52.0	1.00	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	05/02/17 08:45
Sample Matrix:	Water	**Date Received:**	05/10/17 08:44
Sample Name:	M001A-R_170502	**Units:**	pg/L
Lab Code:	E1700483-002	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 07:24
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	961mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406873	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406868

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	2.24	15.6	15.6			1
Total Penta-Dioxins	ND	U	2.42	15.6	26.0			1
Total Hexa-Dioxins	ND	U	0.530	46.8	46.8			1
Total Hepta-Dioxins	ND	U	0.618	15.6	26.0			1
Total Tetra-Furans	9.42**J**		2.32	15.6	15.6	0.85		1
Total Penta-Furans	ND	U	1.29	31.2	31.2			1
Total Hexa-Furans	ND	U	0.458	62.4	62.4			1
Total Hepta-Furans	2.55**J**		0.432	31.2	31.2	0.93		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	05/02/17 08:45
Sample Matrix:	Water	**Date Received:**	05/10/17 08:44
Sample Name:	M001A-R_170502	**Units:**	Percent
Lab Code:	E1700483-002	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 07:24
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	961mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406873	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406868

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	343.678	17	**Y**	40-135	0.76	1.022
13C-1,2,3,7,8-PeCDD	2000	645.299	32	**Y**	40-135	1.57	1.195
13C-1,2,3,4,7,8-HxCDD	2000	735.571	37	**Y**	40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	682.476	34	**Y**	40-135	1.25	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	796.536	40		40-135	1.03	1.066
13C-OCDD	4000	1588.696	40		40-135	0.89	1.138
13C-2,3,7,8-TCDF	2000	350.053	18	**Y**	40-135	0.76	0.992
13C-1,2,3,7,8-PeCDF	2000	597.444	30	**Y**	40-135	1.54	1.151
13C-2,3,4,7,8-PeCDF	2000	874.051	44		40-135	1.55	1.185
13C-1,2,3,4,7,8-HxCDF	2000	750.048	38	**Y**	40-135	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	696.479	35	**Y**	40-135	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	849.749	42		40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	741.128	37	**Y**	40-135	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	843.859	42		40-135	0.43	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	895.079	45		40-135	0.44	1.079
37Cl-2,3,7,8-TCDD	800	181.495	23	**Y**	40-135	NA	1.023

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	05/02/17 08:45
Sample Matrix:	Water	**Date Received:**	05/10/17 08:44
Sample Name:	M001A-R_170502	**Units:**	pg/L
Lab Code:	E1700483-002	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290

Prep Method: Method Sep Funnel/Jar

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	2.24	5.20	1	1	
1,2,3,7,8-PeCDD	ND	2.42	26.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.528	26.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.555	26.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.508	26.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	**3.15**	0.618	26.0	1	0.01	0.0315
OCDD	**22.1**	1.09	52.0	1	0.0003	0.00663
2,3,7,8-TCDF	ND	2.32	5.20	1	0.1	
1,2,3,7,8-PeCDF	ND	1.59	26.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.09	26.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.449	26.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.459	26.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.471	26.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.453	26.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**1.39**	0.389	26.0	1	0.01	0.0139
1,2,3,4,7,8,9-HpCDF	ND	0.481	26.0	1	0.01	
OCDF	**2.73**	0.851	52.0	1	0.0003	0.000819
		Total TEQ				0.0528

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ1700201-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 05:46
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406871	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406868

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.09	3.00	5.00			1
1,2,3,7,8-PeCDD	ND	U	0.614	15.0	25.0			1
1,2,3,4,7,8-HxCDD	0.794**JK**		0.526	15.0	25.0	1.57	1.000	1
1,2,3,6,7,8-HxCDD	0.673**JK**		0.547	15.0	25.0	0.86	1.000	1
1,2,3,7,8,9-HxCDD	1.01**J**		0.503	15.0	25.0	1.18	1.006	1
1,2,3,4,6,7,8-HpCDD	2.77**J**		0.315	15.0	25.0	1.17	1.000	1
OCDD	16.4**J**		0.727	30.0	50.0	0.83	1.000	1
2,3,7,8-TCDF	ND	U	0.998	3.00	5.00			1
1,2,3,7,8-PeCDF	ND	U	0.495	15.0	25.0			1
2,3,4,7,8-PeCDF	ND	U	0.379	15.0	25.0			1
1,2,3,4,7,8-HxCDF	0.973**JK**		0.287	15.0	25.0	1.46	1.000	1
1,2,3,6,7,8-HxCDF	0.610**JK**		0.284	15.0	25.0	1.51	1.000	1
1,2,3,7,8,9-HxCDF	0.683**JK**		0.305	15.0	25.0	2.32	1.000	1
2,3,4,6,7,8-HxCDF	0.851**JK**		0.296	15.0	25.0	1.51	1.000	1
1,2,3,4,6,7,8-HpCDF	0.845**JK**		0.329	15.0	25.0	1.55	1.000	1
1,2,3,4,7,8,9-HpCDF	0.634**JK**		0.402	15.0	25.0	1.77	1.000	1
OCDF	2.89**JK**		0.598	30.0	50.0	1.18	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ1700201-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 05:46
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406871	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406868

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	1.09	15.0	15.0			1
Total Penta-Dioxins	ND	U	0.614	15.0	25.0			1
Total Hexa-Dioxins	1.01**J**		0.525	45.0	45.0	1.18		1
Total Hepta-Dioxins	2.77**J**		0.315	15.0	25.0	1.17		1
Total Tetra-Furans	ND	U	0.998	15.0	15.0			1
Total Penta-Furans	ND	U	0.430	30.0	30.0			1
Total Hexa-Furans	ND	U	0.293	60.0	60.0			1
Total Hepta-Furans	ND	U	0.363	30.0	30.0			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1700201-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 05:46
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406871	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406868

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	895.605	45		40-135	0.78	1.022
13C-1,2,3,7,8-PeCDD	2000	1113.434	56		40-135	1.57	1.195
13C-1,2,3,4,7,8-HxCDD	2000	1158.178	58		40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1091.361	55		40-135	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1156.462	58		40-135	1.05	1.066
13C-OCDD	4000	2280.947	57		40-135	0.87	1.138
13C-2,3,7,8-TCDF	2000	904.034	45		40-135	0.77	0.992
13C-1,2,3,7,8-PeCDF	2000	1162.746	58		40-135	1.57	1.151
13C-2,3,4,7,8-PeCDF	2000	1507.153	75		40-135	1.58	1.185
13C-1,2,3,4,7,8-HxCDF	2000	1251.104	63		40-135	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1175.870	59		40-135	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1376.205	69		40-135	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1211.243	61		40-135	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1265.768	63		40-135	0.44	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1317.021	66		40-135	0.44	1.079
37Cl-2,3,7,8-TCDD	800	388.784	49		40-135	NA	1.023

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Analyzed:**	05/24/17
Sample Matrix:	Water	**Date Extracted:**	05/18/17

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

Analysis Method:	8290	**Units:**	pg/L
Prep Method:	Method Sep Funnel/Jar	**Basis:**	NA
		Analysis Lot:	547663

	Lab Control Sample EQ1700201-02			Duplicate Lab Control Sample EQ1700201-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	1110	1000	111	1090	1000	109	79-122	2	20
1,2,3,4,7,8-HxCDD	1120	1000	112	1100	1000	110	80-126	1	20
1,2,3,6,7,8-HxCDD	1150	1000	115	1120	1000	112	78-134	2	20
1,2,3,7,8,9-HxCDD	1150	1000	115	1110	1000	111	76-137	3	20
1,2,3,7,8-PeCDD	1150	1000	115	1150	1000	115	76-121	<1	20
2,3,7,8-TCDD	232	200	116	232	200	116	71-125	<1	20
OCDD	2300	2000	115	2250	2000	112	81-135	2	20
1,2,3,4,6,7,8-HpCDF	1120	1000	112	1080	1000	108	81-130	3	20
1,2,3,4,7,8,9-HpCDF	1150	1000	115	1120	1000	112	77-128	2	20
1,2,3,4,7,8-HxCDF	1150	1000	115	1130	1000	113	80-130	1	20
1,2,3,6,7,8-HxCDF	1150	1000	115	1120	1000	112	79-131	2	20
1,2,3,7,8,9-HxCDF	1070	1000	107	1050	1000	105	83-130	3	20
1,2,3,7,8-PeCDF	1090	1000	109	1100	1000	110	82-130	1	20
2,3,4,6,7,8-HxCDF	1130	1000	113	1080	1000	108	81-130	4	20
2,3,4,7,8-PeCDF	897	1000	90	902	1000	90	77-129	<1	20
2,3,7,8-TCDF	240	200	120	242	200	121	72-138	<1	20
OCDF	2560	2000	128	2540	2000	127	66-150	1	20

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1700201-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 20:47
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406888	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406880

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	232		1.72	3.00	5.00	0.77	1.001	1
1,2,3,7,8-PeCDD	1150		0.995	15.0	25.0	1.54	1.001	1
1,2,3,4,7,8-HxCDD	1120		0.532	15.0	25.0	1.23	1.000	1
1,2,3,6,7,8-HxCDD	1150		0.551	15.0	25.0	1.26	1.000	1
1,2,3,7,8,9-HxCDD	1150		0.508	15.0	25.0	1.25	1.006	1
1,2,3,4,6,7,8-HpCDD	1110		0.370	15.0	25.0	1.02	1.000	1
OCDD	2300		1.50	30.0	50.0	0.89	1.000	1
2,3,7,8-TCDF	240		1.69	3.00	5.00	0.79	1.000	1
1,2,3,7,8-PeCDF	1090		1.05	15.0	25.0	1.57	1.001	1
2,3,4,7,8-PeCDF	897		0.824	15.0	25.0	1.59	1.001	1
1,2,3,4,7,8-HxCDF	1150		0.573	15.0	25.0	1.24	1.000	1
1,2,3,6,7,8-HxCDF	1150		0.570	15.0	25.0	1.26	1.000	1
1,2,3,7,8,9-HxCDF	1070		0.608	15.0	25.0	1.26	1.000	1
2,3,4,6,7,8-HxCDF	1130		0.600	15.0	25.0	1.26	1.000	1
1,2,3,4,6,7,8-HpCDF	1120		1.59	15.0	25.0	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	1150		1.83	15.0	25.0	1.02	1.000	1
OCDF	2560		2.57	30.0	50.0	0.90	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1700201-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 20:47
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406888	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406880

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	232		1.72	15.0	15.0	0.77		1
Total Penta-Dioxins	1160		0.995	15.0	25.0	1.54		1
Total Hexa-Dioxins	3410		0.530	45.0	45.0	1.23		1
Total Hepta-Dioxins	1110		0.370	15.0	25.0	1.02		1
Total Tetra-Furans	240		1.69	15.0	15.0	0.79		1
Total Penta-Furans	1990		0.921	30.0	30.0	1.53		1
Total Hexa-Furans	4490		0.588	60.0	60.0	1.24		1
Total Hepta-Furans	2270		1.71	30.0	30.0	1.05		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1700201-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 20:47
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406888	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406880

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	710.239	36	**Y**	40-135	0.78	1.022
13C-1,2,3,7,8-PeCDD	2000	888.593	44		40-135	1.60	1.195
13C-1,2,3,4,7,8-HxCDD	2000	888.568	44		40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	843.399	42		40-135	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	959.758	48		40-135	1.05	1.066
13C-OCDD	4000	1943.541	49		40-135	0.90	1.138
13C-2,3,7,8-TCDF	2000	715.357	36	**Y**	40-135	0.77	0.992
13C-1,2,3,7,8-PeCDF	2000	947.209	47		40-135	1.57	1.151
13C-2,3,4,7,8-PeCDF	2000	1197.020	60		40-135	1.57	1.185
13C-1,2,3,4,7,8-HxCDF	2000	959.777	48		40-135	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	911.599	46		40-135	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1072.229	54		40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	929.102	46		40-135	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1006.559	50		40-135	0.44	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1089.803	54		40-135	0.45	1.079
37Cl-2,3,7,8-TCDD	800	333.822	42		40-135	NA	1.023

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Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1700201-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 21:37
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406889	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406880

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	232		1.66	3.00	5.00	0.83	1.000	1
1,2,3,7,8-PeCDD	1150		0.760	15.0	25.0	1.57	1.001	1
1,2,3,4,7,8-HxCDD	1100		0.363	15.0	25.0	1.21	1.000	1
1,2,3,6,7,8-HxCDD	1120		0.380	15.0	25.0	1.26	1.000	1
1,2,3,7,8,9-HxCDD	1110		0.349	15.0	25.0	1.26	1.006	1
1,2,3,4,6,7,8-HpCDD	1090		0.590	15.0	25.0	1.05	1.000	1
OCDD	2250		1.56	30.0	50.0	0.87	1.000	1
2,3,7,8-TCDF	242		1.48	3.00	5.00	0.78	1.000	1
1,2,3,7,8-PeCDF	1100		0.695	15.0	25.0	1.55	1.001	1
2,3,4,7,8-PeCDF	902		0.577	15.0	25.0	1.54	1.001	1
1,2,3,4,7,8-HxCDF	1130		0.392	15.0	25.0	1.24	1.000	1
1,2,3,6,7,8-HxCDF	1120		0.401	15.0	25.0	1.24	1.000	1
1,2,3,7,8,9-HxCDF	1050		0.414	15.0	25.0	1.24	1.000	1
2,3,4,6,7,8-HxCDF	1080		0.397	15.0	25.0	1.26	1.000	1
1,2,3,4,6,7,8-HpCDF	1080		1.48	15.0	25.0	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	1120		1.72	15.0	25.0	1.02	1.000	1
OCDF	2540		0.693	30.0	50.0	0.89	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1700201-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 21:37
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406889	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406880

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	232		1.66	15.0	15.0	0.83		1
Total Penta-Dioxins	1150		0.760	15.0	25.0	1.57		1
Total Hexa-Dioxins	3340		0.364	45.0	45.0	1.21		1
Total Hepta-Dioxins	1090		0.590	15.0	25.0	1.05		1
Total Tetra-Furans	242		1.48	15.0	15.0	0.78		1
Total Penta-Furans	2000		0.629	30.0	30.0	1.55		1
Total Hexa-Furans	4380		0.401	60.0	60.0	1.24		1
Total Hepta-Furans	2200		1.60	30.0	30.0	1.06		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700483
Project:	Naval Base Ventura County, CA/1711881	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1700201-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/24/17 21:37
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/18/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-06
		GC Column:	DB-5MSUI
Data File Name:	P406889	**Blank File Name:**	P406871
ICAL Date:	04/28/16	**Cal Ver. File Name:**	P406880

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	709.770	35	**Y**	40-135	0.79	1.022
13C-1,2,3,7,8-PeCDD	2000	884.498	44		40-135	1.57	1.195
13C-1,2,3,4,7,8-HxCDD	2000	946.959	47		40-135	1.23	0.991
13C-1,2,3,6,7,8-HxCDD	2000	890.752	45		40-135	1.22	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1012.597	51		40-135	1.04	1.066
13C-OCDD	4000	2044.750	51		40-135	0.89	1.138
13C-2,3,7,8-TCDF	2000	711.998	36	**Y**	40-135	0.77	0.992
13C-1,2,3,7,8-PeCDF	2000	940.196	47		40-135	1.56	1.151
13C-2,3,4,7,8-PeCDF	2000	1183.195	59		40-135	1.55	1.185
13C-1,2,3,4,7,8-HxCDF	2000	1005.156	50		40-135	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	939.654	47		40-135	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1121.548	56		40-135	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	998.945	50		40-135	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1051.727	53		40-135	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1135.559	57		40-135	0.44	1.079
37Cl-2,3,7,8-TCDD	800	344.318	43		40-135	NA	1.023

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

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
EB16_170502

Run #10 Filename P406872 Samp: 1 Inj: 1 Acquired: 24-MAY-17 06:35:39
Processed: 24-MAY-17 13:01:56 Sample ID: E1700483-001

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	0.769
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	yes	0.872
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	yes	0.826
4	Unk	1,2,3,4,7,8-HxCDF	35:26	8.275e+00	6.938e+00	1.19	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	35:31	1.067e+01	7.482e+00	1.43	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:03	7.537e+00	7.248e+00	1.04	no	yes	1.015
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	yes	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	NotFnd	*	*	*	no	yes	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.187
10	Unk	OCDF	41:43	7.500e+00	1.138e+01	0.66	no	yes	1.035
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	0.873
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	yes	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:11	1.250e+01	5.247e+00	2.38	no	yes	0.881
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	yes	0.893
15	Unk	1,2,3,7,8,9-HxCDD	36:29	9.746e+00	3.626e+00	2.69	no	yes	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	38:54	9.690e+00	8.897e+00	1.09	yes	no	0.882
17	Unk	OCDD	41:32	1.719e+01	3.052e+01	0.56	no	no	0.980
18	IS	13C-2,3,7,8-TCDF	27:23	1.535e+04	1.992e+04	0.77	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	31:46	2.820e+04	1.798e+04	1.57	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	32:42	3.467e+04	2.200e+04	1.58	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:25	1.190e+04	2.325e+04	0.51	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	35:31	1.330e+04	2.556e+04	0.52	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:01	1.246e+04	2.432e+04	0.51	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	36:46	1.228e+04	2.384e+04	0.52	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:01	8.819e+03	2.025e+04	0.44	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:20	8.478e+03	1.938e+04	0.44	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	28:13	1.341e+04	1.701e+04	0.79	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	32:59	2.220e+04	1.379e+04	1.61	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:09	1.789e+04	1.431e+04	1.25	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:15	1.752e+04	1.395e+04	1.26	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:54	1.498e+04	1.446e+04	1.04	yes	no	0.817
32	IS	13C-OCDD	41:31	2.063e+04	2.346e+04	0.88	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	27:36	4.502e+04	5.724e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:29	4.411e+04	3.512e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:14	1.379e+04				no	0.958

1.931e+01

(1.719e+01 + ~~3.052e+01~~) x 4000 pg x 1
OCDD = ---------- = 3.21 pg/L
(2.063e+04 + 2.346e+04) x 105/mL x 100 / 100 x 0.980

LMO5/20/17

OCDD = 0.56 < 0.89

$A2 = \frac{A1}{0.89} = 1.931e+01$

ALS ENVIRONMENTAL -- HOUSTON HRMS
10450 Stancliff Rd., Suite 115
Houston, TX 77099
Telephone: (713)266-1599. Fax(713)266-0130

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
EB16_170502

Run #10 Filename P406872 Samp: 1 Inj: 1 Acquired: 24-MAY-17 06:35:39
Processed: 24-MAY-17 13:01:56 LAB. ID: E1700483-001

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	5.08e+02	*	*	8.44e+02	*
2	1,2,3,7,8-PeCDF	*	1.68e+02	*	*	6.76e+02	*
3	2,3,4,7,8-PeCDF	*	1.68e+02	*	*	6.76e+02	*
4	1,2,3,4,7,8-HxCDF	1.46e+03	2.40e+02	6.1e+00	1.50e+03	1.88e+02	8.0e+00
5	1,2,3,6,7,8-HxCDF	1.47e+03	2.40e+02	6.1e+00	1.41e+03	1.88e+02	7.5e+00
6	2,3,4,6,7,8-HxCDF	1.77e+03	2.40e+02	7.4e+00	2.11e+03	1.88e+02	1.1e+01
7	1,2,3,7,8,9-HxCDF	*	2.40e+02	*	*	1.88e+02	*
8	1,2,3,4,6,7,8-HpCDF	*	4.00e+02	*	*	3.88e+02	*
9	1,2,3,4,7,8,9-HpCDF	*	4.00e+02	*	*	3.88e+02	*
10	OCDF	1.27e+03	2.52e+02	5.0e+00	2.54e+03	4.56e+02	5.6e+00
11	2,3,7,8-TCDD	*	8.48e+02	*	*	4.80e+02	*
12	1,2,3,7,8-PeCDD	*	8.28e+02	*	*	2.52e+02	*
13	1,2,3,4,7,8-HxCDD	2.43e+03	2.64e+02	9.2e+00	1.02e+03	2.76e+02	3.7e+00
14	1,2,3,6,7,8-HxCDD	*	2.64e+02	*	*	2.76e+02	*
15	1,2,3,7,8,9-HxCDD	1.91e+03	2.64e+02	7.2e+00	9.29e+02	2.76e+02	3.4e+00
16	1,2,3,4,6,7,8-HpCDD	2.53e+03	1.96e+02	1.3e+01	2.33e+03	3.88e+02	6.0e+00
17	OCDD	3.61e+03	2.68e+02	1.3e+01	6.21e+03	4.20e+02	1.5e+01
18	13C-2,3,7,8-TCDF	2.65e+06	5.68e+03	4.7e+02	3.41e+06	2.25e+03	1.5e+03
19	13C-1,2,3,7,8-PeCDF	5.19e+06	7.20e+02	7.2e+03	3.34e+06	1.29e+03	2.6e+03
20	13C-2,3,4,7,8-PeCDF	6.85e+06	7.20e+02	9.5e+03	4.28e+06	1.29e+03	3.3e+03
21	13C-1,2,3,4,7,8-HxCDF	2.61e+06	4.52e+02	5.8e+03	5.06e+06	8.04e+02	6.3e+03
22	13C-1,2,3,6,7,8-HxCDF	2.79e+06	4.52e+02	6.2e+03	5.34e+06	8.04e+02	6.6e+03
23	13C-2,3,4,6,7,8-HxCDF	2.76e+06	4.52e+02	6.1e+03	5.36e+06	8.04e+02	6.7e+03
24	13C-1,2,3,7,8,9-HxCDF	2.54e+06	4.52e+02	5.6e+03	5.00e+06	8.04e+02	6.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.03e+06	1.68e+03	1.2e+03	4.65e+06	1.96e+03	2.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.74e+06	1.68e+03	1.0e+03	4.00e+06	1.96e+03	2.0e+03
27	13C-2,3,7,8-TCDD	2.50e+06	4.60e+03	5.4e+02	3.12e+06	2.28e+03	1.4e+03
28	13C-1,2,3,7,8-PeCDD	4.45e+06	5.68e+02	7.8e+03	2.75e+06	6.72e+02	4.1e+03
29	13C-1,2,3,4,7,8-HxCDD	4.10e+06	2.08e+03	2.0e+03	3.26e+06	1.33e+03	2.5e+03
30	13C-1,2,3,6,7,8-HxCDD	3.78e+06	2.08e+03	1.8e+03	2.98e+06	1.33e+03	2.2e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.23e+06	6.16e+02	5.2e+03	3.04e+06	2.80e+02	1.1e+04
32	13C-OCDD	3.96e+06	1.60e+03	2.5e+03	4.52e+06	1.75e+03	2.6e+03
33	13C-1,2,3,4-TCDD	8.08e+06	4.60e+03	1.8e+03	1.03e+07	2.28e+03	4.5e+03
34	13C-1,2,3,7,8,9-HxCDD	9.65e+06	2.08e+03	4.6e+03	7.69e+06	1.33e+03	5.8e+03
35	37Cl-2,3,7,8-TCDD	2.54e+06	9.68e+02	2.6e+03			

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Peak List Summary

CLIENT ID.

EB16_170502

Entry: 41 Totals Name: Total Hexa-Furans

Run: 10 File: P406872 Sample:1 Injection:1 Function:3

Acquired: 24-MAY-17 06:35:39 Processed: 24-MAY-17 13:01:56

Mass: 373.8210 375.8180 Tot Response: 3.34e+01 RRF: 1.043

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	35:26	8.27e+00	6.94e+00	1.19	yes	1.52e+01	1,2,3,4,7,8-HxCDF	n	n
2	35:31	1.07e+01	7.48e+00	1.43	yes	1.82e+01	1,2,3,6,7,8-HxCDF	n	n

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Peak List Summary

CLIENT ID.

EB16_170502

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 10 File: P406872 Sample:1 Injection:1 Function:4

Acquired: 24-MAY-17 06:35:39 Processed: 24-MAY-17 13:01:56

Mass: 423.7770 425.7740 Tot Response: 1.86e+01 RRF: 0.8816

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:54	9.69e+00	8.90e+00	1.09	yes	1.86e+01	1,2,3,4,6,7,8-HpCDD	n	n

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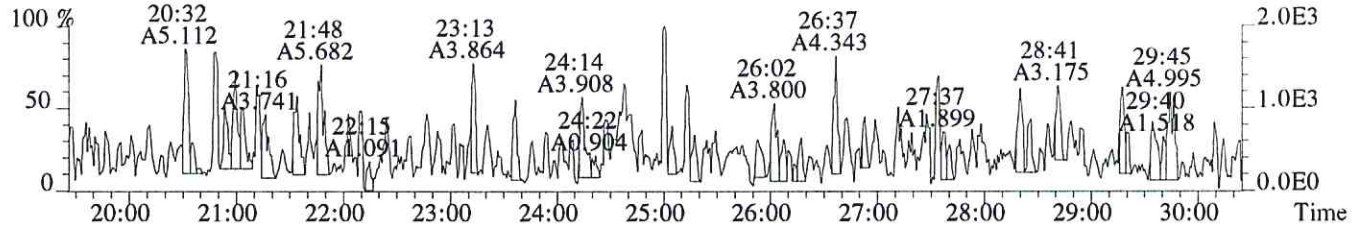
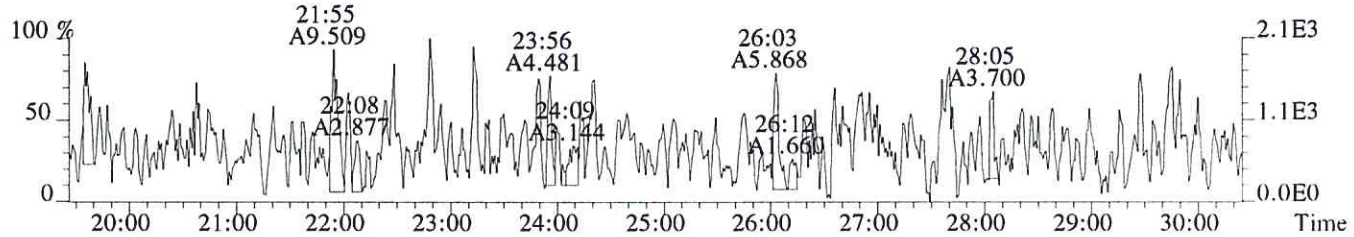
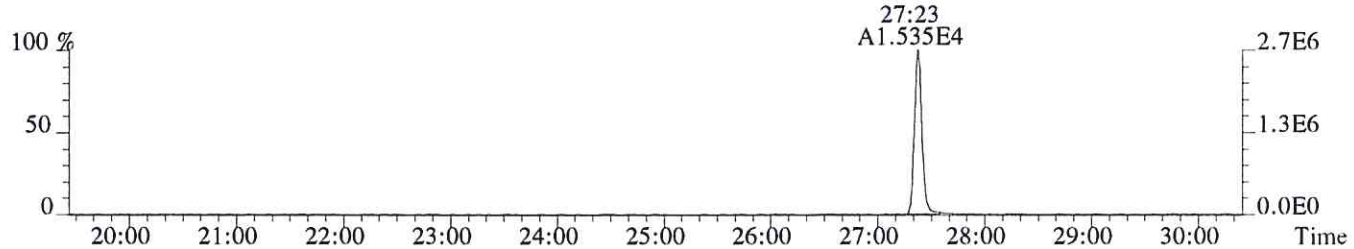
File:P406872 #1-779 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,508.0,1.00%,F,T)



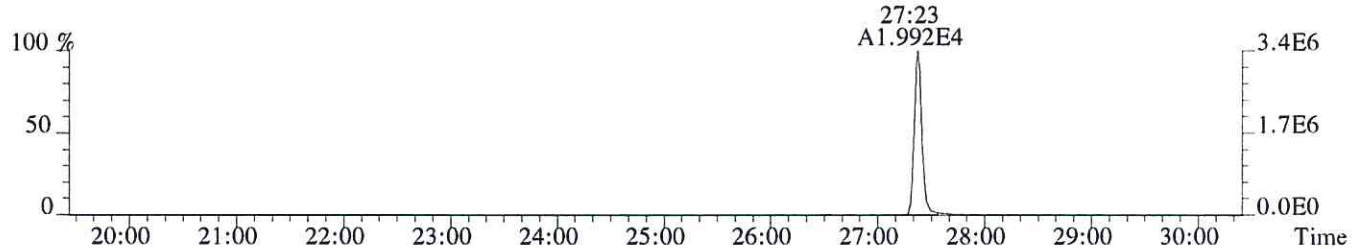
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,844.0,1.00%,F,T)



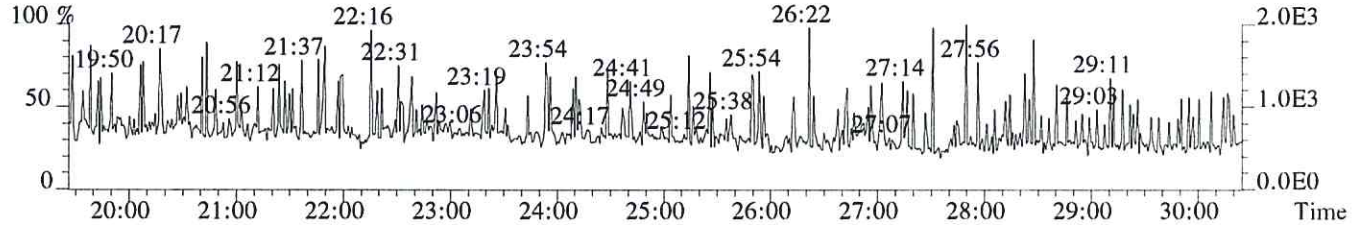
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5684.0,1.00%,F,T)



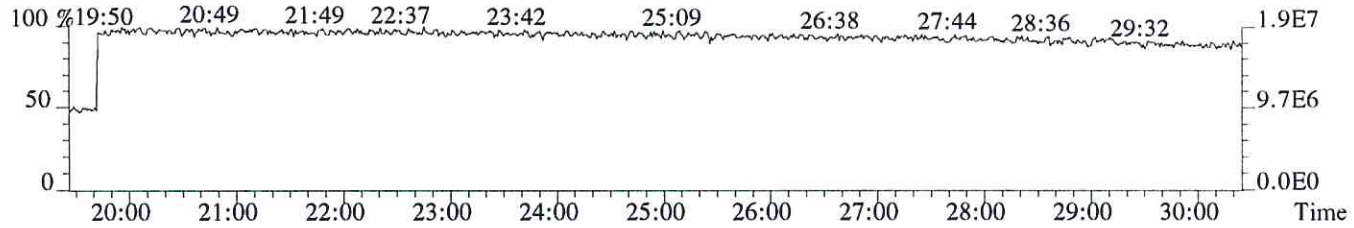
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2248.0,1.00%,F,T)



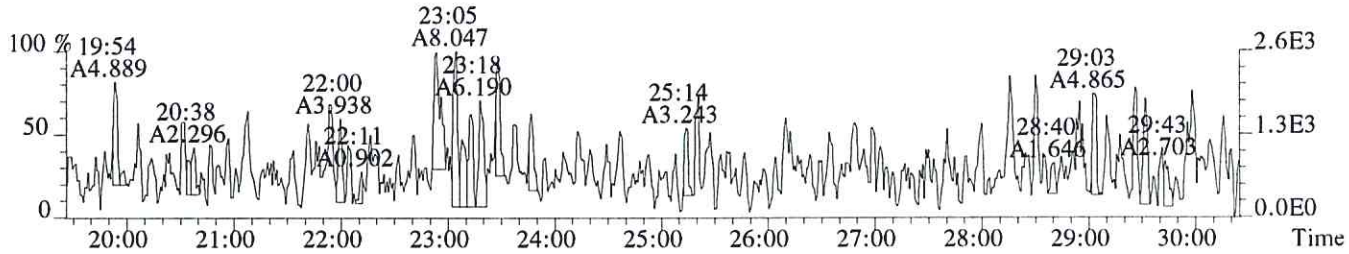
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



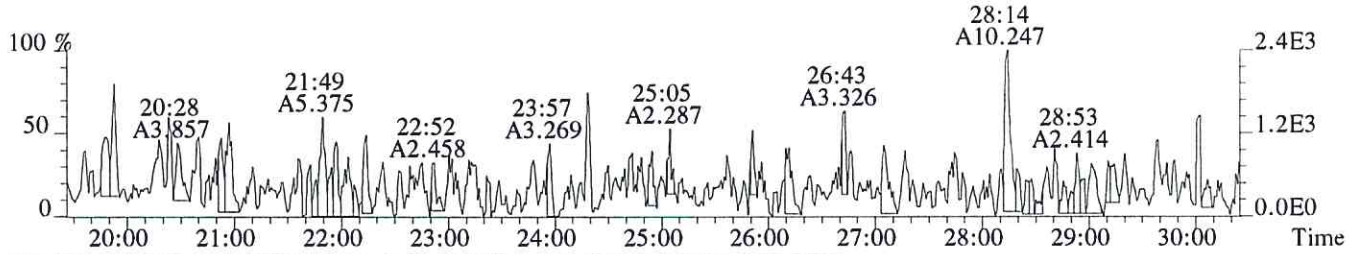
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



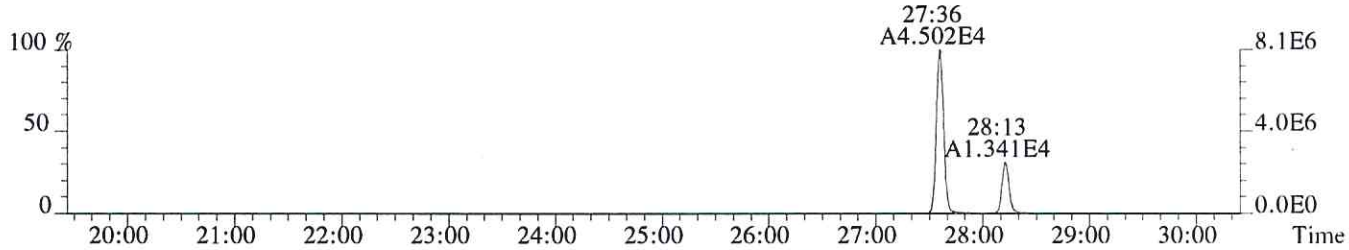
File:P406872 #1-779 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,848.0,1.00%,F,T)



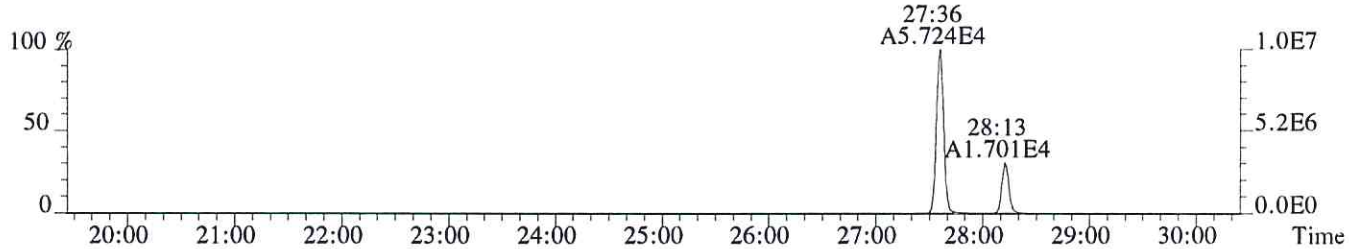
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,480.0,1.00%,F,T)



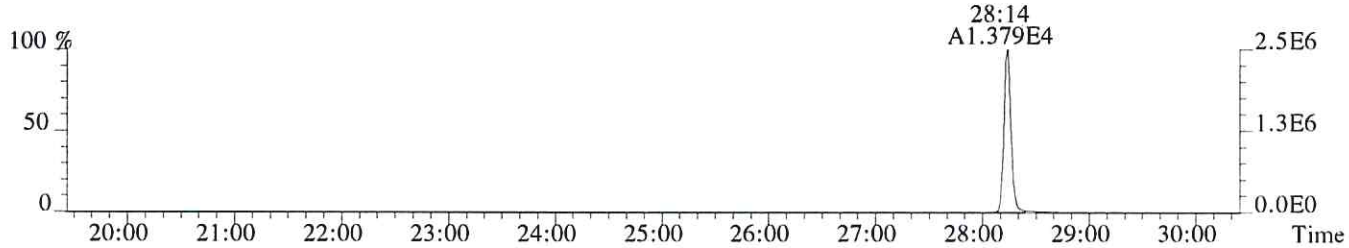
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4604.0,1.00%,F,T)



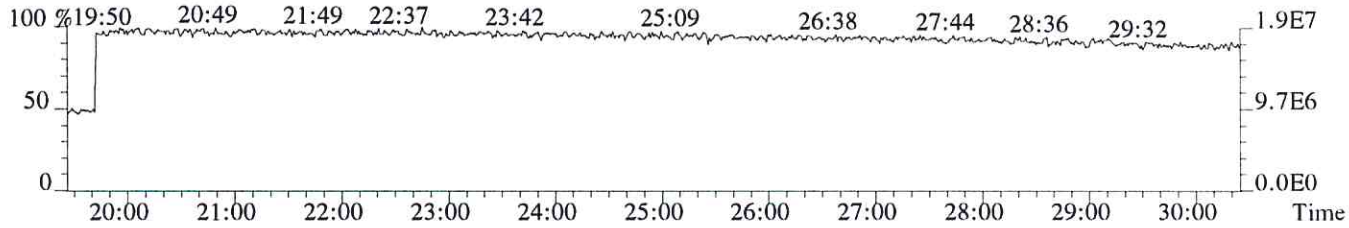
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2280.0,1.00%,F,T)



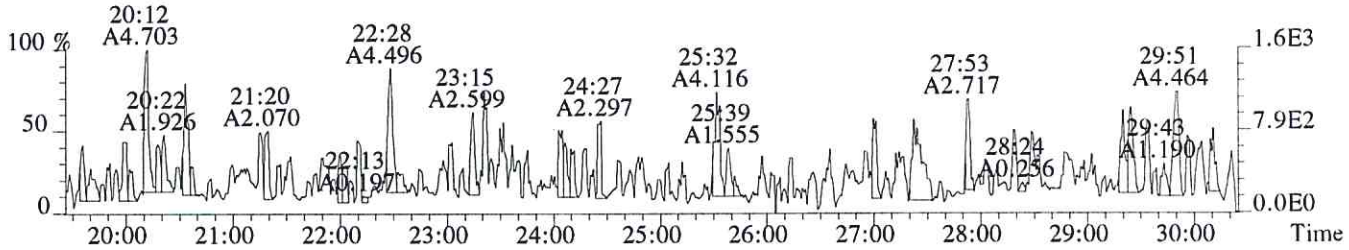
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,968.0,1.00%,F,T)



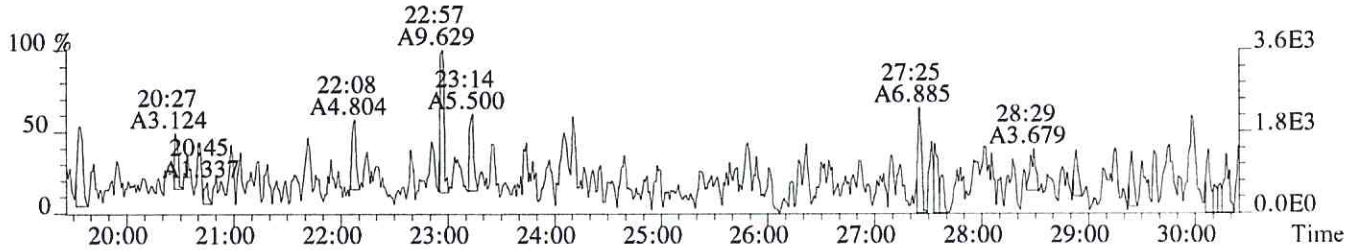
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



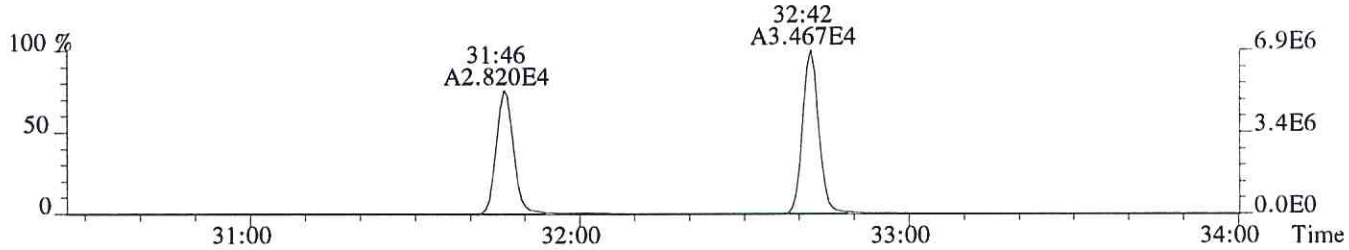
File:P406872 #1-779 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,328.0,1.00%,F,T)



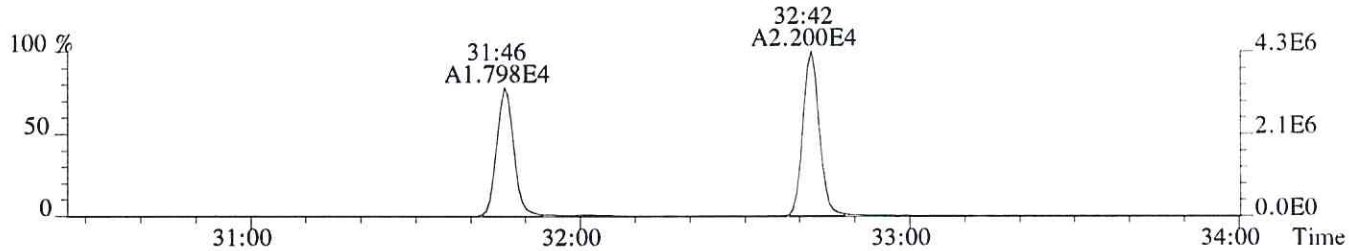
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,812.0,1.00%,F,T)



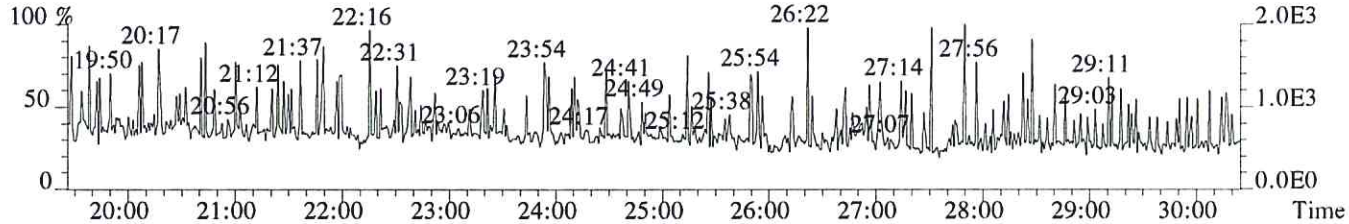
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,720.0,1.00%,F,T)



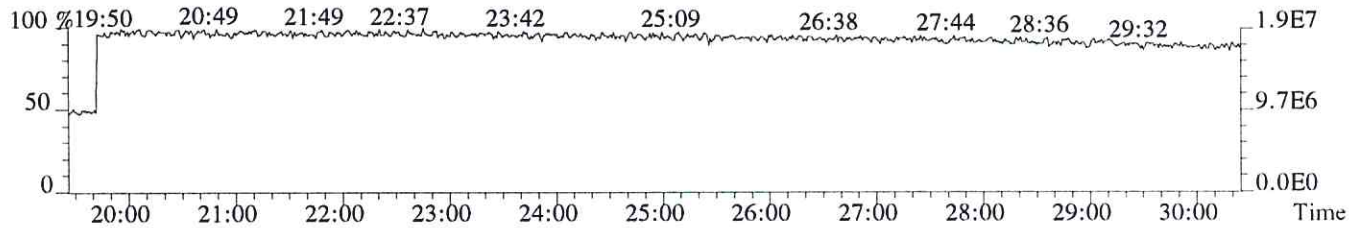
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1288.0,1.00%,F,T)



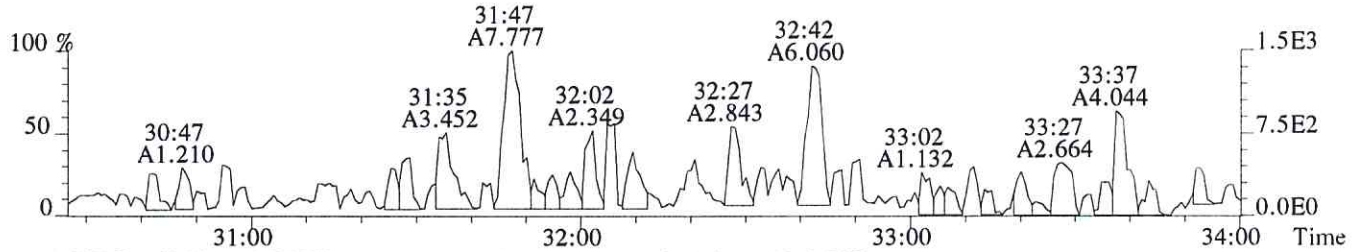
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



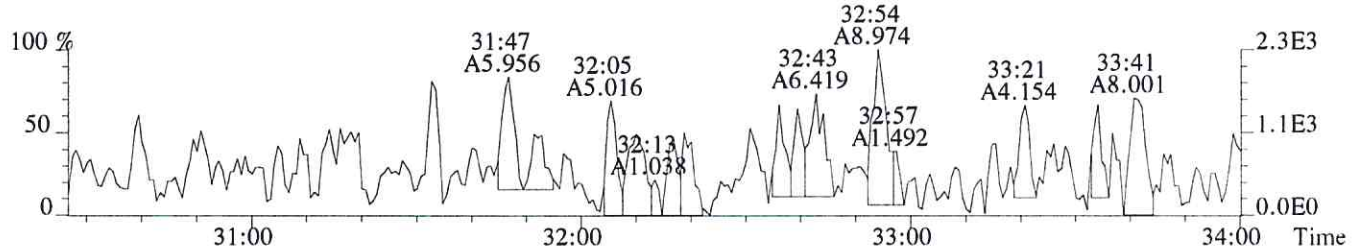
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



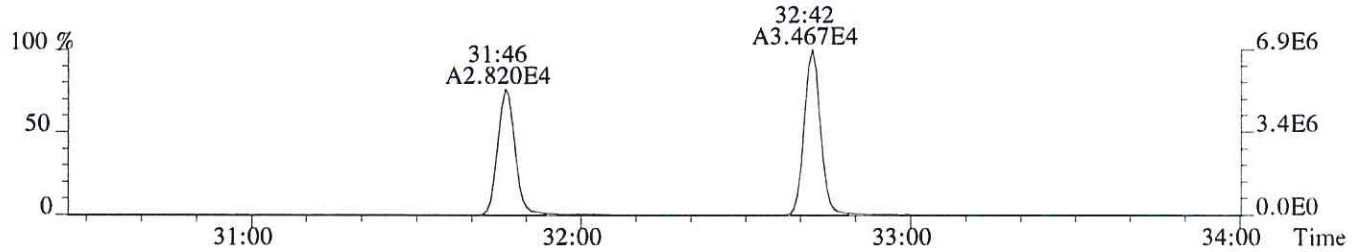
File:P406872 #1-321 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,168.0,1.00%,F,T)



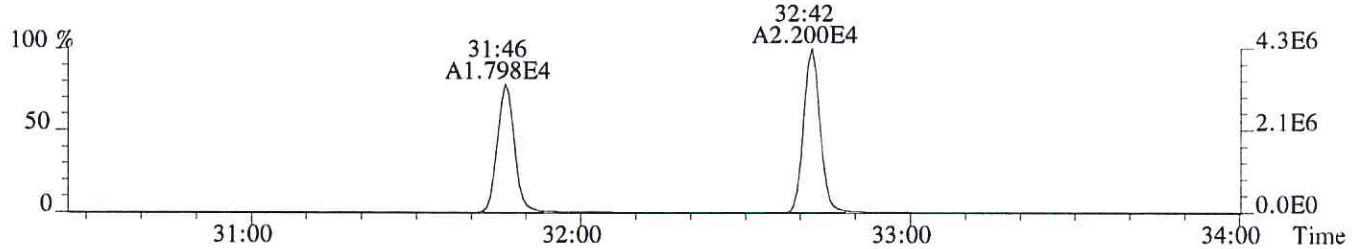
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,676.0,1.00%,F,T)



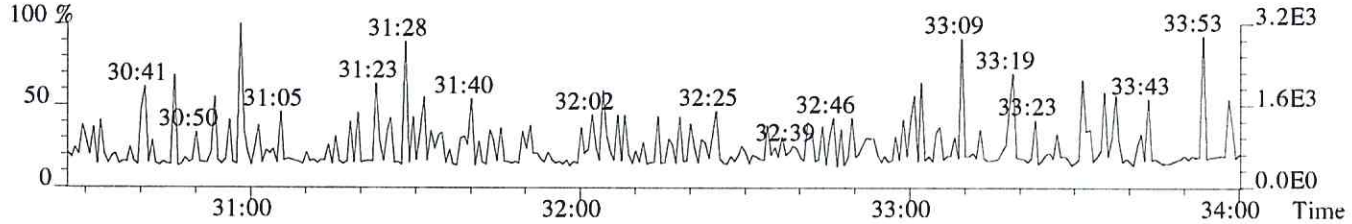
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,720.0,1.00%,F,T)



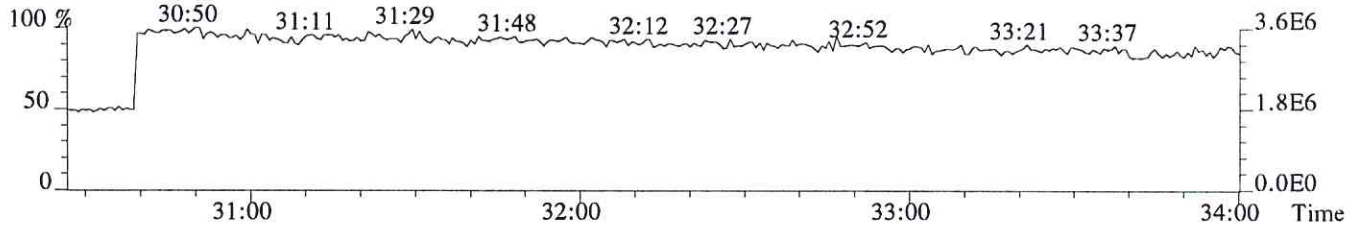
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1288.0,1.00%,F,T)



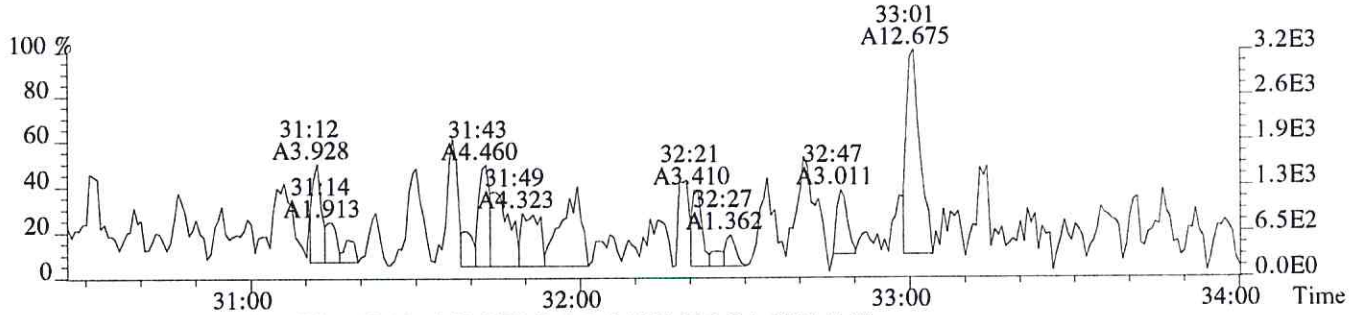
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



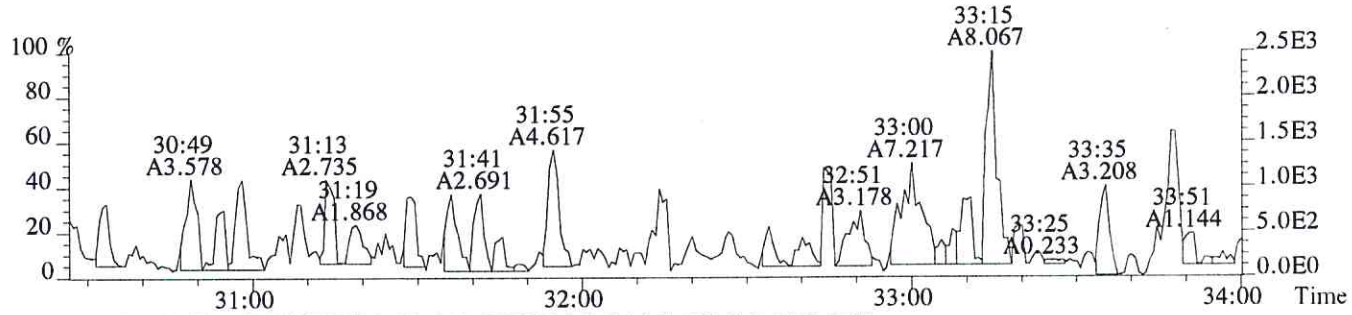
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



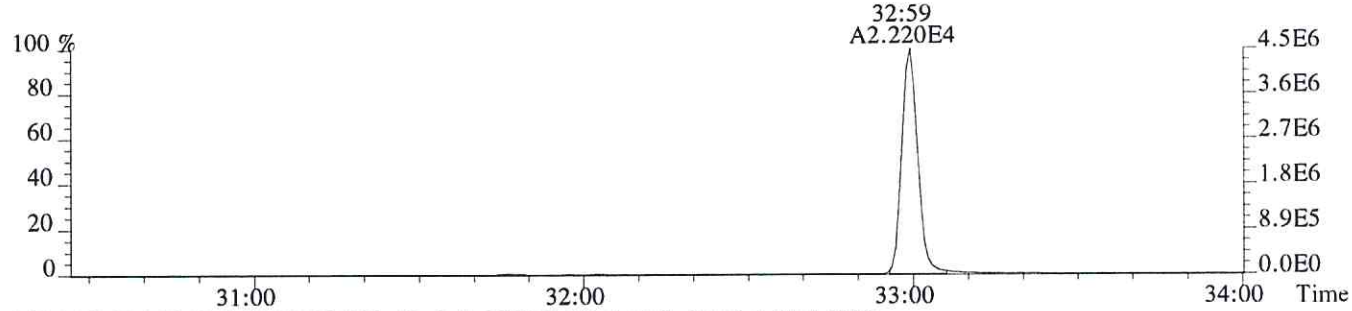
File:P406872 #1-321 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,828.0,1.00%,F,T)



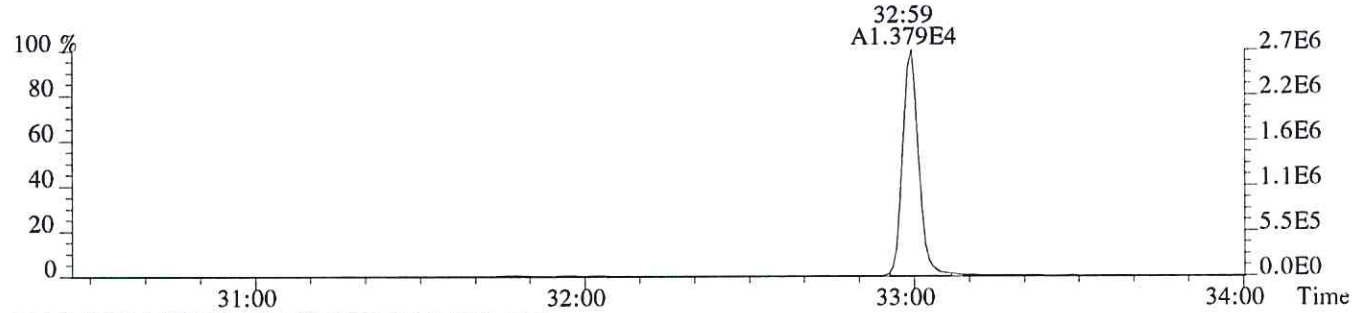
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,252.0,1.00%,F,T)



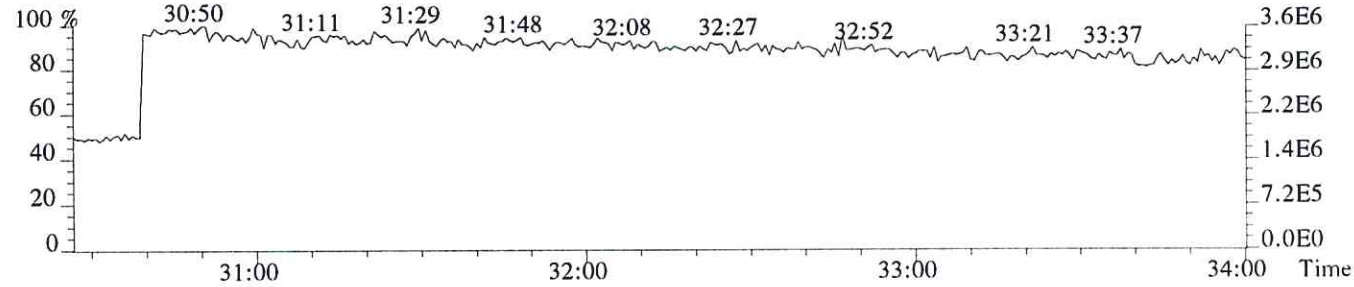
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,568.0,1.00%,F,T)



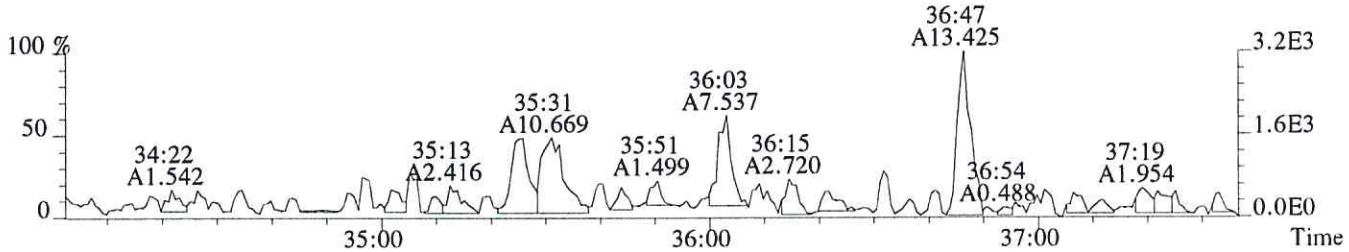
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,672.0,1.00%,F,T)



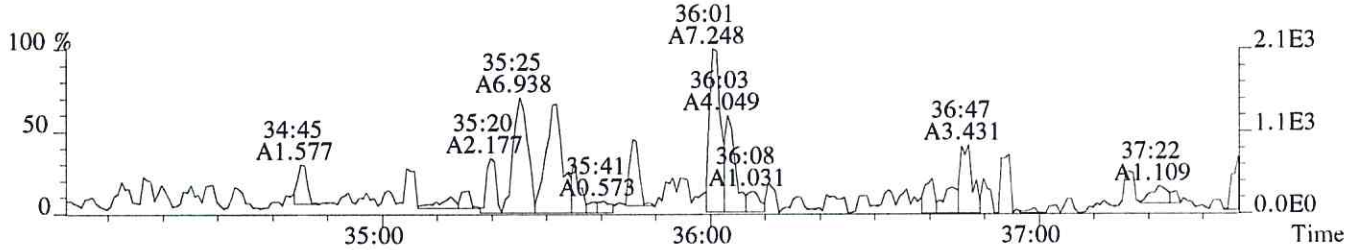
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



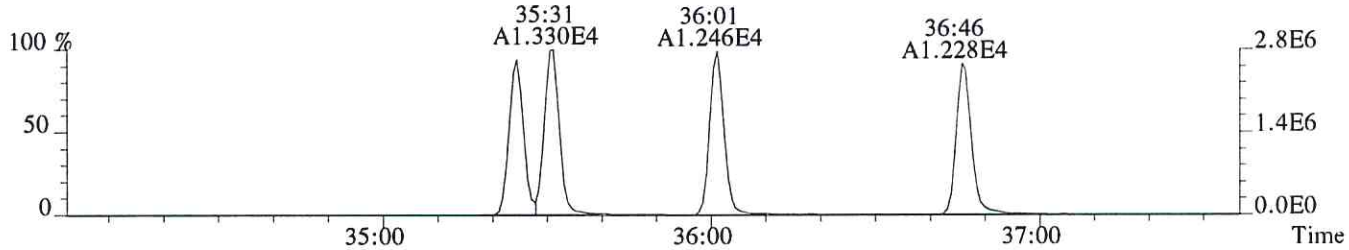
File:P406872 #1-322 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,240.0,0.40%,F,T)



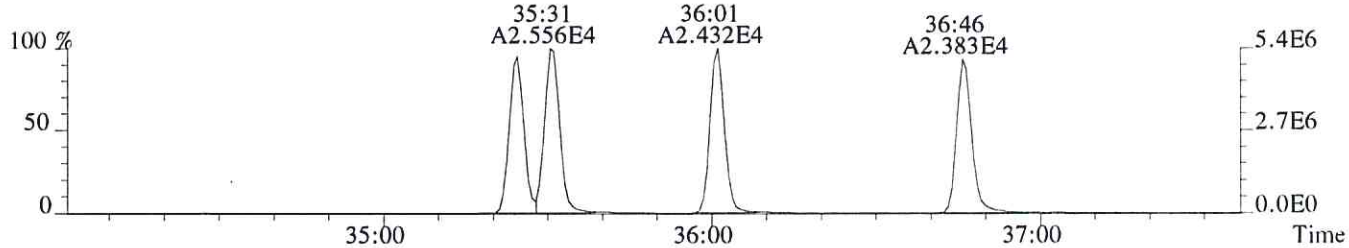
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,188.0,0.40%,F,T)



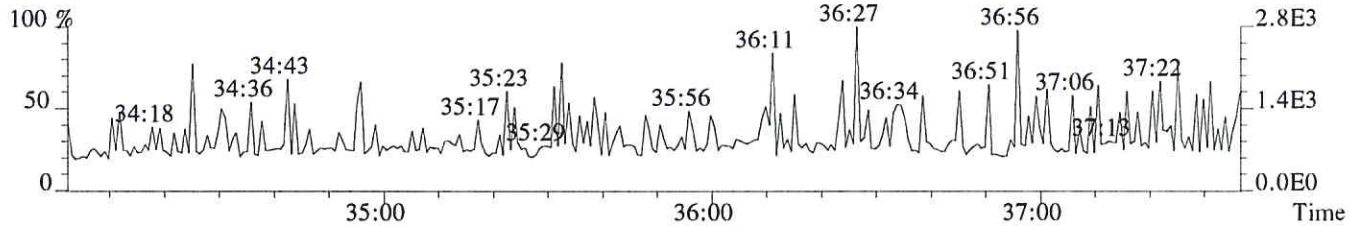
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,452.0,0.40%,F,T)



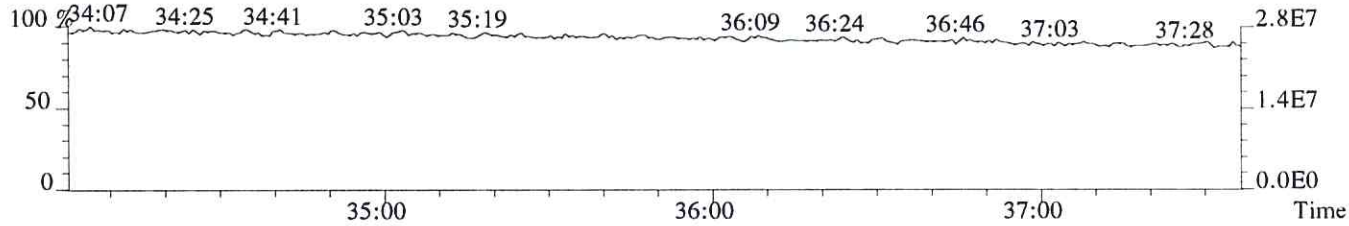
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,804.0,0.40%,F,T)



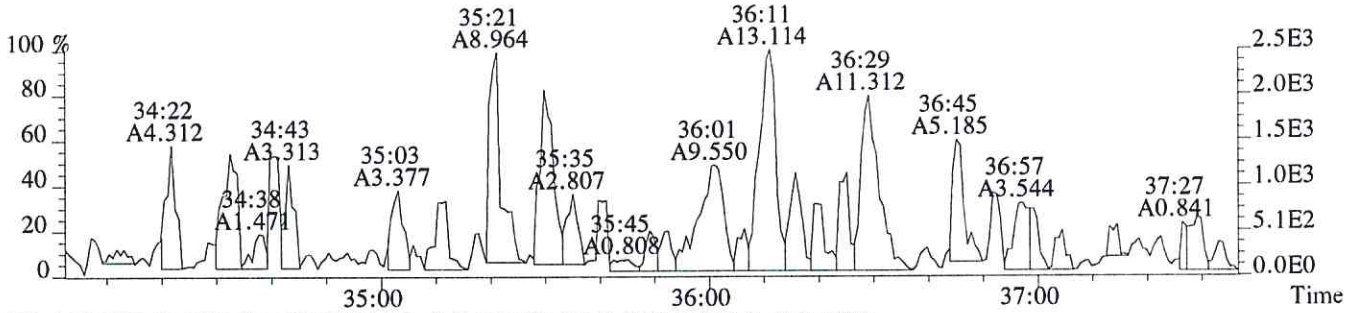
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



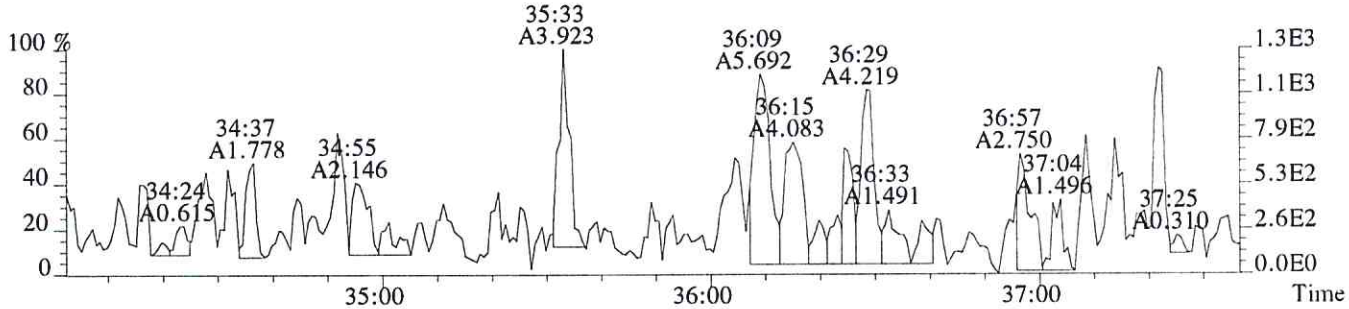
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



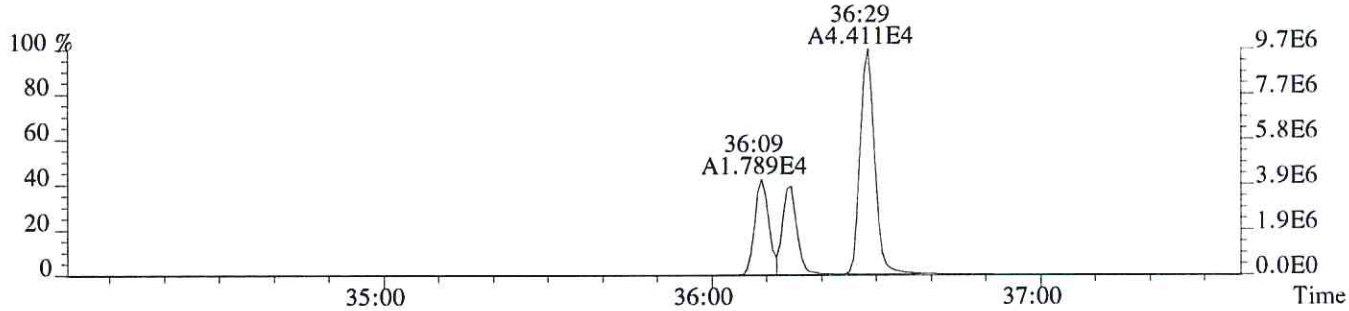
File:P406872 #1-322 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,264.0,0.40%,F,T)



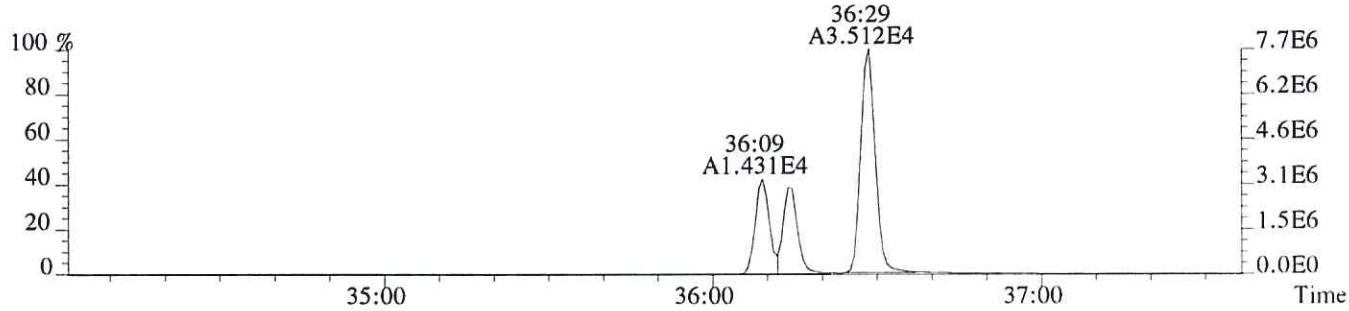
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,276.0,0.40%,F,T)



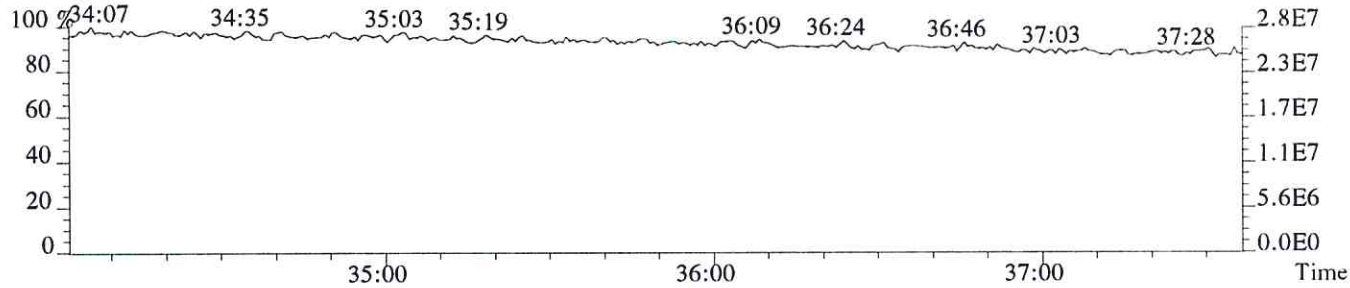
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2084.0,0.40%,F,T)



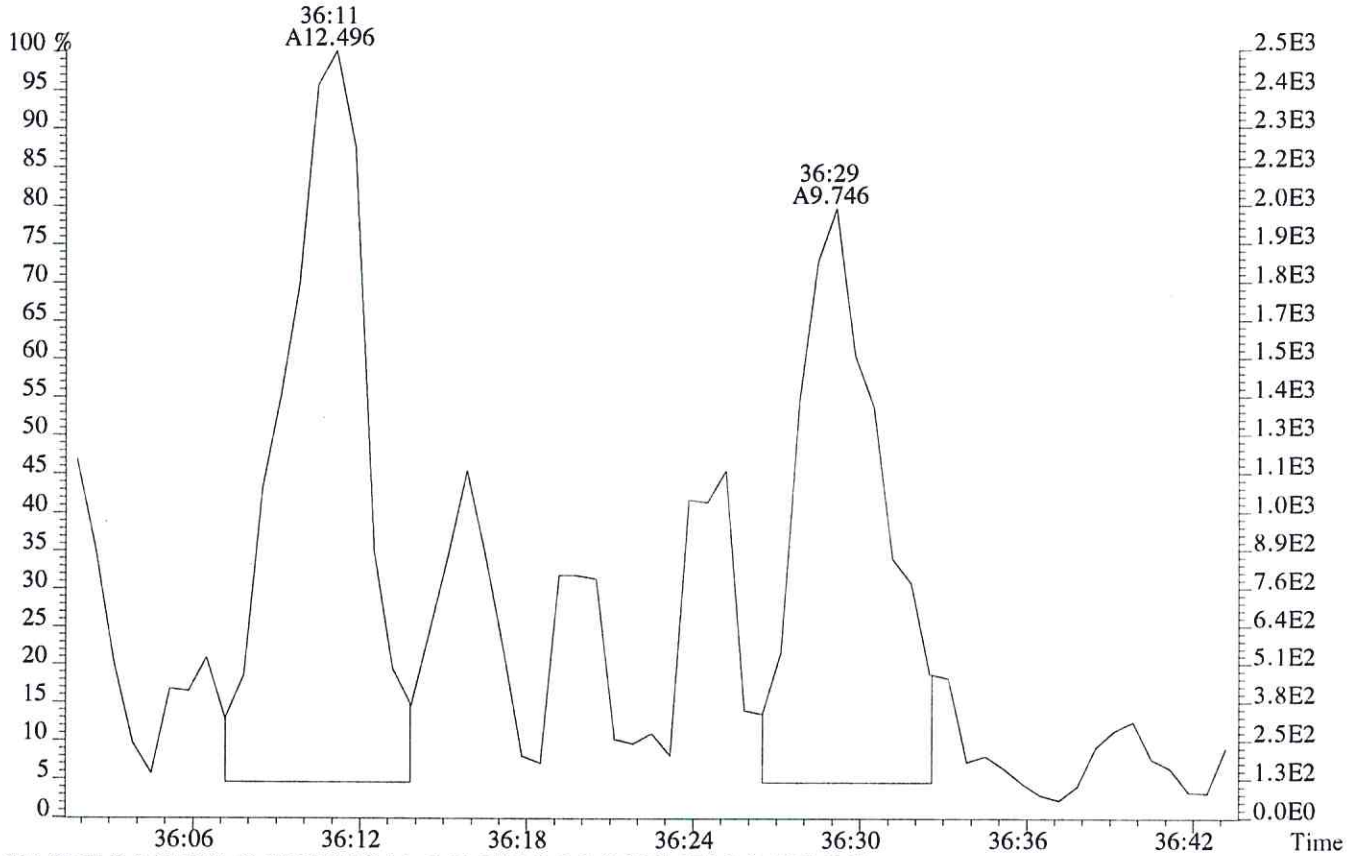
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1328.0,0.40%,F,T)



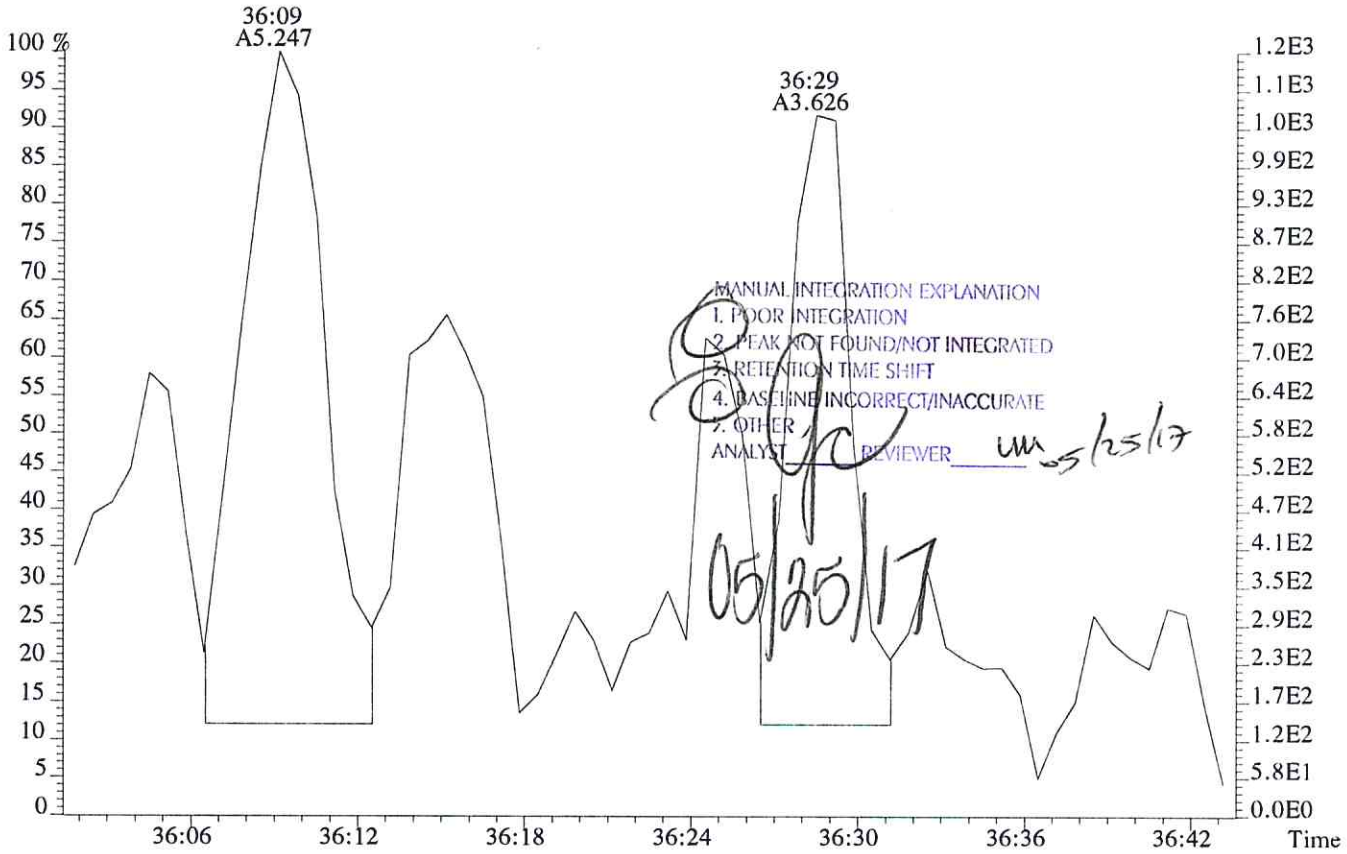
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P406872 #1-322 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,264.0,0.40%,F,T)

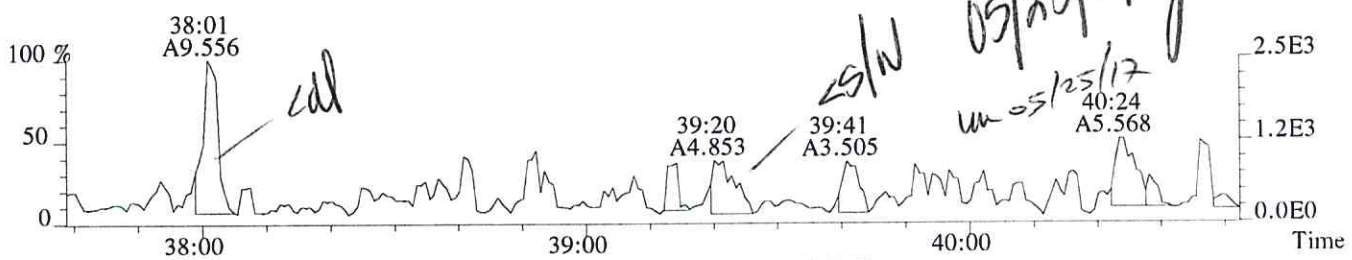


391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,276.0,0.40%,F,T)

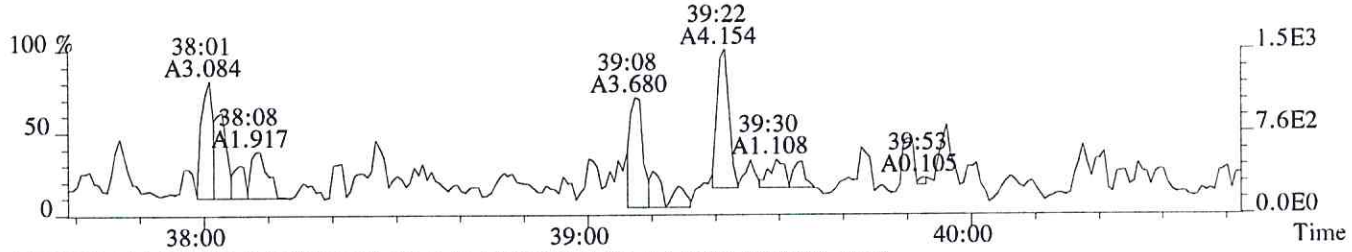


File:P406872 #1-276 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001

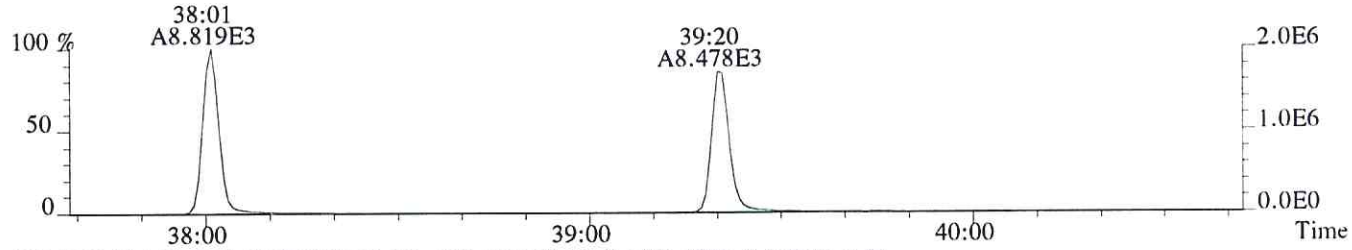
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,400.0,0.50%,F,T)



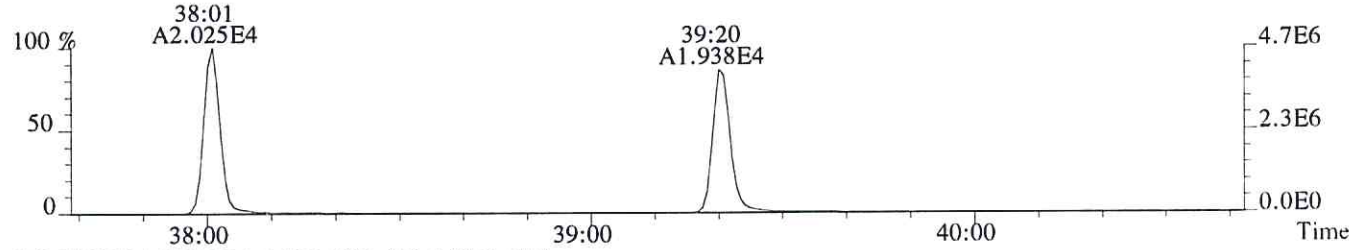
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,388.0,0.50%,F,T)



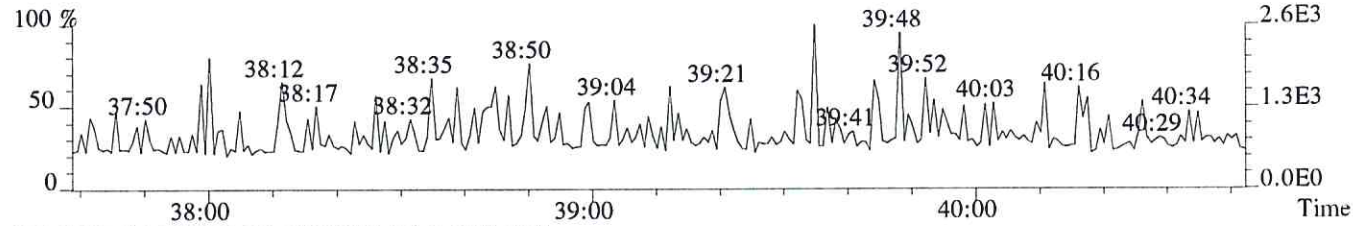
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1684.0,0.50%,F,T)



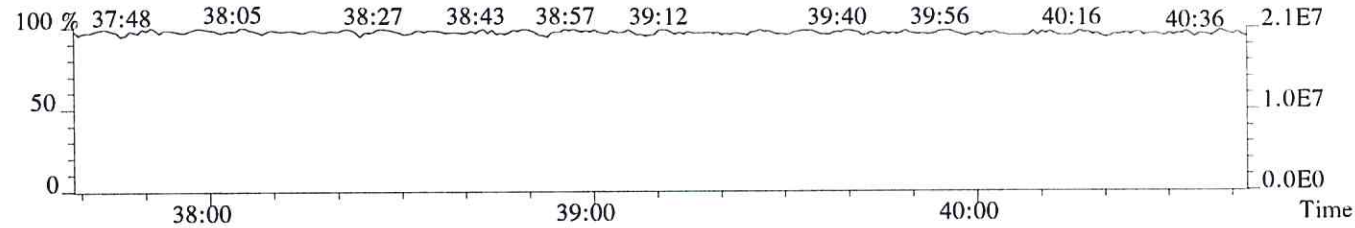
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1956.0,0.50%,F,T)



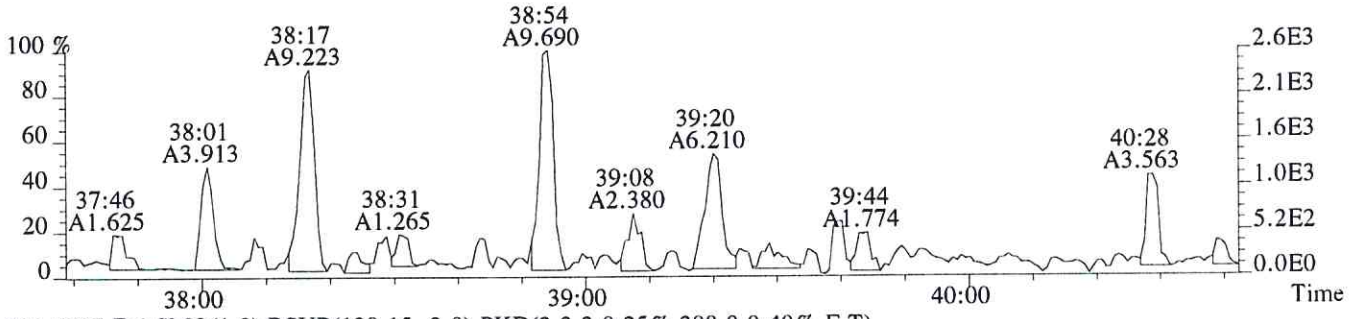
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



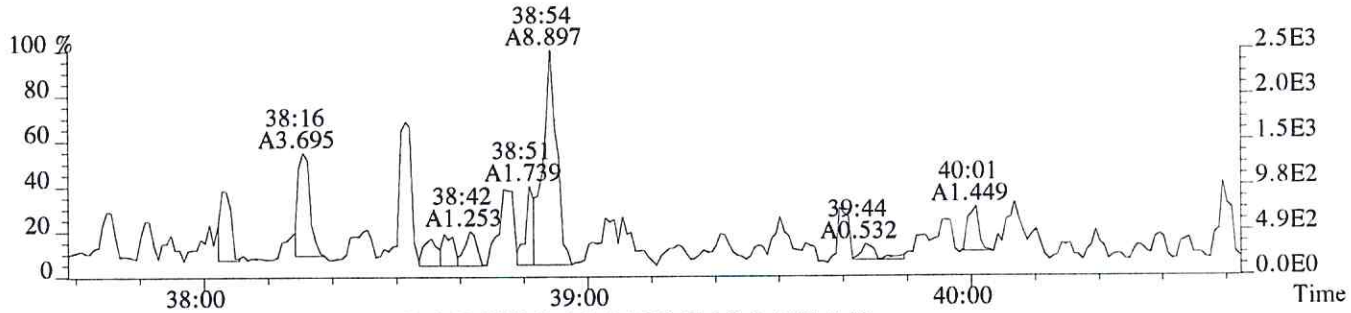
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



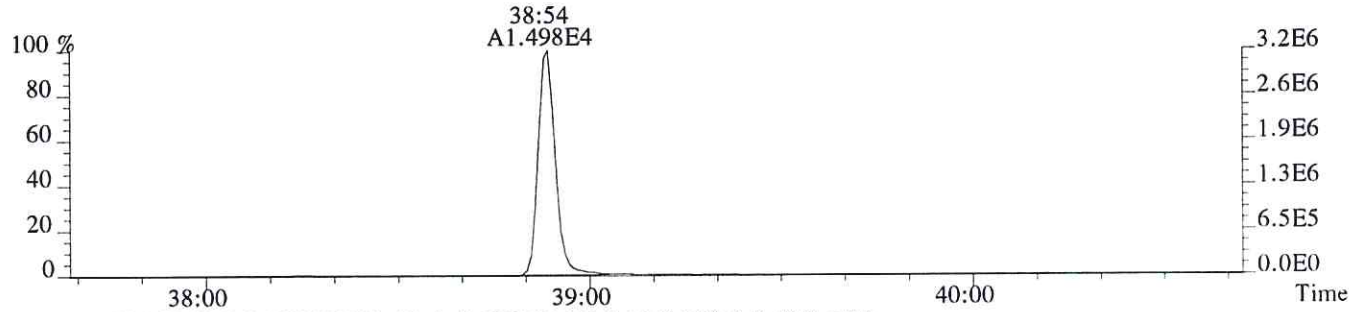
File:P406872 #1-276 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,196.0,0.40%,F,T)



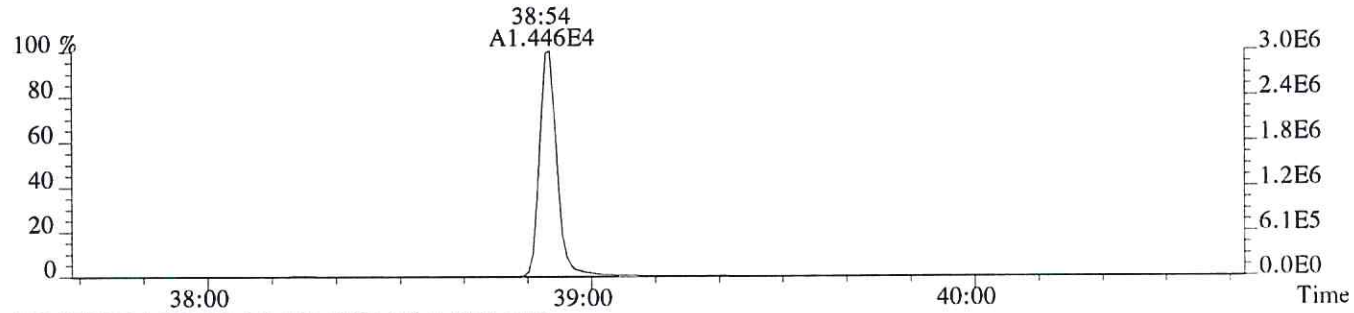
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,388.0,0.40%,F,T)



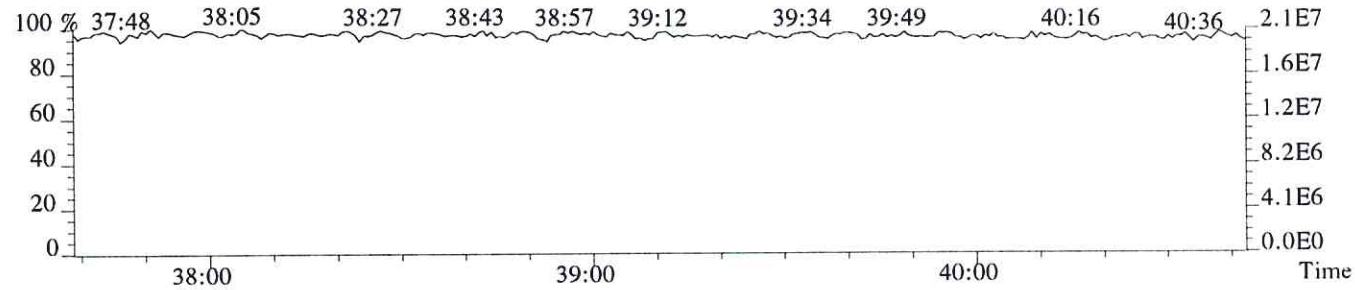
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,616.0,0.40%,F,T)



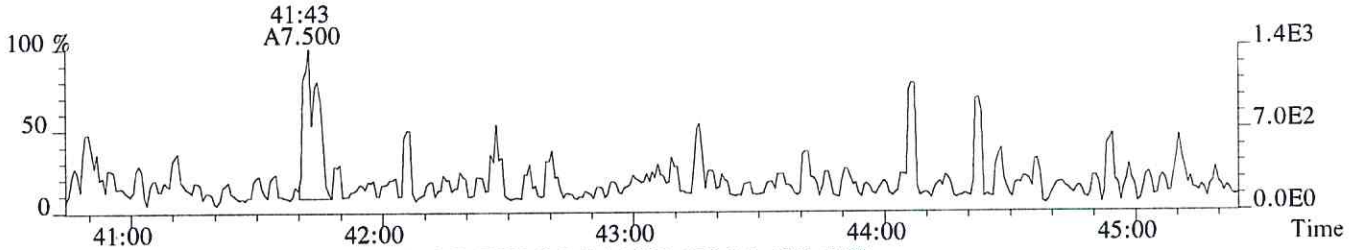
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,280.0,0.40%,F,T)



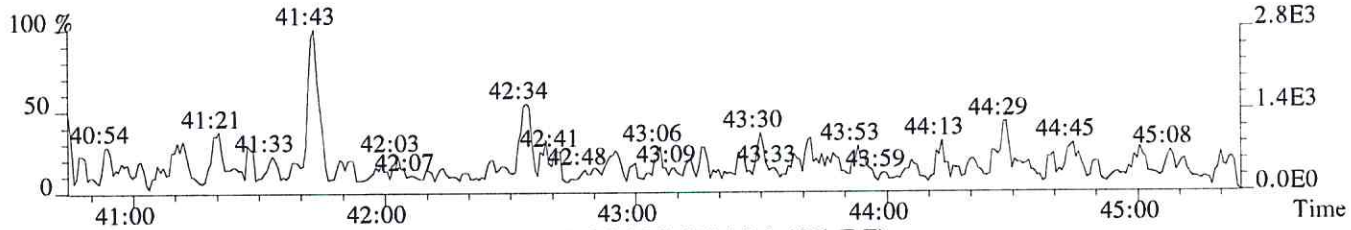
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



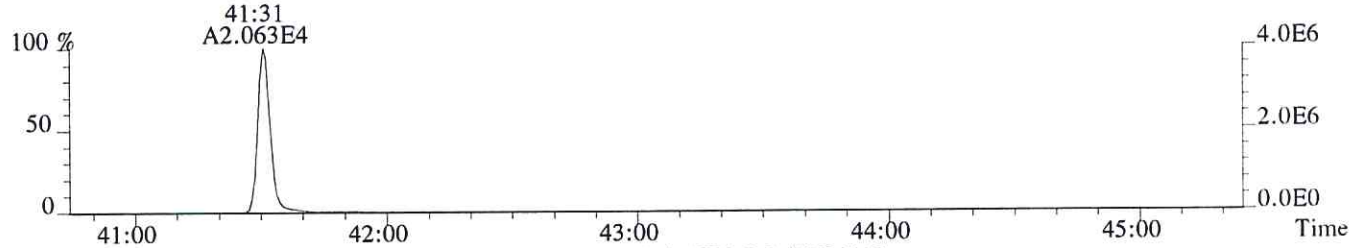
File:P406872 #1-421 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,252.0,0.40%,F,T)



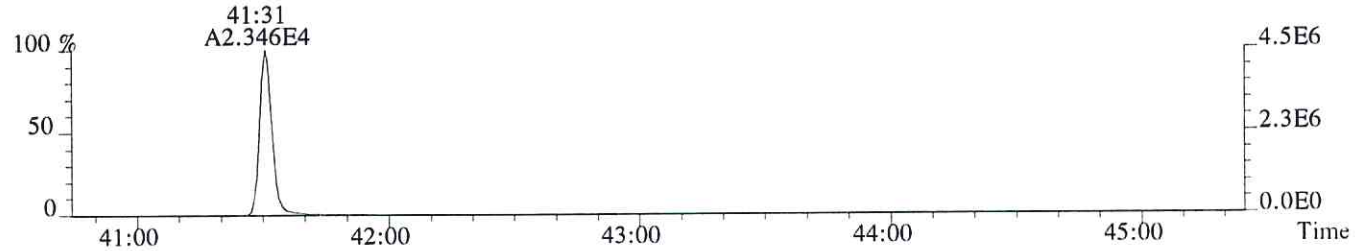
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,456.0,0.40%,F,T)



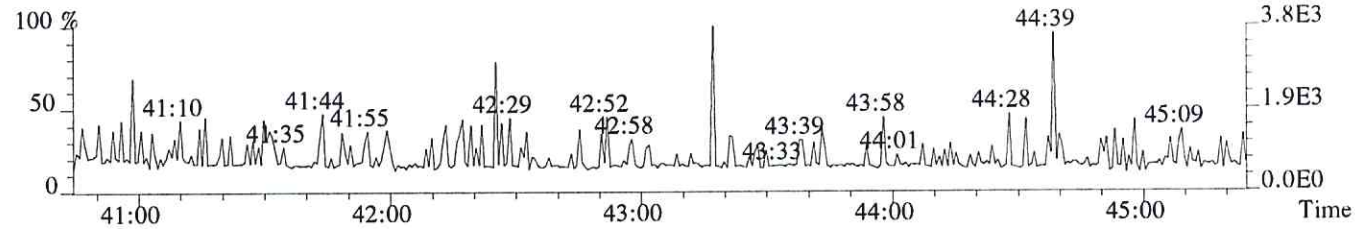
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1604.0,0.40%,F,T)



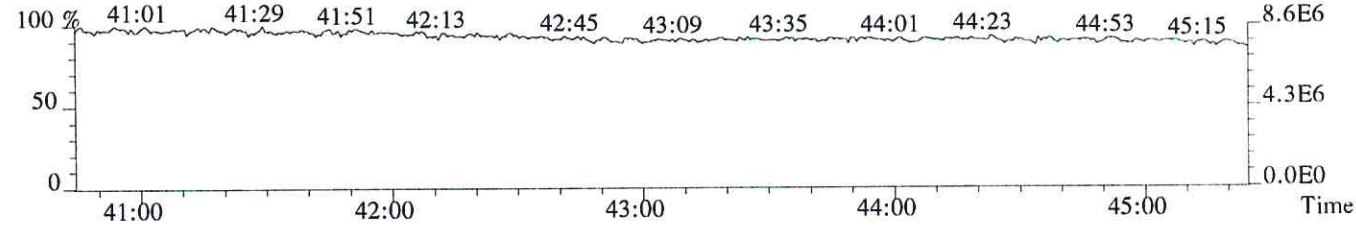
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1752.0,0.40%,F,T)



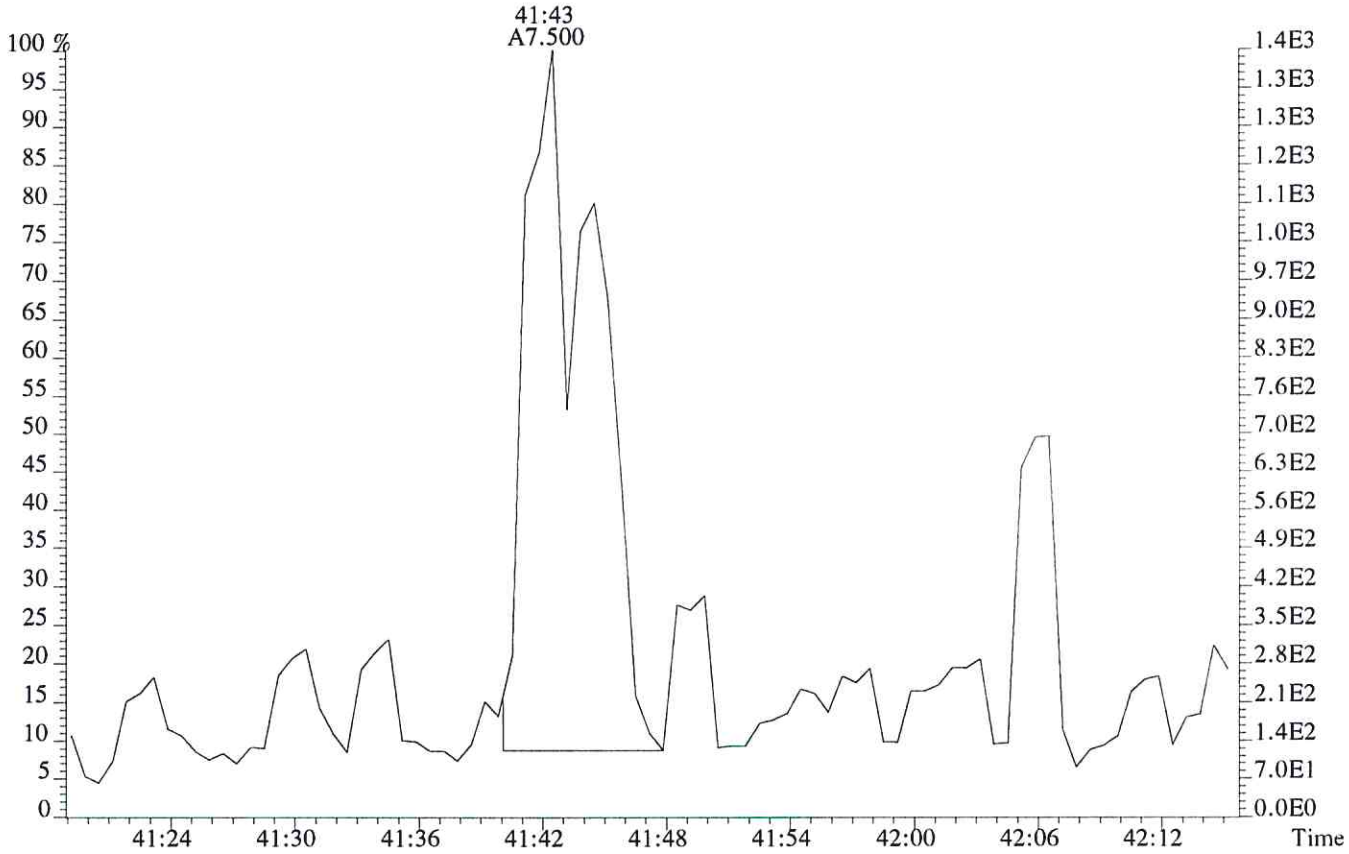
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



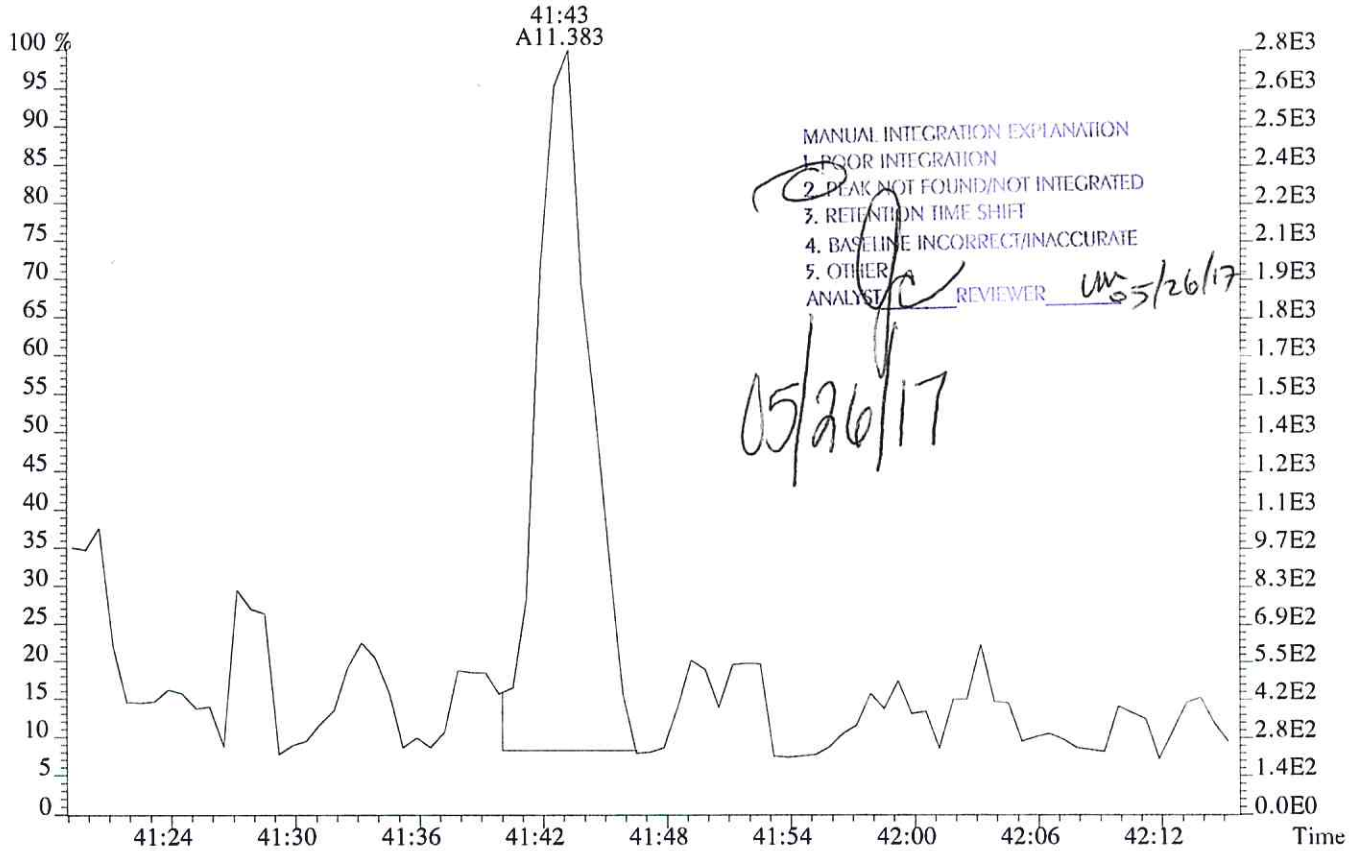
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



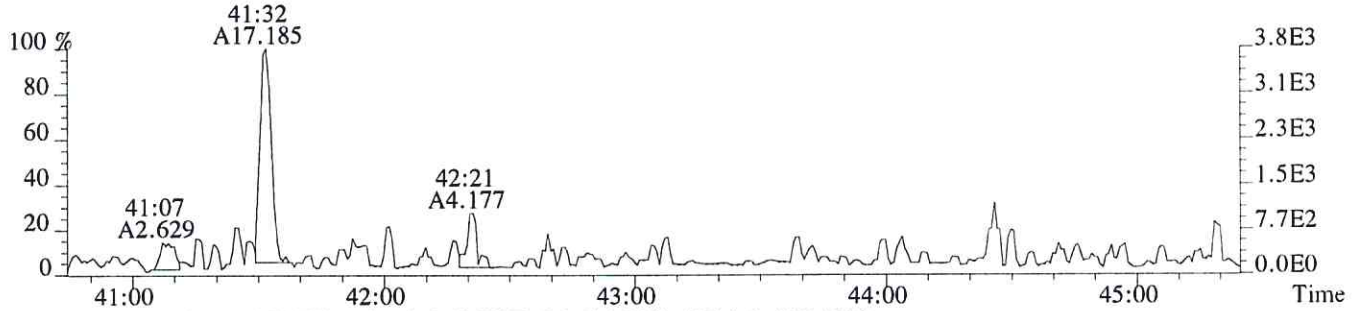
File:P406872 #1-421 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,252.0,0.40%,F,T)



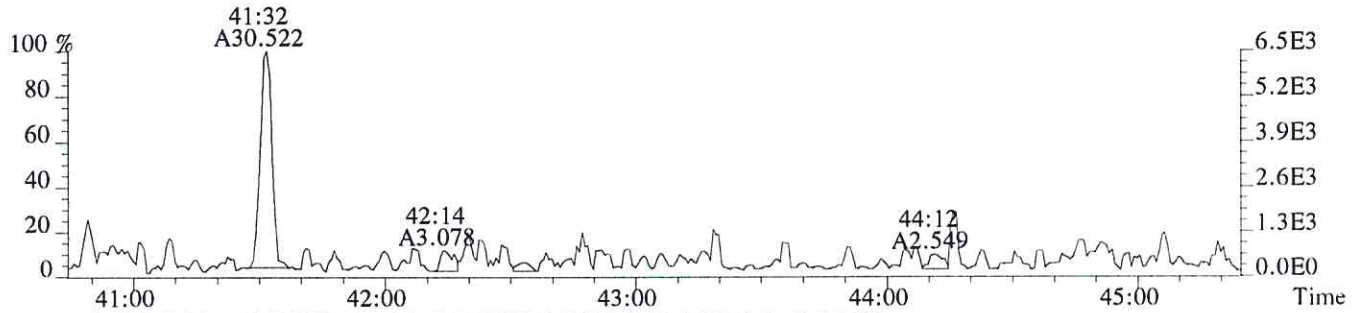
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,456.0,0.40%,F,T)



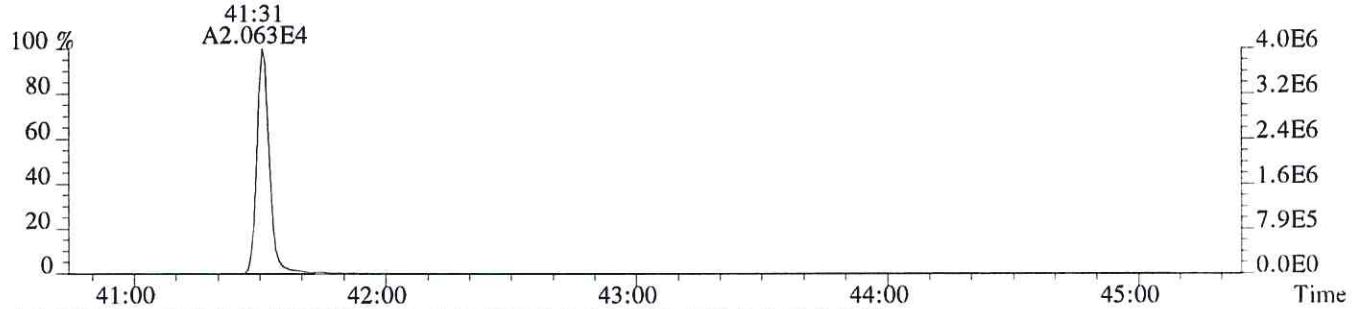
File:P406872 #1-421 Acq:24-MAY-2017 06:35:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-001
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,268.0,0.40%,F,T)



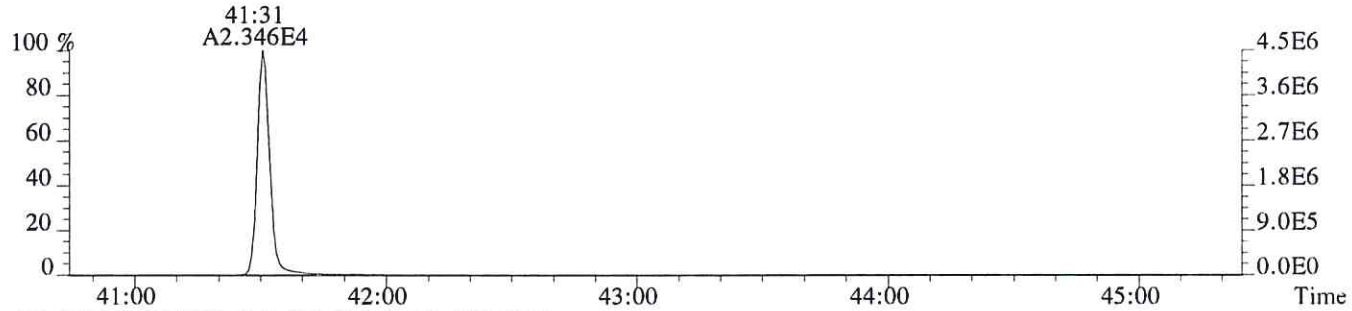
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



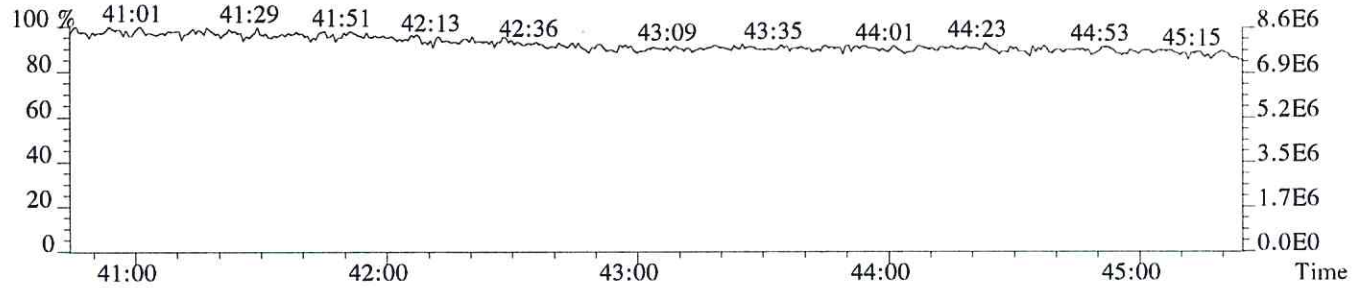
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1604.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1752.0,0.40%,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.
M001A-R_170502

Run #11 Filename P406873 Samp: 1 Inj: 1 Acquired: 24-MAY-17 07:24:50
Processed: 24-MAY-17 13:01:56 Sample ID: E1700483-002

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	yes	0.769
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	yes	0.872
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.097
5	Unk	1,2,3,6,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.029
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.015
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	yes	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:02	1.423e+01	1.526e+01	0.93	yes	yes	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.187
10	Unk	OCDF	41:43	1.952e+01	1.950e+01	1.00	yes	no	1.035
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	0.873
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	yes	0.881
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	yes	0.893
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	yes	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	38:54	2.944e+01	2.427e+01	1.21	no	no	0.882
17	Unk	OCDD	41:32	1.322e+02	1.662e+02	0.80	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	27:23	9.922e+03	1.306e+04	0.76	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	31:46	2.297e+04	1.489e+04	1.54	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	32:42	3.331e+04	2.151e+04	1.55	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:25	1.296e+04	2.527e+04	0.51	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	35:31	1.445e+04	2.751e+04	0.53	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:01	1.370e+04	2.686e+04	0.51	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	36:46	1.387e+04	2.701e+04	0.51	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:01	1.081e+04	2.503e+04	0.43	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:21	1.026e+04	2.332e+04	0.44	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	28:13	8.339e+03	1.091e+04	0.76	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	32:59	2.100e+04	1.334e+04	1.57	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:09	2.048e+04	1.631e+04	1.26	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:15	2.021e+04	1.612e+04	1.25	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:54	1.881e+04	1.833e+04	1.03	yes	no	0.817
32	IS	13C-OCDD	41:31	2.699e+04	3.048e+04	0.89	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	27:36	5.057e+04	6.490e+04	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:29	6.340e+04	5.070e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:14	1.004e+04				no	0.958

$$\text{OCDD} = \frac{(1.322e+02 + 1.662e+02) \times 4000 \text{ pg} \times 1}{(2.699e+04 + 3.048e+04) \times 96 \text{ ml}/\cancel{g} \times 100 \;/\; 100 \times 0.980} = 22.05 \text{ pg/L}$$

MM 05/26/17

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
M001A-R_170502

Run #11 Filename P406873 Samp: 1 Inj: 1 Acquired: 24-MAY-17 07:24:50
Processed: 24-MAY-17 13:01:56 LAB. ID: E1700483-002

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	5.68e+02	*	*	7.80e+02	*
2	1,2,3,7,8-PeCDF	*	7.88e+02	*	*	1.09e+03	*
3	2,3,4,7,8-PeCDF	*	7.88e+02	*	*	1.09e+03	*
4	1,2,3,4,7,8-HxCDF	*	6.28e+02	*	*	1.68e+02	*
5	1,2,3,6,7,8-HxCDF	*	6.28e+02	*	*	1.68e+02	*
6	2,3,4,6,7,8-HxCDF	*	6.28e+02	*	*	1.68e+02	*
7	1,2,3,7,8,9-HxCDF	*	6.28e+02	*	*	1.68e+02	*
8	1,2,3,4,6,7,8-HpCDF	3.68e+03	5.76e+02	6.4e+00	2.46e+03	1.88e+02	1.3e+01
9	1,2,3,4,7,8,9-HpCDF	*	5.76e+02	*	*	1.88e+02	*
10	OCDF	3.51e+03	3.36e+02	1.0e+01	3.54e+03	6.00e+02	5.9e+00
11	2,3,7,8-TCDD	*	9.00e+02	*	*	4.40e+02	*
12	1,2,3,7,8-PeCDD	*	1.68e+03	*	*	8.72e+02	*
13	1,2,3,4,7,8-HxCDD	*	4.92e+02	*	*	2.56e+02	*
14	1,2,3,6,7,8-HxCDD	*	4.92e+02	*	*	2.56e+02	*
15	1,2,3,7,8,9-HxCDD	*	4.92e+02	*	*	2.56e+02	*
16	1,2,3,4,6,7,8-HpCDD	6.75e+03	5.76e+02	1.2e+01	5.21e+03	2.64e+02	2.0e+01
17	OCDD	2.36e+04	4.72e+02	5.0e+01	3.06e+04	6.56e+02	4.7e+01
18	13C-2,3,7,8-TCDF	1.71e+06	5.81e+03	2.9e+02	2.22e+06	2.58e+03	8.6e+02
19	13C-1,2,3,7,8-PeCDF	4.27e+06	4.20e+02	1.0e+04	2.77e+06	7.12e+02	3.9e+03
20	13C-2,3,4,7,8-PeCDF	6.60e+06	4.20e+02	1.6e+04	4.24e+06	7.12e+02	6.0e+03
21	13C-1,2,3,4,7,8-HxCDF	2.86e+06	7.12e+02	4.0e+03	5.51e+06	7.68e+02	7.2e+03
22	13C-1,2,3,6,7,8-HxCDF	3.00e+06	7.12e+02	4.2e+03	5.75e+06	7.68e+02	7.5e+03
23	13C-2,3,4,6,7,8-HxCDF	3.03e+06	7.12e+02	4.3e+03	5.93e+06	7.68e+02	7.7e+03
24	13C-1,2,3,7,8,9-HxCDF	2.86e+06	7.12e+02	4.0e+03	5.65e+06	7.68e+02	7.4e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.50e+06	2.65e+03	9.4e+02	5.73e+06	1.40e+03	4.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.12e+06	2.65e+03	8.0e+02	4.82e+06	1.40e+03	3.4e+03
27	13C-2,3,7,8-TCDD	1.55e+06	4.18e+03	3.7e+02	2.01e+06	2.37e+03	8.5e+02
28	13C-1,2,3,7,8-PeCDD	4.14e+06	4.76e+02	8.7e+03	2.67e+06	8.96e+02	3.0e+03
29	13C-1,2,3,4,7,8-HxCDD	4.66e+06	3.17e+03	1.5e+03	3.68e+06	1.50e+03	2.5e+03
30	13C-1,2,3,6,7,8-HxCDD	4.36e+06	3.17e+03	1.4e+03	3.46e+06	1.50e+03	2.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.10e+06	6.32e+02	6.5e+03	3.91e+06	8.56e+02	4.6e+03
32	13C-OCDD	5.18e+06	3.09e+03	1.7e+03	5.85e+06	1.33e+03	4.4e+03
33	13C-1,2,3,4-TCDD	9.09e+06	4.18e+03	2.2e+03	1.16e+07	2.37e+03	4.9e+03
34	13C-1,2,3,7,8,9-HxCDD	1.40e+07	3.17e+03	4.4e+03	1.12e+07	1.50e+03	7.5e+03
35	37Cl-2,3,7,8-TCDD	1.80e+06	1.38e+03	1.3e+03			

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M001A-R_170502

Entry: 36 Totals Name: Total Tetra-Furans

Run: 11 File: P406873 Sample:1 Injection:1 Function:1

Acquired: 24-MAY-17 07:24:50 Processed: 24-MAY-17 13:01:56

Mass: 303.9020 305.8990 Tot Response: 8.00e+01 RRF: 0.7687

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	29:26	3.68e+01	4.32e+01	0.85	yes	8.00e+01	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M001A-R_170502

Entry: 43 Totals Name: Total Hepta-Furans

Run: 11 File: P406873 Sample:1 Injection:1 Function:4

Acquired: 24-MAY-17 07:24:50 Processed: 24-MAY-17 13:01:56

Mass: 407.7820 409.7790 Tot Response: 5.31e+01 RRF: 1.213

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:02	1.42e+01	1.53e+01	0.93	yes	2.95e+01	1,2,3,4,6,7,8-HpCDF	n	y
2	38:24	1.13e+01	1.23e+01	0.92	yes	2.36e+01		n	y

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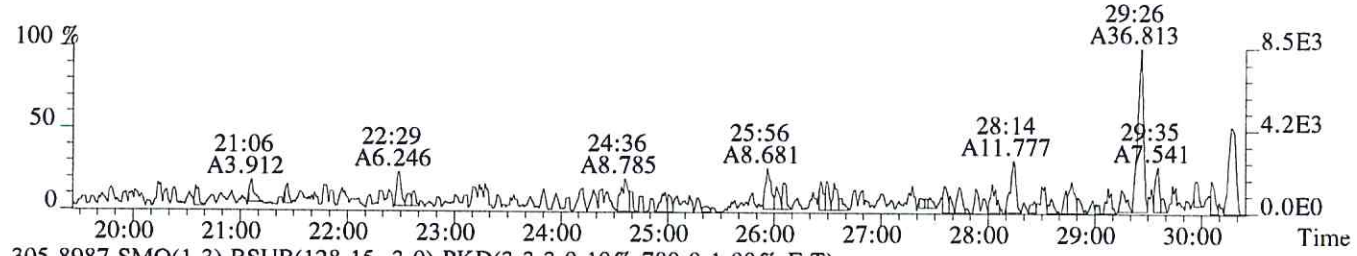
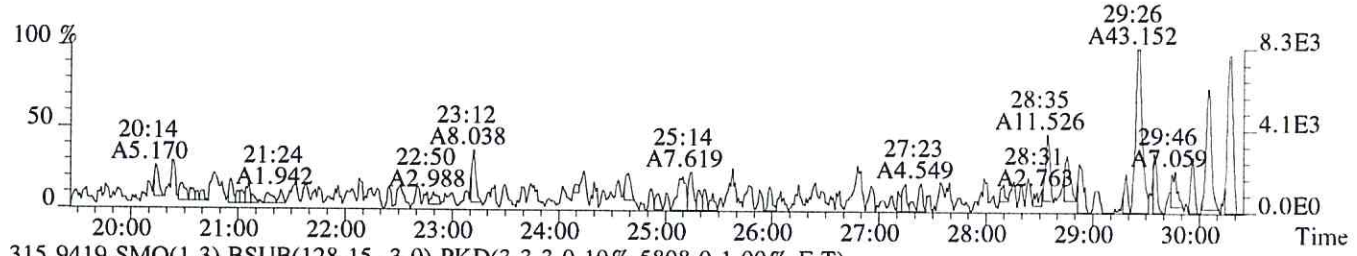
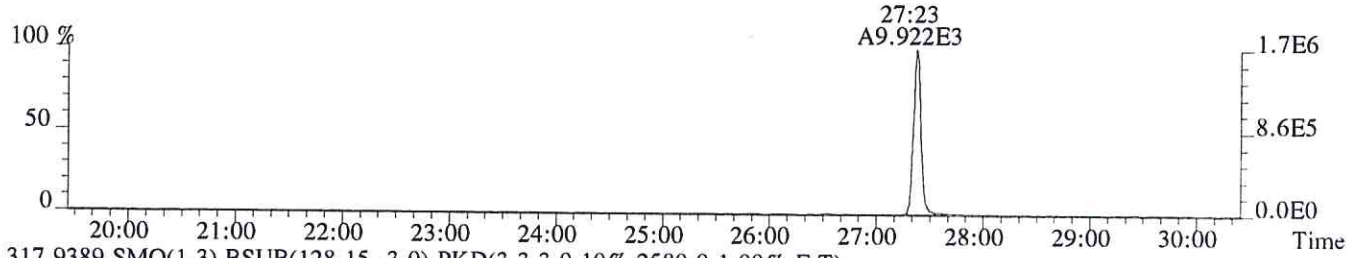
File:P406873 #1-779 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,568.0,1.00%,F,T)



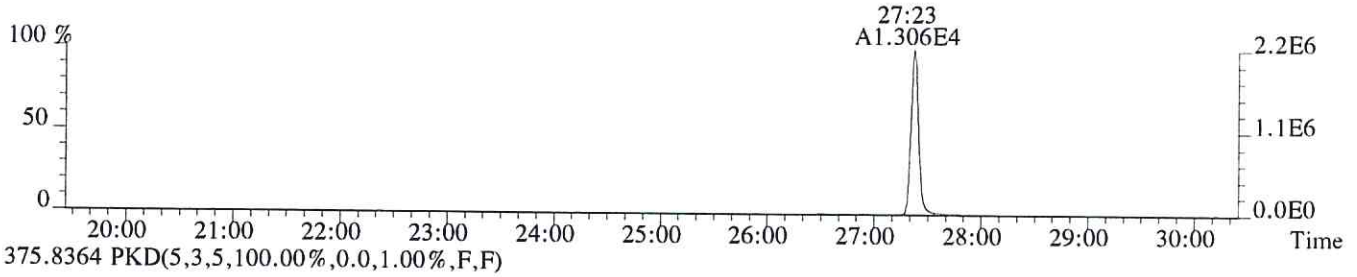
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,780.0,1.00%,F,T)



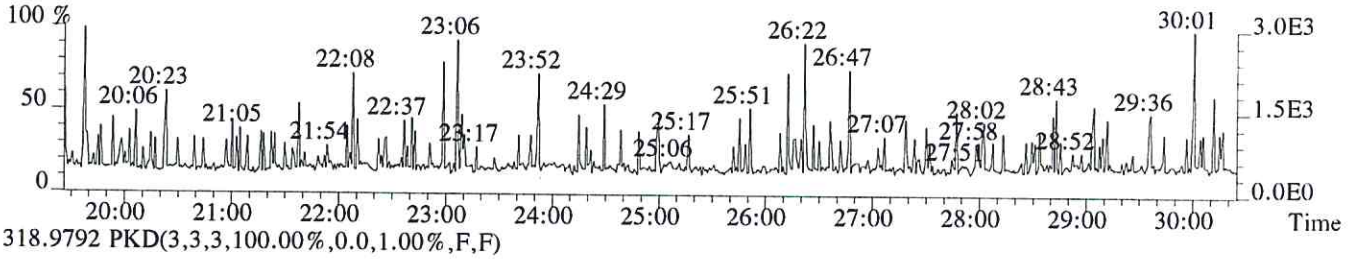
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5808.0,1.00%,F,T)



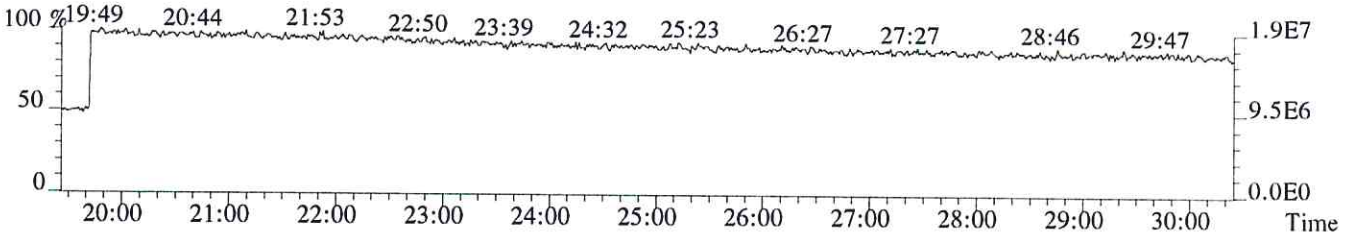
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2580.0,1.00%,F,T)



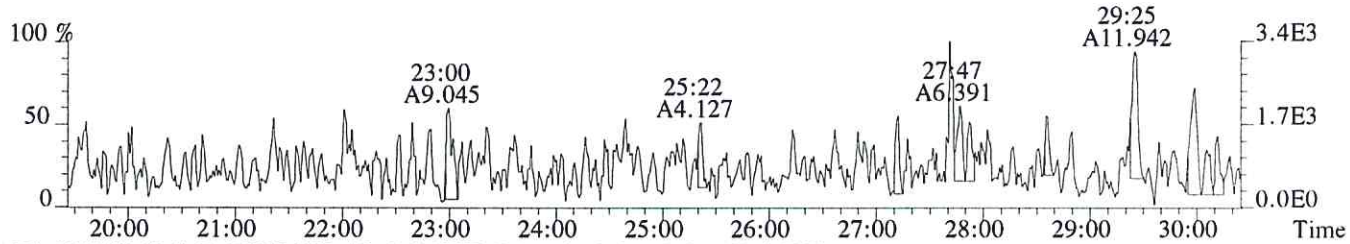
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



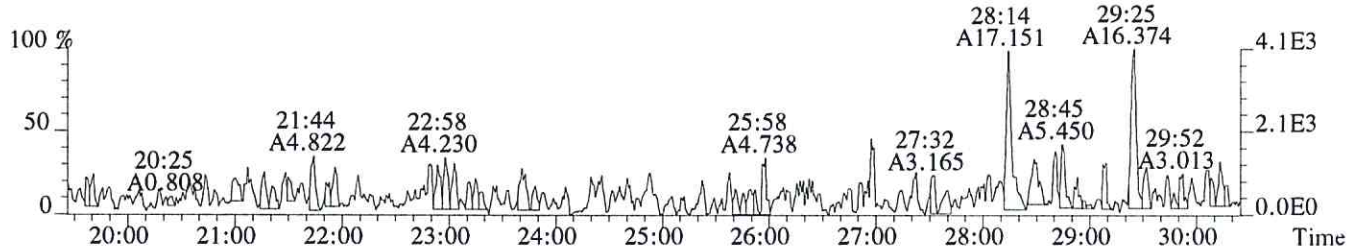
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



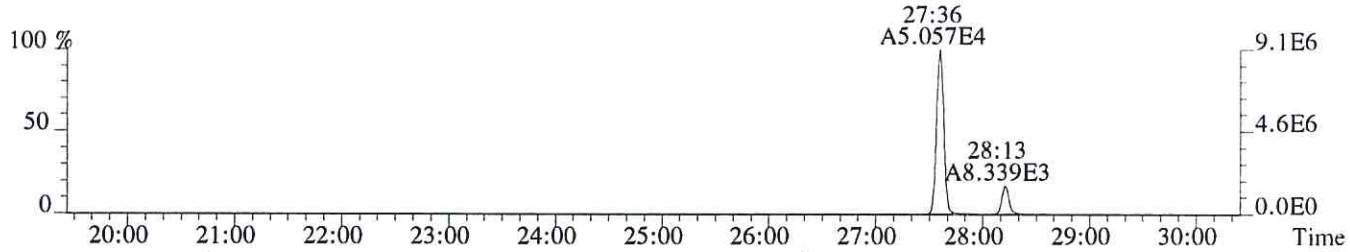
File:P406873 #1-779 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,900.0,1.00%,F,T)



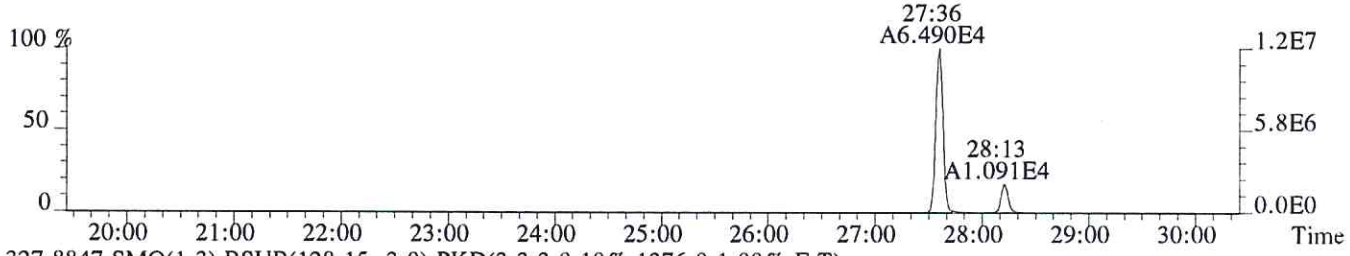
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,440.0,1.00%,F,T)



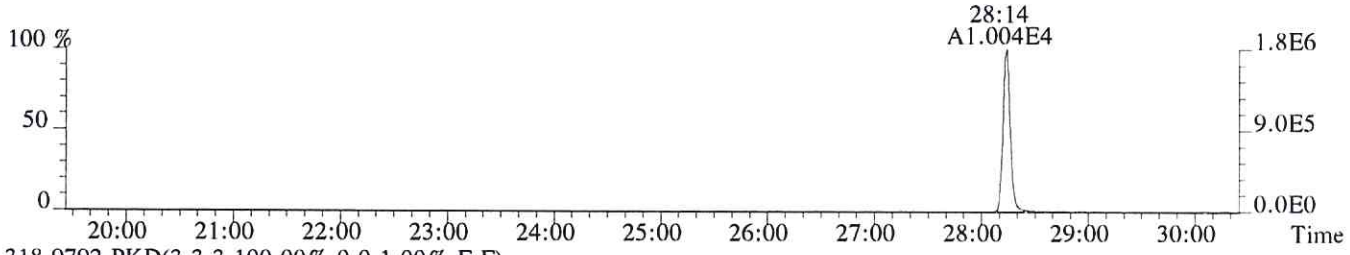
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4184.0,1.00%,F,T)



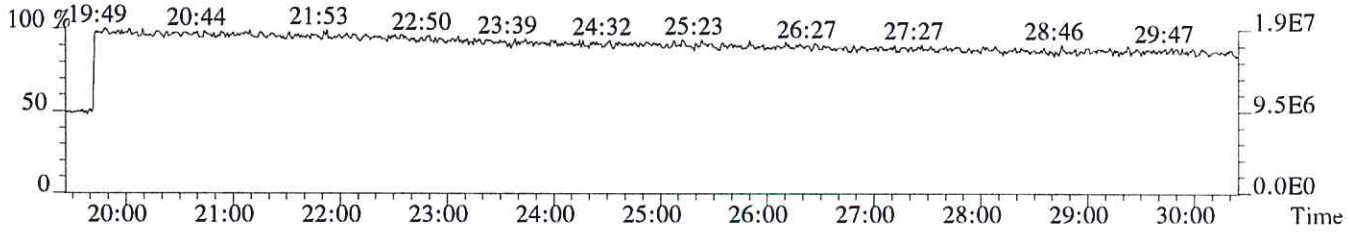
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2372.0,1.00%,F,T)



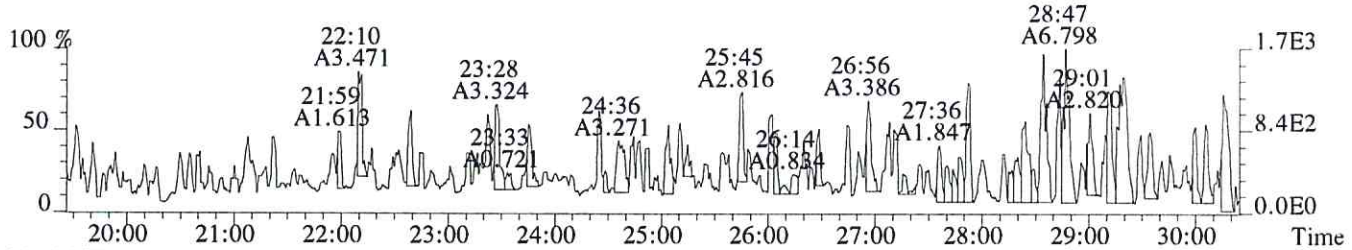
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1376.0,1.00%,F,T)



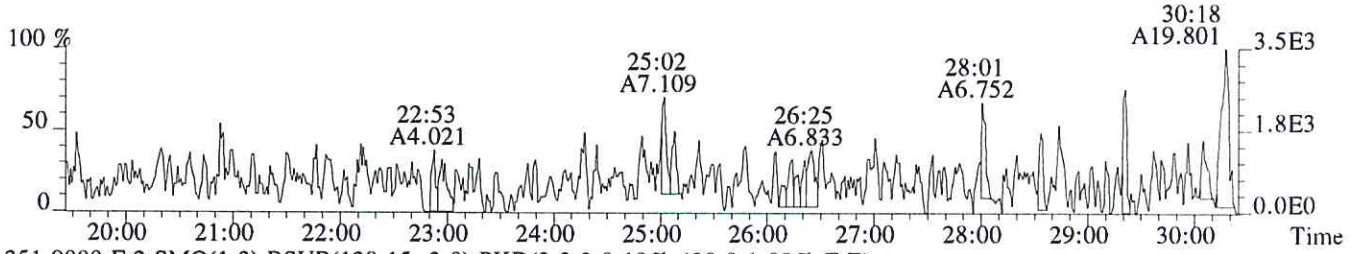
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



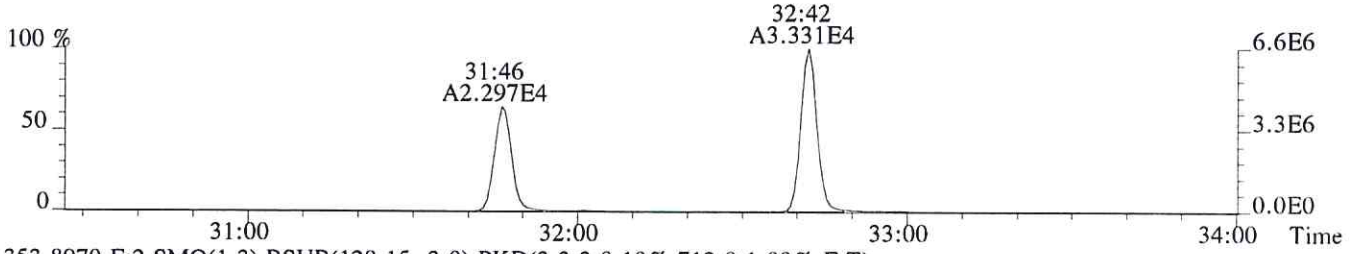
File:P406873 #1-779 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,404.0,1.00%,F,T)



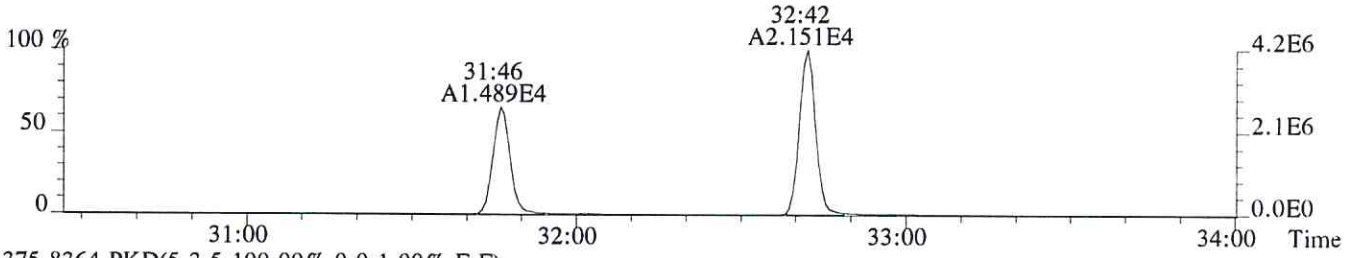
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,832.0,1.00%,F,T)



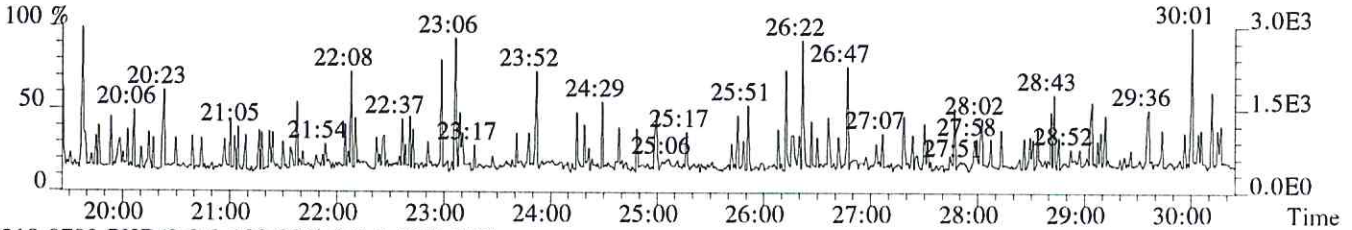
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,420.0,1.00%,F,T)



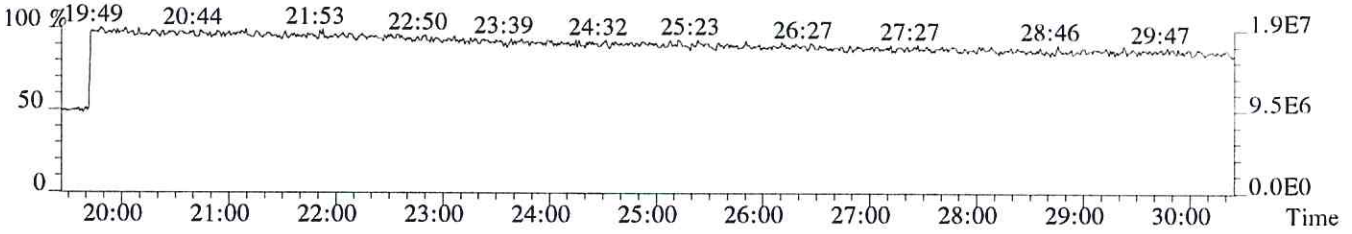
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,712.0,1.00%,F,T)



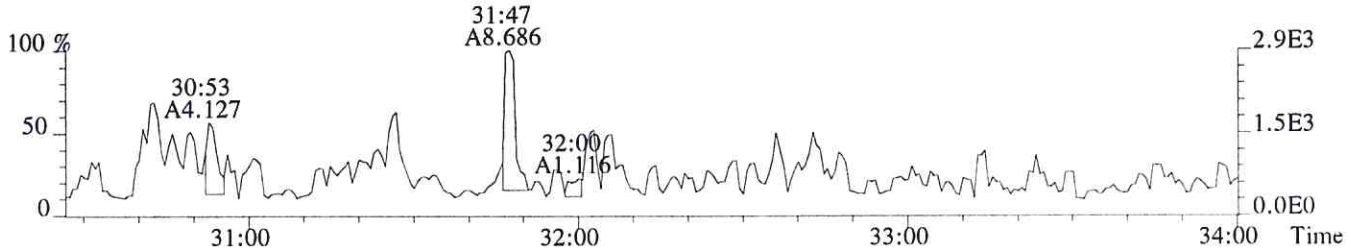
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



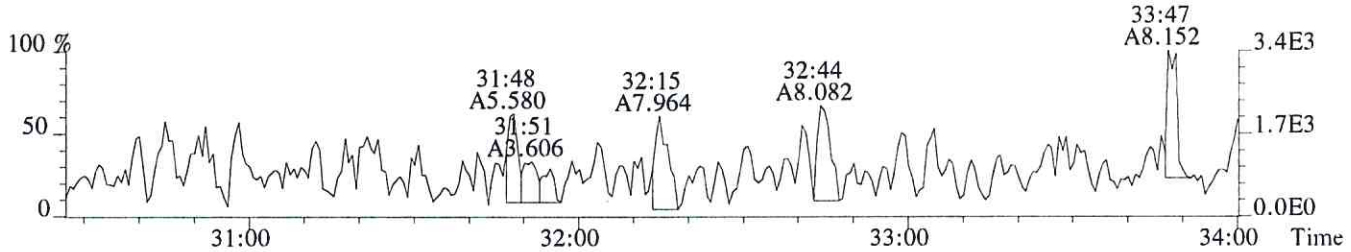
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



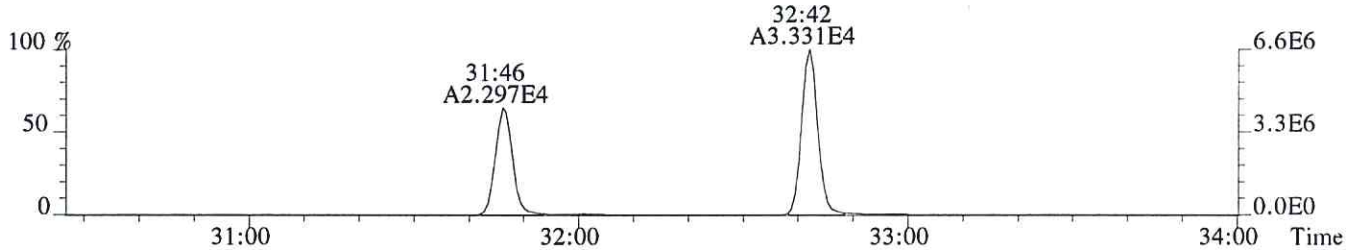
File:P406873 #1-321 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



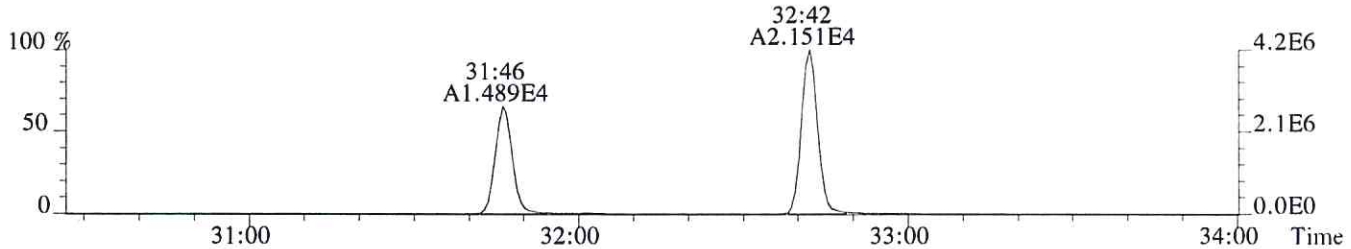
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1088.0,1.00%,F,T)



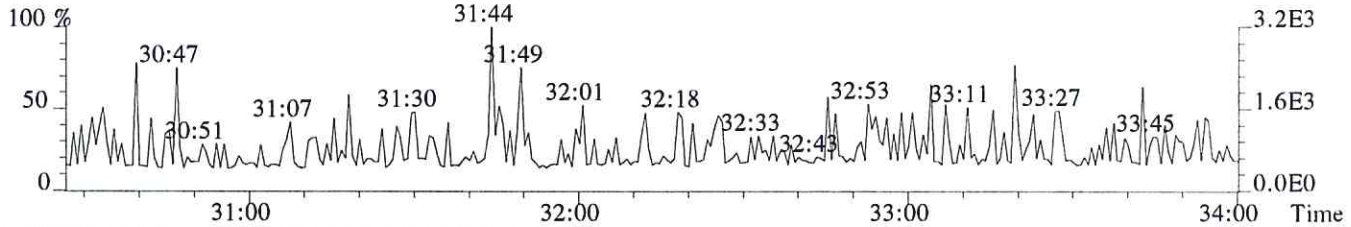
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,420.0,1.00%,F,T)



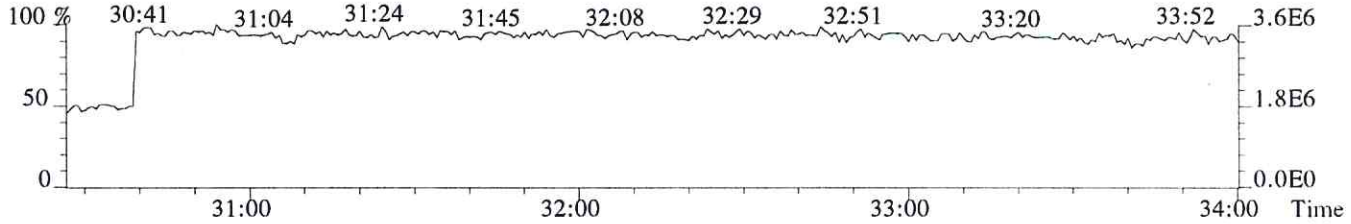
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,712.0,1.00%,F,T)



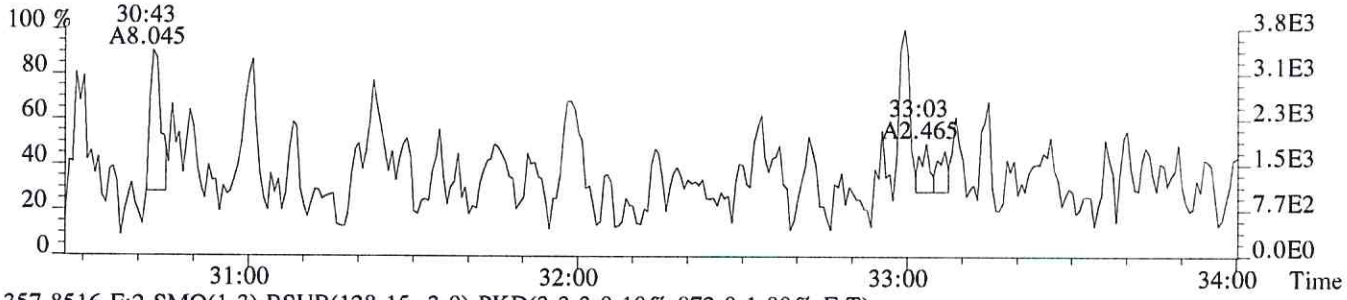
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



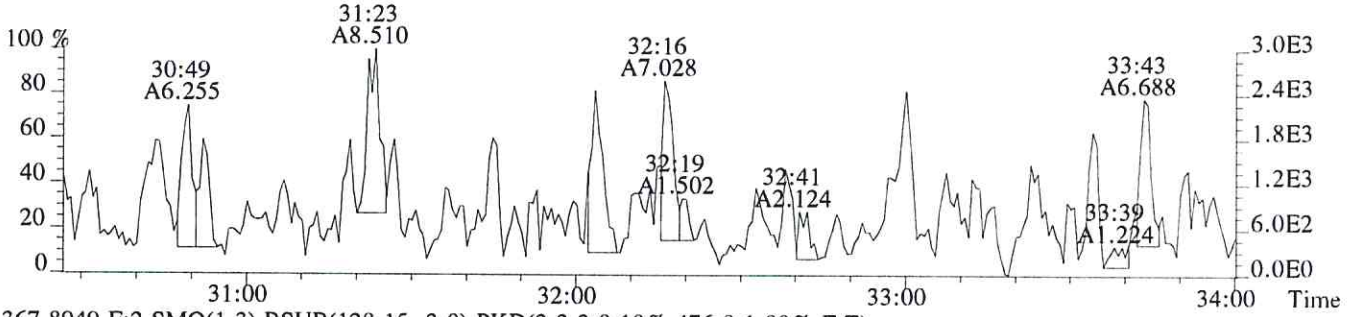
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



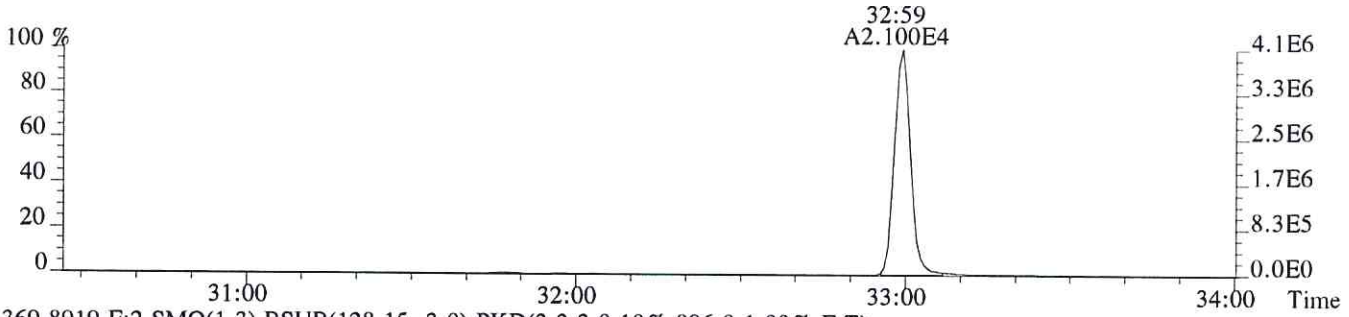
File:P406873 #1-321 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1684.0,1.00%,F,T)



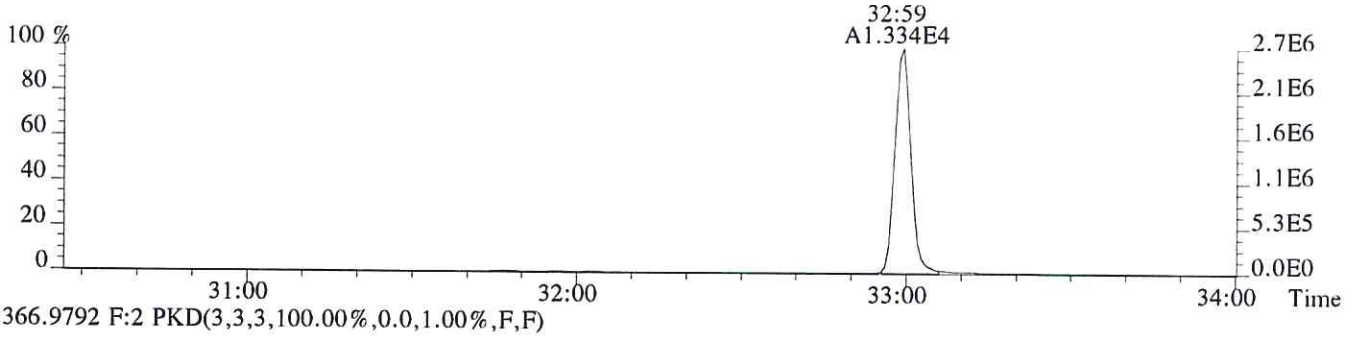
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,872.0,1.00%,F,T)



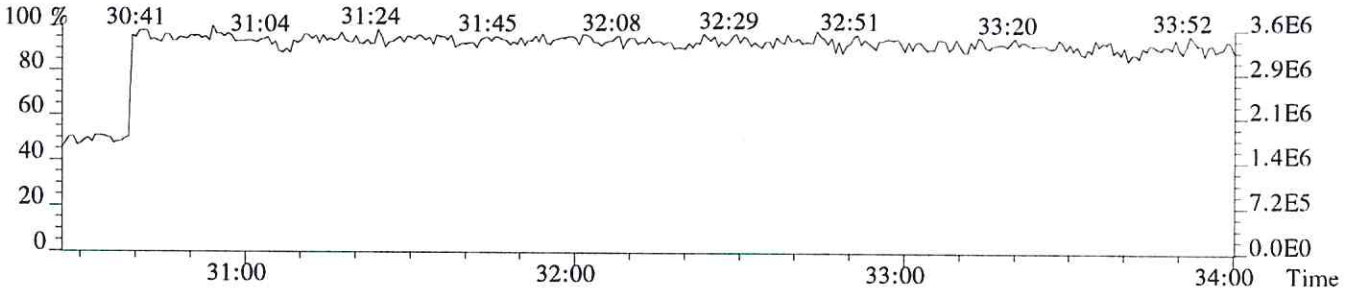
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,476.0,1.00%,F,T)



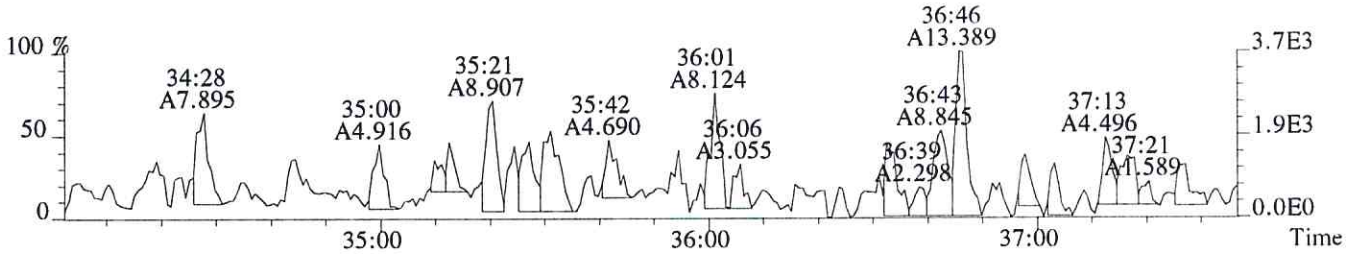
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,896.0,1.00%,F,T)



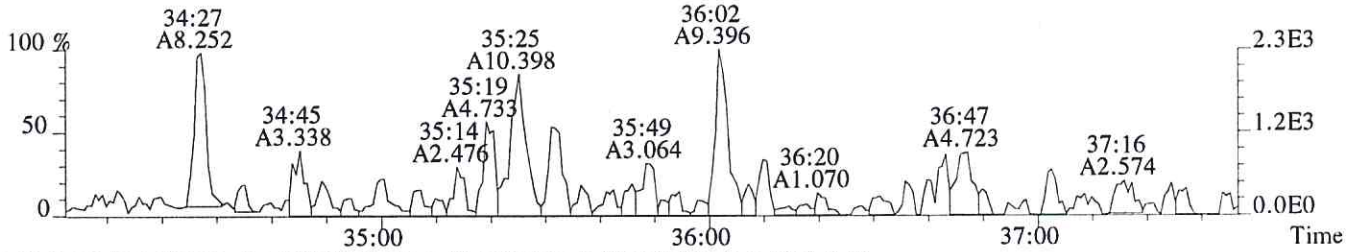
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



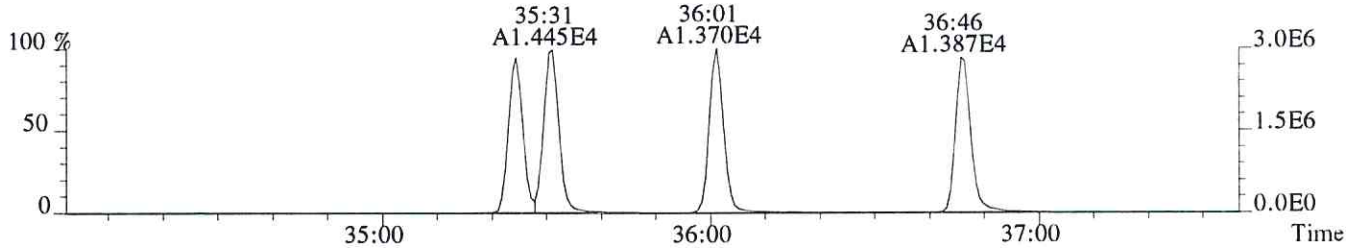
File:P406873 #1-322 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,628.0,0.40%,F,T)



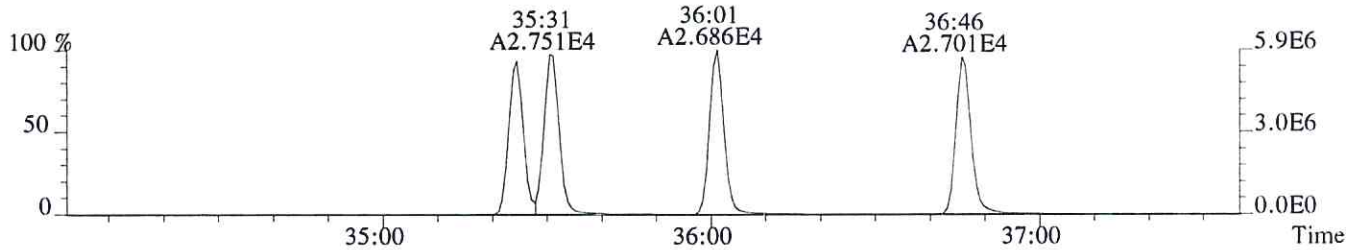
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,168.0,0.40%,F,T)



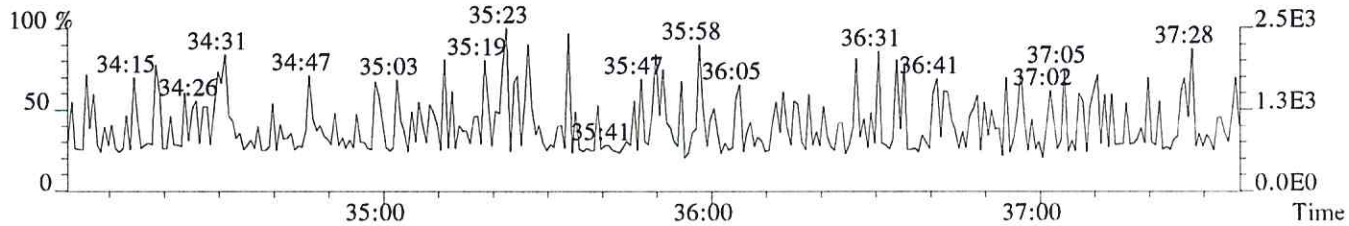
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,712.0,0.40%,F,T)



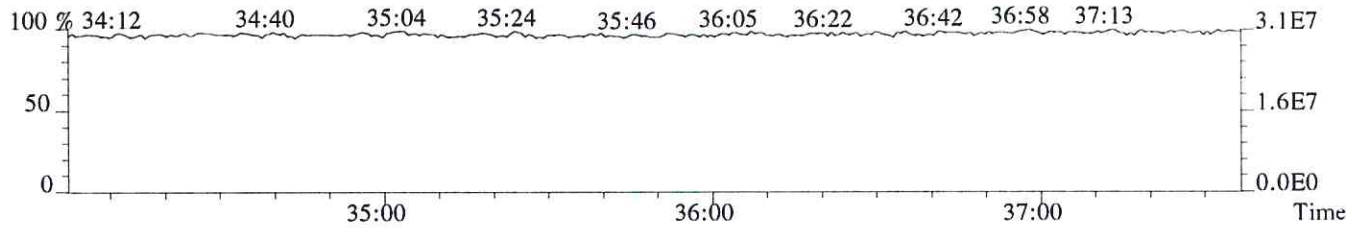
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,768.0,0.40%,F,T)



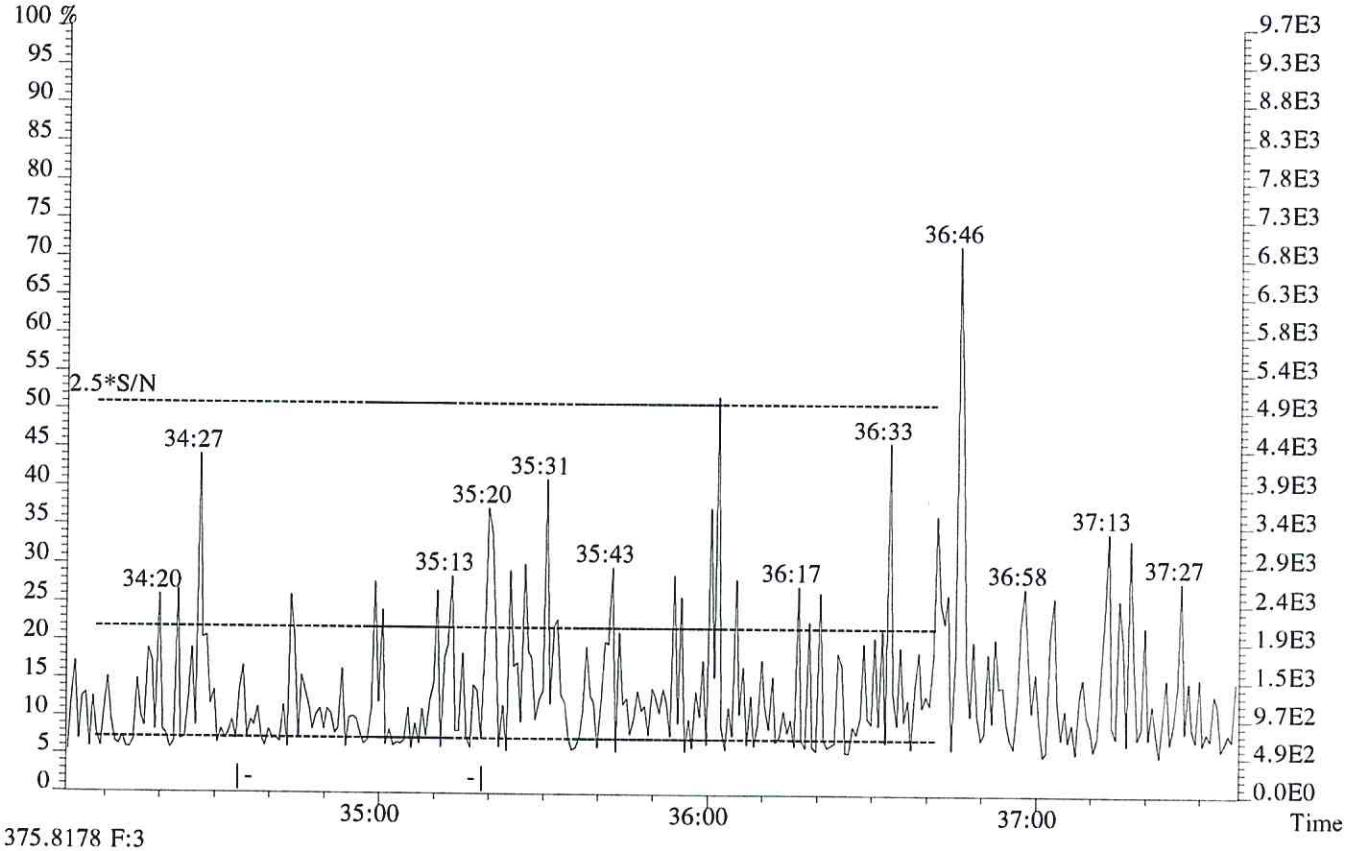
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



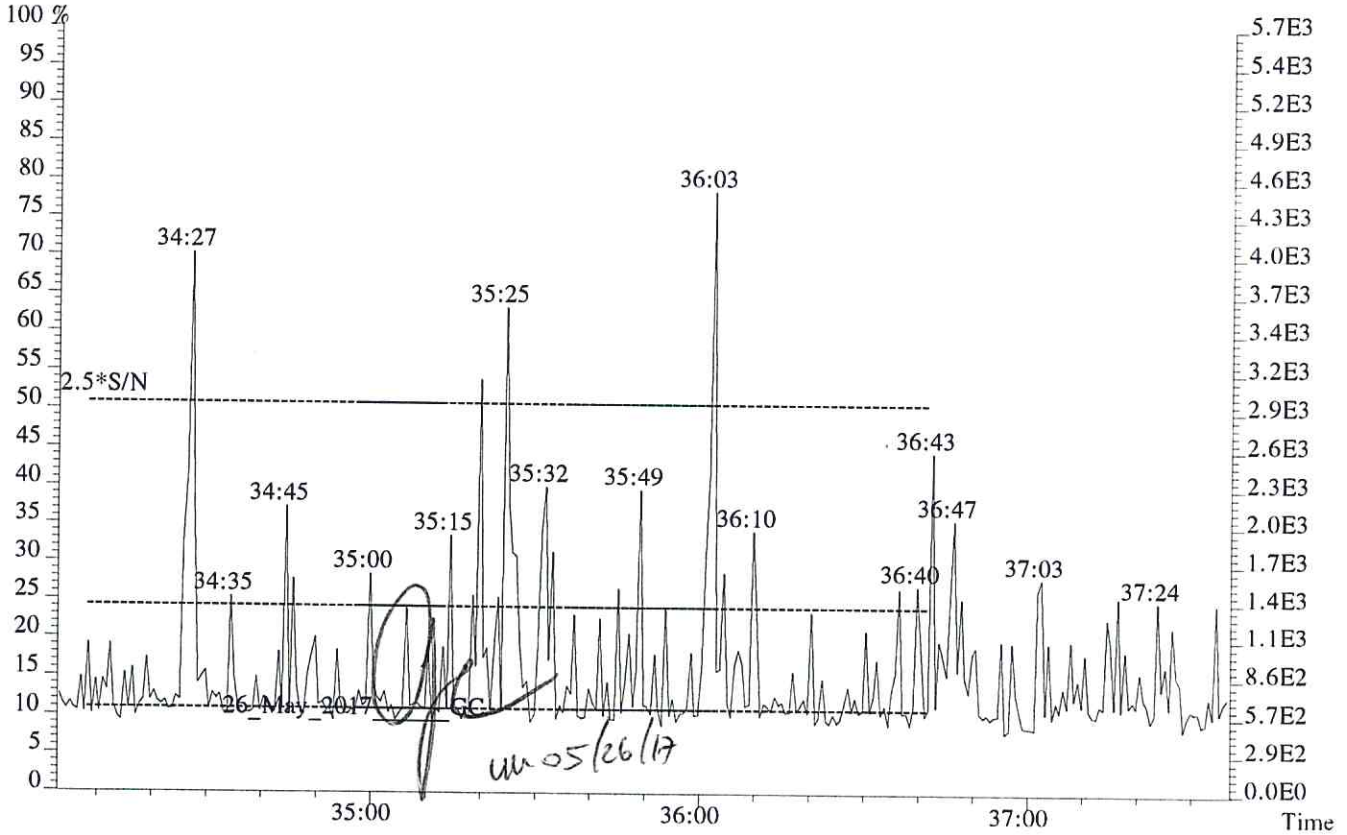
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



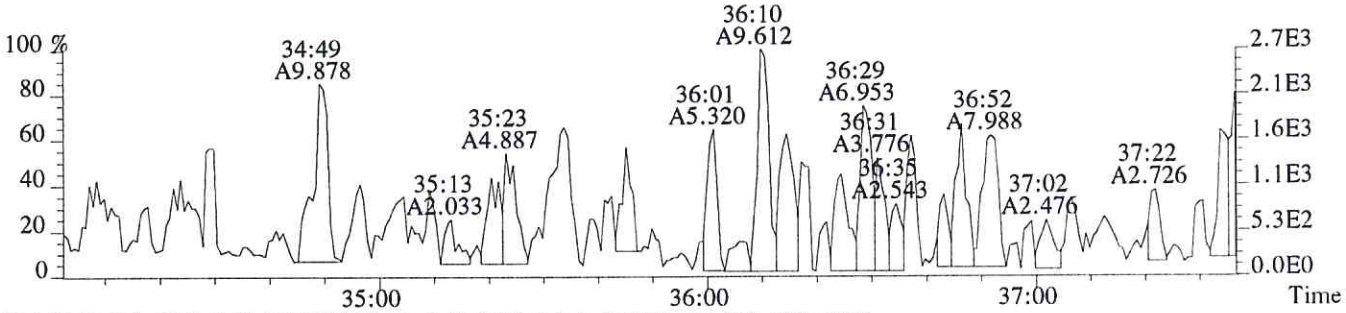
File:P406873 #1-322 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
373.8208 F:3



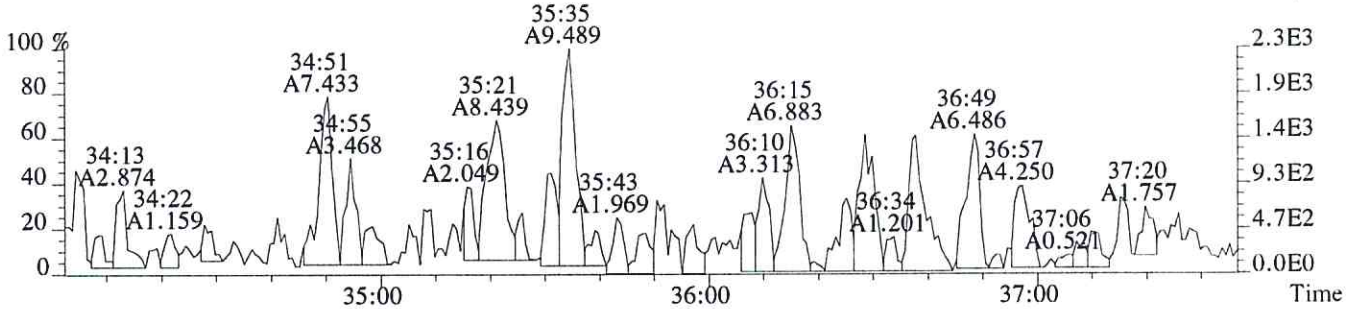
375.8178 F:3



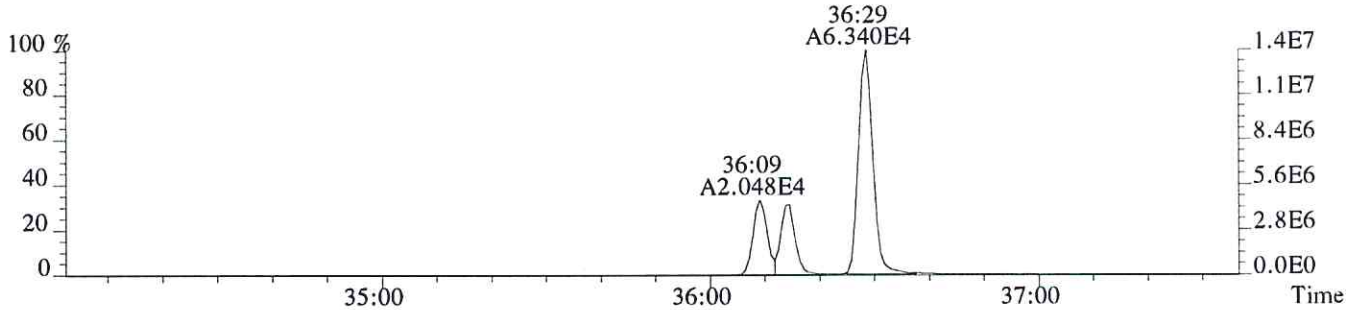
File:P406873 #1-322 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,492.0,0.40%,F,T)



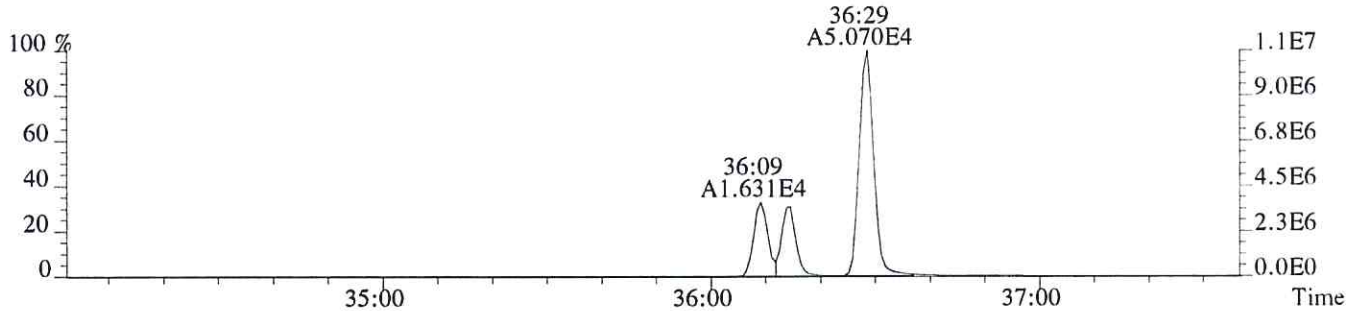
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,256.0,0.40%,F,T)



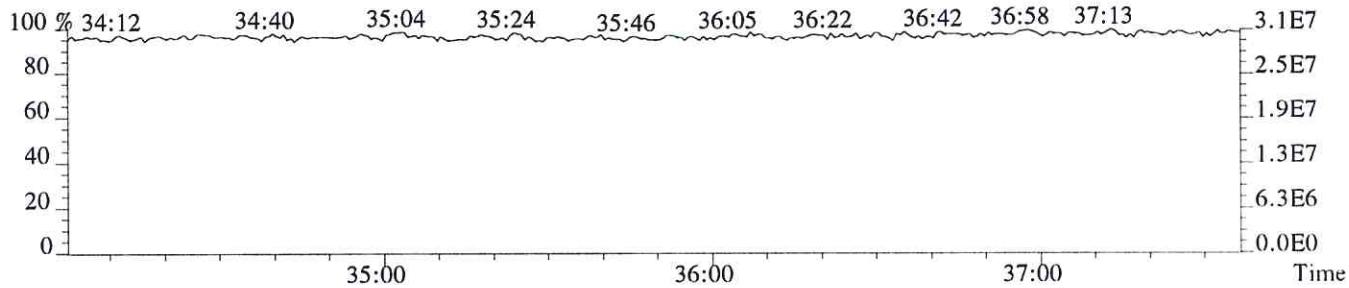
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3168.0,0.40%,F,T)



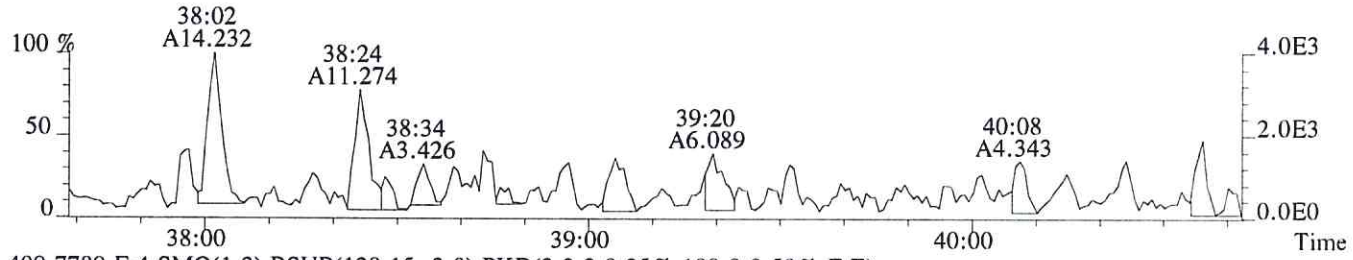
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1500.0,0.40%,F,T)



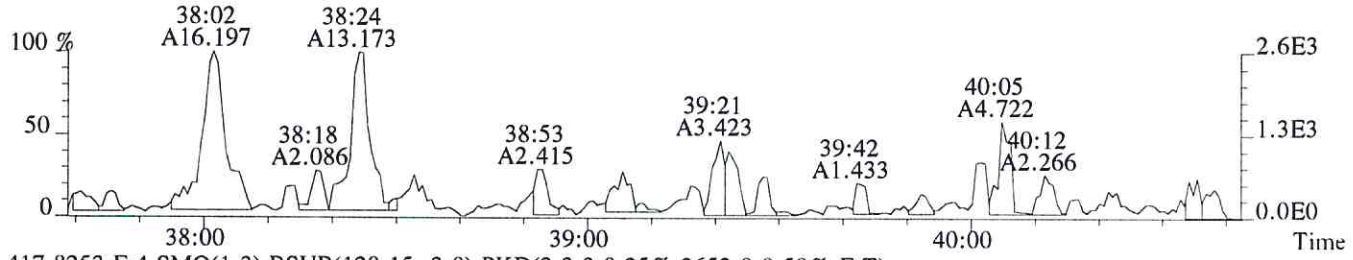
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



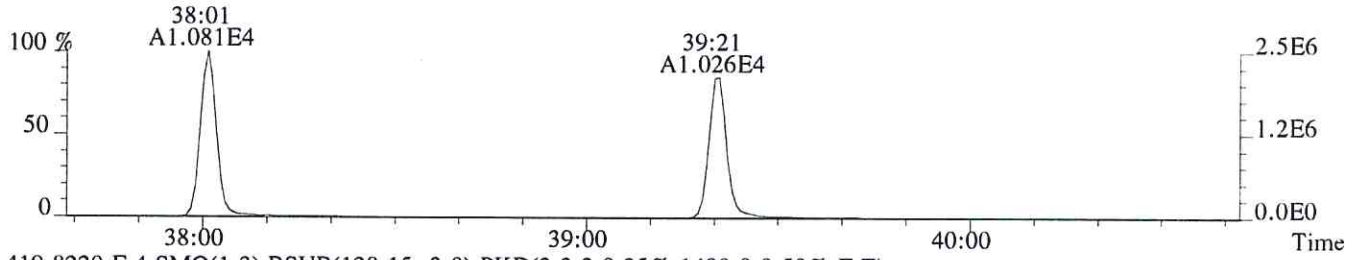
File:P406873 #1-276 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,576.0,0.50%,F,T)



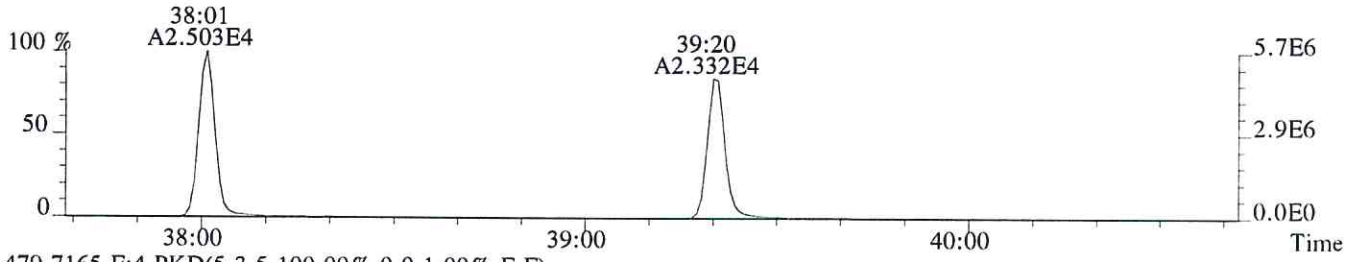
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,188.0,0.50%,F,T)



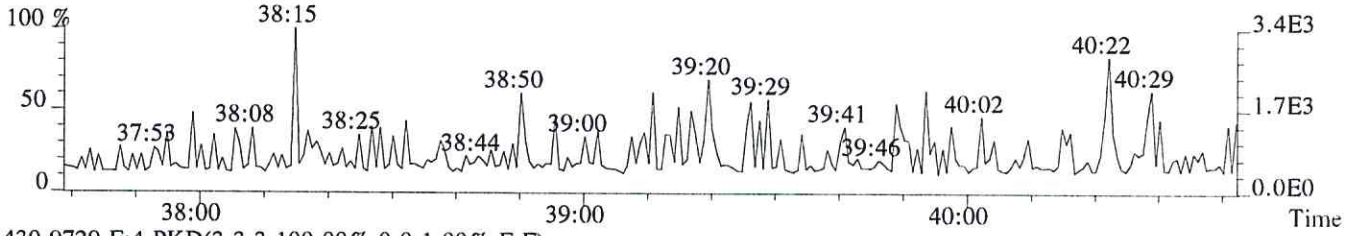
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2652.0,0.50%,F,T)



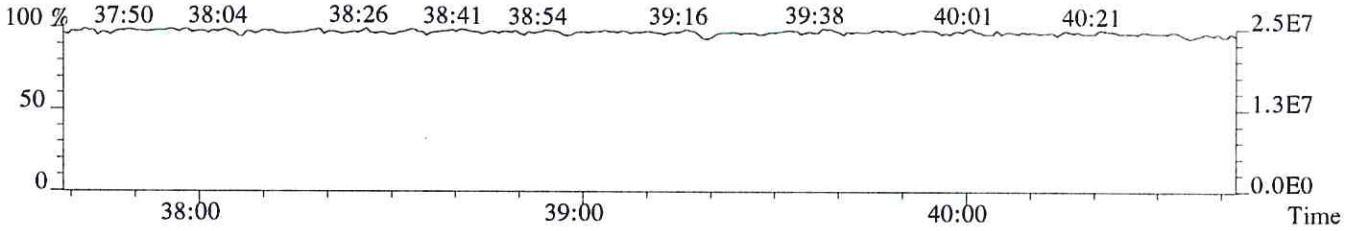
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1400.0,0.50%,F,T)



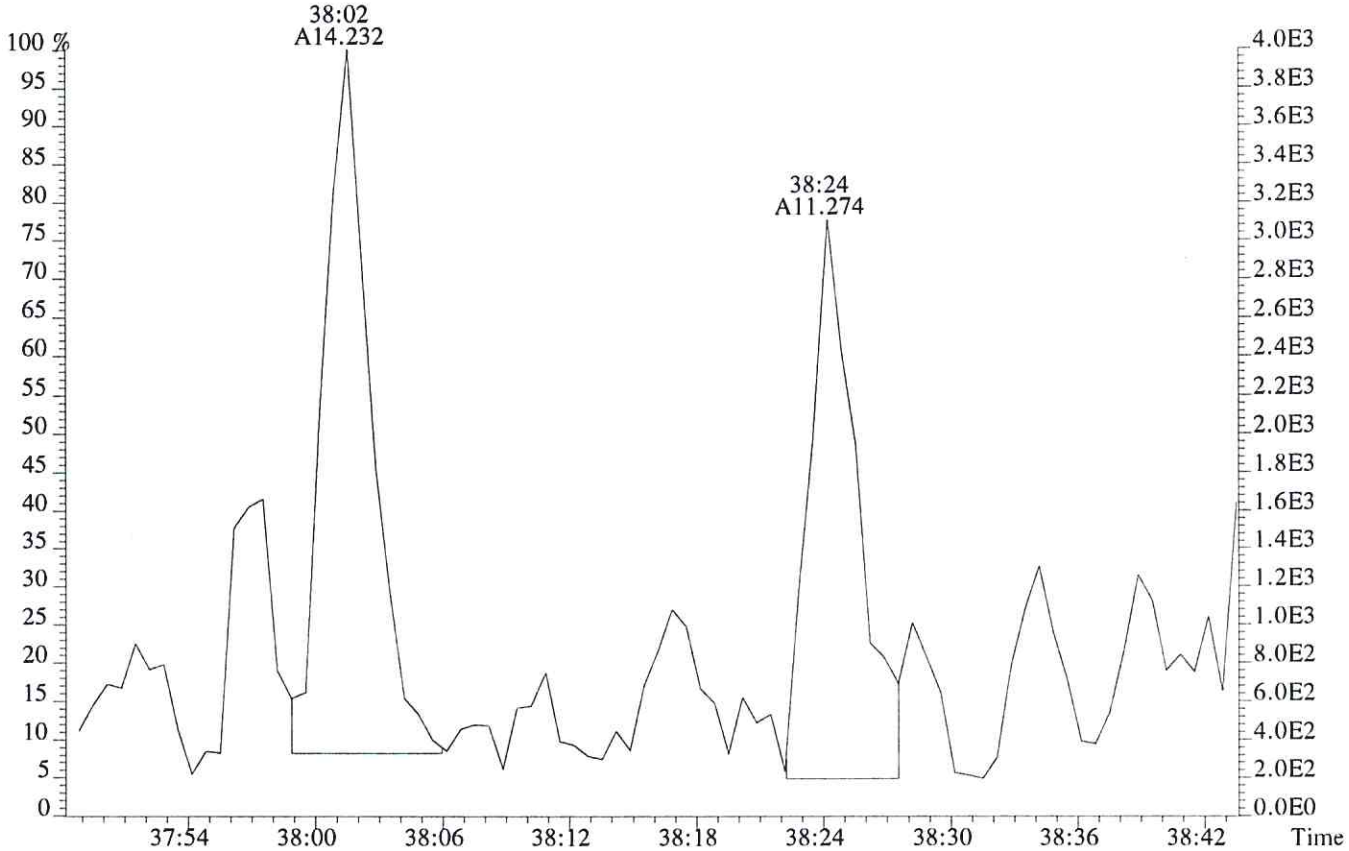
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



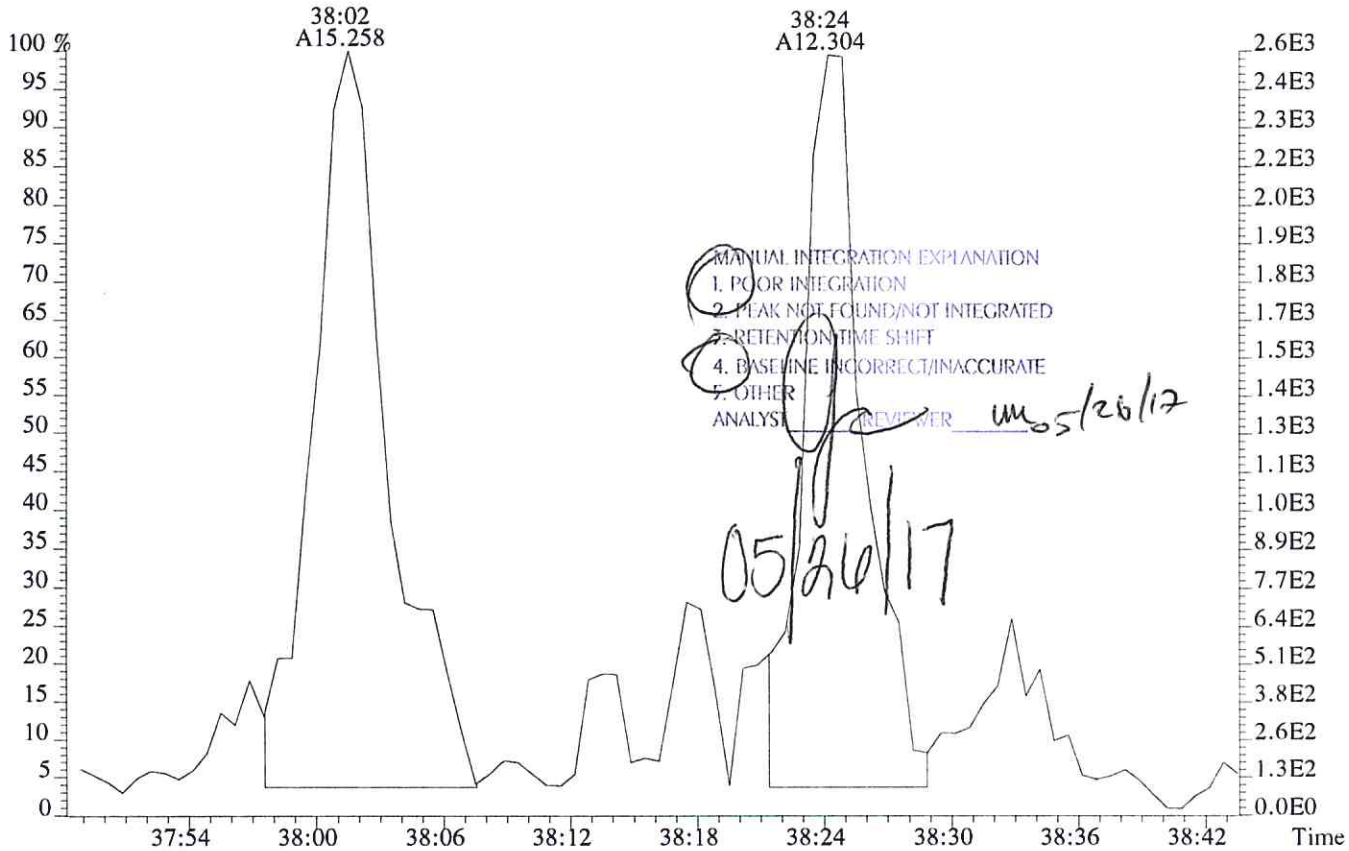
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P406873 #1-276 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,576.0,0.50%,F,T)

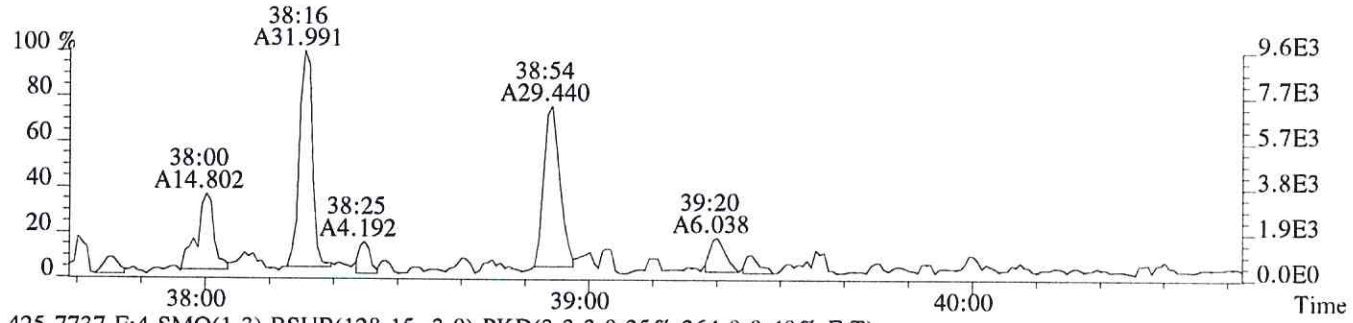


409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,188.0,0.50%,F,T)

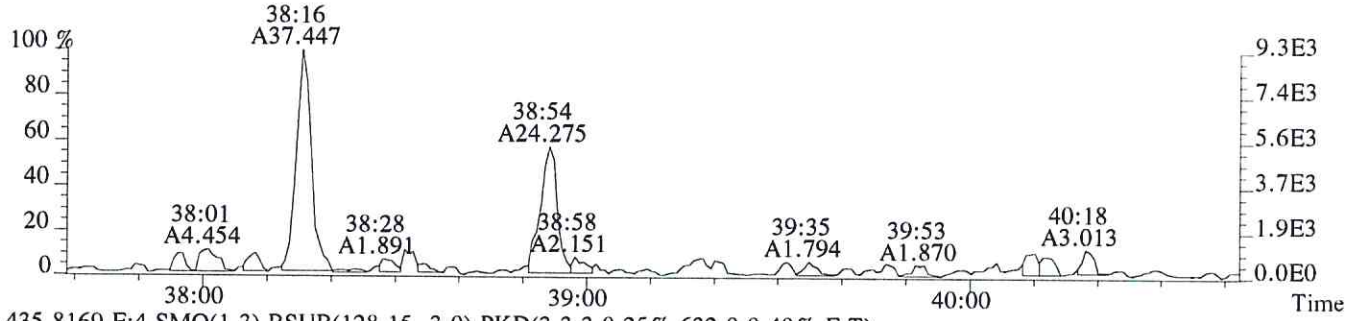


MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST REVIEWER um 05/26/17
05/26/17

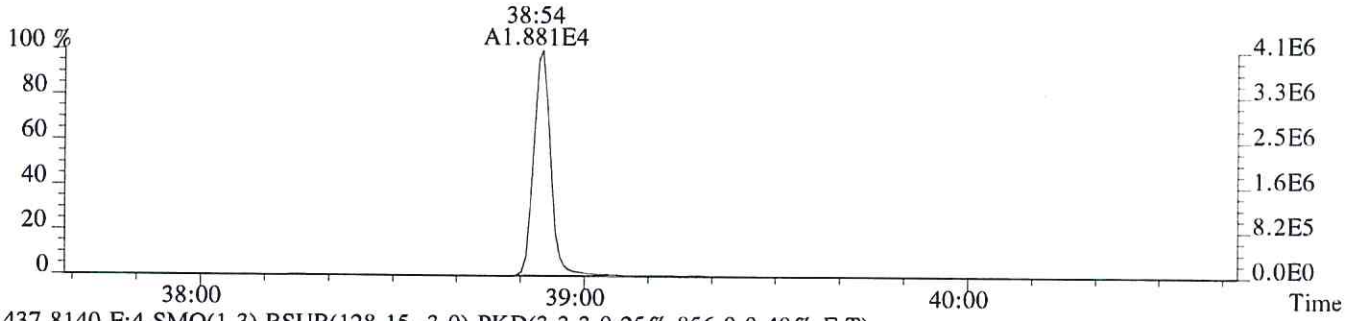
File:P406873 #1-276 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,576.0,0.40%,F,T)



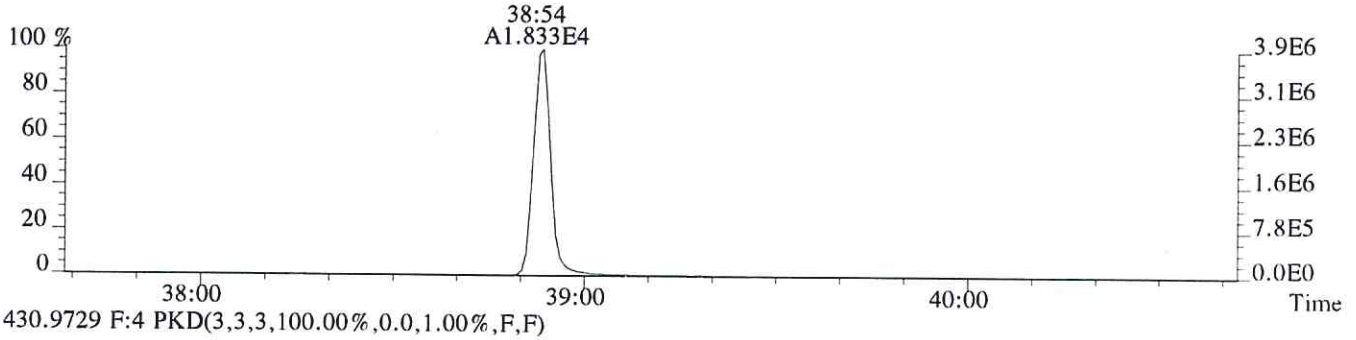
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,264.0,0.40%,F,T)



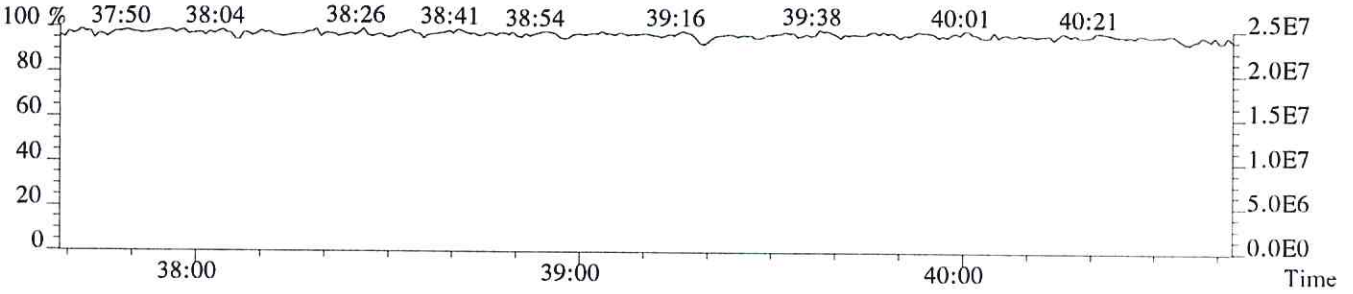
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,632.0,0.40%,F,T)



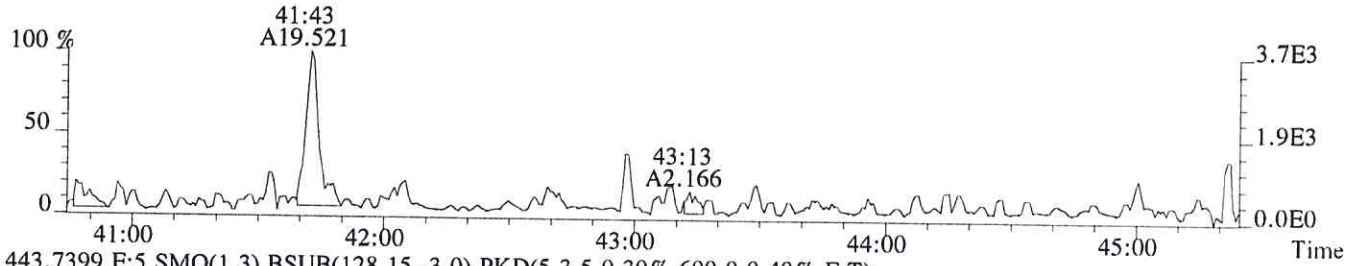
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,856.0,0.40%,F,T)



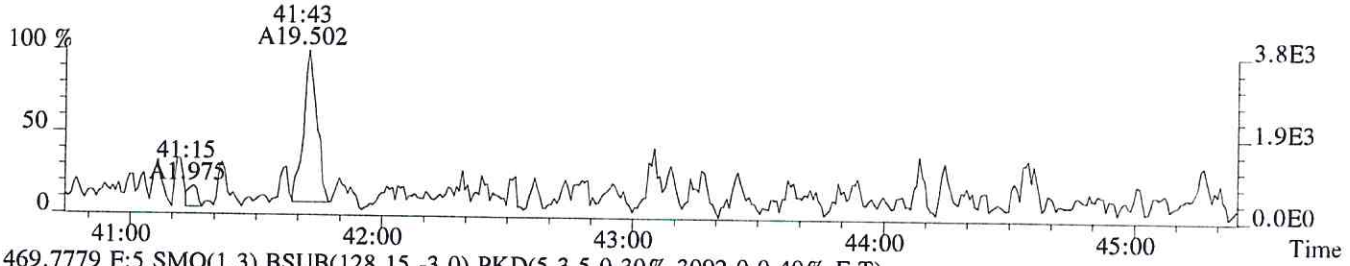
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



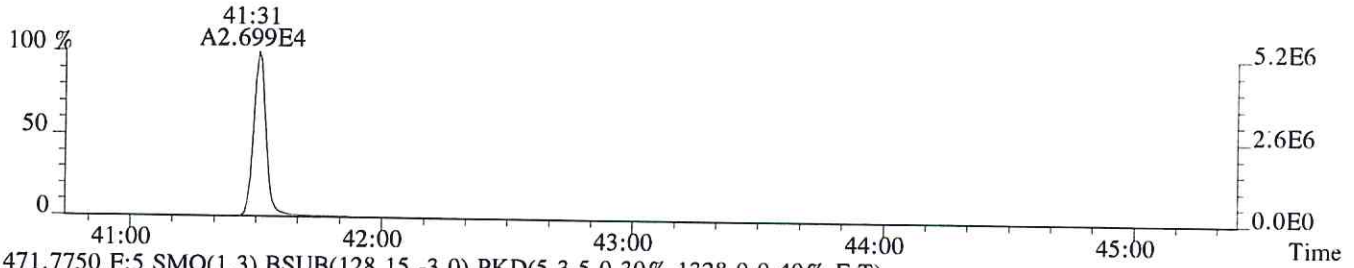
File:P406873 #1-421 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,336.0,0.40%,F,T)



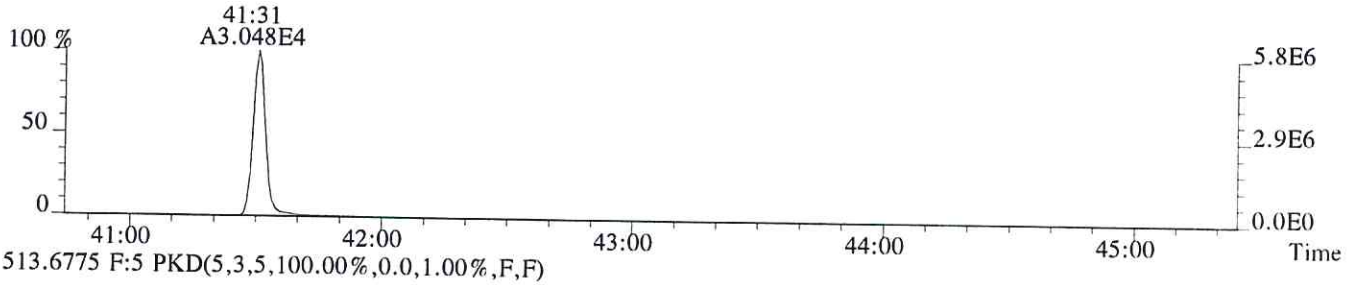
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,600.0,0.40%,F,T)



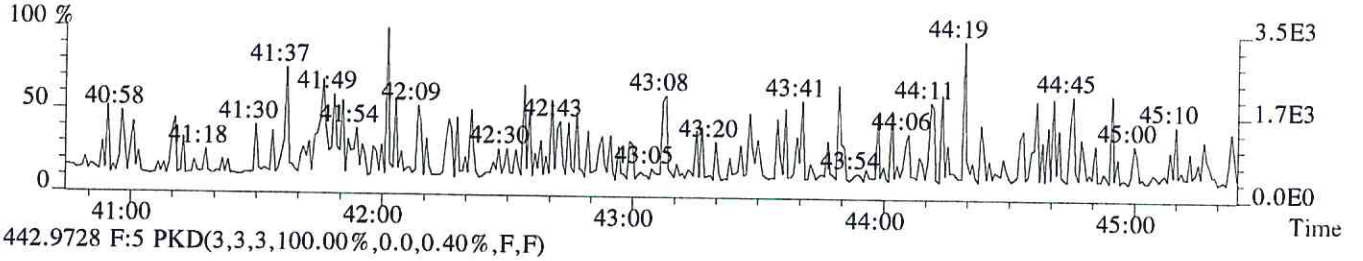
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3092.0,0.40%,F,T)



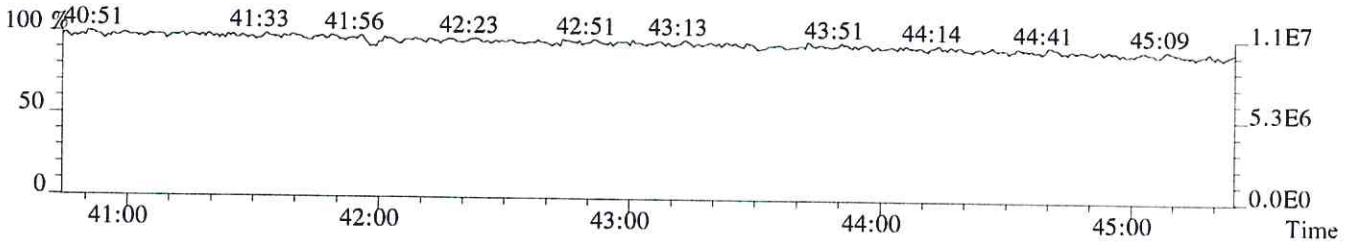
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1328.0,0.40%,F,T)



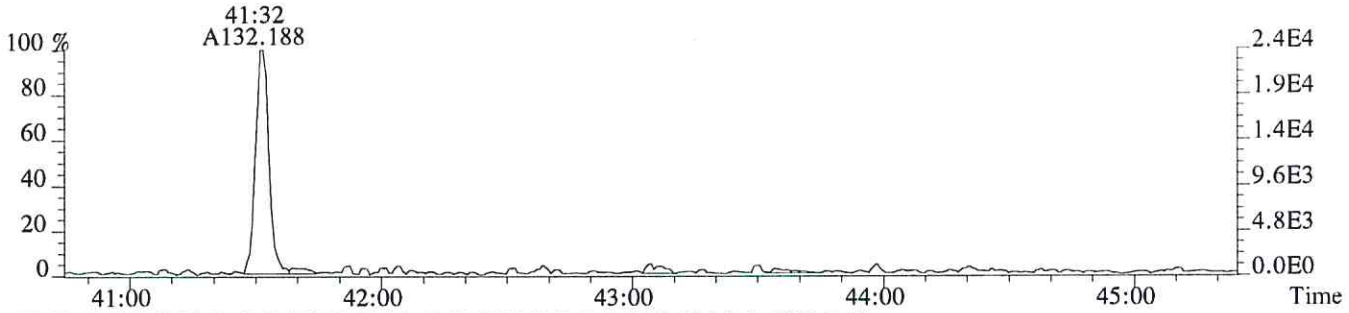
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



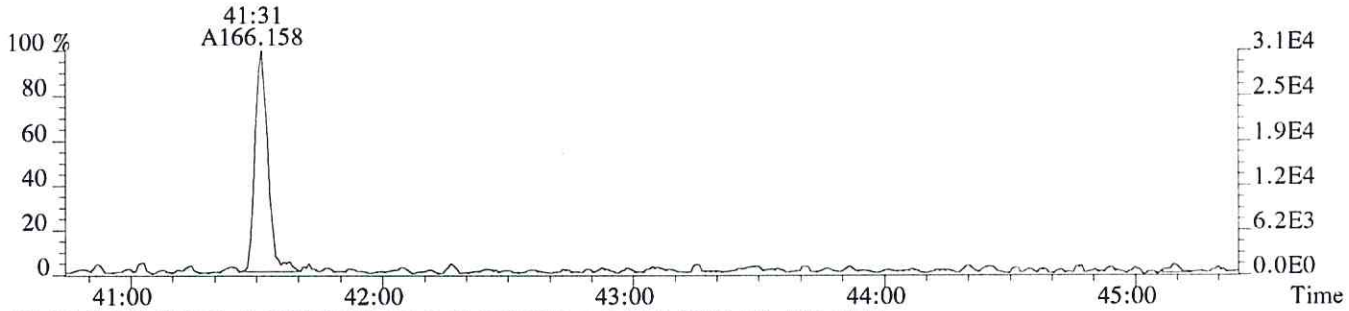
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



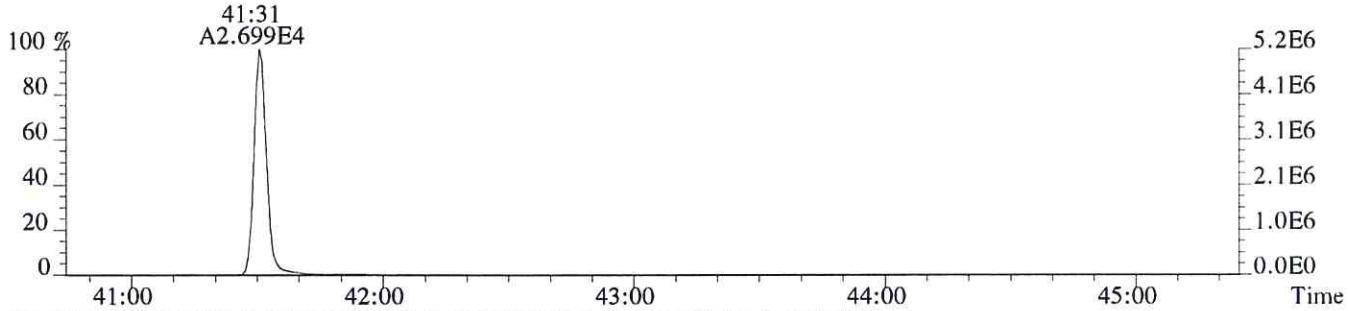
File:P406873 #1-421 Acq:24-MAY-2017 07:24:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700483-002
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,472.0,0.40%,F,T)



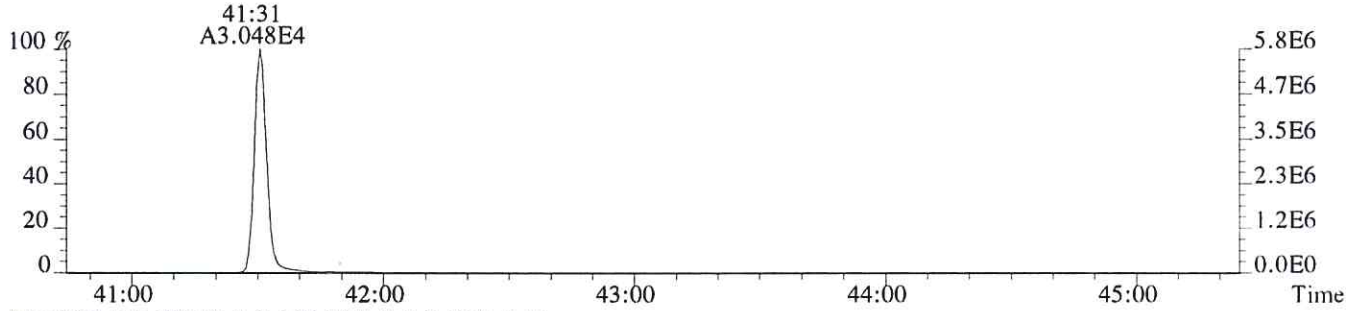
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,656.0,0.40%,F,T)



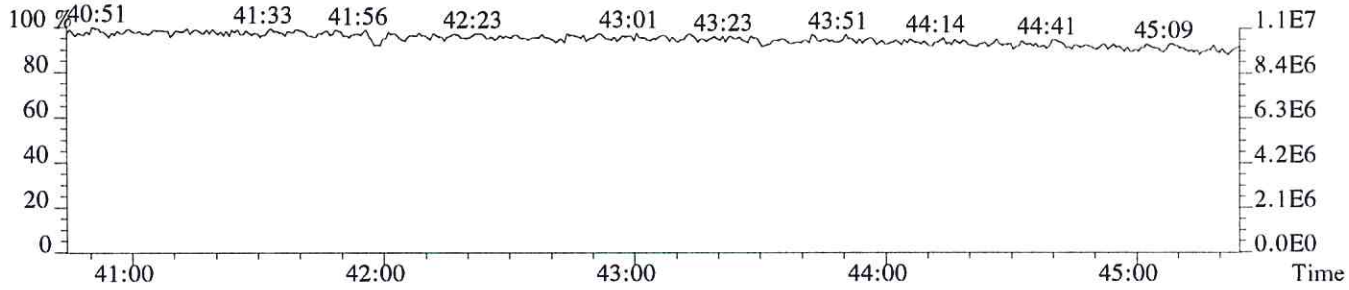
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3092.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1328.0,0.40%,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 P406871 Samp: 1 Inj: 1 Acquired: 24-MAY-17 05:46:28
Processed: 24-MAY-17 13:01:56 Sample ID: EQ1700201-01

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	0.769
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	yes	0.872
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	yes	0.826
4	Unk	1,2,3,4,7,8-HxCDF	35:25	1.881e+01	1.291e+01	1.46	no	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	35:31	1.271e+01	8.430e+00	1.51	no	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:02	1.640e+01	1.086e+01	1.51	no	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	36:47	2.055e+01	8.861e+00	2.32	no	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:02	1.812e+01	1.170e+01	1.55	no	yes	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:22	1.367e+01	7.735e+00	1.77	no	yes	1.187
10	Unk	OCDF	41:43	3.277e+01	2.773e+01	1.18	no	no	1.035
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	yes	0.873
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	yes	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:10	1.209e+01	7.682e+00	1.57	no	yes	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:15	8.206e+00	9.571e+00	0.86	no	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	36:29	1.273e+01	1.076e+01	1.18	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	38:54	3.010e+01	2.584e+01	1.17	yes	yes	0.882
17	Unk	OCDD	41:31	1.284e+02	1.538e+02	0.83	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	27:23	2.356e+04	3.071e+04	0.77	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	31:46	4.121e+04	2.617e+04	1.57	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	32:42	5.296e+04	3.347e+04	1.58	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:25	1.848e+04	3.569e+04	0.52	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	35:31	2.053e+04	3.964e+04	0.52	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:01	1.922e+04	3.708e+04	0.52	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	36:47	1.913e+04	3.710e+04	0.52	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:01	1.402e+04	3.163e+04	0.44	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:21	1.287e+04	2.910e+04	0.44	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	28:13	2.015e+04	2.571e+04	0.78	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	32:59	3.306e+04	2.111e+04	1.57	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:09	2.743e+04	2.176e+04	1.26	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:15	2.750e+04	2.184e+04	1.26	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:54	2.349e+04	2.231e+04	1.05	yes	no	0.817
32	IS	13C-OCDD	41:31	3.262e+04	3.747e+04	0.87	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	27:36	4.671e+04	5.888e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:29	5.371e+04	4.320e+04	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:14	1.966e+04				no	0.958

$$\text{OCDD} = \frac{(1.284e{+}02 + 1.538e{+}02)\ \times\ 4000\ \text{pg}\ \times\ 1}{(3.262e{+}04 + 3.747e{+}04)\ \times\ \text{g}\ \times\ /\ 100\ \times\ 0.980} =$$

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Signal/Noise Height Ratio Summary

CLIENT ID.
METHOD BLANK

Run #9 Filename P406871 Samp: 1 Inj: 1 Acquired: 24-MAY-17 05:46:28
Processed: 24-MAY-17 13:01:56 LAB. ID: EQ1700201-01

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	5.80e+02	*	*	8.72e+02	*
2	1,2,3,7,8-PeCDF	*	3.64e+02	*	*	7.16e+02	*
3	2,3,4,7,8-PeCDF	*	3.64e+02	*	*	7.16e+02	*
4	1,2,3,4,7,8-HxCDF	4.40e+03	4.16e+02	1.1e+01	4.05e+03	3.36e+02	1.2e+01
5	1,2,3,6,7,8-HxCDF	2.72e+03	4.16e+02	6.5e+00	2.08e+03	3.36e+02	6.2e+00
6	2,3,4,6,7,8-HxCDF	3.39e+03	4.16e+02	8.2e+00	2.22e+03	3.36e+02	6.6e+00
7	1,2,3,7,8,9-HxCDF	4.81e+03	4.16e+02	1.2e+01	1.66e+03	3.36e+02	4.9e+00
8	1,2,3,4,6,7,8-HpCDF	4.30e+03	5.76e+02	7.5e+00	3.13e+03	2.84e+02	1.1e+01
9	1,2,3,4,7,8,9-HpCDF	3.55e+03	5.76e+02	6.2e+00	1.85e+03	2.84e+02	6.5e+00
10	OCDF	5.34e+03	3.08e+02	1.7e+01	4.37e+03	5.08e+02	8.6e+00
11	2,3,7,8-TCDD	*	9.20e+02	*	*	7.04e+02	*
12	1,2,3,7,8-PeCDD	*	6.08e+02	*	*	4.84e+02	*
13	1,2,3,4,7,8-HxCDD	3.44e+03	5.84e+02	5.9e+00	2.14e+03	4.64e+02	4.6e+00
14	1,2,3,6,7,8-HxCDD	2.38e+03	5.84e+02	4.1e+00	1.54e+03	4.64e+02	3.3e+00
15	1,2,3,7,8,9-HxCDD	3.03e+03	5.84e+02	5.2e+00	2.54e+03	4.64e+02	5.5e+00
16	1,2,3,4,6,7,8-HpCDD	7.96e+03	2.56e+02	3.1e+01	6.57e+03	3.08e+02	2.1e+01
17	OCDD	2.46e+04	2.84e+02	8.7e+01	2.77e+04	6.56e+02	4.2e+01
18	13C-2,3,7,8-TCDF	4.09e+06	6.92e+03	5.9e+02	5.34e+06	2.72e+03	2.0e+03
19	13C-1,2,3,7,8-PeCDF	7.58e+06	4.72e+02	1.6e+04	4.86e+06	6.64e+02	7.3e+03
20	13C-2,3,4,7,8-PeCDF	1.05e+07	4.72e+02	2.2e+04	6.68e+06	6.64e+02	1.0e+04
21	13C-1,2,3,4,7,8-HxCDF	4.08e+06	6.56e+02	6.2e+03	7.80e+06	1.26e+03	6.2e+03
22	13C-1,2,3,6,7,8-HxCDF	4.39e+06	6.56e+02	6.7e+03	8.40e+06	1.26e+03	6.7e+03
23	13C-2,3,4,6,7,8-HxCDF	4.25e+06	6.56e+02	6.5e+03	8.21e+06	1.26e+03	6.5e+03
24	13C-1,2,3,7,8,9-HxCDF	4.07e+06	6.56e+02	6.2e+03	7.79e+06	1.26e+03	6.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	3.23e+06	1.75e+03	1.8e+03	7.30e+06	3.80e+03	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.78e+06	1.75e+03	1.6e+03	6.16e+06	3.80e+03	1.6e+03
27	13C-2,3,7,8-TCDD	3.75e+06	3.80e+03	9.9e+02	4.78e+06	2.12e+03	2.3e+03
28	13C-1,2,3,7,8-PeCDD	6.72e+06	5.52e+02	1.2e+04	4.27e+06	4.04e+02	1.1e+04
29	13C-1,2,3,4,7,8-HxCDD	6.30e+06	2.06e+03	3.1e+03	4.98e+06	1.14e+03	4.4e+03
30	13C-1,2,3,6,7,8-HxCDD	5.95e+06	2.06e+03	2.9e+03	4.72e+06	1.14e+03	4.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	5.23e+06	2.60e+02	2.0e+04	4.89e+06	4.48e+02	1.1e+04
32	13C-OCDD	6.10e+06	2.25e+03	2.7e+03	7.04e+06	4.38e+03	1.6e+03
33	13C-1,2,3,4-TCDD	8.57e+06	3.80e+03	2.3e+03	1.08e+07	2.12e+03	5.1e+03
34	13C-1,2,3,7,8,9-HxCDD	1.20e+07	2.06e+03	5.8e+03	9.62e+06	1.14e+03	8.4e+03
35	37Cl-2,3,7,8-TCDD	3.64e+06	1.38e+03	2.6e+03			

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Peak List Summary

CLIENT ID.

METHOD BLANK

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 9 File: P406871 Sample:1 Injection:1 Function:3

Acquired: 24-MAY-17 05:46:28 Processed: 24-MAY-17 13:01:56

Mass: 389.8160 391.8130 Tot Response: 2.35e+01 RRF: 0.9067

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	36:29	1.27e+01	1.08e+01	1.18	yes	2.35e+01	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

METHOD BLANK

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 9 File: P406871 Sample:1 Injection:1 Function:4

Acquired: 24-MAY-17 05:46:28 Processed: 24-MAY-17 13:01:56

Mass: 423.7770 425.7740 Tot Response: 5.59e+01 RRF: 0.8816

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:54	3.01e+01	2.58e+01	1.17	yes	5.59e+01	1,2,3,4,6,7,8-HpCDD	y	n

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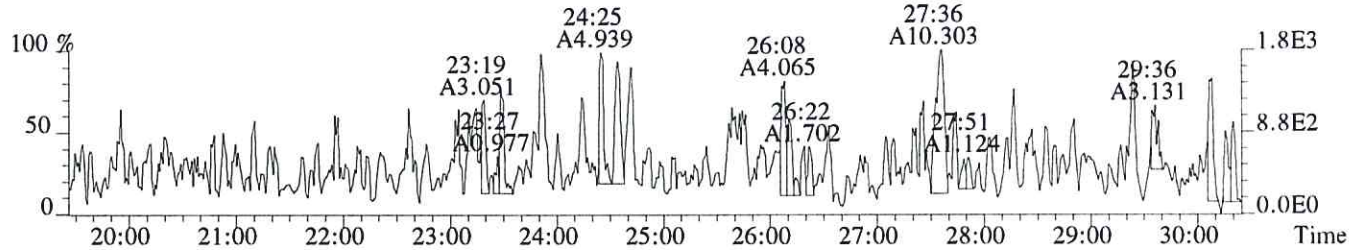
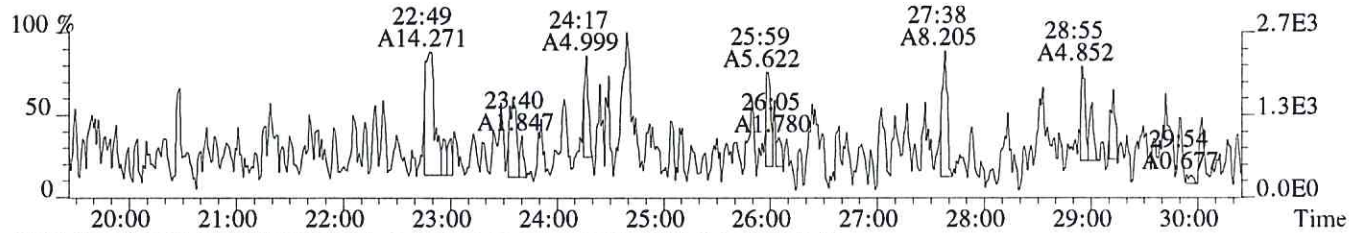
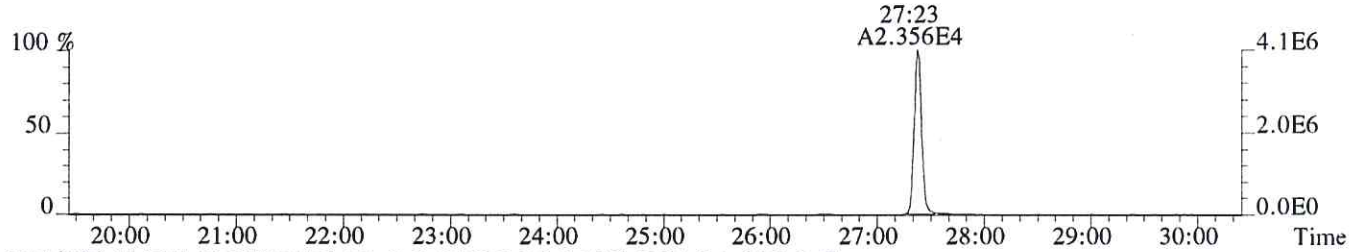
File:P406871 #1-779 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,580.0,1.00%,F,T)



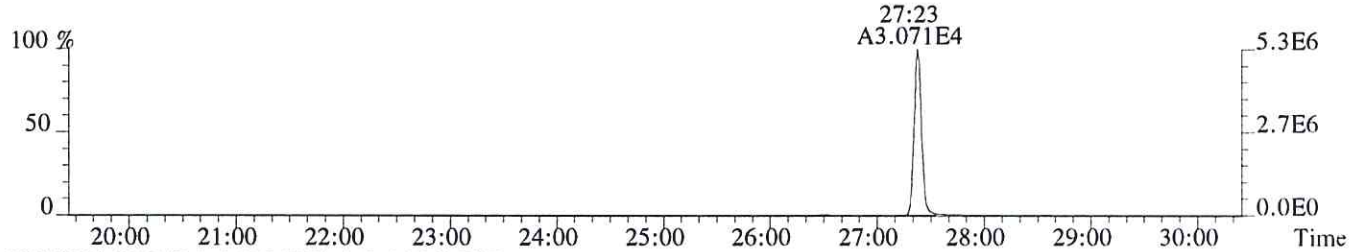
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,872.0,1.00%,F,T)



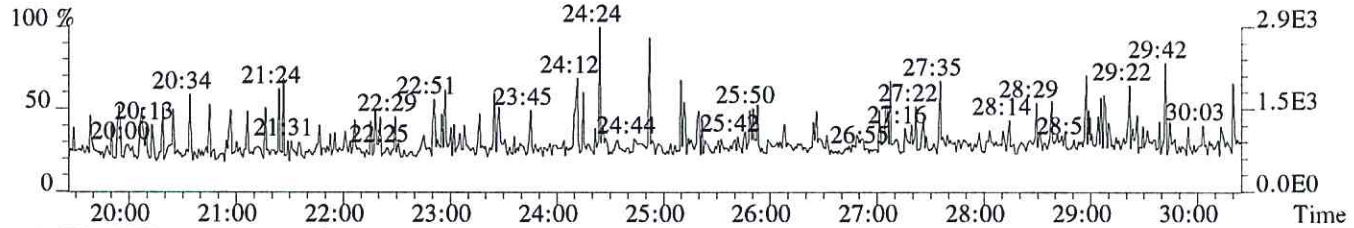
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6924.0,1.00%,F,T)



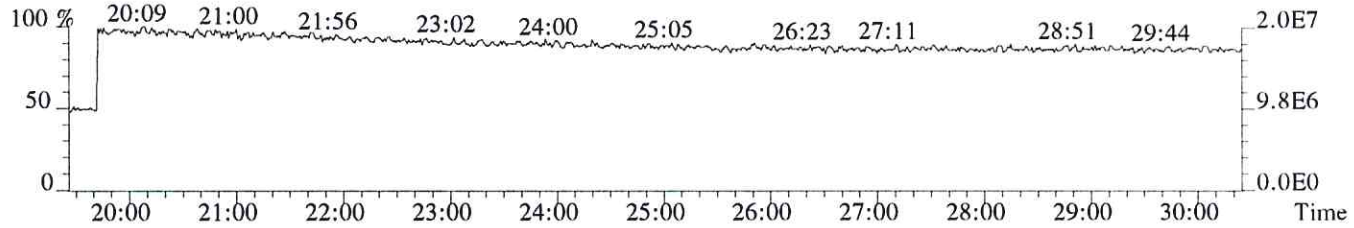
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2724.0,1.00%,F,T)



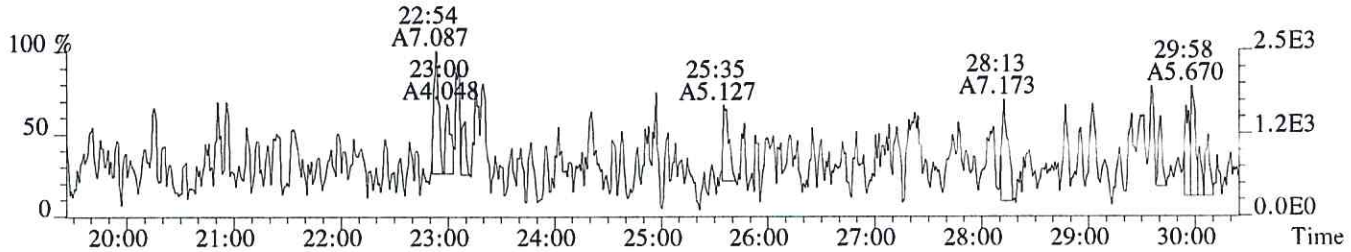
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



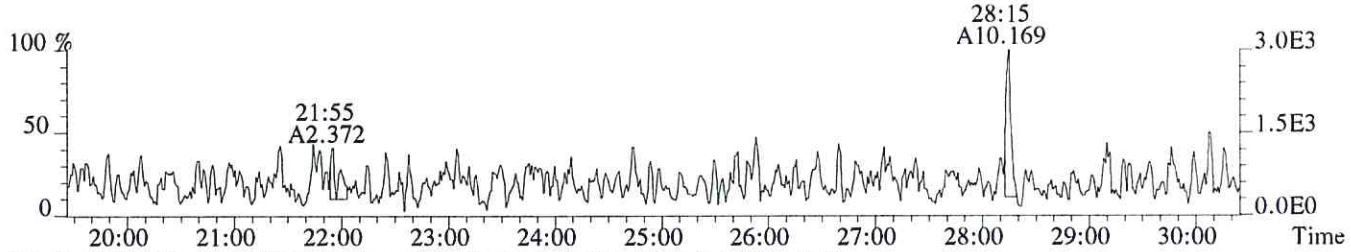
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



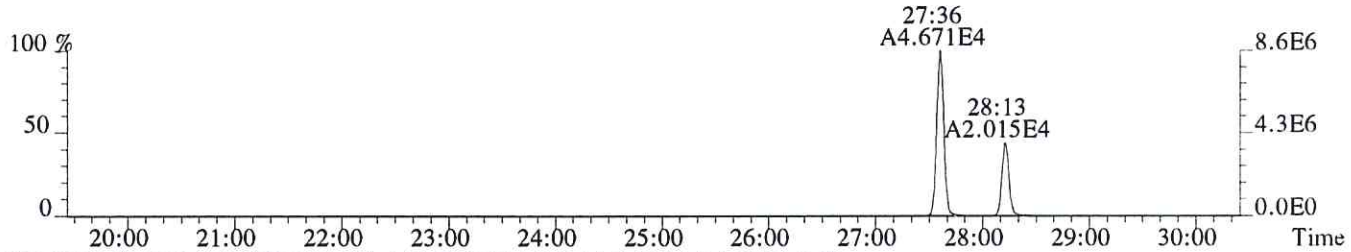
File:P406871 #1-779 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,920.0,1.00%,F,T)



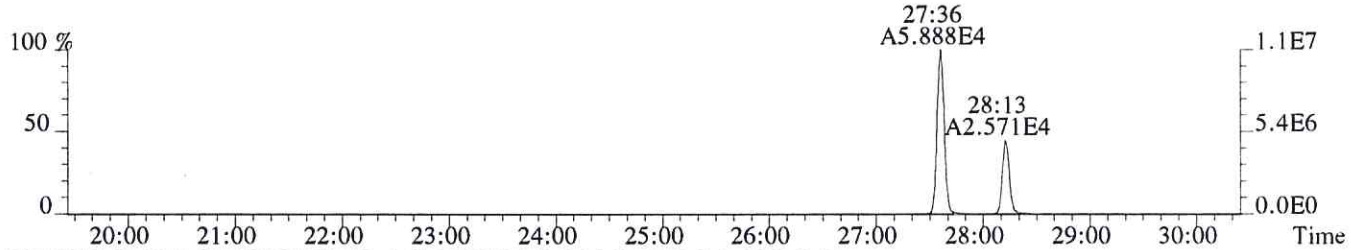
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)



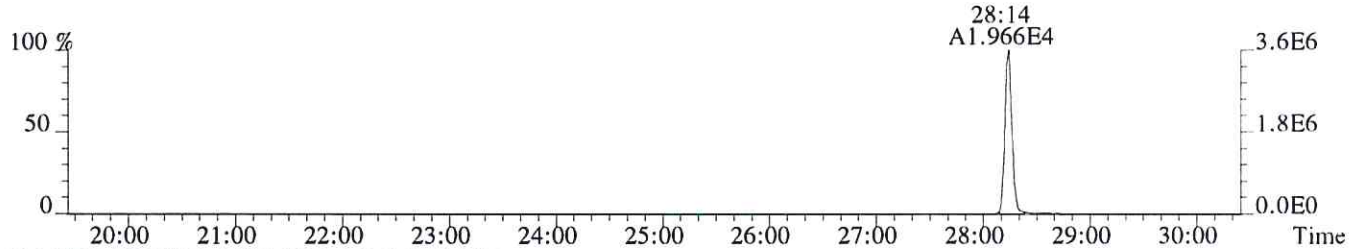
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3800.0,1.00%,F,T)



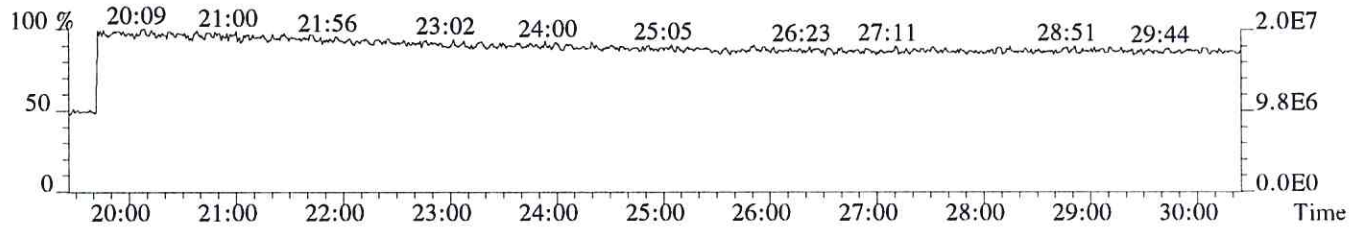
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2124.0,1.00%,F,T)



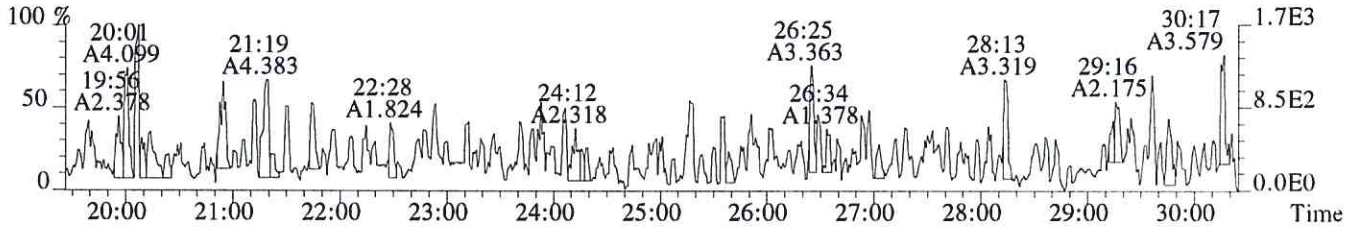
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1376.0,1.00%,F,T)



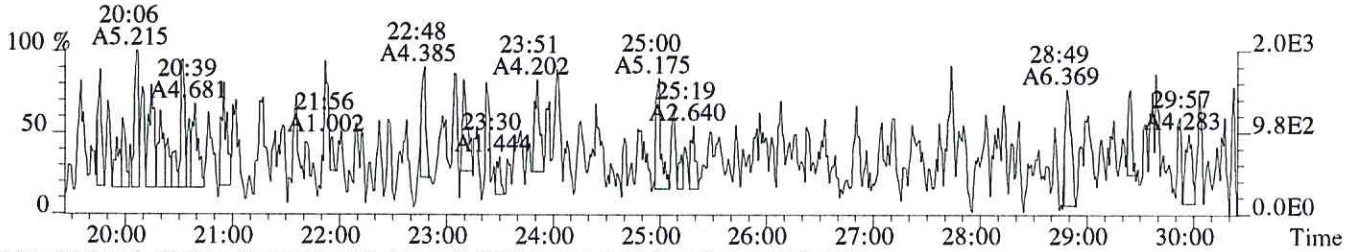
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



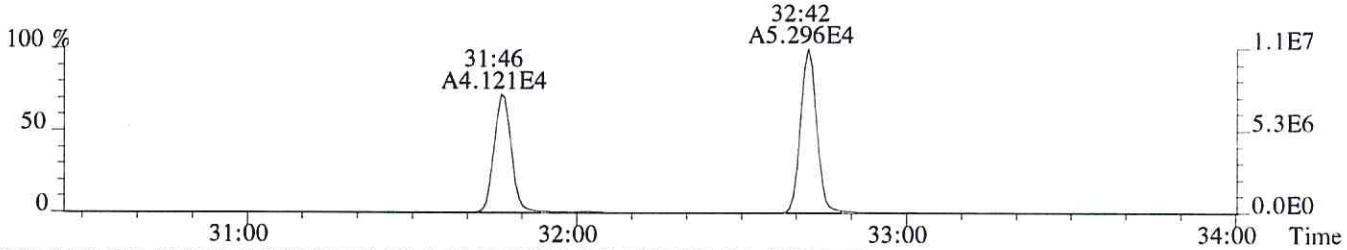
File:P406871 #1-779 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,360.0,1.00%,F,T)



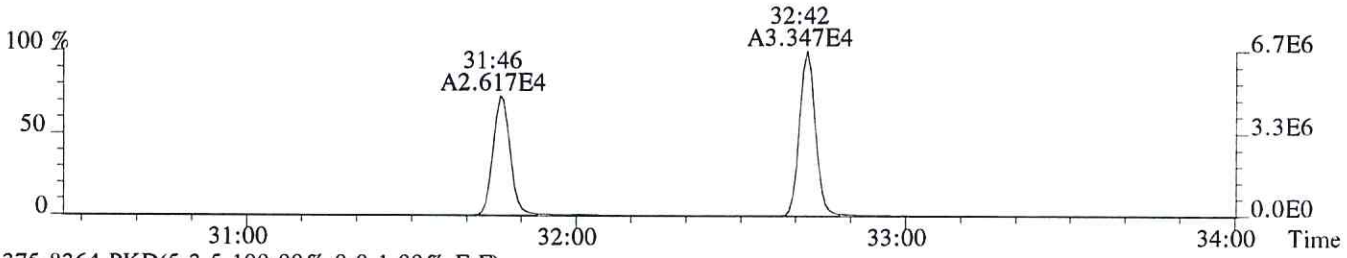
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,836.0,1.00%,F,T)



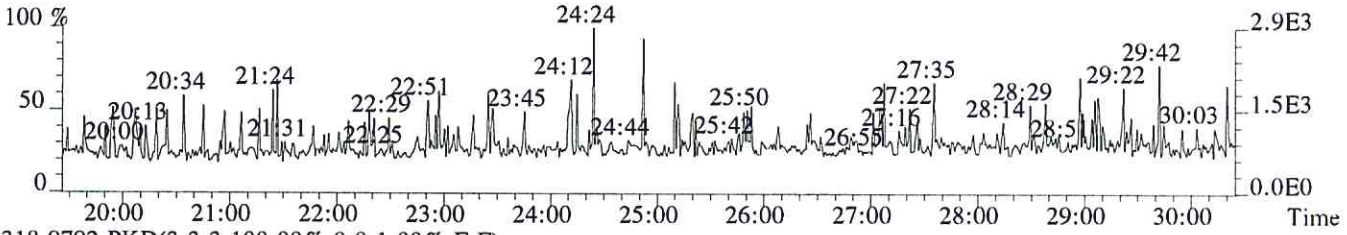
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,T)



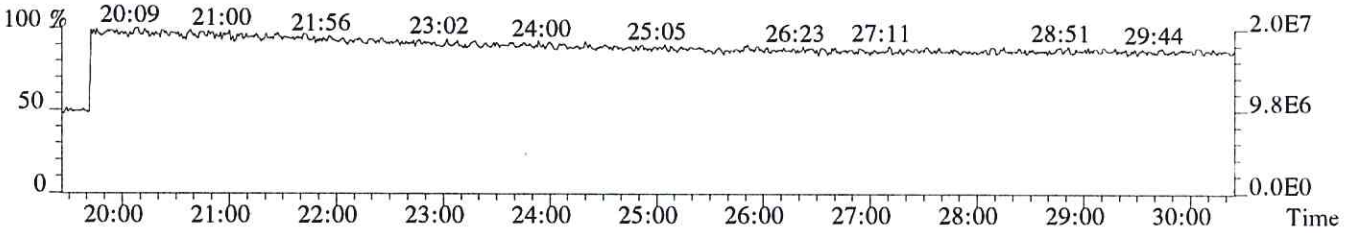
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,664.0,1.00%,F,T)



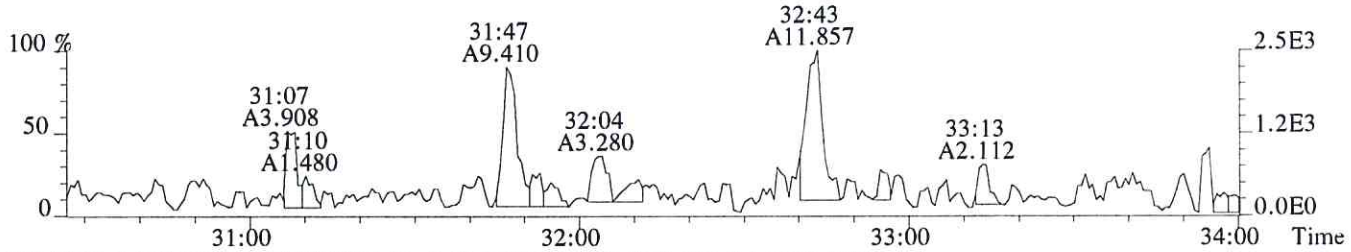
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



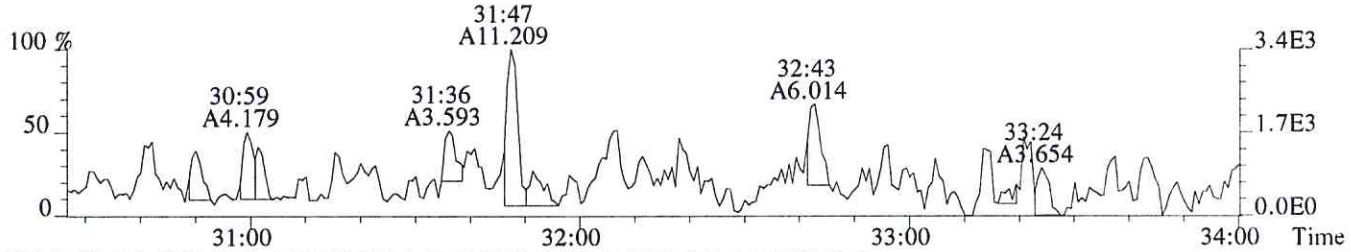
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



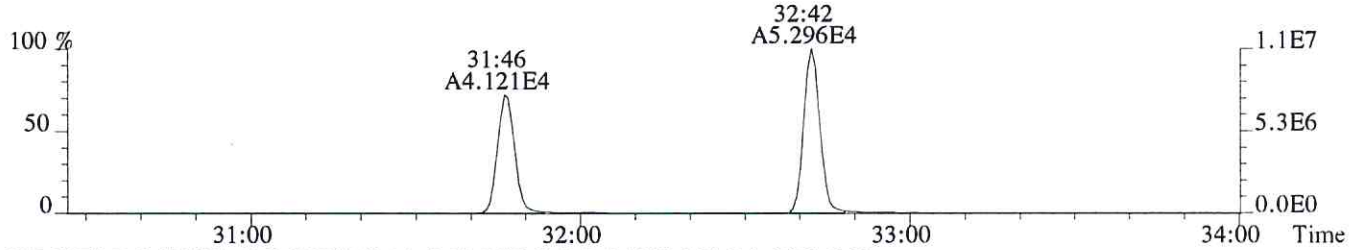
File:P406871 #1-321 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,364.0,1.00%,F,T)



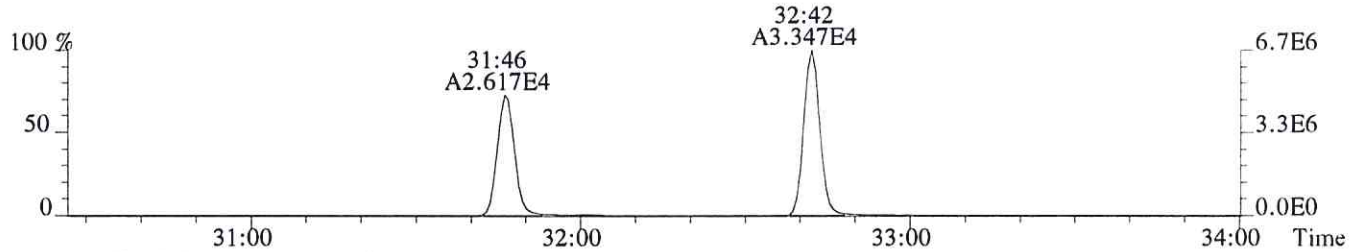
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,716.0,1.00%,F,T)



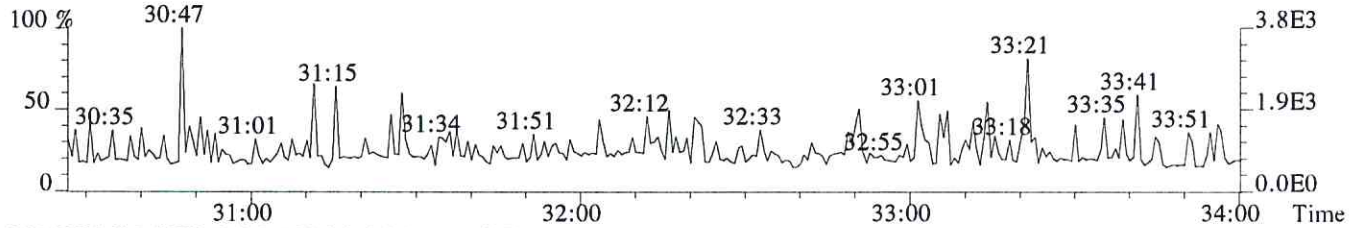
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,T)



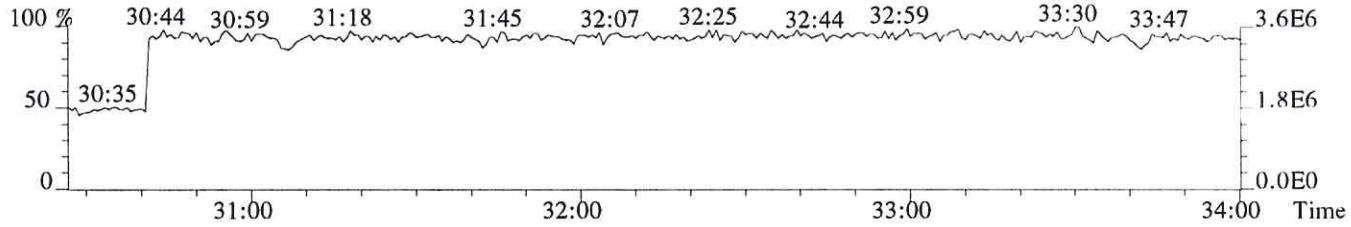
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,664.0,1.00%,F,T)



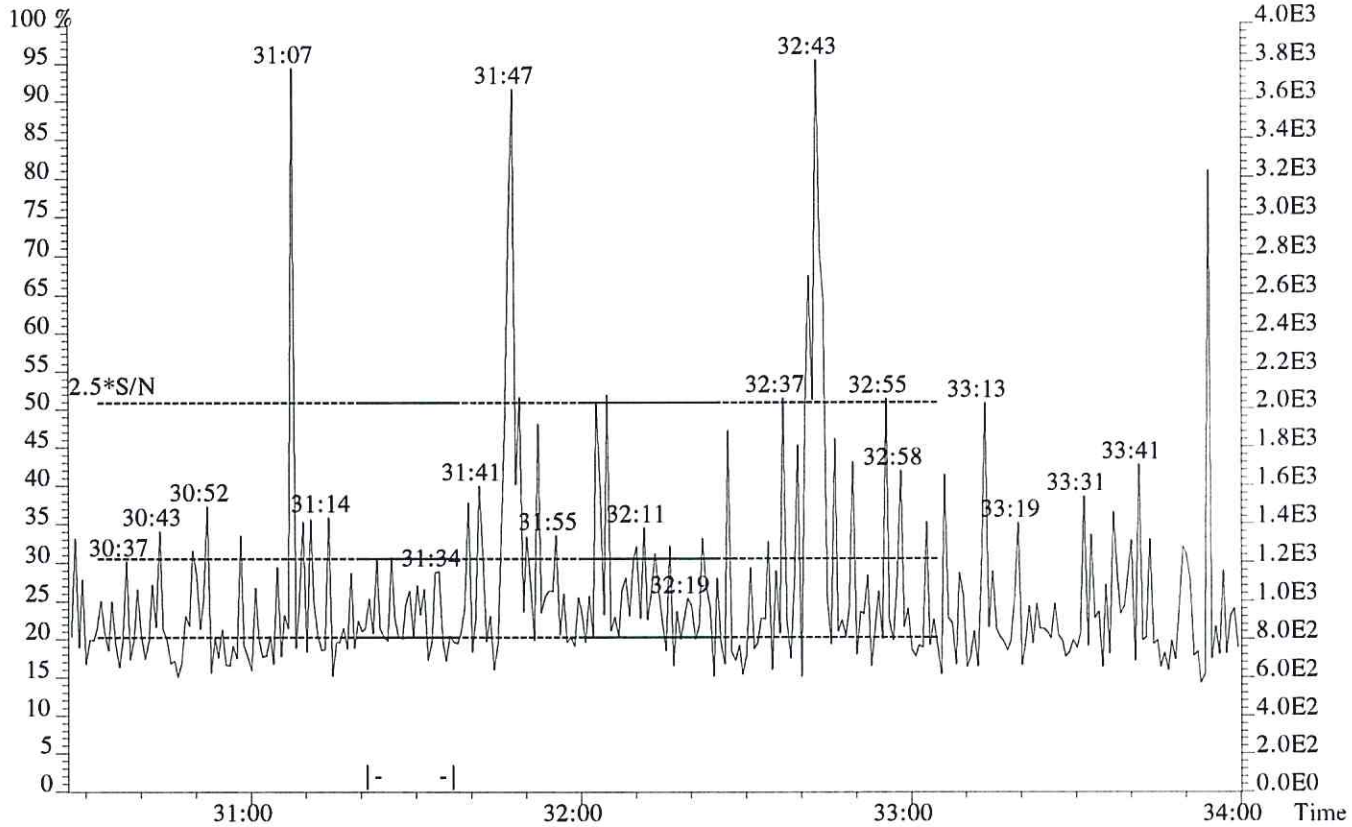
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



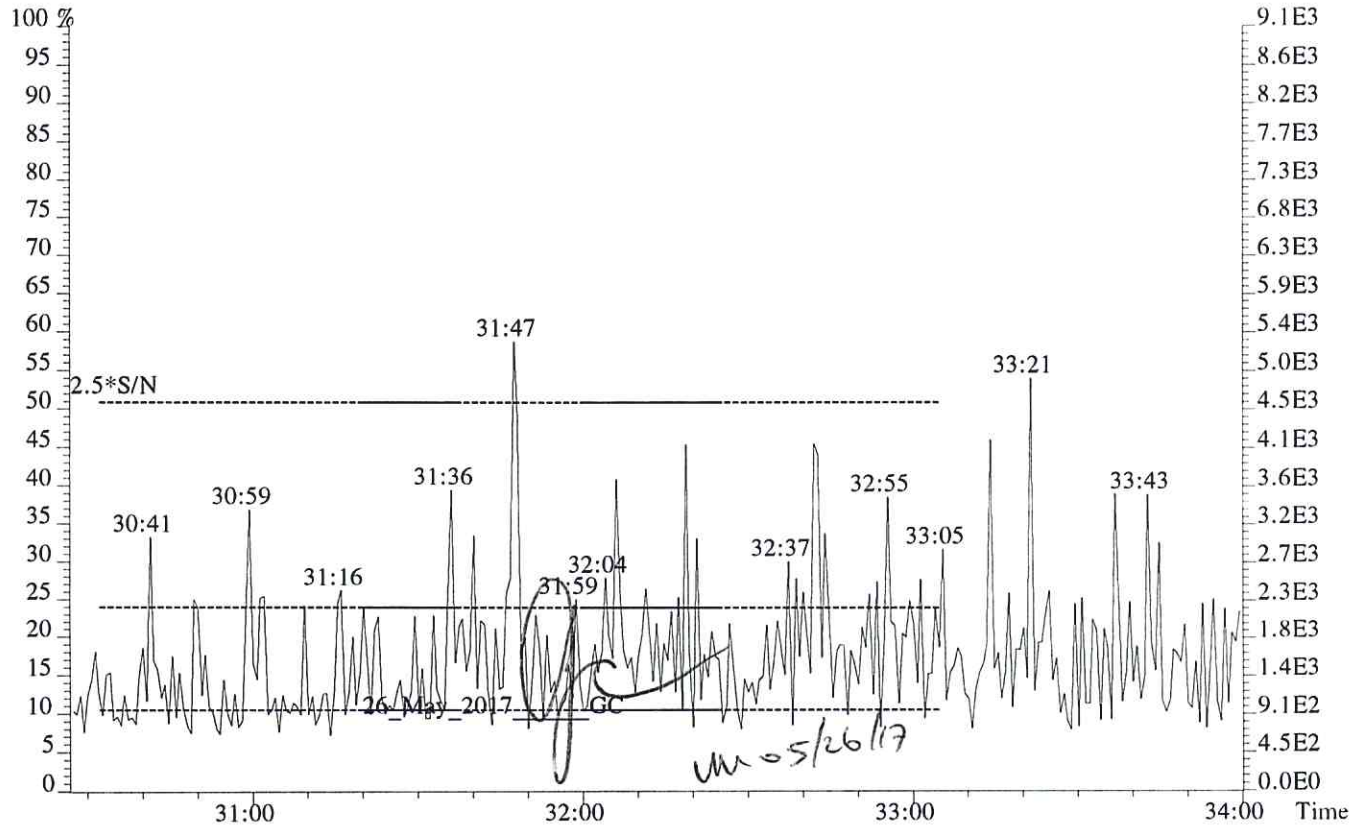
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



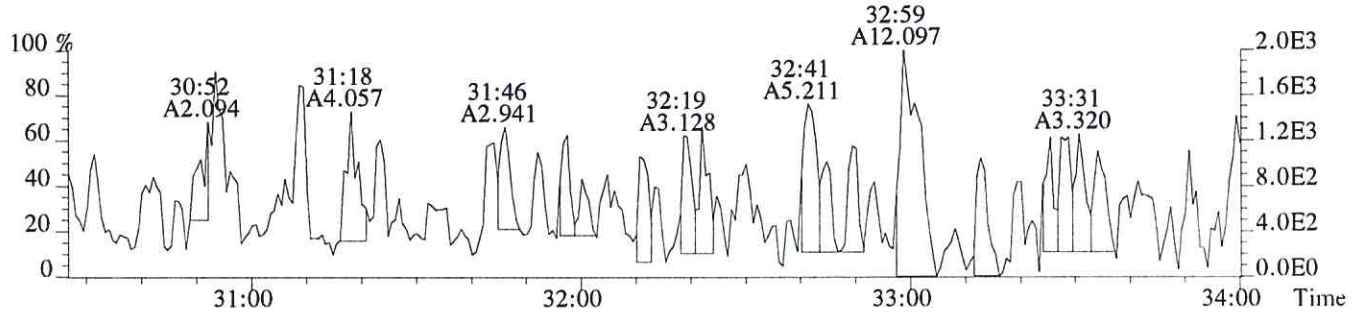
File:P406871 #1-321 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
339.8597 F:2



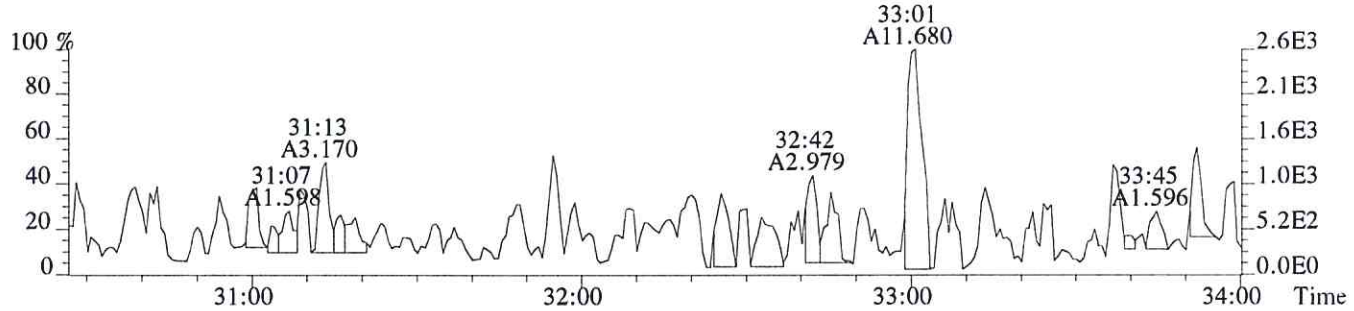
341.8567 F:2



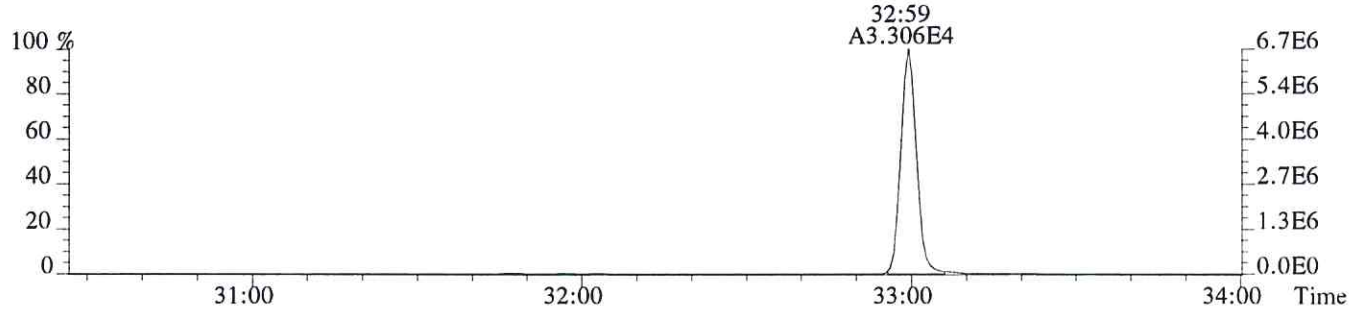
File:P406871 #1-321 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,608.0,1.00%,F,T)



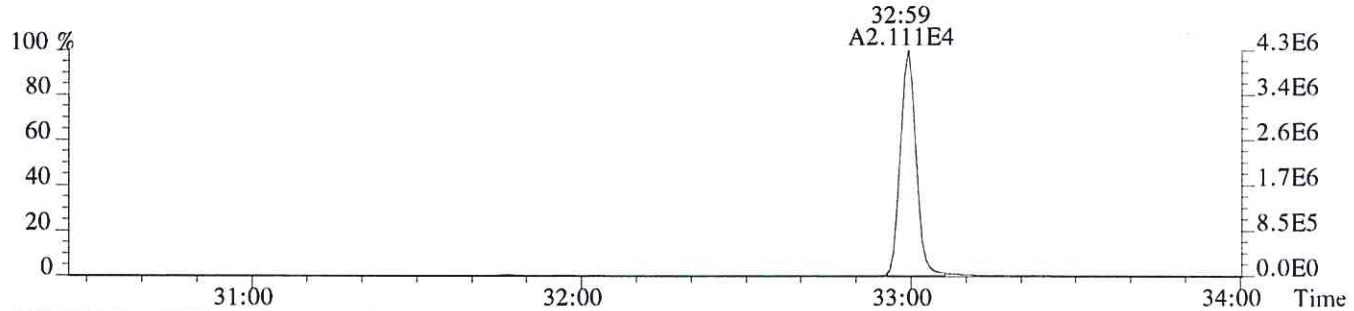
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,484.0,1.00%,F,T)



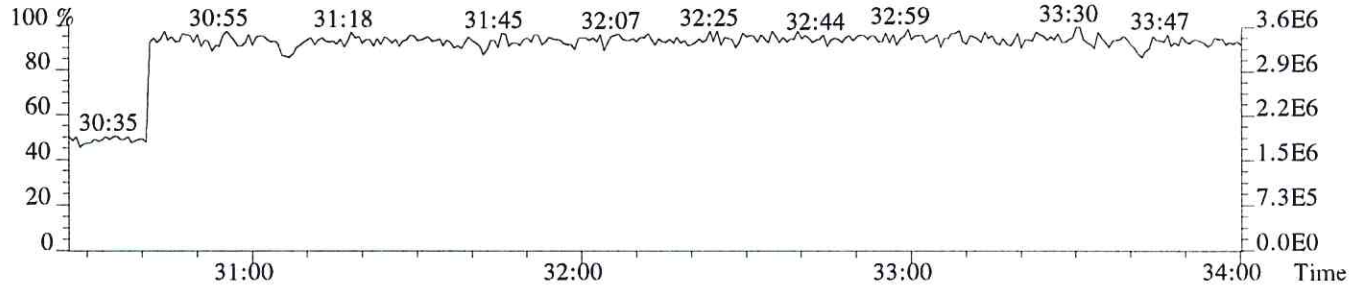
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,552.0,1.00%,F,T)



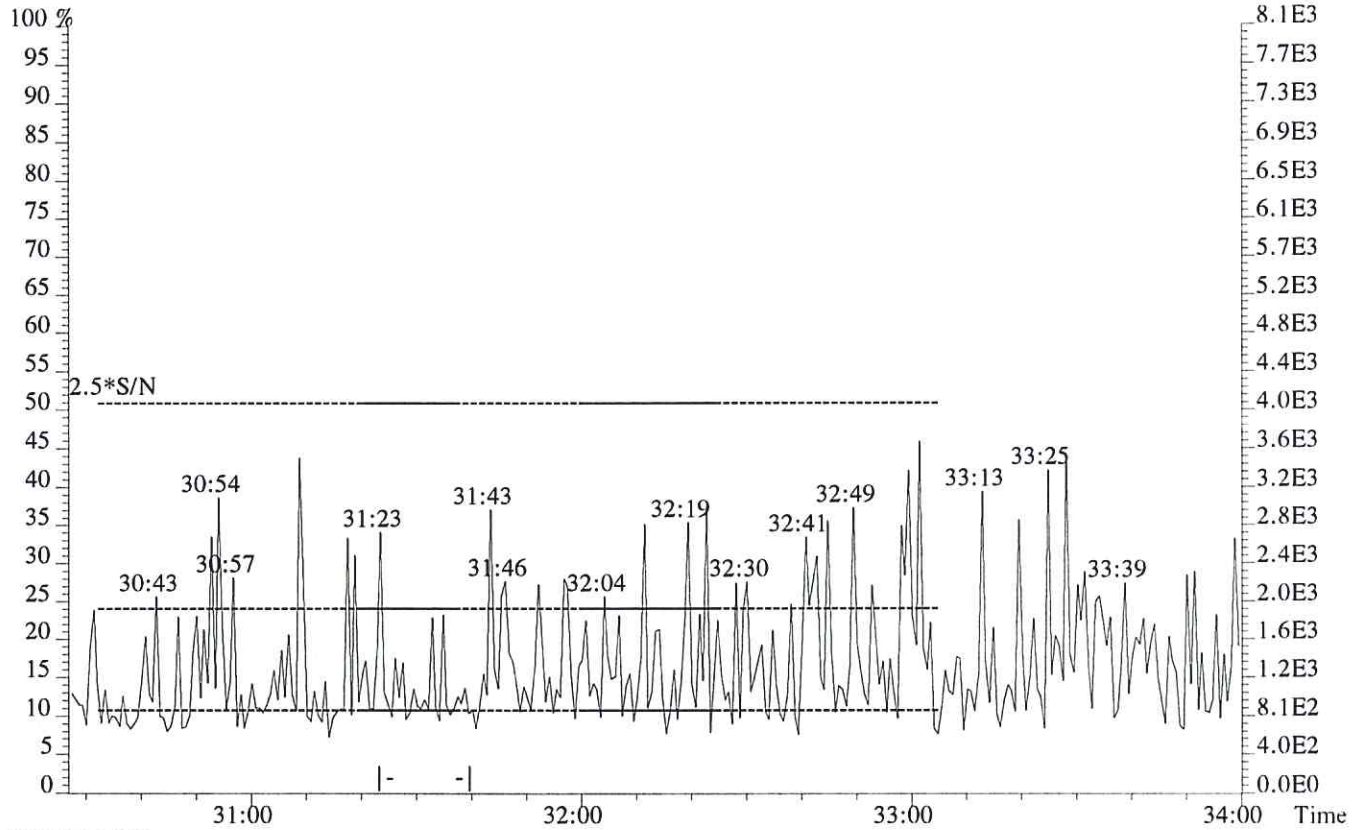
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,404.0,1.00%,F,T)



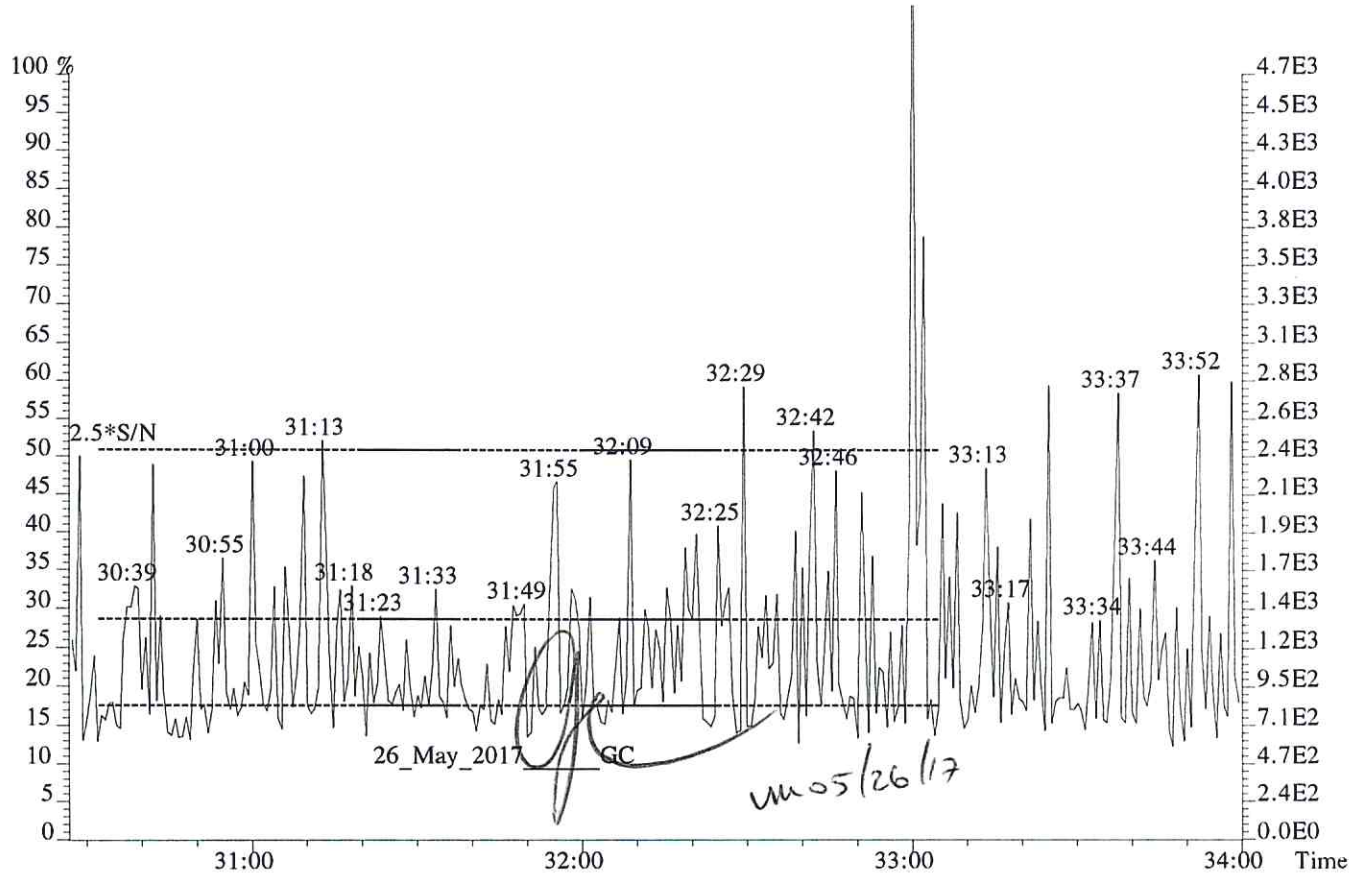
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



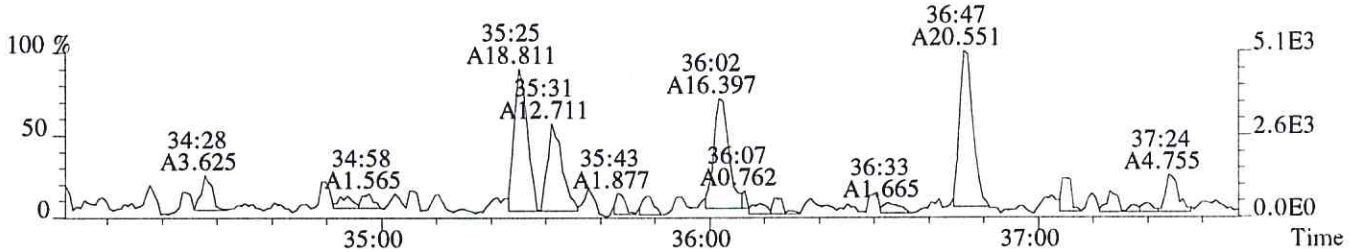
File:P406871 #1-321 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
355.8546 F:2



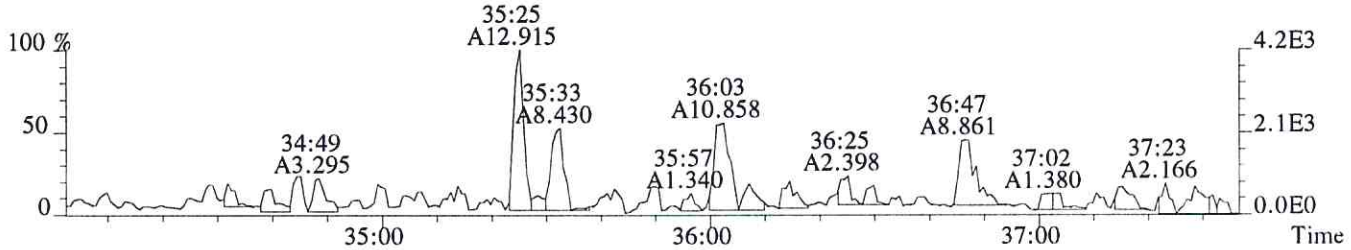
357.8516 F:2



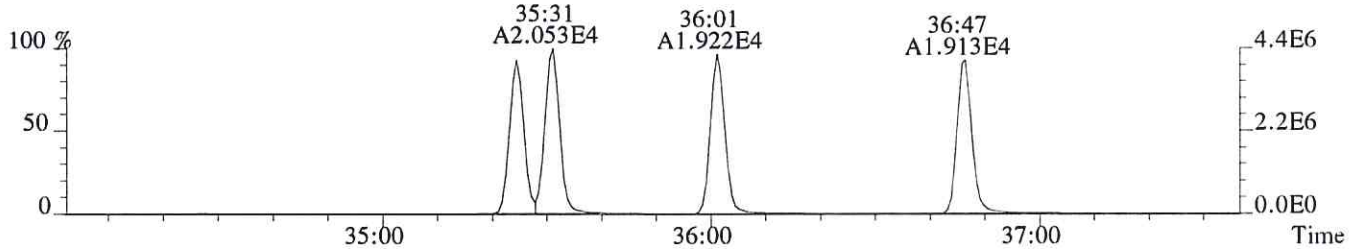
File:P406871 #1-322 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,416.0,0.40%,F,T)



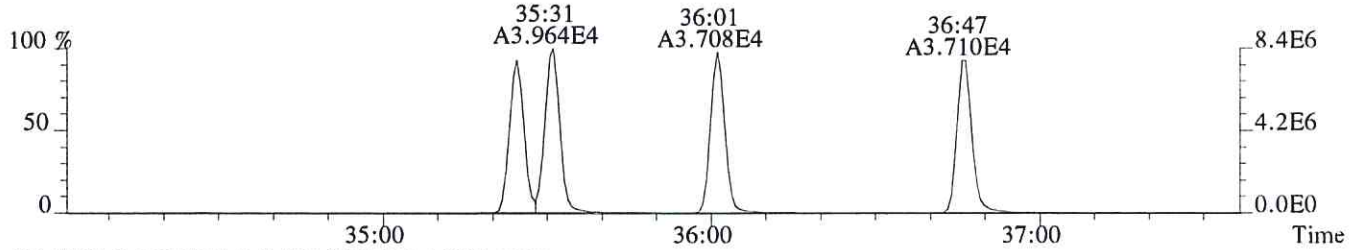
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,336.0,0.40%,F,T)



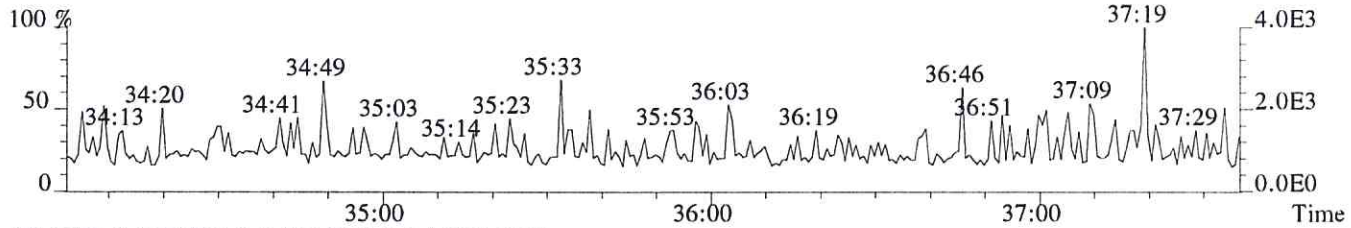
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,656.0,0.40%,F,T)



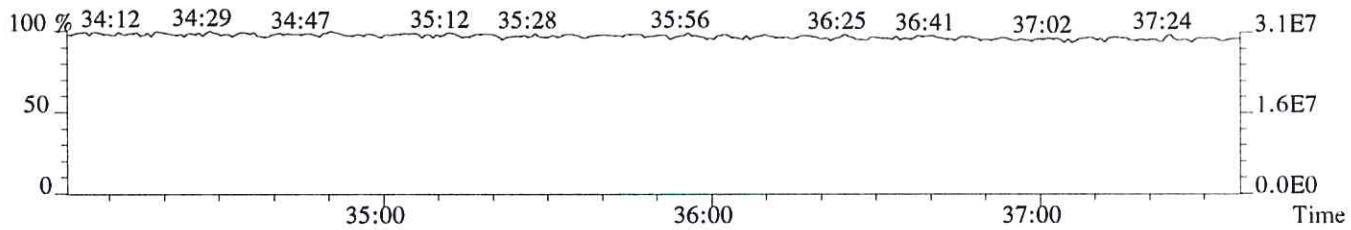
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1260.0,0.40%,F,T)



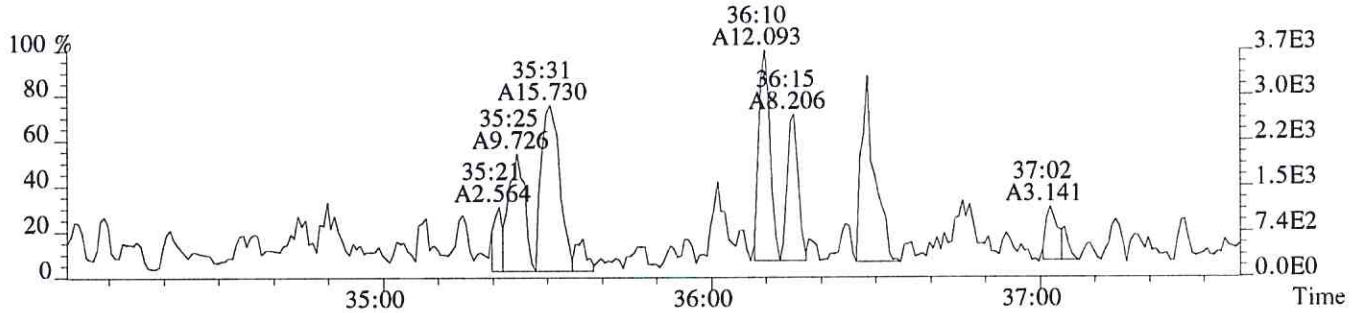
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



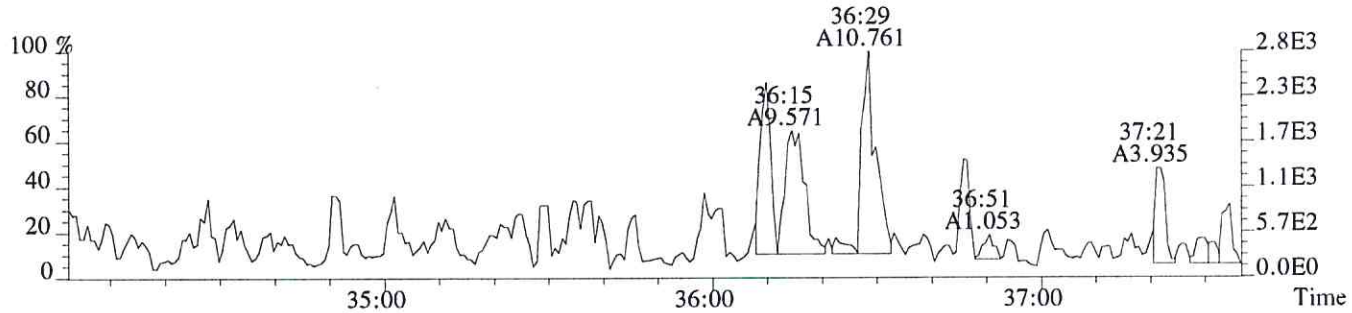
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



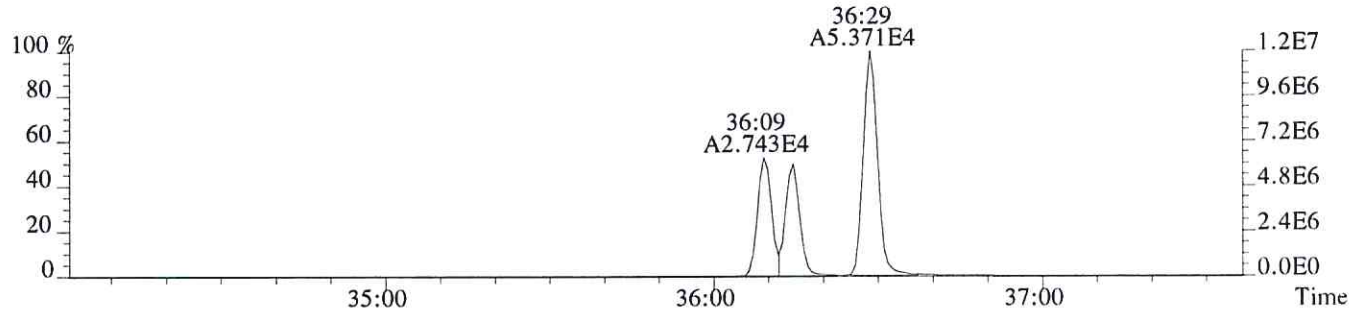
File:P406871 #1-322 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,584.0,0.40%,F,T)



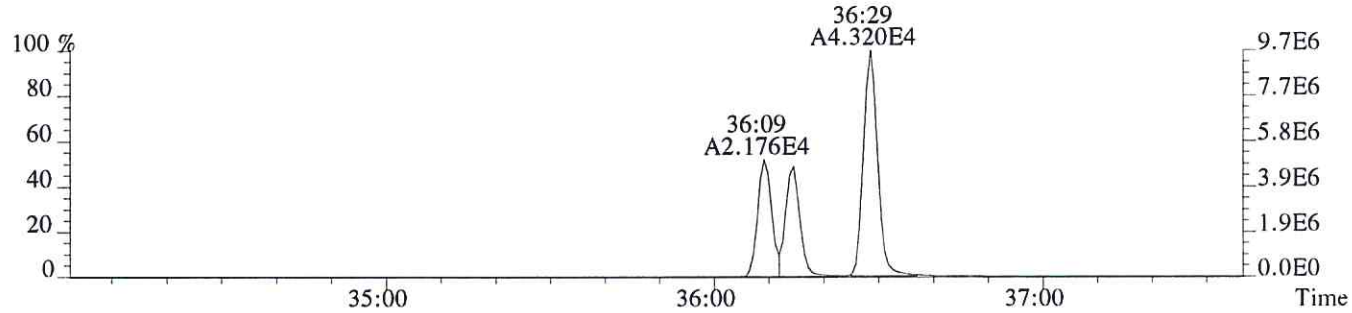
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,464.0,0.40%,F,T)



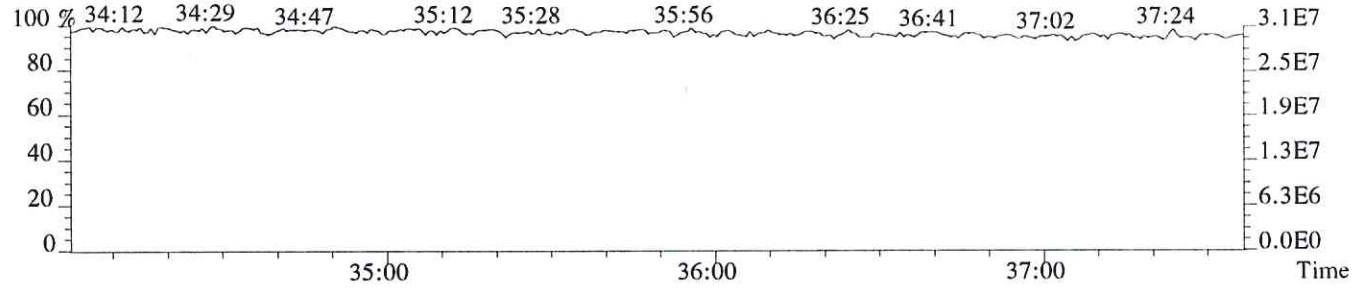
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2056.0,0.40%,F,T)



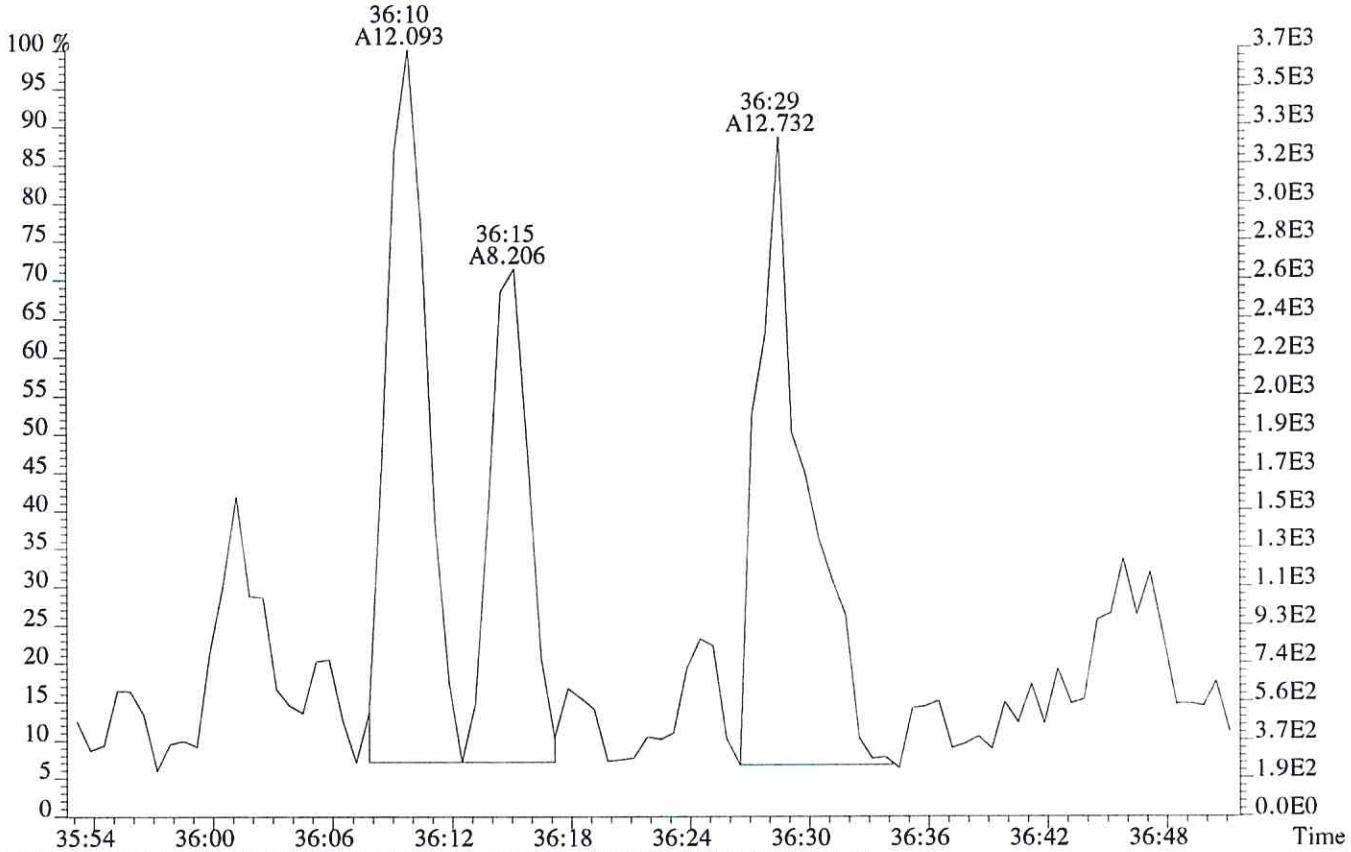
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1140.0,0.40%,F,T)



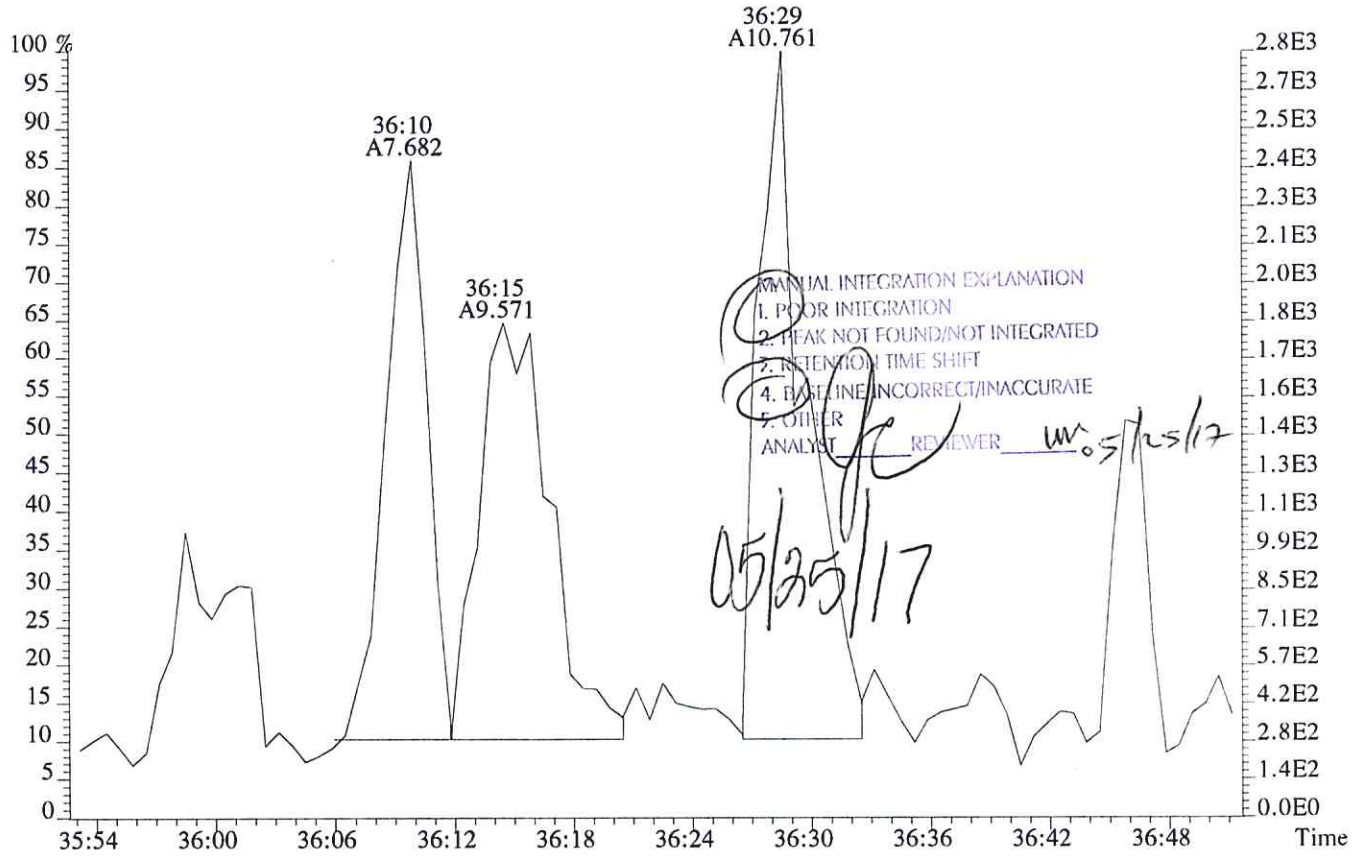
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P406871 #1-322 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,584.0,0.40%,F,T)



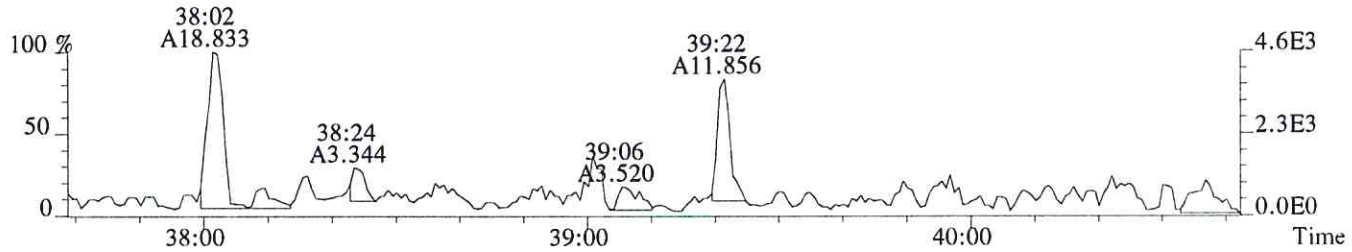
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,464.0,0.40%,F,T)



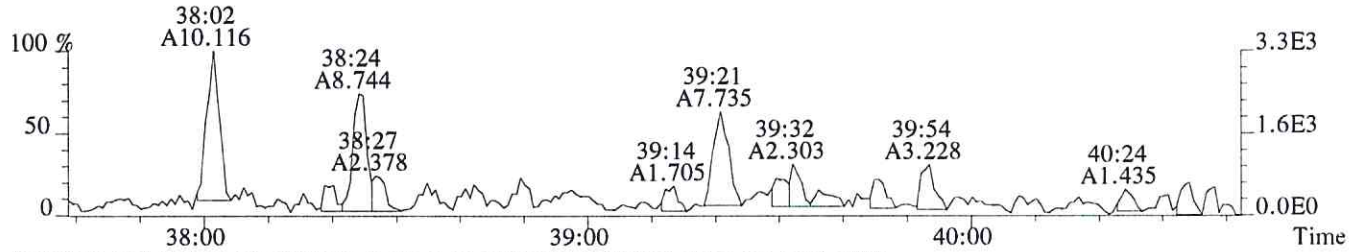
MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST _____ REVIEWER WW 05/25/17

05/25/17

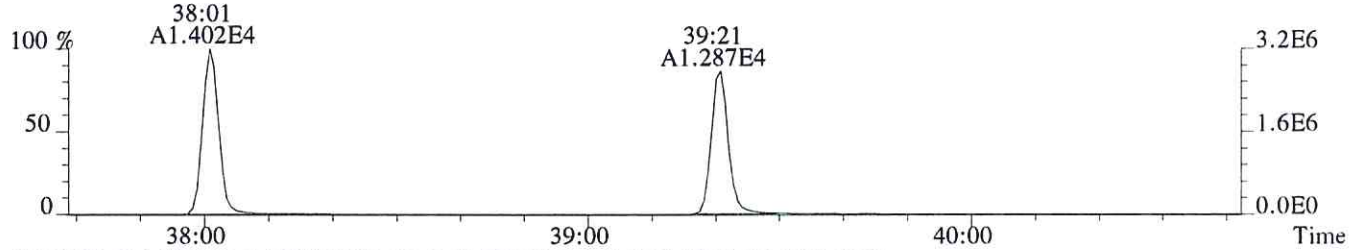
File:P406871 #1-276 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,576.0,0.50%,F,T)



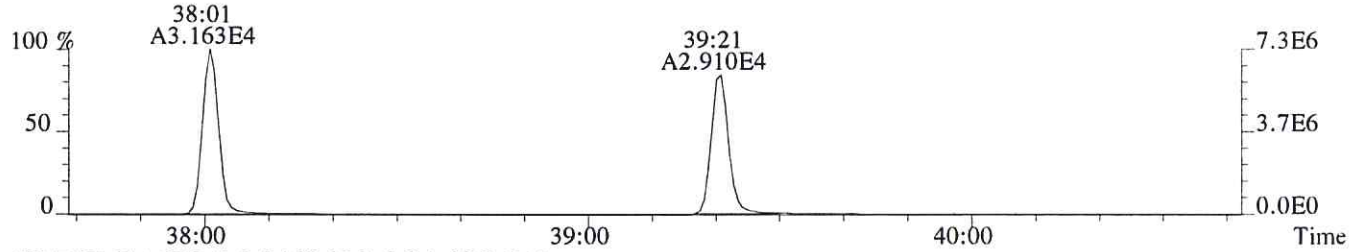
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,284.0,0.50%,F,T)



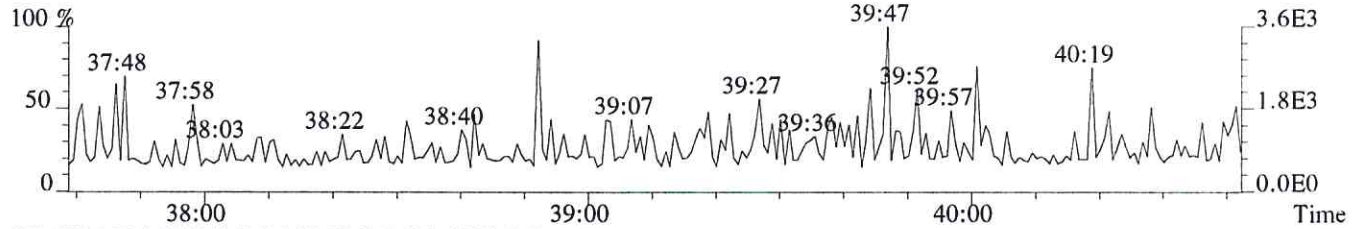
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1752.0,0.50%,F,T)



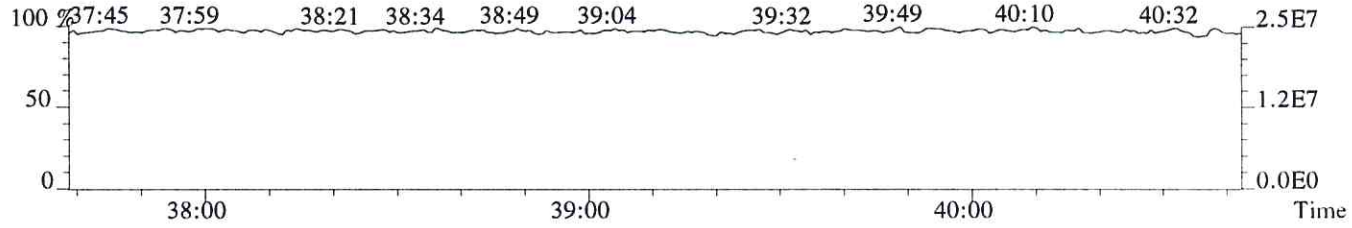
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3800.0,0.50%,F,T)



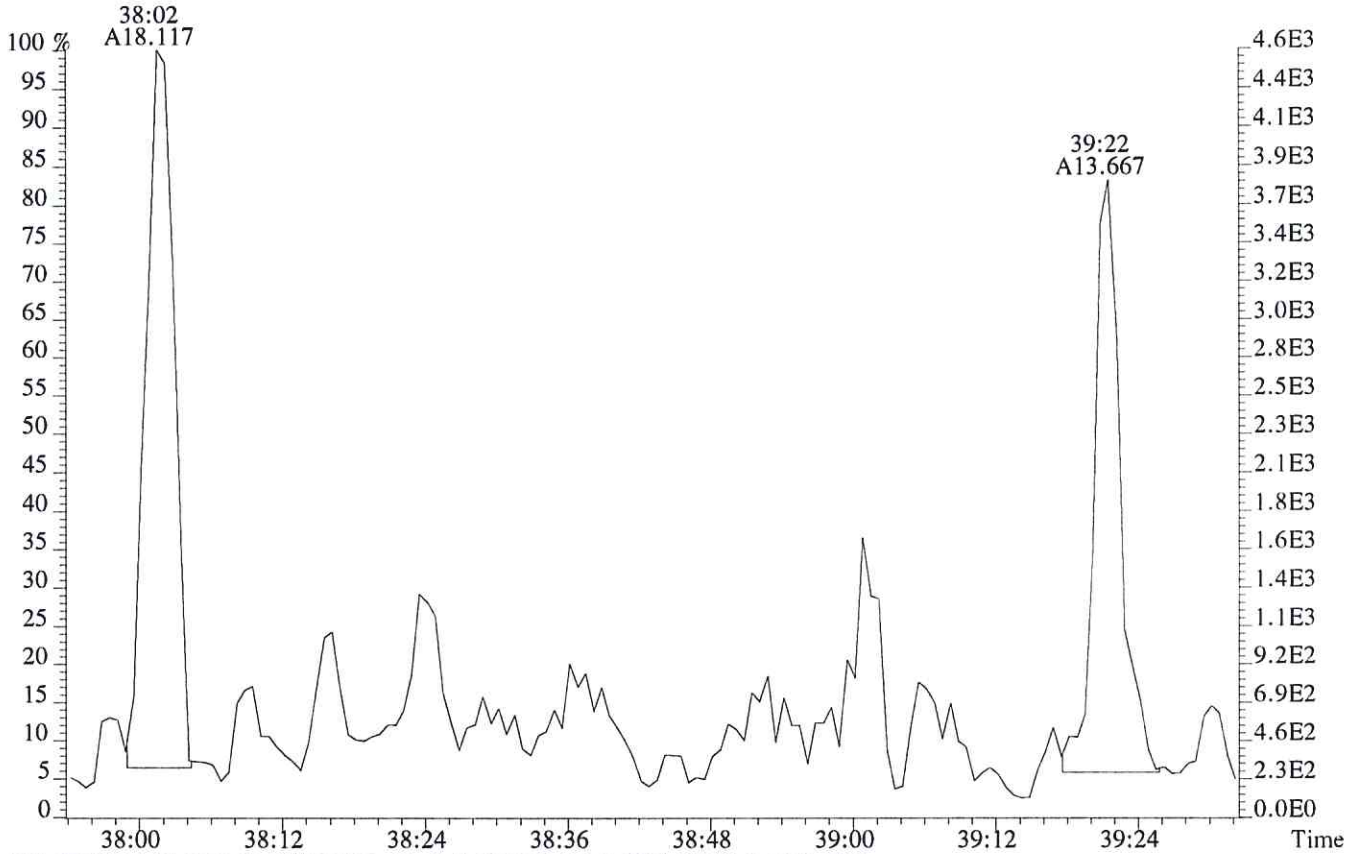
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



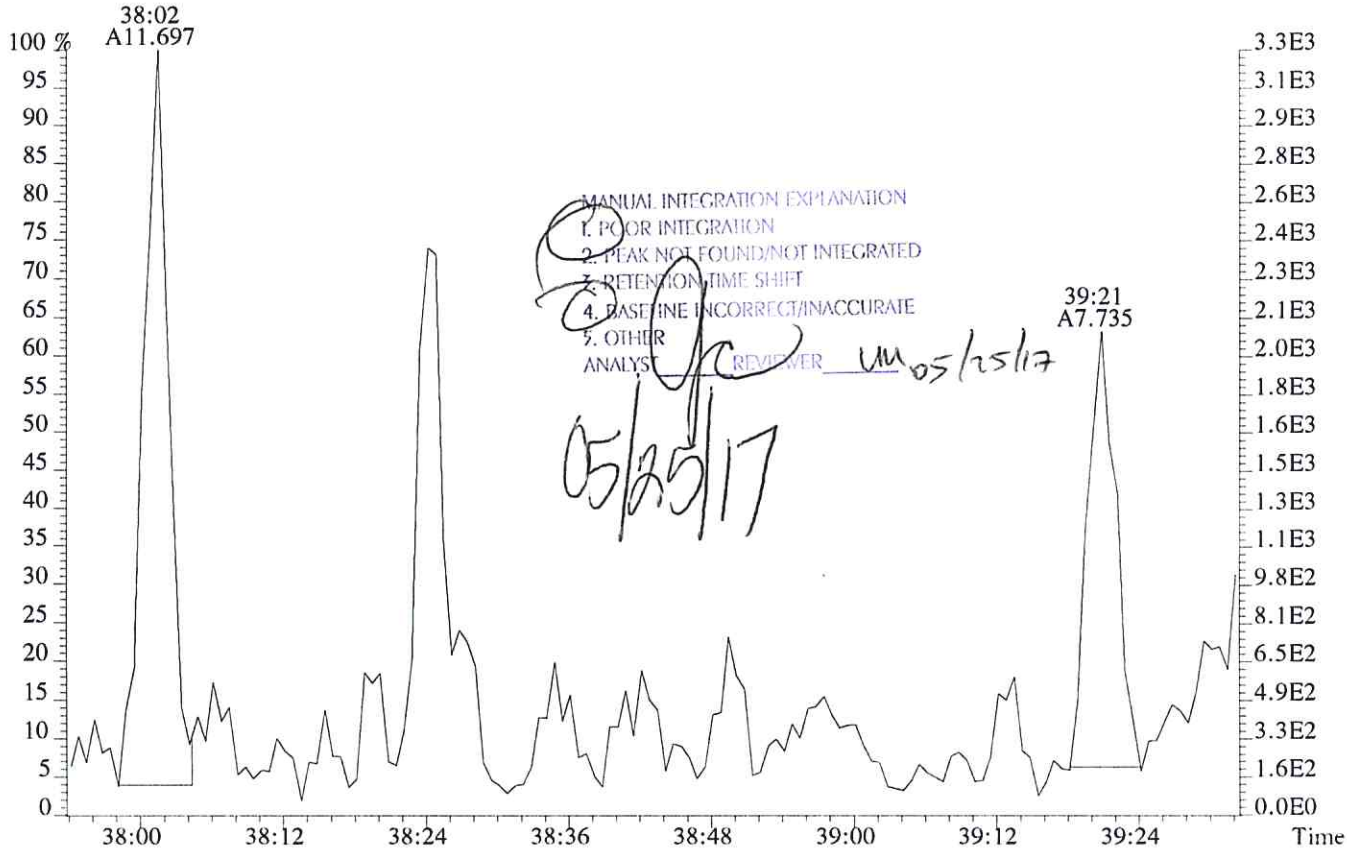
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



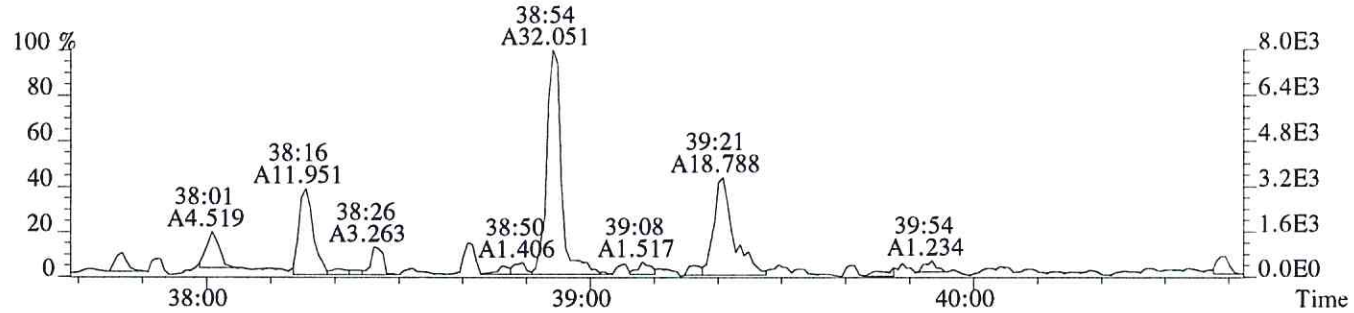
File:P406871 #1-276 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,576.0,0.50%,F,T)



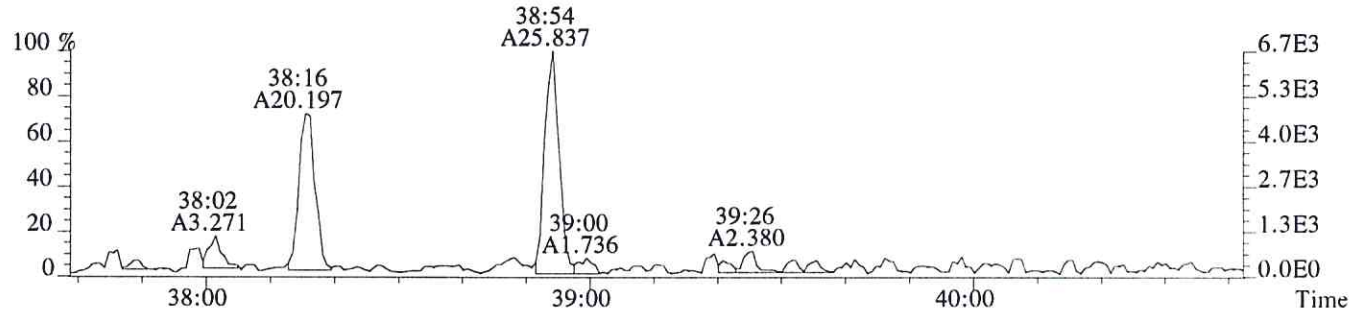
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,284.0,0.50%,F,T)



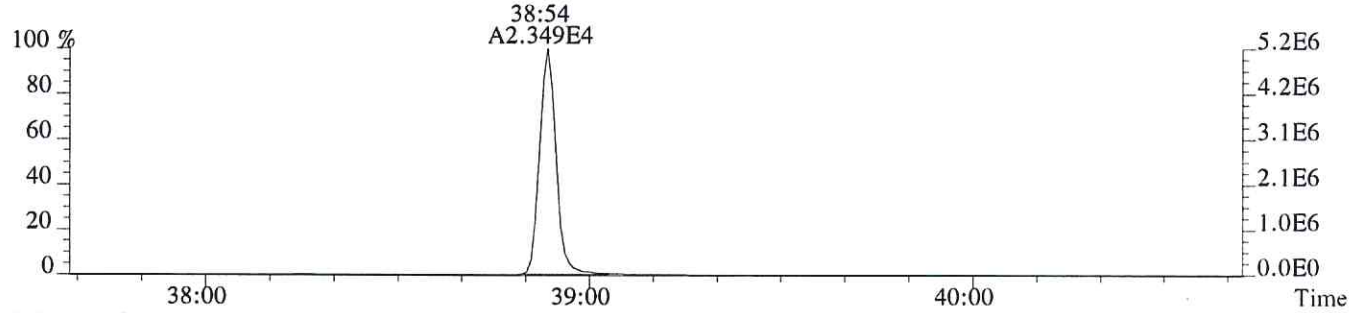
File:P406871 #1-276 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,256.0,0.40%,F,T)



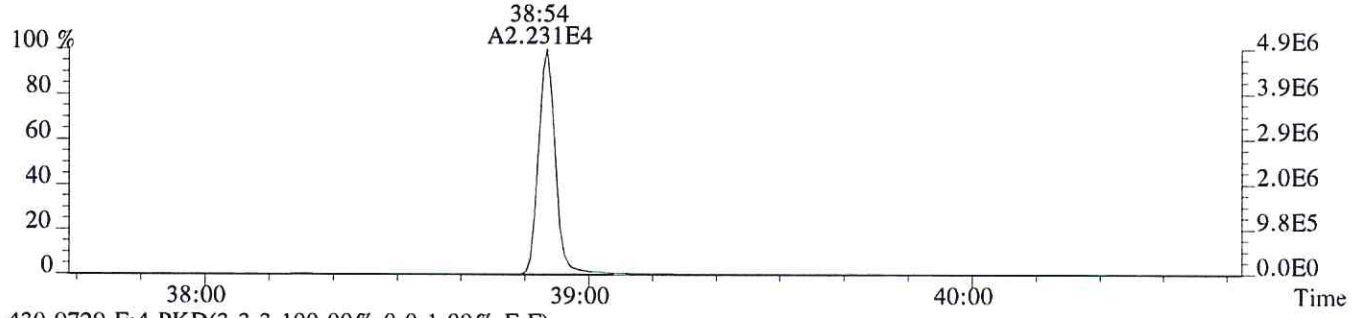
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,308.0,0.40%,F,T)



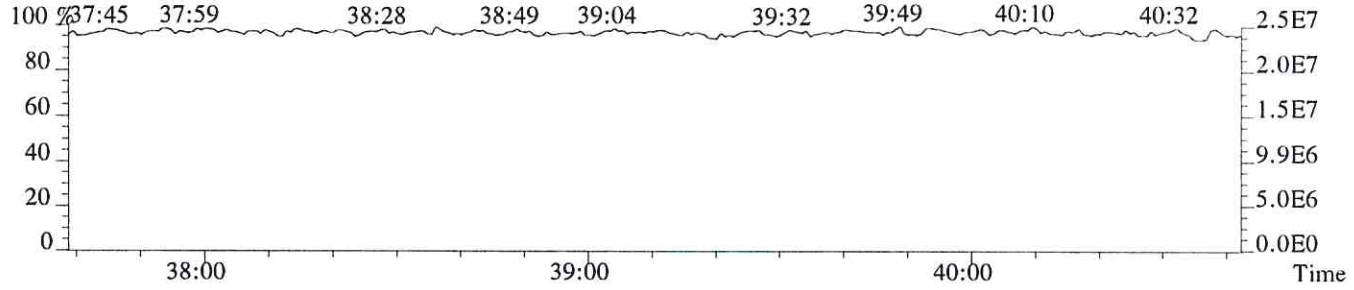
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,260.0,0.40%,F,T)



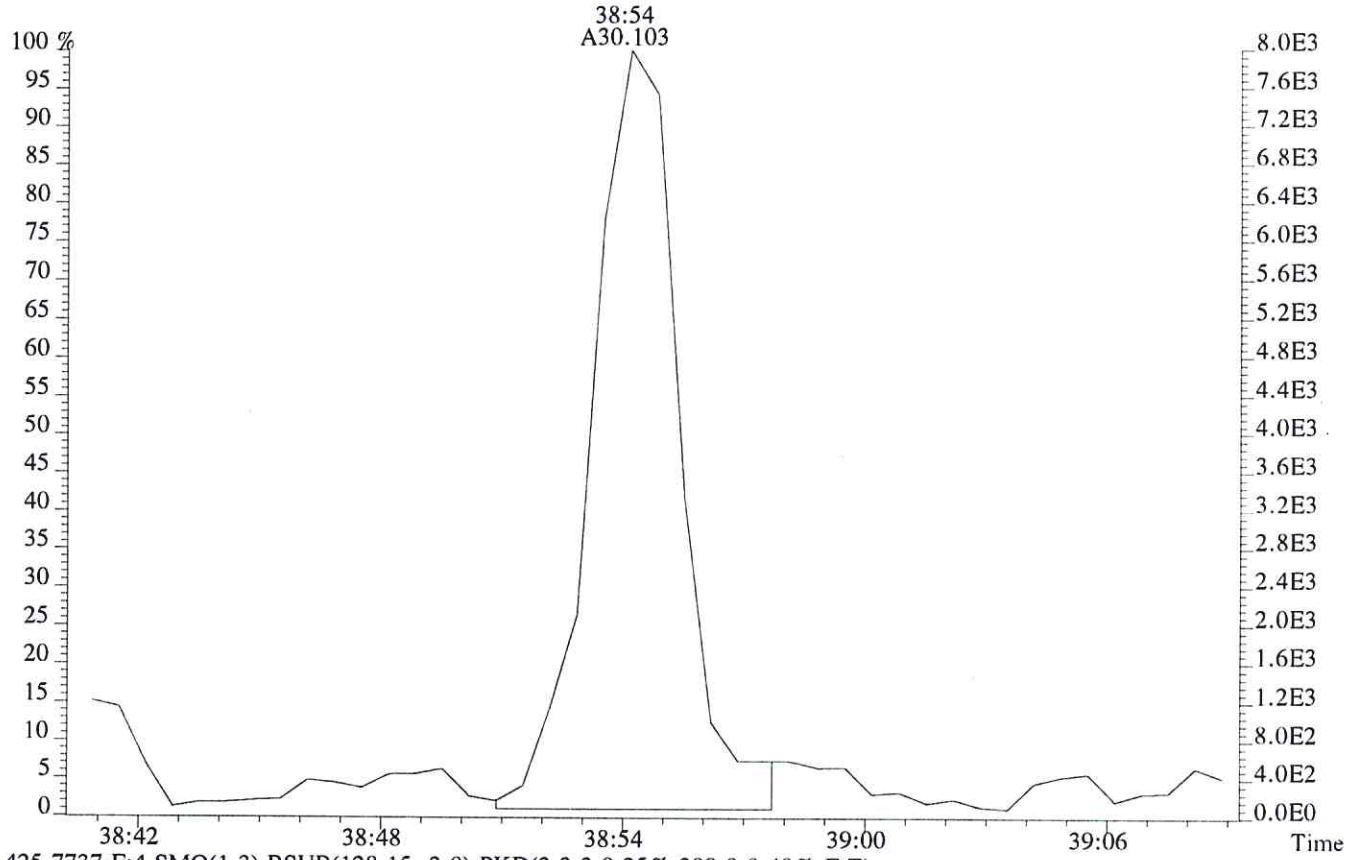
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,448.0,0.40%,F,T)



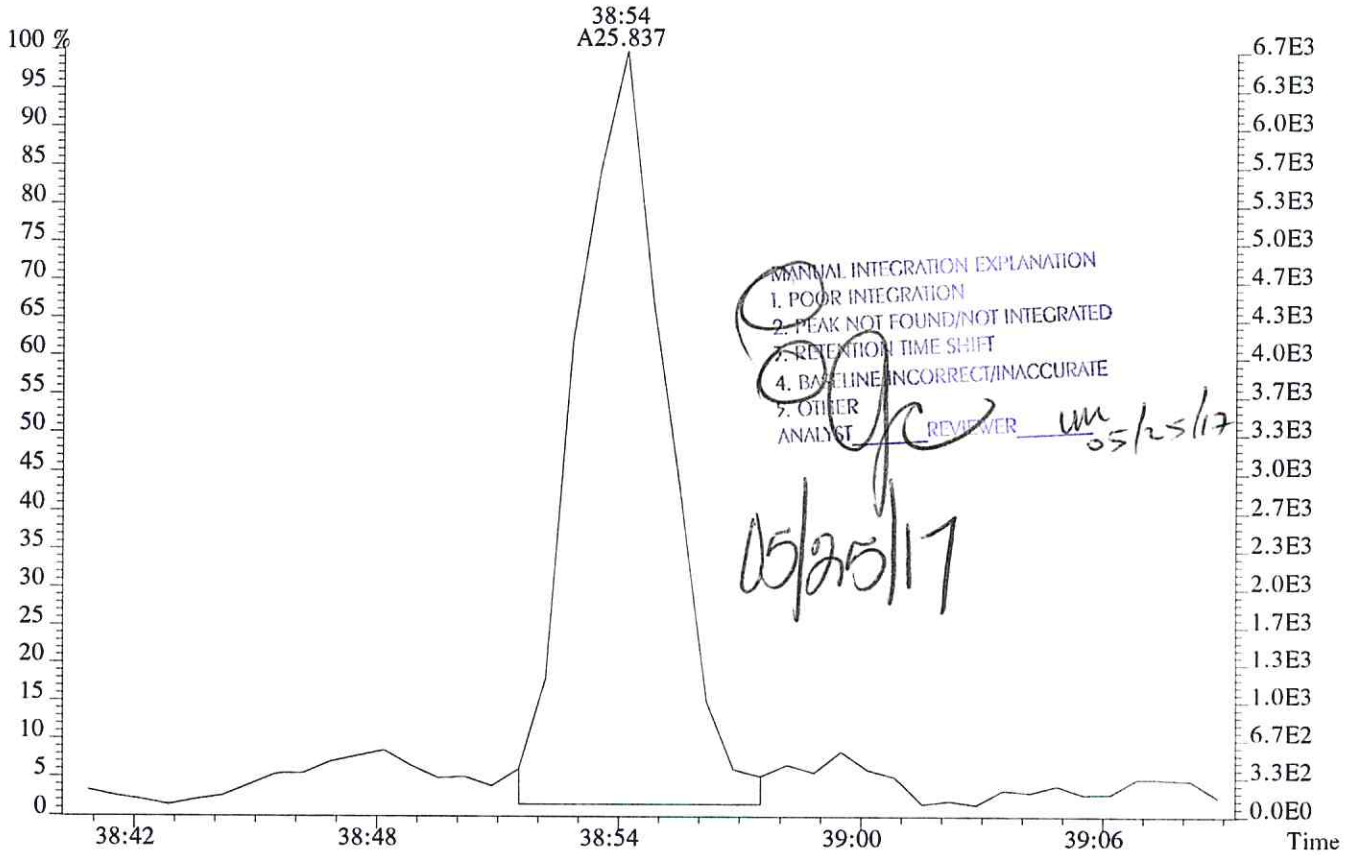
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P406871 #1-276 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,256.0,0.40%,F,T)



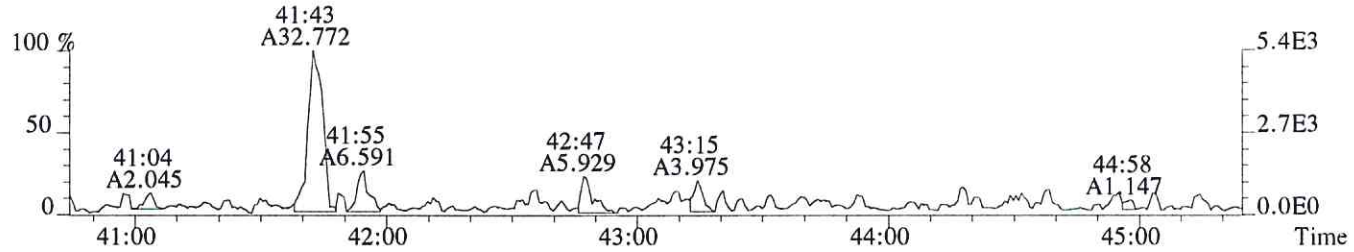
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,308.0,0.40%,F,T)



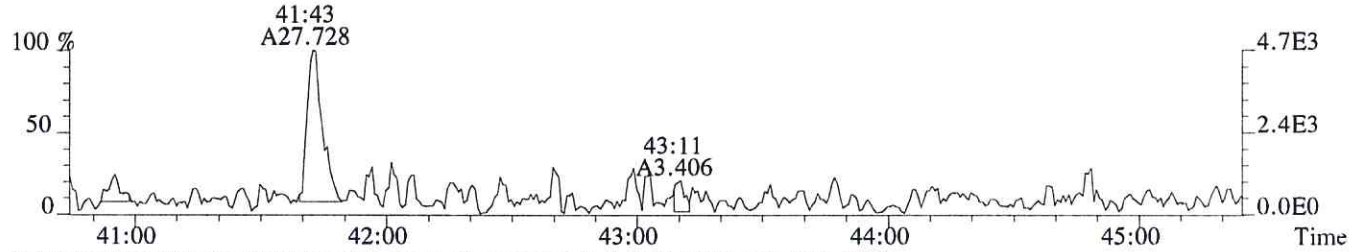
MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST REVIEWER UM 05/25/17

05/25/17

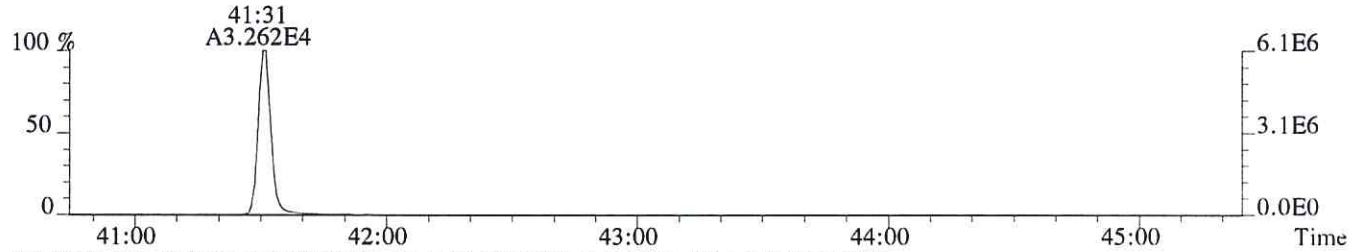
File:P406871 #1-421 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,308.0,0.40%,F,T)



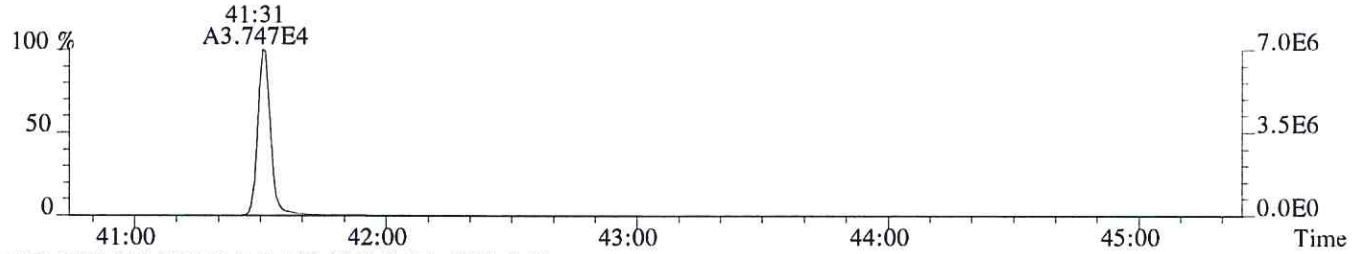
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,508.0,0.40%,F,T)



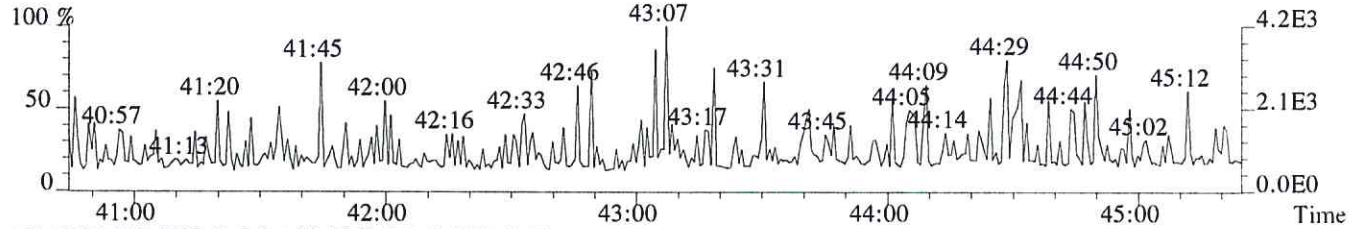
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2248.0,0.40%,F,T)



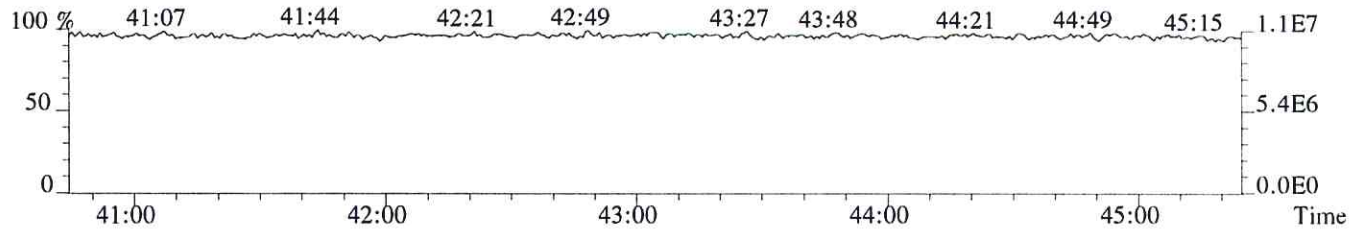
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4384.0,0.40%,F,T)



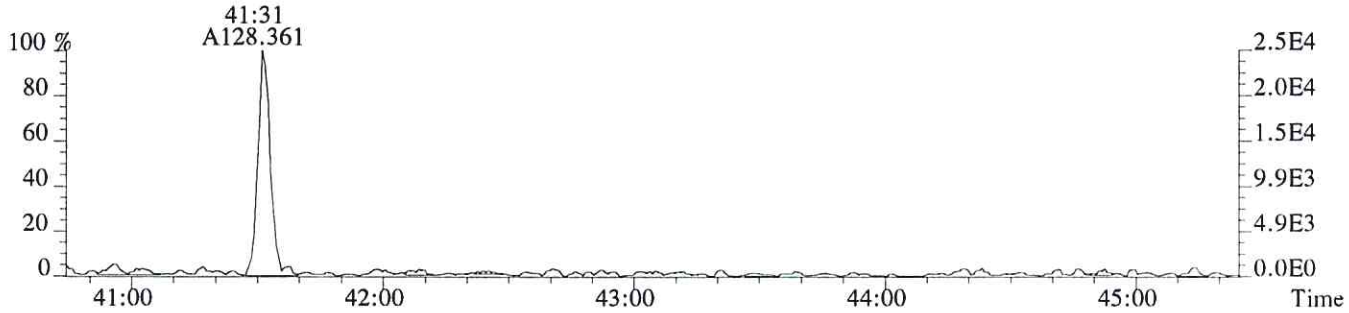
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



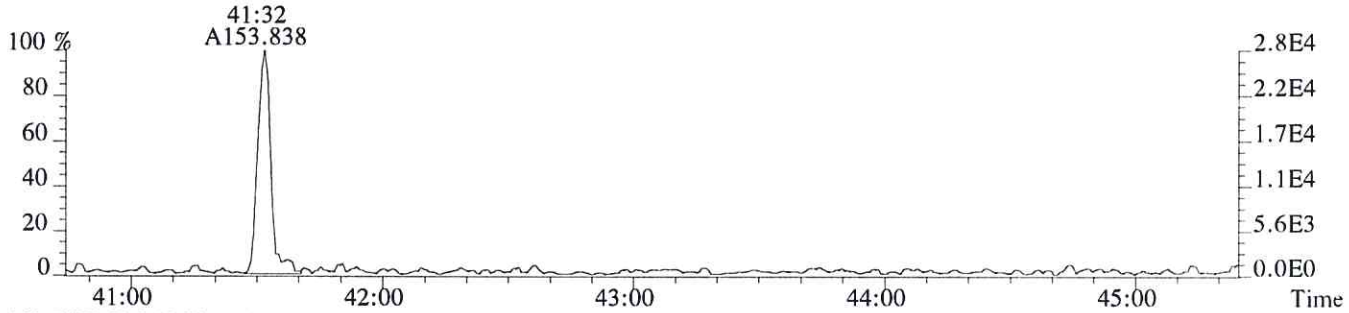
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



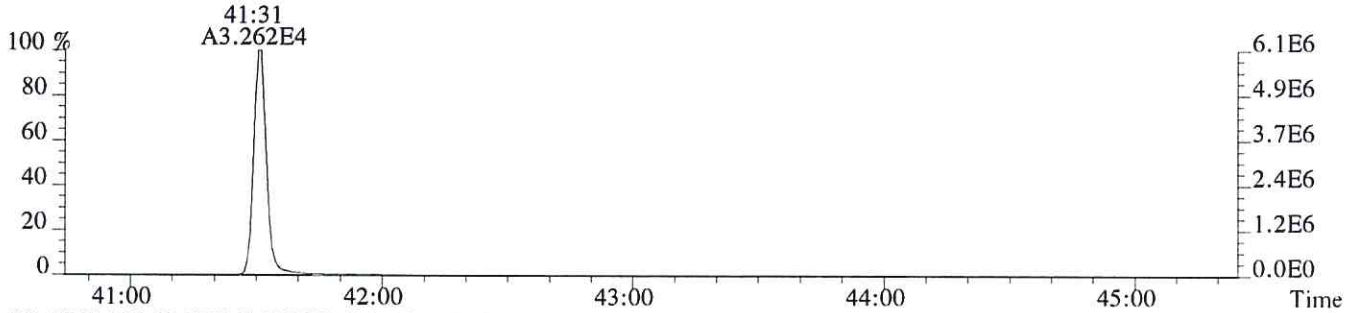
File:P406871 #1-421 Acq:24-MAY-2017 05:46:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,284.0,0.40%,F,T)



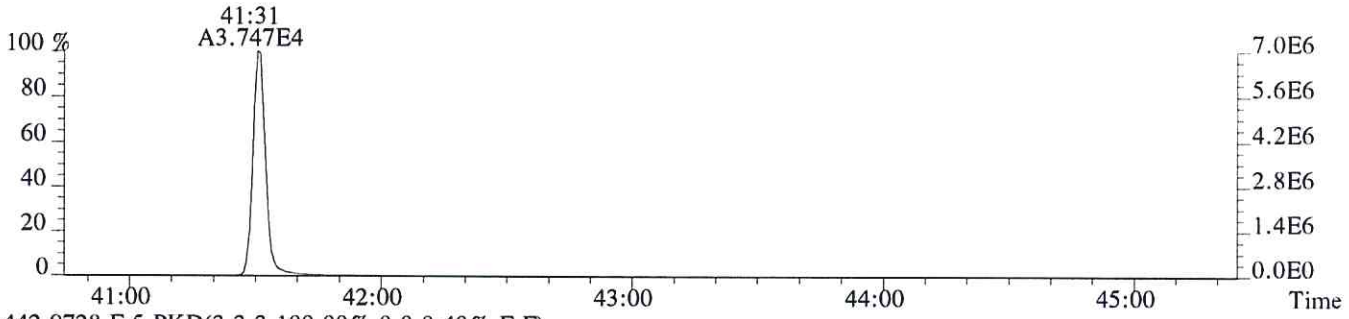
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,656.0,0.40%,F,T)



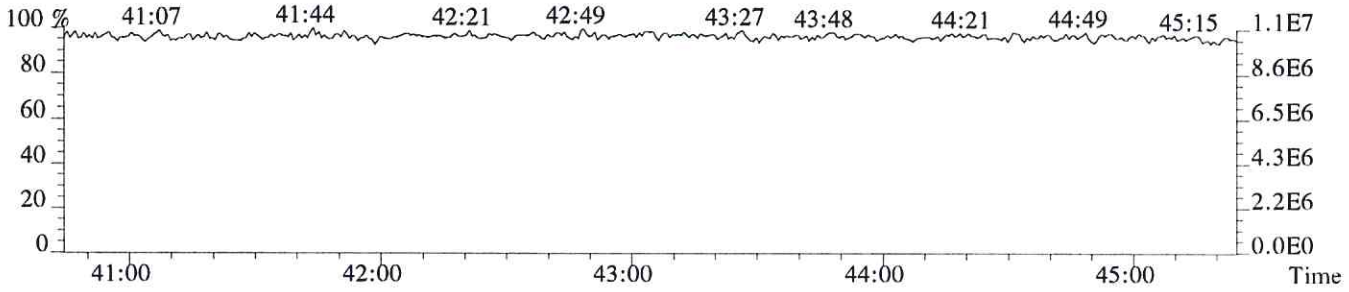
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2248.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4384.0,0.40%,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.
LCS

Run #12 Filename P406888 Samp: 1 Inj: 1 Acquired: 24-MAY-17 20:47:55
Processed: 30-MAY-17 12:36:14 Sample ID: EQ1700201-02

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	27:23	1.636e+03	2.065e+03	0.79	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	31:47	1.486e+04	9.441e+03	1.57	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	32:43	1.458e+04	9.156e+03	1.59	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	35:25	1.407e+04	1.131e+04	1.24	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	35:32	1.491e+04	1.181e+04	1.26	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:02	1.335e+04	1.062e+04	1.26	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	36:47	1.316e+04	1.046e+04	1.26	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:02	1.247e+04	1.191e+04	1.05	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:22	1.157e+04	1.140e+04	1.02	yes	no	1.187
10	Unk	OCDF	41:43	1.820e+04	2.027e+04	0.90	yes	no	1.035
11	Unk	2,3,7,8-TCDD	28:14	1.490e+03	1.942e+03	0.77	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:00	1.138e+04	7.383e+03	1.54	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:10	9.979e+03	8.099e+03	1.23	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:15	1.055e+04	8.399e+03	1.26	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	36:29	1.112e+04	8.871e+03	1.25	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	38:54	9.107e+03	8.932e+03	1.02	yes	no	0.882
17	Unk	OCDD	41:31	1.542e+04	1.729e+04	0.89	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	27:23	1.745e+04	2.265e+04	0.77	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	31:46	3.128e+04	1.996e+04	1.57	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	32:42	3.919e+04	2.490e+04	1.57	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:25	1.363e+04	2.673e+04	0.51	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	35:31	1.543e+04	2.987e+04	0.52	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:01	1.437e+04	2.757e+04	0.52	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	36:47	1.445e+04	2.810e+04	0.51	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:01	1.078e+04	2.448e+04	0.44	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:21	1.043e+04	2.330e+04	0.45	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	28:13	1.491e+04	1.904e+04	0.78	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	32:59	2.485e+04	1.552e+04	1.60	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:09	2.044e+04	1.622e+04	1.26	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:15	2.072e+04	1.631e+04	1.27	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:54	1.893e+04	1.798e+04	1.05	yes	no	0.817
32	IS	13C-OCDD	41:31	2.755e+04	3.045e+04	0.90	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	27:36	4.352e+04	5.506e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:29	5.247e+04	4.164e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:14	1.576e+04				no	0.958

$$\text{OCDD} = \frac{(1.542e+04 + 1.729e+04)\ \times 4000\ \text{pg} \times 1}{(2.755e+04 + 3.045e+04)\ \times\ \text{g} \times\ /\ 100 \times 0.980} =$$

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
LCS

Run #12 Filename P406888 Samp: 1 Inj: 1 Acquired: 24-MAY-17 20:47:55
Processed: 30-MAY-17 12:36:14 LAB. ID: EQ1700201-02

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.62e+05	6.80e+02	3.8e+02	3.38e+05	1.06e+03	3.2e+02
2	1,2,3,7,8-PeCDF	2.74e+06	5.44e+02	5.0e+03	1.73e+06	1.18e+03	1.5e+03
3	2,3,4,7,8-PeCDF	2.85e+06	5.44e+02	5.2e+03	1.77e+06	1.18e+03	1.5e+03
4	1,2,3,4,7,8-HxCDF	3.13e+06	5.88e+02	5.3e+03	2.47e+06	5.40e+02	4.6e+03
5	1,2,3,6,7,8-HxCDF	3.14e+06	5.88e+02	5.3e+03	2.49e+06	5.40e+02	4.6e+03
6	2,3,4,6,7,8-HxCDF	2.90e+06	5.88e+02	4.9e+03	2.35e+06	5.40e+02	4.3e+03
7	1,2,3,7,8,9-HxCDF	2.73e+06	5.88e+02	4.6e+03	2.14e+06	5.40e+02	4.0e+03
8	1,2,3,4,6,7,8-HpCDF	2.86e+06	1.80e+03	1.6e+03	2.78e+06	1.39e+03	2.0e+03
9	1,2,3,4,7,8,9-HpCDF	2.51e+06	1.80e+03	1.4e+03	2.36e+06	1.39e+03	1.7e+03
10	OCDF	3.32e+06	4.12e+02	8.1e+03	3.70e+06	2.53e+03	1.5e+03
11	2,3,7,8-TCDD	2.71e+05	1.20e+03	2.3e+02	3.45e+05	6.84e+02	5.0e+02
12	1,2,3,7,8-PeCDD	2.17e+06	7.64e+02	2.8e+03	1.46e+06	5.28e+02	2.8e+03
13	1,2,3,4,7,8-HxCDD	2.26e+06	4.16e+02	5.4e+03	1.88e+06	3.80e+02	5.0e+03
14	1,2,3,6,7,8-HxCDD	2.26e+06	4.16e+02	5.4e+03	1.81e+06	3.80e+02	4.8e+03
15	1,2,3,7,8,9-HxCDD	2.36e+06	4.16e+02	5.7e+03	1.94e+06	3.80e+02	5.1e+03
16	1,2,3,4,6,7,8-HpCDD	2.05e+06	1.40e+02	1.5e+04	1.99e+06	4.00e+02	5.0e+03
17	OCDD	2.90e+06	3.68e+02	7.9e+03	3.32e+06	1.25e+03	2.7e+03
18	13C-2,3,7,8-TCDF	2.92e+06	6.94e+03	4.2e+02	3.79e+06	2.83e+03	1.3e+03
19	13C-1,2,3,7,8-PeCDF	5.79e+06	4.24e+02	1.4e+04	3.68e+06	5.32e+02	6.9e+03
20	13C-2,3,4,7,8-PeCDF	7.73e+06	4.24e+02	1.8e+04	4.91e+06	5.32e+02	9.2e+03
21	13C-1,2,3,4,7,8-HxCDF	3.03e+06	4.64e+02	6.5e+03	5.91e+06	1.19e+03	5.0e+03
22	13C-1,2,3,6,7,8-HxCDF	3.29e+06	4.64e+02	7.1e+03	6.25e+06	1.19e+03	5.2e+03
23	13C-2,3,4,6,7,8-HxCDF	3.15e+06	4.64e+02	6.8e+03	6.08e+06	1.19e+03	5.1e+03
24	13C-1,2,3,7,8,9-HxCDF	3.05e+06	4.64e+02	6.6e+03	5.88e+06	1.19e+03	4.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.48e+06	1.28e+03	1.9e+03	5.59e+06	1.06e+03	5.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.28e+06	1.28e+03	1.8e+03	5.01e+06	1.06e+03	4.7e+03
27	13C-2,3,7,8-TCDD	2.77e+06	4.39e+03	6.3e+02	3.51e+06	1.67e+03	2.1e+03
28	13C-1,2,3,7,8-PeCDD	4.97e+06	7.16e+02	6.9e+03	3.07e+06	5.84e+02	5.3e+03
29	13C-1,2,3,4,7,8-HxCDD	4.71e+06	1.56e+03	3.0e+03	3.74e+06	8.00e+02	4.7e+03
30	13C-1,2,3,6,7,8-HxCDD	4.53e+06	1.56e+03	2.9e+03	3.53e+06	8.00e+02	4.4e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.24e+06	6.08e+02	7.0e+03	4.01e+06	5.76e+02	7.0e+03
32	13C-OCDD	5.24e+06	3.20e+03	1.6e+03	5.80e+06	1.35e+03	4.3e+03
33	13C-1,2,3,4-TCDD	7.76e+06	4.39e+03	1.8e+03	9.75e+06	1.67e+03	5.8e+03
34	13C-1,2,3,7,8,9-HxCDD	1.15e+07	1.56e+03	7.4e+03	9.18e+06	8.00e+02	1.1e+04
35	37Cl-2,3,7,8-TCDD	2.82e+06	1.47e+03	1.9e+03			

---Sample Calculation---

$$D/L\ TCDD = \frac{2.5 \times (1.204e+03 + 6.840e+02\ ) \times 2000}{(2.766e+06 + 3.514e+06\ ) \times (\qquad\qquad) \times 0.873} =$$

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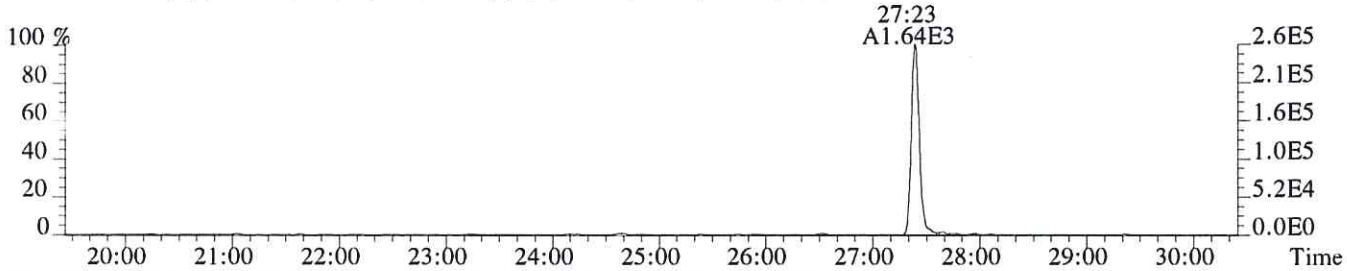
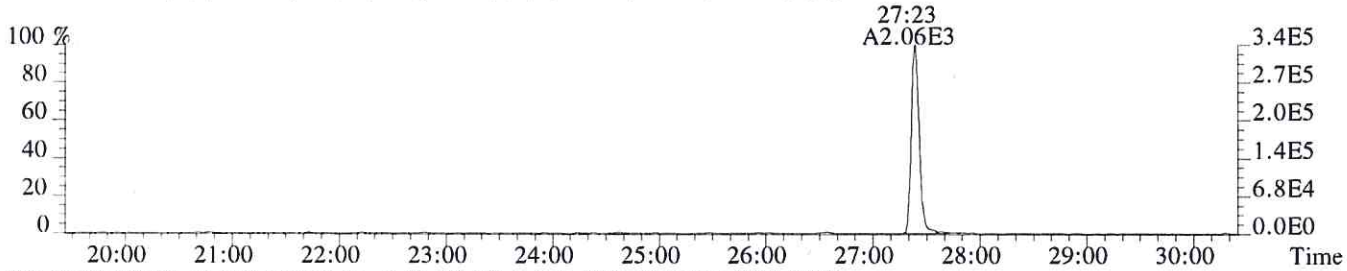
File:P406888 #1-779 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

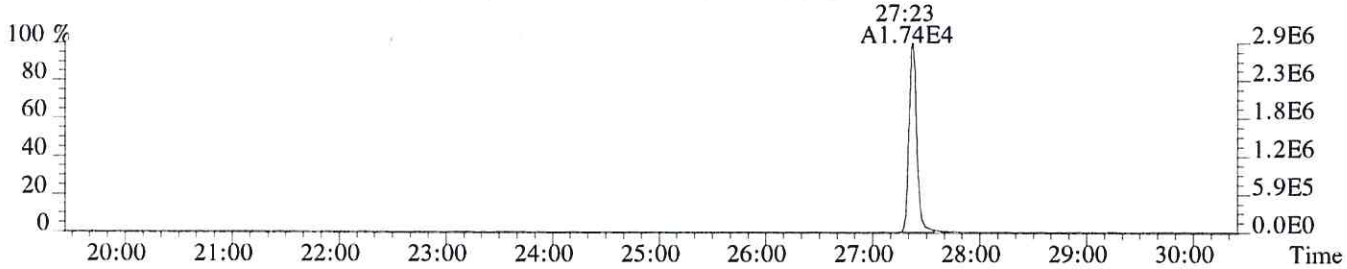
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,680.0,1.00%,F,T)



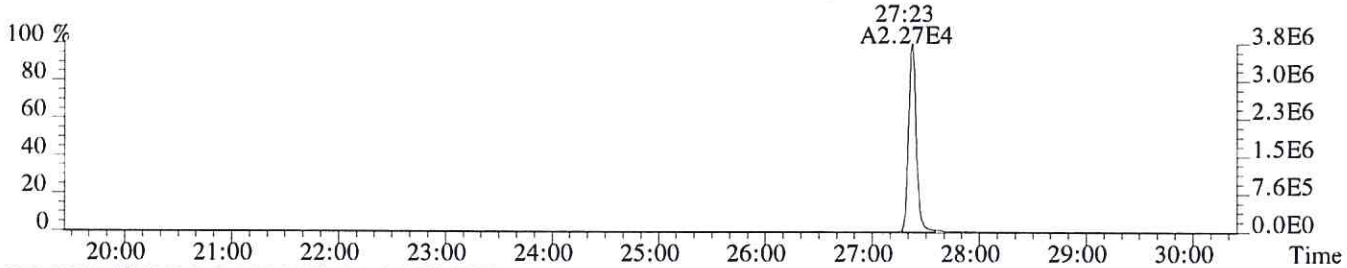
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1064.0,1.00%,F,T)



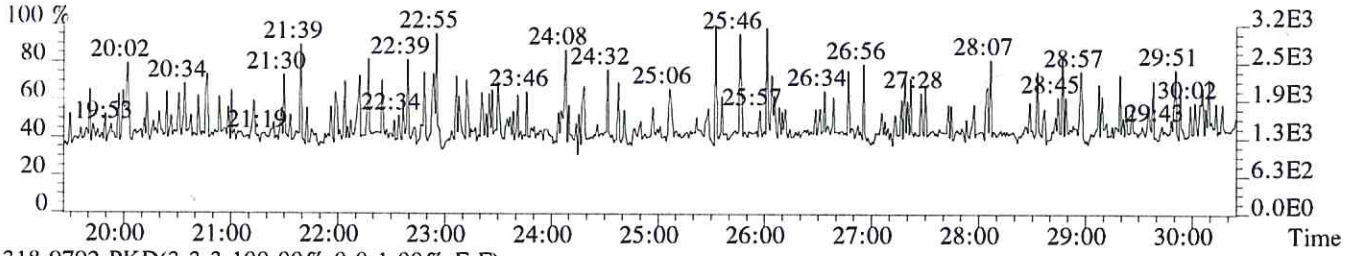
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6944.0,1.00%,F,T)



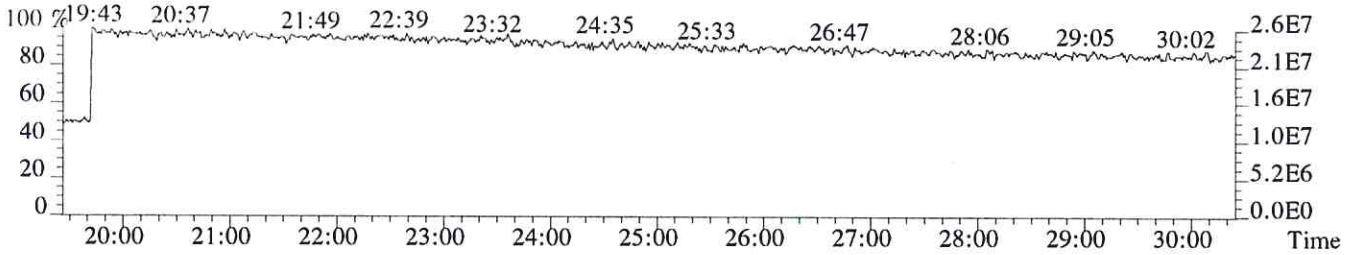
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2832.0,1.00%,F,T)



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

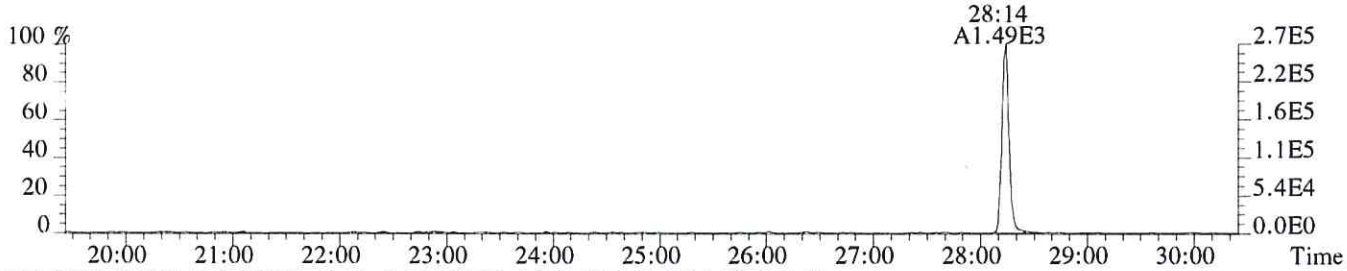


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

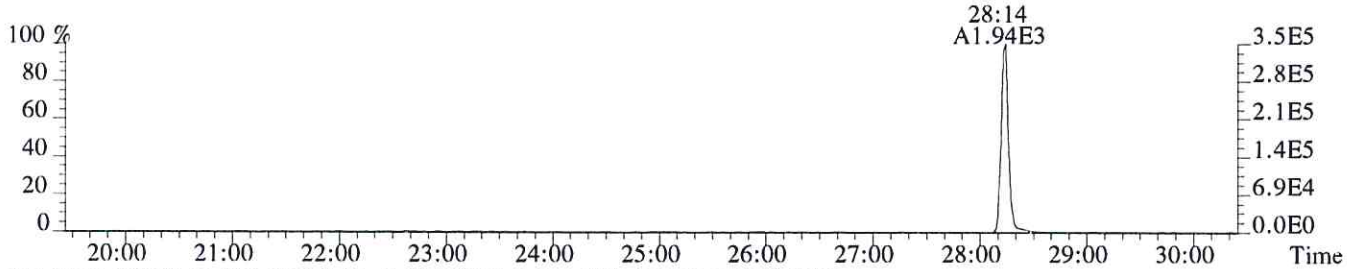


File:P406888 #1-779 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

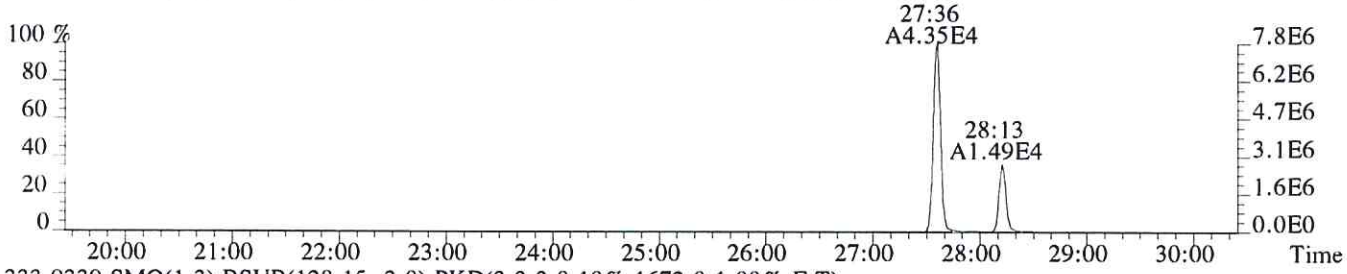
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1204.0,1.00%,F,T)



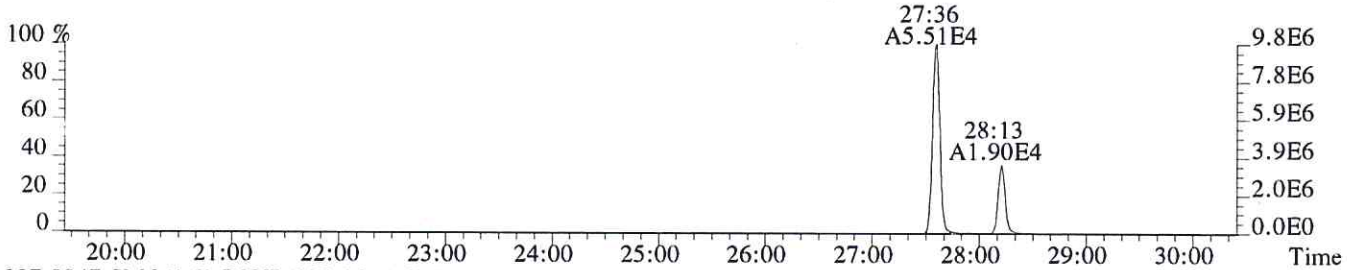
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



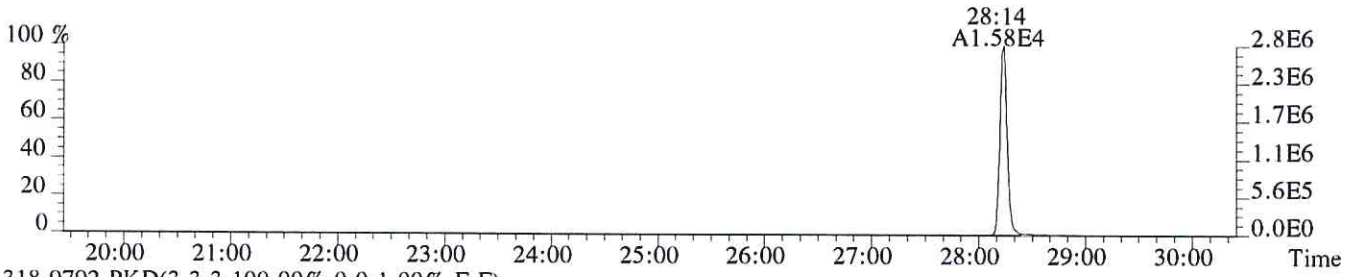
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4392.0,1.00%,F,T)



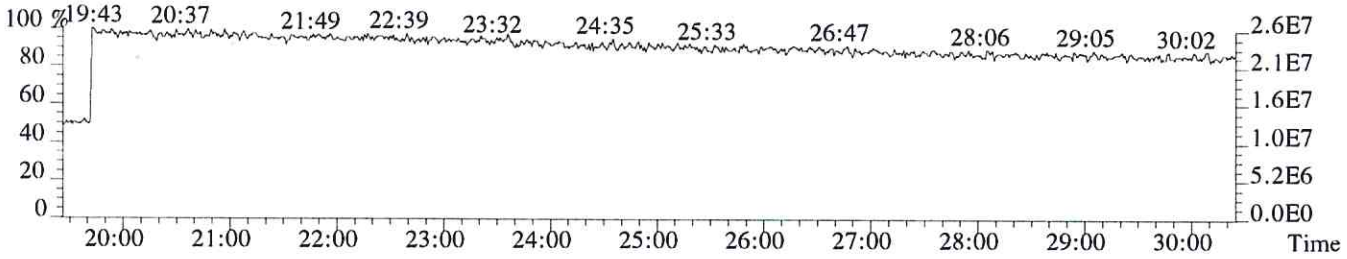
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1672.0,1.00%,F,T)



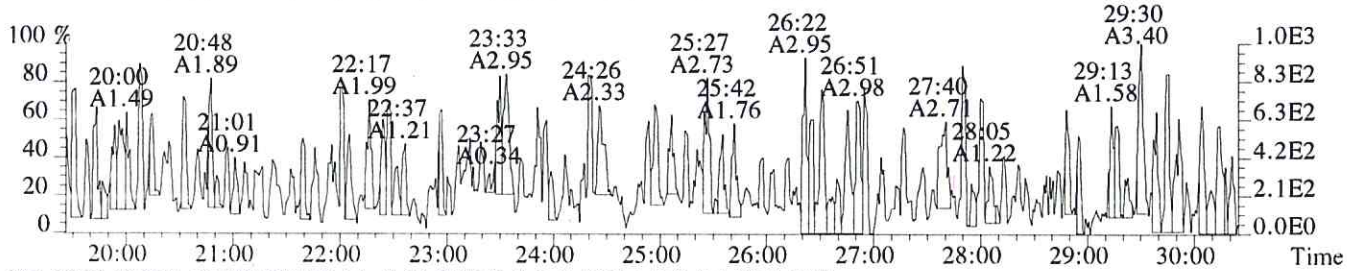
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1472.0,1.00%,F,T)



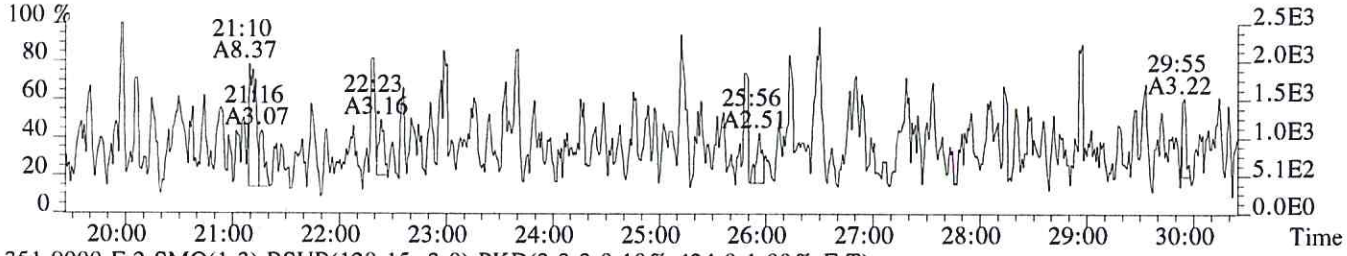
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



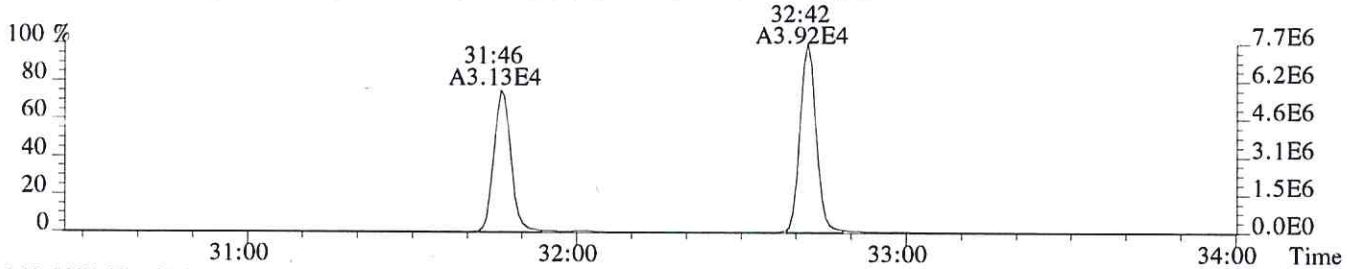
File:P406888 #1-779 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,256.0,1.00%,F,T)



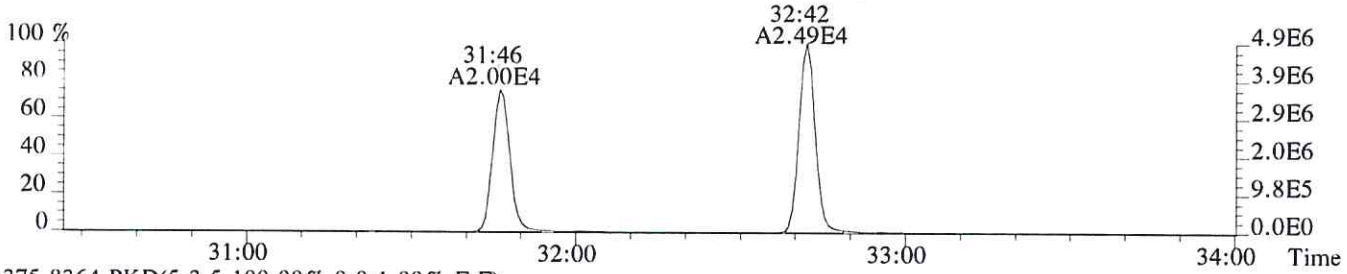
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1120.0,1.00%,F,T)



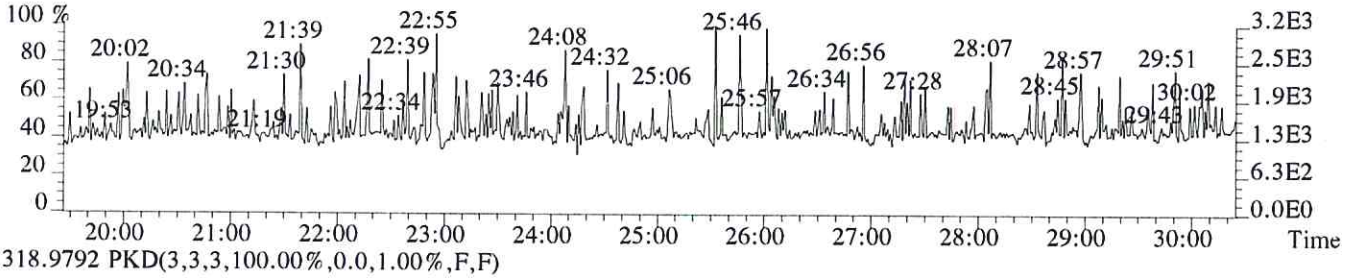
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,424.0,1.00%,F,T)



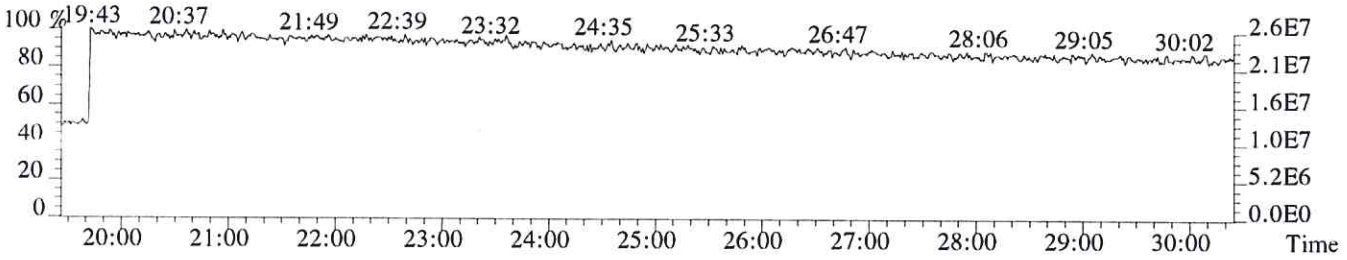
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,532.0,1.00%,F,T)



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

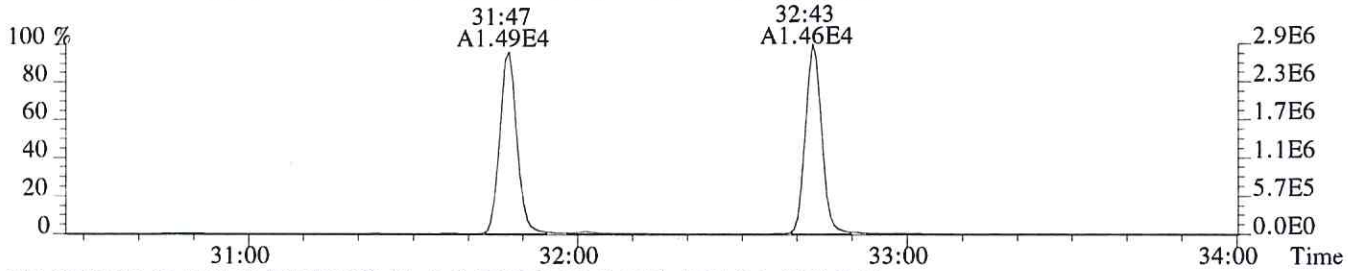


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

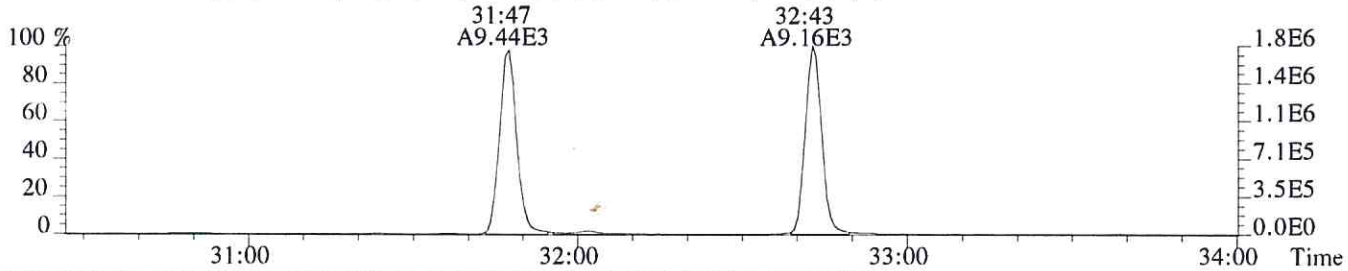


File:P406888 #1-321 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

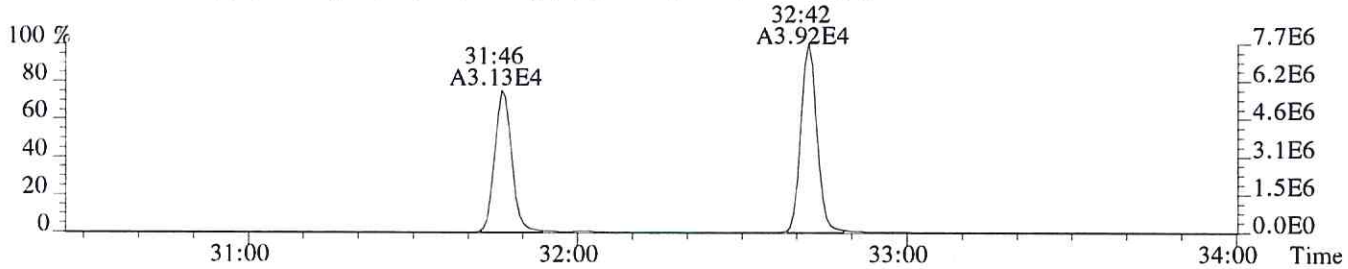
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,544.0,1.00%,F,T)



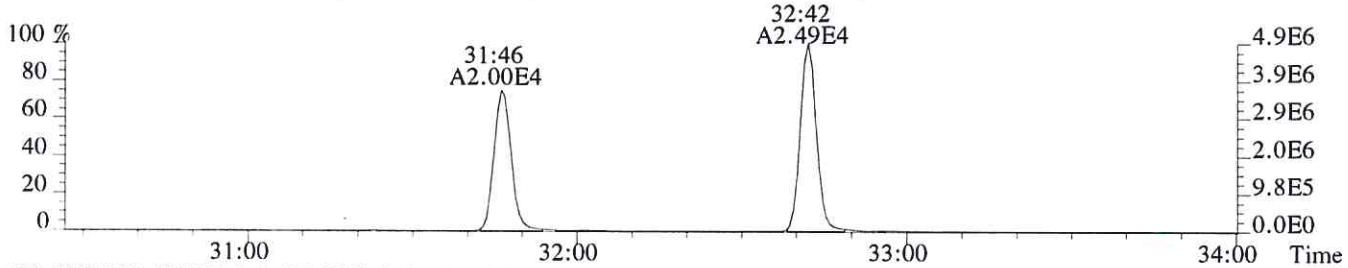
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1184.0,1.00%,F,T)



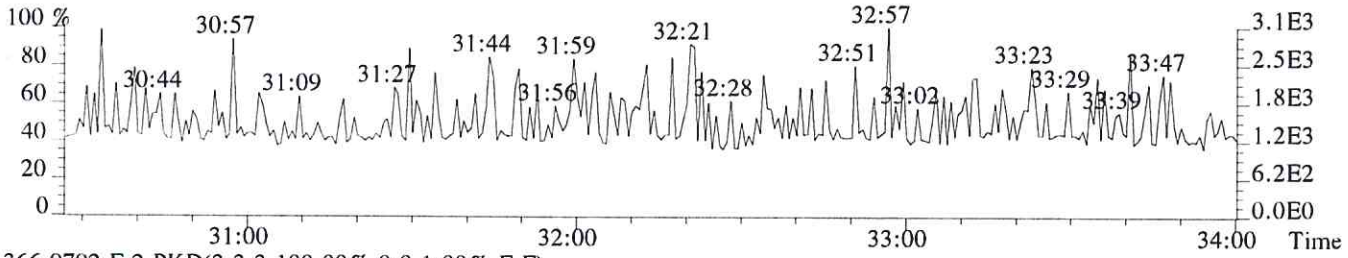
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,424.0,1.00%,F,T)



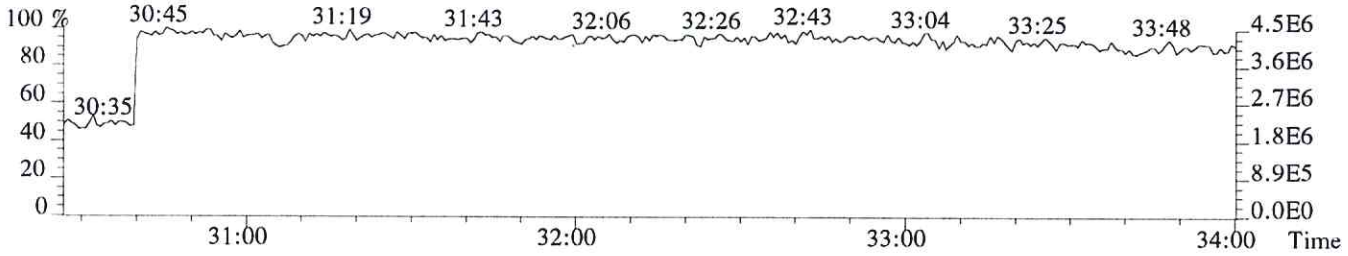
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,532.0,1.00%,F,T)



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

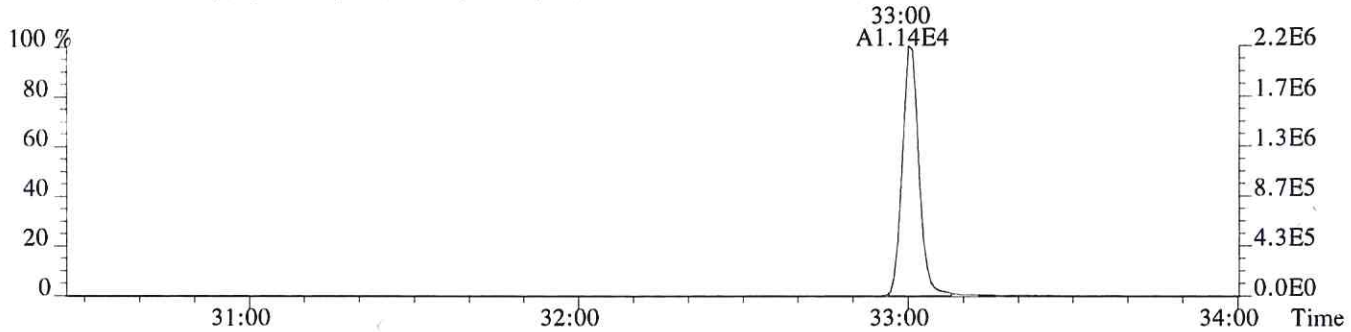


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

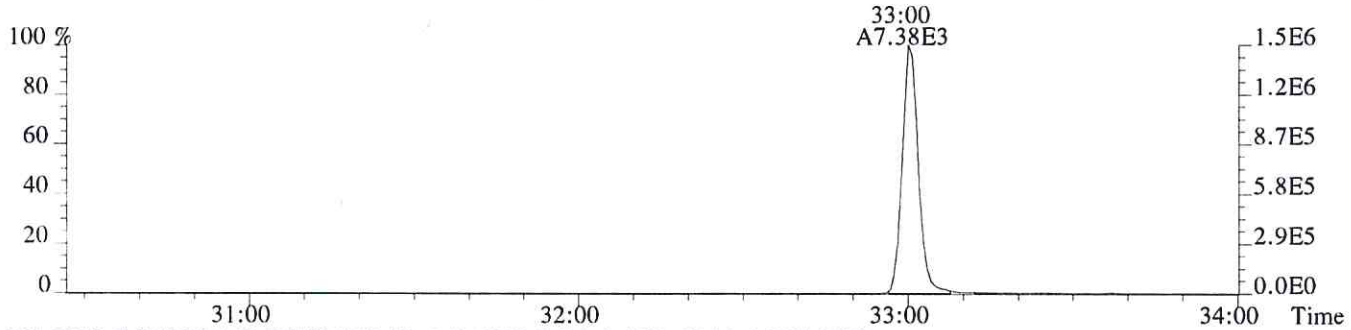


File:P406888 #1-321 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

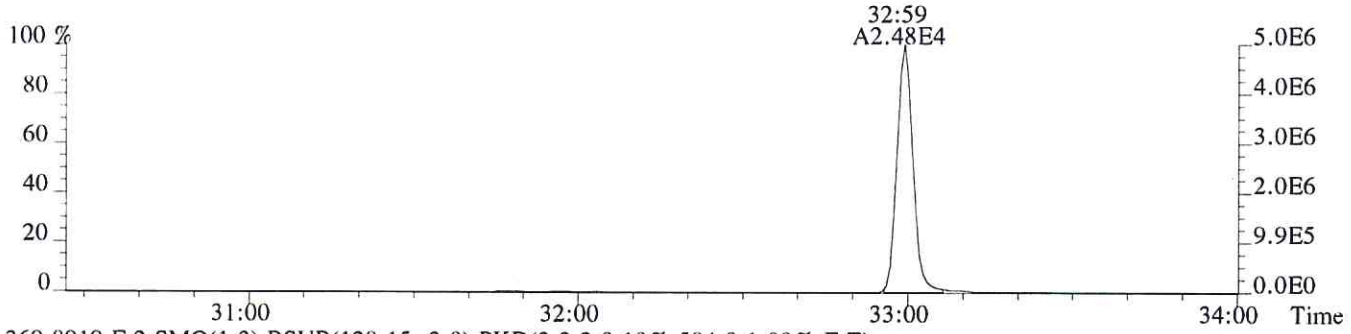
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,764.0,1.00%,F,T)



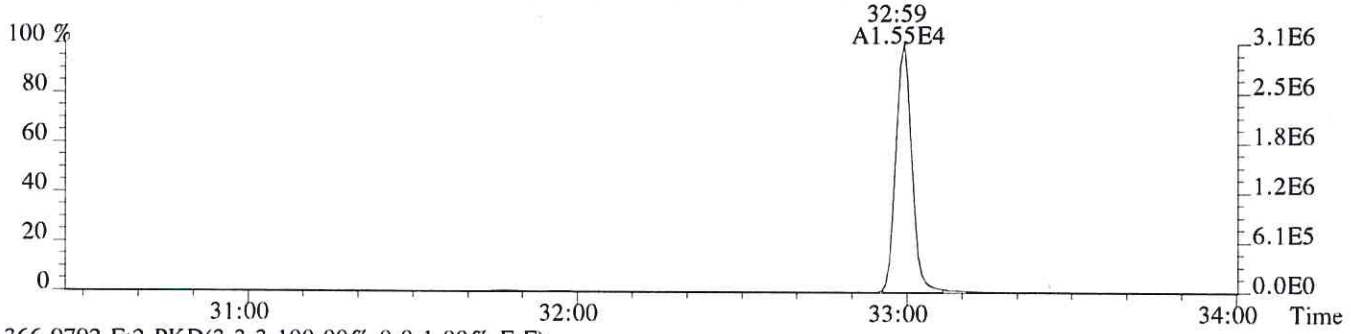
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,528.0,1.00%,F,T)



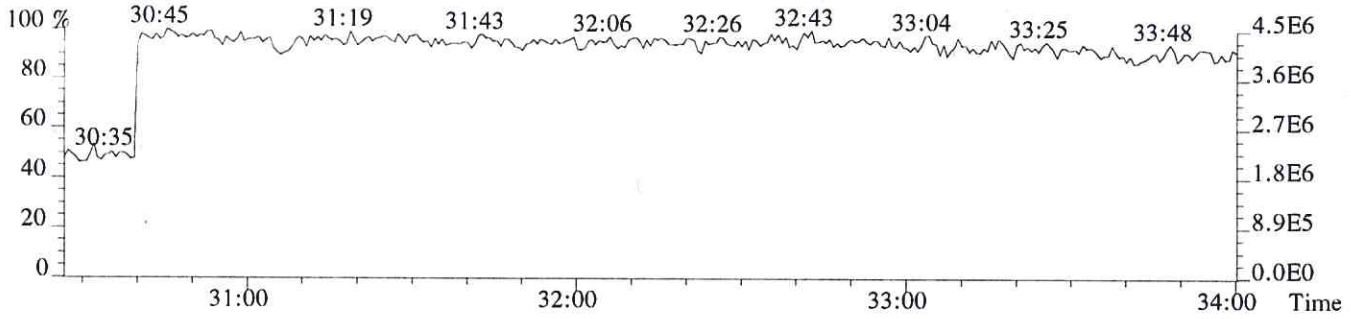
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,716.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,584.0,1.00%,F,T)

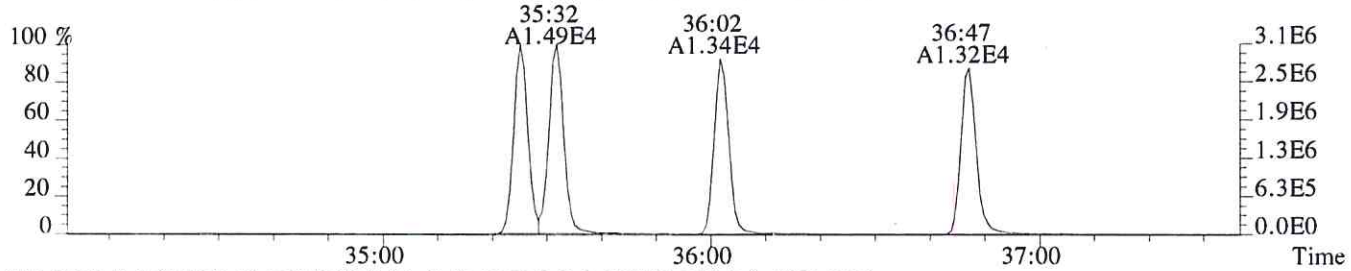


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

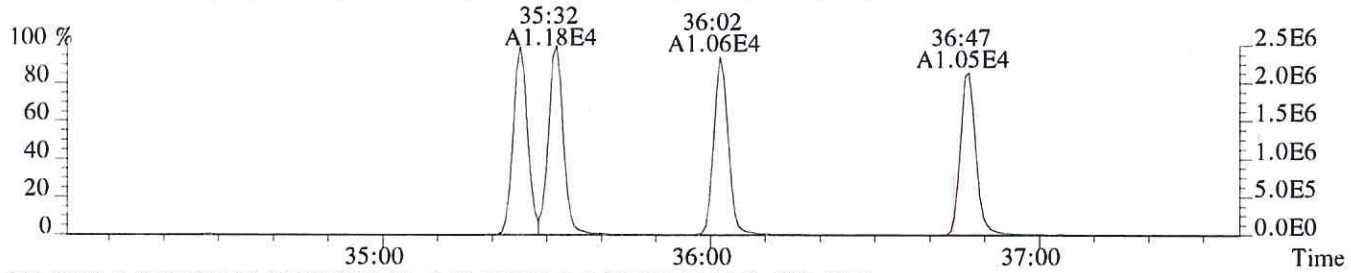


File:P406888 #1-322 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

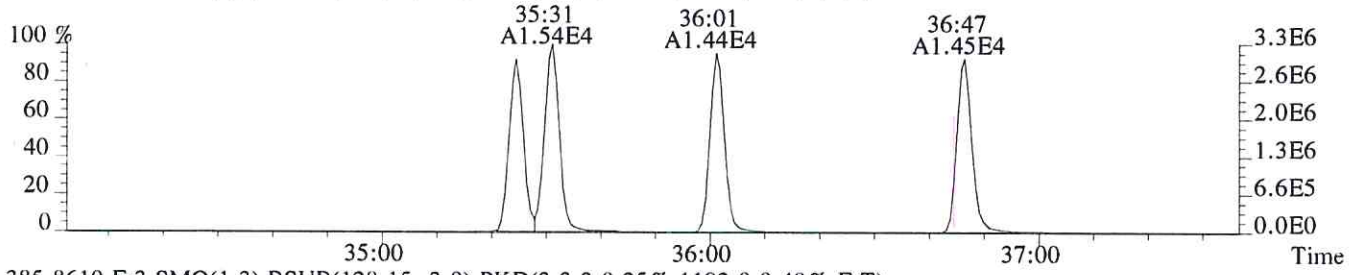
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,588.0,0.40%,F,T)



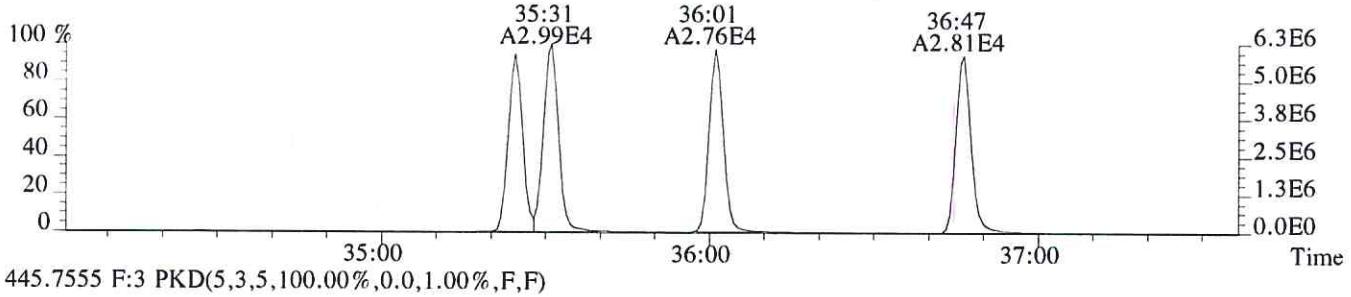
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,540.0,0.40%,F,T)



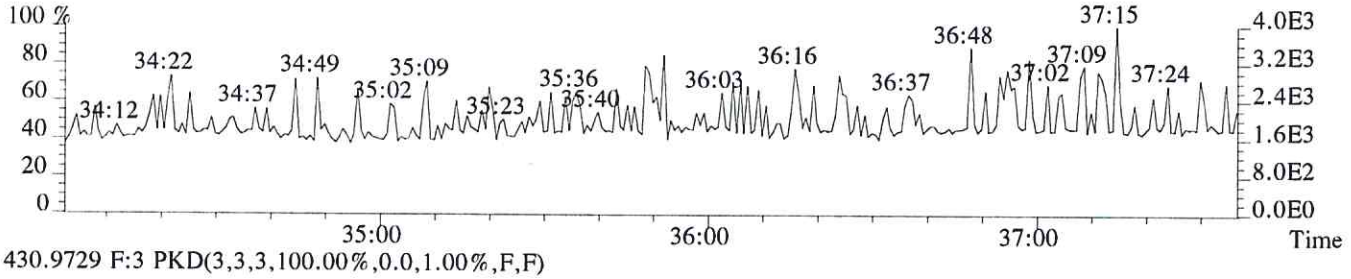
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,464.0,0.40%,F,T)



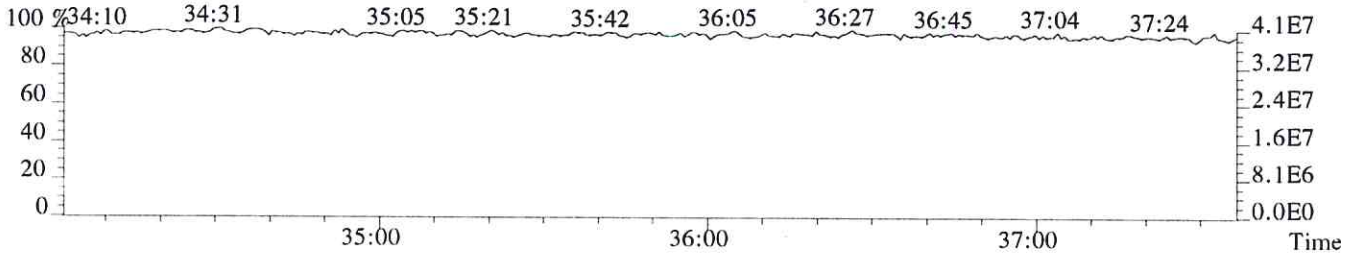
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1192.0,0.40%,F,T)



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

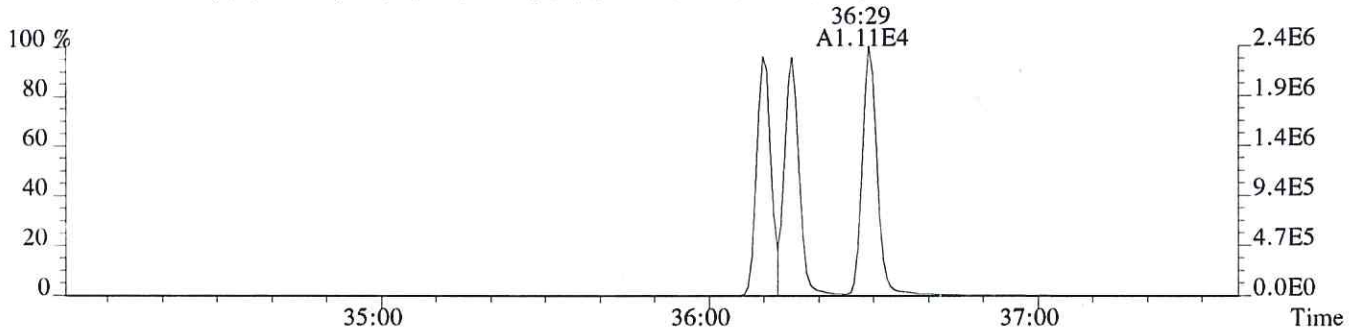


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

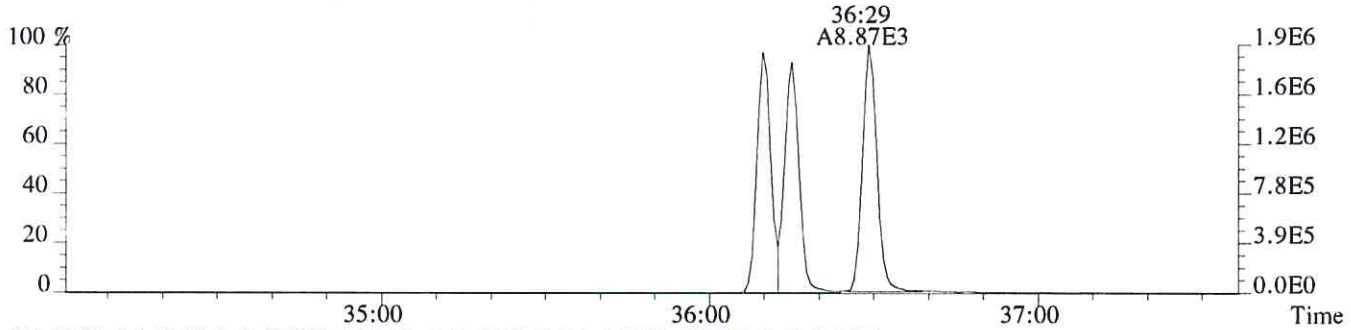


File:P406888 #1-322 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

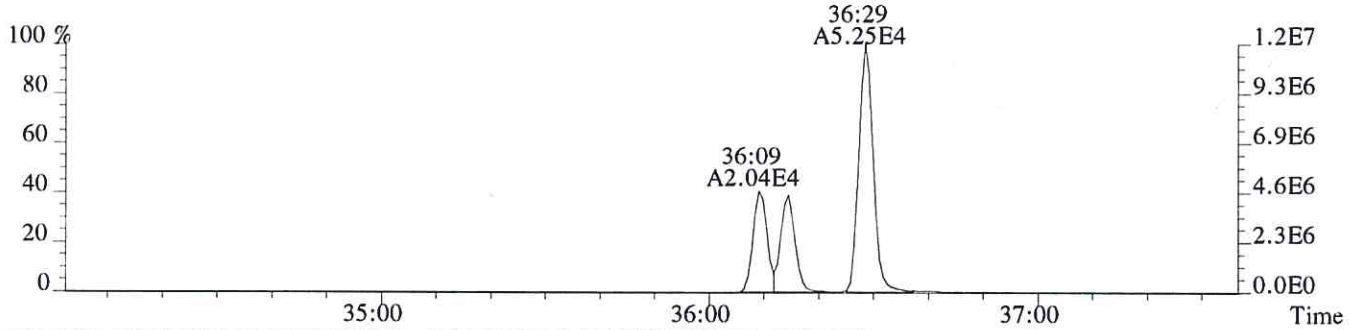
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,416.0,0.40%,F,T)



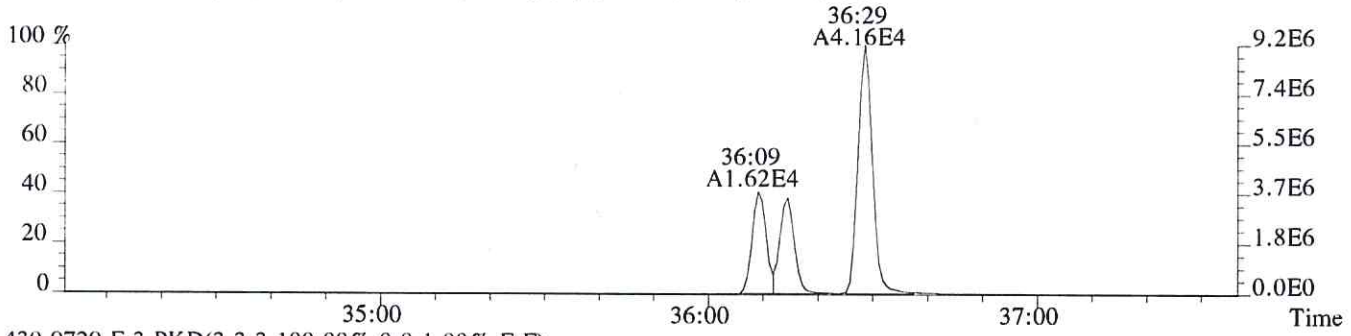
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,380.0,0.40%,F,T)



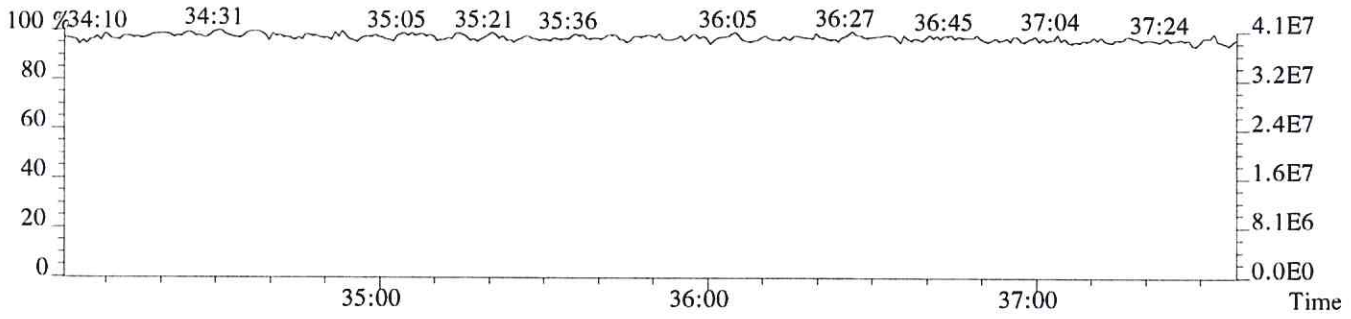
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1556.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,800.0,0.40%,F,T)

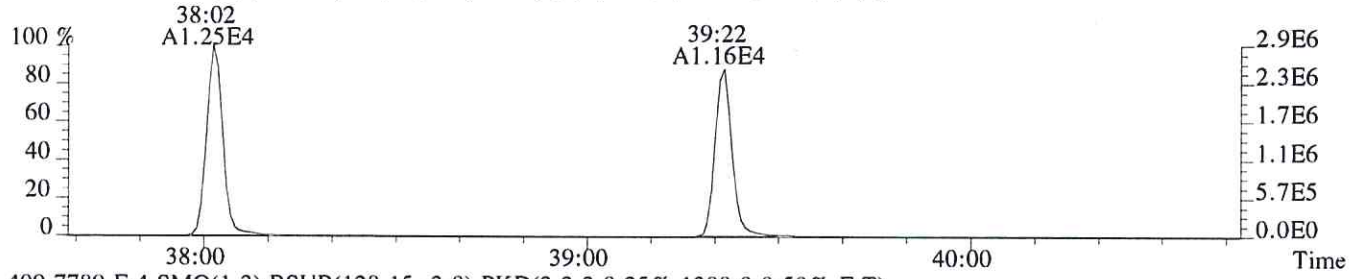


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

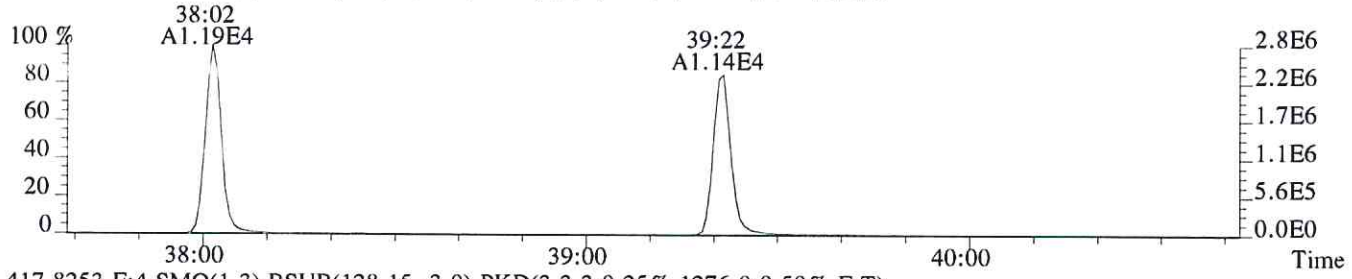


File:P406888 #1-276 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

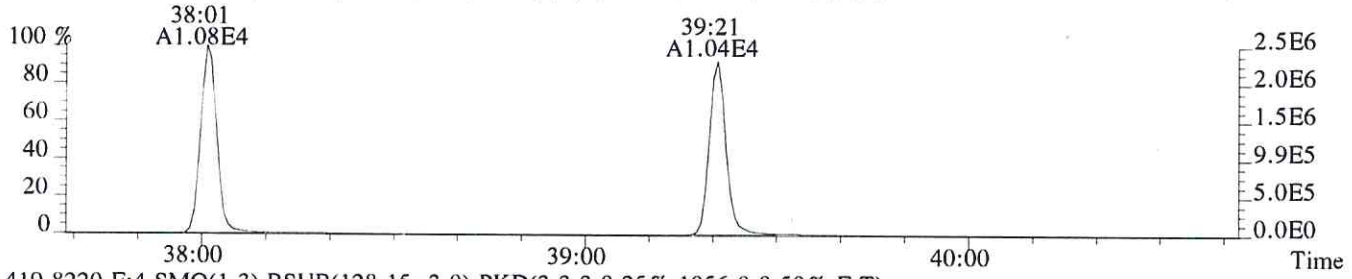
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1804.0,0.50%,F,T)



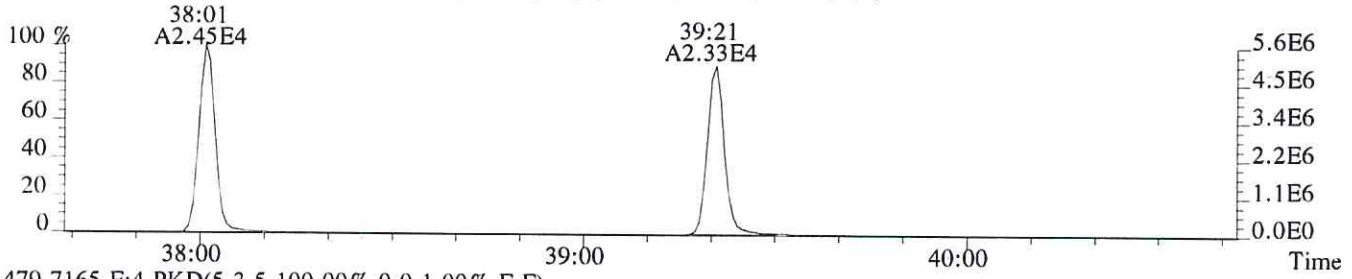
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1388.0,0.50%,F,T)



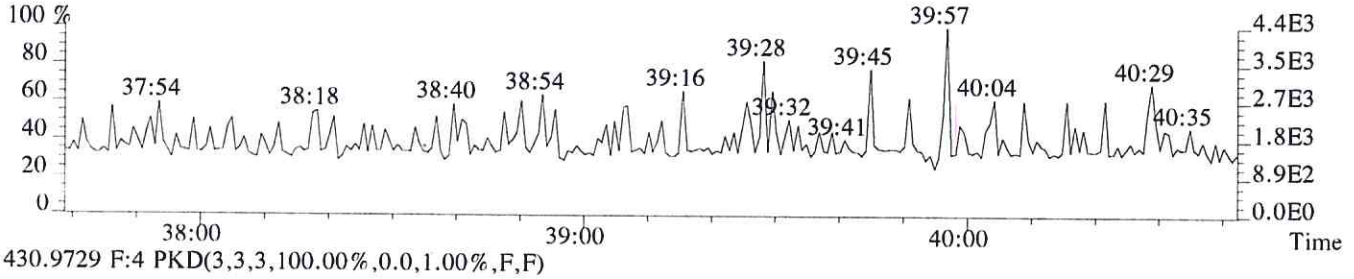
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1276.0,0.50%,F,T)



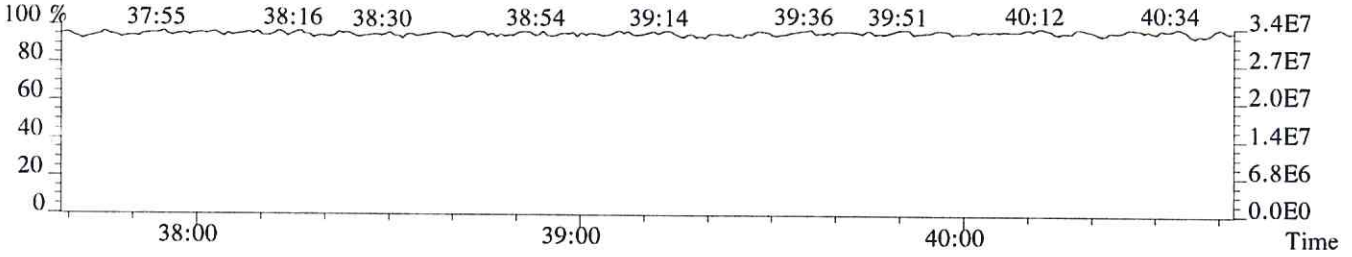
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1056.0,0.50%,F,T)



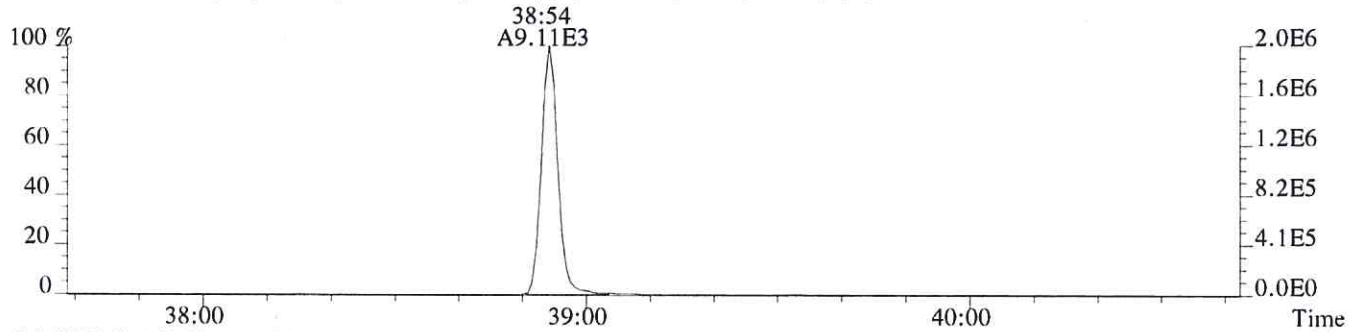
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



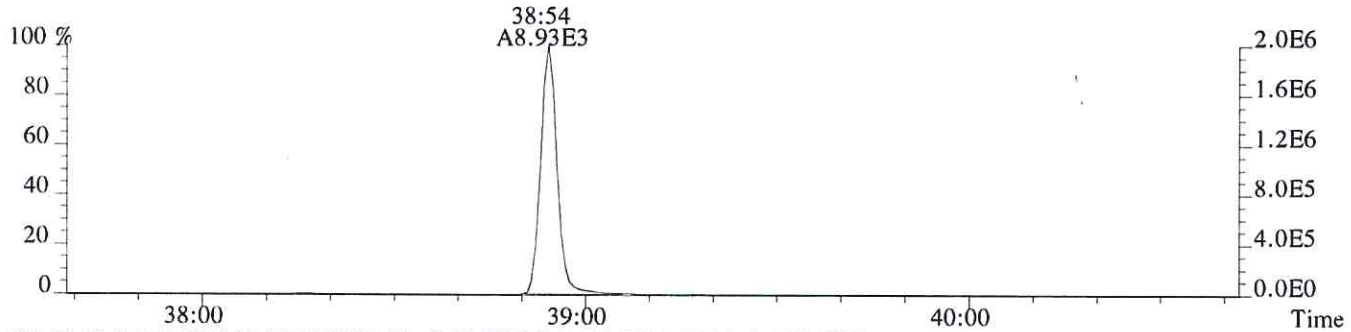
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



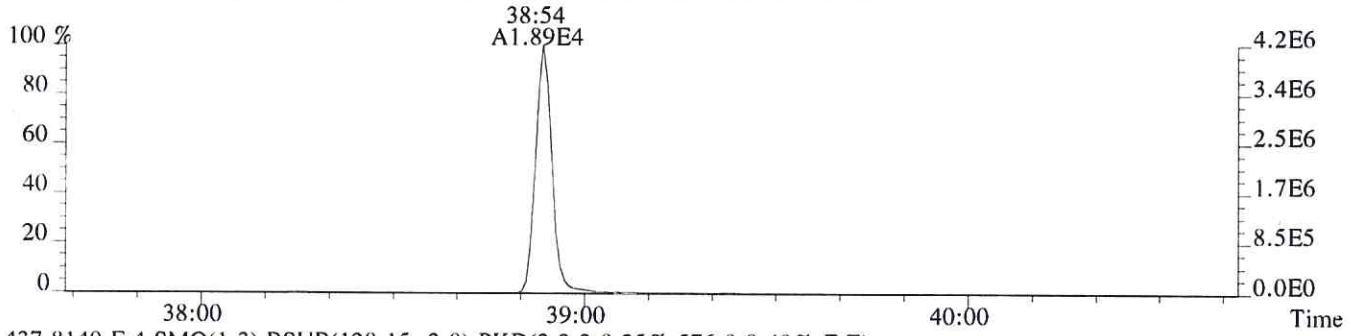
File:P406888 #1-276 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,140.0,0.40%,F,T)



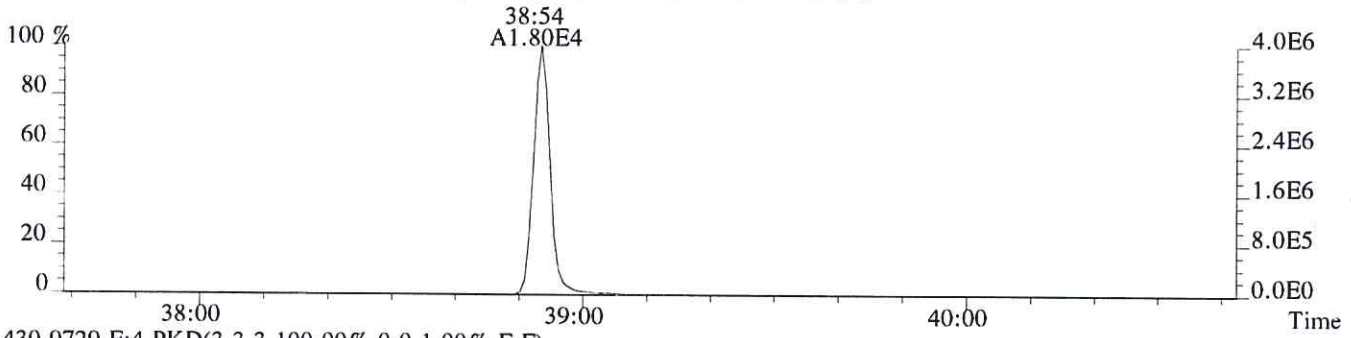
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,400.0,0.40%,F,T)



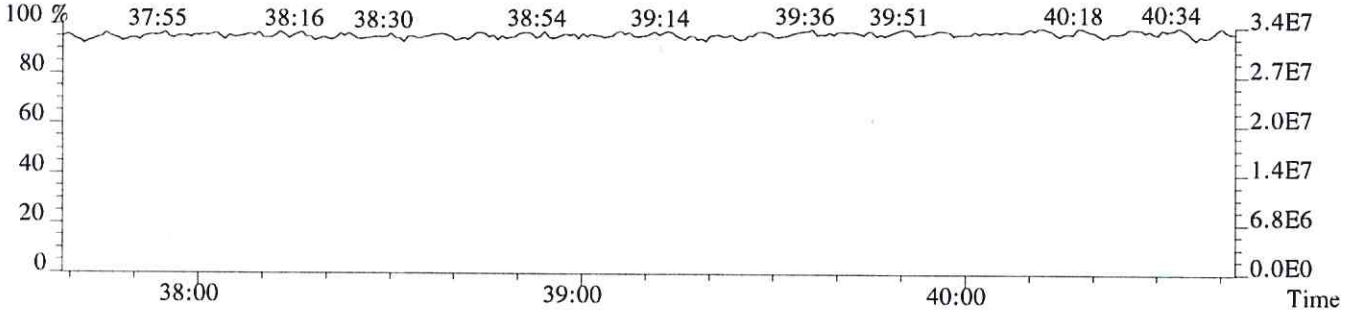
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,608.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,576.0,0.40%,F,T)

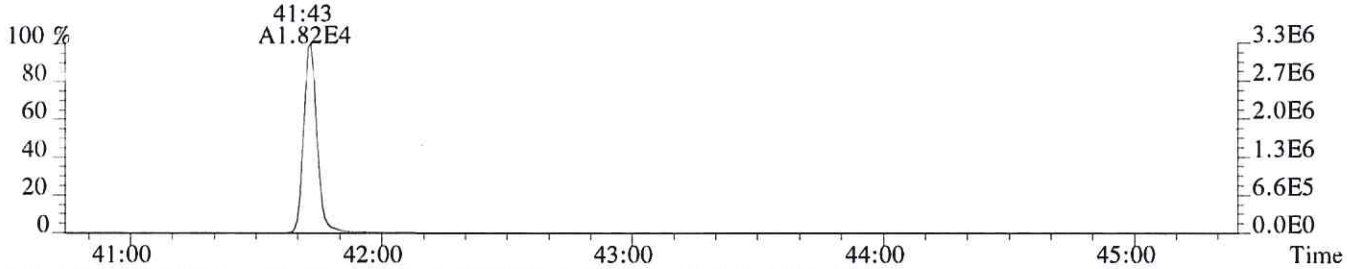


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

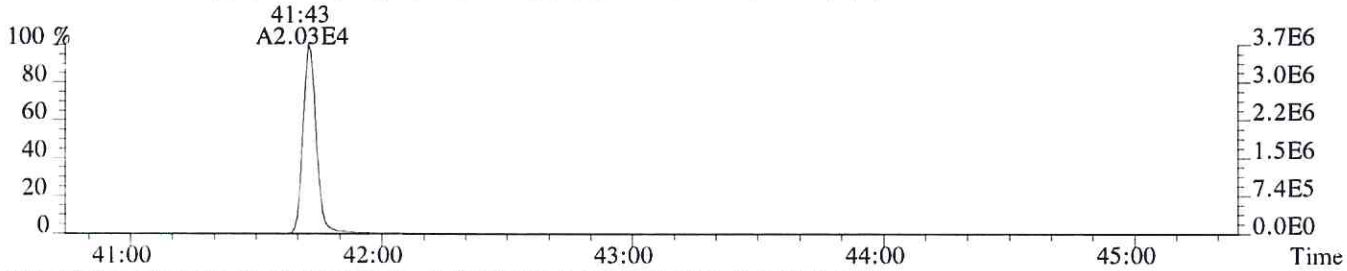


File:P406888 #1-421 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

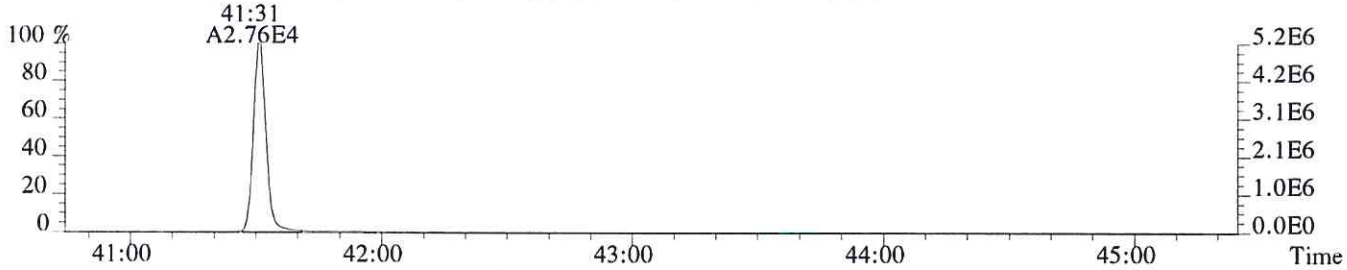
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



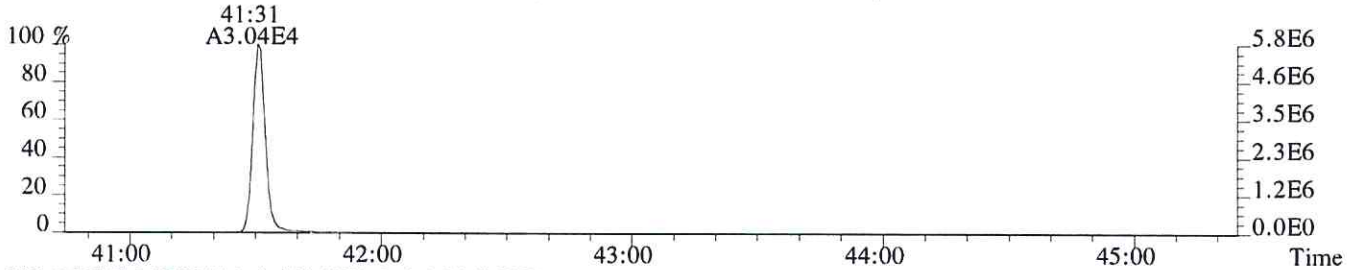
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2528.0,0.40%,F,T)



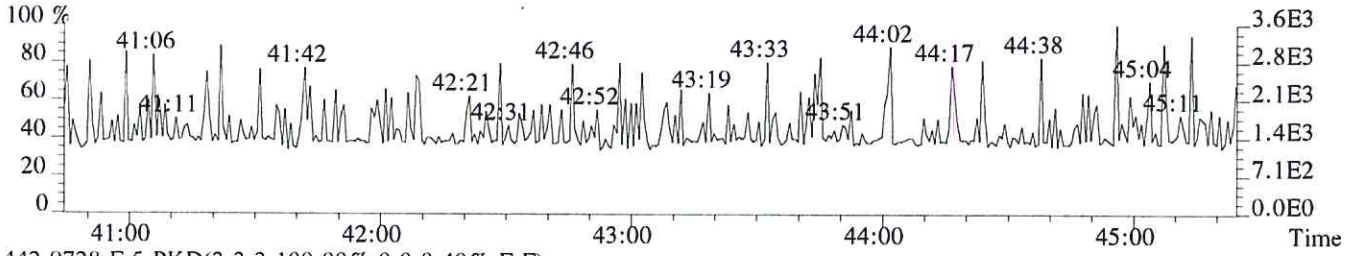
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3200.0,0.40%,F,T)



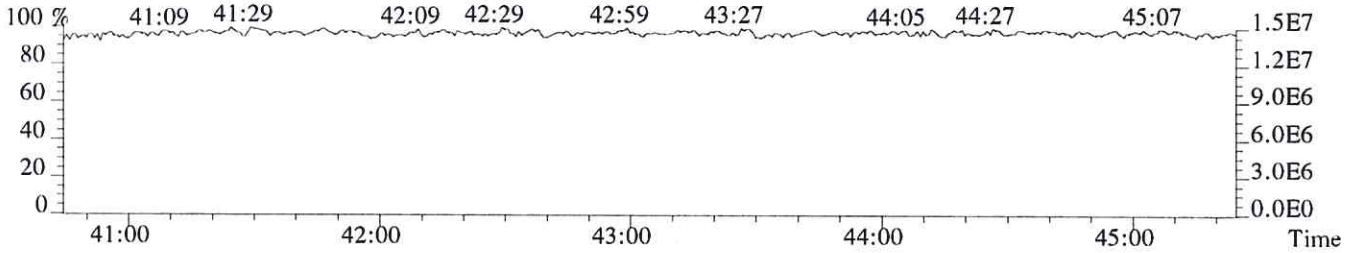
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1348.0,0.40%,F,T)



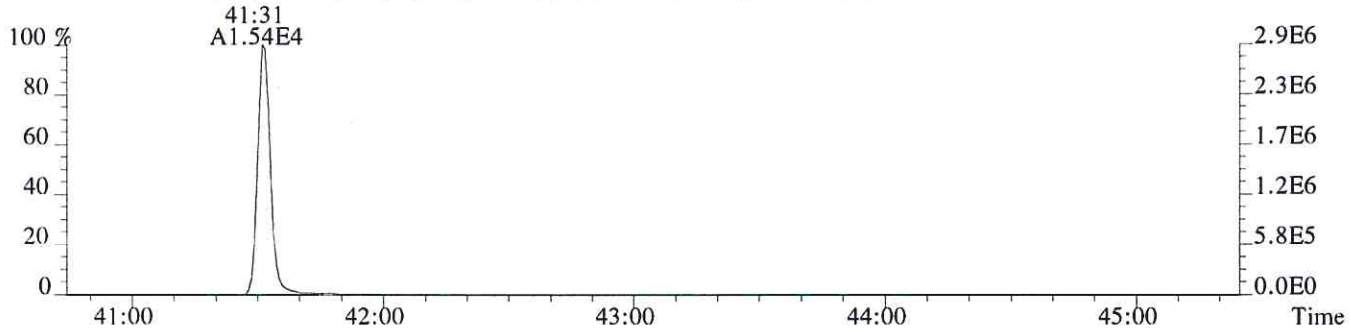
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



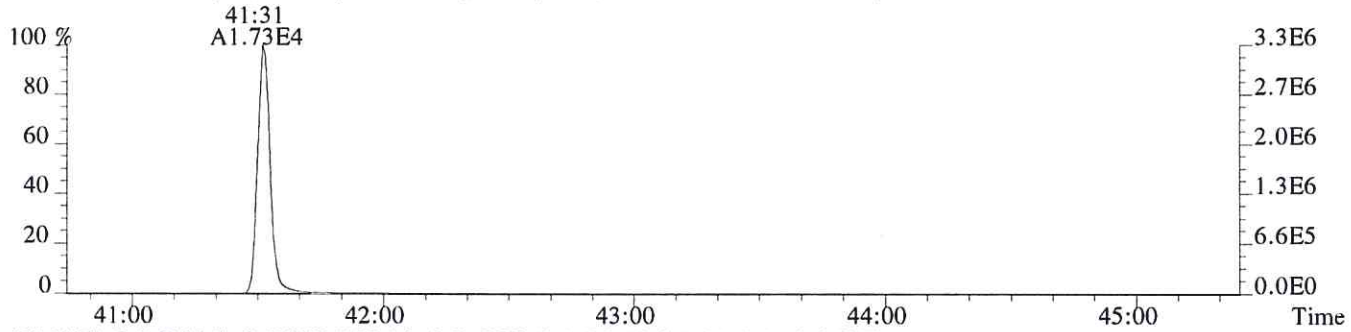
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



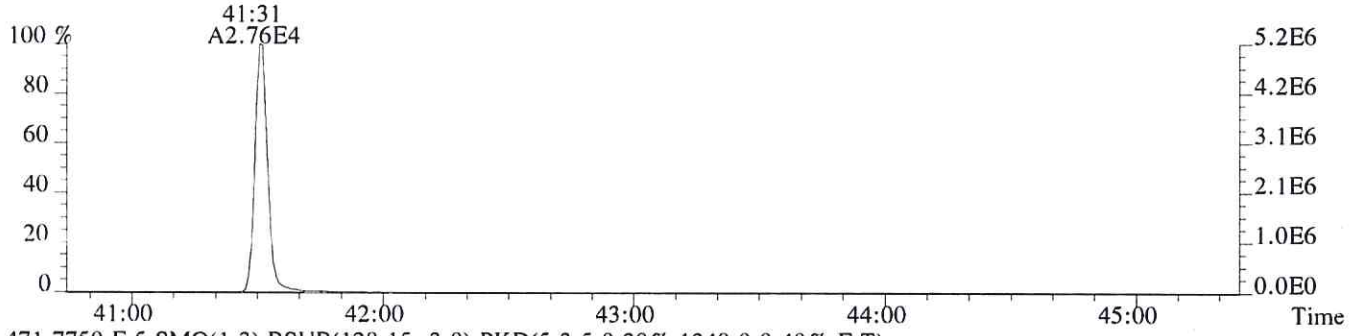
File:P406888 #1-421 Acq:24-MAY-2017 20:47:55 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,368.0,0.40%,F,T)



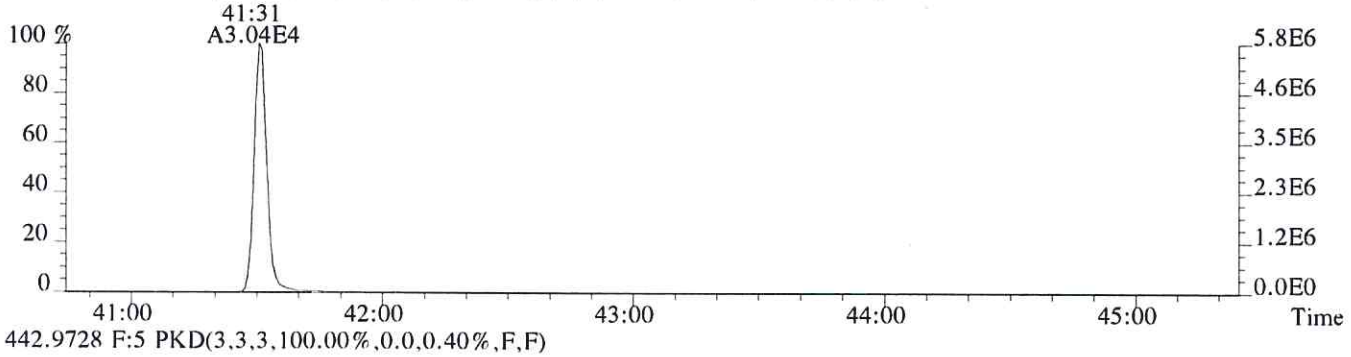
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1252.0,0.40%,F,T)



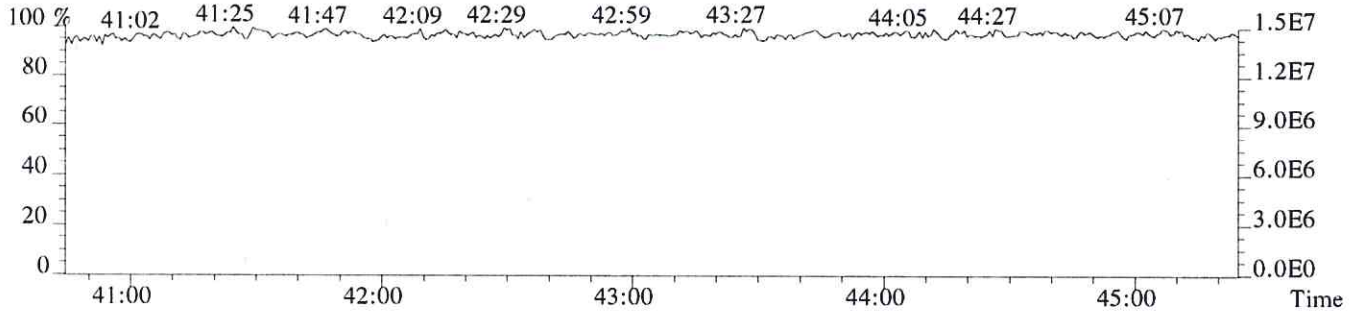
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3200.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1348.0,0.40%,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.
DLCS

Run #13 Filename P406889 Samp: 1 Inj: 1 Acquired: 24-MAY-17 21:37:05
Processed: 30-MAY-17 12:38:39 Sample ID: EQ1700201-03

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	27:23	1.650e+03	2.111e+03	0.78	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	31:47	1.500e+04	9.669e+03	1.55	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	32:43	1.449e+04	9.400e+03	1.54	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	35:25	1.451e+04	1.173e+04	1.24	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	35:32	1.488e+04	1.205e+04	1.24	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:02	1.380e+04	1.097e+04	1.26	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	36:47	1.334e+04	1.073e+04	1.24	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:02	1.270e+04	1.197e+04	1.06	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:22	1.181e+04	1.158e+04	1.02	yes	no	1.187
10	Unk	OCDF	41:43	1.892e+04	2.114e+04	0.89	yes	no	1.035
11	Unk	2,3,7,8-TCDD	28:13	1.577e+03	1.896e+03	0.83	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:00	1.150e+04	7.334e+03	1.57	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:10	1.041e+04	8.590e+03	1.21	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:15	1.095e+04	8.677e+03	1.26	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	36:29	1.146e+04	9.082e+03	1.26	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	38:54	9.571e+03	9.117e+03	1.05	yes	no	0.882
17	Unk	OCDD	41:32	1.567e+04	1.796e+04	0.87	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	27:23	1.753e+04	2.285e+04	0.77	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	31:46	3.135e+04	2.011e+04	1.56	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	32:42	3.900e+04	2.509e+04	1.55	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:25	1.444e+04	2.784e+04	0.52	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	35:31	1.613e+04	3.057e+04	0.53	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:01	1.555e+04	2.956e+04	0.53	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	36:47	1.514e+04	2.938e+04	0.52	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:01	1.144e+04	2.541e+04	0.45	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:21	1.074e+04	2.442e+04	0.44	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	28:13	1.514e+04	1.919e+04	0.79	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	32:59	2.480e+04	1.585e+04	1.57	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:09	2.155e+04	1.752e+04	1.23	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:15	2.152e+04	1.759e+04	1.22	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:54	1.985e+04	1.910e+04	1.04	yes	no	0.817
32	IS	13C-OCDD	41:31	2.881e+04	3.223e+04	0.89	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	27:36	4.379e+04	5.595e+04	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:29	5.249e+04	4.165e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:14	1.645e+04				no	0.958

$$\text{OCDD} = \frac{(1.567e+04 + 1.796e+04) \times 4000 \text{ pg} \times 1}{(2.881e+04 + 3.223e+04) \times \text{g} \times / 100 \times 0.980} =$$

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
DLCS

Run #13 Filename P406889 Samp: 1 Inj: 1 Acquired: 24-MAY-17 21:37:05
Processed: 30-MAY-17 12:38:39 LAB. ID: EQ1700201-03

	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+05	5.68e+02	4.7e+02	3.43e+05	9.72e+02	3.5e+02
2	1,2,3,7,8-PeCDF	2.76e+06	3.56e+02	7.7e+03	1.80e+06	8.40e+02	2.1e+03
3	2,3,4,7,8-PeCDF	2.83e+06	3.56e+02	7.9e+03	1.83e+06	8.40e+02	2.2e+03
4	1,2,3,4,7,8-HxCDF	3.21e+06	4.24e+02	7.6e+03	2.58e+06	3.84e+02	6.7e+03
5	1,2,3,6,7,8-HxCDF	3.10e+06	4.24e+02	7.3e+03	2.48e+06	3.84e+02	6.5e+03
6	2,3,4,6,7,8-HxCDF	3.05e+06	4.24e+02	7.2e+03	2.43e+06	3.84e+02	6.3e+03
7	1,2,3,7,8,9-HxCDF	2.73e+06	4.24e+02	6.5e+03	2.20e+06	3.84e+02	5.7e+03
8	1,2,3,4,6,7,8-HpCDF	2.91e+06	1.40e+03	2.1e+03	2.73e+06	1.66e+03	1.6e+03
9	1,2,3,4,7,8,9-HpCDF	2.52e+06	1.40e+03	1.8e+03	2.42e+06	1.66e+03	1.5e+03
10	OCDF	3.53e+06	1.28e+02	2.8e+04	3.86e+06	7.00e+02	5.5e+03
11	2,3,7,8-TCDD	2.77e+05	1.31e+03	2.1e+02	3.25e+05	5.16e+02	6.3e+02
12	1,2,3,7,8-PeCDD	2.28e+06	5.56e+02	4.1e+03	1.45e+06	4.52e+02	3.2e+03
13	1,2,3,4,7,8-HxCDD	2.39e+06	3.20e+02	7.5e+03	1.95e+06	2.60e+02	7.5e+03
14	1,2,3,6,7,8-HxCDD	2.37e+06	3.20e+02	7.4e+03	1.86e+06	2.60e+02	7.2e+03
15	1,2,3,7,8,9-HxCDD	2.48e+06	3.20e+02	7.8e+03	2.00e+06	2.60e+02	7.7e+03
16	1,2,3,4,6,7,8-HpCDD	2.08e+06	3.96e+02	5.2e+03	2.01e+06	5.08e+02	4.0e+03
17	OCDD	2.95e+06	6.44e+02	4.6e+03	3.32e+06	1.11e+03	3.0e+03
18	13C-2,3,7,8-TCDF	2.97e+06	6.62e+03	4.5e+02	3.81e+06	3.73e+03	1.0e+03
19	13C-1,2,3,7,8-PeCDF	5.98e+06	7.08e+02	8.4e+03	3.84e+06	5.88e+02	6.5e+03
20	13C-2,3,4,7,8-PeCDF	7.60e+06	7.08e+02	1.1e+04	4.89e+06	5.88e+02	8.3e+03
21	13C-1,2,3,4,7,8-HxCDF	3.19e+06	4.56e+02	7.0e+03	6.16e+06	6.36e+02	9.7e+03
22	13C-1,2,3,6,7,8-HxCDF	3.37e+06	4.56e+02	7.4e+03	6.39e+06	6.36e+02	1.0e+04
23	13C-2,3,4,6,7,8-HxCDF	3.43e+06	4.56e+02	7.5e+03	6.57e+06	6.36e+02	1.0e+04
24	13C-1,2,3,7,8,9-HxCDF	3.22e+06	4.56e+02	7.1e+03	6.18e+06	6.36e+02	9.7e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.58e+06	2.36e+03	1.1e+03	5.76e+06	1.46e+03	3.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.30e+06	2.36e+03	9.8e+02	5.15e+06	1.46e+03	3.5e+03
27	13C-2,3,7,8-TCDD	2.77e+06	4.02e+03	6.9e+02	3.52e+06	2.33e+03	1.5e+03
28	13C-1,2,3,7,8-PeCDD	4.99e+06	4.64e+02	1.1e+04	3.20e+06	6.92e+02	4.6e+03
29	13C-1,2,3,4,7,8-HxCDD	4.99e+06	2.58e+03	1.9e+03	4.03e+06	1.02e+03	4.0e+03
30	13C-1,2,3,6,7,8-HxCDD	4.71e+06	2.58e+03	1.8e+03	3.81e+06	1.02e+03	3.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.41e+06	3.84e+02	1.1e+04	4.24e+06	6.68e+02	6.3e+03
32	13C-OCDD	5.47e+06	3.00e+03	1.8e+03	6.02e+06	5.09e+03	1.2e+03
33	13C-1,2,3,4-TCDD	7.81e+06	4.02e+03	1.9e+03	1.01e+07	2.33e+03	4.3e+03
34	13C-1,2,3,7,8,9-HxCDD	1.15e+07	2.58e+03	4.5e+03	9.19e+06	1.02e+03	9.0e+03
35	37Cl-2,3,7,8-TCDD	2.92e+06	1.09e+03	2.7e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.308e+03 + 5.160e+02\ ) \times 2000}{(2.768e+06 + 3.519e+06\ ) \times (\qquad\qquad\qquad\qquad) \times 0.873} =$$

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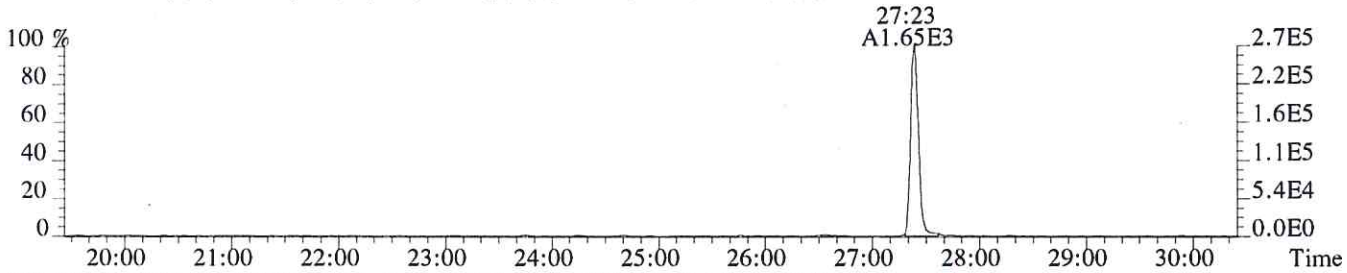
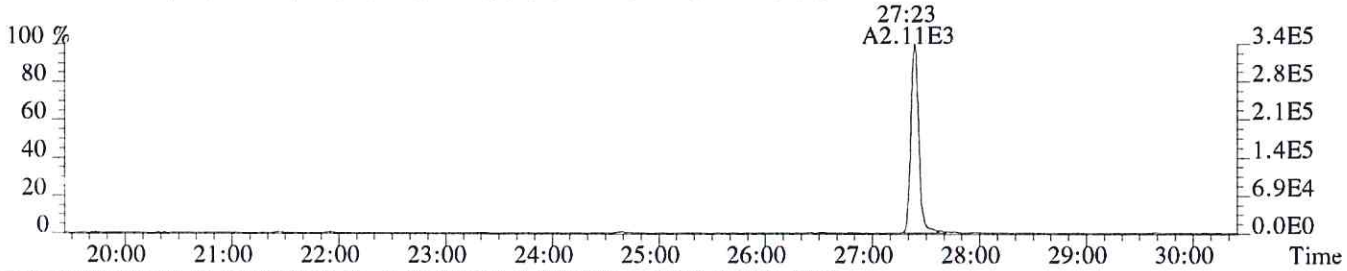
File:P406889 #1-779 Acq:24-MAY-2017 21:37:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

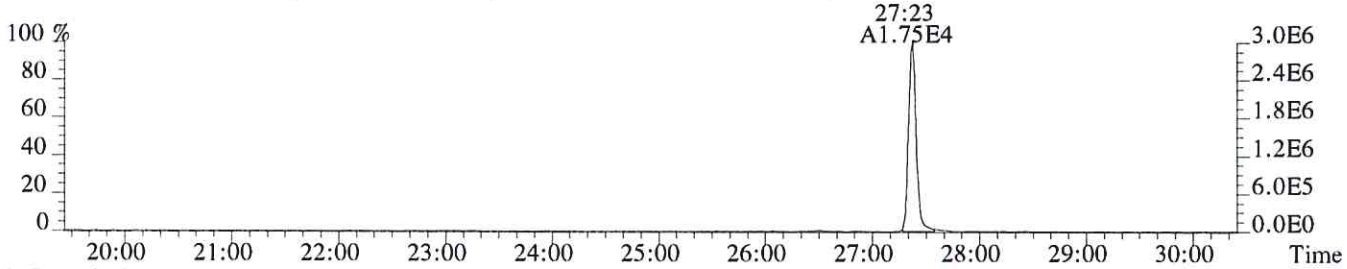
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,568.0,1.00%,F,T)



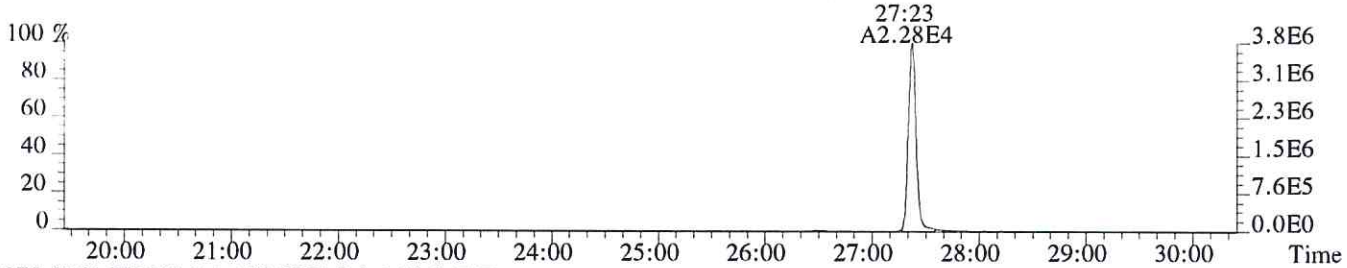
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,972.0,1.00%,F,T)



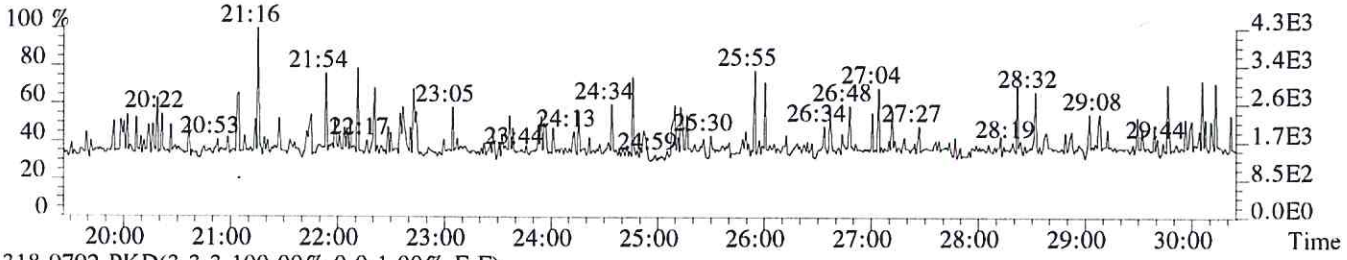
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6620.0,1.00%,F,T)



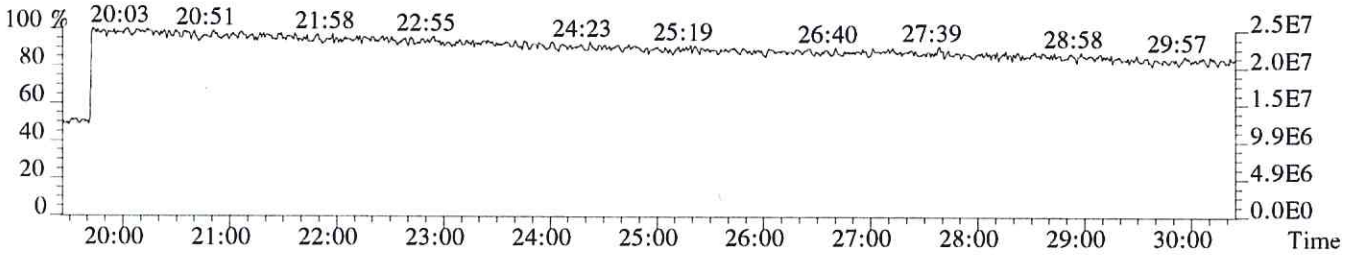
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3728.0,1.00%,F,T)



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

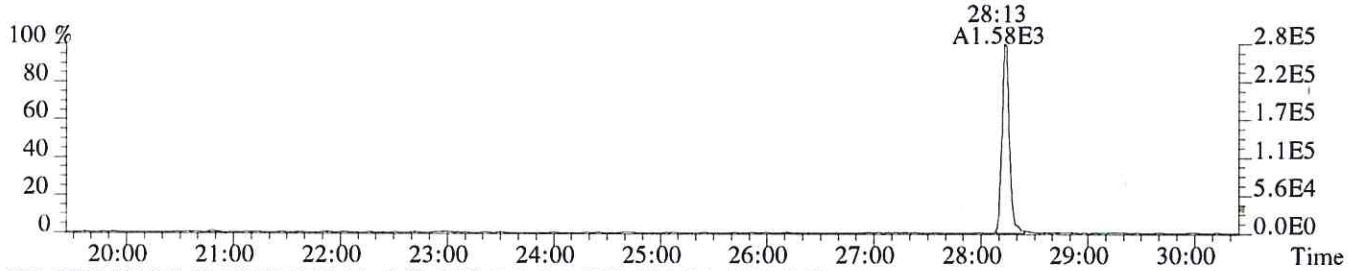


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

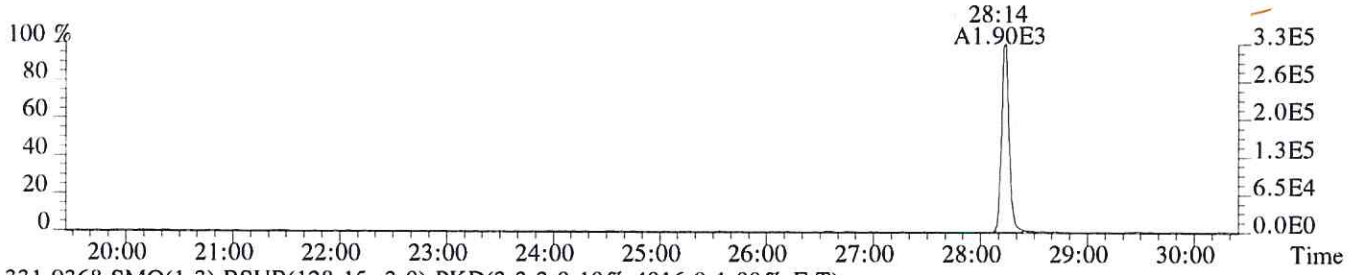


File:P406889 #1-779 Acq:24-MAY-2017 21:37:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

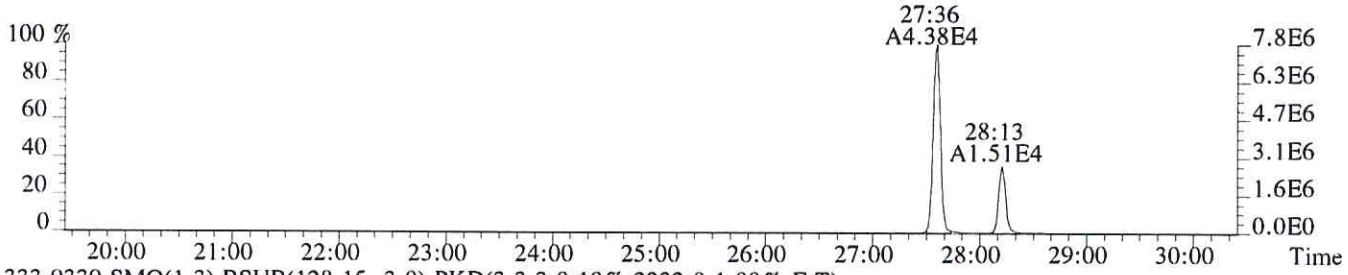
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1308.0,1.00%,F,T)



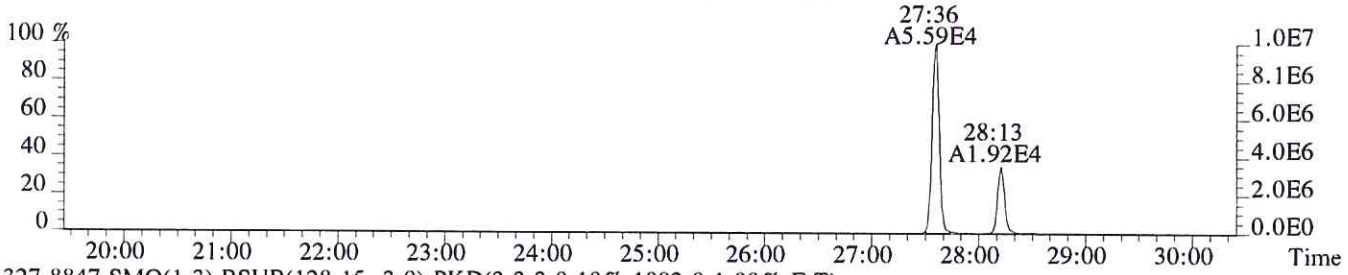
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,516.0,1.00%,F,T)



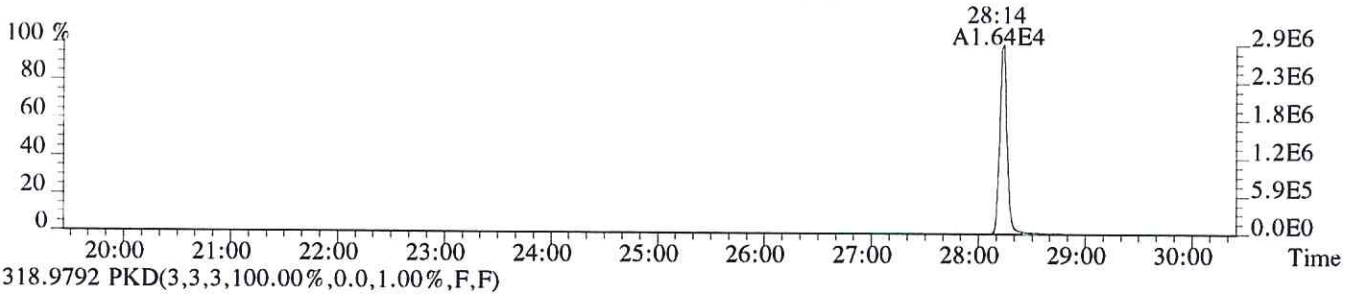
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4016.0,1.00%,F,T)



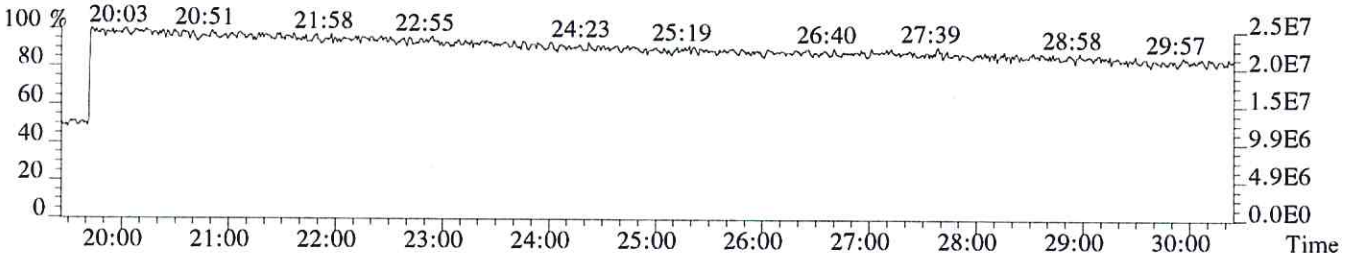
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2332.0,1.00%,F,T)



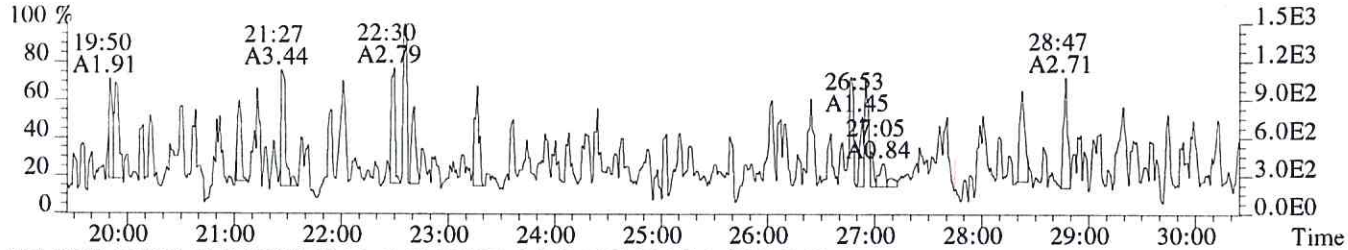
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1092.0,1.00%,F,T)



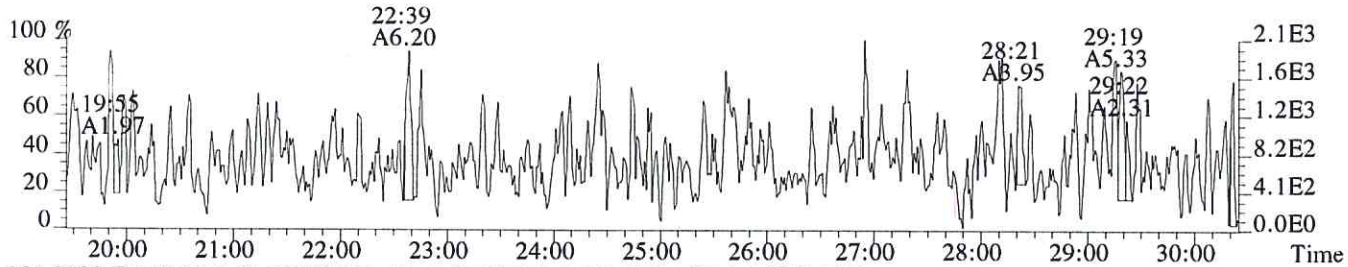
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



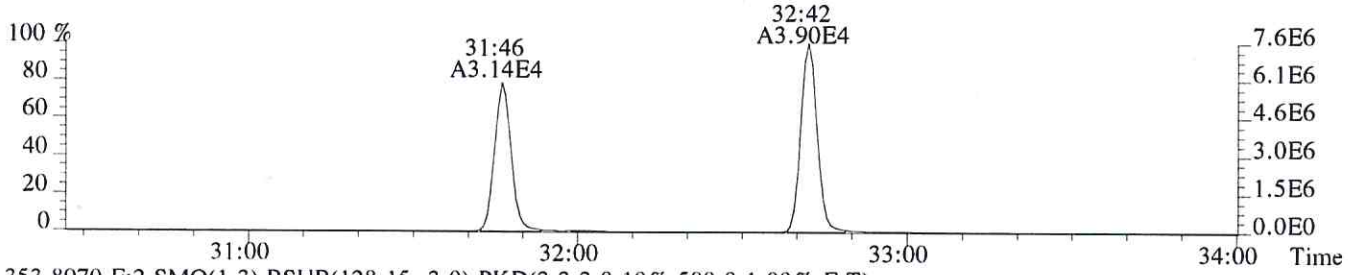
File:P406889 #1-779 Acq:24-MAY-2017 21:37:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,452.0,1.00%,F,T)



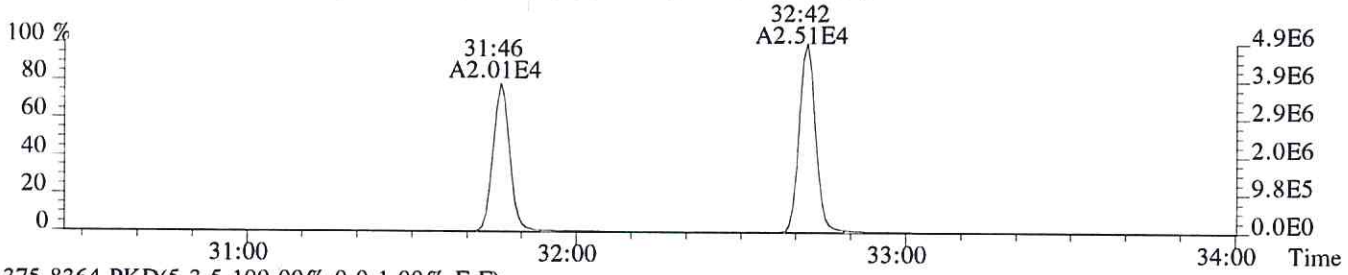
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,904.0,1.00%,F,T)



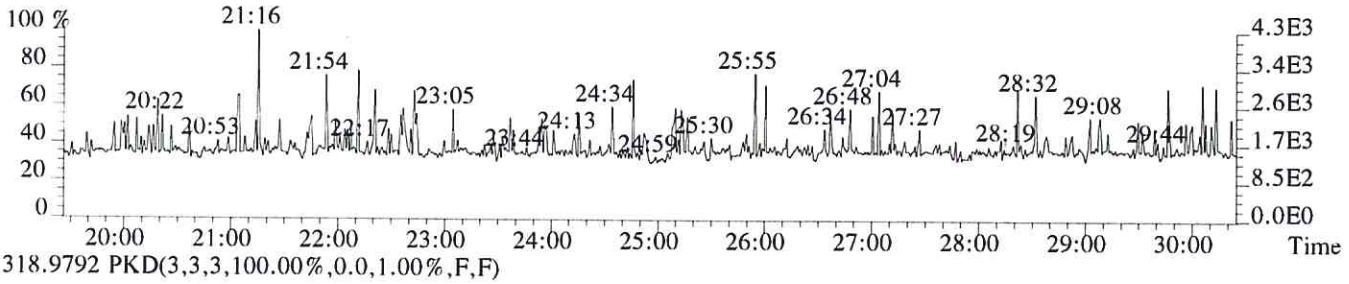
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,708.0,1.00%,F,T)



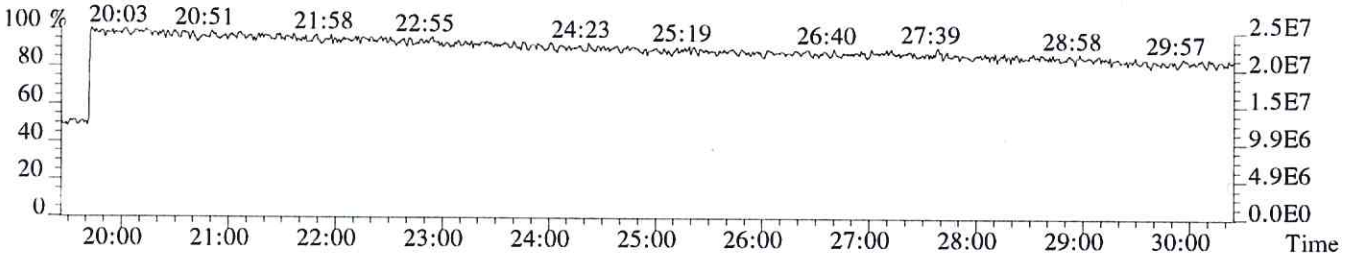
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,588.0,1.00%,F,T)



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

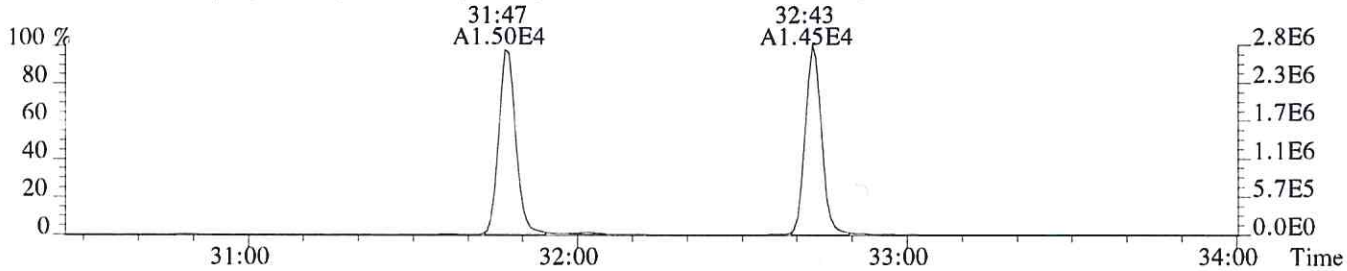


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

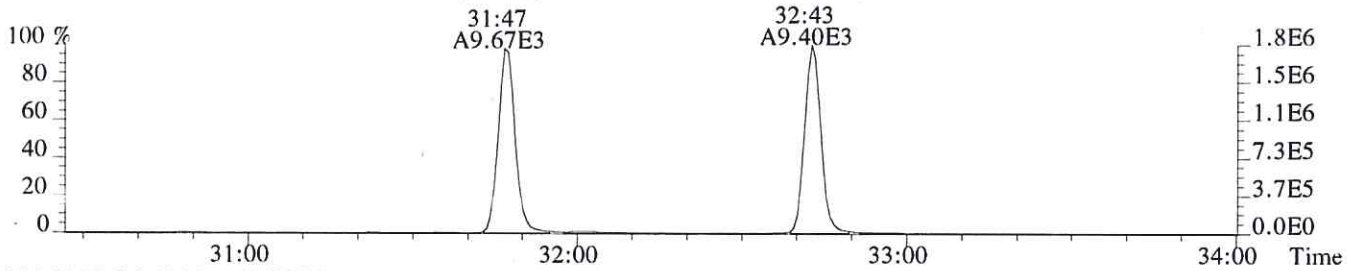


File:P406889 #1-321 Acq:24-MAY-2017 21:37:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

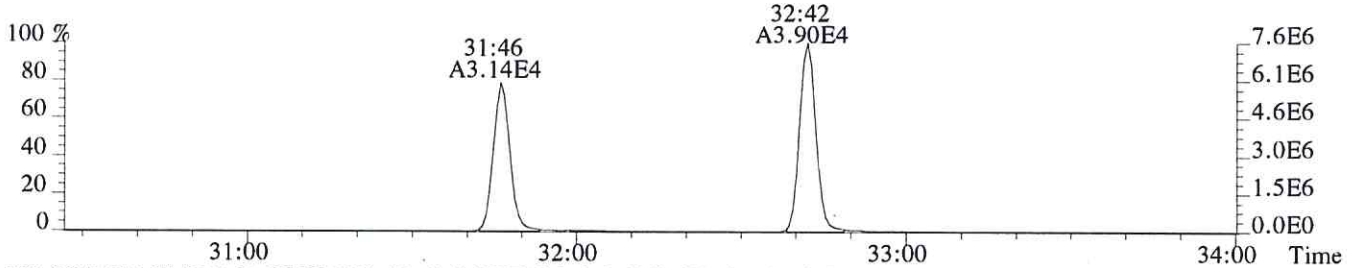
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,356.0,1.00%,F,T)



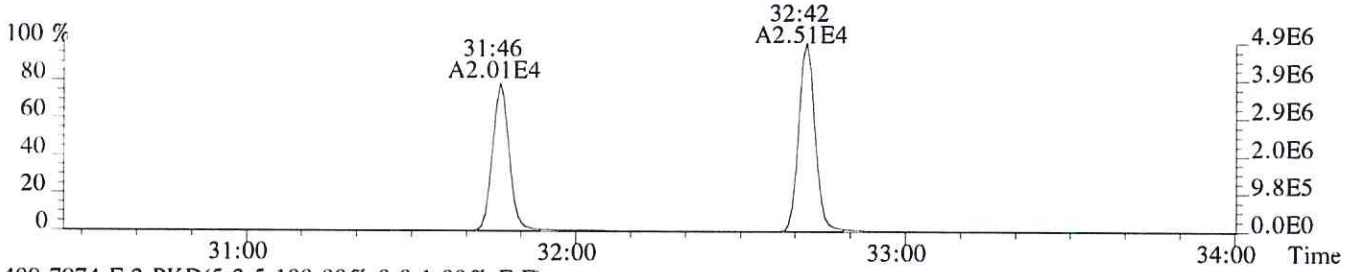
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,840.0,1.00%,F,T)



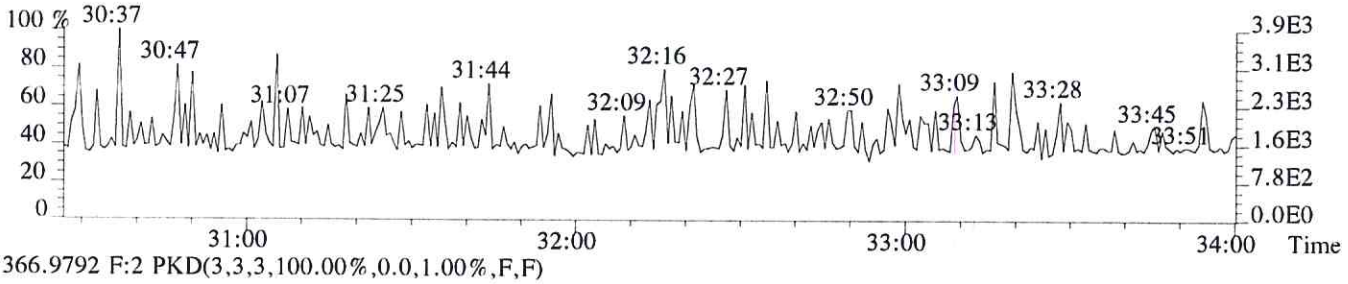
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,708.0,1.00%,F,T)



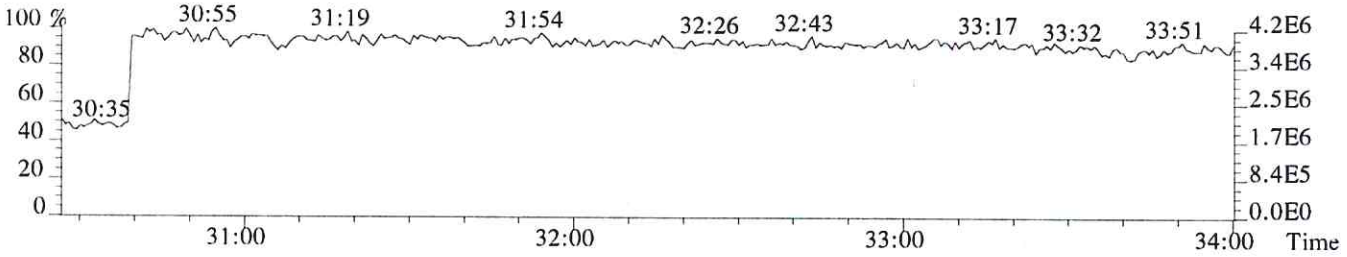
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,588.0,1.00%,F,T)



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

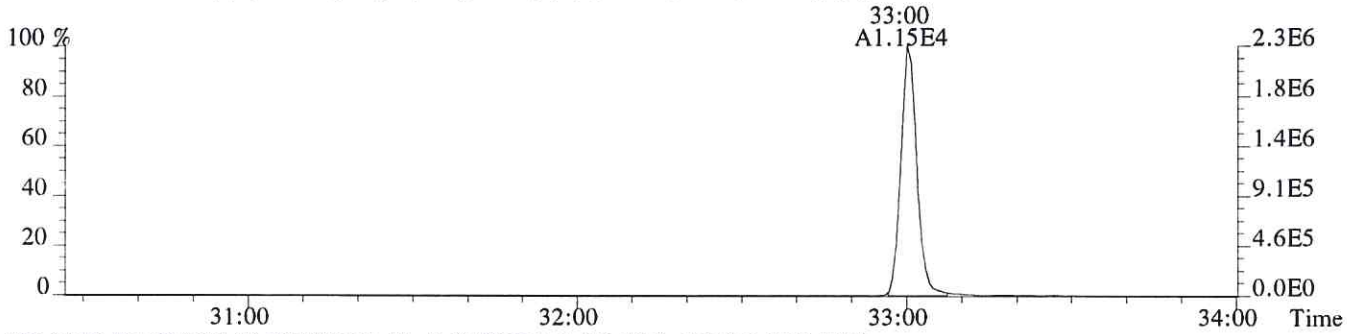


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

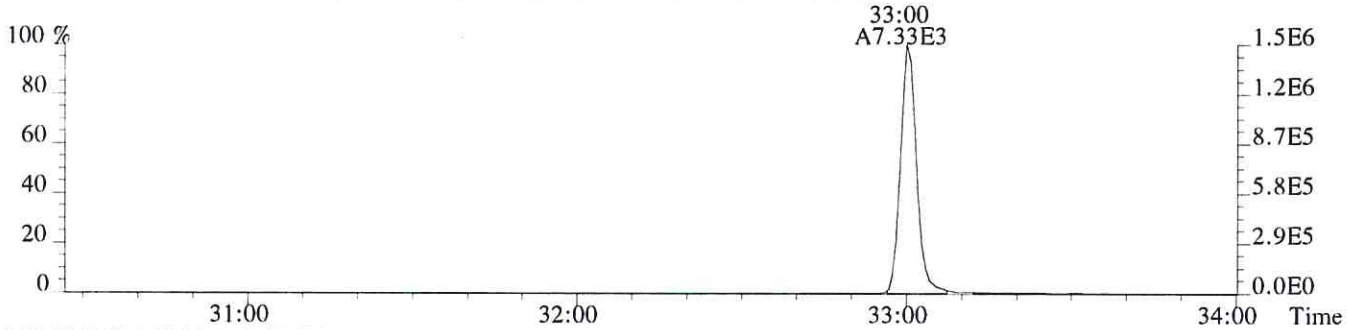


File:P406889 #1-321 Acq:24-MAY-2017 21:37:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

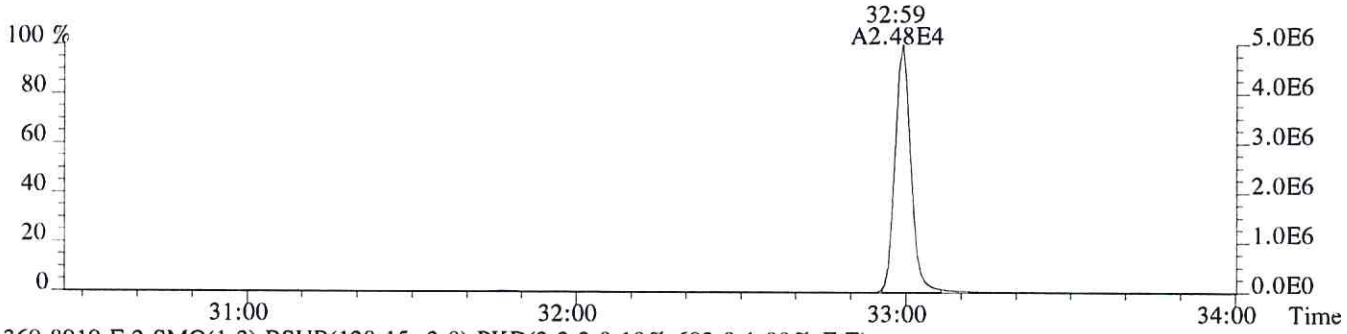
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,556.0,1.00%,F,T)



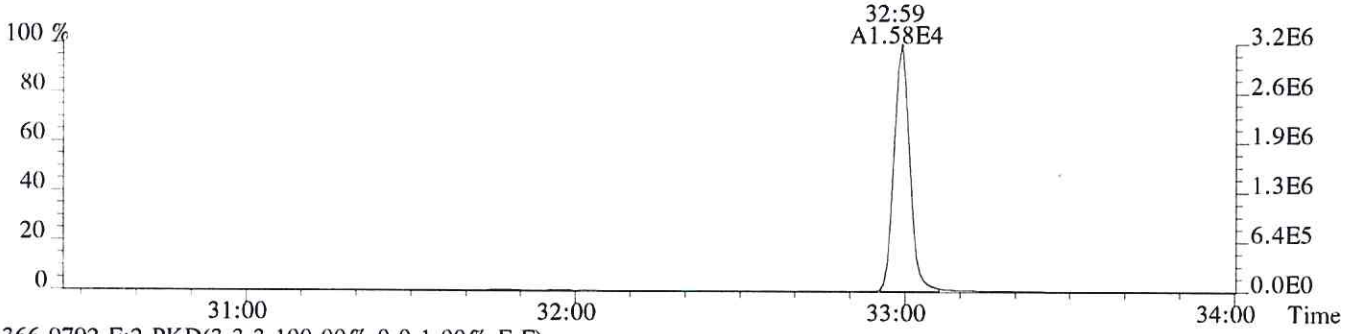
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,452.0,1.00%,F,T)



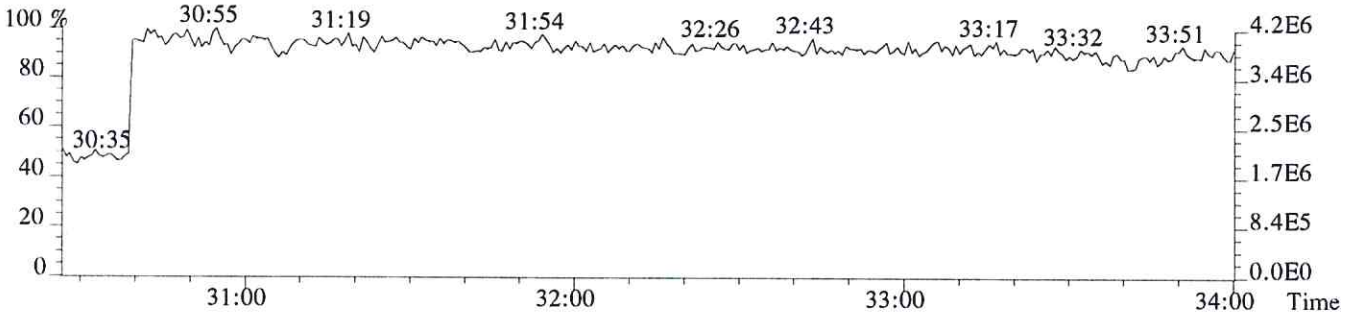
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,464.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,692.0,1.00%,F,T)

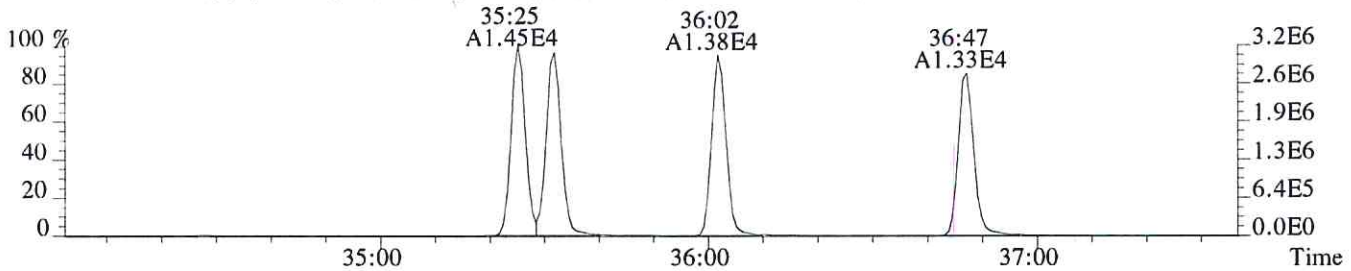


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

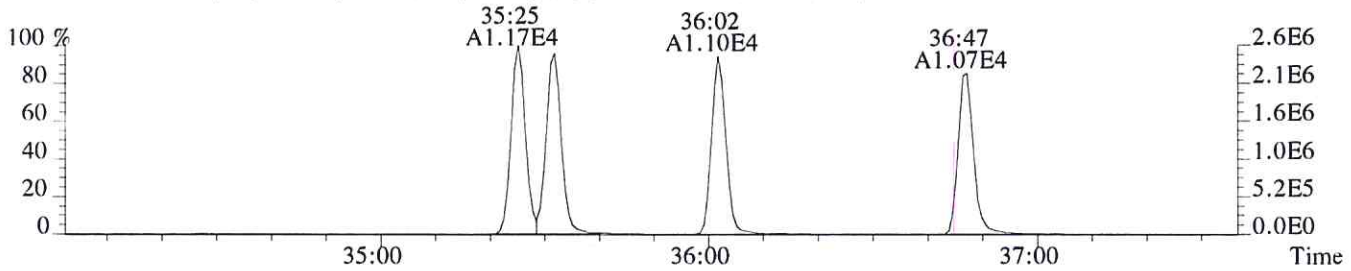


File:P406889 #1-322 Acq:24-MAY-2017 21:37:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

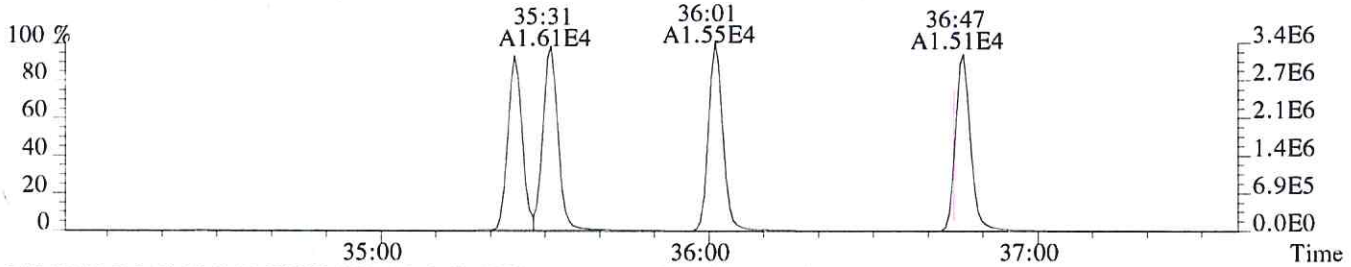
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,424.0,0.40%,F,T)



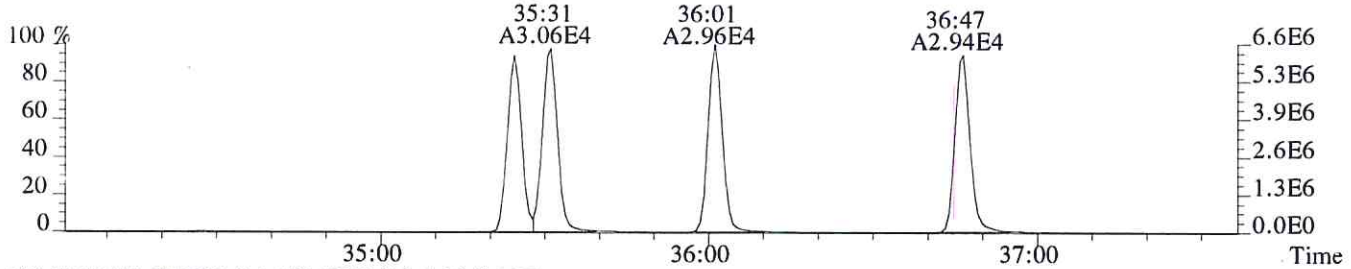
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,384.0,0.40%,F,T)



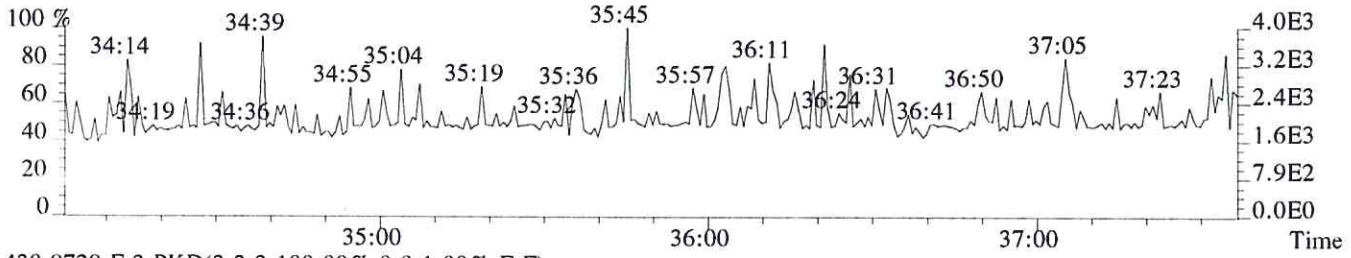
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,456.0,0.40%,F,T)



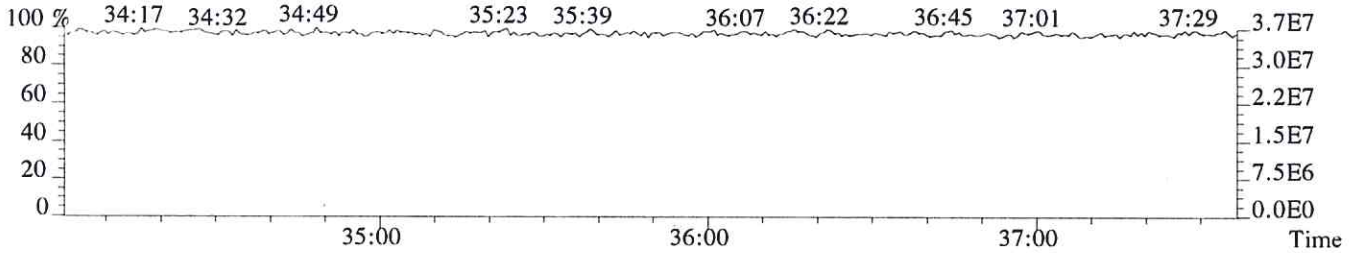
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,636.0,0.40%,F,T)



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

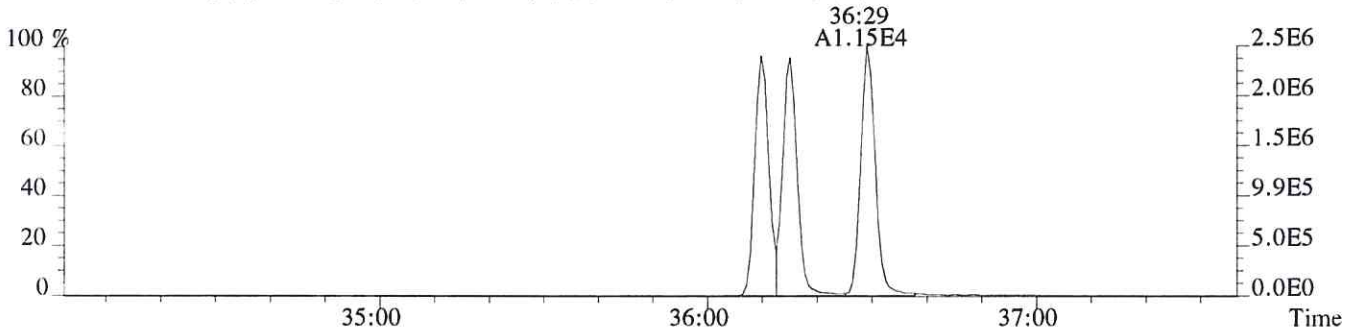


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

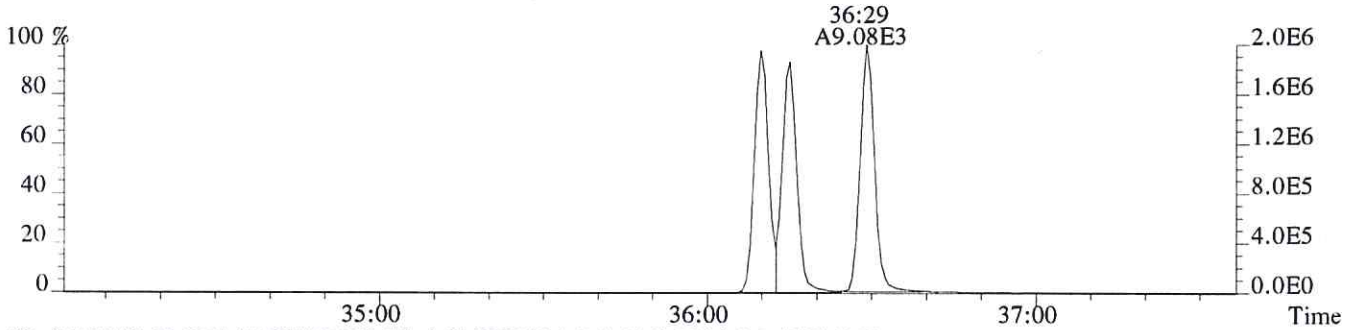


File:P406889 #1-322 Acq:24-MAY-2017 21:37:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

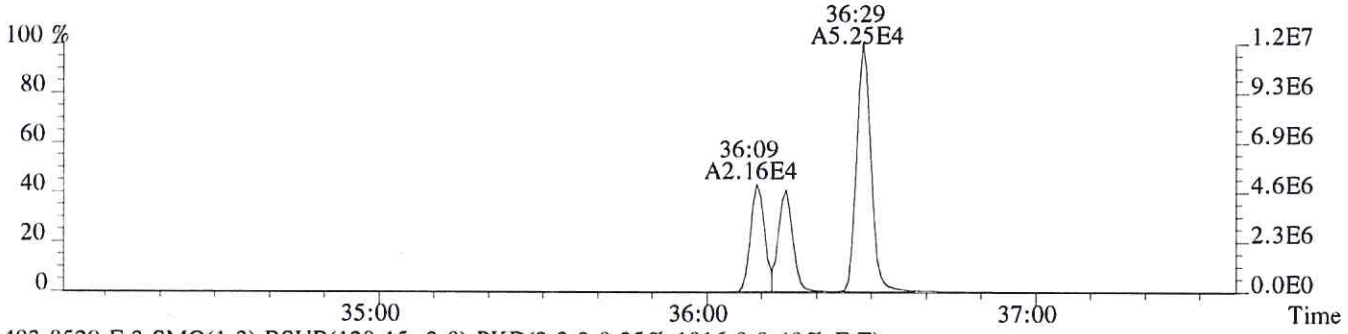
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,320.0,0.40%,F,T)



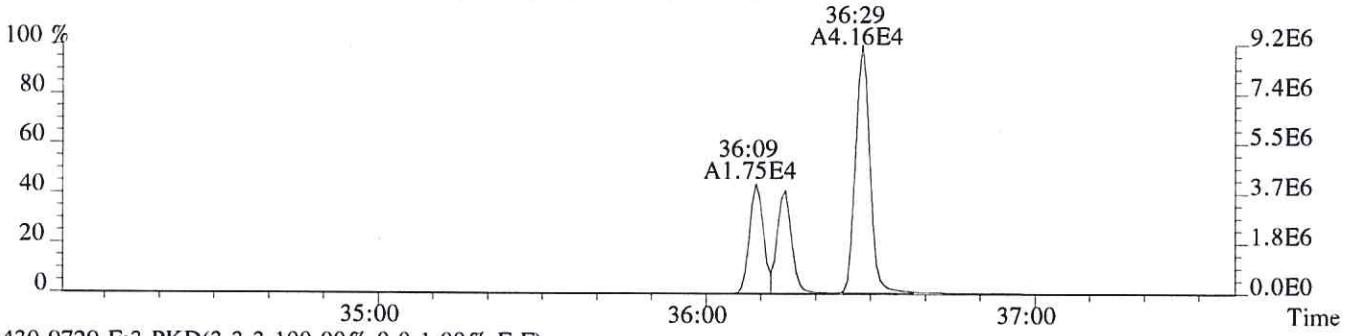
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,260.0,0.40%,F,T)



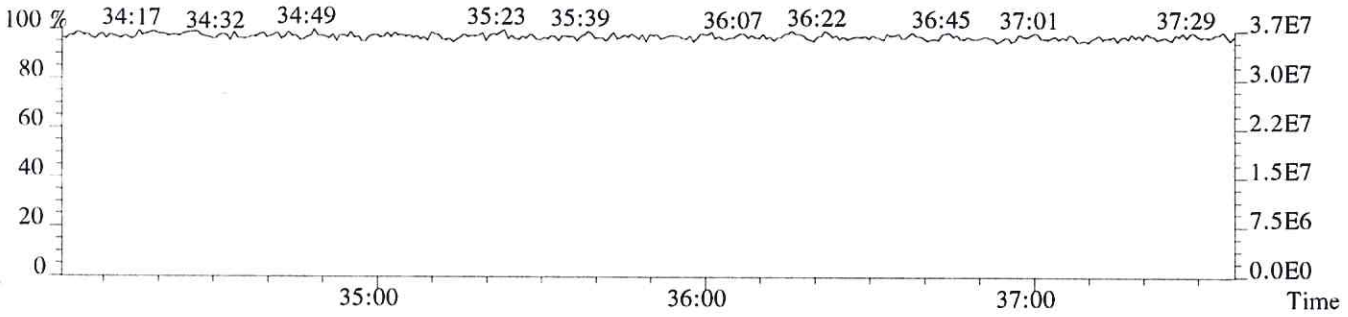
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2584.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1016.0,0.40%,F,T)

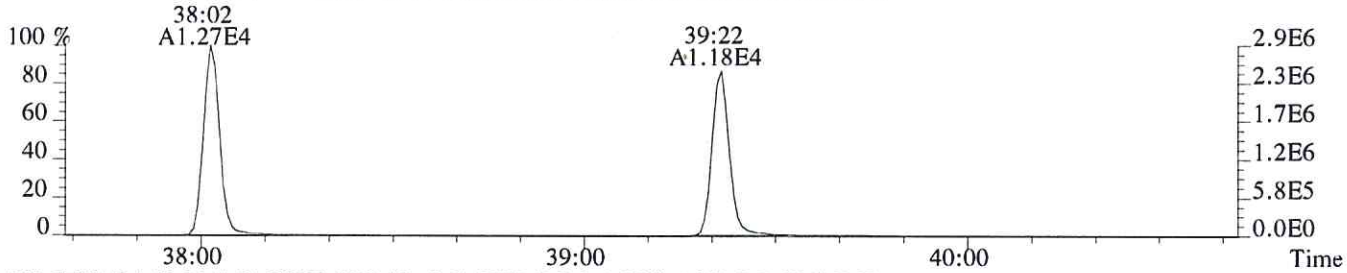


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

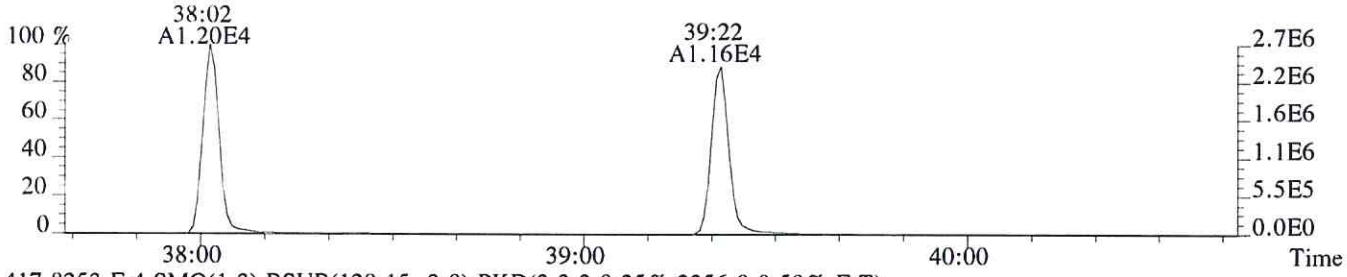


File:P406889 #1-276 Acq:24-MAY-2017 21:37:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

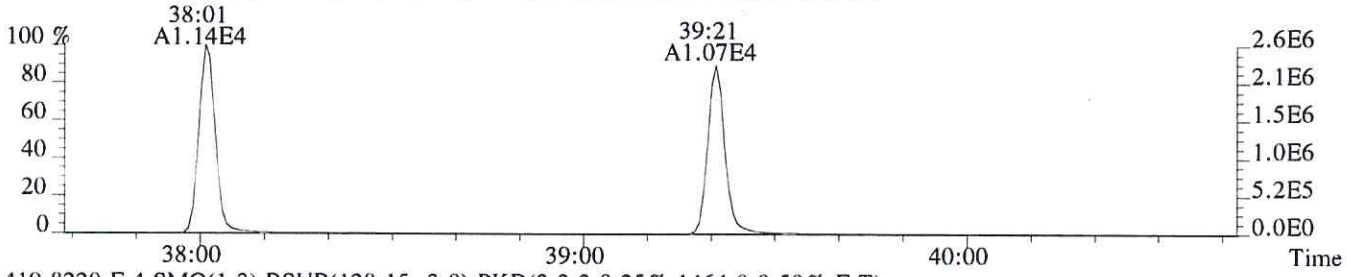
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1400.0,0.50%,F,T)



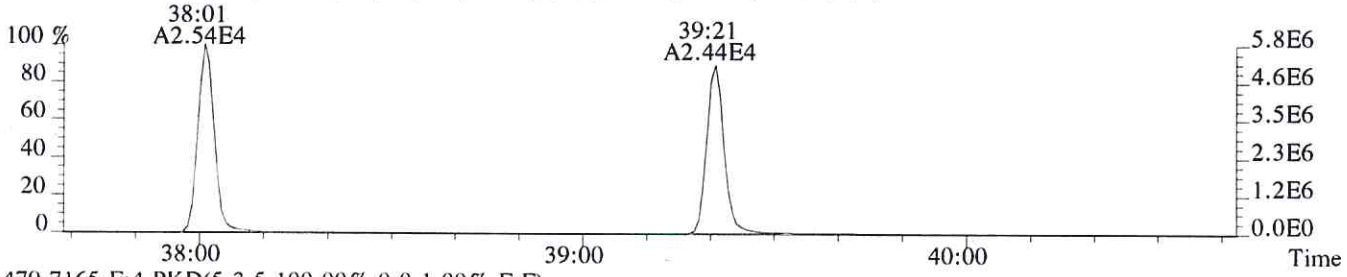
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1660.0,0.50%,F,T)



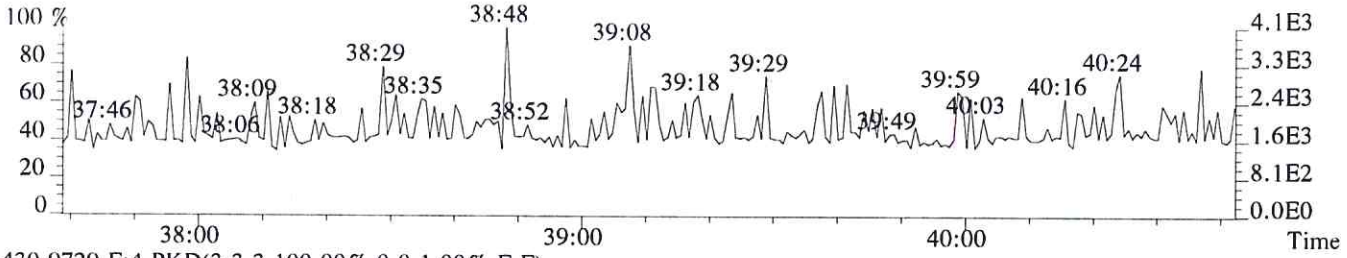
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2356.0,0.50%,F,T)



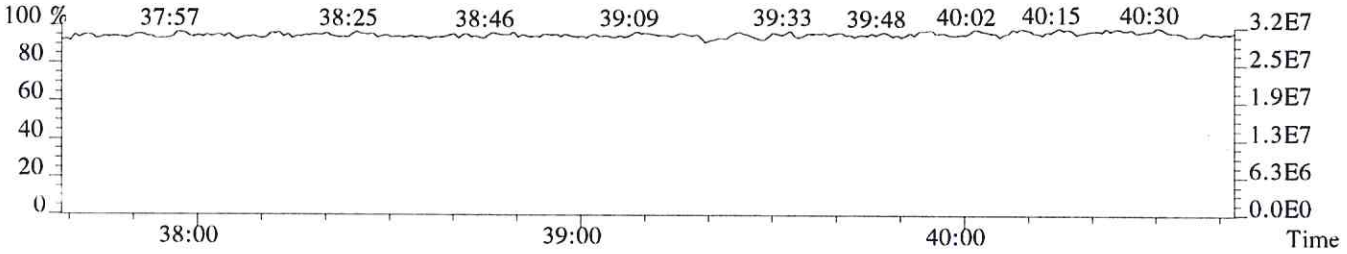
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1464.0,0.50%,F,T)



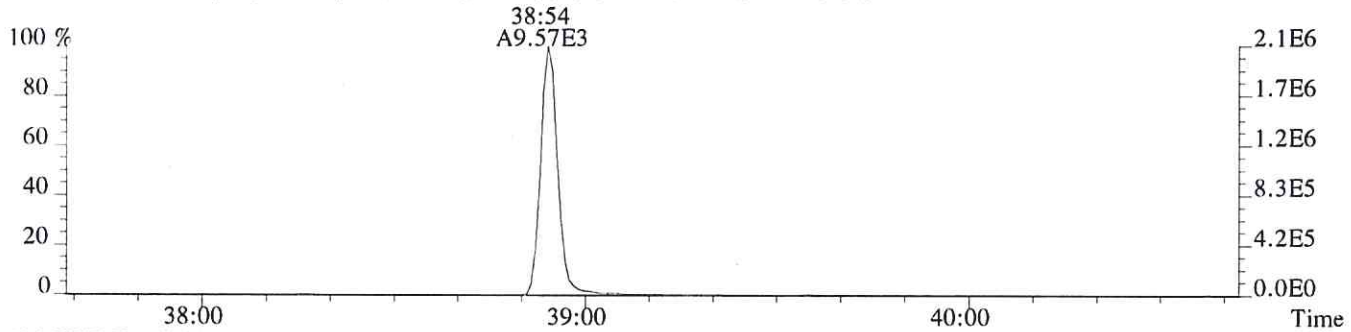
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



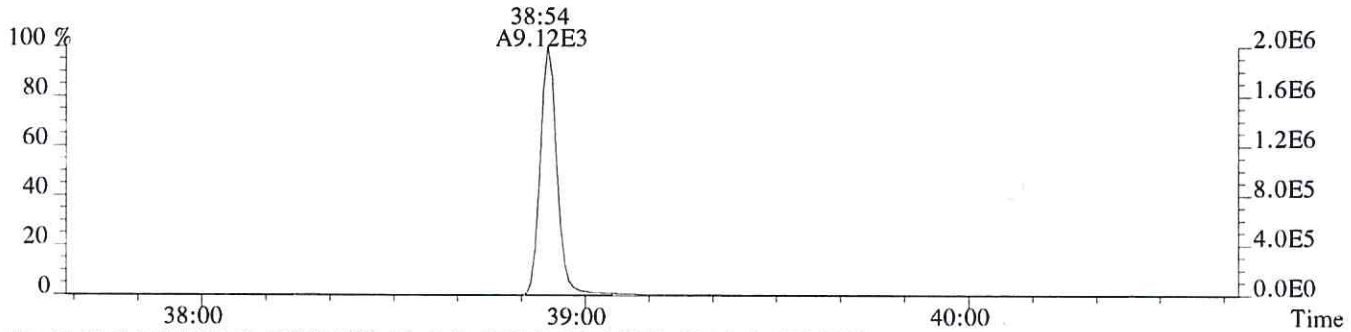
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



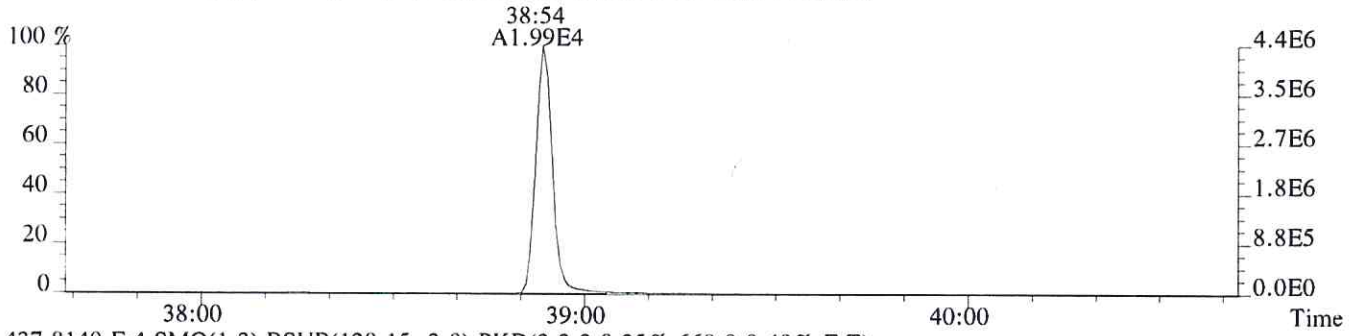
File:P406889 #1-276 Acq:24-MAY-2017 21:37:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,396.0,0.40%,F,T)



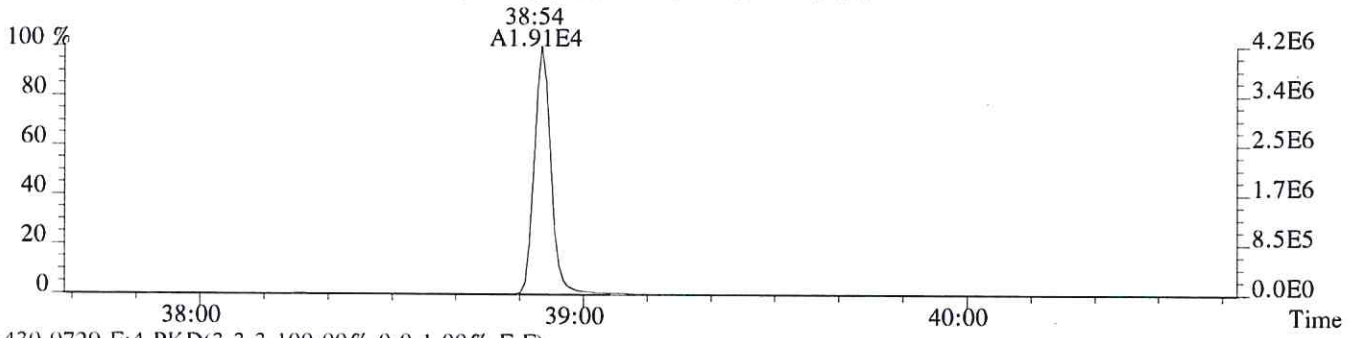
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,508.0,0.40%,F,T)



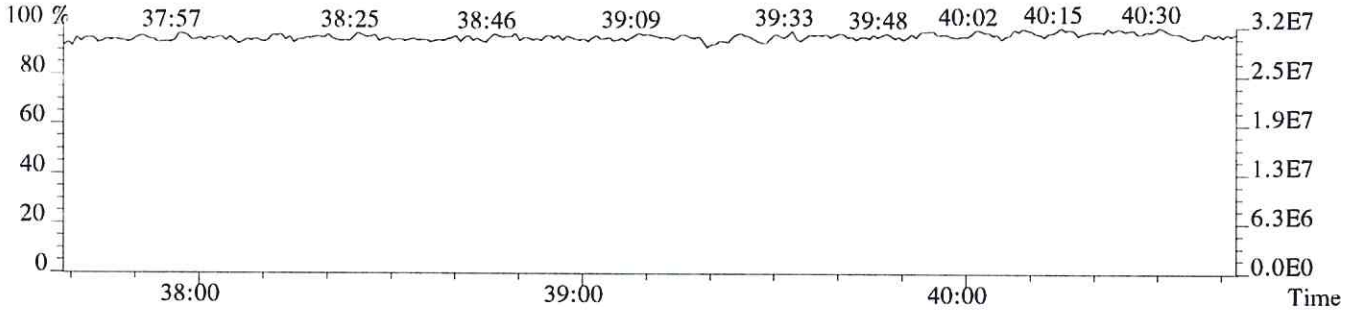
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,384.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,668.0,0.40%,F,T)

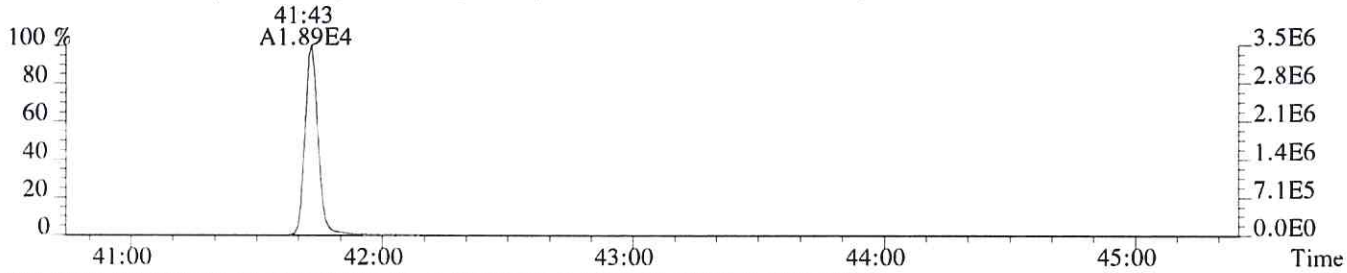


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

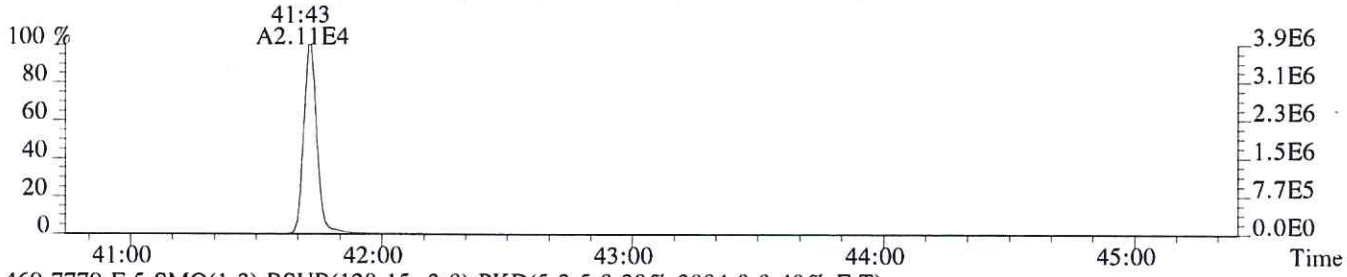


File:P406889 #1-421 Acq:24-MAY-2017 21:37:05 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

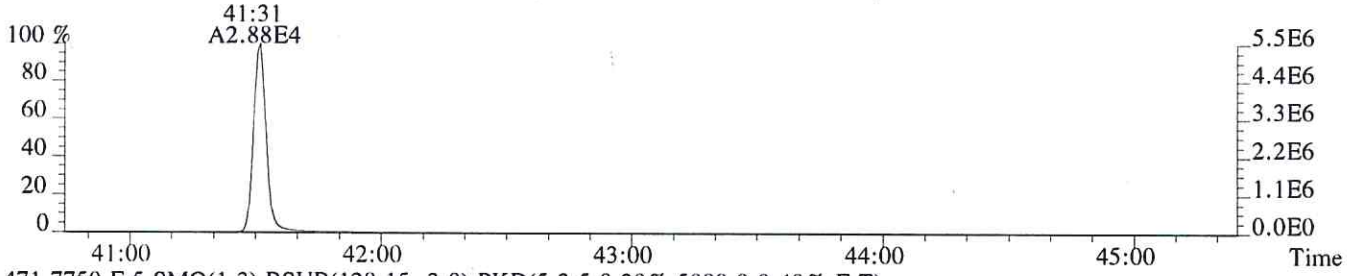
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,128.0,0.40%,F,T)



443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,700.0,0.40%,F,T)



469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3004.0,0.40%,F,T)



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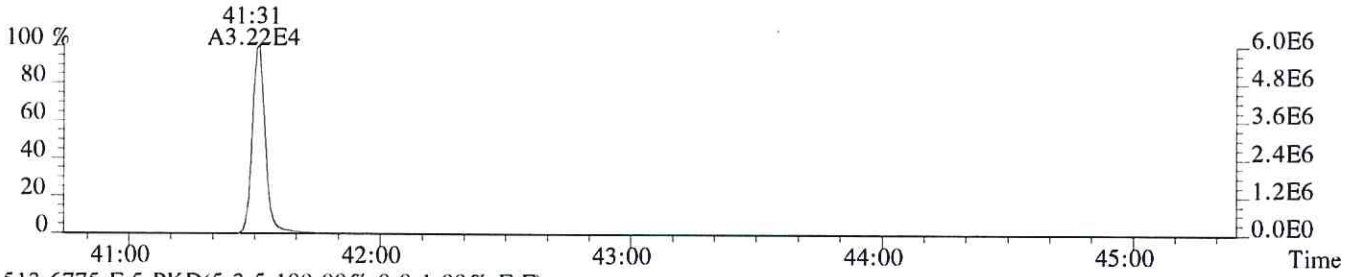
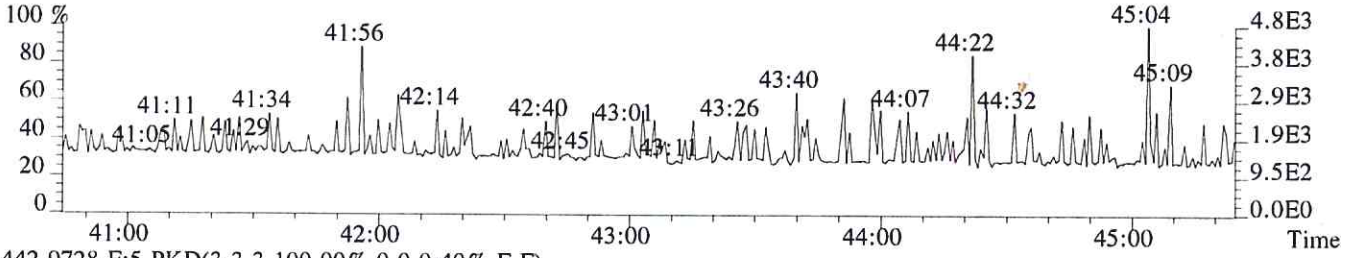
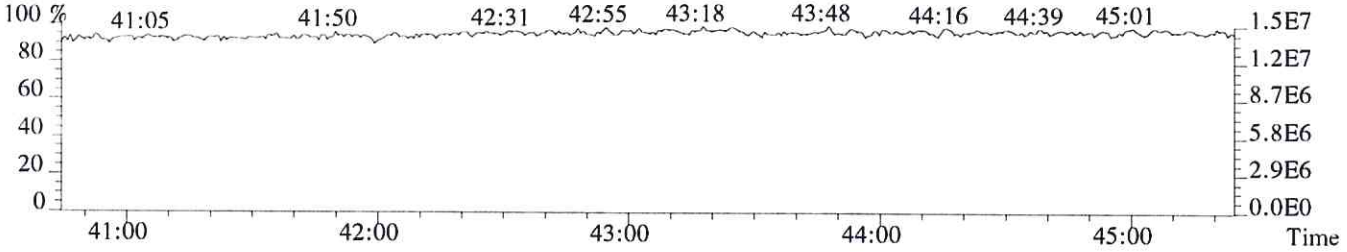


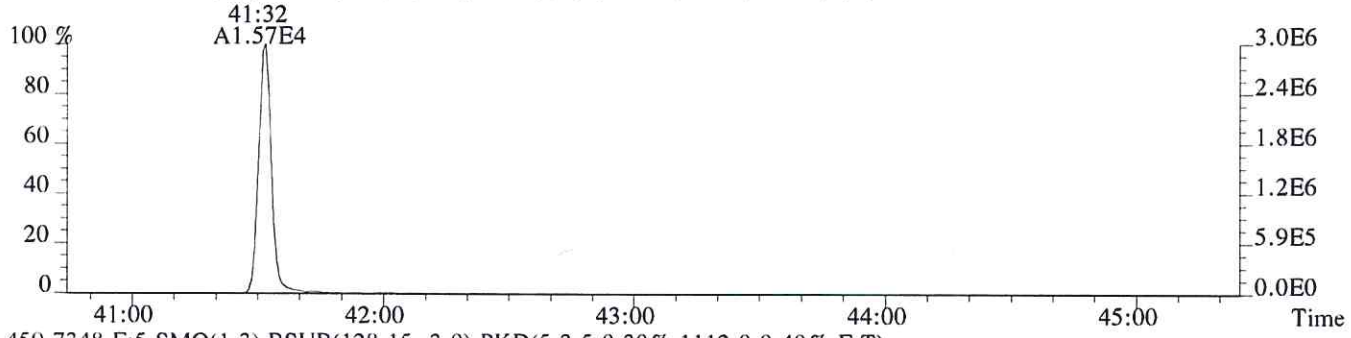
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



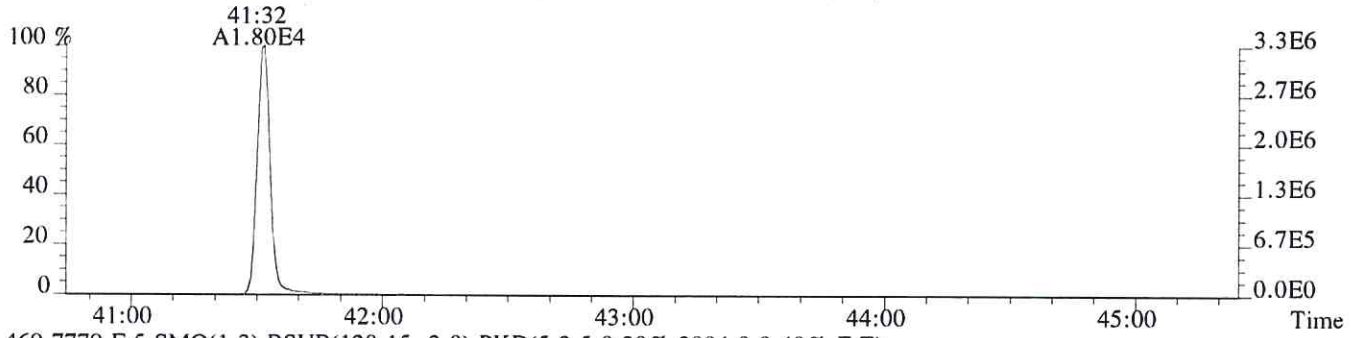
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



File:P406889 #1-421 Acq:24-MAY-2017 21:37:05 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%,644.0,0.40%,F,T)



459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1112.0,0.40%,F,T)



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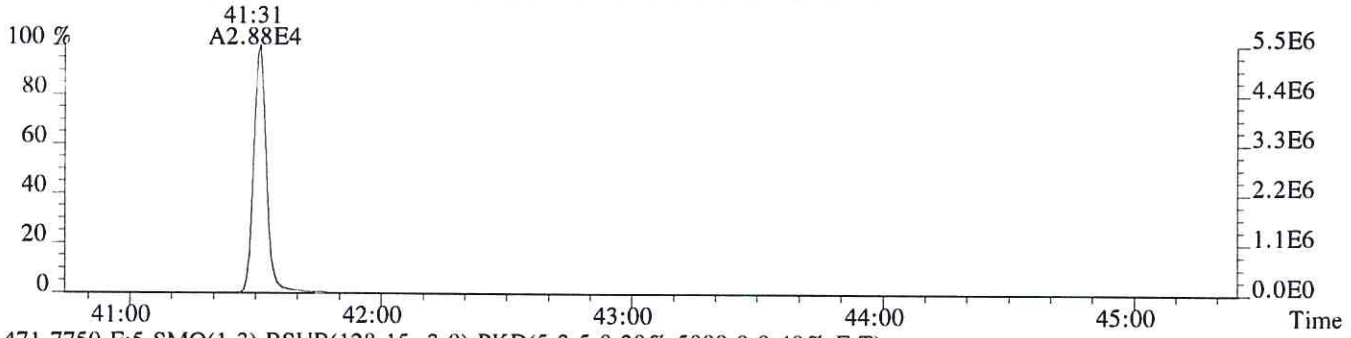
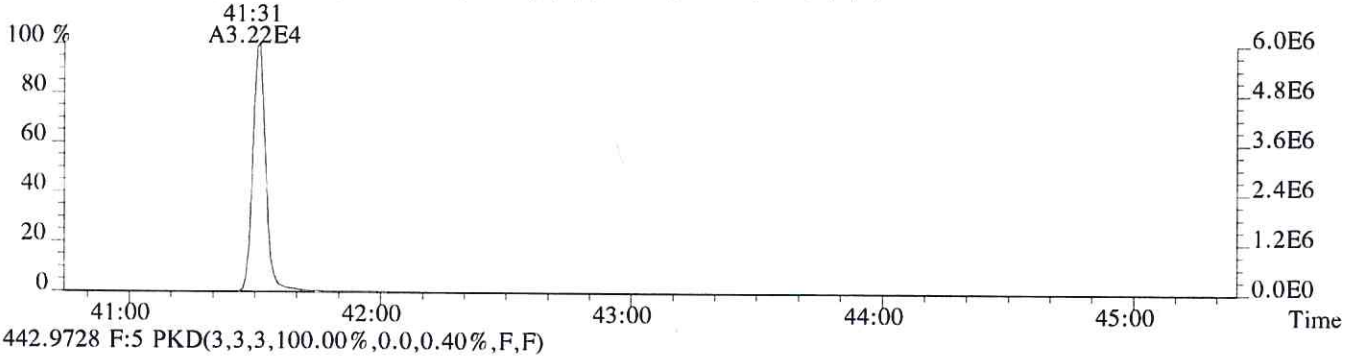
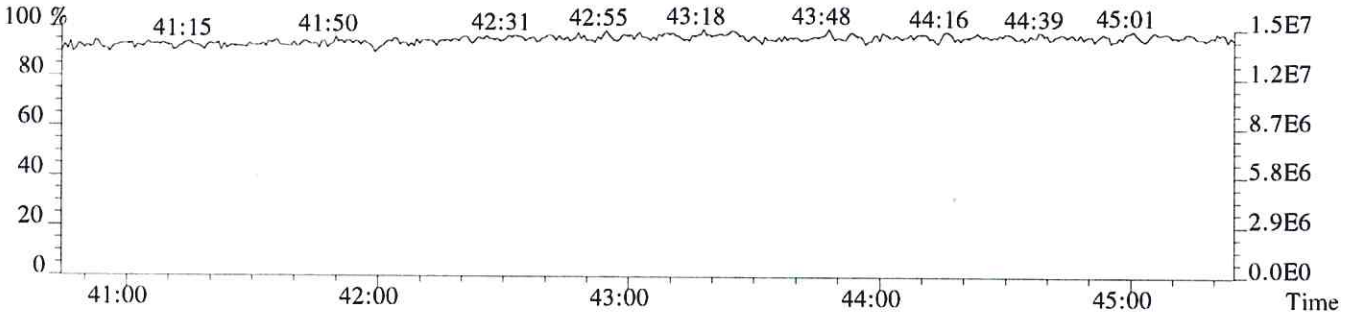


471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5088.0,0.40%,F,T)



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



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: P4068868 – P4068880

Circle one: Beginning / Ending

Date: 05/24/17

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	✓	✓

Analyst: JC

Second QC: LKL

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: 04/28/16

Init. Calib.Times: 09:34

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
178397	WINDOW DEFINE	P406869	24-MAY-17	04:08:06
178519	CS3	P406868	24-MAY-17	03:20:47
METHOD BLANK	EQ1700187-01	P406870	24-MAY-17	04:57:16
METHOD BLANK	EQ1700201-01	P406871	24-MAY-17	05:46:28
EB16_170502	E1700483-001	P406872	24-MAY-17	06:35:39
M001A-R_170502	E1700483-002	P406873	24-MAY-17	07:24:50
GP-BE-05-04-17-A4G	J1703312-001	P406874	24-MAY-17	08:14:02
BP-1	K1704638-001	P406875	24-MAY-17	09:03:13
BP-2	K1704638-002	P406876	24-MAY-17	09:53:10
17E0271-01	E1700503-001	P406877	24-MAY-17	10:40:47
LCS	EQ1700204-02	P406878	24-MAY-17	11:29:57
DLCS	EQ1700204-03	P406879	24-MAY-17	12:19:07
178519	CS3	P406880	24-MAY-17	13:08:19

Sample List Report MassLynx 4.1 SCN815 SCN795

Sample List: C:\MassLynx\ehrms06.PRO\SampleDB\20170523B.spl
Last Modified: Wednesday, May 24, 2017 14:28:59 Central Daylight Time
Printed: Wednesday, May 24, 2017 14:29:01 Central Daylight Time

P4 8290 1L 13

Page Position (1, 1)

Opus 4: P406868res

	Date	Time	File Name	Lab Sample ID	Client File Text	Bottle	MS File	Inlet File	Analyst	Comments
1	5/24/17	03:20	P406868	CS3	178519	Tray1:1	epa1613_als	Dioxin_ALS	LM	HRMScheck 03:20
2		04:08	P406869	WINDOW DEFINE	178397	Tray1:2	epa1613_als	Dioxin_ALS		
3		04:57	P406870	EQ1700187-01	MB	Tray1:3	epa1613_als	Dioxin_ALS		
4		05:46	P406871	EQ1700201-01	MB	Tray1:4	epa1613_als	Dioxin_ALS		
5		06:35	P406872	E1700483-001	E1700483-001	Tray1:5	epa1613_als	Dioxin_ALS		
6		07:24	P406873	E1700483-002	E1700483-002	Tray1:6	epa1613_als	Dioxin_ALS		
7		08:14	P406874	J1703312-001	J1703312-001	Tray1:7	epa1613_als	Dioxin_ALS		
8		09:03	P406875	K1704638-001	K1704638-001	Tray1:8	epa1613_als	Dioxin_ALS		
9		09:53	P406876	K1704638-002	K1704638-002	Tray1:9	epa1613_als	Dioxin_ALS		
10		10:40	P406877	E1700503-001	E1700503-001	Tray1:10	epa1613_als	Dioxin_ALS		
11		11:29	P406878	EQ1700204-02	LCS	Tray1:11	epa1613_als	Dioxin_ALS		
12		12:19	P406879	EQ1700204-03	DLCS	Tray1:12	epa1613_als	Dioxin_ALS		
13		13:08	P406880	CS3	178519	Tray1:2	epa1613_als	Dioxin_ALS		HRMScheck 14:07
14	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---
15	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---
16	---	---	---	---	---	Tray1:1	epa1613_als	Dioxin_ALS	---	---
17	---	---	---	---	---	Tray1:17	epa1613_als	Dioxin_ALS	---	---
18	---	---	---	---	---	Tray1:18	epa1613_als	Dioxin_ALS	---	---
19	---	---	---	---	---	Tray1:19	epa1613_als	Dioxin_ALS	---	---
20	---	---	---	---	---	Tray1:20	epa1613_als	Dioxin_ALS	---	---
21	---	---	---	---	---	Tray1:21	epa1613_als	Dioxin_ALS	---	---
22	---	---	---	---	---	Tray1:22	epa1613_als	Dioxin_ALS	---	---
23	---	---	---	---	---	Tray1:23	epa1613_als	Dioxin_ALS	---	---
24	---	---	---	---	---	Tray1:24	epa1613_als	Dioxin_ALS	---	---
25	---	---	---	---	---	Tray1:25	epa1613_als	Dioxin_ALS	---	---
26	---	---	---	---	---	Tray1:26	epa1613_als	Dioxin_ALS	---	---
27	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---
28	---	---	---	---	---	Tray1:28	epa1613_als	Dioxin_ALS	---	---
29	---	---	---	---	---	Tray1:29	epa1613_als	Dioxin_ALS	---	---
30	---	---	---	---	---	Tray1:30	epa1613_als	Dioxin_ALS	---	---
31	---	---	---	---	---	Tray1:31	epa1613_als	Dioxin_ALS	---	---
32	---	---	---	---	---	Tray1:32	epa1613_als	Dioxin_ALS	---	---
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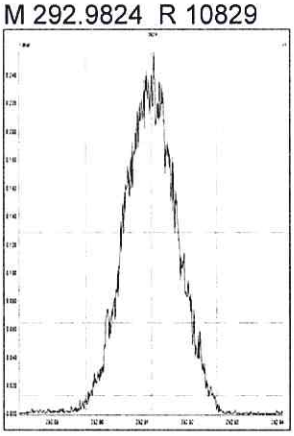
35	---	---	---	---	---	Tray1:35	epa1613_als	Dioxin_ALS	---	---
36	---	---	---	---	---	Tray1:36	epa1613_als	Dioxin_ALS	---	---
37	---	---	---	---	---	Tray1:37	epa1613_als	Dioxin_ALS	---	---
38	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---
39	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---

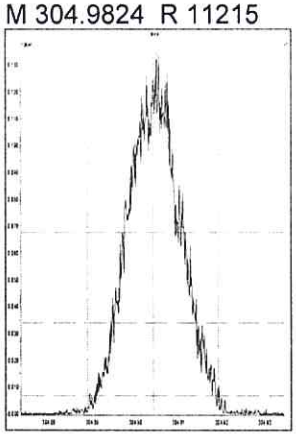
gc 05/26/17

Printed: Wednesday, May 24, 2017 03:20:45 Central Daylight Time

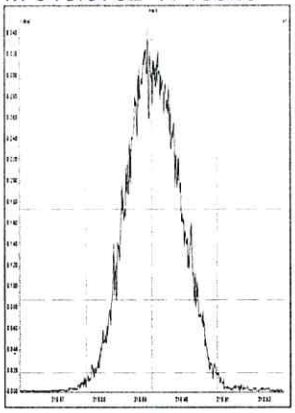
M 292.9824 R 10829



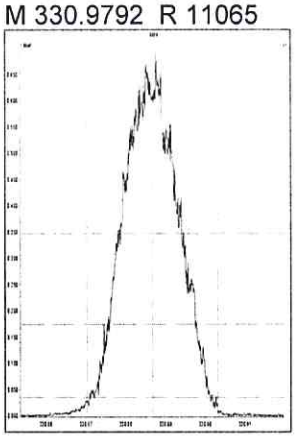
M 304.9824 R 11215



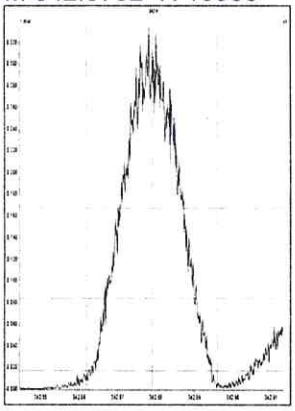
M 318.9792 R 10920



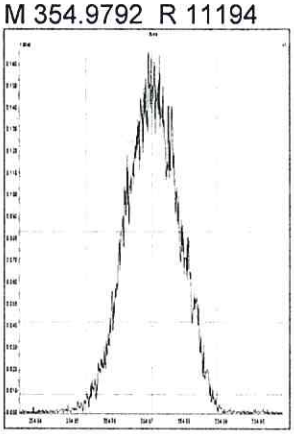
M 330.9792 R 11065



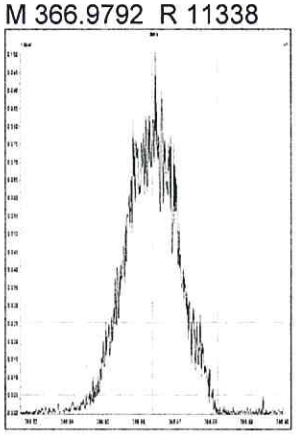
M 342.9792 R 10966



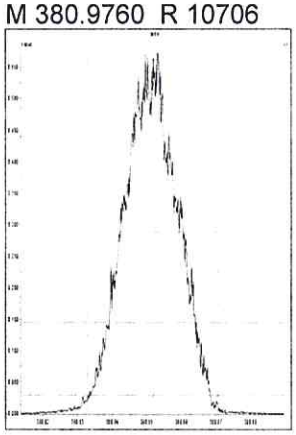
M 354.9792 R 11194



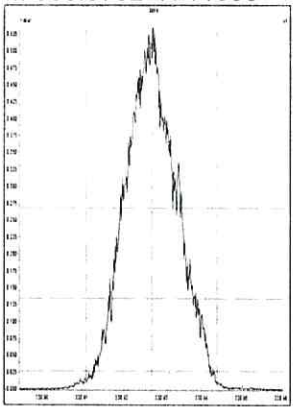
M 366.9792 R 11338



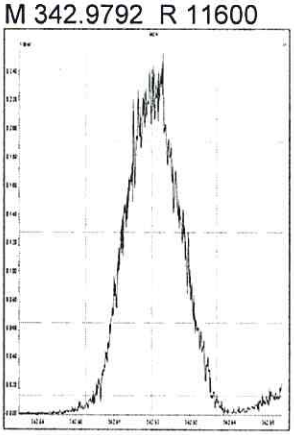
M 380.9760 R 10706



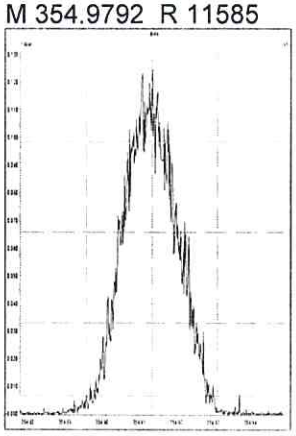
M 330.9792 R 11338



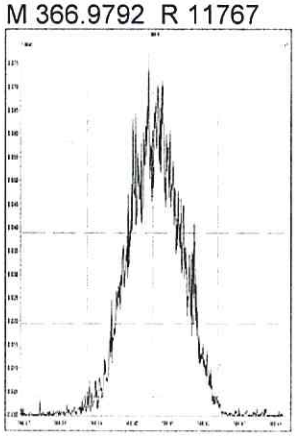
M 342.9792 R 11600



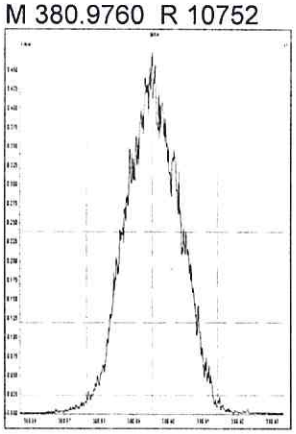
M 354.9792 R 11585



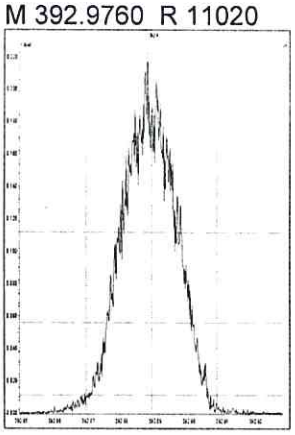
M 366.9792 R 11767



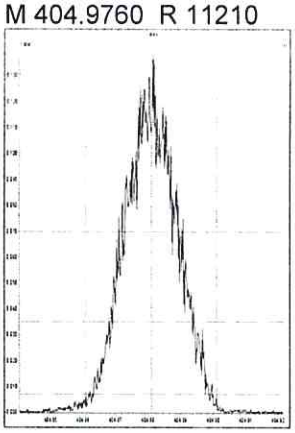
M 380.9760 R 10752



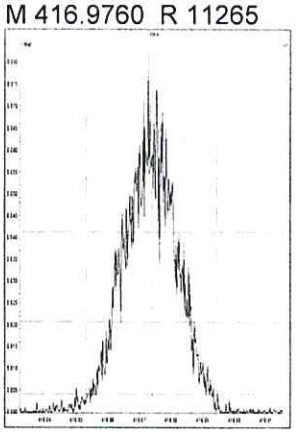
M 392.9760 R 11020



M 404.9760 R 11210



M 416.9760 R 11265



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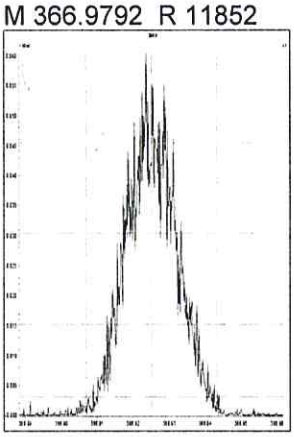
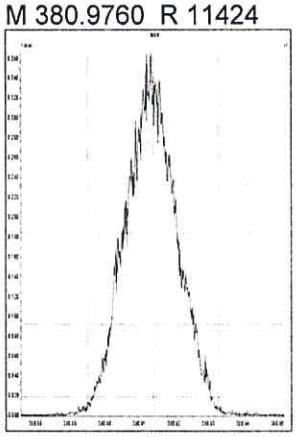
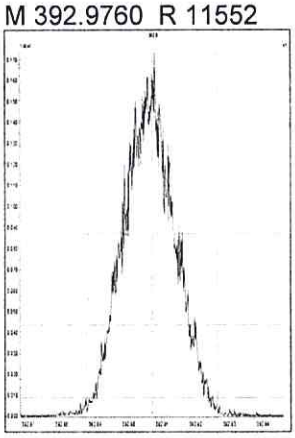
M 366.9792 R 11852



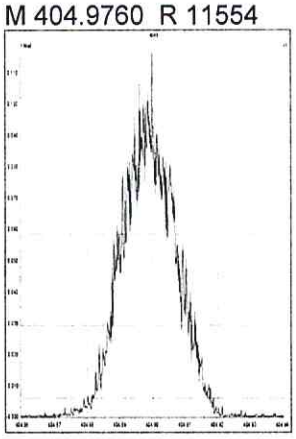
M 380.9760 R 11424



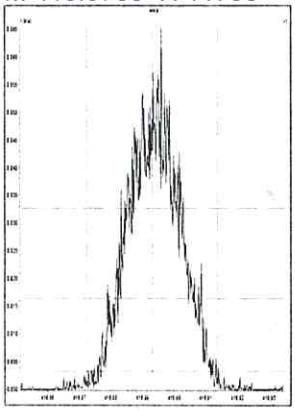
M 392.9760 R 11552



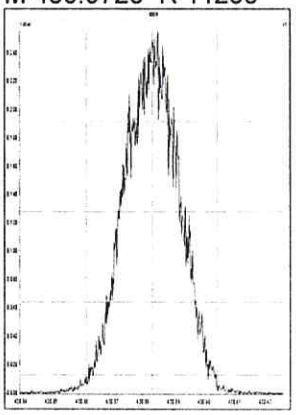
M 404.9760 R 11554



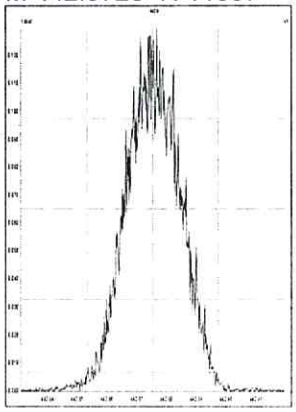
M 416.9760 R 11796



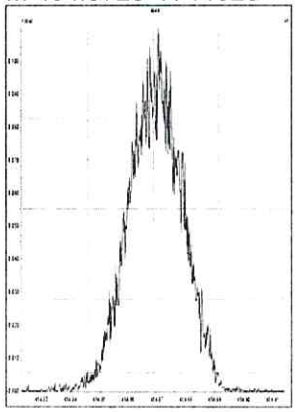
M 430.9728 R 11263



M 442.9728 R 11037



M 454.9728 R 11320



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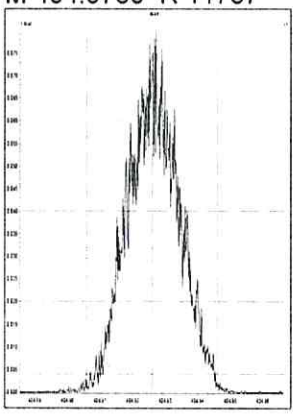

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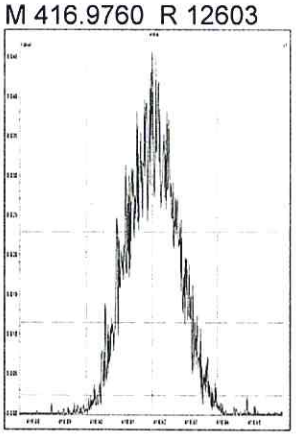
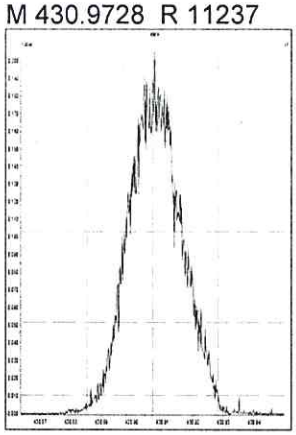
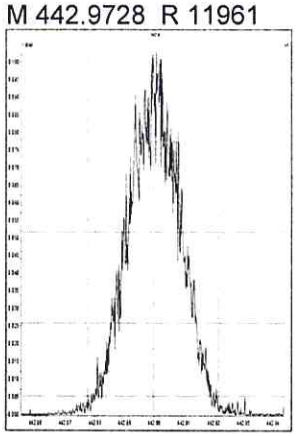


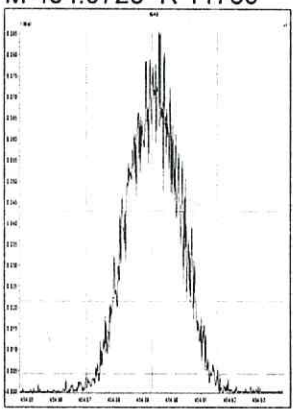
M 430.9728 R 11237



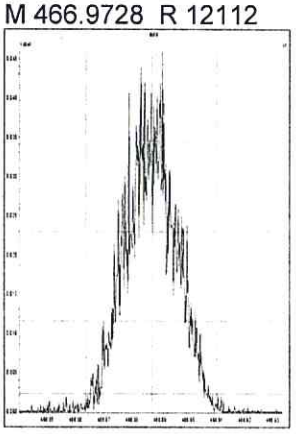
M 442.9728 R 11961



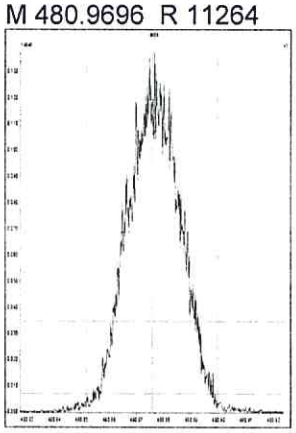
M 454.9728 R 11769



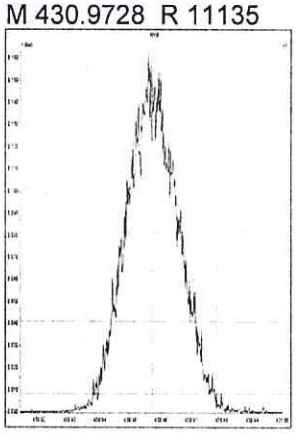
M 466.9728 R 12112



M 480.9696 R 11264



M 430.9728 R 11135



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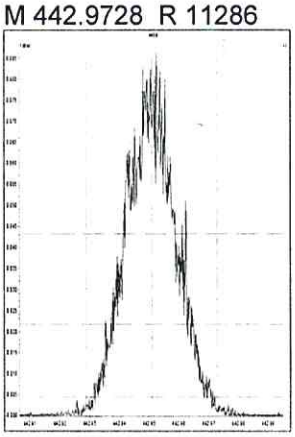
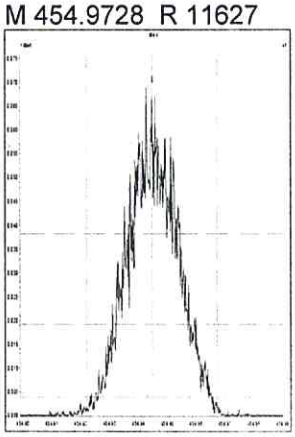
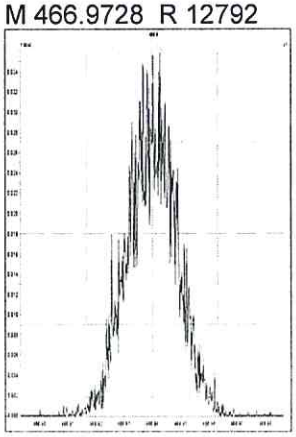
M 442.9728 R 11286



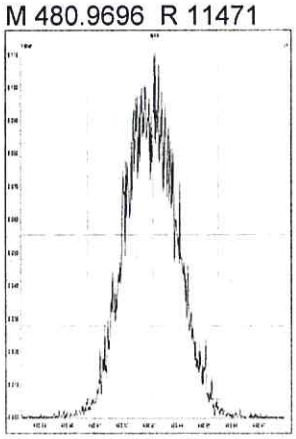
M 454.9728 R 11627



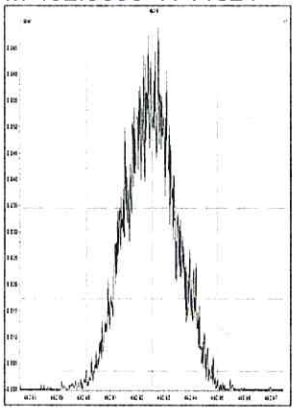
M 466.9728 R 12792



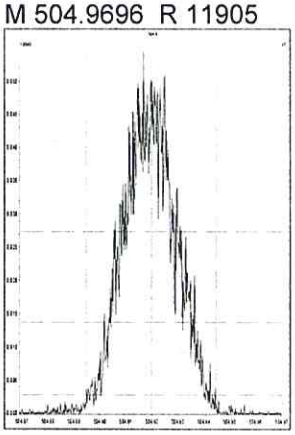
M 480.9696 R 11471



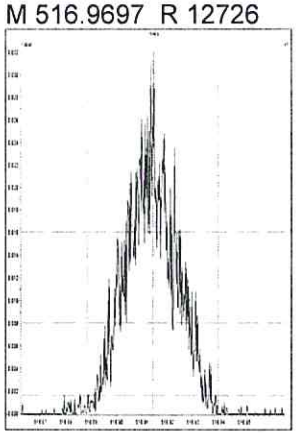
M 492.9696 R 11821



M 504.9696 R 11905



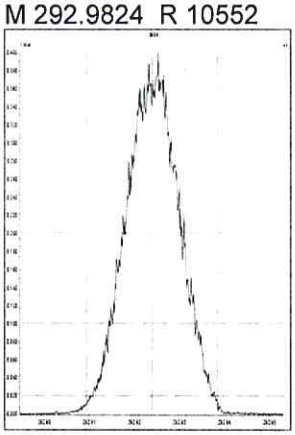
M 516.9697 R 12726



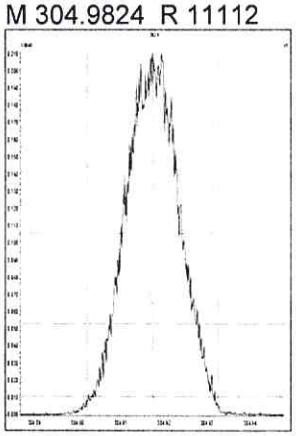
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, May 24, 2017 14:07:23 Central Daylight Time

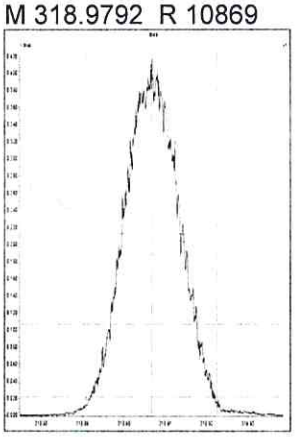
M 292.9824 R 10552



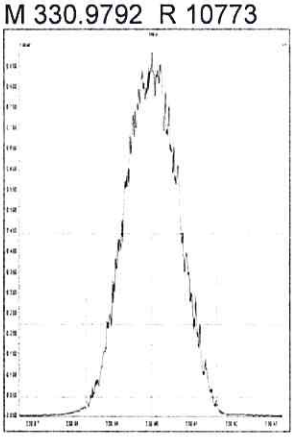
M 304.9824 R 11112



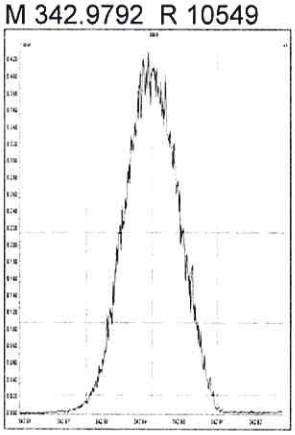
M 318.9792 R 10869



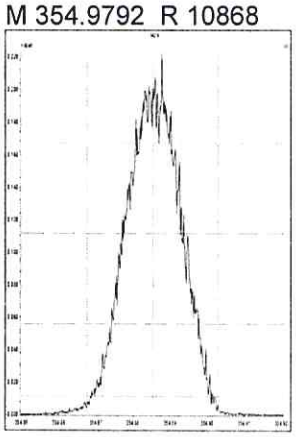
M 330.9792 R 10773



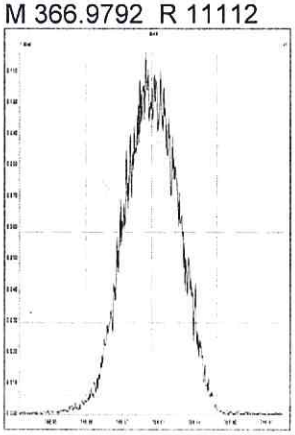
M 342.9792 R 10549



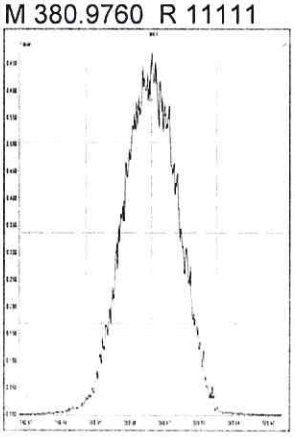
M 354.9792 R 10868



M 366.9792 R 11112



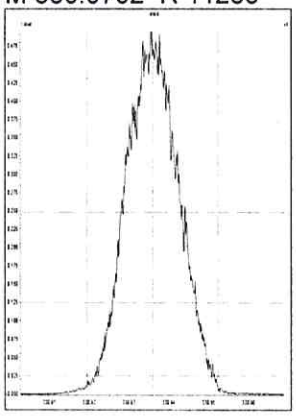
M 380.9760 R 11111



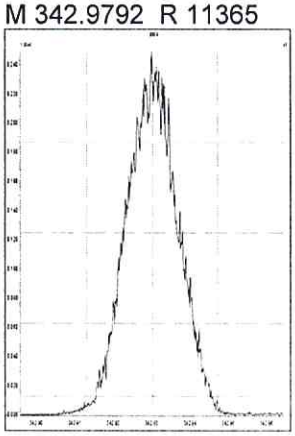
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, May 24, 2017 14:09:35 Central Daylight Time

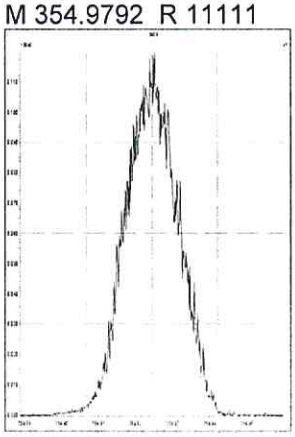
M 330.9792 R 11265



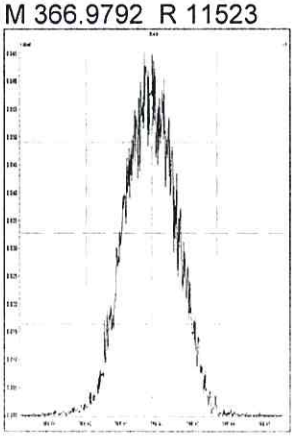
M 342.9792 R 11365



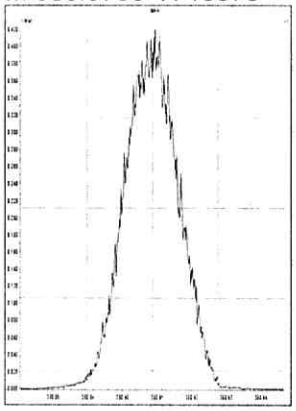
M 354.9792 R 11111



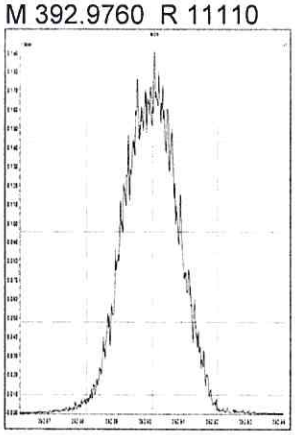
M 366.9792 R 11523



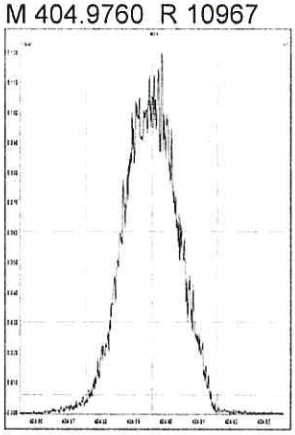
M 380.9760 R 10870



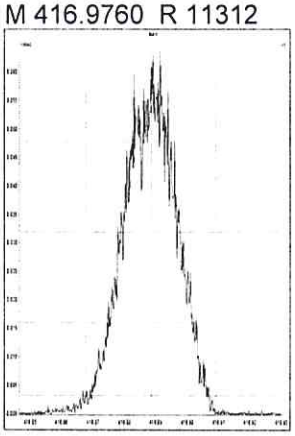
M 392.9760 R 11110



M 404.9760 R 10967



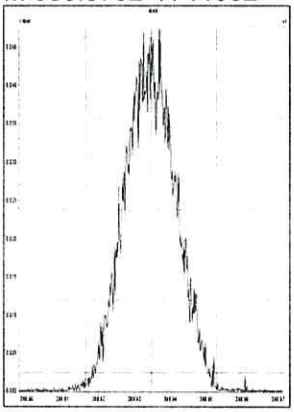
M 416.9760 R 11312



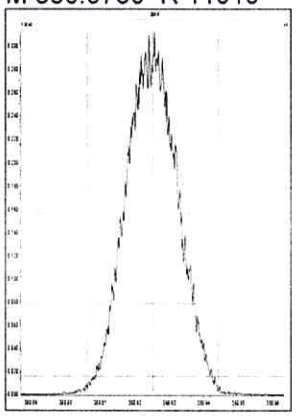
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, May 24, 2017 14:11:09 Central Daylight Time

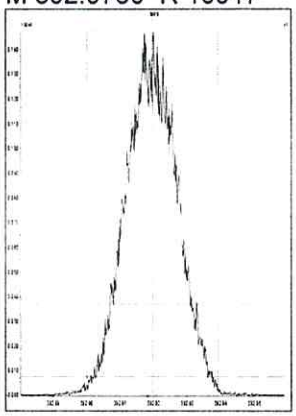
M 366.9792 R 11362



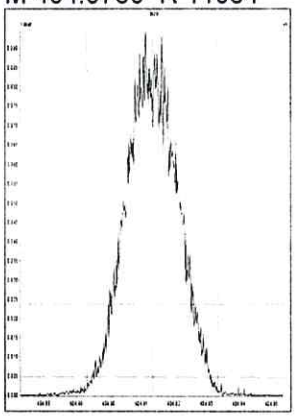
M 380.9760 R 11010



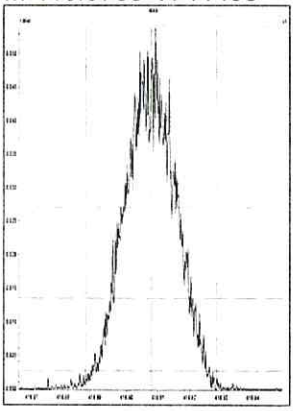
M 392.9760 R 10917



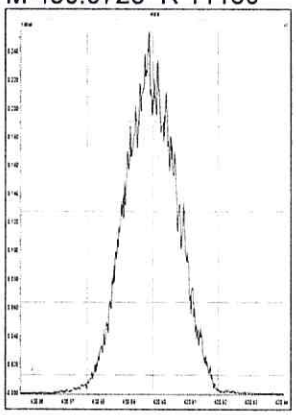
M 404.9760 R 11064



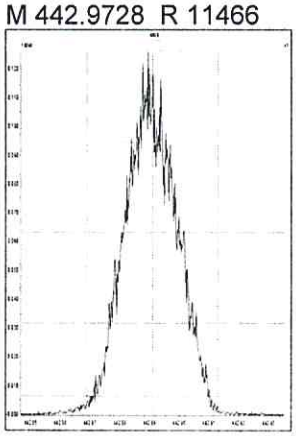
M 416.9760 R 11468



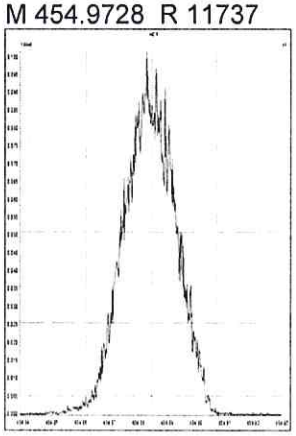
M 430.9728 R 11160



M 442.9728 R 11466



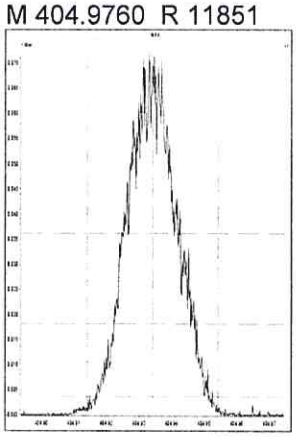
M 454.9728 R 11737



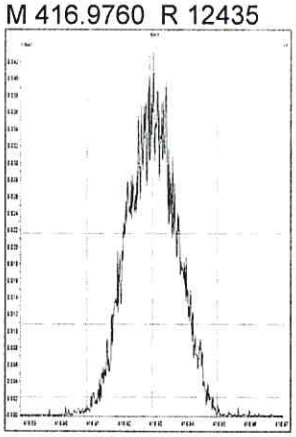
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, May 24, 2017 14:12:50 Central Daylight Time

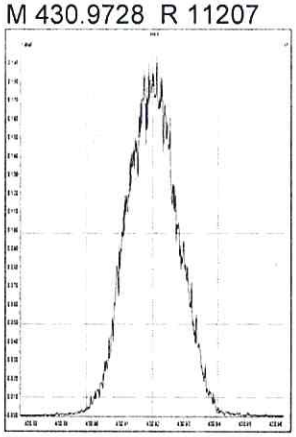
M 404.9760 R 11851



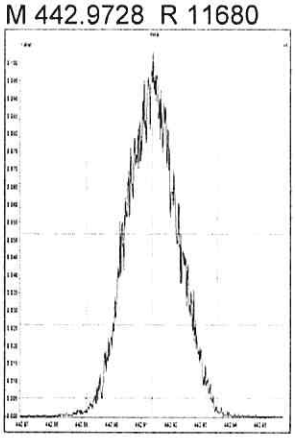
M 416.9760 R 12435



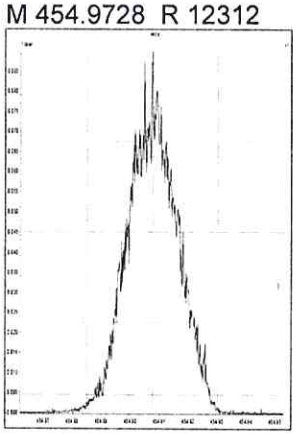
M 430.9728 R 11207



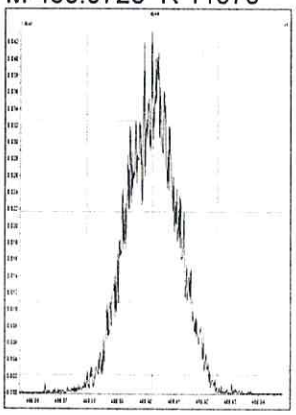
M 442.9728 R 11680



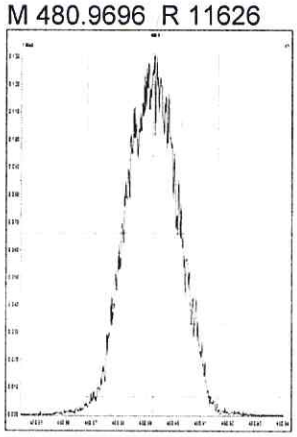
M 454.9728 R 12312



M 466.9728 R 11573



M 480.9696 R 11626



File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

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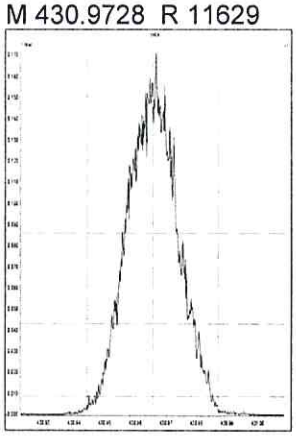
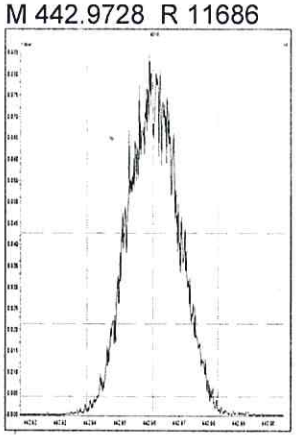
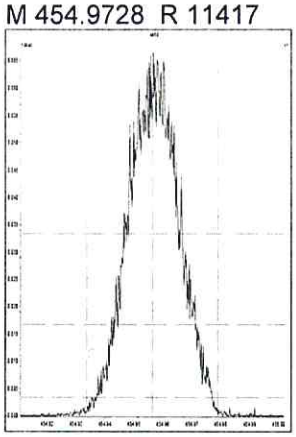
M 430.9728 R 11629



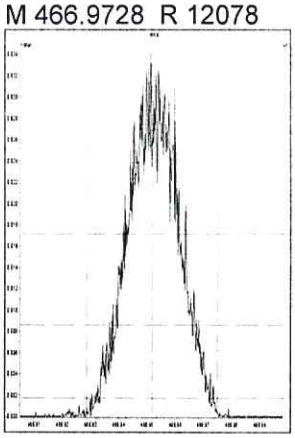
M 442.9728 R 11686



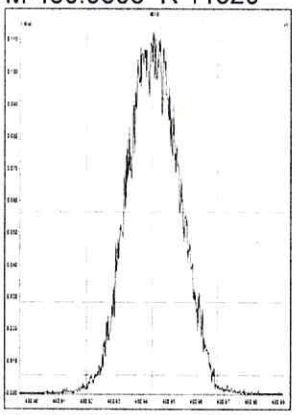
M 454.9728 R 11417



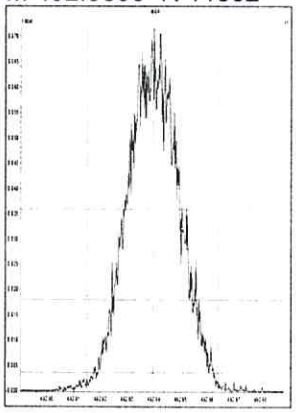
M 466.9728 R 12078



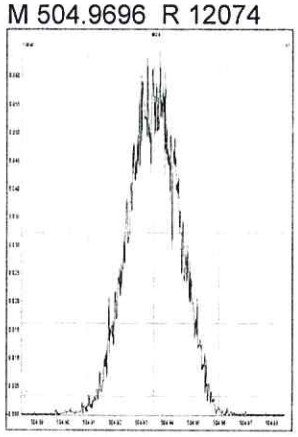
M 480.9696 R 11520



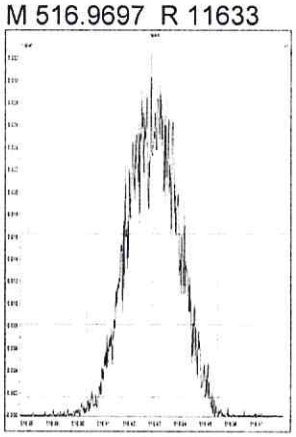
M 492.9696 R 11362



M 504.9696 R 12074



M 516.9697 R 11633



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

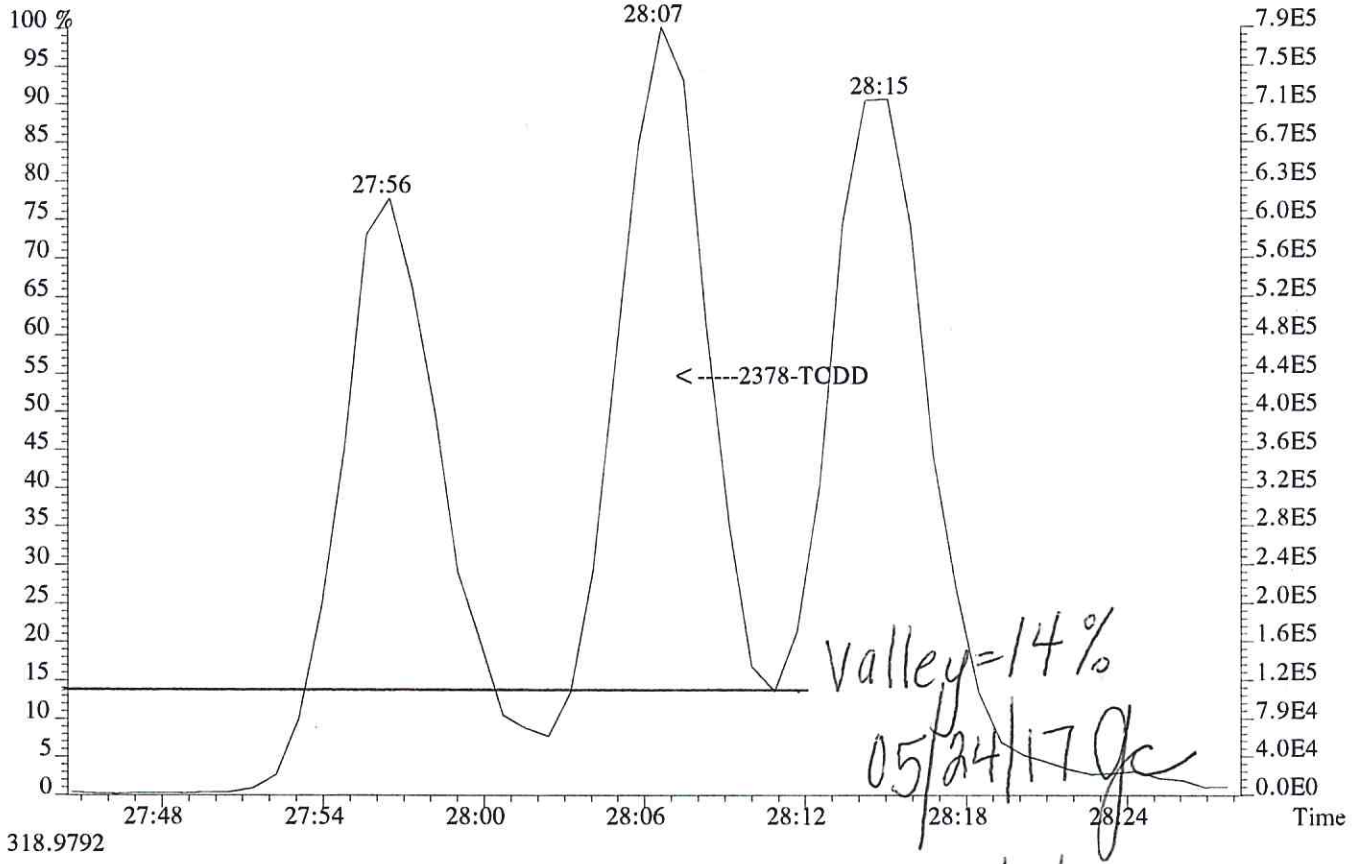
Case No.: _____ SDG No.:
ID: 0.25 (mm)

Lab File ID: P406869
Date Analyzed: 24-MAY-2017
Time Analyzed: 04:08:06

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	22:48	29:19
TCDD	24:34	29:09
PeCDF	29:17	33:38
PeCDD	30:53	33:23
HxCDF	34:19	36:49
HxCDD	34:50	36:25
HpCDF	38:02	39:22
HpCDD	38:16	38:54

% Valley 2378-TCDD: 14 %

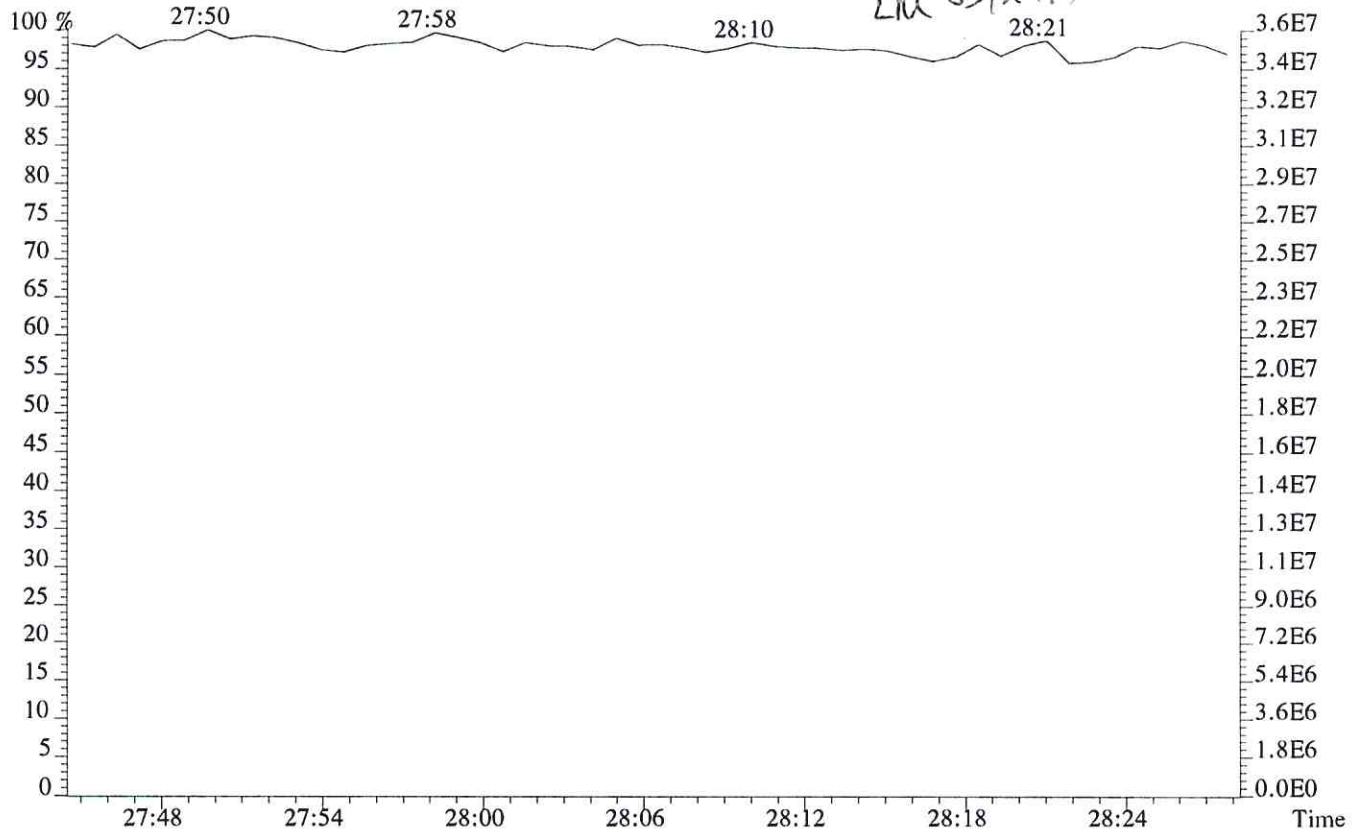
File:P406869 #1-779 Acq:24-MAY-2017 04:08:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178397
319.8965



Valley=14%
05/24/17 JC

318.9792

LIM 05/24/17



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Sample#1 Exp:178397
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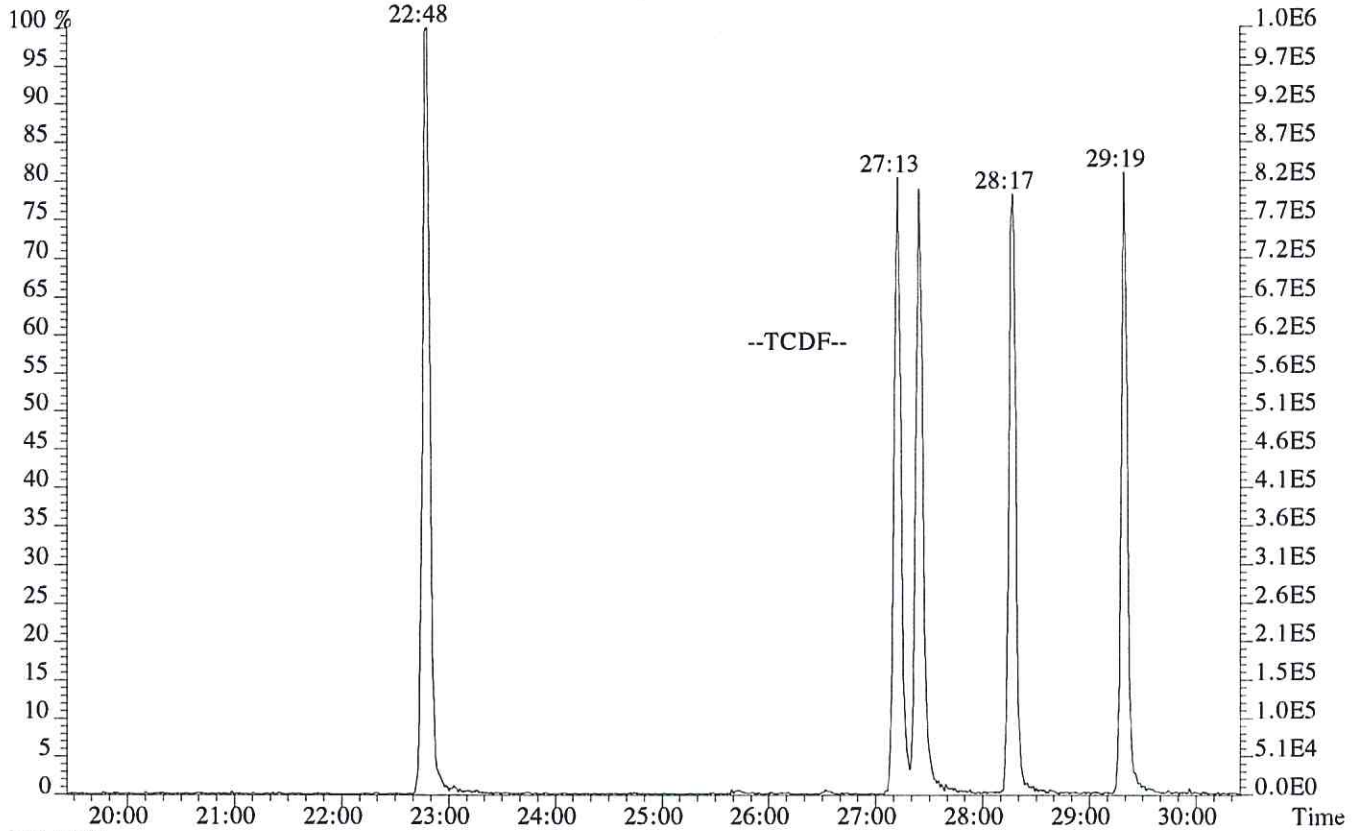
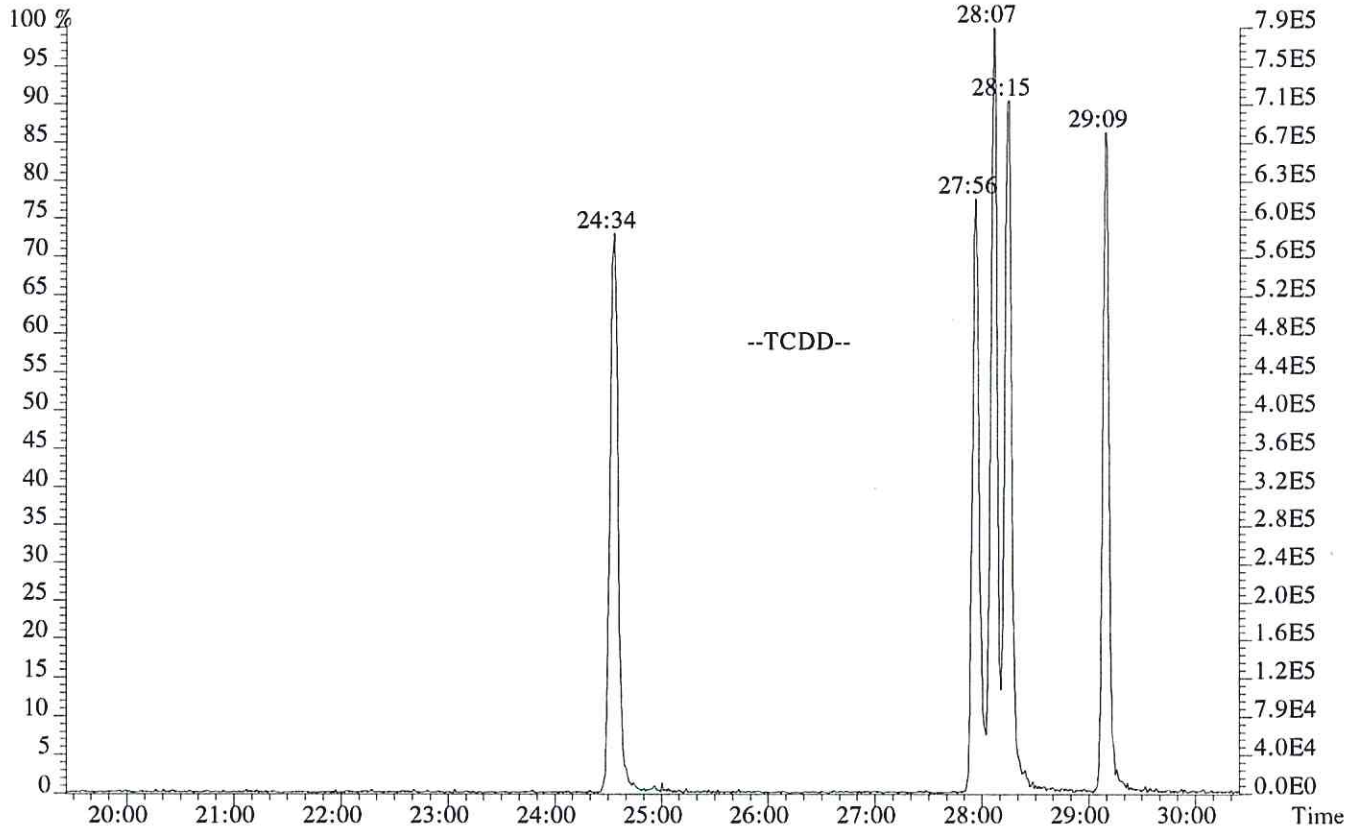


319.8965



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Sample#1 Exp:178397
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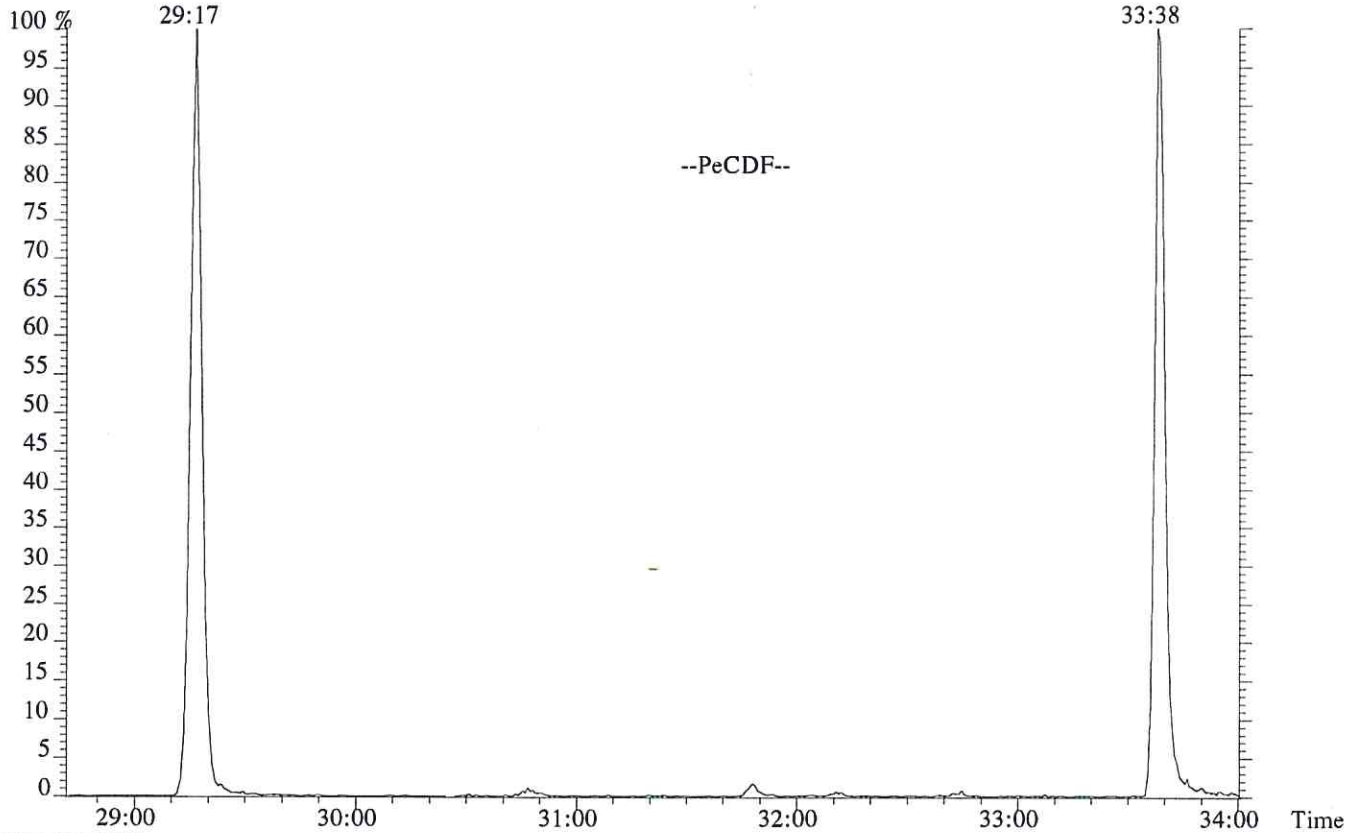

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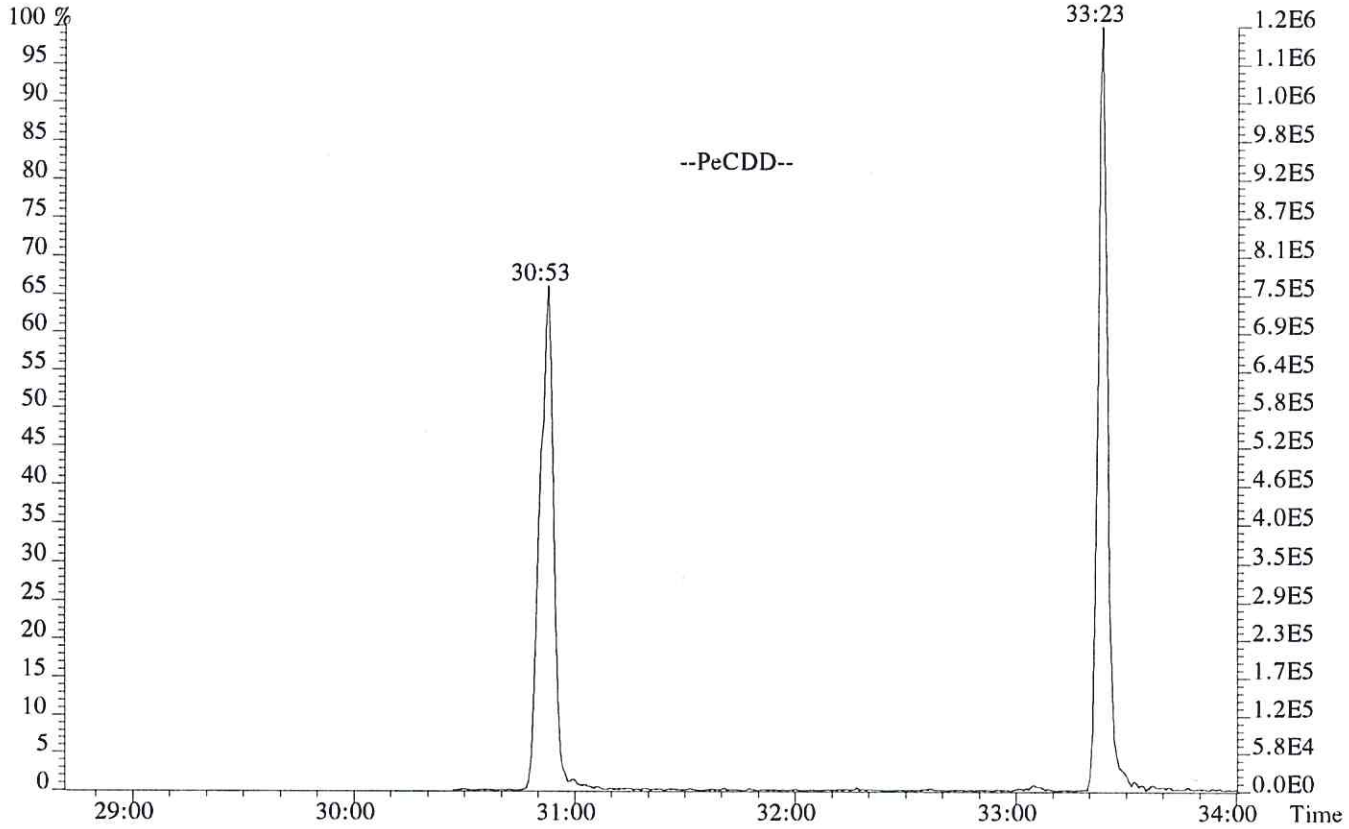

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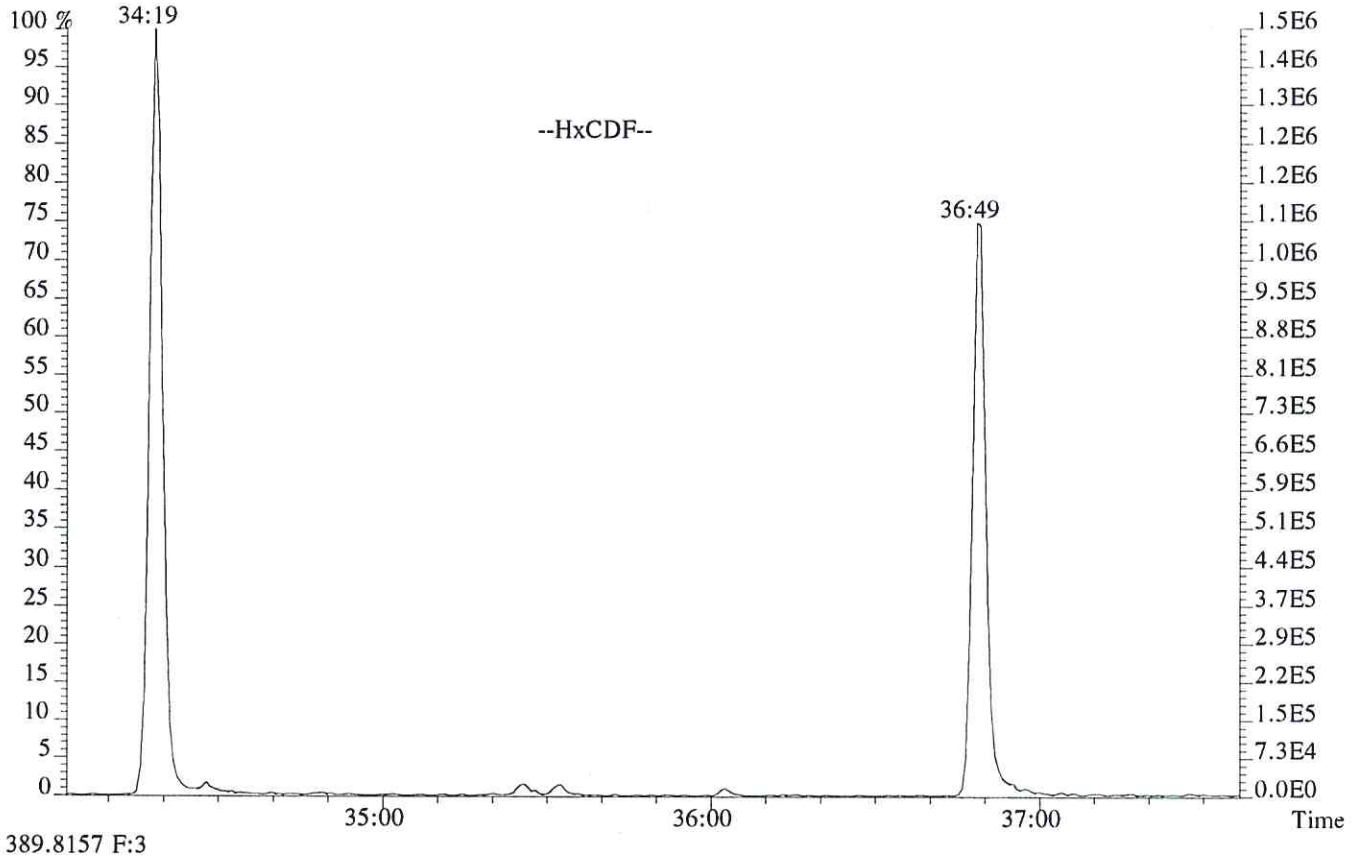
Sample#1 Exp:178397
373.8208 F:3



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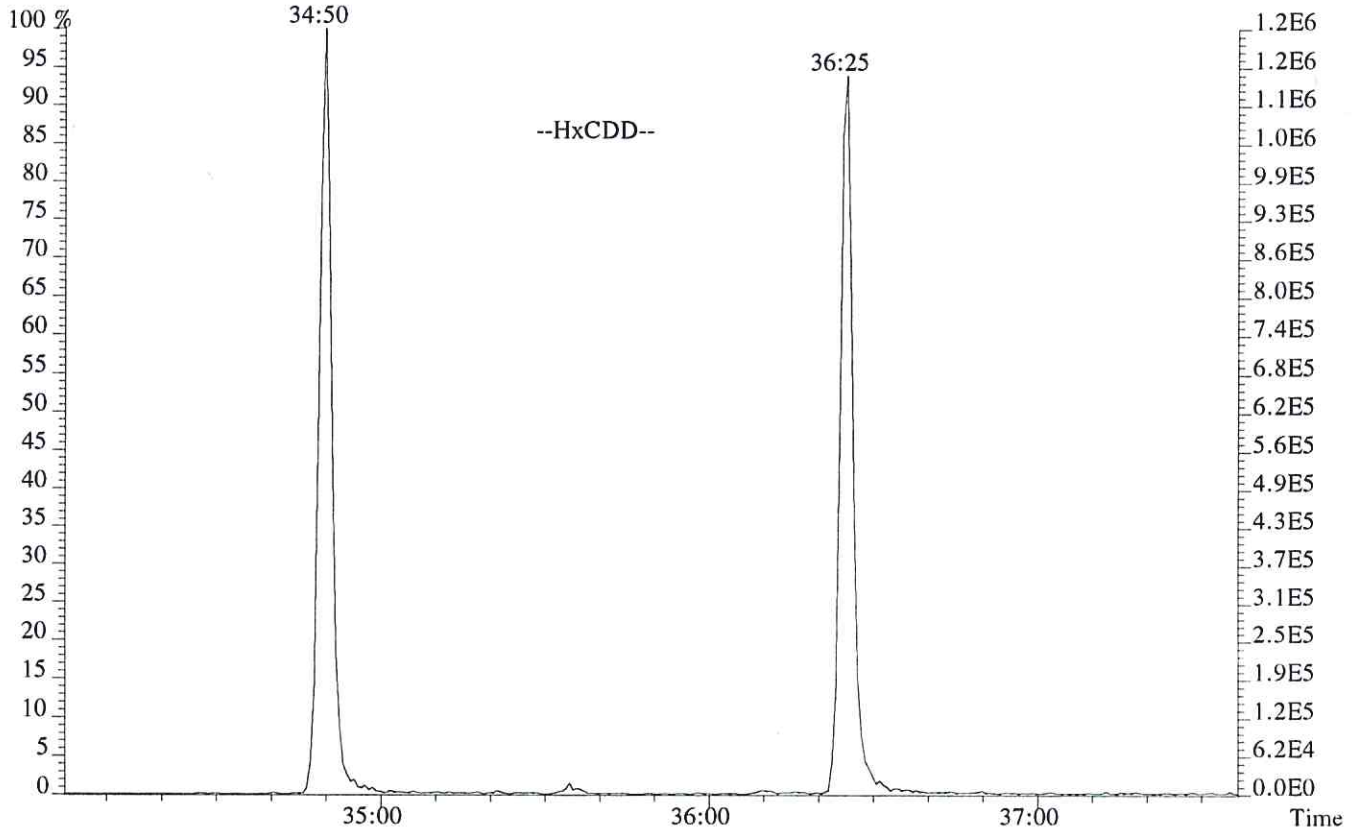

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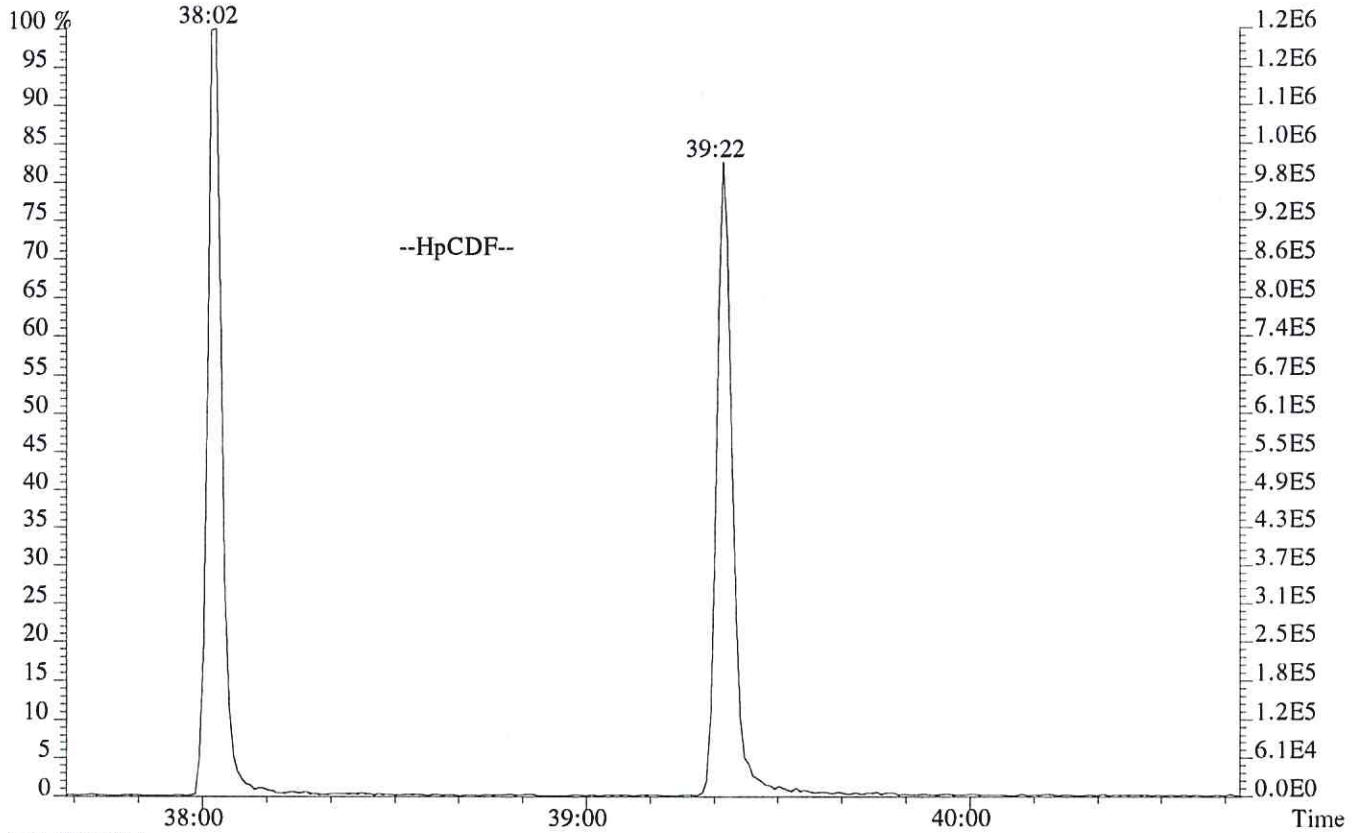
Sample#1 Exp:178397
407.7818 F:4



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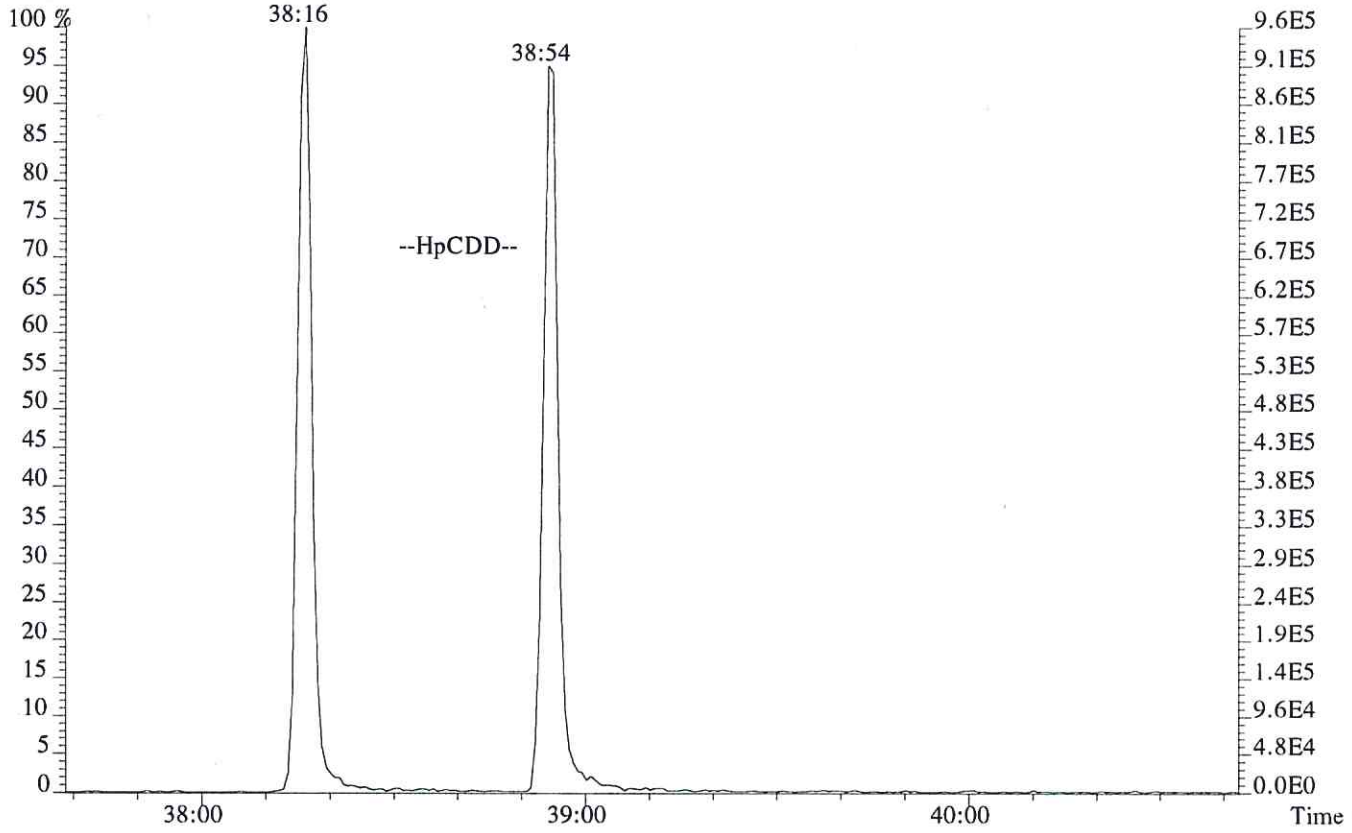

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 04/28/16

Instrument ID: E-HRMS-06 GC Column ID: DB-5MSUI

VER Data Filename: P406868 Analysis Date: 24-MAY-17 Time: 03:20:47

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	10.8	7.8 - 12.9	7.8
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	54	39 - 65	8.3
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	55	39 - 64	10.7
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	55	39 - 64	10.4
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	57	41 - 61	13.2
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	55	43 - 58	10.1
OCDD	M+2/M+4	0.89	0.76-1.02	108	79 - 126	8.1
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	11.2	8.4 - 12.0	12.1
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	56	41 - 60	12.5
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	56	41 - 61	12.3
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	54	45 - 56	7.4
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	54	44 - 57	8.3
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	55	45 - 56	9.8
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	55	44 - 57	9.2
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88-1.20	55	45 - 55	9.1
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88-1.20	54	43 - 58	7.0
OCDF	M+2/M+4	0.90	0.76-1.02	116	63 - 159	15.9

(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) 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: 04/28/16

Instrument ID: E-HRMS-06 GC Column ID: DB-5MSUI

VER Data Filename: P406868 Analysis Date: 24-MAY-17 Time: 03:20:47

	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	2.1
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	108	62 - 160	7.6
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	101	85 - 117	1.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	98	85 - 118	-2.4
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	113	72 - 138	12.9
13C-OCDD	M+2/M+4	0.90	0.76-1.02	255	96 - 415	27.5
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	115	71 - 140	14.6
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	119	76 - 130	19.1
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	119	77 - 130	18.6
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	113	76 - 131	13.4
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	108	70 - 143	8.5
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	116	74 - 135	15.6
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	112	73 - 137	12.3
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	115	78 - 129	14.8
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	127	77 - 129	27.3
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				10.7	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.
178519

Run #7 Filename P406868 Samp: 1 Inj: 1 Acquired: 24-MAY-17 03:20:47
Processed: 24-MAY-17 13:01:56 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	27:24	4.320e+03	5.528e+03	0.78	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	31:47	3.428e+04	2.195e+04	1.56	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	32:43	3.204e+04	2.036e+04	1.57	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	35:25	2.892e+04	2.318e+04	1.25	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	35:32	3.094e+04	2.477e+04	1.25	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:02	2.878e+04	2.333e+04	1.23	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	36:47	2.683e+04	2.144e+04	1.25	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:02	2.566e+04	2.464e+04	1.04	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:22	2.333e+04	2.307e+04	1.01	yes	no	1.187
10	Unk	OCDF	41:43	4.010e+04	4.452e+04	0.90	yes	no	1.035
11	Unk	2,3,7,8-TCDD	28:14	3.522e+03	4.650e+03	0.76	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:01	2.318e+04	1.475e+04	1.57	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:10	2.077e+04	1.690e+04	1.23	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:15	2.175e+04	1.740e+04	1.25	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	36:29	2.321e+04	1.872e+04	1.24	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	38:54	1.992e+04	1.914e+04	1.04	yes	no	0.882
17	Unk	OCDD	41:32	3.524e+04	3.949e+04	0.89	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	27:23	4.983e+04	6.441e+04	0.77	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	31:47	6.996e+04	4.466e+04	1.57	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	32:42	6.905e+04	4.386e+04	1.57	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:25	3.025e+04	5.820e+04	0.52	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	35:31	3.411e+04	6.584e+04	0.52	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:01	3.209e+04	6.190e+04	0.52	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	36:47	2.907e+04	5.602e+04	0.52	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:01	2.299e+04	5.160e+04	0.45	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:21	2.247e+04	5.059e+04	0.44	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	28:13	3.817e+04	4.866e+04	0.78	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	32:59	5.321e+04	3.370e+04	1.58	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:09	4.294e+04	3.432e+04	1.25	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:15	4.431e+04	3.512e+04	1.26	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:54	4.112e+04	3.939e+04	1.04	yes	no	0.817
32	IS	13C-OCDD	41:31	6.666e+04	7.445e+04	0.90	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	27:37	3.858e+04	4.909e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:29	4.903e+04	3.822e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:14	8.945e+03				no	0.958

ALS ENVIRONMENTAL
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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
178519

Run #7 Filename P406868 Samp: 1 Inj: 1 Acquired: 24-MAY-17 03:20:47
Processed: 24-MAY-17 13:01:56 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	7.57e+05	7.00e+02	1.1e+03	9.60e+05	7.16e+02	1.3e+03
2	1,2,3,7,8-PeCDF	6.53e+06	3.88e+02	1.7e+04	4.14e+06	1.58e+03	2.6e+03
3	2,3,4,7,8-PeCDF	6.18e+06	3.88e+02	1.6e+04	3.92e+06	1.58e+03	2.5e+03
4	1,2,3,4,7,8-HxCDF	6.41e+06	6.80e+02	9.4e+03	5.16e+06	1.96e+02	2.6e+04
5	1,2,3,6,7,8-HxCDF	6.70e+06	6.80e+02	9.9e+03	5.36e+06	1.96e+02	2.7e+04
6	2,3,4,6,7,8-HxCDF	6.45e+06	6.80e+02	9.5e+03	5.26e+06	1.96e+02	2.7e+04
7	1,2,3,7,8,9-HxCDF	5.78e+06	6.80e+02	8.5e+03	4.54e+06	1.96e+02	2.3e+04
8	1,2,3,4,6,7,8-HpCDF	5.97e+06	8.36e+02	7.1e+03	5.76e+06	2.59e+03	2.2e+03
9	1,2,3,4,7,8,9-HpCDF	4.93e+06	8.36e+02	5.9e+03	4.82e+06	2.59e+03	1.9e+03
10	OCDF	7.57e+06	3.32e+02	2.3e+04	8.35e+06	8.20e+02	1.0e+04
11	2,3,7,8-TCDD	6.47e+05	9.28e+02	7.0e+02	8.52e+05	6.80e+02	1.3e+03
12	1,2,3,7,8-PeCDD	4.60e+06	5.52e+02	8.3e+03	2.90e+06	2.40e+02	1.2e+04
13	1,2,3,4,7,8-HxCDD	4.75e+06	1.76e+02	2.7e+04	3.90e+06	4.80e+02	8.1e+03
14	1,2,3,6,7,8-HxCDD	4.80e+06	1.76e+02	2.7e+04	3.85e+06	4.80e+02	8.0e+03
15	1,2,3,7,8,9-HxCDD	5.09e+06	1.76e+02	2.9e+04	4.12e+06	4.80e+02	8.6e+03
16	1,2,3,4,6,7,8-HpCDD	4.49e+06	6.40e+02	7.0e+03	4.31e+06	2.96e+02	1.5e+04
17	OCDD	6.77e+06	2.44e+03	2.8e+03	7.50e+06	2.14e+03	3.5e+03
18	13C-2,3,7,8-TCDF	8.58e+06	5.11e+03	1.7e+03	1.10e+07	2.19e+03	5.0e+03
19	13C-1,2,3,7,8-PeCDF	1.31e+07	3.48e+02	3.8e+04	8.33e+06	6.16e+02	1.4e+04
20	13C-2,3,4,7,8-PeCDF	1.36e+07	3.48e+02	3.9e+04	8.69e+06	6.16e+02	1.4e+04
21	13C-1,2,3,4,7,8-HxCDF	6.77e+06	4.96e+02	1.4e+04	1.31e+07	1.07e+03	1.2e+04
22	13C-1,2,3,6,7,8-HxCDF	7.48e+06	4.96e+02	1.5e+04	1.43e+07	1.07e+03	1.3e+04
23	13C-2,3,4,6,7,8-HxCDF	7.22e+06	4.96e+02	1.5e+04	1.39e+07	1.07e+03	1.3e+04
24	13C-1,2,3,7,8,9-HxCDF	6.33e+06	4.96e+02	1.3e+04	1.20e+07	1.07e+03	1.1e+04
25	13C-1,2,3,4,6,7,8-HpCDF	5.31e+06	1.63e+03	3.3e+03	1.19e+07	2.46e+03	4.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.88e+06	1.63e+03	3.0e+03	1.09e+07	2.46e+03	4.4e+03
27	13C-2,3,7,8-TCDD	7.05e+06	4.48e+03	1.6e+03	8.93e+06	2.18e+03	4.1e+03
28	13C-1,2,3,7,8-PeCDD	1.06e+07	5.96e+02	1.8e+04	6.74e+06	4.92e+02	1.4e+04
29	13C-1,2,3,4,7,8-HxCDD	9.91e+06	1.44e+03	6.9e+03	7.95e+06	1.04e+03	7.6e+03
30	13C-1,2,3,6,7,8-HxCDD	9.73e+06	1.44e+03	6.7e+03	7.72e+06	1.04e+03	7.4e+03
31	13C-1,2,3,4,6,7,8-HpCDD	9.20e+06	6.40e+02	1.4e+04	8.87e+06	3.92e+02	2.3e+04
32	13C-OCDD	1.28e+07	3.81e+03	3.3e+03	1.42e+07	2.91e+03	4.9e+03
33	13C-1,2,3,4-TCDD	6.83e+06	4.48e+03	1.5e+03	8.72e+06	2.18e+03	4.0e+03
34	13C-1,2,3,7,8,9-HxCDD	1.08e+07	1.44e+03	7.5e+03	8.59e+06	1.04e+03	8.3e+03
35	37Cl-2,3,7,8-TCDD	1.64e+06	1.08e+03	1.5e+03			

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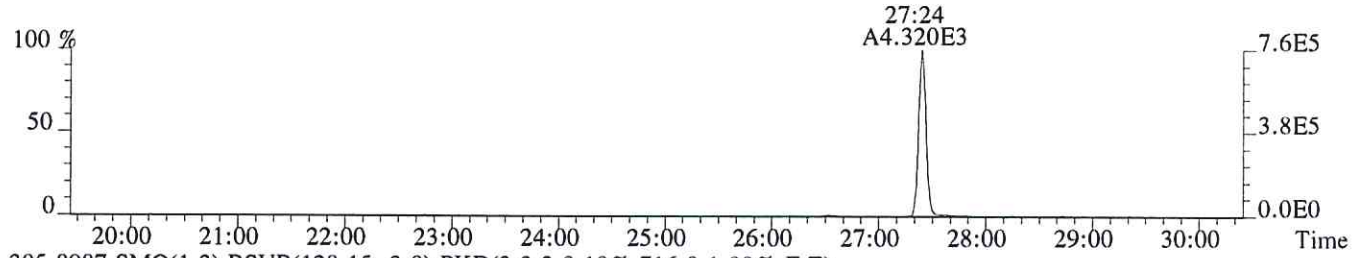
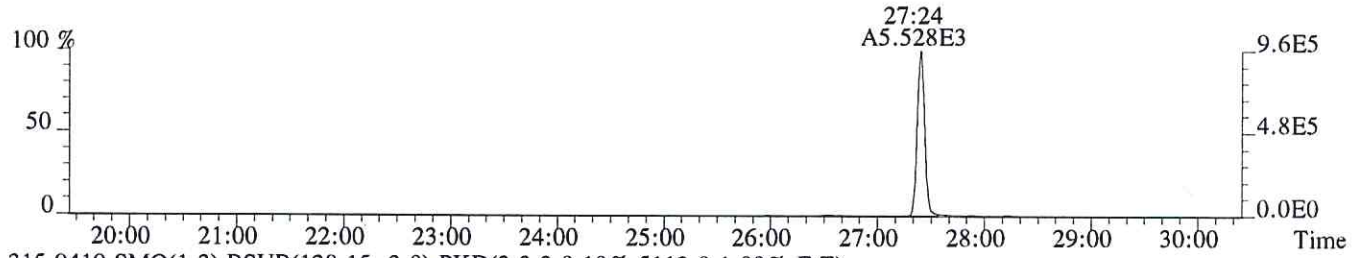
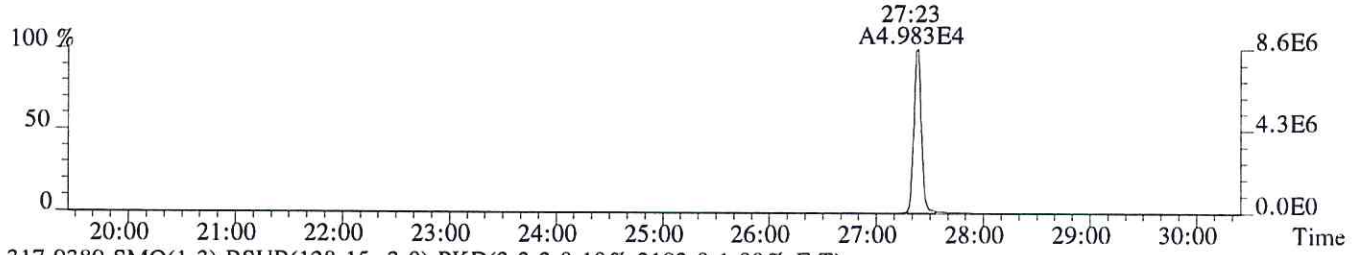
File:P406868 #1-779 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,700.0,1.00%,F,T)



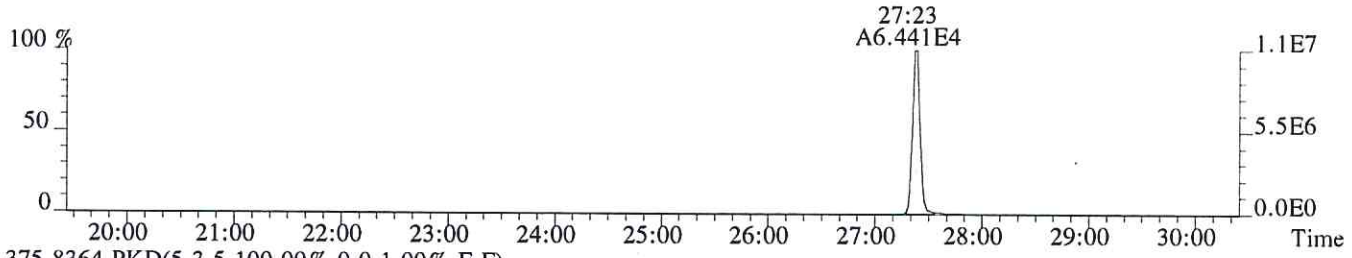
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,716.0,1.00%,F,T)



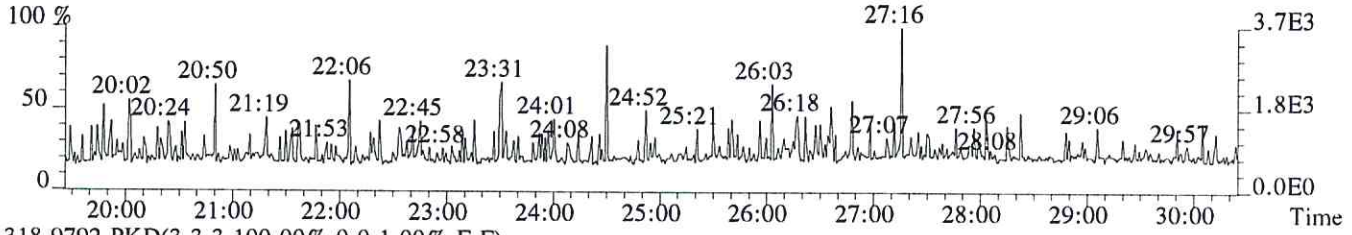
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5112.0,1.00%,F,T)



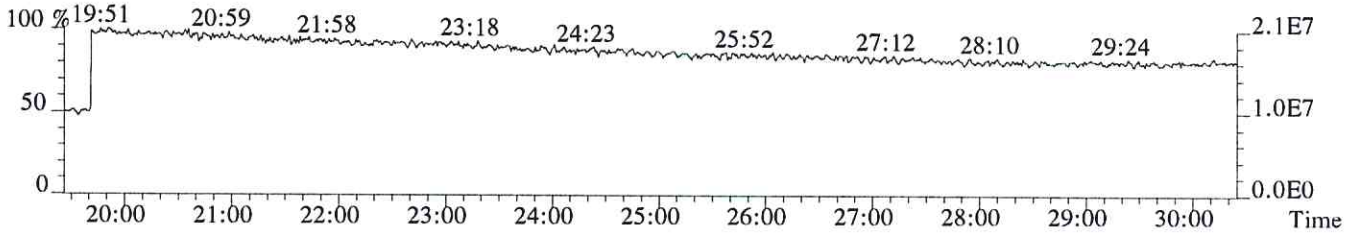
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2192.0,1.00%,F,T)



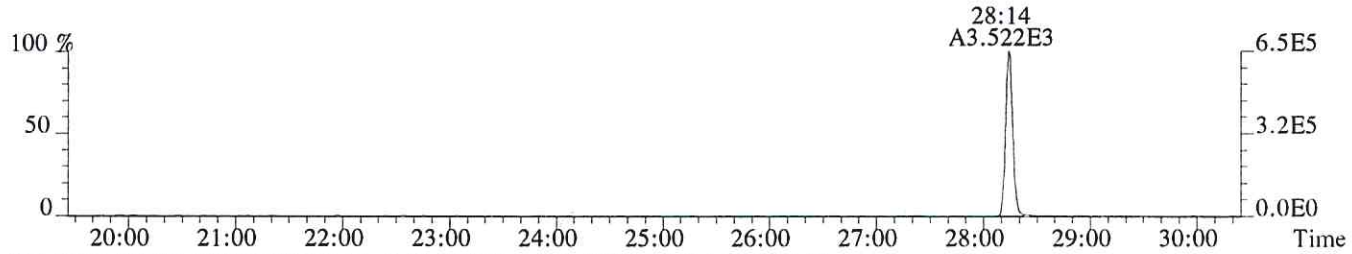
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



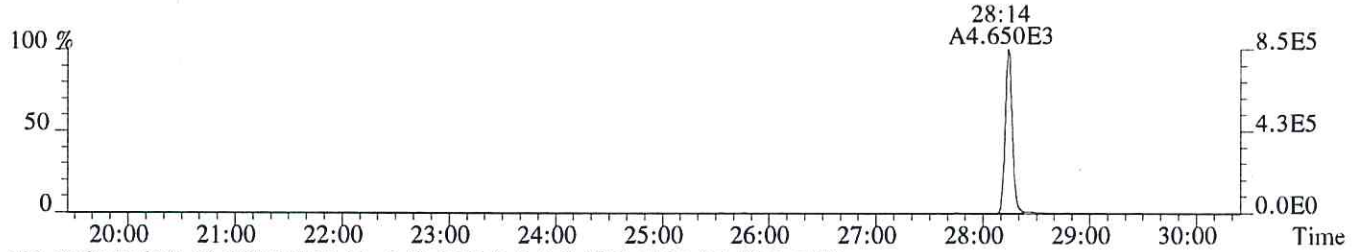
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



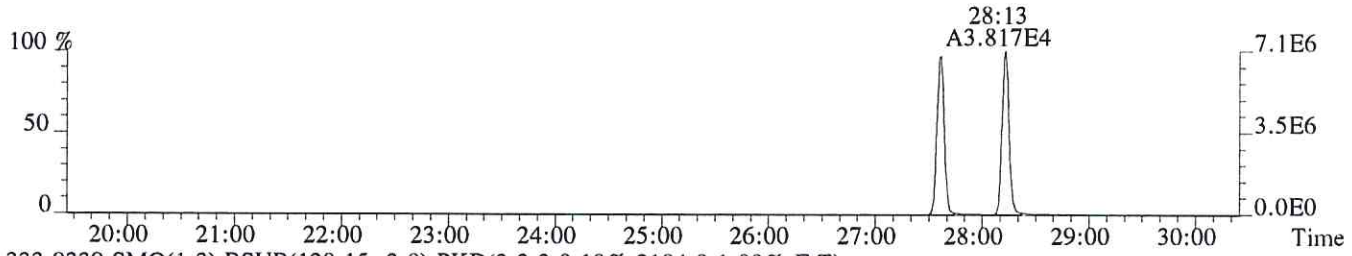
File:P406868 #1-779 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,928.0,1.00%,F,T)



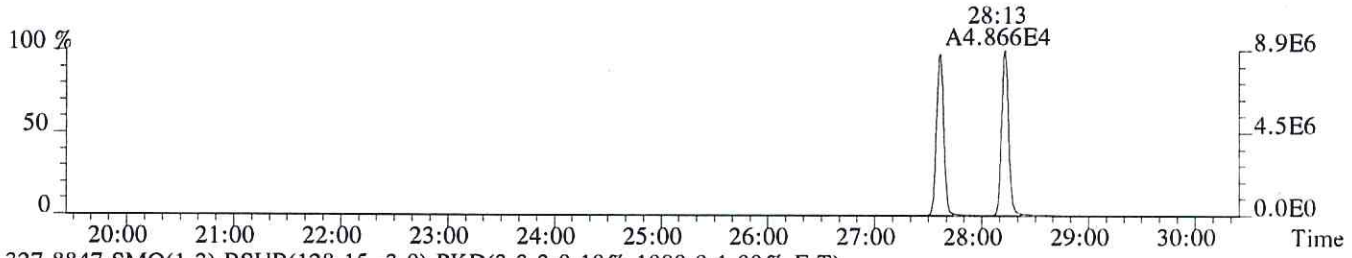
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,680.0,1.00%,F,T)



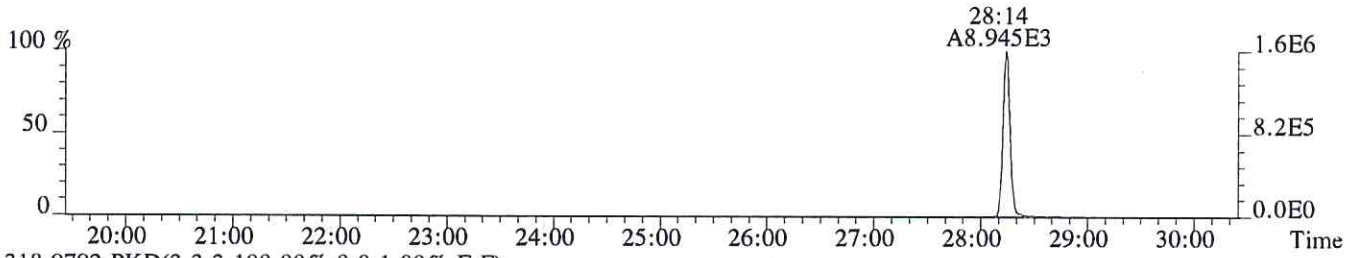
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4484.0,1.00%,F,T)



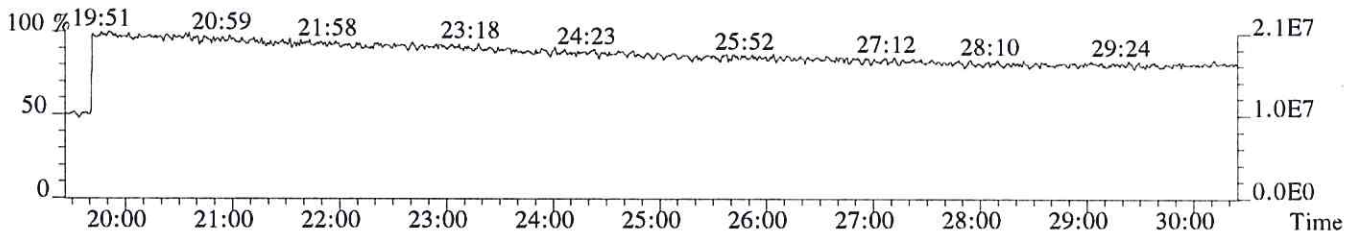
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2184.0,1.00%,F,T)



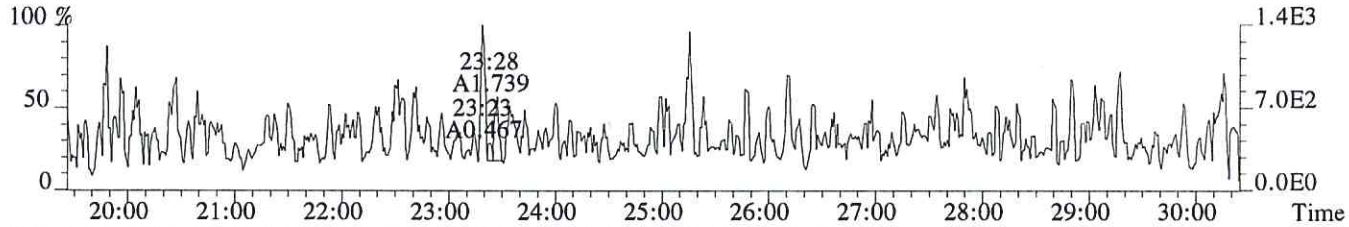
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1080.0,1.00%,F,T)



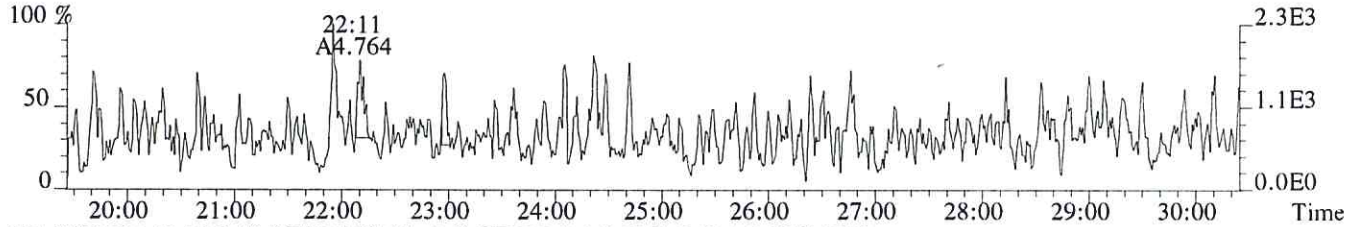
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



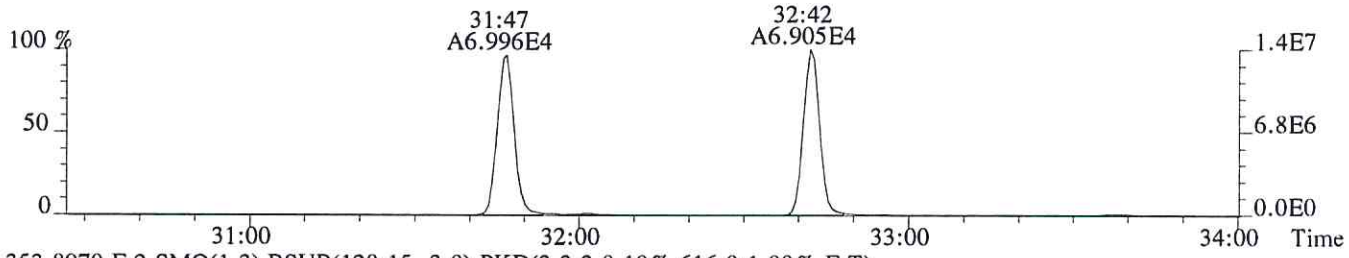
File:P406868 #1-779 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,536.0,1.00%,F,T)



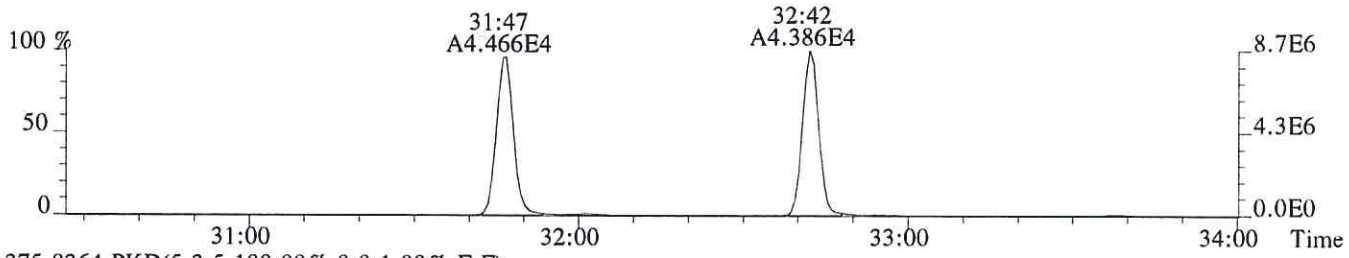
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,928.0,1.00%,F,T)



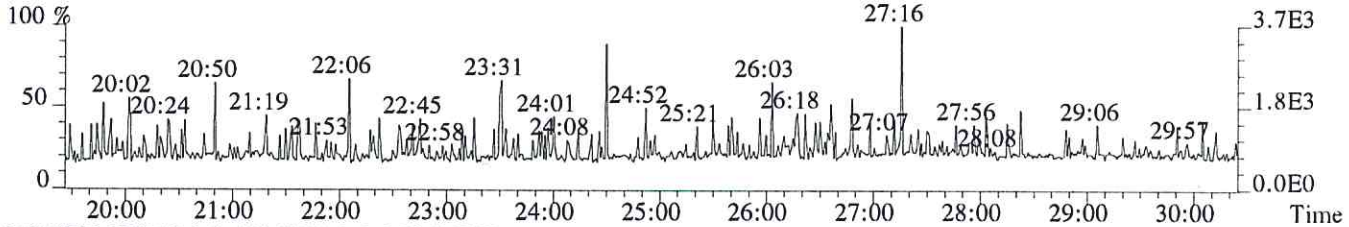
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,348.0,1.00%,F,T)



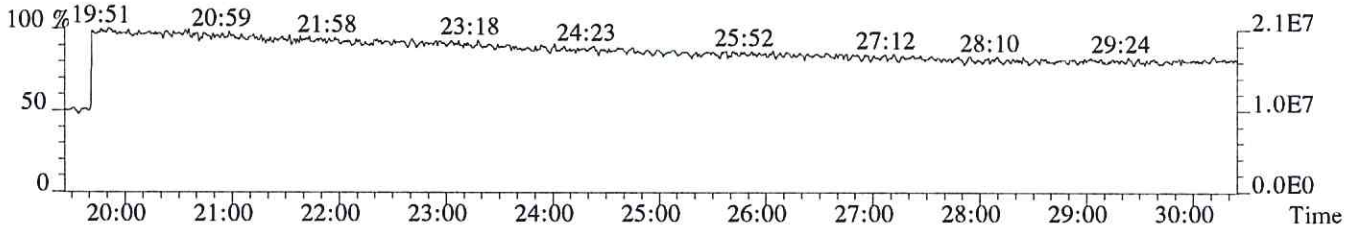
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,616.0,1.00%,F,T)



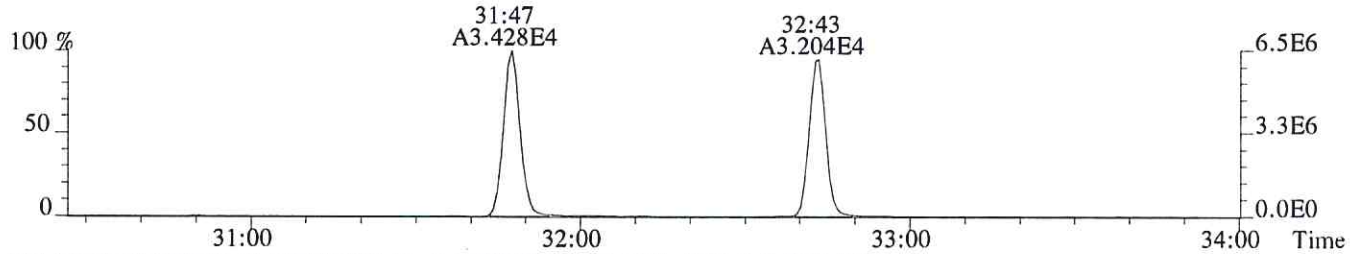
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



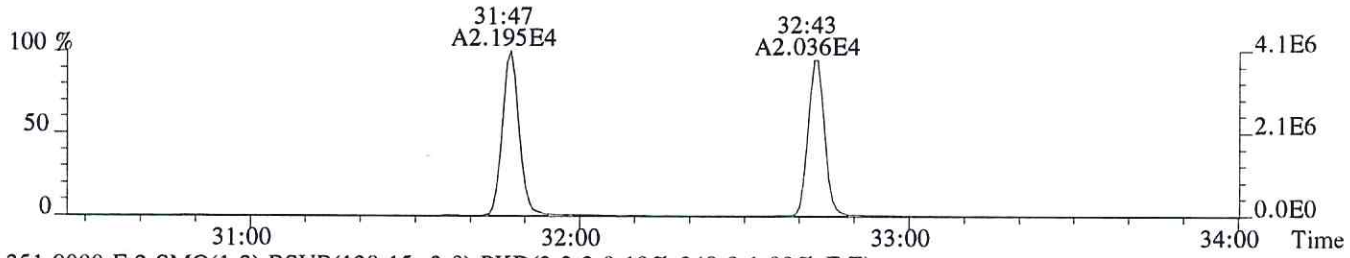
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



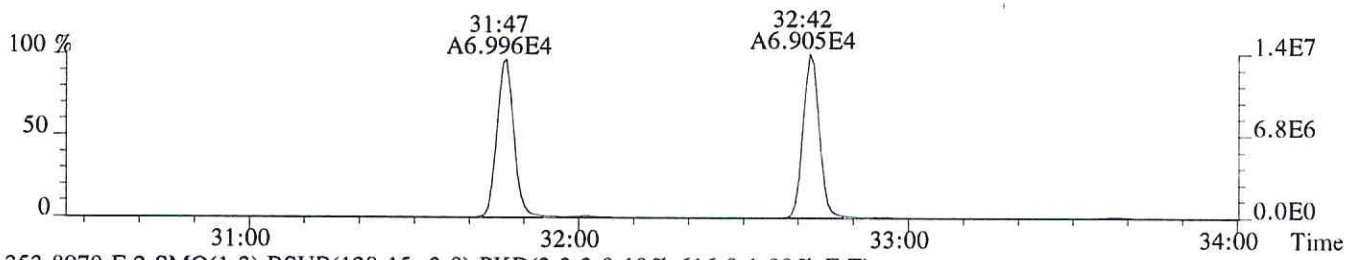
File:P406868 #1-321 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,388.0,1.00%,F,T)



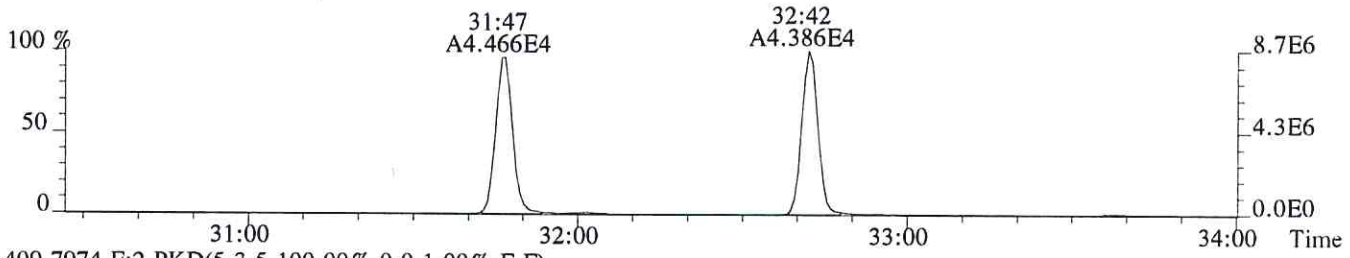
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1580.0,1.00%,F,T)



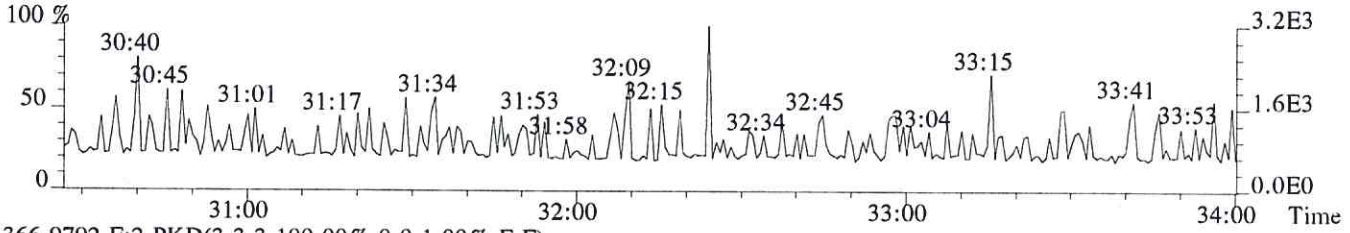
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,348.0,1.00%,F,T)



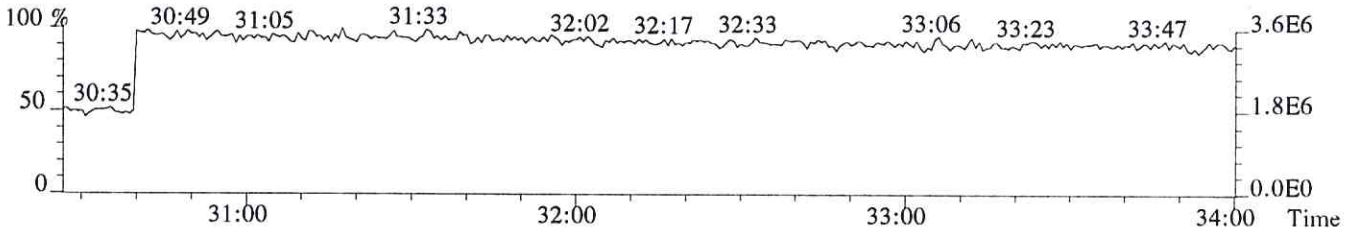
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,616.0,1.00%,F,T)



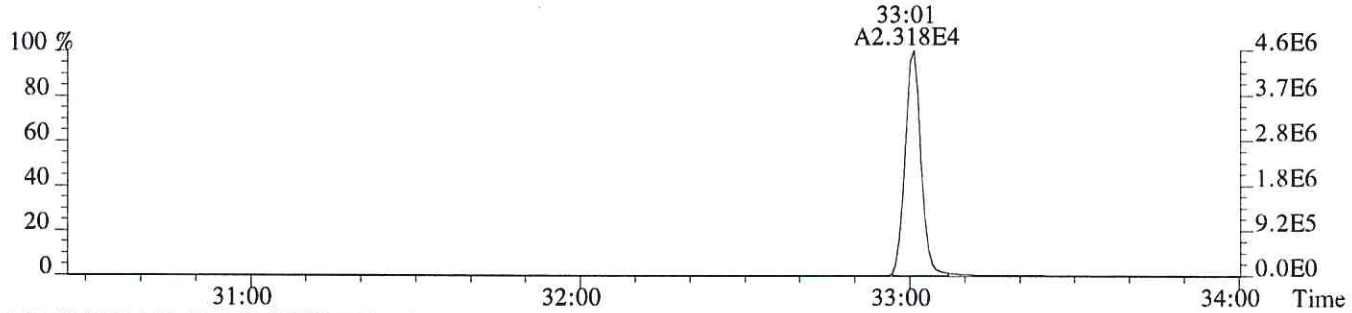
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



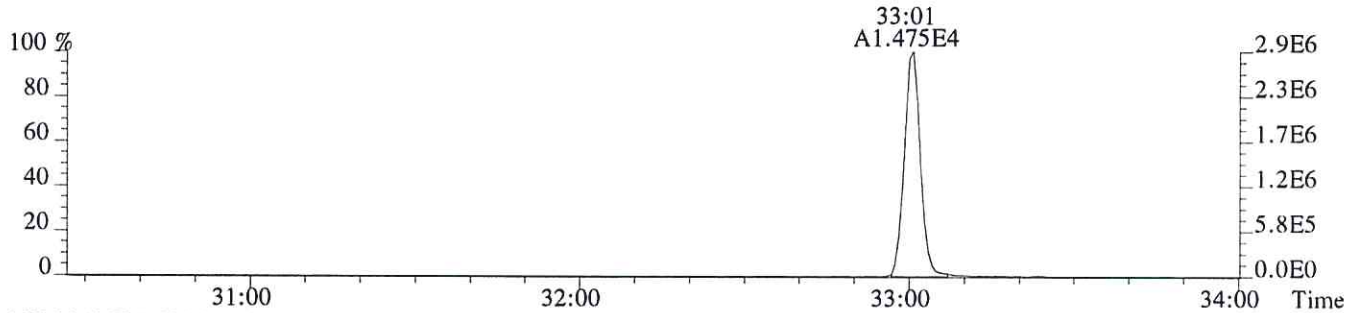
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



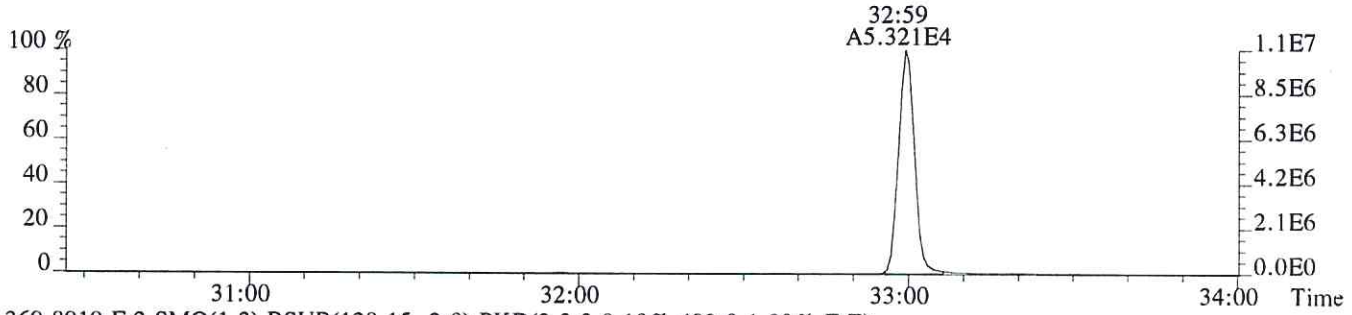
File:P406868 #1-321 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,552.0,1.00%,F,T)



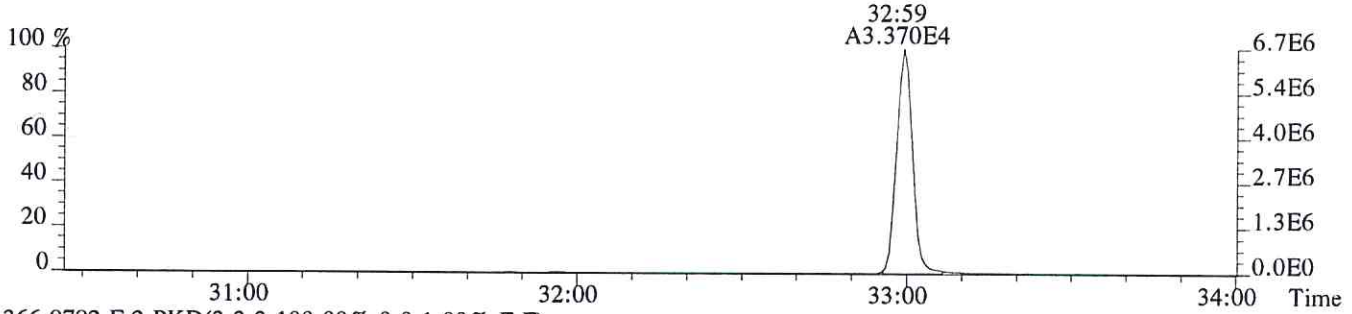
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,240.0,1.00%,F,T)



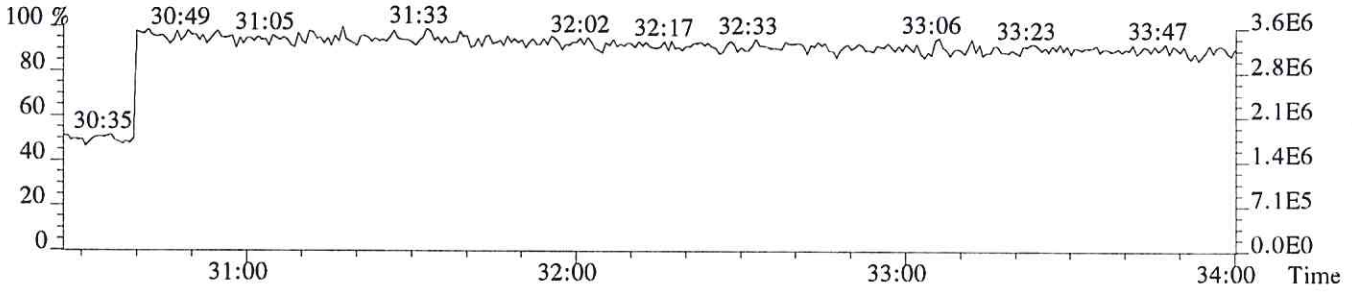
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,596.0,1.00%,F,T)



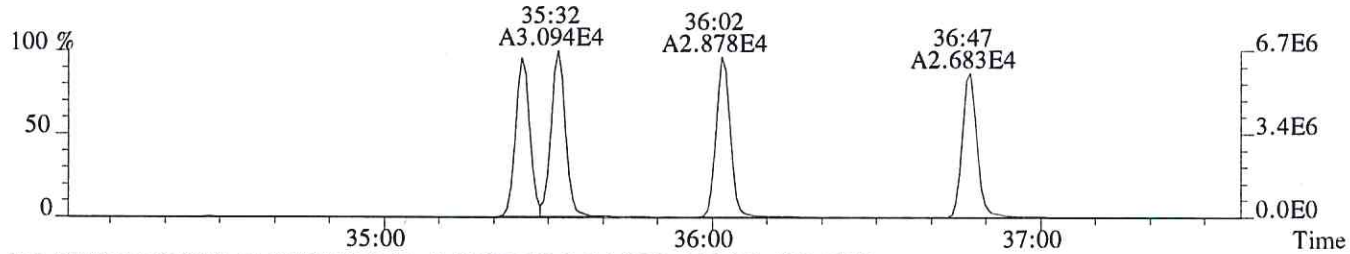
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,492.0,1.00%,F,T)



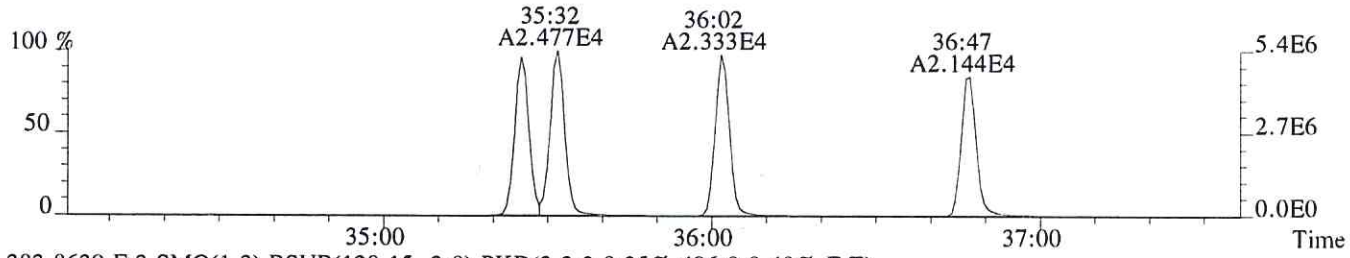
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



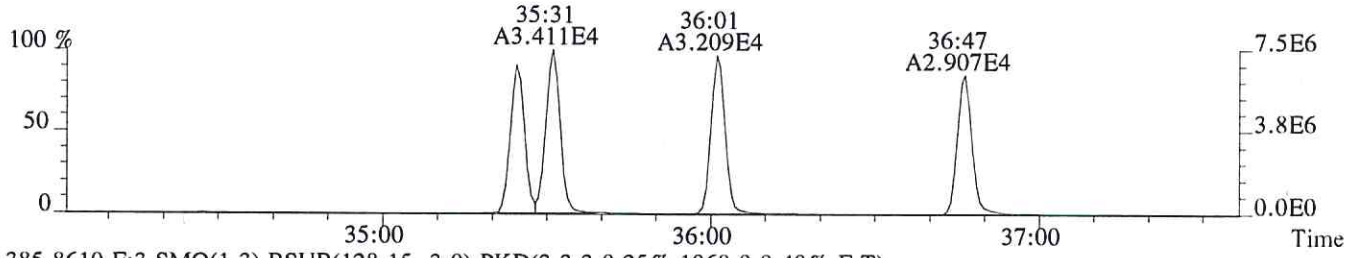
File:P406868 #1-322 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,680.0,0.40%,F,T)



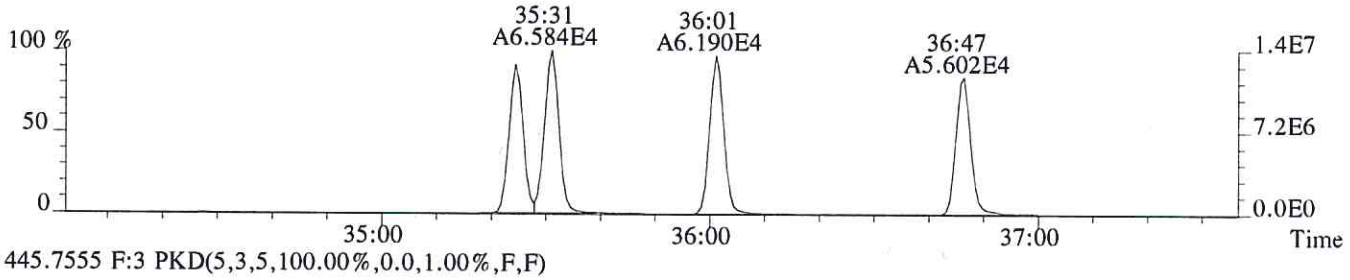
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,196.0,0.40%,F,T)



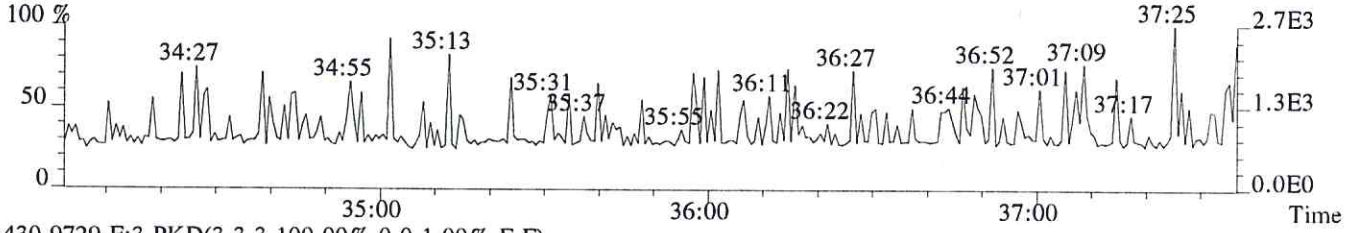
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,496.0,0.40%,F,T)



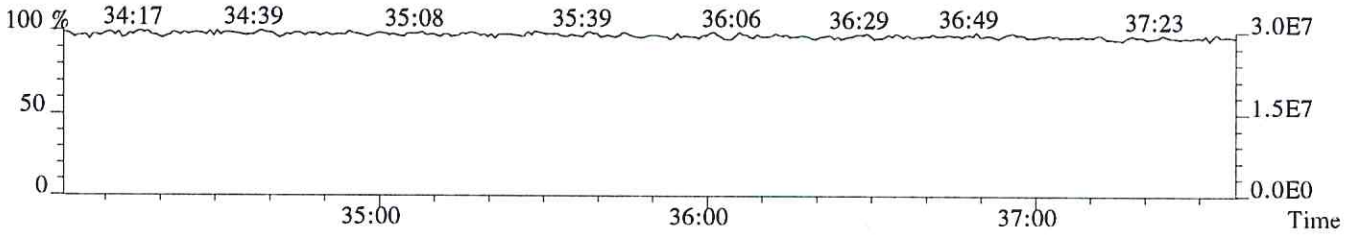
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1068.0,0.40%,F,T)



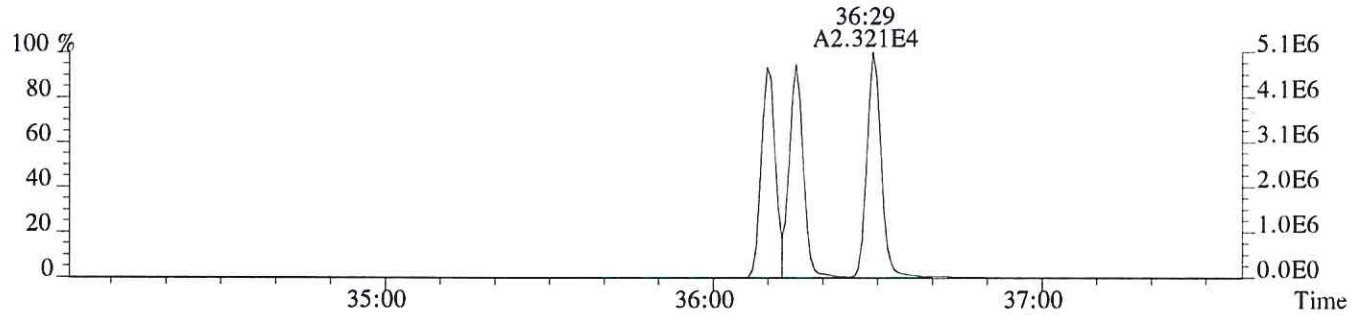
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



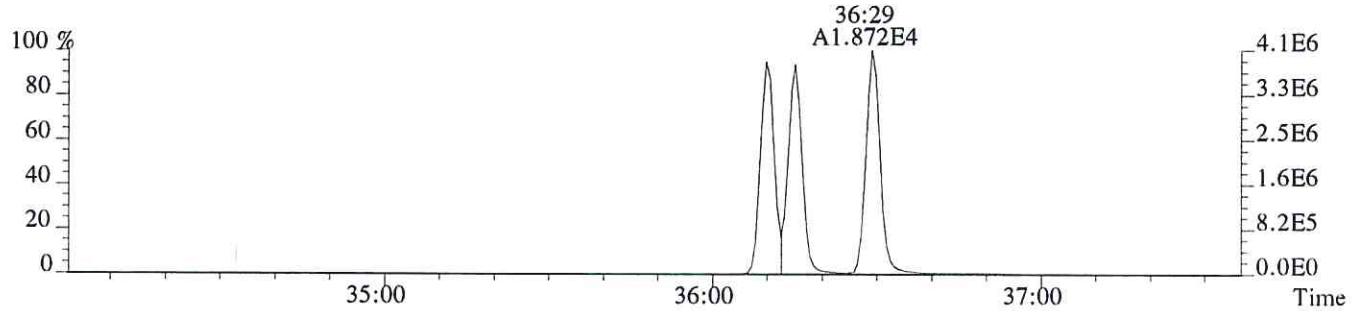
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



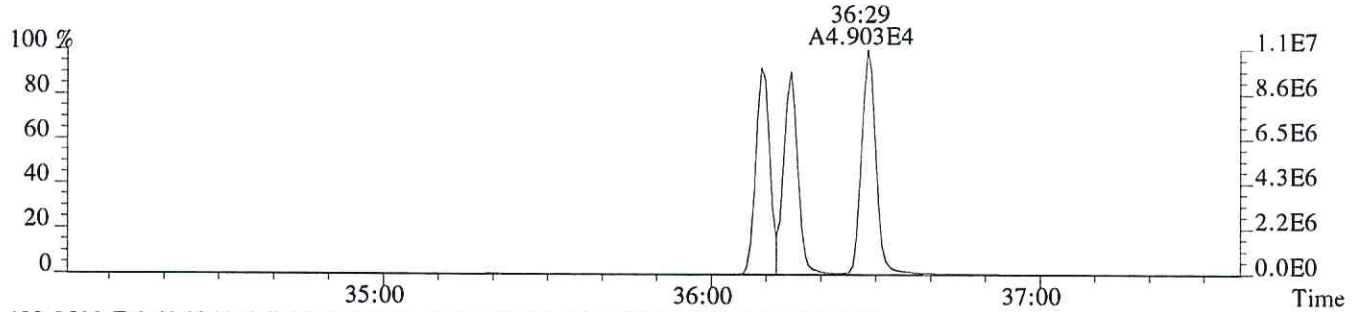
File:P406868 #1-322 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,176.0,0.40%,F,T)



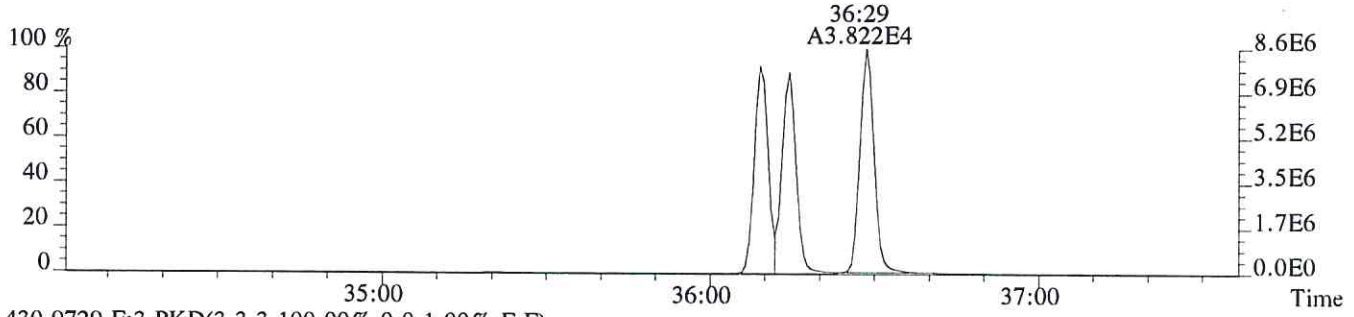
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,480.0,0.40%,F,T)



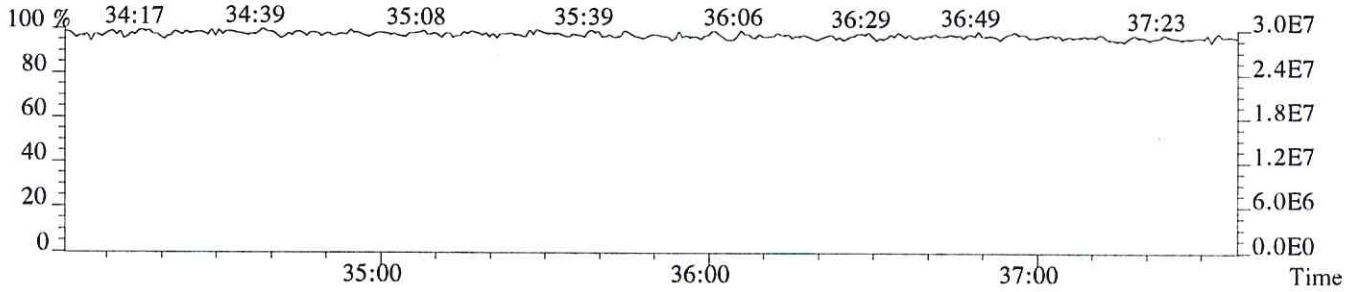
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1444.0,0.40%,F,T)



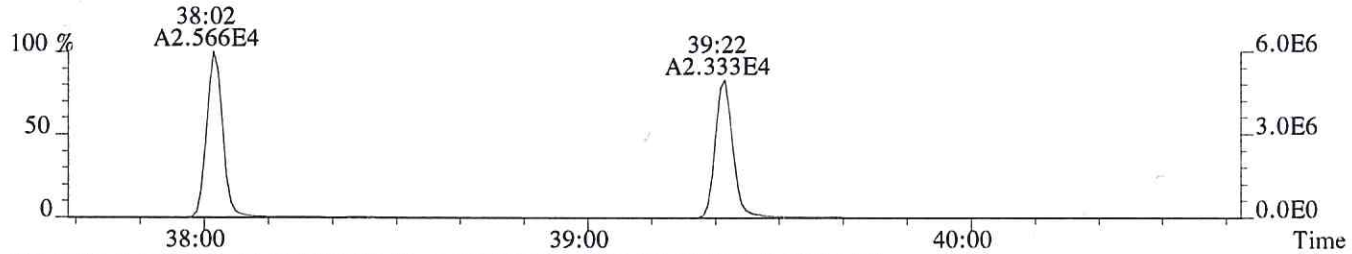
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1040.0,0.40%,F,T)



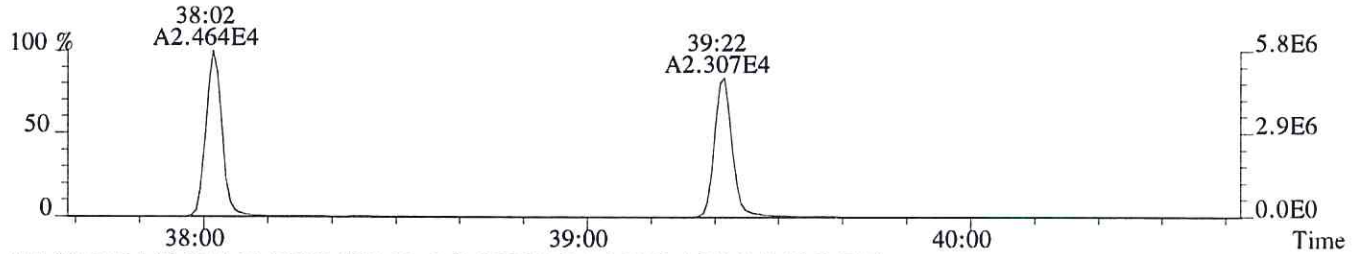
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



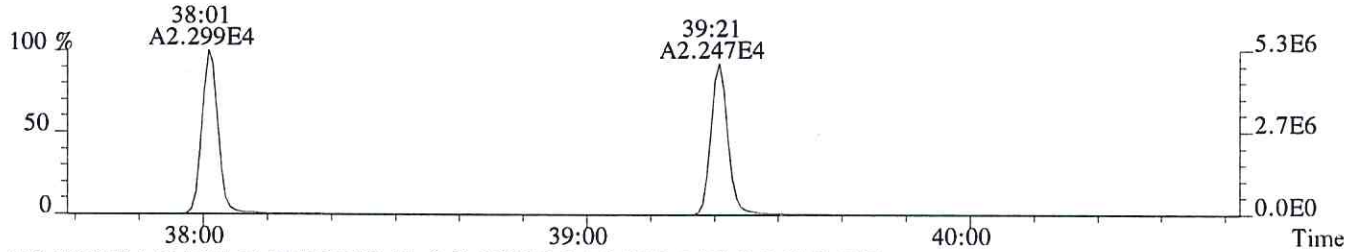
File:P406868 #1-276 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,836.0,0.50%,F,T)



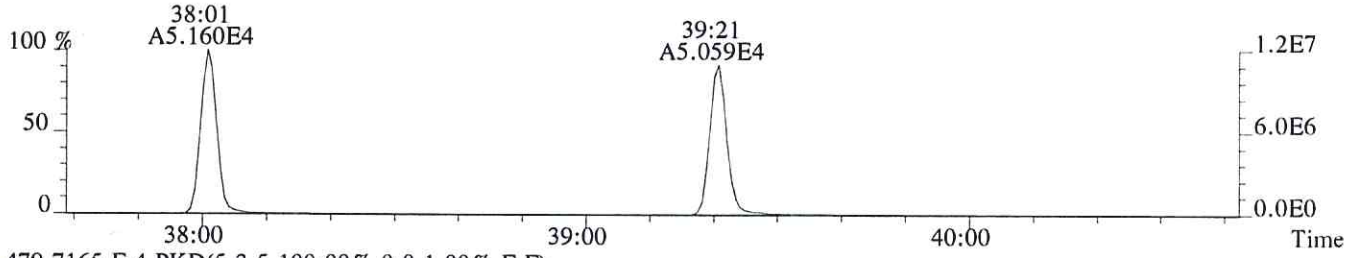
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2592.0,0.50%,F,T)



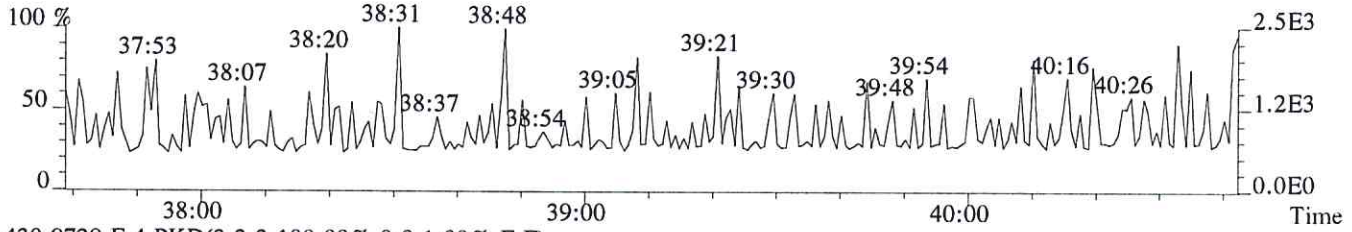
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1632.0,0.50%,F,T)



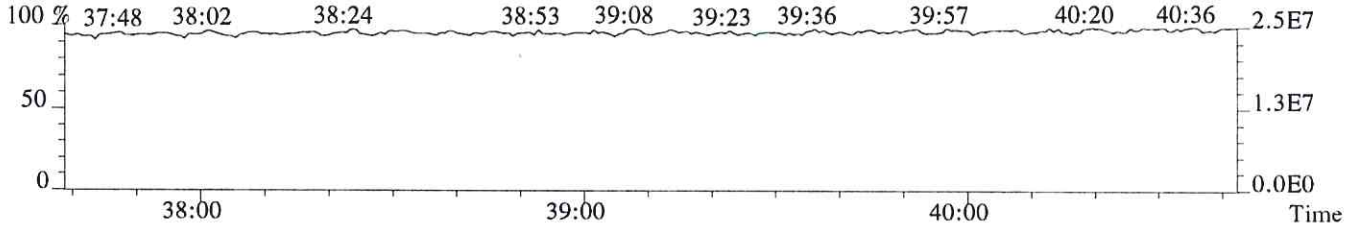
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2464.0,0.50%,F,T)



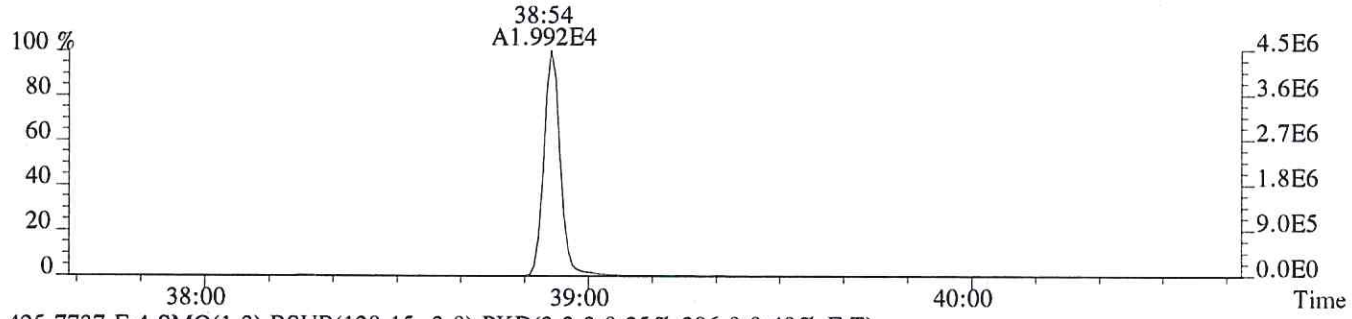
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



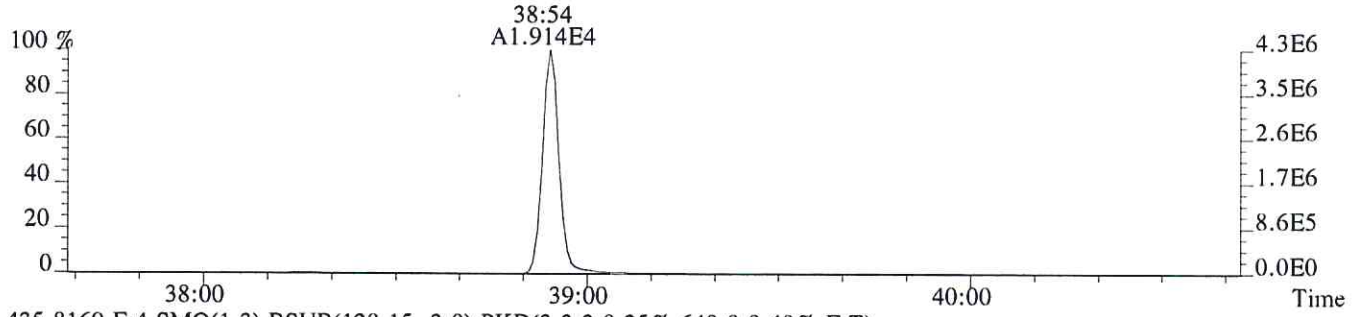
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



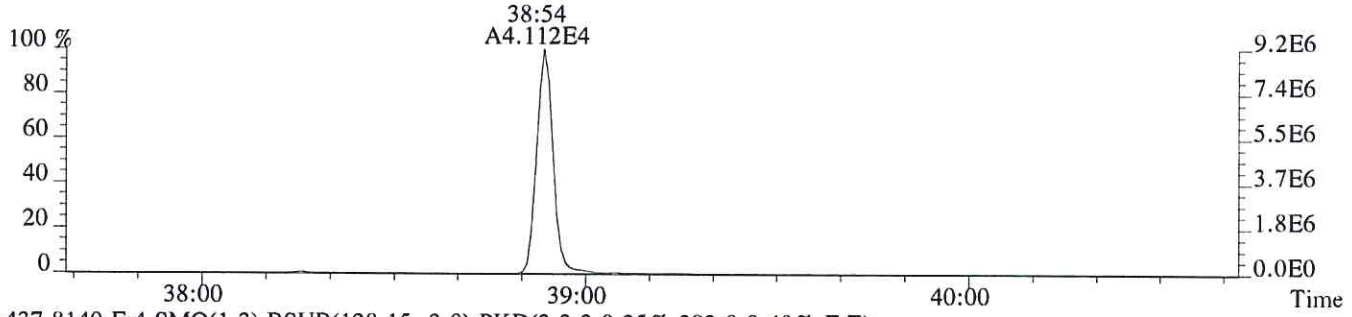
File:P406868 #1-276 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,640.0,0.40%,F,T)



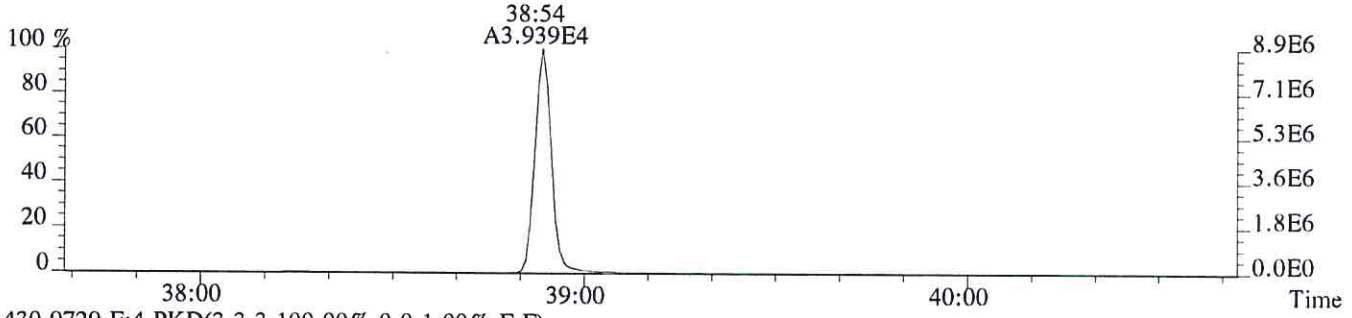
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,296.0,0.40%,F,T)



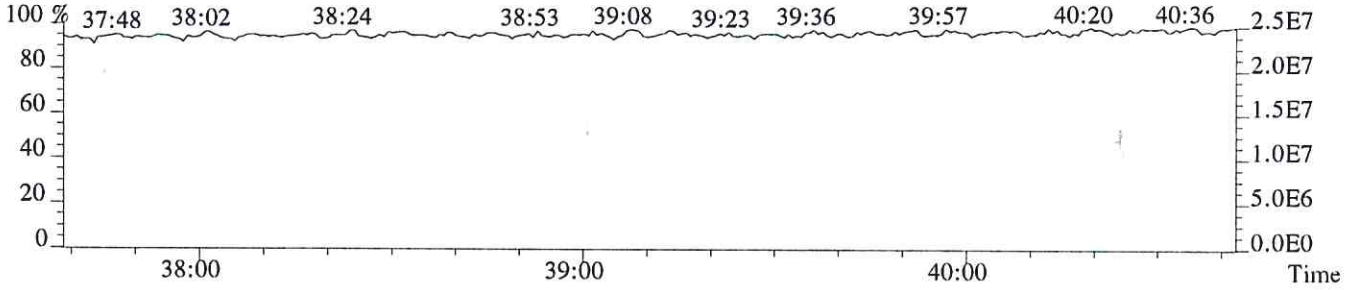
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,640.0,0.40%,F,T)



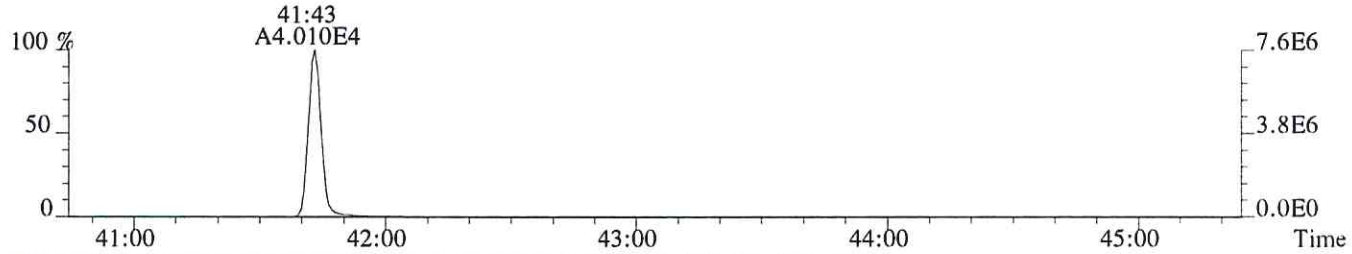
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,392.0,0.40%,F,T)



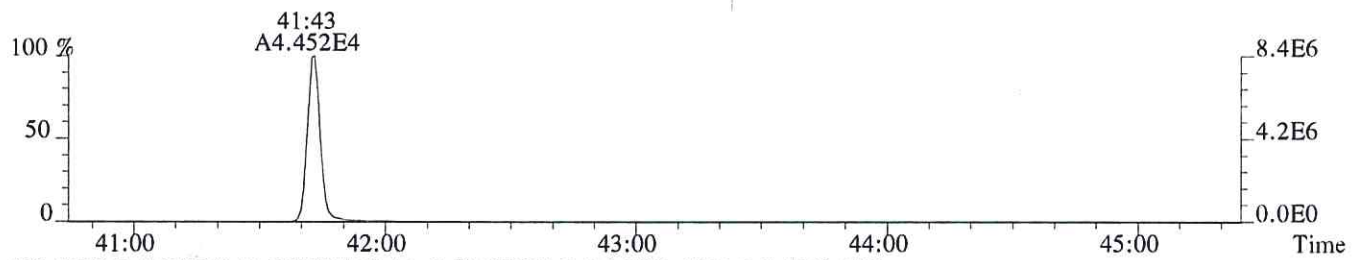
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



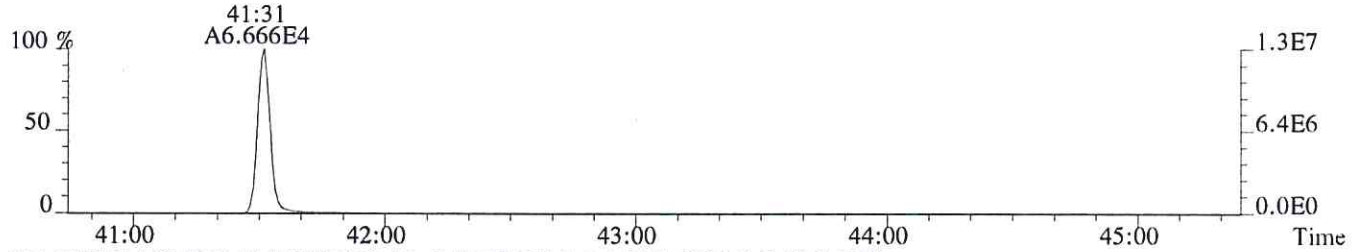
File:P406868 #1-421 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,332.0,0.40%,F,T)



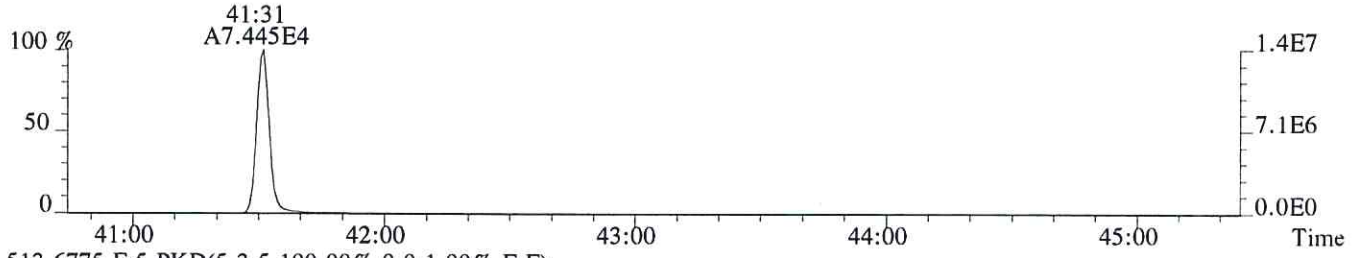
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,820.0,0.40%,F,T)



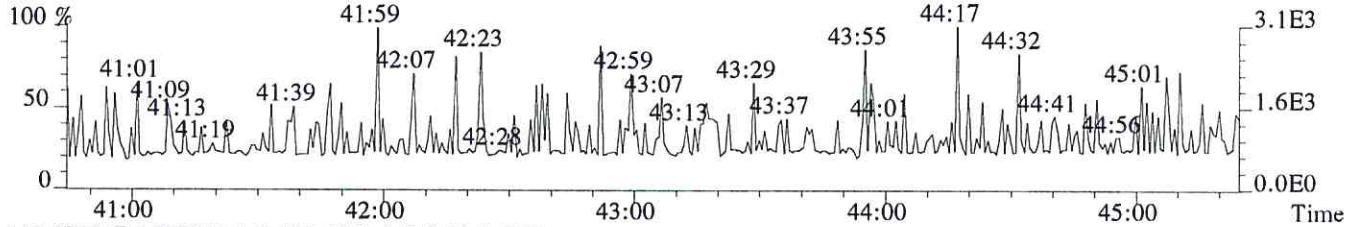
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3812.0,0.40%,F,T)



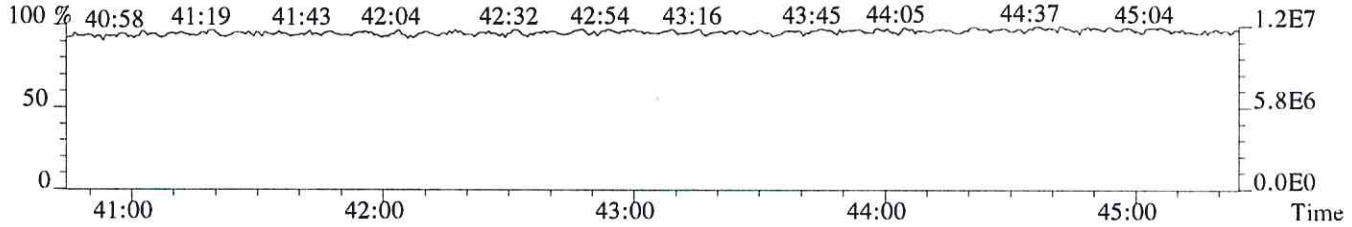
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2908.0,0.40%,F,T)



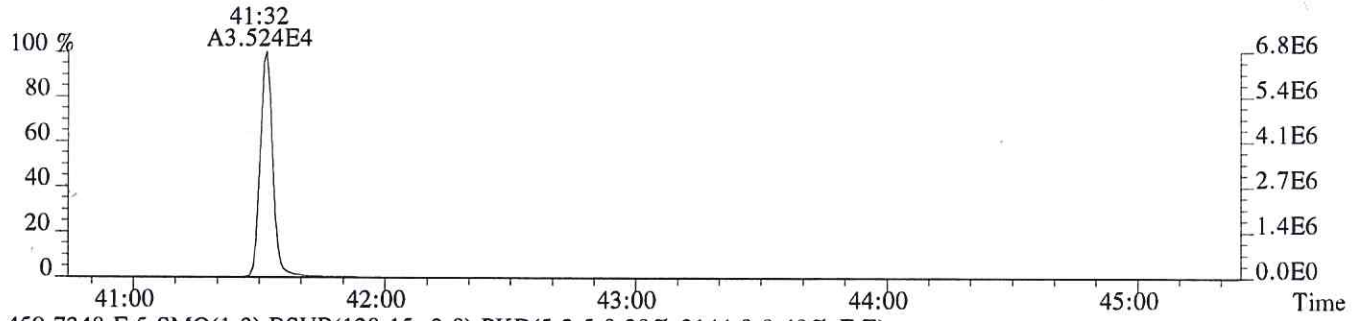
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



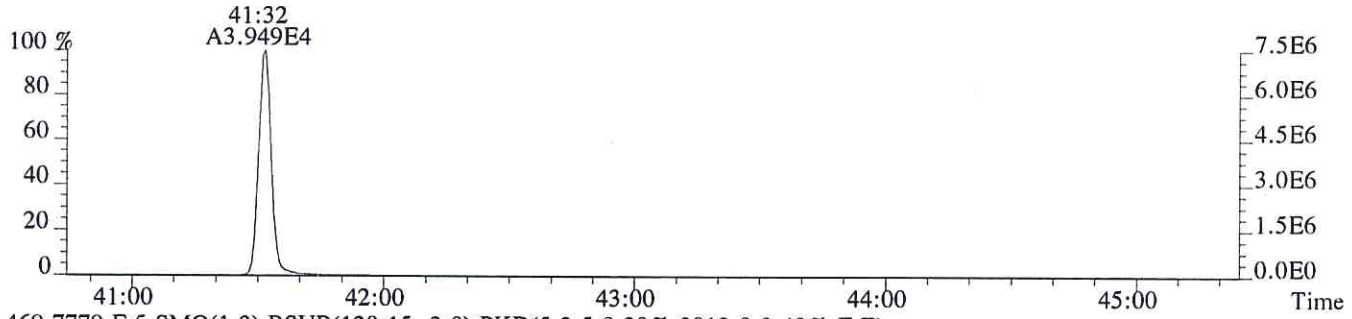
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



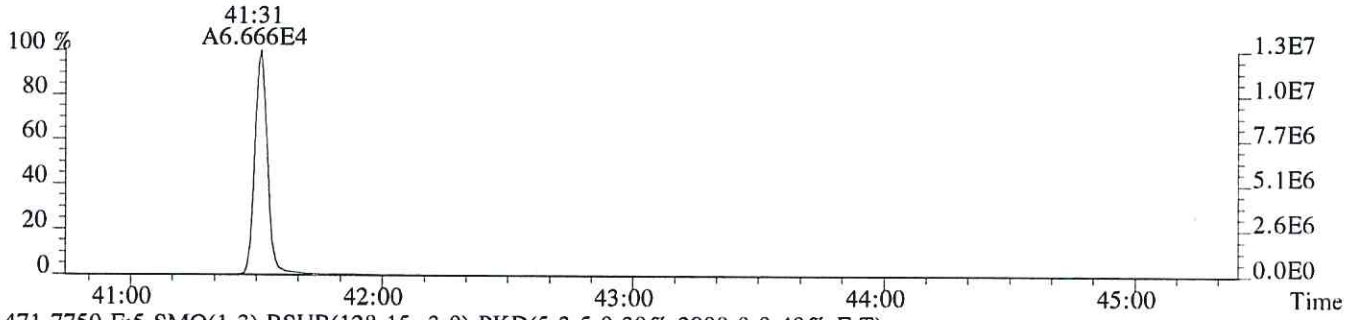
File:P406868 #1-421 Acq:24-MAY-2017 03:20:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2440.0,0.40%,F,T)



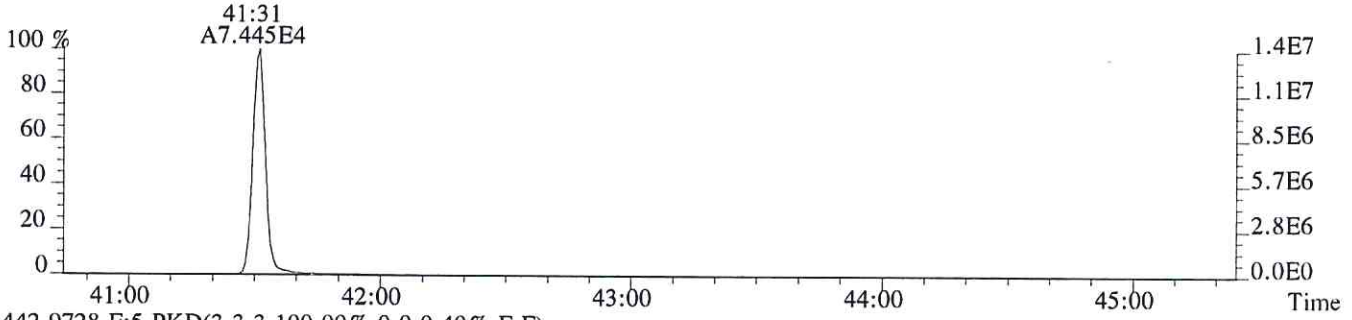
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2144.0,0.40%,F,T)



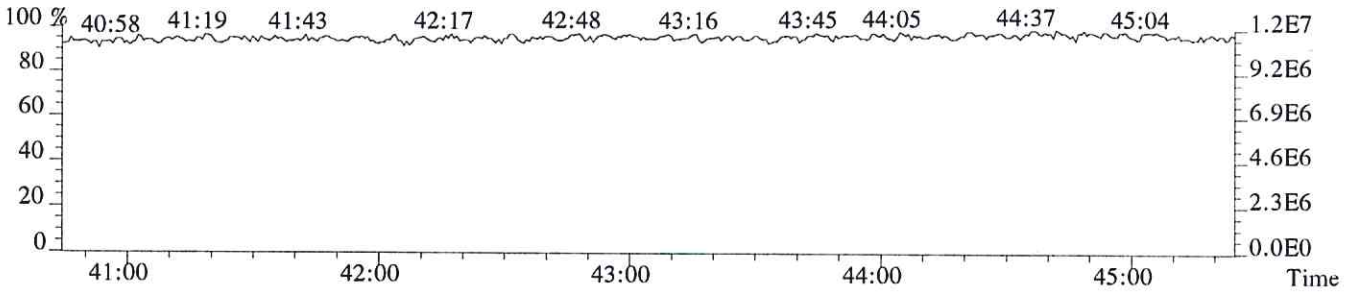
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3812.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2908.0,0.40%,F,T)



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



USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 04/28/16

Instrument ID: E-HRMS-06 GC Column ID: DB-5MSUI

VER Data Filename: P406880 Analysis Date: 24-MAY-17 Time: 13:08:19

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	0.76	0.65-0.89	10.6	7.8 - 12.9	5.9
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32-1.78	54	39 - 65	7.2
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	54	39 - 64	8.3
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	55	39 - 64	9.6
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	55	41 - 61	9.3
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	55	43 - 58	9.1
OCDD	M+2/M+4	0.88	0.76-1.02	107	79 - 126	6.5
2,3,7,8-TCDF	M/M+2	0.75	0.65-0.89	10.8	8.4 - 12.0	7.8
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	55	41 - 60	9.4
2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	55	41 - 61	10.1
1,2,3,4,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	54	45 - 56	7.3
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	53	44 - 57	6.7
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	54	45 - 56	8.4
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	53	44 - 57	6.3
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	53	45 - 55	6.8
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	52	43 - 58	4.8
OCDF	M+2/M+4	0.90	0.76-1.02	115	63 - 159	14.8

(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: 04/28/16

Instrument ID: E-HRMS-06 GC Column ID: DB-5MSUI

VER Data Filename: P406880 Analysis Date: 24-MAY-17 Time: 13:08:19

	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	2.1
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	111	62 - 160	10.6
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	104	85 - 117	4.2
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	97	85 - 118	-3.1
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	107	72 - 138	7.2
13C-OCDD	M+2/M+4	0.89	0.76-1.02	238	96 - 415	19.1
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	111	71 - 140	11.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	118	76 - 130	18.4
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	118	77 - 130	17.8
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	111	76 - 131	11.3
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	106	70 - 143	5.6
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	115	74 - 135	14.9
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	112	73 - 137	12.4
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37-0.51	112	78 - 129	12.5
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	123	77 - 129	23.0
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				10.5	7.8 - 12.7	4.8

(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) 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.
178519

Run #18 Filename P406880 Samp: 1 Inj: 1 Acquired: 24-MAY-17 13:08:19
Processed: 26-MAY-17 10:35:50 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	27:23	5.496e+03	7.315e+03	0.75	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	31:47	4.613e+04	2.985e+04	1.55	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	32:43	4.317e+04	2.808e+04	1.54	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	35:25	3.943e+04	3.207e+04	1.23	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	35:32	4.149e+04	3.332e+04	1.25	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:02	3.936e+04	3.177e+04	1.24	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	36:47	3.671e+04	2.959e+04	1.24	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:02	3.435e+04	3.321e+04	1.03	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:22	3.139e+04	3.005e+04	1.04	yes	no	1.187
10	Unk	OCDF	41:43	5.191e+04	5.778e+04	0.90	yes	no	1.035
11	Unk	2,3,7,8-TCDD	28:14	4.824e+03	6.388e+03	0.76	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:00	3.270e+04	2.121e+04	1.54	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:10	2.942e+04	2.383e+04	1.23	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:15	2.999e+04	2.408e+04	1.25	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	36:29	3.204e+04	2.539e+04	1.26	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	38:54	2.632e+04	2.516e+04	1.05	yes	no	0.882
17	Unk	OCDD	41:32	4.506e+04	5.128e+04	0.88	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	27:23	6.766e+04	8.695e+04	0.78	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	31:46	9.713e+04	6.208e+04	1.56	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	32:42	9.532e+04	6.142e+04	1.55	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:25	4.132e+04	8.018e+04	0.52	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	35:31	4.640e+04	8.981e+04	0.52	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:01	4.499e+04	8.678e+04	0.52	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	36:46	3.985e+04	7.853e+04	0.51	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:01	3.144e+04	7.086e+04	0.44	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:21	3.016e+04	6.866e+04	0.44	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	28:13	5.317e+04	6.816e+04	0.78	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	32:59	7.594e+04	4.890e+04	1.55	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:09	6.205e+04	4.960e+04	1.25	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:15	6.169e+04	4.882e+04	1.26	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:54	5.489e+04	5.213e+04	1.05	yes	no	0.817
32	IS	13C-OCDD	41:31	8.707e+04	9.756e+04	0.89	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	27:36	5.372e+04	6.877e+04	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:29	6.779e+04	5.440e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:14	1.229e+04				no	0.958

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www.alsglobal.com

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
178519

Run #18 Filename P406880 Samp: 1 Inj: 1 Acquired: 24-MAY-17 13:08:19
Processed: 26-MAY-17 10:35:50 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	9.54e+05	4.24e+02	2.2e+03	1.26e+06	6.08e+02	2.1e+03
2	1,2,3,7,8-PeCDF	8.42e+06	5.04e+02	1.7e+04	5.50e+06	4.44e+02	1.2e+04
3	2,3,4,7,8-PeCDF	8.48e+06	5.04e+02	1.7e+04	5.53e+06	4.44e+02	1.2e+04
4	1,2,3,4,7,8-HxCDF	8.63e+06	2.80e+02	3.1e+04	6.99e+06	1.04e+02	6.7e+04
5	1,2,3,6,7,8-HxCDF	8.64e+06	2.80e+02	3.1e+04	6.94e+06	1.04e+02	6.7e+04
6	2,3,4,6,7,8-HxCDF	8.77e+06	2.80e+02	3.1e+04	7.10e+06	1.04e+02	6.8e+04
7	1,2,3,7,8,9-HxCDF	7.67e+06	2.80e+02	2.7e+04	6.20e+06	1.04e+02	6.0e+04
8	1,2,3,4,6,7,8-HpCDF	7.96e+06	2.05e+03	3.9e+03	7.69e+06	2.61e+03	3.0e+03
9	1,2,3,4,7,8,9-HpCDF	6.69e+06	2.05e+03	3.3e+03	6.26e+06	2.61e+03	2.4e+03
10	OCDF	9.87e+06	2.24e+02	4.4e+04	1.08e+07	4.48e+02	2.4e+04
11	2,3,7,8-TCDD	8.57e+05	4.88e+02	1.8e+03	1.15e+06	4.64e+02	2.5e+03
12	1,2,3,7,8-PeCDD	6.45e+06	5.60e+02	1.2e+04	4.22e+06	5.56e+02	7.6e+03
13	1,2,3,4,7,8-HxCDD	6.78e+06	2.60e+02	2.6e+04	5.48e+06	2.36e+02	2.3e+04
14	1,2,3,6,7,8-HxCDD	6.55e+06	2.60e+02	2.5e+04	5.20e+06	2.36e+02	2.2e+04
15	1,2,3,7,8,9-HxCDD	6.96e+06	2.60e+02	2.7e+04	5.67e+06	2.36e+02	2.4e+04
16	1,2,3,4,6,7,8-HpCDD	5.90e+06	4.64e+02	1.3e+04	5.65e+06	4.00e+02	1.4e+04
17	OCDD	8.60e+06	2.46e+03	3.5e+03	9.76e+06	3.44e+03	2.8e+03
18	13C-2,3,7,8-TCDF	1.17e+07	4.61e+03	2.5e+03	1.49e+07	2.24e+03	6.7e+03
19	13C-1,2,3,7,8-PeCDF	1.82e+07	5.24e+02	3.5e+04	1.17e+07	9.64e+02	1.2e+04
20	13C-2,3,4,7,8-PeCDF	1.89e+07	5.24e+02	3.6e+04	1.22e+07	9.64e+02	1.3e+04
21	13C-1,2,3,4,7,8-HxCDF	9.11e+06	4.36e+02	2.1e+04	1.76e+07	6.64e+02	2.6e+04
22	13C-1,2,3,6,7,8-HxCDF	9.79e+06	4.36e+02	2.2e+04	1.90e+07	6.64e+02	2.9e+04
23	13C-2,3,4,6,7,8-HxCDF	1.01e+07	4.36e+02	2.3e+04	1.94e+07	6.64e+02	2.9e+04
24	13C-1,2,3,7,8,9-HxCDF	8.38e+06	4.36e+02	1.9e+04	1.64e+07	6.64e+02	2.5e+04
25	13C-1,2,3,4,6,7,8-HpCDF	7.27e+06	3.52e+03	2.1e+03	1.64e+07	2.66e+03	6.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.51e+06	3.52e+03	1.8e+03	1.47e+07	2.66e+03	5.5e+03
27	13C-2,3,7,8-TCDD	9.81e+06	3.97e+03	2.5e+03	1.24e+07	1.47e+03	8.5e+03
28	13C-1,2,3,7,8-PeCDD	1.48e+07	4.88e+02	3.0e+04	9.54e+06	4.72e+02	2.0e+04
29	13C-1,2,3,4,7,8-HxCDD	1.43e+07	2.72e+03	5.3e+03	1.14e+07	1.32e+03	8.6e+03
30	13C-1,2,3,6,7,8-HxCDD	1.33e+07	2.72e+03	4.9e+03	1.05e+07	1.32e+03	7.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.22e+07	6.80e+02	1.8e+04	1.16e+07	2.88e+02	4.0e+04
32	13C-OCDD	1.66e+07	5.22e+03	3.2e+03	1.86e+07	5.98e+03	3.1e+03
33	13C-1,2,3,4-TCDD	9.53e+06	3.97e+03	2.4e+03	1.23e+07	1.47e+03	8.4e+03
34	13C-1,2,3,7,8,9-HxCDD	1.50e+07	2.72e+03	5.5e+03	1.20e+07	1.32e+03	9.1e+03
35	37Cl-2,3,7,8-TCDD	2.21e+06	7.28e+02	3.0e+03			

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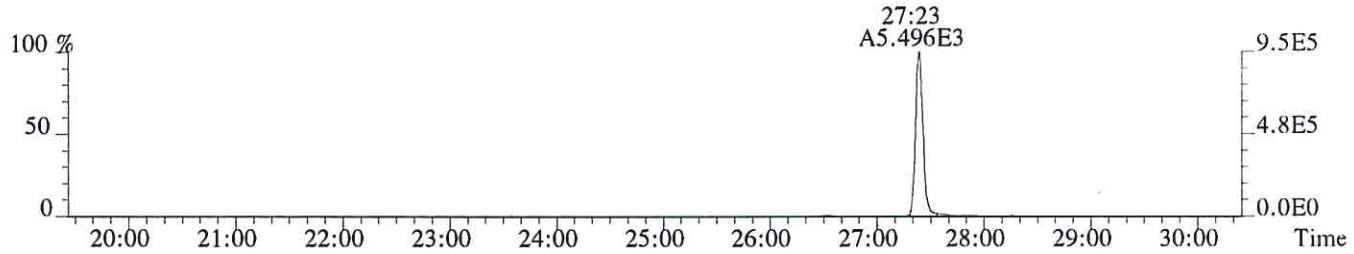
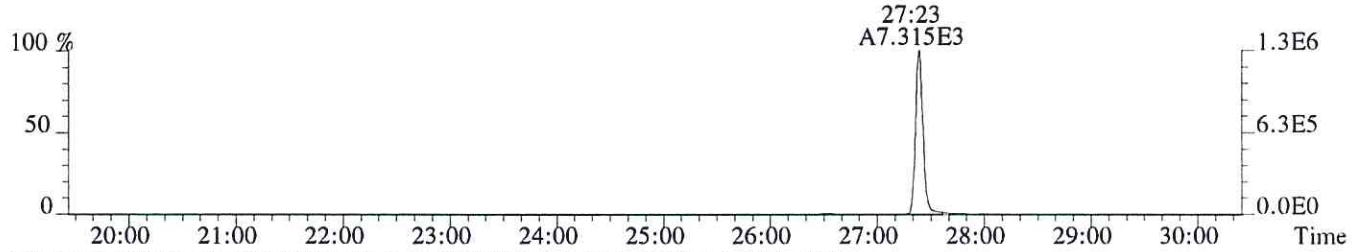
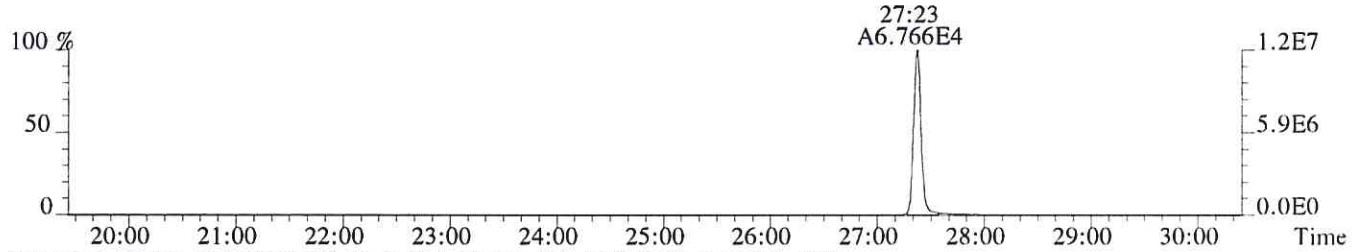
File:P406880 #1-779 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,424.0,1.00%,F,T)



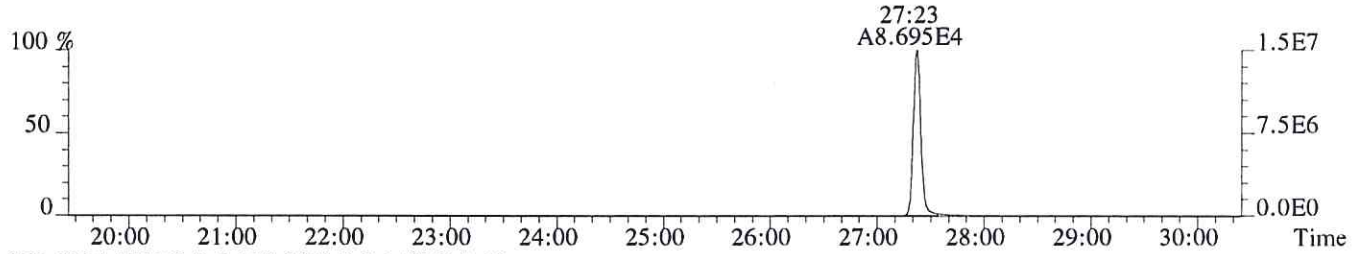
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,608.0,1.00%,F,T)



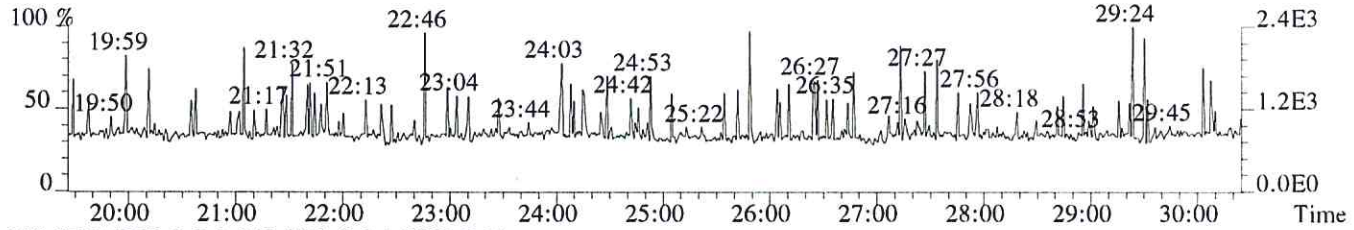
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4608.0,1.00%,F,T)



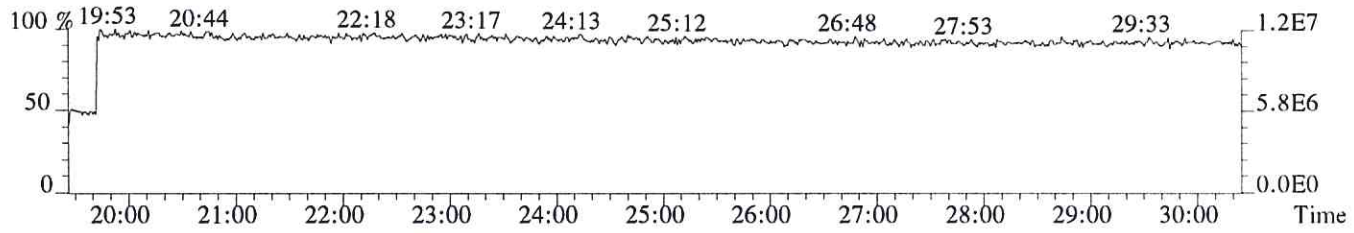
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2240.0,1.00%,F,T)



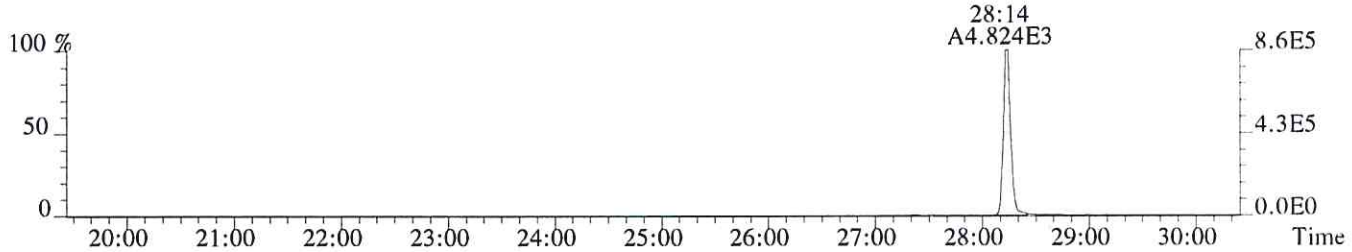
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



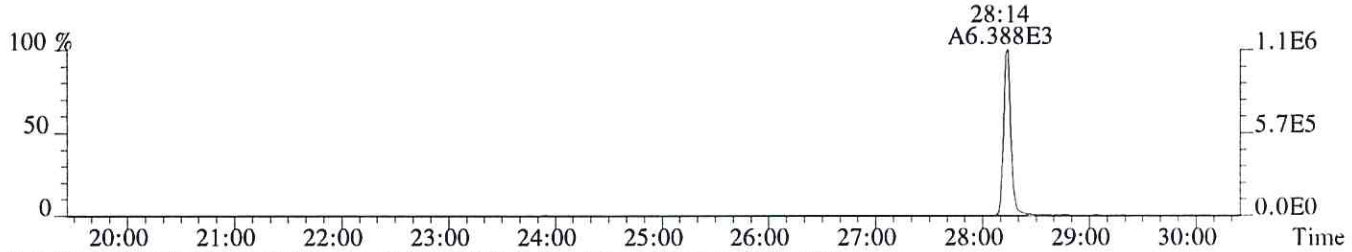
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



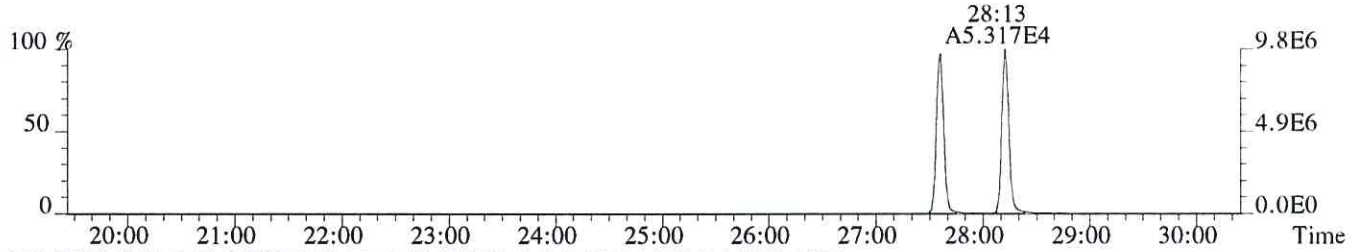
File:P406880 #1-779 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,488.0,1.00%,F,T)



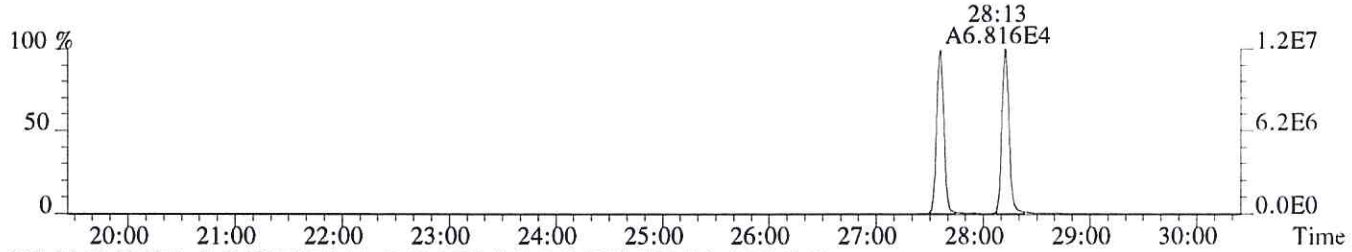
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,464.0,1.00%,F,T)



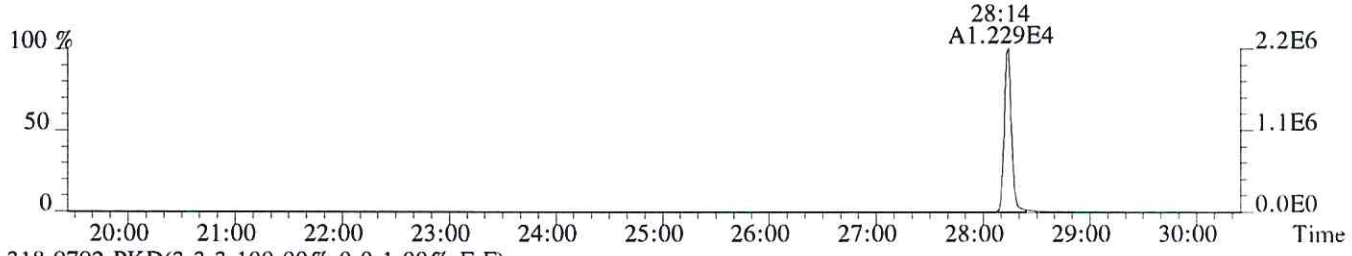
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3972.0,1.00%,F,T)



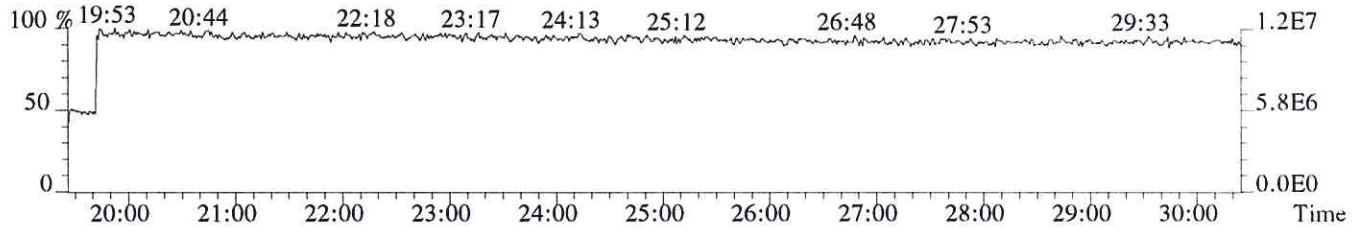
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1468.0,1.00%,F,T)



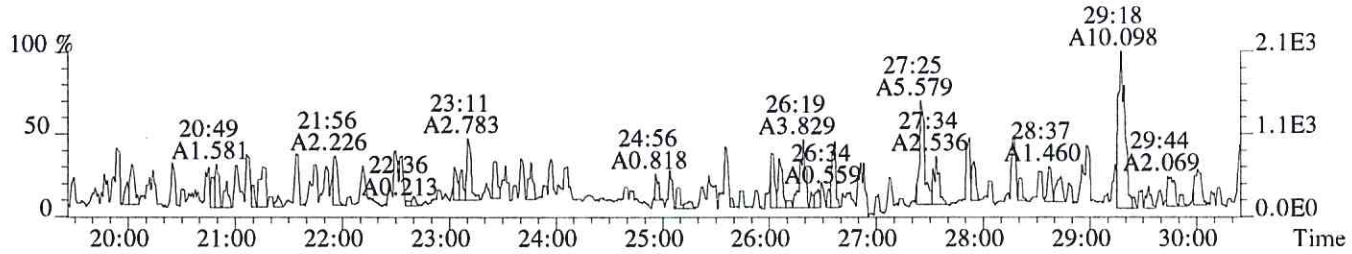
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,T)



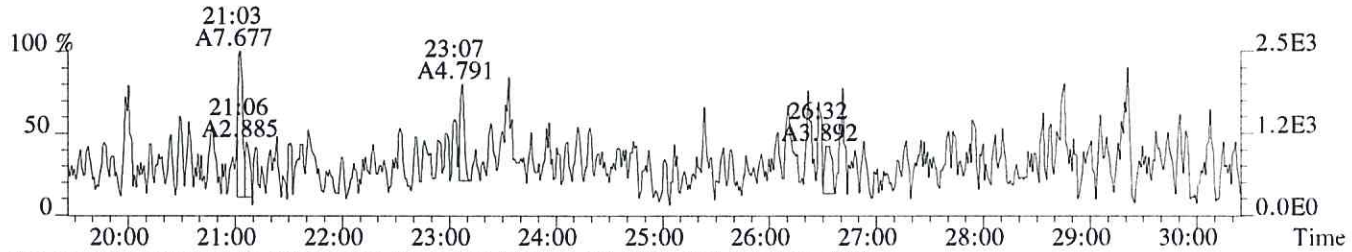
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



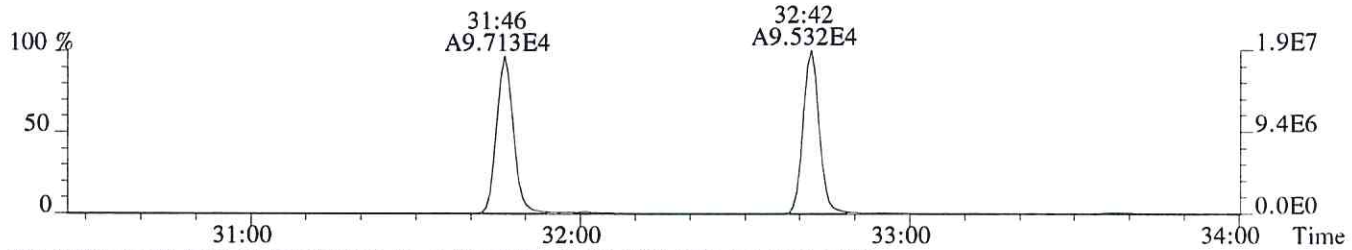
File:P406880 #1-779 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,300.0,1.00%,F,T)



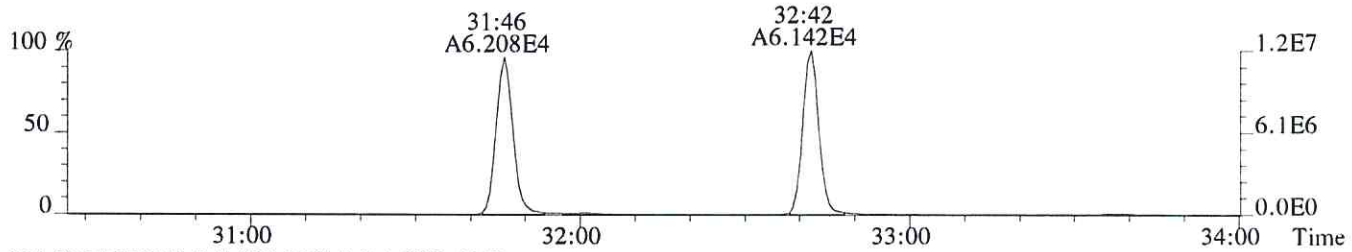
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,952.0,1.00%,F,T)



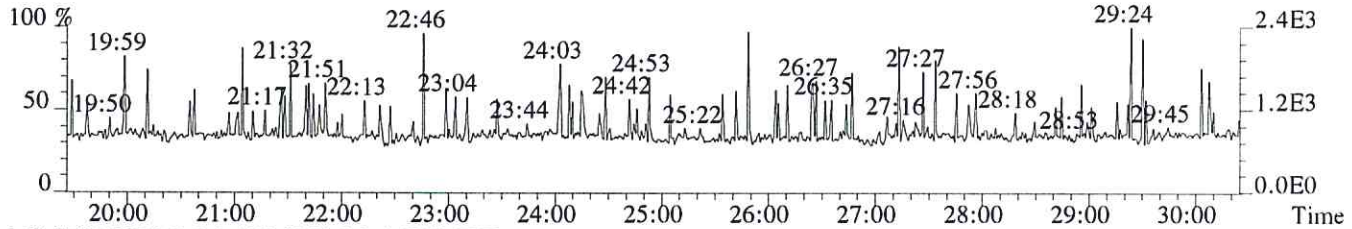
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,524.0,1.00%,F,T)



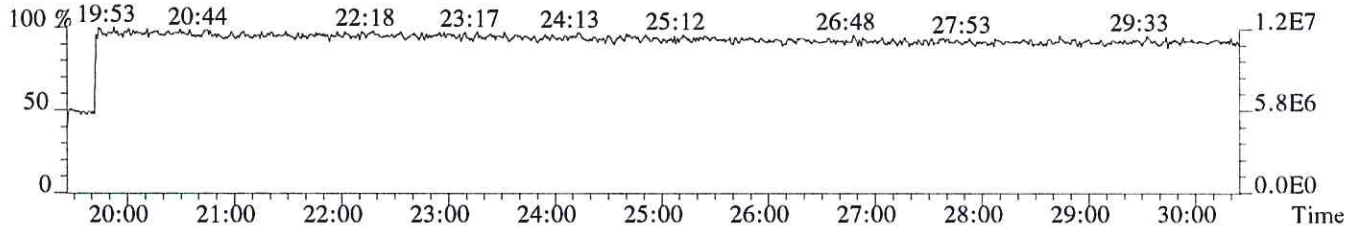
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,964.0,1.00%,F,T)



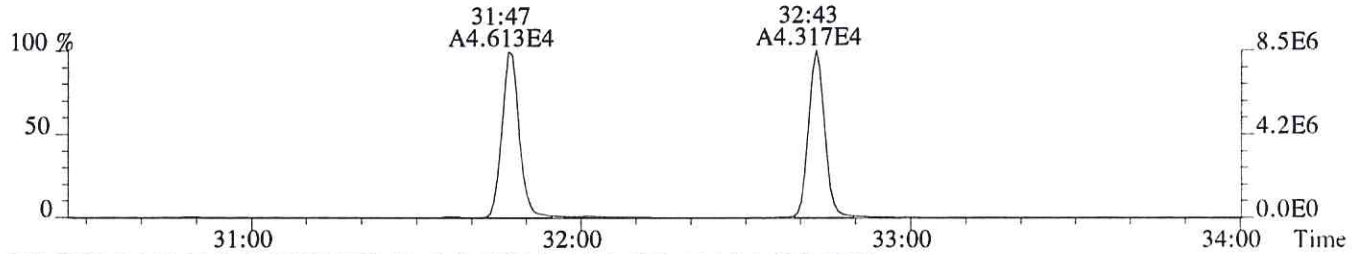
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



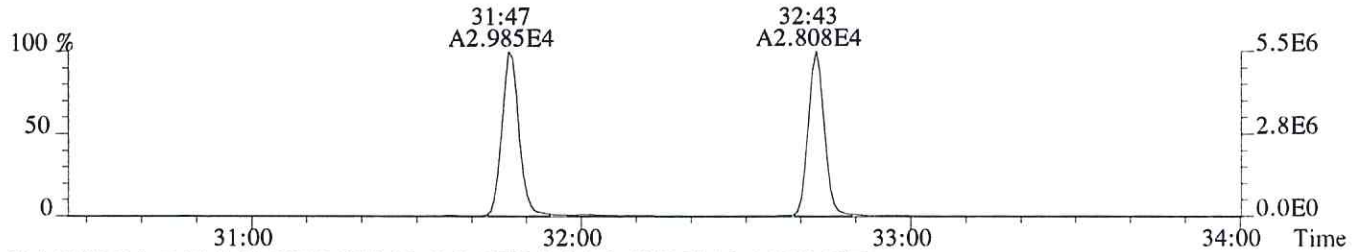
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



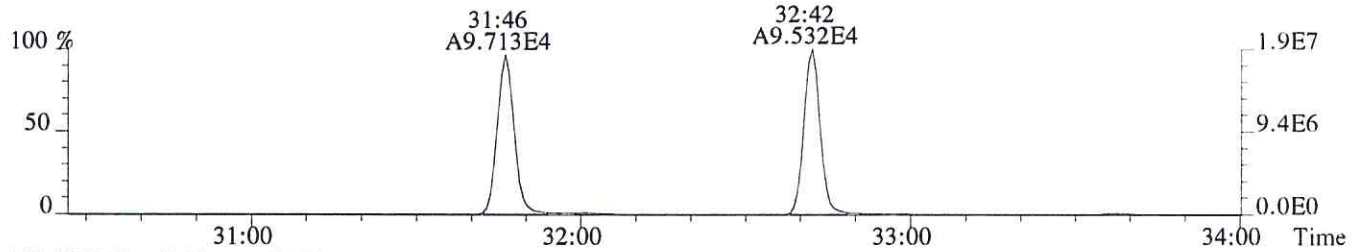
File:P406880 #1-321 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,504.0,1.00%,F,T)



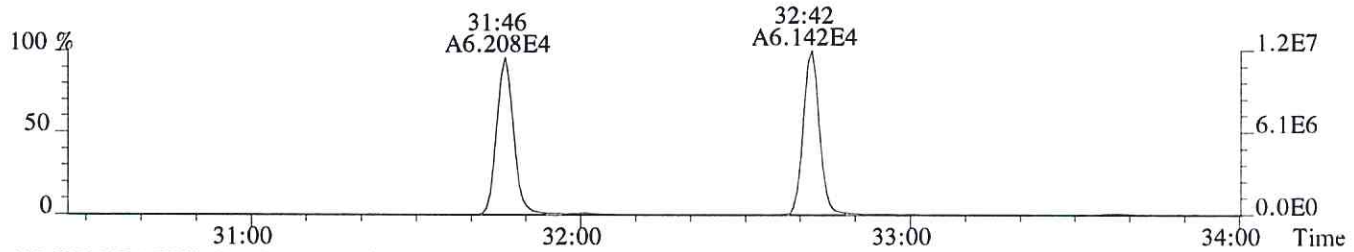
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



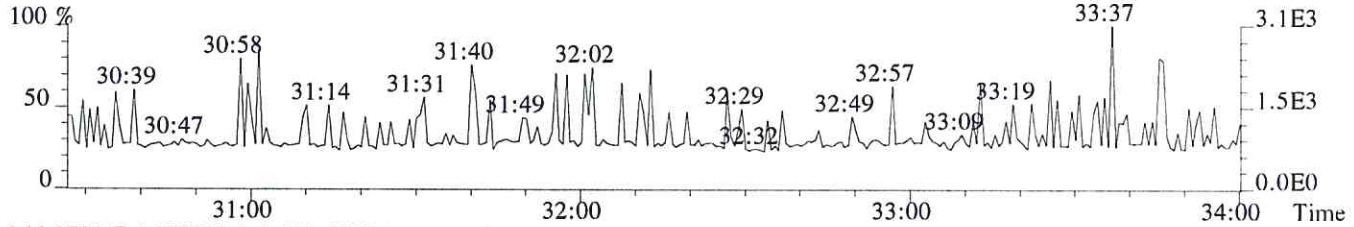
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,524.0,1.00%,F,T)



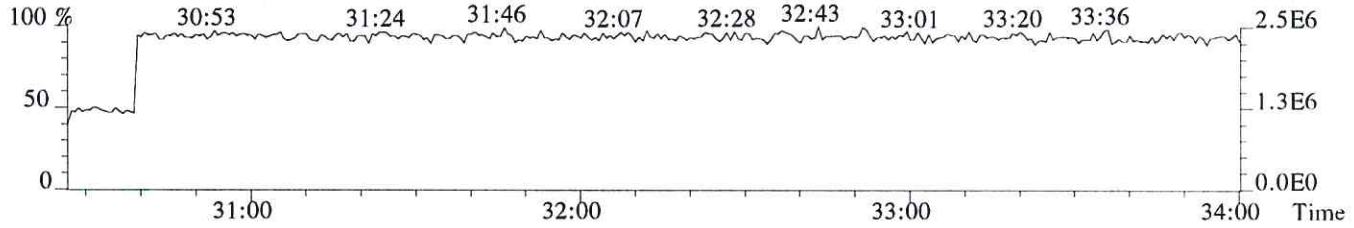
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,964.0,1.00%,F,T)



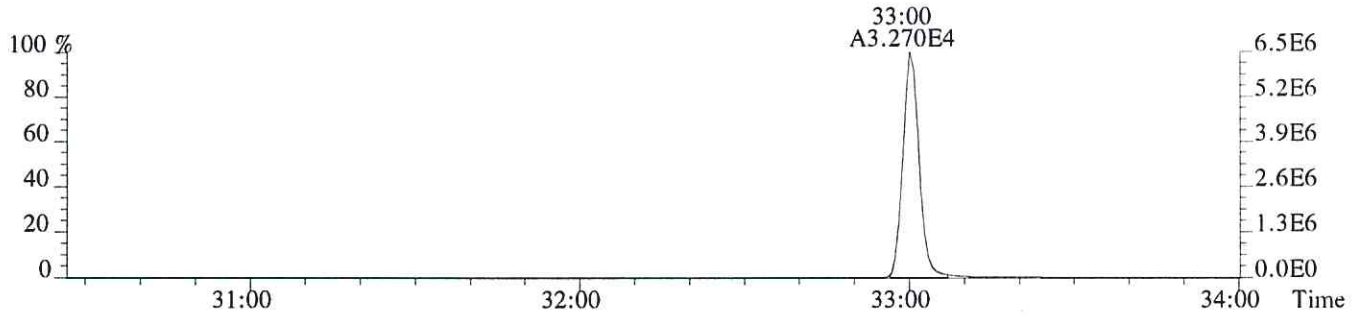
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



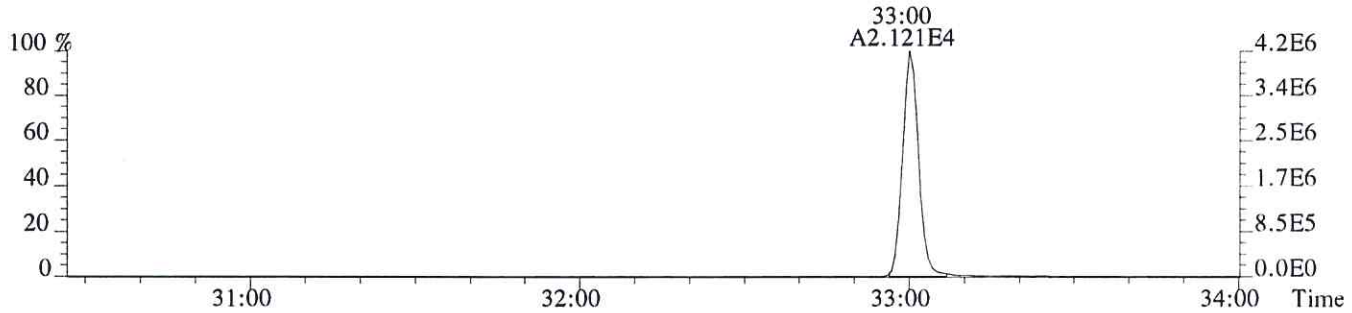
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



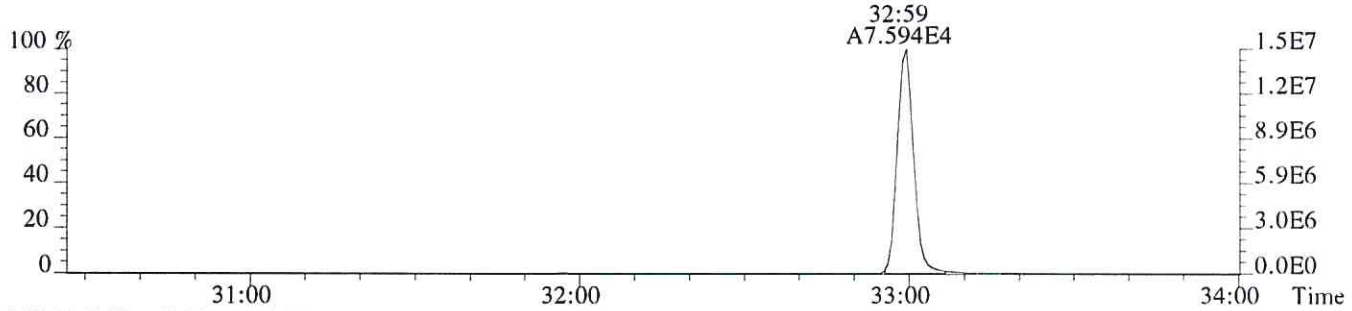
File:P406880 #1-321 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,560.0,1.00%,F,T)



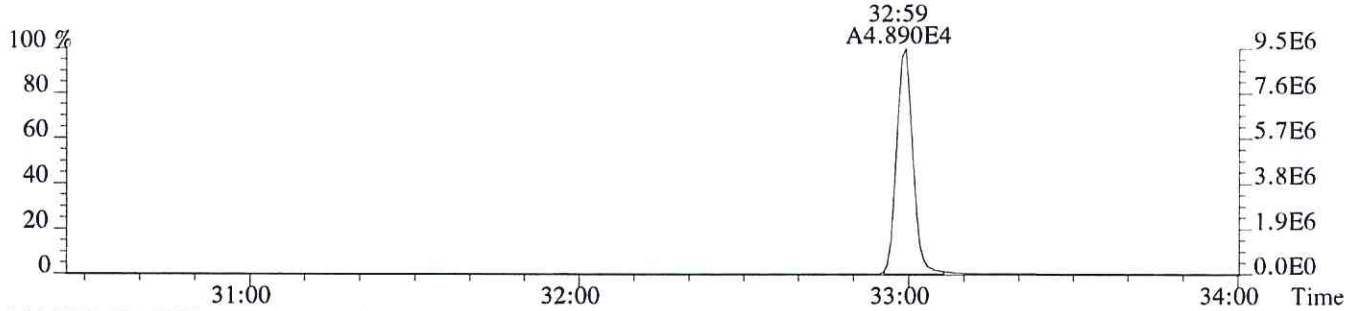
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,556.0,1.00%,F,T)



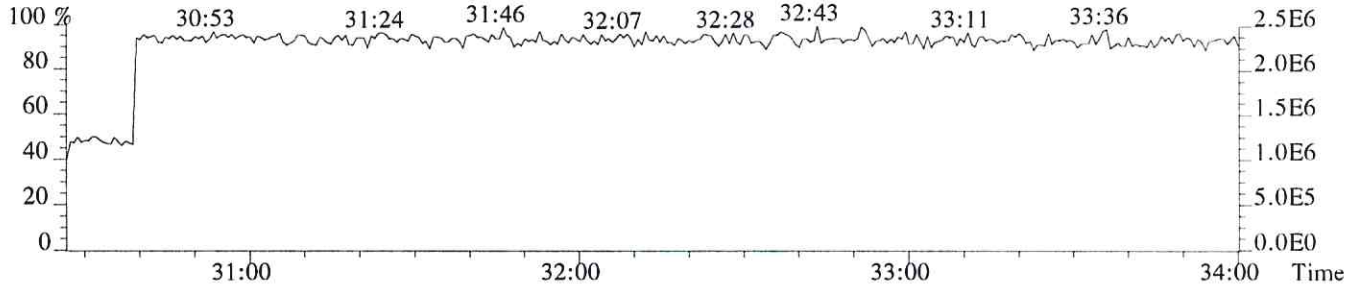
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,488.0,1.00%,F,T)



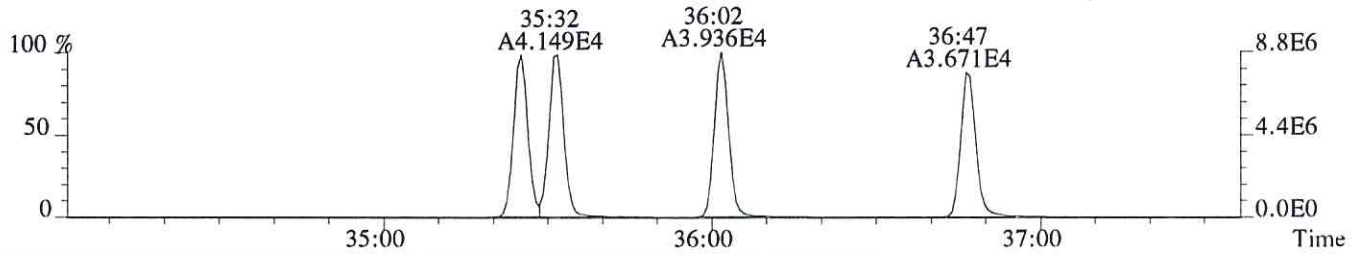
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,T)



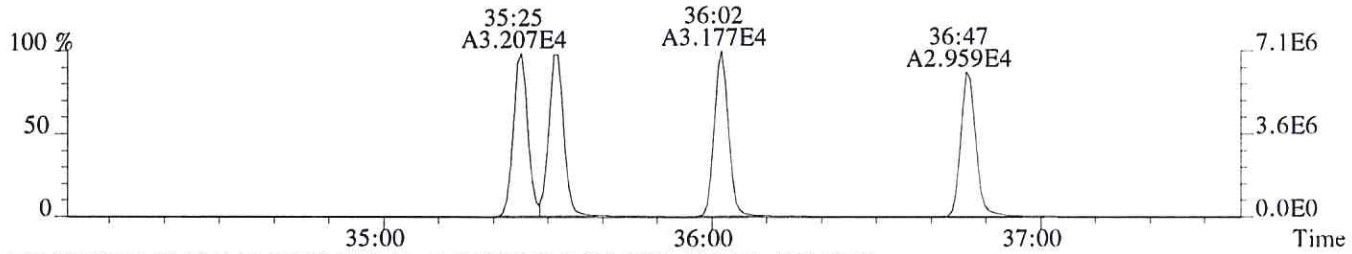
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



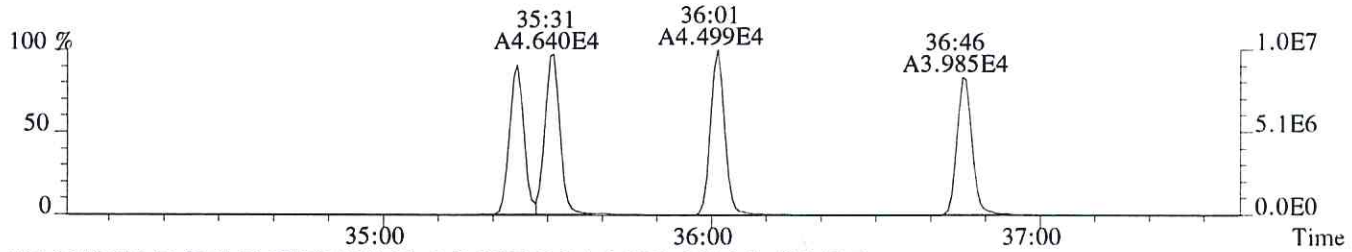
File:P406880 #1-322 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,280.0,0.40%,F,T)



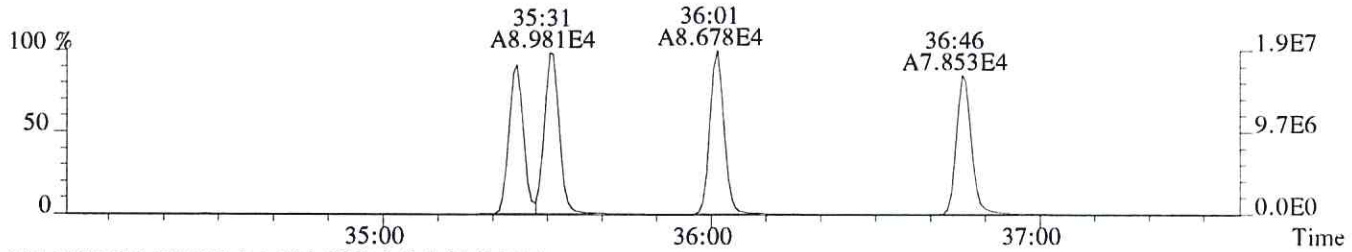
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,104.0,0.40%,F,T)



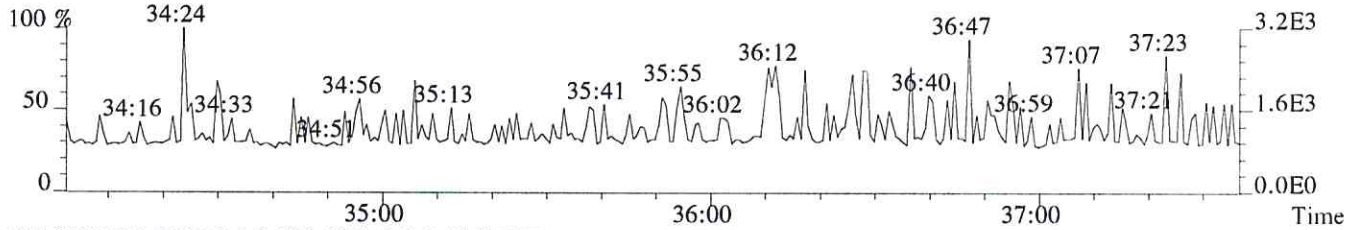
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,436.0,0.40%,F,T)



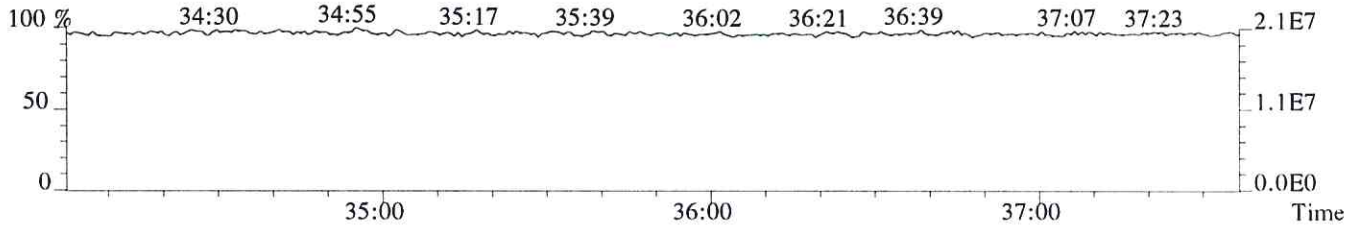
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,664.0,0.40%,F,T)



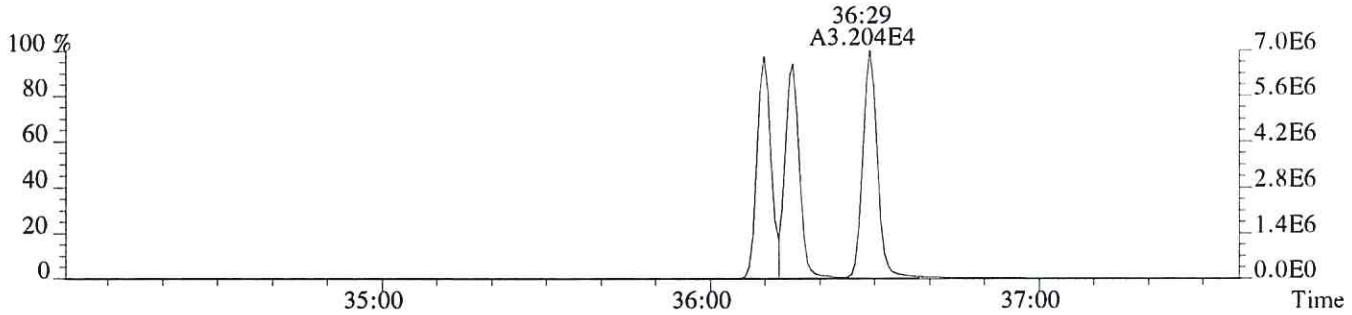
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



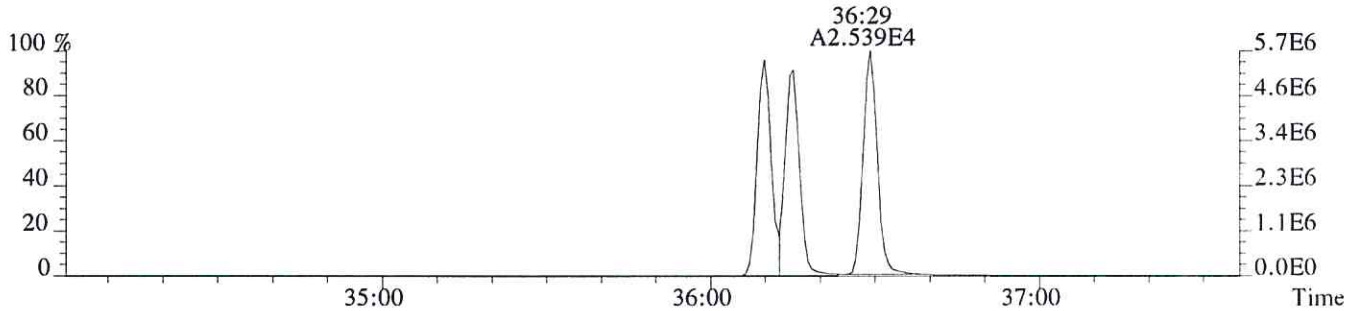
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



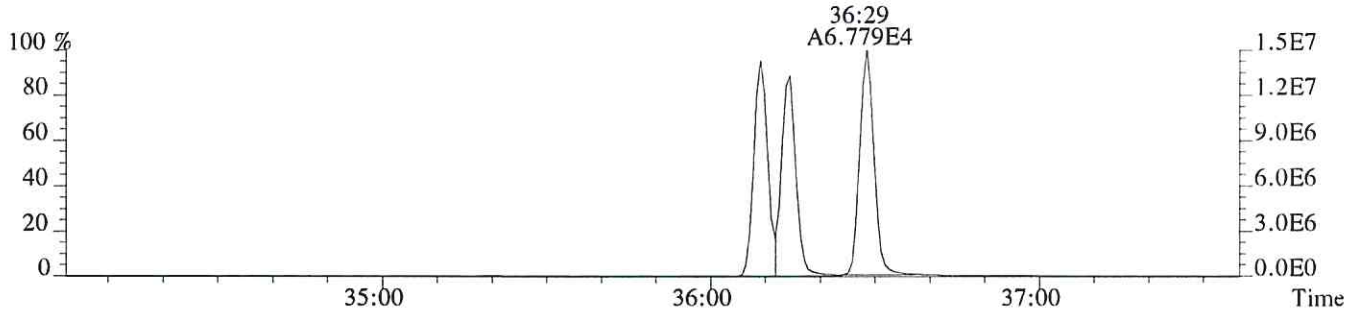
File:P406880 #1-322 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,260.0,0.40%,F,T)



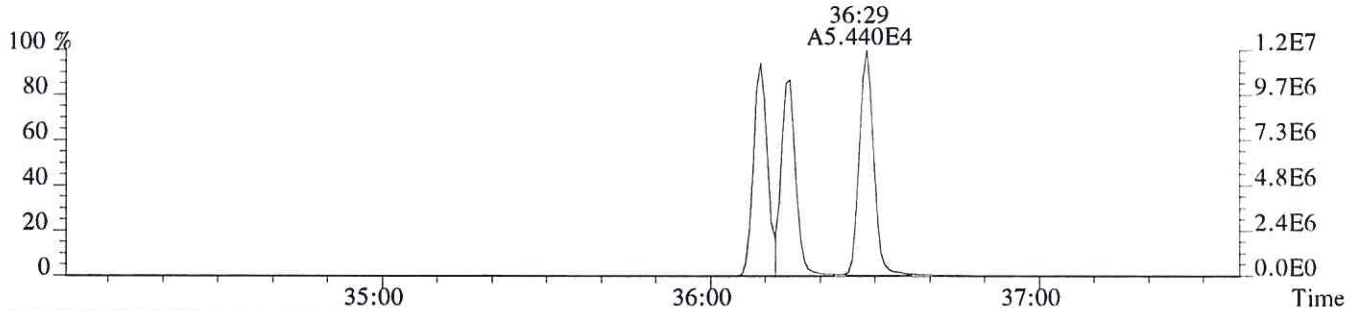
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,236.0,0.40%,F,T)



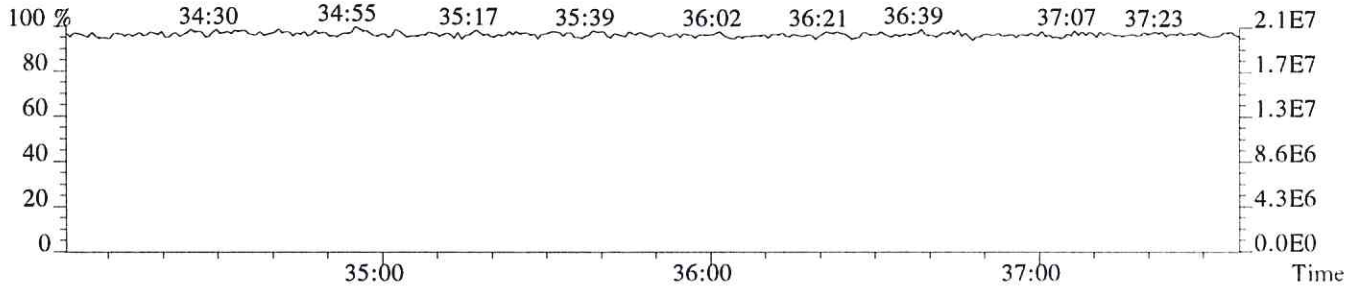
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2724.0,0.40%,F,T)



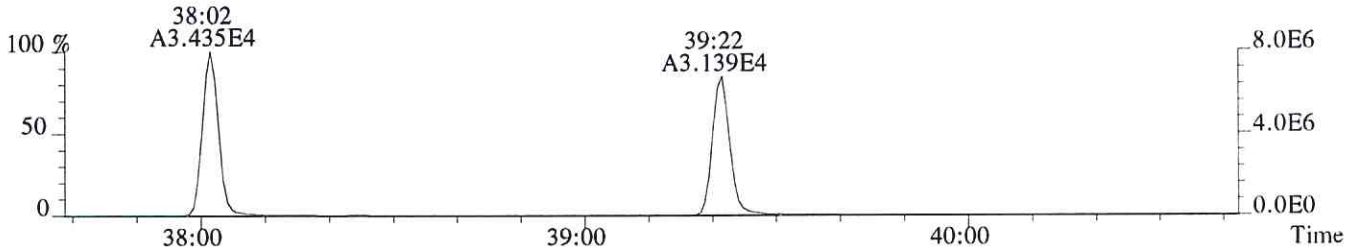
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1320.0,0.40%,F,T)



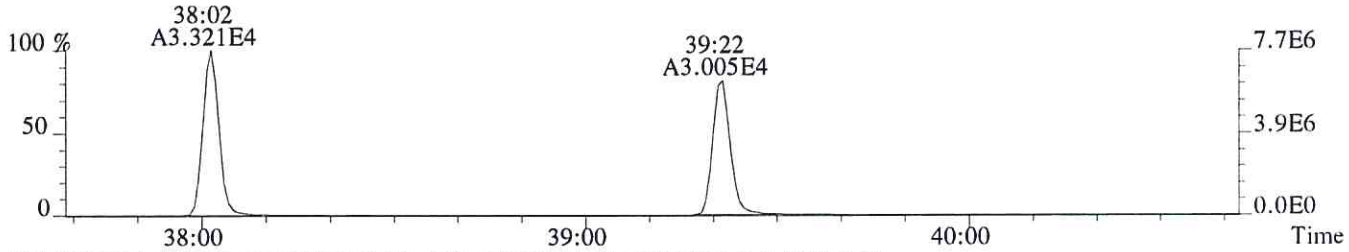
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



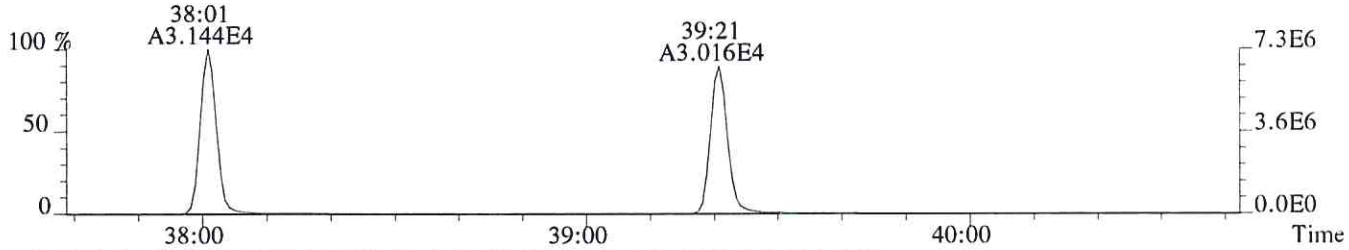
File:P406880 #1-276 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2048.0,0.50%,F,T)



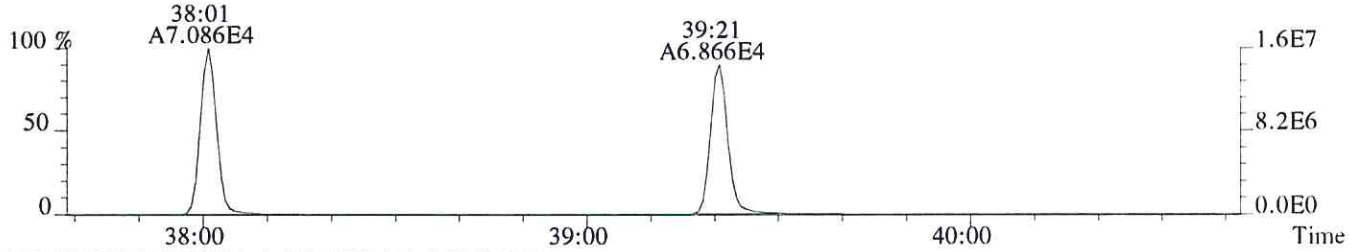
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2608.0,0.50%,F,T)



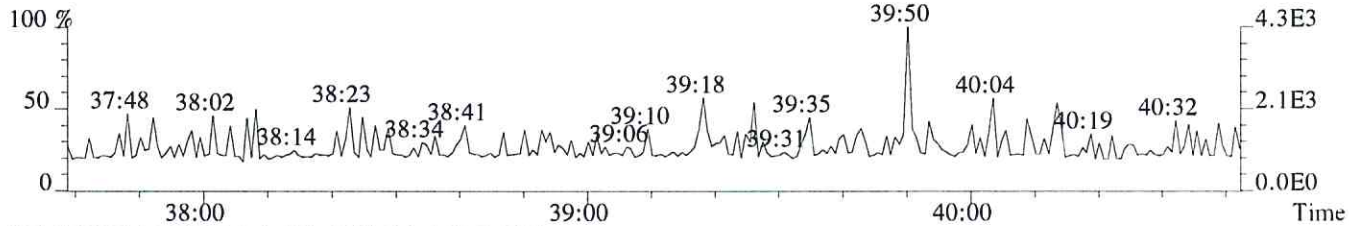
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3524.0,0.50%,F,T)



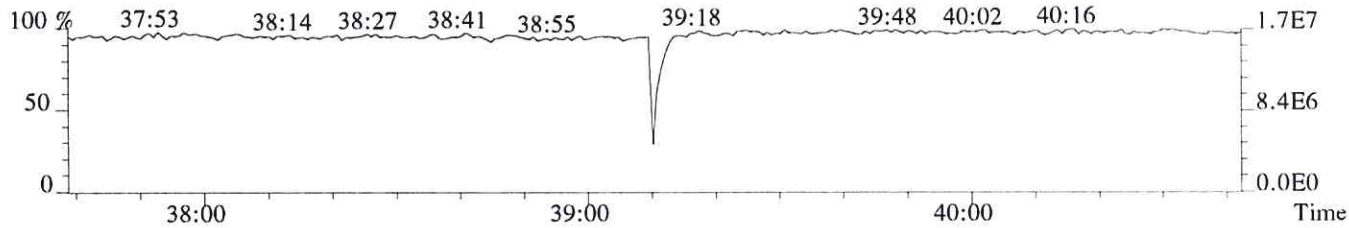
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2664.0,0.50%,F,T)



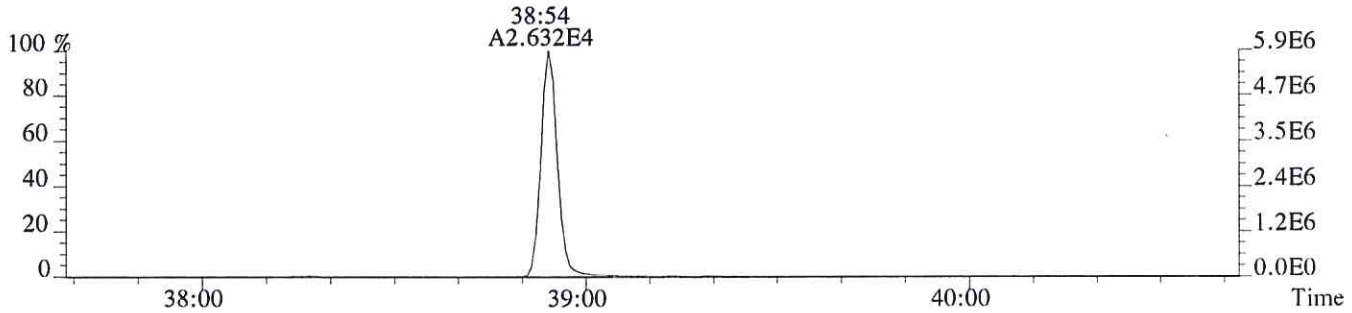
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



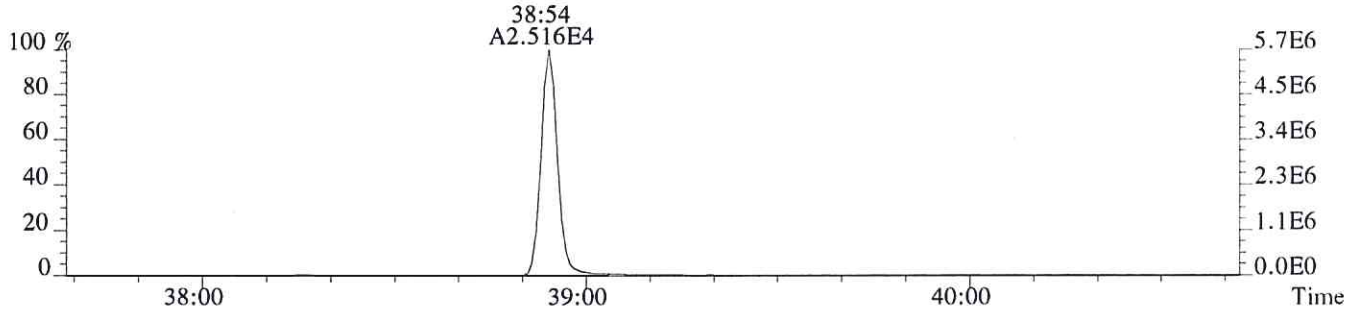
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



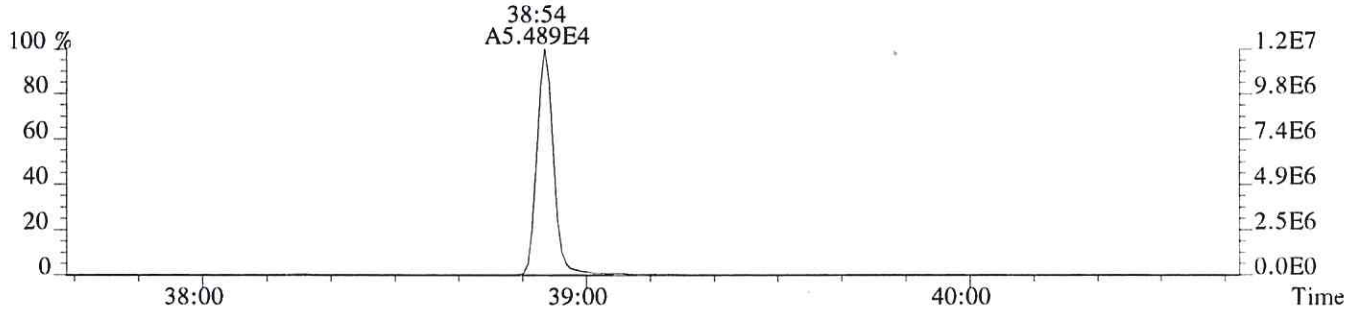
File:P406880 #1-276 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,464.0,0.40%,F,T)



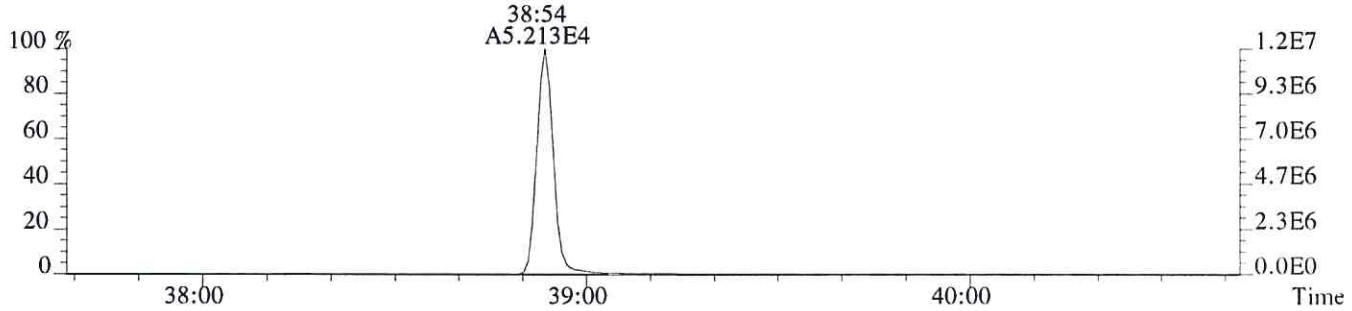
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,400.0,0.40%,F,T)



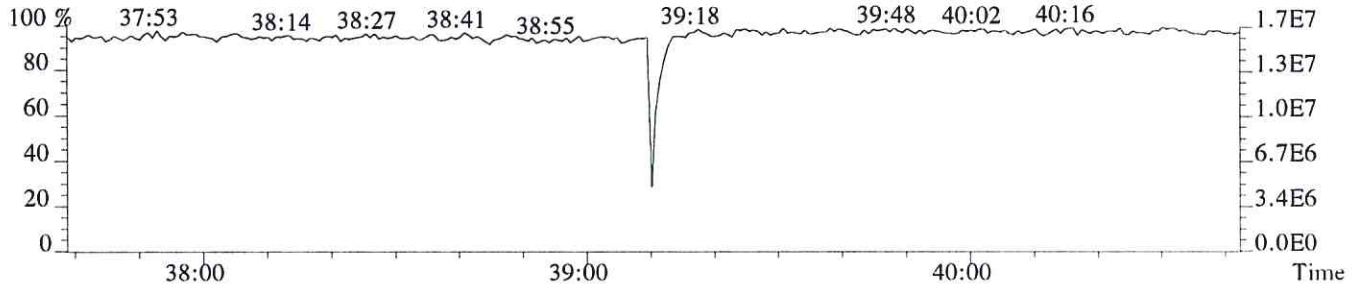
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,680.0,0.40%,F,T)



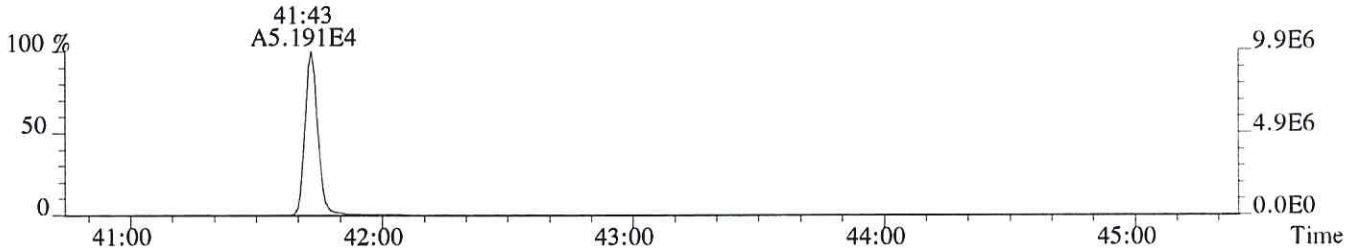
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,288.0,0.40%,F,T)



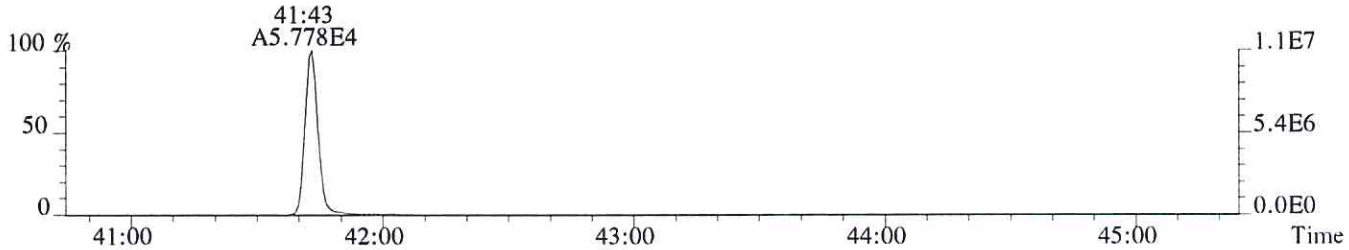
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



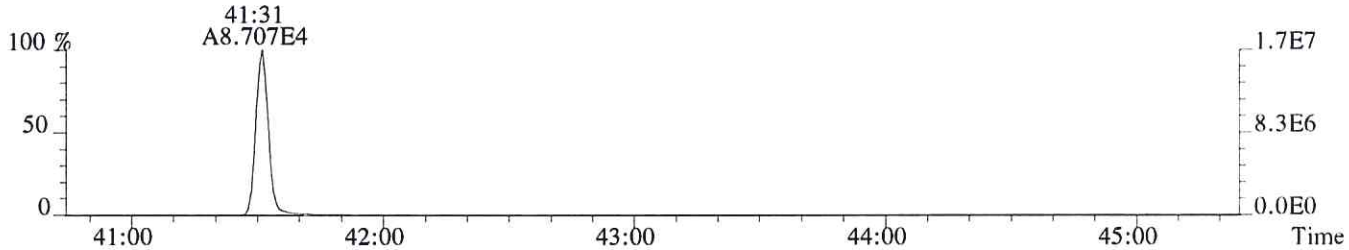
File:P406880 #1-421 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,224.0,0.40%,F,T)



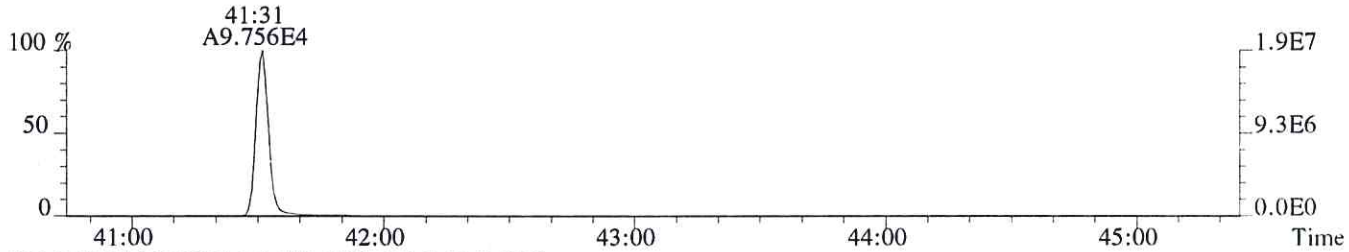
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,448.0,0.40%,F,T)



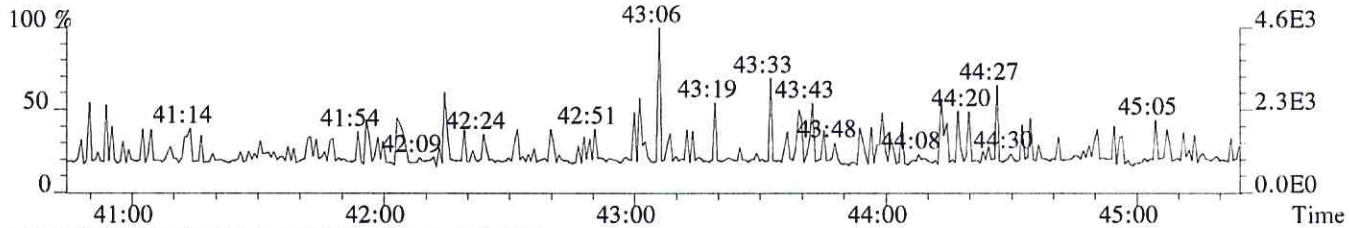
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5216.0,0.40%,F,T)



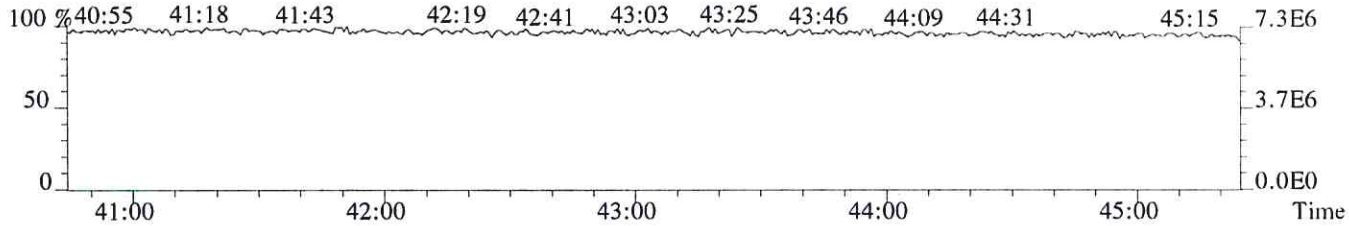
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5980.0,0.40%,F,T)



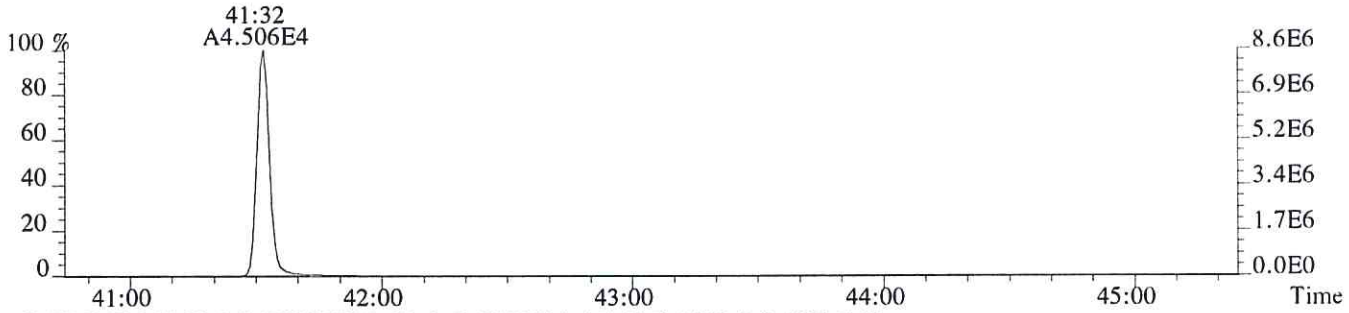
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



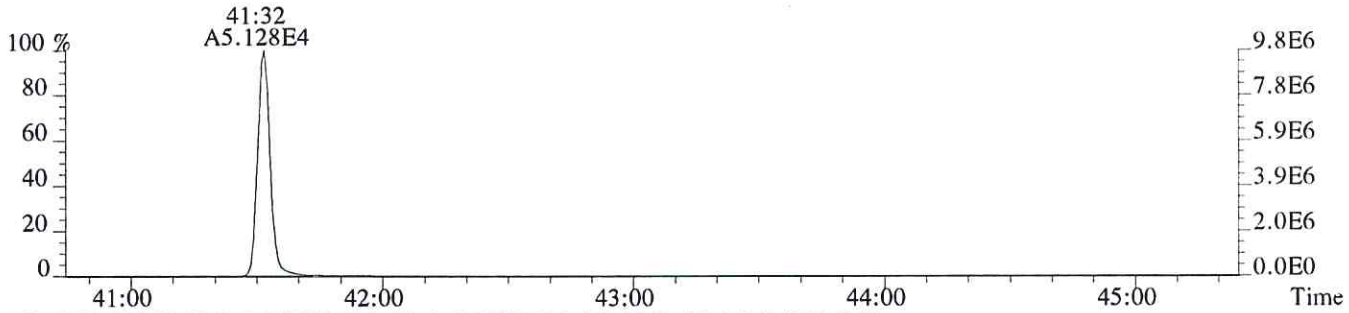
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



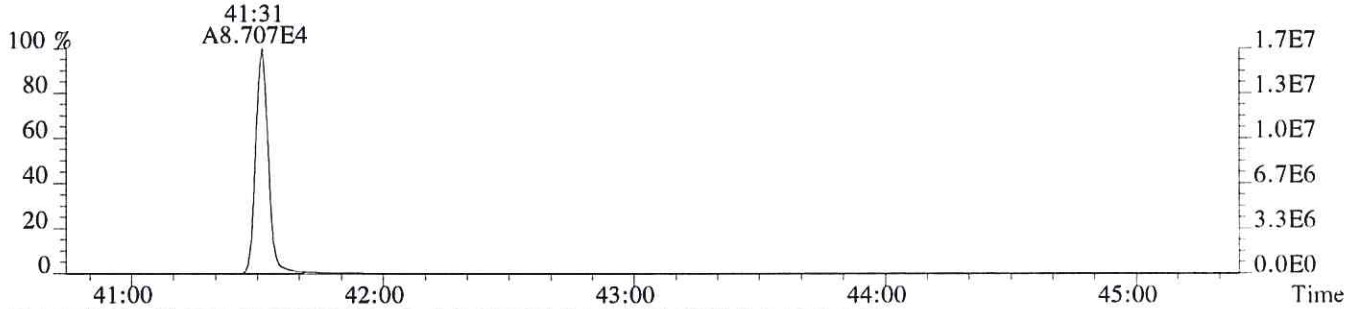
File:P406880 #1-421 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2460.0,0.40%,F,T)



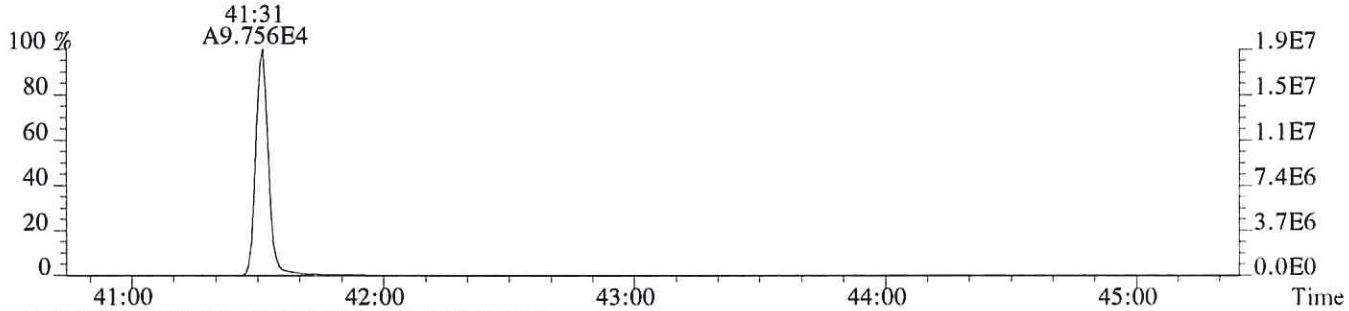
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3440.0,0.40%,F,T)



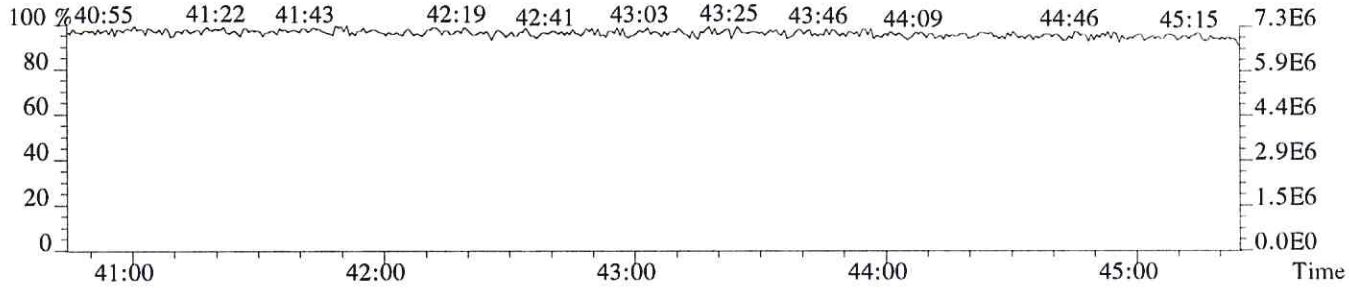
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5216.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5980.0,0.40%,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: P406850

Circle one: Beginning / Ending

Date: 05/24/17

Method: 1613 / 1613E / 8290 / Tetra / TCDD Only / 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: JC

Second QC: WS.

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-06

Init. Calib. Date: 04/28/16

Init. Calib.Times: 09:34:40

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
178397	WINDOW DEFINE	P406881	24-MAY-17	14:16:25
178519	CS3	P406880	24-MAY-17	13:08:19
METHOD BLANK	EQ1700190-01	P406882	24-MAY-17	15:53:42
XAD-2 TRAP FILTER	E1700472-001	P406884	24-MAY-17	17:31:15
LCS	EQ1700190-02	P406886	24-MAY-17	19:09:33
DLCS	EQ1700190-03	P406887	24-MAY-17	19:58:44

Sample List Report MassLynx 4.1 SCN815 SCN795

Sample List: C:\MassLynx\ehrms06.PRO\SampleDB\20170524A.spl
Last Modified: Thursday, May 25, 2017 10:12:45 Central Daylight Time
Printed: Thursday, May 25, 2017 10:12:47 Central Daylight Time

Page Position (1, 1)

m23 18290

OPUS-5: P406880RES OPUS-5: P406880RESM

	Date	Time	File Name	Lab Sample ID	Client File Text	Bottle	MS File	Inlet File	Analyst	Comments
1	5/24/17	13:56	P406880	CS3	178519	Tray1:2	epa1613_als	Dioxin_ALS		HRMScheck 14:07
2		14:16	P406881	WINDOW DEFINE	178397	Tray1:1	epa1613_als	Dioxin_ALS		
3		15:53	P406882	EQ1700190-01	MB	Tray1:3	epa1613_als	Dioxin_ALS		
4		16:42	P406883	K1703687-008	K1703687-008	Tray1:4	epa1613_als	Dioxin_ALS		
5		17:31	P406884	E1700472-001	E1700472-001	Tray1:5	epa1613_als	Dioxin_ALS		
6		18:20	P406885	E1700491-001	E1700491-001	Tray1:6	epa1613_als	Dioxin_ALS		
7		19:09	P406886	EQ1700190-02	LCS	Tray1:7	epa1613_als	Dioxin_ALS		
8		19:58	P406887	EQ1700190-03	DLCS	Tray1:8	epa1613_als	Dioxin_ALS		
9		20:47	P406888	EQ1700201-02	LCS	Tray1:9	epa1613_als	Dioxin_ALS		
10		21:37	P406889	EQ1700201-03	DLCS	Tray1:10	epa1613_als	Dioxin_ALS		
11		22:34	P406890	CS3	178519	Tray1:2	epa1613_als	Dioxin_ALS		HRMScheck 22:34
12	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---
13	---	---	---	---	---	Tray1:1	epa1613_als	Dioxin_ALS	---	---
14	---	---	---	---	---	Tray1:14	epa1613_als	Dioxin_ALS	---	---
15	---	---	---	---	---	Tray1:15	epa1613_als	Dioxin_ALS	---	---
16	---	---	---	---	---	Tray1:16	epa1613_als	Dioxin_ALS	---	---
17	---	---	---	---	---	Tray1:17	epa1613_als	Dioxin_ALS	---	---
18	---	---	---	---	---	Tray1:18	epa1613_als	Dioxin_ALS	---	---
19	---	---	---	---	---	Tray1:19	epa1613_als	Dioxin_ALS	---	---
20	---	---	---	---	---	Tray1:20	epa1613_als	Dioxin_ALS	---	---
21	---	---	---	---	---	Tray1:21	epa1613_als	Dioxin_ALS	---	---
22	---	---	---	---	---	Tray1:22	epa1613_als	Dioxin_ALS	---	---
23	---	---	---	---	---	Tray1:23	epa1613_als	Dioxin_ALS	---	---
24	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---
25	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---
26	---	---	---	---	---	Tray1:26	epa1613_als	Dioxin_ALS	---	---
27	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---
28	---	---	---	---	---	Tray1:28	epa1613_als	Dioxin_ALS	---	---
29	---	---	---	---	---	Tray1:29	epa1613_als	Dioxin_ALS	---	---
30	---	---	---	---	---	Tray1:30	epa1613_als	Dioxin_ALS	---	---
31	---	---	---	05/30/17	---	Tray1:31	epa1613_als	Dioxin_ALS	---	---
32	---	---	JC	---	---	Tray1:32	epa1613_als	Dioxin_ALS	---	---
33	---	---	---	---	---	Tray1:33	epa1613_als	Dioxin_ALS	---	---
34	---	---	---	---	---	Tray1:34	epa1613_als	Dioxin_ALS	---	---
35	---	---	---	---	---	Tray1:35	epa1613_als	Dioxin_ALS	---	---
36	---	---	---	---	---	Tray1:36	epa1613_als	Dioxin_ALS	---	---
37	---	---	---	---	---	Tray1:37	epa1613_als	Dioxin_ALS	---	---
38	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---
39	---	---	---	---	---	Tray1:2	epa1613_als	Dioxin_ALS	---	---

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

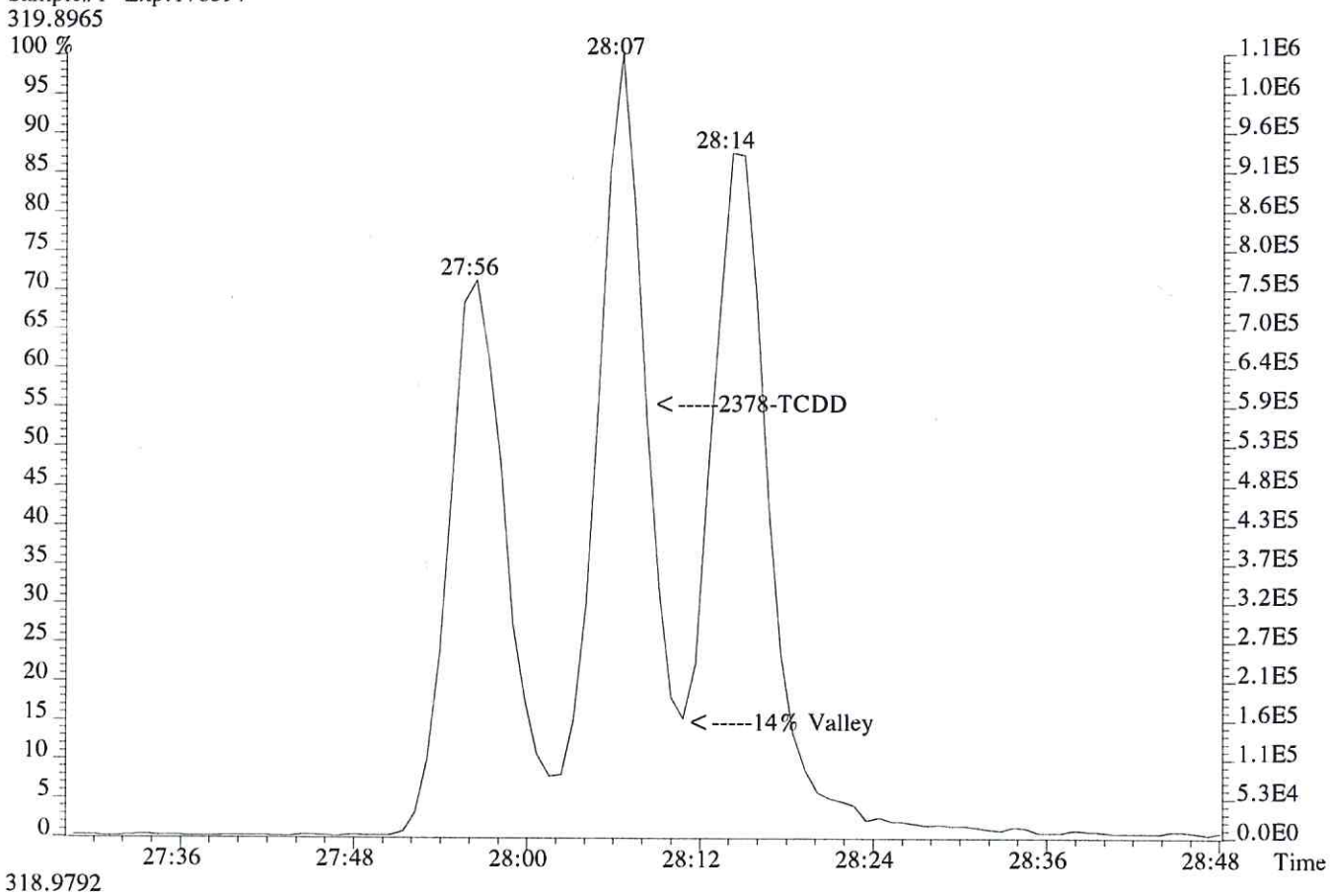
Case No.: _____ SDG No.:
ID: 0.25 (mm)

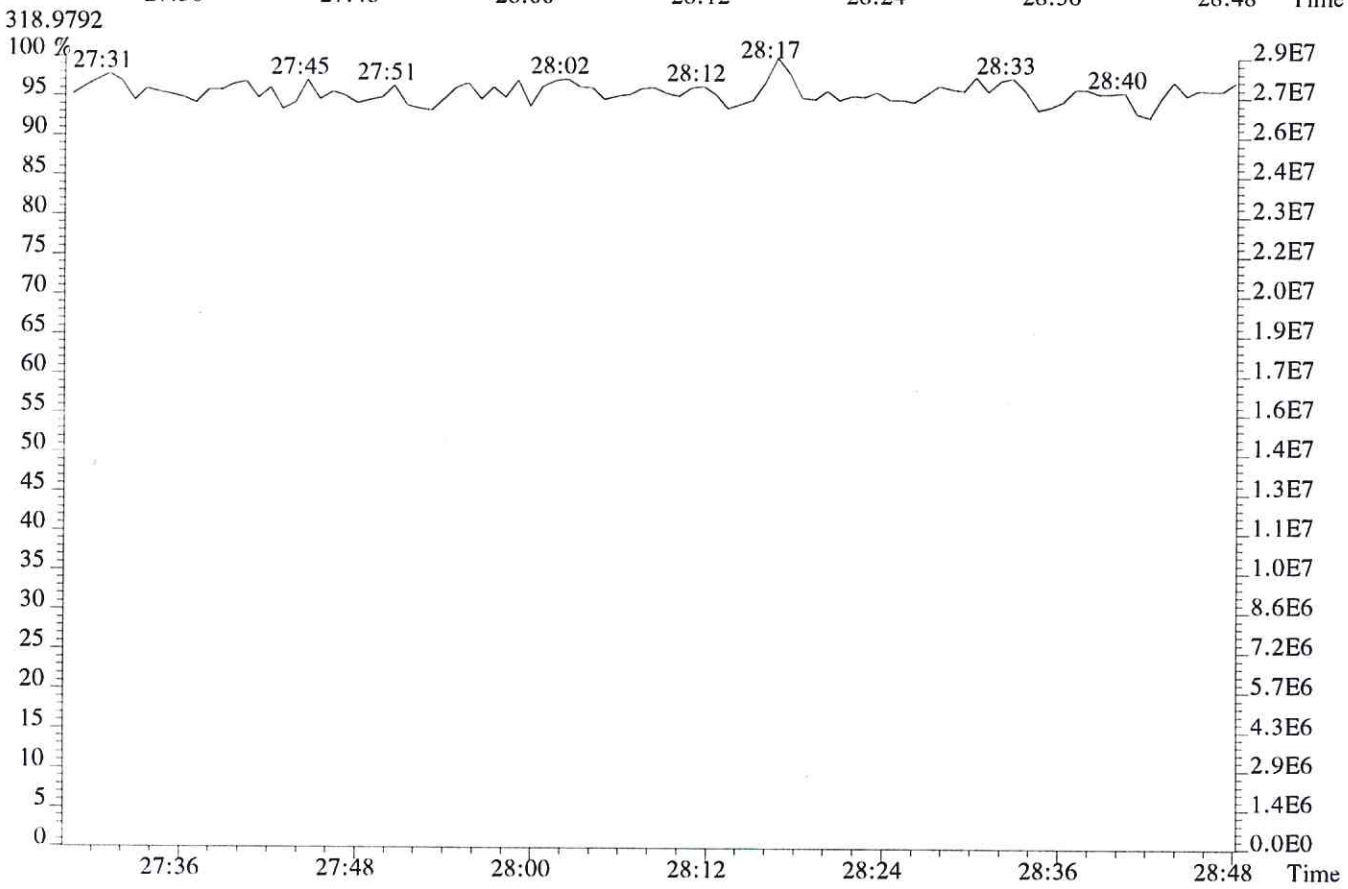
Lab File ID: P406881
Date Analyzed: 24-MAY-17
Time Analyzed: 14:16:25

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	22:48	29:20
TCDD	24:34	29:10
PeCDF	29:17	33:39
PeCDD	30:53	33:23
HxCDF	34:19	36:49
HxCDD	34:50	36:25
HpCDF	38:02	39:22
HpCDD	38:16	38:55

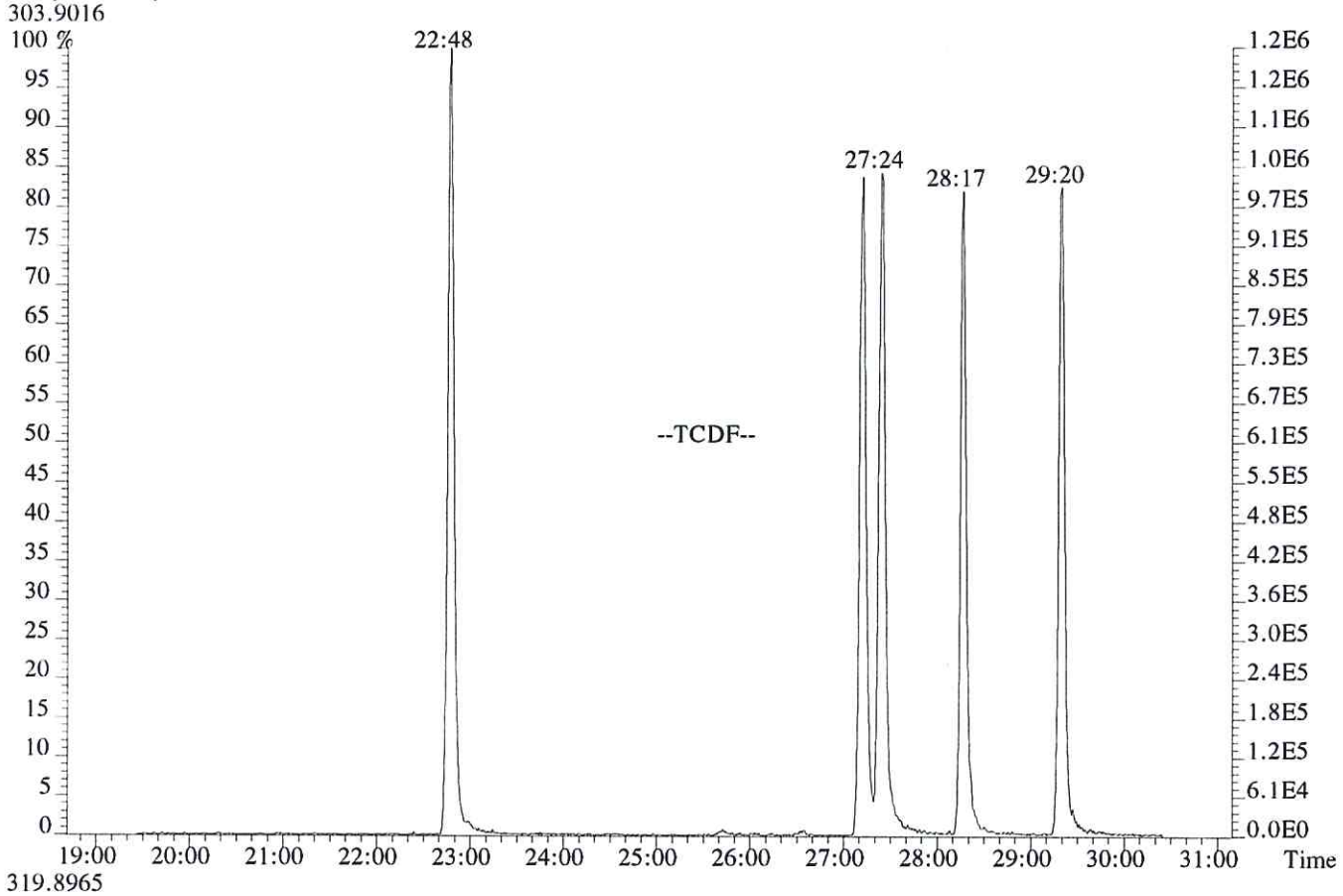
% Valley 2378-TCDD: 14 %

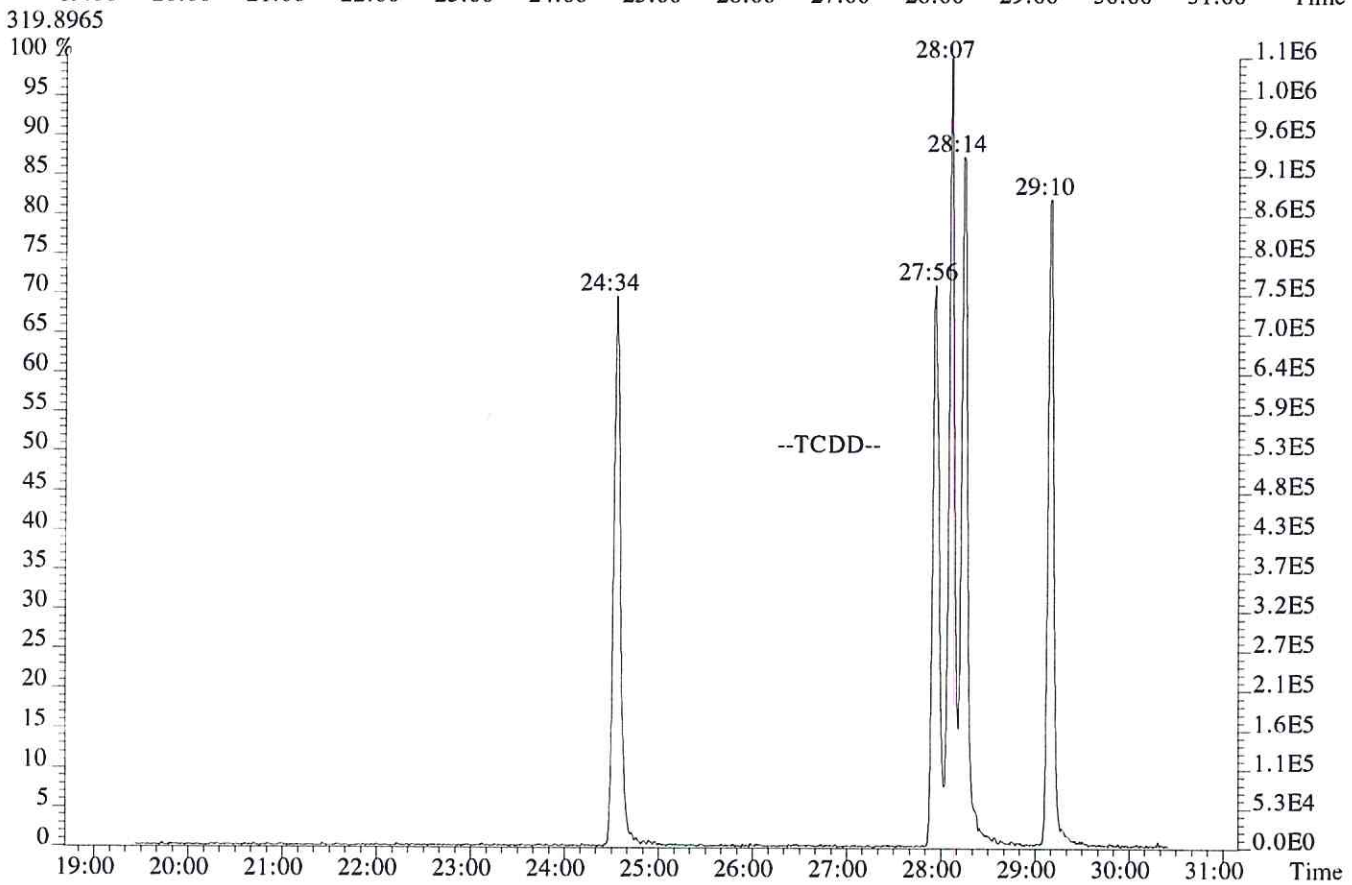
File:P406881 #1-779 Acq:24-MAY-2017 14:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178397



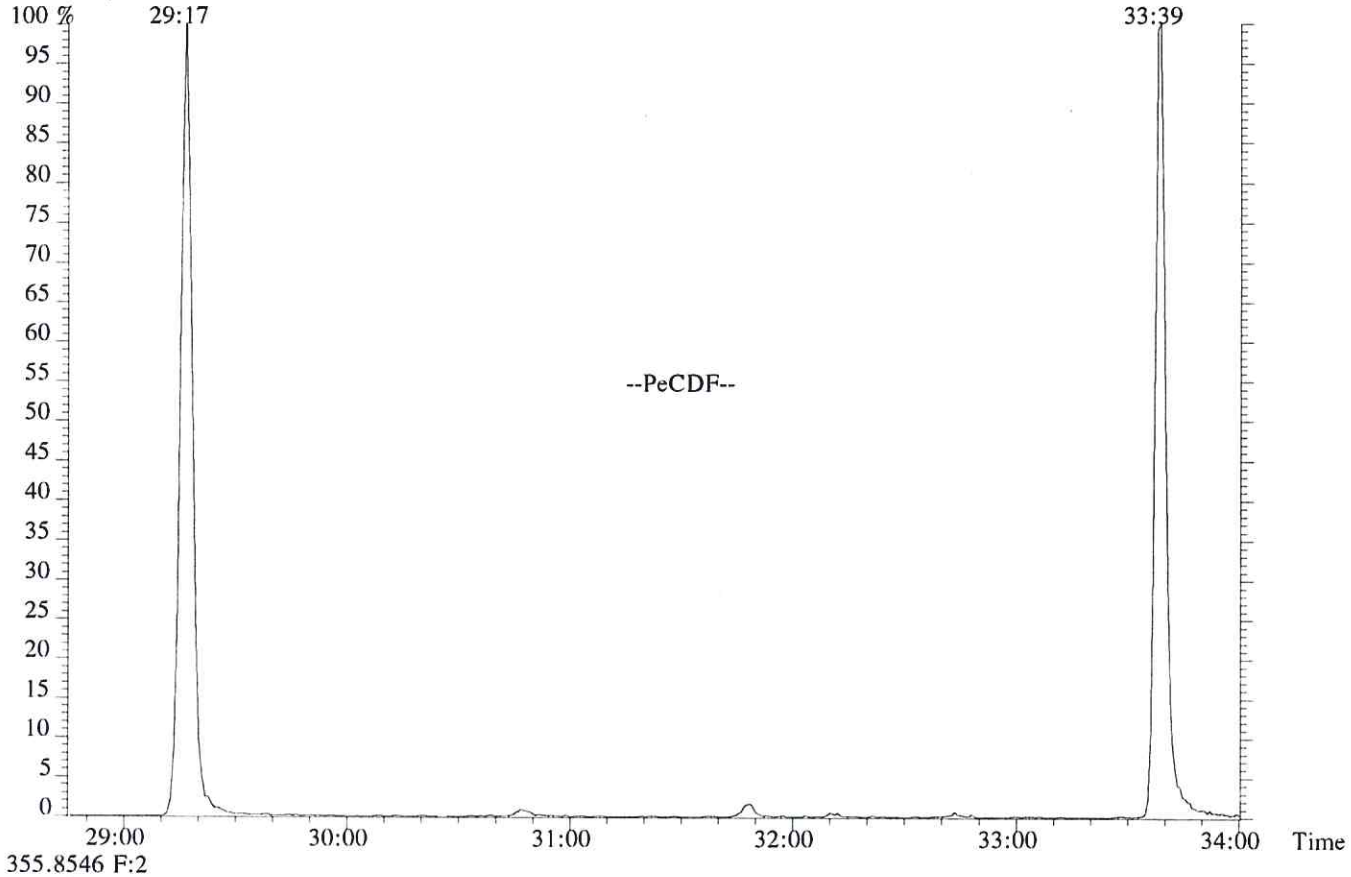


File:P406881 #1-779 Acq:24-MAY-2017 14:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178397

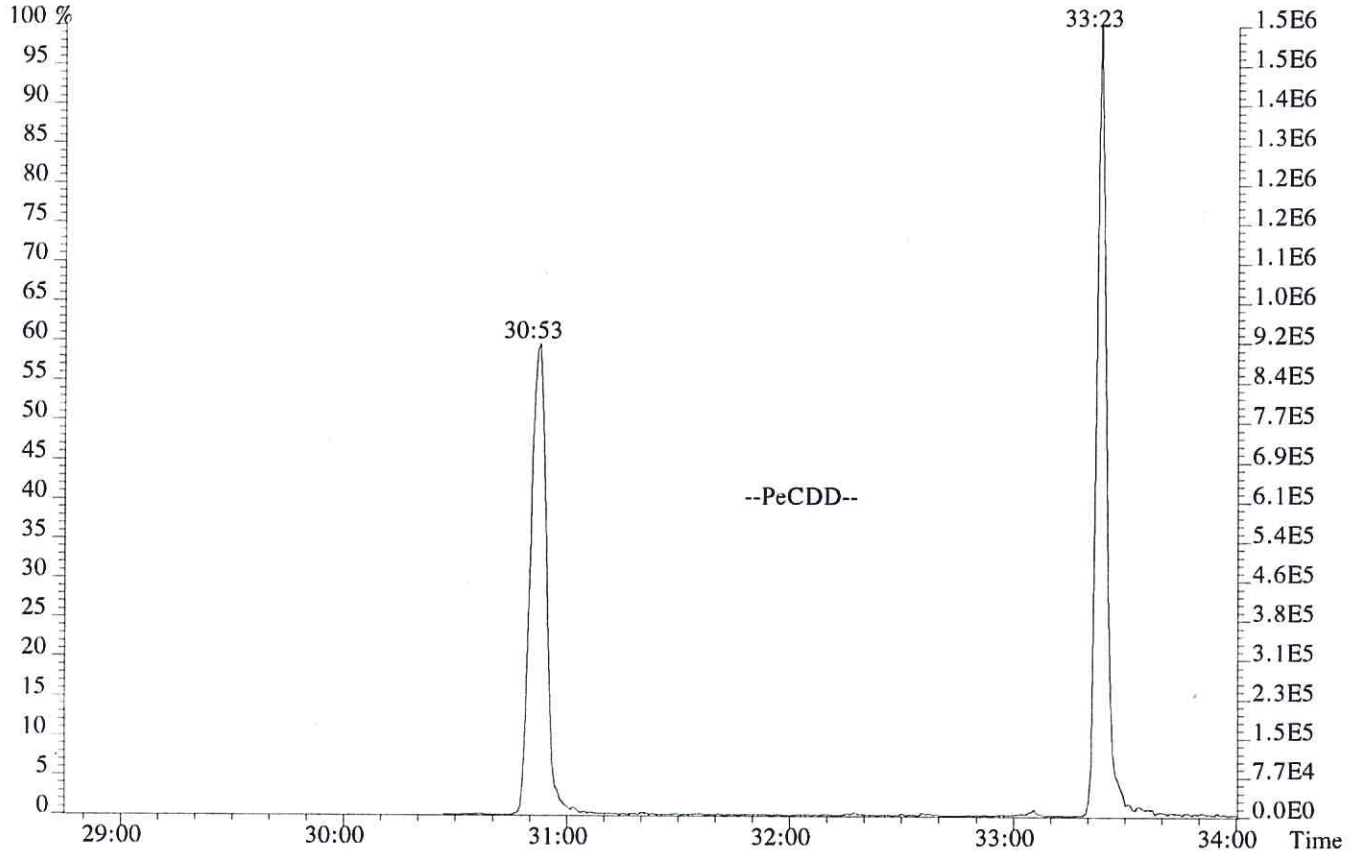




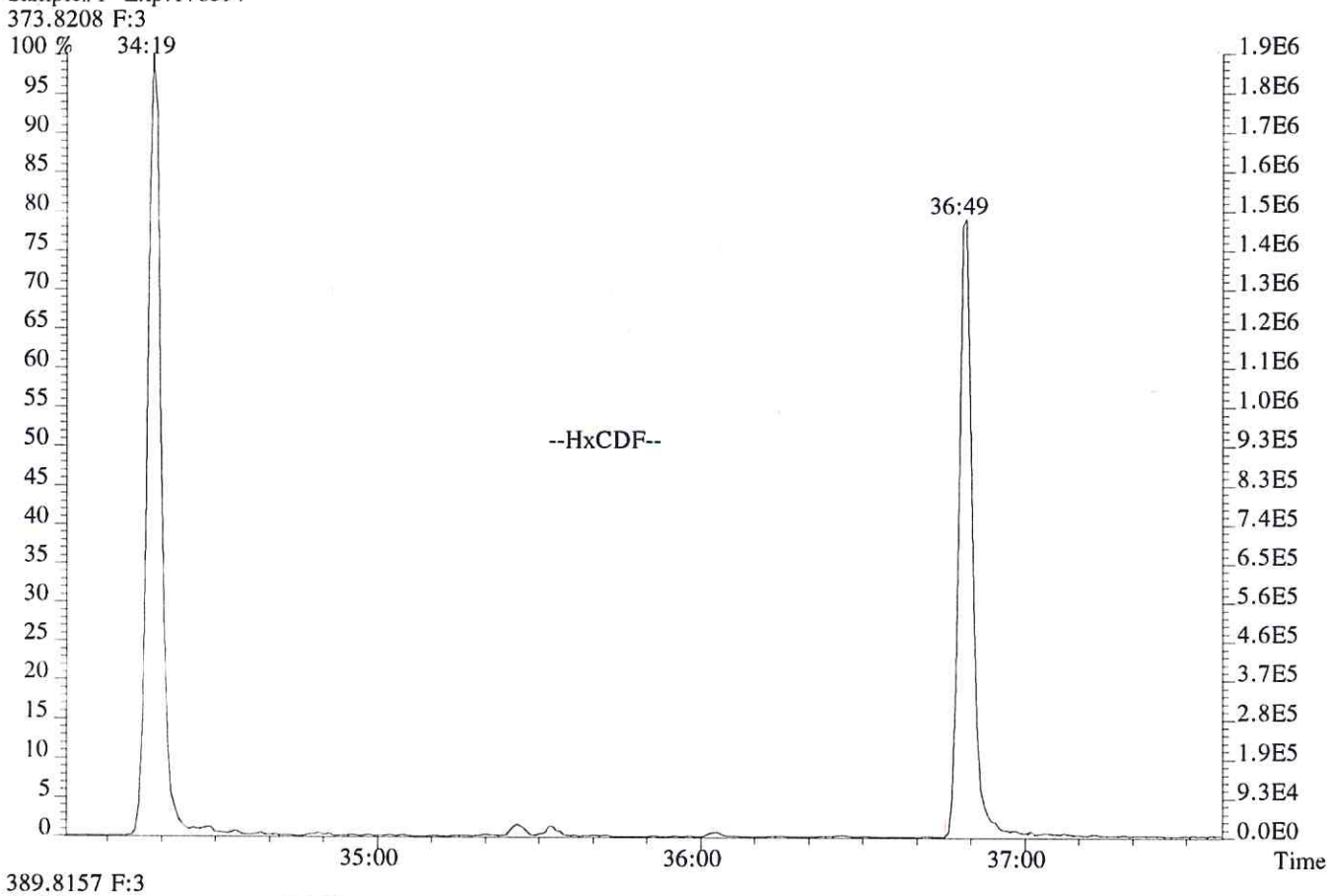
File:P406881 #1-779 Acq:24-MAY-2017 14:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178397
339.8597,339.8597 F:2

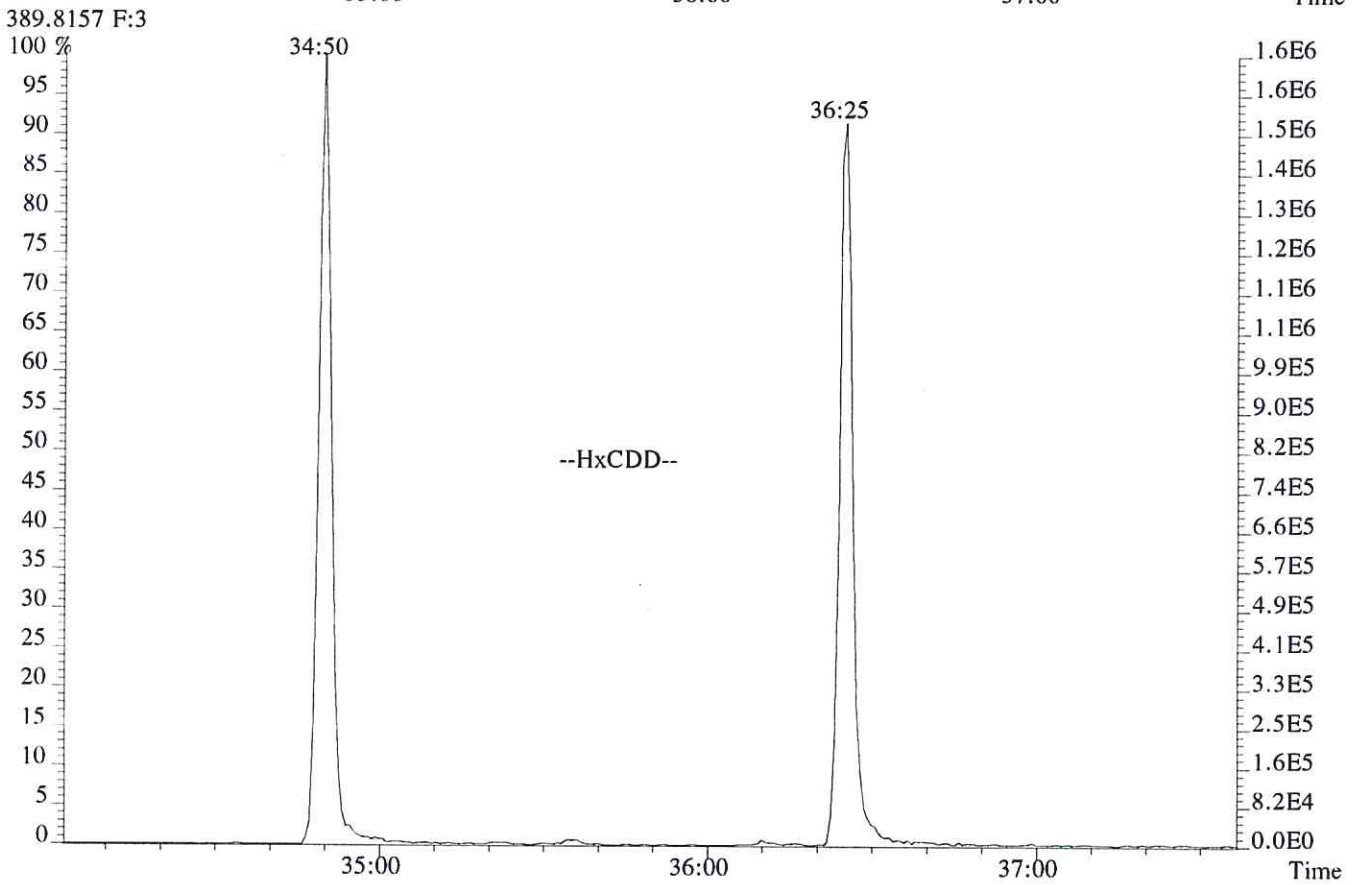


355.8546 F:2

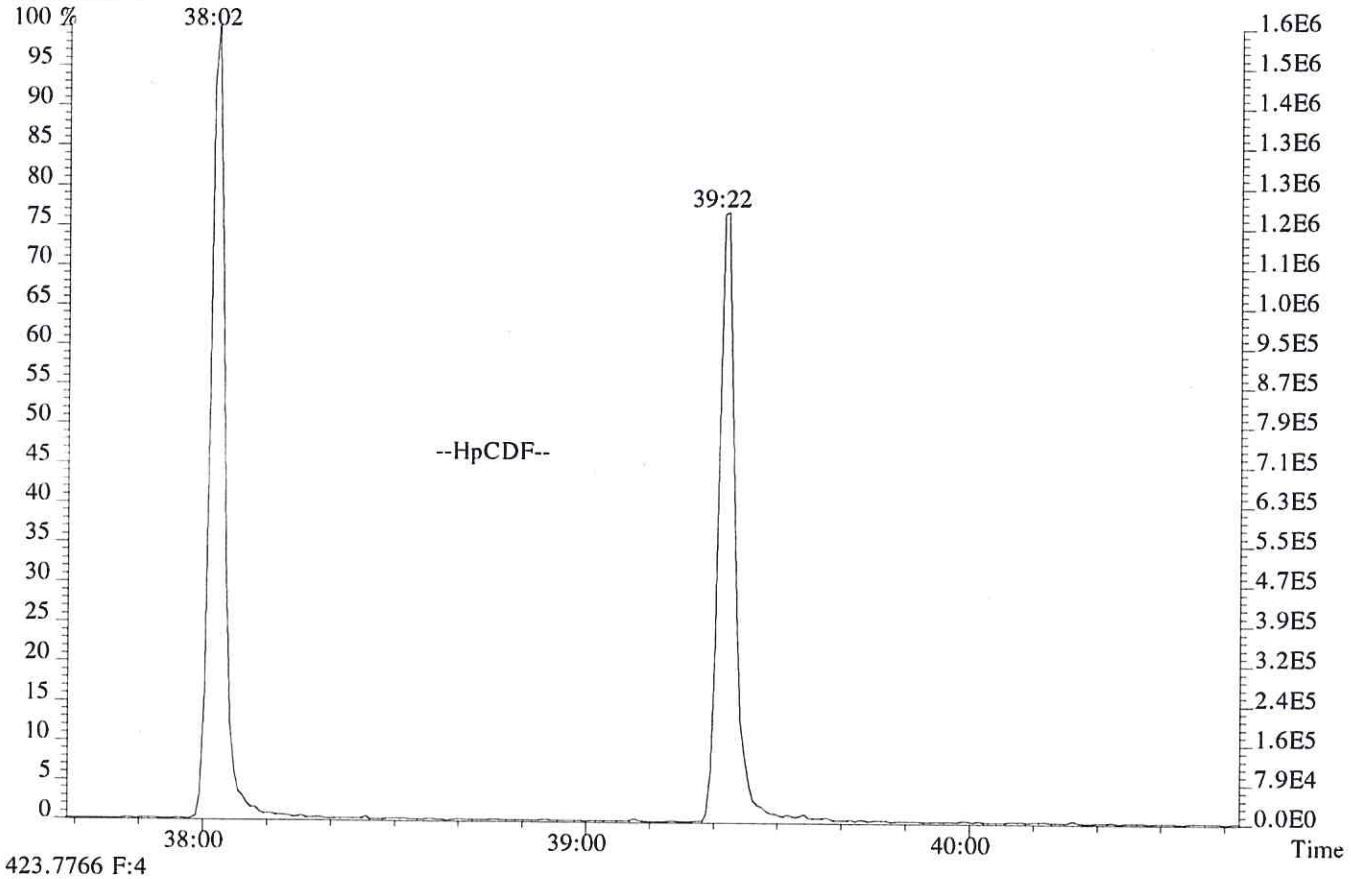


File:P406881 #1-322 Acq:24-MAY-2017 14:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178397

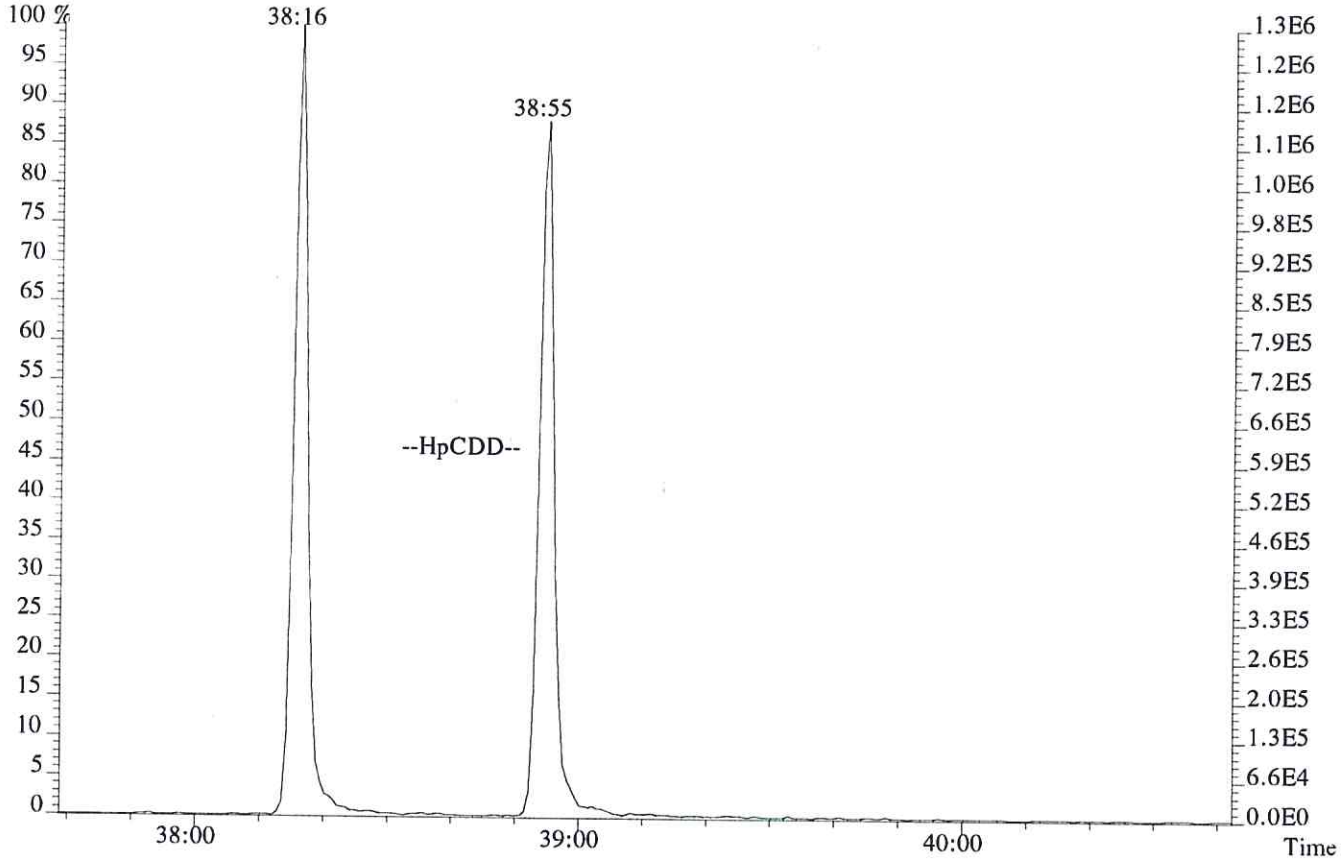




File:P406881 #1-276 Acq:24-MAY-2017 14:16:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178397
407.7818 F:4



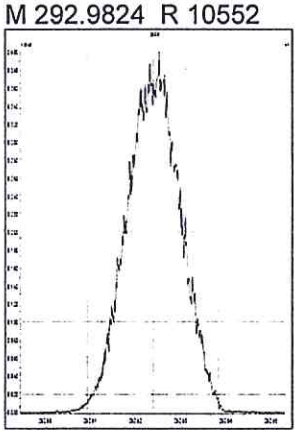
423.7766 F:4



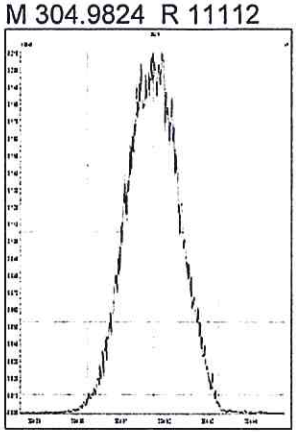
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, May 24, 2017 14:07:23 Central Daylight Time

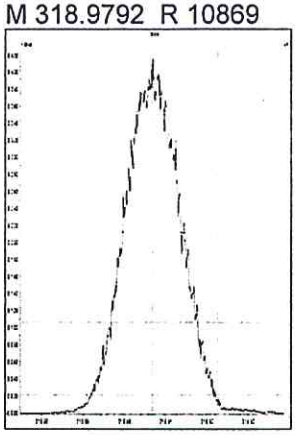
M 292.9824 R 10552



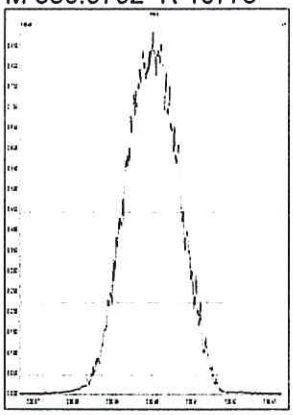
M 304.9824 R 11112



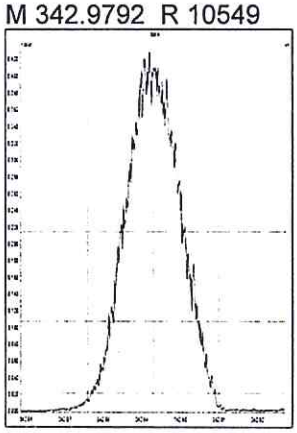
M 318.9792 R 10869



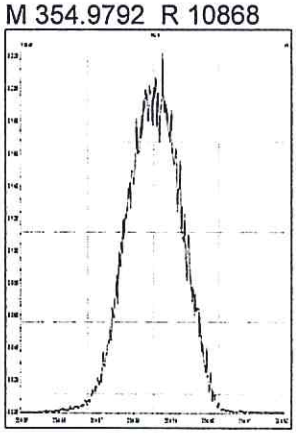
M 330.9792 R 10773



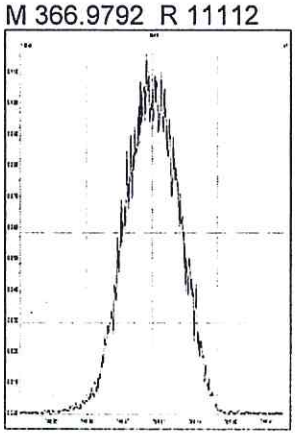
M 342.9792 R 10549



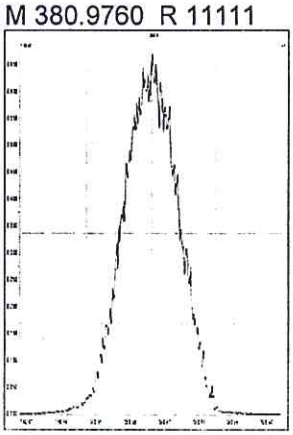
M 354.9792 R 10868



M 366.9792 R 11112



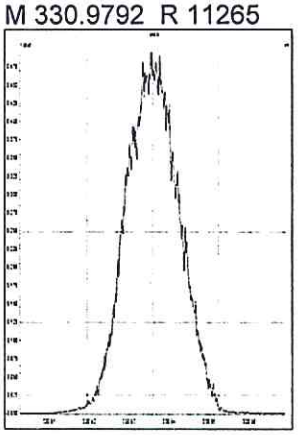
M 380.9760 R 11111



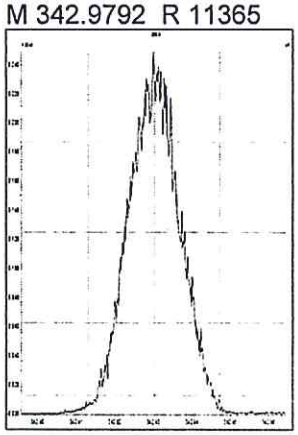
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, May 24, 2017 14:09:35 Central Daylight Time

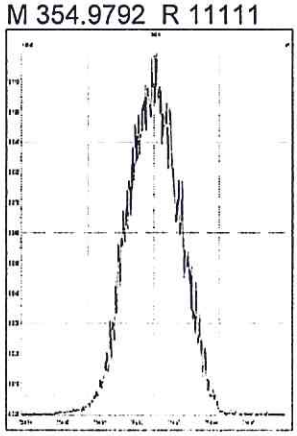
M 330.9792 R 11265



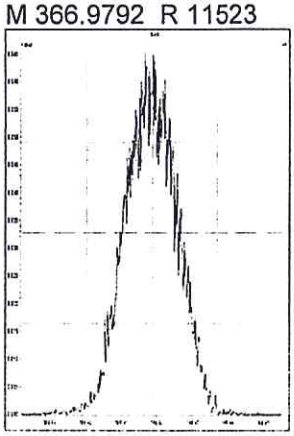
M 342.9792 R 11365



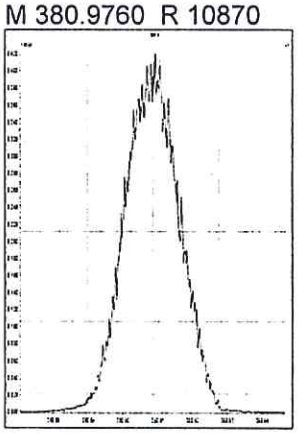
M 354.9792 R 11111



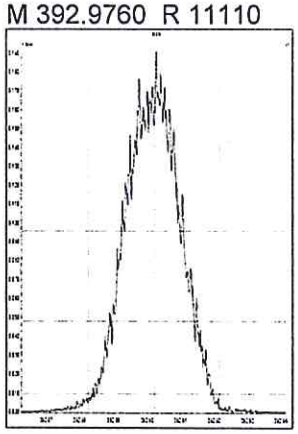
M 366.9792 R 11523



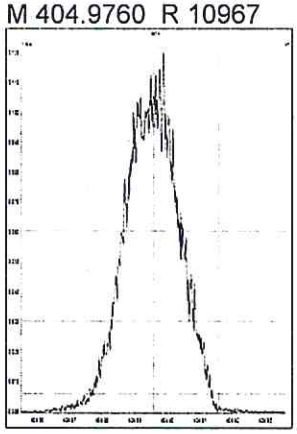
M 380.9760 R 10870



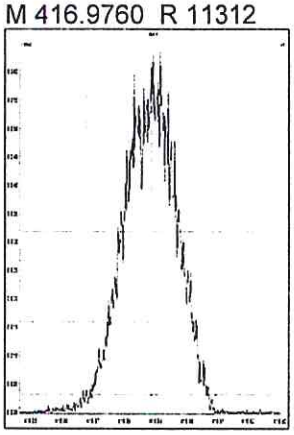
M 392.9760 R 11110



M 404.9760 R 10967



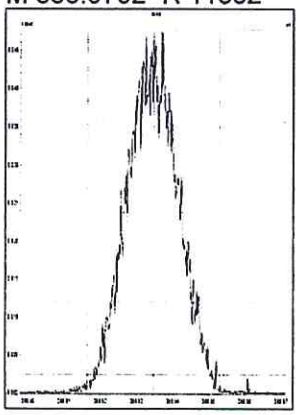
M 416.9760 R 11312



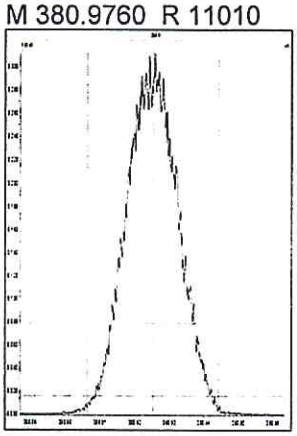
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, May 24, 2017 14:11:09 Central Daylight Time

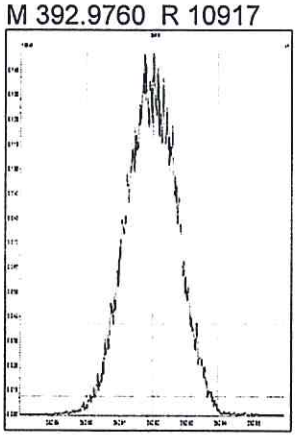
M 366.9792 R 11362



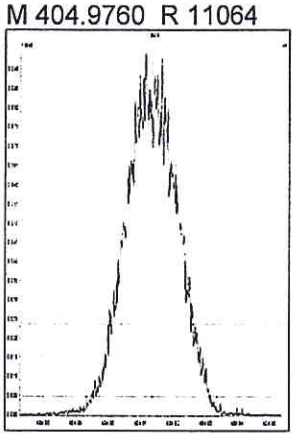
M 380.9760 R 11010



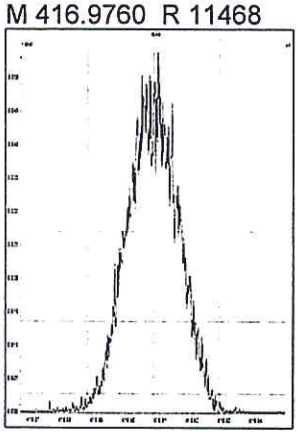
M 392.9760 R 10917



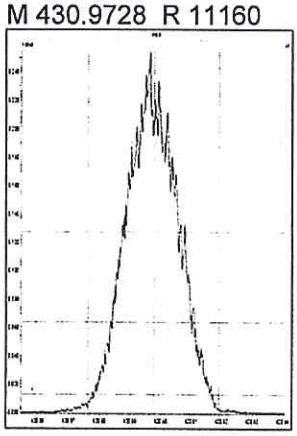
M 404.9760 R 11064



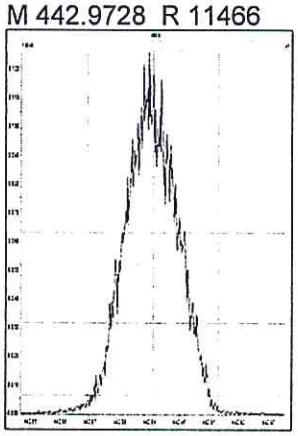
M 416.9760 R 11468



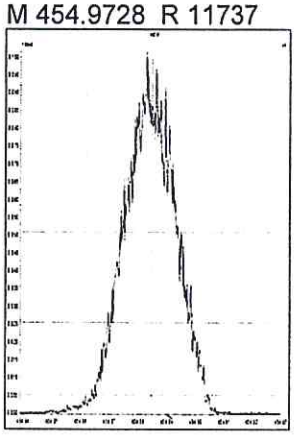
M 430.9728 R 11160



M 442.9728 R 11466



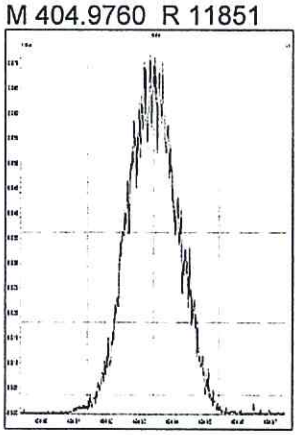
M 454.9728 R 11737



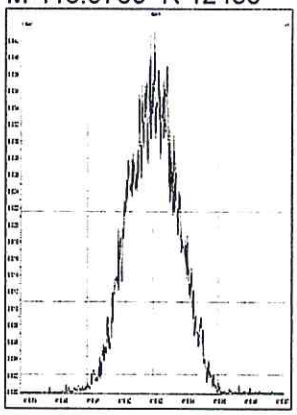
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, May 24, 2017 14:12:50 Central Daylight Time

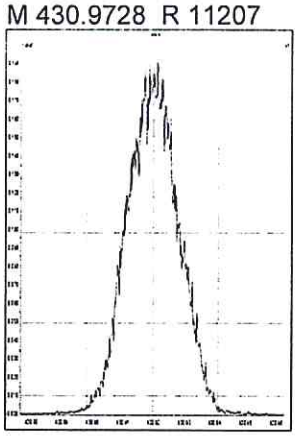
M 404.9760 R 11851



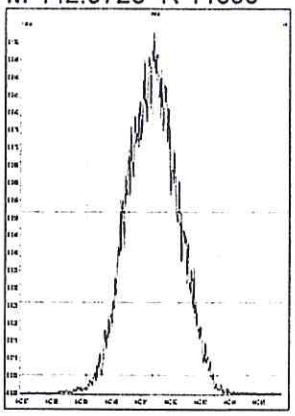
M 416.9760 R 12435



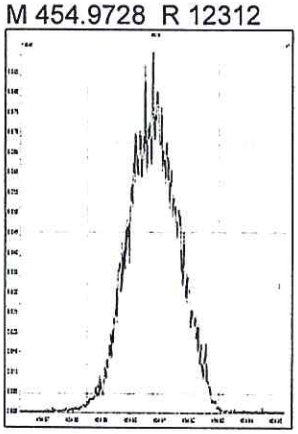
M 430.9728 R 11207



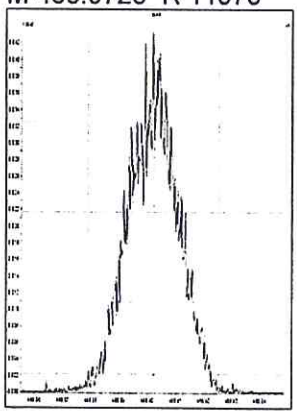
M 442.9728 R 11680



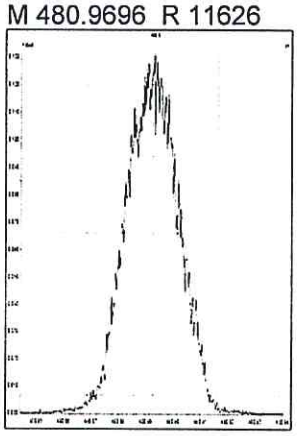
M 454.9728 R 12312



M 466.9728 R 11573



M 480.9696 R 11626



File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

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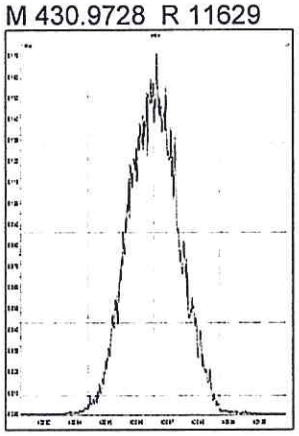
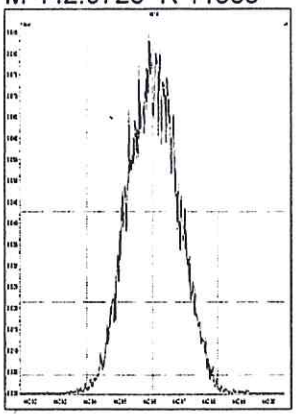
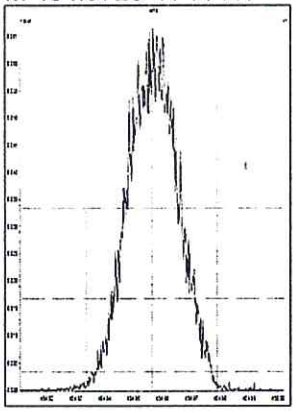
M 430.9728 R 11629



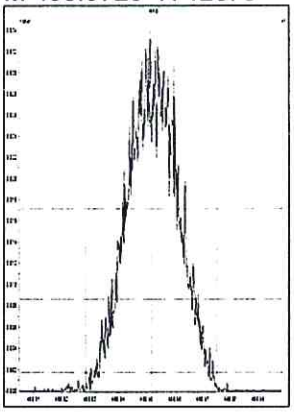
M 442.9728 R 11686



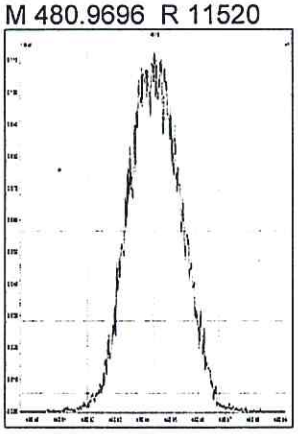
M 454.9728 R 11417



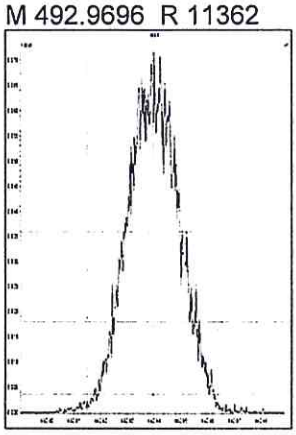
M 466.9728 R 12078



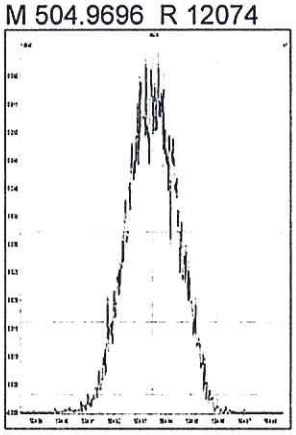
M 480.9696 R 11520



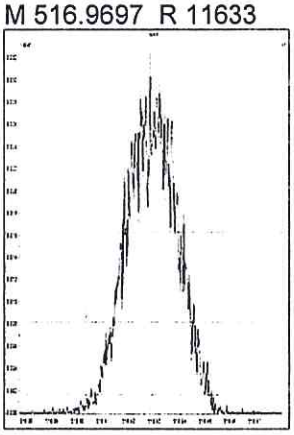
M 492.9696 R 11362



M 504.9696 R 12074



M 516.9697 R 11633



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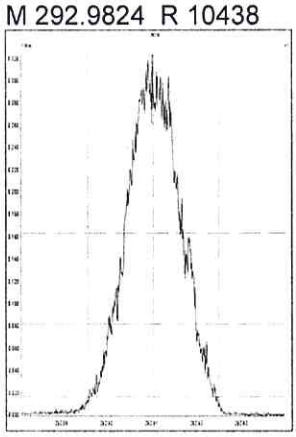
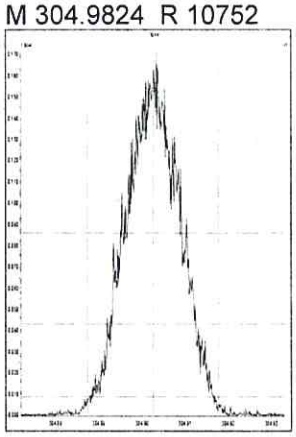
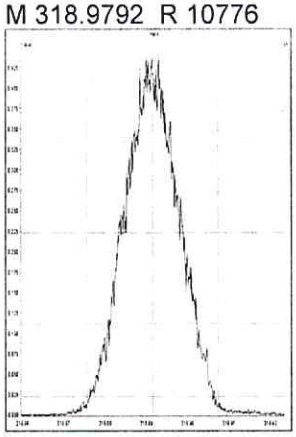
M 292.9824 R 10438



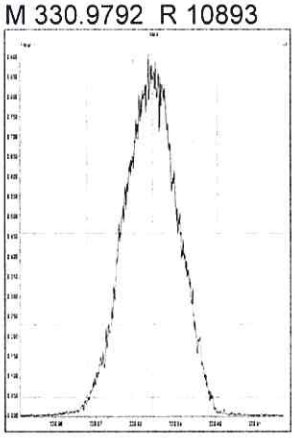
M 304.9824 R 10752



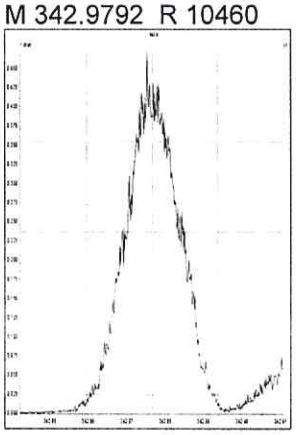
M 318.9792 R 10776



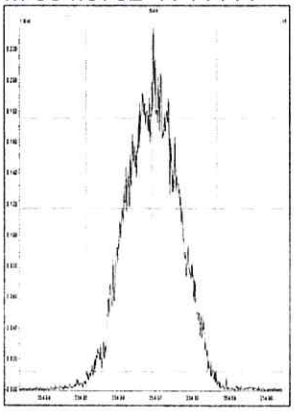
M 330.9792 R 10893



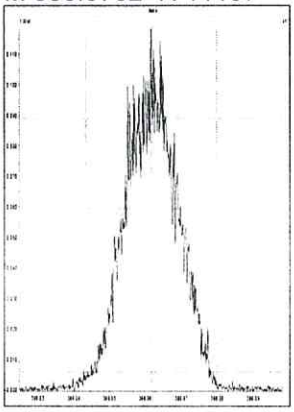
M 342.9792 R 10460



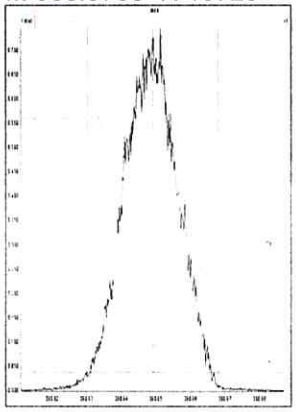
M 354.9792 R 11111



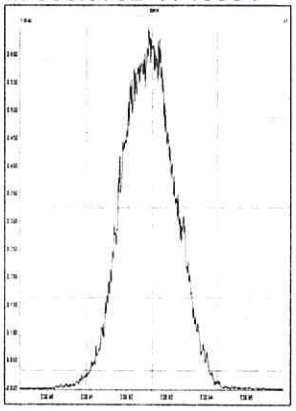
M 366.9792 R 11137



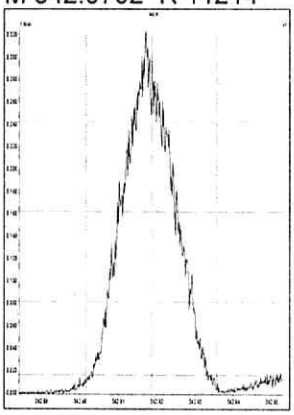
M 380.9760 R 10729



M 330.9792 R 10964



M 342.9792 R 11214



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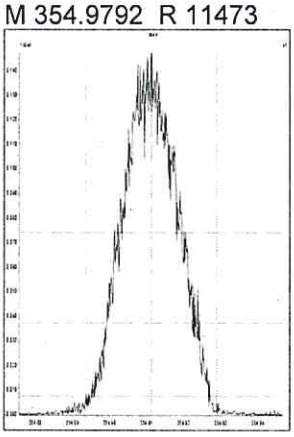
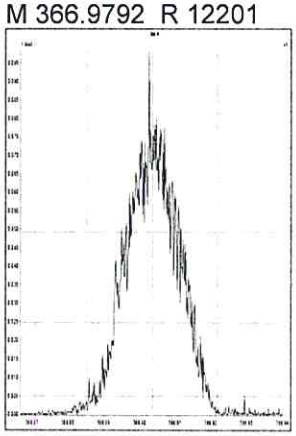


M 366.9792 R 12201



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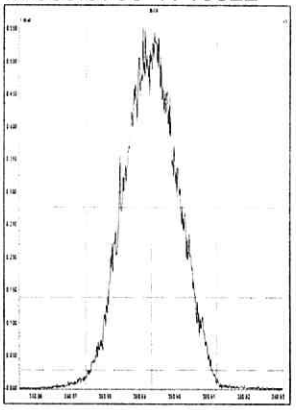
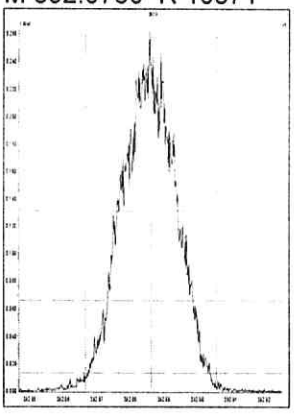


M 392.9760 R 10871



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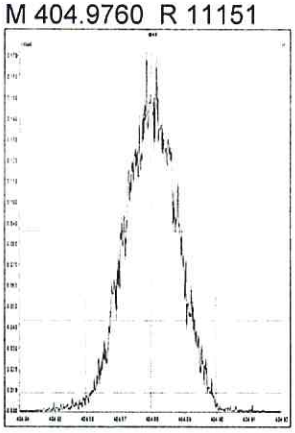
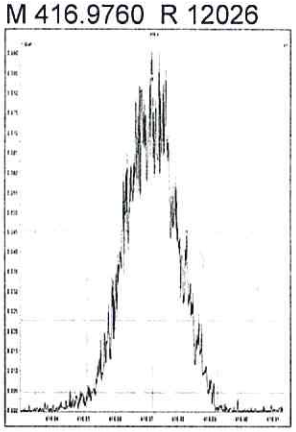
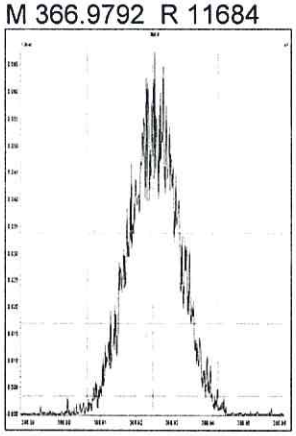


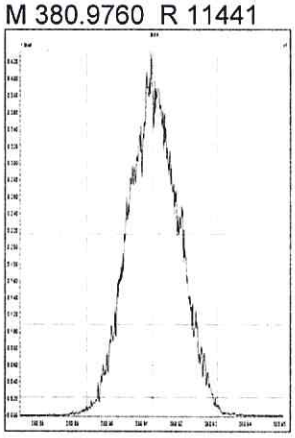
M 416.9760 R 12026



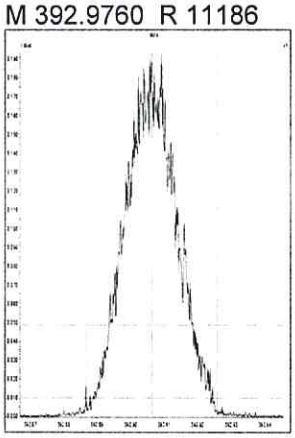
M 366.9792 R 11684



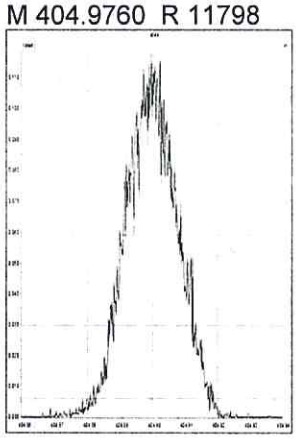
M 380.9760 R 11441



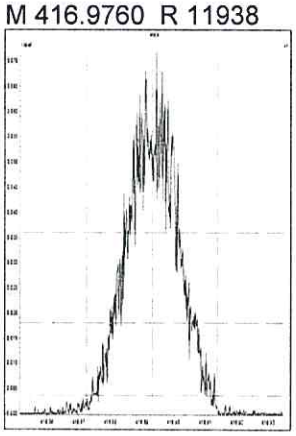
M 392.9760 R 11186



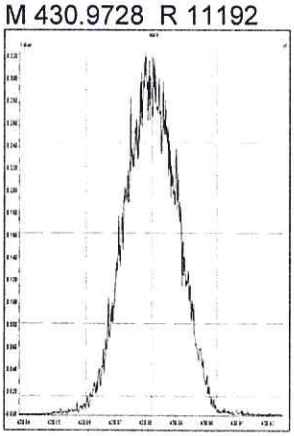
M 404.9760 R 11798



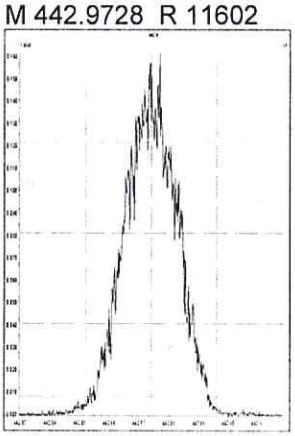
M 416.9760 R 11938



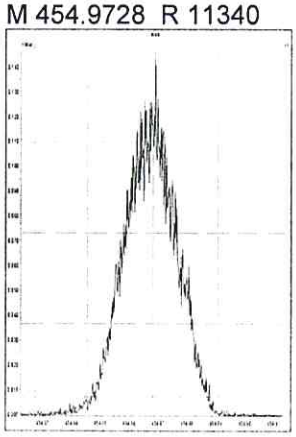
M 430.9728 R 11192



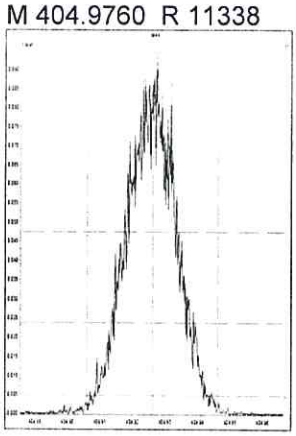
M 442.9728 R 11602



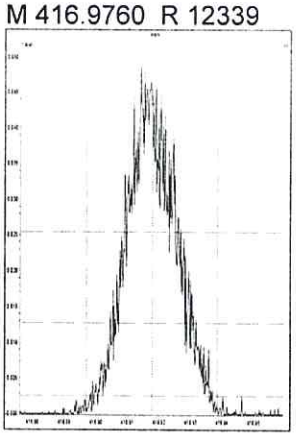
M 454.9728 R 11340



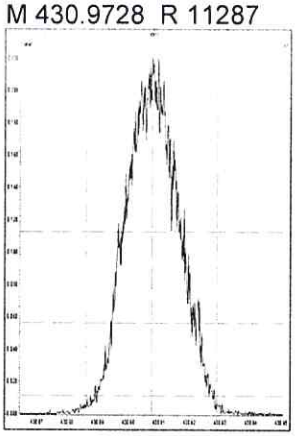
M 404.9760 R 11338



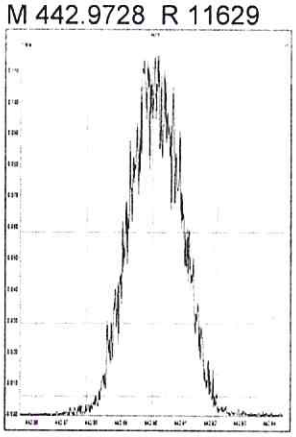
M 416.9760 R 12339



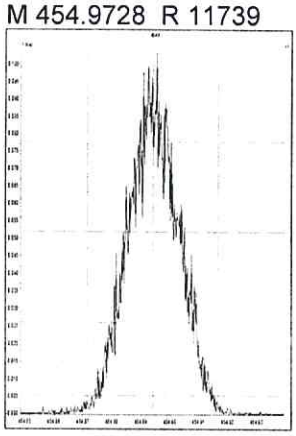
M 430.9728 R 11287



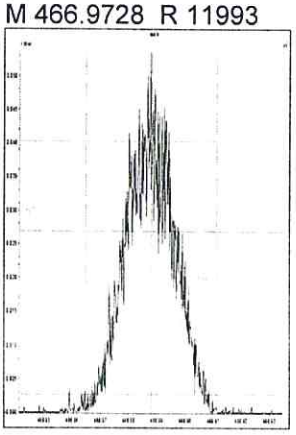
M 442.9728 R 11629



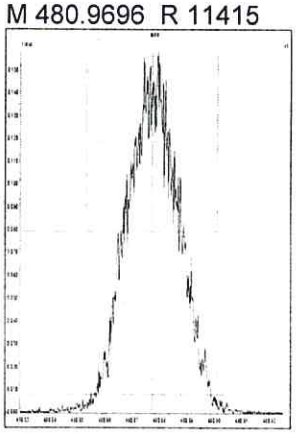
M 454.9728 R 11739



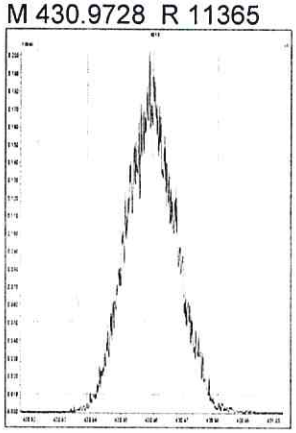
M 466.9728 R 11993



M 480.9696 R 11415

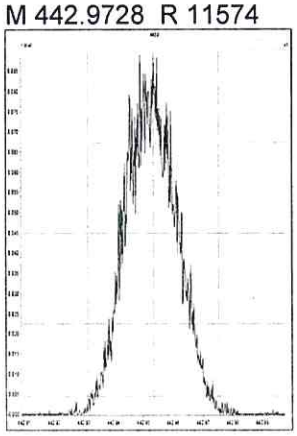


M 430.9728 R 11365



Printed: Wednesday, May 24, 2017 22:34:29 Central Daylight Time

M 442.9728 R 11574



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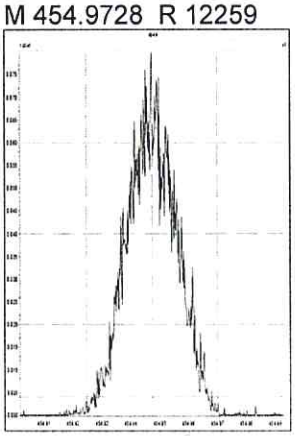

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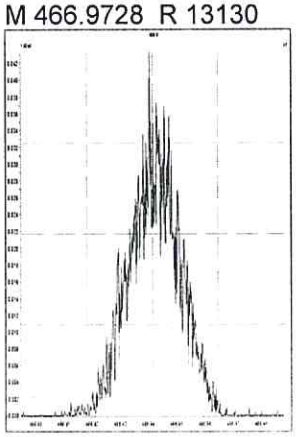
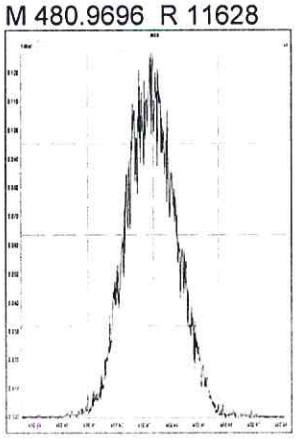
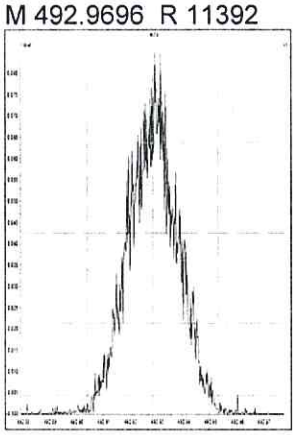


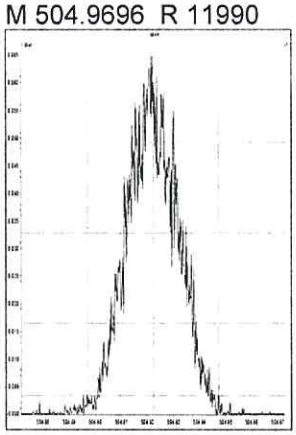
M 480.9696 R 11628



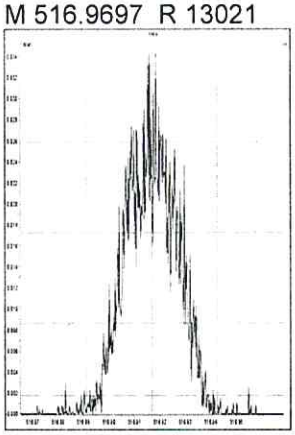
M 492.9696 R 11392



M 504.9696 R 11990



M 516.9697 R 13021



FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 04/28/16

Instrument ID: E-HRMS-06 GC Column : DB-5MSUI

VER Data Filename: P406880 Analysis Date: 24-MAY-17 Time: 13:08:19

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CCAL. RRF	MEAN RRF	%D (3)
2,3,7,8-TCDD	M/M+2	0.76	0.65-0.89	0.92	0.87	5.86
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32-1.78	0.86	0.81	7.18
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	0.96	0.83	16.16
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	0.98	0.89	9.59
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	1.04	0.92	13.21
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	0.96	0.88	9.13
OCDD	M+2/M+4	0.88	0.76-1.02	1.04	0.98	6.52
2,3,7,8-TCDF	M/M+2	0.75	0.65-0.89	0.83	0.77	7.79
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	0.95	0.87	9.42
2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	0.90	0.82	9.50
1,2,3,4,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	1.05	0.93	12.94
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	1.10	1.03	6.71
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	0.97	0.83	17.78
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	1.04	0.92	13.13
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	1.32	1.24	6.80
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	1.20	1.05	14.53
OCDF	M+2/M+4	0.90	0.76-1.02	1.19	1.03	14.84

(1) See Table 3.4-2, Method 23, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 3.4-3, Method 23.

(3) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 25%(OCDF 30%), Table 3.4-5.

M23F4A

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 04/28/16

Instrument ID: E-HRMS-06 GC column ID : DB-5MSUI

VER Data Filename: P406880 Analysis Date: 24-MAY-17 Time: 13:08:19

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CCAL. RRF	MEAN RRF	%D (3)
Internal Standards						
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	0.99	0.97	2.12
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	1.02	0.92	10.59
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	0.90	0.93	-3.06
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	0.88	0.82	7.16
13C-OCDD	M+2/M+4	0.89	0.76-1.02	0.76	0.63	19.13
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	1.26	1.14	10.99
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	1.30	1.10	18.41
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	1.11	1.06	5.57
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37-0.51	0.84	0.74	12.48
Surrogate Standards						
37Cl-2,3,7,8-TCDD				1.01	0.99	2.62
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	0.98	0.99	-0.52
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	1.01	0.94	7.45
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	0.89	0.85	5.37
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	0.97	0.88	9.33
Alternate Standard						
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	0.97	0.84	14.89

(1) See Table 12, Method M23A, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 19, Method M23A.

(3) %RSD for the Internal Standards must not exceed +/- 30%(25% for TCDD & HxCDD).
Surrogate & Alternate Standards must not exceed +/- 25%, Table 21, Method M23A.

M23F4BP

ALS Environmental
Sample Response Summary

CLIENT ID.
178519

Run #7 Filename P406880 #1 Samp: 1 Inj: 1 Acquired: 24-MAY-17 13:08:19
Processed: 30-MAY-17 11:27:15 LAB. ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	27:23	5.496e+03	7.315e+03	0.75	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	31:47	4.613e+04	2.985e+04	1.55	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	32:43	4.317e+04	2.808e+04	1.54	yes	no	0.817
4	Unk	1,2,3,4,7,8-HxCDF	35:25	3.943e+04	3.207e+04	1.23	yes	no	0.929
5	Unk	1,2,3,6,7,8-HxCDF	35:32	4.149e+04	3.332e+04	1.25	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:02	3.936e+04	3.177e+04	1.24	yes	no	0.923
7	Unk	1,2,3,7,8,9-HxCDF	36:47	3.671e+04	2.959e+04	1.24	yes	no	0.827
8	Unk	1,2,3,4,6,7,8-HpCDF	38:02	3.435e+04	3.321e+04	1.03	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:22	3.139e+04	3.005e+04	1.04	yes	no	1.049
10	Unk	OCDF	41:43	5.191e+04	5.778e+04	0.90	yes	no	1.035
11	Unk	2,3,7,8-TCDD	28:14	4.824e+03	6.388e+03	0.76	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:00	3.270e+04	2.121e+04	1.54	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:10	2.942e+04	2.383e+04	1.23	yes	no	0.830
14	Unk	1,2,3,6,7,8-HxCDD	36:15	2.999e+04	2.408e+04	1.25	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	36:29	3.204e+04	2.539e+04	1.26	yes	no	0.918
16	Unk	1,2,3,4,6,7,8-HpCDD	38:54	2.632e+04	2.516e+04	1.05	yes	no	0.882
17	Unk	OCDD	41:32	4.506e+04	5.128e+04	0.88	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	27:23	6.766e+04	8.695e+04	0.78	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	31:46	9.713e+04	6.208e+04	1.56	yes	no	1.098
20	SS	13C-2,3,4,7,8-PeCDF	32:42	9.532e+04	6.142e+04	1.55	yes	no	0.990
21	SS	13C-1,2,3,4,7,8-HxCDF	35:25	4.132e+04	8.018e+04	0.52	yes	no	0.847
22	IS	13C-1,2,3,6,7,8-HxCDF	35:31	4.640e+04	8.981e+04	0.52	yes	no	1.056
24	ALT	13C-1,2,3,7,8,9-HxCDF	36:46	3.985e+04	7.853e+04	0.51	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:01	3.144e+04	7.086e+04	0.44	yes	no	0.744
26	SS	13C-1,2,3,4,7,8,9-HpCDF	39:21	3.016e+04	6.866e+04	0.44	yes	no	0.884
27	IS	13C-2,3,7,8-TCDD	28:13	5.317e+04	6.816e+04	0.78	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	32:59	7.594e+04	4.890e+04	1.55	yes	no	0.922
29	SS	13C-1,2,3,4,7,8-HxCDD	36:09	6.205e+04	4.960e+04	1.25	yes	no	0.940
30	IS	13C-1,2,3,6,7,8-HxCDD	36:15	6.169e+04	4.882e+04	1.26	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:54	5.489e+04	5.213e+04	1.05	yes	no	0.817
32	IS	13C-OCDD	41:31	8.707e+04	9.756e+04	0.89	yes	no	0.634
33	S/RT	13C-1,2,3,4-TCDD	27:36	5.372e+04	6.877e+04	0.78	yes	no	-
34	S/RT	13C-1,2,3,7,8,9-HxCDD	36:29	6.779e+04	5.440e+04	1.25	yes	no	-
35	SS	37Cl-2,3,7,8-TCDD	28:14	1.229e+04				no	0.987

$$\text{OCDD} = \frac{(4.506e+04 + 5.128e+04 \times (200.0)) \times}{(8.707e+04 + 9.756e+04) \times 0.980 \times 1.000} = \quad \text{pg}$$

ALS Environmental
10450 Stancliff Rd, Suite 115
Houston, TX 77099
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ALS Form M23resp.frm/TO9RESP.FRM

ALS Environmental
Signal/Noise Height Ratio Summary

CLIENT ID.
178519

Run #7 Filename P406880 Samp: 1 Inj: 1 Acquired: 24-MAY-17 13:08:19
Processed: 30-MAY-17 11:27:151 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	9.54e+05	4.24e+02	2.2e+03	1.26e+06	6.08e+02	2.1e+03
2	1,2,3,7,8-PeCDF	8.42e+06	5.04e+02	1.7e+04	5.50e+06	4.44e+02	1.2e+04
3	2,3,4,7,8-PeCDF	8.48e+06	5.04e+02	1.7e+04	5.53e+06	4.44e+02	1.2e+04
4	1,2,3,4,7,8-HxCDF	8.63e+06	2.80e+02	3.1e+04	6.99e+06	1.04e+02	6.7e+04
5	1,2,3,6,7,8-HxCDF	8.64e+06	2.80e+02	3.1e+04	6.94e+06	1.04e+02	6.7e+04
6	2,3,4,6,7,8-HxCDF	8.77e+06	2.80e+02	3.1e+04	7.10e+06	1.04e+02	6.8e+04
7	1,2,3,7,8,9-HxCDF	7.67e+06	2.80e+02	2.7e+04	6.20e+06	1.04e+02	6.0e+04
8	1,2,3,4,6,7,8-HpCDF	7.96e+06	2.05e+03	3.9e+03	7.69e+06	2.61e+03	3.0e+03
9	1,2,3,4,7,8,9-HpCDF	6.69e+06	2.05e+03	3.3e+03	6.26e+06	2.61e+03	2.4e+03
10	OCDF	9.87e+06	2.24e+02	4.4e+04	1.08e+07	4.48e+02	2.4e+04
11	2,3,7,8-TCDD	8.57e+05	4.88e+02	1.8e+03	1.15e+06	4.64e+02	2.5e+03
12	1,2,3,7,8-PeCDD	6.45e+06	5.60e+02	1.2e+04	4.22e+06	5.56e+02	7.6e+03
13	1,2,3,4,7,8-HxCDD	6.78e+06	2.60e+02	2.6e+04	5.48e+06	2.36e+02	2.3e+04
14	1,2,3,6,7,8-HxCDD	6.55e+06	2.60e+02	2.5e+04	5.20e+06	2.36e+02	2.2e+04
15	1,2,3,7,8,9-HxCDD	6.96e+06	2.60e+02	2.7e+04	5.67e+06	2.36e+02	2.4e+04
16	1,2,3,4,6,7,8-HpCDD	5.90e+06	4.64e+02	1.3e+04	5.65e+06	4.00e+02	1.4e+04
17	OCDD	8.60e+06	2.46e+03	3.5e+03	9.76e+06	3.44e+03	2.8e+03
18	13C-2,3,7,8-TCDF	1.17e+07	4.61e+03	2.5e+03	1.49e+07	2.24e+03	6.7e+03
19	13C-1,2,3,7,8-PeCDF	1.82e+07	5.24e+02	3.5e+04	1.17e+07	9.64e+02	1.2e+04
20	13C-2,3,4,7,8-PeCDF	1.89e+07	5.24e+02	3.6e+04	1.22e+07	9.64e+02	1.3e+04
21	13C-1,2,3,4,7,8-HxCDF	9.11e+06	4.36e+02	2.1e+04	1.76e+07	6.64e+02	2.6e+04
22	13C-1,2,3,6,7,8-HxCDF	9.79e+06	4.36e+02	2.2e+04	1.90e+07	6.64e+02	2.9e+04
24	13C-1,2,3,7,8,9-HxCDF	8.38e+06	4.36e+02	1.9e+04	1.64e+07	6.64e+02	2.5e+04
25	13C-1,2,3,4,6,7,8-HpCDF	7.27e+06	3.52e+03	2.1e+03	1.64e+07	2.66e+03	6.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.51e+06	3.52e+03	1.8e+03	1.47e+07	2.66e+03	5.5e+03
27	13C-2,3,7,8-TCDD	9.80e+06	3.97e+03	2.5e+03	1.24e+07	1.47e+03	8.5e+03
28	13C-1,2,3,7,8-PeCDD	1.48e+07	4.88e+02	3.0e+04	9.54e+06	4.72e+02	2.0e+04
29	13C-1,2,3,4,7,8-HxCDD	1.43e+07	2.72e+03	5.3e+03	1.14e+07	1.32e+03	8.6e+03
30	13C-1,2,3,6,7,8-HxCDD	1.33e+07	2.72e+03	4.9e+03	1.05e+07	1.32e+03	7.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.22e+07	6.80e+02	1.8e+04	1.16e+07	2.88e+02	4.0e+04
32	13C-OCDD	1.66e+07	5.22e+03	3.2e+03	1.86e+07	5.98e+03	3.1e+03
33	13C-1,2,3,4-TCDD	9.53e+06	3.97e+03	2.4e+03	1.23e+07	1.47e+03	8.4e+03
34	13C-1,2,3,7,8,9-HxCDD	1.50e+07	2.72e+03	5.5e+03	1.20e+07	1.32e+03	9.1e+03
35	37Cl-2,3,7,8-TCDD	2.21e+06	7.28e+02	3.0e+03			

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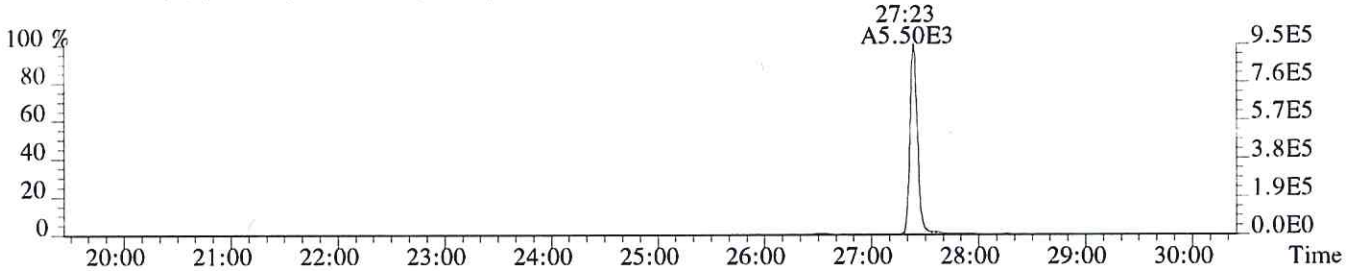
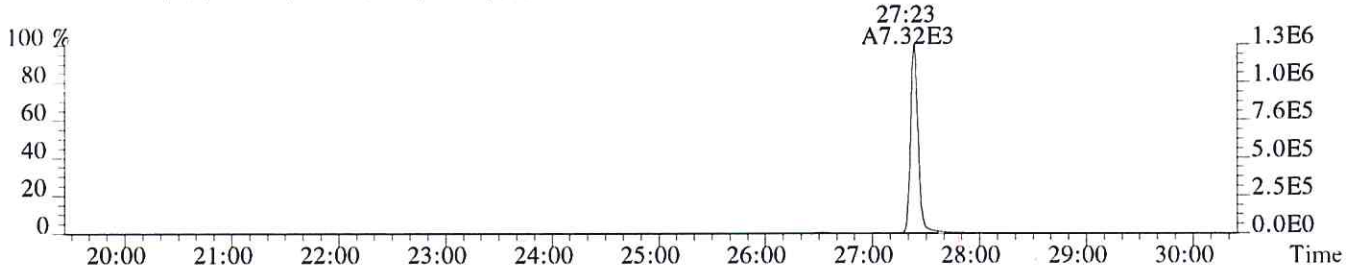
ALS Environmental Form M23sn.frm/TO

File:P406880 #1-779 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519

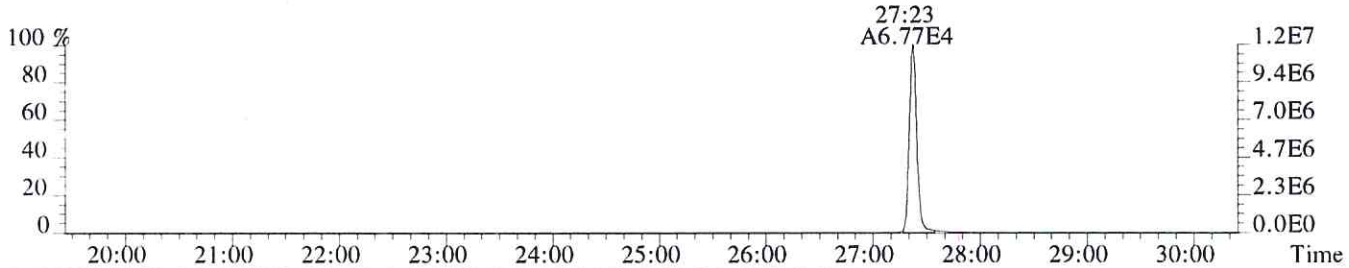
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,424.0,1.00%,F,T)



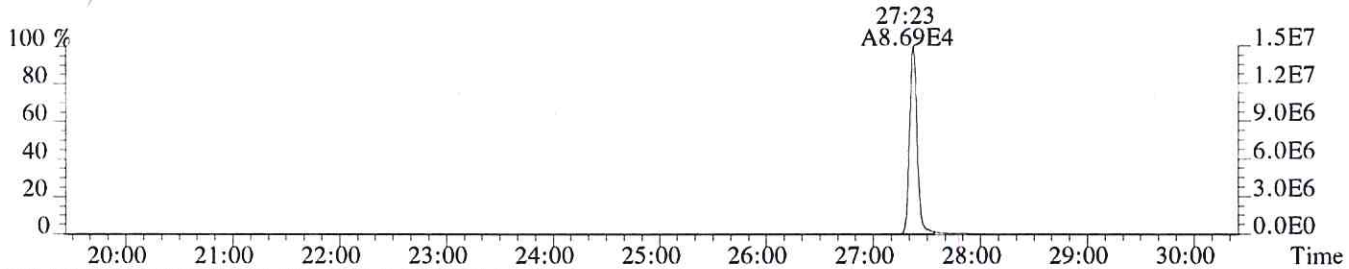
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,608.0,1.00%,F,T)



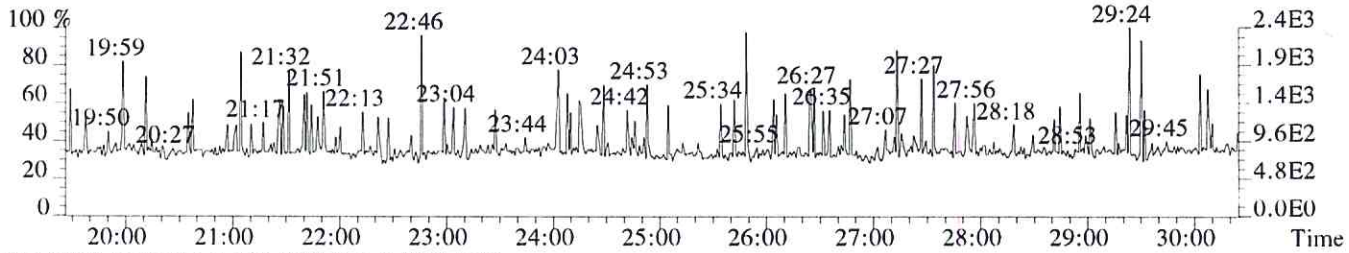
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4608.0,1.00%,F,T)



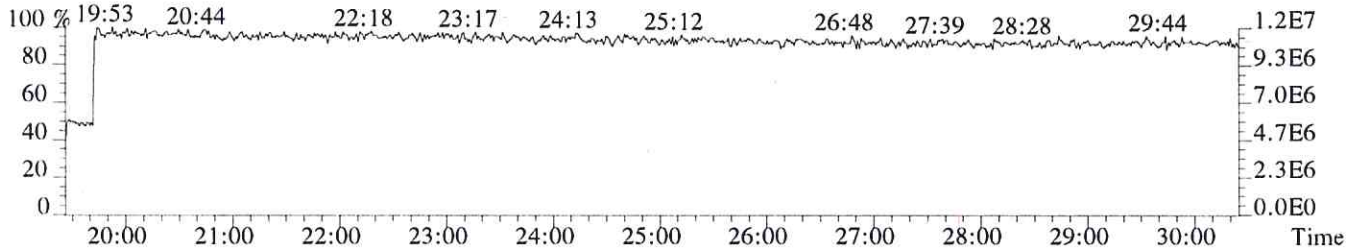
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2240.0,1.00%,F,T)



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

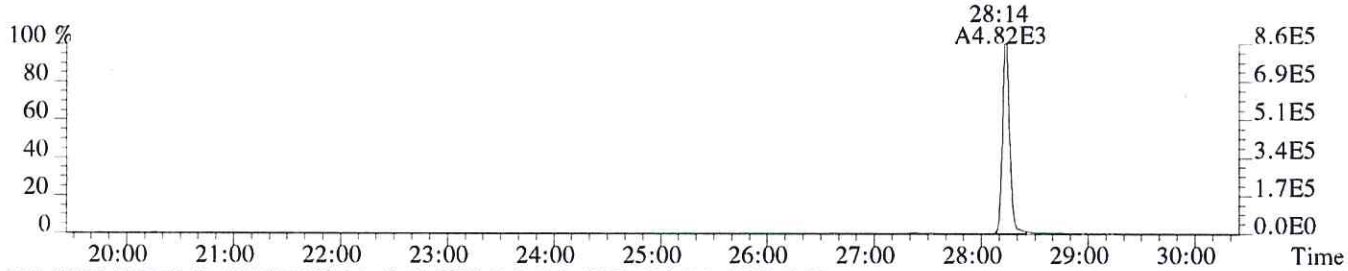


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

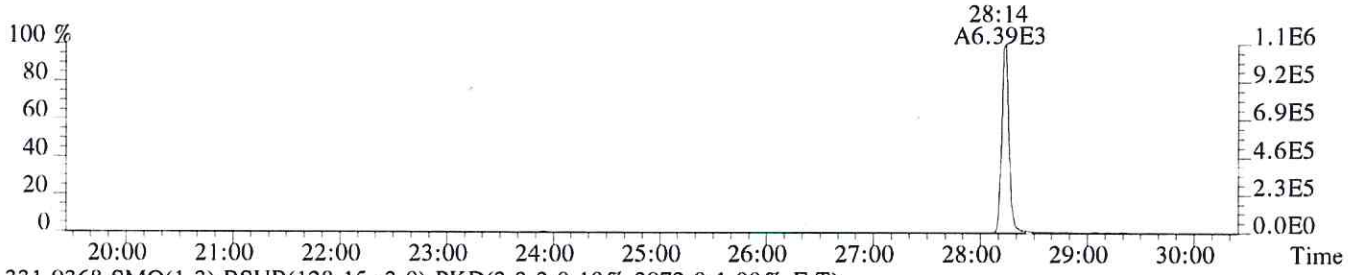


File:P406880 #1-779 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519

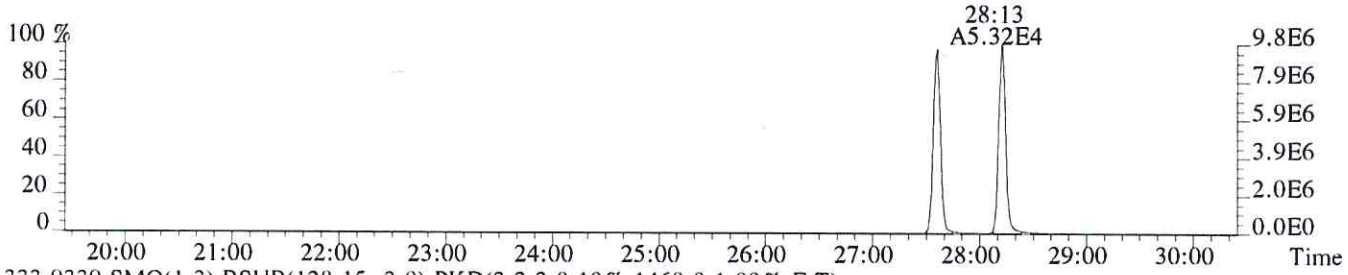
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,488.0,1.00%,F,T)



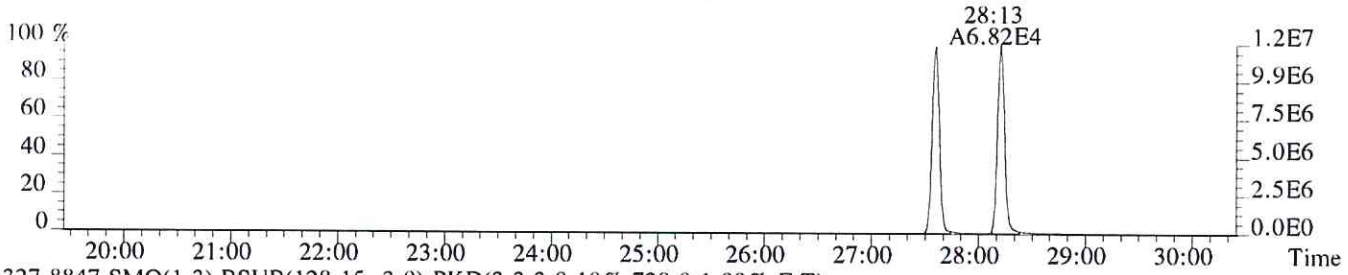
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,464.0,1.00%,F,T)



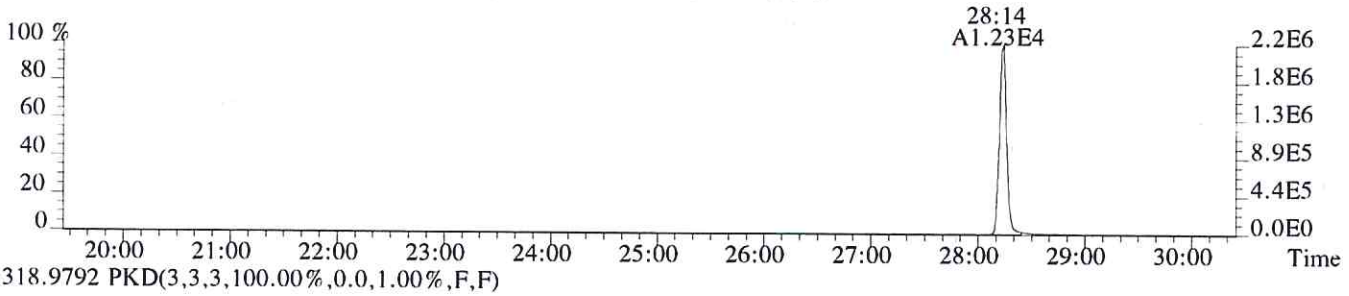
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3972.0,1.00%,F,T)



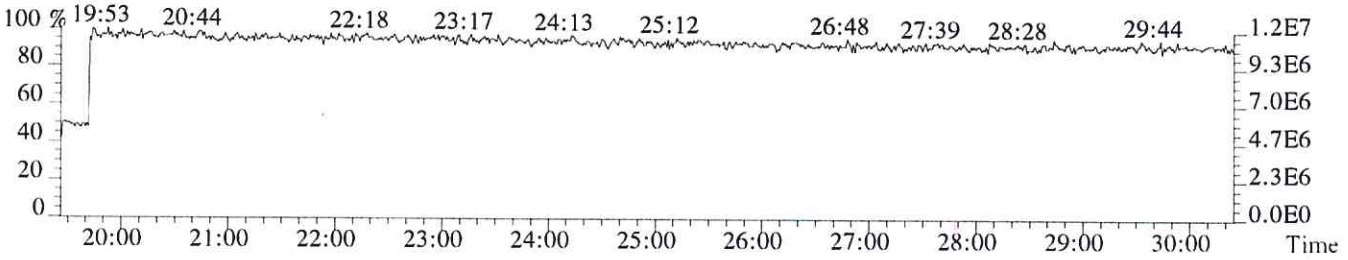
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1468.0,1.00%,F,T)



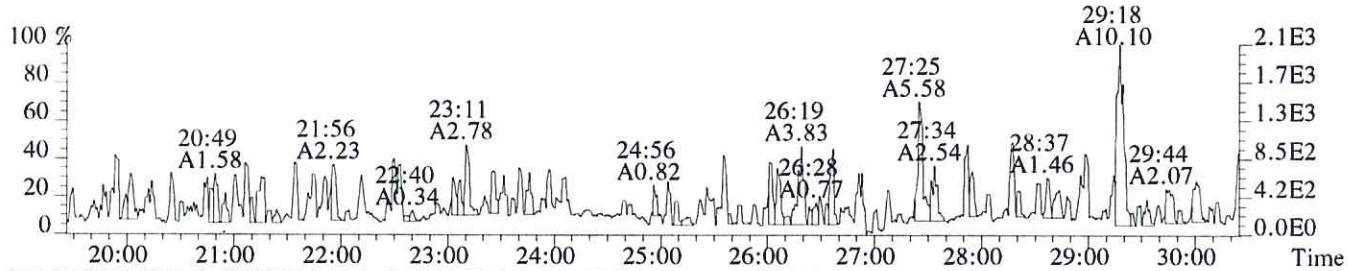
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,T)



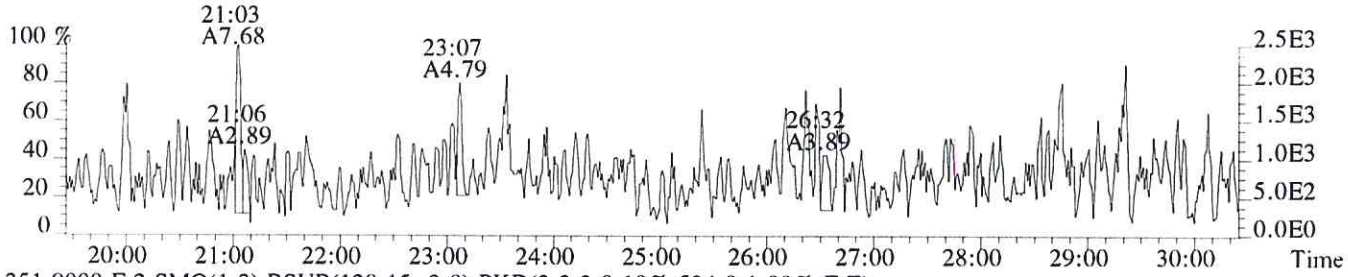
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



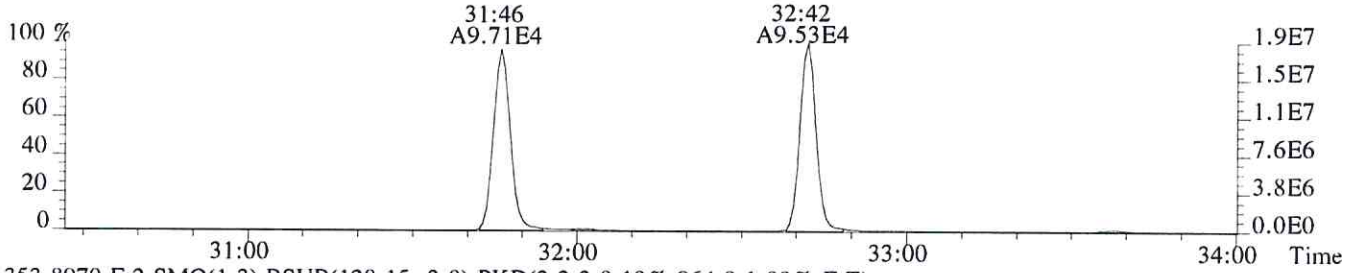
File:P406880 #1-779 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,300.0,1.00%,F,T)



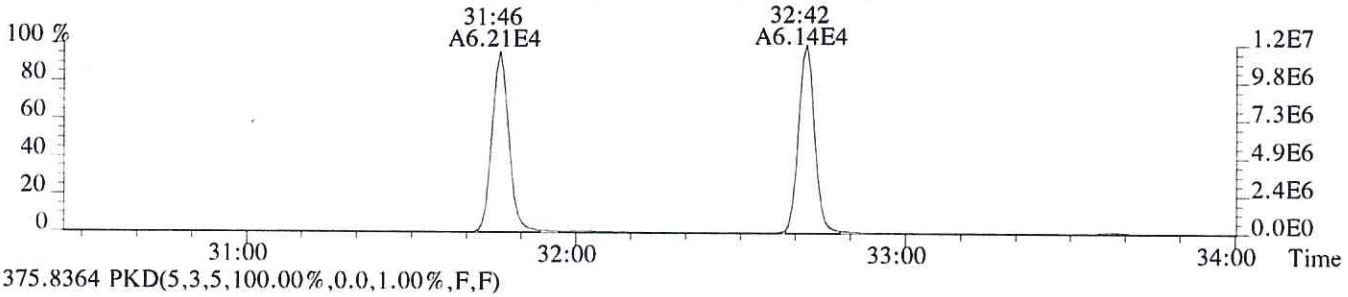
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,952.0,1.00%,F,T)



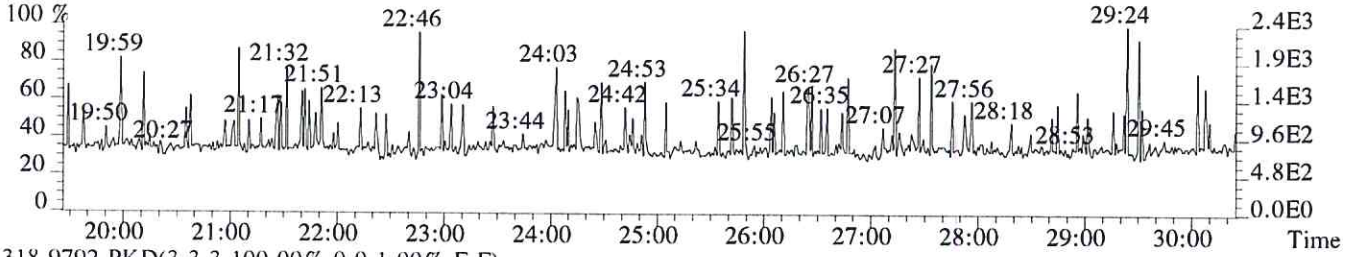
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,524.0,1.00%,F,T)



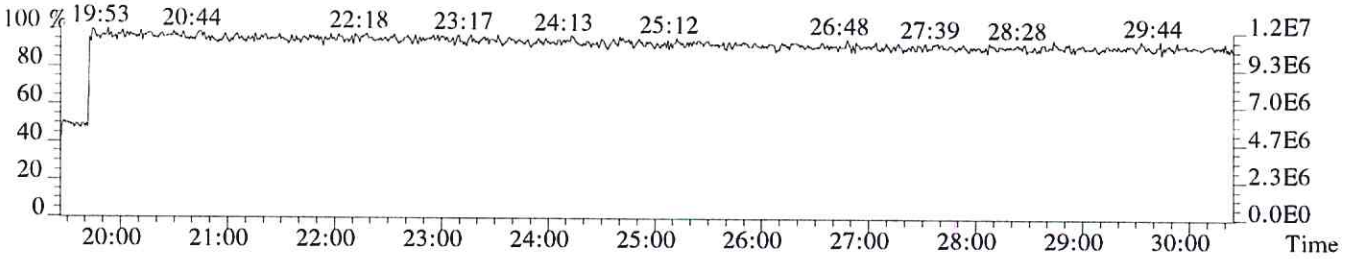
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,964.0,1.00%,F,T)



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

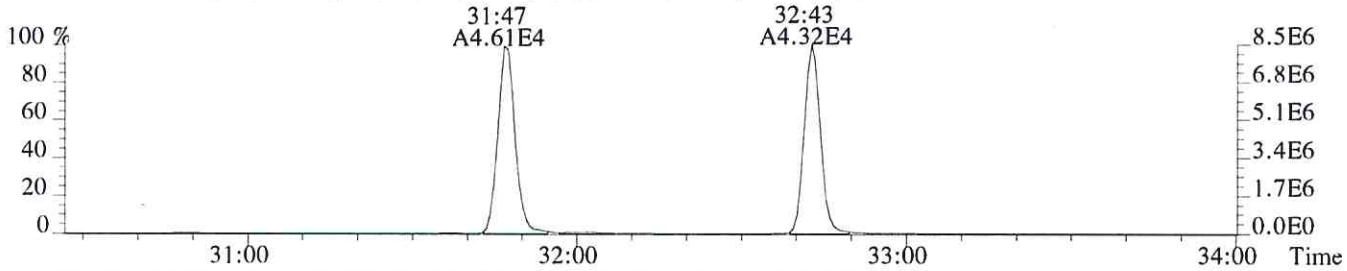


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

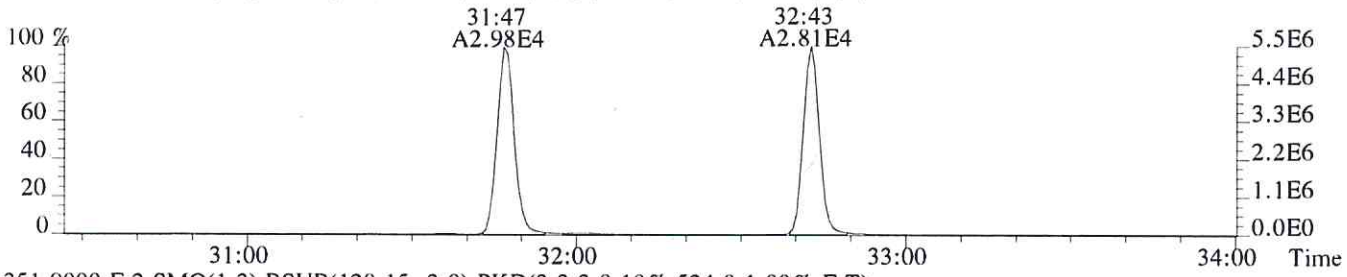


File:P406880 #1-321 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519

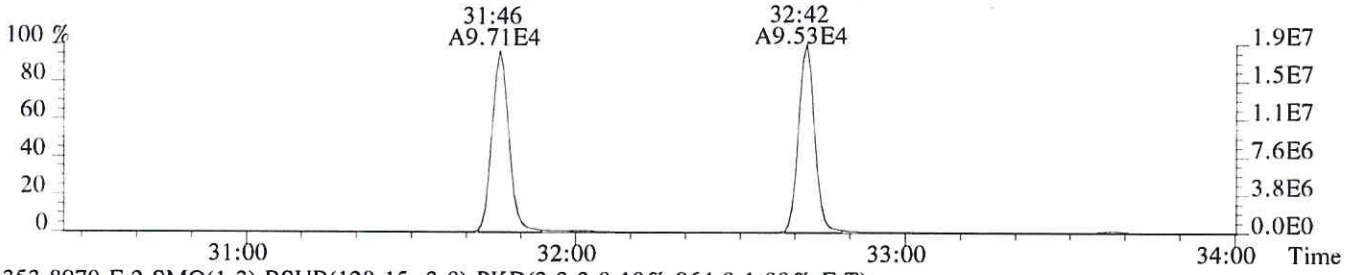
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,504.0,1.00%,F,T)



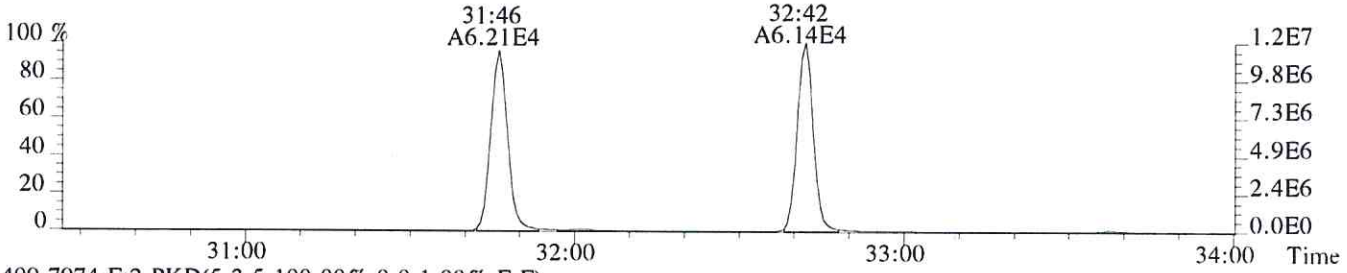
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



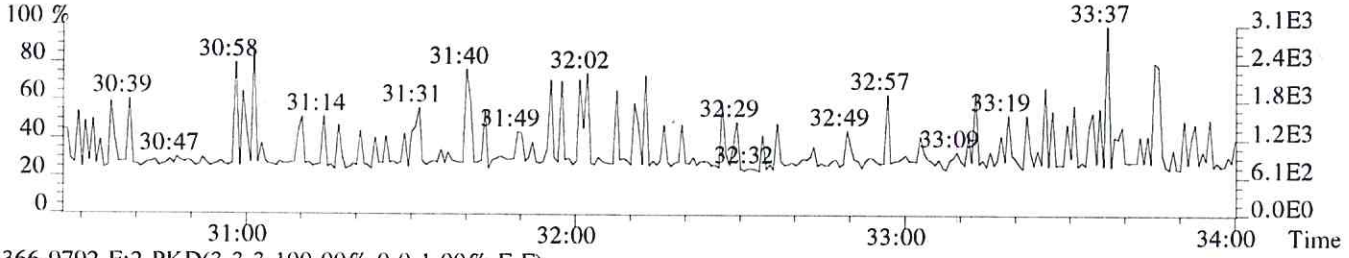
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,524.0,1.00%,F,T)



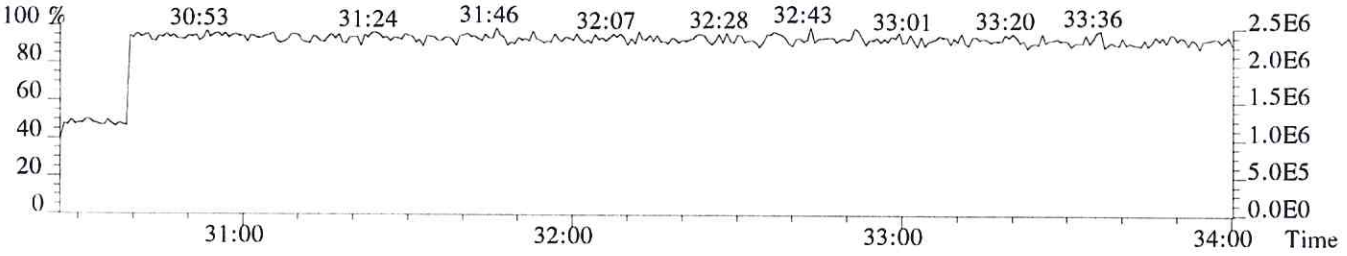
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,964.0,1.00%,F,T)



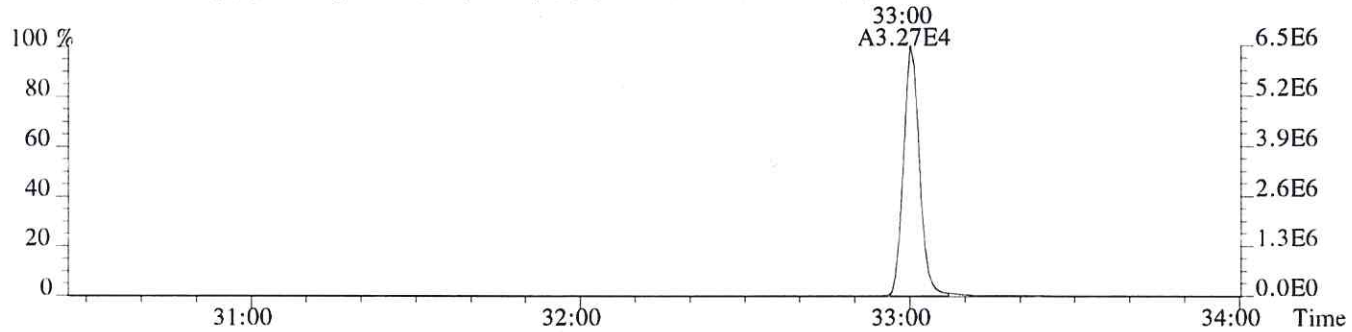
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



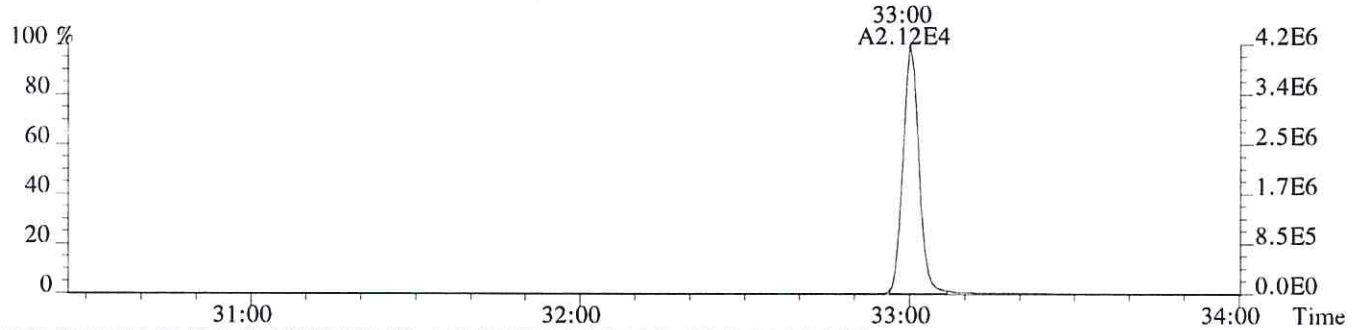
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



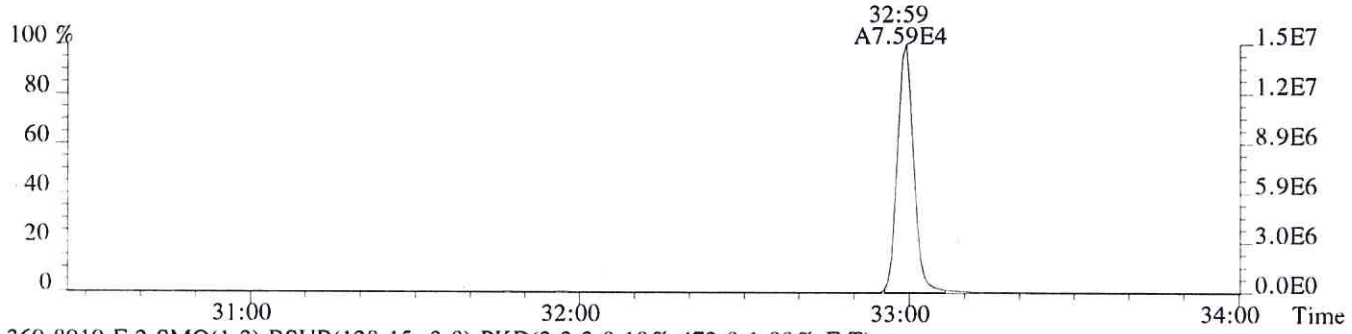
File:P406880 #1-321 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,560.0,1.00%,F,T)



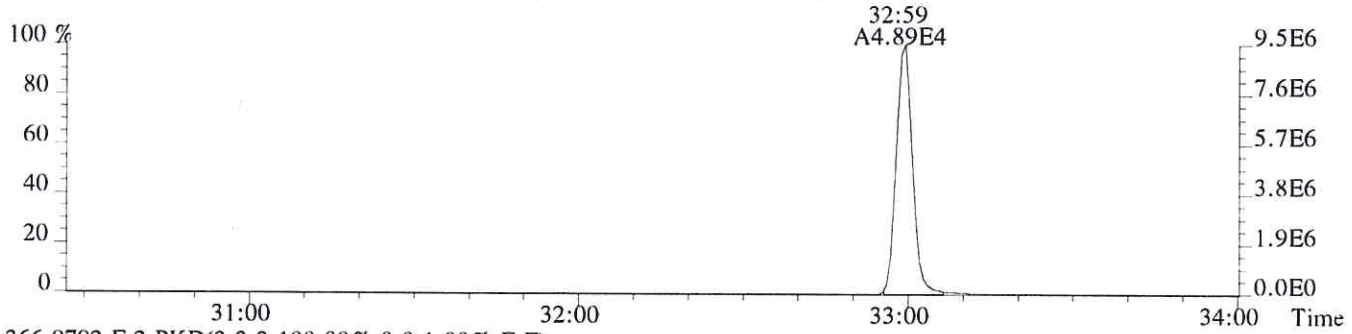
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,556.0,1.00%,F,T)



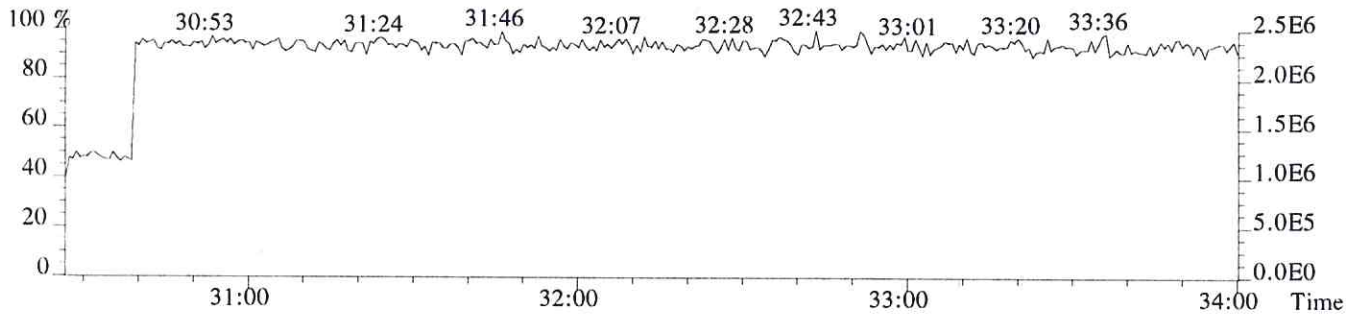
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,488.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,T)

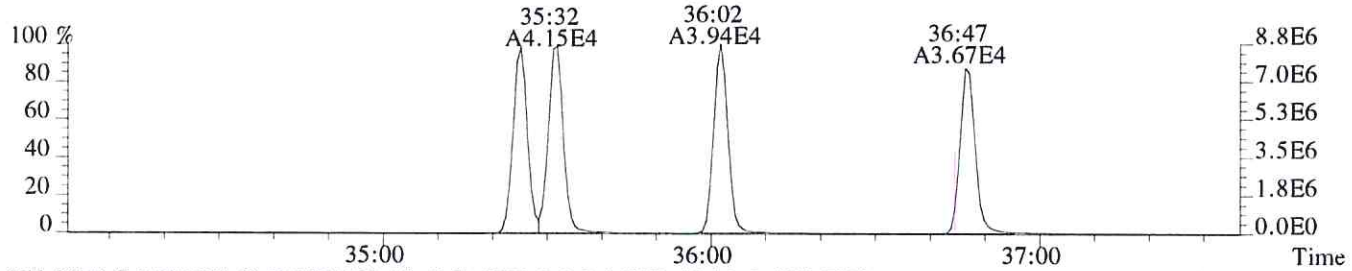


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

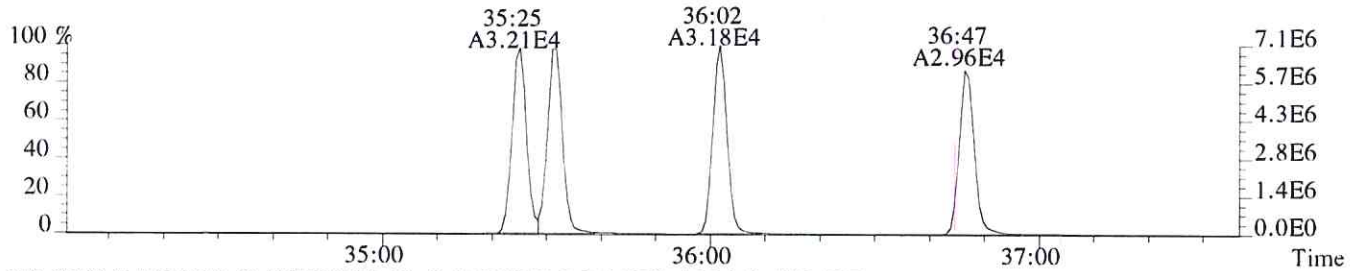


File:P406880 #1-322 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519

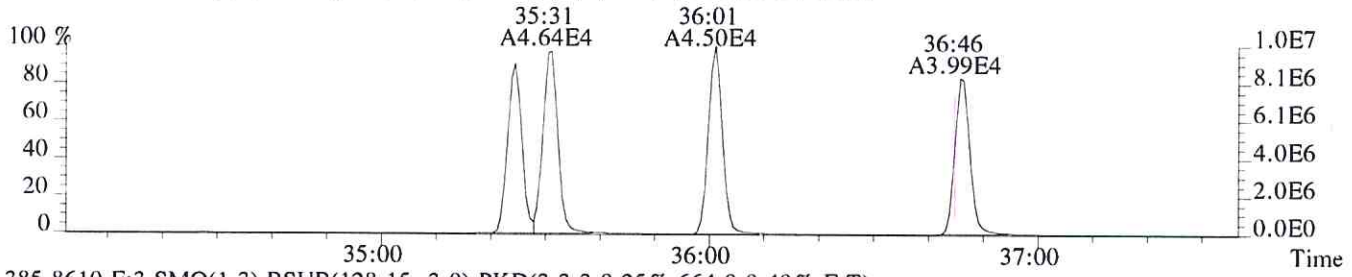
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,280.0,0.40%,F,T)



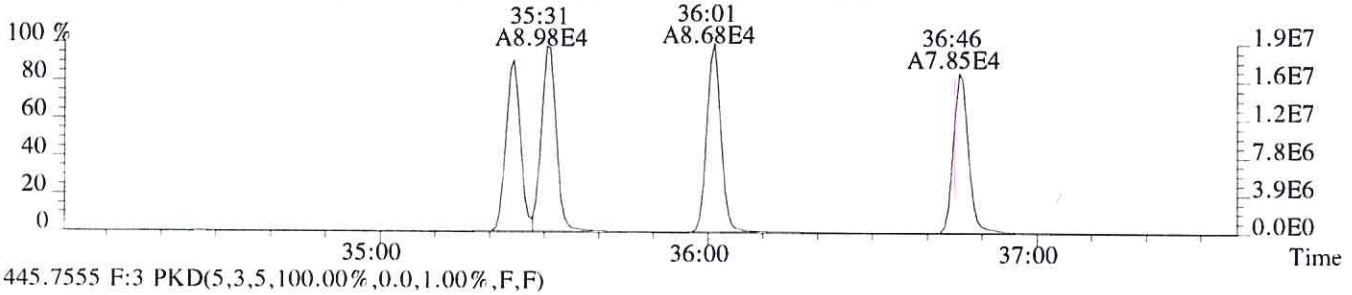
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,104.0,0.40%,F,T)



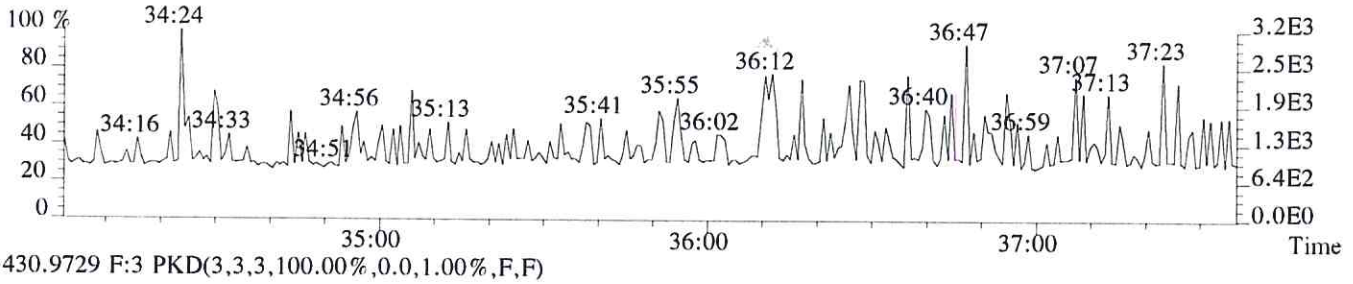
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,436.0,0.40%,F,T)



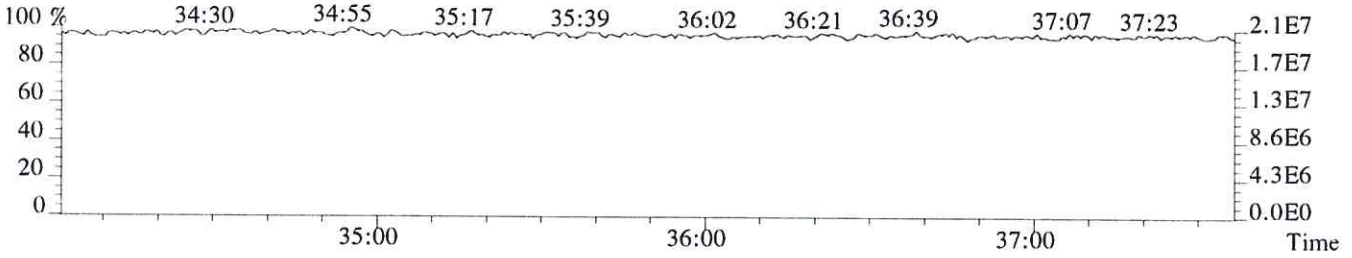
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,664.0,0.40%,F,T)



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

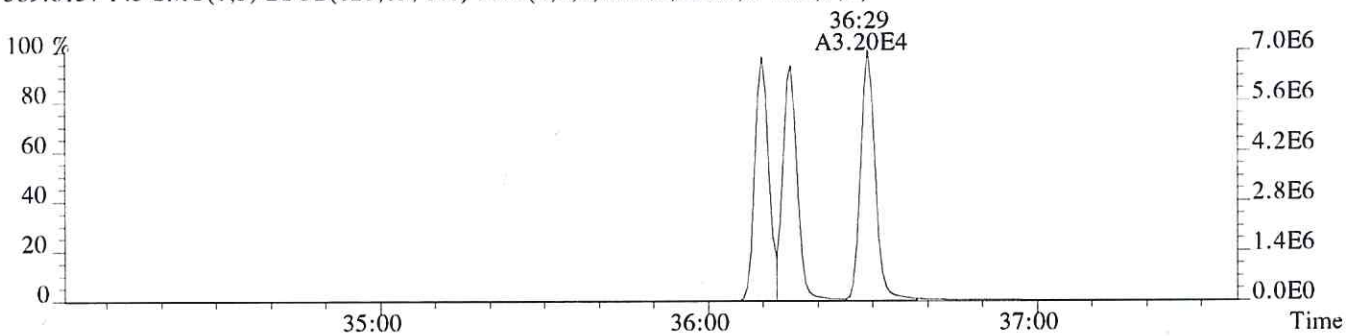


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

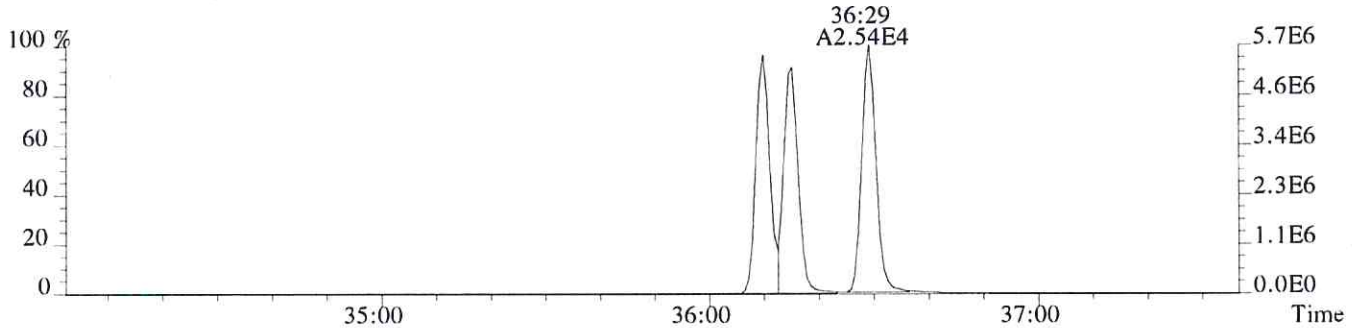


File:P406880 #1-322 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519

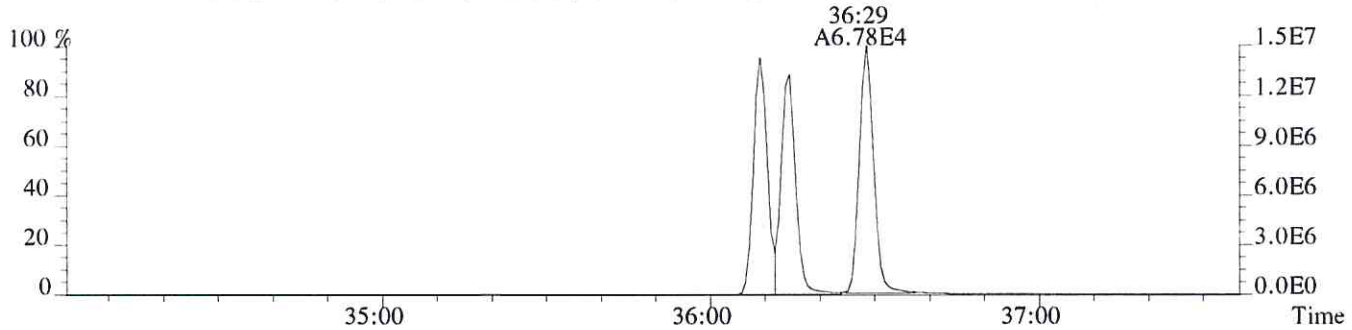
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,260.0,0.40%,F,T)



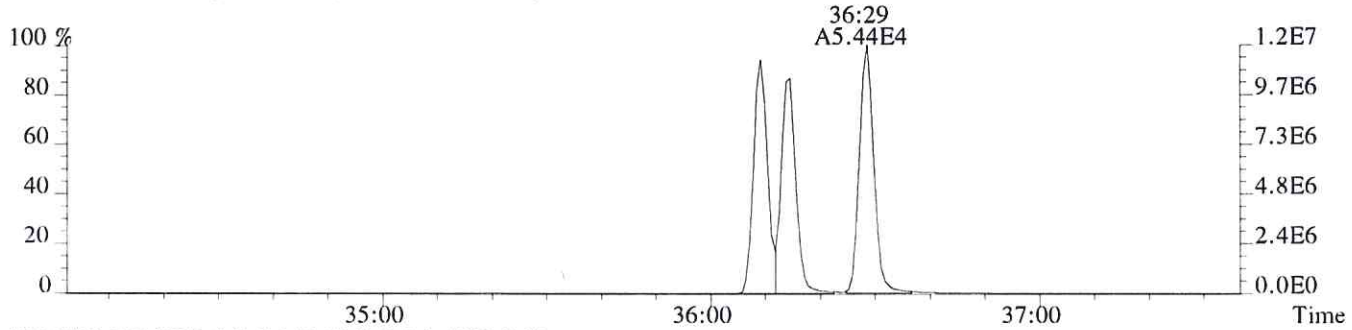
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,236.0,0.40%,F,T)



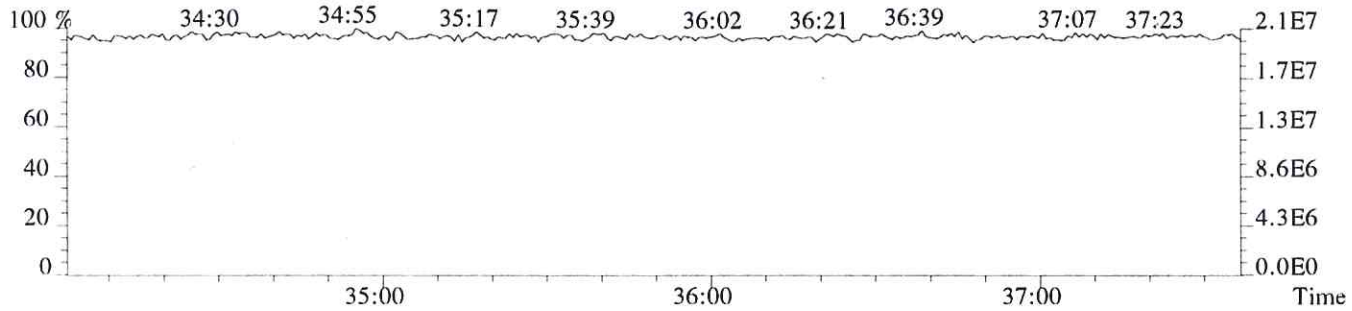
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2724.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1320.0,0.40%,F,T)

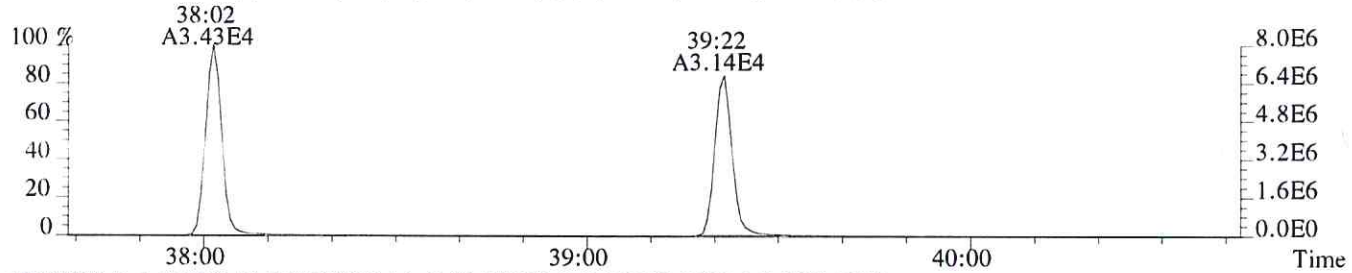


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

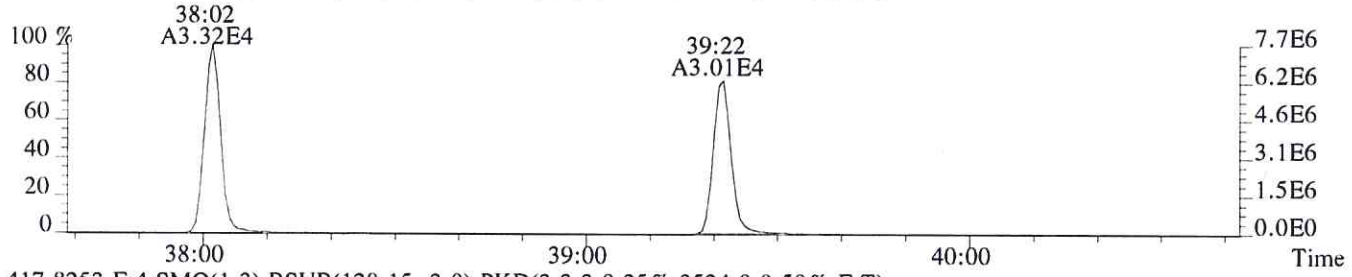


File:P406880 #1-276 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519

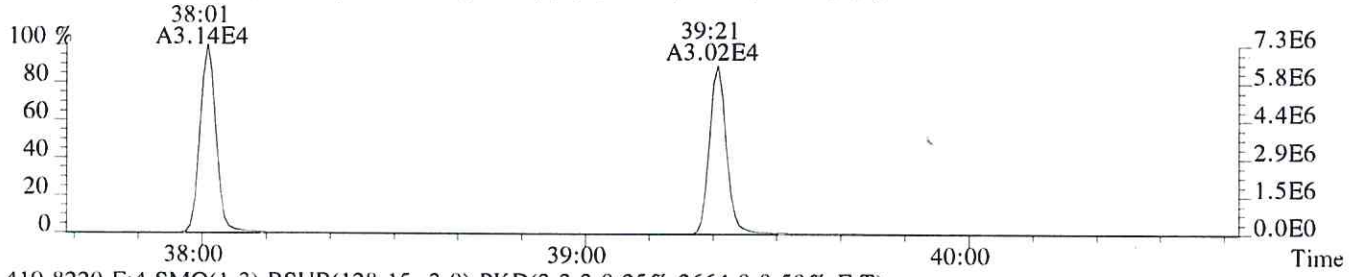
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2048.0,0.50%,F,T)



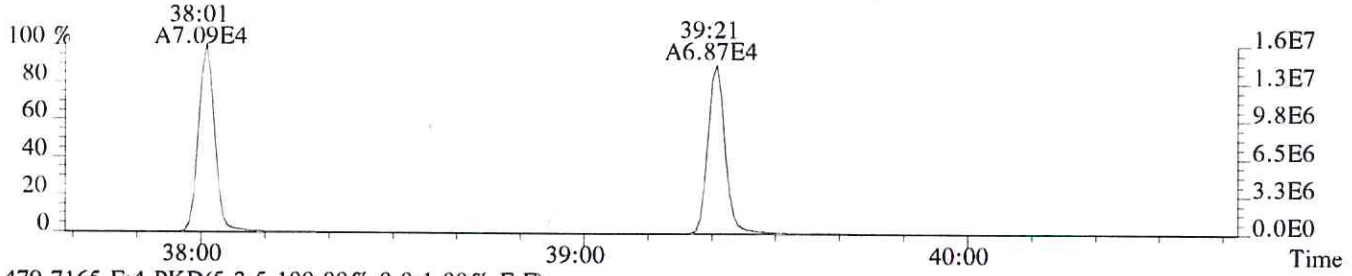
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2608.0,0.50%,F,T)



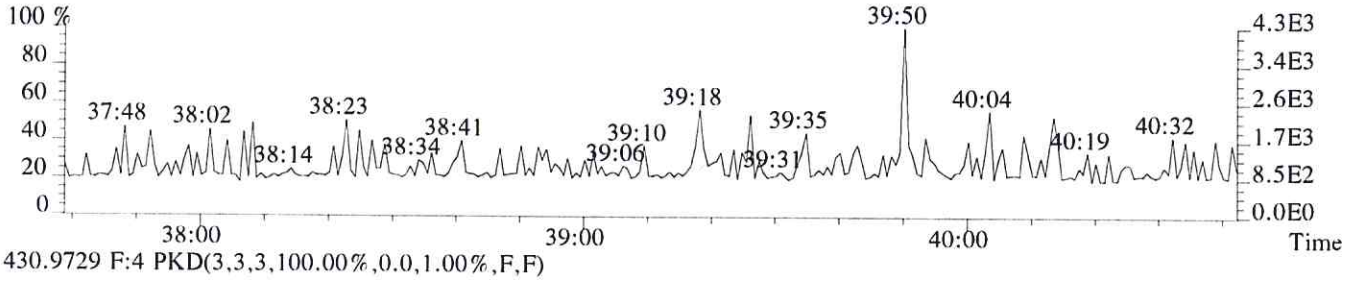
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3524.0,0.50%,F,T)



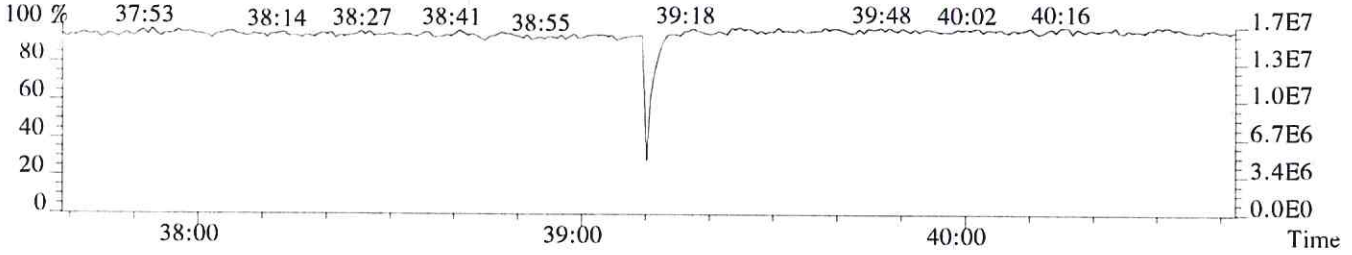
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2664.0,0.50%,F,T)



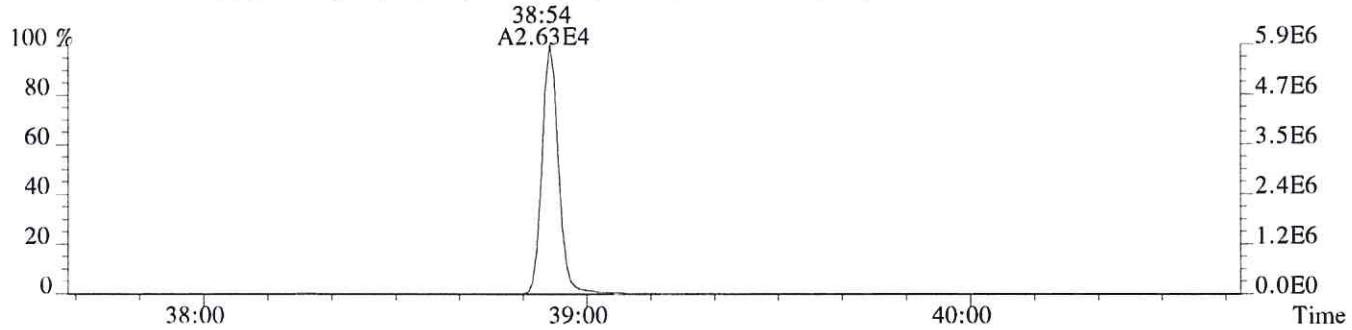
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



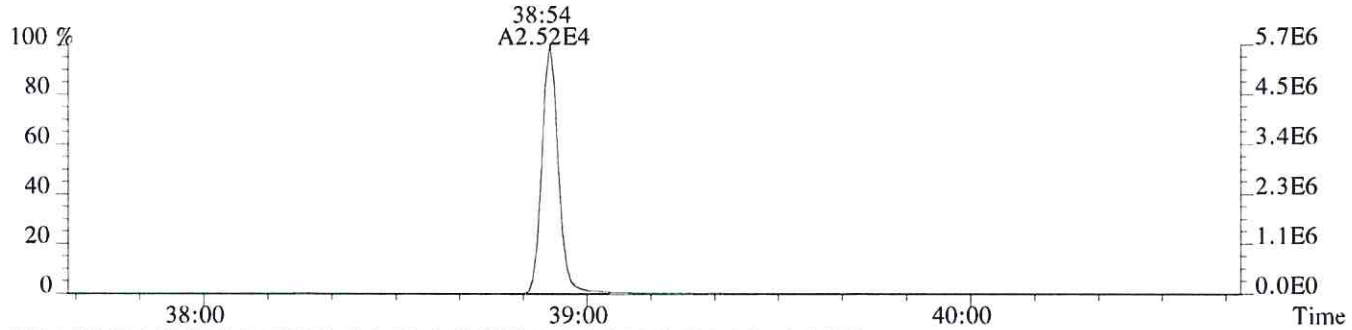
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



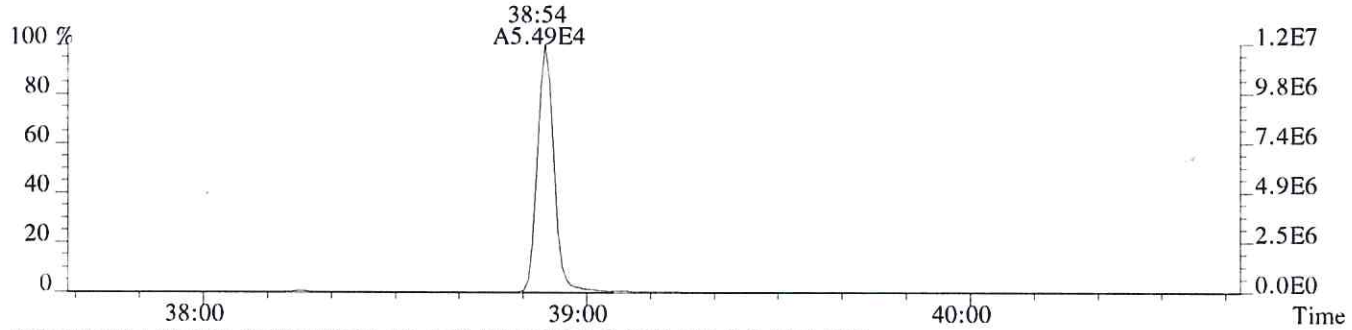
File:P406880 #1-276 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,464.0,0.40%,F,T)



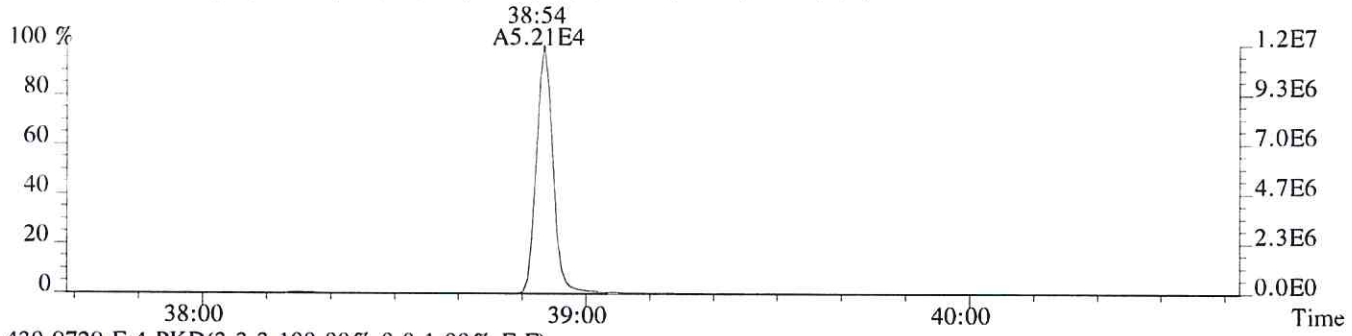
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,400.0,0.40%,F,T)



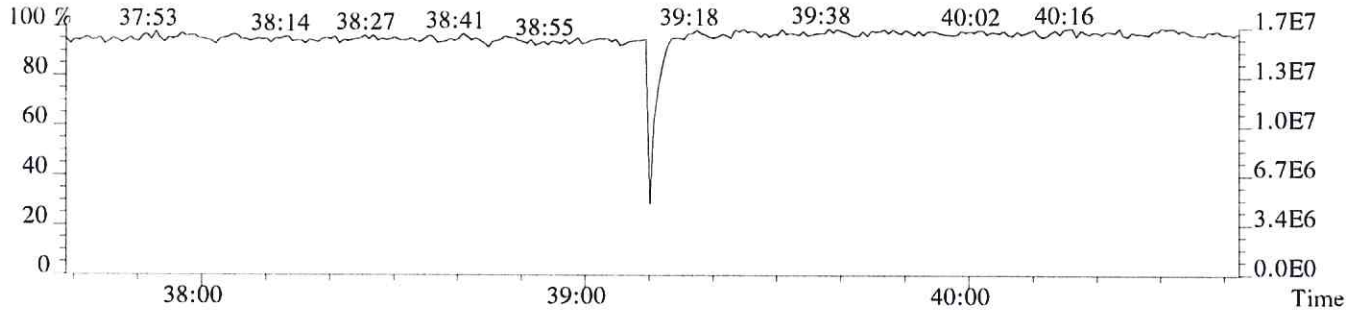
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,680.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,288.0,0.40%,F,T)

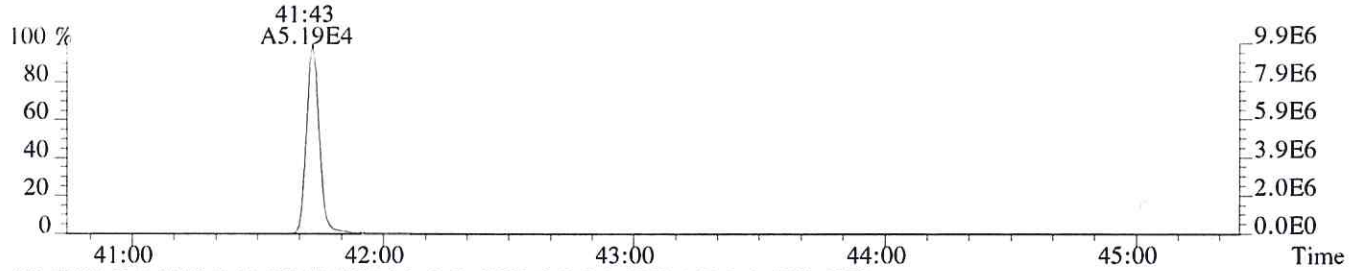


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

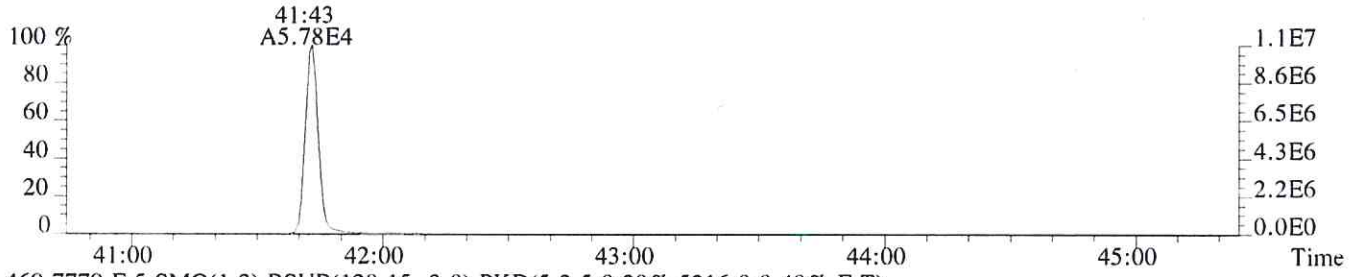


File:P406880 #1-421 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519

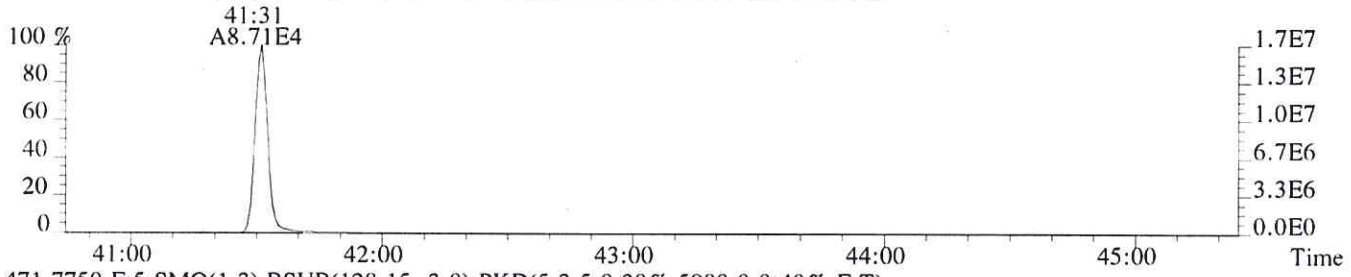
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,224.0,0.40%,F,T)



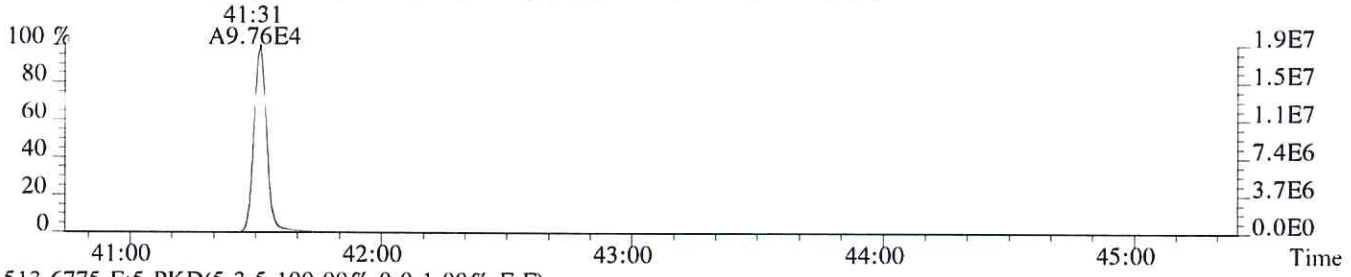
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,448.0,0.40%,F,T)



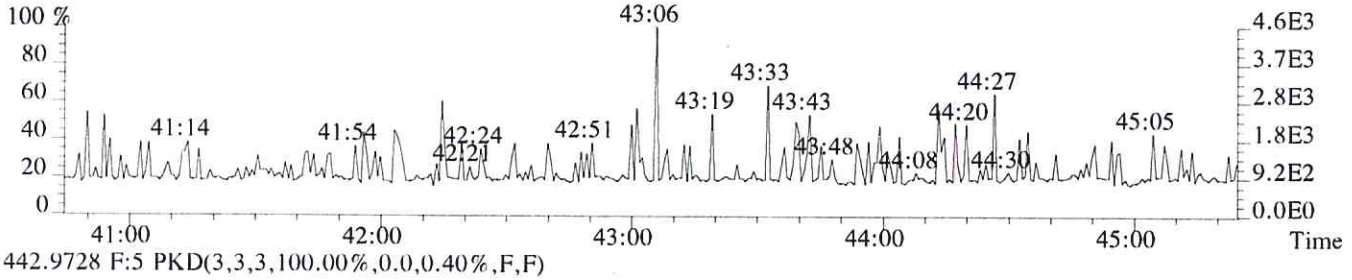
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5216.0,0.40%,F,T)



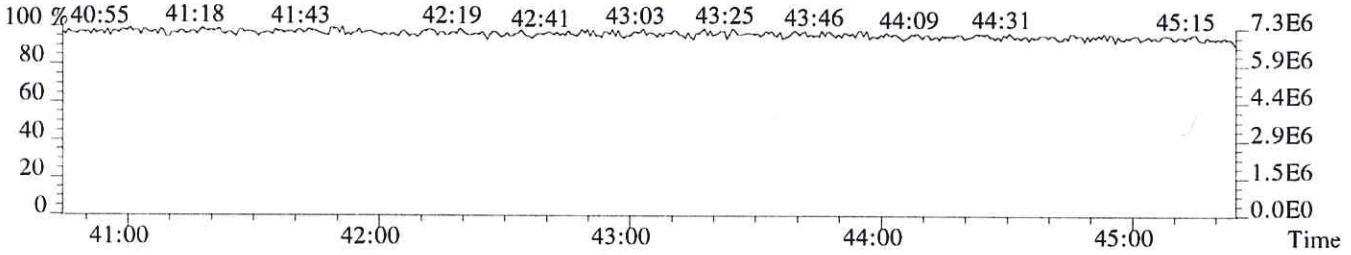
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5980.0,0.40%,F,T)



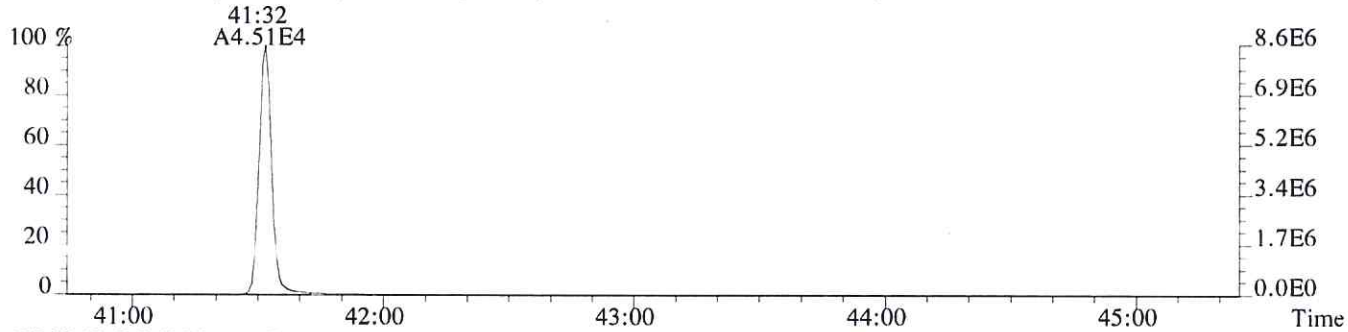
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



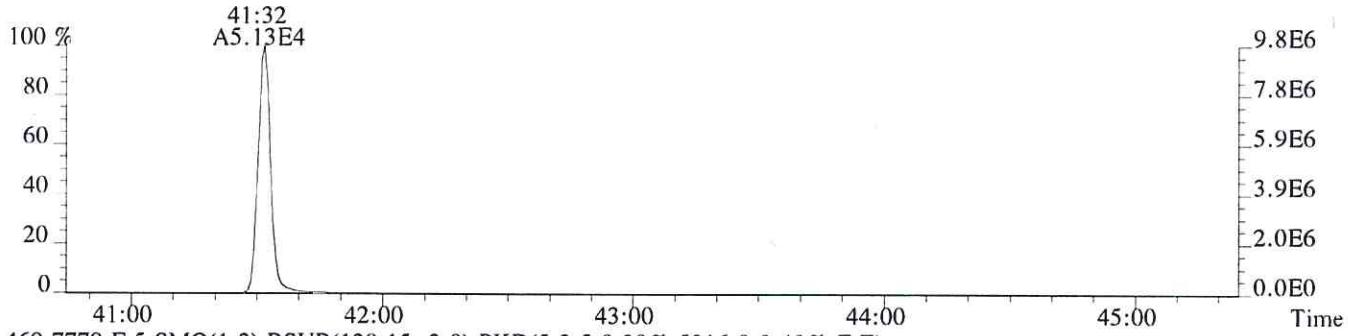
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



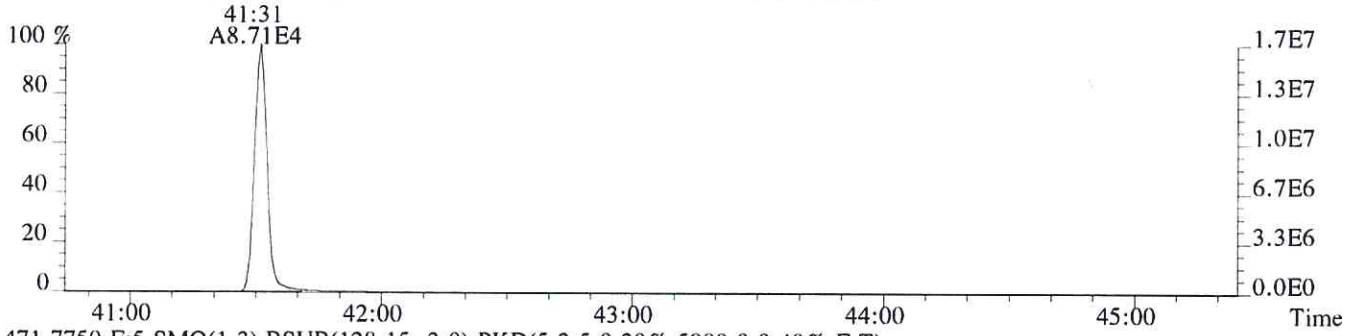
File:P406880 #1-421 Acq:24-MAY-2017 13:08:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:178519
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2460.0,0.40%,F,T)



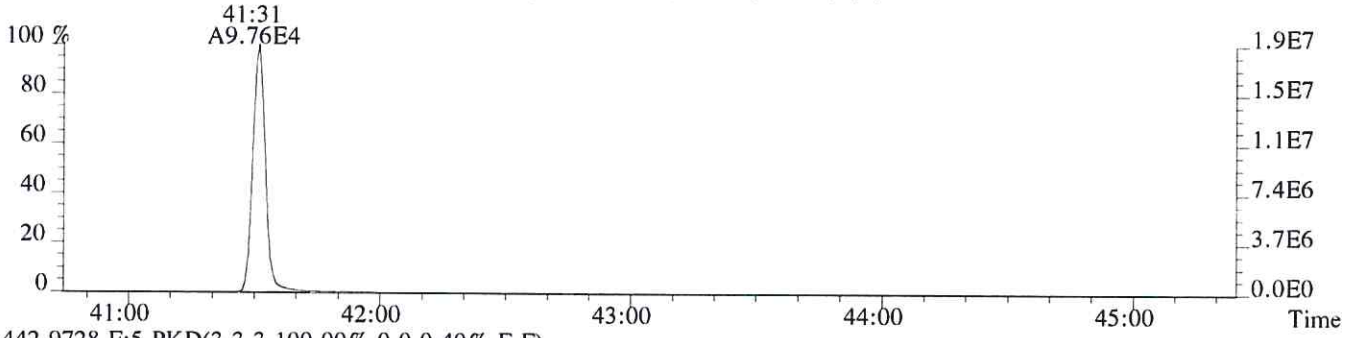
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3440.0,0.40%,F,T)



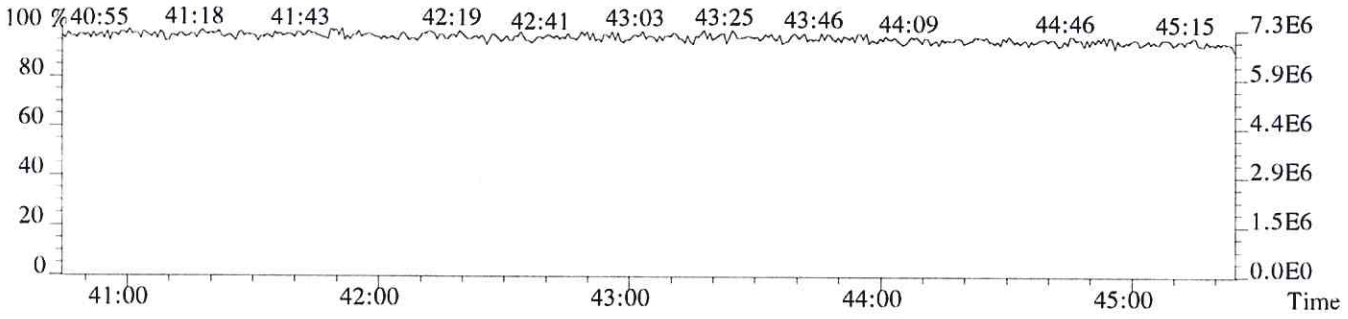
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5216.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5980.0,0.40%,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: 04/29/2016
Instrument Name: E-HRMS-06	Calibration File Name: P4-1604281613I
Processor Name: Jimmy Chau	Reviewer Name: Loan Luong
Supervisor Signature: Andy 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?		√			1
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?	√				
Did each calibration point meet method criteria for Ion Abundance Ratio for all analytes and labeled standards?	√				

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290	Process Date: 04/29/2016				
Instrument Name: E-HRMS-06	Calibration File Name: P4-1604281613I				
Processor Name: Jimmy Chau	Reviewer Name: Loan Luong				
Supervisor Signature: Andy Neir	**Yes**	**No**	**NA**	**NR**	**ER#**
Description					
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: 04/29/2016
Instrument Name: E-HRMS-06	Calibration File Name: P4-1604281613I
Processor Name: Jimmy Chau	Reviewer Name: Loan Luong
ER#[5]	**Description**
1	Although the Mass Resolution check was complete within the 12-hour window, a technical problem prevented us from printing out the report at the same time.

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: Episode No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm) Instrument ID: E-HRMS-06

Init. Calib. Date: 04/28/16

Init. Calib.Times: 09:34:40

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
87077	WINDOW DEFINE	P402423	28-APR-16	09:34:40
76554	CS0.5	P402425	28-APR-16	11:12:25
76555	CS1	P402426	28-APR-16	12:33:36
76556	CS2	P402427	28-APR-16	13:21:59
76557	CS3	P402428	28-APR-16	14:11:09
76558	CS4	P402429	28-APR-16	15:00:19
76956	CS5	P402430	28-APR-16	15:49:31
54819	2ND SOURCE	P402432	28-APR-16	18:00:48

Sample List Report MassLynx 4.1 SCN815 SCN795

Sample List: C:\MassLynx\ehrms06.PRO\SampleDB\20160428.SPL
Last Modified: Thursday, April 28, 2016 09:23:17 Central Daylight Time
Printed: Tuesday, May 03, 2016 13:38:11 Central Daylight Time

Page Position (1, 1)

OPUS-5: P4-160428 1613 I/RES OPUS-5: P4-160428 M23I/RES

	Date	Time	File Name	Lab Sample ID	Client File Text	Bottle	MS File	Inlet File	Analyst	Comments
1	4/28/16	09:34	P402423	87077	WINDOW DEFINE	Tray1:1	EPA1613_ALS	Dioxin_ALS	ACN	HRMS Check 09:29
2		10:23	P402424	NONANE	NONANE	Tray1:2	EPA1613_ALS	Dioxin_ALS		
3		11:12	P402425	CS0.5	76554	Tray1:3	EPA1613_ALS	Dioxin_ALS		
4		12:33	P402426	CS1	76555	Tray1:4	EPA1613_ALS	Dioxin_ALS		
5		13:21	P402427	CS2	76556	Tray1:5	EPA1613_ALS	Dioxin_ALS		
6		14:11	P402428	CS3	76557	Tray1:6	EPA1613_ALS	Dioxin_ALS		
7		15:00	P402429	CS4	76558	Tray1:7	EPA1613_ALS	Dioxin_ALS		
8		15:49	P402430	CS5	76956	Tray1:8	EPA1613_ALS	Dioxin_ALS		
9		17:12	P402431	NONANE	NONANE	Tray1:9	EPA1613_ALS	Dioxin_ALS		
10		18:00	P402432	2ND SOURCE	54819	Tray1:10	EPA1613_ALS	Dioxin_ALS		HRMS Check 09:01
11			---	---	---	Tray1:11	EPA1613_ALS	Dioxin_ALS		
12			---	---	---	Tray1:12	EPA1613_ALS	Dioxin_ALS		
13			---	---	---	Tray1:13	EPA1613_ALS	Dioxin_ALS		
14			---	---	---	Tray1:14	EPA1613_ALS	Dioxin_ALS		
15			---	---	---	Tray1:15	EPA1613_ALS	Dioxin_ALS		
16			---	---	---	Tray1:16	EPA1613_ALS	Dioxin_ALS		
17			---	---	---	Tray1:17	EPA1613_ALS	Dioxin_ALS		
18			---	---	---	Tray1:18	EPA1613_ALS	Dioxin_ALS		
19			---	---	---	Tray1:19	EPA1613_ALS	Dioxin_ALS		
20	---	---	---	---	---	Tray1:20	EPA1613_ALS	Dioxin_ALS	---	---
21	---	---	---	---	---	Tray1:21	EPA1613_ALS	Dioxin_ALS	---	---
22	---	---	---	---	---	Tray1:22	EPA1613_ALS	Dioxin_ALS	---	---
23	---	---	---	---	---	Tray1:23	EPA1613_ALS	Dioxin_ALS	---	---
24	---	---	---	---	---	Tray1:24	EPA1613_ALS	Dioxin_ALS	---	---
25	---	---	---	---	---	Tray1:25	EPA1613_ALS	Dioxin_ALS	---	---
26	---	---	---	---	---	Tray1:26	EPA1613_ALS	Dioxin_ALS	---	---
27	---	---	---	---	---	Tray1:27	EPA1613_ALS	Dioxin_ALS	---	---
28	---	---	---	---	---	Tray1:28	EPA1613_ALS	Dioxin_ALS	---	---
29	---	---	---	---	---	Tray1:29	EPA1613_ALS	Dioxin_ALS	---	---
30	---	---	---	---	---	Tray1:30	EPA1613_ALS	Dioxin_ALS	---	---
31	---	---	---	---	---	Tray1:31	EPA1613_ALS	Dioxin_ALS	---	---
32	---	---	---	---	---	Tray1:32	EPA1613_ALS	Dioxin_ALS	---	---
33	---	---	---	---	---	Tray1:33	EPA1613_ALS	Dioxin_ALS	---	---
34	---	---	---	---	---	Tray1:34	EPA1613_ALS	Dioxin_ALS	---	---
35	---	---	---	---	---	Tray1:35	EPA1613_ALS	Dioxin_ALS	---	---
36	---	---	---	---	---	Tray1:36	EPA1613_ALS	Dioxin_ALS	---	---
37	---	---	---	---	---	Tray1:37	EPA1613_ALS	Dioxin_ALS	---	---
38	---	---	---	---	---	Tray1:38	EPA1613_ALS	Dioxin_ALS	---	---
39	---	---	---	---	---	Tray1:39	EPA1613_ALS	Dioxin_ALS	---	---

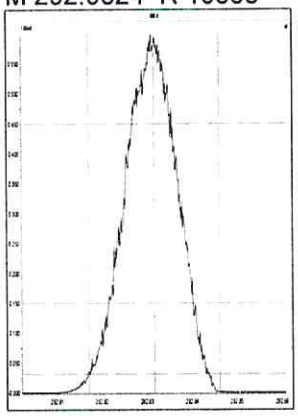
JC 04/28/16

Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

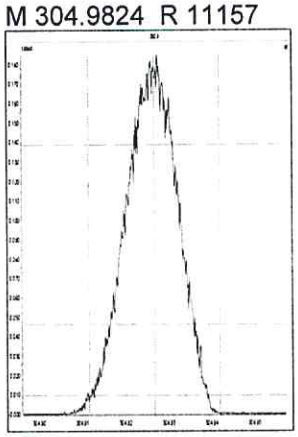
File: Experiment: epa1613_als.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, April 28, 2016 09:29:52 Central Daylight Time

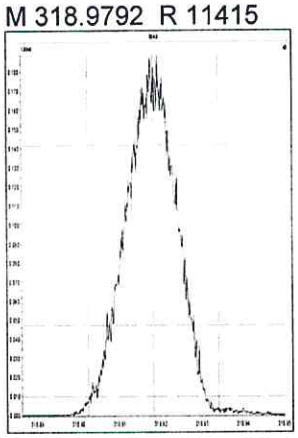
M 292.9824 R 10868



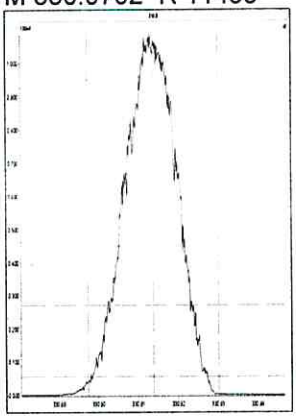
M 304.9824 R 11157



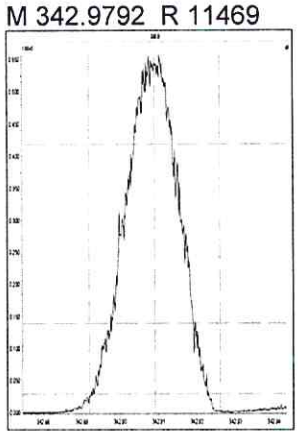
M 318.9792 R 11415



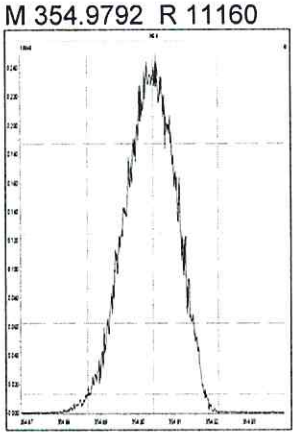
M 330.9792 R 11466



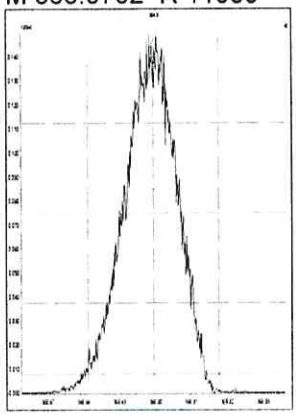
M 342.9792 R 11469



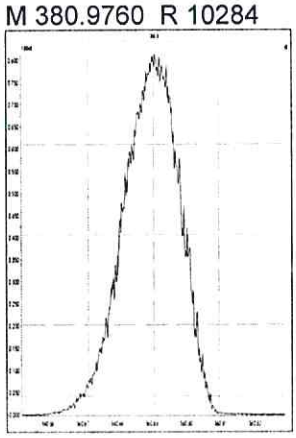
M 354.9792 R 11160



M 366.9792 R 11059



M 380.9760 R 10284

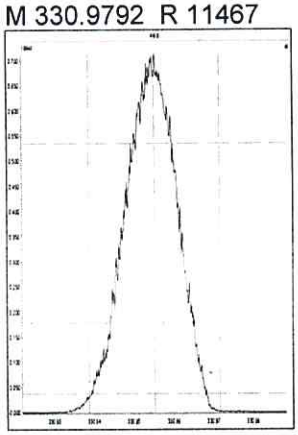


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

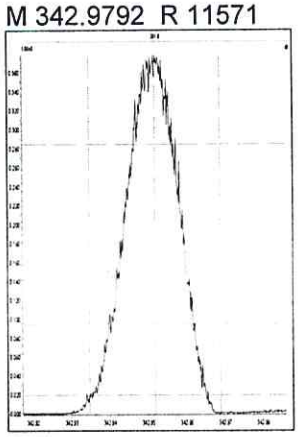
File: Experiment: epa1613_als.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Thursday, April 28, 2016 09:30:48 Central Daylight Time

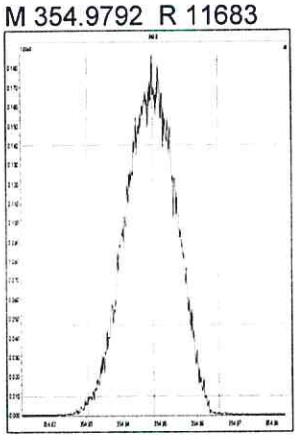
M 330.9792 R 11467



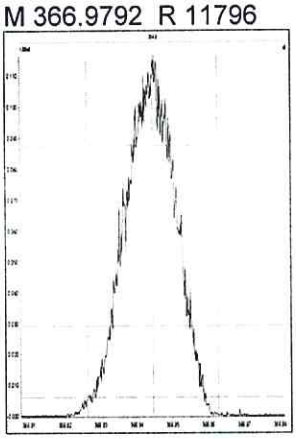
M 342.9792 R 11571



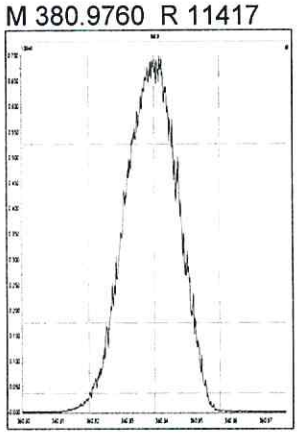
M 354.9792 R 11683



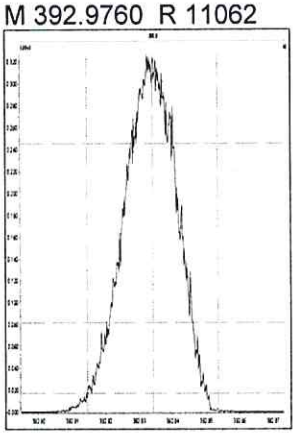
M 366.9792 R 11796



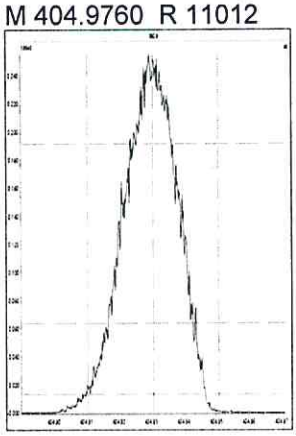
M 380.9760 R 11417



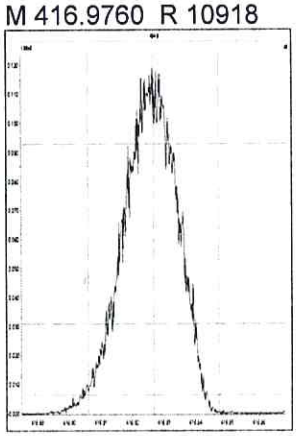
M 392.9760 R 11062



M 404.9760 R 11012



M 416.9760 R 10918

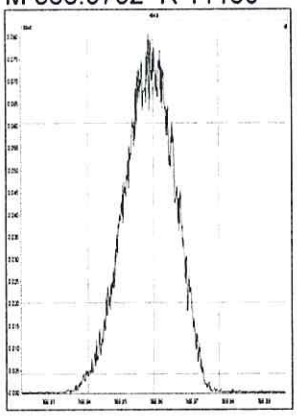


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

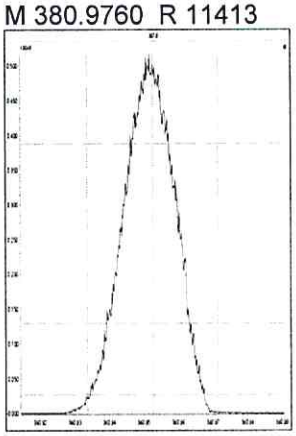
File: Experiment: epa1613_als.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, April 28, 2016 09:31:32 Central Daylight Time

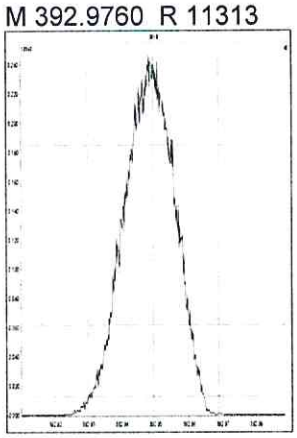
M 366.9792 R 11160



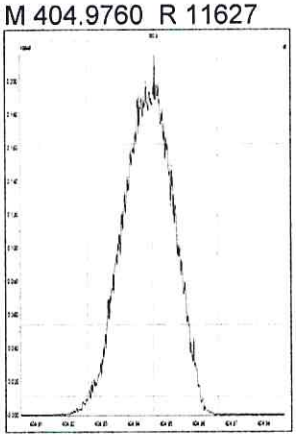
M 380.9760 R 11413



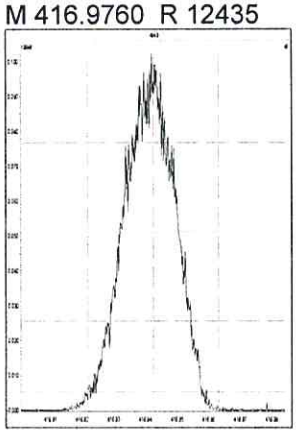
M 392.9760 R 11313



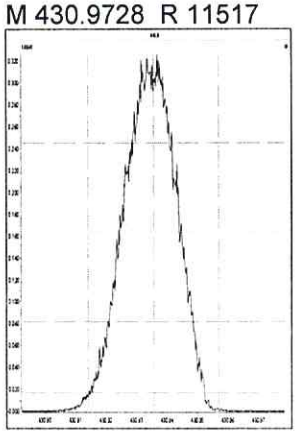
M 404.9760 R 11627



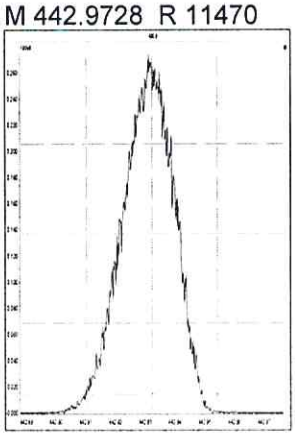
M 416.9760 R 12435



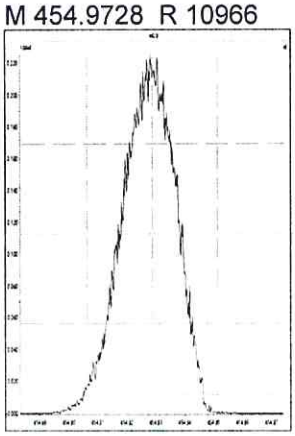
M 430.9728 R 11517



M 442.9728 R 11470



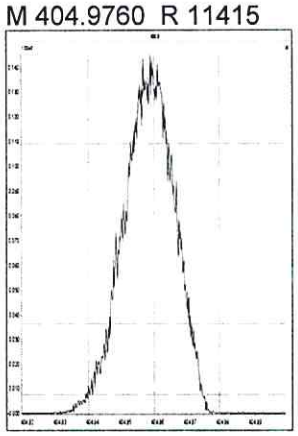
M 454.9728 R 10966



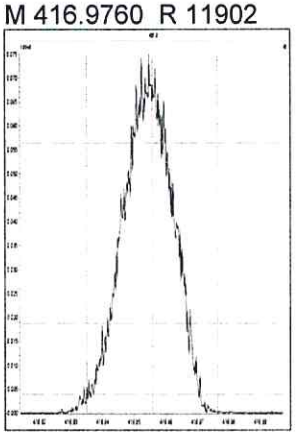
File: Experiment: epa1613_als.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Thursday, April 28, 2016 09:32:09 Central Daylight Time

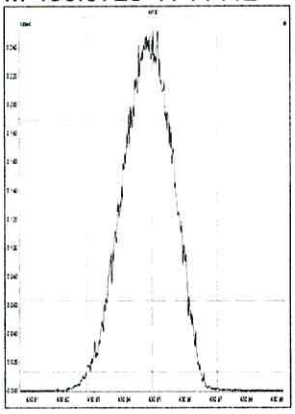
M 404.9760 R 11415



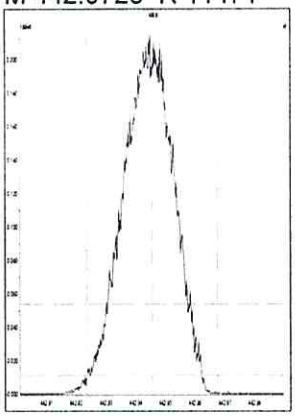
M 416.9760 R 11902



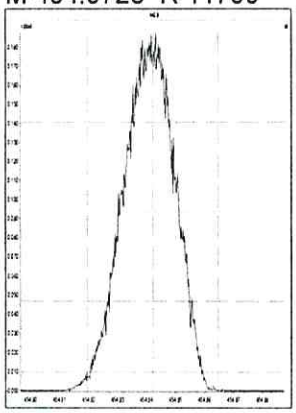
M 430.9728 R 11412



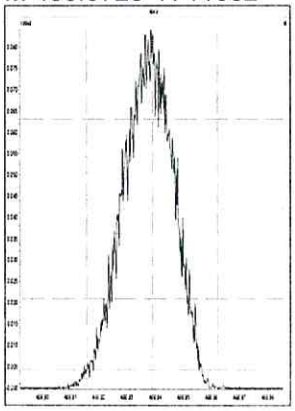
M 442.9728 R 11471



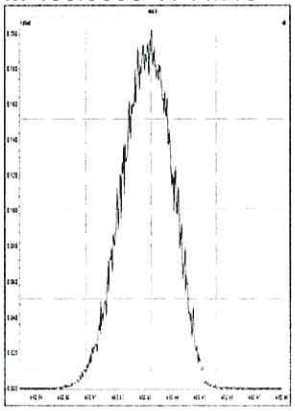
M 454.9728 R 11790



M 466.9728 R 11682



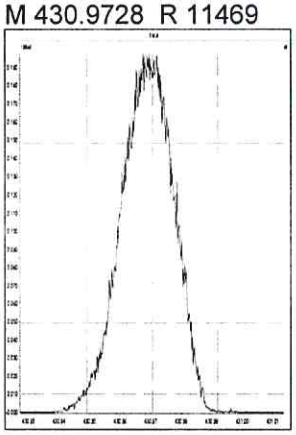
M 480.9696 R 11210



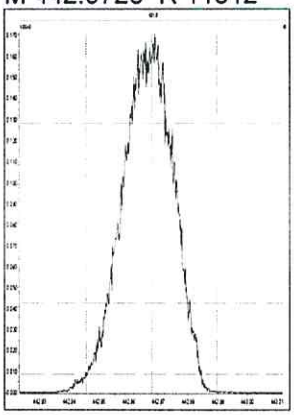
File: Experiment: epa1613_als.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, April 28, 2016 09:32:46 Central Daylight Time

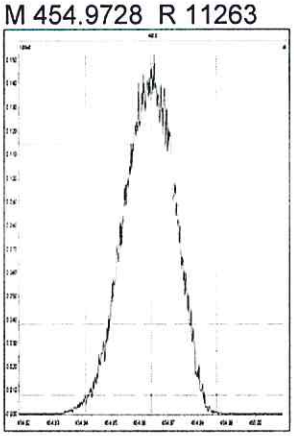
M 430.9728 R 11469



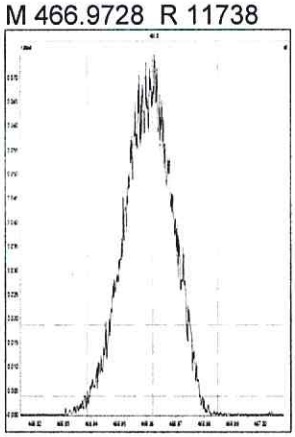
M 442.9728 R 11312



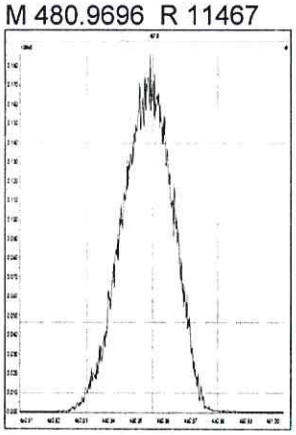
M 454.9728 R 11263



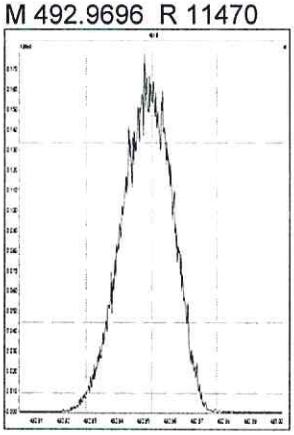
M 466.9728 R 11738



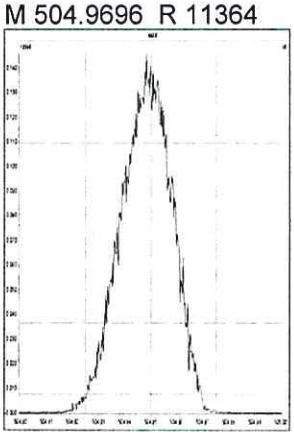
M 480.9696 R 11467



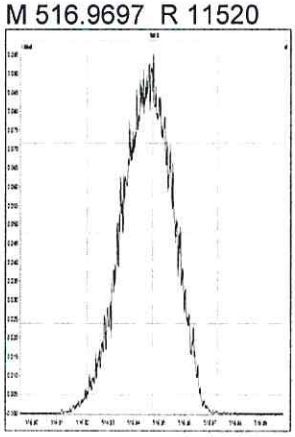
M 492.9696 R 11470



M 504.9696 R 11364



M 516.9697 R 11520



Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

File: Experiment: epa1613_als.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Friday, April 29, 2016 09:01:11 Central Daylight Time

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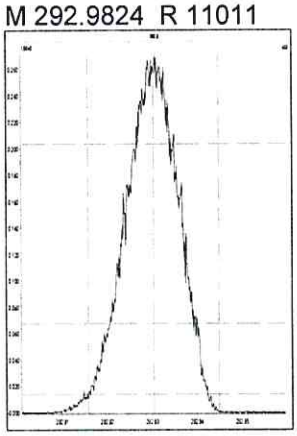
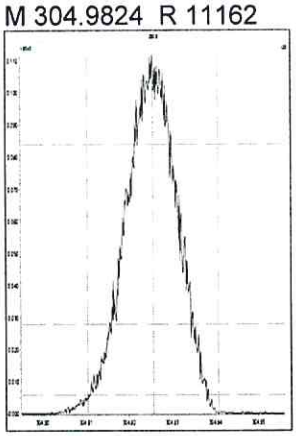
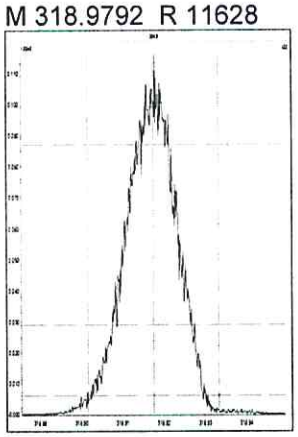


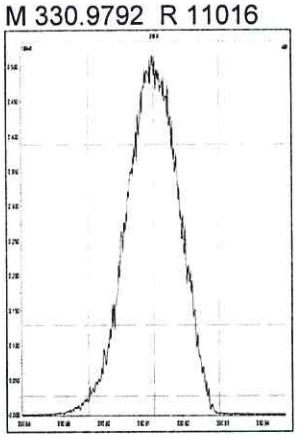
M 304.9824 R 11162



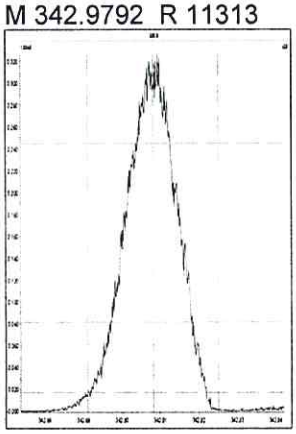
M 318.9792 R 11628



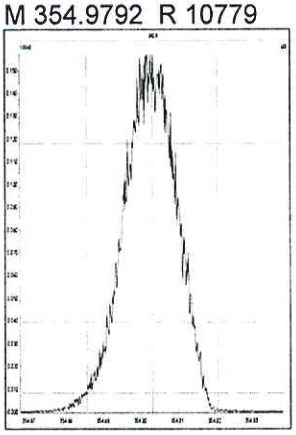
M 330.9792 R 11016



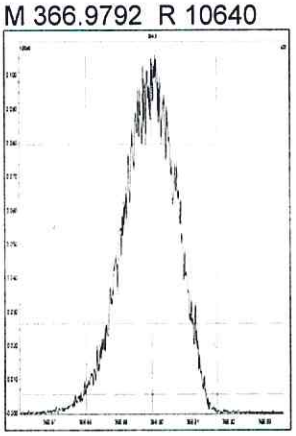
M 342.9792 R 11313



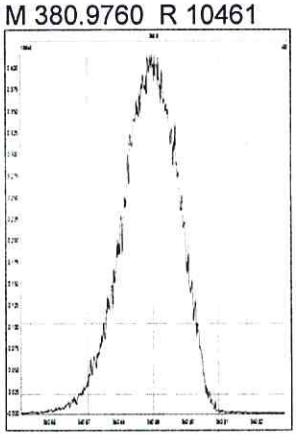
M 354.9792 R 10779



M 366.9792 R 10640



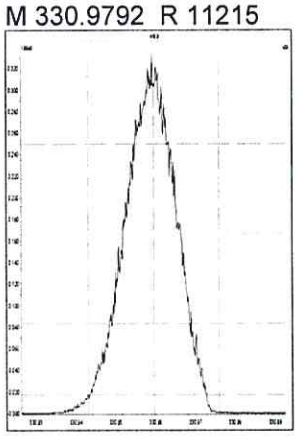
M 380.9760 R 10461



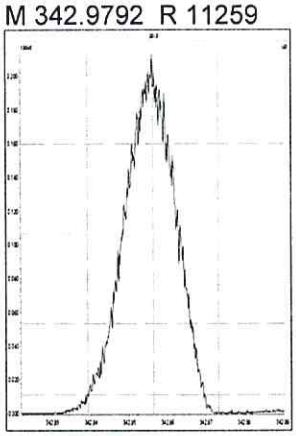
File: Experiment: epa1613_als.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Friday, April 29, 2016 09:02:03 Central Daylight Time

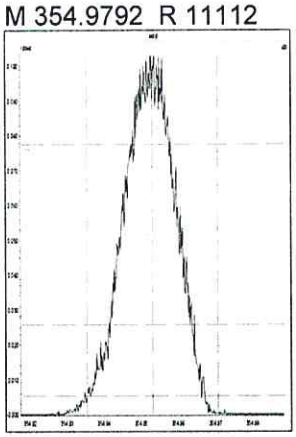
M 330.9792 R 11215



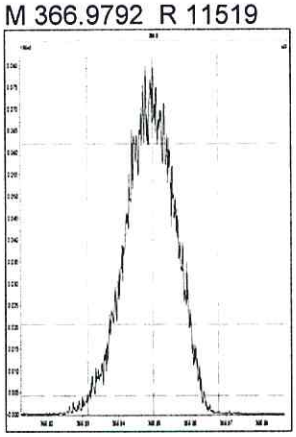
M 342.9792 R 11259



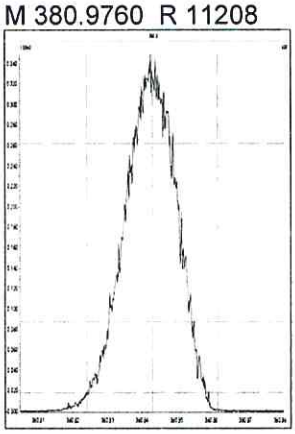
M 354.9792 R 11112



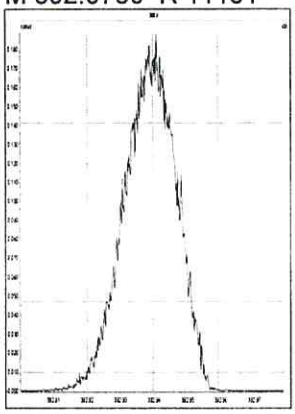
M 366.9792 R 11519



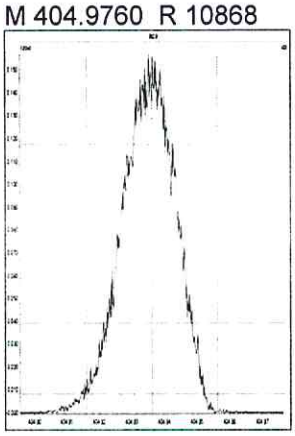
M 380.9760 R 11208



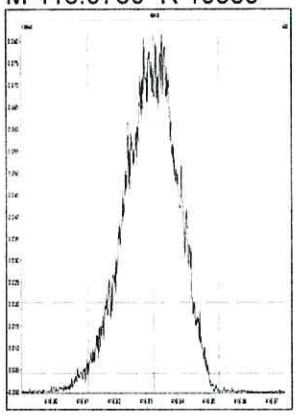
M 392.9760 R 11161



M 404.9760 R 10868



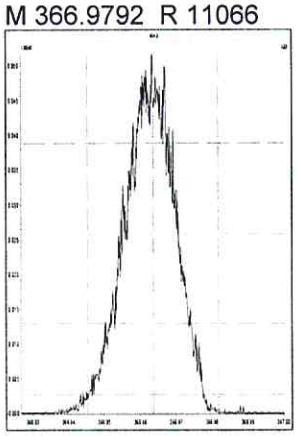
M 416.9760 R 10639



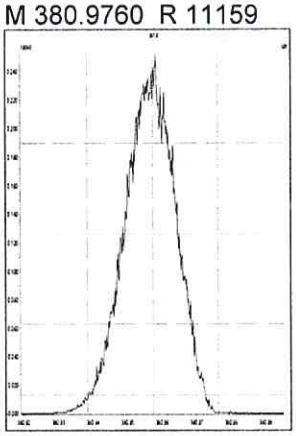
File: Experiment: epa1613_als.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Friday, April 29, 2016 09:02:51 Central Daylight Time

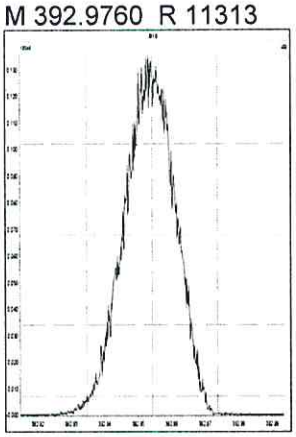
M 366.9792 R 11066



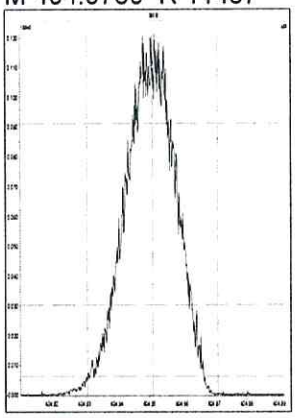
M 380.9760 R 11159



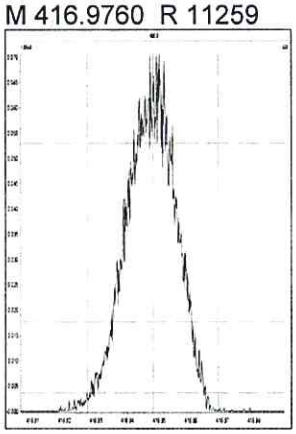
M 392.9760 R 11313



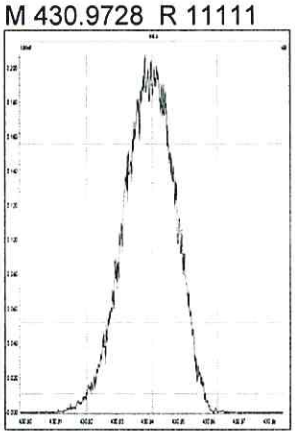
M 404.9760 R 11467



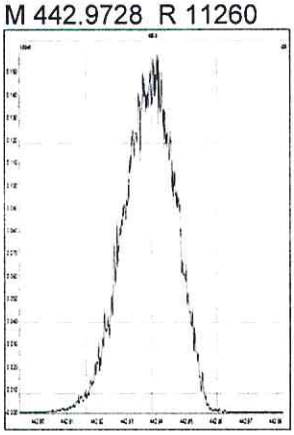
M 416.9760 R 11259



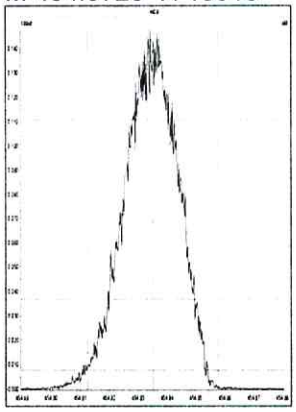
M 430.9728 R 11111



M 442.9728 R 11260



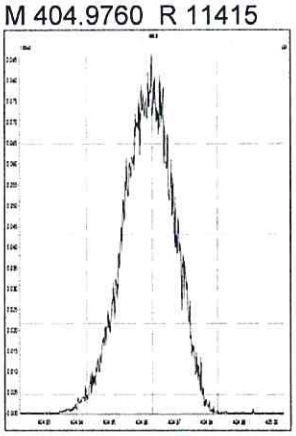
M 454.9728 R 10918



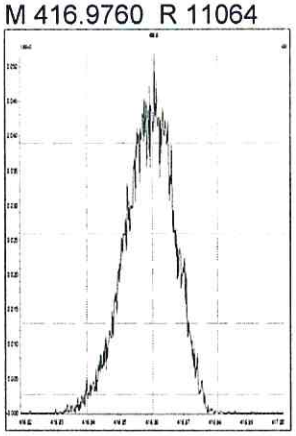
File: Experiment: epa1613_als.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Friday, April 29, 2016 09:03:28 Central Daylight Time

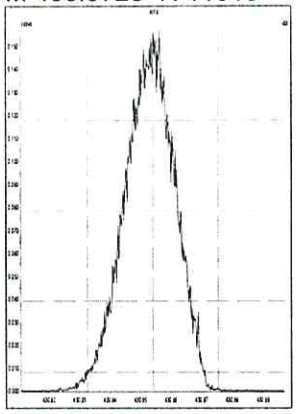
M 404.9760 R 11415



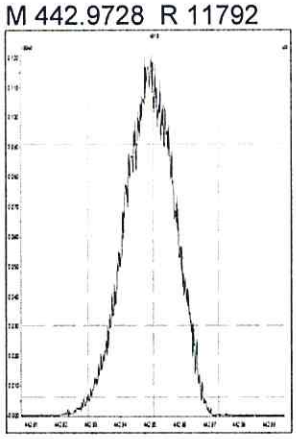
M 416.9760 R 11064



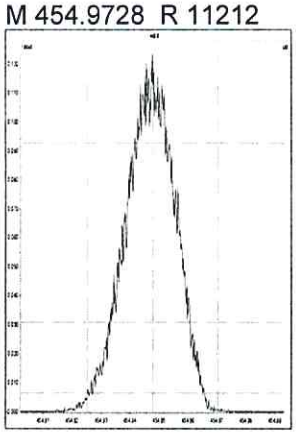
M 430.9728 R 11313



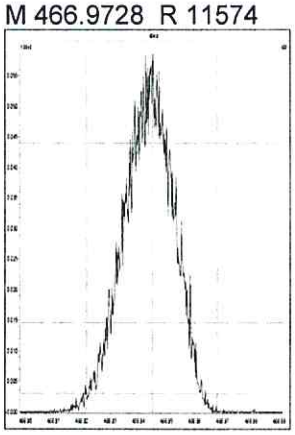
M 442.9728 R 11792



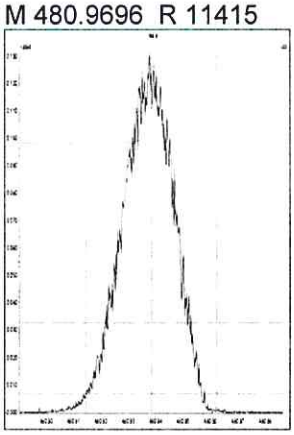
M 454.9728 R 11212



M 466.9728 R 11574



M 480.9696 R 11415

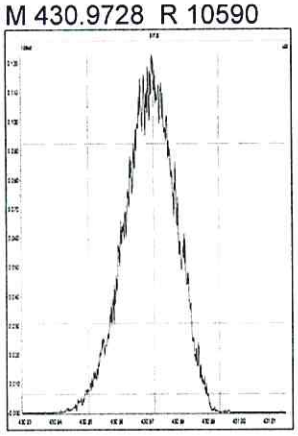


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

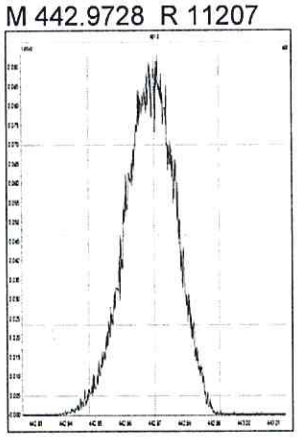
File: Experiment: epa1613_als.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Friday, April 29, 2016 09:04:06 Central Daylight Time

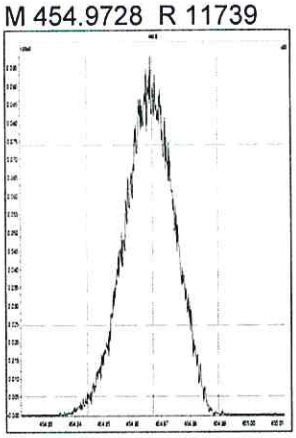
M 430.9728 R 10590



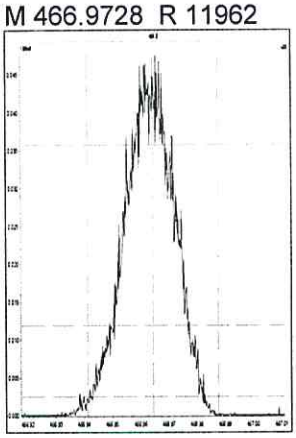
M 442.9728 R 11207



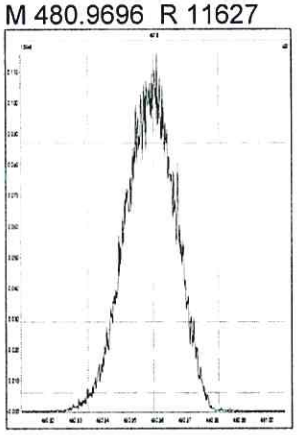
M 454.9728 R 11739



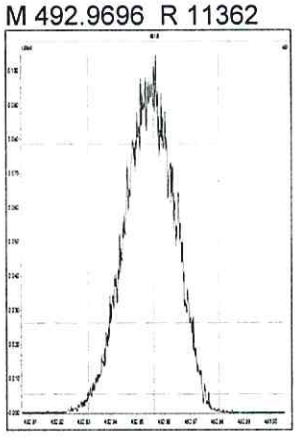
M 466.9728 R 11962



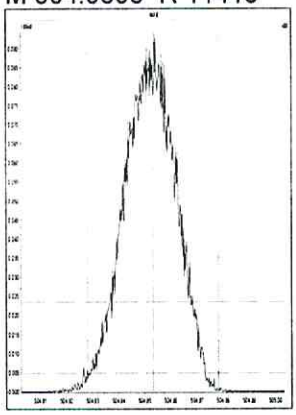
M 480.9696 R 11627



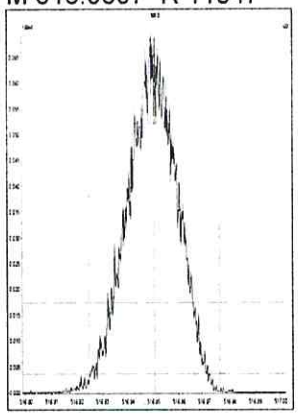
M 492.9696 R 11362



M 504.9696 R 11416



M 516.9697 R 11847



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

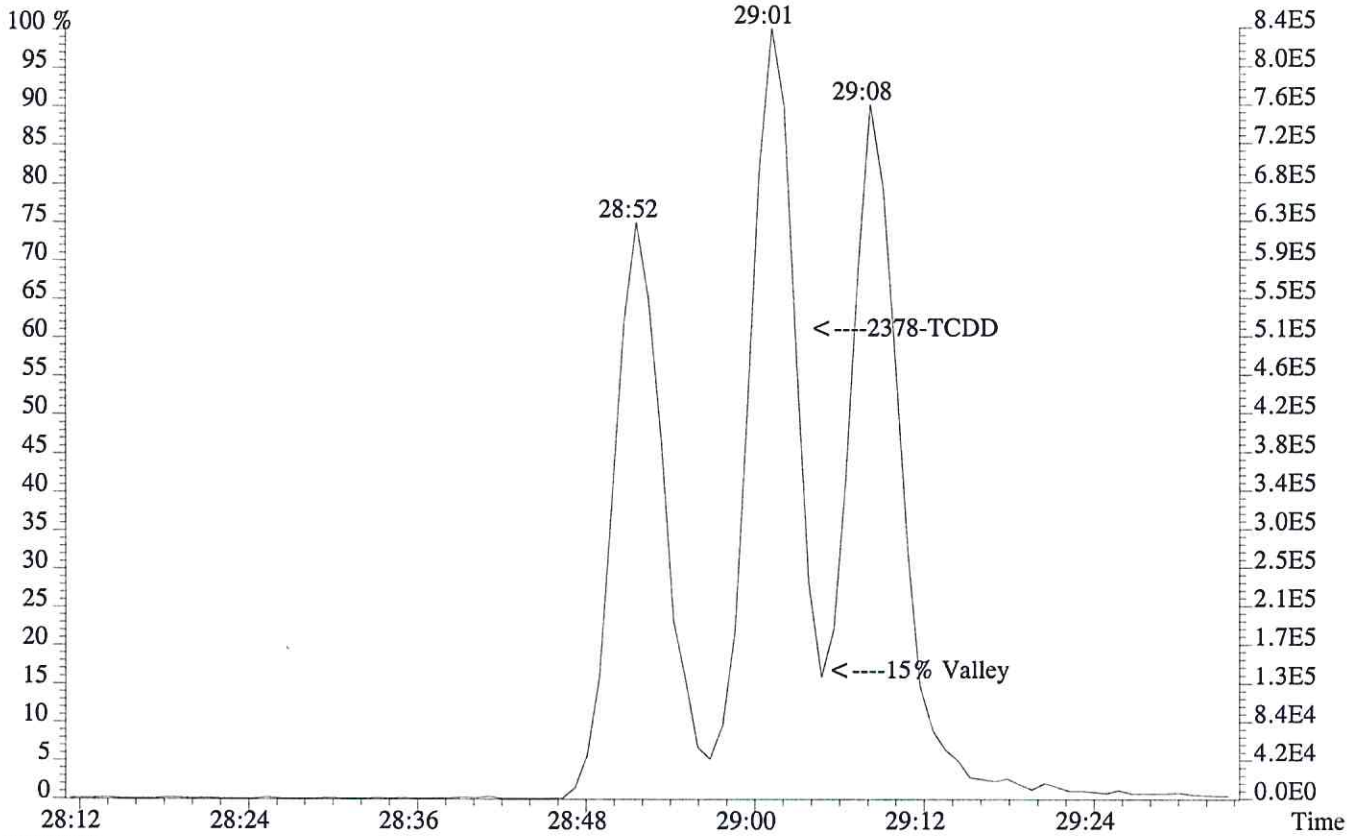
Case No.: _____
ID: 0.25 (mm)

SDG No.:
Lab File ID: P402423
Date Analyzed: 28-APR-2016
Time Analyzed 09:34:40

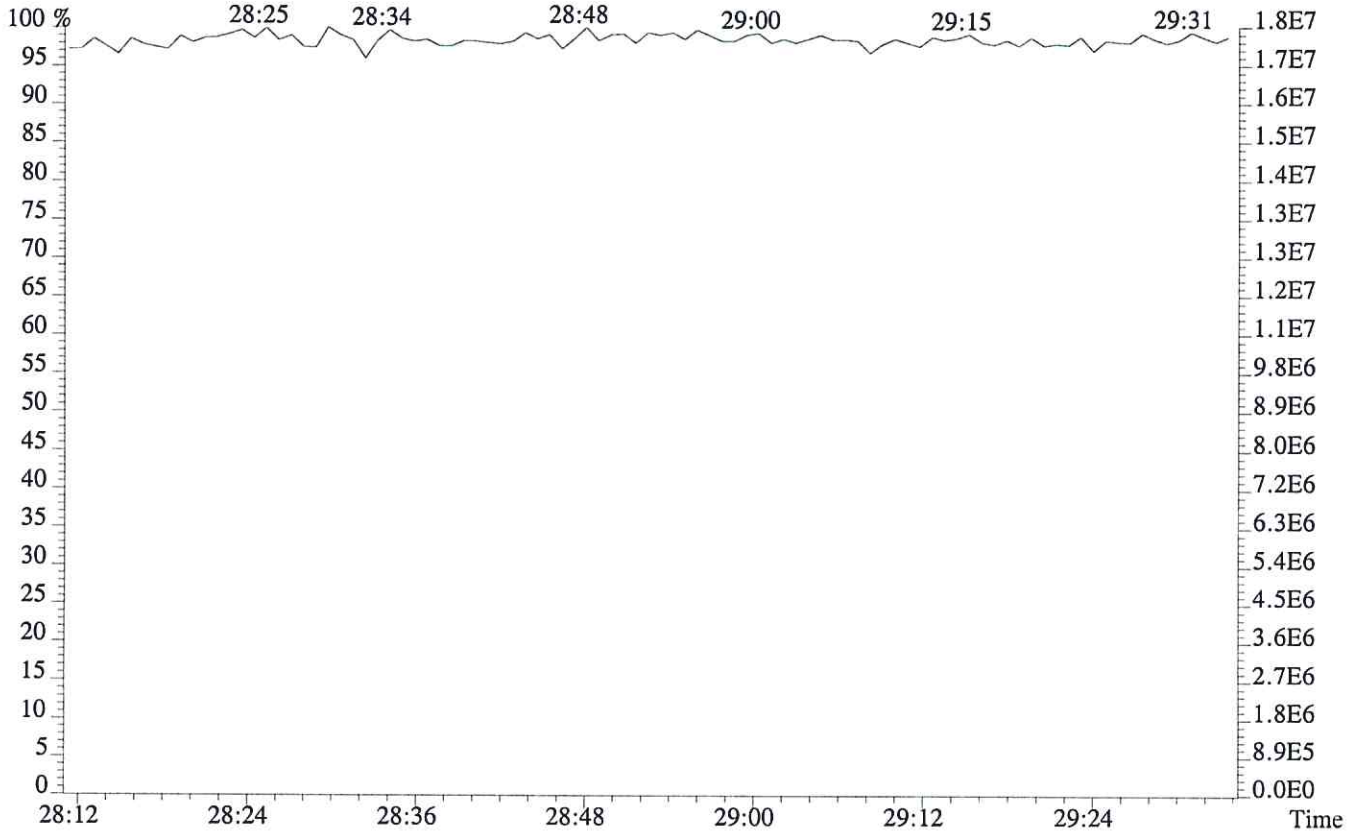
Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	23:55	30:09
TCDD	25:47	30:00
PeCDF	30:05	34:16
PeCDD	31:36	34:01
HxCDF	34:54	37:22
HxCDD	35:25	36:58
HpCDF	38:35	39:57
HpCDD	38:49	39:29

% Valley 2378-TCDD: 15 %

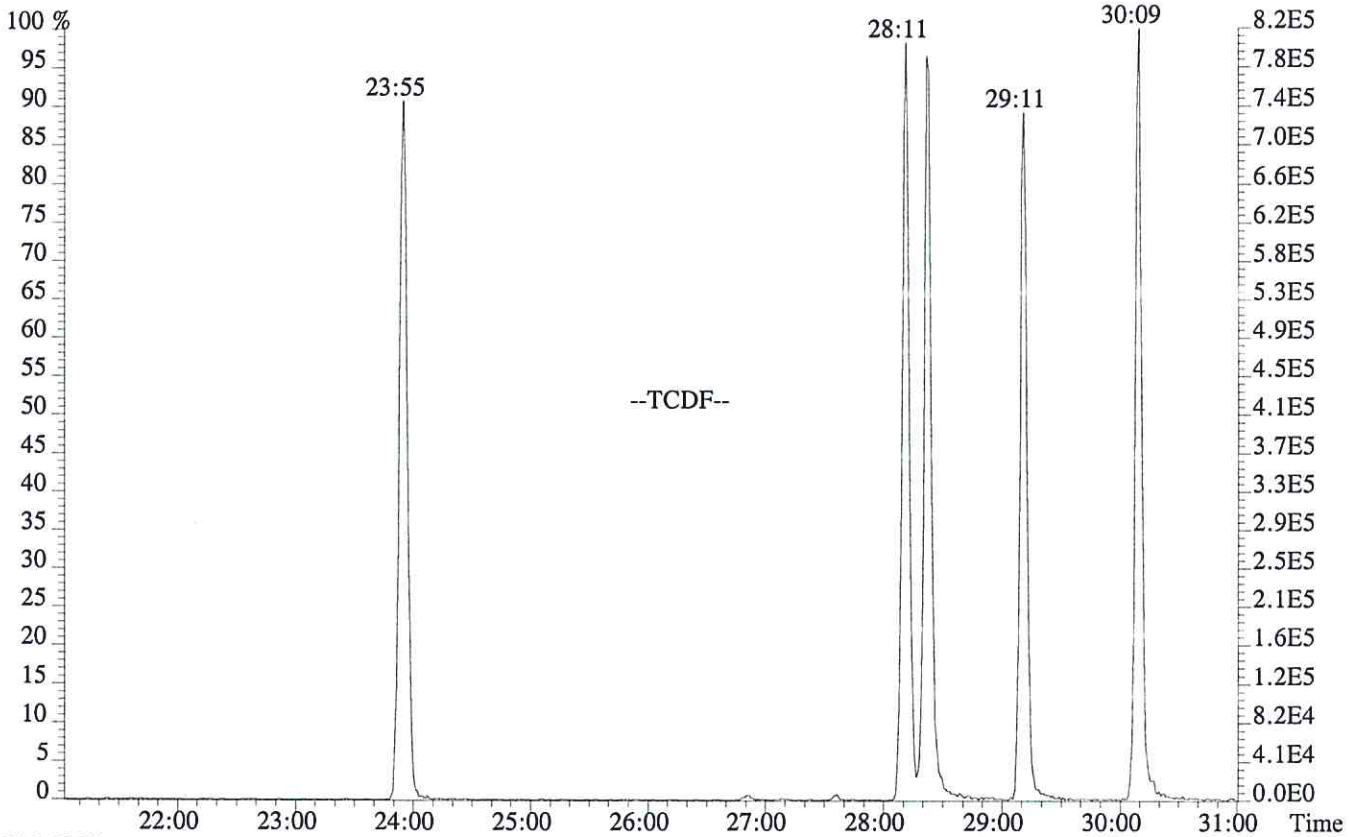
File:P402423 #1-684 Acq:28-APR-2016 09:34:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
319.8965



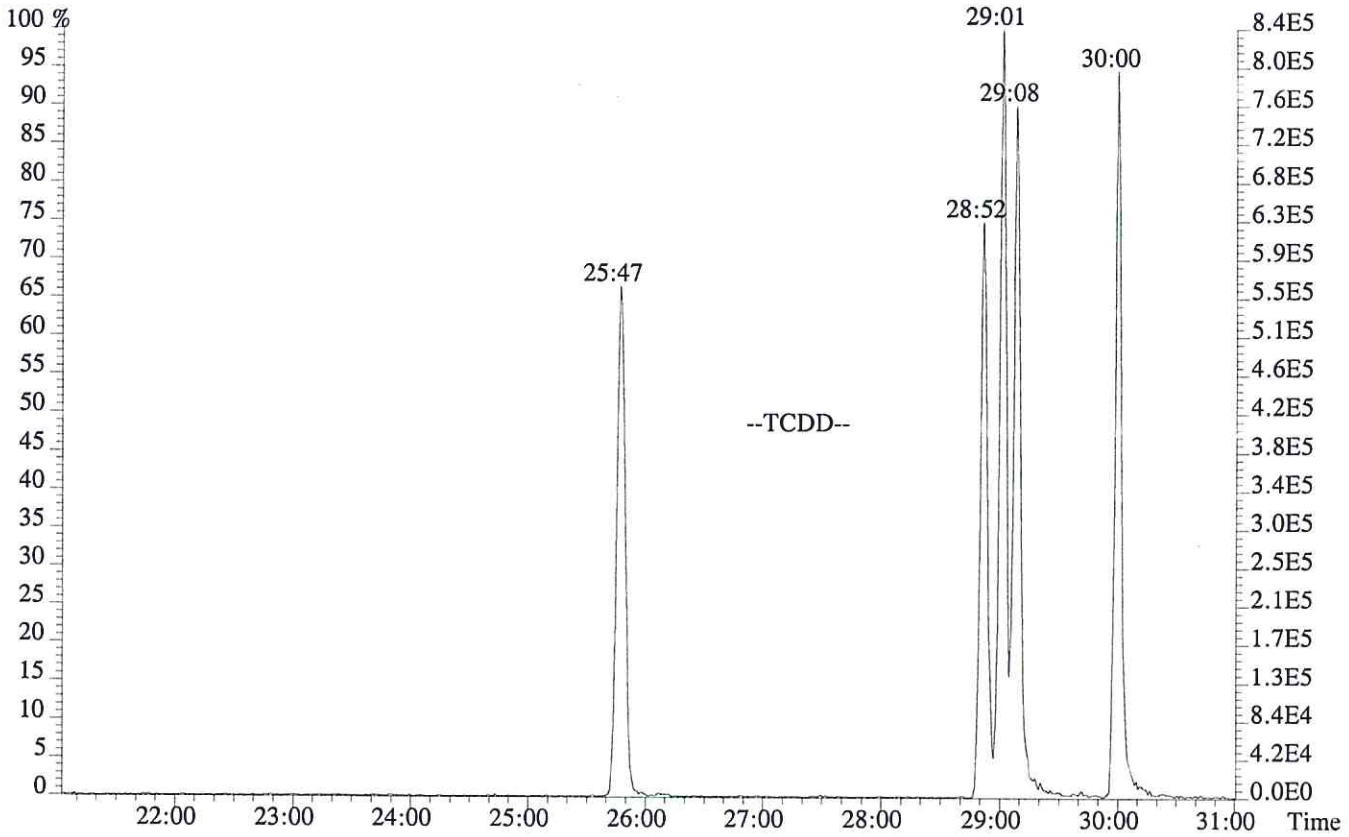
318.9792



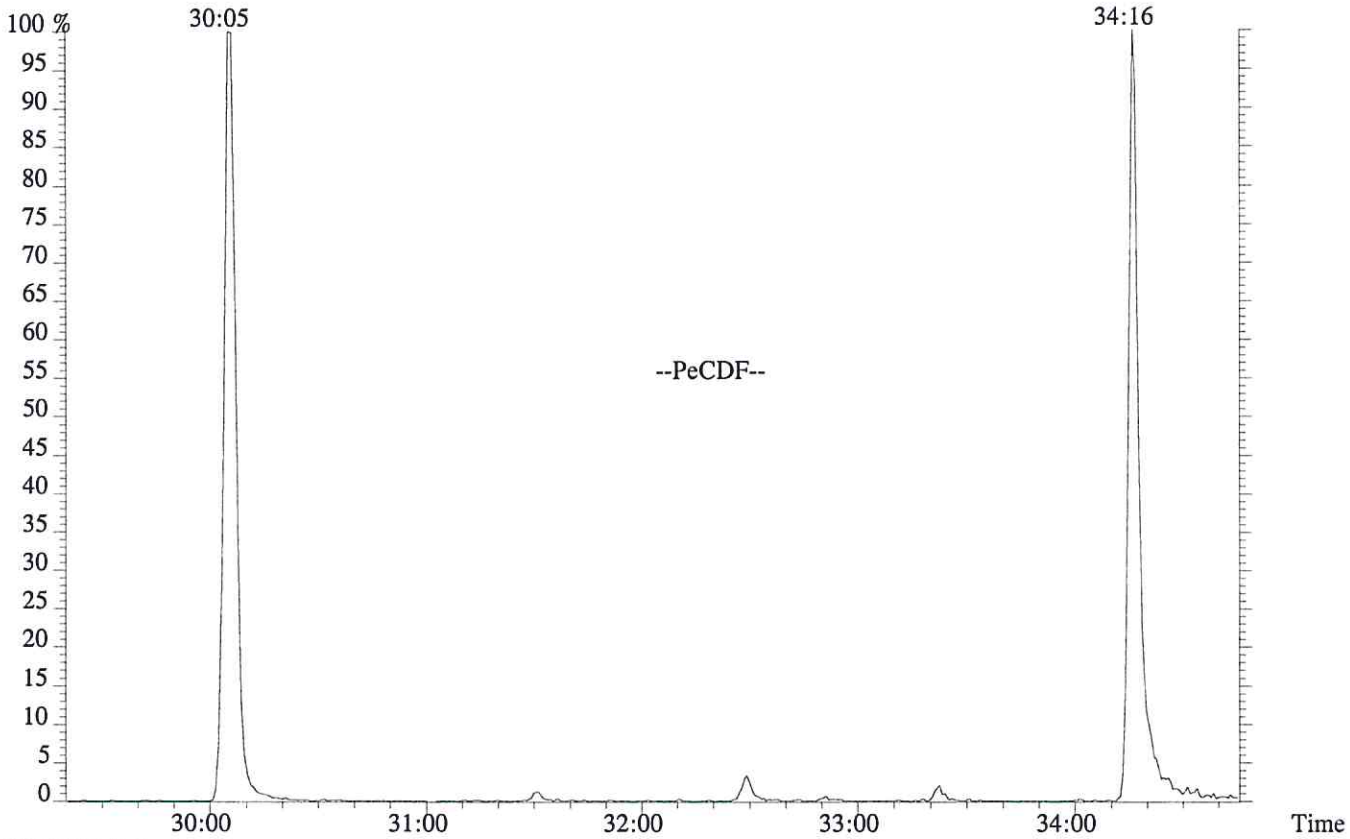
File:P402423 #1-684 Acq:28-APR-2016 09:34:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
303.9016



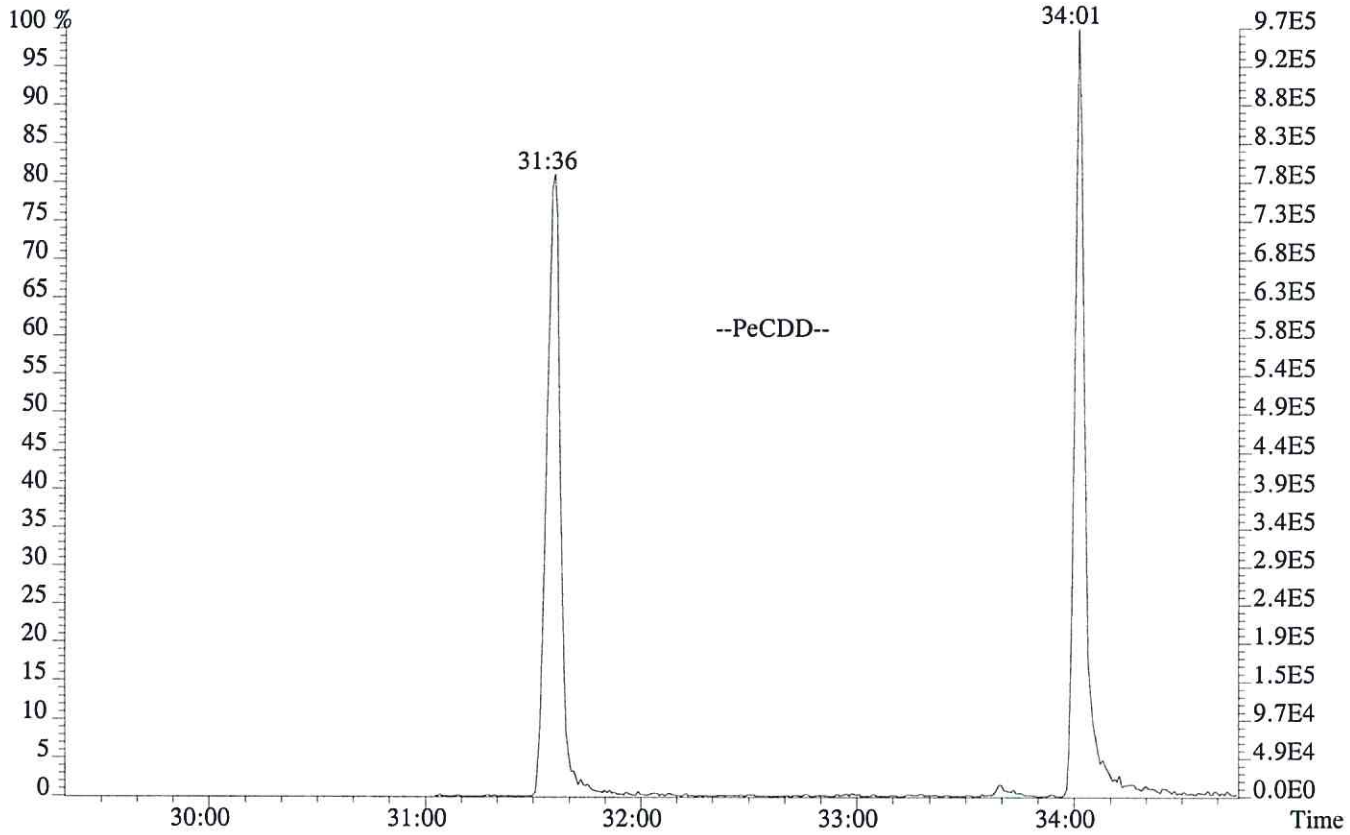
319.8965



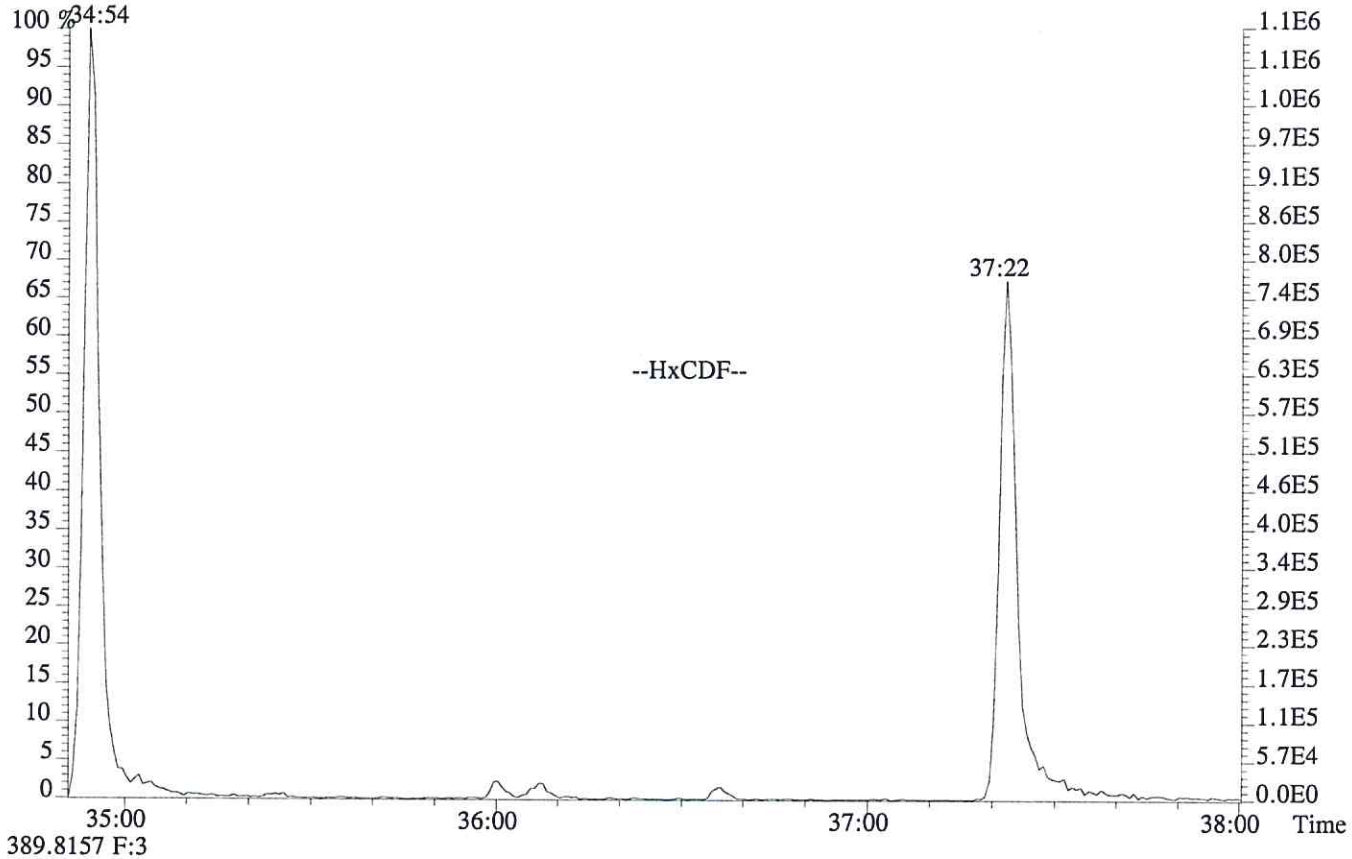
File:P402423 #1-684 Acq:28-APR-2016 09:34:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
339.8597,339.8597 F:2



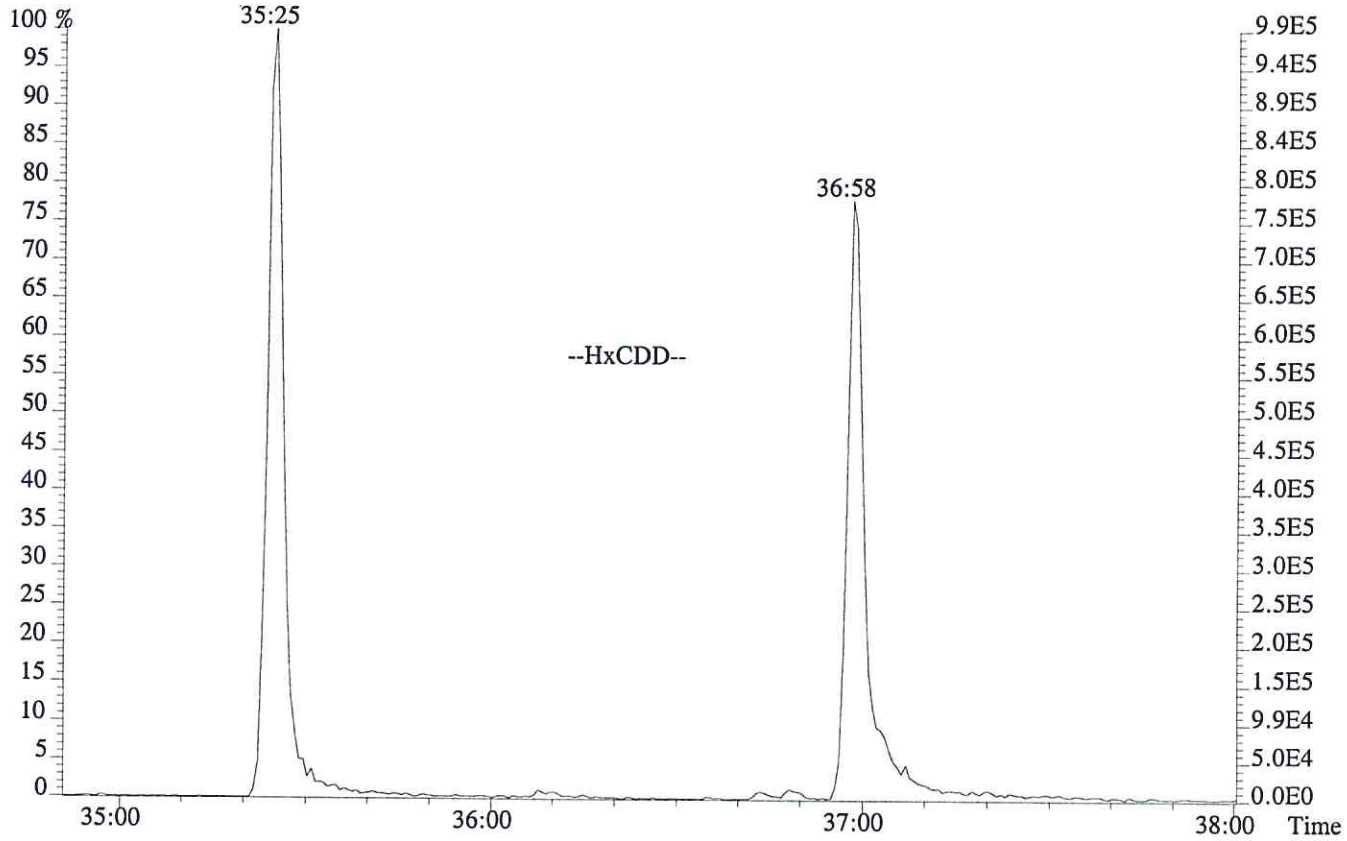
355.8546 F:2



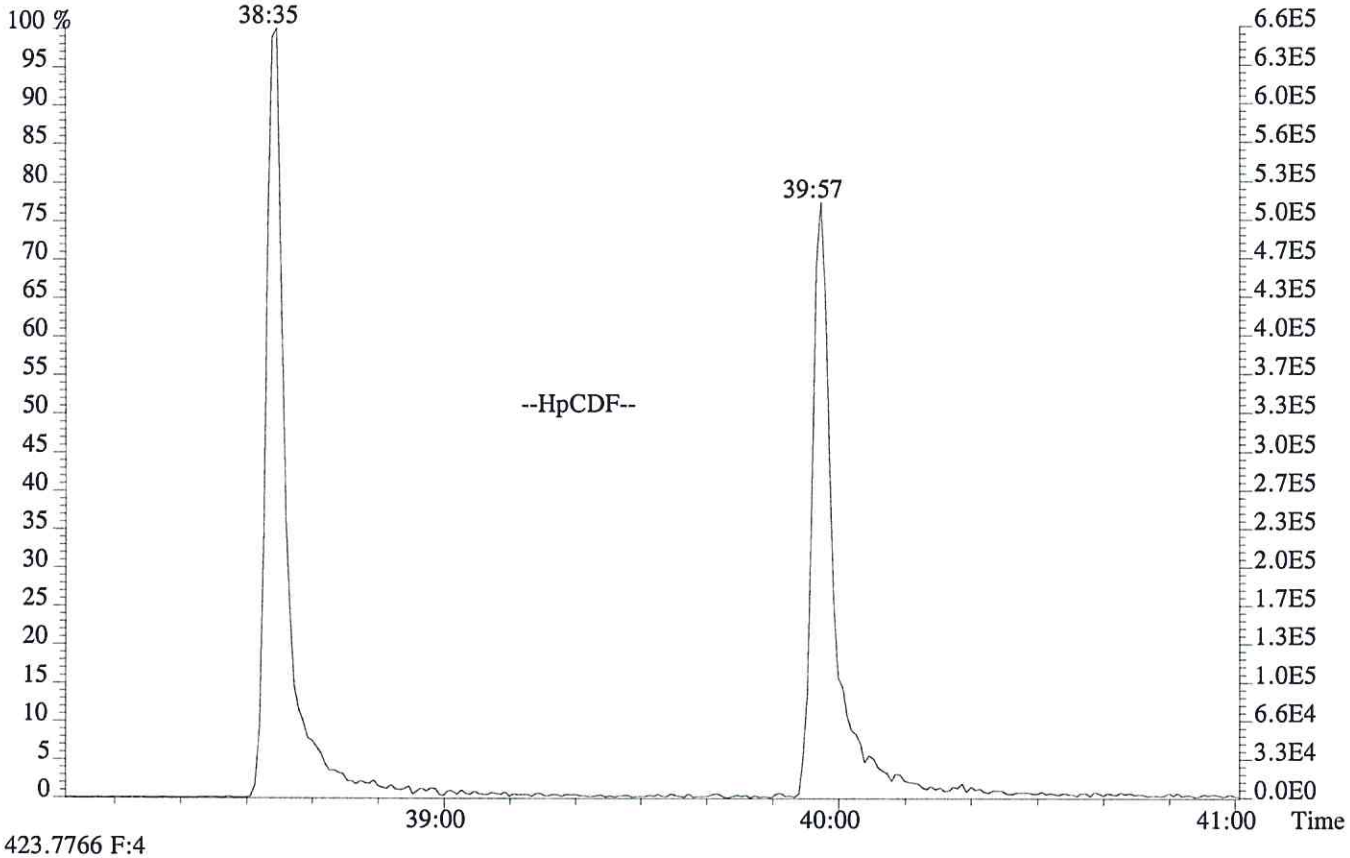
File:P402423 #1-285 Acq:28-APR-2016 09:34:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
373.8208 F:3



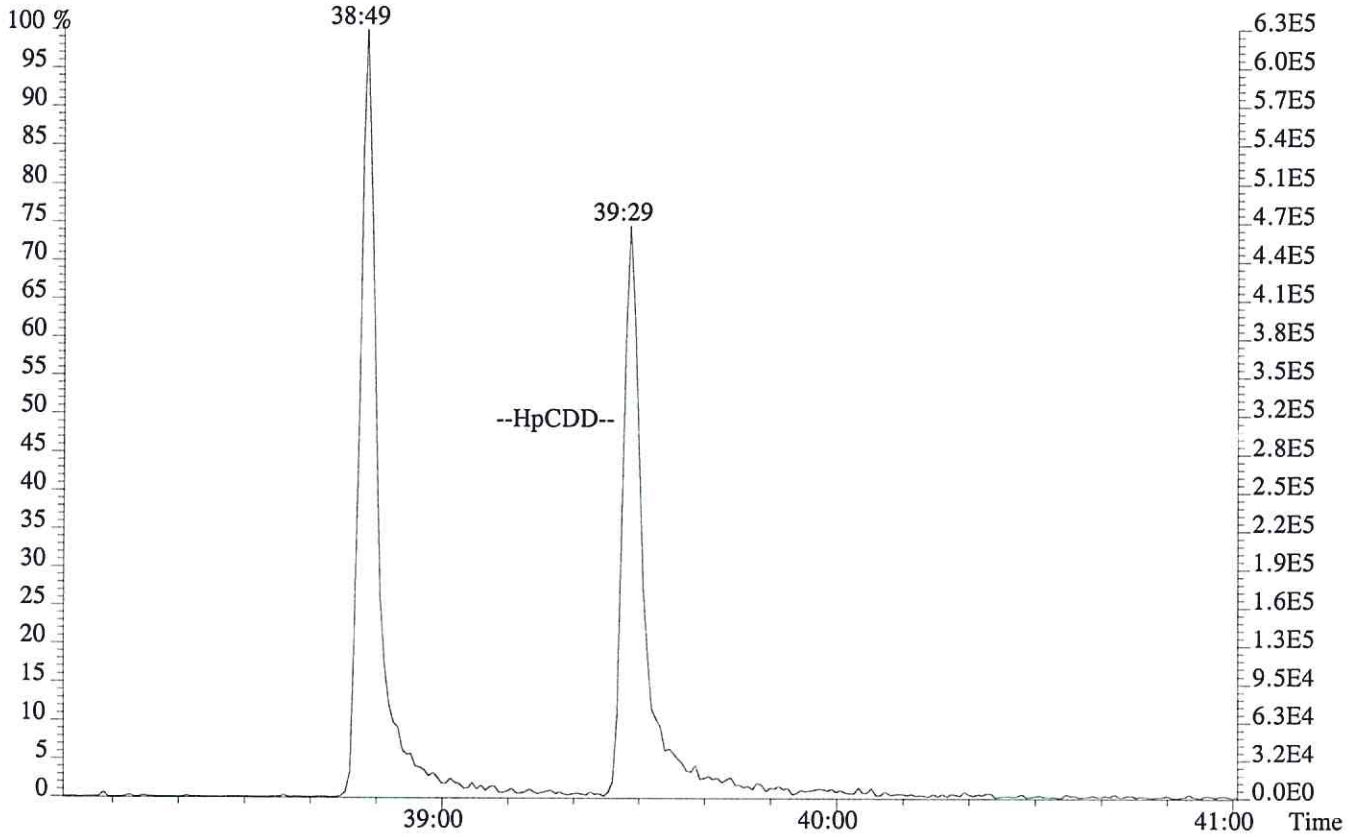
389.8157 F:3



File:P402423 #1-268 Acq:28-APR-2016 09:34:40 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOW DEFINE
407.7818 F:4



423.7766 F:4



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-06
Init. Calib. Date(s).: 04/28/16 Method 1613/8290
Init. Calib. Time.: 09:34:40

	RR/RRF								
Target Analytes	CS0.5	CS1	CS2	CS3	CS4	CS5	MEAN RR/RRF	%RSD	QC LIMITS
2,3,7,8-TCDD	0.91	0.90	0.81	0.83	0.87	0.92	0.87	5.11	+/-20%
2,3,7,8-TCDF	0.77	0.78	0.70	0.73	0.80	0.83	0.77	6.30	+/-20%
1,2,3,7,8-PeCDF	0.83	0.83	0.81	0.89	0.92	0.95	0.87	6.45	+/-20%
1,2,3,7,8-PeCDD	0.77	0.80	0.78	0.80	0.83	0.85	0.81	3.88	+/-20%
2,3,4,7,8-PeCDF	0.78	0.80	0.78	0.84	0.87	0.88	0.83	5.42	+/-20%
1,2,3,4,7,8-HxCDF	1.05	1.05	1.05	1.11	1.14	1.18	1.10	5.09	+/-20%
1,2,3,6,7,8-HxCDF	1.03	0.96	0.99	1.04	1.07	1.10	1.03	5.15	+/-20%
1,2,3,4,7,8-HxCDD	0.85	0.85	0.81	0.89	0.93	0.95	0.88	5.86	+/-20%
1,2,3,6,7,8-HxCDD	0.86	0.90	0.84	0.89	0.93	0.94	0.89	4.47	+/-20%
1,2,3,7,8,9-HxCDD	0.94	0.93	0.86	0.94	0.98	1.02	0.95	5.65	+/-20%
2,3,4,6,7,8-HxCDF	0.96	1.00	0.96	1.03	1.06	1.08	1.02	4.92	+/-20%
1,2,3,7,8,9-HxCDF	0.97	1.01	0.97	1.05	1.08	1.11	1.03	5.63	+/-20%
1,2,3,4,6,7,8-HpCDF	1.18	1.16	1.19	1.25	1.31	1.34	1.24	6.10	+/-20%
1,2,3,4,6,7,8-HpCDD	0.83	0.83	0.85	0.90	0.92	0.96	0.88	6.05	+/-20%
1,2,3,4,7,8,9-HpCDF	1.18	1.18	1.09	1.18	1.22	1.26	1.19	4.97	+/-20%
OCDD	1.01	0.94	0.92	0.97	1.01	1.02	0.98	4.32	+/-20%
OCDF	1.00	1.01	0.97	1.04	1.08	1.11	1.03	5.13	+/-20%
Labeled Compounds									
13C-2,3,7,8-TCDD	0.96	0.97	0.96	0.96	0.97	0.99	0.97	1.04	+/-35%
13C-1,2,3,7,8-PeCDD	0.92	0.90	0.89	0.89	0.91	1.01	0.92	5.11	+/-35%
13C-1,2,3,4,7,8-HxCDD	0.85	0.86	0.87	0.91	0.89	0.87	0.88	2.48	+/-35%
13C-1,2,3,6,7,8-HxCDD	0.96	0.94	0.95	0.95	0.93	0.88	0.93	2.93	+/-35%
13C-1,2,3,4,6,7,8-HpCDD	0.78	0.84	0.82	0.83	0.83	0.80	0.82	2.83	+/-35%
13C-OCDD	0.58	0.64	0.65	0.64	0.65	0.65	0.63	4.10	+/-35%
13C-2,3,7,8-TCDF	1.12	1.15	1.12	1.12	1.14	1.17	1.14	1.79	+/-35%
13C-1,2,3,7,8-PeCDF	1.08	1.07	1.07	1.07	1.10	1.19	1.10	4.40	+/-35%
13C-2,3,4,7,8-PeCDF	1.07	1.08	1.05	1.05	1.08	1.19	1.09	4.69	+/-35%
13C-1,2,3,4,7,8-HxCDF	0.88	0.89	0.89	0.93	0.89	0.88	0.89	2.10	+/-35%
13C-1,2,3,6,7,8-HxCDF	1.07	1.07	1.06	1.08	1.05	1.01	1.06	2.49	+/-35%
13C-2,3,4,6,7,8-HxCDF	0.95	0.96	0.96	0.99	0.96	0.94	0.96	1.74	+/-35%
13C-1,2,3,7,8,9-HxCDF	0.82	0.84	0.85	0.86	0.85	0.84	0.84	1.67	+/-35%
13C-1,2,3,4,6,7,8-HpCDF	0.73	0.75	0.76	0.76	0.74	0.72	0.74	2.03	+/-35%
13C-1,2,3,4,7,8,9-HpCDF	0.61	0.66	0.67	0.67	0.67	0.66	0.66	3.41	+/-35%
37Cl-2,3,7,8-TCDD	0.93	0.94	0.93	0.93	0.98	1.03	0.96	4.21	+/-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

FORM VI-HR CDD-1 DLM02.2

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-06
Init. Calib. Date(s).: 04/28/16 Method 1613/8290
Init. Calib. Time.: 09:34:40

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	0.84	0.73	0.71	0.75	0.75	0.76		0.65-0.89
2,3,7,8-TCDD	320/322	0.85	0.75	0.81	0.73	0.75	0.75		0.65-0.89
1,2,3,7,8-PeCDF	340/342	1.55	1.67	1.55	1.56	1.54	1.54		1.32-1.78
2,3,4,7,8-PeCDF	340/342	1.55	1.63	1.54	1.56	1.55	1.52		1.32-1.78
1,2,3,7,8-PeCDD	356/358	1.37	1.50	1.59	1.56	1.53	1.53		1.32-1.78
1,2,3,4,7,8-HxCDF	374/376	1.23	1.27	1.26	1.22	1.21	1.23		1.05-1.43
1,2,3,6,7,8-HxCDF	374/376	1.22	1.15	1.20	1.23	1.23	1.23		1.05-1.43
2,3,4,6,7,8-HxCDF	374/376	1.18	1.29	1.26	1.24	1.24	1.22		1.05-1.43
1,2,3,7,8,9-HxCDF	374/376	1.24	1.28	1.22	1.21	1.23	1.23		1.05-1.43
1,2,3,4,7,8-HxCDD	390/392	1.39	1.19	1.20	1.24	1.22	1.22		1.05-1.43
1,2,3,6,7,8-HxCDD	390/392	1.18	1.20	1.23	1.24	1.23	1.22		1.05-1.43
1,2,3,7,8,9-HxCDD	390/392	1.25	1.15	1.25	1.22	1.21	1.25		1.05-1.43
1,2,3,4,6,7,8-HpCDF	408/410	0.91	1.02	1.03	1.01	1.02	1.01		0.88-1.20
1,2,3,4,7,8,9-HpCDF	408/410	1.18	0.97	1.04	1.02	1.03	1.03		0.88-1.20
1,2,3,4,6,7,8-HpCDD	424/426	0.99	1.05	1.01	1.04	1.01	1.03		0.88-1.20
OCDF	442/444	0.89	0.94	0.87	0.89	0.90	0.89		0.76-1.02
OCDD	458/460	0.89	0.85	0.88	0.87	0.87	0.87		0.76-1.02
13C-2,3,7,8-TCDD	332/334	0.77	0.77	0.78	0.78	0.78	0.77		0.65-0.89
13C-1,2,3,7,8-PeCDD	368/370	1.56	1.59	1.57	1.57	1.57	1.56		1.32-1.78
13C-1,2,3,4,7,8-HxCDD	402/404	1.24	1.24	1.24	1.25	1.24	1.25		1.05-1.43
13C-1,2,3,6,7,8-HxCDD	402/404	1.24	1.24	1.26	1.23	1.25	1.25		1.05-1.43
13C-1,2,3,4,6,7,8-HpCDD	436/438	1.04	1.03	1.04	1.04	1.04	1.03		0.88-1.20
13C-OCDD	470/472	0.89	0.88	0.89	0.89	0.89	0.88		0.76-1.02
13C-2,3,7,8-TCDF	316/318	0.76	0.77	0.77	0.77	0.76	0.77		0.65-0.89
13C-1,2,3,7,8-PeCDF	352/354	1.57	1.58	1.56	1.54	1.55	1.57		1.32-1.78
13C-2,3,4,7,8-PeCDF	352/354	1.54	1.56	1.56	1.55	1.56	1.55		1.32-1.78
13C-1,2,3,4,7,8-HxCDF	384/386	0.51	0.51	0.51	0.50	0.51	0.50		0.43-0.59
13C-1,2,3,6,7,8-HxCDF	384/386	0.51	0.51	0.50	0.51	0.51	0.51		0.43-0.59
13C-2,3,4,6,7,8-HxCDF	384/386	0.51	0.51	0.51	0.50	0.51	0.50		0.43-0.59
13C-1,2,3,7,8,9-HxCDF	384/386	0.51	0.48	0.51	0.50	0.51	0.50		0.43-0.59
13C-1,2,3,4,6,7,8-HpCDF	418/420	0.43	0.44	0.43	0.44	0.44	0.44		0.37-0.51
13C-1,2,3,4,7,8,9-HpCDF	418/420	0.44	0.43	0.44	0.44	0.43	0.42		0.37-0.51
13C-1,2,3,4-TCDD	332/334	0.77	0.79	0.77	0.79	0.78	0.79		0.65-0.89
13C-1,2,3,7,8,9-HxCDD	402/404	1.23	1.23	1.23	1.17	1.24	1.23		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 P402425 Samp: 1 Inj: 1 Acquired: 28-APR-16 11:12:25
Processed: 28-APR-16 16:59:48 Sample ID: CS0.5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:21	6.640e+01	7.867e+01	0.84	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	32:29	4.604e+02	2.973e+02	1.55	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	33:22	4.292e+02	2.776e+02	1.55	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	36:00	3.549e+02	2.880e+02	1.23	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	36:06	4.193e+02	3.435e+02	1.22	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:36	3.423e+02	2.899e+02	1.18	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	37:20	3.044e+02	2.456e+02	1.24	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:34	2.848e+02	3.113e+02	0.91	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:57	2.712e+02	2.306e+02	1.18	yes	no	1.187
10	Unk	OCDF	42:26	3.768e+02	4.247e+02	0.89	yes	no	1.035
11	Unk	2,3,7,8-TCDD	29:07	6.750e+01	7.952e+01	0.85	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:39	3.452e+02	2.522e+02	1.37	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:44	2.904e+02	2.095e+02	1.39	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:49	3.065e+02	2.593e+02	1.18	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	37:03	3.254e+02	2.593e+02	1.25	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	39:29	2.210e+02	2.240e+02	0.99	yes	no	0.882
17	Unk	OCDD	42:14	3.841e+02	4.321e+02	0.89	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	28:20	3.270e+04	4.293e+04	0.76	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	32:28	4.452e+04	2.838e+04	1.57	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	33:21	4.398e+04	2.851e+04	1.54	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:59	1.644e+04	3.243e+04	0.51	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	36:06	1.994e+04	3.946e+04	0.51	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:35	1.781e+04	3.469e+04	0.51	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	37:20	1.522e+04	3.012e+04	0.51	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:33	1.220e+04	2.822e+04	0.43	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:57	1.029e+04	2.364e+04	0.44	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	29:06	2.826e+04	3.671e+04	0.77	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	33:38	3.781e+04	2.420e+04	1.56	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:43	2.590e+04	2.093e+04	1.24	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:48	2.925e+04	2.355e+04	1.24	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:28	2.189e+04	2.106e+04	1.04	yes	no	0.817
32	IS	13C-OCDD	42:13	3.035e+04	3.402e+04	0.89	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	28:33	2.947e+04	3.809e+04	0.77	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:02	3.046e+04	2.481e+04	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:08	1.579e+02				no	0.958

ALS ENVIRONMENTAL
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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76554

Run #1 Filename P402425 Samp: 1 Inj: 1 Acquired: 28-APR-16 11:12:25
Processed: 28-APR-16 16:59:481 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	1.48e+04	3.32e+02	4.5e+01	1.60e+04	7.92e+02	2.0e+01
2	1,2,3,7,8-PeCDF	8.54e+04	4.00e+02	2.1e+02	5.41e+04	1.17e+03	4.6e+01
3	2,3,4,7,8-PeCDF	8.53e+04	4.00e+02	2.1e+02	5.74e+04	1.17e+03	4.9e+01
4	1,2,3,4,7,8-HxCDF	7.37e+04	5.48e+02	1.3e+02	6.16e+04	2.00e+01	3.1e+03
5	1,2,3,6,7,8-HxCDF	8.11e+04	5.48e+02	1.5e+02	6.59e+04	2.00e+01	3.3e+03
6	2,3,4,6,7,8-HxCDF	7.35e+04	5.48e+02	1.3e+02	6.33e+04	2.00e+01	3.2e+03
7	1,2,3,7,8,9-HxCDF	6.20e+04	5.48e+02	1.1e+02	5.02e+04	2.00e+01	2.5e+03
8	1,2,3,4,6,7,8-HpCDF	6.07e+04	2.88e+02	2.1e+02	6.21e+04	4.80e+02	1.3e+02
9	1,2,3,4,7,8,9-HpCDF	4.89e+04	2.88e+02	1.7e+02	4.69e+04	4.80e+02	9.8e+01
10	OCDF	6.46e+04	2.88e+02	2.2e+02	7.14e+04	6.96e+02	1.0e+02
11	2,3,7,8-TCDD	1.37e+04	8.08e+02	1.7e+01	1.78e+04	7.24e+02	2.5e+01
12	1,2,3,7,8-PeCDD	7.04e+04	8.08e+02	8.7e+01	5.01e+04	1.28e+02	3.9e+02
13	1,2,3,4,7,8-HxCDD	6.39e+04	7.12e+02	9.0e+01	4.82e+04	4.52e+02	1.1e+02
14	1,2,3,6,7,8-HxCDD	6.39e+04	7.12e+02	9.0e+01	5.16e+04	4.52e+02	1.1e+02
15	1,2,3,7,8,9-HxCDD	6.26e+04	7.12e+02	8.8e+01	5.03e+04	4.52e+02	1.1e+02
16	1,2,3,4,6,7,8-HpCDD	3.82e+04	4.84e+02	7.9e+01	4.48e+04	2.68e+02	1.7e+02
17	OCDD	6.15e+04	4.04e+02	1.5e+02	7.23e+04	7.80e+02	9.3e+01
18	13C-2,3,7,8-TCDF	6.57e+06	2.36e+03	2.8e+03	8.50e+06	9.20e+02	9.2e+03
19	13C-1,2,3,7,8-PeCDF	8.31e+06	1.92e+02	4.3e+04	5.29e+06	6.16e+02	8.6e+03
20	13C-2,3,4,7,8-PeCDF	8.75e+06	1.92e+02	4.6e+04	5.63e+06	6.16e+02	9.1e+03
21	13C-1,2,3,4,7,8-HxCDF	3.52e+06	9.64e+02	3.7e+03	6.96e+06	8.04e+02	8.7e+03
22	13C-1,2,3,6,7,8-HxCDF	3.99e+06	9.64e+02	4.1e+03	7.81e+06	8.04e+02	9.7e+03
23	13C-2,3,4,6,7,8-HxCDF	3.75e+06	9.64e+02	3.9e+03	7.30e+06	8.04e+02	9.1e+03
24	13C-1,2,3,7,8,9-HxCDF	3.02e+06	9.64e+02	3.1e+03	5.89e+06	8.04e+02	7.3e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.53e+06	2.33e+03	1.1e+03	5.83e+06	3.56e+03	1.6e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.90e+06	2.33e+03	8.1e+02	4.36e+06	3.56e+03	1.2e+03
27	13C-2,3,7,8-TCDD	5.90e+06	5.78e+03	1.0e+03	7.55e+06	2.68e+03	2.8e+03
28	13C-1,2,3,7,8-PeCDD	7.46e+06	5.28e+02	1.4e+04	4.80e+06	4.60e+02	1.0e+04
29	13C-1,2,3,4,7,8-HxCDD	5.77e+06	2.69e+03	2.1e+03	4.67e+06	1.04e+03	4.5e+03
30	13C-1,2,3,6,7,8-HxCDD	5.82e+06	2.69e+03	2.2e+03	4.67e+06	1.04e+03	4.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.09e+06	7.52e+02	5.4e+03	3.85e+06	1.12e+02	3.4e+04
32	13C-OCDD	4.76e+06	6.04e+02	7.9e+03	5.40e+06	8.08e+02	6.7e+03
33	13C-1,2,3,4-TCDD	5.96e+06	5.78e+03	1.0e+03	7.70e+06	2.68e+03	2.9e+03
34	13C-1,2,3,7,8,9-HxCDD	5.73e+06	2.69e+03	2.1e+03	4.67e+06	1.04e+03	4.5e+03
35	37Cl-2,3,7,8-TCDD	3.17e+04	1.36e+03	2.3e+01			

ALS ENVIRONMENTAL
10450 Stancliff Road
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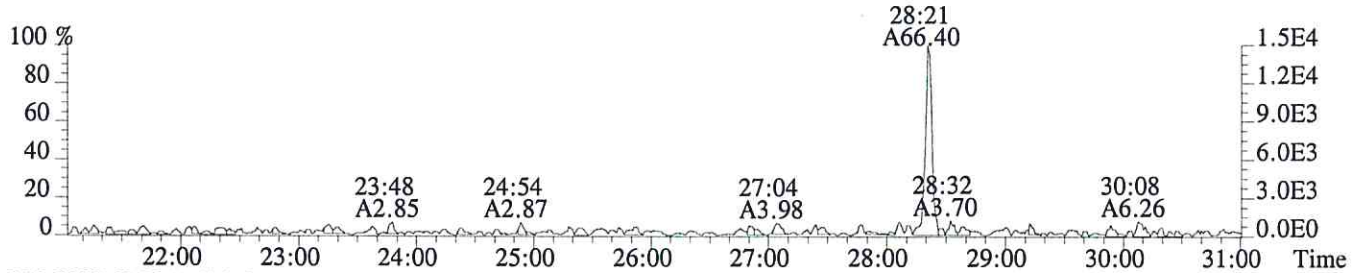
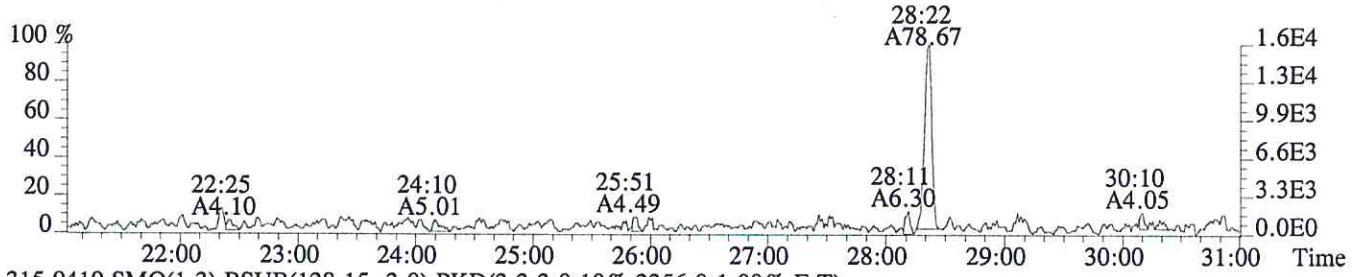
Office:(281)-530-5656. Fax:(281)530-5887

File:P402425 #1-684 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554

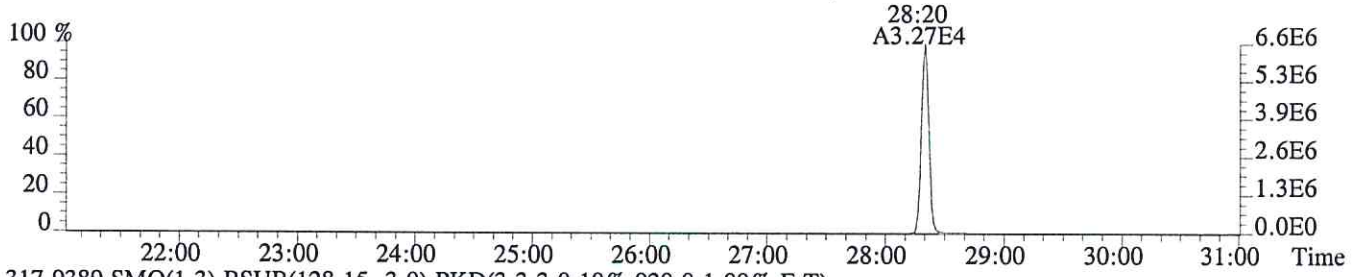
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,332.0,1.00%,F,T)



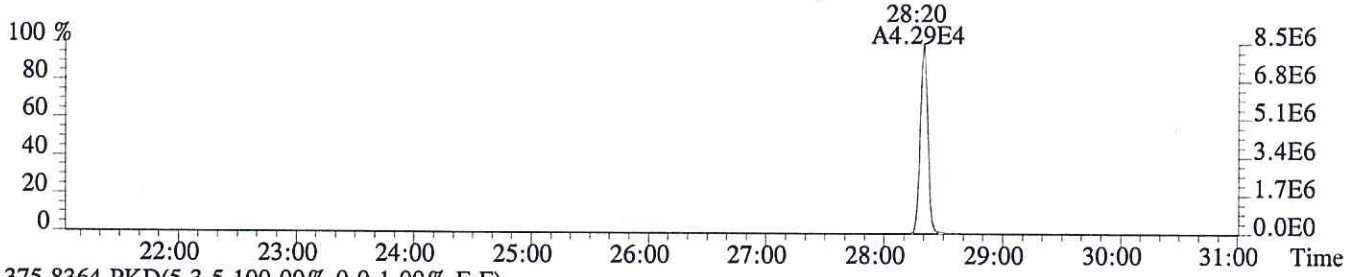
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,792.0,1.00%,F,T)



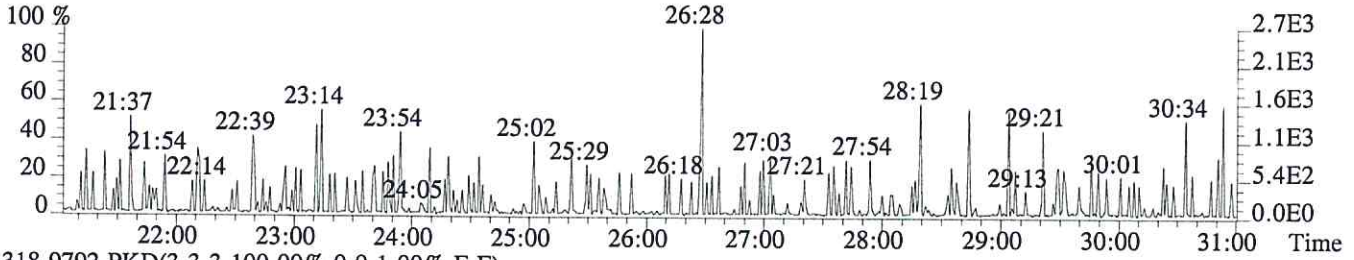
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2356.0,1.00%,F,T)



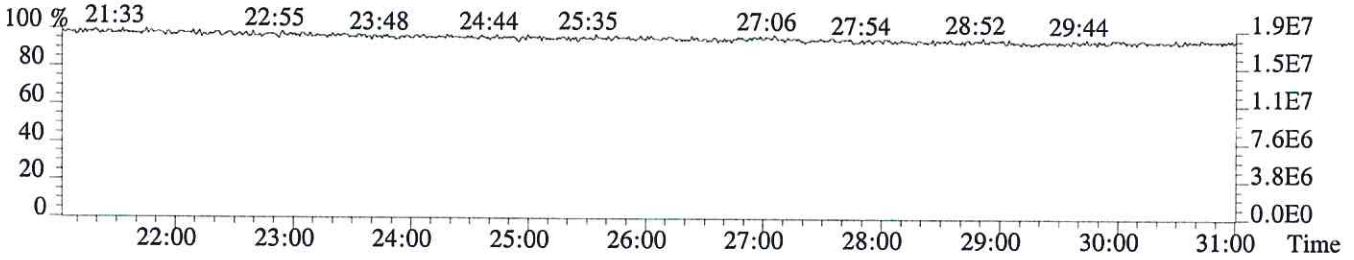
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,920.0,1.00%,F,T)



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

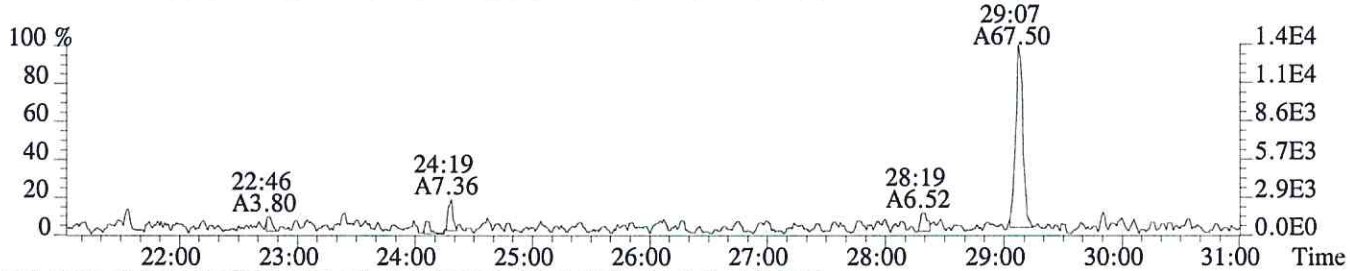


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

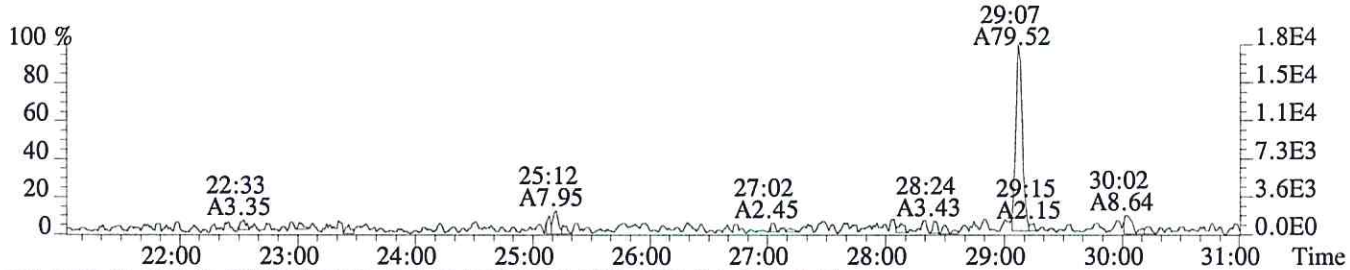


File:P402425 #1-684 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554

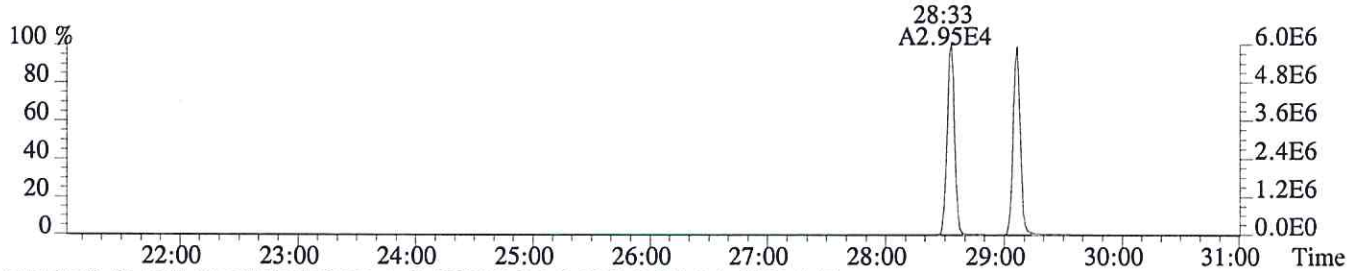
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,808.0,1.00%,F,T)



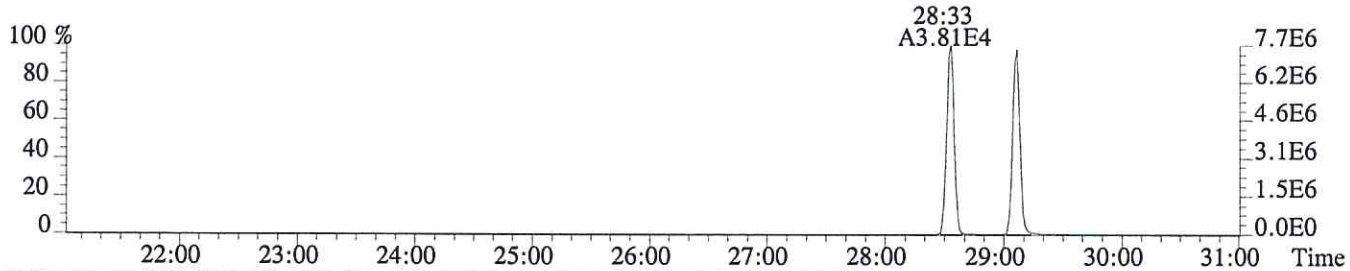
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,724.0,1.00%,F,T)



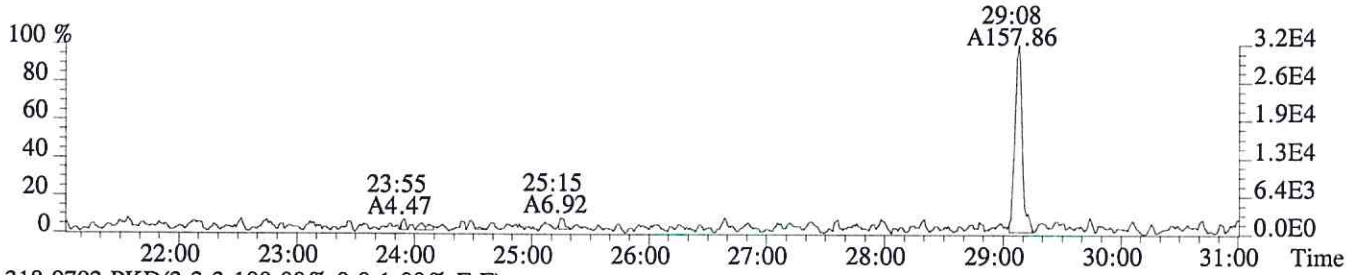
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5784.0,1.00%,F,T)



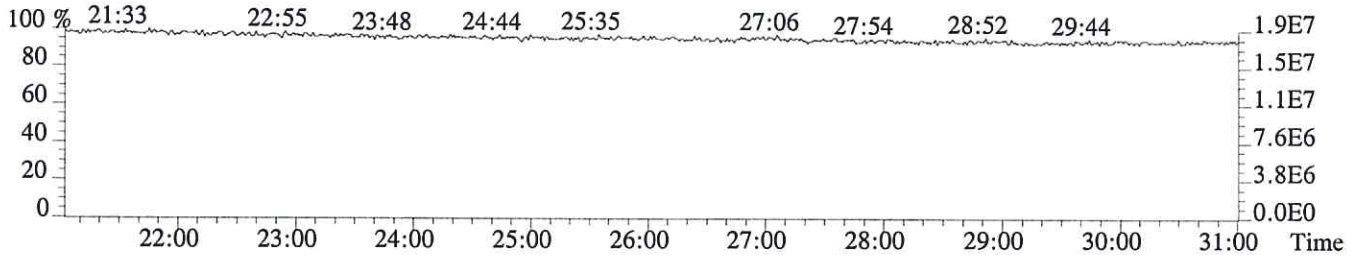
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2684.0,1.00%,F,T)



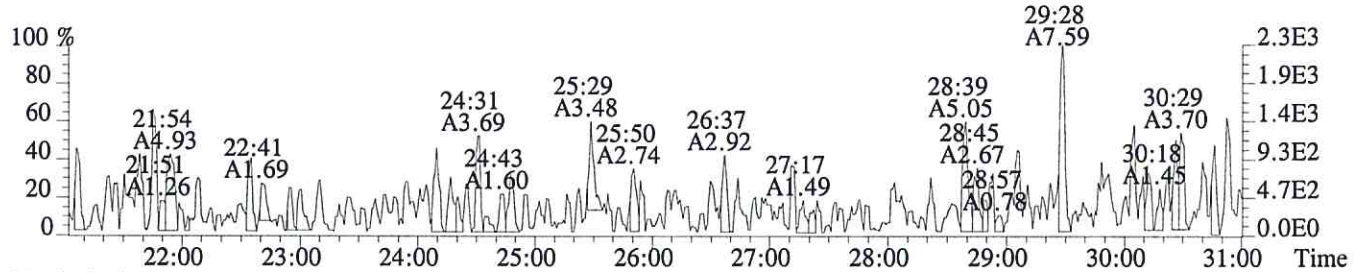
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1364.0,1.00%,F,T)



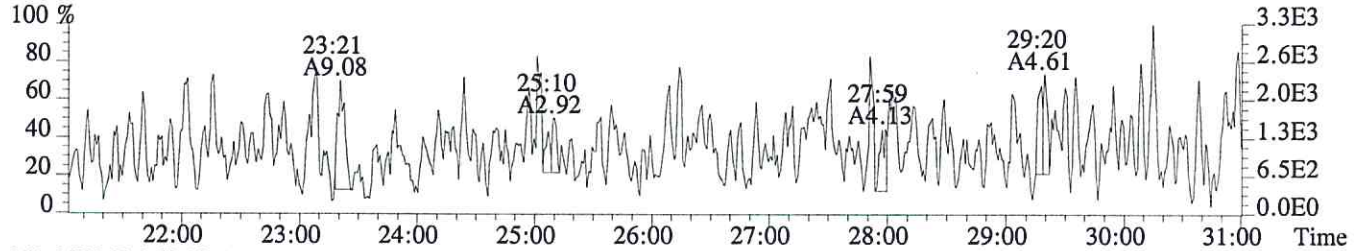
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



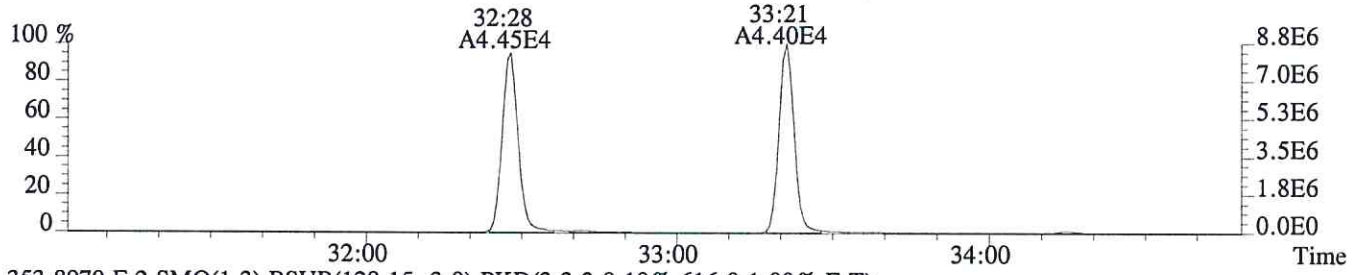
File:P402425 #1-684 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



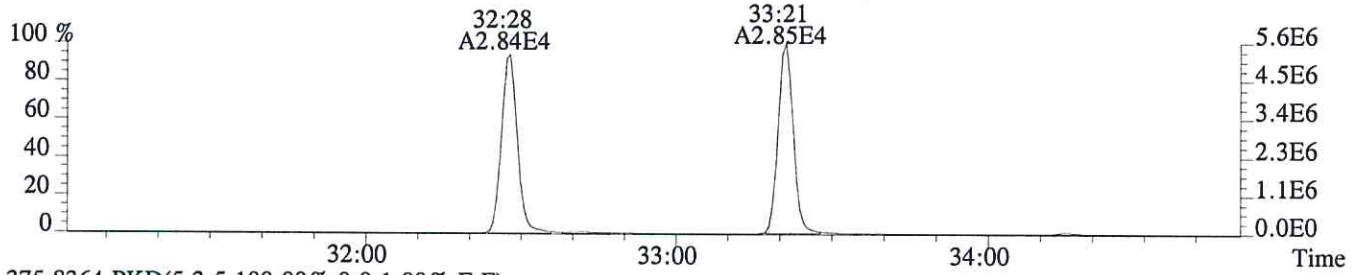
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1428.0,1.00%,F,T)



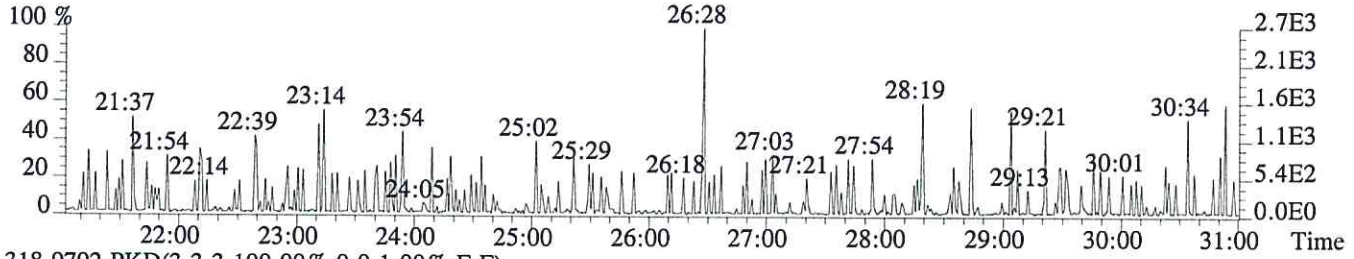
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,192.0,1.00%,F,T)



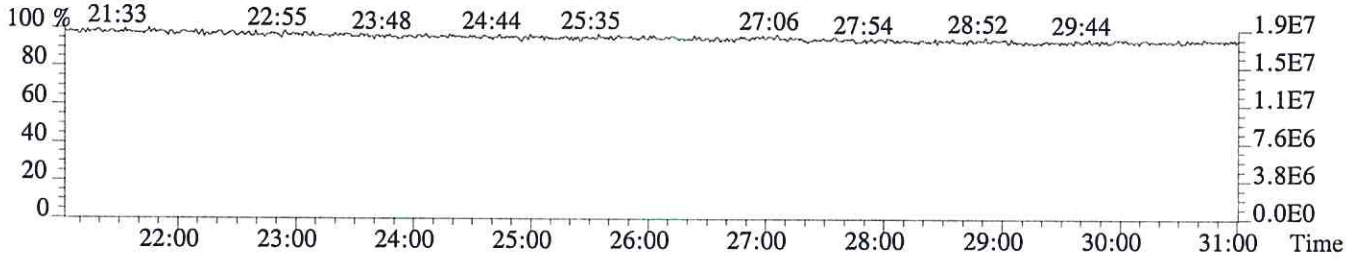
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,616.0,1.00%,F,T)



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

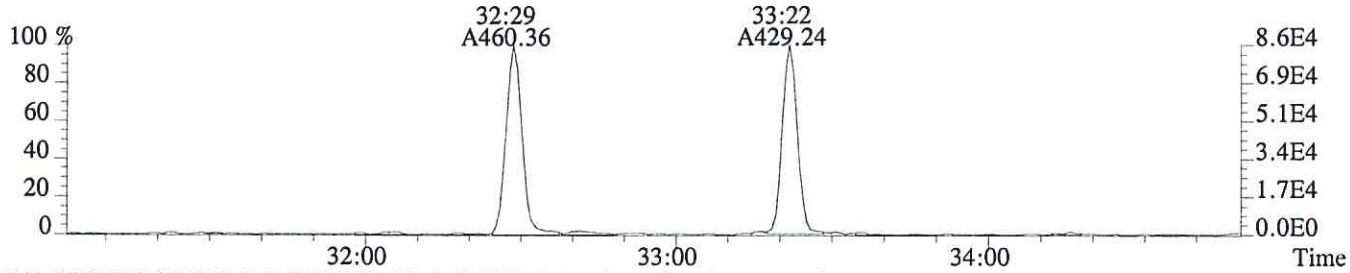


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

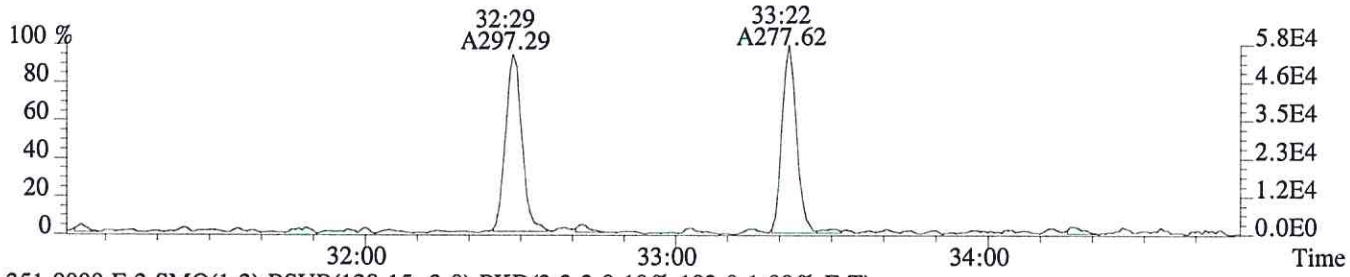


File:P402425 #1-340 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554

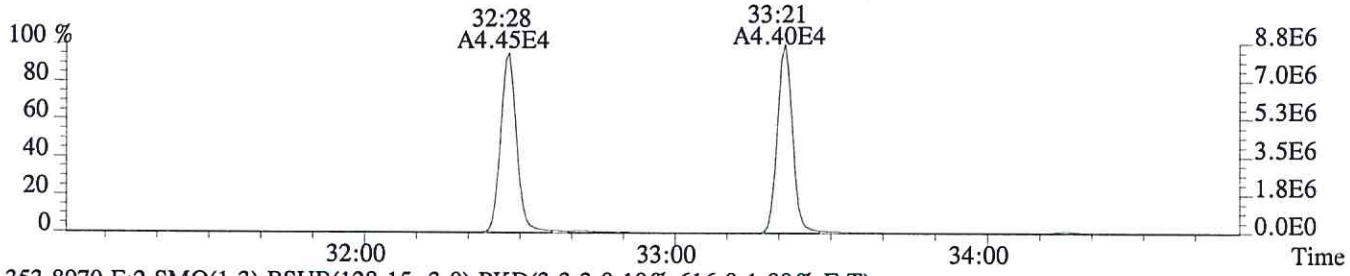
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,400.0,1.00%,F,T)



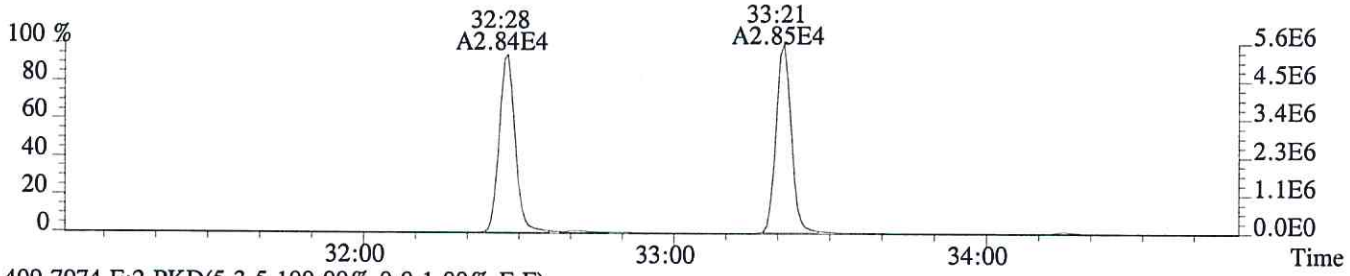
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1168.0,1.00%,F,T)



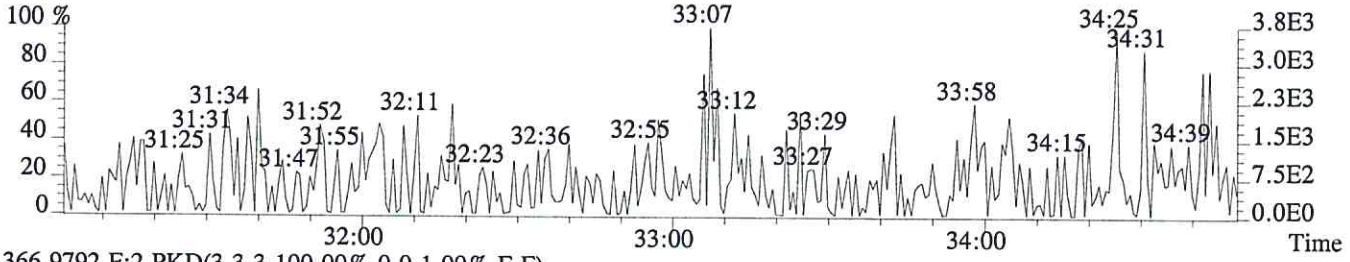
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,192.0,1.00%,F,T)



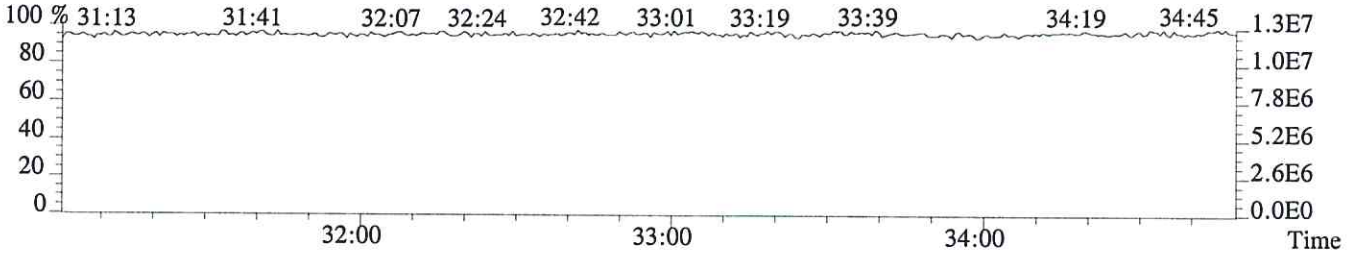
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,616.0,1.00%,F,T)



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

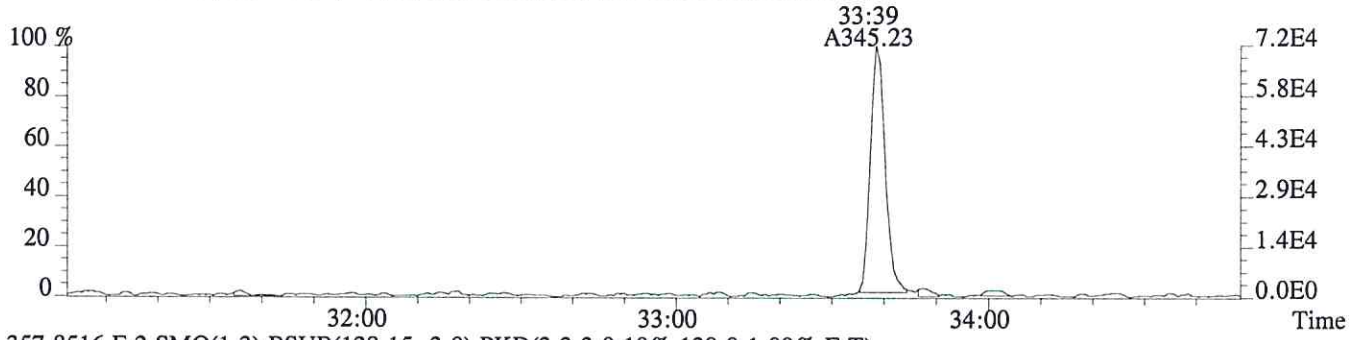


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

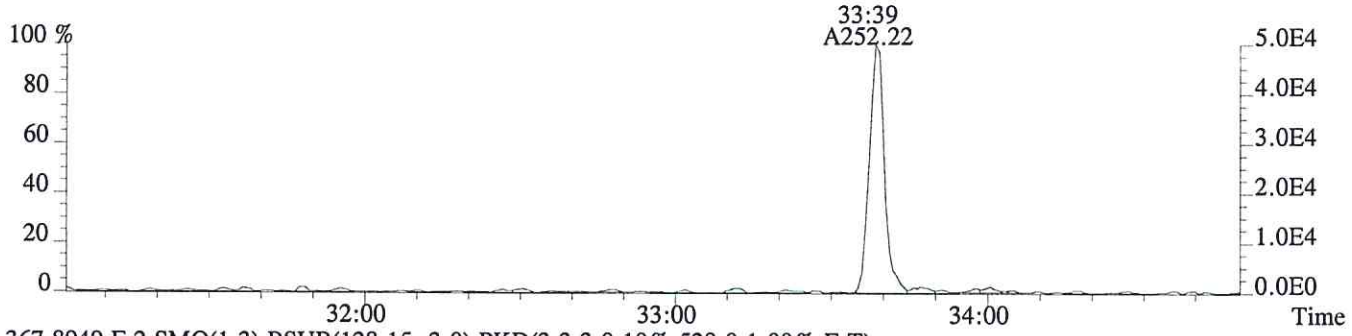


File:P402425 #1-340 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554

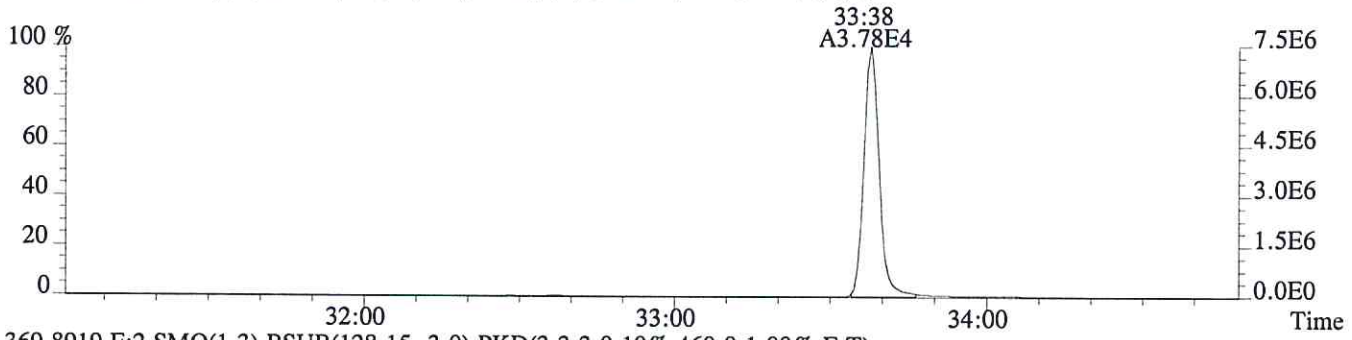
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,808.0,1.00%,F,T)



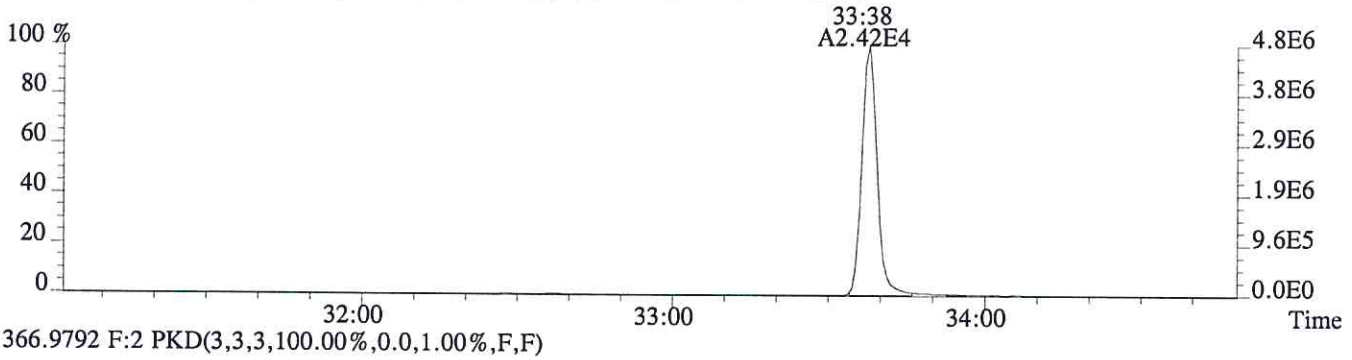
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,128.0,1.00%,F,T)



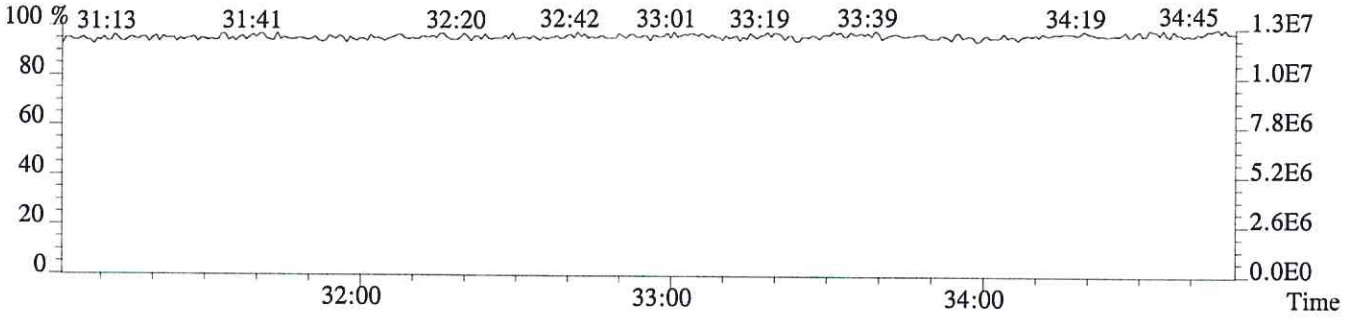
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,528.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,460.0,1.00%,F,T)

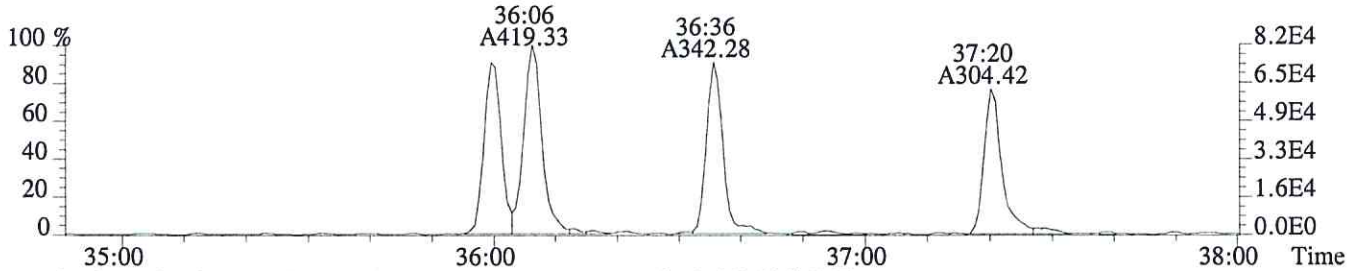


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

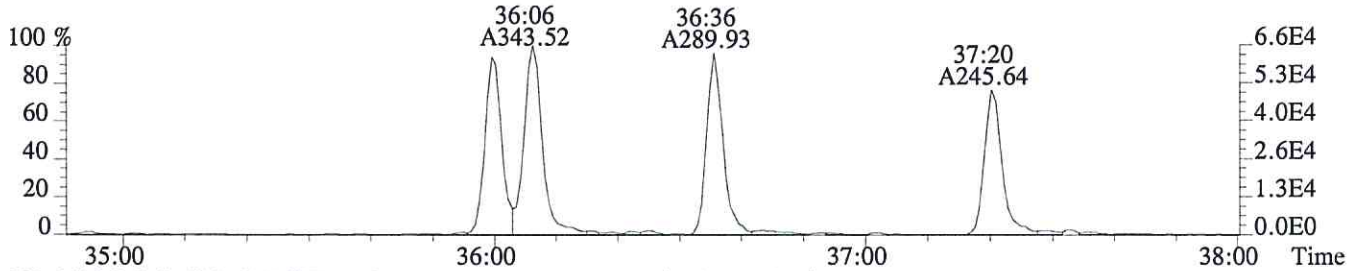


File:P402425 #1-285 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554

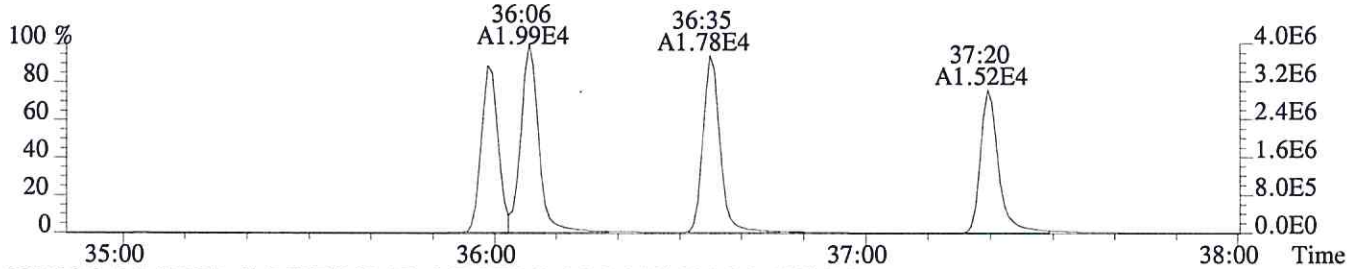
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,548.0,0.40%,F,T)



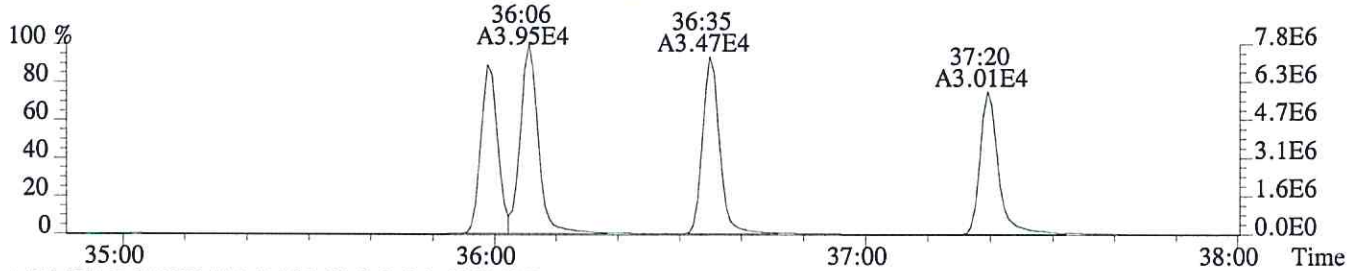
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,20.0,0.40%,F,T)



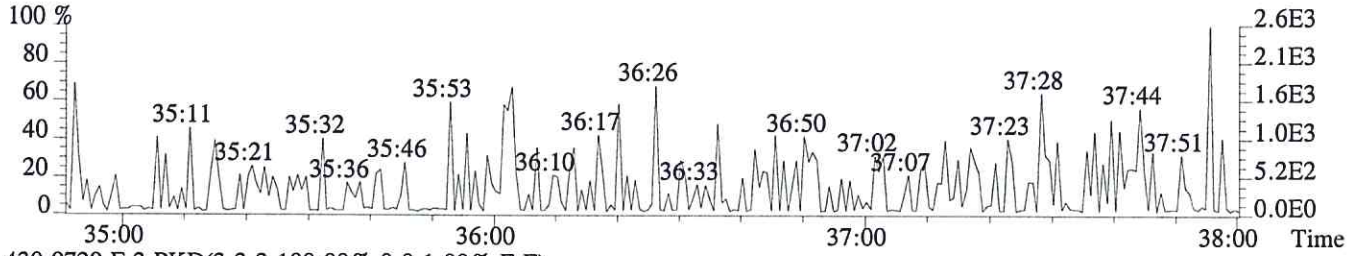
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,964.0,0.40%,F,T)



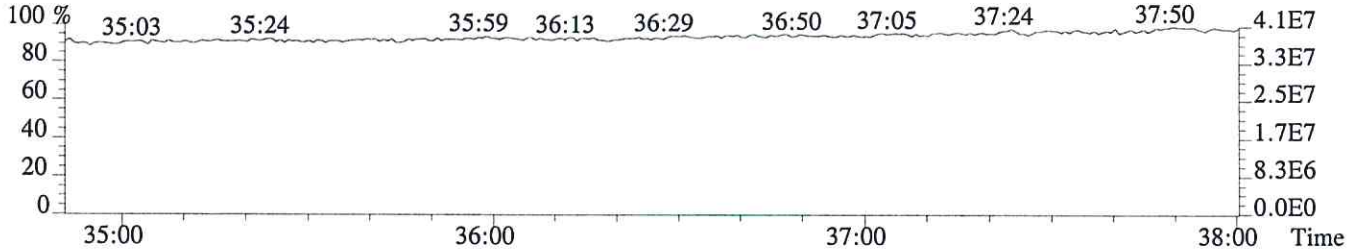
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,804.0,0.40%,F,T)



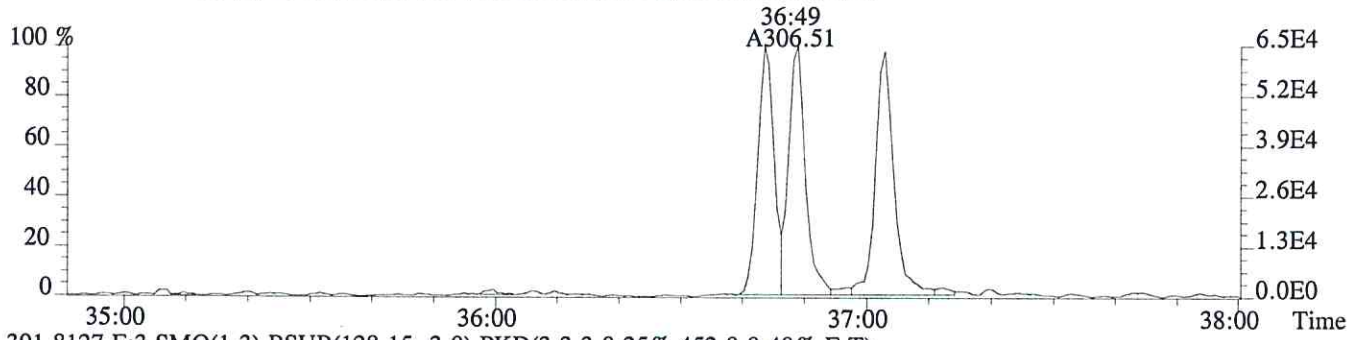
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



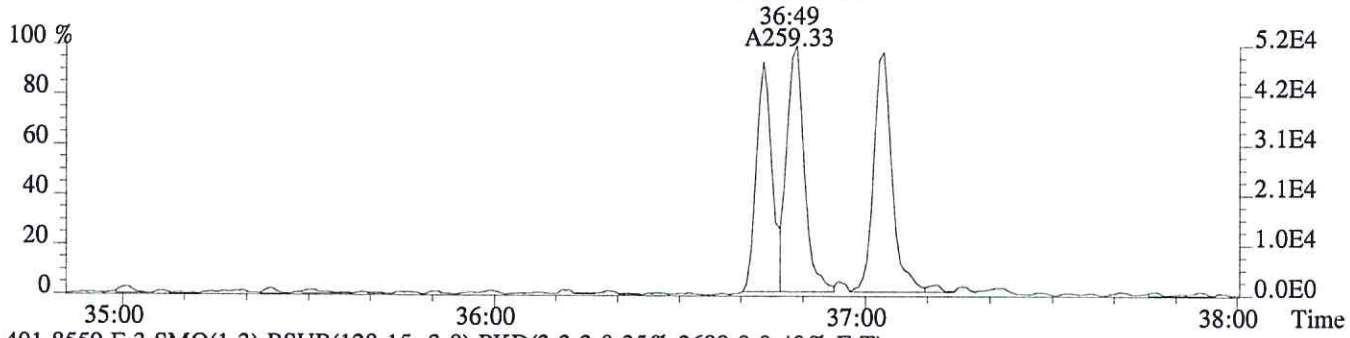
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



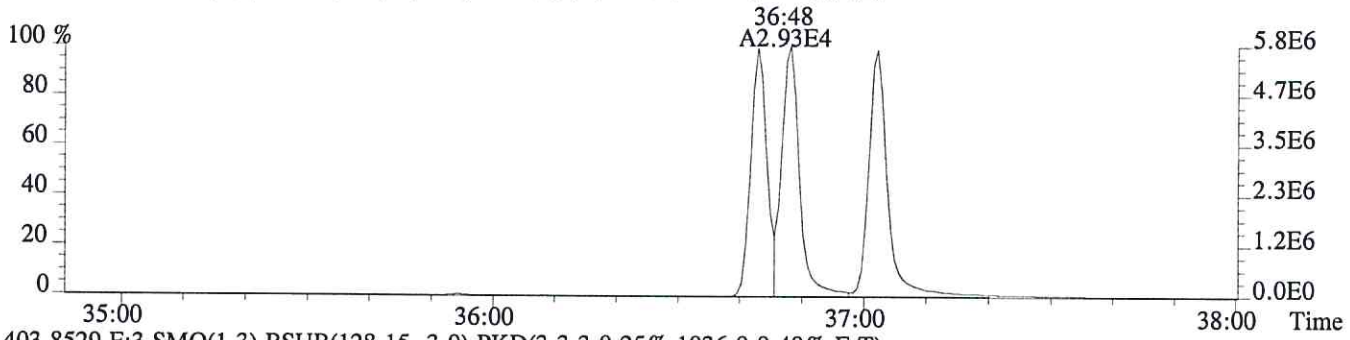
File:P402425 #1-285 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,712.0,0.40%,F,T)



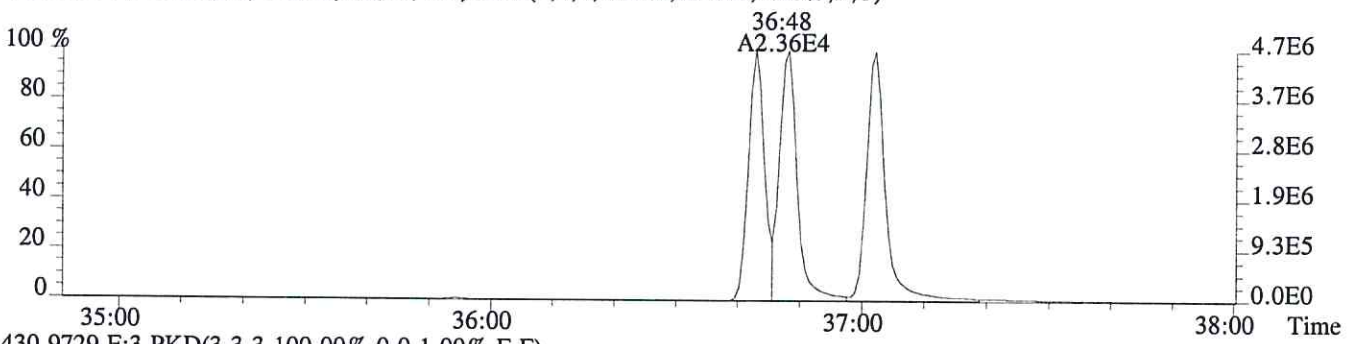
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,452.0,0.40%,F,T)



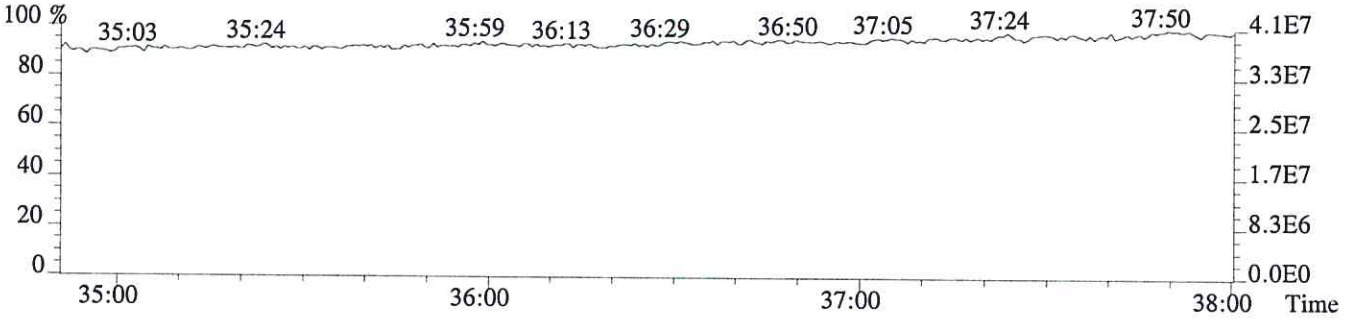
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2688.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1036.0,0.40%,F,T)

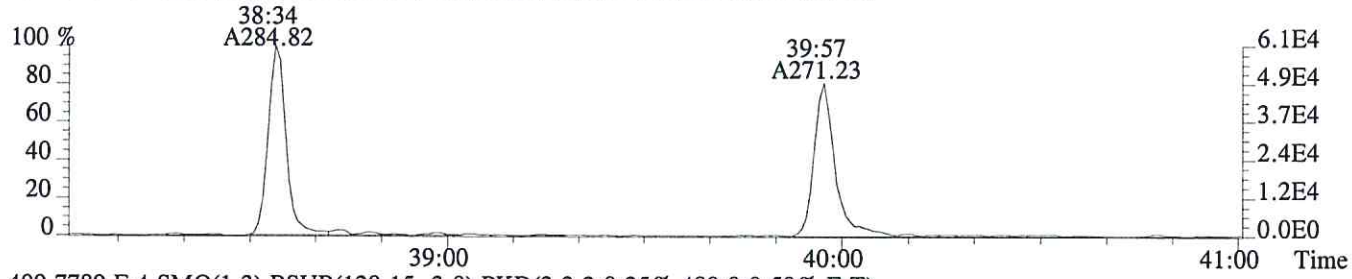


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

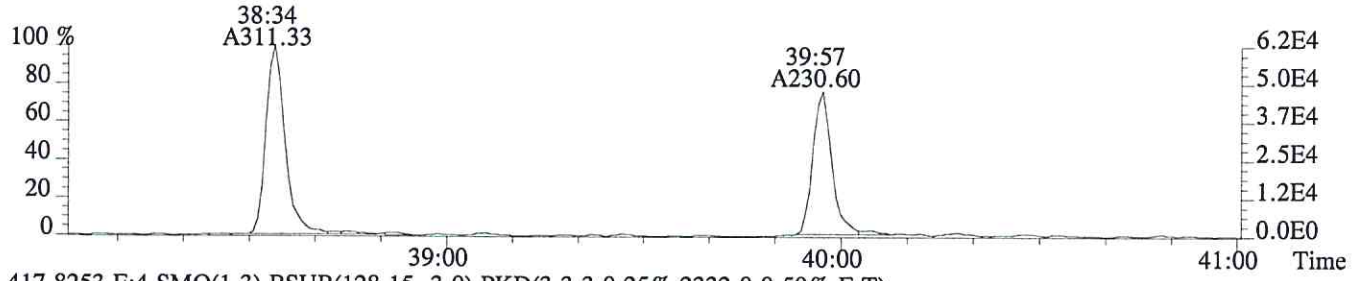


File:P402425 #1-268 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554

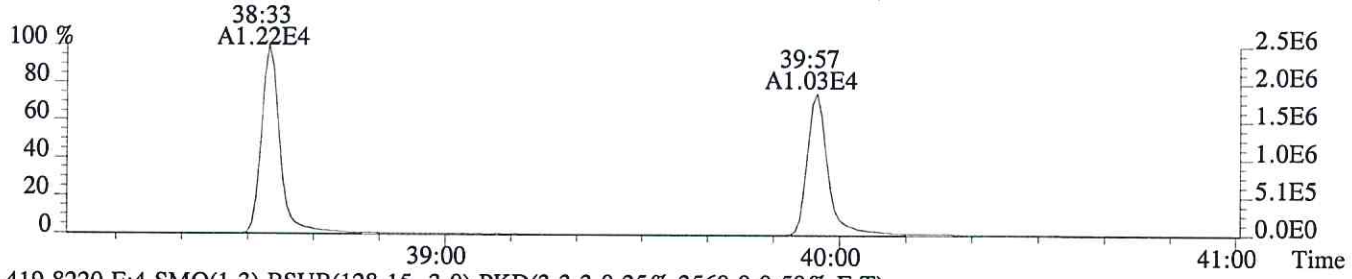
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,288.0,0.50%,F,T)



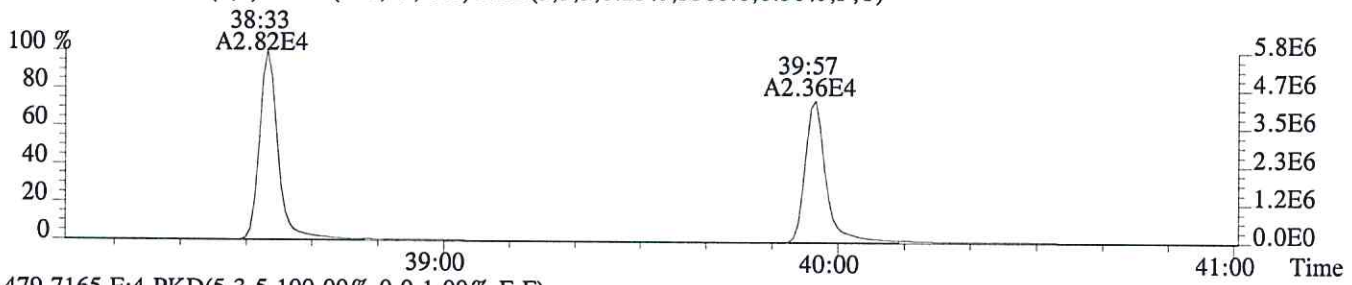
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,480.0,0.50%,F,T)



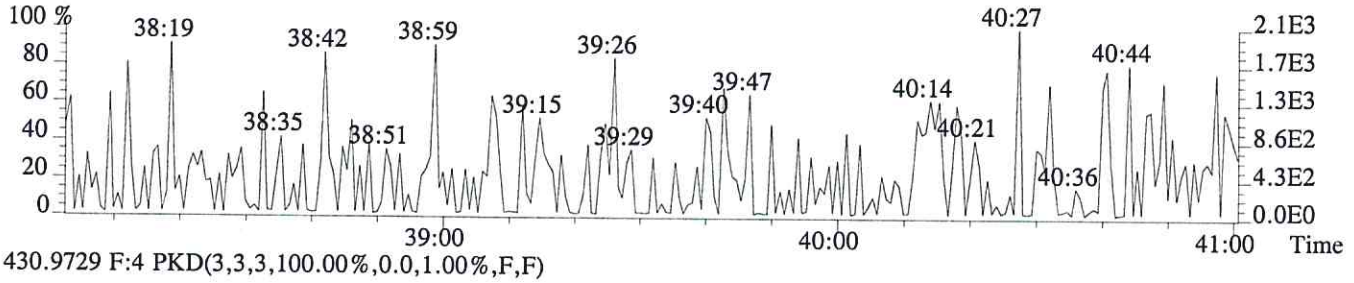
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2332.0,0.50%,F,T)



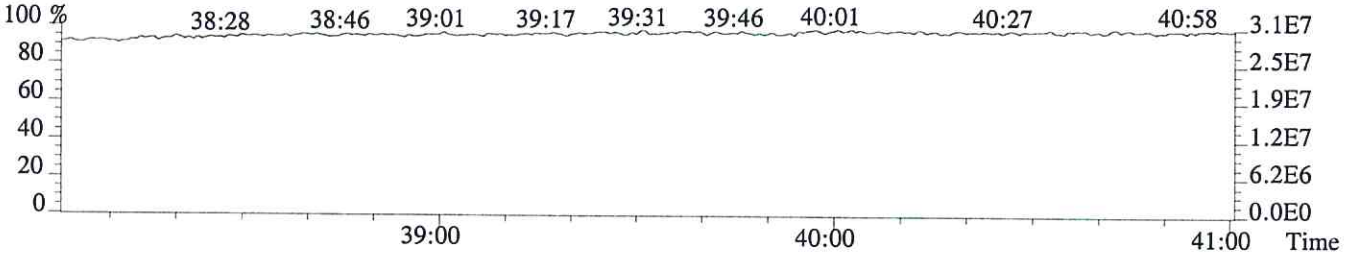
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3560.0,0.50%,F,T)



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

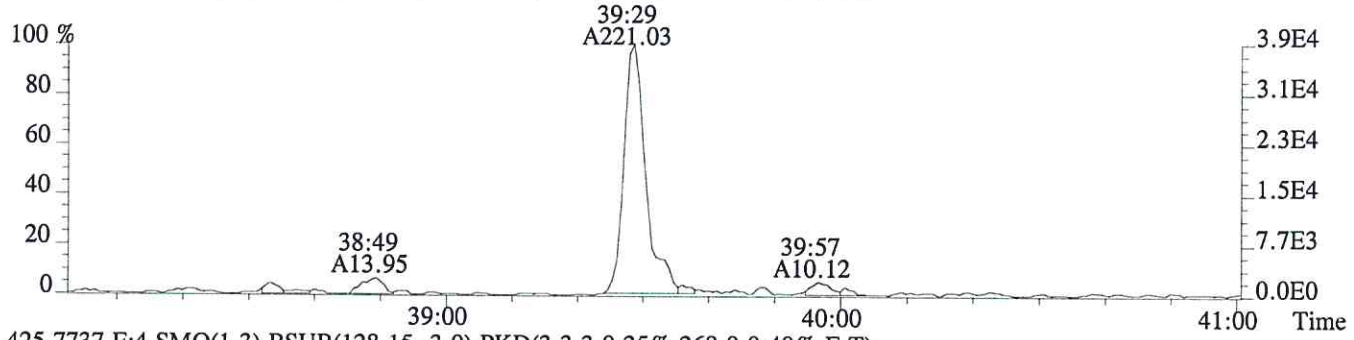


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

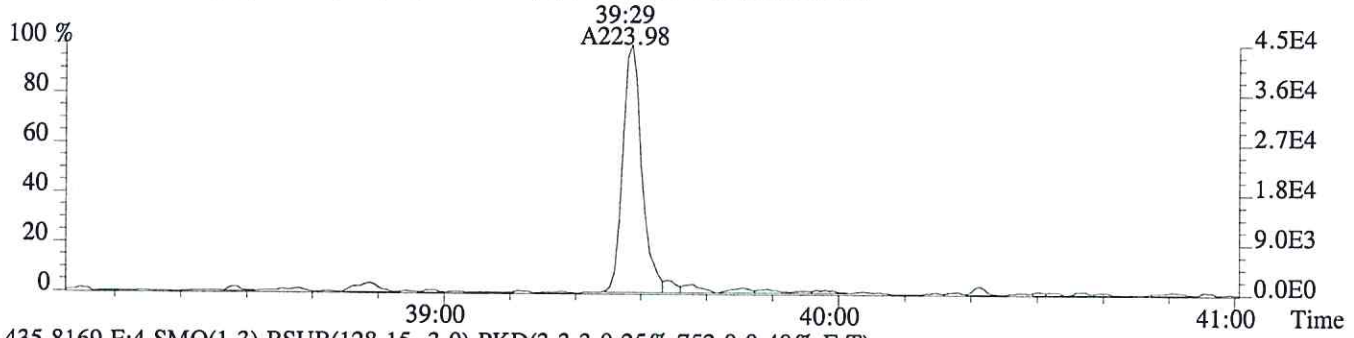


File:P402425 #1-268 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554

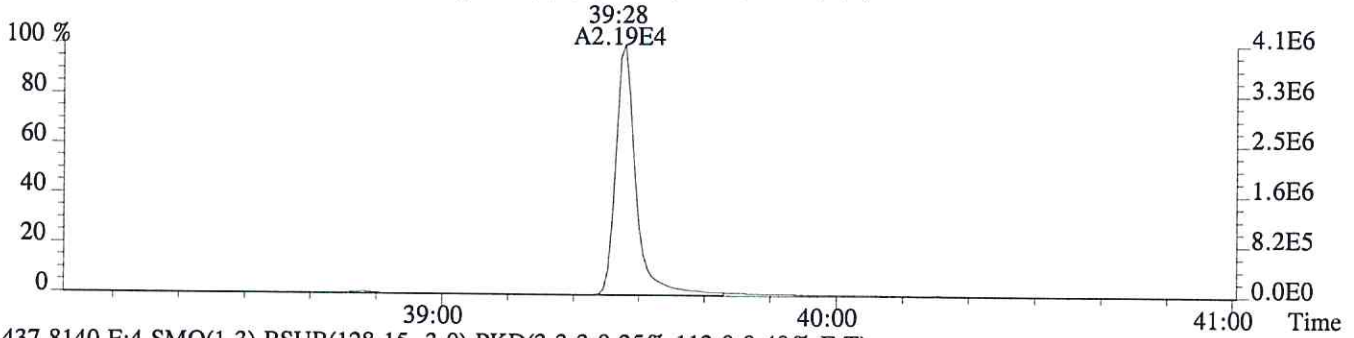
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,484.0,0.40%,F,T)



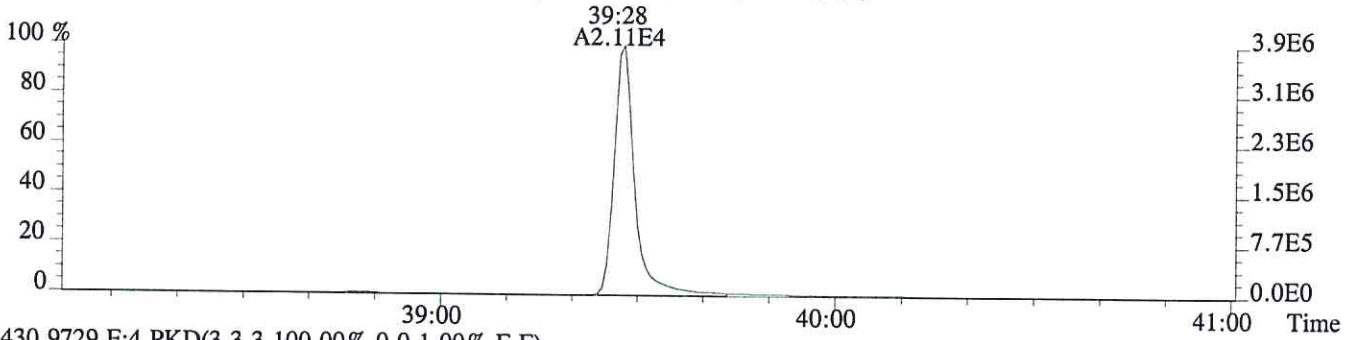
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,268.0,0.40%,F,T)



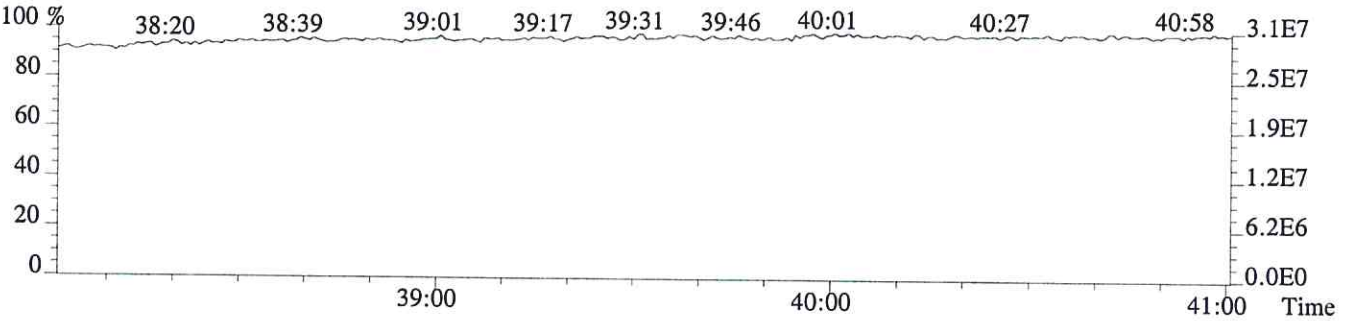
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,752.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,112.0,0.40%,F,T)

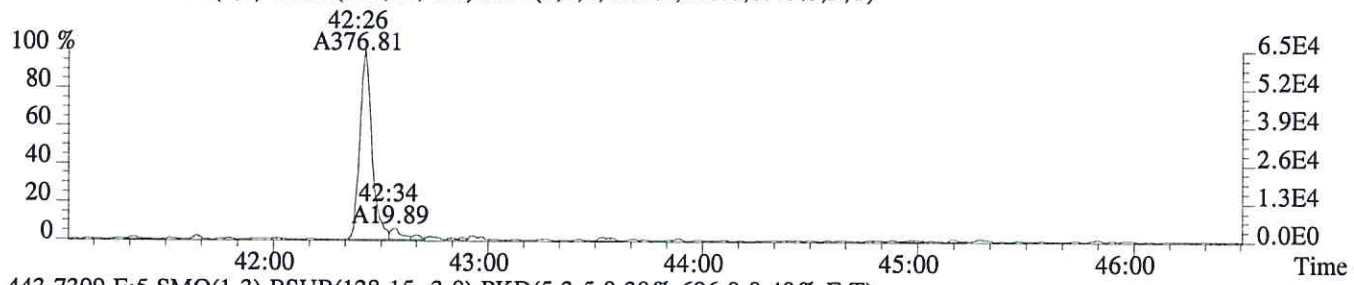


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

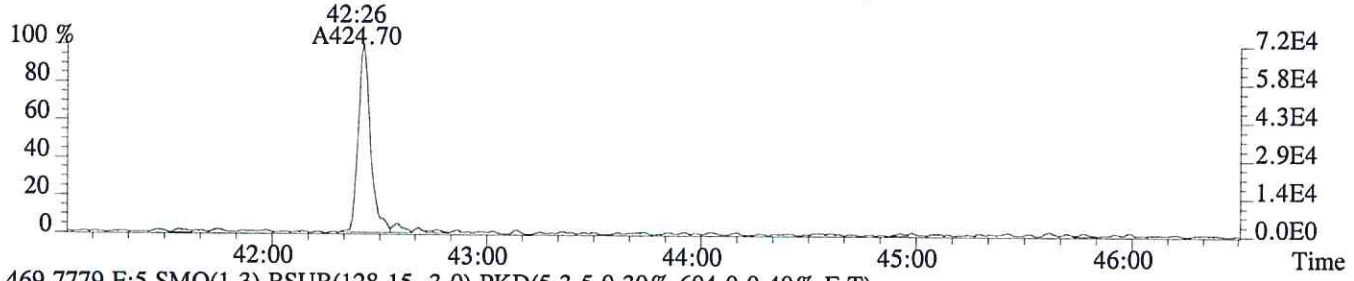


File:P402425 #1-492 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554

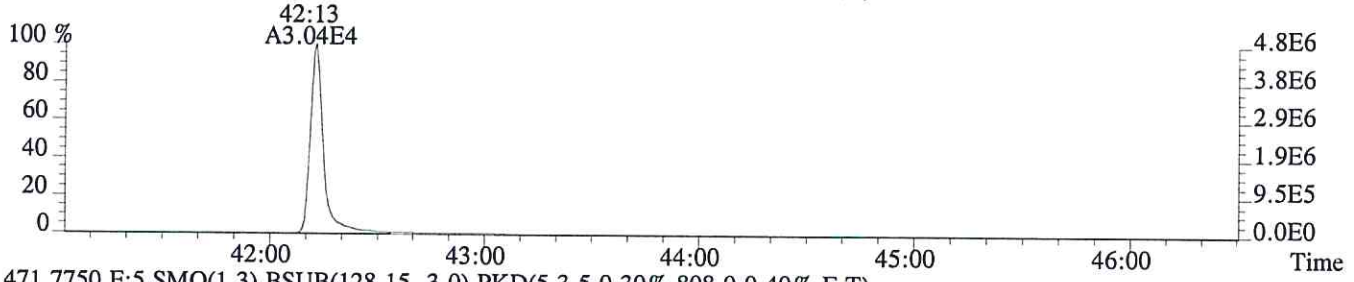
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,288.0,0.40%,F,T)



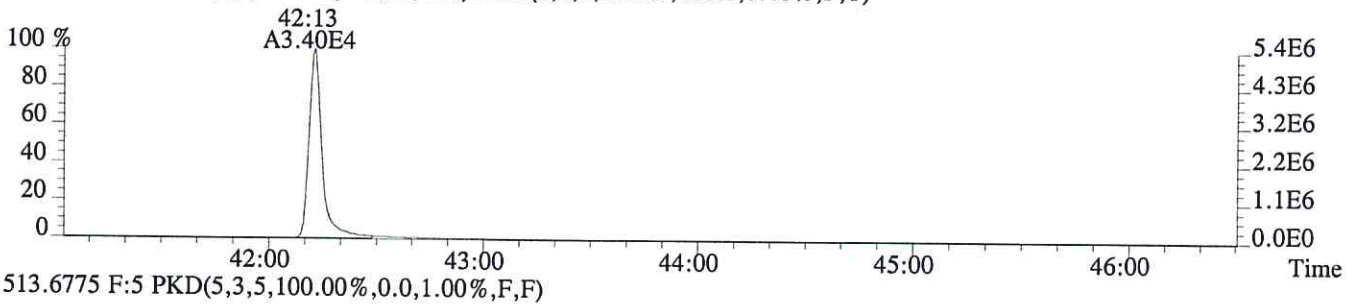
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,696.0,0.40%,F,T)



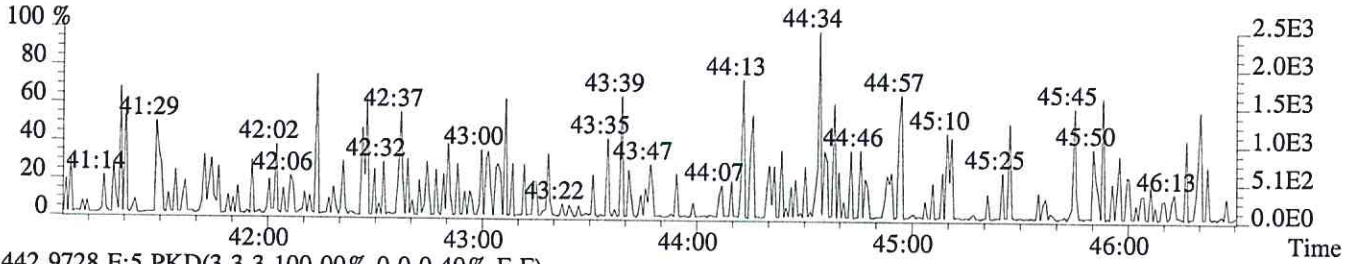
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,604.0,0.40%,F,T)



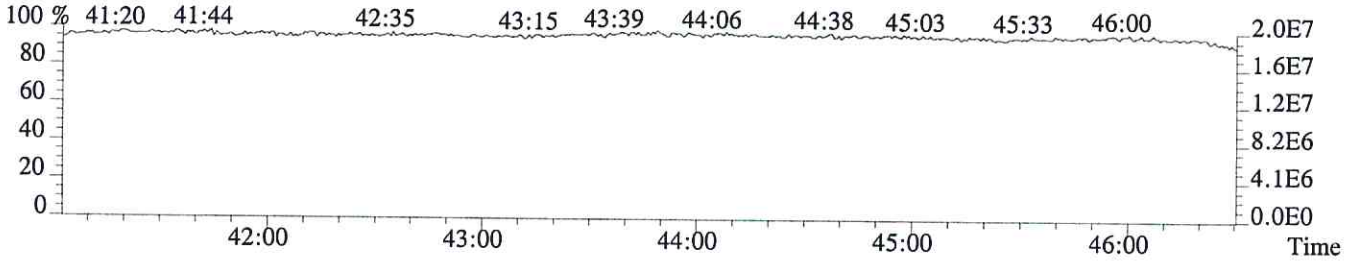
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,808.0,0.40%,F,T)



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

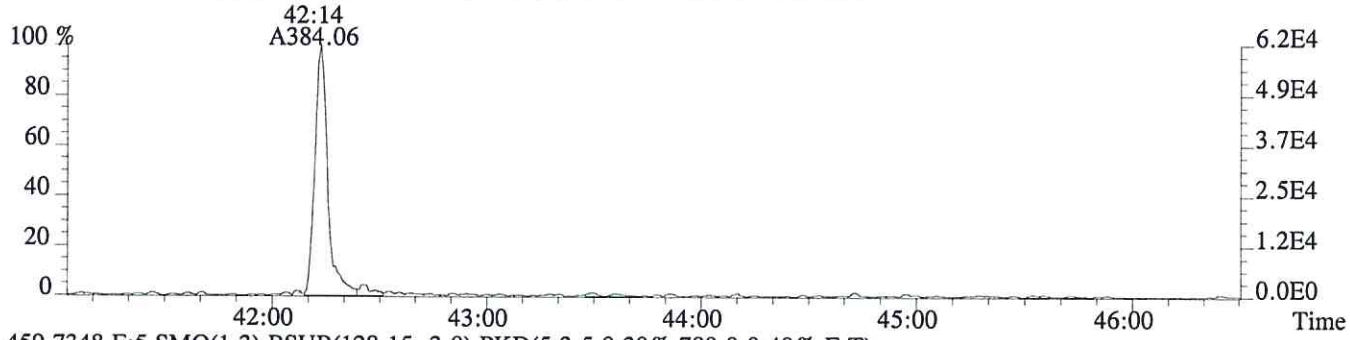


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

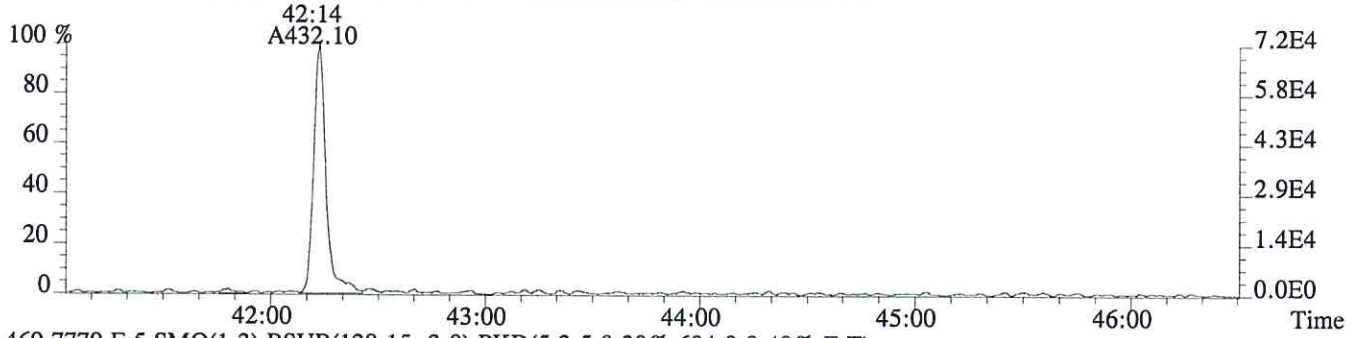


File:P402425 #1-492 Acq:28-APR-2016 11:12:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76554

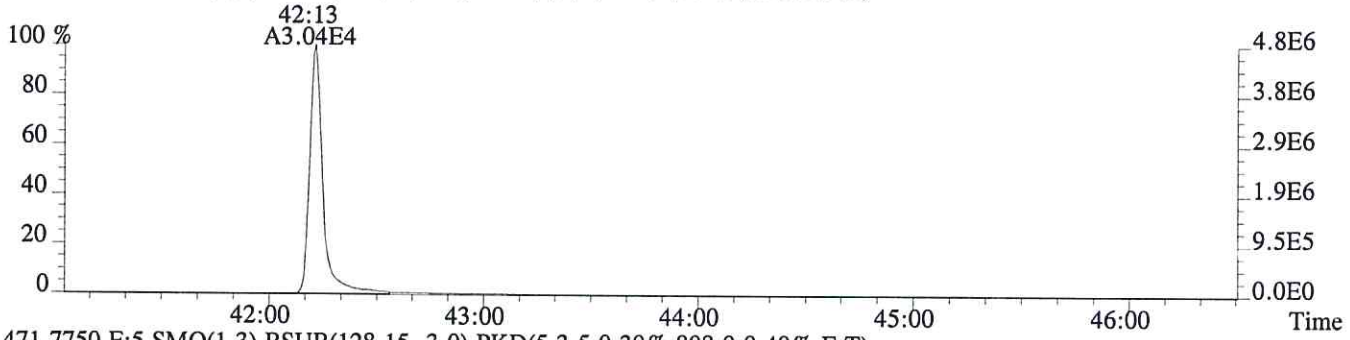
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,404.0,0.40%,F,T)



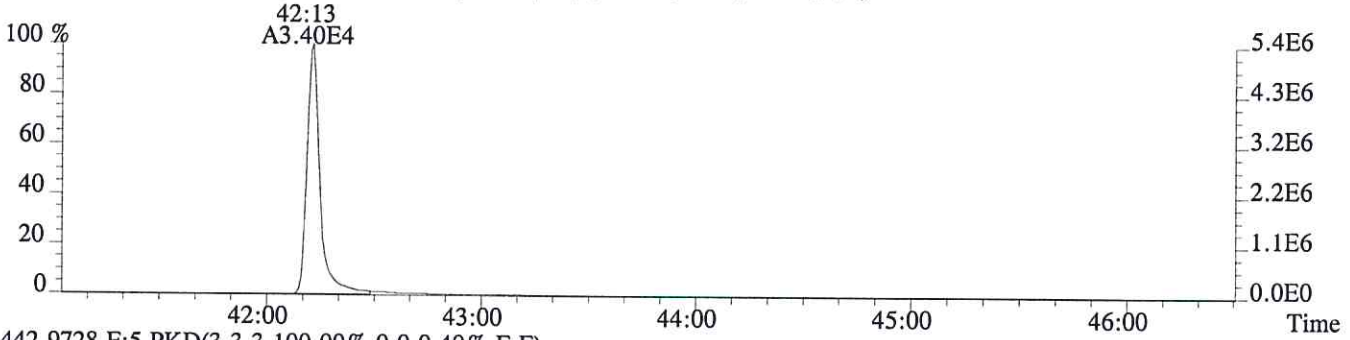
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,780.0,0.40%,F,T)



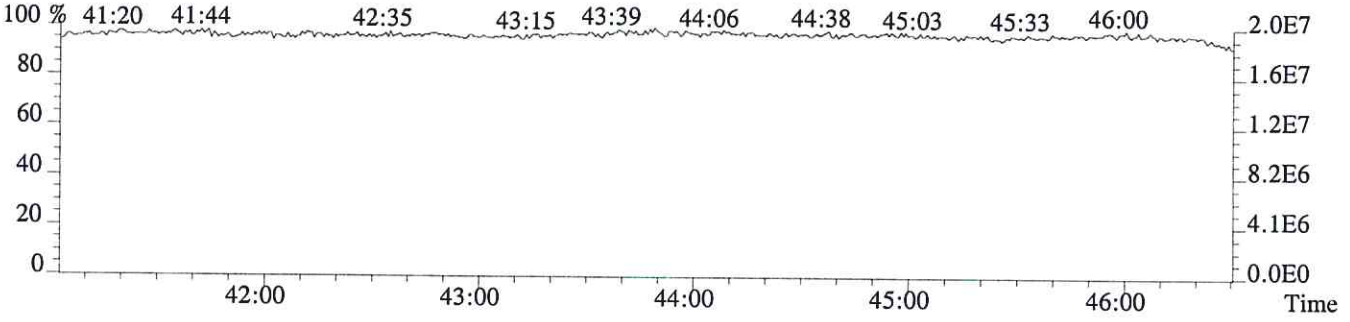
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,604.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,808.0,0.40%,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.
76555

Run #2 Filename P402426 Samp: 1 Inj: 1 Acquired: 28-APR-16 12:33:36
Processed: 28-APR-16 16:59:48 Sample ID: CS1

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:22	1.114e+02	1.532e+02	0.73	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	32:29	8.206e+02	4.918e+02	1.67	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	33:22	7.828e+02	4.800e+02	1.63	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	36:00	6.139e+02	4.820e+02	1.27	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	36:06	6.482e+02	5.615e+02	1.15	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:36	6.407e+02	4.979e+02	1.29	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	37:20	5.669e+02	4.422e+02	1.28	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:34	5.208e+02	5.100e+02	1.02	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:57	4.553e+02	4.689e+02	0.97	yes	no	1.187
10	Unk	OCDF	42:26	7.427e+02	7.878e+02	0.94	yes	no	1.035
11	Unk	2,3,7,8-TCDD	29:08	1.097e+02	1.465e+02	0.75	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:39	6.361e+02	4.231e+02	1.50	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:44	4.733e+02	3.989e+02	1.19	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:49	5.466e+02	4.541e+02	1.20	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	37:03	5.324e+02	4.638e+02	1.15	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	39:29	4.228e+02	4.040e+02	1.05	yes	no	0.882
17	Unk	OCDD	42:14	6.520e+02	7.713e+02	0.85	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	28:21	2.927e+04	3.826e+04	0.77	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	32:28	3.853e+04	2.440e+04	1.58	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	33:21	3.847e+04	2.470e+04	1.56	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:59	1.410e+04	2.782e+04	0.51	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	36:06	1.712e+04	3.354e+04	0.51	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:35	1.524e+04	3.018e+04	0.51	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	37:20	1.287e+04	2.694e+04	0.48	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:33	1.084e+04	2.480e+04	0.44	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:57	9.473e+03	2.192e+04	0.43	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	29:06	2.477e+04	3.220e+04	0.77	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	33:38	3.240e+04	2.042e+04	1.59	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:43	2.263e+04	1.831e+04	1.24	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:48	2.466e+04	1.981e+04	1.24	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:28	2.011e+04	1.958e+04	1.03	yes	no	0.817
32	IS	13C-OCDD	42:13	2.824e+04	3.217e+04	0.88	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	28:33	2.591e+04	3.282e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:02	2.613e+04	2.123e+04	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:08	2.773e+02				no	0.958

ALS ENVIRONMENTAL
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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76555

Run #2 Filename P402426 Samp: 1 Inj: 1 Acquired: 28-APR-16 12:33:36
Processed: 28-APR-16 16:59:481 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	2.39e+04	4.44e+02	5.4e+01	3.12e+04	9.88e+02	3.2e+01
2	1,2,3,7,8-PeCDF	1.57e+05	4.20e+02	3.7e+02	9.53e+04	1.40e+03	6.8e+01
3	2,3,4,7,8-PeCDF	1.55e+05	4.20e+02	3.7e+02	9.69e+04	1.40e+03	6.9e+01
4	1,2,3,4,7,8-HxCDF	1.29e+05	1.88e+02	6.9e+02	1.02e+05	7.60e+01	1.3e+03
5	1,2,3,6,7,8-HxCDF	1.28e+05	1.88e+02	6.8e+02	1.10e+05	7.60e+01	1.4e+03
6	2,3,4,6,7,8-HxCDF	1.33e+05	1.88e+02	7.1e+02	1.08e+05	7.60e+01	1.4e+03
7	1,2,3,7,8,9-HxCDF	1.09e+05	1.88e+02	5.8e+02	9.05e+04	7.60e+01	1.2e+03
8	1,2,3,4,6,7,8-HpCDF	1.04e+05	5.84e+02	1.8e+02	1.07e+05	3.48e+02	3.1e+02
9	1,2,3,4,7,8,9-HpCDF	8.20e+04	5.84e+02	1.4e+02	8.36e+04	3.48e+02	2.4e+02
10	OCDF	1.15e+05	4.48e+02	2.6e+02	1.26e+05	6.32e+02	2.0e+02
11	2,3,7,8-TCDD	2.16e+04	5.44e+02	4.0e+01	3.01e+04	7.84e+02	3.8e+01
12	1,2,3,7,8-PeCDD	1.22e+05	9.24e+02	1.3e+02	8.53e+04	3.52e+02	2.4e+02
13	1,2,3,4,7,8-HxCDD	1.04e+05	7.32e+02	1.4e+02	8.96e+04	6.44e+02	1.4e+02
14	1,2,3,6,7,8-HxCDD	1.07e+05	7.32e+02	1.5e+02	9.13e+04	6.44e+02	1.4e+02
15	1,2,3,7,8,9-HxCDD	1.02e+05	7.32e+02	1.4e+02	8.71e+04	6.44e+02	1.4e+02
16	1,2,3,4,6,7,8-HpCDD	8.08e+04	3.84e+02	2.1e+02	7.85e+04	3.56e+02	2.2e+02
17	OCDD	1.11e+05	2.96e+02	3.7e+02	1.25e+05	7.68e+02	1.6e+02
18	13C-2,3,7,8-TCDF	5.68e+06	2.03e+03	2.8e+03	7.44e+06	1.29e+03	5.8e+03
19	13C-1,2,3,7,8-PeCDF	7.33e+06	2.88e+02	2.5e+04	4.66e+06	2.84e+02	1.6e+04
20	13C-2,3,4,7,8-PeCDF	7.74e+06	2.88e+02	2.7e+04	5.01e+06	2.84e+02	1.8e+04
21	13C-1,2,3,4,7,8-HxCDF	3.10e+06	5.20e+02	6.0e+03	6.10e+06	8.32e+02	7.3e+03
22	13C-1,2,3,6,7,8-HxCDF	3.44e+06	5.20e+02	6.6e+03	6.74e+06	8.32e+02	8.1e+03
23	13C-2,3,4,6,7,8-HxCDF	3.23e+06	5.20e+02	6.2e+03	6.41e+06	8.32e+02	7.7e+03
24	13C-1,2,3,7,8,9-HxCDF	2.63e+06	5.20e+02	5.0e+03	5.28e+06	8.32e+02	6.3e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.28e+06	2.71e+03	8.4e+02	5.19e+06	9.00e+02	5.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.75e+06	2.71e+03	6.5e+02	3.99e+06	9.00e+02	4.4e+03
27	13C-2,3,7,8-TCDD	5.12e+06	3.87e+03	1.3e+03	6.62e+06	1.96e+03	3.4e+03
28	13C-1,2,3,7,8-PeCDD	6.40e+06	5.36e+02	1.2e+04	4.04e+06	4.08e+02	9.9e+03
29	13C-1,2,3,4,7,8-HxCDD	5.12e+06	2.20e+03	2.3e+03	4.13e+06	1.25e+03	3.3e+03
30	13C-1,2,3,6,7,8-HxCDD	4.93e+06	2.20e+03	2.2e+03	3.89e+06	1.25e+03	3.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.78e+06	5.24e+02	7.2e+03	3.61e+06	6.00e+02	6.0e+03
32	13C-OCDD	4.48e+06	5.80e+02	7.7e+03	5.04e+06	5.92e+02	8.5e+03
33	13C-1,2,3,4-TCDD	5.30e+06	3.87e+03	1.4e+03	6.72e+06	1.96e+03	3.4e+03
34	13C-1,2,3,7,8,9-HxCDD	5.07e+06	2.20e+03	2.3e+03	4.09e+06	1.25e+03	3.3e+03
35	37Cl-2,3,7,8-TCDD	5.75e+04	1.83e+03	3.1e+01			

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10450 Stancliff Road
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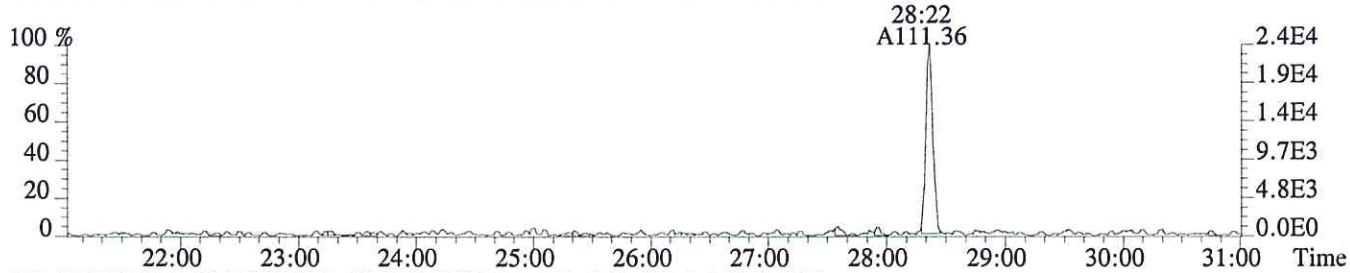
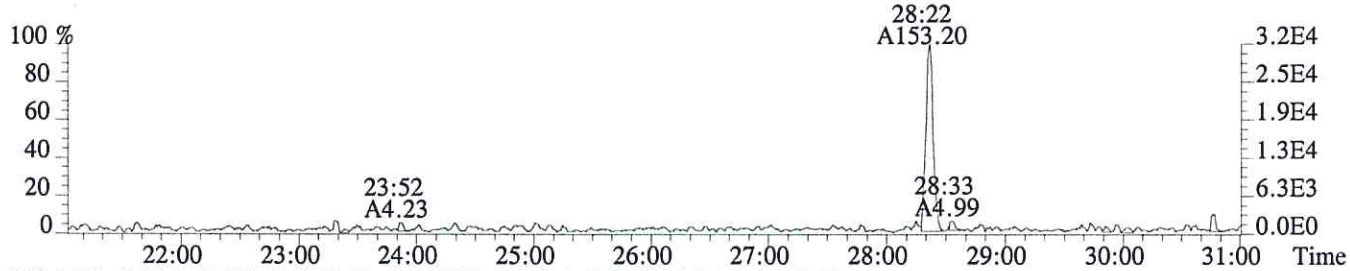
File:P402426 #1-684 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

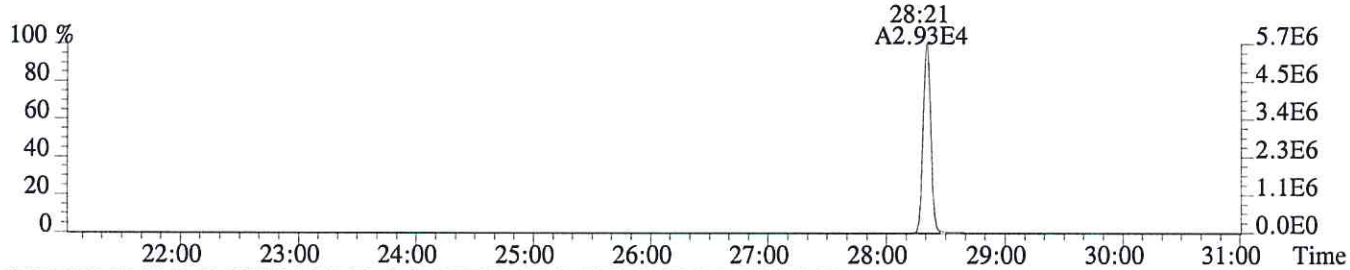
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



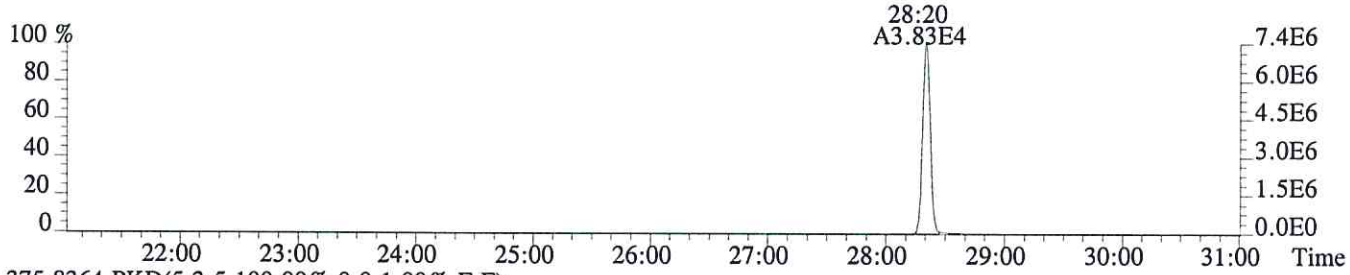
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,988.0,1.00%,F,T)



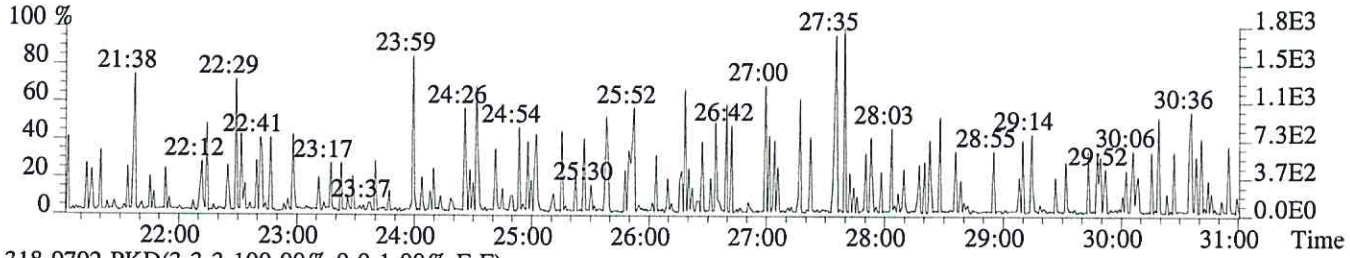
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2028.0,1.00%,F,T)



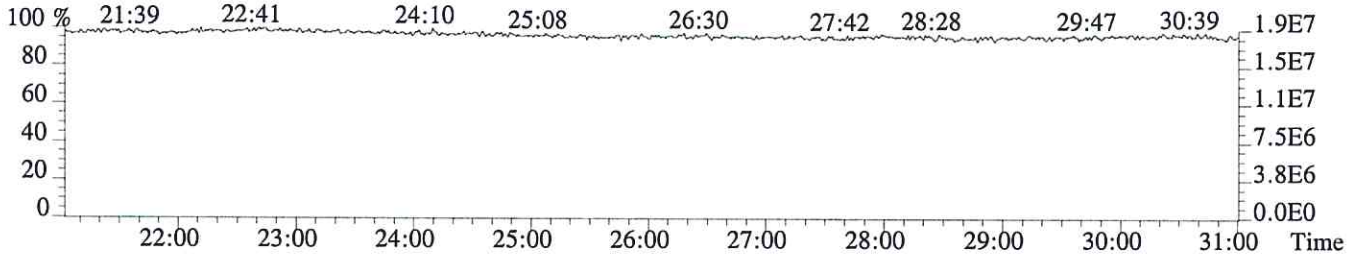
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1292.0,1.00%,F,T)



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

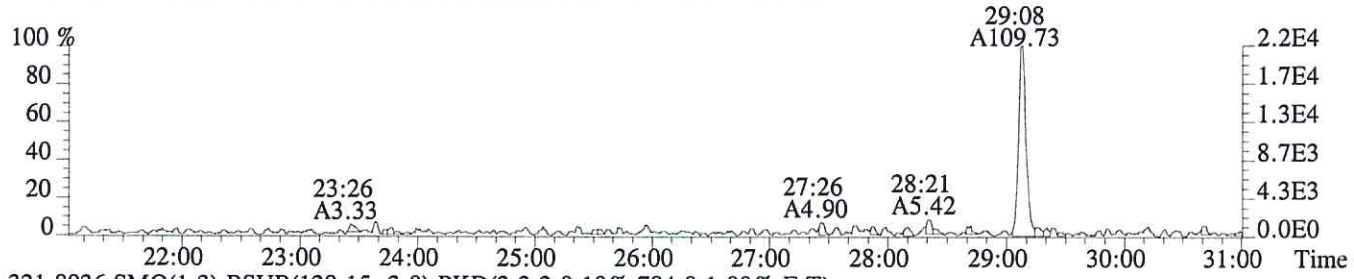


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

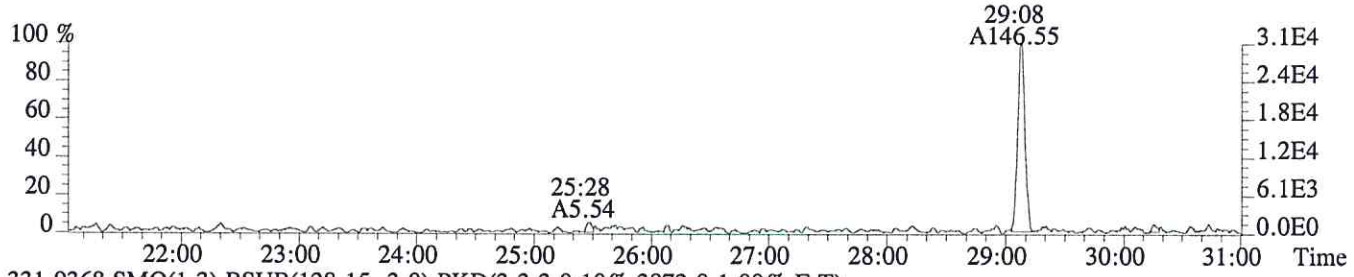


File:P402426 #1-684 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

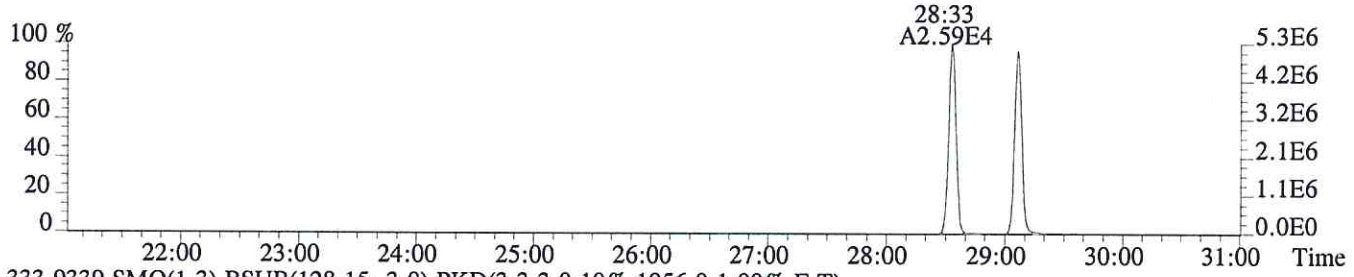
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,544.0,1.00%,F,T)



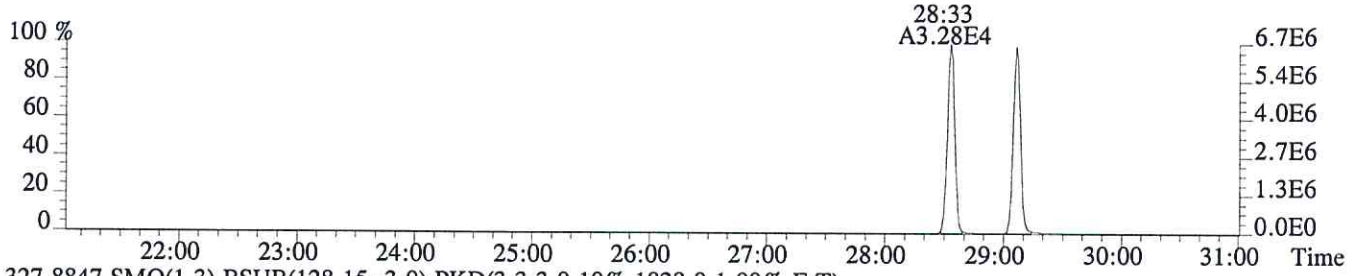
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,784.0,1.00%,F,T)



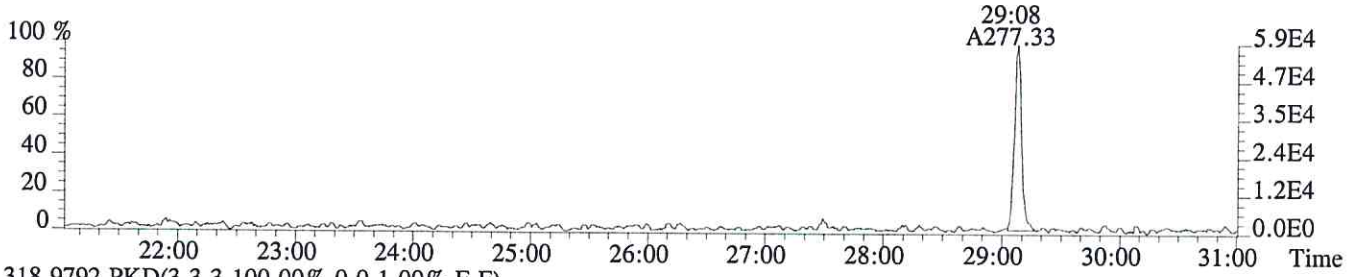
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3872.0,1.00%,F,T)



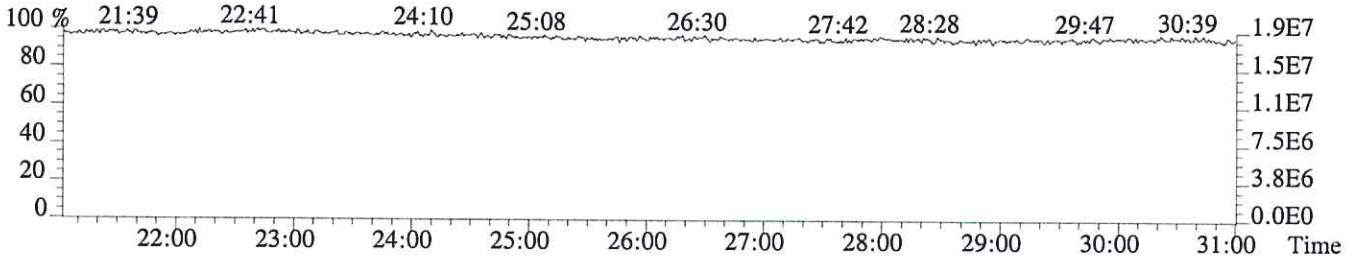
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1956.0,1.00%,F,T)



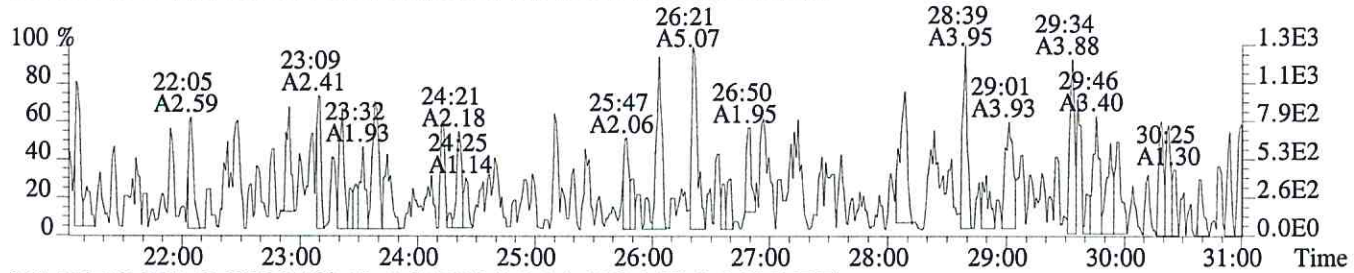
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1828.0,1.00%,F,T)



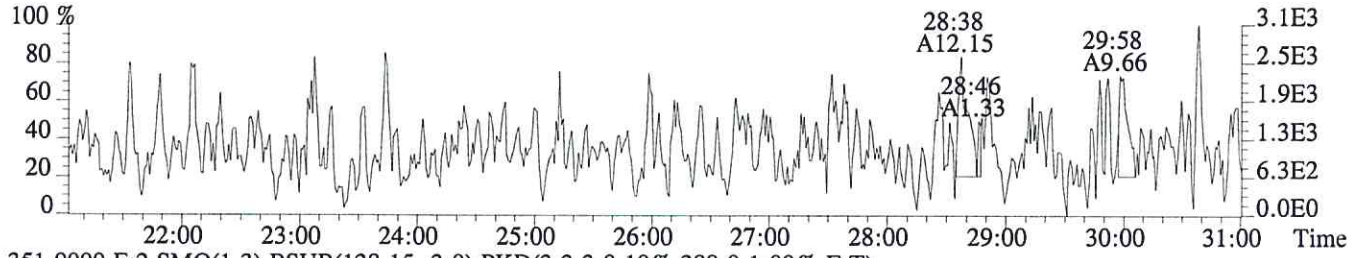
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



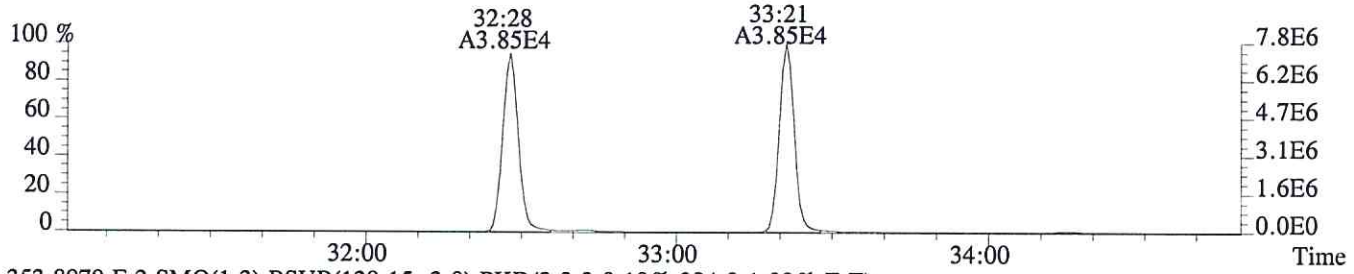
File:P402426 #1-684 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,368.0,1.00%,F,T)



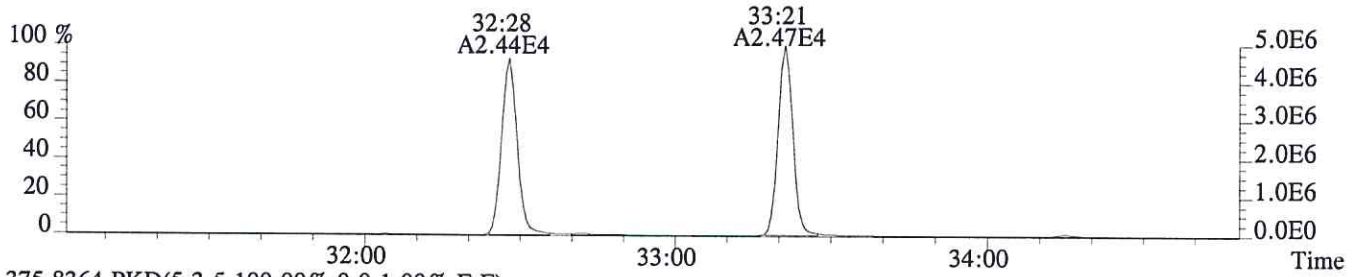
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1452.0,1.00%,F,T)



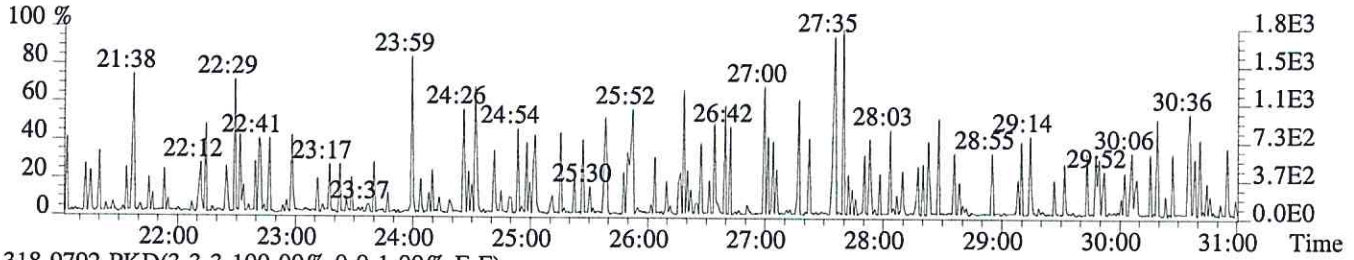
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,288.0,1.00%,F,T)



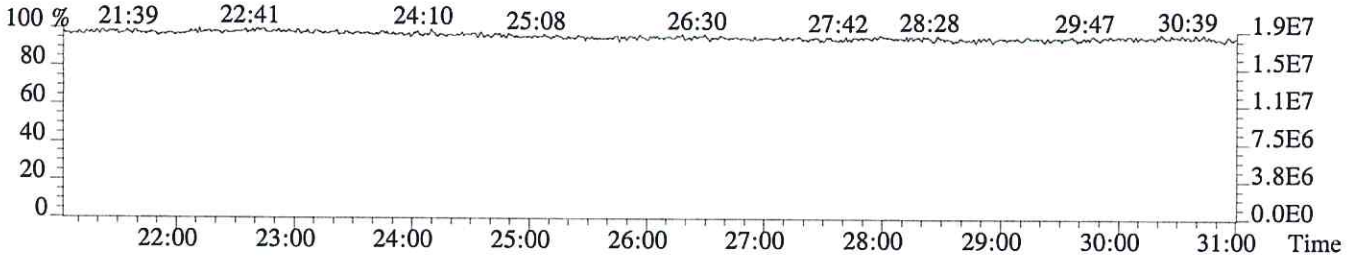
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,284.0,1.00%,F,T)



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

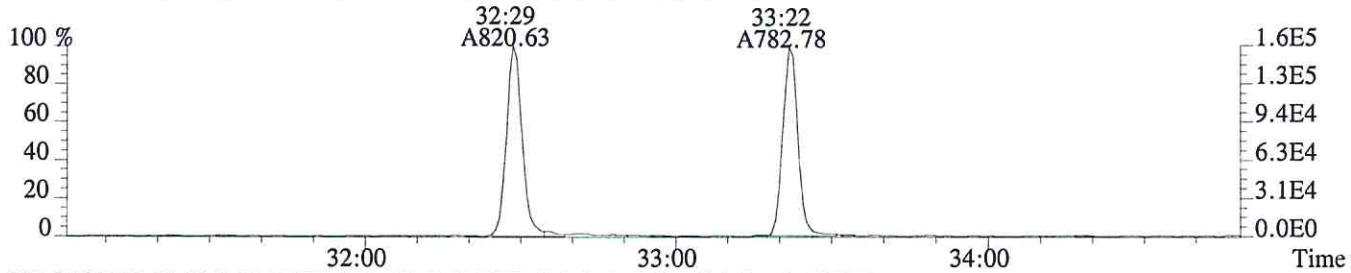


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

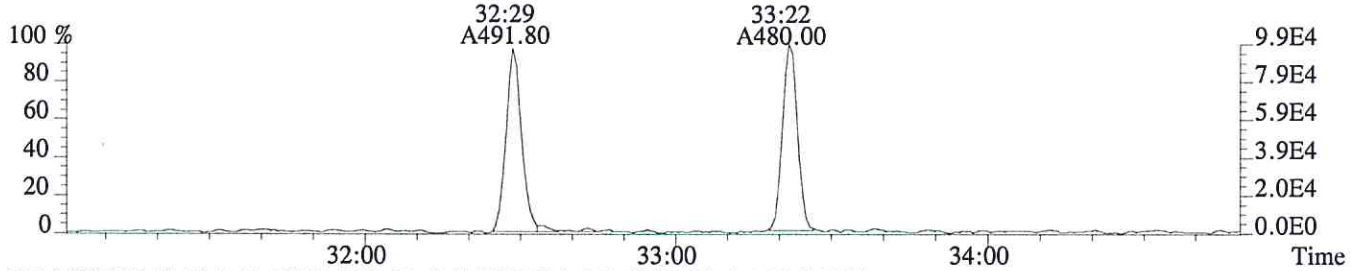


File:P402426 #1-340 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

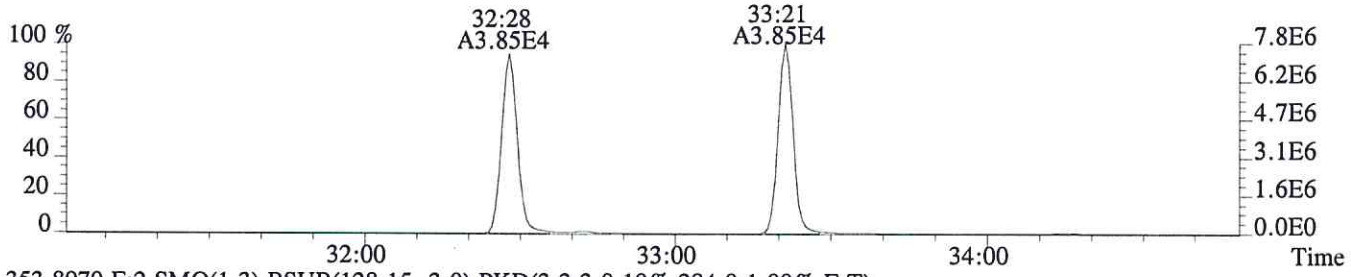
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,420.0,1.00%,F,T)



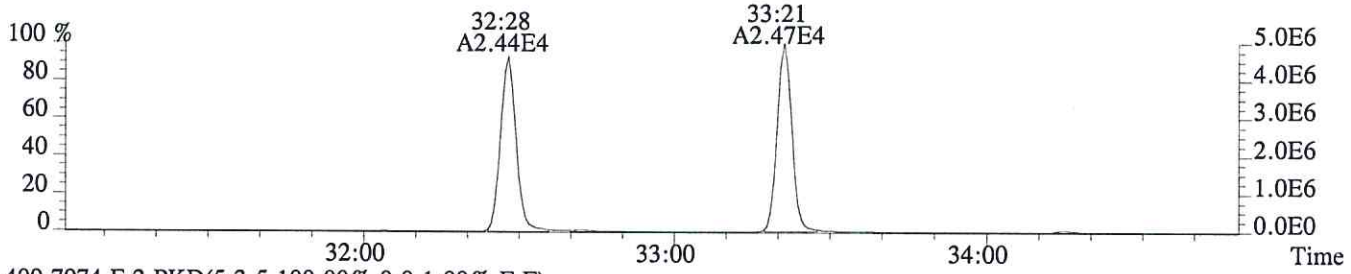
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1404.0,1.00%,F,T)



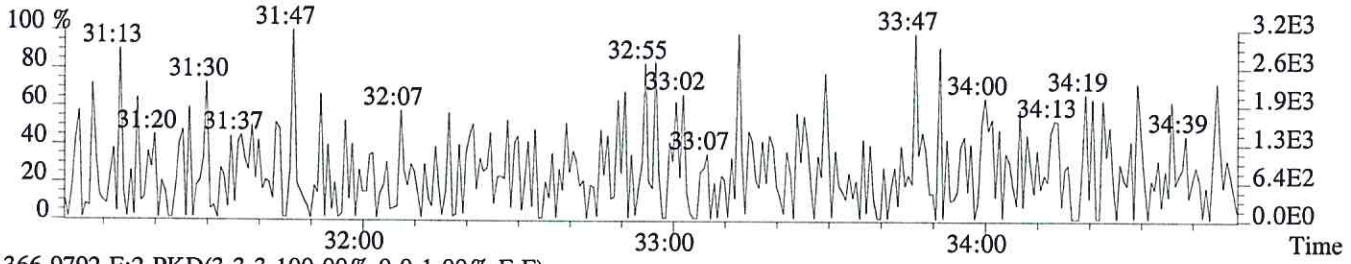
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,288.0,1.00%,F,T)



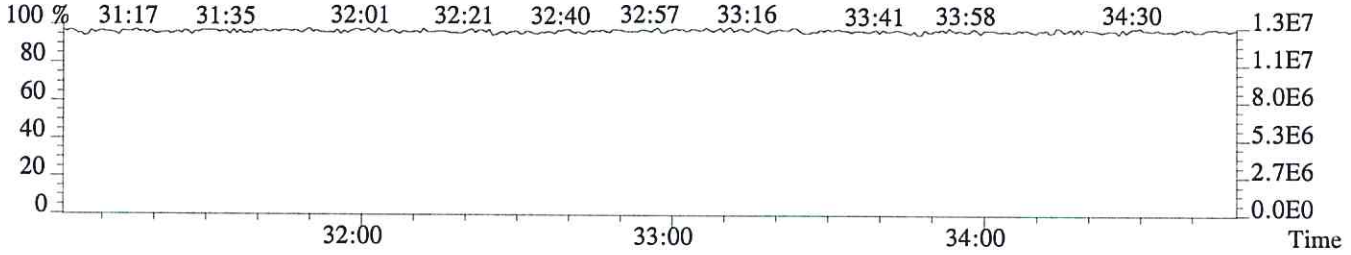
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,284.0,1.00%,F,T)



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

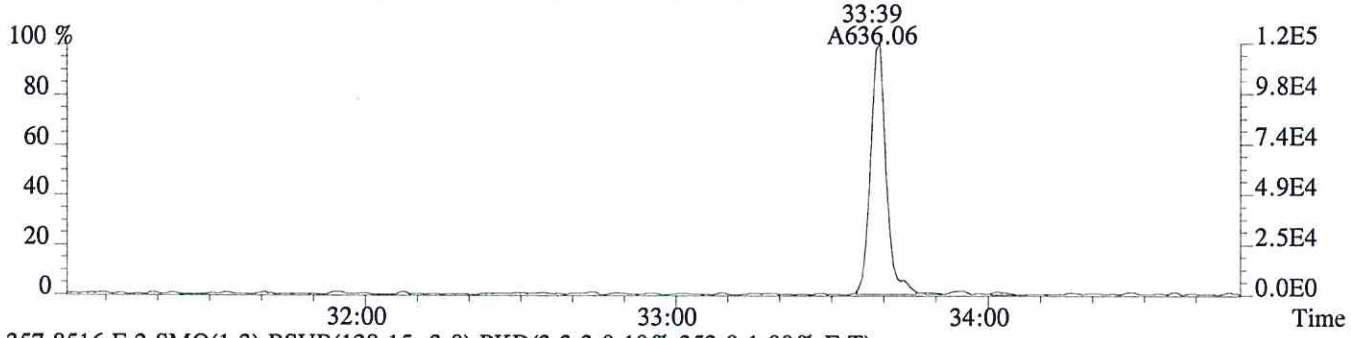


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

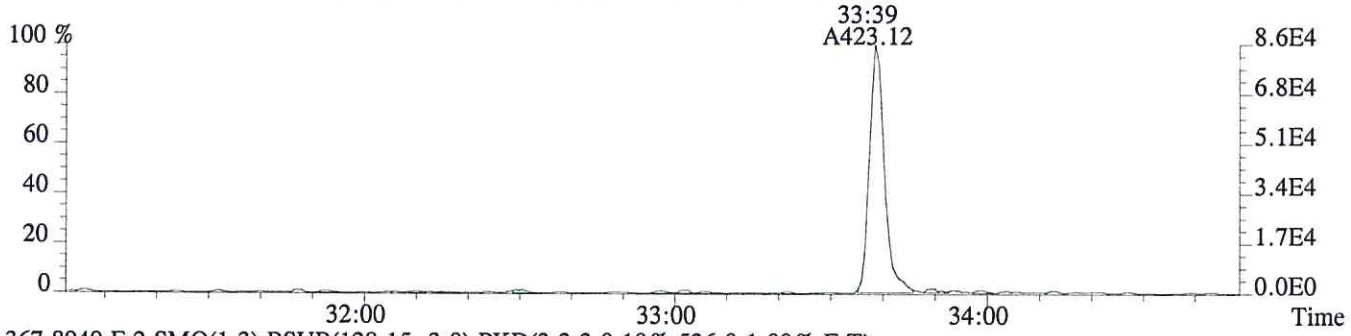


File:P402426 #1-340 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

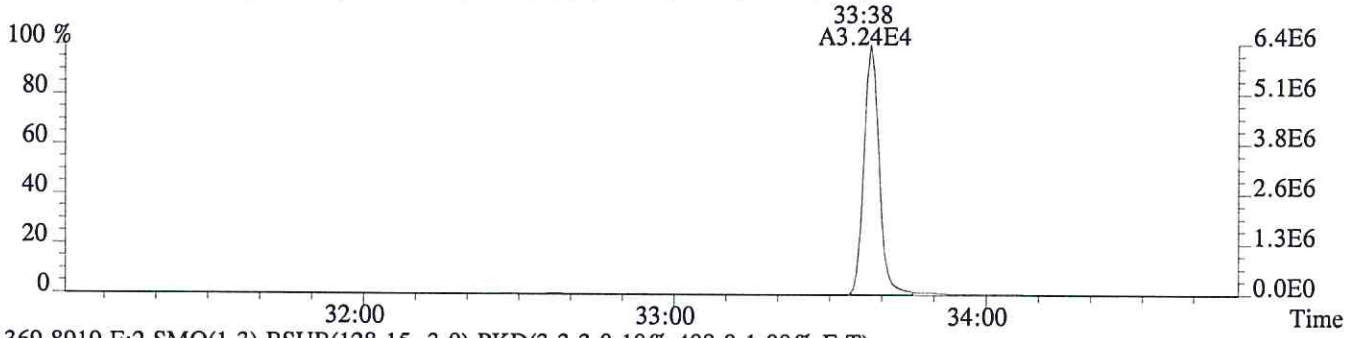
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,924.0,1.00%,F,T)



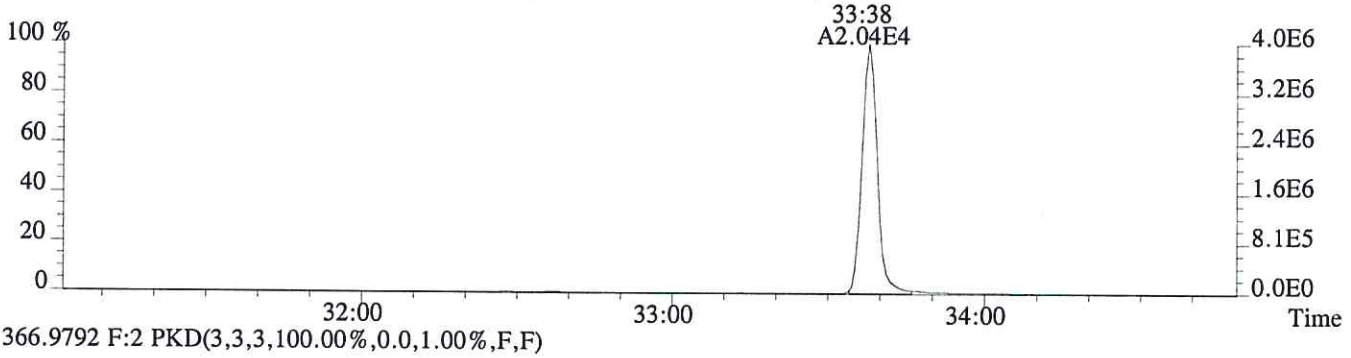
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,352.0,1.00%,F,T)



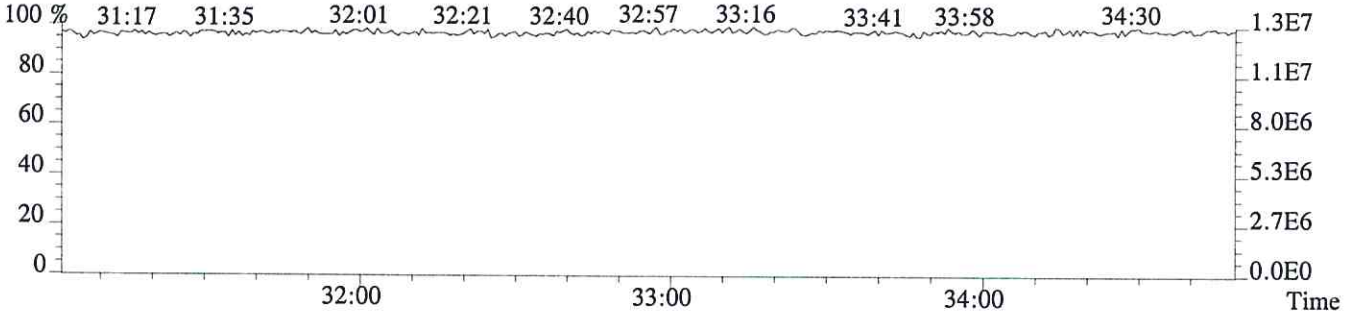
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,536.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,408.0,1.00%,F,T)

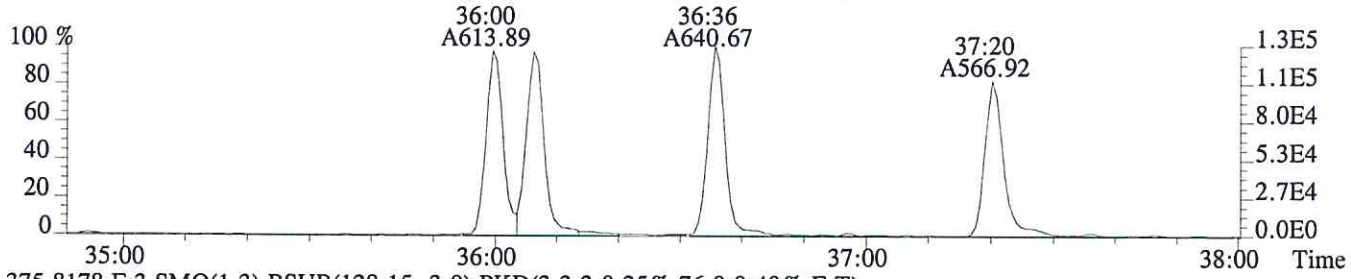


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

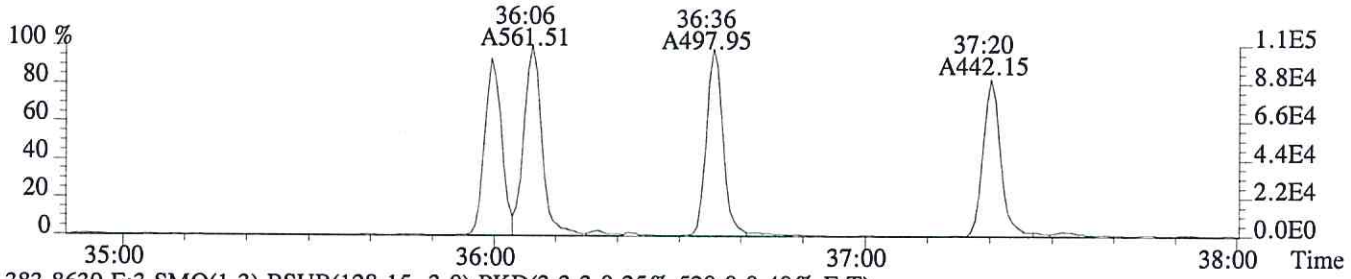


File:P402426 #1-285 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

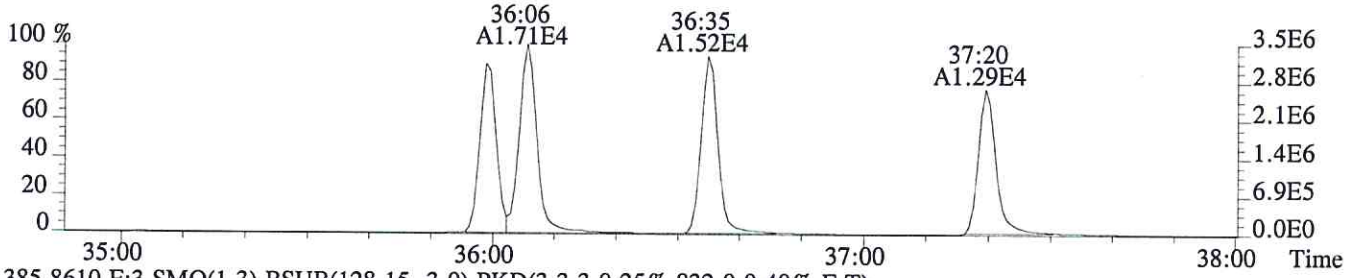
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,188.0,0.40%,F,T)



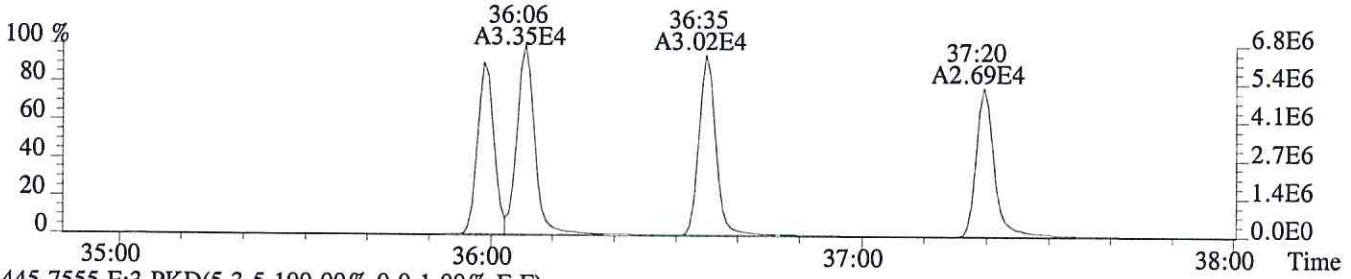
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,76.0,0.40%,F,T)



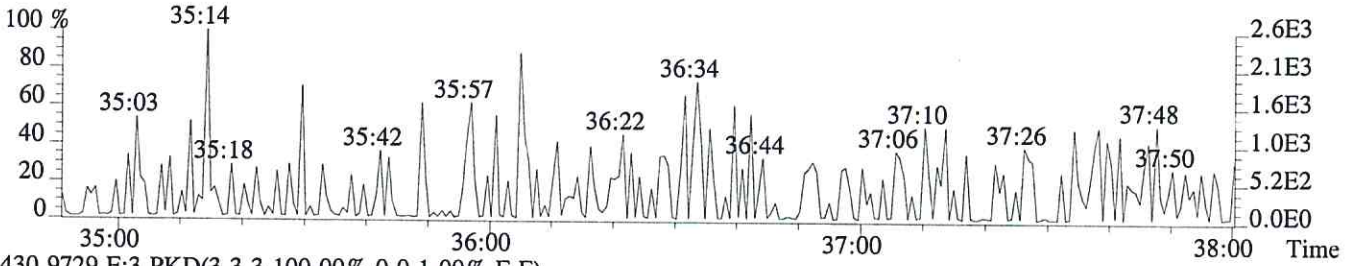
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,520.0,0.40%,F,T)



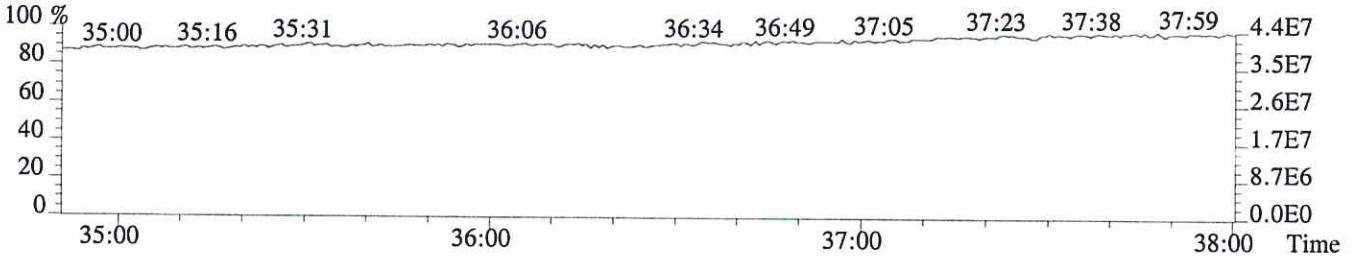
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,832.0,0.40%,F,T)



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

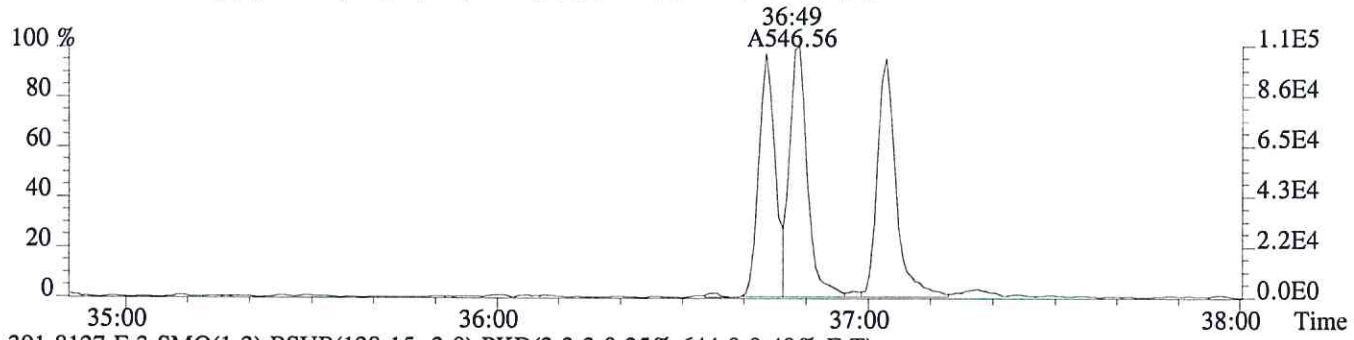


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

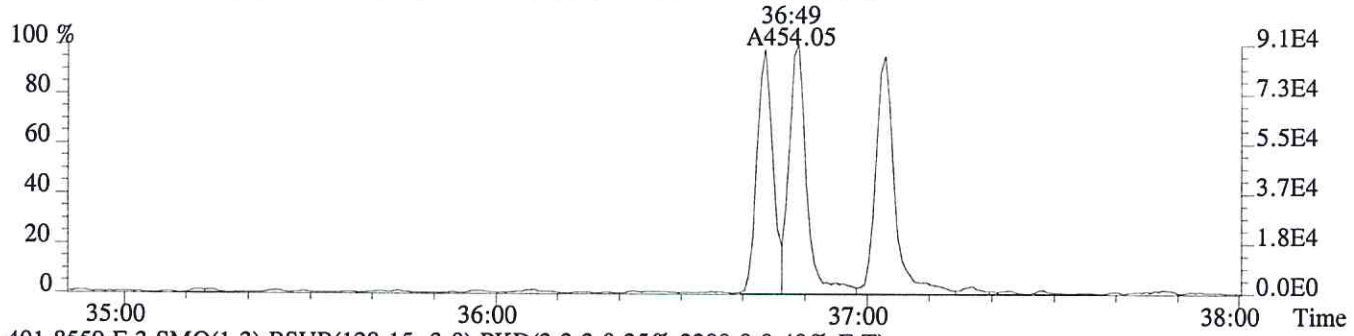


File:P402426 #1-285 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

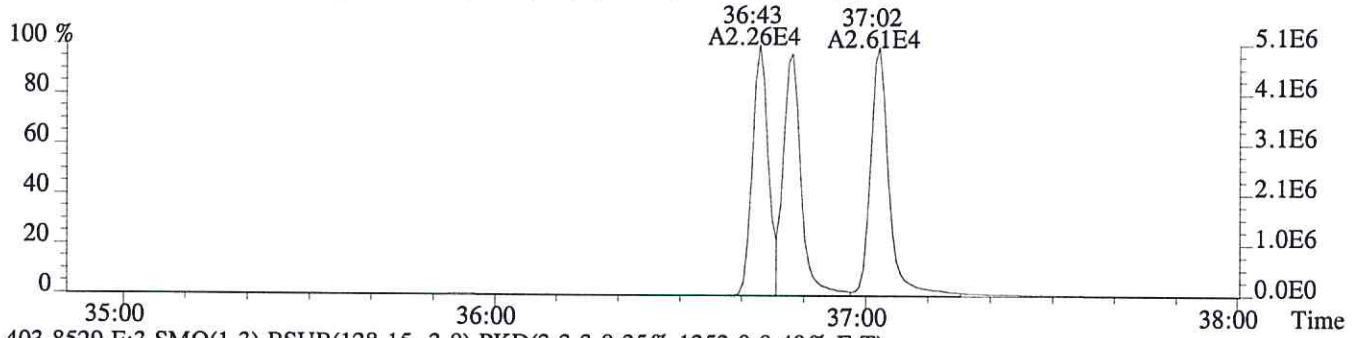
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,732.0,0.40%,F,T)



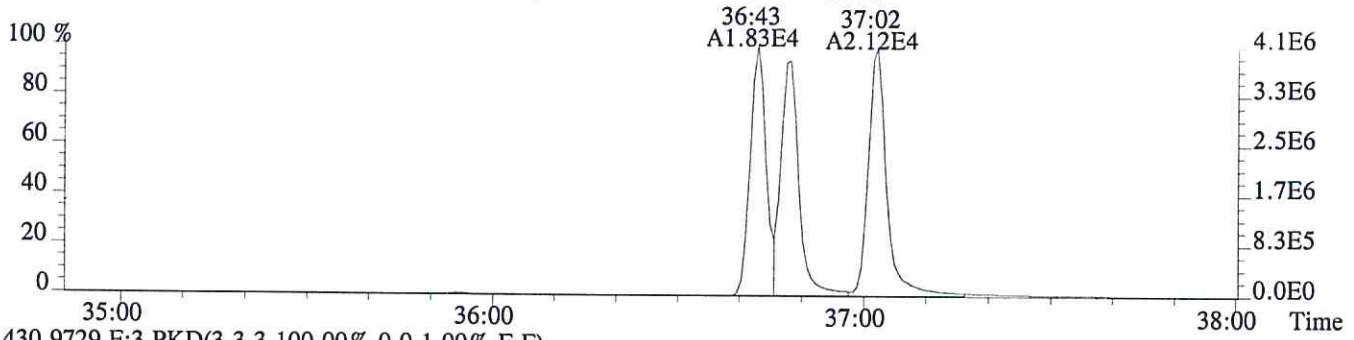
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,644.0,0.40%,F,T)



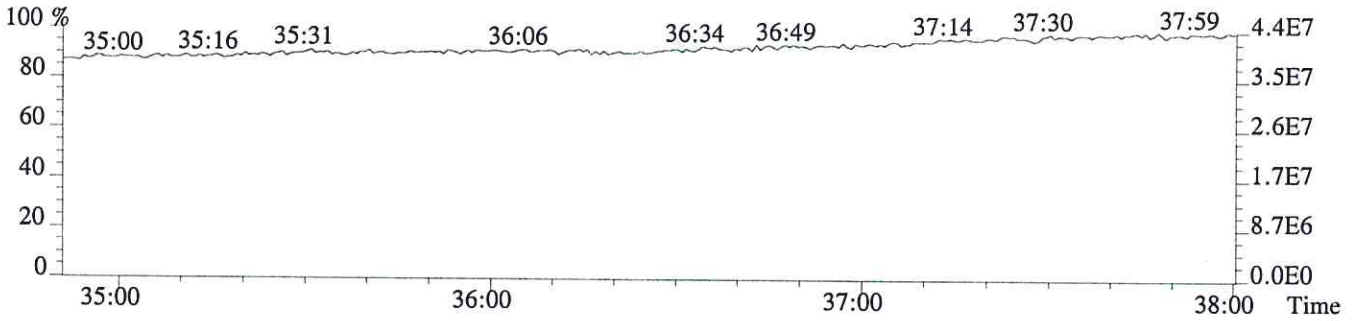
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2200.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1252.0,0.40%,F,T)

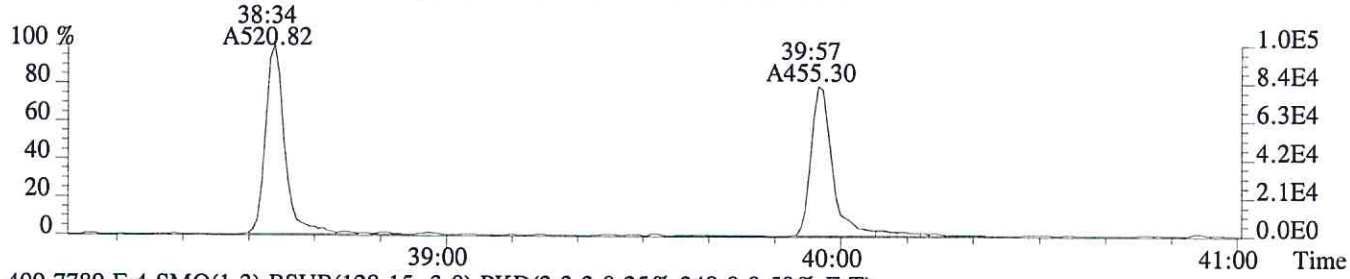


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

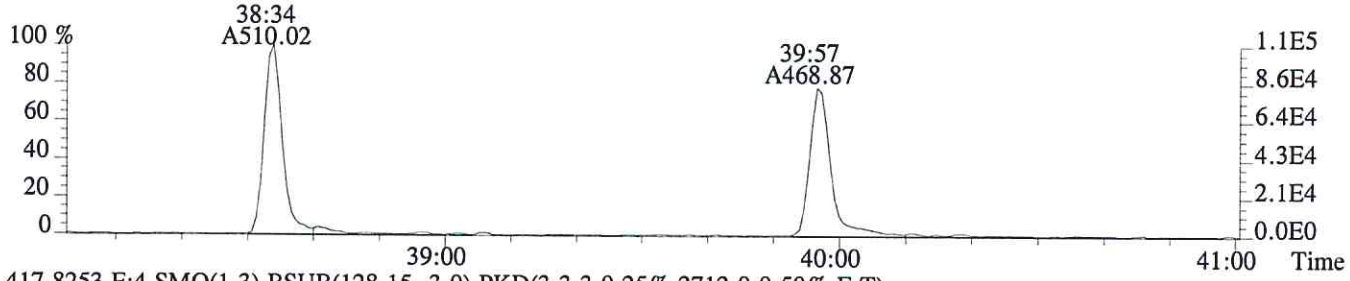


File:P402426 #1-268 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

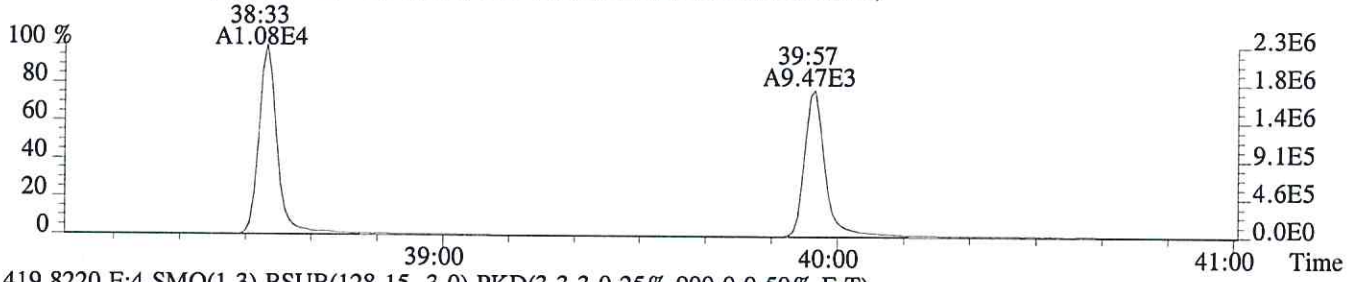
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,584.0,0.50%,F,T)



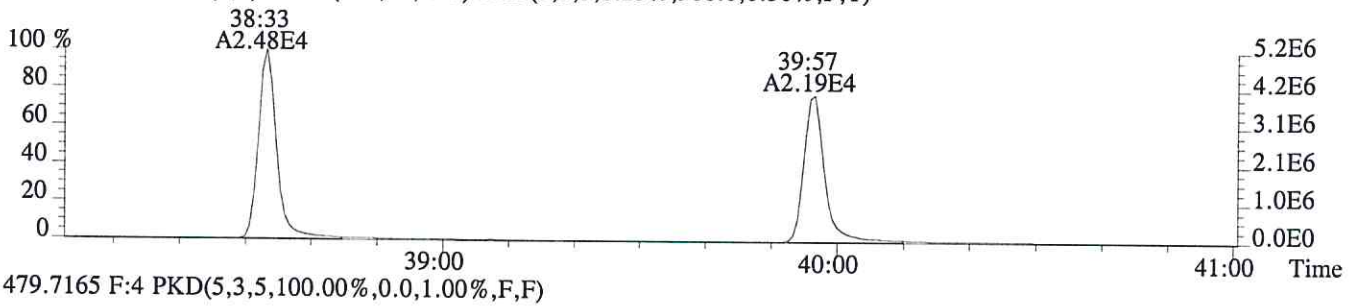
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,348.0,0.50%,F,T)



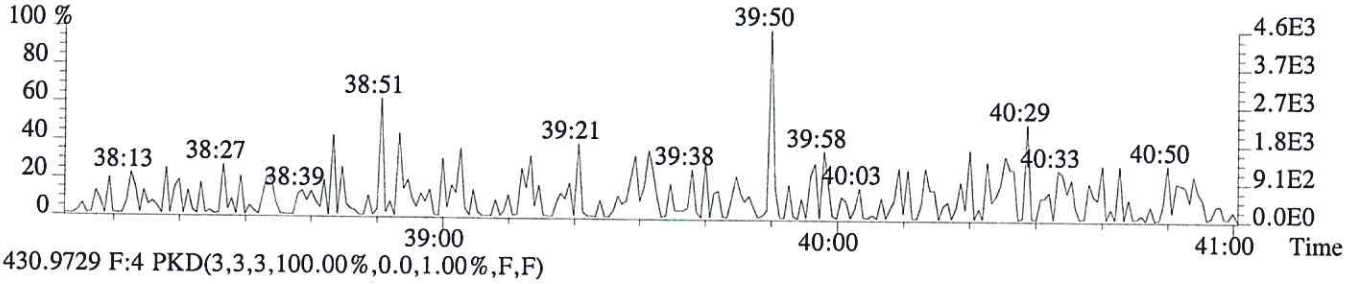
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2712.0,0.50%,F,T)



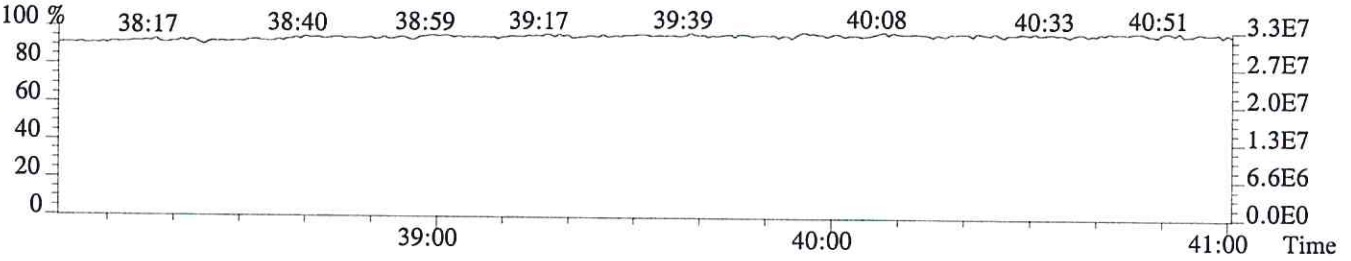
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,900.0,0.50%,F,T)



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

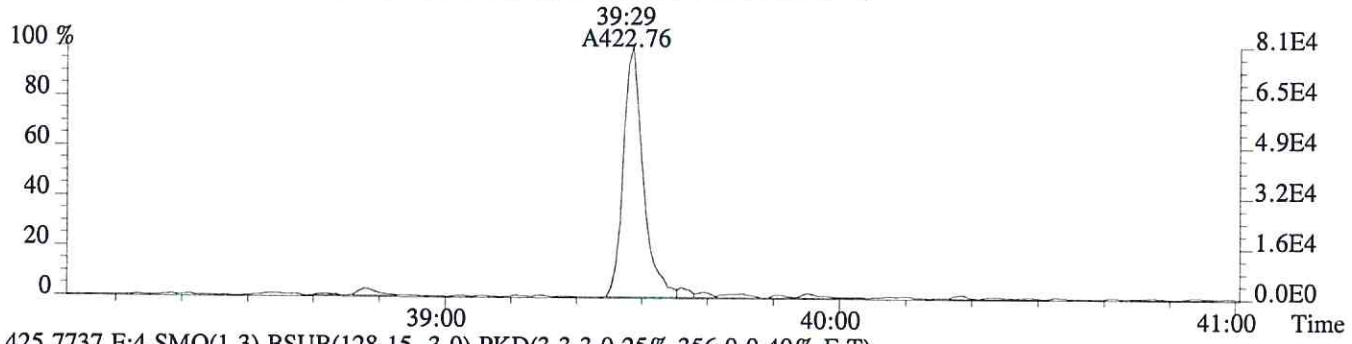


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

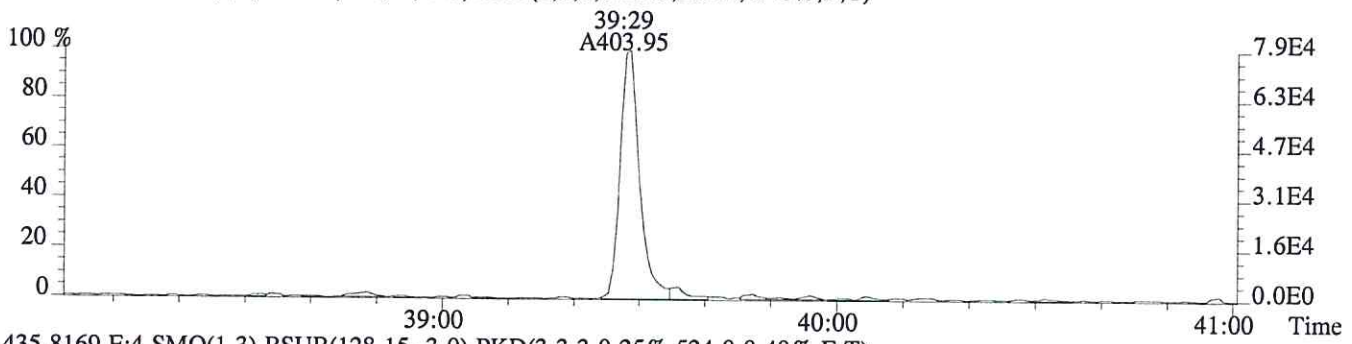


File:P402426 #1-268 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

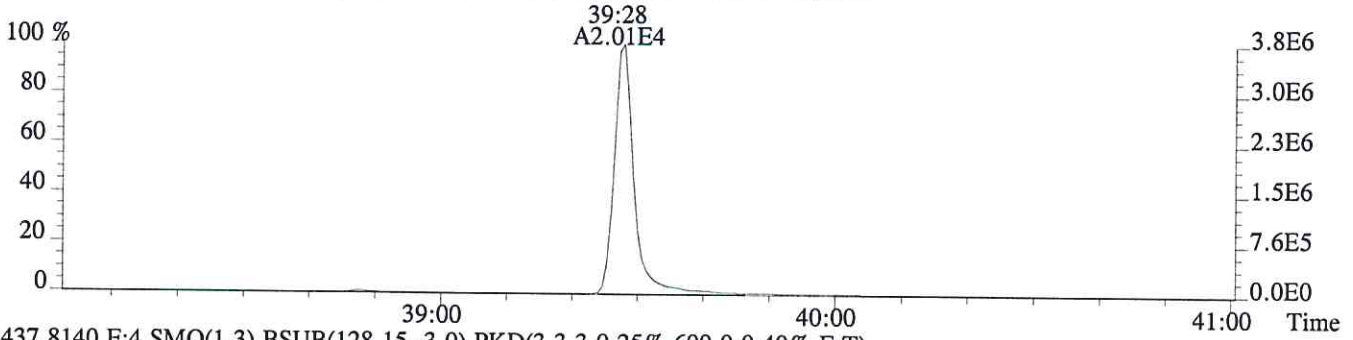
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,384.0,0.40%,F,T)



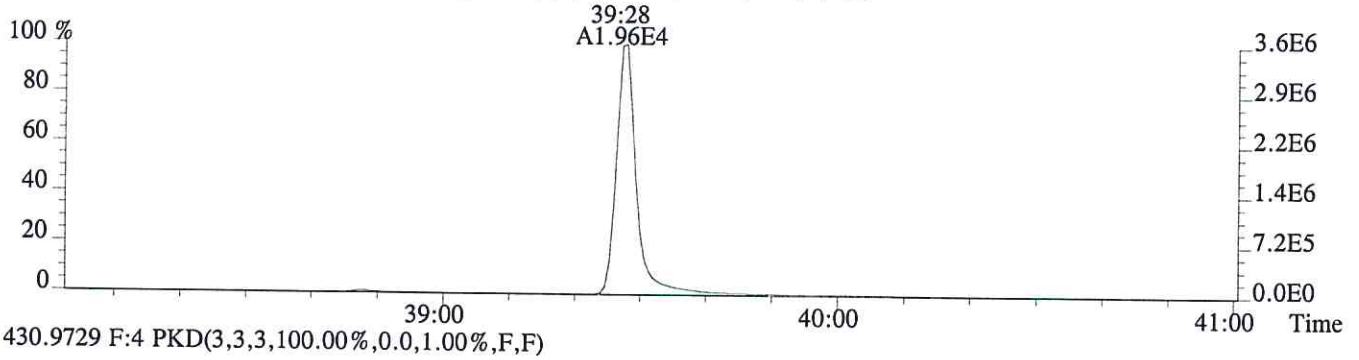
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,356.0,0.40%,F,T)



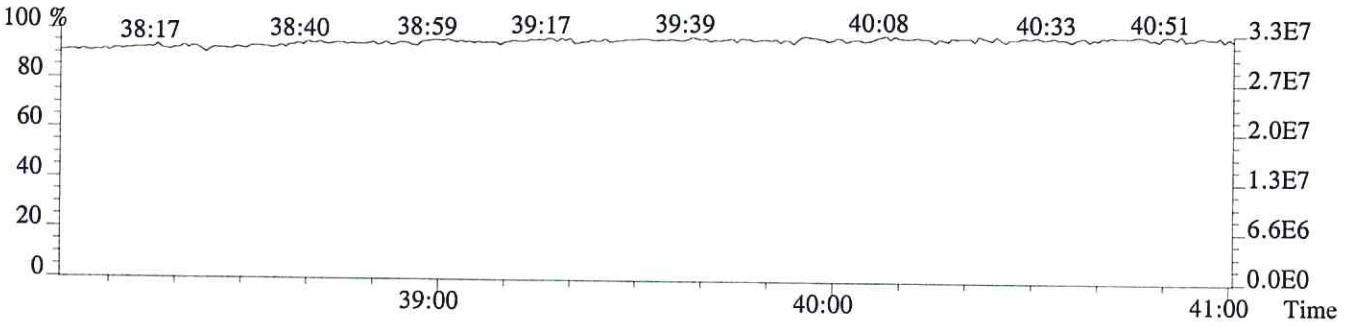
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,524.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.40%,F,T)

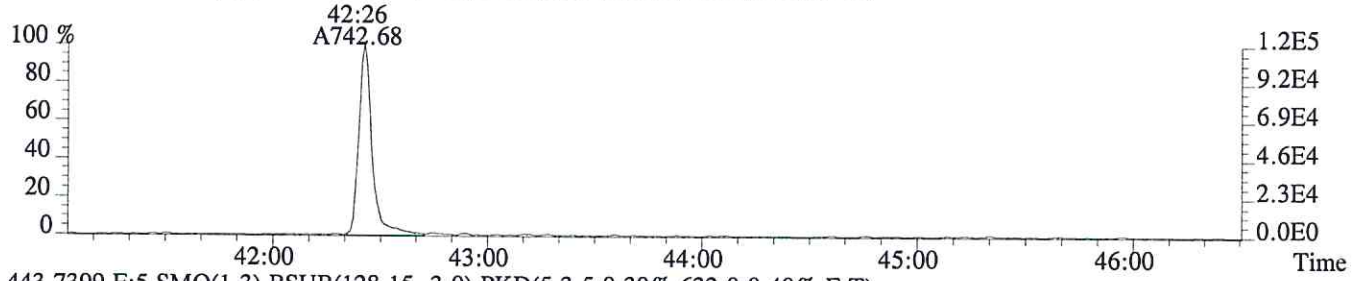


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

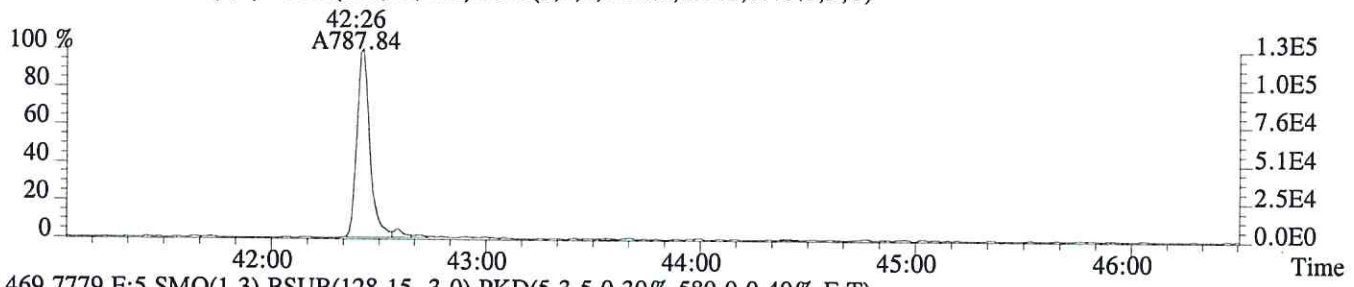


File:P402426 #1-492 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

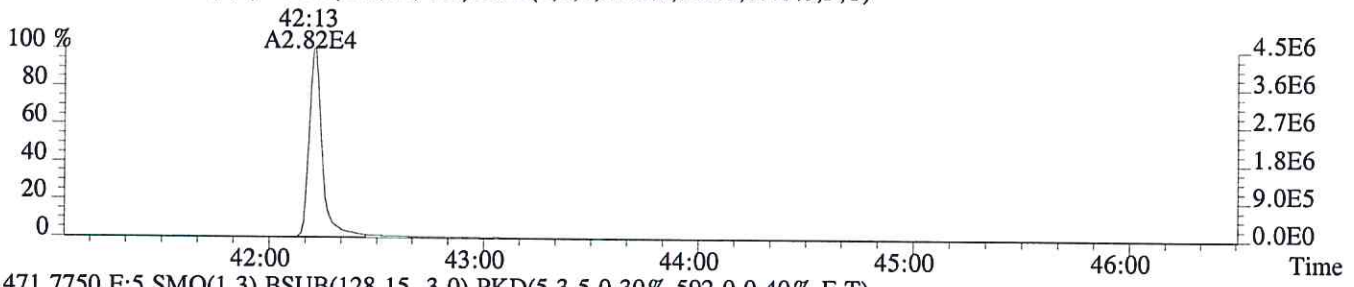
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,448.0,0.40%,F,T)



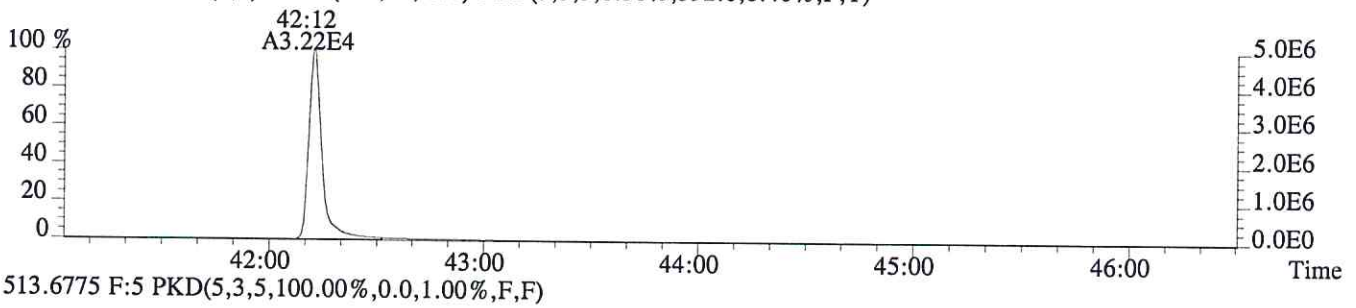
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,632.0,0.40%,F,T)



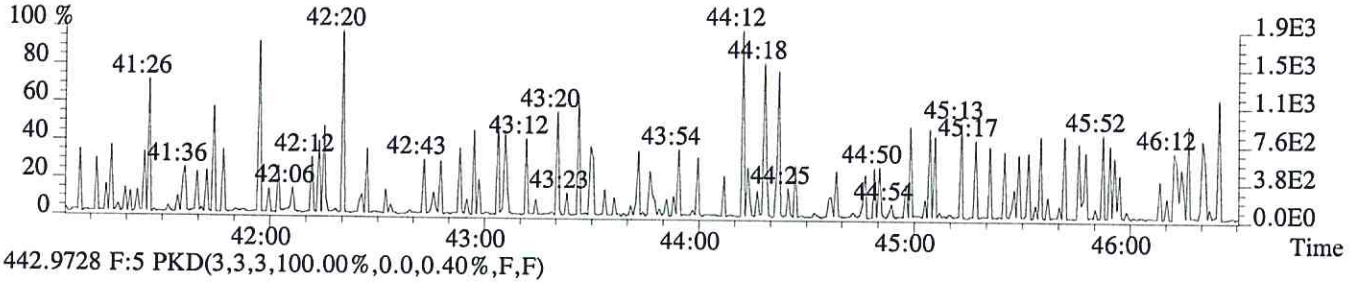
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,580.0,0.40%,F,T)



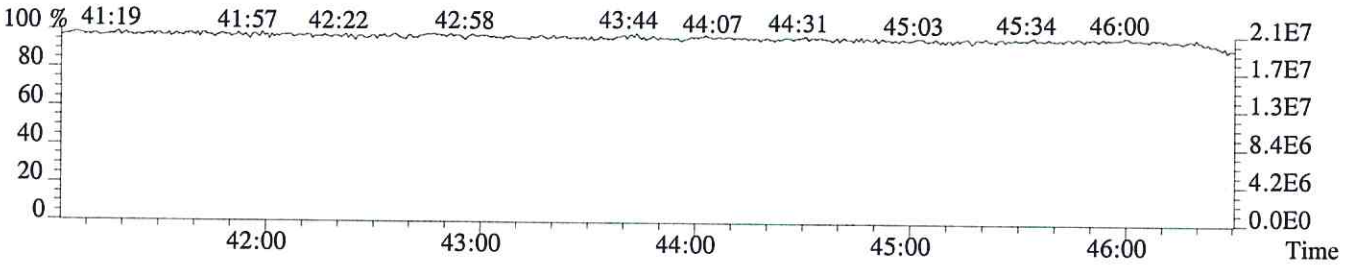
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,592.0,0.40%,F,T)



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

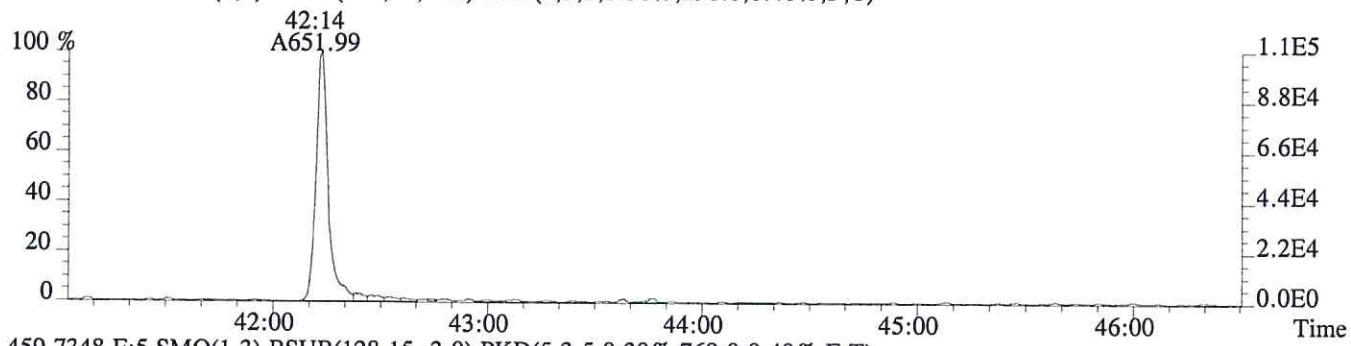


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

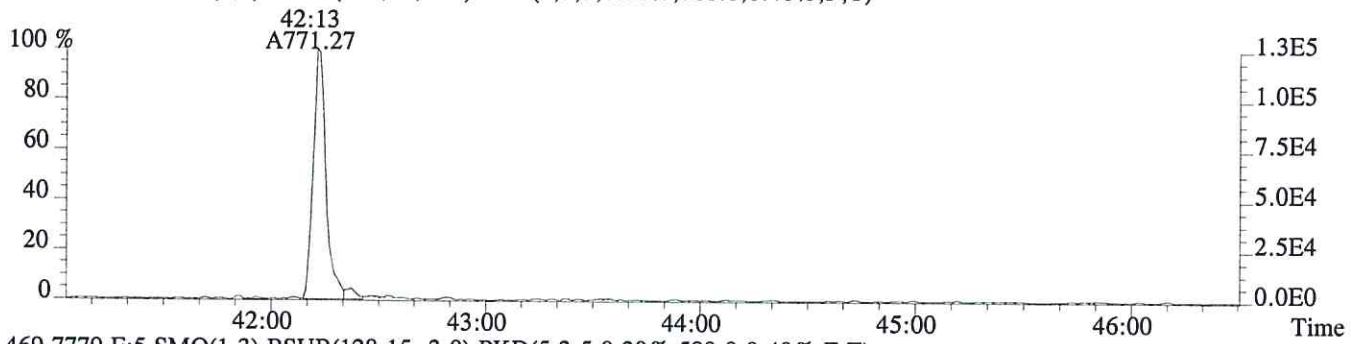


File:P402426 #1-492 Acq:28-APR-2016 12:33:36 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76555

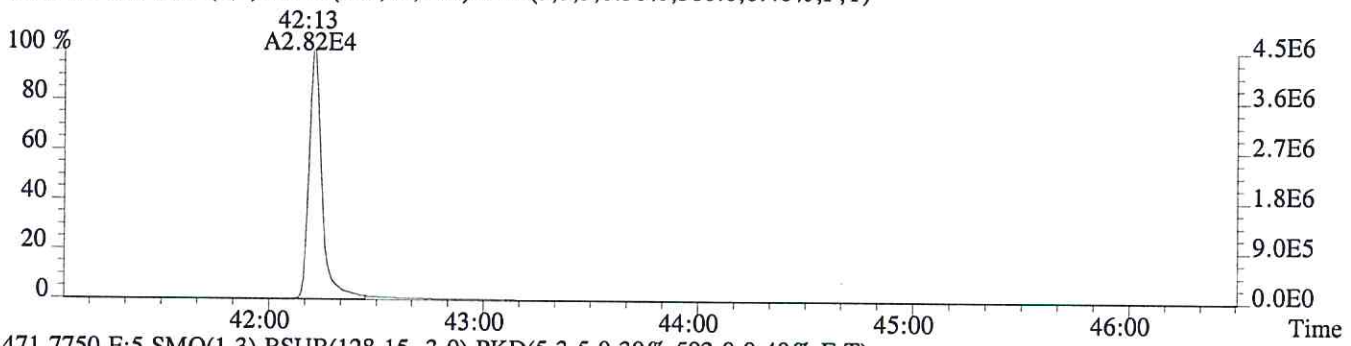
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,296.0,0.40%,F,T)



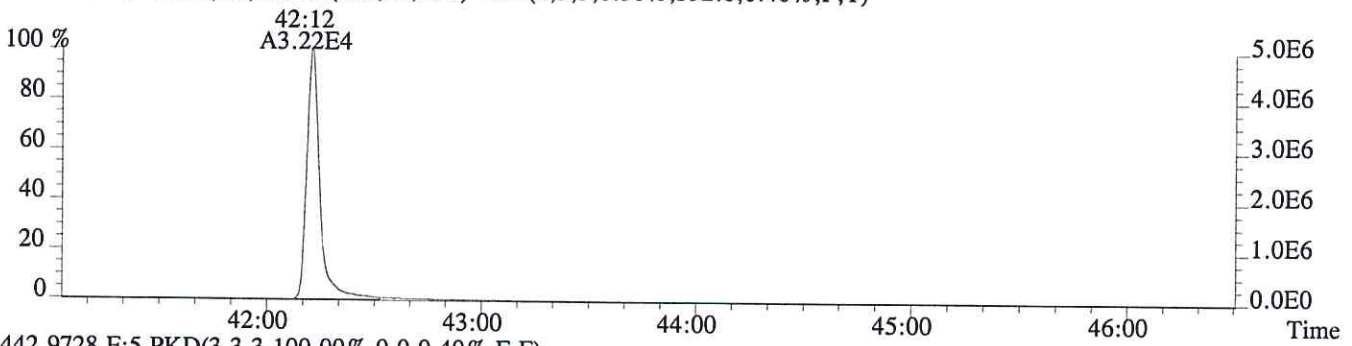
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,768.0,0.40%,F,T)



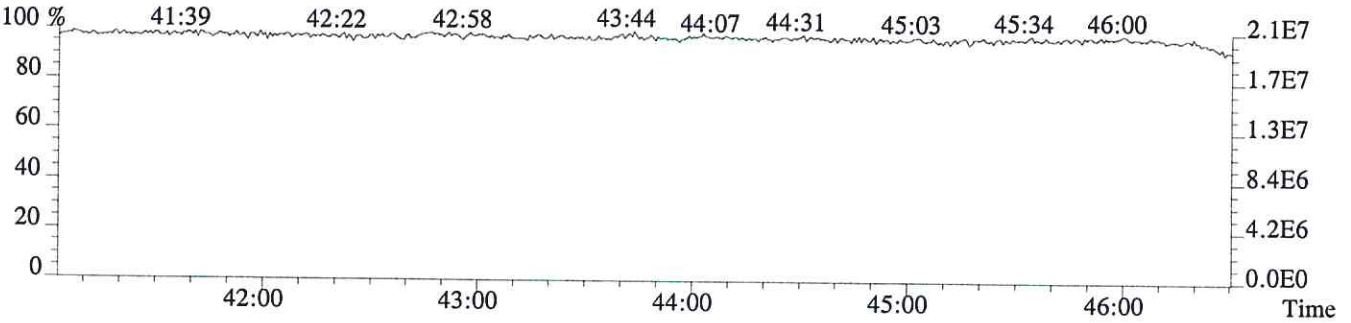
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,580.0,0.40%,F,T)



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)



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76556

Run #3 Filename P402427 Samp: 1 Inj: 1 Acquired: 28-APR-16 13:21:59
Processed: 28-APR-16 16:59:48 Sample ID: CS2

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:22	3.911e+02	5.506e+02	0.71	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	32:29	3.165e+03	2.040e+03	1.55	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	33:22	3.006e+03	1.950e+03	1.54	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	36:00	2.492e+03	1.974e+03	1.26	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	36:06	2.720e+03	2.257e+03	1.20	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:36	2.439e+03	1.940e+03	1.26	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	37:20	2.157e+03	1.761e+03	1.22	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:34	2.166e+03	2.096e+03	1.03	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:57	1.768e+03	1.701e+03	1.04	yes	no	1.187
10	Unk	OCDF	42:26	2.784e+03	3.203e+03	0.87	yes	no	1.035
11	Unk	2,3,7,8-TCDD	29:08	4.219e+02	5.216e+02	0.81	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:39	2.570e+03	1.613e+03	1.59	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:44	1.841e+03	1.539e+03	1.20	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:49	2.095e+03	1.709e+03	1.23	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	37:03	2.072e+03	1.655e+03	1.25	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	39:29	1.665e+03	1.645e+03	1.01	yes	no	0.882
17	Unk	OCDD	42:14	2.660e+03	3.014e+03	0.88	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	28:20	2.931e+04	3.813e+04	0.77	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	32:28	3.917e+04	2.512e+04	1.56	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	33:21	3.850e+04	2.471e+04	1.56	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	36:00	1.440e+04	2.806e+04	0.51	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	36:06	1.674e+04	3.369e+04	0.50	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:35	1.535e+04	3.028e+04	0.51	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	37:20	1.355e+04	2.677e+04	0.51	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:33	1.083e+04	2.513e+04	0.43	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:57	9.699e+03	2.220e+04	0.44	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	29:06	2.544e+04	3.251e+04	0.78	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	33:38	3.281e+04	2.089e+04	1.57	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:43	2.309e+04	1.856e+04	1.24	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:48	2.525e+04	1.997e+04	1.26	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:28	1.994e+04	1.920e+04	1.04	yes	no	0.817
32	IS	13C-OCDD	42:13	2.908e+04	3.271e+04	0.89	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	28:33	2.622e+04	3.387e+04	0.77	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:02	2.629e+04	2.132e+04	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:07	1.118e+03				no	0.958

ALS ENVIRONMENTAL
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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76556

Run #3 Filename P402427 Samp: 1 Inj: 1 Acquired: 28-APR-16 13:21:59
Processed: 28-APR-16 16:59:481 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	7.56e+04	5.84e+02	1.3e+02	1.09e+05	8.64e+02	1.3e+02
2	1,2,3,7,8-PeCDF	6.11e+05	5.56e+02	1.1e+03	3.82e+05	1.34e+03	2.8e+02
3	2,3,4,7,8-PeCDF	6.04e+05	5.56e+02	1.1e+03	3.87e+05	1.34e+03	2.9e+02
4	1,2,3,4,7,8-HxCDF	5.27e+05	3.84e+02	1.4e+03	4.25e+05	4.92e+02	8.6e+02
5	1,2,3,6,7,8-HxCDF	5.56e+05	3.84e+02	1.4e+03	4.54e+05	4.92e+02	9.2e+02
6	2,3,4,6,7,8-HxCDF	5.10e+05	3.84e+02	1.3e+03	4.03e+05	4.92e+02	8.2e+02
7	1,2,3,7,8,9-HxCDF	4.26e+05	3.84e+02	1.1e+03	3.56e+05	4.92e+02	7.2e+02
8	1,2,3,4,6,7,8-HpCDF	4.69e+05	7.00e+02	6.7e+02	4.58e+05	4.36e+02	1.1e+03
9	1,2,3,4,7,8,9-HpCDF	3.35e+05	7.00e+02	4.8e+02	3.25e+05	4.36e+02	7.4e+02
10	OCDF	4.56e+05	4.12e+02	1.1e+03	5.23e+05	9.64e+02	5.4e+02
11	2,3,7,8-TCDD	8.71e+04	8.44e+02	1.0e+02	1.05e+05	6.52e+02	1.6e+02
12	1,2,3,7,8-PeCDD	5.01e+05	5.56e+02	9.0e+02	3.20e+05	5.04e+02	6.4e+02
13	1,2,3,4,7,8-HxCDD	4.17e+05	1.09e+03	3.8e+02	3.54e+05	5.00e+02	7.1e+02
14	1,2,3,6,7,8-HxCDD	4.29e+05	1.09e+03	3.9e+02	3.56e+05	5.00e+02	7.1e+02
15	1,2,3,7,8,9-HxCDD	4.12e+05	1.09e+03	3.8e+02	3.42e+05	5.00e+02	6.8e+02
16	1,2,3,4,6,7,8-HpCDD	3.29e+05	4.12e+02	8.0e+02	3.22e+05	3.36e+02	9.6e+02
17	OCDD	4.46e+05	5.60e+01	8.0e+03	5.09e+05	6.56e+02	7.8e+02
18	13C-2,3,7,8-TCDF	5.75e+06	2.51e+03	2.3e+03	7.59e+06	1.28e+03	5.9e+03
19	13C-1,2,3,7,8-PeCDF	7.52e+06	2.12e+02	3.5e+04	4.83e+06	6.84e+02	7.1e+03
20	13C-2,3,4,7,8-PeCDF	7.89e+06	2.12e+02	3.7e+04	5.05e+06	6.84e+02	7.4e+03
21	13C-1,2,3,4,7,8-HxCDF	3.07e+06	8.04e+02	3.8e+03	6.05e+06	1.15e+03	5.3e+03
22	13C-1,2,3,6,7,8-HxCDF	3.52e+06	8.04e+02	4.4e+03	6.88e+06	1.15e+03	6.0e+03
23	13C-2,3,4,6,7,8-HxCDF	3.26e+06	8.04e+02	4.1e+03	6.44e+06	1.15e+03	5.6e+03
24	13C-1,2,3,7,8,9-HxCDF	2.67e+06	8.04e+02	3.3e+03	5.35e+06	1.15e+03	4.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.32e+06	2.21e+03	1.0e+03	5.32e+06	1.80e+03	3.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.84e+06	2.21e+03	8.3e+02	4.23e+06	1.80e+03	2.3e+03
27	13C-2,3,7,8-TCDD	5.39e+06	5.16e+03	1.0e+03	6.81e+06	2.49e+03	2.7e+03
28	13C-1,2,3,7,8-PeCDD	6.68e+06	5.24e+02	1.3e+04	4.28e+06	5.04e+02	8.5e+03
29	13C-1,2,3,4,7,8-HxCDD	5.29e+06	2.50e+03	2.1e+03	4.24e+06	1.40e+03	3.0e+03
30	13C-1,2,3,6,7,8-HxCDD	5.18e+06	2.50e+03	2.1e+03	4.12e+06	1.40e+03	2.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.98e+06	9.08e+02	4.4e+03	3.83e+06	9.84e+02	3.9e+03
32	13C-OCDD	4.80e+06	8.72e+02	5.5e+03	5.39e+06	8.36e+02	6.4e+03
33	13C-1,2,3,4-TCDD	5.45e+06	5.16e+03	1.1e+03	7.02e+06	2.49e+03	2.8e+03
34	13C-1,2,3,7,8,9-HxCDD	5.28e+06	2.50e+03	2.1e+03	4.27e+06	1.40e+03	3.0e+03
35	37Cl-2,3,7,8-TCDD	2.28e+05	1.64e+03	1.4e+02			

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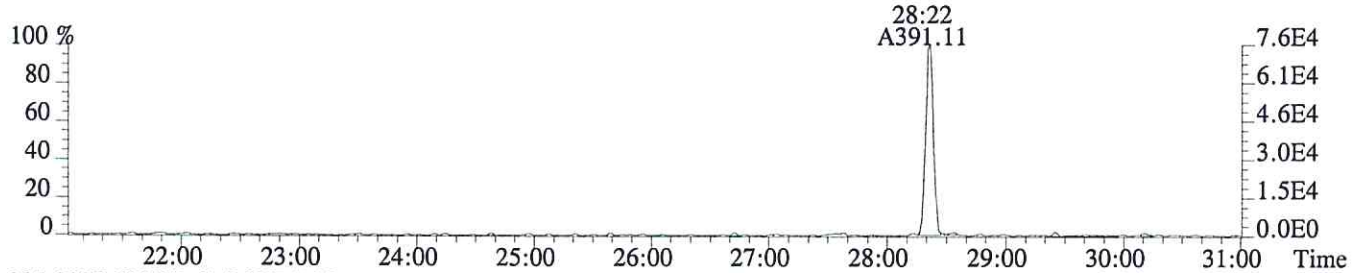
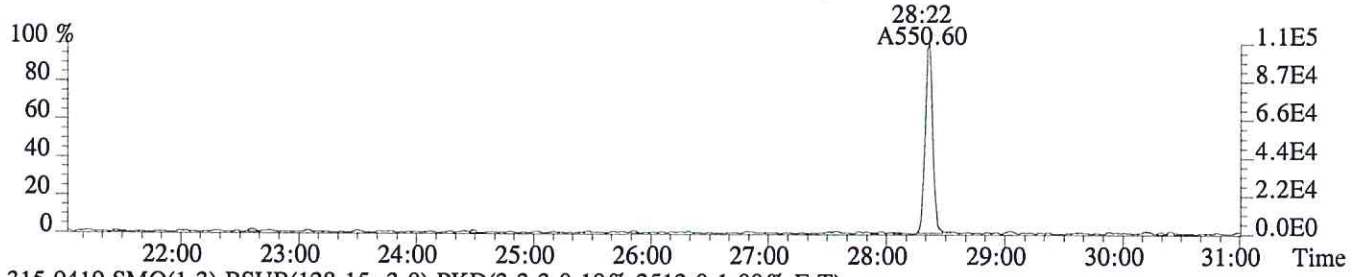
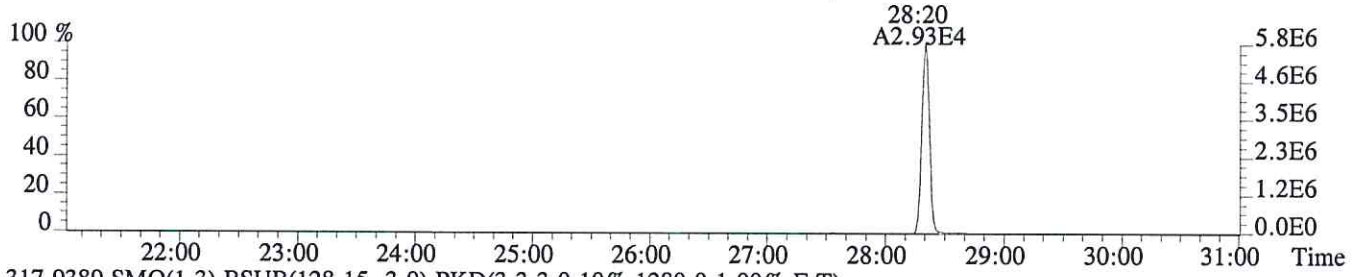
File:P402427 #1-684 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,584.0,1.00%,F,T)



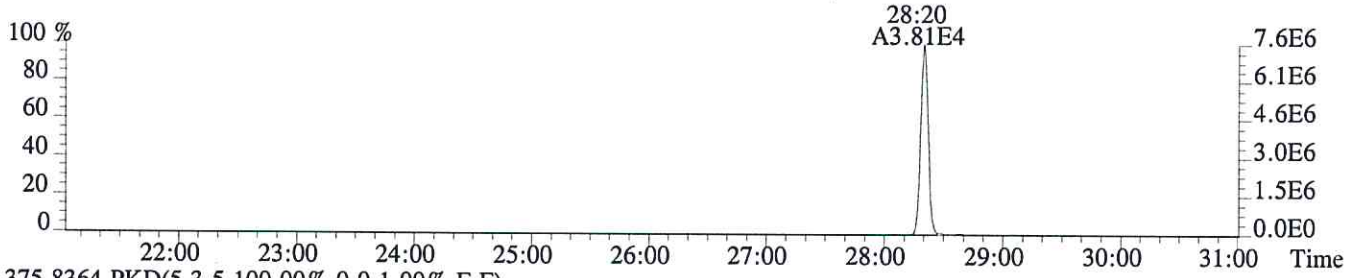
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,864.0,1.00%,F,T)



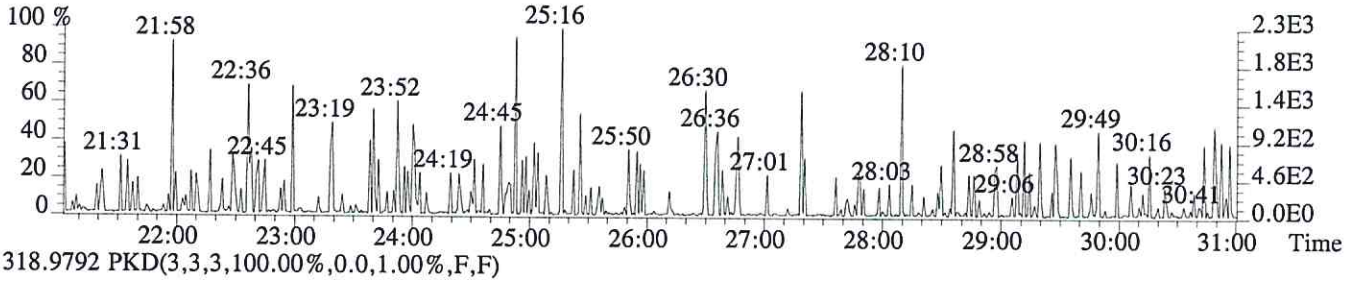
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2512.0,1.00%,F,T)



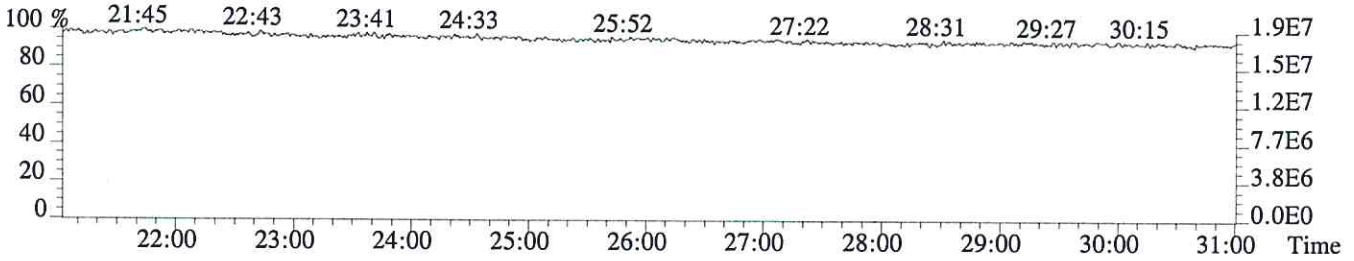
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1280.0,1.00%,F,T)



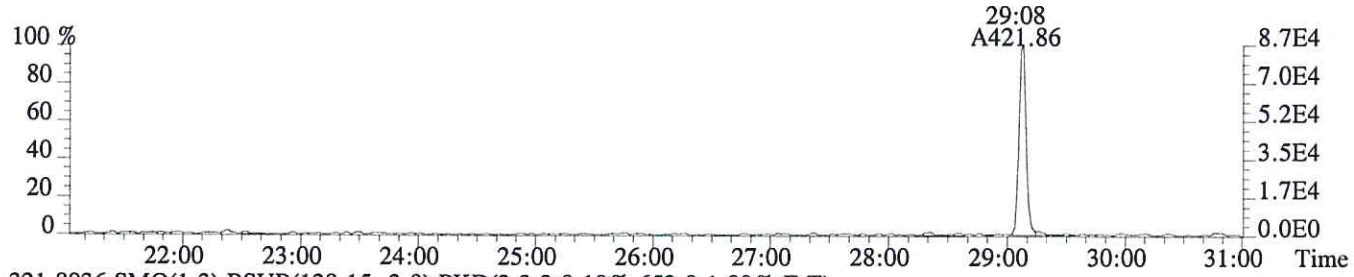
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



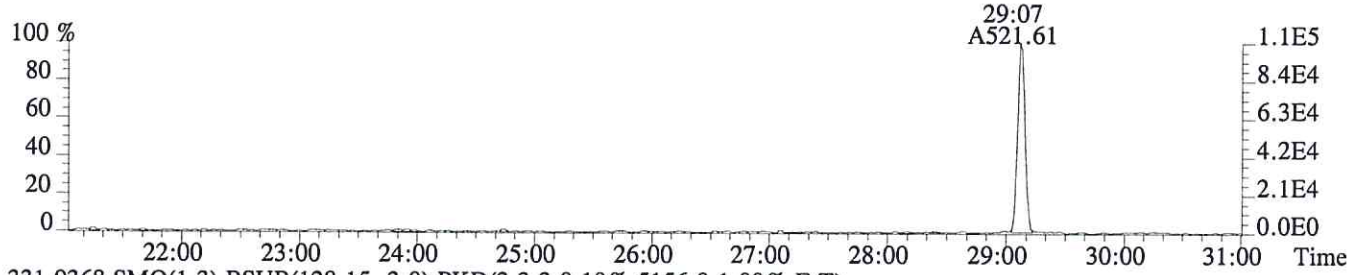
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



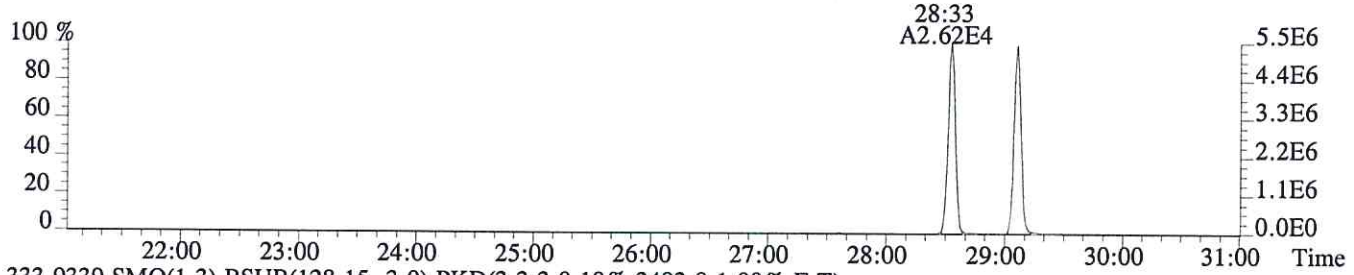
File:P402427 #1-684 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,844.0,1.00%,F,T)



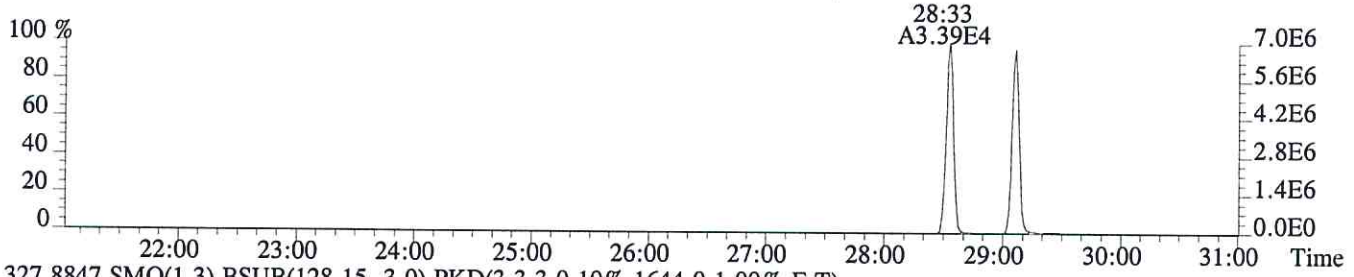
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,652.0,1.00%,F,T)



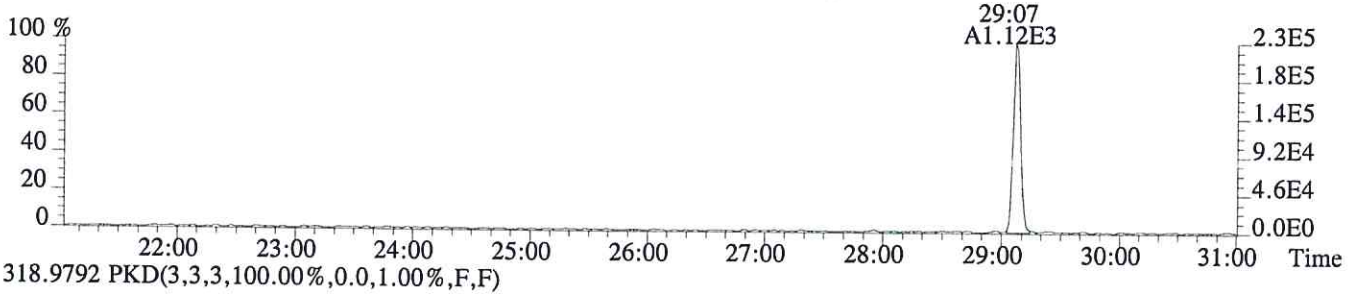
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5156.0,1.00%,F,T)



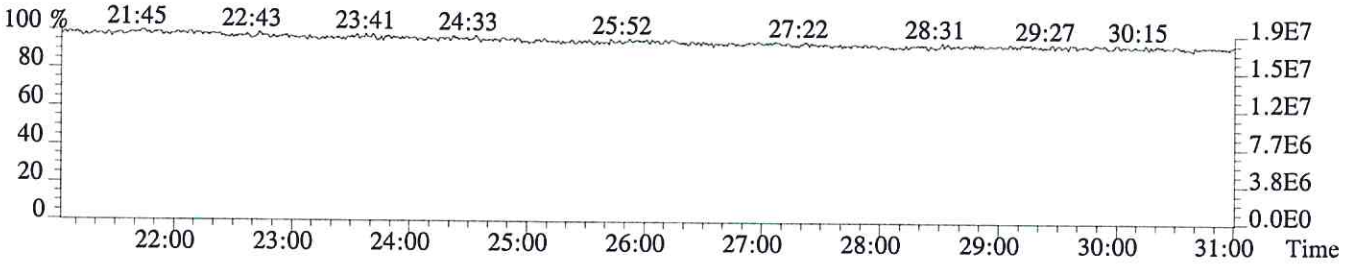
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2492.0,1.00%,F,T)



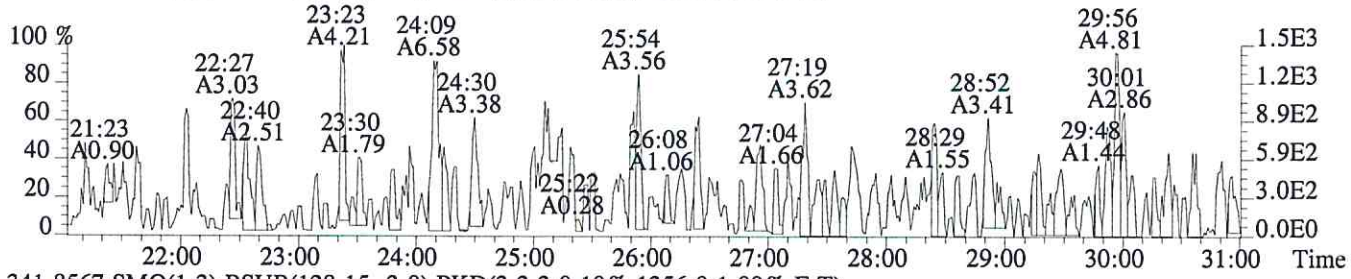
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1644.0,1.00%,F,T)



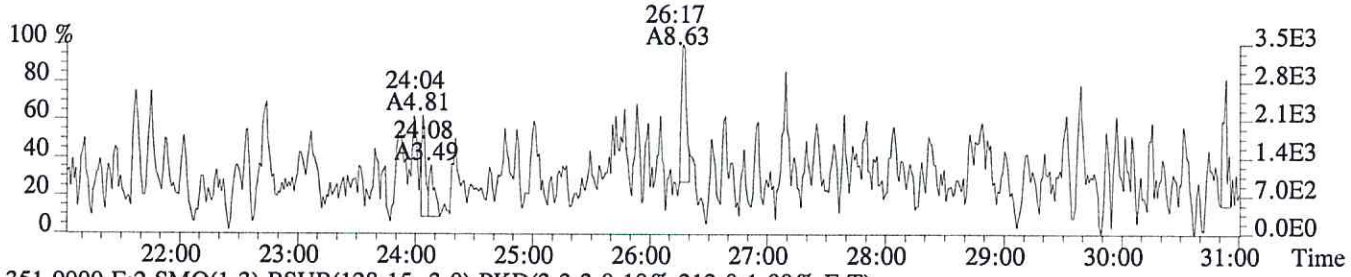
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



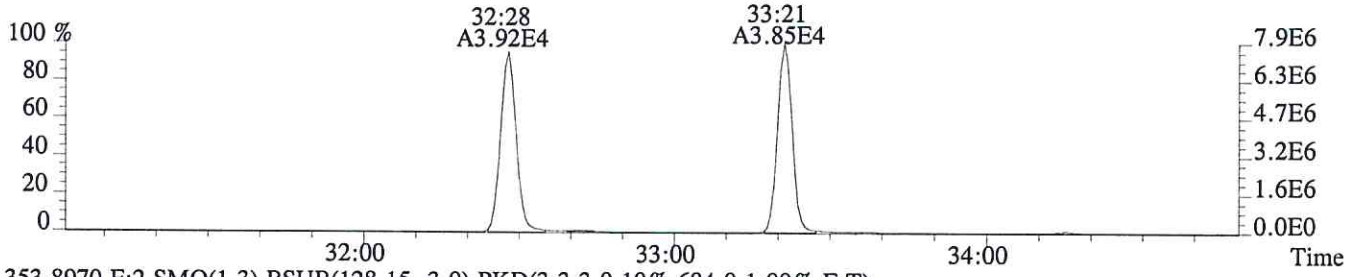
File:P402427 #1-684 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,320.0,1.00%,F,T)



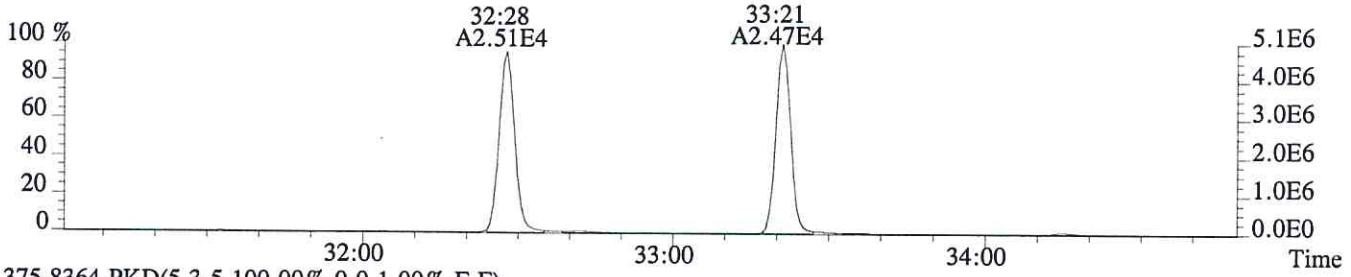
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1356.0,1.00%,F,T)



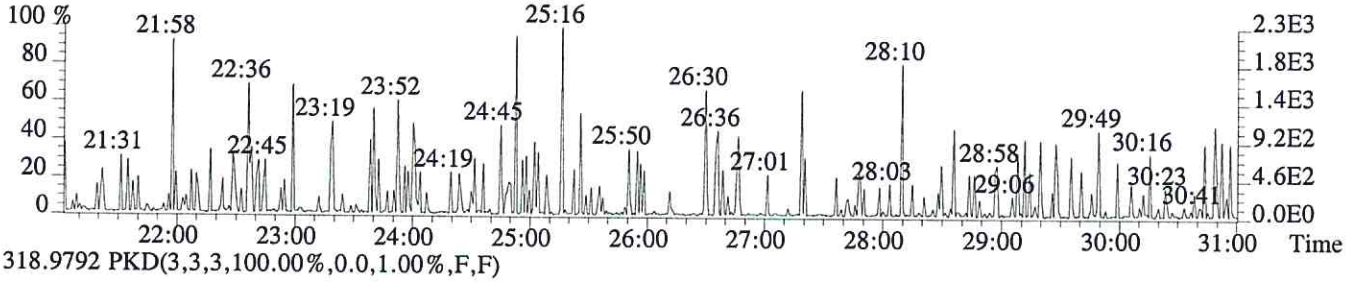
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,212.0,1.00%,F,T)



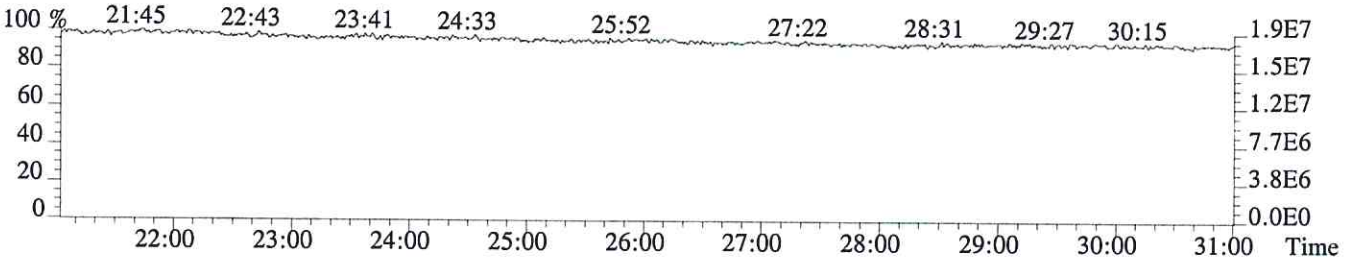
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



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

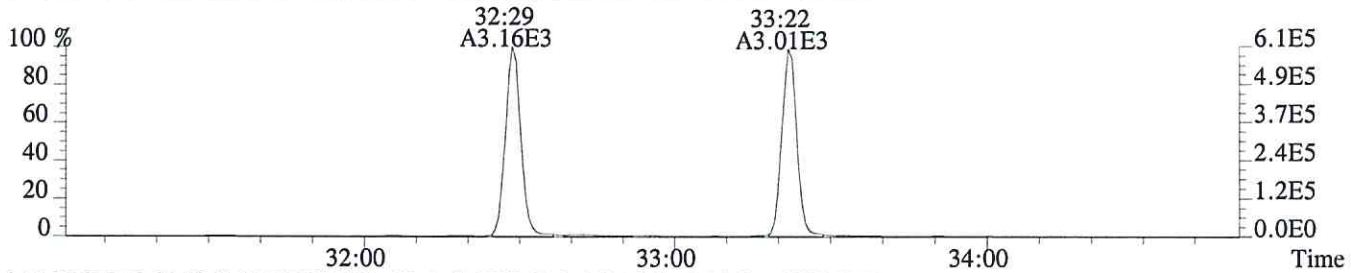


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

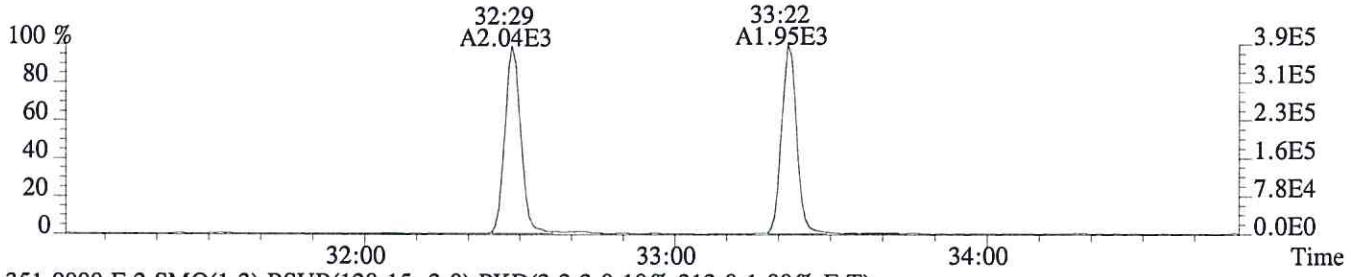


File:P402427 #1-340 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556

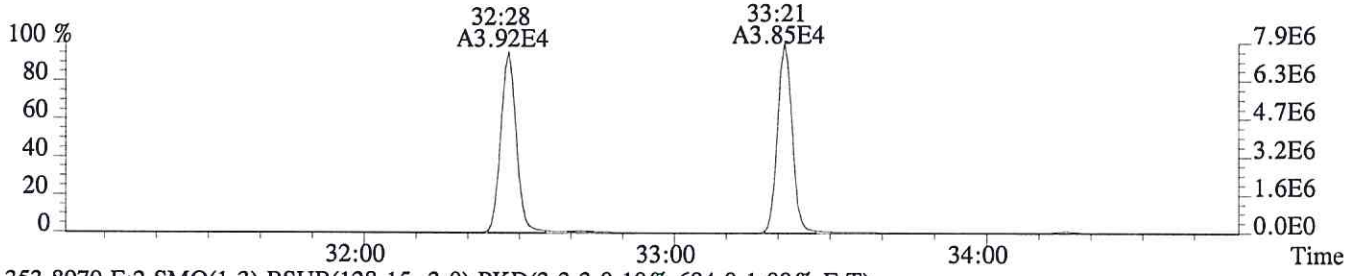
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,556.0,1.00%,F,T)



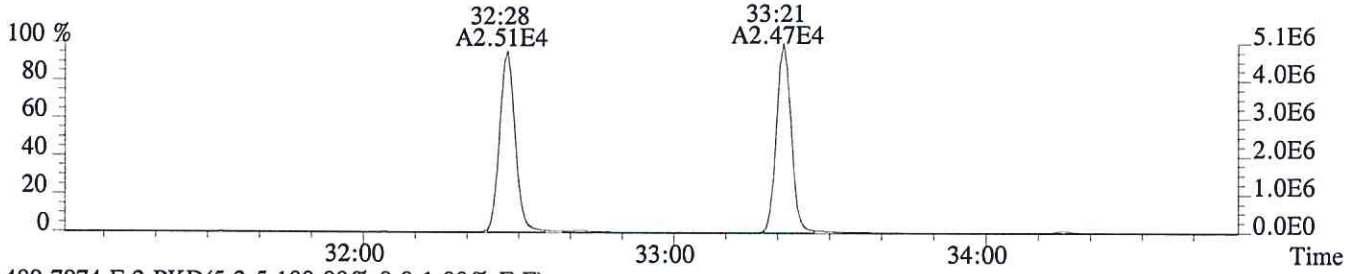
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1344.0,1.00%,F,T)



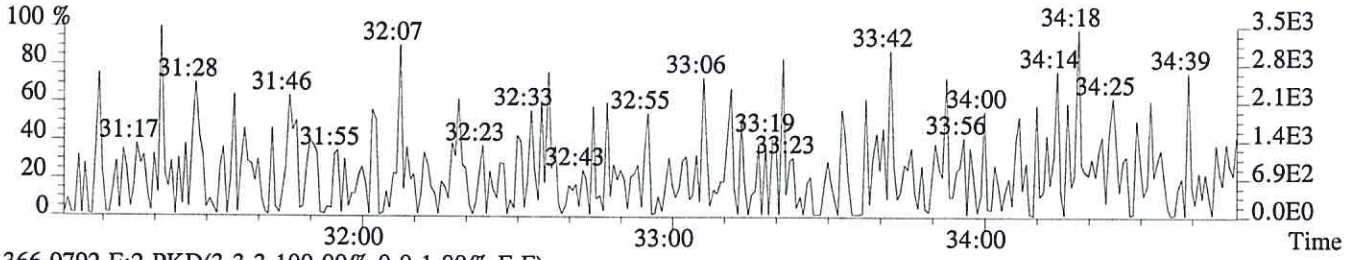
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,212.0,1.00%,F,T)



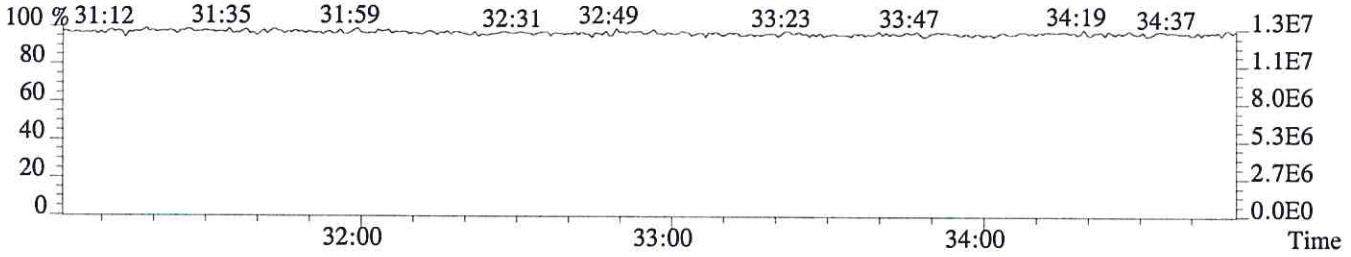
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)



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

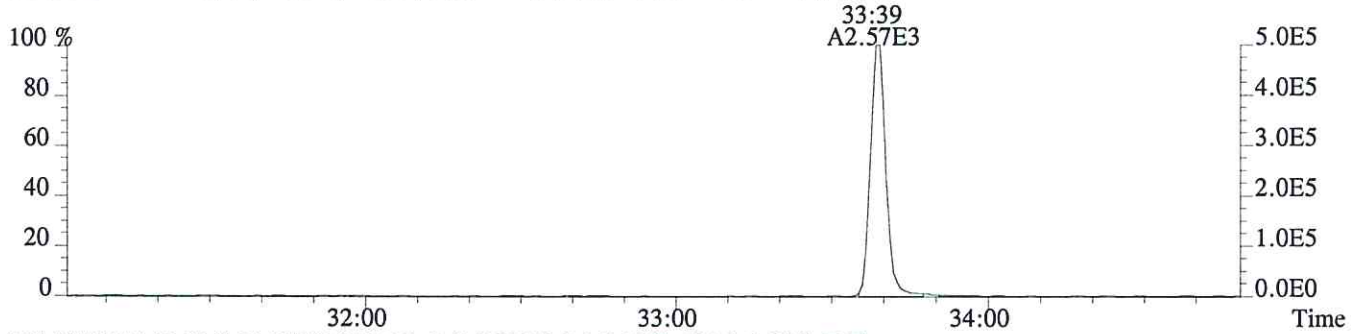


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

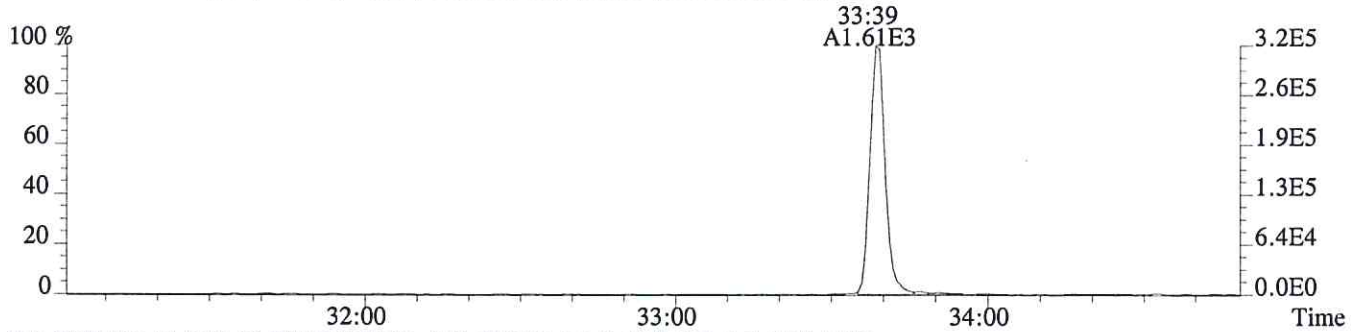


File:P402427 #1-340 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556

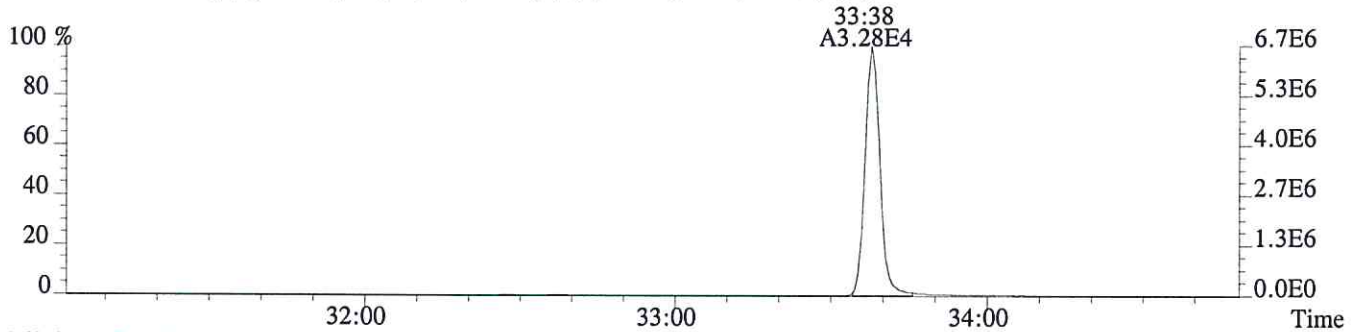
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,556.0,1.00%,F,T)



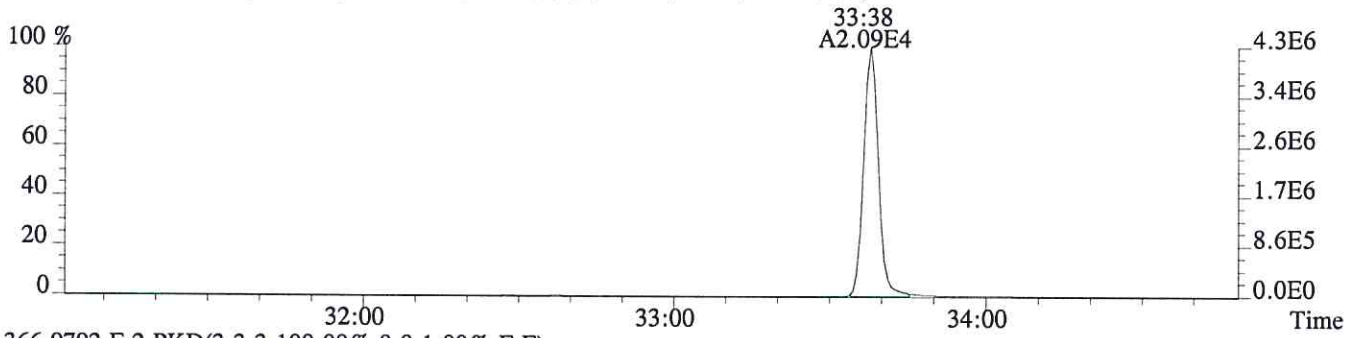
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,504.0,1.00%,F,T)



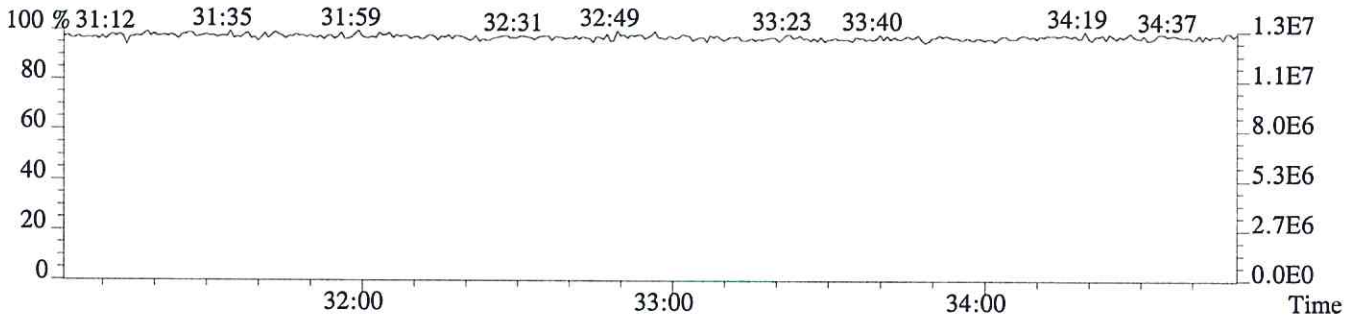
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,524.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,504.0,1.00%,F,T)

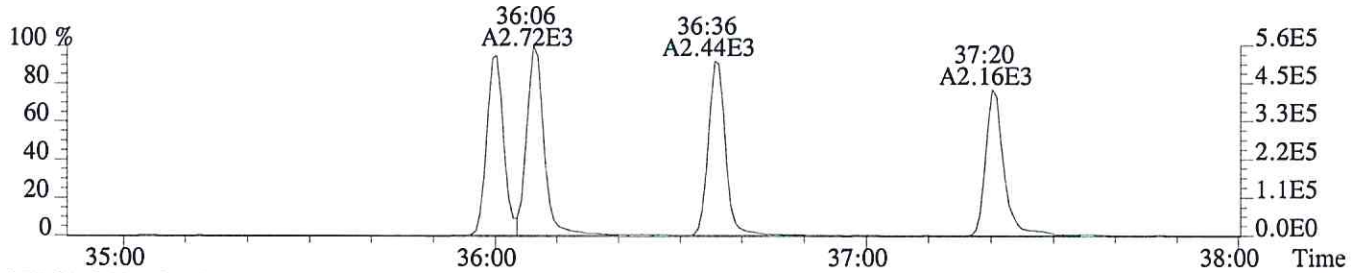


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

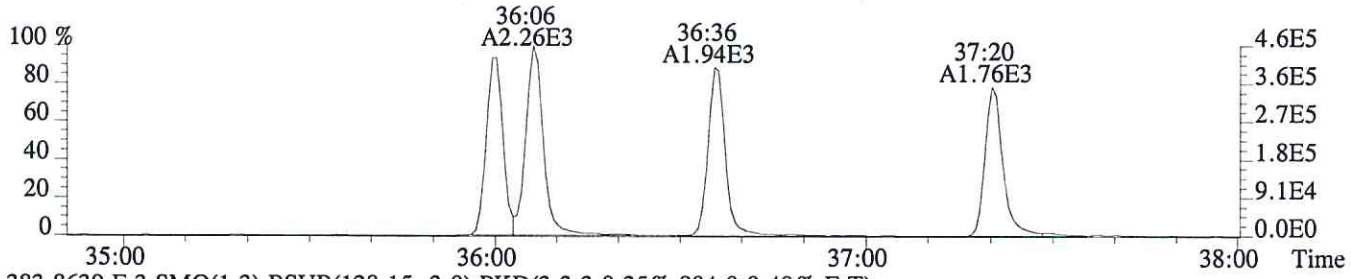


File:P402427 #1-285 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556

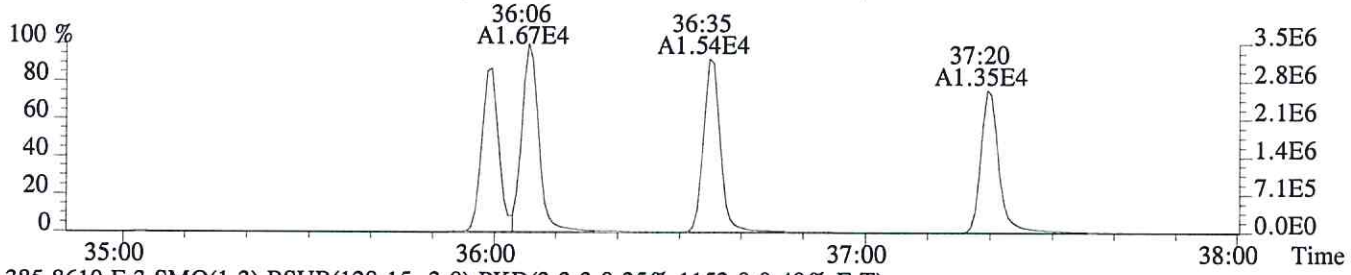
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,384.0,0.40%,F,T)



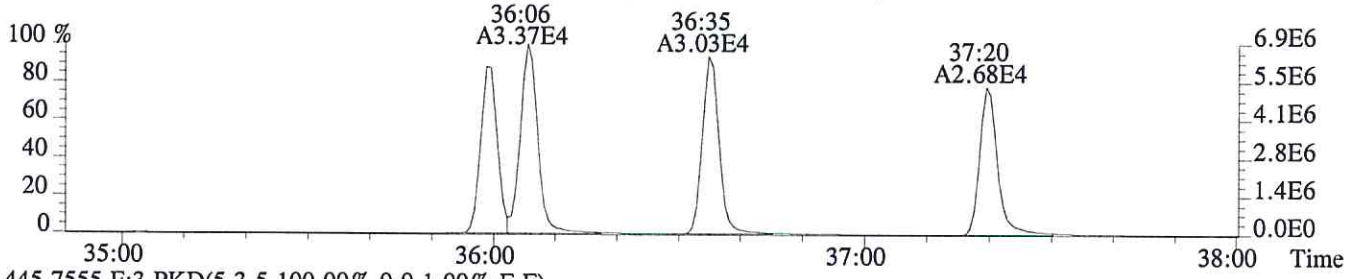
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,492.0,0.40%,F,T)



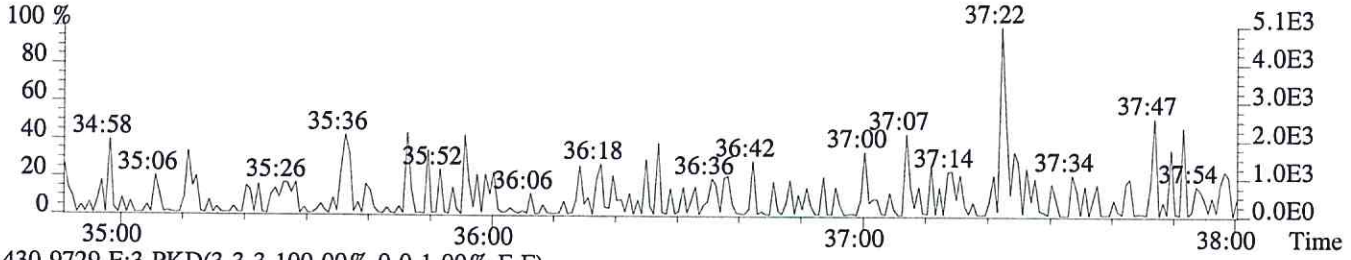
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,804.0,0.40%,F,T)



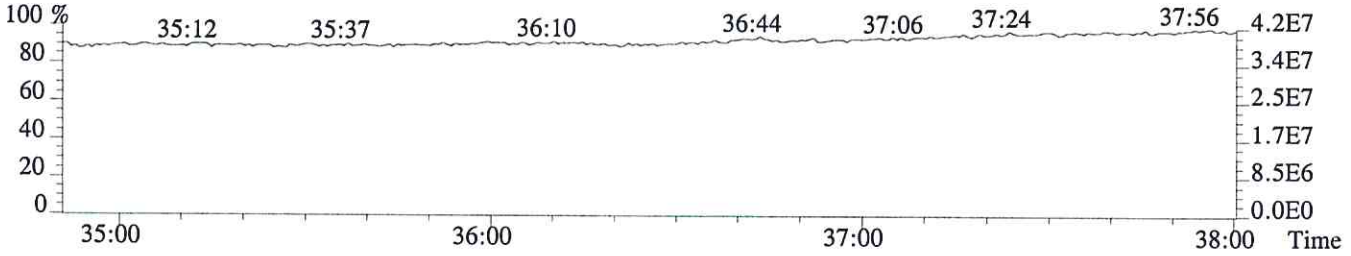
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1152.0,0.40%,F,T)



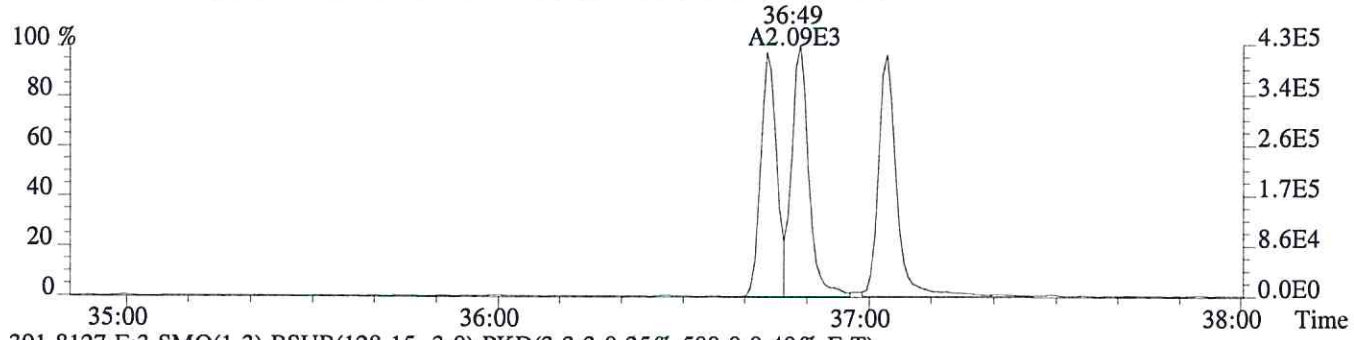
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



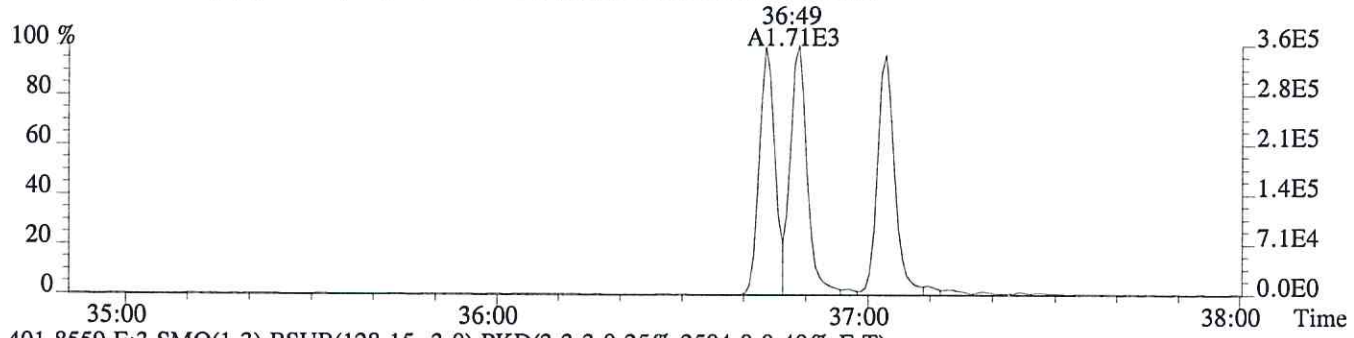
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



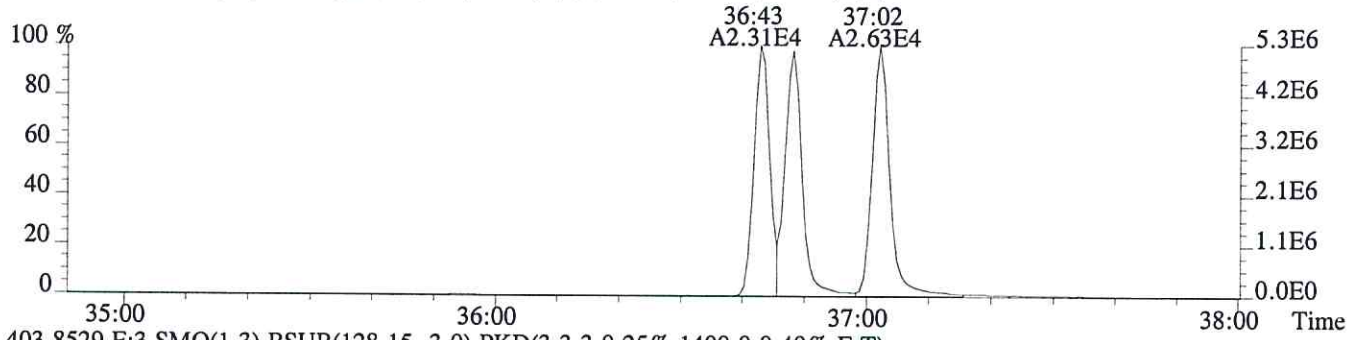
File:P402427 #1-285 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1092.0,0.40%,F,T)



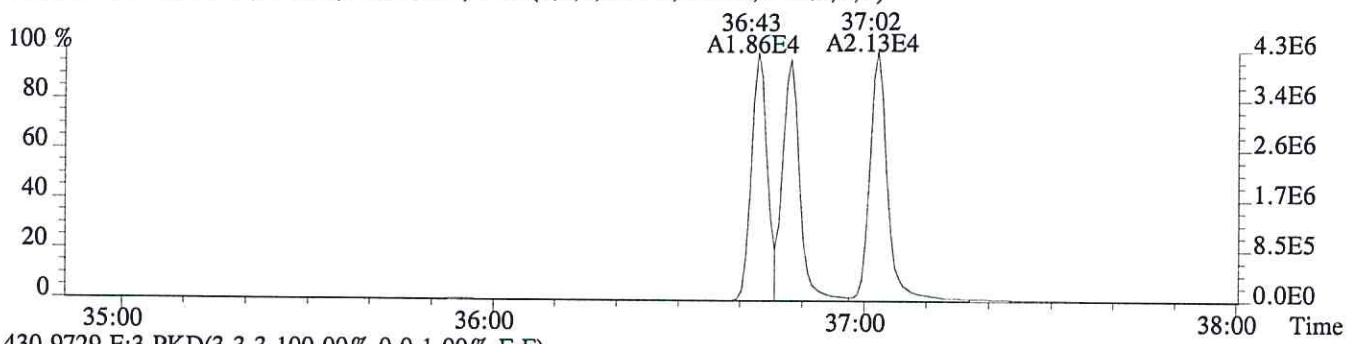
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,500.0,0.40%,F,T)



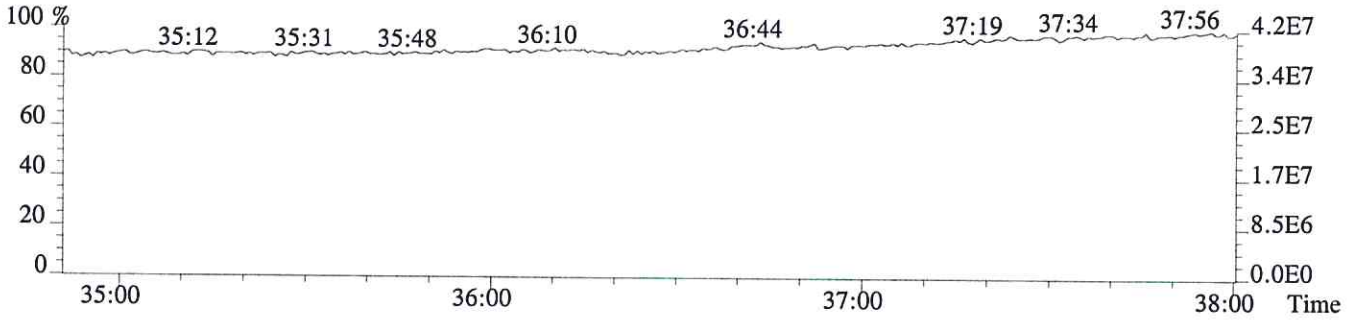
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2504.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1400.0,0.40%,F,T)

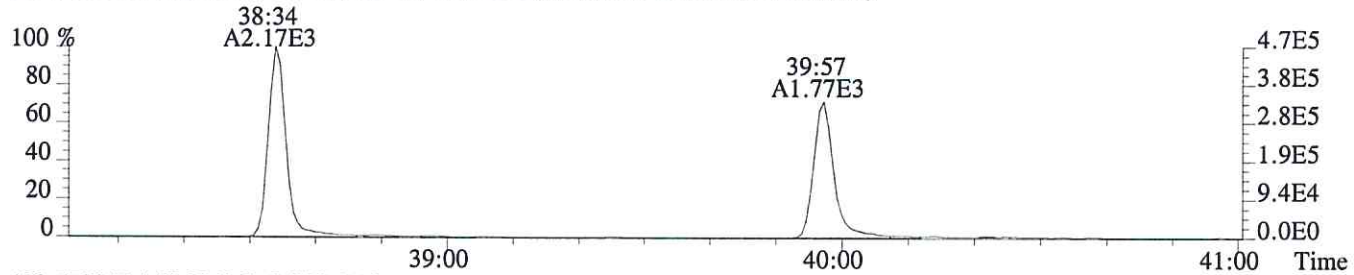


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

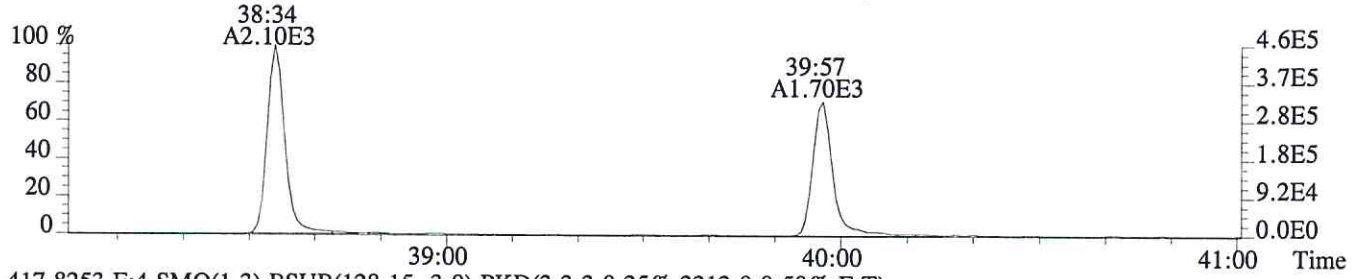


File:P402427 #1-268 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556

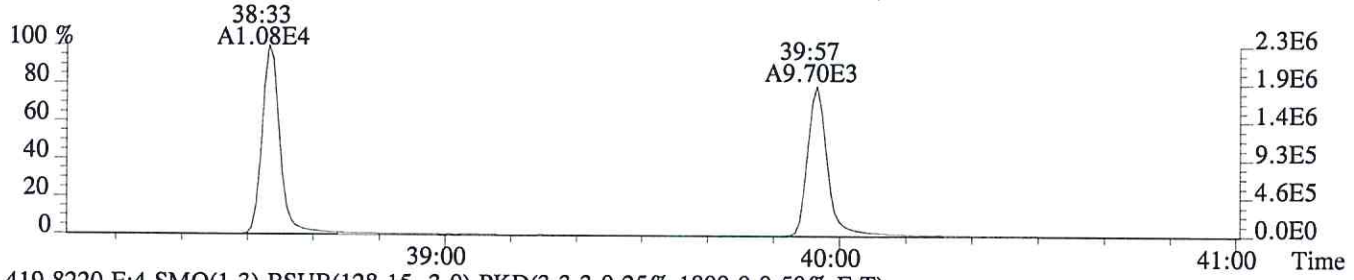
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,700.0,0.50%,F,T)



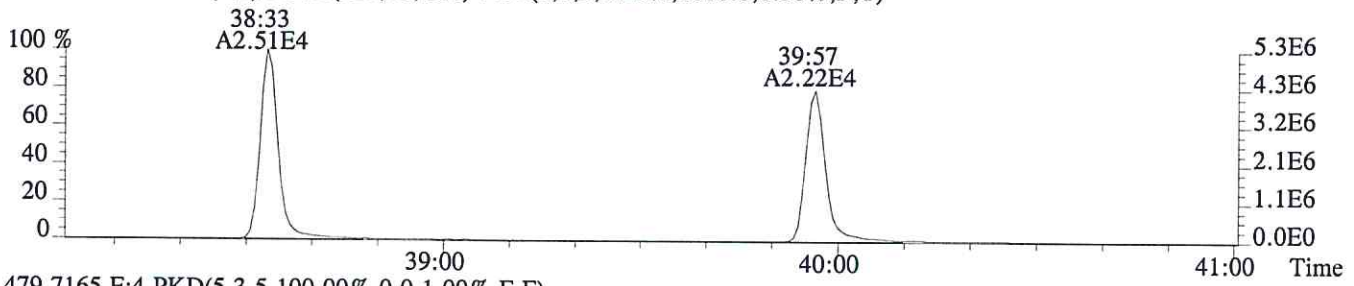
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,436.0,0.50%,F,T)



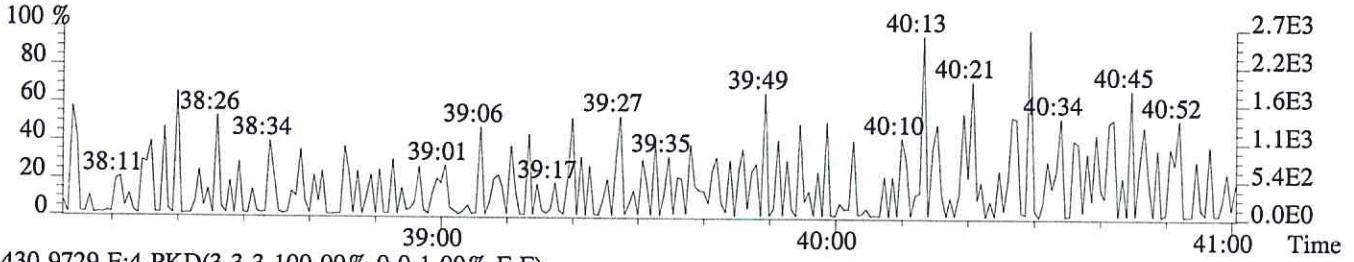
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2212.0,0.50%,F,T)



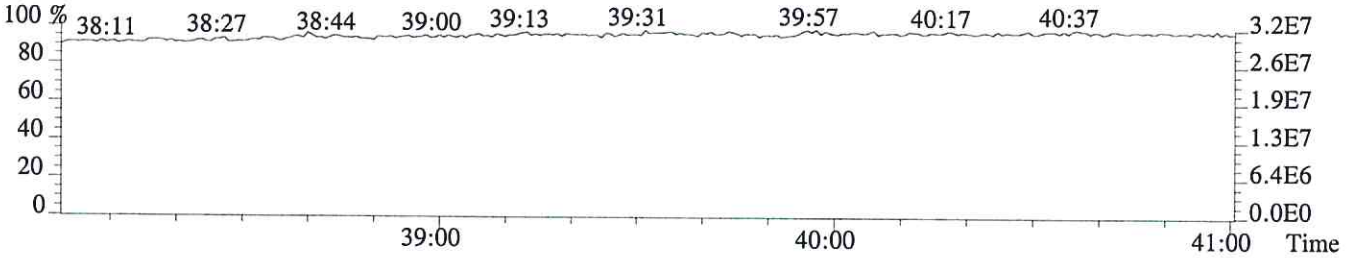
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1800.0,0.50%,F,T)



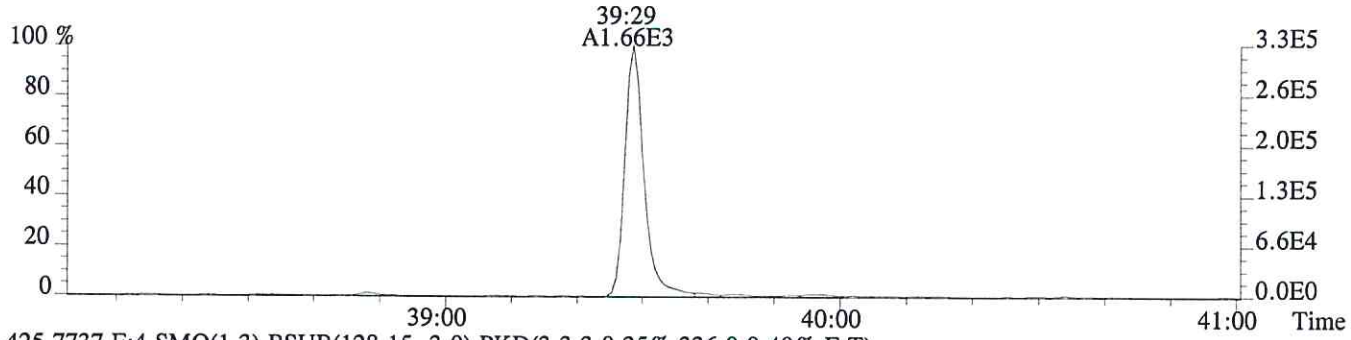
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



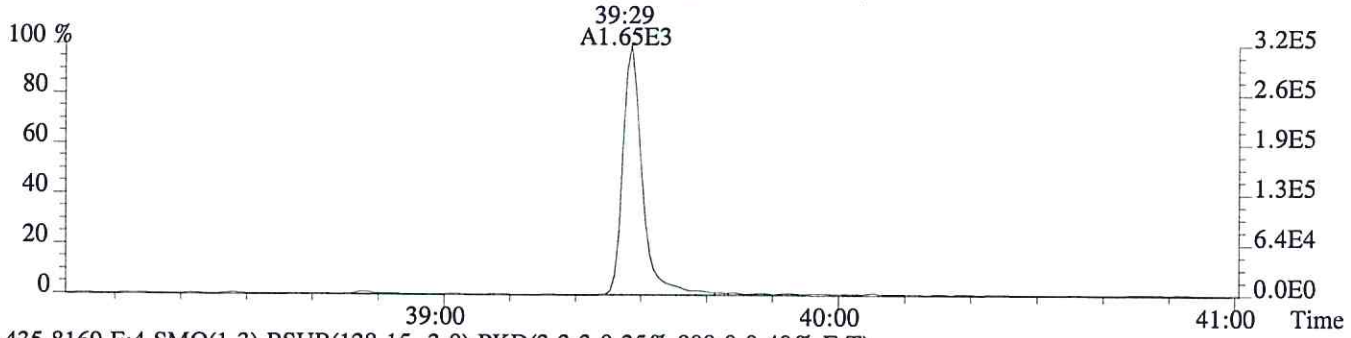
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



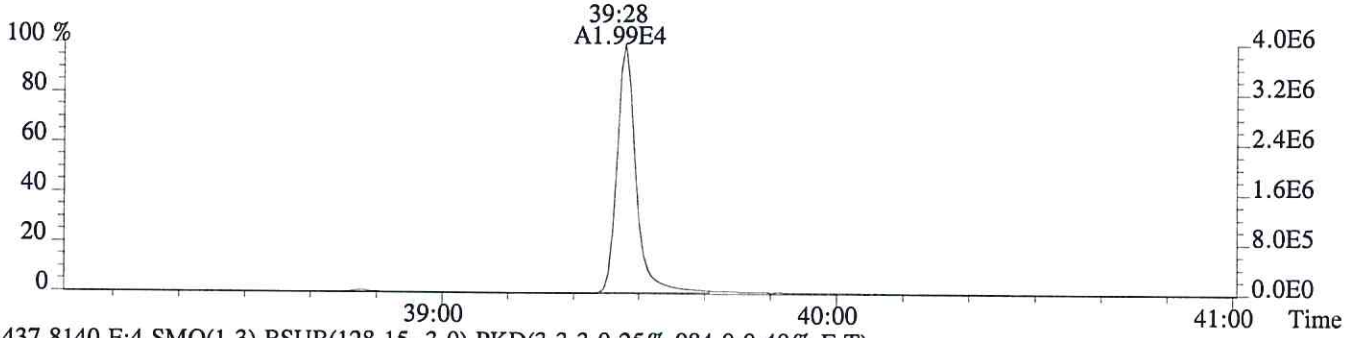
File:P402427 #1-268 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,412.0,0.40%,F,T)



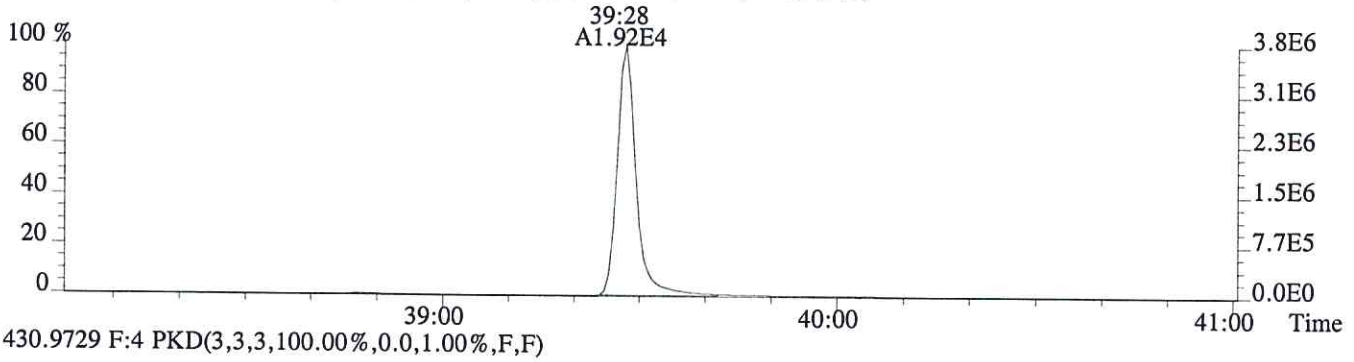
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,336.0,0.40%,F,T)



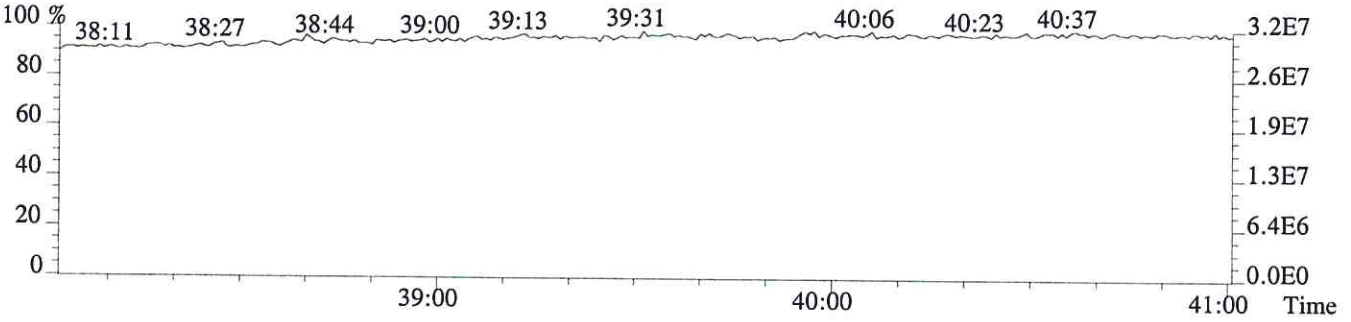
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,908.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,984.0,0.40%,F,T)

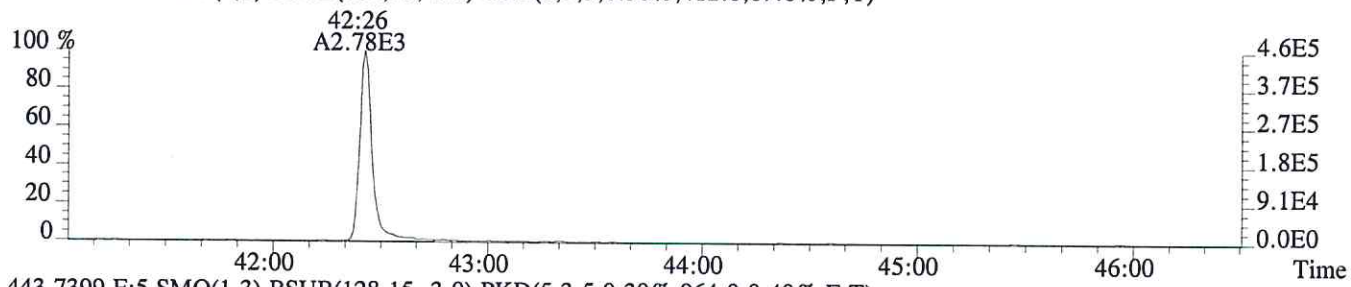


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

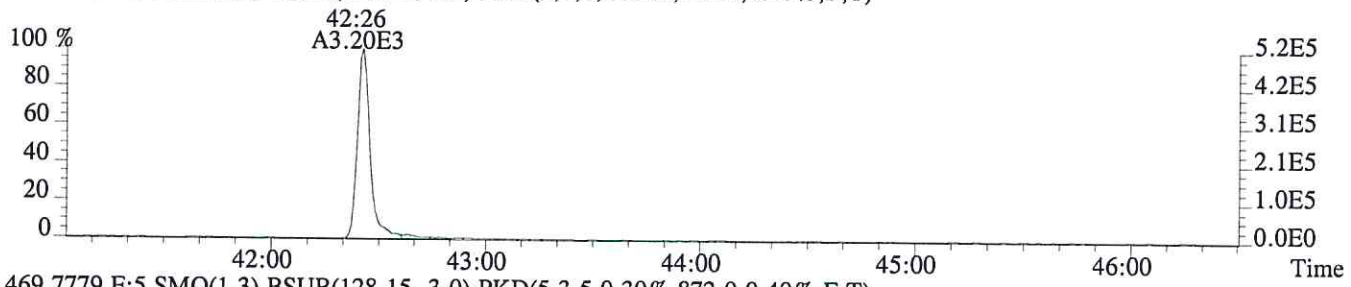


File:P402427 #1-492 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556

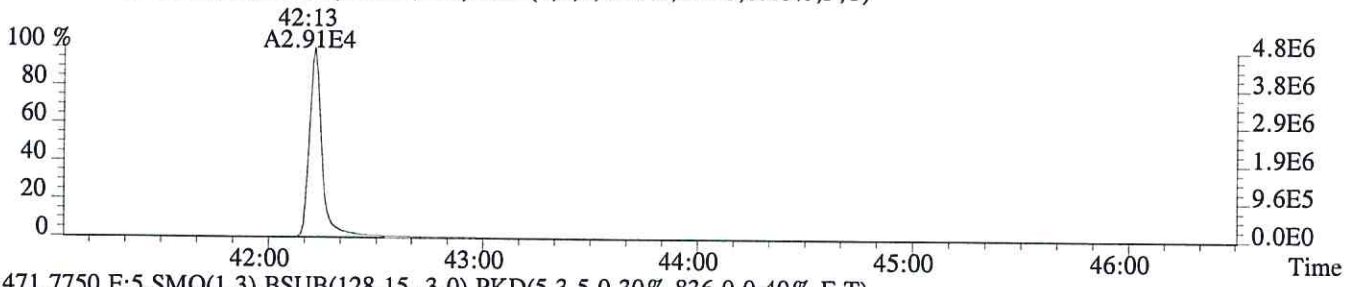
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,412.0,0.40%,F,T)



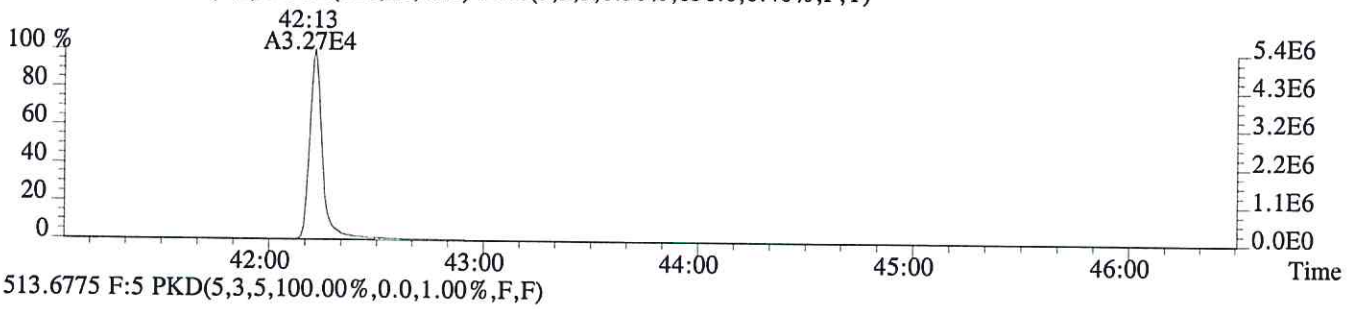
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,964.0,0.40%,F,T)



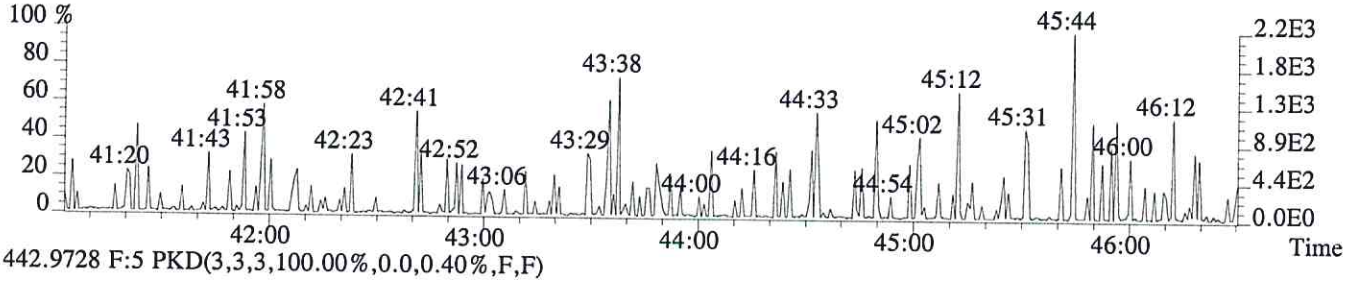
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,872.0,0.40%,F,T)



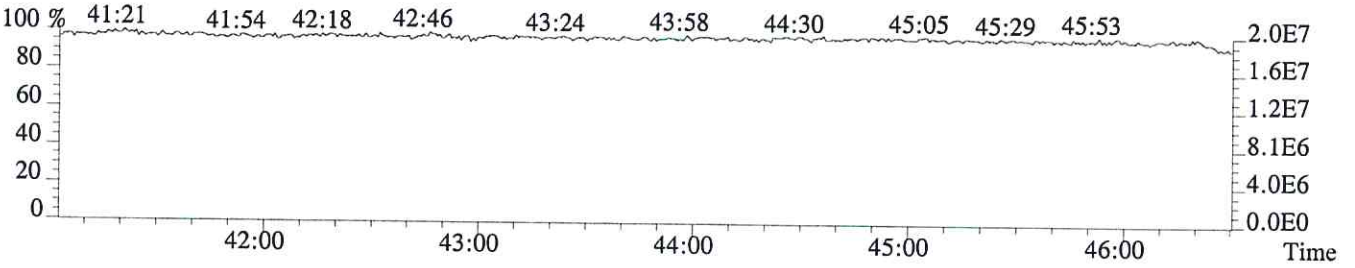
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,836.0,0.40%,F,T)



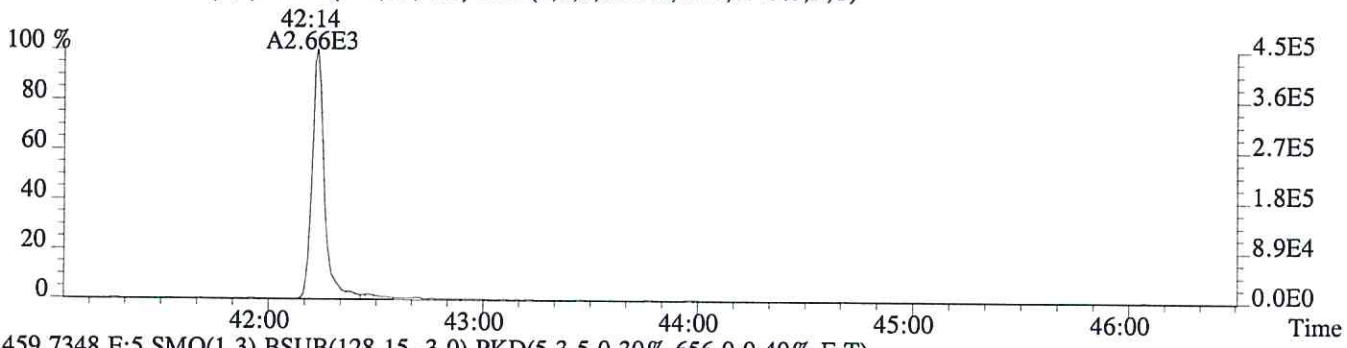
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



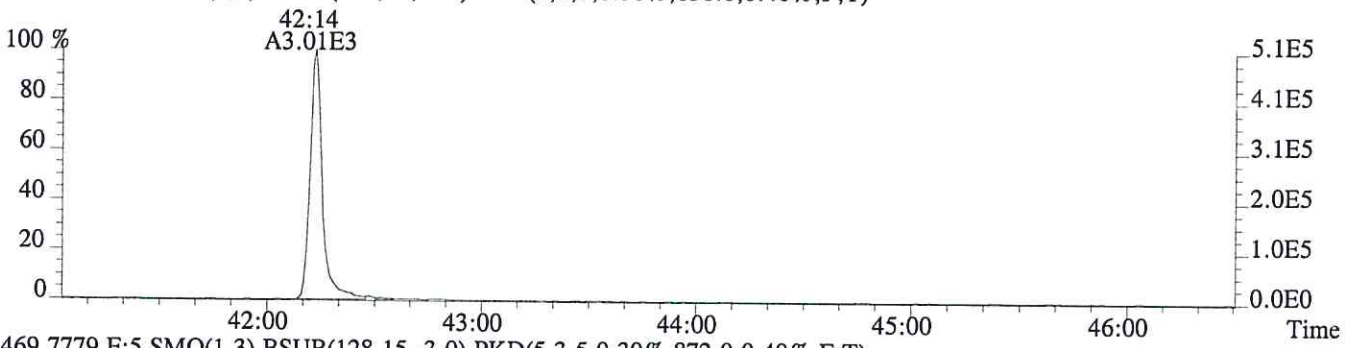
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



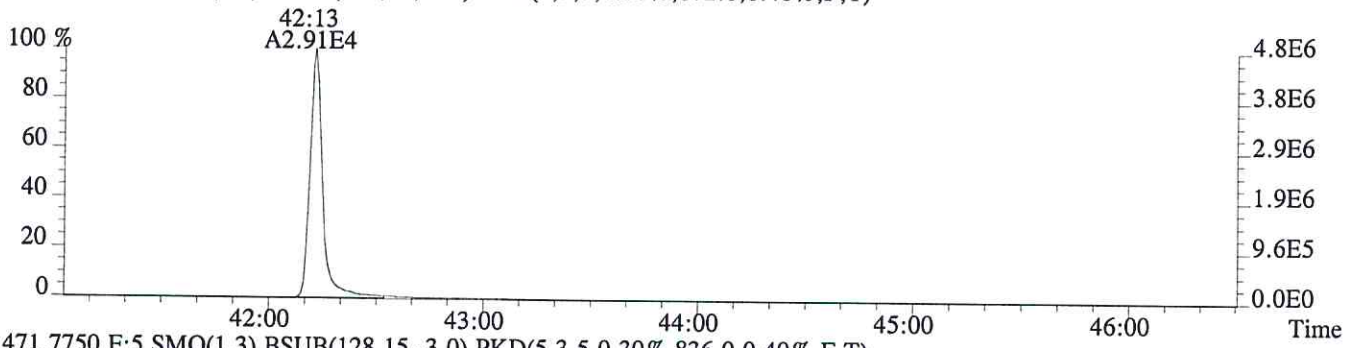
File:P402427 #1-492 Acq:28-APR-2016 13:21:59 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76556
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,56.0,0.40%,F,T)



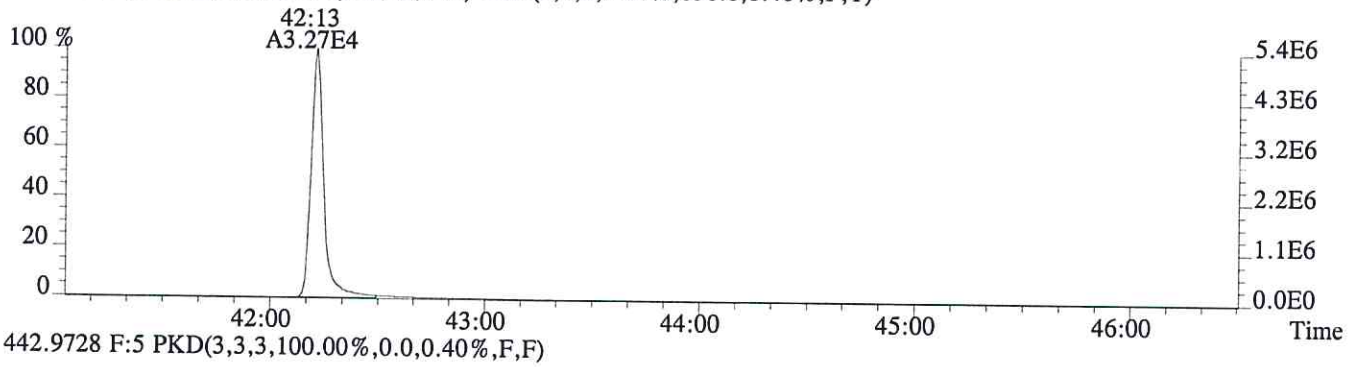
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,656.0,0.40%,F,T)



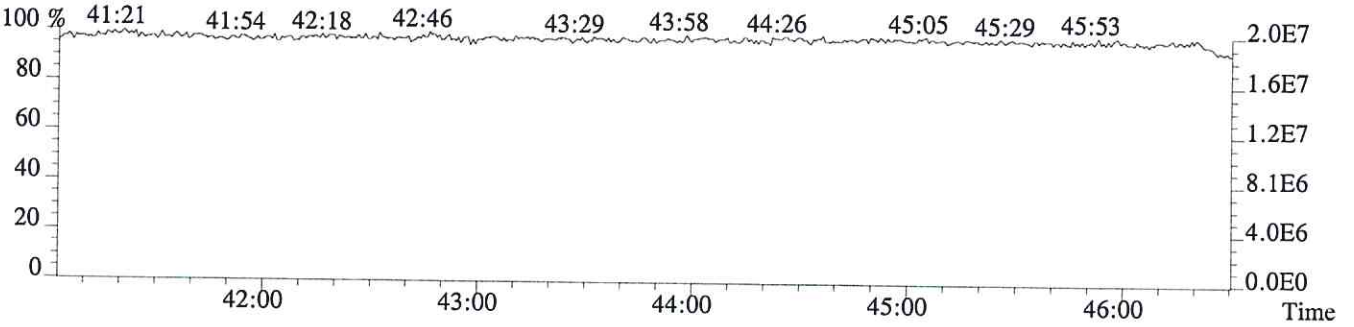
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,872.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,836.0,0.40%,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.
76557

Run #4 Filename P402428 Samp: 1 Inj: 1 Acquired: 28-APR-16 14:11:09
Processed: 28-APR-16 16:59:49 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:21	2.634e+03	3.534e+03	0.75	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	32:29	2.176e+04	1.392e+04	1.56	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	33:22	2.014e+04	1.293e+04	1.56	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	36:00	1.679e+04	1.378e+04	1.22	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	36:06	1.825e+04	1.478e+04	1.23	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:36	1.662e+04	1.337e+04	1.24	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	37:20	1.468e+04	1.210e+04	1.21	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:34	1.407e+04	1.400e+04	1.01	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:57	1.189e+04	1.161e+04	1.02	yes	no	1.187
10	Unk	OCDF	42:26	1.853e+04	2.073e+04	0.89	yes	no	1.035
11	Unk	2,3,7,8-TCDD	29:07	2.516e+03	3.445e+03	0.73	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:39	1.628e+04	1.040e+04	1.56	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:44	1.329e+04	1.074e+04	1.24	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:48	1.372e+04	1.105e+04	1.24	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	37:03	1.422e+04	1.170e+04	1.22	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	39:29	1.130e+04	1.087e+04	1.04	yes	no	0.882
17	Unk	OCDD	42:13	1.706e+04	1.968e+04	0.87	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	28:20	3.661e+04	4.769e+04	0.77	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	32:28	4.893e+04	3.170e+04	1.54	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	33:21	4.793e+04	3.086e+04	1.55	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:59	1.838e+04	3.660e+04	0.50	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	36:06	2.145e+04	4.233e+04	0.51	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:35	1.957e+04	3.896e+04	0.50	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	37:20	1.707e+04	3.402e+04	0.50	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:33	1.368e+04	3.135e+04	0.44	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:57	1.207e+04	2.767e+04	0.44	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	29:06	3.165e+04	4.058e+04	0.78	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	33:38	4.073e+04	2.598e+04	1.57	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:43	2.995e+04	2.400e+04	1.25	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:48	3.088e+04	2.502e+04	1.23	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:28	2.516e+04	2.408e+04	1.04	yes	no	0.817
32	IS	13C-OCDD	42:12	3.560e+04	3.981e+04	0.89	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	28:33	3.300e+04	4.202e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:02	3.195e+04	2.720e+04	1.17	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:07	6.959e+03				no	0.958

ALS ENVIRONMENTAL
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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76557

Run #4 Filename P402428 Samp: 1 Inj: 1 Acquired: 28-APR-16 14:11:09
Processed: 28-APR-16 16:59:491 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	5.38e+05	3.80e+02	1.4e+03	7.04e+05	9.20e+02	7.7e+02
2	1,2,3,7,8-PeCDF	4.26e+06	5.16e+02	8.3e+03	2.71e+06	1.71e+03	1.6e+03
3	2,3,4,7,8-PeCDF	4.15e+06	5.16e+02	8.0e+03	2.66e+06	1.71e+03	1.6e+03
4	1,2,3,4,7,8-HxCDF	3.76e+06	4.80e+02	7.8e+03	3.09e+06	3.56e+02	8.7e+03
5	1,2,3,6,7,8-HxCDF	3.84e+06	4.80e+02	8.0e+03	3.11e+06	3.56e+02	8.7e+03
6	2,3,4,6,7,8-HxCDF	3.67e+06	4.80e+02	7.7e+03	2.94e+06	3.56e+02	8.3e+03
7	1,2,3,7,8,9-HxCDF	3.05e+06	4.80e+02	6.4e+03	2.46e+06	3.56e+02	6.9e+03
8	1,2,3,4,6,7,8-HpCDF	3.05e+06	1.40e+03	2.2e+03	3.01e+06	7.16e+02	4.2e+03
9	1,2,3,4,7,8,9-HpCDF	2.27e+06	1.40e+03	1.6e+03	2.25e+06	7.16e+02	3.1e+03
10	OCDF	3.15e+06	3.08e+02	1.0e+04	3.40e+06	8.28e+02	4.1e+03
11	2,3,7,8-TCDD	5.26e+05	6.00e+02	8.8e+02	7.23e+05	7.68e+02	9.4e+02
12	1,2,3,7,8-PeCDD	3.38e+06	8.64e+02	3.9e+03	2.16e+06	4.28e+02	5.0e+03
13	1,2,3,4,7,8-HxCDD	3.05e+06	7.20e+02	4.2e+03	2.43e+06	7.80e+02	3.1e+03
14	1,2,3,6,7,8-HxCDD	2.86e+06	7.20e+02	4.0e+03	2.32e+06	7.80e+02	3.0e+03
15	1,2,3,7,8,9-HxCDD	2.84e+06	7.20e+02	3.9e+03	2.29e+06	7.80e+02	2.9e+03
16	1,2,3,4,6,7,8-HpCDD	2.20e+06	6.00e+02	3.7e+03	2.09e+06	9.40e+02	2.2e+03
17	OCDD	2.90e+06	2.36e+02	1.2e+04	3.32e+06	4.80e+02	6.9e+03
18	13C-2,3,7,8-TCDF	7.40e+06	2.07e+03	3.6e+03	9.55e+06	1.53e+03	6.2e+03
19	13C-1,2,3,7,8-PeCDF	9.24e+06	2.92e+02	3.2e+04	6.04e+06	7.28e+02	8.3e+03
20	13C-2,3,4,7,8-PeCDF	9.70e+06	2.92e+02	3.3e+04	6.25e+06	7.28e+02	8.6e+03
21	13C-1,2,3,4,7,8-HxCDF	4.10e+06	7.28e+02	5.6e+03	8.16e+06	8.04e+02	1.0e+04
22	13C-1,2,3,6,7,8-HxCDF	4.51e+06	7.28e+02	6.2e+03	8.85e+06	8.04e+02	1.1e+04
23	13C-2,3,4,6,7,8-HxCDF	4.28e+06	7.28e+02	5.9e+03	8.47e+06	8.04e+02	1.1e+04
24	13C-1,2,3,7,8,9-HxCDF	3.56e+06	7.28e+02	4.9e+03	6.94e+06	8.04e+02	8.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.96e+06	2.95e+03	1.0e+03	6.74e+06	1.98e+03	3.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.31e+06	2.95e+03	7.8e+02	5.26e+06	1.98e+03	2.6e+03
27	13C-2,3,7,8-TCDD	6.62e+06	4.98e+03	1.3e+03	8.42e+06	2.69e+03	3.1e+03
28	13C-1,2,3,7,8-PeCDD	8.24e+06	6.92e+02	1.2e+04	5.19e+06	5.44e+02	9.5e+03
29	13C-1,2,3,4,7,8-HxCDD	6.78e+06	1.81e+03	3.7e+03	5.42e+06	1.12e+03	4.8e+03
30	13C-1,2,3,6,7,8-HxCDD	6.33e+06	1.81e+03	3.5e+03	5.24e+06	1.12e+03	4.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.79e+06	6.92e+02	6.9e+03	4.64e+06	1.37e+03	3.4e+03
32	13C-OCDD	5.95e+06	6.32e+02	9.4e+03	6.73e+06	9.96e+02	6.8e+03
33	13C-1,2,3,4-TCDD	6.79e+06	4.98e+03	1.4e+03	8.56e+06	2.69e+03	3.2e+03
34	13C-1,2,3,7,8,9-HxCDD	6.48e+06	1.81e+03	3.6e+03	5.32e+06	1.12e+03	4.7e+03
35	37Cl-2,3,7,8-TCDD	1.49e+06	1.34e+03	1.1e+03			

ALS ENVIRONMENTAL
10450 Stancliff Road
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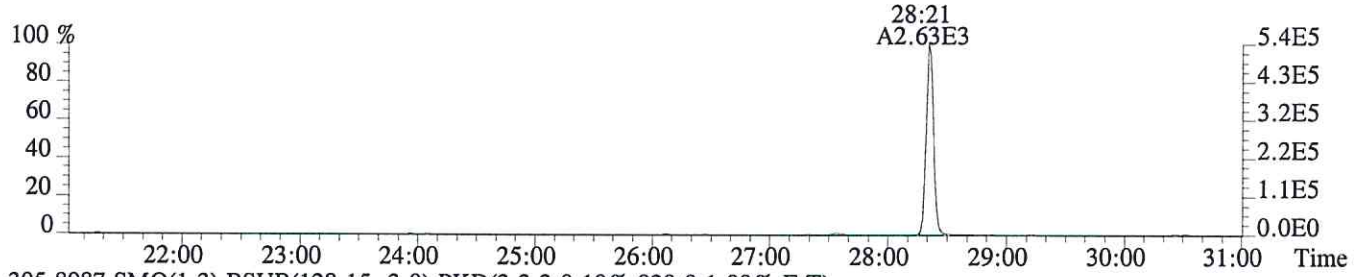
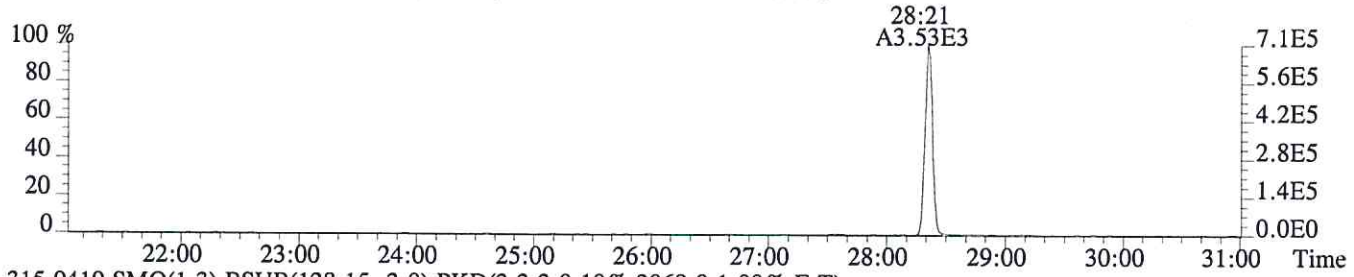
Office:(281)-530-5656. Fax:(281)530-5887

File:P402428 #1-684 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557

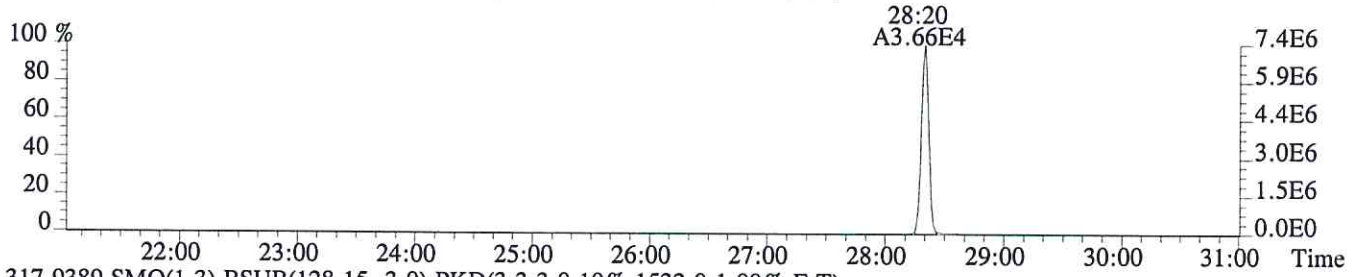
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,380.0,1.00%,F,T)



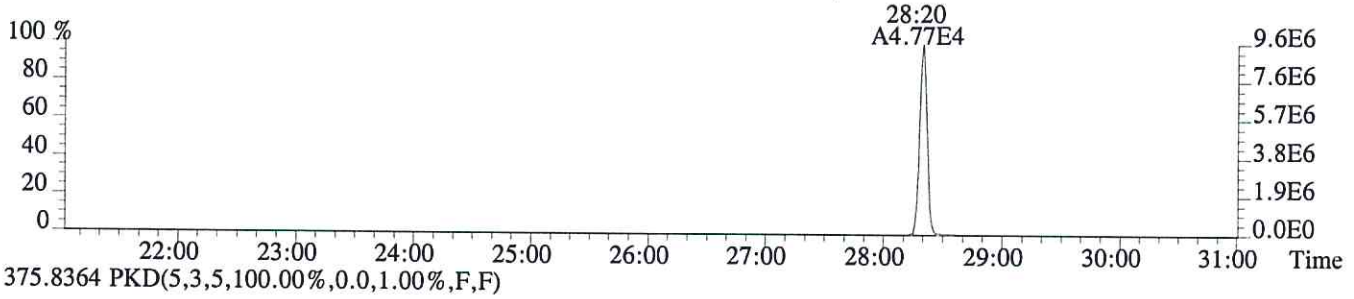
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,920.0,1.00%,F,T)



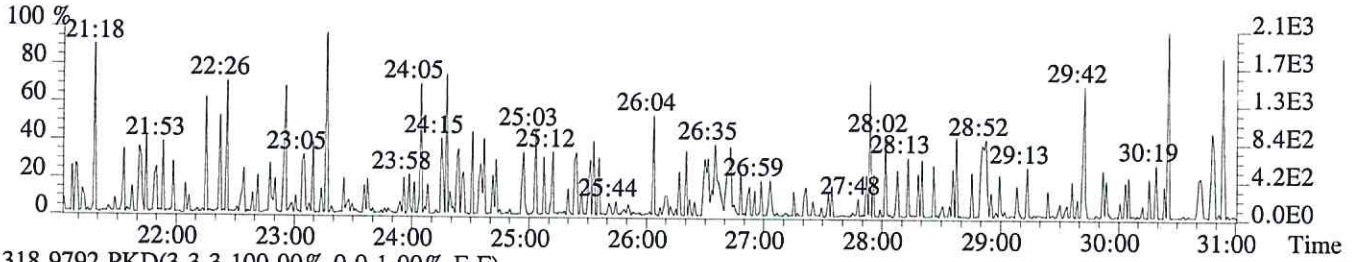
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2068.0,1.00%,F,T)



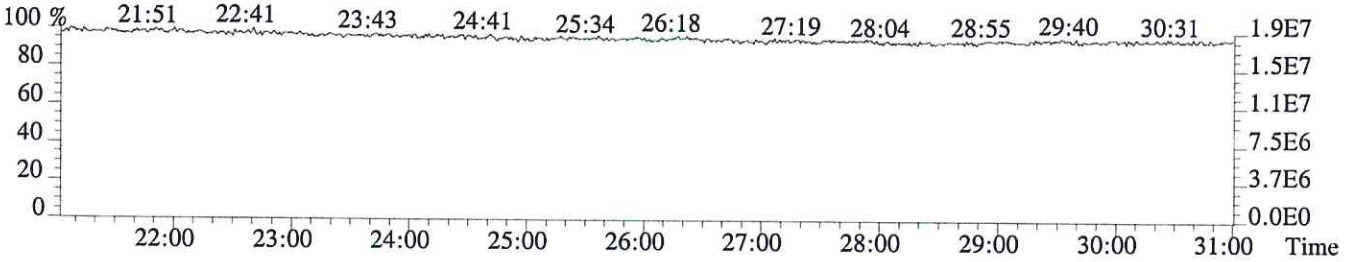
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1532.0,1.00%,F,T)



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

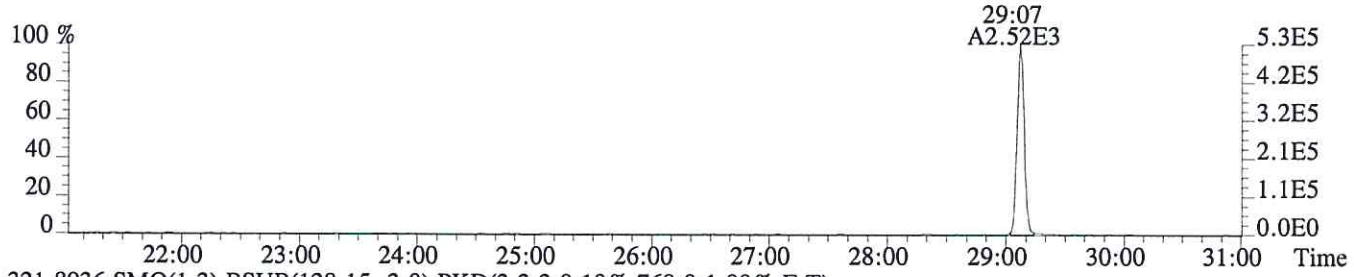


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

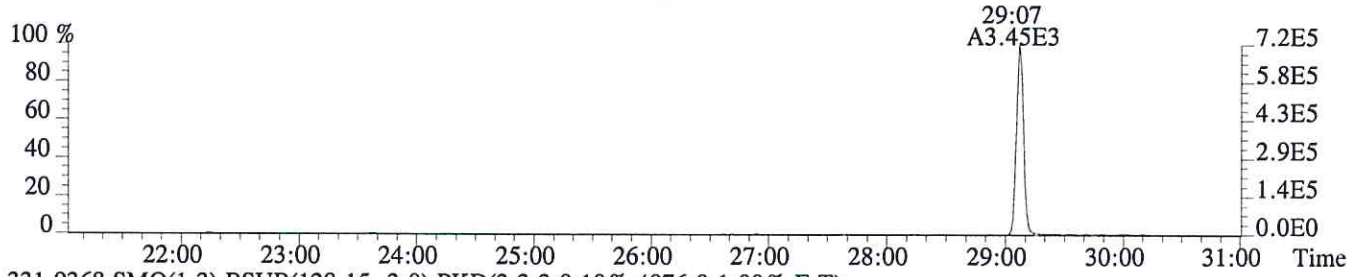


File:P402428 #1-684 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557

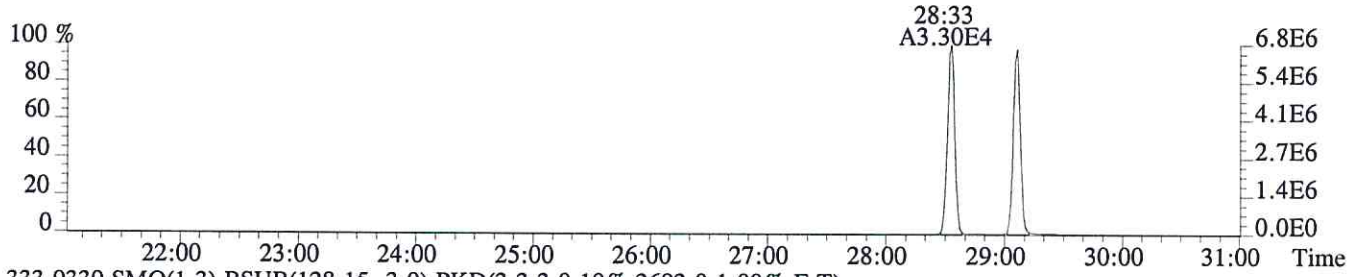
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,600.0,1.00%,F,T)



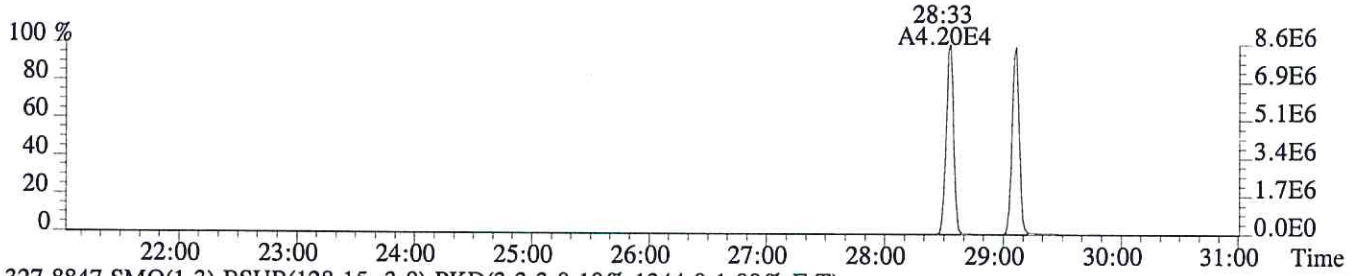
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,768.0,1.00%,F,T)



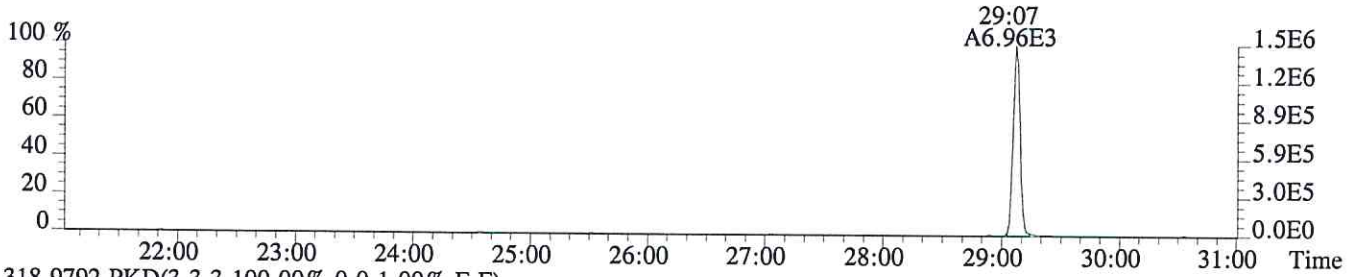
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4976.0,1.00%,F,T)



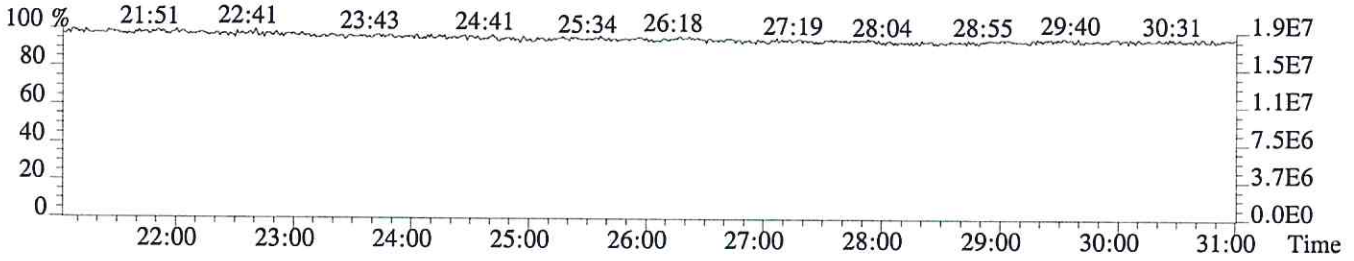
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2692.0,1.00%,F,T)



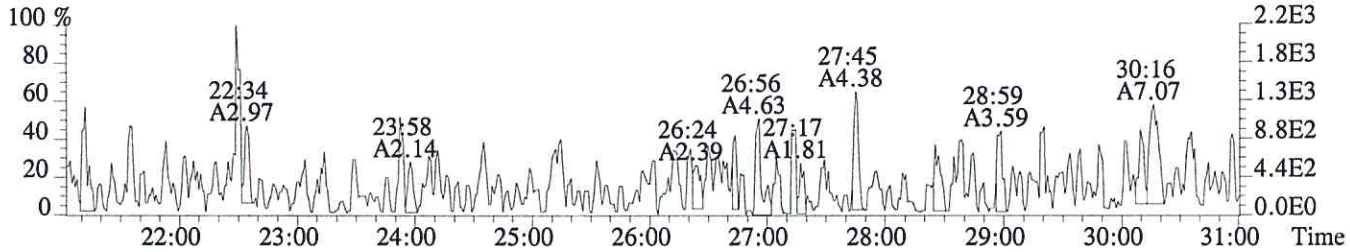
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1344.0,1.00%,F,T)



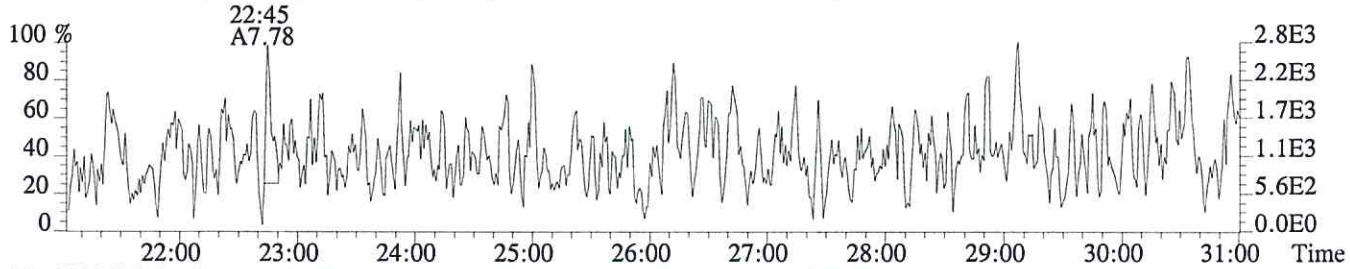
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



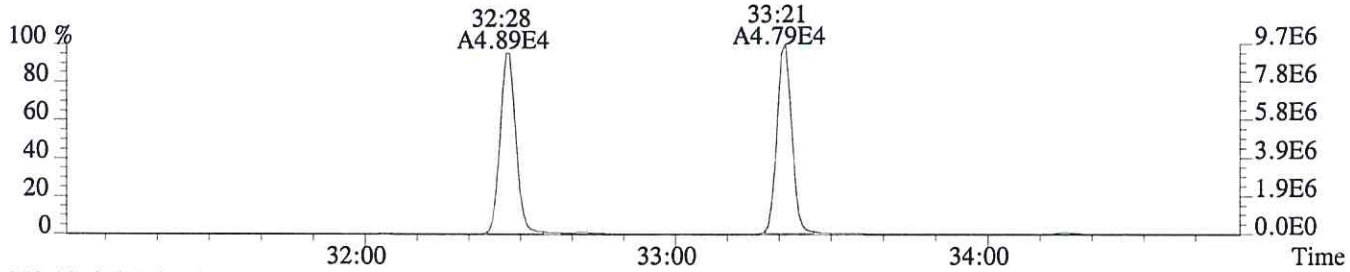
File:P402428 #1-684 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,480.0,1.00%,F,T)



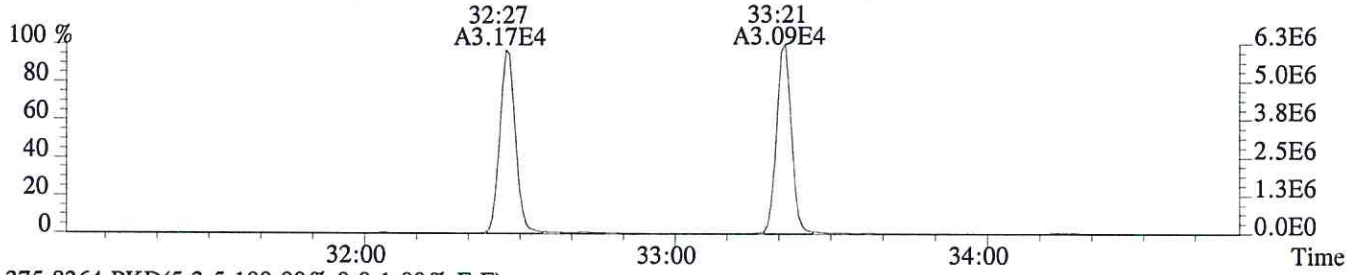
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1608.0,1.00%,F,T)



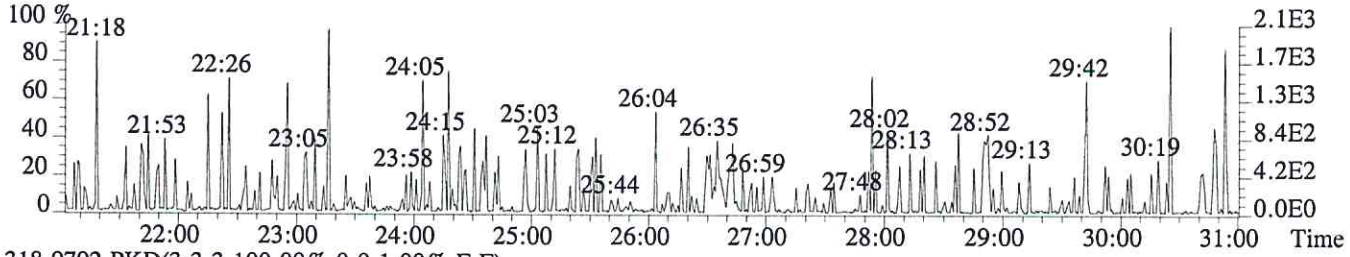
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,292.0,1.00%,F,T)



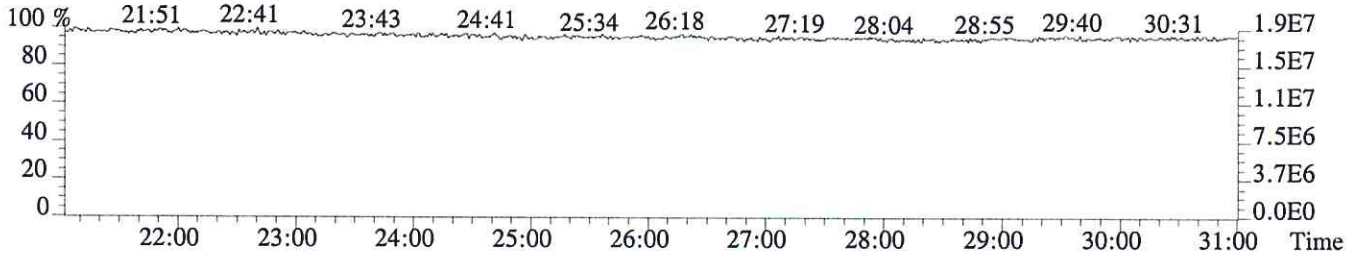
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,T)



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

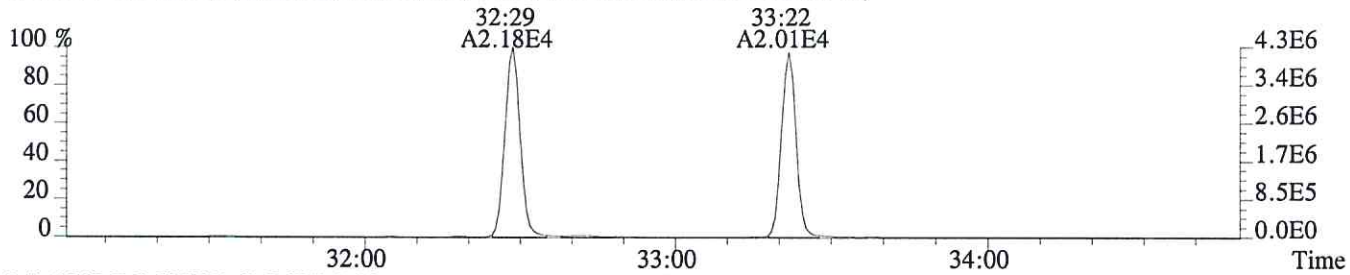


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

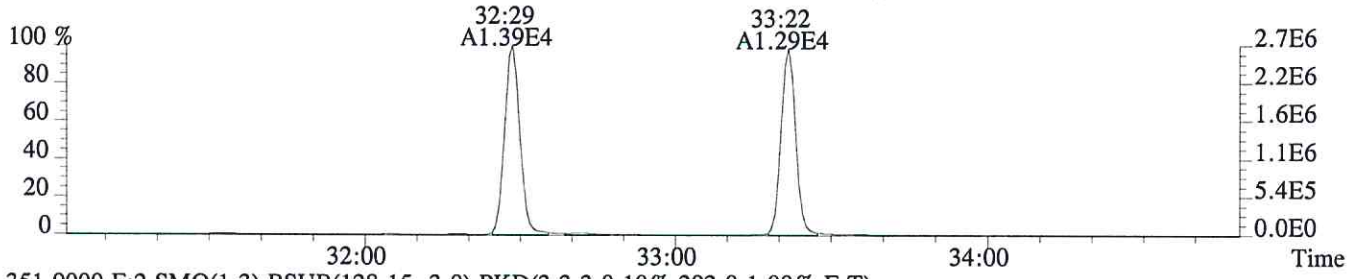


File:P402428 #1-340 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557

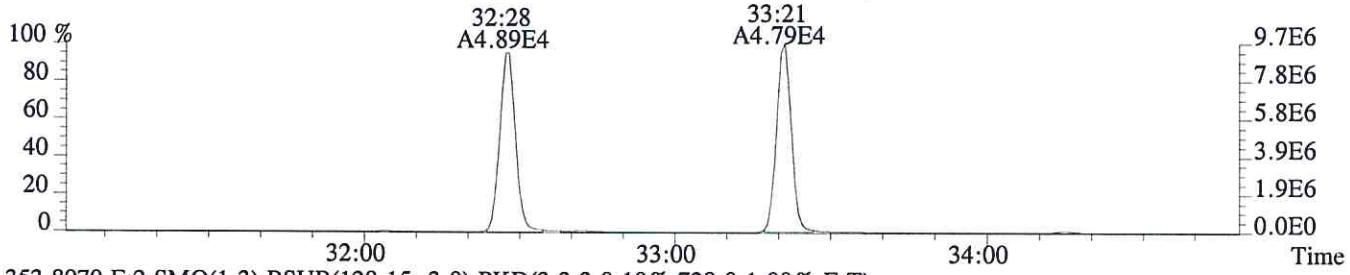
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,516.0,1.00%,F,T)



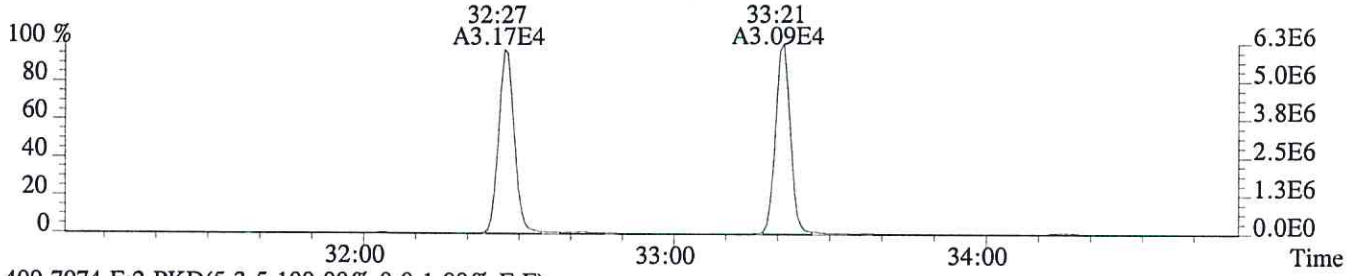
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1708.0,1.00%,F,T)



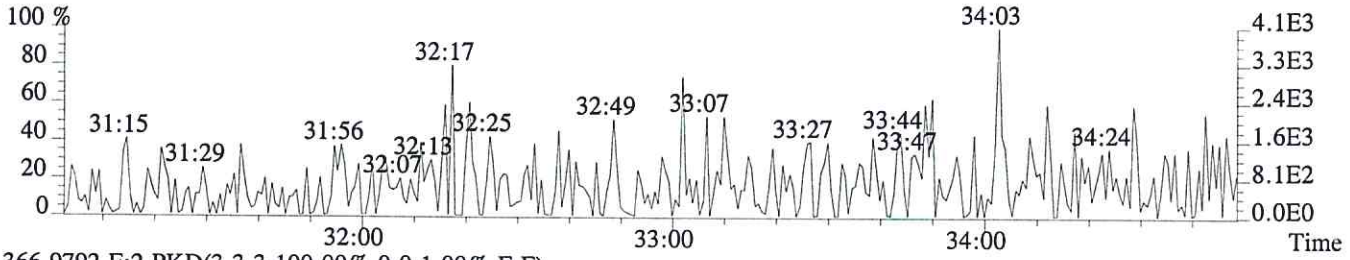
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,292.0,1.00%,F,T)



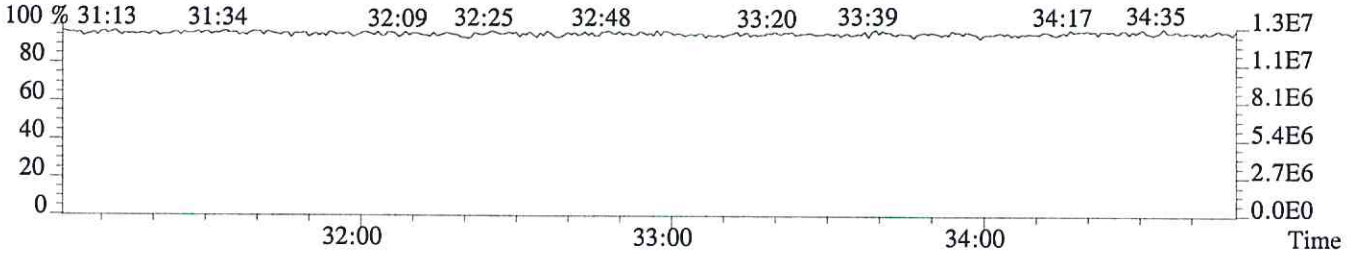
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,T)



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

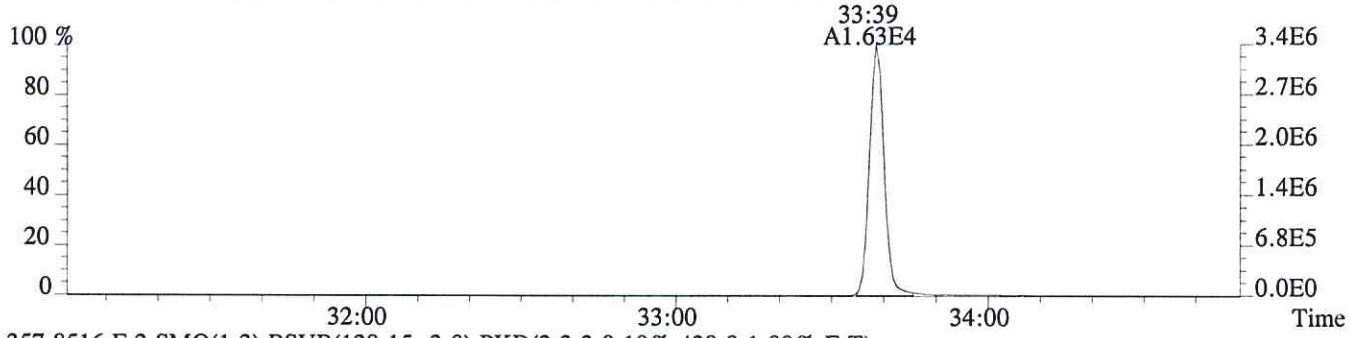


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

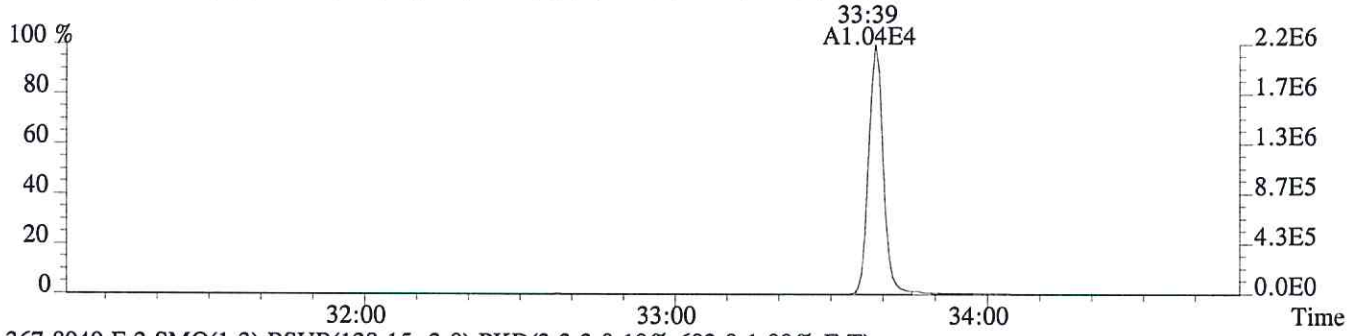


File:P402428 #1-340 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557

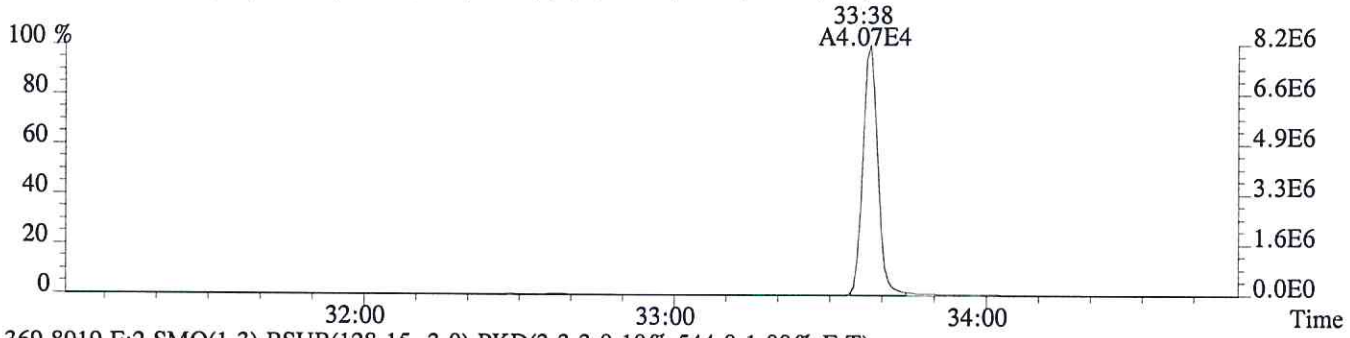
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,864.0,1.00%,F,T)



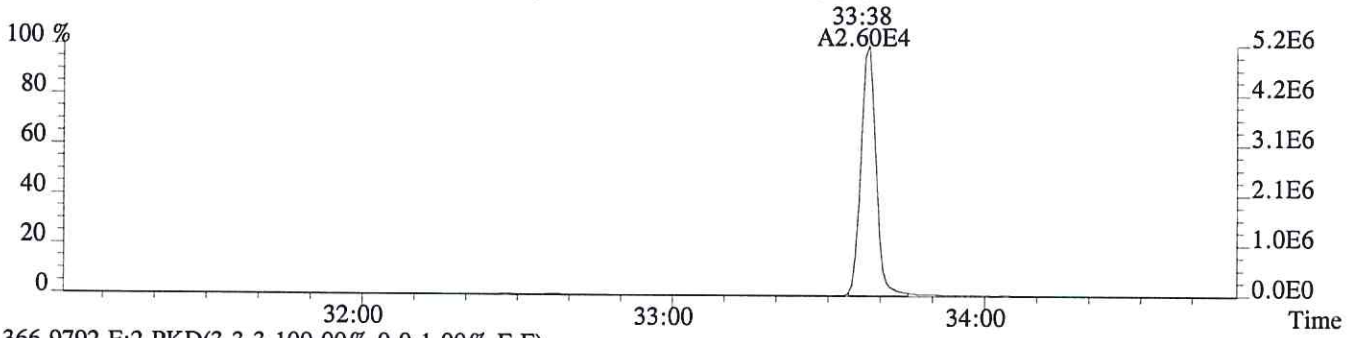
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,428.0,1.00%,F,T)



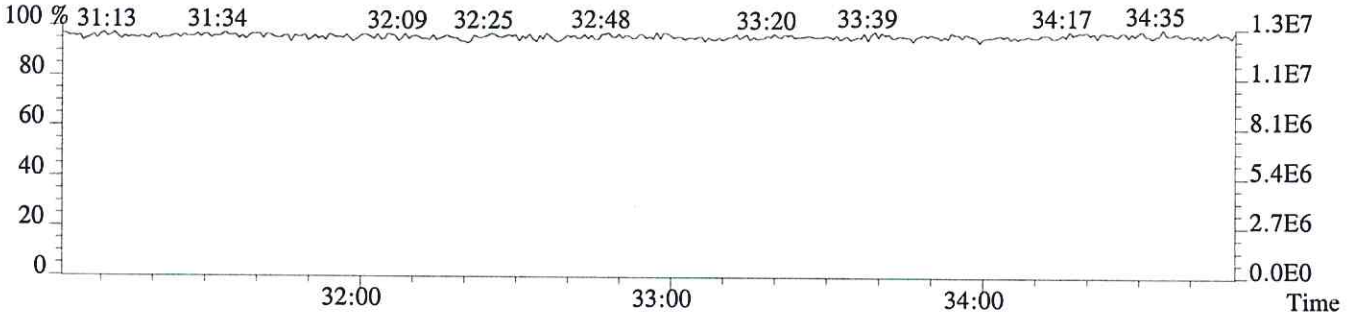
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,692.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,544.0,1.00%,F,T)

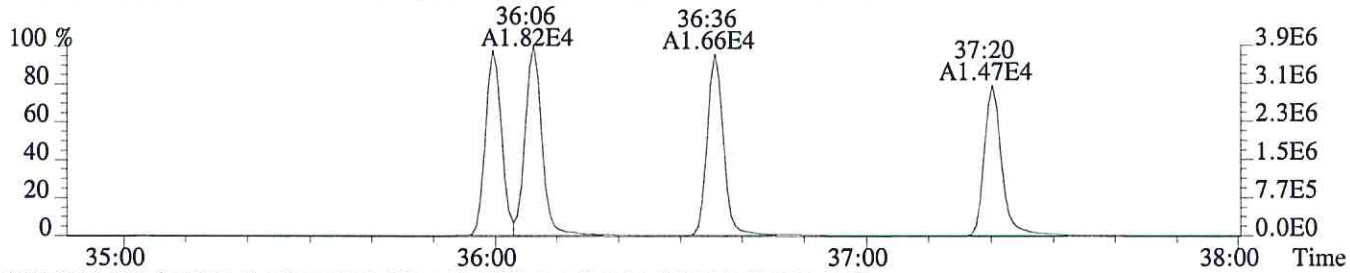


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

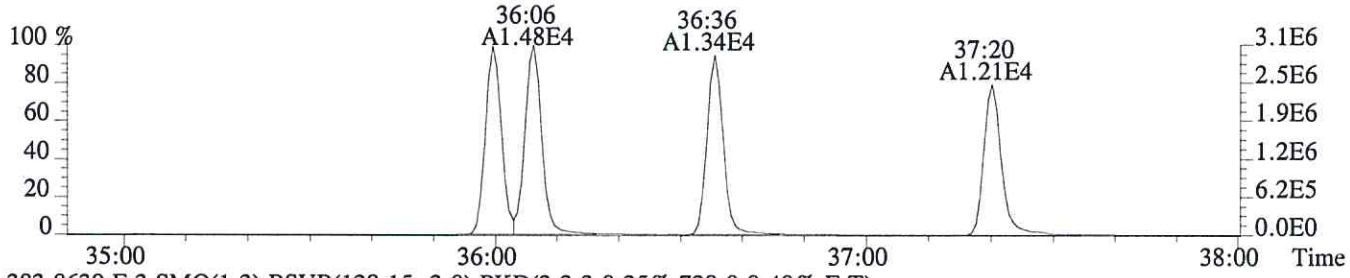


File:P402428 #1-285 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557

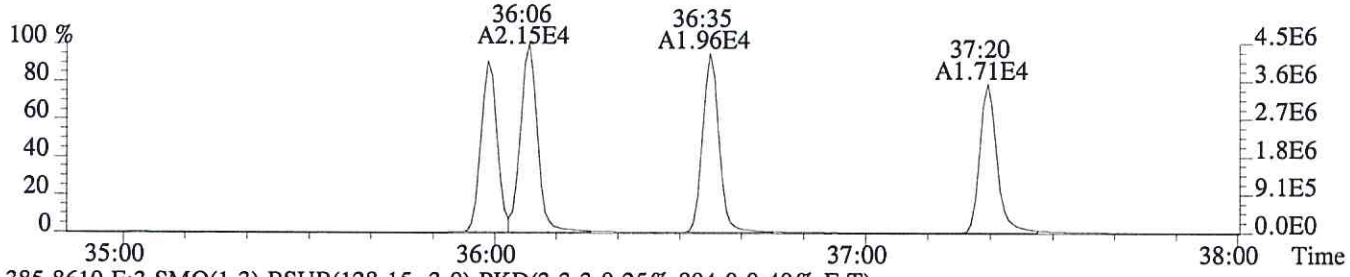
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,480.0,0.40%,F,T)



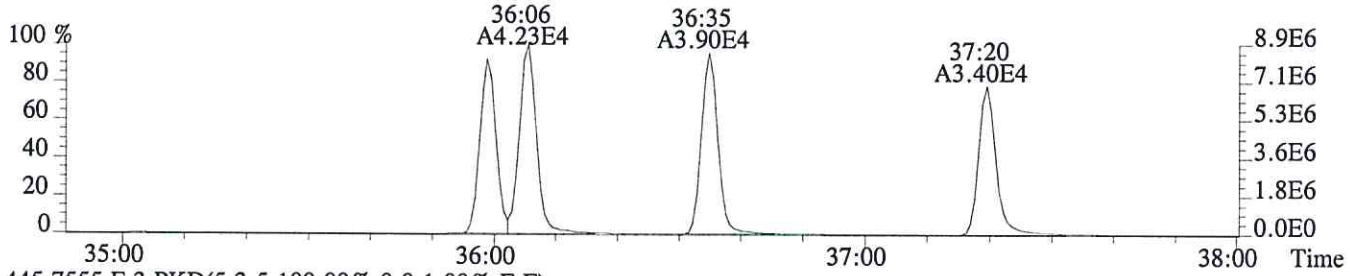
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,356.0,0.40%,F,T)



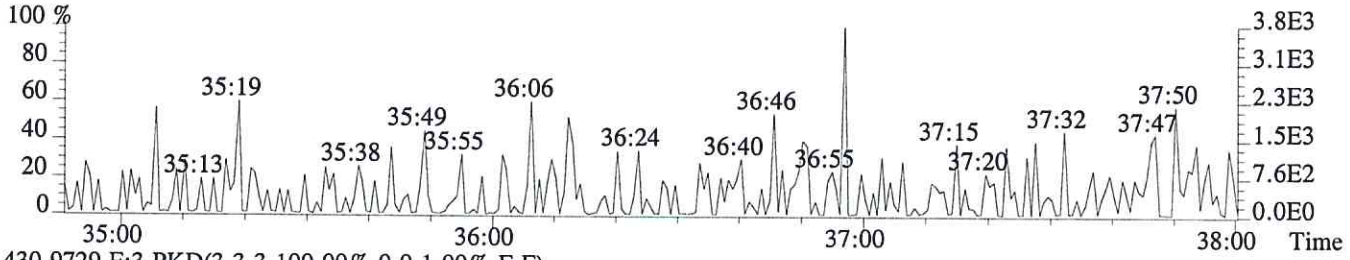
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,728.0,0.40%,F,T)



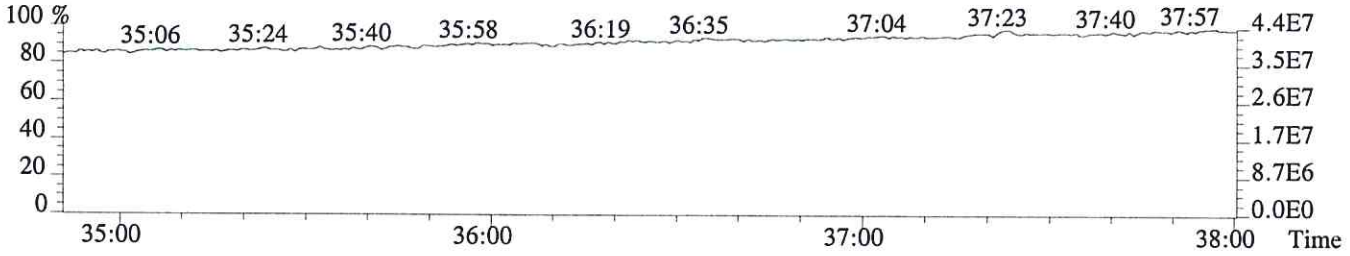
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,804.0,0.40%,F,T)



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

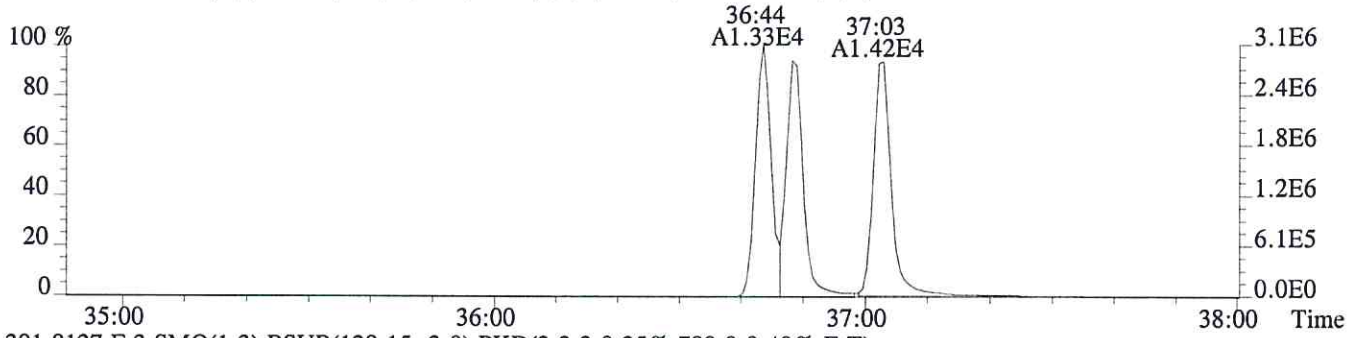


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

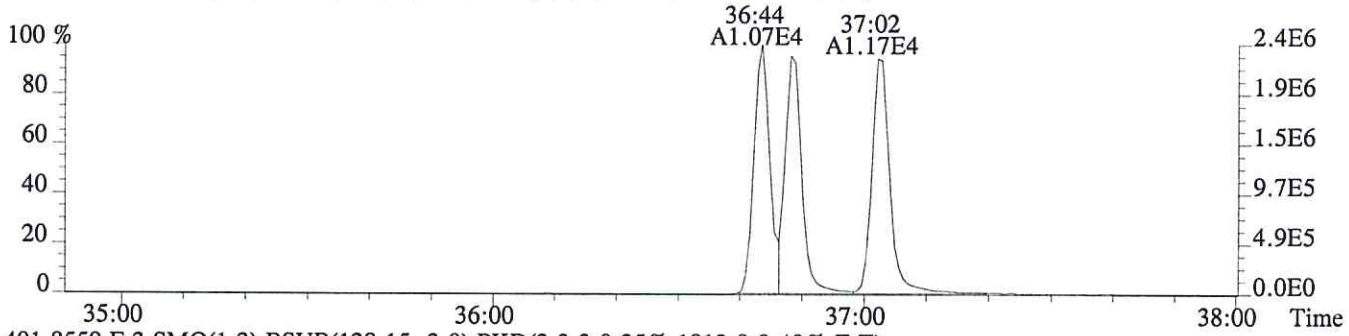


File:P402428 #1-285 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557

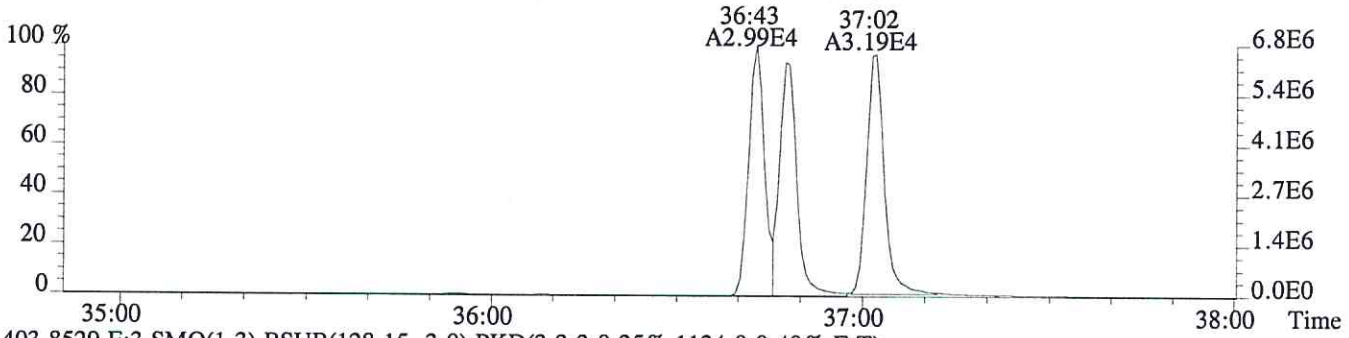
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,720.0,0.40%,F,T)



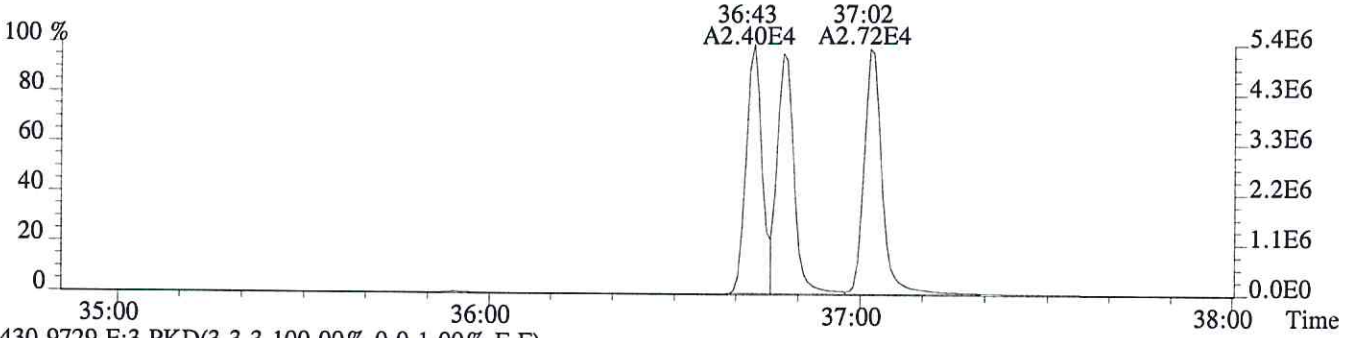
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,780.0,0.40%,F,T)



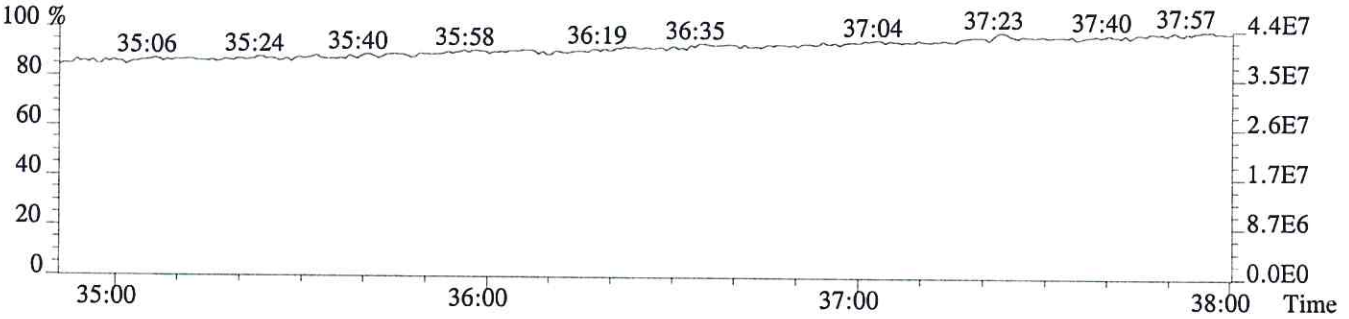
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1812.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1124.0,0.40%,F,T)

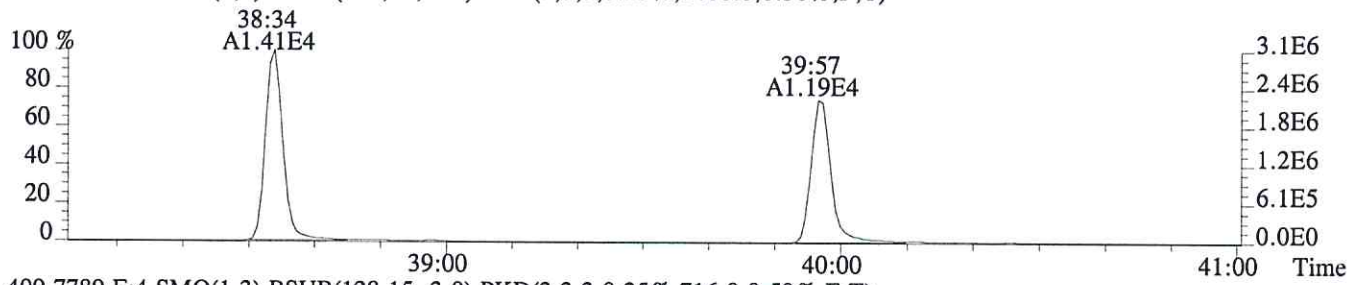


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

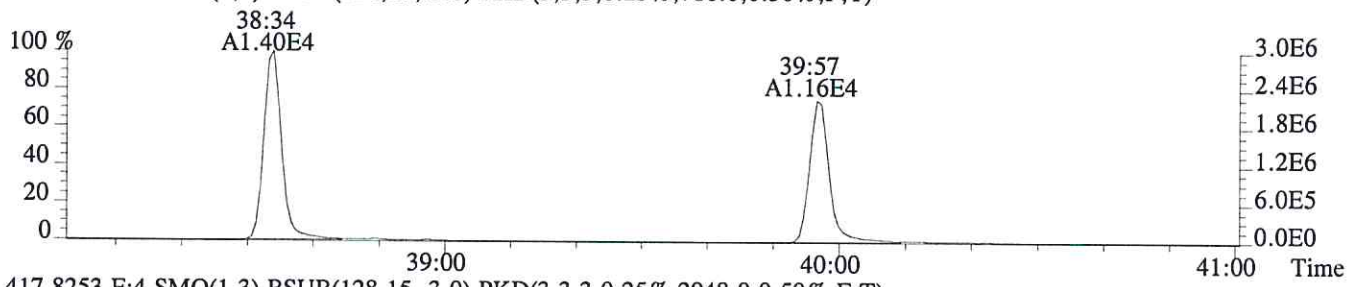


File:P402428 #1-268 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557

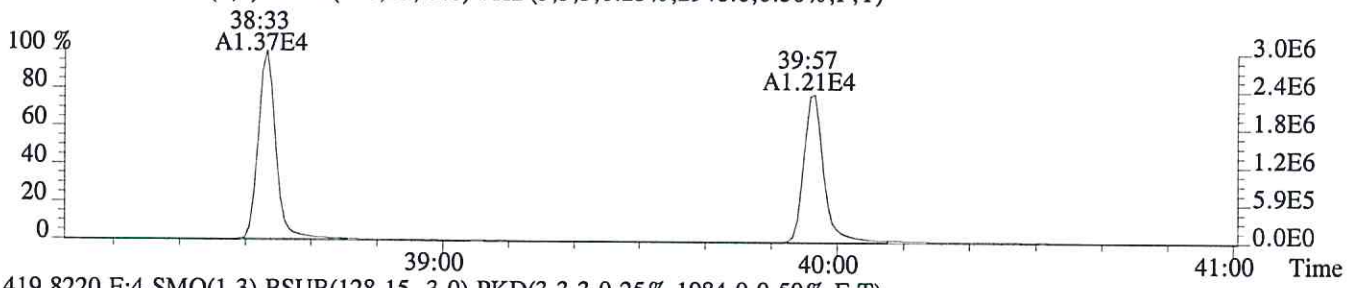
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1400.0,0.50%,F,T)



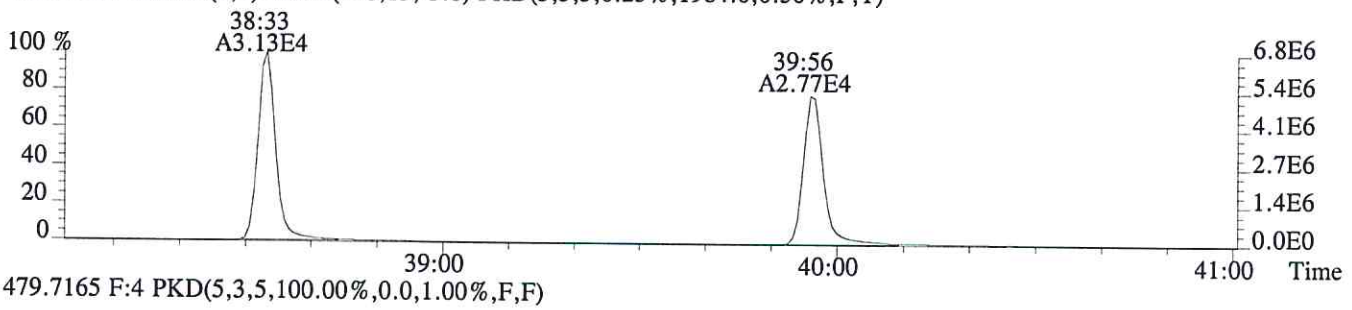
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,716.0,0.50%,F,T)



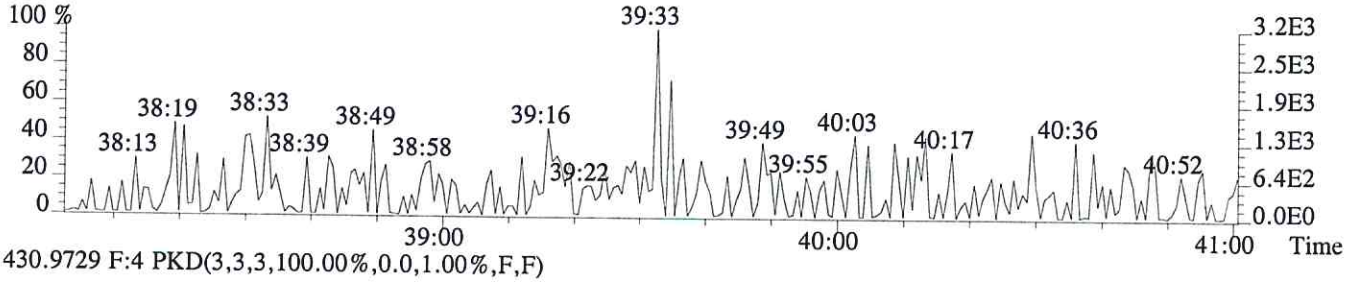
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2948.0,0.50%,F,T)



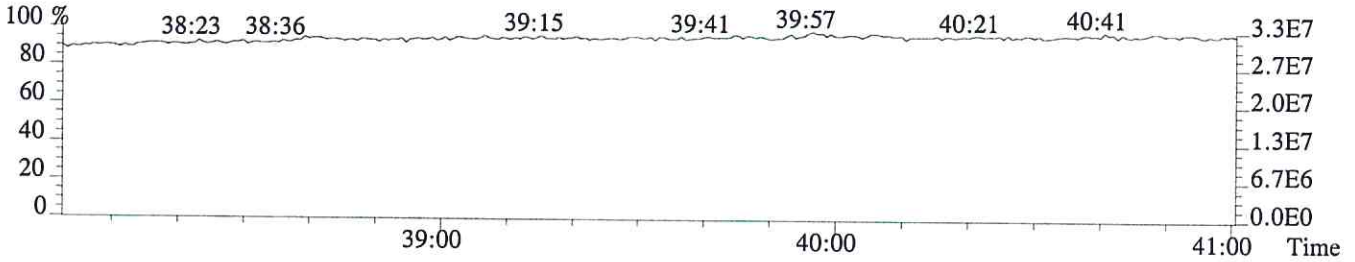
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1984.0,0.50%,F,T)



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

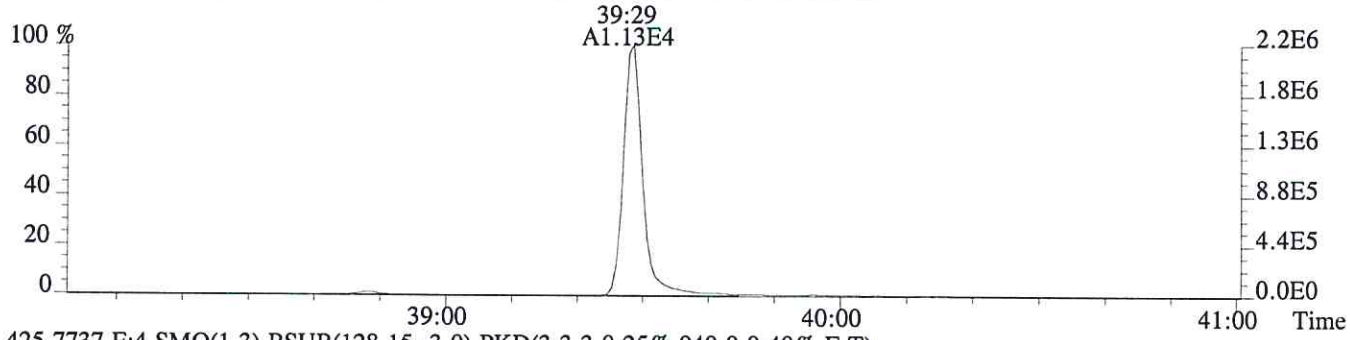


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

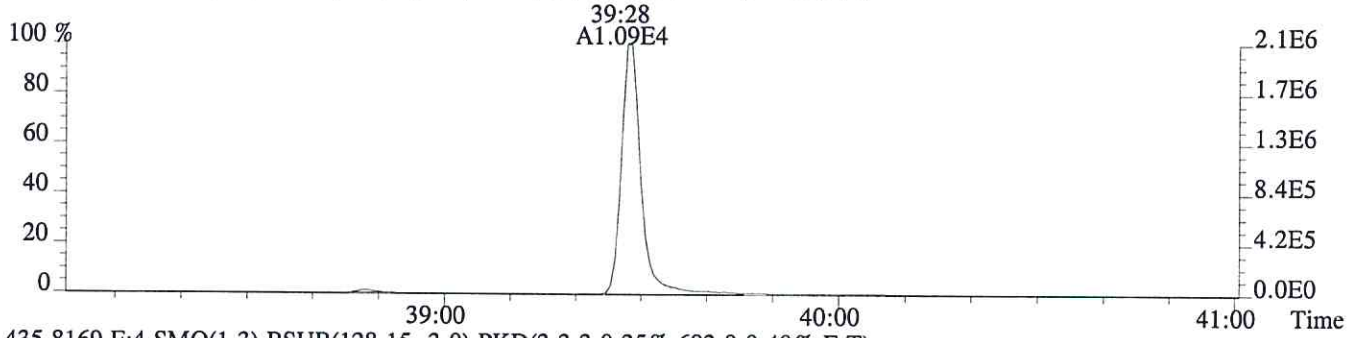


File:P402428 #1-268 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557

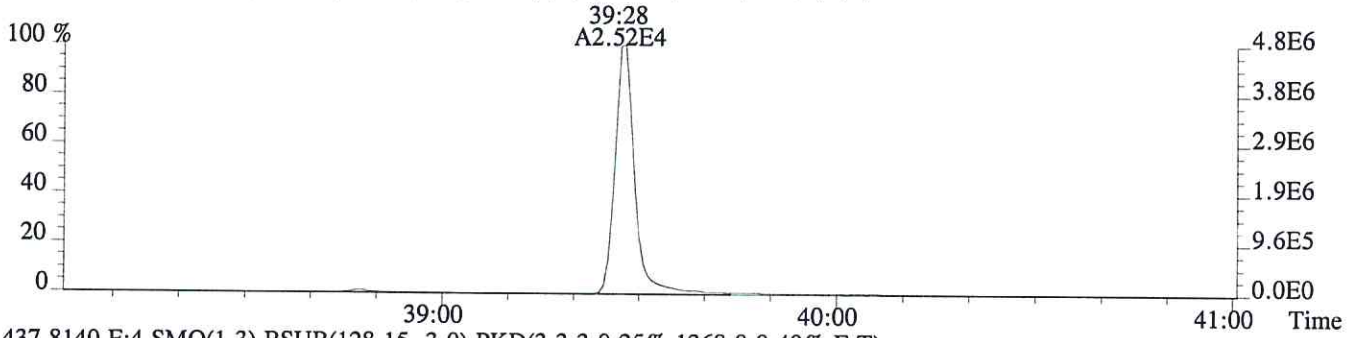
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.40%,F,T)



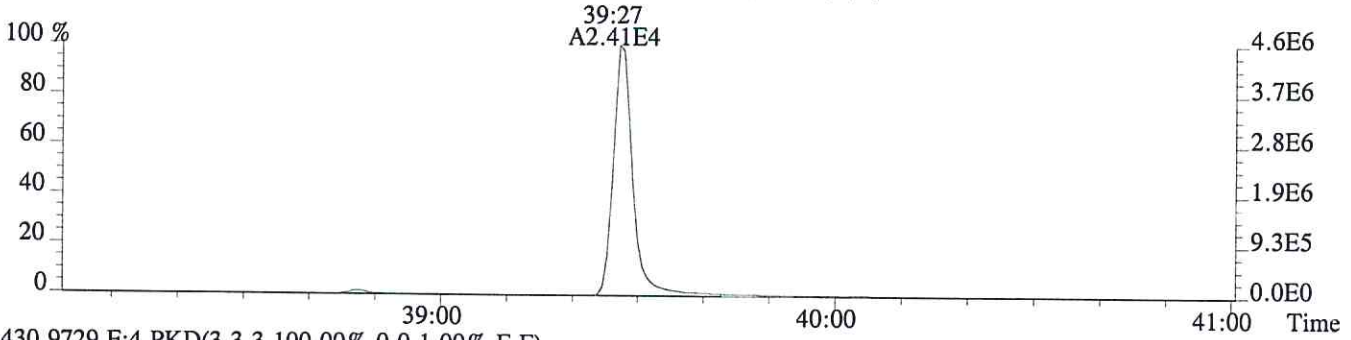
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,940.0,0.40%,F,T)



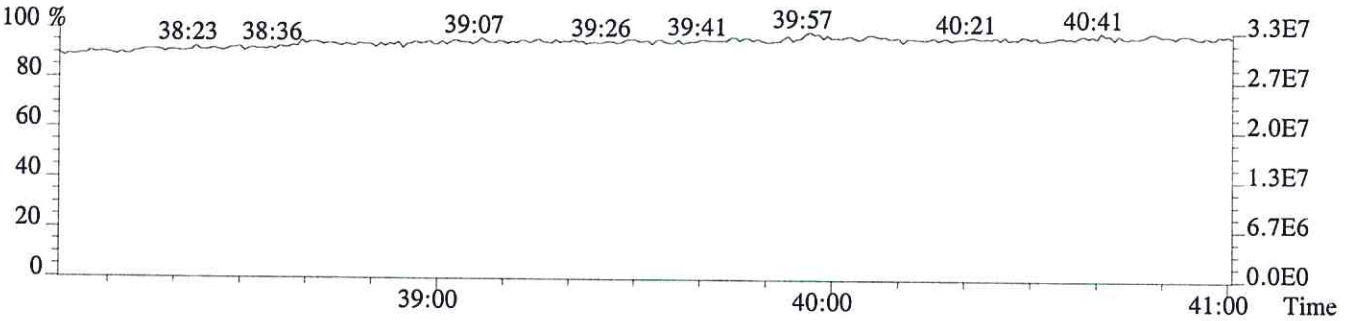
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,692.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1368.0,0.40%,F,T)

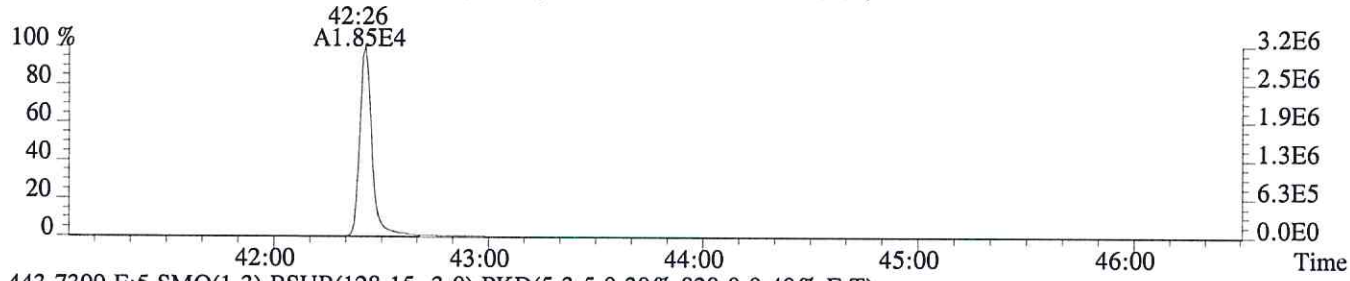


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

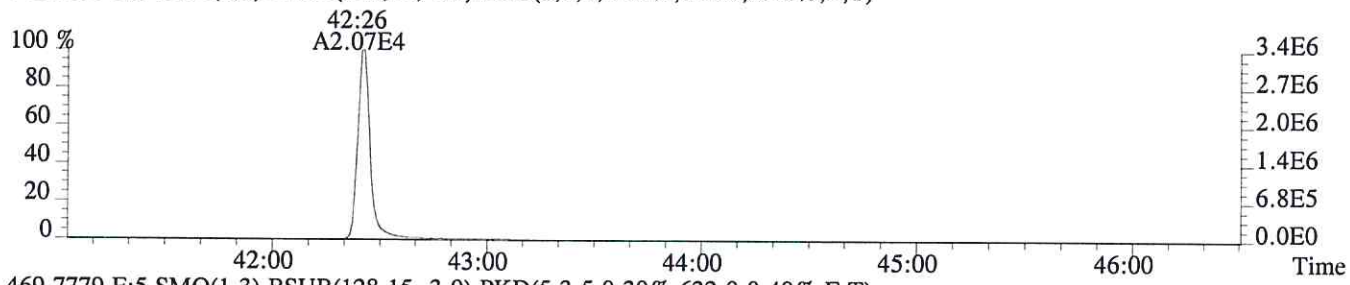


File:P402428 #1-492 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557

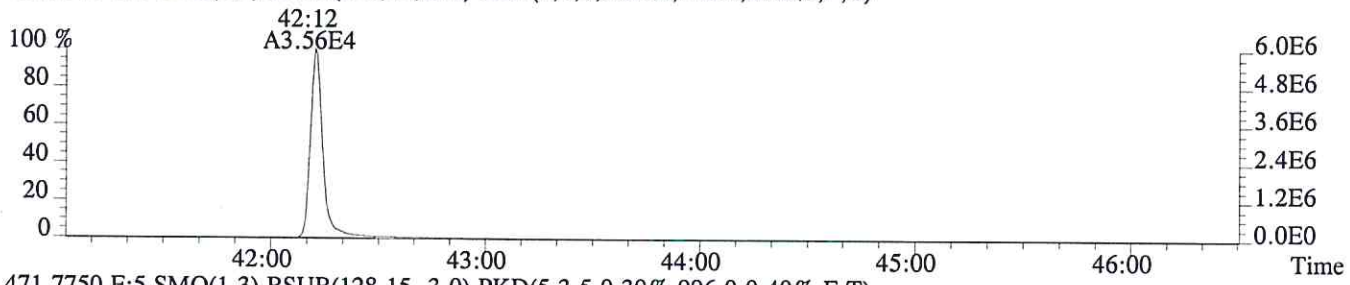
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,308.0,0.40%,F,T)



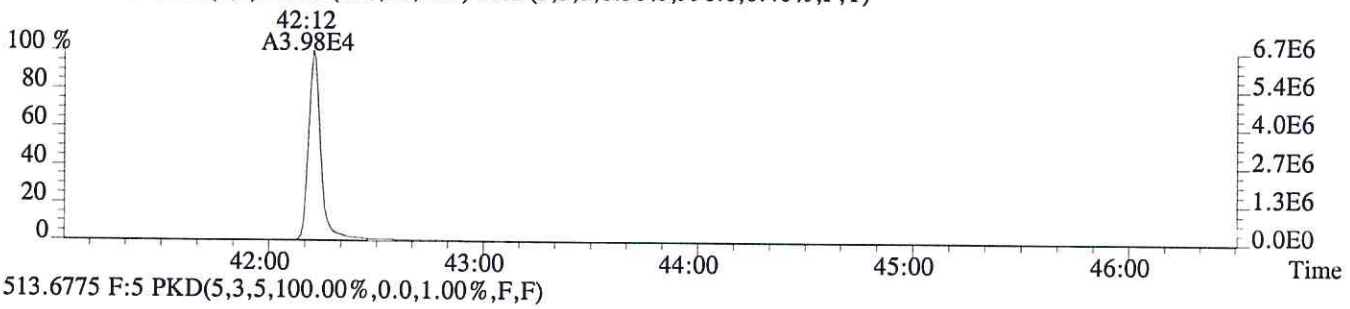
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,828.0,0.40%,F,T)



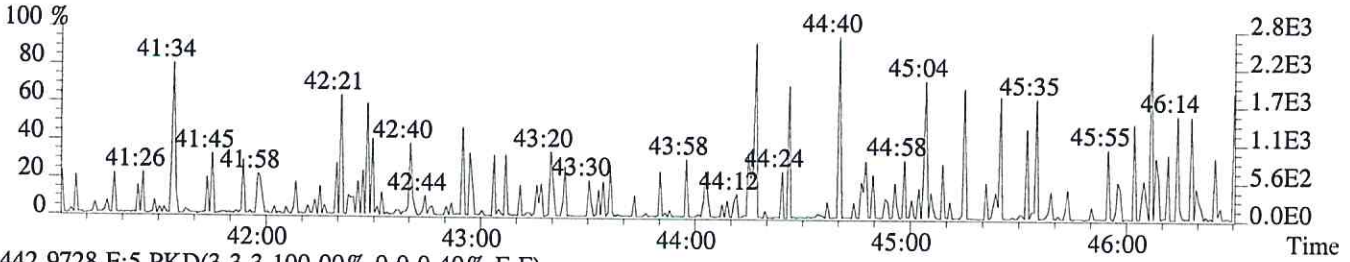
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,632.0,0.40%,F,T)



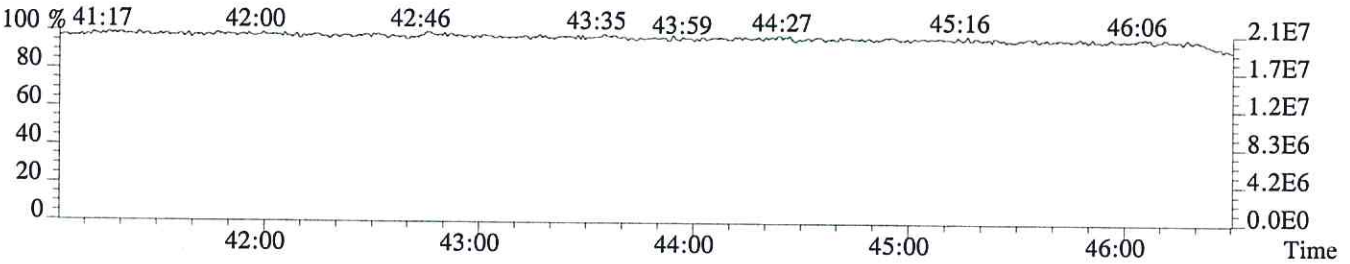
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,996.0,0.40%,F,T)



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

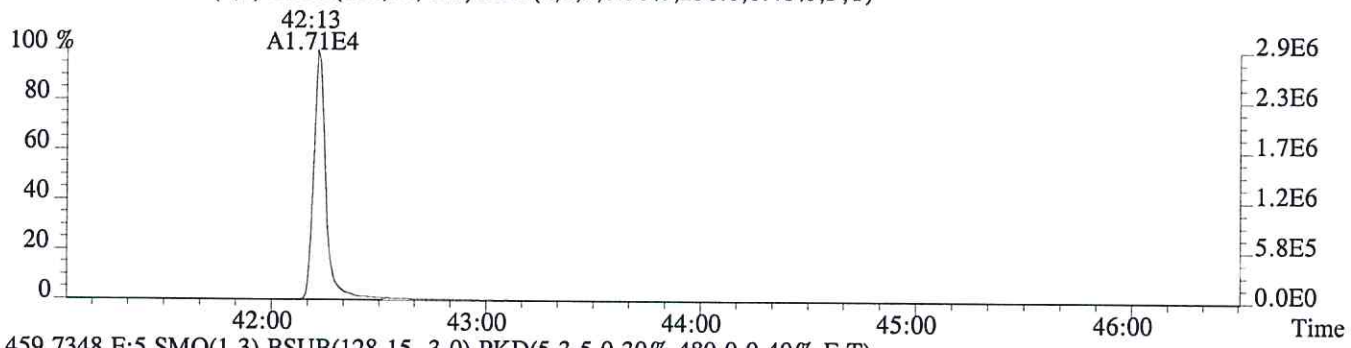


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

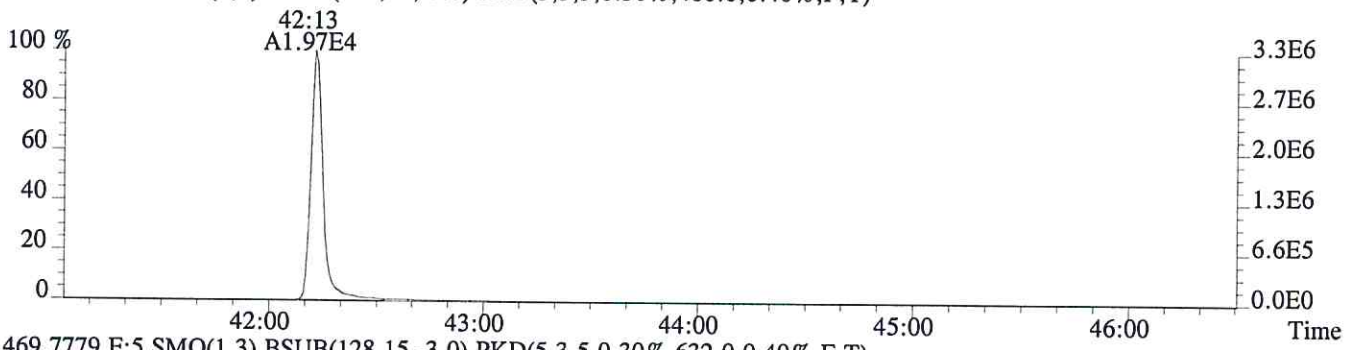


File:P402428 #1-492 Acq:28-APR-2016 14:11:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76557

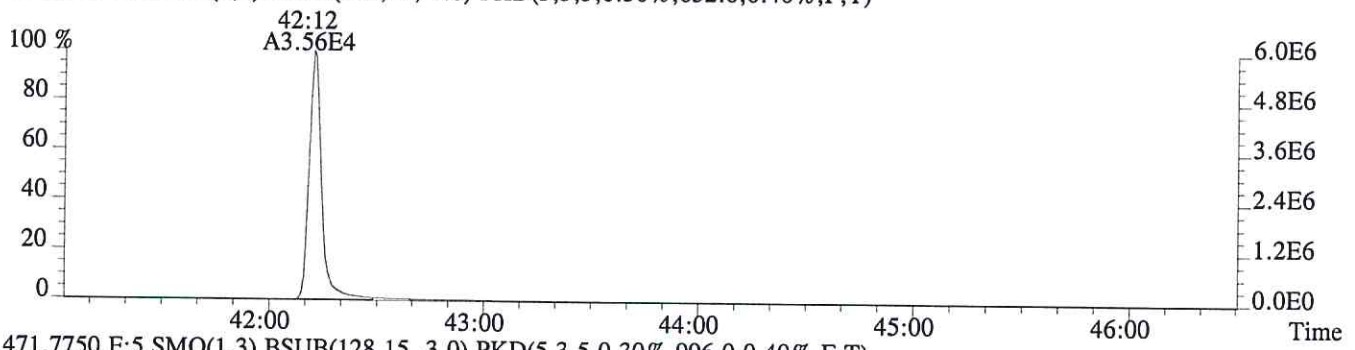
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,236.0,0.40%,F,T)



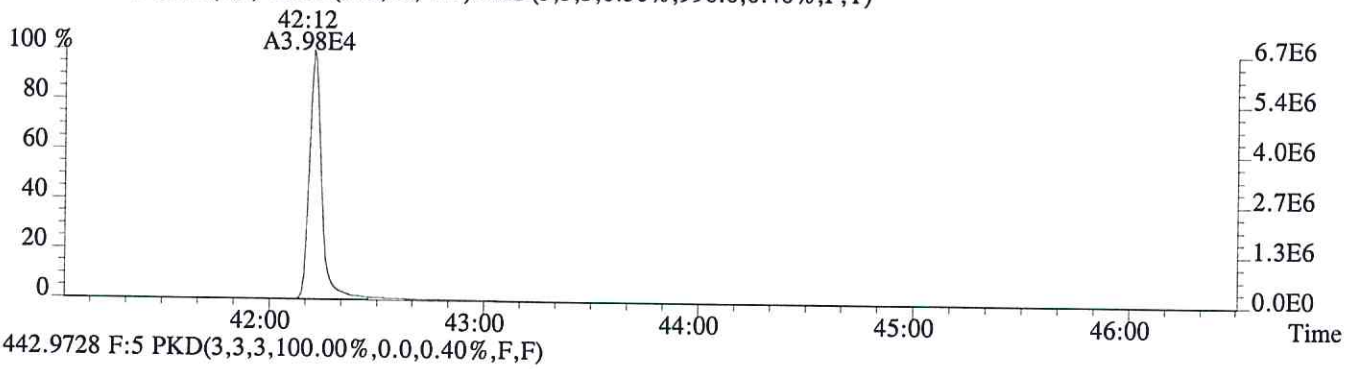
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,480.0,0.40%,F,T)



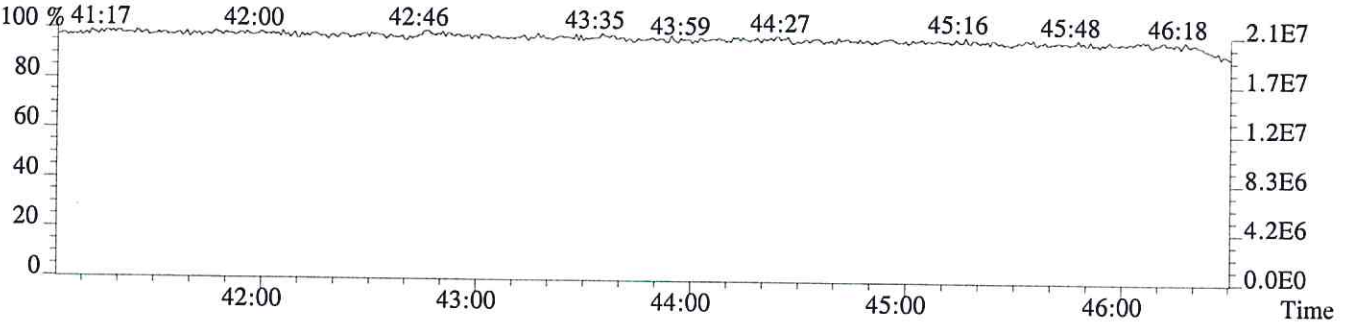
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,632.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,996.0,0.40%,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.
76558

Run #5 Filename P402429 Samp: 1 Inj: 1 Acquired: 28-APR-16 15:00:19
Processed: 28-APR-16 16:59:49 Sample ID: CS4

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:21	9.716e+03	1.293e+04	0.75	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	32:29	7.677e+04	4.995e+04	1.54	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	33:22	7.119e+04	4.606e+04	1.55	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	36:00	5.848e+04	4.824e+04	1.21	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	36:06	6.453e+04	5.245e+04	1.23	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:36	5.851e+04	4.726e+04	1.24	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	37:20	5.286e+04	4.311e+04	1.23	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:34	5.142e+04	5.052e+04	1.02	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:57	4.363e+04	4.227e+04	1.03	yes	no	1.187
10	Unk	OCDF	42:26	6.887e+04	7.671e+04	0.90	yes	no	1.035
11	Unk	2,3,7,8-TCDD	29:07	9.054e+03	1.211e+04	0.75	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:39	5.736e+04	3.738e+04	1.53	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:44	4.716e+04	3.858e+04	1.22	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:49	4.983e+04	4.039e+04	1.23	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	37:03	5.106e+04	4.216e+04	1.21	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	39:29	4.028e+04	3.985e+04	1.01	yes	no	0.882
17	Unk	OCDD	42:14	6.340e+04	7.272e+04	0.87	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	28:20	3.078e+04	4.027e+04	0.76	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	32:28	4.162e+04	2.690e+04	1.55	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	33:21	4.112e+04	2.637e+04	1.56	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:59	1.574e+04	3.095e+04	0.51	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	36:06	1.843e+04	3.617e+04	0.51	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:35	1.687e+04	3.321e+04	0.51	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	37:20	1.495e+04	2.933e+04	0.51	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:33	1.179e+04	2.705e+04	0.44	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:57	1.053e+04	2.457e+04	0.43	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	29:06	2.666e+04	3.407e+04	0.78	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	33:38	3.488e+04	2.227e+04	1.57	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:43	2.558e+04	2.067e+04	1.24	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:48	2.695e+04	2.150e+04	1.25	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:28	2.207e+04	2.129e+04	1.04	yes	no	0.817
32	IS	13C-OCDD	42:13	3.189e+04	3.572e+04	0.89	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	28:33	2.740e+04	3.511e+04	0.78	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:02	2.890e+04	2.329e+04	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:07	2.453e+04				no	0.958

ALS ENVIRONMENTAL
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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76558

Run #5 Filename P402429 Samp: 1 Inj: 1 Acquired: 28-APR-16 15:00:19
Processed: 28-APR-16 16:59:491 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	1.93e+06	5.20e+02	3.7e+03	2.59e+06	9.84e+02	2.6e+03
2	1,2,3,7,8-PeCDF	1.51e+07	7.20e+02	2.1e+04	9.86e+06	1.50e+03	6.6e+03
3	2,3,4,7,8-PeCDF	1.48e+07	7.20e+02	2.1e+04	9.65e+06	1.50e+03	6.4e+03
4	1,2,3,4,7,8-HxCDF	1.26e+07	8.68e+02	1.5e+04	1.05e+07	3.08e+02	3.4e+04
5	1,2,3,6,7,8-HxCDF	1.35e+07	8.68e+02	1.6e+04	1.11e+07	3.08e+02	3.6e+04
6	2,3,4,6,7,8-HxCDF	1.28e+07	8.68e+02	1.5e+04	1.04e+07	3.08e+02	3.4e+04
7	1,2,3,7,8,9-HxCDF	1.10e+07	8.68e+02	1.3e+04	9.01e+06	3.08e+02	2.9e+04
8	1,2,3,4,6,7,8-HpCDF	1.13e+07	1.49e+03	7.6e+03	1.11e+07	7.03e+03	1.6e+03
9	1,2,3,4,7,8,9-HpCDF	8.42e+06	1.49e+03	5.6e+03	8.15e+06	7.03e+03	1.2e+03
10	OCDF	1.19e+07	5.52e+02	2.2e+04	1.32e+07	1.05e+03	1.3e+04
11	2,3,7,8-TCDD	1.91e+06	5.92e+02	3.2e+03	2.56e+06	8.72e+02	2.9e+03
12	1,2,3,7,8-PeCDD	1.16e+07	1.11e+03	1.0e+04	7.60e+06	2.96e+02	2.6e+04
13	1,2,3,4,7,8-HxCDD	1.07e+07	1.47e+03	7.3e+03	8.78e+06	4.00e+02	2.2e+04
14	1,2,3,6,7,8-HxCDD	1.04e+07	1.47e+03	7.0e+03	8.40e+06	4.00e+02	2.1e+04
15	1,2,3,7,8,9-HxCDD	1.05e+07	1.47e+03	7.2e+03	8.61e+06	4.00e+02	2.2e+04
16	1,2,3,4,6,7,8-HpCDD	8.20e+06	7.96e+02	1.0e+04	8.01e+06	8.84e+02	9.1e+03
17	OCDD	1.06e+07	4.20e+02	2.5e+04	1.21e+07	5.20e+02	2.3e+04
18	13C-2,3,7,8-TCDF	6.15e+06	2.25e+03	2.7e+03	8.04e+06	1.24e+03	6.5e+03
19	13C-1,2,3,7,8-PeCDF	8.09e+06	4.44e+02	1.8e+04	5.27e+06	4.36e+02	1.2e+04
20	13C-2,3,4,7,8-PeCDF	8.52e+06	4.44e+02	1.9e+04	5.44e+06	4.36e+02	1.2e+04
21	13C-1,2,3,4,7,8-HxCDF	3.45e+06	5.20e+02	6.6e+03	6.83e+06	1.19e+03	5.7e+03
22	13C-1,2,3,6,7,8-HxCDF	3.91e+06	5.20e+02	7.5e+03	7.70e+06	1.19e+03	6.5e+03
23	13C-2,3,4,6,7,8-HxCDF	3.66e+06	5.20e+02	7.0e+03	7.25e+06	1.19e+03	6.1e+03
24	13C-1,2,3,7,8,9-HxCDF	3.06e+06	5.20e+02	5.9e+03	6.09e+06	1.19e+03	5.1e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.58e+06	3.03e+03	8.5e+02	5.92e+06	3.40e+03	1.7e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.04e+06	3.03e+03	6.7e+02	4.73e+06	3.40e+03	1.4e+03
27	13C-2,3,7,8-TCDD	5.61e+06	4.80e+03	1.2e+03	7.16e+06	1.90e+03	3.8e+03
28	13C-1,2,3,7,8-PeCDD	7.18e+06	5.44e+02	1.3e+04	4.60e+06	4.28e+02	1.1e+04
29	13C-1,2,3,4,7,8-HxCDD	5.76e+06	2.27e+03	2.5e+03	4.66e+06	1.61e+03	2.9e+03
30	13C-1,2,3,6,7,8-HxCDD	5.63e+06	2.27e+03	2.5e+03	4.45e+06	1.61e+03	2.8e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.43e+06	8.28e+02	5.4e+03	4.23e+06	9.48e+02	4.5e+03
32	13C-OCDD	5.37e+06	9.88e+02	5.4e+03	5.95e+06	1.14e+03	5.2e+03
33	13C-1,2,3,4-TCDD	5.68e+06	4.80e+03	1.2e+03	7.18e+06	1.90e+03	3.8e+03
34	13C-1,2,3,7,8,9-HxCDD	5.97e+06	2.27e+03	2.6e+03	4.80e+06	1.61e+03	3.0e+03
35	37Cl-2,3,7,8-TCDD	5.17e+06	1.64e+03	3.1e+03			

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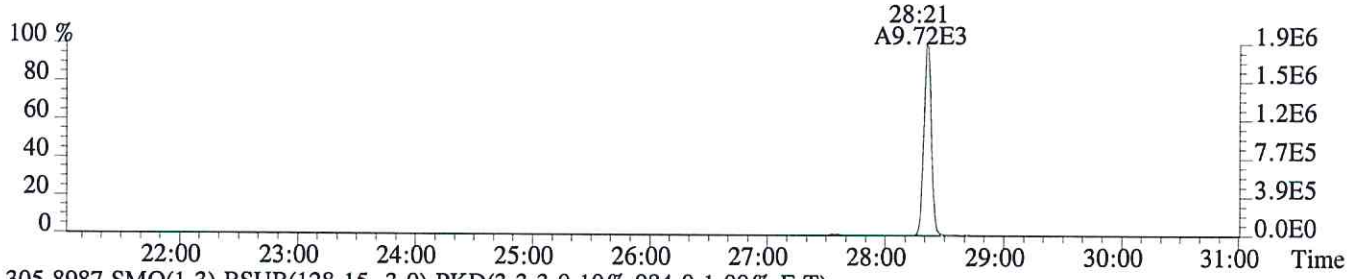
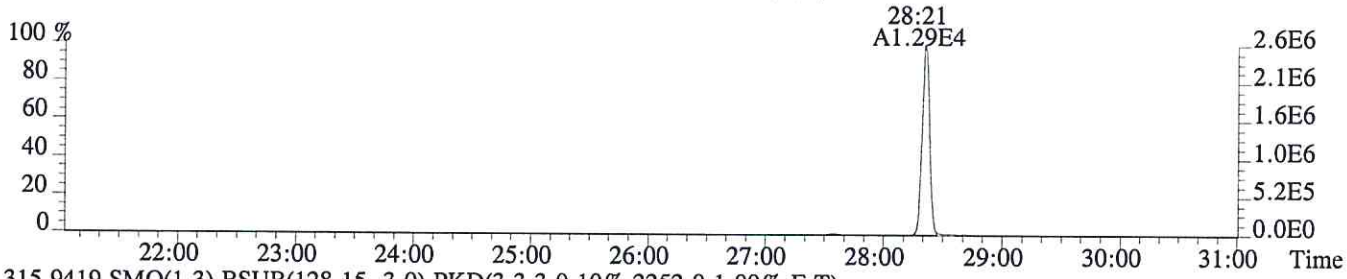
File:P402429 #1-684 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558

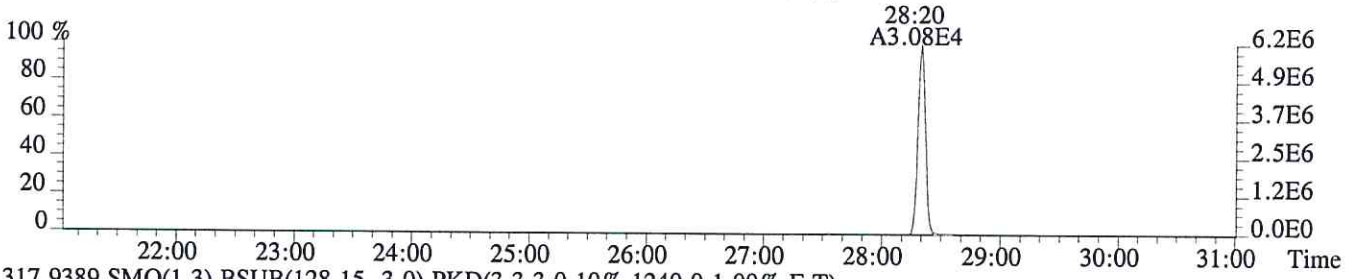
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,T)



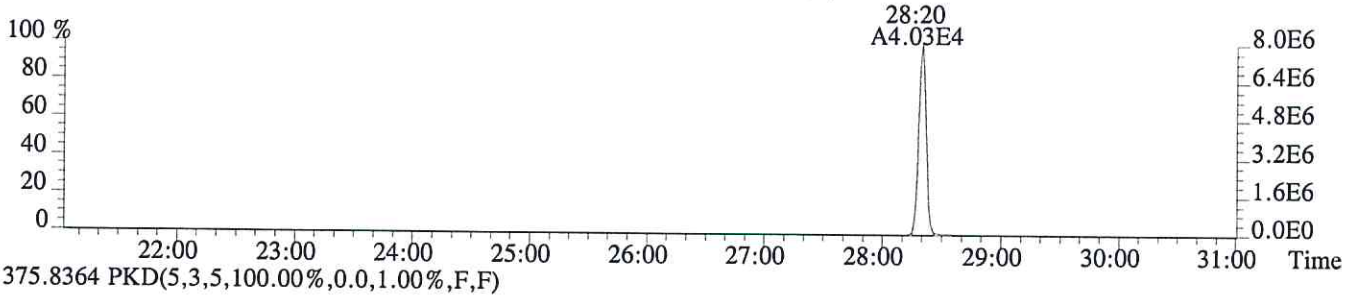
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,984.0,1.00%,F,T)



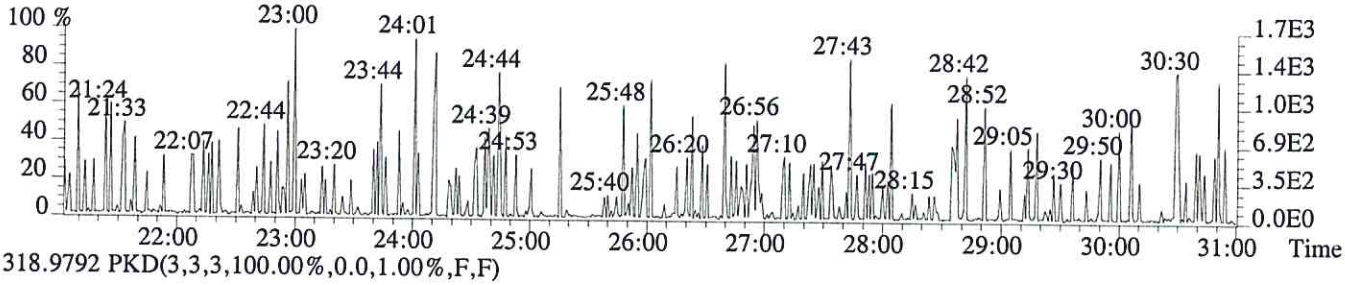
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2252.0,1.00%,F,T)



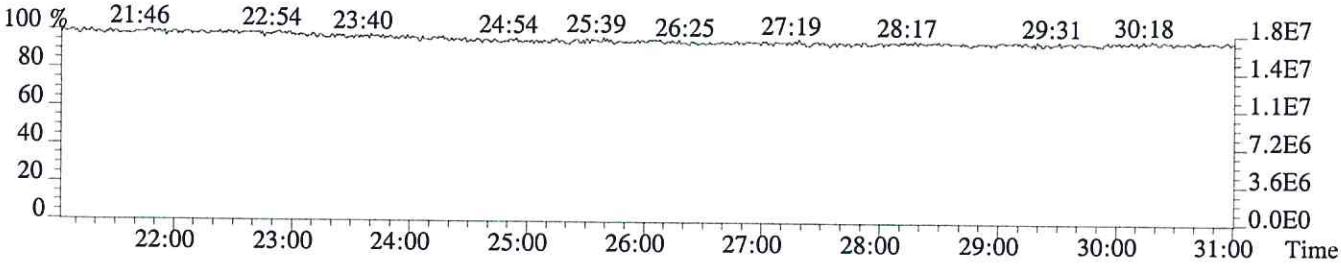
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1240.0,1.00%,F,T)



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

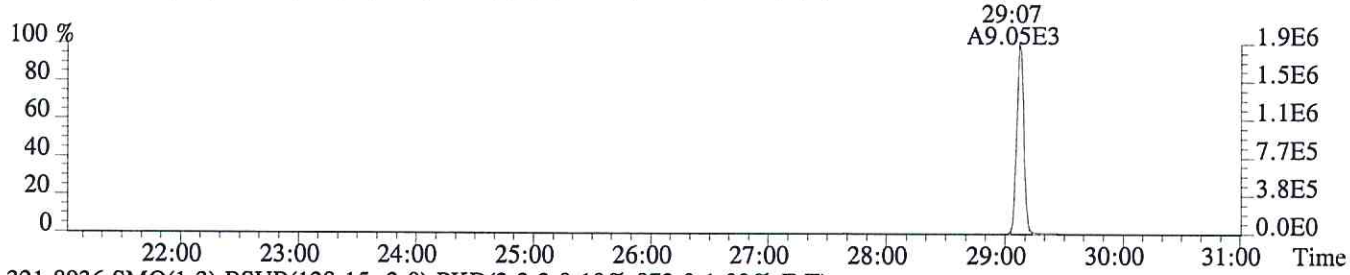


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

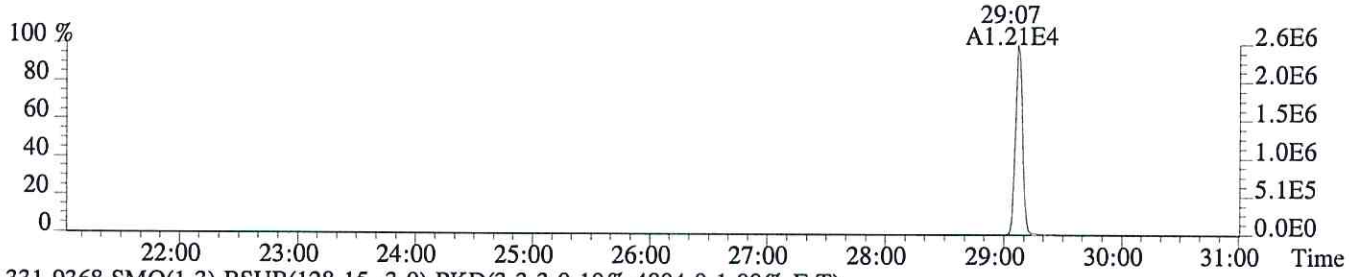


File:P402429 #1-684 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558

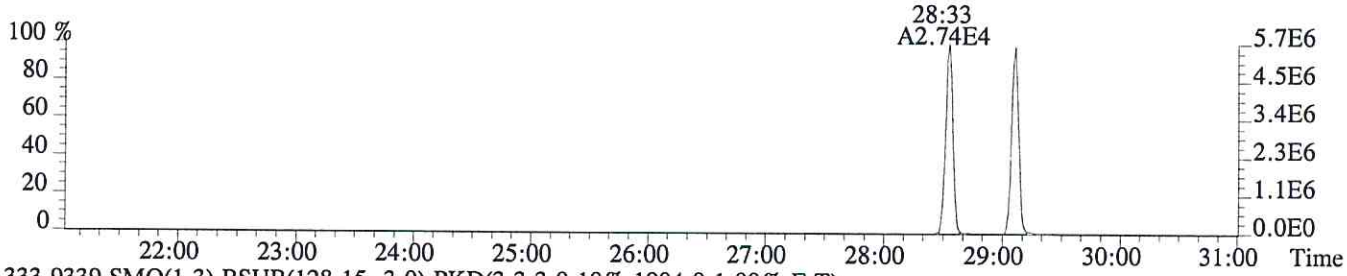
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,592.0,1.00%,F,T)



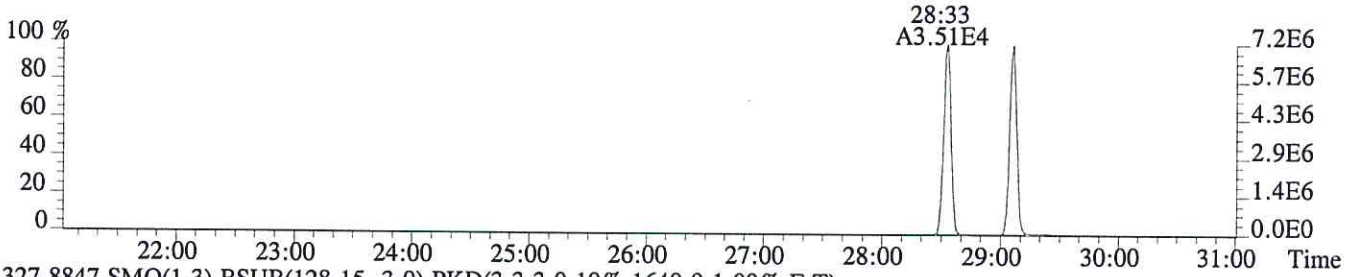
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,872.0,1.00%,F,T)



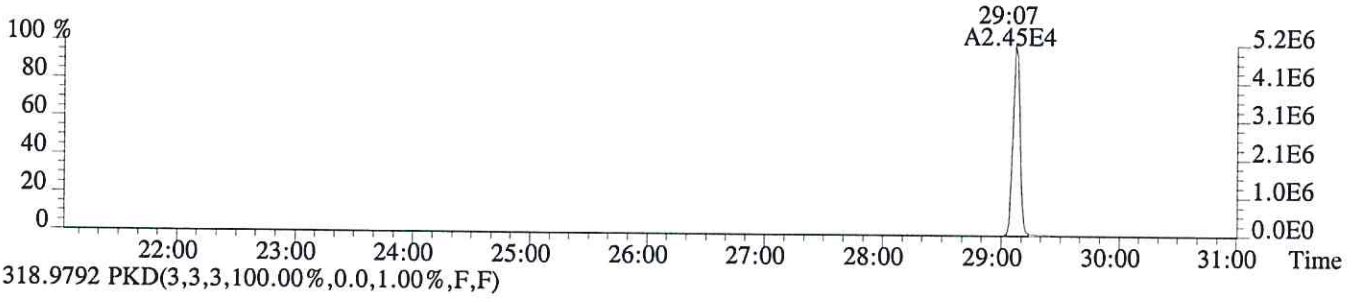
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4804.0,1.00%,F,T)



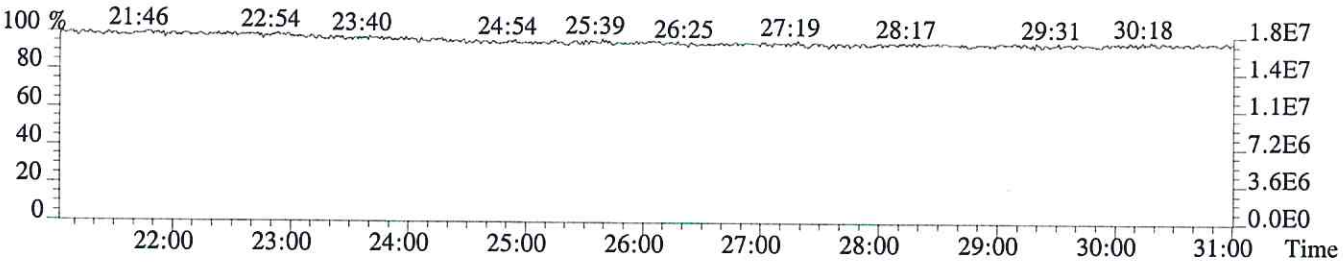
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1904.0,1.00%,F,T)



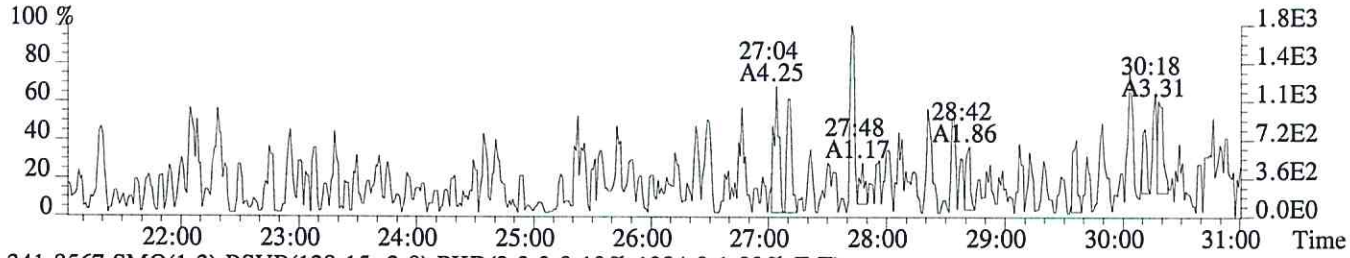
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1640.0,1.00%,F,T)



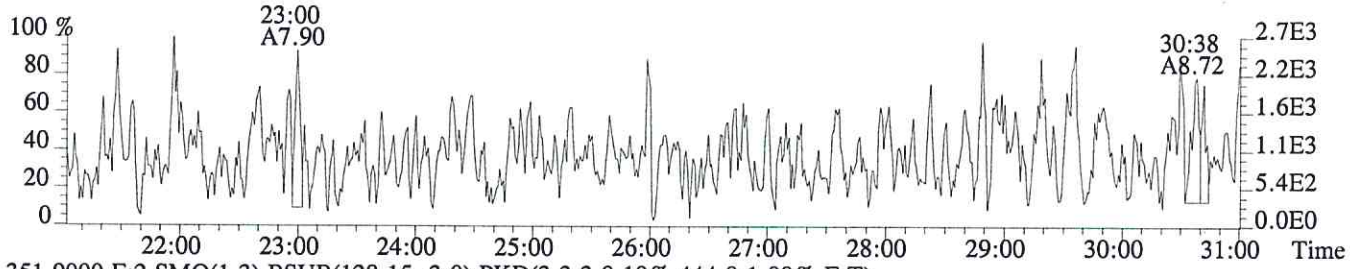
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



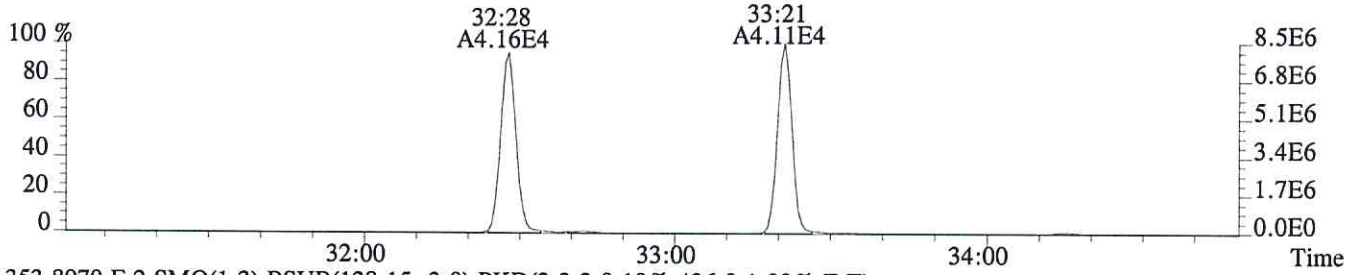
File:P402429 #1-684 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,588.0,1.00%,F,T)



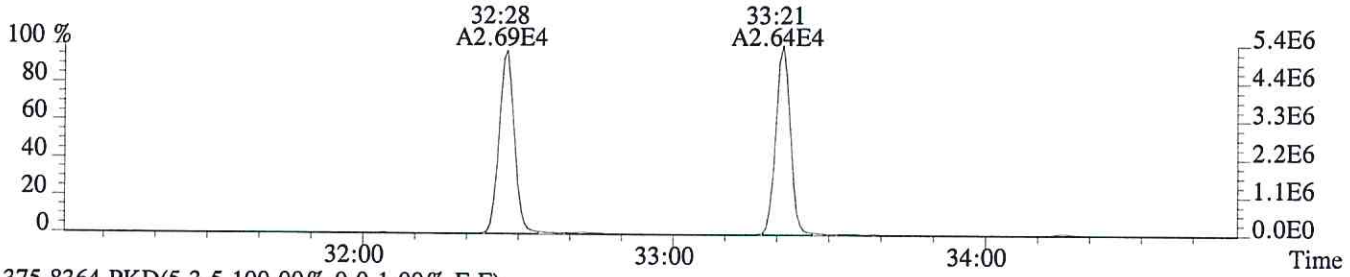
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1284.0,1.00%,F,T)



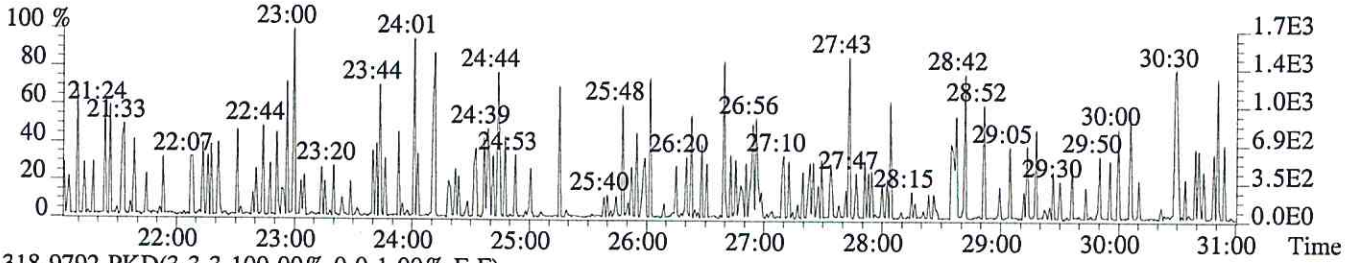
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



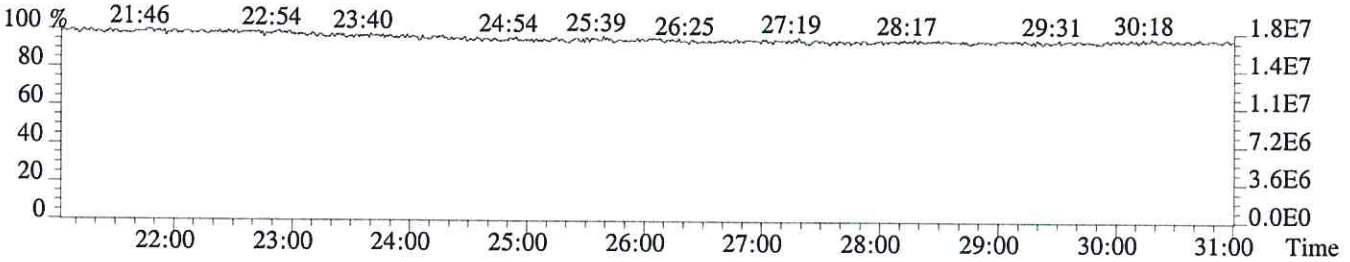
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,436.0,1.00%,F,T)



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

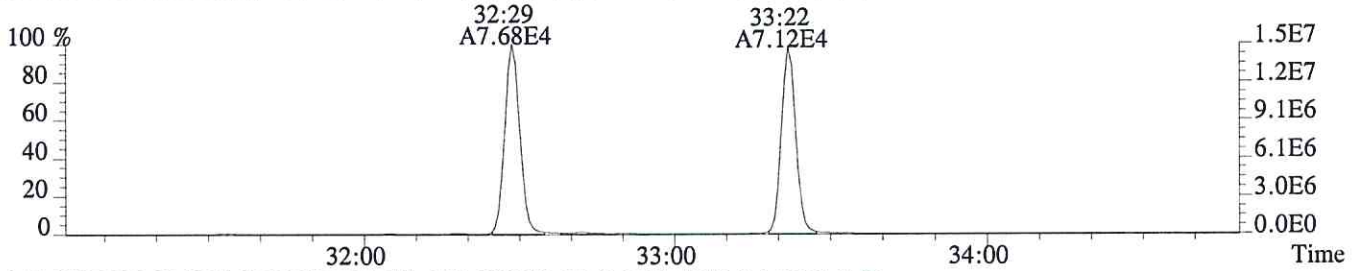


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

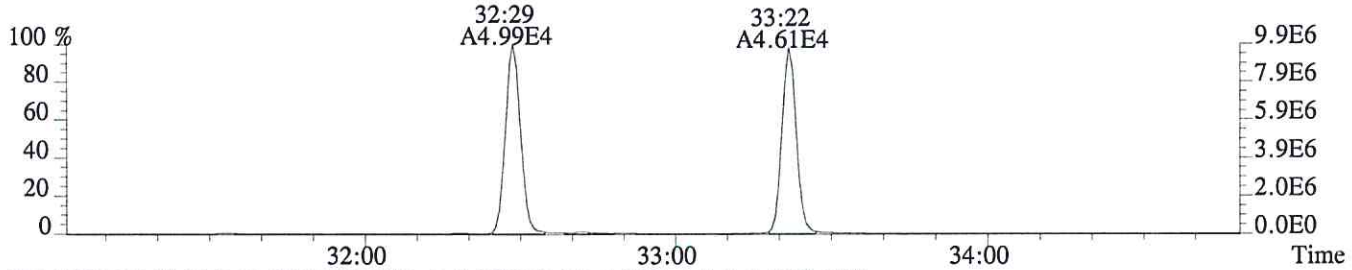


File:P402429 #1-340 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558

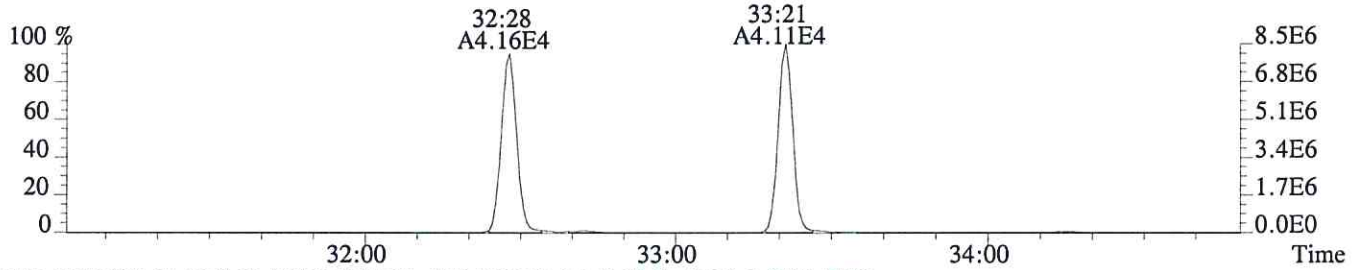
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,720.0,1.00%,F,T)



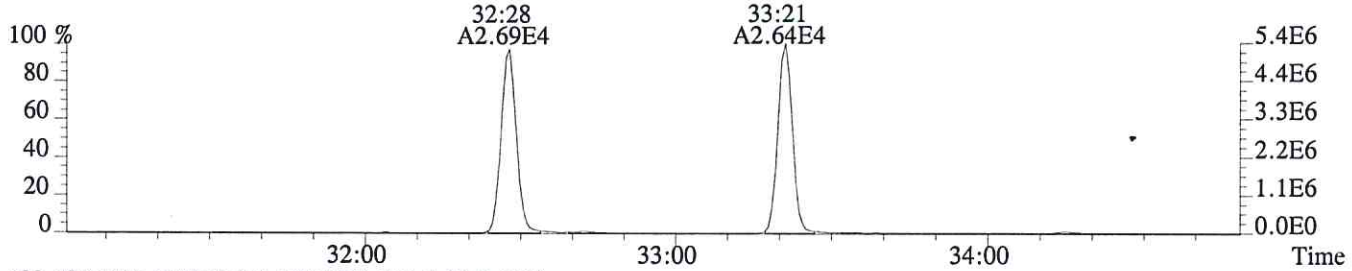
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1500.0,1.00%,F,T)



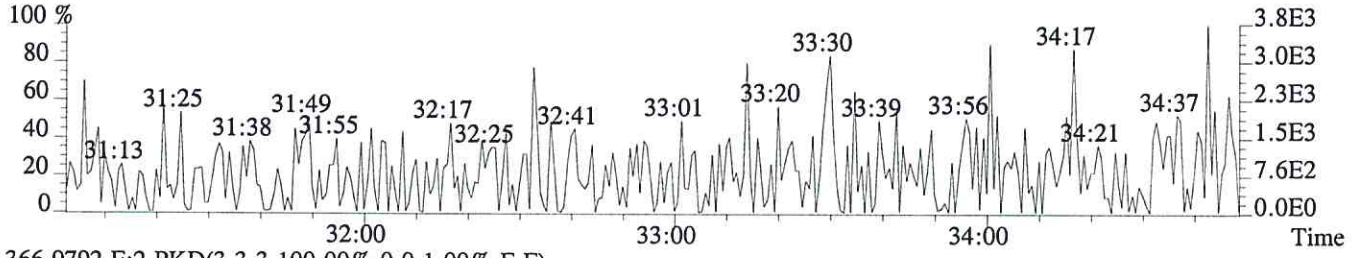
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



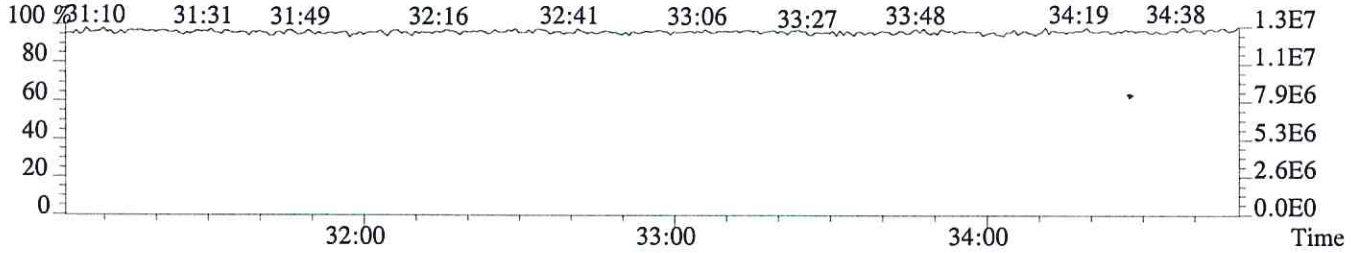
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,436.0,1.00%,F,T)



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

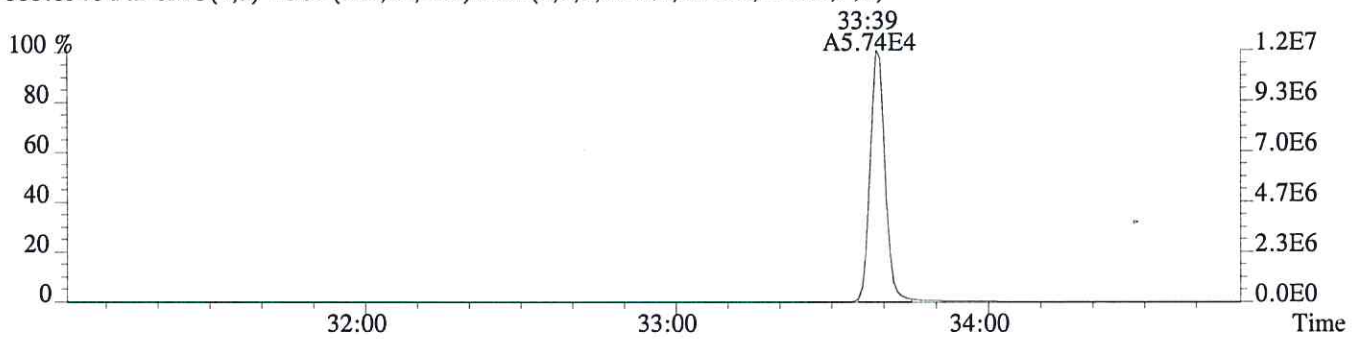


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

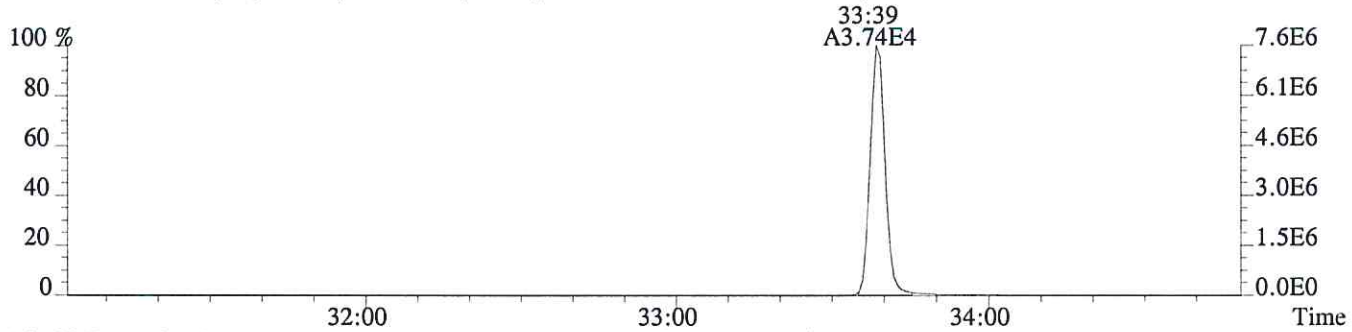


File:P402429 #1-340 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558

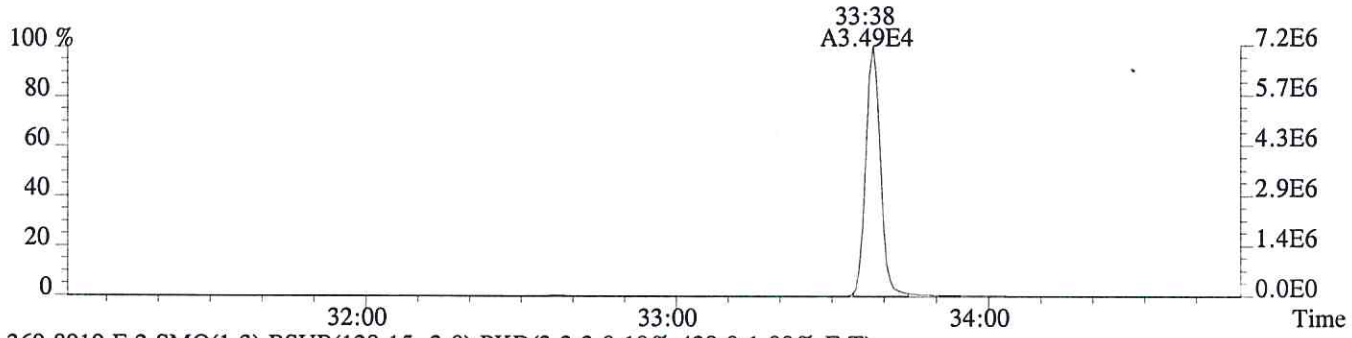
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1112.0,1.00%,F,T)



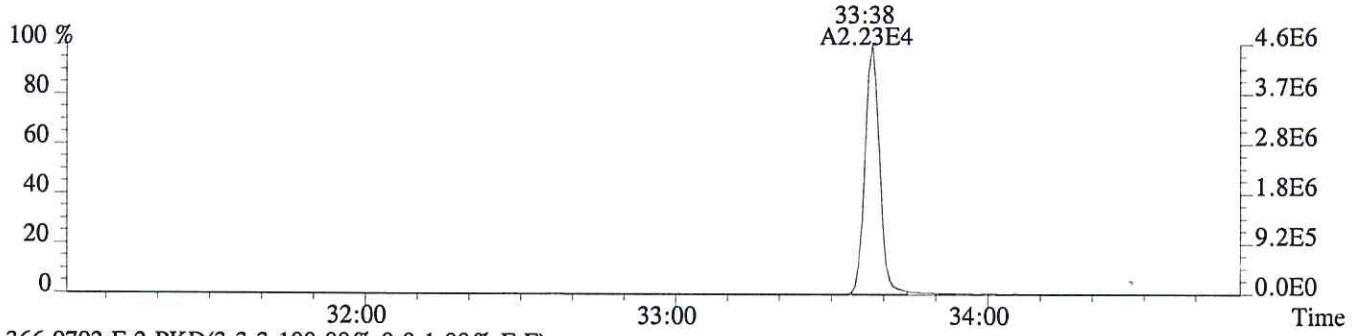
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,296.0,1.00%,F,T)



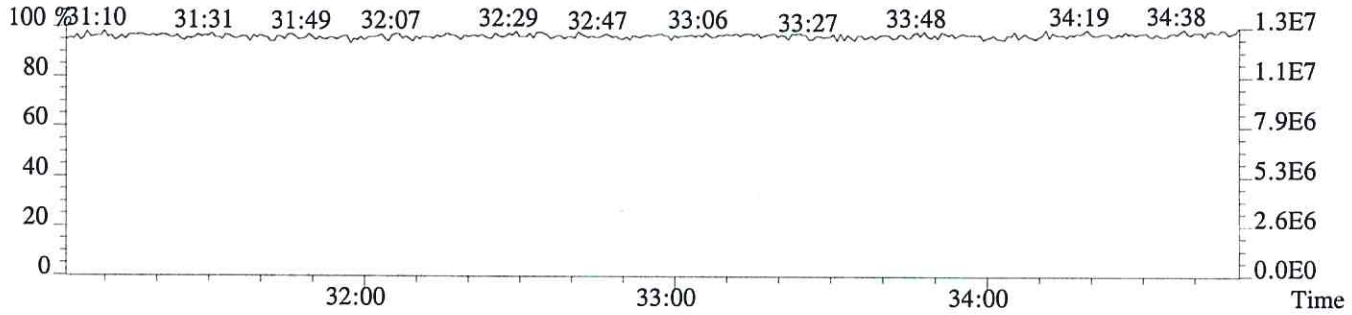
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,544.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,428.0,1.00%,F,T)

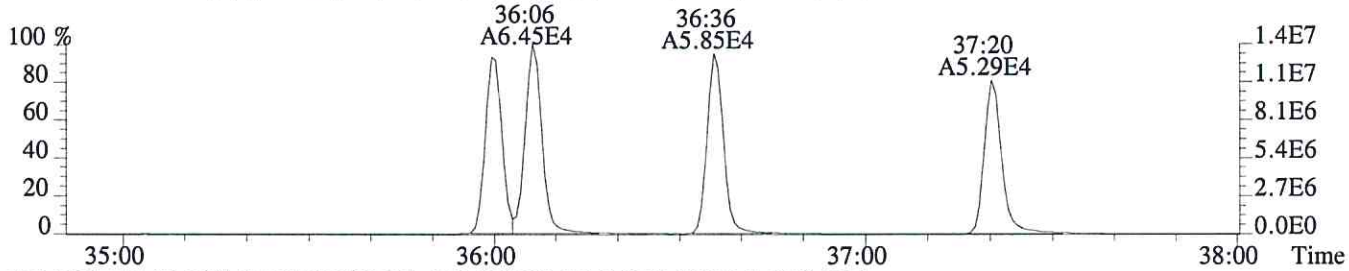


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

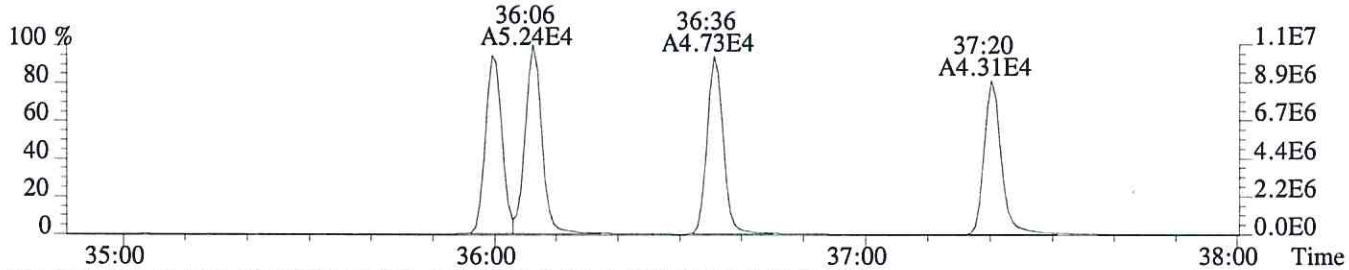


File:P402429 #1-285 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558

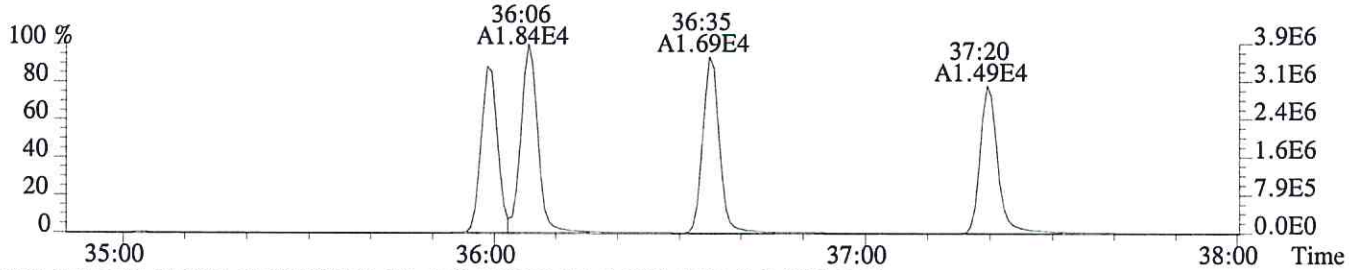
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,868.0,0.40%,F,T)



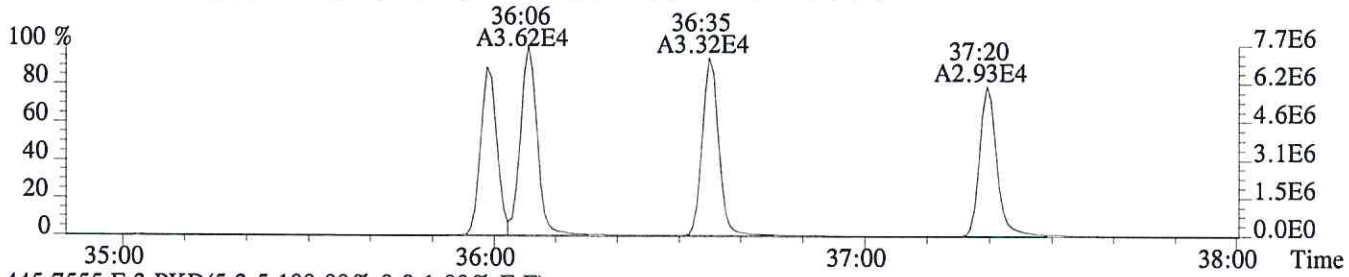
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,308.0,0.40%,F,T)



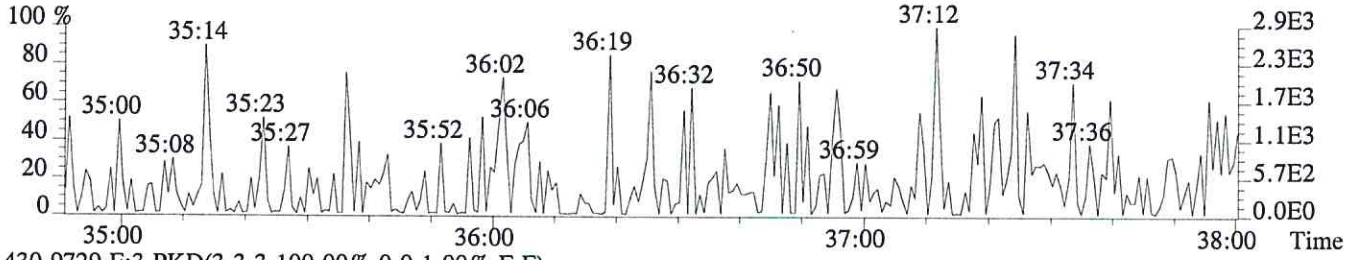
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,520.0,0.40%,F,T)



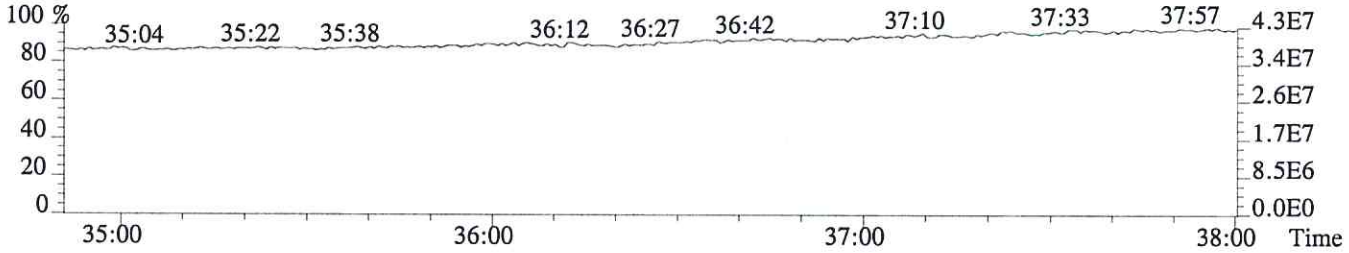
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1192.0,0.40%,F,T)



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

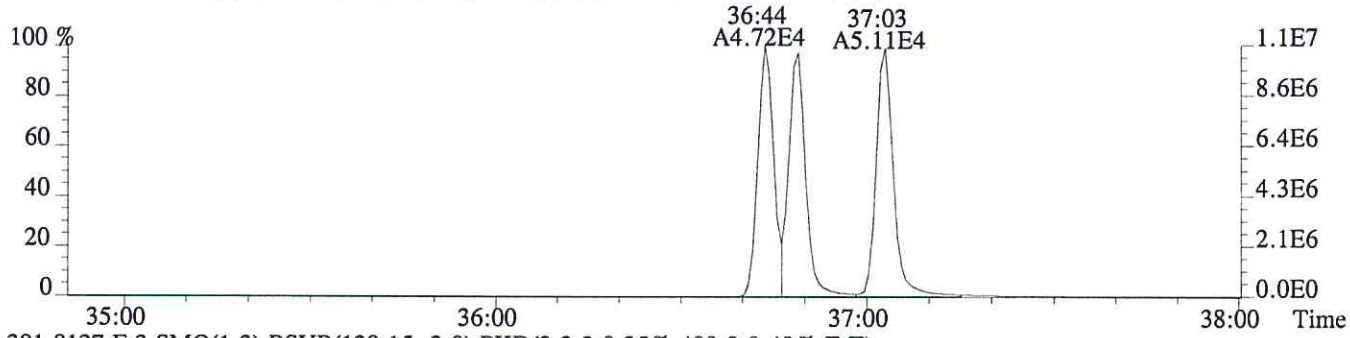


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

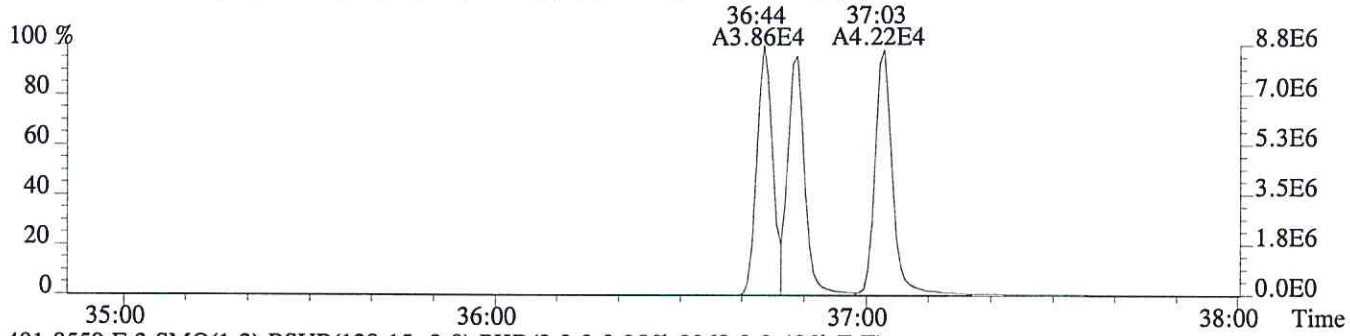


File:P402429 #1-285 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558

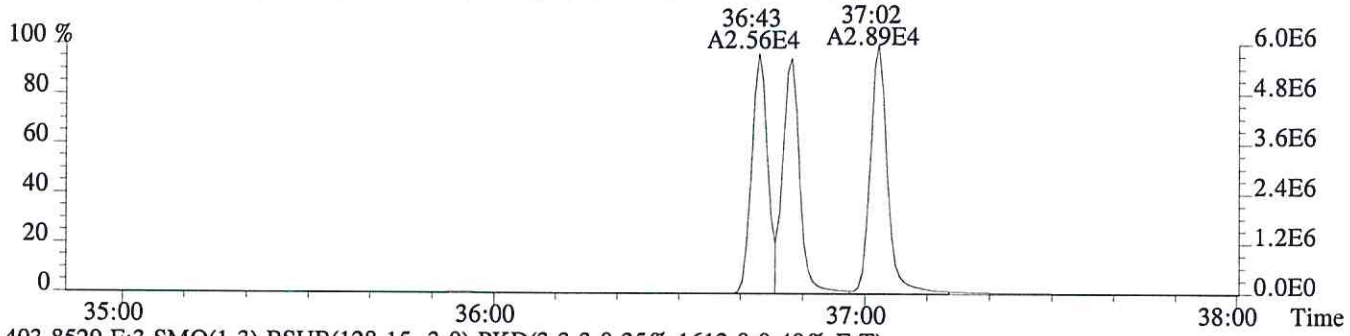
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1472.0,0.40%,F,T)



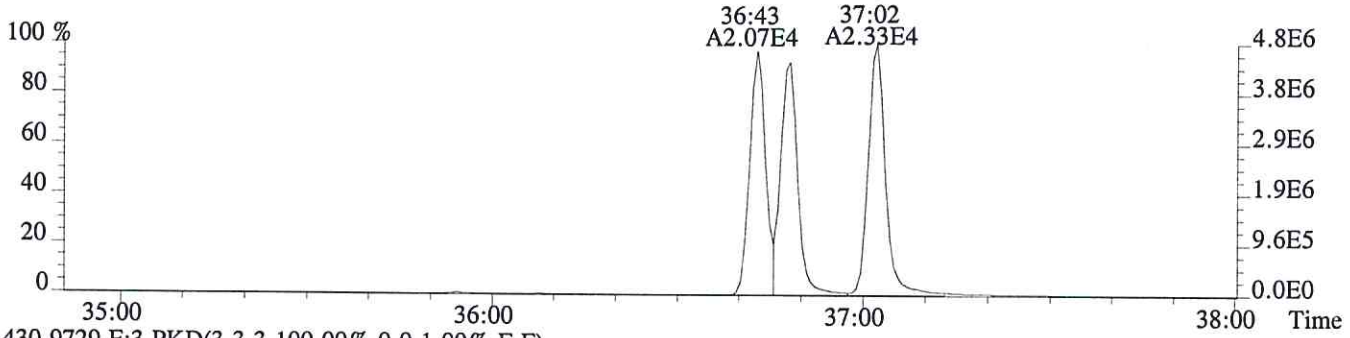
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,400.0,0.40%,F,T)



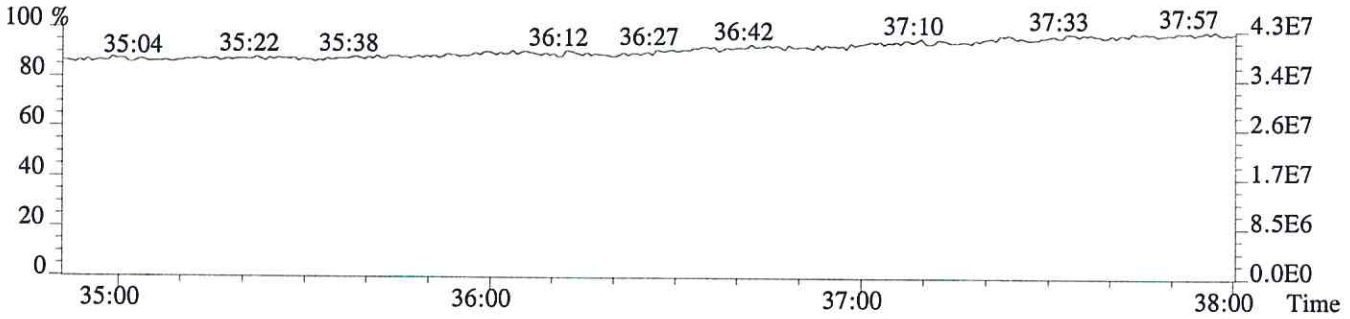
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2268.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1612.0,0.40%,F,T)

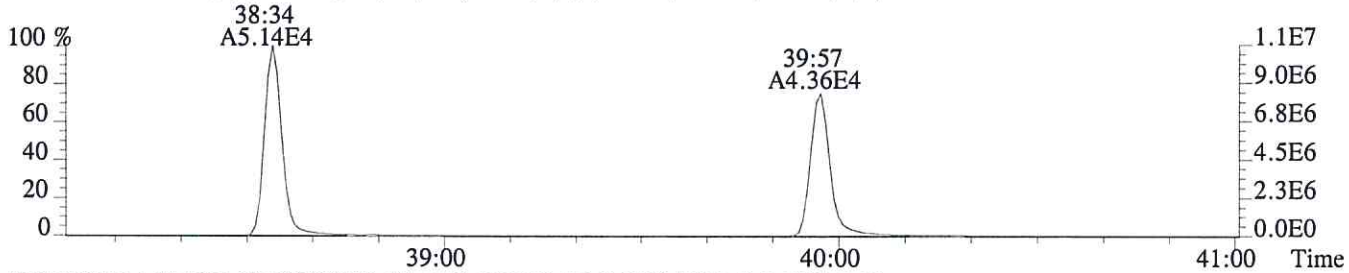


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

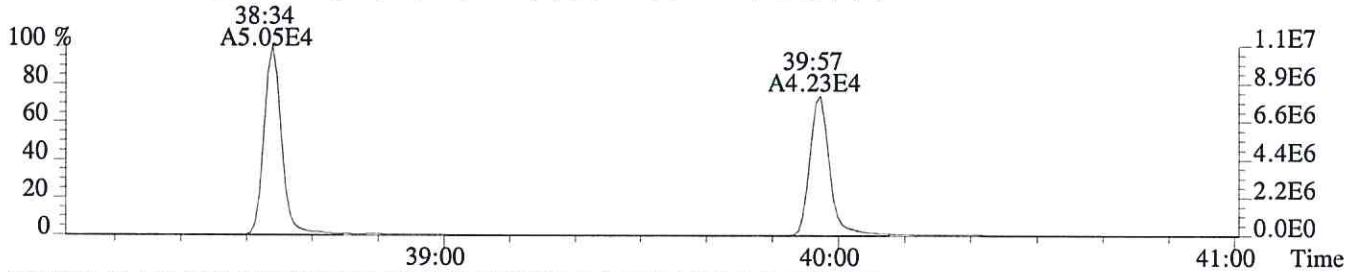


File:P402429 #1-268 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558

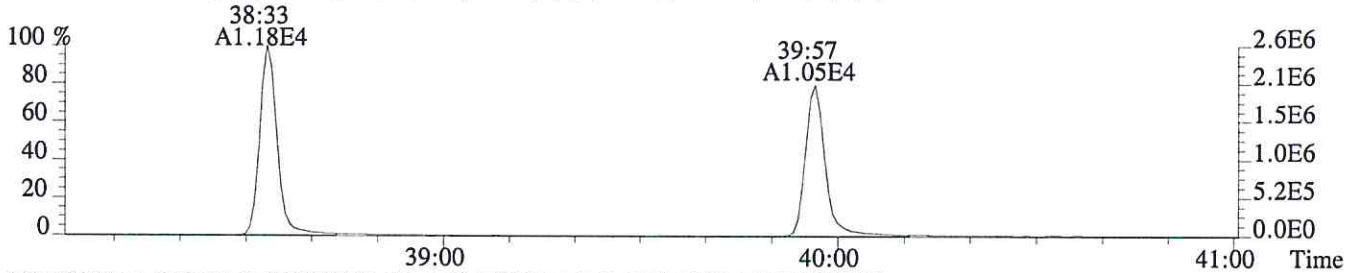
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1492.0,0.50%,F,T)



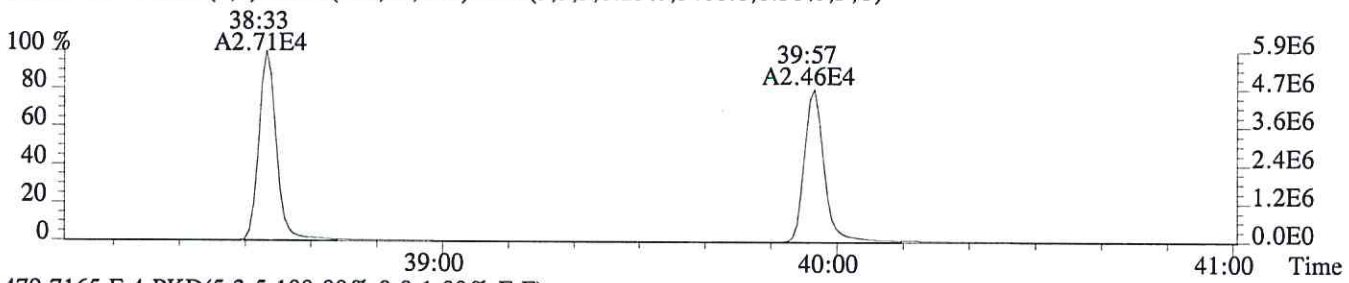
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7032.0,0.50%,F,T)



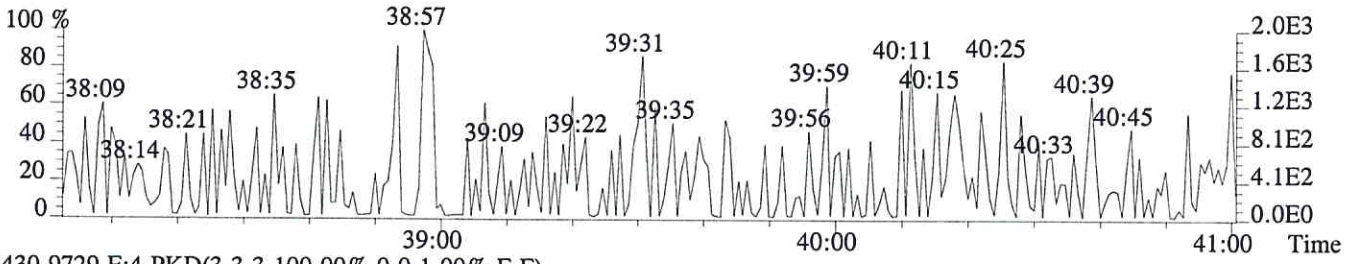
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3028.0,0.50%,F,T)



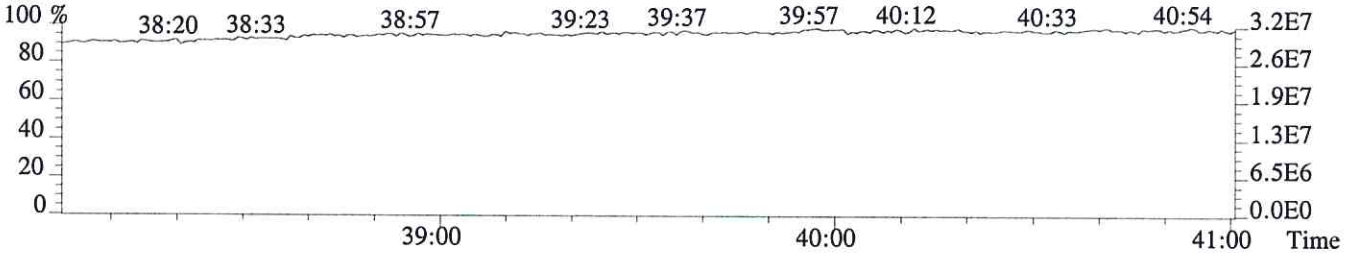
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3400.0,0.50%,F,T)



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

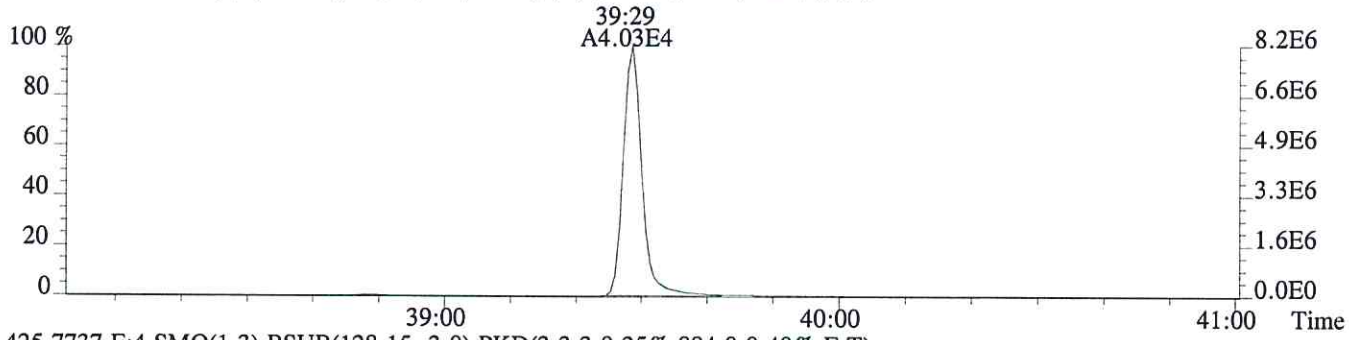


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

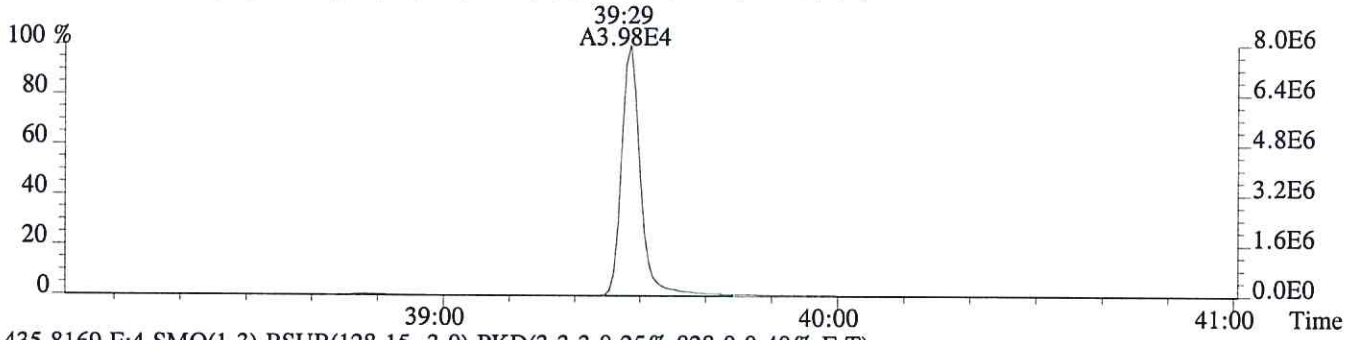


File:P402429 #1-268 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558

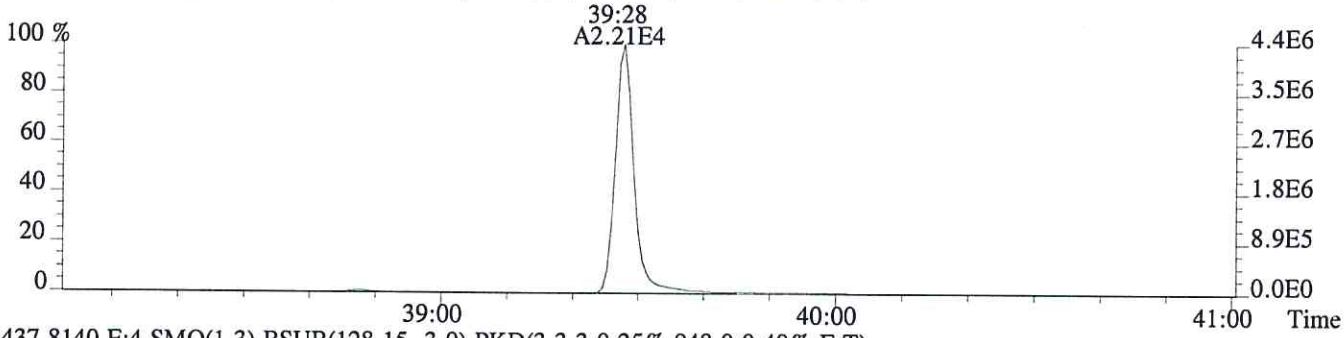
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,796.0,0.40%,F,T)



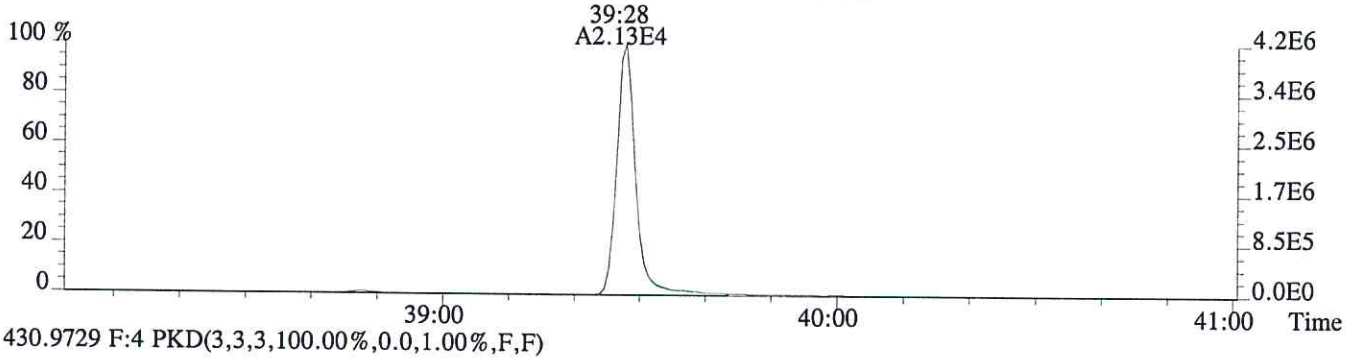
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,884.0,0.40%,F,T)



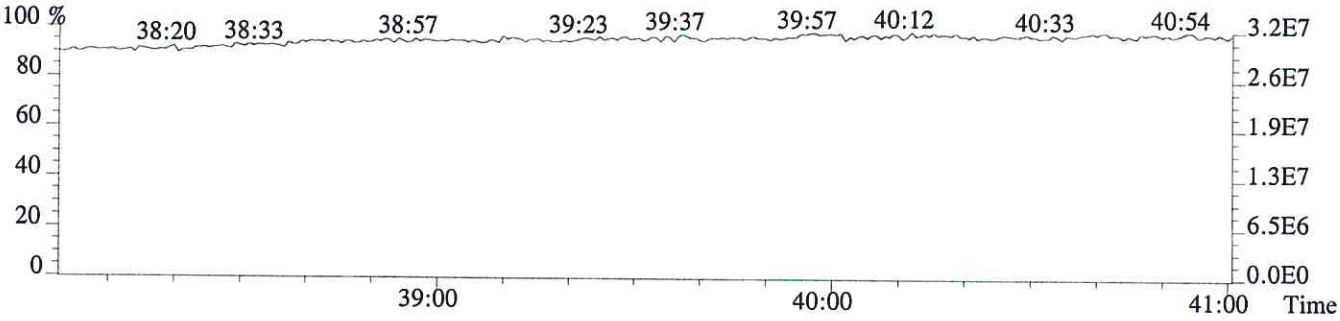
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,828.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,948.0,0.40%,F,T)

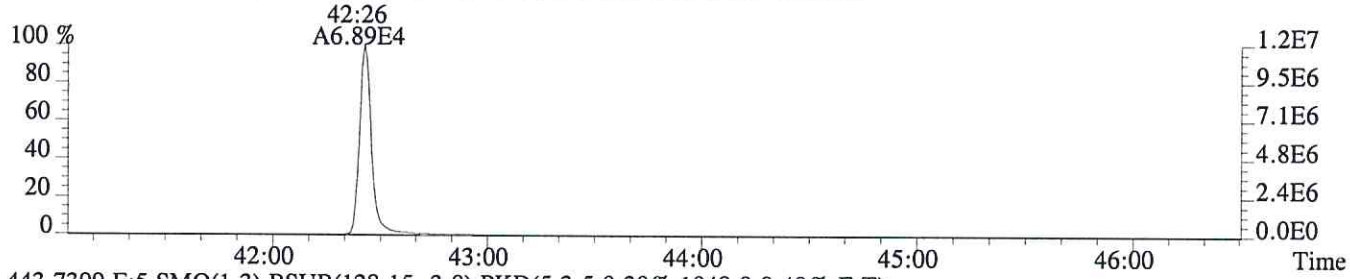


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

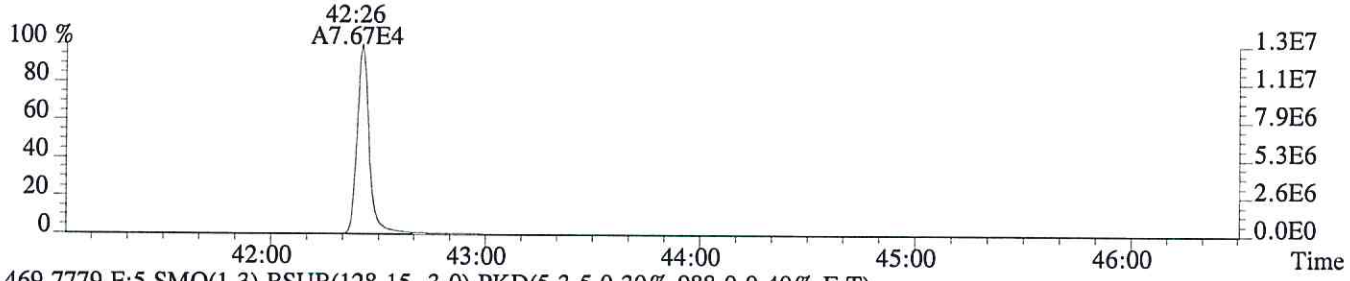


File:P402429 #1-492 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558

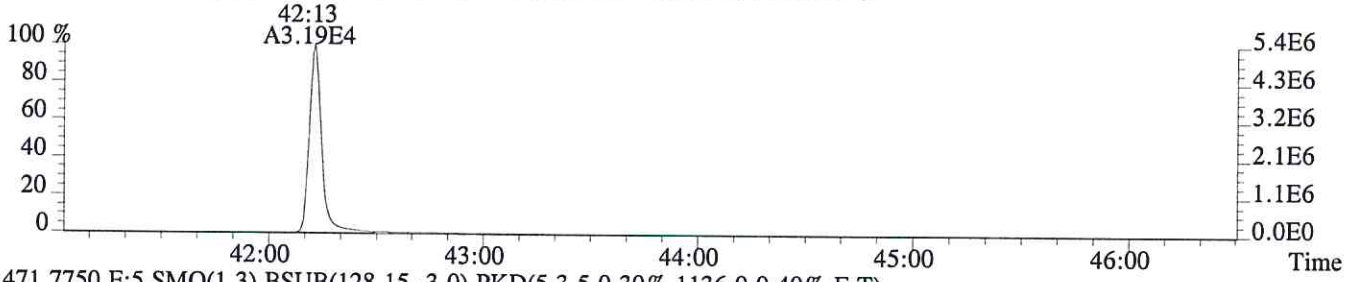
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,552.0,0.40%,F,T)



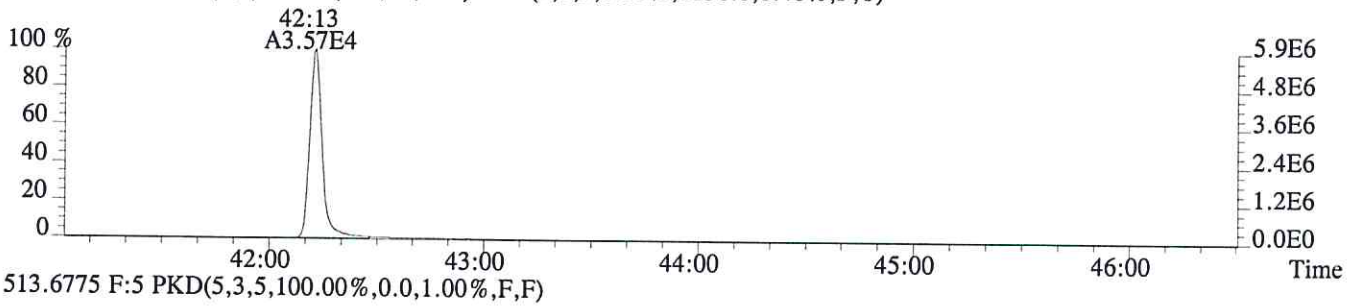
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1048.0,0.40%,F,T)



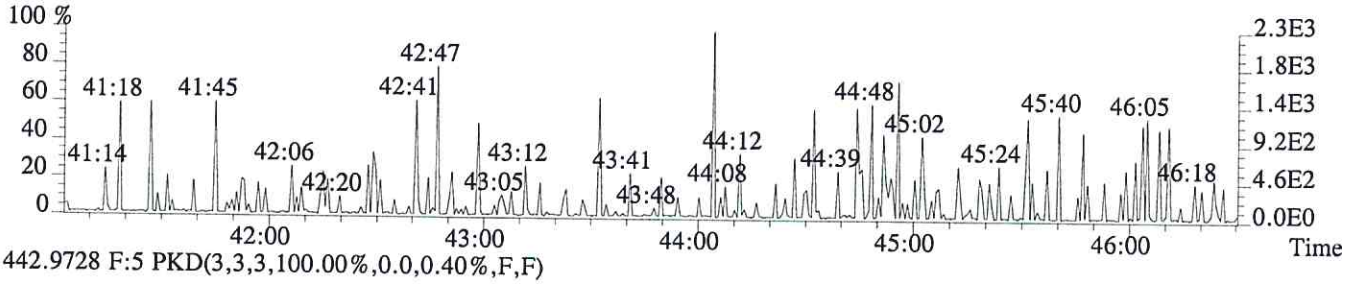
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,988.0,0.40%,F,T)



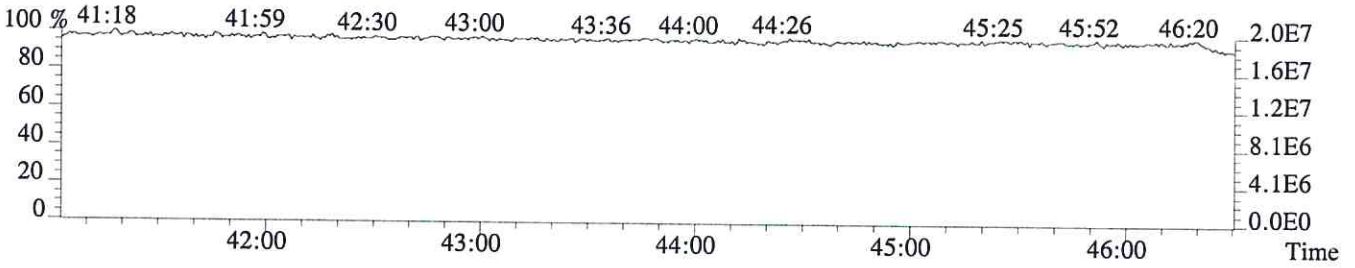
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1136.0,0.40%,F,T)



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

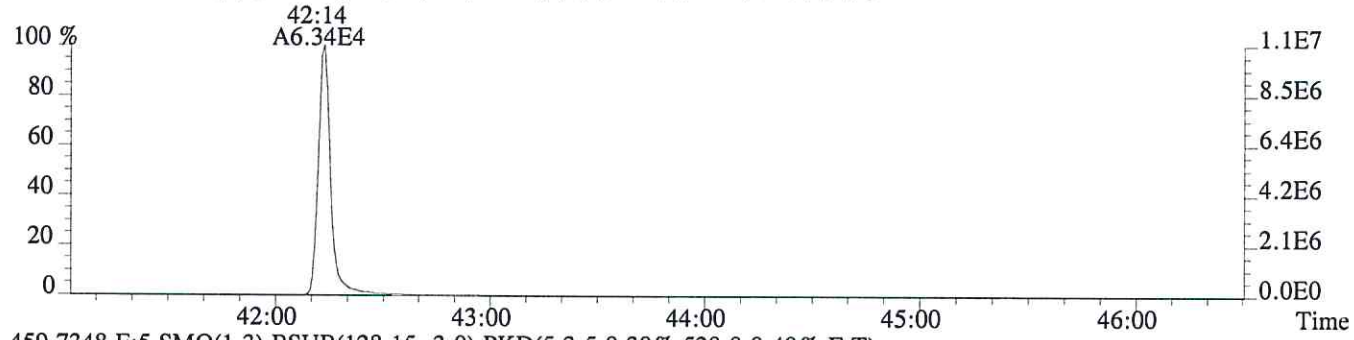


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

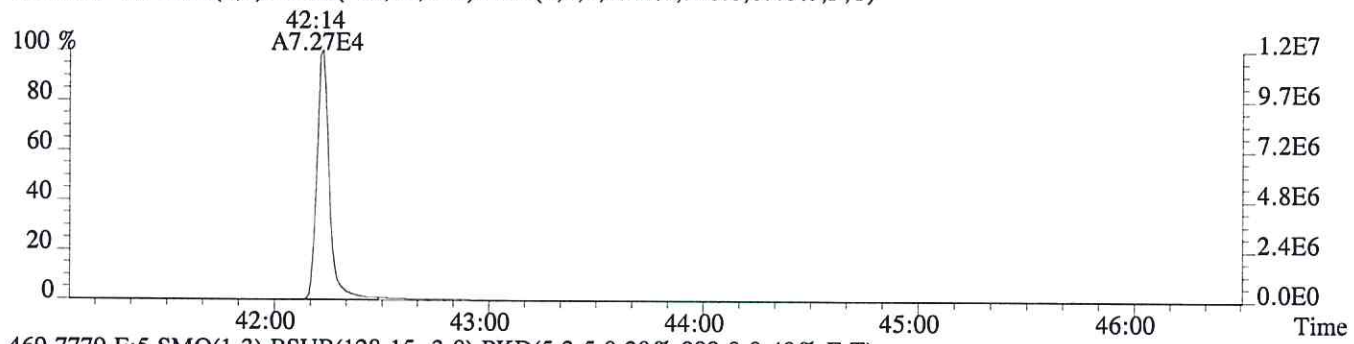


File:P402429 #1-492 Acq:28-APR-2016 15:00:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76558

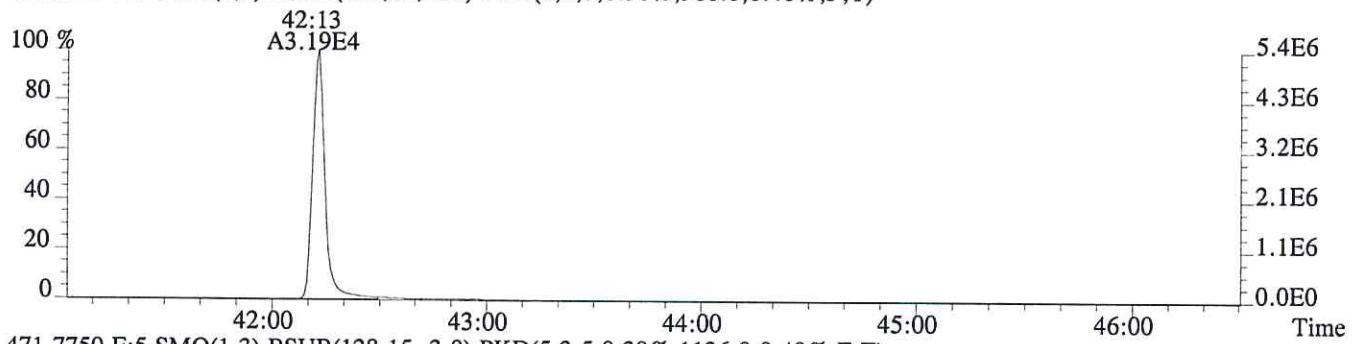
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,420.0,0.40%,F,T)



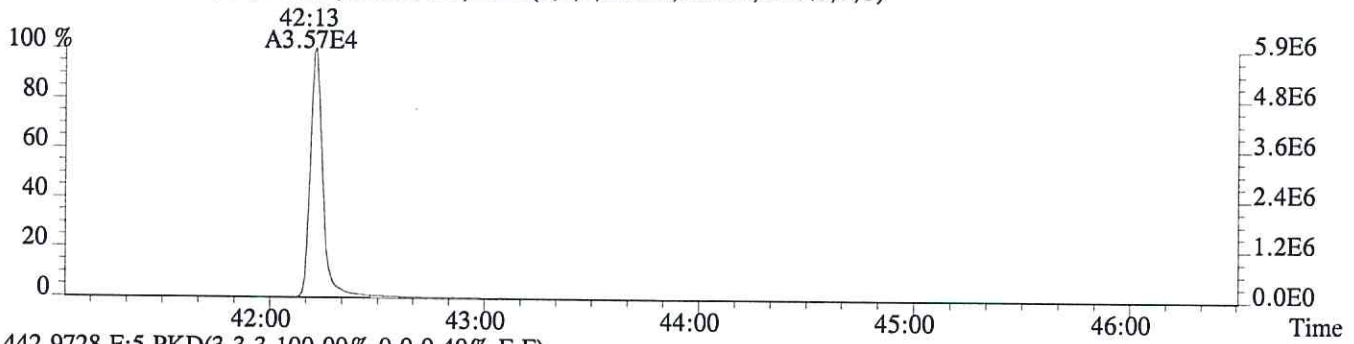
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,520.0,0.40%,F,T)



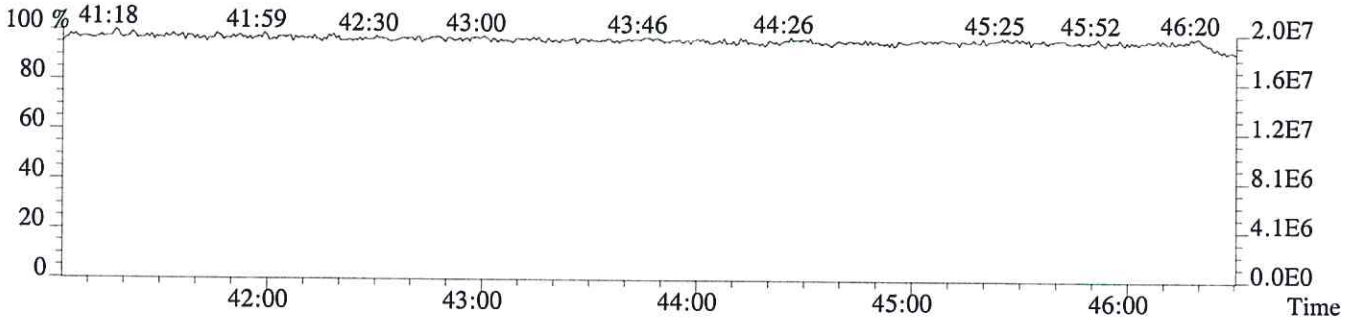
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,988.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1136.0,0.40%,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.
76956

Run #6 Filename P402430 Samp: 1 Inj: 1 Acquired: 28-APR-16 15:49:31
Processed: 28-APR-16 16:59:49 Sample ID: CS5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:22	4.070e+04	5.366e+04	0.76	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	32:29	3.313e+05	2.154e+05	1.54	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	33:23	3.060e+05	2.007e+05	1.52	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	36:00	2.628e+05	2.144e+05	1.23	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	36:07	2.826e+05	2.297e+05	1.23	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:36	2.592e+05	2.118e+05	1.22	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	37:21	2.381e+05	1.934e+05	1.23	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:35	2.239e+05	2.227e+05	1.01	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:57	1.940e+05	1.890e+05	1.03	yes	no	1.187
10	Unk	OCDF	42:26	3.159e+05	3.533e+05	0.89	yes	no	1.035
11	Unk	2,3,7,8-TCDD	29:08	3.778e+04	5.026e+04	0.75	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:39	2.531e+05	1.651e+05	1.53	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:44	2.112e+05	1.727e+05	1.22	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:49	2.112e+05	1.725e+05	1.22	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	37:03	2.291e+05	1.829e+05	1.25	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	39:29	1.800e+05	1.753e+05	1.03	yes	no	0.882
17	Unk	OCDD	42:14	2.863e+05	3.289e+05	0.87	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	28:21	2.453e+04	3.198e+04	0.77	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	32:28	3.515e+04	2.246e+04	1.57	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	33:22	3.482e+04	2.245e+04	1.55	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	36:00	1.347e+04	2.704e+04	0.50	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	36:06	1.575e+04	3.084e+04	0.51	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:36	1.454e+04	2.889e+04	0.50	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	37:20	1.299e+04	2.584e+04	0.50	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:34	1.022e+04	2.315e+04	0.44	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:57	8.980e+03	2.131e+04	0.42	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	29:06	2.077e+04	2.693e+04	0.77	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	33:39	2.982e+04	1.913e+04	1.56	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:44	2.249e+04	1.793e+04	1.25	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:48	2.265e+04	1.805e+04	1.25	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:28	1.883e+04	1.830e+04	1.03	yes	no	0.817
32	IS	13C-OCDD	42:13	2.816e+04	3.200e+04	0.88	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	28:33	2.134e+04	2.690e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:02	2.549e+04	2.073e+04	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:08	9.937e+04				no	0.958

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76956

Run #6 Filename P402430 Samp: 1 Inj: 1 Acquired: 28-APR-16 15:49:31
Processed: 28-APR-16 16:59:491 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	8.30e+06	4.12e+02	2.0e+04	1.09e+07	8.88e+02	1.2e+04
2	1,2,3,7,8-PeCDF	6.55e+07	9.56e+02	6.9e+04	4.25e+07	2.58e+03	1.6e+04
3	2,3,4,7,8-PeCDF	6.39e+07	9.56e+02	6.7e+04	4.17e+07	2.58e+03	1.6e+04
4	1,2,3,4,7,8-HxCDF	5.78e+07	1.60e+03	3.6e+04	4.73e+07	1.55e+03	3.0e+04
5	1,2,3,6,7,8-HxCDF	6.03e+07	1.60e+03	3.8e+04	4.89e+07	1.55e+03	3.1e+04
6	2,3,4,6,7,8-HxCDF	5.78e+07	1.60e+03	3.6e+04	4.70e+07	1.55e+03	3.0e+04
7	1,2,3,7,8,9-HxCDF	5.04e+07	1.60e+03	3.2e+04	4.08e+07	1.55e+03	2.6e+04
8	1,2,3,4,6,7,8-HpCDF	4.88e+07	1.38e+04	3.5e+03	4.76e+07	1.46e+04	3.3e+03
9	1,2,3,4,7,8,9-HpCDF	3.81e+07	1.38e+04	2.8e+03	3.74e+07	1.46e+04	2.6e+03
10	OCDF	5.49e+07	3.28e+02	1.7e+05	6.02e+07	6.68e+02	9.0e+04
11	2,3,7,8-TCDD	8.04e+06	8.00e+02	1.0e+04	1.07e+07	6.72e+02	1.6e+04
12	1,2,3,7,8-PeCDD	5.29e+07	9.52e+02	5.6e+04	3.45e+07	4.04e+02	8.6e+04
13	1,2,3,4,7,8-HxCDD	4.70e+07	4.28e+02	1.1e+05	3.81e+07	8.44e+02	4.5e+04
14	1,2,3,6,7,8-HxCDD	4.61e+07	4.28e+02	1.1e+05	3.83e+07	8.44e+02	4.5e+04
15	1,2,3,7,8,9-HxCDD	4.74e+07	4.28e+02	1.1e+05	3.90e+07	8.44e+02	4.6e+04
16	1,2,3,4,6,7,8-HpCDD	3.61e+07	1.14e+03	3.2e+04	3.55e+07	1.57e+03	2.3e+04
17	OCDD	4.98e+07	5.32e+02	9.4e+04	5.77e+07	5.00e+02	1.2e+05
18	13C-2,3,7,8-TCDF	4.95e+06	2.36e+03	2.1e+03	6.43e+06	1.42e+03	4.5e+03
19	13C-1,2,3,7,8-PeCDF	6.76e+06	4.44e+02	1.5e+04	4.45e+06	9.00e+02	4.9e+03
20	13C-2,3,4,7,8-PeCDF	7.12e+06	4.44e+02	1.6e+04	4.61e+06	9.00e+02	5.1e+03
21	13C-1,2,3,4,7,8-HxCDF	3.00e+06	5.20e+02	5.8e+03	6.05e+06	5.92e+02	1.0e+04
22	13C-1,2,3,6,7,8-HxCDF	3.39e+06	5.20e+02	6.5e+03	6.63e+06	5.92e+02	1.1e+04
23	13C-2,3,4,6,7,8-HxCDF	3.31e+06	5.20e+02	6.4e+03	6.45e+06	5.92e+02	1.1e+04
24	13C-1,2,3,7,8,9-HxCDF	2.80e+06	5.20e+02	5.4e+03	5.49e+06	5.92e+02	9.3e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.27e+06	2.60e+03	8.7e+02	5.12e+06	7.00e+02	7.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.79e+06	2.60e+03	6.9e+02	4.22e+06	7.00e+02	6.0e+03
27	13C-2,3,7,8-TCDD	4.29e+06	3.18e+03	1.4e+03	5.54e+06	1.94e+03	2.9e+03
28	13C-1,2,3,7,8-PeCDD	6.07e+06	5.48e+02	1.1e+04	3.85e+06	4.40e+02	8.8e+03
29	13C-1,2,3,4,7,8-HxCDD	5.05e+06	1.90e+03	2.7e+03	4.00e+06	1.10e+03	3.6e+03
30	13C-1,2,3,6,7,8-HxCDD	4.92e+06	1.90e+03	2.6e+03	3.95e+06	1.10e+03	3.6e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.87e+06	4.48e+02	8.6e+03	3.76e+06	7.64e+02	4.9e+03
32	13C-OCDD	4.89e+06	9.04e+02	5.4e+03	5.62e+06	9.40e+02	6.0e+03
33	13C-1,2,3,4-TCDD	4.39e+06	3.18e+03	1.4e+03	5.59e+06	1.94e+03	2.9e+03
34	13C-1,2,3,7,8,9-HxCDD	5.24e+06	1.90e+03	2.8e+03	4.32e+06	1.10e+03	3.9e+03
35	37Cl-2,3,7,8-TCDD	2.11e+07	1.52e+03	1.4e+04			

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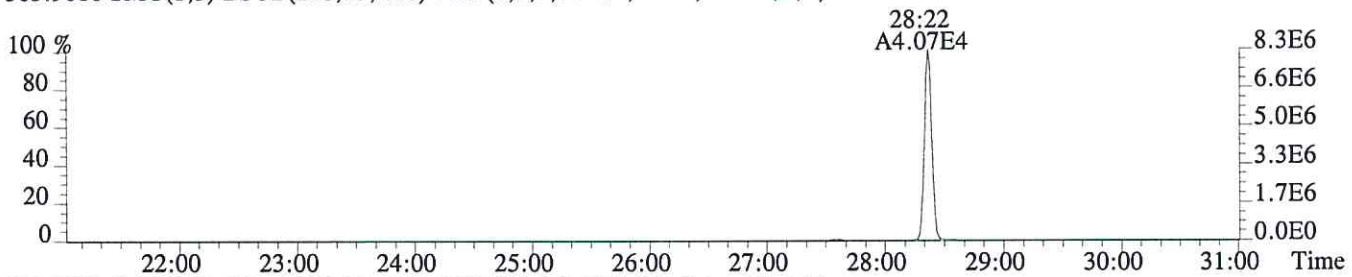
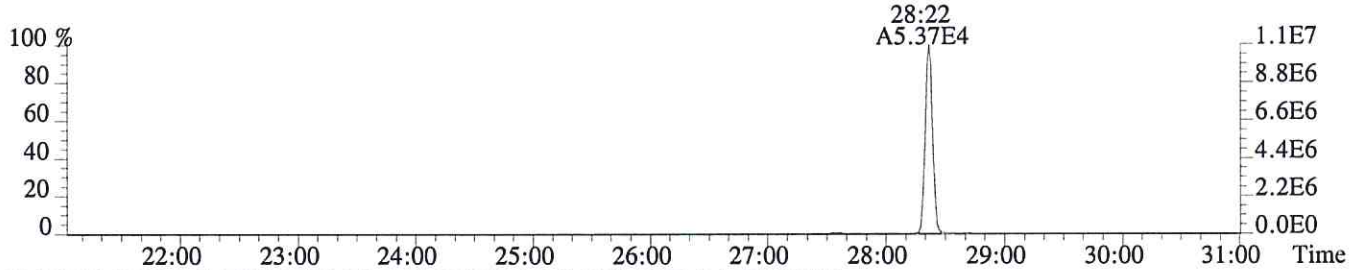
File:P402430 #1-684 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

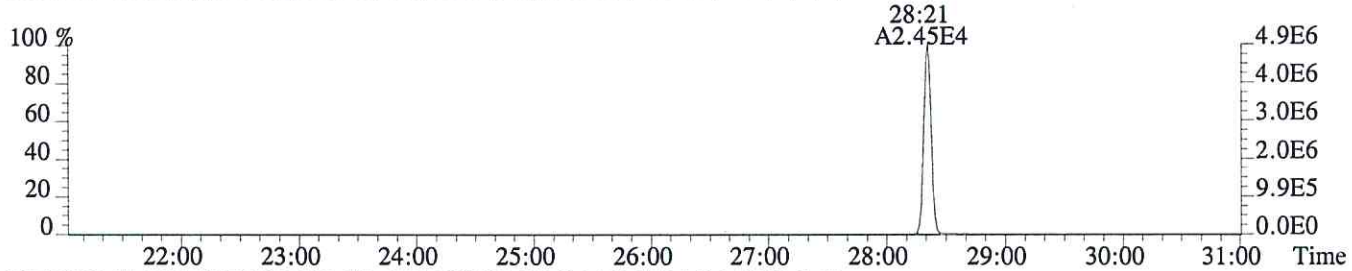
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,412.0,1.00%,F,T)



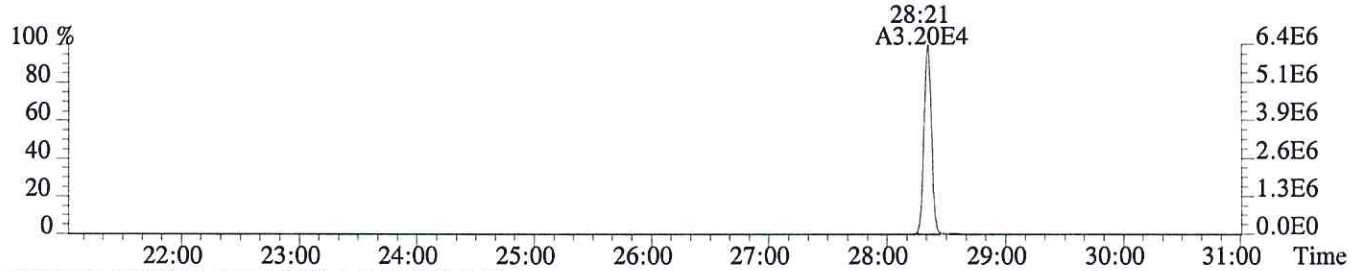
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,888.0,1.00%,F,T)



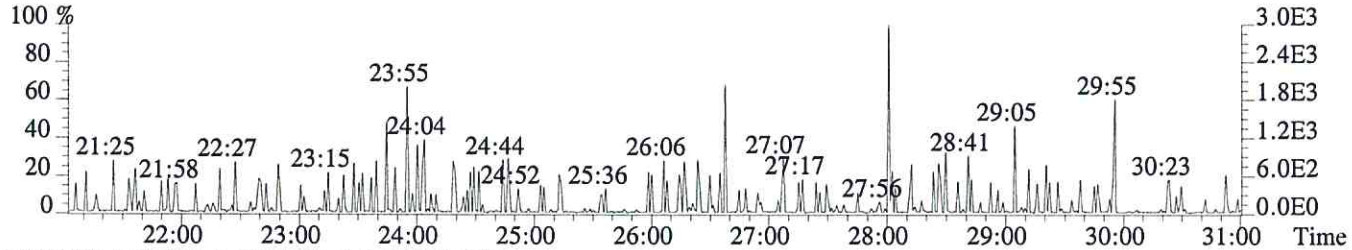
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2356.0,1.00%,F,T)



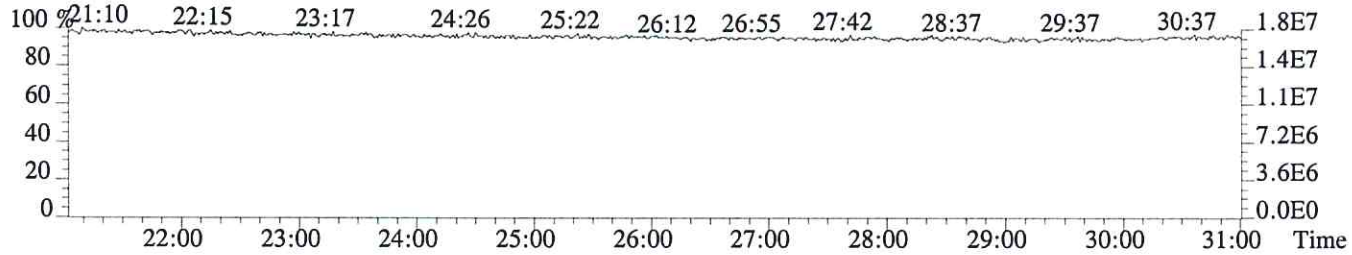
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1424.0,1.00%,F,T)



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

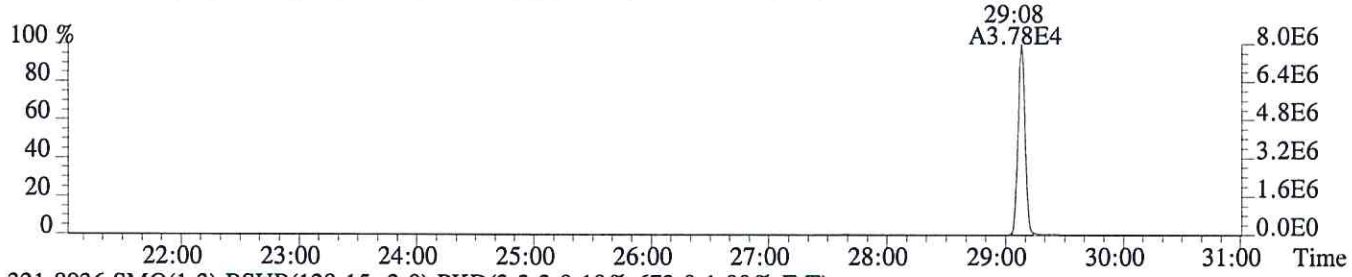


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

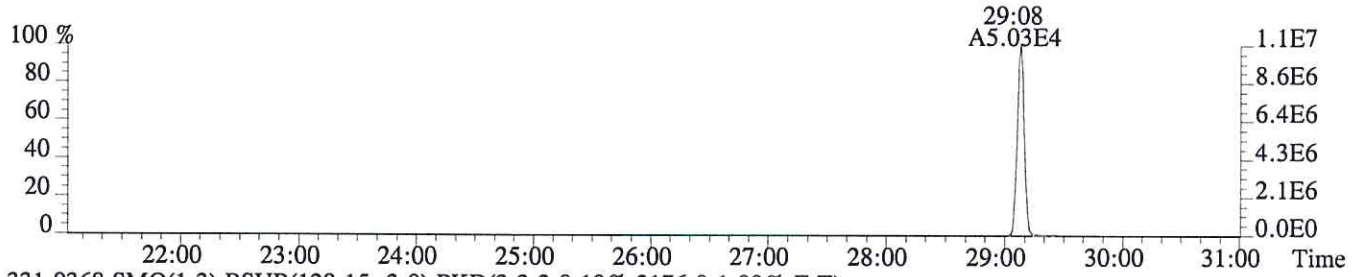


File:P402430 #1-684 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

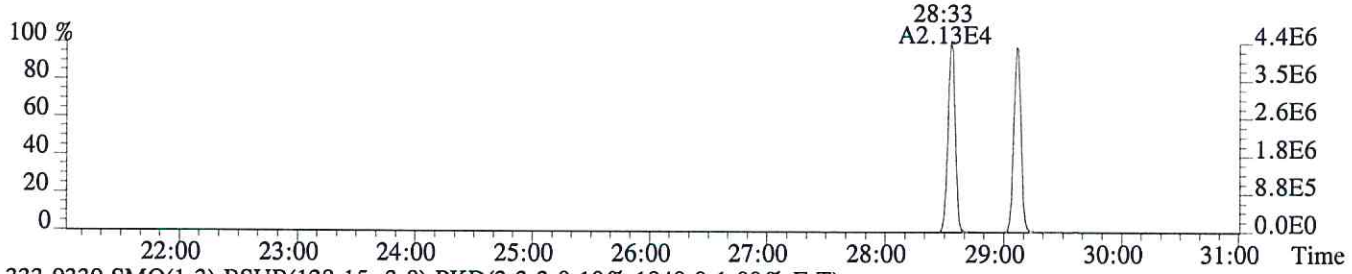
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,800.0,1.00%,F,T)



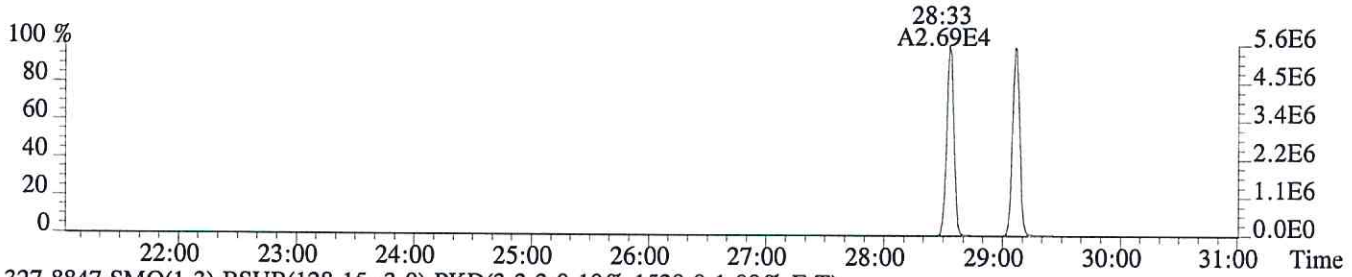
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,672.0,1.00%,F,T)



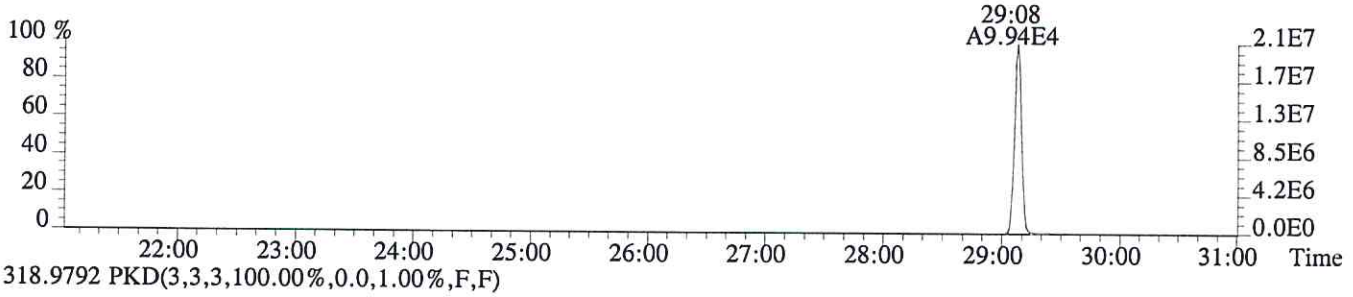
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3176.0,1.00%,F,T)



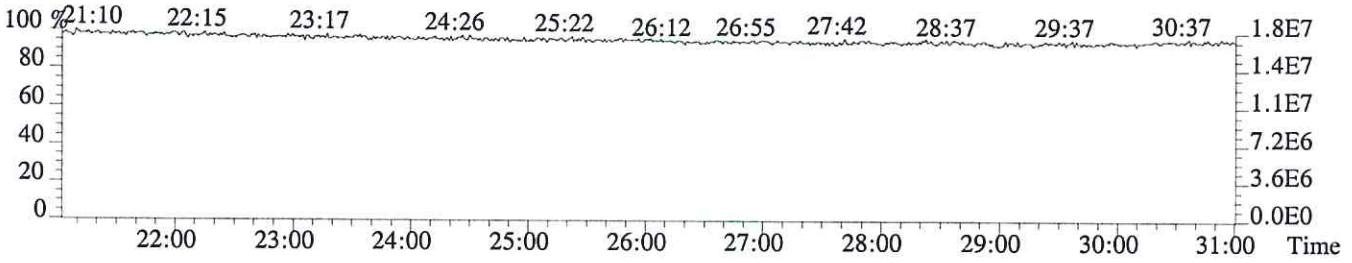
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1940.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1520.0,1.00%,F,T)

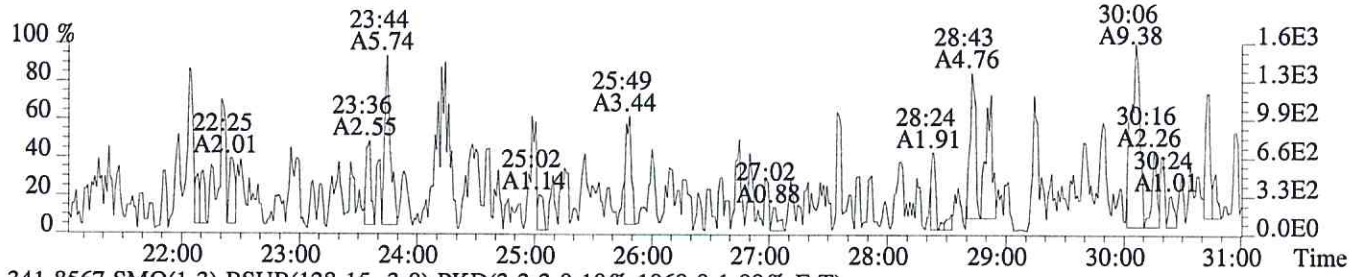


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

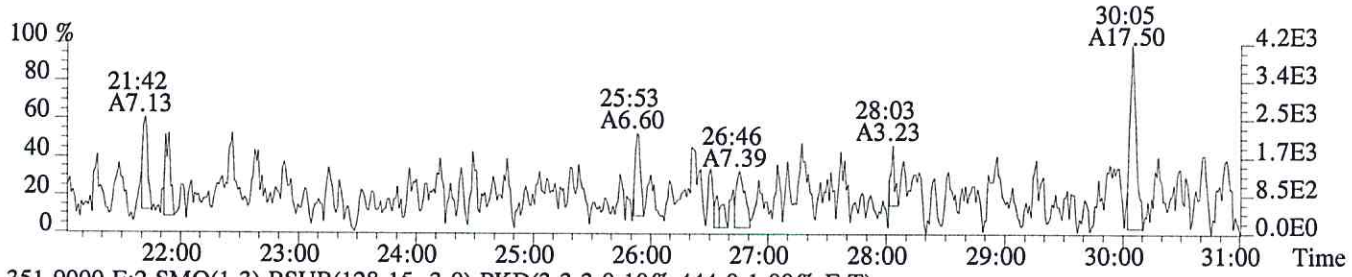


File:P402430 #1-684 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

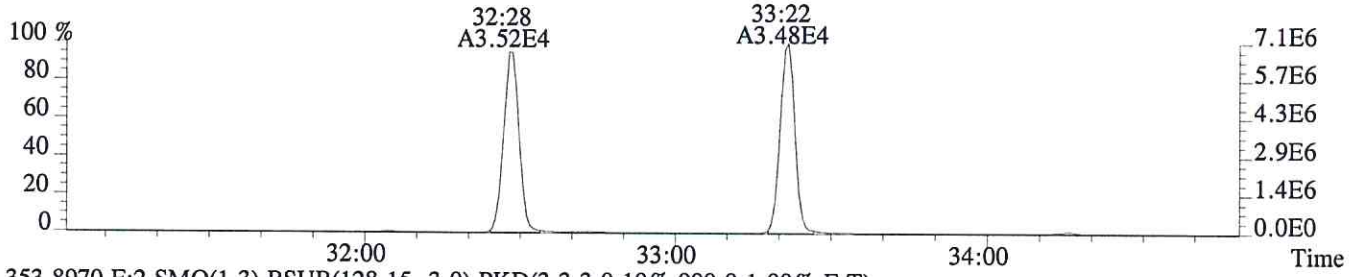
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,496.0,1.00%,F,T)



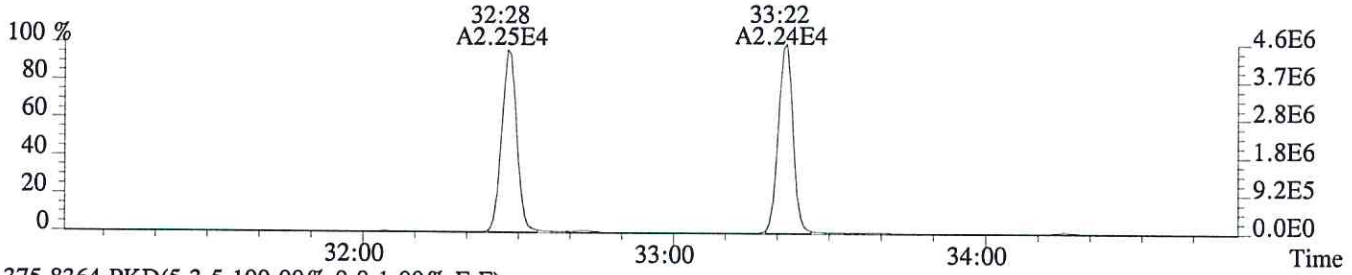
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1068.0,1.00%,F,T)



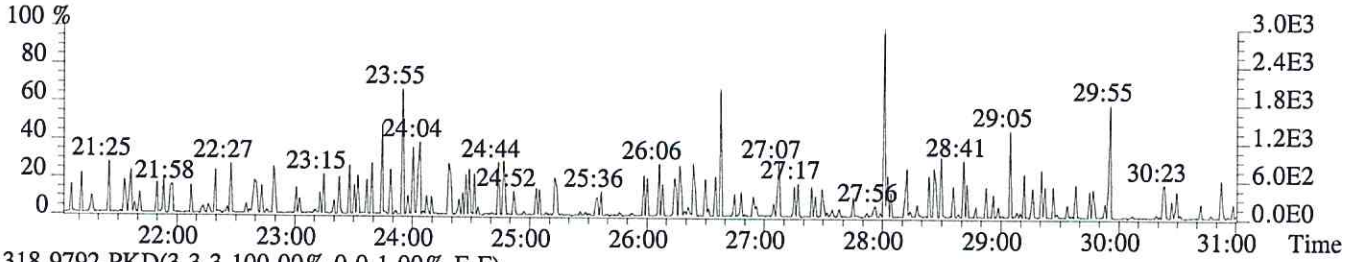
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



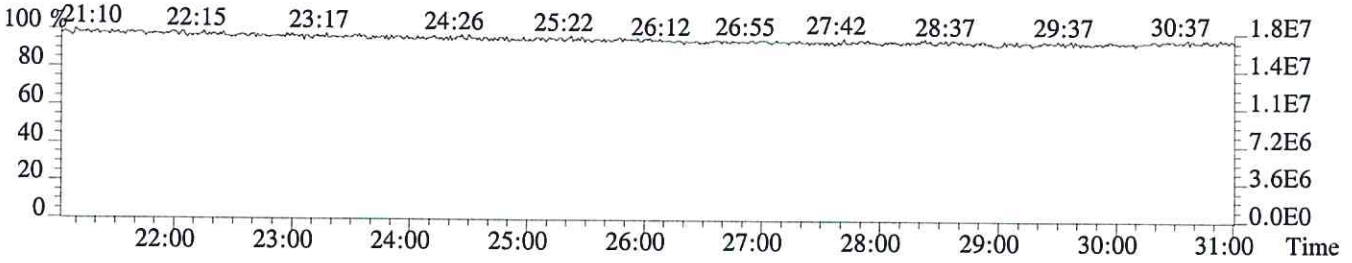
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,900.0,1.00%,F,T)



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

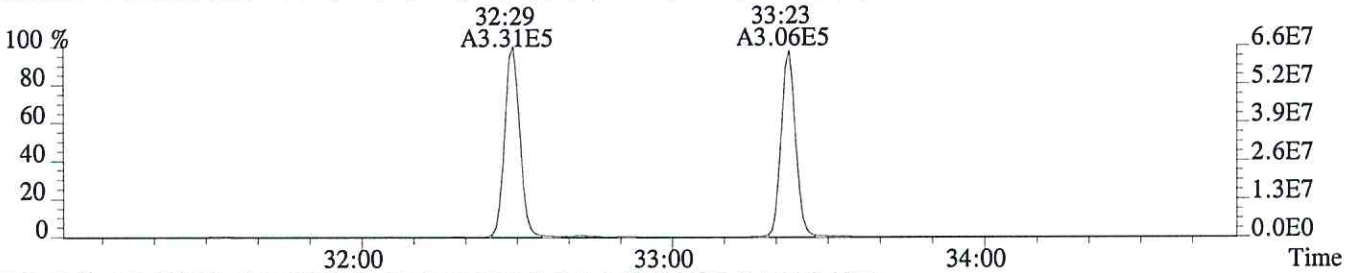


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

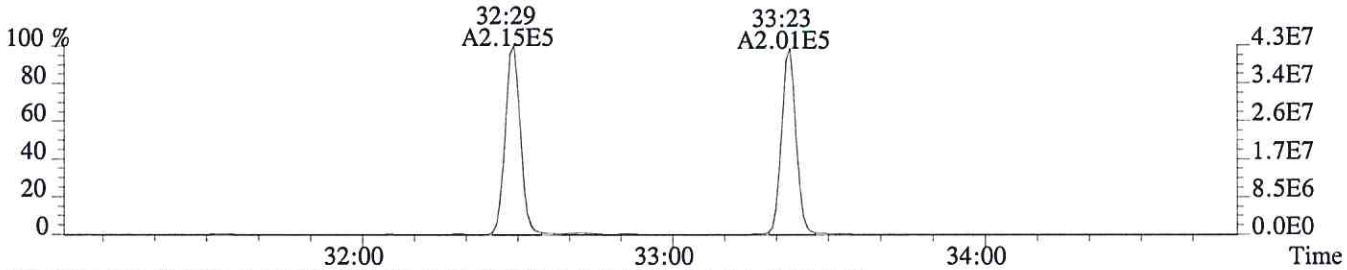


File:P402430 #1-340 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

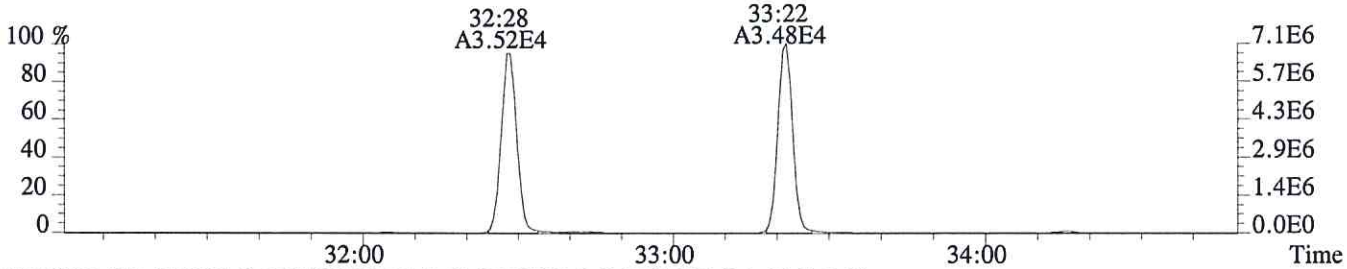
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,956.0,1.00%,F,T)



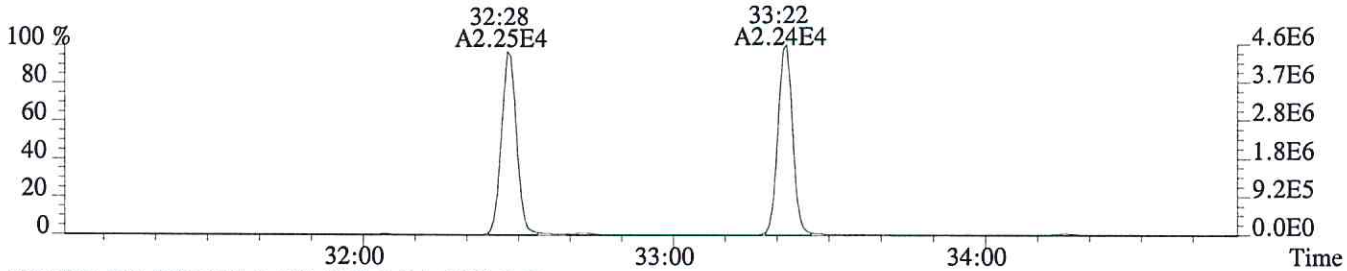
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2576.0,1.00%,F,T)



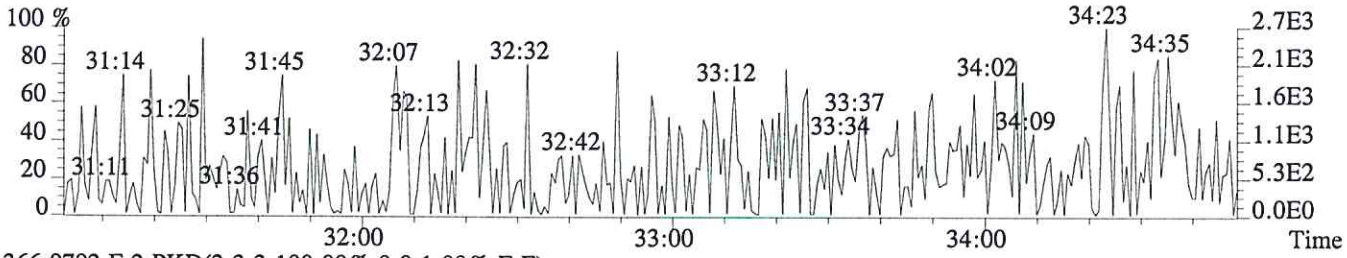
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



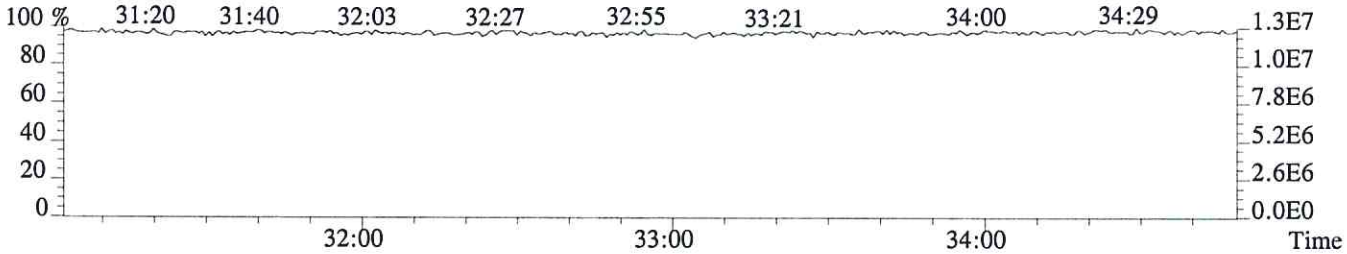
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,900.0,1.00%,F,T)



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

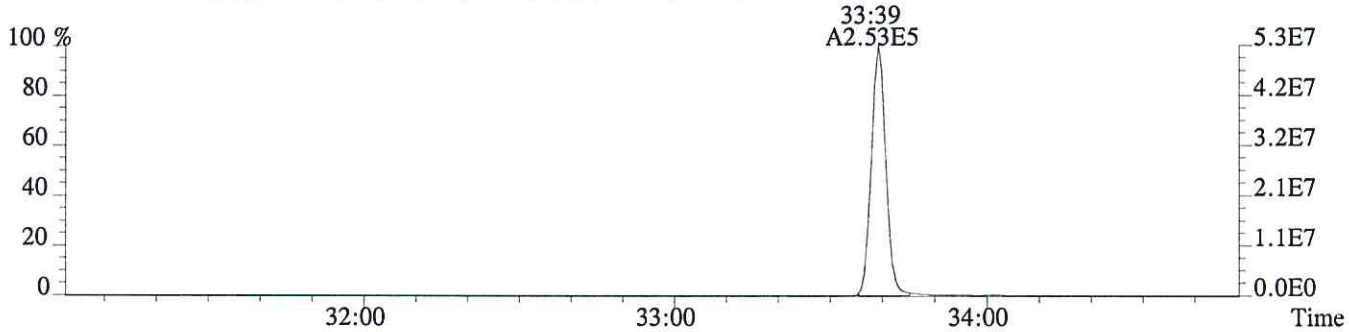


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

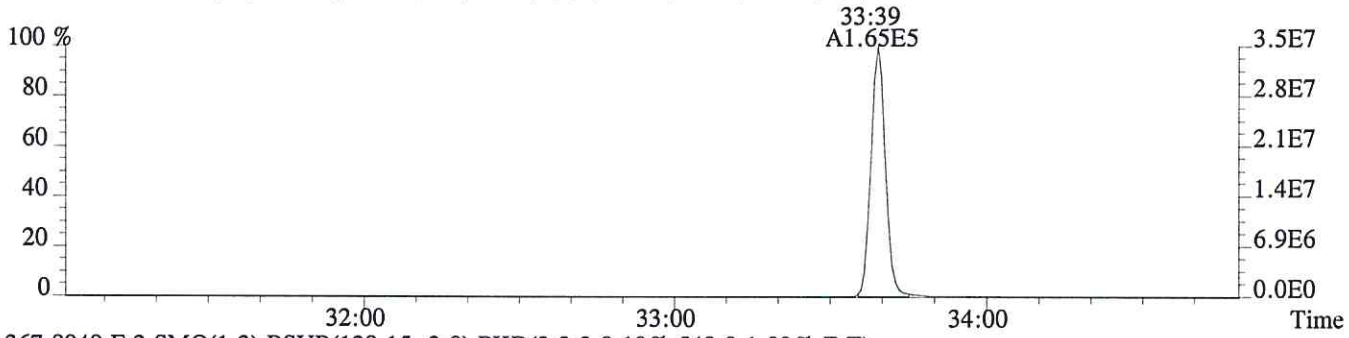


File:P402430 #1-340 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

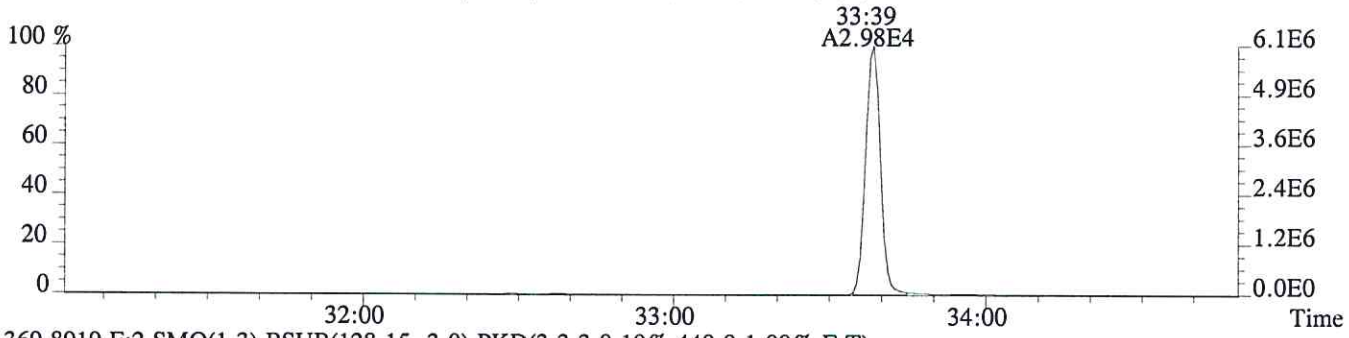
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,952.0,1.00%,F,T)



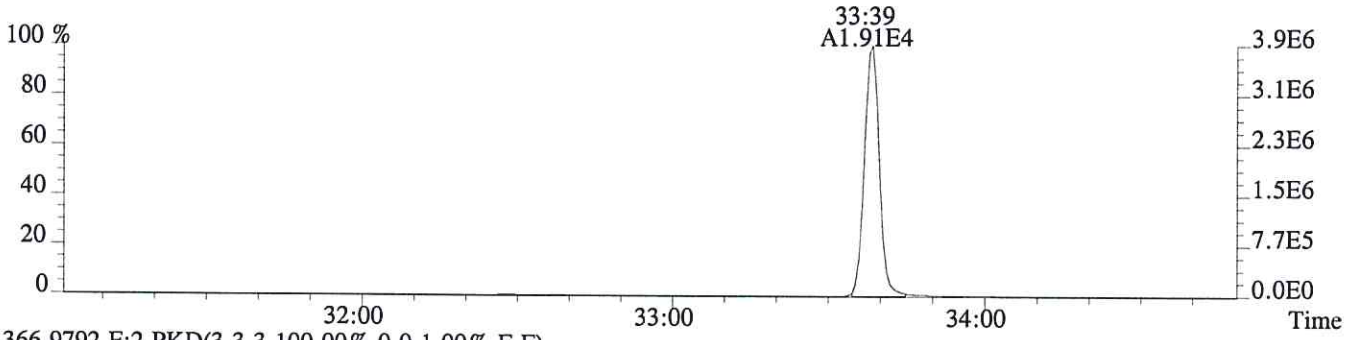
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,404.0,1.00%,F,T)



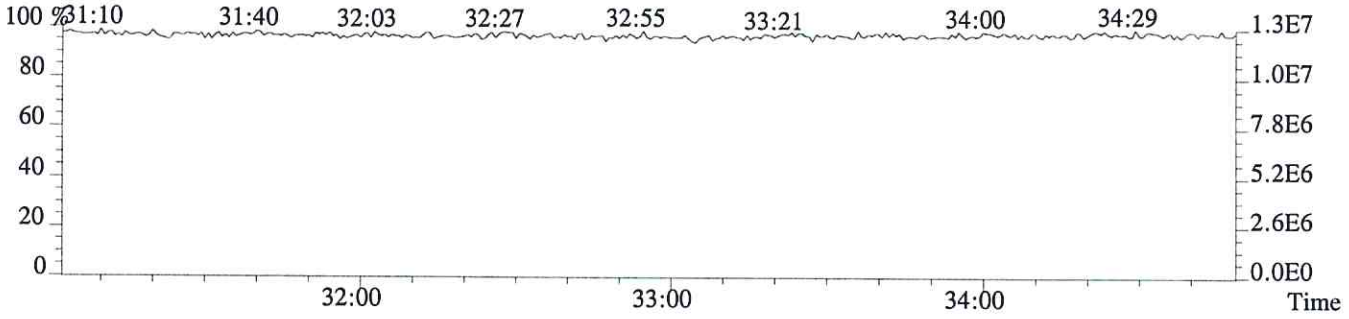
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,548.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,440.0,1.00%,F,T)

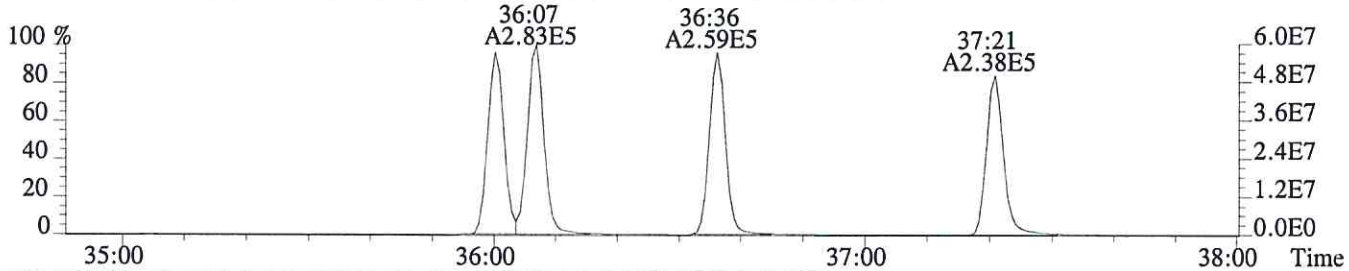


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

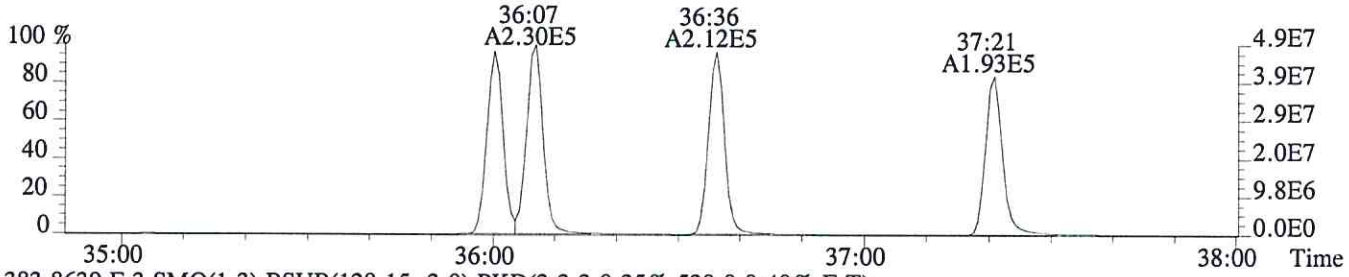


File:P402430 #1-285 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

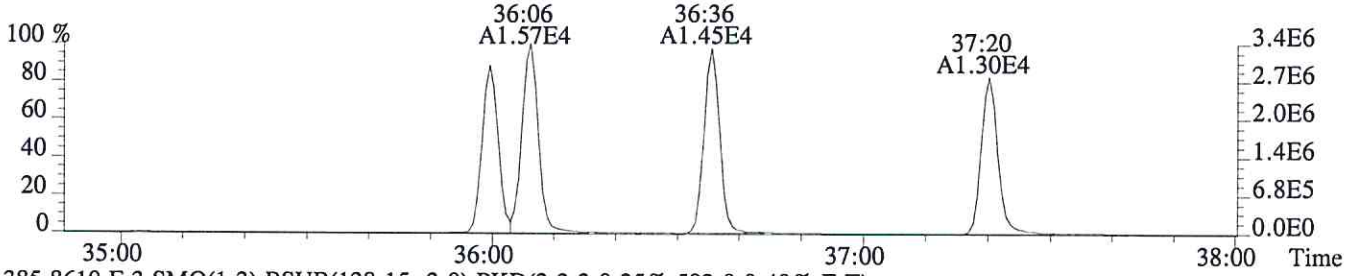
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1596.0,0.40%,F,T)



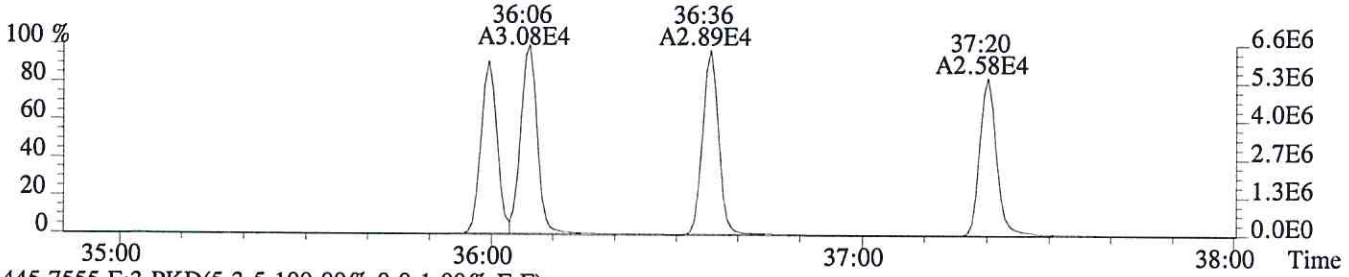
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1552.0,0.40%,F,T)



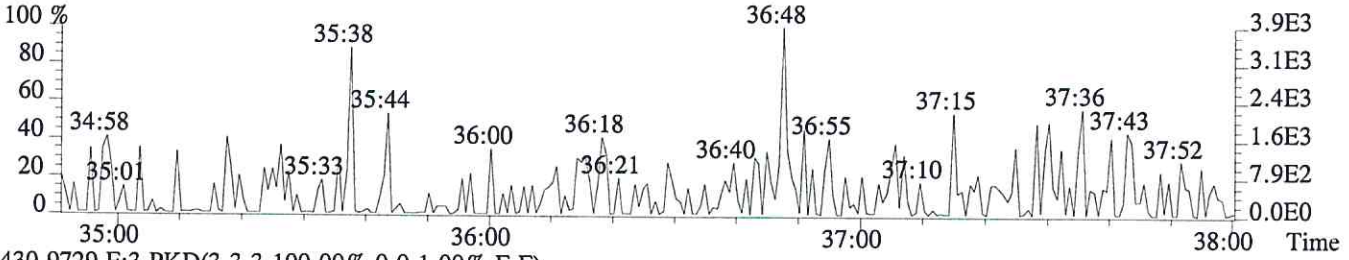
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,520.0,0.40%,F,T)



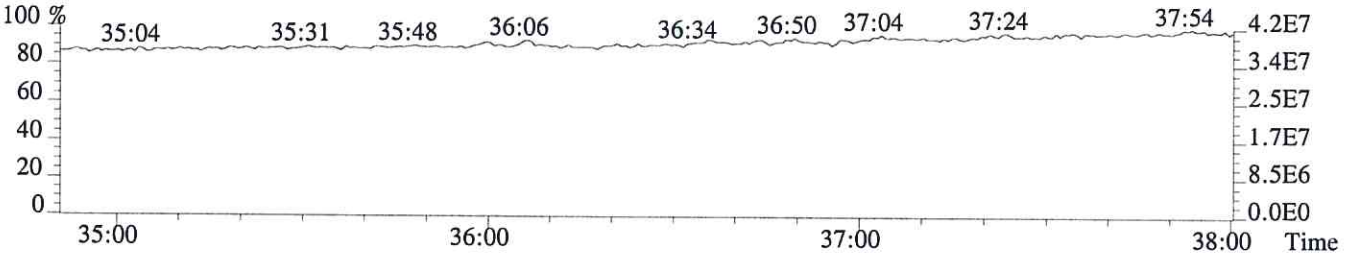
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,592.0,0.40%,F,T)



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

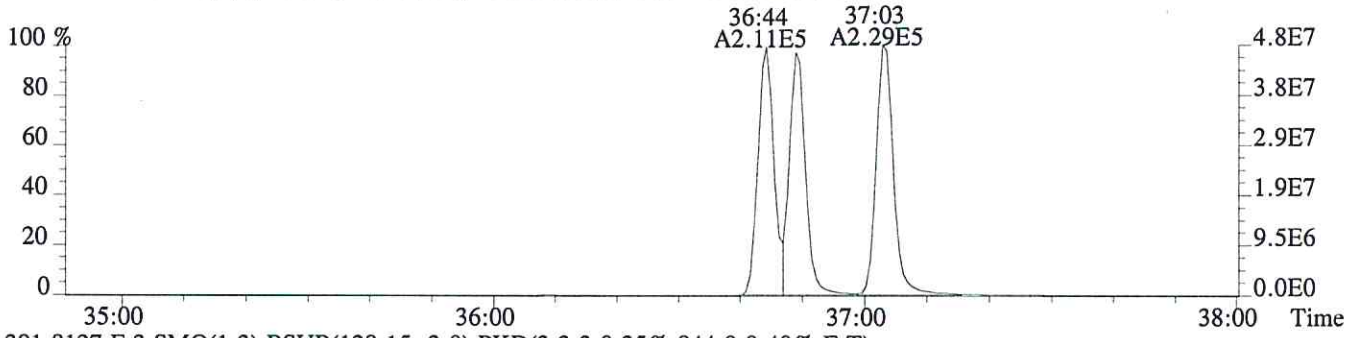


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

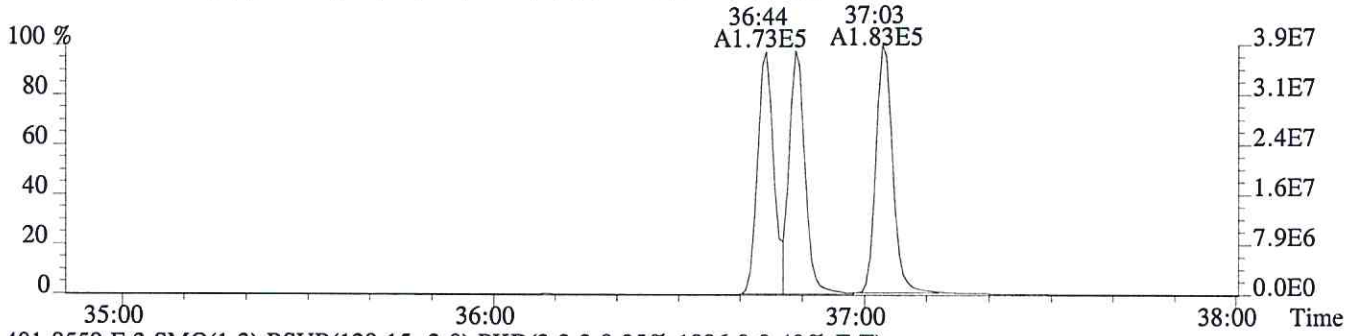


File:P402430 #1-285 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

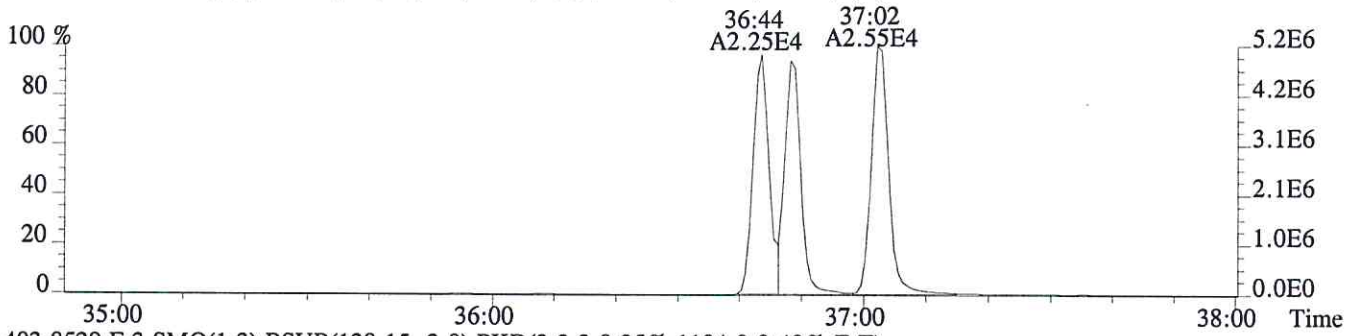
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,428.0,0.40%,F,T)



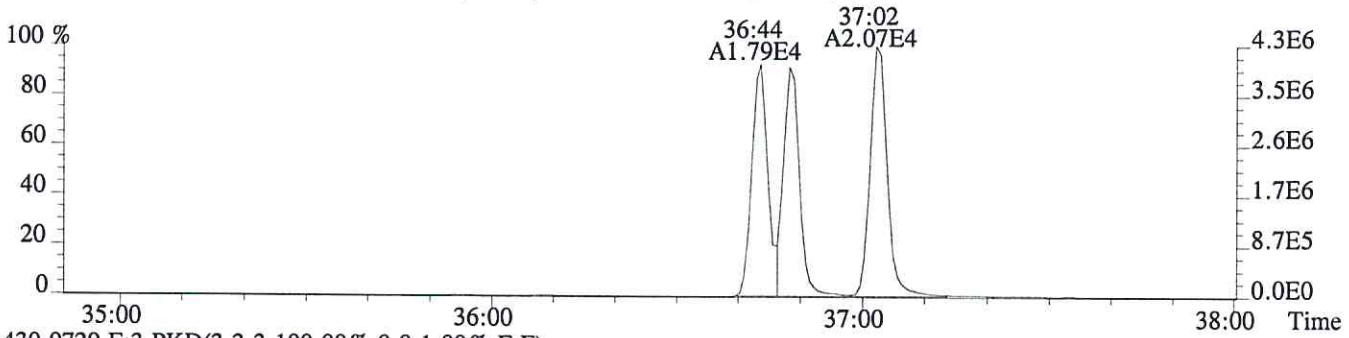
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,844.0,0.40%,F,T)



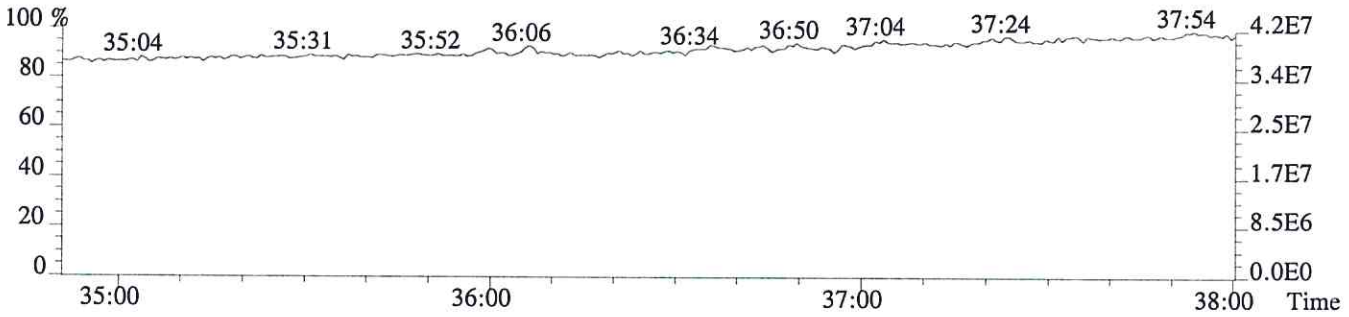
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1896.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1104.0,0.40%,F,T)

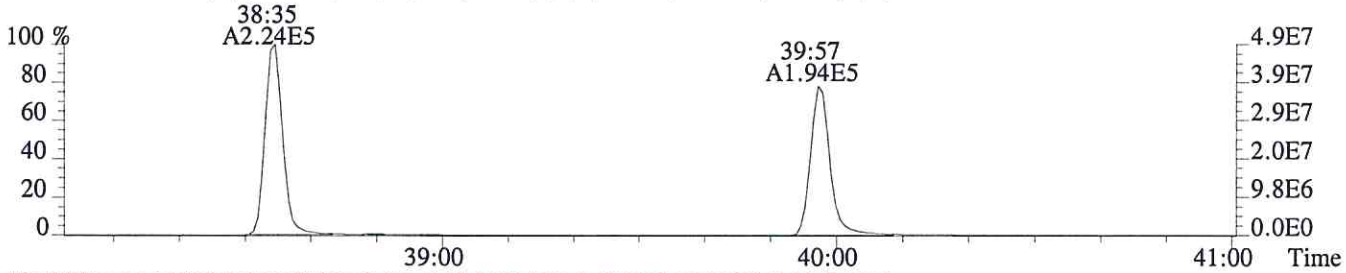


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

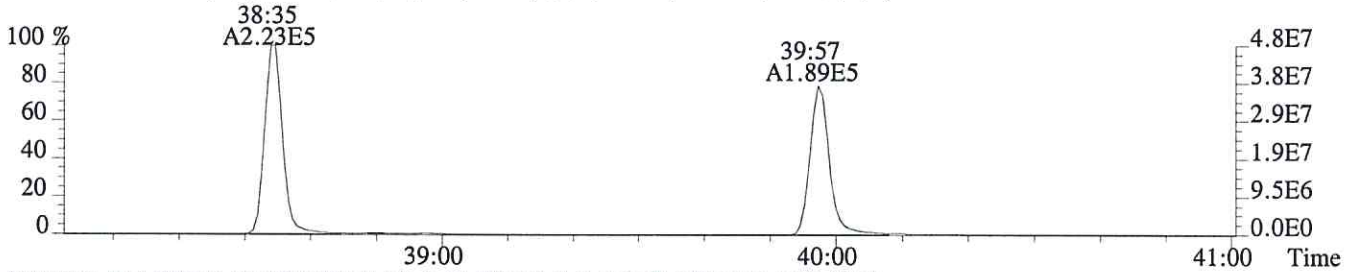


File:P402430 #1-268 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

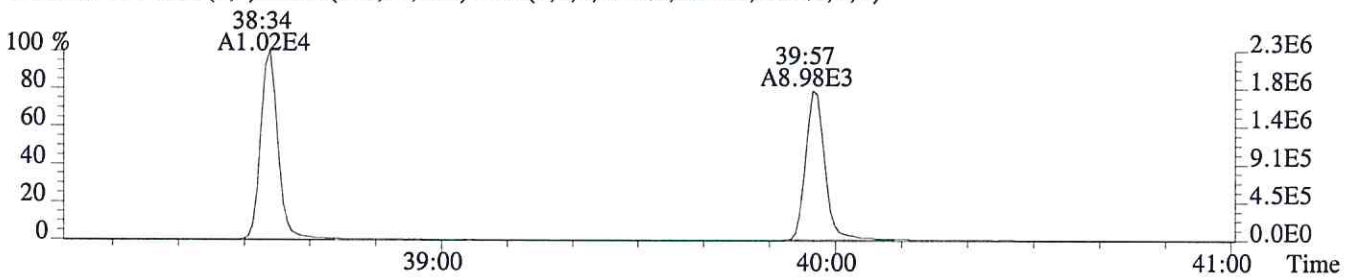
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,13792.0,0.50%,F,T)



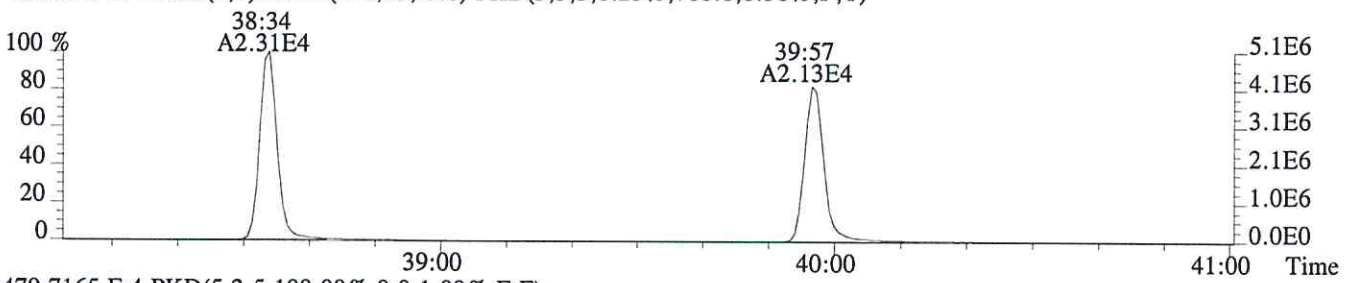
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,14556.0,0.50%,F,T)



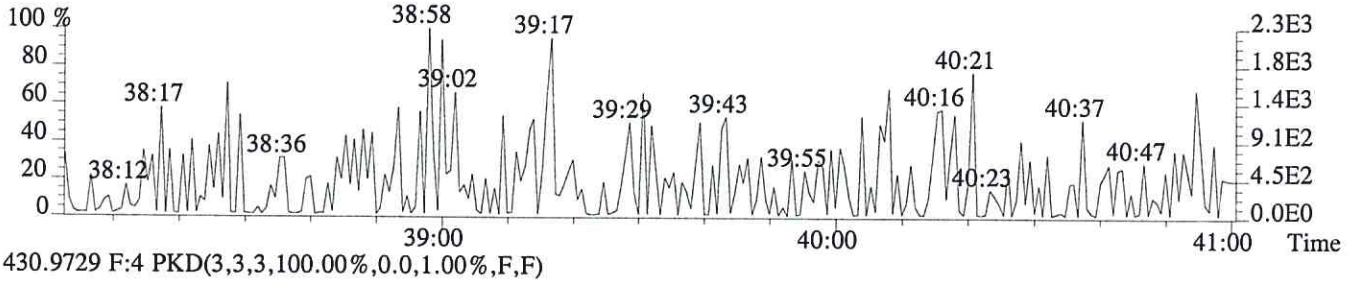
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2596.0,0.50%,F,T)



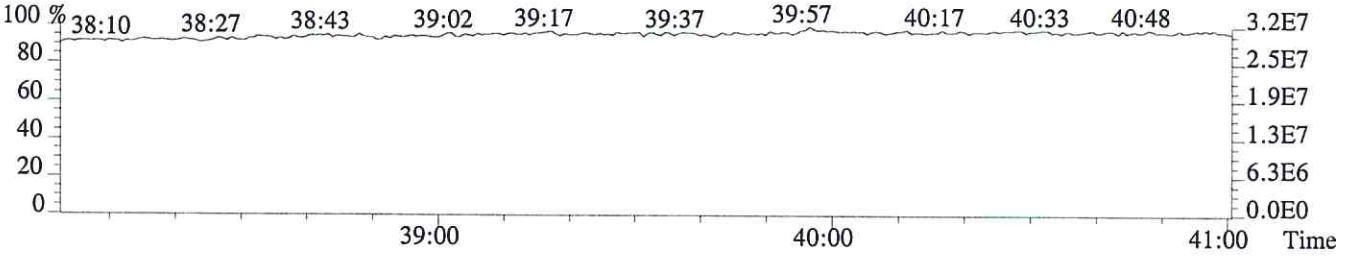
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,700.0,0.50%,F,T)



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

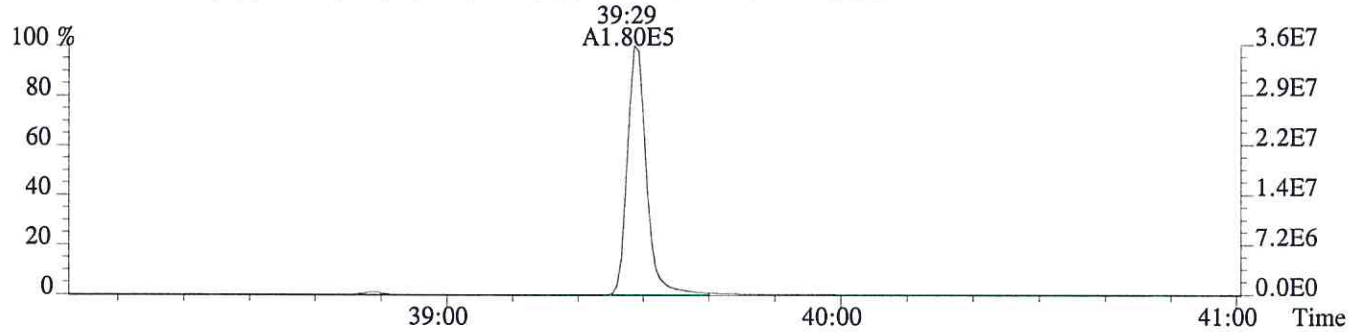


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

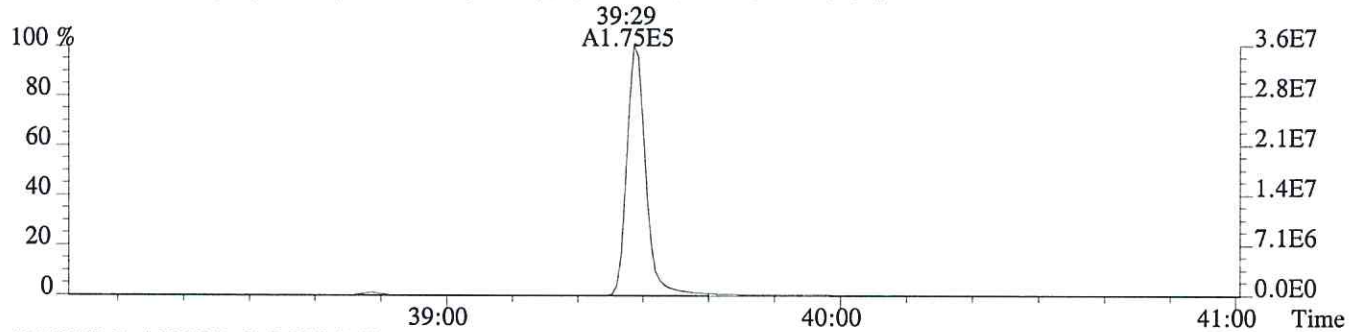


File:P402430 #1-268 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

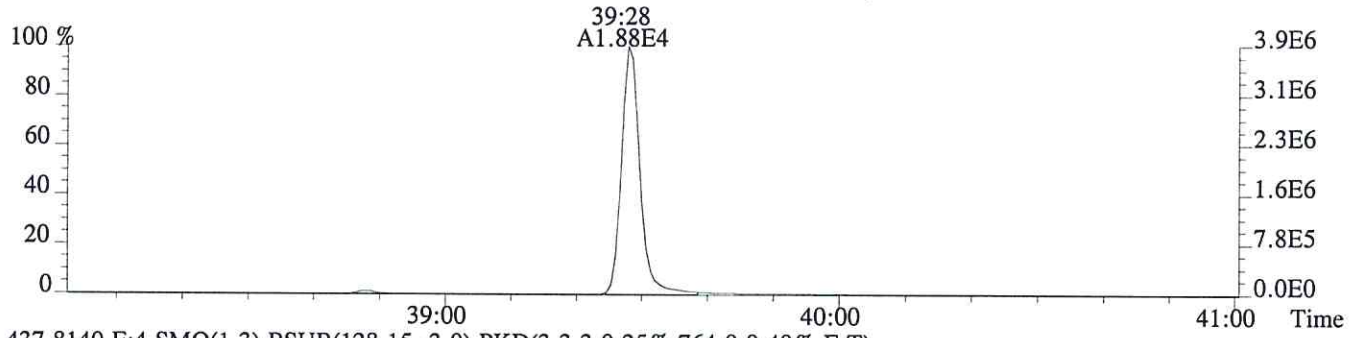
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1144.0,0.40%,F,T)



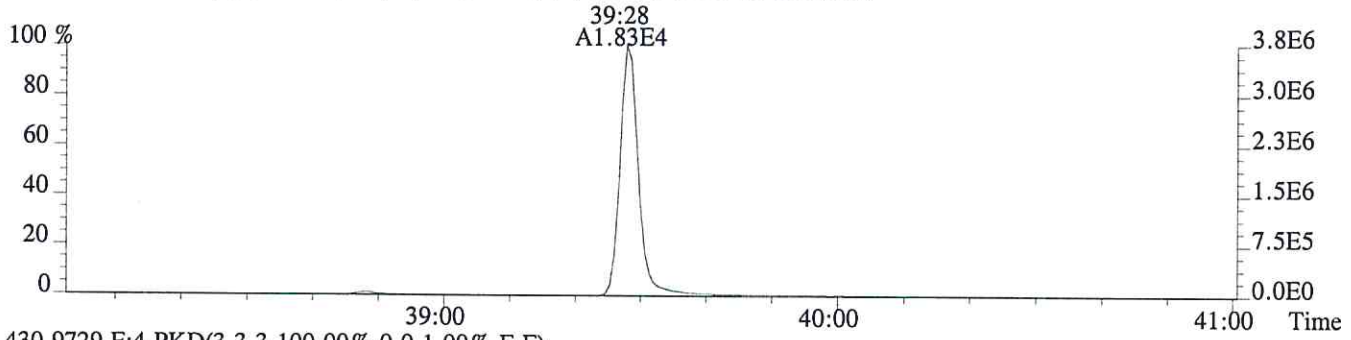
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1568.0,0.40%,F,T)



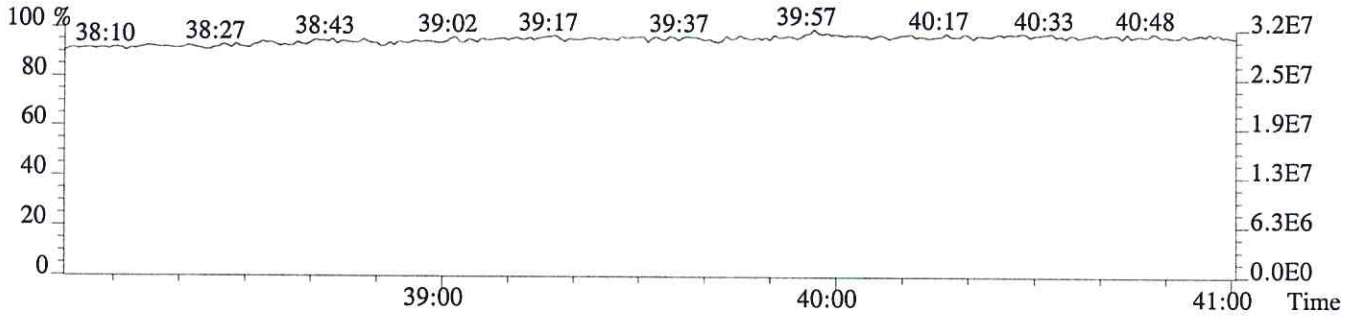
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,448.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,764.0,0.40%,F,T)

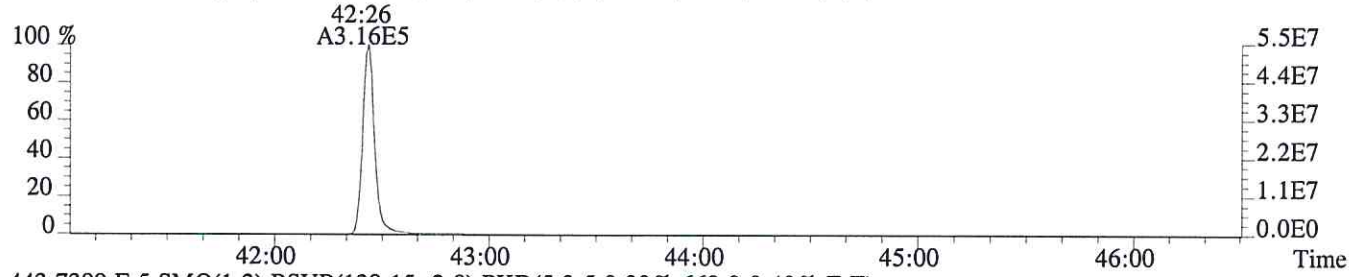


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

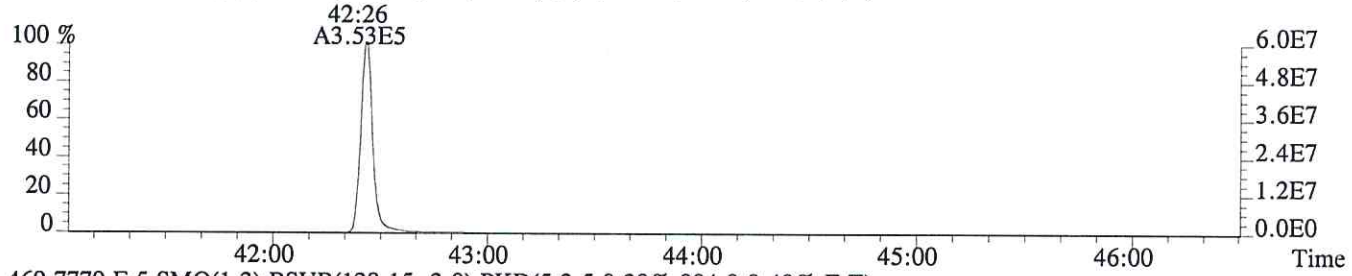


File:P402430 #1-492 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

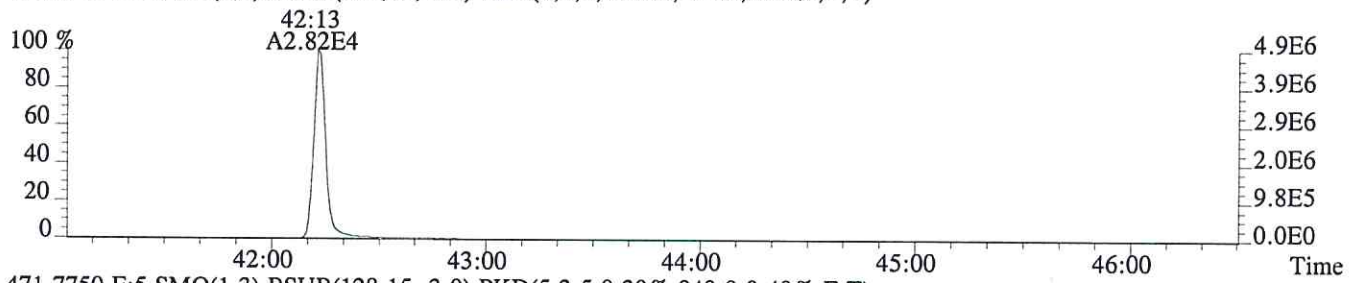
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,328.0,0.40%,F,T)



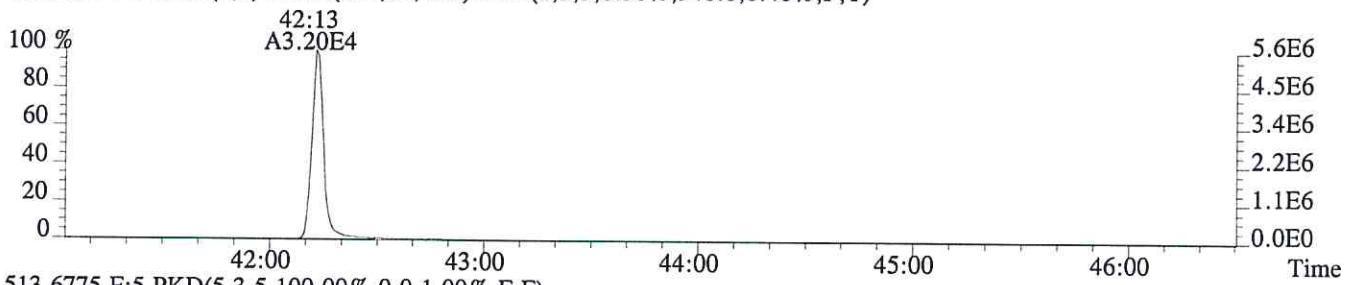
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,668.0,0.40%,F,T)



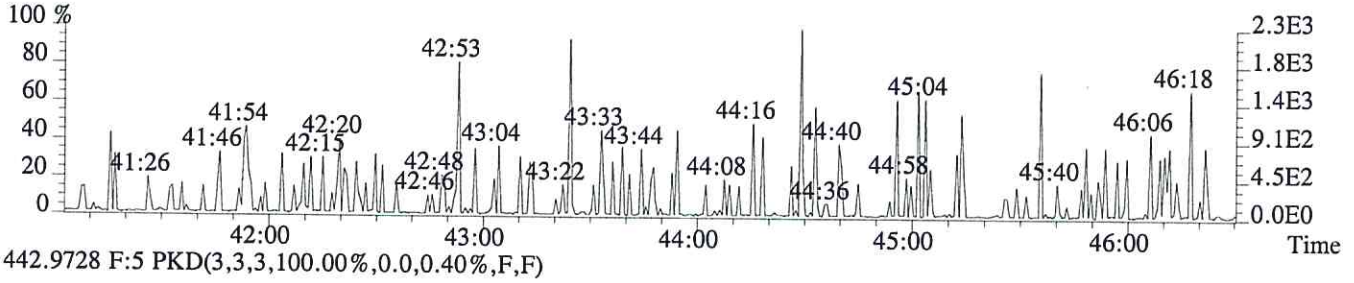
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,904.0,0.40%,F,T)



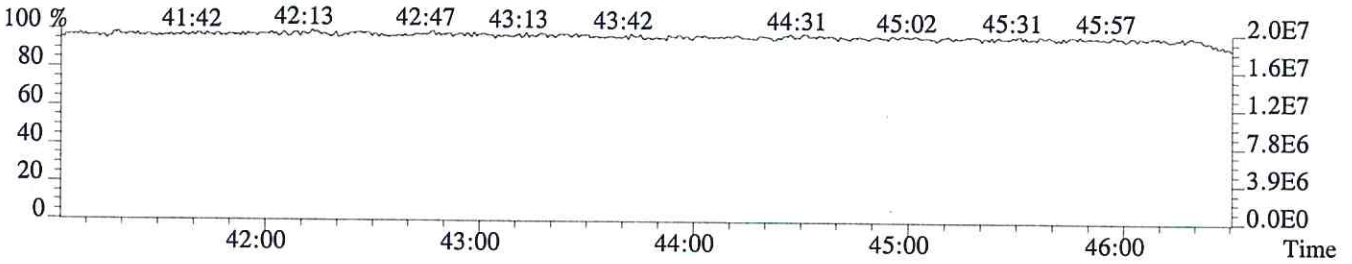
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,940.0,0.40%,F,T)



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

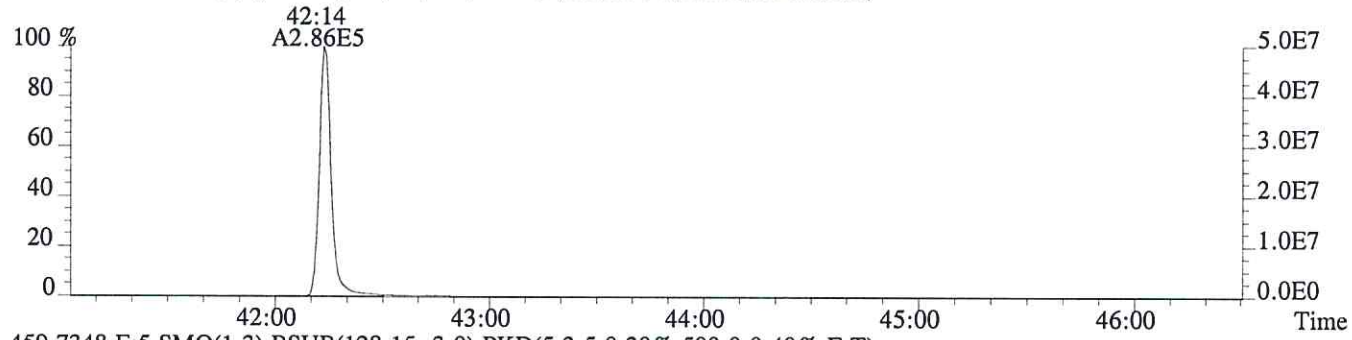


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

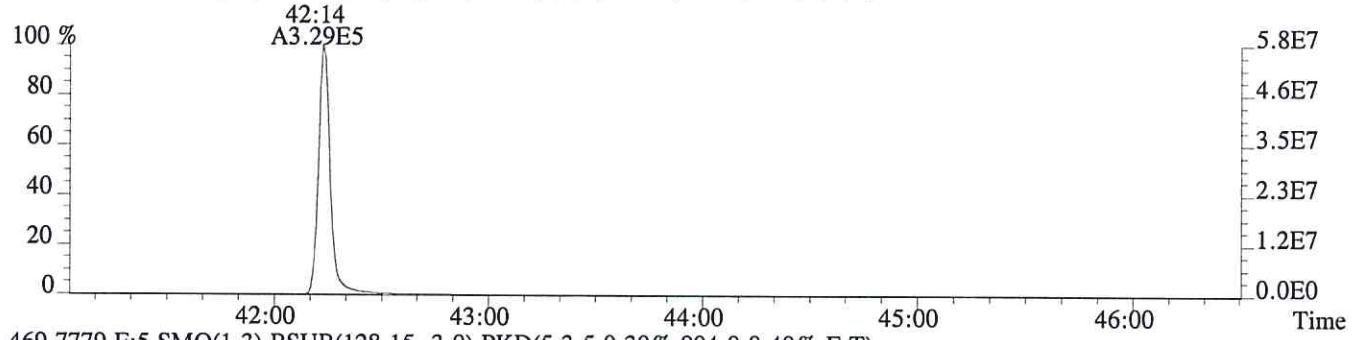


File:P402430 #1-492 Acq:28-APR-2016 15:49:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:76956

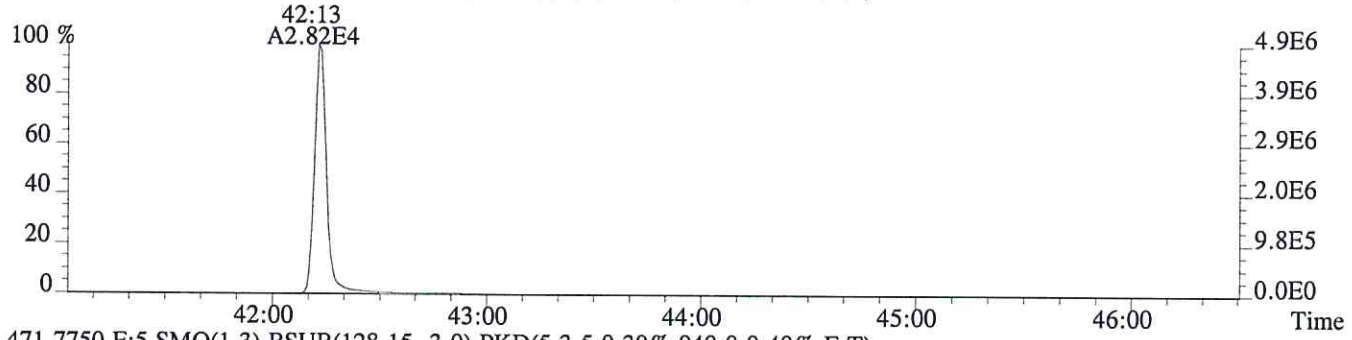
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,532.0,0.40%,F,T)



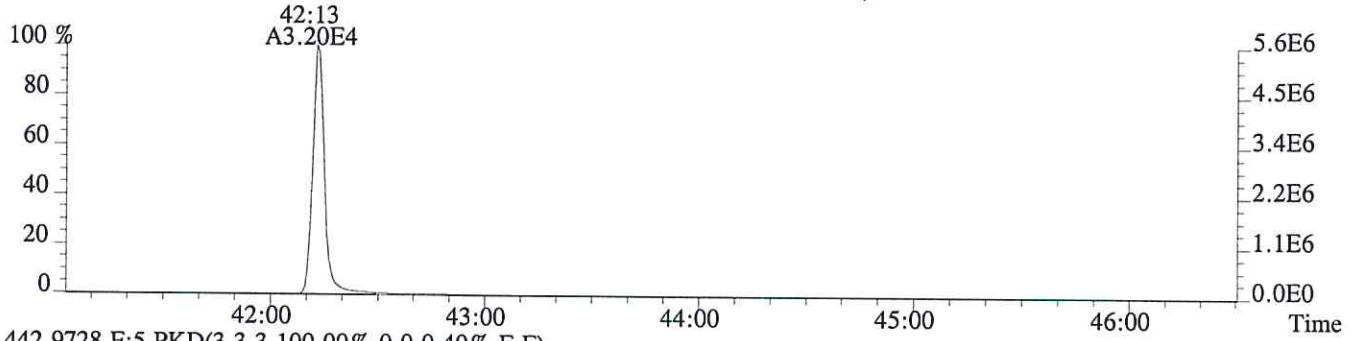
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,500.0,0.40%,F,T)



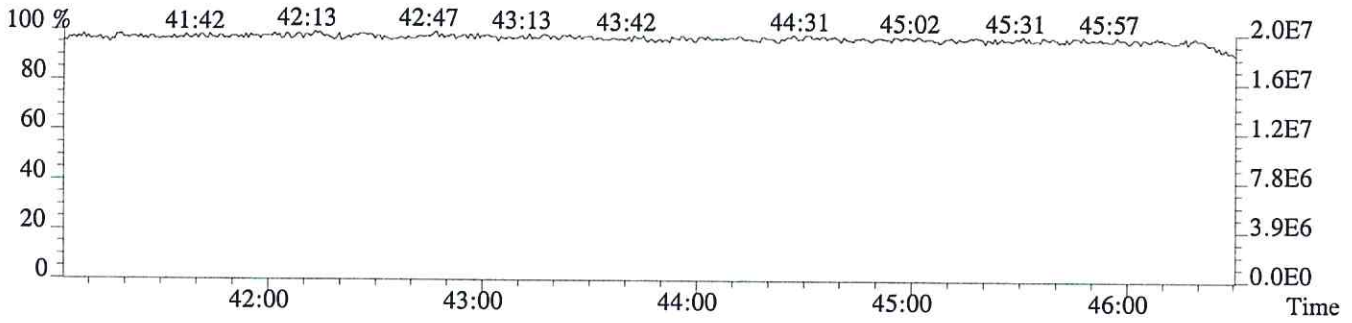
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,904.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,940.0,0.40%,F,T)



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



USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 04/28/16

Instrument ID: E-HRMS-06 GC Column ID : DB-5MSUI

VER Data Filename: P402432 Analysis Date: 28-APR-16 Time: 18:00:48

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	0.75	0.65-0.89	9.4	7.8 - 12.9	-6.0
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	49	39 - 65	-1.1
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	55	39 - 64	10.2
1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	44	39 - 64	-12.4
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	49	41 - 61	-2.2
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.00	0.88-1.20	50	43 - 58	-0.9
OCDD	M+2/M+4	0.89	0.76-1.02	91	79 - 126	-9.0
2,3,7,8-TCDF	M/M+2	0.75	0.65-0.89	9.4	8.4 - 12.0	-5.9
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	47	41 - 60	-5.7
2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	54	41 - 61	7.4
1,2,3,4,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	48	45 - 56	-3.1
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	51	44 - 57	2.2
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05-1.43	50	45 - 56	-0.7
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	49	44 - 57	-1.6
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	49	45 - 55	-2.1
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.00	0.88-1.20	53	43 - 58	5.6
OCDF	M+2/M+4	0.88	0.76-1.02	91	63 - 159	-8.5

(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: 04/28/16

Instrument ID: E-HRMS-06 GC Column ID : DB-5MSUI

VER Data Filename: P402432 Analysis Date: 28-APR-16 Time: 18:00:48

	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	3.3
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	106	62 - 160	6.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	101	85 - 117	0.6
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	113	85 - 118	12.7
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.01	0.88-1.20	106	72 - 138	6.4
13C-OCDD	M+2/M+4	0.88	0.76-1.02	220	96 - 415	9.9
13C-2,3,7,8-TCDF	M/M+2	0.75	0.65-0.89	102	71 - 140	1.7
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	106	76 - 130	5.9
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	102	77 - 130	1.9
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.50	0.43-0.59	109	76 - 131	8.9
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	101	70 - 143	0.6
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.50	0.43-0.59	107	74 - 135	7.1
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	105	73 - 137	5.1
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37-0.51	107	78 - 129	7.1
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.42	0.37-0.51	105	77 - 129	5.5
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			10.1	7.8 - 12.7	0.7

(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.
54819

Run #7 Filename P402432 Samp: 1 Inj: 1 Acquired: 28-APR-16 18:00:48
Processed: 4-MAY-16 10:21:23 Sample ID: 2ND SOURCE

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:21	2.228e+03	2.988e+03	0.75	yes	no	0.769
2	Unk	1,2,3,7,8-PeCDF	32:29	1.823e+04	1.158e+04	1.57	yes	no	0.872
3	Unk	2,3,4,7,8-PeCDF	33:22	1.858e+04	1.207e+04	1.54	yes	no	0.826
4	Unk	1,2,3,4,7,8-HxCDF	36:00	1.558e+04	1.262e+04	1.23	yes	no	1.097
5	Unk	1,2,3,6,7,8-HxCDF	36:06	1.682e+04	1.364e+04	1.23	yes	no	1.029
6	Unk	2,3,4,6,7,8-HxCDF	36:36	1.516e+04	1.230e+04	1.23	yes	no	1.015
7	Unk	1,2,3,7,8,9-HxCDF	37:20	1.394e+04	1.133e+04	1.23	yes	no	1.033
8	Unk	1,2,3,4,6,7,8-HpCDF	38:34	1.337e+04	1.297e+04	1.03	yes	no	1.237
9	Unk	1,2,3,4,7,8,9-HpCDF	39:57	1.184e+04	1.186e+04	1.00	yes	no	1.187
10	Unk	OCDF	42:26	1.687e+04	1.909e+04	0.88	yes	no	1.035
11	Unk	2,3,7,8-TCDD	29:07	2.202e+03	2.924e+03	0.75	yes	no	0.873
12	Unk	1,2,3,7,8-PeCDD	33:39	1.480e+04	9.477e+03	1.56	yes	no	0.806
13	Unk	1,2,3,4,7,8-HxCDD	36:44	1.290e+04	1.044e+04	1.24	yes	no	0.881
14	Unk	1,2,3,6,7,8-HxCDD	36:49	1.240e+04	1.004e+04	1.23	yes	no	0.893
15	Unk	1,2,3,7,8,9-HxCDD	37:03	1.347e+04	1.090e+04	1.24	yes	no	0.946
16	Unk	1,2,3,4,6,7,8-HpCDD	39:29	1.036e+04	1.036e+04	1.00	yes	no	0.882
17	Unk	OCDD	42:14	1.593e+04	1.796e+04	0.89	yes	no	0.980
18	IS	13C-2,3,7,8-TCDF	28:20	3.098e+04	4.114e+04	0.75	yes	no	1.137
19	IS	13C-1,2,3,7,8-PeCDF	32:28	4.434e+04	2.815e+04	1.57	yes	no	1.098
20	IS	13C-2,3,4,7,8-PeCDF	33:21	4.203e+04	2.703e+04	1.55	yes	no	1.086
21	IS	13C-1,2,3,4,7,8-HxCDF	35:59	1.768e+04	3.540e+04	0.50	yes	no	0.894
22	IS	13C-1,2,3,6,7,8-HxCDF	36:06	1.949e+04	3.843e+04	0.51	yes	no	1.056
23	IS	13C-2,3,4,6,7,8-HxCDF	36:35	1.856e+04	3.641e+04	0.51	yes	no	0.959
24	IS	13C-1,2,3,7,8,9-HxCDF	37:20	1.651e+04	3.275e+04	0.50	yes	no	0.843
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:33	1.324e+04	3.024e+04	0.44	yes	no	0.744
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:57	1.128e+04	2.656e+04	0.42	yes	no	0.658
27	IS	13C-2,3,7,8-TCDD	29:06	2.734e+04	3.513e+04	0.78	yes	no	0.970
28	IS	13C-1,2,3,7,8-PeCDD	33:38	3.719e+04	2.372e+04	1.57	yes	no	0.922
29	IS	13C-1,2,3,4,7,8-HxCDD	36:43	2.669e+04	2.141e+04	1.25	yes	no	0.877
30	IS	13C-1,2,3,6,7,8-HxCDD	36:48	3.179e+04	2.557e+04	1.24	yes	no	0.933
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:28	2.387e+04	2.356e+04	1.01	yes	no	0.817
32	IS	13C-OCDD	42:13	3.556e+04	4.044e+04	0.88	yes	no	0.634
33	RS/RT	13C-1,2,3,4-TCDD	28:33	2.745e+04	3.491e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:02	3.017e+04	2.437e+04	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:07	6.016e+03				no	0.958

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.
54819

Run #7 Filename P402432 Samp: 1 Inj: 1 Acquired: 28-APR-16 18:00:48
Processed: 4-MAY-16 10:21:23 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	4.45e+05	3.24e+02	1.4e+03	5.93e+05	8.68e+02	6.8e+02
2	1,2,3,7,8-PeCDF	3.60e+06	4.72e+02	7.6e+03	2.29e+06	1.93e+03	1.2e+03
3	2,3,4,7,8-PeCDF	3.92e+06	4.72e+02	8.3e+03	2.55e+06	1.93e+03	1.3e+03
4	1,2,3,4,7,8-HxCDF	3.39e+06	6.00e+02	5.6e+03	2.77e+06	2.96e+02	9.4e+03
5	1,2,3,6,7,8-HxCDF	3.63e+06	6.00e+02	6.1e+03	2.95e+06	2.96e+02	1.0e+04
6	2,3,4,6,7,8-HxCDF	3.36e+06	6.00e+02	5.6e+03	2.75e+06	2.96e+02	9.3e+03
7	1,2,3,7,8,9-HxCDF	2.93e+06	6.00e+02	4.9e+03	2.37e+06	2.96e+02	8.0e+03
8	1,2,3,4,6,7,8-HpCDF	2.97e+06	1.30e+03	2.3e+03	2.90e+06	1.95e+03	1.5e+03
9	1,2,3,4,7,8,9-HpCDF	2.41e+06	1.30e+03	1.8e+03	2.38e+06	1.95e+03	1.2e+03
10	OCDF	2.94e+06	2.56e+02	1.1e+04	3.30e+06	1.26e+03	2.6e+03
11	2,3,7,8-TCDD	4.60e+05	8.48e+02	5.4e+02	6.09e+05	5.44e+02	1.1e+03
12	1,2,3,7,8-PeCDD	3.03e+06	8.04e+02	3.8e+03	1.94e+06	4.32e+02	4.5e+03
13	1,2,3,4,7,8-HxCDD	3.00e+06	5.96e+02	5.0e+03	2.44e+06	4.40e+02	5.5e+03
14	1,2,3,6,7,8-HxCDD	2.68e+06	5.96e+02	4.5e+03	2.14e+06	4.40e+02	4.9e+03
15	1,2,3,7,8,9-HxCDD	2.93e+06	5.96e+02	4.9e+03	2.39e+06	4.40e+02	5.4e+03
16	1,2,3,4,6,7,8-HpCDD	2.21e+06	7.40e+02	3.0e+03	2.14e+06	2.04e+02	1.1e+04
17	OCDD	2.81e+06	3.68e+02	7.6e+03	3.18e+06	5.48e+02	5.8e+03
18	13C-2,3,7,8-TCDF	6.22e+06	2.39e+03	2.6e+03	8.28e+06	1.22e+03	6.8e+03
19	13C-1,2,3,7,8-PeCDF	8.65e+06	1.80e+02	4.8e+04	5.47e+06	9.36e+02	5.8e+03
20	13C-2,3,4,7,8-PeCDF	8.77e+06	1.80e+02	4.9e+04	5.67e+06	9.36e+02	6.1e+03
21	13C-1,2,3,4,7,8-HxCDF	3.84e+06	8.80e+02	4.4e+03	7.75e+06	1.22e+03	6.4e+03
22	13C-1,2,3,6,7,8-HxCDF	4.13e+06	8.80e+02	4.7e+03	8.17e+06	1.22e+03	6.7e+03
23	13C-2,3,4,6,7,8-HxCDF	4.07e+06	8.80e+02	4.6e+03	8.06e+06	1.22e+03	6.6e+03
24	13C-1,2,3,7,8,9-HxCDF	3.43e+06	8.80e+02	3.9e+03	6.80e+06	1.22e+03	5.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.96e+06	1.88e+03	1.6e+03	6.66e+06	3.59e+03	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.26e+06	1.88e+03	1.2e+03	5.28e+06	3.59e+03	1.5e+03
27	13C-2,3,7,8-TCDD	5.74e+06	4.56e+03	1.3e+03	7.39e+06	2.22e+03	3.3e+03
28	13C-1,2,3,7,8-PeCDD	7.73e+06	5.04e+02	1.5e+04	4.94e+06	4.20e+02	1.2e+04
29	13C-1,2,3,4,7,8-HxCDD	6.12e+06	2.33e+03	2.6e+03	4.90e+06	1.48e+03	3.3e+03
30	13C-1,2,3,6,7,8-HxCDD	6.82e+06	2.33e+03	2.9e+03	5.50e+06	1.48e+03	3.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.97e+06	6.88e+02	7.2e+03	4.81e+06	5.08e+02	9.5e+03
32	13C-OCDD	6.24e+06	7.60e+02	8.2e+03	7.07e+06	5.80e+02	1.2e+04
33	13C-1,2,3,4-TCDD	5.71e+06	4.56e+03	1.3e+03	7.19e+06	2.22e+03	3.2e+03
34	13C-1,2,3,7,8,9-HxCDD	6.57e+06	2.33e+03	2.8e+03	5.27e+06	1.48e+03	3.6e+03
35	37Cl-2,3,7,8-TCDD	1.26e+06	1.59e+03	7.9e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (8.480e{+}02 + 5.440e{+}02) \times 100}{(5.737e{+}06 + 7.394e{+}06) \times (\qquad) \times 0.873} =$$

ALS ENVIRONMENTAL
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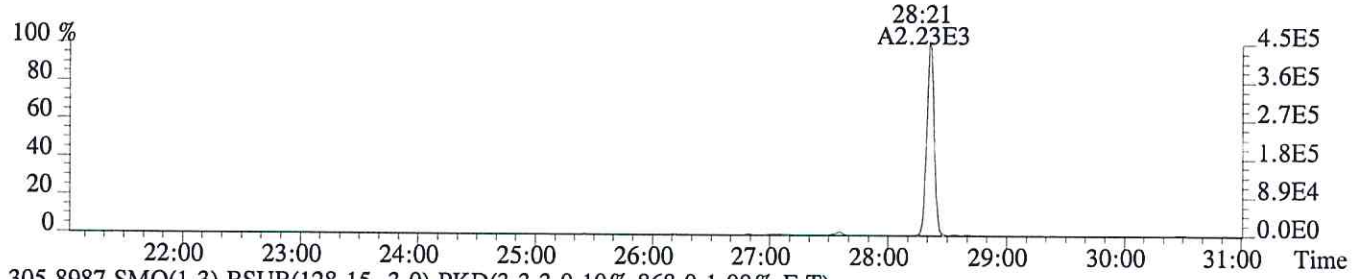
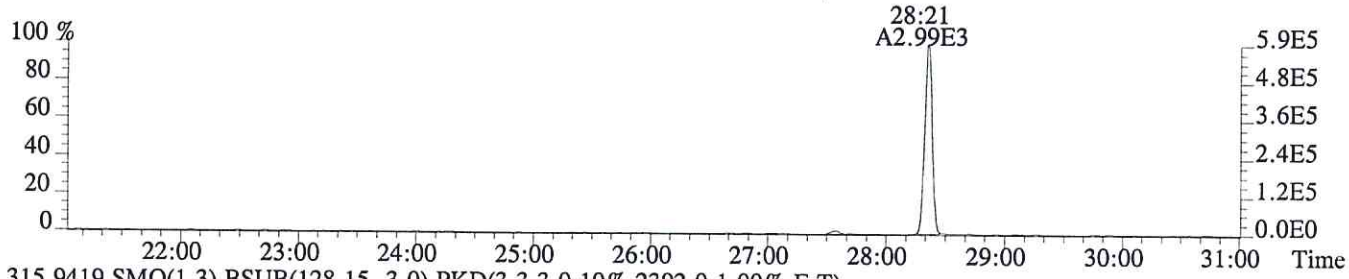
File:P402432 #1-684 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819

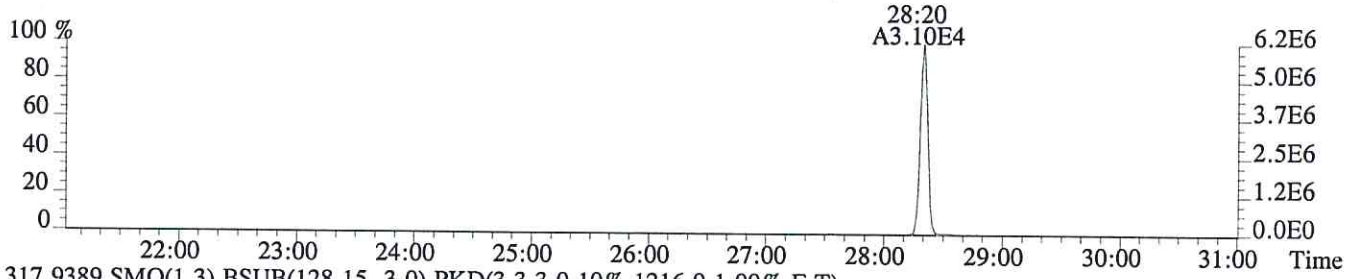
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,324.0,1.00%,F,T)



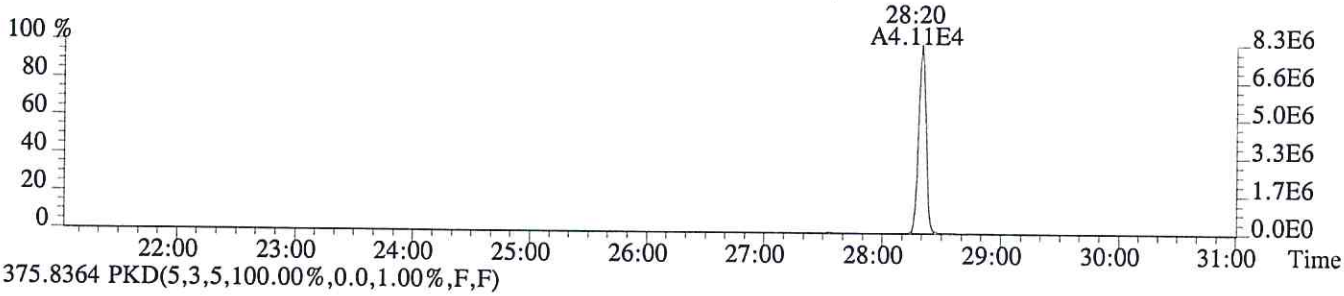
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,868.0,1.00%,F,T)



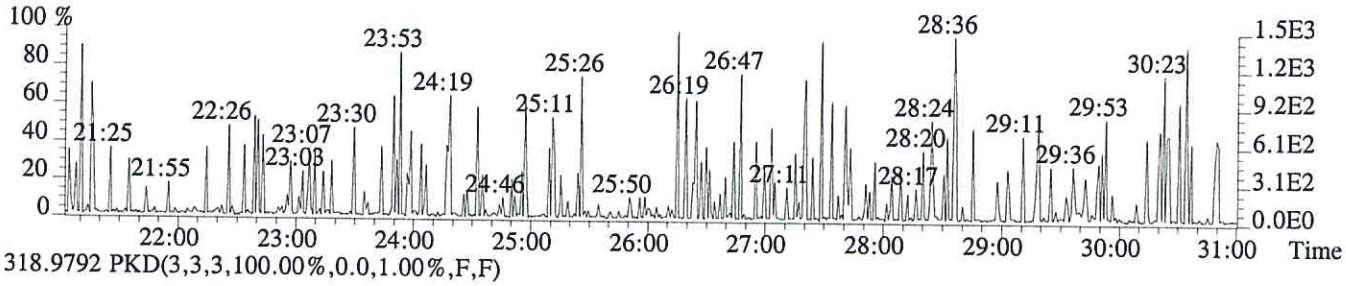
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2392.0,1.00%,F,T)



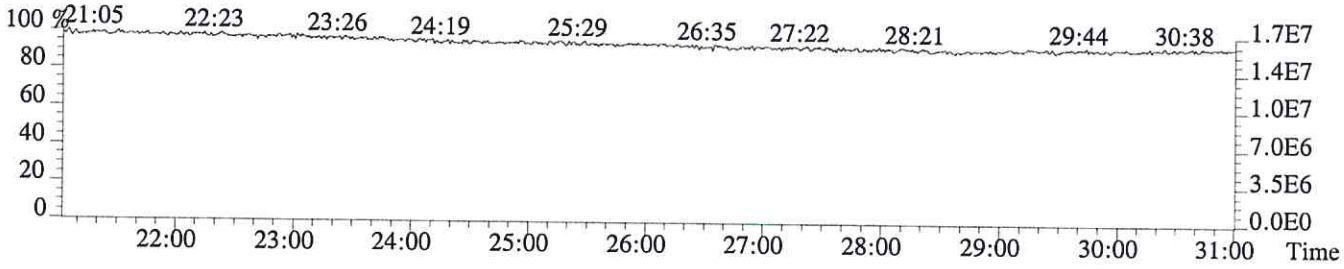
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1216.0,1.00%,F,T)



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

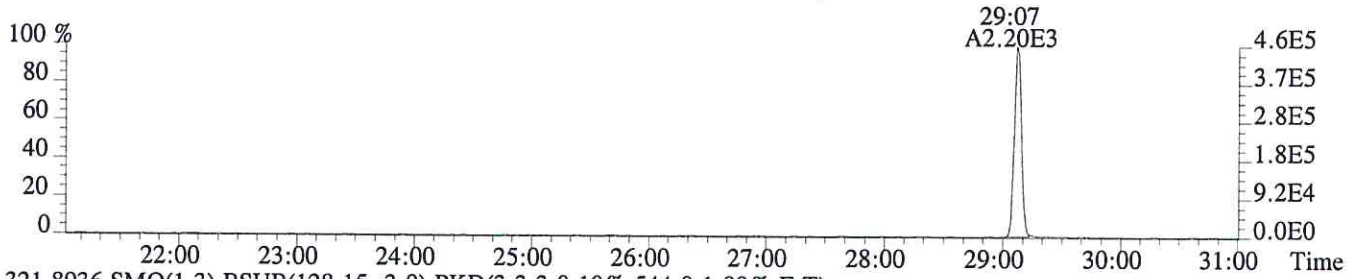


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

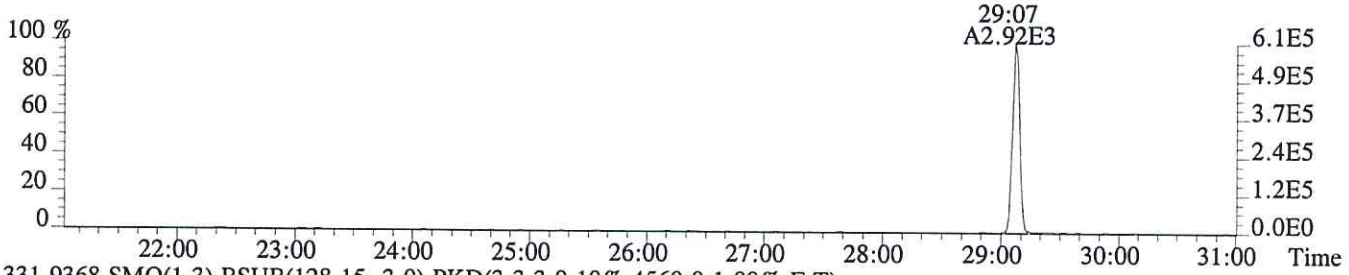


File:P402432 #1-684 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819

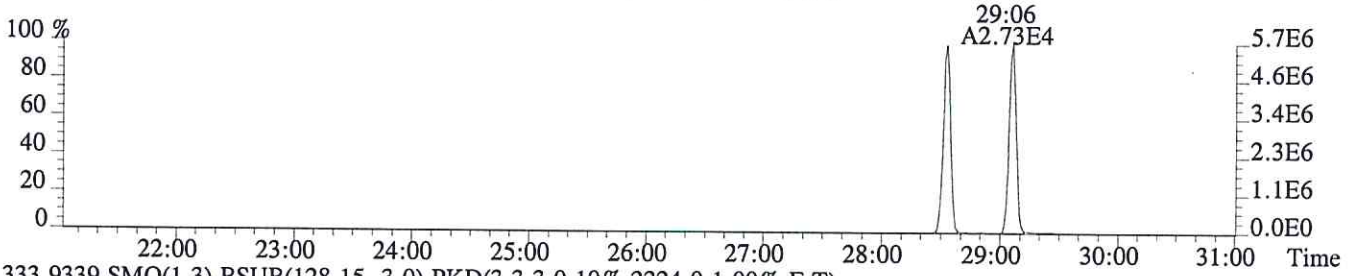
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,848.0,1.00%,F,T)



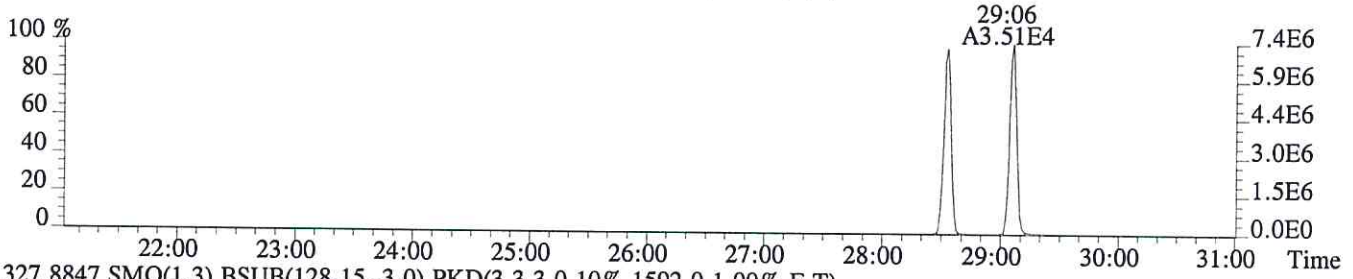
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,544.0,1.00%,F,T)



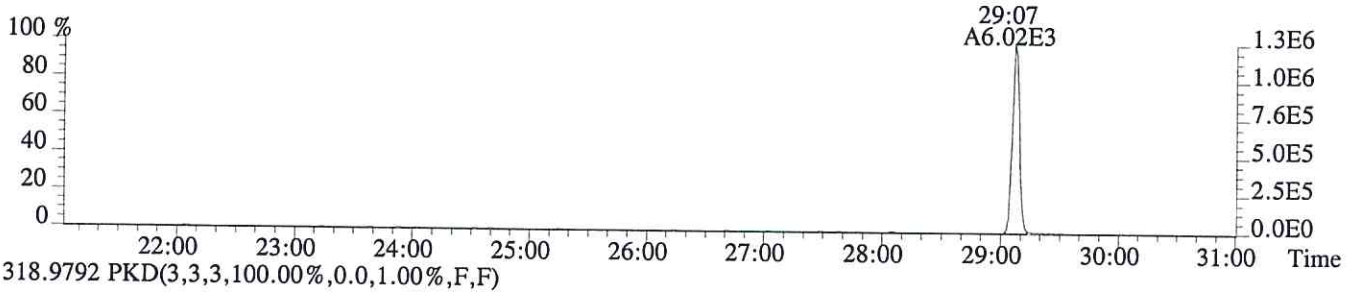
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4560.0,1.00%,F,T)



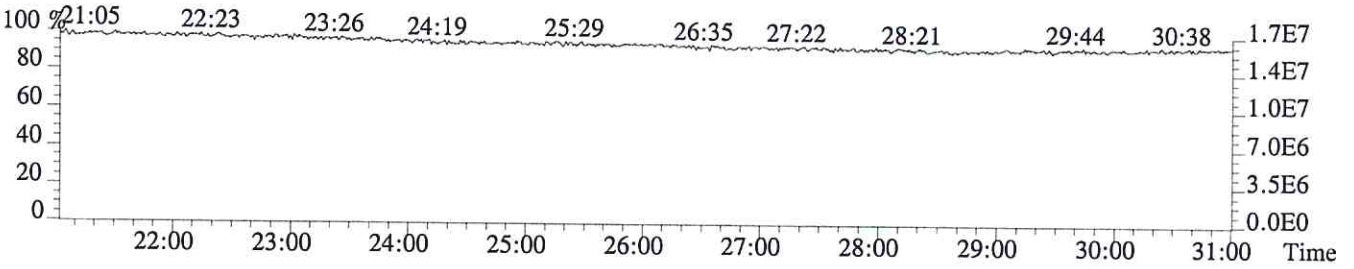
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2224.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1592.0,1.00%,F,T)

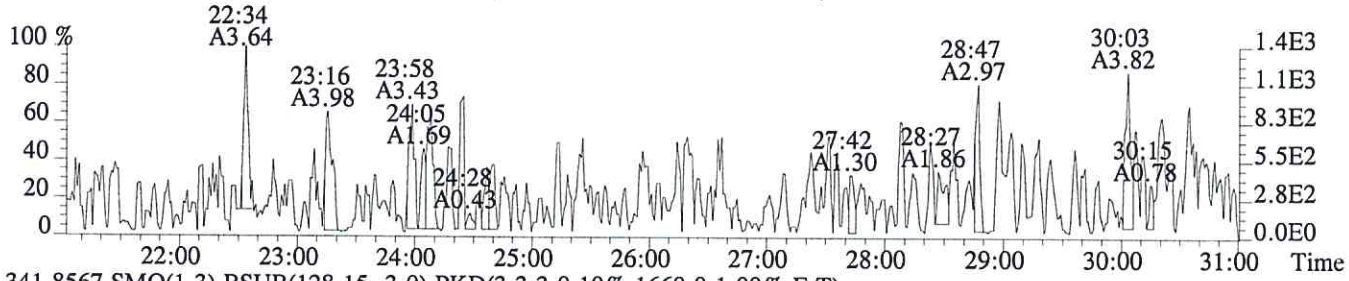


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

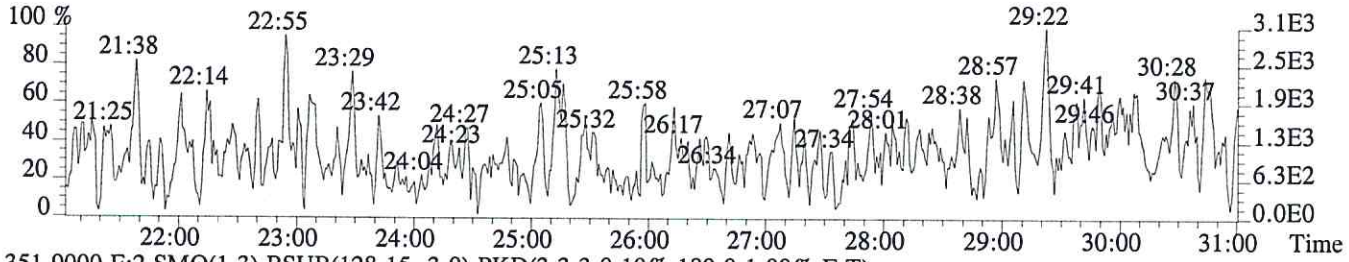


File:P402432 #1-684 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819

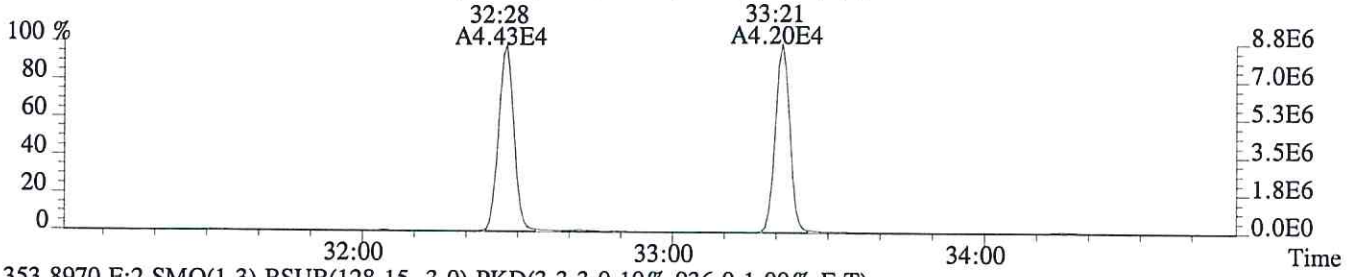
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,500.0,1.00%,F,T)



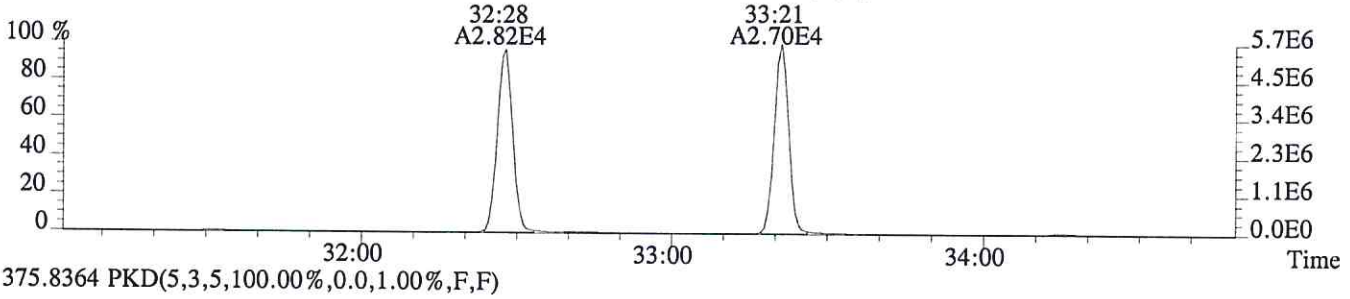
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1660.0,1.00%,F,T)



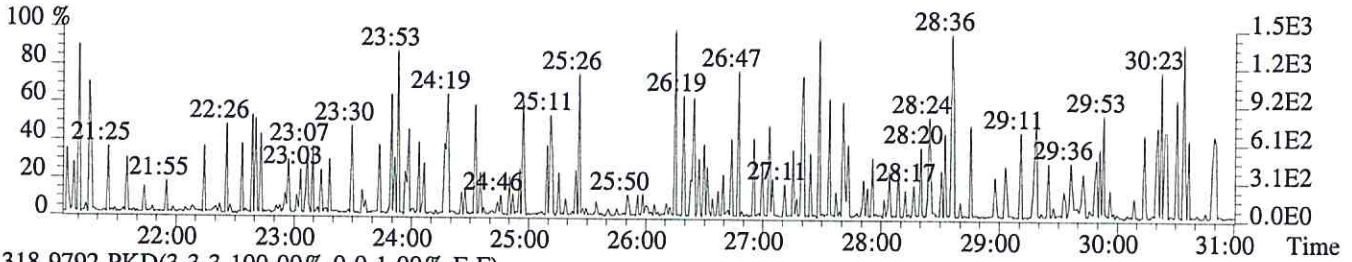
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,180.0,1.00%,F,T)



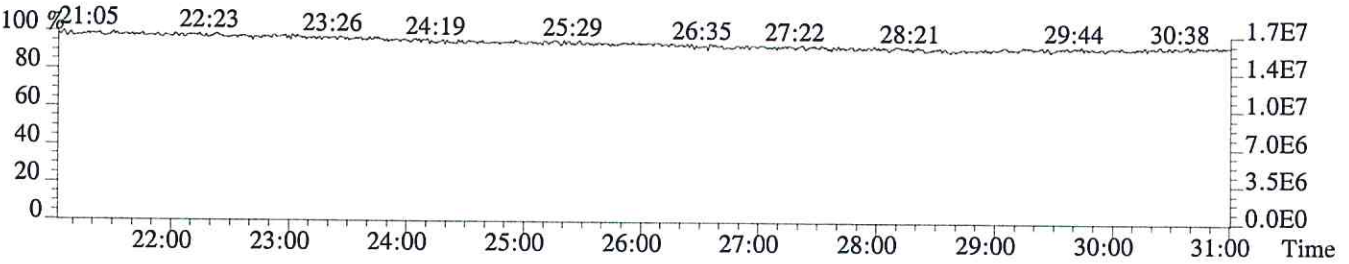
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,936.0,1.00%,F,T)



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

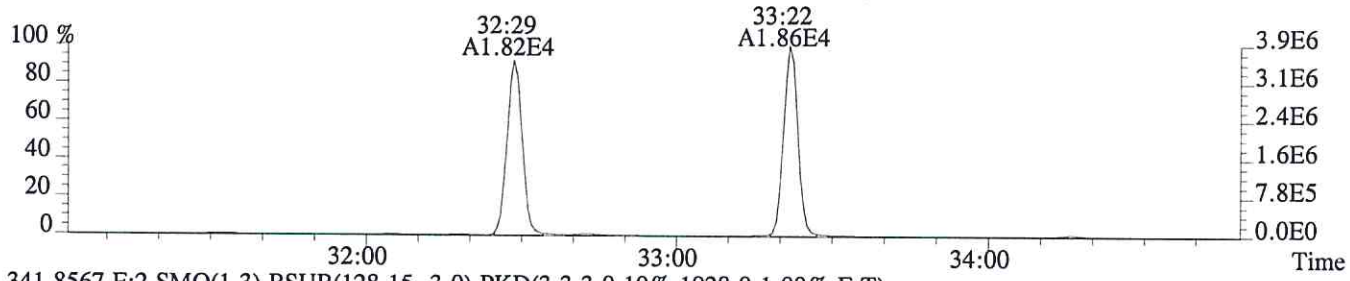


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

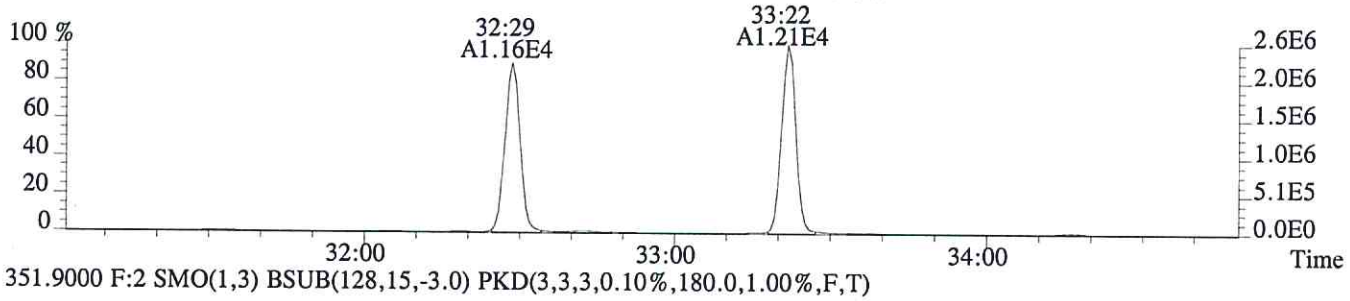


File:P402432 #1-340 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819

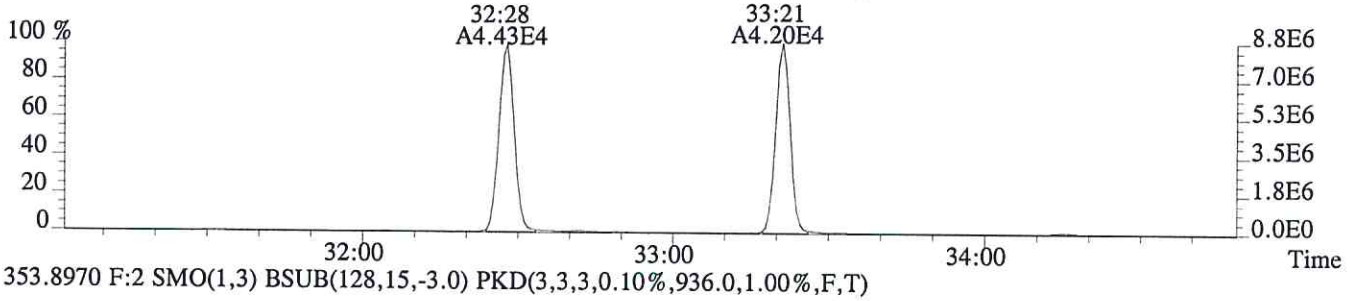
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,T)



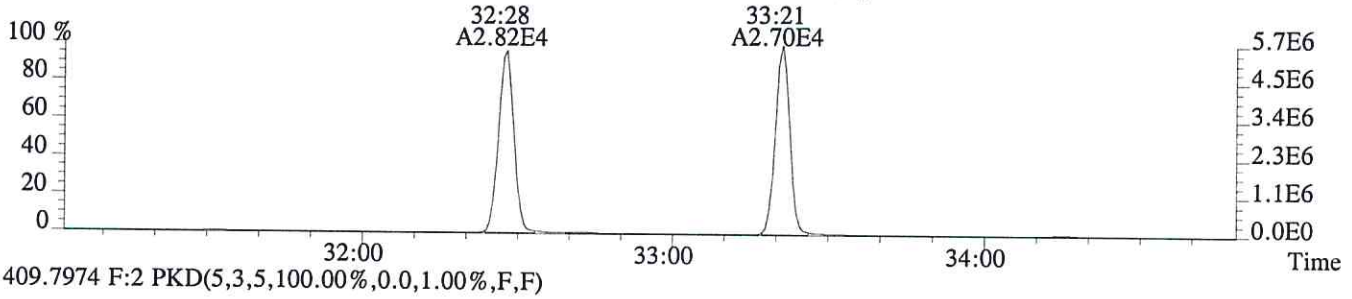
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1928.0,1.00%,F,T)



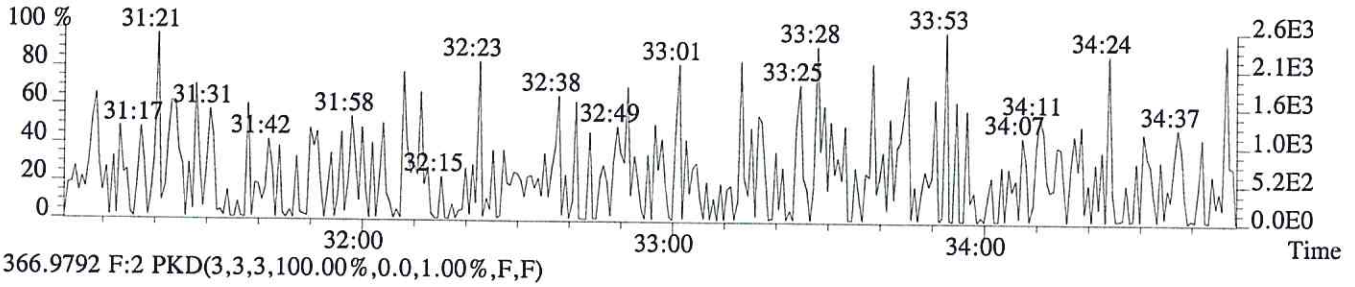
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,180.0,1.00%,F,T)



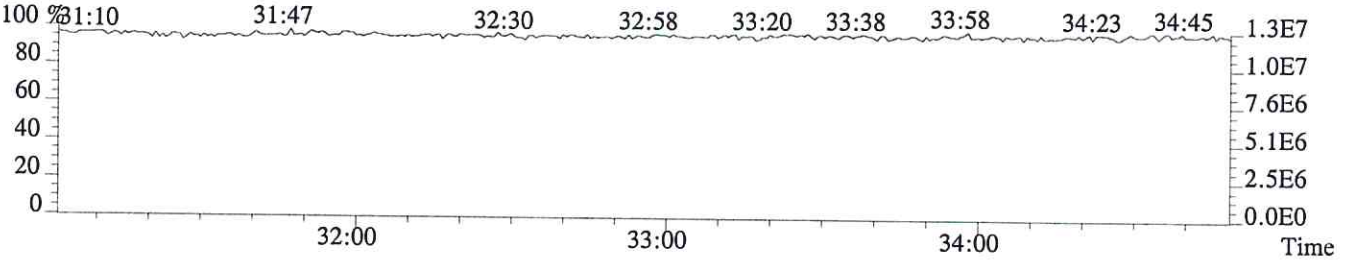
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,936.0,1.00%,F,T)



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

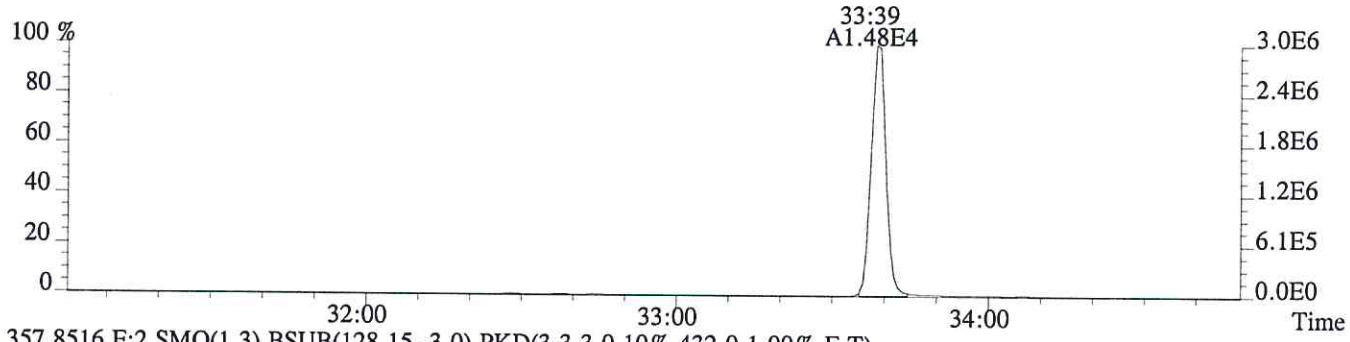


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

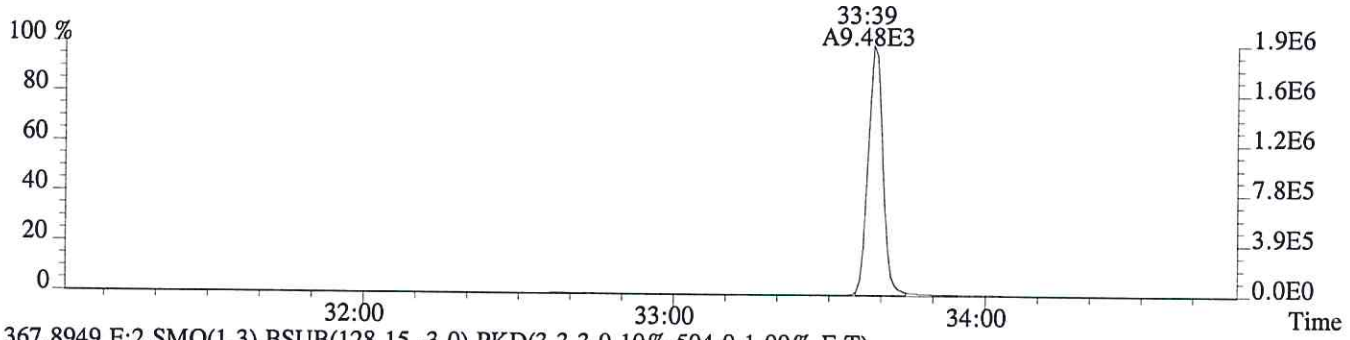


File:P402432 #1-340 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819

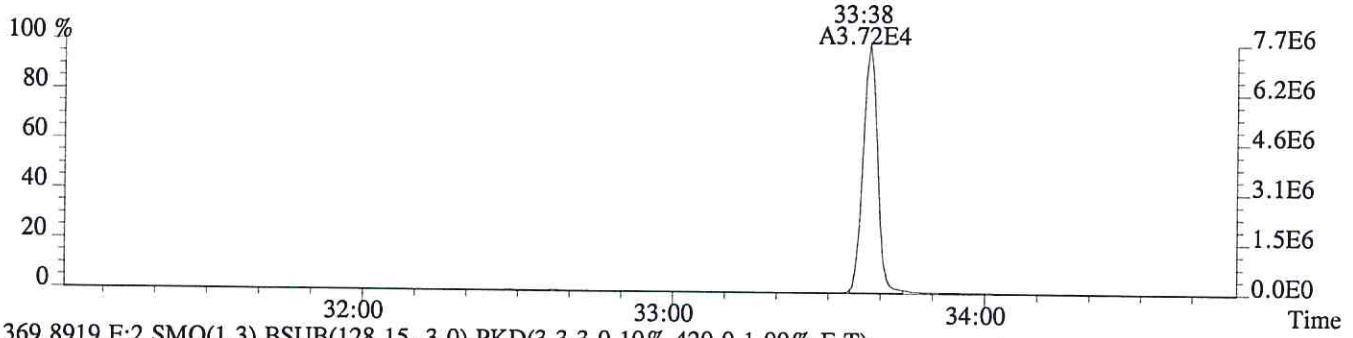
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,804.0,1.00%,F,T)



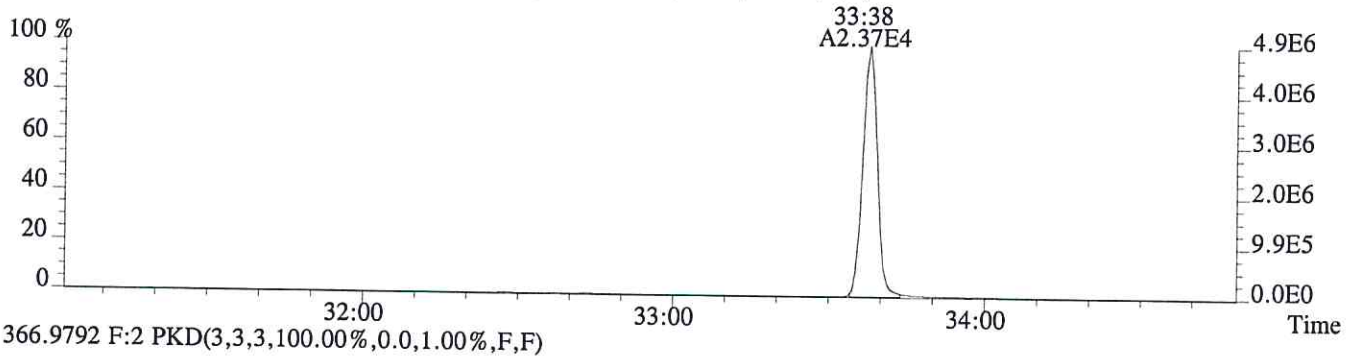
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,432.0,1.00%,F,T)



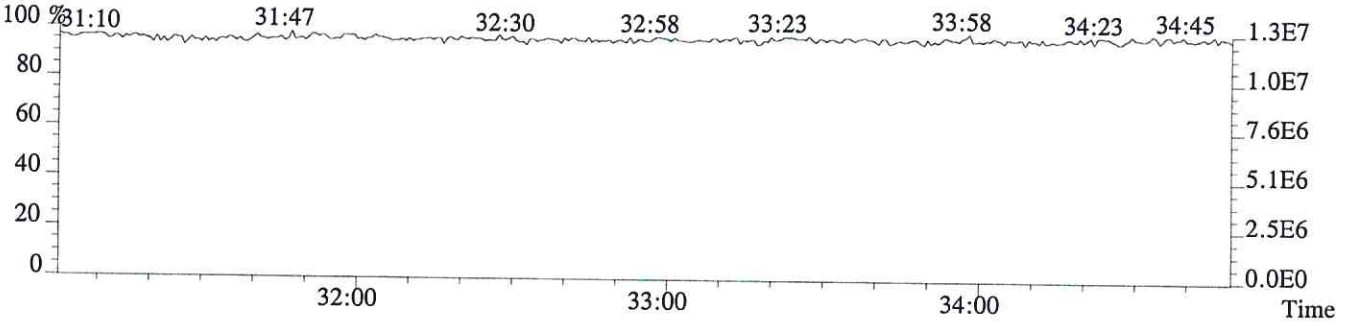
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,504.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,420.0,1.00%,F,T)

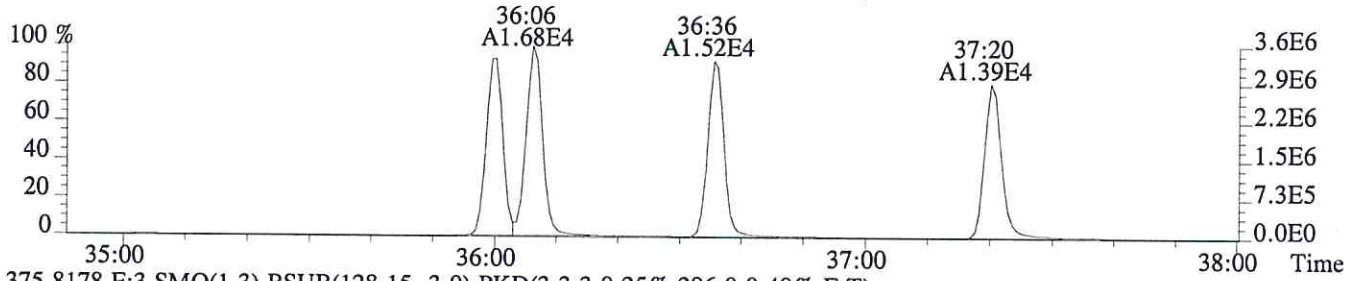


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

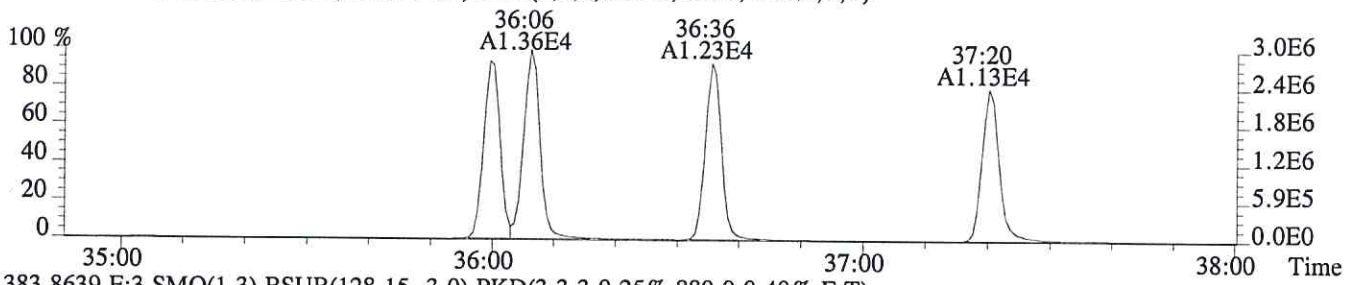


File:P402432 #1-285 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819

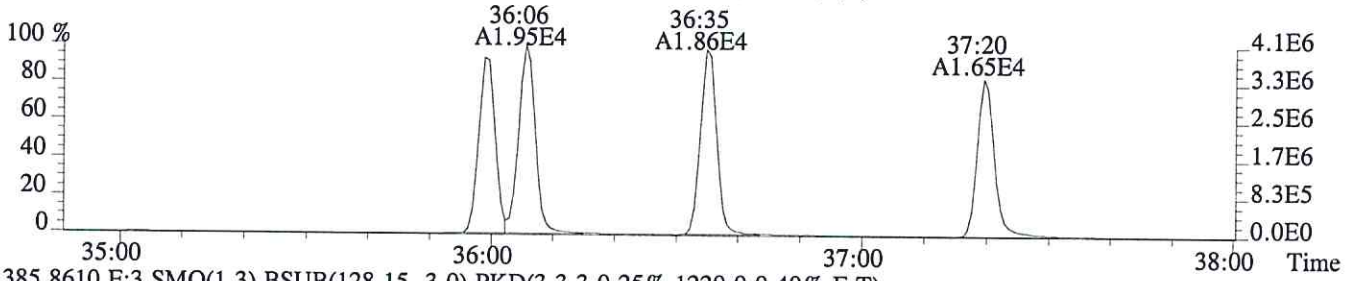
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,600.0,0.40%,F,T)



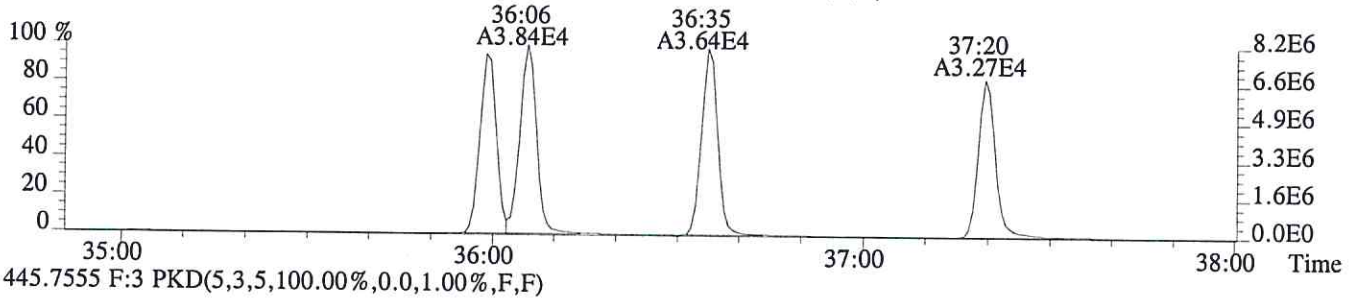
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,296.0,0.40%,F,T)



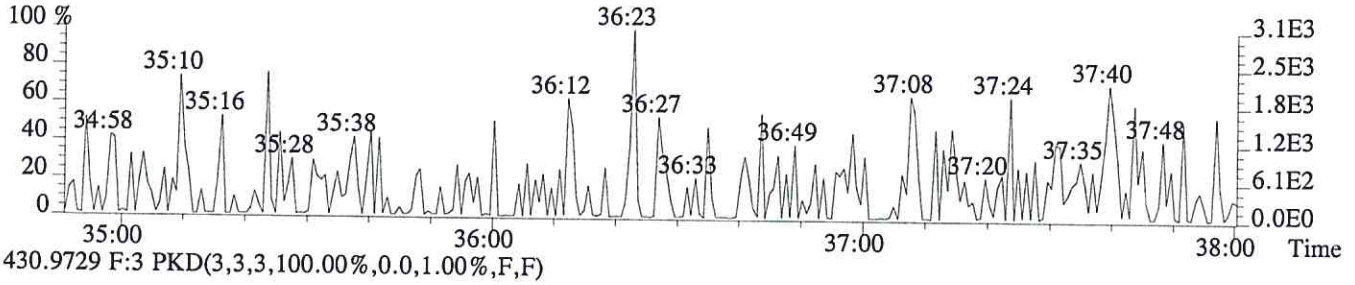
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,880.0,0.40%,F,T)



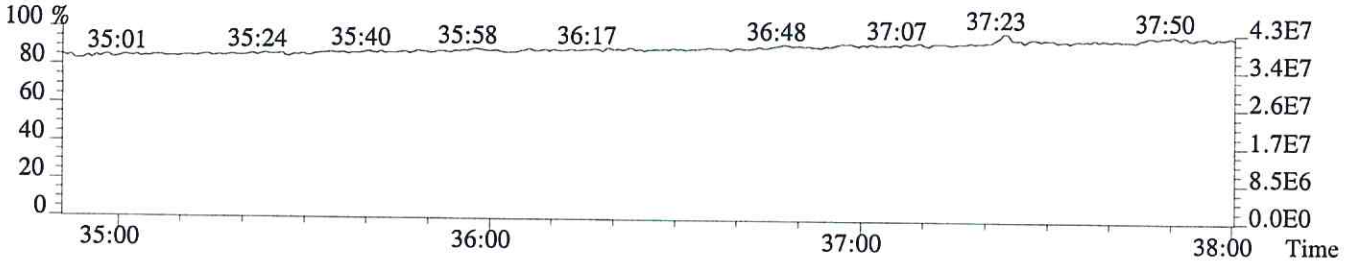
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1220.0,0.40%,F,T)



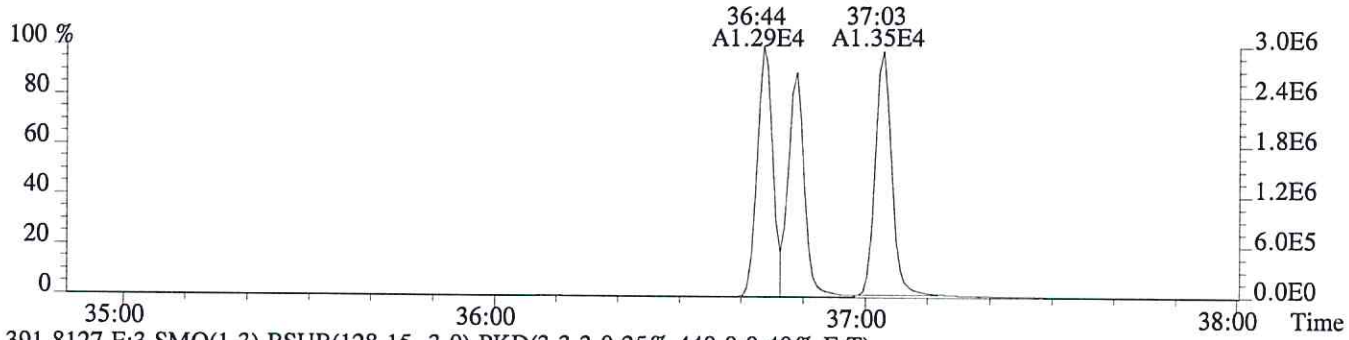
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



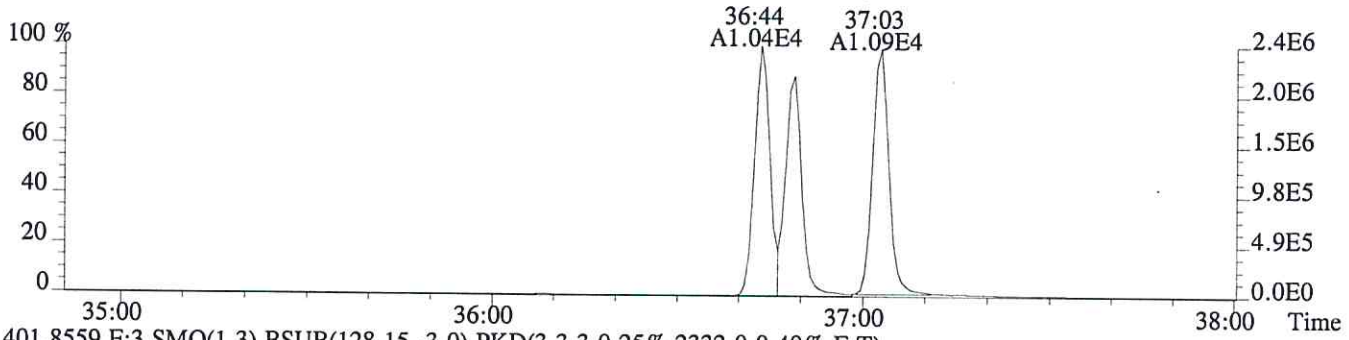
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



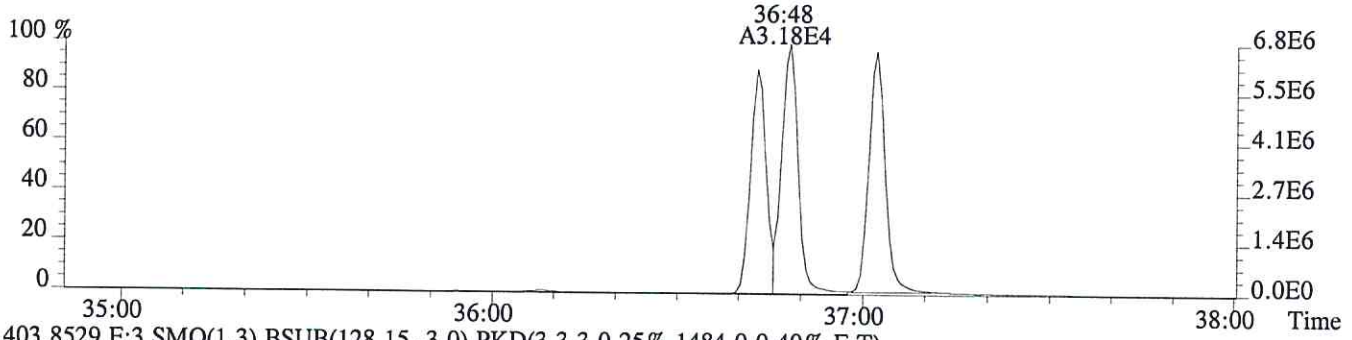
File:P402432 #1-285 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,596.0,0.40%,F,T)



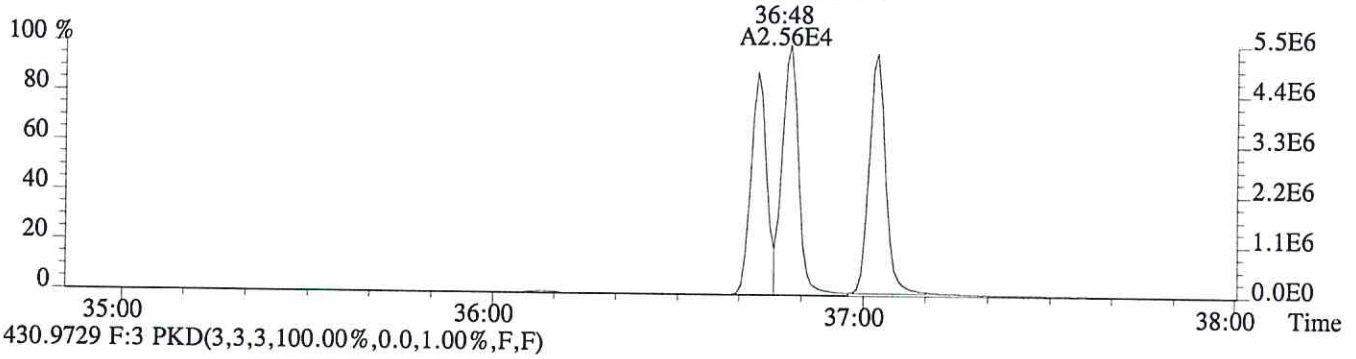
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,440.0,0.40%,F,T)



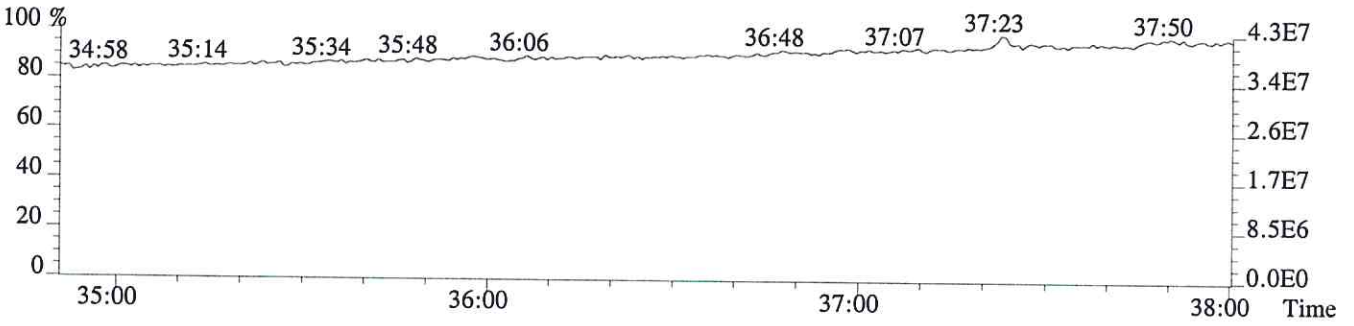
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2332.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1484.0,0.40%,F,T)

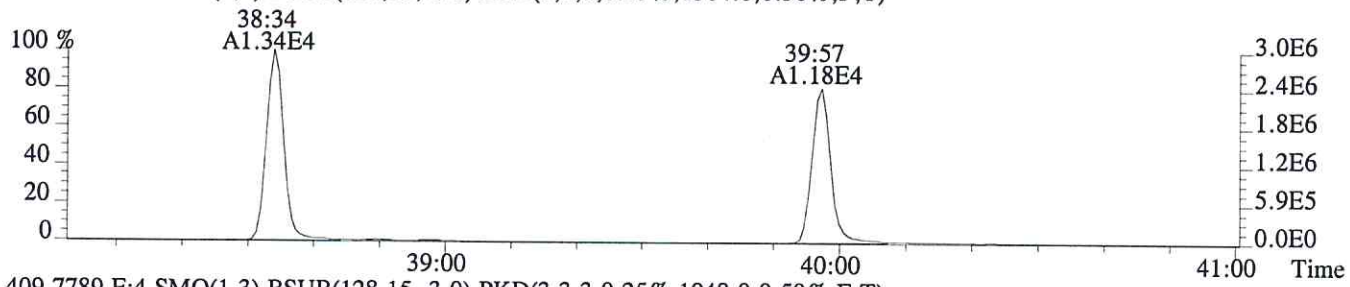


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

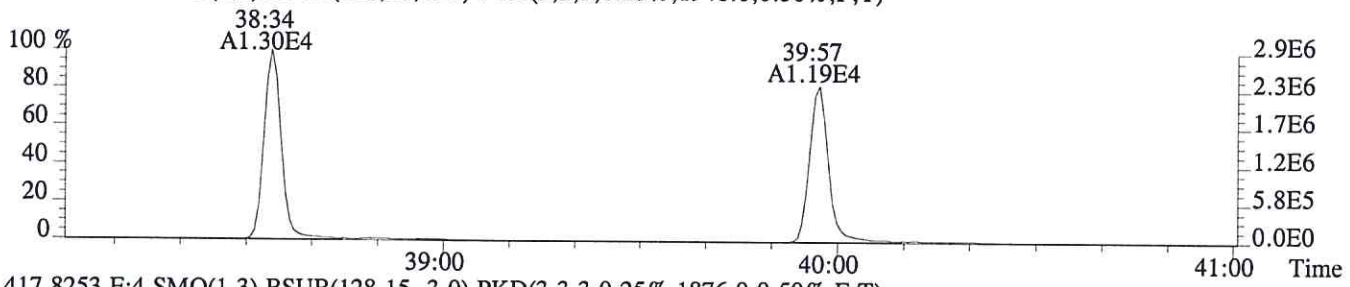


File:P402432 #1-268 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819

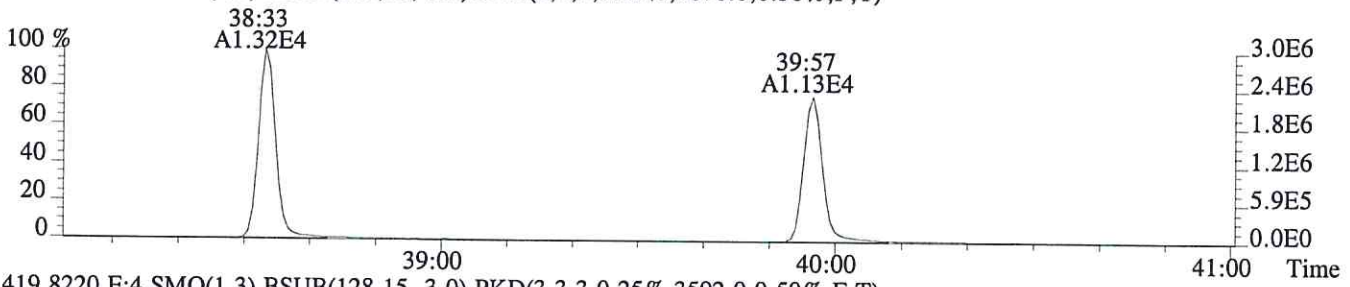
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1304.0,0.50%,F,T)



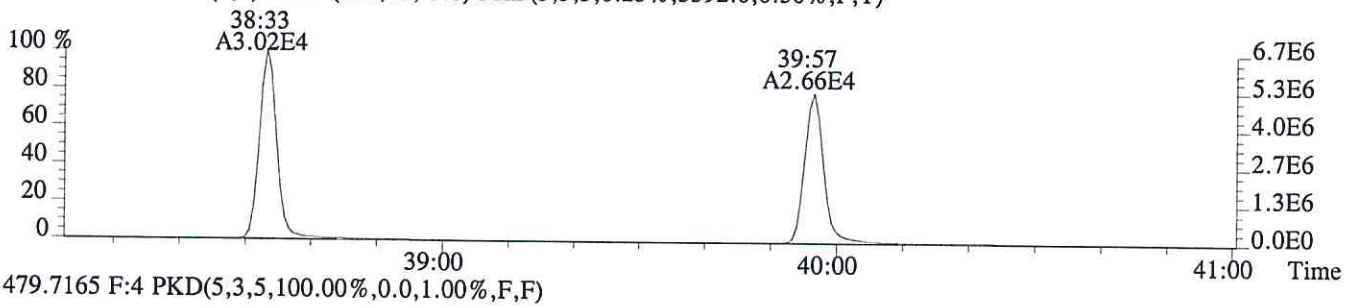
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1948.0,0.50%,F,T)



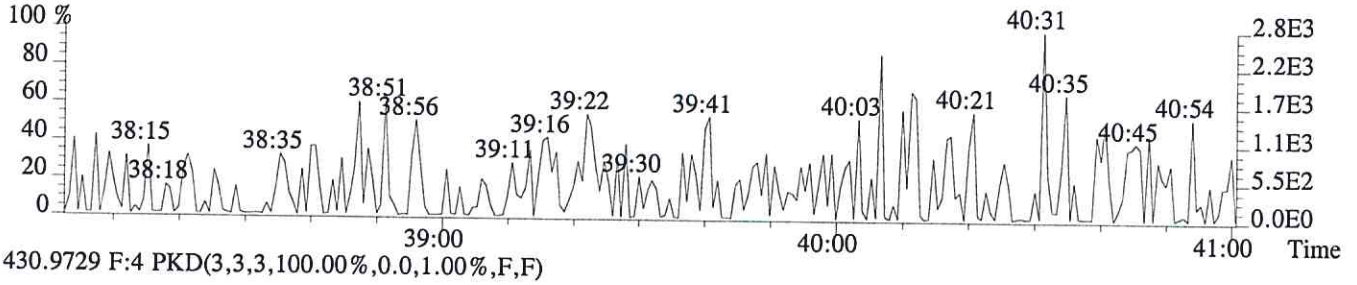
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1876.0,0.50%,F,T)



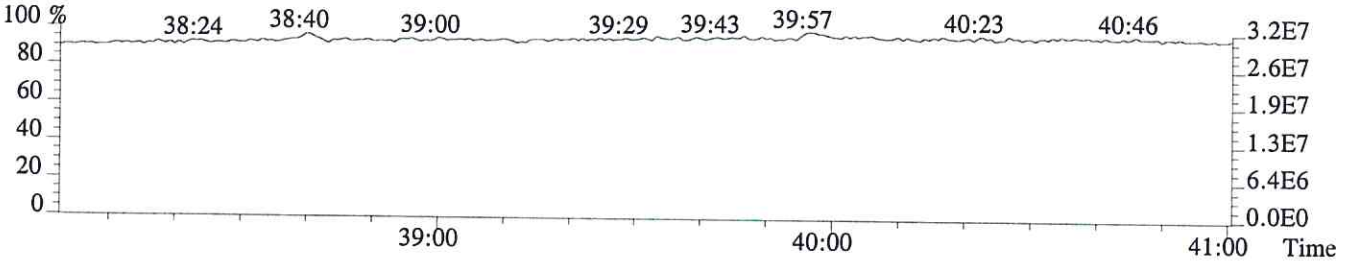
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3592.0,0.50%,F,T)



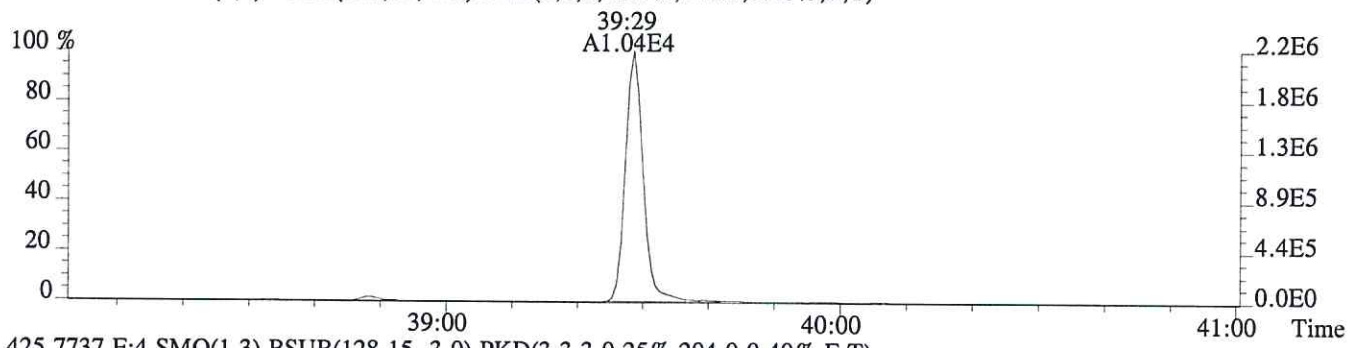
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



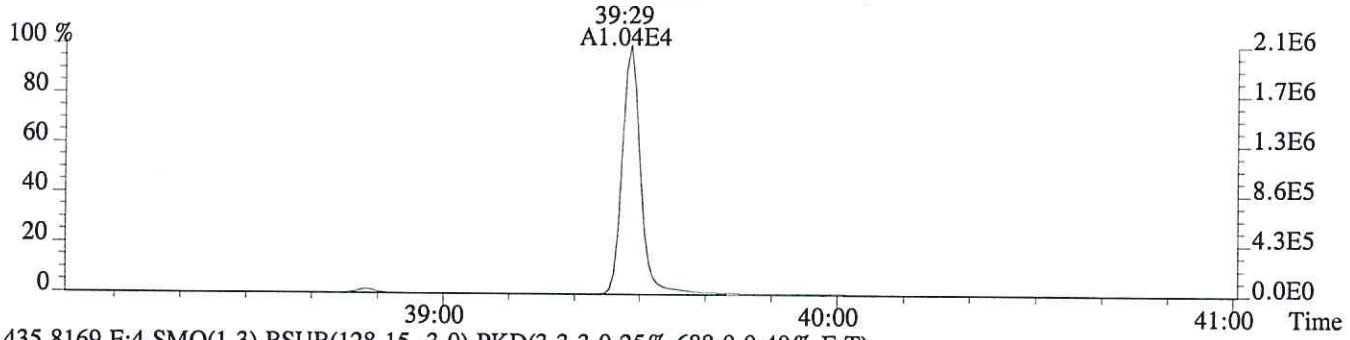
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



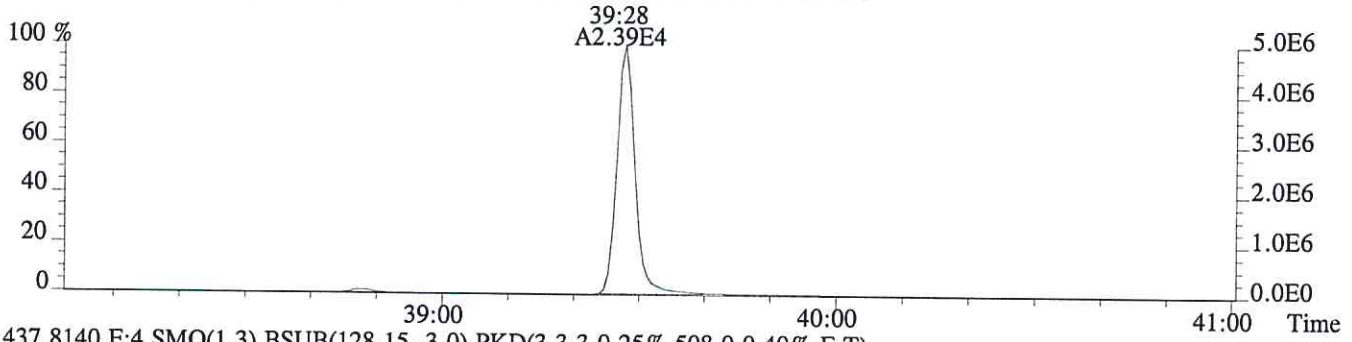
File:P402432 #1-268 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,740.0,0.40%,F,T)



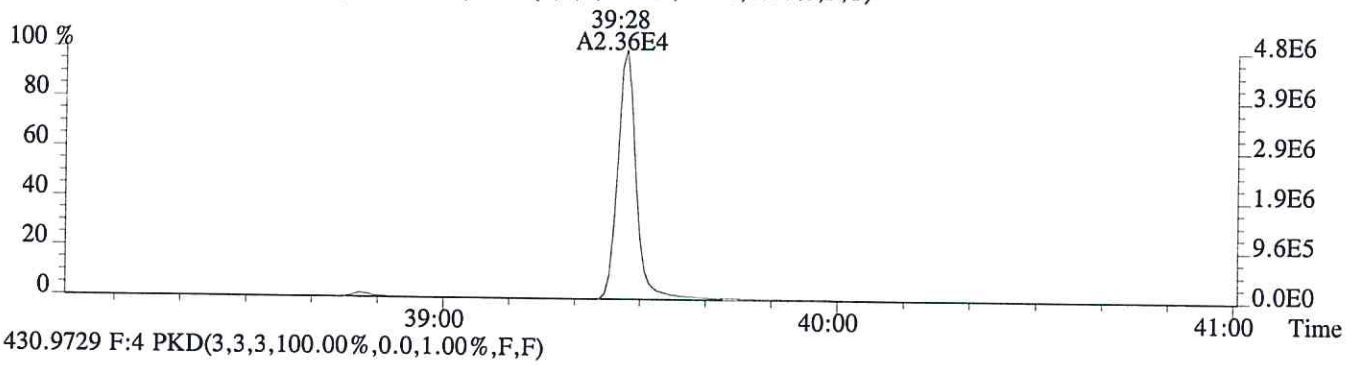
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,204.0,0.40%,F,T)



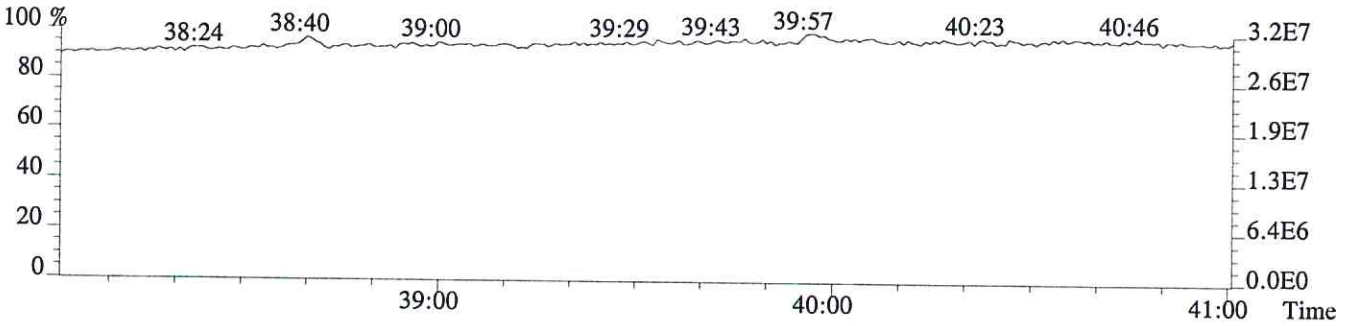
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,688.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,508.0,0.40%,F,T)

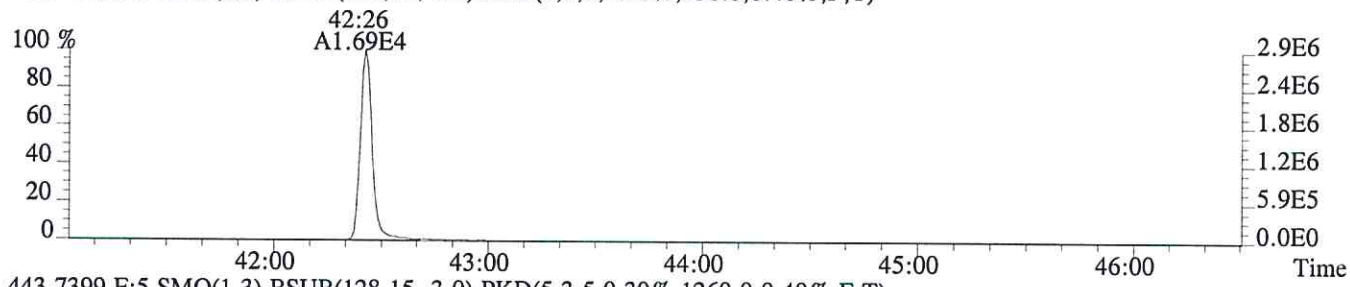


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

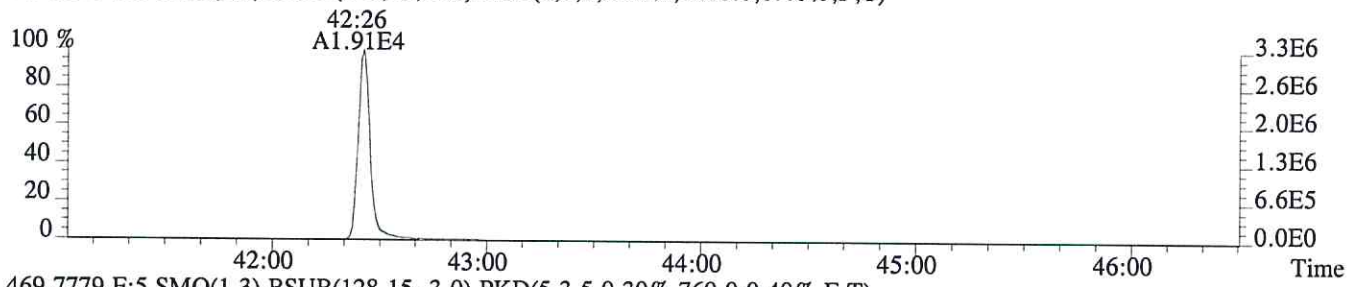


File:P402432 #1-492 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819

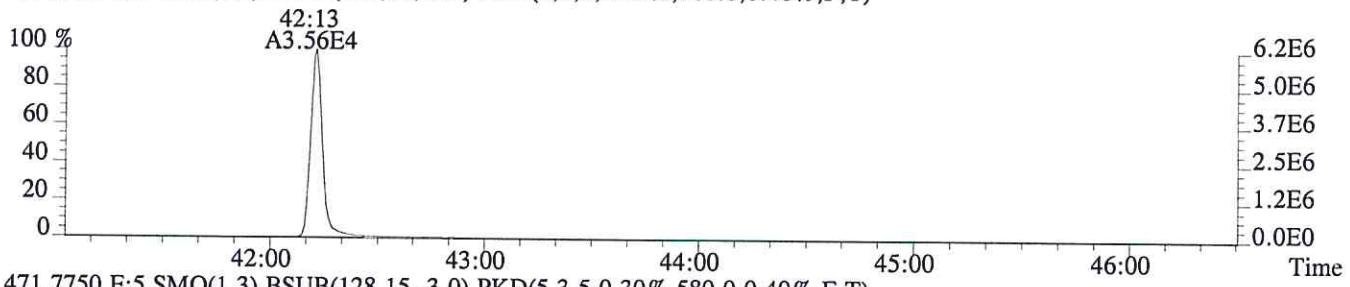
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,256.0,0.40%,F,T)



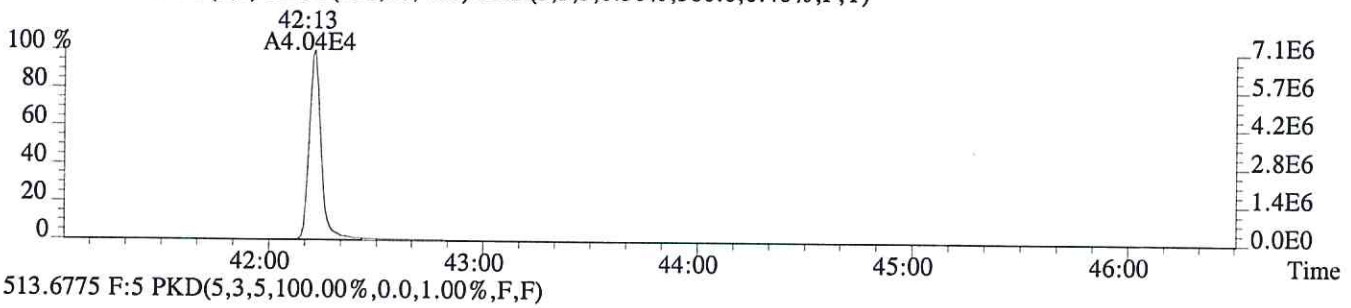
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1260.0,0.40%,F,T)



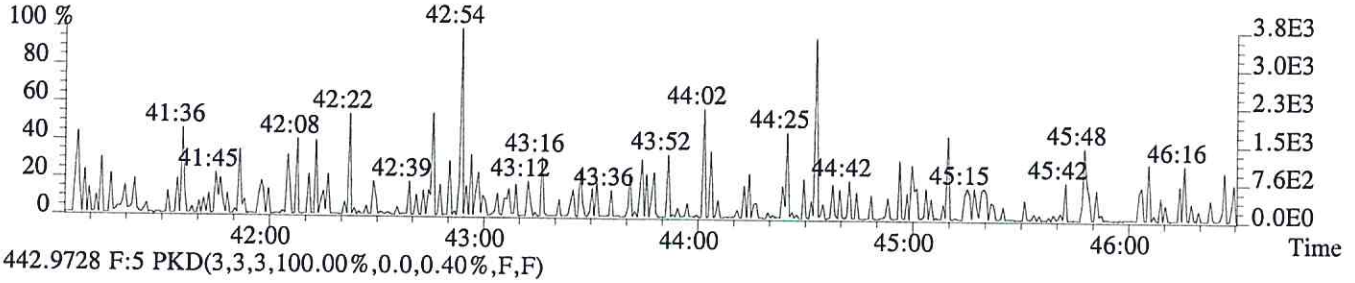
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,760.0,0.40%,F,T)



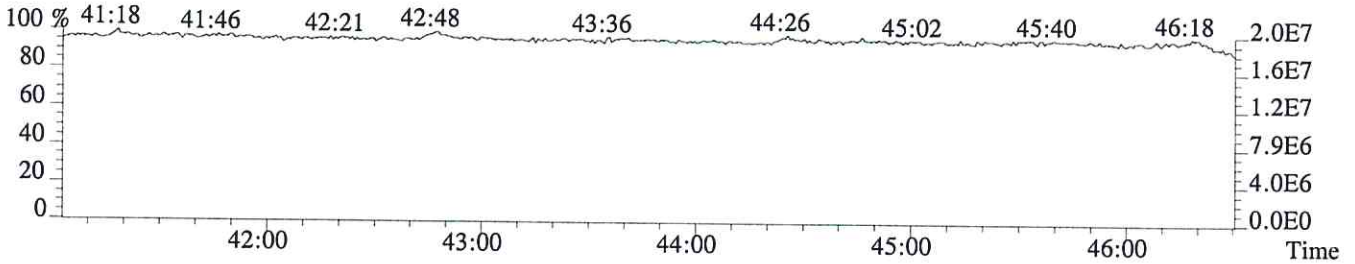
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,580.0,0.40%,F,T)



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

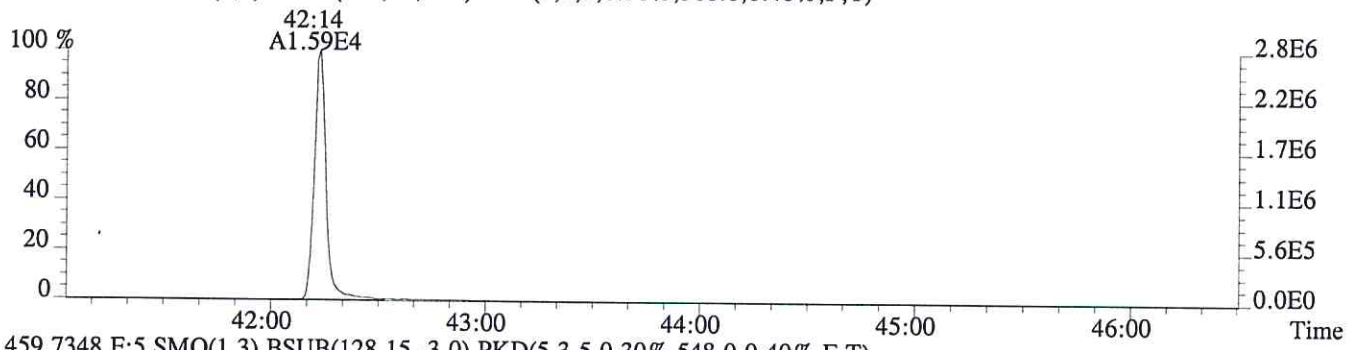


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

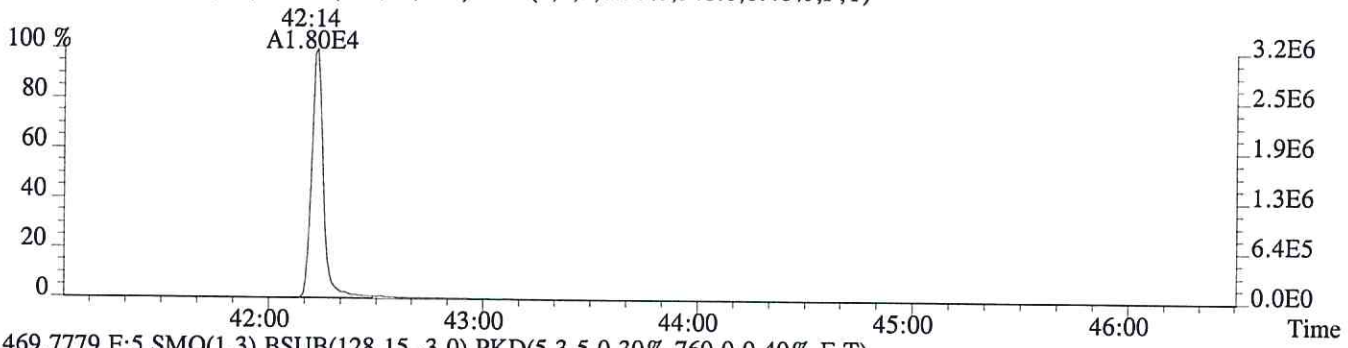


File:P402432 #1-492 Acq:28-APR-2016 18:00:48 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:54819

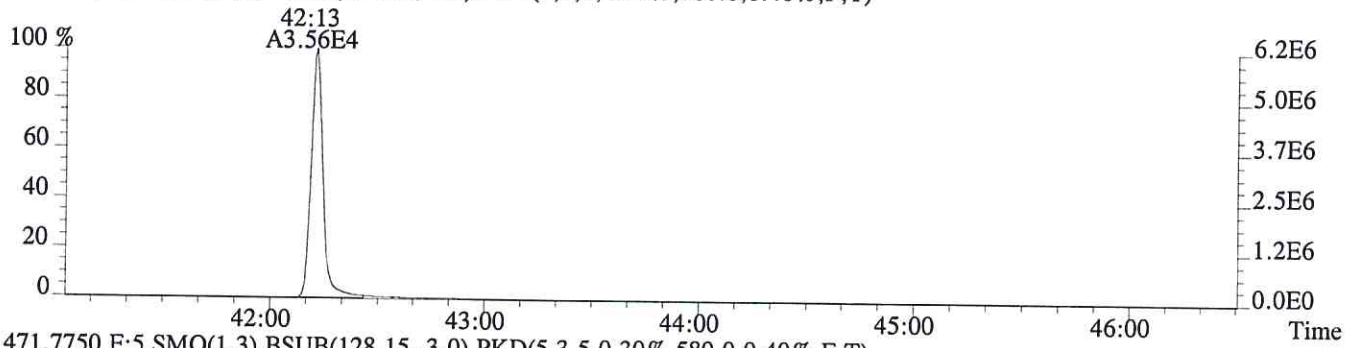
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,368.0,0.40%,F,T)



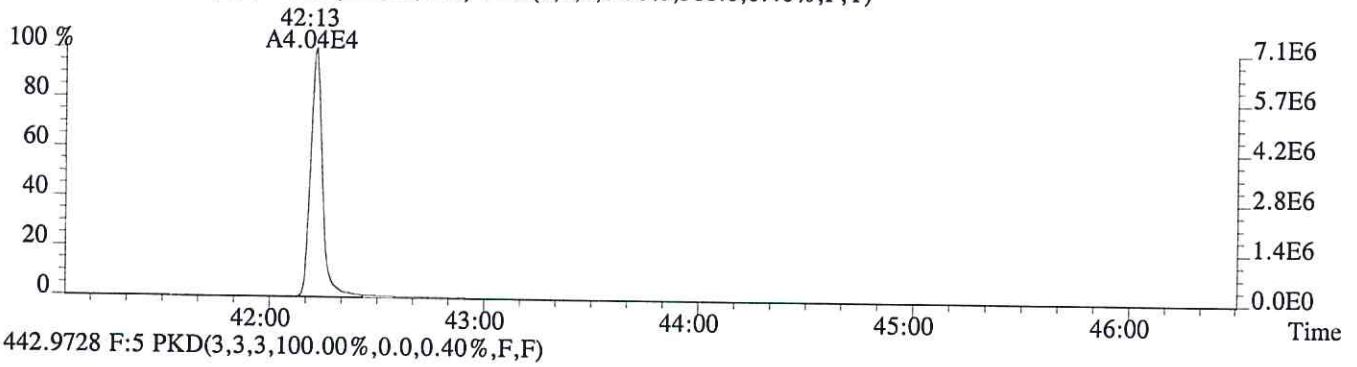
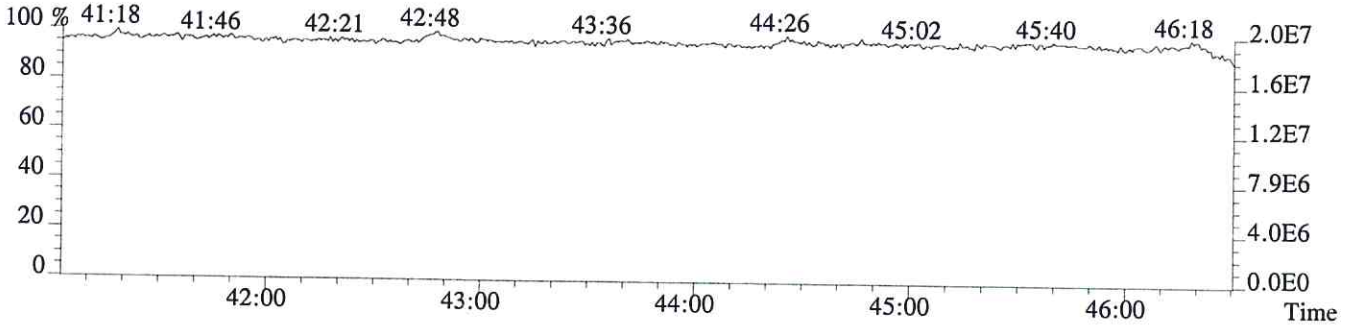
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,548.0,0.40%,F,T)



469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,760.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,580.0,0.40%,F,T)



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