May 24, 2017 Service Request No:E1700468

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

Laboratory Results for: Naval Base Ventura County, CA 1711509

Dear Tina,

Enclosed are the results of the sample(s) submitted to our laboratory May 05, 2017
For your reference, these analyses have been assigned our service request number **E1700468.**

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

Client: BC Laboratories, Incorporated **Service Request:**E1700468

Project: Naval Base Ventura County, CA 1711509

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1700468-001	DUP03_170428	4/28/2017	1204
E1700468-002	M038A_170428	4/28/2017	1159
E1700468-003	M038E_170428	4/28/2017	1006
E1700468-004	M039A_170428	4/28/2017	1005
E1700468-005	EB10_170428	4/28/2017	1410
E1700468-006	EB11_170428	4/28/2017	1420

Service Request Summary

Folder #: **E1700468**
Client Name: BC Laboratories, Incorporated
Project Name: Naval Base Ventura County, CA 1711509
Project Number:

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: CGRANDITS
Date Received: 05/05/17
Internal Due Date: 5/26/2017
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number: 1711509
EDD: BASIC_WQC_CASNo

9 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserved
Location: E-Disposed, EHRMS-WIC 3C
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON PCDD PCDF/8290
E1700468-001	DUP03_170428	Water	04/28/17 1204	**IV**
E1700468-002	M038A_170428	Water	04/28/17 1159	**IV**
E1700468-003	M038E_170428	Water	04/28/17 1006	**IV**
E1700468-004	M039A_170428	Water	04/28/17 1005	**IV**
E1700468-005	EB10_170428	Water	04/28/17 1410	**IV**
E1700468-006	EB11_170428	Water	04/28/17 1420	**IV**

Service Request Summary

Folder #:	**E1700468**
Client Name:	BC Laboratories, Incorporated
Project Name:	Naval Base Ventura County, CA 1711509
Project Number:	
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:	CGRANDITS
Date Received:	05/05/17
Internal Due Date:	5/26/2017
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	N
Report to MDL?:	Y
P.O. Number:	1711509
EDD:	BASIC_WQC_CASNo

9 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserved

Location: E-Disposed, EHRMS-WIC 3C

Pressure Gas:

Superset Summary

Service Request: E1700468 **SuperSet Reference:** 17-0000422927 rev 00

Analytical Method: **8290**

Calibrations: 05/16/17

Data Files:

Raw Data	Begin CCAL	Method Blank	Lab ID
P607257	P607251	P607254	E1700468-001
P607258	P607251	P607254	E1700468-002
P607259	P607251	P607254	E1700468-003
P607260	P607251	P607254	E1700468-004
P607267	P607264	P607254	E1700468-005
P607268	P607264	P607254	E1700468-006
P607254	P607251	P607254	EQ1700183-01
P607261	P607251	P607254	EQ1700183-02
P607262	P607251	P607254	EQ1700183-03

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.

ALS Laboratory Group

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

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ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01	11/30/2017
Arizona Department of Health Services	AZ0793	5/27/2017
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 E1700468 DB-5MSUI SPB-Octyl

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

Date:	Analyst:	Samples:
05/22/17	JC	-001, -002, -003, -004

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

Date:	Analyst:	Samples:
05/23/17	UM	001 – 004

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

SR# Unique ID E170046 8 DB-5MSUI SPB-Octyl

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

Date:	Analyst:	Samples:
05/23/17	JC	-005, -006

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

Date:	Analyst:	Samples:
05/23/17	LKL	005, 006

Chain of Custody

ALS Environmental - Houston HRMS
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SUBCONTRACT ORDER
BC Laboratories
1711509

E1700468 **5**

BC Laboratories, Inc.
Former Naval Air Station Alameda Pt, CA 1711509

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: 1711509-07 Water	**Sampled:**	**04/28/17 12:04**	CLP
EPA 8290 - CDDs & CDFs	05/15/17 17:00	05/28/17 12:04	DOD/Level IV/ Groundwater/ NEED EQUIS EDD/ ID= DUP03_170428
Containers supplied: Qt amber			
Sample ID: 1711509-09 Water	**Sampled:**	**04/28/17 11:59**	CLP
EPA 8290 - CDDs & CDFs	05/15/17 17:00	05/28/17 11:59	DOD/Level IV/ Groundwater/ NEED EQUIS EDD/ID= M038A_170428
Containers supplied:			
Sample ID: 1711509-10 Water	**Sampled:**	**04/28/17 10:06**	CLP
EPA 8290 - CDDs & CDFs	05/15/17 17:00	05/28/17 10:06	DOD/Level IV/ Groundwater/ NEED EQUIS EDD/ ID-M038E_170428
Containers supplied:			
Sample ID: 1711509-11 Water	**Sampled:**	**04/28/17 10:05**	CLP
EPA 8290 - CDDs & CDFs	05/15/17 17:00	05/28/17 10:05	DOD/Level IV/ Groundwater/ NEED EQUIS EDD/ID -M039A_170428
Containers supplied:			
Sample ID: 1711509-14 Water	**Sampled:**	**04/28/17 14:10**	CLP
EPA 8290 - CDDs & CDFs	05/15/17 17:00	05/28/17 14:10	DOD/Level IV/ Groundwater/ NEED EQUIS EDD - ID -EB10_170428
Containers supplied:			
Sample ID: 1711509-15 Water	**Sampled:**	**04/28/17 14:20**	CLP
EPA 8290 - CDDs & CDFs	05/15/17 17:00	05/28/17 14:20	DOD/Level IV/ Groundwater/ NEED EQUIS EDD ID= EB11_170428
Containers supplied:			

Use ID (highlighted in pink for sample descriptions)

Released By	Date	Received By	Date
	5.2.17		5-5-17 1014
Released By	Date	Received By	Date

TEMP - 19.3/19.9°C

ALS Environmental

Cooler Receipt Form

Project Chemist: NB

Client/Project: BC

Thermometer ID: SM04

Date/Time Received: 5-5-17 1014 Initials: CG

Date/Time Logged in: 5-5-17 1414 Initials: CG

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? NO SEALS
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?
12 395 37603 6116 6579		5-5-17	1100	CG	19.3/19.9	☐
						☐
						☐
						☐

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:

SAMPLES ID= M038E_170428
ID= M039A_170428
ID= LEBIL_170428
} 1 BROKEN CONTAINER IN COOLER UPON RECEIPT

Service request Label: E1700468 5
BC Laboratories, Inc.
Former Naval Air Station Alameda Pt, CA 1711609

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

Preparation Information Benchsheet

Prep Run#: 287576 **Prep WorkFlow:** OrgExtDioxAq-30 **Status:** Prepped
Team: Semivoa GCMS/ALOPEZ **Prep Method:** Method Sep Funnel/Jar **Prep Date/Time:** 5/10/17 10:00 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1700435-001	SB01-170424	.01	8290/PCDD PCDF	5	x	Water	897mL	Clear
2	E1700457-001	GW-1378	.01	8290/PCDD PCDF	7	x	Ground Water	1044mL	Clear
3	E1700457-002	GW-1364	.01	8290/PCDD PCDF	7	x	Ground Water	1024mL	Clear
4	E1700457-003	GW-1380	.01	8290/PCDD PCDF	7	x	Ground Water	1041mL	Clear
5	E1700457-004	GW-1388	.01	8290/PCDD PCDF	7	x	Ground Water	1027mL	Clear
6	E1700457-005	GW-1369	.01	8290/PCDD PCDF	7	x	Ground Water	1034mL	Light brown
7	E1700457-006	GW-1370	.01	8290/PCDD PCDF	7	x	Ground Water	1043mL	Light brown
8	E1700465-001	M001E-R_170501	.01	8290/PCDD PCDF	7	x	Water	948mL	Off white; cloudy
9	E1700465-002	EB13_170501	.01	8290/PCDD PCDF	7	x	Water	1051mL	Clear
10	E1700468-001	DUP03_170428	.01	8290/PCDD PCDF	7	x	Water	980mL	Off white; cloudy
11	E1700468-002	M038A_170428	.01	8290/PCDD PCDF	7	x	Water	983mL	Of white; cloudy
12	E1700468-003	M038E_170428	.01	8290/PCDD PCDF	7	x	Water	1001mL	Clear
13	E1700468-004	M039A_170428	.01	8290/PCDD PCDF	7	x	Water	941mL	Clear
14	E1700468-005	EB10_170428	.01	8290/PCDD PCDF	5	x	Water	972mL	Clear
15	E1700468-006	EB11_170428	.01	8290/PCDD PCDF	5	x	Water	1054mL	Clear
16	EQ1700183-01	MB		8290A/PCDD PCDF	5	x	Liquid	1000mL	
17	EQ1700183-02	LCS		8290A/PCDD PCDF	5	x	Liquid	1000mL	
18	EQ1700183-03	DLCS		8290A/PCDD PCDF	5	x	Liquid	1000mL	
19	K1704446-002	TW 0672	.01	8290A/PCDD PCDF	7	x	Water	1069mL	Clear

Preparation Information Benchsheet

Prep Run#: 287576 **Prep WorkFlow:** OrgExtDioxAq-30 **Status:** Prepped
Team: Semivoa GCMS/ALOPEZ **Prep Method:** Method **Prep Date/Time:** 5/10/17 10:00 AM

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

EQ1700183-02	100.00µL	EQ1700183-02	100.00µL	EQ1700183-03	100.00µL	EQ1700183-03	100.00µL

Name:	1613B Labeled Working Standard	Inventory ID	181178	Logbook Ref:	181178 JG 05/10/2017	Expires On:	06/30/2017

E1700435-001	1,000.00µL	E1700457-001	1,000.00µL	E1700457-002	1,000.00µL	E1700457-003	1,000.00µL	E1700457-004	1,000.00µL	E1700457-005	1,000.00µL
E1700457-006	1,000.00µL	E1700465-001	1,000.00µL	E1700465-002	1,000.00µL	E1700468-001	1,000.00µL	E1700468-002	1,000.00µL	E1700468-003	1,000.00µL
E1700468-004	1,000.00µL	E1700468-005	1,000.00µL	E1700468-006	1,000.00µL	EQ1700183-01	1,000.00µL	EQ1700183-01	1,000.00µL	EQ1700183-02	1,000.00µL
EQ1700183-02	1,000.00µL	EQ1700183-03	1,000.00µL	EQ1700183-03	1,000.00µL	K1704446-002	1,000.00µL				

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

E1700435-001	100.00µL	E1700457-001	100.00µL	E1700457-002	100.00µL	E1700457-003	100.00µL	E1700457-004	100.00µL	E1700457-005	100.00µL
E1700457-006	100.00µL	E1700465-001	100.00µL	E1700465-002	100.00µL	E1700468-001	100.00µL	E1700468-002	100.00µL	E1700468-003	100.00µL
E1700468-004	100.00µL	E1700468-005	100.00µL	E1700468-006	100.00µL	EQ1700183-01	100.00µL	EQ1700183-01	100.00µL	EQ1700183-02	100.00µL
EQ1700183-02	100.00µL	EQ1700183-03	100.00µL	EQ1700183-03	100.00µL	K1704446-002	100.00µL				

Preparation Materials

Sensafe Free Chlorine WTR CHK	LM 3/19/15 (79756)	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%	tw 05/15/17 (181250)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	JP 1/10/16 (178535)
Sodium Hydroxide 1N NaOH	sodium hydroxide (180303)	Tridecane (n-Tridecane)	AL 3/31/17 (180309)	Silica Gel	AL 4/24/17 (180901)
sulfuric acid	CID 1/13/17 (178592)	Toluene 99.9% Minimum	JG 05/02/2017 (180306)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	5/10/17 10:00	Started:	5/12/17 13:00	Started:	5/12/17 14:00	Started:	5/15/17 09:00
Finished:	5/10/17 14:30	Finished:	5/12/17 14:00	Finished:	5/12/17 16:00	Finished:	5/15/17 14:00
By:	JGHOSH	By:	ALOPEZ	By:	ALOPEZ	By:	ALOPEZ
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: JG Date: 05/17/2017

Preparation Information Benchsheet

Prep Run#: 287576 **Prep WorkFlow:** OrgExtDioxAq-30 **Status:** Prepped
Team: Semivoa GCMS/ALOPEZ **Prep Method:** Method **Prep Date/Time:** 5/10/17 10:00 AM

Chain of Custody

Relinquished By:	_____	Date:	_____	Extracts Examined
Received By:	_____	Date:	_____	Yes No

Analytical Results

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

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 12:04
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	DUP03_170428	**Units:**	pg/L
Lab Code:	E1700468-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 02:12
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	980mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607257	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.30	3.06	5.10			1
1,2,3,7,8-PeCDD	ND	U	0.882	15.3	25.5			1
1,2,3,4,7,8-HxCDD	0.986**JK**		0.134	15.3	25.5	1.61	1.001	1
1,2,3,6,7,8-HxCDD	0.654**JK**		0.146	15.3	25.5	2.55	1.000	1
1,2,3,7,8,9-HxCDD	1.02**JK**		0.129	15.3	25.5	0.56	1.007	1
1,2,3,4,6,7,8-HpCDD	14.4**J**		0.594	15.3	25.5	0.93	1.000	1
OCDD	78.2		1.62	30.6	51.0	0.85	1.000	1
2,3,7,8-TCDF	ND	U	1.51	3.06	5.10			1
1,2,3,7,8-PeCDF	ND	U	0.392	15.3	25.5			1
2,3,4,7,8-PeCDF	1.41**J**		0.386	15.3	25.5	1.33	1.001	1
1,2,3,4,7,8-HxCDF	1.17**JK**		0.245	15.3	25.5	1.47	1.000	1
1,2,3,6,7,8-HxCDF	1.11**J**		0.205	15.3	25.5	1.26	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.284	15.3	25.5			1
2,3,4,6,7,8-HxCDF	2.07**J**		0.319	15.3	25.5	1.12	1.000	1
1,2,3,4,6,7,8-HpCDF	4.75**J**		0.0898	15.3	25.5	1.18	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.106	15.3	25.5			1
OCDF	7.42**J**		1.27	30.6	51.0	0.92	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 12:04
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	DUP03_170428	**Units:**	pg/L
Lab Code:	E1700468-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 02:12
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	980mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607257	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	2.30	15.3	15.3			1
Total Penta-Dioxins	ND	U	0.882	15.3	25.5			1
Total Hexa-Dioxins	3.42**J**		0.136	45.9	45.9	1.12		1
Total Hepta-Dioxins	36.8		0.594	15.3	25.5	1.06		1
Total Tetra-Furans	4.55**J**		1.51	15.3	15.3	0.85		1
Total Penta-Furans	5.27**J**		0.389	30.6	30.6	1.66		1
Total Hexa-Furans	3.18**J**		0.256	61.2	61.2	1.26		1
Total Hepta-Furans	4.75**J**		0.0970	30.6	30.6	1.18		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 12:04
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	DUP03_170428	**Units:**	Percent
Lab Code:	E1700468-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 02:12
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	980mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607257	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

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	395.940	20	**Y**	40-135	0.81	1.027
13C-1,2,3,7,8-PeCDD	2000	717.187	36	**Y**	40-135	1.59	1.228
13C-1,2,3,4,7,8-HxCDD	2000	787.449	39	**Y**	40-135	1.32	0.991
13C-1,2,3,6,7,8-HxCDD	2000	774.827	39	**Y**	40-135	1.20	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	751.487	38	**Y**	40-135	1.05	1.069
13C-OCDD	4000	1267.259	32	**Y**	40-135	0.90	1.139
13C-2,3,7,8-TCDF	2000	535.381	27	**Y**	40-135	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	876.606	44		40-135	1.57	1.178
13C-2,3,4,7,8-PeCDF	2000	860.311	43		40-135	1.59	1.216
13C-1,2,3,4,7,8-HxCDF	2000	899.819	45		40-135	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	966.366	48		40-135	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	810.721	41		40-135	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	662.148	33	**Y**	40-135	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	822.355	41		40-135	0.45	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	803.846	40		40-135	0.44	1.081
37Cl-2,3,7,8-TCDD	800	270.114	34	**Y**	40-135	NA	1.028

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 12:04
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	DUP03_170428	**Units:**	pg/L
Lab Code:	E1700468-001	**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	2.30	5.10	1	1	
1,2,3,7,8-PeCDD	ND	0.882	25.5	1	1	
1,2,3,4,7,8-HxCDD	**0.986**	0.134	25.5	1	0.1	0.0986
1,2,3,6,7,8-HxCDD	**0.654**	0.146	25.5	1	0.1	0.0654
1,2,3,7,8,9-HxCDD	**1.02**	0.129	25.5	1	0.1	0.102
1,2,3,4,6,7,8-HpCDD	**14.4**	0.594	25.5	1	0.01	0.144
OCDD	**78.2**	1.62	51.0	1	0.0003	0.0235
2,3,7,8-TCDF	ND	1.51	5.10	1	0.1	
1,2,3,7,8-PeCDF	ND	0.392	25.5	1	0.03	
2,3,4,7,8-PeCDF	**1.41**	0.386	25.5	1	0.3	0.423
1,2,3,4,7,8-HxCDF	**1.17**	0.245	25.5	1	0.1	0.117
1,2,3,6,7,8-HxCDF	**1.11**	0.205	25.5	1	0.1	0.111
1,2,3,7,8,9-HxCDF	ND	0.284	25.5	1	0.1	
2,3,4,6,7,8-HxCDF	**2.07**	0.319	25.5	1	0.1	0.207
1,2,3,4,6,7,8-HpCDF	**4.75**	0.0898	25.5	1	0.01	0.0475
1,2,3,4,7,8,9-HpCDF	ND	0.106	25.5	1	0.01	
OCDF	**7.42**	1.27	51.0	1	0.0003	0.00223
		Total TEQ				1.34

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 11:59
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M038A_170428	**Units:**	pg/L
Lab Code:	E1700468-002	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 03:01
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	983mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607258	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.22	3.05	5.09			1
1,2,3,7,8-PeCDD	0.969**J**		0.581	15.3	25.4	1.32	1.001	1
1,2,3,4,7,8-HxCDD	ND	U	0.321	15.3	25.4			1
1,2,3,6,7,8-HxCDD	ND	U	0.342	15.3	25.4			1
1,2,3,7,8,9-HxCDD	1.20**J**		0.305	15.3	25.4	1.15	1.007	1
1,2,3,4,6,7,8-HpCDD	10.9**J**		0.307	15.3	25.4	1.01	1.000	1
OCDD	71.2		1.75	30.5	50.9	0.85	1.000	1
2,3,7,8-TCDF	ND	U	0.732	3.05	5.09			1
1,2,3,7,8-PeCDF	ND	U	0.653	15.3	25.4			1
2,3,4,7,8-PeCDF	ND	U	0.640	15.3	25.4			1
1,2,3,4,7,8-HxCDF	0.775**JK**		0.376	15.3	25.4	0.82	1.000	1
1,2,3,6,7,8-HxCDF	0.644**JK**		0.316	15.3	25.4	0.79	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.435	15.3	25.4			1
2,3,4,6,7,8-HxCDF	0.894**J**		0.497	15.3	25.4	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	3.97**JK**		0.0875	15.3	25.4	1.39	1.000	1
1,2,3,4,7,8,9-HpCDF	0.740**J**		0.0957	15.3	25.4	0.96	1.001	1
OCDF	6.37**J**		1.29	30.5	50.9	0.77	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 11:59
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M038A_170428	**Units:**	pg/L
Lab Code:	E1700468-002	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 03:01
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	983mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607258	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	1.22	15.3	15.3			1
Total Penta-Dioxins	ND	U	0.581	15.3	25.4			1
Total Hexa-Dioxins	3.15**J**		0.322	45.8	45.8	1.21		1
Total Hepta-Dioxins	34.0		0.307	15.3	25.4	1.01		1
Total Tetra-Furans	8.33**J**		0.732	15.3	15.3	0.82		1
Total Penta-Furans	2.74**J**		0.647	30.5	30.5	1.69		1
Total Hexa-Furans	5.97**J**		0.395	61.0	61.0	1.17		1
Total Hepta-Furans	5.07**J**		0.0916	30.5	30.5	0.95		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 11:59
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M038A_170428	**Units:**	Percent
Lab Code:	E1700468-002	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 03:01
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	983mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607258	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

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	520.986	26	**Y**	40-135	0.79	1.026
13C-1,2,3,7,8-PeCDD	2000	831.636	42		40-135	1.58	1.228
13C-1,2,3,4,7,8-HxCDD	2000	833.698	42		40-135	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	820.520	41		40-135	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	757.934	38	**Y**	40-135	1.05	1.070
13C-OCDD	4000	1141.482	29	**Y**	40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	728.586	36	**Y**	40-135	0.80	0.988
13C-1,2,3,7,8-PeCDF	2000	1042.424	52		40-135	1.56	1.177
13C-2,3,4,7,8-PeCDF	2000	1018.946	51		40-135	1.59	1.215
13C-1,2,3,4,7,8-HxCDF	2000	975.765	49		40-135	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1027.715	51		40-135	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	893.967	45		40-135	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	731.026	37	**Y**	40-135	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	802.328	40		40-135	0.45	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	829.200	41		40-135	0.45	1.081
37Cl-2,3,7,8-TCDD	800	339.070	42		40-135	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 11:59
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M038A_170428	**Units:**	pg/L
Lab Code:	E1700468-002	**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	1.22	5.09	1	1	
1,2,3,7,8-PeCDD	**0.969**	0.581	25.4	1	1	0.969
1,2,3,4,7,8-HxCDD	ND	0.321	25.4	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.342	25.4	1	0.1	
1,2,3,7,8,9-HxCDD	**1.20**	0.305	25.4	1	0.1	0.120
1,2,3,4,6,7,8-HpCDD	**10.9**	0.307	25.4	1	0.01	0.109
OCDD	**71.2**	1.75	50.9	1	0.0003	0.0214
2,3,7,8-TCDF	ND	0.732	5.09	1	0.1	
1,2,3,7,8-PeCDF	ND	0.653	25.4	1	0.03	
2,3,4,7,8-PeCDF	ND	0.640	25.4	1	0.3	
1,2,3,4,7,8-HxCDF	**0.775**	0.376	25.4	1	0.1	0.0775
1,2,3,6,7,8-HxCDF	**0.644**	0.316	25.4	1	0.1	0.0644
1,2,3,7,8,9-HxCDF	ND	0.435	25.4	1	0.1	
2,3,4,6,7,8-HxCDF	**0.894**	0.497	25.4	1	0.1	0.0894
1,2,3,4,6,7,8-HpCDF	**3.97**	0.0875	25.4	1	0.01	0.0397
1,2,3,4,7,8,9-HpCDF	**0.740**	0.0957	25.4	1	0.01	0.00740
OCDF	**6.37**	1.29	50.9	1	0.0003	0.00191
		Total TEQ				1.50

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 10:06
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M038E_170428	**Units:**	pg/L
Lab Code:	E1700468-003	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 03:50
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1001mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607259	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.16	3.00	5.00			1
1,2,3,7,8-PeCDD	ND	U	1.41	15.0	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.203	15.0	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.217	15.0	25.0			1
1,2,3,7,8,9-HxCDD	0.845**J**		0.193	15.0	25.0	1.43	1.007	1
1,2,3,4,6,7,8-HpCDD	3.38**J**		0.176	15.0	25.0	0.99	1.000	1
OCDD	18.6**JK**		0.951	30.0	50.0	0.73	1.000	1
2,3,7,8-TCDF	ND	U	0.825	3.00	5.00			1
1,2,3,7,8-PeCDF	0.965**JK**		0.328	15.0	25.0	1.29	1.001	1
2,3,4,7,8-PeCDF	0.671**JK**		0.324	15.0	25.0	0.90	1.000	1
1,2,3,4,7,8-HxCDF	0.951**JK**		0.129	15.0	25.0	0.78	1.001	1
1,2,3,6,7,8-HxCDF	0.799**JK**		0.111	15.0	25.0	1.49	1.000	1
1,2,3,7,8,9-HxCDF	1.24**JK**		0.161	15.0	25.0	1.50	1.000	1
2,3,4,6,7,8-HxCDF	1.11**J**		0.168	15.0	25.0	1.28	1.000	1
1,2,3,4,6,7,8-HpCDF	1.24**JK**		0.137	15.0	25.0	1.59	1.000	1
1,2,3,4,7,8,9-HpCDF	0.579**JK**		0.173	15.0	25.0	0.59	1.000	1
OCDF	4.62**J**		1.13	30.0	50.0	1.02	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 10:06
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M038E_170428	**Units:**	pg/L
Lab Code:	E1700468-003	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 03:50
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1001mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607259	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	2.16	15.0	15.0			1
Total Penta-Dioxins	ND	U	1.41	15.0	25.0			1
Total Hexa-Dioxins	ND	U	0.204	45.0	45.0			1
Total Hepta-Dioxins	3.38**J**		0.176	15.0	25.0	0.99		1
Total Tetra-Furans	15.7		0.825	15.0	15.0	0.85		1
Total Penta-Furans	ND	U	0.326	30.0	30.0			1
Total Hexa-Furans	1.11**J**		0.138	60.0	60.0	1.28		1
Total Hepta-Furans	ND	U	0.153	30.0	30.0			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 10:06
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M038E_170428	**Units:**	Percent
Lab Code:	E1700468-003	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 03:50
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1001mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607259	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

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	353.588	18	**Y**	40-135	0.79	1.027
13C-1,2,3,7,8-PeCDD	2000	571.627	29	**Y**	40-135	1.62	1.228
13C-1,2,3,4,7,8-HxCDD	2000	593.461	30	**Y**	40-135	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	599.821	30	**Y**	40-135	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	551.122	28	**Y**	40-135	1.05	1.069
13C-OCDD	4000	829.676	21	**Y**	40-135	0.92	1.138
13C-2,3,7,8-TCDF	2000	481.614	24	**Y**	40-135	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	700.825	35	**Y**	40-135	1.56	1.178
13C-2,3,4,7,8-PeCDF	2000	690.524	35	**Y**	40-135	1.56	1.216
13C-1,2,3,4,7,8-HxCDF	2000	679.820	34	**Y**	40-135	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	734.837	37	**Y**	40-135	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	603.498	30	**Y**	40-135	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	515.924	26	**Y**	40-135	0.51	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	599.108	30	**Y**	40-135	0.46	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	572.546	29	**Y**	40-135	0.45	1.081
37Cl-2,3,7,8-TCDD	800	233.815	29	**Y**	40-135	NA	1.028

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 10:06
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M038E_170428	**Units:**	pg/L
Lab Code:	E1700468-003	**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	2.16	5.00	1	1	
1,2,3,7,8-PeCDD	ND	1.41	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.203	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.217	25.0	1	0.1	
1,2,3,7,8,9-HxCDD	**0.845**	0.193	25.0	1	0.1	0.0845
1,2,3,4,6,7,8-HpCDD	**3.38**	0.176	25.0	1	0.01	0.0338
OCDD	**18.6**	0.951	50.0	1	0.0003	0.00558
2,3,7,8-TCDF	ND	0.825	5.00	1	0.1	
1,2,3,7,8-PeCDF	**0.965**	0.328	25.0	1	0.03	0.0290
2,3,4,7,8-PeCDF	**0.671**	0.324	25.0	1	0.3	0.201
1,2,3,4,7,8-HxCDF	**0.951**	0.129	25.0	1	0.1	0.0951
1,2,3,6,7,8-HxCDF	**0.799**	0.111	25.0	1	0.1	0.0799
1,2,3,7,8,9-HxCDF	**1.24**	0.161	25.0	1	0.1	0.124
2,3,4,6,7,8-HxCDF	**1.11**	0.168	25.0	1	0.1	0.111
1,2,3,4,6,7,8-HpCDF	**1.24**	0.137	25.0	1	0.01	0.0124
1,2,3,4,7,8,9-HpCDF	**0.579**	0.173	25.0	1	0.01	0.00579
OCDF	**4.62**	1.13	50.0	1	0.0003	0.00139
		Total TEQ				0.783

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 10:05
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M039A_170428	**Units:**	pg/L
Lab Code:	E1700468-004	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 04:39
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	941mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607260	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.958	3.19	5.31			1
1,2,3,7,8-PeCDD	ND	U	1.09	15.9	26.6			1
1,2,3,4,7,8-HxCDD	ND	U	0.124	15.9	26.6			1
1,2,3,6,7,8-HxCDD	1.15**J**		0.134	15.9	26.6	1.06	1.000	1
1,2,3,7,8,9-HxCDD	0.670**JK**		0.118	15.9	26.6	0.43	1.007	1
1,2,3,4,6,7,8-HpCDD	16.8**J**		0.362	15.9	26.6	1.18	1.000	1
OCDD	138		1.29	31.9	53.1	0.91	1.000	1
2,3,7,8-TCDF	ND	U	1.22	3.19	5.31			1
1,2,3,7,8-PeCDF	0.753**JK**		0.505	15.9	26.6	0.83	1.001	1
2,3,4,7,8-PeCDF	ND	U	0.529	15.9	26.6			1
1,2,3,4,7,8-HxCDF	1.04**JK**		0.268	15.9	26.6	1.52	1.000	1
1,2,3,6,7,8-HxCDF	0.913**J**		0.217	15.9	26.6	1.24	1.000	1
1,2,3,7,8,9-HxCDF	0.501**JK**		0.320	15.9	26.6	3.47	1.000	1
2,3,4,6,7,8-HxCDF	0.925**JK**		0.360	15.9	26.6	1.64	1.000	1
1,2,3,4,6,7,8-HpCDF	3.86**JK**		0.322	15.9	26.6	0.68	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.376	15.9	26.6			1
OCDF	6.62**JK**		0.635	31.9	53.1	0.71	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 10:05
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M039A_170428	**Units:**	pg/L
Lab Code:	E1700468-004	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 04:39
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	941mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607260	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.958	15.9	15.9			1
Total Penta-Dioxins	ND	U	1.09	15.9	26.6			1
Total Hexa-Dioxins	1.15**J**		0.126	47.8	47.8	1.06		1
Total Hepta-Dioxins	37.0		0.362	15.9	26.6	0.92		1
Total Tetra-Furans	8.82**J**		1.22	15.9	15.9	0.70		1
Total Penta-Furans	2.37**J**		0.517	31.9	31.9	1.48		1
Total Hexa-Furans	2.96**J**		0.281	63.8	63.8	1.26		1
Total Hepta-Furans	ND	U	0.347	31.9	31.9			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 10:05
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M039A_170428	**Units:**	Percent
Lab Code:	E1700468-004	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 04:39
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	941mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607260	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

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	472.142	24	**Y**	40-135	0.79	1.027
13C-1,2,3,7,8-PeCDD	2000	743.933	37	**Y**	40-135	1.59	1.229
13C-1,2,3,4,7,8-HxCDD	2000	792.978	40		40-135	1.24	0.991
13C-1,2,3,6,7,8-HxCDD	2000	756.454	38	**Y**	40-135	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	717.130	36	**Y**	40-135	1.06	1.069
13C-OCDD	4000	1139.661	28	**Y**	40-135	0.90	1.139
13C-2,3,7,8-TCDF	2000	629.365	31	**Y**	40-135	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	955.230	48		40-135	1.59	1.178
13C-2,3,4,7,8-PeCDF	2000	893.241	45		40-135	1.58	1.216
13C-1,2,3,4,7,8-HxCDF	2000	913.663	46		40-135	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	997.644	50		40-135	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	814.785	41		40-135	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	663.502	33	**Y**	40-135	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	790.596	40		40-135	0.44	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	774.597	39	**Y**	40-135	0.46	1.081
37Cl-2,3,7,8-TCDD	800	312.530	39	**Y**	40-135	NA	1.028

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 10:05
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	M039A_170428	**Units:**	pg/L
Lab Code:	E1700468-004	**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	0.958	5.31	1	1	
1,2,3,7,8-PeCDD	ND	1.09	26.6	1	1	
1,2,3,4,7,8-HxCDD	ND	0.124	26.6	1	0.1	
1,2,3,6,7,8-HxCDD	**1.15**	0.134	26.6	1	0.1	0.115
1,2,3,7,8,9-HxCDD	**0.670**	0.118	26.6	1	0.1	0.0670
1,2,3,4,6,7,8-HpCDD	**16.8**	0.362	26.6	1	0.01	0.168
OCDD	**138**	1.29	53.1	1	0.0003	0.0414
2,3,7,8-TCDF	ND	1.22	5.31	1	0.1	
1,2,3,7,8-PeCDF	**0.753**	0.505	26.6	1	0.03	0.0226
2,3,4,7,8-PeCDF	ND	0.529	26.6	1	0.3	
1,2,3,4,7,8-HxCDF	**1.04**	0.268	26.6	1	0.1	0.104
1,2,3,6,7,8-HxCDF	**0.913**	0.217	26.6	1	0.1	0.0913
1,2,3,7,8,9-HxCDF	**0.501**	0.320	26.6	1	0.1	0.0501
2,3,4,6,7,8-HxCDF	**0.925**	0.360	26.6	1	0.1	0.0925
1,2,3,4,6,7,8-HpCDF	**3.86**	0.322	26.6	1	0.01	0.0386
1,2,3,4,7,8,9-HpCDF	ND	0.376	26.6	1	0.01	
OCDF	**6.62**	0.635	53.1	1	0.0003	0.00199
		Total TEQ				0.792

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 14:10
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	EB10_170428	**Units:**	pg/L
Lab Code:	E1700468-005	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 10:37
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	972mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607267	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607264

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.24	3.09	5.14			1
1,2,3,7,8-PeCDD	1.45**JK**		1.28	15.4	25.7	0.51	0.999	1
1,2,3,4,7,8-HxCDD	2.23**J**		0.282	15.4	25.7	1.32	1.000	1
1,2,3,6,7,8-HxCDD	2.53**J**		0.304	15.4	25.7	1.32	1.000	1
1,2,3,7,8,9-HxCDD	3.39**J**		0.270	15.4	25.7	1.42	1.007	1
1,2,3,4,6,7,8-HpCDD	6.04**J**		0.436	15.4	25.7	1.16	1.000	1
OCDD	42.2**J**		2.24	30.9	51.4	0.95	1.000	1
2,3,7,8-TCDF	ND	U	0.816	3.09	5.14			1
1,2,3,7,8-PeCDF	1.96**JK**		0.694	15.4	25.7	1.05	1.001	1
2,3,4,7,8-PeCDF	1.44**J**		0.752	15.4	25.7	1.63	1.000	1
1,2,3,4,7,8-HxCDF	2.09**J**		0.185	15.4	25.7	1.24	1.000	1
1,2,3,6,7,8-HxCDF	1.58**JK**		0.159	15.4	25.7	0.75	1.000	1
1,2,3,7,8,9-HxCDF	2.69**JK**		0.232	15.4	25.7	1.99	1.001	1
2,3,4,6,7,8-HxCDF	1.23**JK**		0.260	15.4	25.7	3.06	1.000	1
1,2,3,4,6,7,8-HpCDF	3.26**JK**		0.518	15.4	25.7	1.31	1.000	1
1,2,3,4,7,8,9-HpCDF	2.89**J**		0.683	15.4	25.7	0.89	1.000	1
OCDF	6.71**JK**		1.57	30.9	51.4	0.49	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 14:10
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	EB10_170428	**Units:**	pg/L
Lab Code:	E1700468-005	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 10:37
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	972mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607267	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607264

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	2.24	15.4	15.4			1
Total Penta-Dioxins	ND	U	1.28	15.4	25.7			1
Total Hexa-Dioxins	8.16**J**		0.285	46.3	46.3	1.32		1
Total Hepta-Dioxins	6.04**J**		0.436	15.4	25.7	1.16		1
Total Tetra-Furans	24.7		0.816	15.4	15.4	0.70		1
Total Penta-Furans	1.44**J**		0.722	30.9	30.9	1.63		1
Total Hexa-Furans	2.09**J**		0.201	61.7	61.7	1.24		1
Total Hepta-Furans	2.89**J**		0.591	30.9	30.9	0.89		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 14:10
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	EB10_170428	**Units:**	Percent
Lab Code:	E1700468-005	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 10:37
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	972mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607267	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607264

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	180.728	9	**Y**	40-135	0.78	1.026
13C-1,2,3,7,8-PeCDD	2000	306.005	15	**Y**	40-135	1.57	1.228
13C-1,2,3,4,7,8-HxCDD	2000	312.994	16	**Y**	40-135	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	311.066	16	**Y**	40-135	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	297.402	15	**Y**	40-135	1.07	1.070
13C-OCDD	4000	462.031	12	**Y**	40-135	0.92	1.139
13C-2,3,7,8-TCDF	2000	233.830	12	**Y**	40-135	0.78	0.988
13C-1,2,3,7,8-PeCDF	2000	388.226	19	**Y**	40-135	1.60	1.177
13C-2,3,4,7,8-PeCDF	2000	354.750	18	**Y**	40-135	1.58	1.216
13C-1,2,3,4,7,8-HxCDF	2000	376.823	19	**Y**	40-135	0.55	0.969
13C-1,2,3,6,7,8-HxCDF	2000	402.958	20	**Y**	40-135	0.54	0.972
13C-1,2,3,7,8,9-HxCDF	2000	330.936	17	**Y**	40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	263.329	13	**Y**	40-135	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	344.782	17	**Y**	40-135	0.45	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	314.291	16	**Y**	40-135	0.43	1.081
37Cl-2,3,7,8-TCDD	800	117.390	15	**Y**	40-135	NA	1.028

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 14:10
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	EB10_170428	**Units:**	pg/L
Lab Code:	E1700468-005	**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	5.14	1	1	
1,2,3,7,8-PeCDD	**1.45**	1.28	25.7	1	1	1.45
1,2,3,4,7,8-HxCDD	**2.23**	0.282	25.7	1	0.1	0.223
1,2,3,6,7,8-HxCDD	**2.53**	0.304	25.7	1	0.1	0.253
1,2,3,7,8,9-HxCDD	**3.39**	0.270	25.7	1	0.1	0.339
1,2,3,4,6,7,8-HpCDD	**6.04**	0.436	25.7	1	0.01	0.0604
OCDD	**42.2**	2.24	51.4	1	0.0003	0.0127
2,3,7,8-TCDF	ND	0.816	5.14	1	0.1	
1,2,3,7,8-PeCDF	**1.96**	0.694	25.7	1	0.03	0.0588
2,3,4,7,8-PeCDF	**1.44**	0.752	25.7	1	0.3	0.432
1,2,3,4,7,8-HxCDF	**2.09**	0.185	25.7	1	0.1	0.209
1,2,3,6,7,8-HxCDF	**1.58**	0.159	25.7	1	0.1	0.158
1,2,3,7,8,9-HxCDF	**2.69**	0.232	25.7	1	0.1	0.269
2,3,4,6,7,8-HxCDF	**1.23**	0.260	25.7	1	0.1	0.123
1,2,3,4,6,7,8-HpCDF	**3.26**	0.518	25.7	1	0.01	0.0326
1,2,3,4,7,8,9-HpCDF	**2.89**	0.683	25.7	1	0.01	0.0289
OCDF	**6.71**	1.57	51.4	1	0.0003	0.00201
	Total TEQ					3.65

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 14:20
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	EB11_170428	**Units:**	pg/L
Lab Code:	E1700468-006	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 11:26
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1054mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607268	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607264

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.01	3.00	4.74			1
1,2,3,7,8-PeCDD	0.861**JK**		0.687	15.0	23.7	2.54	1.000	1
1,2,3,4,7,8-HxCDD	1.13**J**		0.0722	15.0	23.7	1.40	1.000	1
1,2,3,6,7,8-HxCDD	0.719**J**		0.0788	15.0	23.7	1.05	1.001	1
1,2,3,7,8,9-HxCDD	0.799**JK**		0.0693	15.0	23.7	1.80	1.007	1
1,2,3,4,6,7,8-HpCDD	1.26**J**		0.0769	15.0	23.7	1.01	1.000	1
OCDD	7.61**J**		0.471	30.0	47.4	0.88	1.000	1
2,3,7,8-TCDF	ND	U	0.453	3.00	4.74			1
1,2,3,7,8-PeCDF	0.380**JK**		0.241	15.0	23.7	2.80	1.001	1
2,3,4,7,8-PeCDF	ND	U	0.249	15.0	23.7			1
1,2,3,4,7,8-HxCDF	0.557**JK**		0.0446	15.0	23.7	0.77	1.000	1
1,2,3,6,7,8-HxCDF	0.552**JK**		0.0389	15.0	23.7	1.63	1.000	1
1,2,3,7,8,9-HxCDF	1.29**JK**		0.0532	15.0	23.7	1.62	1.000	1
2,3,4,6,7,8-HxCDF	1.23**J**		0.0598	15.0	23.7	1.11	1.000	1
1,2,3,4,6,7,8-HpCDF	1.09**J**		0.173	15.0	23.7	1.11	1.000	1
1,2,3,4,7,8,9-HpCDF	0.885**JK**		0.215	15.0	23.7	1.21	1.000	1
OCDF	2.39**J**		0.377	30.0	47.4	0.91	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 14:20
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	EB11_170428	**Units:**	pg/L
Lab Code:	E1700468-006	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 11:26
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1054mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607268	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607264

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	1.01	15.0	15.0			1
Total Penta-Dioxins	ND	U	0.687	15.0	23.7			1
Total Hexa-Dioxins	1.13**J**		0.0731	45.0	45.0	1.40		1
Total Hepta-Dioxins	2.44**J**		0.0769	15.0	23.7	1.07		1
Total Tetra-Furans	5.38**J**		0.453	15.0	15.0	0.66		1
Total Penta-Furans	ND	U	0.245	30.0	30.0			1
Total Hexa-Furans	1.23**J**		0.0475	60.0	60.0	1.11		1
Total Hepta-Furans	1.09**J**		0.192	30.0	30.0	1.11		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 14:20
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	EB11_170428	**Units:**	Percent
Lab Code:	E1700468-006	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 11:26
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1054mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607268	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607264

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	618.820	31	**Y**	40-135	0.80	1.027
13C-1,2,3,7,8-PeCDD	2000	1096.811	55		40-135	1.56	1.228
13C-1,2,3,4,7,8-HxCDD	2000	1131.437	57		40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1171.938	59		40-135	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1052.353	53		40-135	1.07	1.069
13C-OCDD	4000	1602.536	40		40-135	0.90	1.139
13C-2,3,7,8-TCDF	2000	828.050	41		40-135	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1374.827	69		40-135	1.58	1.178
13C-2,3,4,7,8-PeCDF	2000	1302.824	65		40-135	1.60	1.216
13C-1,2,3,4,7,8-HxCDF	2000	1386.848	69		40-135	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1428.667	71		40-135	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1198.042	60		40-135	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	967.381	48		40-135	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1200.945	60		40-135	0.45	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1121.434	56		40-135	0.45	1.081
37Cl-2,3,7,8-TCDD	800	421.329	53		40-135	NA	1.028

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	04/28/17 14:20
Sample Matrix:	Water	**Date Received:**	05/05/17 10:14
Sample Name:	EB11_170428	**Units:**	pg/L
Lab Code:	E1700468-006	**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	1.01	4.74	1	1	
1,2,3,7,8-PeCDD	**0.861**	0.687	23.7	1	1	0.861
1,2,3,4,7,8-HxCDD	**1.13**	0.0722	23.7	1	0.1	0.113
1,2,3,6,7,8-HxCDD	**0.719**	0.0788	23.7	1	0.1	0.0719
1,2,3,7,8,9-HxCDD	**0.799**	0.0693	23.7	1	0.1	0.0799
1,2,3,4,6,7,8-HpCDD	**1.26**	0.0769	23.7	1	0.01	0.0126
OCDD	**7.61**	0.471	47.4	1	0.0003	0.00228
2,3,7,8-TCDF	ND	0.453	4.74	1	0.1	
1,2,3,7,8-PeCDF	**0.380**	0.241	23.7	1	0.03	0.0114
2,3,4,7,8-PeCDF	ND	0.249	23.7	1	0.3	
1,2,3,4,7,8-HxCDF	**0.557**	0.0446	23.7	1	0.1	0.0557
1,2,3,6,7,8-HxCDF	**0.552**	0.0389	23.7	1	0.1	0.0552
1,2,3,7,8,9-HxCDF	**1.29**	0.0532	23.7	1	0.1	0.129
2,3,4,6,7,8-HxCDF	**1.23**	0.0598	23.7	1	0.1	0.123
1,2,3,4,6,7,8-HpCDF	**1.09**	0.173	23.7	1	0.01	0.0109
1,2,3,4,7,8,9-HpCDF	**0.885**	0.215	23.7	1	0.01	0.00885
OCDF	**2.39**	0.377	47.4	1	0.0003	0.000717
		Total TEQ				1.54

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ1700183-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/19/17 23:44
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607254	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.18	3.00	5.00			1
1,2,3,7,8-PeCDD	ND	U	0.678	15.0	25.0			1
1,2,3,4,7,8-HxCDD	0.768**JK**		0.126	15.0	25.0	0.83	1.000	1
1,2,3,6,7,8-HxCDD	0.990**J**		0.138	15.0	25.0	1.17	1.000	1
1,2,3,7,8,9-HxCDD	1.12**J**		0.121	15.0	25.0	1.14	1.008	1
1,2,3,4,6,7,8-HpCDD	1.10**JK**		0.336	15.0	25.0	1.45	1.000	1
OCDD	6.60**J**		0.545	30.0	50.0	0.76	1.000	1
2,3,7,8-TCDF	ND	U	0.598	3.00	5.00			1
1,2,3,7,8-PeCDF	ND	U	0.391	15.0	25.0			1
2,3,4,7,8-PeCDF	0.606**JK**		0.376	15.0	25.0	2.51	1.001	1
1,2,3,4,7,8-HxCDF	0.395**JK**		0.200	15.0	25.0	0.56	1.000	1
1,2,3,6,7,8-HxCDF	0.514**J**		0.173	15.0	25.0	1.15	1.000	1
1,2,3,7,8,9-HxCDF	1.38**J**		0.239	15.0	25.0	1.07	1.000	1
2,3,4,6,7,8-HxCDF	0.912**JK**		0.254	15.0	25.0	1.47	1.000	1
1,2,3,4,6,7,8-HpCDF	0.615**JK**		0.0740	15.0	25.0	1.45	1.000	1
1,2,3,4,7,8,9-HpCDF	0.609**JK**		0.0880	15.0	25.0	1.48	1.000	1
OCDF	2.02**JK**		0.348	30.0	50.0	1.13	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ1700183-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/19/17 23:44
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607254	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	1.18	15.0	15.0			1
Total Penta-Dioxins	ND	U	0.678	15.0	25.0			1
Total Hexa-Dioxins	2.12**J**		0.128	45.0	45.0	1.17		1
Total Hepta-Dioxins	ND	U	0.336	15.0	25.0			1
Total Tetra-Furans	ND	U	0.598	15.0	15.0			1
Total Penta-Furans	ND	U	0.384	30.0	30.0			1
Total Hexa-Furans	1.89**J**		0.212	60.0	60.0	1.15		1
Total Hepta-Furans	ND	U	0.0810	30.0	30.0			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1700183-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/19/17 23:44
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607254	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

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	514.144	26	**Y**	40-135	0.77	1.027
13C-1,2,3,7,8-PeCDD	2000	974.840	49		40-135	1.58	1.228
13C-1,2,3,4,7,8-HxCDD	2000	1109.125	55		40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1095.304	55		40-135	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1112.309	56		40-135	1.06	1.069
13C-OCDD	4000	1895.777	47		40-135	0.90	1.138
13C-2,3,7,8-TCDF	2000	672.902	34	**Y**	40-135	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	1154.445	58		40-135	1.58	1.178
13C-2,3,4,7,8-PeCDF	2000	1164.421	58		40-135	1.59	1.216
13C-1,2,3,4,7,8-HxCDF	2000	1235.844	62		40-135	0.52	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1320.420	66		40-135	0.52	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1152.330	58		40-135	0.52	1.007
13C-2,3,4,6,7,8-HxCDF	2000	965.709	48		40-135	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	1200.909	60		40-135	0.45	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1157.464	58		40-135	0.45	1.081
37Cl-2,3,7,8-TCDD	800	347.702	43		40-135	NA	1.028

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Analyzed:**	05/20/17
Sample Matrix:	Water	**Date Extracted:**	05/10/17

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:	546662

	Lab Control Sample EQ1700183-02			Duplicate Lab Control Sample EQ1700183-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	1020	1000	102	1080	1000	108	79-122	6	20
1,2,3,4,7,8-HxCDD	1030	1000	103	1060	1000	106	80-126	3	20
1,2,3,6,7,8-HxCDD	1060	1000	106	1080	1000	108	78-134	2	20
1,2,3,7,8,9-HxCDD	921	1000	92	993	1000	99	76-137	8	20
1,2,3,7,8-PeCDD	1100	1000	110	1120	1000	112	76-121	2	20
2,3,7,8-TCDD	333	200	166 *	330	200	165 *	71-125	<1	20
OCDD	2140	2000	107	2230	2000	112	81-135	4	20
1,2,3,4,6,7,8-HpCDF	1050	1000	105	1070	1000	107	81-130	2	20
1,2,3,4,7,8,9-HpCDF	1060	1000	106	1050	1000	105	77-128	<1	20
1,2,3,4,7,8-HxCDF	1020	1000	102	1060	1000	106	80-130	4	20
1,2,3,6,7,8-HxCDF	903	1000	90	917	1000	92	79-131	2	20
1,2,3,7,8,9-HxCDF	961	1000	96	981	1000	98	83-130	2	20
1,2,3,7,8-PeCDF	906	1000	91	924	1000	92	82-130	2	20
2,3,4,6,7,8-HxCDF	1030	1000	103	1050	1000	105	81-130	1	20
2,3,4,7,8-PeCDF	786	1000	79	820	1000	82	77-129	4	20
2,3,7,8-TCDF	218	200	109	216	200	108	72-138	<1	20
OCDF	2450	2000	122	2430	2000	122	66-150	<1	20

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1700183-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 05:28
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607261	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	333		1.87	3.00	5.00	0.83	1.001	1
1,2,3,7,8-PeCDD	1100		1.03	15.0	25.0	1.57	1.001	1
1,2,3,4,7,8-HxCDD	1030		0.251	15.0	25.0	1.27	1.000	1
1,2,3,6,7,8-HxCDD	1060		0.277	15.0	25.0	1.28	1.000	1
1,2,3,7,8,9-HxCDD	921		0.243	15.0	25.0	1.25	1.007	1
1,2,3,4,6,7,8-HpCDD	1020		0.266	15.0	25.0	1.05	1.000	1
OCDD	2140		8.88	30.0	50.0	0.91	1.000	1
2,3,7,8-TCDF	218		1.67	3.00	5.00	0.74	1.001	1
1,2,3,7,8-PeCDF	906		3.99	15.0	25.0	1.60	1.000	1
2,3,4,7,8-PeCDF	786		4.44	15.0	25.0	1.56	1.000	1
1,2,3,4,7,8-HxCDF	1020		0.159	15.0	25.0	1.24	1.000	1
1,2,3,6,7,8-HxCDF	903		0.140	15.0	25.0	1.23	1.000	1
1,2,3,7,8,9-HxCDF	961		0.209	15.0	25.0	1.24	1.000	1
2,3,4,6,7,8-HxCDF	1030		0.230	15.0	25.0	1.29	1.000	1
1,2,3,4,6,7,8-HpCDF	1050		2.56	15.0	25.0	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	1060		3.43	15.0	25.0	1.04	1.000	1
OCDF	2450		4.88	30.0	50.0	0.89	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1700183-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 05:28
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607261	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	333		1.87	15.0	15.0	0.83		1
Total Penta-Dioxins	1100		1.03	15.0	25.0	1.57		1
Total Hexa-Dioxins	3010		0.256	45.0	45.0	1.27		1
Total Hepta-Dioxins	1020		0.266	15.0	25.0	1.05		1
Total Tetra-Furans	219		1.67	15.0	15.0	0.86		1
Total Penta-Furans	1690		4.20	30.0	30.0	1.60		1
Total Hexa-Furans	3920		0.177	60.0	60.0	1.24		1
Total Hepta-Furans	2110		2.94	30.0	30.0	1.03		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1700183-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 05:28
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607261	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

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	318.197	16	**Y**	40-135	0.77	1.026
13C-1,2,3,7,8-PeCDD	2000	559.086	28	**Y**	40-135	1.61	1.228
13C-1,2,3,4,7,8-HxCDD	2000	576.604	29	**Y**	40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	571.776	29	**Y**	40-135	1.23	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	584.528	29	**Y**	40-135	1.05	1.070
13C-OCDD	4000	986.509	25	**Y**	40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	393.457	20	**Y**	40-135	0.77	0.988
13C-1,2,3,7,8-PeCDF	2000	731.145	37	**Y**	40-135	1.58	1.178
13C-2,3,4,7,8-PeCDF	2000	652.375	33	**Y**	40-135	1.57	1.216
13C-1,2,3,4,7,8-HxCDF	2000	705.003	35	**Y**	40-135	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	755.710	38	**Y**	40-135	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	605.017	30	**Y**	40-135	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	467.796	23	**Y**	40-135	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	689.053	34	**Y**	40-135	0.44	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	622.560	31	**Y**	40-135	0.43	1.081
37Cl-2,3,7,8-TCDD	800	216.639	27	**Y**	40-135	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1700183-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 06:17
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607262	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	330		2.74	3.00	5.00	0.76	1.001	1
1,2,3,7,8-PeCDD	1120		0.980	15.0	25.0	1.54	1.001	1
1,2,3,4,7,8-HxCDD	1060		0.192	15.0	25.0	1.25	1.000	1
1,2,3,6,7,8-HxCDD	1080		0.208	15.0	25.0	1.28	1.000	1
1,2,3,7,8,9-HxCDD	993		0.184	15.0	25.0	1.24	1.007	1
1,2,3,4,6,7,8-HpCDD	1080		0.238	15.0	25.0	1.05	1.000	1
OCDD	2230		6.36	30.0	50.0	0.91	1.000	1
2,3,7,8-TCDF	216		0.522	3.00	5.00	0.82	1.001	1
1,2,3,7,8-PeCDF	924		1.17	15.0	25.0	1.53	1.001	1
2,3,4,7,8-PeCDF	820		1.06	15.0	25.0	1.57	1.001	1
1,2,3,4,7,8-HxCDF	1060		0.113	15.0	25.0	1.19	1.000	1
1,2,3,6,7,8-HxCDF	917		0.0940	15.0	25.0	1.24	1.000	1
1,2,3,7,8,9-HxCDF	981		0.121	15.0	25.0	1.24	1.000	1
2,3,4,6,7,8-HxCDF	1050		0.129	15.0	25.0	1.26	1.000	1
1,2,3,4,6,7,8-HpCDF	1070		2.21	15.0	25.0	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	1050		2.66	15.0	25.0	1.00	1.000	1
OCDF	2430		3.60	30.0	50.0	0.89	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1700183-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 06:17
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607262	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

Native Analyte Results

Analyte Name	Result	Q	EDL	LOD	LOQ	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	330		2.74	15.0	15.0	0.76		1
Total Penta-Dioxins	1120		0.980	15.0	25.0	1.54		1
Total Hexa-Dioxins	3130		0.194	45.0	45.0	1.25		1
Total Hepta-Dioxins	1080		0.238	15.0	25.0	1.05		1
Total Tetra-Furans	232		0.522	15.0	15.0	0.82		1
Total Penta-Furans	1760		1.11	30.0	30.0	1.40		1
Total Hexa-Furans	4000		0.112	60.0	60.0	1.19		1
Total Hepta-Furans	2120		2.41	30.0	30.0	1.05		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	BC Laboratories, Incorporated	**Service Request:**	E1700468
Project:	Naval Base Ventura County, CA 1711509	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1700183-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	8290	**Date Analyzed:**	05/20/17 06:17
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	5/10/17
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P607262	**Blank File Name:**	P607254
ICAL Date:	05/16/17	**Cal Ver. File Name:**	P607251

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	301.260	15	**Y**	40-135	0.79	1.027
13C-1,2,3,7,8-PeCDD	2000	710.458	36	**Y**	40-135	1.57	1.228
13C-1,2,3,4,7,8-HxCDD	2000	729.575	36	**Y**	40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	761.635	38	**Y**	40-135	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	751.452	38	**Y**	40-135	1.07	1.069
13C-OCDD	4000	1305.758	33	**Y**	40-135	0.91	1.138
13C-2,3,7,8-TCDF	2000	392.834	20	**Y**	40-135	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	804.778	40		40-135	1.59	1.178
13C-2,3,4,7,8-PeCDF	2000	867.504	43		40-135	1.58	1.216
13C-1,2,3,4,7,8-HxCDF	2000	814.734	41		40-135	0.54	0.969
13C-1,2,3,6,7,8-HxCDF	2000	873.696	44		40-135	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	786.680	39	**Y**	40-135	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	657.103	33	**Y**	40-135	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	839.361	42		40-135	0.45	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	806.447	40		40-135	0.44	1.081
37Cl-2,3,7,8-TCDD	800	229.407	29	**Y**	40-135	NA	1.028

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.
DUP03_170428

Run #12 Filename P607257 Samp: 1 Inj: 1 Acquired: 20-MAY-17 02:12:11
Processed: 22-MAY-17 15:26:31 Sample ID: E1700468-001

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	1.020
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:42	4.995e+01	3.742e+01	1.33	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:32	4.792e+01	3.251e+01	1.47	no	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:38	4.720e+01	3.744e+01	1.26	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:11	5.118e+01	4.579e+01	1.12	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	yes	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:15	1.373e+02	1.168e+02	1.18	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.341
10	Unk	OCDF	40:47	1.040e+02	1.131e+02	0.92	yes	no	1.337
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.055
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	yes	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:21	2.789e+01	1.737e+01	1.61	no	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:25	2.770e+01	1.087e+01	2.55	no	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:39	2.343e+01	4.150e+01	0.56	no	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:08	2.423e+02	2.595e+02	0.93	yes	no	1.048
17	Unk	OCDD	40:37	8.793e+02	1.037e+03	0.85	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:46	3.071e+04	3.921e+04	0.78	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:41	7.724e+04	4.907e+04	1.57	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:41	7.629e+04	4.803e+04	1.59	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:32	3.485e+04	6.629e+04	0.53	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:39	4.506e+04	8.512e+04	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:10	2.810e+04	5.313e+04	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:56	3.056e+04	5.785e+04	0.53	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	2.437e+04	5.404e+04	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	2.104e+04	4.756e+04	0.44	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:45	1.671e+04	2.070e+04	0.81	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	31:60	4.596e+04	2.892e+04	1.59	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	4.274e+04	3.227e+04	1.32	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:25	3.994e+04	3.332e+04	1.20	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:07	3.480e+04	3.299e+04	1.05	yes	no	0.884
32	IS	13C-OCDD	40:36	4.243e+04	4.692e+04	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:03	8.482e+04	1.066e+05	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:39	1.136e+05	9.061e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:47	2.773e+04				no	1.072

$$\text{OCDD} = \frac{(8.793e{+}02 + 1.037e{+}03)\ \times\ 4000\ \text{pg}\ \times\ 1}{(4.243e{+}04 + 4.692e{+}04)\ \times\ 980\text{ml}/g\ \times\ 100\ /\ 100\ \times\ 1.120} = 78.16\ \text{pg/L}$$

um 05/23/17

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

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
DUP03_170428

Run #12 Filename P607257 Samp: 1 Inj: 1 Acquired: 20-MAY-17 02:12:11
Processed: 22-MAY-17 15:26:31 LAB. ID: E1700468-001

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	6.00e+02	*	*	2.41e+03	*
2	1,2,3,7,8-PeCDF	*	2.52e+02	*	*	1.48e+03	*
3	2,3,4,7,8-PeCDF	7.31e+03	2.52e+02	2.9e+01	7.96e+03	1.48e+03	5.4e+00
4	1,2,3,4,7,8-HxCDF	9.50e+03	9.64e+02	9.9e+00	5.89e+03	2.76e+02	2.1e+01
5	1,2,3,6,7,8-HxCDF	8.07e+03	9.64e+02	8.4e+00	8.66e+03	2.76e+02	3.1e+01
6	2,3,4,6,7,8-HxCDF	1.21e+04	9.64e+02	1.3e+01	6.16e+03	2.76e+02	2.2e+01
7	1,2,3,7,8,9-HxCDF	*	9.64e+02	*	*	2.76e+02	*
8	1,2,3,4,6,7,8-HpCDF	2.49e+04	1.20e+02	2.1e+02	2.51e+04	2.92e+02	8.6e+01
9	1,2,3,4,7,8,9-HpCDF	*	1.20e+02	*	*	2.92e+02	*
10	OCDF	2.09e+04	1.31e+03	1.6e+01	2.14e+04	1.54e+03	1.4e+01
11	2,3,7,8-TCDD	*	1.42e+03	*	*	1.37e+03	*
12	1,2,3,7,8-PeCDD	*	1.50e+03	*	*	8.16e+02	*
13	1,2,3,4,7,8-HxCDD	6.82e+03	2.04e+02	3.3e+01	3.10e+03	2.40e+02	1.3e+01
14	1,2,3,6,7,8-HxCDD	8.24e+03	2.04e+02	4.0e+01	3.33e+03	2.40e+02	1.4e+01
15	1,2,3,7,8,9-HxCDD	5.52e+03	2.04e+02	2.7e+01	7.95e+03	2.40e+02	3.3e+01
16	1,2,3,4,6,7,8-HpCDD	5.53e+04	8.04e+02	6.9e+01	5.96e+04	9.80e+02	6.1e+01
17	OCDD	1.57e+05	9.40e+02	1.7e+02	2.03e+05	2.11e+03	9.6e+01
18	13C-2,3,7,8-TCDF	4.41e+06	9.78e+03	4.5e+02	5.57e+06	5.05e+03	1.1e+03
19	13C-1,2,3,7,8-PeCDF	1.30e+07	6.60e+02	2.0e+04	8.27e+06	1.90e+03	4.4e+03
20	13C-2,3,4,7,8-PeCDF	1.38e+07	6.60e+02	2.1e+04	8.72e+06	1.90e+03	4.6e+03
21	13C-1,2,3,4,7,8-HxCDF	7.07e+06	1.36e+03	5.2e+03	1.34e+07	1.40e+03	9.6e+03
22	13C-1,2,3,6,7,8-HxCDF	8.97e+06	1.36e+03	6.6e+03	1.69e+07	1.40e+03	1.2e+04
23	13C-2,3,4,6,7,8-HxCDF	5.80e+06	1.36e+03	4.3e+03	1.11e+07	1.40e+03	7.9e+03
24	13C-1,2,3,7,8,9-HxCDF	6.35e+06	1.36e+03	4.7e+03	1.20e+07	1.40e+03	8.6e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.18e+06	3.82e+03	1.4e+03	1.15e+07	1.28e+04	9.0e+02
26	13C-1,2,3,4,7,8,9-HpCDF	4.58e+06	3.82e+03	1.2e+03	1.03e+07	1.28e+04	8.1e+02
27	13C-2,3,7,8-TCDD	2.60e+06	8.47e+03	3.1e+02	3.26e+06	4.12e+03	7.9e+02
28	13C-1,2,3,7,8-PeCDD	8.47e+06	7.64e+02	1.1e+04	5.38e+06	9.92e+02	5.4e+03
29	13C-1,2,3,4,7,8-HxCDD	8.74e+06	2.22e+03	3.9e+03	6.95e+06	1.02e+03	6.8e+03
30	13C-1,2,3,6,7,8-HxCDD	8.23e+06	2.22e+03	3.7e+03	6.67e+06	1.02e+03	6.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.46e+06	1.60e+03	4.7e+03	7.10e+06	2.72e+02	2.6e+04
32	13C-OCDD	8.12e+06	3.51e+03	2.3e+03	9.03e+06	1.37e+03	6.6e+03
33	13C-1,2,3,4-TCDD	1.27e+07	8.47e+03	1.5e+03	1.61e+07	4.12e+03	3.9e+03
34	13C-1,2,3,7,8,9-HxCDD	2.37e+07	2.22e+03	1.1e+04	1.89e+07	1.02e+03	1.8e+04
35	37Cl-2,3,7,8-TCDD	4.34e+06	1.42e+03	3.1e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.416e{+}03 + 1.368e{+}03) \times 2000}{(2.597e{+}06 + 3.255e{+}06) \times (\qquad\qquad) \times 1.055} =$$

ALS ENVIRONMENTAL
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Peak List Summary

CLIENT ID.

DUP03_170428

Entry: 36 Totals Name: Total Tetra-Furans

Run: 12 File: P607257 Sample:1 Injection:1 Function:1

Acquired: 20-MAY-17 02:12:11 Processed: 22-MAY-17 15:26:31

Mass: 303.9020 305.8990 Tot Response: 1.59e+02 RRF: 1.020

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:09	7.31e+01	8.59e+01	0.85	yes	1.59e+02	n	y

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

DUP03_170428

Entry: 38 Totals Name: Total Penta-Furans1

Run: 12 File: P607257 Sample:1 Injection:1 Function:1

Acquired: 20-MAY-17 02:12:11 Processed: 22-MAY-17 15:26:31

Mass: 339.8600 341.8570 Tot Response: 1.80e+02 RRF: 1.036

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:00	1.14e+02	6.61e+01	1.72	yes	1.80e+02	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

DUP03_170428

Entry: 39 Totals Name: Total Penta-Furans2

Run: 12 File: P607257 Sample:1 Injection:1 Function:2

Acquired: 20-MAY-17 02:12:11 Processed: 22-MAY-17 15:26:31

Mass: 339.8600 341.8570 Tot Response: 1.53e+02 RRF: 1.036

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	30:18	4.12e+01	2.48e+01	1.66	yes	6.60e+01		n	n
2	31:42	4.99e+01	3.74e+01	1.33	yes	8.74e+01	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.

DUP03_170428

Entry: 41 Totals Name: Total Hexa-Furans

Run: 12 File: P607257 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 02:12:11 Processed: 22-MAY-17 15:26:31

Mass: 373.8210 375.8180 Tot Response: 1.82e+02 RRF: 1.207

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:38	4.72e+01	3.74e+01	1.26	yes	8.46e+01	1,2,3,6,7,8-HxCDF	n	n
2	35:11	5.12e+01	4.58e+01	1.12	yes	9.70e+01	2,3,4,6,7,8-HxCDF	n	n

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Peak List Summary

CLIENT ID.

DUP03_170428

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 12 File: P607257 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 02:12:11 Processed: 22-MAY-17 15:26:31

Mass: 389.8160 391.8130 Tot Response: 1.35e+02 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:56	7.11e+01	6.36e+01	1.12	yes	1.35e+02	n	n

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Peak List Summary

CLIENT ID.

DUP03_170428

Entry: 43 Totals Name: Total Hepta-Furans

Run: 12 File: P607257 Sample:1 Injection:1 Function:4

Acquired: 20-MAY-17 02:12:11 Processed: 22-MAY-17 15:26:31

Mass: 407.7820 409.7790 Tot Response: 2.54e+02 RRF: 1.368

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:15	1.37e+02	1.17e+02	1.18	yes	2.54e+02	1,2,3,4,6,7,8-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

DUP03_170428

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 12 File: P607257 Sample:1 Injection:1 Function:4

Acquired: 20-MAY-17 02:12:11 Processed: 22-MAY-17 15:26:31

Mass: 423.7770 425.7740 Tot Response: 1.28e+03 RRF: 1.048

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:30	4.01e+02	3.77e+02	1.06	yes	7.79e+02	n	n
2	38:08	2.42e+02	2.60e+02	0.93	yes	5.02e+02 1,2,3,4,6,7,8-HpCDD	n	n

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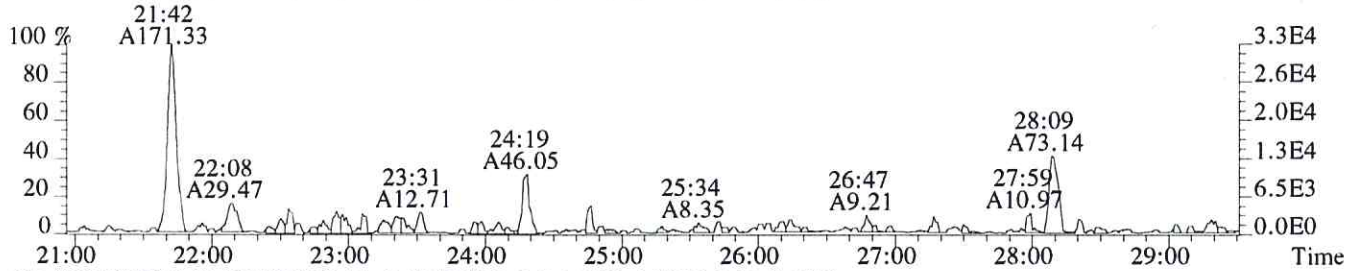
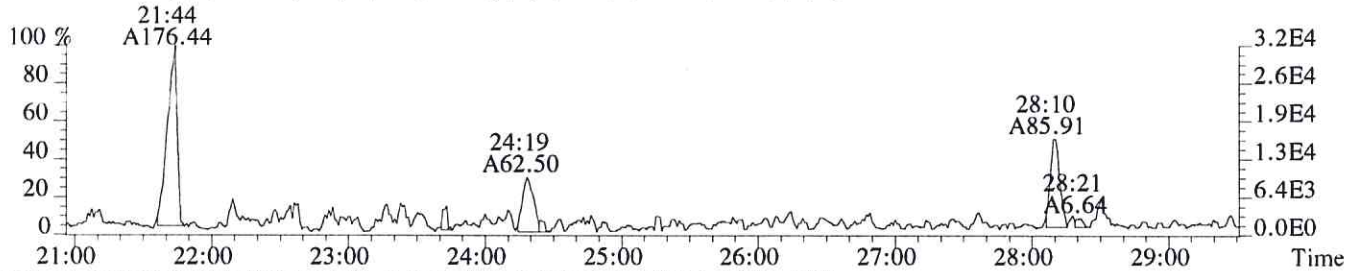
File:P607257 #1-609 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

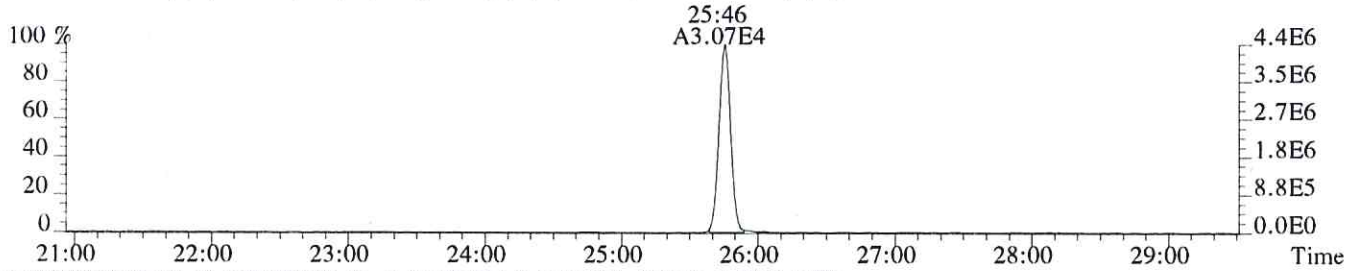
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,600.0,1.00%,F,T)



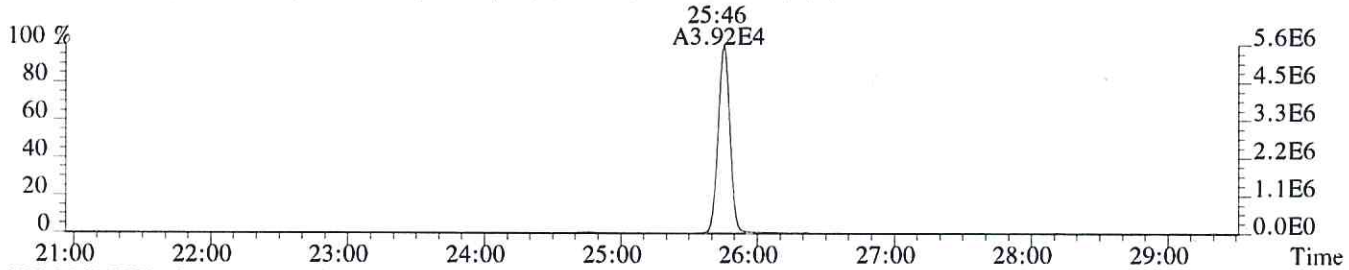
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2408.0,1.00%,F,T)



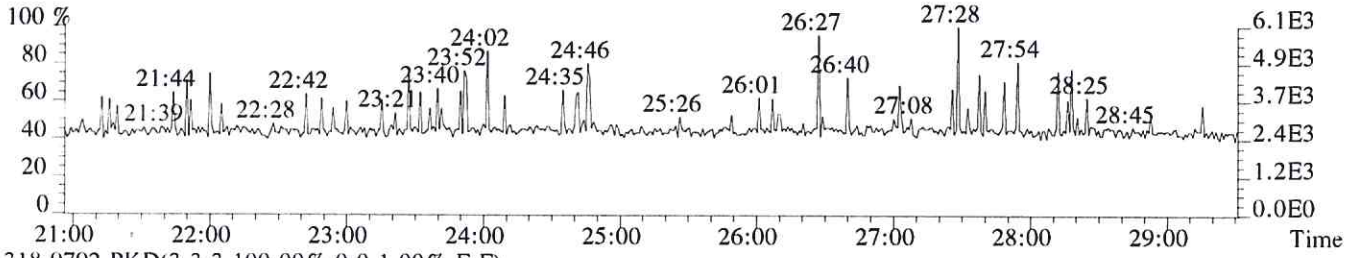
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9776.0,1.00%,F,T)



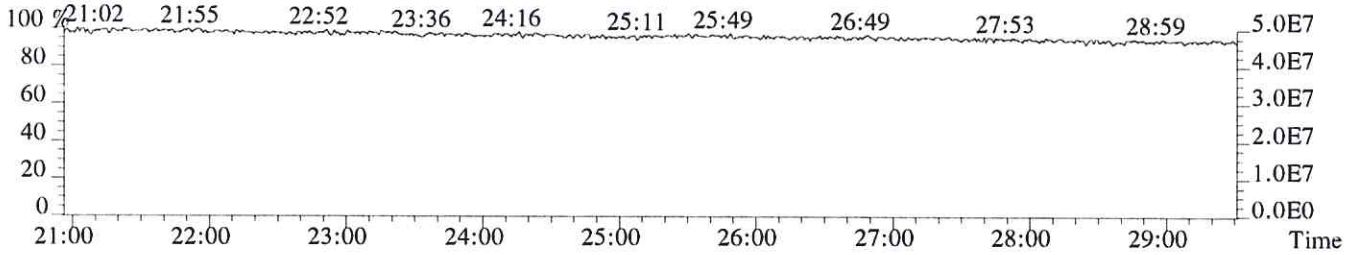
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5052.0,1.00%,F,T)



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

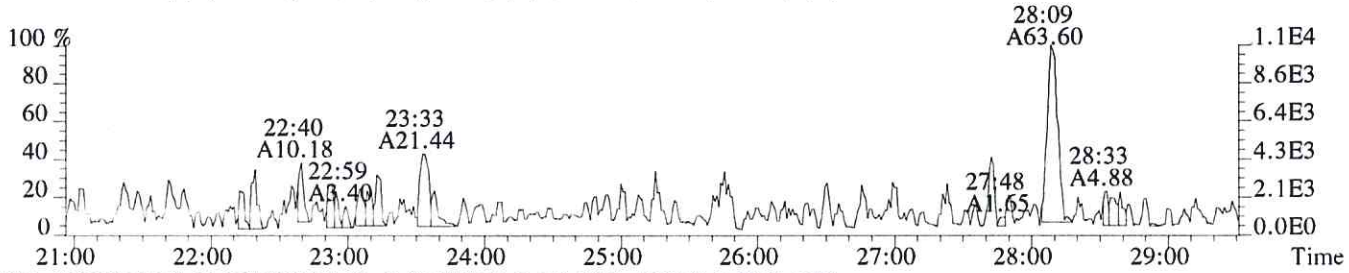


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

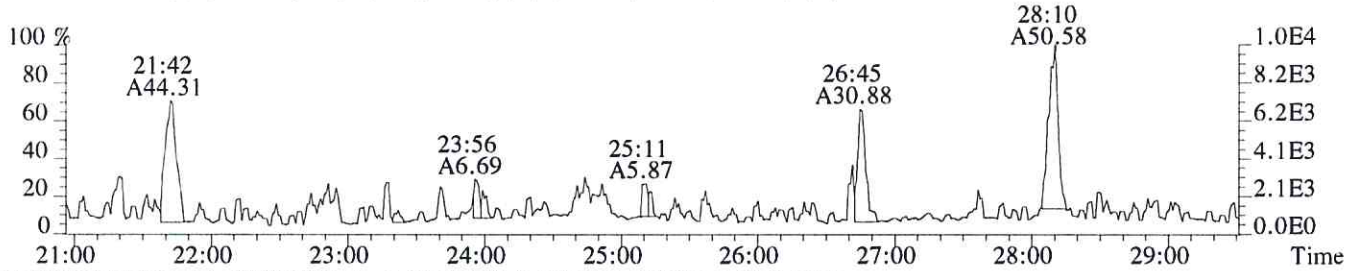


File:P607257 #1-609 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

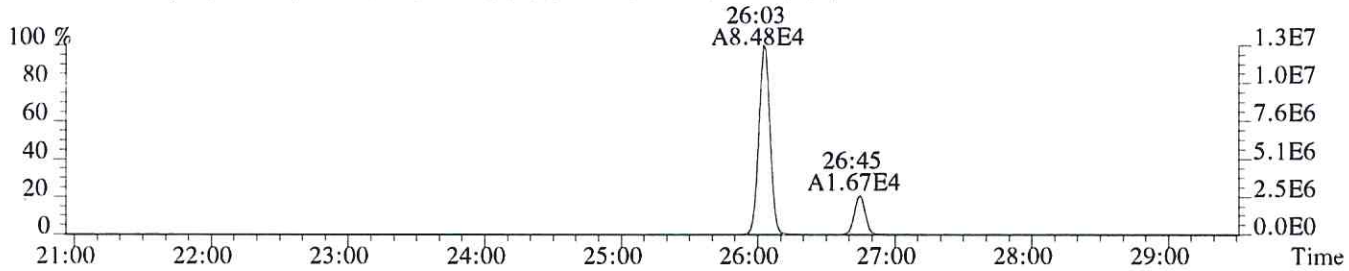
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1416.0,1.00%,F,T)



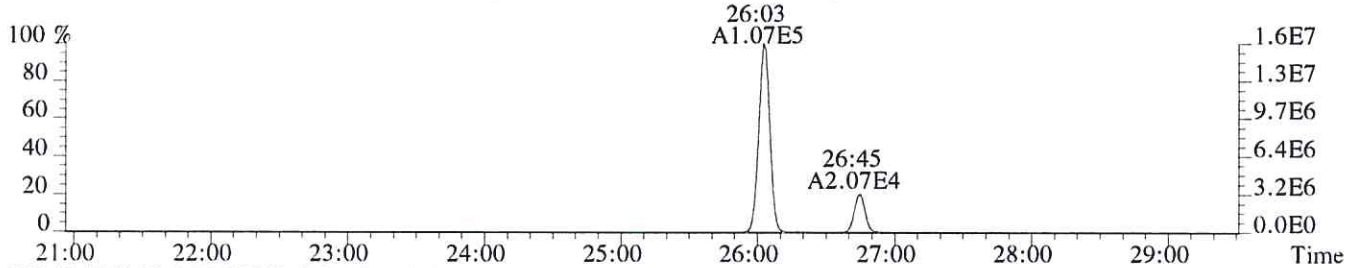
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1368.0,1.00%,F,T)



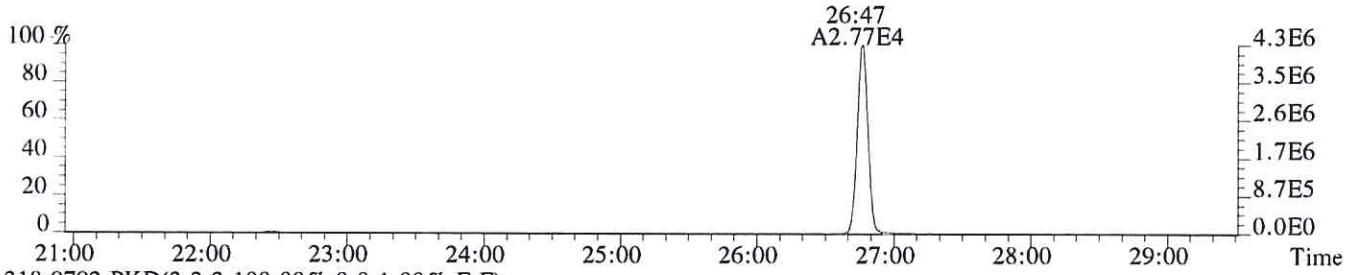
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8468.0,1.00%,F,T)



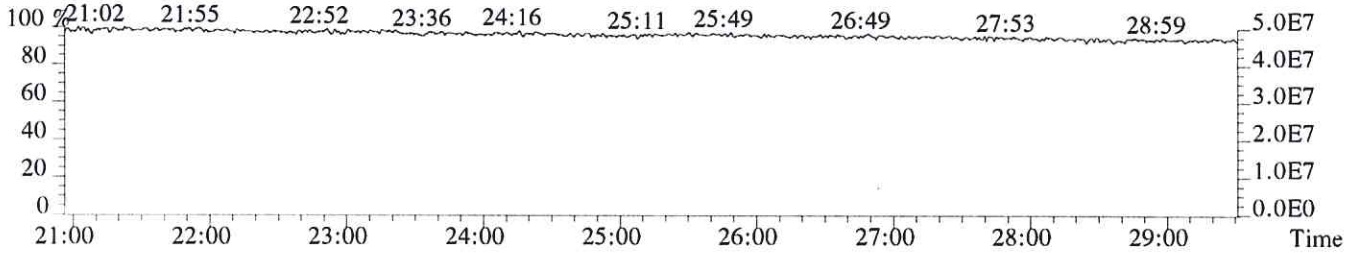
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4116.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1420.0,1.00%,F,T)

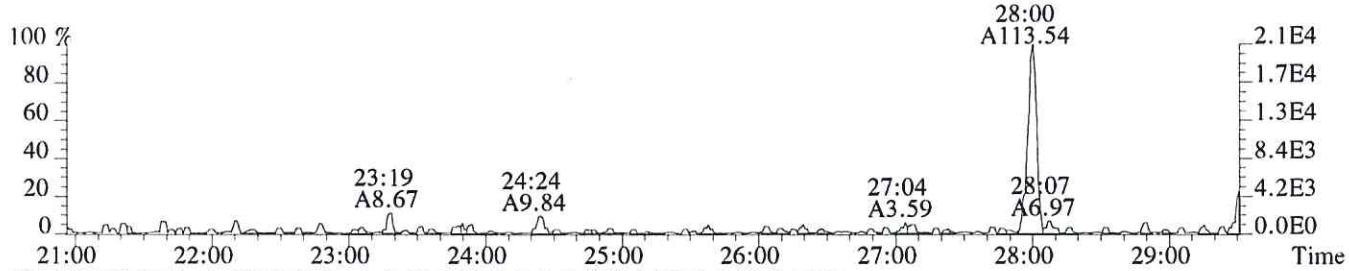


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

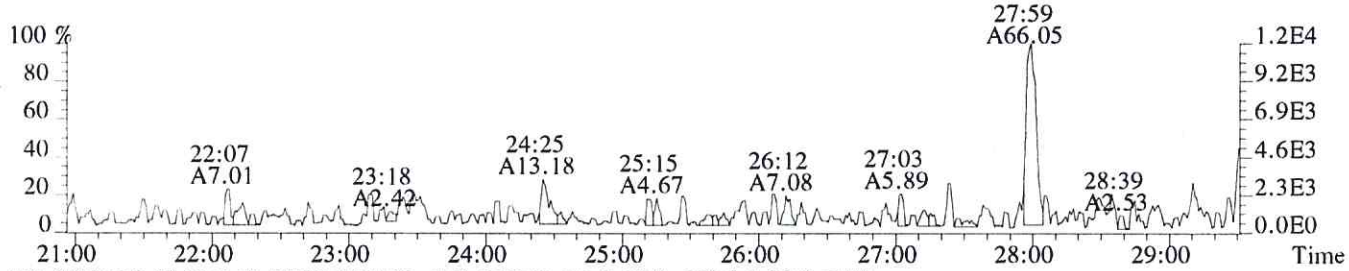


File:P607257 #1-609 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

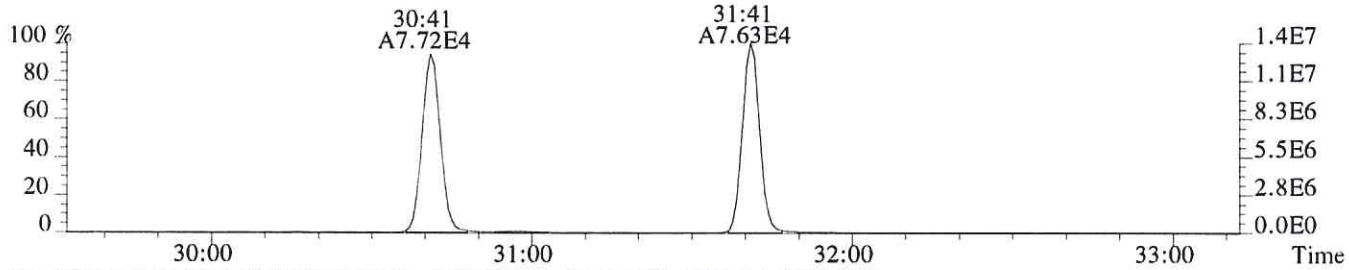
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,160.0,1.00%,F,T)



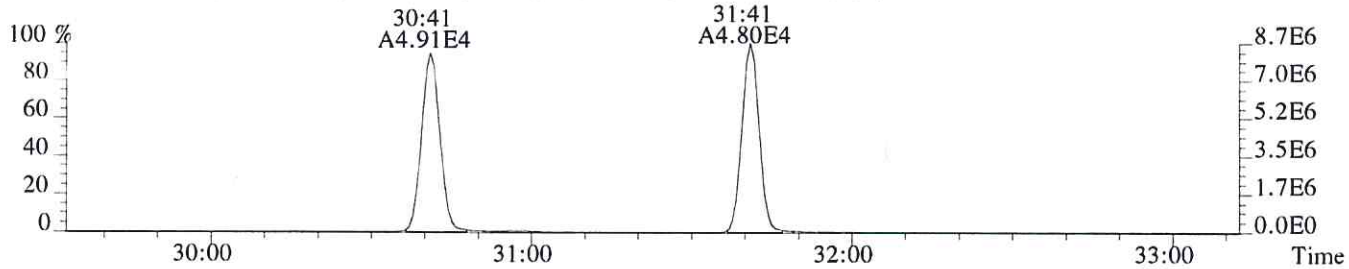
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1172.0,1.00%,F,T)



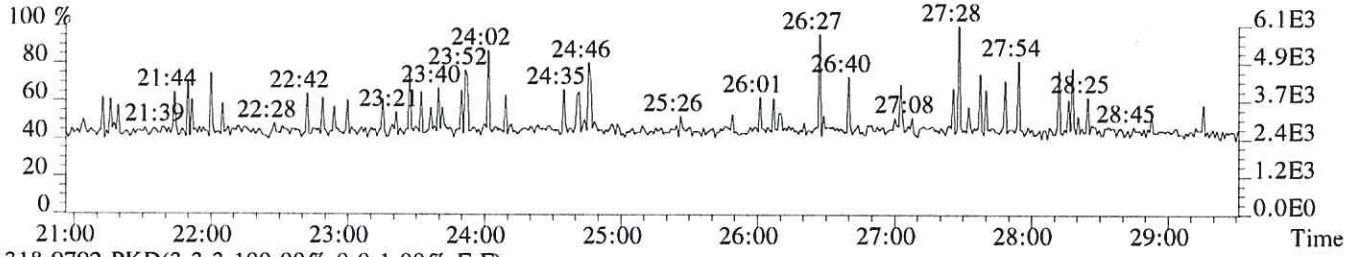
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,660.0,1.00%,F,T)



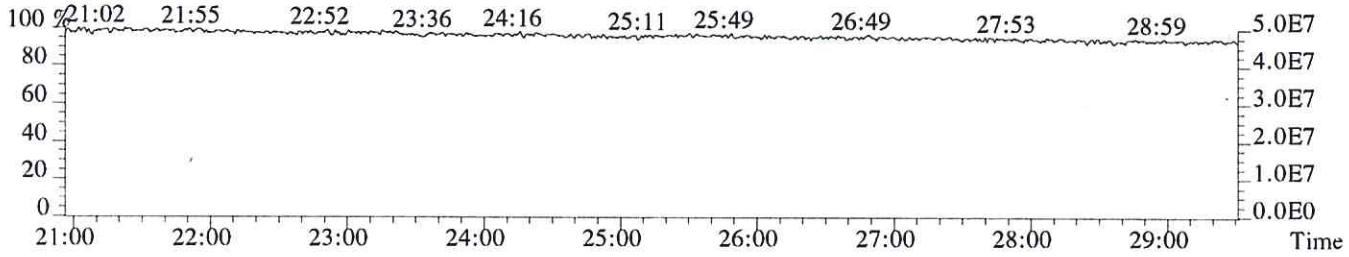
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1900.0,1.00%,F,T)



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

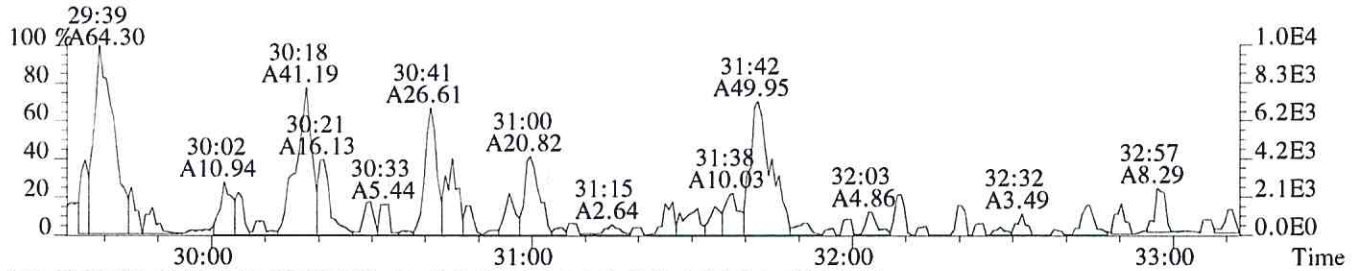


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

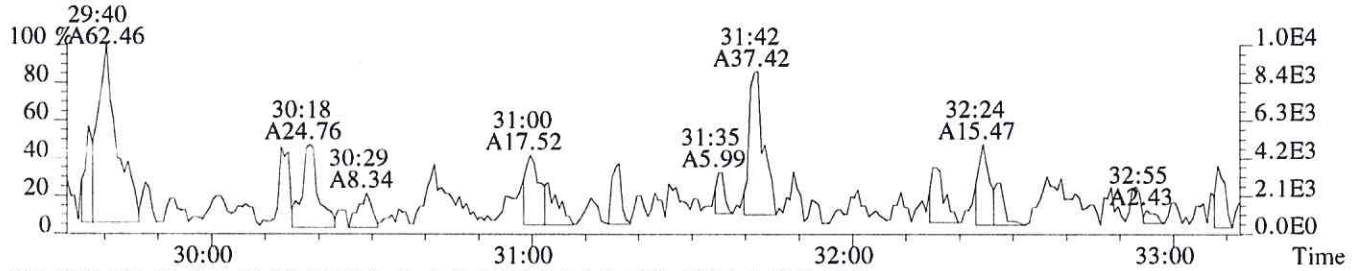


File:P607257 #1-330 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

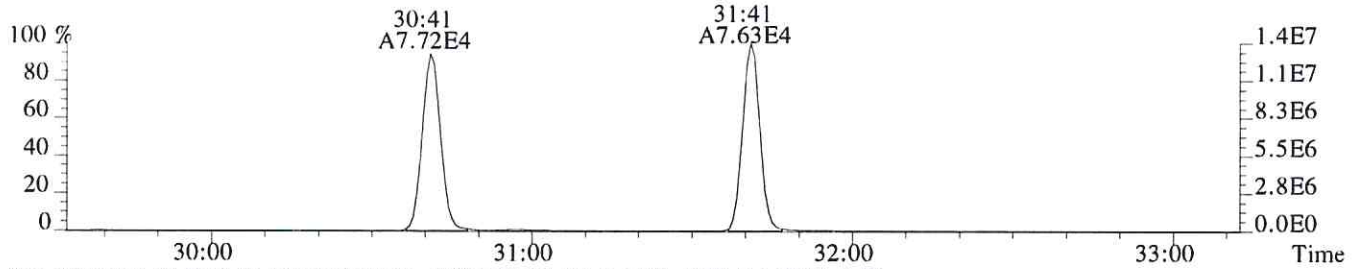
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,252.0,1.00%,F,T)



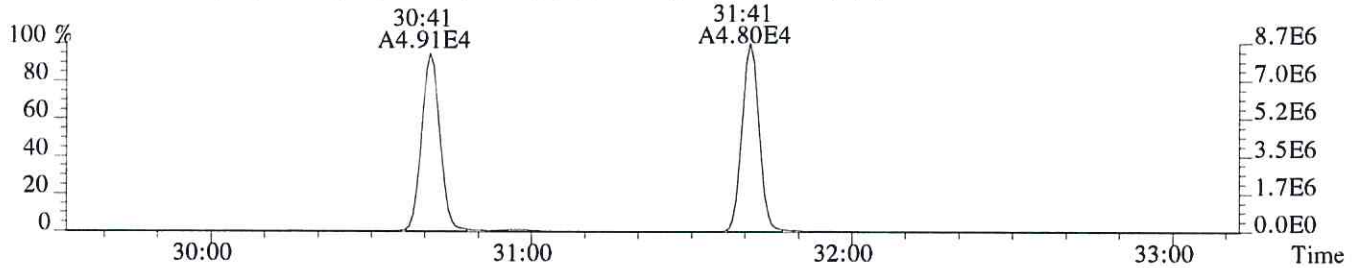
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1480.0,1.00%,F,T)



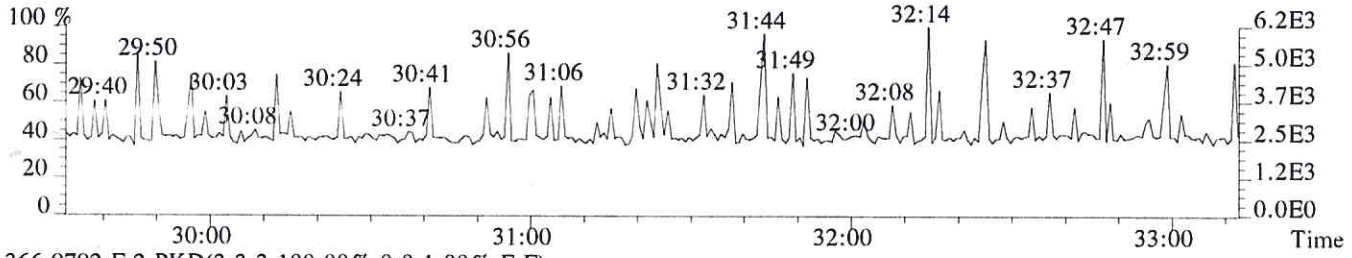
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,660.0,1.00%,F,T)



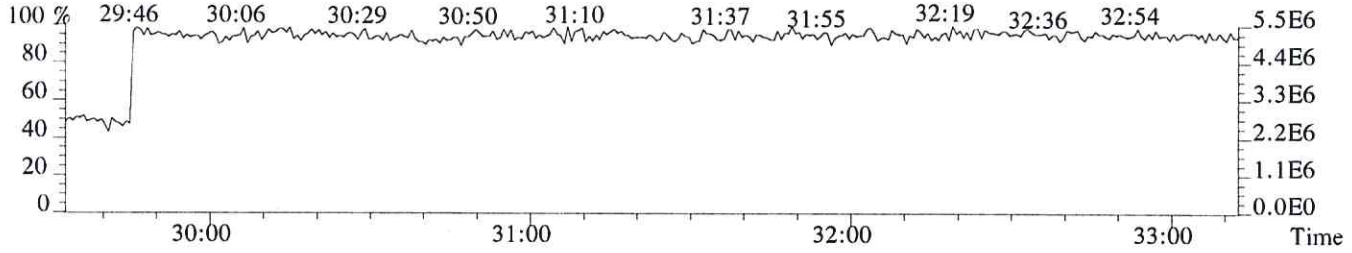
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1900.0,1.00%,F,T)



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

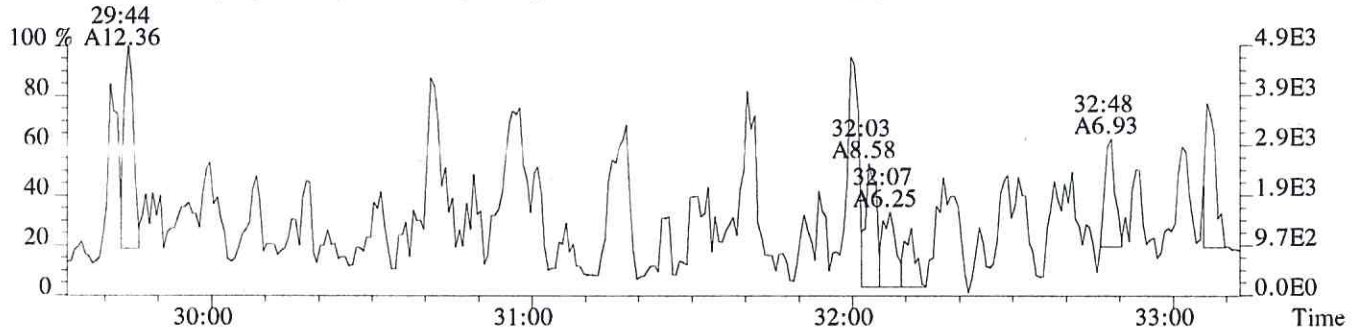


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

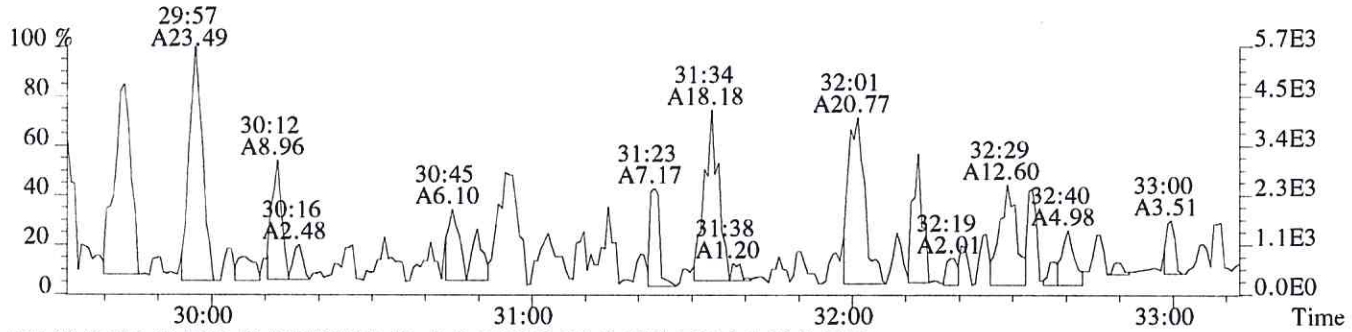


File:P607257 #1-330 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

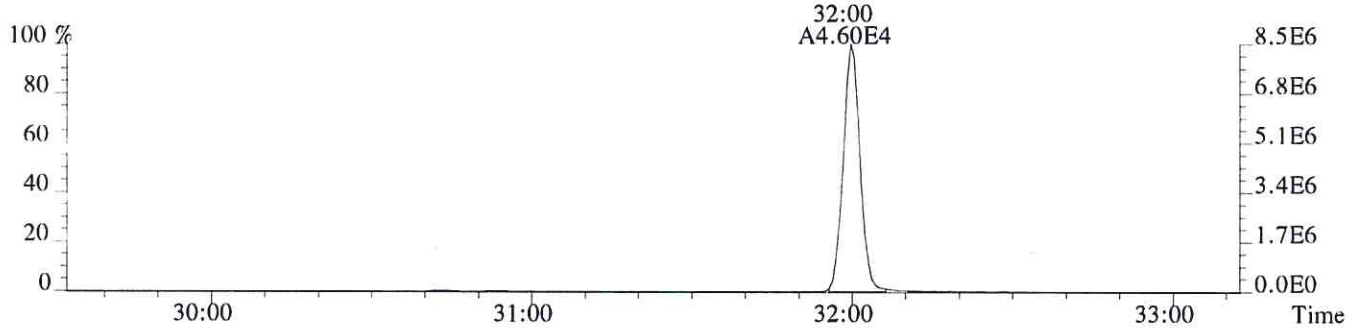
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1500.0,1.00%,F,T)



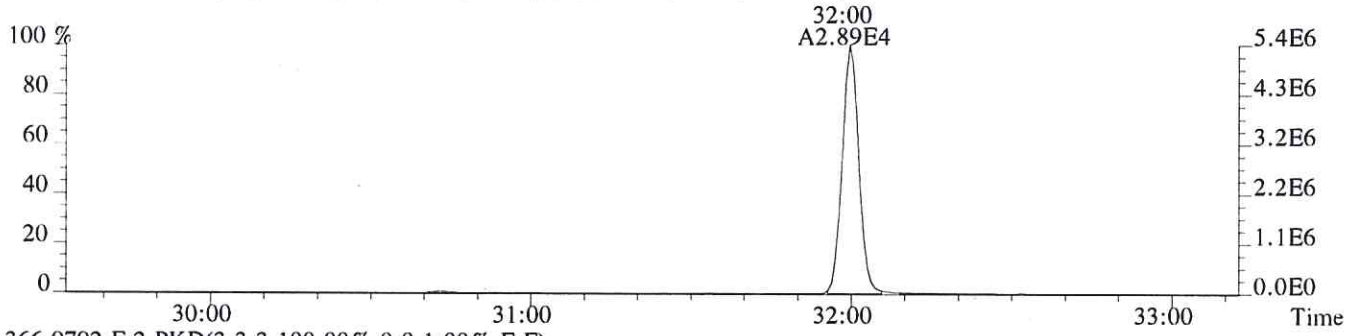
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,816.0,1.00%,F,T)



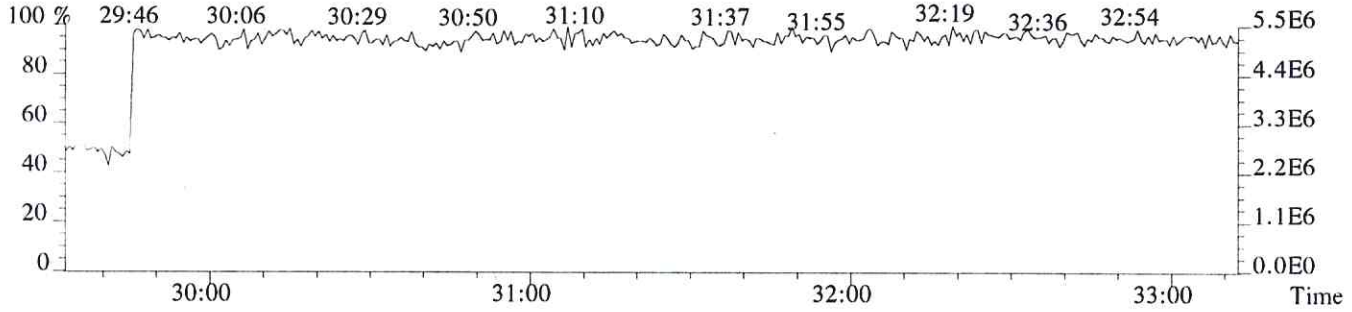
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,764.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,992.0,1.00%,F,T)

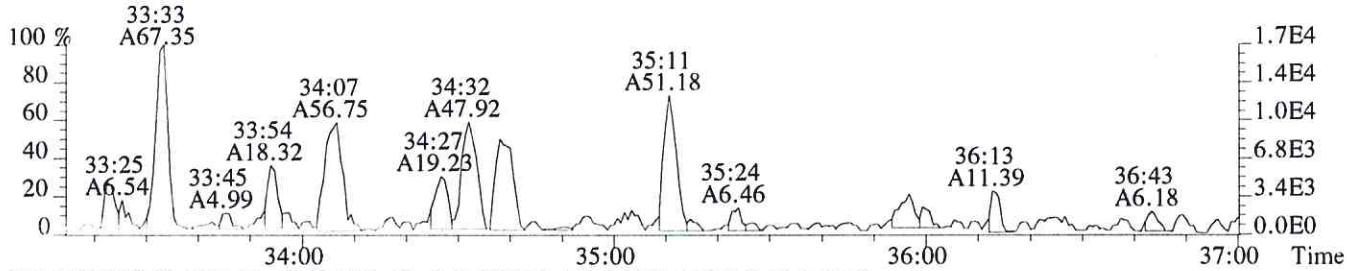


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

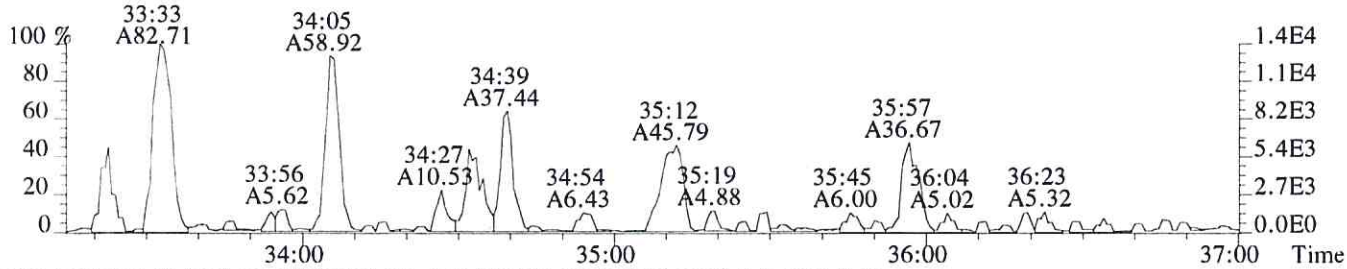


File:P607257 #1-339 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

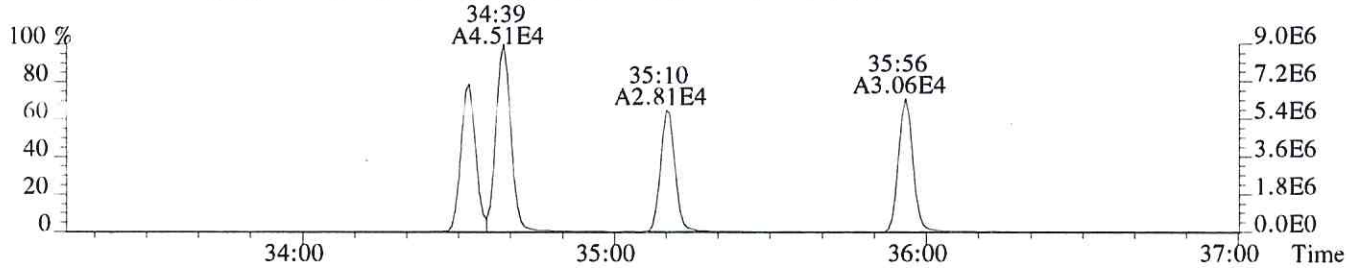
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,964.0,0.40%,F,T)



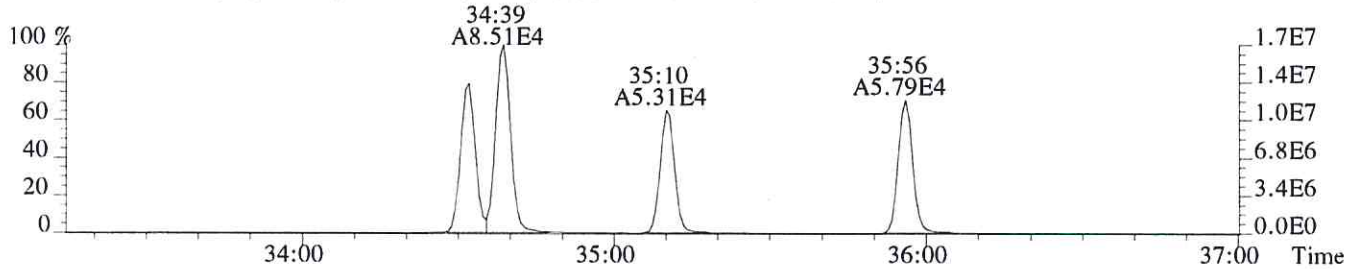
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,276.0,0.40%,F,T)



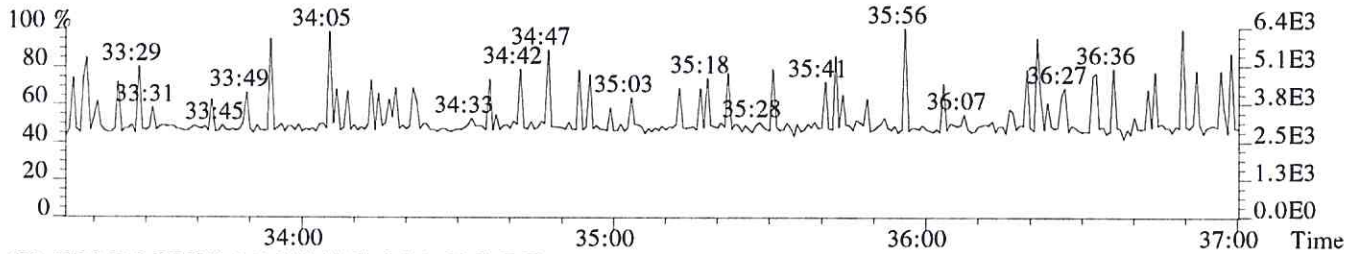
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1360.0,0.40%,F,T)



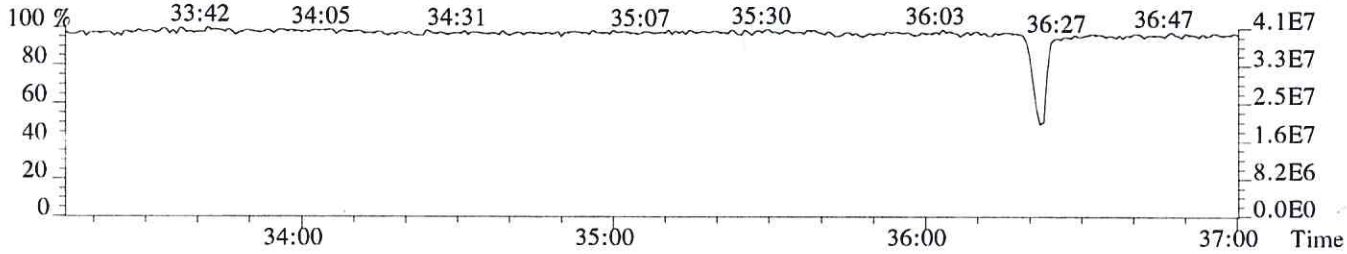
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1400.0,0.40%,F,T)



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

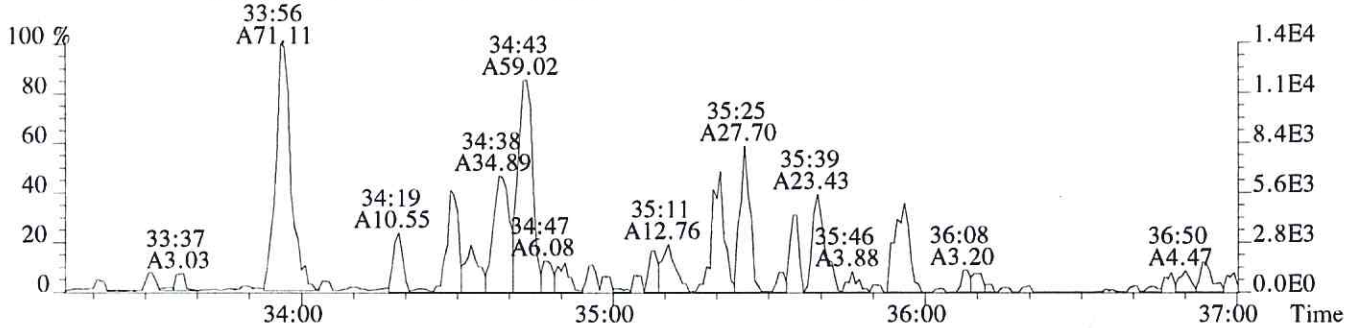


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

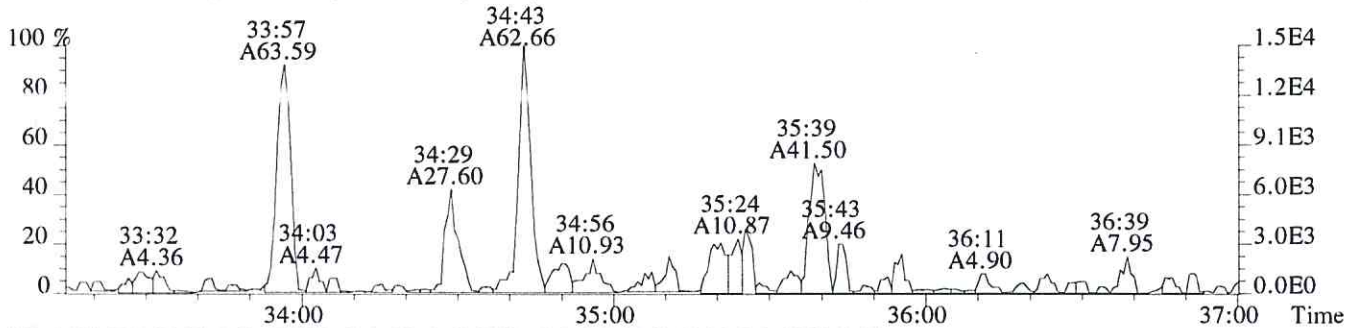


File:P607257 #1-339 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

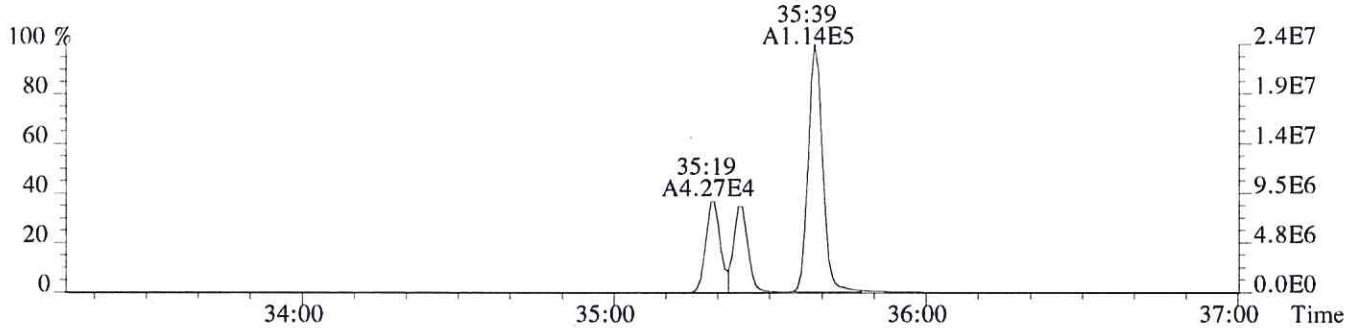
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,204.0,0.40%,F,T)



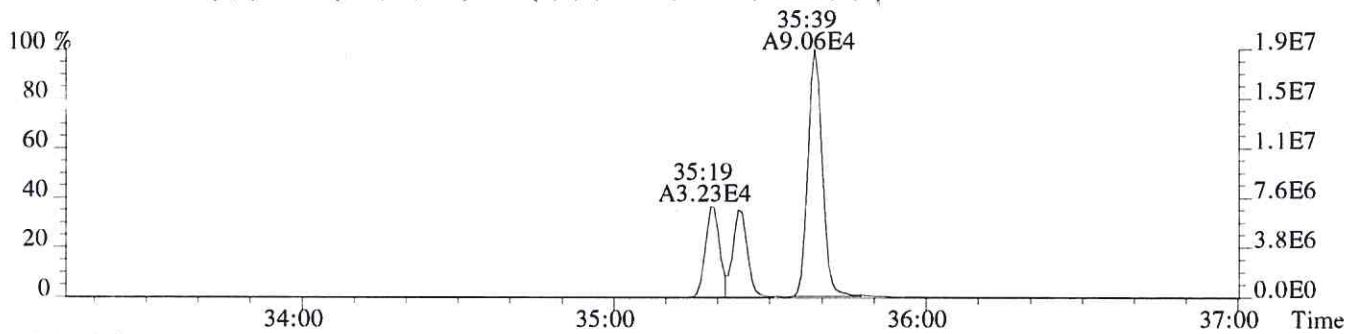
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,240.0,0.40%,F,T)



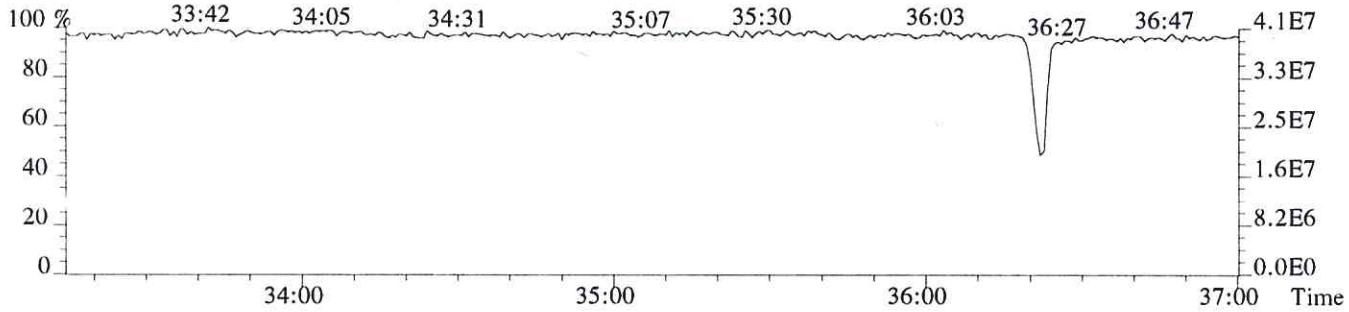
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2220.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1024.0,0.40%,F,T)

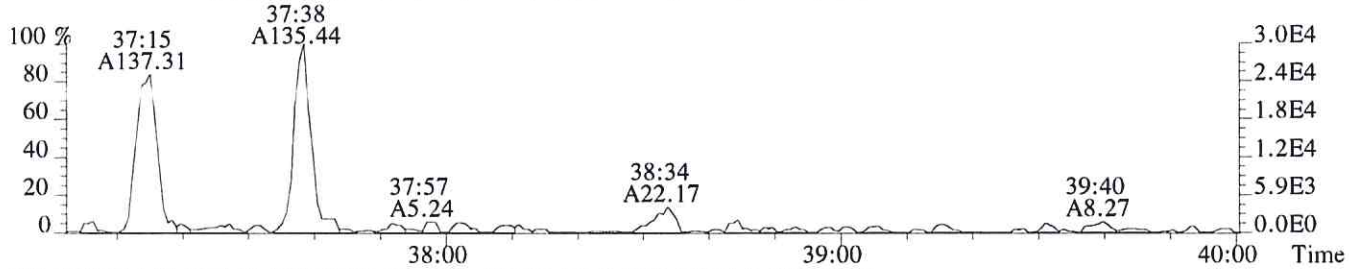


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

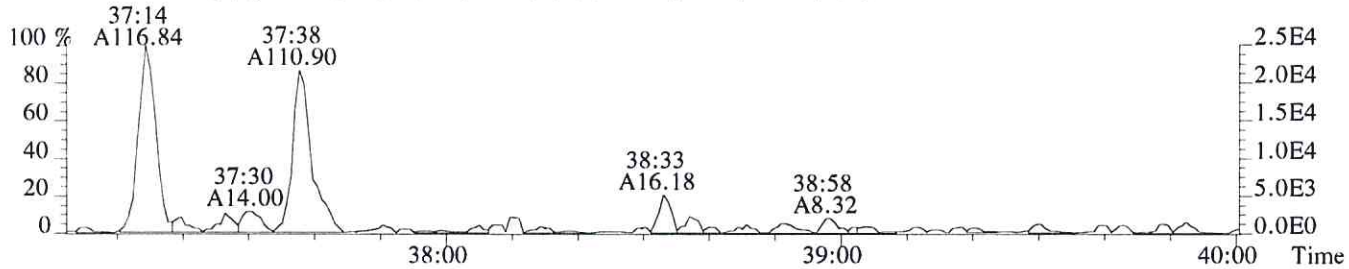


File:P607257 #1-268 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

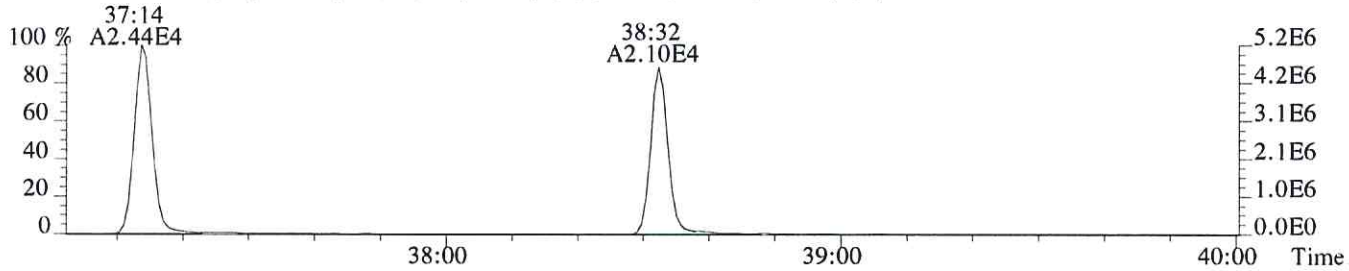
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,120.0,0.50%,F,T)



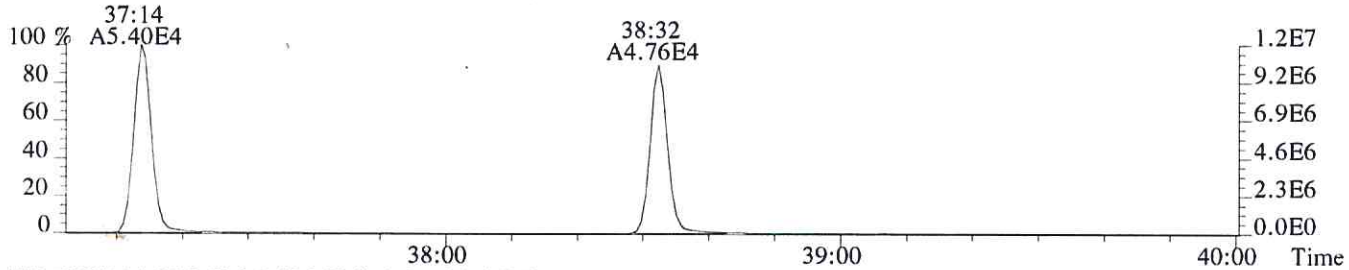
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,292.0,0.50%,F,T)



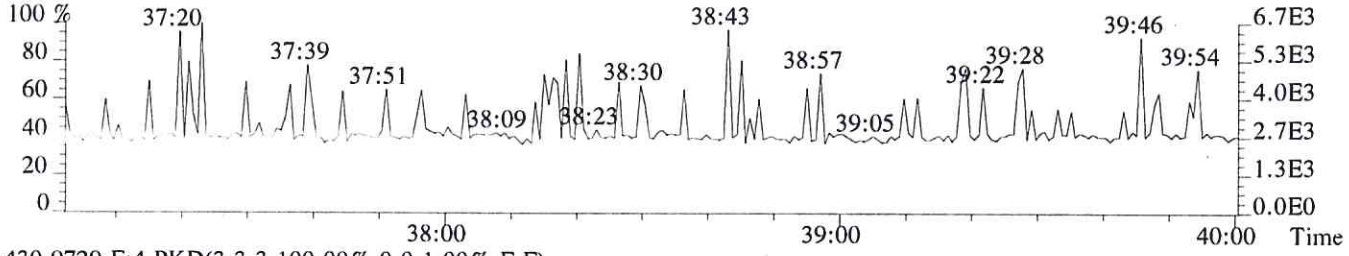
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3816.0,0.50%,F,T)



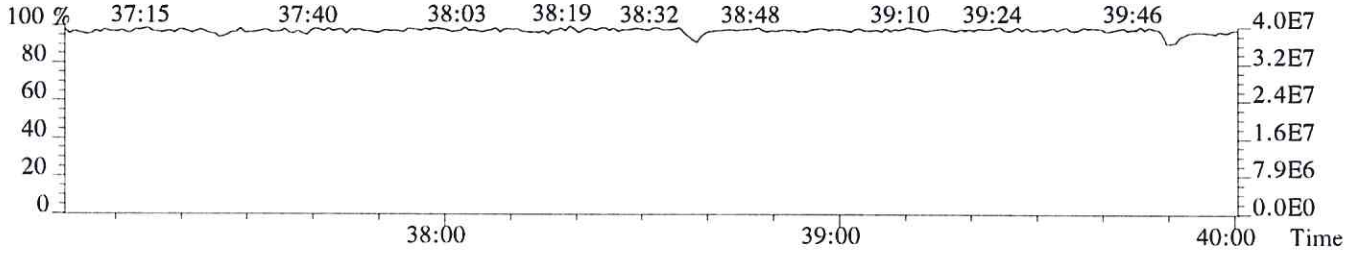
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,12772.0,0.50%,F,T)



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

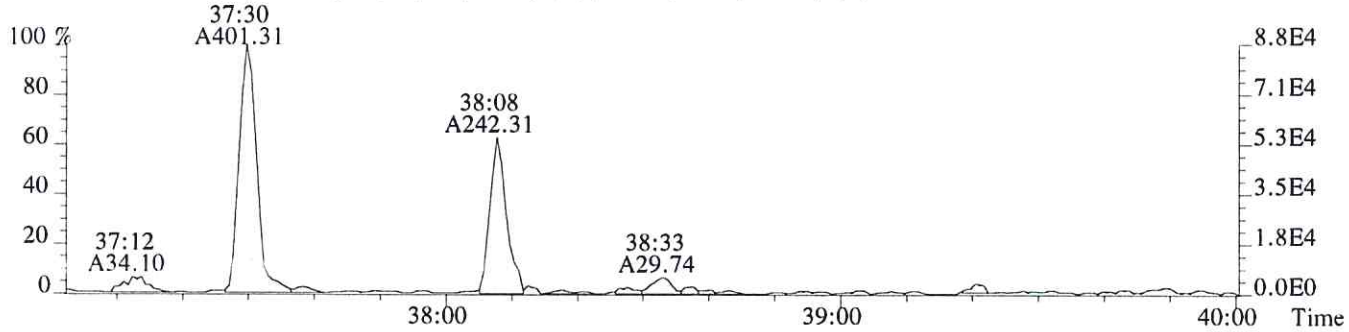


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

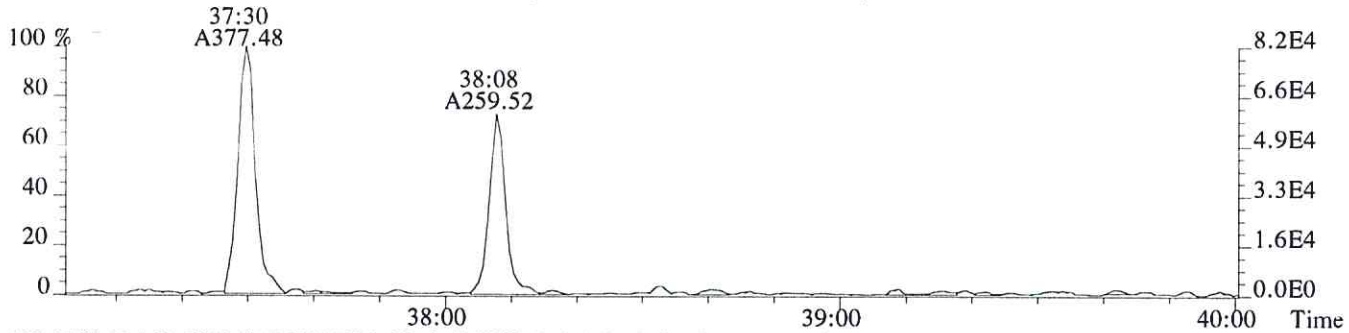


File:P607257 #1-268 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

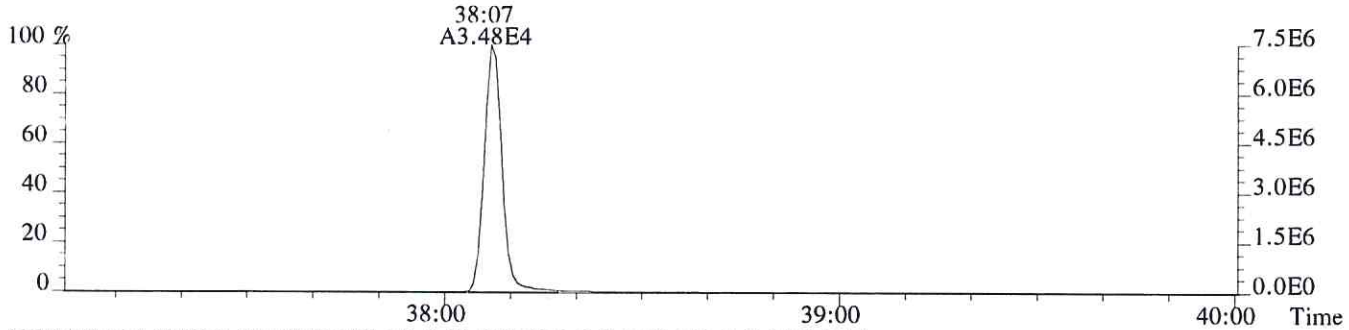
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,804.0,0.40%,F,T)



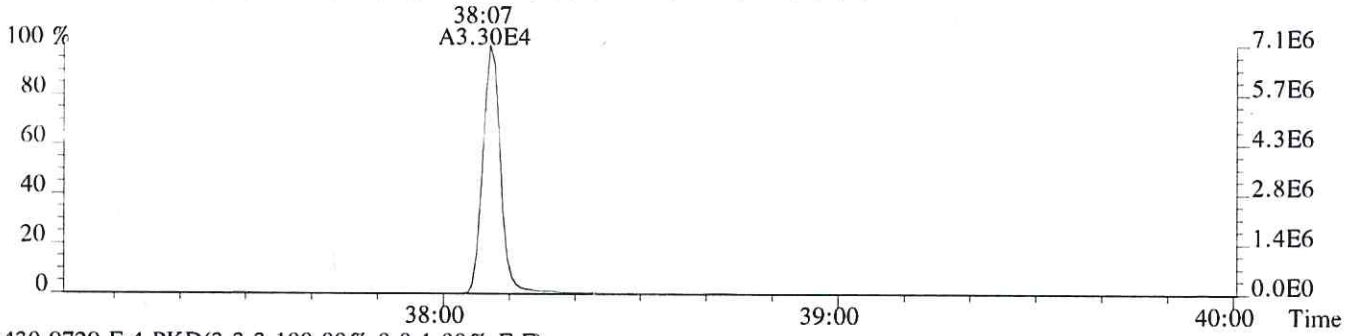
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,980.0,0.40%,F,T)



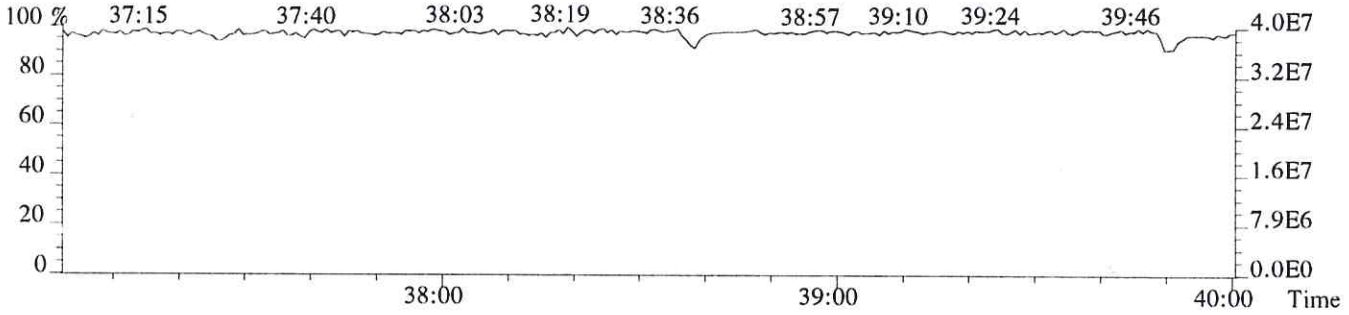
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1600.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,272.0,0.40%,F,T)

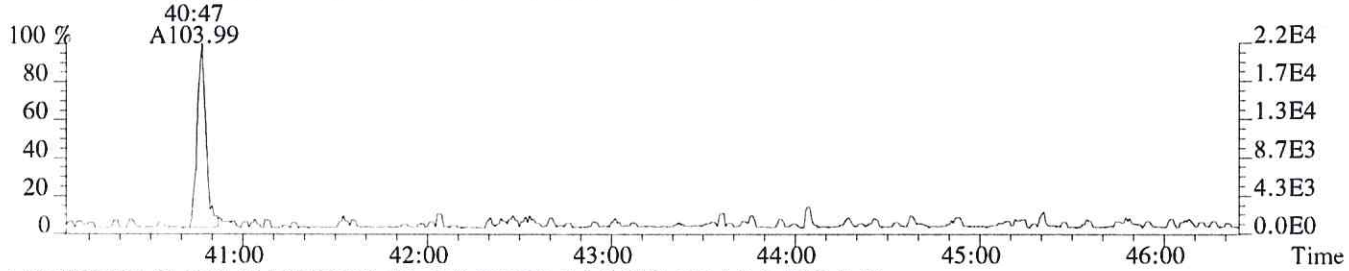


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

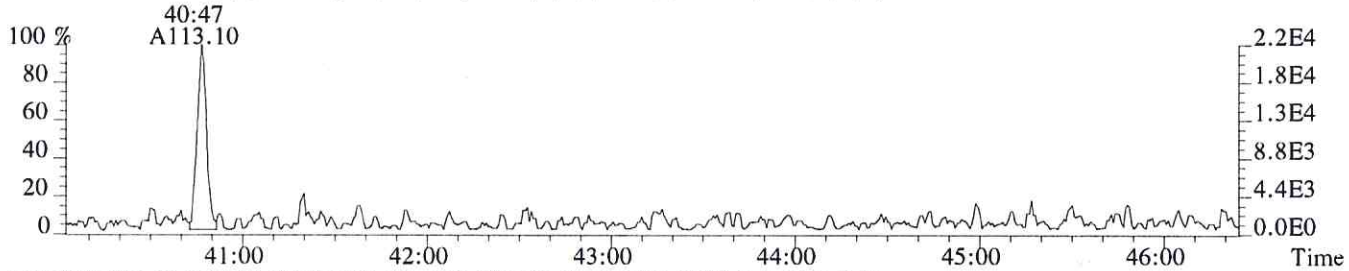


File:P607257 #1-573 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

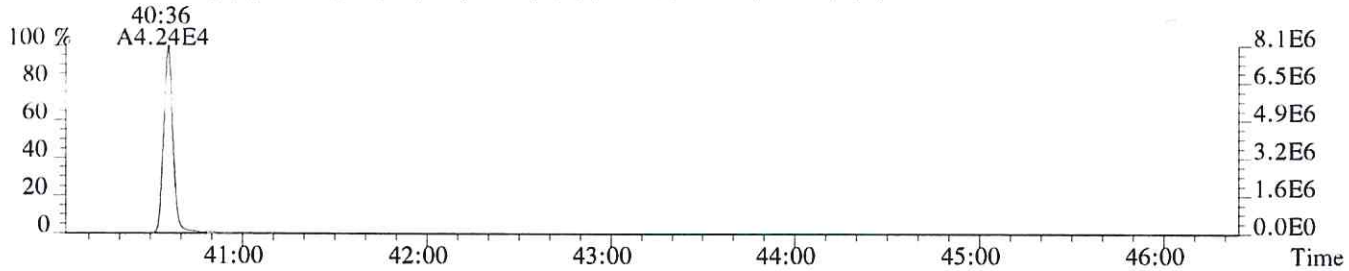
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1308.0,0.40%,F,T)



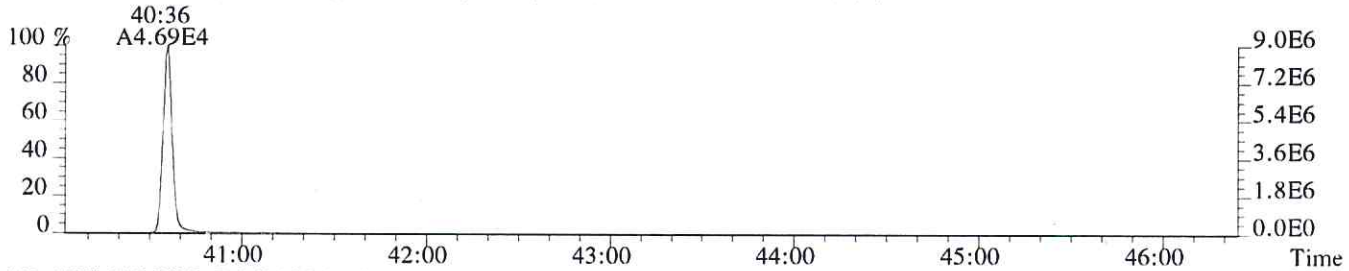
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1544.0,0.40%,F,T)



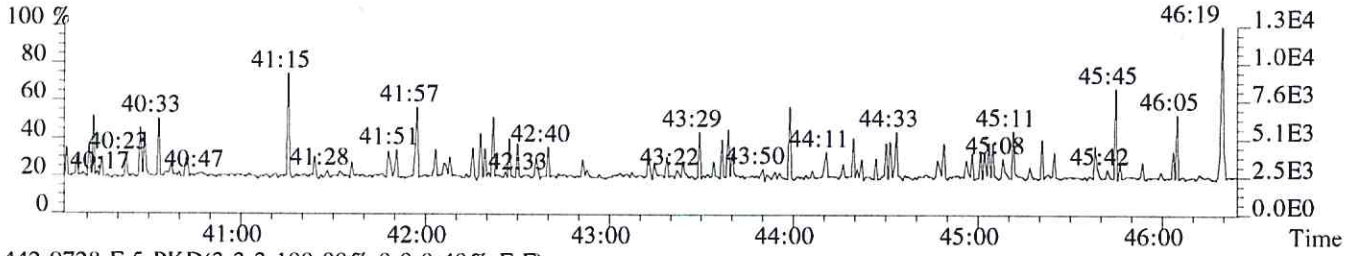
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3508.0,0.40%,F,T)



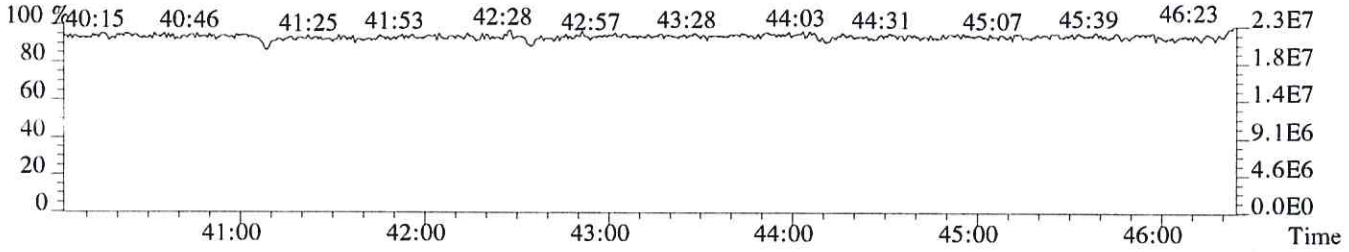
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1372.0,0.40%,F,T)



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

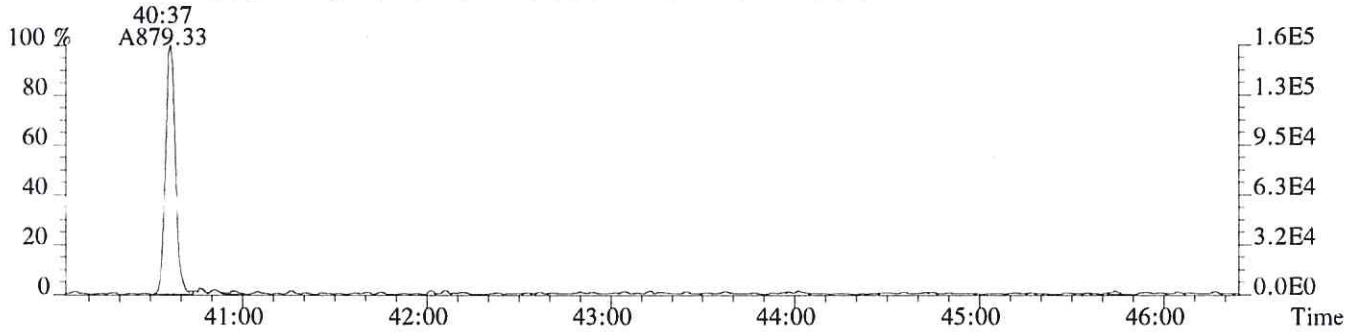


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

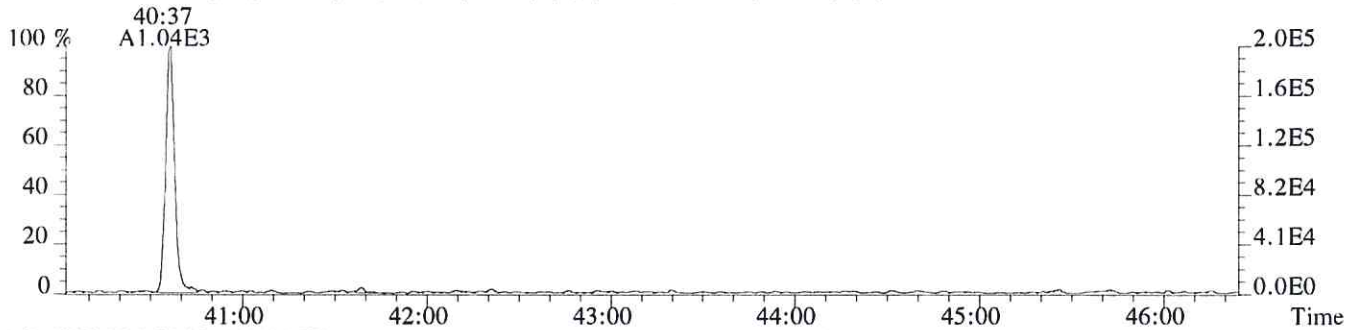


File:P607257 #1-573 Acq:20-MAY-2017 02:12:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-001

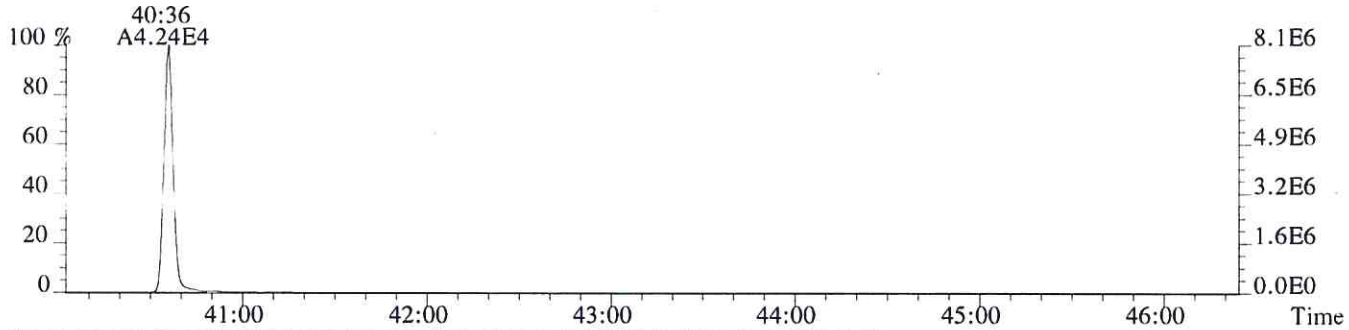
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,940.0,0.40%,F,T)



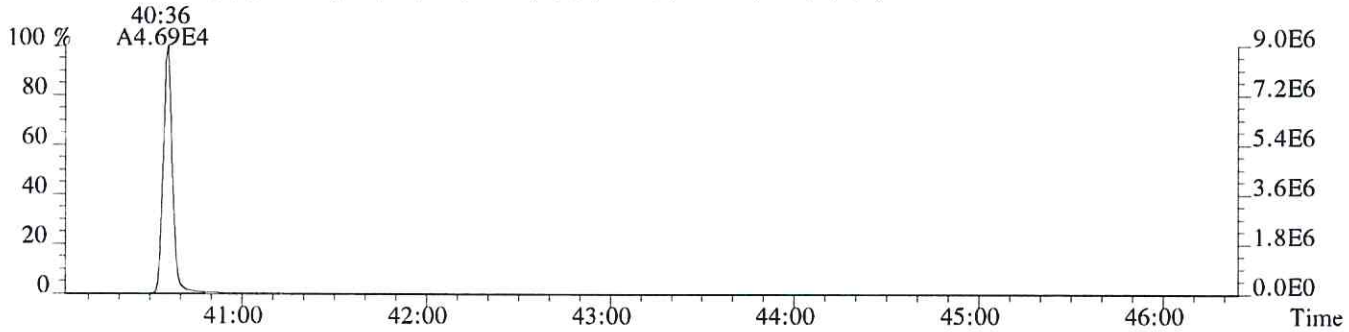
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2112.0,0.40%,F,T)



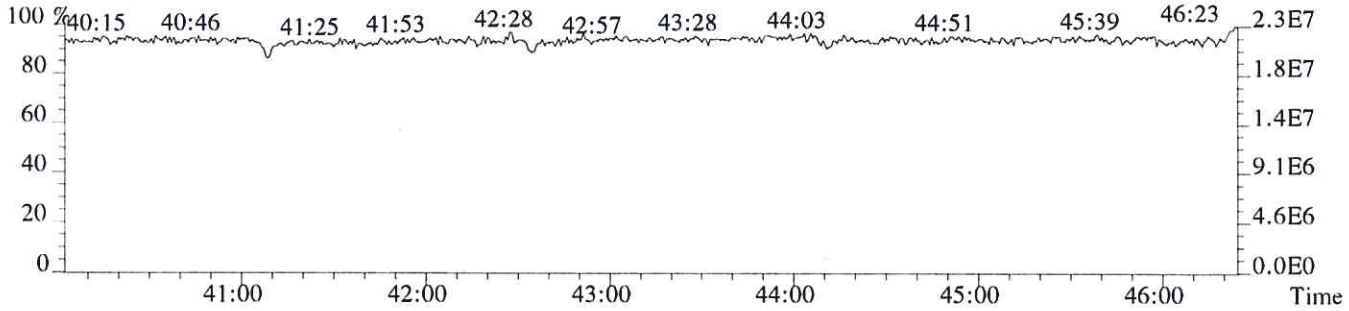
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3508.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1372.0,0.40%,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.
M038A_170428

Run #13 Filename P607258 Samp: 1 Inj: 1 Acquired: 20-MAY-17 03:01:15
Processed: 22-MAY-17 15:38:03 Sample ID: E1700468-002

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	yes	1.020
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	1.058
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:33	3.038e+01	3.720e+01	0.82	no	yes	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	3.019e+01	3.801e+01	0.79	no	yes	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:11	2.667e+01	2.176e+01	1.23	yes	yes	1.176
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	yes	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:14	1.478e+02	1.065e+02	1.39	no	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:34	1.763e+01	1.840e+01	0.96	yes	no	1.341
10	Unk	OCDF	40:46	7.631e+01	9.955e+01	0.77	yes	no	1.337
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:02	2.461e+01	1.871e+01	1.32	no	yes	0.964
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	yes	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:40	2.961e+01	2.575e+01	1.15	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:08	2.018e+02	1.991e+02	1.01	yes	no	1.048
17	Unk	OCDD	40:37	7.552e+02	8.914e+02	0.85	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:46	4.289e+04	5.371e+04	0.80	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:41	9.286e+04	5.963e+04	1.56	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:41	9.174e+04	5.775e+04	1.59	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:32	3.957e+04	7.499e+04	0.53	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:39	4.997e+04	9.462e+04	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:11	3.215e+04	6.152e+04	0.52	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:56	3.490e+04	6.693e+04	0.52	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	2.465e+04	5.525e+04	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	2.290e+04	5.101e+04	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:45	2.207e+04	2.792e+04	0.79	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	32:00	5.404e+04	3.411e+04	1.58	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	4.634e+04	3.660e+04	1.27	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:25	4.532e+04	3.571e+04	1.27	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:08	3.652e+04	3.490e+04	1.05	yes	no	0.884
32	IS	13C-OCDD	40:36	3.951e+04	4.455e+04	0.89	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:04	8.667e+04	1.077e+05	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:39	1.184e+05	9.492e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:47	3.534e+04				no	1.072

$$\text{OCDD} = \frac{(7.552e+02 + 8.914e+02) \times 4000 \text{ pg} \times 1}{(3.951e+04 + 4.455e+04) \times 983 \text{ mL} \times 100 / 100 \times 1.120} = 71.16 \text{ pg/L}$$

vm 05/23/17

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
M038A_170428

Run #13 Filename P607258 Samp: 1 Inj: 1 Acquired: 20-MAY-17 03:01:15
Processed: 22-MAY-17 15:38:03 LAB. ID: E1700468-002

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	5.36e+02	*	*	1.50e+03	*
2	1,2,3,7,8-PeCDF	*	3.12e+02	*	*	3.19e+03	*
3	2,3,4,7,8-PeCDF	*	3.12e+02	*	*	3.19e+03	*
4	1,2,3,4,7,8-HxCDF	6.49e+03	1.70e+03	3.8e+00	1.00e+04	5.04e+02	2.0e+01
5	1,2,3,6,7,8-HxCDF	7.44e+03	1.70e+03	4.4e+00	7.86e+03	5.04e+02	1.6e+01
6	2,3,4,6,7,8-HxCDF	6.64e+03	1.70e+03	3.9e+00	4.99e+03	5.04e+02	9.9e+00
7	1,2,3,7,8,9-HxCDF	*	1.70e+03	*	*	5.04e+02	*
8	1,2,3,4,6,7,8-HpCDF	2.71e+04	1.92e+02	1.4e+02	2.26e+04	2.16e+02	1.0e+02
9	1,2,3,4,7,8,9-HpCDF	4.32e+03	1.92e+02	2.3e+01	3.39e+03	2.16e+02	1.6e+01
10	OCDF	1.33e+04	8.40e+02	1.6e+01	2.34e+04	1.86e+03	1.3e+01
11	2,3,7,8-TCDD	*	1.04e+03	*	*	1.01e+03	*
12	1,2,3,7,8-PeCDD	5.25e+03	9.36e+02	5.6e+00	4.95e+03	8.16e+02	6.1e+00
13	1,2,3,4,7,8-HxCDD	*	2.28e+02	*	*	9.80e+02	*
14	1,2,3,6,7,8-HxCDD	*	2.28e+02	*	*	9.80e+02	*
15	1,2,3,7,8,9-HxCDD	6.93e+03	2.28e+02	3.0e+01	6.00e+03	9.80e+02	6.1e+00
16	1,2,3,4,6,7,8-HpCDD	4.41e+04	3.20e+02	1.4e+02	4.22e+04	6.44e+02	6.6e+01
17	OCDD	1.39e+05	8.56e+02	1.6e+02	1.70e+05	2.21e+03	7.7e+01
18	13C-2,3,7,8-TCDF	6.10e+06	7.42e+03	8.2e+02	7.77e+06	4.04e+03	1.9e+03
19	13C-1,2,3,7,8-PeCDF	1.56e+07	6.24e+02	2.5e+04	1.01e+07	5.42e+03	1.9e+03
20	13C-2,3,4,7,8-PeCDF	1.67e+07	6.24e+02	2.7e+04	1.06e+07	5.42e+03	1.9e+03
21	13C-1,2,3,4,7,8-HxCDF	8.23e+06	6.32e+02	1.3e+04	1.54e+07	1.52e+03	1.0e+04
22	13C-1,2,3,6,7,8-HxCDF	1.03e+07	6.32e+02	1.6e+04	1.95e+07	1.52e+03	1.3e+04
23	13C-2,3,4,6,7,8-HxCDF	6.56e+06	6.32e+02	1.0e+04	1.25e+07	1.52e+03	8.3e+03
24	13C-1,2,3,7,8,9-HxCDF	7.24e+06	6.32e+02	1.1e+04	1.40e+07	1.52e+03	9.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	5.28e+06	4.66e+03	1.1e+03	1.16e+07	6.00e+03	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	5.01e+06	4.66e+03	1.1e+03	1.10e+07	6.00e+03	1.8e+03
27	13C-2,3,7,8-TCDD	3.54e+06	7.70e+03	4.6e+02	4.53e+06	3.79e+03	1.2e+03
28	13C-1,2,3,7,8-PeCDD	9.71e+06	2.84e+02	3.4e+04	6.16e+06	9.36e+02	6.6e+03
29	13C-1,2,3,4,7,8-HxCDD	9.96e+06	2.65e+03	3.8e+03	7.83e+06	9.04e+02	8.7e+03
30	13C-1,2,3,6,7,8-HxCDD	9.61e+06	2.65e+03	3.6e+03	7.66e+06	9.04e+02	8.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	7.83e+06	1.29e+03	6.1e+03	7.40e+06	2.44e+02	3.0e+04
32	13C-OCDD	7.51e+06	5.52e+03	1.4e+03	8.40e+06	6.02e+03	1.4e+03
33	13C-1,2,3,4-TCDD	1.29e+07	7.70e+03	1.7e+03	1.61e+07	3.79e+03	4.2e+03
34	13C-1,2,3,7,8,9-HxCDD	2.44e+07	2.65e+03	9.2e+03	1.98e+07	9.04e+02	2.2e+04
35	37Cl-2,3,7,8-TCDD	5.69e+06	1.20e+03	4.7e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.036e+03 + 1.012e+03) \times 2000}{(3.539e+06 + 4.533e+06) \times (\qquad\qquad) \times 1.055} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M038A_170428

Entry: 36 Totals Name: Total Tetra-Furans

Run: 13 File: P607258 Sample:1 Injection:1 Function:1

Acquired: 20-MAY-17 03:01:15 Processed: 22-MAY-17 15:38:03

Mass: 303.9020 305.8990 Tot Response: 4.03e+02 RRF: 1.020

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:43	1.82e+02	2.21e+02	0.82	yes	4.03e+02	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M038A_170428

Entry: 38 Totals Name: Total Penta-Furans1

Run: 13 File: P607258 Sample:1 Injection:1 Function:1

Acquired: 20-MAY-17 03:01:15 Processed: 22-MAY-17 15:38:03

Mass: 339.8600 341.8570 Tot Response: 2.11e+02 RRF: 1.036

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	28:00	1.33e+02	7.85e+01	1.69	yes	2.11e+02	n	n

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Peak List Summary

CLIENT ID.

M038A_170428

Entry: 41 Totals Name: Total Hexa-Furans

Run: 13 File: P607258 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 03:01:15 Processed: 22-MAY-17 15:38:03

Mass: 373.8210 375.8180 Tot Response: 3.91e+02 RRF: 1.207

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	33:23	2.12e+01	1.81e+01	1.17	yes	3.93e+01		y	n
2	33:33	7.78e+01	6.87e+01	1.13	yes	1.47e+02		y	n
3	33:55	1.35e+01	1.15e+01	1.17	yes	2.51e+01		y	n
4	34:06	7.53e+01	5.61e+01	1.34	yes	1.31e+02		y	n
5	35:11	2.67e+01	2.18e+01	1.23	yes	4.84e+01	2,3,4,6,7,8-HxCDF	y	n

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M038A_170428

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 13 File: P607258 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 03:01:15 Processed: 22-MAY-17 15:38:03

Mass: 389.8160 391.8130 Tot Response: 1.41e+02 RRF: 1.085

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:40	4.67e+01	3.86e+01	1.21	yes	8.54e+01		n	n
2	35:40	2.96e+01	2.57e+01	1.15	yes	5.54e+01	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M038A_170428

Entry: 43 Totals Name: Total Hepta-Furans

Run: 13 File: P607258 Sample:1 Injection:1 Function:4

Acquired: 20-MAY-17 03:01:15 Processed: 22-MAY-17 15:38:03

Mass: 407.7820 409.7790 Tot Response: 2.60e+02 RRF: 1.368

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:38	1.09e+02	1.15e+02	0.95	yes	2.24e+02	n	n
2	38:34	1.76e+01	1.84e+01	0.96	yes	3.60e+01	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M038A_170428

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 13 File: P607258 Sample:1 Injection:1 Function:4

Acquired: 20-MAY-17 03:01:15 Processed: 22-MAY-17 15:38:03

Mass: 423.7770 425.7740 Tot Response: 1.25e+03 RRF: 1.048

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:30	4.26e+02	4.23e+02	1.01	yes	8.49e+02	n	n
2	38:08	2.02e+02	1.99e+02	1.01	yes	4.01e+02	1,2,3,4,6,7,8-HpCDD	n	n

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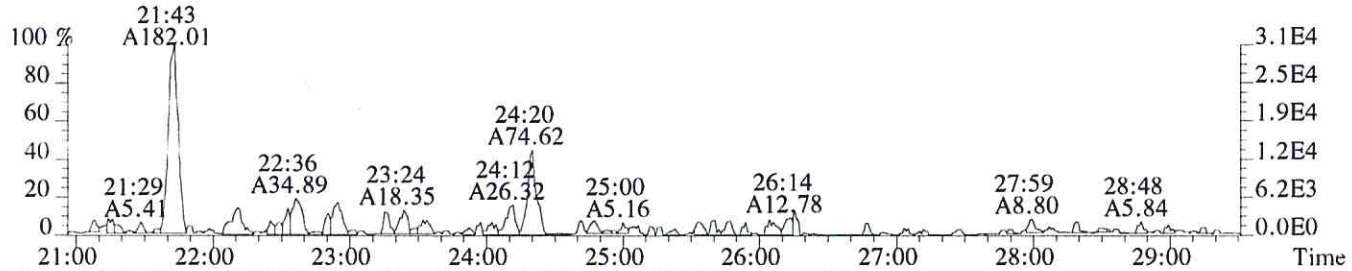
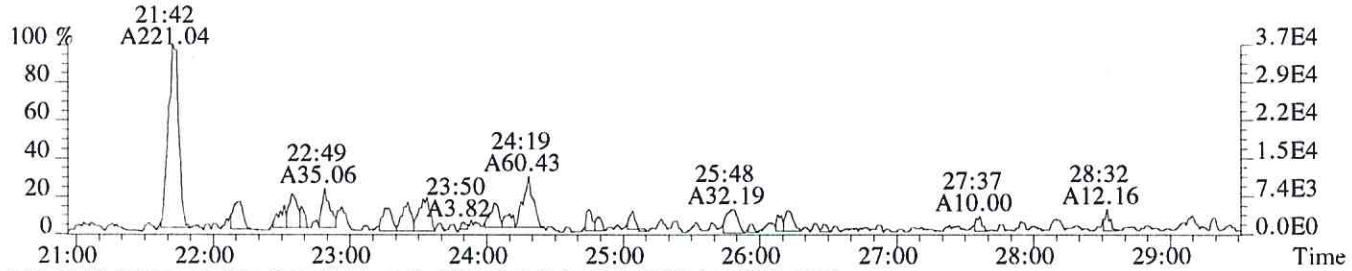
File:P607258 #1-609 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

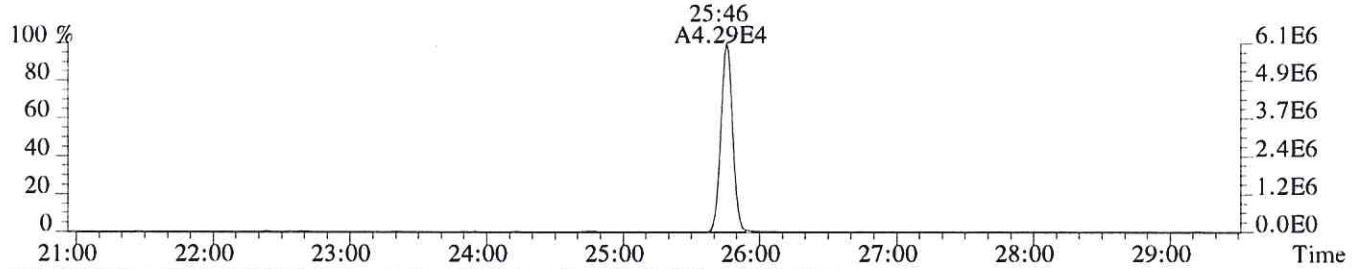
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,536.0,1.00%,F,T)



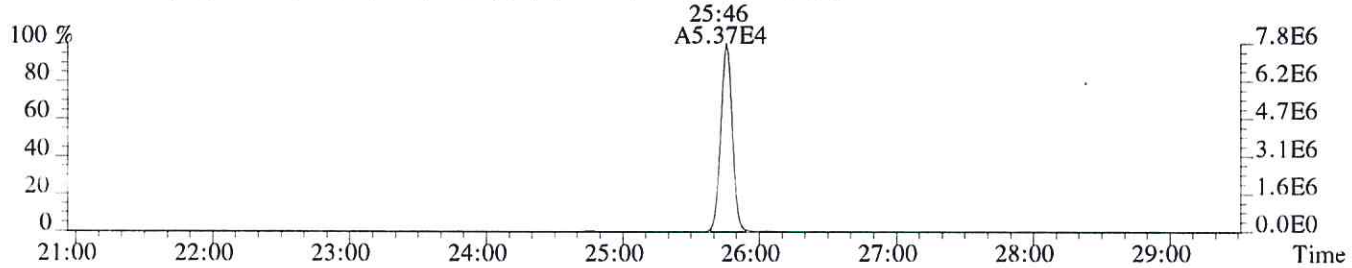
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1504.0,1.00%,F,T)



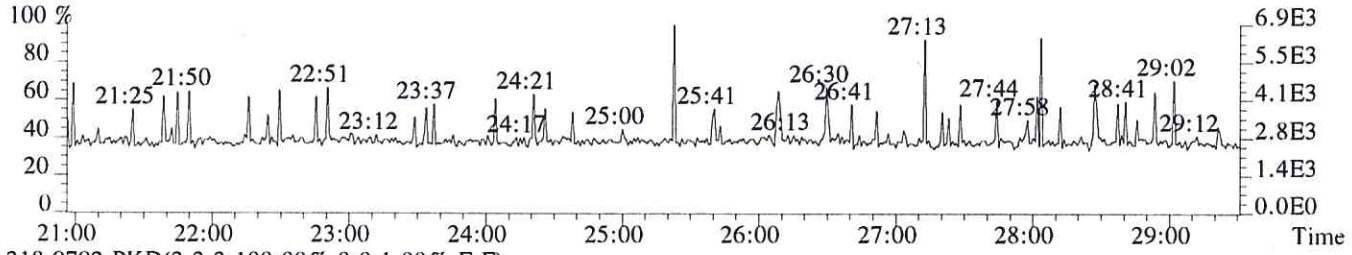
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7420.0,1.00%,F,T)



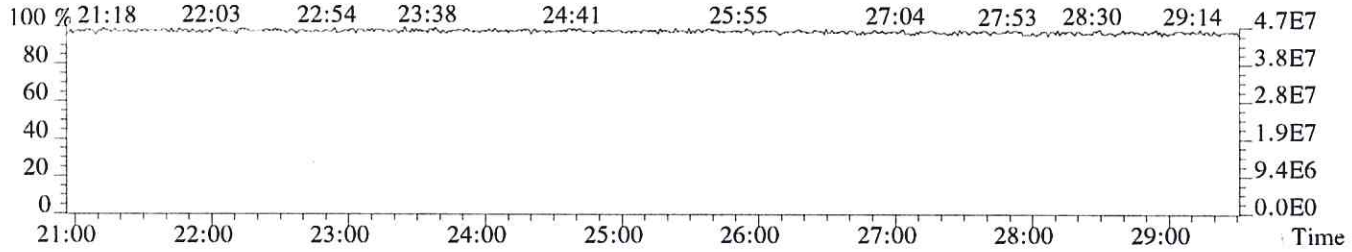
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4040.0,1.00%,F,T)



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

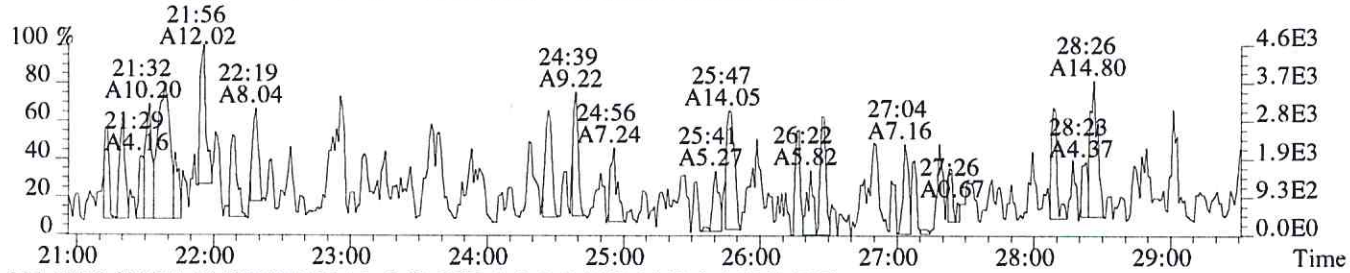


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

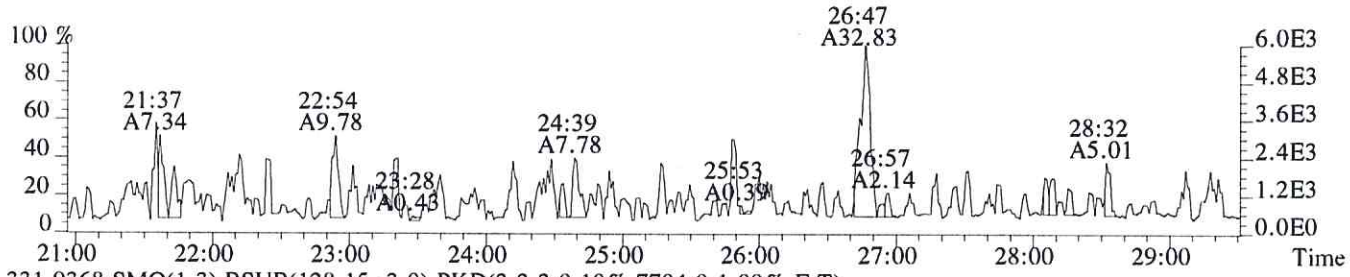


File:P607258 #1-609 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

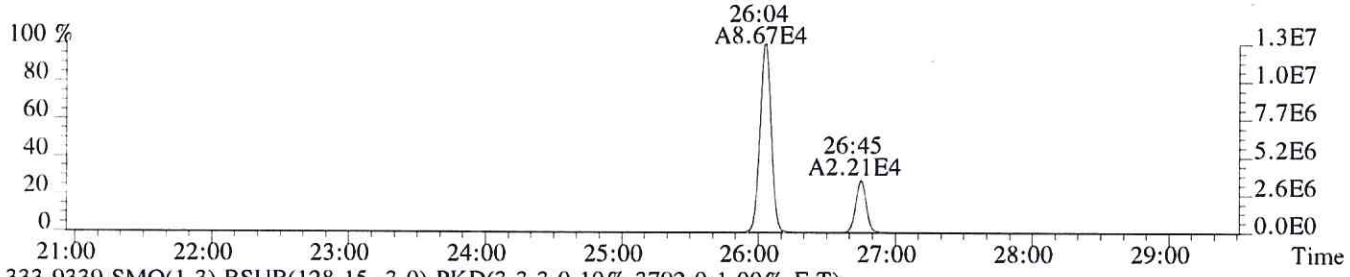
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1036.0,1.00%,F,T)



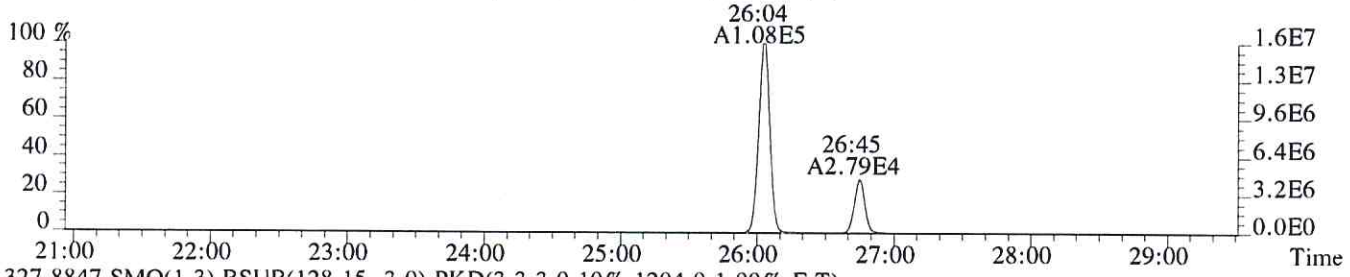
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1012.0,1.00%,F,T)



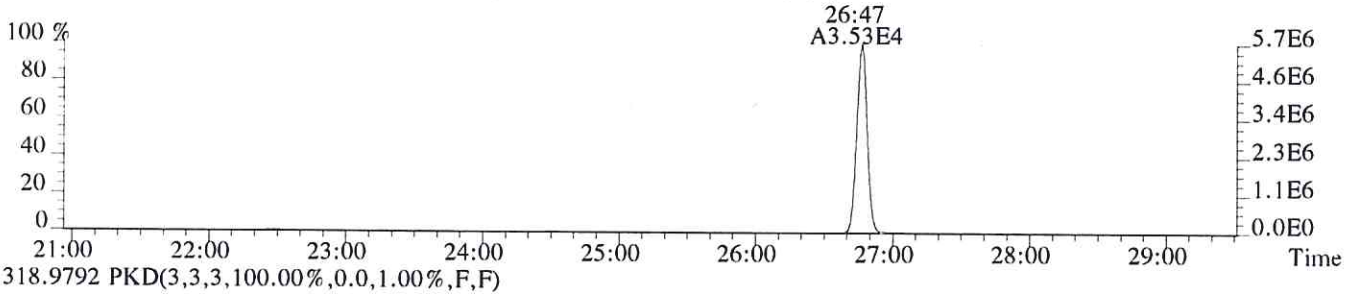
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7704.0,1.00%,F,T)



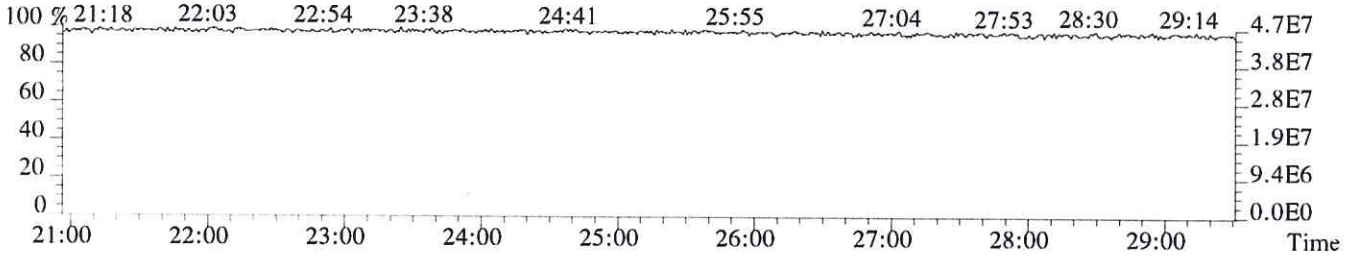
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3792.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1204.0,1.00%,F,T)

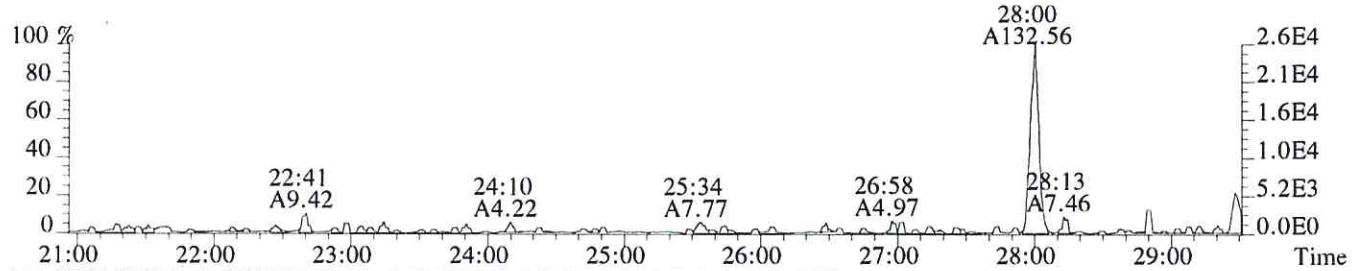


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

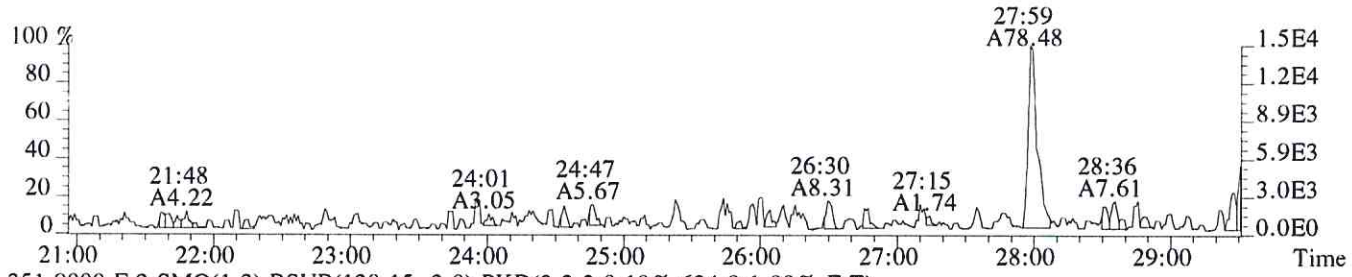


File:P607258 #1-609 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

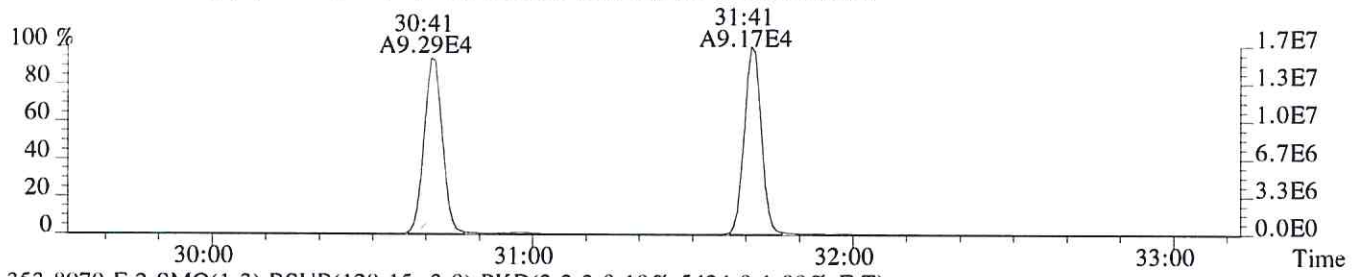
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,268.0,1.00%,F,T)



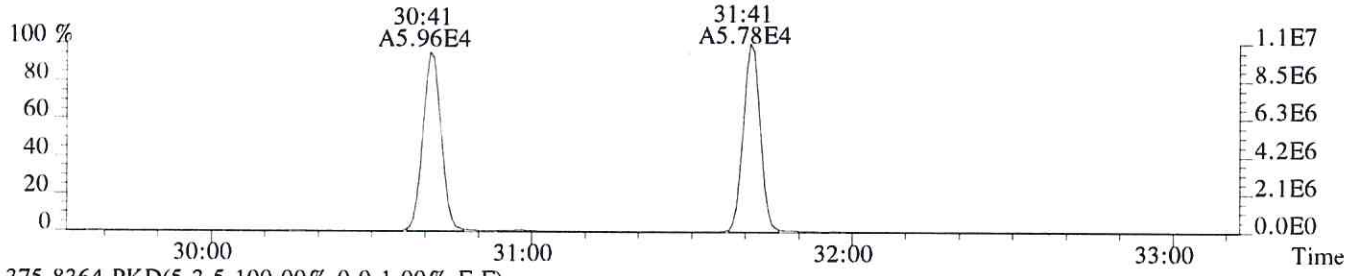
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1052.0,1.00%,F,T)



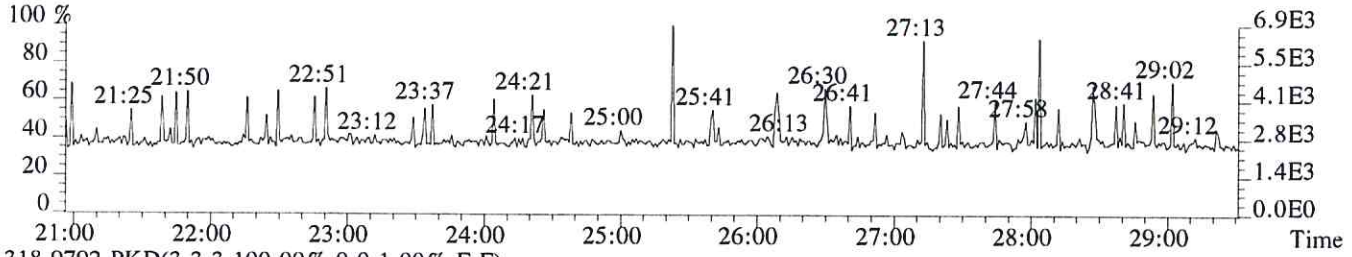
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,624.0,1.00%,F,T)



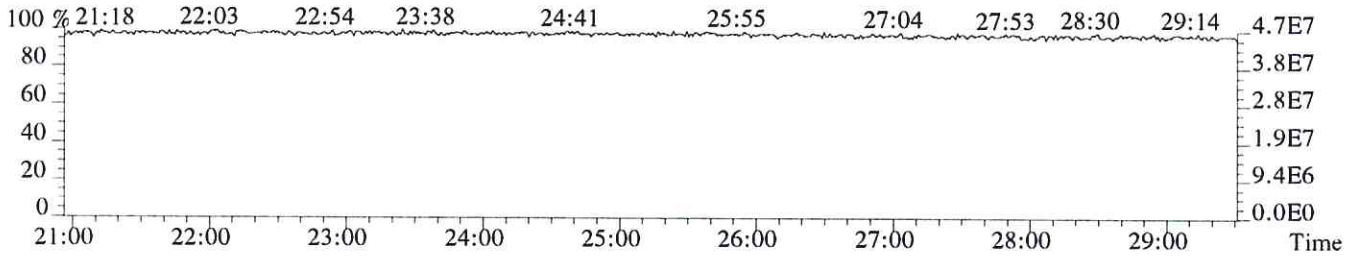
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5424.0,1.00%,F,T)



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

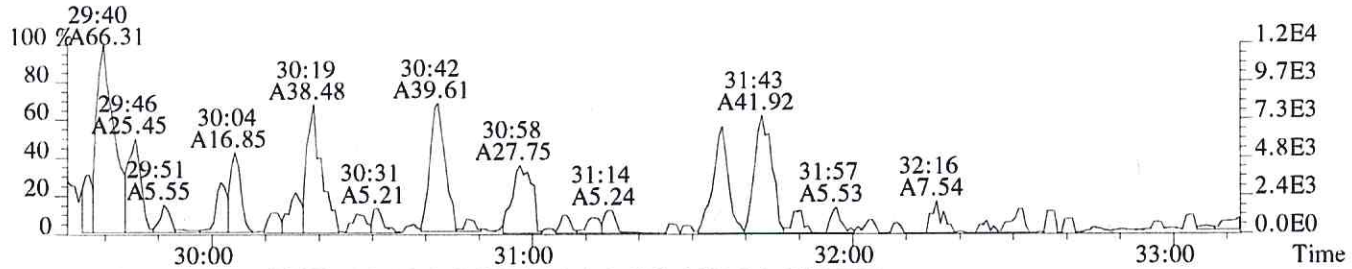


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

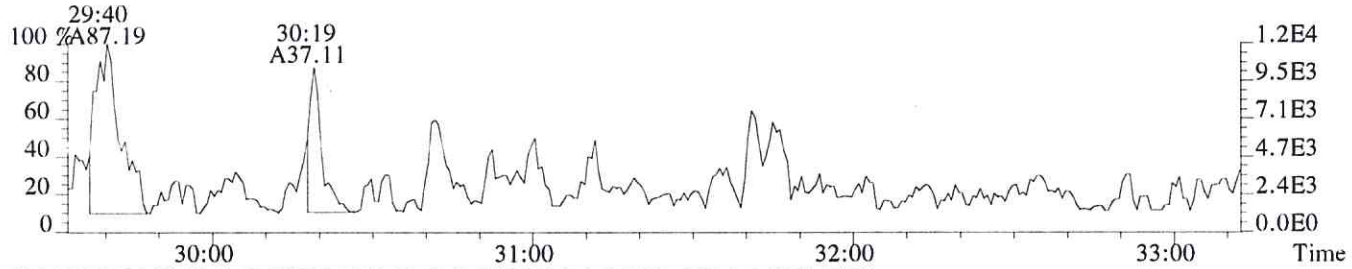


File:P607258 #1-330 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

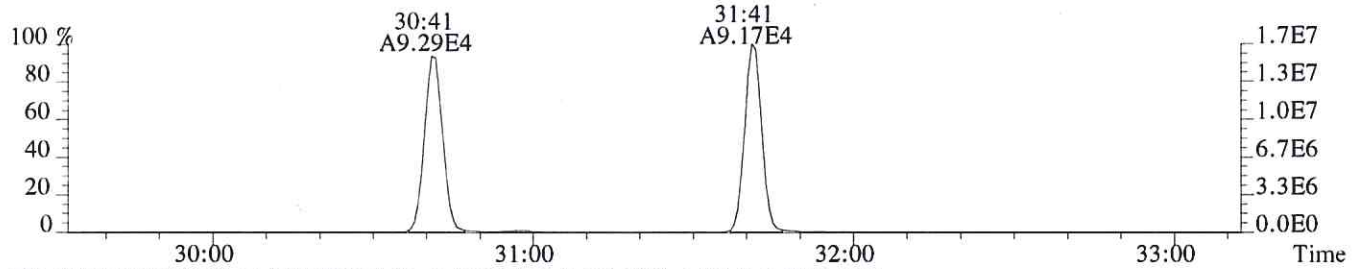
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,312.0,1.00%,F,T)



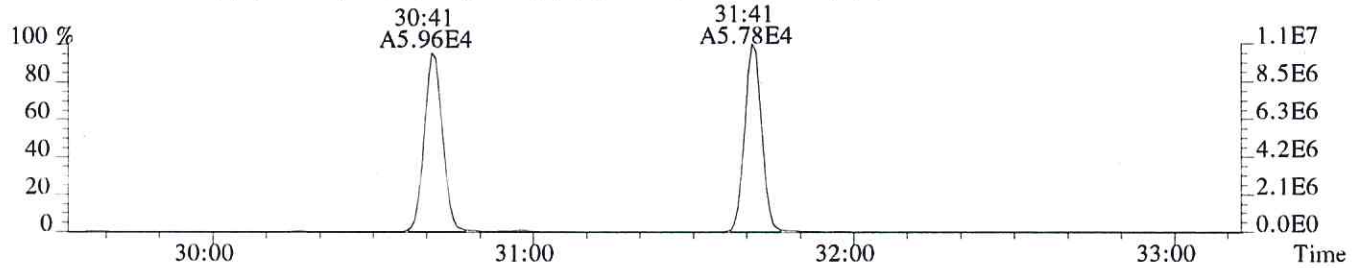
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3188.0,1.00%,F,T)



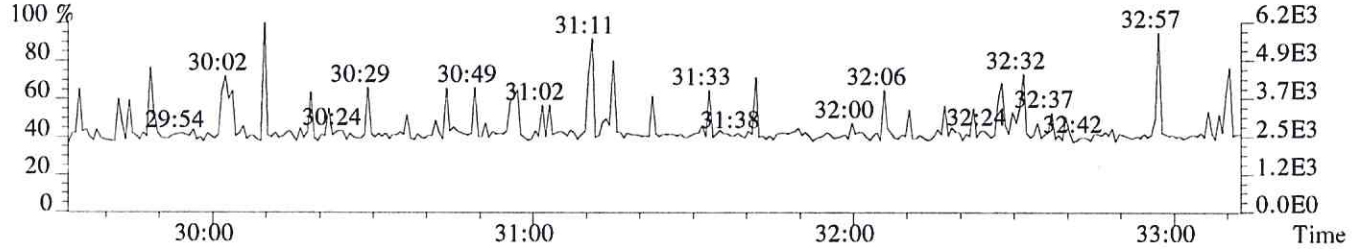
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,624.0,1.00%,F,T)



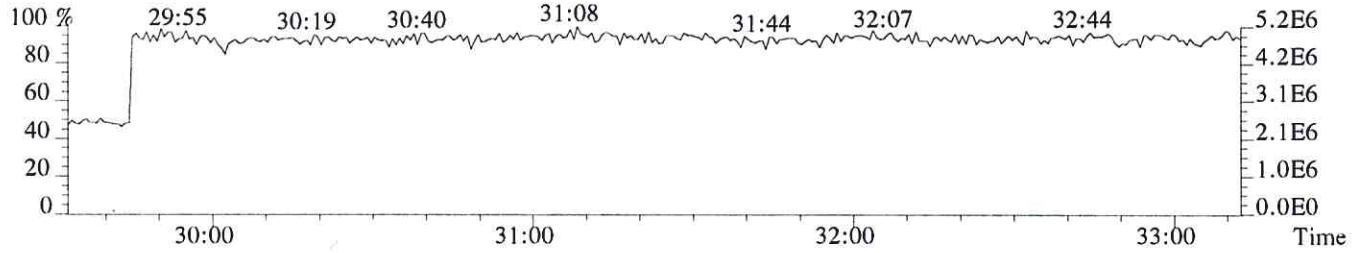
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5424.0,1.00%,F,T)



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

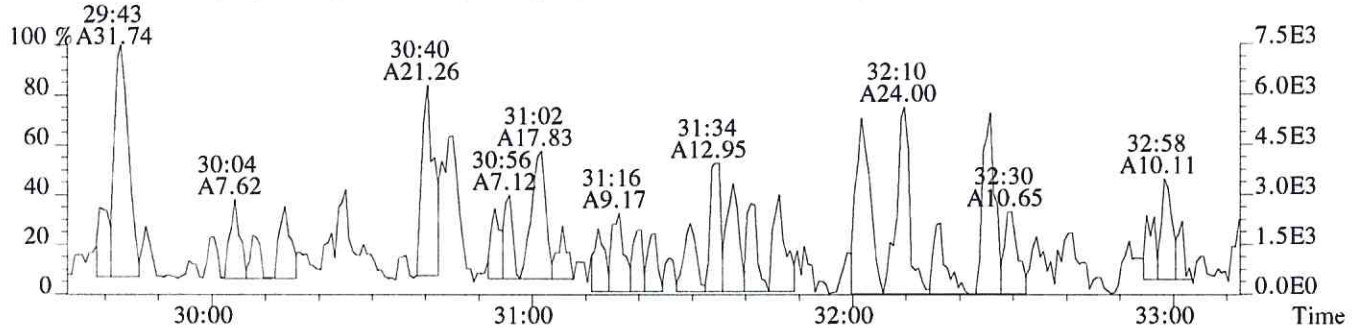


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

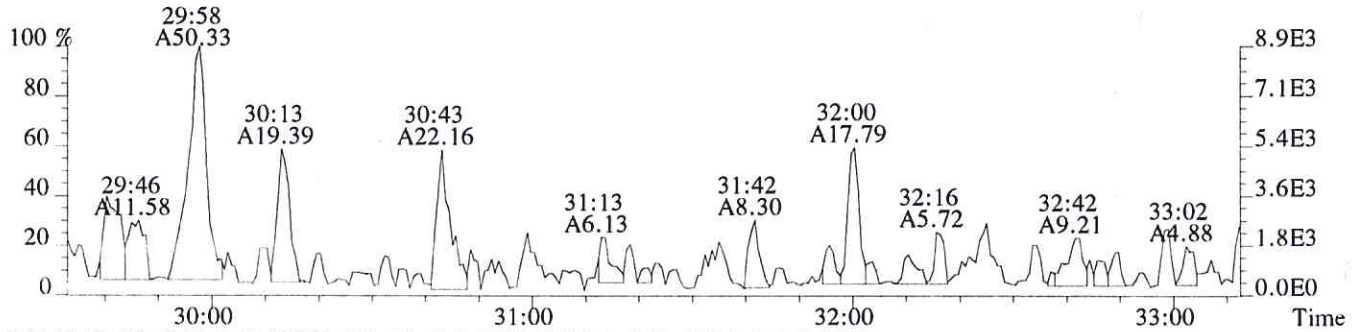


File:P607258 #1-330 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

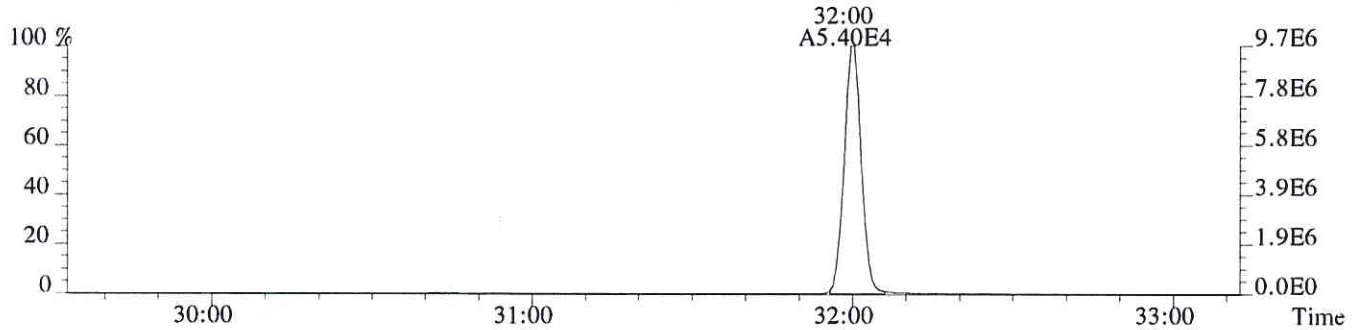
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,936.0,1.00%,F,T)



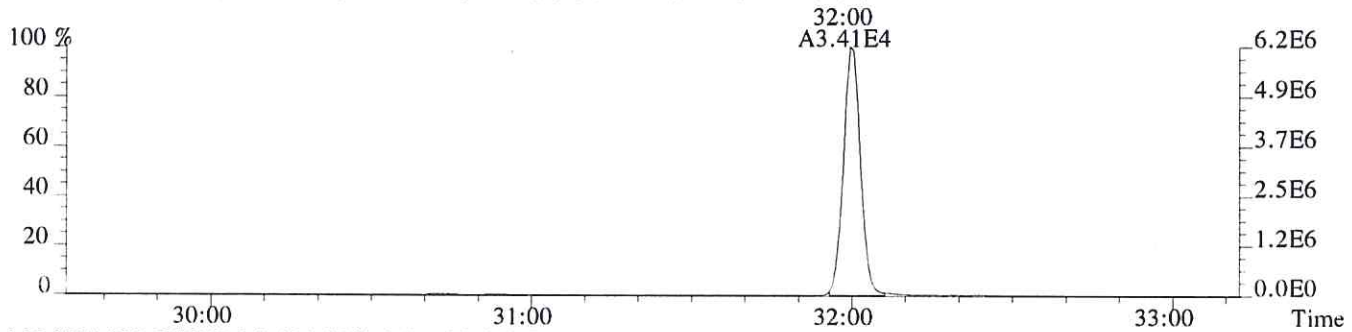
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,816.0,1.00%,F,T)



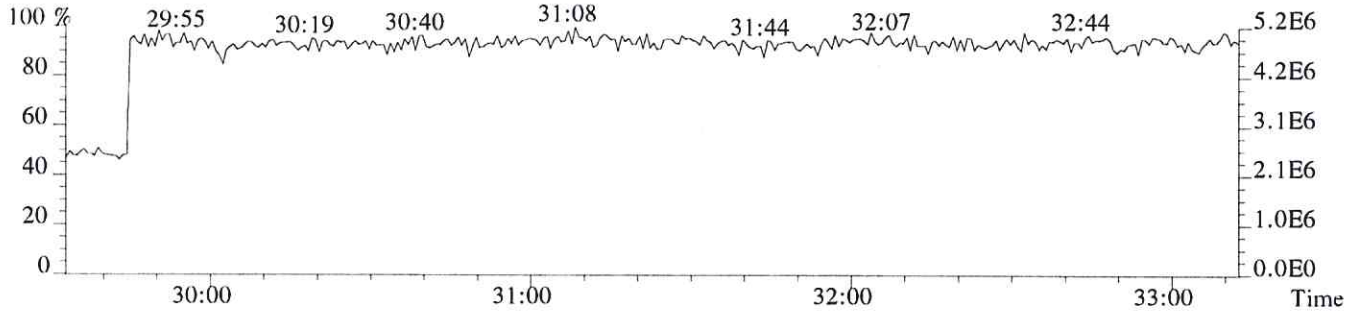
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,284.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,936.0,1.00%,F,T)

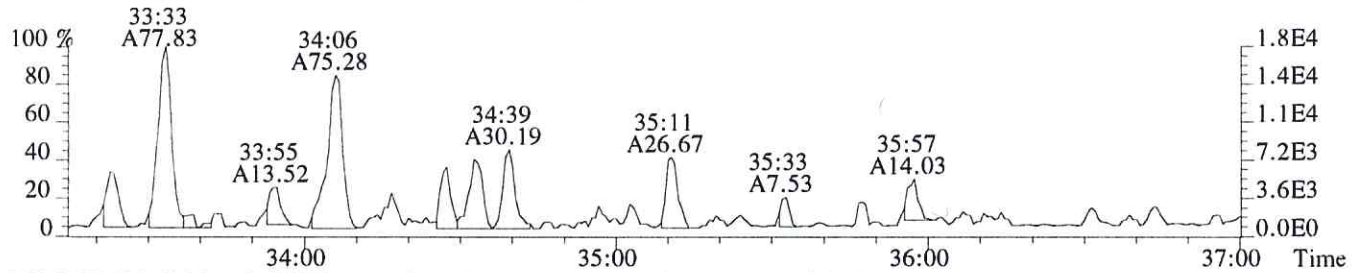


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

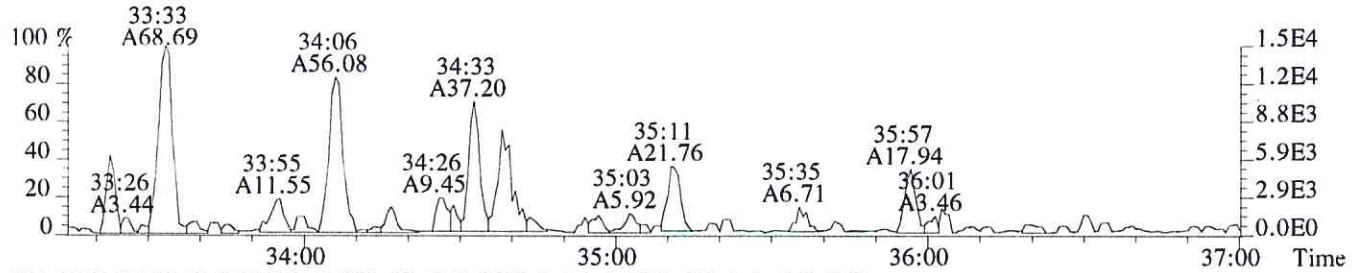


File:P607258 #1-339 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

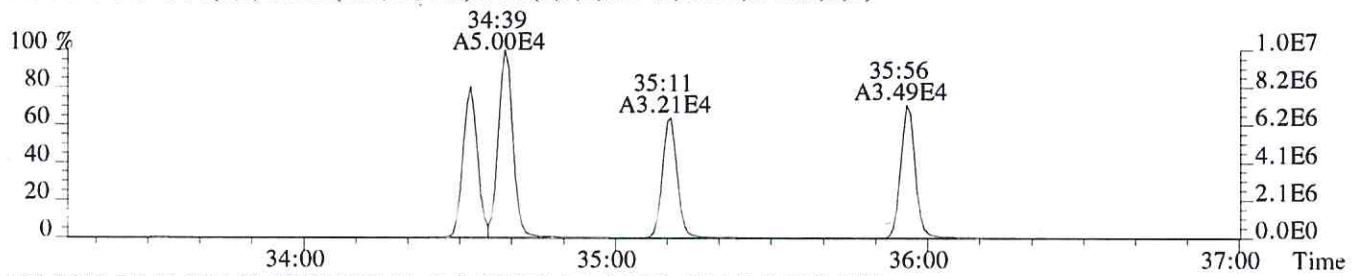
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1700.0,0.40%,F,T)



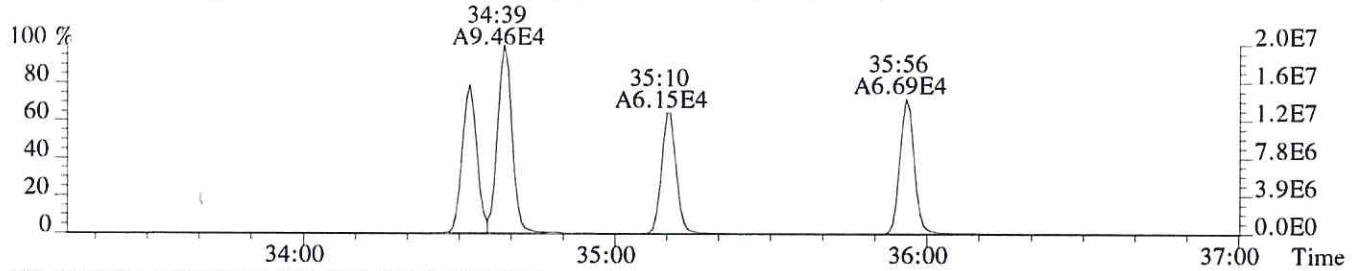
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,504.0,0.40%,F,T)



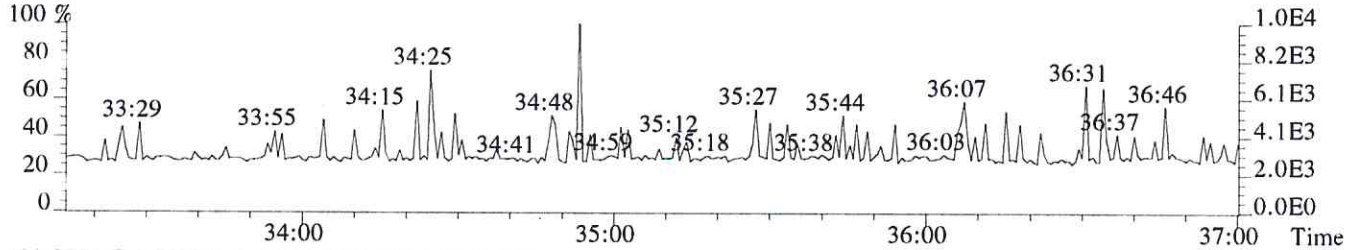
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,632.0,0.40%,F,T)



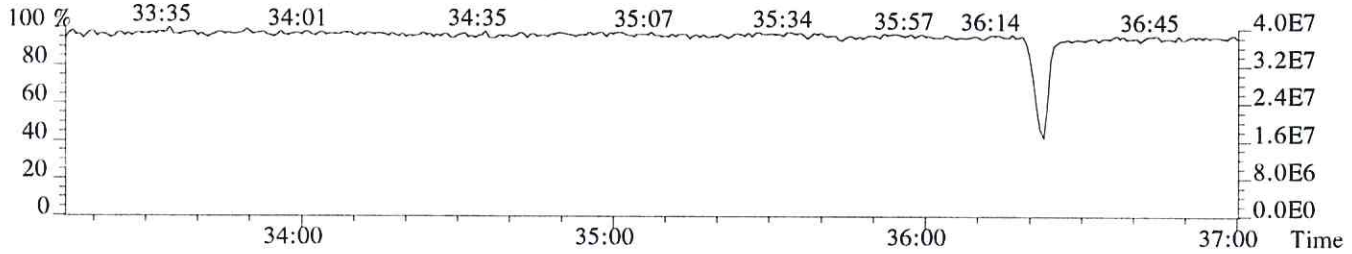
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1516.0,0.40%,F,T)



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

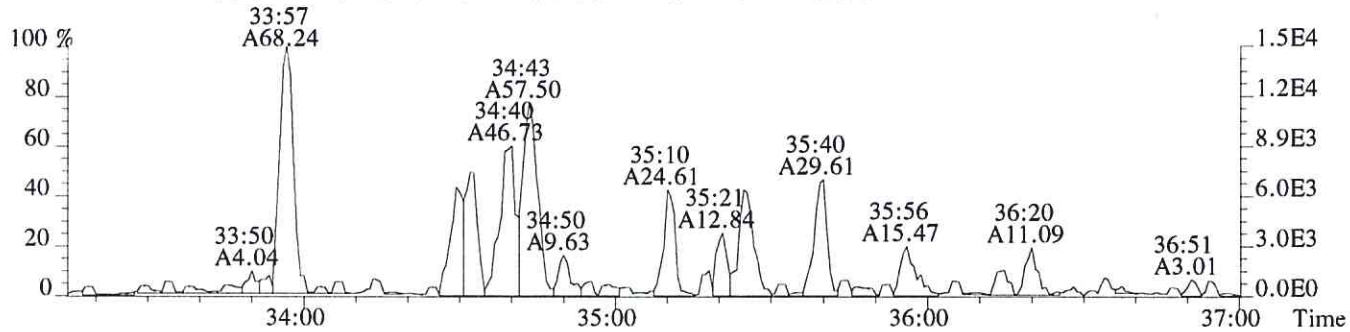


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

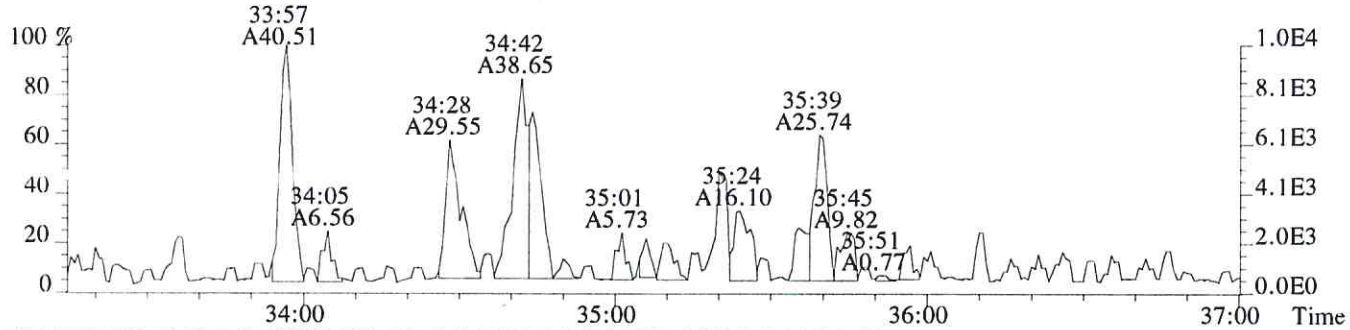


File:P607258 #1-339 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

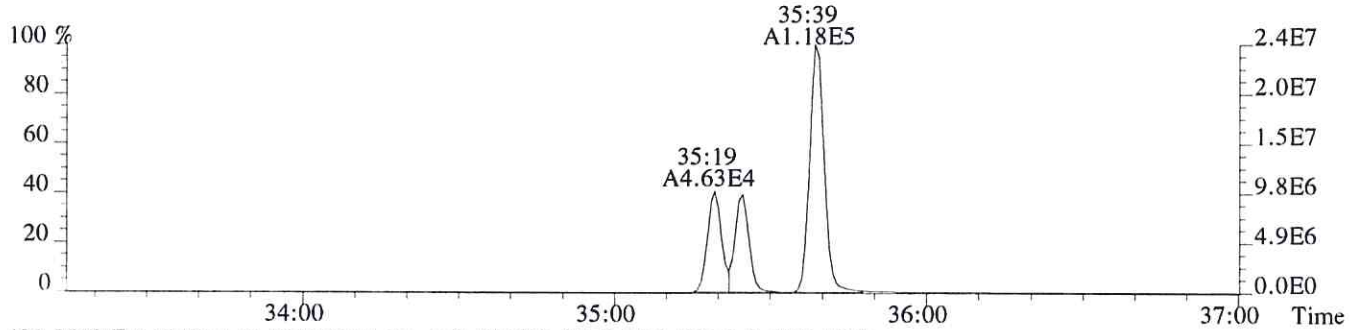
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,228.0,0.40%,F,T)



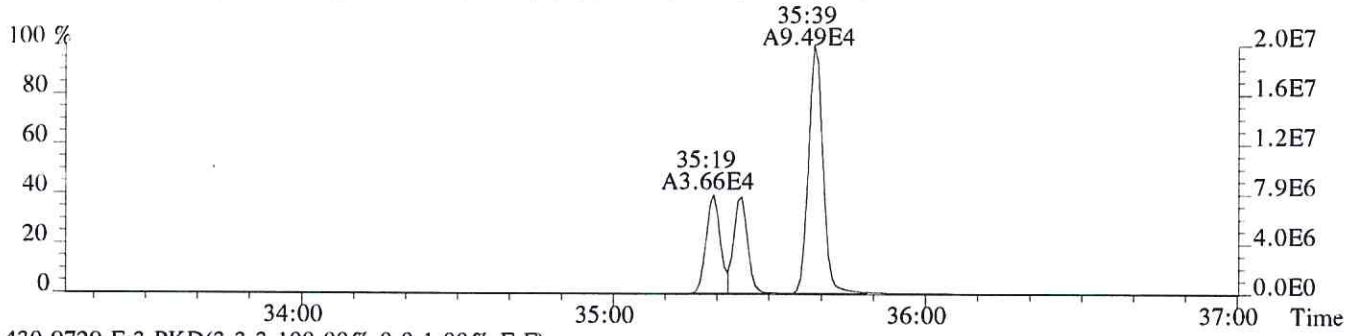
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,980.0,0.40%,F,T)



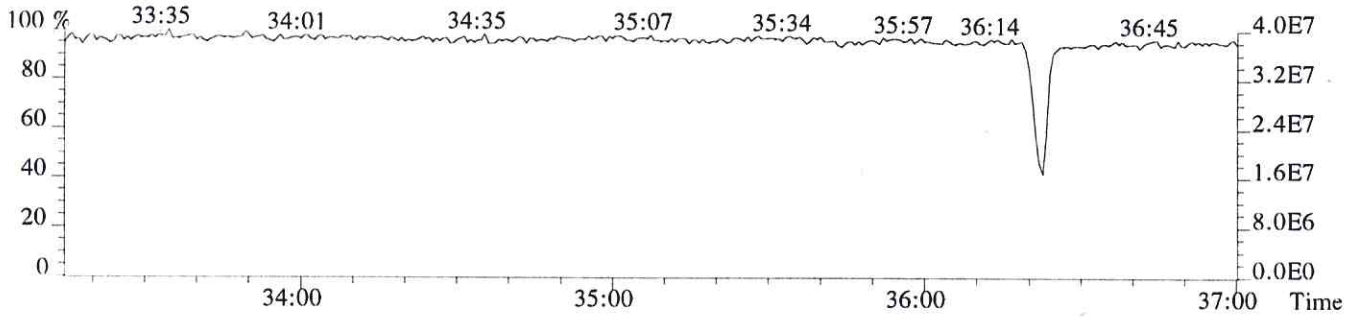
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2652.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,904.0,0.40%,F,T)

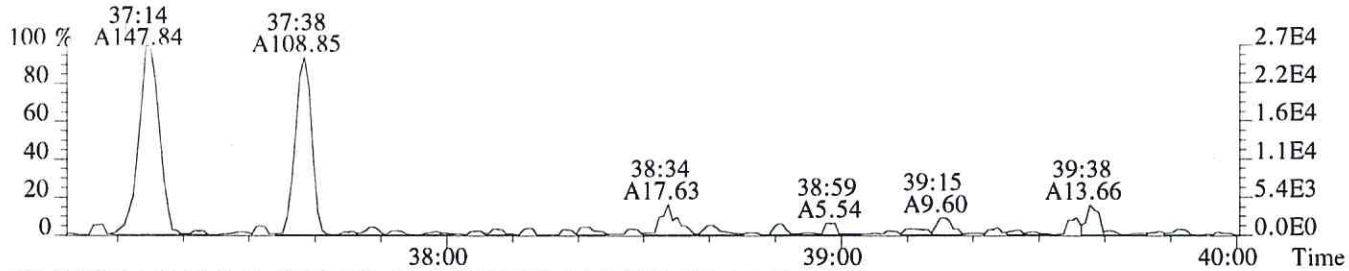


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

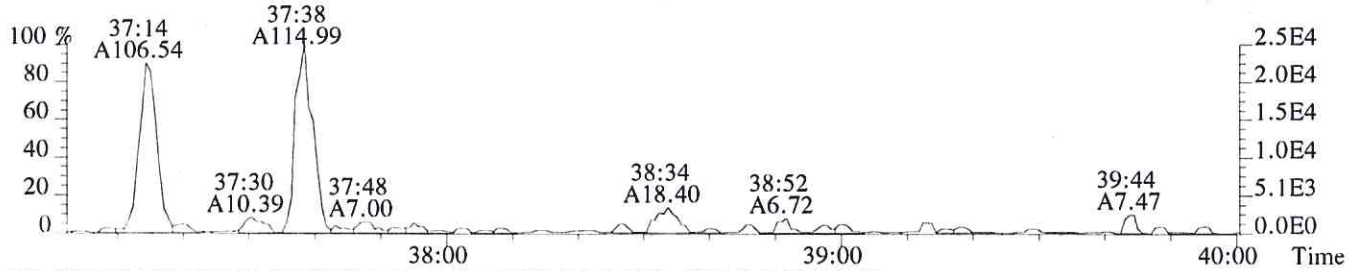


File:P607258 #1-268 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

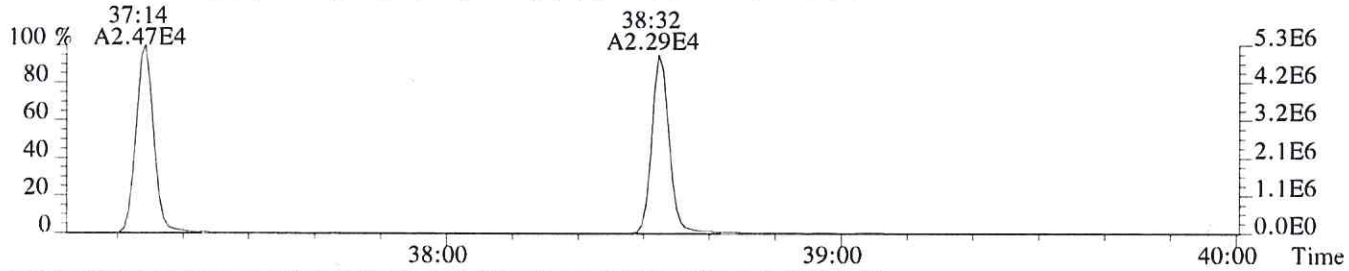
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,192.0,0.50%,F,T)



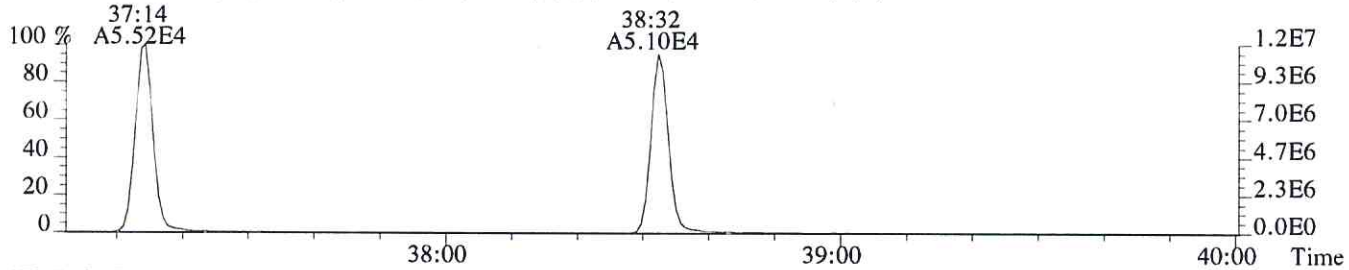
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,216.0,0.50%,F,T)



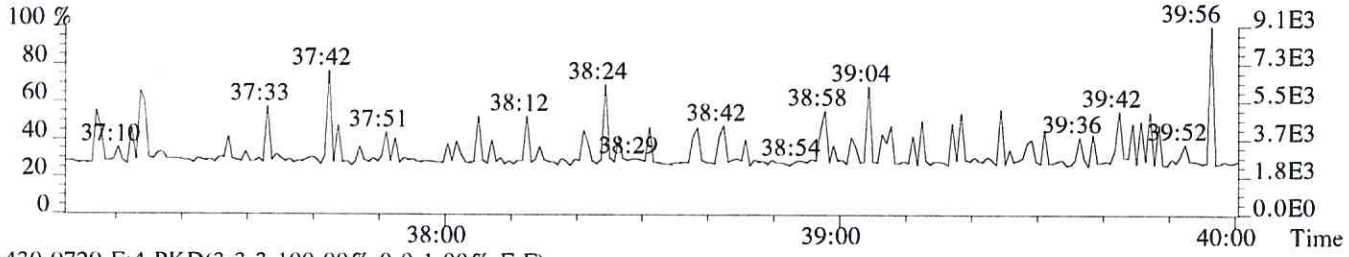
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4664.0,0.50%,F,T)



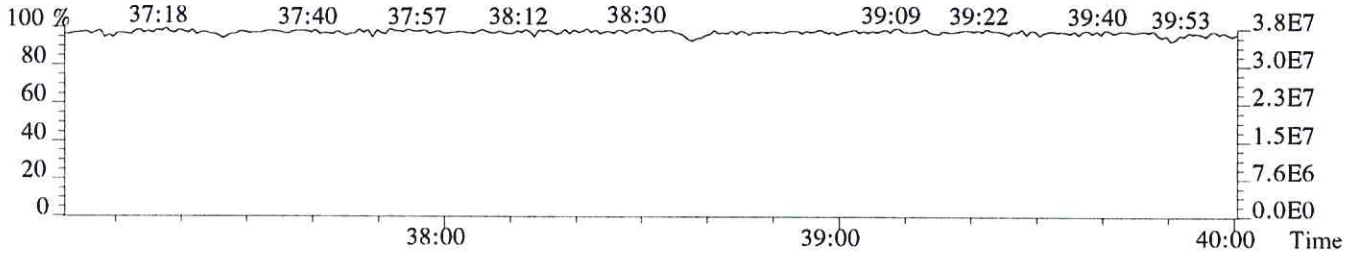
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6000.0,0.50%,F,T)



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

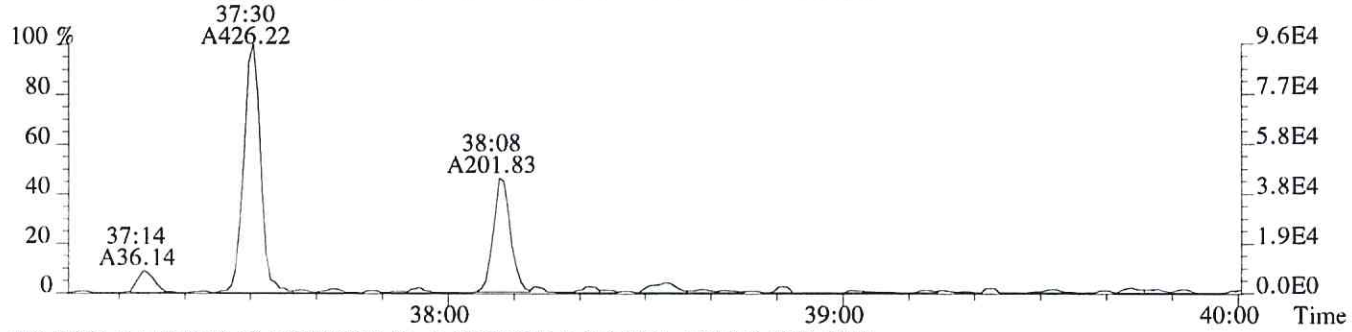


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

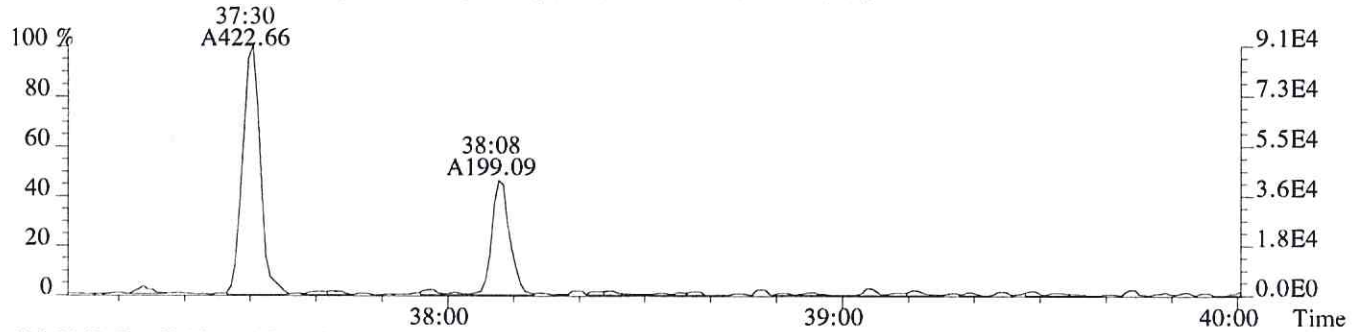


File:P607258 #1-268 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

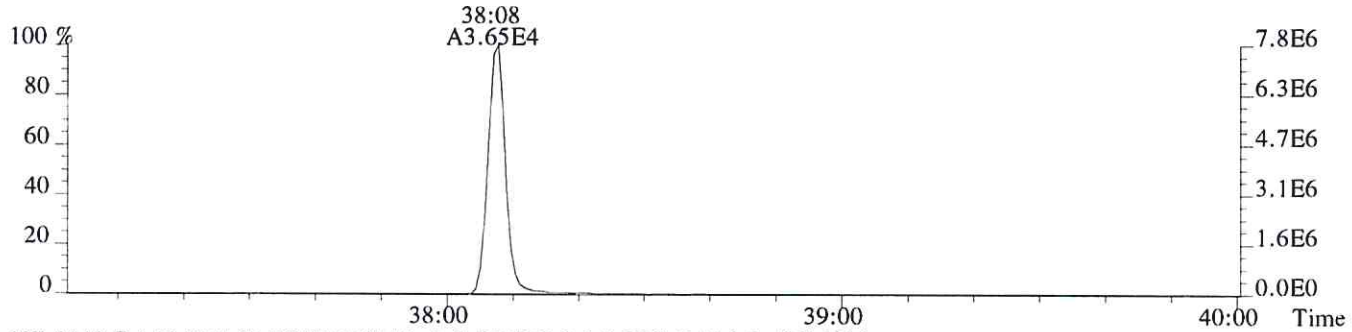
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,320.0,0.40%,F,T)



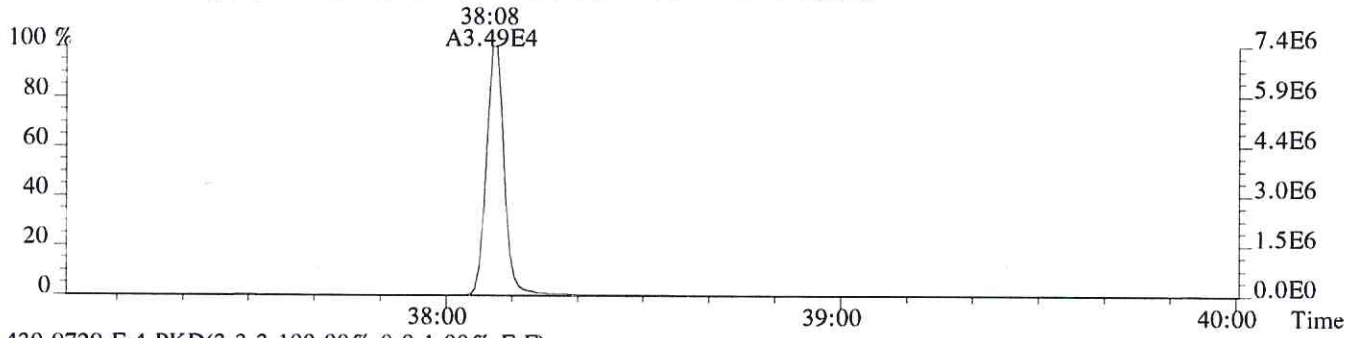
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,644.0,0.40%,F,T)



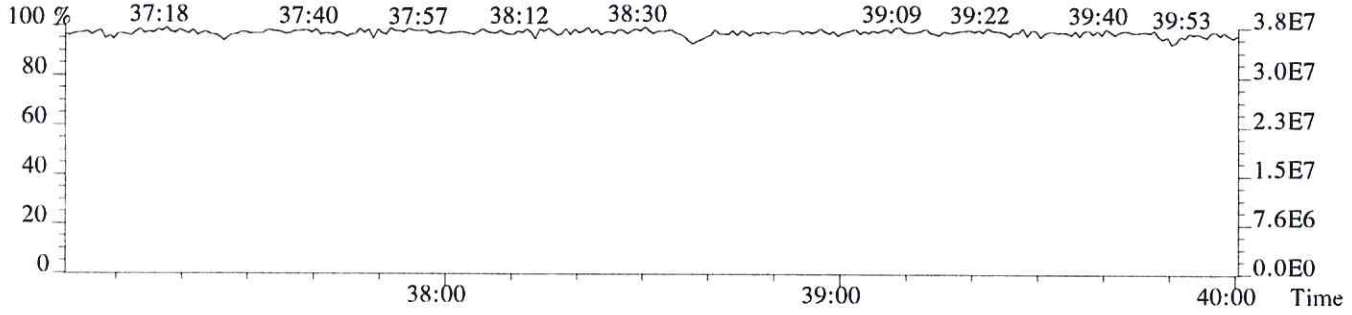
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1292.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,244.0,0.40%,F,T)

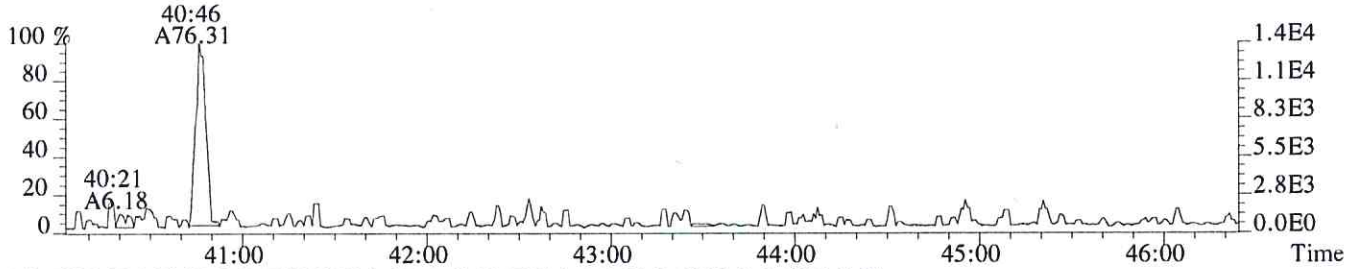


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

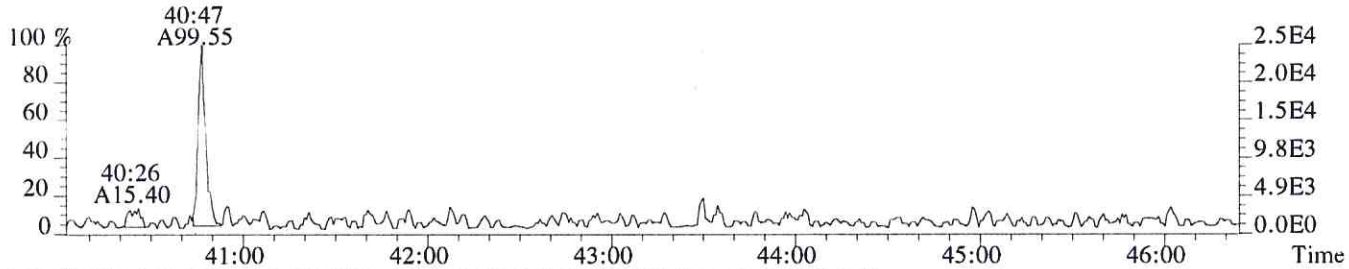


File:P607258 #1-573 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

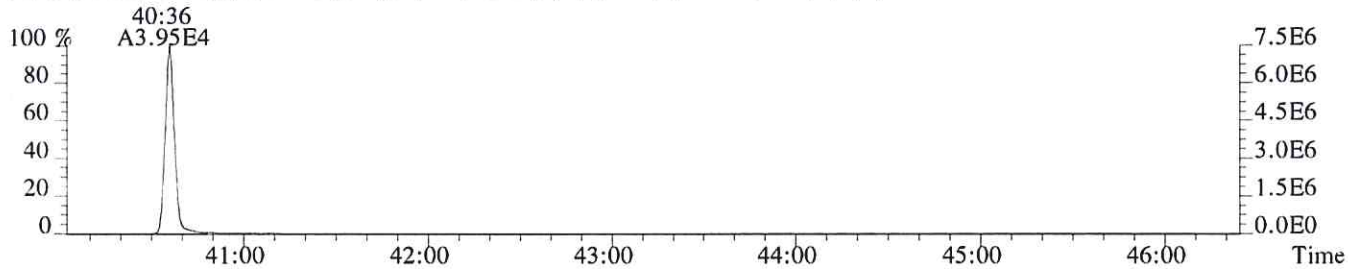
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,840.0,0.40%,F,T)



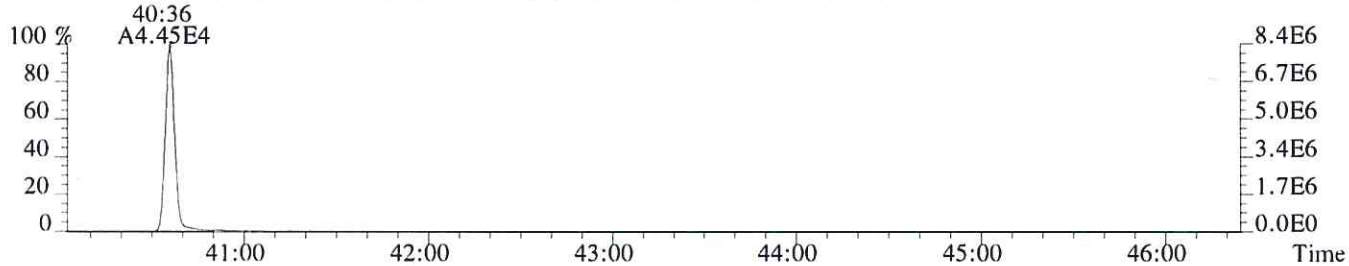
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1860.0,0.40%,F,T)



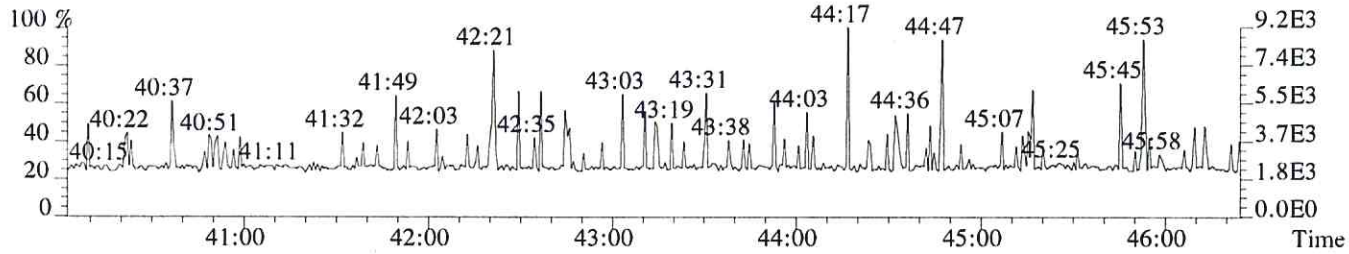
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5524.0,0.40%,F,T)



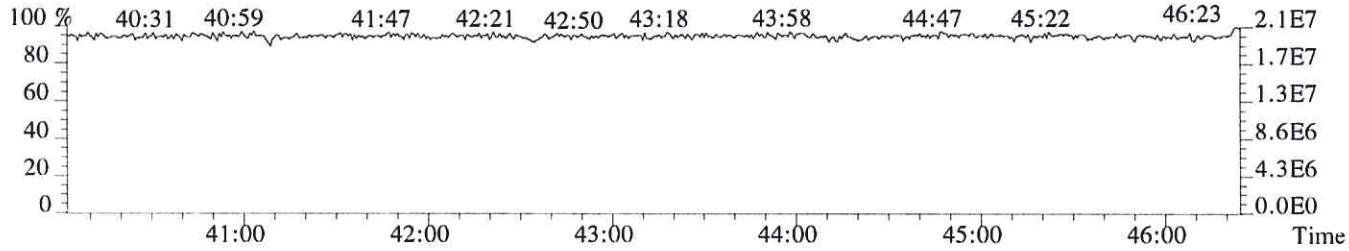
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,6020.0,0.40%,F,T)



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

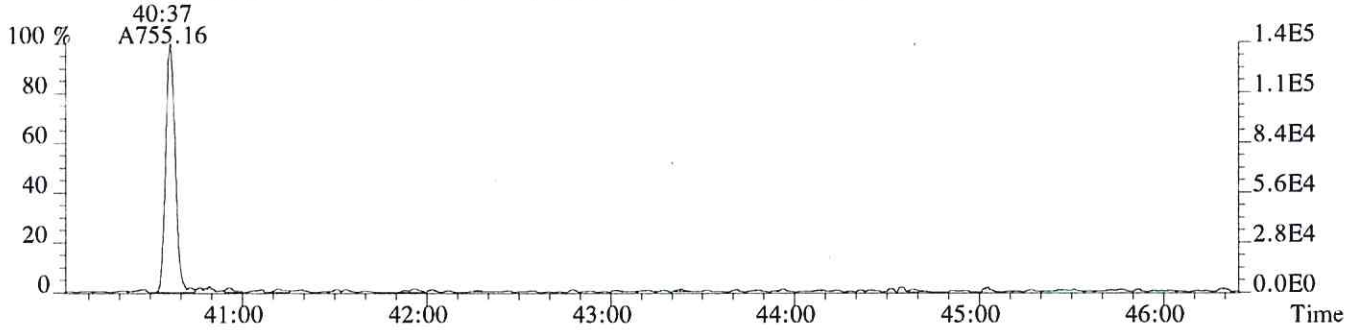


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

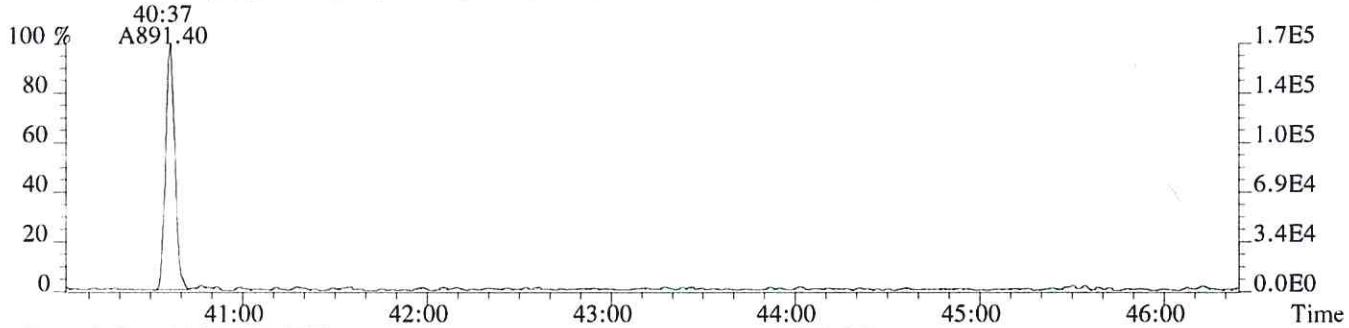


File:P607258 #1-573 Acq:20-MAY-2017 03:01:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-002

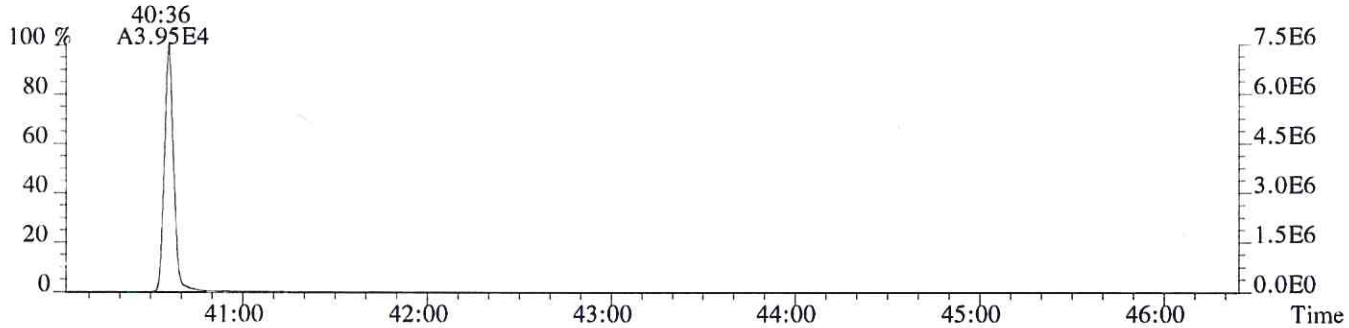
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,856.0,0.40%,F,T)



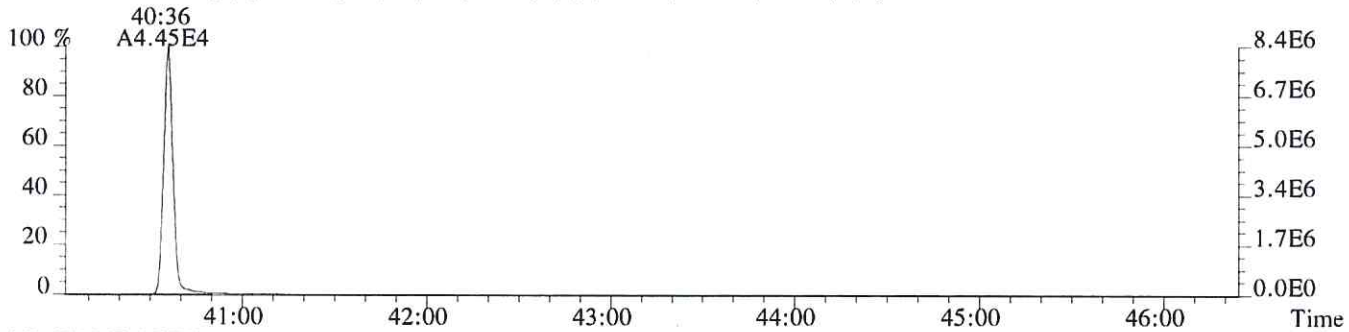
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2212.0,0.40%,F,T)



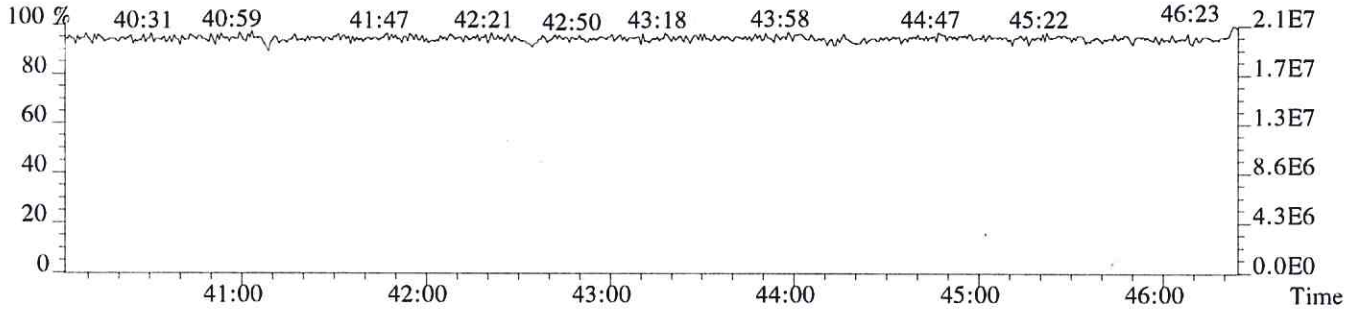
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5524.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,6020.0,0.40%,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.
M038E_170428

Run #14 Filename P607259 Samp: 1 Inj: 1 Acquired: 20-MAY-17 03:50:19
Processed: 22-MAY-17 15:52:23 Sample ID: E1700468-003

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:42	2.925e+01	2.259e+01	1.29	no	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:41	1.929e+01	2.133e+01	0.90	no	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:33	2.356e+01	3.028e+01	0.78	no	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	2.919e+01	1.961e+01	1.49	no	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:10	2.171e+01	1.696e+01	1.28	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:56	3.101e+01	2.064e+01	1.50	no	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:14	3.603e+01	2.260e+01	1.59	no	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:32	9.023e+00	1.521e+01	0.59	no	no	1.341
10	Unk	OCDF	40:47	4.249e+01	4.166e+01	1.02	yes	no	1.337
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.055
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	yes	1.074
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	yes	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:39	1.629e+01	1.142e+01	1.43	no	yes	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:08	4.087e+01	4.131e+01	0.99	yes	no	1.048
17	Unk	OCDD	40:36	1.334e+02	1.838e+02	0.73	no	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:46	2.609e+04	3.255e+04	0.80	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:41	5.734e+04	3.681e+04	1.56	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:41	5.670e+04	3.634e+04	1.56	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:31	2.456e+04	4.659e+04	0.53	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:38	3.188e+04	6.027e+04	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:10	1.998e+04	3.895e+04	0.51	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:56	2.102e+04	4.025e+04	0.52	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	1.665e+04	3.653e+04	0.46	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	1.414e+04	3.135e+04	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:45	1.377e+04	1.738e+04	0.79	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	31:60	3.440e+04	2.125e+04	1.62	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	2.921e+04	2.342e+04	1.25	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:24	2.969e+04	2.311e+04	1.28	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:07	2.375e+04	2.254e+04	1.05	yes	no	0.884
32	IS	13C-OCDD	40:35	2.612e+04	2.834e+04	0.92	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:03	7.969e+04	9.883e+04	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:39	1.053e+05	8.478e+04	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:46	2.238e+04				no	1.072

$$\text{OCDD} = \frac{(1.334e+02 + \overset{1.499e+02}{\cancel{1.838e+02}}) \times 4000 \text{ pg} \times 1}{(2.612e+04 + 2.834e+04) \times 1000 \text{ mL} \times 100 / 100 \times 1.120} = 18.56 \text{ pg/L}$$

LM 05/23/17

OCDD = 0.73 < 0.89

$$A_2 = \frac{A_1}{0.89} = 1.499e+02$$

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
M038E_170428

Run #14 Filename P607259 Samp: 1 Inj: 1 Acquired: 20-MAY-17 03:50:19
Processed: 22-MAY-17 15:52:23 LAB. ID: E1700468-003

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	2.64e+02	*	*	1.11e+03	*
2	1,2,3,7,8-PeCDF	5.04e+03	2.08e+02	2.4e+01	4.22e+03	9.00e+02	4.7e+00
3	2,3,4,7,8-PeCDF	4.65e+03	2.08e+02	2.2e+01	3.91e+03	9.00e+02	4.3e+00
4	1,2,3,4,7,8-HxCDF	4.22e+03	2.40e+02	1.8e+01	6.30e+03	2.44e+02	2.6e+01
5	1,2,3,6,7,8-HxCDF	5.86e+03	2.40e+02	2.4e+01	5.53e+03	2.44e+02	2.3e+01
6	2,3,4,6,7,8-HxCDF	5.91e+03	2.40e+02	2.5e+01	4.60e+03	2.44e+02	1.9e+01
7	1,2,3,7,8,9-HxCDF	6.43e+03	2.40e+02	2.7e+01	4.64e+03	2.44e+02	1.9e+01
8	1,2,3,4,6,7,8-HpCDF	7.49e+03	1.96e+02	3.8e+01	5.28e+03	2.44e+02	2.2e+01
9	1,2,3,4,7,8,9-HpCDF	2.25e+03	1.96e+02	1.1e+01	4.33e+03	2.44e+02	1.8e+01
10	OCDF	8.74e+03	1.72e+02	5.1e+01	6.69e+03	1.39e+03	4.8e+00
11	2,3,7,8-TCDD	*	1.43e+03	*	*	8.12e+02	*
12	1,2,3,7,8-PeCDD	*	1.35e+03	*	*	1.38e+03	*
13	1,2,3,4,7,8-HxCDD	*	2.32e+02	*	*	2.64e+02	*
14	1,2,3,6,7,8-HxCDD	*	2.32e+02	*	*	2.64e+02	*
15	1,2,3,7,8,9-HxCDD	4.06e+03	2.32e+02	1.7e+01	2.49e+03	2.64e+02	9.4e+00
16	1,2,3,4,6,7,8-HpCDD	9.66e+03	1.44e+02	6.7e+01	8.78e+03	2.32e+02	3.8e+01
17	OCDD	2.51e+04	2.12e+02	1.2e+02	3.06e+04	8.96e+02	3.4e+01
18	13C-2,3,7,8-TCDF	3.65e+06	1.12e+04	3.3e+02	4.50e+06	4.50e+03	1.0e+03
19	13C-1,2,3,7,8-PeCDF	9.76e+06	1.15e+04	8.5e+02	6.16e+06	3.28e+02	1.9e+04
20	13C-2,3,4,7,8-PeCDF	1.03e+07	1.15e+04	8.9e+02	6.51e+06	3.28e+02	2.0e+04
21	13C-1,2,3,4,7,8-HxCDF	5.13e+06	2.96e+02	1.7e+04	9.75e+06	2.02e+03	4.8e+03
22	13C-1,2,3,6,7,8-HxCDF	6.21e+06	2.96e+02	2.1e+04	1.20e+07	2.02e+03	6.0e+03
23	13C-2,3,4,6,7,8-HxCDF	4.15e+06	2.96e+02	1.4e+04	8.03e+06	2.02e+03	4.0e+03
24	13C-1,2,3,7,8,9-HxCDF	4.26e+06	2.96e+02	1.4e+04	8.12e+06	2.02e+03	4.0e+03
25	13C-1,2,3,4,6,7,8-HpCDF	3.58e+06	3.80e+03	9.4e+02	7.95e+06	5.90e+03	1.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.94e+06	3.80e+03	7.7e+02	6.51e+06	5.90e+03	1.1e+03
27	13C-2,3,7,8-TCDD	2.18e+06	7.01e+03	3.1e+02	2.73e+06	3.27e+03	8.4e+02
28	13C-1,2,3,7,8-PeCDD	6.21e+06	3.00e+02	2.1e+04	3.80e+06	6.84e+02	5.6e+03
29	13C-1,2,3,4,7,8-HxCDD	6.35e+06	1.92e+03	3.3e+03	5.00e+06	1.22e+03	4.1e+03
30	13C-1,2,3,6,7,8-HxCDD	6.15e+06	1.92e+03	3.2e+03	4.82e+06	1.22e+03	3.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	5.19e+06	2.72e+02	1.9e+04	4.95e+06	7.92e+02	6.3e+03
32	13C-OCDD	4.95e+06	5.66e+03	8.7e+02	5.41e+06	3.70e+03	1.5e+03
33	13C-1,2,3,4-TCDD	1.19e+07	7.01e+03	1.7e+03	1.48e+07	3.27e+03	4.5e+03
34	13C-1,2,3,7,8,9-HxCDD	2.11e+07	1.92e+03	1.1e+04	1.69e+07	1.22e+03	1.4e+04
35	37Cl-2,3,7,8-TCDD	3.47e+06	8.96e+02	3.9e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.432e{+}03 + 8.120e{+}02\ ) \times 2000}{(2.177e{+}06 + 2.732e{+}06\ ) \times (\qquad\qquad\qquad\qquad) \times 1.055} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M038E_170428

Entry: 36 Totals Name: Total Tetra-Furans

Run: 14 File: P607259 Sample:1 Injection:1 Function:1

Acquired: 20-MAY-17 03:50:19 Processed: 22-MAY-17 15:52:23

Mass: 303.9020 305.8990 Tot Response: 4.69e+02 RRF: 1.020

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:42	1.82e+02	2.14e+02	0.85	yes	3.96e+02	n	n
2	24:20	3.40e+01	3.97e+01	0.86	yes	7.37e+01	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M038E_170428

Entry: 41 Totals Name: Total Hexa-Furans

Run: 14 File: P607259 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 03:50:19 Processed: 22-MAY-17 15:52:23

Mass: 373.8210 375.8180 Tot Response: 3.87e+01 RRF: 1.207

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	35:10	2.17e+01	1.70e+01	1.28	yes	3.87e+01	2,3,4,6,7,8-HxCDF	n	n

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Peak List Summary

CLIENT ID.

M038E_170428

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 14 File: P607259 Sample:1 Injection:1 Function:4

Acquired: 20-MAY-17 03:50:19 Processed: 22-MAY-17 15:52:23

Mass: 423.7770 425.7740 Tot Response: 8.22e+01 RRF: 1.048

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:08	4.09e+01	4.13e+01	0.99	yes	8.22e+01	1,2,3,4,6,7,8-HpCDD	n	n

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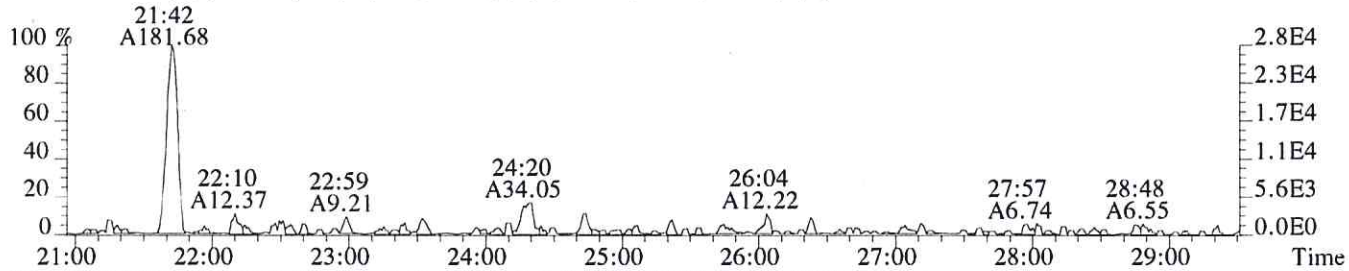
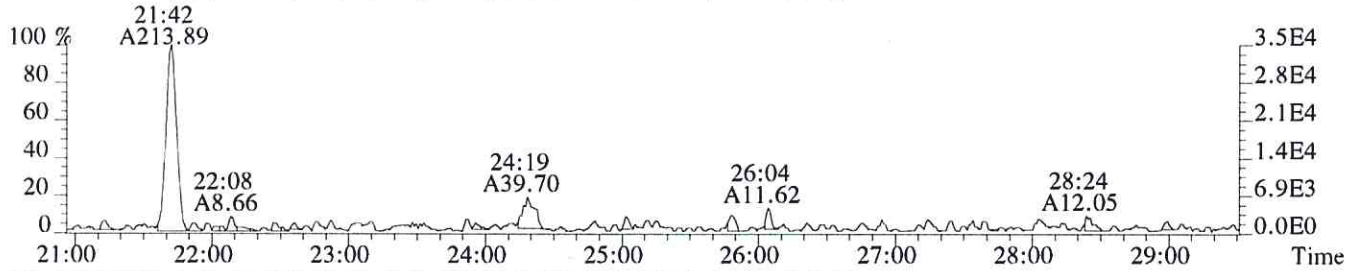
File:P607259 #1-609 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003

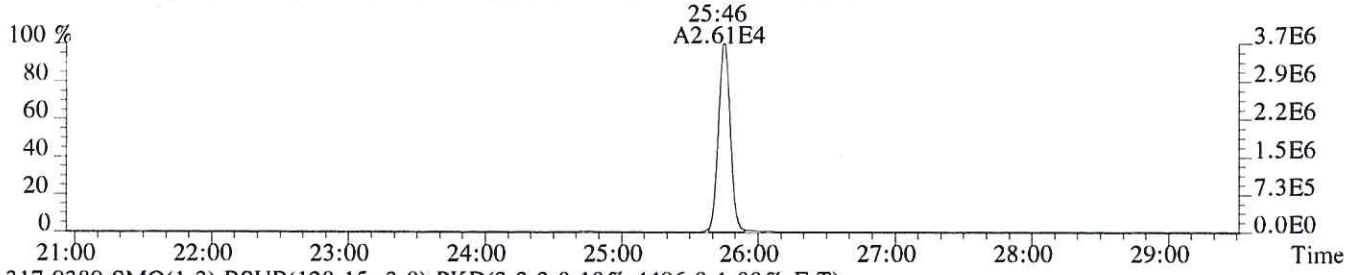
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,264.0,1.00%,F,T)



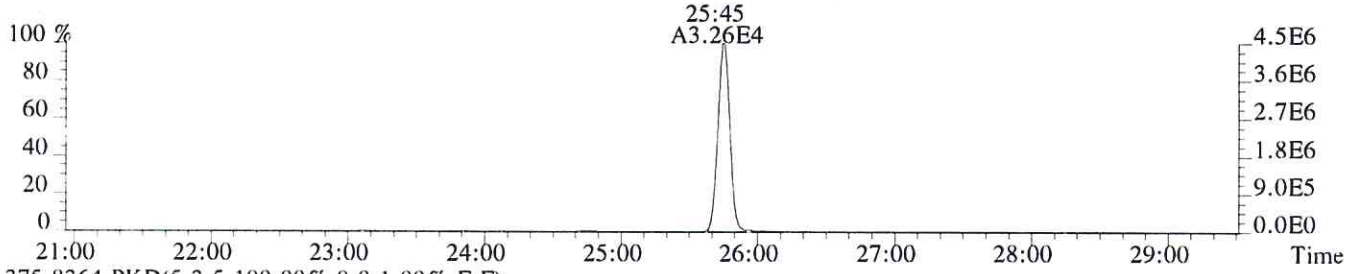
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1112.0,1.00%,F,T)



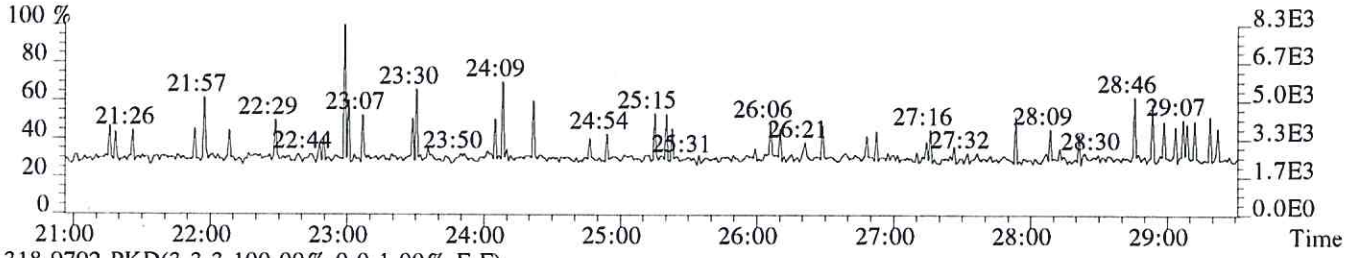
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11172.0,1.00%,F,T)



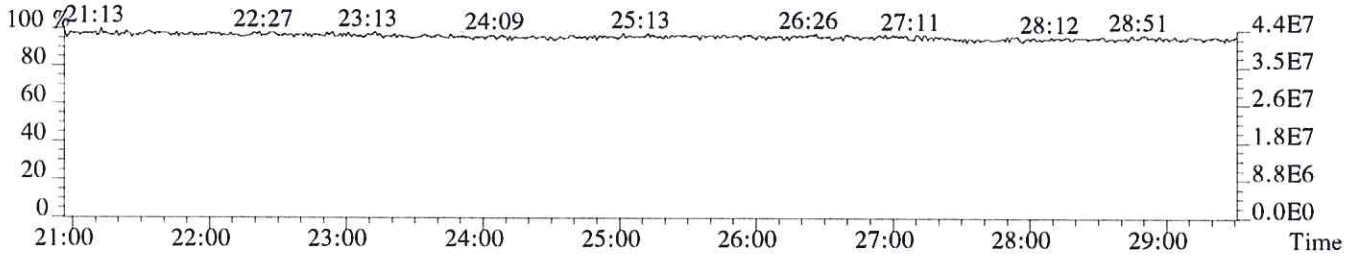
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4496.0,1.00%,F,T)



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

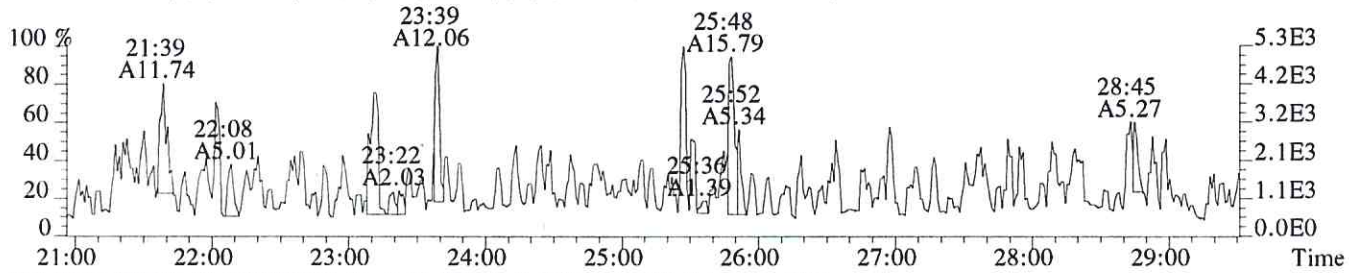


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

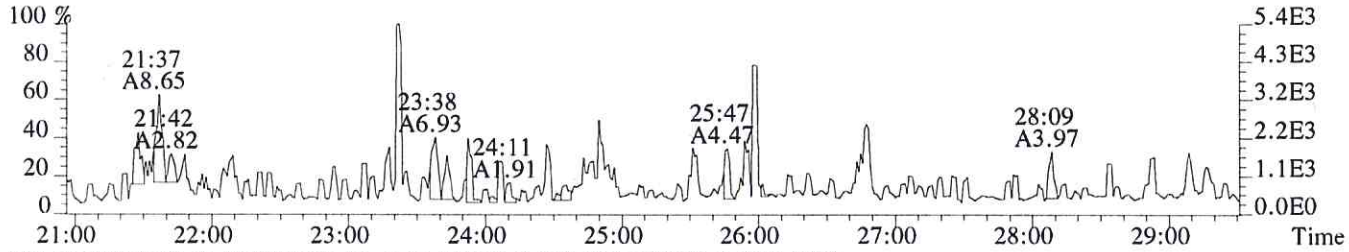


File:P607259 #1-609 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003

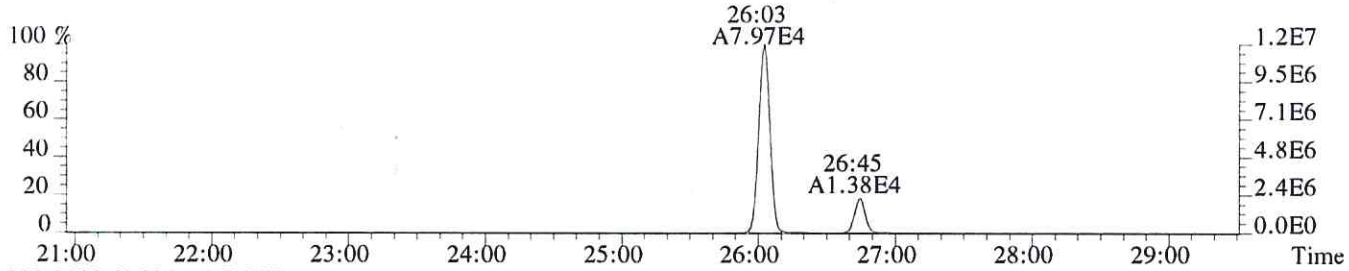
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1432.0,1.00%,F,T)



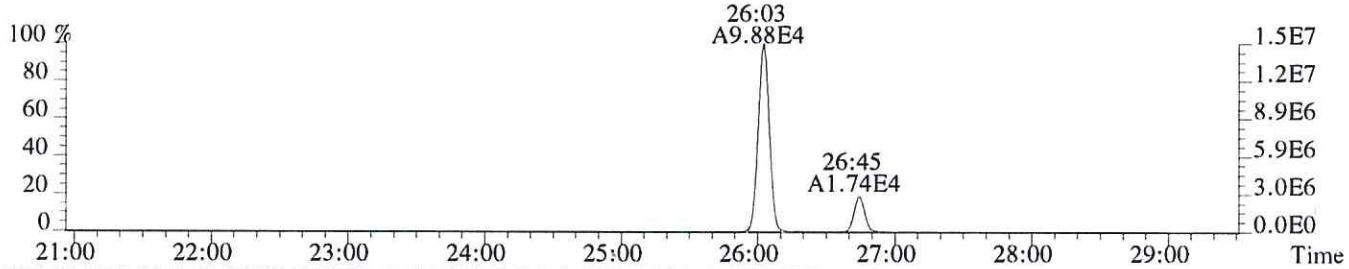
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,812.0,1.00%,F,T)



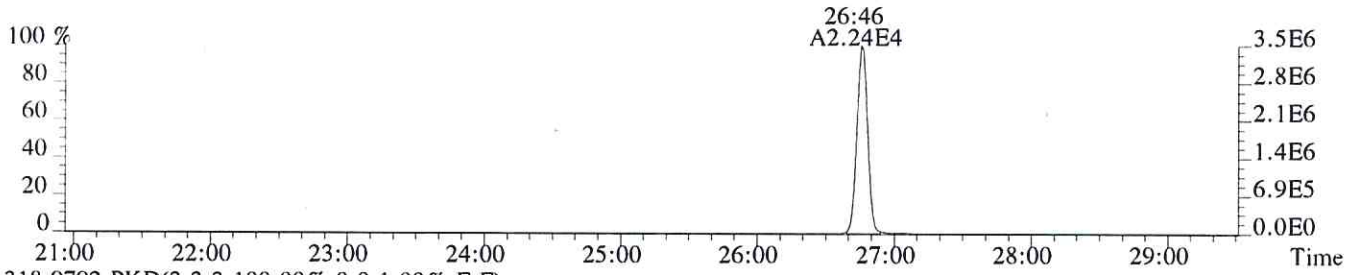
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7008.0,1.00%,F,T)



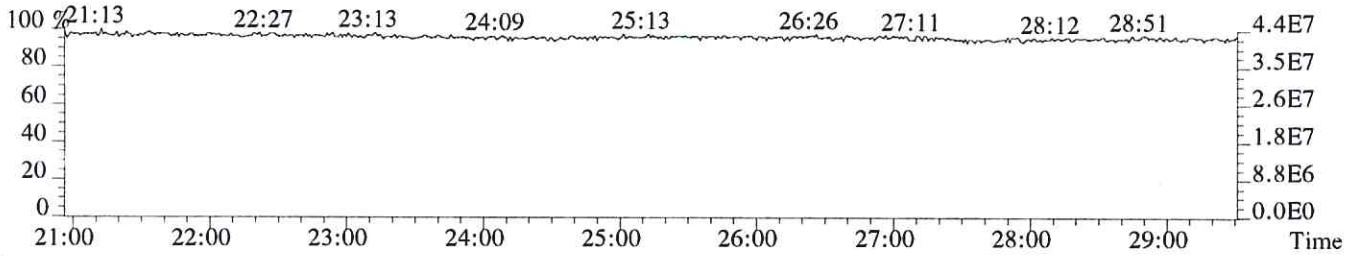
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3268.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,896.0,1.00%,F,T)

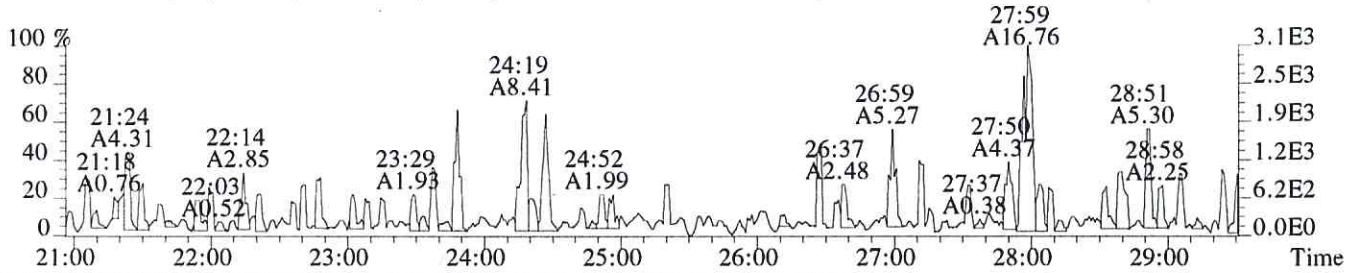


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

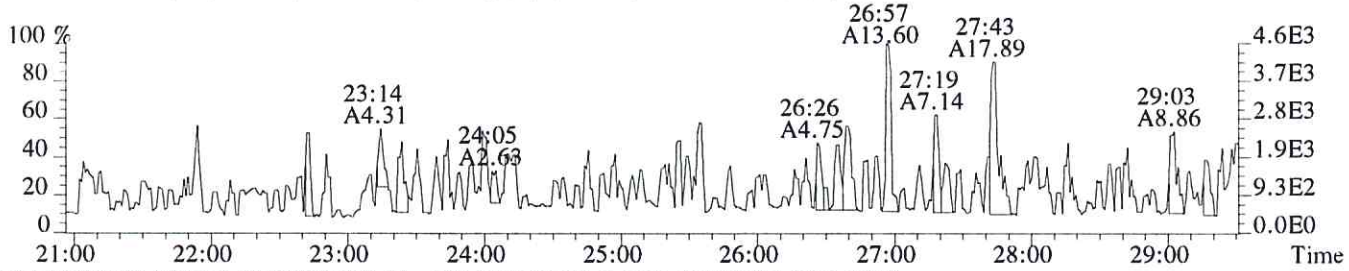


File:P607259 #1-609 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003

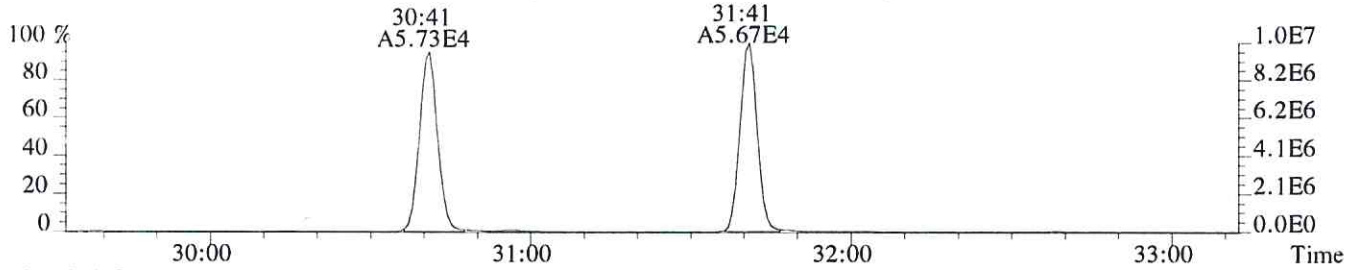
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,252.0,1.00%,F,T)



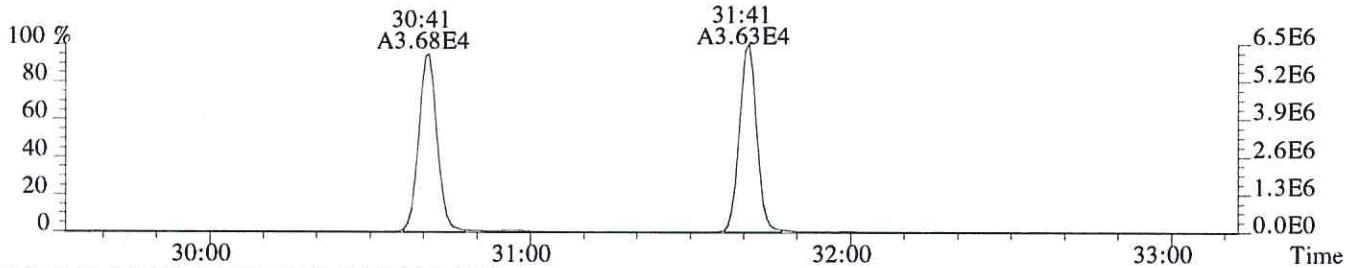
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1092.0,1.00%,F,T)



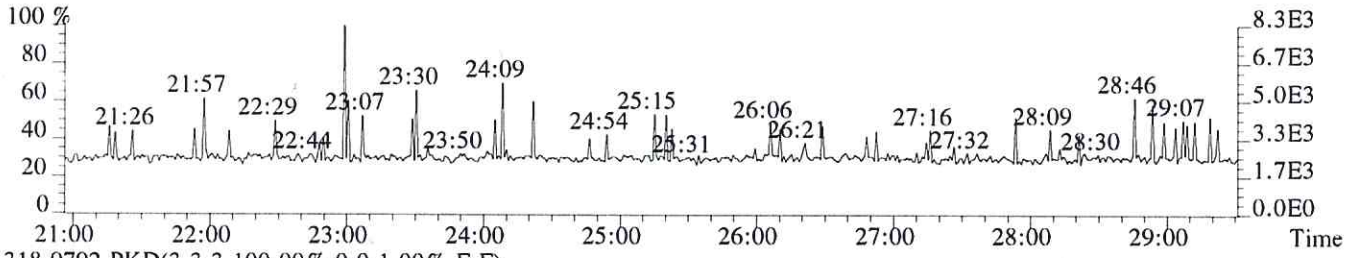
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11536.0,1.00%,F,T)



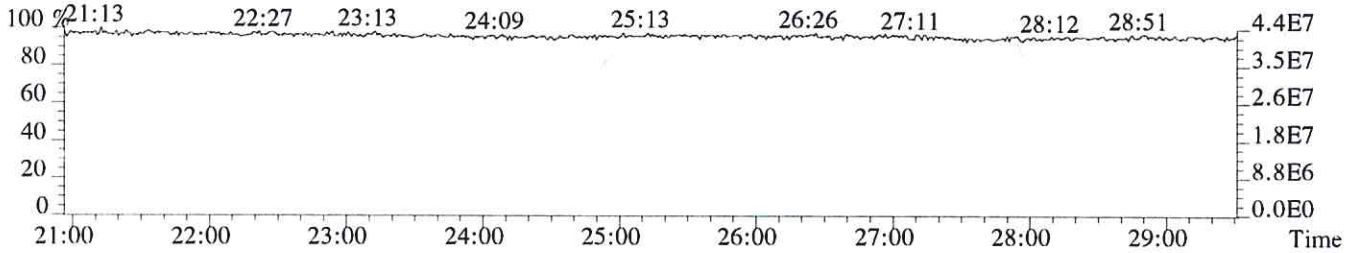
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,328.0,1.00%,F,T)



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

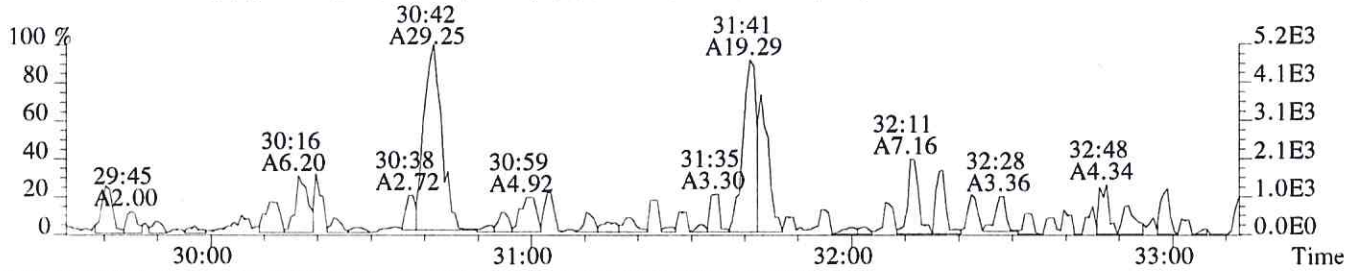


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

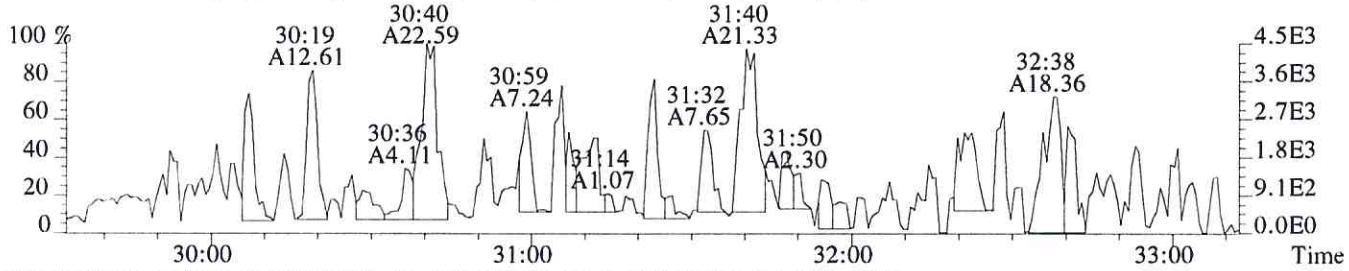


File:P607259 #1-330 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003

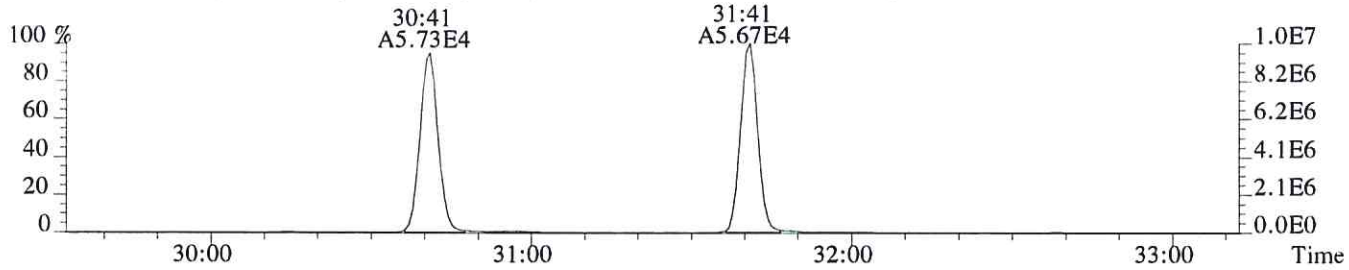
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,208.0,1.00%,F,T)



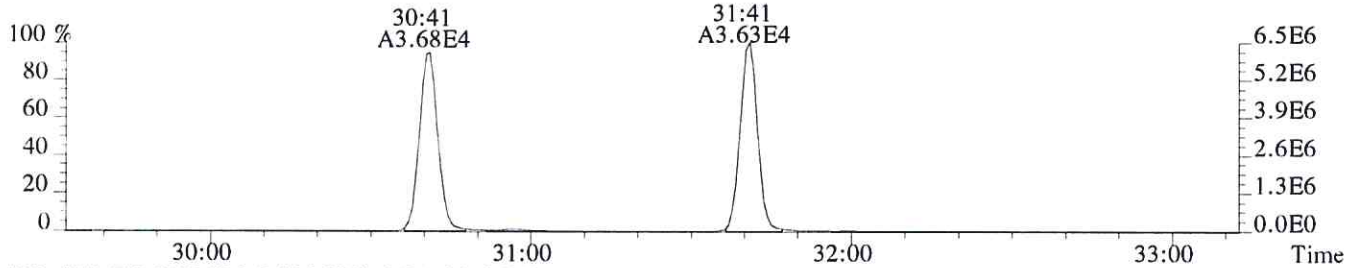
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,900.0,1.00%,F,T)



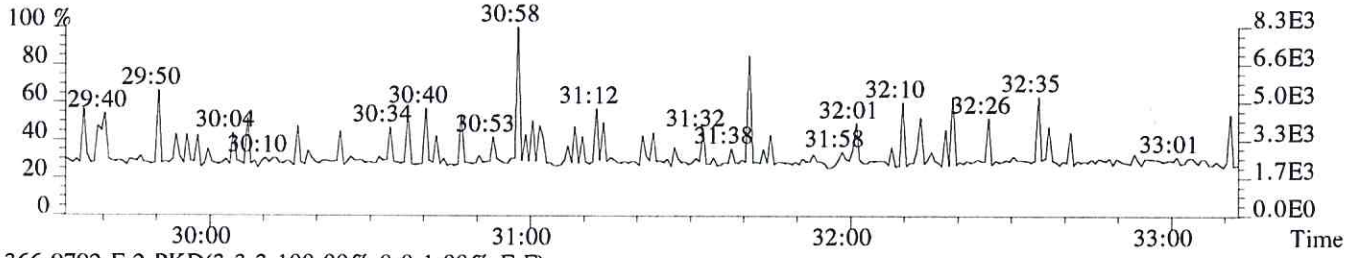
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11536.0,1.00%,F,T)



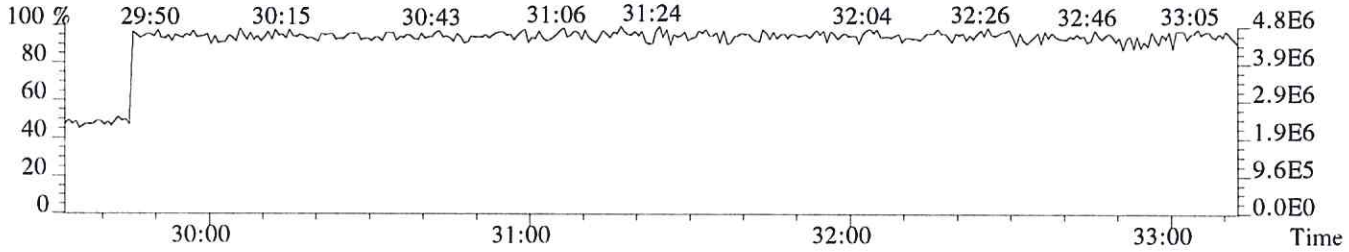
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,328.0,1.00%,F,T)



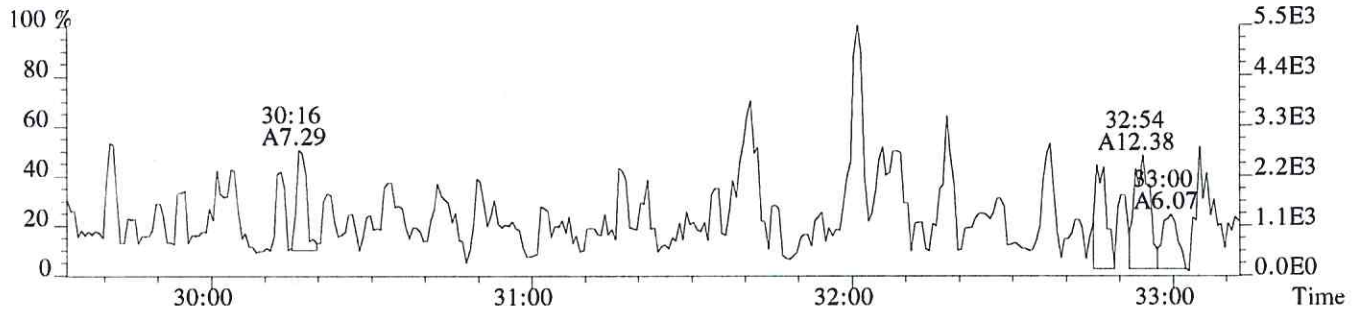
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



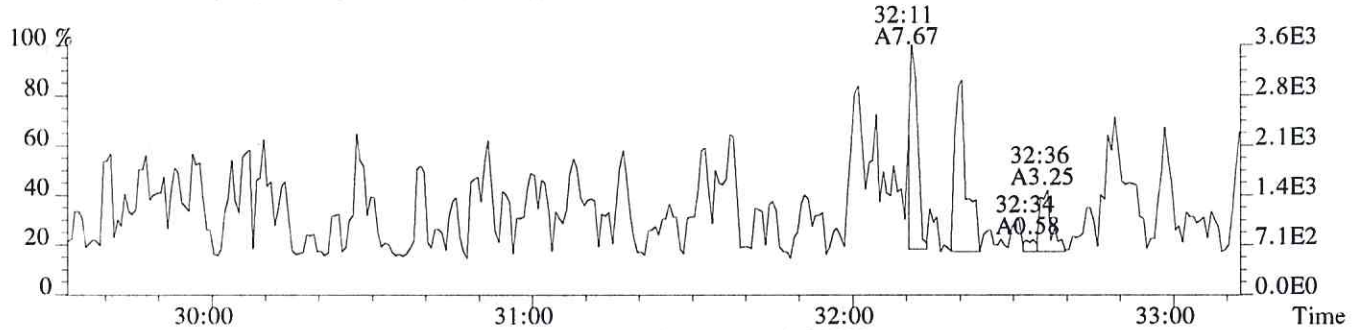
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



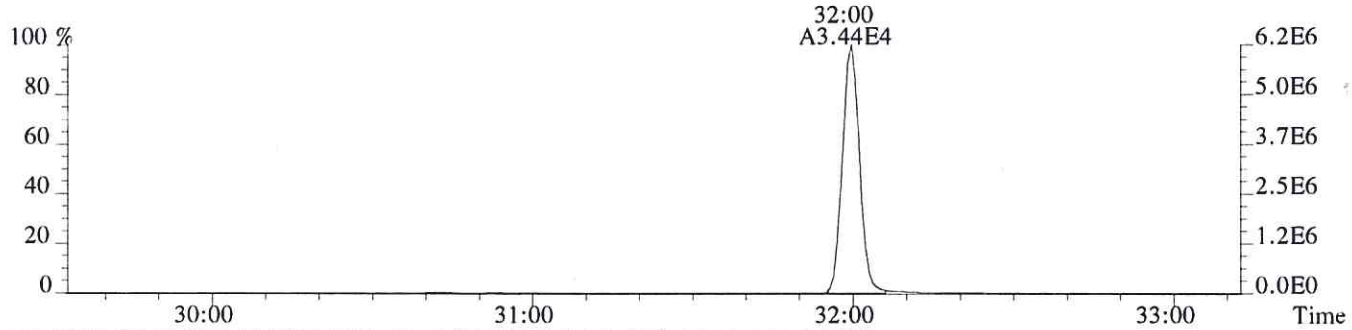
File:P607259 #1-330 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1348.0,1.00%,F,T)



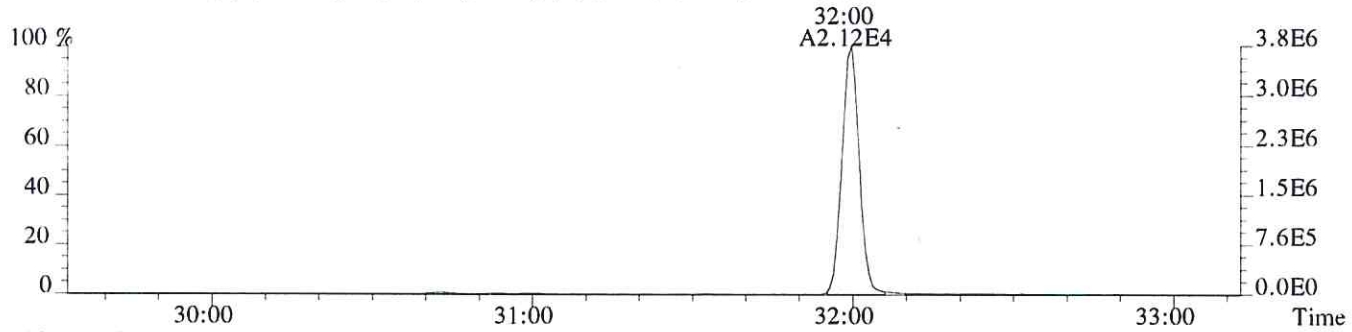
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1380.0,1.00%,F,T)



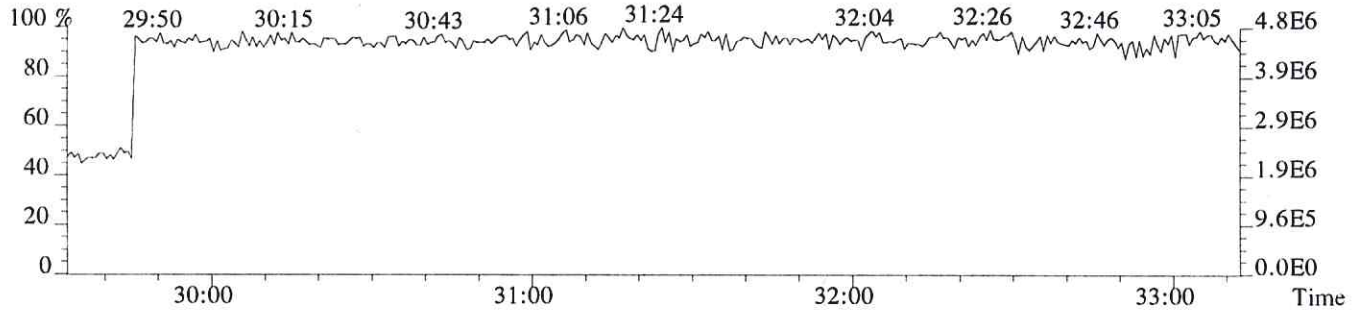
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,300.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,684.0,1.00%,F,T)

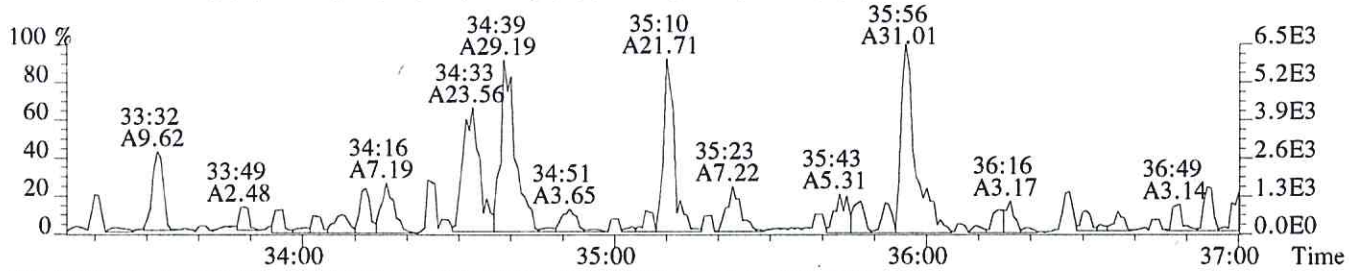


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

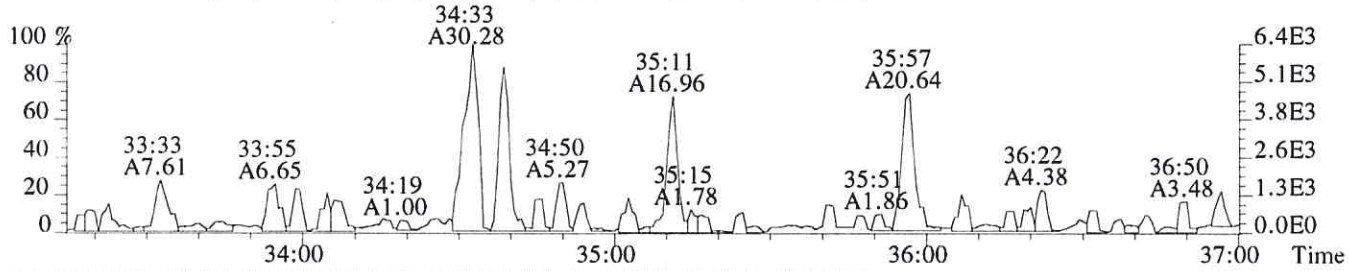


File:P607259 #1-339 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003

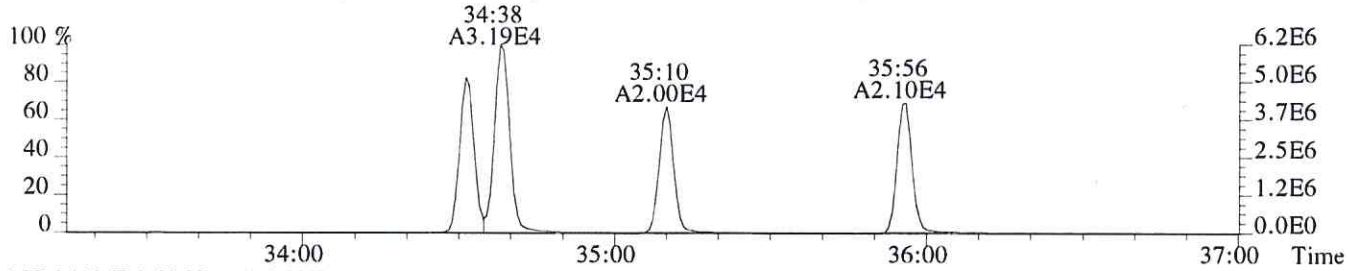
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,240.0,0.40%,F,T)



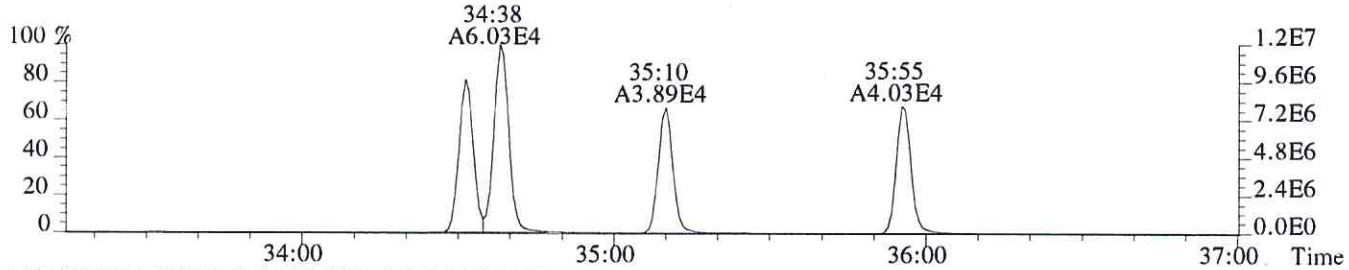
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,244.0,0.40%,F,T)



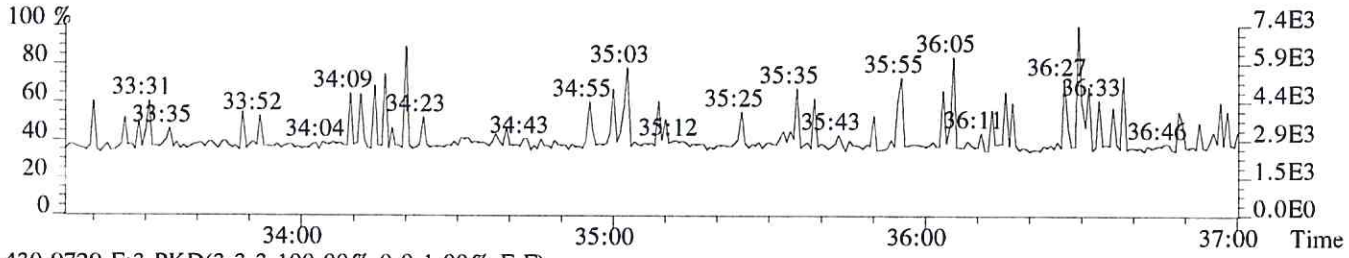
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,296.0,0.40%,F,T)



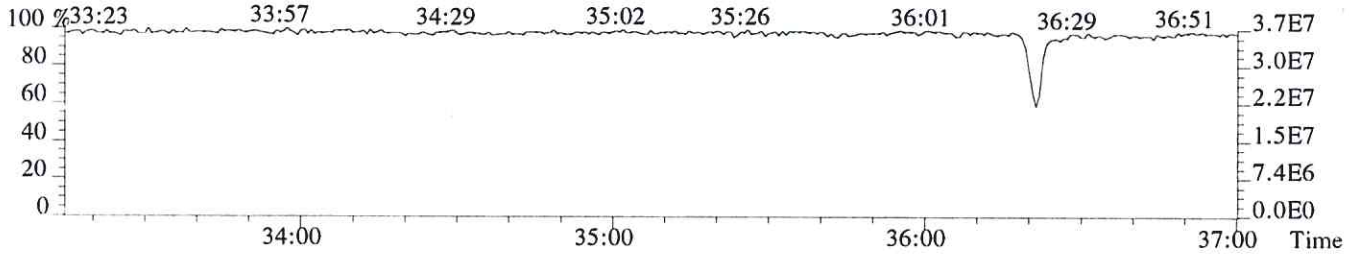
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2016.0,0.40%,F,T)



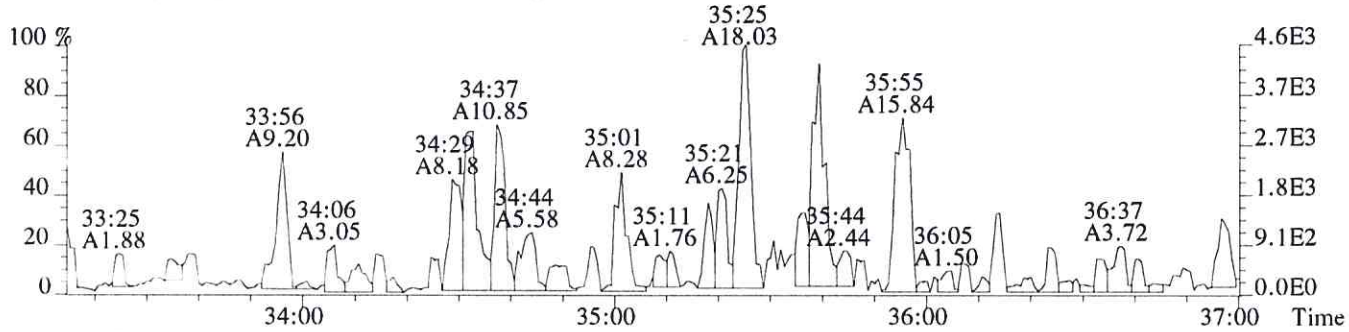
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



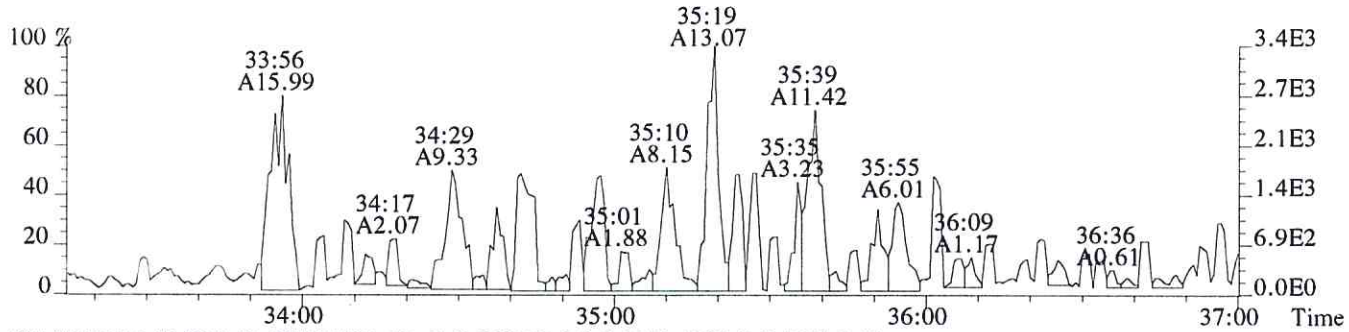
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



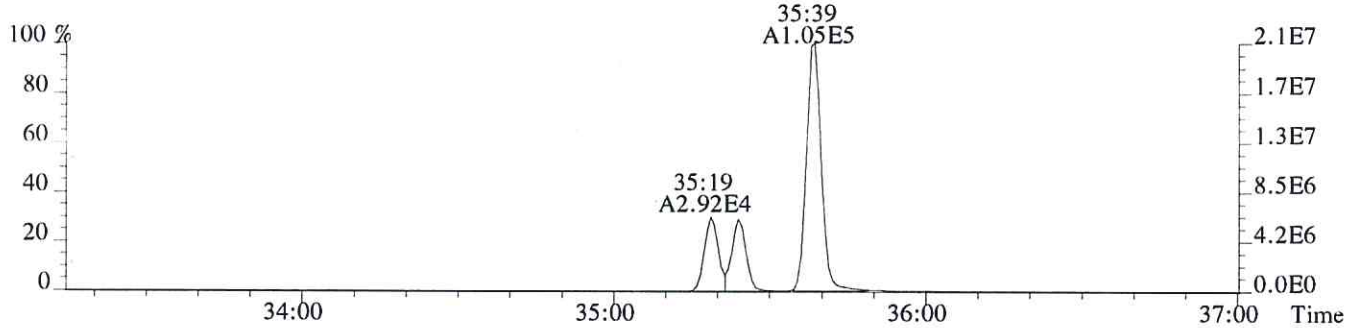
File:P607259 #1-339 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,232.0,0.40%,F,T)



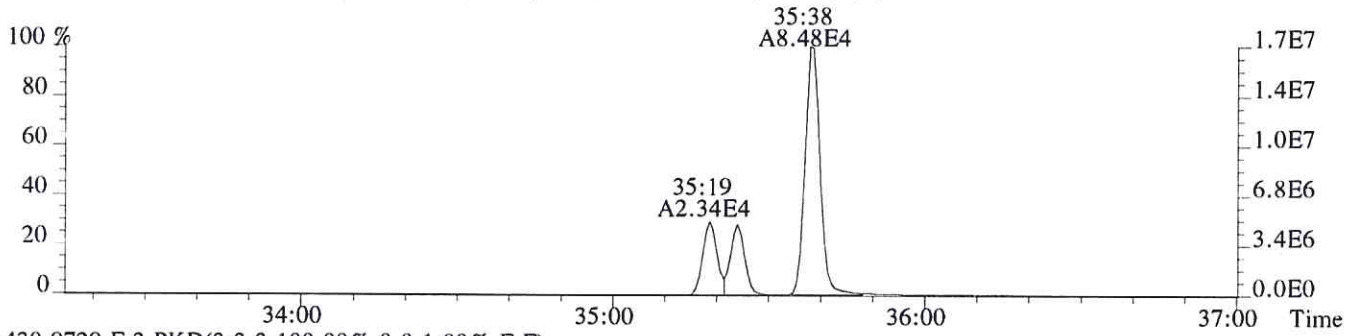
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,264.0,0.40%,F,T)



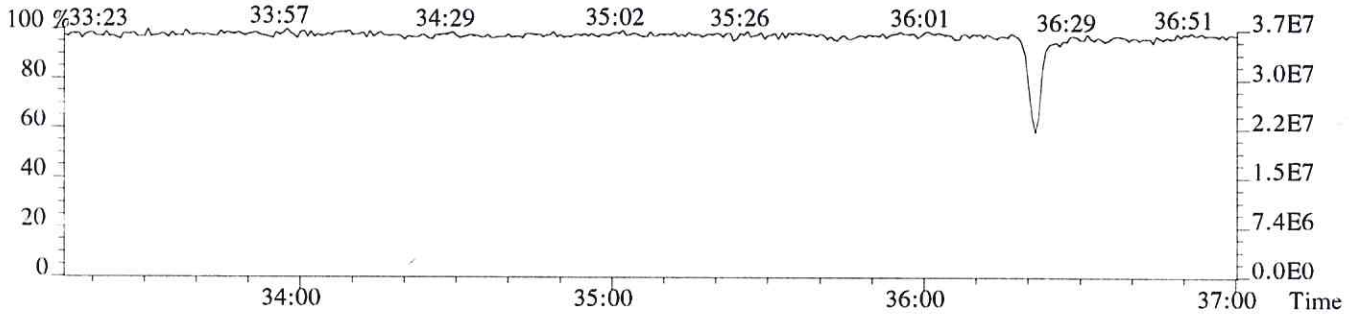
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1920.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1224.0,0.40%,F,T)

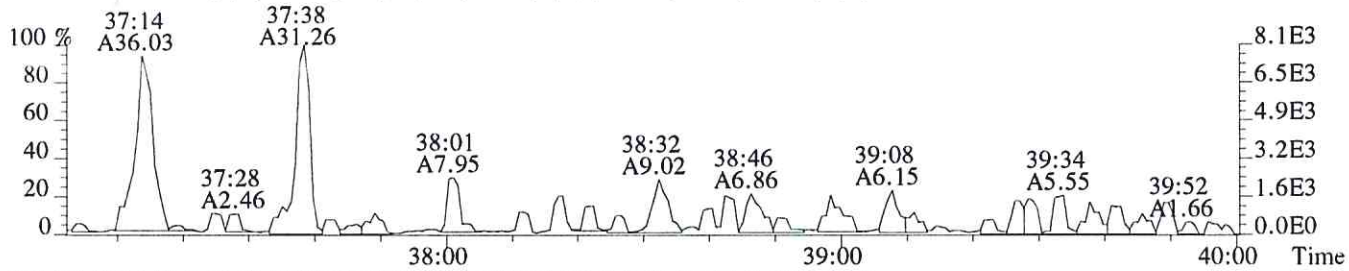


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

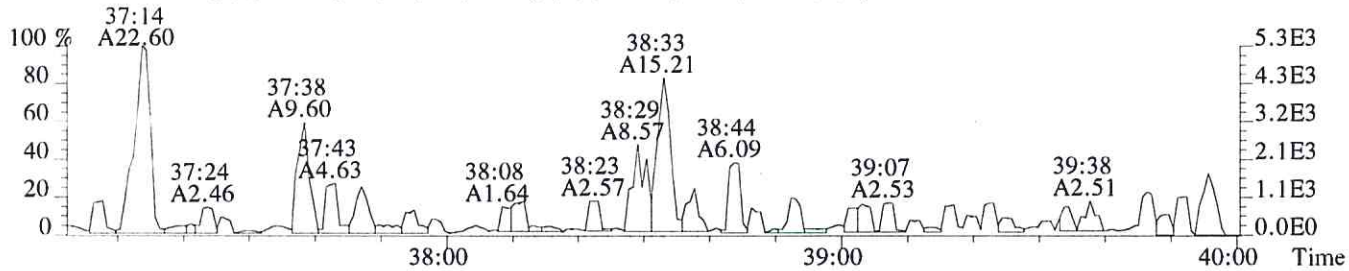


File:P607259 #1-268 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003

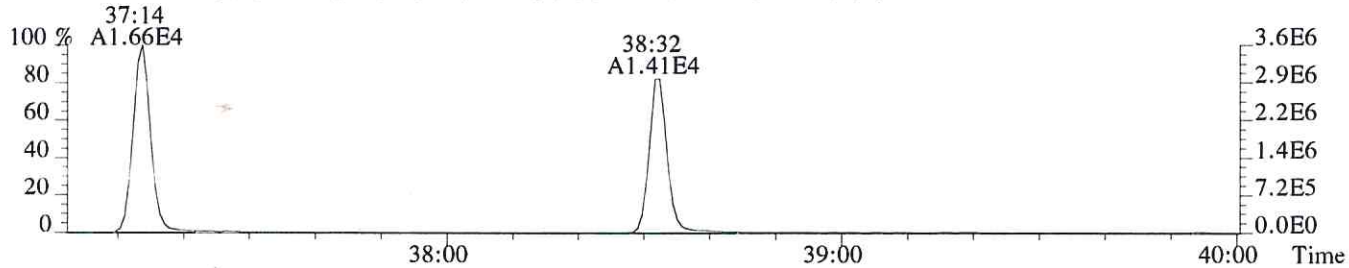
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,196.0,0.50%,F,T)



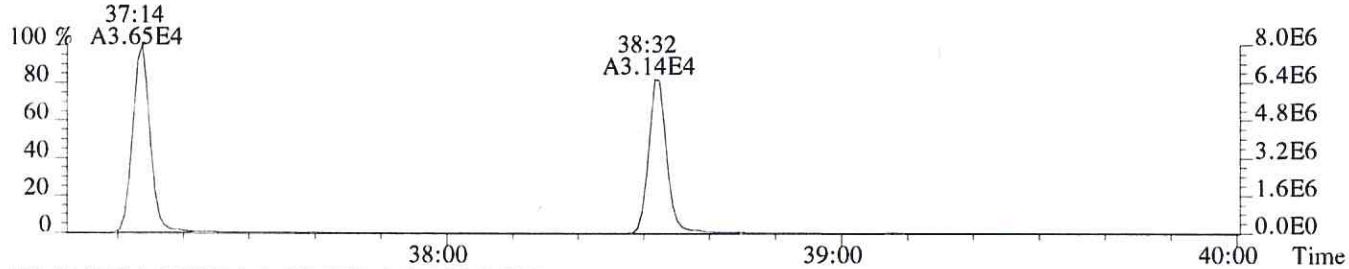
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,244.0,0.50%,F,T)



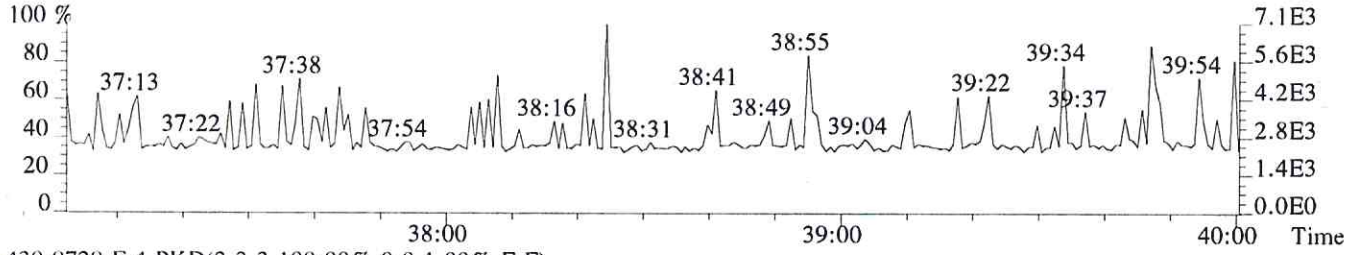
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3800.0,0.50%,F,T)



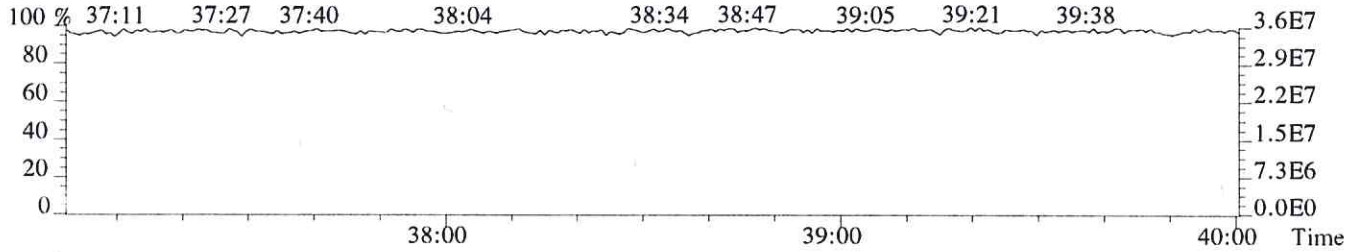
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5904.0,0.50%,F,T)



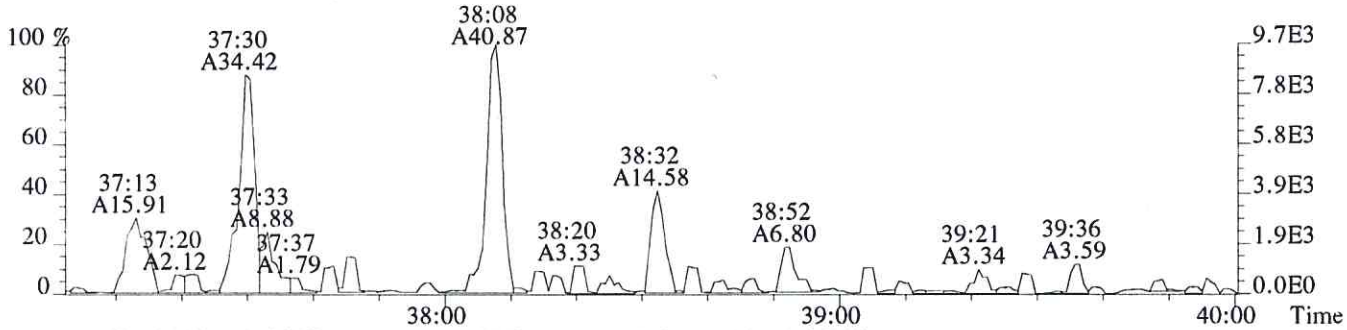
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



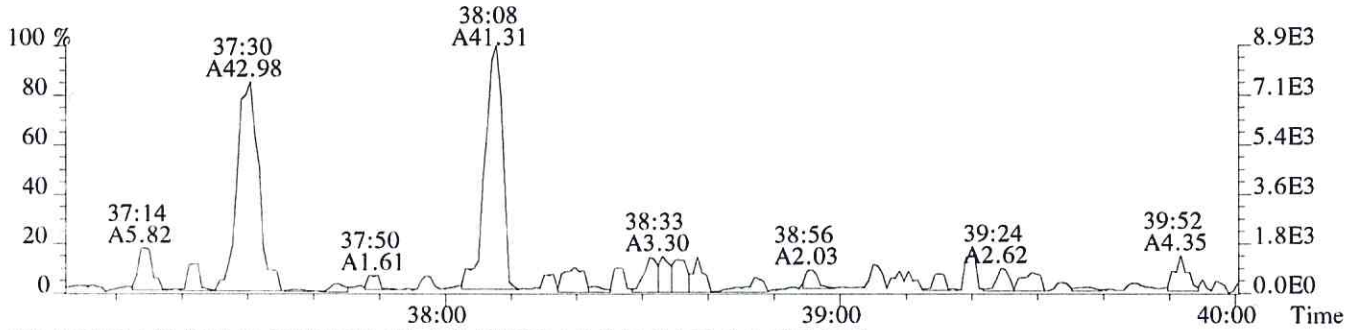
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



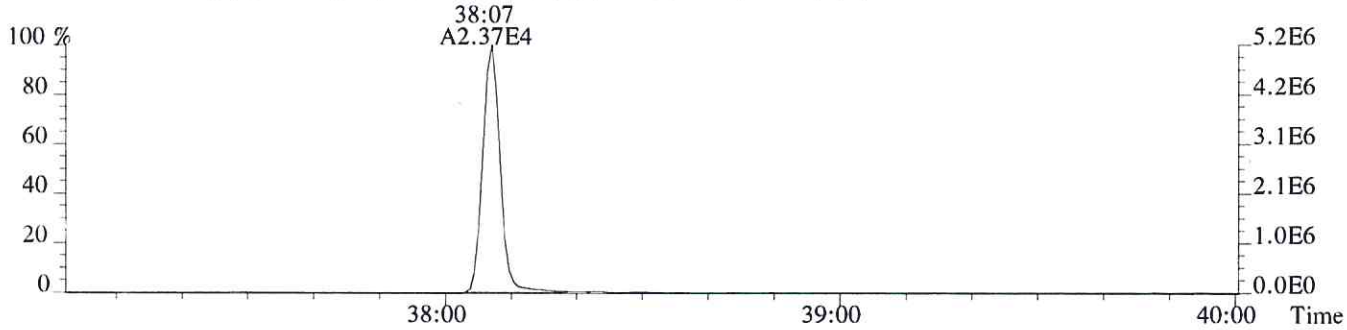
File:P607259 #1-268 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,144.0,0.40%,F,T)



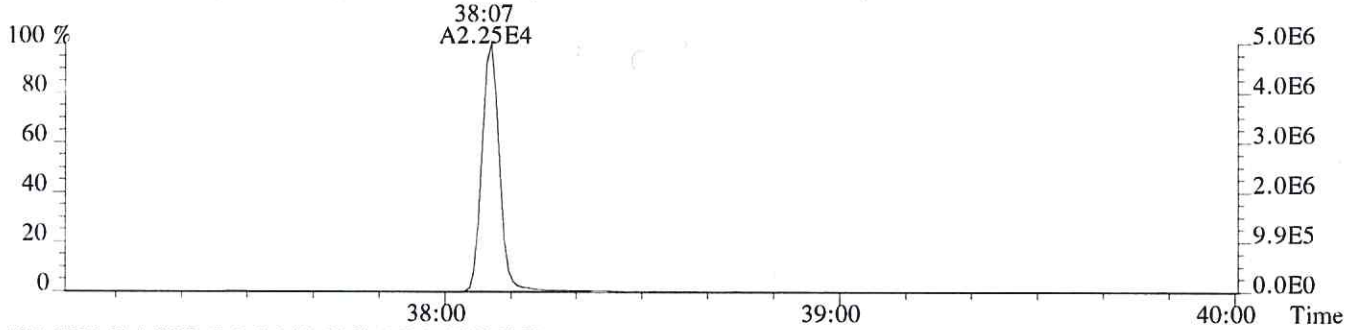
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,232.0,0.40%,F,T)



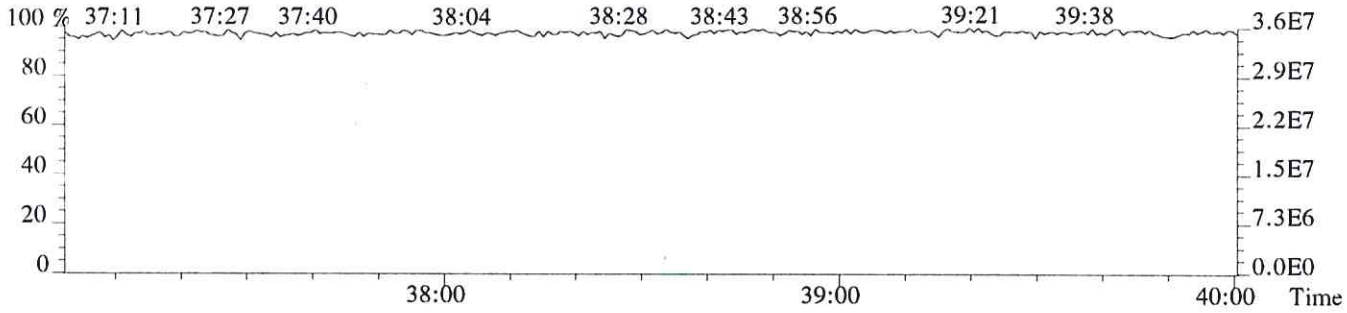
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,272.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,792.0,0.40%,F,T)

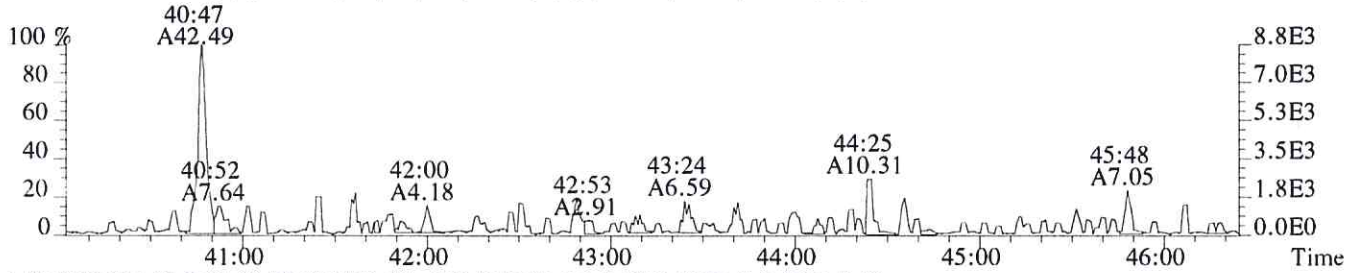


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

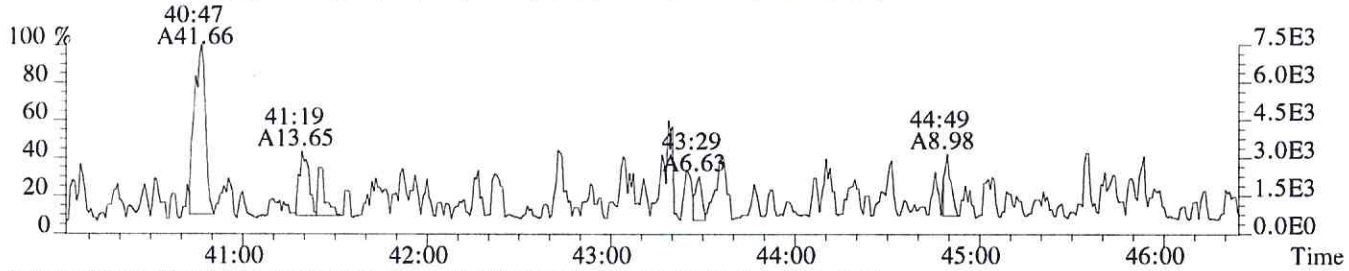


File:P607259 #1-573 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003

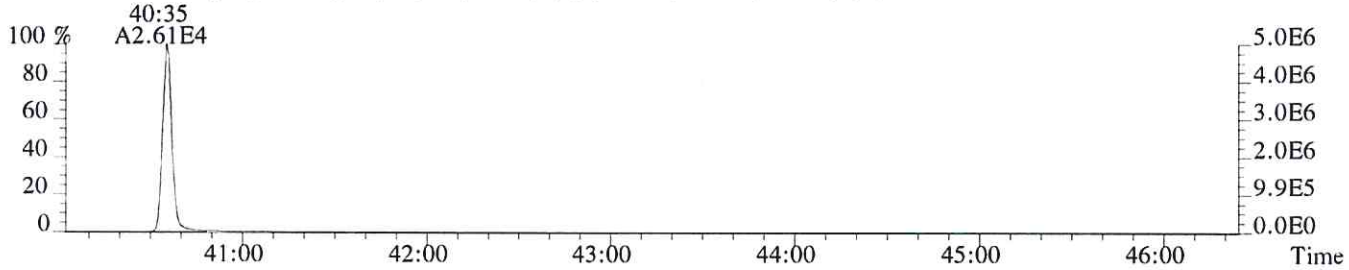
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,172.0,0.40%,F,T)



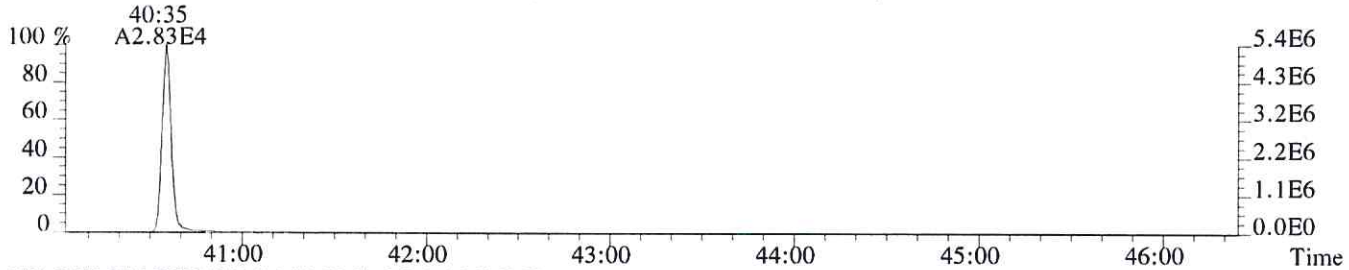
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1392.0,0.40%,F,T)



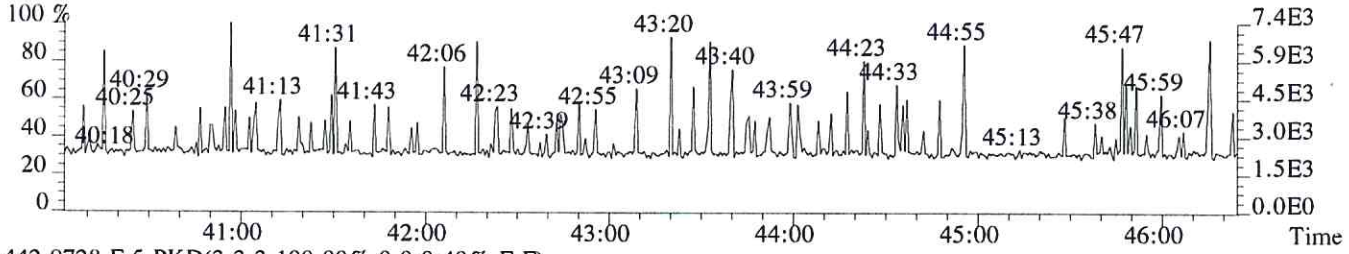
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5656.0,0.40%,F,T)



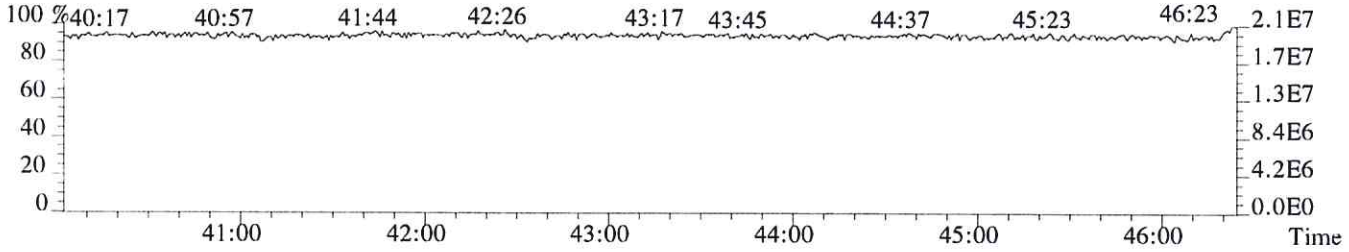
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3696.0,0.40%,F,T)



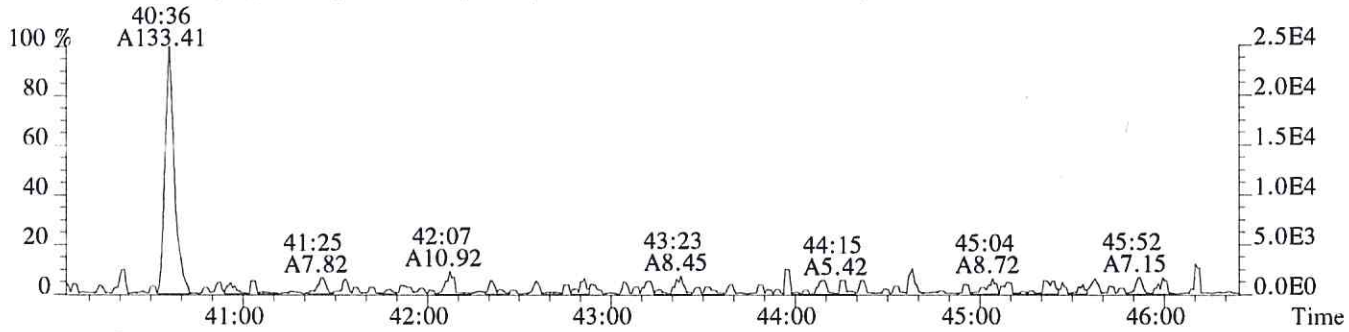
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



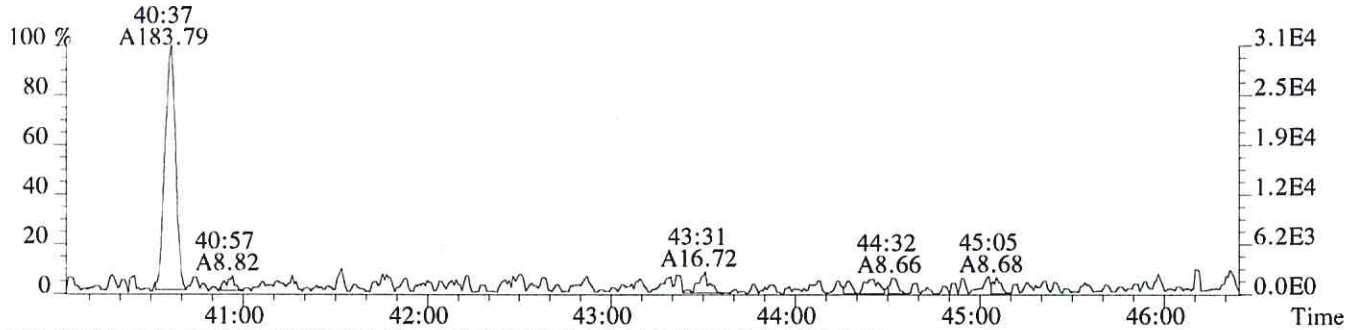
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



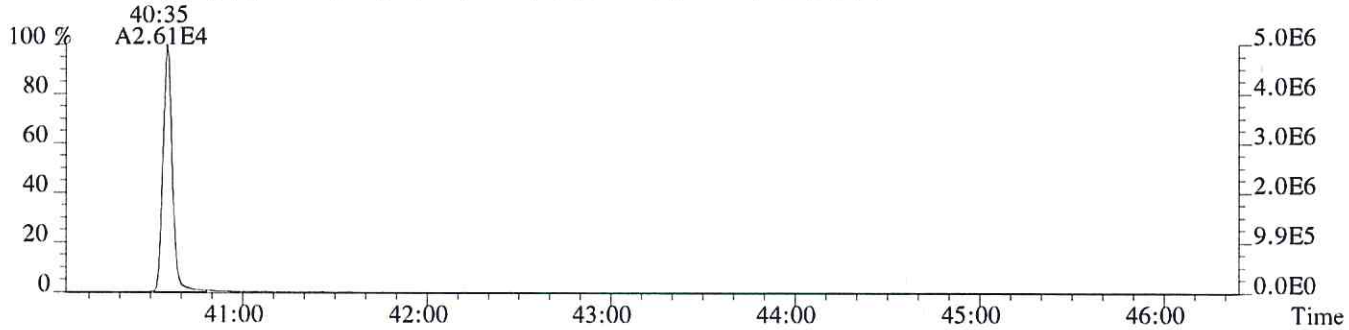
File:P607259 #1-573 Acq:20-MAY-2017 03:50:19 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-003
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,212.0,0.40%,F,T)



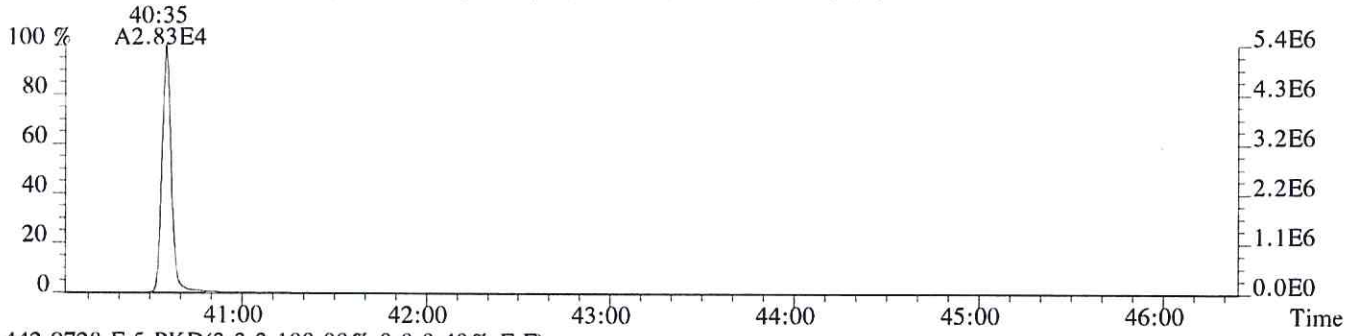
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,896.0,0.40%,F,T)



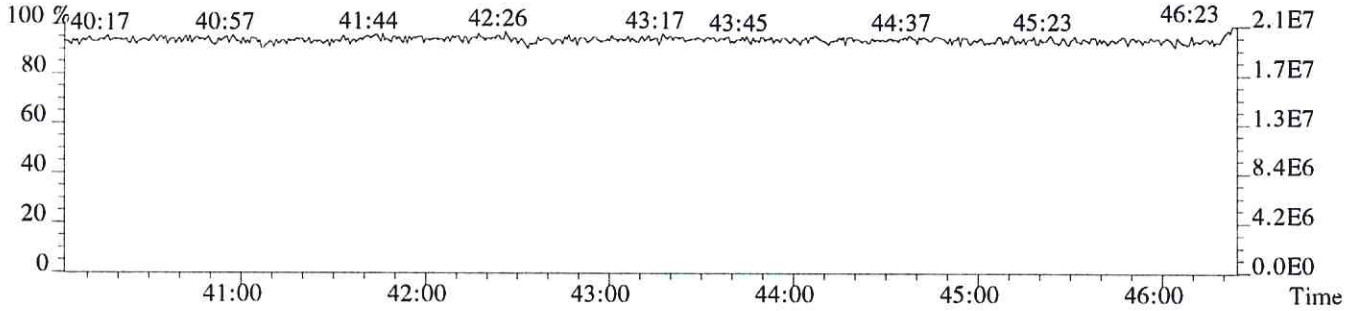
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5656.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3696.0,0.40%,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.
M039A_170428

Run #15 Filename P607260 Samp: 1 Inj: 1 Acquired: 20-MAY-17 04:39:21
Processed: 22-MAY-17 15:59:24 Sample ID: E1700468-004

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:42	3.030e+01	3.662e+01	0.83	no	no	1.058
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:31	4.097e+01	2.703e+01	1.52	no	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	3.664e+01	2.965e+01	1.24	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:10	2.936e+01	1.790e+01	1.64	no	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:56	3.786e+01	1.091e+01	3.47	no	yes	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:14	9.368e+01	1.374e+02	0.68	no	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	no	1.341
10	Unk	OCDF	40:46	7.594e+01	1.073e+02	0.71	no	no	1.337
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.055
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	yes	0.964
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	yes	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:24	1.990e+01	1.870e+01	1.06	yes	yes	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:39	1.418e+01	3.285e+01	0.43	no	yes	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:07	2.798e+02	2.370e+02	1.18	yes	no	1.048
17	Unk	OCDD	40:36	1.340e+03	1.478e+03	0.91	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:45	3.524e+04	4.410e+04	0.80	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:40	8.155e+04	5.131e+04	1.59	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:40	7.637e+04	4.824e+04	1.58	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:31	3.392e+04	6.503e+04	0.52	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:38	4.493e+04	8.455e+04	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:09	2.692e+04	5.150e+04	0.52	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:55	2.984e+04	5.577e+04	0.54	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:13	2.233e+04	5.030e+04	0.44	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	2.002e+04	4.367e+04	0.46	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:44	1.902e+04	2.405e+04	0.79	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	31:59	4.603e+04	2.895e+04	1.59	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	4.030e+04	3.247e+04	1.24	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:24	3.858e+04	3.033e+04	1.27	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:06	3.206e+04	3.027e+04	1.06	yes	no	0.884
32	IS	13C-OCDD	40:35	3.677e+04	4.064e+04	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:02	8.166e+04	1.032e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:38	1.095e+05	8.724e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:46	3.097e+04				no	1.072

$$\text{OCDD} = \frac{(1.340e+03 + 1.478e+03) \times 4000 \text{ pg} \times 1}{(3.677e+04 + 4.064e+04) \times 941 \text{ mg} \times 100 / 100 \times 1.120} = 138 \text{ pg/L}$$

MM 05/23/17

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
M039A_170428

Run #15 Filename P607260 Samp: 1 Inj: 1 Acquired: 20-MAY-17 04:39:21
Processed: 22-MAY-17 15:59:24 LAB. ID: E1700468-004

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	1.10e+03	*	*	1.60e+03	*
2	1,2,3,7,8-PeCDF	6.54e+03	1.68e+02	3.9e+01	6.67e+03	2.17e+03	3.1e+00
3	2,3,4,7,8-PeCDF	*	1.68e+02	*	*	2.17e+03	*
4	1,2,3,4,7,8-HxCDF	7.41e+03	2.76e+02	2.7e+01	6.39e+03	1.03e+03	6.2e+00
5	1,2,3,6,7,8-HxCDF	7.46e+03	2.76e+02	2.7e+01	6.38e+03	1.03e+03	6.2e+00
6	2,3,4,6,7,8-HxCDF	6.18e+03	2.76e+02	2.2e+01	3.41e+03	1.03e+03	3.3e+00
7	1,2,3,7,8,9-HxCDF	5.82e+03	2.76e+02	2.1e+01	2.91e+03	1.03e+03	2.8e+00
8	1,2,3,4,6,7,8-HpCDF	1.91e+04	3.00e+02	6.4e+01	3.09e+04	1.02e+03	3.0e+01
9	1,2,3,4,7,8,9-HpCDF	*	3.00e+02	*	*	1.02e+03	*
10	OCDF	1.57e+04	2.36e+02	6.6e+01	2.08e+04	9.72e+02	2.1e+01
11	2,3,7,8-TCDD	*	1.13e+03	*	*	1.72e+02	*
12	1,2,3,7,8-PeCDD	*	1.85e+03	*	*	9.44e+02	*
13	1,2,3,4,7,8-HxCDD	*	1.72e+02	*	*	2.04e+02	*
14	1,2,3,6,7,8-HxCDD	4.12e+03	1.72e+02	2.4e+01	4.51e+03	2.04e+02	2.2e+01
15	1,2,3,7,8,9-HxCDD	3.82e+03	1.72e+02	2.2e+01	4.93e+03	2.04e+02	2.4e+01
16	1,2,3,4,6,7,8-HpCDD	5.96e+04	7.76e+02	7.7e+01	5.19e+04	1.84e+02	2.8e+02
17	OCDD	2.58e+05	2.68e+02	9.6e+02	2.72e+05	1.78e+03	1.5e+02
18	13C-2,3,7,8-TCDF	5.12e+06	9.30e+03	5.5e+02	6.36e+06	3.64e+03	1.7e+03
19	13C-1,2,3,7,8-PeCDF	1.42e+07	9.13e+03	1.6e+03	8.96e+06	5.82e+03	1.5e+03
20	13C-2,3,4,7,8-PeCDF	1.42e+07	9.13e+03	1.6e+03	8.87e+06	5.82e+03	1.5e+03
21	13C-1,2,3,4,7,8-HxCDF	7.03e+06	1.05e+03	6.7e+03	1.34e+07	1.48e+03	9.0e+03
22	13C-1,2,3,6,7,8-HxCDF	9.20e+06	1.05e+03	8.7e+03	1.76e+07	1.48e+03	1.2e+04
23	13C-2,3,4,6,7,8-HxCDF	5.60e+06	1.05e+03	5.3e+03	1.07e+07	1.48e+03	7.2e+03
24	13C-1,2,3,7,8,9-HxCDF	6.19e+06	1.05e+03	5.9e+03	1.17e+07	1.48e+03	7.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	4.75e+06	2.92e+03	1.6e+03	1.08e+07	7.05e+03	1.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.33e+06	2.92e+03	1.5e+03	9.51e+06	7.05e+03	1.3e+03
27	13C-2,3,7,8-TCDD	3.04e+06	5.87e+03	5.2e+02	3.80e+06	3.40e+03	1.1e+03
28	13C-1,2,3,7,8-PeCDD	8.70e+06	8.28e+02	1.1e+04	5.40e+06	1.76e+02	3.1e+04
29	13C-1,2,3,4,7,8-HxCDD	8.32e+06	2.38e+03	3.5e+03	6.72e+06	1.14e+03	5.9e+03
30	13C-1,2,3,6,7,8-HxCDD	8.01e+06	2.38e+03	3.4e+03	6.30e+06	1.14e+03	5.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	6.87e+06	2.16e+02	3.2e+04	6.54e+06	1.76e+02	3.7e+04
32	13C-OCDD	7.21e+06	1.52e+03	4.8e+03	7.87e+06	3.37e+03	2.3e+03
33	13C-1,2,3,4-TCDD	1.21e+07	5.87e+03	2.1e+03	1.53e+07	3.40e+03	4.5e+03
34	13C-1,2,3,7,8,9-HxCDD	2.26e+07	2.38e+03	9.5e+03	1.81e+07	1.14e+03	1.6e+04
35	37Cl-2,3,7,8-TCDD	4.98e+06	7.40e+02	6.7e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.132e{+}03 + 1.720e{+}02\ ) \times 2000}{(3.035e{+}06 + 3.796e{+}06\ ) \times (\qquad\qquad\qquad\qquad) \times 1.055} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M039A_170428

Entry: 36 Totals Name: Total Tetra-Furans

Run: 15 File: P607260 Sample:1 Injection:1 Function:1

Acquired: 20-MAY-17 04:39:21 Processed: 22-MAY-17 15:59:24

Mass: 303.9020 305.8990 Tot Response: 3.36e+02 RRF: 1.020

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:41	1.38e+02	1.98e+02	0.70	yes	3.36e+02	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M039A_170428

Entry: 38 Totals Name: Total Penta-Furans1

Run: 15 File: P607260 Sample:1 Injection:1 Function:1

Acquired: 20-MAY-17 04:39:21 Processed: 22-MAY-17 15:59:24

Mass: 339.8600 341.8570 Tot Response: 1.49e+02 RRF: 1.036

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	27:59	8.88e+01	6.01e+01 1.48	yes	1.49e+02		n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M039A_170428

Entry: 41 Totals Name: Total Hexa-Furans

Run: 15 File: P607260 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 04:39:21 Processed: 22-MAY-17 15:59:24

Mass: 373.8210 375.8180 Tot Response: 1.81e+02 RRF: 1.207

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:05	6.37e+01	5.05e+01	1.26	yes	1.14e+02	n	n
2	34:39	3.66e+01	2.97e+01	1.24	yes	6.63e+01 1,2,3,6,7,8-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M039A_170428

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 15 File: P607260 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 04:39:21 Processed: 22-MAY-17 15:59:24

Mass: 389.8160 391.8130 Tot Response: 3.86e+01 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	35:24	1.99e+01	1.87e+01	1.06	yes	3.86e+01	1,2,3,6,7,8-HxCDD	y	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

M039A_170428

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 15 File: P607260 Sample:1 Injection:1 Function:4

Acquired: 20-MAY-17 04:39:21 Processed: 22-MAY-17 15:59:24

Mass: 423.7770 425.7740 Tot Response: 1.14e+03 RRF: 1.048

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:29	2.98e+02	3.23e+02	0.92	yes	6.20e+02		n	n
2	38:07	2.80e+02	2.37e+02	1.18	yes	5.17e+02	1,2,3,4,6,7,8-HpCDD	n	n

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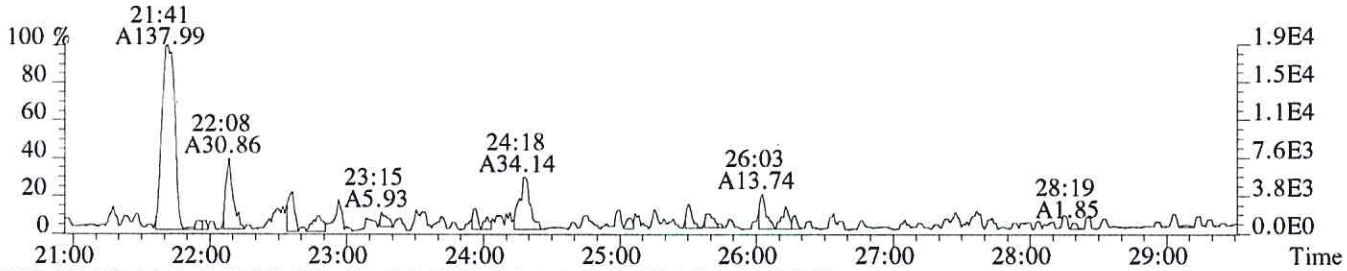
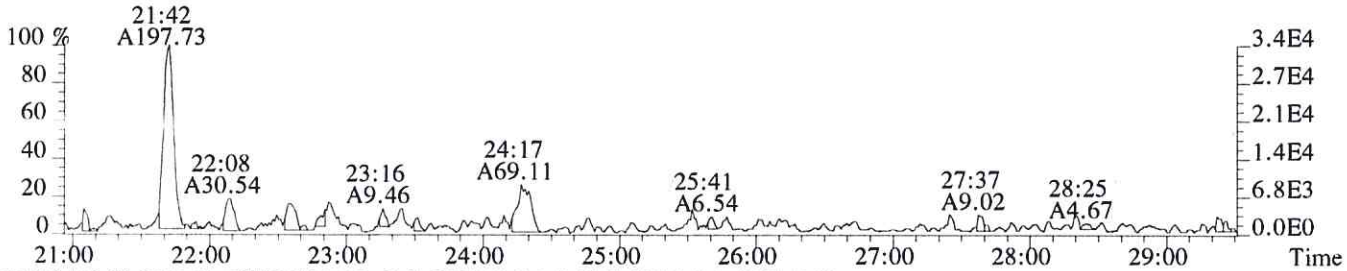
File:P607260 #1-609 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

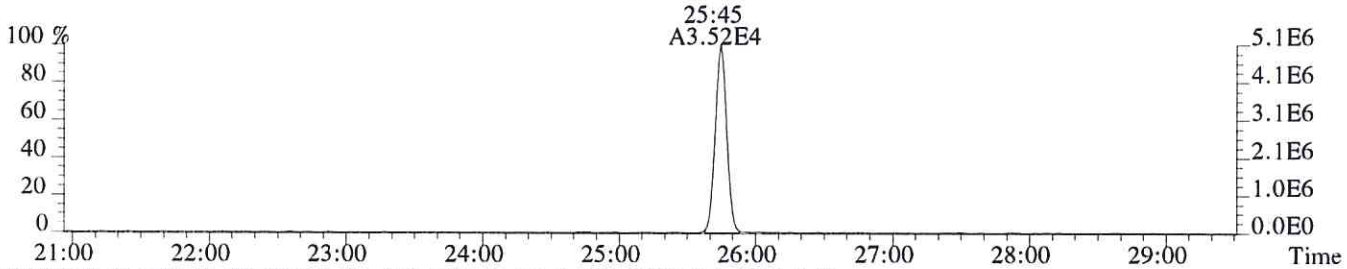
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1104.0,1.00%,F,T)



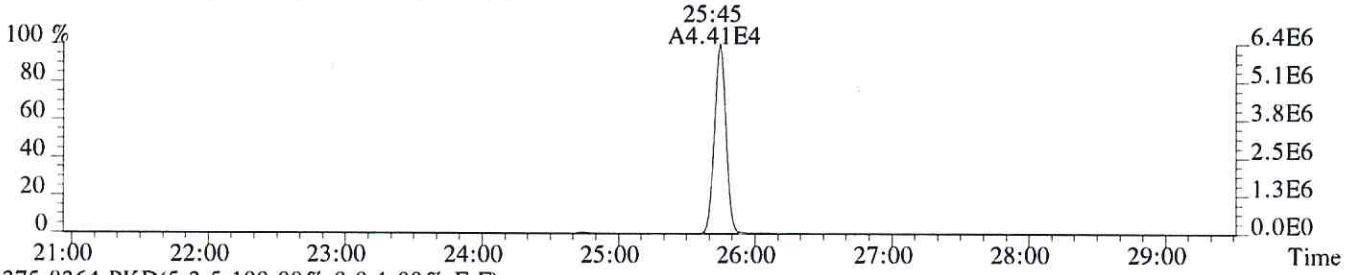
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1596.0,1.00%,F,T)



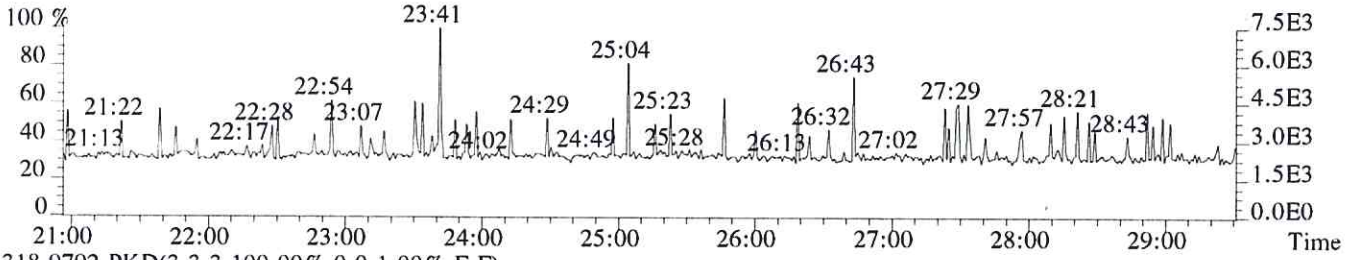
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9300.0,1.00%,F,T)



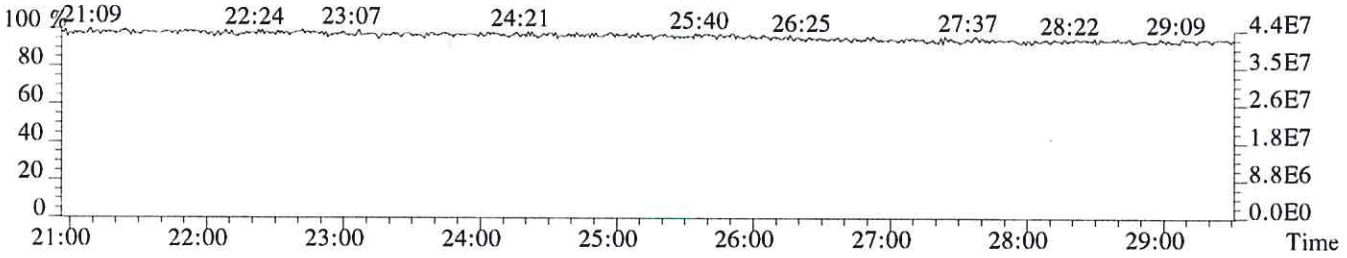
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3636.0,1.00%,F,T)



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

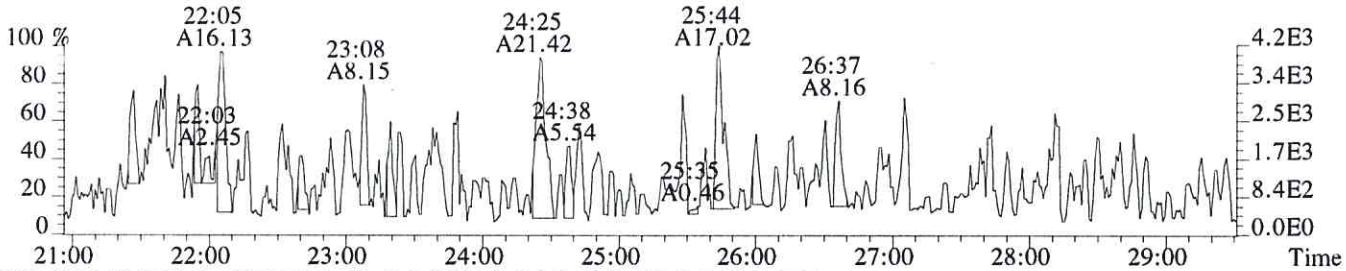


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

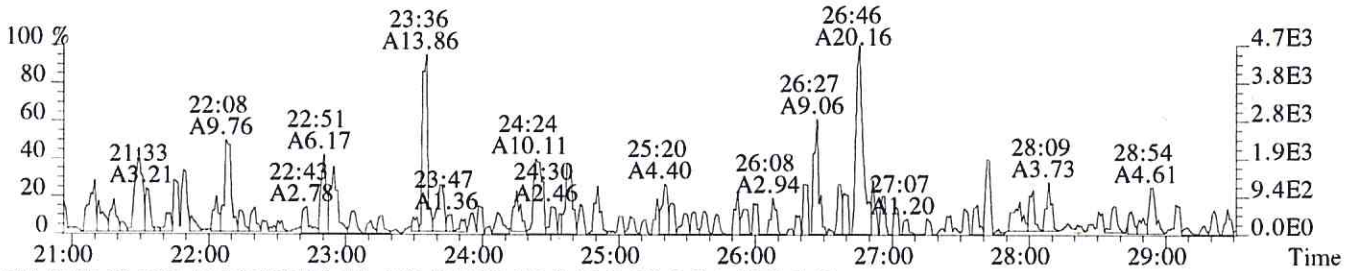


File:P607260 #1-609 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

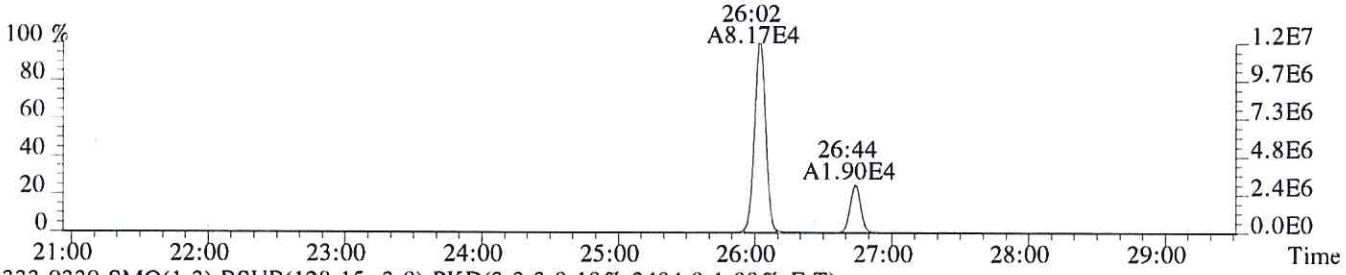
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1132.0,1.00%,F,T)



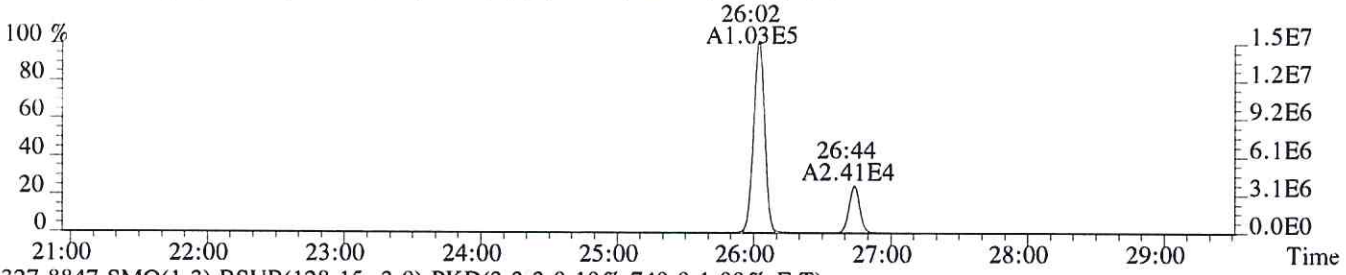
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,172.0,1.00%,F,T)



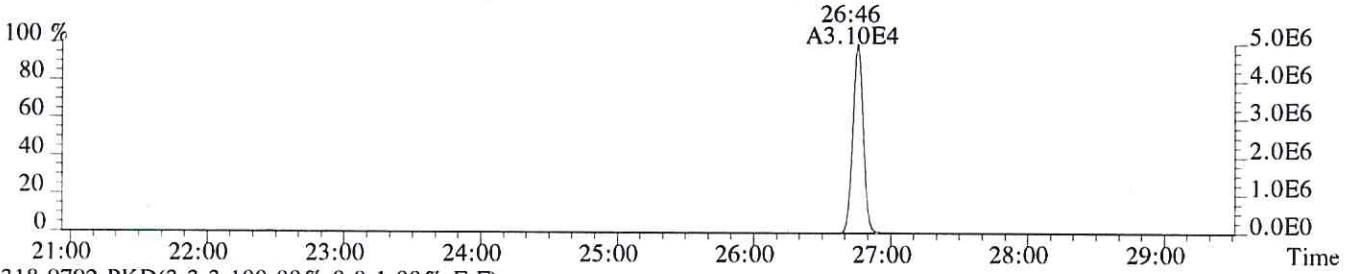
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5872.0,1.00%,F,T)



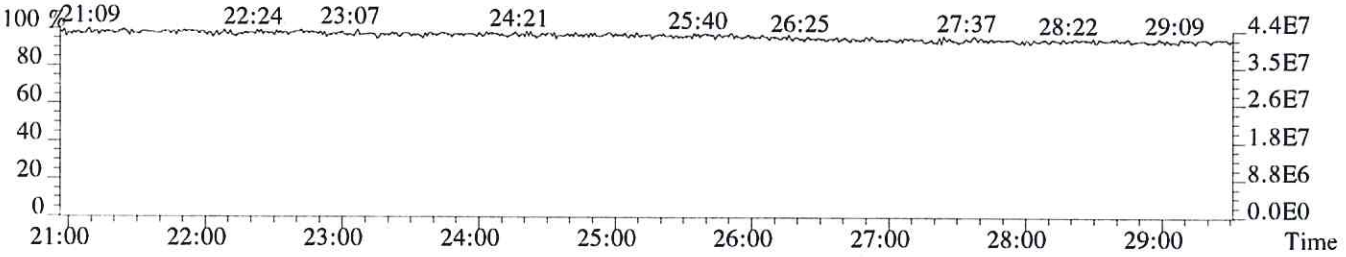
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3404.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,740.0,1.00%,F,T)

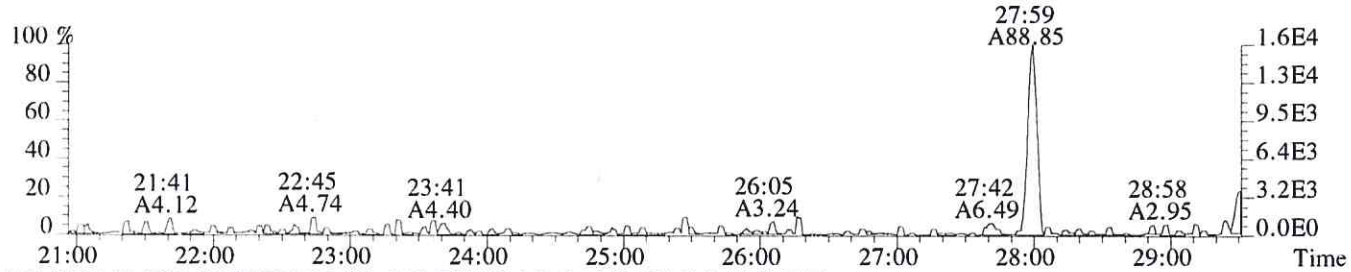


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

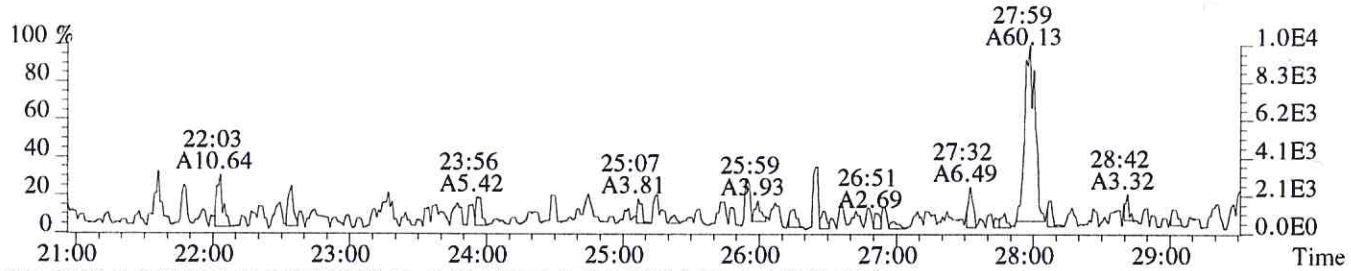


File:P607260 #1-609 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

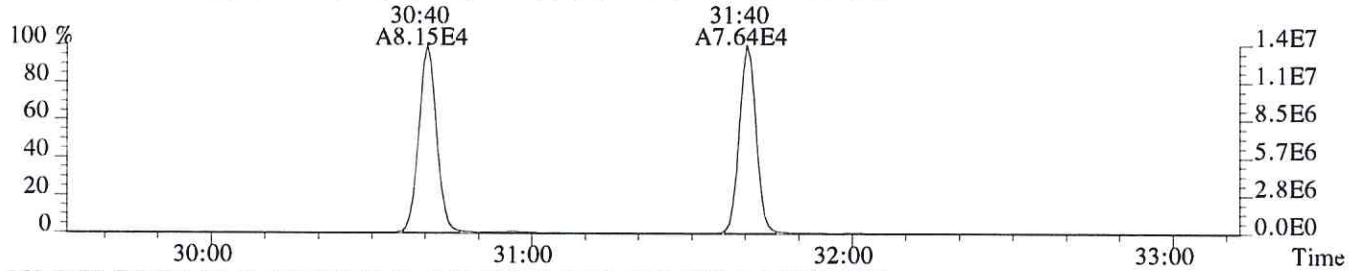
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,168.0,1.00%,F,T)



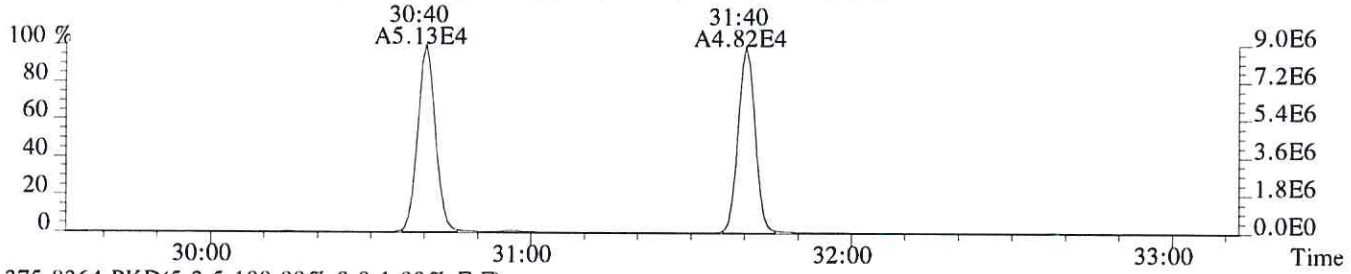
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,892.0,1.00%,F,T)



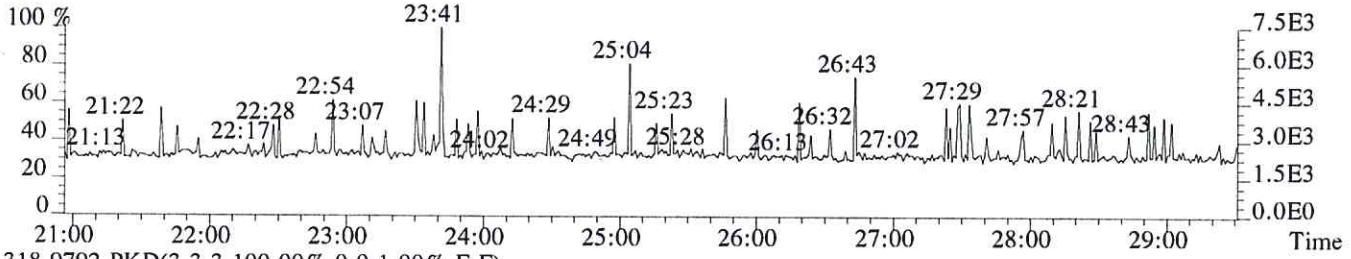
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9128.0,1.00%,F,T)



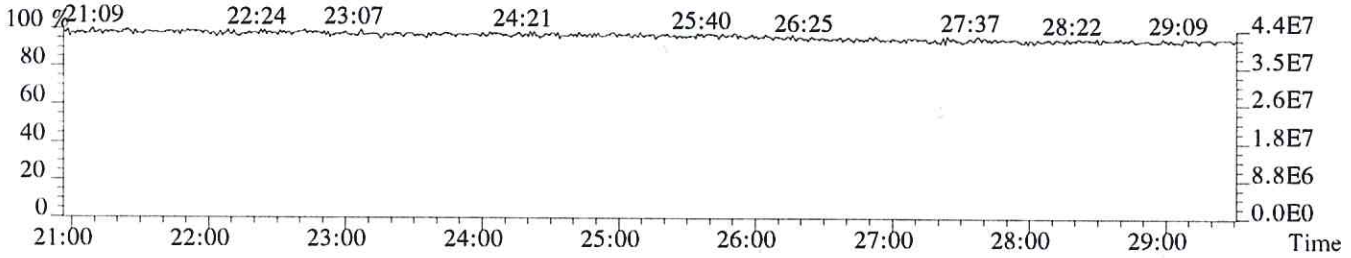
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5820.0,1.00%,F,T)



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

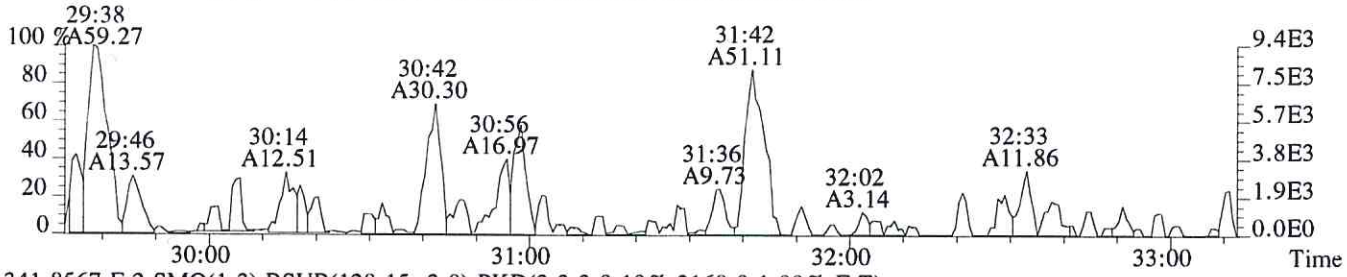


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

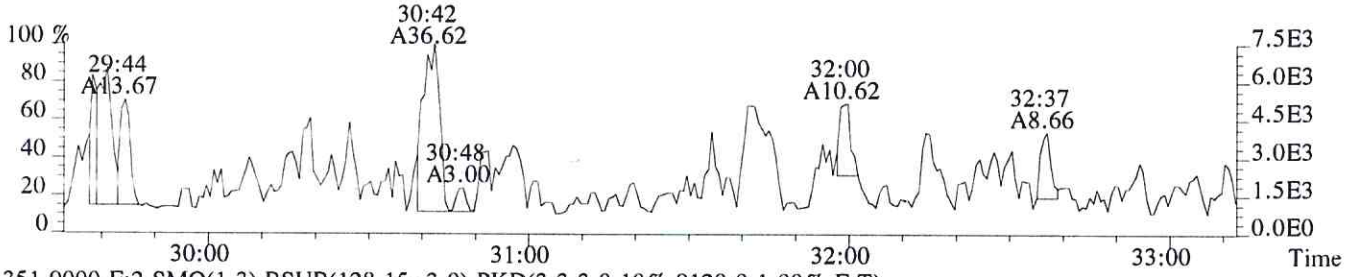


File:P607260 #1-330 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

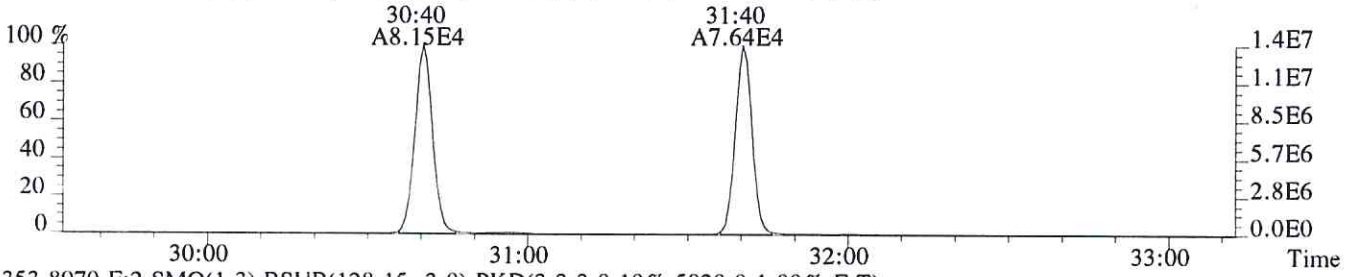
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,168.0,1.00%,F,T)



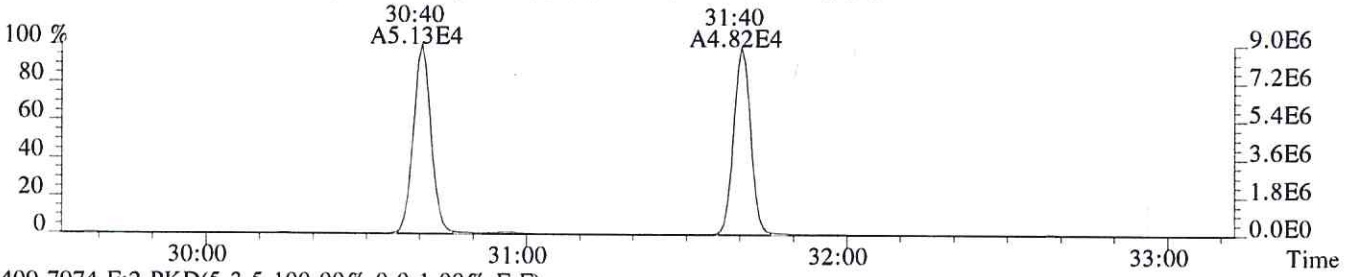
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2168.0,1.00%,F,T)



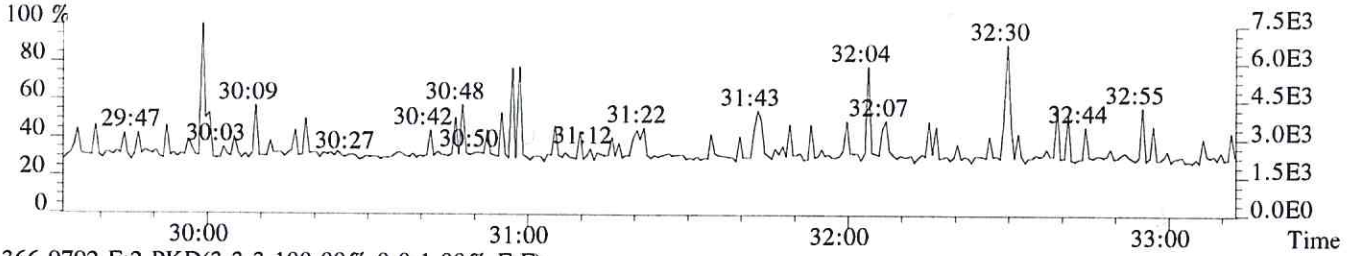
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9128.0,1.00%,F,T)



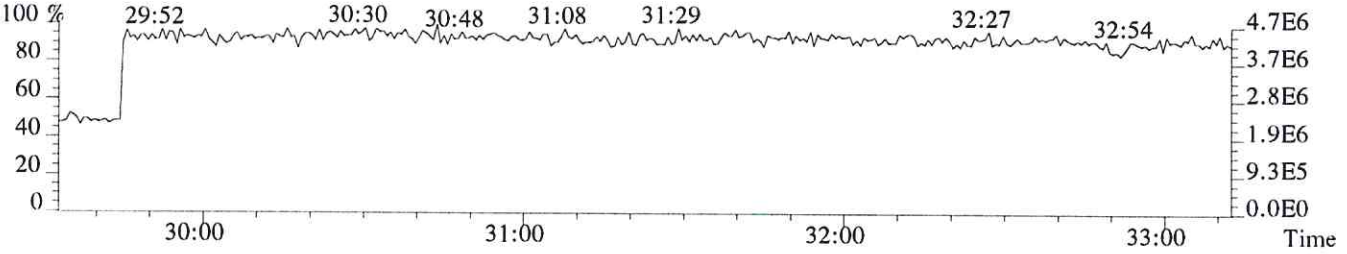
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5820.0,1.00%,F,T)



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

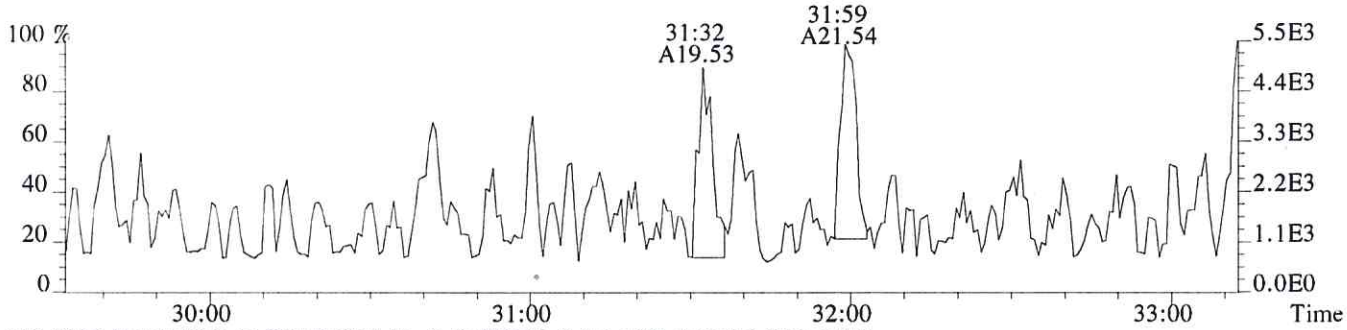


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

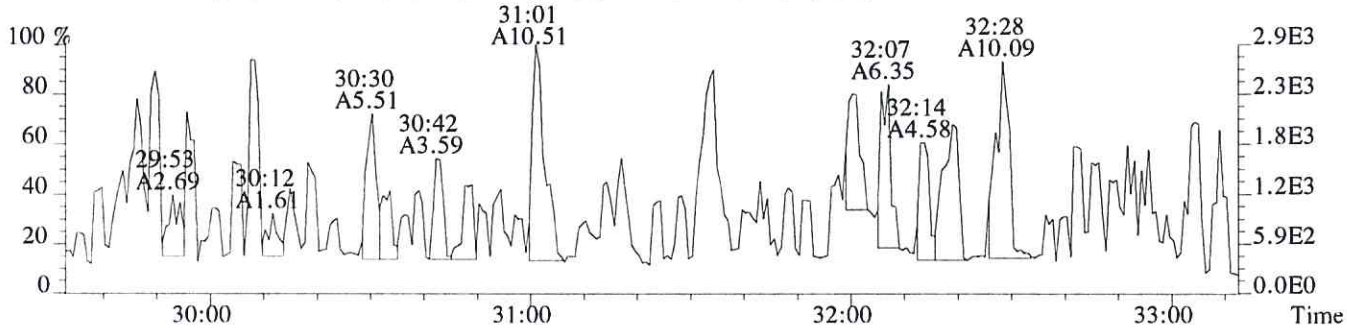


File:P607260 #1-330 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

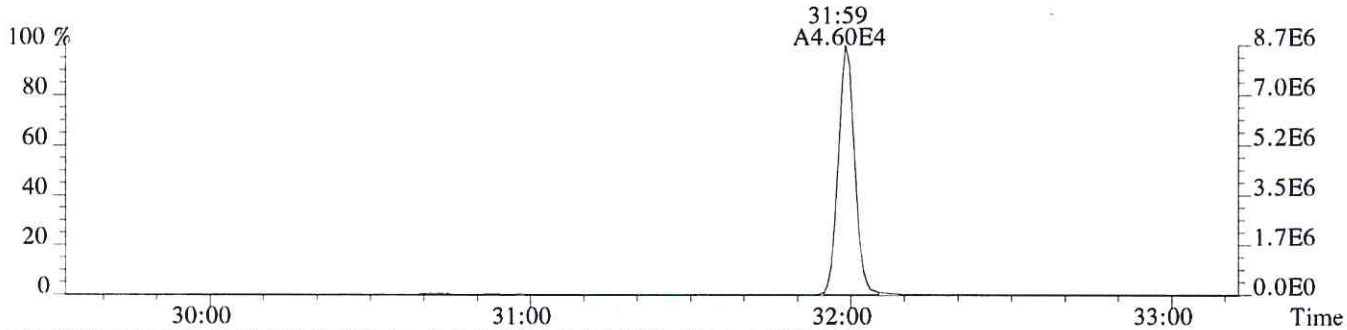
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1848.0,1.00%,F,T)



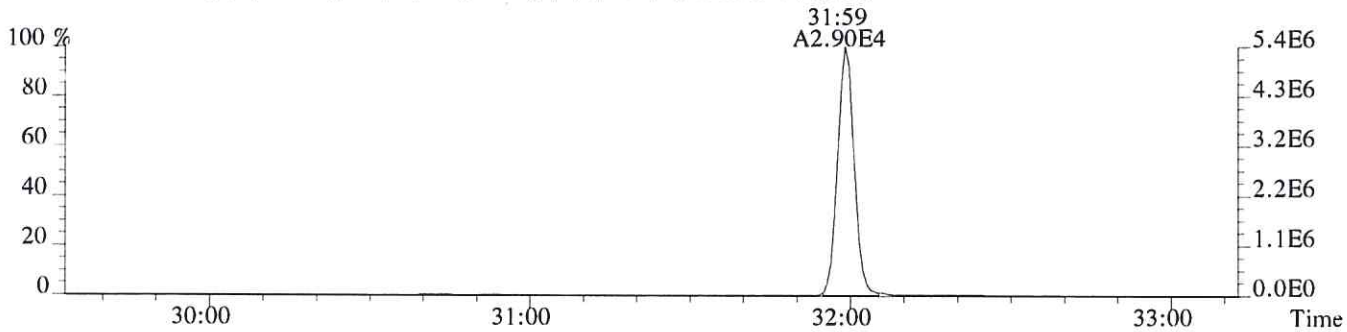
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,944.0,1.00%,F,T)



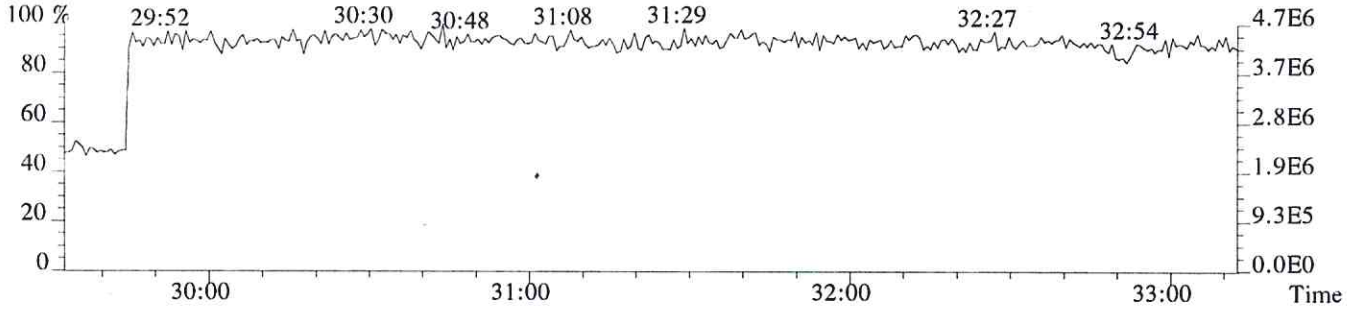
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,828.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,176.0,1.00%,F,T)

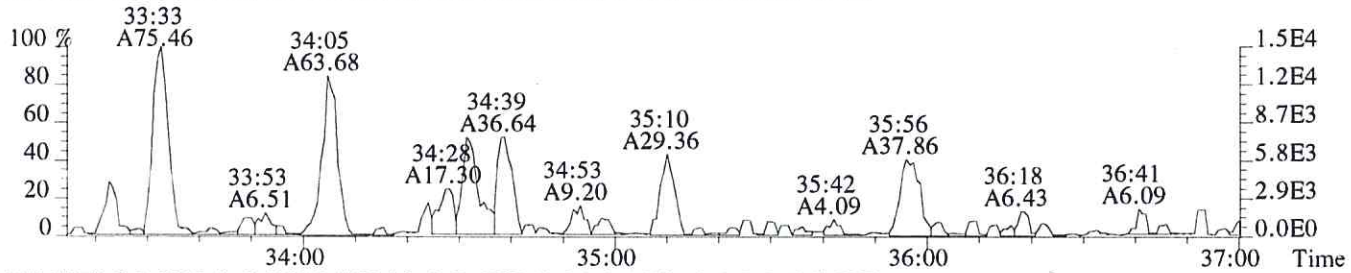


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

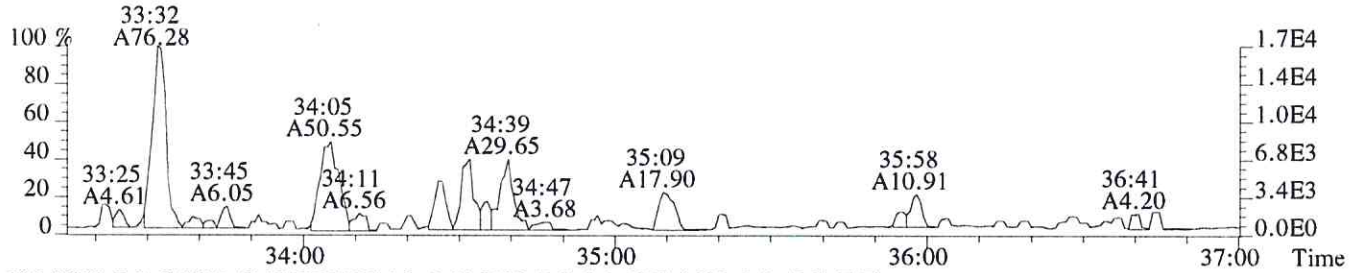


File:P607260 #1-339 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

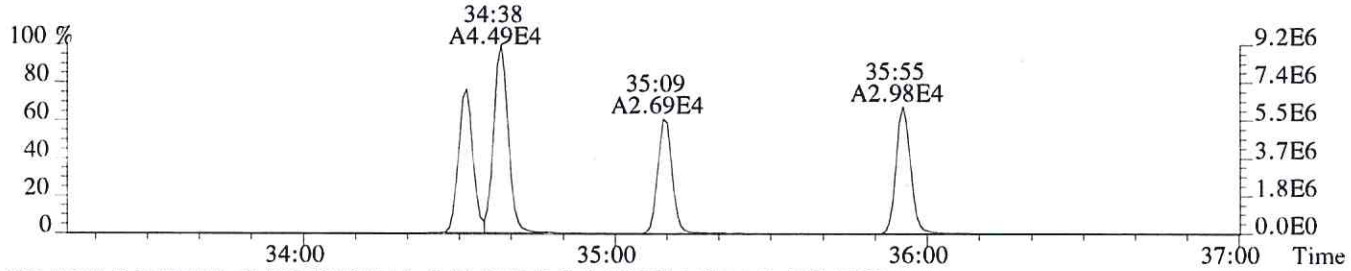
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,276.0,0.40%,F,T)



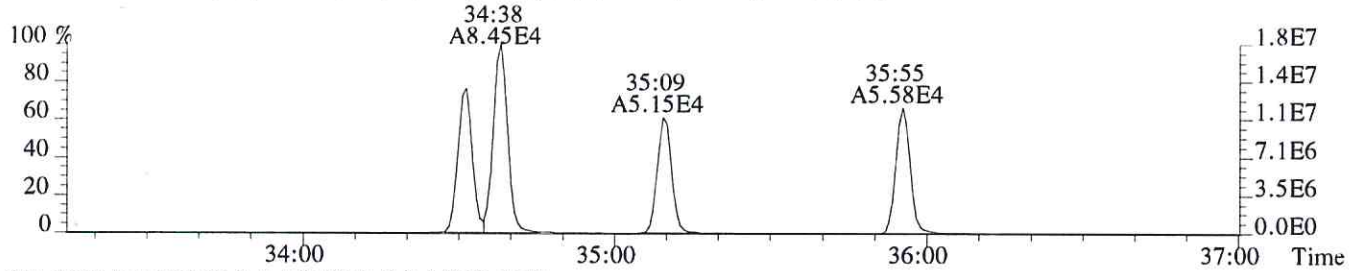
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1028.0,0.40%,F,T)



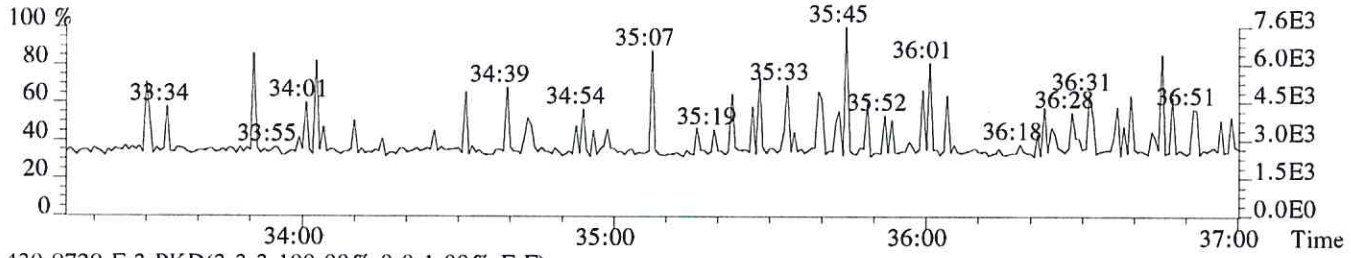
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1052.0,0.40%,F,T)



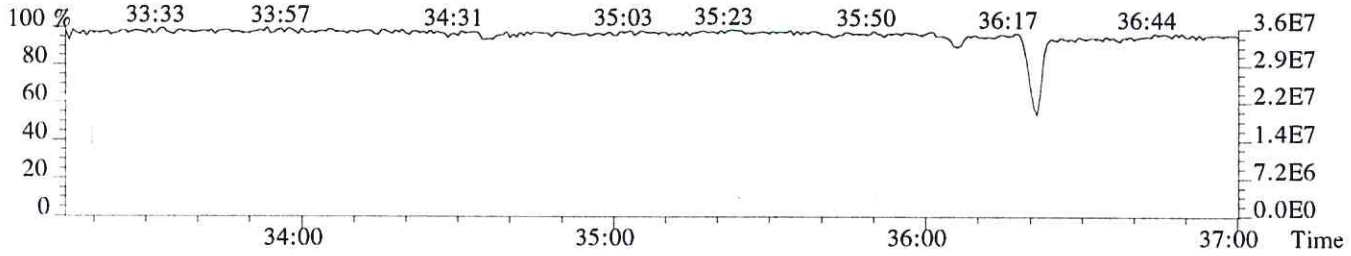
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1484.0,0.40%,F,T)



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

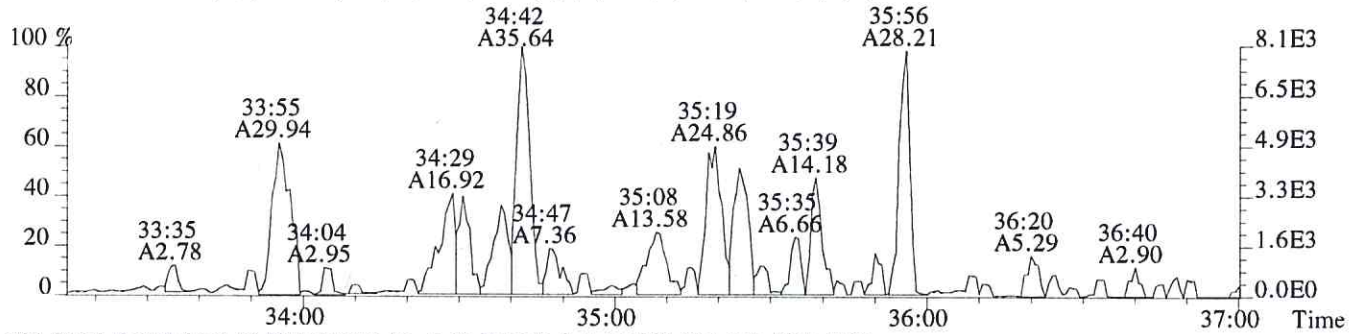


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

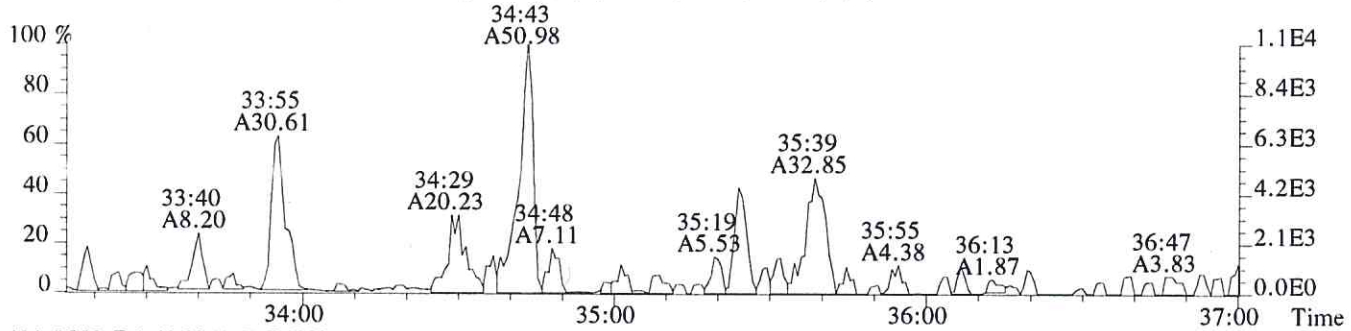


File:P607260 #1-339 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

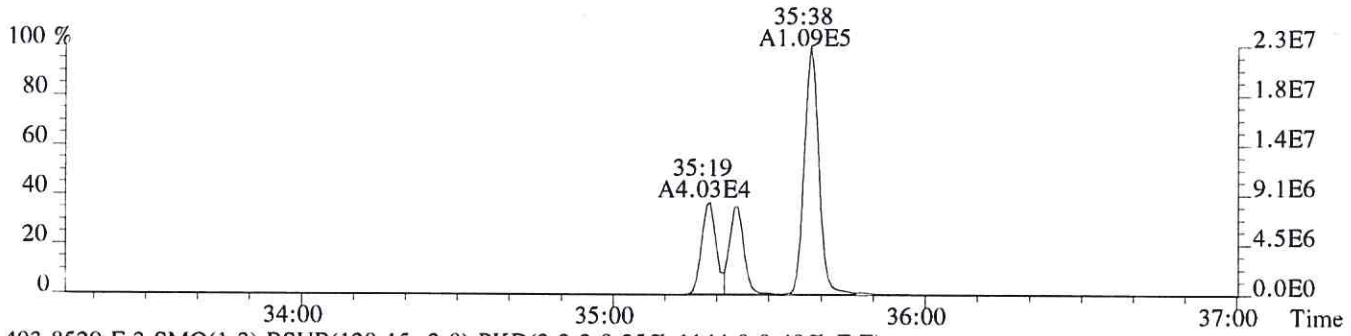
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,172.0,0.40%,F,T)



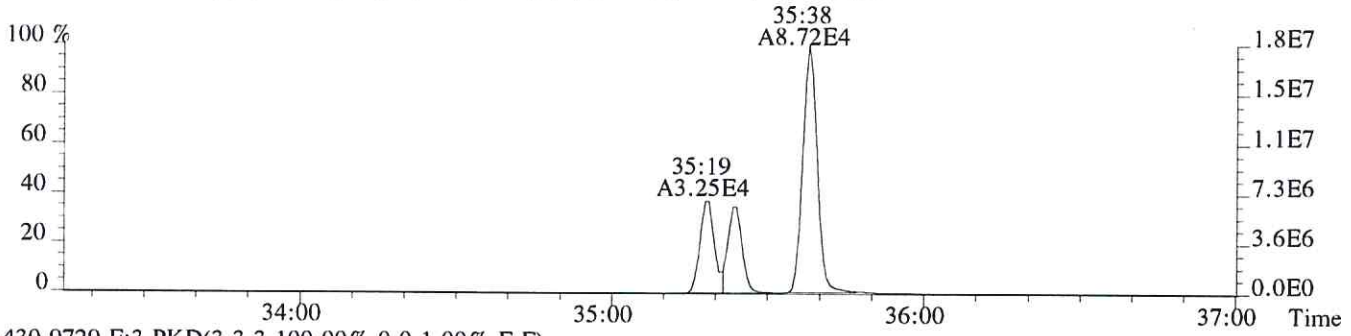
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,204.0,0.40%,F,T)



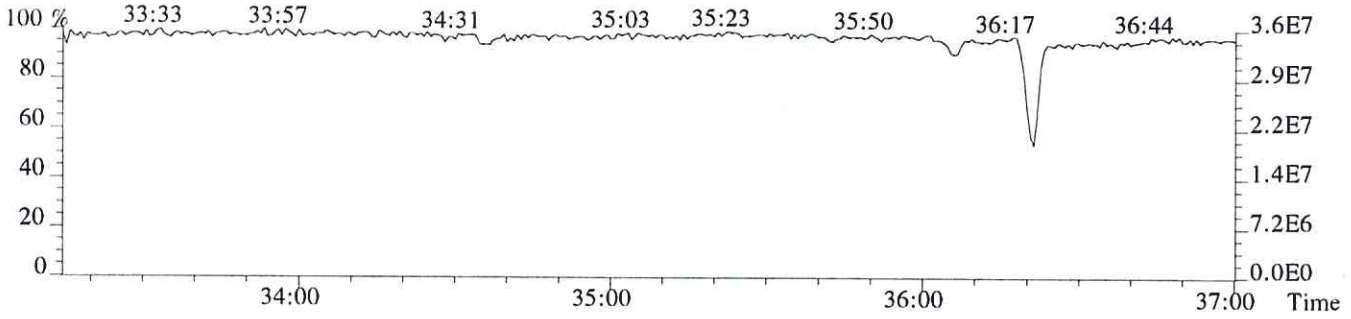
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2376.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1144.0,0.40%,F,T)

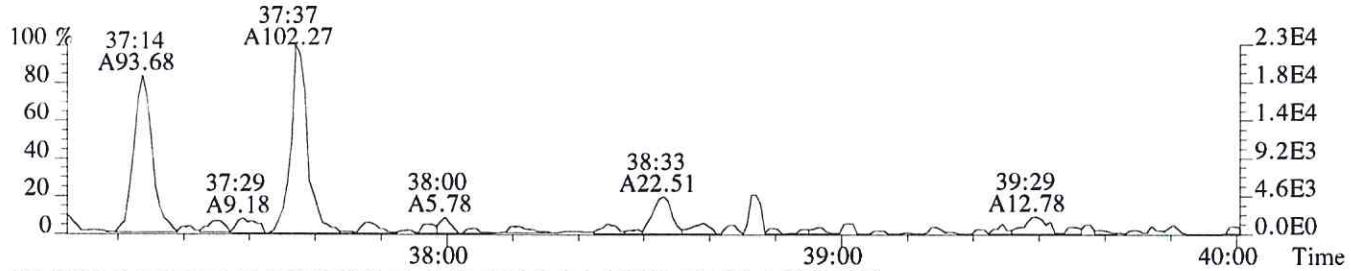


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

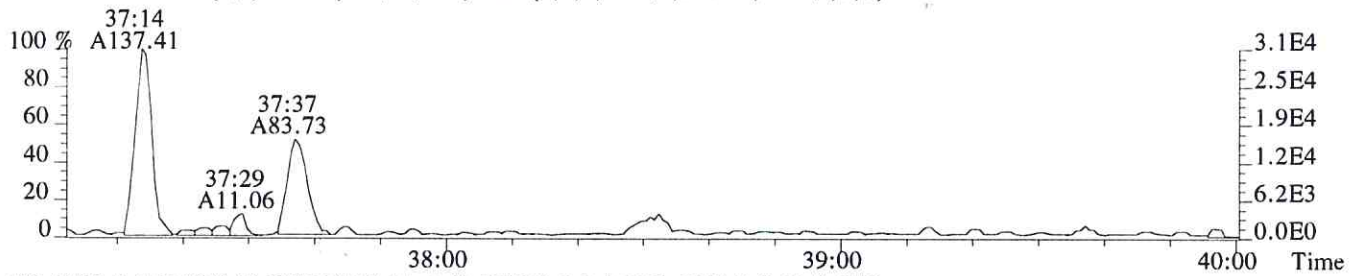


File:P607260 #1-268 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

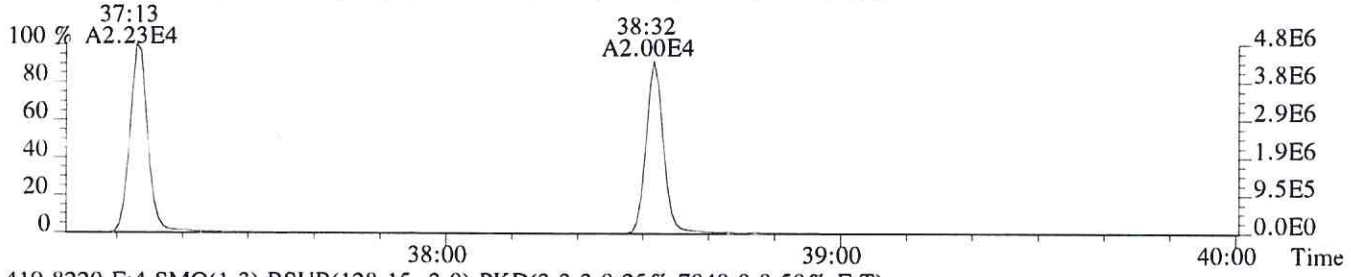
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,300.0,0.50%,F,T)



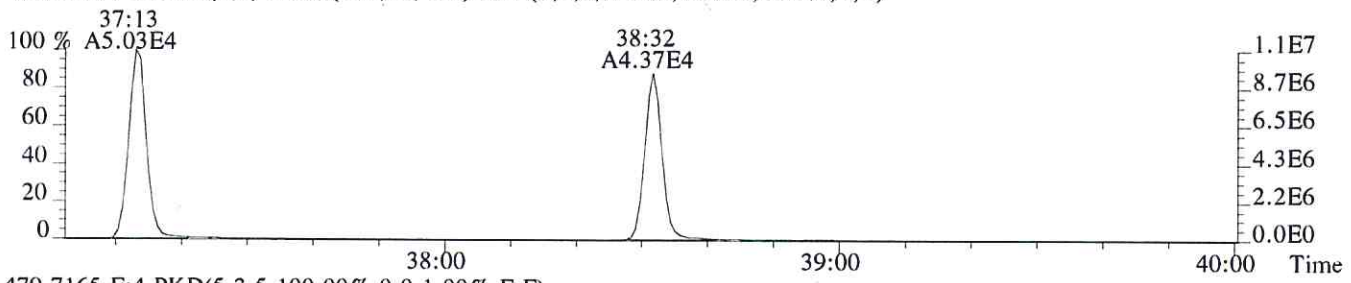
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1016.0,0.50%,F,T)



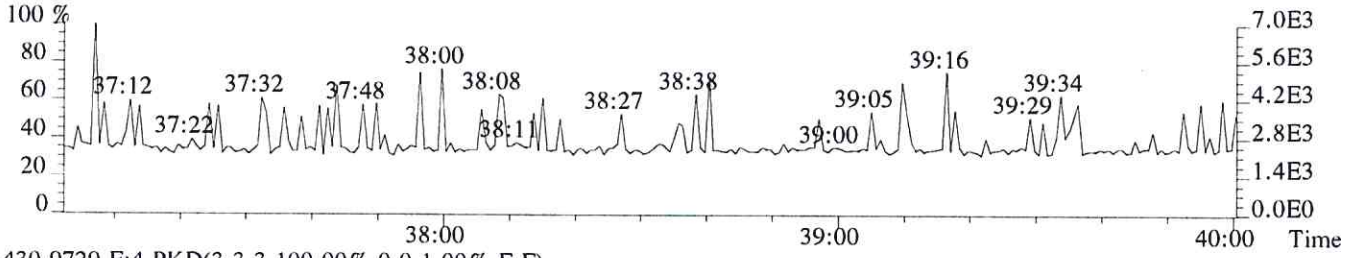
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2924.0,0.50%,F,T)



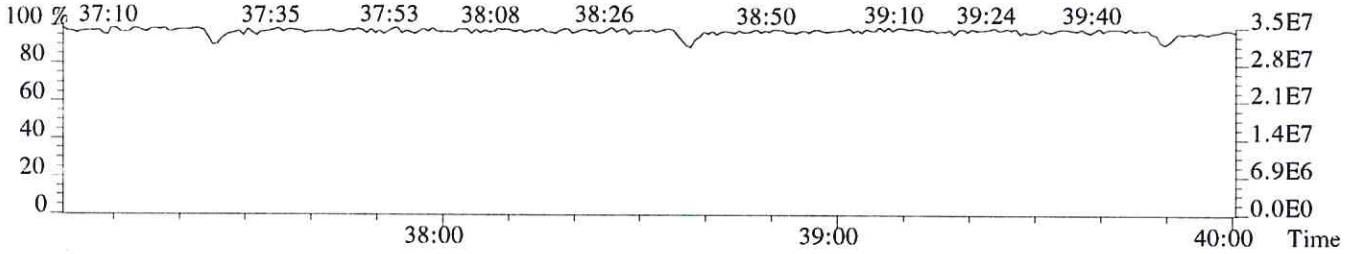
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7048.0,0.50%,F,T)



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

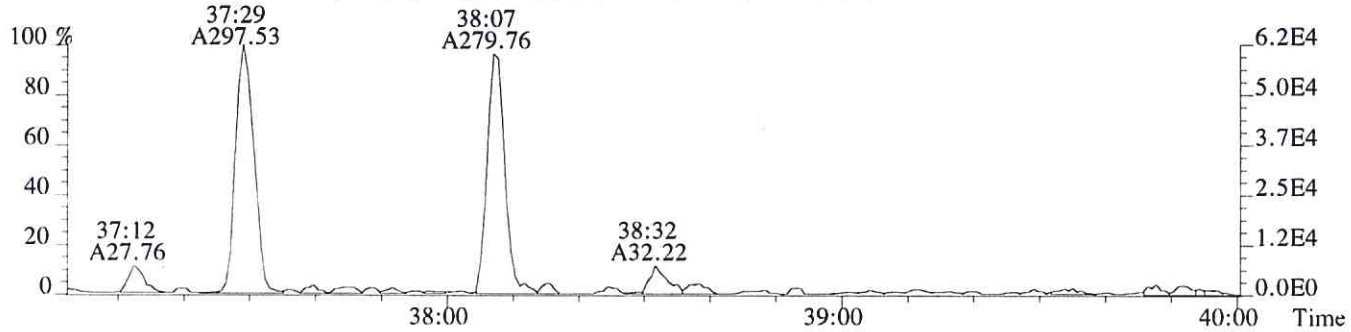


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

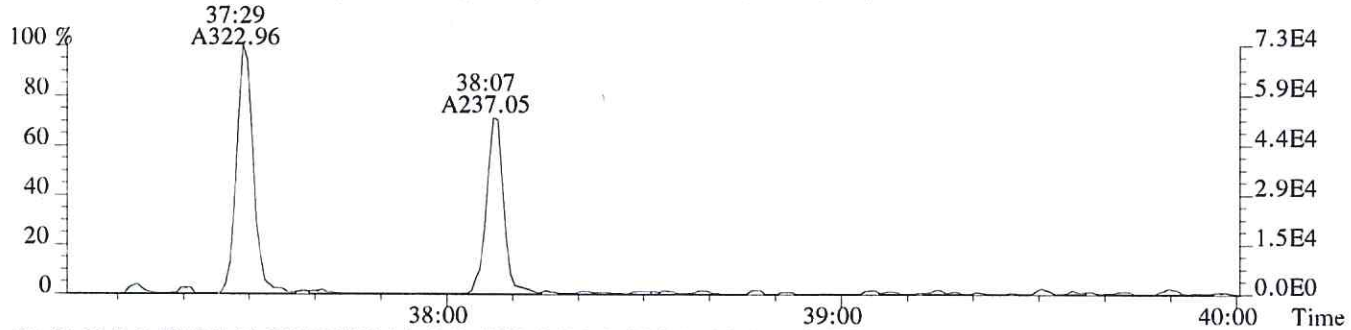


File:P607260 #1-268 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

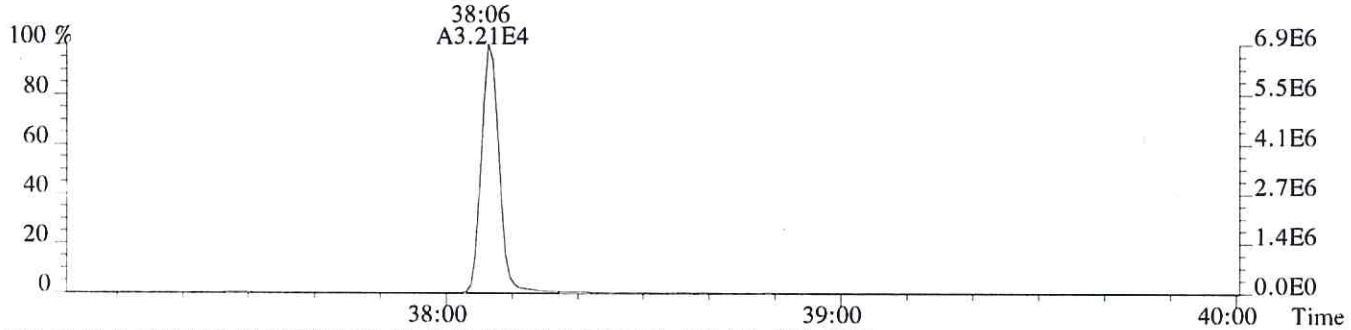
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,776.0,0.40%,F,T)



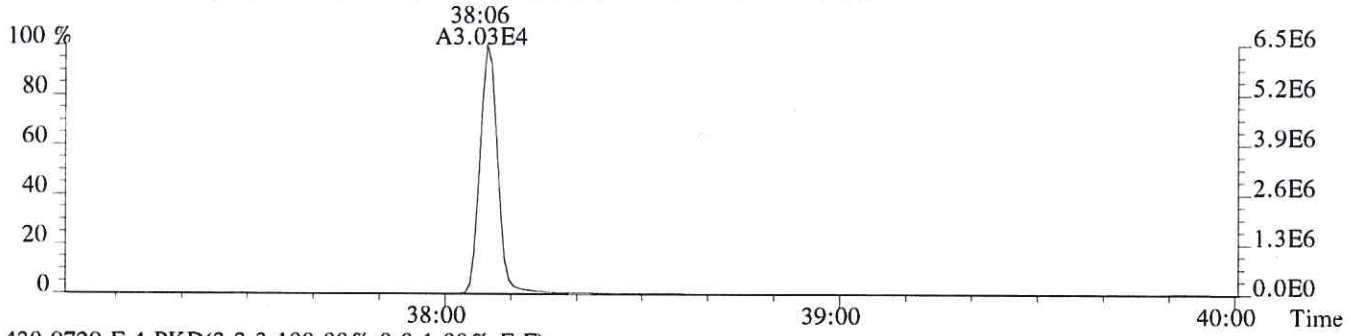
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,184.0,0.40%,F,T)



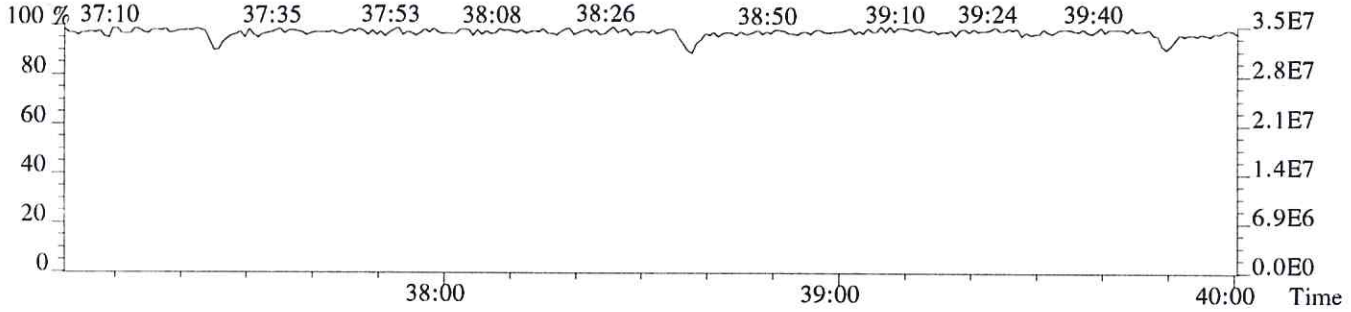
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,216.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,176.0,0.40%,F,T)

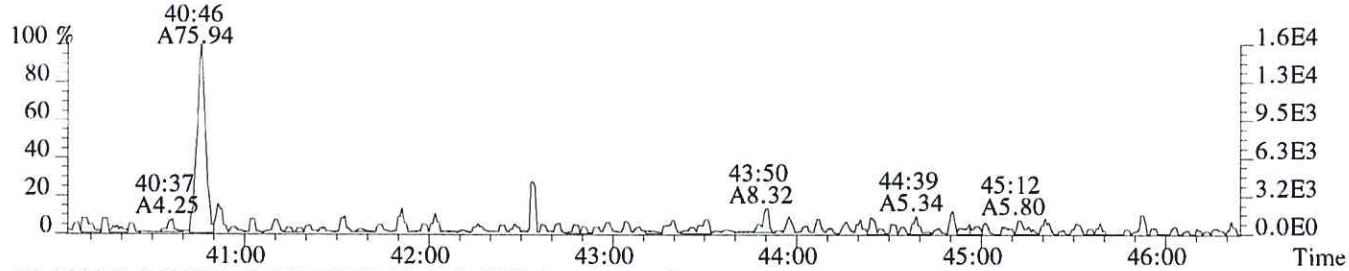


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

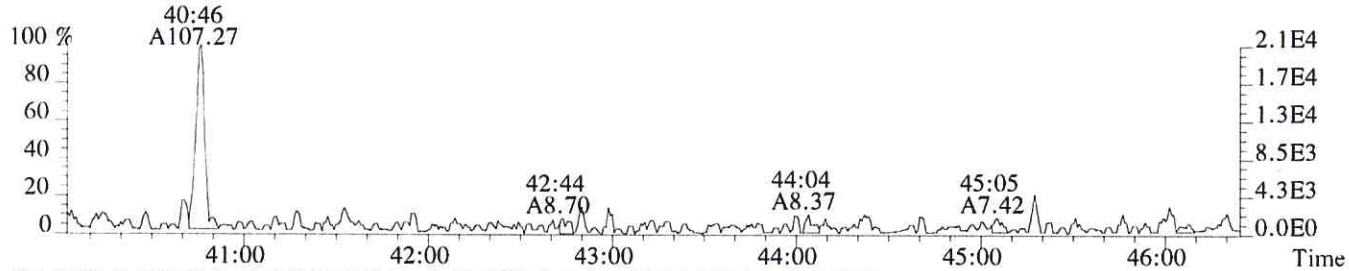


File:P607260 #1-573 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

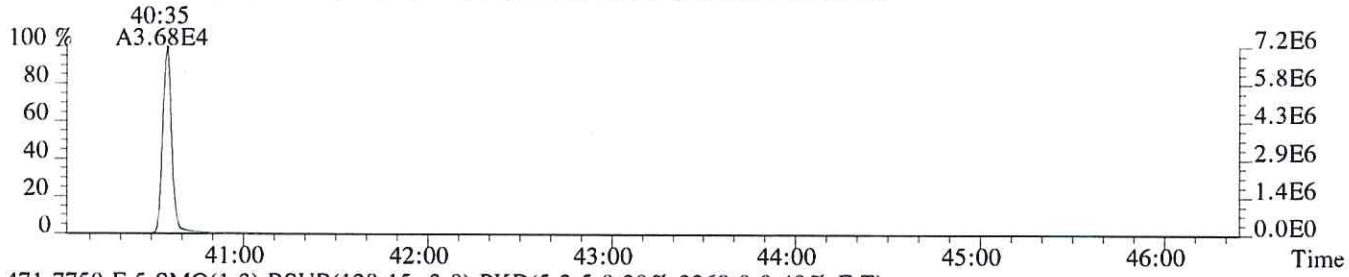
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,236.0,0.40%,F,T)



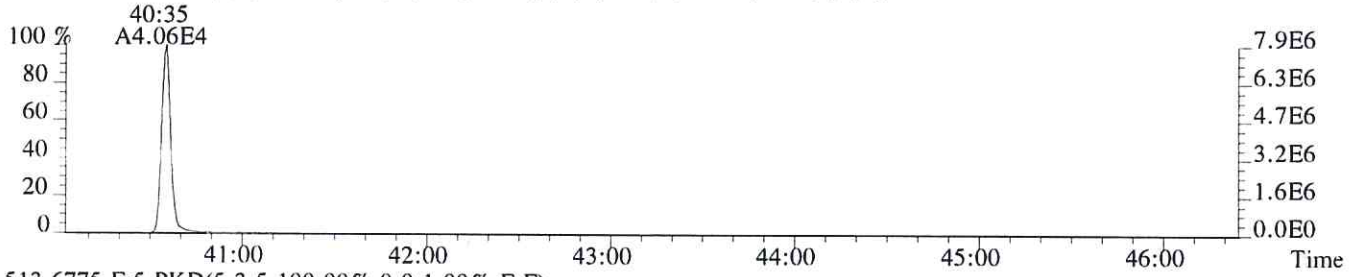
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,972.0,0.40%,F,T)



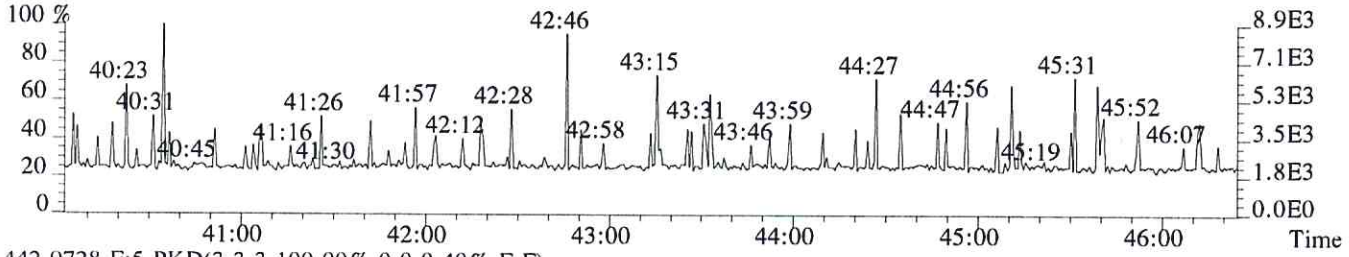
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1516.0,0.40%,F,T)



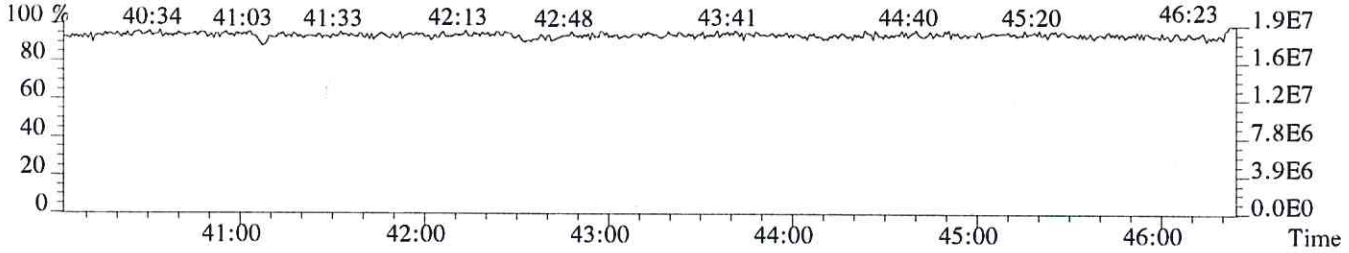
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3368.0,0.40%,F,T)



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

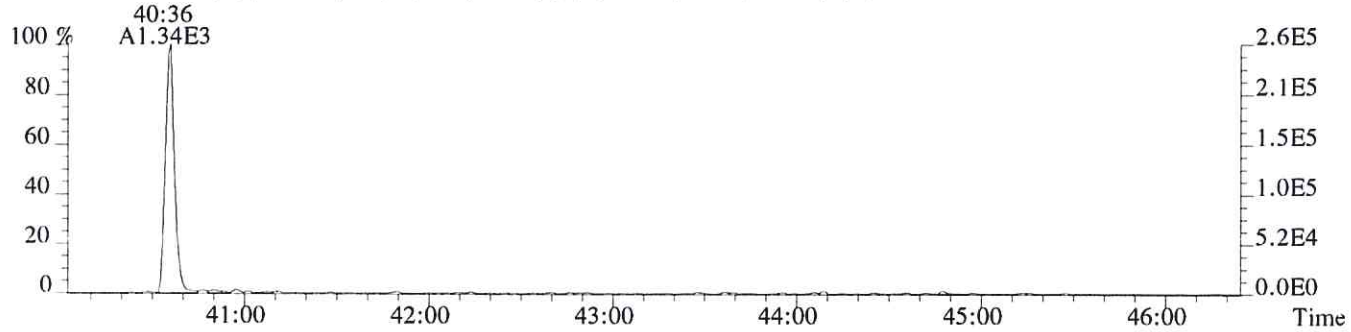


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

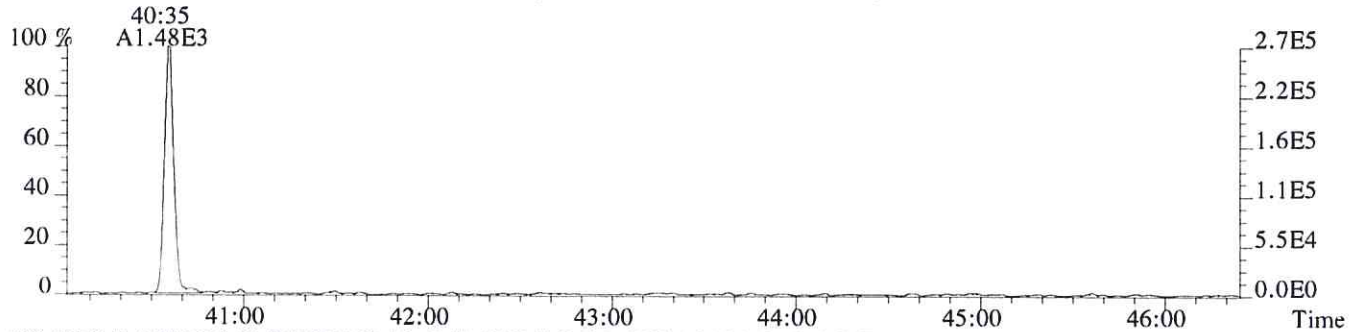


File:P607260 #1-573 Acq:20-MAY-2017 04:39:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-004

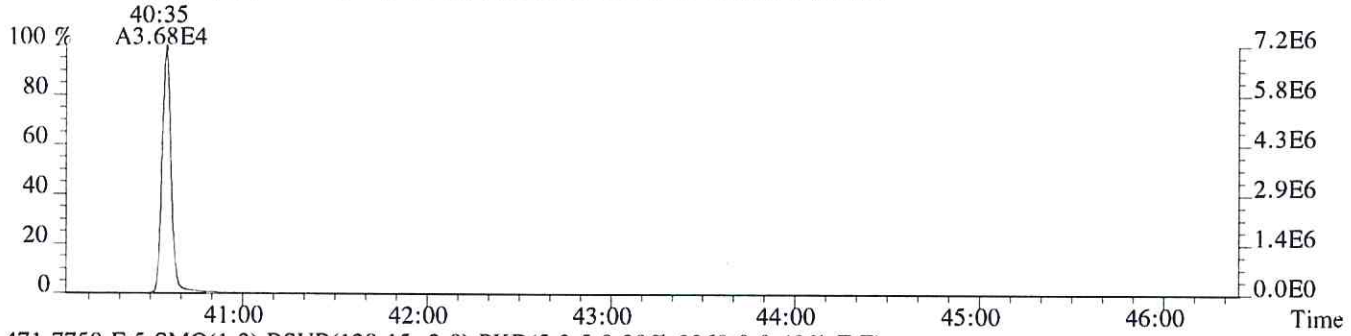
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,268.0,0.40%,F,T)



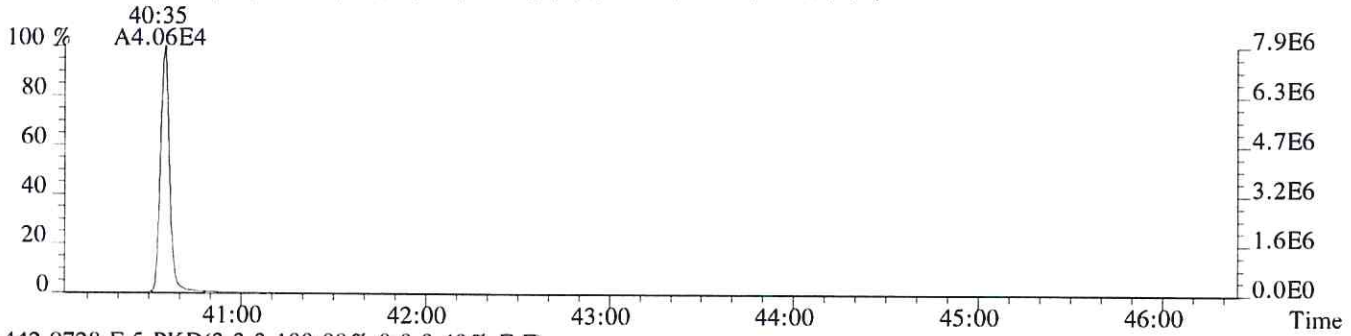
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1784.0,0.40%,F,T)



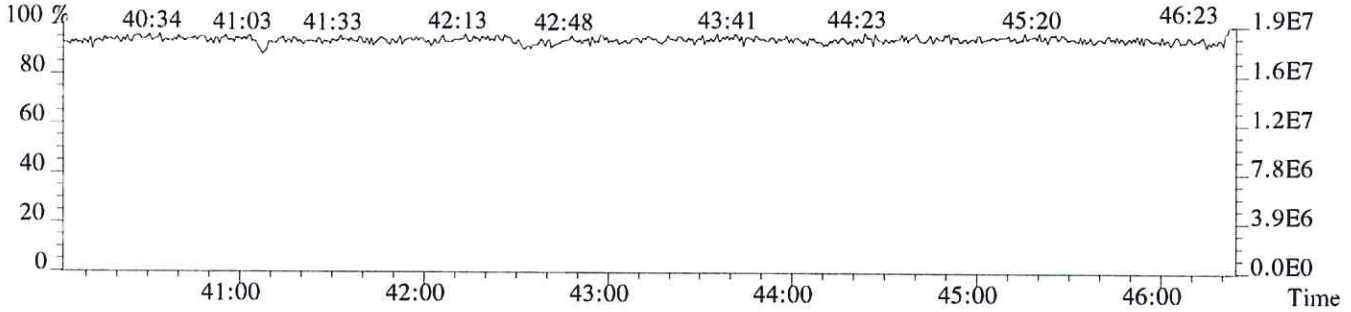
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1516.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3368.0,0.40%,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.
EB10_170428

Run #10 Filename P607267 Samp: 1 Inj: 1 Acquired: 20-MAY-17 10:37:29
Processed: 23-MAY-17 10:32:35 Sample ID: E1700468-005

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:41	3.783e+01	3.616e+01	1.05	no	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:40	2.483e+01	1.520e+01	1.63	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:31	3.312e+01	2.671e+01	1.24	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	3.035e+01	4.029e+01	0.75	no	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:10	3.431e+01	1.121e+01	3.06	no	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:57	5.617e+01	2.826e+01	1.99	no	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:14	5.163e+01	3.937e+01	1.31	no	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:32	2.626e+01	2.967e+01	0.89	yes	no	1.341
10	Unk	OCDF	40:45	3.703e+01	7.541e+01	0.49	no	no	1.337
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.055
12	Unk	1,2,3,7,8-PeCDD	31:58	1.452e+01	2.876e+01	0.51	no	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:19	2.186e+01	1.656e+01	1.32	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:24	2.367e+01	1.791e+01	1.32	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:39	3.640e+01	2.564e+01	1.42	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:07	4.905e+01	4.233e+01	1.16	yes	no	1.048
17	Unk	OCDD	40:36	2.020e+02	2.123e+02	0.95	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:45	1.476e+04	1.889e+04	0.78	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:40	3.792e+04	2.373e+04	1.60	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:40	3.463e+04	2.187e+04	1.58	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:31	1.656e+04	3.033e+04	0.55	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:38	2.097e+04	3.912e+04	0.54	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:10	1.258e+04	2.319e+04	0.54	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:55	1.353e+04	2.642e+04	0.51	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	1.130e+04	2.510e+04	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	8.953e+03	2.074e+04	0.43	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:44	8.243e+03	1.058e+04	0.78	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	31:60	2.151e+04	1.371e+04	1.57	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	1.835e+04	1.465e+04	1.25	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:24	1.820e+04	1.436e+04	1.27	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:07	1.532e+04	1.438e+04	1.07	yes	no	0.884
32	IS	13C-OCDD	40:35	1.728e+04	1.878e+04	0.92	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:03	9.328e+04	1.178e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:38	1.261e+05	9.990e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:46	1.328e+04				no	1.072

$$\text{OCDD} = \frac{(2.020e+02 + 2.123e+02) \times 4000 \text{ pg} \times 1}{(1.728e+04 + 1.878e+04) \times 972 \text{ mL/g} \times 100 / 100 \times 1.120} = 42.2 \text{ pg/L}$$

UM 05/24/17

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
EB10_170428

Run #10 Filename P607267 Samp: 1 Inj: 1 Acquired: 20-MAY-17 10:37:29
Processed: 23-MAY-17 10:32:35 LAB. ID: E1700468-005

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	3.44e+02	*	*	4.36e+02	*
2	1,2,3,7,8-PeCDF	8.12e+03	1.96e+02	4.1e+01	4.79e+03	1.30e+03	3.7e+00
3	2,3,4,7,8-PeCDF	7.97e+03	1.96e+02	4.1e+01	3.92e+03	1.30e+03	3.0e+00
4	1,2,3,4,7,8-HxCDF	7.08e+03	2.12e+02	3.3e+01	4.77e+03	2.28e+02	2.1e+01
5	1,2,3,6,7,8-HxCDF	8.21e+03	2.12e+02	3.9e+01	7.25e+03	2.28e+02	3.2e+01
6	2,3,4,6,7,8-HxCDF	7.59e+03	2.12e+02	3.6e+01	2.70e+03	2.28e+02	1.2e+01
7	1,2,3,7,8,9-HxCDF	1.13e+04	2.12e+02	5.3e+01	5.53e+03	2.28e+02	2.4e+01
8	1,2,3,4,6,7,8-HpCDF	1.10e+04	8.56e+02	1.3e+01	9.42e+03	2.36e+02	4.0e+01
9	1,2,3,4,7,8,9-HpCDF	6.18e+03	8.56e+02	7.2e+00	6.58e+03	2.36e+02	2.8e+01
10	OCDF	8.52e+03	1.28e+02	6.7e+01	1.18e+04	1.26e+03	9.4e+00
11	2,3,7,8-TCDD	*	1.16e+03	*	*	1.96e+02	*
12	1,2,3,7,8-PeCDD	3.72e+03	2.68e+02	1.4e+01	6.54e+03	1.23e+03	5.3e+00
13	1,2,3,4,7,8-HxCDD	4.88e+03	1.64e+02	3.0e+01	4.84e+03	2.52e+02	1.9e+01
14	1,2,3,6,7,8-HxCDD	6.00e+03	1.64e+02	3.7e+01	3.47e+03	2.52e+02	1.4e+01
15	1,2,3,7,8,9-HxCDD	6.58e+03	1.64e+02	4.0e+01	4.92e+03	2.52e+02	2.0e+01
16	1,2,3,4,6,7,8-HpCDD	1.13e+04	3.08e+02	3.7e+01	9.62e+03	2.56e+02	3.8e+01
17	OCDD	3.52e+04	2.60e+02	1.4e+02	4.18e+04	1.41e+03	3.0e+01
18	13C-2,3,7,8-TCDF	2.08e+06	8.37e+03	2.5e+02	2.73e+06	4.10e+03	6.7e+02
19	13C-1,2,3,7,8-PeCDF	6.43e+06	2.94e+03	2.2e+03	4.00e+06	2.39e+03	1.7e+03
20	13C-2,3,4,7,8-PeCDF	6.12e+06	2.94e+03	2.1e+03	3.90e+06	2.39e+03	1.6e+03
21	13C-1,2,3,4,7,8-HxCDF	3.41e+06	1.76e+02	1.9e+04	6.35e+06	1.14e+03	5.5e+03
22	13C-1,2,3,6,7,8-HxCDF	4.16e+06	1.76e+02	2.4e+04	7.77e+06	1.14e+03	6.8e+03
23	13C-2,3,4,6,7,8-HxCDF	2.60e+06	1.76e+02	1.5e+04	4.80e+06	1.14e+03	4.2e+03
24	13C-1,2,3,7,8,9-HxCDF	2.70e+06	1.76e+02	1.5e+04	5.38e+06	1.14e+03	4.7e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.41e+06	2.14e+03	1.1e+03	5.34e+06	3.63e+03	1.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.83e+06	2.14e+03	8.5e+02	4.31e+06	3.63e+03	1.2e+03
27	13C-2,3,7,8-TCDD	1.27e+06	6.26e+03	2.0e+02	1.68e+06	2.84e+03	5.9e+02
28	13C-1,2,3,7,8-PeCDD	3.80e+06	2.52e+02	1.5e+04	2.46e+06	8.80e+02	2.8e+03
29	13C-1,2,3,4,7,8-HxCDD	3.91e+06	1.55e+03	2.5e+03	3.12e+06	1.29e+03	2.4e+03
30	13C-1,2,3,6,7,8-HxCDD	3.82e+06	1.55e+03	2.5e+03	2.96e+06	1.29e+03	2.3e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.32e+06	6.64e+02	5.0e+03	3.02e+06	7.64e+02	4.0e+03
32	13C-OCDD	3.30e+06	3.34e+03	9.9e+02	3.53e+06	5.54e+03	6.4e+02
33	13C-1,2,3,4-TCDD	1.37e+07	6.26e+03	2.2e+03	1.74e+07	2.84e+03	6.1e+03
34	13C-1,2,3,7,8,9-HxCDD	2.57e+07	1.55e+03	1.7e+04	2.04e+07	1.29e+03	1.6e+04
35	37Cl-2,3,7,8-TCDD	2.10e+06	1.32e+03	1.6e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.160e{+}03 + 1.960e{+}02\ ) \times 2000}{(1.274e{+}06 + 1.677e{+}06\ ) \times (\qquad\qquad\qquad\qquad) \times 1.055} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

EB10_170428

Entry: 36 Totals Name: Total Tetra-Furans

Run: 10 File: P607267 Sample:1 Injection:1 Function:1

Acquired: 20-MAY-17 10:37:29 Processed: 23-MAY-17 10:32:35

Mass: 303.9020 305.8990 Tot Response: 4.11e+02 RRF: 1.020

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:42	1.54e+02	2.22e+02	0.70	yes	3.76e+02	n	n
2	26:04	1.54e+01	1.97e+01	0.78	yes	3.51e+01	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
EB10_170428

Entry: 39 Totals Name: Total Penta-Furans2

Run: 10 File: P607267 Sample:1 Injection:1 Function:2

Acquired: 20-MAY-17 10:37:29 Processed: 23-MAY-17 10:32:35

Mass: 339.8600 341.8570 Tot Response: 4.00e+01 RRF: 1.036

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	31:40	2.48e+01	1.52e+01	1.63	yes	4.00e+01	2,3,4,7,8-PeCDF	n	n

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Peak List Summary

CLIENT ID.

EB10_170428

Entry: 41 Totals Name: Total Hexa-Furans

Run: 10 File: P607267 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 10:37:29 Processed: 23-MAY-17 10:32:35

Mass: 373.8210 375.8180 Tot Response: 5.98e+01 RRF: 1.207

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:31	3.31e+01	2.67e+01	1.24	yes	5.98e+01	1,2,3,4,7,8-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

EB10_170428

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 10 File: P607267 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 10:37:29 Processed: 23-MAY-17 10:32:35

Mass: 389.8160 391.8130 Tot Response: 1.42e+02 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	35:19	2.19e+01	1.66e+01	1.32	yes	3.84e+01	1,2,3,4,7,8-HxCDD	n	n
2	35:24	2.37e+01	1.79e+01	1.32	yes	4.16e+01	1,2,3,6,7,8-HxCDD	n	n
3	35:39	3.64e+01	2.56e+01	1.42	yes	6.20e+01	1,2,3,7,8,9-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

EB10_170428

Entry: 43 Totals Name: Total Hepta-Furans

Run: 10 File: P607267 Sample:1 Injection:1 Function:4

Acquired: 20-MAY-17 10:37:29 Processed: 23-MAY-17 10:32:35

Mass: 407.7820 409.7790 Tot Response: 5.59e+01 RRF: 1.368

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:32	2.63e+01	2.97e+01	0.89	yes	5.59e+01	1,2,3,4,7,8,9-HpCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

EB10_170428

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 10 File: P607267 Sample:1 Injection:1 Function:4

Acquired: 20-MAY-17 10:37:29 Processed: 23-MAY-17 10:32:35

Mass: 423.7770 425.7740 Tot Response: 9.14e+01 RRF: 1.048

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:07	4.91e+01	4.23e+01	1.16	yes	9.14e+01	1,2,3,4,6,7,8-HpCDD	n	n

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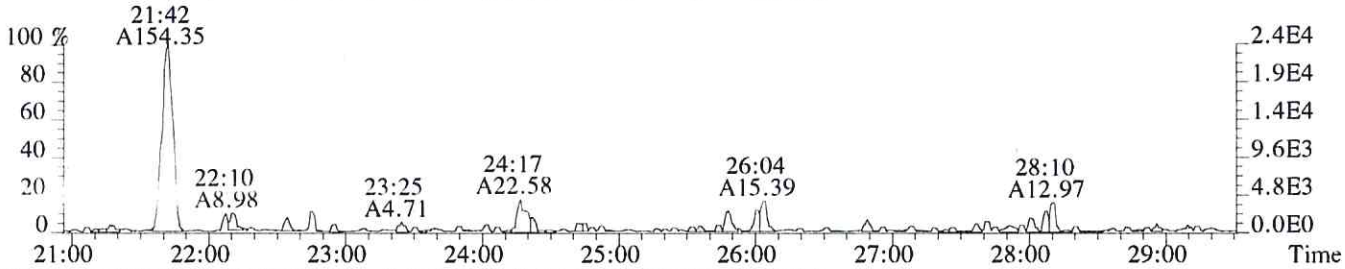
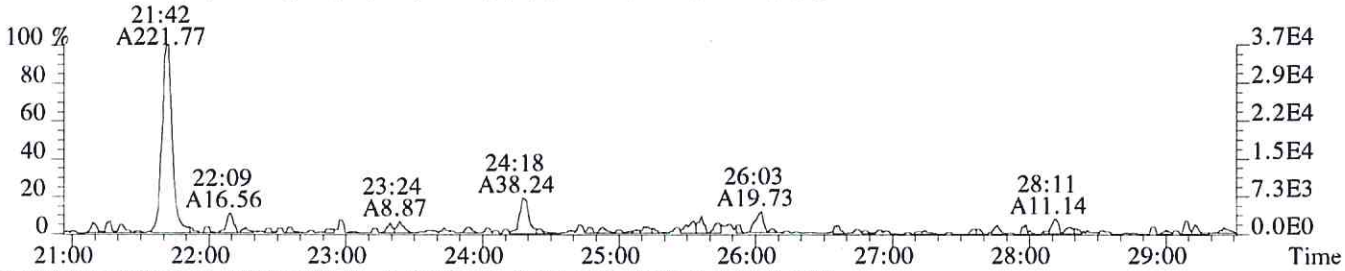
File:P607267 #1-609 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005

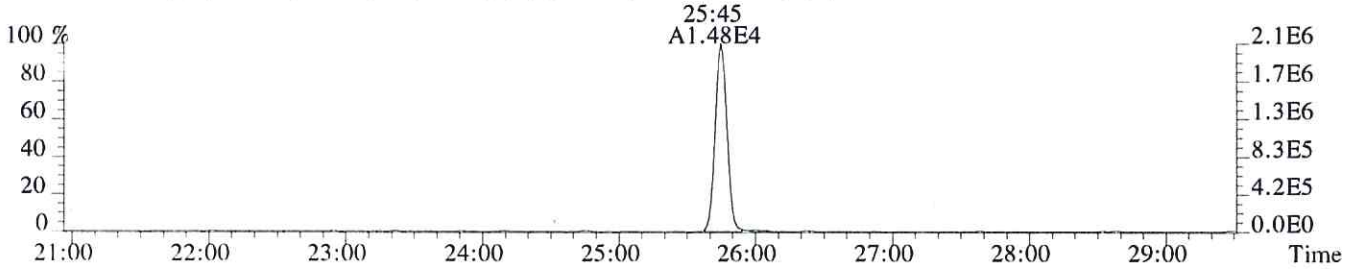
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,344.0,1.00%,F,T)



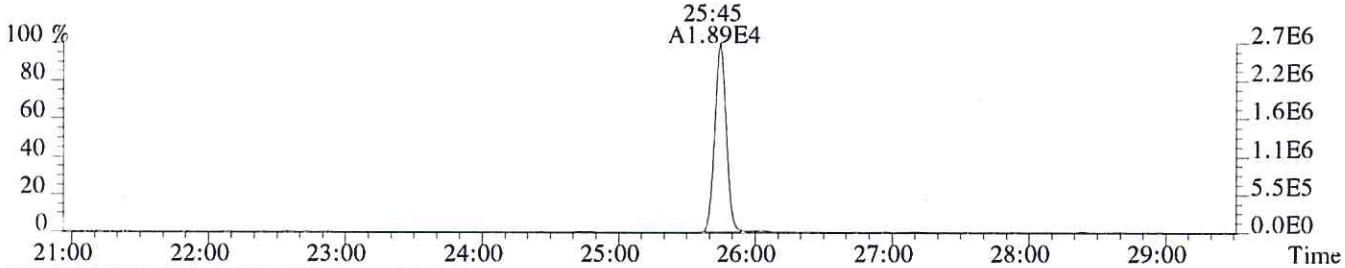
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,436.0,1.00%,F,T)



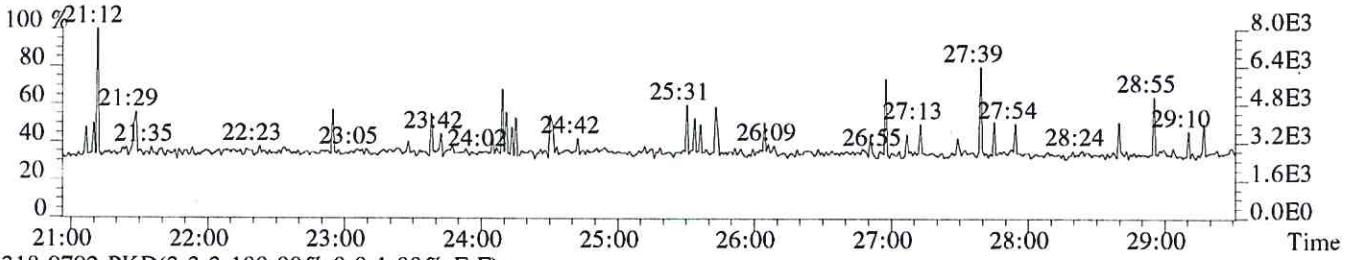
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8372.0,1.00%,F,T)



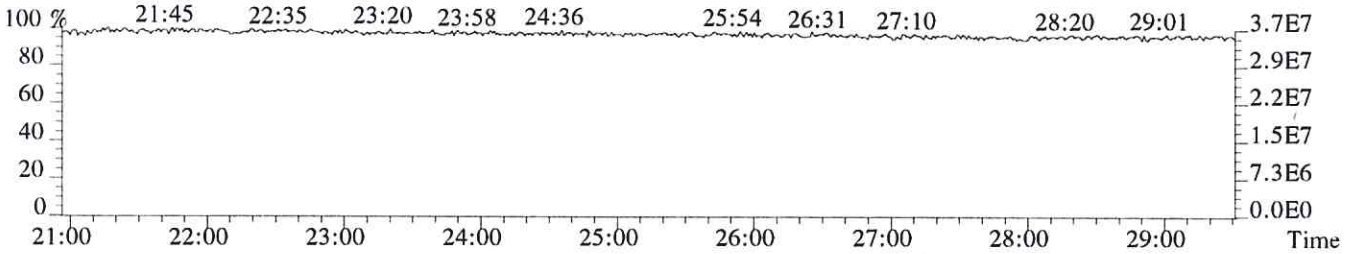
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4100.0,1.00%,F,T)



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

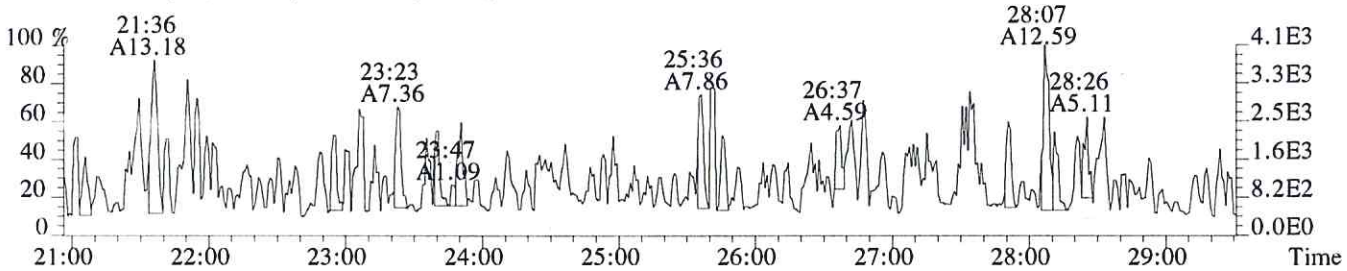


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

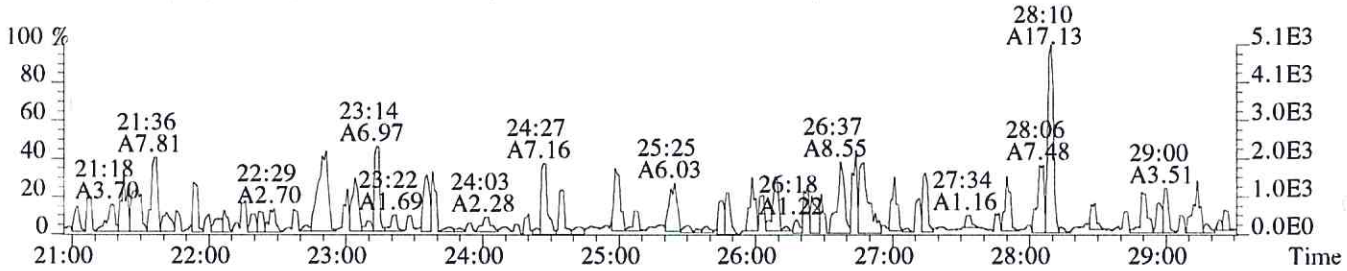


File:P607267 #1-609 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005

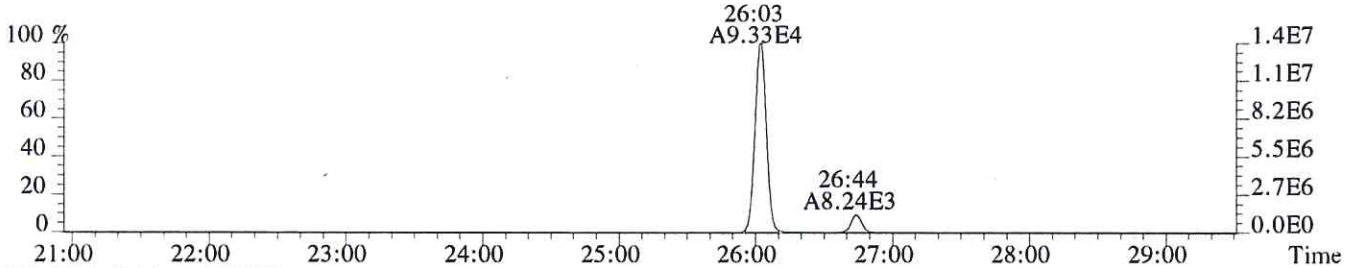
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1160.0,1.00%,F,T)



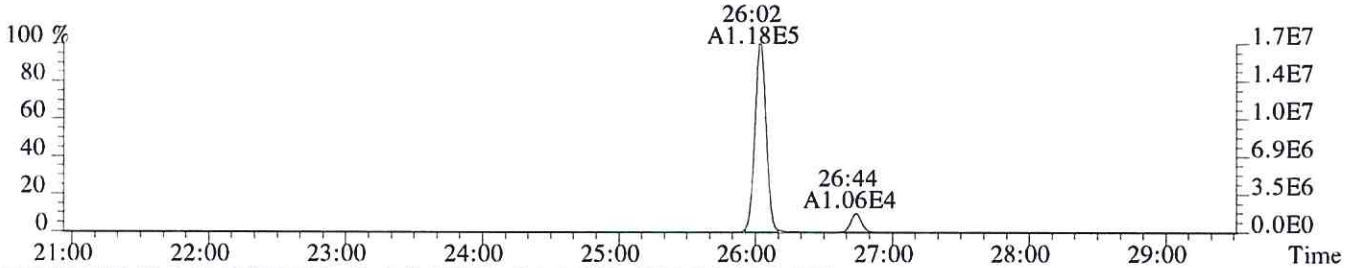
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,196.0,1.00%,F,T)



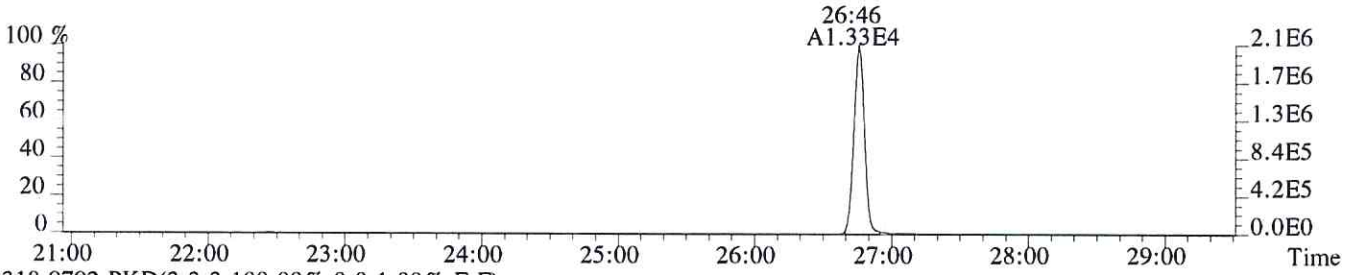
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6260.0,1.00%,F,T)



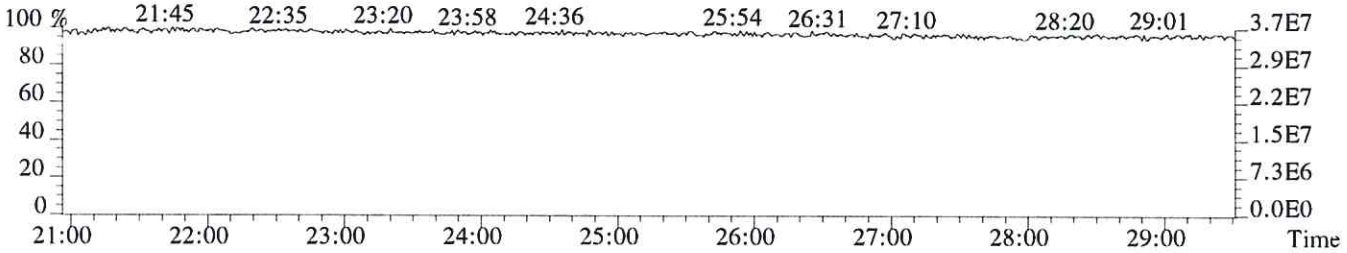
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2836.0,1.00%,F,T)



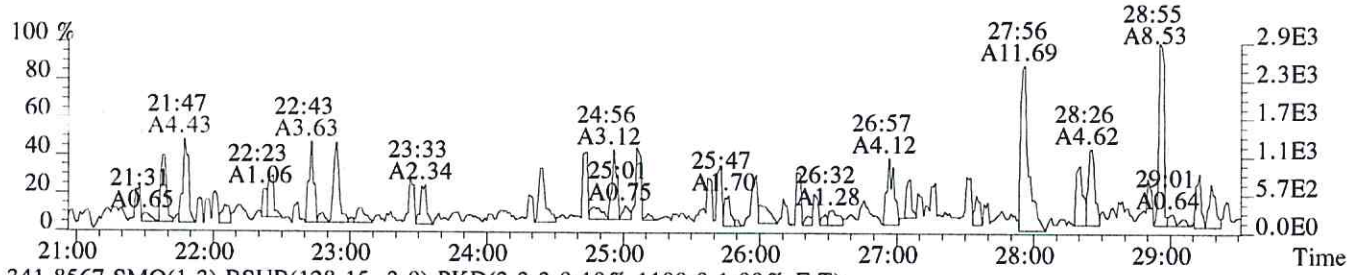
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1320.0,1.00%,F,T)



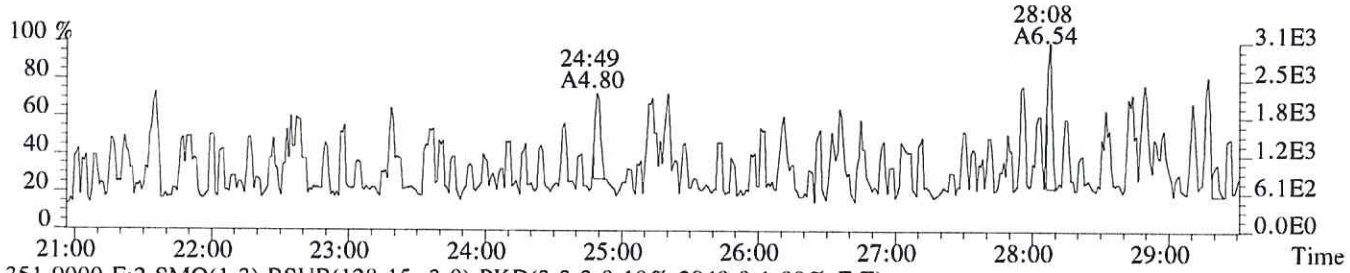
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



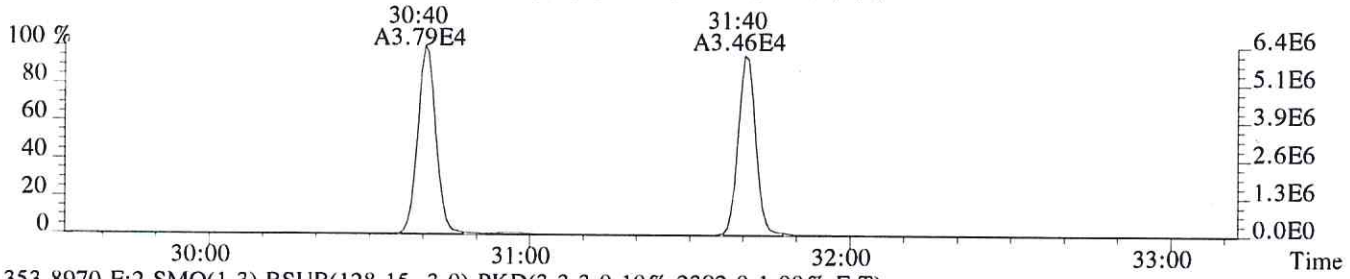
File:P607267 #1-609 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,300.0,1.00%,F,T)



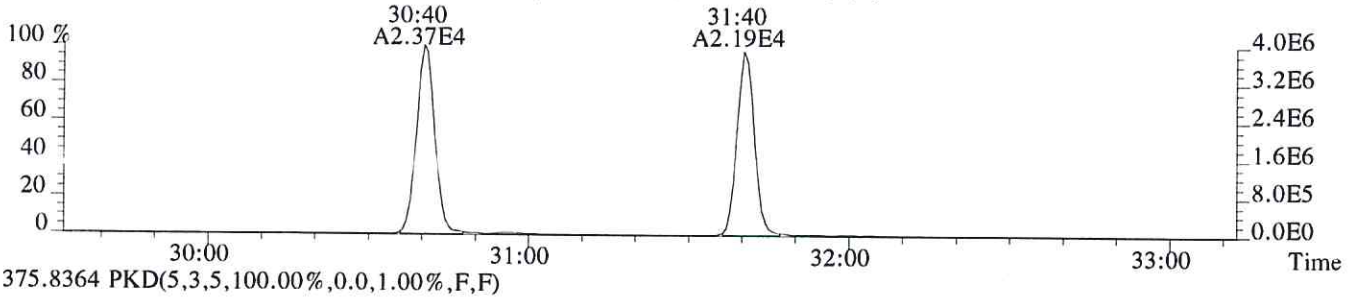
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1100.0,1.00%,F,T)



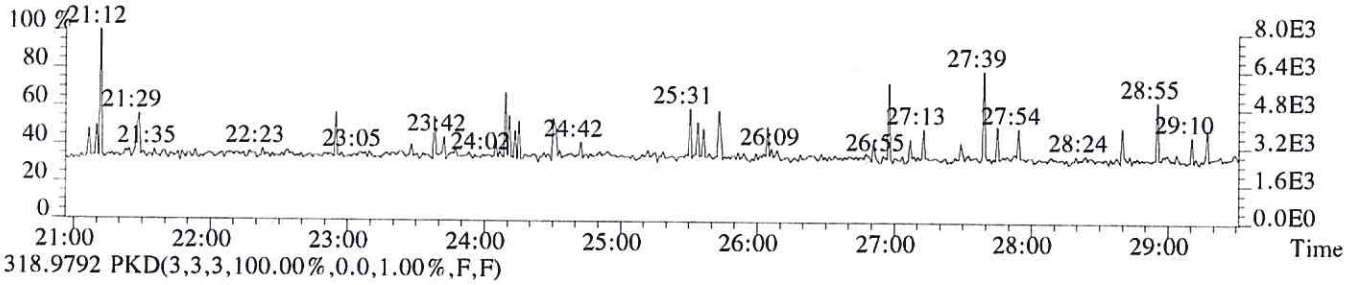
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2940.0,1.00%,F,T)



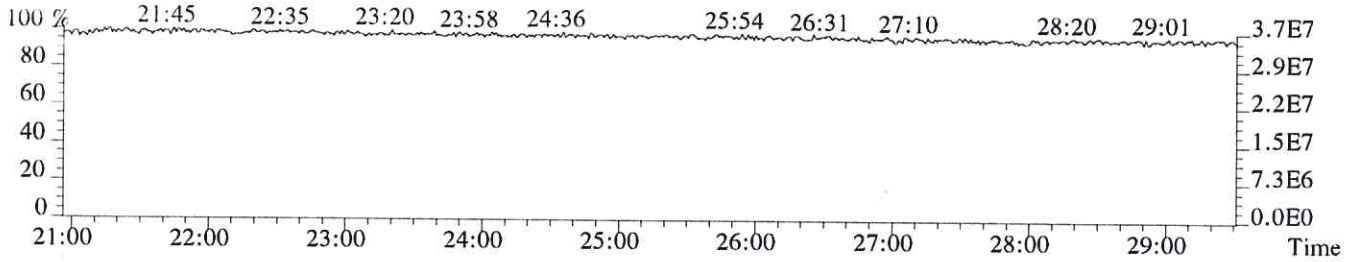
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2392.0,1.00%,F,T)



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

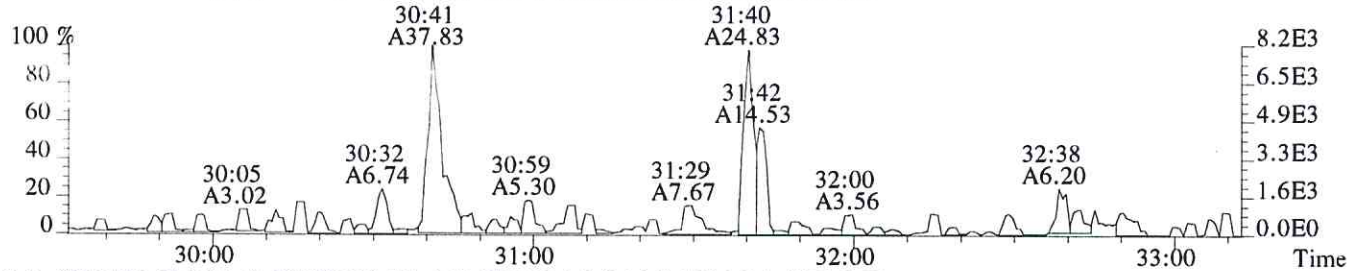


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

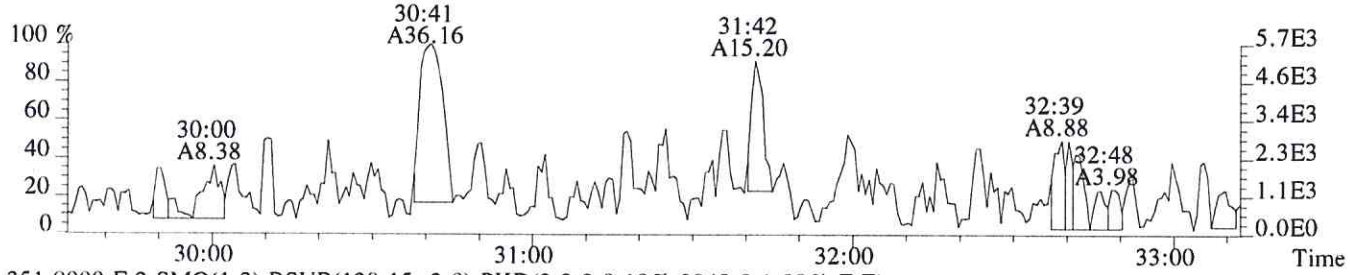


File:P607267 #1-330 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005

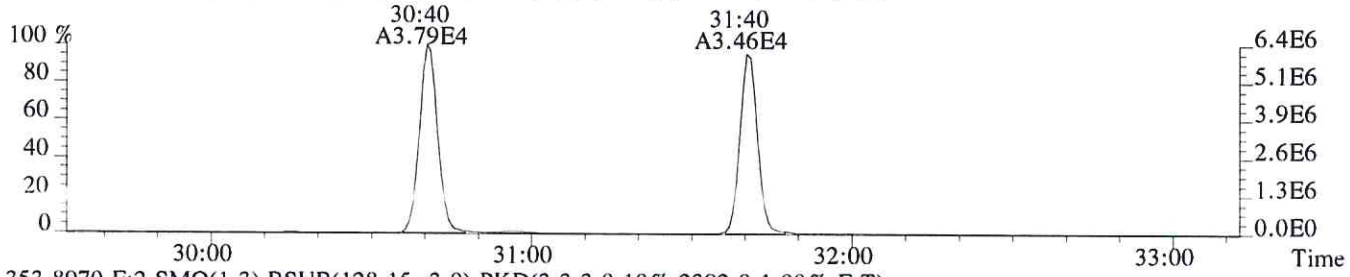
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,196.0,1.00%,F,T)



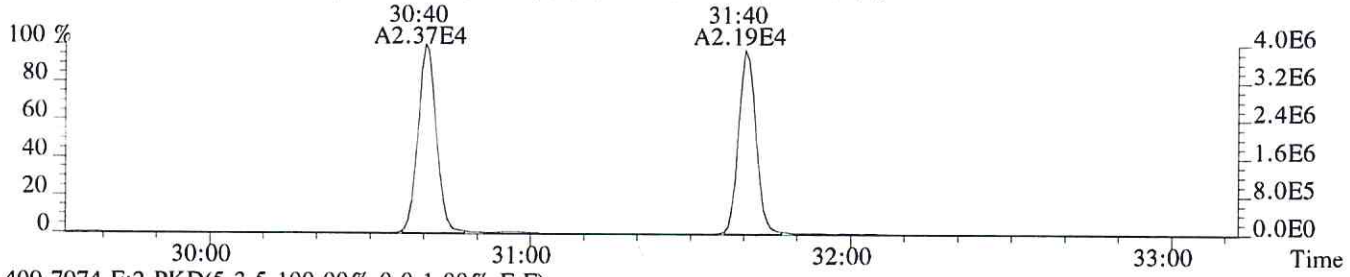
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1296.0,1.00%,F,T)



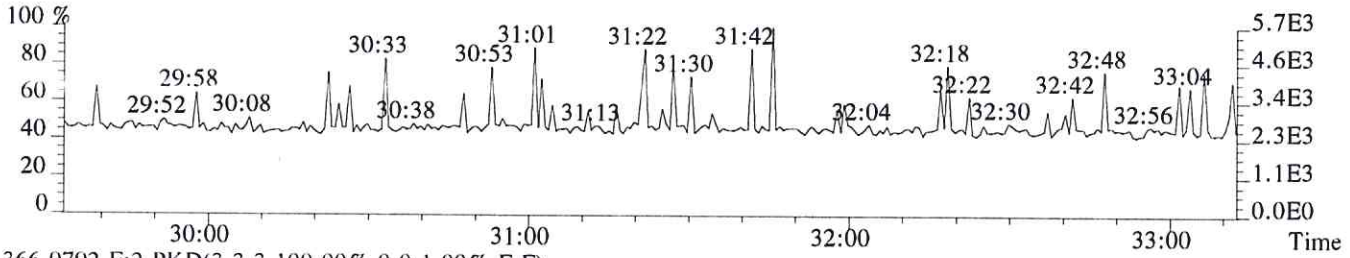
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2940.0,1.00%,F,T)



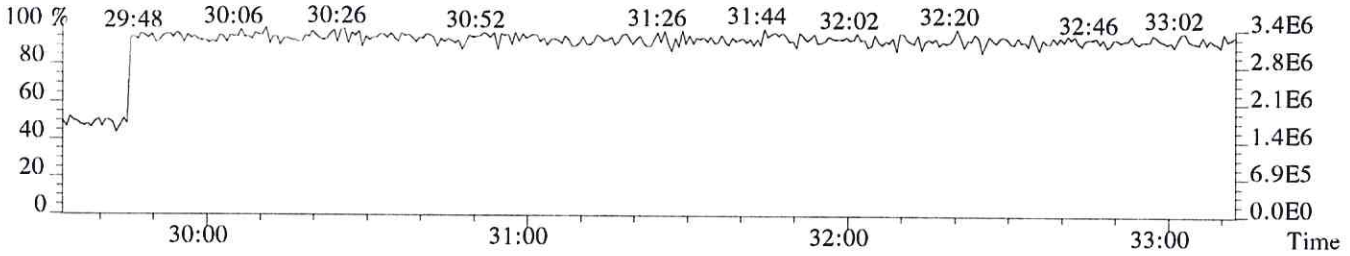
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2392.0,1.00%,F,T)



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

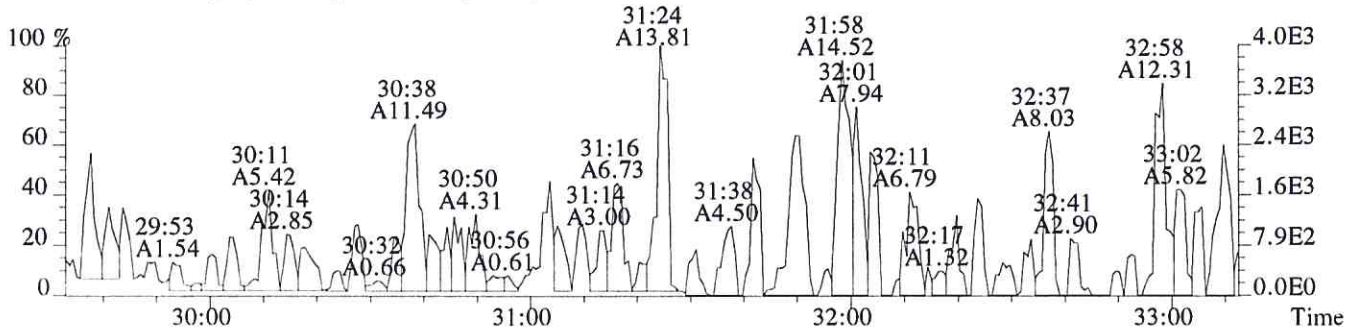


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

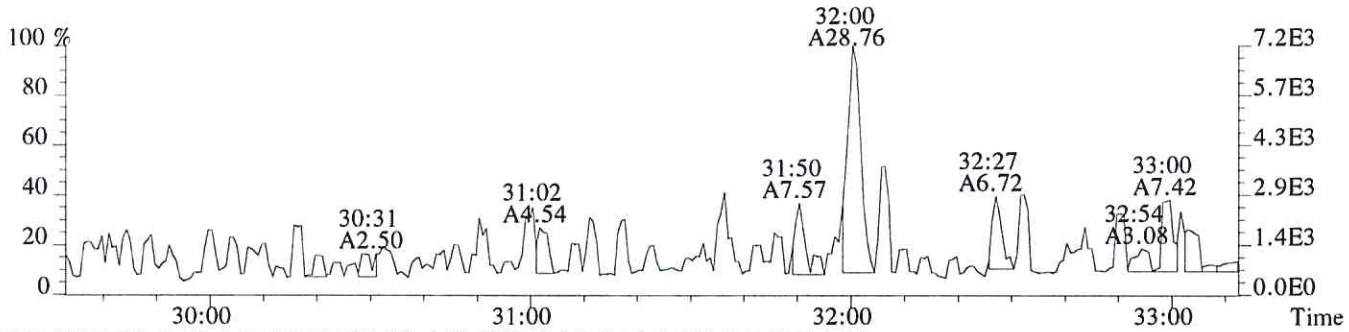


File:P607267 #1-330 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005

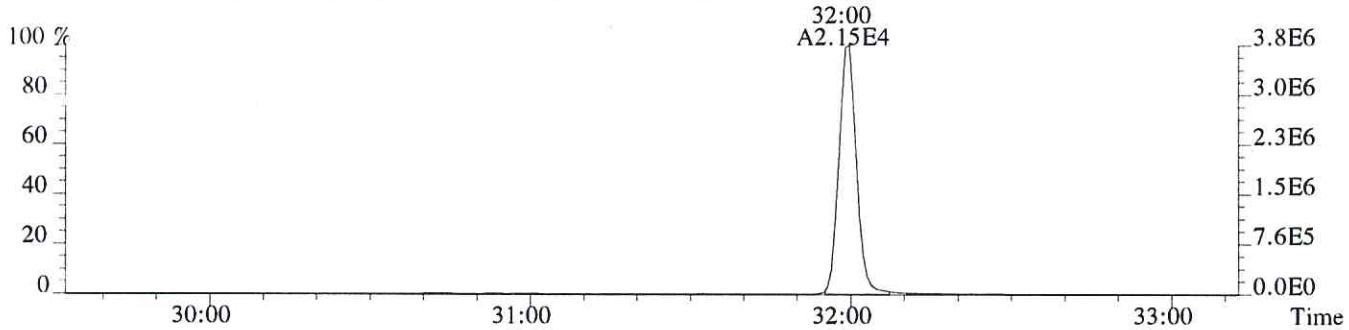
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,268.0,1.00%,F,T)



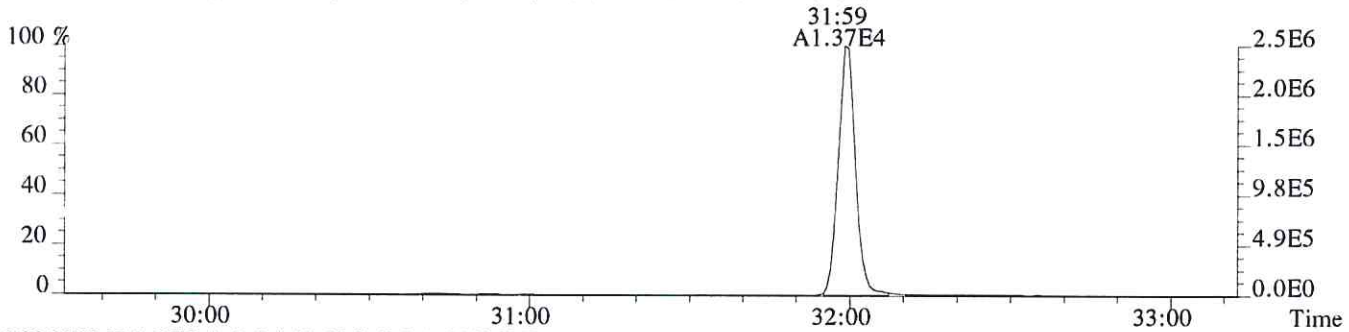
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1232.0,1.00%,F,T)



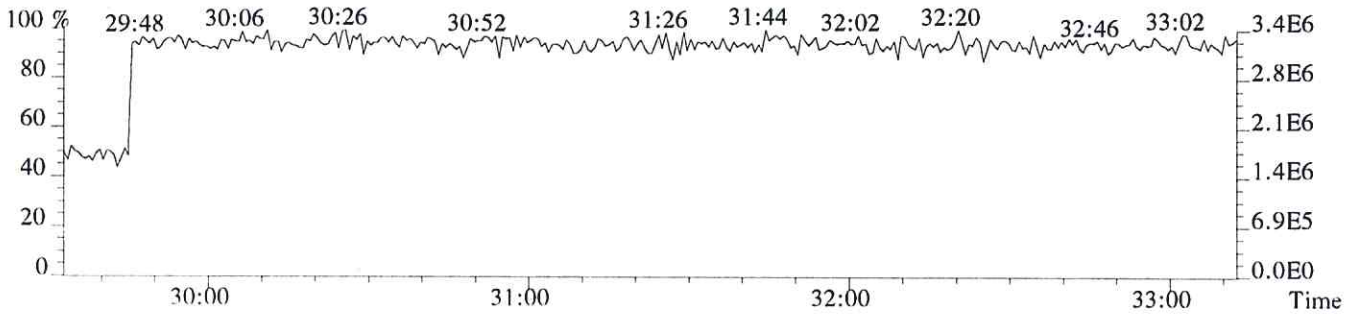
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,252.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,880.0,1.00%,F,T)

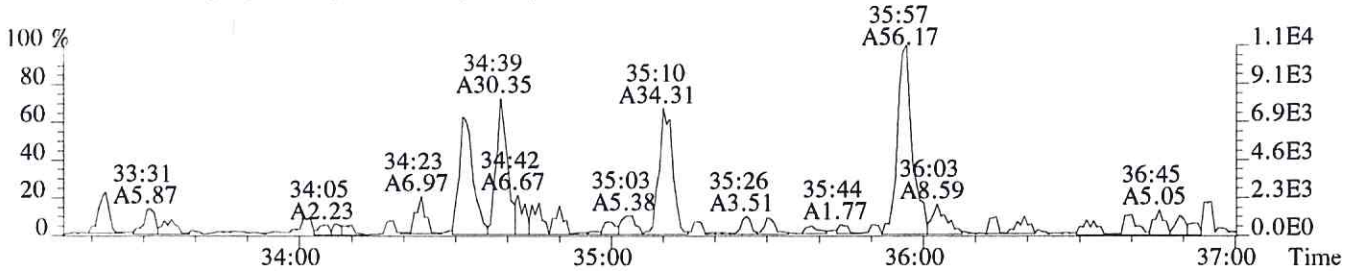


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

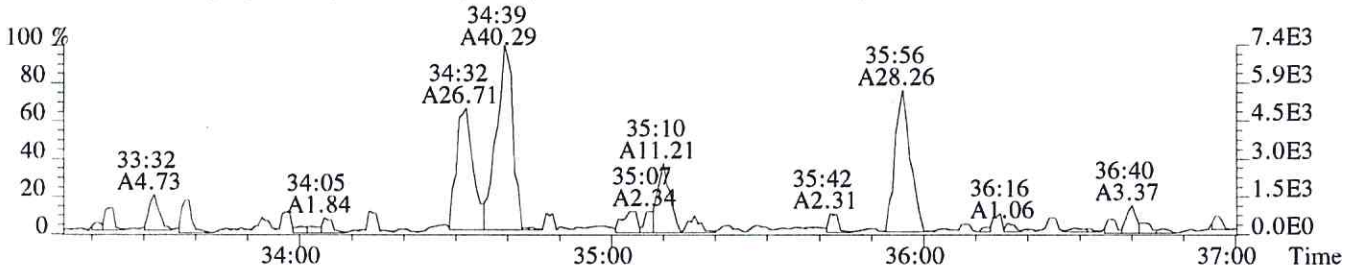


File:P607267 #1-339 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005

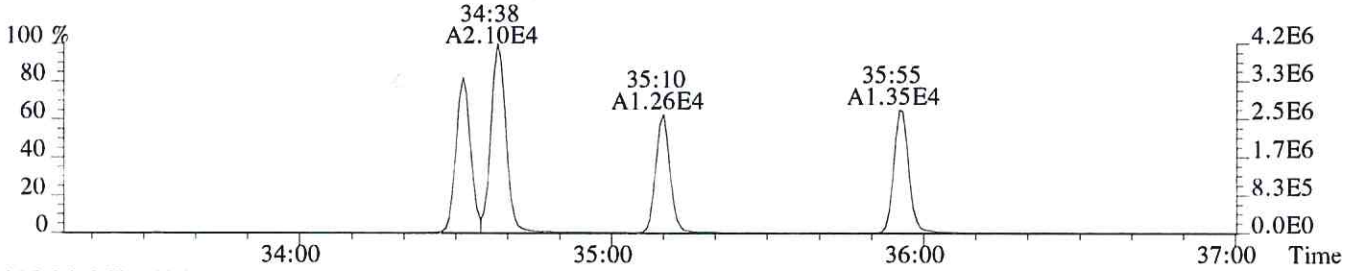
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,212.0,0.40%,F,T)



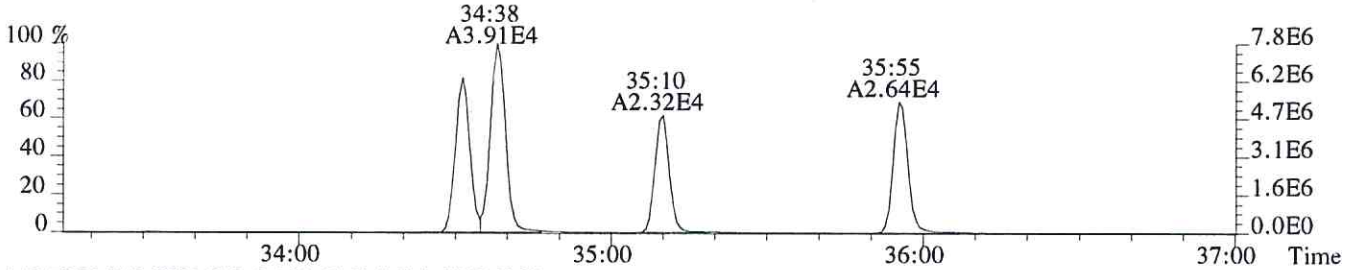
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,228.0,0.40%,F,T)



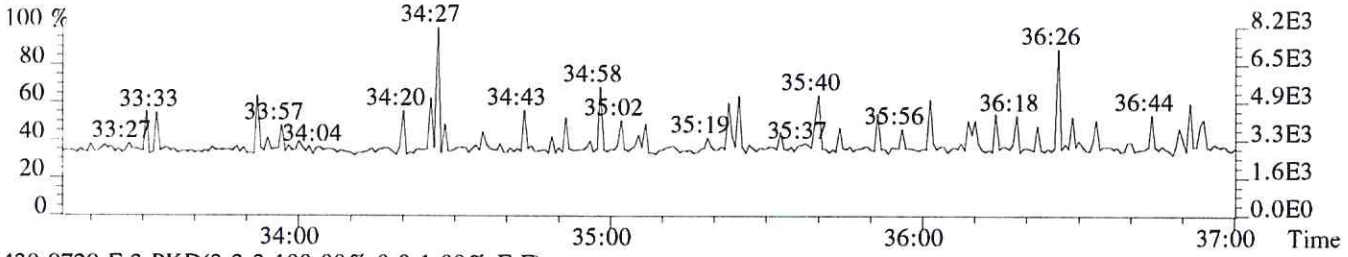
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,176.0,0.40%,F,T)



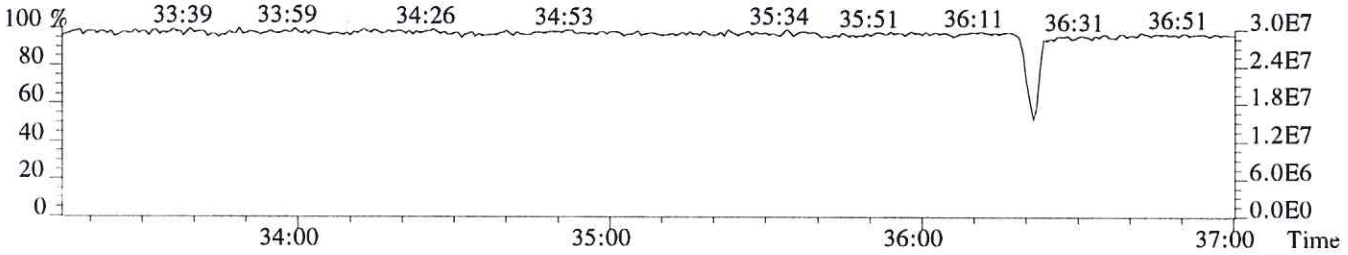
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1144.0,0.40%,F,T)



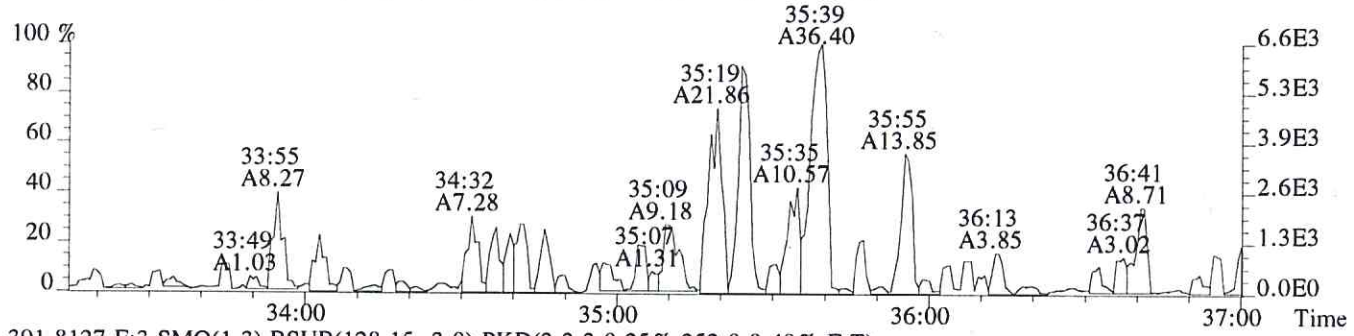
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



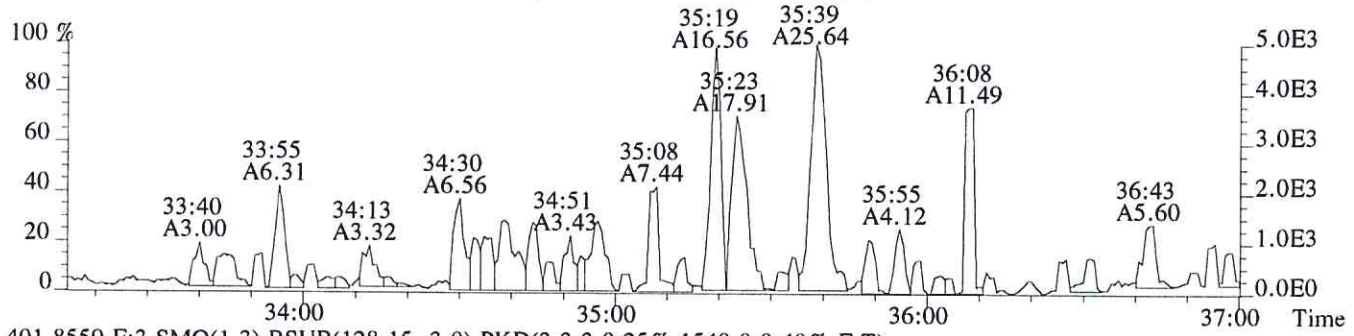
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



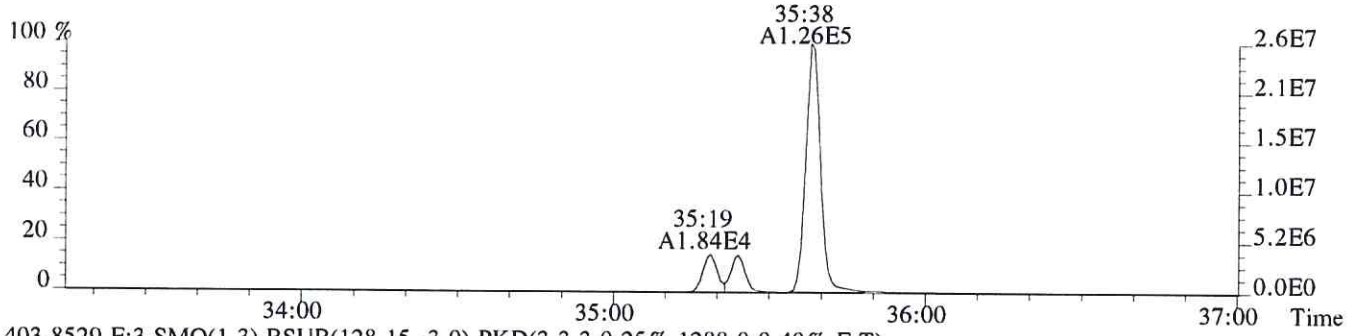
File:P607267 #1-339 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,164.0,0.40%,F,T)



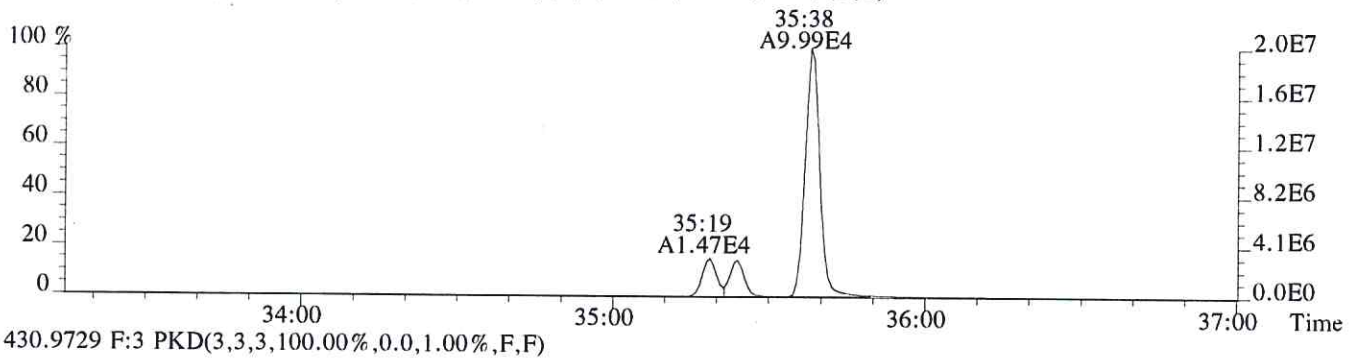
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,252.0,0.40%,F,T)



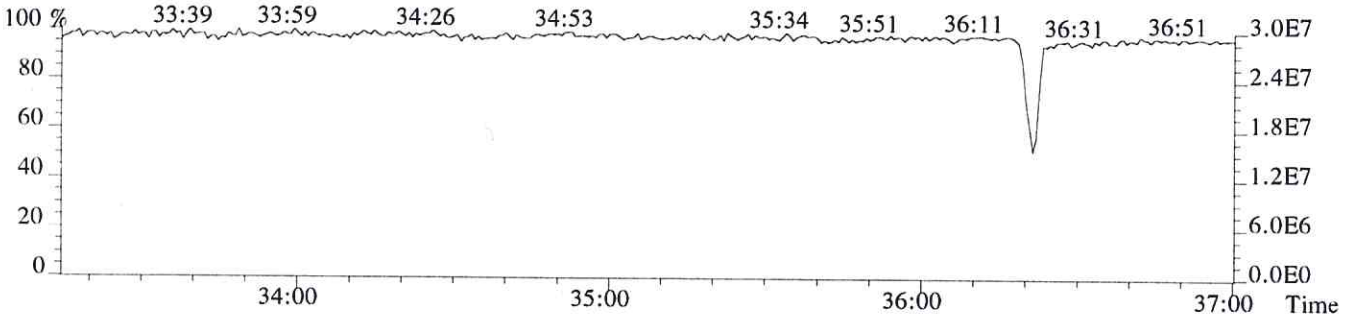
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1548.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1288.0,0.40%,F,T)

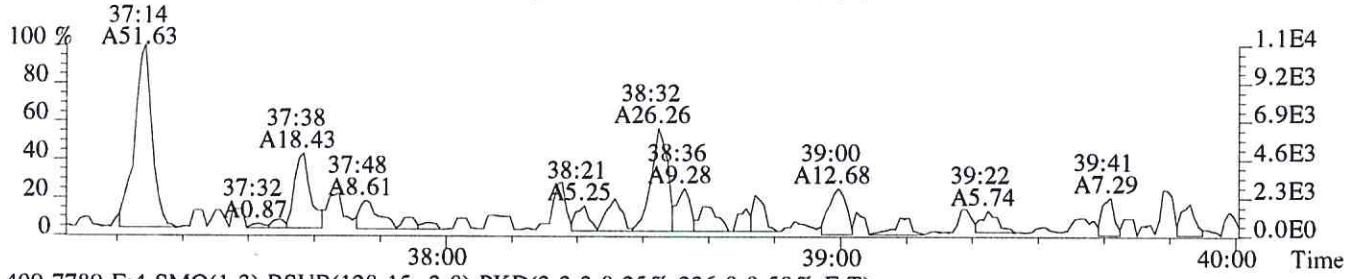


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

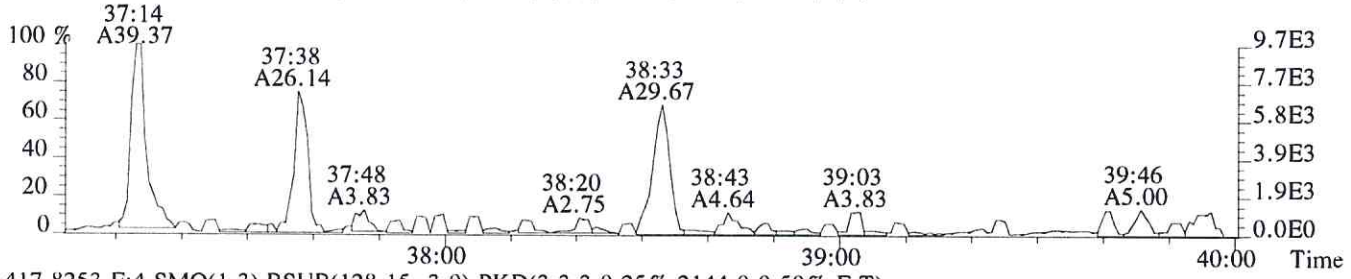


File:P607267 #1-268 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005

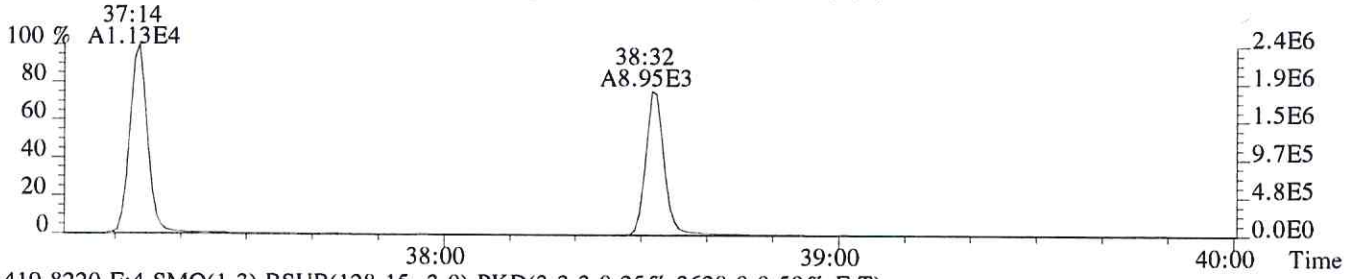
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,856.0,0.50%,F,T)



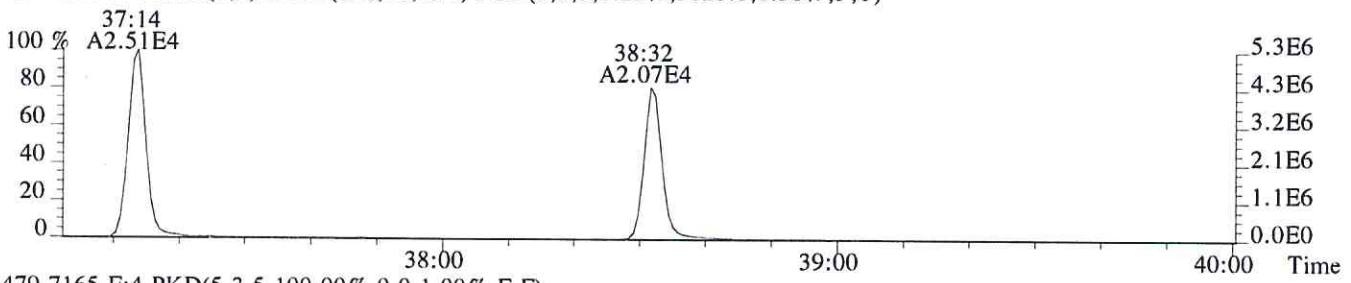
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,236.0,0.50%,F,T)



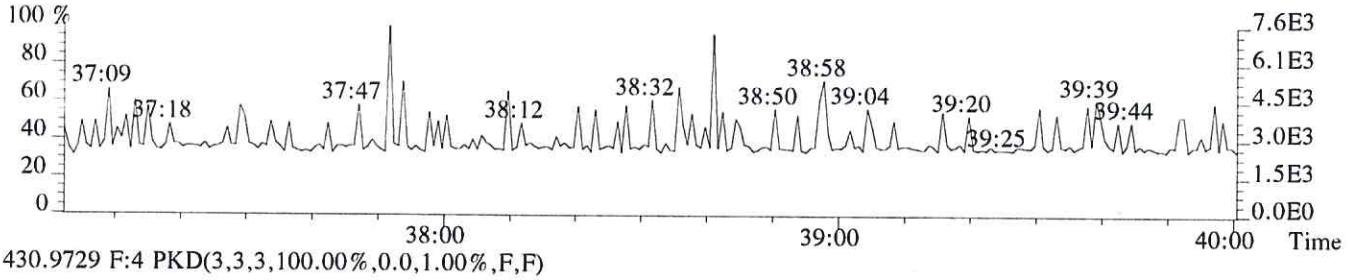
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2144.0,0.50%,F,T)



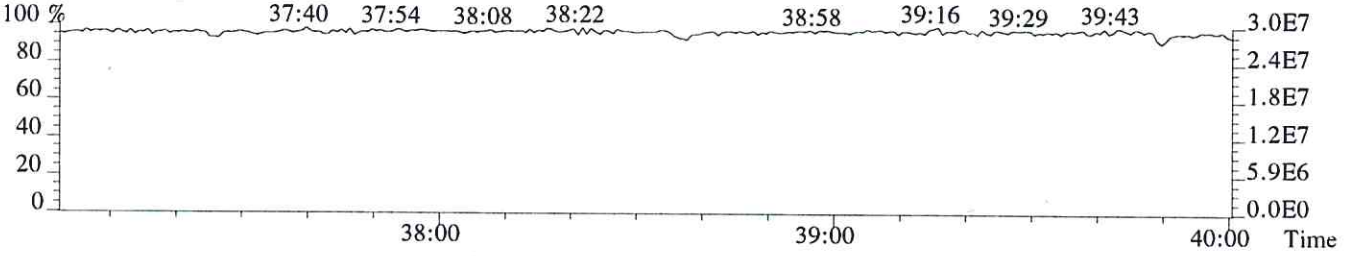
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3628.0,0.50%,F,T)



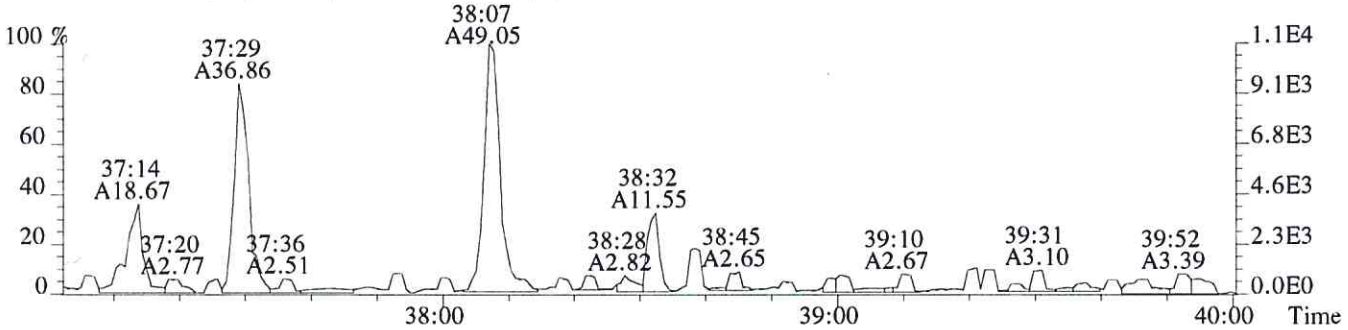
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



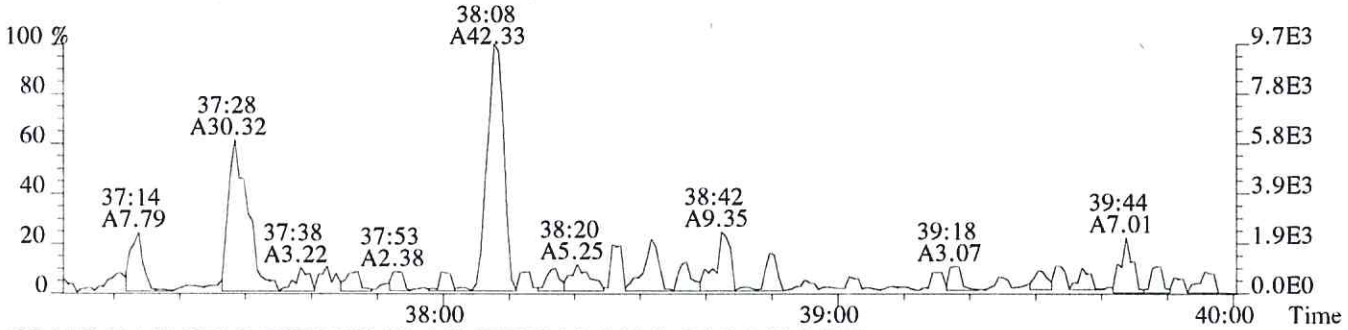
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



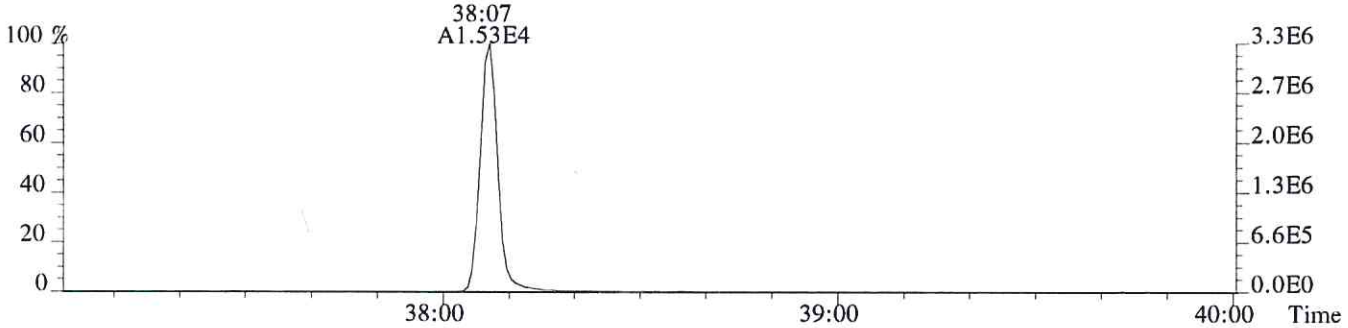
File:P607267 #1-268 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,308.0,0.40%,F,T)



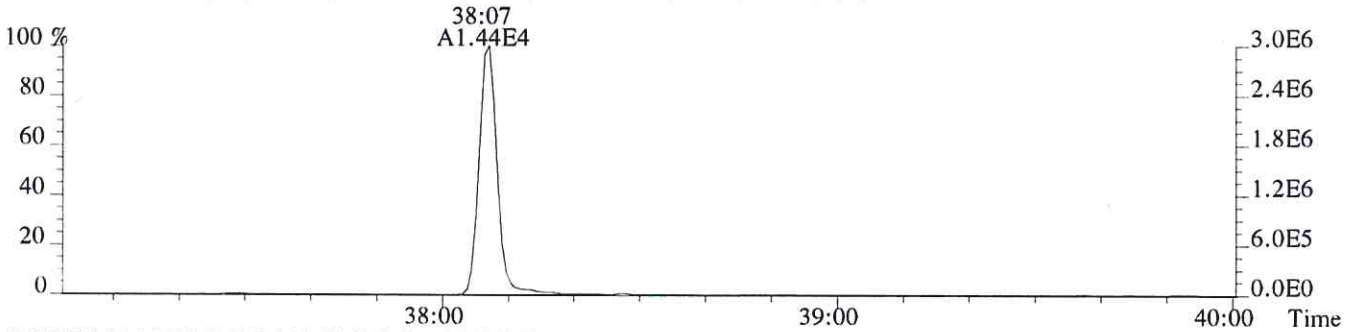
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,256.0,0.40%,F,T)



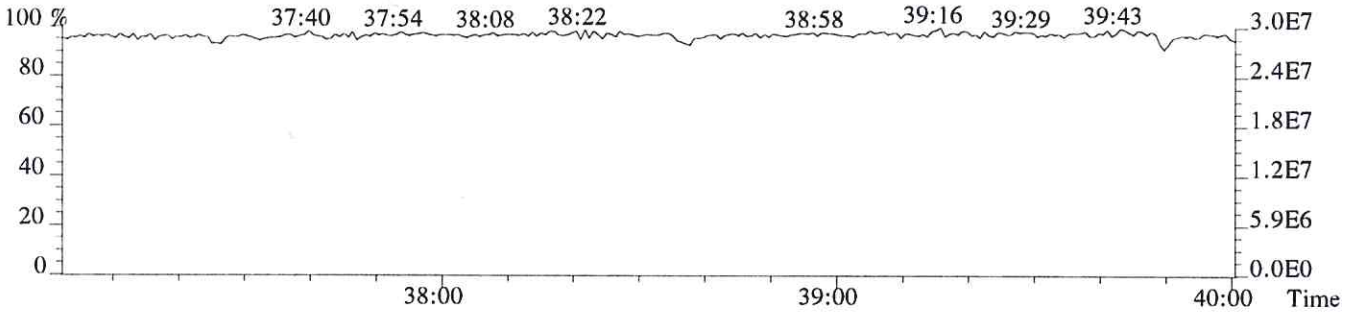
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,664.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,764.0,0.40%,F,T)

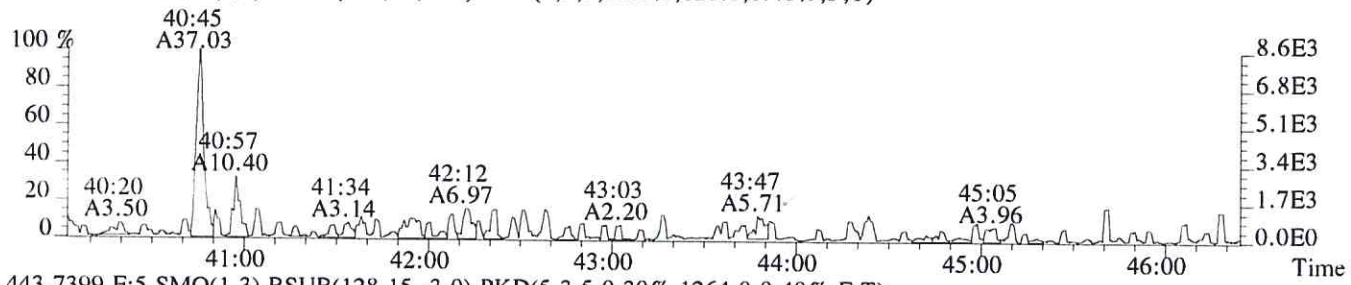


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

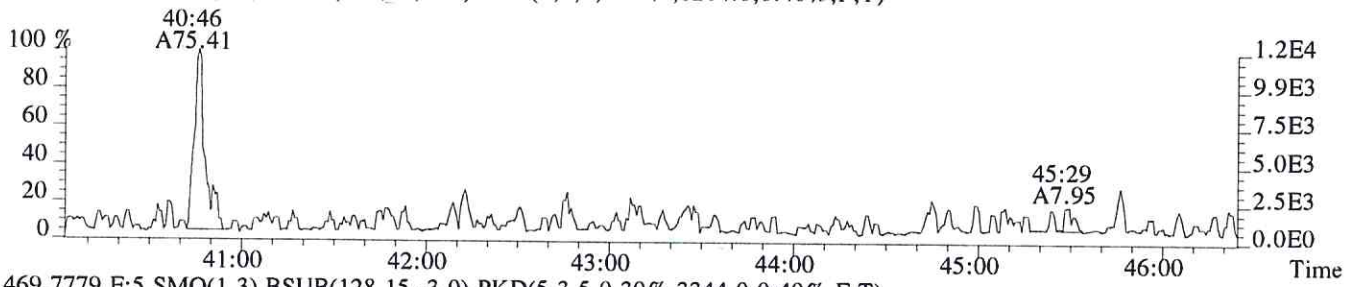


File:P607267 #1-573 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005

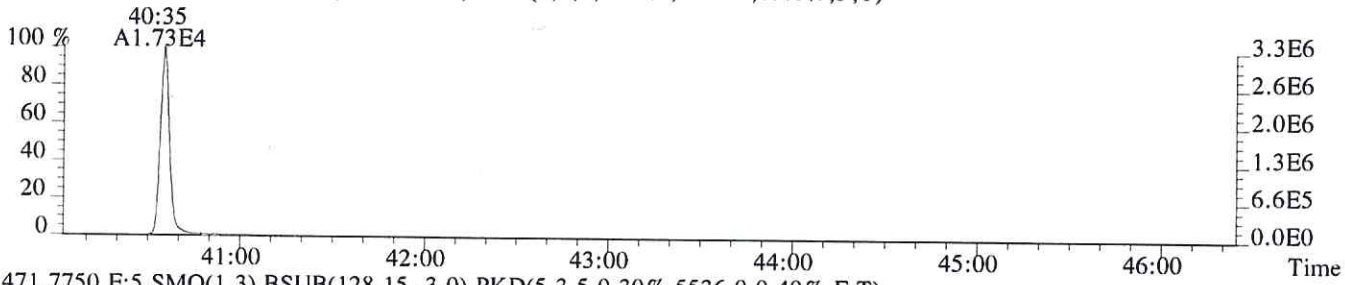
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,128.0,0.40%,F,T)



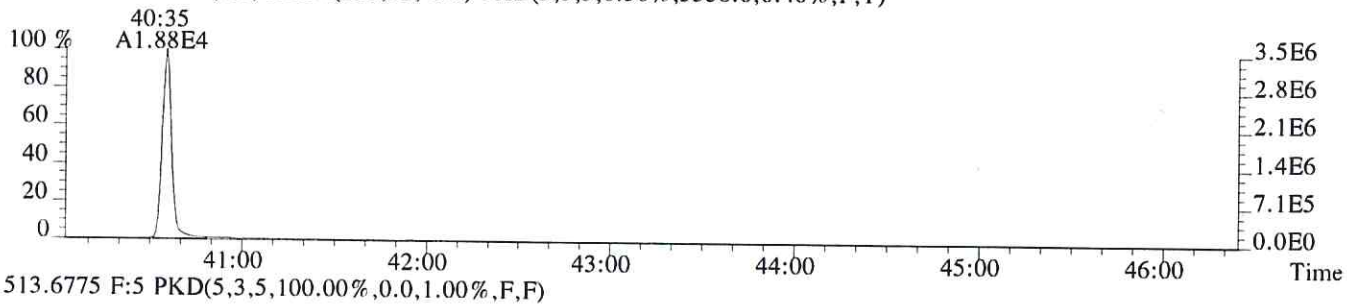
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1264.0,0.40%,F,T)



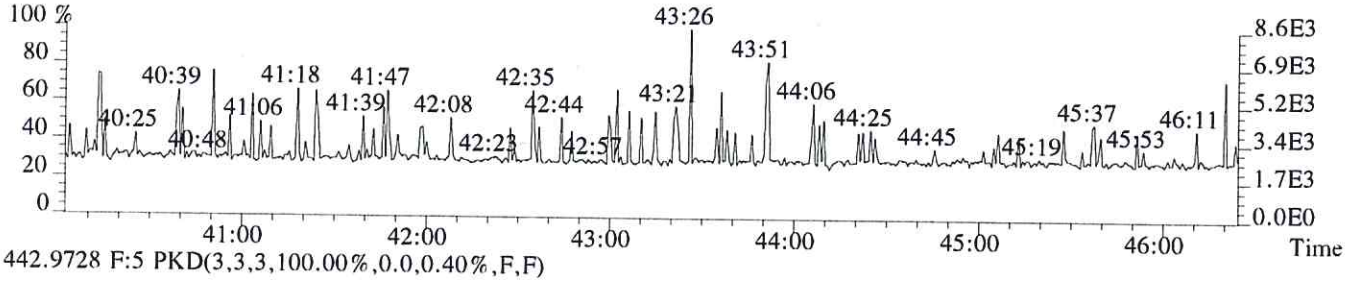
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3344.0,0.40%,F,T)



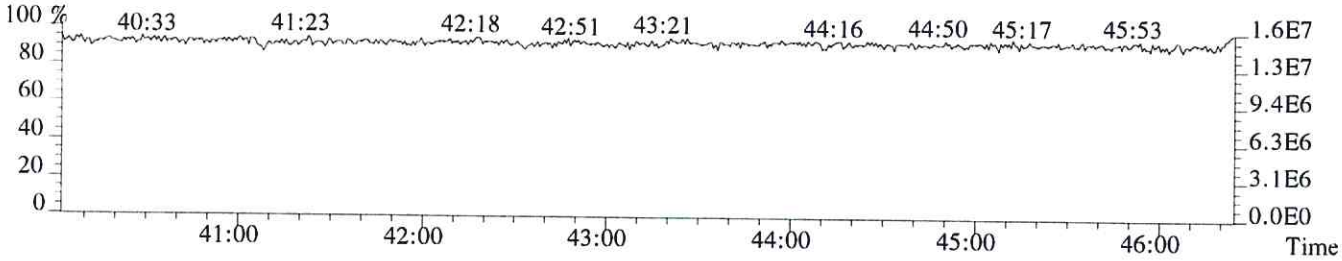
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5536.0,0.40%,F,T)



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

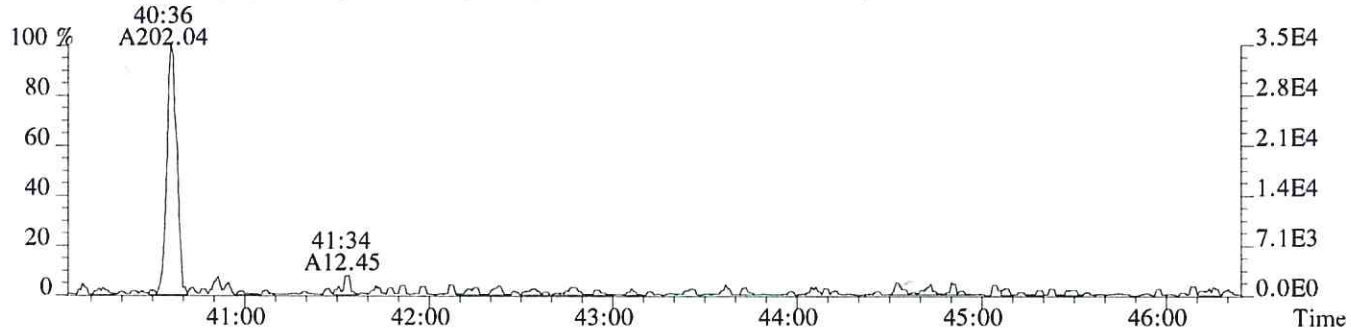


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

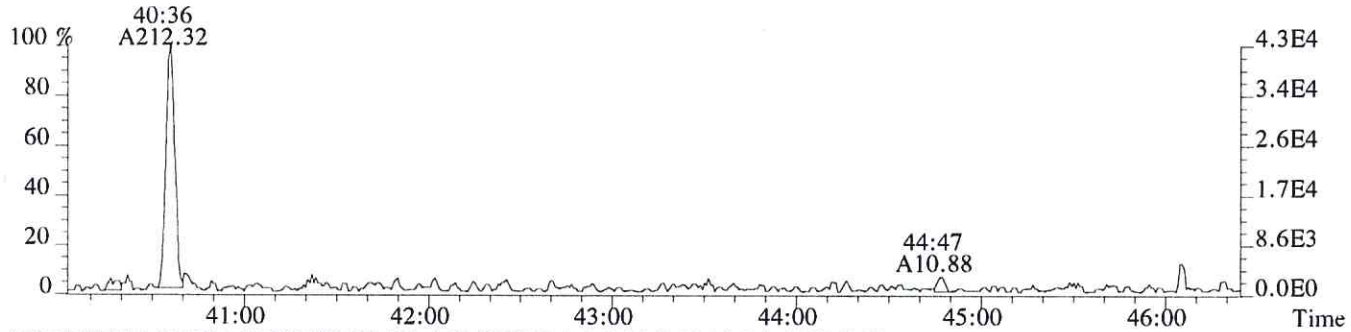


File:P607267 #1-573 Acq:20-MAY-2017 10:37:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-005

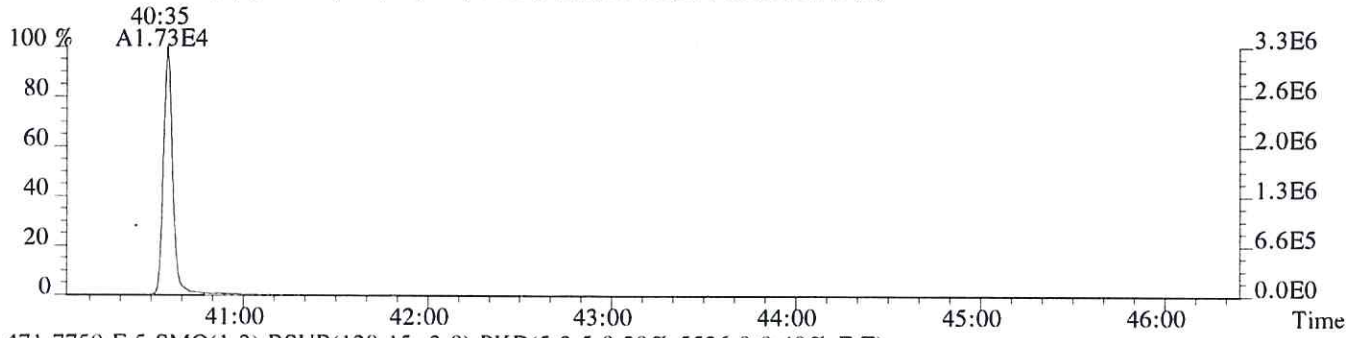
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,260.0,0.40%,F,T)



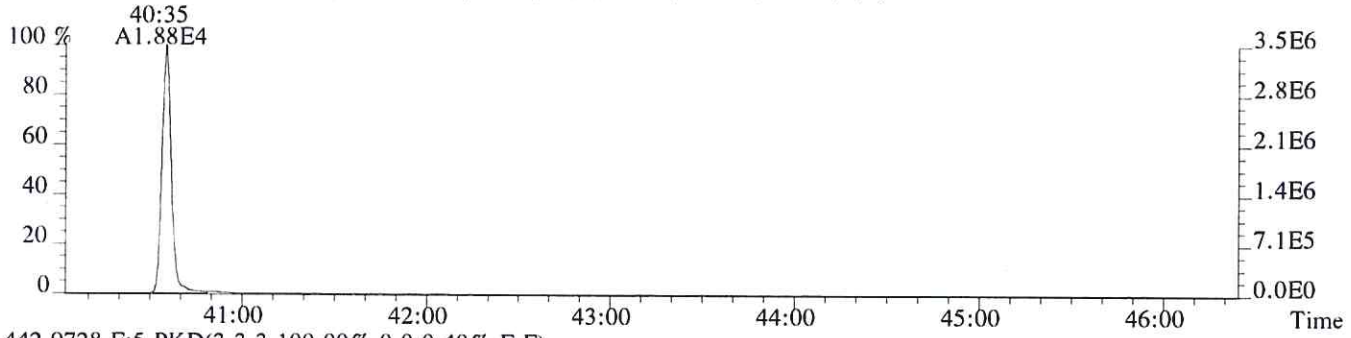
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1412.0,0.40%,F,T)



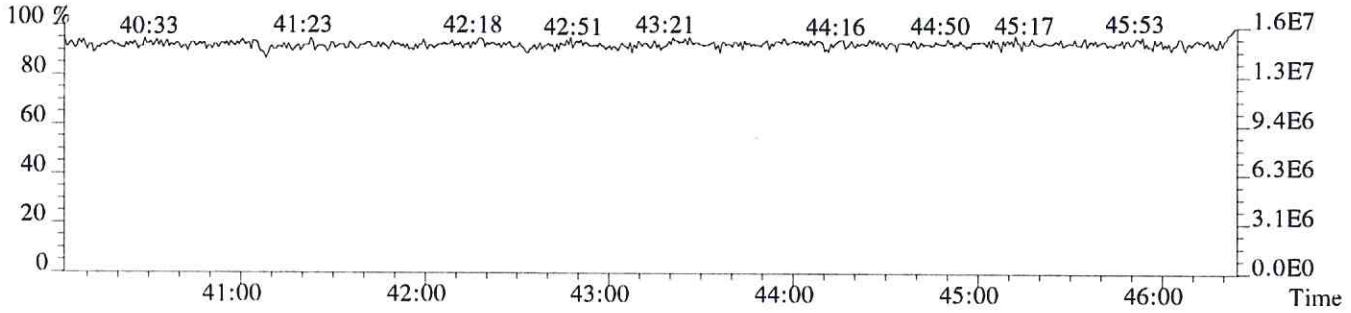
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3344.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5536.0,0.40%,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.
EB11_170428

Run #11 Filename P607268 Samp: 1 Inj: 1 Acquired: 20-MAY-17 11:26:31
Processed: 23-MAY-17 10:43:33 Sample ID: E1700468-006

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:42	5.192e+01	1.852e+01	2.80	no	no	1.058
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:32	3.618e+01	4.680e+01	0.77	no	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	5.503e+01	3.386e+01	1.63	no	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:11	5.431e+01	4.882e+01	1.11	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:57	8.864e+01	5.472e+01	1.62	no	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:14	5.490e+01	4.946e+01	1.11	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:33	4.046e+01	3.340e+01	1.21	no	no	1.341
10	Unk	OCDF	40:46	5.169e+01	5.664e+01	0.91	yes	no	1.337
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:00	5.616e+01	2.211e+01	2.54	no	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:20	4.570e+01	3.253e+01	1.40	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:26	2.741e+01	2.603e+01	1.05	no	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:39	4.832e+01	2.679e+01	1.80	no	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:08	3.765e+01	3.740e+01	1.01	yes	no	1.048
17	Unk	OCDD	40:37	1.352e+02	1.535e+02	0.88	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:46	5.366e+04	6.808e+04	0.79	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:41	1.364e+05	8.658e+04	1.58	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:41	1.305e+05	8.143e+04	1.60	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:32	6.106e+04	1.162e+05	0.53	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:39	7.580e+04	1.431e+05	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:10	4.678e+04	8.818e+04	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:56	5.110e+04	9.748e+04	0.52	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	4.013e+04	9.009e+04	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	3.373e+04	7.510e+04	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:45	2.924e+04	3.660e+04	0.80	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	31:60	7.850e+04	5.043e+04	1.56	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	6.833e+04	5.423e+04	1.26	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:24	7.054e+04	5.547e+04	1.27	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:07	5.578e+04	5.218e+04	1.07	yes	no	0.884
32	IS	13C-OCDD	40:36	6.070e+04	6.779e+04	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:03	9.513e+04	1.204e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:39	1.293e+05	1.029e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:46	4.869e+04				no	1.072

$$\text{OCDD} = \frac{(1.352e+02 + 1.535e+02) \times 4000 \text{ pg} \times 1}{(6.070e+04 + 6.779e+04) \times 1054 \text{ mL} / g \times 100 / 100 \times 1.120} = 7.61 \text{ pg/L}$$

m 05/24/17

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
EB11_170428

Run #11 Filename P607268 Samp: 1 Inj: 1 Acquired: 20-MAY-17 11:26:31
Processed: 23-MAY-17 10:43:33 LAB. ID: E1700468-006

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	9.28e+02	*	*	7.32e+02	*
2	1,2,3,7,8-PeCDF	1.02e+04	2.84e+02	3.6e+01	4.67e+03	1.76e+03	2.6e+00
3	2,3,4,7,8-PeCDF	*	2.84e+02	*	*	1.76e+03	*
4	1,2,3,4,7,8-HxCDF	9.19e+03	1.16e+02	7.9e+01	1.14e+04	3.00e+02	3.8e+01
5	1,2,3,6,7,8-HxCDF	1.08e+04	1.16e+02	9.3e+01	5.51e+03	3.00e+02	1.8e+01
6	2,3,4,6,7,8-HxCDF	1.18e+04	1.16e+02	1.0e+02	8.69e+03	3.00e+02	2.9e+01
7	1,2,3,7,8,9-HxCDF	1.84e+04	1.16e+02	1.6e+02	9.10e+03	3.00e+02	3.0e+01
8	1,2,3,4,6,7,8-HpCDF	1.24e+04	1.19e+03	1.0e+01	1.18e+04	2.36e+02	5.0e+01
9	1,2,3,4,7,8,9-HpCDF	7.51e+03	1.19e+03	6.3e+00	8.77e+03	2.36e+02	3.7e+01
10	OCDF	1.02e+04	2.16e+02	4.7e+01	7.98e+03	1.09e+03	7.3e+00
11	2,3,7,8-TCDD	*	2.22e+03	*	*	8.00e+01	*
12	1,2,3,7,8-PeCDD	1.20e+04	1.64e+03	7.3e+00	5.04e+03	1.73e+03	2.9e+00
13	1,2,3,4,7,8-HxCDD	7.73e+03	2.28e+02	3.4e+01	8.22e+03	2.04e+02	4.0e+01
14	1,2,3,6,7,8-HxCDD	6.45e+03	2.28e+02	2.8e+01	4.73e+03	2.04e+02	2.3e+01
15	1,2,3,7,8,9-HxCDD	9.70e+03	2.28e+02	4.3e+01	7.00e+03	2.04e+02	3.4e+01
16	1,2,3,4,6,7,8-HpCDD	9.93e+03	2.36e+02	4.2e+01	8.12e+03	1.72e+02	4.7e+01
17	OCDD	2.57e+04	2.44e+02	1.1e+02	2.98e+04	1.12e+03	2.7e+01
18	13C-2,3,7,8-TCDF	7.48e+06	6.16e+03	1.2e+03	9.53e+06	3.47e+03	2.7e+03
19	13C-1,2,3,7,8-PeCDF	2.31e+07	2.00e+04	1.2e+03	1.48e+07	1.15e+04	1.3e+03
20	13C-2,3,4,7,8-PeCDF	2.37e+07	2.00e+04	1.2e+03	1.47e+07	1.15e+04	1.3e+03
21	13C-1,2,3,4,7,8-HxCDF	1.22e+07	3.16e+02	3.9e+04	2.31e+07	1.69e+03	1.4e+04
22	13C-1,2,3,6,7,8-HxCDF	1.48e+07	3.16e+02	4.7e+04	2.81e+07	1.69e+03	1.7e+04
23	13C-2,3,4,6,7,8-HxCDF	9.61e+06	3.16e+02	3.0e+04	1.84e+07	1.69e+03	1.1e+04
24	13C-1,2,3,7,8,9-HxCDF	1.06e+07	3.16e+02	3.4e+04	2.01e+07	1.69e+03	1.2e+04
25	13C-1,2,3,4,6,7,8-HpCDF	8.63e+06	8.32e+03	1.0e+03	1.95e+07	1.93e+04	1.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	7.31e+06	8.32e+03	8.8e+02	1.61e+07	1.93e+04	8.4e+02
27	13C-2,3,7,8-TCDD	4.62e+06	6.22e+03	7.4e+02	5.66e+06	3.10e+03	1.8e+03
28	13C-1,2,3,7,8-PeCDD	1.47e+07	2.12e+02	6.9e+04	9.36e+06	7.68e+02	1.2e+04
29	13C-1,2,3,4,7,8-HxCDD	1.48e+07	2.29e+03	6.4e+03	1.17e+07	1.87e+03	6.3e+03
30	13C-1,2,3,6,7,8-HxCDD	1.40e+07	2.29e+03	6.1e+03	1.11e+07	1.87e+03	5.9e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.24e+07	7.32e+02	1.7e+04	1.15e+07	8.84e+02	1.3e+04
32	13C-OCDD	1.16e+07	9.87e+03	1.2e+03	1.29e+07	7.33e+03	1.8e+03
33	13C-1,2,3,4-TCDD	1.42e+07	6.22e+03	2.3e+03	1.80e+07	3.10e+03	5.8e+03
34	13C-1,2,3,7,8,9-HxCDD	2.72e+07	2.29e+03	1.2e+04	2.16e+07	1.87e+03	1.2e+04
35	37Cl-2,3,7,8-TCDD	7.54e+06	7.92e+02	9.5e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (2.224e{+}03 + 8.000e{+}01) \times 2000}{(4.622e{+}06 + 5.661e{+}06) \times (\qquad\qquad) \times 1.055} =$$

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
EB11_170428

Entry: 36 Totals Name: Total Tetra-Furans

Run: 11 File: P607268 Sample:1 Injection:1 Function:1

Acquired: 20-MAY-17 11:26:31 Processed: 23-MAY-17 10:43:33

Mass: 303.9020 305.8990 Tot Response: 3.52e+02 RRF: 1.020

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	21:42	1.41e+02	2.12e+02	0.66	yes	3.52e+02	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

EB11_170428

Entry: 41 Totals Name: Total Hexa-Furans

Run: 11 File: P607268 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 11:26:31 Processed: 23-MAY-17 10:43:33

Mass: 373.8210 375.8180 Tot Response: 1.03e+02 RRF: 1.207

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	35:11	5.43e+01	4.88e+01	1.11	yes	1.03e+02	2,3,4,6,7,8-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

EB11_170428

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 11 File: P607268 Sample:1 Injection:1 Function:3

Acquired: 20-MAY-17 11:26:31 Processed: 23-MAY-17 10:43:33

Mass: 389.8160 391.8130 Tot Response: 7.82e+01 RRF: 1.085

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	35:20	4.57e+01	3.25e+01	1.40	yes	7.82e+01	1,2,3,4,7,8-HxCDD	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

EB11_170428

Entry: 43 Totals Name: Total Hepta-Furans

Run: 11 File: P607268 Sample:1 Injection:1 Function:4

Acquired: 20-MAY-17 11:26:31 Processed: 23-MAY-17 10:43:33

Mass: 407.7820 409.7790 Tot Response: 1.04e+02 RRF: 1.368

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:14	5.49e+01	4.95e+01	1.11	yes	1.04e+02	1,2,3,4,6,7,8-HpCDF	n	n

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

ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.
EB11_170428

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 11 File: P607268 Sample:1 Injection:1 Function:4

Acquired: 20-MAY-17 11:26:31 Processed: 23-MAY-17 10:43:33

Mass: 423.7770 425.7740 Tot Response: 1.46e+02 RRF: 1.048

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	37:30	3.65e+01	3.41e+01	1.07	yes	7.06e+01	n	n
2	38:08	3.76e+01	3.74e+01	1.01	yes	7.50e+01	1,2,3,4,6,7,8-HpCDD	n	n

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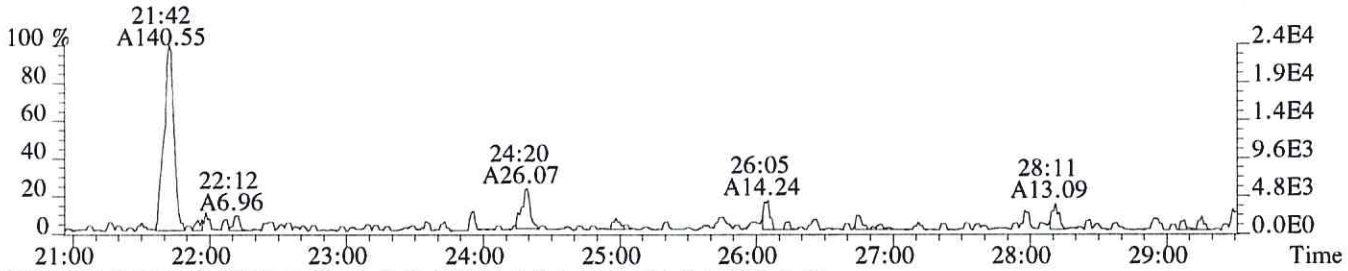
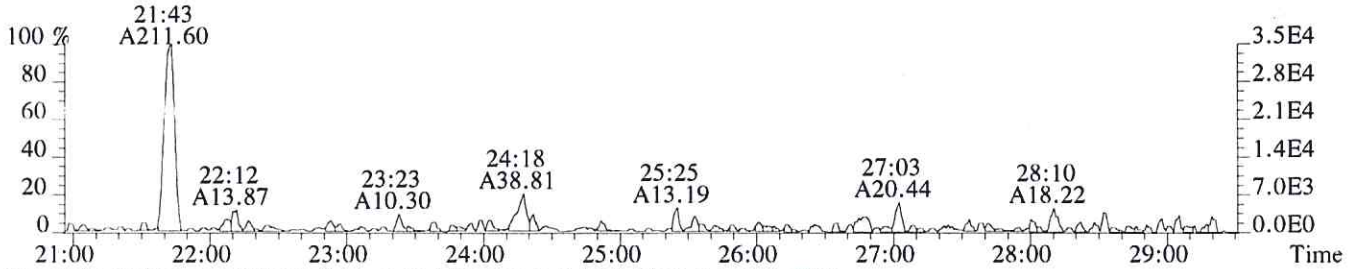
File:P607268 #1-609 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006

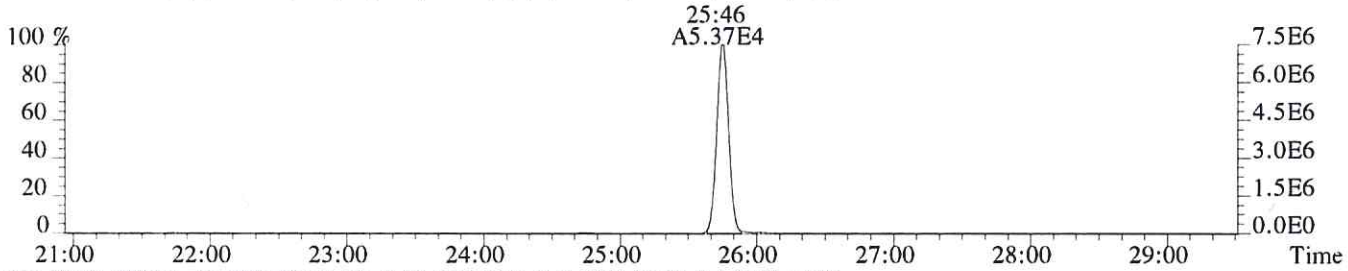
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,928.0,1.00%,F,T)



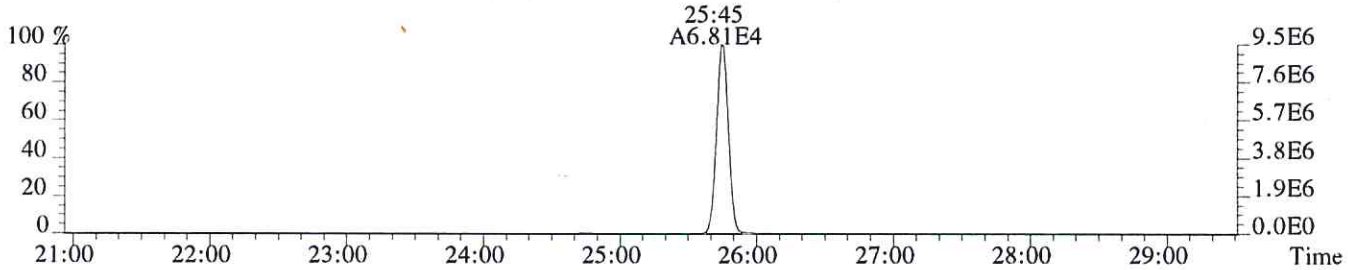
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,732.0,1.00%,F,T)



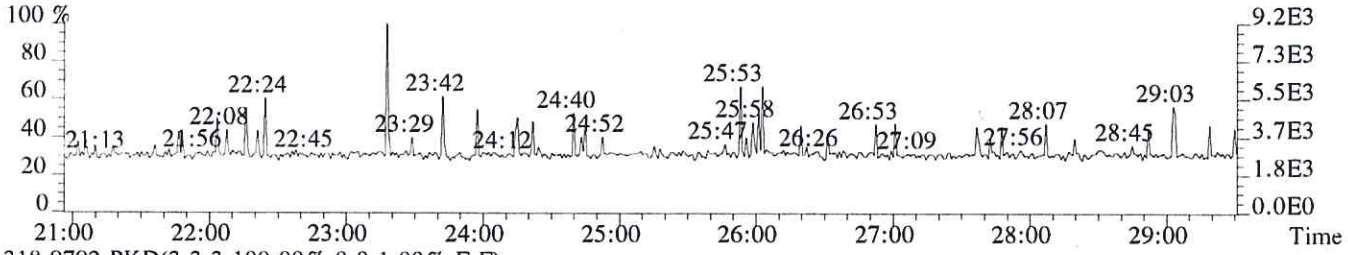
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6160.0,1.00%,F,T)



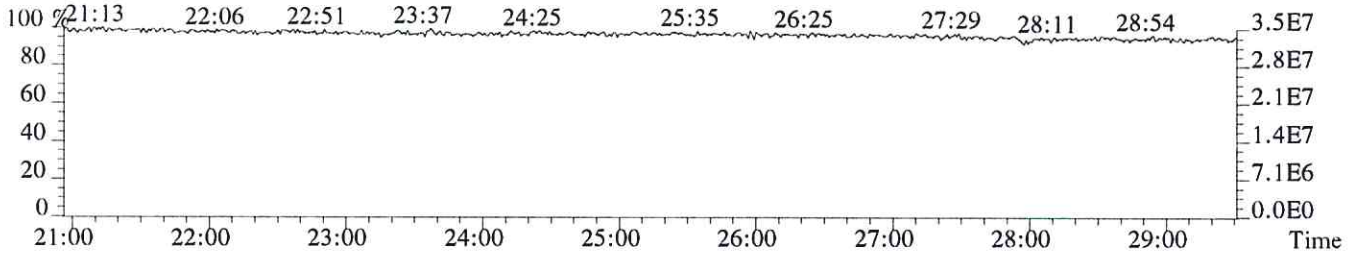
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3468.0,1.00%,F,T)



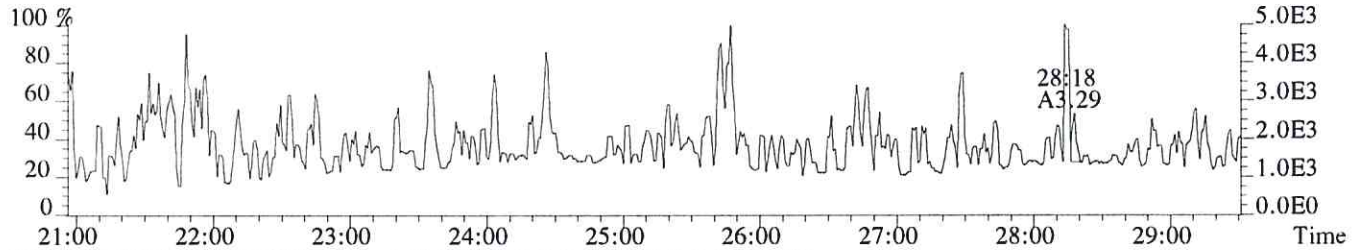
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



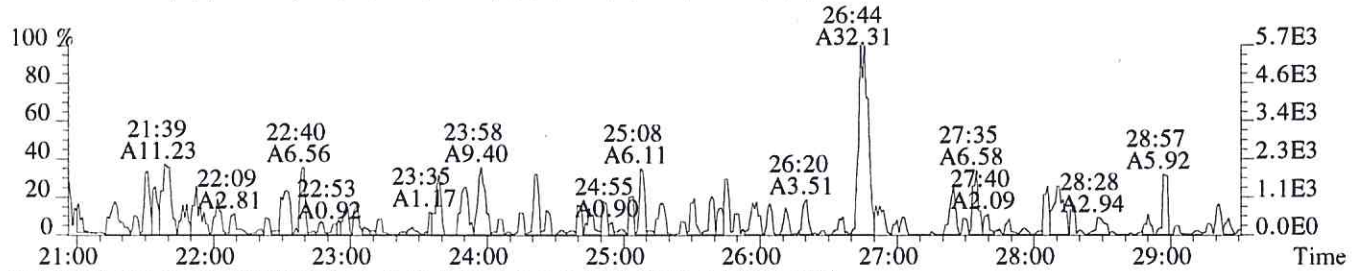
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



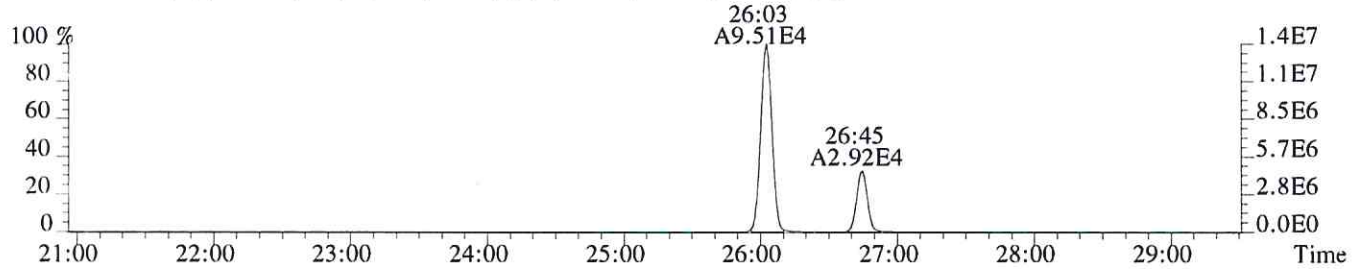
File:P607268 #1-609 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2224.0,1.00%,F,T)



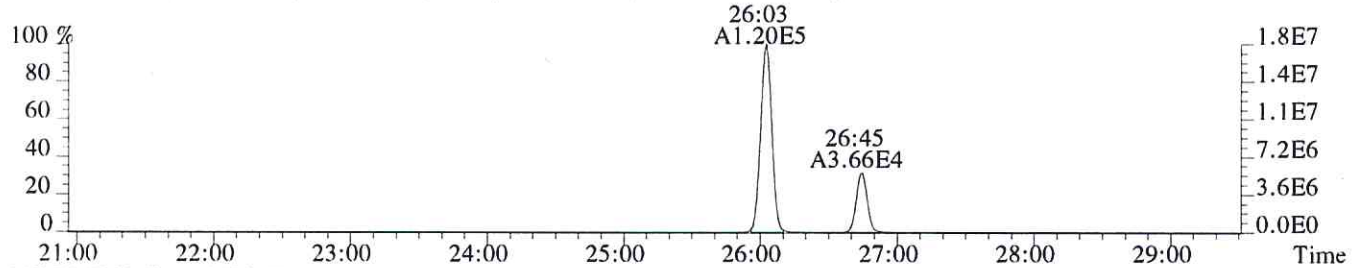
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,80.0,1.00%,F,T)



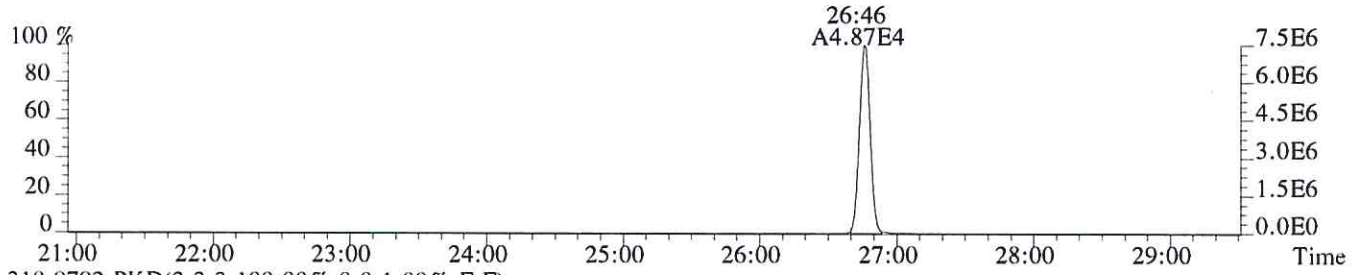
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6216.0,1.00%,F,T)



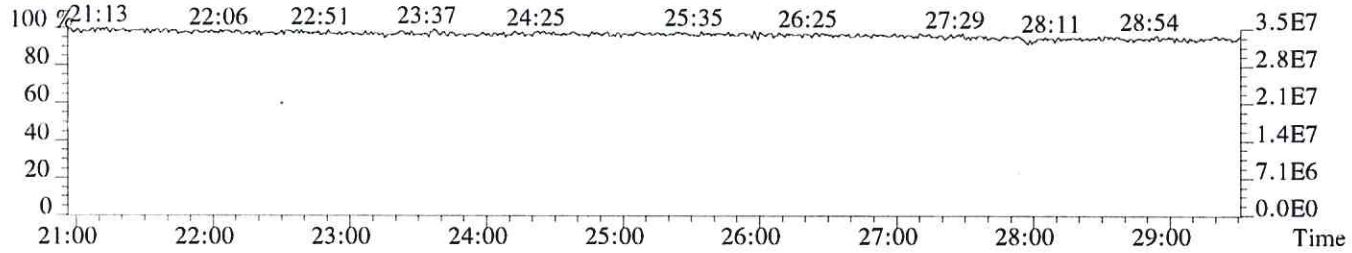
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3100.0,1.00%,F,T)



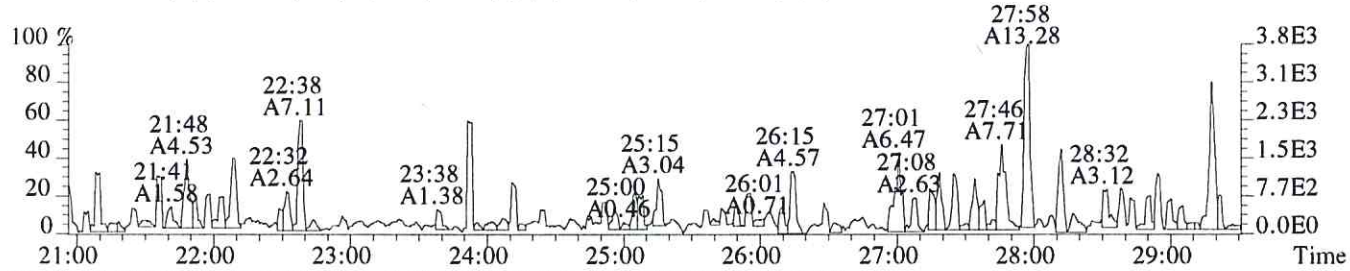
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,792.0,1.00%,F,T)



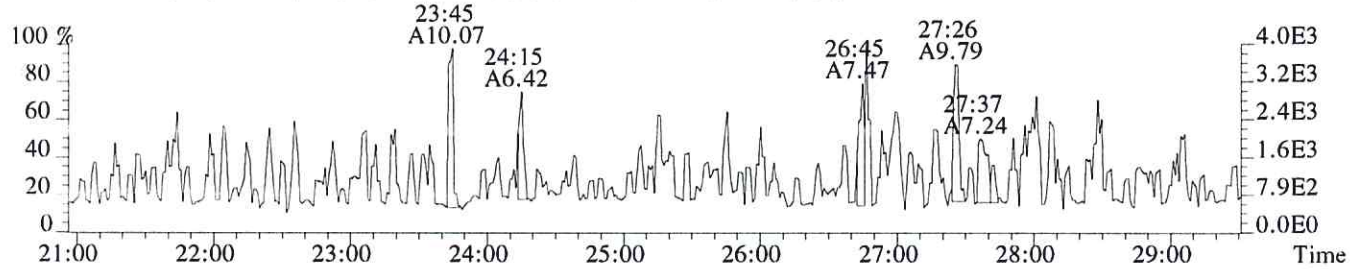
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



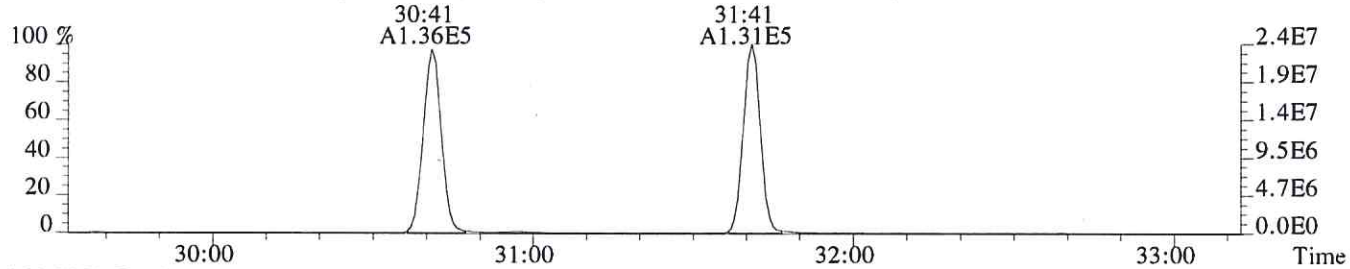
File:P607268 #1-609 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,252.0,1.00%,F,T)



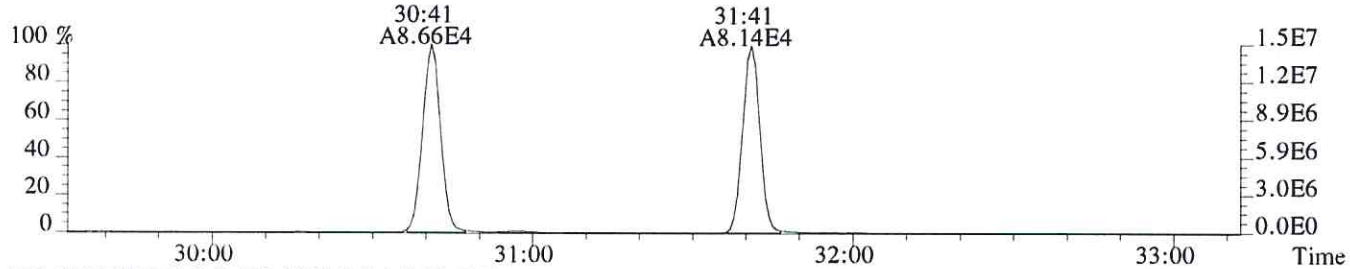
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1256.0,1.00%,F,T)



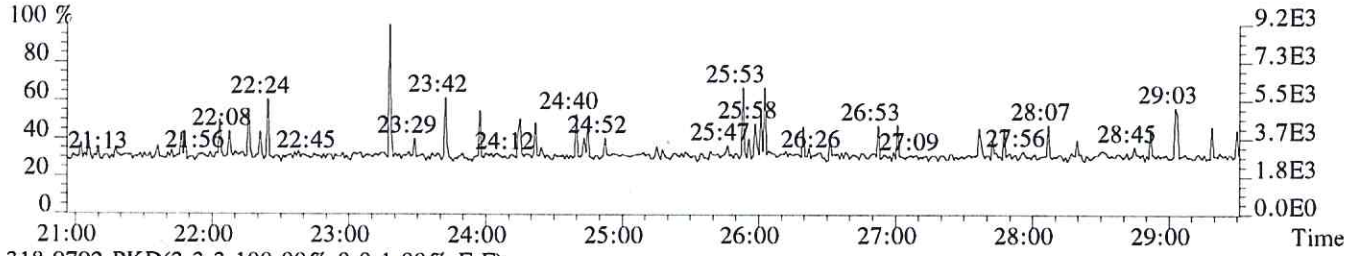
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,20024.0,1.00%,F,T)



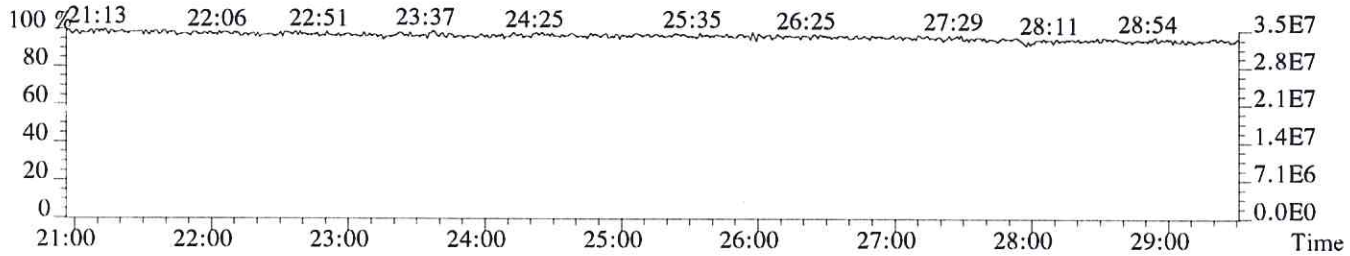
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11480.0,1.00%,F,T)



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

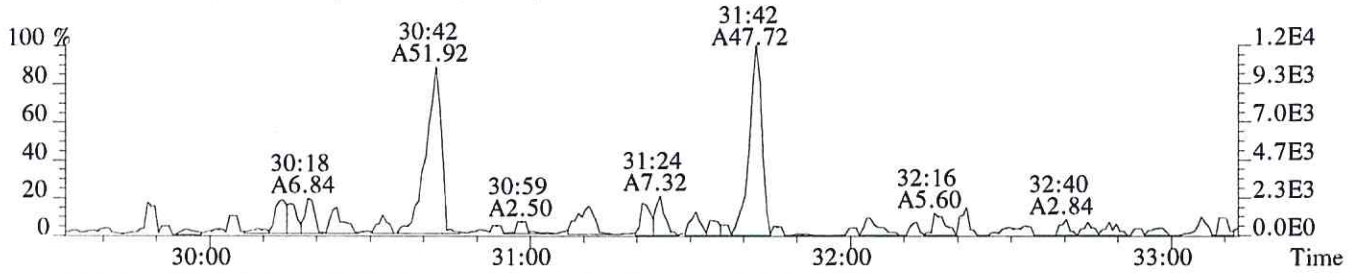


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

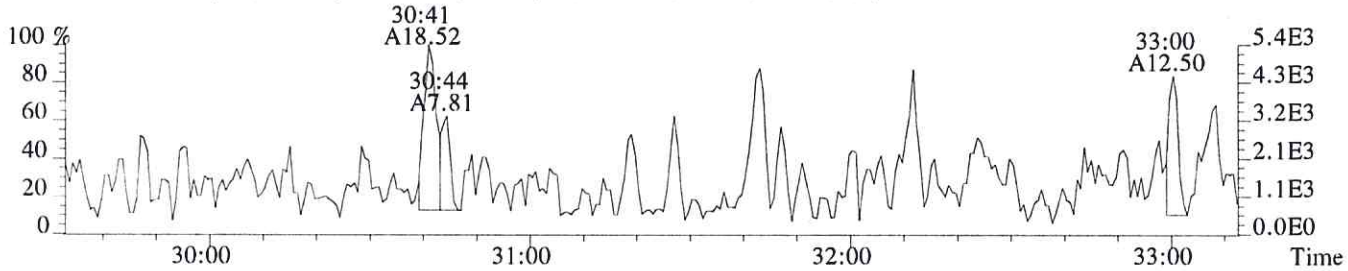


File:P607268 #1-330 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006

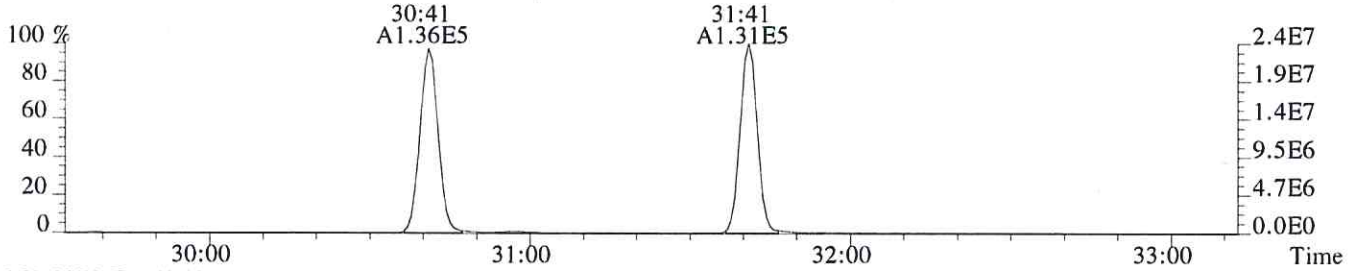
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,284.0,1.00%,F,T)



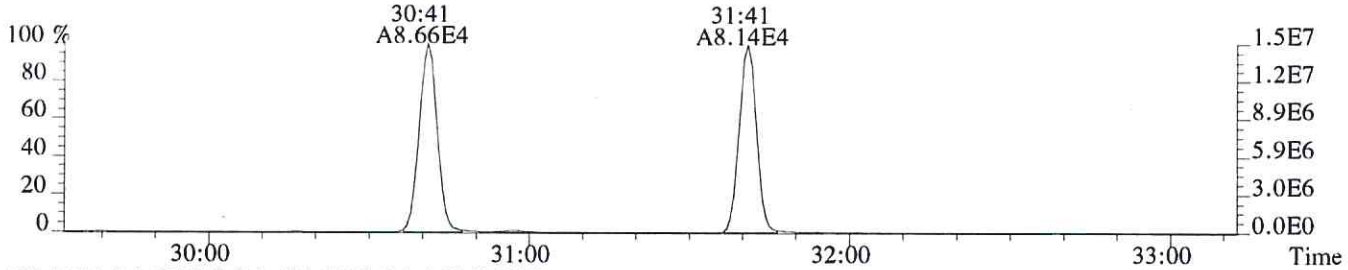
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1764.0,1.00%,F,T)



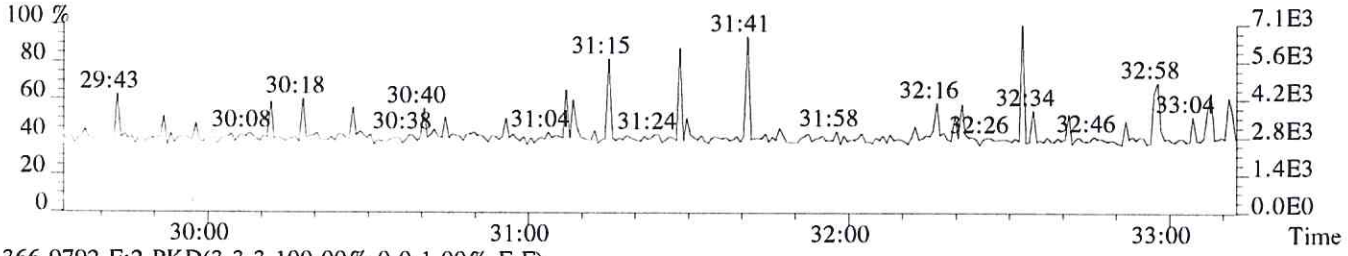
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,20024.0,1.00%,F,T)



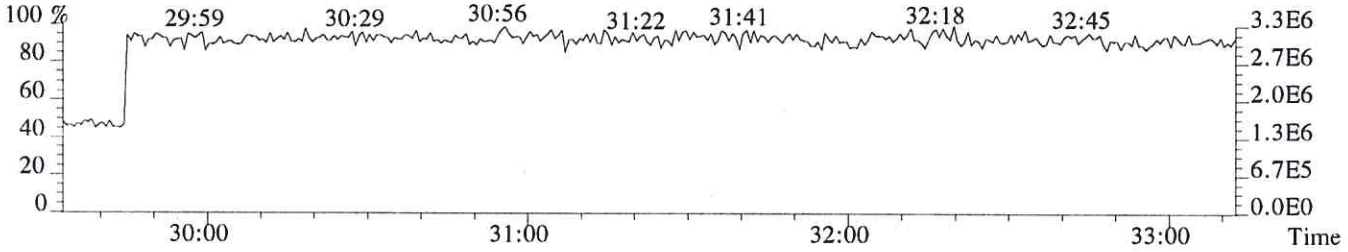
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11480.0,1.00%,F,T)



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

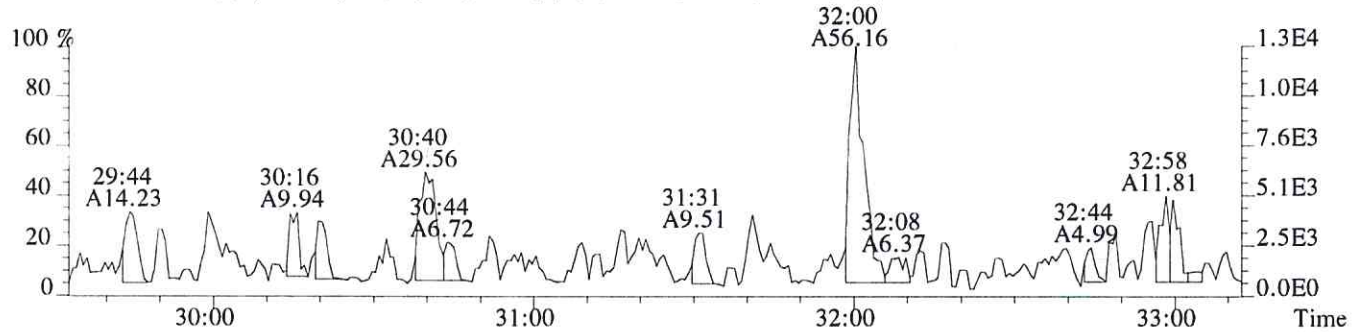


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

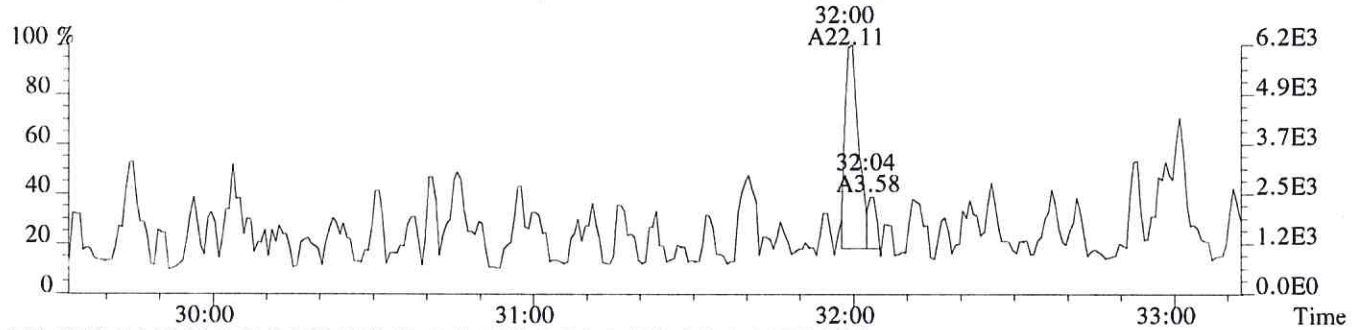


File:P607268 #1-330 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006

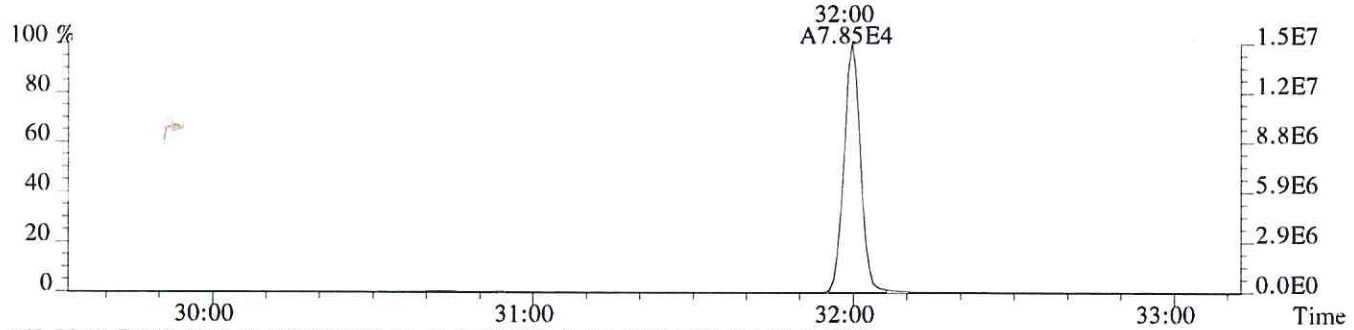
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1636.0,1.00%,F,T)



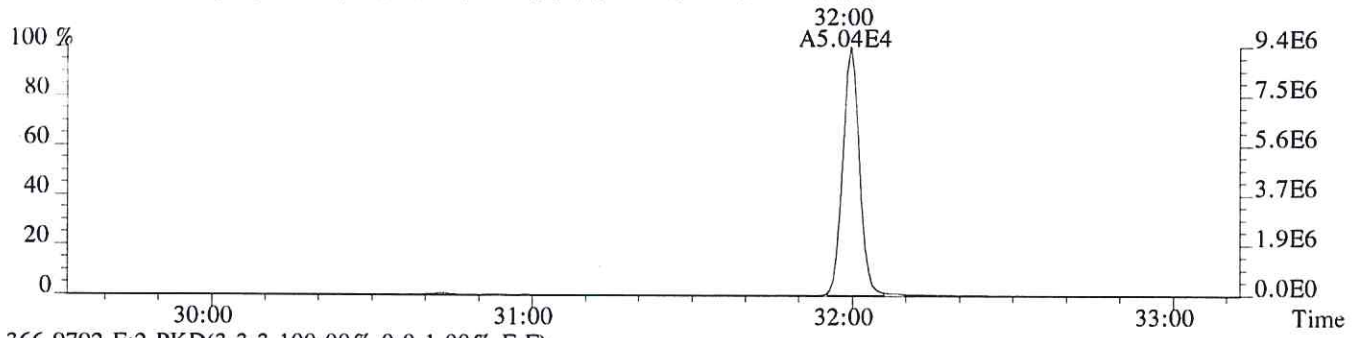
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1728.0,1.00%,F,T)



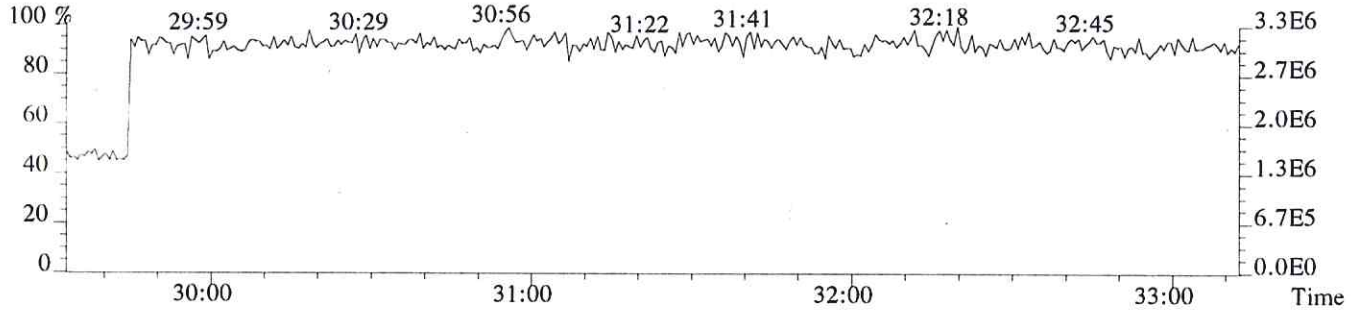
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,212.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,768.0,1.00%,F,T)

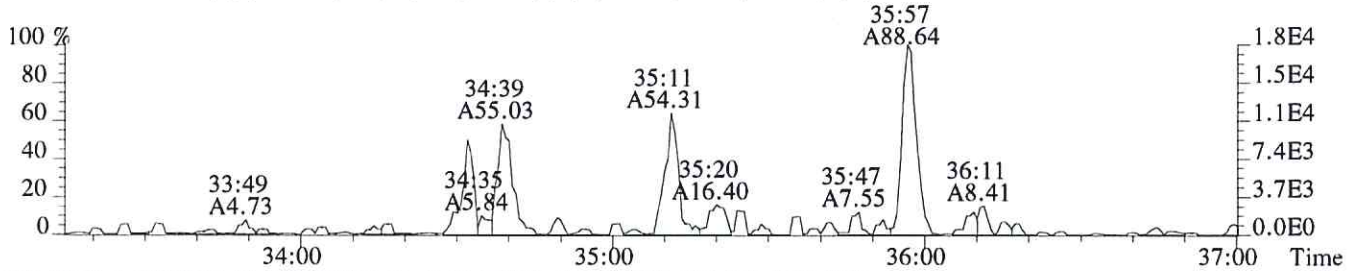


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

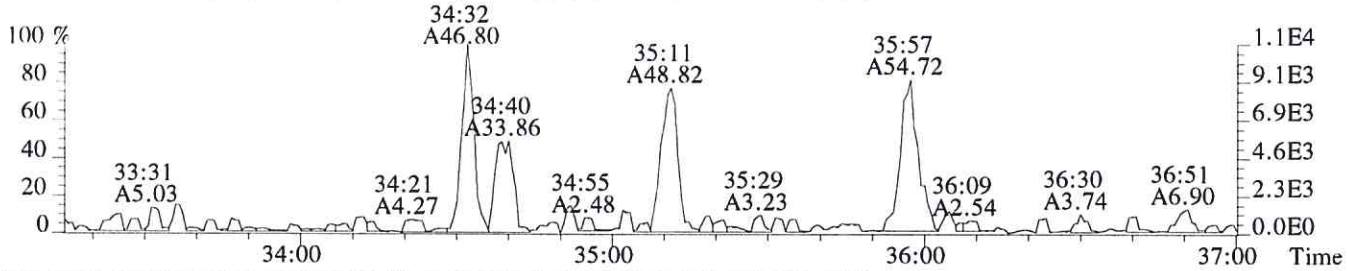


File:P607268 #1-339 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006

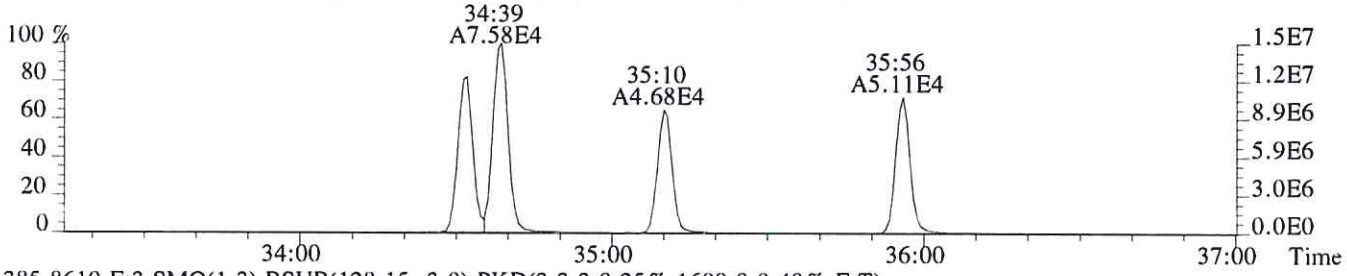
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,116.0,0.40%,F,T)



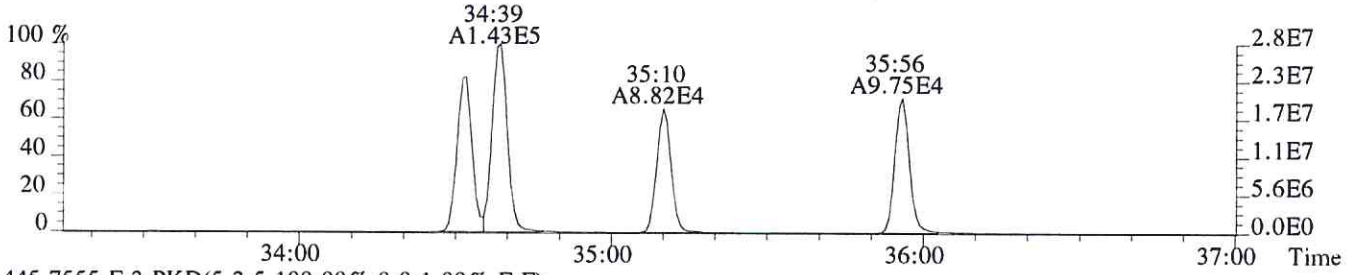
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,300.0,0.40%,F,T)



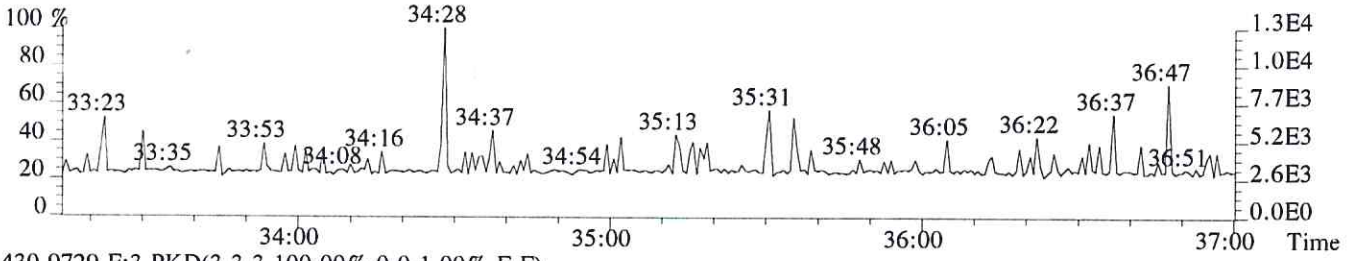
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,316.0,0.40%,F,T)



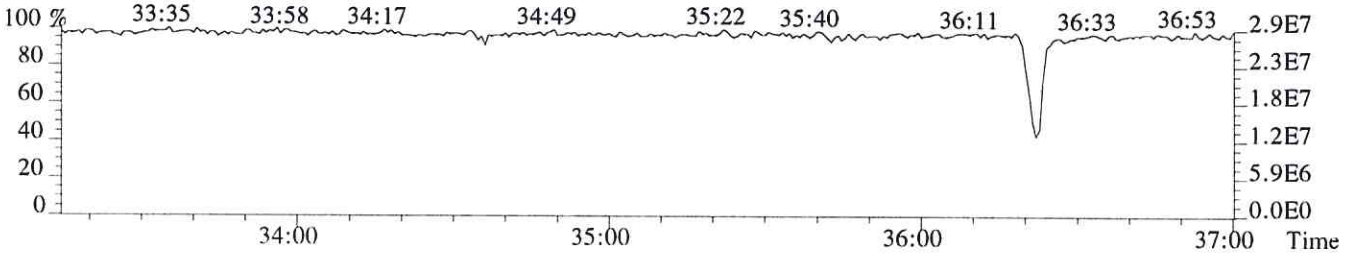
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1688.0,0.40%,F,T)



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

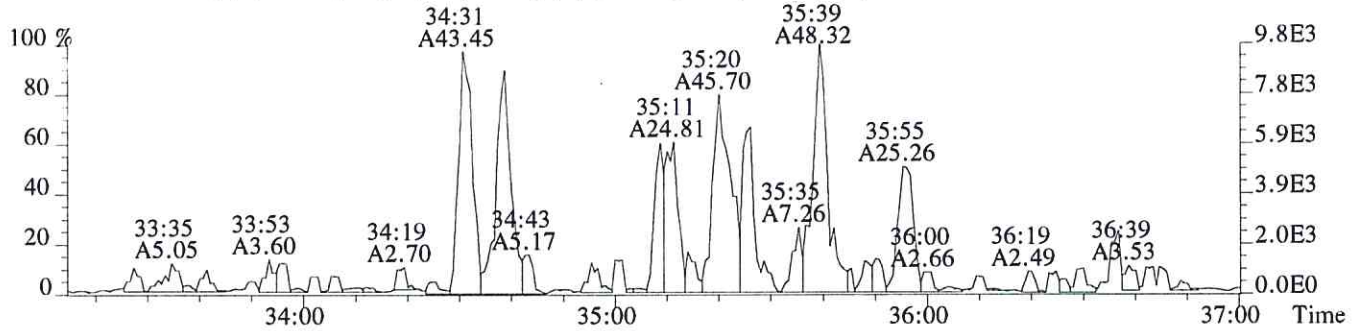


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

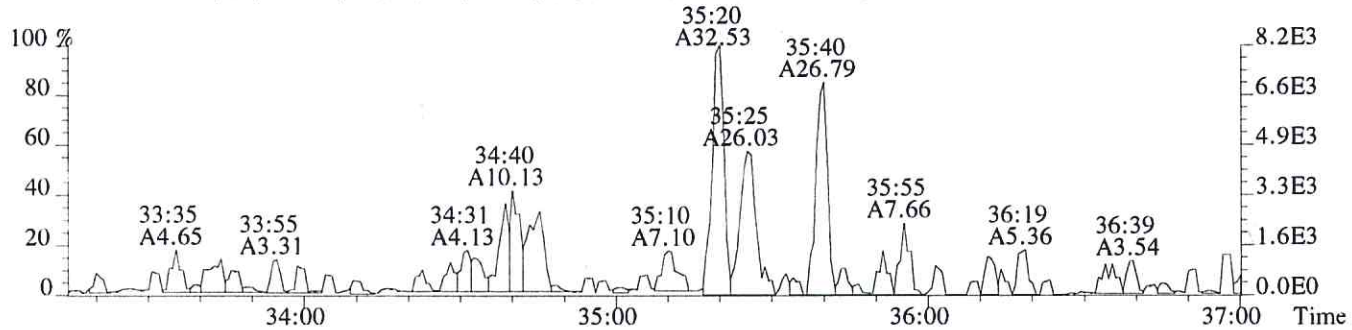


File:P607268 #1-339 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006

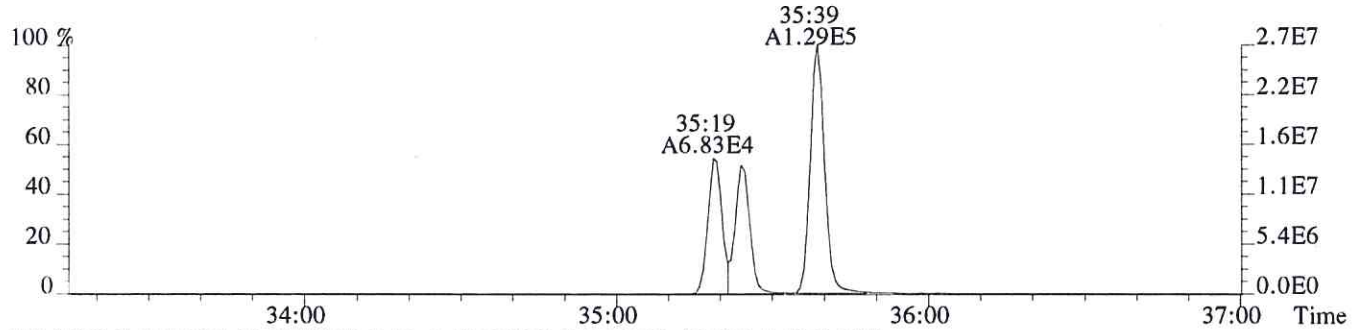
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,228.0,0.40%,F,T)



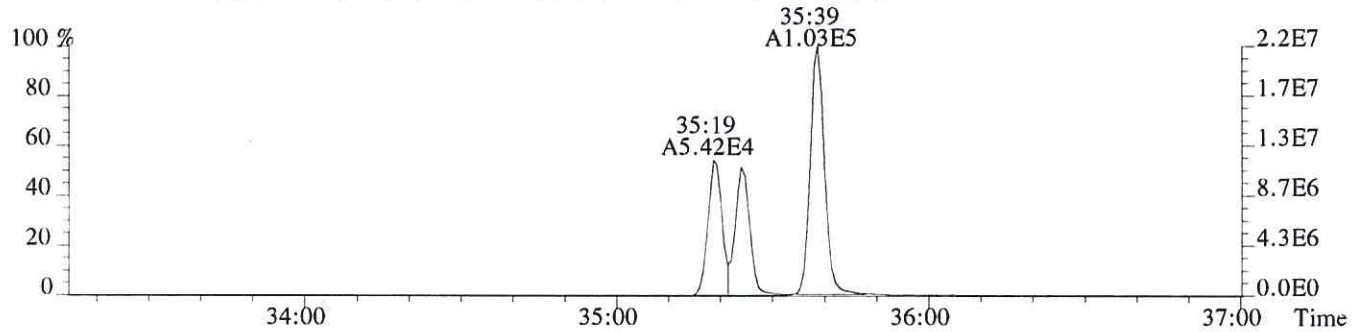
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,204.0,0.40%,F,T)



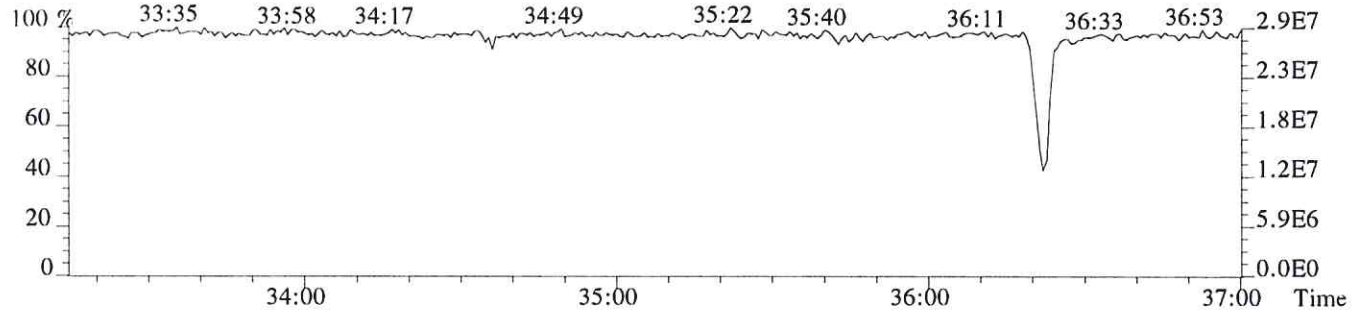
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2292.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1868.0,0.40%,F,T)

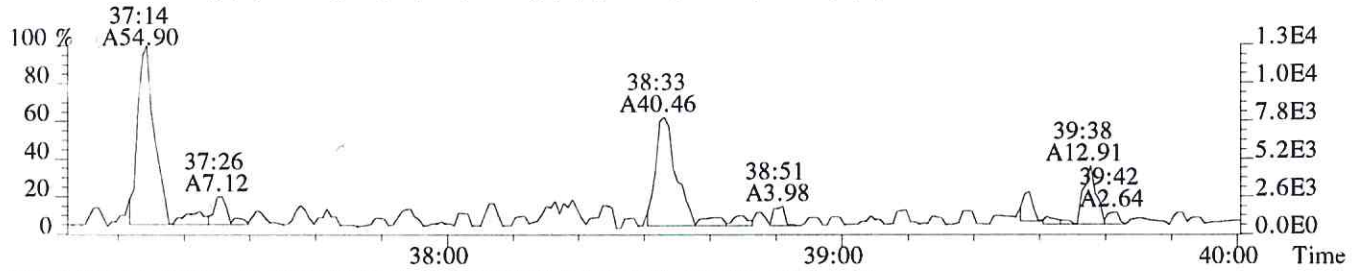


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

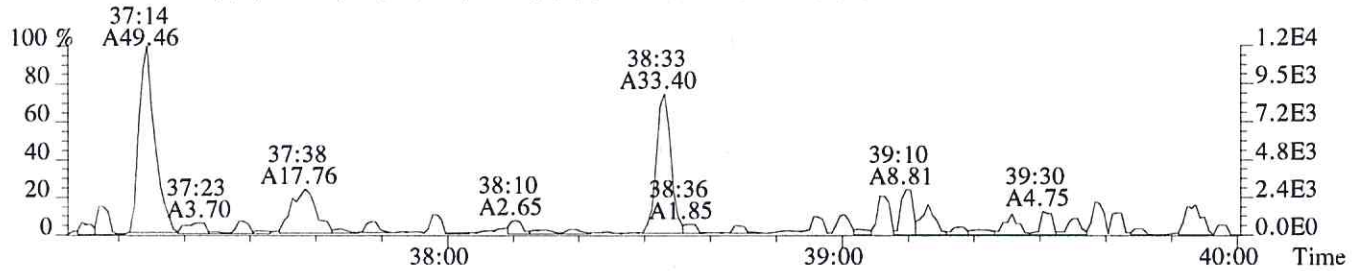


File:P607268 #1-268 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006

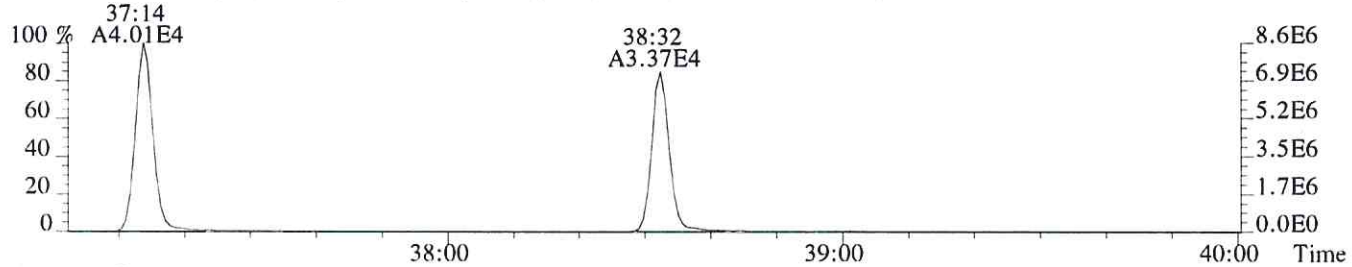
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1192.0,0.50%,F,T)



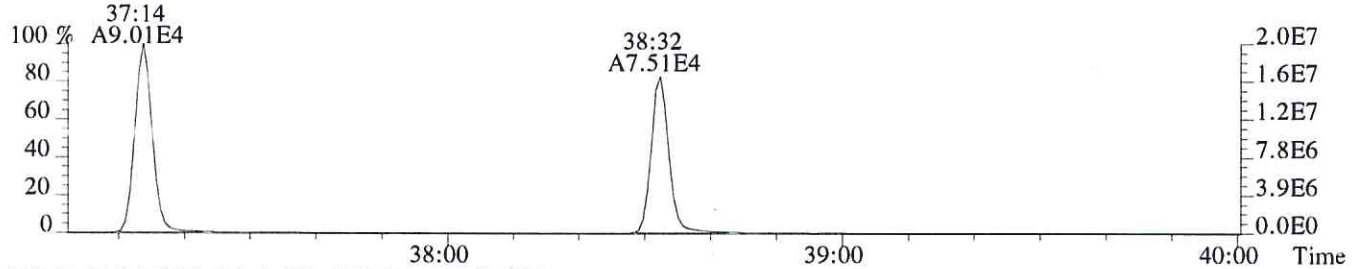
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,236.0,0.50%,F,T)



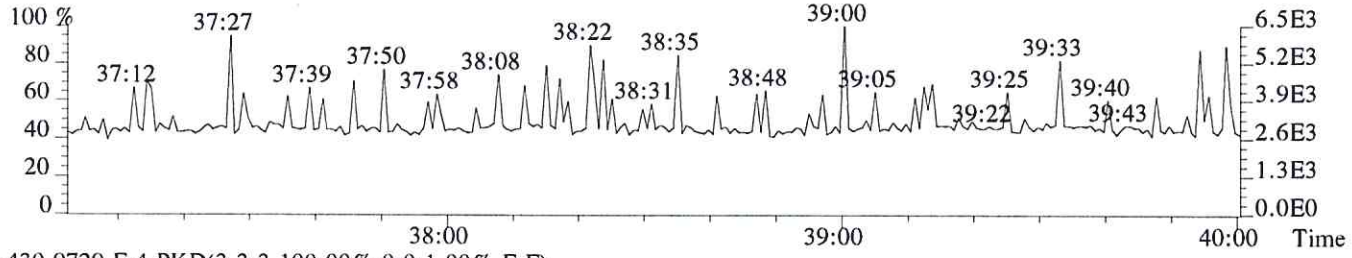
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8324.0,0.50%,F,T)



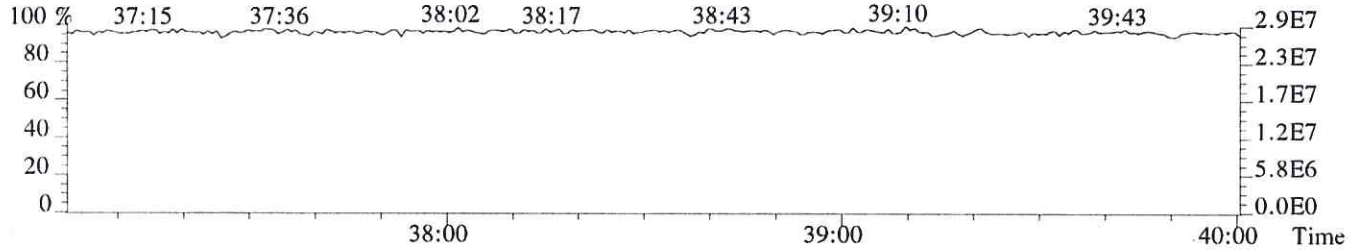
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,19252.0,0.50%,F,T)



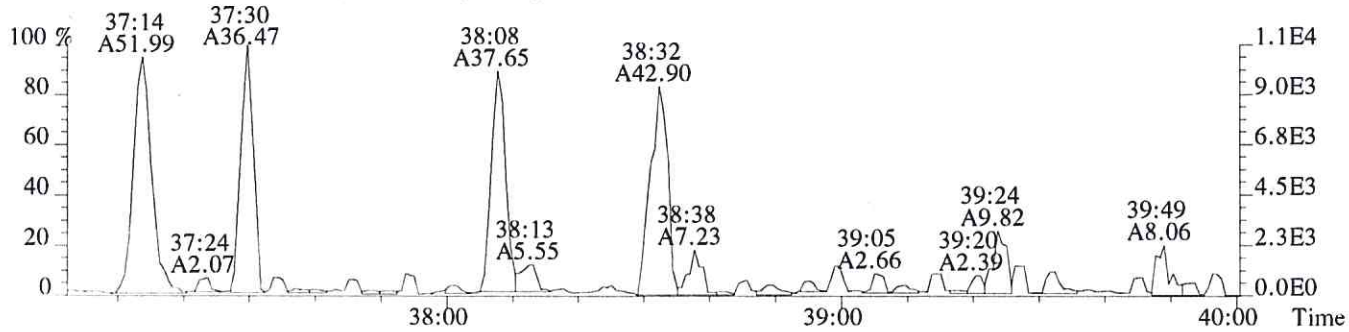
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



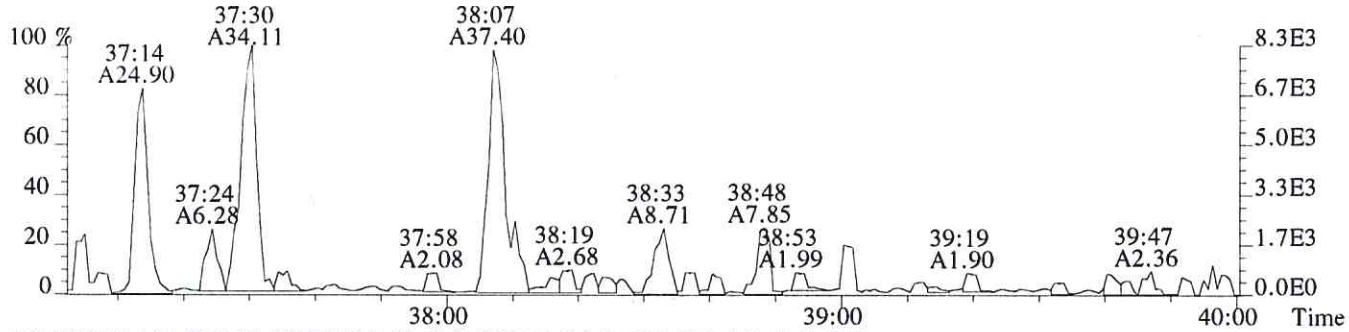
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



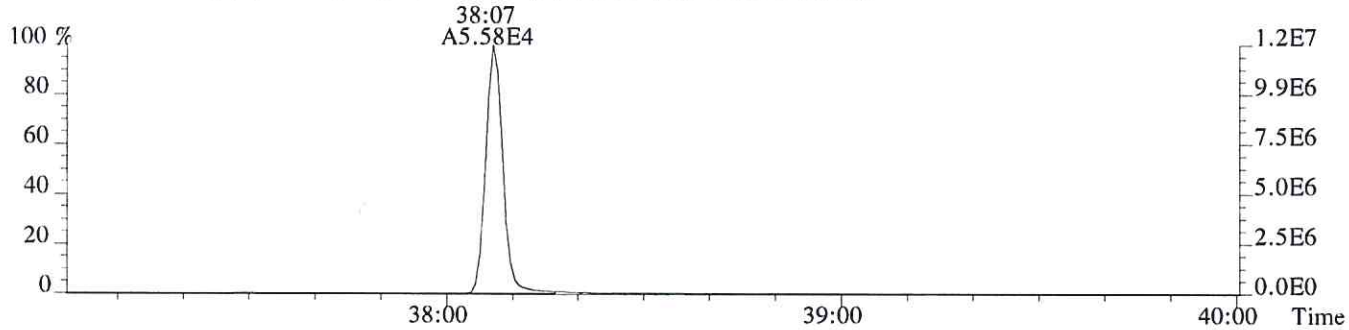
File:P607268 #1-268 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,236.0,0.40%,F,T)



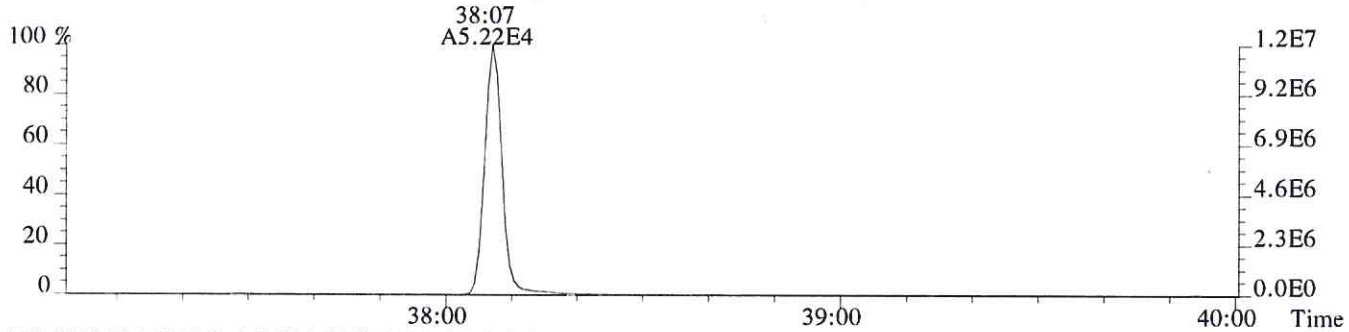
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,172.0,0.40%,F,T)



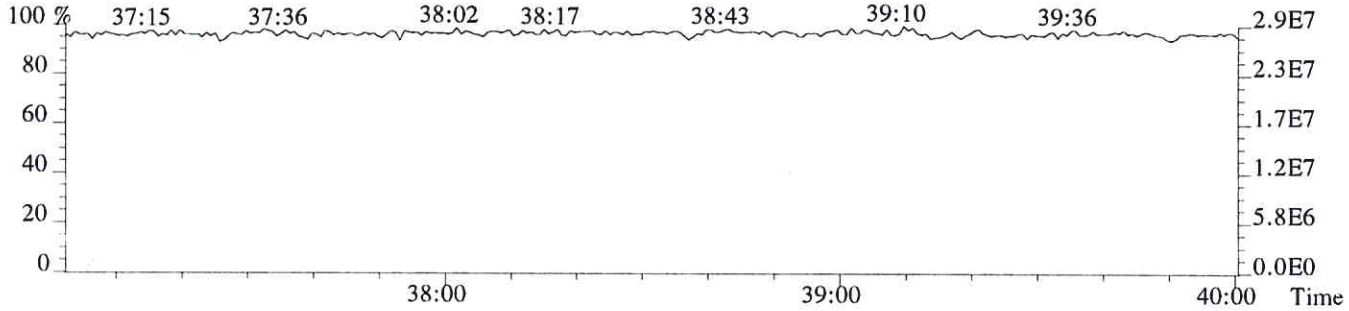
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,732.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,884.0,0.40%,F,T)

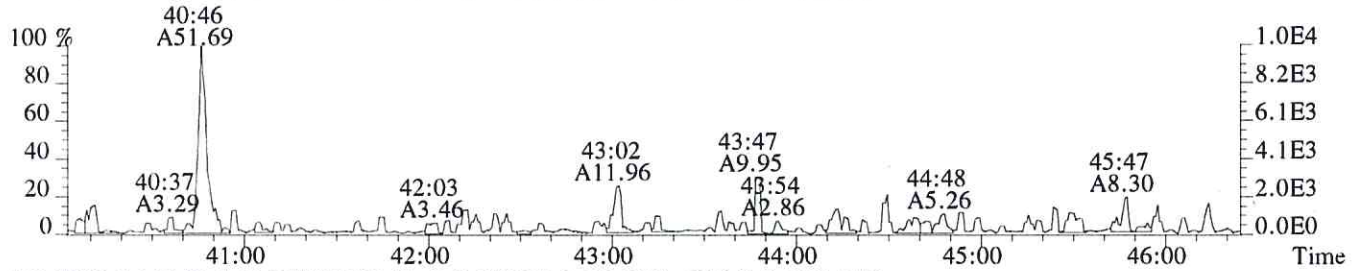


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

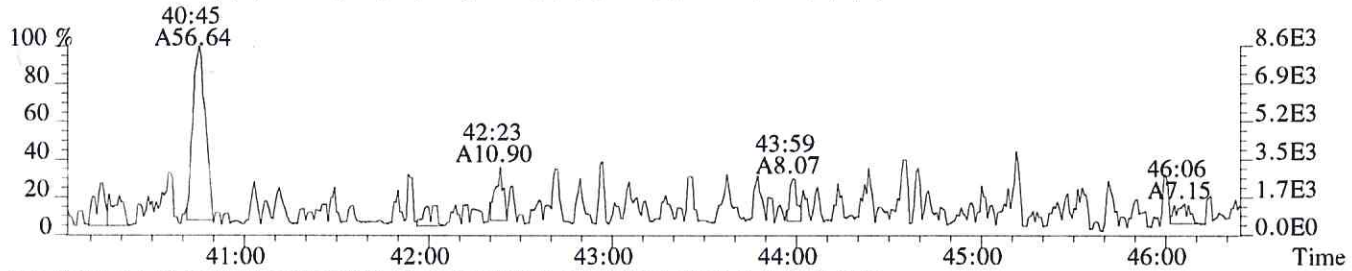


File:P607268 #1-573 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006

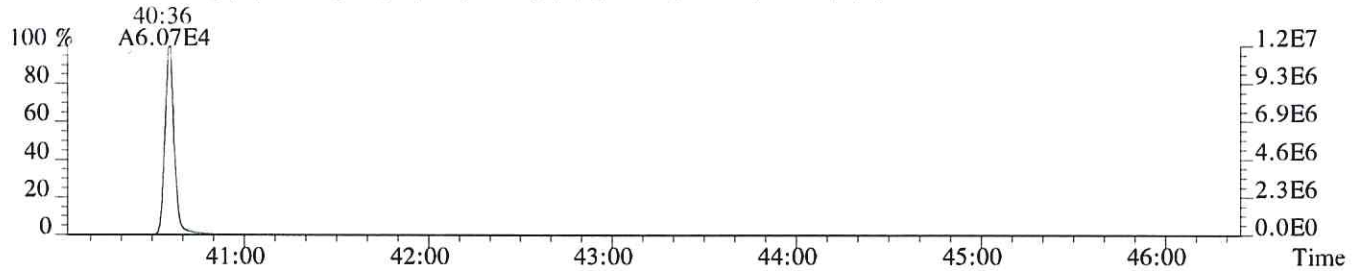
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,216.0,0.40%,F,T)



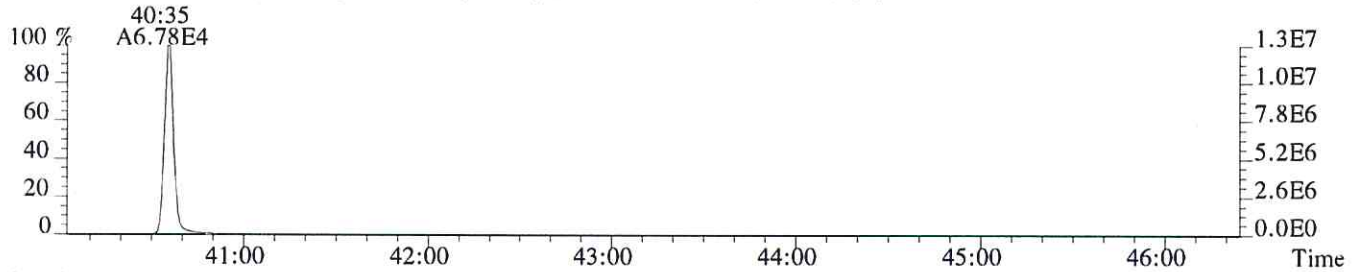
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1088.0,0.40%,F,T)



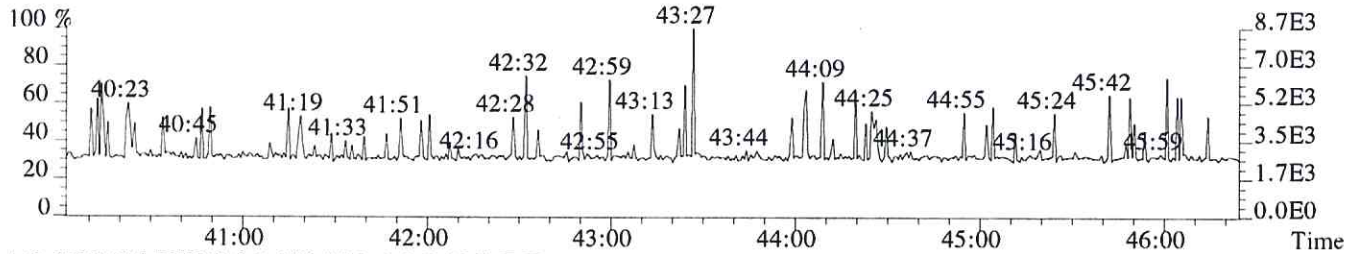
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,9868.0,0.40%,F,T)



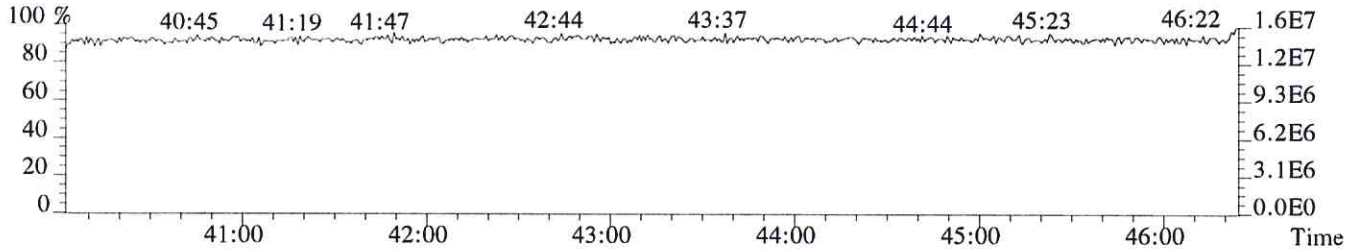
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,7328.0,0.40%,F,T)



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

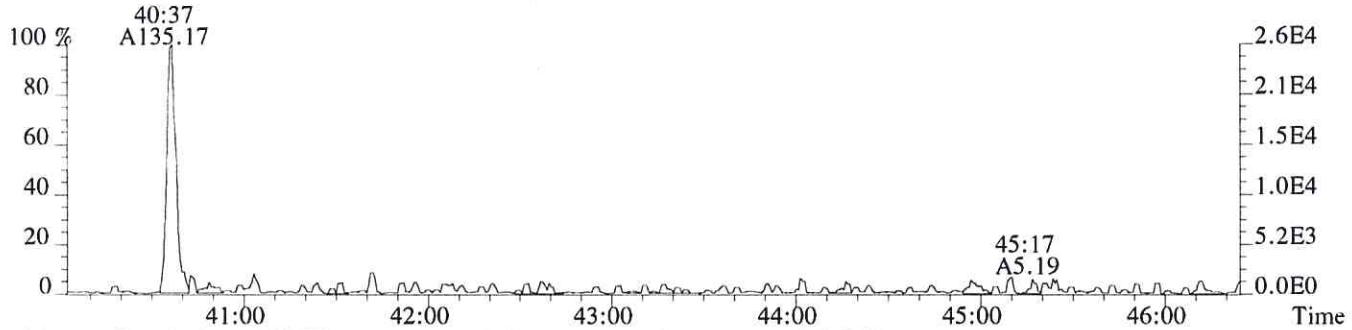


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

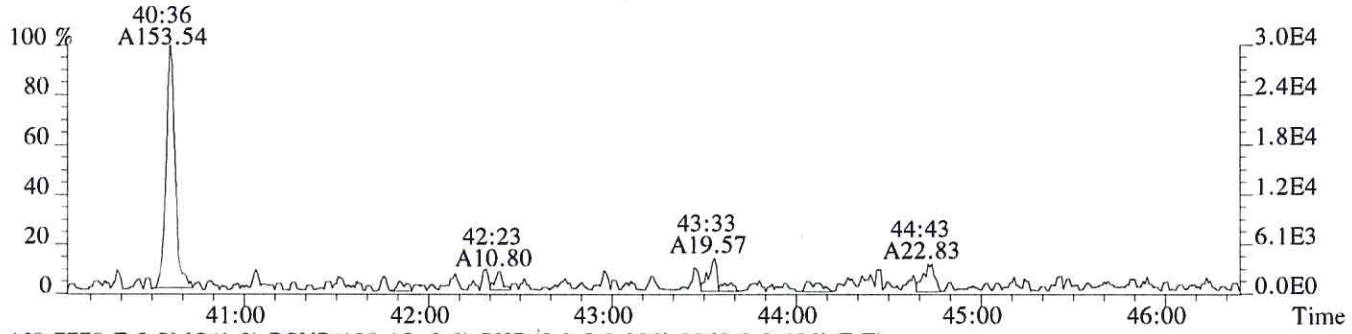


File:P607268 #1-573 Acq:20-MAY-2017 11:26:31 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1700468-006

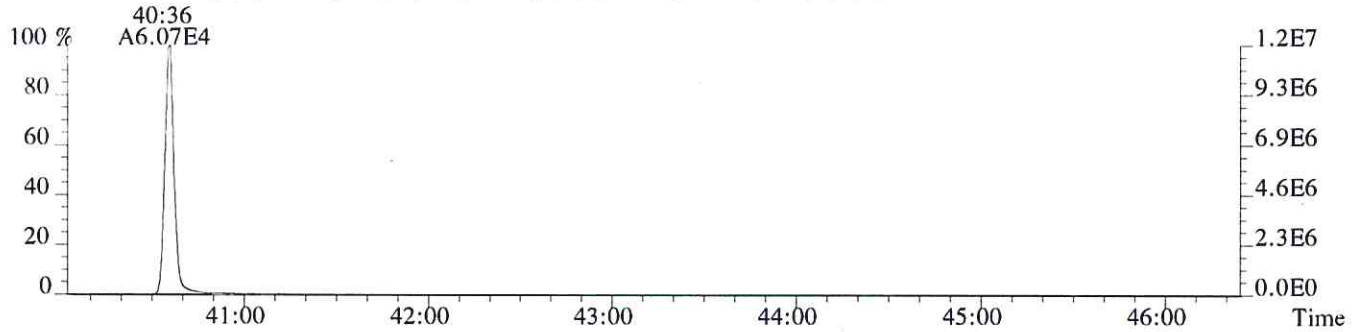
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,244.0,0.40%,F,T)



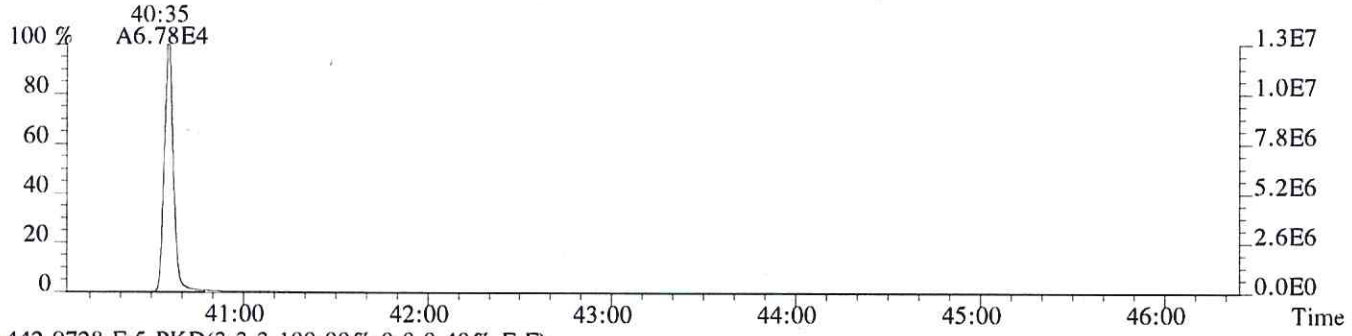
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1120.0,0.40%,F,T)



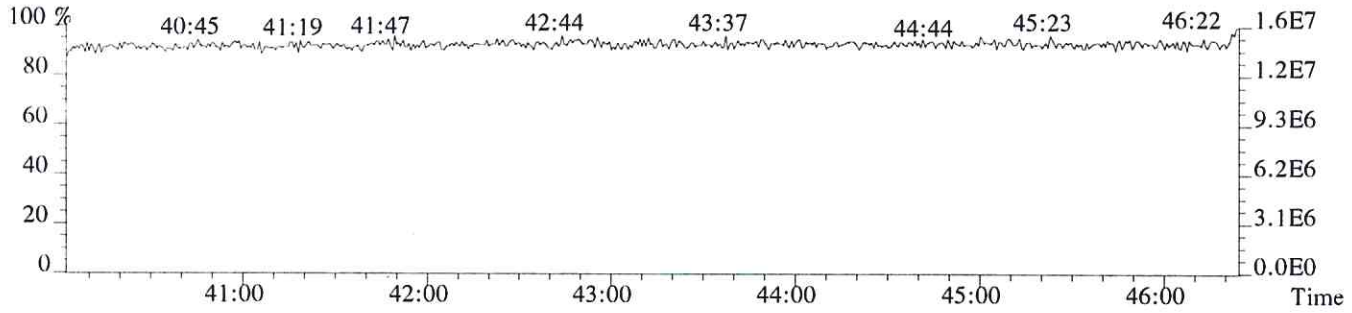
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,9868.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,7328.0,0.40%,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 P607254 Samp: 1 Inj: 1 Acquired: 19-MAY-17 23:44:58
Processed: 22-MAY-17 14:46:37 Sample ID: EQ1700183-01

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	1.020
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:42	5.028e+01	2.001e+01	2.51	no	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:31	1.893e+01	3.373e+01	0.56	no	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	2.886e+01	2.519e+01	1.15	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:10	4.144e+01	2.814e+01	1.47	no	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:56	5.390e+01	5.020e+01	1.07	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:14	3.458e+01	2.386e+01	1.45	no	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:32	2.903e+01	1.962e+01	1.48	no	no	1.341
10	Unk	OCDF	40:45	5.355e+01	4.733e+01	1.13	no	no	1.337
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.055
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:19	2.394e+01	2.895e+01	0.83	no	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:25	2.844e+01	2.433e+01	1.17	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:40	3.566e+01	3.132e+01	1.14	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:07	4.068e+01	2.805e+01	1.45	no	no	1.048
17	Unk	OCDD	40:36	1.062e+02	1.391e+02	0.76	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:46	3.845e+04	4.823e+04	0.80	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:41	1.004e+05	6.368e+04	1.58	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:41	1.018e+05	6.420e+04	1.59	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:31	4.733e+04	9.055e+04	0.52	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:38	6.068e+04	1.159e+05	0.52	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:10	4.060e+04	7.699e+04	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:55	4.293e+04	8.181e+04	0.52	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	3.505e+04	7.860e+04	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	3.055e+04	6.749e+04	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:45	2.087e+04	2.706e+04	0.77	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	31:60	6.143e+04	3.896e+04	1.58	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	5.836e+04	4.650e+04	1.26	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:24	5.741e+04	4.538e+04	1.27	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:07	5.116e+04	4.845e+04	1.06	yes	no	0.884
32	IS	13C-OCDD	40:35	6.273e+04	6.995e+04	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:03	8.349e+04	1.054e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:39	1.124e+05	9.023e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:46	3.521e+04				no	1.072

$$\text{OCDD} = \frac{(1.062e{+}02 + 1.391e{+}02\ ) \times 4000\ \text{pg} \times 1}{(6.273e{+}04 + 6.995e{+}04) \times \text{g} \times / 100 \times 1.120} =$$

ALS ENVIRONMENTAL -- HOUSTON HRMS
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Houston, TX 77099
Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
METHOD BLANK

Run #9 Filename P607254 Samp: 1 Inj: 1 Acquired: 19-MAY-17 23:44:58
Processed: 22-MAY-17 14:46:37 LAB. ID: EQ1700183-01

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	2.92e+02	*	*	1.16e+03	*
2	1,2,3,7,8-PeCDF	*	1.92e+02	*	*	2.08e+03	*
3	2,3,4,7,8-PeCDF	8.51e+03	1.92e+02	4.4e+01	5.84e+03	2.08e+03	2.8e+00
4	1,2,3,4,7,8-HxCDF	5.82e+03	1.23e+03	4.7e+00	8.87e+03	2.28e+02	3.9e+01
5	1,2,3,6,7,8-HxCDF	6.23e+03	1.23e+03	5.1e+00	5.11e+03	2.28e+02	2.2e+01
6	2,3,4,6,7,8-HxCDF	7.86e+03	1.23e+03	6.4e+00	7.50e+03	2.28e+02	3.3e+01
7	1,2,3,7,8,9-HxCDF	1.12e+04	1.23e+03	9.1e+00	8.15e+03	2.28e+02	3.6e+01
8	1,2,3,4,6,7,8-HpCDF	8.39e+03	2.52e+02	3.3e+01	5.76e+03	2.44e+02	2.4e+01
9	1,2,3,4,7,8,9-HpCDF	4.68e+03	2.52e+02	1.9e+01	5.10e+03	2.44e+02	2.1e+01
10	OCDF	8.92e+03	1.60e+02	5.6e+01	8.04e+03	1.02e+03	7.9e+00
11	2,3,7,8-TCDD	*	1.66e+03	*	*	1.96e+02	*
12	1,2,3,7,8-PeCDD	*	1.42e+03	*	*	9.84e+02	*
13	1,2,3,4,7,8-HxCDD	5.71e+03	2.64e+02	2.2e+01	7.09e+03	3.40e+02	2.1e+01
14	1,2,3,6,7,8-HxCDD	5.86e+03	2.64e+02	2.2e+01	5.09e+03	3.40e+02	1.5e+01
15	1,2,3,7,8,9-HxCDD	6.46e+03	2.64e+02	2.4e+01	6.23e+03	3.40e+02	1.8e+01
16	1,2,3,4,6,7,8-HpCDD	1.08e+04	8.48e+02	1.3e+01	7.24e+03	6.64e+02	1.1e+01
17	OCDD	1.67e+04	2.36e+02	7.1e+01	2.19e+04	1.31e+03	1.7e+01
18	13C-2,3,7,8-TCDF	5.30e+06	1.05e+04	5.1e+02	6.59e+06	5.08e+03	1.3e+03
19	13C-1,2,3,7,8-PeCDF	1.66e+07	1.62e+03	1.0e+04	1.07e+07	2.04e+03	5.2e+03
20	13C-2,3,4,7,8-PeCDF	1.83e+07	1.62e+03	1.1e+04	1.14e+07	2.04e+03	5.6e+03
21	13C-1,2,3,4,7,8-HxCDF	9.97e+06	1.44e+02	6.9e+04	1.89e+07	1.48e+03	1.3e+04
22	13C-1,2,3,6,7,8-HxCDF	1.20e+07	1.44e+02	8.4e+04	2.31e+07	1.48e+03	1.6e+04
23	13C-2,3,4,6,7,8-HxCDF	8.40e+06	1.44e+02	5.8e+04	1.59e+07	1.48e+03	1.1e+04
24	13C-1,2,3,7,8,9-HxCDF	8.63e+06	1.44e+02	6.0e+04	1.64e+07	1.48e+03	1.1e+04
25	13C-1,2,3,4,6,7,8-HpCDF	7.44e+06	5.79e+03	1.3e+03	1.64e+07	1.48e+04	1.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.53e+06	5.79e+03	1.1e+03	1.43e+07	1.48e+04	9.7e+02
27	13C-2,3,7,8-TCDD	3.22e+06	8.40e+03	3.8e+02	4.28e+06	4.38e+03	9.8e+02
28	13C-1,2,3,7,8-PeCDD	1.12e+07	8.24e+02	1.4e+04	7.13e+06	4.72e+02	1.5e+04
29	13C-1,2,3,4,7,8-HxCDD	1.24e+07	2.09e+03	6.0e+03	9.80e+06	1.08e+03	9.1e+03
30	13C-1,2,3,6,7,8-HxCDD	1.17e+07	2.09e+03	5.6e+03	9.33e+06	1.08e+03	8.6e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.11e+07	3.00e+02	3.7e+04	1.03e+07	3.72e+02	2.8e+04
32	13C-OCDD	1.19e+07	2.09e+03	5.7e+03	1.33e+07	9.75e+03	1.4e+03
33	13C-1,2,3,4-TCDD	1.25e+07	8.40e+03	1.5e+03	1.56e+07	4.38e+03	3.6e+03
34	13C-1,2,3,7,8,9-HxCDD	2.28e+07	2.09e+03	1.1e+04	1.84e+07	1.08e+03	1.7e+04
35	37Cl-2,3,7,8-TCDD	5.44e+06	1.30e+03	4.2e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.660e{+}03 + 1.960e{+}02) \times 2000}{(3.219e{+}06 + 4.279e{+}06) \times (\qquad) \times 1.055} =$$

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Peak List Summary

CLIENT ID.

METHOD BLANK

Entry: 41 Totals Name: Total Hexa-Furans

Run: 9 File: P607254 Sample:1 Injection:1 Function:3

Acquired: 19-MAY-17 23:44:58 Processed: 22-MAY-17 14:46:37

Mass: 373.8210 375.8180 Tot Response: 1.58e+02 RRF: 1.207

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	34:39	2.89e+01	2.52e+01	1.15	yes	5.41e+01	1,2,3,6,7,8-HxCDF	n	n
2	35:56	5.39e+01	5.02e+01	1.07	yes	1.04e+02	1,2,3,7,8,9-HxCDF	n	n

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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

METHOD BLANK

Entry: 42 Totals Name: Total Hexa-Dioxins

Run: 9 File: P607254 Sample:1 Injection:1 Function:3

Acquired: 19-MAY-17 23:44:58 Processed: 22-MAY-17 14:46:37

Mass: 389.8160 391.8130 Tot Response: 1.20e+02 RRF: 1.085

#	RT	Resp	Resp	Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	35:25	2.84e+01	2.43e+01	1.17	yes	5.28e+01	1,2,3,6,7,8-HxCDD	n	n
2	35:40	3.57e+01	3.13e+01	1.14	yes	6.70e+01	1,2,3,7,8,9-HxCDD	n	n

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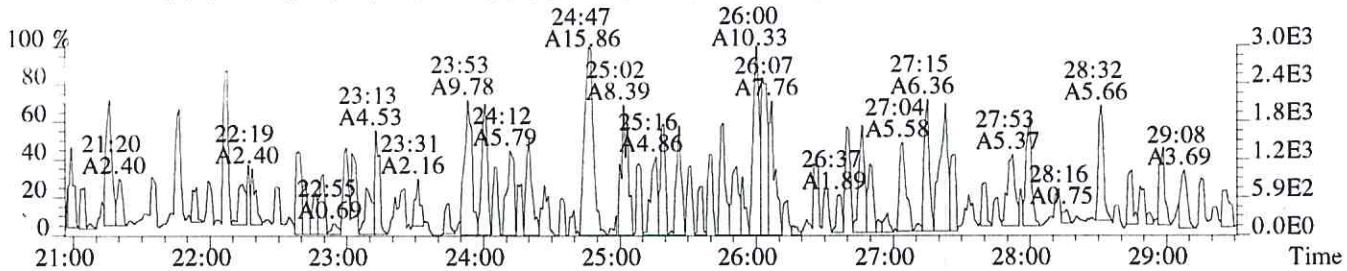
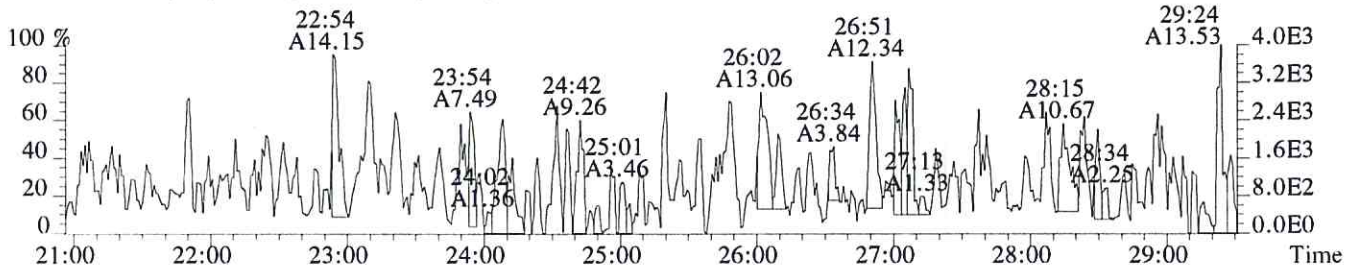
File:P607254 #1-609 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

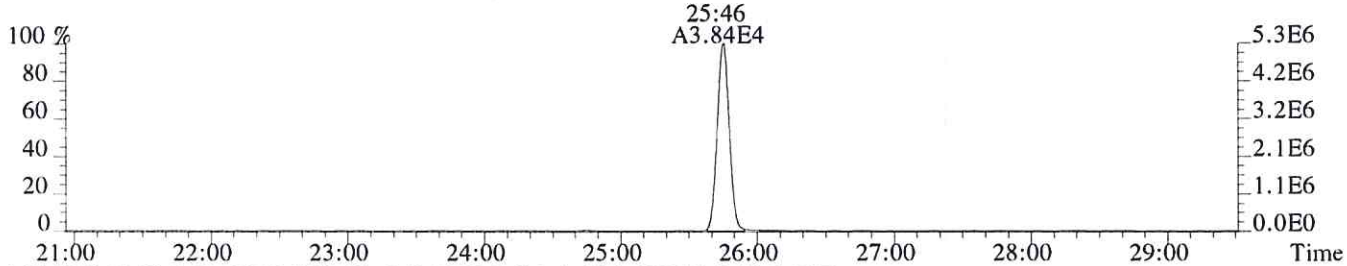
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,292.0,1.00%,F,T)



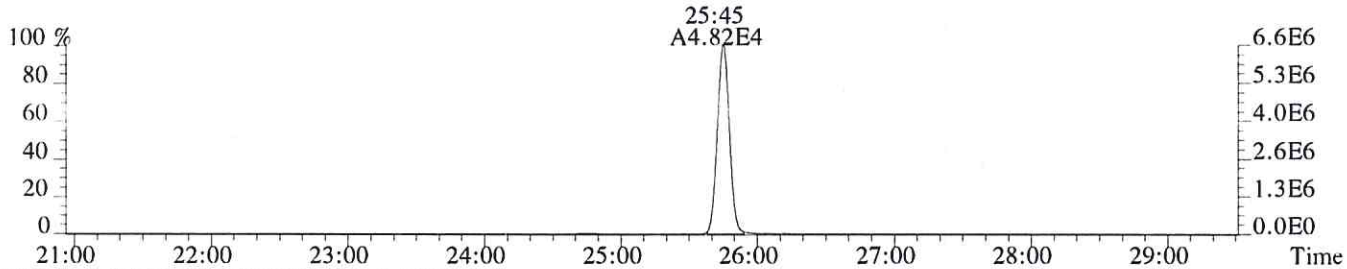
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1164.0,1.00%,F,T)



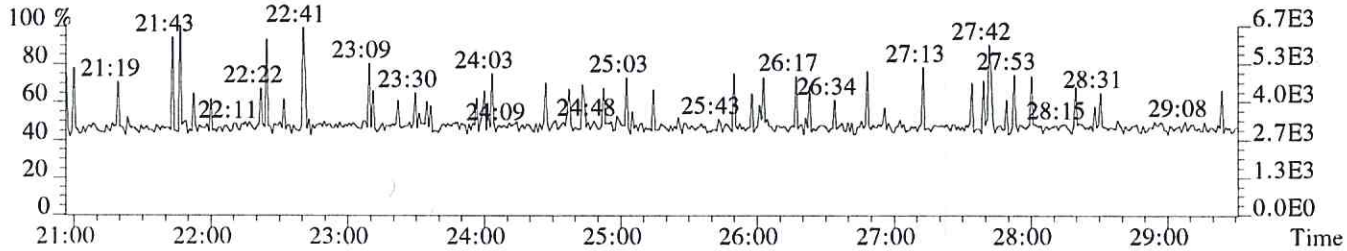
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10464.0,1.00%,F,T)



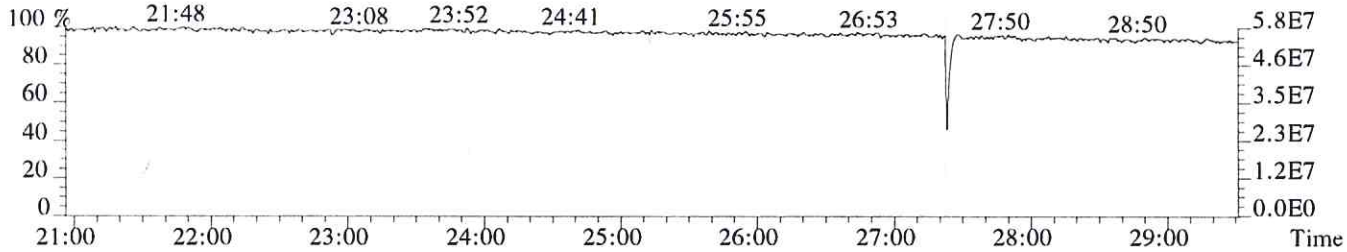
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5076.0,1.00%,F,T)



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

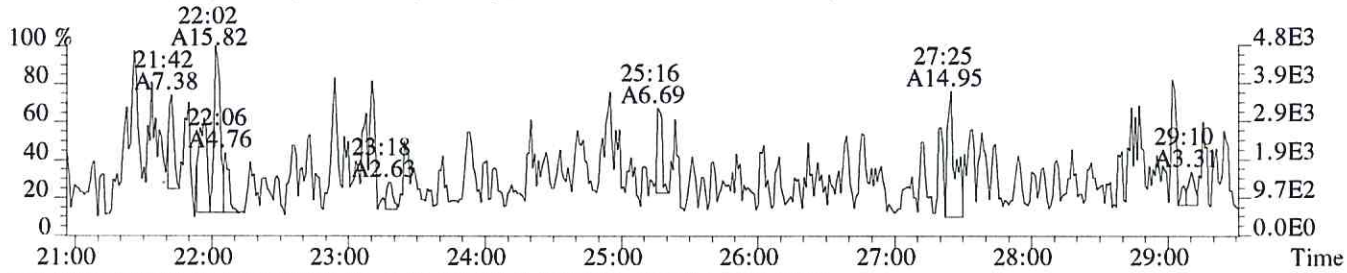


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

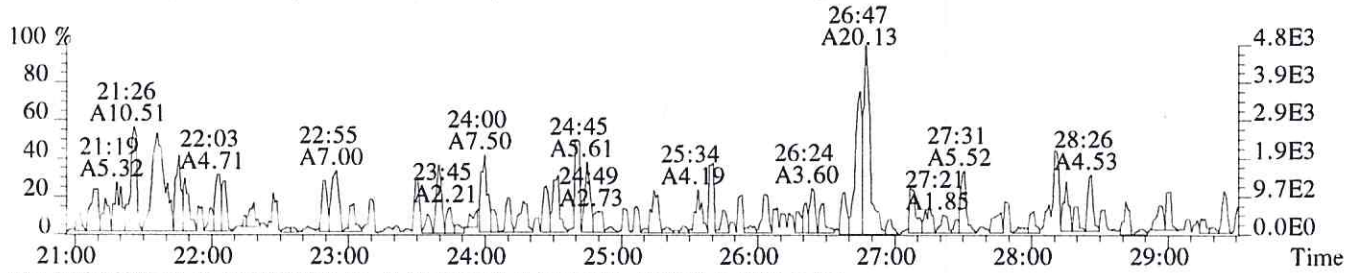


File:P607254 #1-609 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

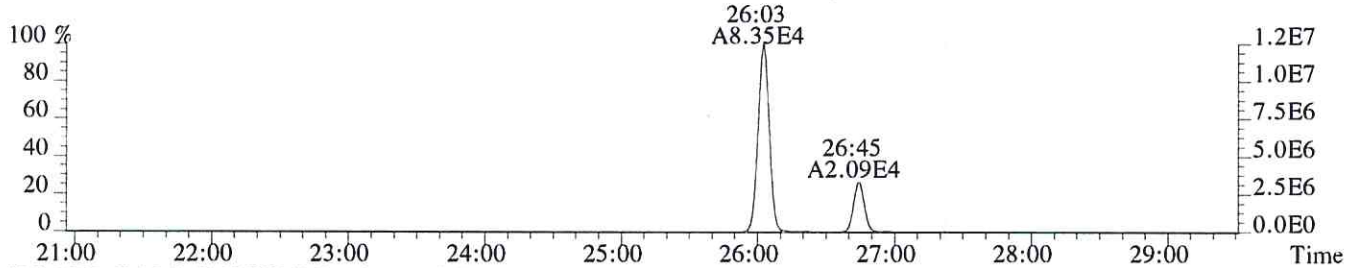
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1660.0,1.00%,F,T)



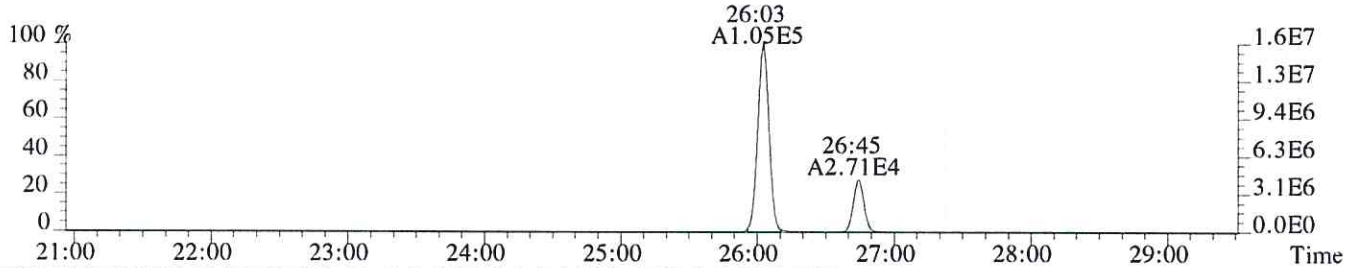
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,196.0,1.00%,F,T)



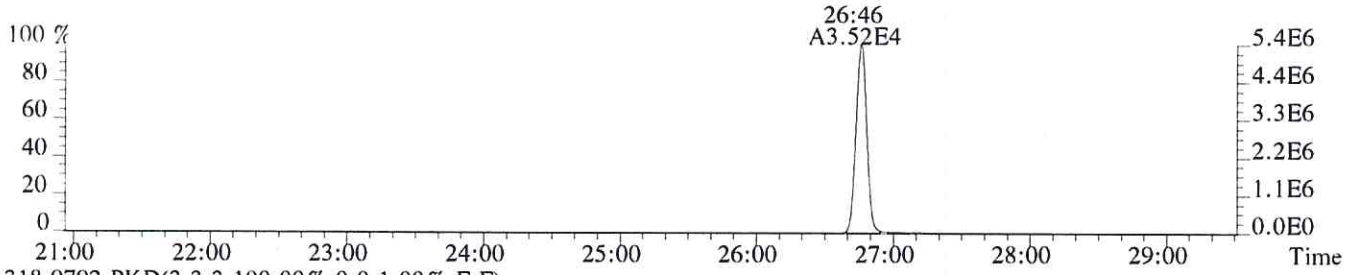
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8396.0,1.00%,F,T)



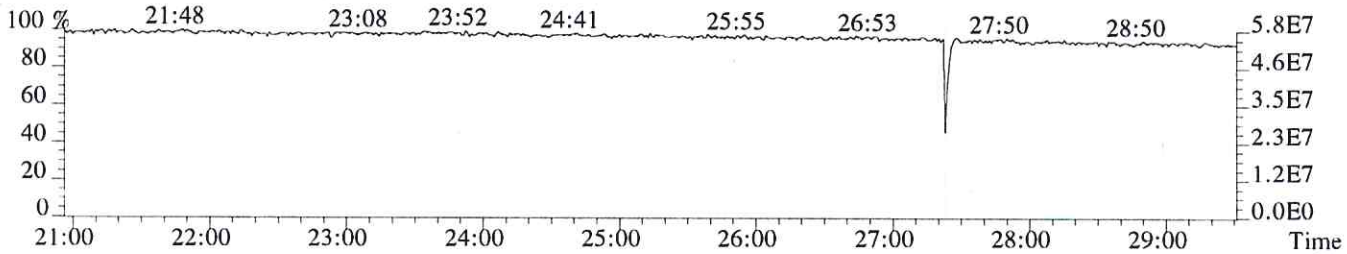
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4376.0,1.00%,F,T)



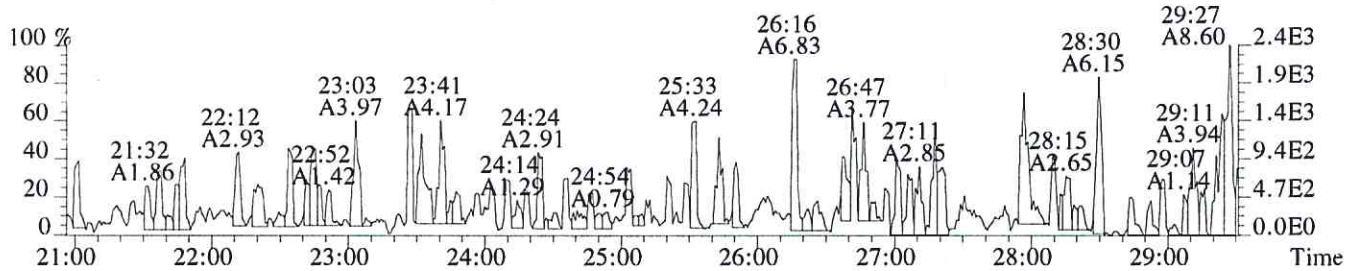
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1304.0,1.00%,F,T)



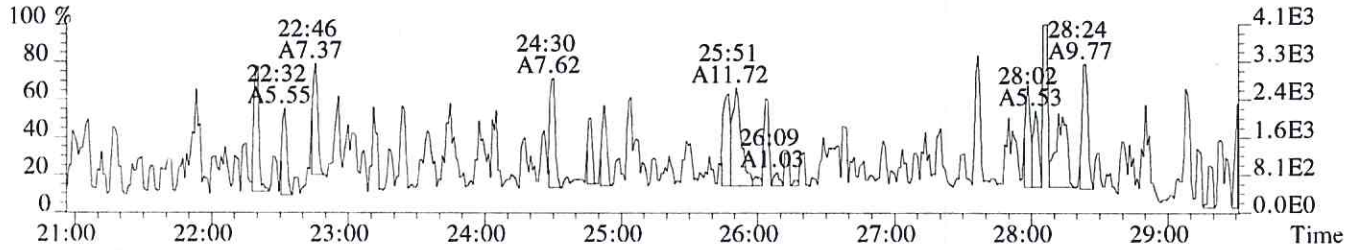
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



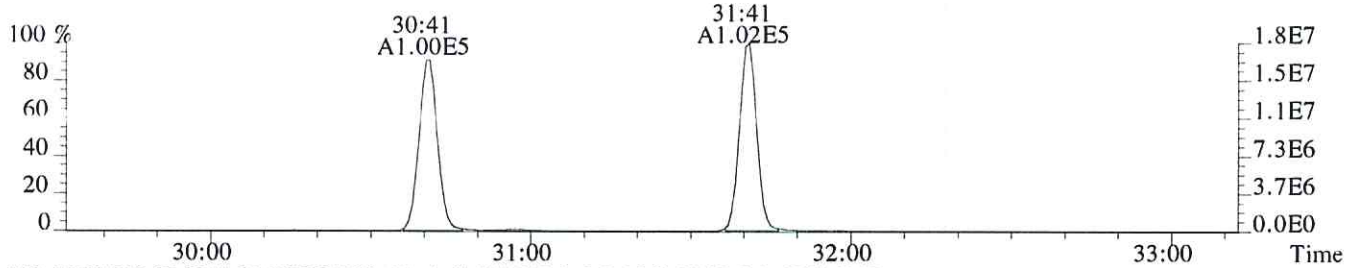
File:P607254 #1-609 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,268.0,1.00%,F,T)



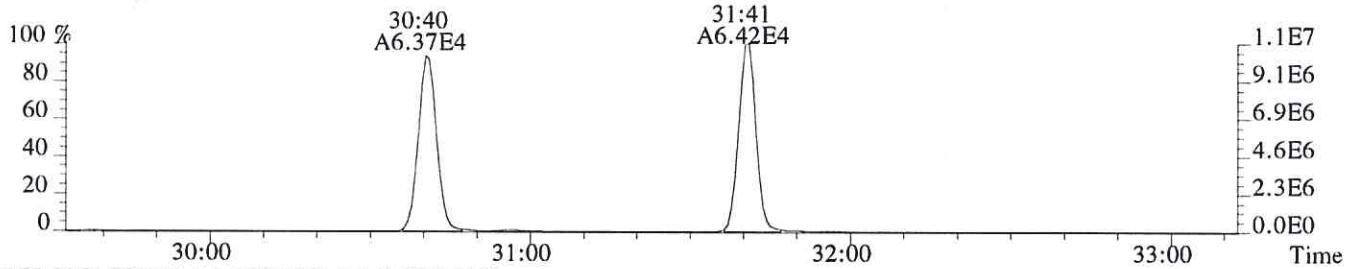
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1044.0,1.00%,F,T)



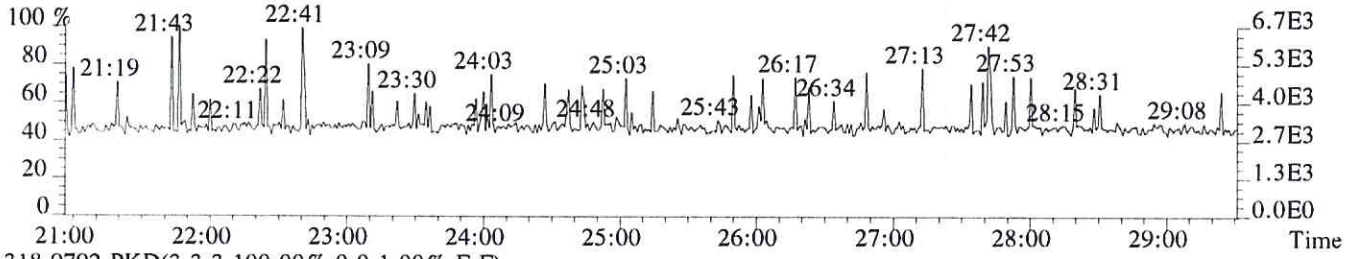
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1624.0,1.00%,F,T)



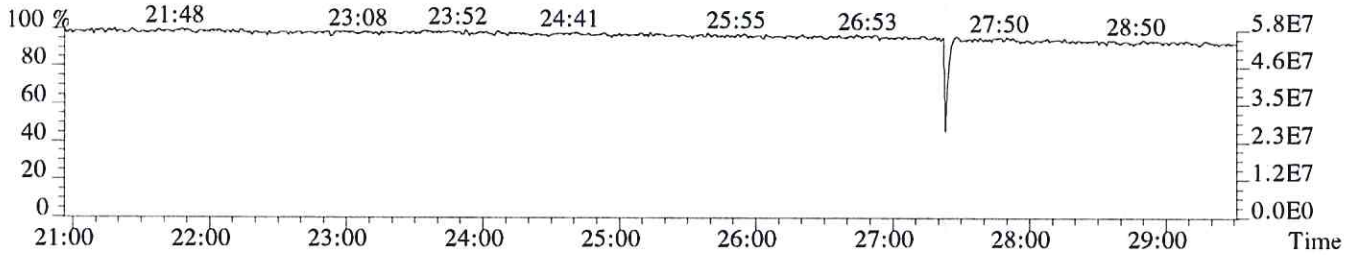
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2040.0,1.00%,F,T)



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

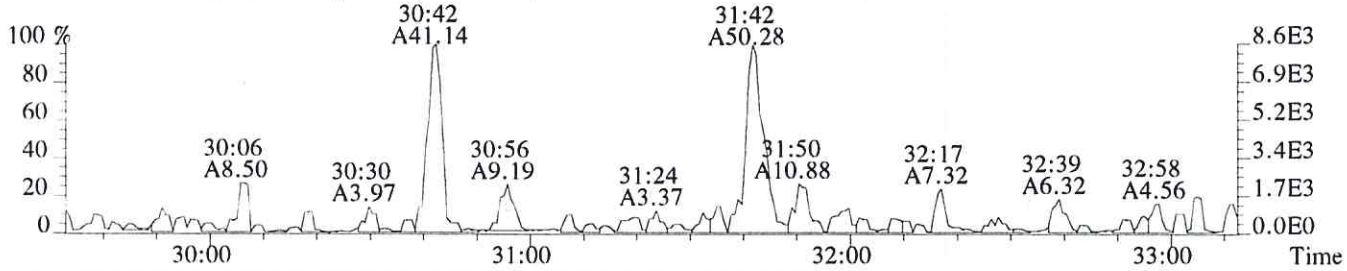


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

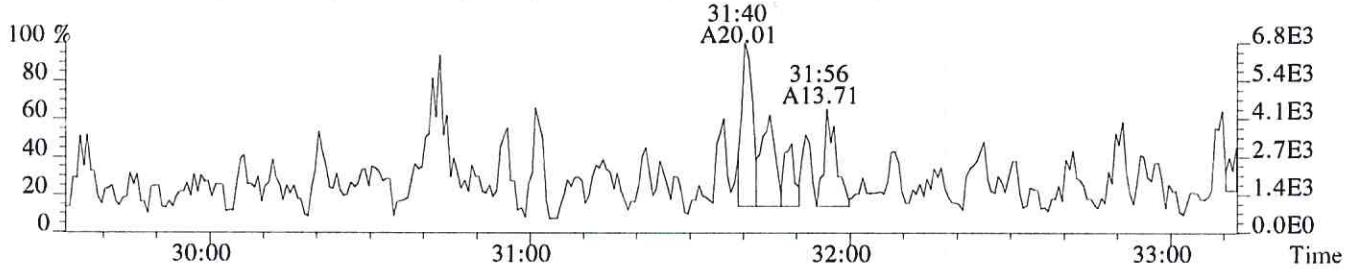


File:P607254 #1-330 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

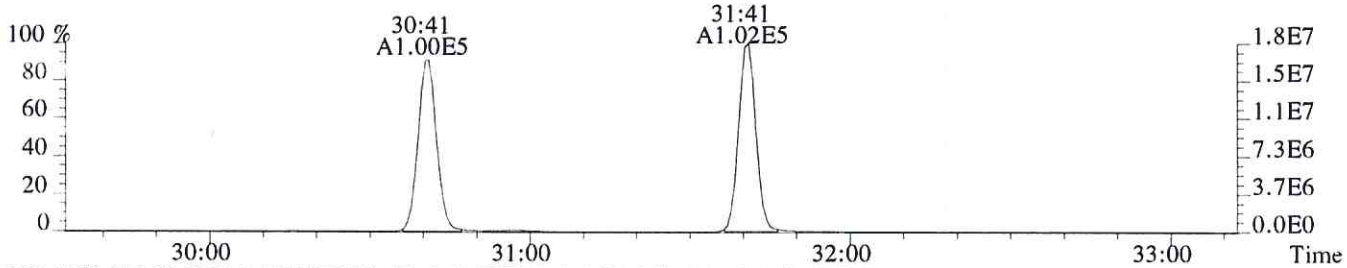
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,192.0,1.00%,F,T)



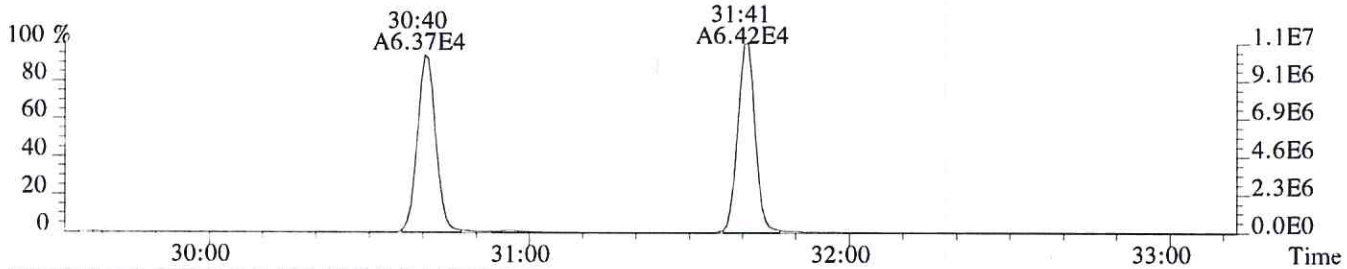
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2084.0,1.00%,F,T)



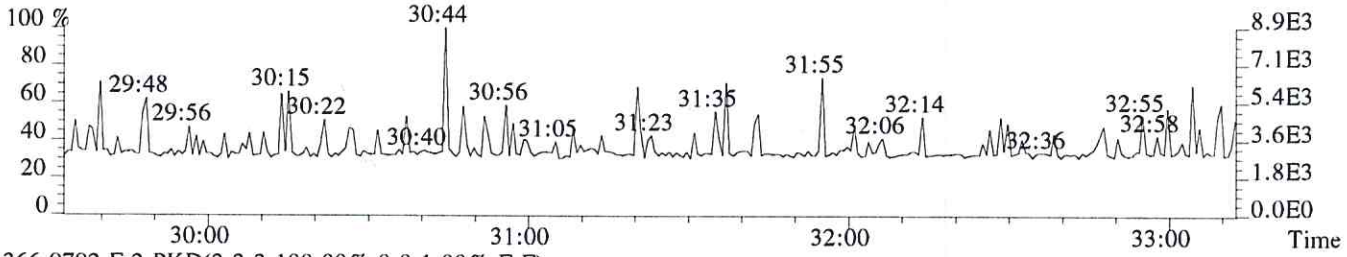
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1624.0,1.00%,F,T)



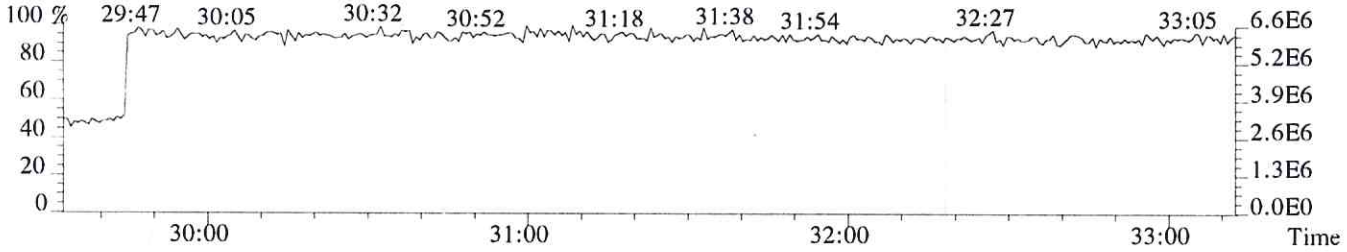
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2040.0,1.00%,F,T)



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

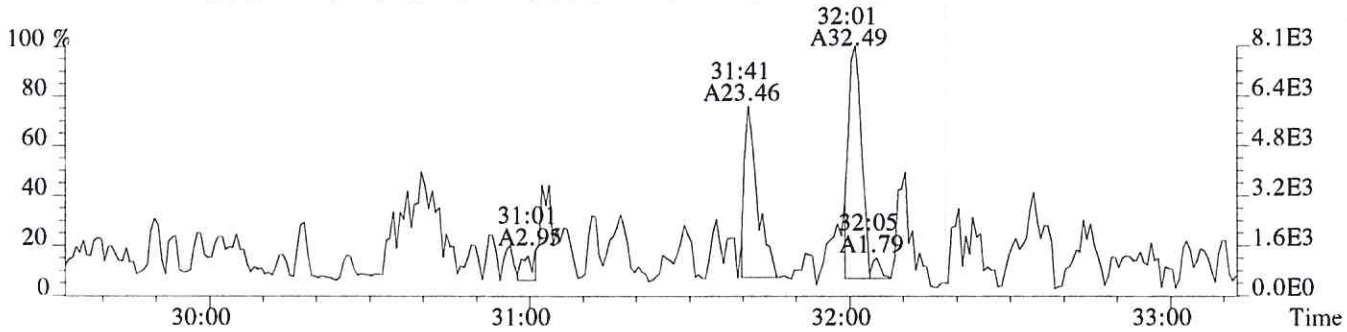


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

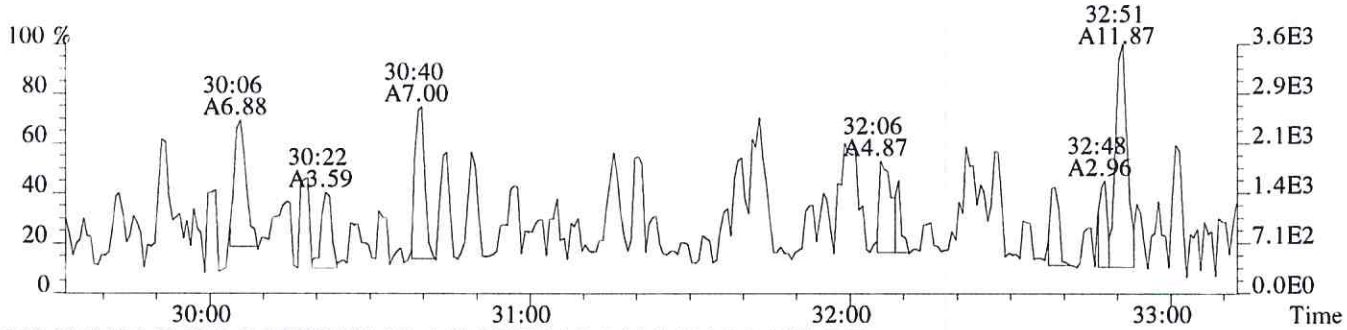


File:P607254 #1-330 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

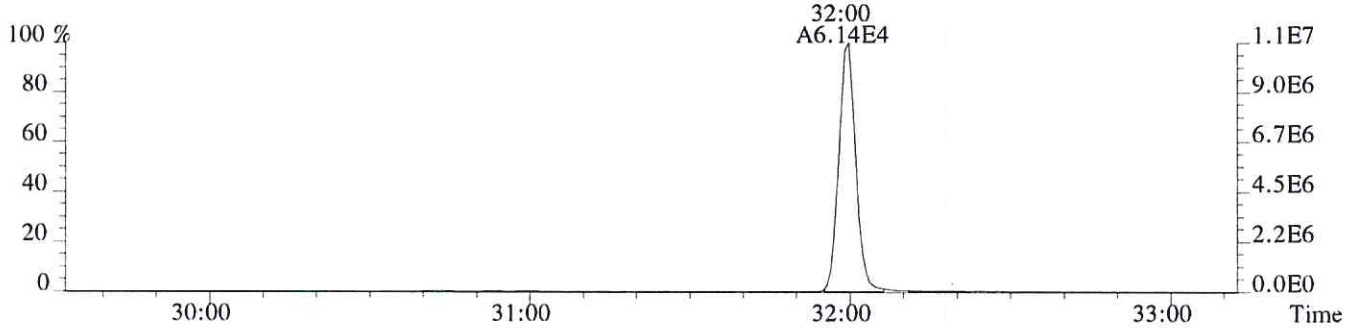
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1424.0,1.00%,F,T)



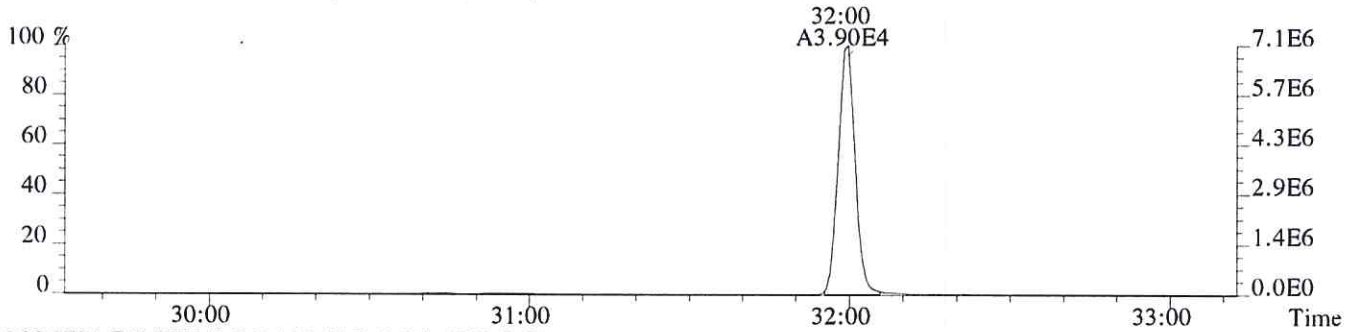
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,984.0,1.00%,F,T)



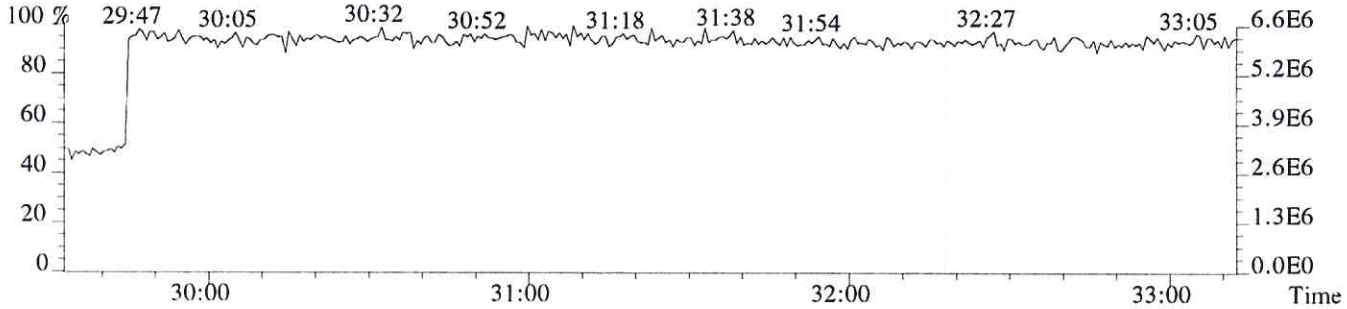
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,824.0,1.00%,F,T)



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

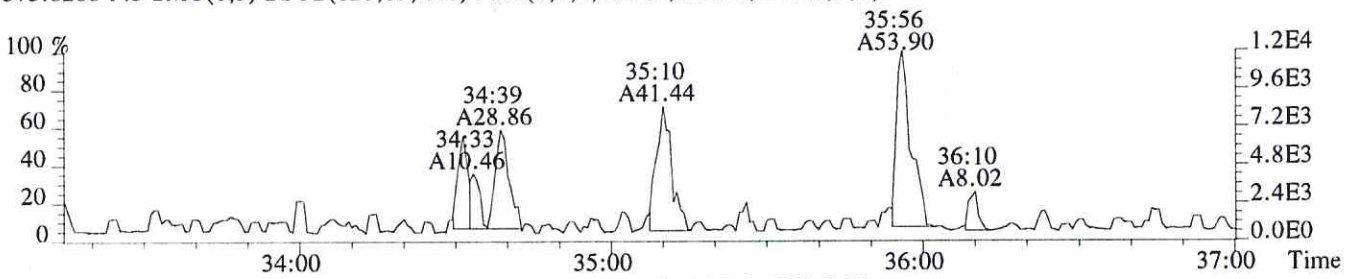


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

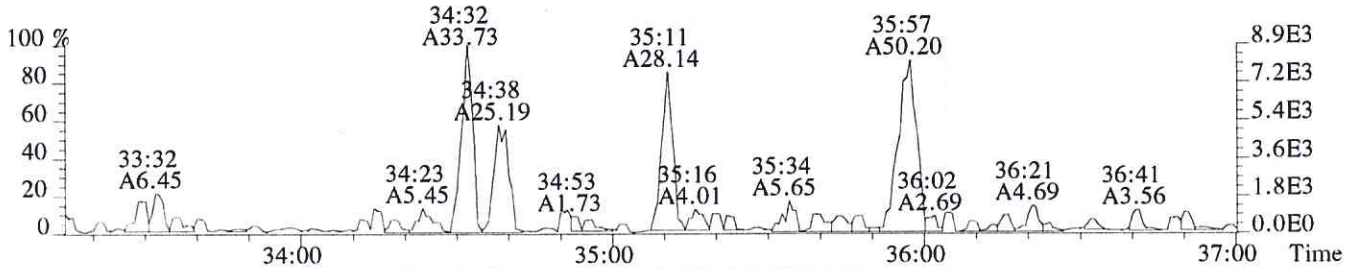


File:P607254 #1-339 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

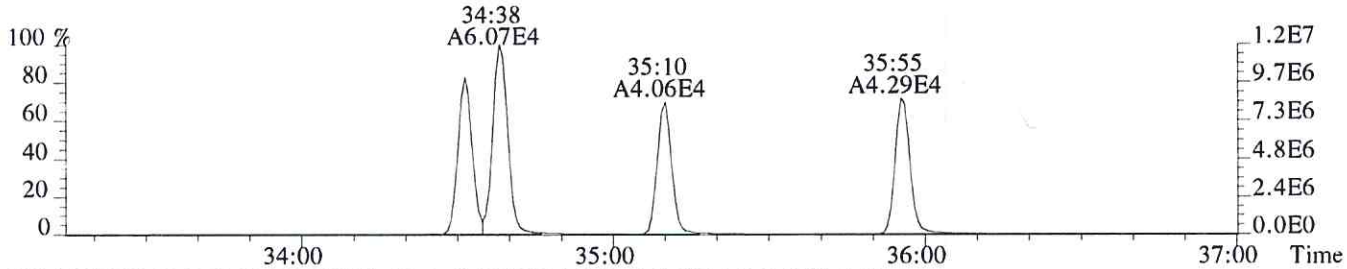
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1228.0,0.40%,F,T)



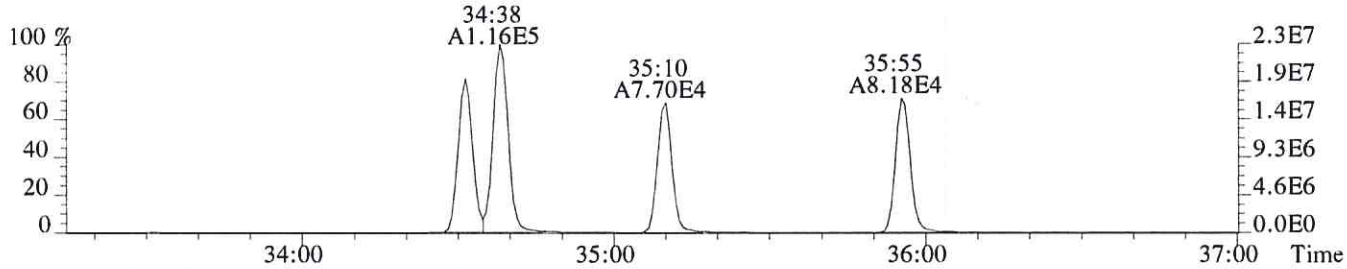
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,228.0,0.40%,F,T)



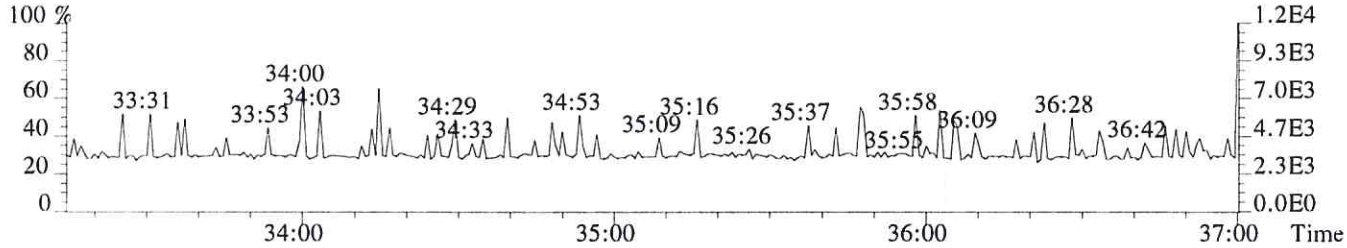
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,144.0,0.40%,F,T)



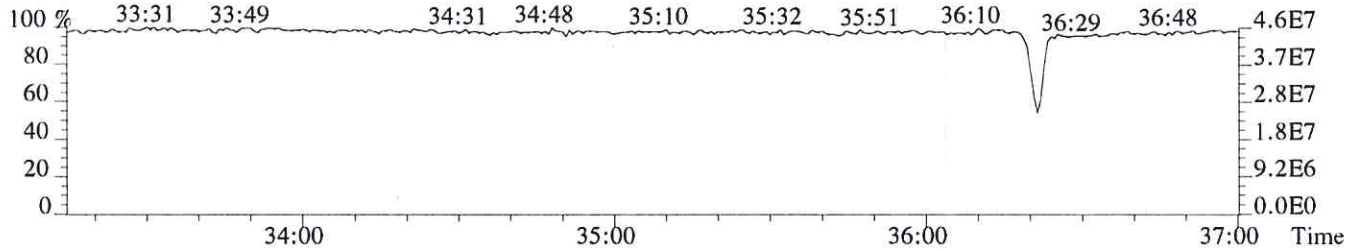
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1484.0,0.40%,F,T)



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

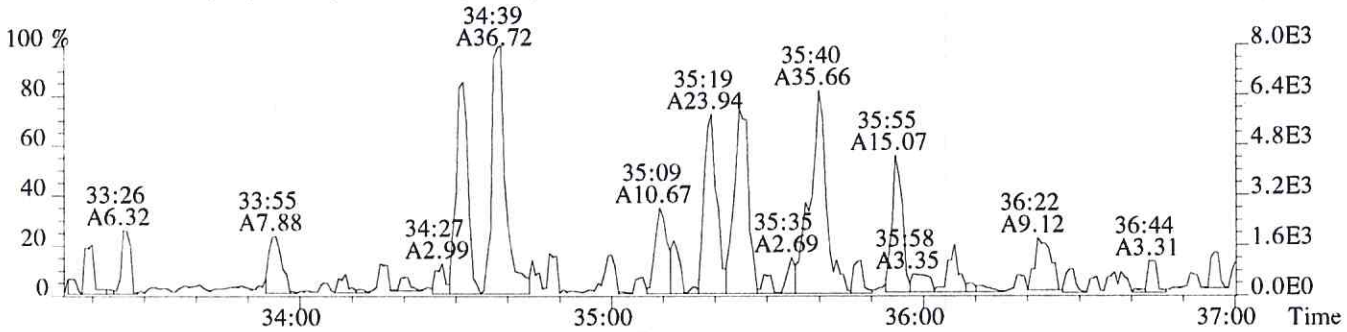


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

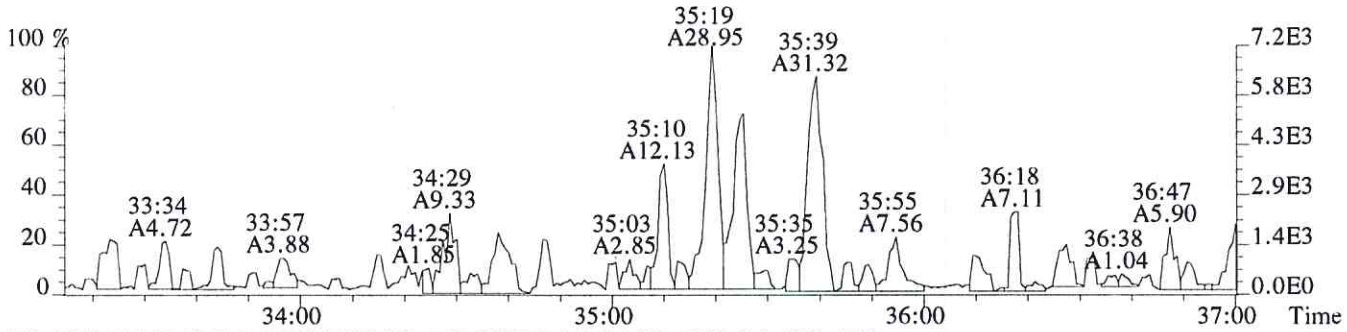


File:P607254 #1-339 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

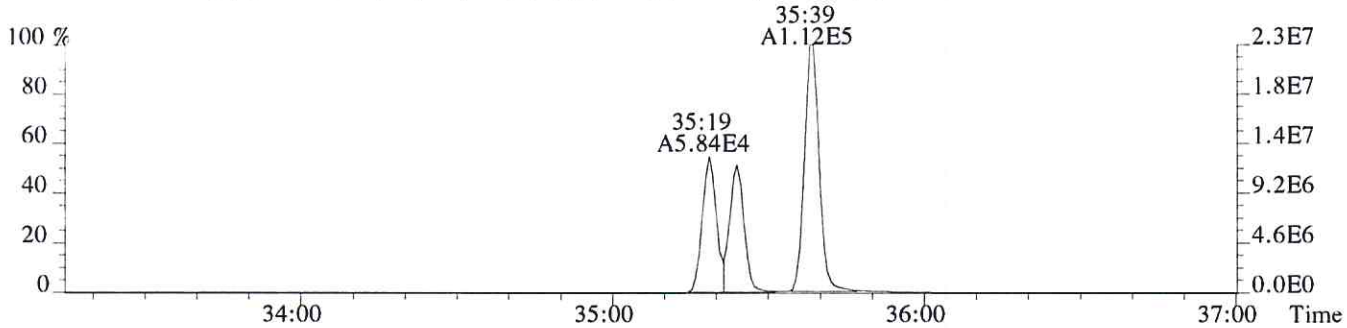
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,264.0,0.40%,F,T)



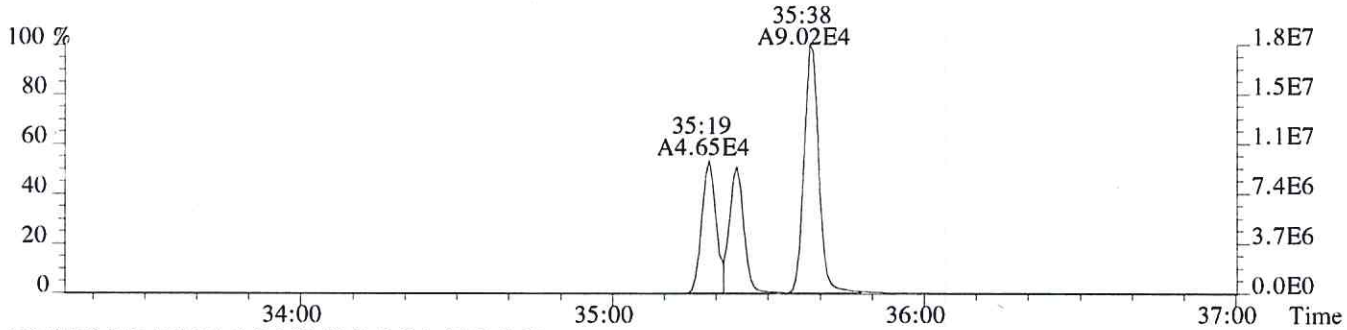
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,340.0,0.40%,F,T)



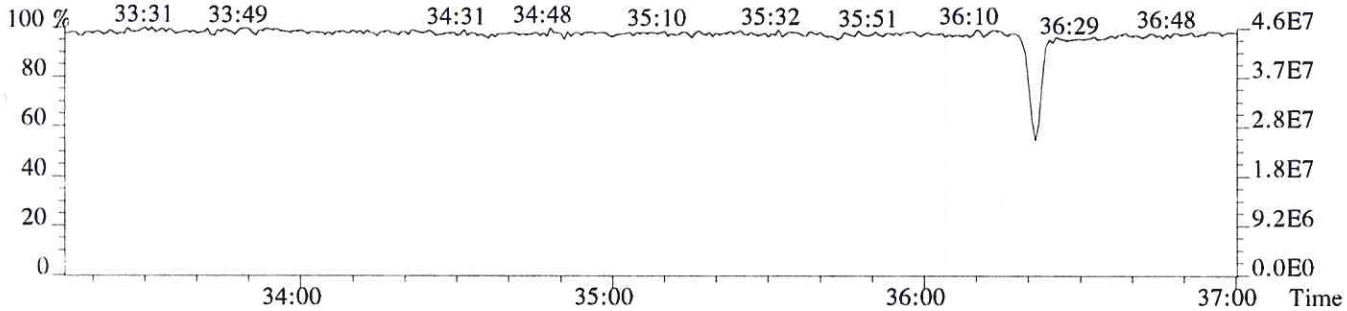
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2088.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1080.0,0.40%,F,T)

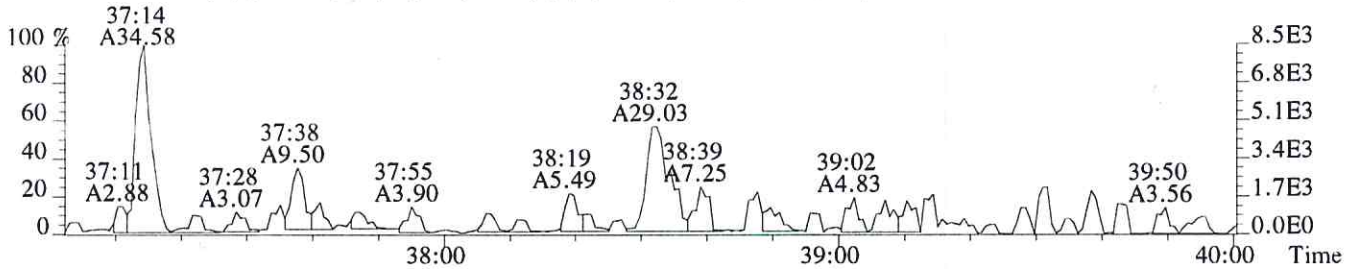


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

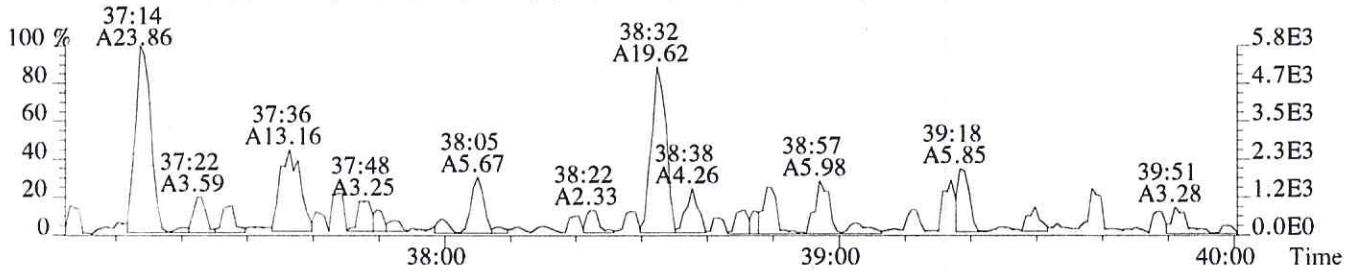


File:P607254 #1-268 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

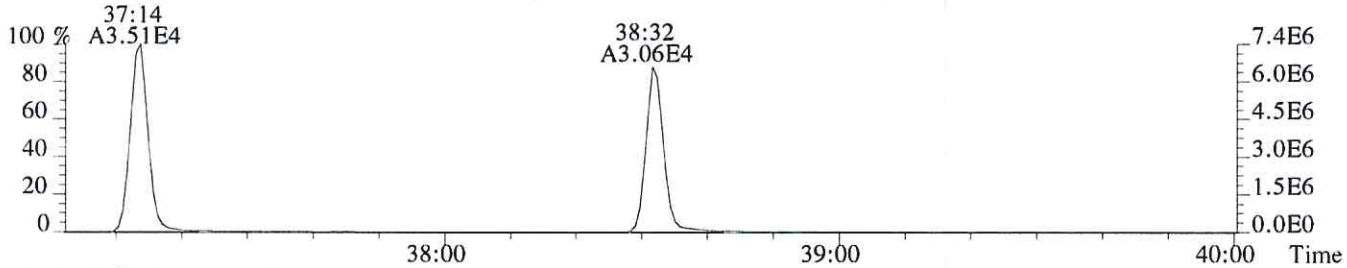
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,252.0,0.50%,F,T)



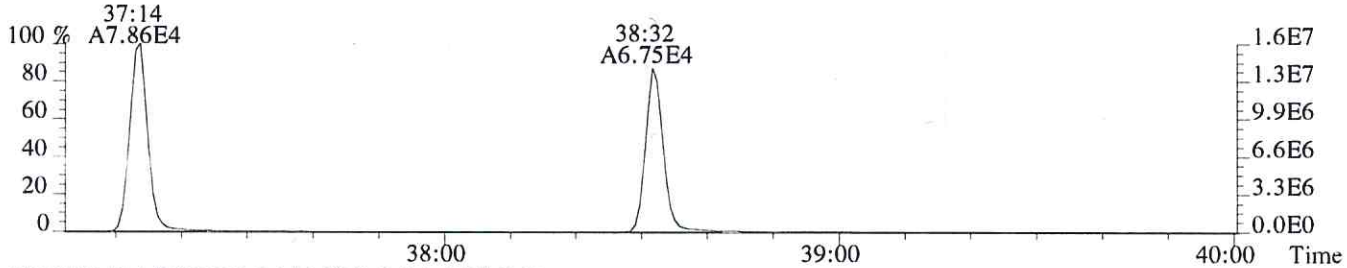
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,244.0,0.50%,F,T)



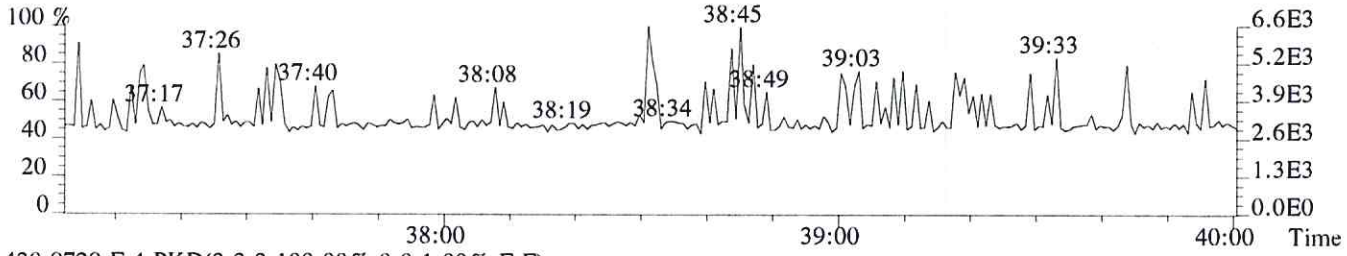
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5788.0,0.50%,F,T)



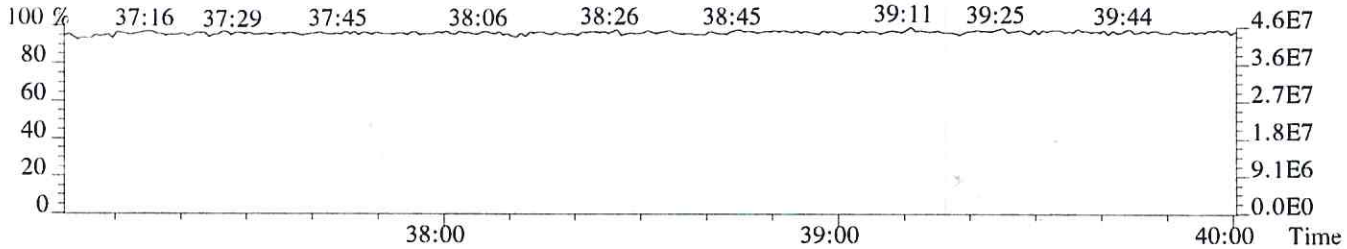
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,14828.0,0.50%,F,T)



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

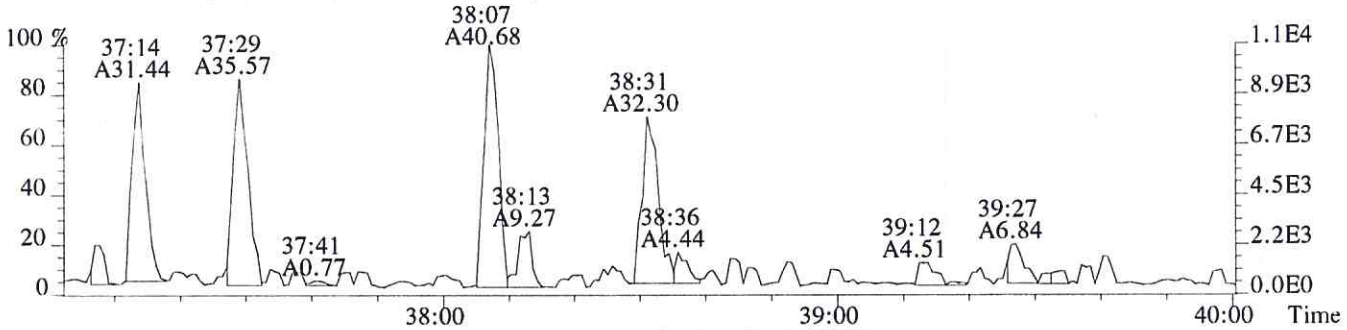


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

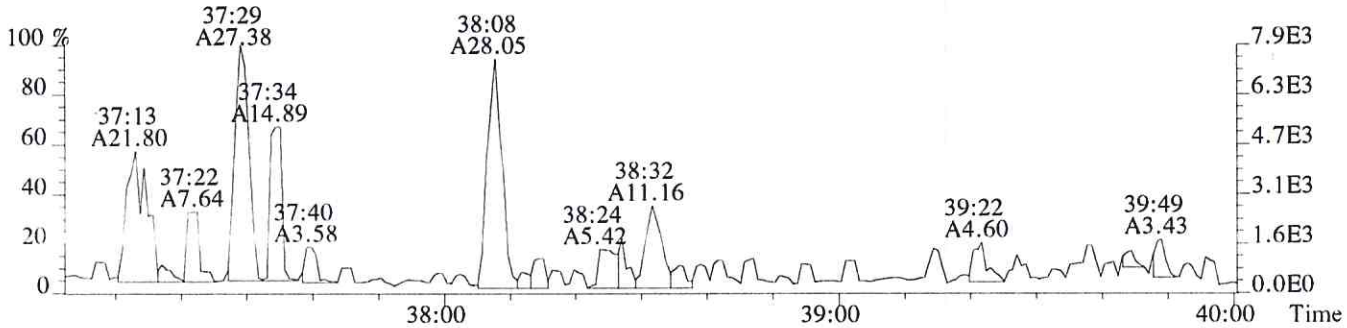


File:P607254 #1-268 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

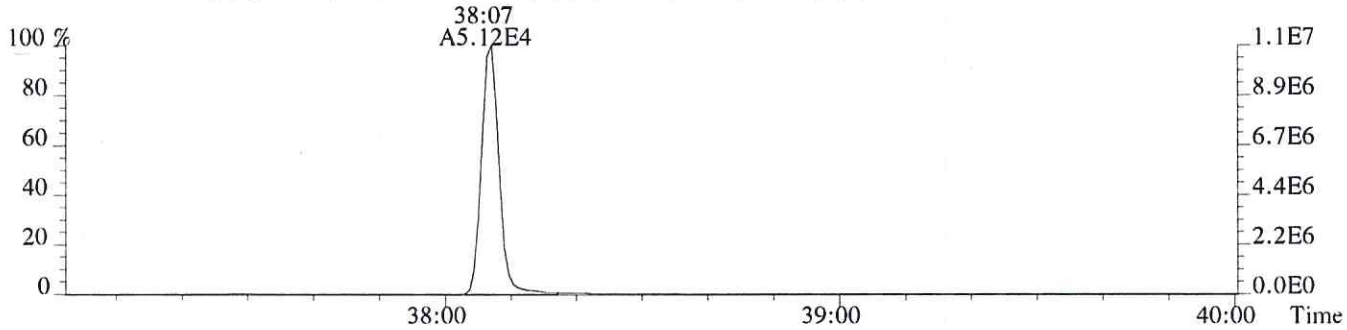
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,848.0,0.40%,F,T)



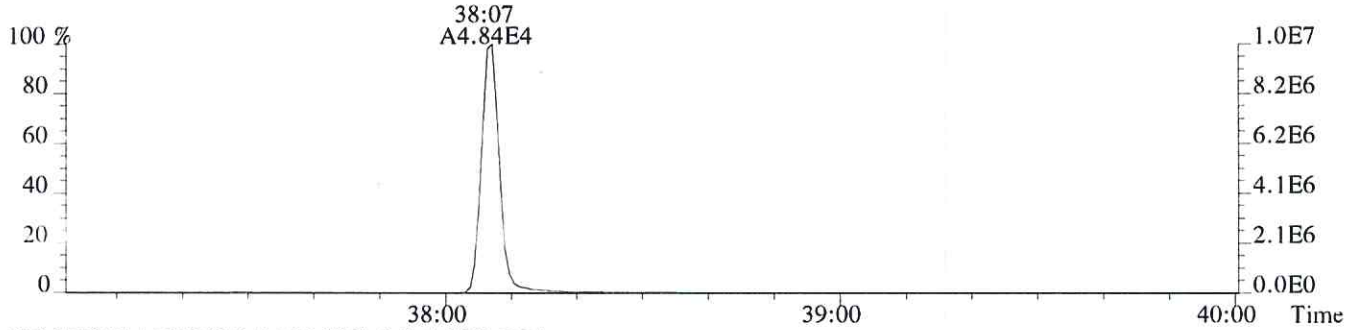
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,664.0,0.40%,F,T)



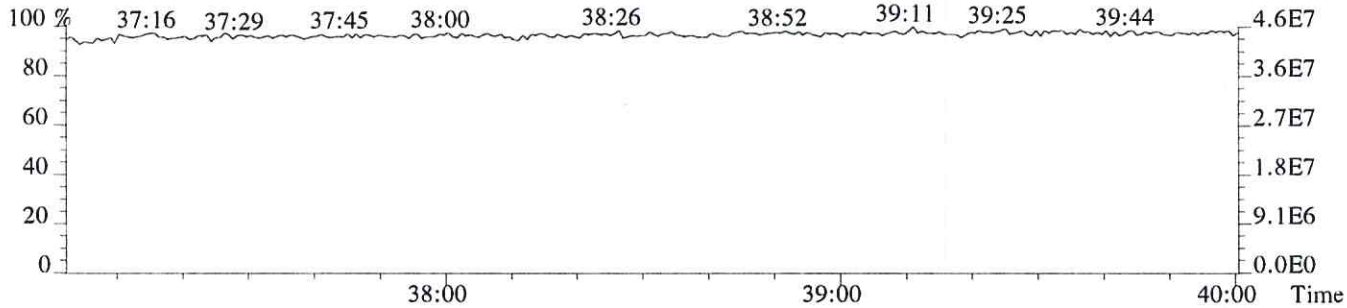
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,300.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,372.0,0.40%,F,T)

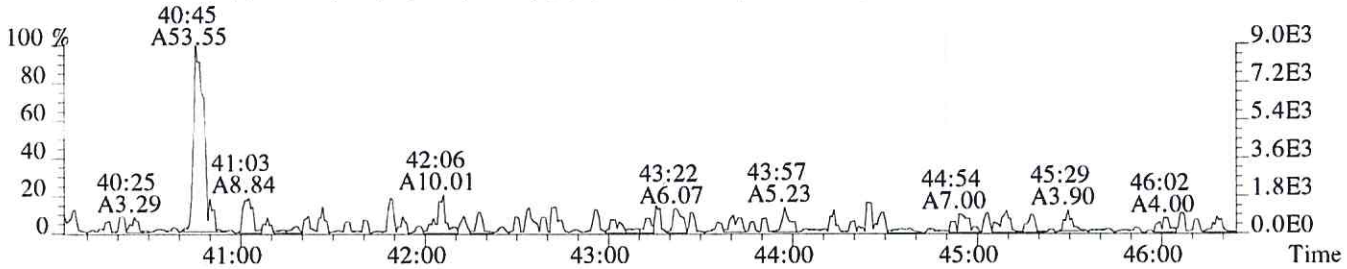


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

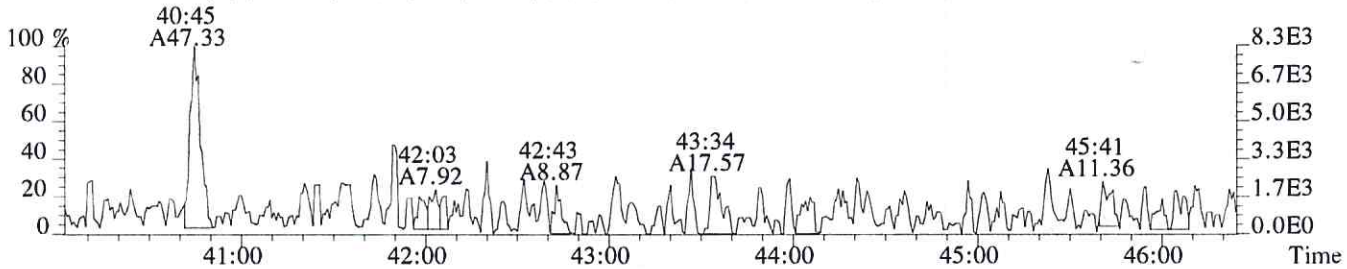


File:P607254 #1-573 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

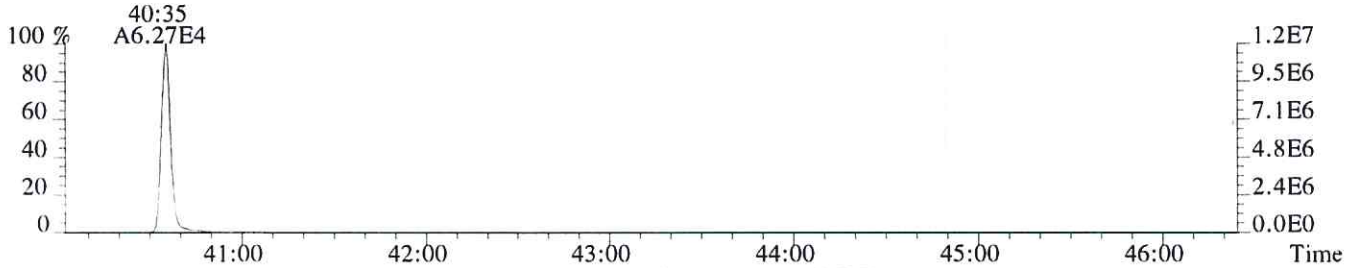
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,160.0,0.40%,F,T)



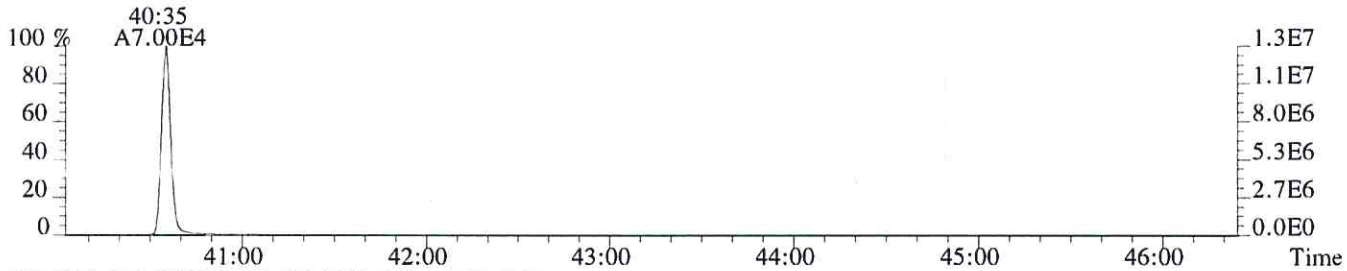
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1016.0,0.40%,F,T)



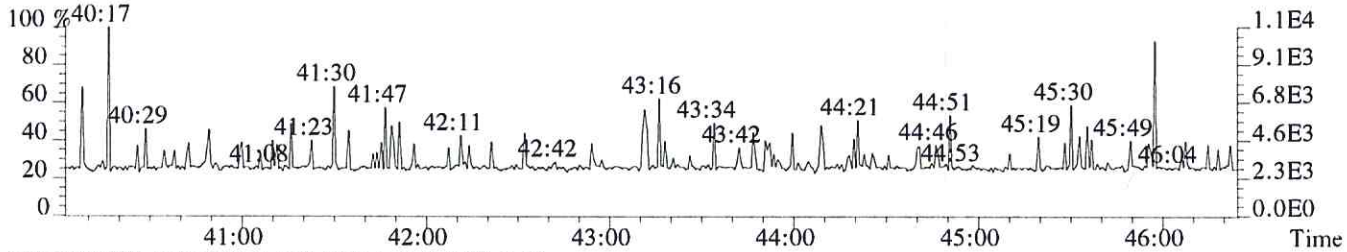
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2088.0,0.40%,F,T)



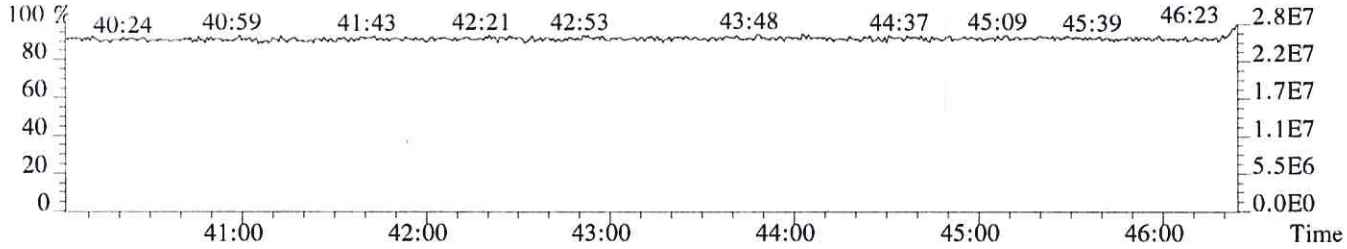
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,9752.0,0.40%,F,T)



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

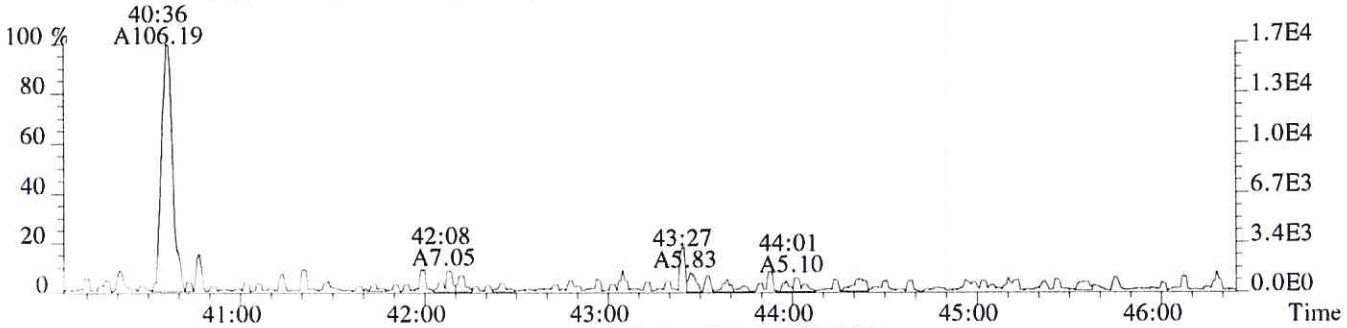


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

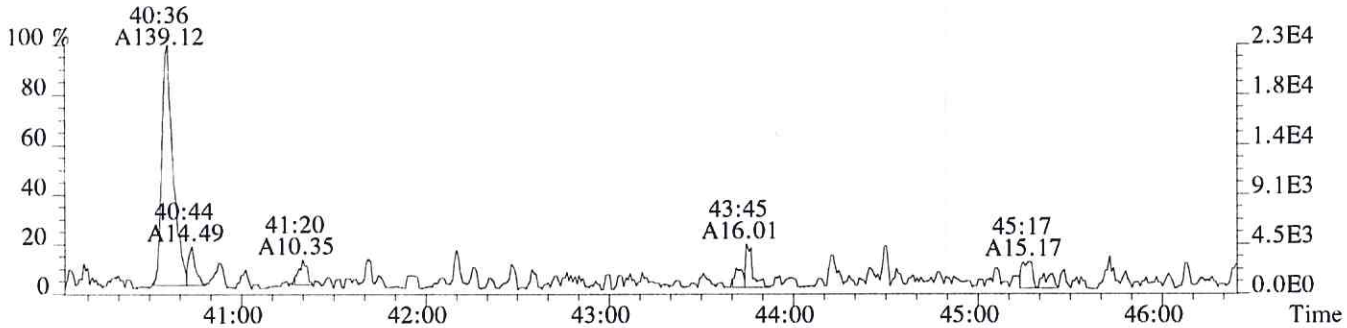


File:P607254 #1-573 Acq:19-MAY-2017 23:44:58 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

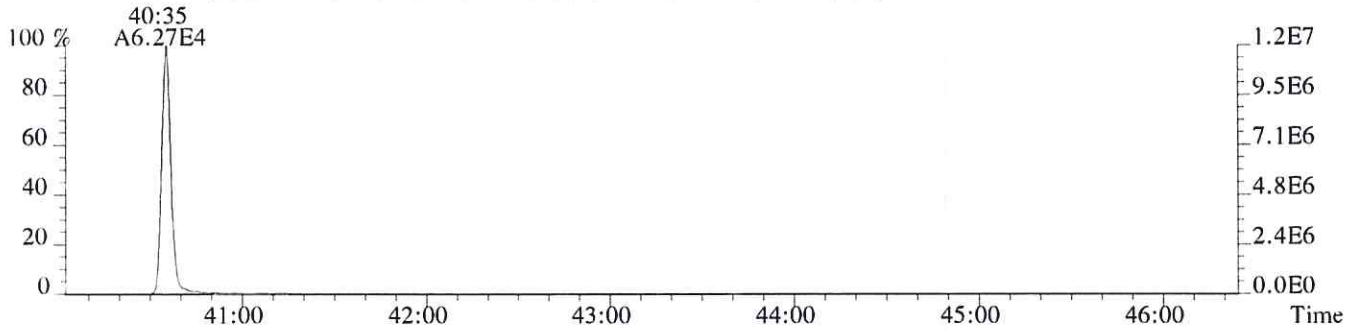
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,236.0,0.40%,F,T)



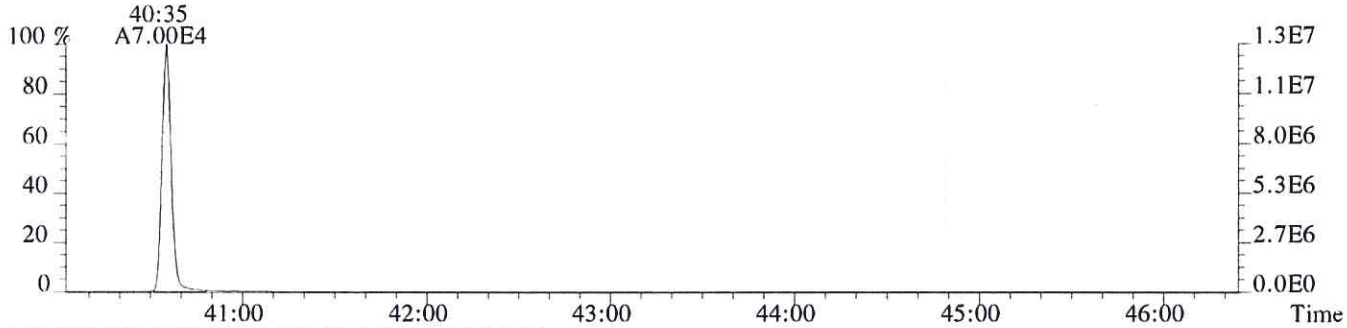
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1308.0,0.40%,F,T)



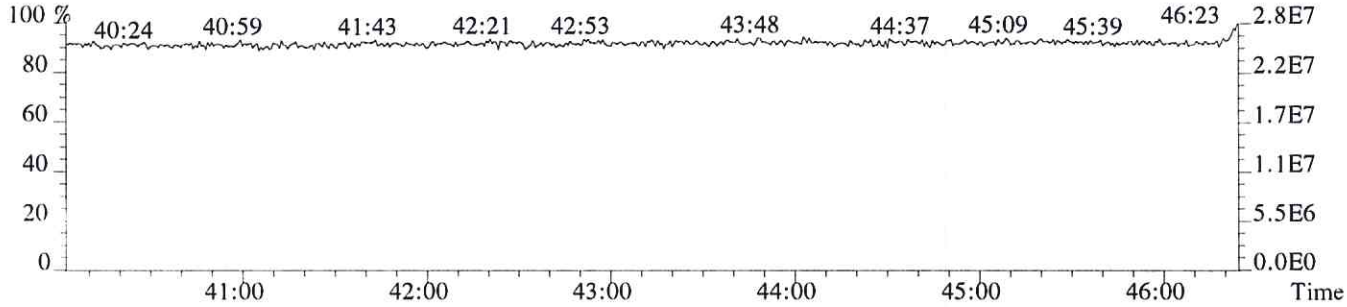
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2088.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,9752.0,0.40%,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 #16 Filename P607261 Samp: 1 Inj: 1 Acquired: 20-MAY-17 05:28:25
Processed: 22-MAY-17 16:07:16 Sample ID: EQ1700183-02

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:48	1.368e+03	1.850e+03	0.74	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:42	1.752e+04	1.098e+04	1.60	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:42	1.295e+04	8.283e+03	1.56	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:33	1.809e+04	1.458e+04	1.24	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	1.941e+04	1.575e+04	1.23	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:11	1.258e+04	9.769e+03	1.29	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:57	1.365e+04	1.100e+04	1.24	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:15	1.560e+04	1.516e+04	1.03	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:33	1.235e+04	1.186e+04	1.04	yes	no	1.341
10	Unk	OCDF	40:47	1.722e+04	1.926e+04	0.89	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:47	1.354e+03	1.625e+03	0.83	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:01	1.069e+04	6.825e+03	1.57	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:20	1.089e+04	8.560e+03	1.27	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:25	1.072e+04	8.350e+03	1.28	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:40	1.027e+04	8.221e+03	1.25	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:08	9.308e+03	8.835e+03	1.05	yes	no	1.048
17	Unk	OCDD	40:37	1.272e+04	1.402e+04	0.91	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:46	1.263e+04	1.637e+04	0.77	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:42	3.644e+04	2.304e+04	1.58	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:42	3.249e+04	2.073e+04	1.57	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:32	1.747e+04	3.338e+04	0.52	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:39	2.260e+04	4.273e+04	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:11	1.279e+04	2.403e+04	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:56	1.464e+04	2.771e+04	0.53	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	1.286e+04	2.930e+04	0.44	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:33	1.033e+04	2.376e+04	0.43	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:45	7.404e+03	9.573e+03	0.77	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	32:00	2.031e+04	1.264e+04	1.61	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	1.968e+04	1.556e+04	1.26	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:25	1.912e+04	1.557e+04	1.23	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:08	1.729e+04	1.655e+04	1.05	yes	no	0.884
32	IS	13C-OCDD	40:36	2.104e+04	2.359e+04	0.89	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:04	4.780e+04	6.029e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:39	7.265e+04	5.838e+04	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:47	1.255e+04				no	1.072

$$\text{OCDD} = \frac{(1.272e+04 + 1.402e+04)\ \times 4000\ \text{pg} \times 1}{(2.104e+04 + 2.359e+04)\ \times\ \text{g}\ \times\ /\ 100 \times 1.120} =$$

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

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
LCS

Run #16 Filename P607261 Samp: 1 Inj: 1 Acquired: 20-MAY-17 05:28:25
Processed: 22-MAY-17 16:07:16 LAB. ID: EQ1700183-02

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.90e+05	7.44e+02	2.6e+02	2.54e+05	6.12e+02	4.1e+02
2	1,2,3,7,8-PeCDF	2.90e+06	3.34e+03	8.7e+02	1.83e+06	5.05e+03	3.6e+02
3	2,3,4,7,8-PeCDF	2.30e+06	3.34e+03	6.9e+02	1.47e+06	5.05e+03	2.9e+02
4	1,2,3,4,7,8-HxCDF	3.74e+06	2.44e+02	1.5e+04	3.04e+06	1.84e+02	1.7e+04
5	1,2,3,6,7,8-HxCDF	3.70e+06	2.44e+02	1.5e+04	2.99e+06	1.84e+02	1.6e+04
6	2,3,4,6,7,8-HxCDF	2.67e+06	2.44e+02	1.1e+04	2.07e+06	1.84e+02	1.1e+04
7	1,2,3,7,8,9-HxCDF	2.69e+06	2.44e+02	1.1e+04	2.19e+06	1.84e+02	1.2e+04
8	1,2,3,4,6,7,8-HpCDF	3.34e+06	1.89e+03	1.8e+03	3.16e+06	4.63e+03	6.8e+02
9	1,2,3,4,7,8,9-HpCDF	2.61e+06	1.89e+03	1.4e+03	2.43e+06	4.63e+03	5.3e+02
10	OCDF	3.26e+06	1.35e+03	2.4e+03	3.63e+06	4.27e+03	8.5e+02
11	2,3,7,8-TCDD	2.08e+05	7.28e+02	2.9e+02	2.51e+05	3.12e+02	8.0e+02
12	1,2,3,7,8-PeCDD	1.94e+06	1.02e+03	1.9e+03	1.25e+06	1.80e+02	6.9e+03
13	1,2,3,4,7,8-HxCDD	2.37e+06	2.16e+02	1.1e+04	1.88e+06	1.96e+02	9.6e+03
14	1,2,3,6,7,8-HxCDD	2.22e+06	2.16e+02	1.0e+04	1.69e+06	1.96e+02	8.6e+03
15	1,2,3,7,8,9-HxCDD	2.06e+06	2.16e+02	9.5e+03	1.66e+06	1.96e+02	8.5e+03
16	1,2,3,4,6,7,8-HpCDD	2.00e+06	2.32e+02	8.6e+03	1.92e+06	1.80e+02	1.1e+04
17	OCDD	2.40e+06	4.02e+03	6.0e+02	2.70e+06	4.54e+03	6.0e+02
18	13C-2,3,7,8-TCDF	1.75e+06	1.04e+04	1.7e+02	2.23e+06	3.85e+03	5.8e+02
19	13C-1,2,3,7,8-PeCDF	6.02e+06	8.12e+02	7.4e+03	3.87e+06	1.08e+03	3.6e+03
20	13C-2,3,4,7,8-PeCDF	5.65e+06	8.12e+02	7.0e+03	3.63e+06	1.08e+03	3.4e+03
21	13C-1,2,3,4,7,8-HxCDF	3.66e+06	7.92e+02	4.6e+03	7.00e+06	2.80e+02	2.5e+04
22	13C-1,2,3,6,7,8-HxCDF	4.40e+06	7.92e+02	5.6e+03	8.38e+06	2.80e+02	3.0e+04
23	13C-2,3,4,6,7,8-HxCDF	2.75e+06	7.92e+02	3.5e+03	5.13e+06	2.80e+02	1.8e+04
24	13C-1,2,3,7,8,9-HxCDF	2.91e+06	7.92e+02	3.7e+03	5.51e+06	2.80e+02	2.0e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.77e+06	3.14e+03	8.8e+02	6.40e+06	2.46e+03	2.6e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.14e+06	3.14e+03	6.8e+02	4.92e+06	2.46e+03	2.0e+03
27	13C-2,3,7,8-TCDD	1.17e+06	4.92e+03	2.4e+02	1.46e+06	2.68e+03	5.5e+02
28	13C-1,2,3,7,8-PeCDD	3.68e+06	3.20e+02	1.2e+04	2.31e+06	2.72e+02	8.5e+03
29	13C-1,2,3,4,7,8-HxCDD	4.27e+06	1.68e+03	2.5e+03	3.36e+06	9.20e+02	3.6e+03
30	13C-1,2,3,6,7,8-HxCDD	3.90e+06	1.68e+03	2.3e+03	3.23e+06	9.20e+02	3.5e+03
31	13C-1,2,3,4,6,7,8-HpCDD	3.78e+06	3.68e+02	1.0e+04	3.57e+06	2.20e+02	1.6e+04
32	13C-OCDD	4.07e+06	4.88e+03	8.3e+02	4.50e+06	3.73e+03	1.2e+03
33	13C-1,2,3,4-TCDD	6.96e+06	4.92e+03	1.4e+03	8.82e+06	2.68e+03	3.3e+03
34	13C-1,2,3,7,8,9-HxCDD	1.49e+07	1.68e+03	8.9e+03	1.18e+07	9.20e+02	1.3e+04
35	37Cl-2,3,7,8-TCDD	1.96e+06	1.52e+03	1.3e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (7.280e{+}02 + 3.120e{+}02) \times 2000}{(1.167e{+}06 + 1.464e{+}06) \times (\qquad\qquad) \times 1.055} =$$

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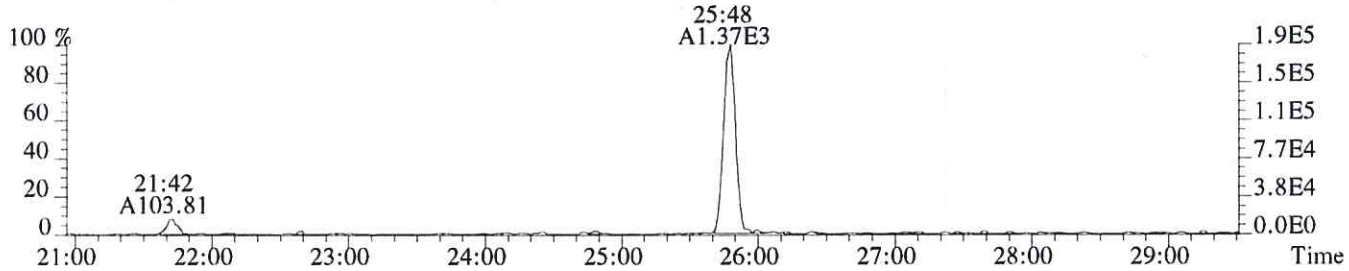
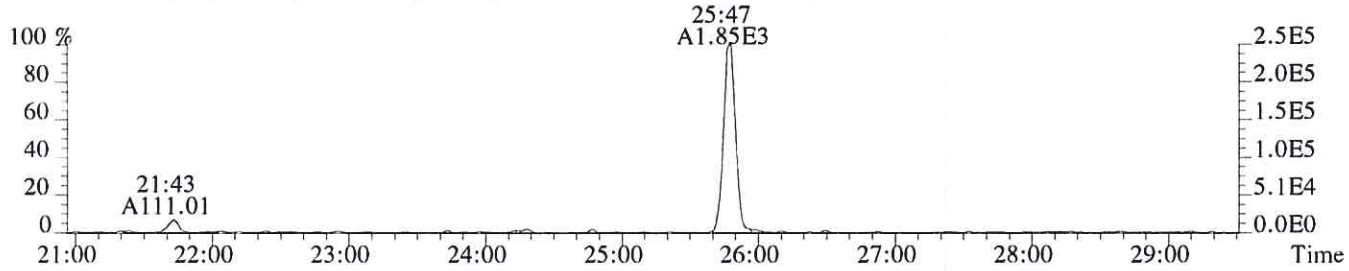
File:P607261 #1-609 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

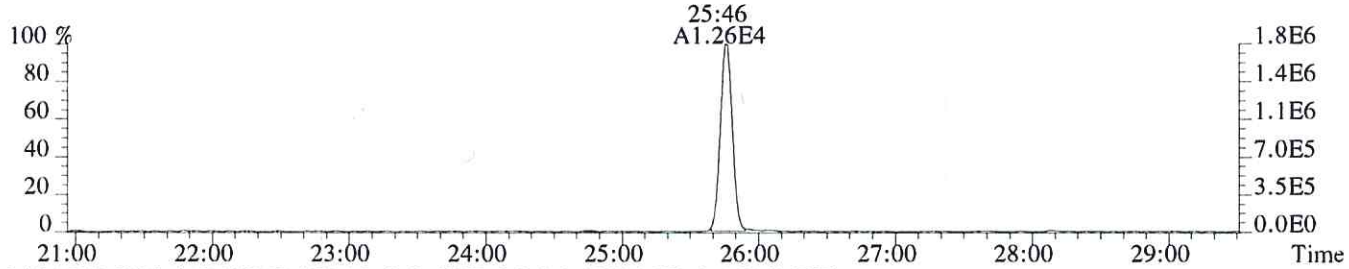
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,744.0,1.00%,F,T)



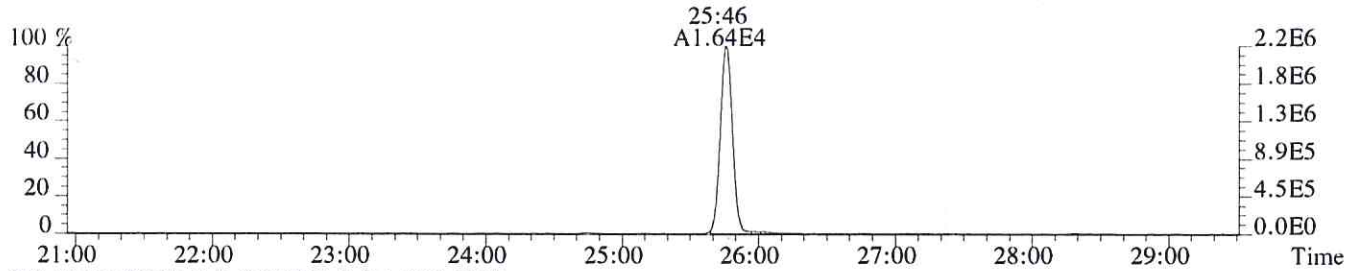
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,612.0,1.00%,F,T)



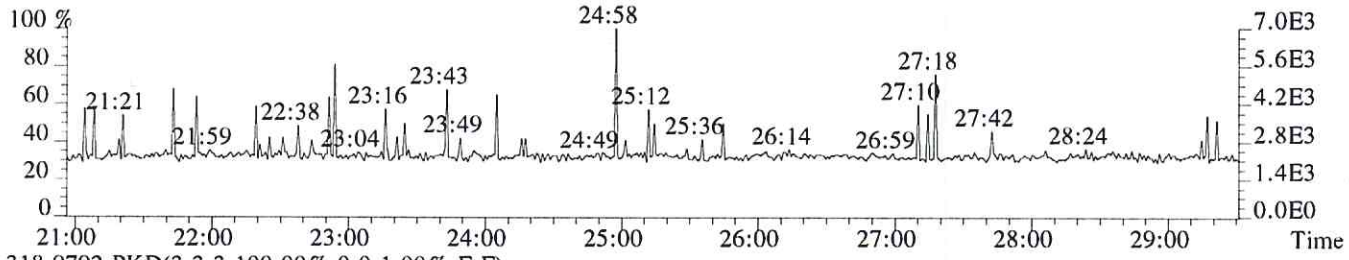
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10416.0,1.00%,F,T)



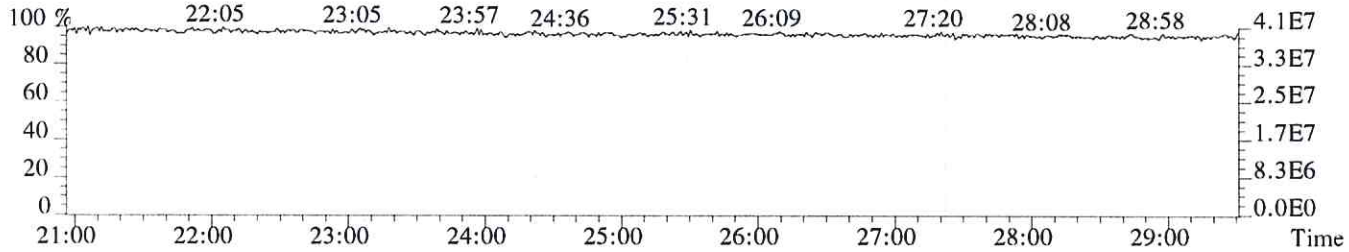
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3852.0,1.00%,F,T)



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

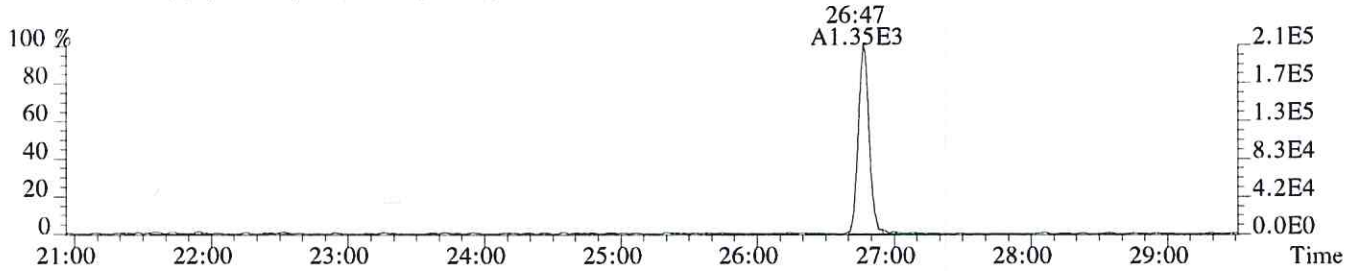


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

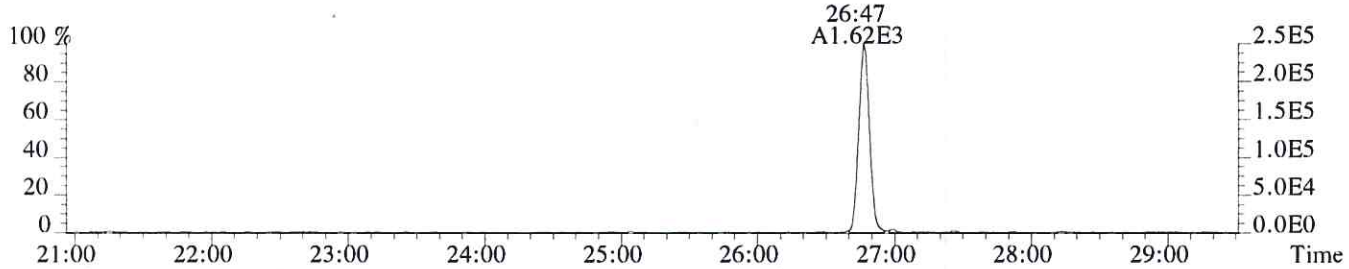


File:P607261 #1-609 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

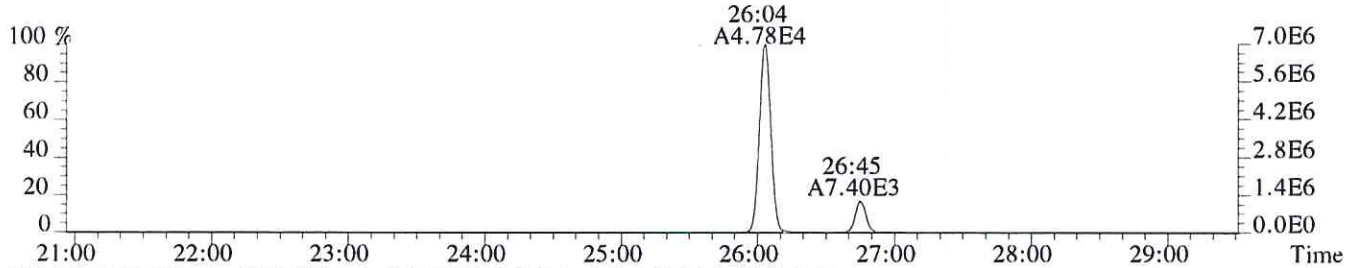
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,T)



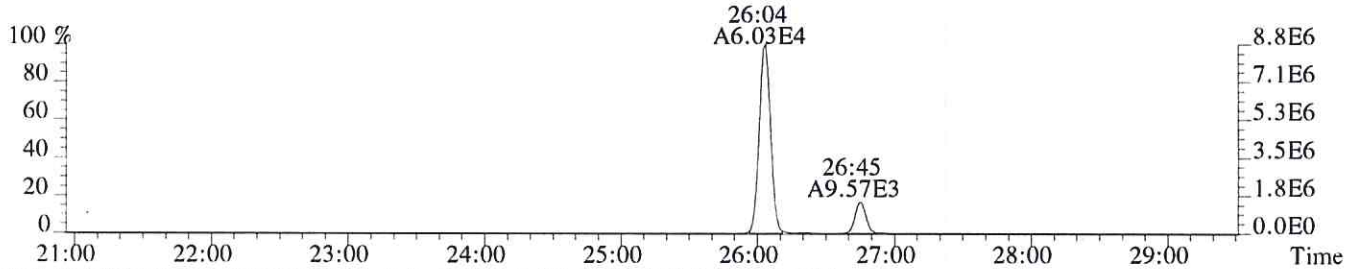
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,312.0,1.00%,F,T)



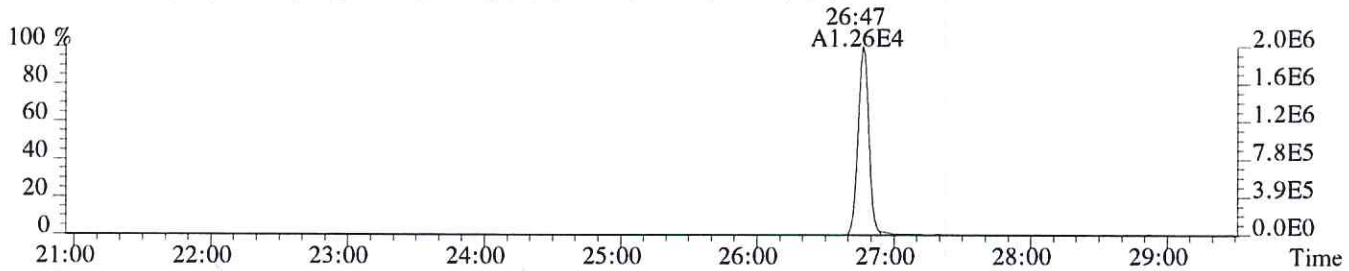
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4920.0,1.00%,F,T)



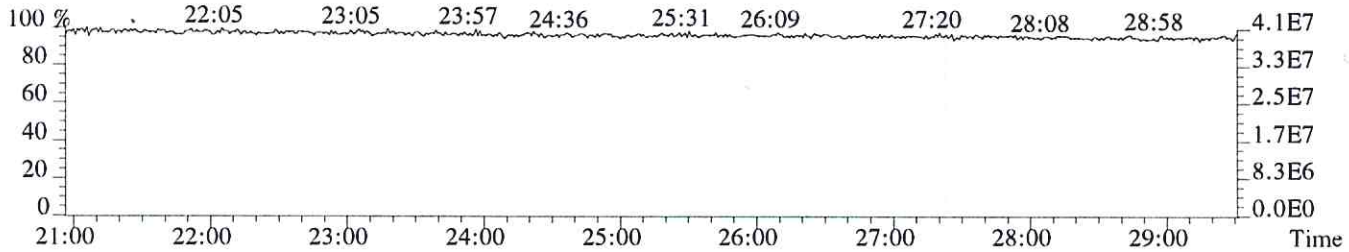
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2676.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1520.0,1.00%,F,T)

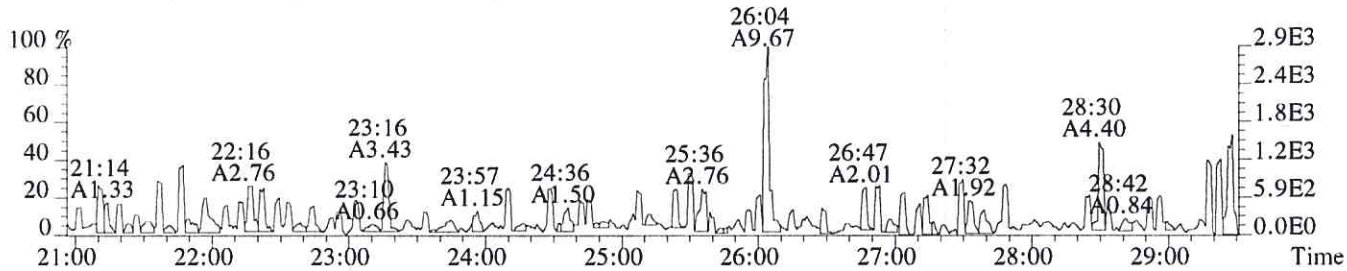


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

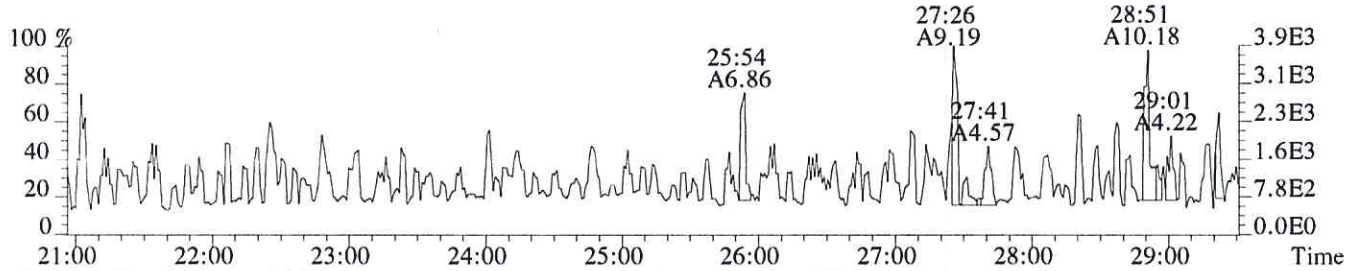


File:P607261 #1-609 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

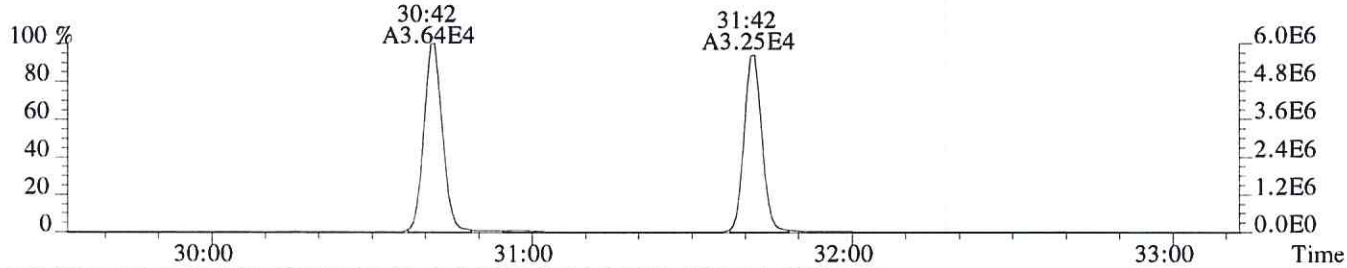
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,172.0,1.00%,F,T)



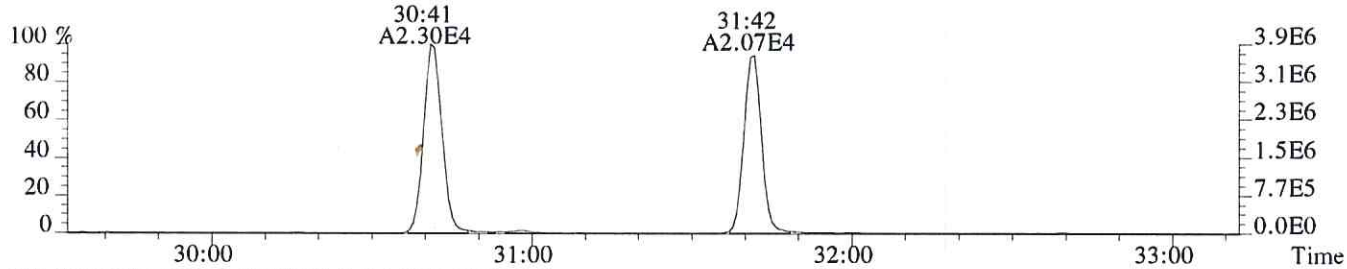
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1320.0,1.00%,F,T)



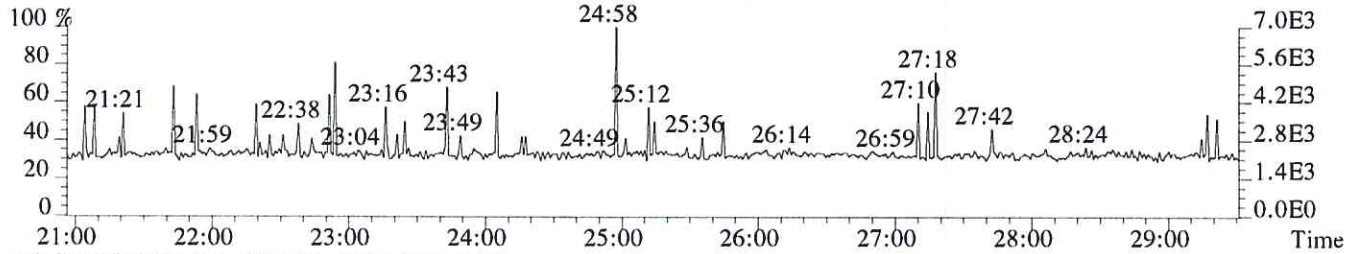
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,812.0,1.00%,F,T)



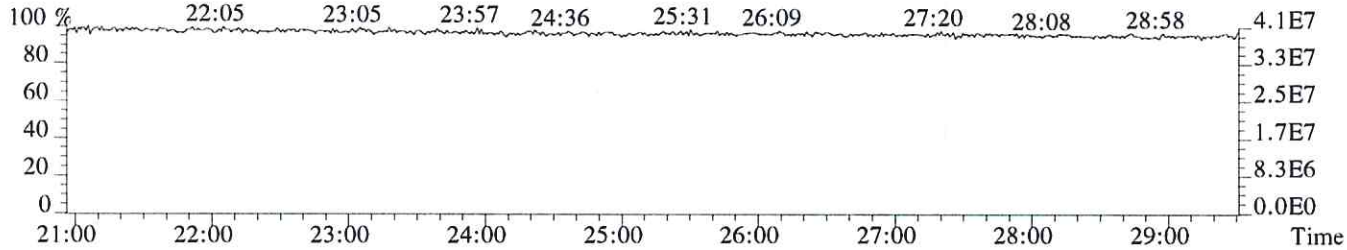
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1084.0,1.00%,F,T)



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

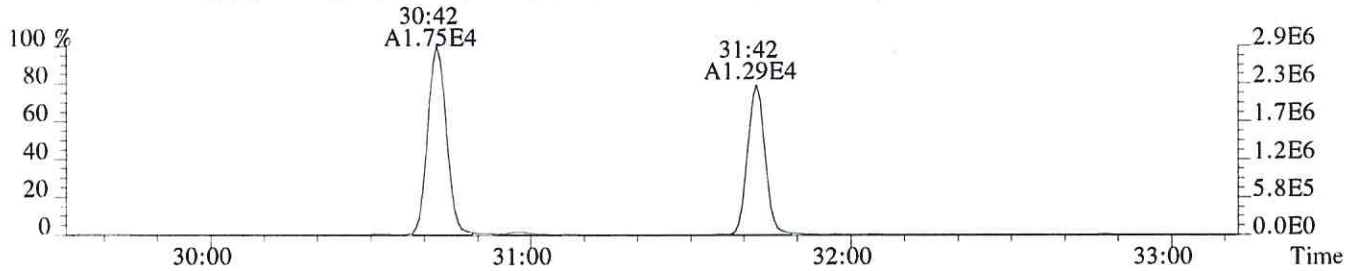


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

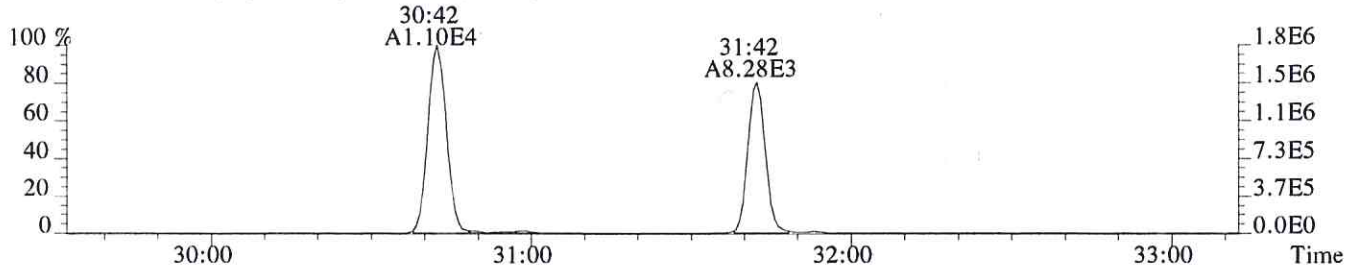


File:P607261 #1-330 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

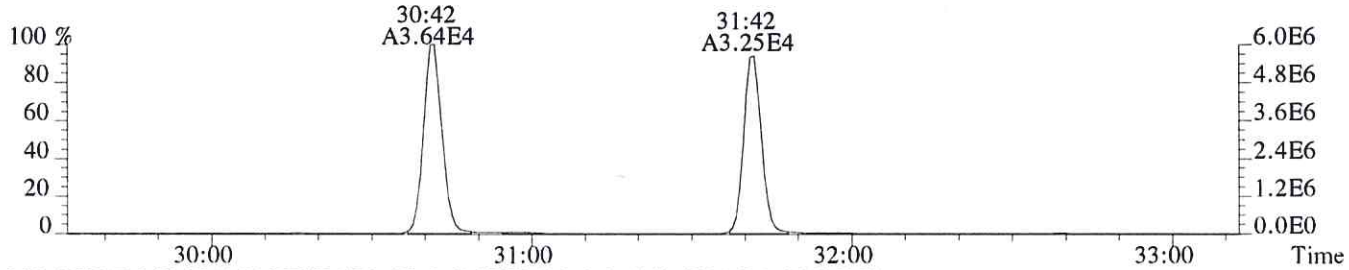
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3344.0,1.00%,F,T)



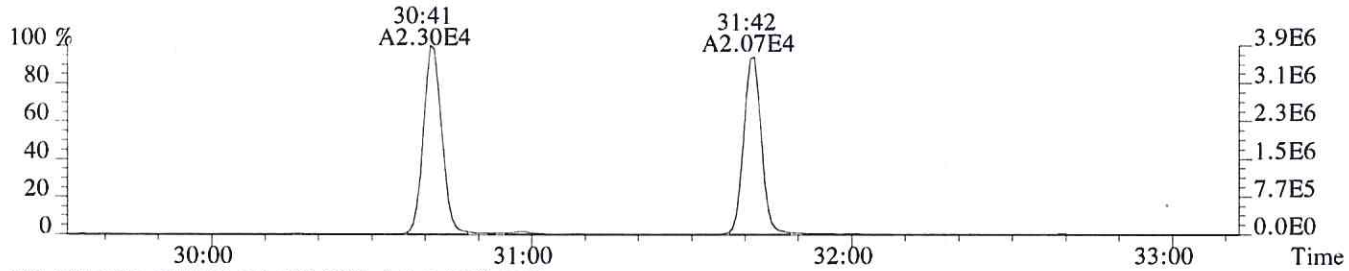
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5048.0,1.00%,F,T)



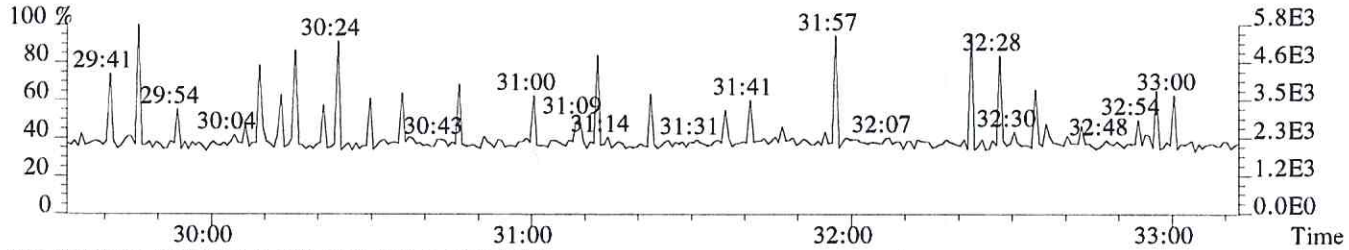
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,812.0,1.00%,F,T)



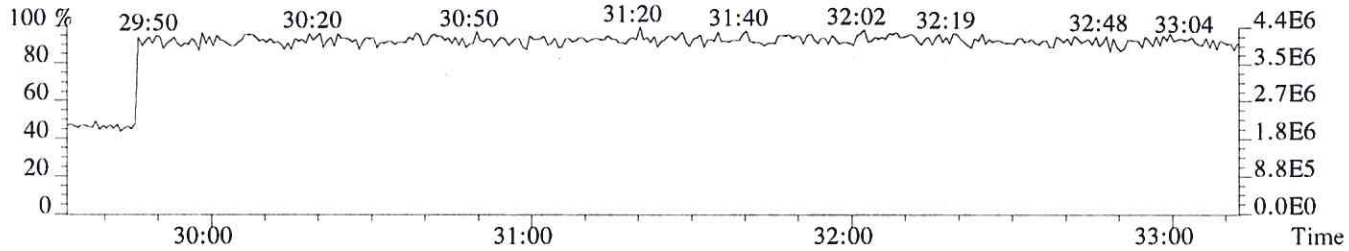
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1084.0,1.00%,F,T)



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

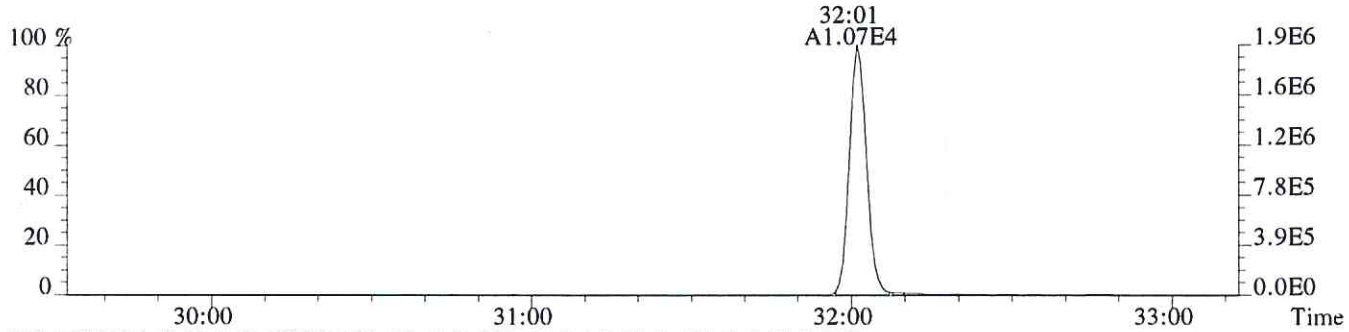


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

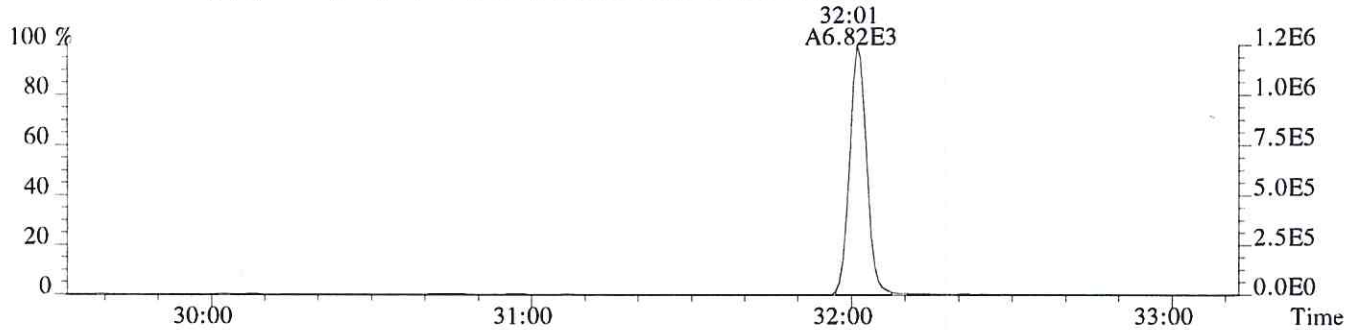


File:P607261 #1-330 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

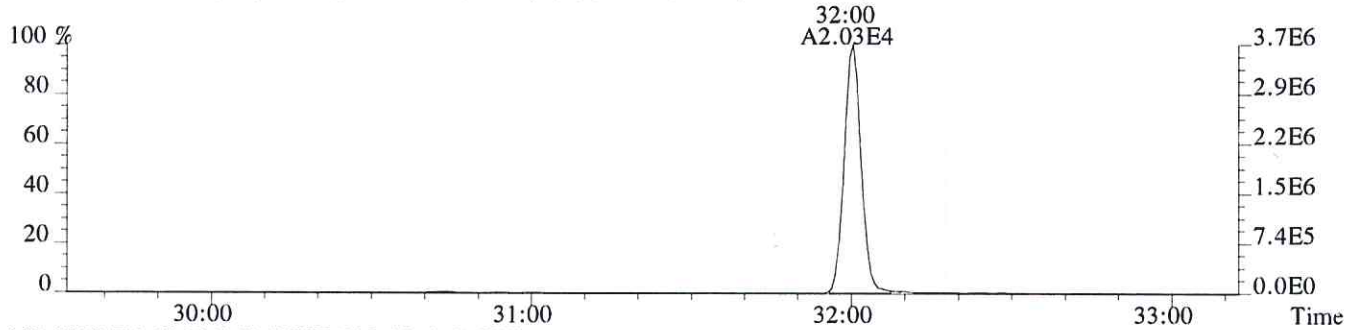
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1016.0,1.00%,F,T)



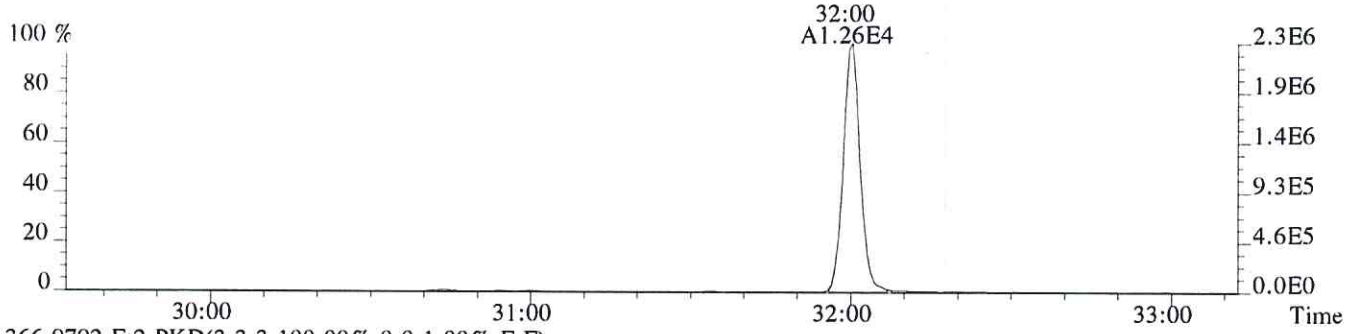
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,180.0,1.00%,F,T)



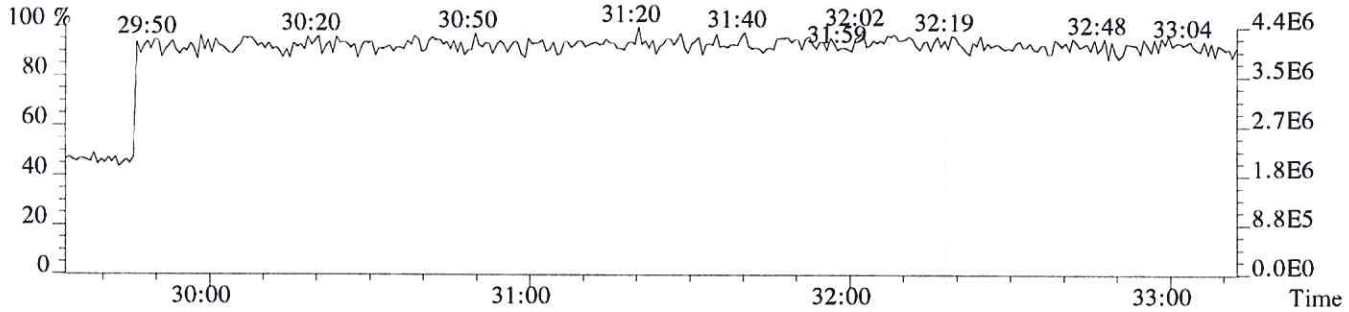
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,320.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,272.0,1.00%,F,T)

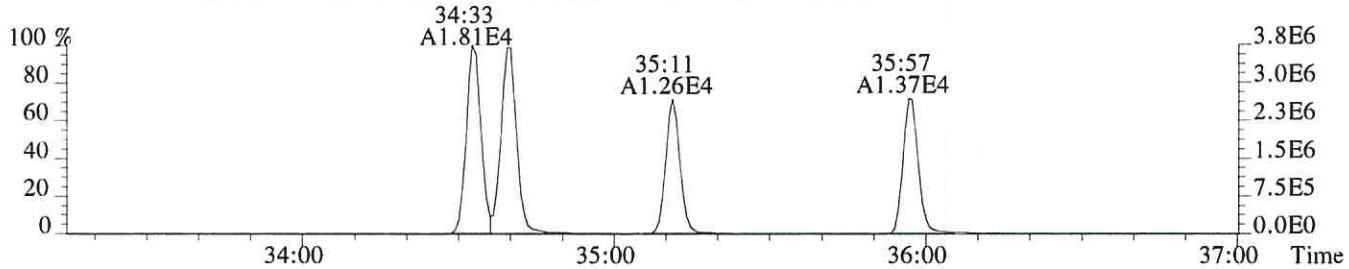


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

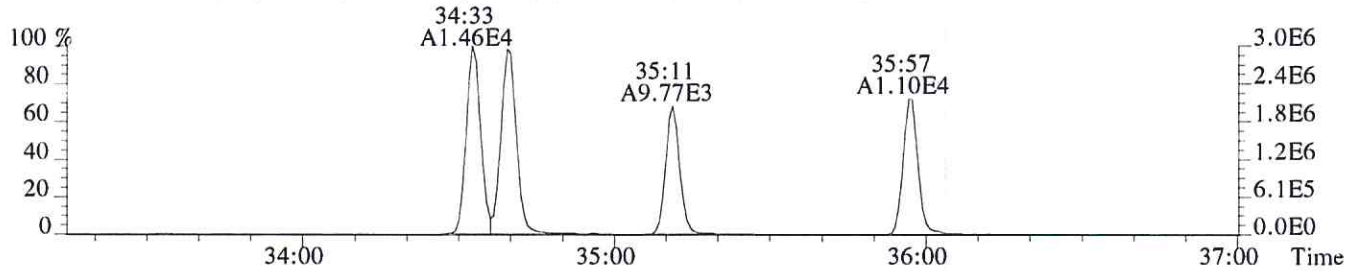


File:P607261 #1-339 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

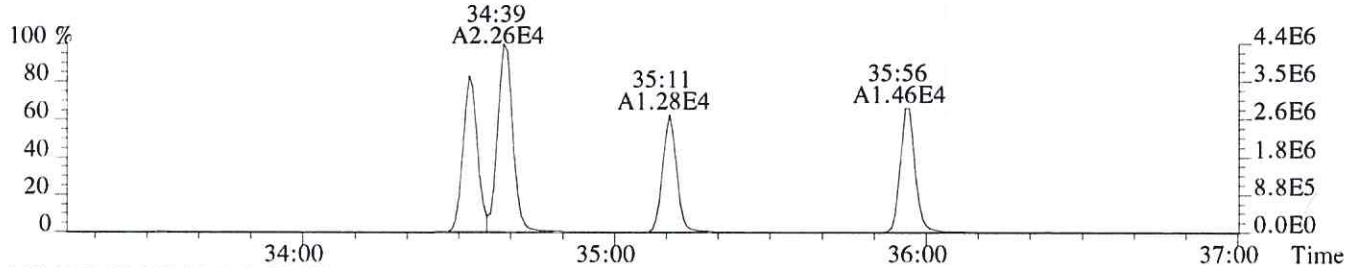
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,244.0,0.40%,F,T)



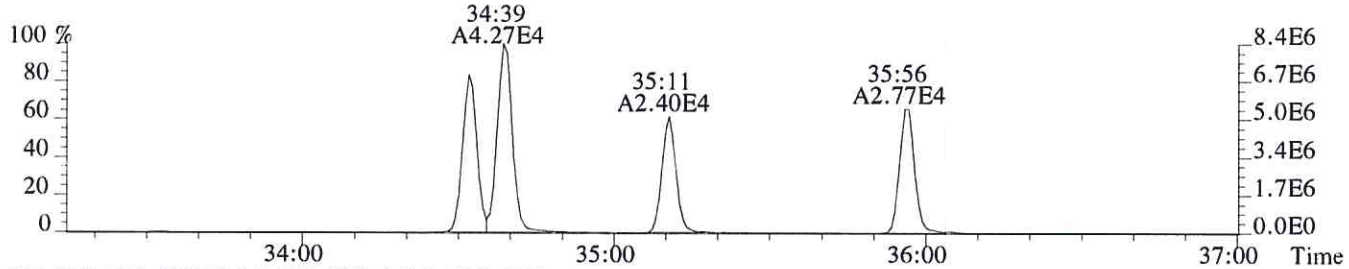
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,184.0,0.40%,F,T)



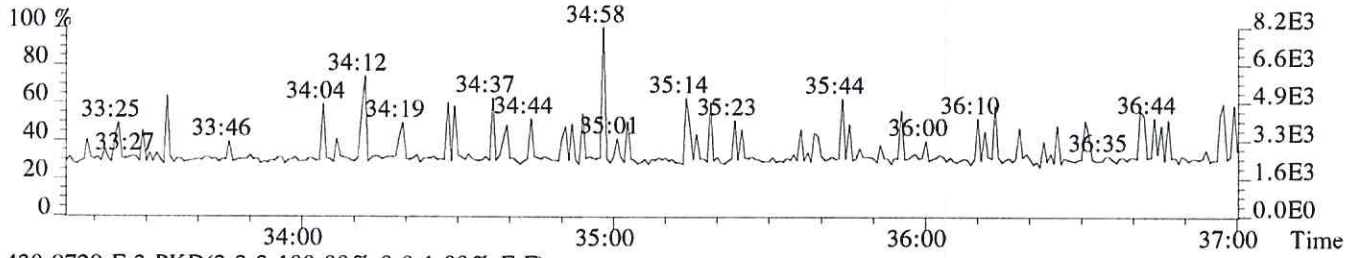
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,792.0,0.40%,F,T)



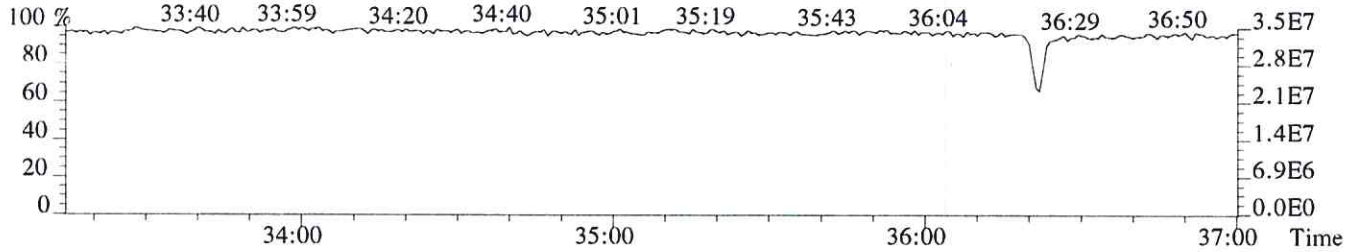
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,280.0,0.40%,F,T)



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

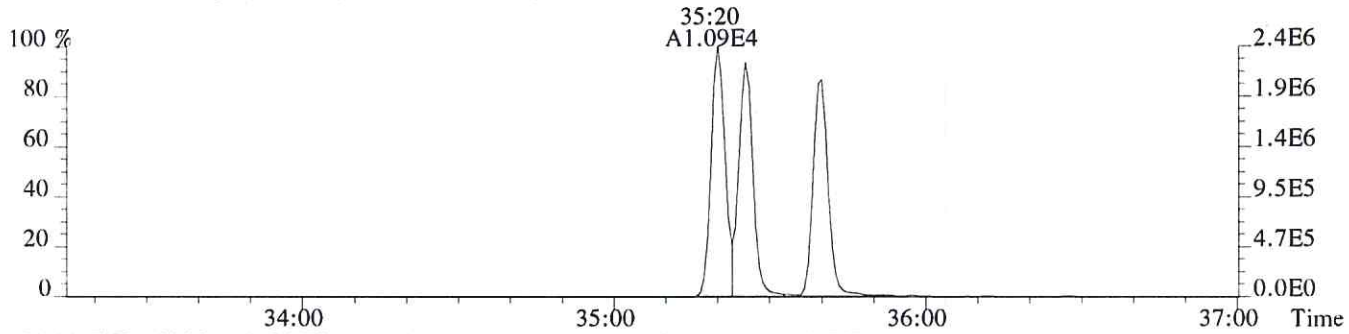


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

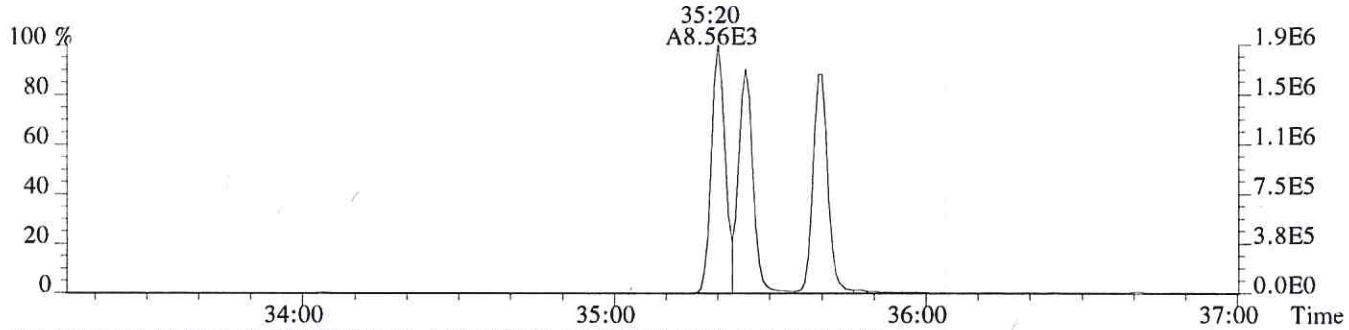


File:P607261 #1-339 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

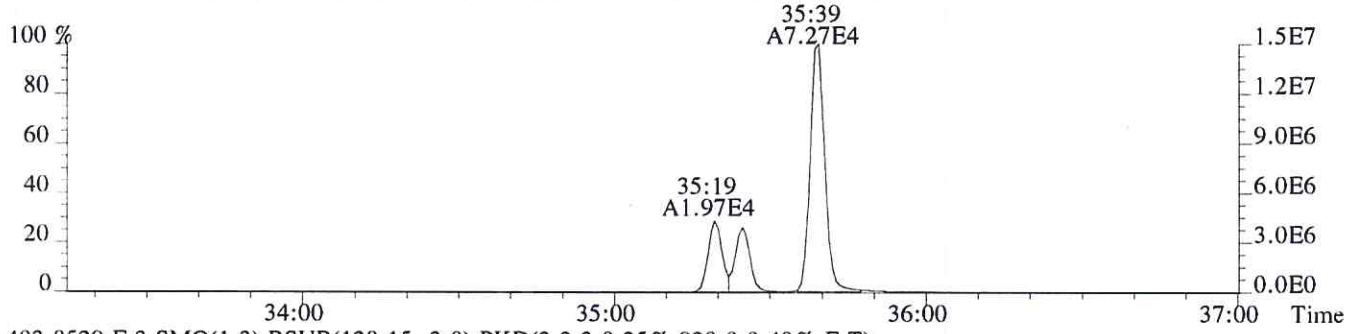
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,216.0,0.40%,F,T)



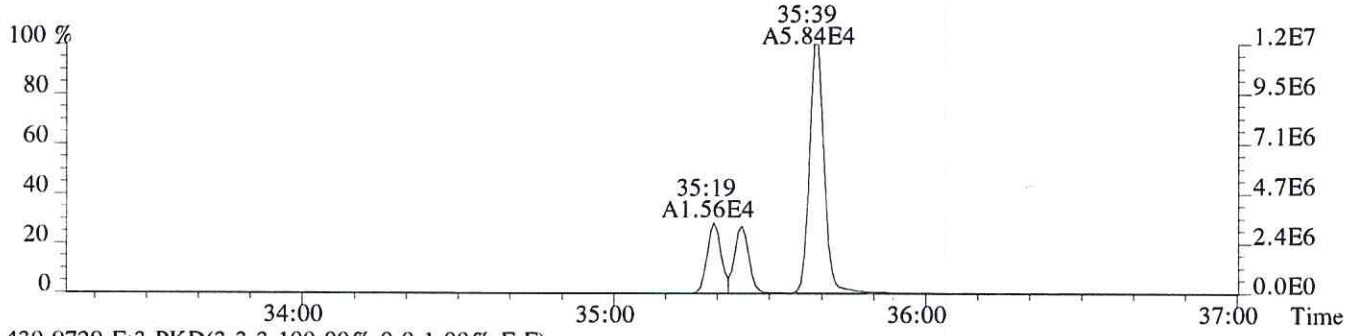
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,196.0,0.40%,F,T)



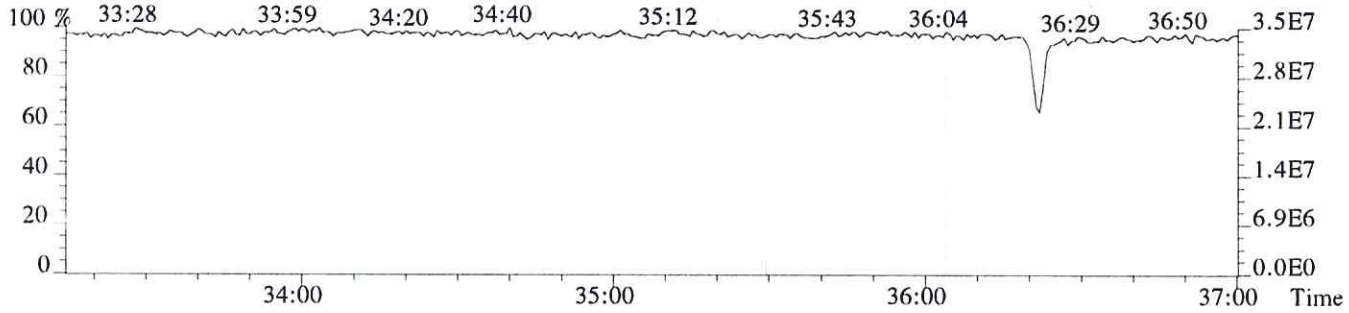
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1676.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,920.0,0.40%,F,T)

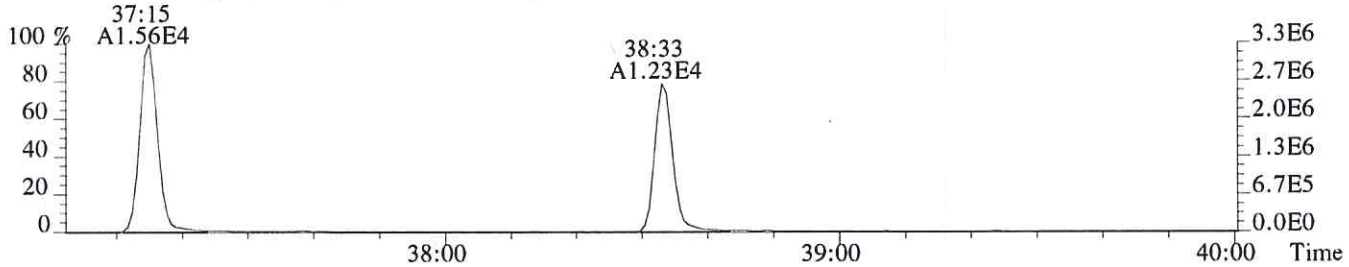


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

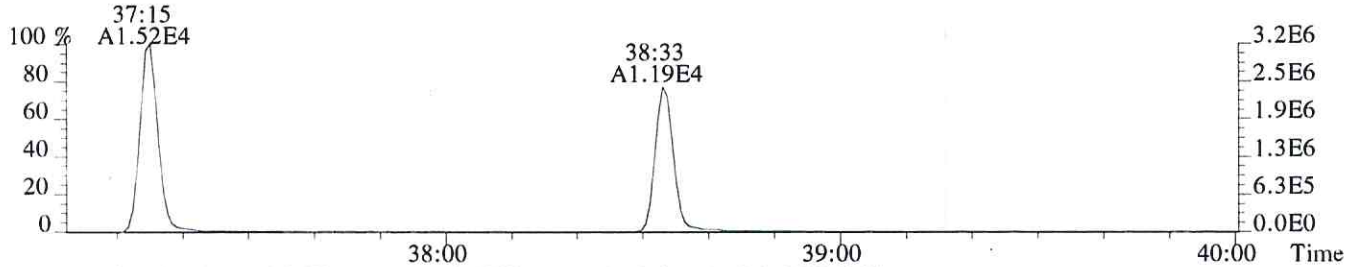


File:P607261 #1-268 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

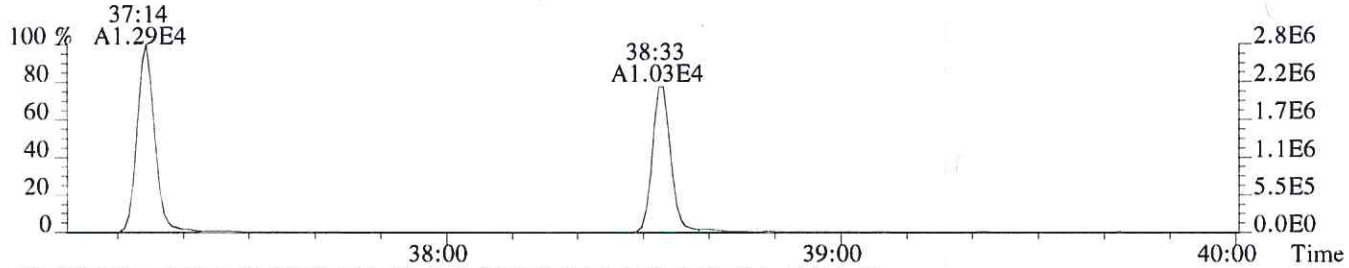
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1888.0,0.50%,F,T)



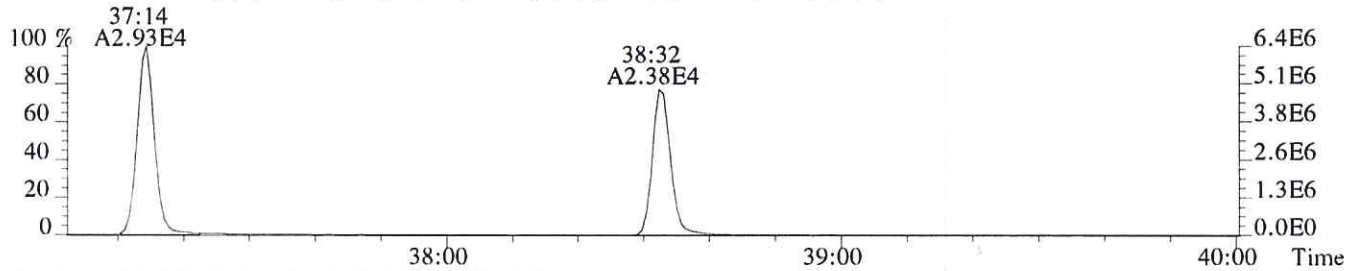
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4628.0,0.50%,F,T)



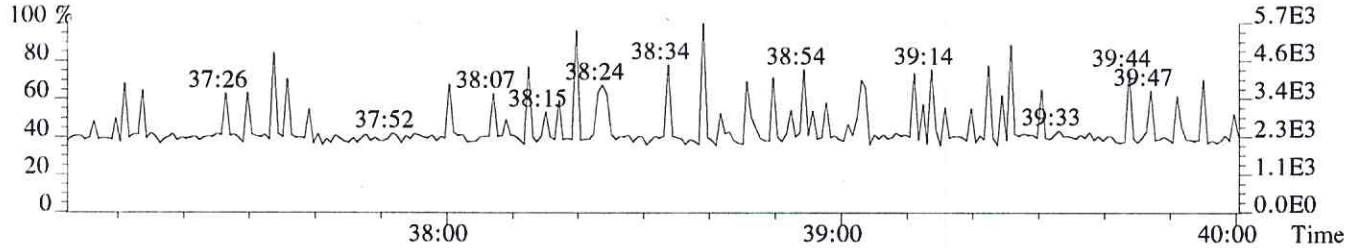
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3144.0,0.50%,F,T)



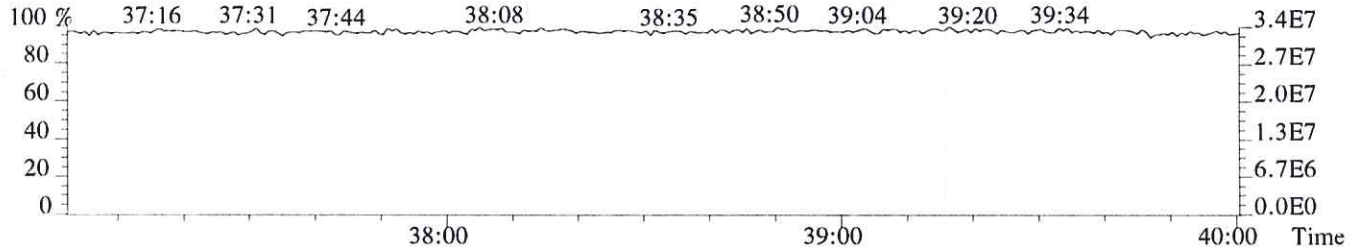
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2464.0,0.50%,F,T)



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

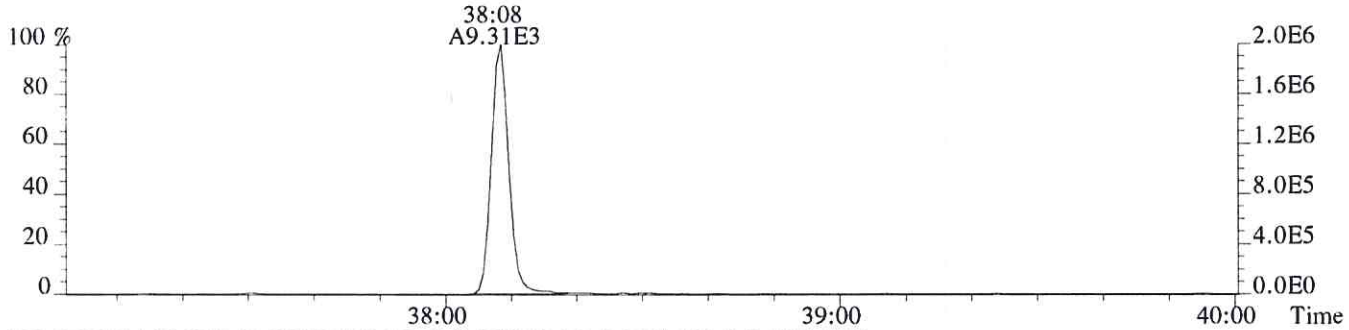


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

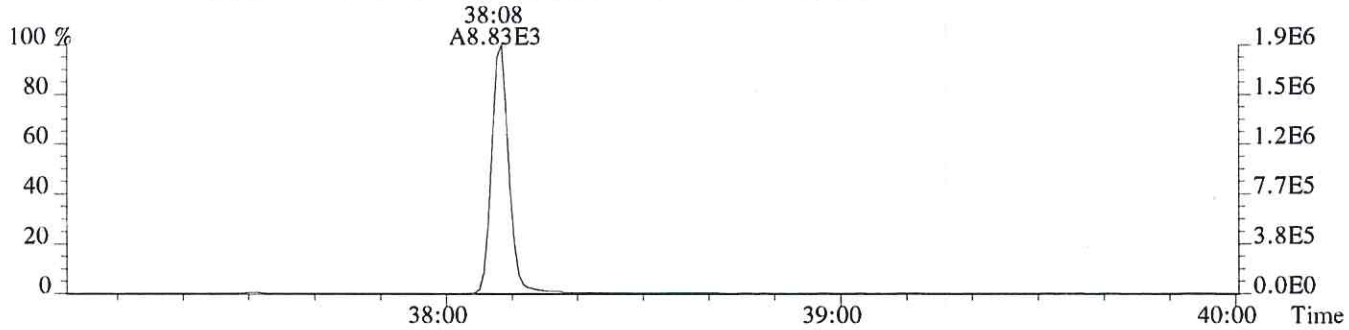


File:P607261 #1-268 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

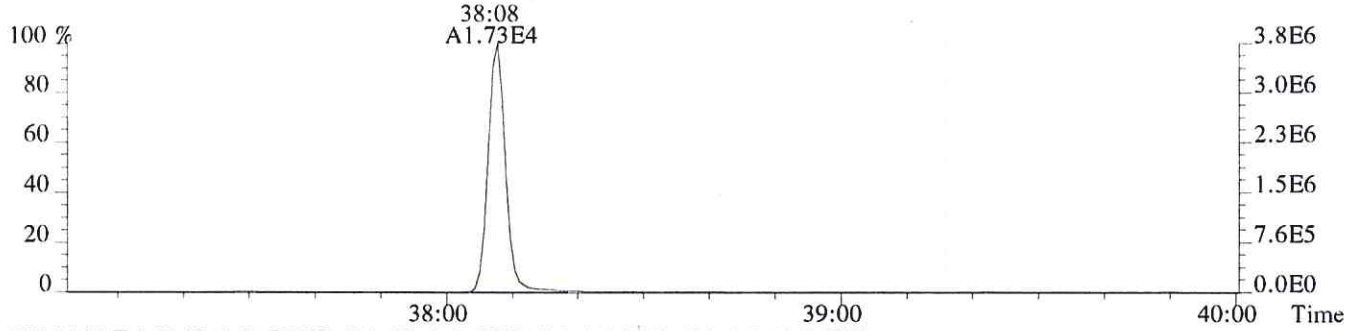
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,232.0,0.40%,F,T)



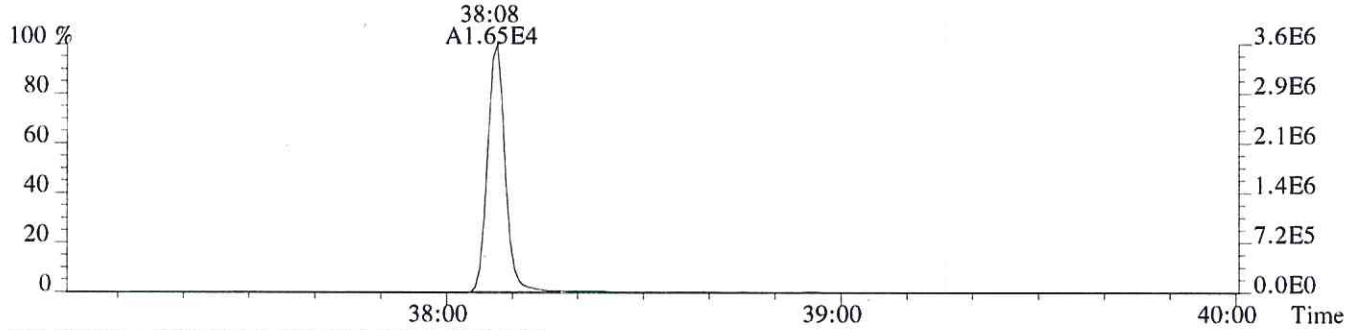
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,180.0,0.40%,F,T)



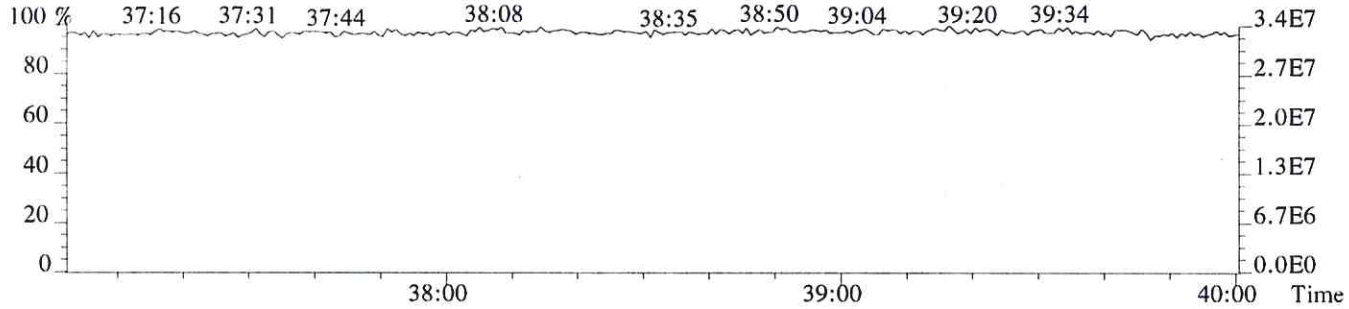
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,368.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,220.0,0.40%,F,T)

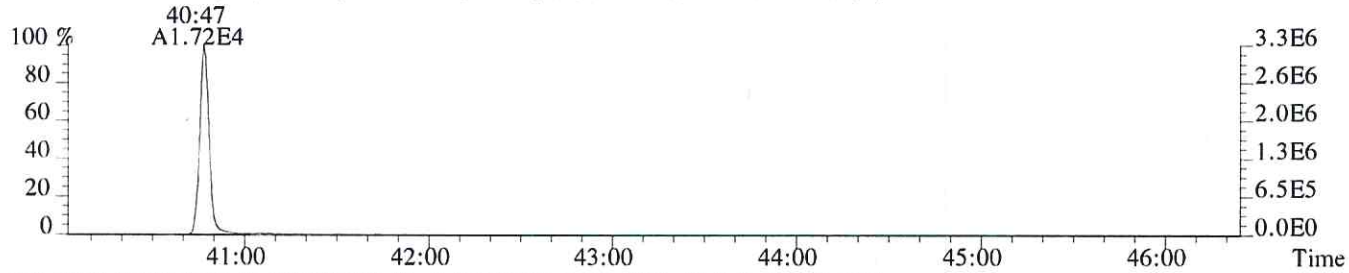


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

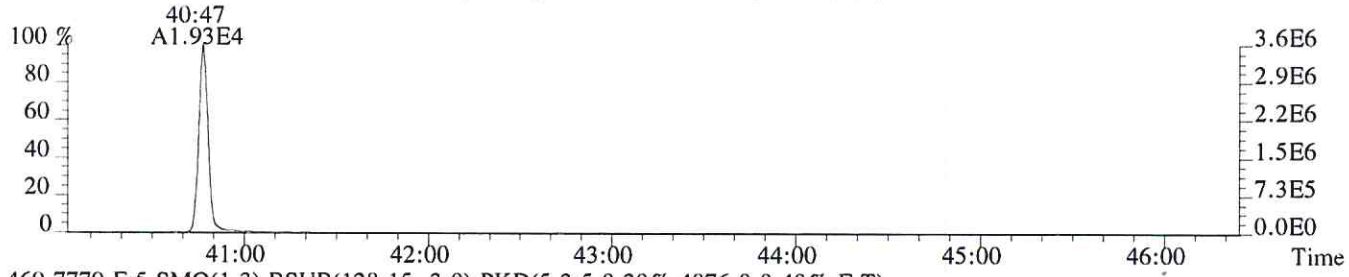


File:P607261 #1-573 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

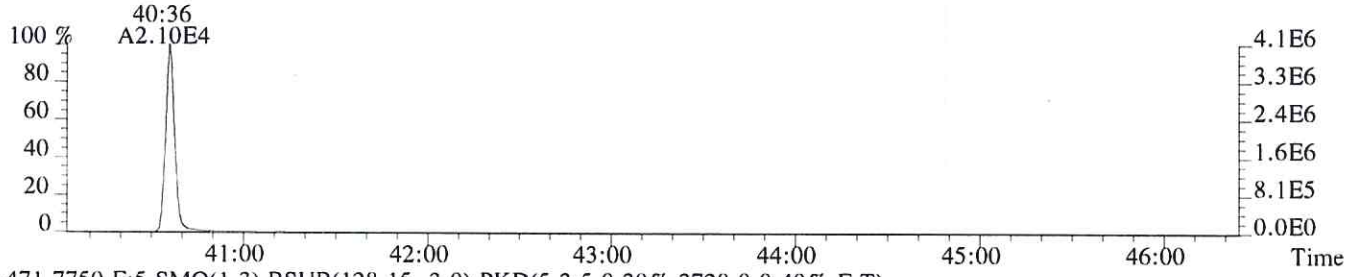
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1348.0,0.40%,F,T)



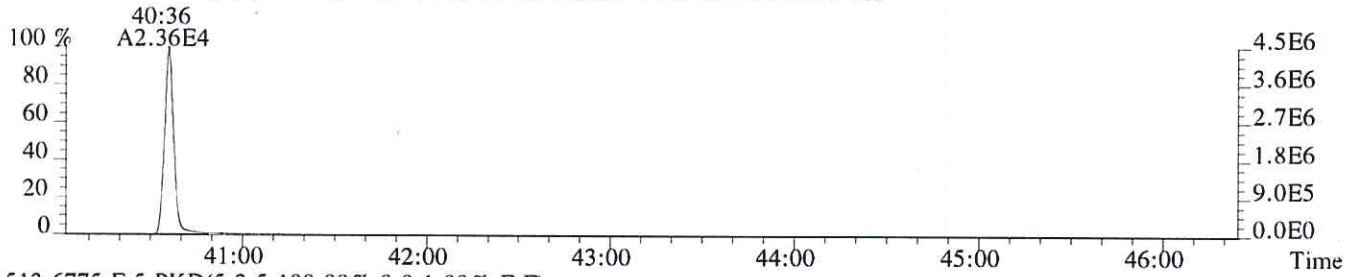
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4268.0,0.40%,F,T)



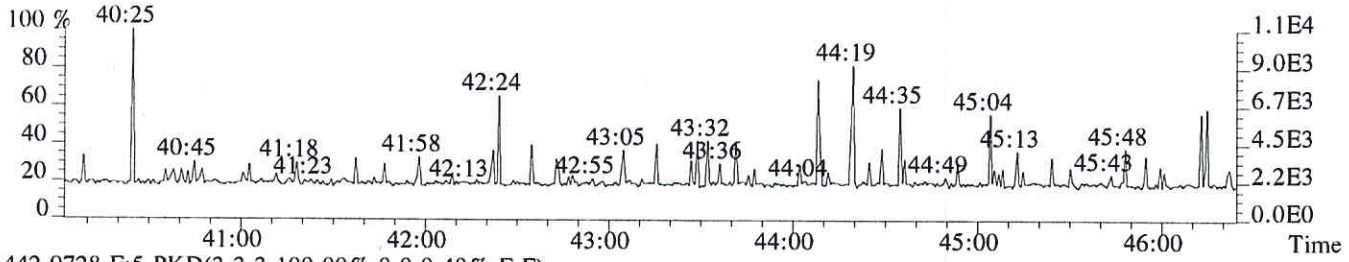
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4876.0,0.40%,F,T)



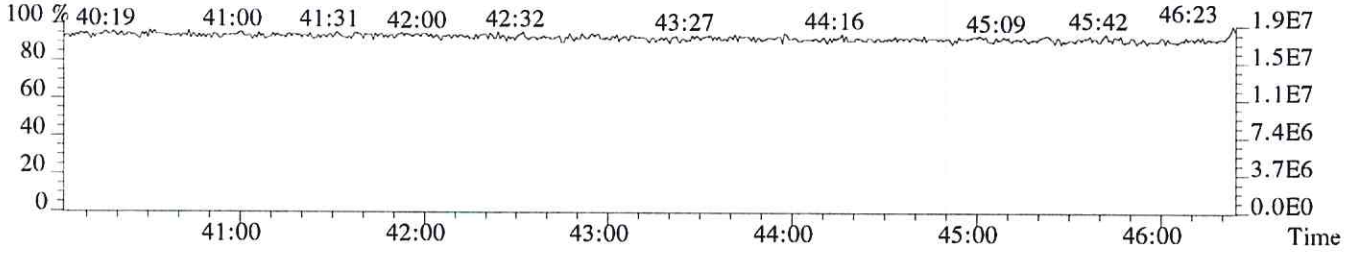
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3728.0,0.40%,F,T)



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

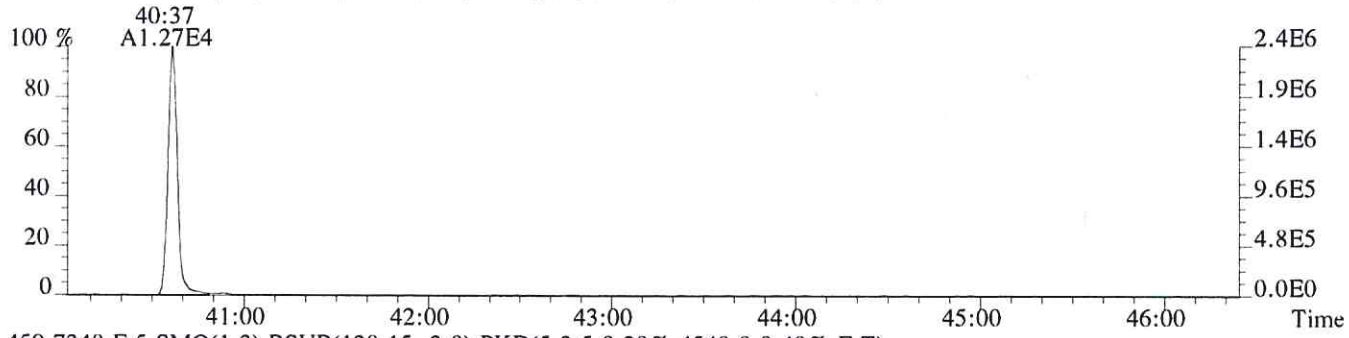


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

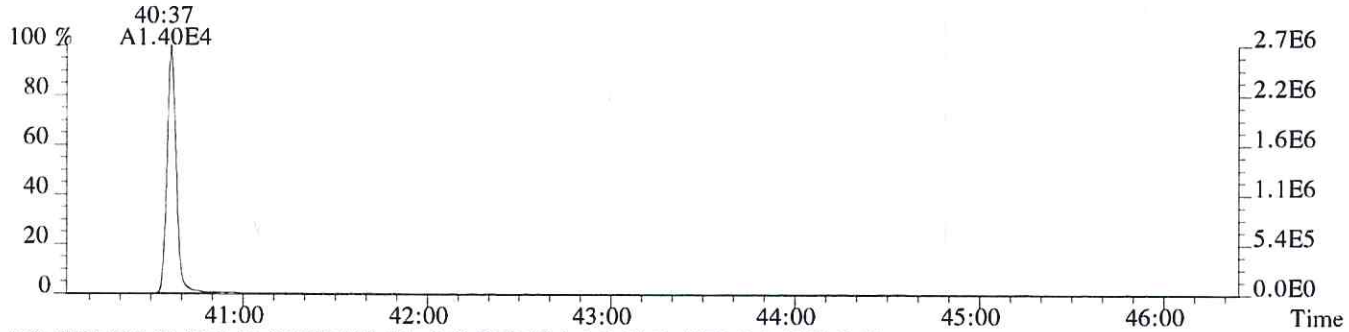


File:P607261 #1-573 Acq:20-MAY-2017 05:28:25 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:LCS

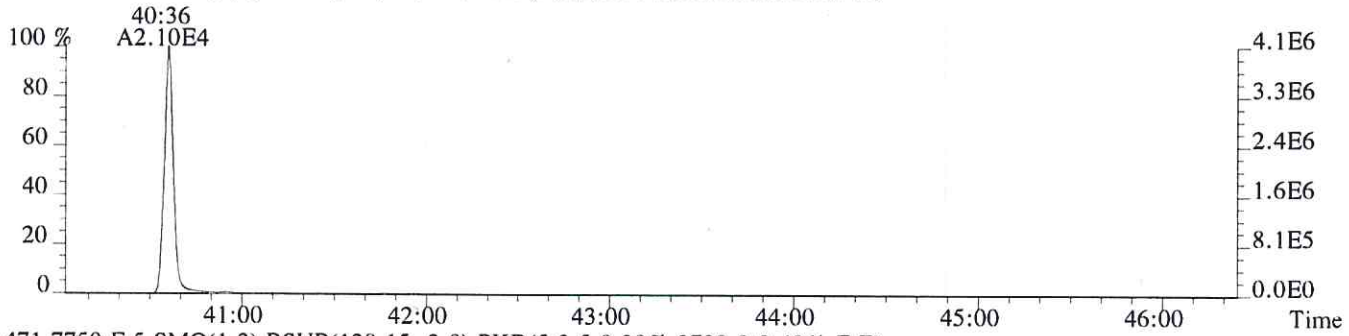
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4016.0,0.40%,F,T)



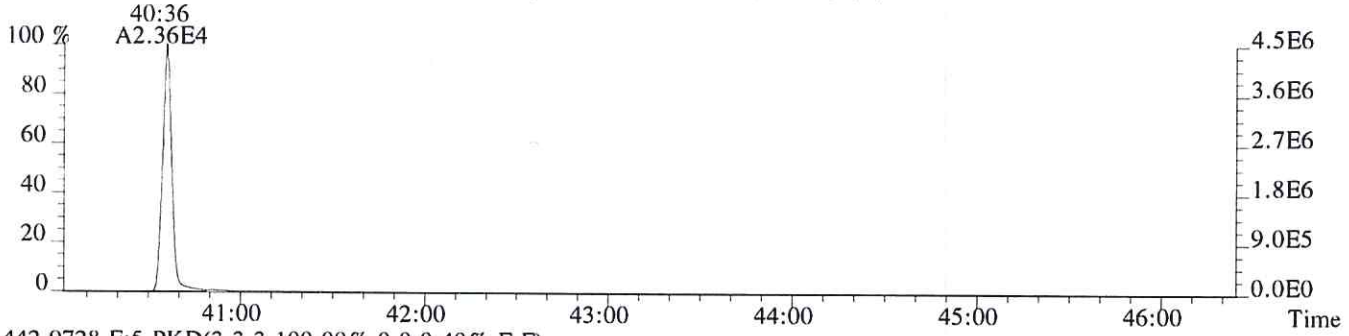
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4540.0,0.40%,F,T)



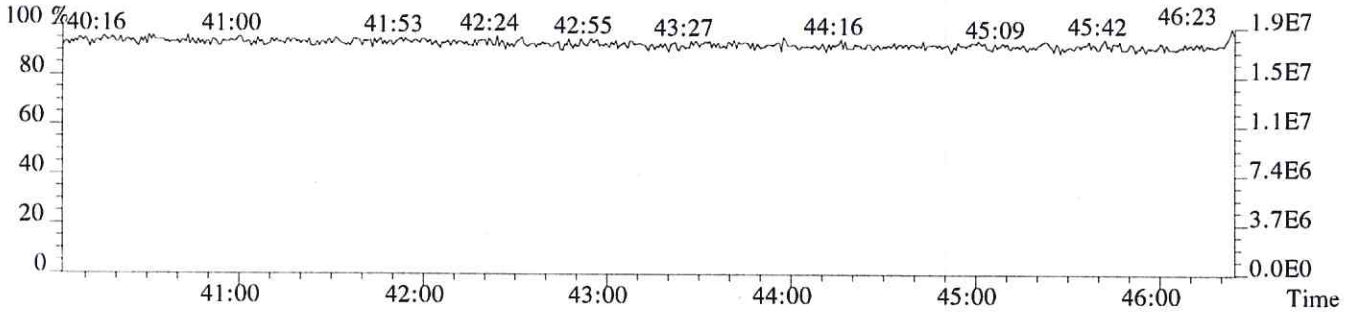
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4876.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3728.0,0.40%,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 #17 Filename P607262 Samp: 1 Inj: 1 Acquired: 20-MAY-17 06:17:28
Processed: 22-MAY-17 16:09:37 Sample ID: EQ1700183-03

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:47	1.427e+03	1.746e+03	0.82	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:42	1.922e+04	1.255e+04	1.53	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:42	1.788e+04	1.137e+04	1.57	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:33	2.206e+04	1.855e+04	1.19	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	2.365e+04	1.910e+04	1.24	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:11	1.838e+04	1.456e+04	1.26	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:57	1.877e+04	1.513e+04	1.24	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:14	2.024e+04	1.922e+04	1.05	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:33	1.614e+04	1.612e+04	1.00	yes	no	1.341
10	Unk	OCDF	40:46	2.340e+04	2.630e+04	0.89	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:47	1.201e+03	1.576e+03	0.76	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:01	1.360e+04	8.832e+03	1.54	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:19	1.454e+04	1.165e+04	1.25	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:25	1.500e+04	1.174e+04	1.28	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:39	1.485e+04	1.197e+04	1.24	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:08	1.311e+04	1.249e+04	1.05	yes	no	1.048
17	Unk	OCDD	40:36	1.828e+04	2.000e+04	0.91	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:46	1.278e+04	1.598e+04	0.80	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:41	3.992e+04	2.508e+04	1.59	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:41	4.301e+04	2.726e+04	1.58	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:32	2.131e+04	3.958e+04	0.54	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:39	2.684e+04	5.141e+04	0.52	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:10	1.856e+04	3.503e+04	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:56	1.952e+04	3.752e+04	0.52	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	1.652e+04	3.669e+04	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	1.406e+04	3.170e+04	0.44	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:45	7.054e+03	8.907e+03	0.79	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	31:60	2.541e+04	1.618e+04	1.57	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	2.575e+04	2.046e+04	1.26	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:24	2.665e+04	2.123e+04	1.26	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:07	2.332e+04	2.175e+04	1.07	yes	no	0.884
32	IS	13C-OCDD	40:35	2.910e+04	3.212e+04	0.91	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:03	4.752e+04	5.981e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:39	7.565e+04	6.011e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:47	1.320e+04				no	1.072

$$\text{OCDD} = \frac{(1.828e+04 + 2.000e+04\ ) \times 4000\ \text{pg} \times 1}{(2.910e+04 + 3.212e+04) \times \quad \text{g} \times \quad / 100 \times 1.120} =$$

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

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
DLCS

Run #17 Filename P607262 Samp: 1 Inj: 1 Acquired: 20-MAY-17 06:17:28
Processed: 22-MAY-17 16:09:37 LAB. ID: EQ1700183-03

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.00e+05	2.16e+02	9.3e+02	2.35e+05	2.12e+02	1.1e+03
2	1,2,3,7,8-PeCDF	3.23e+06	2.32e+02	1.4e+04	2.09e+06	2.48e+03	8.4e+02
3	2,3,4,7,8-PeCDF	3.16e+06	2.32e+02	1.4e+04	2.02e+06	2.48e+03	8.1e+02
4	1,2,3,4,7,8-HxCDF	4.37e+06	1.00e+02	4.4e+04	3.66e+06	2.44e+02	1.5e+04
5	1,2,3,6,7,8-HxCDF	4.70e+06	1.00e+02	4.7e+04	3.82e+06	2.44e+02	1.6e+04
6	2,3,4,6,7,8-HxCDF	3.76e+06	1.00e+02	3.8e+04	3.02e+06	2.44e+02	1.2e+04
7	1,2,3,7,8,9-HxCDF	3.88e+06	1.00e+02	3.9e+04	3.08e+06	2.44e+02	1.3e+04
8	1,2,3,4,6,7,8-HpCDF	4.26e+06	4.27e+03	1.0e+03	4.04e+06	2.73e+03	1.5e+03
9	1,2,3,4,7,8,9-HpCDF	3.43e+06	4.27e+03	8.0e+02	3.38e+06	2.73e+03	1.2e+03
10	OCDF	4.24e+06	1.54e+03	2.8e+03	4.97e+06	3.96e+03	1.3e+03
11	2,3,7,8-TCDD	1.93e+05	1.17e+03	1.6e+02	2.36e+05	2.20e+02	1.1e+03
12	1,2,3,7,8-PeCDD	2.46e+06	1.15e+03	2.1e+03	1.64e+06	2.96e+02	5.5e+03
13	1,2,3,4,7,8-HxCDD	3.16e+06	2.00e+02	1.6e+04	2.57e+06	2.16e+02	1.2e+04
14	1,2,3,6,7,8-HxCDD	2.97e+06	2.00e+02	1.5e+04	2.34e+06	2.16e+02	1.1e+04
15	1,2,3,7,8,9-HxCDD	3.04e+06	2.00e+02	1.5e+04	2.47e+06	2.16e+02	1.1e+04
16	1,2,3,4,6,7,8-HpCDD	2.89e+06	3.04e+02	9.5e+03	2.77e+06	1.96e+02	1.4e+04
17	OCDD	3.40e+06	4.13e+03	8.2e+02	3.71e+06	4.00e+03	9.3e+02
18	13C-2,3,7,8-TCDF	1.78e+06	8.41e+03	2.1e+02	2.22e+06	4.96e+03	4.5e+02
19	13C-1,2,3,7,8-PeCDF	6.81e+06	1.83e+03	3.7e+03	4.21e+06	1.26e+03	3.4e+03
20	13C-2,3,4,7,8-PeCDF	7.66e+06	1.83e+03	4.2e+03	4.96e+06	1.26e+03	4.0e+03
21	13C-1,2,3,4,7,8-HxCDF	4.16e+06	1.68e+02	2.5e+04	7.96e+06	1.00e+03	8.0e+03
22	13C-1,2,3,6,7,8-HxCDF	5.29e+06	1.68e+02	3.1e+04	1.00e+07	1.00e+03	1.0e+04
23	13C-2,3,4,6,7,8-HxCDF	3.89e+06	1.68e+02	2.3e+04	7.42e+06	1.00e+03	7.4e+03
24	13C-1,2,3,7,8,9-HxCDF	3.97e+06	1.68e+02	2.4e+04	7.73e+06	1.00e+03	7.7e+03
25	13C-1,2,3,4,6,7,8-HpCDF	3.51e+06	2.61e+03	1.3e+03	7.88e+06	2.64e+03	3.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.99e+06	2.61e+03	1.1e+03	6.81e+06	2.64e+03	2.6e+03
27	13C-2,3,7,8-TCDD	1.07e+06	7.30e+03	1.5e+02	1.34e+06	3.33e+03	4.0e+02
28	13C-1,2,3,7,8-PeCDD	4.71e+06	3.28e+02	1.4e+04	2.93e+06	2.36e+02	1.2e+04
29	13C-1,2,3,4,7,8-HxCDD	5.60e+06	1.63e+03	3.4e+03	4.44e+06	1.12e+03	4.0e+03
30	13C-1,2,3,6,7,8-HxCDD	5.35e+06	1.63e+03	3.3e+03	4.27e+06	1.12e+03	3.8e+03
31	13C-1,2,3,4,6,7,8-HpCDD	5.19e+06	1.56e+02	3.3e+04	4.81e+06	1.88e+02	2.6e+04
32	13C-OCDD	5.36e+06	5.46e+03	9.8e+02	6.03e+06	2.81e+03	2.1e+03
33	13C-1,2,3,4-TCDD	6.97e+06	7.30e+03	9.6e+02	8.68e+06	3.33e+03	2.6e+03
34	13C-1,2,3,7,8,9-HxCDD	1.57e+07	1.63e+03	9.6e+03	1.24e+07	1.12e+03	1.1e+04
35	37Cl-2,3,7,8-TCDD	2.04e+06	1.64e+03	1.2e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.172e{+}03 + 2.200e{+}02) \times 2000}{(1.066e{+}06 + 1.338e{+}06) \times (\qquad) \times 1.055} =$$

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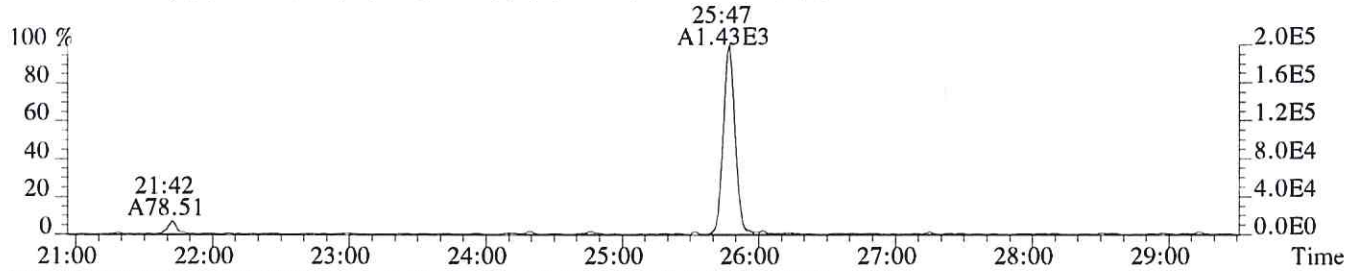
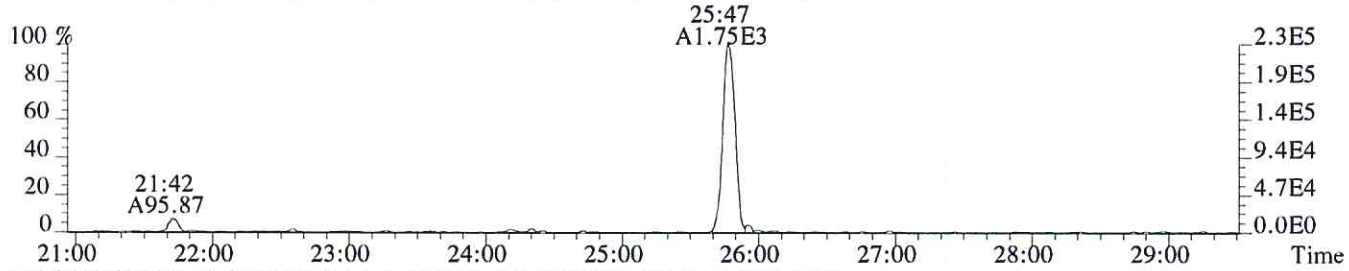
File:P607262 #1-609 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

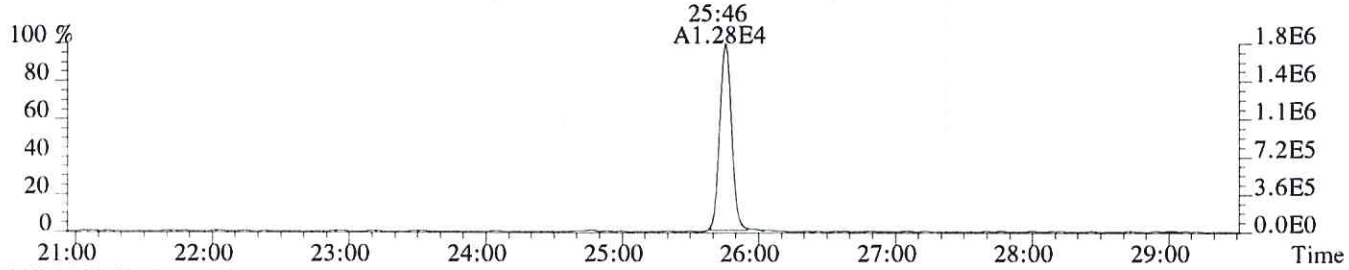
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,216.0,1.00%,F,T)



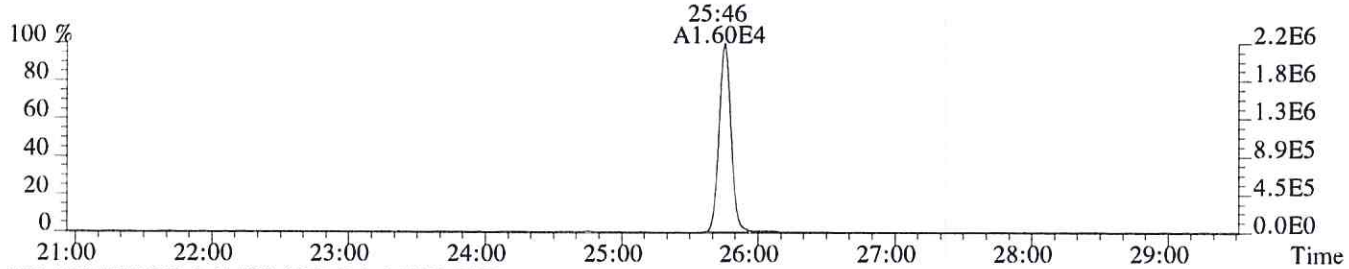
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,212.0,1.00%,F,T)



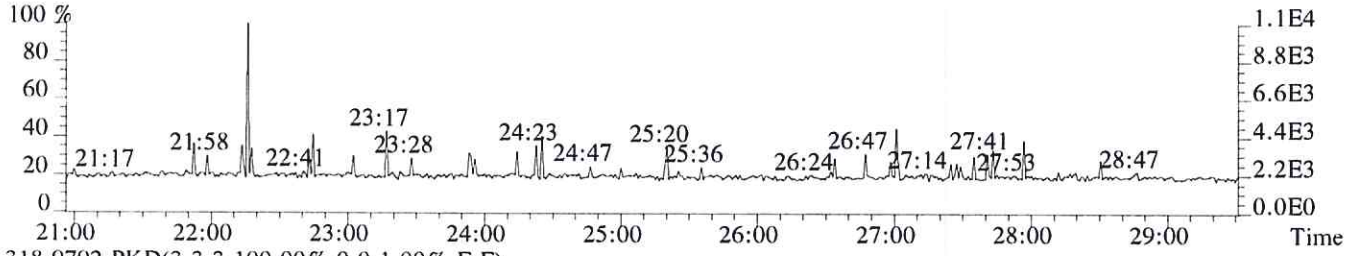
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8412.0,1.00%,F,T)



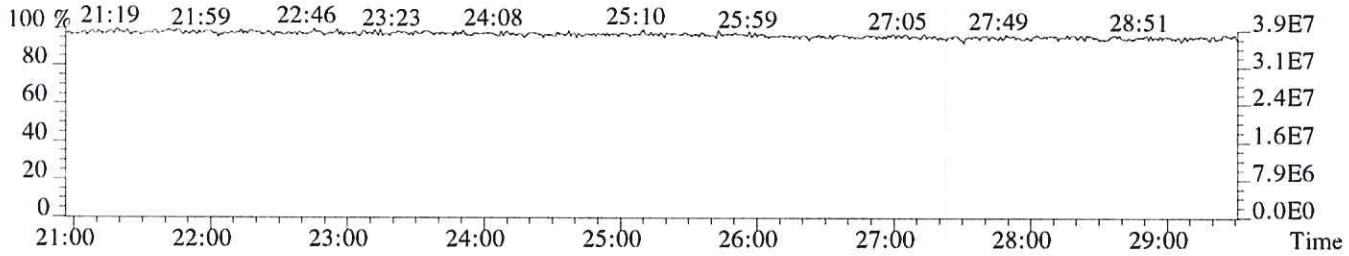
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4956.0,1.00%,F,T)



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

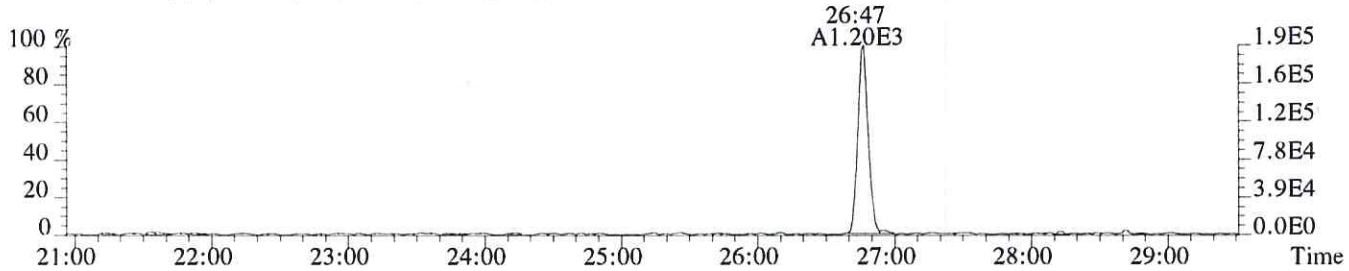


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

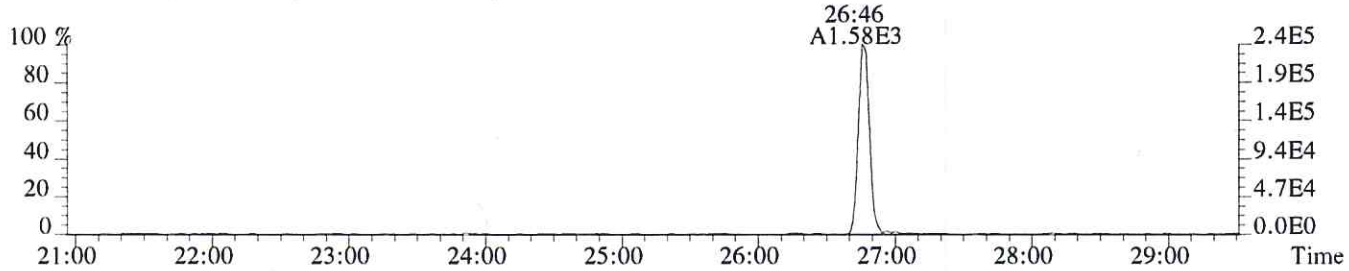


File:P607262 #1-609 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

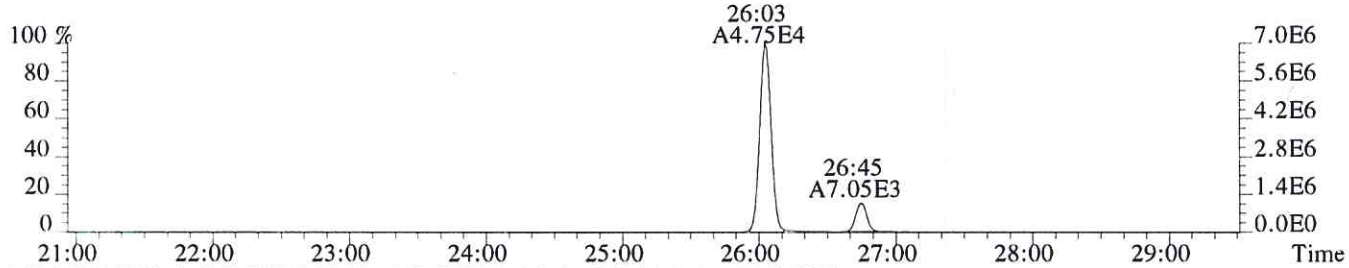
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1172.0,1.00%,F,T)



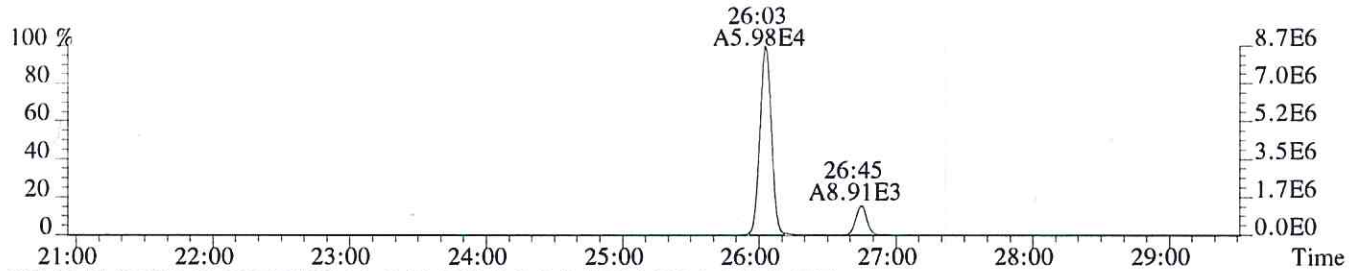
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,220.0,1.00%,F,T)



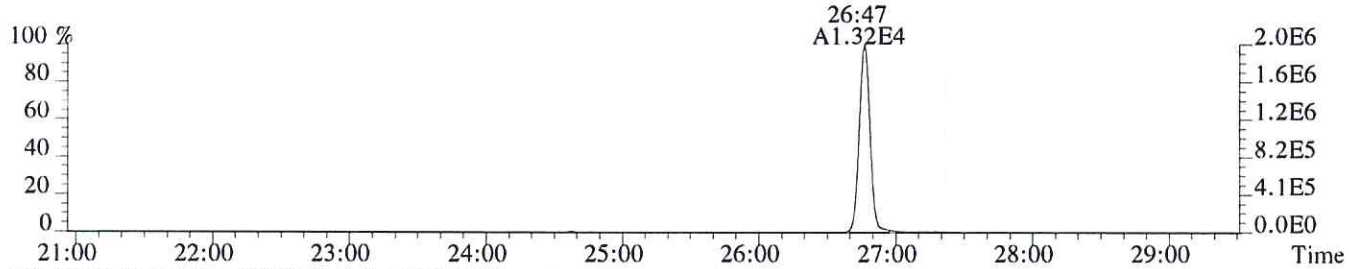
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7296.0,1.00%,F,T)



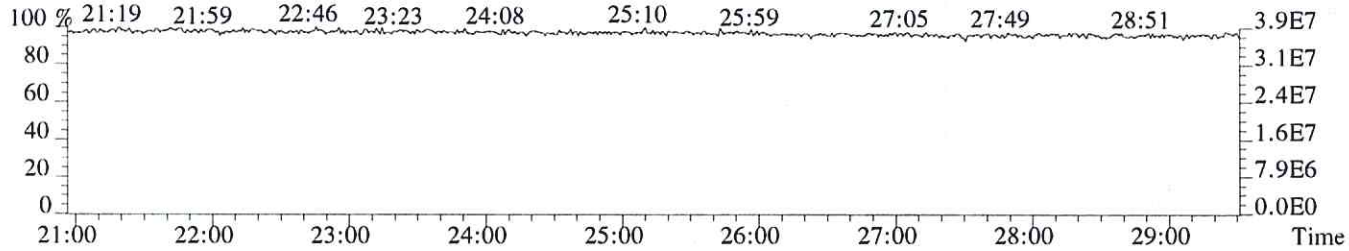
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3328.0,1.00%,F,T)



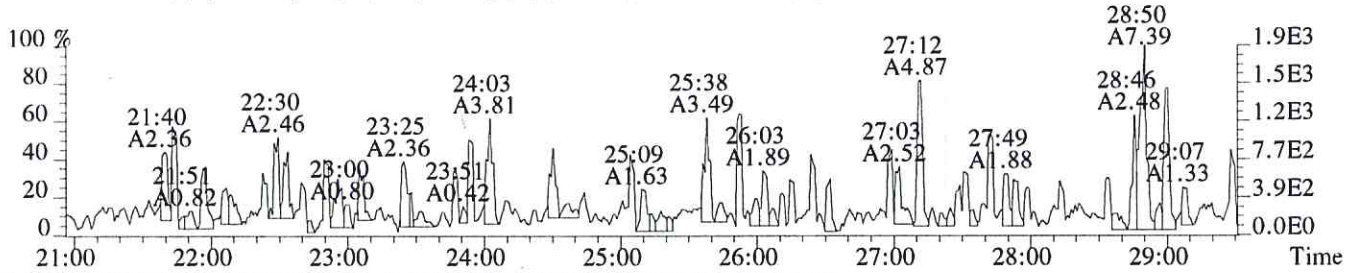
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1636.0,1.00%,F,T)



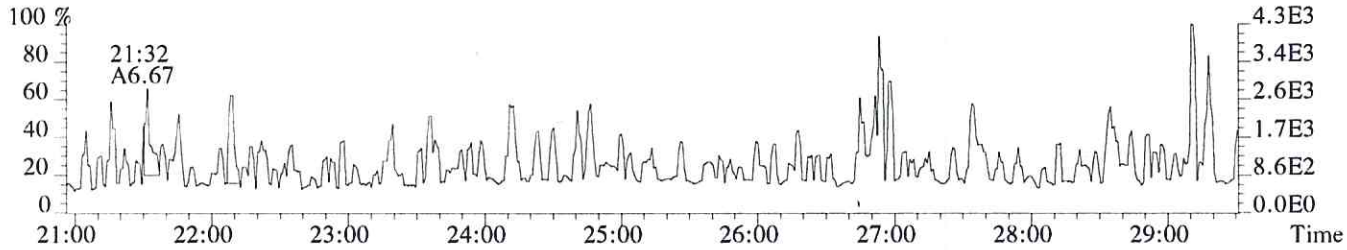
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



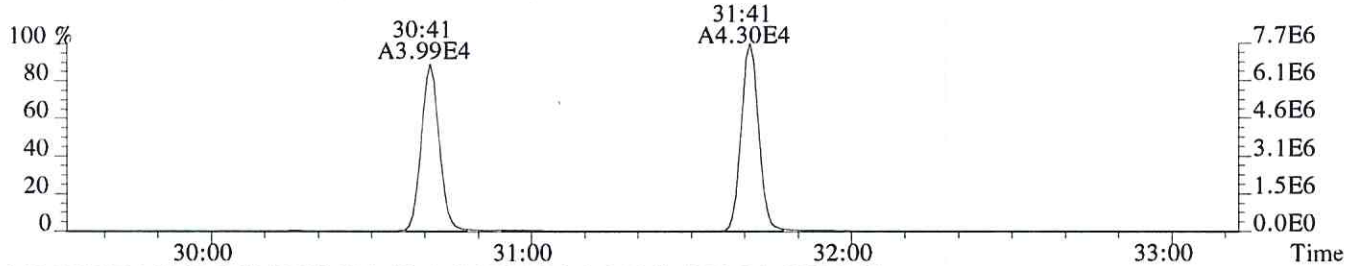
File:P607262 #1-609 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,272.0,1.00%,F,T)



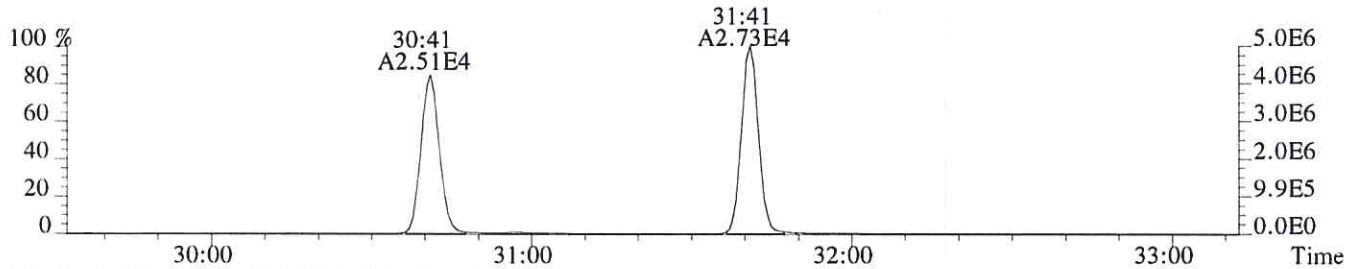
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1264.0,1.00%,F,T)



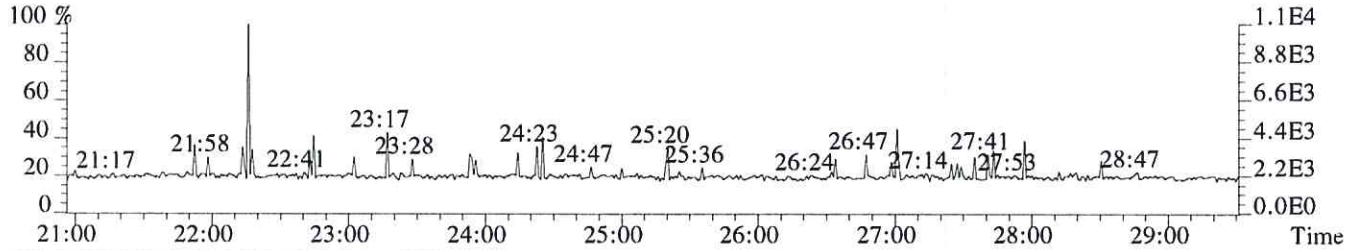
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1832.0,1.00%,F,T)



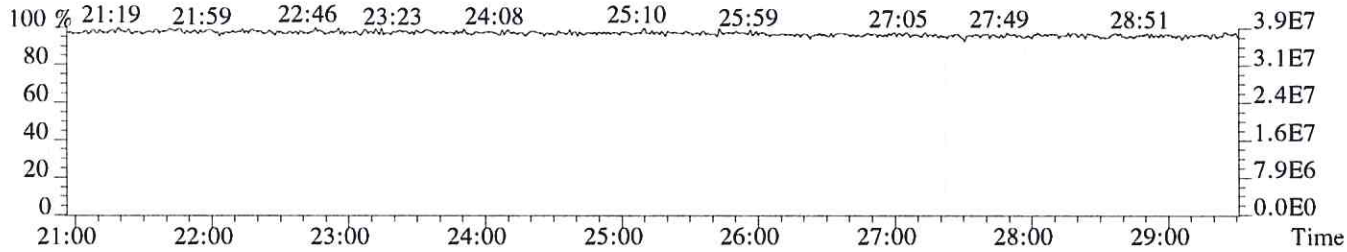
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1256.0,1.00%,F,T)



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

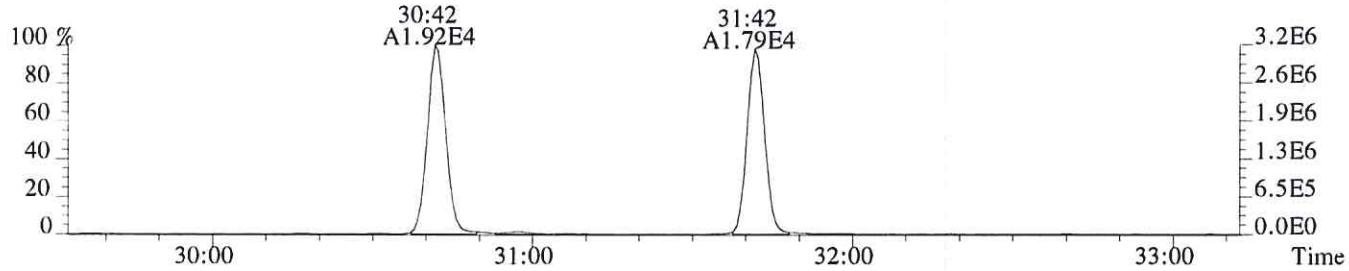


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

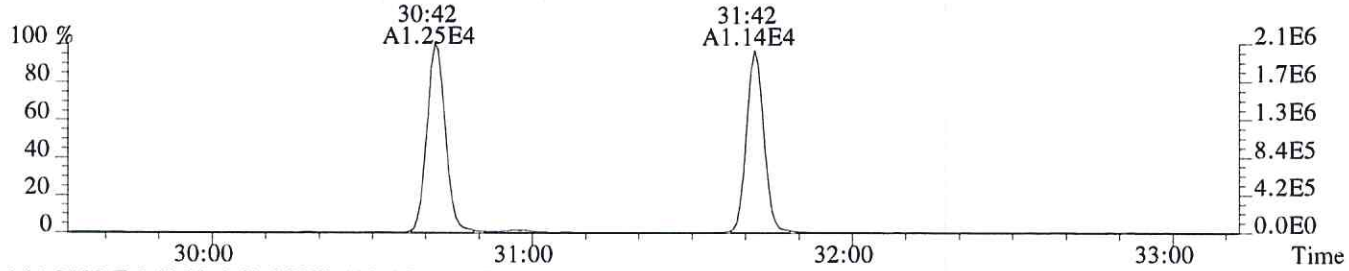


File:P607262 #1-330 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

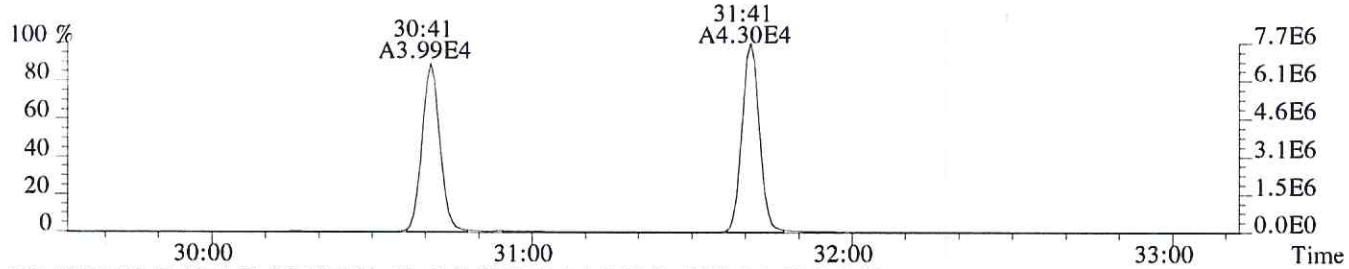
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,232.0,1.00%,F,T)



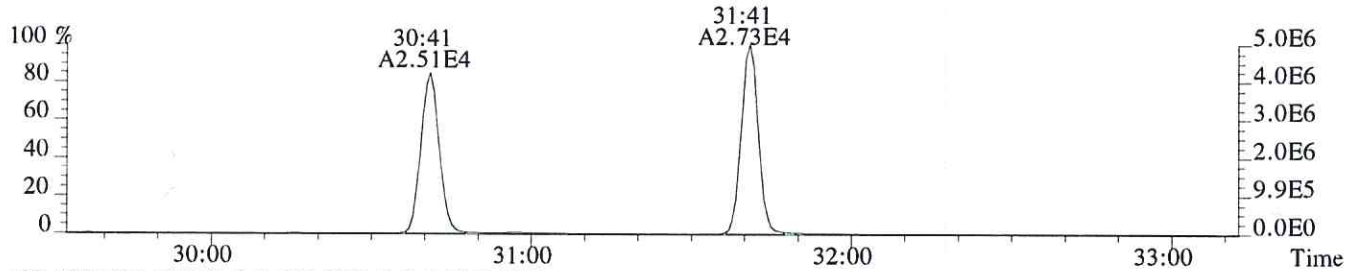
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2484.0,1.00%,F,T)



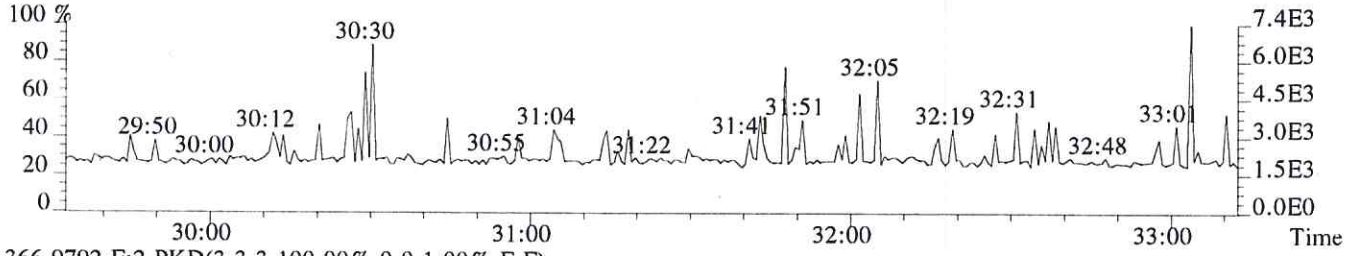
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1832.0,1.00%,F,T)



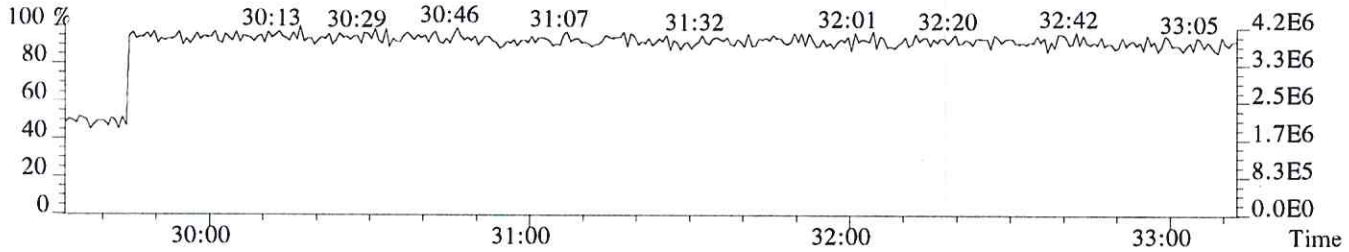
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1256.0,1.00%,F,T)



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

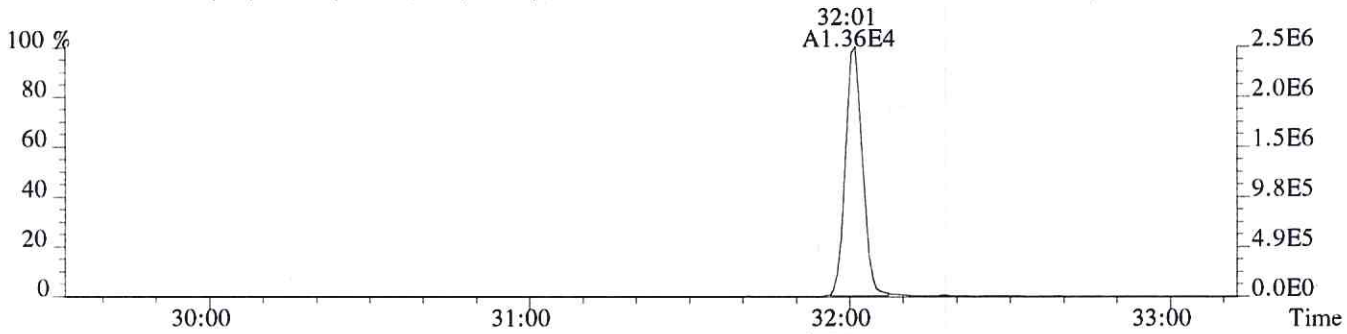


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

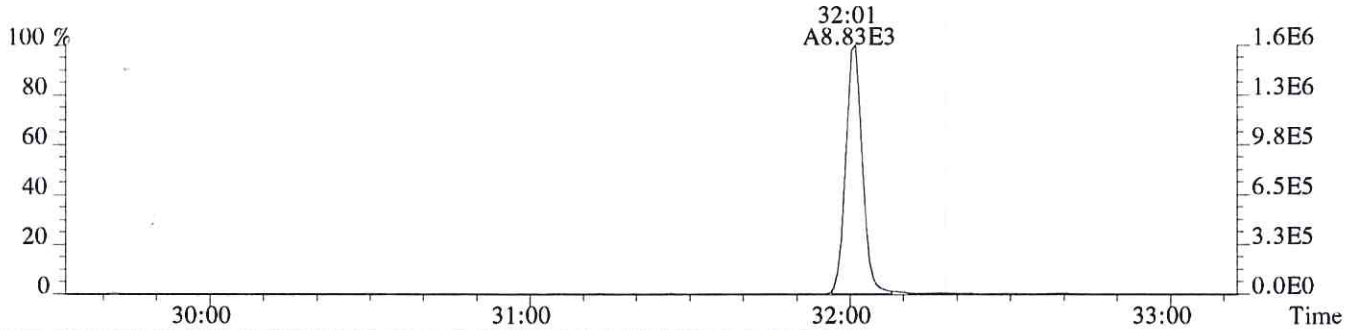


File:P607262 #1-330 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

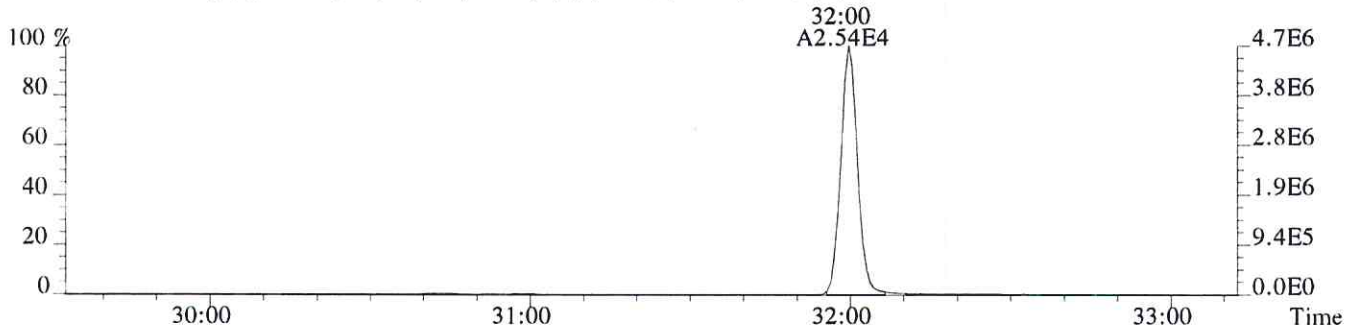
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1148.0,1.00%,F,T)



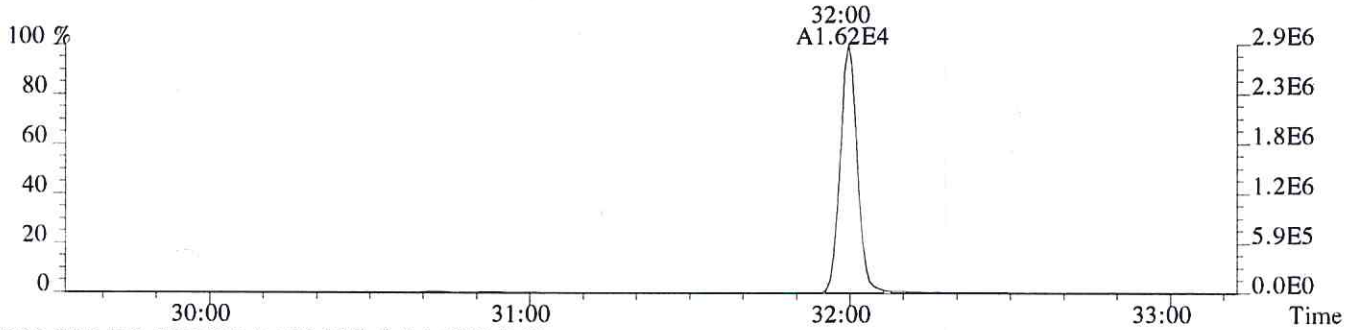
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,296.0,1.00%,F,T)



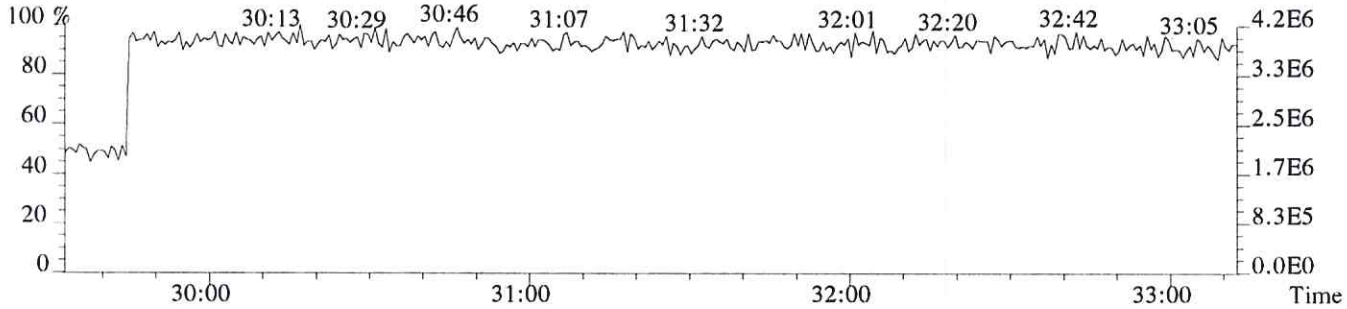
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,328.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,236.0,1.00%,F,T)

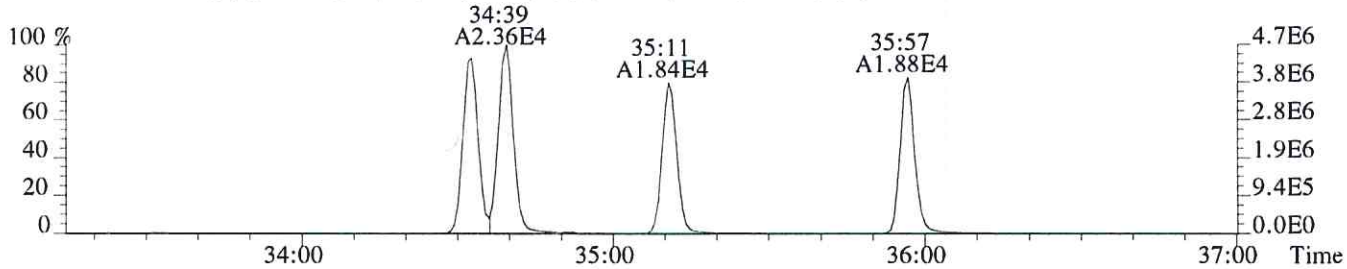


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

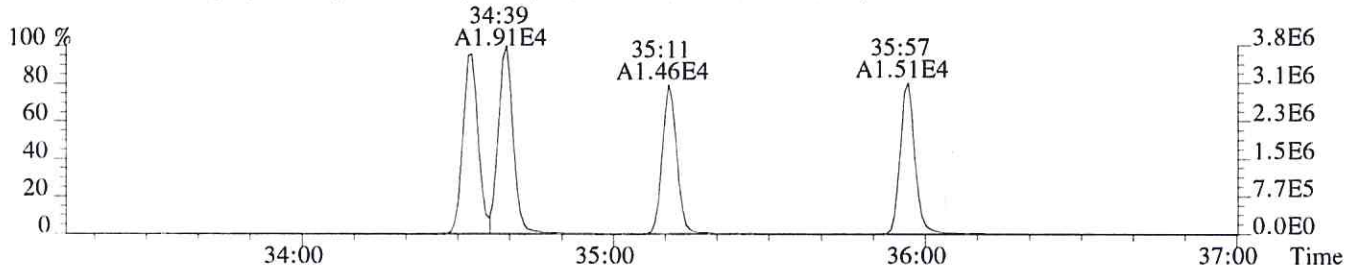


File:P607262 #1-339 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

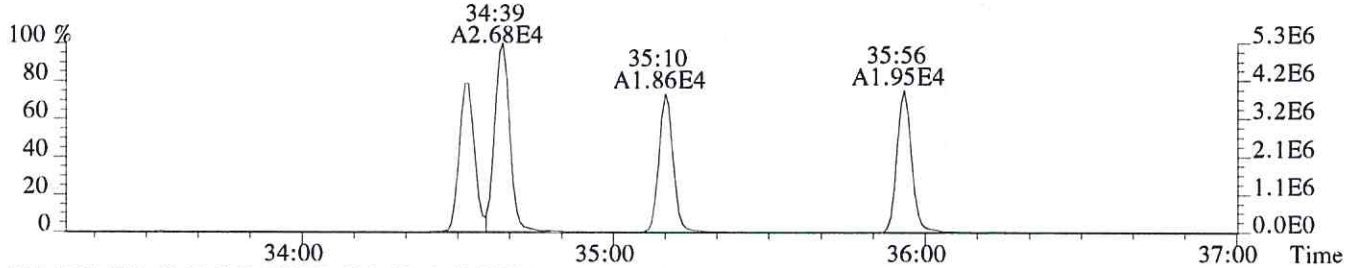
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,100.0,0.40%,F,T)



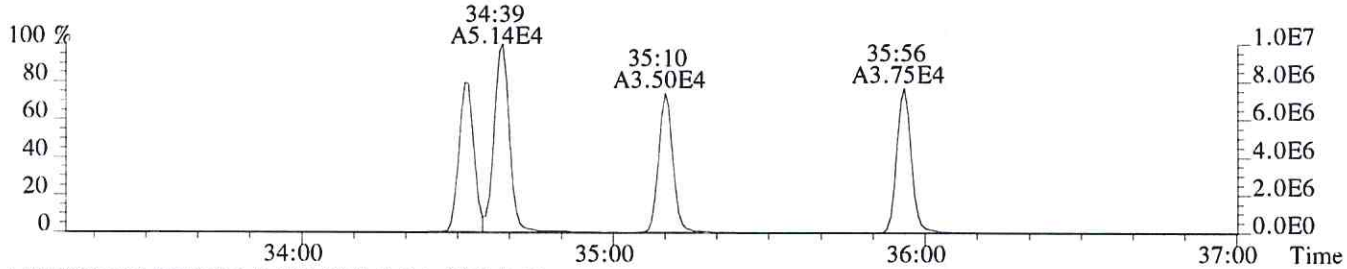
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,244.0,0.40%,F,T)



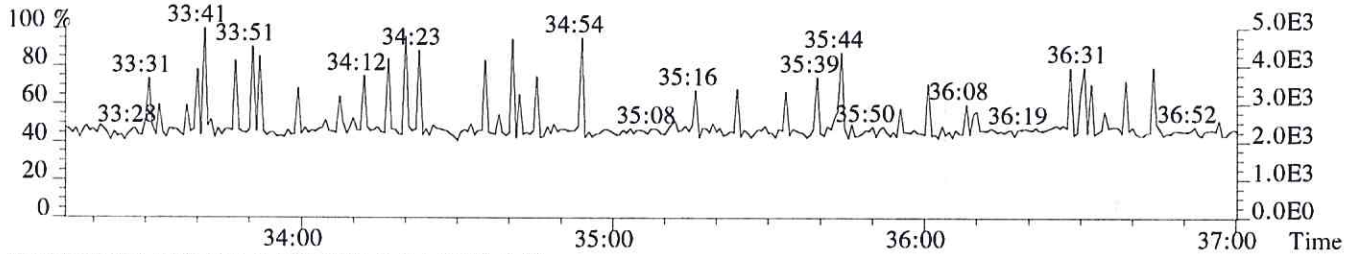
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,168.0,0.40%,F,T)



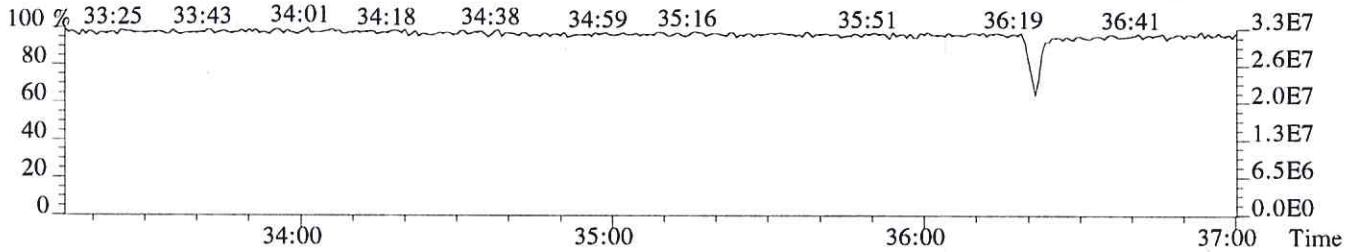
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1000.0,0.40%,F,T)



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

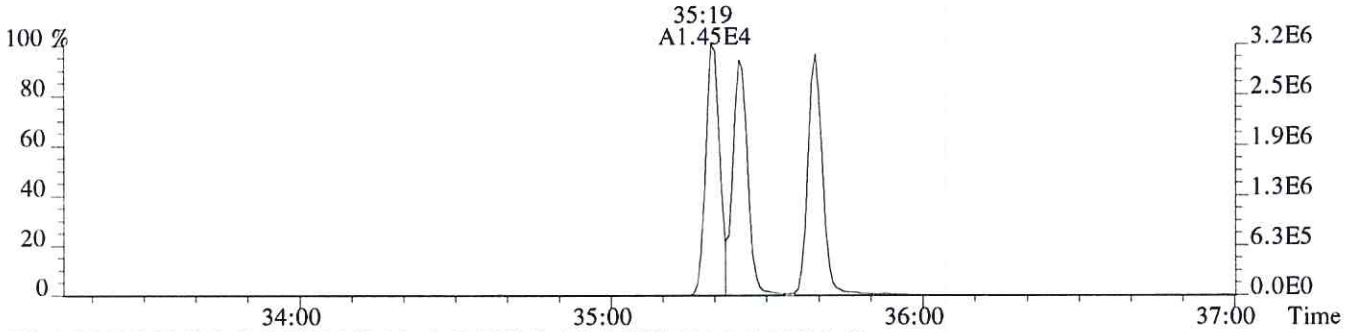


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

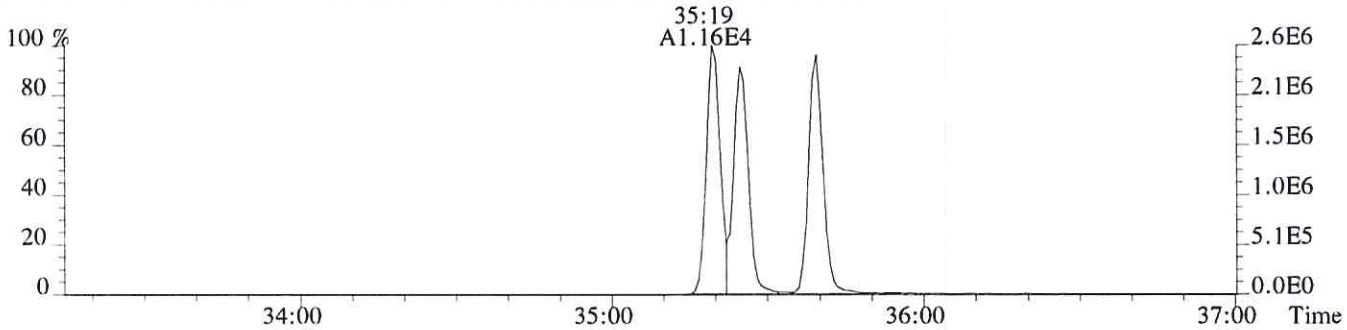


File:P607262 #1-339 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

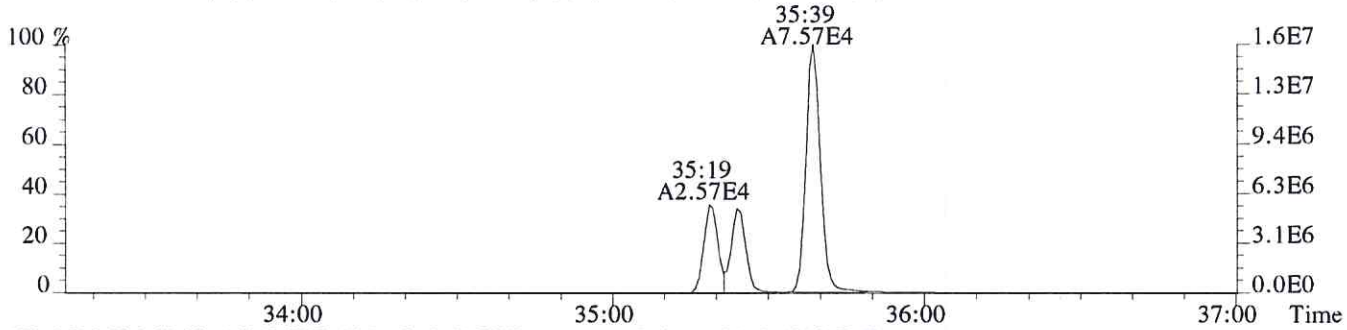
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,200.0,0.40%,F,T)



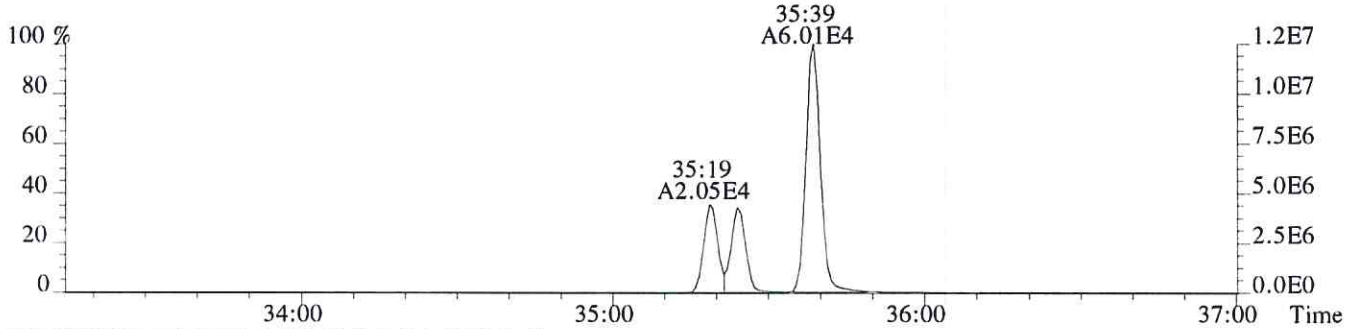
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,216.0,0.40%,F,T)



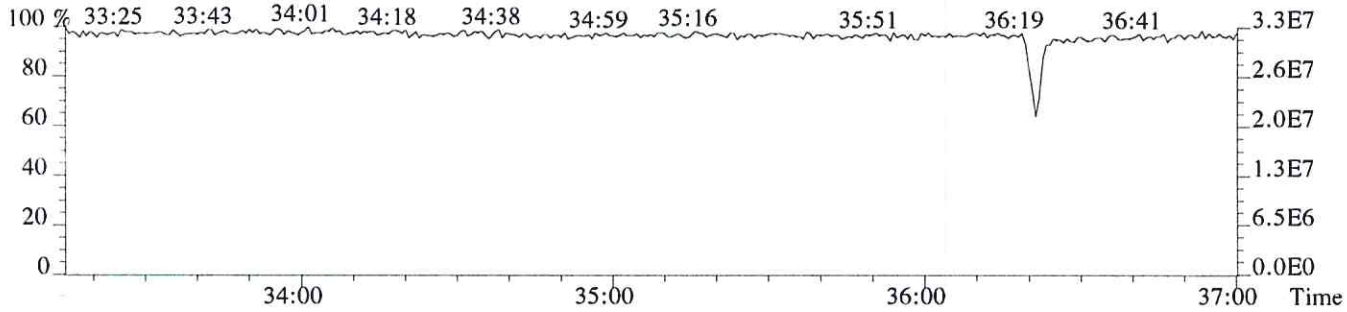
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1628.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1116.0,0.40%,F,T)

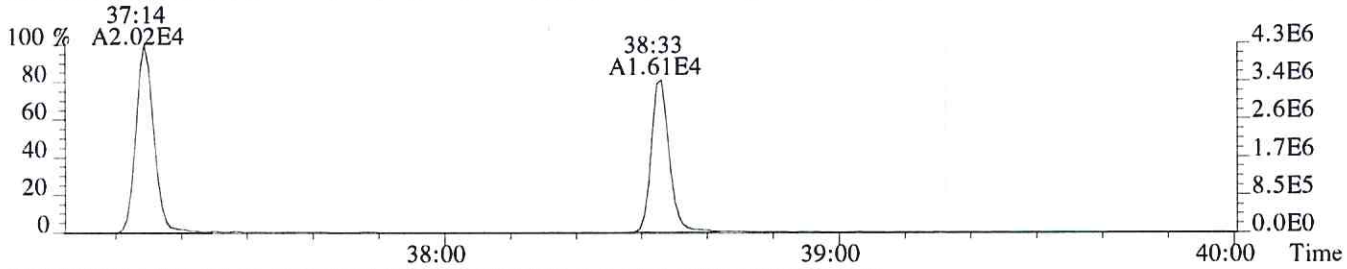


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

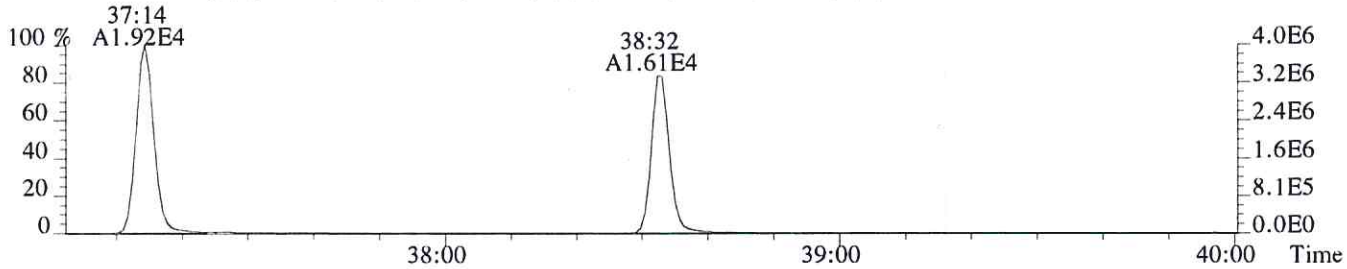


File:P607262 #1-268 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

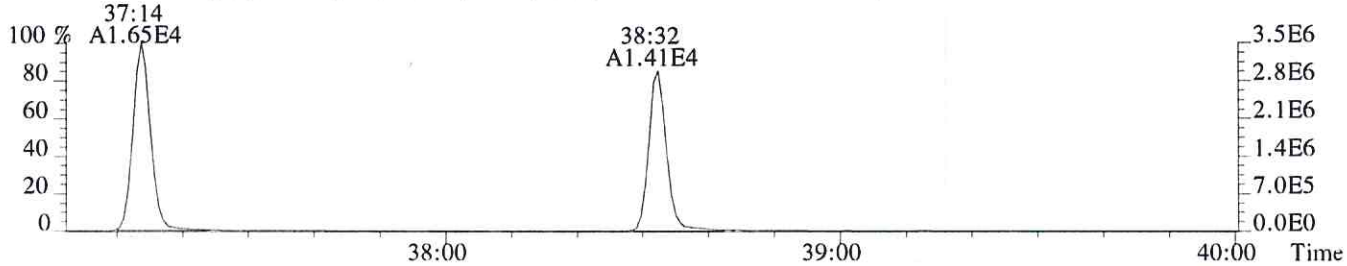
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4268.0,0.50%,F,T)



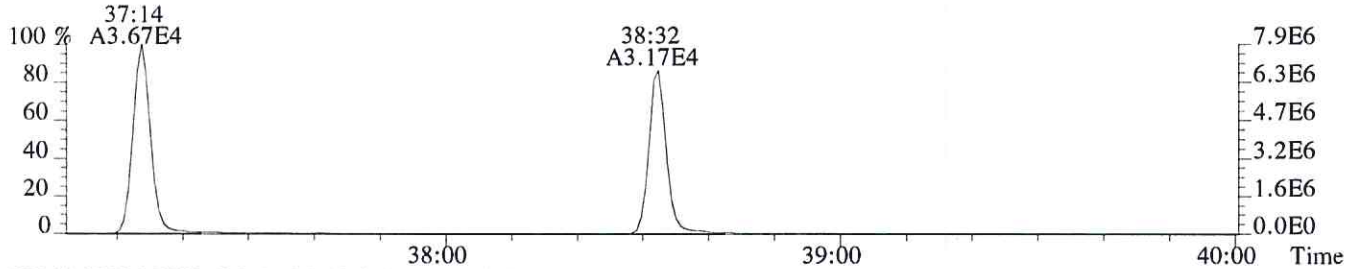
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2732.0,0.50%,F,T)



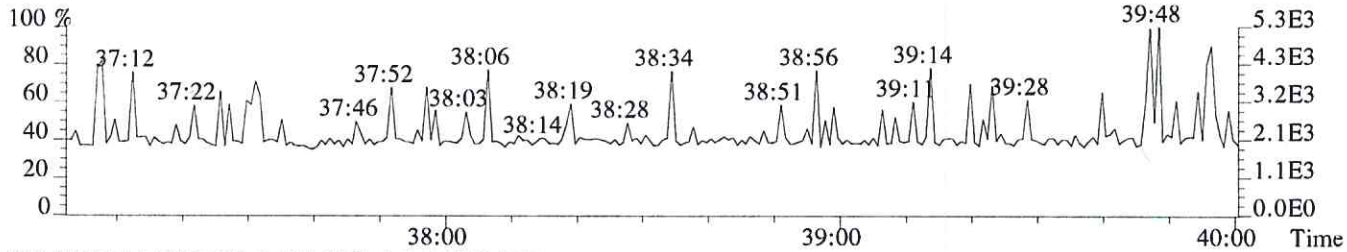
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2612.0,0.50%,F,T)



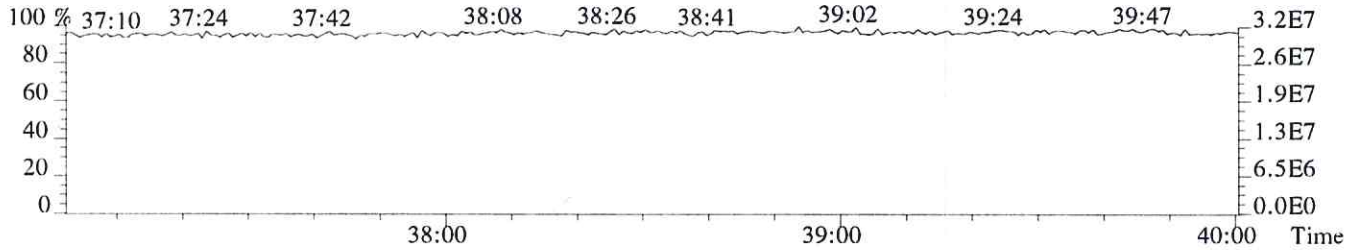
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2644.0,0.50%,F,T)



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

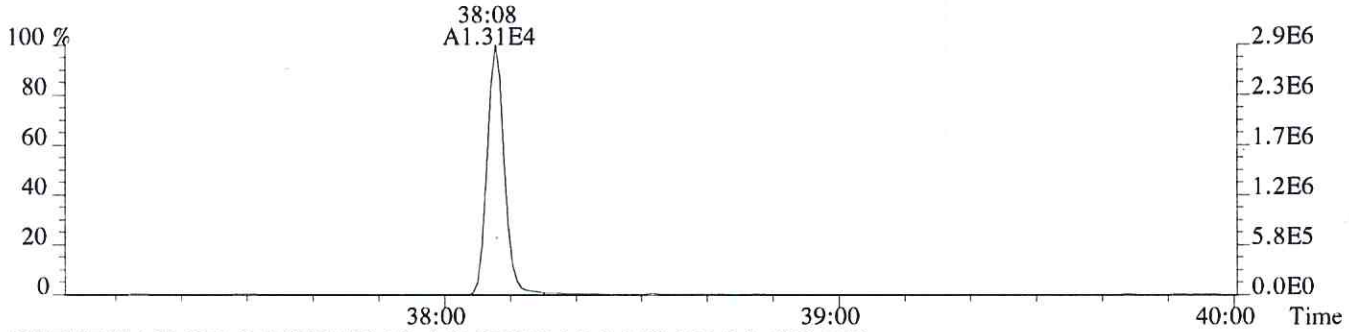


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

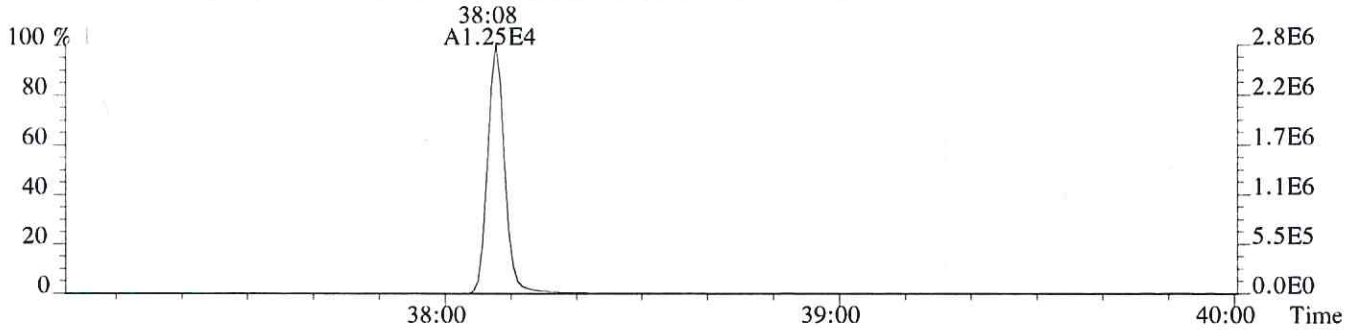


File:P607262 #1-268 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

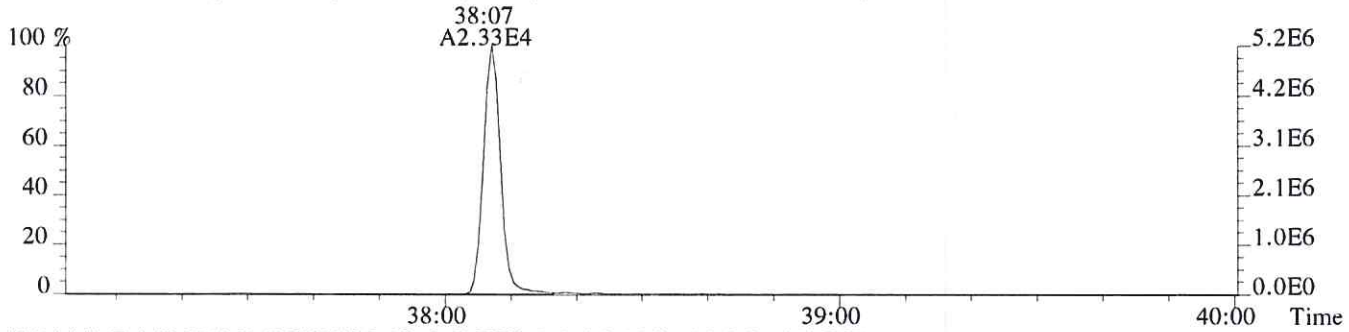
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,304.0,0.40%,F,T)



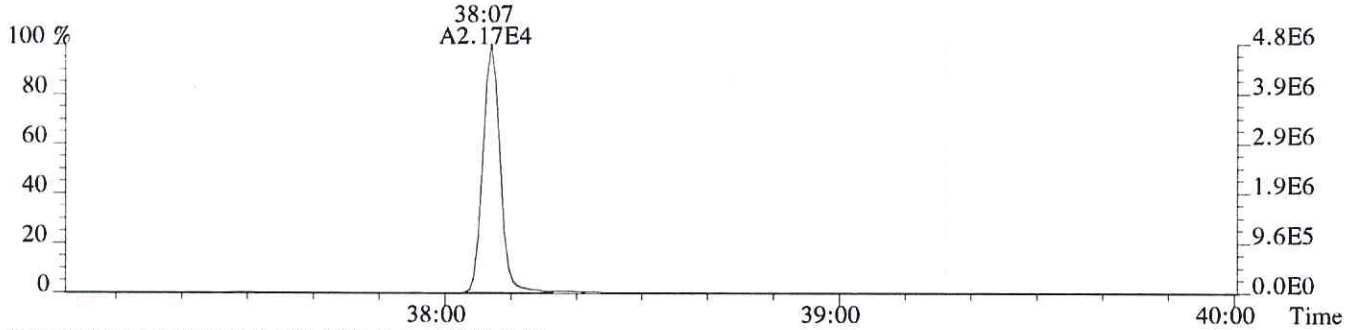
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,196.0,0.40%,F,T)



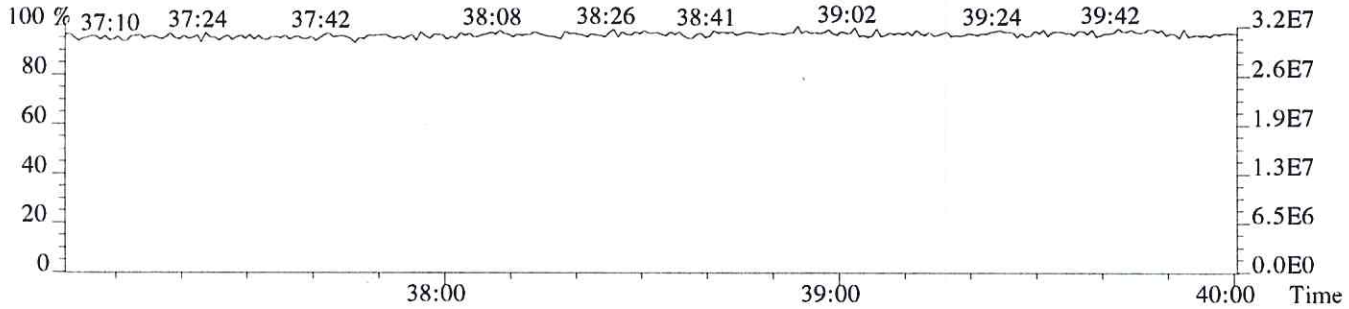
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,156.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,188.0,0.40%,F,T)

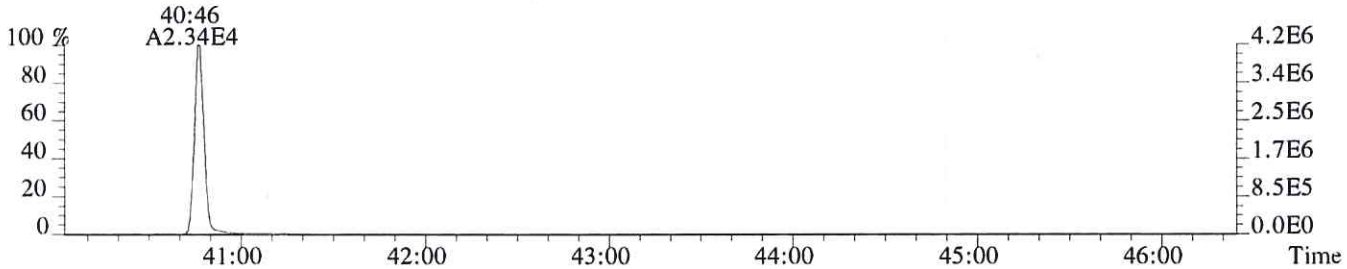


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

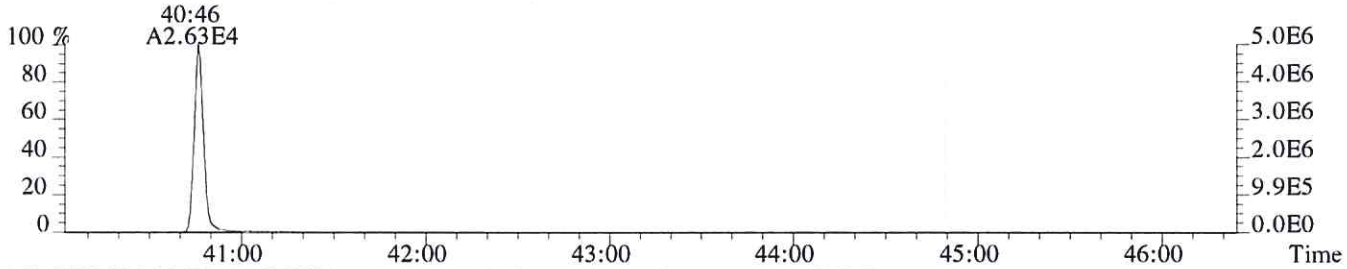


File:P607262 #1-573 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

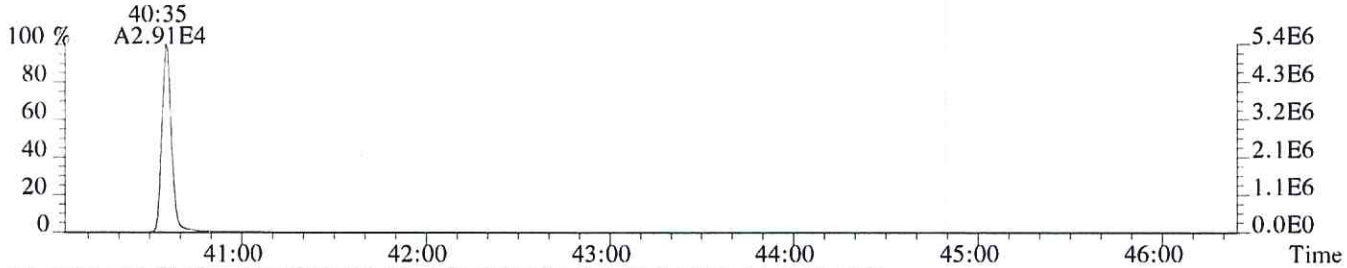
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1536.0,0.40%,F,T)



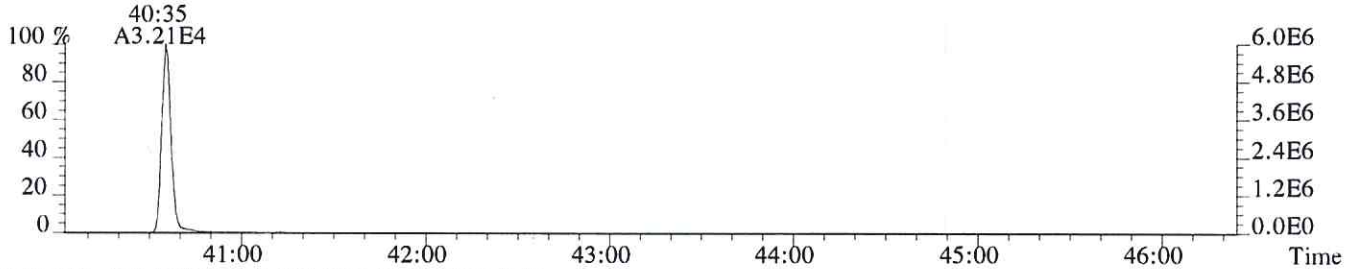
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3960.0,0.40%,F,T)



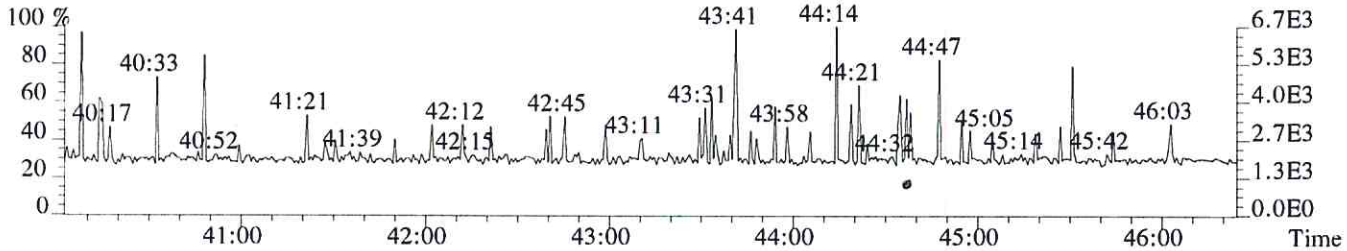
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5464.0,0.40%,F,T)



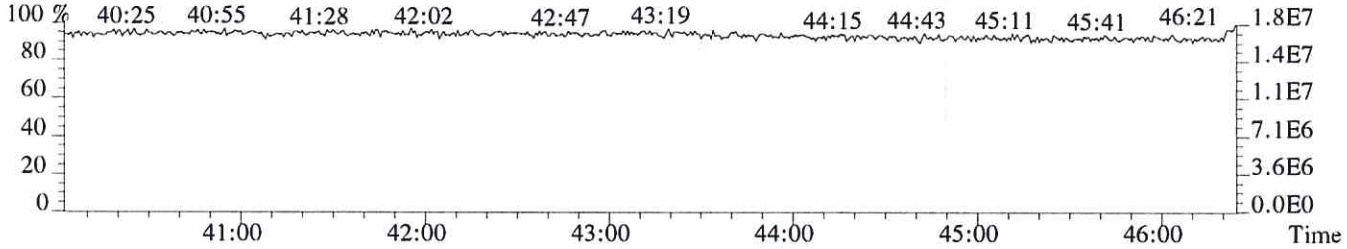
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2812.0,0.40%,F,T)



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

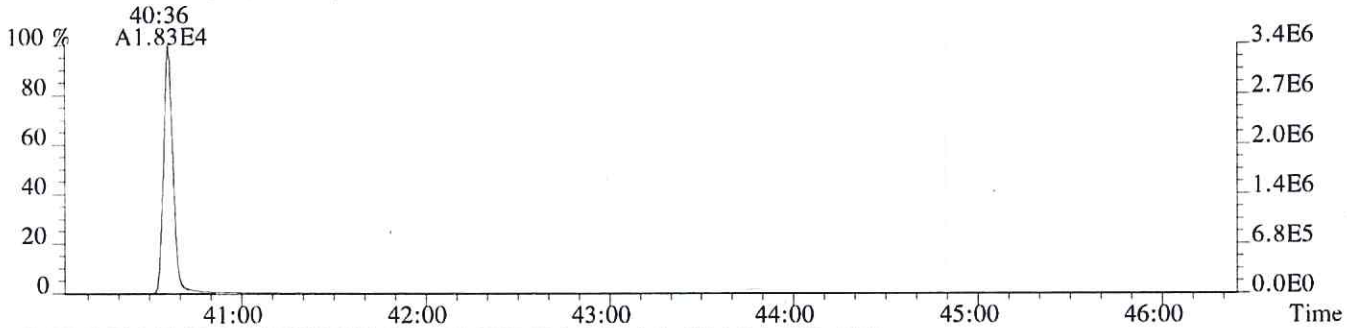


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

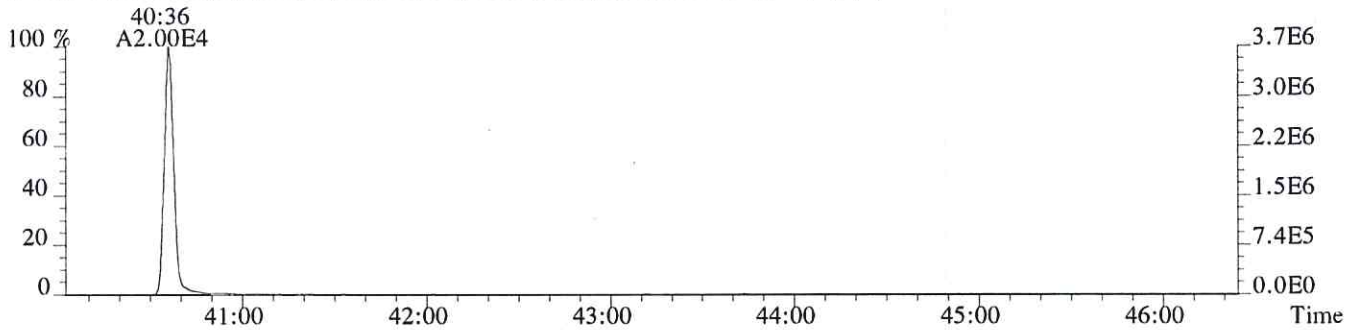


File:P607262 #1-573 Acq:20-MAY-2017 06:17:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:DLCS

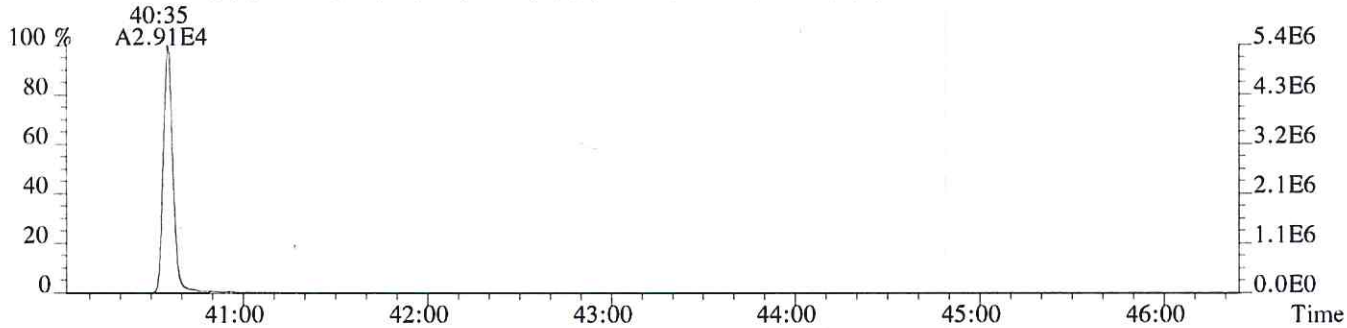
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4132.0,0.40%,F,T)



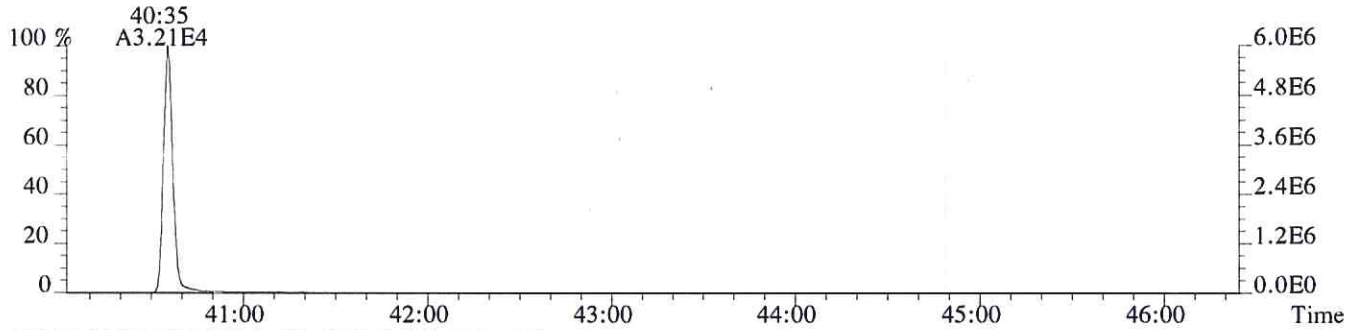
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4004.0,0.40%,F,T)



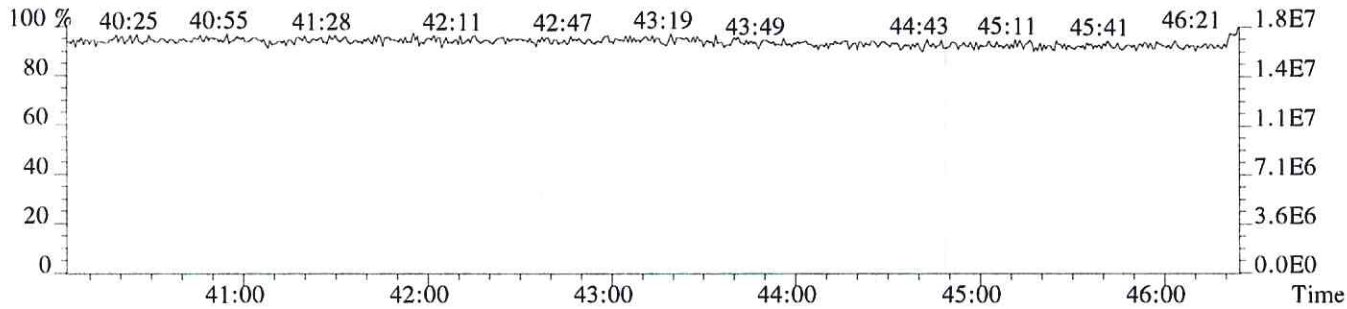
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5464.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2812.0,0.40%,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: P607251 - P607263 Circle one: Beginning / Ending

Date: 05/19/17 - 05/20/17

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	✓	✓

Analyst: TC Second QC: LKL

ccalqc.xls 07/17/12

5DBC
PCDD/PCDF/PCB ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS Environmental Contract:

Lab Code: ALS-TX Case No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm) Instrument ID:E-HRMS-08

Init. Calib. Date: 05/16/17

Init. Calib.Times: 11:03

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	P607252	19-MAY-17	22:06:51
178519	CS3	P607251	19-MAY-17	21:18:37
178519	CS3	P607263	20-MAY-17	07:14:41
METHOD BLANK	EQ1700183-01	P607254	19-MAY-17	23:44:58
M001E-R_170501	E1700465-001	P607255	20-MAY-17	00:34:03
EB13_170501	E1700465-002	P607256	20-MAY-17	01:23:07
DUP03_170428	E1700468-001	P607257	20-MAY-17	02:12:11
M038A_170428	E1700468-002	P607258	20-MAY-17	03:01:15
M038E_170428	E1700468-003	P607259	20-MAY-17	03:50:19
M039A_170428	E1700468-004	P607260	20-MAY-17	04:39:21
LCS	EQ1700183-02	P607261	20-MAY-17	05:28:25
DLCS	EQ1700183-03	P607262	20-MAY-17	06:17:28

Sample List Report **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20170519B.SPL
Last Modified: Monday, May 22, 2017 10:26:33 Central Daylight Time
Printed: Monday, May 22, 2017 10:26:35 Central Daylight Time

8296

Page Position (1, 1)

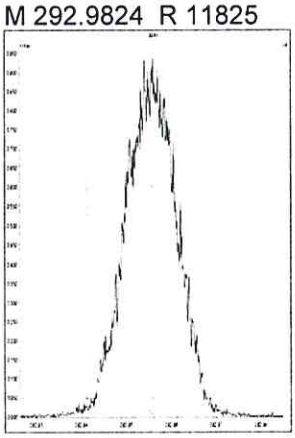
OPUS-5 : P607251 RES

	Date	Time	File Name	Lab Sample ID	Client File Text	Bottle	MS File	Inlet File	Analyst	Comments
1	5/19/17	21:18	P607251	178519	CS3	Tray1:2	EPA1613_ALS	Dioxin_ALS		HRMS check 20:22
2		22:06	P607252	178397	WINDOWDEFINE	Tray1:1	EPA1613_ALS	Dioxin_ALS		
3		22:50	P607253	EQ1700180-01	MB	Tray1:3	EPA1613_ALS	Dioxin_ALS		
4		23:44	P607254	EQ1700183-01	MB	Tray1:4	EPA1613_ALS	Dioxin_ALS		
5	5/20/17	00:34	P607255	E1700465-001	E1700465-001	Tray1:5	EPA1613_ALS	Dioxin_ALS		
6		01:23	P607256	E1700465-002	E1700465-002	Tray1:6	EPA1613_ALS	Dioxin_ALS		
7		02:12	P607257	E1700468-001	E1700468-001	Tray1:7	EPA1613_ALS	Dioxin_ALS		
8		03:01	P607258	E1700468-002	E1700468-002	Tray1:8	EPA1613_ALS	Dioxin_ALS		
9		03:50	P607259	E1700468-003	E1700468-003	Tray1:9	EPA1613_ALS	Dioxin_ALS		
10		04:39	P607260	E1700468-004	E1700468-004	Tray1:10	EPA1613_ALS	Dioxin_ALS		
11		05:28	P607261	EQ1700183-02	LCS	Tray1:11	EPA1613_ALS	Dioxin_ALS		
12		06:17	P607262	EQ1700183-03	DLCS	Tray1:12	EPA1613_ALS	Dioxin_ALS		
13		07:14	P607263	178519	CS3	Tray1:2	EPA1613_ALS	Dioxin_ALS		HRMS check 07:14
14	---	---	---	---	---	Tray1:1	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	---	---	---	---	---	Tray1:2	EPA1613_ALS	Dioxin_ALS	---	---
26	---	---	---	---	---	Tray1:2	EPA1613_ALS	Dioxin_ALS	---	---
27	---	---	---	---	---	Tray1:1	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	---	---	---	---	---	Tray1:2	EPA1613_ALS	Dioxin_ALS	---	---
39	---	---	---	---	---	Tray1:2	EPA1613_ALS	Dioxin_ALS	---	---

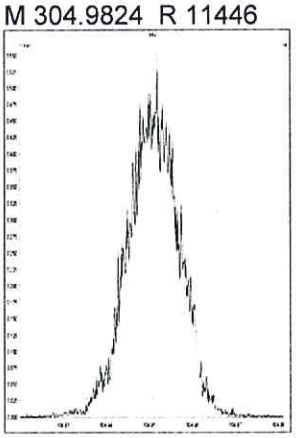
05/22/17

Printed: Friday, May 19, 2017 20:22:06 Central Daylight Time

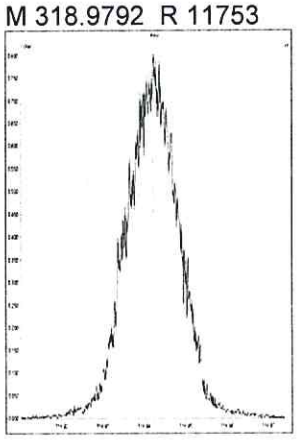
M 292.9824 R 11825



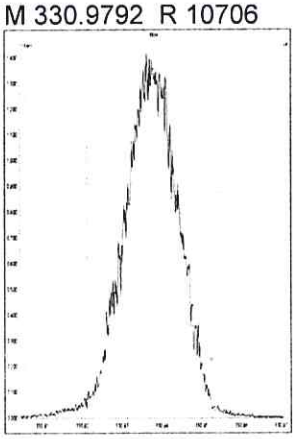
M 304.9824 R 11446



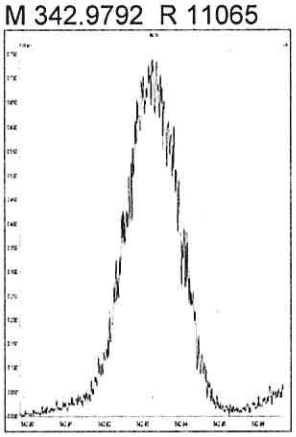
M 318.9792 R 11753



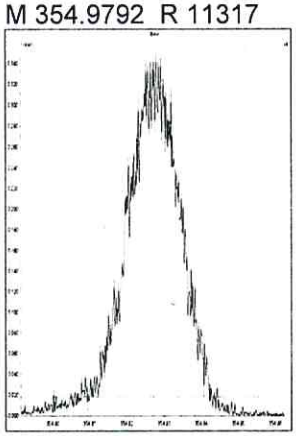
M 330.9792 R 10706



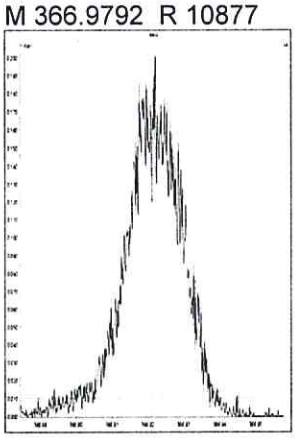
M 342.9792 R 11065



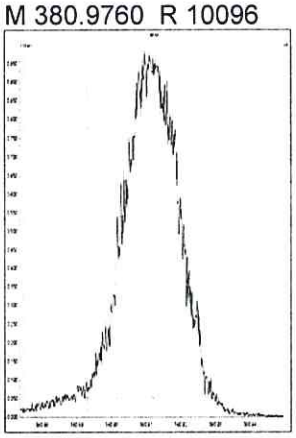
M 354.9792 R 11317



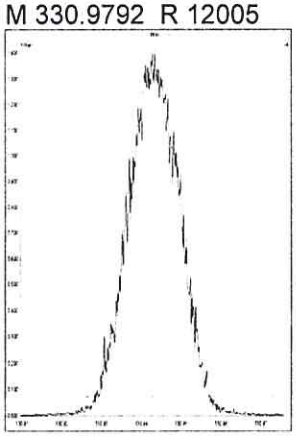
M 366.9792 R 10877



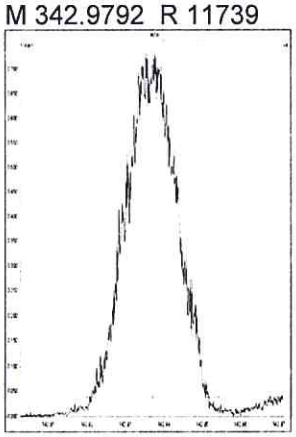
M 380.9760 R 10096



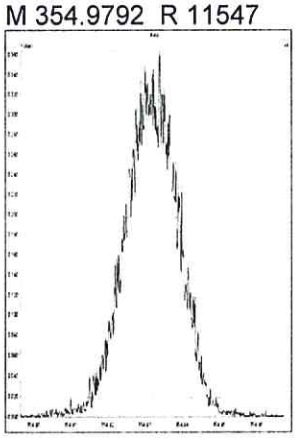
M 330.9792 R 12005



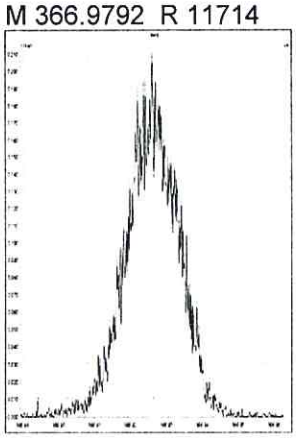
M 342.9792 R 11739



M 354.9792 R 11547



M 366.9792 R 11714



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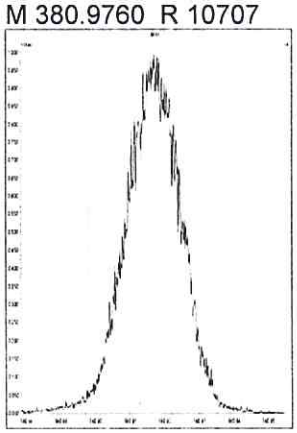

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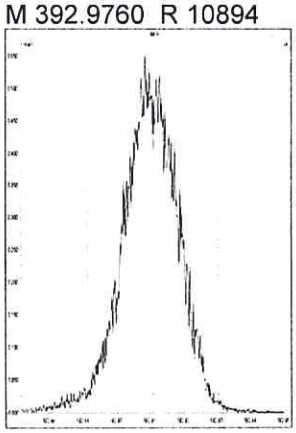

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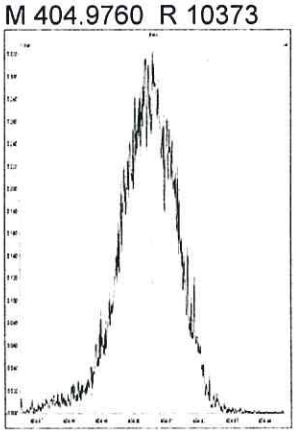

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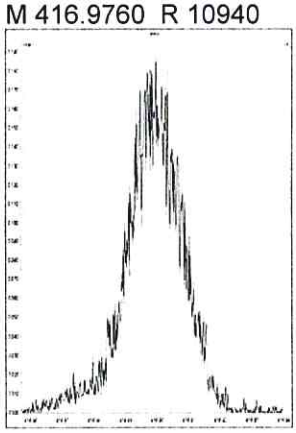

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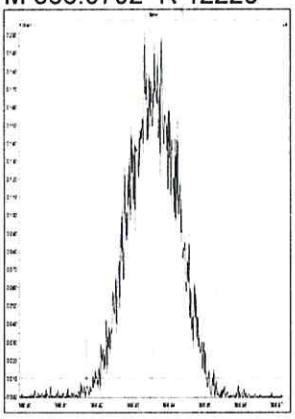

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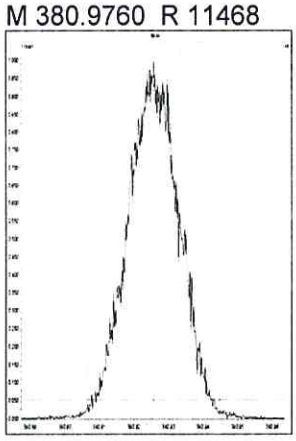

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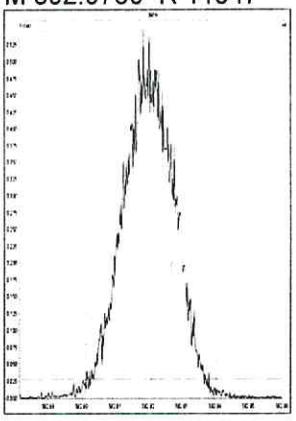

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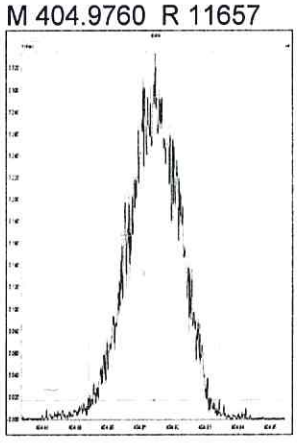

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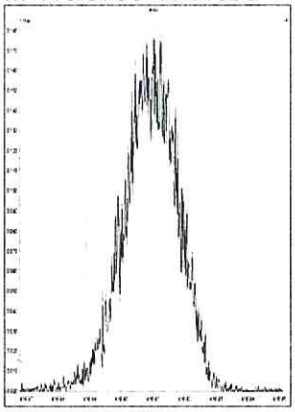

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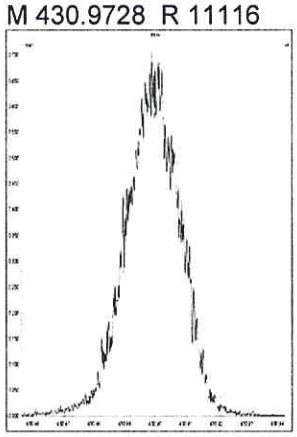

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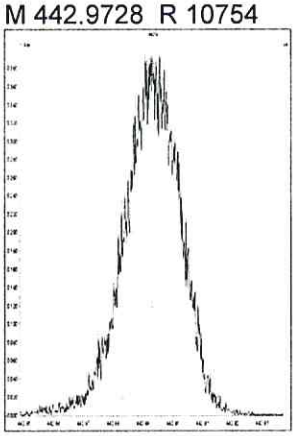
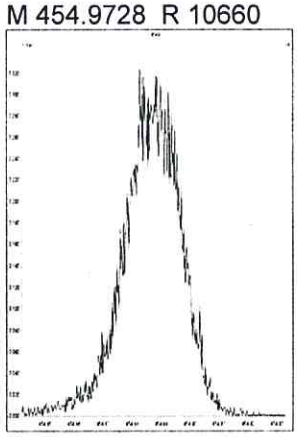


M 454.9728 R 10660



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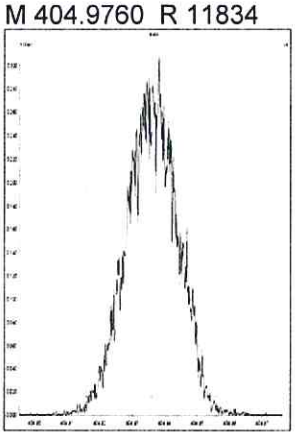
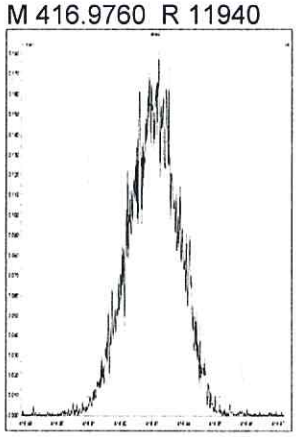


M 416.9760 R 11940



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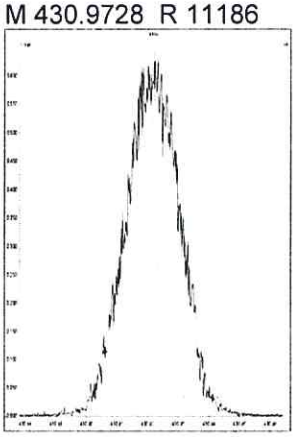

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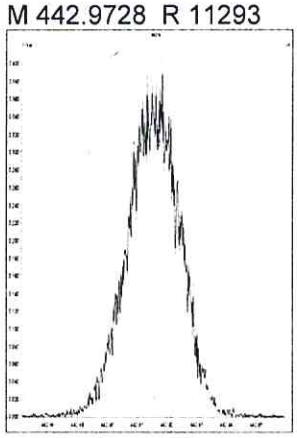

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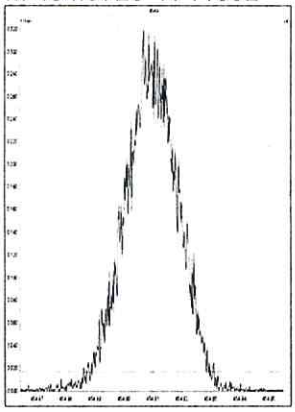
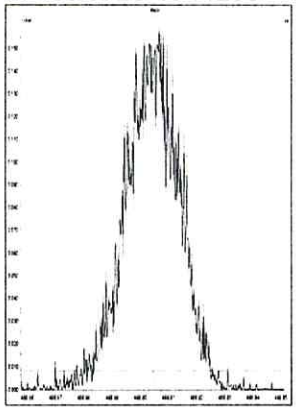


M 466.9728 R 11236



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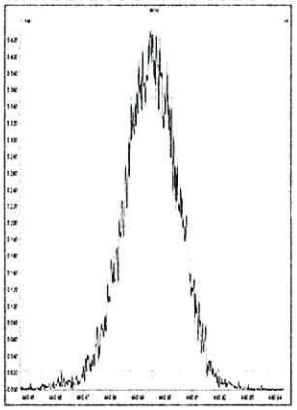

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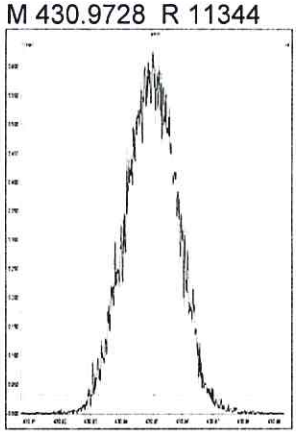

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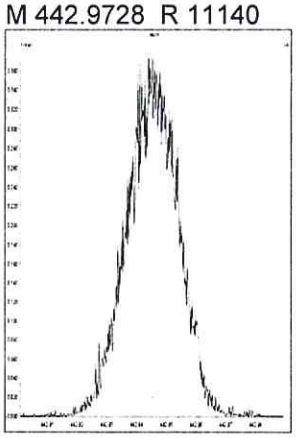
M 442.9728 R 11140



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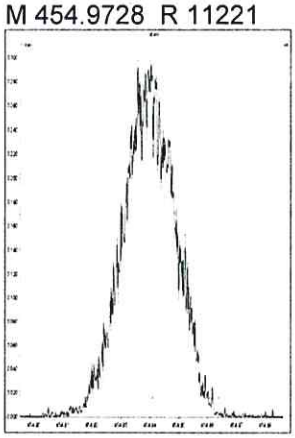

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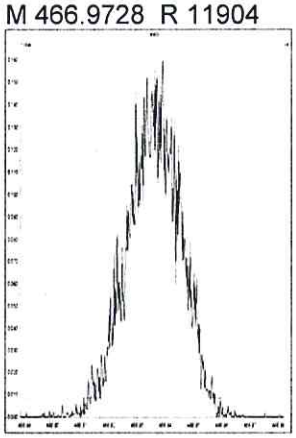

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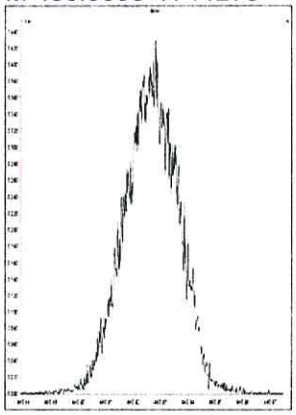

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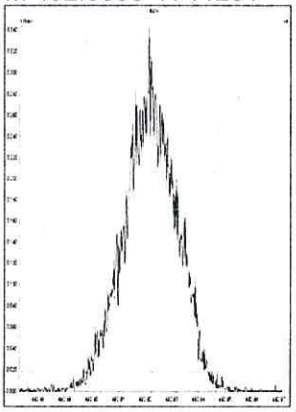

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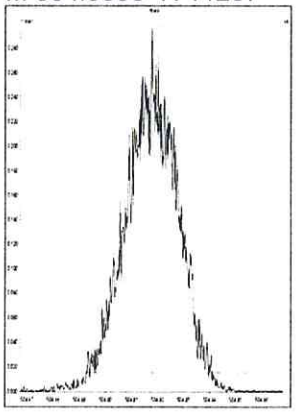

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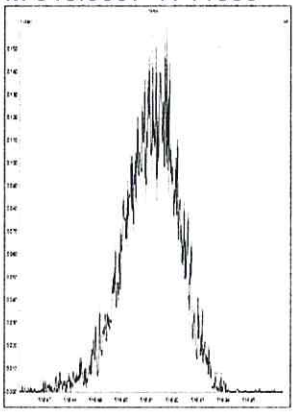

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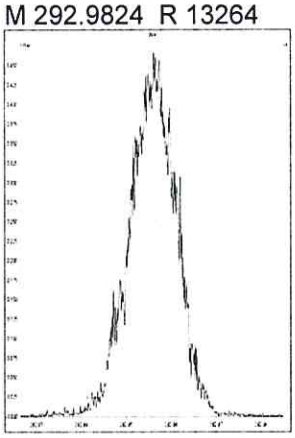

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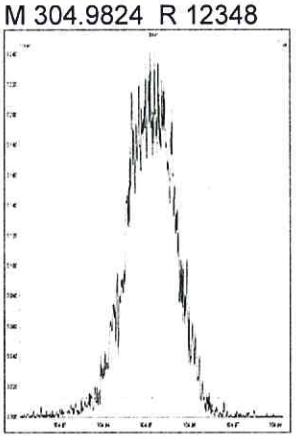

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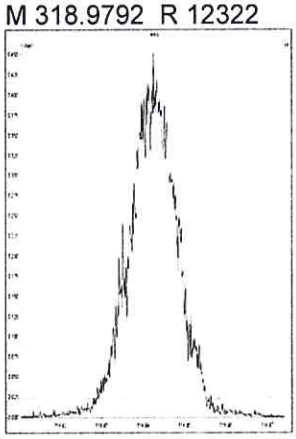
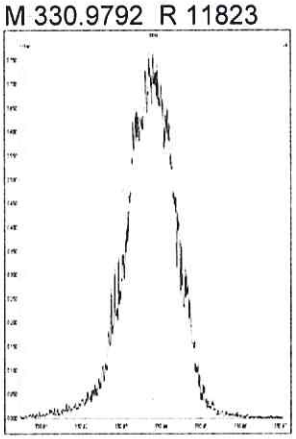


M 330.9792 R 11823



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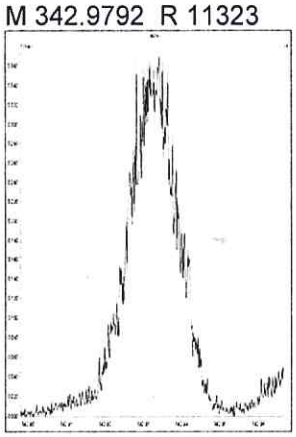

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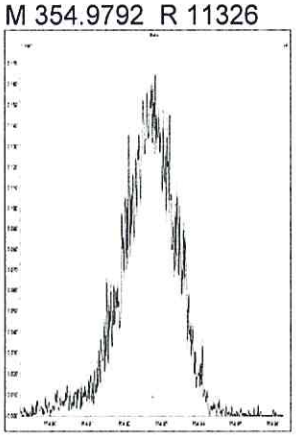
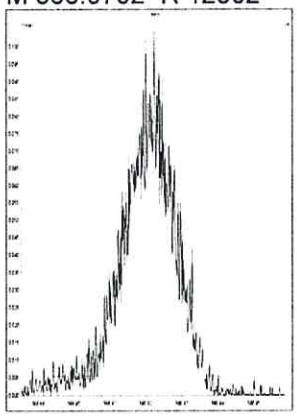
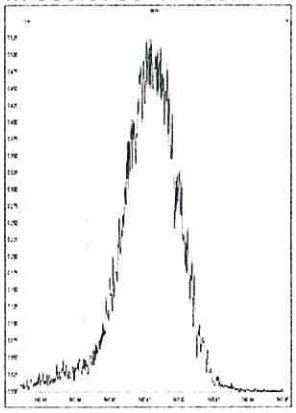


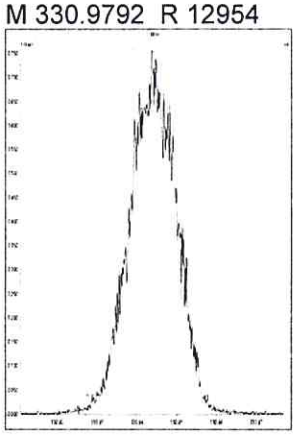
M 366.9792 R 12502



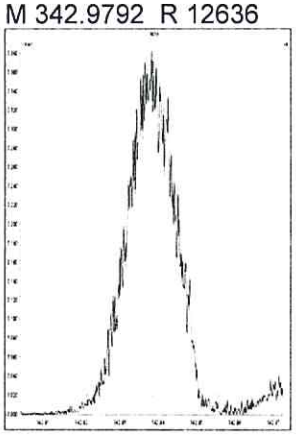
M 380.9760 R 10921



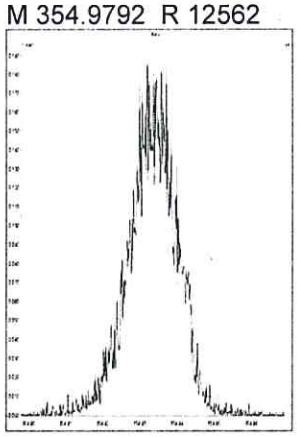
M 330.9792 R 12954



M 342.9792 R 12636



M 354.9792 R 12562



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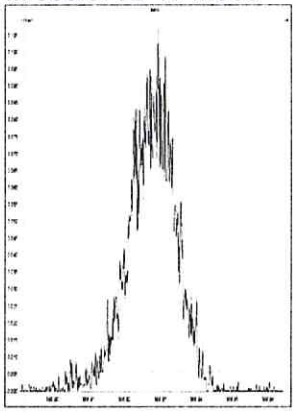

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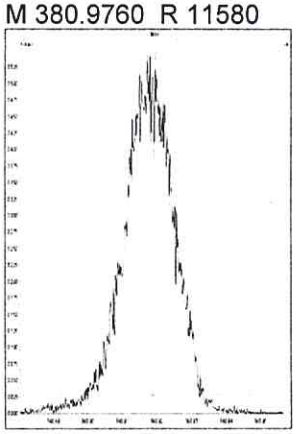
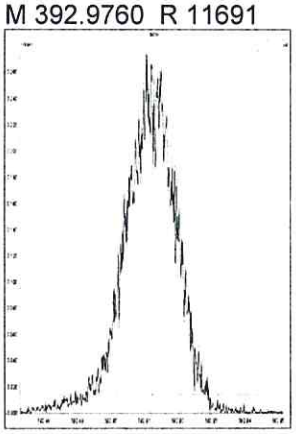
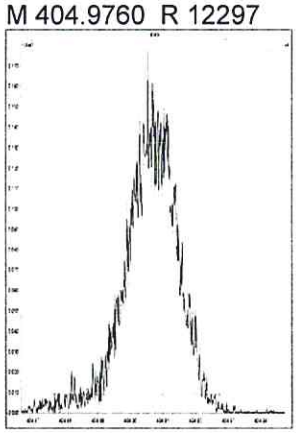


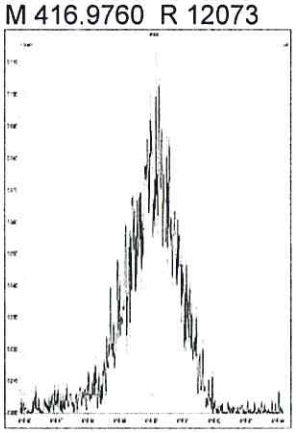
M 392.9760 R 11691



M 404.9760 R 12297



M 416.9760 R 12073



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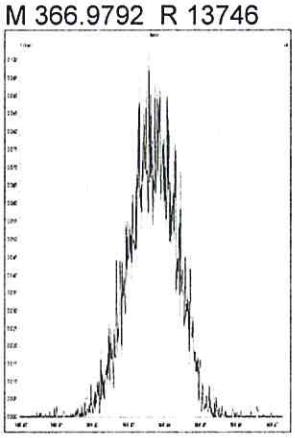
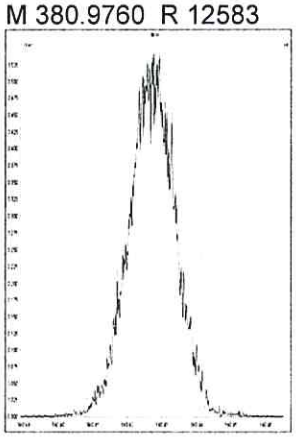
M 366.9792 R 13746



M 380.9760 R 12583



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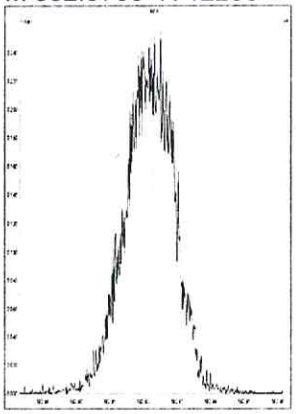
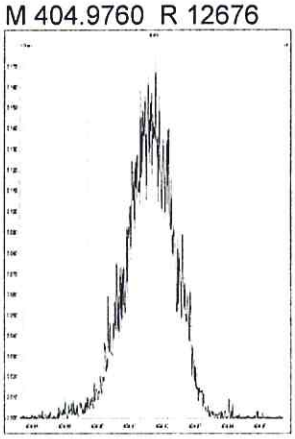
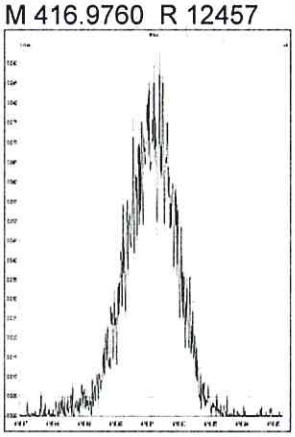


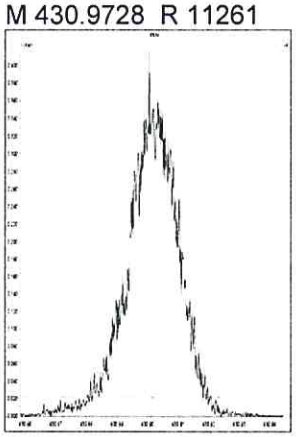
M 404.9760 R 12676



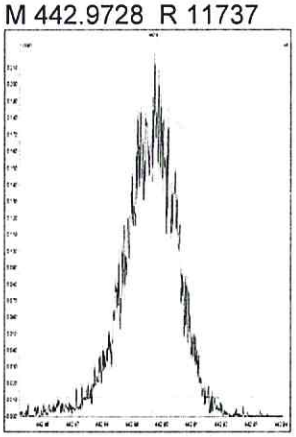
M 416.9760 R 12457



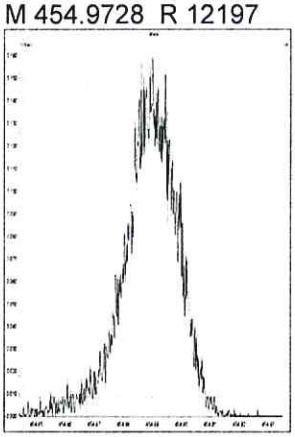
M 430.9728 R 11261



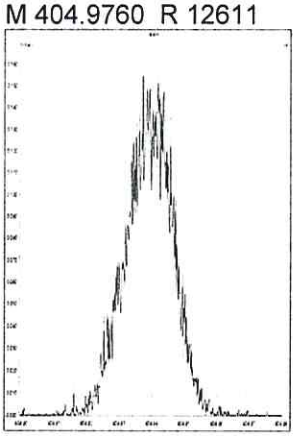
M 442.9728 R 11737



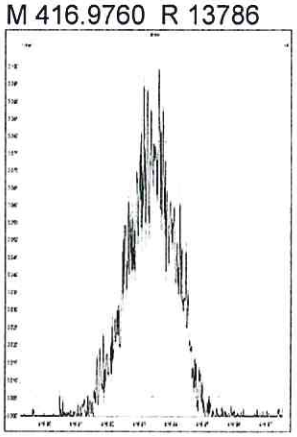
M 454.9728 R 12197



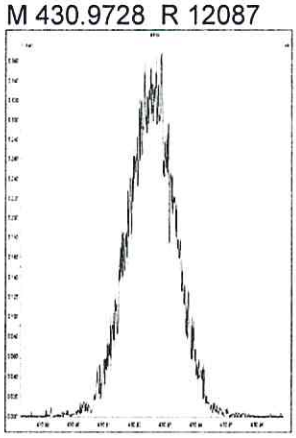
M 404.9760 R 12611



M 416.9760 R 13786



M 430.9728 R 12087



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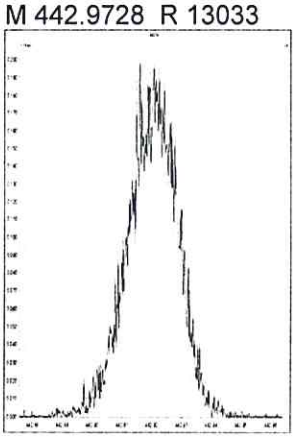

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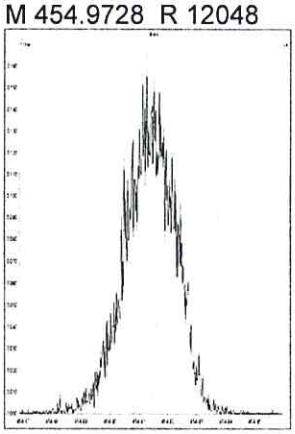

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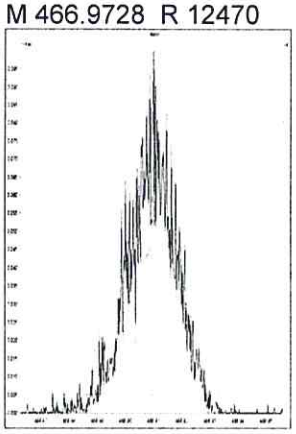
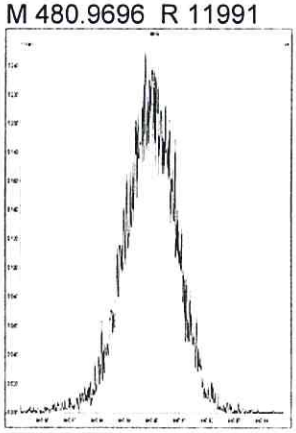
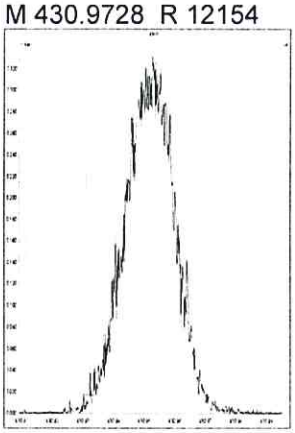


M 480.9696 R 11991

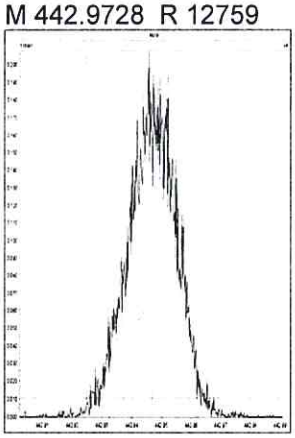


M 430.9728 R 12154

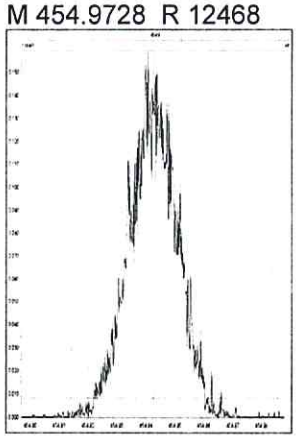


Printed: Saturday, May 20, 2017 07:14:39 Central Daylight Time

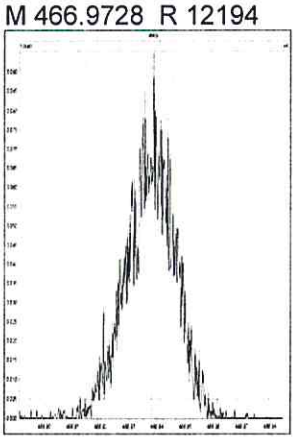
M 442.9728 R 12759



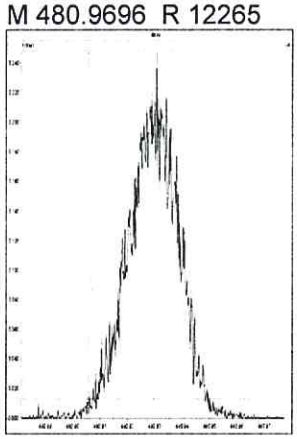
M 454.9728 R 12468



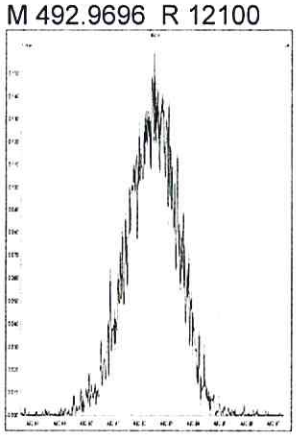
M 466.9728 R 12194



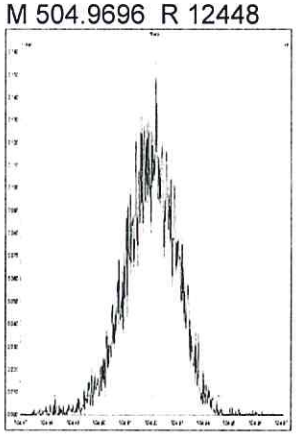
M 480.9696 R 12265



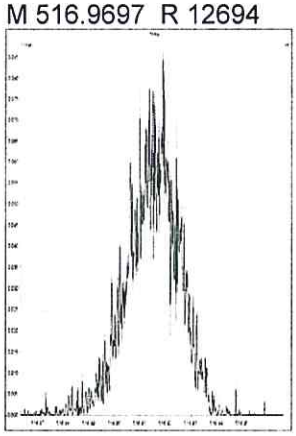
M 492.9696 R 12100



M 504.9696 R 12448



M 516.9697 R 12694



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

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

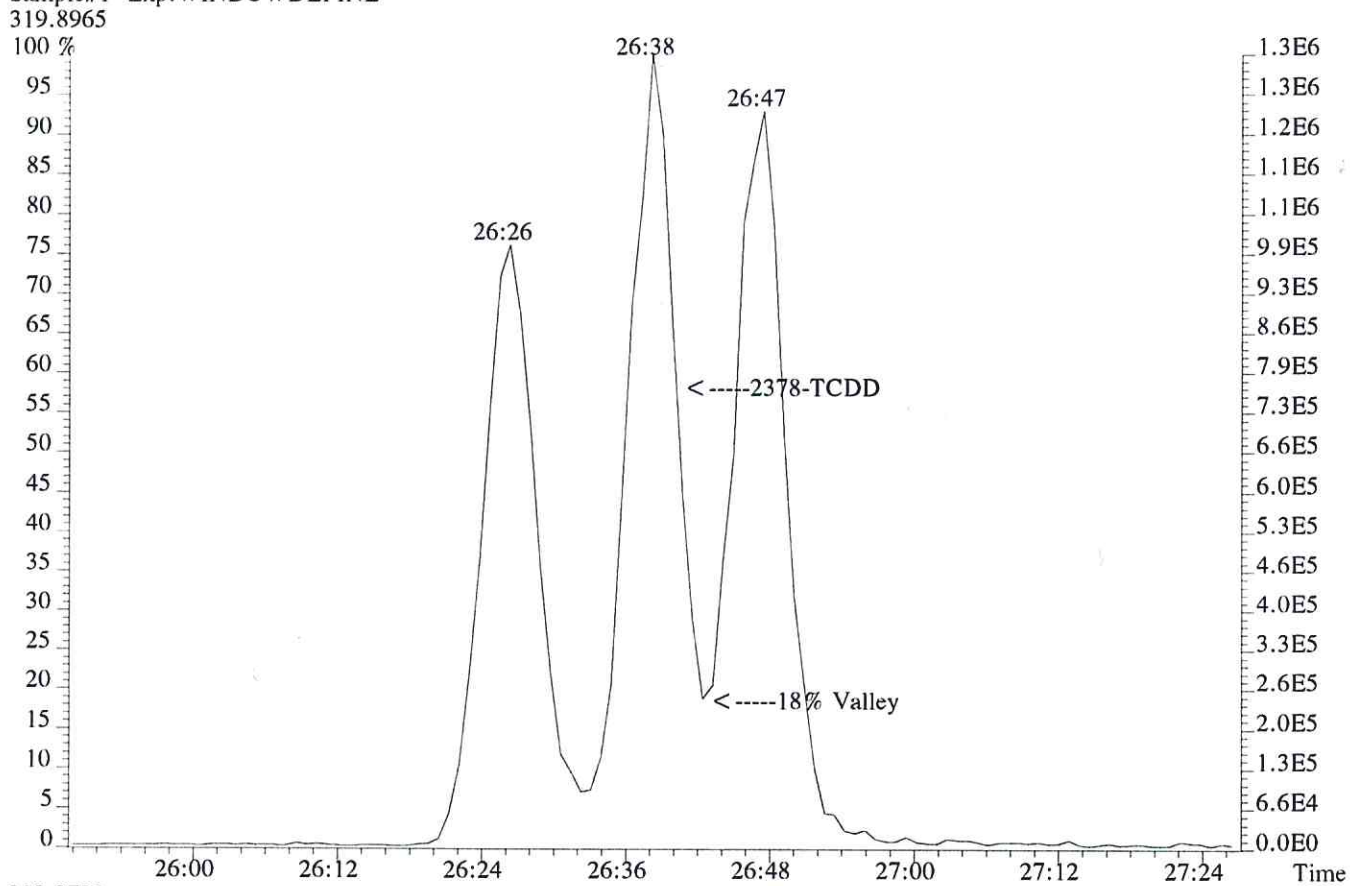
Case No.: _____ SDG No.:
ID: 0.25 (mm)

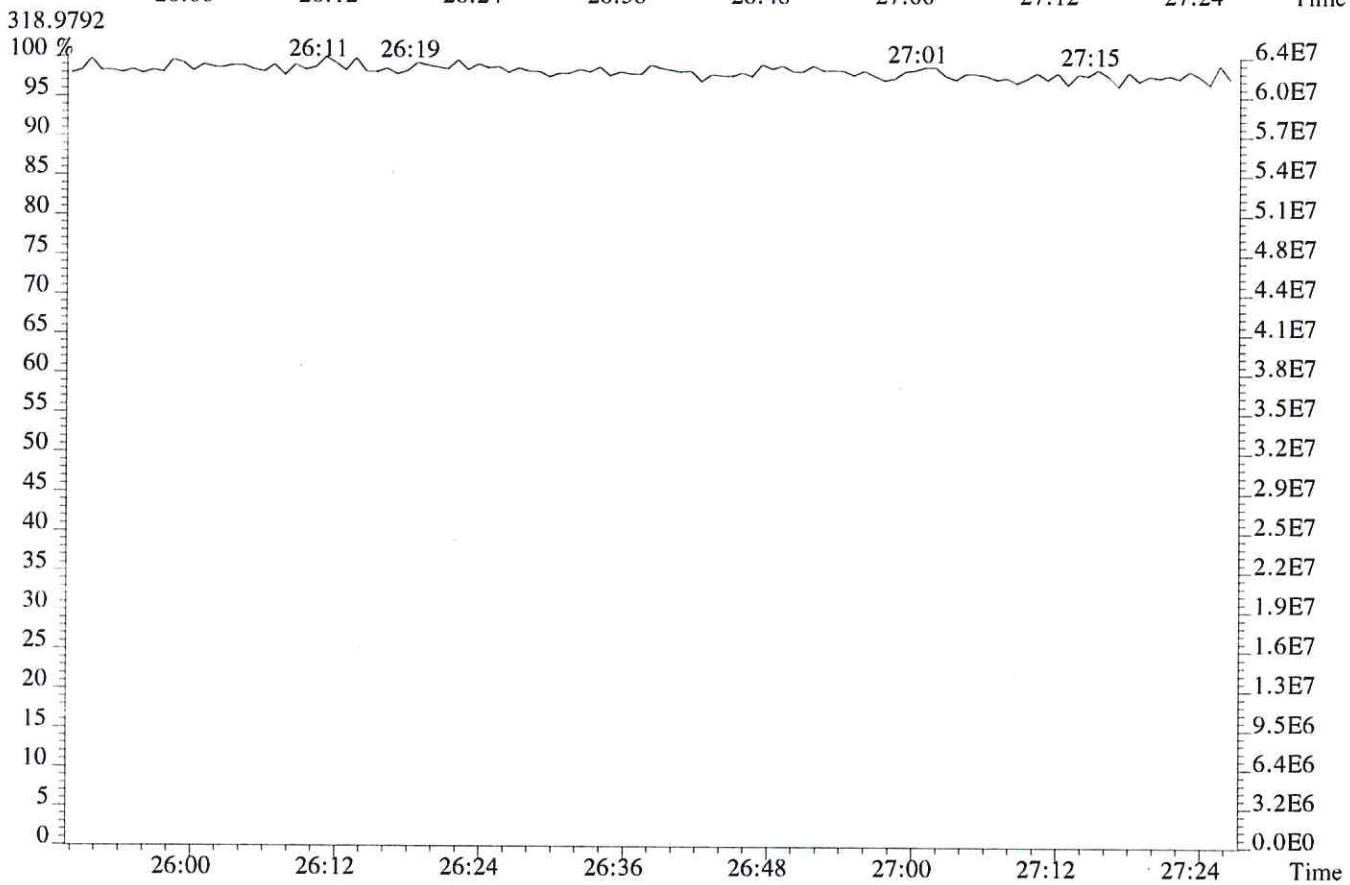
Lab File ID: P607252
Date Analyzed: 19-MAY-17
Time Analyzed: 22:06:51

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	21:19	28:00
TCDD	22:55	27:49
PeCDF	27:59	32:40
PeCDD	29:44	32:25
HxCDF	33:23	35:59
HxCDD	33:57	35:35
HpCDF	37:15	38:33
HpCDD	37:30	38:08

% Valley 2378-TCDD: 18 %

File:P607252 #1-609 Acq:19-MAY-2017 22:06:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOWDEFINE





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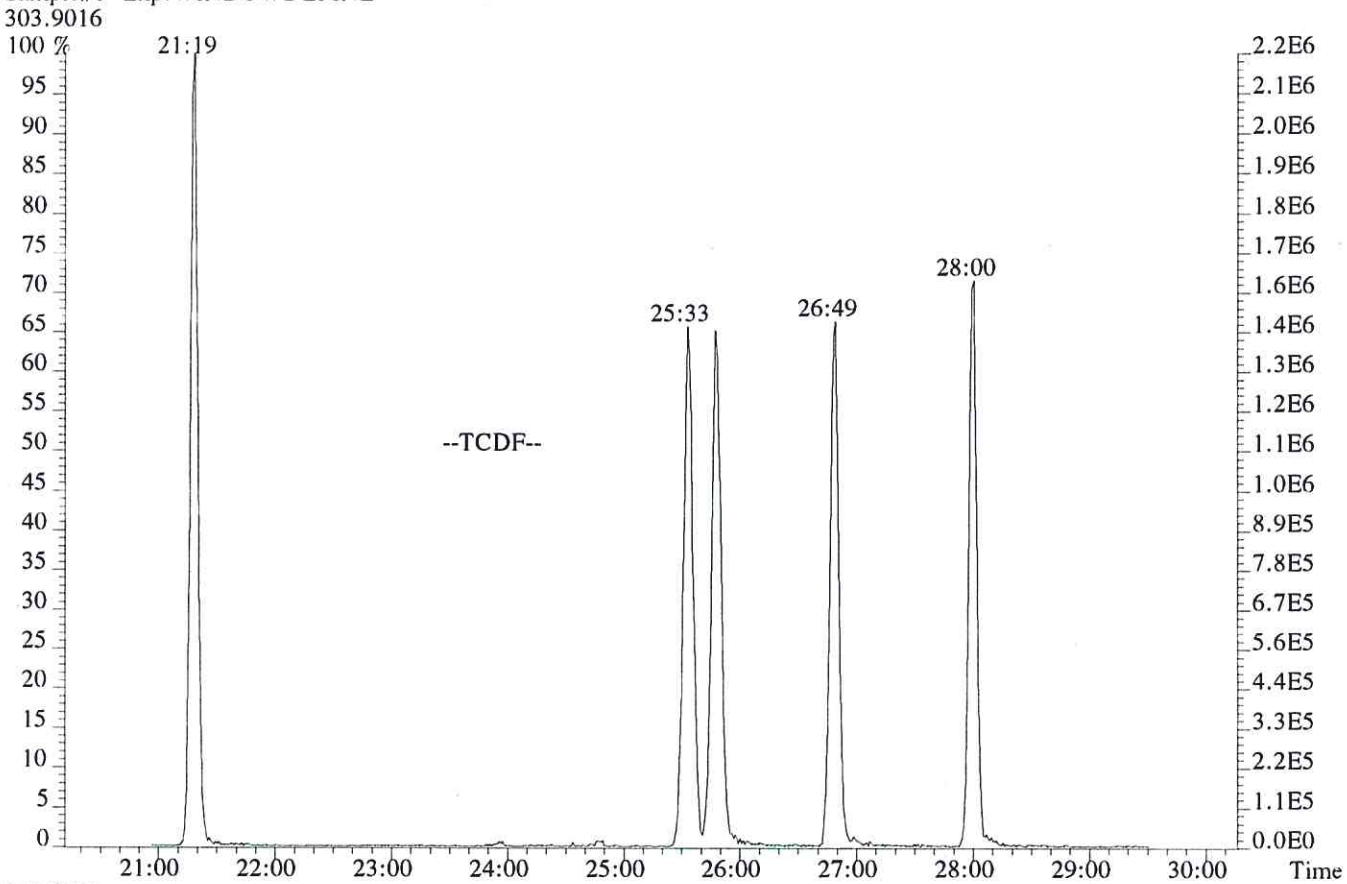
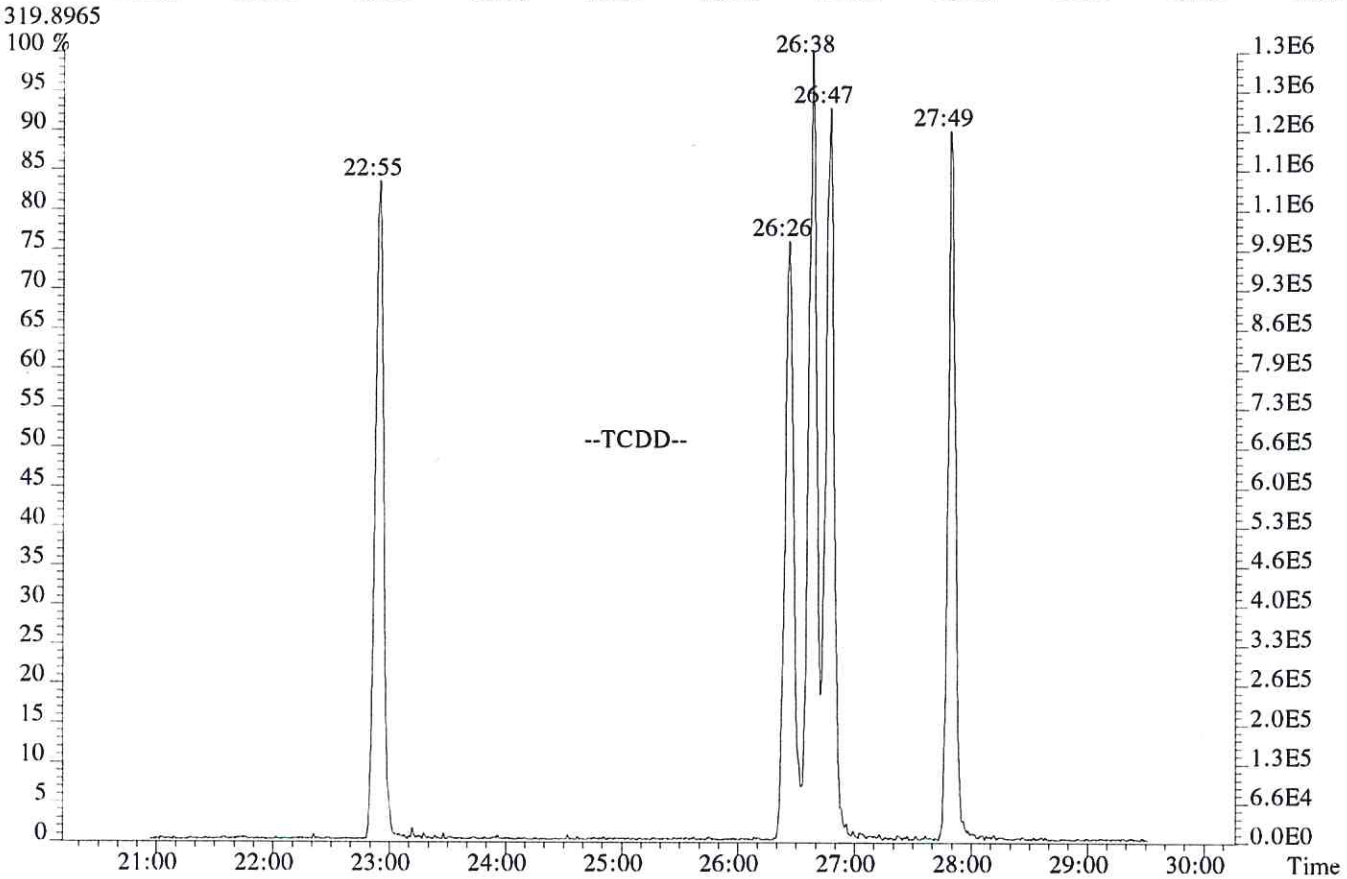
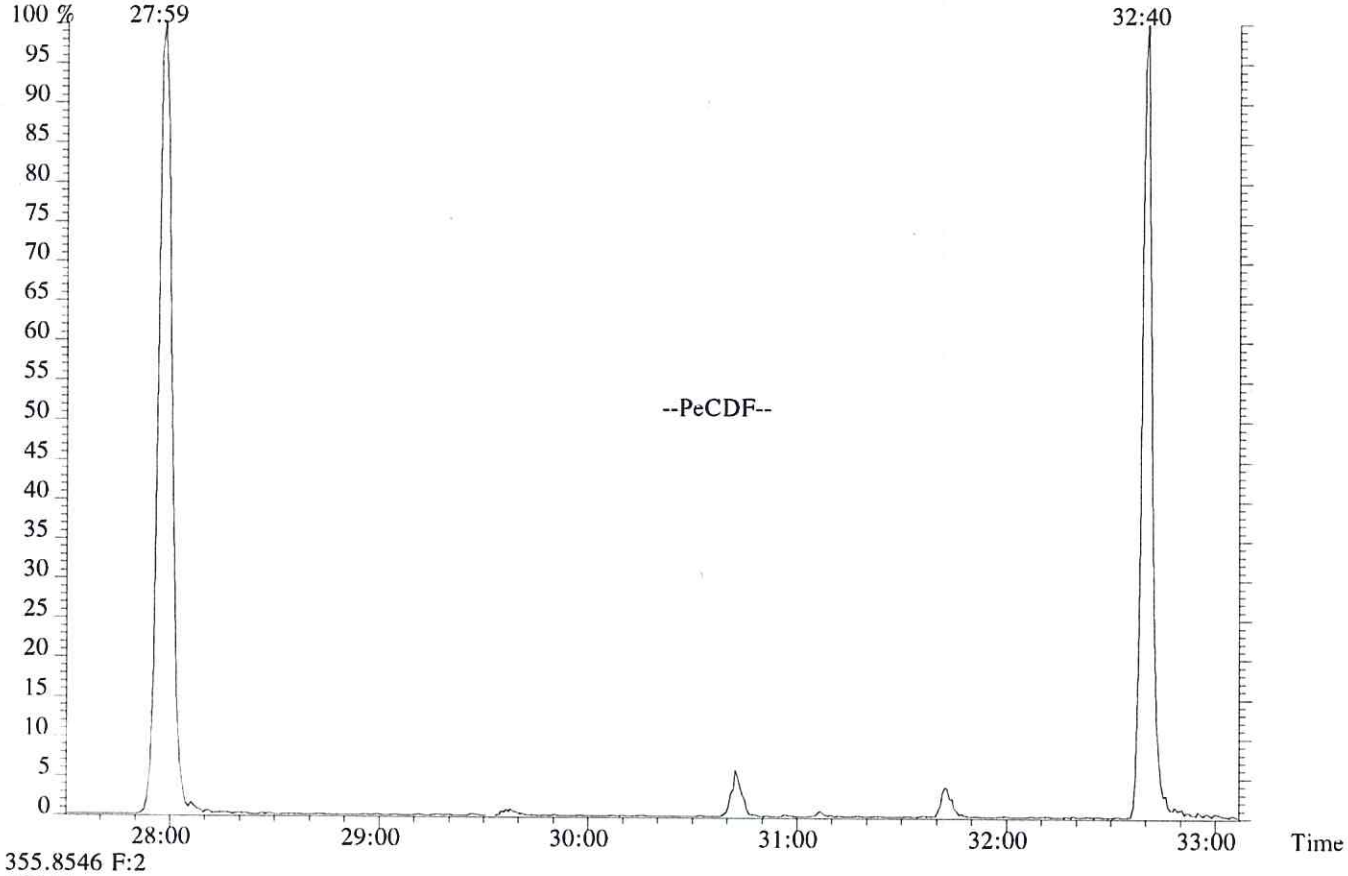
Sample#1 Exp:WINDOWDEFINE

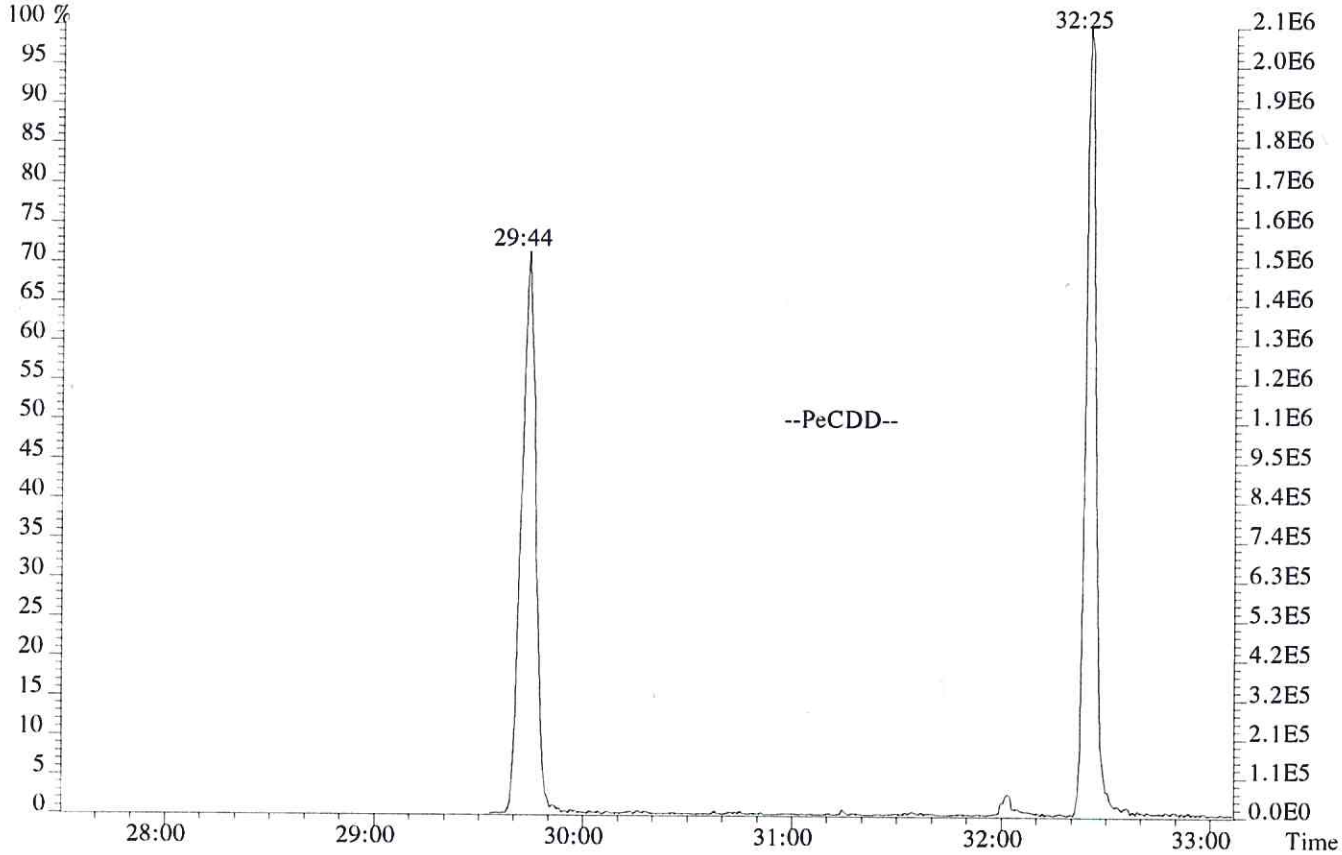




File:P607252 #1-609 Acq:19-MAY-2017 22:06:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOWDEFINE
339.8597,339.8597 F:2



355.8546 F:2



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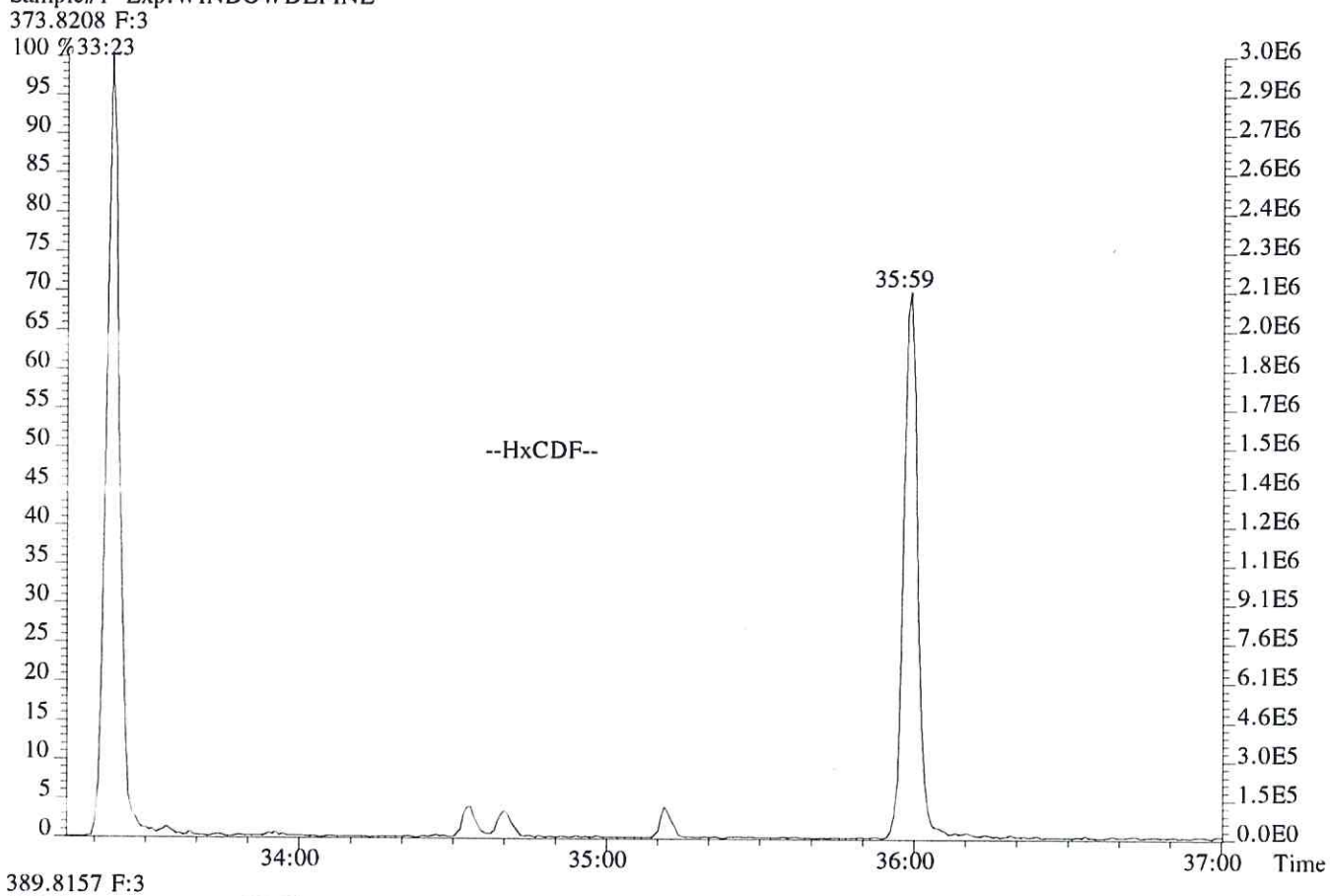
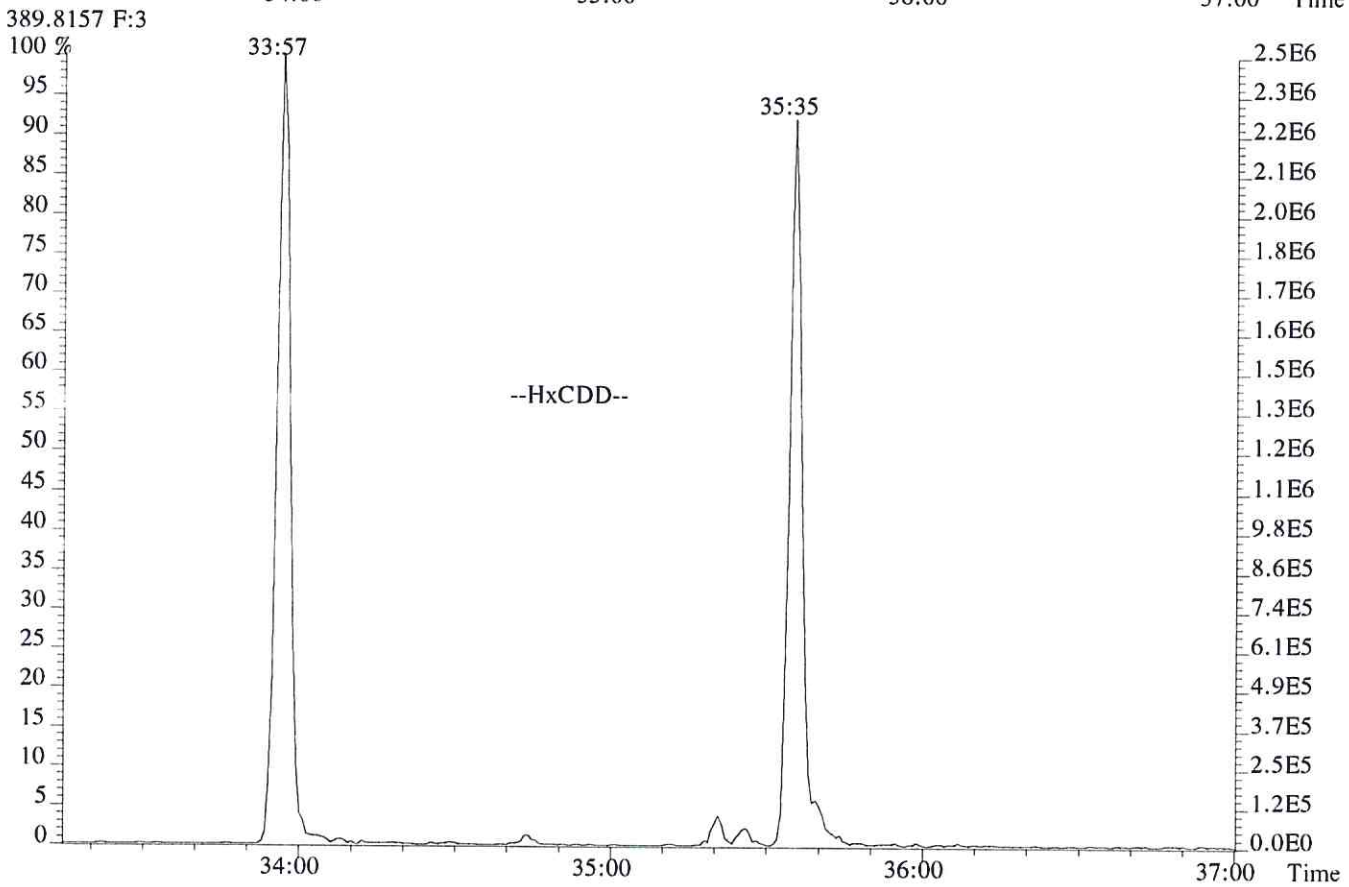
Sample#1 Exp:WINDOWDEFINE





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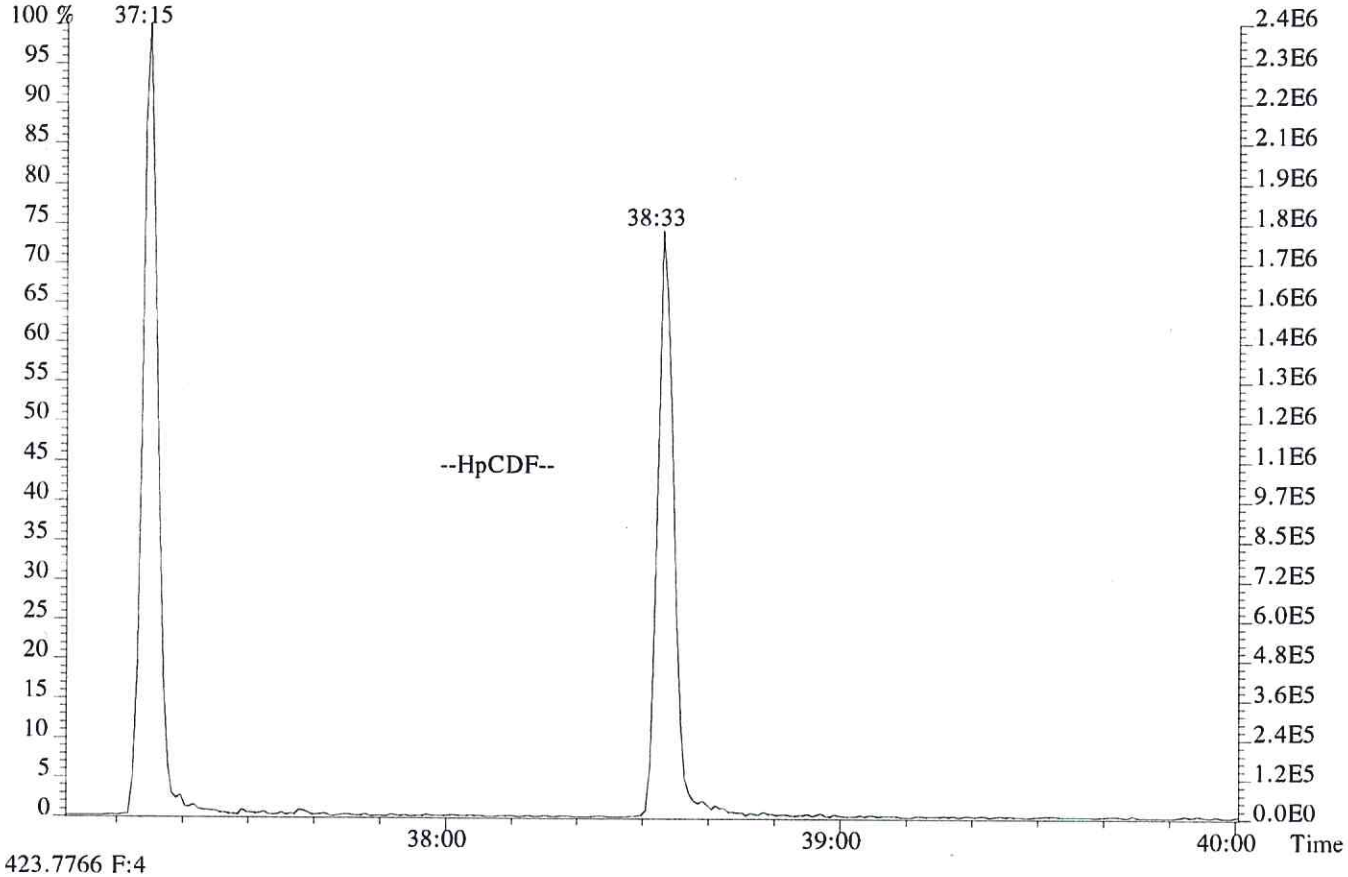
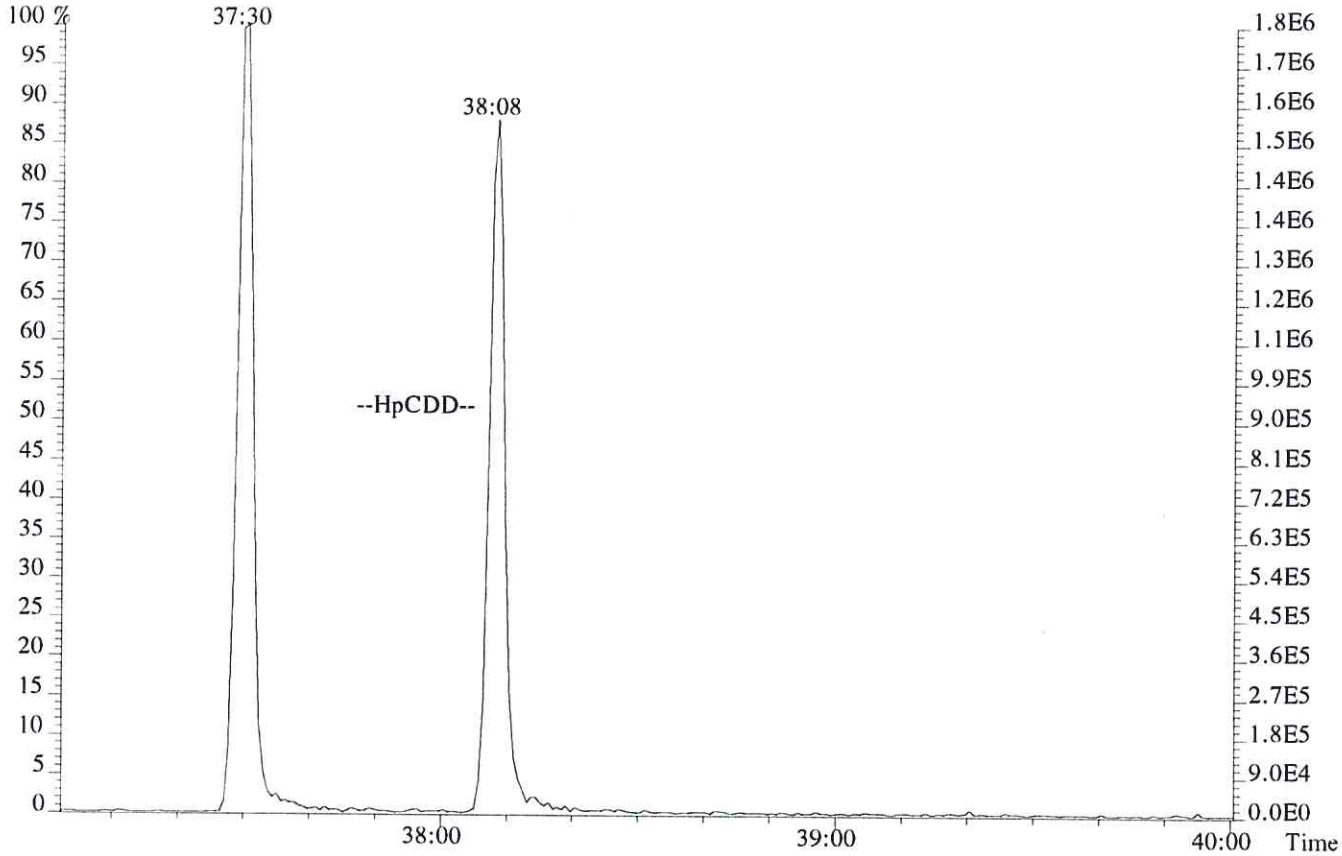
Sample#1 Exp:WINDOWDEFINE
407.7818 F:4



423.7766 F:4



USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date:

Instrument ID: E-HRMS-08 GC Column ID : DB-5MSUI

VER Data Filename: P607251 Analysis Date: 19-MAY-17 Time: 21:18:37

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	9.9	7.8 - 12.9	-1.5
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	49	39 - 65	-1.3
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	49	39 - 64	-2.5
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	51	39 - 64	1.1
1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05-1.43	50	41 - 61	-0.8
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	49	43 - 58	-1.9
OCDD	M+2/M+4	0.89	0.76-1.02	99	79 - 126	-0.7
2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	9.7	8.4 - 12.0	-3.3
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	49	41 - 60	-1.2
2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32-1.78	48	41 - 61	-4.3
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	50	45 - 56	0.2
1,2,3,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	49	44 - 57	-1.6
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	49	45 - 56	-2.8
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	49	44 - 57	-2.8
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	50	45 - 55	-0.8
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	48	43 - 58	-3.4
OCDF	M+2/M+4	0.90	0.76-1.02	97	63 - 159	-3.4

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date:

Instrument ID: E-HRMS-08 GC Column ID : DB-5MSUI

VER Data Filename: P607251 Analysis Date: 19-MAY-17 Time: 21:18:37

	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	100	82 - 121	0.4
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	109	62 - 160	8.8
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	98	85 - 117	-2.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	96	85 - 118	-4.3
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	100	72 - 138	0.4
13C-OCDD	M+2/M+4	0.90	0.76-1.02	182	96 - 415	-9.1
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	99	71 - 140	-1.3
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	106	76 - 130	5.9
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	108	77 - 130	8.3
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	97	76 - 131	-3.4
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	92	70 - 143	-8.4
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	94	74 - 135	-6.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	96	73 - 137	-3.8
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	100	78 - 129	-0.2
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	94	77 - 129	-5.7
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			9.9	7.8 - 12.7	-0.5

(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)

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
178519

Run #7 Filename P607251 Samp: 1 Inj: 1 Acquired: 19-MAY-17 21:18:37
Processed: 22-MAY-17 14:42:20 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:49	6.859e+03	8.591e+03	0.80	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:43	5.890e+04	3.799e+04	1.55	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:43	5.595e+04	3.647e+04	1.53	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:33	5.476e+04	4.355e+04	1.26	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:40	5.757e+04	4.638e+04	1.24	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:11	5.326e+04	4.369e+04	1.22	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:57	4.807e+04	3.865e+04	1.24	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:15	4.777e+04	4.668e+04	1.02	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:34	3.781e+04	3.712e+04	1.02	yes	no	1.341
10	Unk	OCDF	40:47	5.652e+04	6.248e+04	0.90	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:47	5.233e+03	6.751e+03	0.78	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:02	4.005e+04	2.560e+04	1.56	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:21	3.902e+04	3.126e+04	1.25	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:26	3.806e+04	3.005e+04	1.27	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:40	4.259e+04	3.261e+04	1.31	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:08	3.424e+04	3.264e+04	1.05	yes	no	1.048
17	Unk	OCDD	40:37	4.815e+04	5.441e+04	0.89	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:47	6.919e+04	8.744e+04	0.79	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:42	1.136e+05	7.185e+04	1.58	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:42	1.164e+05	7.387e+04	1.58	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:33	5.391e+04	1.022e+05	0.53	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:39	6.129e+04	1.161e+05	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:11	5.825e+04	1.113e+05	0.52	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:57	5.040e+04	9.697e+04	0.52	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	4.260e+04	9.415e+04	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:33	3.532e+04	8.038e+04	0.44	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:47	5.067e+04	6.466e+04	0.78	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	32:01	8.410e+04	5.402e+04	1.56	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:20	7.482e+04	5.940e+04	1.26	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:25	7.238e+04	5.765e+04	1.26	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:08	6.705e+04	6.309e+04	1.06	yes	no	0.884
32	IS	13C-OCDD	40:37	8.712e+04	9.720e+04	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:04	5.154e+04	6.484e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:39	8.161e+04	6.515e+04	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:47	1.242e+04				no	1.072

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.
178519

Run #7 Filename P607251 Samp: 1 Inj: 1 Acquired: 19-MAY-17 21:18:37
Processed: 22-MAY-17 14:42:20 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	9.67e+05	9.52e+02	1.0e+03	1.20e+06	1.70e+03	7.1e+02
2	1,2,3,7,8-PeCDF	1.00e+07	1.90e+04	5.3e+02	6.42e+06	4.06e+03	1.6e+03
3	2,3,4,7,8-PeCDF	1.01e+07	1.90e+04	5.3e+02	6.59e+06	4.06e+03	1.6e+03
4	1,2,3,4,7,8-HxCDF	1.14e+07	1.14e+03	1.0e+04	9.07e+06	7.68e+02	1.2e+04
5	1,2,3,6,7,8-HxCDF	1.16e+07	1.14e+03	1.0e+04	9.41e+06	7.68e+02	1.2e+04
6	2,3,4,6,7,8-HxCDF	1.09e+07	1.14e+03	9.6e+03	9.07e+06	7.68e+02	1.2e+04
7	1,2,3,7,8,9-HxCDF	9.95e+06	1.14e+03	8.7e+03	8.01e+06	7.68e+02	1.0e+04
8	1,2,3,4,6,7,8-HpCDF	1.04e+07	8.00e+03	1.3e+03	1.02e+07	8.32e+03	1.2e+03
9	1,2,3,4,7,8,9-HpCDF	7.98e+06	8.00e+03	1.0e+03	7.63e+06	8.32e+03	9.2e+02
10	OCDF	1.04e+07	4.44e+03	2.3e+03	1.16e+07	1.04e+04	1.1e+03
11	2,3,7,8-TCDD	8.13e+05	1.83e+03	4.4e+02	1.07e+06	5.64e+02	1.9e+03
12	1,2,3,7,8-PeCDD	7.34e+06	1.48e+03	4.9e+03	4.66e+06	2.44e+02	1.9e+04
13	1,2,3,4,7,8-HxCDD	8.11e+06	2.64e+02	3.1e+04	6.37e+06	1.15e+03	5.5e+03
14	1,2,3,6,7,8-HxCDD	7.81e+06	2.64e+02	3.0e+04	6.15e+06	1.15e+03	5.4e+03
15	1,2,3,7,8,9-HxCDD	8.69e+06	2.64e+02	3.3e+04	6.85e+06	1.15e+03	6.0e+03
16	1,2,3,4,6,7,8-HpCDD	7.49e+06	4.48e+02	1.7e+04	7.30e+06	7.08e+02	1.0e+04
17	OCDD	9.10e+06	4.10e+03	2.2e+03	1.03e+07	7.10e+03	1.4e+03
18	13C-2,3,7,8-TCDF	9.81e+06	1.38e+04	7.1e+02	1.22e+07	6.72e+03	1.8e+03
19	13C-1,2,3,7,8-PeCDF	1.88e+07	1.28e+03	1.5e+04	1.19e+07	2.06e+03	5.8e+03
20	13C-2,3,4,7,8-PeCDF	2.07e+07	1.28e+03	1.6e+04	1.32e+07	2.06e+03	6.4e+03
21	13C-1,2,3,4,7,8-HxCDF	1.12e+07	1.13e+03	9.9e+03	2.12e+07	1.93e+03	1.1e+04
22	13C-1,2,3,6,7,8-HxCDF	1.24e+07	1.13e+03	1.1e+04	2.36e+07	1.93e+03	1.2e+04
23	13C-2,3,4,6,7,8-HxCDF	1.19e+07	1.13e+03	1.0e+04	2.28e+07	1.93e+03	1.2e+04
24	13C-1,2,3,7,8,9-HxCDF	1.04e+07	1.13e+03	9.2e+03	2.02e+07	1.93e+03	1.0e+04
25	13C-1,2,3,4,6,7,8-HpCDF	9.23e+06	9.17e+03	1.0e+03	2.07e+07	1.16e+04	1.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	7.59e+06	9.17e+03	8.3e+02	1.71e+07	1.16e+04	1.5e+03
27	13C-2,3,7,8-TCDD	7.70e+06	6.40e+03	1.2e+03	9.81e+06	4.67e+03	2.1e+03
28	13C-1,2,3,7,8-PeCDD	1.51e+07	1.02e+03	1.5e+04	9.74e+06	1.10e+03	8.8e+03
29	13C-1,2,3,4,7,8-HxCDD	1.55e+07	1.37e+03	1.1e+04	1.21e+07	8.92e+02	1.4e+04
30	13C-1,2,3,6,7,8-HxCDD	1.48e+07	1.37e+03	1.1e+04	1.18e+07	8.92e+02	1.3e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.48e+07	1.59e+03	9.3e+03	1.39e+07	7.20e+02	1.9e+04
32	13C-OCDD	1.63e+07	3.02e+03	5.4e+03	1.81e+07	4.31e+03	4.2e+03
33	13C-1,2,3,4-TCDD	7.61e+06	6.40e+03	1.2e+03	9.38e+06	4.67e+03	2.0e+03
34	13C-1,2,3,7,8,9-HxCDD	1.71e+07	1.37e+03	1.3e+04	1.35e+07	8.92e+02	1.5e+04
35	37Cl-2,3,7,8-TCDD	1.96e+06	2.04e+03	9.6e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.832e{+}03 + 5.640e{+}02\ ) \times 100}{(7.699e{+}06 + 9.811e{+}06\ ) \times (\qquad\qquad\qquad\qquad) \times 1.055} =$$

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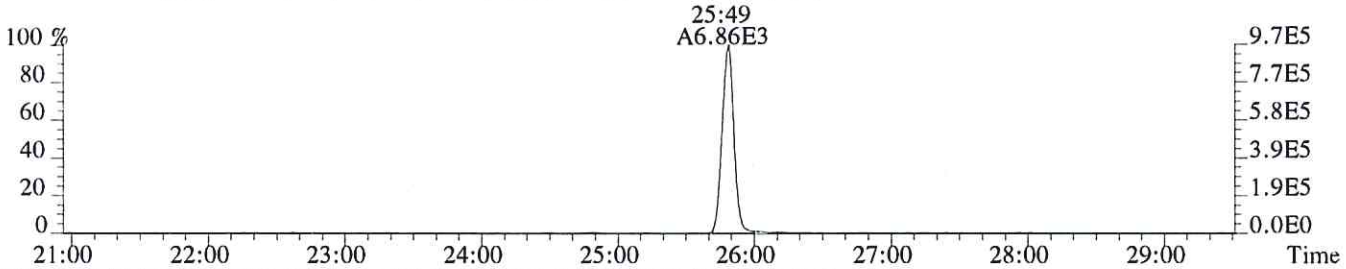
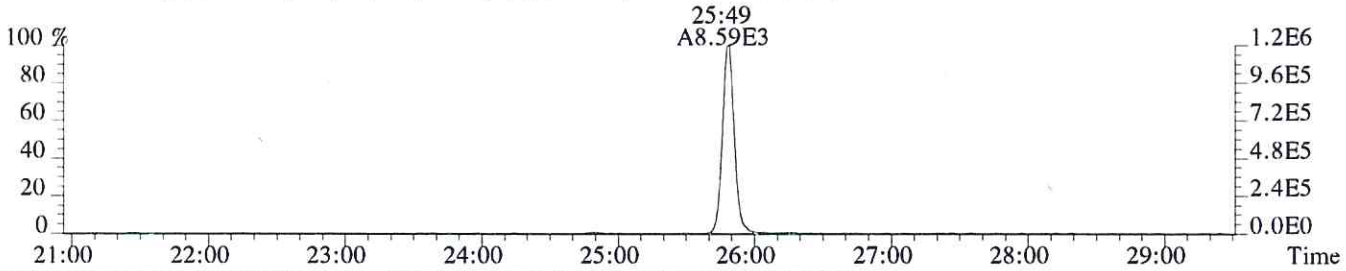
File:P607251 #1-609 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

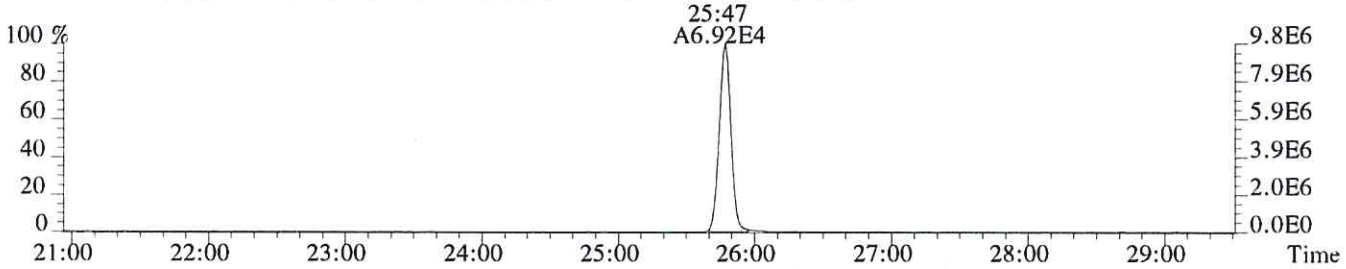
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,952.0,1.00%,F,T)



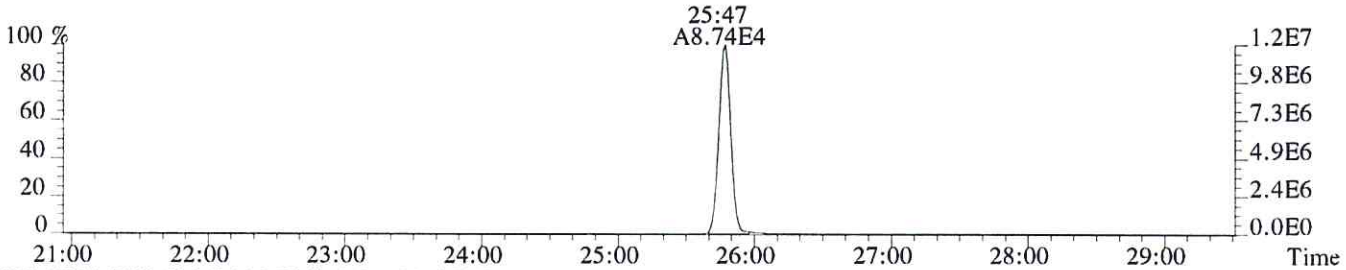
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1696.0,1.00%,F,T)



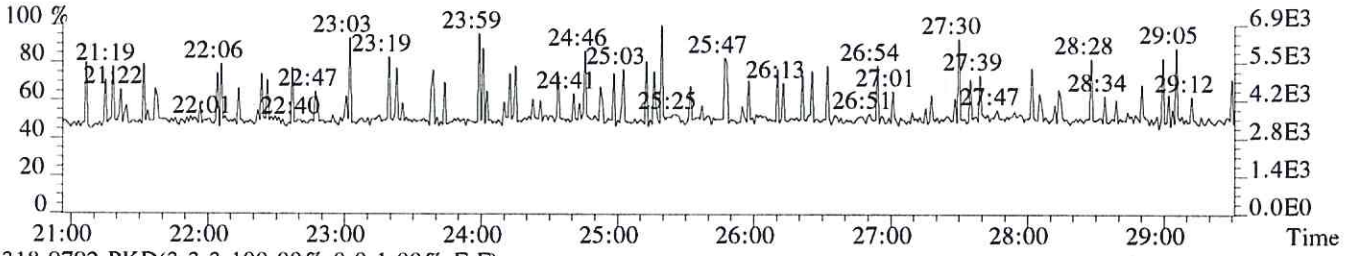
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13816.0,1.00%,F,T)



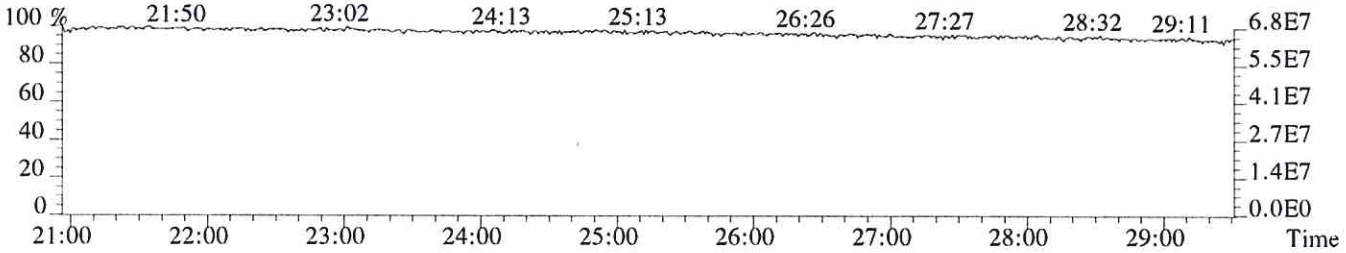
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6724.0,1.00%,F,T)



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

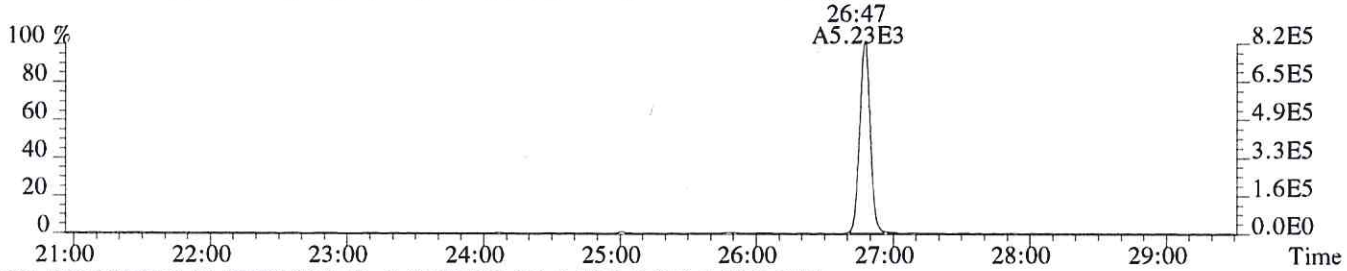


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

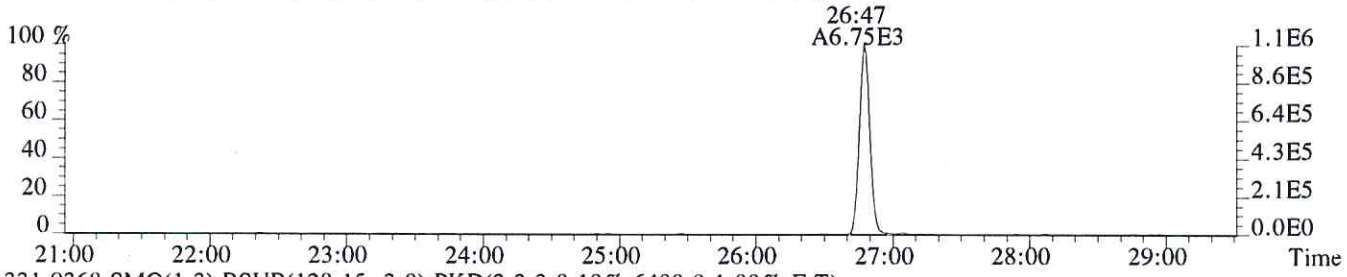


File:P607251 #1-609 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

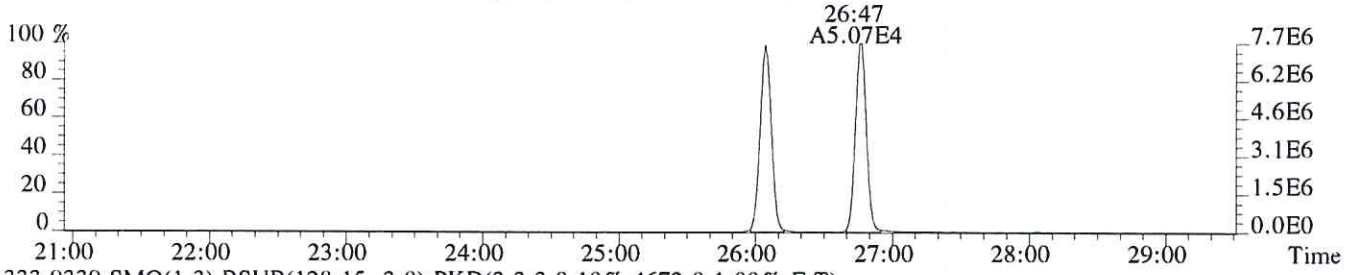
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1832.0,1.00%,F,T)



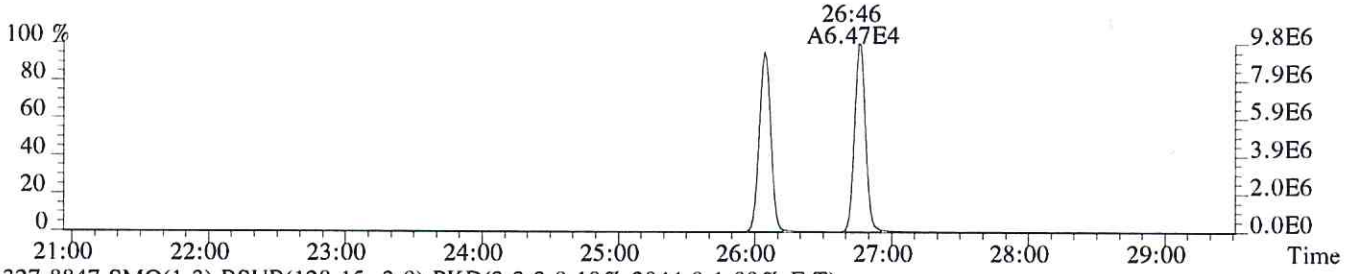
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,564.0,1.00%,F,T)



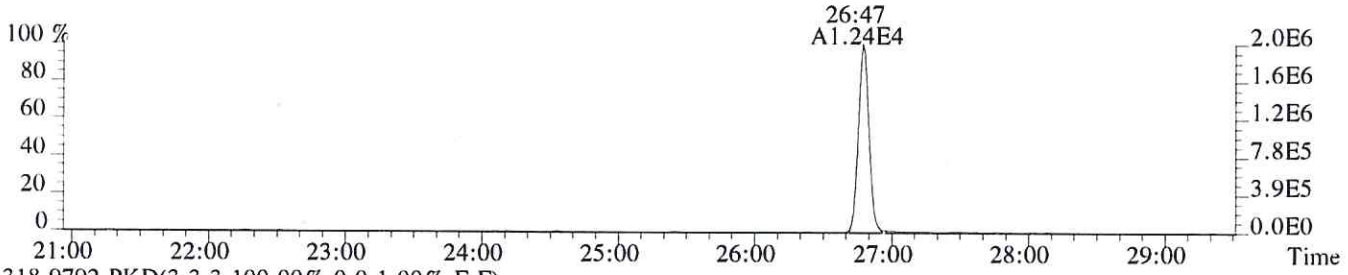
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6400.0,1.00%,F,T)



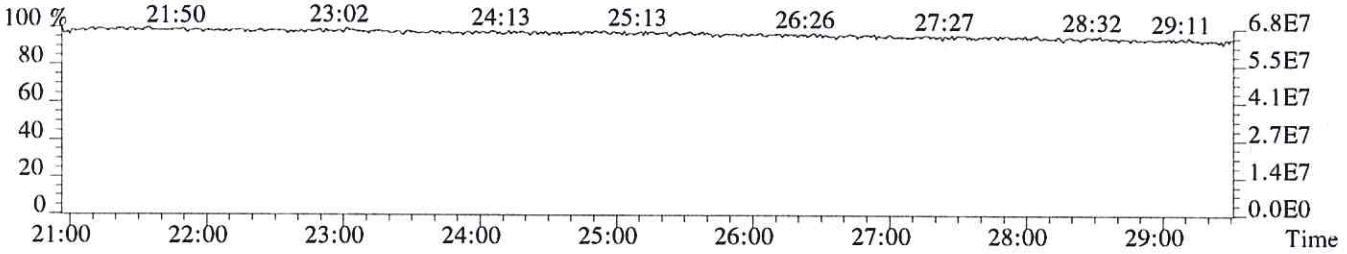
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4672.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2044.0,1.00%,F,T)

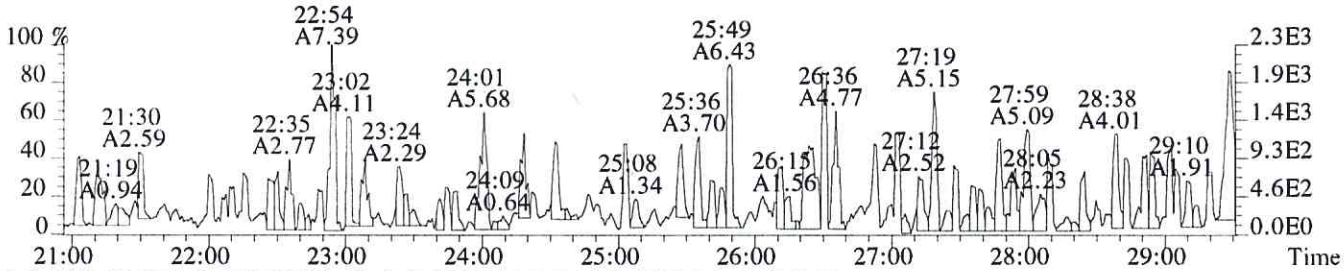


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

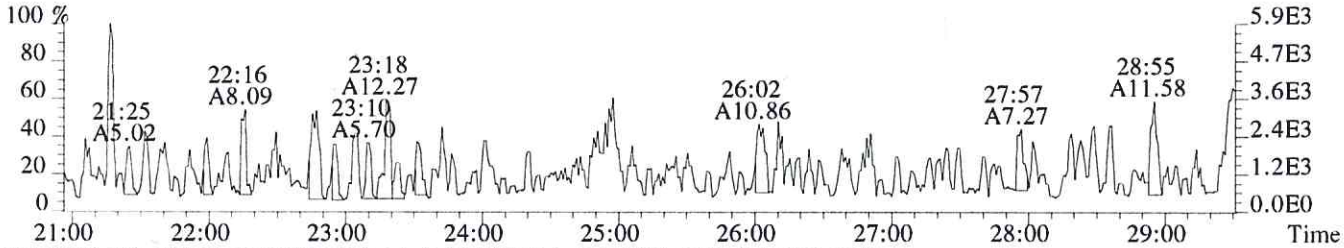


File:P607251 #1-609 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

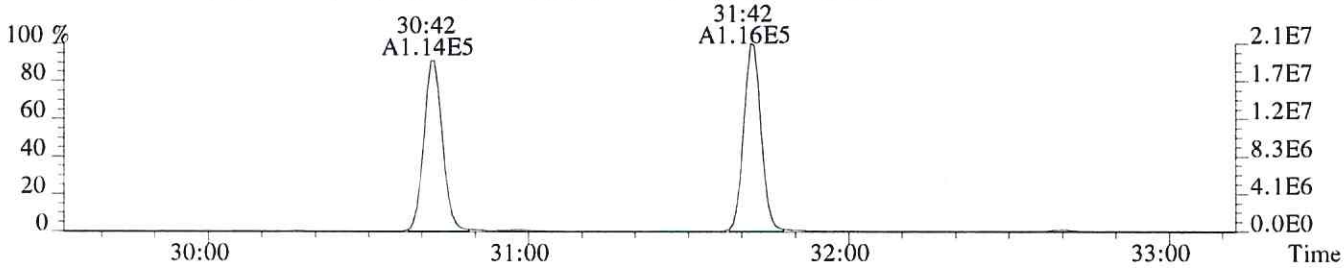
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,268.0,1.00%,F,T)



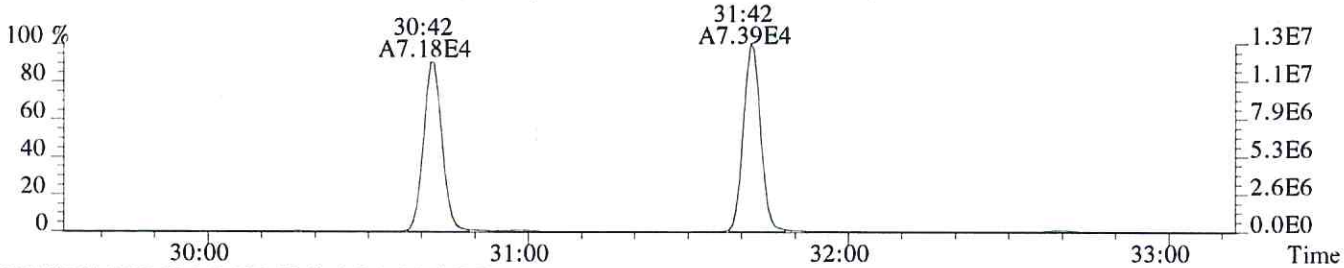
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1268.0,1.00%,F,T)



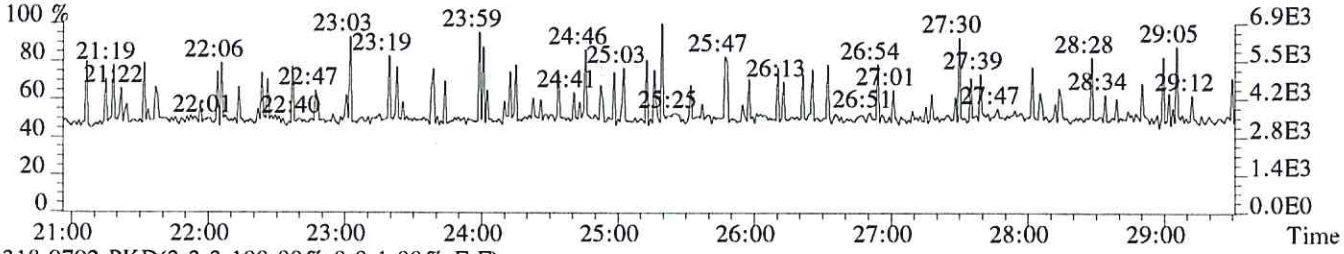
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1276.0,1.00%,F,T)



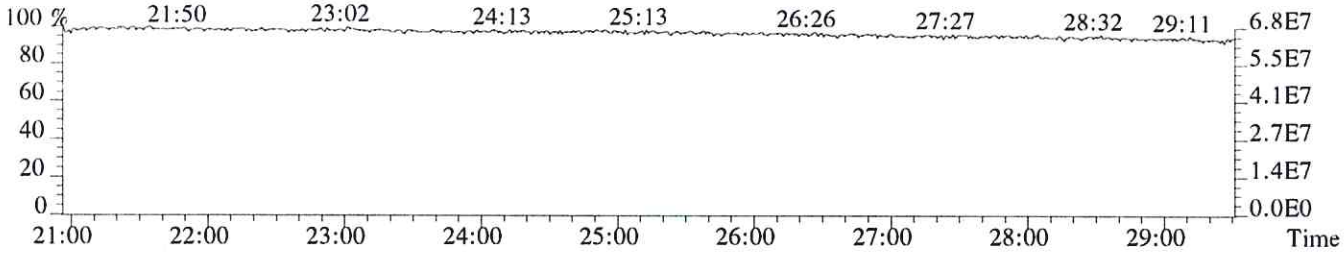
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2060.0,1.00%,F,T)



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

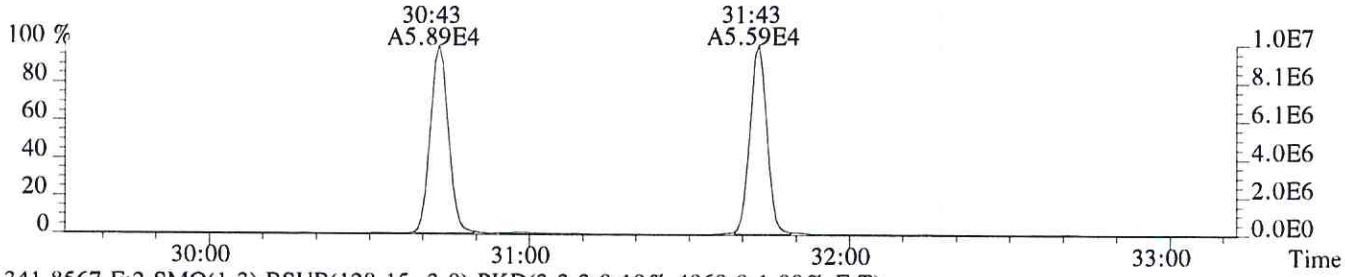


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

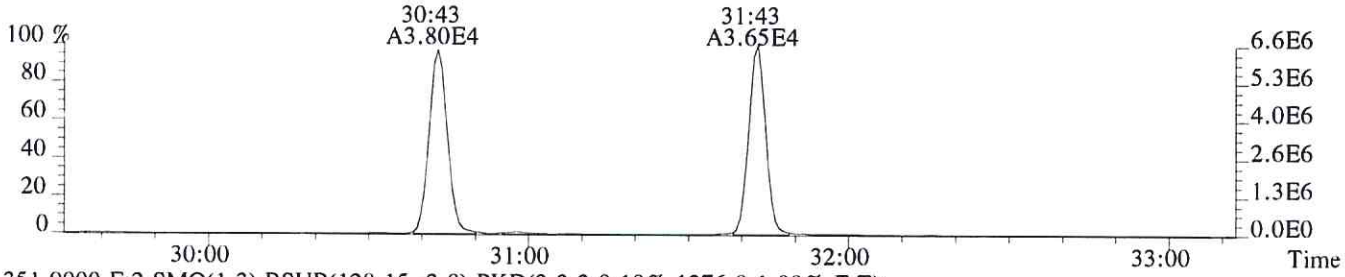


File:P607251 #1-330 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

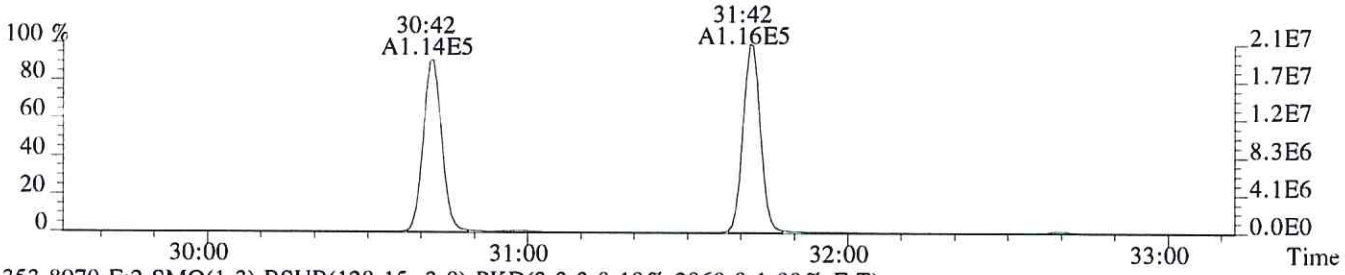
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,19044.0,1.00%,F,T)



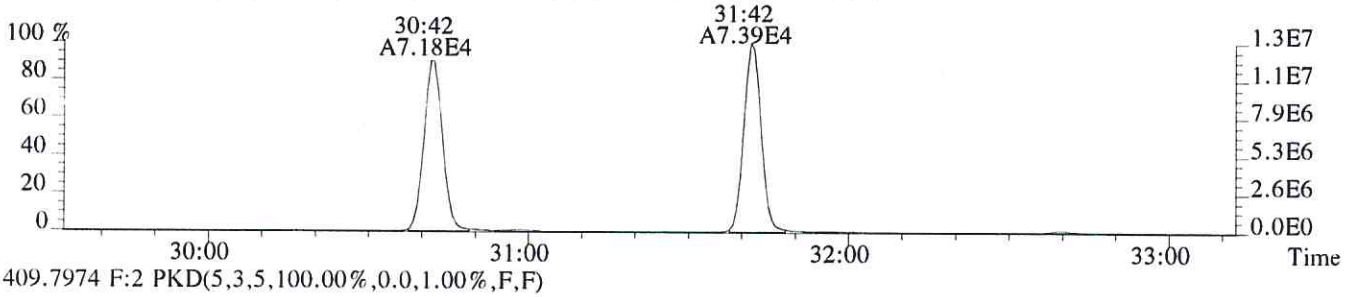
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4060.0,1.00%,F,T)



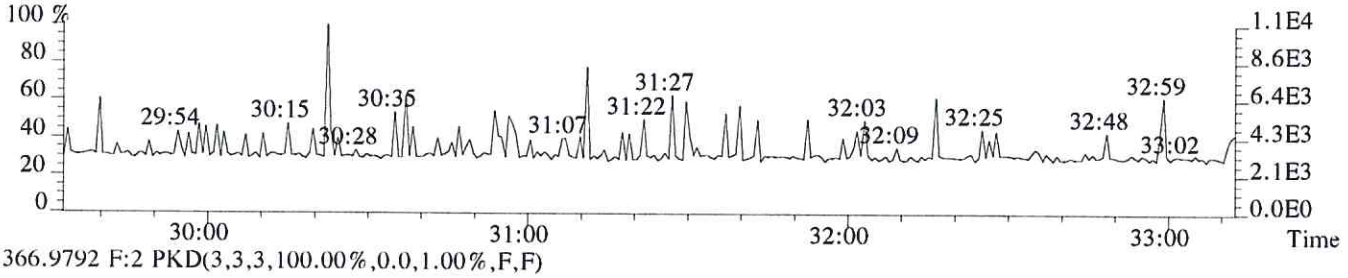
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1276.0,1.00%,F,T)



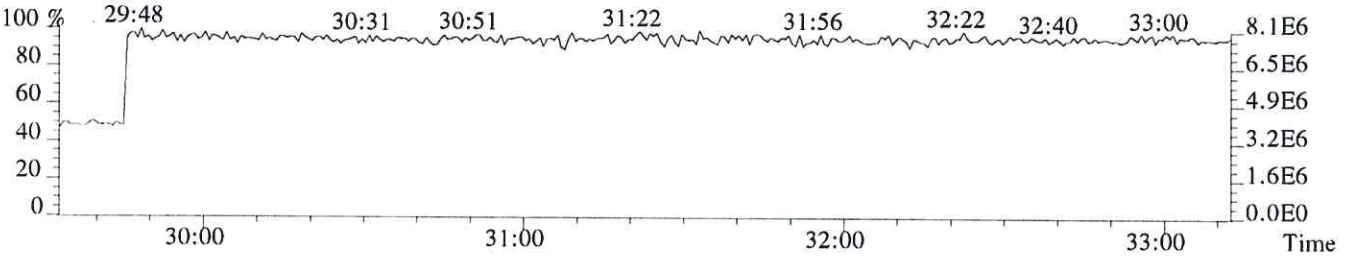
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2060.0,1.00%,F,T)



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

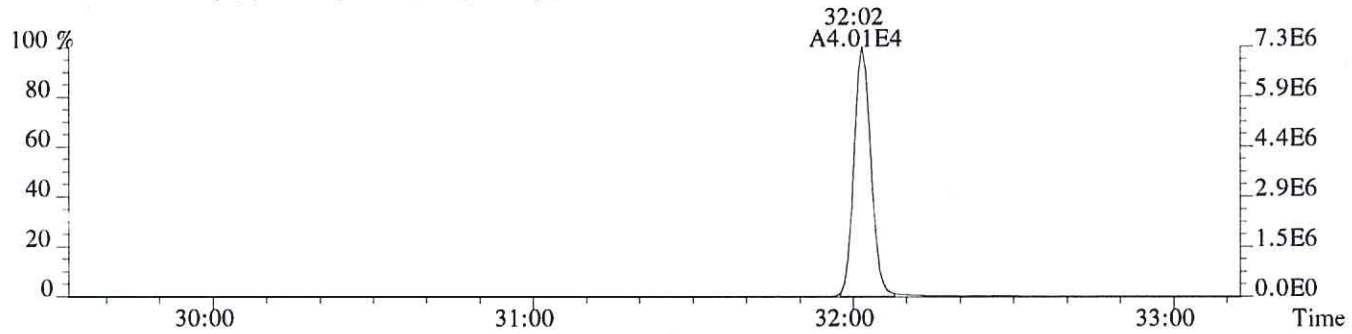


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

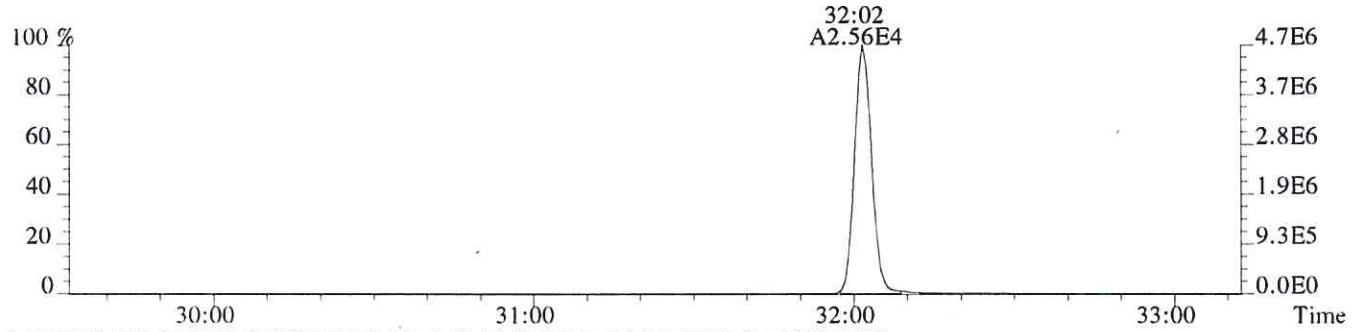


File:P607251 #1-330 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

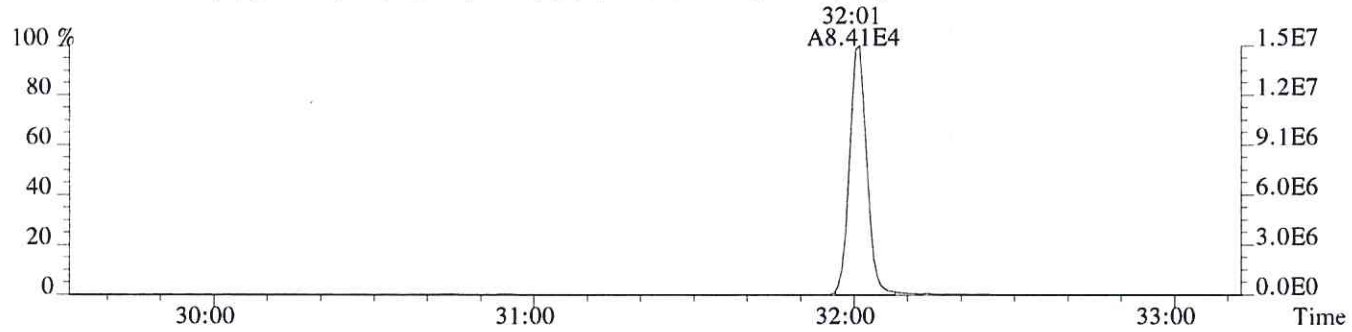
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1484.0,1.00%,F,T)



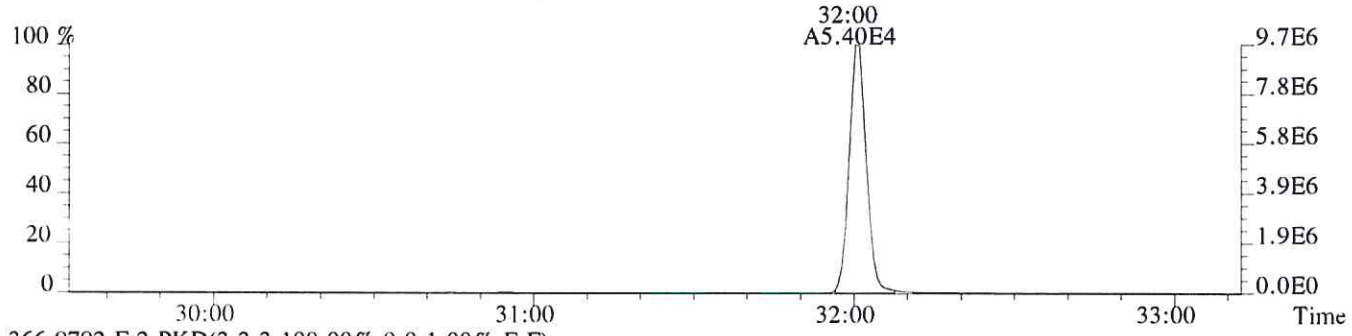
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,244.0,1.00%,F,T)



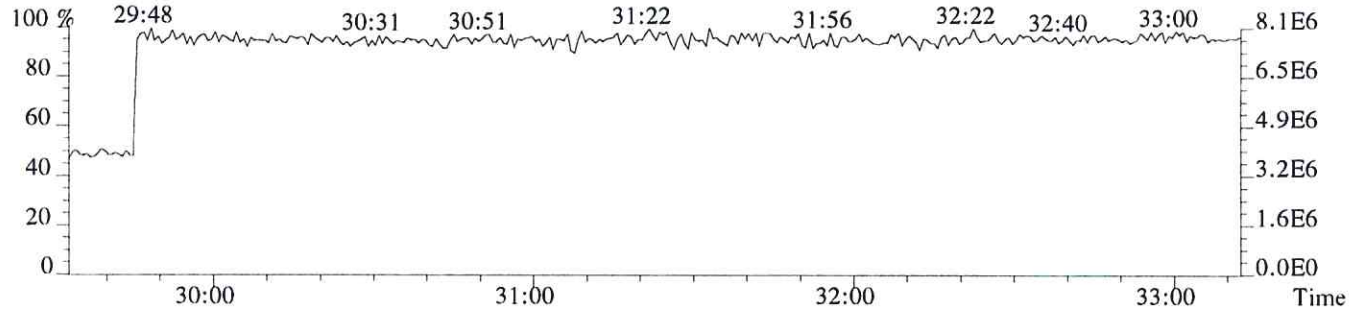
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1020.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1104.0,1.00%,F,T)

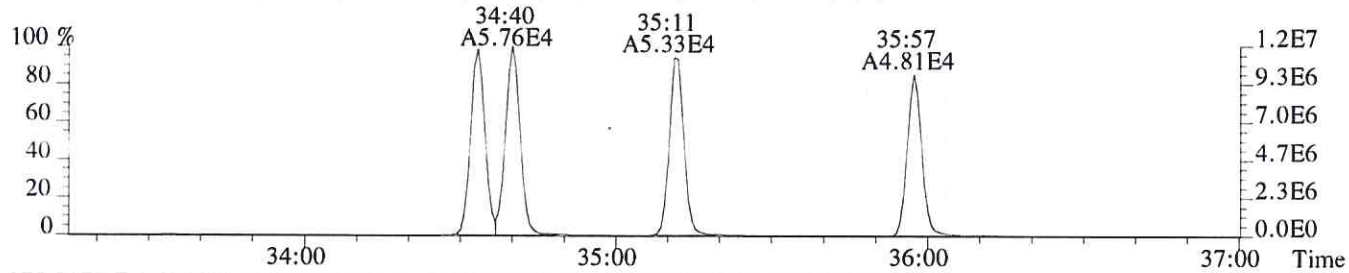


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

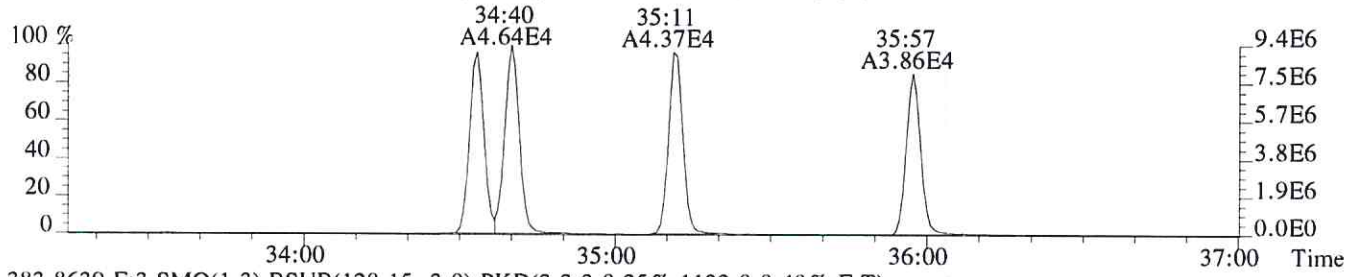


File:P607251 #1-339 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

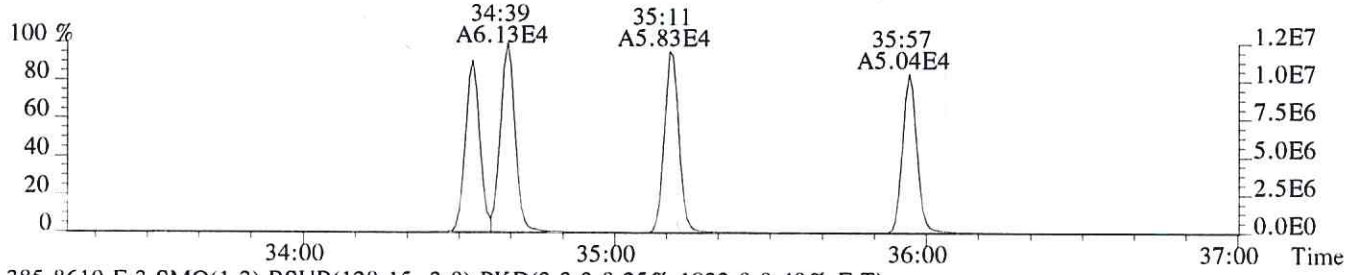
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1140.0,0.40%,F,T)



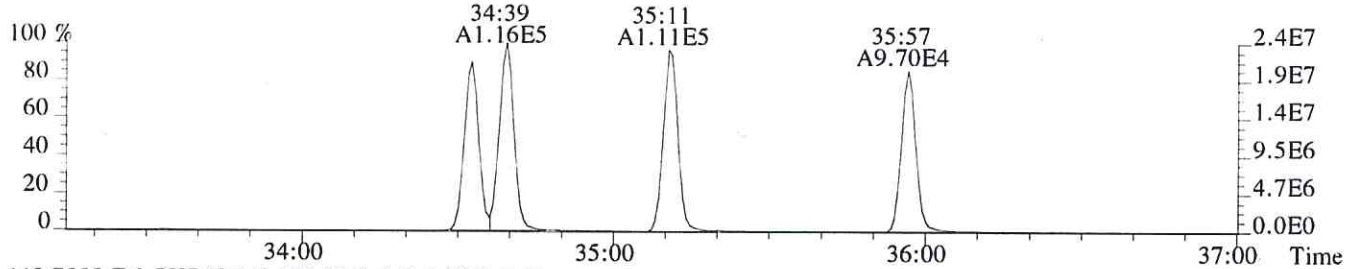
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,768.0,0.40%,F,T)



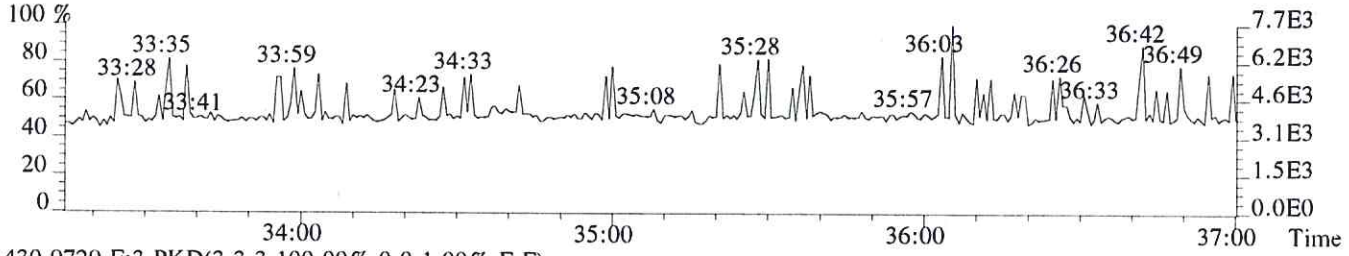
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1132.0,0.40%,F,T)



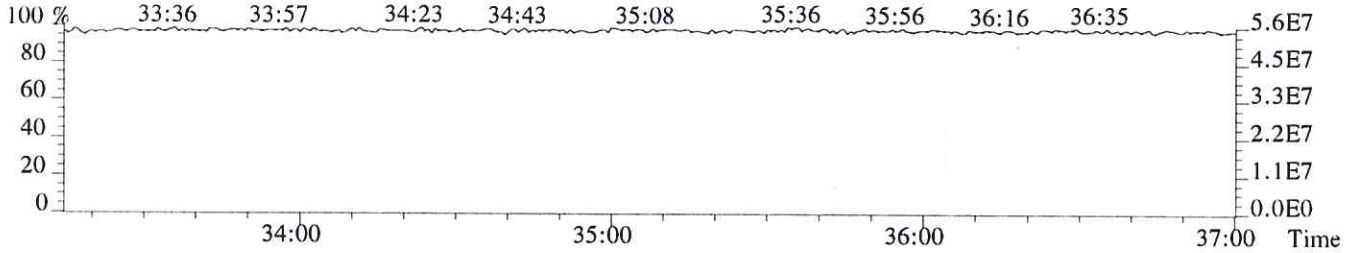
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1932.0,0.40%,F,T)



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

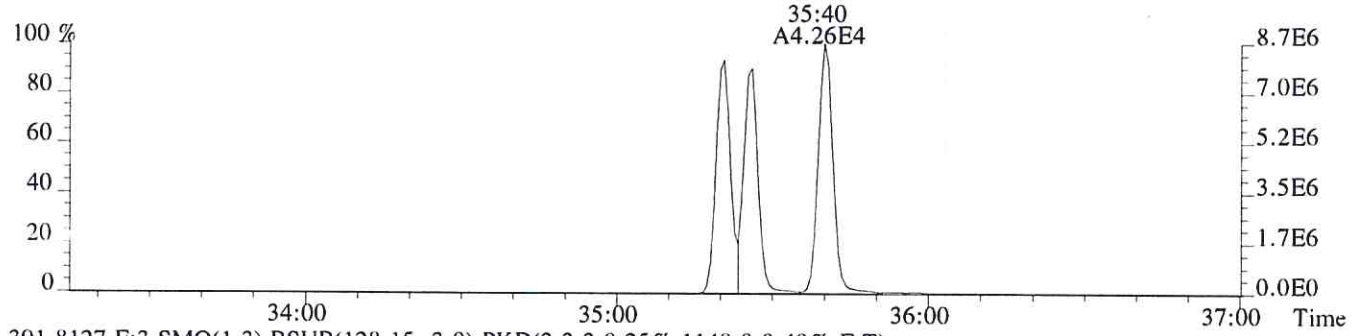


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

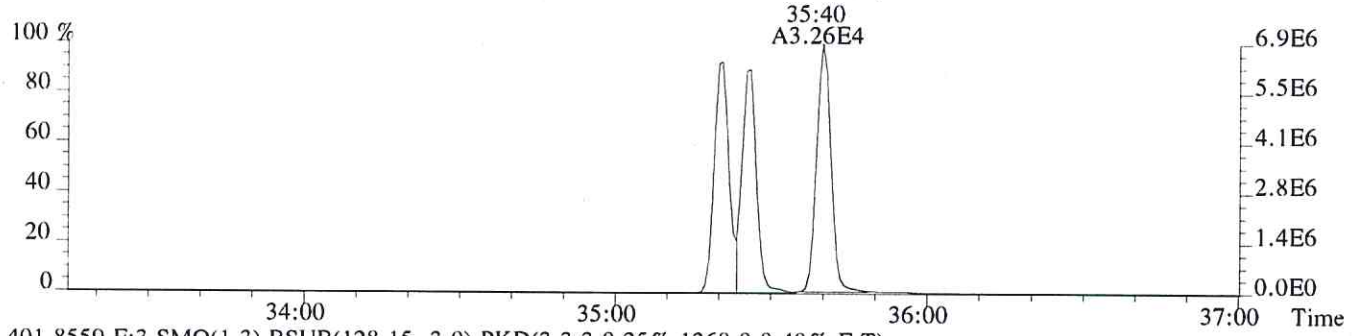


File:P607251 #1-339 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

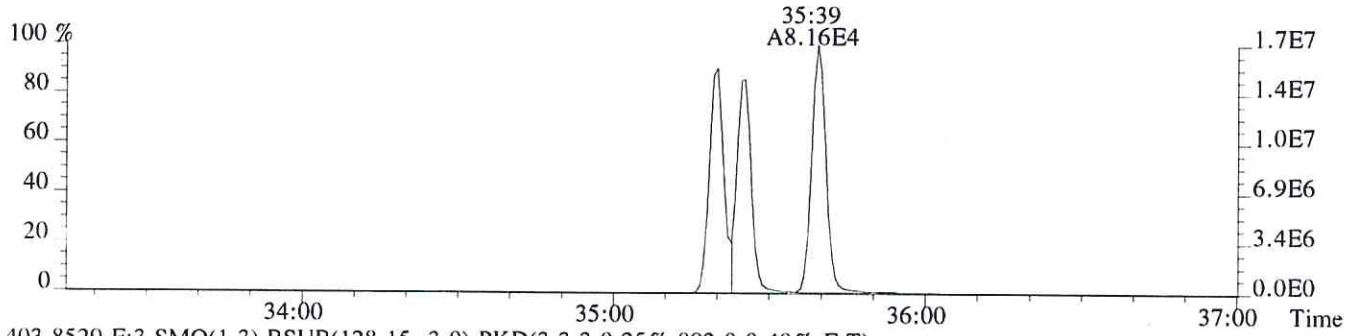
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,264.0,0.40%,F,T)



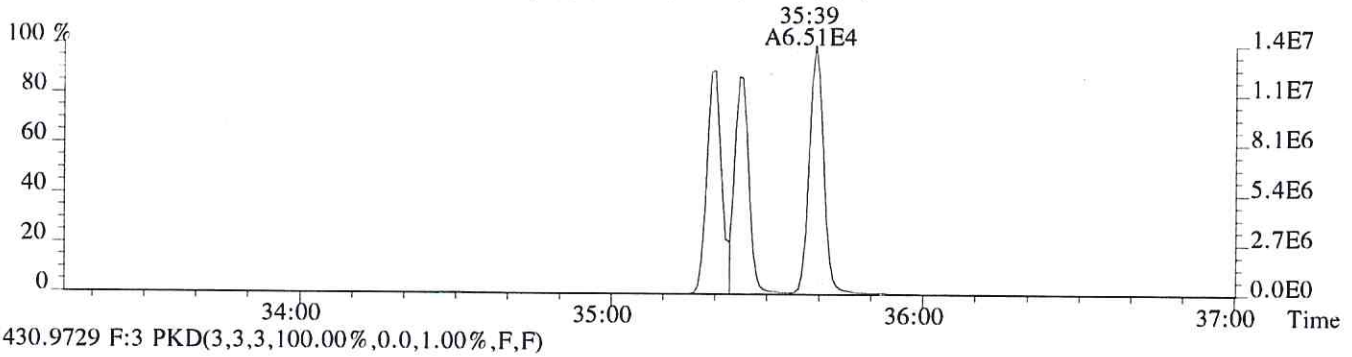
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1148.0,0.40%,F,T)



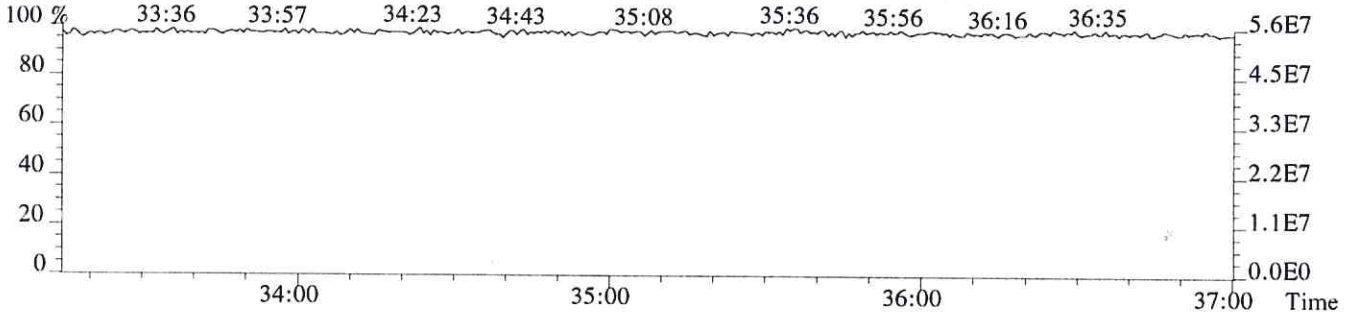
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1368.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,892.0,0.40%,F,T)

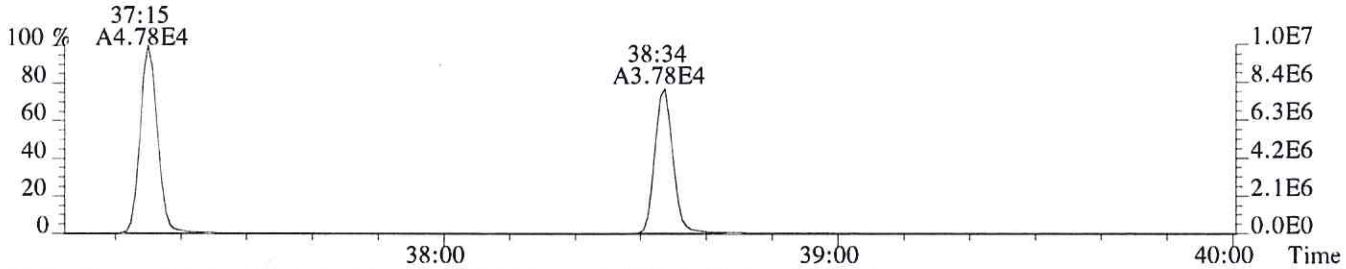


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

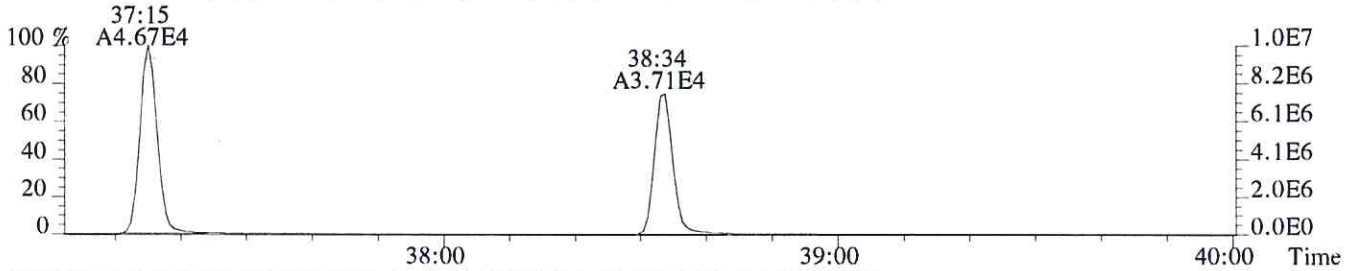


File:P607251 #1-268 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

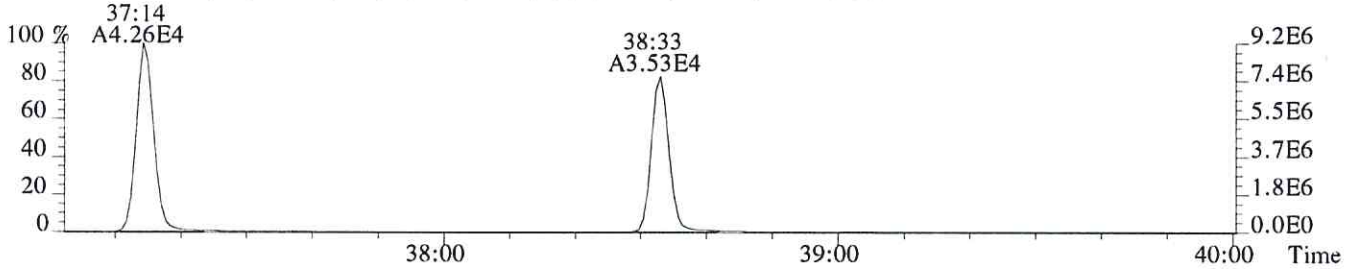
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8004.0,0.50%,F,T)



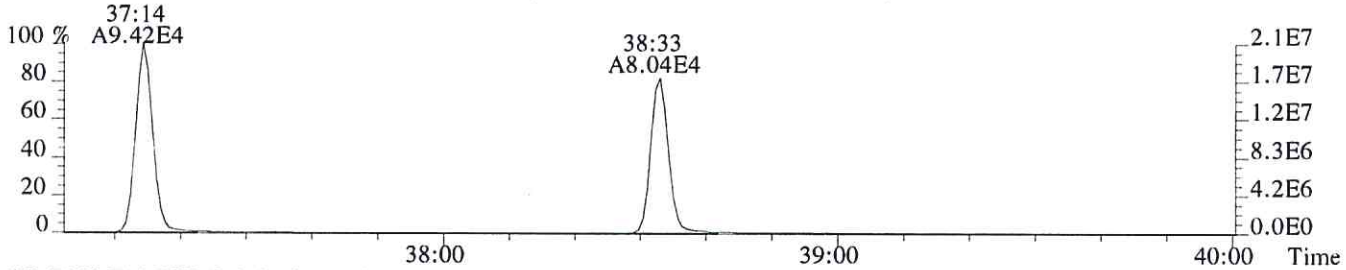
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8316.0,0.50%,F,T)



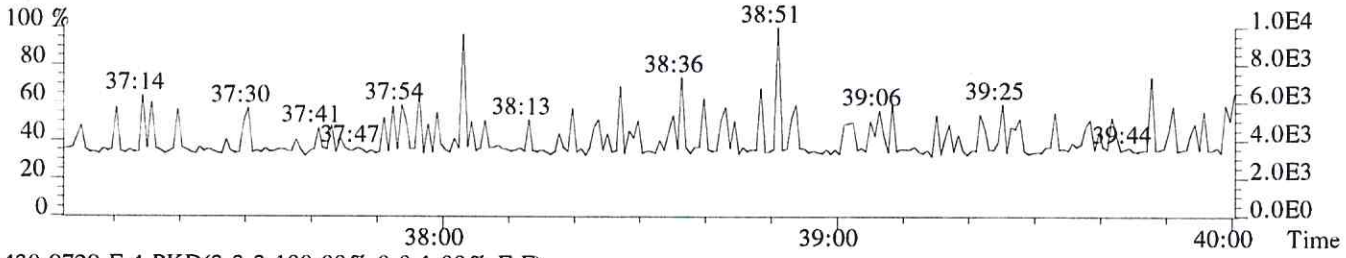
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9172.0,0.50%,F,T)



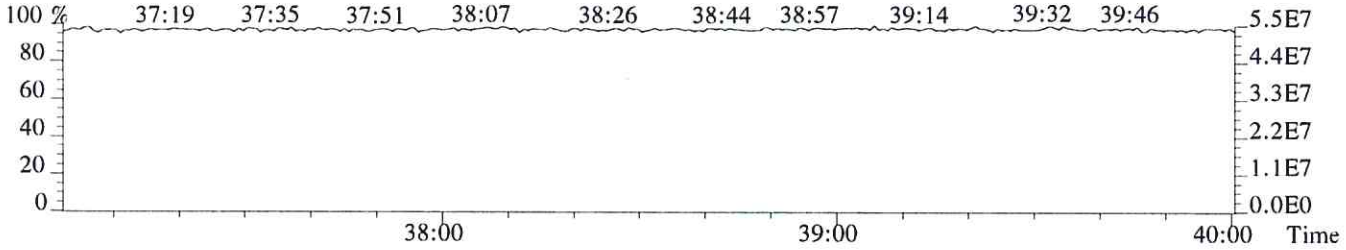
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11596.0,0.50%,F,T)



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

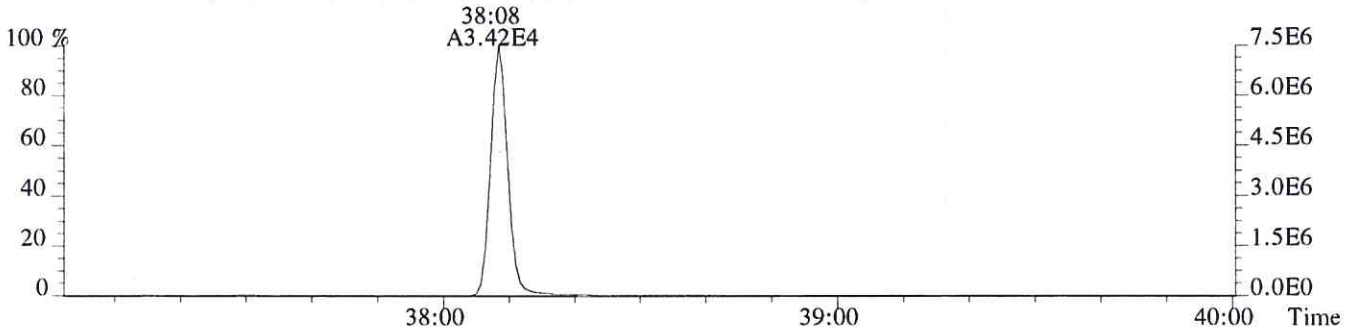


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

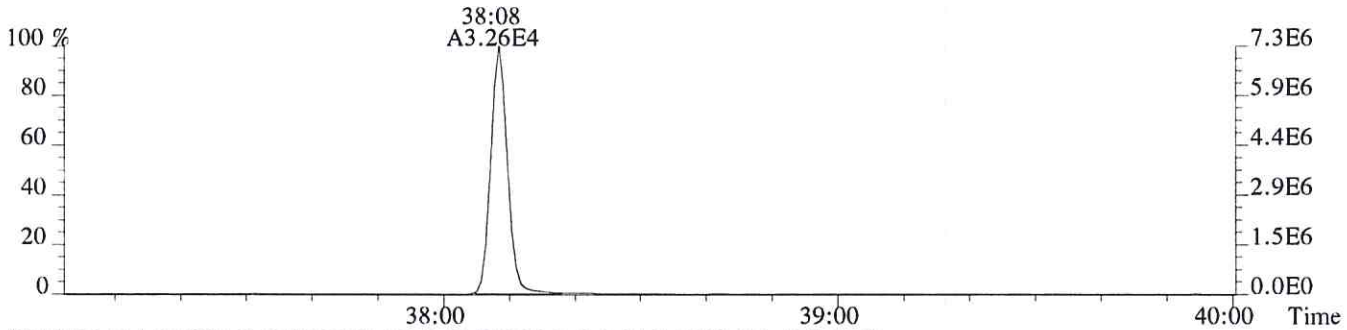


File:P607251 #1-268 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

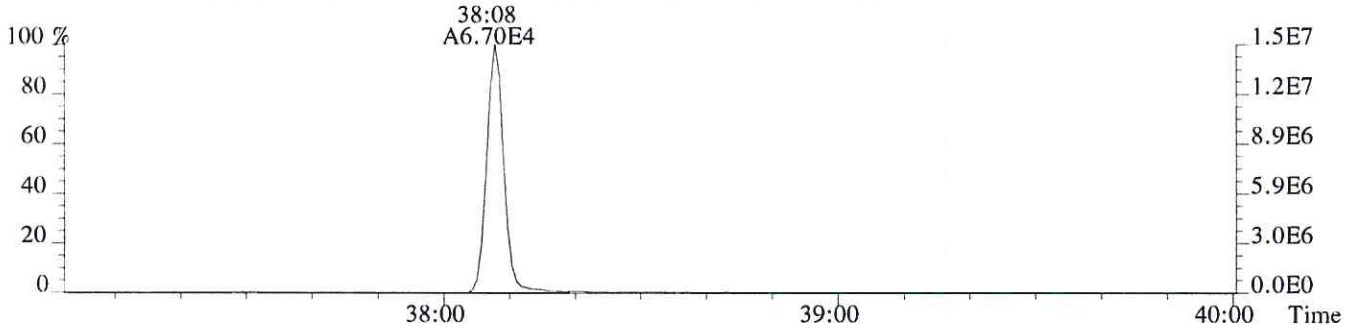
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,448.0,0.40%,F,T)



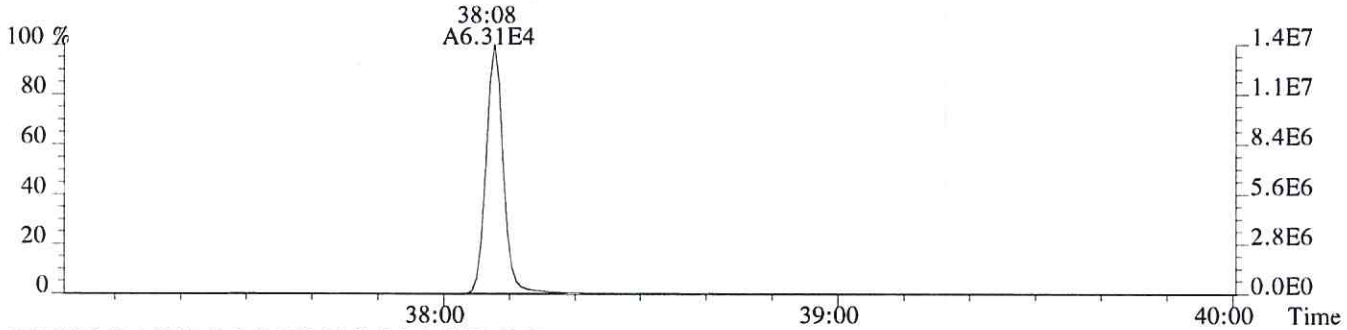
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,708.0,0.40%,F,T)



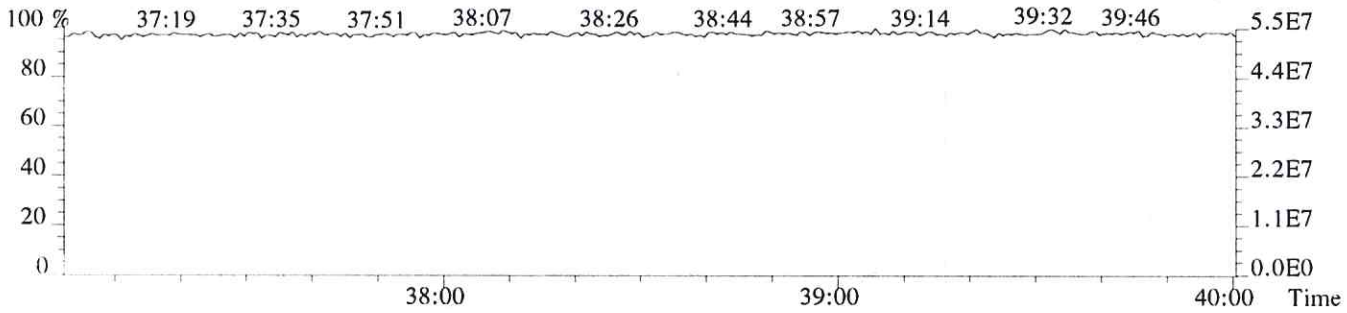
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1588.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,720.0,0.40%,F,T)

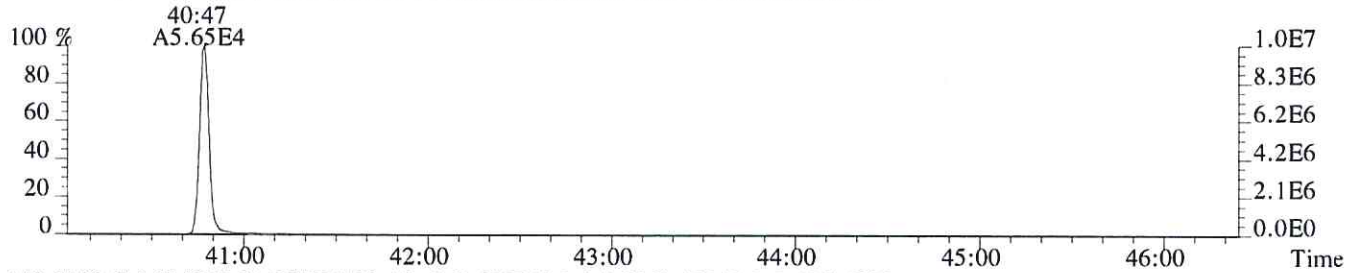


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

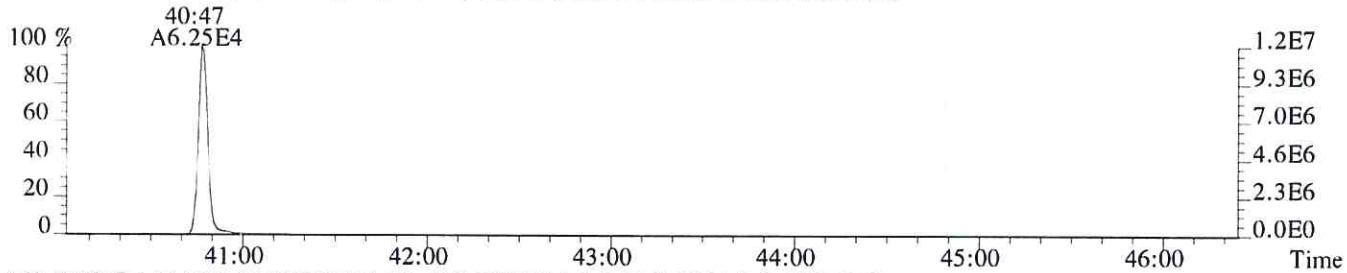


File:P607251 #1-573 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

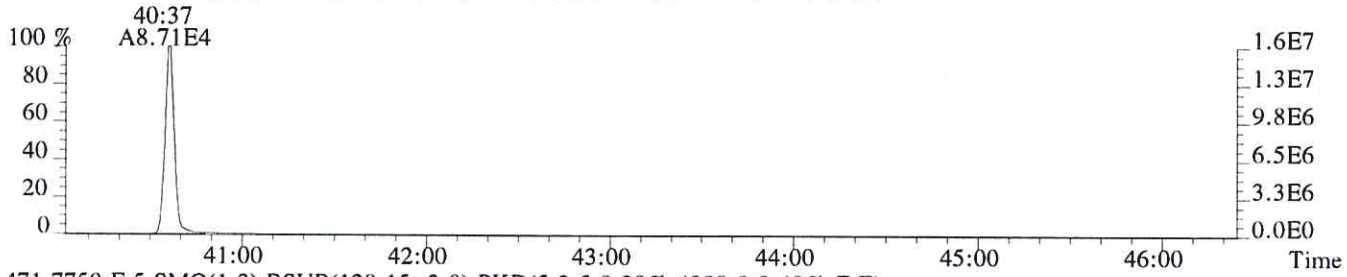
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4436.0,0.40%,F,T)



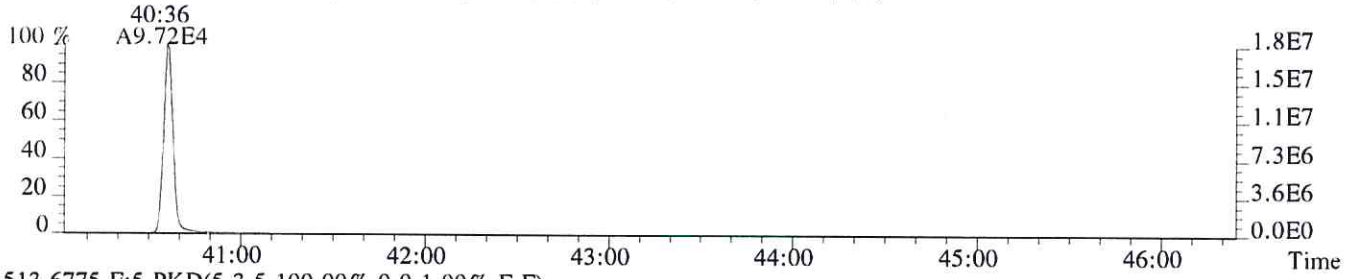
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,10412.0,0.40%,F,T)



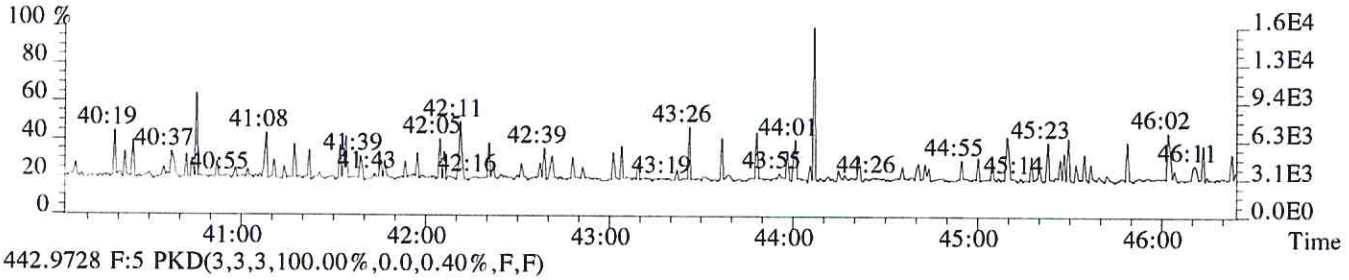
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3024.0,0.40%,F,T)



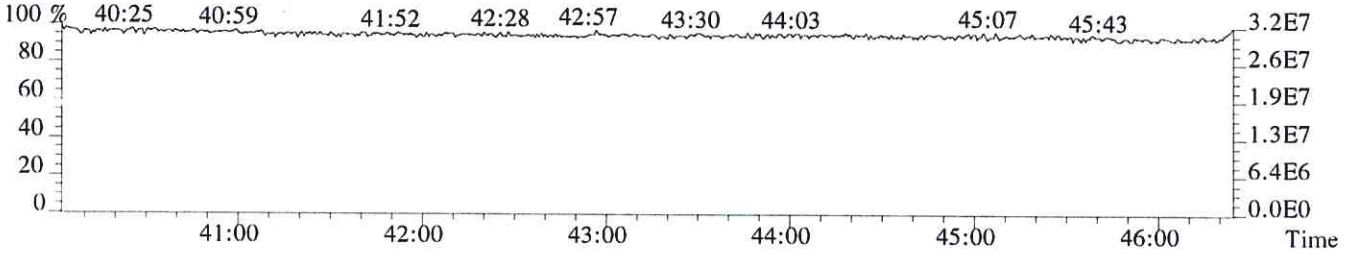
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4308.0,0.40%,F,T)



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

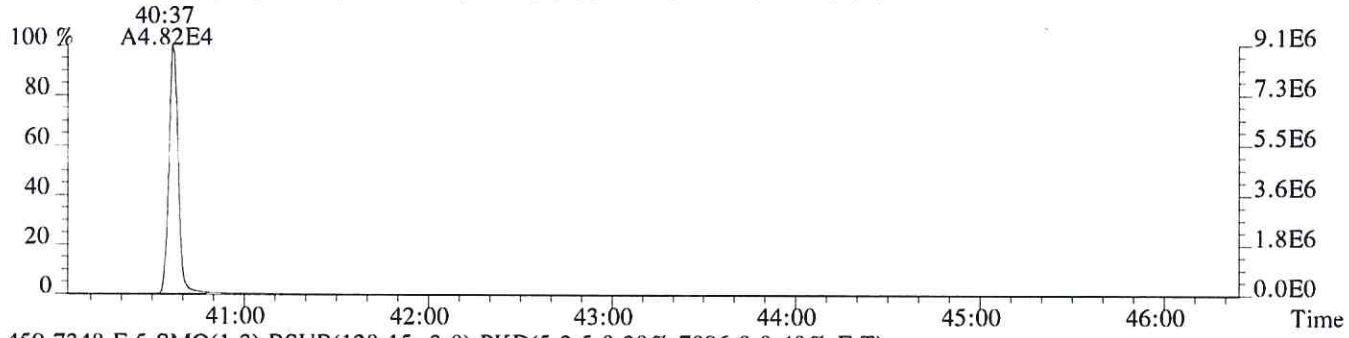


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

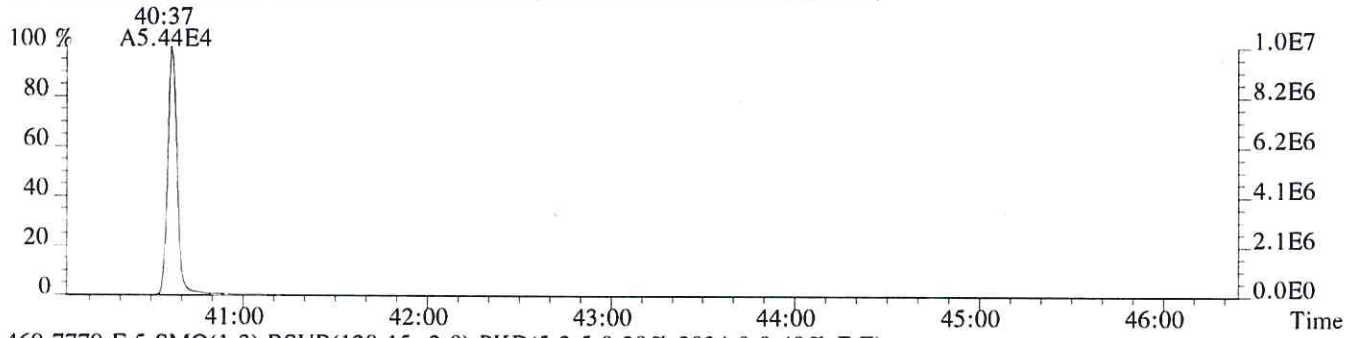


File:P607251 #1-573 Acq:19-MAY-2017 21:18:37 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

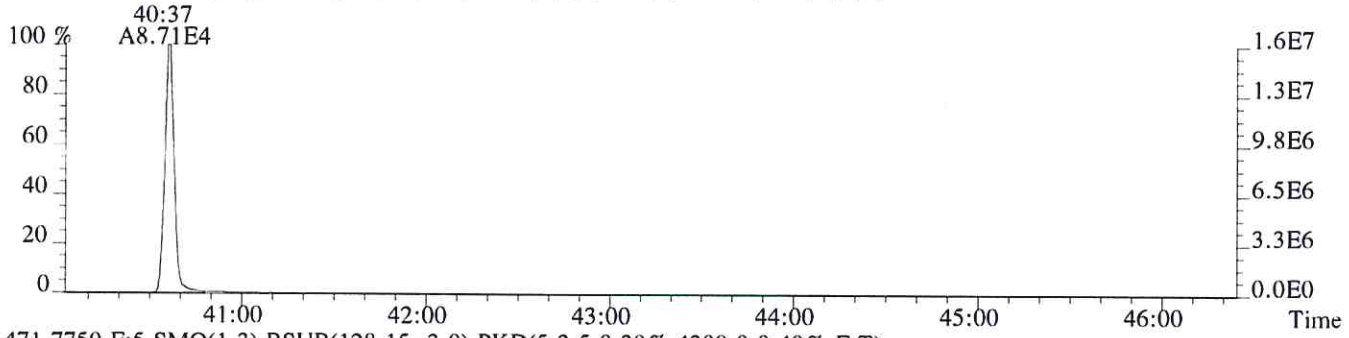
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4100.0,0.40%,F,T)



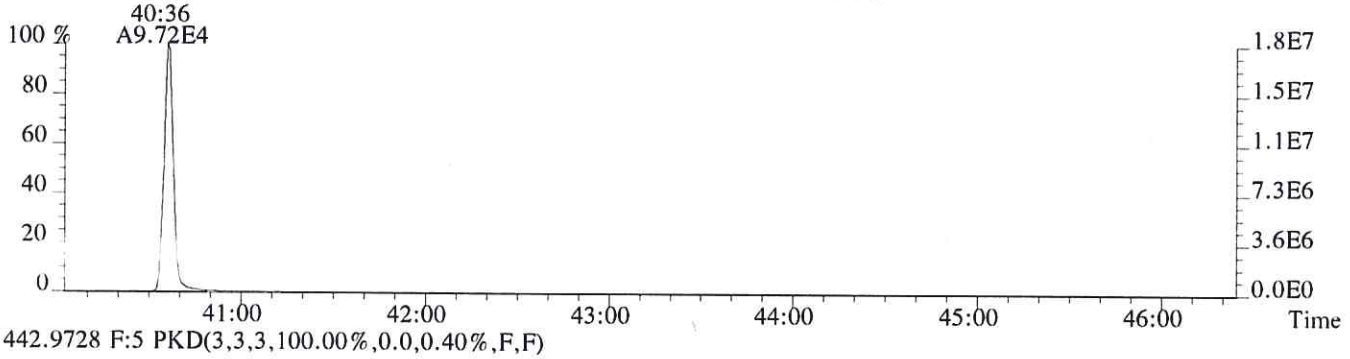
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,7096.0,0.40%,F,T)



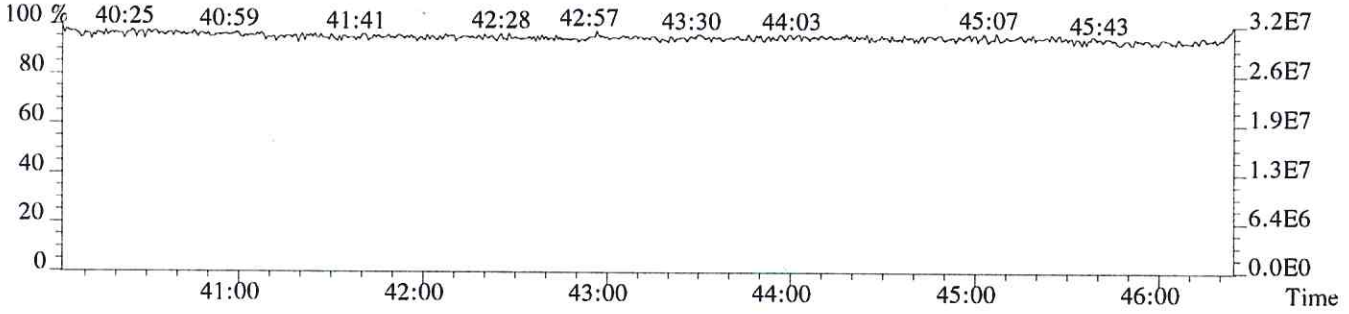
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3024.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4308.0,0.40%,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:

Instrument ID: E-HRMS-08 GC Column ID : DB-5MSUI

VER Data Filename: P607263 Analysis Date: 20-MAY-17 Time: 07:14:41

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	9.9	7.8 - 12.9	-1.2
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	49	39 - 65	-1.7
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	49	39 - 64	-2.6
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	50	39 - 64	0.9
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	49	41 - 61	-2.7
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	49	43 - 58	-1.5
OCDD	M+2/M+4	0.90	0.76-1.02	99	79 - 126	-1.0
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	9.7	8.4 - 12.0	-2.8
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	50	41 - 60	-0.8
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	48	41 - 61	-3.4
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	50	45 - 56	-0.8
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	48	44 - 57	-3.3
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	49	45 - 56	-1.3
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	50	44 - 57	-0.7
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88-1.20	50	45 - 55	-0.3
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	48	43 - 58	-3.6
OCDF	M+2/M+4	0.90	0.76-1.02	95	63 - 159	-4.7

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date:

Instrument ID: E-HRMS-08 GC Column ID : DB-5MSUI

VER Data Filename: P607263 Analysis Date: 20-MAY-17 Time: 07:14:41

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	103	82 - 121	2.8
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	102	62 - 160	1.5
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	96	85 - 117	-4.2
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	99	85 - 118	-1.2
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	92	72 - 138	-8.4
13C-OCDD	M+2/M+4	0.90	0.76-1.02	153	96 - 415	-23.5
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	103	71 - 140	2.5
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	102	76 - 130	2.2
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	101	77 - 130	0.8
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	102	76 - 131	2.2
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	96	70 - 143	-4.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	92	74 - 135	-7.6
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	96	73 - 137	-4.1
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37-0.51	94	78 - 129	-6.0
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	85	77 - 129	-14.7
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			9.9	7.8 - 12.7	-0.9

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) No ion abundance ratio; report concentration found.
(5) The beginnning CCAL %RSD for the labeled standard must not exceed +/- 30% Section 7.7.4.2. The ending CCAL must not exceed +/- 35%, Sec 8.3.2.4 (8290)

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
178519

Run #8 Filename P607263 Samp: 1 Inj: 1 Acquired: 20-MAY-17 07:14:41
Processed: 22-MAY-17 14:44:29 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:47	8.538e+03	1.083e+04	0.79	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:42	6.854e+04	4.427e+04	1.55	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:42	6.364e+04	4.059e+04	1.57	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:33	5.702e+04	4.580e+04	1.25	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	5.907e+04	4.793e+04	1.23	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:11	5.477e+04	4.384e+04	1.25	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:57	4.795e+04	3.855e+04	1.24	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:14	4.559e+04	4.372e+04	1.04	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:32	3.408e+04	3.344e+04	1.02	yes	no	1.341
10	Unk	OCDF	40:46	4.666e+04	5.200e+04	0.90	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:47	6.586e+03	8.192e+03	0.80	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:01	4.475e+04	2.851e+04	1.57	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:19	3.807e+04	3.042e+04	1.25	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:25	3.921e+04	3.094e+04	1.27	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:39	4.119e+04	3.278e+04	1.26	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:08	3.156e+04	2.969e+04	1.06	yes	no	1.048
17	Unk	OCDD	40:36	4.060e+04	4.527e+04	0.90	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:46	8.649e+04	1.090e+05	0.79	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:41	1.315e+05	8.347e+04	1.58	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:41	1.303e+05	8.229e+04	1.58	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:32	5.625e+04	1.086e+05	0.52	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:39	6.351e+04	1.222e+05	0.52	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:10	5.815e+04	1.107e+05	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:56	4.928e+04	9.542e+04	0.52	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	3.953e+04	8.911e+04	0.44	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	3.192e+04	7.254e+04	0.44	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:45	6.282e+04	7.899e+04	0.80	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	31:60	9.438e+04	6.031e+04	1.56	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	7.334e+04	5.766e+04	1.27	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:24	7.456e+04	5.954e+04	1.25	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:07	6.082e+04	5.784e+04	1.05	yes	no	0.884
32	IS	13C-OCDD	40:35	7.336e+04	8.152e+04	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:04	6.179e+04	7.793e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:39	8.234e+04	6.424e+04	1.28	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:47	1.484e+04				no	1.072

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
178519

Run #8 Filename P607263 Samp: 1 Inj: 1 Acquired: 20-MAY-17 07:14:41
Processed: 22-MAY-17 14:44:29 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.22e+06	2.32e+02	5.3e+03	1.58e+06	1.17e+03	1.4e+03
2	1,2,3,7,8-PeCDF	1.11e+07	4.52e+02	2.5e+04	7.20e+06	1.60e+03	4.5e+03
3	2,3,4,7,8-PeCDF	1.15e+07	4.52e+02	2.5e+04	7.24e+06	1.60e+03	4.5e+03
4	1,2,3,4,7,8-HxCDF	1.17e+07	1.64e+02	7.1e+04	9.19e+06	3.00e+02	3.1e+04
5	1,2,3,6,7,8-HxCDF	1.20e+07	1.64e+02	7.3e+04	9.63e+06	3.00e+02	3.2e+04
6	2,3,4,6,7,8-HxCDF	1.15e+07	1.64e+02	7.0e+04	9.22e+06	3.00e+02	3.1e+04
7	1,2,3,7,8,9-HxCDF	9.71e+06	1.64e+02	5.9e+04	7.72e+06	3.00e+02	2.6e+04
8	1,2,3,4,6,7,8-HpCDF	1.00e+07	6.04e+03	1.7e+03	9.41e+06	5.57e+03	1.7e+03
9	1,2,3,4,7,8,9-HpCDF	7.19e+06	6.04e+03	1.2e+03	7.10e+06	5.57e+03	1.3e+03
10	OCDF	8.87e+06	6.04e+03	1.5e+03	9.94e+06	3.57e+03	2.8e+03
11	2,3,7,8-TCDD	1.05e+06	8.56e+02	1.2e+03	1.30e+06	1.76e+02	7.4e+03
12	1,2,3,7,8-PeCDD	8.28e+06	1.82e+03	4.6e+03	5.19e+06	3.08e+02	1.7e+04
13	1,2,3,4,7,8-HxCDD	8.25e+06	1.16e+02	7.1e+04	6.70e+06	2.52e+02	2.7e+04
14	1,2,3,6,7,8-HxCDD	7.91e+06	1.16e+02	6.8e+04	6.29e+06	2.52e+02	2.5e+04
15	1,2,3,7,8,9-HxCDD	8.48e+06	1.16e+02	7.3e+04	6.80e+06	2.52e+02	2.7e+04
16	1,2,3,4,6,7,8-HpCDD	6.92e+06	6.96e+02	9.9e+03	6.53e+06	2.28e+02	2.9e+04
17	OCDD	7.91e+06	1.54e+03	5.1e+03	8.93e+06	3.71e+03	2.4e+03
18	13C-2,3,7,8-TCDF	1.24e+07	8.30e+03	1.5e+03	1.56e+07	3.04e+03	5.1e+03
19	13C-1,2,3,7,8-PeCDF	2.20e+07	1.40e+04	1.6e+03	1.39e+07	1.50e+03	9.3e+03
20	13C-2,3,4,7,8-PeCDF	2.36e+07	1.40e+04	1.7e+03	1.47e+07	1.50e+03	9.8e+03
21	13C-1,2,3,4,7,8-HxCDF	1.14e+07	2.72e+02	4.2e+04	2.19e+07	2.36e+02	9.3e+04
22	13C-1,2,3,6,7,8-HxCDF	1.27e+07	2.72e+02	4.7e+04	2.42e+07	2.36e+02	1.0e+05
23	13C-2,3,4,6,7,8-HxCDF	1.22e+07	2.72e+02	4.5e+04	2.33e+07	2.36e+02	9.9e+04
24	13C-1,2,3,7,8,9-HxCDF	1.01e+07	2.72e+02	3.7e+04	1.92e+07	2.36e+02	8.1e+04
25	13C-1,2,3,4,6,7,8-HpCDF	8.67e+06	4.62e+03	1.9e+03	1.94e+07	8.45e+03	2.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.86e+06	4.62e+03	1.5e+03	1.51e+07	8.45e+03	1.8e+03
27	13C-2,3,7,8-TCDD	1.00e+07	6.94e+03	1.4e+03	1.27e+07	3.28e+03	3.9e+03
28	13C-1,2,3,7,8-PeCDD	1.74e+07	1.36e+02	1.3e+05	1.12e+07	1.80e+02	6.2e+04
29	13C-1,2,3,4,7,8-HxCDD	1.60e+07	1.64e+03	9.8e+03	1.26e+07	2.52e+02	5.0e+04
30	13C-1,2,3,6,7,8-HxCDD	1.52e+07	1.64e+03	9.2e+03	1.22e+07	2.52e+02	4.8e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.33e+07	7.72e+02	1.7e+04	1.27e+07	2.60e+02	4.9e+04
32	13C-OCDD	1.43e+07	5.91e+03	2.4e+03	1.60e+07	8.64e+03	1.9e+03
33	13C-1,2,3,4-TCDD	8.99e+06	6.94e+03	1.3e+03	1.15e+07	3.28e+03	3.5e+03
34	13C-1,2,3,7,8,9-HxCDD	1.68e+07	1.64e+03	1.0e+04	1.32e+07	2.52e+02	5.2e+04
35	37Cl-2,3,7,8-TCDD	2.33e+06	1.22e+03	1.9e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (8.560e{+}02 + 1.760e{+}02) \times 100}{(9.997e{+}06 + 1.272e{+}07) \times (\qquad\qquad) \times 1.055} =$$

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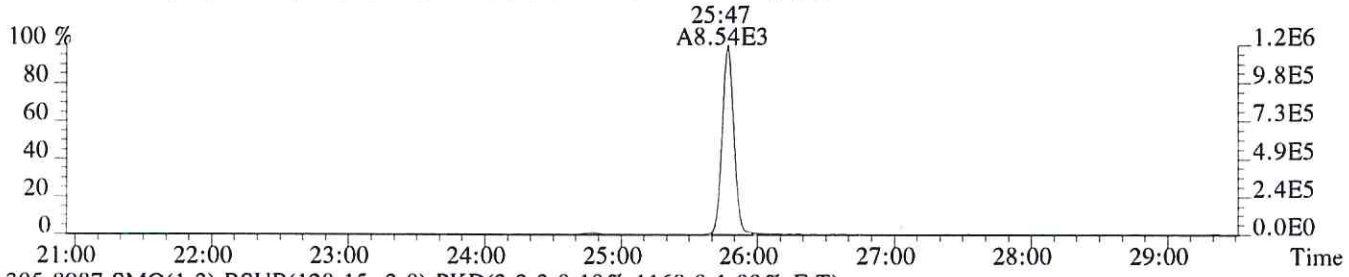
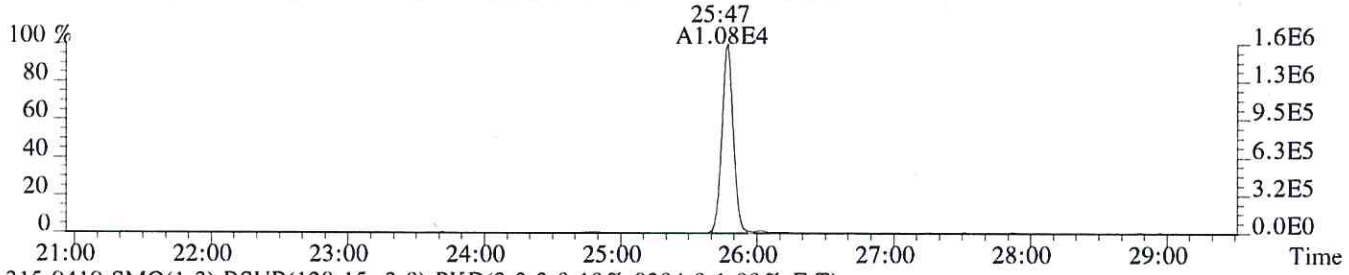
File:P607263 #1-609 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

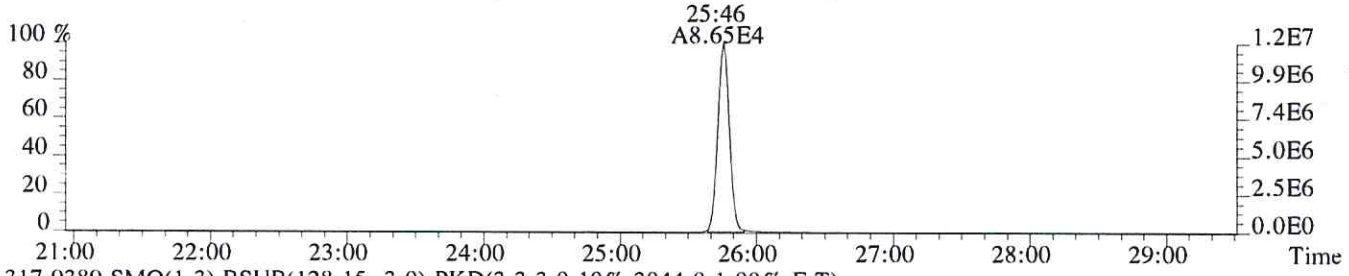
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,232.0,1.00%,F,T)



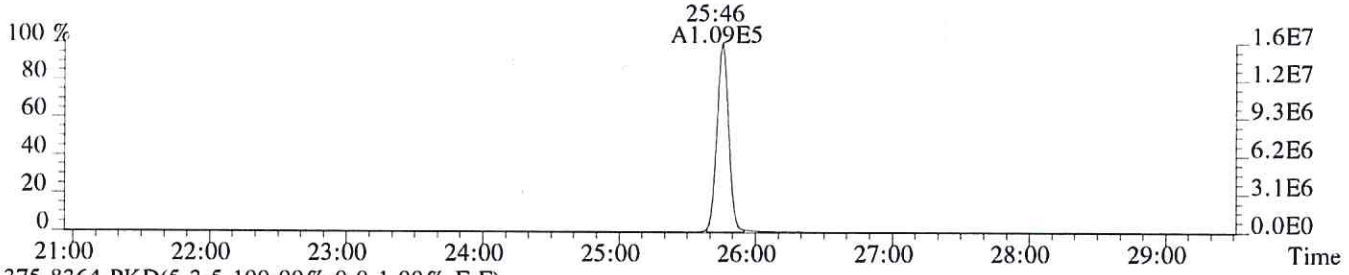
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1168.0,1.00%,F,T)



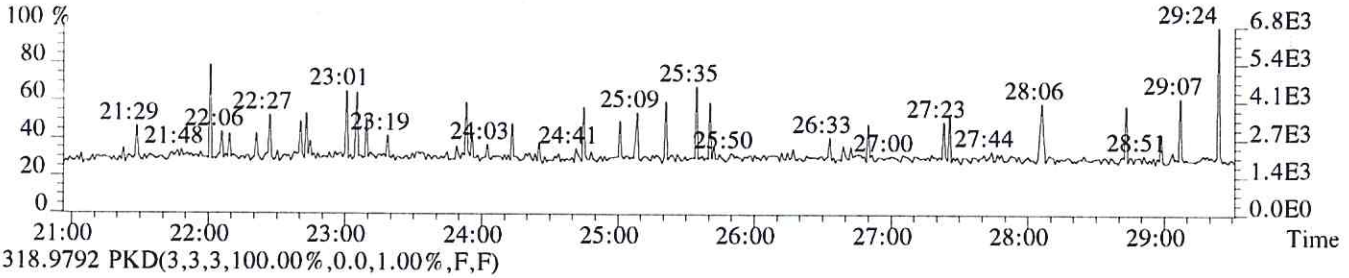
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8304.0,1.00%,F,T)



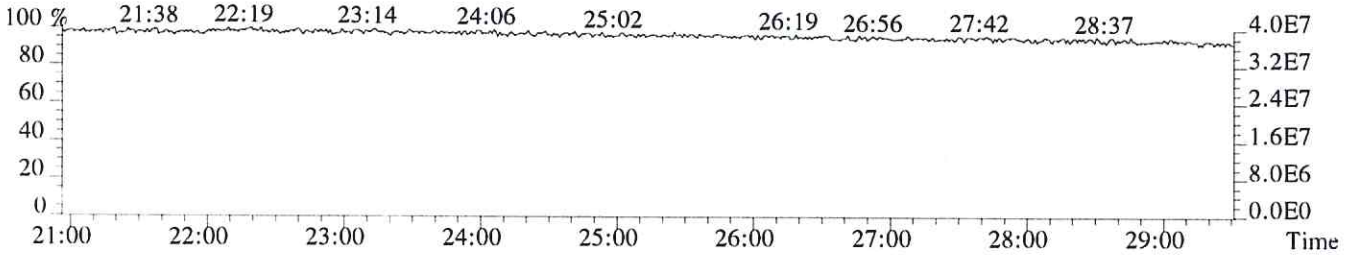
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3044.0,1.00%,F,T)



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

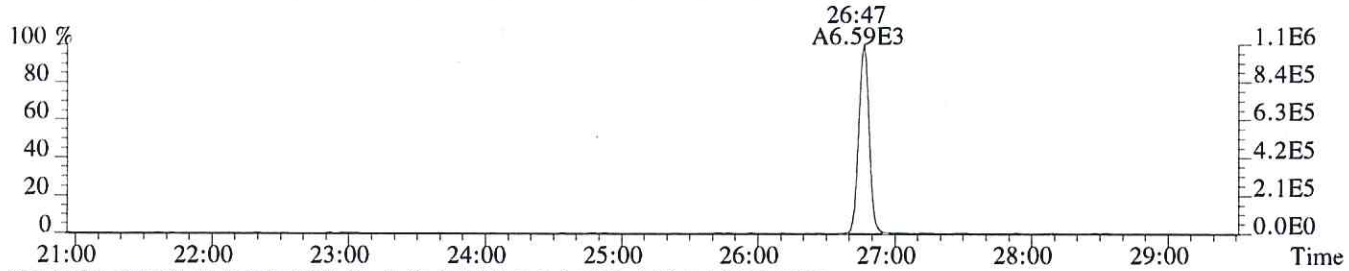


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

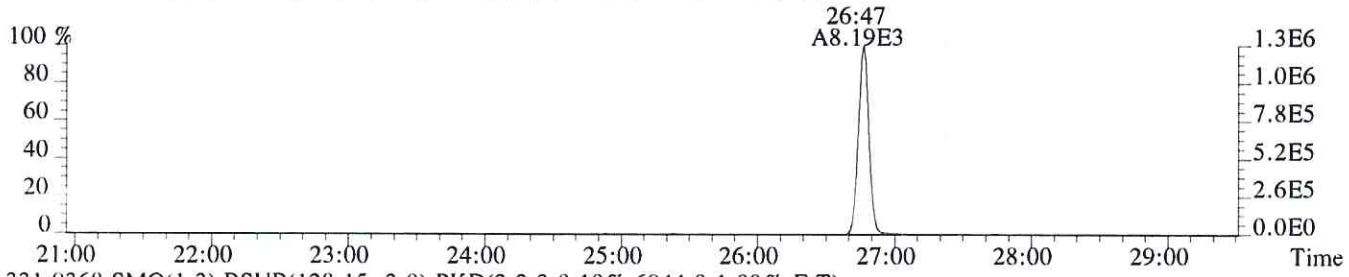


File:P607263 #1-609 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

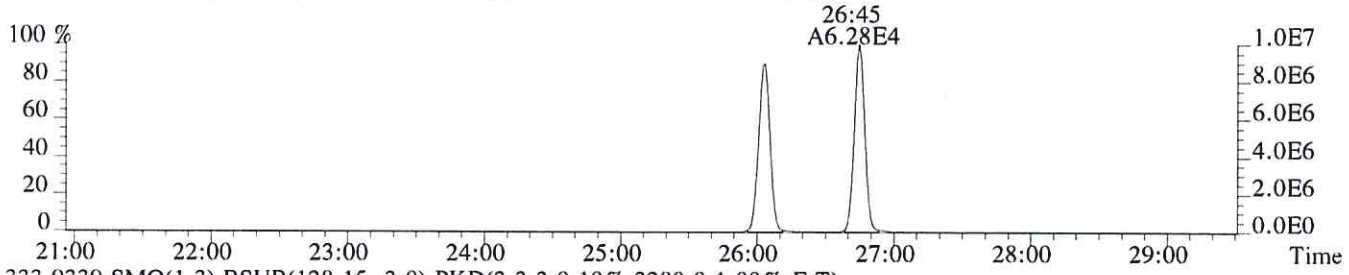
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,856.0,1.00%,F,T)



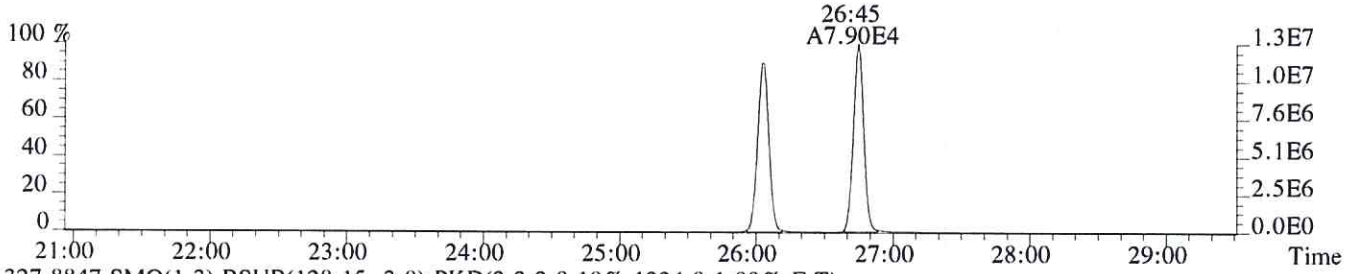
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,176.0,1.00%,F,T)



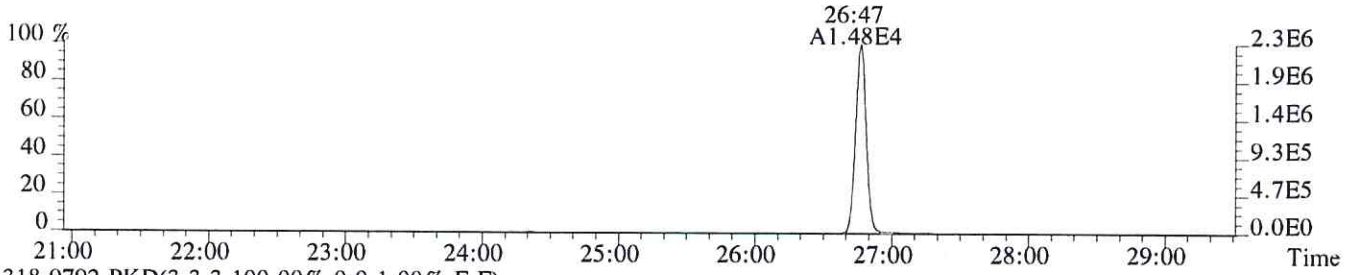
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6944.0,1.00%,F,T)



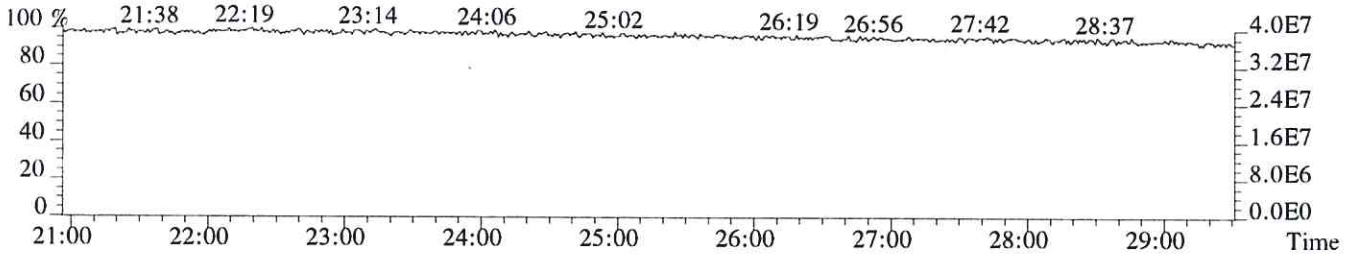
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3280.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1224.0,1.00%,F,T)

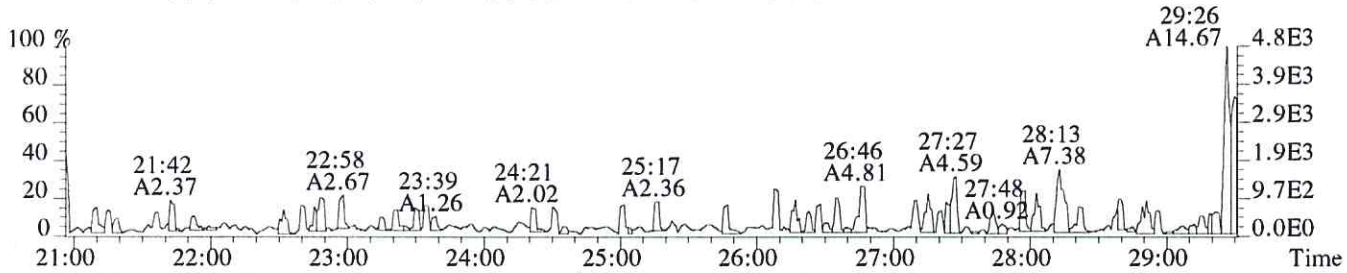


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

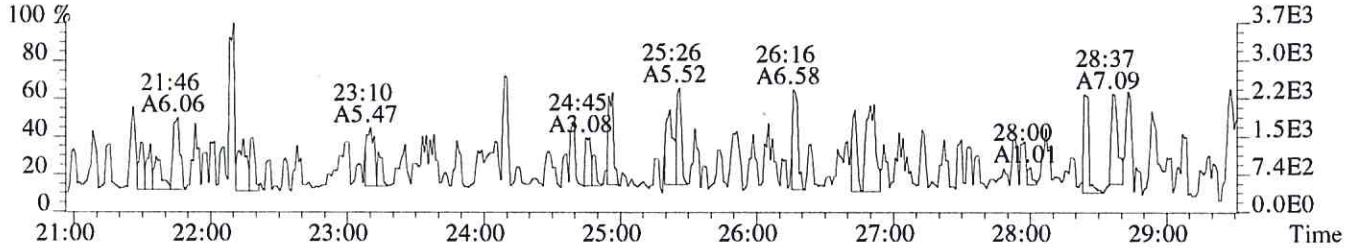


File:P607263 #1-609 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

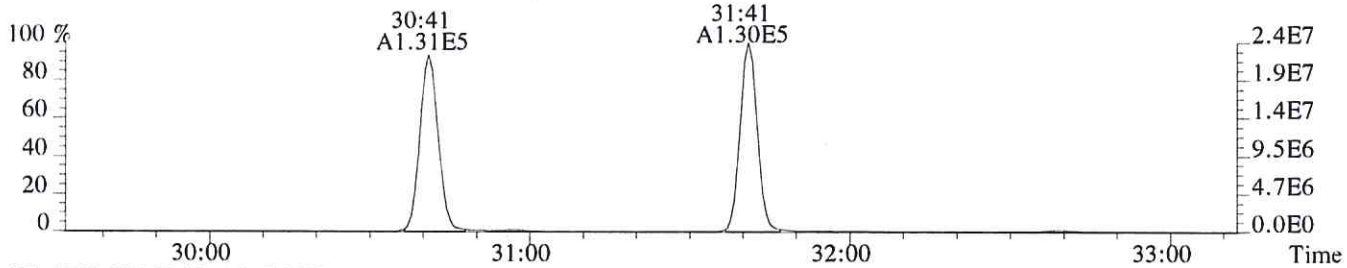
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,240.0,1.00%,F,T)



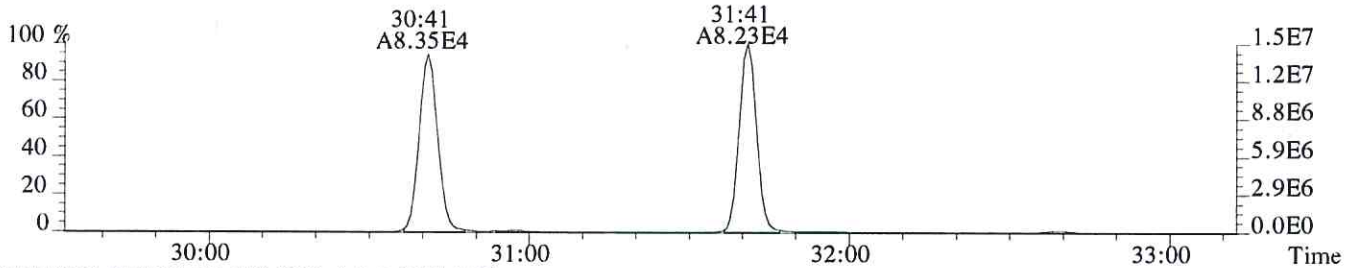
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,884.0,1.00%,F,T)



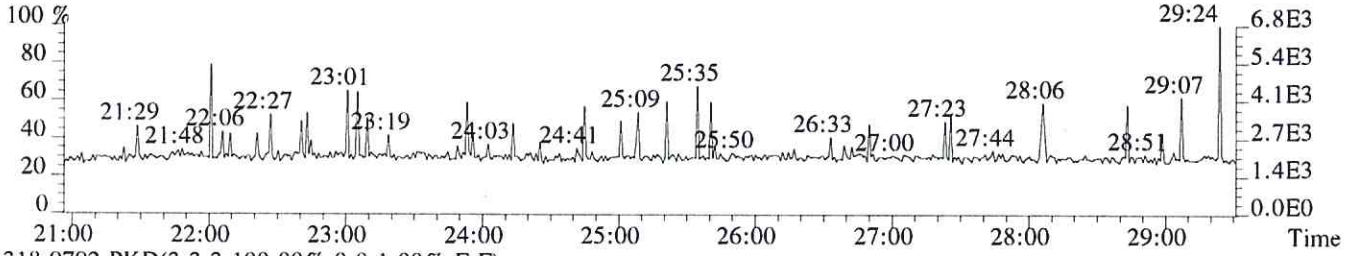
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,14000.0,1.00%,F,T)



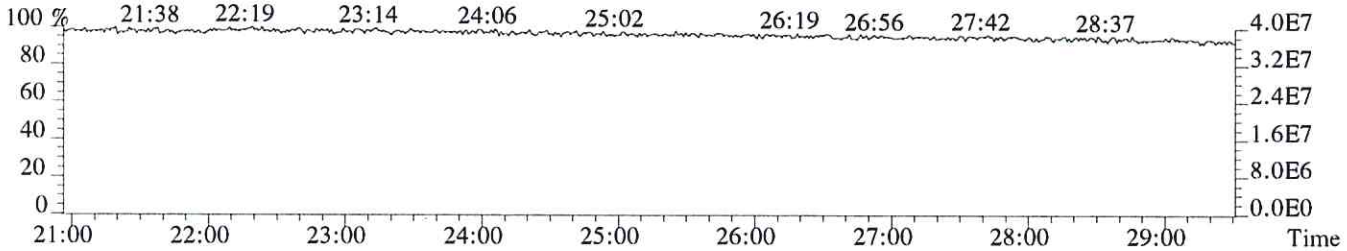
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1500.0,1.00%,F,T)



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

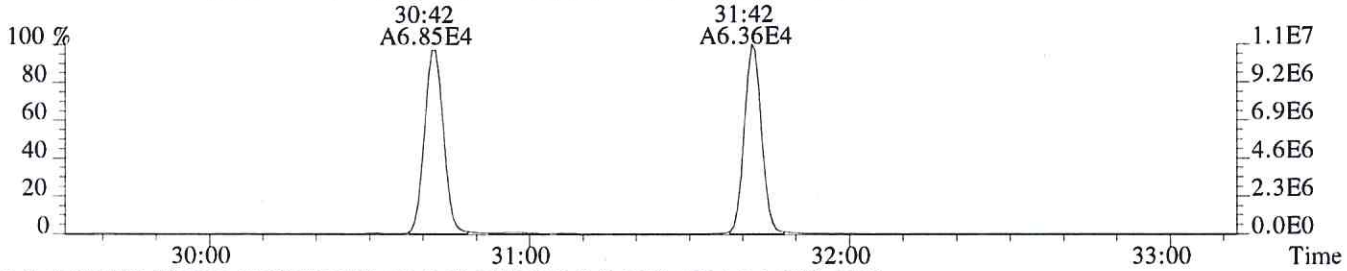


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

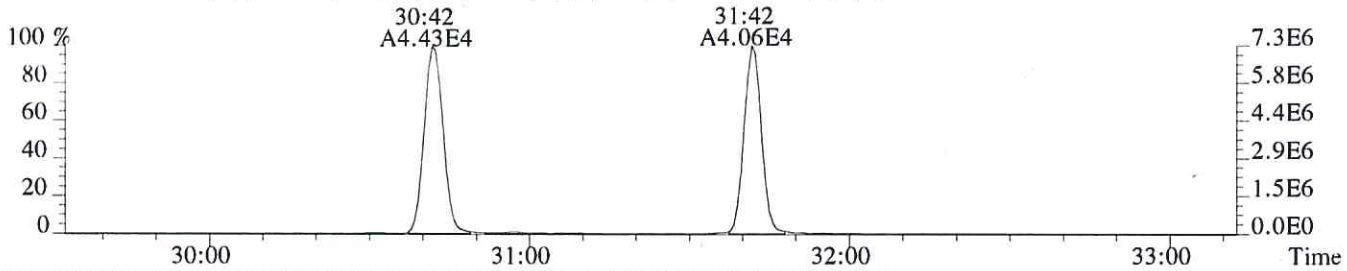


File:P607263 #1-330 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

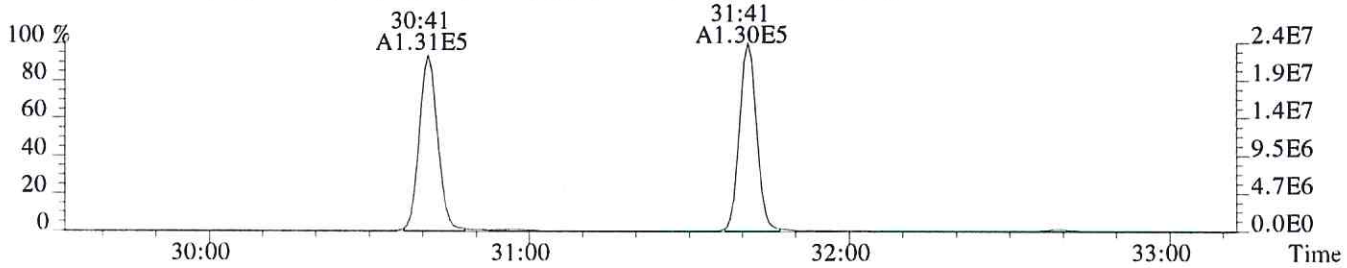
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,452.0,1.00%,F,T)



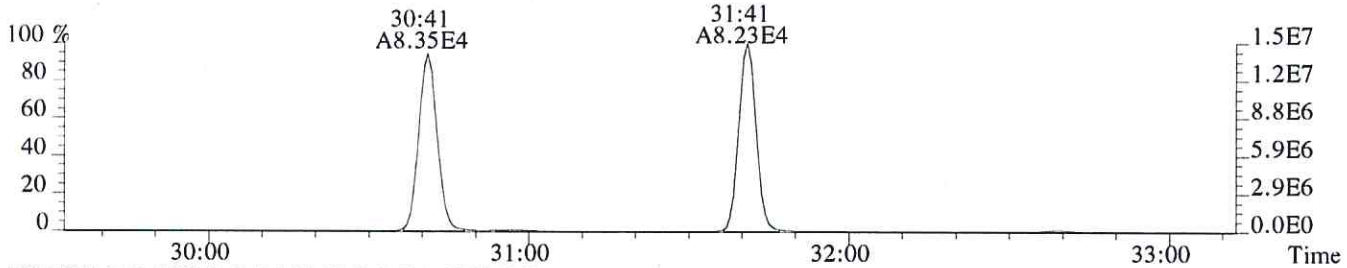
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1604.0,1.00%,F,T)



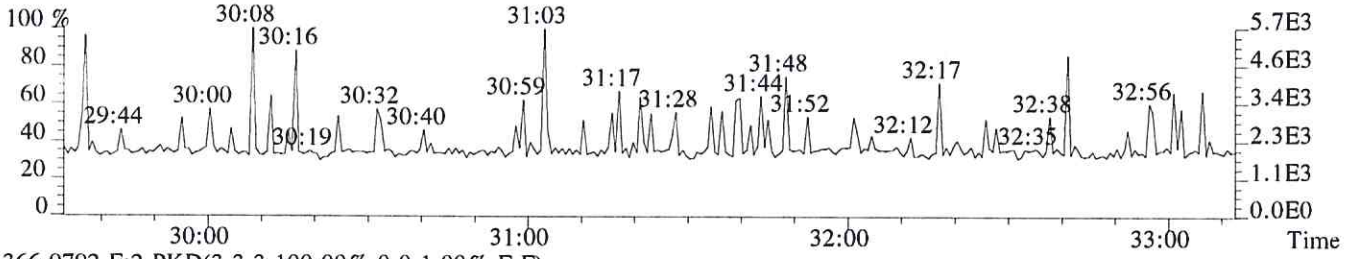
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,14000.0,1.00%,F,T)



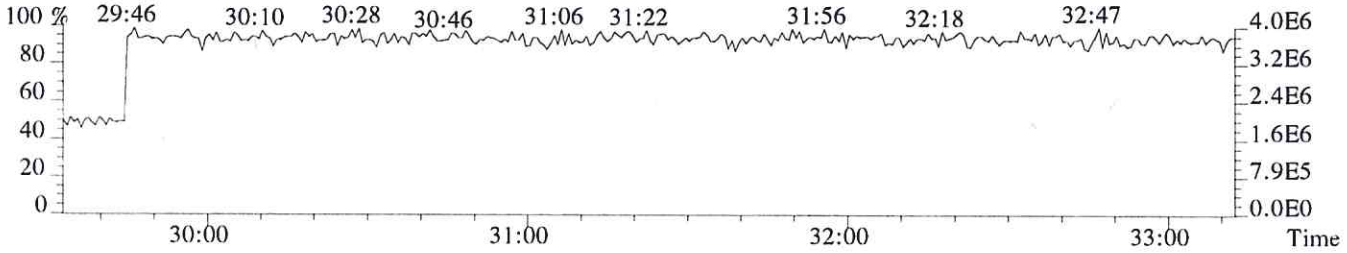
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1500.0,1.00%,F,T)



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

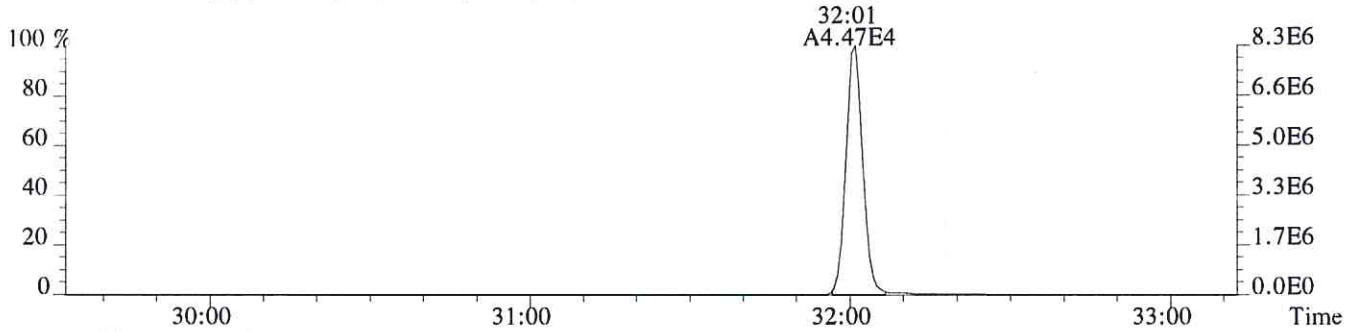


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

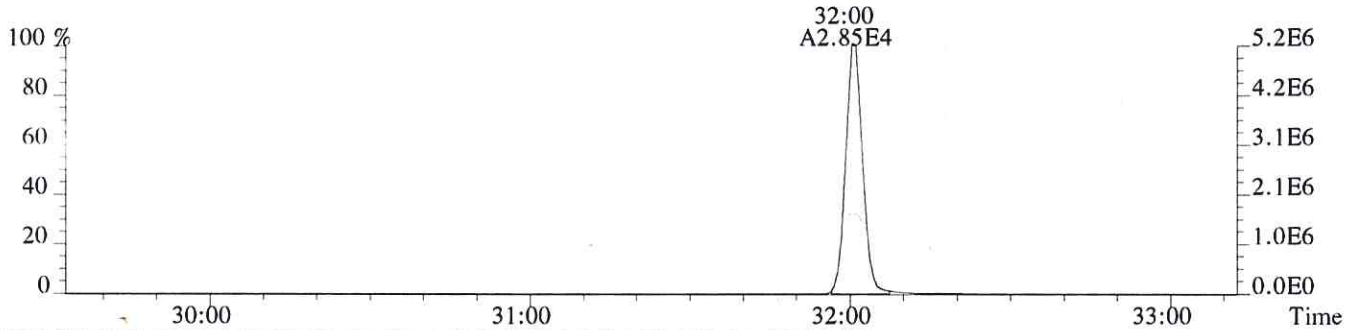


File:P607263 #1-330 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

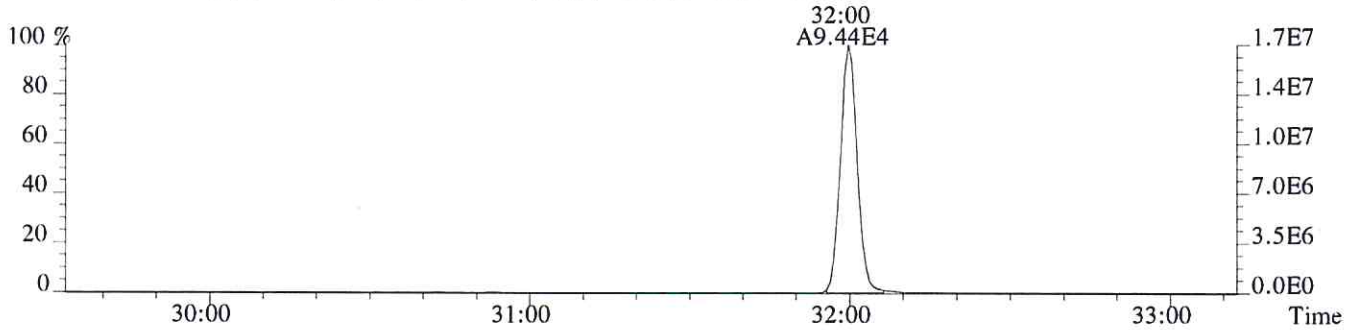
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1816.0,1.00%,F,T)



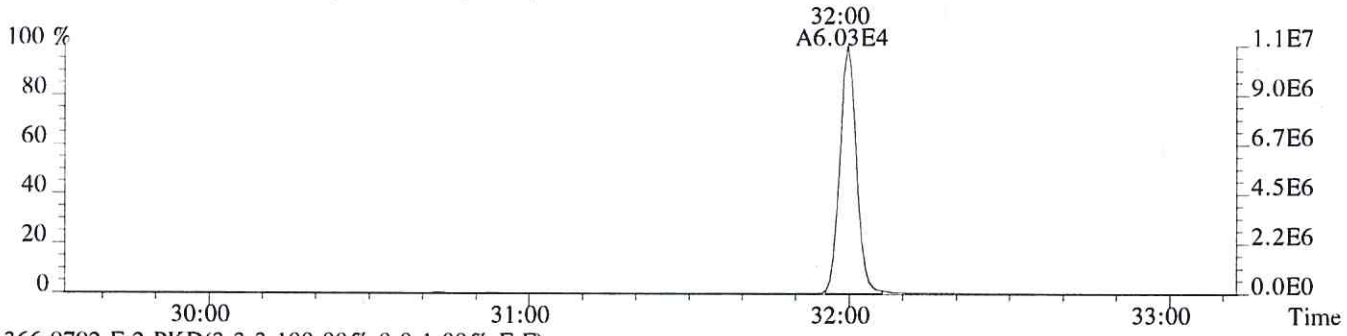
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,308.0,1.00%,F,T)



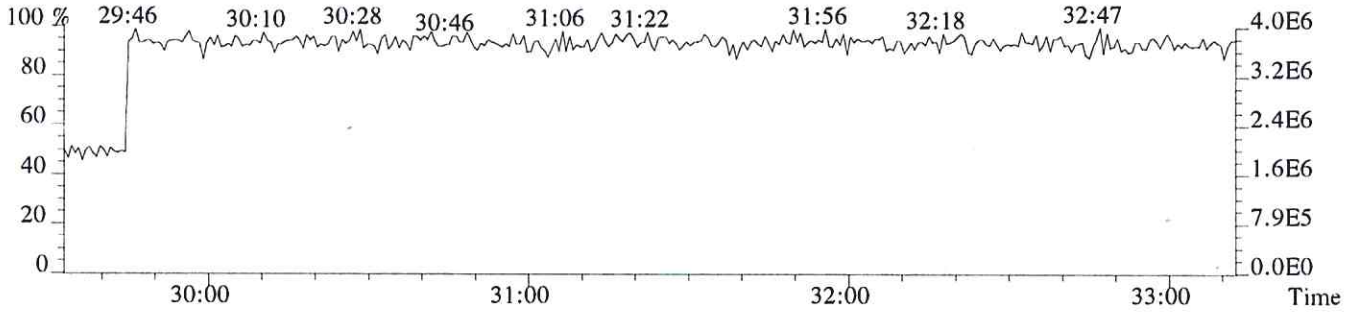
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,136.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,180.0,1.00%,F,T)

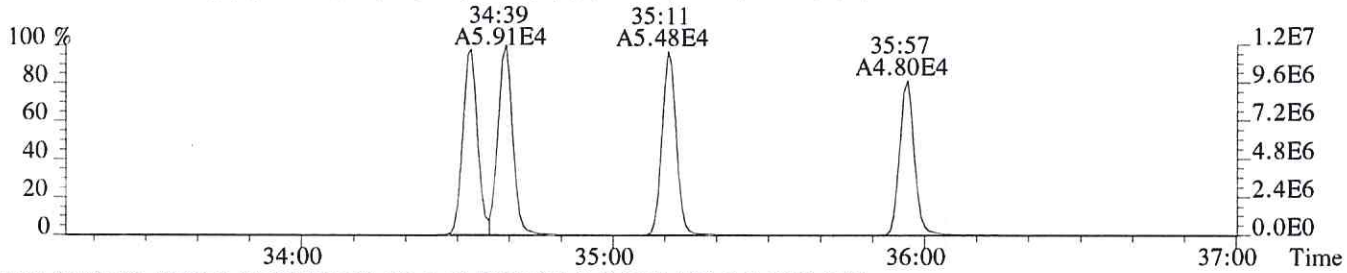


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

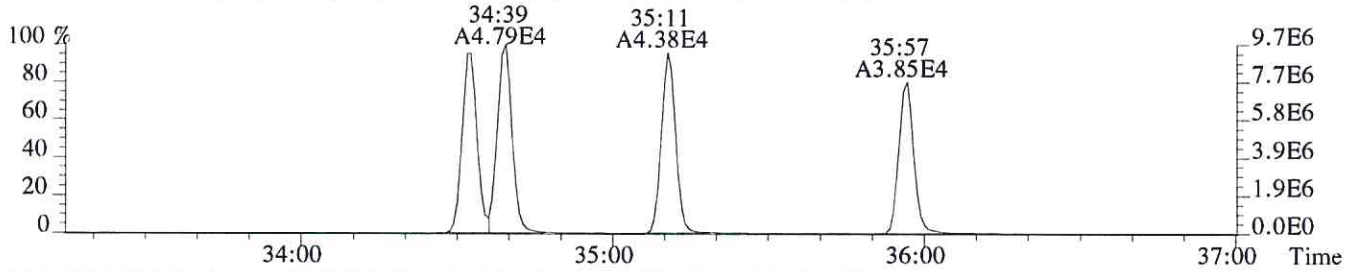


File:P607263 #1-339 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

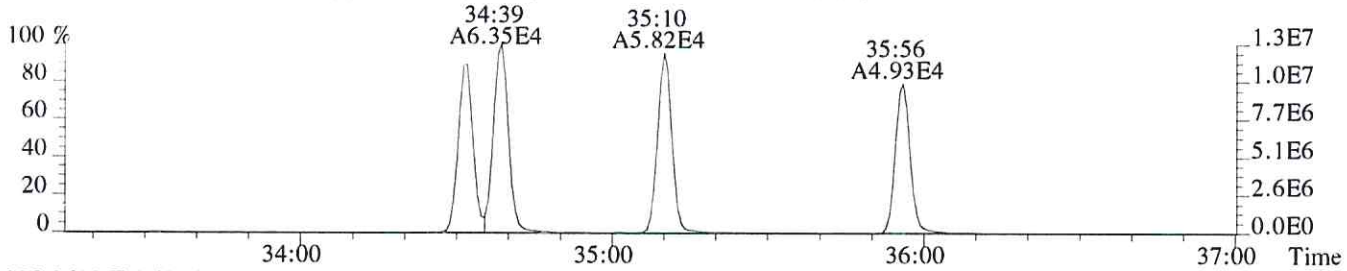
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,164.0,0.40%,F,T)



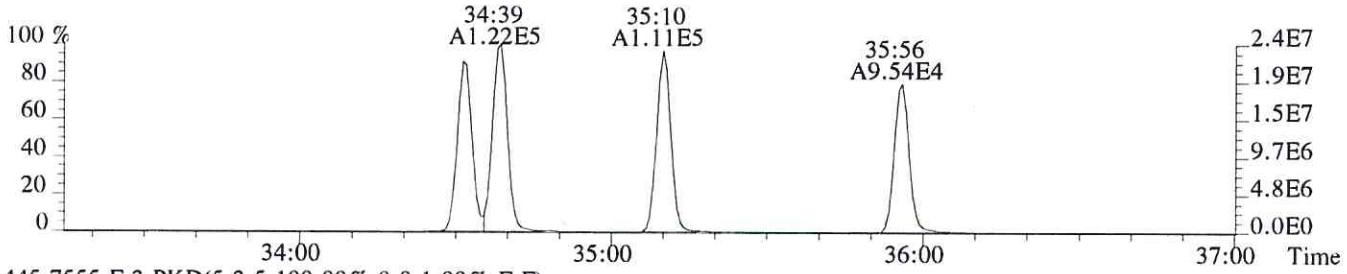
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,300.0,0.40%,F,T)



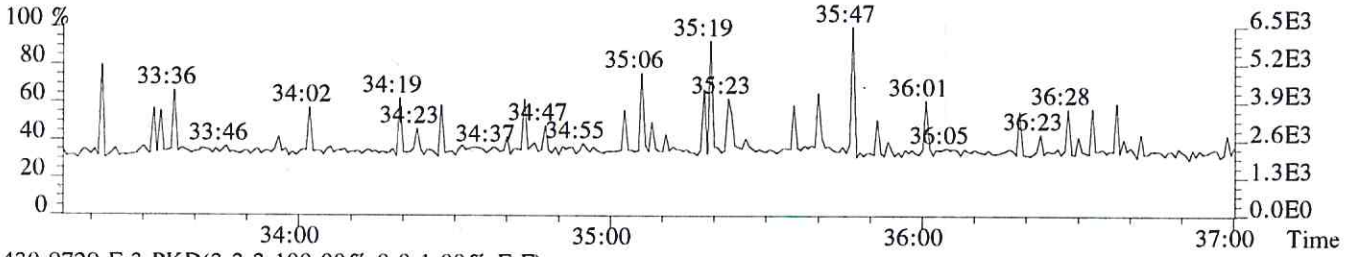
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,272.0,0.40%,F,T)



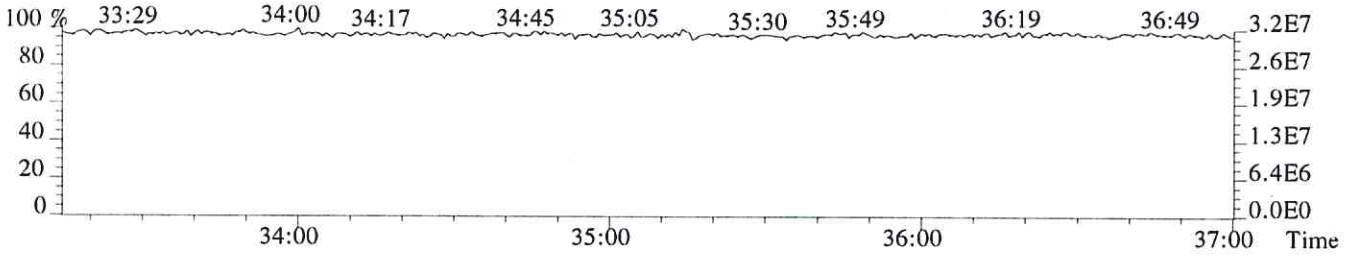
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,236.0,0.40%,F,T)



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

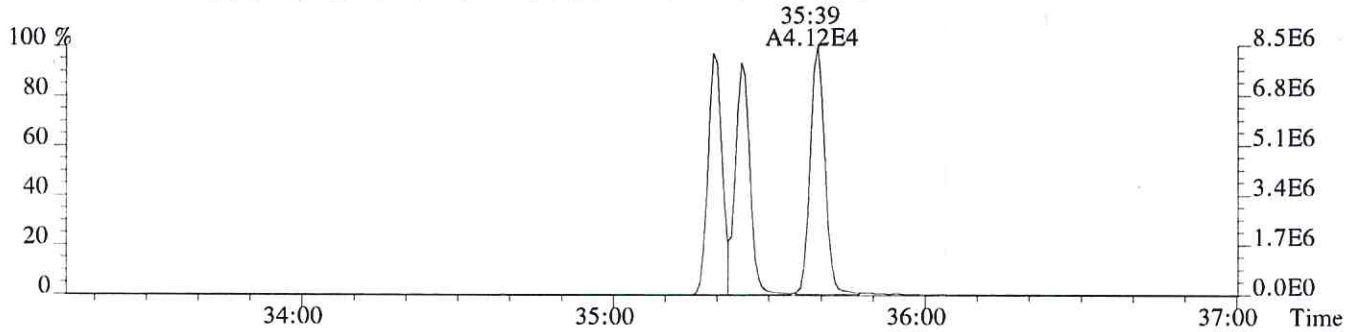


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

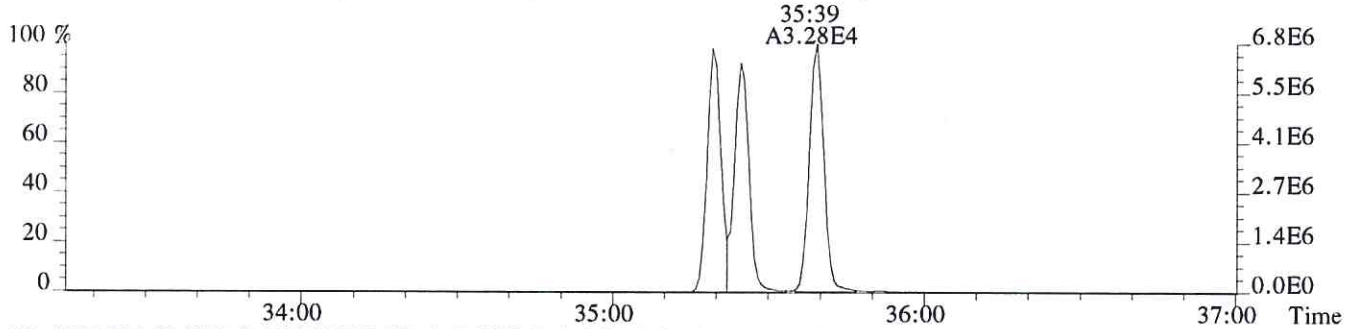


File:P607263 #1-339 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

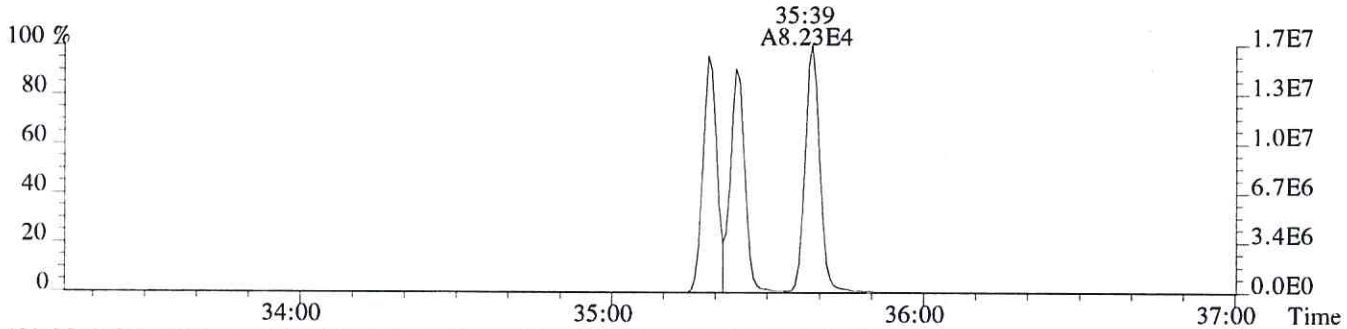
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,116.0,0.40%,F,T)



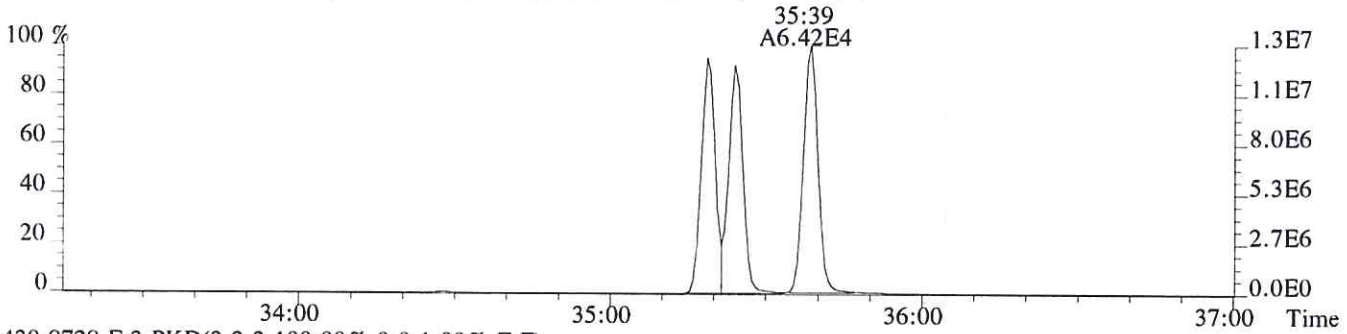
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,252.0,0.40%,F,T)



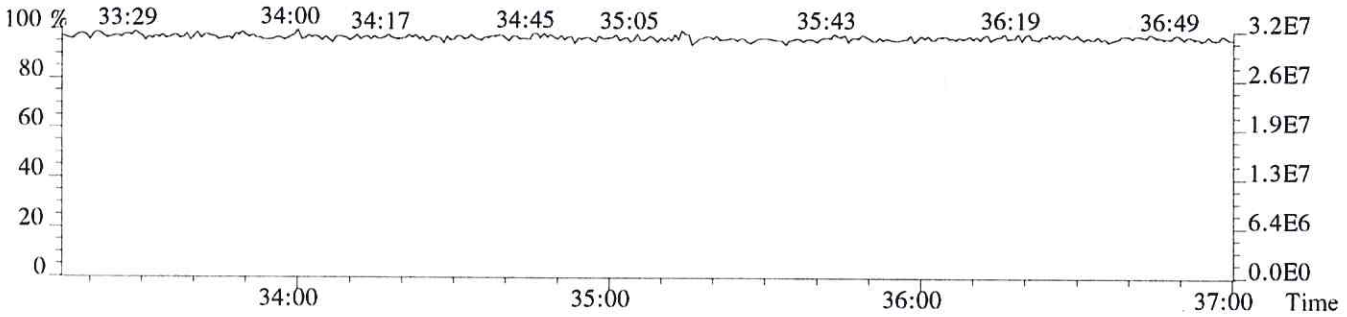
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1640.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,252.0,0.40%,F,T)

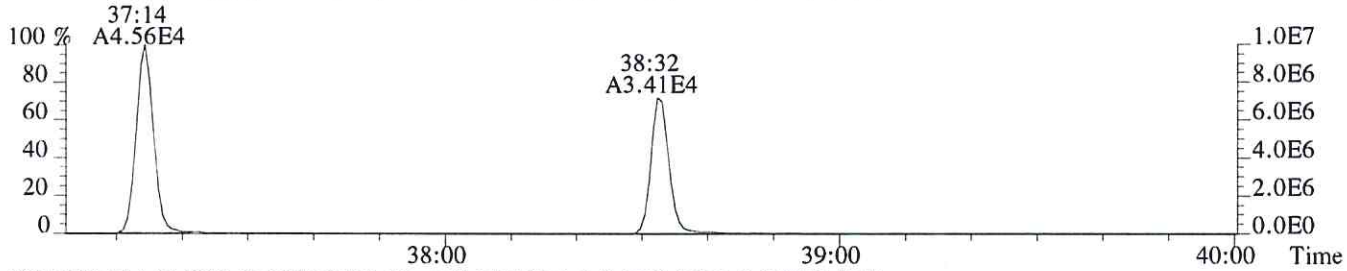


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

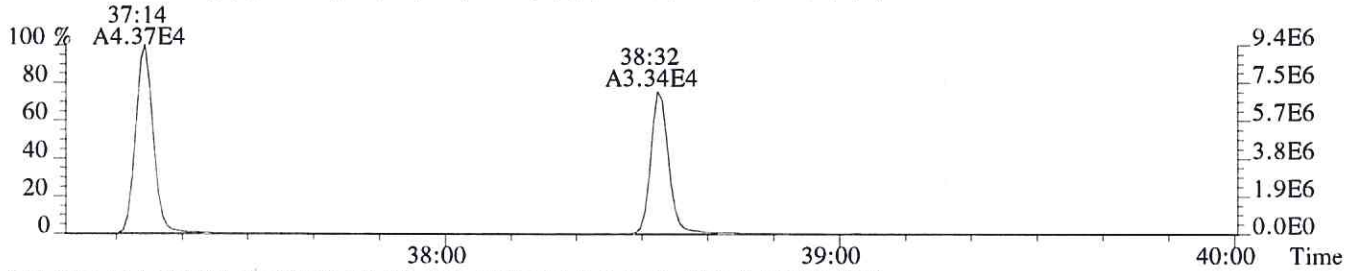


File:P607263 #1-268 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

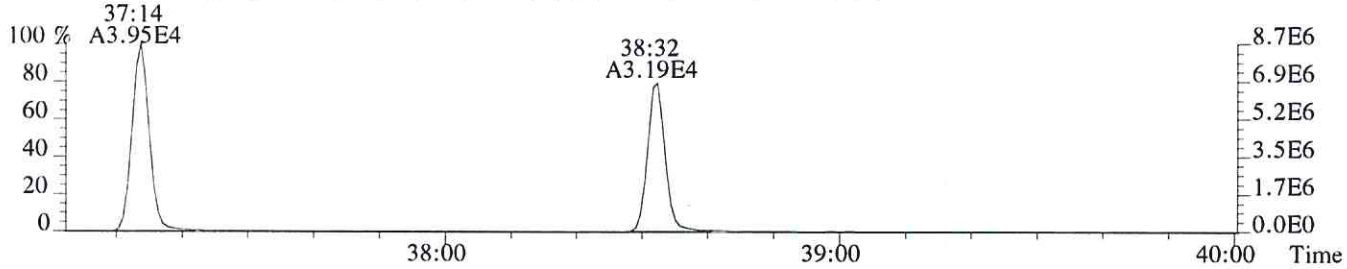
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6036.0,0.50%,F,T)



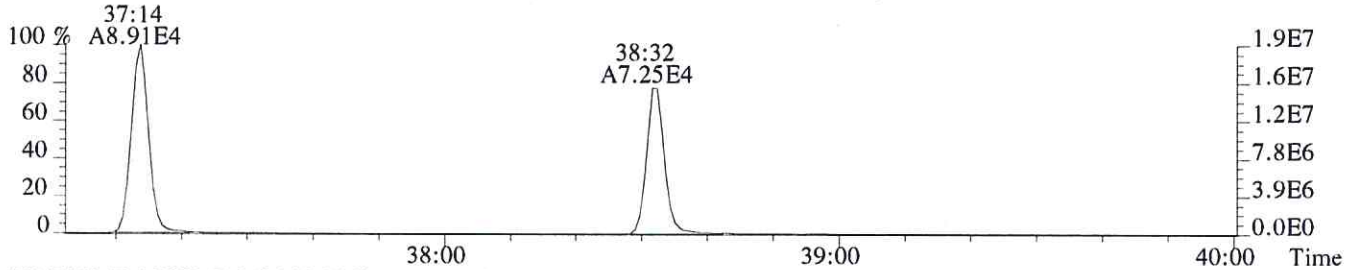
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5572.0,0.50%,F,T)



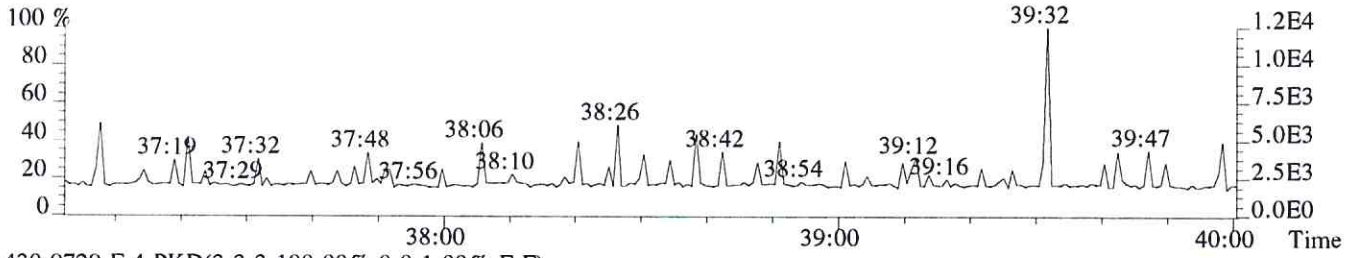
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4620.0,0.50%,F,T)



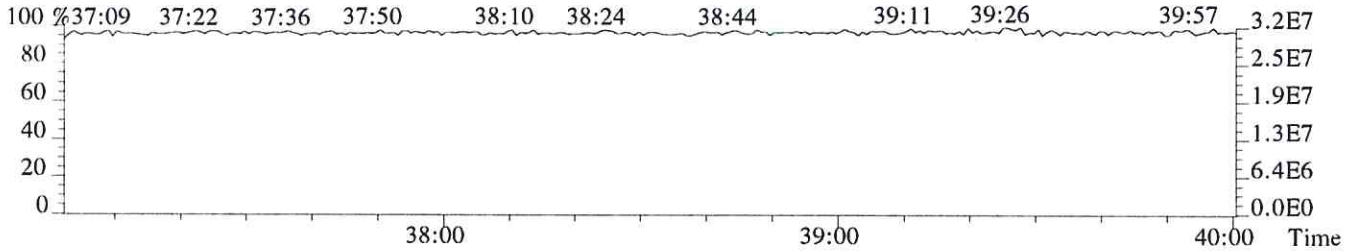
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8452.0,0.50%,F,T)



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

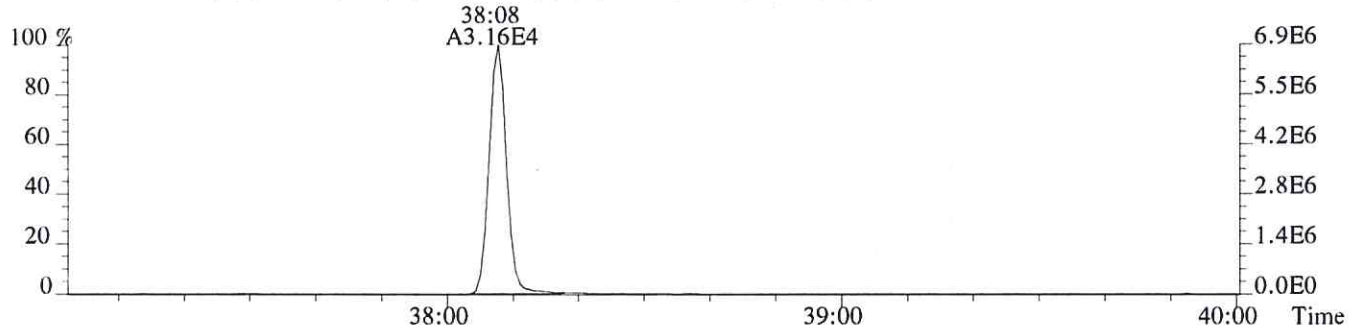


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

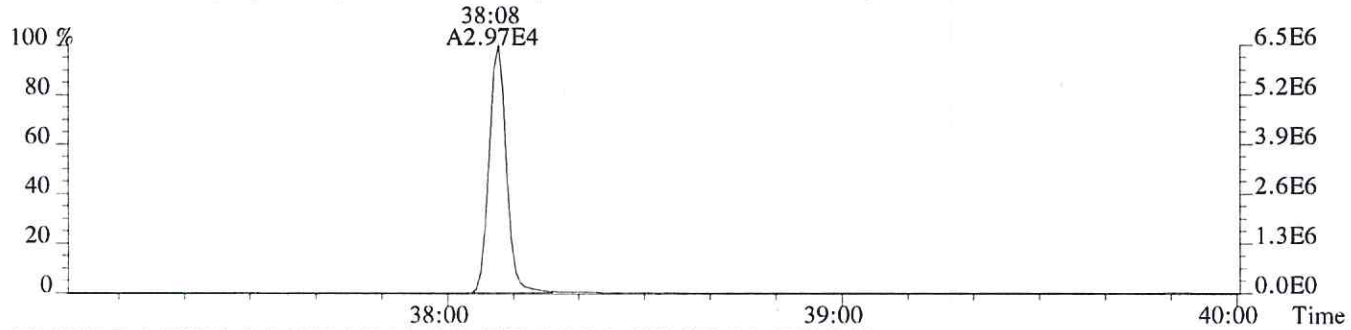


File:P607263 #1-268 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

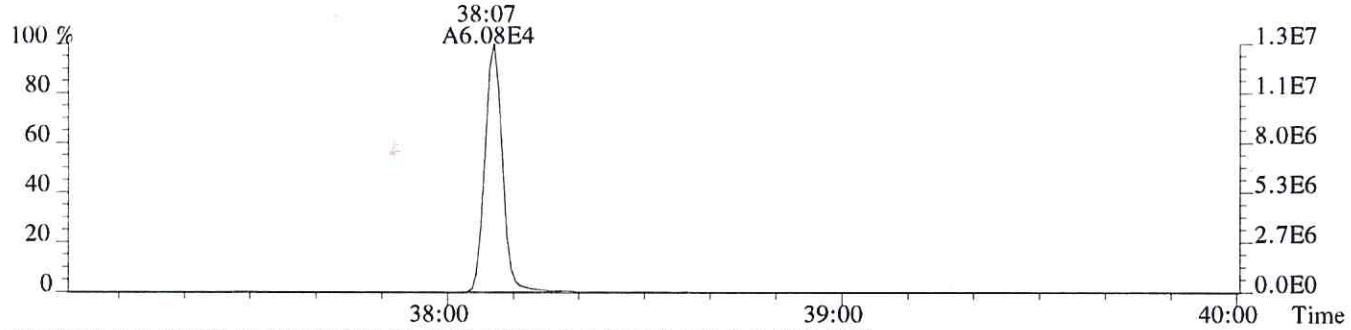
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,696.0,0.40%,F,T)



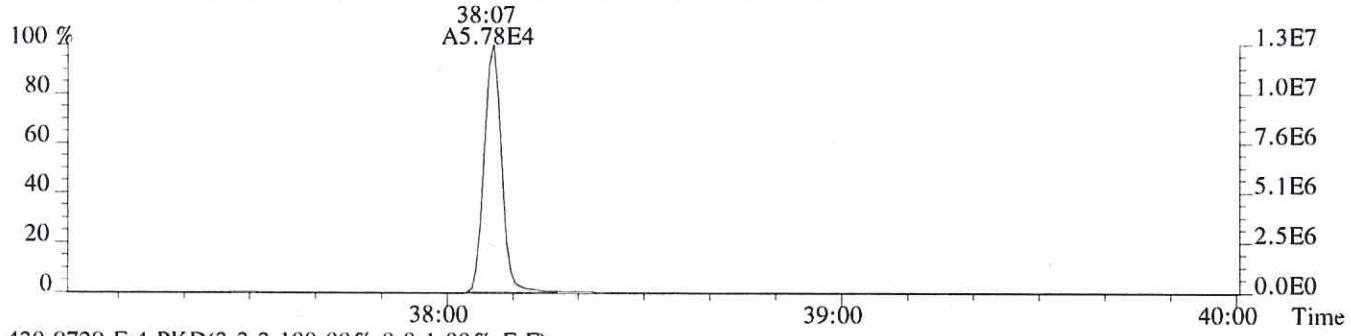
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,228.0,0.40%,F,T)



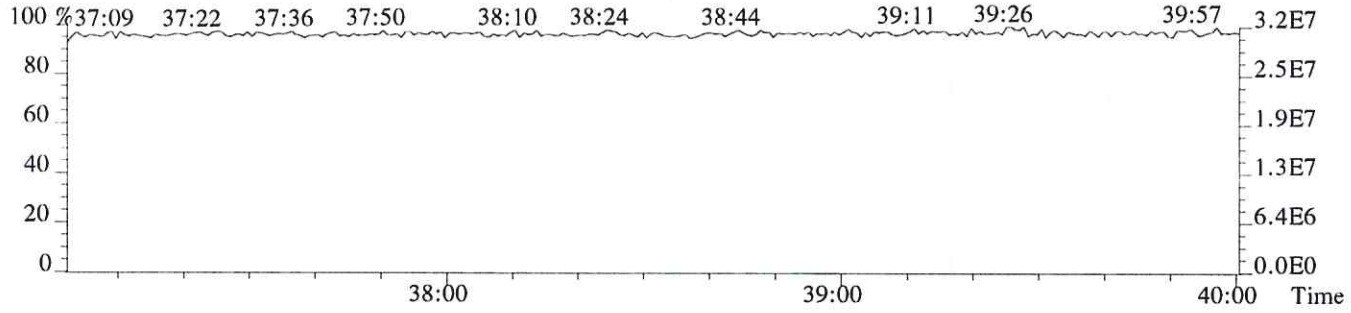
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,772.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,260.0,0.40%,F,T)

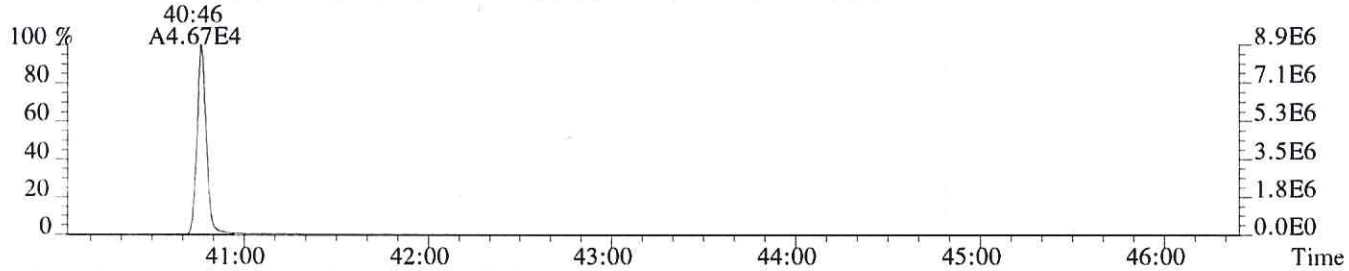


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

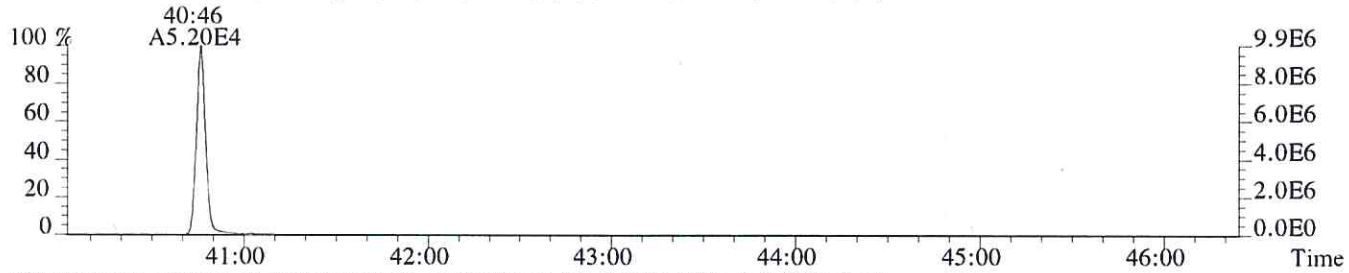


File:P607263 #1-573 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

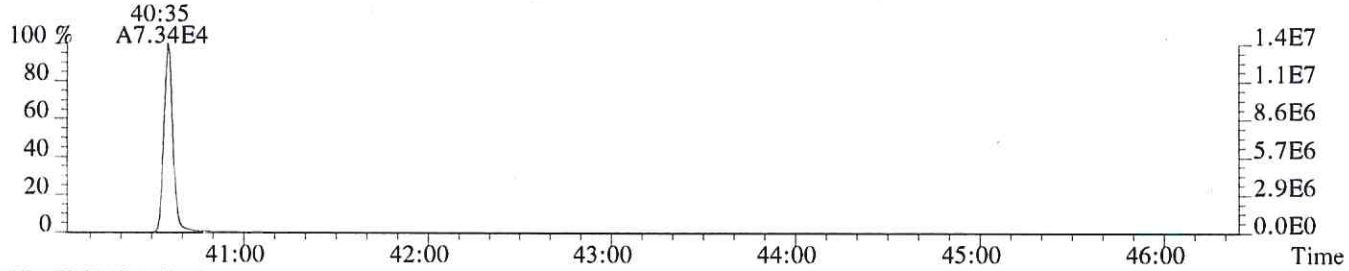
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,6036.0,0.40%,F,T)



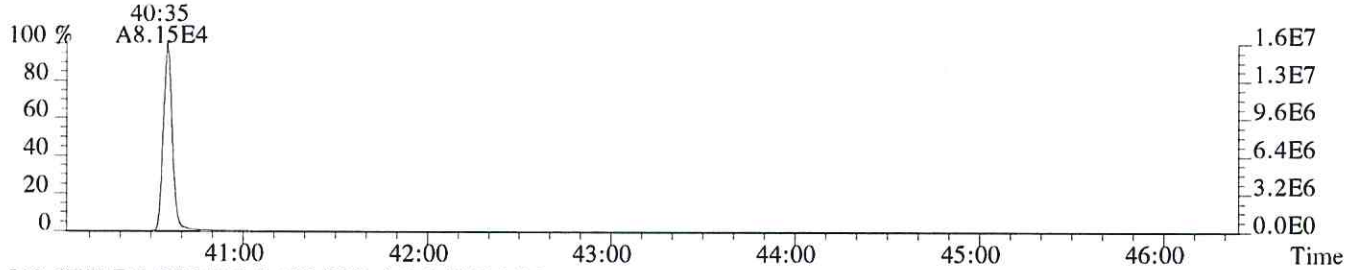
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3568.0,0.40%,F,T)



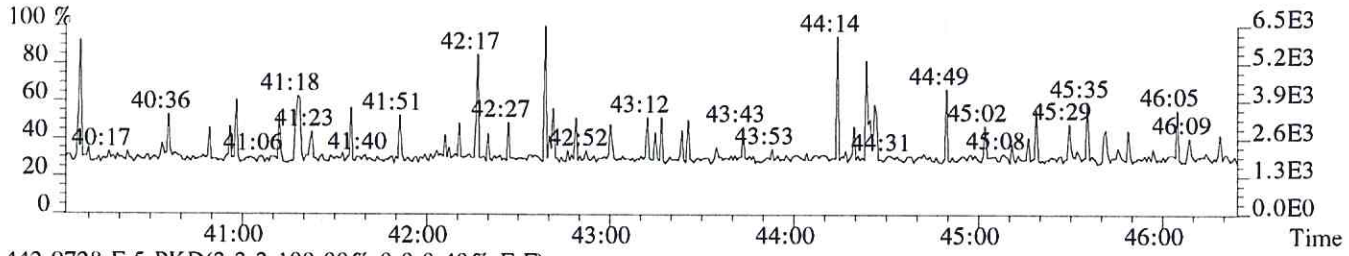
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5912.0,0.40%,F,T)



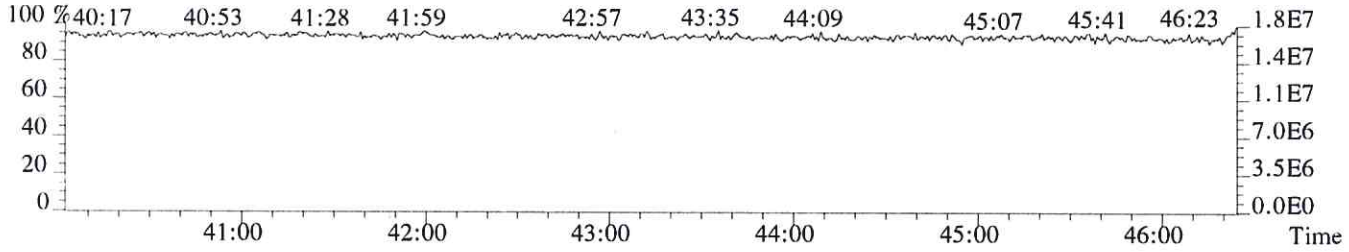
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8640.0,0.40%,F,T)



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

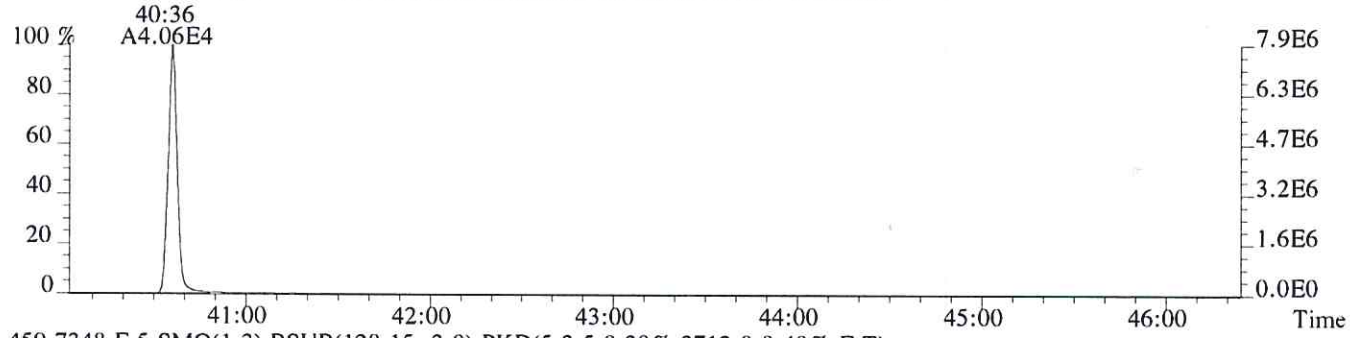


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

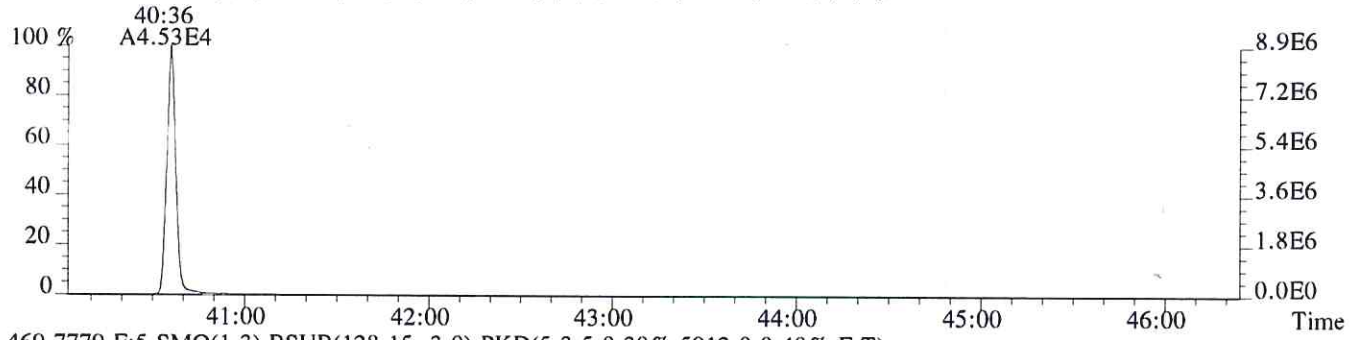


File:P607263 #1-573 Acq:20-MAY-2017 07:14:41 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

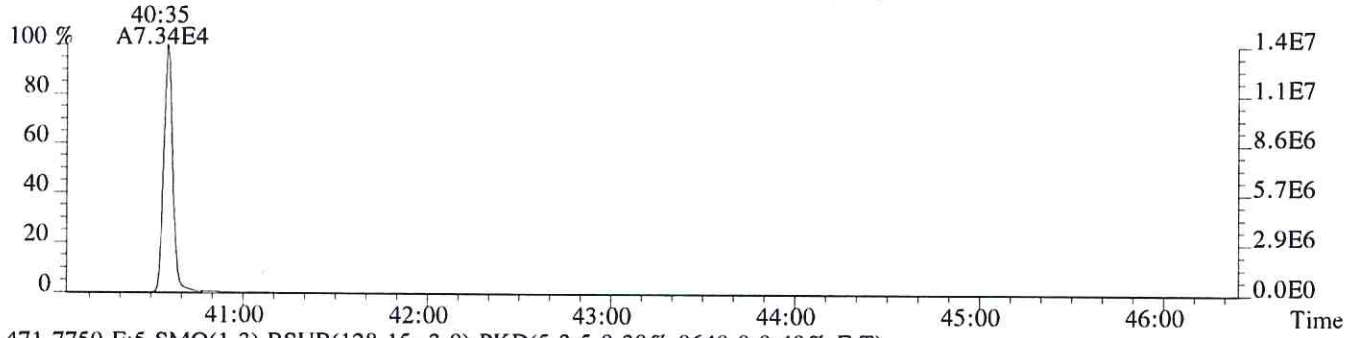
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1544.0,0.40%,F,T)



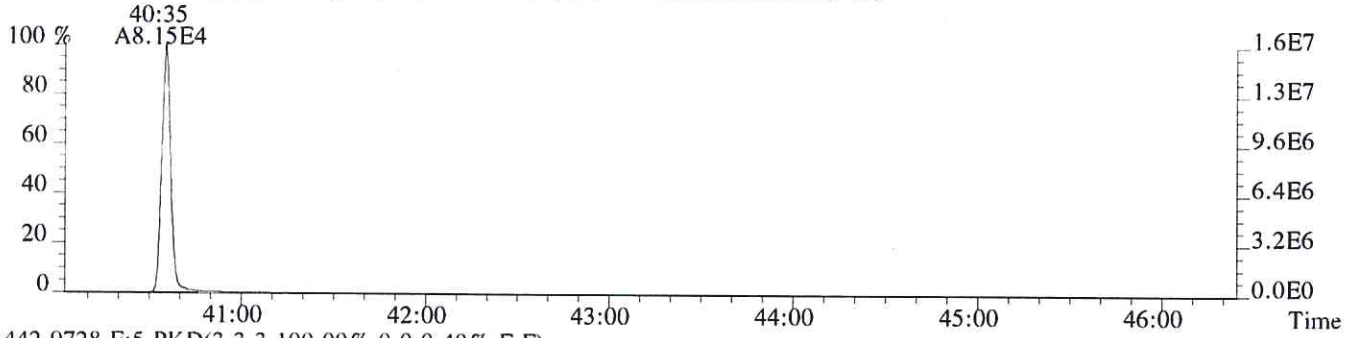
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3712.0,0.40%,F,T)



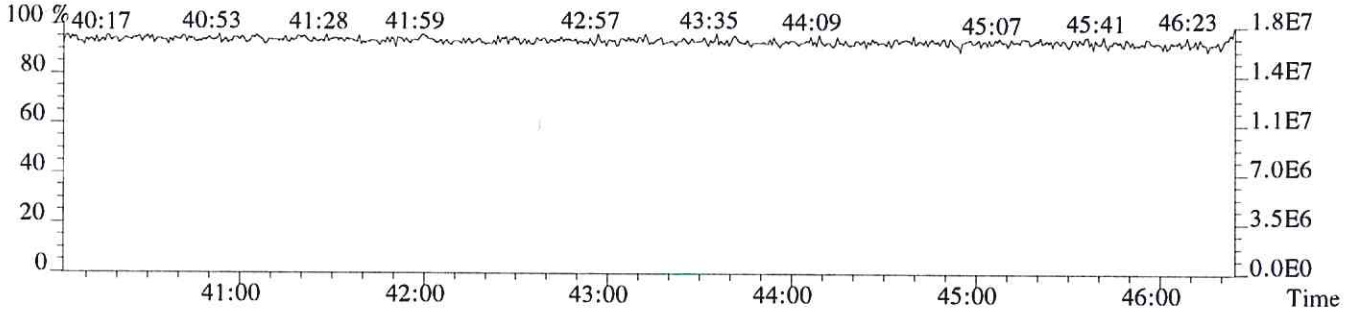
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5912.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8640.0,0.40%,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: P607264 - P607276 Circle one: Beginning / Ending

Date: 05/20/17

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	✓	✓

Analyst: J C Second QC: LKL

ccalqc.xls 07/17/12

5DBC
PCDD/PCDF/PCB ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS Environmental Contract:

Lab Code: ALS-TX Case No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm) Instrument ID:E-HRMS-08

Init. Calib. Date: 05/16/17

Init. Calib.Times: 11:03

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	P607265	20-MAY-17	08:59:23
178519	CS3	P607264	20-MAY-17	08:11:08
178519	CS3	P607276	20-MAY-17	18:07:11
178519	EQ1700189-01	P607266	20-MAY-17	09:48:28
EB10_170428	E1700468-005	P607267	20-MAY-17	10:37:29
EB11_170428	E1700468-006	P607268	20-MAY-17	11:26:31
COMPOSITE	K1703897-008	P607269	20-MAY-17	12:15:33
BC-SED-WF-1-U	J1703377-001	P607270	20-MAY-17	13:04:37
BC-SED-WF-1-L	J1703377-002	P607271	20-MAY-17	13:53:42
BC-SED-WF-2-U	J1703377-003	P607272	20-MAY-17	14:42:46
BC-SED-WF-2-L	J1703377-004	P607273	20-MAY-17	15:31:49
BC-SED-WF-3-U	J1703377-005	P607274	20-MAY-17	16:20:55
BC-SED-WF-3-U-DUP	J1703377-006	P607275	20-MAY-17	17:09:59

Sample List Report **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20170519C.SPL
Last Modified: Monday, May 22, 2017 10:34:50 Central Daylight Time
Printed: Monday, May 22, 2017 10:34:53 Central Daylight Time

Page Position (1, 1)

OPUS-5 : P607264 RE5

	Date	Time	File Name	Lab Sample ID	Client File Text	Bottle	MS File	Inlet File	Analyst	Comments
1	5/20/17	08:11	P607264	178519	CS3	Tray1:2	EPA1613_ALS	Dioxin_ALS	LM for LKL	HRMS check 08:11
2		08:59	P607265	178397	WINDOWDEFINE	Tray1:1	EPA1613_ALS	Dioxin_ALS		
3		09:48	P607266	EQ1700189-01	MB	Tray1:3	EPA1613_ALS	Dioxin_ALS		
4		10:37	P607267	E1700468-005	E1700468-005	Tray1:4	EPA1613_ALS	Dioxin_ALS		
5		11:26	P607268	E1700468-006	E1700468-006	Tray1:5	EPA1613_ALS	Dioxin_ALS		
6		12:15	P607269	K1703897-008	K1703897-008	Tray1:6	EPA1613_ALS	Dioxin_ALS		
7		13:04	P607270	J1703377-001	J1703377-001	Tray1:7	EPA1613_ALS	Dioxin_ALS		
8		13:53	P607271	J1703377-002	J1703377-002	Tray1:8	EPA1613_ALS	Dioxin_ALS		
9		14:42	P607272	J1703377-003	J1703377-003	Tray1:9	EPA1613_ALS	Dioxin_ALS		
10		15:31	P607273	J1703377-004	J1703377-004	Tray1:10	EPA1613_ALS	Dioxin_ALS		
11		16:20	P607274	J1703377-005	J1703377-005	Tray1:11	EPA1613_ALS	Dioxin_ALS		
12		17:09	P607275	J1703377-006	J1703377-006	Tray1:12	EPA1613_ALS	Dioxin_ALS		
13		18:07	P607276	178519	CS3	Tray1:2	EPA1613_ALS	Dioxin_ALS		HRMS check 5/21/17 05:48
14	---	---	---	---	---	Tray1:1	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	---	---	---	---	---	Tray1:2	EPA1613_ALS	Dioxin_ALS	---	---
26	---	---	---	---	---	Tray1:2	EPA1613_ALS	Dioxin_ALS	---	---
27	---	---	---	---	---	Tray1:1	EPA1613_ALS	Dioxin_ALS	---	---
28	---	---	---	---	---	Tray1:28	EPA1613_ALS	Dioxin_ALS	---	---
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37	---	---	---	---	---	Tray1:37	EPA1613_ALS	Dioxin_ALS	---	---
38	---	---	---	---	---	Tray1:2	EPA1613_ALS	Dioxin_ALS	---	---
39	---	---	---	---	---	Tray1:2	EPA1613_ALS	Dioxin_ALS	---	---

JC 05/23/17

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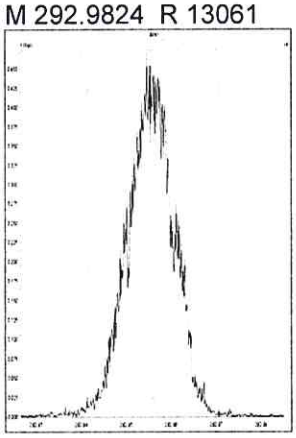

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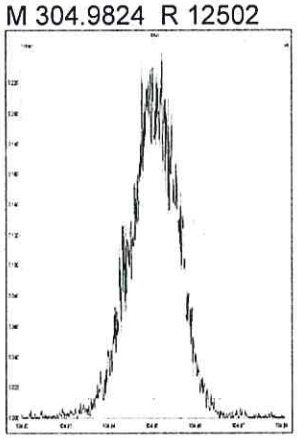

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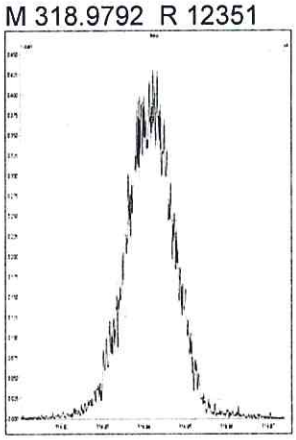

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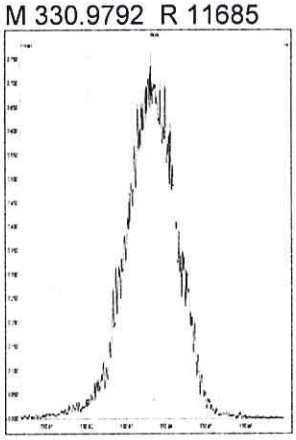
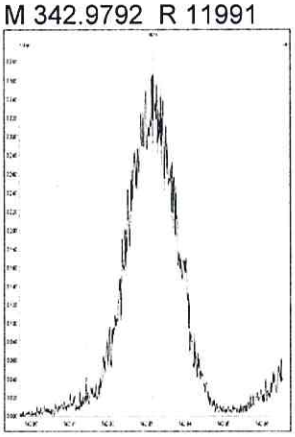
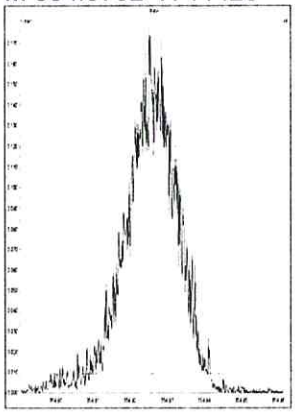


M 342.9792 R 11991



M 354.9792 R 11420



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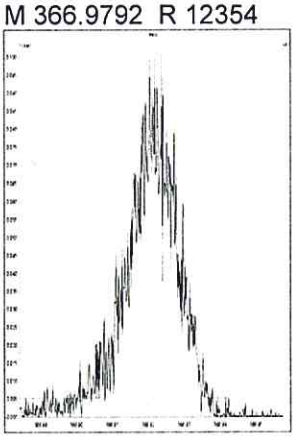

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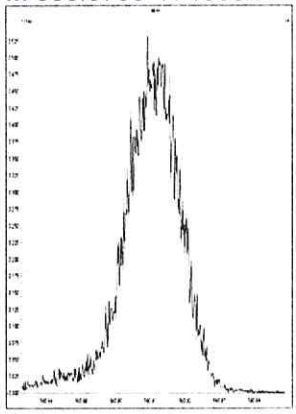

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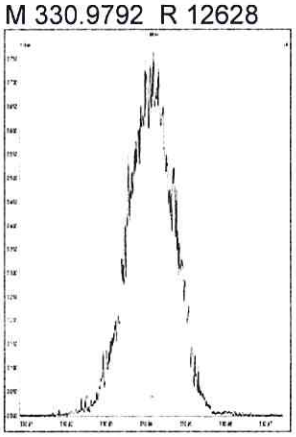
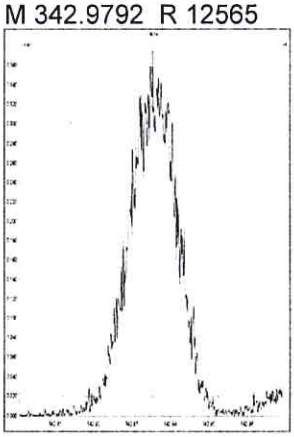


M 342.9792 R 12565



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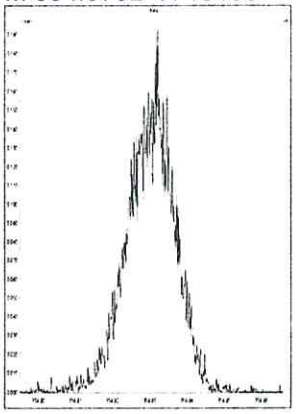

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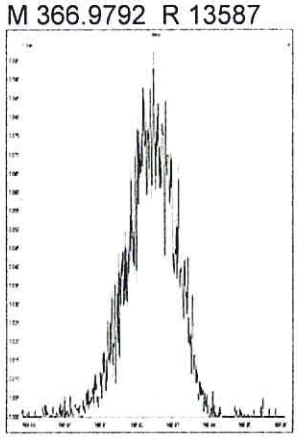

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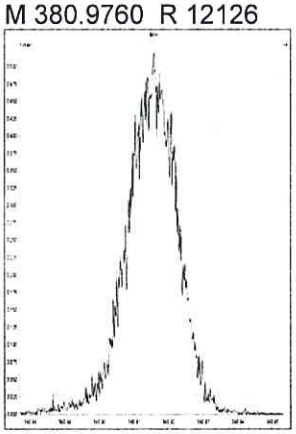

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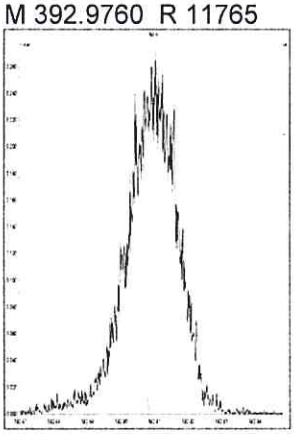

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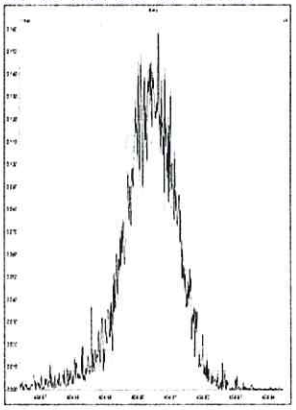
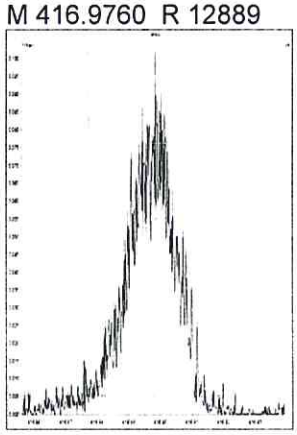


M 416.9760 R 12889



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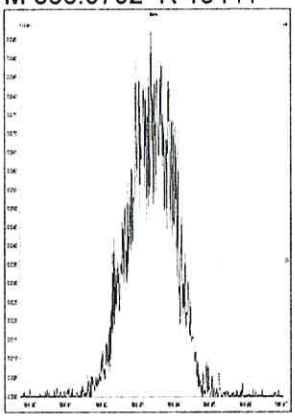
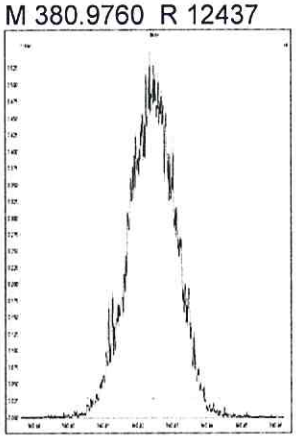
M 366.9792 R 13441



M 380.9760 R 12437



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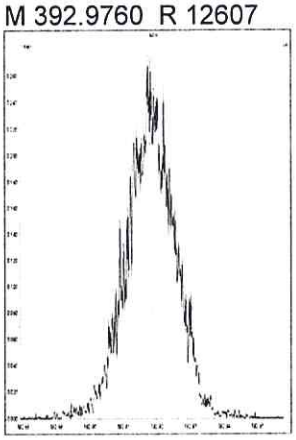
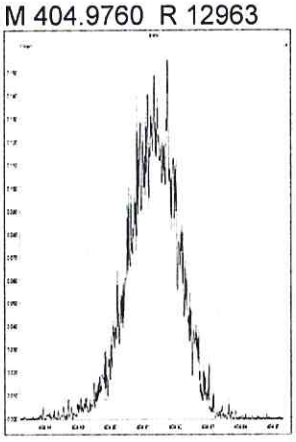


M 404.9760 R 12963



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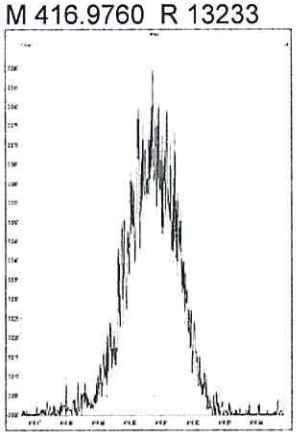
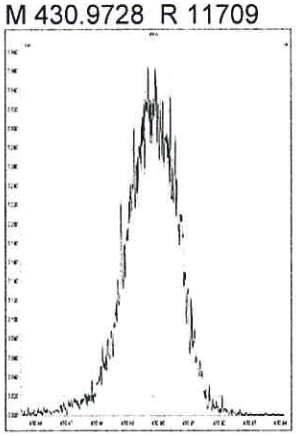
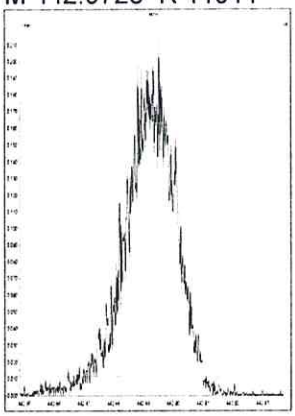


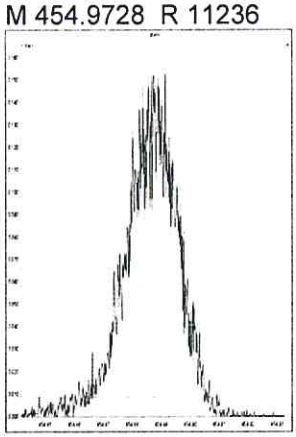
M 430.9728 R 11709



M 442.9728 R 11911



M 454.9728 R 11236



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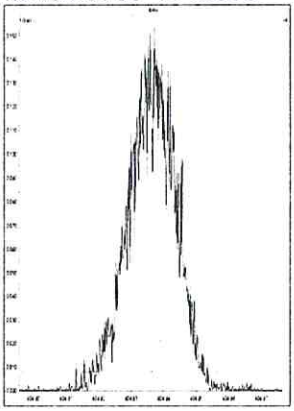

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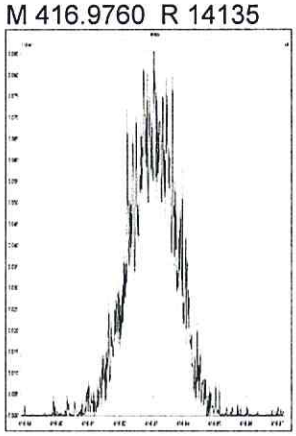

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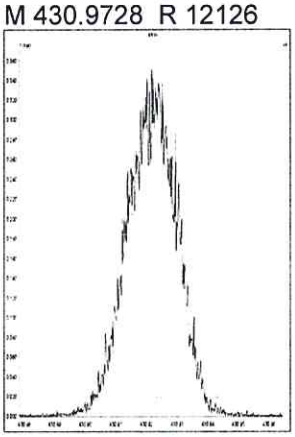

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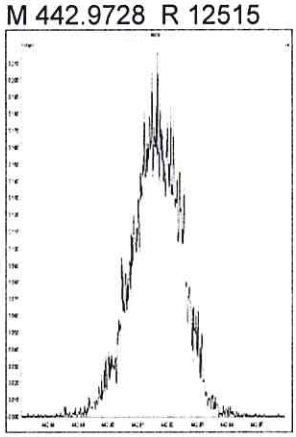

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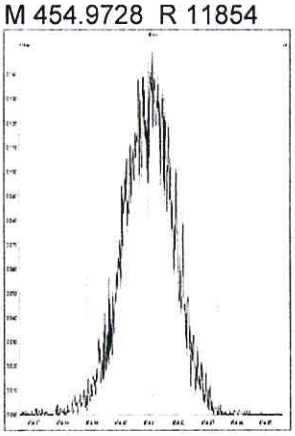

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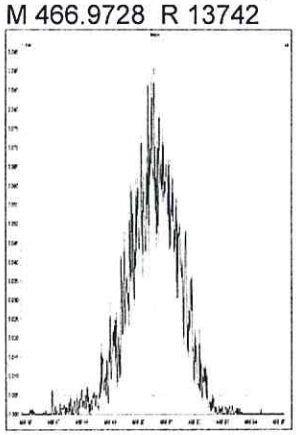

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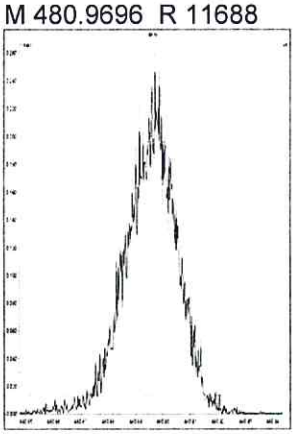

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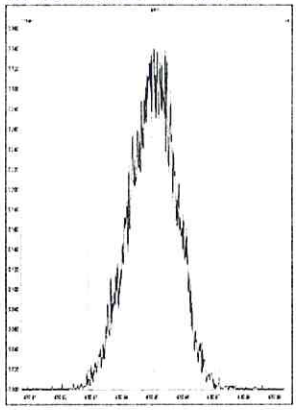

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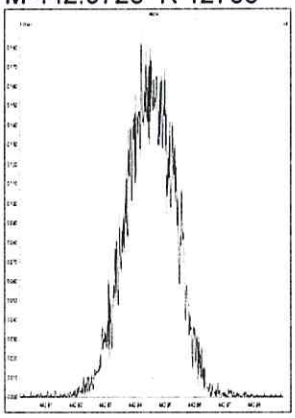

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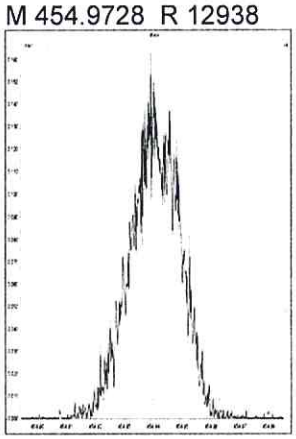

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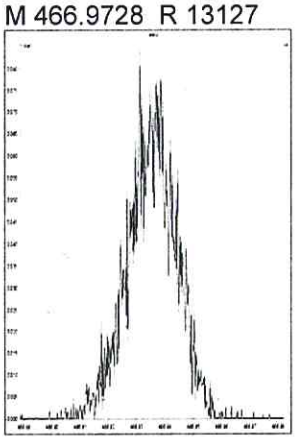

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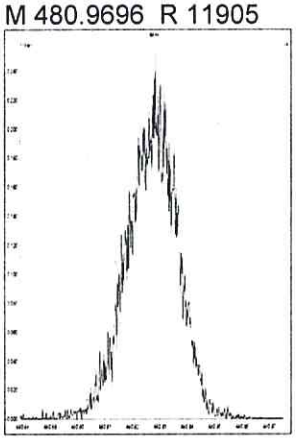

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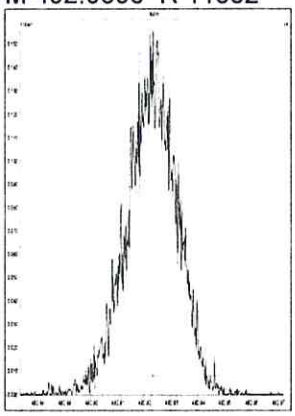

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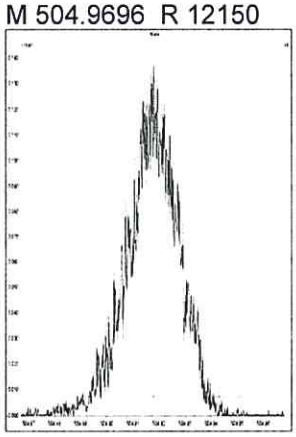

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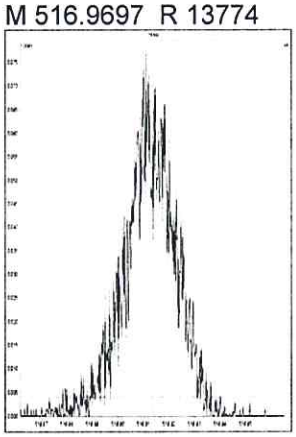

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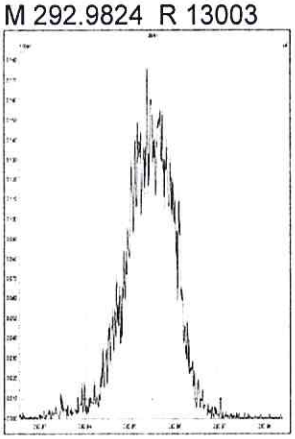

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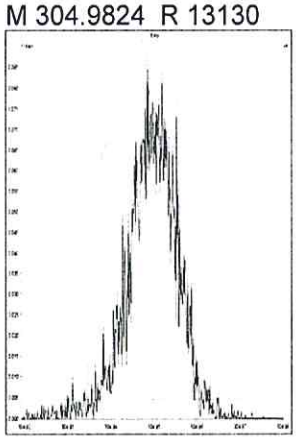

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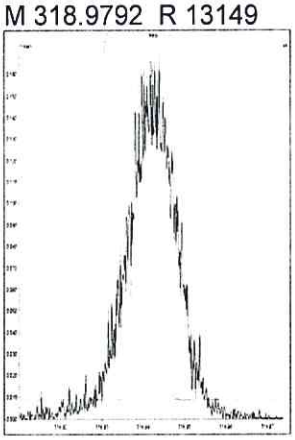

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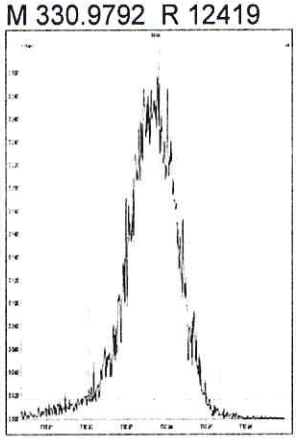

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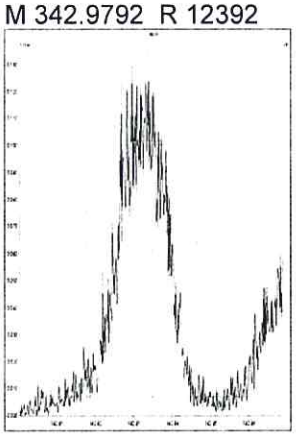

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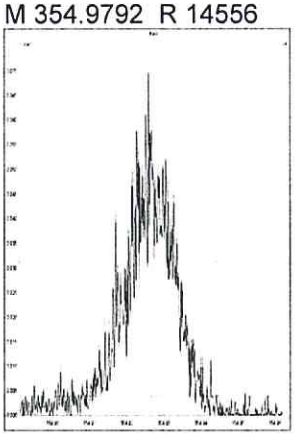

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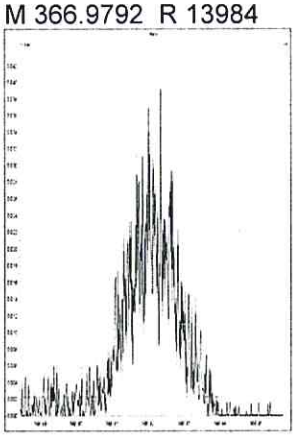

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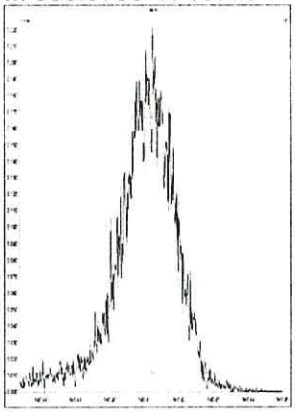

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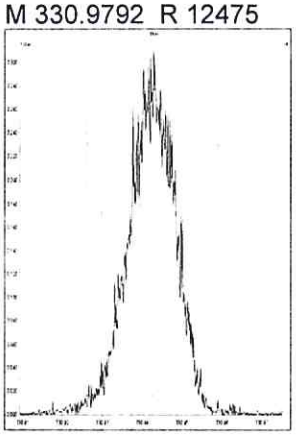

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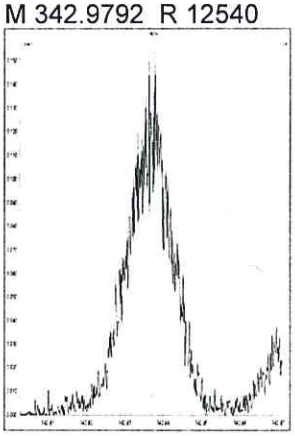

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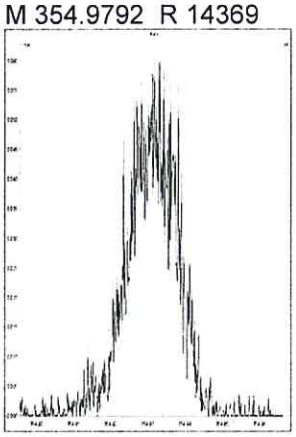

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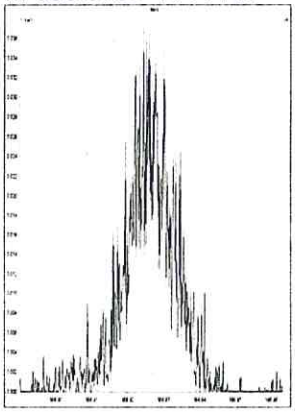

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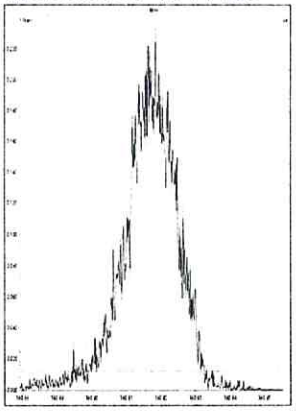

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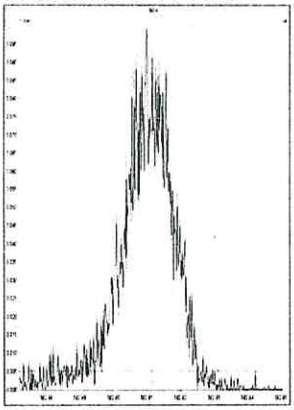

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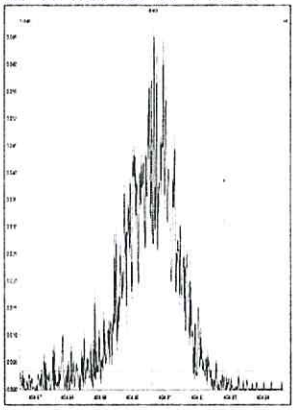

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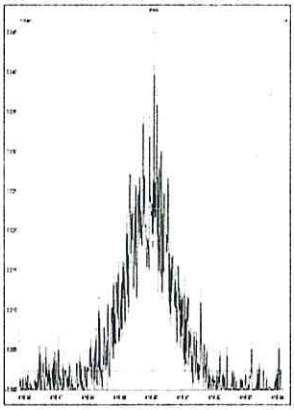

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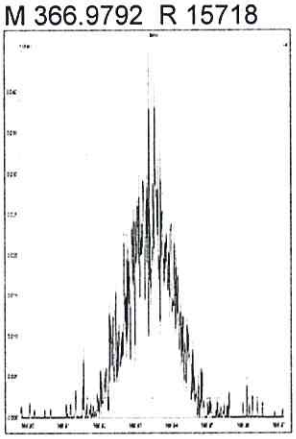

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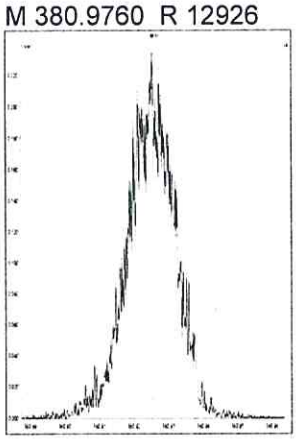

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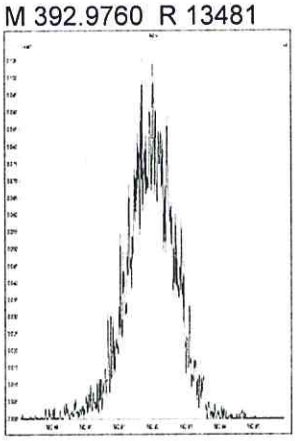

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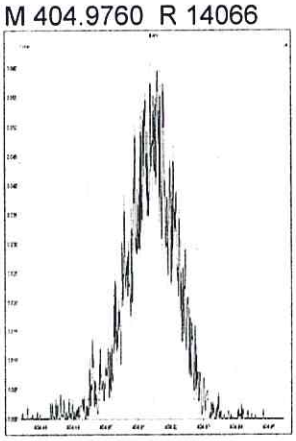

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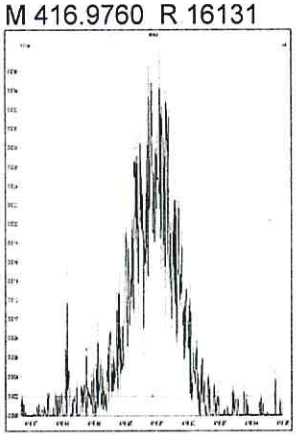

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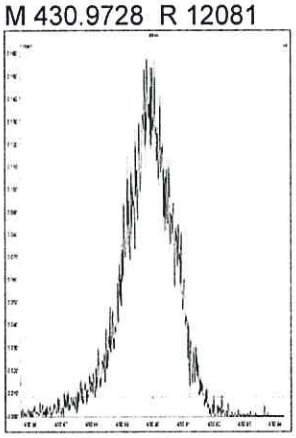
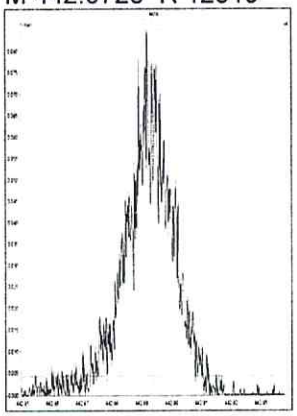


M 442.9728 R 12519



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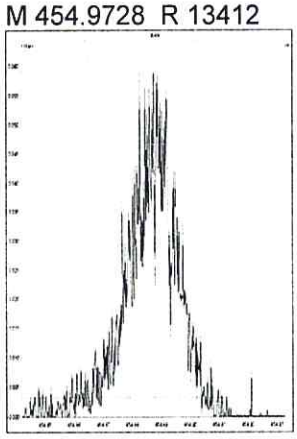

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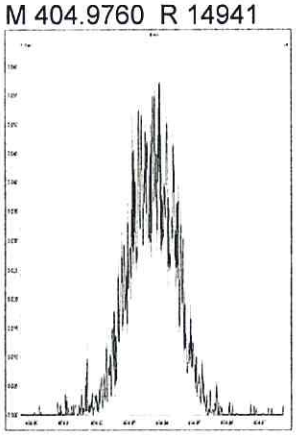

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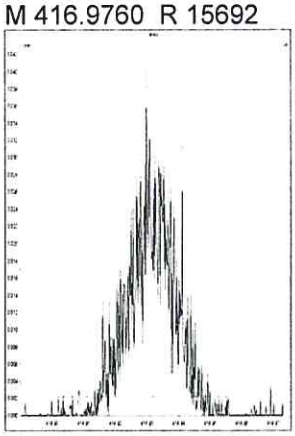

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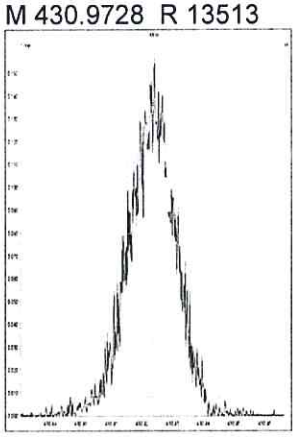

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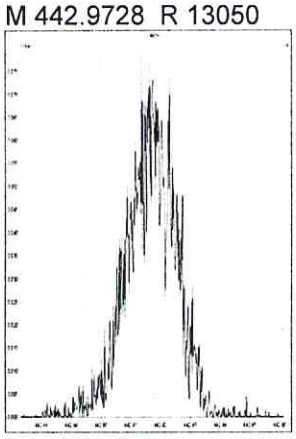

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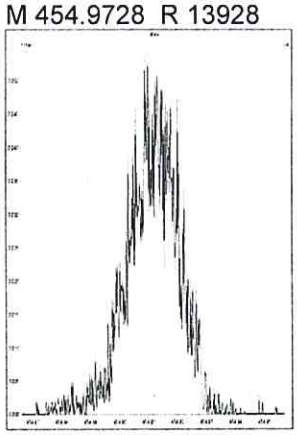

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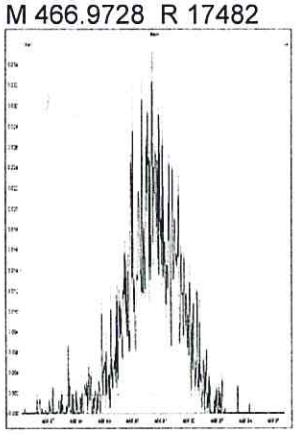

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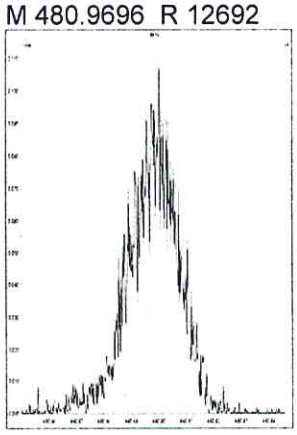
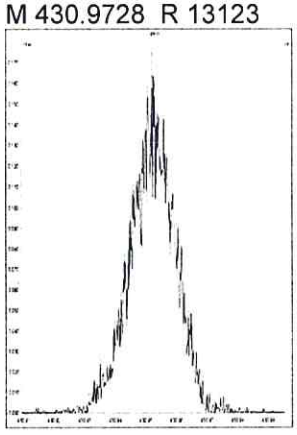


M 430.9728 R 13123



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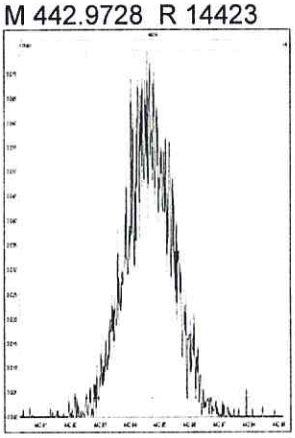

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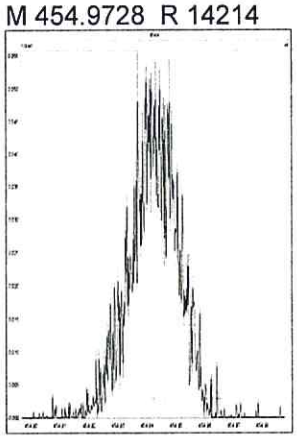
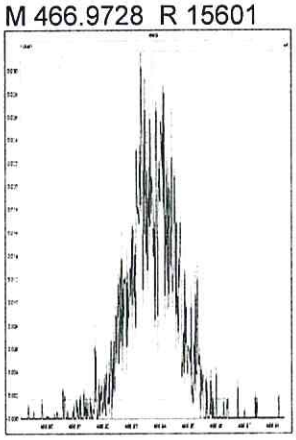


M 466.9728 R 15601



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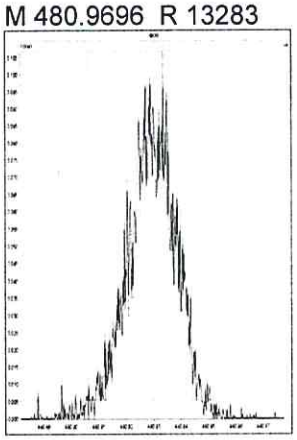

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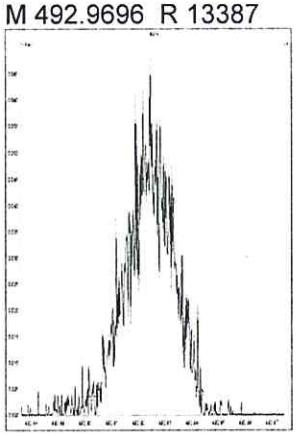

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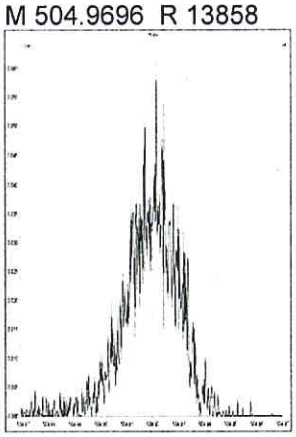

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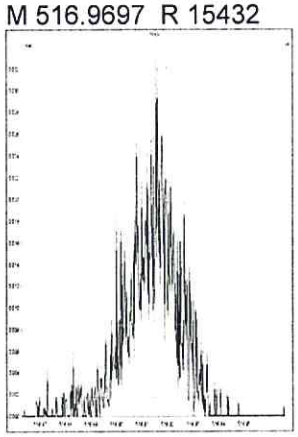


5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

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

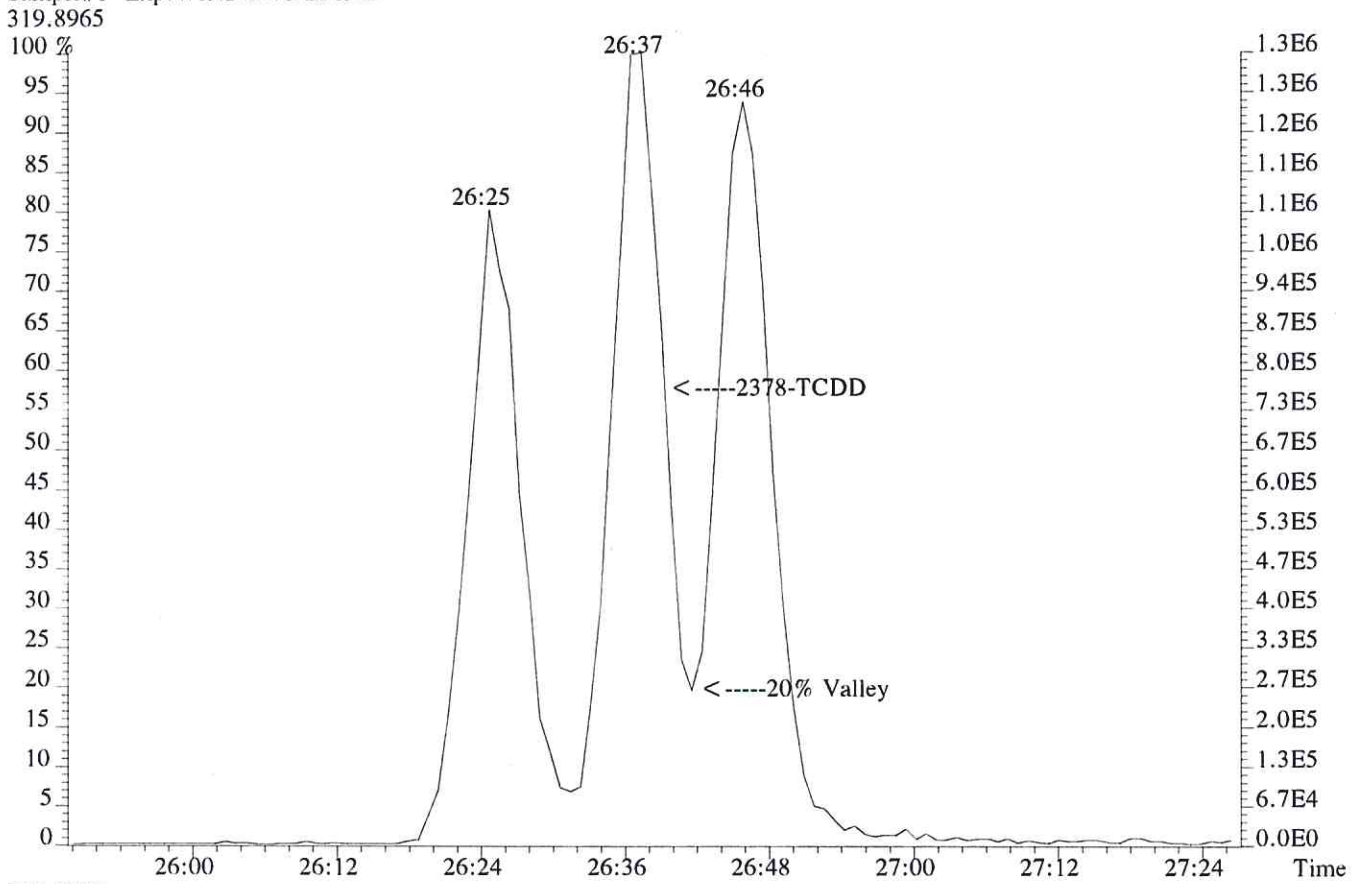
Case No.: _____ SDG No.:
ID: 0.25 (mm)

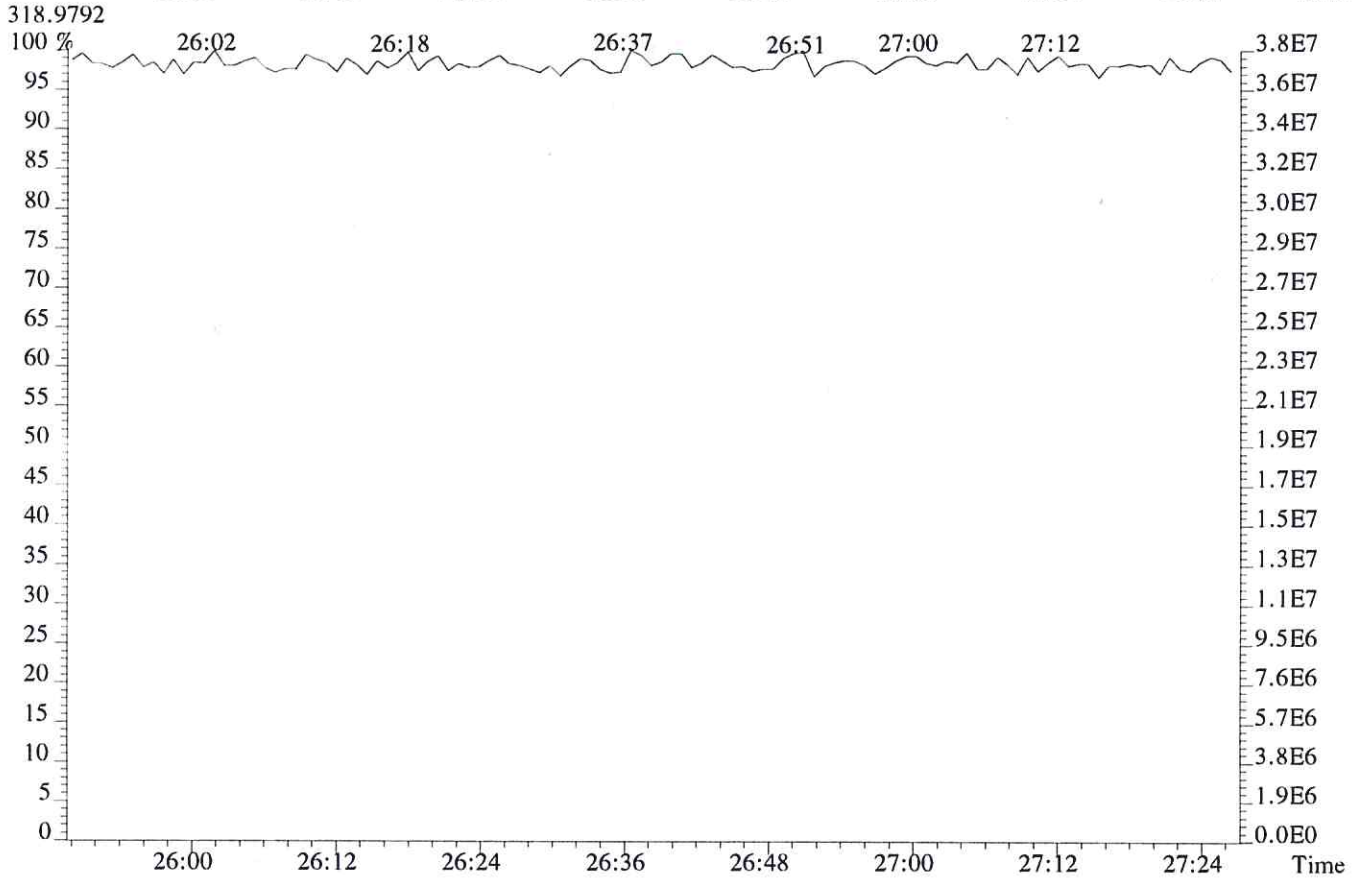
Lab File ID: P607265
Date Analyzed: 20-MAY-17
Time Analyzed: 08:59:23

Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	21:17	27:59
TCDD	22:53	27:49
PeCDF	27:58	32:39
PeCDD	29:43	32:24
HxCDF	33:23	35:59
HxCDD	33:56	35:35
HpCDF	37:14	38:32
HpCDD	37:29	38:08

% Valley 2378-TCDD: 20 %

File:P607265 #1-609 Acq:20-MAY-2017 08:59:23 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOWDEFINE





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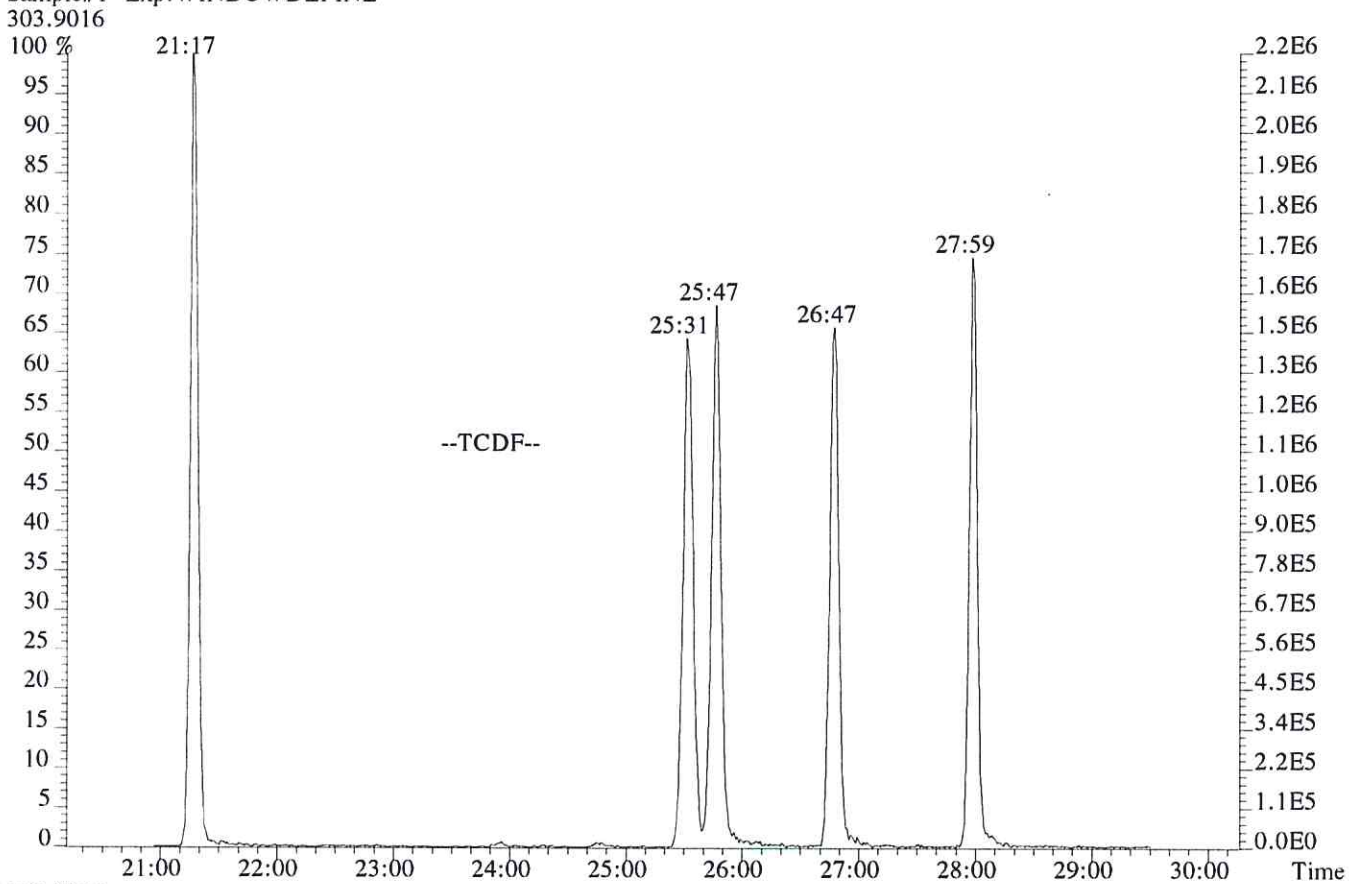
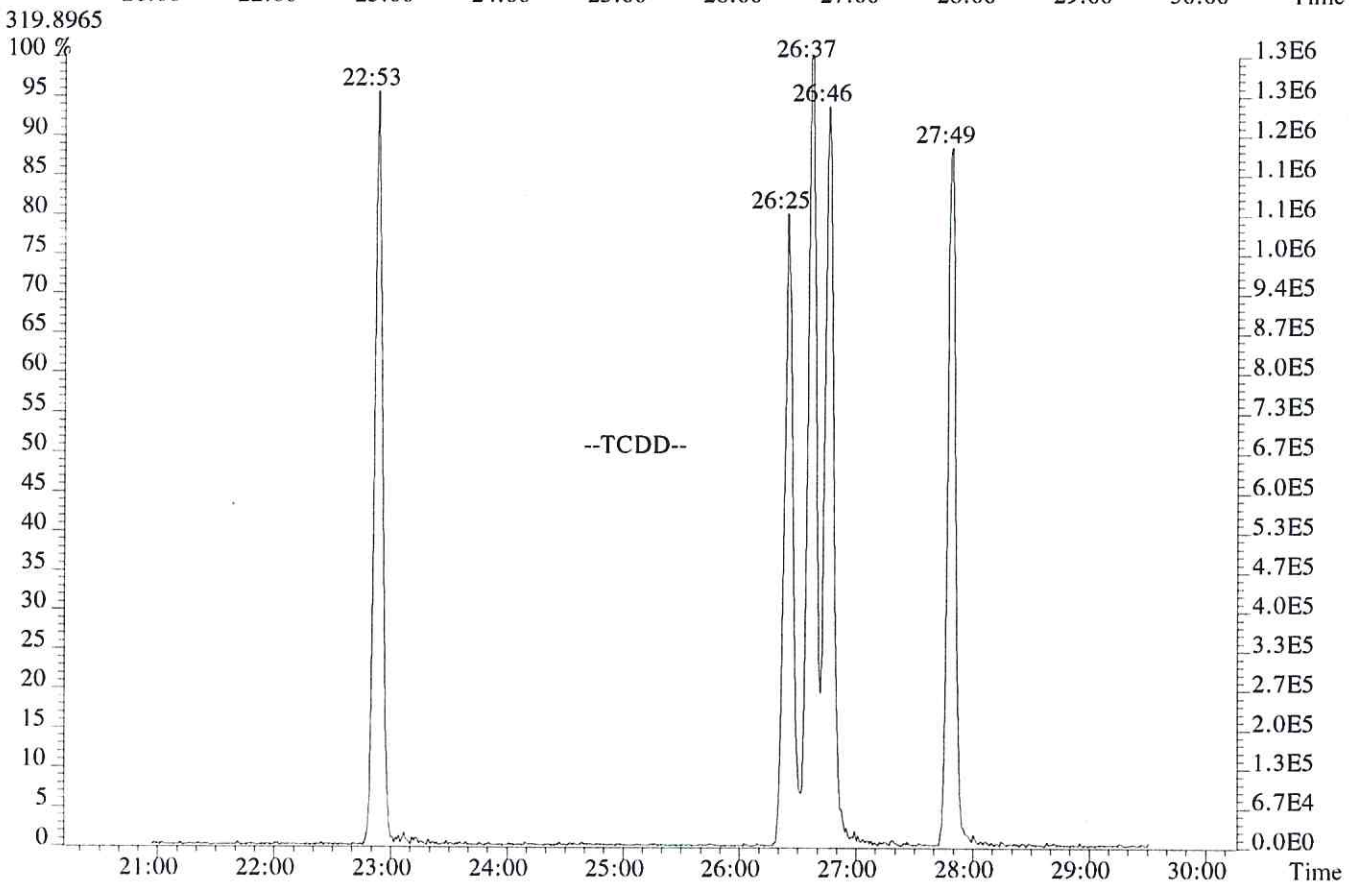
Sample#1 Exp:WINDOWDEFINE





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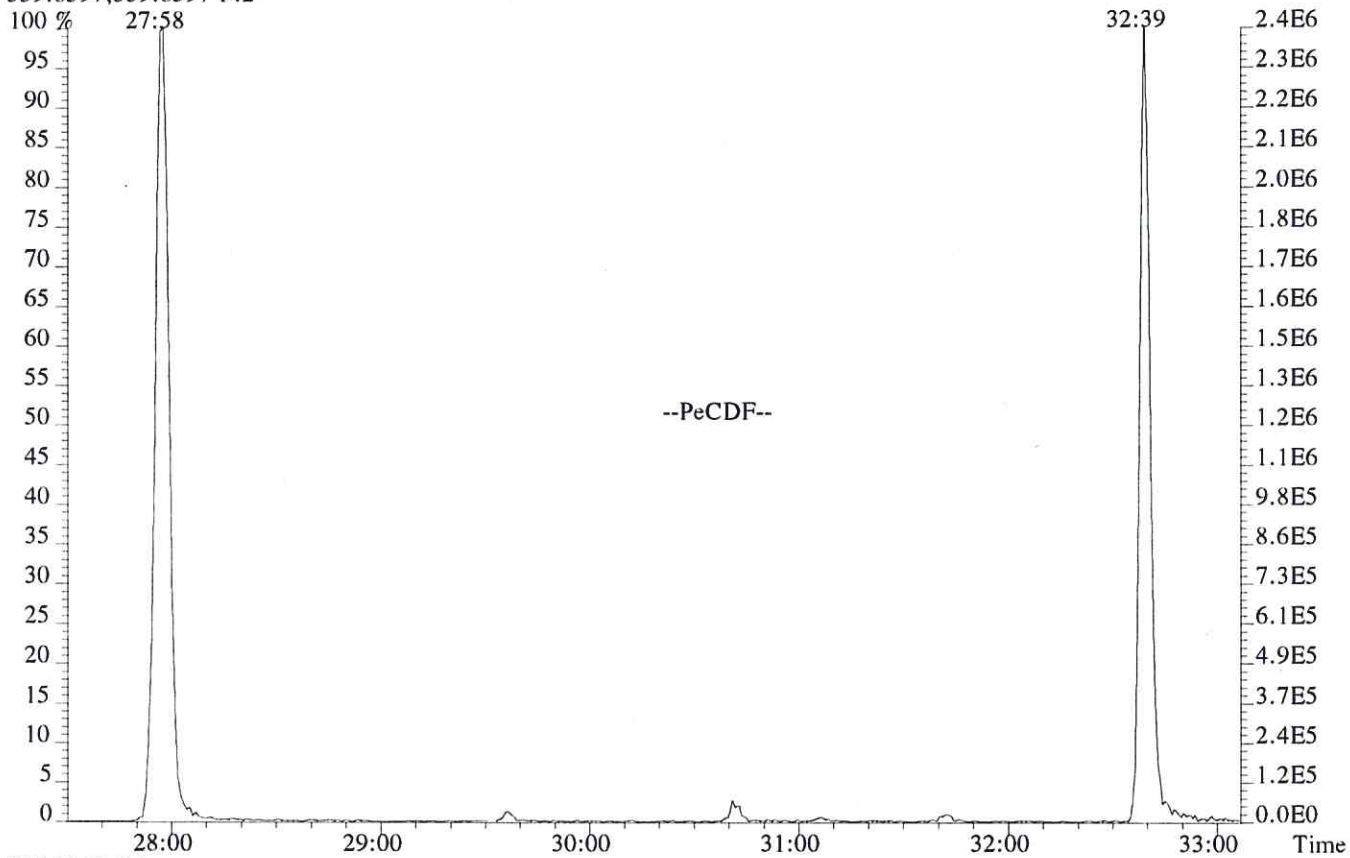
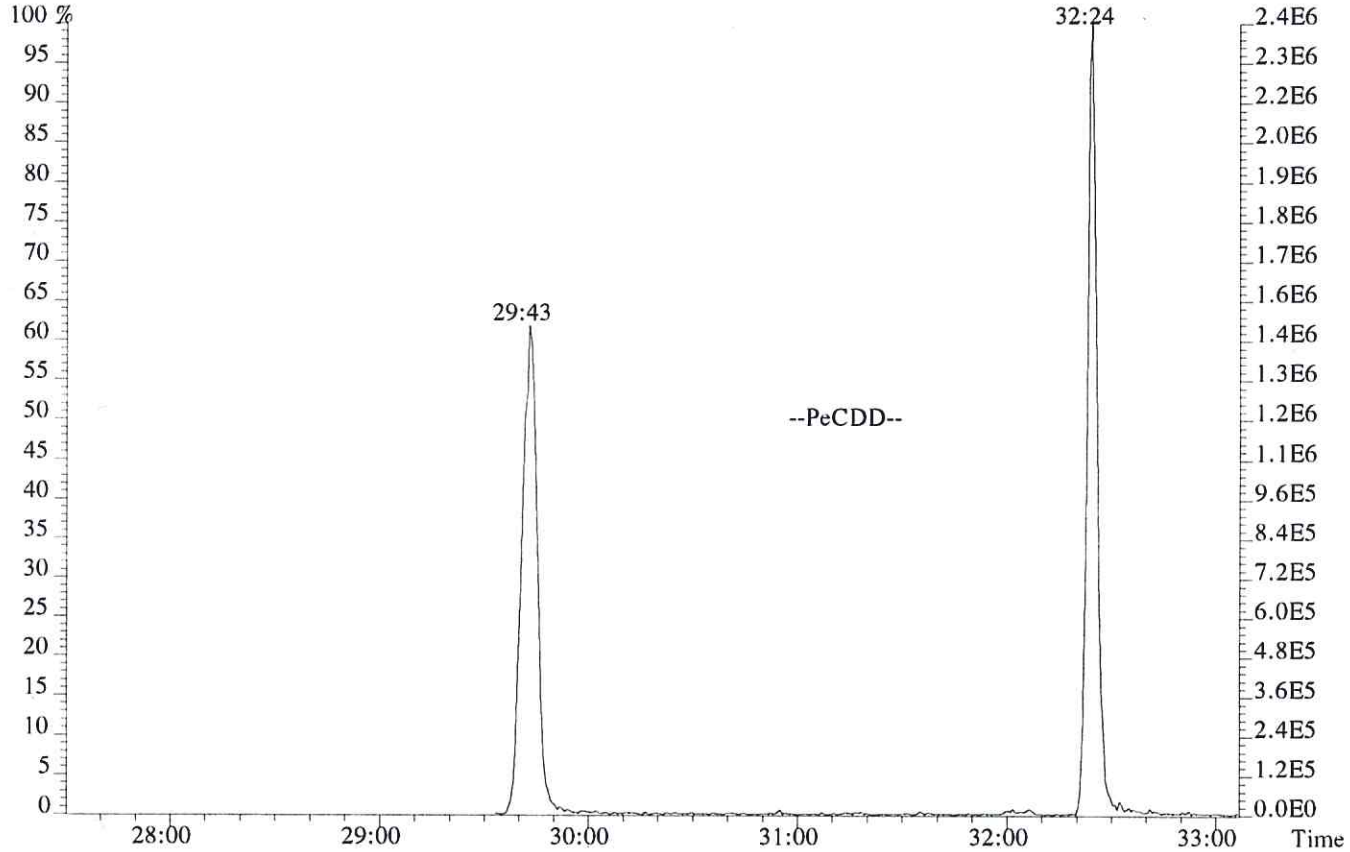
339.8597,339.8597 F:2



355.8546 F:2



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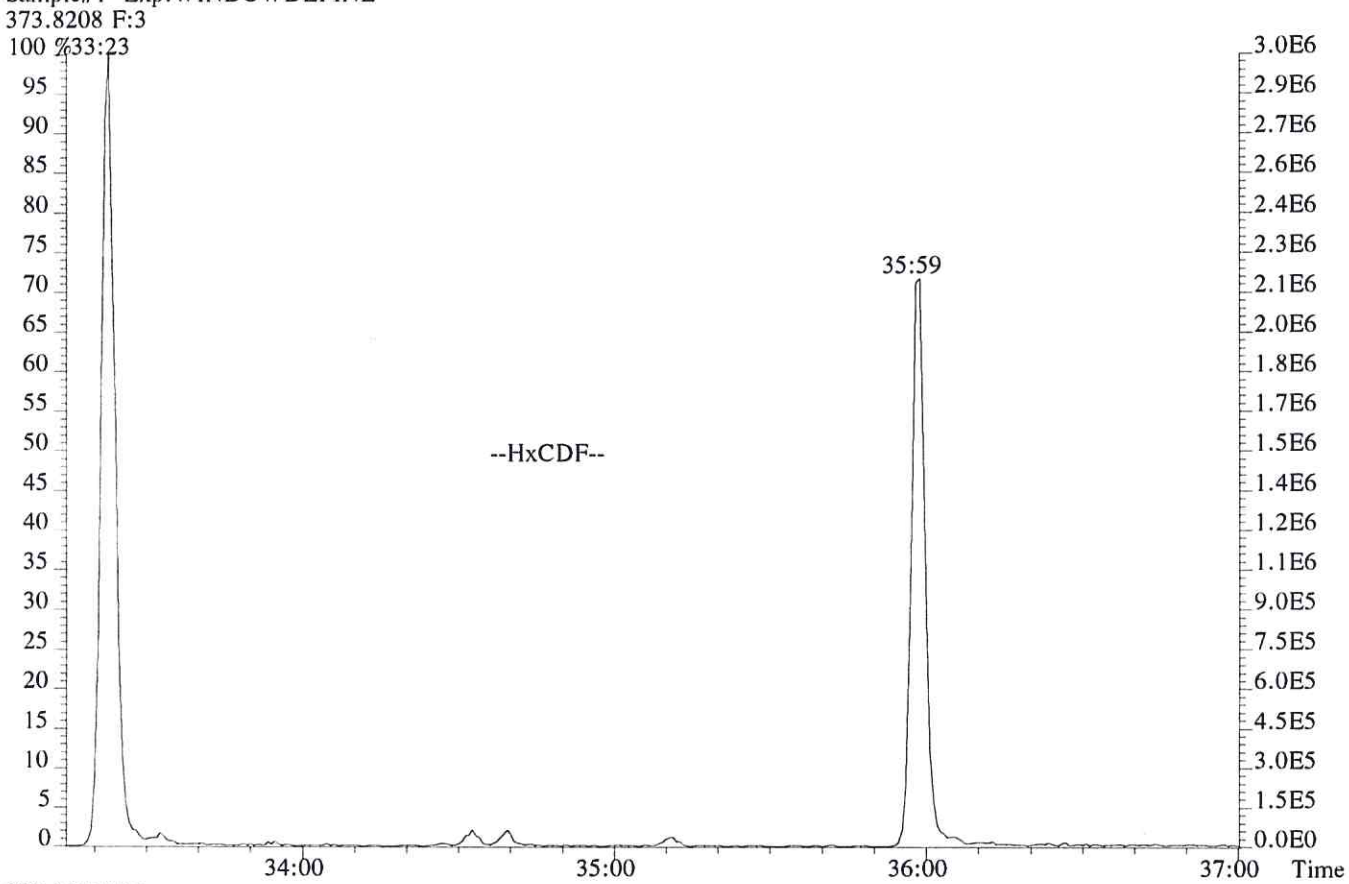
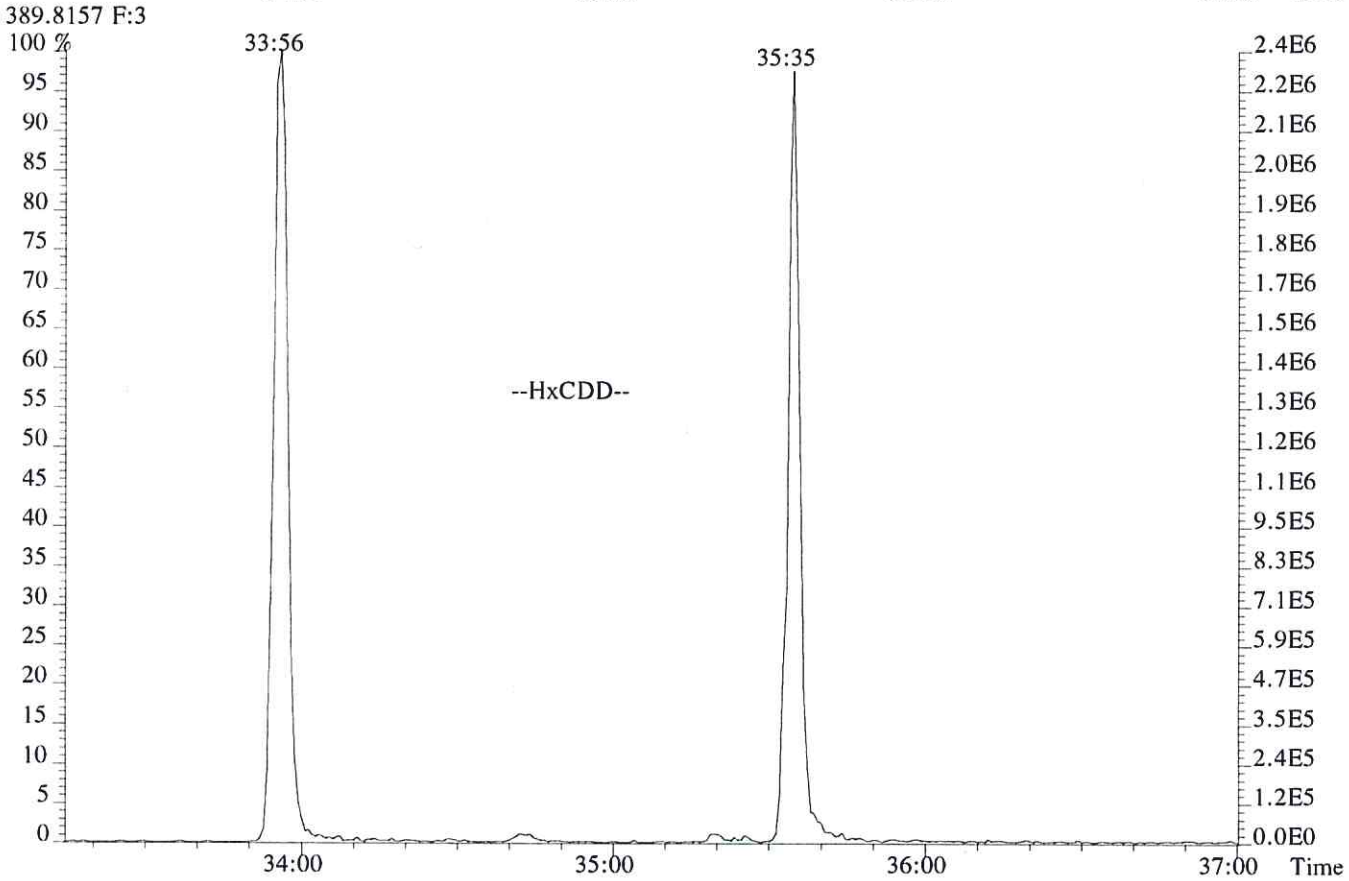
Sample#1 Exp:WINDOWDEFINE





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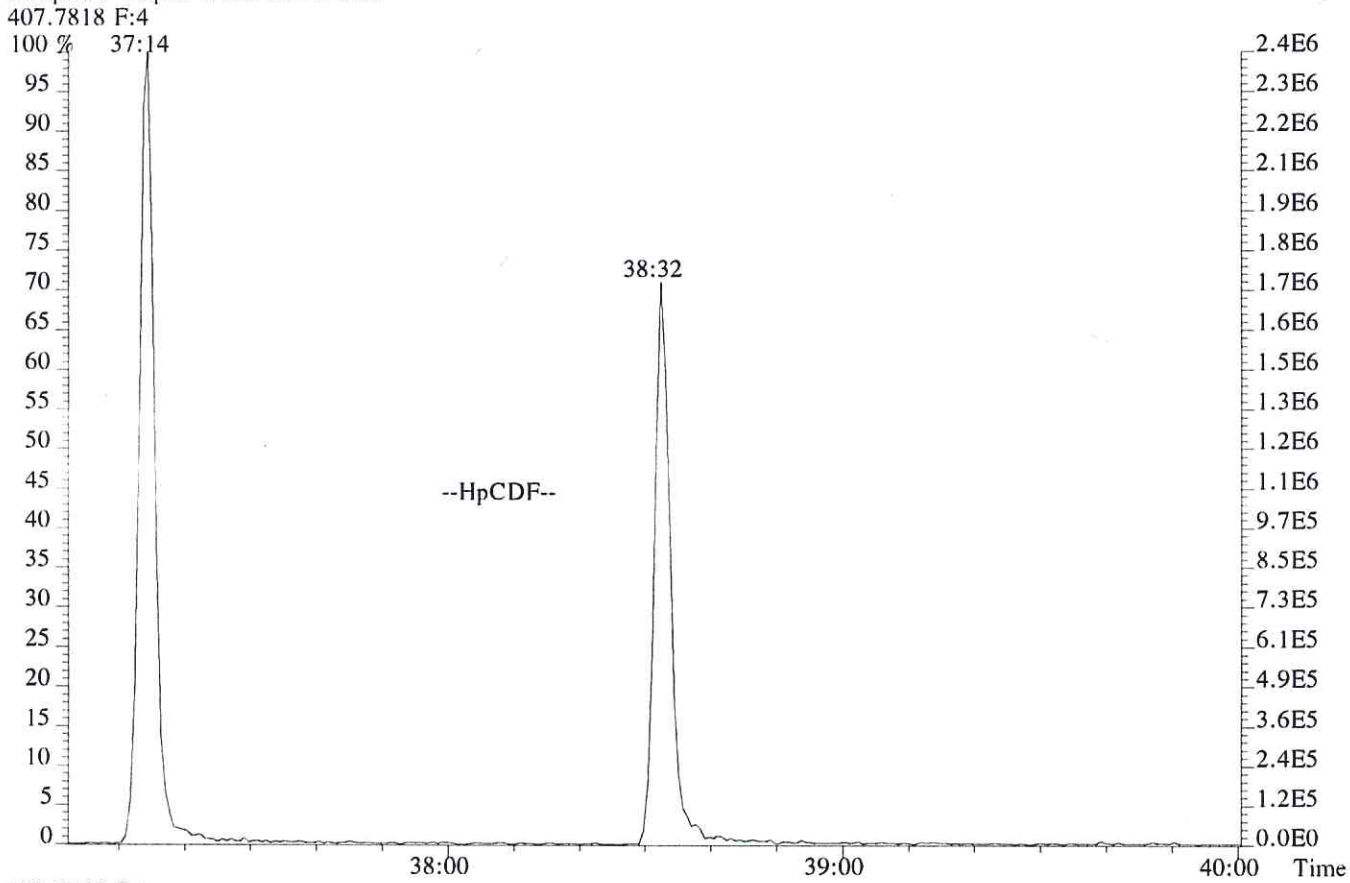

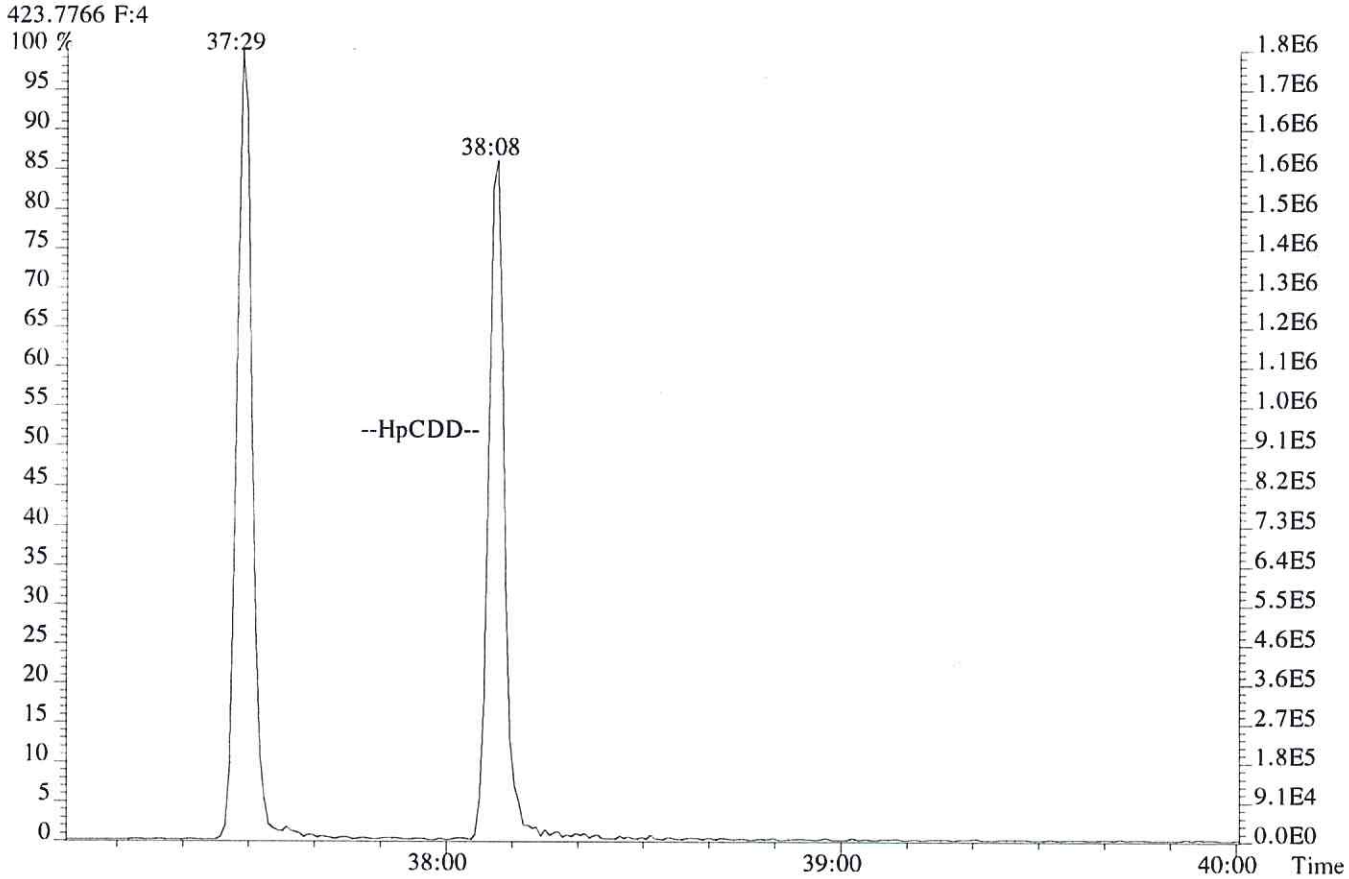

USEPA - ITD

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 05/16/17

Instrument ID: E-HRMS-08 GC Column ID : DB-5MSUI

VER Data Filename: P607264 Analysis Date: 20-MAY-17 Time: 08:11:08

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	9.7	7.8 - 12.9	-3.3
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	50	39 - 65	-0.6
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	50	39 - 64	0.1
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	50	39 - 64	-0.9
1,2,3,7,8,9-HxCDD	M+2/M+4	1.19	1.05-1.43	48	41 - 61	-4.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	49	43 - 58	-1.1
OCDD	M+2/M+4	0.90	0.76-1.02	100	79 - 126	0.3
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	9.4	8.4 - 12.0	-5.6
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	49	41 - 60	-1.6
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	49	41 - 61	-2.7
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	50	45 - 56	-0.4
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	48	44 - 57	-3.1
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05-1.43	48	45 - 56	-3.6
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	49	44 - 57	-1.1
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	51	45 - 55	1.5
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88-1.20	49	43 - 58	-1.8
OCDF	M+2/M+4	0.91	0.76-1.02	96	63 - 159	-4.3

(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

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 05/16/17

Instrument ID: E-HRMS-08 GC Column ID : DB-5MSUI

VER Data Filename: P607264 Analysis Date: 20-MAY-17 Time: 08:11:08

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	101	82 - 121	1.5
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	102	62 - 160	2.1
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.36	1.05-1.43	99	85 - 117	-0.6
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.19	1.05-1.43	100	85 - 118	-0.2
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88-1.20	96	72 - 138	-4.4
13C-OCDD	M+2/M+4	0.91	0.76-1.02	167	96 - 415	-16.3
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	101	71 - 140	1.1
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	104	76 - 130	3.9
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	102	77 - 130	2.1
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	102	76 - 131	2.1
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	98	70 - 143	-2.3
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	94	74 - 135	-5.9
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	99	73 - 137	-1.0
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	97	78 - 129	-3.4
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37-0.51	89	77 - 129	-10.6
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			9.9	7.8 - 12.7	-1.5

(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)

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
178519

Run #7 Filename P607264 Samp: 1 Inj: 1 Acquired: 20-MAY-17 08:11:08
Processed: 23-MAY-17 10:22:12 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:47	8.278e+03	1.061e+04	0.78	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:42	7.058e+04	4.518e+04	1.56	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:42	6.602e+04	4.219e+04	1.56	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:32	5.884e+04	4.750e+04	1.24	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	6.263e+04	4.987e+04	1.26	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:10	5.810e+04	4.645e+04	1.25	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:56	4.939e+04	3.930e+04	1.26	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:14	4.894e+04	4.739e+04	1.03	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:32	3.737e+04	3.700e+04	1.01	yes	no	1.341
10	Unk	OCDF	40:46	5.319e+04	5.856e+04	0.91	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:46	6.471e+03	8.055e+03	0.80	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:00	4.616e+04	2.969e+04	1.55	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:19	4.178e+04	3.355e+04	1.25	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:24	3.982e+04	3.199e+04	1.24	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:39	4.188e+04	3.522e+04	1.19	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:07	3.400e+04	3.217e+04	1.06	yes	no	1.048
17	Unk	OCDD	40:35	4.641e+04	5.177e+04	0.90	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:45	8.701e+04	1.092e+05	0.80	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:40	1.360e+05	8.641e+04	1.57	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:40	1.339e+05	8.524e+04	1.57	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:31	5.837e+04	1.115e+05	0.52	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:38	6.735e+04	1.275e+05	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:09	6.215e+04	1.177e+05	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:55	5.242e+04	9.945e+04	0.53	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:13	4.214e+04	9.423e+04	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	3.505e+04	7.790e+04	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:44	6.295e+04	7.950e+04	0.79	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	31:59	9.707e+04	6.128e+04	1.58	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	8.066e+04	5.947e+04	1.36	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:23	7.588e+04	6.387e+04	1.19	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:06	6.612e+04	6.152e+04	1.07	yes	no	0.884
32	IS	13C-OCDD	40:35	8.318e+04	9.164e+04	0.91	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:03	6.342e+04	7.880e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:38	8.428e+04	6.686e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:46	1.502e+04				no	1.072

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
178519

Run #7 Filename P607264 Samp: 1 Inj: 1 Acquired: 20-MAY-17 08:11:08
Processed: 23-MAY-17 10:22:12 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.17e+06	2.04e+02	5.7e+03	1.52e+06	2.04e+02	7.5e+03
2	1,2,3,7,8-PeCDF	1.17e+07	1.34e+04	8.8e+02	7.47e+06	1.97e+03	3.8e+03
3	2,3,4,7,8-PeCDF	1.18e+07	1.34e+04	8.8e+02	7.53e+06	1.97e+03	3.8e+03
4	1,2,3,4,7,8-HxCDF	1.22e+07	7.72e+02	1.6e+04	9.74e+06	1.64e+02	5.9e+04
5	1,2,3,6,7,8-HxCDF	1.26e+07	7.72e+02	1.6e+04	1.00e+07	1.64e+02	6.1e+04
6	2,3,4,6,7,8-HxCDF	1.19e+07	7.72e+02	1.5e+04	9.48e+06	1.64e+02	5.8e+04
7	1,2,3,7,8,9-HxCDF	1.03e+07	7.72e+02	1.3e+04	8.04e+06	1.64e+02	4.9e+04
8	1,2,3,4,6,7,8-HpCDF	1.08e+07	4.63e+03	2.3e+03	1.04e+07	6.37e+03	1.6e+03
9	1,2,3,4,7,8,9-HpCDF	8.02e+06	4.63e+03	1.7e+03	7.74e+06	6.37e+03	1.2e+03
10	OCDF	1.00e+07	8.64e+03	1.2e+03	1.12e+07	8.38e+03	1.3e+03
11	2,3,7,8-TCDD	1.02e+06	1.68e+02	6.1e+03	1.23e+06	2.28e+02	5.4e+03
12	1,2,3,7,8-PeCDD	8.52e+06	1.11e+03	7.7e+03	5.45e+06	1.06e+03	5.2e+03
13	1,2,3,4,7,8-HxCDD	8.71e+06	2.12e+02	4.1e+04	6.94e+06	1.76e+02	3.9e+04
14	1,2,3,6,7,8-HxCDD	8.20e+06	2.12e+02	3.9e+04	6.62e+06	1.76e+02	3.8e+04
15	1,2,3,7,8,9-HxCDD	8.86e+06	2.12e+02	4.2e+04	7.21e+06	1.76e+02	4.1e+04
16	1,2,3,4,6,7,8-HpCDD	7.45e+06	1.37e+03	5.4e+03	7.06e+06	1.24e+03	5.7e+03
17	OCDD	8.92e+06	8.04e+03	1.1e+03	9.93e+06	2.30e+03	4.3e+03
18	13C-2,3,7,8-TCDF	1.22e+07	5.62e+03	2.2e+03	1.53e+07	2.43e+03	6.3e+03
19	13C-1,2,3,7,8-PeCDF	2.30e+07	1.36e+03	1.7e+04	1.47e+07	2.64e+02	5.6e+04
20	13C-2,3,4,7,8-PeCDF	2.43e+07	1.36e+03	1.8e+04	1.54e+07	2.64e+02	5.8e+04
21	13C-1,2,3,4,7,8-HxCDF	1.23e+07	1.68e+02	7.3e+04	2.32e+07	1.84e+02	1.3e+05
22	13C-1,2,3,6,7,8-HxCDF	1.36e+07	1.68e+02	8.1e+04	2.57e+07	1.84e+02	1.4e+05
23	13C-2,3,4,6,7,8-HxCDF	1.27e+07	1.68e+02	7.6e+04	2.43e+07	1.84e+02	1.3e+05
24	13C-1,2,3,7,8,9-HxCDF	1.09e+07	1.68e+02	6.5e+04	2.06e+07	1.84e+02	1.1e+05
25	13C-1,2,3,4,6,7,8-HpCDF	9.15e+06	5.38e+03	1.7e+03	2.06e+07	1.15e+04	1.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	7.64e+06	5.38e+03	1.4e+03	1.67e+07	1.15e+04	1.4e+03
27	13C-2,3,7,8-TCDD	9.86e+06	6.80e+03	1.4e+03	1.25e+07	3.02e+03	4.1e+03
28	13C-1,2,3,7,8-PeCDD	1.77e+07	1.96e+02	9.0e+04	1.12e+07	7.12e+02	1.6e+04
29	13C-1,2,3,4,7,8-HxCDD	1.66e+07	1.58e+03	1.0e+04	1.27e+07	1.07e+03	1.2e+04
30	13C-1,2,3,6,7,8-HxCDD	1.56e+07	1.58e+03	9.9e+03	1.27e+07	1.07e+03	1.2e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.45e+07	1.24e+03	1.2e+04	1.34e+07	9.28e+02	1.4e+04
32	13C-OCDD	1.58e+07	1.40e+04	1.1e+03	1.77e+07	1.31e+04	1.4e+03
33	13C-1,2,3,4-TCDD	9.38e+06	6.80e+03	1.4e+03	1.17e+07	3.02e+03	3.9e+03
34	13C-1,2,3,7,8,9-HxCDD	1.77e+07	1.58e+03	1.1e+04	1.41e+07	1.07e+03	1.3e+04
35	37Cl-2,3,7,8-TCDD	2.30e+06	1.26e+03	1.8e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.680e{+}02 + 2.280e{+}02) \times 100}{(9.858e{+}06 + 1.254e{+}07) \times (\qquad\qquad) \times 1.055} =$$

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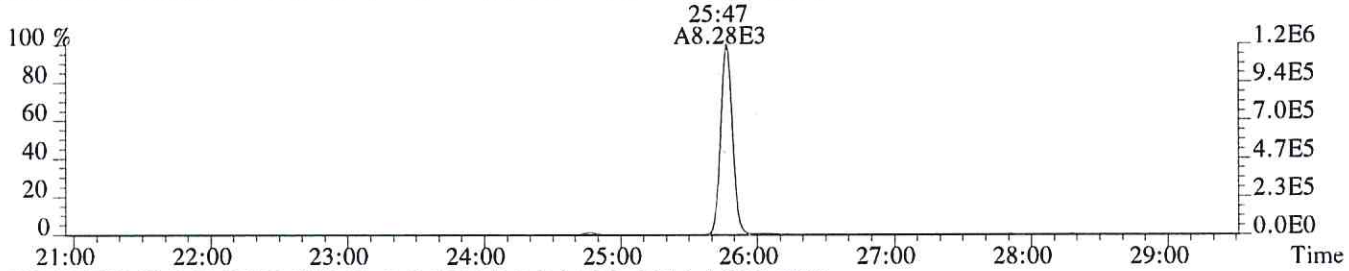
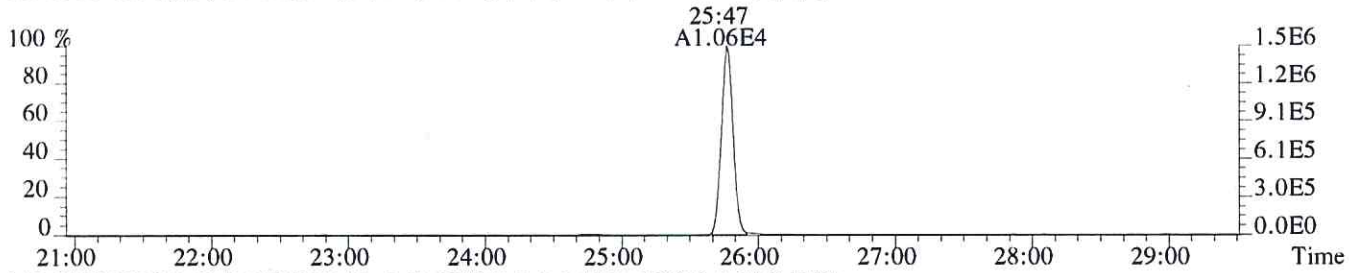
File:P607264 #1-609 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

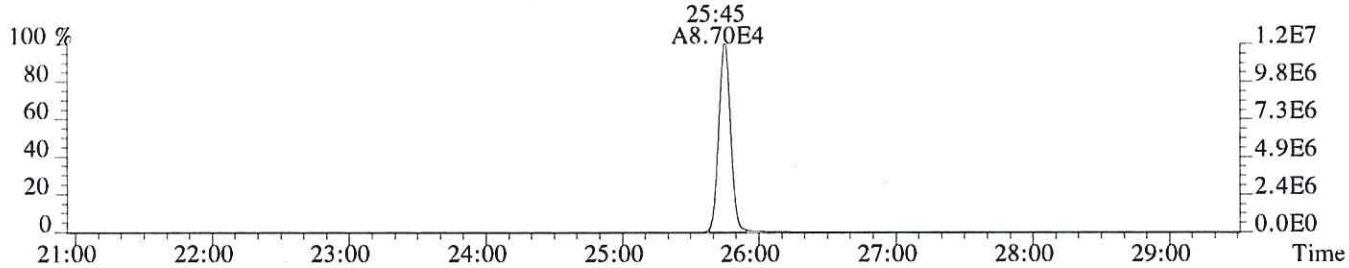
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,204.0,1.00%,F,T)



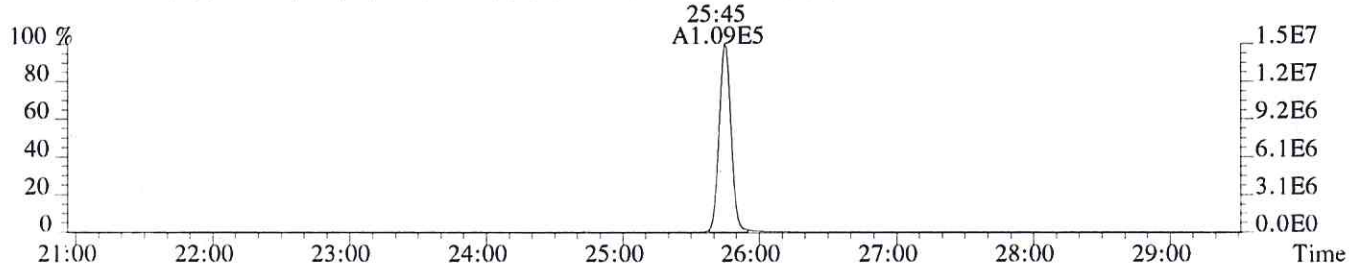
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,204.0,1.00%,F,T)



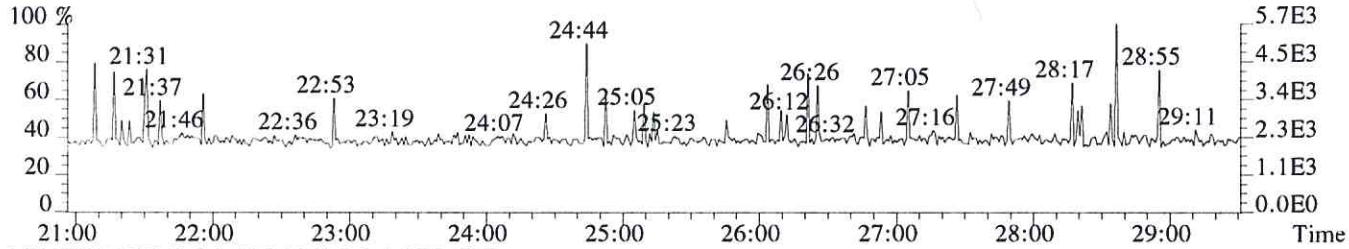
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5620.0,1.00%,F,T)



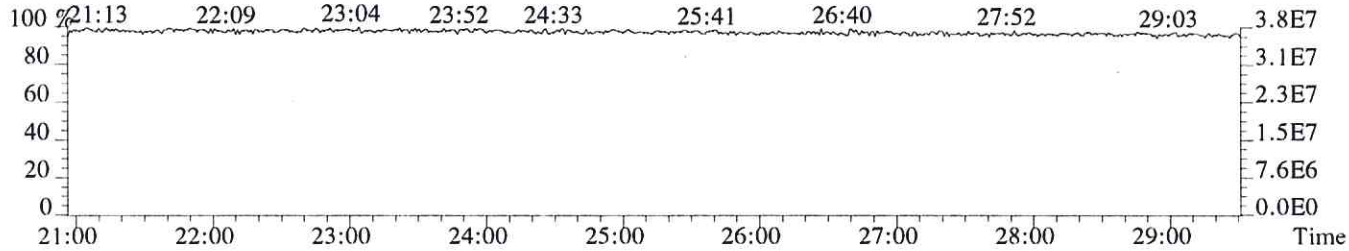
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2428.0,1.00%,F,T)



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

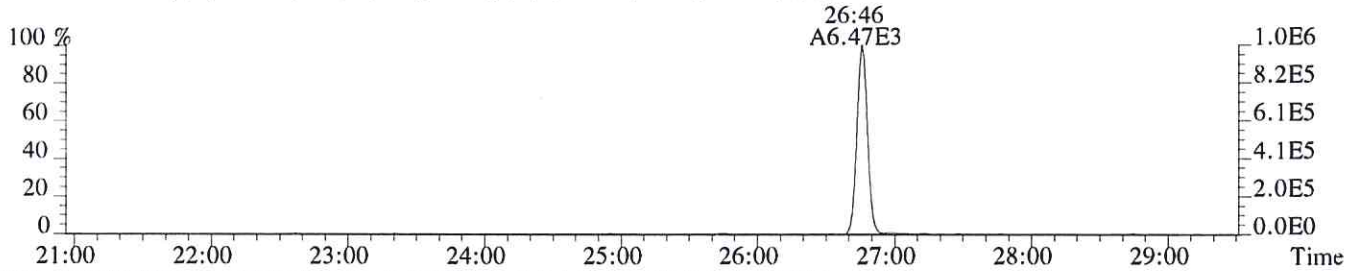


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

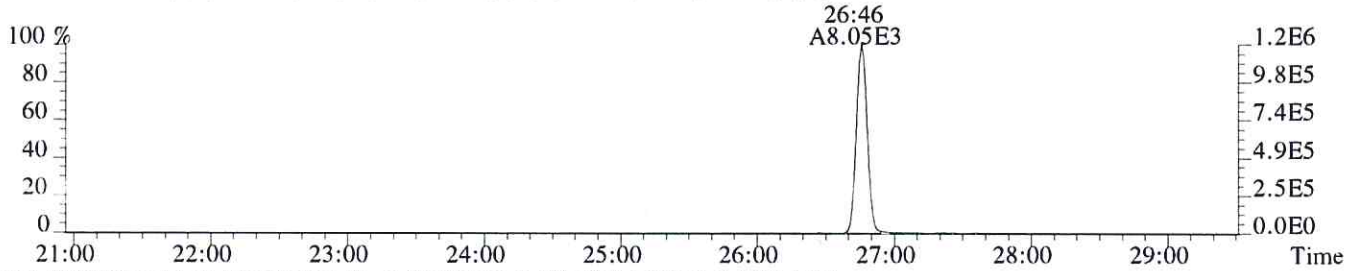


File:P607264 #1-609 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

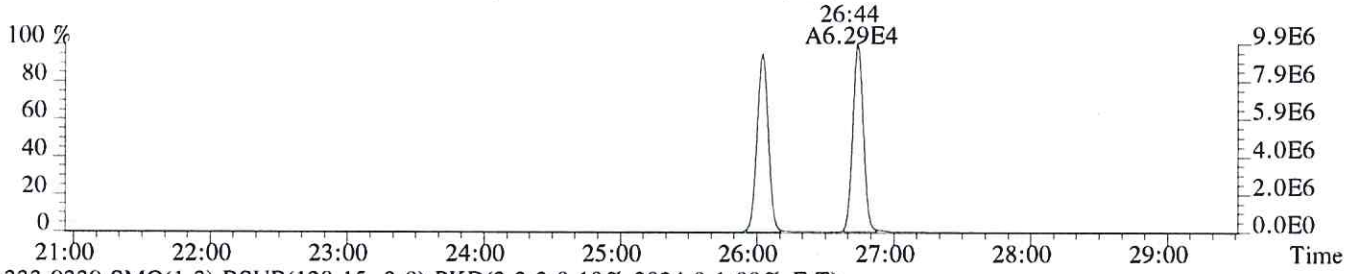
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,168.0,1.00%,F,T)



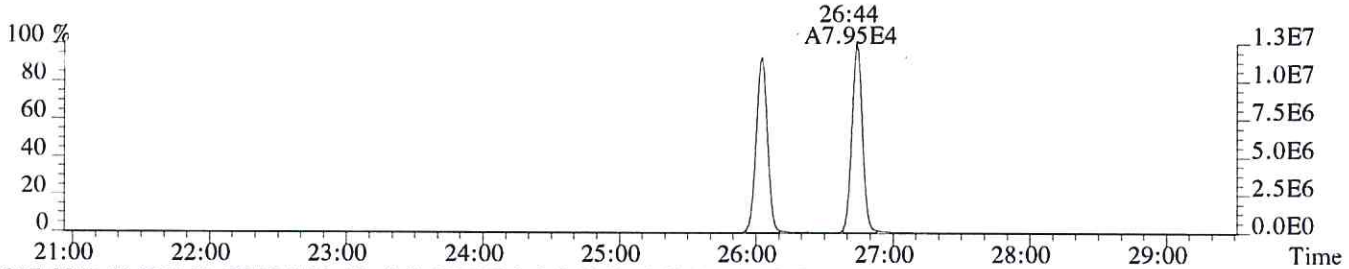
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,228.0,1.00%,F,T)



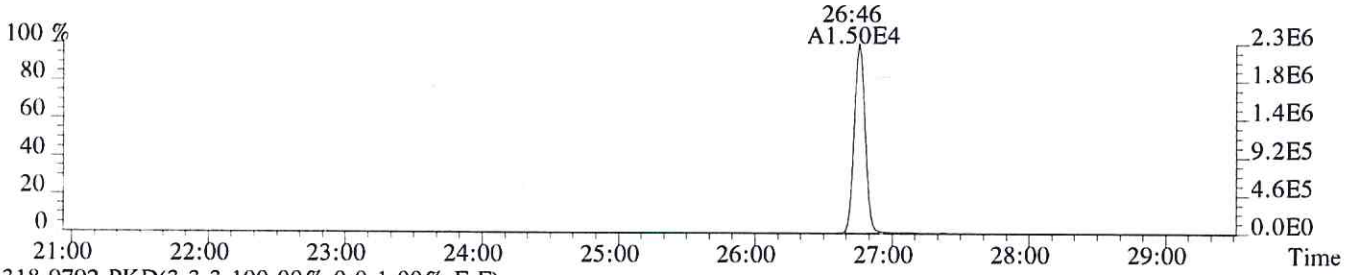
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6800.0,1.00%,F,T)



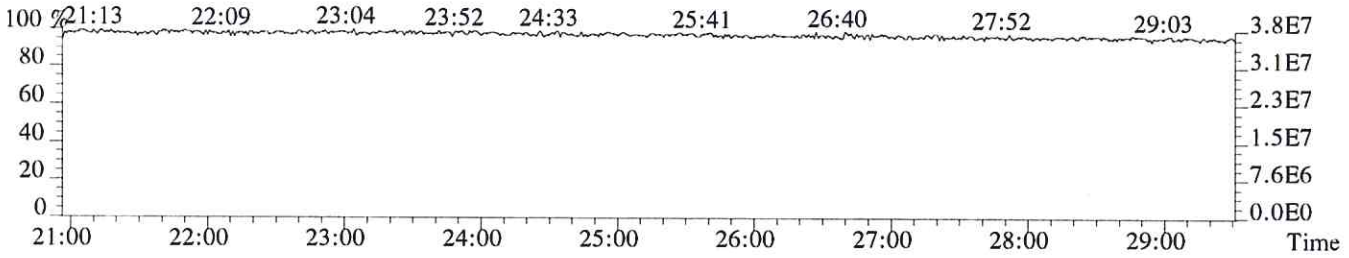
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3024.0,1.00%,F,T)



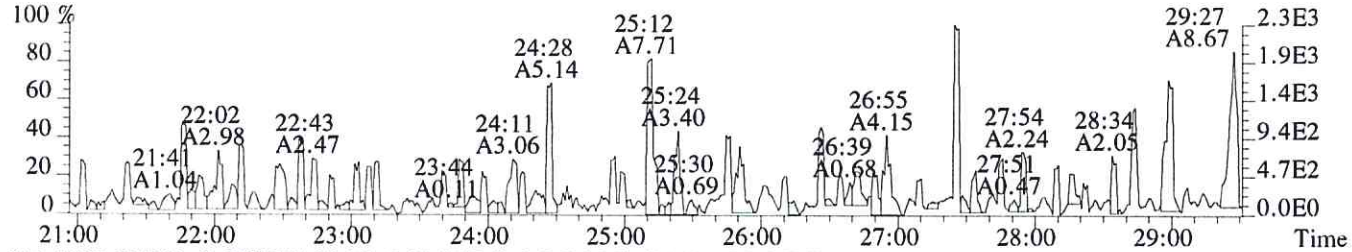
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1260.0,1.00%,F,T)



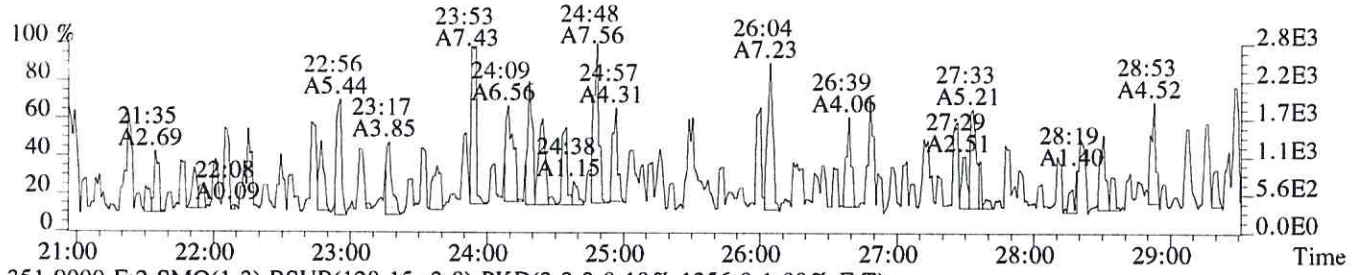
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



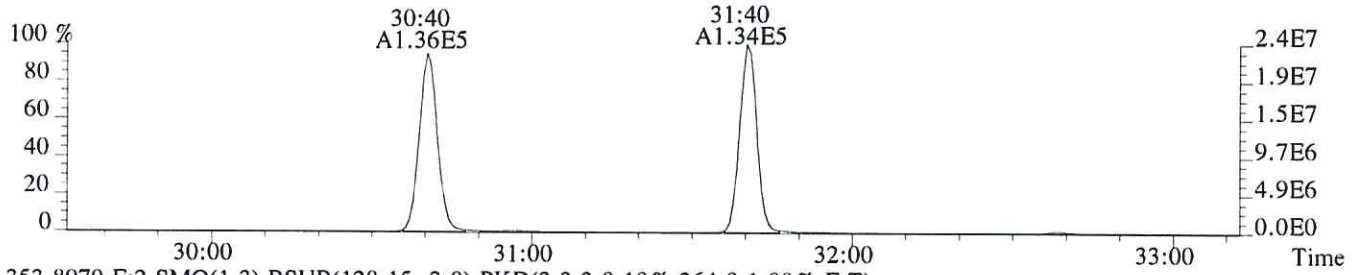
File:P607264 #1-609 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,180.0,1.00%,F,T)



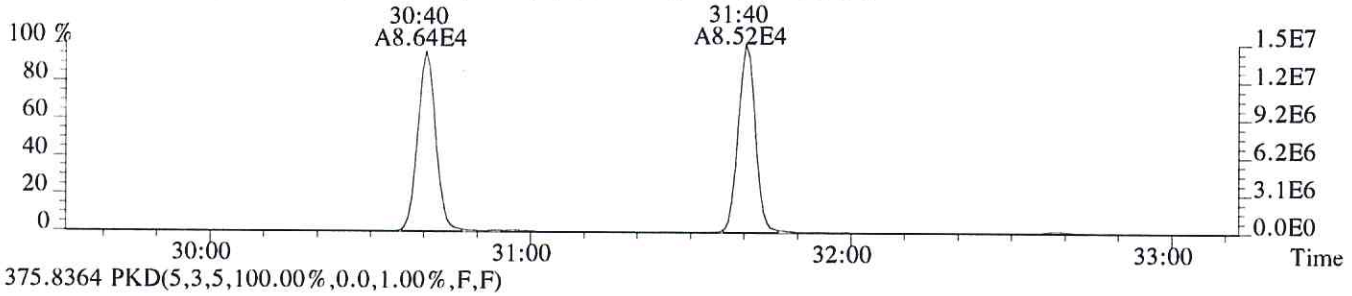
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,632.0,1.00%,F,T)



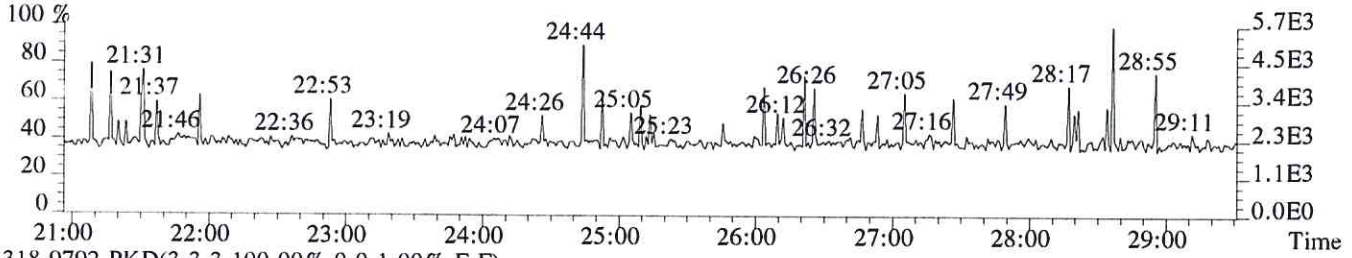
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1356.0,1.00%,F,T)



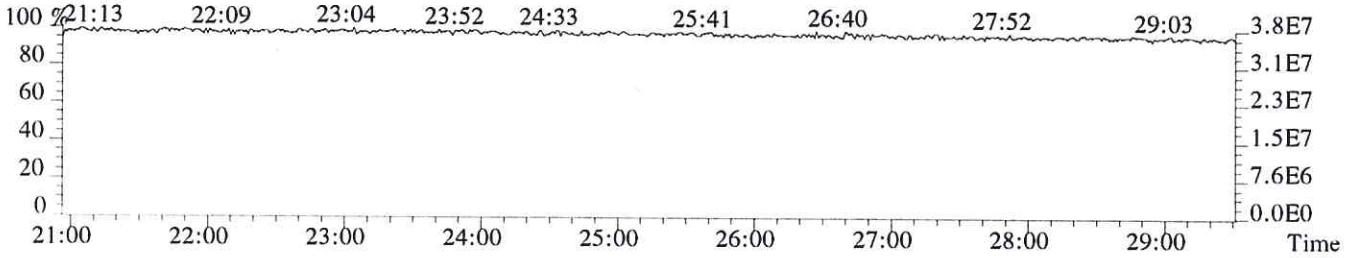
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,264.0,1.00%,F,T)



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

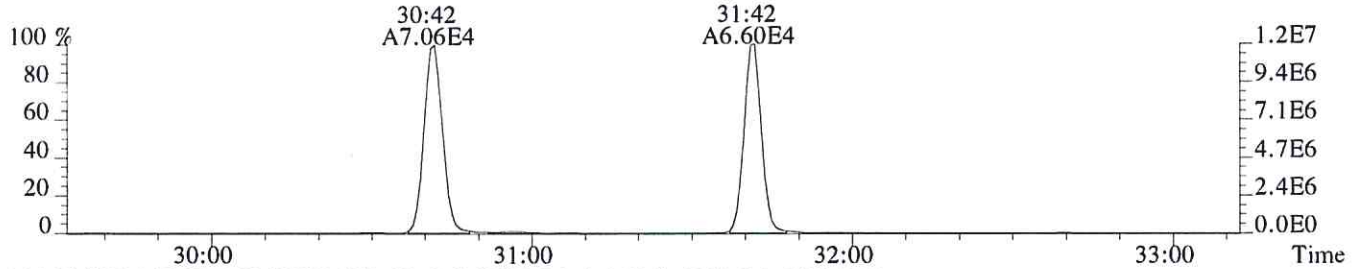


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

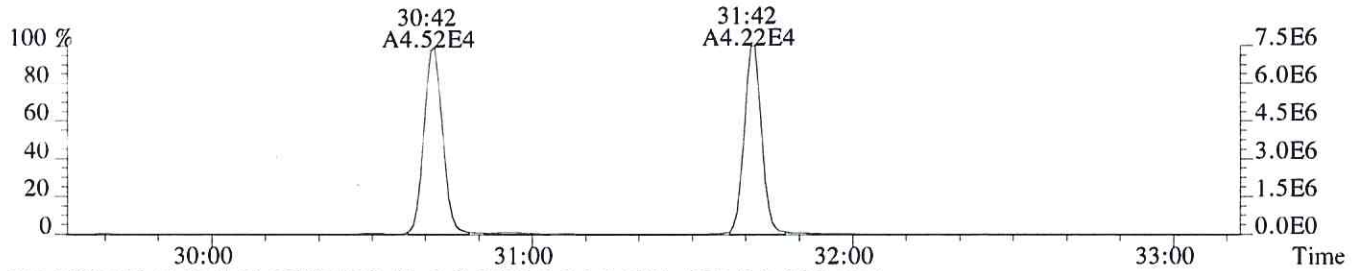


File:P607264 #1-330 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

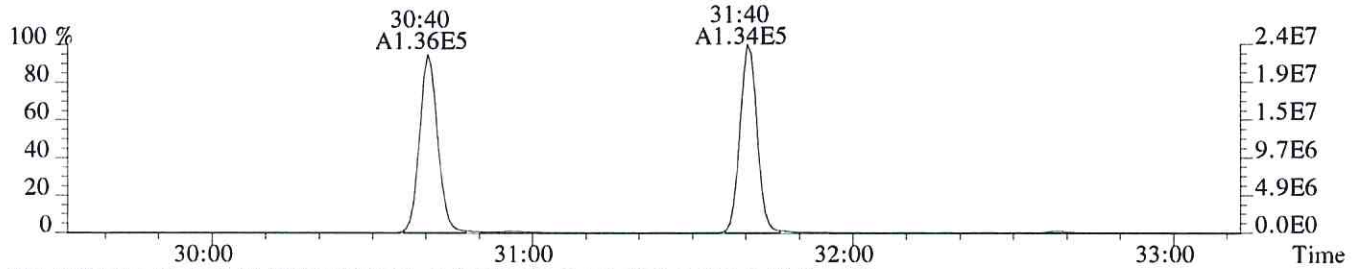
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,13368.0,1.00%,F,T)



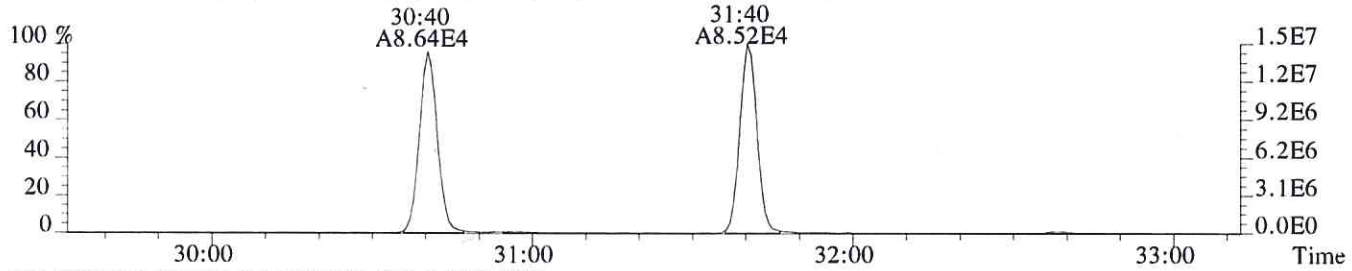
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1968.0,1.00%,F,T)



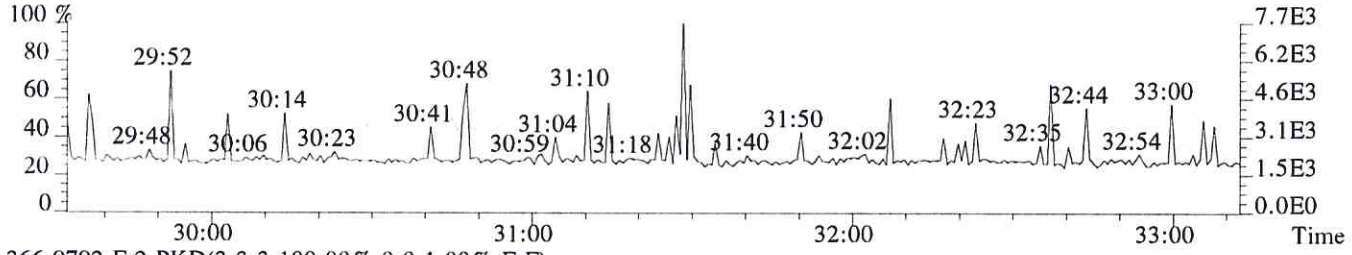
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1356.0,1.00%,F,T)



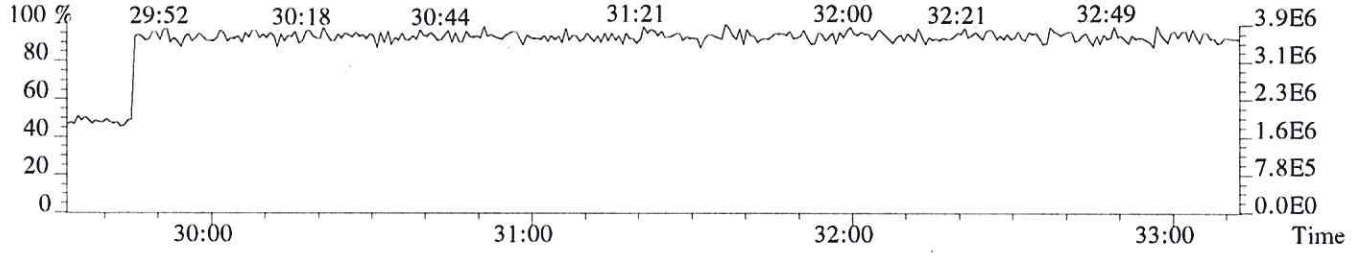
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,264.0,1.00%,F,T)



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

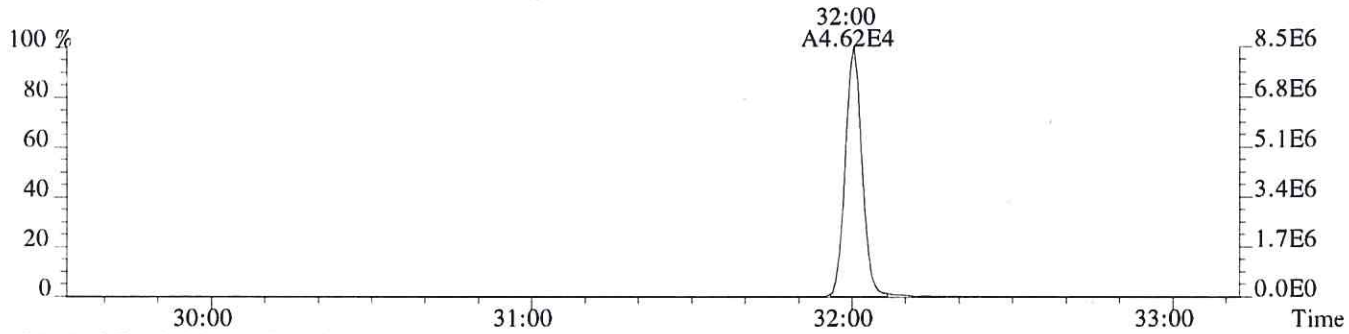


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

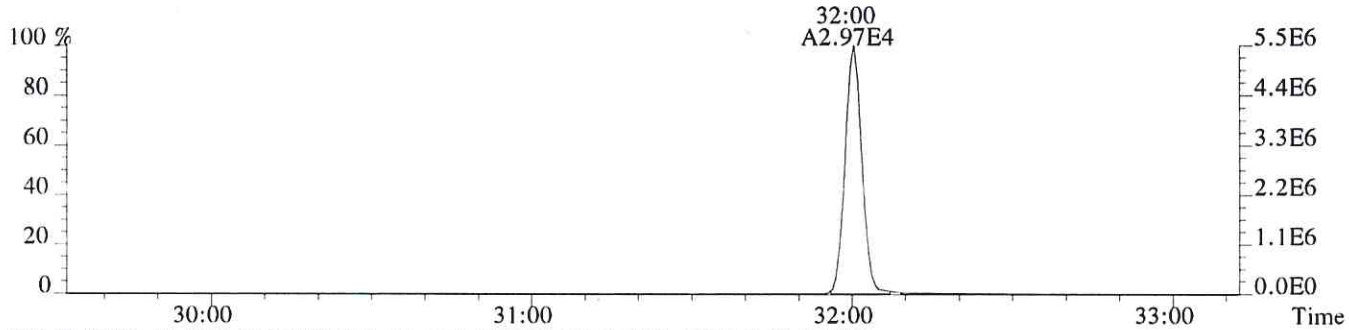


File:P607264 #1-330 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

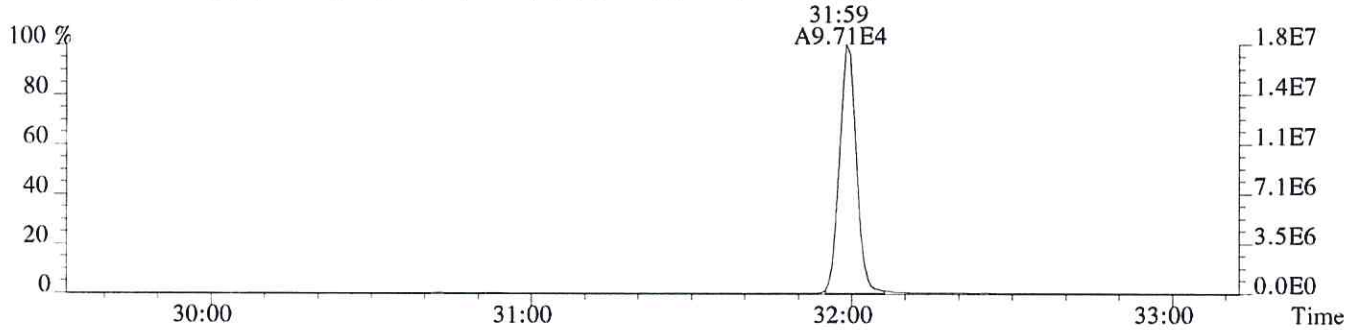
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1108.0,1.00%,F,T)



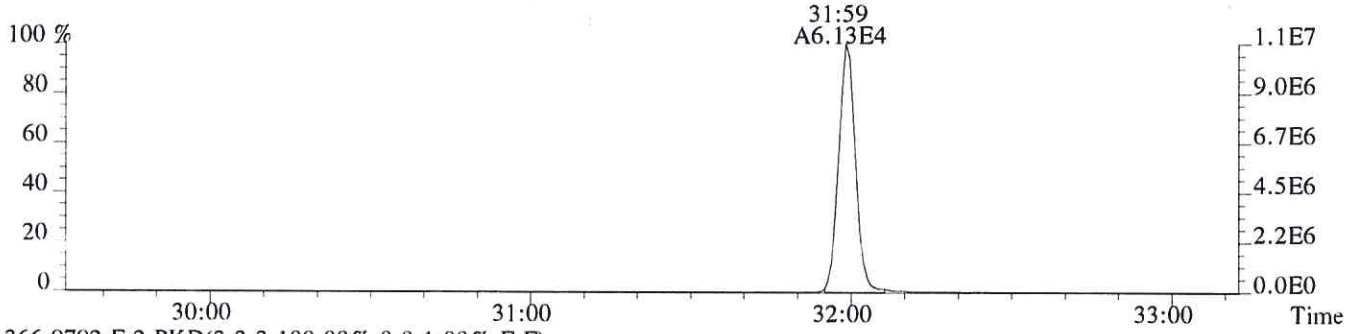
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1056.0,1.00%,F,T)



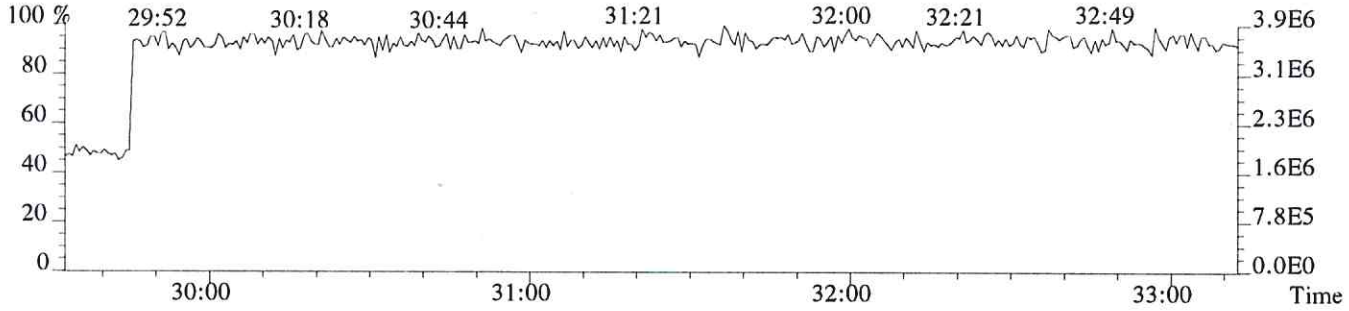
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,196.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,712.0,1.00%,F,T)

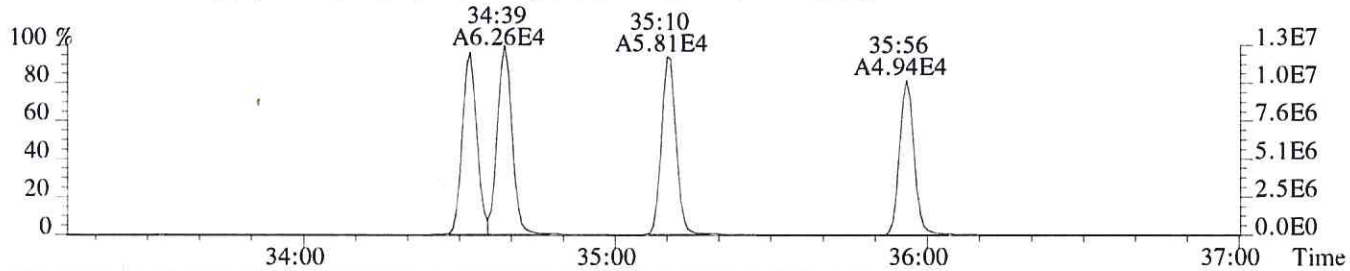


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

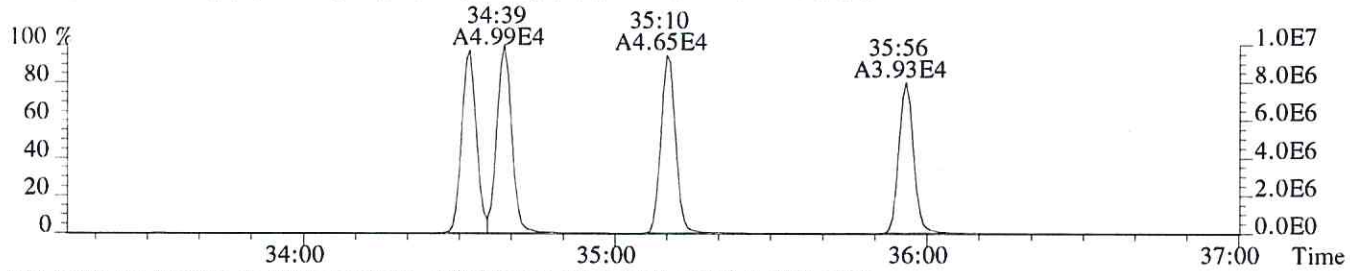


File:P607264 #1-339 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

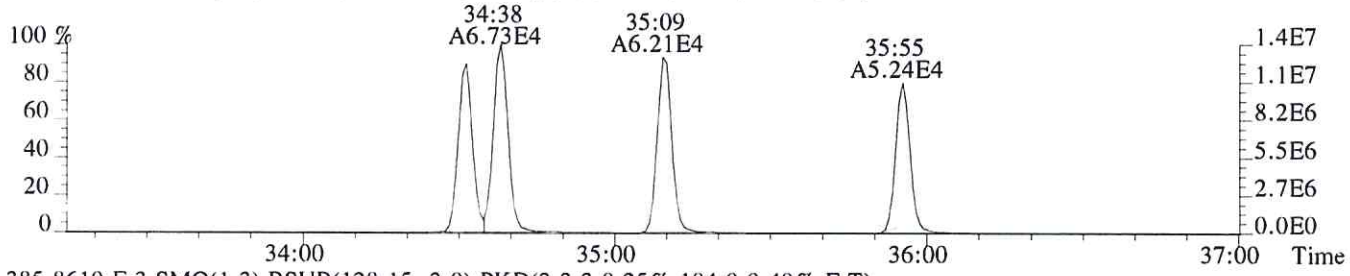
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,772.0,0.40%,F,T)



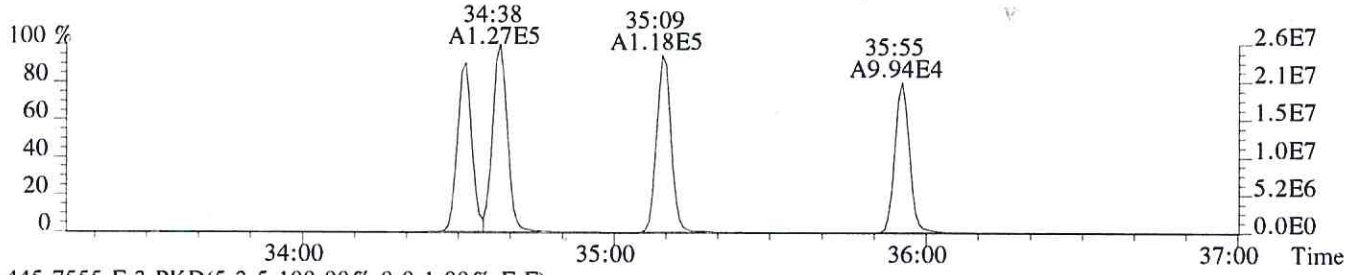
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,164.0,0.40%,F,T)



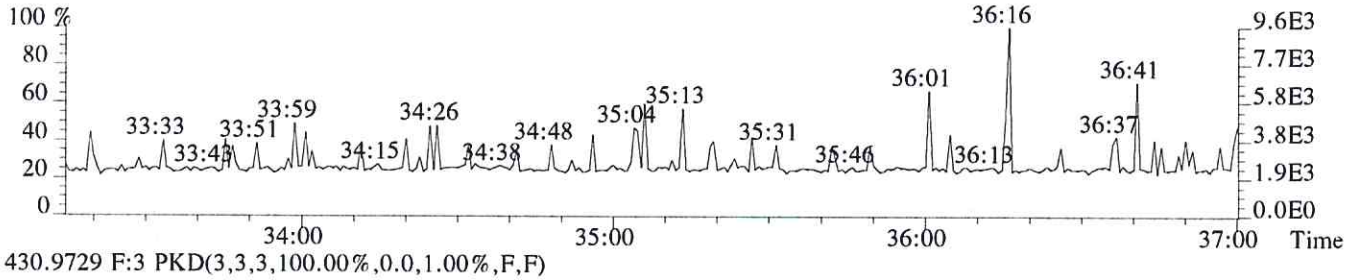
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,168.0,0.40%,F,T)



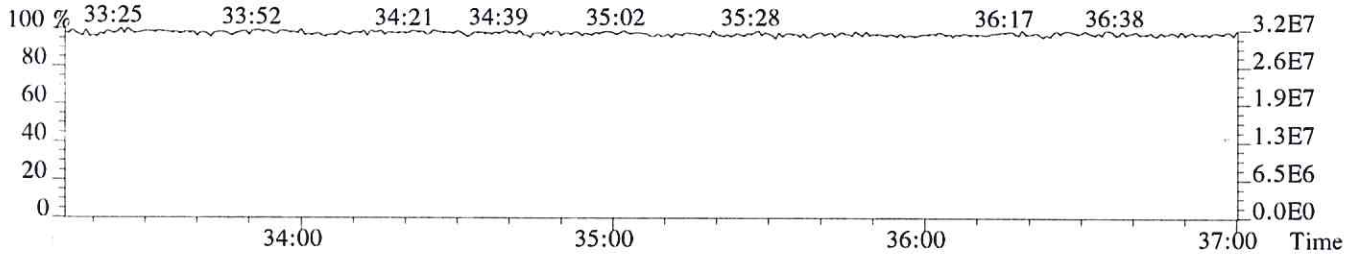
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,184.0,0.40%,F,T)



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

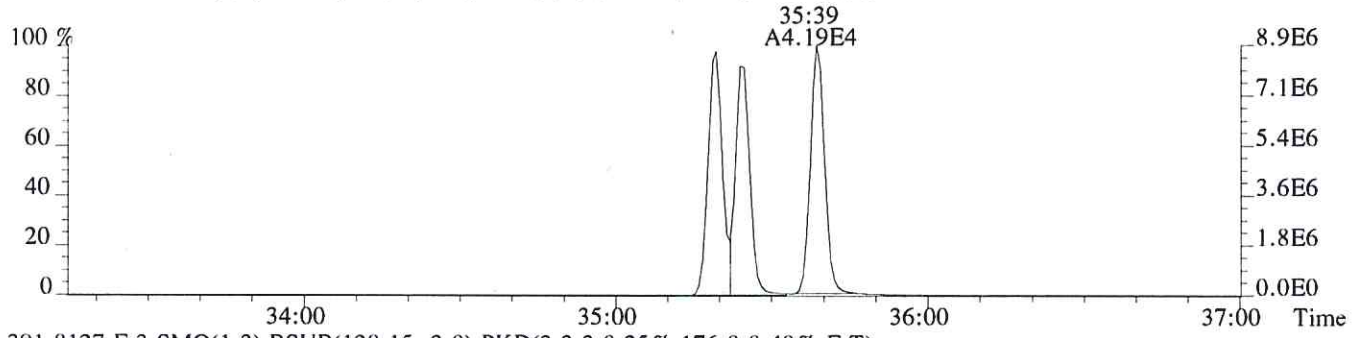


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

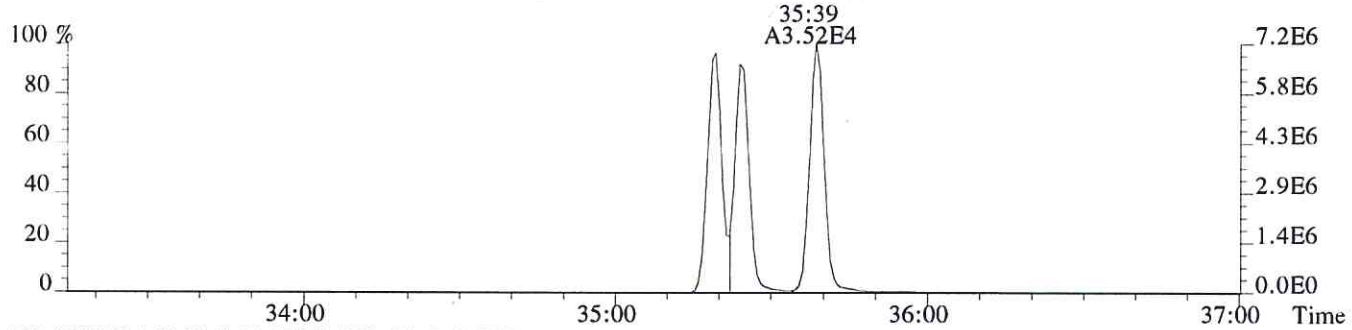


File:P607264 #1-339 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

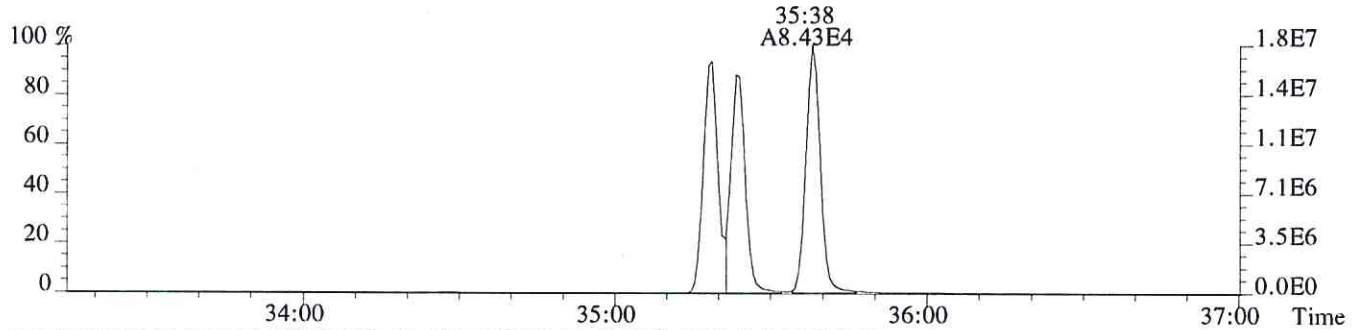
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,212.0,0.40%,F,T)



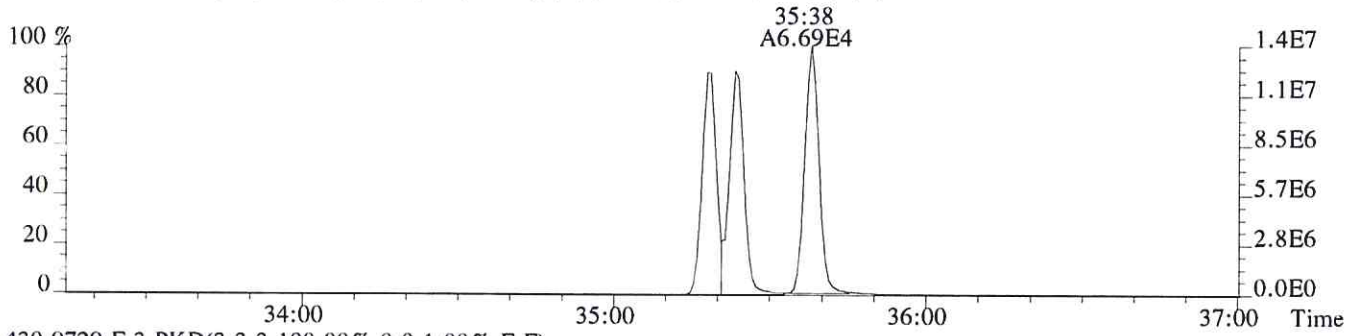
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,176.0,0.40%,F,T)



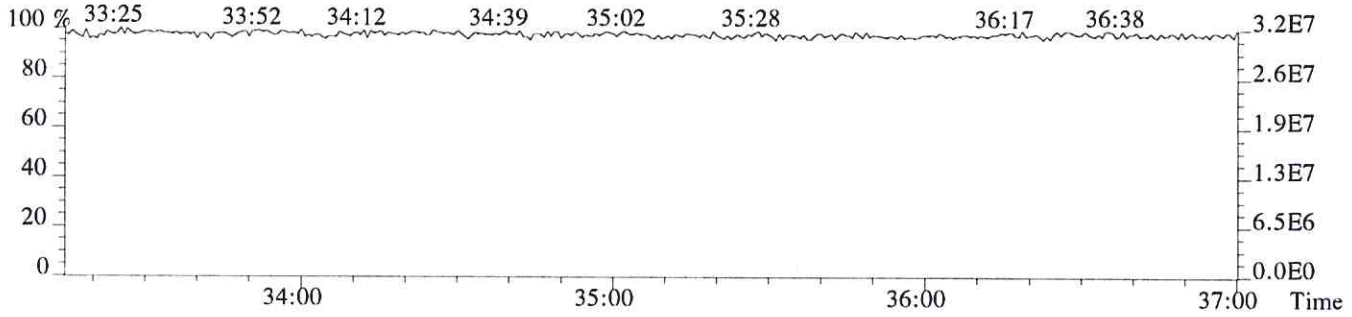
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1584.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1072.0,0.40%,F,T)

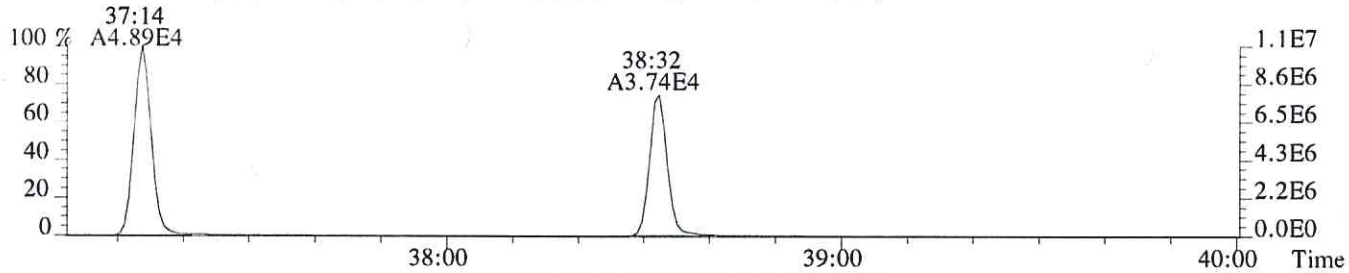


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

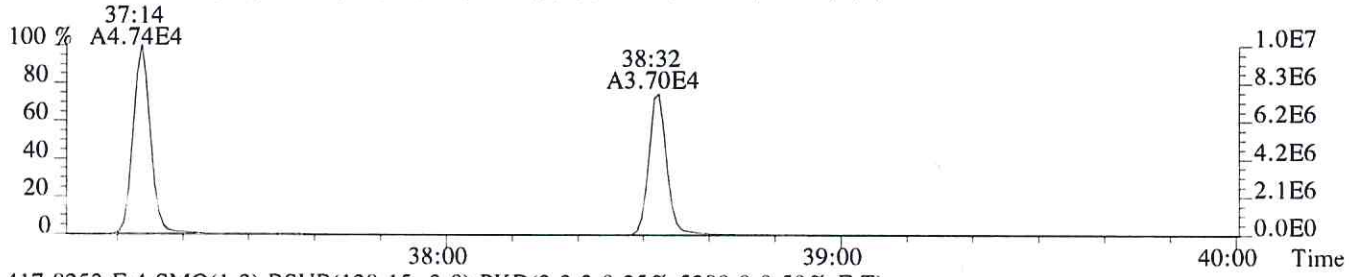


File:P607264 #1-268 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

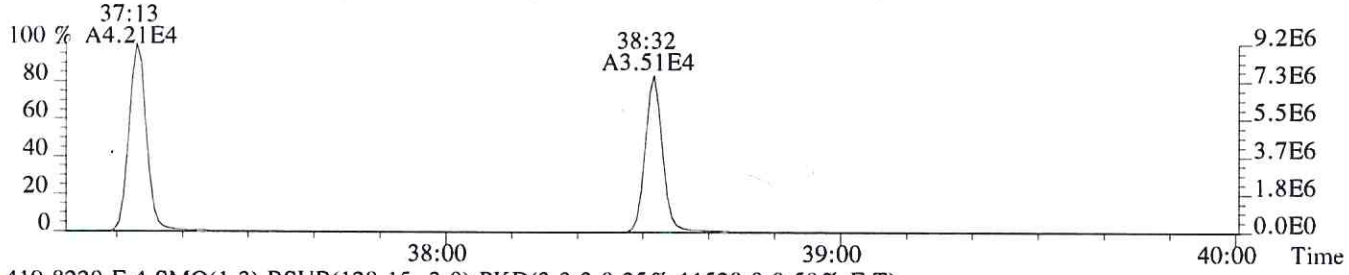
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4628.0,0.50%,F,T)



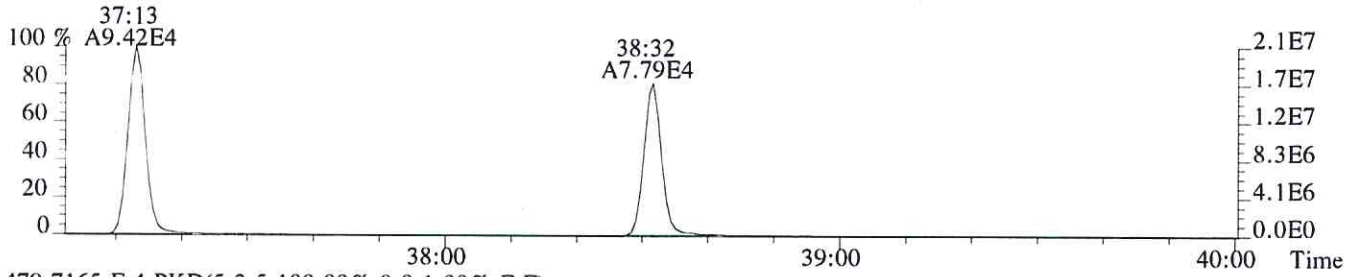
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6372.0,0.50%,F,T)



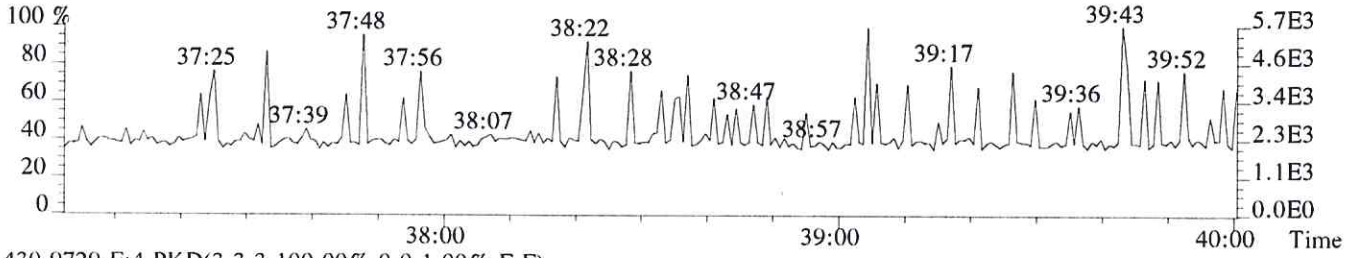
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5380.0,0.50%,F,T)



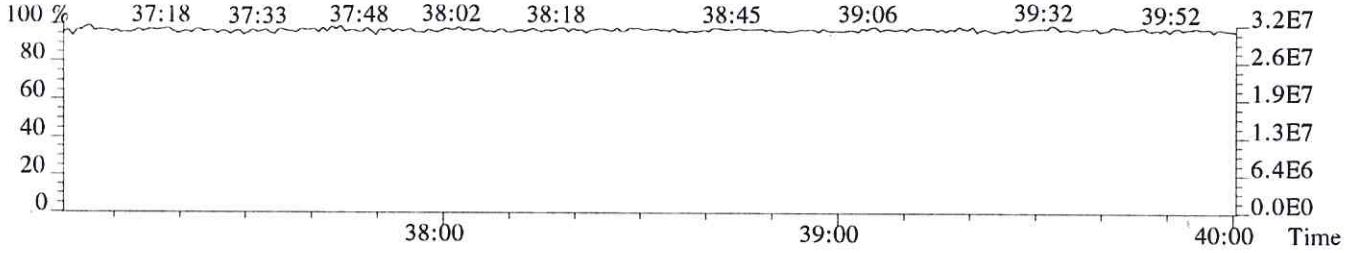
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11528.0,0.50%,F,T)



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

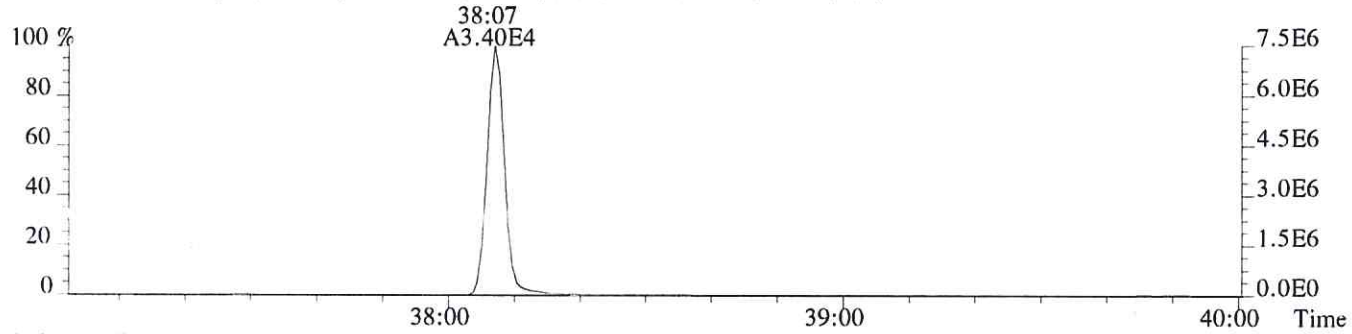


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

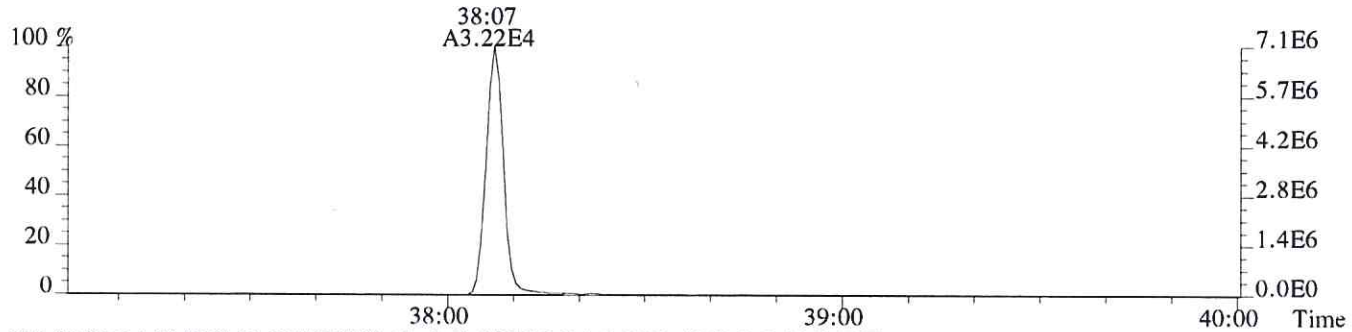


File:P607264 #1-268 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

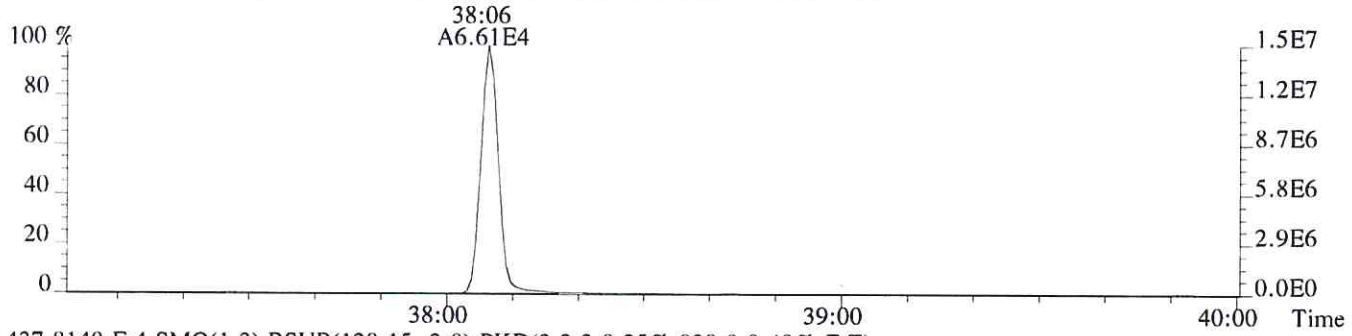
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1372.0,0.40%,F,T)



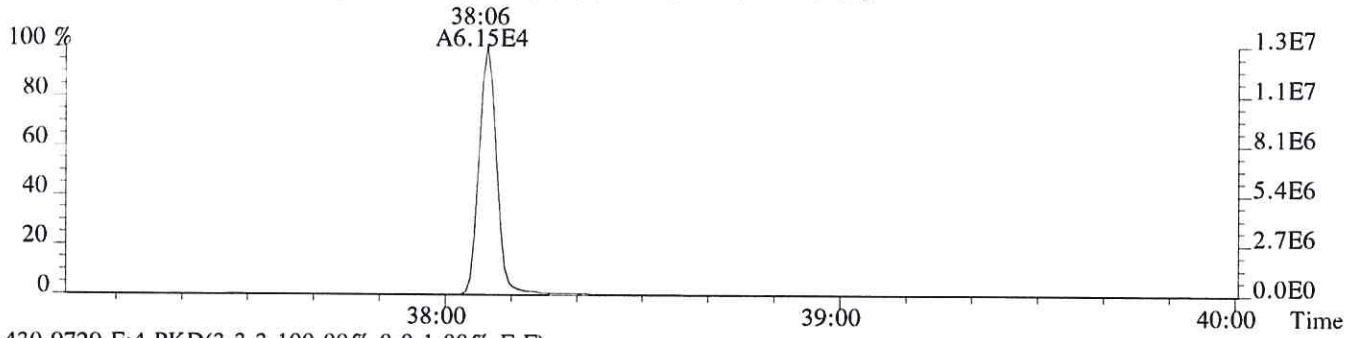
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1244.0,0.40%,F,T)



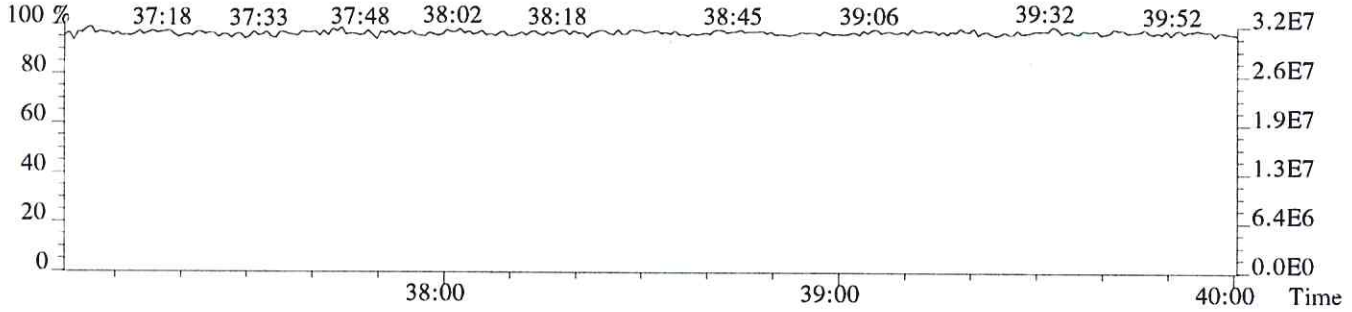
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1240.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,928.0,0.40%,F,T)

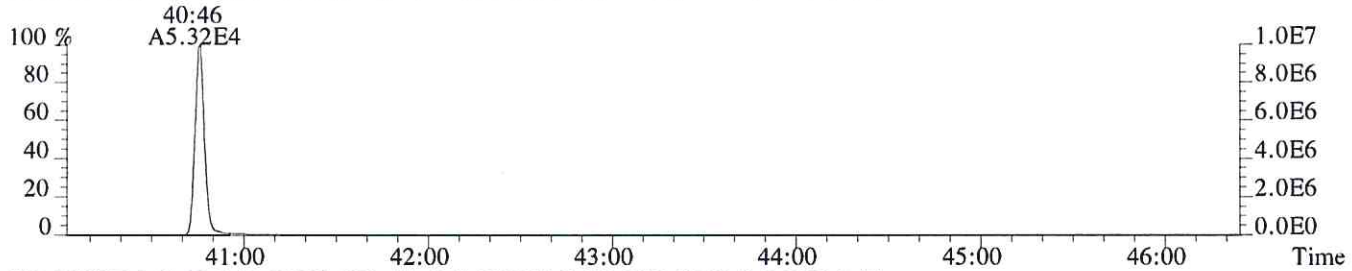


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

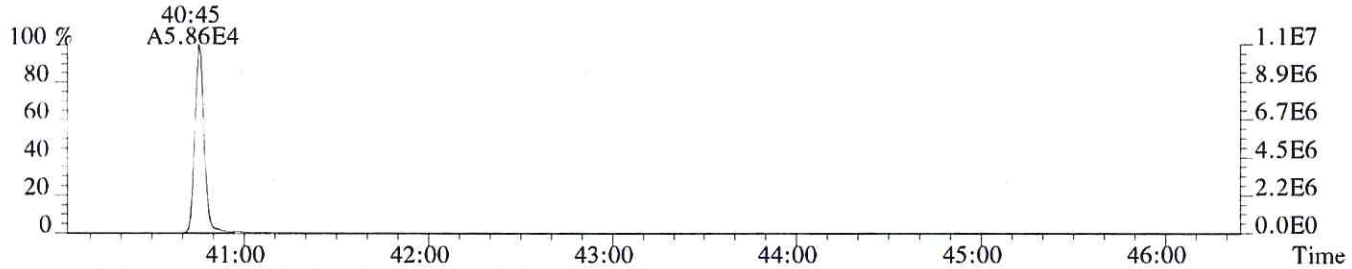


File:P607264 #1-573 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

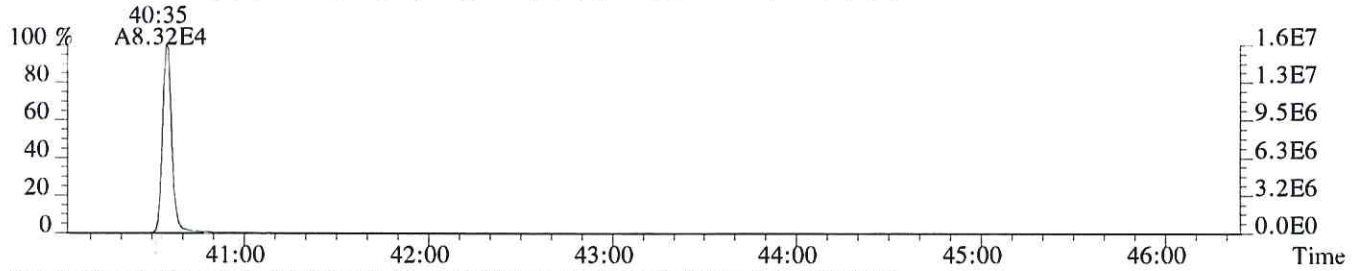
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8636.0,0.40%,F,T)



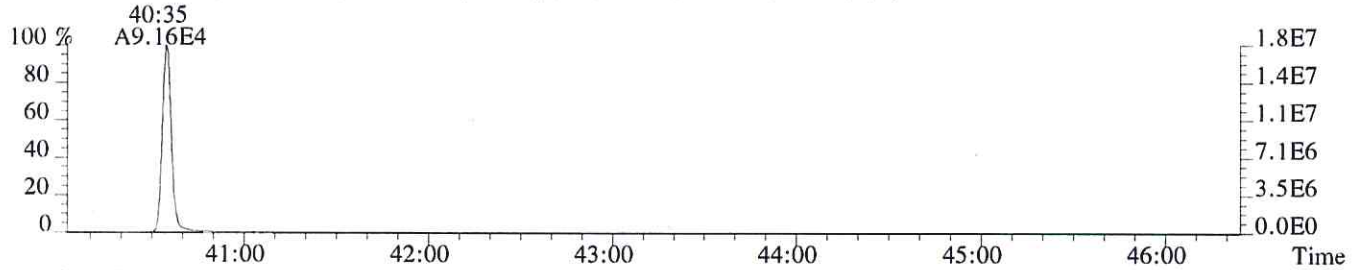
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8380.0,0.40%,F,T)



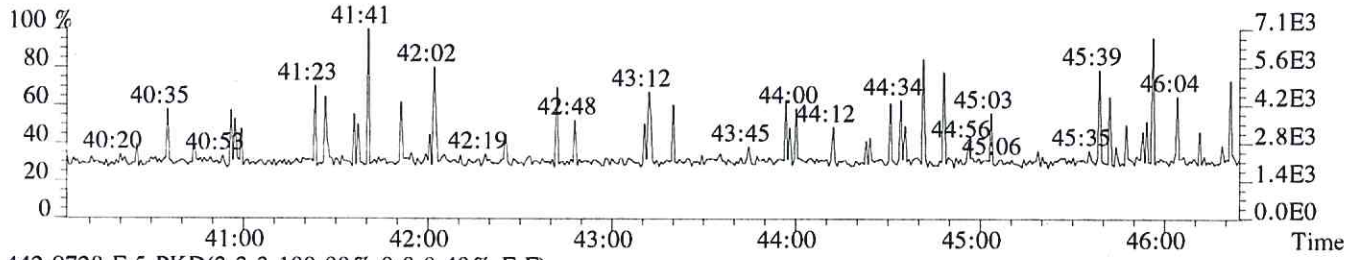
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,14012.0,0.40%,F,T)



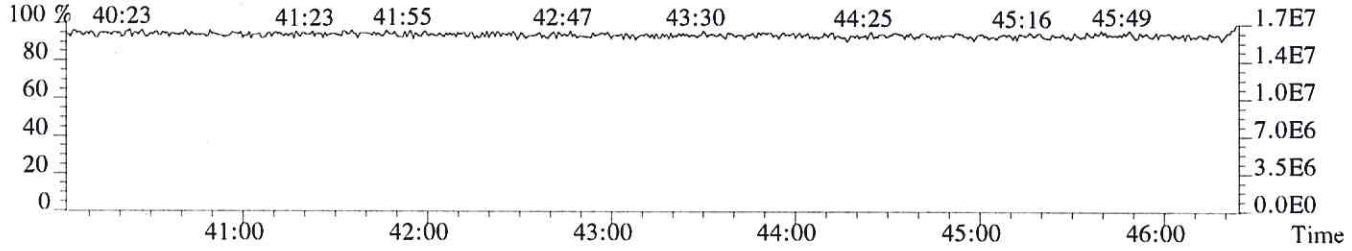
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,13052.0,0.40%,F,T)



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

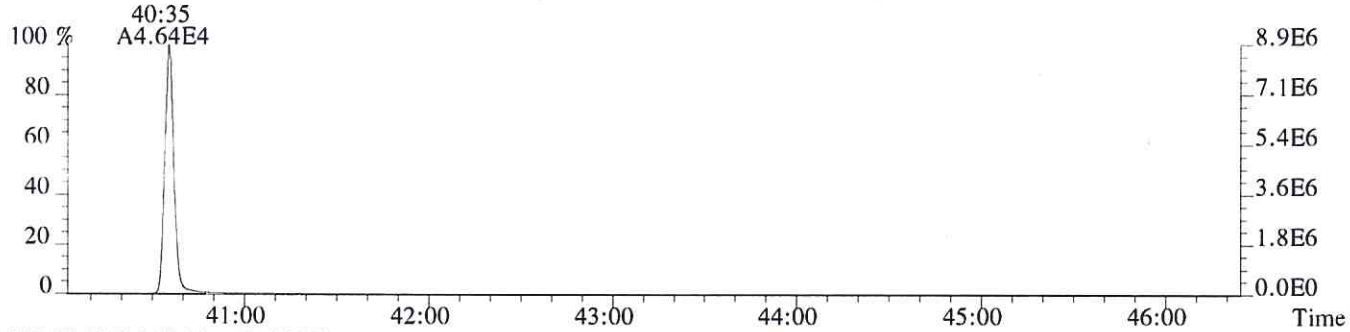


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

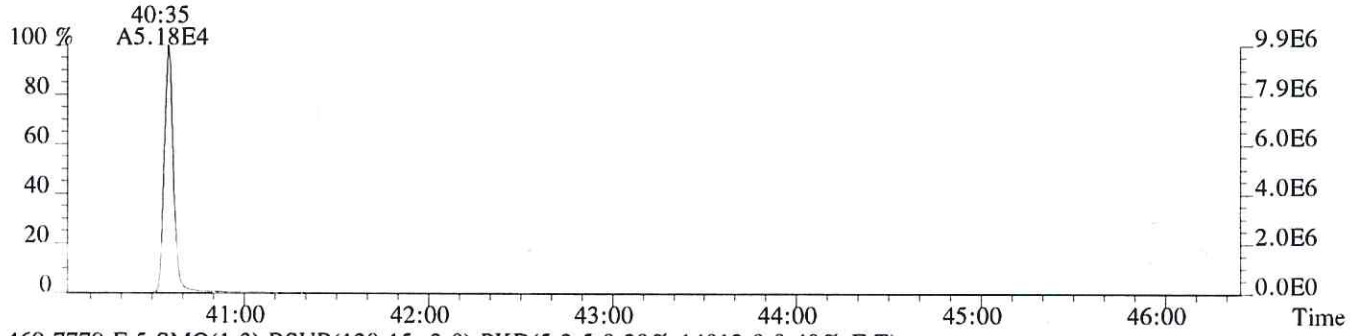


File:P607264 #1-573 Acq:20-MAY-2017 08:11:08 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

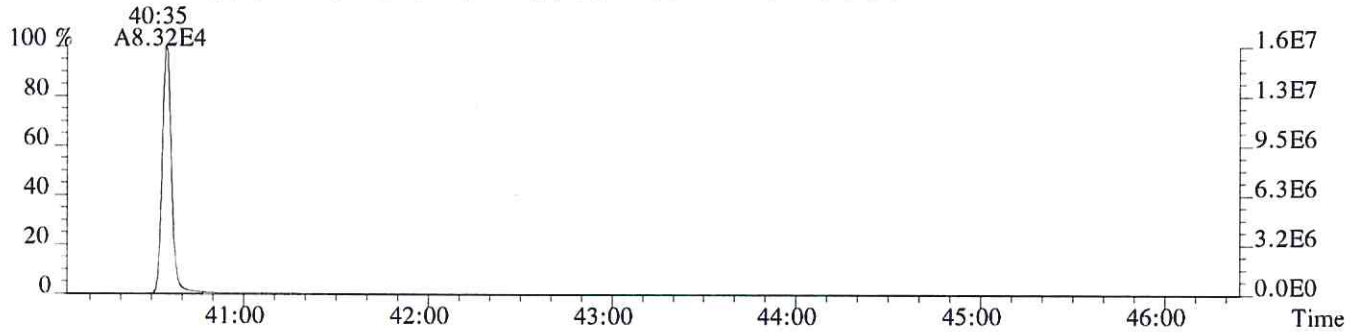
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8044.0,0.40%,F,T)



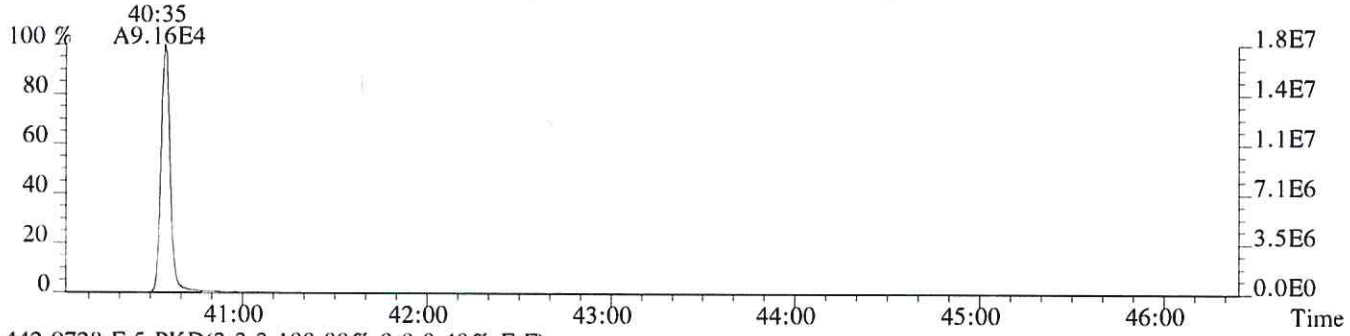
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2296.0,0.40%,F,T)



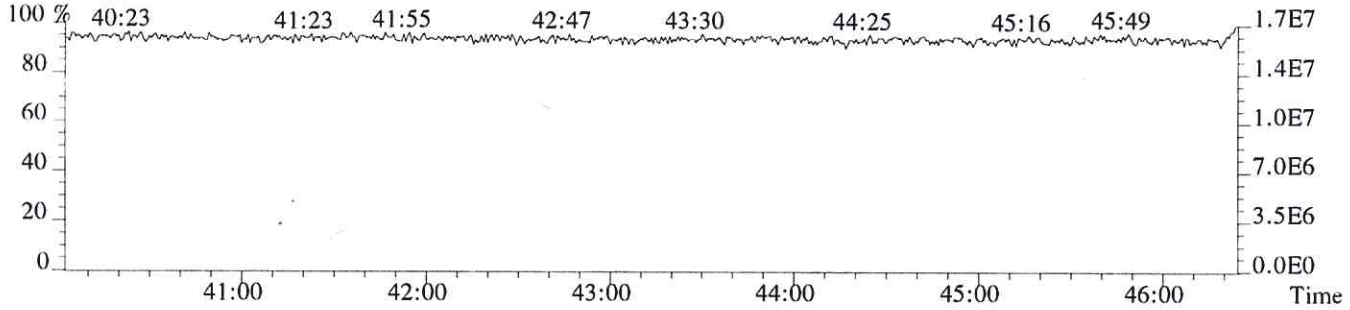
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,14012.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,13052.0,0.40%,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: 05/16/17

Instrument ID: E-HRMS-08 GC Column ID : DB-5MSUI

VER Data Filename: P607276 Analysis Date: 20-MAY-17 Time: 18:07:11

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	9.7	7.8 - 12.9	-2.6
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	49	39 - 65	-1.1
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	49	39 - 64	-2.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	51	39 - 64	1.8
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	49	41 - 61	-2.6
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	49	43 - 58	-1.1
OCDD	M+2/M+4	0.89	0.76-1.02	100	79 - 126	0.1
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	9.6	8.4 - 12.0	-3.8
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	50	41 - 60	-0.8
2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	48	41 - 61	-3.8
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	50	45 - 56	-0.2
1,2,3,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	48	44 - 57	-3.5
1,2,3,7,8,9-HxCDF	M+2/M+4	1.22	1.05-1.43	49	45 - 56	-3.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	49	44 - 57	-1.3
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	50	45 - 55	-0.1
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88-1.20	48	43 - 58	-3.6
OCDF	M+2/M+4	0.89	0.76-1.02	94	63 - 159	-5.7

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 05/16/17

Instrument ID: E-HRMS-08 GC Column ID : DB-5MSUI

VER Data Filename: P607276 Analysis Date: 20-MAY-17 Time: 18:07:11

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	102	82 - 121	2.3
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	103	62 - 160	2.7
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	97	85 - 117	-2.5
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	100	85 - 118	0.1
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	91	72 - 138	-9.3
13C-OCDD	M+2/M+4	0.90	0.76-1.02	147	96 - 415	-26.6
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	102	71 - 140	2.5
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	103	76 - 130	3.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	103	77 - 130	2.8
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	102	76 - 131	1.6
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	97	70 - 143	-3.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	95	74 - 135	-4.8
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	97	73 - 137	-3.0
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	94	78 - 129	-5.7
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37-0.51	85	77 - 129	-15.2
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	M+2/M+4			10.2	7.8 - 12.7	1.8

(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)

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
178519

Run #8 Filename P607276 Samp: 1 Inj: 1 Acquired: 20-MAY-17 18:07:11
Processed: 23-MAY-17 10:25:10 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:47	9.489e+03	1.208e+04	0.79	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:42	7.815e+04	4.980e+04	1.57	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:42	7.238e+04	4.677e+04	1.55	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:33	6.491e+04	5.209e+04	1.25	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:39	6.792e+04	5.470e+04	1.24	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:11	6.210e+04	5.072e+04	1.22	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:57	5.487e+04	4.480e+04	1.22	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:14	5.155e+04	5.063e+04	1.02	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:32	3.874e+04	3.767e+04	1.03	yes	no	1.341
10	Unk	OCDF	40:46	5.028e+04	5.620e+04	0.89	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:47	7.145e+03	9.195e+03	0.78	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:01	5.145e+04	3.257e+04	1.58	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:19	4.434e+04	3.542e+04	1.25	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:25	4.548e+04	3.607e+04	1.26	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:39	4.786e+04	3.776e+04	1.27	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:08	3.532e+04	3.390e+04	1.04	yes	no	1.048
17	Unk	OCDD	40:36	4.462e+04	5.011e+04	0.89	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:46	9.787e+04	1.221e+05	0.80	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:41	1.497e+05	9.421e+04	1.59	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:41	1.500e+05	9.408e+04	1.59	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:32	6.452e+04	1.220e+05	0.53	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:39	7.363e+04	1.397e+05	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:10	6.714e+04	1.273e+05	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:56	5.839e+04	1.113e+05	0.52	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:14	4.524e+04	1.016e+05	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:32	3.649e+04	8.174e+04	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:45	7.047e+04	8.852e+04	0.80	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	31:60	1.079e+05	6.843e+04	1.58	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:19	8.498e+04	6.668e+04	1.27	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:24	8.608e+04	6.853e+04	1.26	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:07	6.858e+04	6.500e+04	1.05	yes	no	0.884
32	IS	13C-OCDD	40:35	8.019e+04	8.883e+04	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:03	6.951e+04	8.787e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:39	9.312e+04	7.364e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:47	1.719e+04				no	1.072

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
178519

Run #8 Filename P607276 Samp: 1 Inj: 1 Acquired: 20-MAY-17 18:07:11
Processed: 23-MAY-17 10:25:10 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.31e+06	2.96e+02	4.4e+03	1.69e+06	1.09e+03	1.6e+03
2	1,2,3,7,8-PeCDF	1.31e+07	2.05e+04	6.4e+02	8.34e+06	1.01e+04	8.2e+02
3	2,3,4,7,8-PeCDF	1.30e+07	2.05e+04	6.4e+02	8.49e+06	1.01e+04	8.4e+02
4	1,2,3,4,7,8-HxCDF	1.32e+07	7.64e+02	1.7e+04	1.06e+07	3.04e+02	3.5e+04
5	1,2,3,6,7,8-HxCDF	1.37e+07	7.64e+02	1.8e+04	1.10e+07	3.04e+02	3.6e+04
6	2,3,4,6,7,8-HxCDF	1.30e+07	7.64e+02	1.7e+04	1.06e+07	3.04e+02	3.5e+04
7	1,2,3,7,8,9-HxCDF	1.10e+07	7.64e+02	1.4e+04	8.98e+06	3.04e+02	3.0e+04
8	1,2,3,4,6,7,8-HpCDF	1.13e+07	6.48e+03	1.7e+03	1.10e+07	4.82e+03	2.3e+03
9	1,2,3,4,7,8,9-HpCDF	8.02e+06	6.48e+03	1.2e+03	7.86e+06	4.82e+03	1.6e+03
10	OCDF	9.47e+06	1.14e+04	8.3e+02	1.07e+07	2.72e+03	3.9e+03
11	2,3,7,8-TCDD	1.11e+06	7.88e+02	1.4e+03	1.44e+06	2.88e+02	5.0e+03
12	1,2,3,7,8-PeCDD	9.16e+06	4.44e+02	2.1e+04	5.83e+06	1.21e+03	4.8e+03
13	1,2,3,4,7,8-HxCDD	9.52e+06	2.52e+02	3.8e+04	7.67e+06	2.44e+02	3.1e+04
14	1,2,3,6,7,8-HxCDD	9.21e+06	2.52e+02	3.7e+04	7.28e+06	2.44e+02	3.0e+04
15	1,2,3,7,8,9-HxCDD	1.00e+07	2.52e+02	4.0e+04	7.83e+06	2.44e+02	3.2e+04
16	1,2,3,4,6,7,8-HpCDD	7.81e+06	1.58e+04	5.0e+02	7.41e+06	2.76e+02	2.7e+04
17	OCDD	8.74e+06	4.78e+03	1.8e+03	9.79e+06	8.23e+03	1.2e+03
18	13C-2,3,7,8-TCDF	1.37e+07	6.24e+03	2.2e+03	1.70e+07	3.08e+03	5.5e+03
19	13C-1,2,3,7,8-PeCDF	2.50e+07	1.86e+03	1.3e+04	1.58e+07	1.54e+04	1.0e+03
20	13C-2,3,4,7,8-PeCDF	2.70e+07	1.86e+03	1.4e+04	1.69e+07	1.54e+04	1.1e+03
21	13C-1,2,3,4,7,8-HxCDF	1.30e+07	2.72e+02	4.8e+04	2.48e+07	1.22e+03	2.0e+04
22	13C-1,2,3,6,7,8-HxCDF	1.47e+07	2.72e+02	5.4e+04	2.76e+07	1.22e+03	2.3e+04
23	13C-2,3,4,6,7,8-HxCDF	1.41e+07	2.72e+02	5.2e+04	2.71e+07	1.22e+03	2.2e+04
24	13C-1,2,3,7,8,9-HxCDF	1.19e+07	2.72e+02	4.4e+04	2.24e+07	1.22e+03	1.8e+04
25	13C-1,2,3,4,6,7,8-HpCDF	9.83e+06	8.11e+03	1.2e+03	2.22e+07	1.16e+04	1.9e+03
26	13C-1,2,3,4,7,8,9-HpCDF	7.64e+06	8.11e+03	9.4e+02	1.68e+07	1.16e+04	1.5e+03
27	13C-2,3,7,8-TCDD	1.11e+07	6.13e+03	1.8e+03	1.42e+07	2.90e+03	4.9e+03
28	13C-1,2,3,7,8-PeCDD	1.99e+07	3.04e+02	6.6e+04	1.26e+07	1.04e+03	1.2e+04
29	13C-1,2,3,4,7,8-HxCDD	1.85e+07	2.05e+03	9.0e+03	1.47e+07	9.92e+02	1.5e+04
30	13C-1,2,3,6,7,8-HxCDD	1.75e+07	2.05e+03	8.5e+03	1.41e+07	9.92e+02	1.4e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.50e+07	1.33e+03	1.1e+04	1.43e+07	4.32e+02	3.3e+04
32	13C-OCDD	1.56e+07	3.21e+03	4.9e+03	1.74e+07	5.82e+03	3.0e+03
33	13C-1,2,3,4-TCDD	1.02e+07	6.13e+03	1.7e+03	1.29e+07	2.90e+03	4.4e+03
34	13C-1,2,3,7,8,9-HxCDD	1.99e+07	2.05e+03	9.7e+03	1.57e+07	9.92e+02	1.6e+04
35	37Cl-2,3,7,8-TCDD	2.70e+06	1.48e+03	1.8e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (7.880e{+}02 + 2.880e{+}02) \times 100}{(1.110e{+}07 + 1.416e{+}07) \times (\qquad\qquad) \times 1.055} =$$

ALS ENVIRONMENTAL
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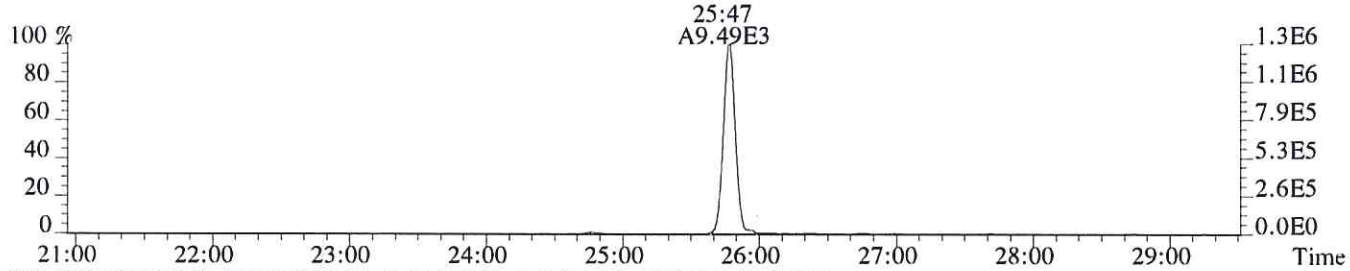
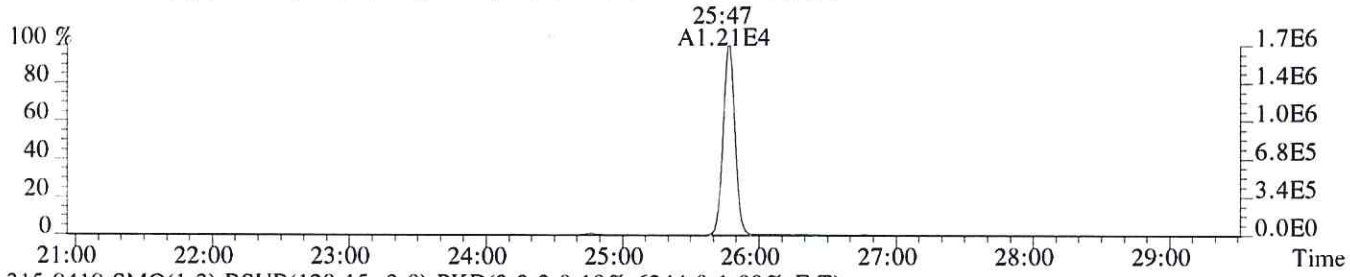
File:P607276 #1-609 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

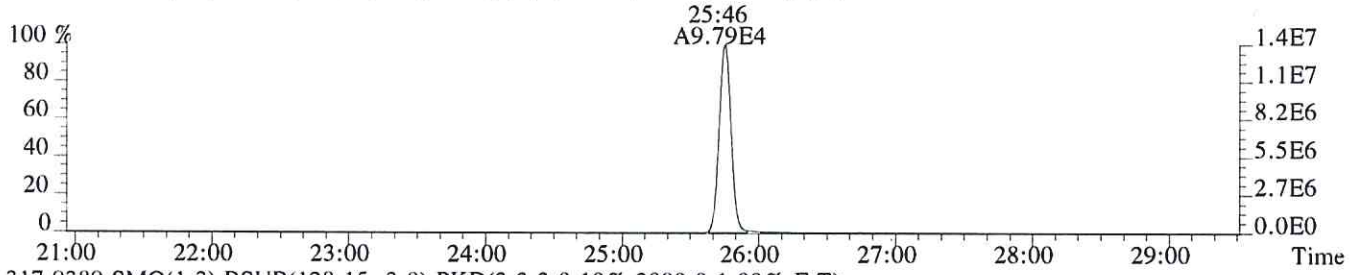
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,296.0,1.00%,F,T)



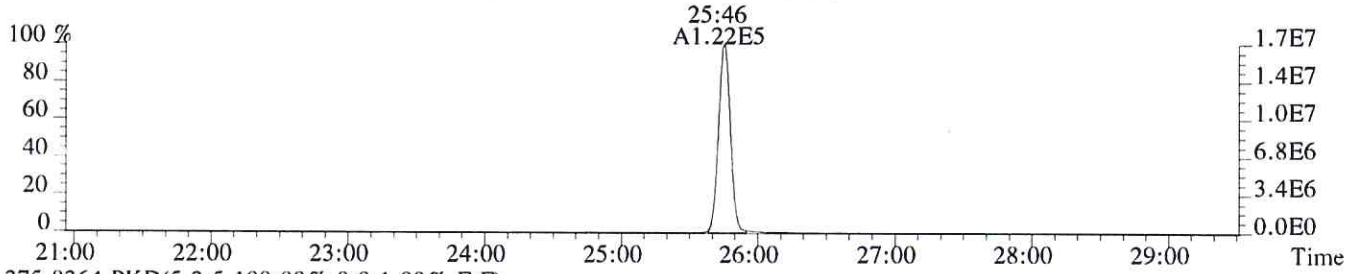
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1088.0,1.00%,F,T)



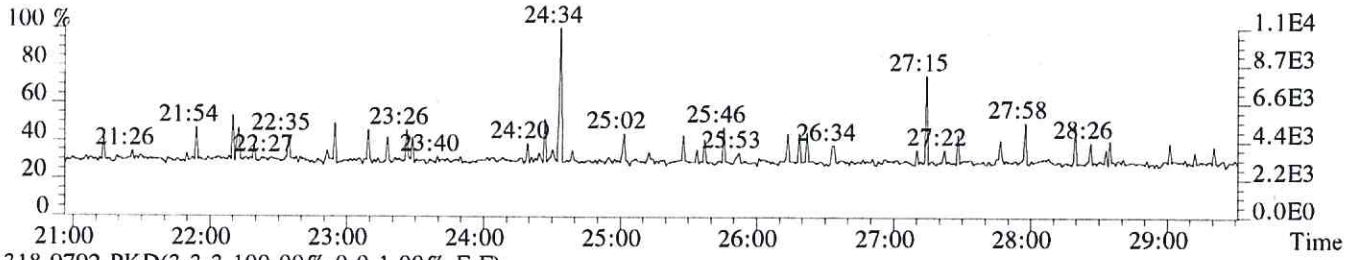
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6244.0,1.00%,F,T)



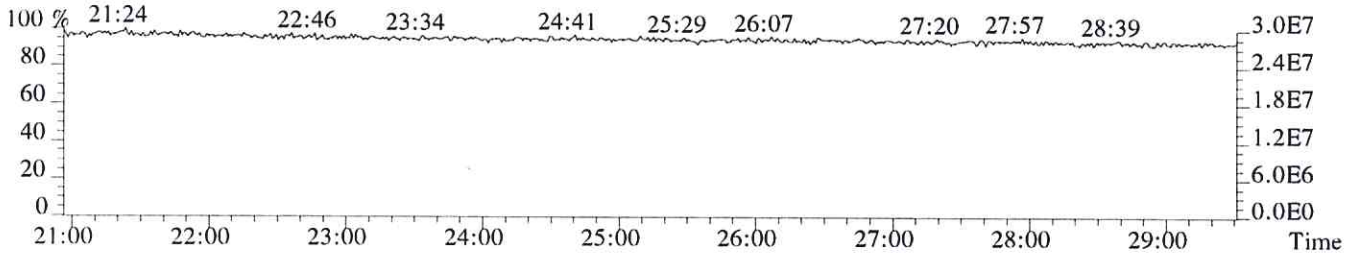
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3080.0,1.00%,F,T)



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

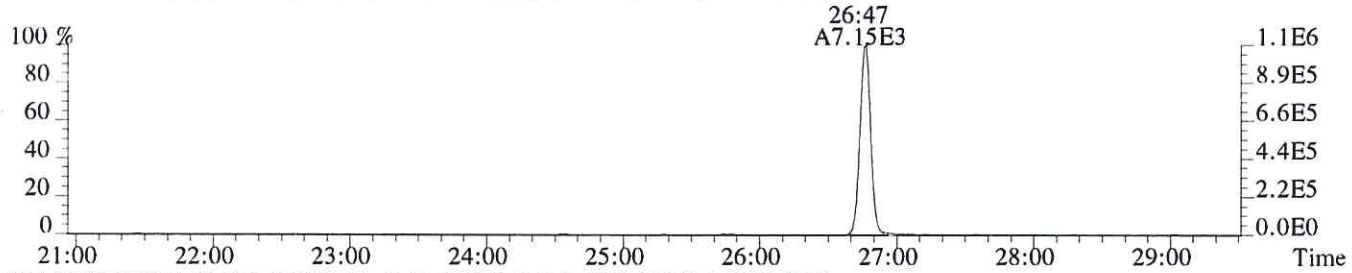


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

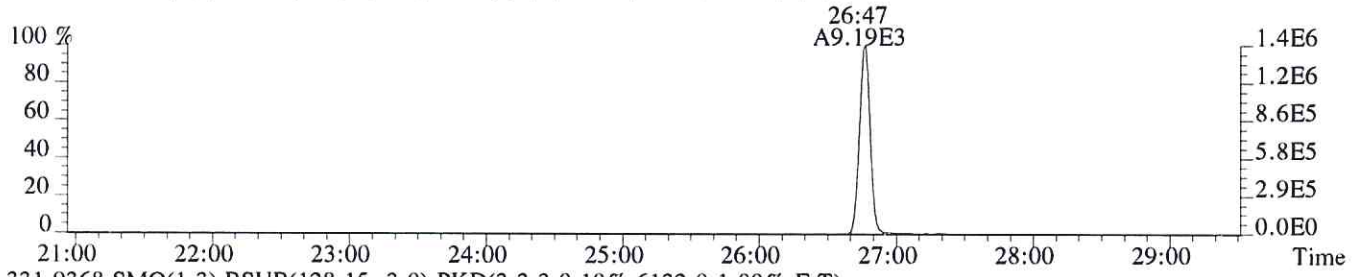


File:P607276 #1-609 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

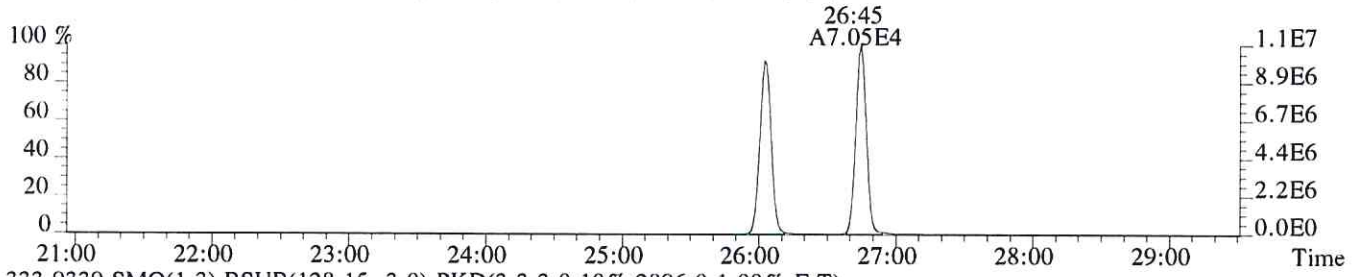
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



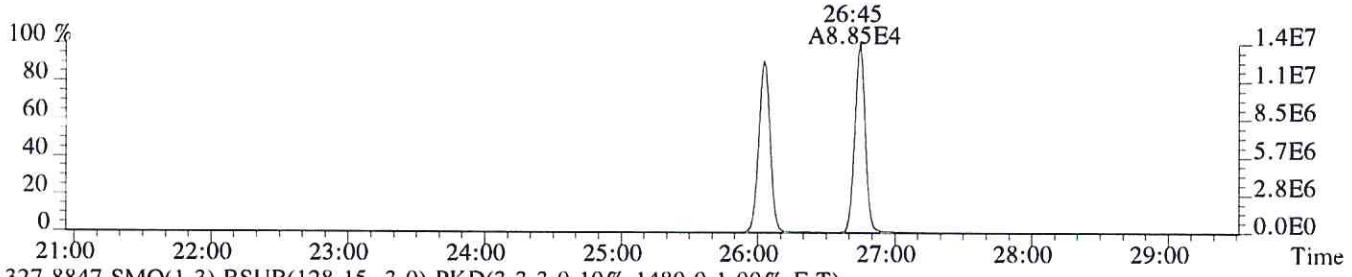
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,288.0,1.00%,F,T)



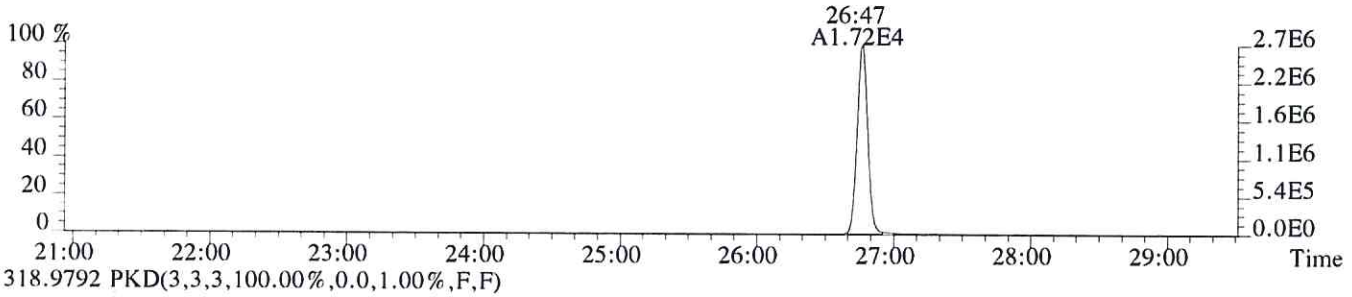
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6132.0,1.00%,F,T)



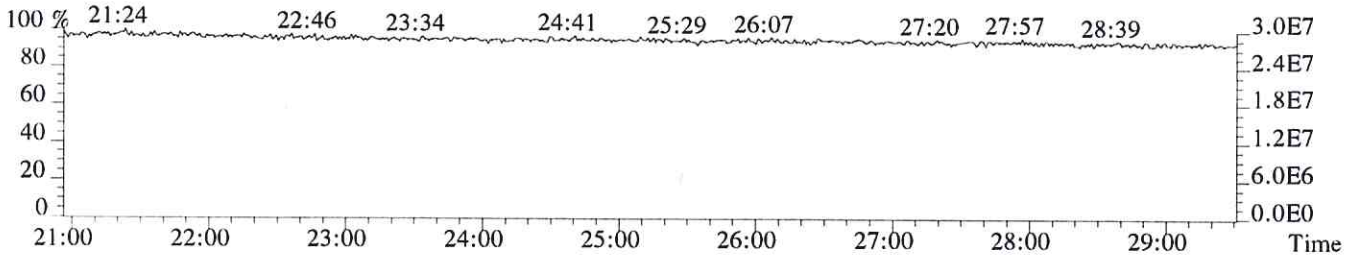
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2896.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1480.0,1.00%,F,T)

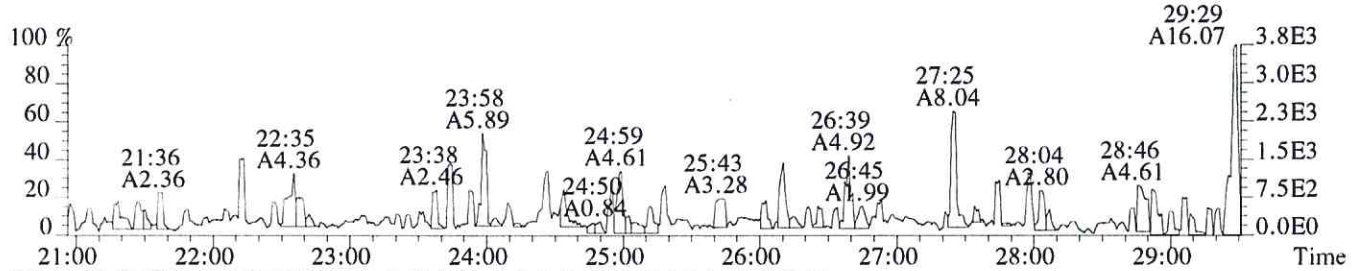


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

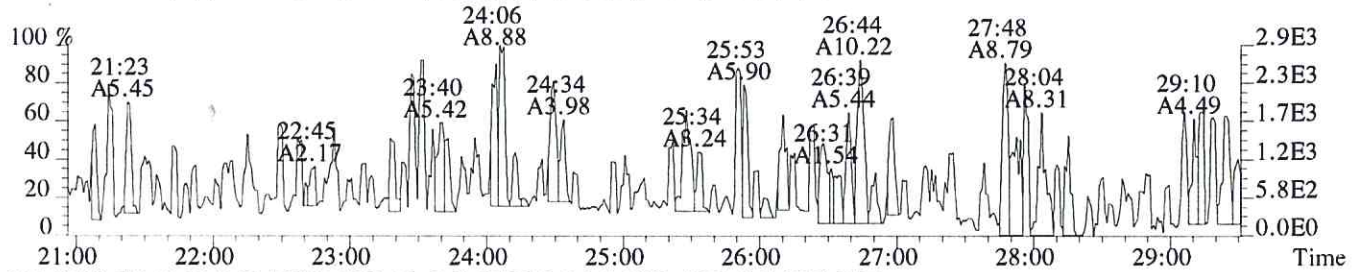


File:P607276 #1-609 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

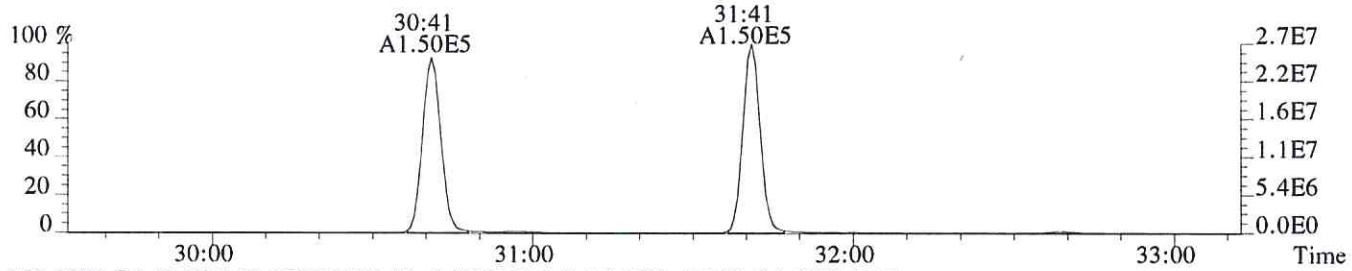
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,316.0,1.00%,F,T)



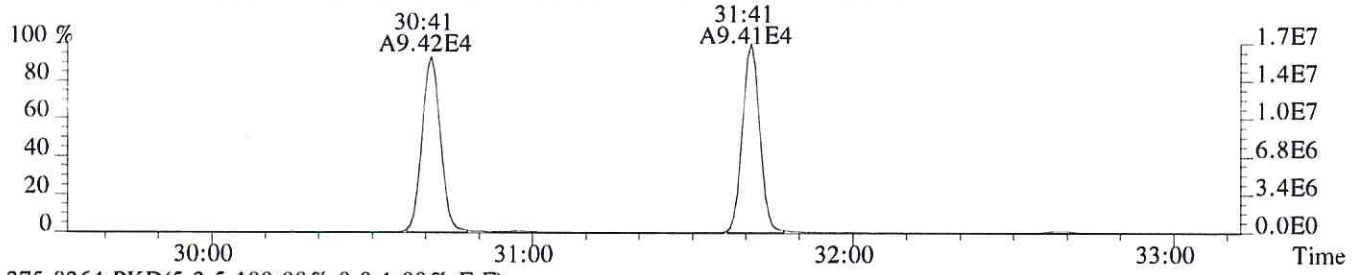
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,744.0,1.00%,F,T)



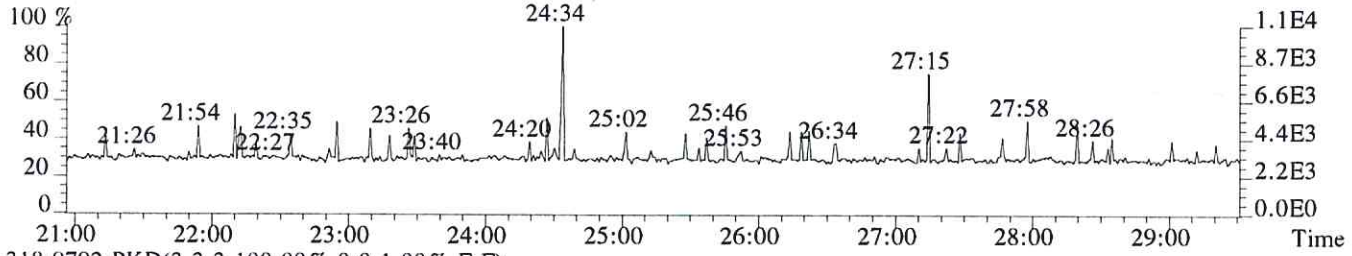
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1864.0,1.00%,F,T)



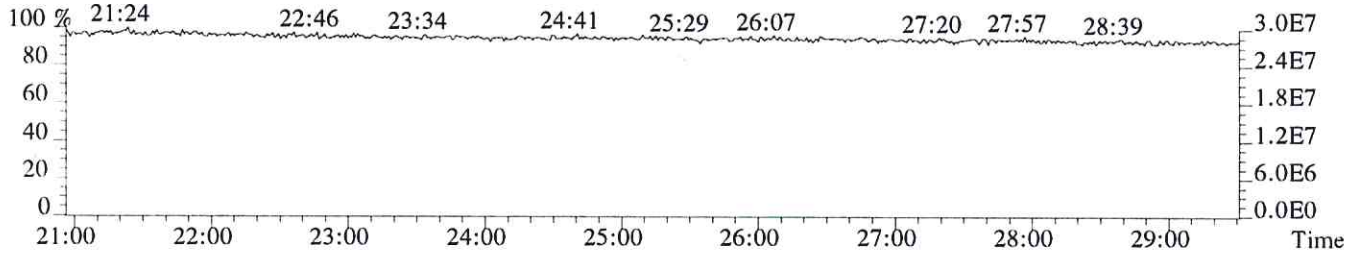
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15360.0,1.00%,F,T)



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

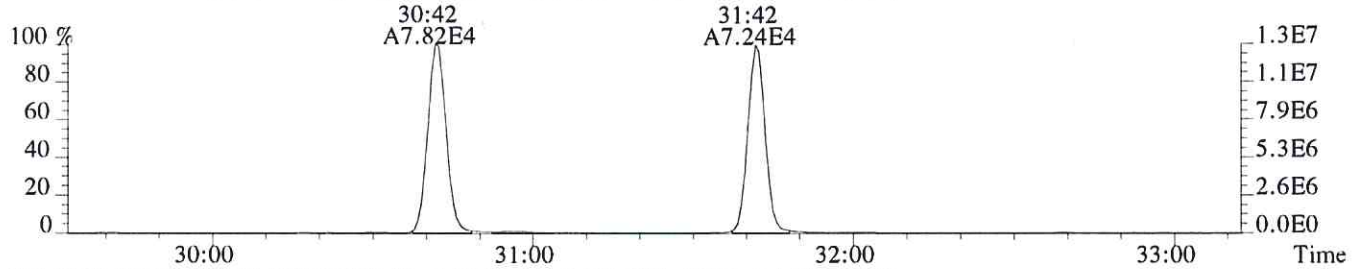


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

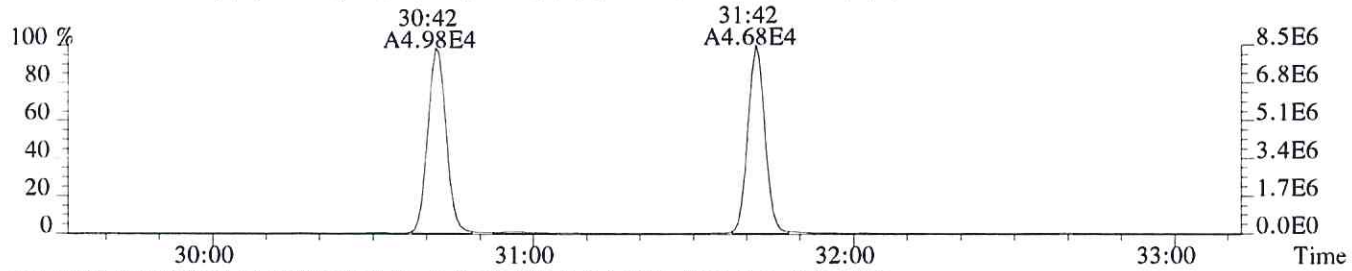


File:P607276 #1-330 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

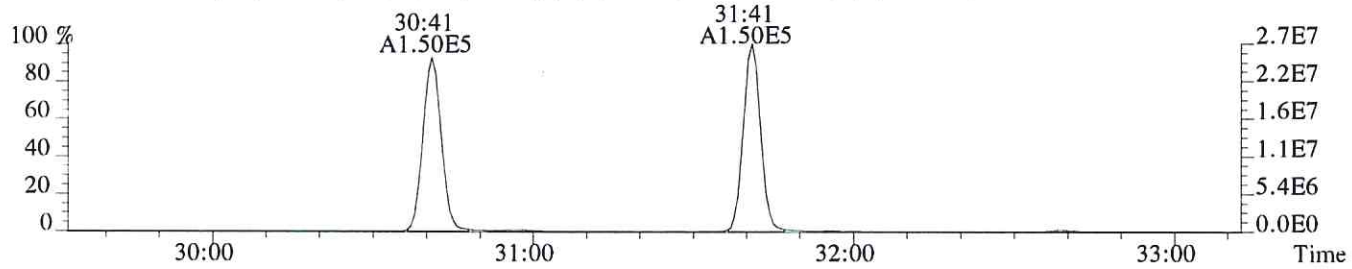
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,20500.0,1.00%,F,T)



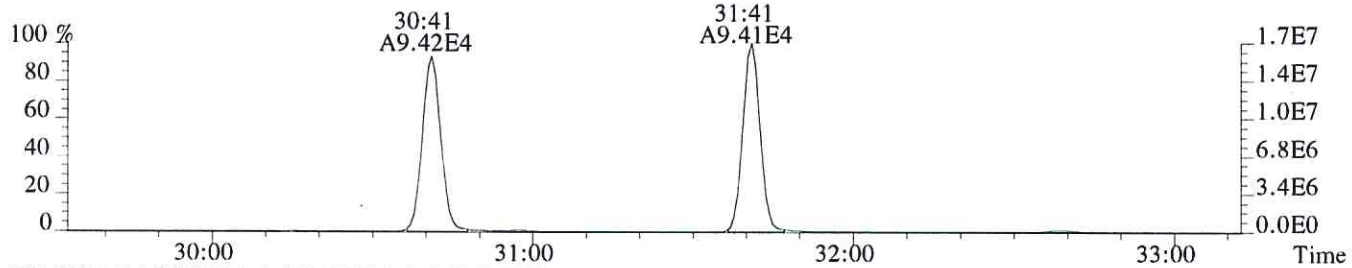
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10132.0,1.00%,F,T)



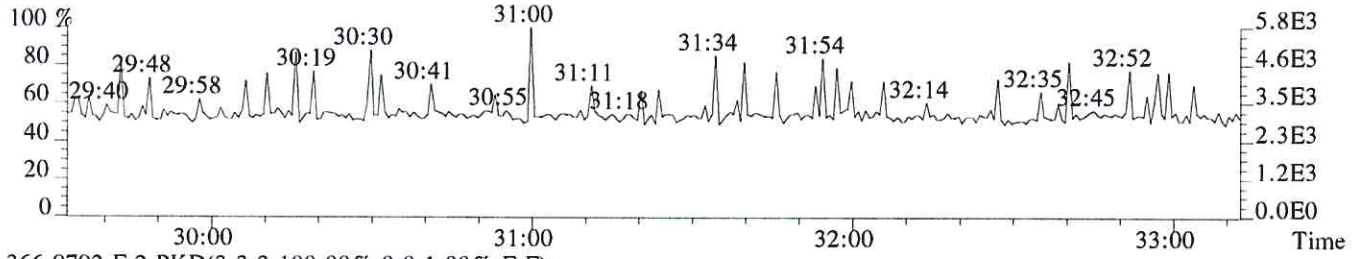
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1864.0,1.00%,F,T)



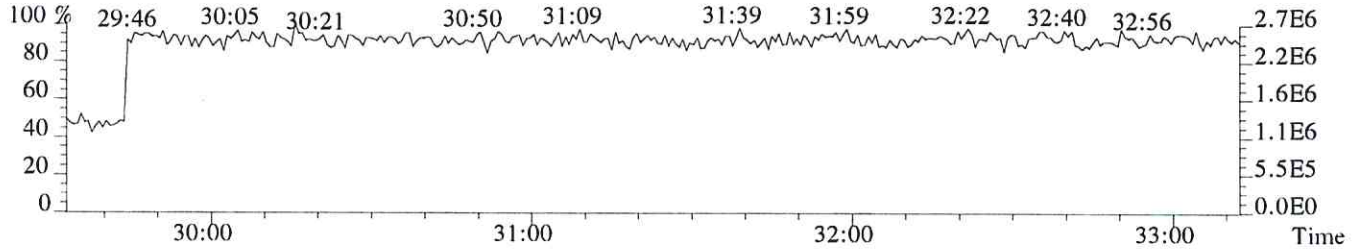
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15360.0,1.00%,F,T)



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

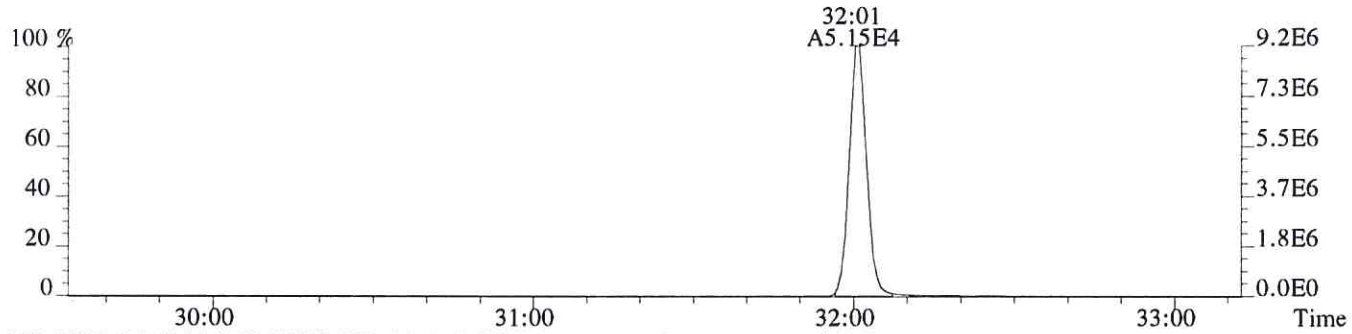


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

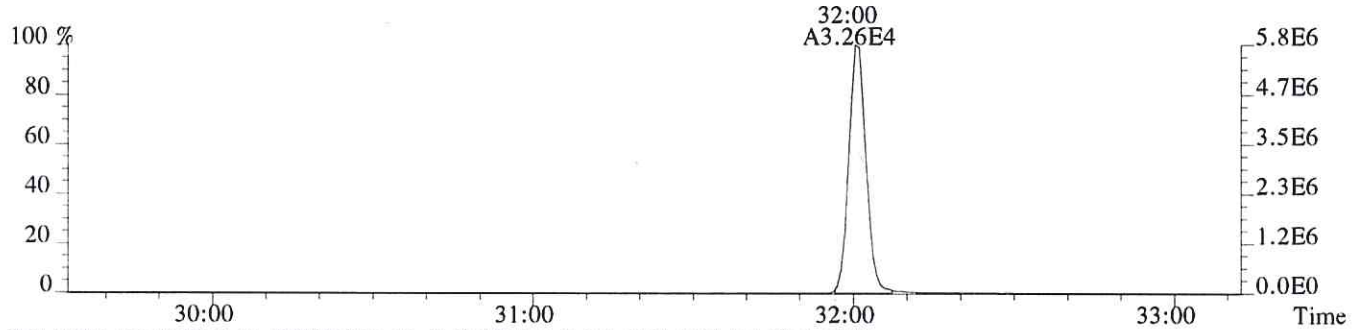


File:P607276 #1-330 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

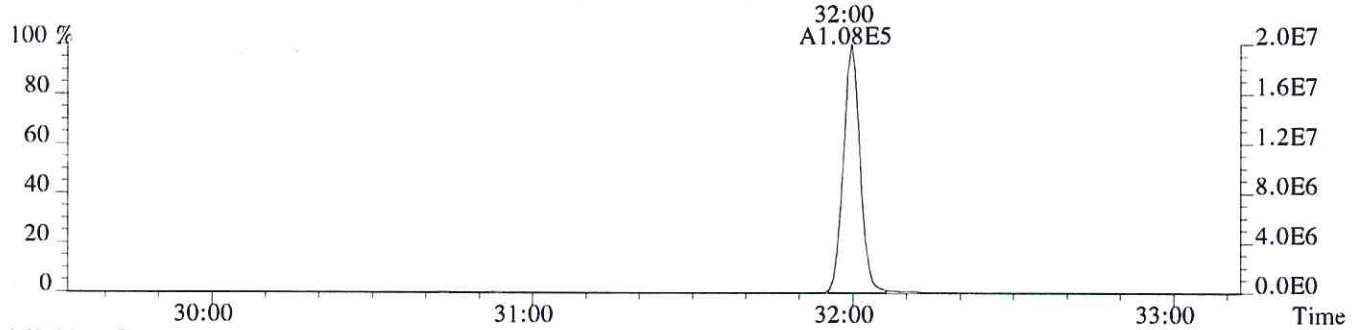
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,T)



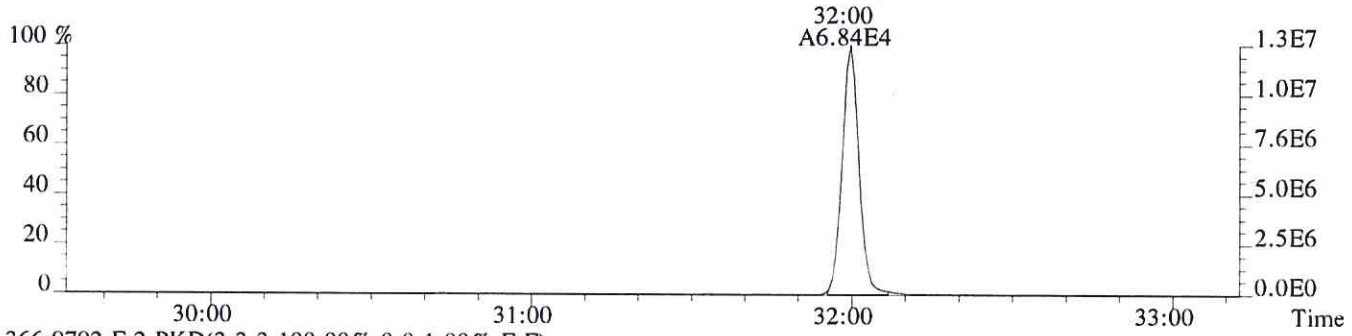
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1208.0,1.00%,F,T)



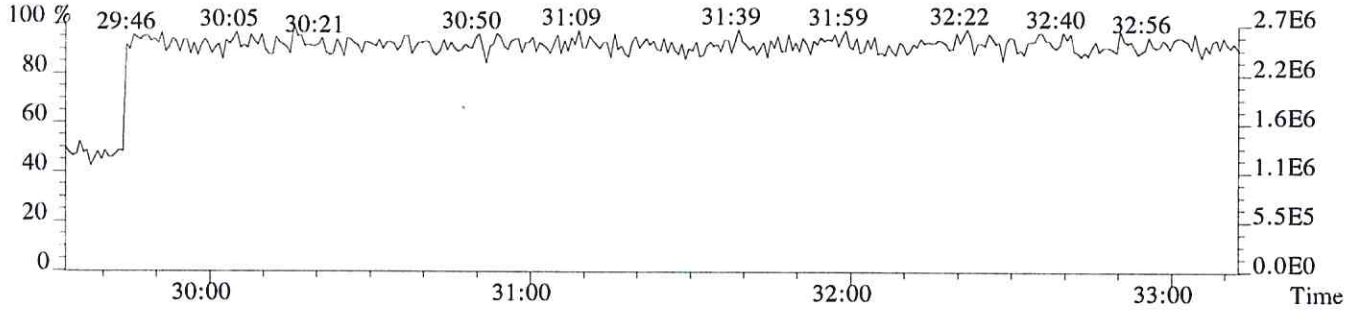
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,304.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1036.0,1.00%,F,T)

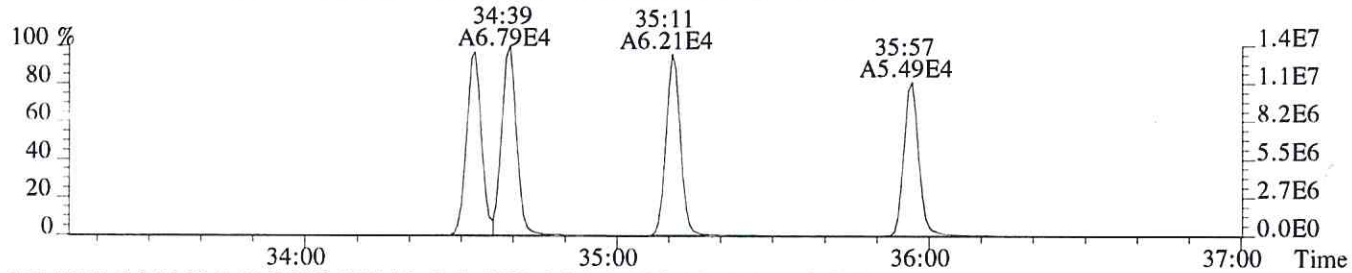


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

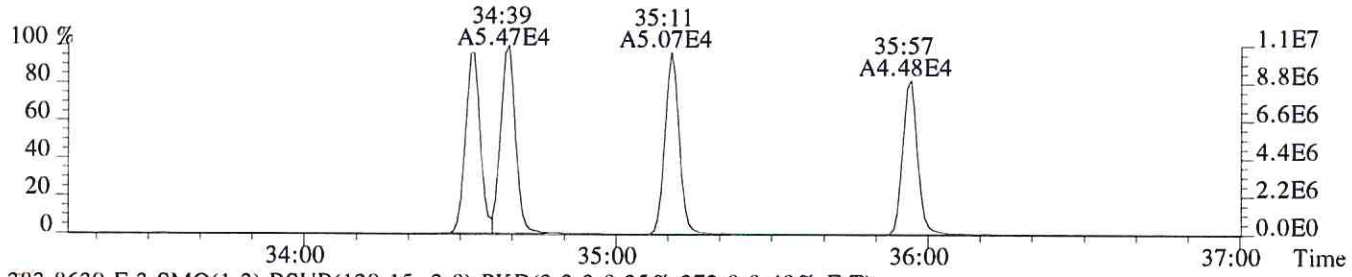


File:P607276 #1-339 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

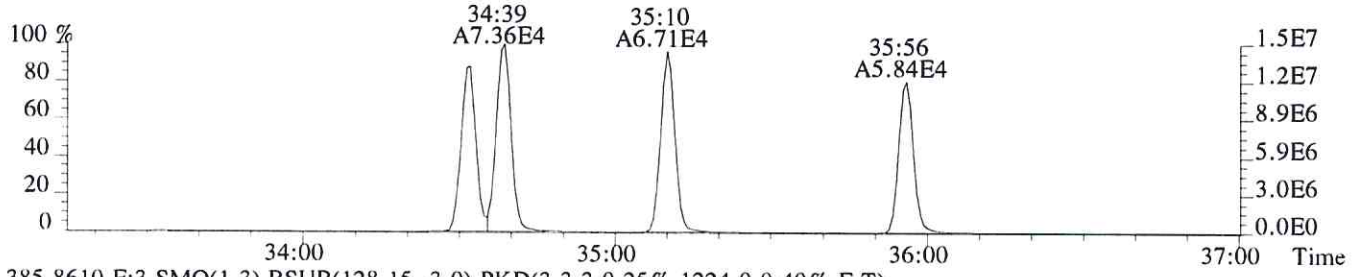
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,764.0,0.40%,F,T)



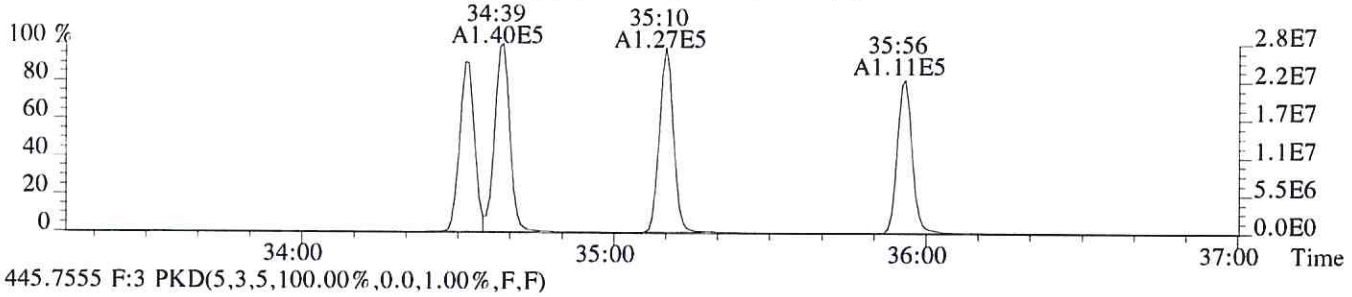
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,304.0,0.40%,F,T)



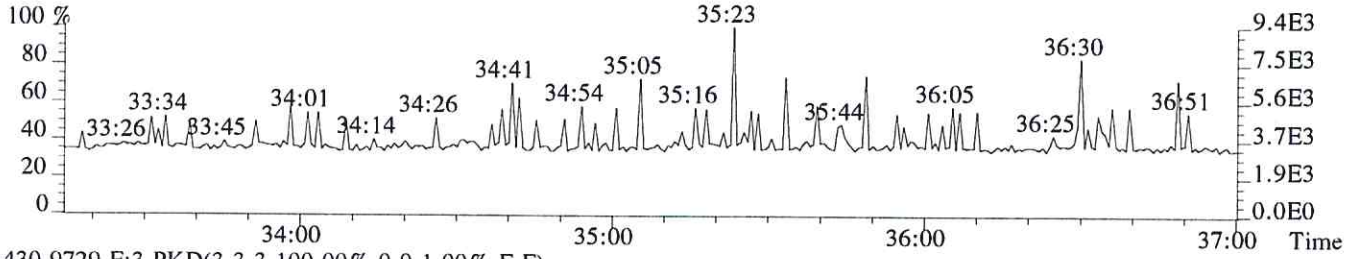
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,272.0,0.40%,F,T)



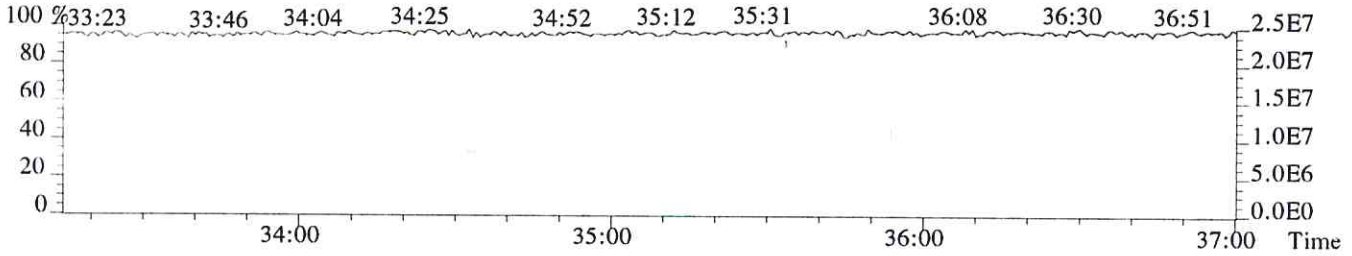
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1224.0,0.40%,F,T)



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

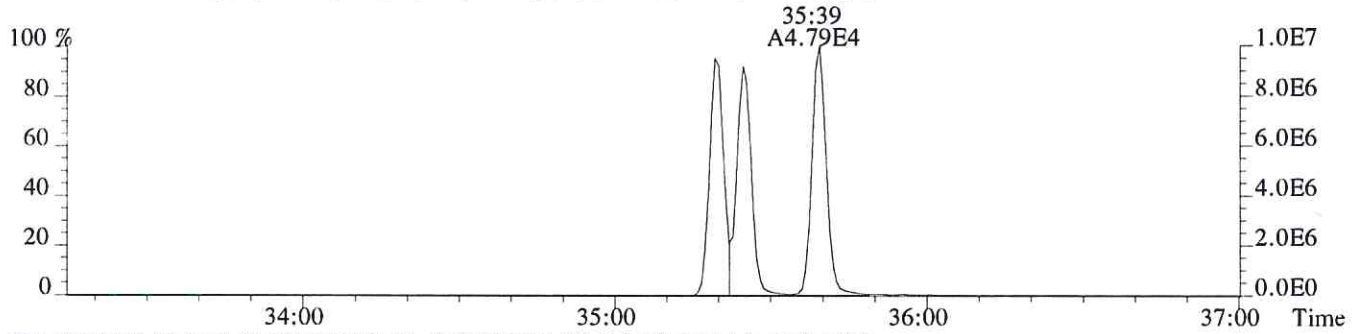


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

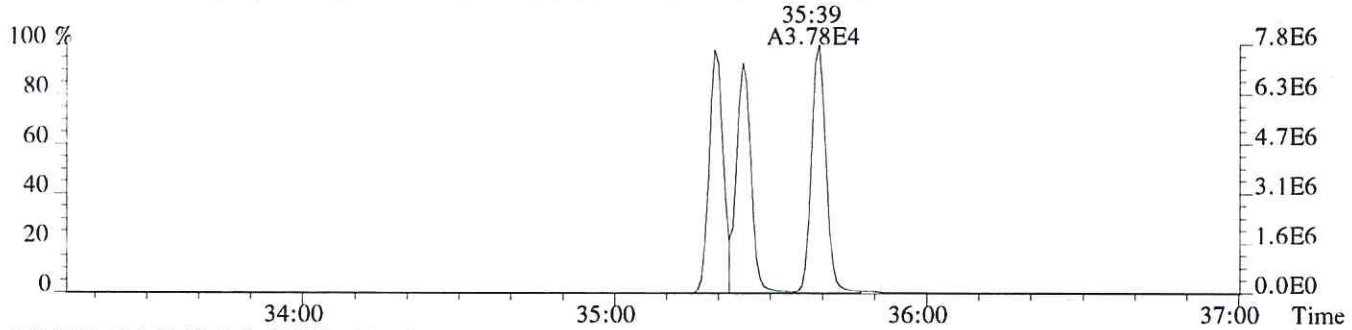


File:P607276 #1-339 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

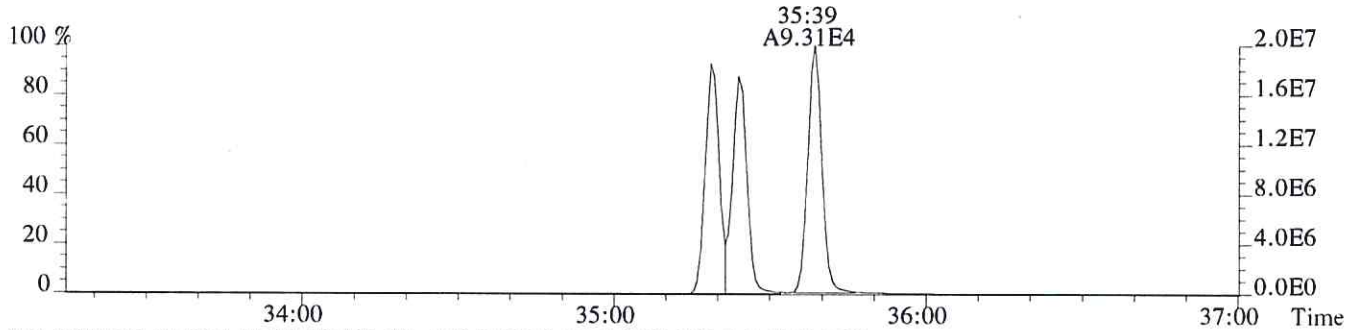
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,252.0,0.40%,F,T)



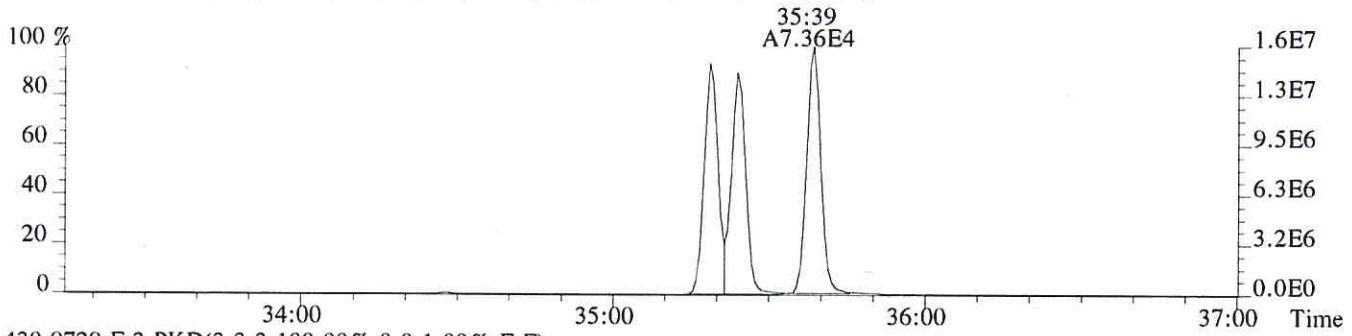
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,244.0,0.40%,F,T)



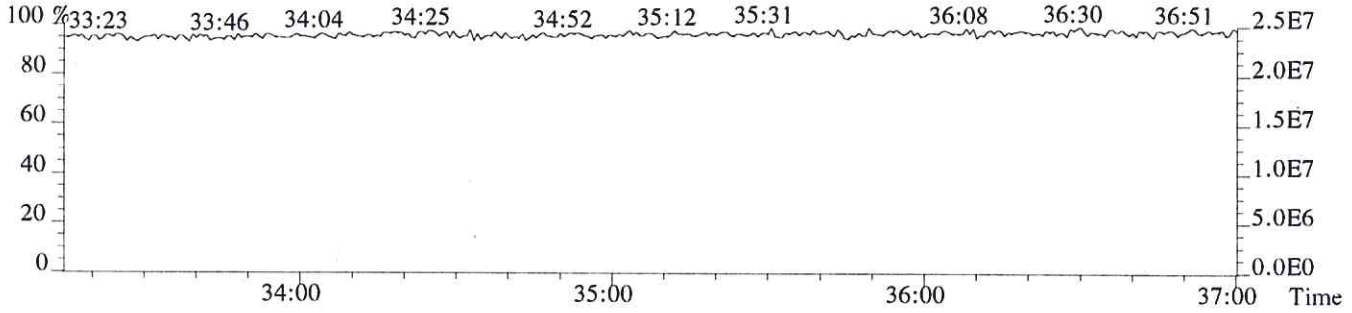
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2048.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,992.0,0.40%,F,T)

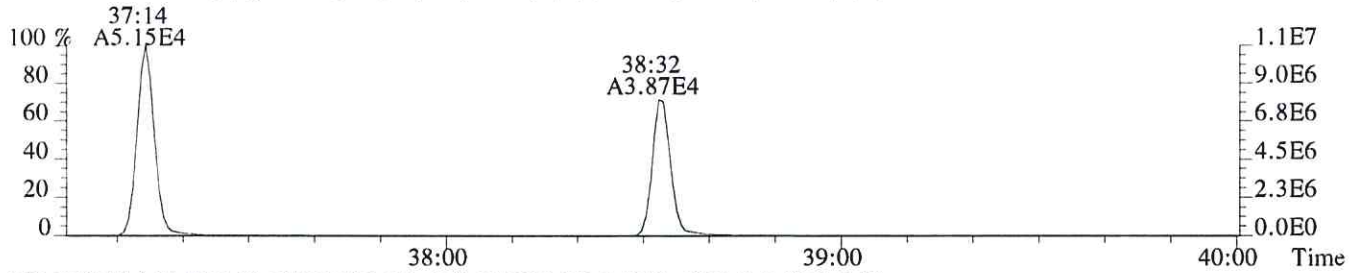


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

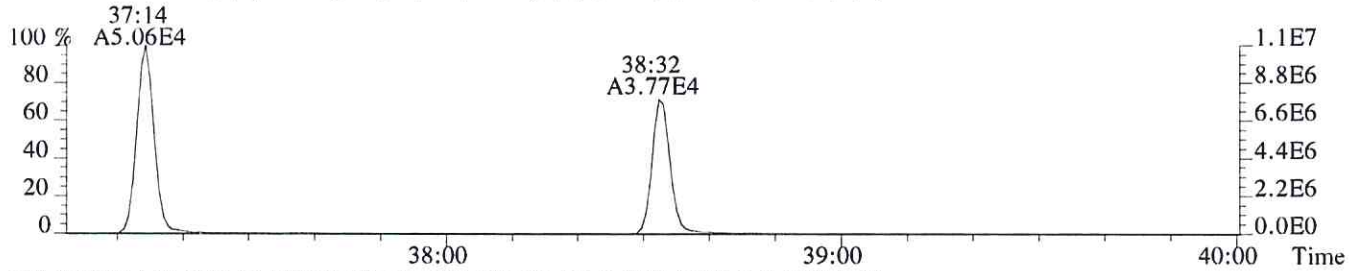


File:P607276 #1-268 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

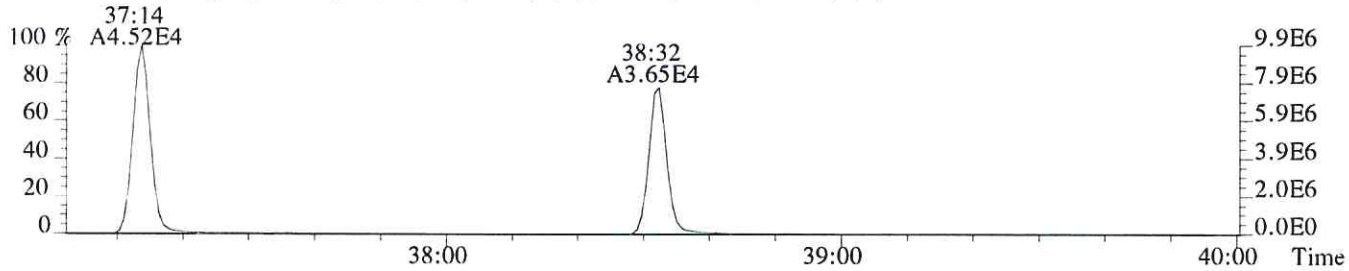
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6484.0,0.50%,F,T)



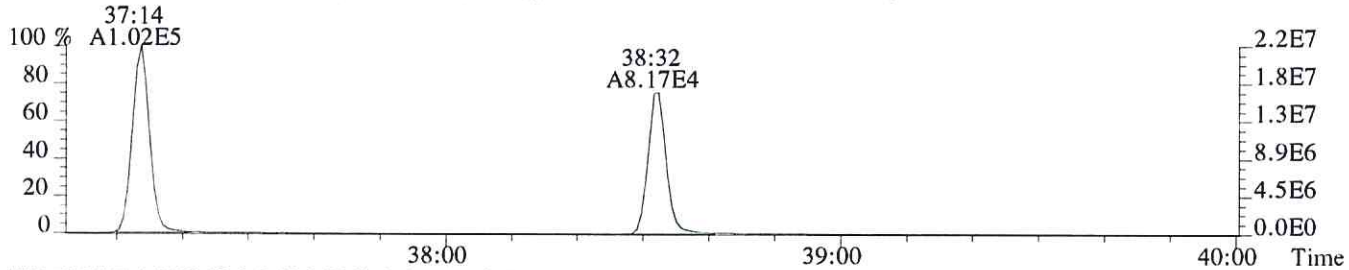
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4824.0,0.50%,F,T)



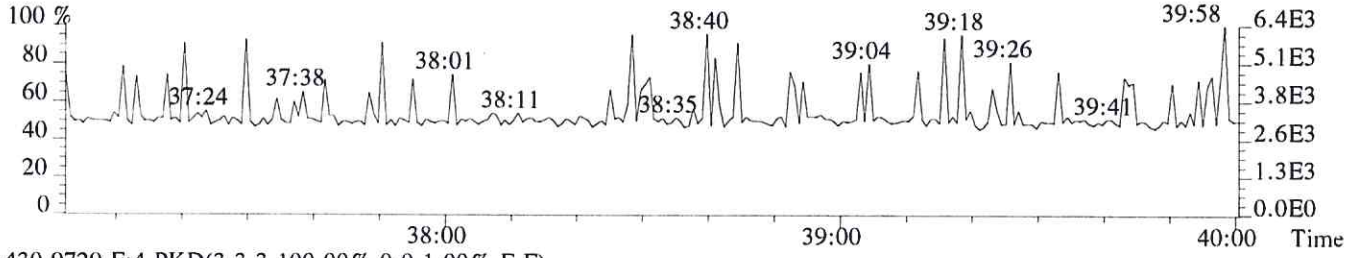
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8108.0,0.50%,F,T)



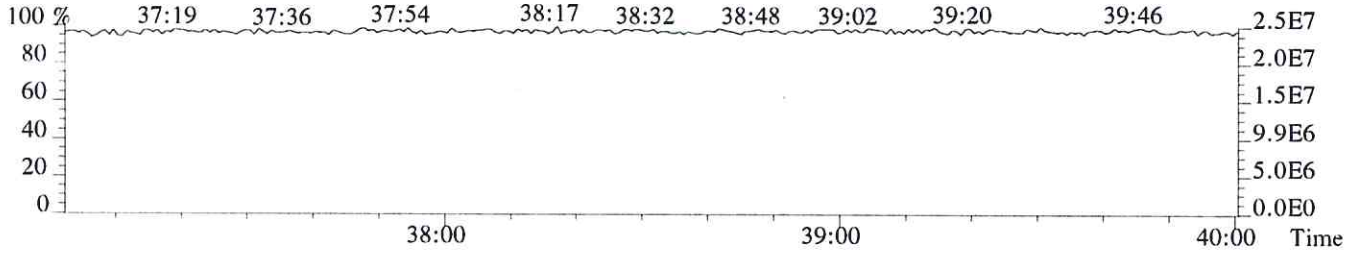
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11556.0,0.50%,F,T)



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

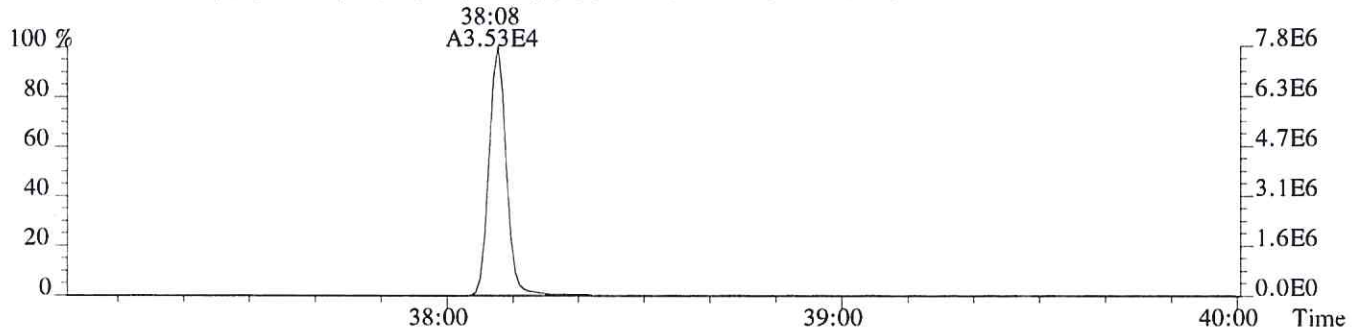


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

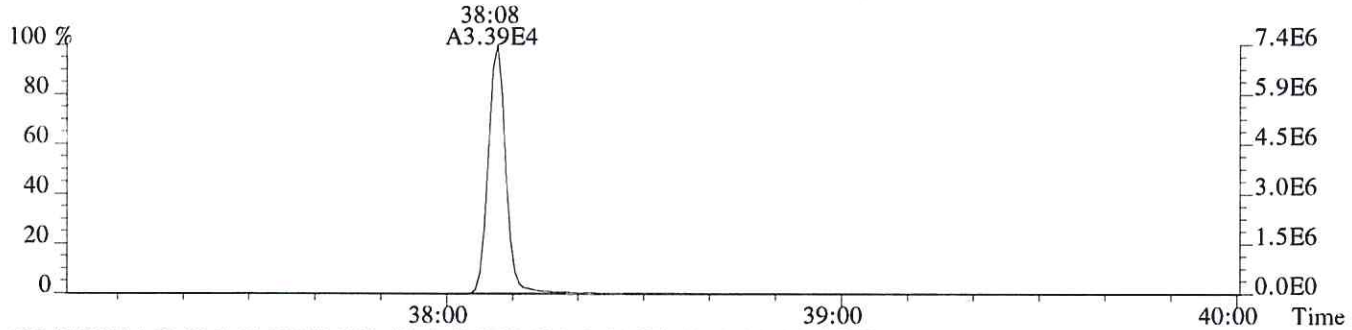


File:P607276 #1-268 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

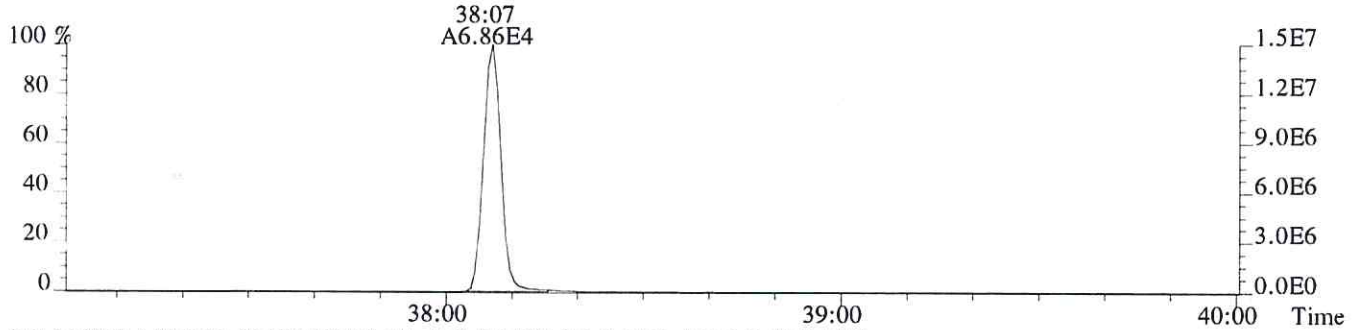
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,15756.0,0.40%,F,T)



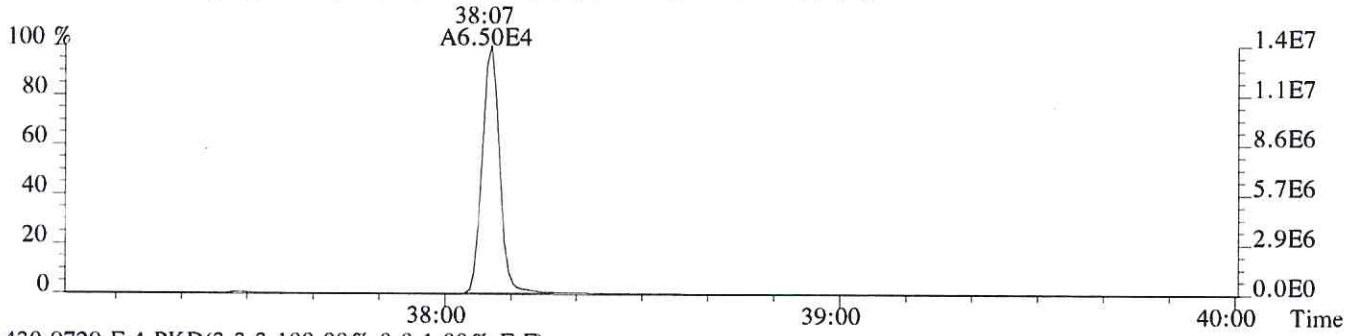
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,276.0,0.40%,F,T)



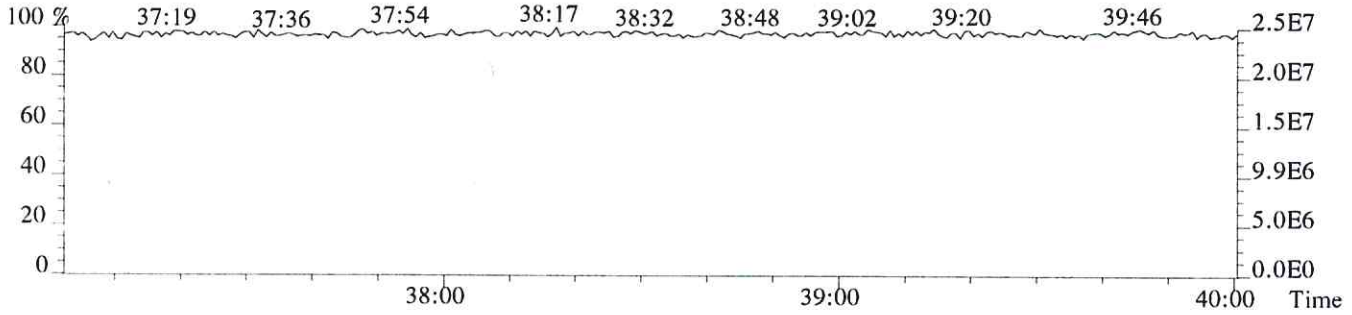
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1328.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,432.0,0.40%,F,T)

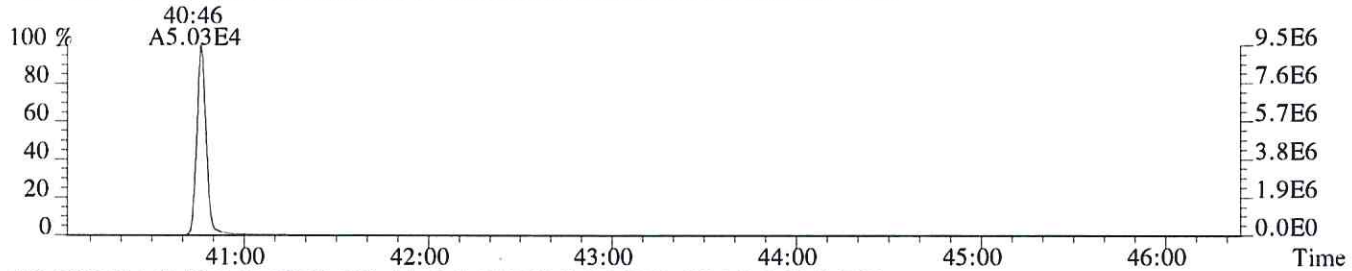


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

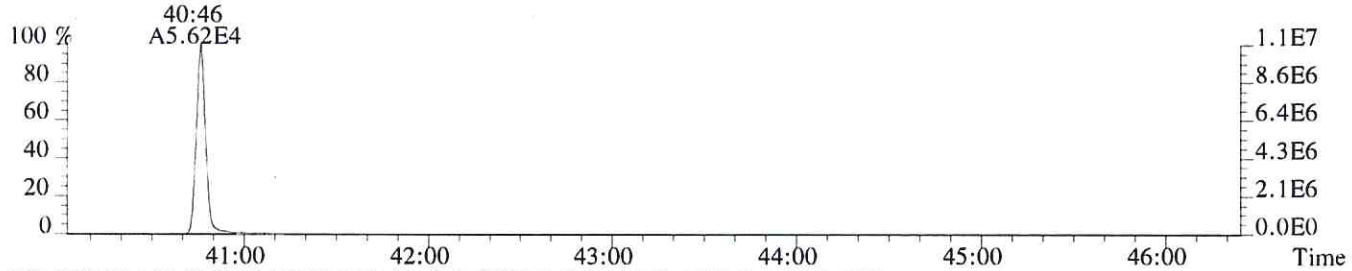


File:P607276 #1-573 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

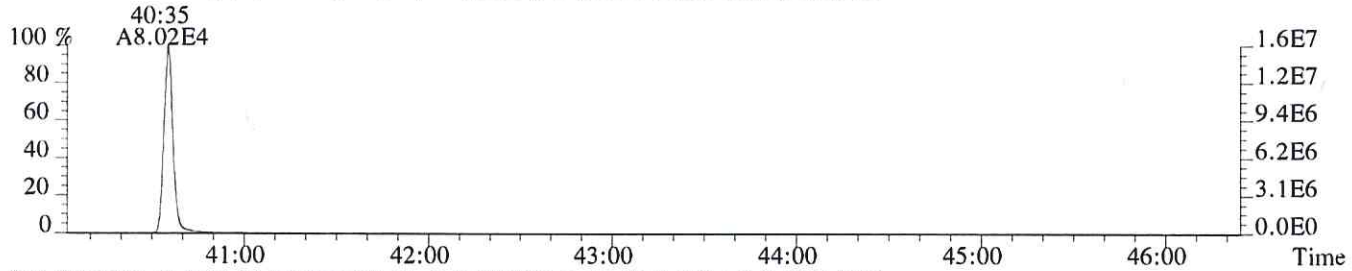
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,11388.0,0.40%,F,T)



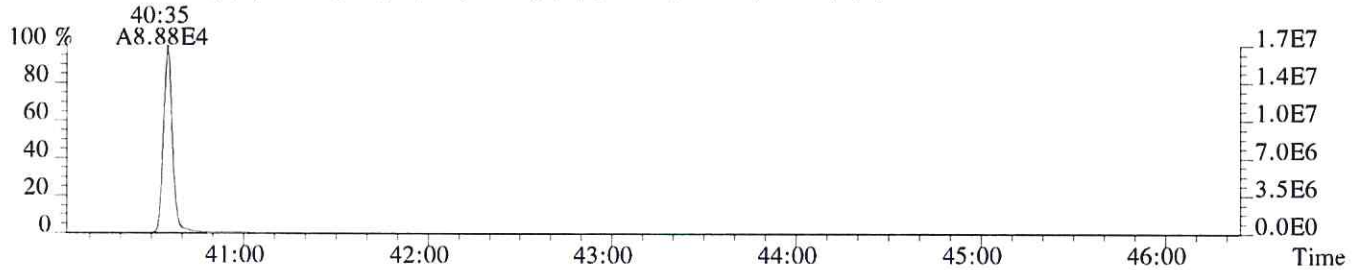
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2720.0,0.40%,F,T)



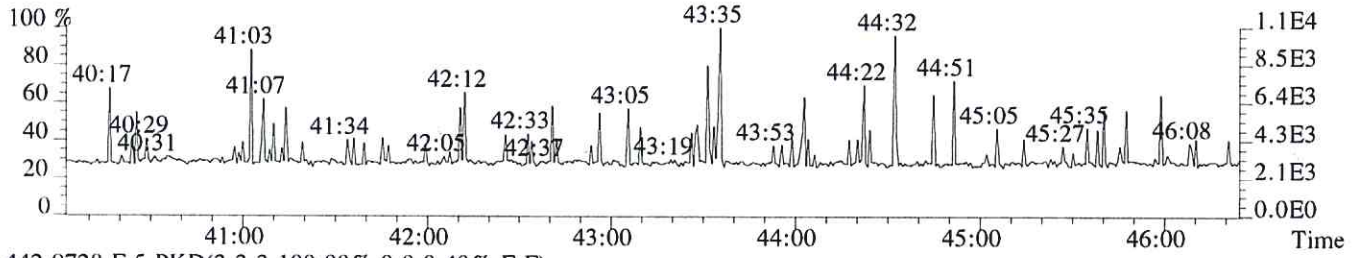
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3208.0,0.40%,F,T)



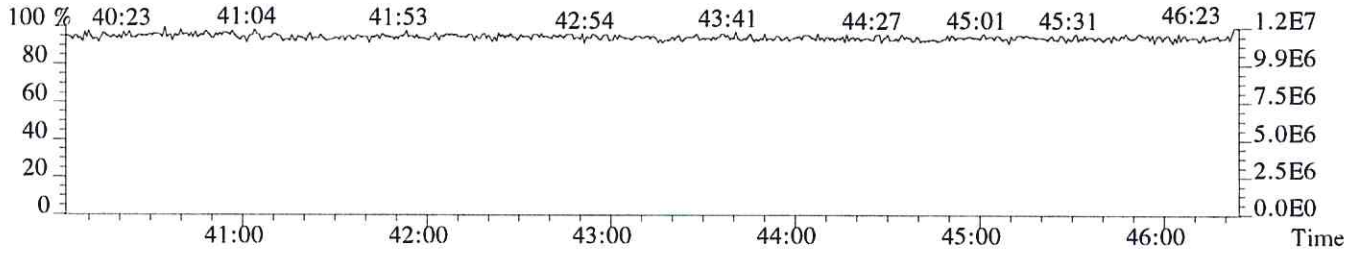
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5816.0,0.40%,F,T)



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

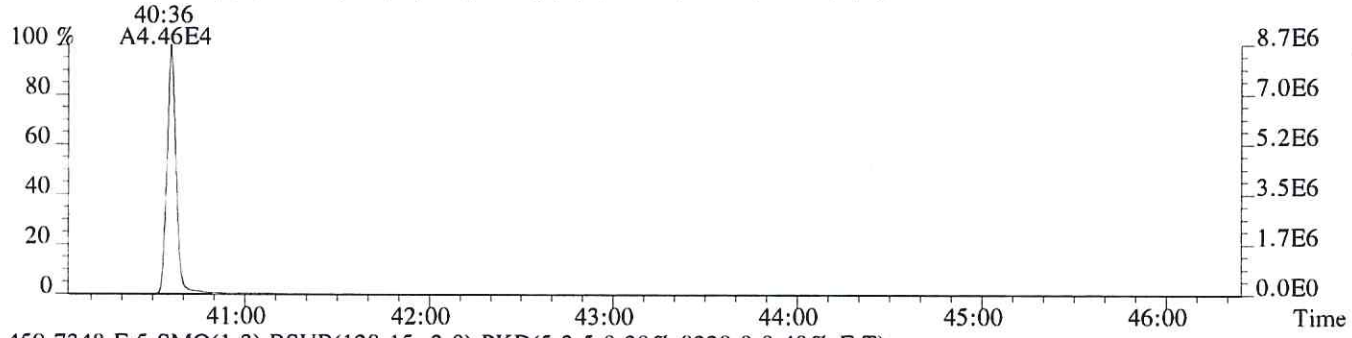


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)

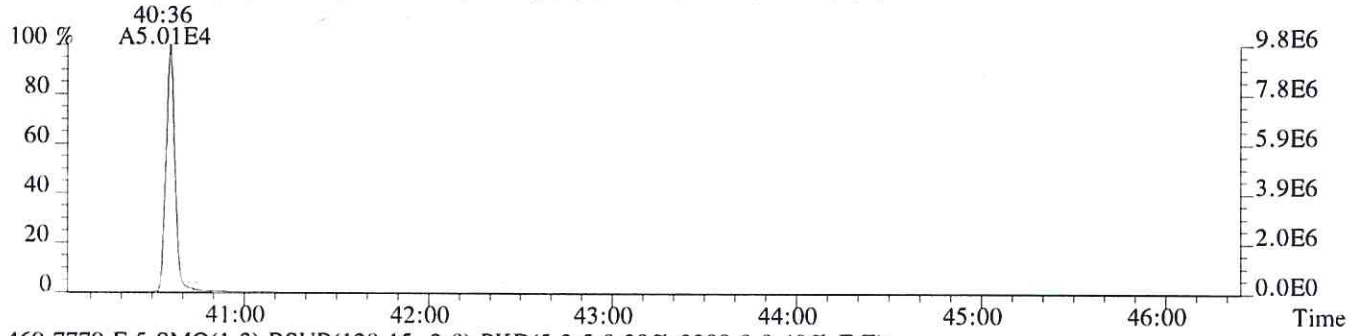


File:P607276 #1-573 Acq:20-MAY-2017 18:07:11 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

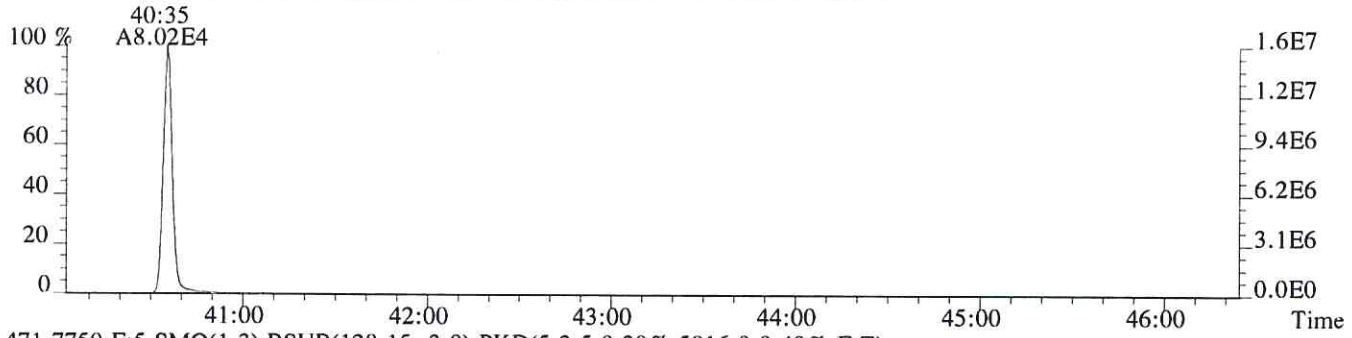
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,4784.0,0.40%,F,T)



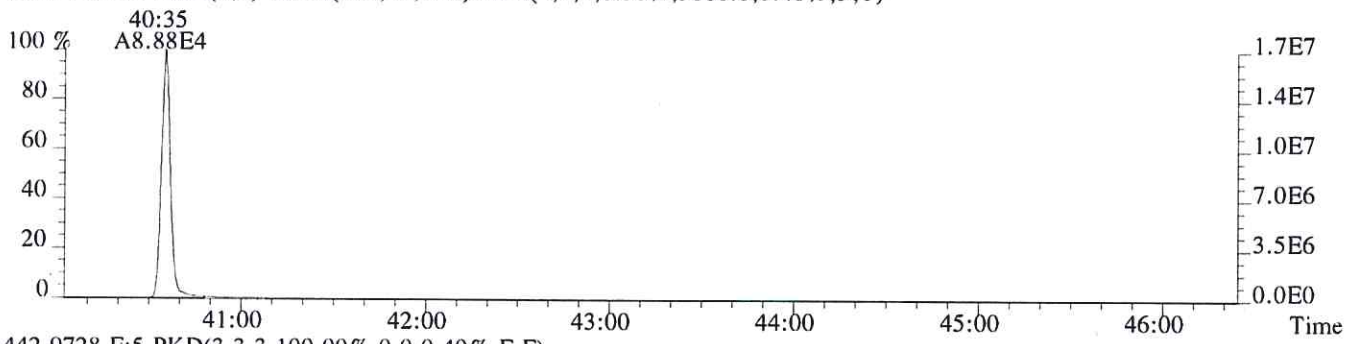
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8228.0,0.40%,F,T)



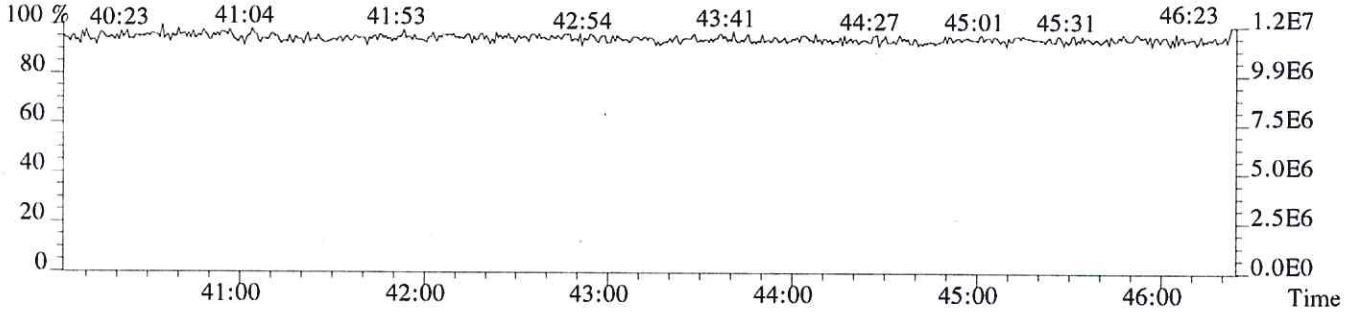
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3208.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5816.0,0.40%,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: 05/17/17
Instrument Name: E/HRMS-08	Calibration File Name: P6-1705161613I
Processor Name: Rosela Cruz	Reviewer Name: LOAN LUONG
Supervisor: Hien Nin	

Description	Yes	No	NA	NR	ER#
Analytical Sequence					
Does the analytical sequence summary accurately reflect the instrument run log, including ICV?	√				
Was a Mass Resolution Check performed at the beginning and end of the 12-hour sequence?	√				
Were all calibration standards and the ICV analyzed within the same 12-hour sequence?	√				
Were all calibration standards analyzed only once?	√				
Was the ICV analyzed after the ICAL, before analyzing samples?	√				
	√				
Mass Resolution Check					
Are beginning and ending resolution checks provided and legible?	√				
Were all target masses >10,000 resolving power at the beginning of the sequence?	√				
Were all target masses >10,000 resolving power at the end of the sequence?	√				
For PCB analysis, were masses at the low and high end of each function mass range >8,000?			√		
Where automatic printout of the mass resolution were not >10,000, was the resolution inspected by a trained analyst, including manual calculation of the resolution, if warranted?			√		
Window Define/209					
Is the window defining mix summary present, and accompanied by SICPs/Chromatograms for the WDM?	√				
Was the WDM/Column Performance/209 solution analyzed prior to the analysis of the calibration standards?	√				
Was 2,3,7,8-TCDD peak valley <25% to any other TCDD?	√				
Were all first and last eluters adequately resolved in each function?	√				
If first and last eluters were not resolved, was corrective action performed and documented, followed by a reanalysis of the WDM?			√		
Was the retention time of PCB 209 >55 min?			√		
Were the following congeners uniquely resolved (valley height <40% of the shortest peak)? PCB-34 and PCB-23 PCB-187 and PCB-182			√		
Did PCB 156/157 co-elute within 2 seconds at peak maximum?			√		
Calibration Standards					
Were there at least 5 calibration standards analyzed?	√				
If not all calibration standards were used, were the omitted standards either the lowest or highest calibration standard?			√		

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290	Process Date: 05/17/17
Instrument Name: E-HRMS-08	Calibration File Name: P6-1705161613I
Processor Name: Gisela Cruz	Reviewer Name: LOAN LUONG
Supervisor: [illegible]	

Description	Yes	No	NA	NR	ER#
Are all sample response summaries, S/N height summaries, and SICPs included (and legible) for the entire sequence?	√				
Did each calibration point meet method criteria for Ion Abundance Ratio for all analytes and labeled standards?	√				
Did each calibration point meet method criteria for signal-to-noise ratios (S/N)?	√				
Were area counts for the highest calibration standard below levels of saturation?	√				
Were manual integrations technically justified to correct for poor software integration?			√		
Response Factors					
Is the ICAL Response Factor Summary present, including RR/RF values for each native/labeled analyte at each level of calibration?	√				
Were all calibration standards used in determining response factors?	√				
Were relative response factors (RR) for each native analyte calculated at each calibration point?	√				
Did the RSD for RRFs for each native analyte meet method criteria?	√				
Were response factors (RF) for each native analyte not having a corresponding labeled compound calculated at each calibration point?	√				
Were RFs for each labeled compound calculated for each calibration point?	√				
Did the RSD for RF for each labeled compound meet method criteria?	√				
Initial Calibration Verification					
Is the calibration verification present, including form 4A/B reflecting results for the ICV (Conc. or %D)	√				
Did all analytes meet method criteria for the ICV.	√				

Laboratory Review Checklist: Initial Calibration

Method: 1613/8290	Process Date: 05/17/17
Instrument Name: E-HRMS-08	Calibration File Name: P6-1705161613I
Processor Name: Gisela Cruz	Reviewer Name: LOAN LUONG

ER#[5]	Description

NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: TX01411 Episode No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm) Instrument ID: E-HRMS-08

Init. Calib. Date: 05/16/17

Init. Calib.Times: 11:03

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
178397	WINDOW DEFINE	P607178	16-MAY-17	11:03:07
76554	CS0.5	P607179	16-MAY-17	12:44:15
76555	CS1	P607180	16-MAY-17	13:34:34
76556	CS2	P607181	16-MAY-17	14:24:51
76557	CS3	P607182	16-MAY-17	15:15:09
76558	CS4	P607183	16-MAY-17	16:05:29
82168	CS5	P607184	16-MAY-17	16:55:47
75080	2ND SOURCE	P607186	16-MAY-17	18:45:06

Sample List Report **MassLynx 4.1 SCN815 SCN795**

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20170516.SPL
Last Modified: Wednesday, May 17, 2017 09:44:00 Central Daylight Time
Printed: Wednesday, May 17, 2017 09:44:02 Central Daylight Time

Page Position (1, 1)

OPUS 4: P6-170516613I; P607186res

	Date	Time	File Name	Lab Sample ID	Client File Text	Bottle	MS File	Inlet File	Analyst	Comments
1	5/16/17	11:03	P607178	178397	WINDOWDEFINE	Tray1:1	EPA1613_ALS	Dioxin_ALS	LG	HRMScheck 10:00
2		12:44	P607179	76554	CS0.5	Tray1:3	EPA1613_ALS	Dioxin_ALS		
3		13:34	P607180	76555	CS1	Tray1:4	EPA1613_ALS	Dioxin_ALS		
4		14:24	P607181	76556	CS2	Tray1:5	EPA1613_ALS	Dioxin_ALS		
5		15:15	P607182	76557	CS3	Tray1:6	EPA1613_ALS	Dioxin_ALS		
6		16:05	P607183	76558	CS4	Tray1:7	EPA1613_ALS	Dioxin_ALS		
7		16:55	P607184	82168	CS5	Tray1:8	EPA1613_ALS	Dioxin_ALS		
8		17:54	P607185	NONANE	NONANE	Tray1:9	EPA1613_ALS	Dioxin_ALS		
9		18:45	P607186	75080	2ND SOURCE	Tray1:10	EPA1613_ALS	Dioxin_ALS		
10		19:43	P607187	NONANE	NONANE	Tray1:10	EPA1613_ALS	Dioxin_ALS		HRMScheck 19:43
11	---	---	P607188	---	---	Tray1:12	EPA1613_ALS	Dioxin_ALS	---	---
12	---	---	P607189	---	---	Tray1:13	EPA1613_ALS	Dioxin_ALS	---	---
13	---	---	P607190	---	---	Tray1:14	EPA1613_ALS	Dioxin_ALS	---	---
14	---	---	P607191	---	---	Tray1:15	EPA1613_ALS	Dioxin_ALS	---	---
15	---	---	P607192	---	---	Tray1:16	EPA1613_ALS	Dioxin_ALS	---	---
16	---	---	P607193	---	---	Tray1:17	EPA1613_ALS	Dioxin_ALS	---	---
17	---	---	P607194	---	---	Tray1:18	EPA1613_ALS	Dioxin_ALS	---	---
18	---	---	P607195	---	---	Tray1:19	EPA1613_ALS	Dioxin_ALS	---	---
19	---	---	P607196	---	---	Tray1:20	EPA1613_ALS	Dioxin_ALS	---	---
20	---	---	P607197	---	---	Tray1:21	EPA1613_ALS	Dioxin_ALS	---	---
21	---	---	P607198	---	---	Tray1:22	EPA1613_ALS	Dioxin_ALS	---	---
22	---	---	P607199	---	---	Tray1:23	EPA1613_ALS	Dioxin_ALS	---	---
23	---	---	P607200	---	---	Tray1:24	EPA1613_ALS	Dioxin_ALS	---	---
24	---	---	P607201	---	---	Tray1:25	EPA1613_ALS	Dioxin_ALS	---	---
25	---	---	P607202	---	---	Tray1:26	EPA1613_ALS	Dioxin_ALS	---	---
26	---	---	P607203	---	---	Tray1:27	EPA1613_ALS	Dioxin_ALS	---	---
27	---	---	P607204	---	---	Tray1:28	EPA1613_ALS	Dioxin_ALS	---	---
28	---	---	P607205	---	---	Tray1:29	EPA1613_ALS	Dioxin_ALS	---	---
29	---	---	P607206	---	---	Tray1:30	EPA1613_ALS	Dioxin_ALS	---	---
30	---	---	P607207	---	---	Tray1:31	EPA1613_ALS	Dioxin_ALS	---	---
31	---	---	P607208	---	---	Tray1:32	EPA1613_ALS	Dioxin_ALS	---	---
32	---	---	P607209	---	---	Tray1:33	EPA1613_ALS	Dioxin_ALS	---	---
33	---	---	P607210	---	---	Tray1:34	EPA1613_ALS	Dioxin_ALS	---	---
34	---	---	---	---	---	Tray1:35	EPA1613_ALS	Dioxin_ALS	---	---
35	---	---	---	---	---	Tray1:36	EPA1613_ALS	Dioxin_ALS	---	---
36	---	---	---	---	---	Tray1:37	EPA1613_ALS	Dioxin_ALS	---	---
37	---	---	---	---	---	Tray1:38	EPA1613_ALS	Dioxin_ALS	---	---
38	---	---	---	---	---	Tray1:39	EPA1613_ALS	Dioxin_ALS	---	---
39	---	---	---	---	---	Tray1:39	EPA1613_ALS	Dioxin_ALS	---	---

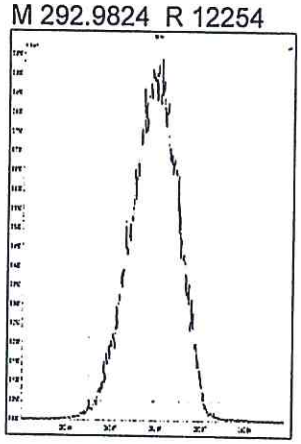
gc 05/17/17

Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

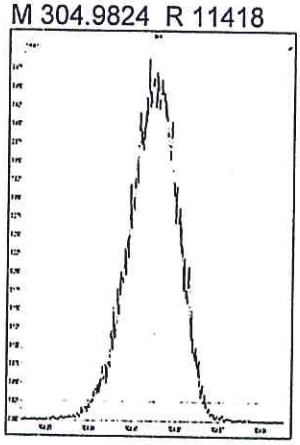
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, May 16, 2017 10:00:51 Central Daylight Time

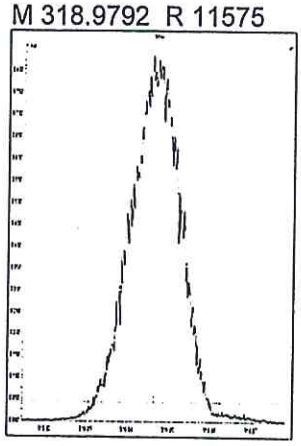
M 292.9824 R 12254



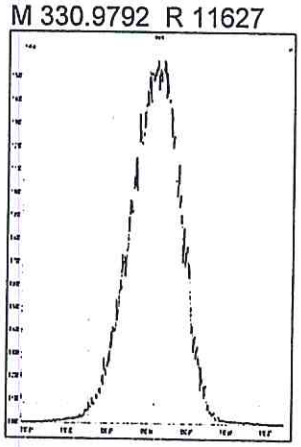
M 304.9824 R 11418



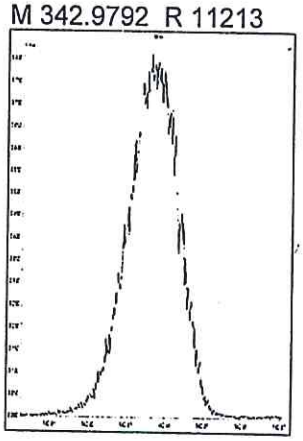
M 318.9792 R 11575



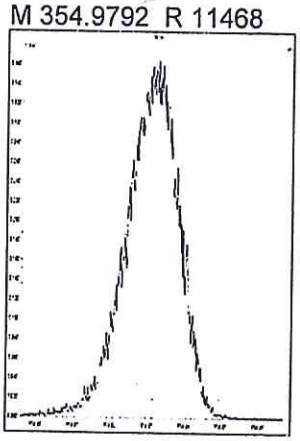
M 330.9792 R 11627



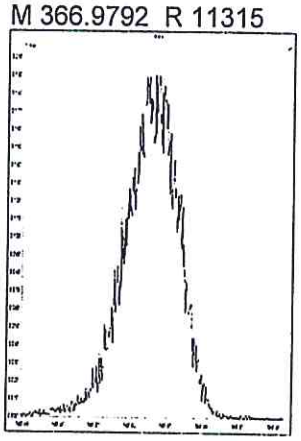
M 342.9792 R 11213



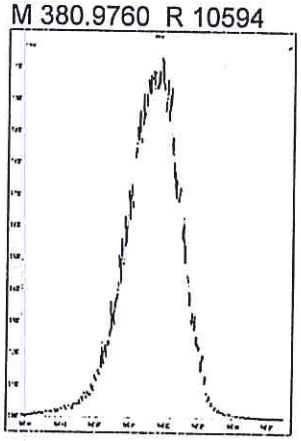
M 354.9792 R 11468



M 366.9792 R 11315



M 380.9760 R 10594

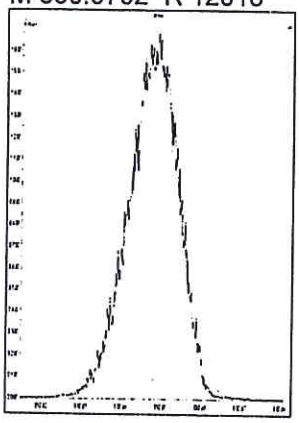


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

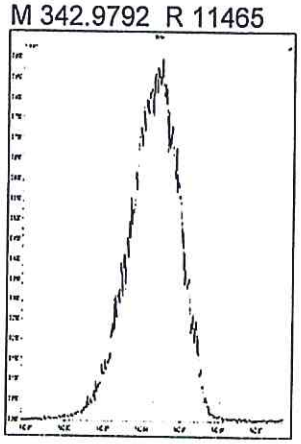
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, May 16, 2017 10:02:42 Central Daylight Time

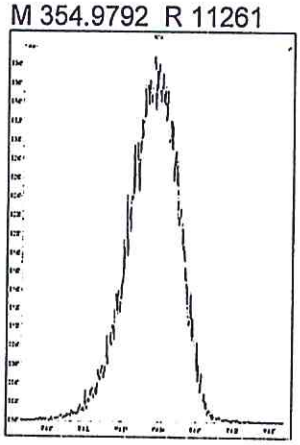
M 330.9792 R 12018



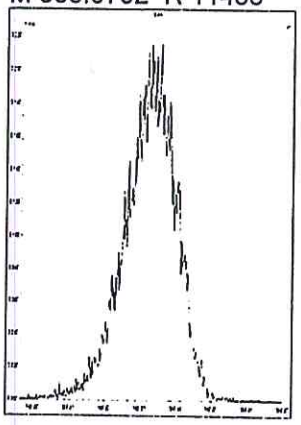
M 342.9792 R 11465



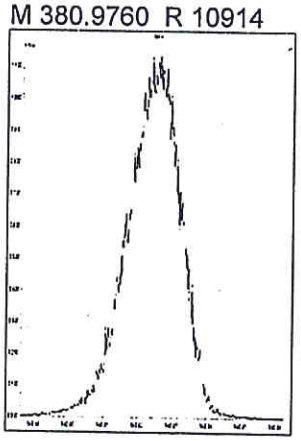
M 354.9792 R 11261



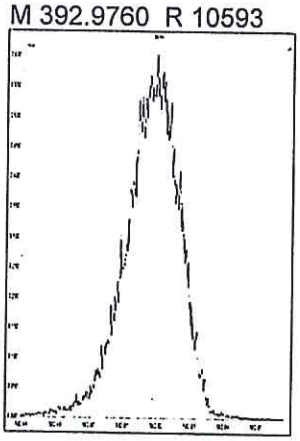
M 366.9792 R 11466



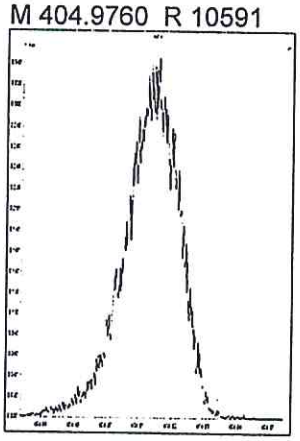
M 380.9760 R 10914



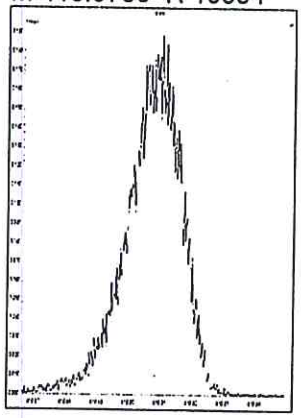
M 392.9760 R 10593



M 404.9760 R 10591



M 416.9760 R 10594

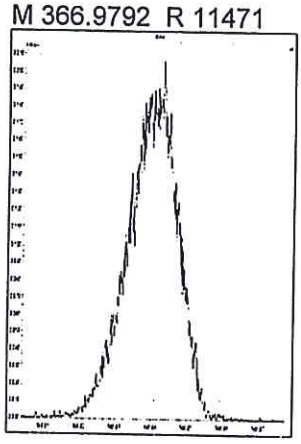


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

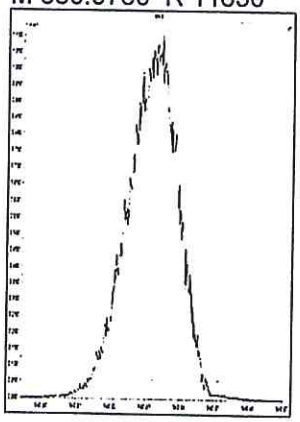
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, May 16, 2017 10:03:51 Central Daylight Time

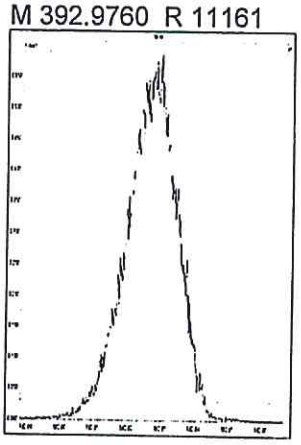
M 366.9792 R 11471



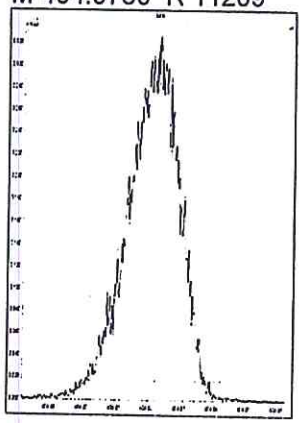
M 380.9760 R 11630



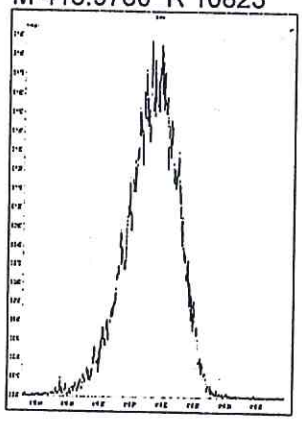
M 392.9760 R 11161



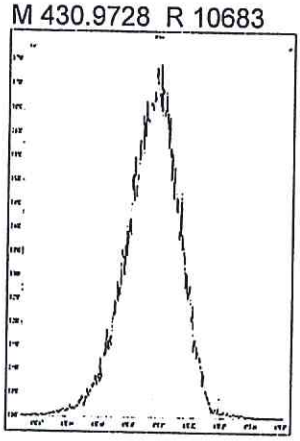
M 404.9760 R 11209



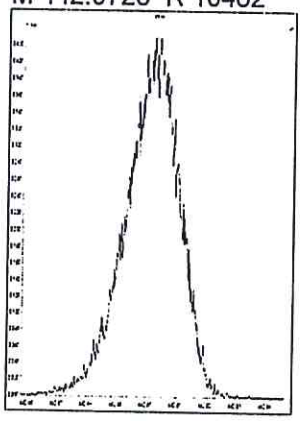
M 416.9760 R 10823



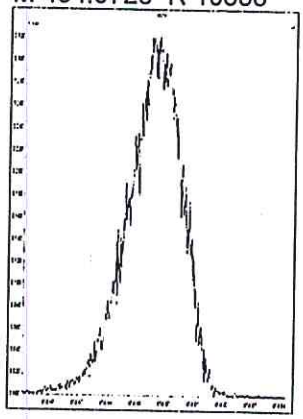
M 430.9728 R 10683



M 442.9728 R 10462



M 454.9728 R 10638

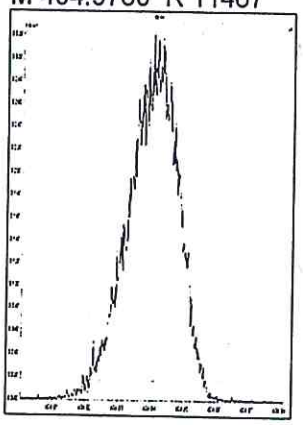


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

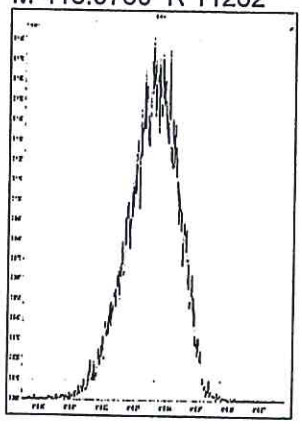
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Tuesday, May 16, 2017 10:05:27 Central Daylight Time

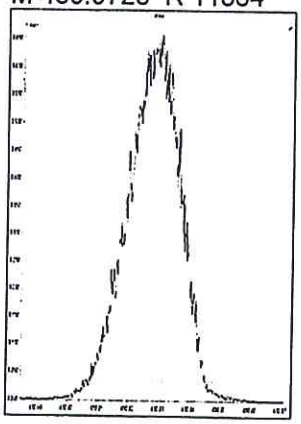
M 404.9760 R 11467



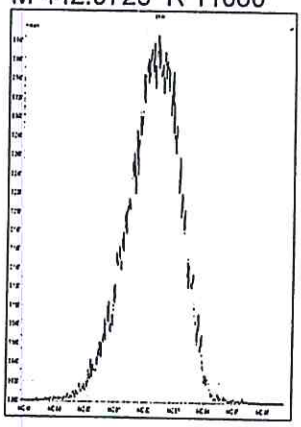
M 416.9760 R 11262



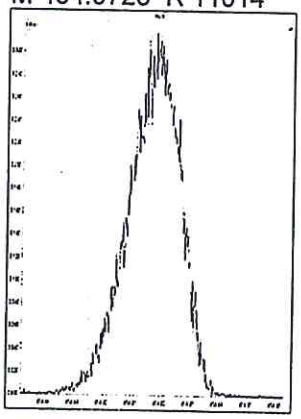
M 430.9728 R 11364



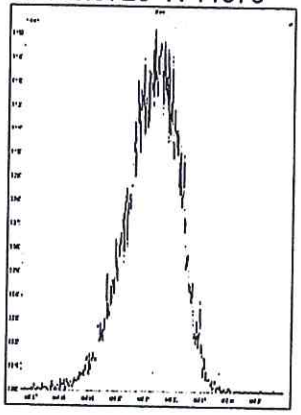
M 442.9728 R 11060



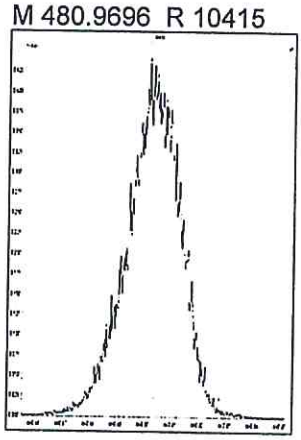
M 454.9728 R 11014



M 466.9728 R 11573



M 480.9696 R 10415

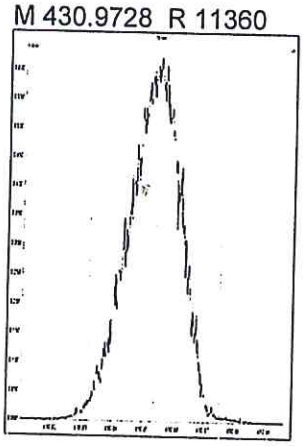


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

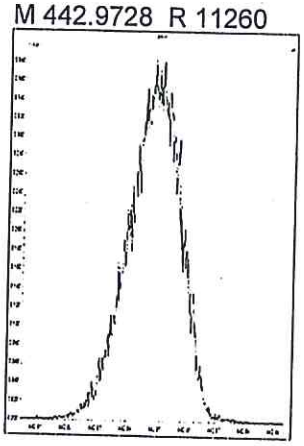
File: Experiment: EPA1613_ALS.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, May 16, 2017 10:07:03 Central Daylight Time

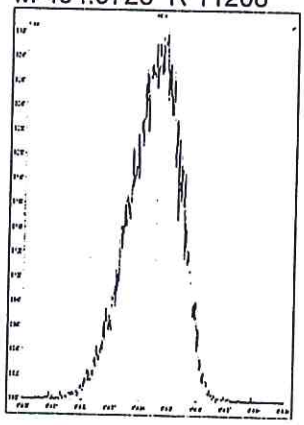
M 430.9728 R 11360



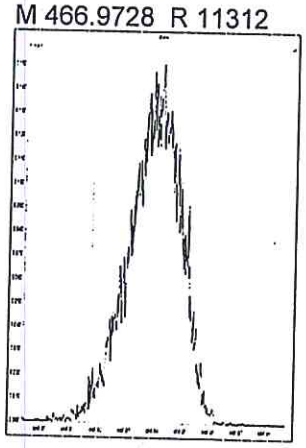
M 442.9728 R 11260



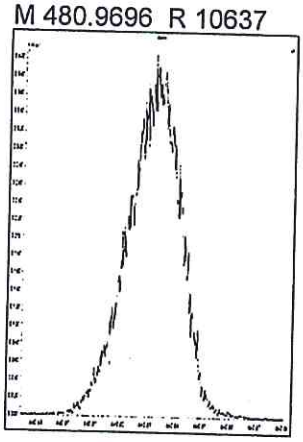
M 454.9728 R 11208



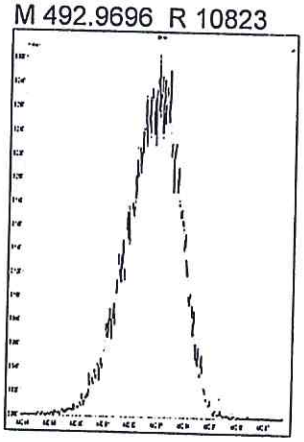
M 466.9728 R 11312



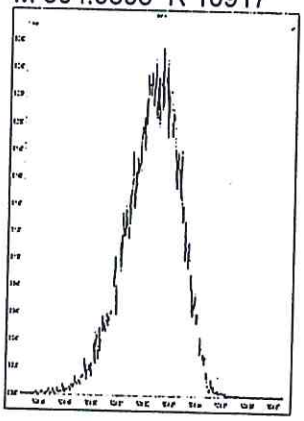
M 480.9696 R 10637



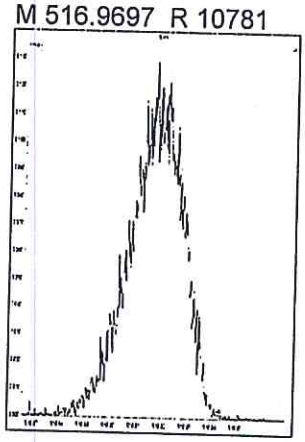
M 492.9696 R 10823



M 504.9696 R 10917



M 516.9697 R 10781



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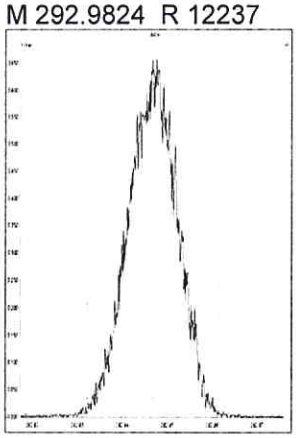
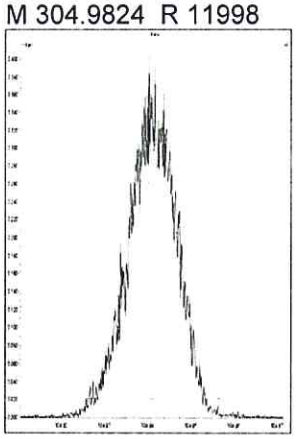
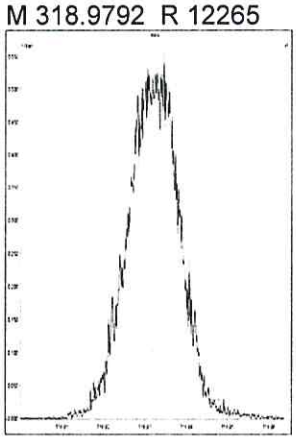
M 292.9824 R 12237



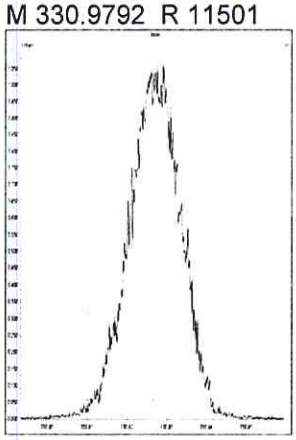
M 304.9824 R 11998



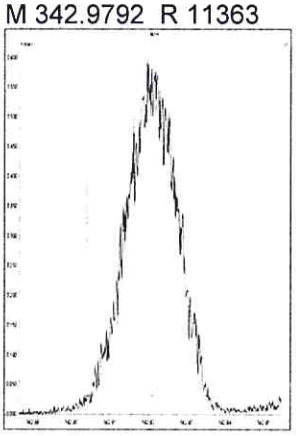
M 318.9792 R 12265



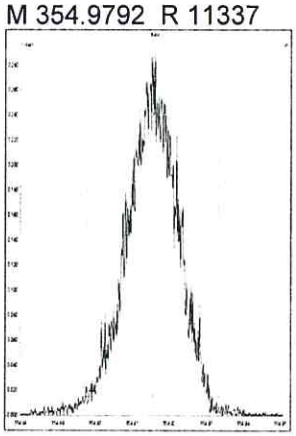
M 330.9792 R 11501



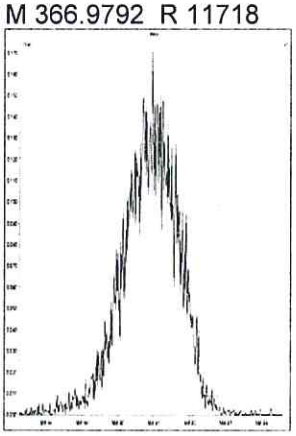
M 342.9792 R 11363



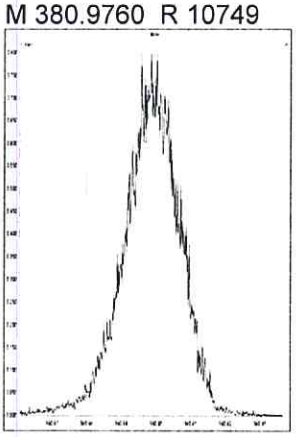
M 354.9792 R 11337



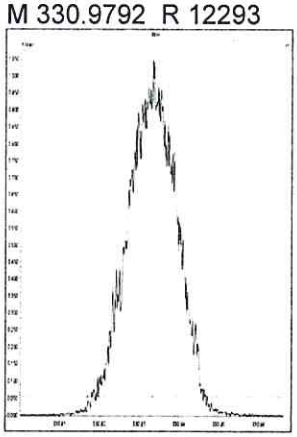
M 366.9792 R 11718



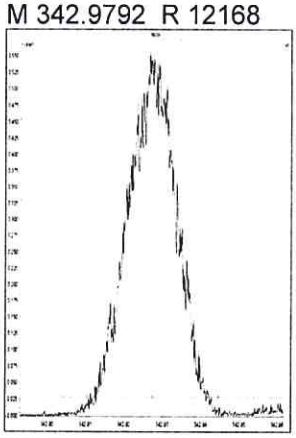
M 380.9760 R 10749



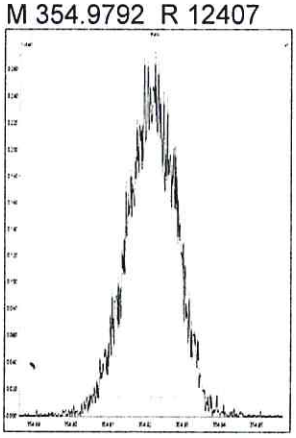
M 330.9792 R 12293



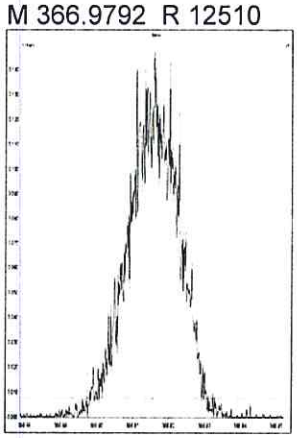
M 342.9792 R 12168



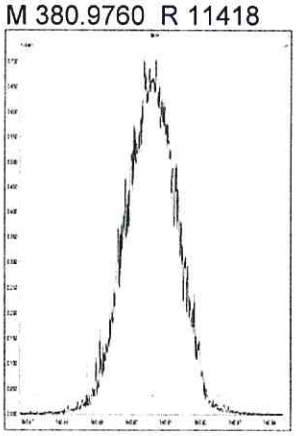
M 354.9792 R 12407



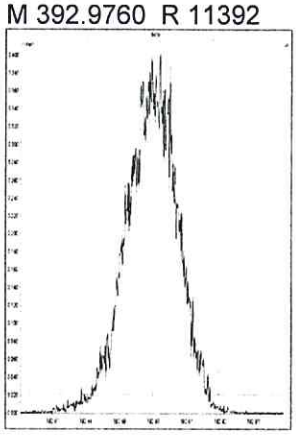
M 366.9792 R 12510



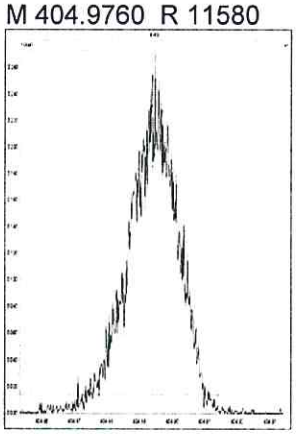
M 380.9760 R 11418



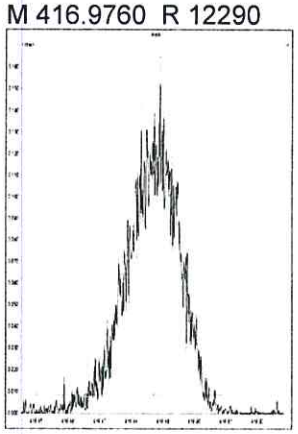
M 392.9760 R 11392



M 404.9760 R 11580



M 416.9760 R 12290



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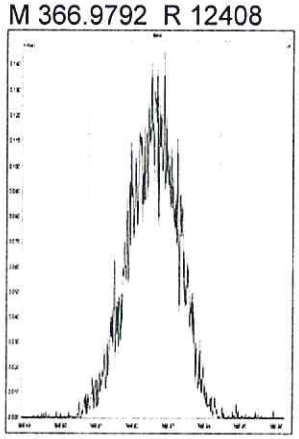
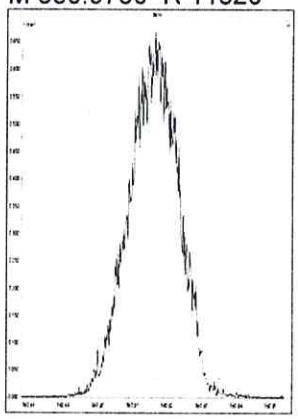
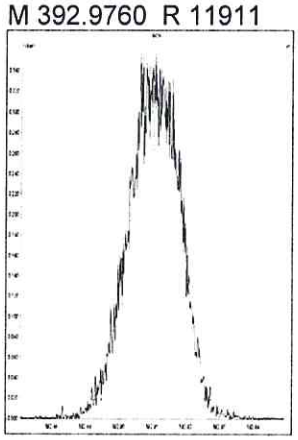
M 366.9792 R 12408



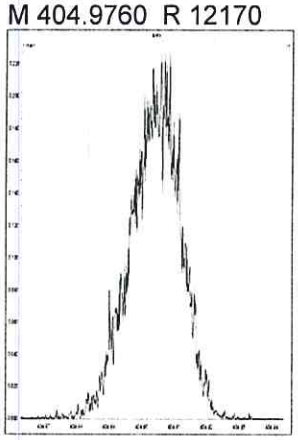
M 380.9760 R 11820



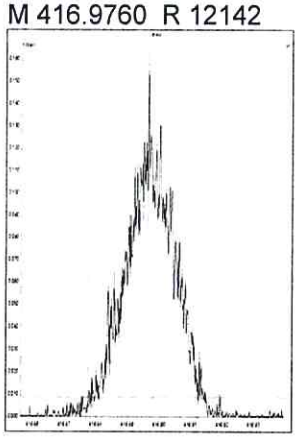
M 392.9760 R 11911



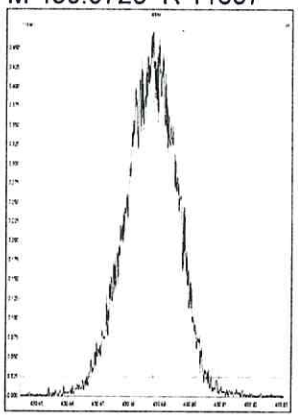
M 404.9760 R 12170



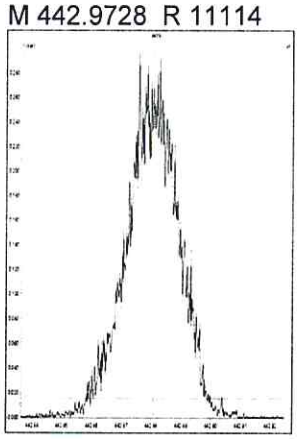
M 416.9760 R 12142



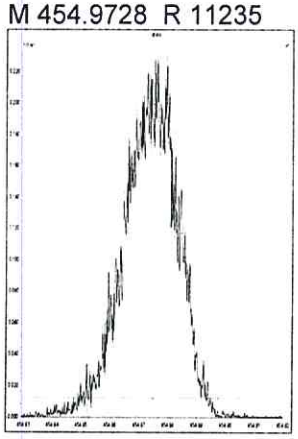
M 430.9728 R 11657



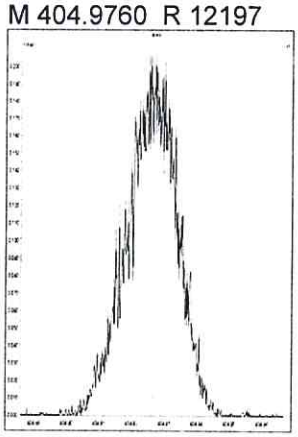
M 442.9728 R 11114



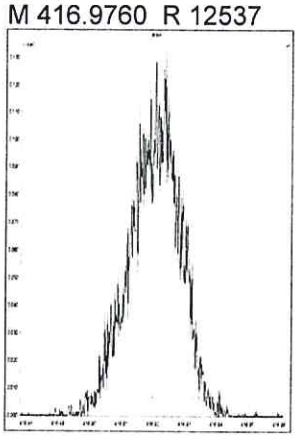
M 454.9728 R 11235



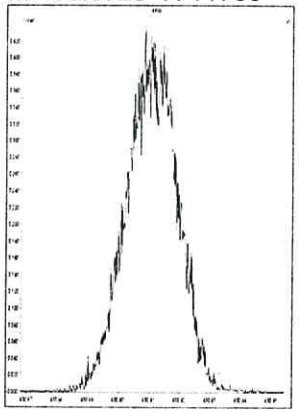
M 404.9760 R 12197



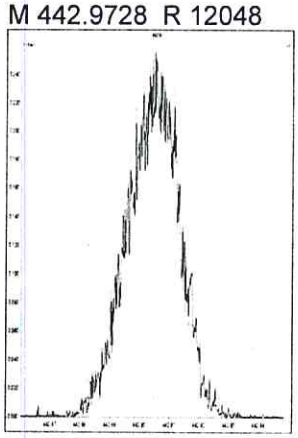
M 416.9760 R 12537



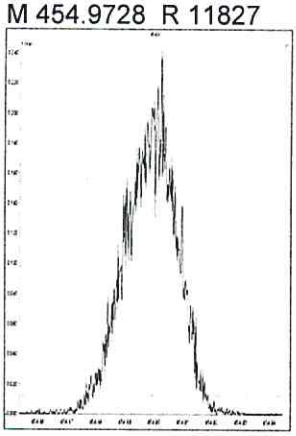
M 430.9728 R 11788



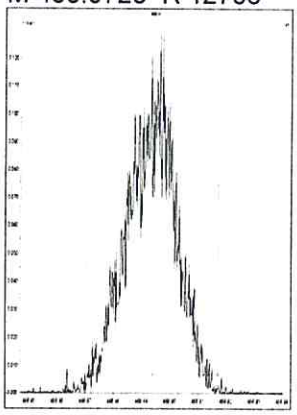
M 442.9728 R 12048



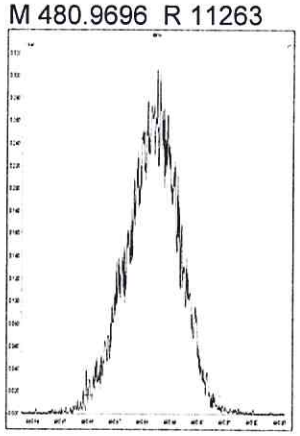
M 454.9728 R 11827



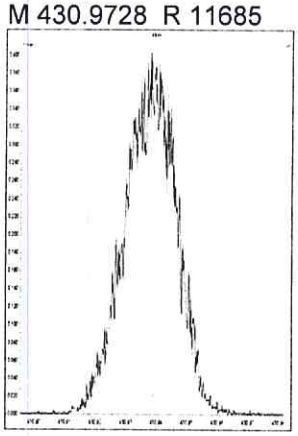
M 466.9728 R 12756



M 480.9696 R 11263



M 430.9728 R 11685



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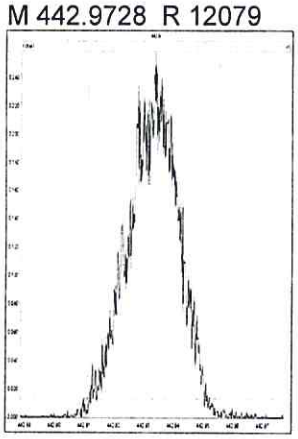
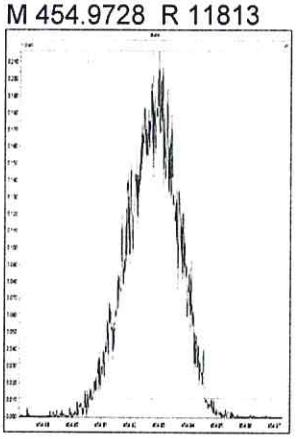
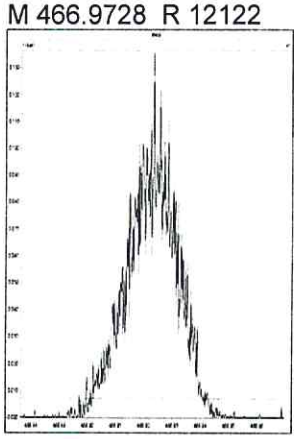
M 442.9728 R 12079



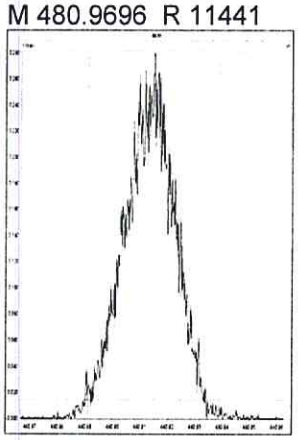
M 454.9728 R 11813



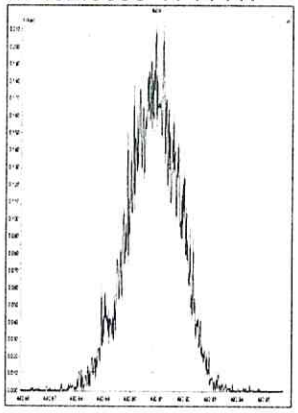
M 466.9728 R 12122



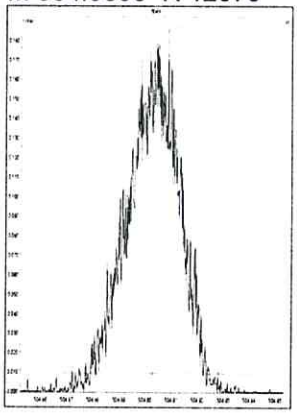
M 480.9696 R 11441



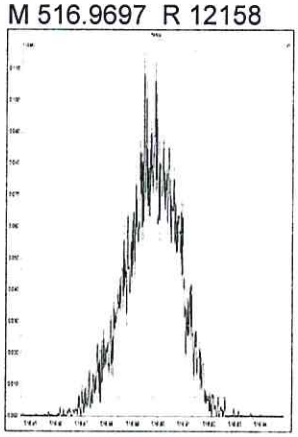
M 492.9696 R 11417



M 504.9696 R 12079



M 516.9697 R 12158



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

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

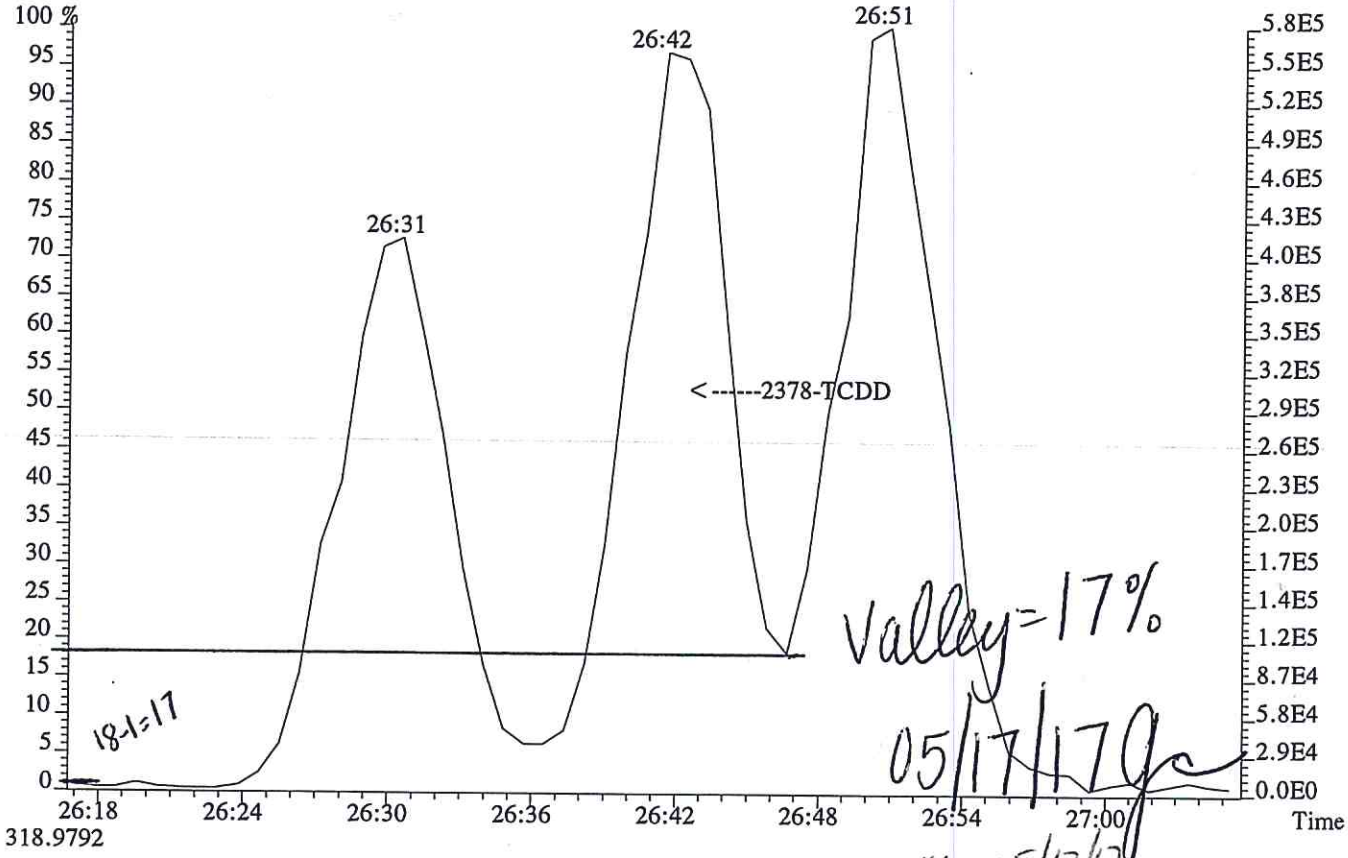
Case No.:
ID: 0.25 (mm)

SDG No.:
Lab File ID: P607178
Date Analyzed: 16-MAY-17
Time Analyzed: 11:03:07

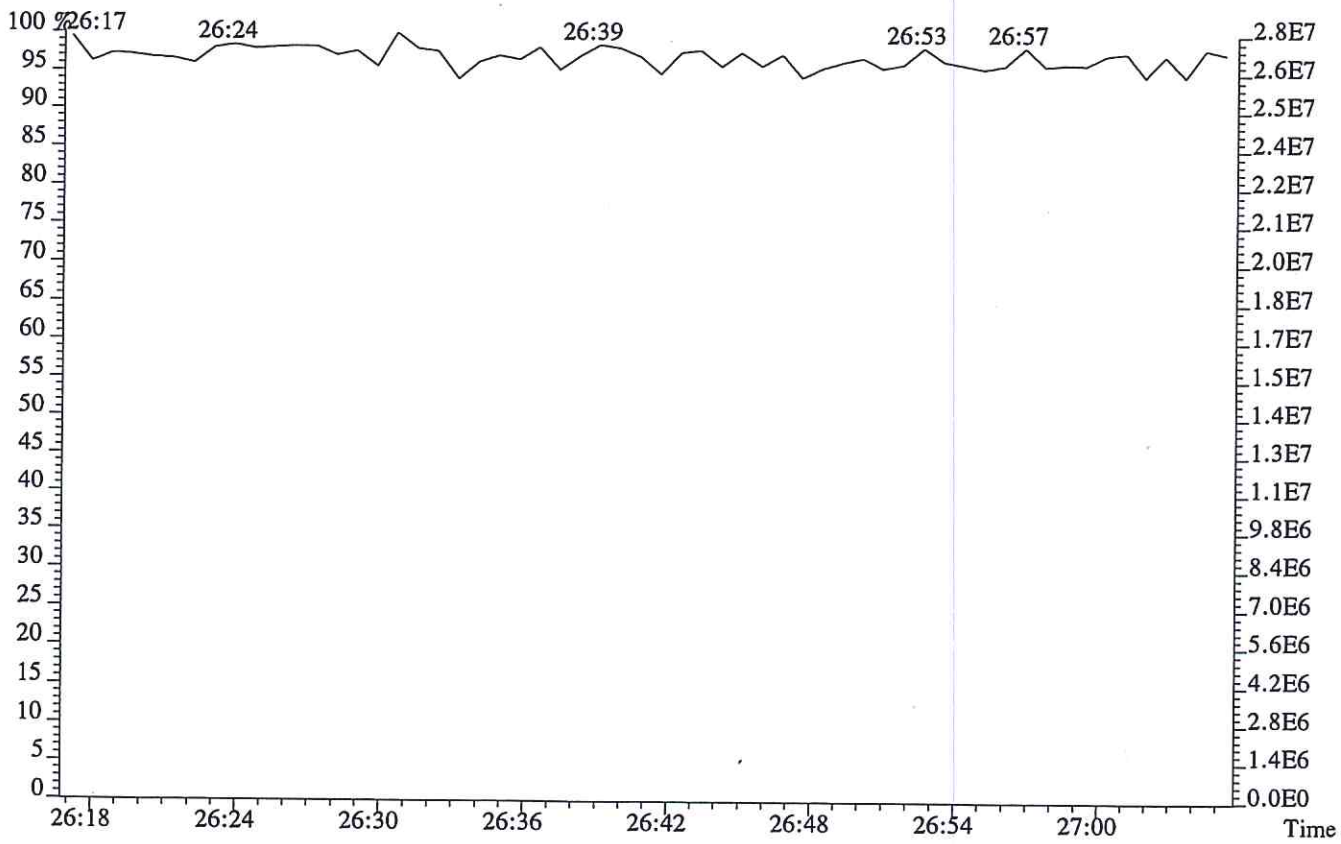
Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	21:22	28:03
TCDD	22:58	27:53
PeCDF	28:02	32:42
PeCDD	29:47	32:28
HxCDF	33:25	36:01
HxCDD	33:59	35:37
HpCDF	37:17	38:35
HpCDD	37:32	38:10

% Valley 2378-TCDD: 17 %

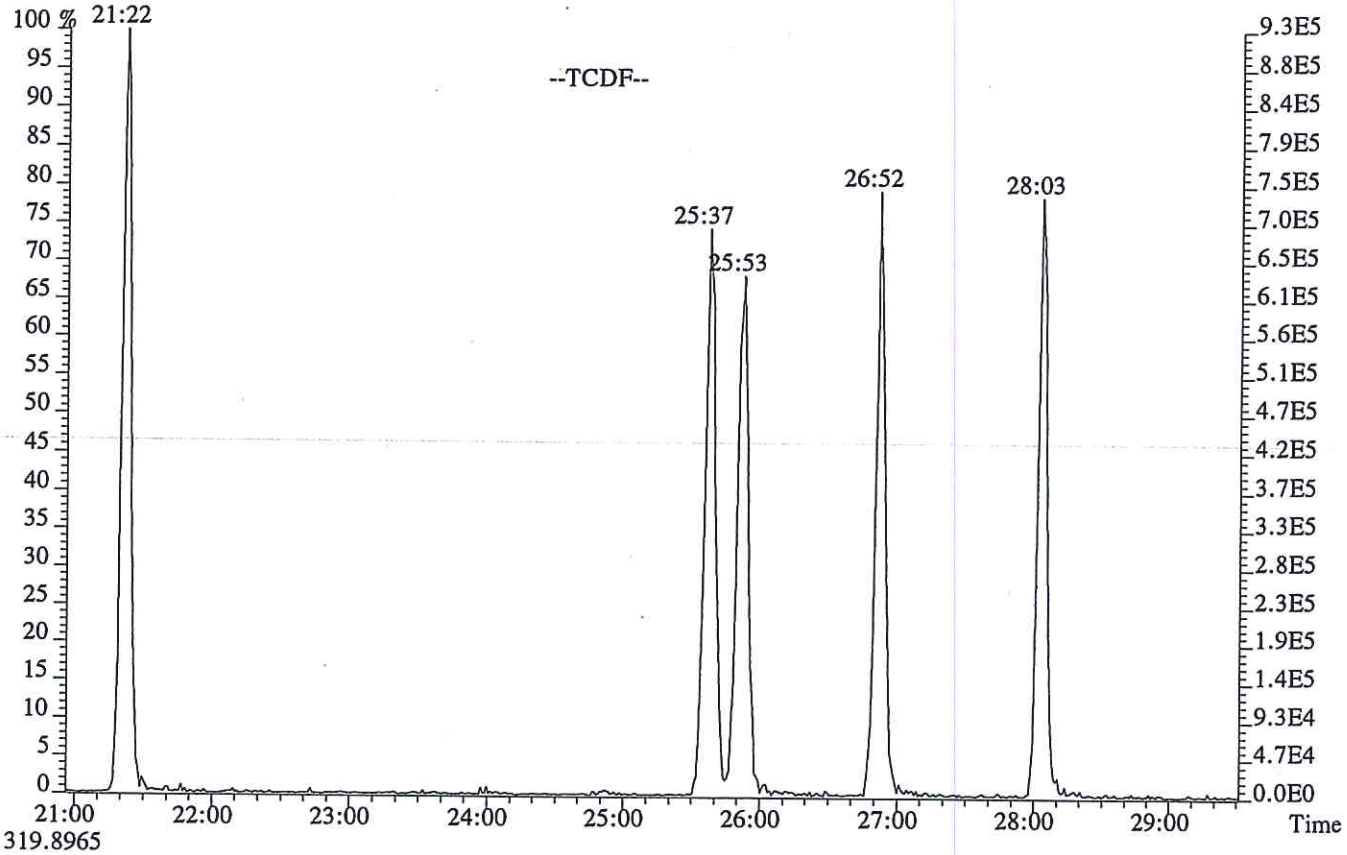
File:P607178 #1-609 Acq:16-MAY-2017 11:03:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOWDEFINE
319.8965

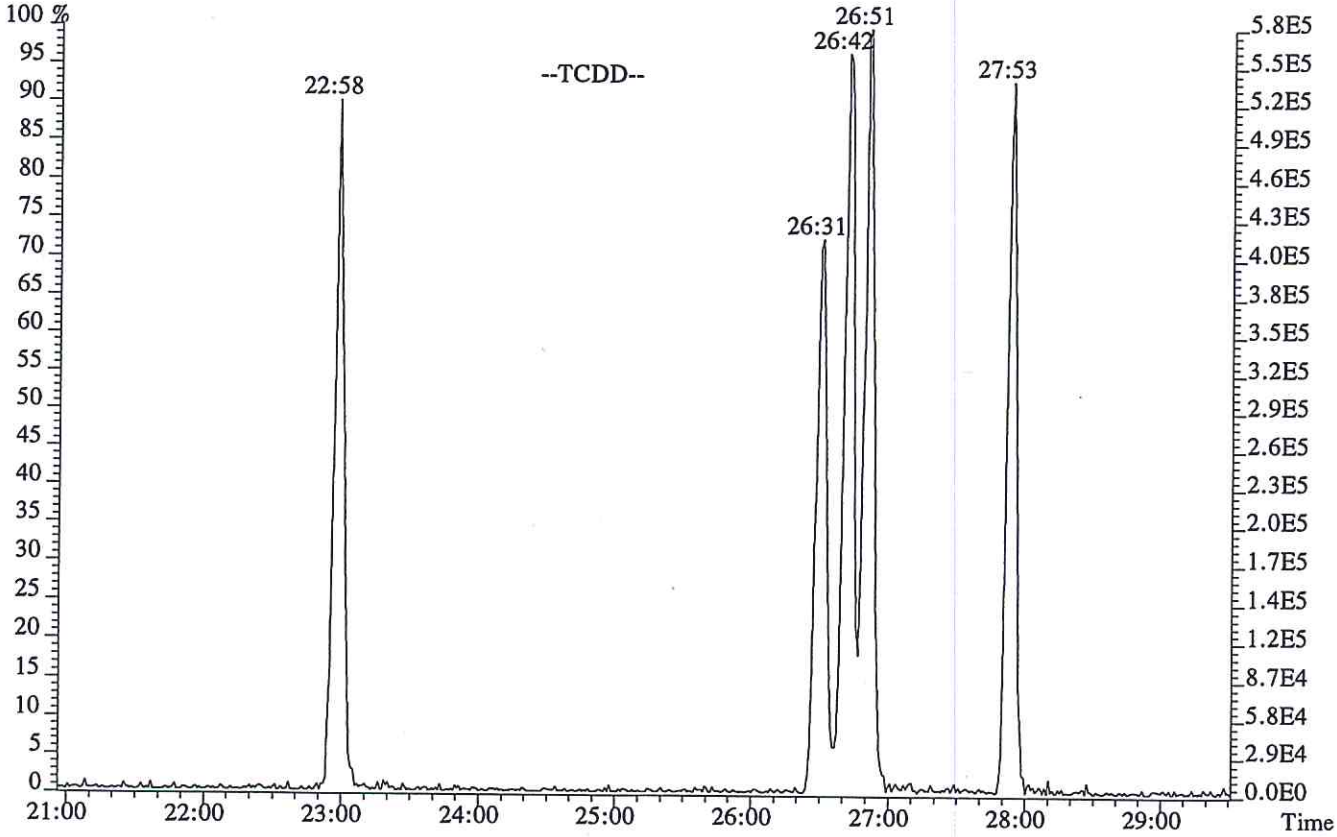


318.9792

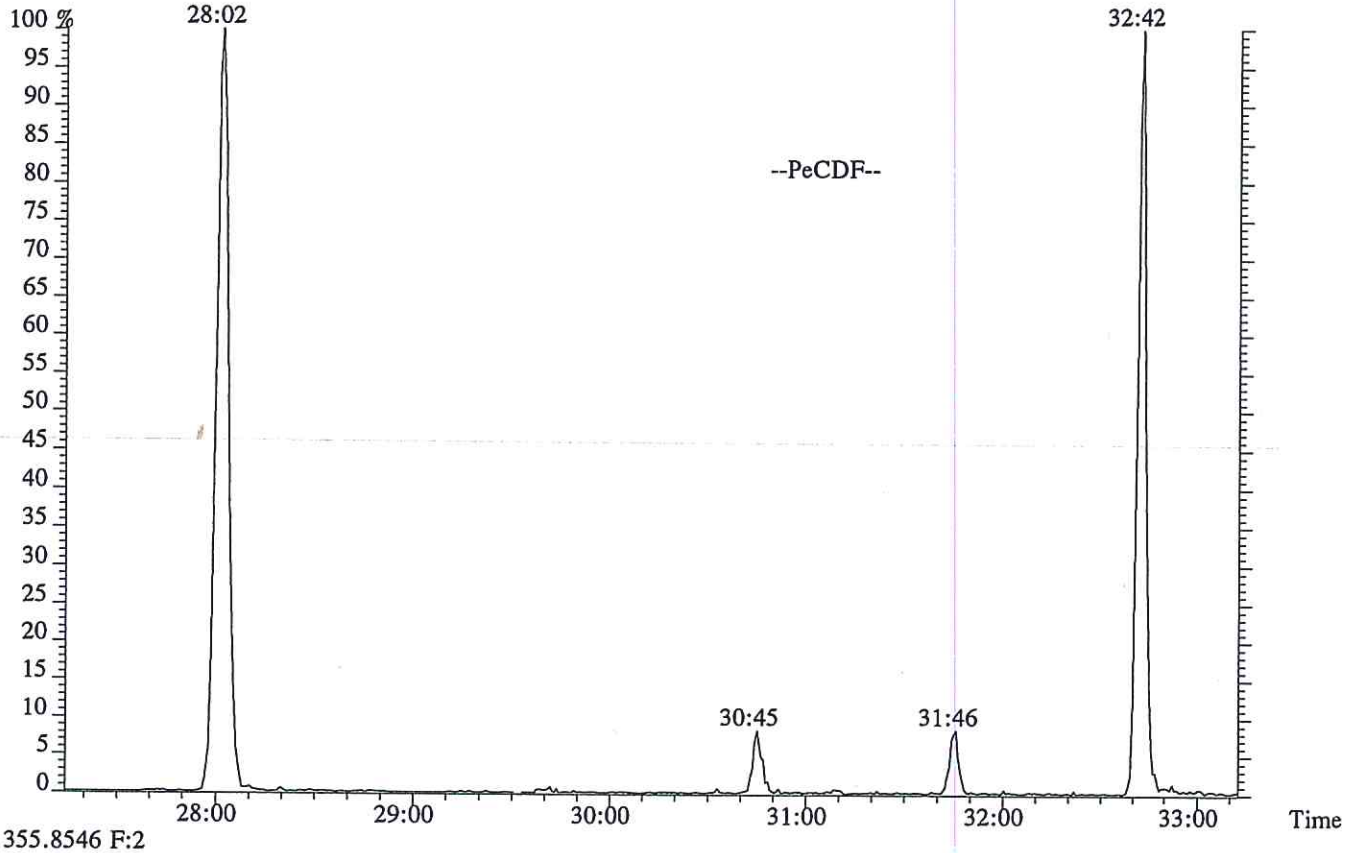


File:P607178 #1-609 Acq:16-MAY-2017 11:03:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOWDEFINE
303.9016

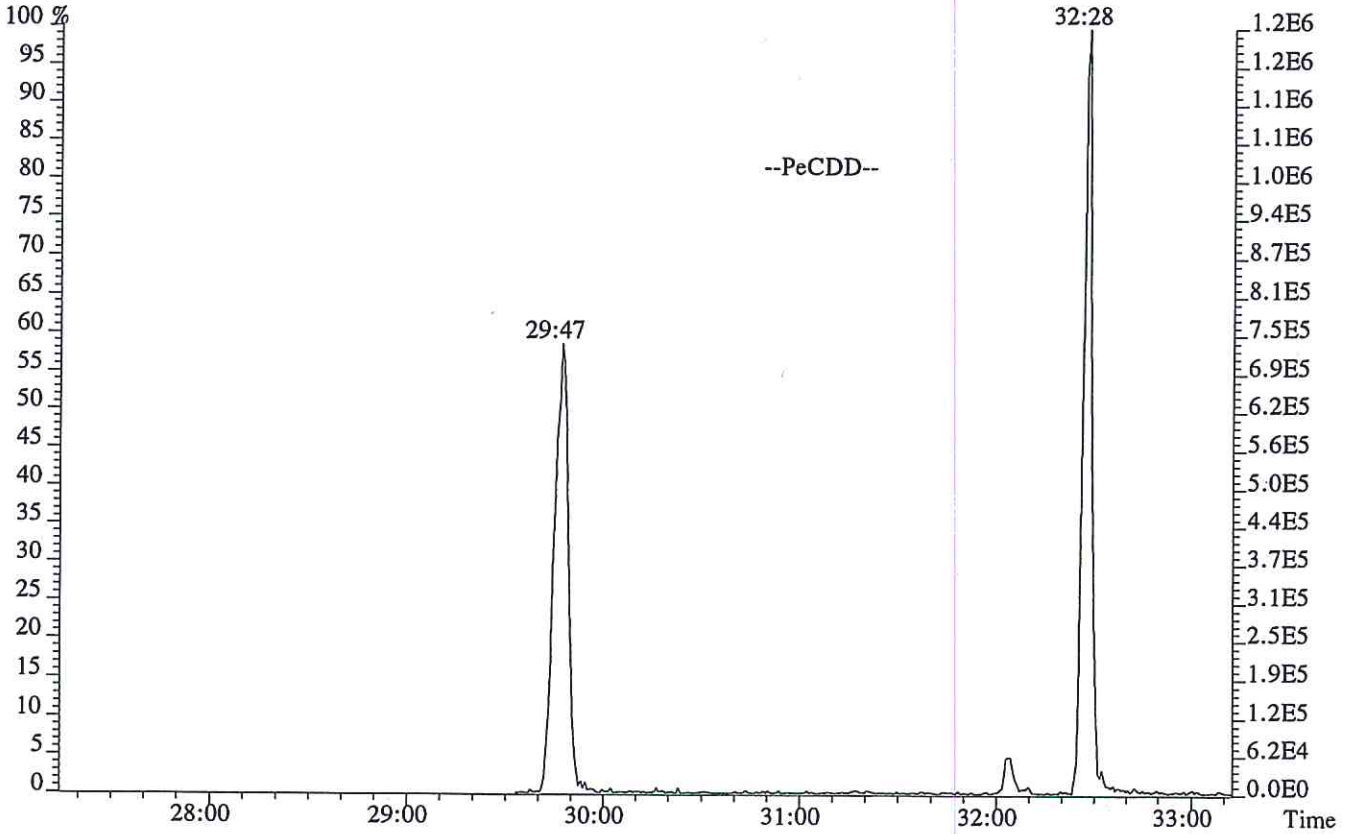




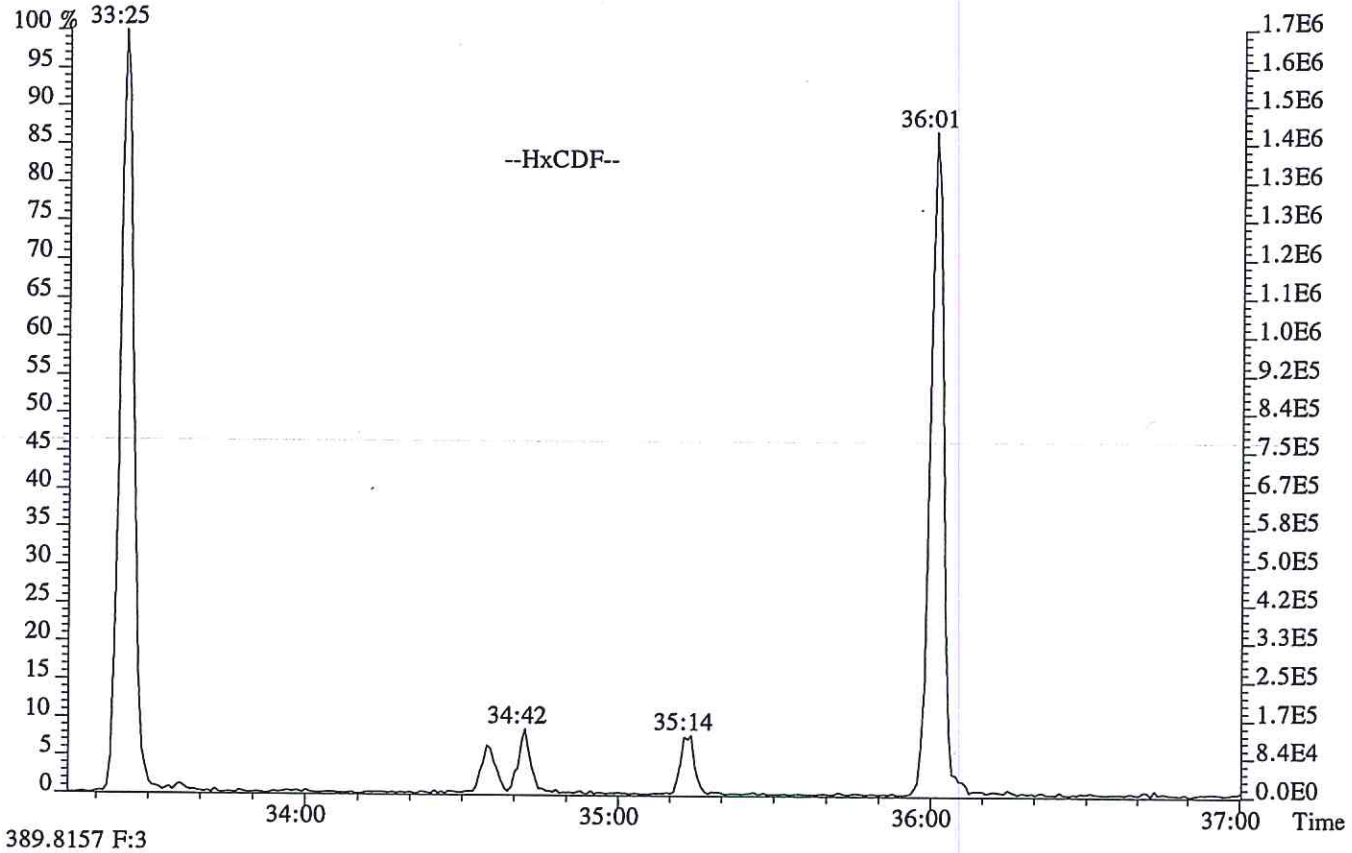
File:P607178 #1-609 Acq:16-MAY-2017 11:03:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOWDEFINE
339.8597,339.8597 F:2



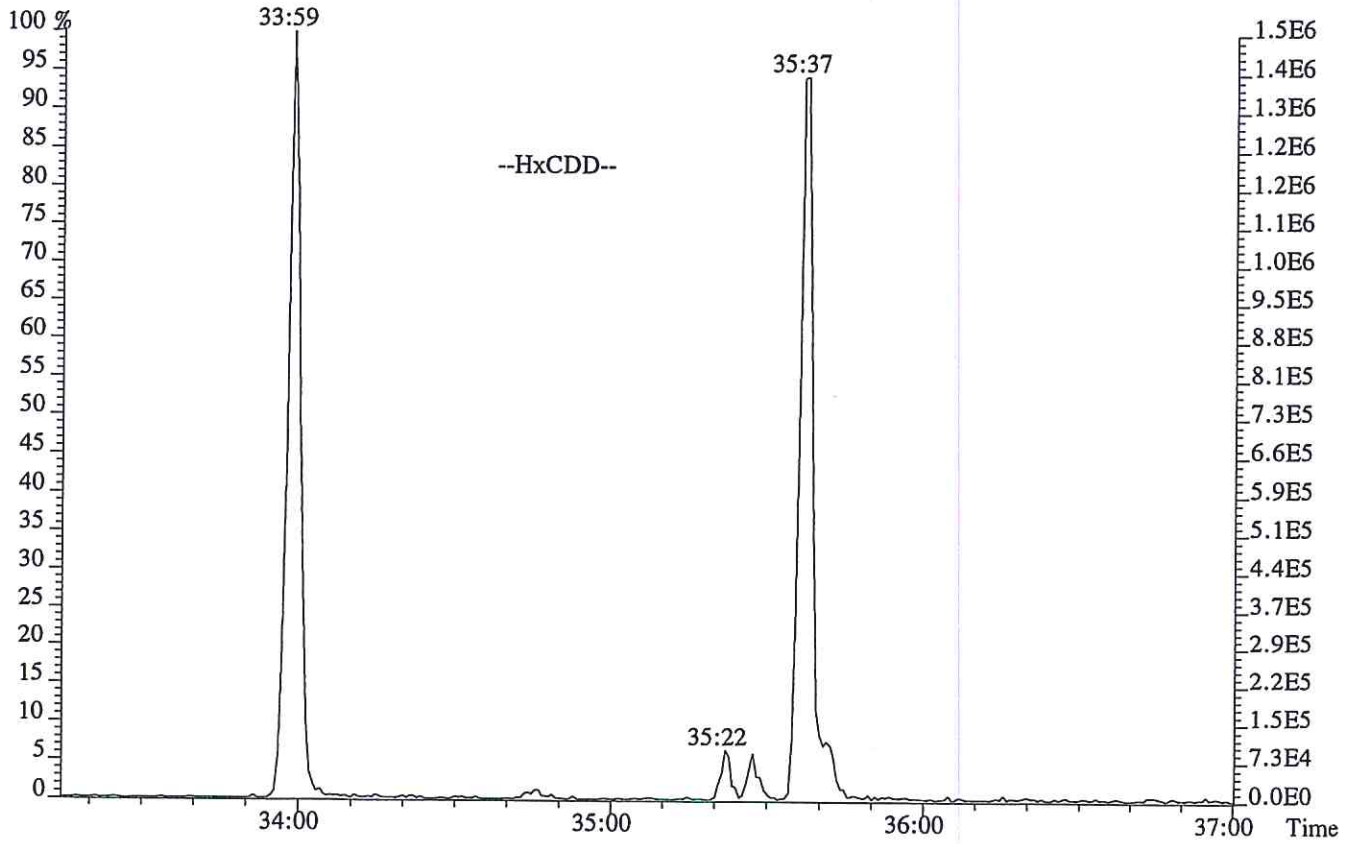
355.8546 F:2



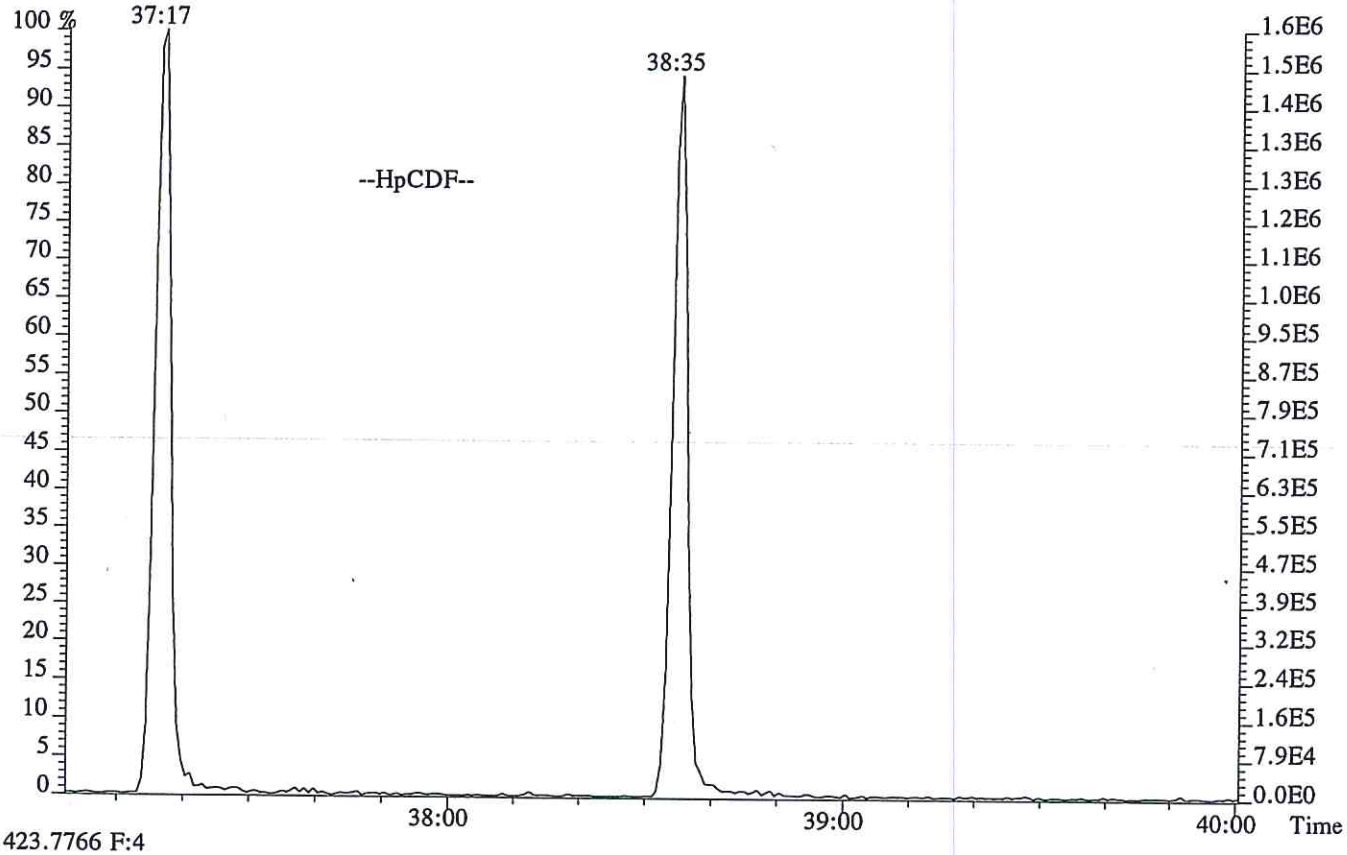
File:P607178 #1-339 Acq:16-MAY-2017 11:03:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOWDEFINE
373.8208 F:3



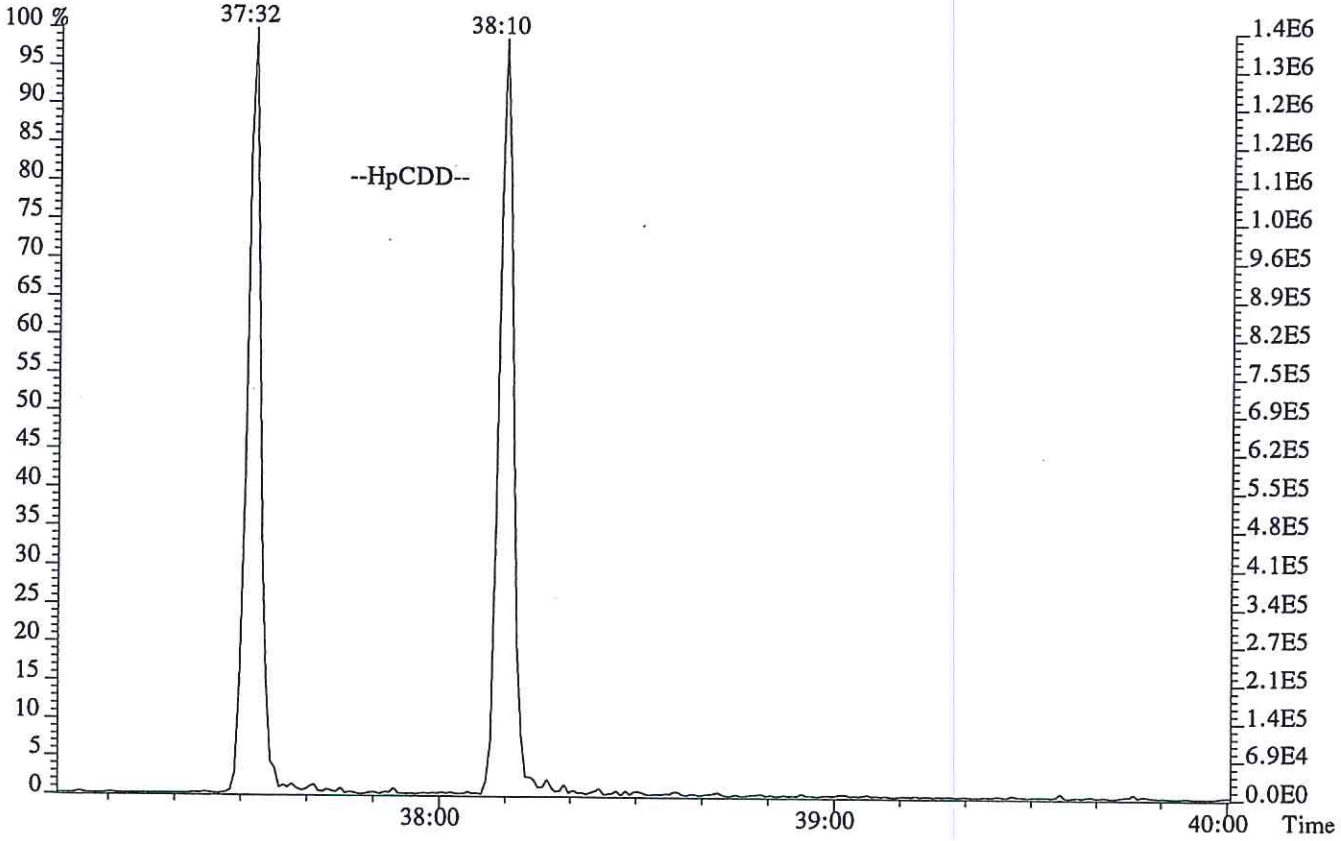
389.8157 F:3



File:P607178 #1-268 Acq:16-MAY-2017 11:03:07 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WINDOWDEFINE
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-08
Init. Calib. Date(s).: 05/16/17 Method 1613/8290
Init. Calib. Time.: 11:03

Target Analytes	RR/RRF CS0.5	CS1	CS2	CS3	CS4	CS5	MEAN RR/RRF	%RSD	QC LIMITS
2,3,7,8-TCDD	1.16	1.02	1.08	1.04	1.03	1.00	1.05	5.40	+/-20%
2,3,7,8-TCDF	1.03	1.14	1.02	0.99	0.98	0.97	1.02	5.95	+/-20%
1,2,3,7,8-PeCDF	1.06	1.12	1.06	1.06	1.06	0.97	1.06	4.56	+/-20%
1,2,3,7,8-PeCDD	0.95	1.03	0.97	0.94	0.95	0.94	0.96	3.49	+/-20%
2,3,4,7,8-PeCDF	1.01	1.05	1.01	0.99	1.00	1.04	1.01	2.15	+/-20%
1,2,3,4,7,8-HxCDF	1.26	1.31	1.28	1.24	1.26	1.19	1.26	3.19	+/-20%
1,2,3,6,7,8-HxCDF	1.19	1.24	1.21	1.17	1.17	1.17	1.19	2.29	+/-20%
1,2,3,4,7,8-HxCDD	1.04	1.15	1.06	1.03	1.06	1.11	1.07	4.29	+/-20%
1,2,3,6,7,8-HxCDD	1.04	1.10	1.05	1.06	1.06	0.91	1.04	6.17	+/-20%
1,2,3,7,8,9-HxCDD	1.22	1.24	1.15	1.11	1.11	1.06	1.15	6.10	+/-20%
2,3,4,6,7,8-HxCDF	1.21	1.23	1.17	1.15	1.17	1.12	1.18	3.29	+/-20%
1,2,3,7,8,9-HxCDF	1.27	1.30	1.19	1.18	1.19	1.13	1.21	5.22	+/-20%
1,2,3,4,6,7,8-HpCDF	1.41	1.44	1.42	1.38	1.37	1.32	1.39	3.26	+/-20%
1,2,3,4,6,7,8-HpCDD	1.08	1.07	1.05	1.05	1.04	1.01	1.05	2.42	+/-20%
1,2,3,4,7,8,9-HpCDF	1.31	1.44	1.34	1.30	1.31	1.36	1.34	3.87	+/-20%
OCDD	1.16	1.22	1.14	1.11	1.11	0.98	1.12	7.13	+/-20%
OCDF	1.35	1.42	1.35	1.34	1.36	1.19	1.34	5.74	+/-20%
Labeled Compounds									
13C-2,3,7,8-TCDD	0.99	0.96	0.99	0.97	0.99	1.02	0.99	2.07	+/-35%
13C-1,2,3,7,8-PeCDD	1.04	1.25	1.07	1.05	1.07	1.07	1.09	7.35	+/-35%
13C-1,2,3,4,7,8-HxCDD	0.93	0.93	0.93	0.94	0.94	0.93	0.93	0.60	+/-35%
13C-1,2,3,6,7,8-HxCDD	0.89	0.91	0.91	0.91	0.91	1.02	0.93	5.21	+/-35%
13C-1,2,3,4,6,7,8-HpCDD	0.87	0.97	0.85	0.86	0.87	0.89	0.88	4.81	+/-35%
13C-OCDD	0.66	0.79	0.62	0.67	0.66	0.75	0.69	9.28	+/-35%
13C-2,3,7,8-TCDF	1.37	1.31	1.37	1.36	1.40	1.38	1.36	2.22	+/-35%
13C-1,2,3,7,8-PeCDF	1.45	1.67	1.49	1.45	1.48	1.49	1.51	5.39	+/-35%
13C-2,3,4,7,8-PeCDF	1.45	1.73	1.49	1.46	1.49	1.44	1.51	7.21	+/-35%
13C-1,2,3,4,7,8-HxCDF	1.08	1.07	1.08	1.10	1.11	1.16	1.10	2.84	+/-35%
13C-1,2,3,6,7,8-HxCDF	1.33	1.28	1.31	1.32	1.36	1.31	1.32	1.88	+/-35%
13C-2,3,4,6,7,8-HxCDF	1.20	1.18	1.21	1.20	1.21	1.21	1.20	0.87	+/-35%
13C-1,2,3,7,8,9-HxCDF	1.06	1.06	1.07	1.06	1.07	1.08	1.07	0.72	+/-35%
13C-1,2,3,4,6,7,8-HpCDF	0.92	1.00	0.90	0.91	0.93	0.94	0.93	3.97	+/-35%
13C-1,2,3,4,7,8,9-HpCDF	0.83	0.94	0.80	0.82	0.83	0.79	0.84	6.38	+/-35%
37Cl-2,3,7,8-TCDD	1.07	1.13	1.07	1.04	1.06	1.06	1.07	2.63	+/-35%

1. 123789-HxCDD Relative Response (RR) is calculated based on the labeled analog of the other two HxCDDs.
2. OCDF RR is calculated based on the labeled analog of OCDD

USEPA - CLP
6DFB6
CDD/CDF INITIAL CALIBRATION ION ABUNDANCE RATIO SUMMARY
HIGH RESOLUTION

Lab Name: ALS Environmental Contract No.:
Lab Code: ALSTX Case No.: TO No.: SDG No.:
GC Column: DB-5MSUI ID: 0.25(mm) Instrument ID: E-HRMS-08
Init. Calib. Date(s).: 05/16/17 Method 1613/8290
Init. Calib. Time.: 11:03

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	0.86	0.76	0.78	0.78	0.77	0.78		0.65-0.89
2,3,7,8-TCDD	320/322	0.74	0.72	0.85	0.77	0.78	0.78		0.65-0.89
1,2,3,7,8-PeCDF	340/342	1.54	1.59	1.55	1.57	1.56	1.56		1.32-1.78
2,3,4,7,8-PeCDF	340/342	1.50	1.53	1.57	1.54	1.55	1.55		1.32-1.78
1,2,3,7,8-PeCDD	356/358	1.54	1.48	1.57	1.55	1.56	1.56		1.32-1.78
1,2,3,4,7,8-HxCDF	374/376	1.16	1.27	1.25	1.25	1.24	1.24		1.05-1.43
1,2,3,6,7,8-HxCDF	374/376	1.23	1.24	1.24	1.25	1.24	1.25		1.05-1.43
2,3,4,6,7,8-HxCDF	374/376	1.27	1.26	1.21	1.24	1.24	1.24		1.05-1.43
1,2,3,7,8,9-HxCDF	374/376	1.27	1.24	1.26	1.25	1.25	1.25		1.05-1.43
1,2,3,4,7,8-HxCDD	390/392	1.20	1.22	1.29	1.24	1.25	1.25		1.05-1.43
1,2,3,6,7,8-HxCDD	390/392	1.22	1.37	1.27	1.24	1.24	1.25		1.05-1.43
1,2,3,7,8,9-HxCDD	390/392	1.30	1.27	1.23	1.20	1.25	1.25		1.05-1.43
1,2,3,4,6,7,8-HpCDF	408/410	1.05	1.04	1.04	1.02	1.04	1.04		0.88-1.20
1,2,3,4,7,8,9-HpCDF	408/410	1.09	1.01	1.03	1.02	1.03	1.03		0.88-1.20
1,2,3,4,6,7,8-HpCDD	424/426	1.07	1.00	1.04	1.05	1.04	1.04		0.88-1.20
OCDF	442/444	0.92	0.93	0.88	0.90	0.90	0.91		0.76-1.02
OCDD	458/460	0.86	0.87	0.89	0.89	0.88	0.88		0.76-1.02
13C-2,3,7,8-TCDD	332/334	0.78	0.79	0.80	0.78	0.79	0.78		0.65-0.89
13C-1,2,3,7,8-PeCDD	368/370	1.57	1.57	1.57	1.57	1.58	1.56		1.32-1.78
13C-1,2,3,4,7,8-HxCDD	402/404	1.26	1.32	1.27	1.26	1.26	1.25		1.05-1.43
13C-1,2,3,6,7,8-HxCDD	402/404	1.27	1.20	1.27	1.26	1.25	1.25		1.05-1.43
13C-1,2,3,4,6,7,8-HpCDD	436/438	1.05	1.07	1.06	1.06	1.05	1.05		0.88-1.20
13C-OCDD	470/472	0.91	0.89	0.90	0.90	0.90	0.91		0.76-1.02
13C-2,3,7,8-TCDF	316/318	0.79	0.79	0.79	0.79	0.79	0.79		0.65-0.89
13C-1,2,3,7,8-PeCDF	352/354	1.58	1.55	1.59	1.58	1.59	1.58		1.32-1.78
13C-2,3,4,7,8-PeCDF	352/354	1.57	1.58	1.59	1.58	1.57	1.57		1.32-1.78
13C-1,2,3,4,7,8-HxCDF	384/386	0.53	0.52	0.52	0.52	0.53	0.52		0.43-0.59
13C-1,2,3,6,7,8-HxCDF	384/386	0.53	0.53	0.53	0.53	0.53	0.52		0.43-0.59
13C-2,3,4,6,7,8-HxCDF	384/386	0.53	0.53	0.53	0.52	0.53	0.52		0.43-0.59
13C-1,2,3,7,8,9-HxCDF	384/386	0.53	0.53	0.53	0.52	0.53	0.53		0.43-0.59
13C-1,2,3,4,6,7,8-HpCDF	418/420	0.45	0.45	0.46	0.45	0.45	0.45		0.37-0.51
13C-1,2,3,4,7,8,9-HpCDF	418/420	0.45	0.45	0.45	0.45	0.46	0.45		0.37-0.51
13C-1,2,3,4-TCDD	332/334	0.80	0.79	0.79	0.80	0.81	0.79		0.65-0.89
13C-1,2,3,7,8,9-HxCDD	402/404	1.25	1.22	1.23	1.24	1.26	1.27		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 P607179 Samp: 1 Inj: 1 Acquired: 16-MAY-17 12:44:15
Processed: 17-MAY-17 07:52:56 Sample ID: CS0.5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:51	4.015e+02	4.653e+02	0.86	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:45	2.886e+03	1.876e+03	1.54	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:44	2.704e+03	1.798e+03	1.50	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:35	2.251e+03	1.948e+03	1.16	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:41	2.682e+03	2.184e+03	1.23	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:13	2.488e+03	1.954e+03	1.27	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:59	2.310e+03	1.814e+03	1.27	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:16	2.038e+03	1.948e+03	1.05	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:34	1.743e+03	1.596e+03	1.09	yes	no	1.341
10	Unk	OCDF	40:49	2.607e+03	2.845e+03	0.92	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:49	3.011e+02	4.047e+02	0.74	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:04	1.835e+03	1.190e+03	1.54	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:22	1.613e+03	1.346e+03	1.20	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:27	1.559e+03	1.275e+03	1.22	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:41	1.928e+03	1.488e+03	1.30	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:10	1.482e+03	1.390e+03	1.07	yes	no	1.048
17	Unk	OCDD	40:39	2.163e+03	2.511e+03	0.86	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:50	1.490e+05	1.891e+05	0.79	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:44	2.190e+05	1.389e+05	1.58	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:44	2.176e+05	1.383e+05	1.57	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:34	9.173e+04	1.739e+05	0.53	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:41	1.137e+05	2.127e+05	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:12	1.011e+05	1.919e+05	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:58	8.982e+04	1.699e+05	0.53	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:16	7.038e+04	1.551e+05	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:34	6.384e+04	1.407e+05	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:49	1.068e+05	1.373e+05	0.78	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	32:02	1.565e+05	9.952e+04	1.57	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:21	1.269e+05	1.006e+05	1.26	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:27	1.223e+05	9.638e+04	1.27	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:09	1.093e+05	1.038e+05	1.05	yes	no	0.884
32	IS	13C-OCDD	40:38	1.533e+05	1.693e+05	0.91	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:07	1.091e+05	1.371e+05	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:41	1.360e+05	1.090e+05	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:50	6.612e+02				no	1.072

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Signal/Noise Height Ratio Summary

CLIENT ID.
76554

Run #1 Filename P607179 Samp: 1 Inj: 1 Acquired: 16-MAY-17 12:44:15
Processed: 17-MAY-17 07:52:56 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	5.70e+04	1.96e+02	2.9e+02	7.05e+04	2.00e+03	3.5e+01
2	1,2,3,7,8-PeCDF	5.01e+05	1.24e+03	4.0e+02	3.19e+05	5.72e+02	5.6e+02
3	2,3,4,7,8-PeCDF	4.93e+05	1.24e+03	4.0e+02	3.22e+05	5.72e+02	5.6e+02
4	1,2,3,4,7,8-HxCDF	4.63e+05	4.92e+02	9.4e+02	4.05e+05	1.76e+02	2.3e+03
5	1,2,3,6,7,8-HxCDF	5.50e+05	4.92e+02	1.1e+03	4.50e+05	1.76e+02	2.6e+03
6	2,3,4,6,7,8-HxCDF	5.20e+05	4.92e+02	1.1e+03	4.12e+05	1.76e+02	2.3e+03
7	1,2,3,7,8,9-HxCDF	5.13e+05	4.92e+02	1.0e+03	3.76e+05	1.76e+02	2.1e+03
8	1,2,3,4,6,7,8-HpCDF	4.47e+05	1.28e+03	3.5e+02	4.50e+05	2.80e+02	1.6e+03
9	1,2,3,4,7,8,9-HpCDF	3.79e+05	1.28e+03	2.9e+02	3.42e+05	2.80e+02	1.2e+03
10	OCDF	5.14e+05	1.44e+03	3.6e+02	5.73e+05	1.06e+03	5.4e+02
11	2,3,7,8-TCDD	5.13e+04	6.12e+02	8.4e+01	6.57e+04	2.84e+02	2.3e+02
12	1,2,3,7,8-PeCDD	3.38e+05	1.70e+03	2.0e+02	2.28e+05	2.24e+02	1.0e+03
13	1,2,3,4,7,8-HxCDD	3.38e+05	1.68e+02	2.0e+03	2.89e+05	2.20e+02	1.3e+03
14	1,2,3,6,7,8-HxCDD	3.25e+05	1.68e+02	1.9e+03	2.69e+05	2.20e+02	1.2e+03
15	1,2,3,7,8,9-HxCDD	4.12e+05	1.68e+02	2.5e+03	3.20e+05	2.20e+02	1.5e+03
16	1,2,3,4,6,7,8-HpCDD	3.49e+05	1.24e+03	2.8e+02	3.14e+05	1.32e+02	2.4e+03
17	OCDD	4.42e+05	1.19e+03	3.7e+02	5.07e+05	1.02e+03	5.0e+02
18	13C-2,3,7,8-TCDF	2.17e+07	1.27e+04	1.7e+03	2.78e+07	7.08e+03	3.9e+03
19	13C-1,2,3,7,8-PeCDF	3.81e+07	1.05e+03	3.6e+04	2.41e+07	1.31e+03	1.8e+04
20	13C-2,3,4,7,8-PeCDF	4.04e+07	1.05e+03	3.8e+04	2.56e+07	1.31e+03	2.0e+04
21	13C-1,2,3,4,7,8-HxCDF	1.93e+07	2.28e+02	8.5e+04	3.66e+07	1.43e+03	2.6e+04
22	13C-1,2,3,6,7,8-HxCDF	2.38e+07	2.28e+02	1.0e+05	4.49e+07	1.43e+03	3.1e+04
23	13C-2,3,4,6,7,8-HxCDF	2.11e+07	2.28e+02	9.3e+04	4.05e+07	1.43e+03	2.8e+04
24	13C-1,2,3,7,8,9-HxCDF	1.94e+07	2.28e+02	8.5e+04	3.64e+07	1.43e+03	2.5e+04
25	13C-1,2,3,4,6,7,8-HpCDF	1.58e+07	9.30e+03	1.7e+03	3.49e+07	1.79e+04	2.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.38e+07	9.30e+03	1.5e+03	3.03e+07	1.79e+04	1.7e+03
27	13C-2,3,7,8-TCDD	1.70e+07	5.26e+03	3.2e+03	2.18e+07	3.70e+03	5.9e+03
28	13C-1,2,3,7,8-PeCDD	2.97e+07	3.16e+02	9.4e+04	1.90e+07	5.84e+02	3.3e+04
29	13C-1,2,3,4,7,8-HxCDD	2.70e+07	2.20e+03	1.2e+04	2.12e+07	1.56e+02	1.4e+05
30	13C-1,2,3,6,7,8-HxCDD	2.56e+07	2.20e+03	1.2e+04	2.01e+07	1.56e+02	1.3e+05
31	13C-1,2,3,4,6,7,8-HpCDD	2.48e+07	8.60e+02	2.9e+04	2.34e+07	8.80e+01	2.7e+05
32	13C-OCDD	3.05e+07	1.16e+04	2.6e+03	3.36e+07	1.42e+04	2.4e+03
33	13C-1,2,3,4-TCDD	1.64e+07	5.26e+03	3.1e+03	2.07e+07	3.70e+03	5.6e+03
34	13C-1,2,3,7,8,9-HxCDD	2.96e+07	2.20e+03	1.3e+04	2.37e+07	1.56e+02	1.5e+05
35	37Cl-2,3,7,8-TCDD	1.15e+05	6.00e+02	1.9e+02			

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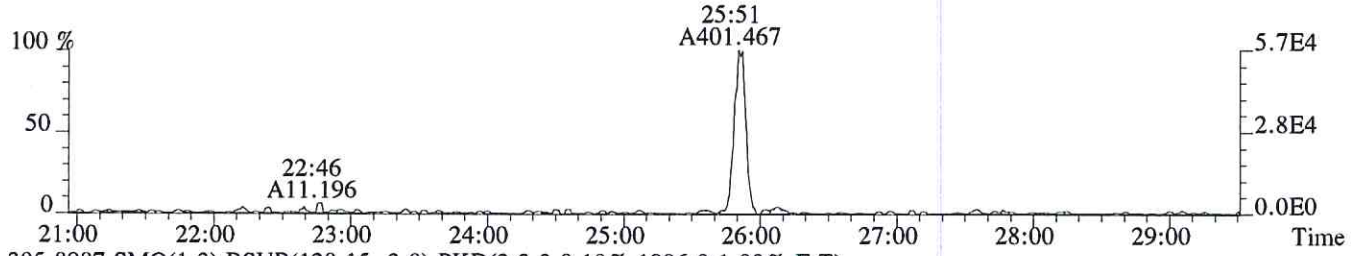
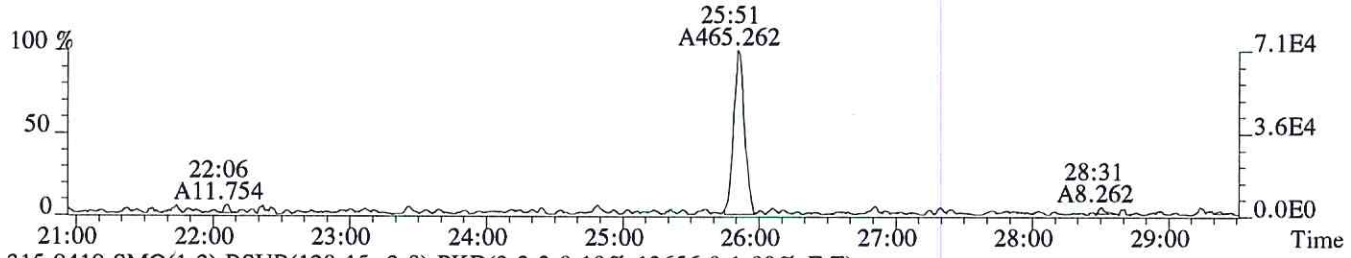
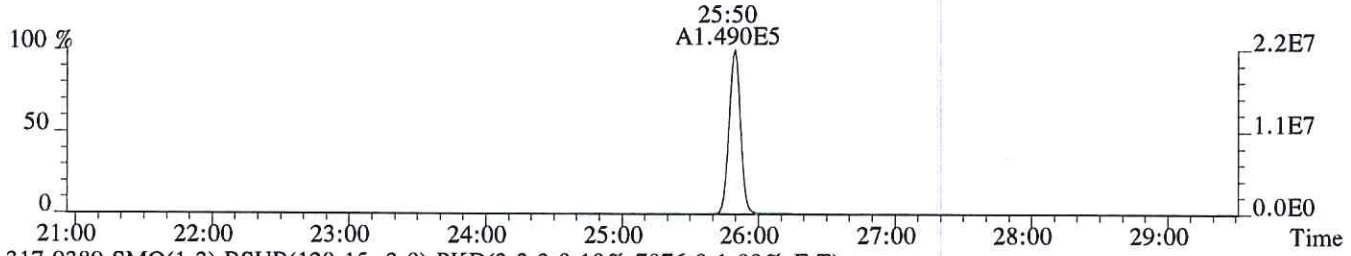
File:P607179 #1-609 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,196.0,1.00%,F,T)



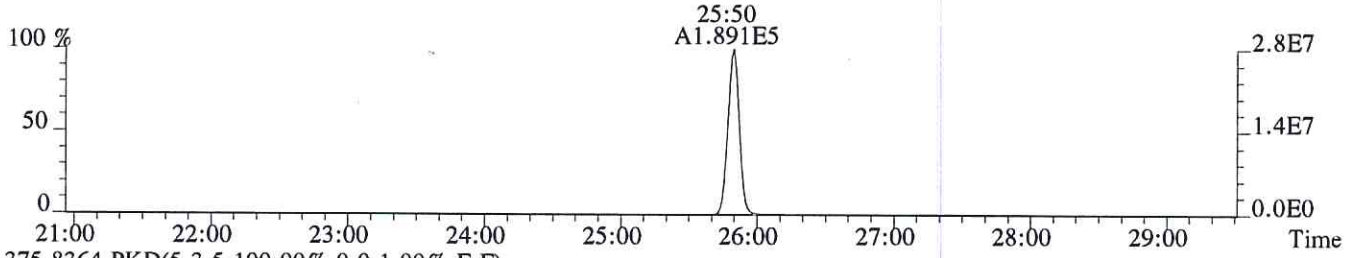
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1996.0,1.00%,F,T)



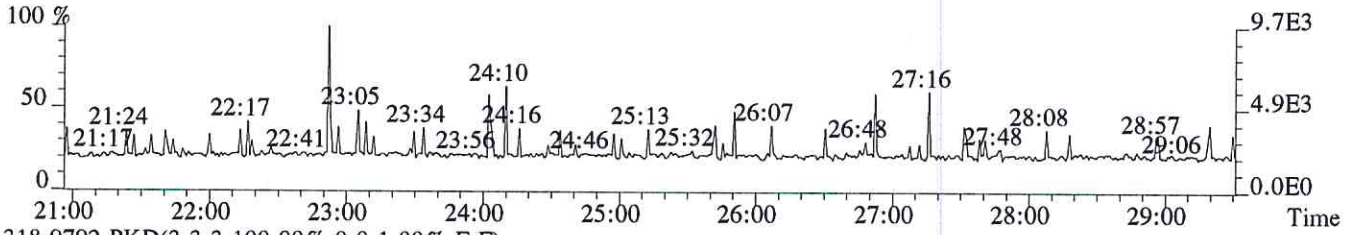
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12656.0,1.00%,F,T)



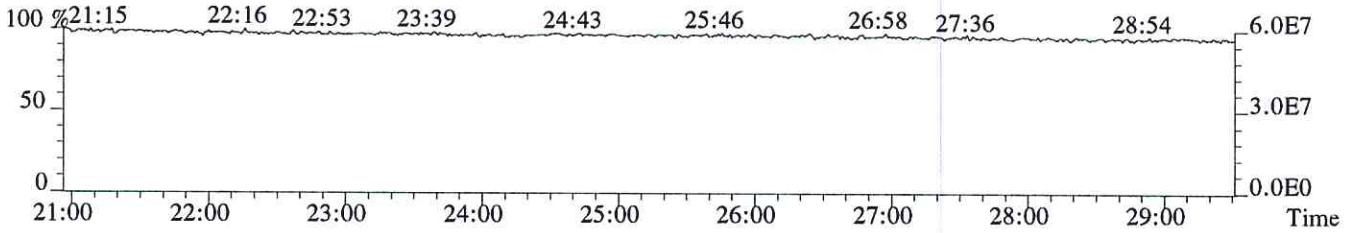
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7076.0,1.00%,F,T)



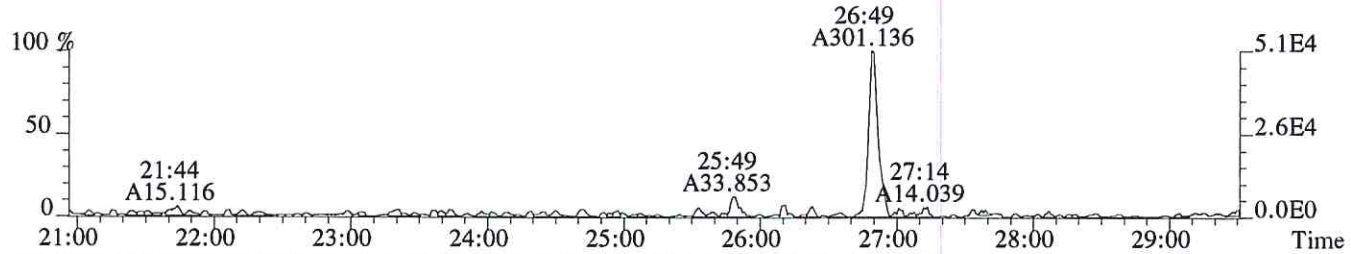
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



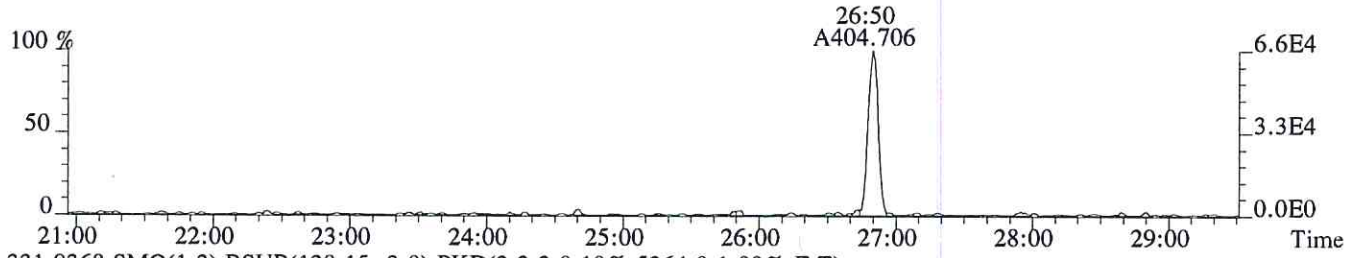
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



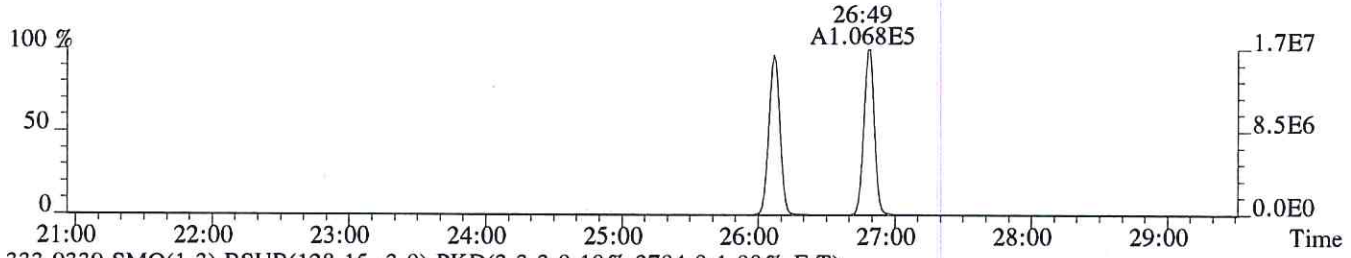
File:P607179 #1-609 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,612.0,1.00%,F,T)



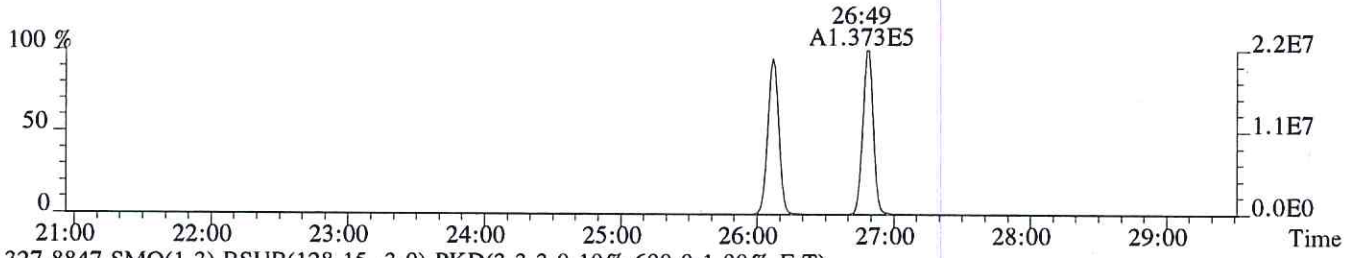
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,284.0,1.00%,F,T)



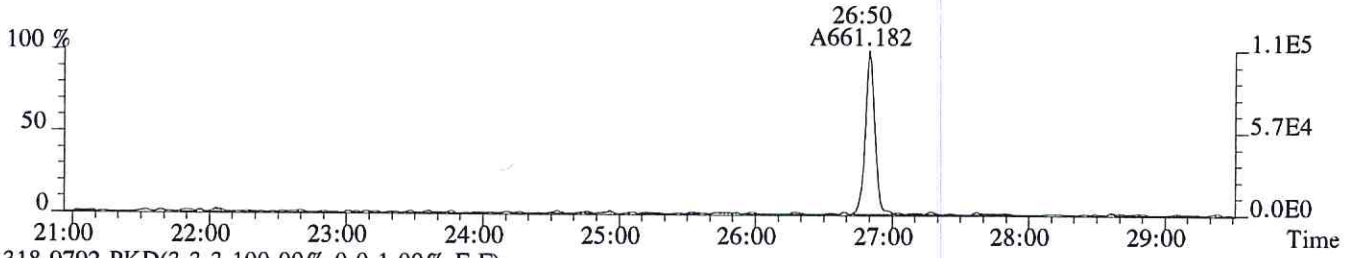
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5264.0,1.00%,F,T)



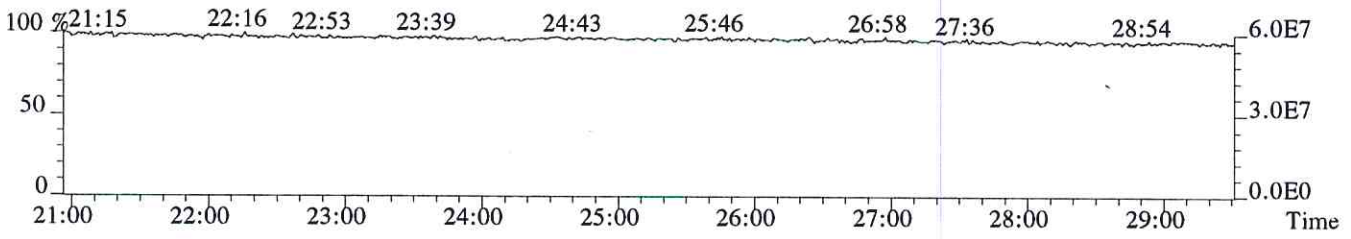
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3704.0,1.00%,F,T)



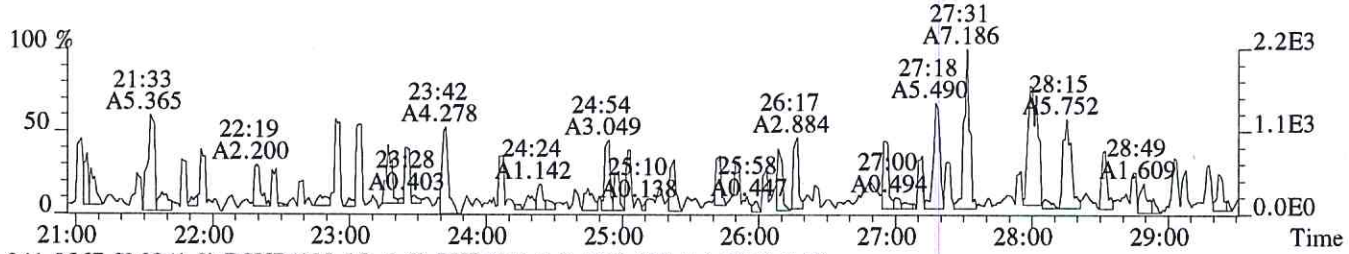
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,600.0,1.00%,F,T)



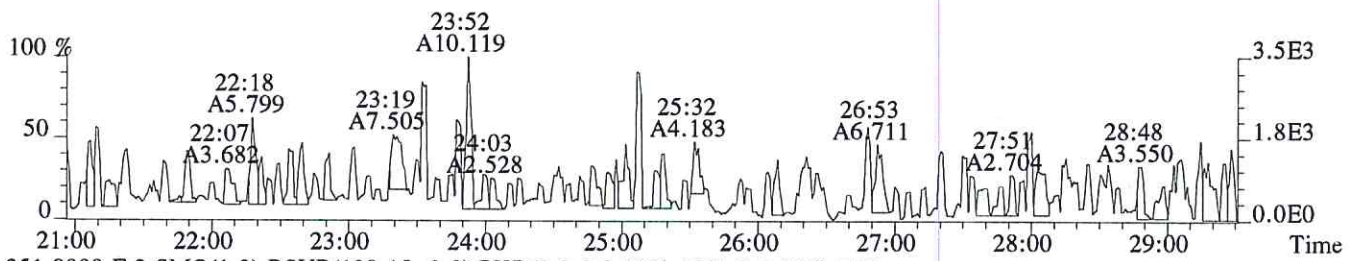
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



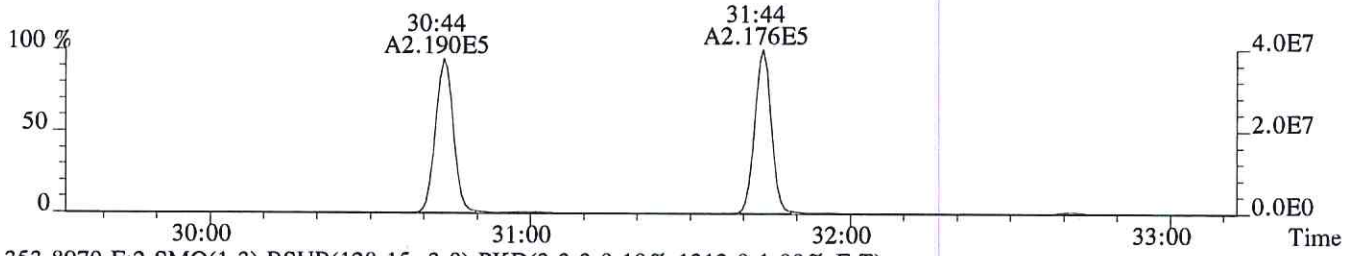
File:P607179 #1-609 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,220.0,1.00%,F,T)



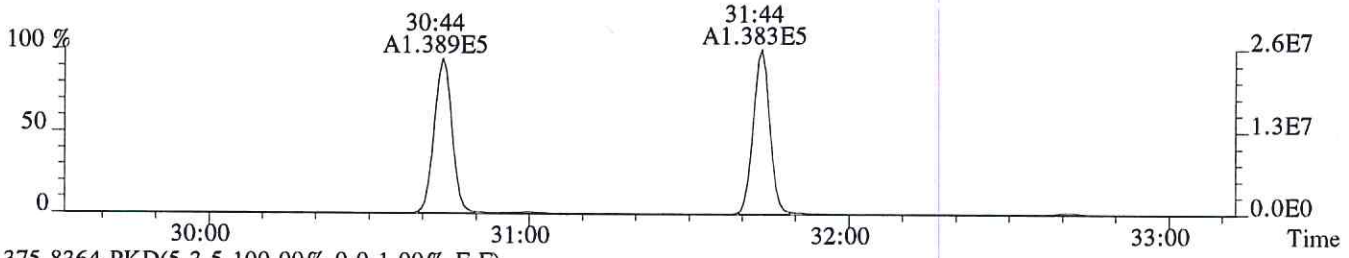
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,708.0,1.00%,F,T)



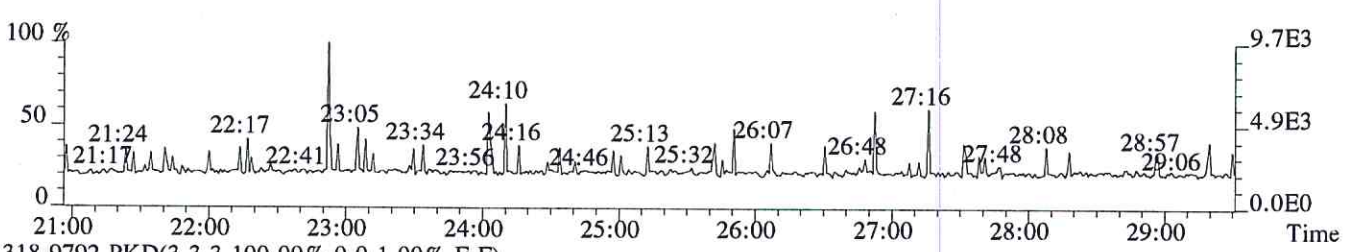
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1052.0,1.00%,F,T)



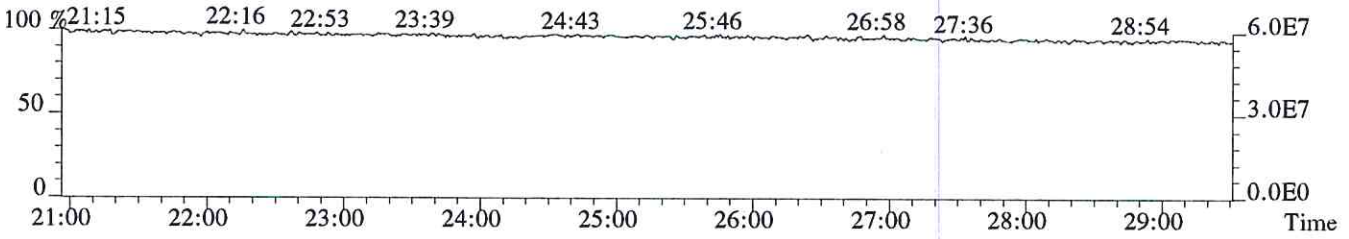
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1312.0,1.00%,F,T)



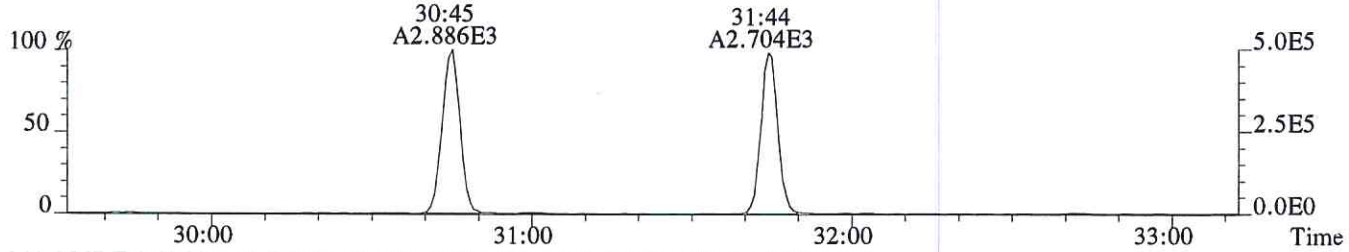
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



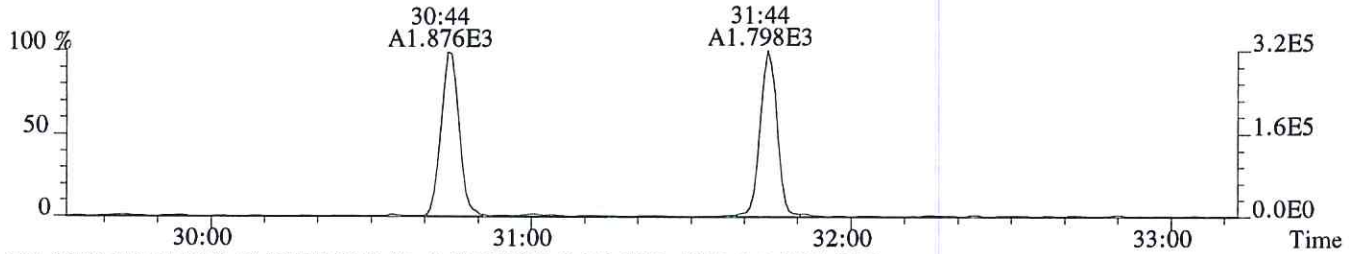
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



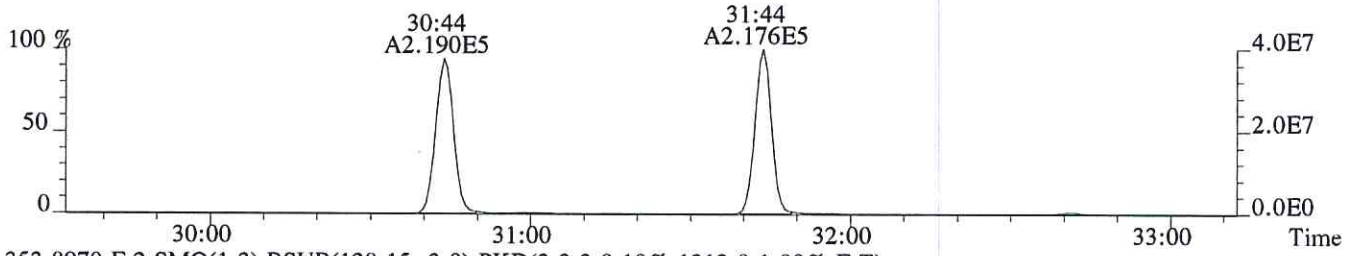
File:P607179 #1-330 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1244.0,1.00%,F,T)



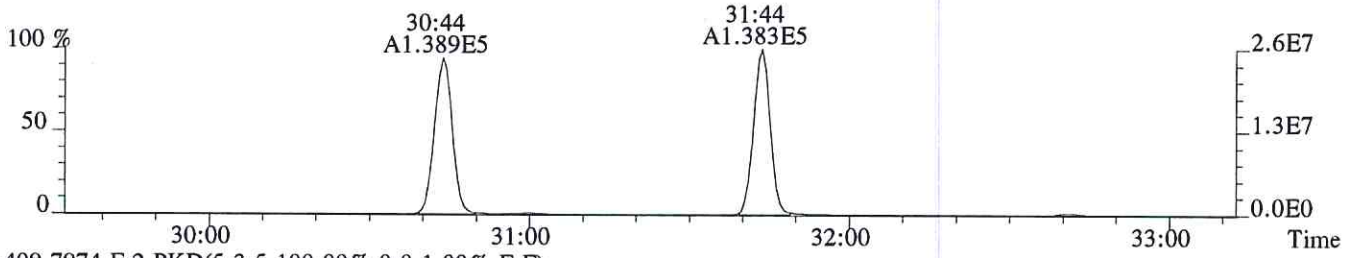
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,572.0,1.00%,F,T)



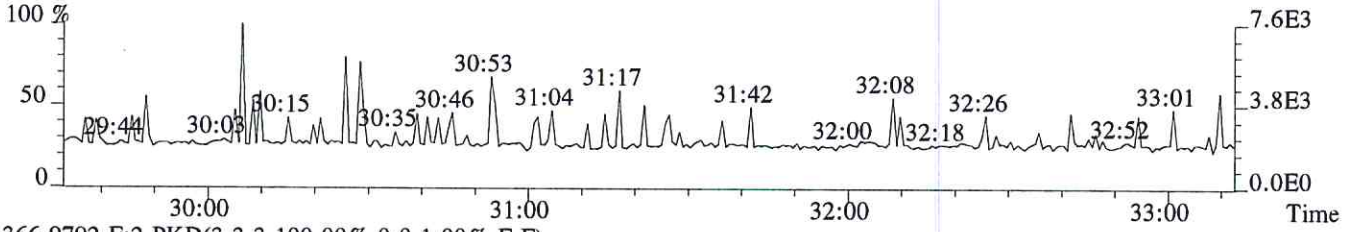
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1052.0,1.00%,F,T)



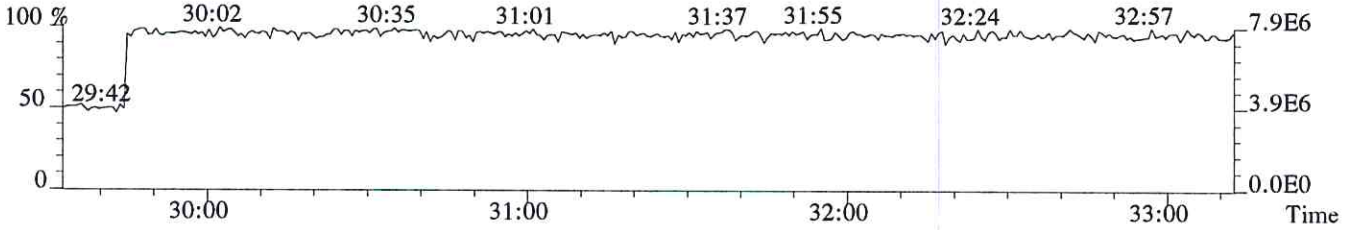
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1312.0,1.00%,F,T)



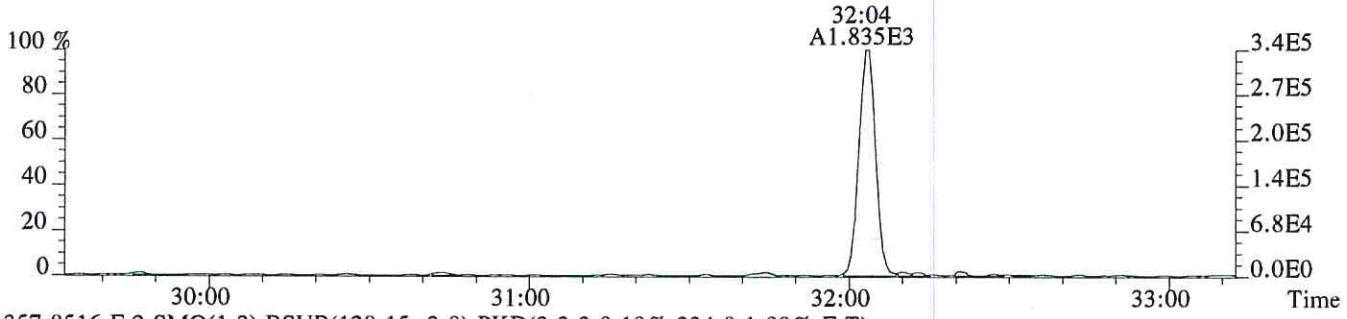
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



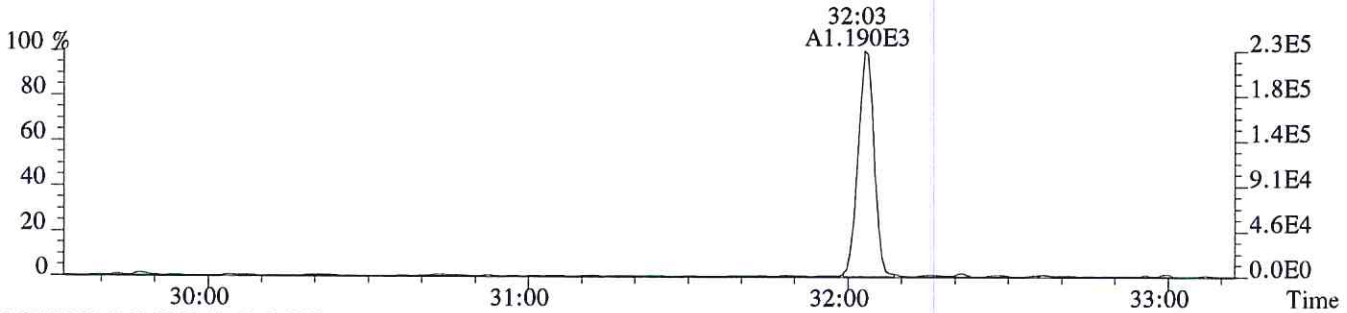
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



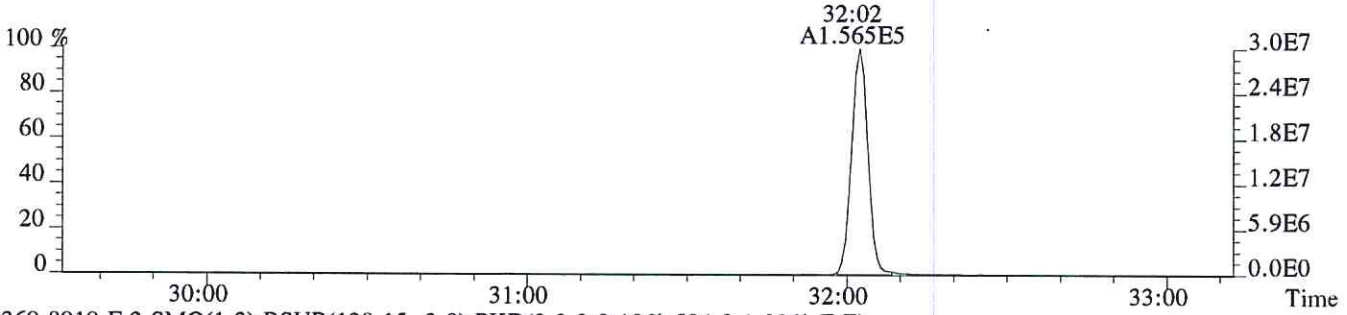
File:P607179 #1-330 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1700.0,1.00%,F,T)



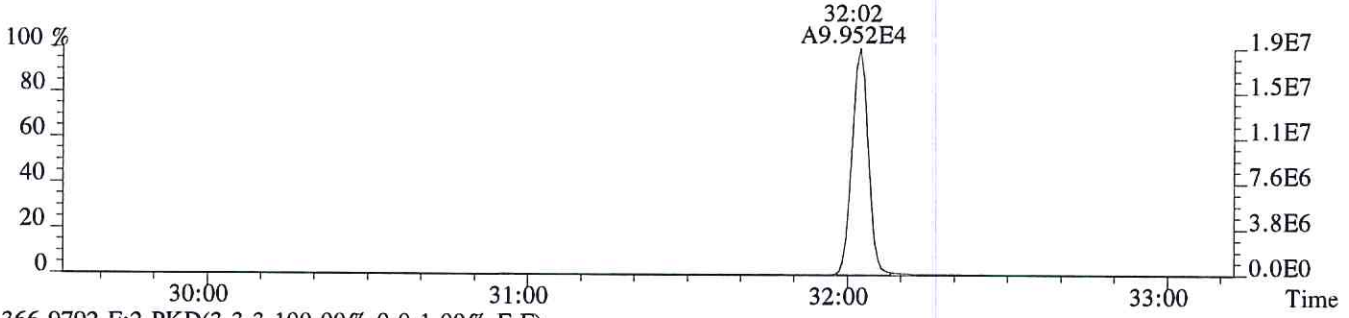
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,224.0,1.00%,F,T)



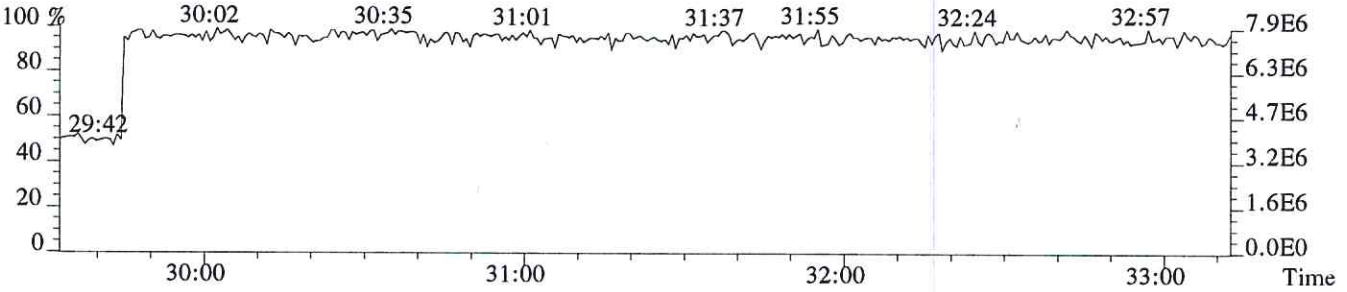
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,316.0,1.00%,F,T)



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

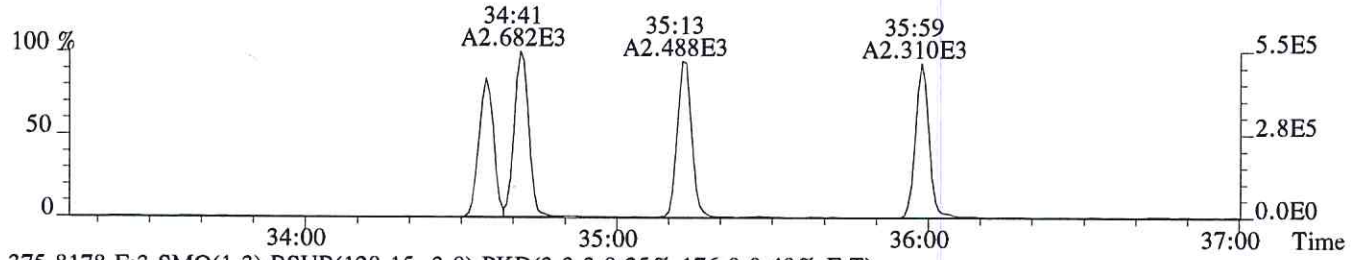


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

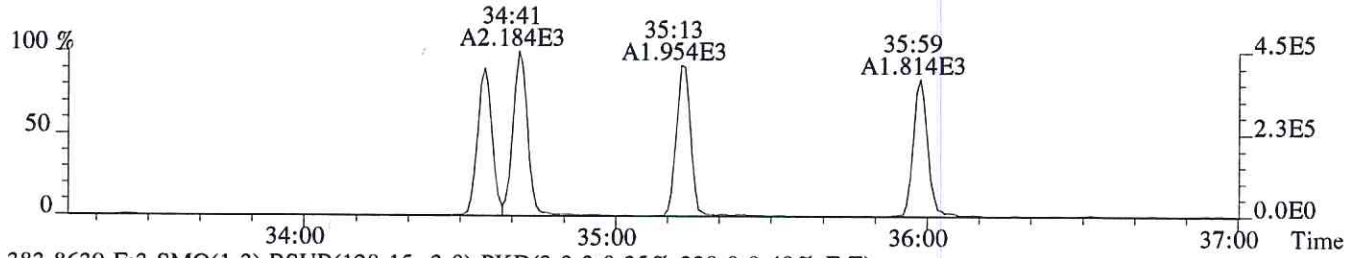


File:P607179 #1-339 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5

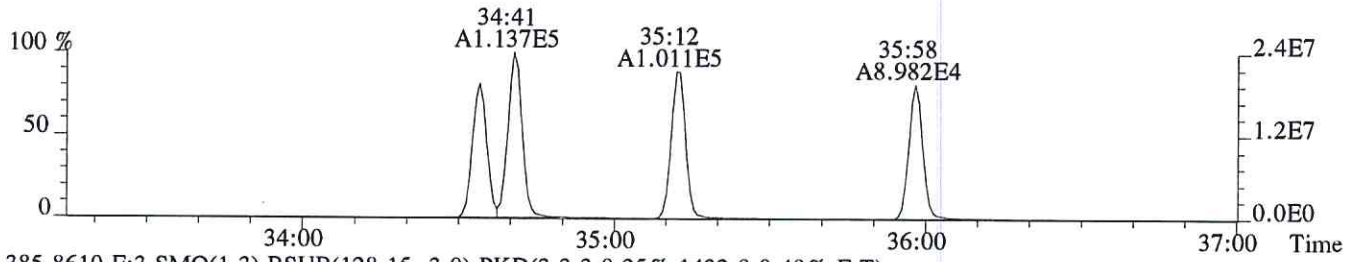
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,492.0,0.40%,F,T)



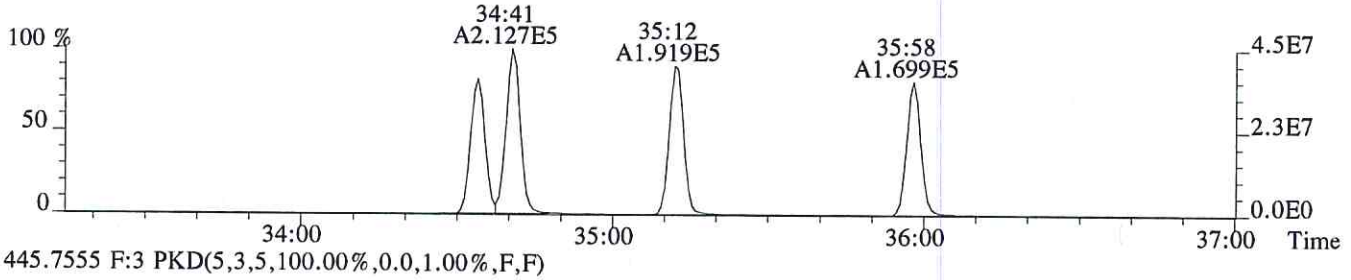
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,176.0,0.40%,F,T)



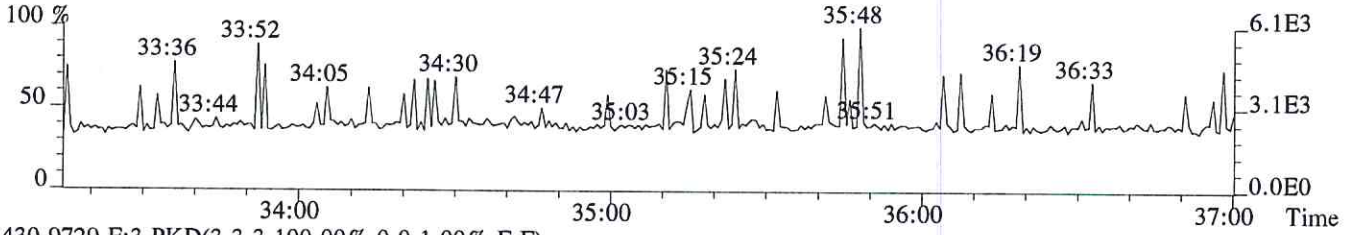
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,228.0,0.40%,F,T)



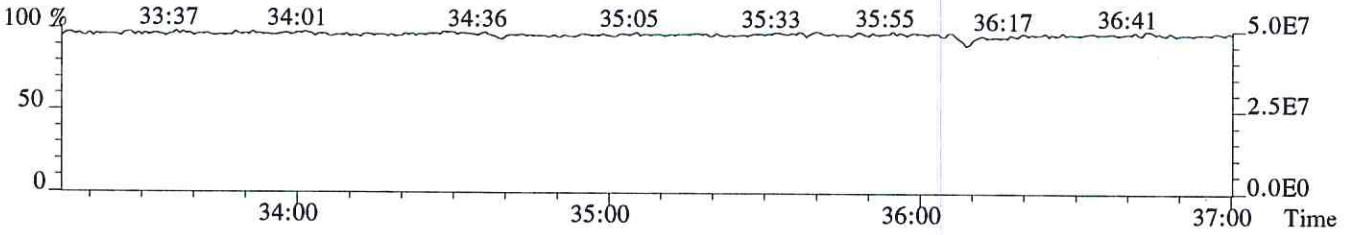
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1432.0,0.40%,F,T)



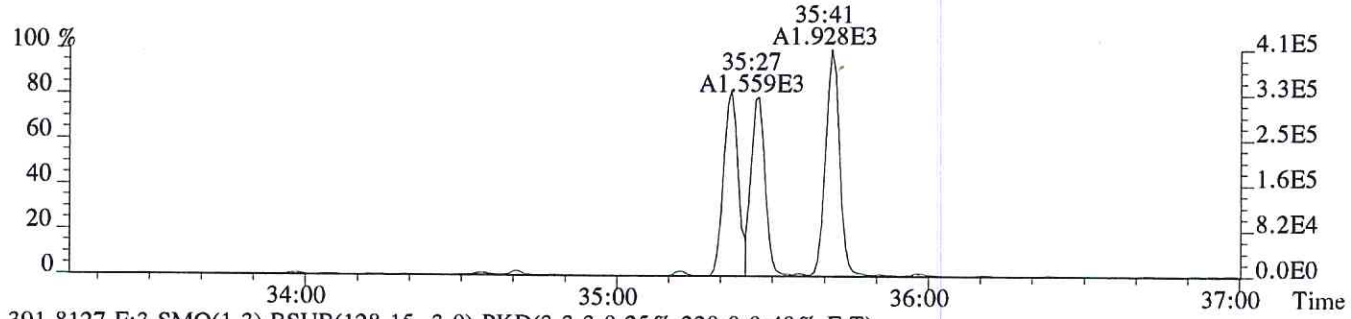
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



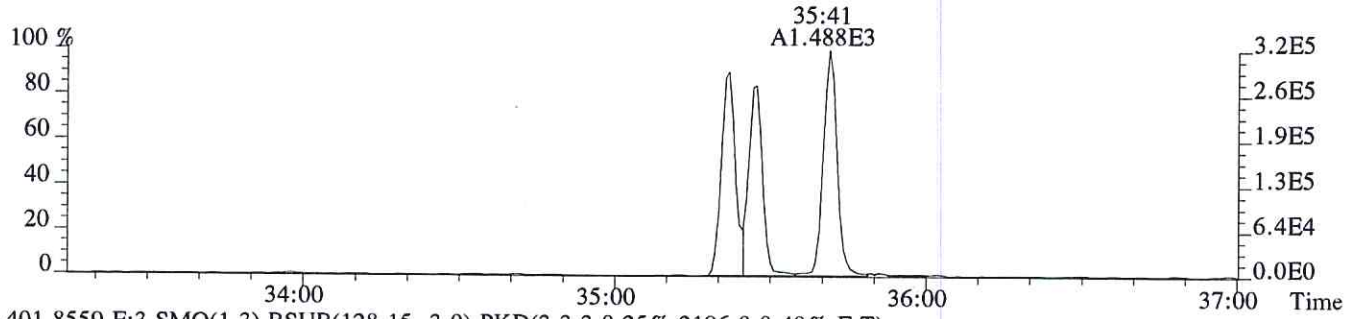
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



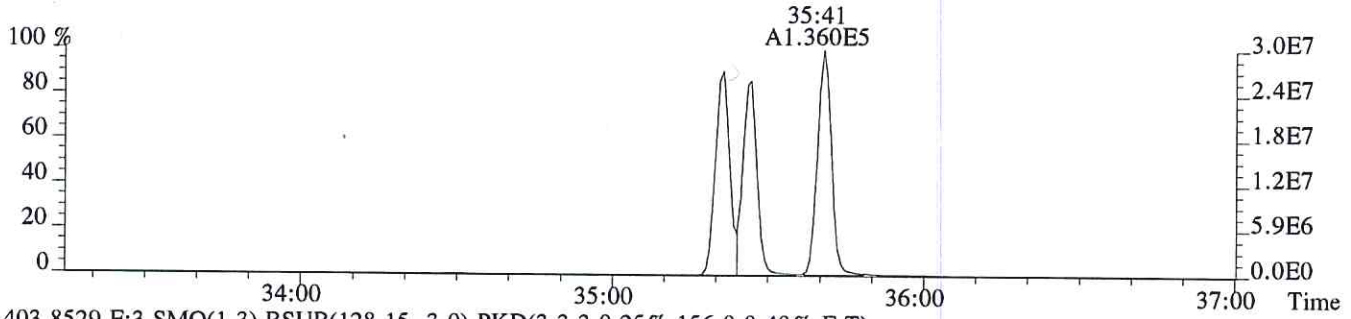
File:P607179 #1-339 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,168.0,0.40%,F,T)



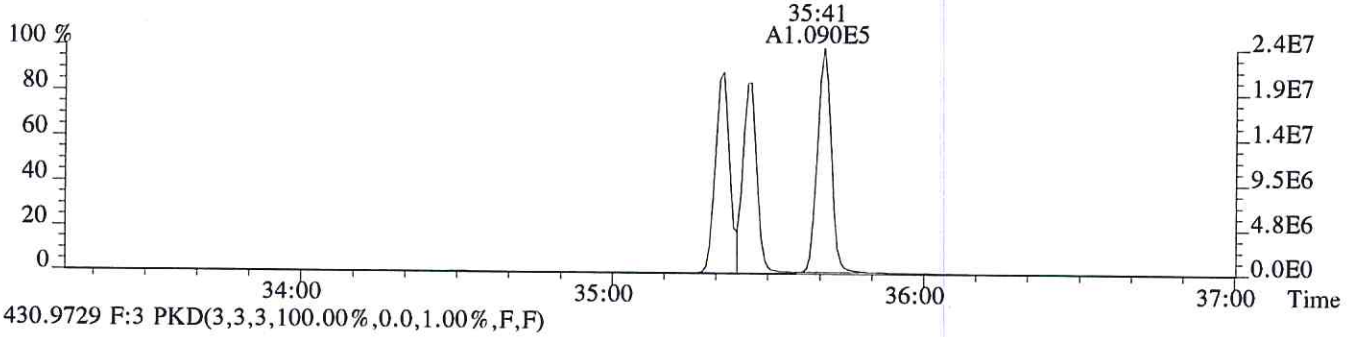
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,220.0,0.40%,F,T)



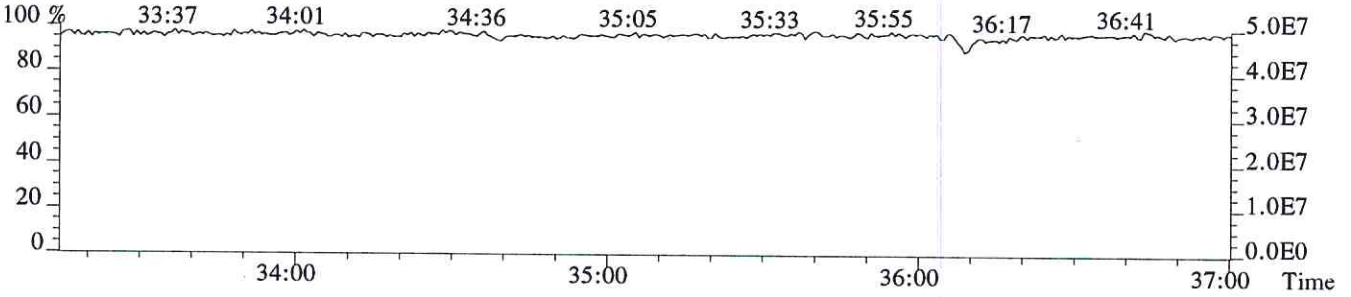
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2196.0,0.40%,F,T)



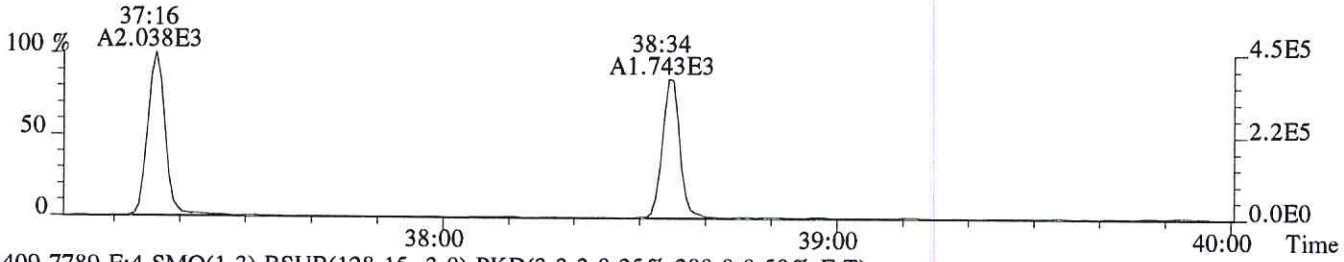
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,156.0,0.40%,F,T)



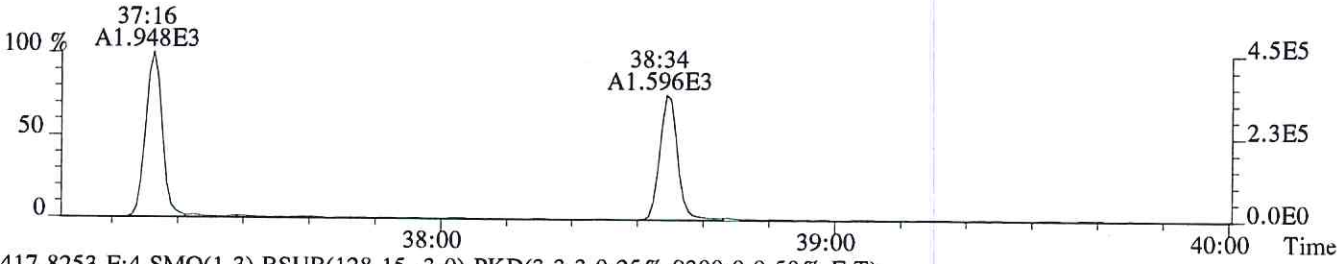
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



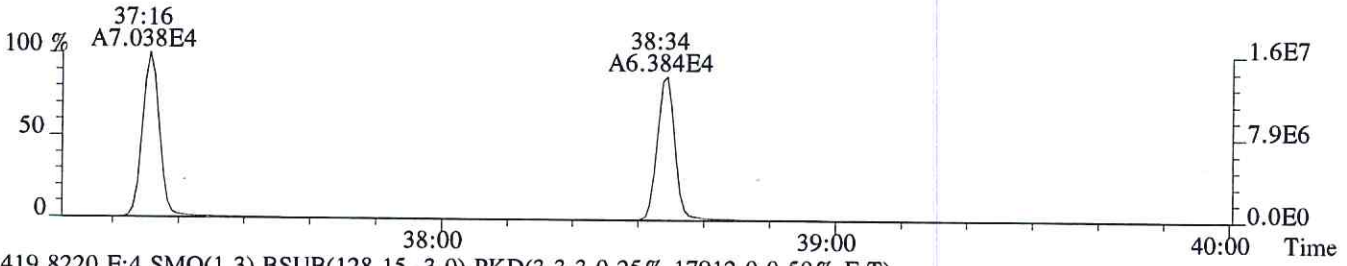
File:P607179 #1-268 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1284.0,0.50%,F,T)



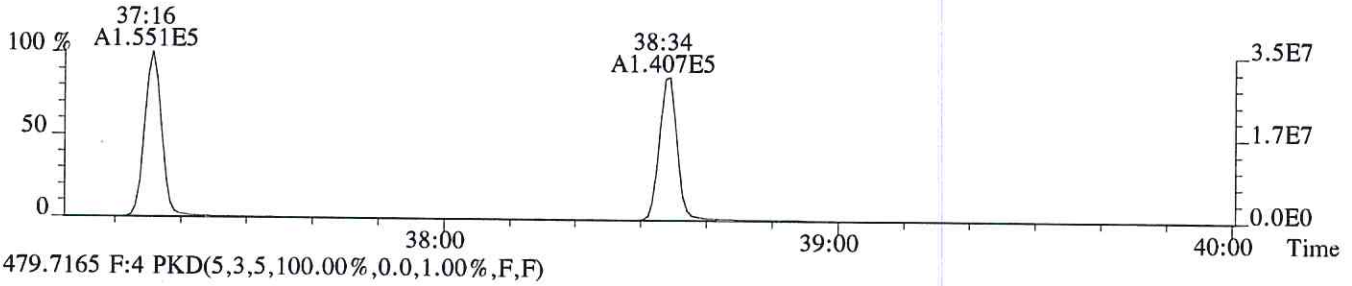
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,280.0,0.50%,F,T)



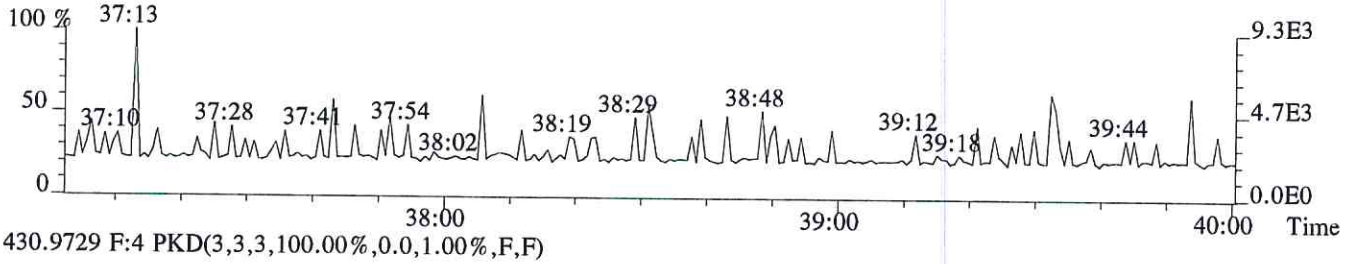
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9300.0,0.50%,F,T)



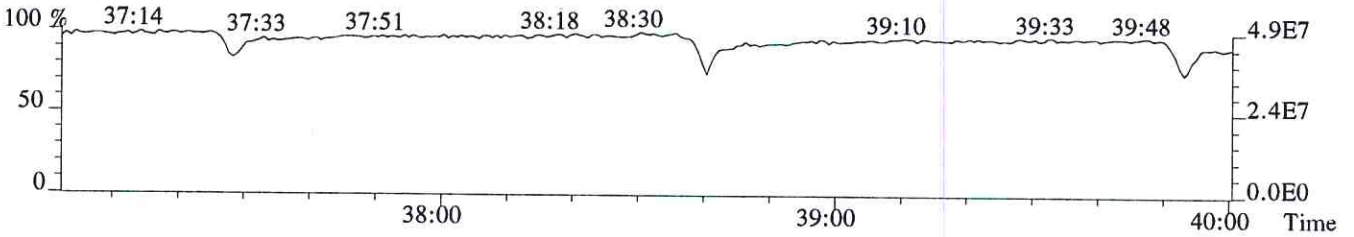
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,17912.0,0.50%,F,T)



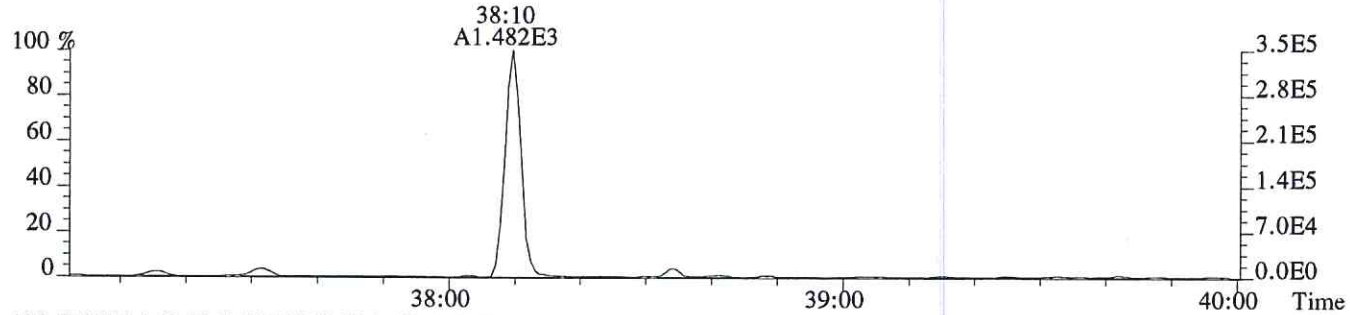
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



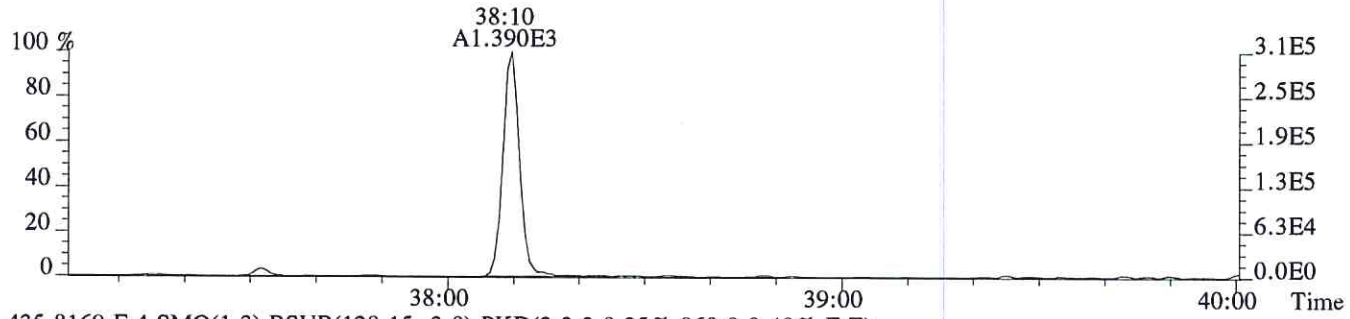
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



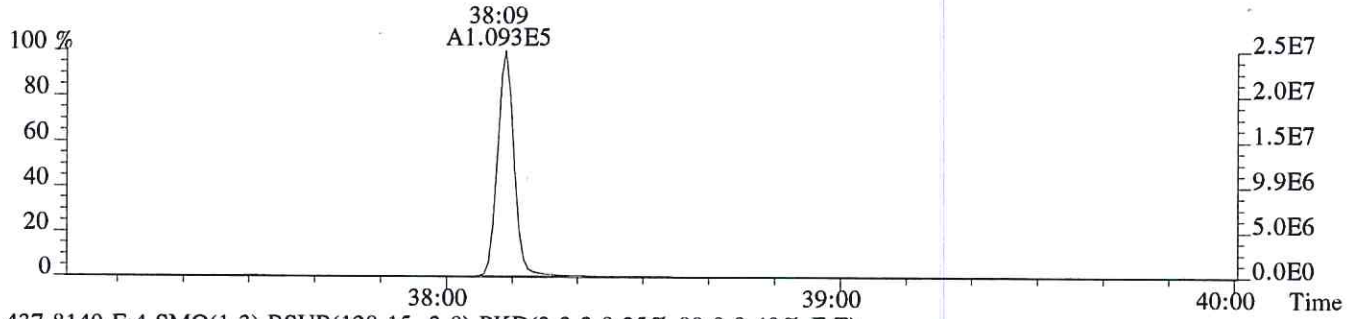
File:P607179 #1-268 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1244.0,0.40%,F,T)



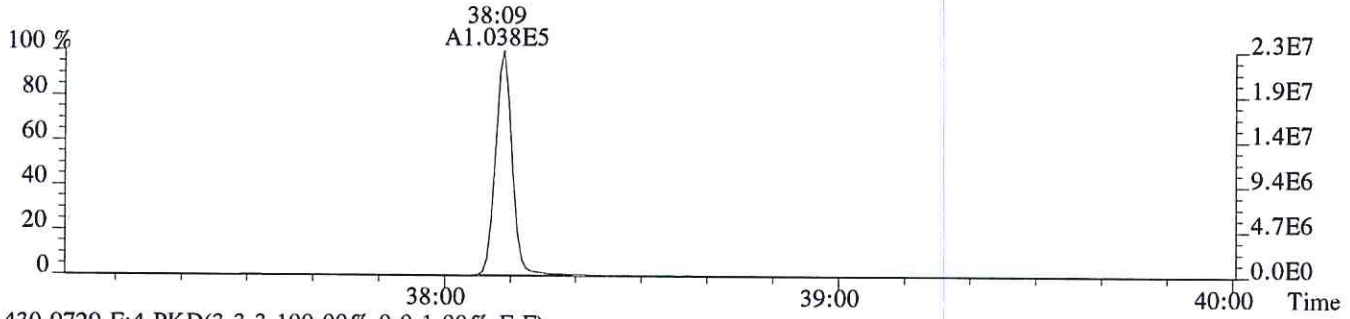
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,132.0,0.40%,F,T)



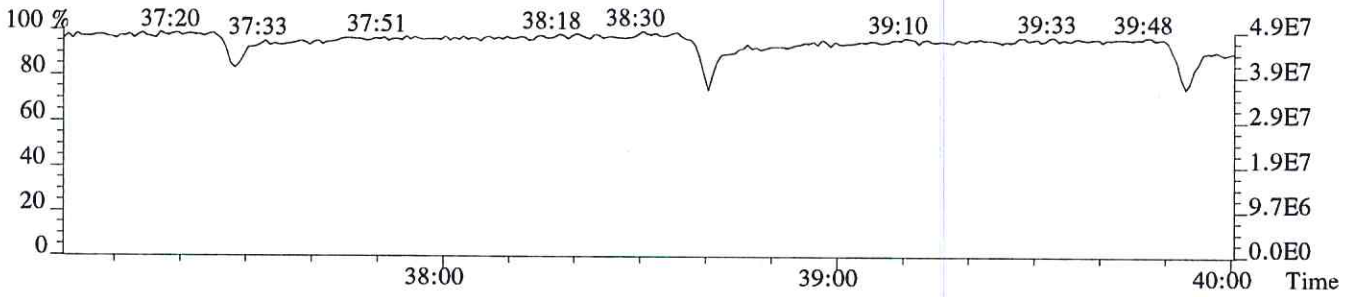
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,860.0,0.40%,F,T)



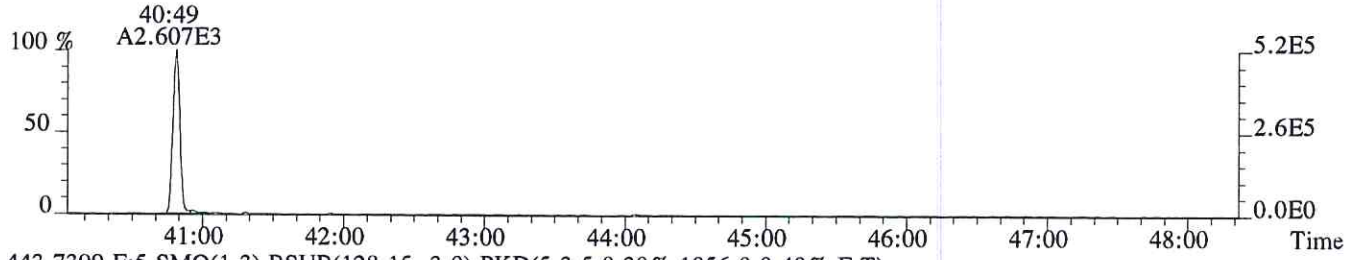
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,88.0,0.40%,F,T)



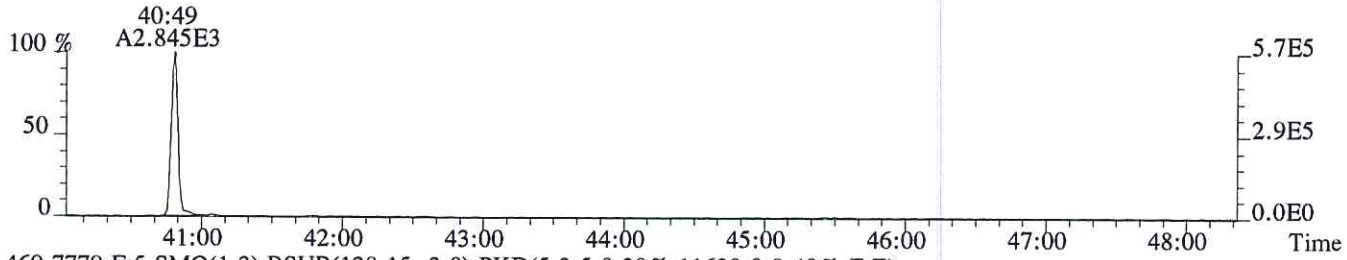
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



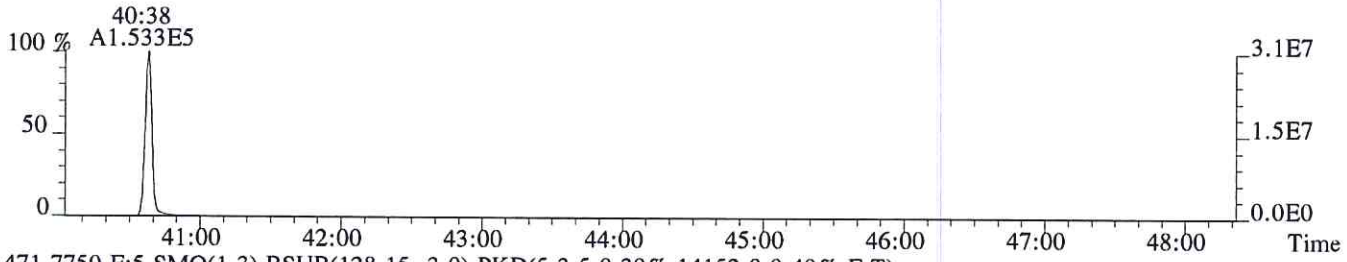
File:P607179 #1-749 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1444.0,0.40%,F,T)



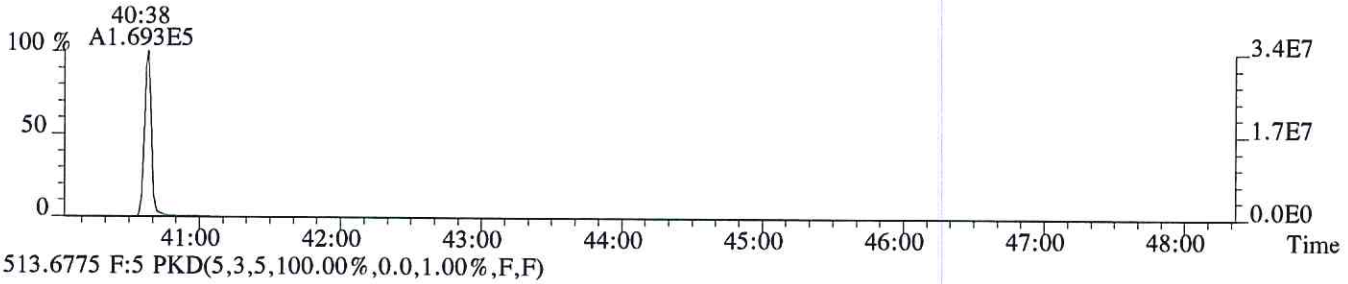
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1056.0,0.40%,F,T)



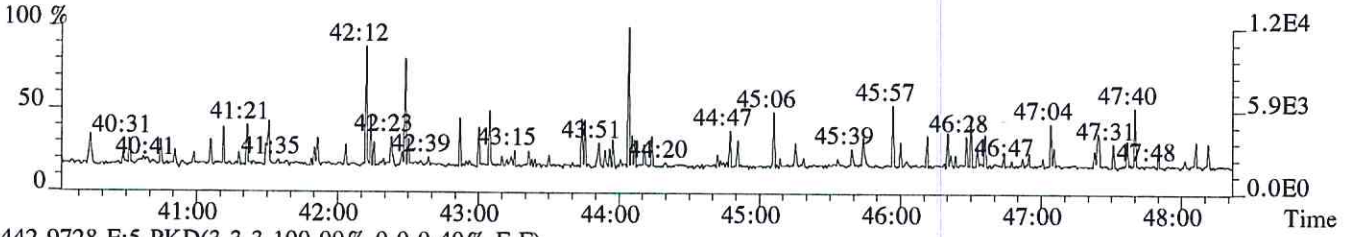
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,11620.0,0.40%,F,T)



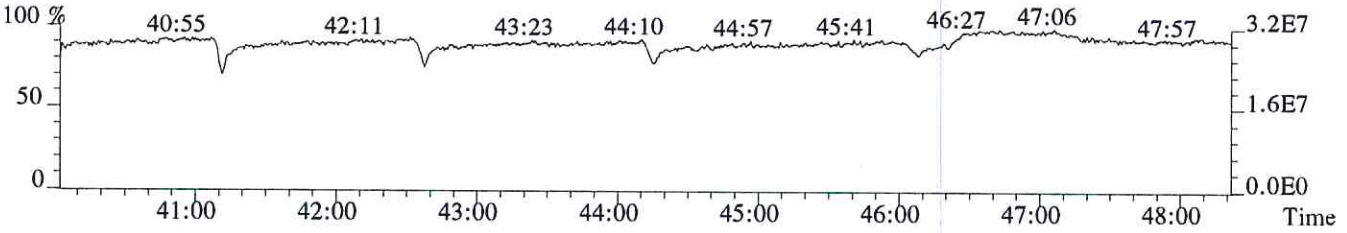
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,14152.0,0.40%,F,T)



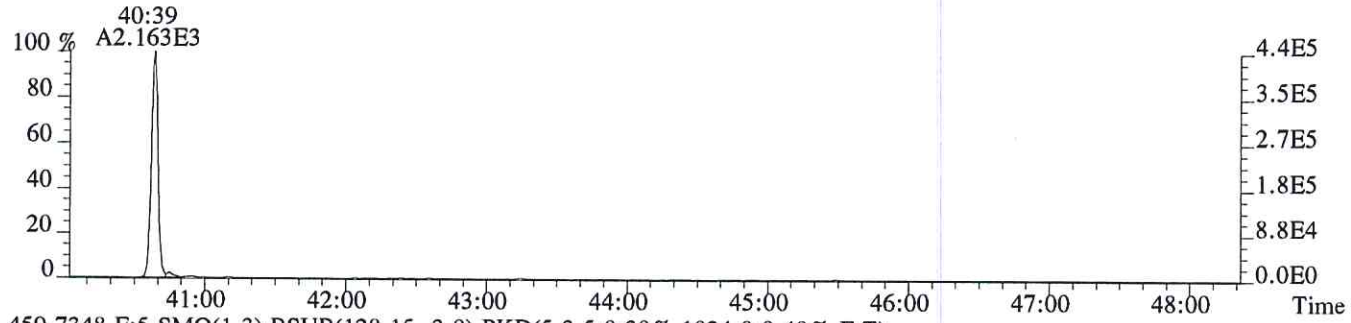
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



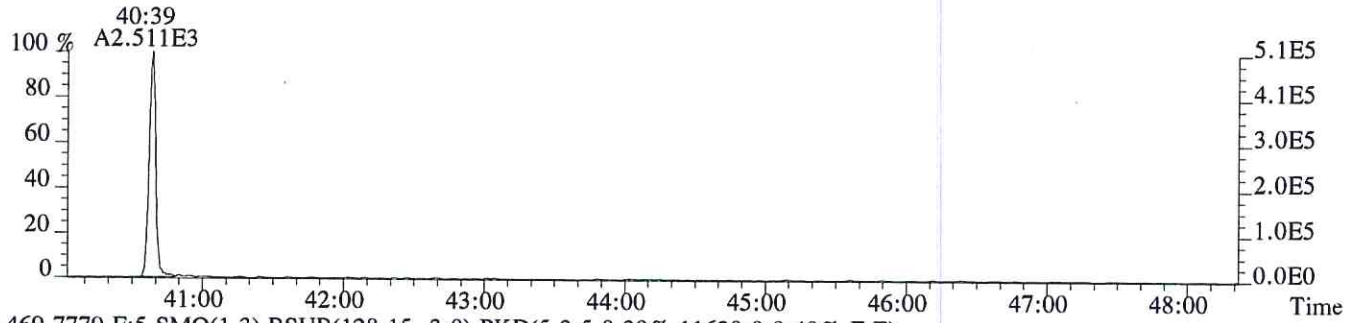
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



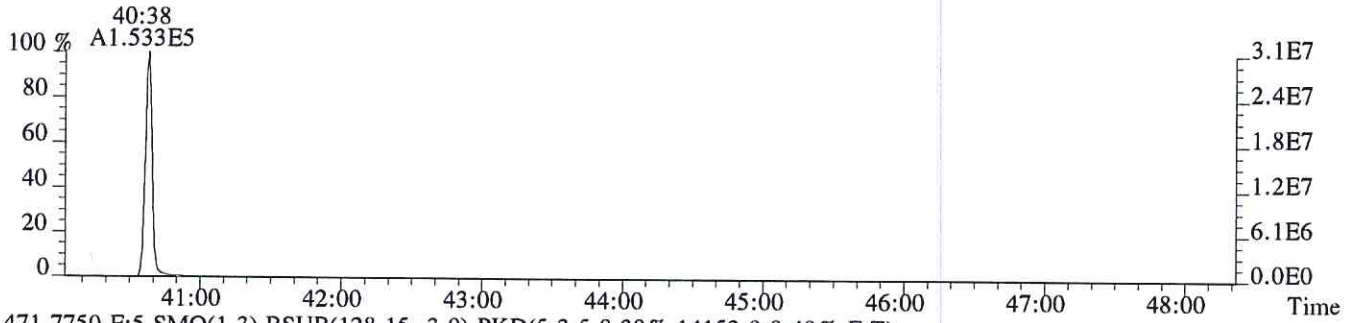
File:P607179 #1-749 Acq:16-MAY-2017 12:44:15 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1188.0,0.40%,F,T)



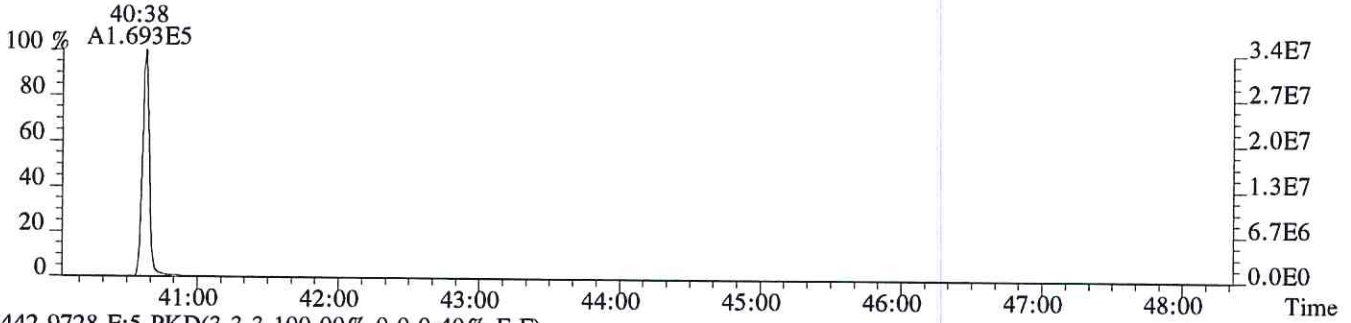
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1024.0,0.40%,F,T)



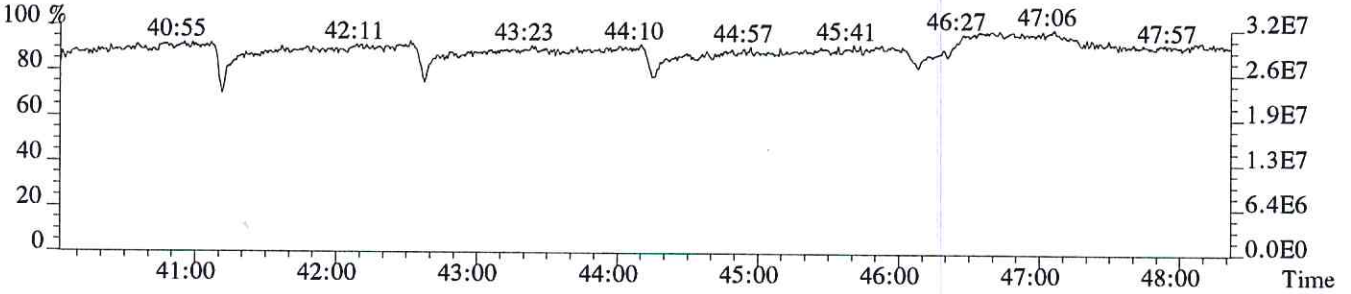
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,11620.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,14152.0,0.40%,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 P607180 Samp: 1 Inj: 1 Acquired: 16-MAY-17 13:34:34
Processed: 17-MAY-17 07:52:56 Sample ID: CS1

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:51	2.786e+02	3.646e+02	0.76	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:45	2.490e+03	1.570e+03	1.59	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:44	2.370e+03	1.545e+03	1.53	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:35	2.374e+03	1.865e+03	1.27	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:41	2.670e+03	2.147e+03	1.24	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:13	2.455e+03	1.954e+03	1.26	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:59	2.330e+03	1.873e+03	1.24	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:16	2.238e+03	2.152e+03	1.04	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:34	2.053e+03	2.035e+03	1.01	yes	no	1.341
10	Unk	OCDF	40:49	3.280e+03	3.524e+03	0.93	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:51	1.782e+02	2.485e+02	0.72	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:03	1.664e+03	1.126e+03	1.48	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:22	1.789e+03	1.465e+03	1.22	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:27	1.764e+03	1.289e+03	1.37	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:41	1.938e+03	1.524e+03	1.27	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:10	1.569e+03	1.570e+03	1.00	yes	no	1.048
17	Unk	OCDD	40:38	2.717e+03	3.114e+03	0.87	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:50	4.990e+04	6.337e+04	0.79	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:44	8.786e+04	5.655e+04	1.55	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:44	9.173e+04	5.802e+04	1.58	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:34	4.455e+04	8.504e+04	0.52	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:41	5.401e+04	1.016e+05	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:12	4.976e+04	9.392e+04	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:58	4.440e+04	8.453e+04	0.53	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:16	3.779e+04	8.379e+04	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:34	3.547e+04	7.849e+04	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:49	3.670e+04	4.659e+04	0.79	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	32:02	6.637e+04	4.219e+04	1.57	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:21	6.455e+04	4.885e+04	1.32	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:26	6.037e+04	5.044e+04	1.20	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:09	6.052e+04	5.673e+04	1.07	yes	no	0.884
32	IS	13C-OCDD	40:38	9.024e+04	1.011e+05	0.89	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:07	3.824e+04	4.842e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:41	6.677e+04	5.455e+04	1.22	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:51	4.878e+02				no	1.072

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www.alsglobal.com

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76555

Run #2 Filename P607180 Samp: 1 Inj: 1 Acquired: 16-MAY-17 13:34:34
Processed: 17-MAY-17 07:52:56 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	4.27e+04	2.64e+02	1.6e+02	5.58e+04	7.92e+02	7.0e+01
2	1,2,3,7,8-PeCDF	4.34e+05	1.64e+02	2.6e+03	2.59e+05	1.50e+03	1.7e+02
3	2,3,4,7,8-PeCDF	4.55e+05	1.64e+02	2.8e+03	2.71e+05	1.50e+03	1.8e+02
4	1,2,3,4,7,8-HxCDF	4.97e+05	1.05e+03	4.7e+02	3.90e+05	3.76e+02	1.0e+03
5	1,2,3,6,7,8-HxCDF	5.20e+05	1.05e+03	5.0e+02	4.62e+05	3.76e+02	1.2e+03
6	2,3,4,6,7,8-HxCDF	5.19e+05	1.05e+03	4.9e+02	4.02e+05	3.76e+02	1.1e+03
7	1,2,3,7,8,9-HxCDF	4.90e+05	1.05e+03	4.7e+02	3.90e+05	3.76e+02	1.0e+03
8	1,2,3,4,6,7,8-HpCDF	5.13e+05	6.96e+02	7.4e+02	4.88e+05	1.80e+02	2.7e+03
9	1,2,3,4,7,8,9-HpCDF	4.74e+05	6.96e+02	6.8e+02	4.47e+05	1.80e+02	2.5e+03
10	OCDF	6.47e+05	8.96e+02	7.2e+02	6.88e+05	2.94e+03	2.3e+02
11	2,3,7,8-TCDD	2.98e+04	1.60e+03	1.9e+01	3.48e+04	2.28e+02	1.5e+02
12	1,2,3,7,8-PeCDD	3.08e+05	1.32e+03	2.3e+02	1.95e+05	8.16e+02	2.4e+02
13	1,2,3,4,7,8-HxCDD	3.67e+05	2.64e+02	1.4e+03	3.10e+05	3.04e+02	1.0e+03
14	1,2,3,6,7,8-HxCDD	3.64e+05	2.64e+02	1.4e+03	2.81e+05	3.04e+02	9.3e+02
15	1,2,3,7,8,9-HxCDD	4.07e+05	2.64e+02	1.5e+03	3.23e+05	3.04e+02	1.1e+03
16	1,2,3,4,6,7,8-HpCDD	3.70e+05	2.24e+02	1.7e+03	3.50e+05	3.08e+02	1.1e+03
17	OCDD	5.36e+05	1.18e+03	4.5e+02	6.01e+05	1.90e+03	3.2e+02
18	13C-2,3,7,8-TCDF	7.25e+06	1.24e+04	5.8e+02	9.21e+06	7.56e+03	1.2e+03
19	13C-1,2,3,7,8-PeCDF	1.52e+07	1.28e+02	1.2e+05	9.81e+06	5.20e+02	1.9e+04
20	13C-2,3,4,7,8-PeCDF	1.70e+07	1.28e+02	1.3e+05	1.06e+07	5.20e+02	2.0e+04
21	13C-1,2,3,4,7,8-HxCDF	9.35e+06	1.36e+02	6.9e+04	1.78e+07	1.42e+03	1.3e+04
22	13C-1,2,3,6,7,8-HxCDF	1.12e+07	1.36e+02	8.2e+04	2.12e+07	1.42e+03	1.5e+04
23	13C-2,3,4,6,7,8-HxCDF	1.05e+07	1.36e+02	7.7e+04	2.00e+07	1.42e+03	1.4e+04
24	13C-1,2,3,7,8,9-HxCDF	9.41e+06	1.36e+02	6.9e+04	1.78e+07	1.42e+03	1.3e+04
25	13C-1,2,3,4,6,7,8-HpCDF	8.51e+06	5.36e+03	1.6e+03	1.88e+07	1.84e+04	1.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	7.61e+06	5.36e+03	1.4e+03	1.71e+07	1.84e+04	9.3e+02
27	13C-2,3,7,8-TCDD	5.65e+06	5.45e+03	1.0e+03	7.28e+06	2.99e+03	2.4e+03
28	13C-1,2,3,7,8-PeCDD	1.25e+07	1.41e+03	8.9e+03	7.89e+06	2.44e+02	3.2e+04
29	13C-1,2,3,4,7,8-HxCDD	1.35e+07	2.38e+03	5.6e+03	1.05e+07	8.96e+02	1.2e+04
30	13C-1,2,3,6,7,8-HxCDD	1.26e+07	2.38e+03	5.3e+03	1.02e+07	8.96e+02	1.1e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.36e+07	1.74e+03	7.8e+03	1.26e+07	5.48e+02	2.3e+04
32	13C-OCDD	1.80e+07	5.16e+03	3.5e+03	2.00e+07	1.45e+04	1.4e+03
33	13C-1,2,3,4-TCDD	5.78e+06	5.45e+03	1.1e+03	7.37e+06	2.99e+03	2.5e+03
34	13C-1,2,3,7,8,9-HxCDD	1.45e+07	2.38e+03	6.1e+03	1.17e+07	8.96e+02	1.3e+04
35	37Cl-2,3,7,8-TCDD	7.87e+04	7.04e+02	1.1e+02			

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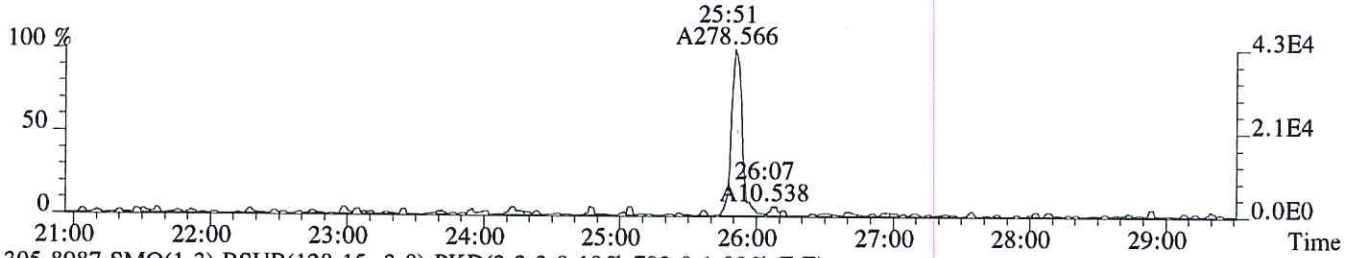
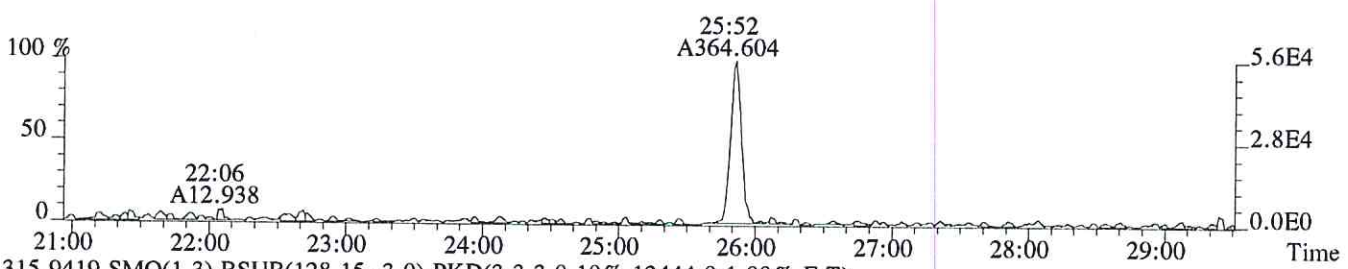
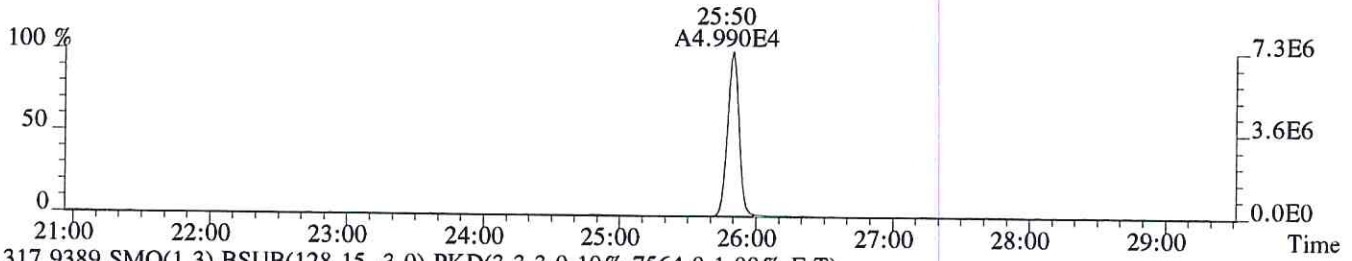
File:P607180 #1-609 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,264.0,1.00%,F,T)



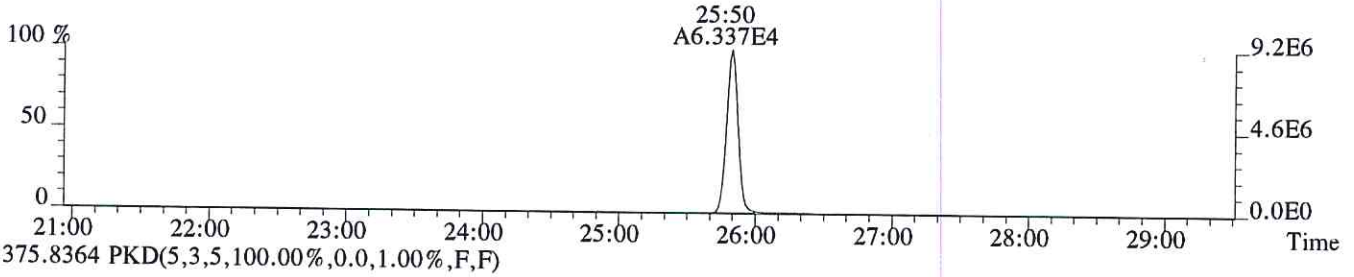
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,792.0,1.00%,F,T)



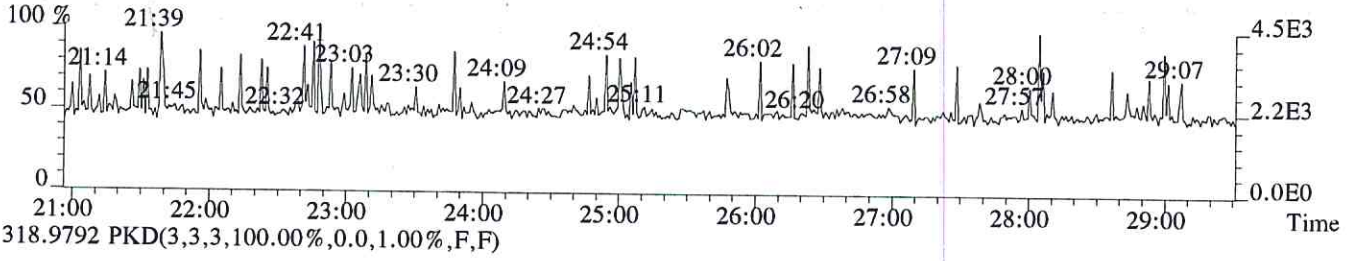
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12444.0,1.00%,F,T)



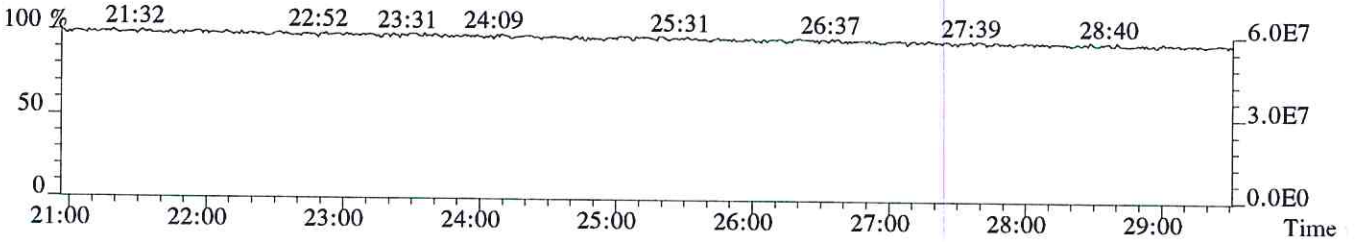
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7564.0,1.00%,F,T)



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

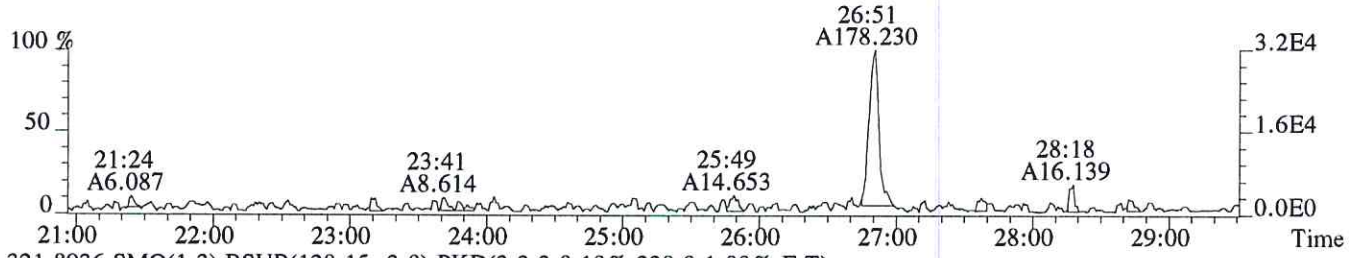


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

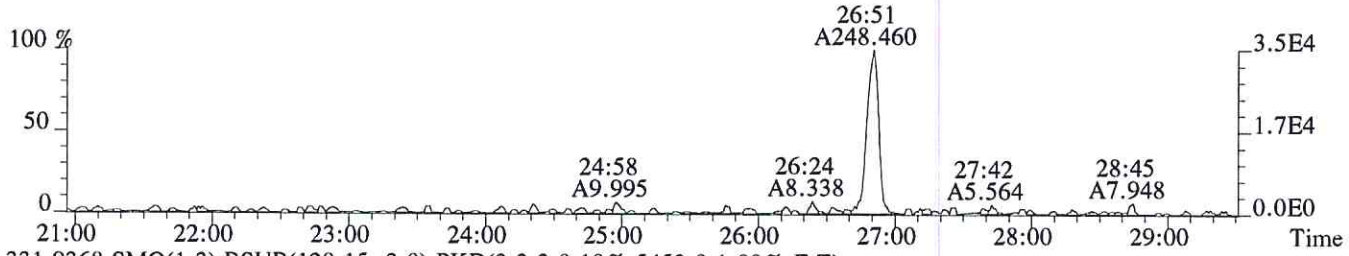


File:P607180 #1-609 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1

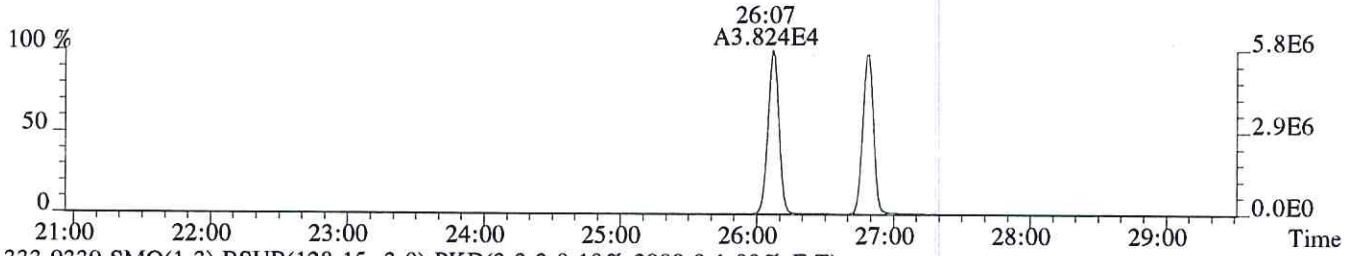
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1604.0,1.00%,F,T)



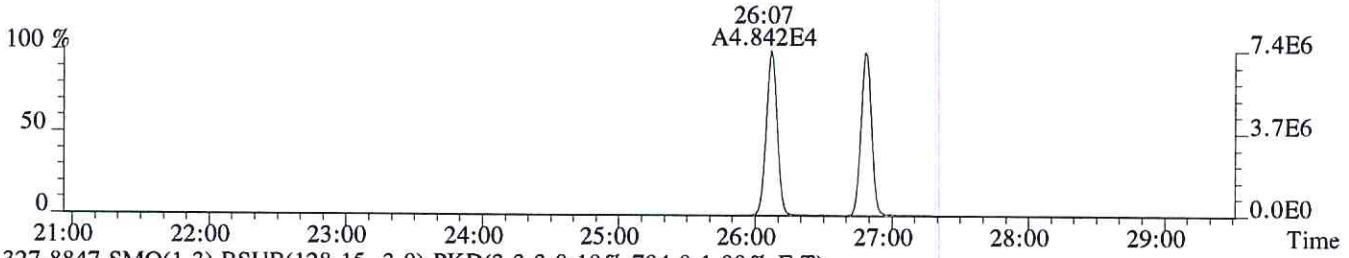
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,228.0,1.00%,F,T)



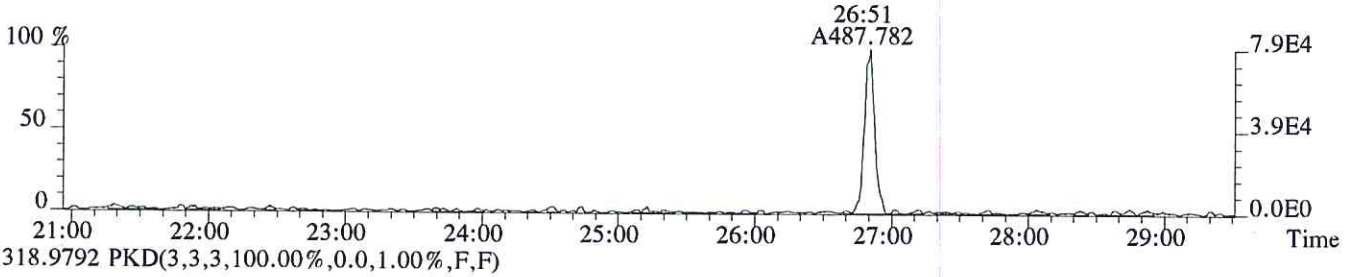
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5452.0,1.00%,F,T)



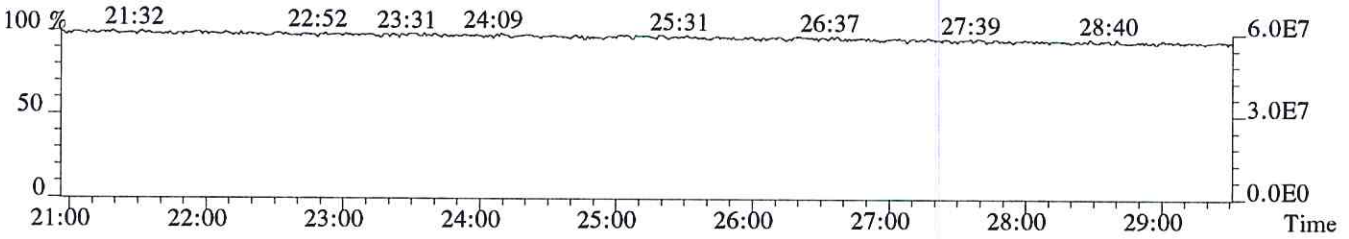
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2988.0,1.00%,F,T)



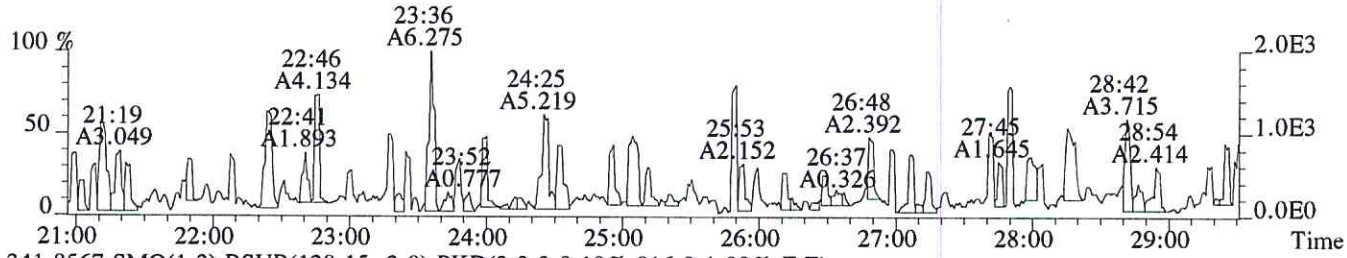
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,T)



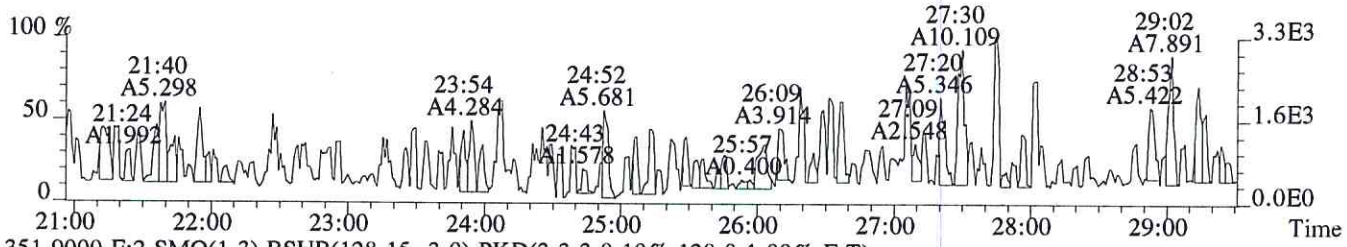
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



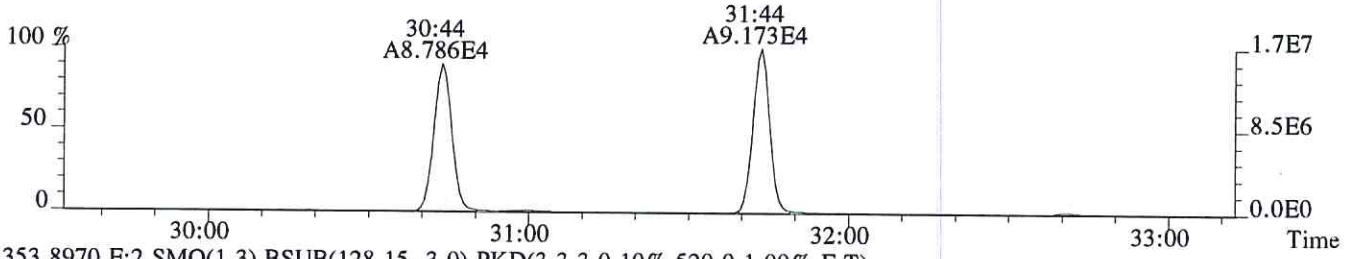
File:P607180 #1-609 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,244.0,1.00%,F,T)



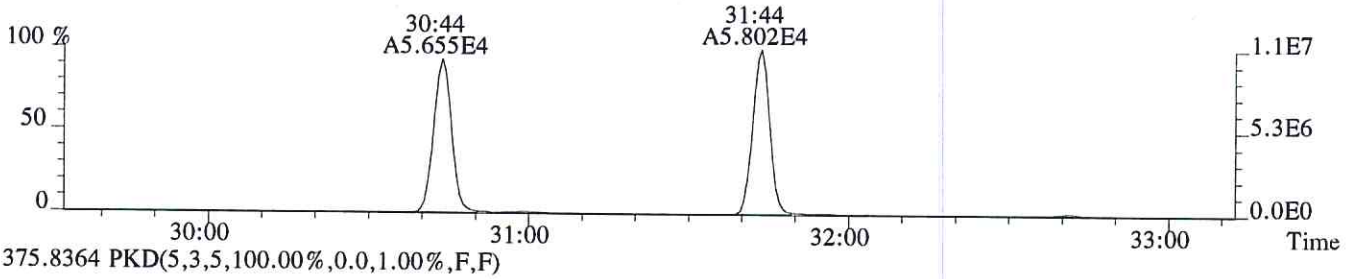
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,816.0,1.00%,F,T)



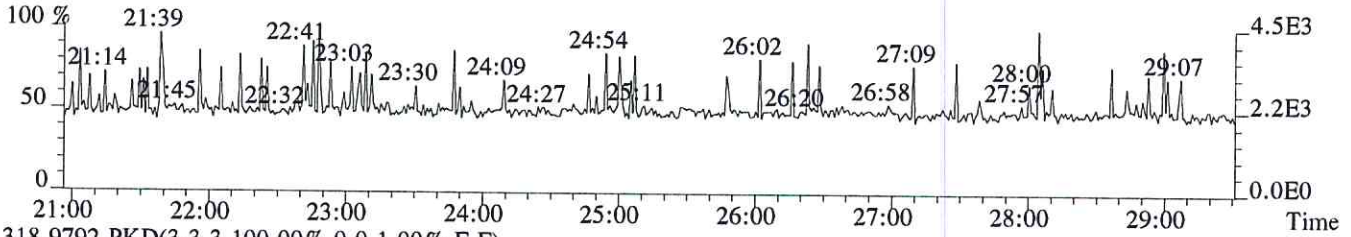
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,128.0,1.00%,F,T)



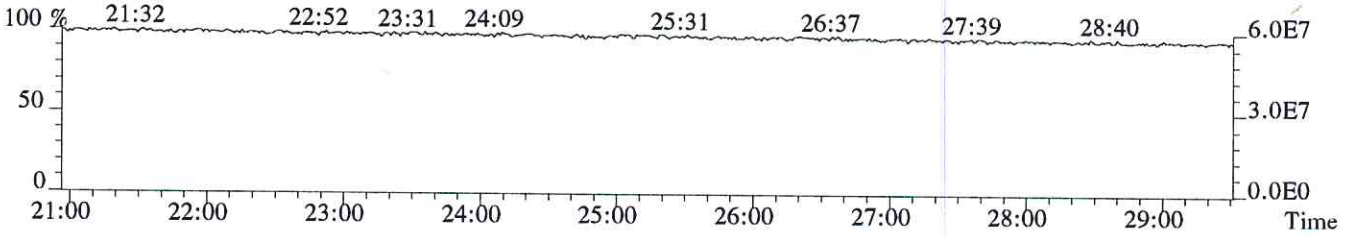
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,T)



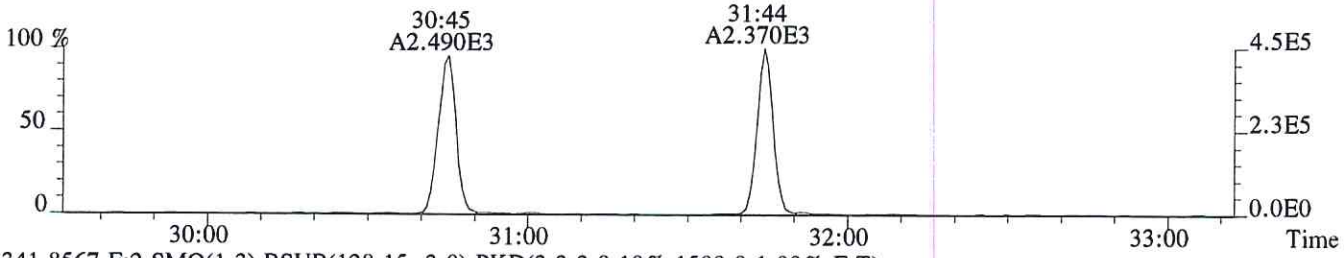
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



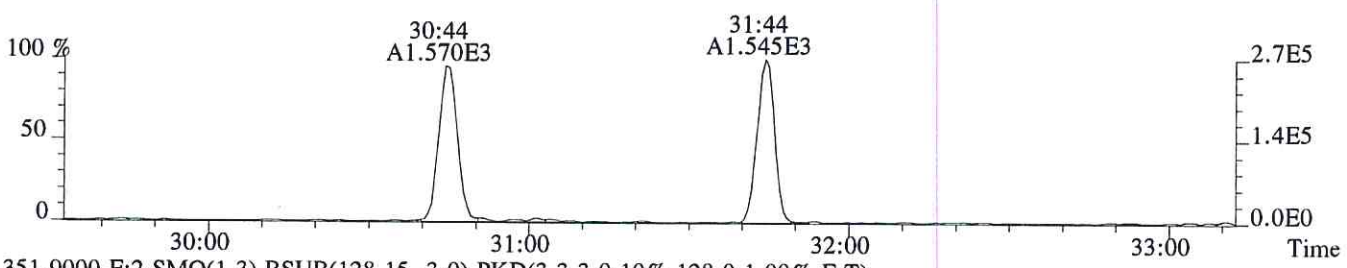
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



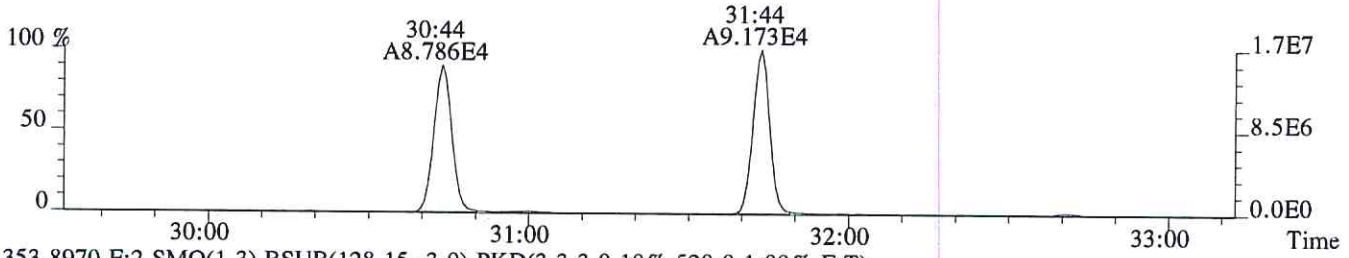
File:P607180 #1-330 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,164.0,1.00%,F,T)



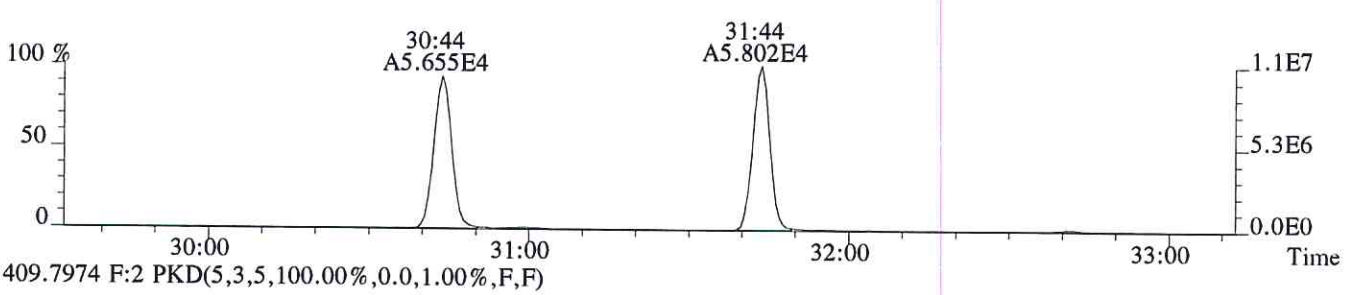
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1500.0,1.00%,F,T)



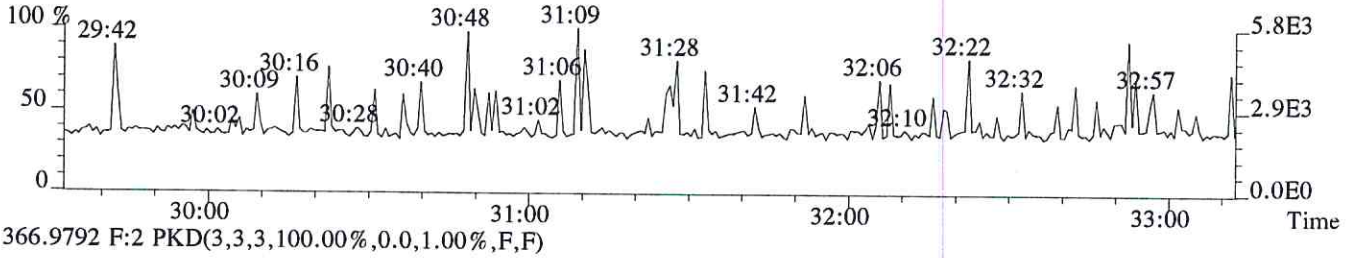
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,128.0,1.00%,F,T)



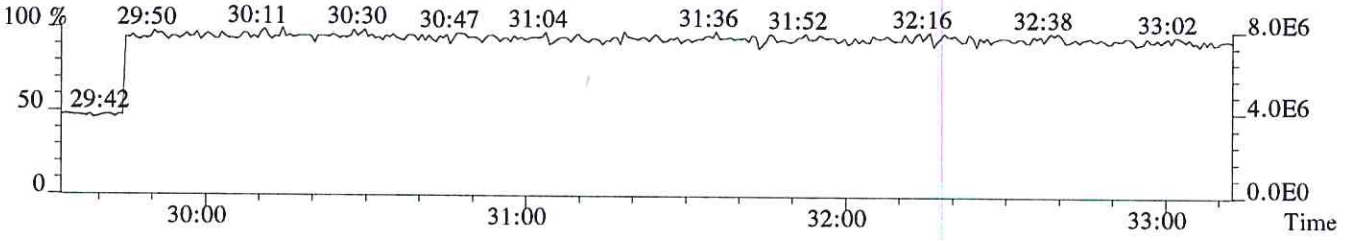
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,T)



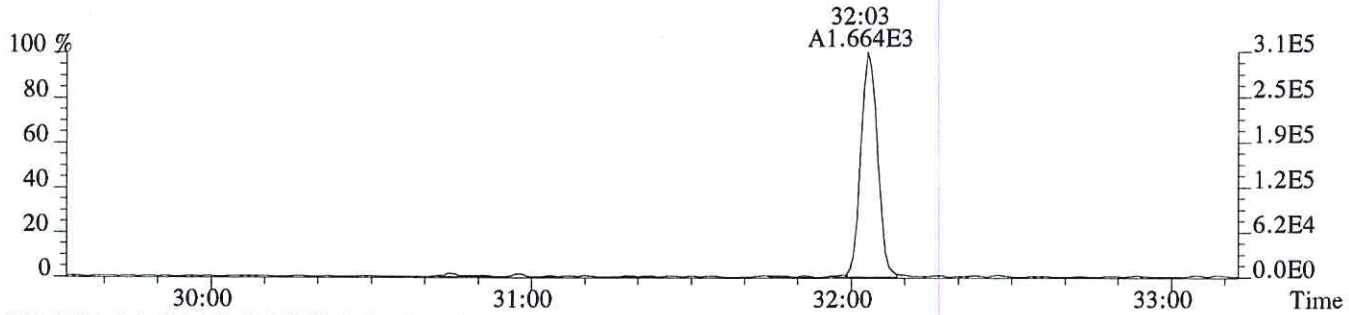
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



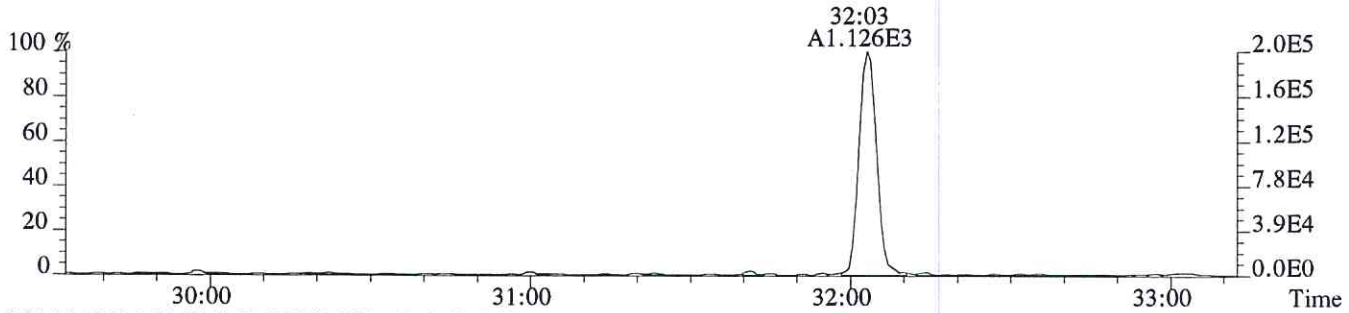
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



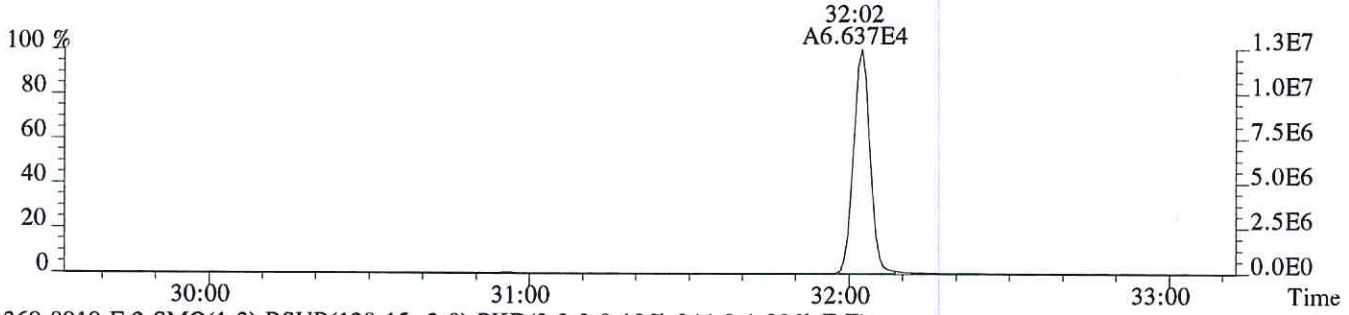
File:P607180 #1-330 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1324.0,1.00%,F,T)



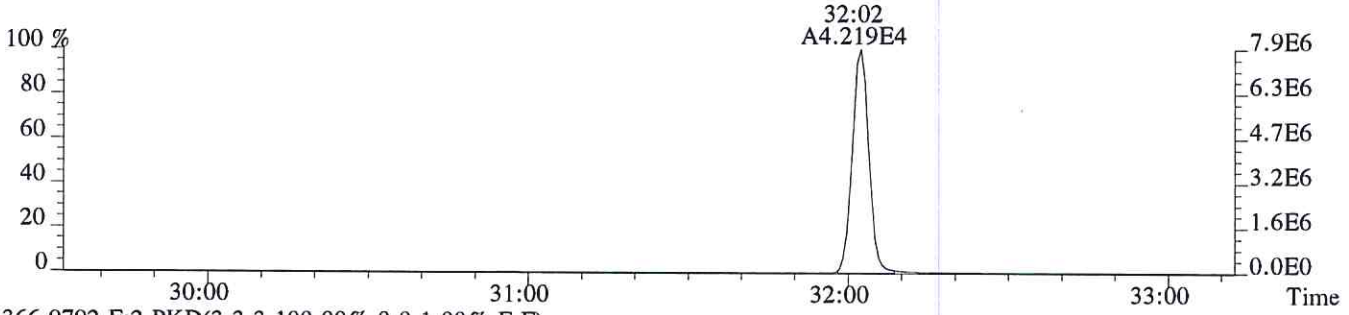
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,816.0,1.00%,F,T)



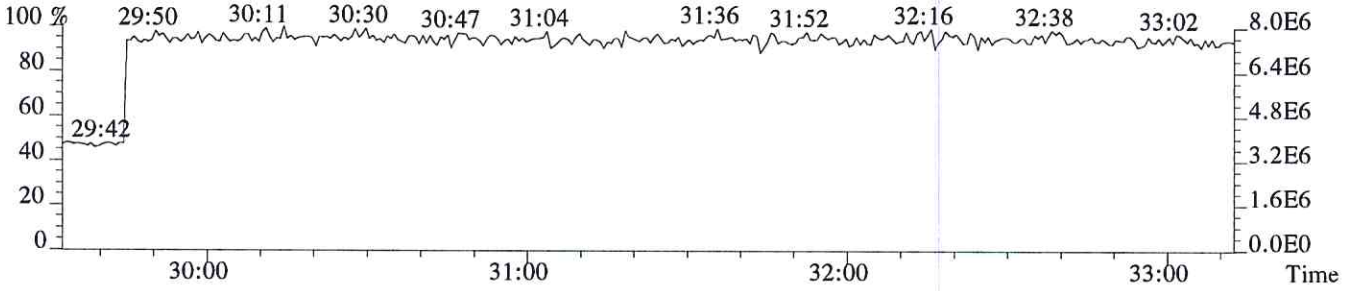
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1408.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,244.0,1.00%,F,T)

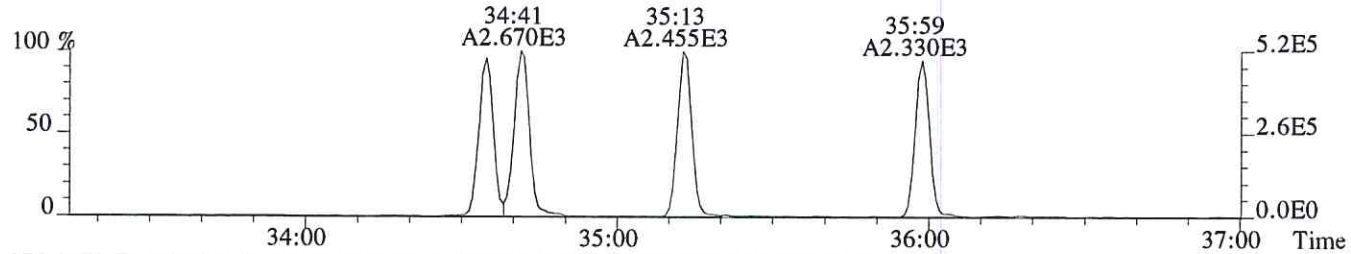


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

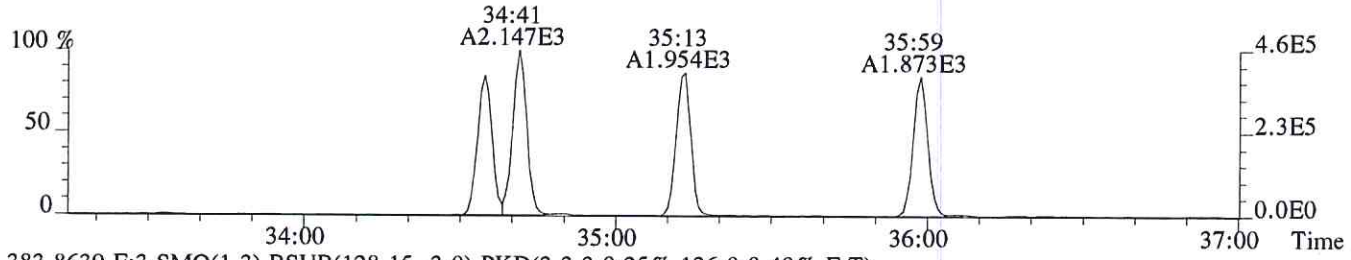


File:P607180 #1-339 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1

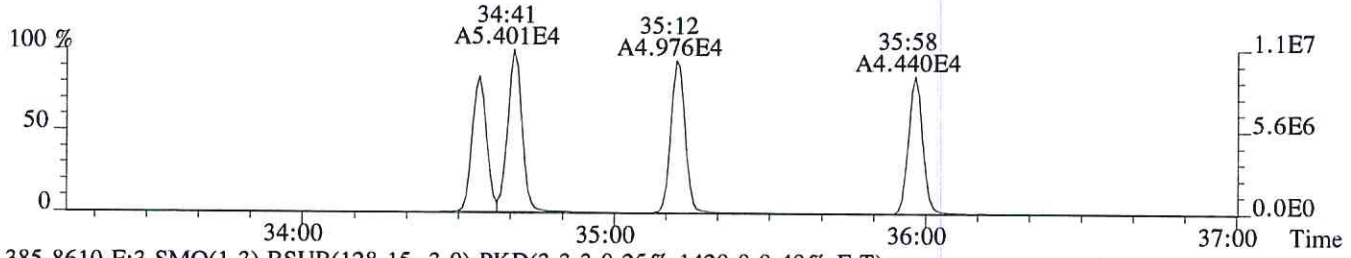
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1048.0,0.40%,F,T)



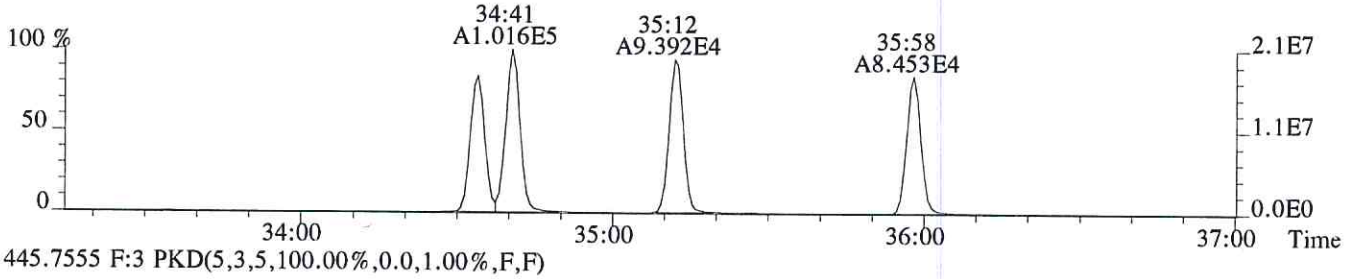
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,376.0,0.40%,F,T)



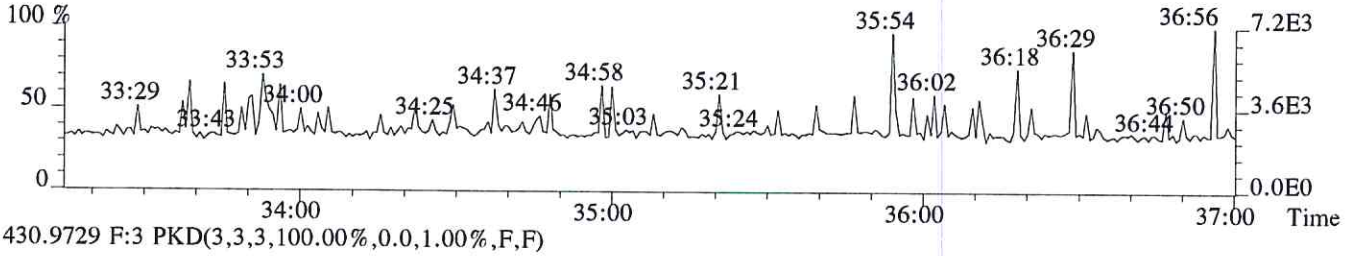
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,136.0,0.40%,F,T)



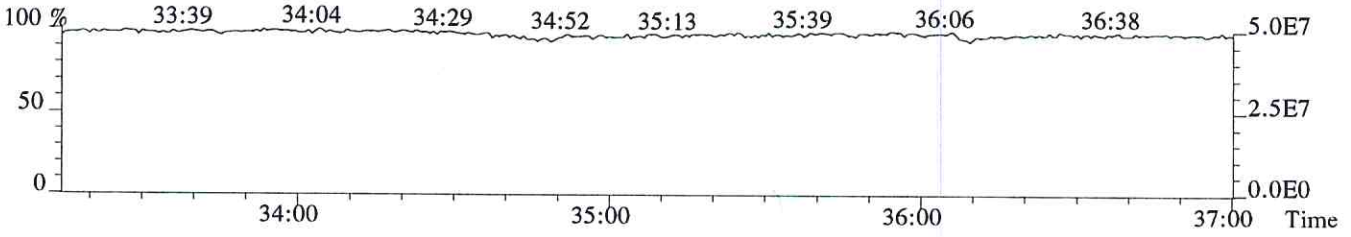
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1420.0,0.40%,F,T)



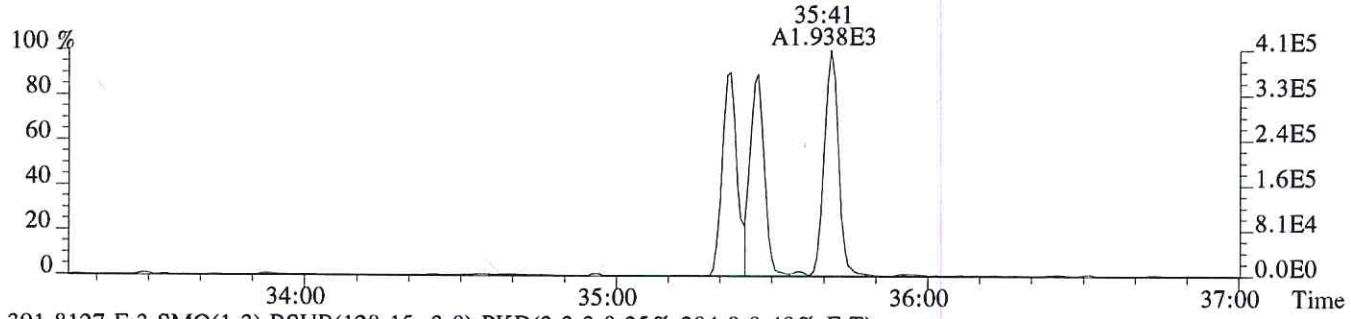
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



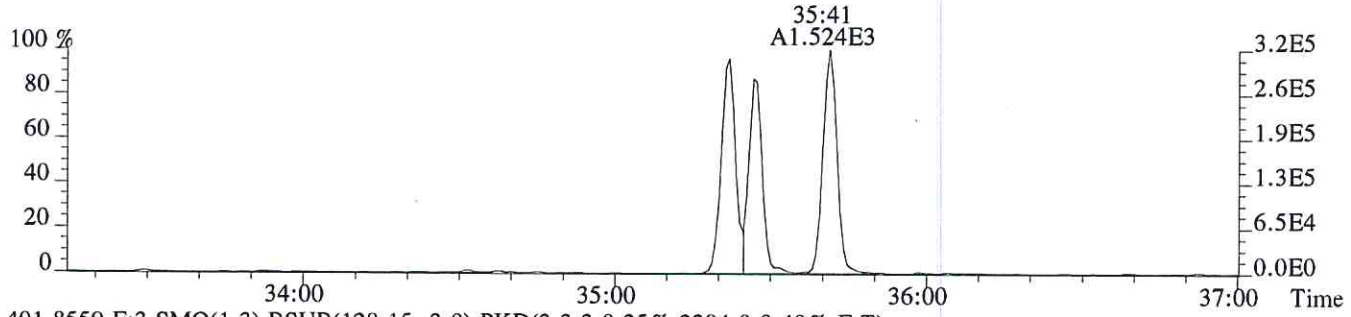
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



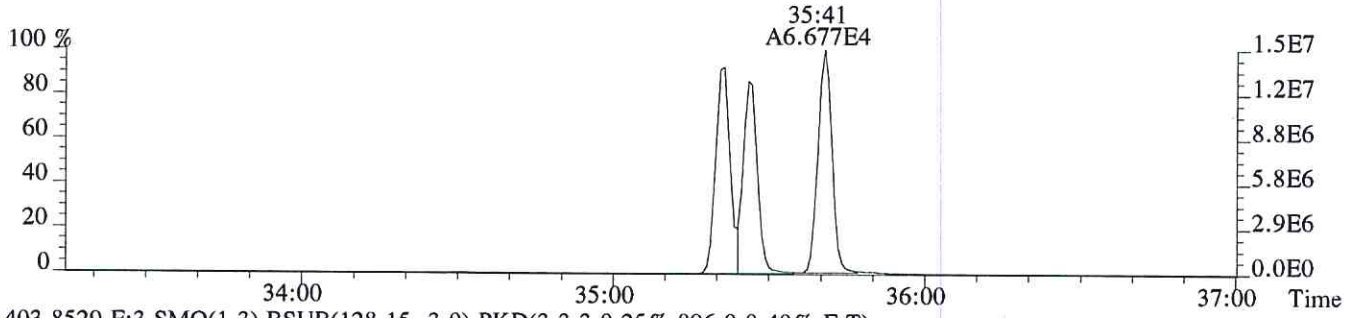
File:P607180 #1-339 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,264.0,0.40%,F,T)



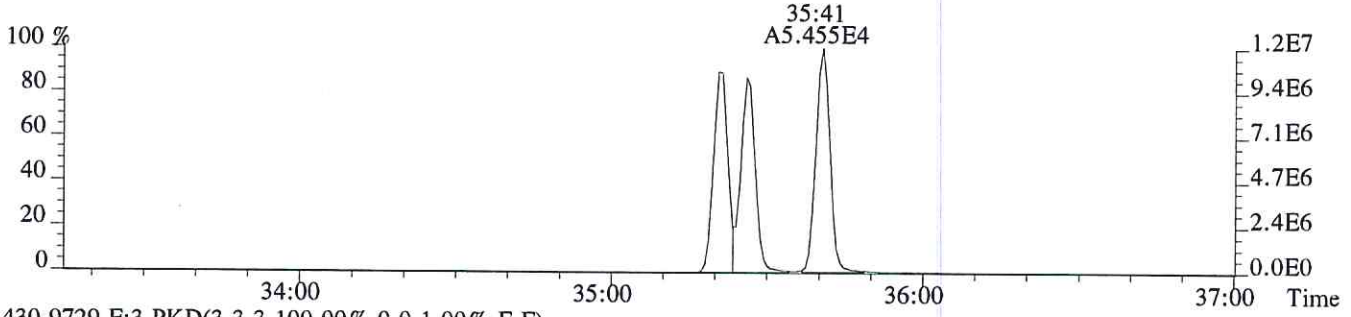
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,304.0,0.40%,F,T)



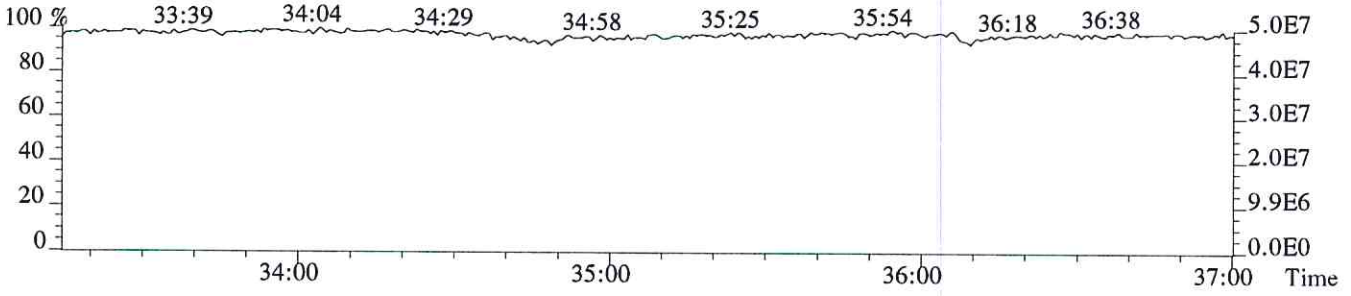
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2384.0,0.40%,F,T)



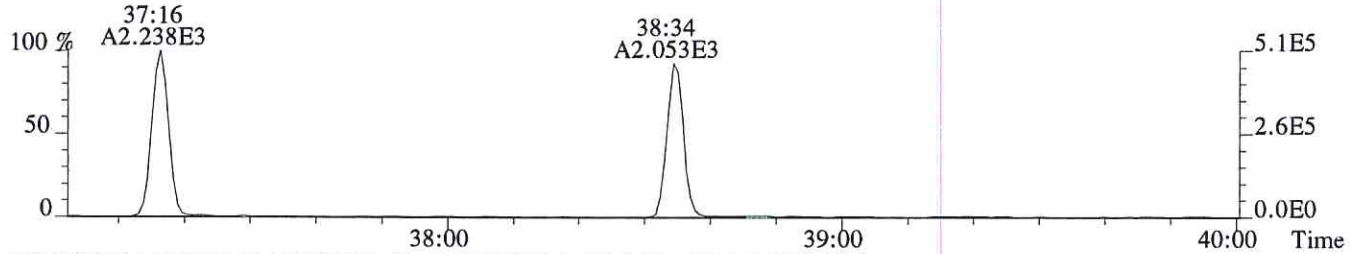
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,896.0,0.40%,F,T)



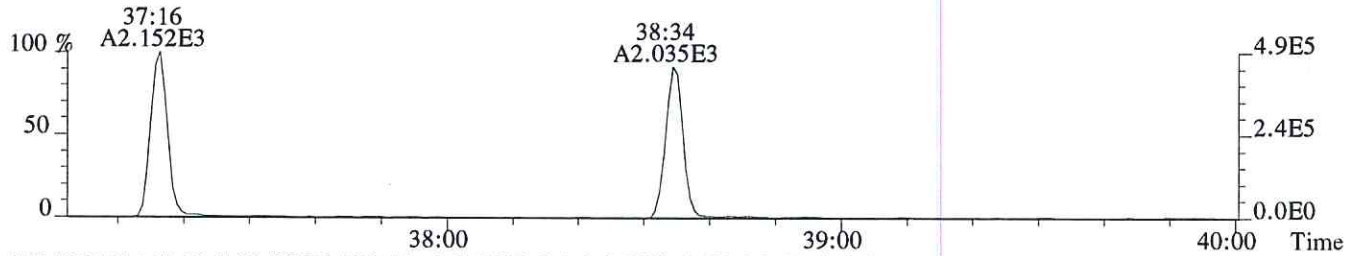
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



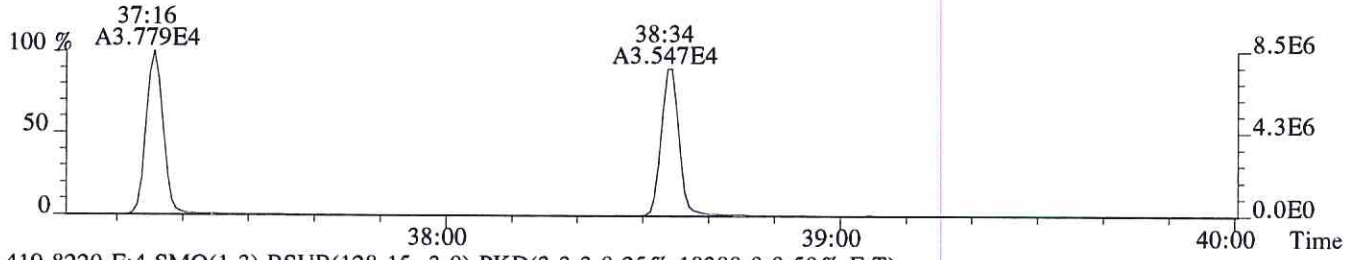
File:P607180 #1-268 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,696.0,0.50%,F,T)



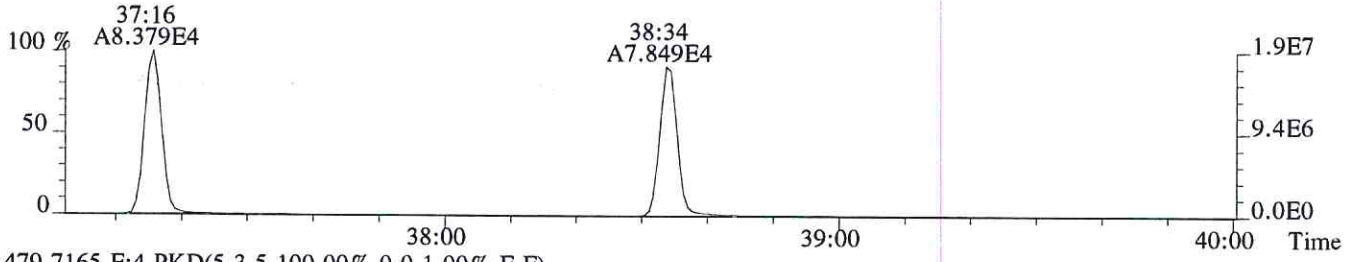
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,180.0,0.50%,F,T)



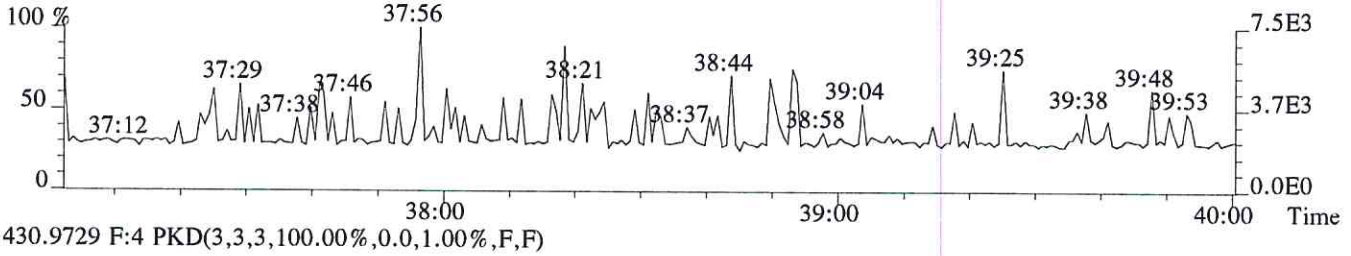
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5356.0,0.50%,F,T)



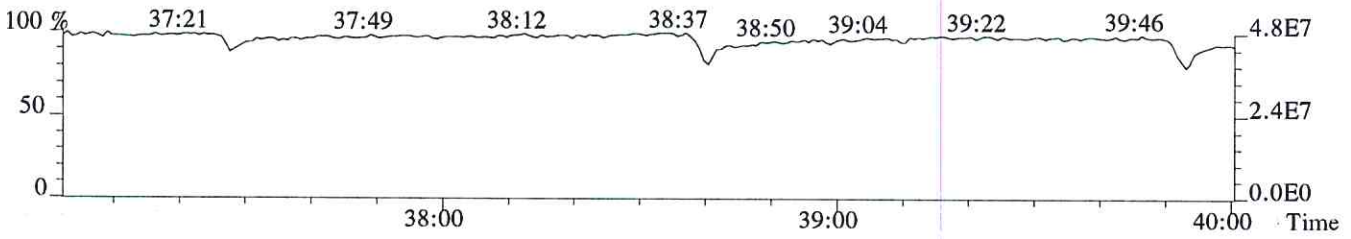
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,18380.0,0.50%,F,T)



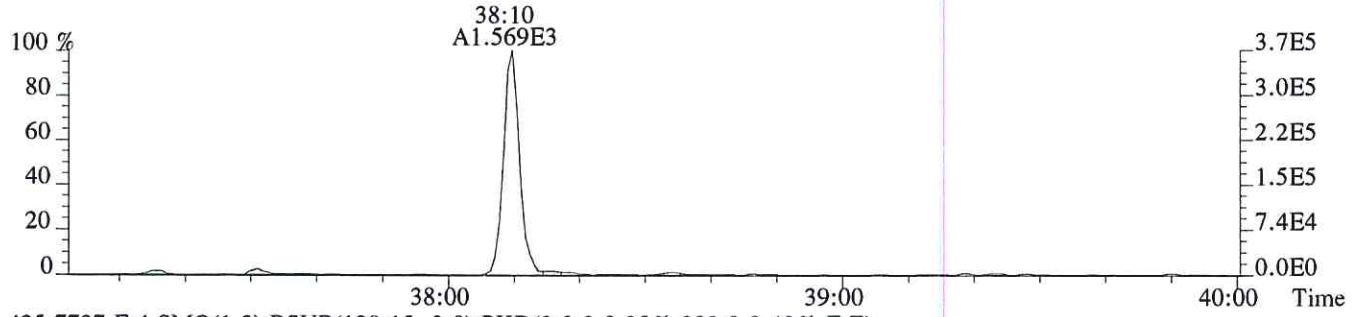
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



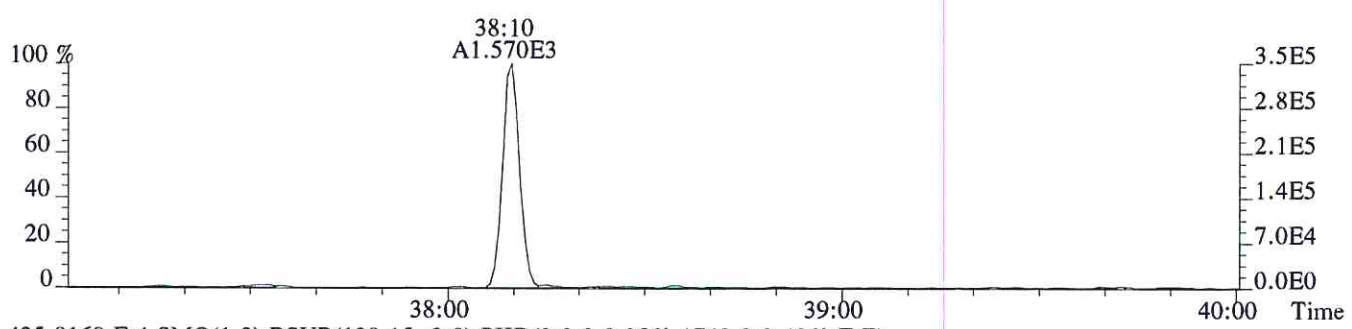
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



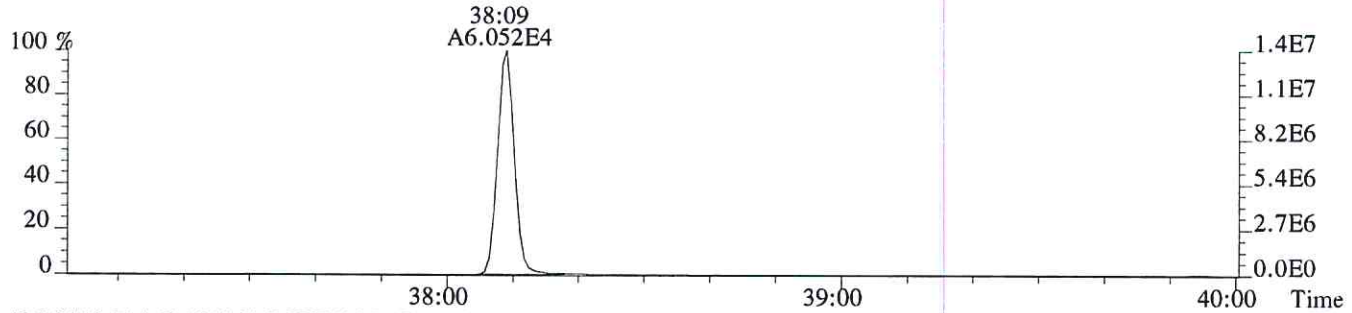
File:P607180 #1-268 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,224.0,0.40%,F,T)



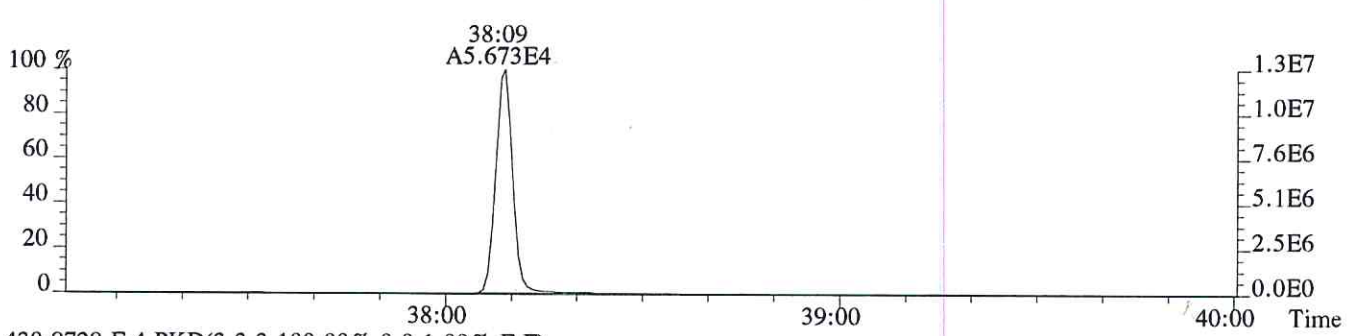
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,308.0,0.40%,F,T)



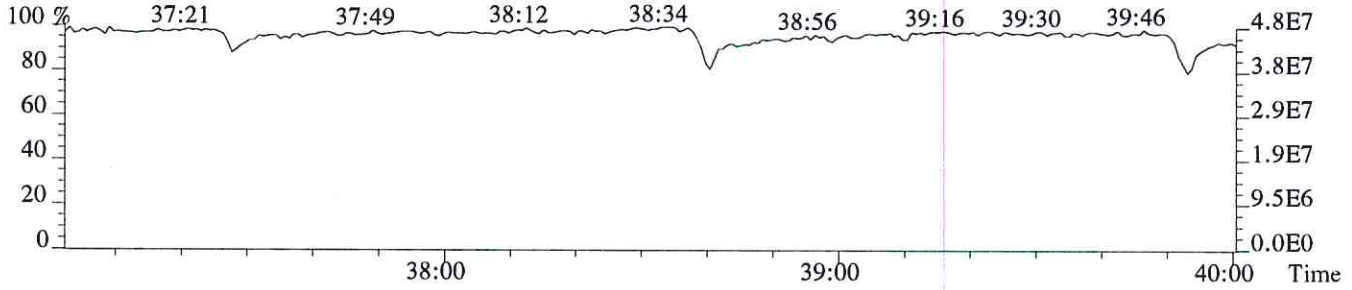
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1740.0,0.40%,F,T)



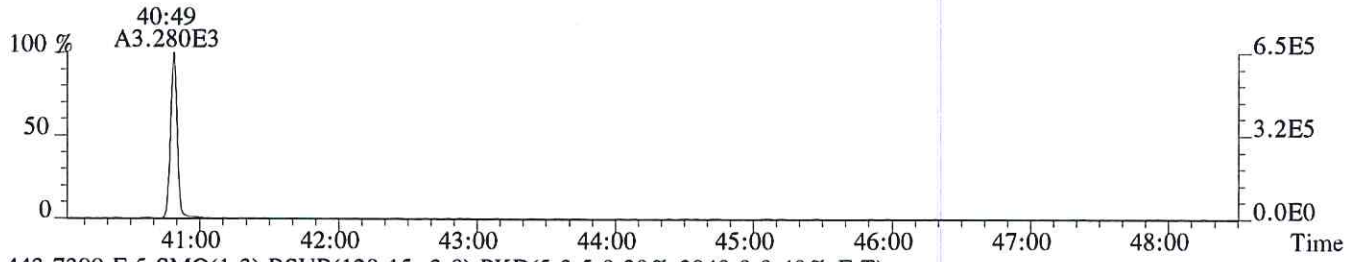
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,548.0,0.40%,F,T)



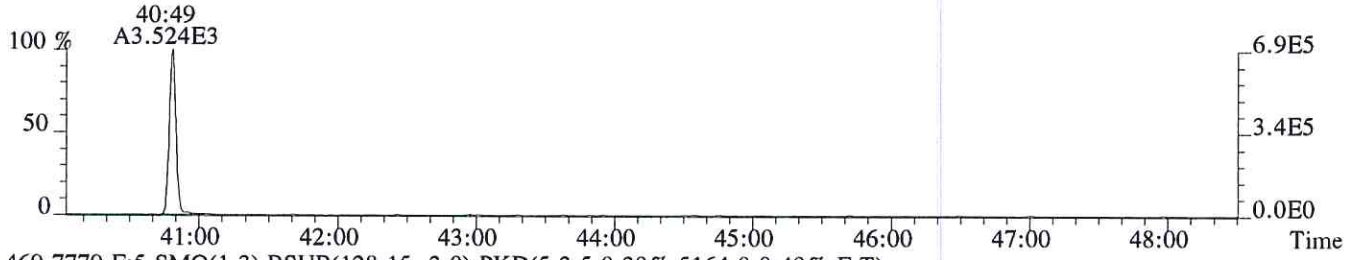
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



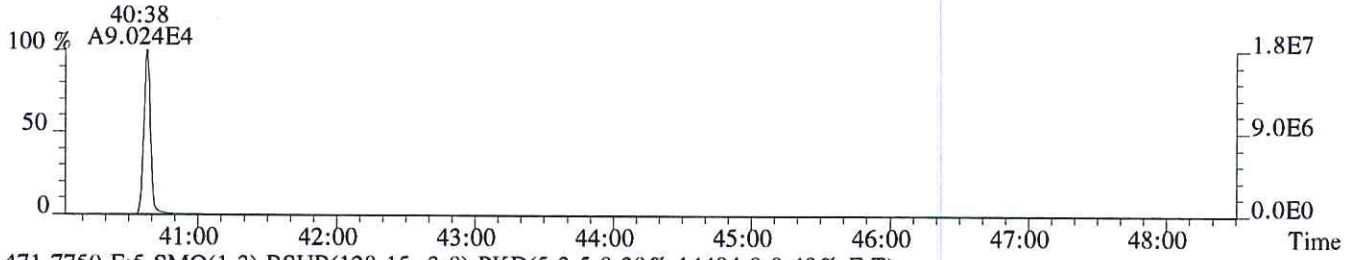
File:P607180 #1-762 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,896.0,0.40%,F,T)



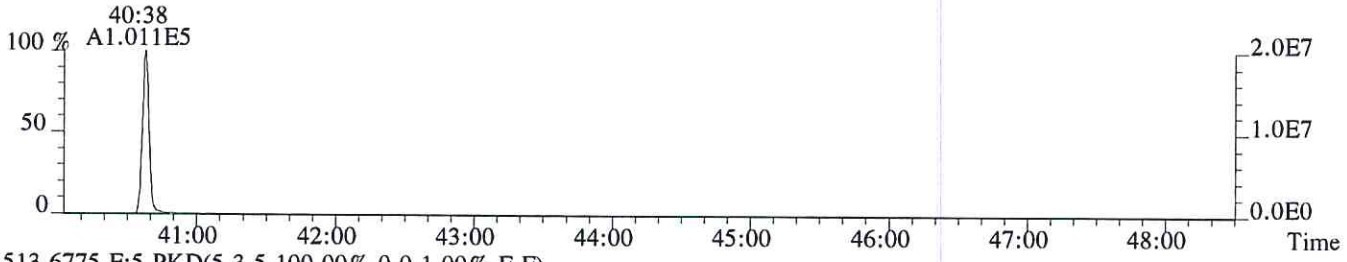
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2940.0,0.40%,F,T)



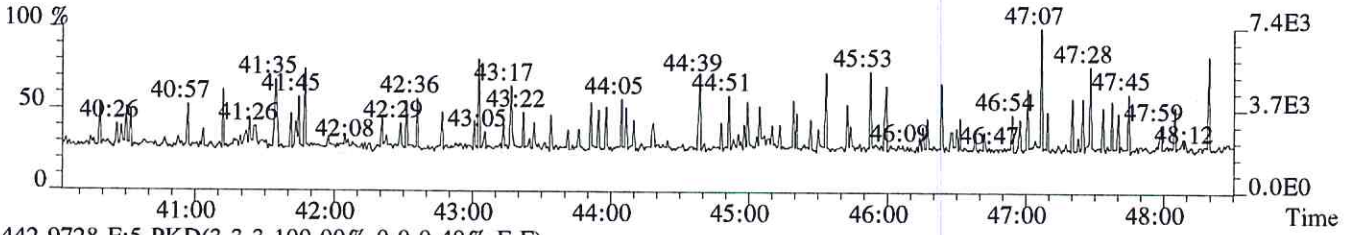
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5164.0,0.40%,F,T)



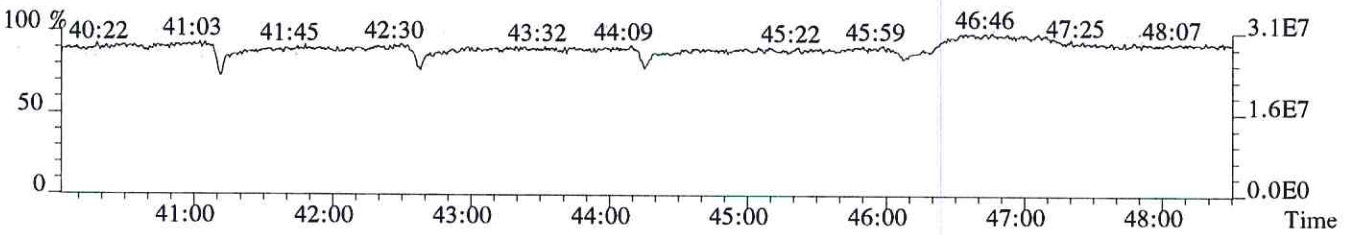
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,14484.0,0.40%,F,T)



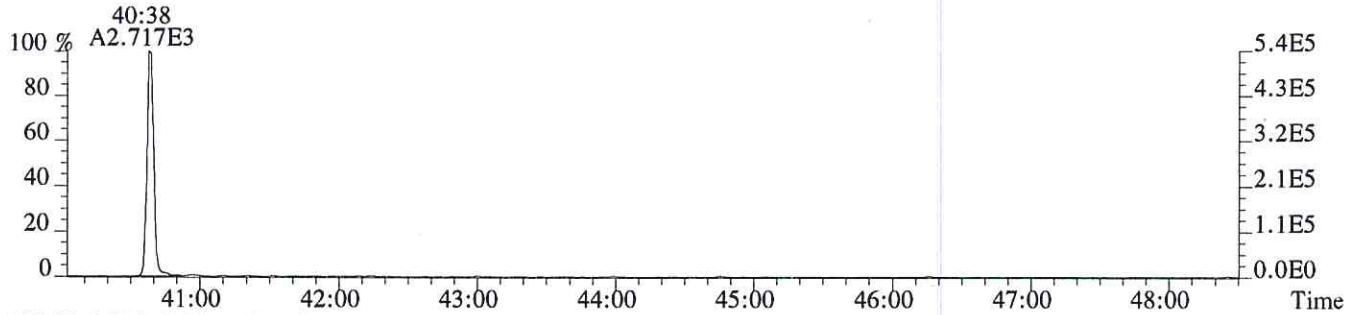
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



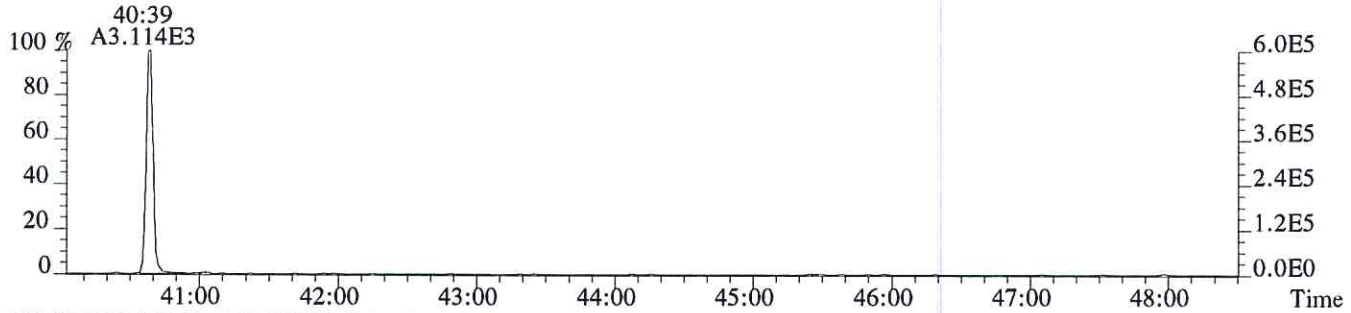
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



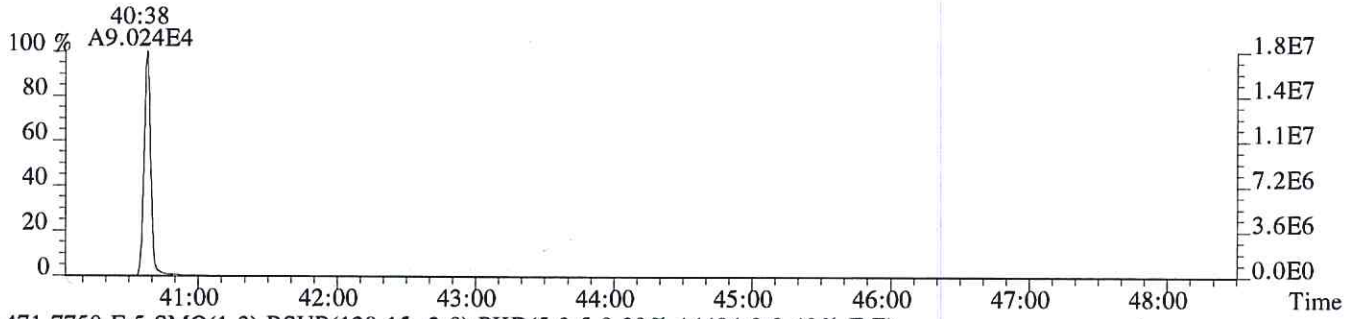
File:P607180 #1-762 Acq:16-MAY-2017 13:34:34 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1180.0,0.40%,F,T)



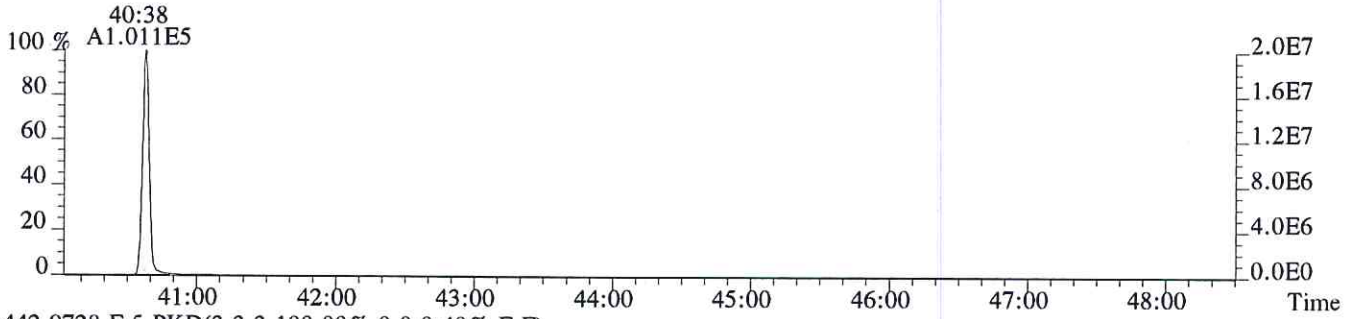
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1900.0,0.40%,F,T)



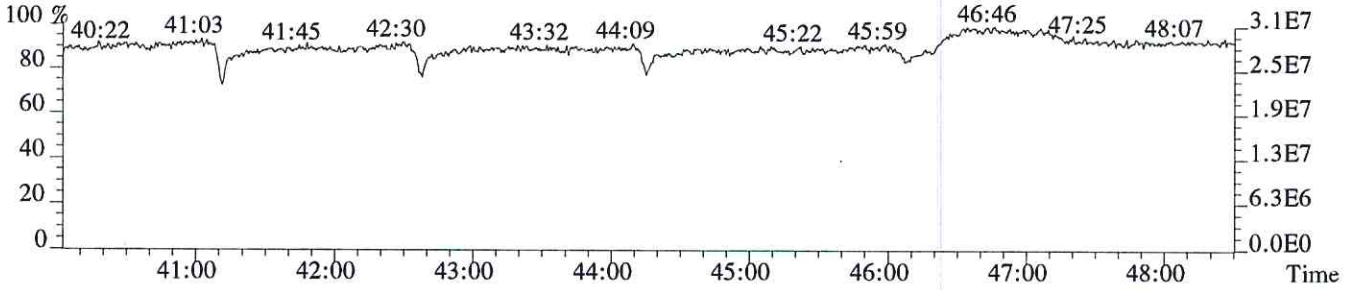
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5164.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,14484.0,0.40%,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 P607181 Samp: 1 Inj: 1 Acquired: 16-MAY-17 14:24:51
Processed: 17-MAY-17 07:52:57 Sample ID: CS2

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:51	2.386e+03	3.044e+03	0.78	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:45	1.873e+04	1.205e+04	1.55	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:44	1.782e+04	1.132e+04	1.57	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:35	1.533e+04	1.224e+04	1.25	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:41	1.747e+04	1.410e+04	1.24	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:13	1.545e+04	1.279e+04	1.21	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:59	1.414e+04	1.119e+04	1.26	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:16	1.297e+04	1.250e+04	1.04	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:35	1.081e+04	1.045e+04	1.03	yes	no	1.341
10	Unk	OCDF	40:49	1.570e+04	1.794e+04	0.88	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:51	1.912e+03	2.246e+03	0.85	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:04	1.230e+04	7.854e+03	1.57	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:22	1.103e+04	8.554e+03	1.29	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:27	1.070e+04	8.425e+03	1.27	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:41	1.163e+04	9.448e+03	1.23	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:10	9.034e+03	8.697e+03	1.04	yes	no	1.048
17	Unk	OCDD	40:39	1.332e+04	1.500e+04	0.89	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:50	1.182e+05	1.489e+05	0.79	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:44	1.779e+05	1.120e+05	1.59	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:44	1.777e+05	1.118e+05	1.59	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:34	7.429e+04	1.418e+05	0.52	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:41	9.014e+04	1.714e+05	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:13	8.320e+04	1.573e+05	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:58	7.343e+04	1.393e+05	0.53	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:16	5.629e+04	1.225e+05	0.46	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:34	4.930e+04	1.095e+05	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:49	8.544e+04	1.066e+05	0.80	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	32:02	1.268e+05	8.063e+04	1.57	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:21	1.036e+05	8.176e+04	1.27	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:27	1.018e+05	8.041e+04	1.27	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:09	8.739e+04	8.214e+04	1.06	yes	no	0.884
32	IS	13C-OCDD	40:38	1.177e+05	1.307e+05	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:07	8.582e+04	1.086e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:41	1.100e+05	8.941e+04	1.23	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:50	4.153e+03				no	1.072

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76556

Run #3 Filename P607181 Samp: 1 Inj: 1 Acquired: 16-MAY-17 14:24:51
Processed: 17-MAY-17 07:52:57 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	3.41e+05	2.28e+02	1.5e+03	4.26e+05	1.24e+03	3.4e+02
2	1,2,3,7,8-PeCDF	3.23e+06	2.20e+02	1.5e+04	2.08e+06	1.54e+03	1.3e+03
3	2,3,4,7,8-PeCDF	3.32e+06	2.20e+02	1.5e+04	2.11e+06	1.54e+03	1.4e+03
4	1,2,3,4,7,8-HxCDF	3.21e+06	2.32e+02	1.4e+04	2.62e+06	2.96e+02	8.9e+03
5	1,2,3,6,7,8-HxCDF	3.44e+06	2.32e+02	1.5e+04	2.84e+06	2.96e+02	9.6e+03
6	2,3,4,6,7,8-HxCDF	3.22e+06	2.32e+02	1.4e+04	2.65e+06	2.96e+02	8.9e+03
7	1,2,3,7,8,9-HxCDF	2.95e+06	2.32e+02	1.3e+04	2.33e+06	2.96e+02	7.9e+03
8	1,2,3,4,6,7,8-HpCDF	2.95e+06	1.25e+03	2.4e+03	2.83e+06	2.92e+03	9.7e+02
9	1,2,3,4,7,8,9-HpCDF	2.35e+06	1.25e+03	1.9e+03	2.30e+06	2.92e+03	7.9e+02
10	OCDF	3.02e+06	1.31e+03	2.3e+03	3.47e+06	3.74e+03	9.3e+02
11	2,3,7,8-TCDD	2.89e+05	1.26e+03	2.3e+02	3.43e+05	2.48e+02	1.4e+03
12	1,2,3,7,8-PeCDD	2.38e+06	1.26e+03	1.9e+03	1.47e+06	9.68e+02	1.5e+03
13	1,2,3,4,7,8-HxCDD	2.37e+06	2.24e+02	1.1e+04	1.85e+06	2.52e+02	7.3e+03
14	1,2,3,6,7,8-HxCDD	2.25e+06	2.24e+02	1.0e+04	1.76e+06	2.52e+02	7.0e+03
15	1,2,3,7,8,9-HxCDD	2.46e+06	2.24e+02	1.1e+04	1.98e+06	2.52e+02	7.8e+03
16	1,2,3,4,6,7,8-HpCDD	2.05e+06	1.36e+02	1.5e+04	1.98e+06	2.20e+02	9.0e+03
17	OCDD	2.63e+06	2.52e+03	1.0e+03	2.97e+06	2.03e+03	1.5e+03
18	13C-2,3,7,8-TCDF	1.71e+07	1.81e+04	9.5e+02	2.16e+07	6.03e+03	3.6e+03
19	13C-1,2,3,7,8-PeCDF	3.04e+07	7.72e+02	3.9e+04	1.93e+07	8.28e+02	2.3e+04
20	13C-2,3,4,7,8-PeCDF	3.31e+07	7.72e+02	4.3e+04	2.10e+07	8.28e+02	2.5e+04
21	13C-1,2,3,4,7,8-HxCDF	1.58e+07	2.96e+02	5.3e+04	2.99e+07	1.41e+03	2.1e+04
22	13C-1,2,3,6,7,8-HxCDF	1.80e+07	2.96e+02	6.1e+04	3.48e+07	1.41e+03	2.5e+04
23	13C-2,3,4,6,7,8-HxCDF	1.74e+07	2.96e+02	5.9e+04	3.26e+07	1.41e+03	2.3e+04
24	13C-1,2,3,7,8,9-HxCDF	1.55e+07	2.96e+02	5.2e+04	2.96e+07	1.41e+03	2.1e+04
25	13C-1,2,3,4,6,7,8-HpCDF	1.25e+07	1.31e+04	9.6e+02	2.77e+07	2.21e+04	1.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.08e+07	1.31e+04	8.3e+02	2.39e+07	2.21e+04	1.1e+03
27	13C-2,3,7,8-TCDD	1.36e+07	6.41e+03	2.1e+03	1.69e+07	3.18e+03	5.3e+03
28	13C-1,2,3,7,8-PeCDD	2.39e+07	9.08e+02	2.6e+04	1.52e+07	1.34e+03	1.1e+04
29	13C-1,2,3,4,7,8-HxCDD	2.26e+07	2.50e+03	9.0e+03	1.77e+07	7.20e+02	2.5e+04
30	13C-1,2,3,6,7,8-HxCDD	2.13e+07	2.50e+03	8.5e+03	1.67e+07	7.20e+02	2.3e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.98e+07	9.52e+02	2.1e+04	1.86e+07	1.94e+03	9.6e+03
32	13C-OCDD	2.37e+07	1.71e+04	1.4e+03	2.60e+07	8.06e+03	3.2e+03
33	13C-1,2,3,4-TCDD	1.30e+07	6.41e+03	2.0e+03	1.65e+07	3.18e+03	5.2e+03
34	13C-1,2,3,7,8,9-HxCDD	2.35e+07	2.50e+03	9.4e+03	1.92e+07	7.20e+02	2.7e+04
35	37Cl-2,3,7,8-TCDD	6.57e+05	1.05e+03	6.3e+02			

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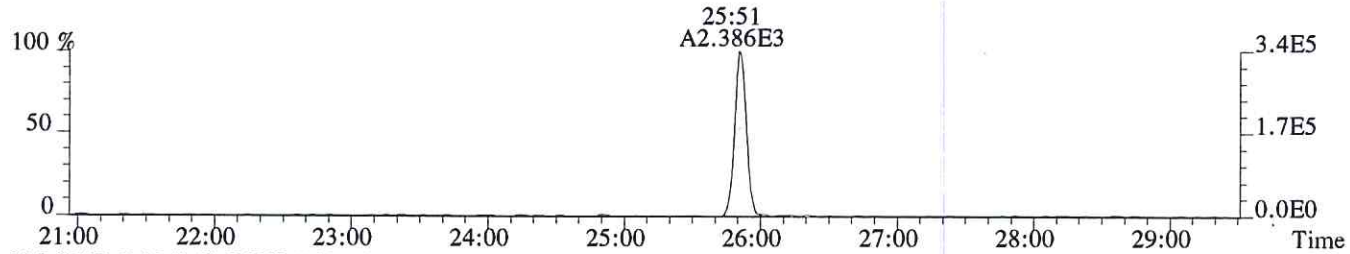
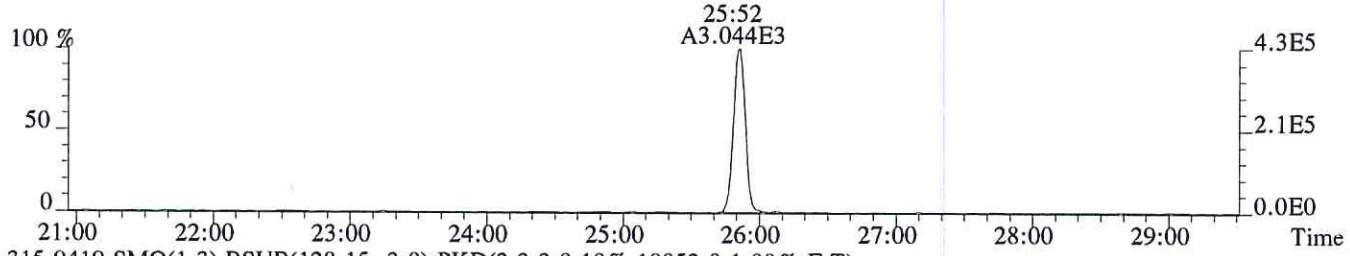
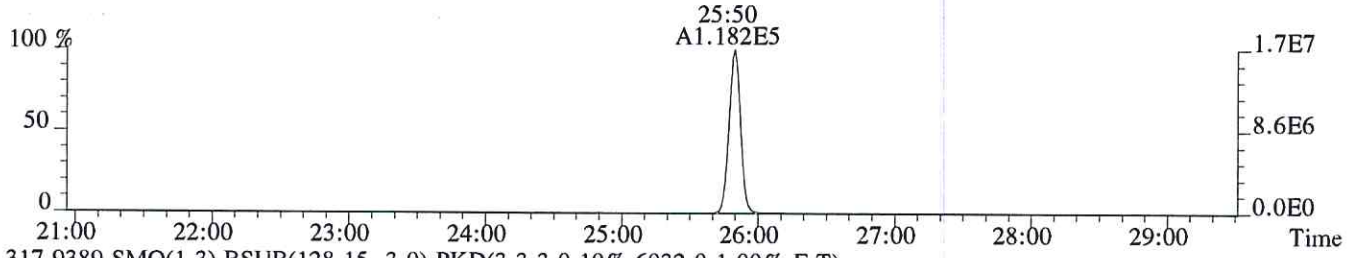
File:P607181 #1-609 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,228.0,1.00%,F,T)



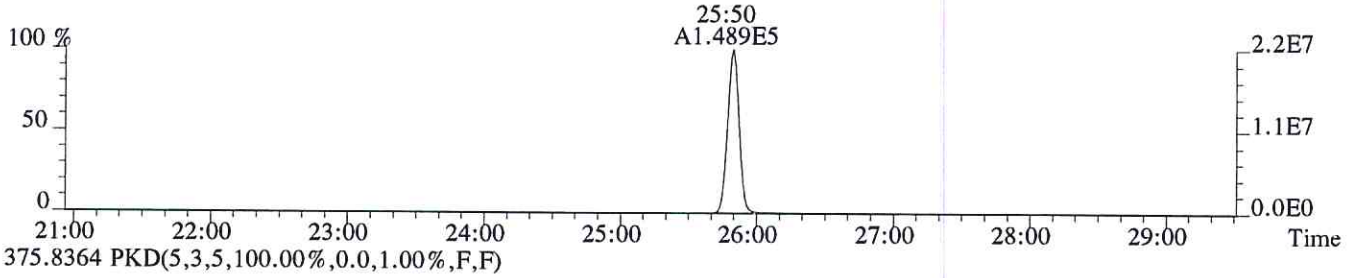
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1236.0,1.00%,F,T)



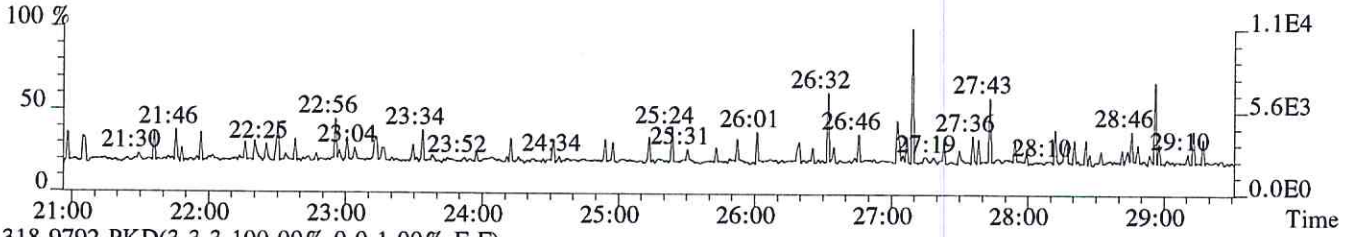
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18052.0,1.00%,F,T)



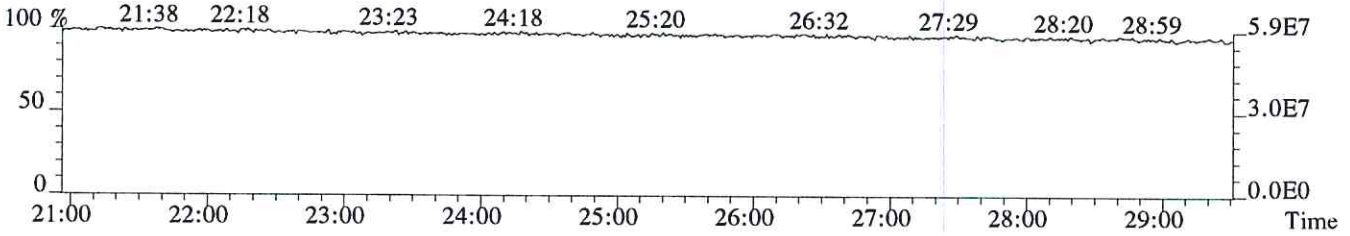
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6032.0,1.00%,F,T)



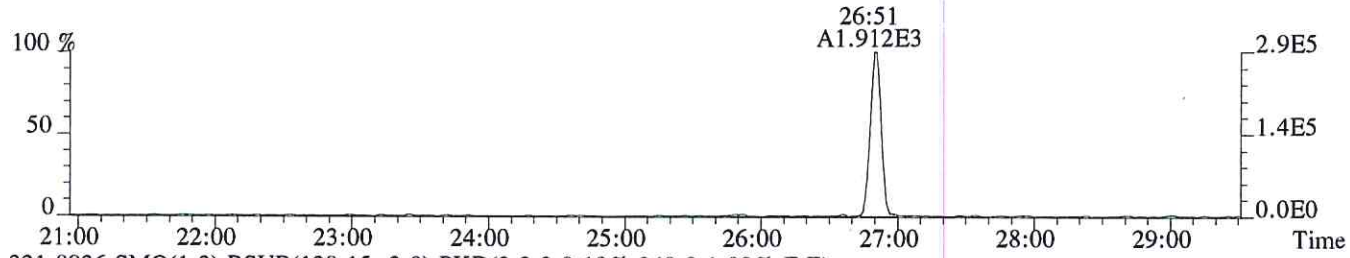
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



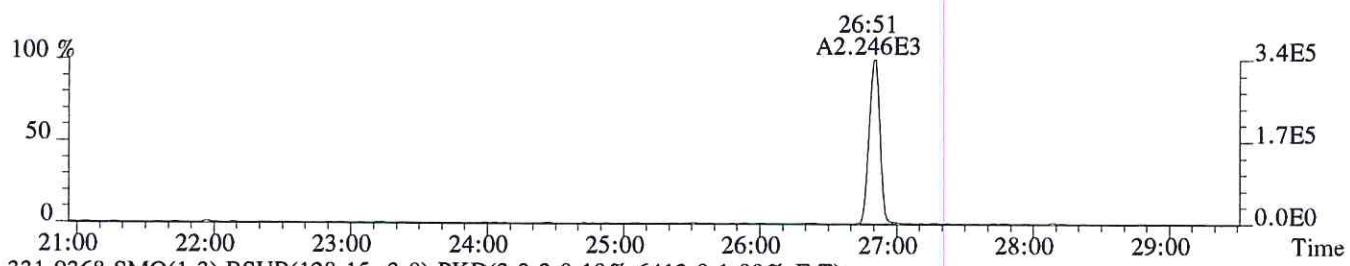
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



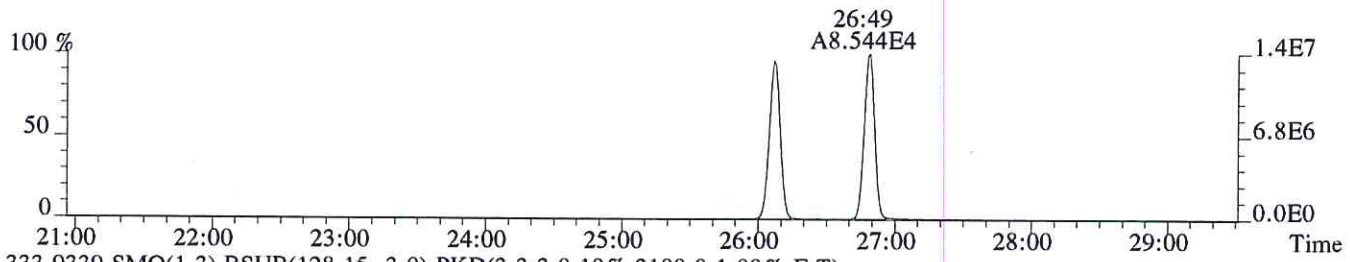
File:P607181 #1-609 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1260.0,1.00%,F,T)



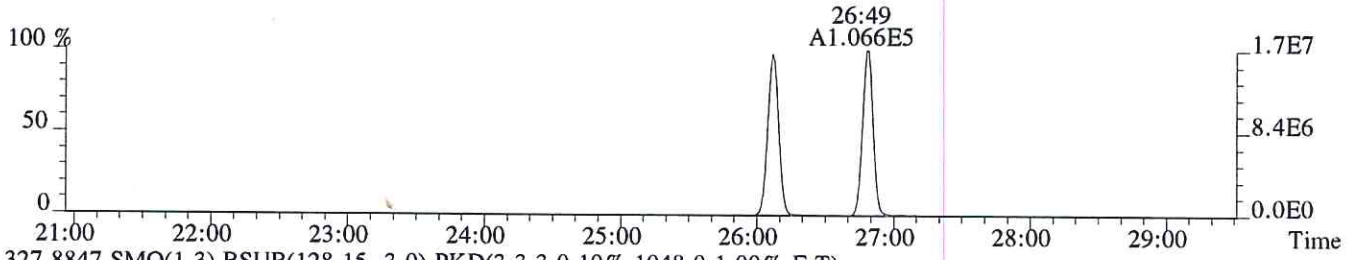
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,248.0,1.00%,F,T)



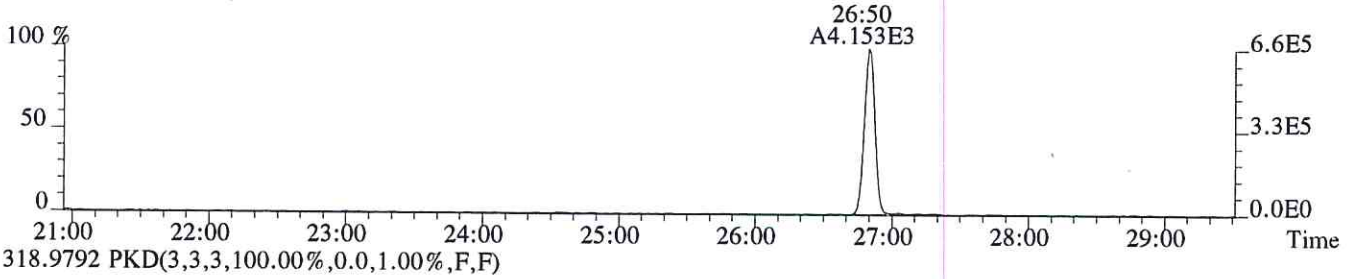
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6412.0,1.00%,F,T)



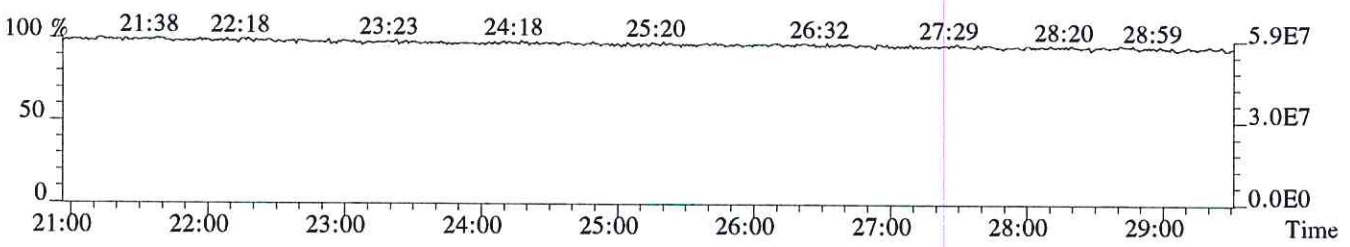
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3180.0,1.00%,F,T)



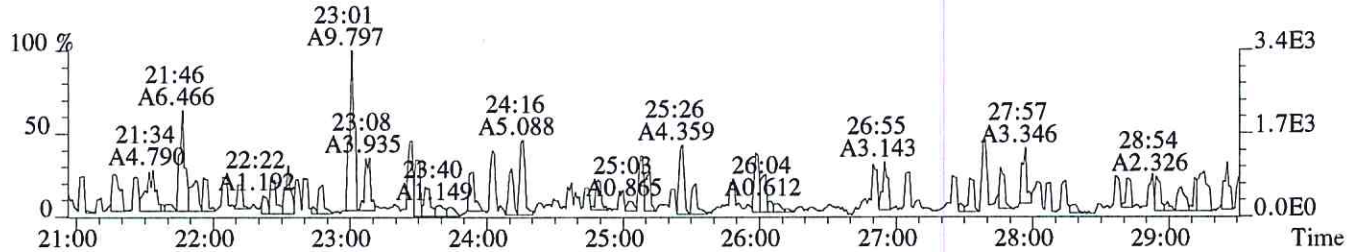
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,T)



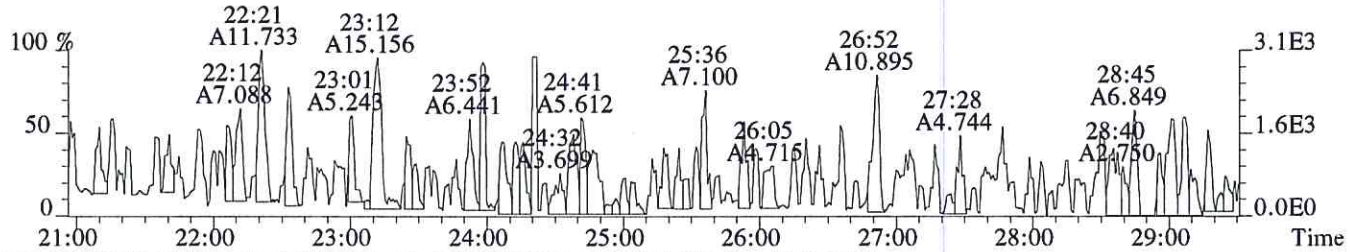
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



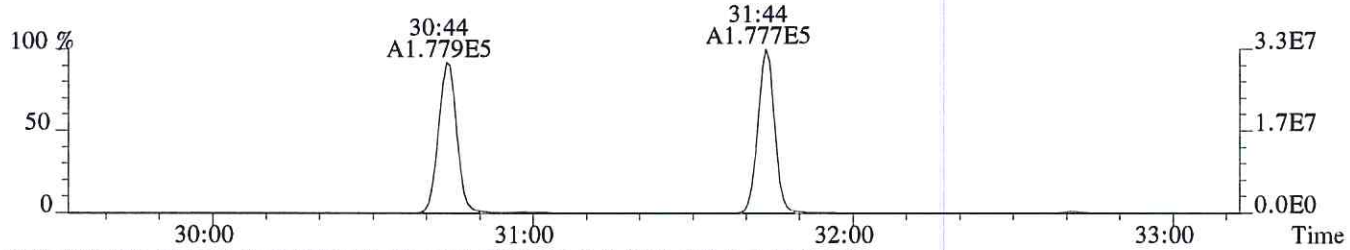
File:P607181 #1-609 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,240.0,1.00%,F,T)



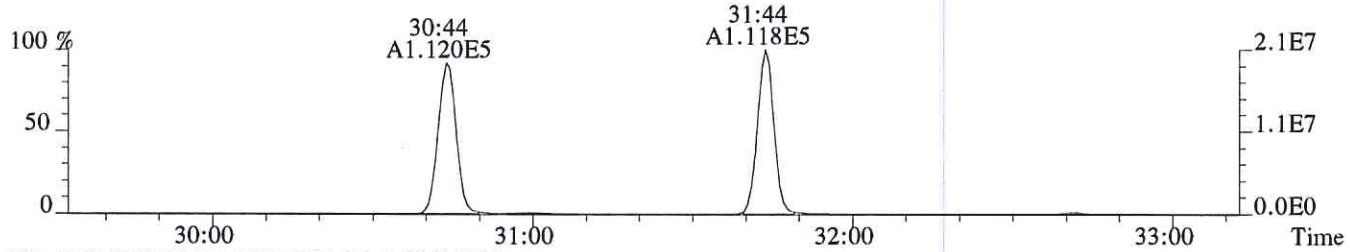
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,664.0,1.00%,F,T)



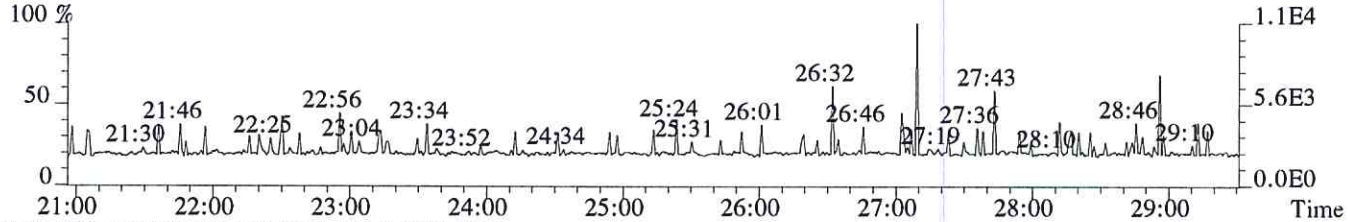
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,772.0,1.00%,F,T)



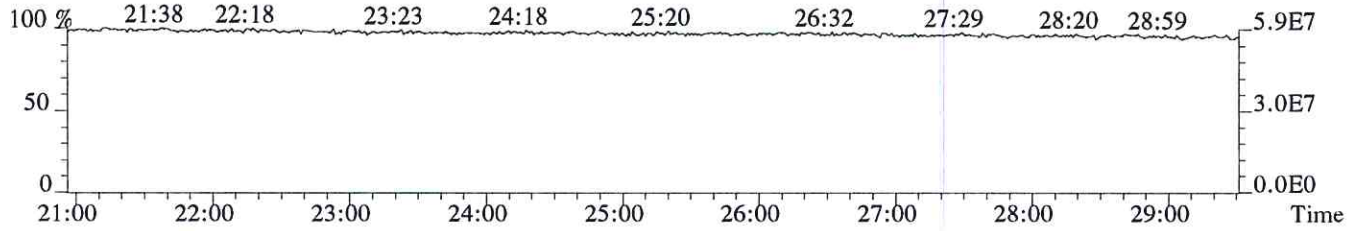
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,828.0,1.00%,F,T)



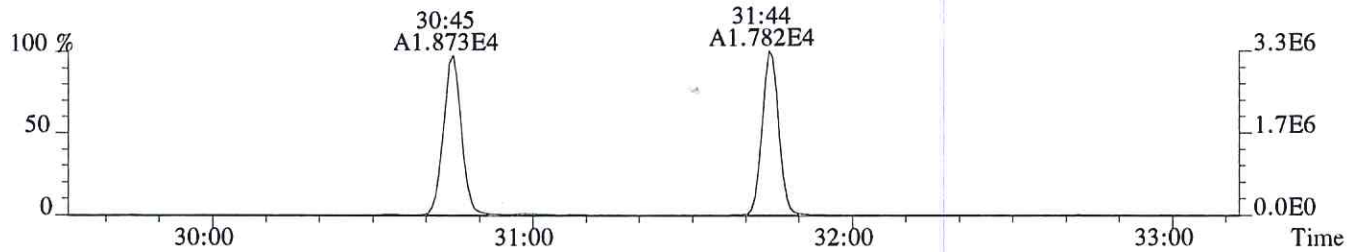
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



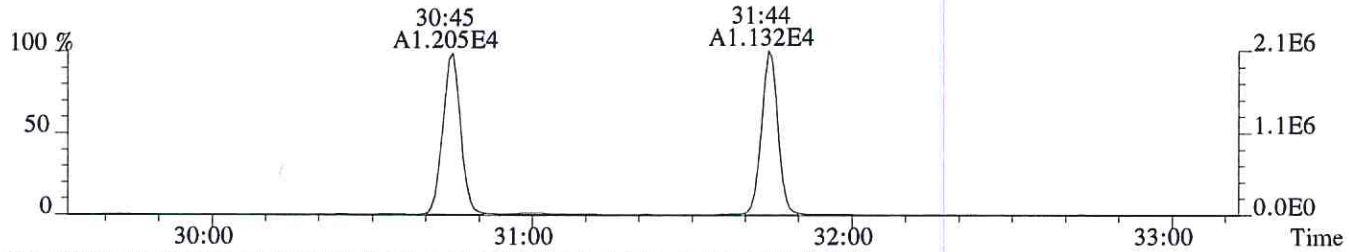
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



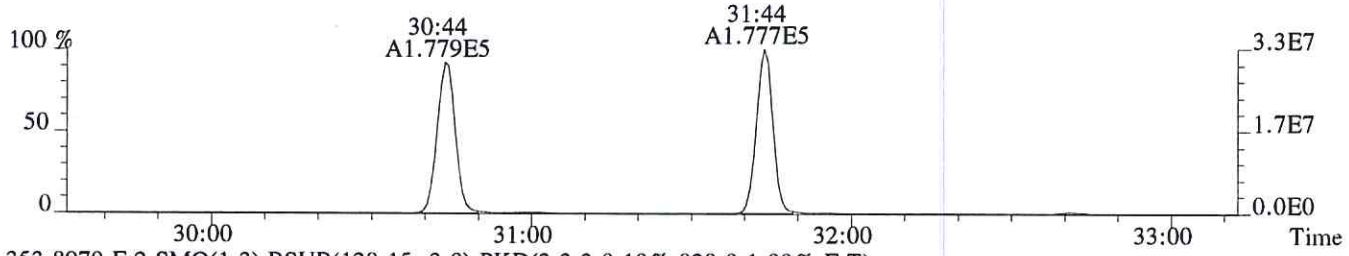
File:P607181 #1-330 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,220.0,1.00%,F,T)



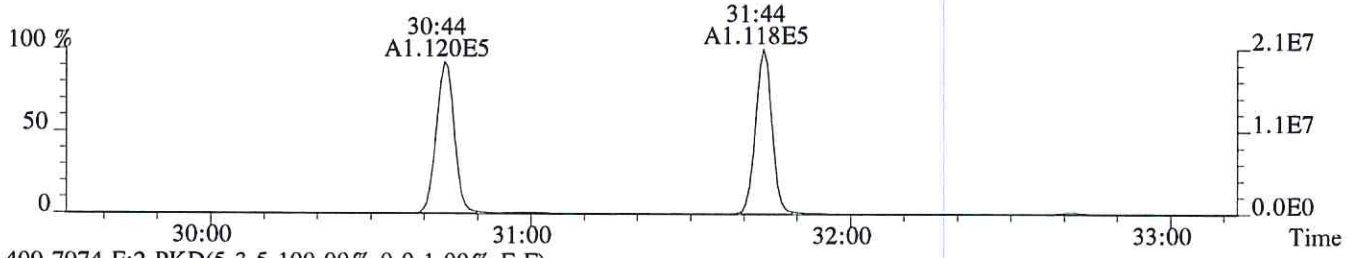
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1544.0,1.00%,F,T)



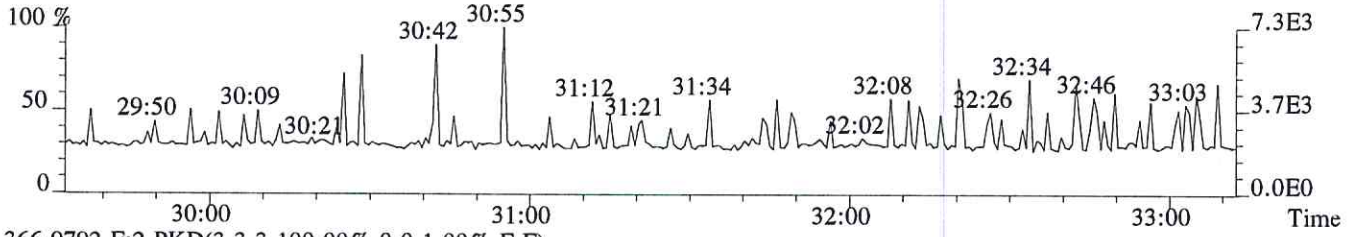
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,772.0,1.00%,F,T)



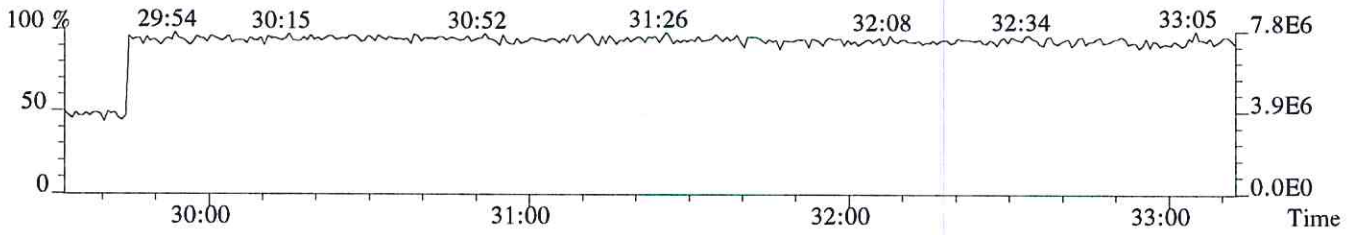
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,828.0,1.00%,F,T)



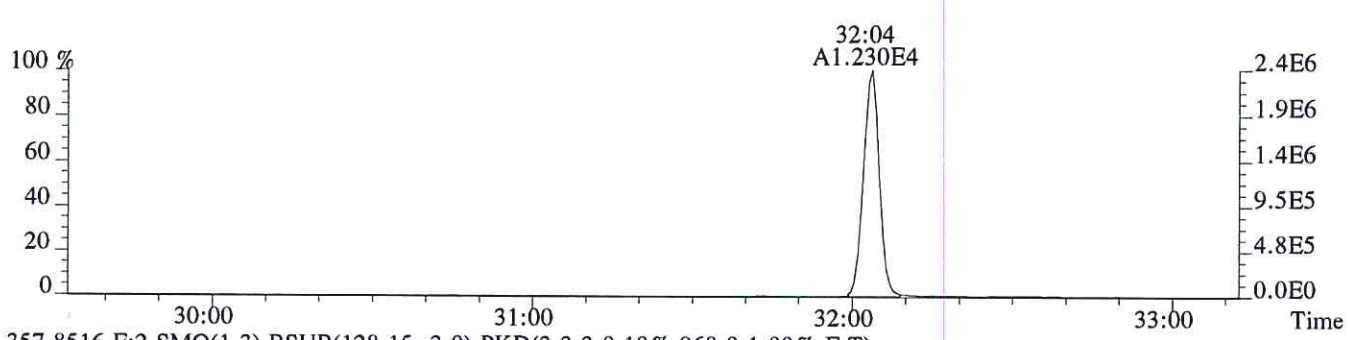
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



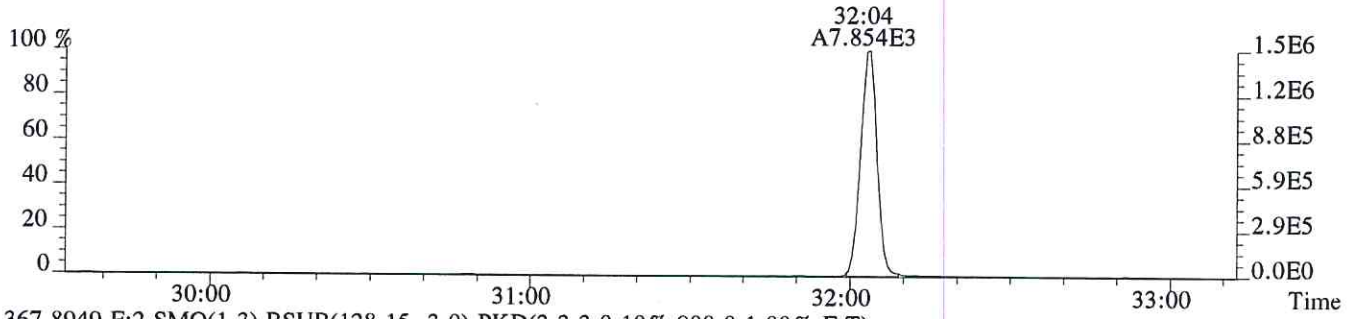
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



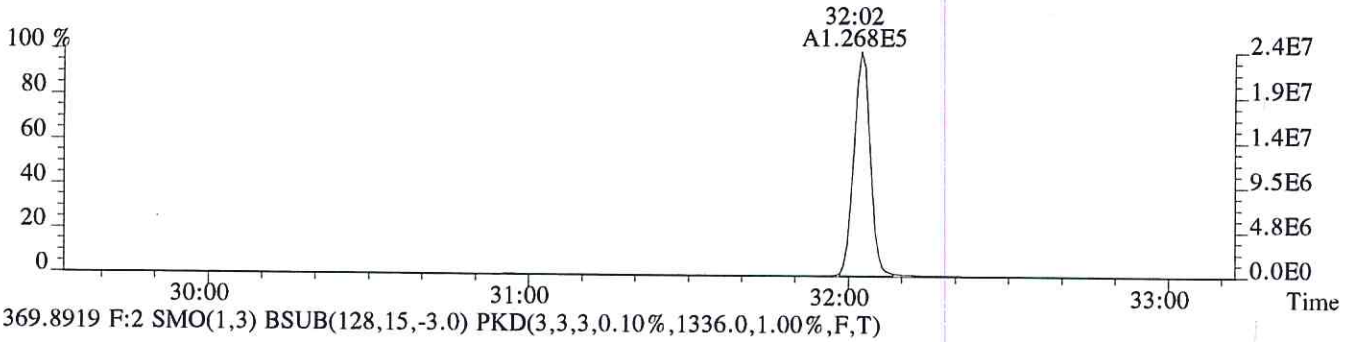
File:P607181 #1-330 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1264.0,1.00%,F,T)



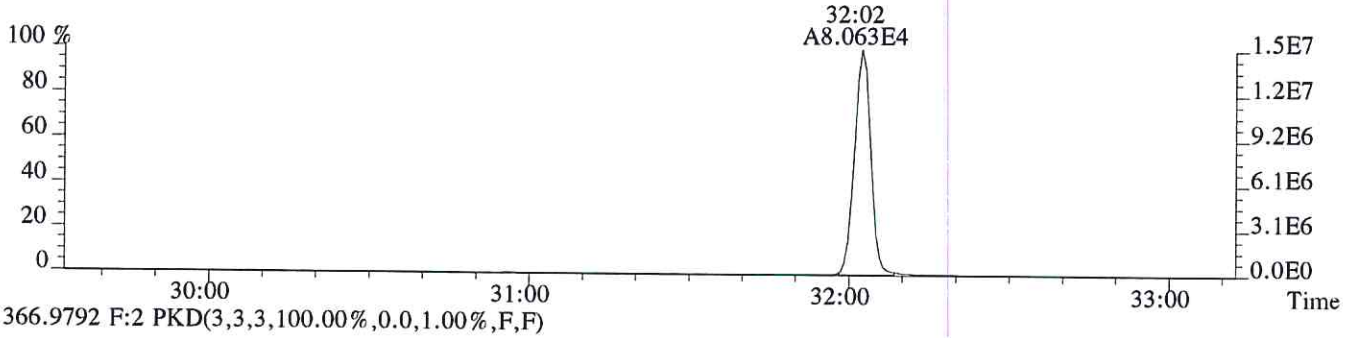
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,968.0,1.00%,F,T)



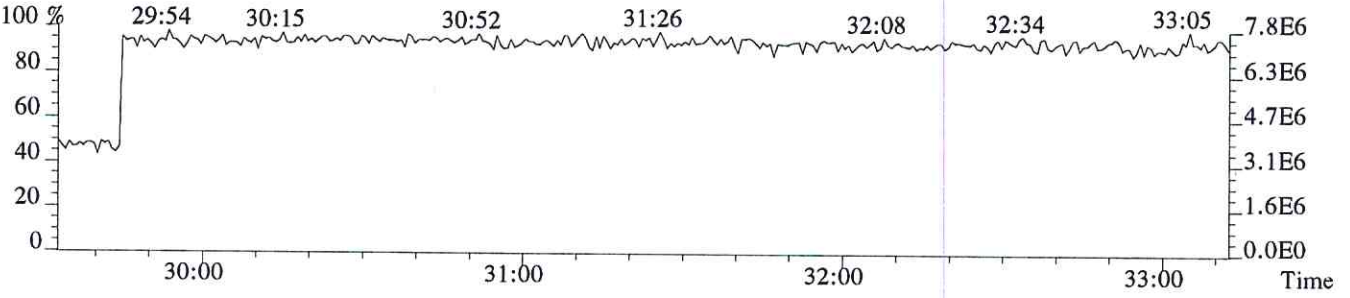
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,908.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1336.0,1.00%,F,T)

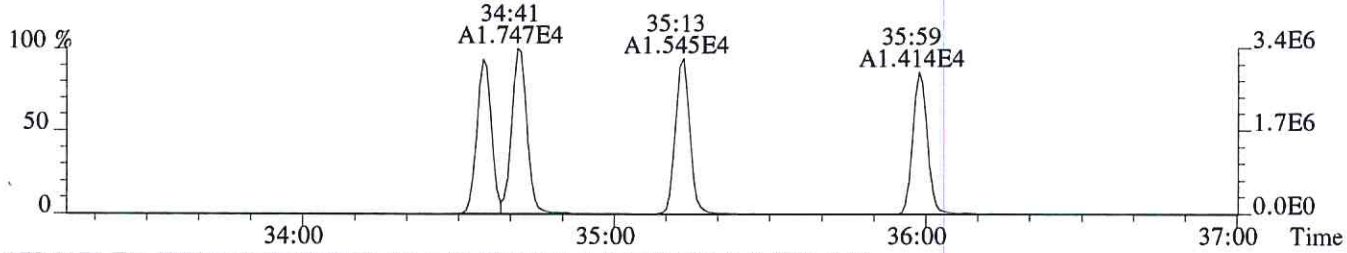


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

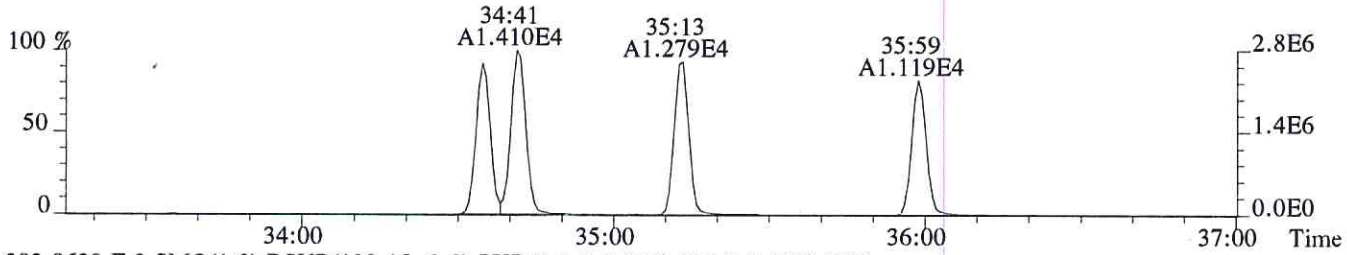


File:P607181 #1-339 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2

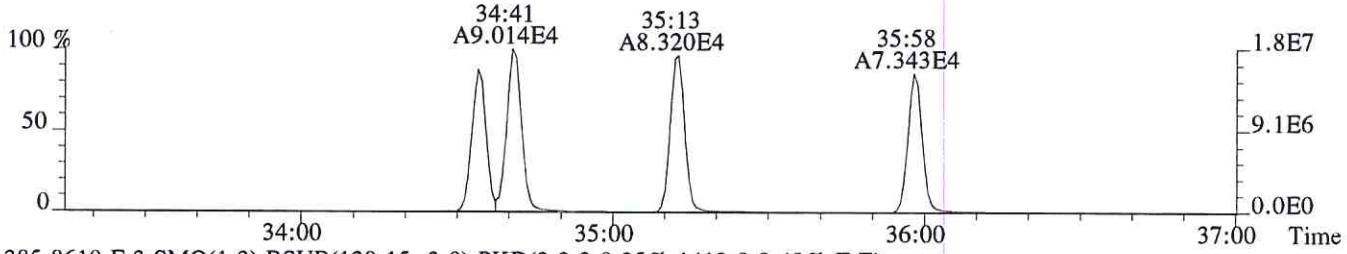
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,232.0,0.40%,F,T)



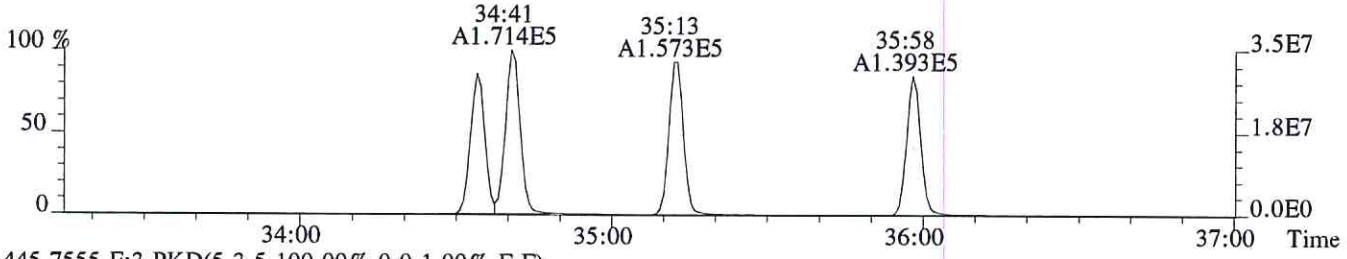
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,296.0,0.40%,F,T)



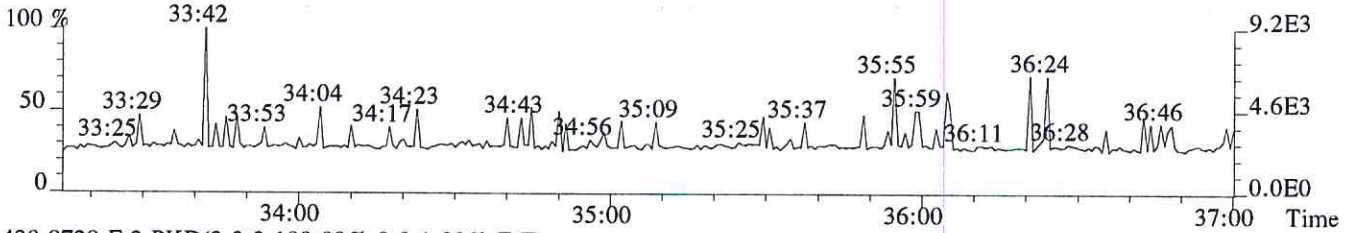
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,296.0,0.40%,F,T)



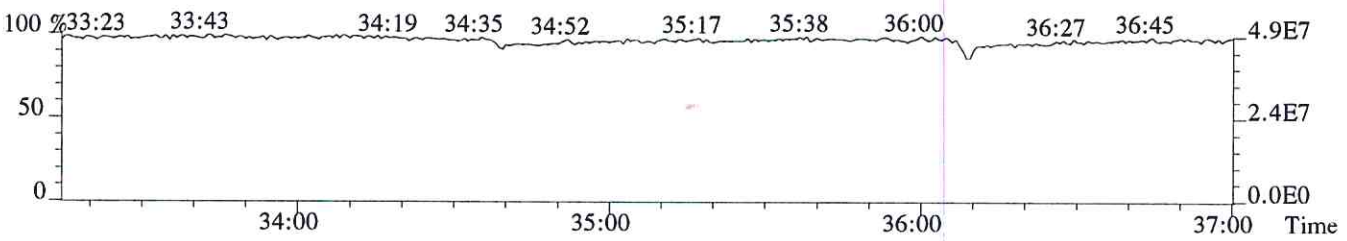
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1412.0,0.40%,F,T)



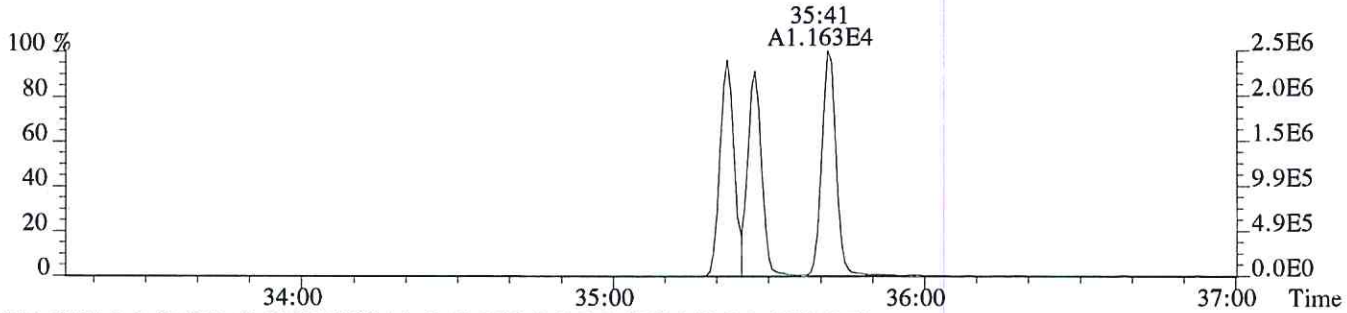
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



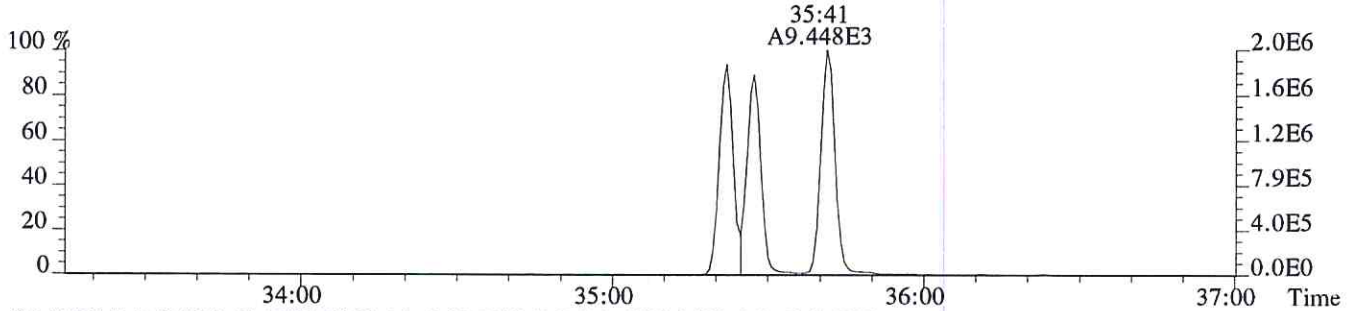
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



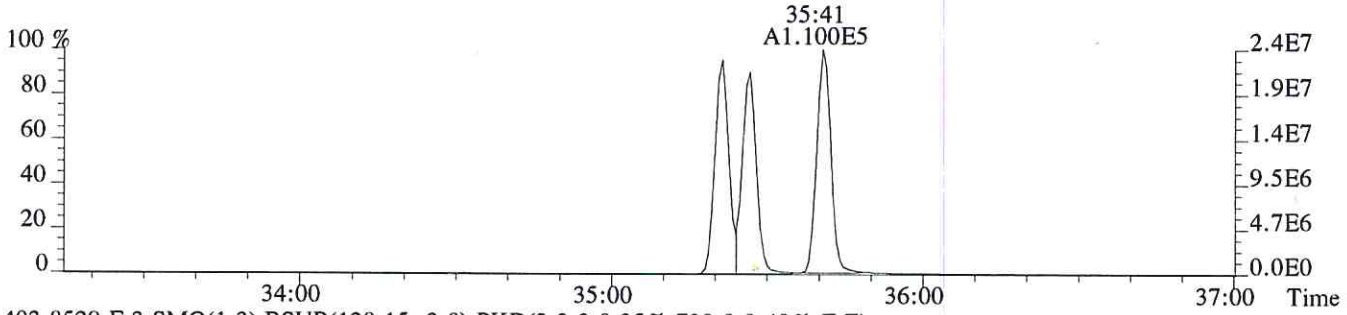
File:P607181 #1-339 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,224.0,0.40%,F,T)



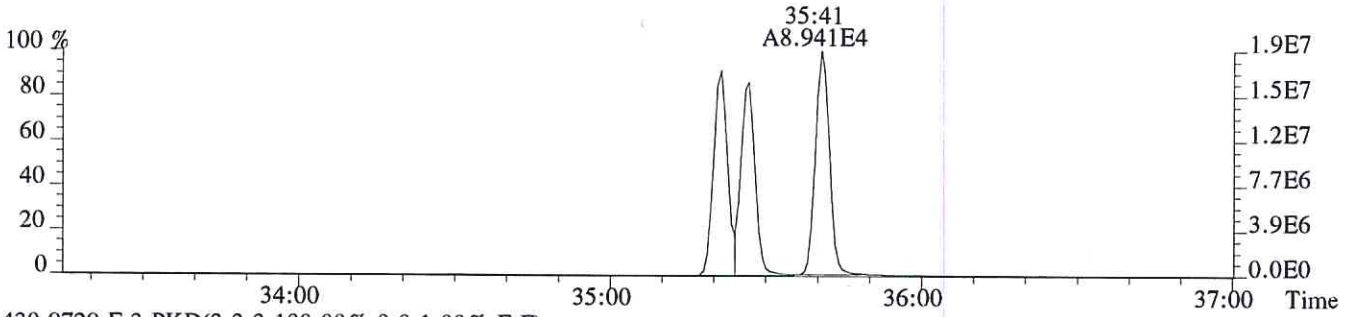
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,252.0,0.40%,F,T)



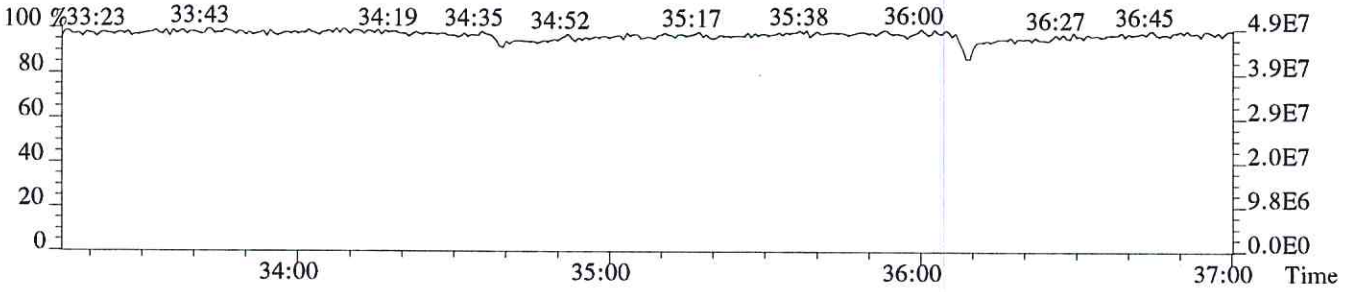
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2500.0,0.40%,F,T)



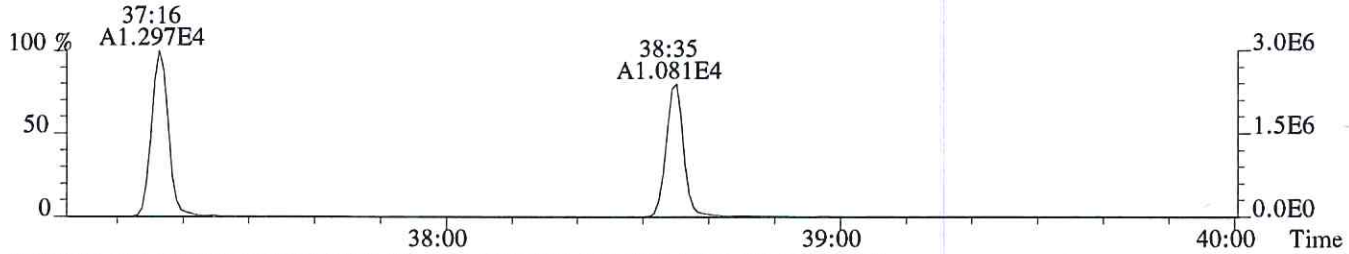
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,720.0,0.40%,F,T)



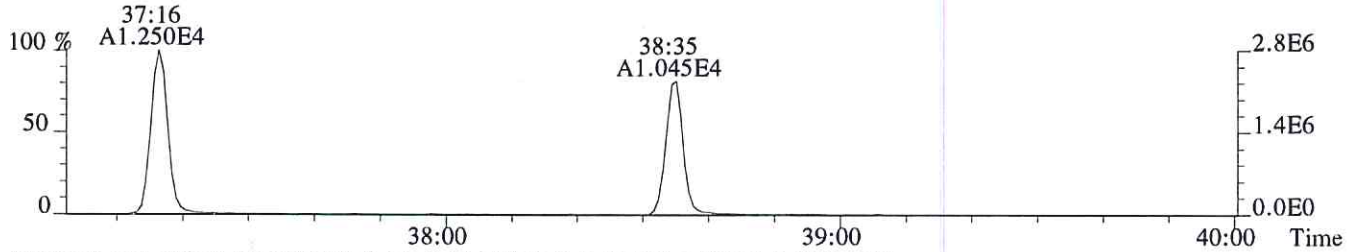
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



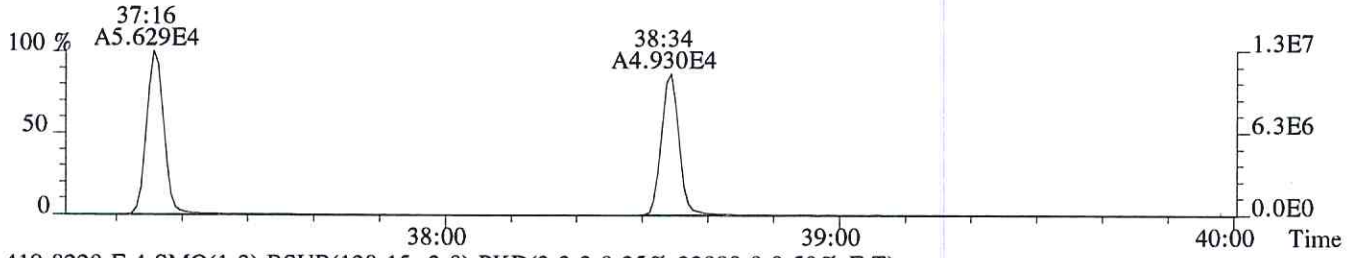
File:P607181 #1-268 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1248.0,0.50%,F,T)



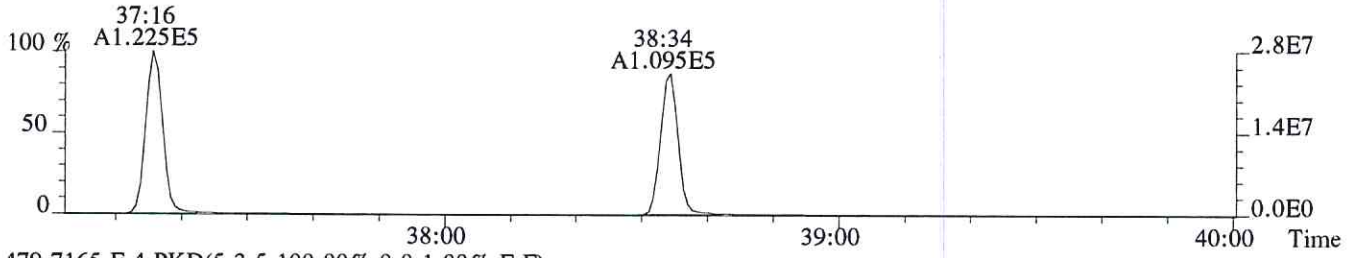
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2916.0,0.50%,F,T)



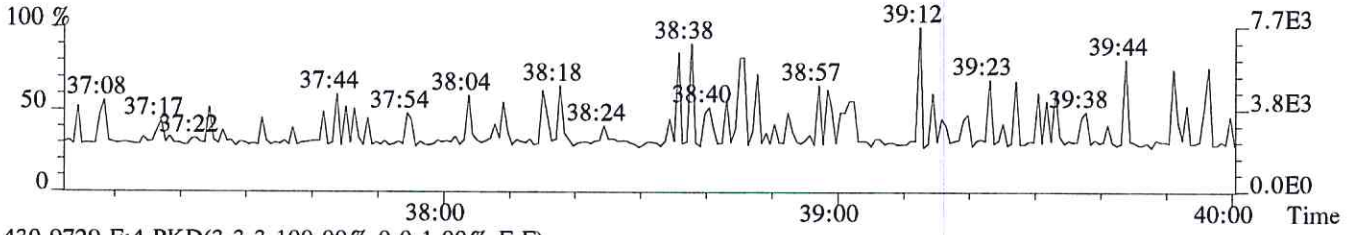
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,13056.0,0.50%,F,T)



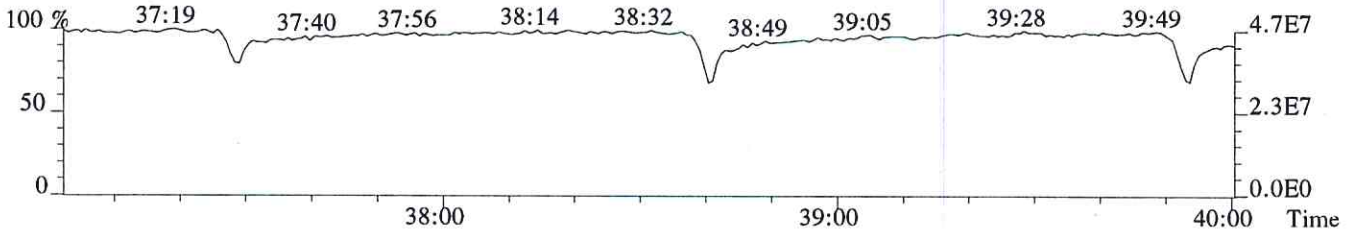
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,22080.0,0.50%,F,T)



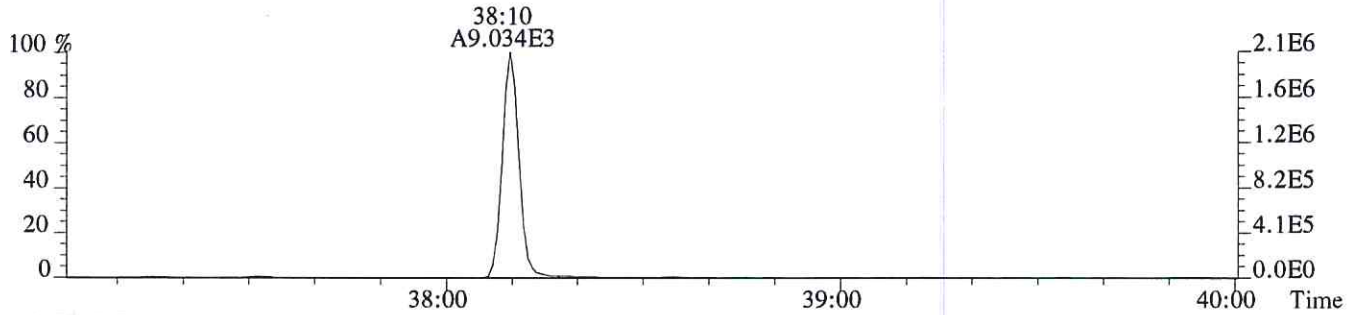
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



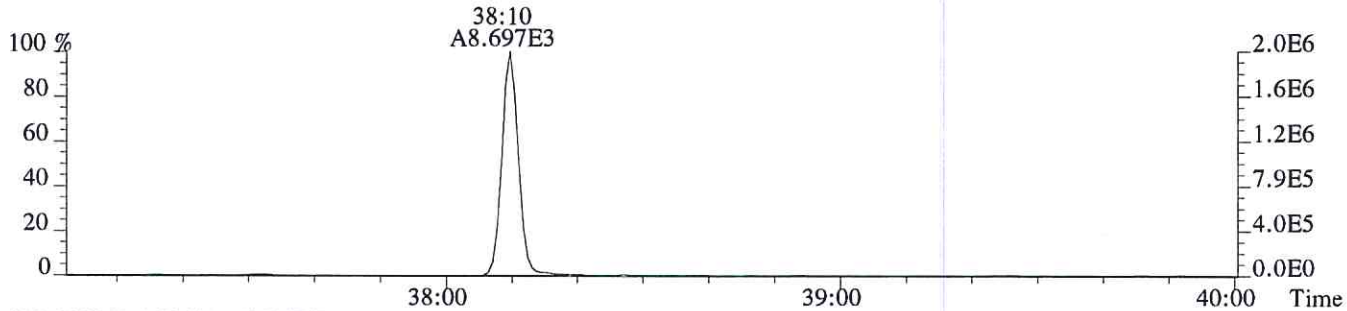
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



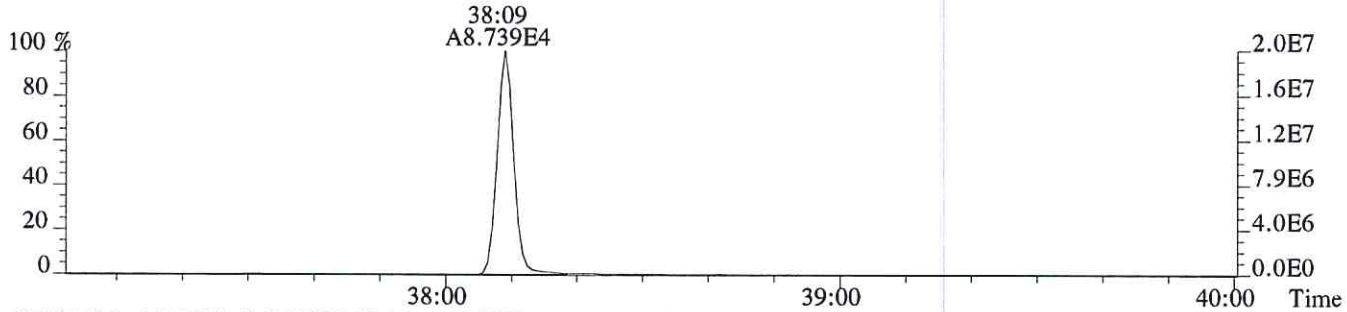
File:P607181 #1-268 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,136.0,0.40%,F,T)



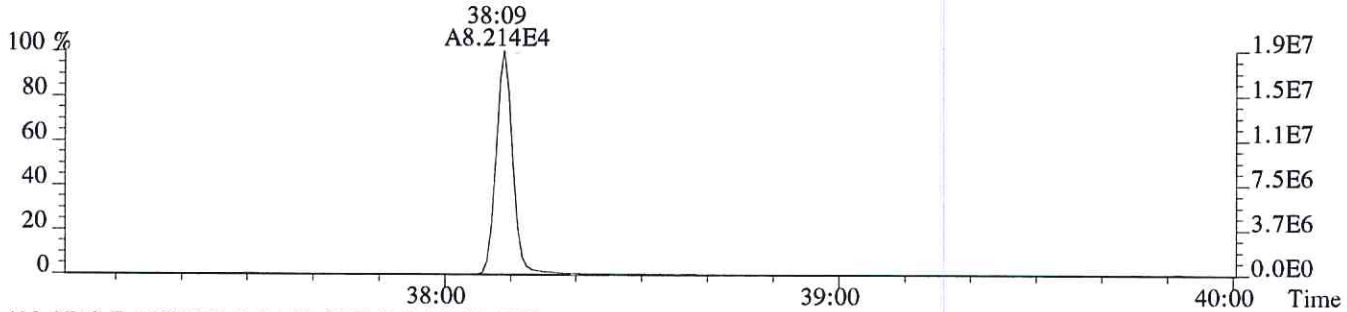
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,220.0,0.40%,F,T)



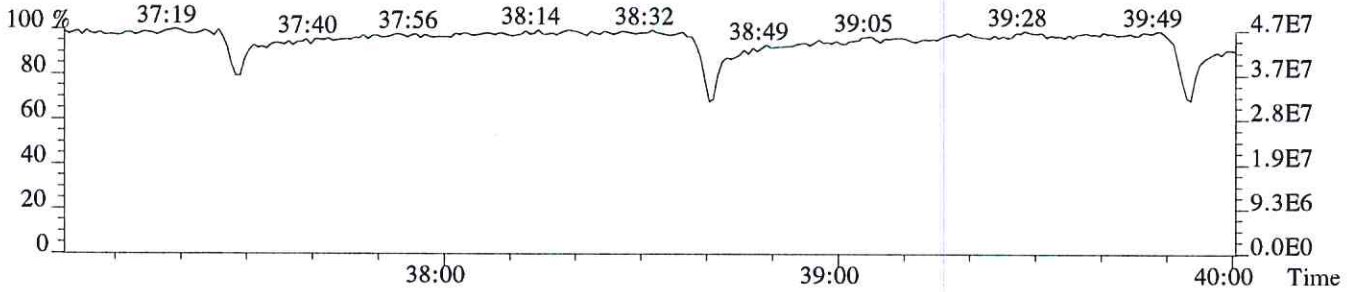
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,952.0,0.40%,F,T)



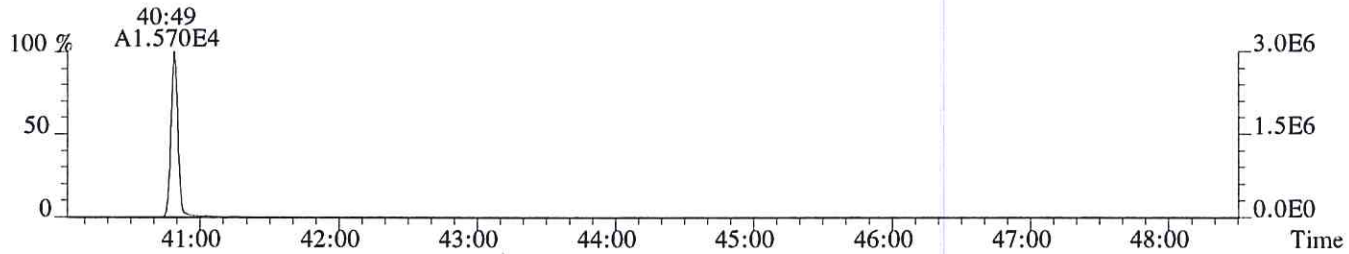
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1940.0,0.40%,F,T)



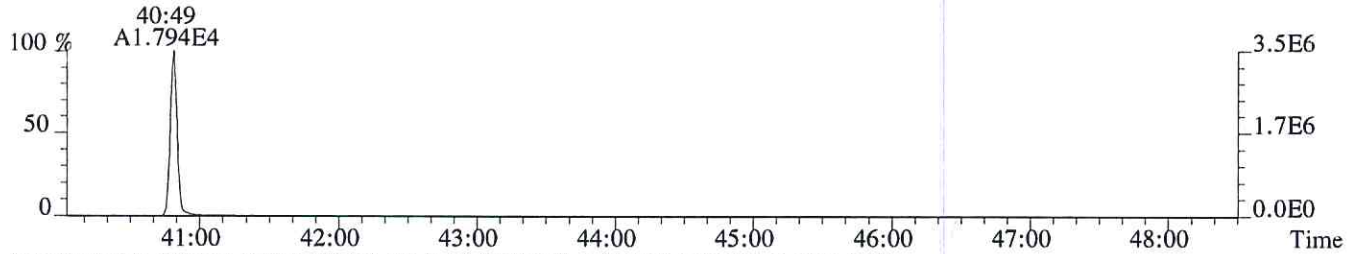
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



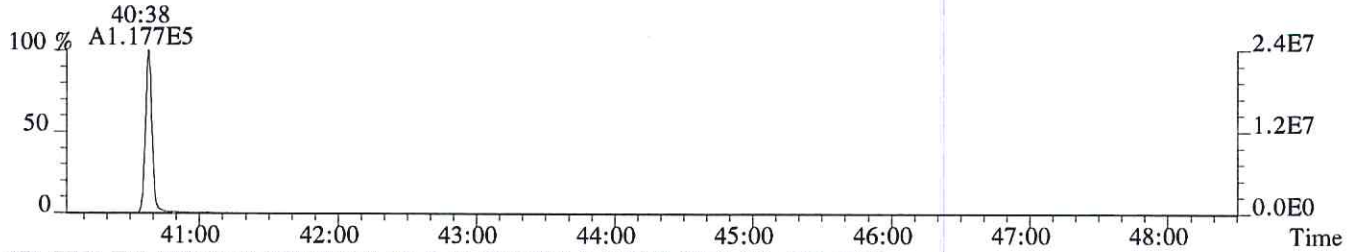
File:P607181 #1-762 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1308.0,0.40%,F,T)



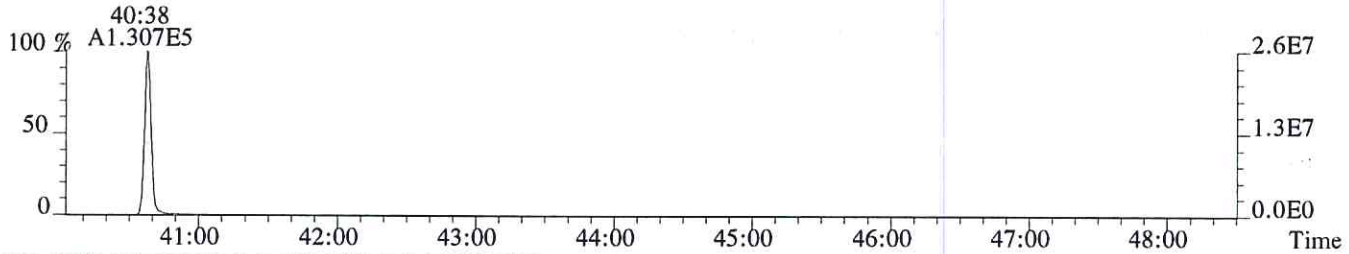
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3736.0,0.40%,F,T)



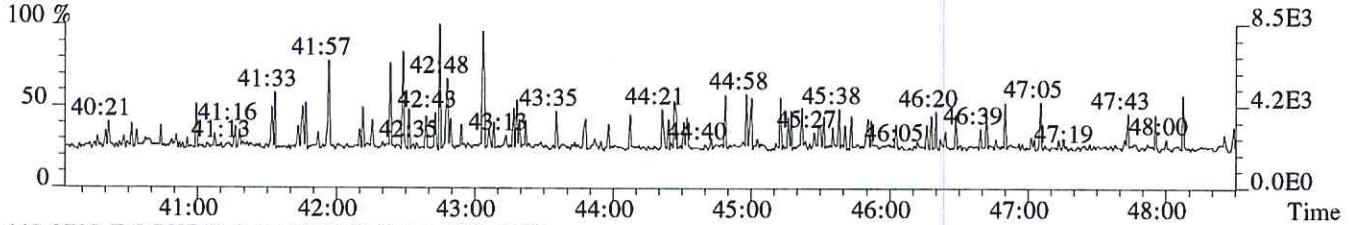
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,17120.0,0.40%,F,T)



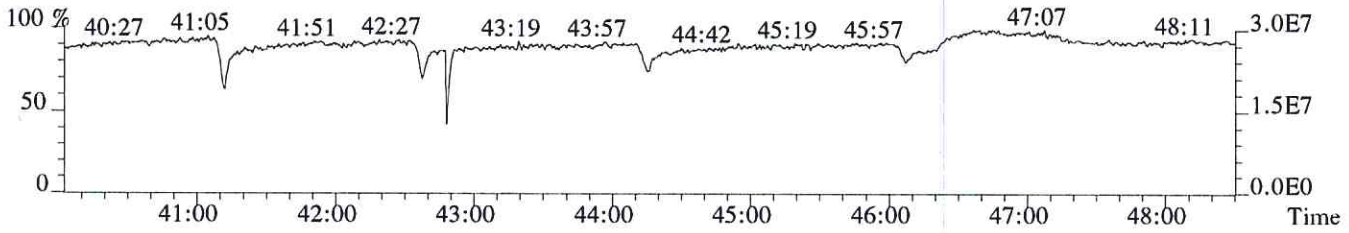
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8060.0,0.40%,F,T)



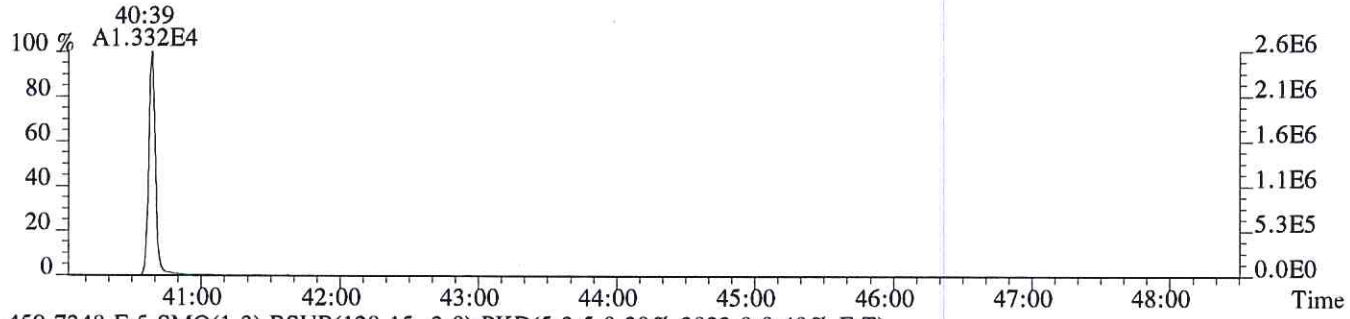
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



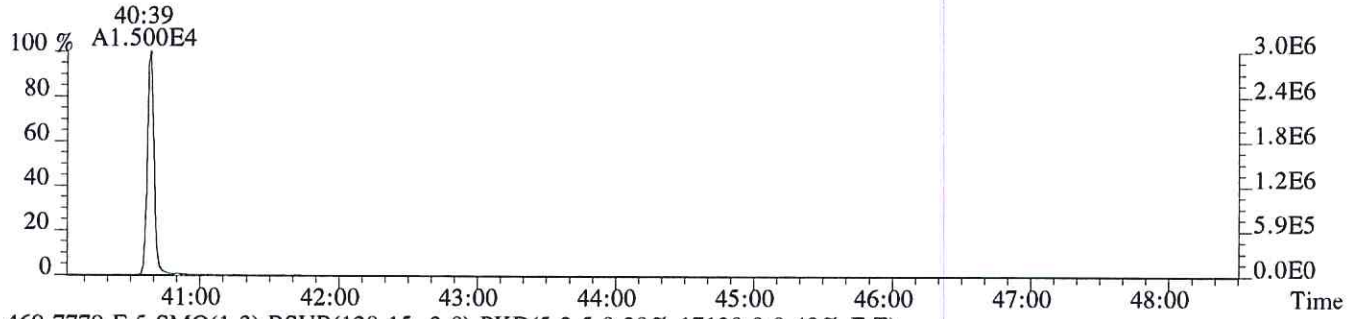
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



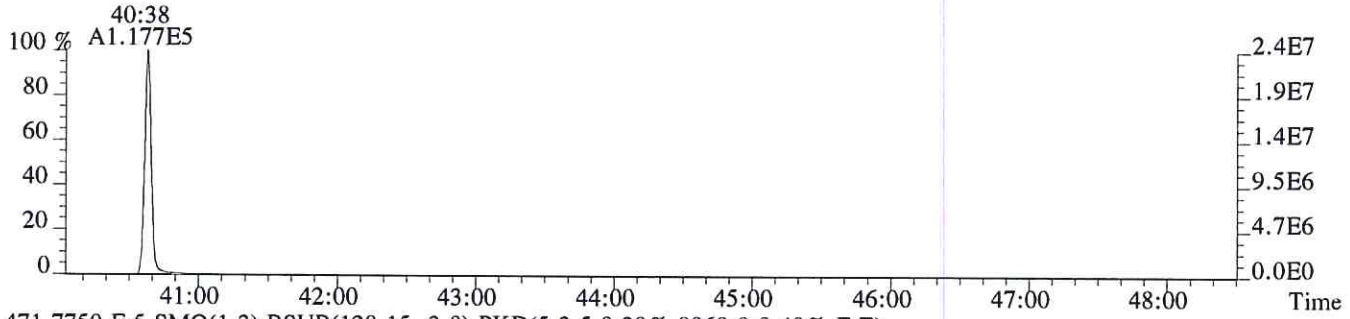
File:P607181 #1-762 Acq:16-MAY-2017 14:24:51 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2520.0,0.40%,F,T)



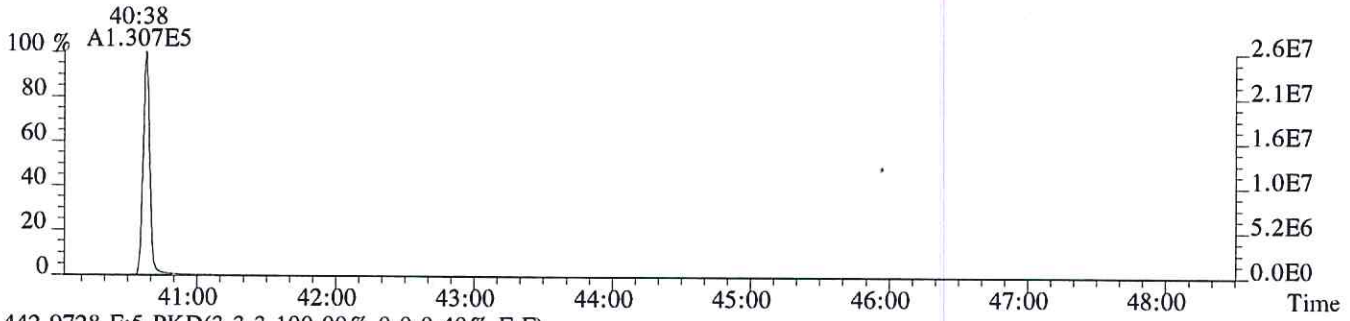
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2032.0,0.40%,F,T)



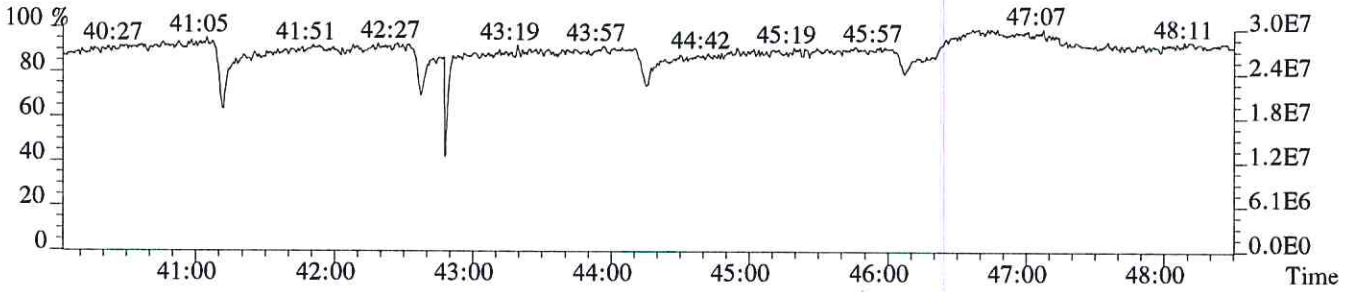
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,17120.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8060.0,0.40%,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 P607182 Samp: 1 Inj: 1 Acquired: 16-MAY-17 15:15:09
Processed: 17-MAY-17 07:52:58 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:51	2.103e+04	2.695e+04	0.78	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:44	1.681e+05	1.072e+05	1.57	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:44	1.575e+05	1.020e+05	1.54	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:34	1.359e+05	1.089e+05	1.25	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:41	1.536e+05	1.232e+05	1.25	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:13	1.372e+05	1.109e+05	1.24	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:58	1.249e+05	1.001e+05	1.25	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:16	1.138e+05	1.115e+05	1.02	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:34	9.665e+04	9.477e+04	1.02	yes	no	1.341
10	Unk	OCDF	40:48	1.516e+05	1.689e+05	0.90	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:49	1.568e+04	2.033e+04	0.77	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:03	1.076e+05	6.918e+04	1.55	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:21	9.560e+04	7.714e+04	1.24	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:27	9.479e+04	7.643e+04	1.24	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:41	1.002e+05	8.339e+04	1.20	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:09	8.246e+04	7.874e+04	1.05	yes	no	1.048
17	Unk	OCDD	40:38	1.247e+05	1.407e+05	0.89	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:49	2.148e+05	2.714e+05	0.79	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:43	3.172e+05	2.010e+05	1.58	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:43	3.204e+05	2.023e+05	1.58	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:33	1.351e+05	2.585e+05	0.52	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:40	1.645e+05	3.095e+05	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:12	1.478e+05	2.826e+05	0.52	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:57	1.311e+05	2.502e+05	0.52	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:15	1.017e+05	2.244e+05	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:34	9.181e+04	2.033e+05	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:48	1.527e+05	1.948e+05	0.78	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	32:02	2.300e+05	1.461e+05	1.57	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:21	1.875e+05	1.484e+05	1.26	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:26	1.809e+05	1.433e+05	1.26	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:08	1.583e+05	1.492e+05	1.06	yes	no	0.884
32	IS	13C-OCDD	40:37	2.261e+05	2.514e+05	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:06	1.586e+05	1.990e+05	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:40	1.984e+05	1.597e+05	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:49	3.730e+04				no	1.072

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76557

Run #4 Filename P607182 Samp: 1 Inj: 1 Acquired: 16-MAY-17 15:15:09
Processed: 17-MAY-17 07:52:58 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	3.08e+06	2.36e+02	1.3e+04	3.95e+06	1.76e+03	2.2e+03
2	1,2,3,7,8-PeCDF	2.87e+07	1.33e+03	2.2e+04	1.81e+07	3.27e+03	5.5e+03
3	2,3,4,7,8-PeCDF	2.93e+07	1.33e+03	2.2e+04	1.90e+07	3.27e+03	5.8e+03
4	1,2,3,4,7,8-HxCDF	2.89e+07	9.56e+02	3.0e+04	2.33e+07	2.24e+02	1.0e+05
5	1,2,3,6,7,8-HxCDF	3.14e+07	9.56e+02	3.3e+04	2.54e+07	2.24e+02	1.1e+05
6	2,3,4,6,7,8-HxCDF	2.89e+07	9.56e+02	3.0e+04	2.33e+07	2.24e+02	1.0e+05
7	1,2,3,7,8,9-HxCDF	2.68e+07	9.56e+02	2.8e+04	2.15e+07	2.24e+02	9.6e+04
8	1,2,3,4,6,7,8-HpCDF	2.57e+07	1.98e+03	1.3e+04	2.52e+07	6.98e+03	3.6e+03
9	1,2,3,4,7,8,9-HpCDF	2.12e+07	1.98e+03	1.1e+04	2.03e+07	6.98e+03	2.9e+03
10	OCDF	2.97e+07	9.76e+03	3.0e+03	3.30e+07	1.41e+04	2.3e+03
11	2,3,7,8-TCDD	2.52e+06	1.41e+03	1.8e+03	3.29e+06	3.04e+02	1.1e+04
12	1,2,3,7,8-PeCDD	2.01e+07	1.53e+03	1.3e+04	1.28e+07	1.01e+03	1.3e+04
13	1,2,3,4,7,8-HxCDD	2.10e+07	2.32e+02	9.0e+04	1.69e+07	1.80e+02	9.4e+04
14	1,2,3,6,7,8-HxCDD	2.03e+07	2.32e+02	8.7e+04	1.63e+07	1.80e+02	9.0e+04
15	1,2,3,7,8,9-HxCDD	2.14e+07	2.32e+02	9.2e+04	1.77e+07	1.80e+02	9.8e+04
16	1,2,3,4,6,7,8-HpCDD	1.88e+07	1.15e+03	1.6e+04	1.79e+07	7.52e+02	2.4e+04
17	OCDD	2.46e+07	6.92e+03	3.6e+03	2.79e+07	8.76e+03	3.2e+03
18	13C-2,3,7,8-TCDF	3.15e+07	1.20e+04	2.6e+03	3.98e+07	5.73e+03	6.9e+03
19	13C-1,2,3,7,8-PeCDF	5.53e+07	1.49e+03	3.7e+04	3.49e+07	1.28e+03	2.7e+04
20	13C-2,3,4,7,8-PeCDF	6.04e+07	1.49e+03	4.1e+04	3.83e+07	1.28e+03	3.0e+04
21	13C-1,2,3,4,7,8-HxCDF	2.88e+07	9.80e+02	2.9e+04	5.50e+07	1.92e+03	2.9e+04
22	13C-1,2,3,6,7,8-HxCDF	3.36e+07	9.80e+02	3.4e+04	6.38e+07	1.92e+03	3.3e+04
23	13C-2,3,4,6,7,8-HxCDF	3.13e+07	9.80e+02	3.2e+04	5.91e+07	1.92e+03	3.1e+04
24	13C-1,2,3,7,8,9-HxCDF	2.84e+07	9.80e+02	2.9e+04	5.43e+07	1.92e+03	2.8e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.28e+07	1.79e+04	1.3e+03	5.05e+07	1.14e+04	4.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	2.06e+07	1.79e+04	1.1e+03	4.54e+07	1.14e+04	4.0e+03
27	13C-2,3,7,8-TCDD	2.47e+07	6.44e+03	3.8e+03	3.12e+07	3.69e+03	8.5e+03
28	13C-1,2,3,7,8-PeCDD	4.35e+07	9.08e+02	4.8e+04	2.74e+07	6.40e+02	4.3e+04
29	13C-1,2,3,4,7,8-HxCDD	4.07e+07	1.50e+03	2.7e+04	3.21e+07	2.16e+02	1.5e+05
30	13C-1,2,3,6,7,8-HxCDD	3.86e+07	1.50e+03	2.6e+04	3.06e+07	2.16e+02	1.4e+05
31	13C-1,2,3,4,6,7,8-HpCDD	3.63e+07	1.29e+03	2.8e+04	3.41e+07	1.08e+03	3.1e+04
32	13C-OCDD	4.50e+07	3.03e+04	1.5e+03	5.06e+07	2.05e+04	2.5e+03
33	13C-1,2,3,4-TCDD	2.40e+07	6.44e+03	3.7e+03	2.98e+07	3.69e+03	8.1e+03
34	13C-1,2,3,7,8,9-HxCDD	4.25e+07	1.50e+03	2.8e+04	3.45e+07	2.16e+02	1.6e+05
35	37Cl-2,3,7,8-TCDD	6.02e+06	8.12e+02	7.4e+03			

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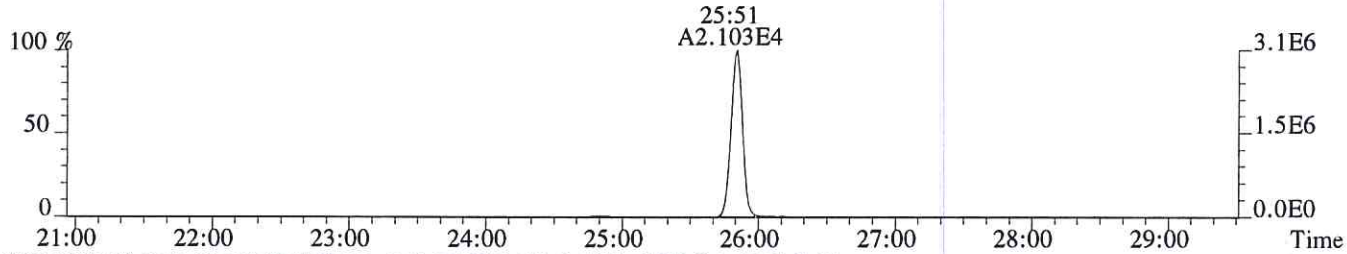
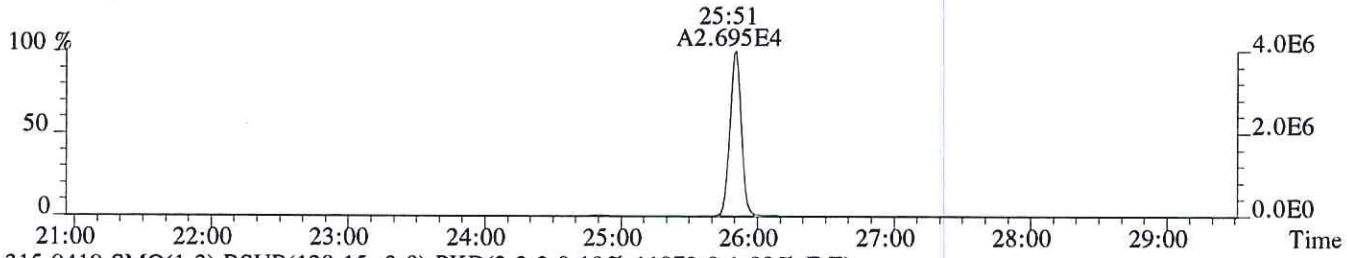
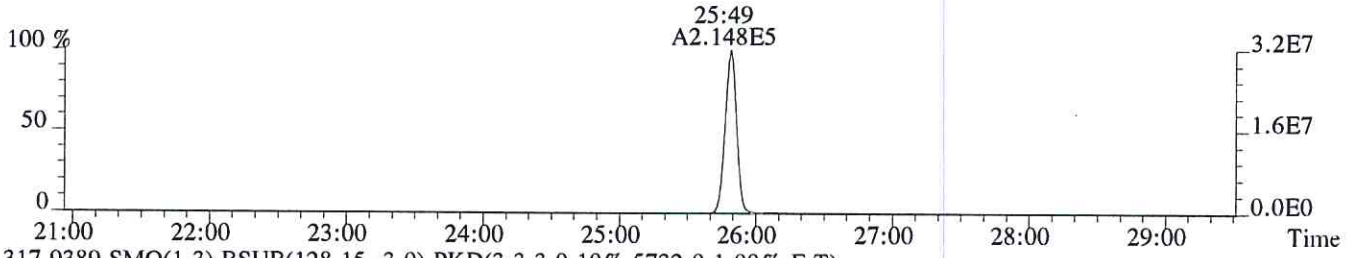
File:P607182 #1-609 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,236.0,1.00%,F,T)



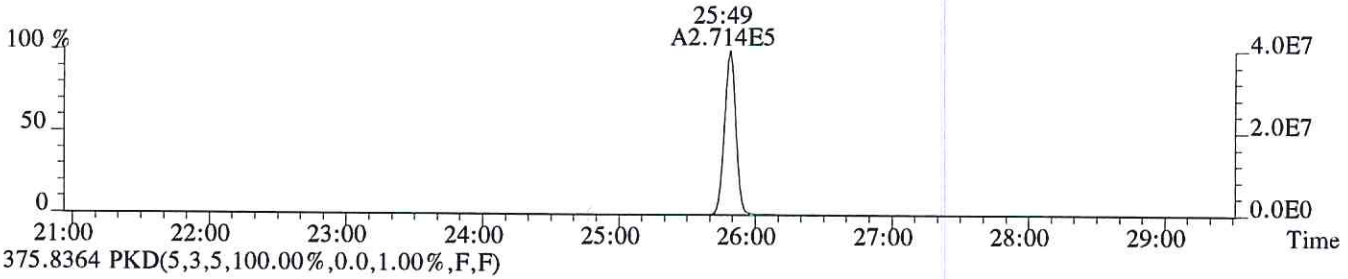
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1756.0,1.00%,F,T)



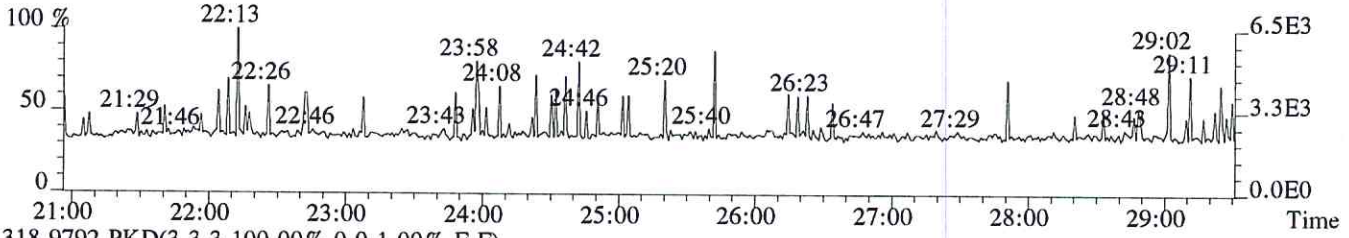
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11972.0,1.00%,F,T)



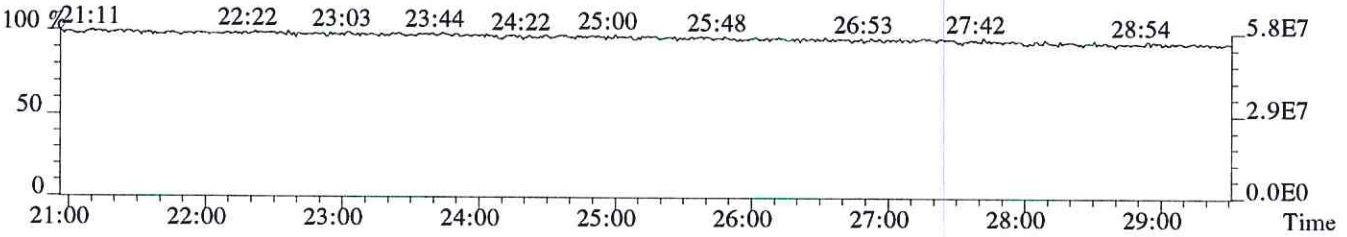
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5732.0,1.00%,F,T)



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

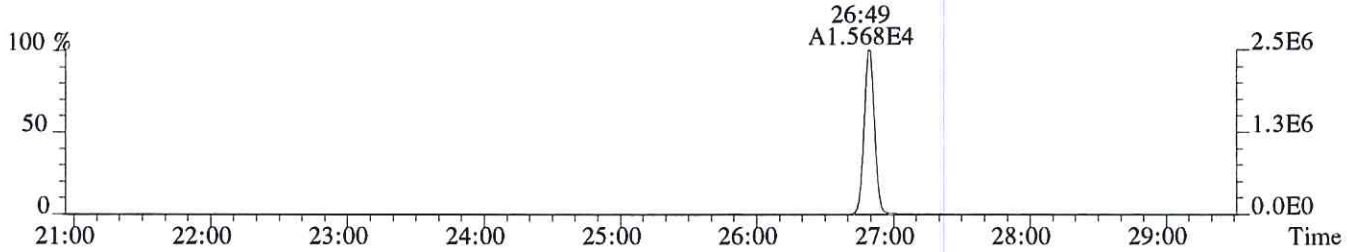


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

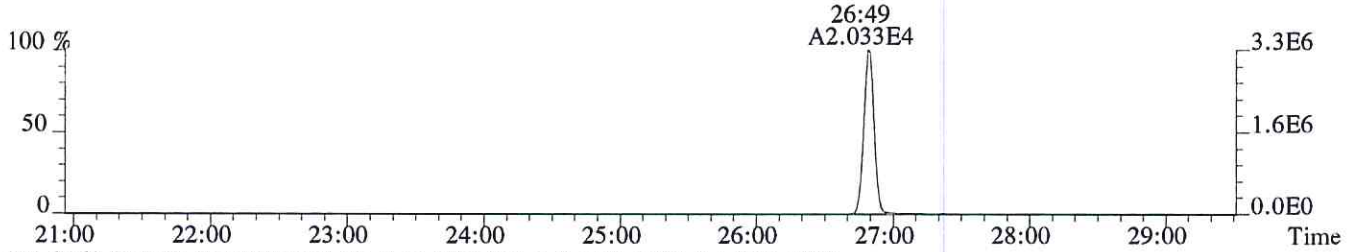


File:P607182 #1-609 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

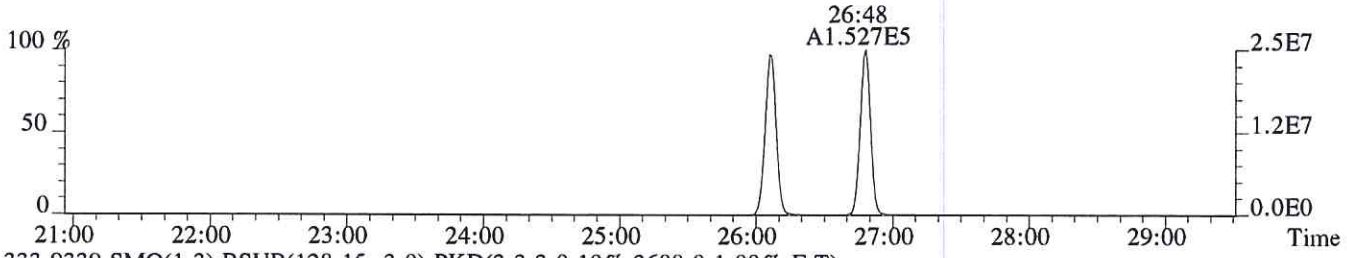
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1412.0,1.00%,F,T)



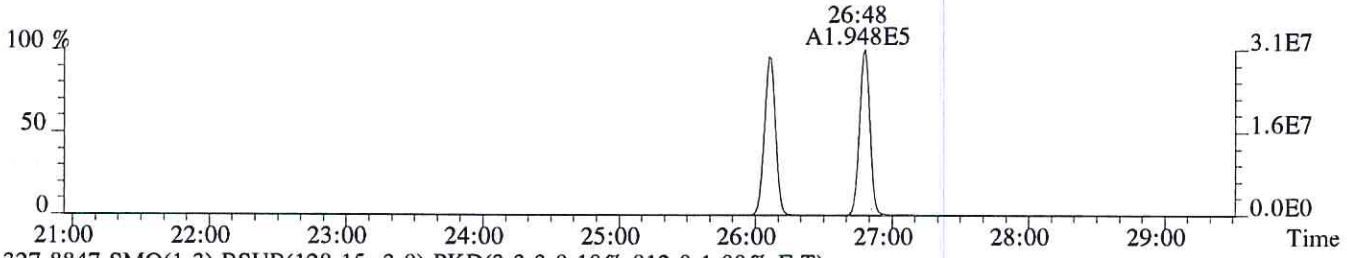
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,304.0,1.00%,F,T)



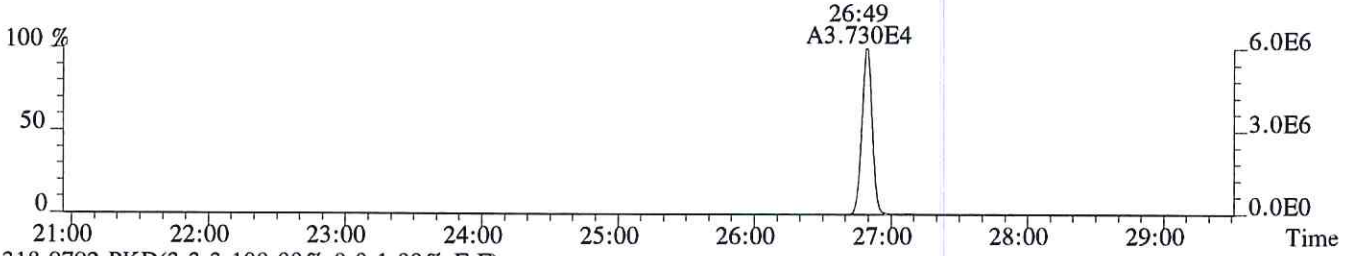
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6440.0,1.00%,F,T)



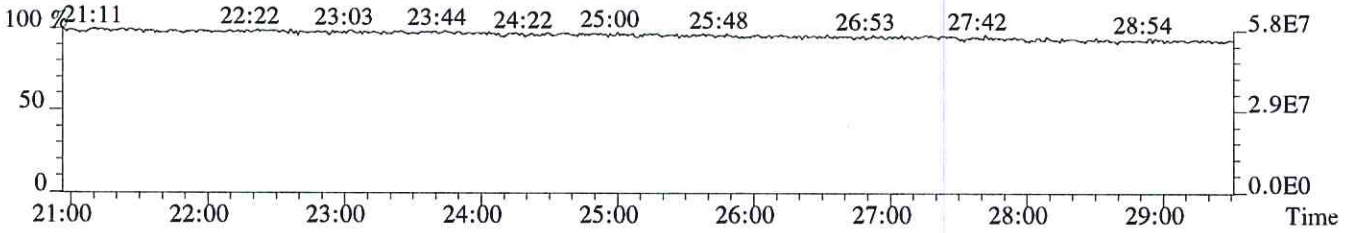
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3688.0,1.00%,F,T)



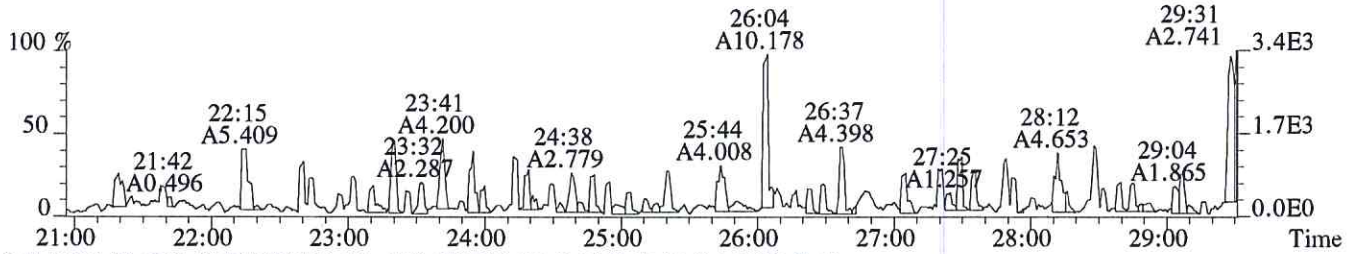
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,812.0,1.00%,F,T)



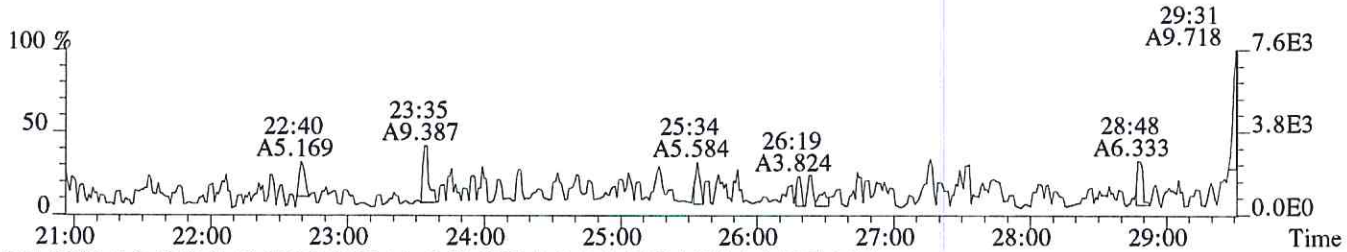
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



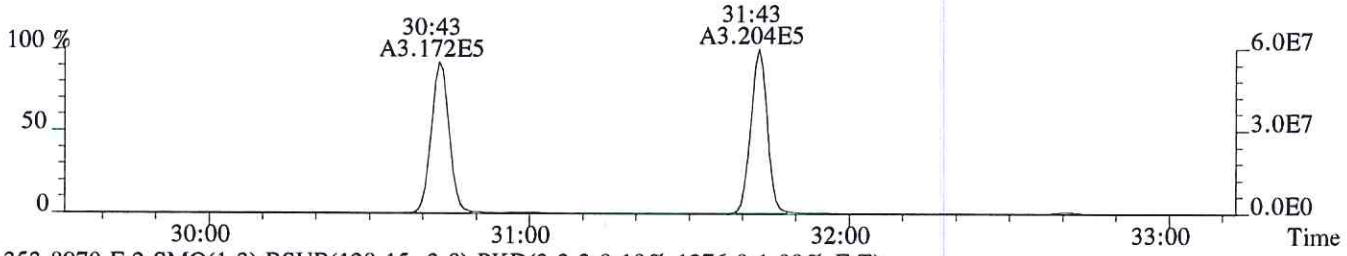
File:P607182 #1-609 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,236.0,1.00%,F,T)



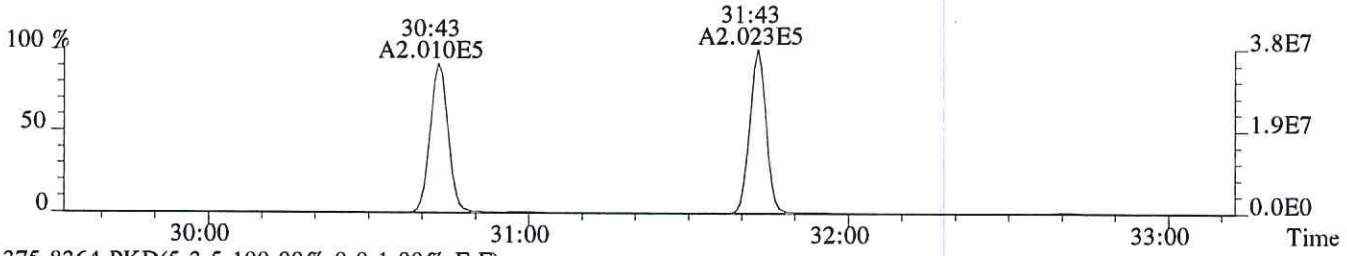
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1112.0,1.00%,F,T)



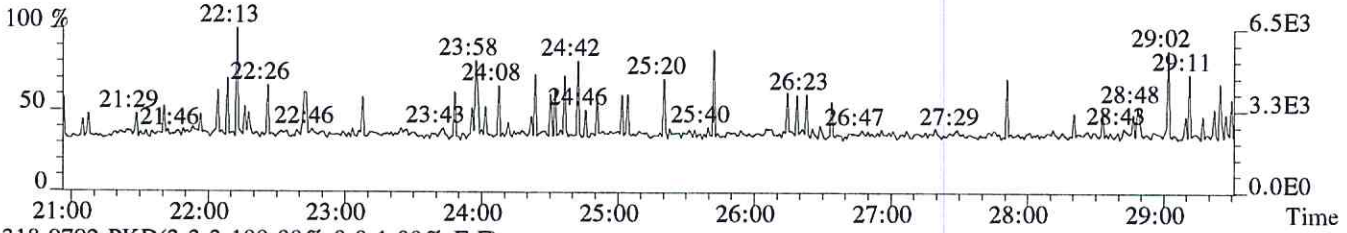
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1488.0,1.00%,F,T)



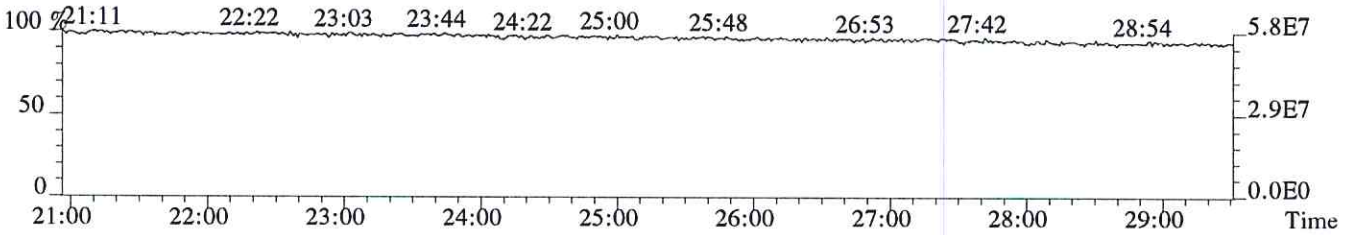
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1276.0,1.00%,F,T)



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

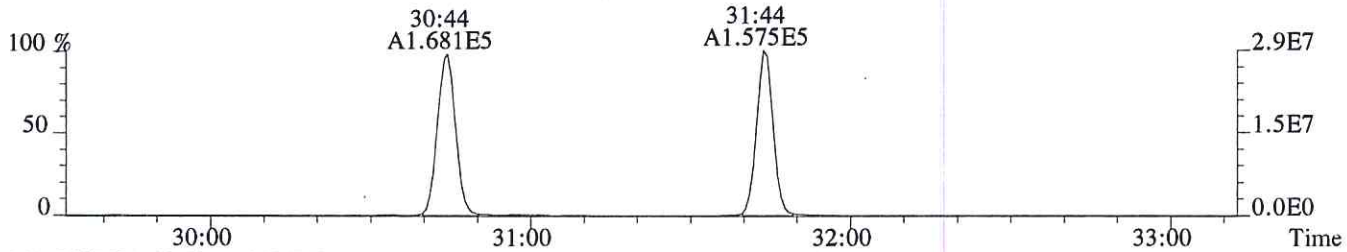


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

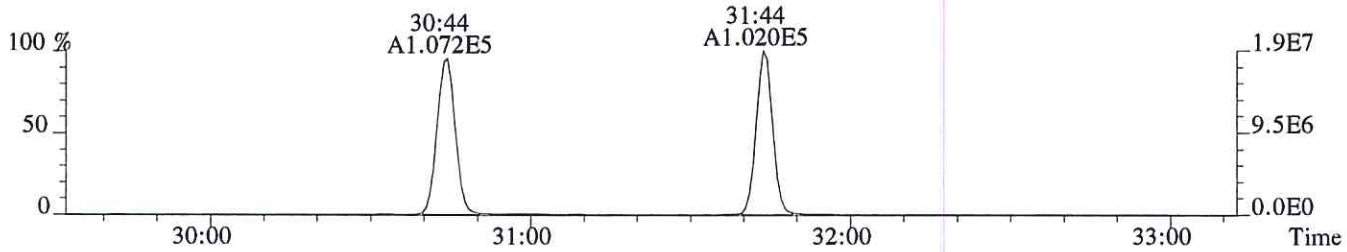


File:P607182 #1-330 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

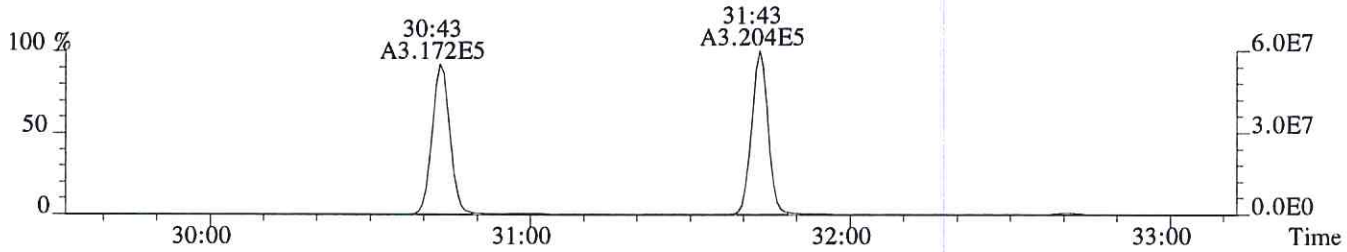
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1332.0,1.00%,F,T)



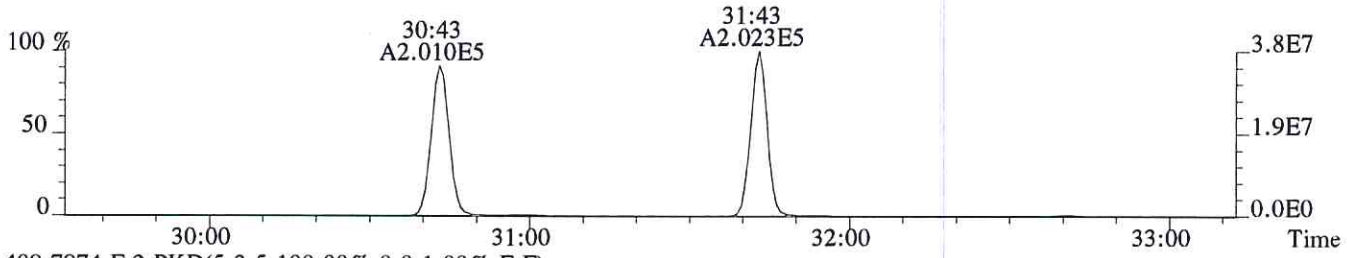
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3268.0,1.00%,F,T)



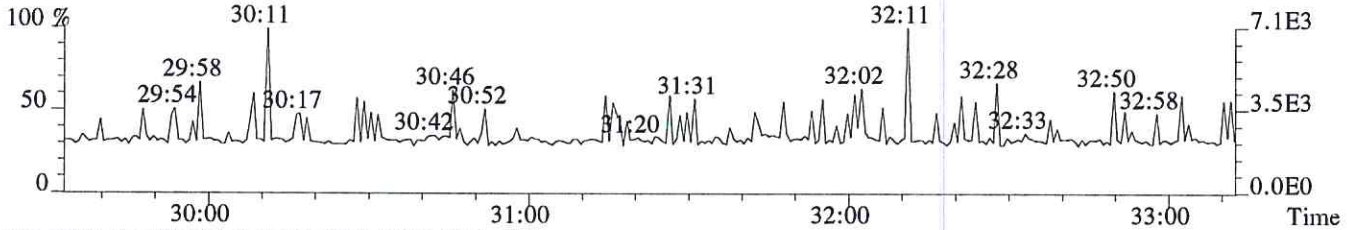
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1488.0,1.00%,F,T)



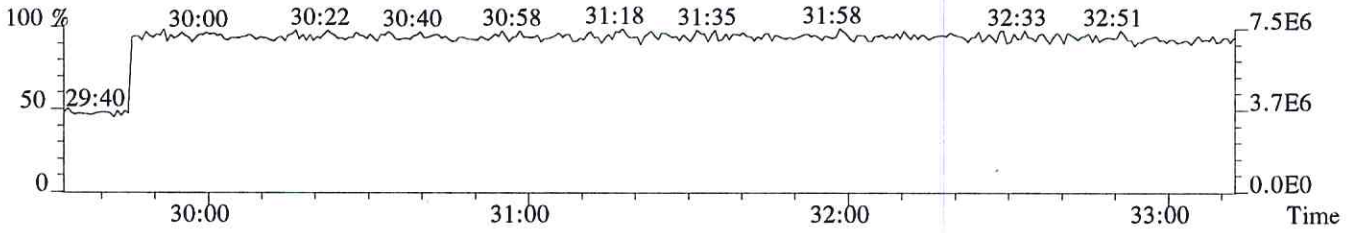
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1276.0,1.00%,F,T)



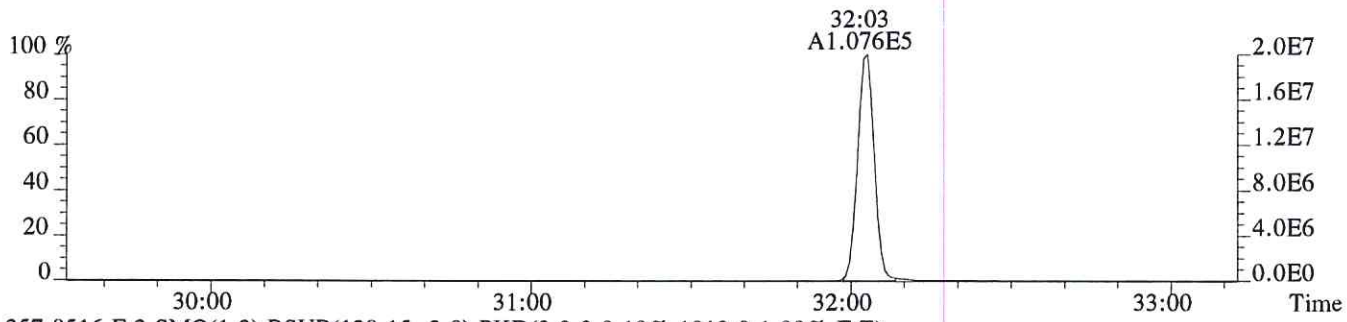
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



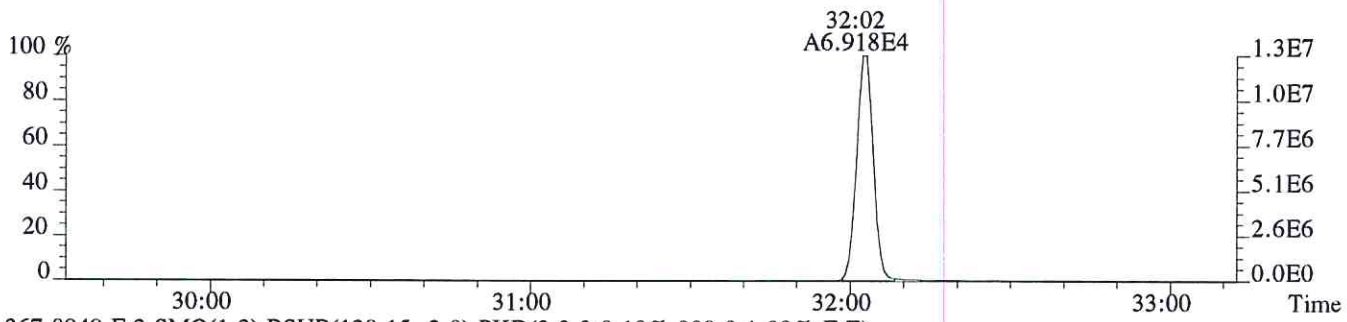
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



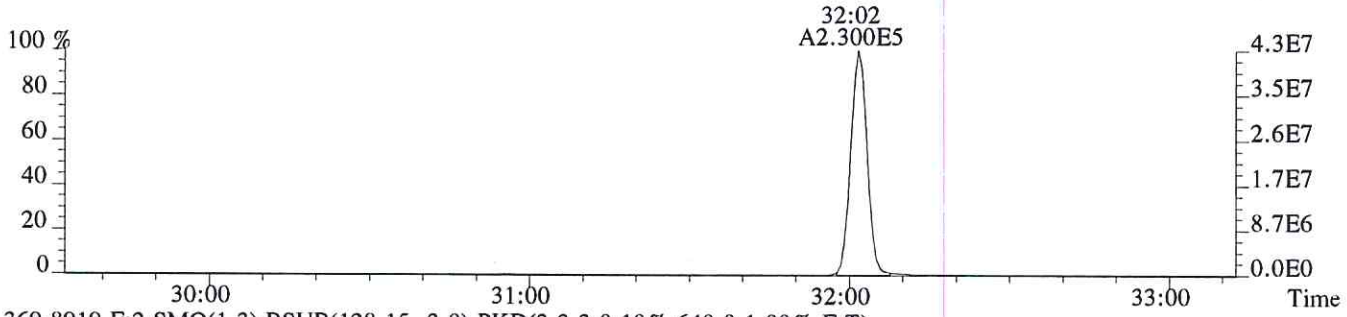
File:P607182 #1-330 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1528.0,1.00%,F,T)



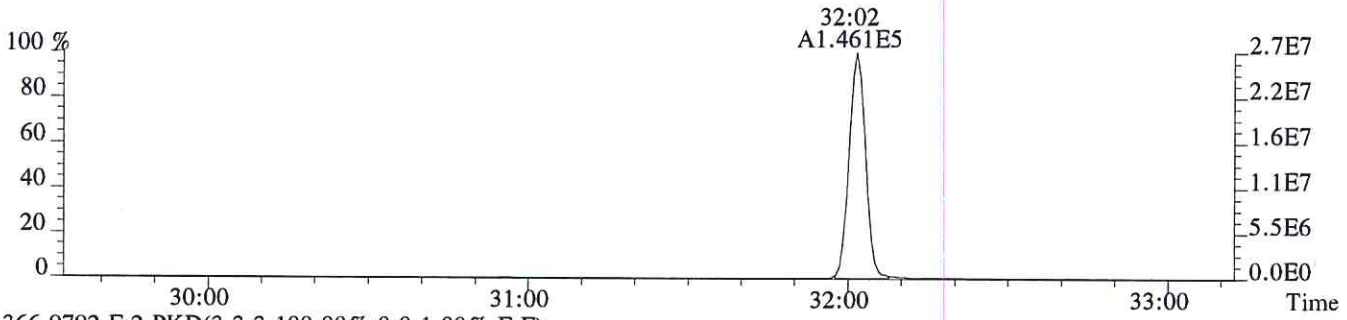
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1012.0,1.00%,F,T)



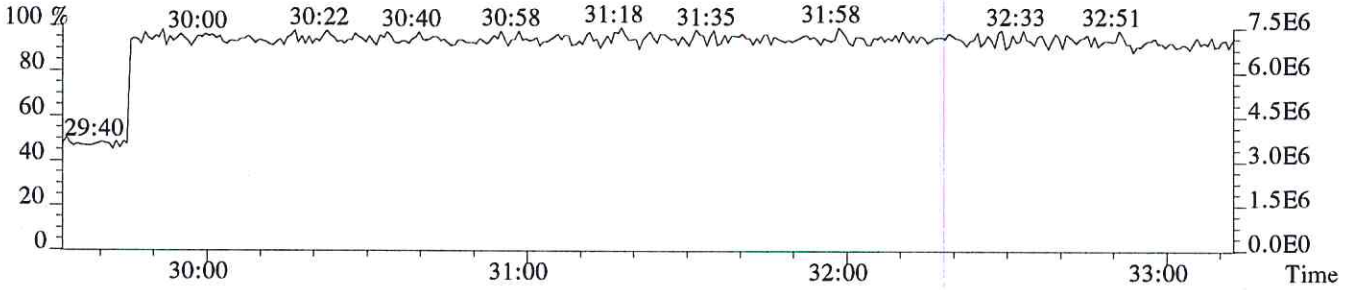
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,908.0,1.00%,F,T)



369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,640.0,1.00%,F,T)

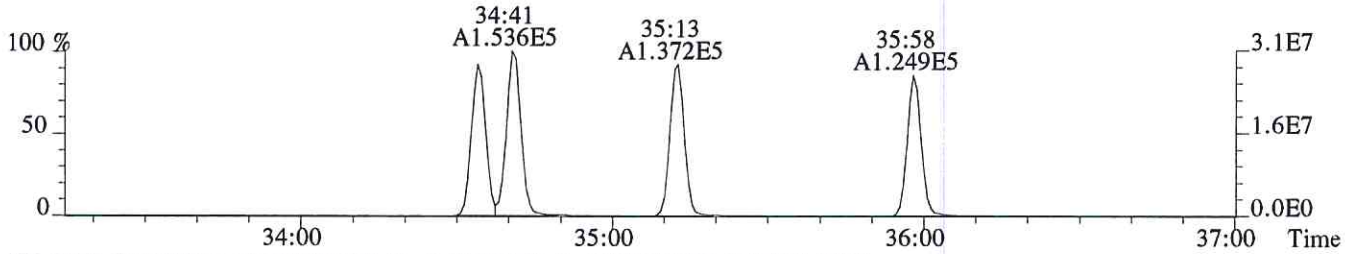


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

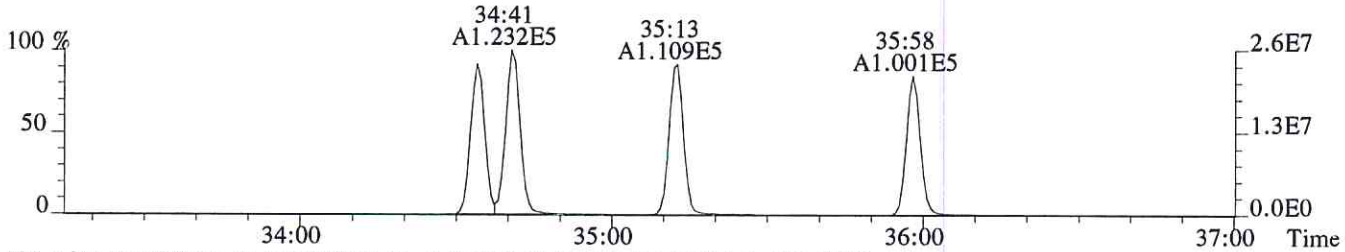


File:P607182 #1-339 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

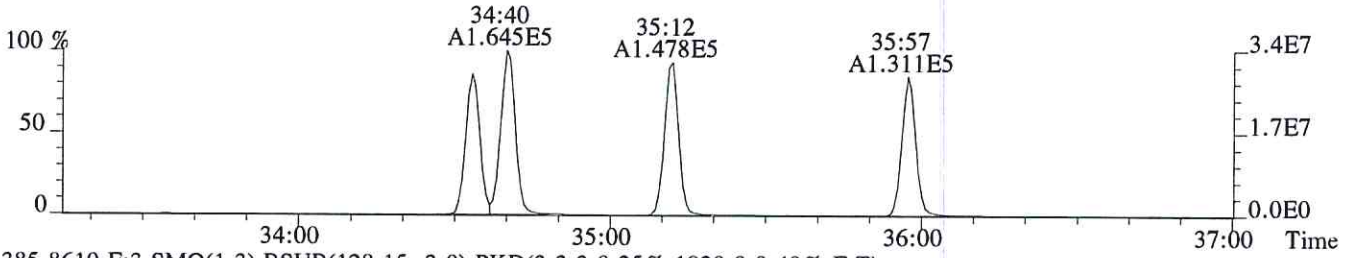
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,956.0,0.40%,F,T)



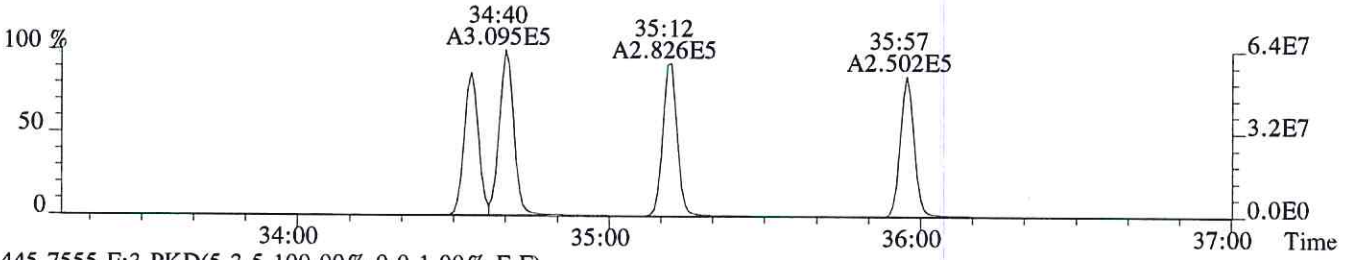
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,224.0,0.40%,F,T)



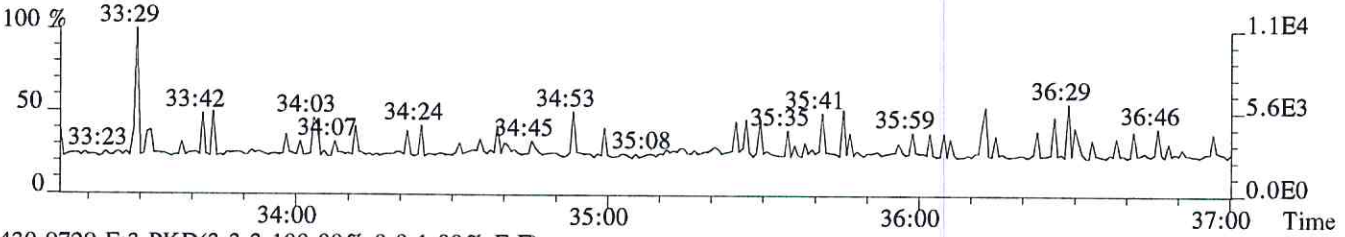
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,980.0,0.40%,F,T)



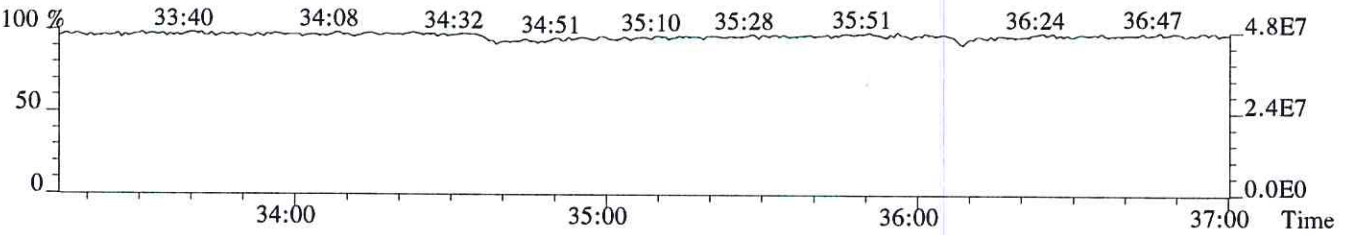
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1920.0,0.40%,F,T)



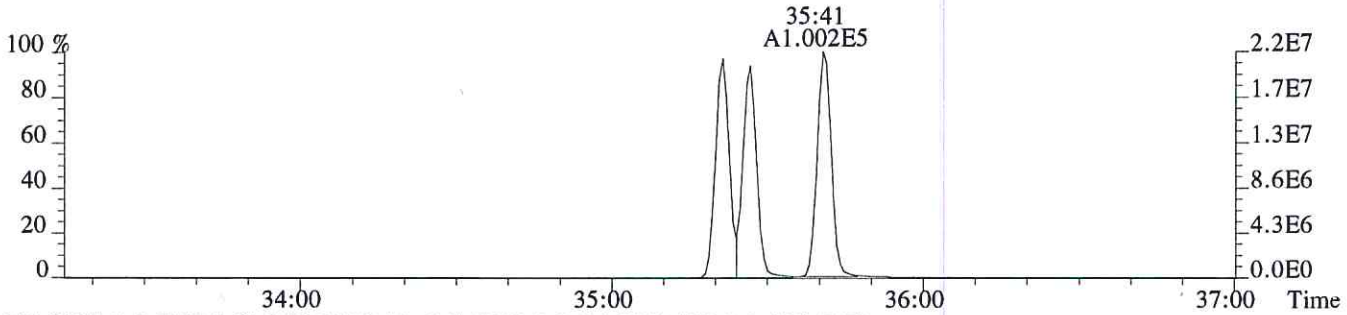
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



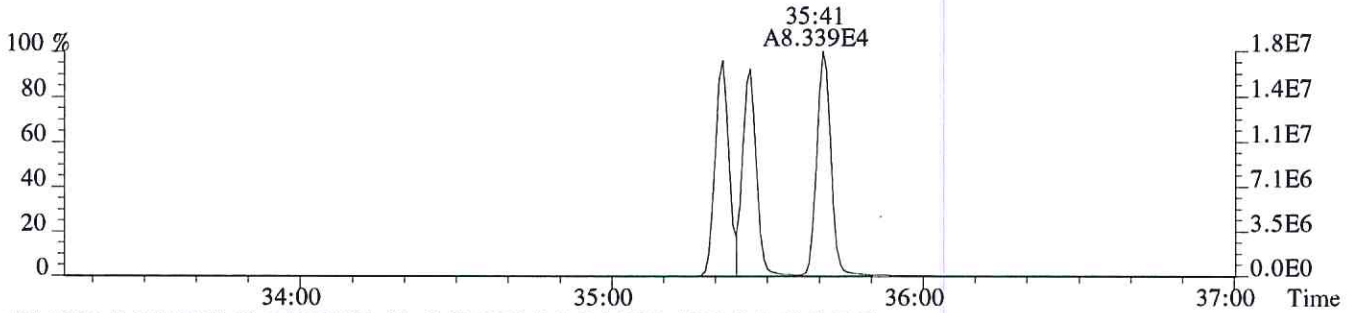
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



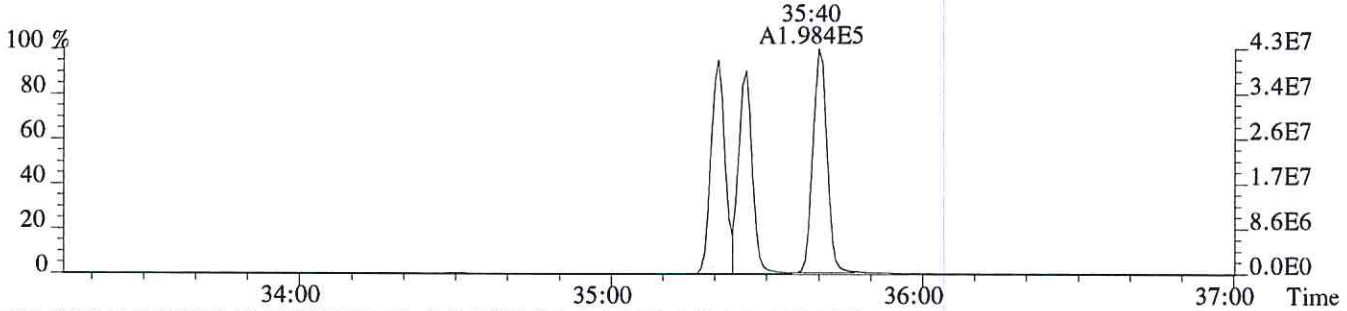
File:P607182 #1-339 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,232.0,0.40%,F,T)



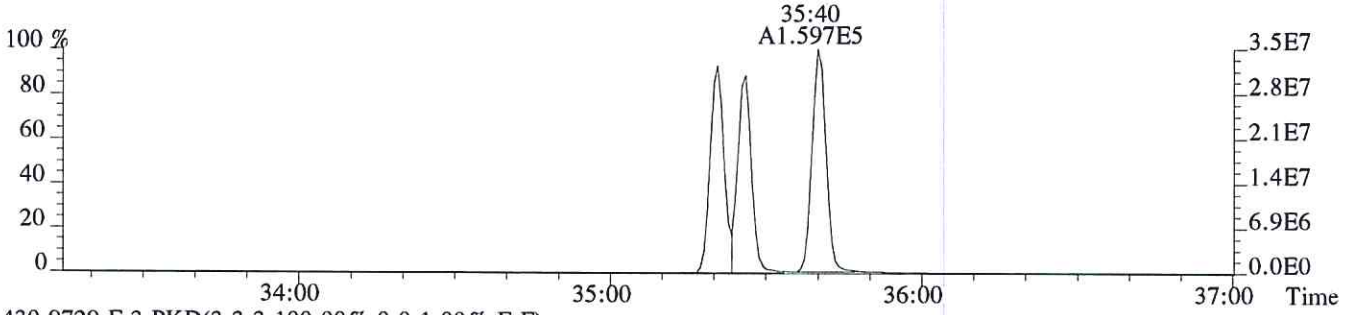
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,180.0,0.40%,F,T)



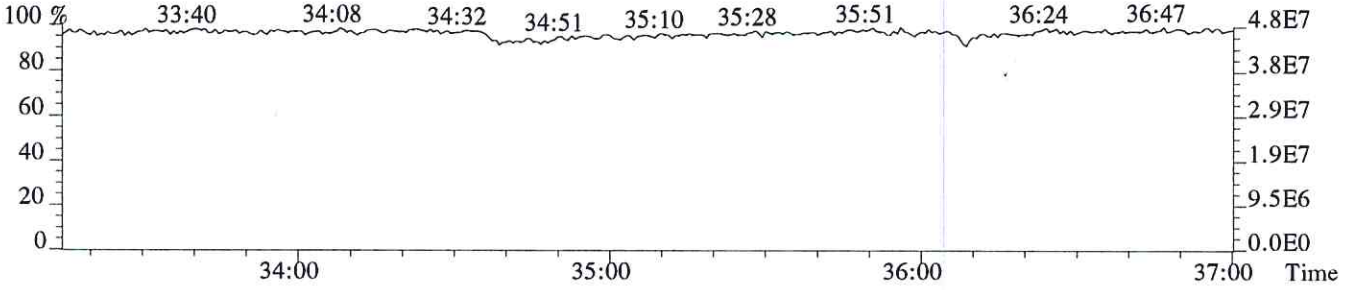
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1500.0,0.40%,F,T)



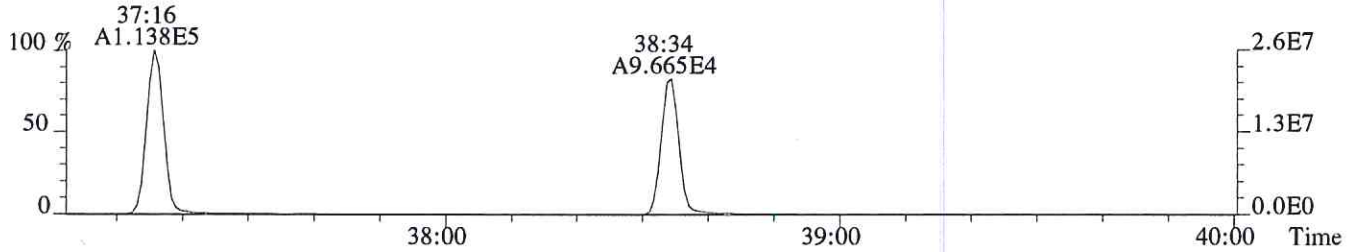
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,216.0,0.40%,F,T)



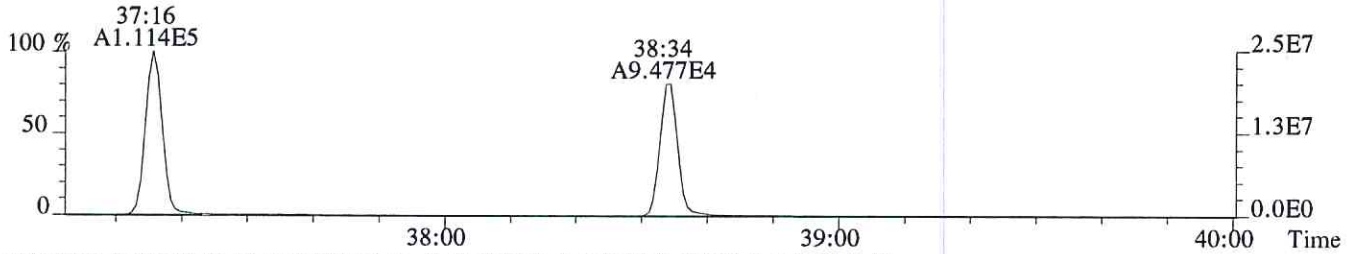
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



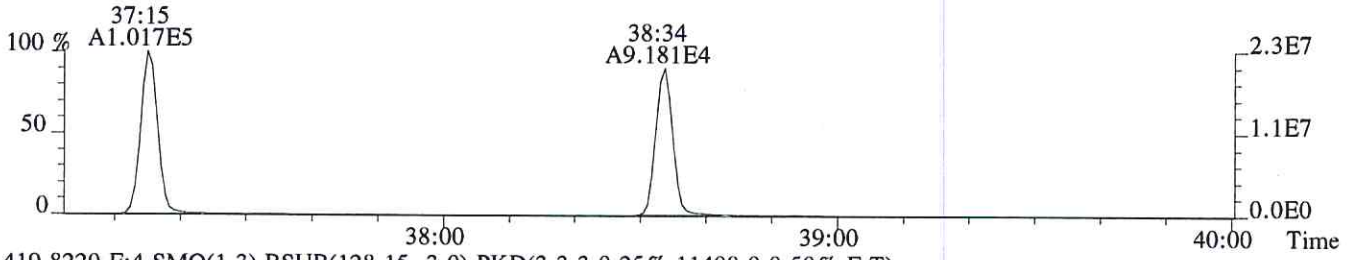
File:P607182 #1-268 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1980.0,0.50%,F,T)



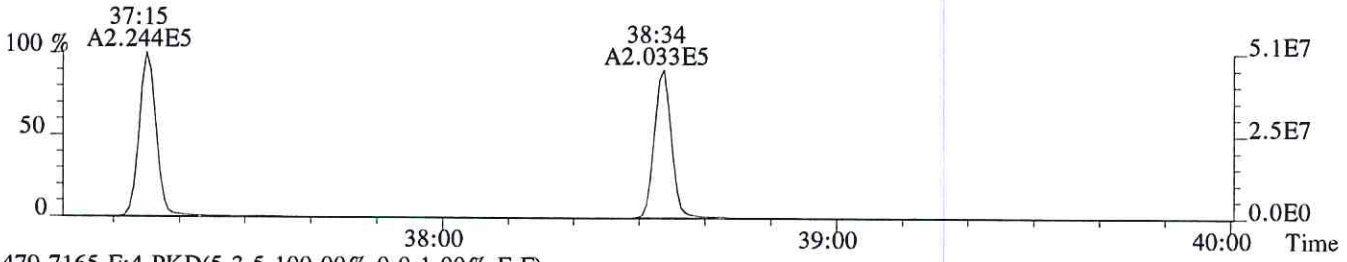
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6976.0,0.50%,F,T)



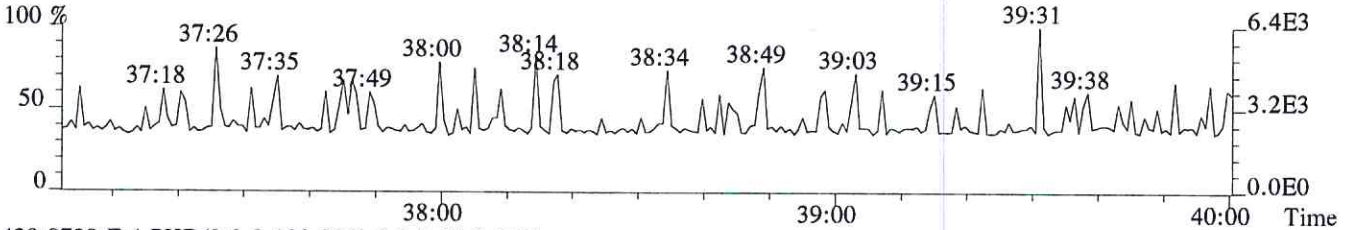
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,17904.0,0.50%,F,T)



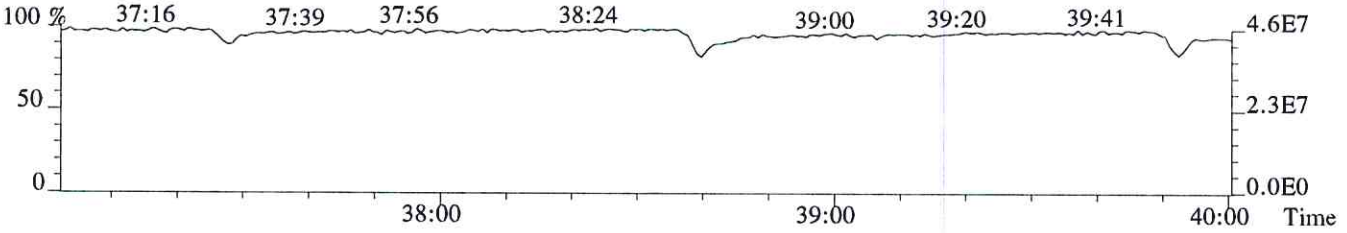
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11408.0,0.50%,F,T)



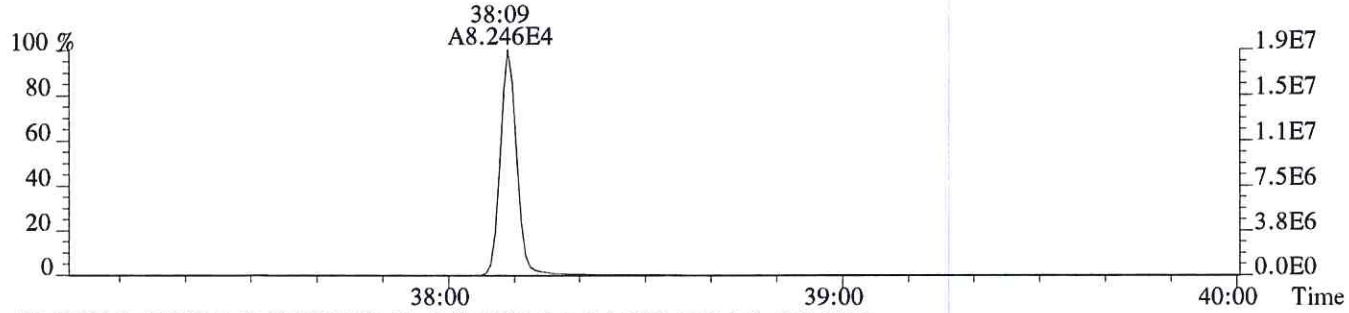
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



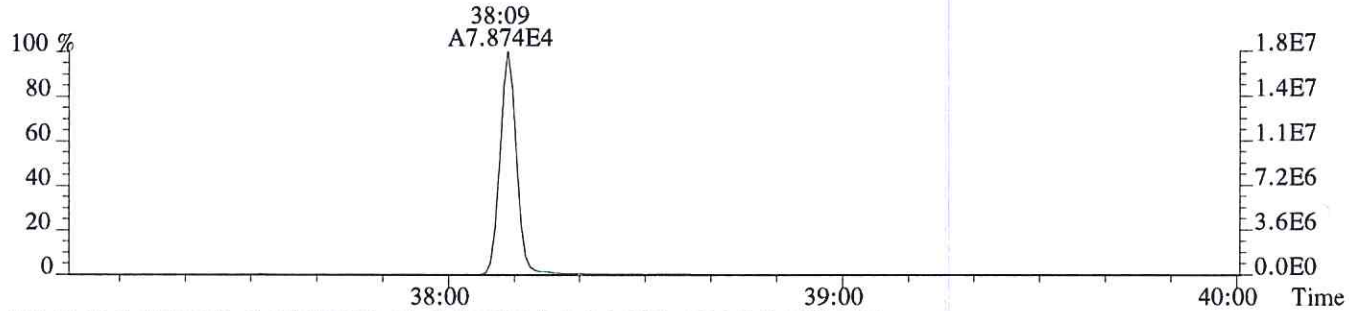
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



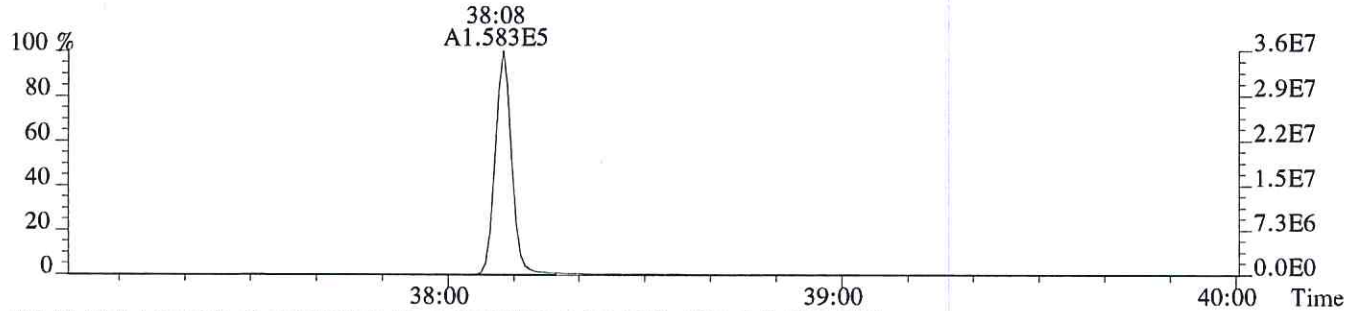
File:P607182 #1-268 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1148.0,0.40%,F,T)



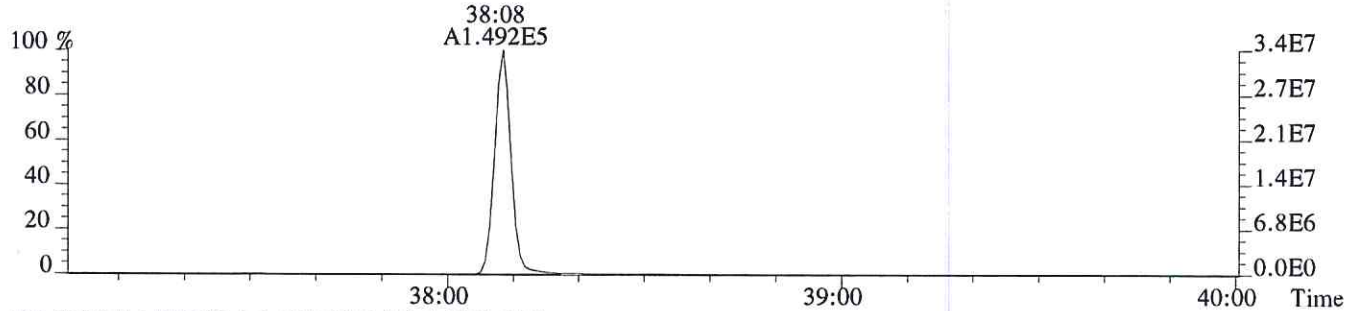
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,752.0,0.40%,F,T)



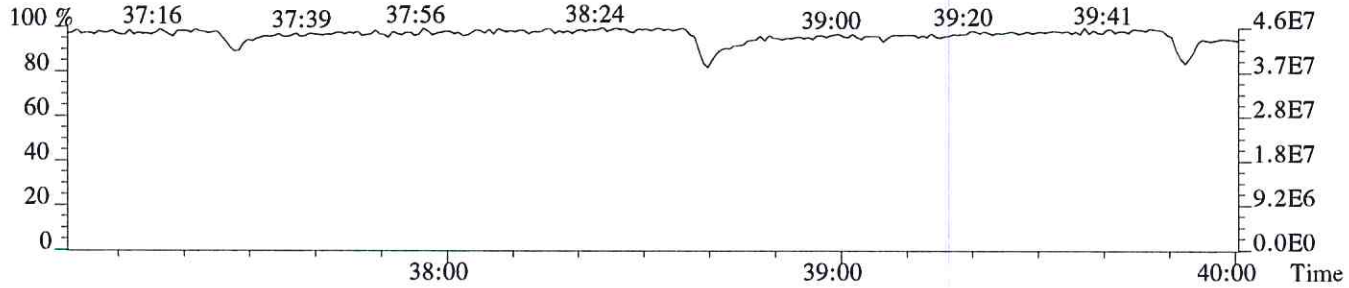
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1288.0,0.40%,F,T)



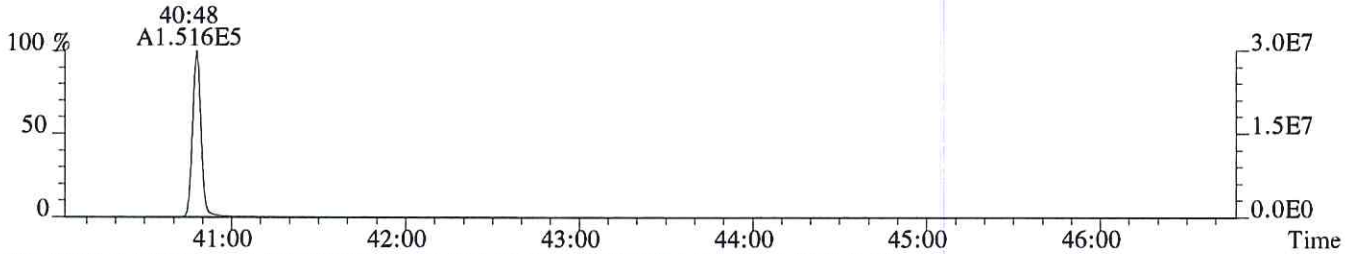
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1084.0,0.40%,F,T)



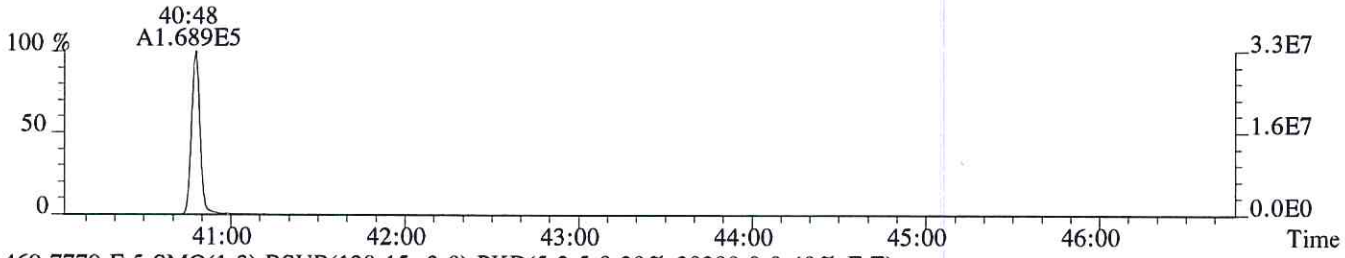
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



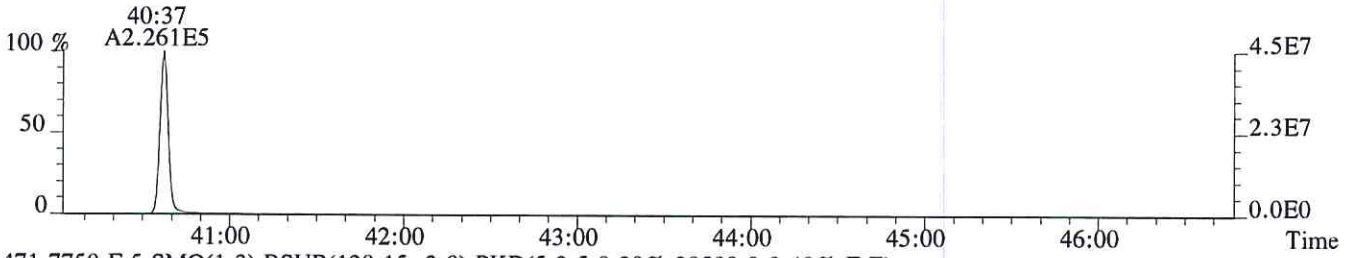
File:P607182 #1-607 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,9756.0,0.40%,F,T)



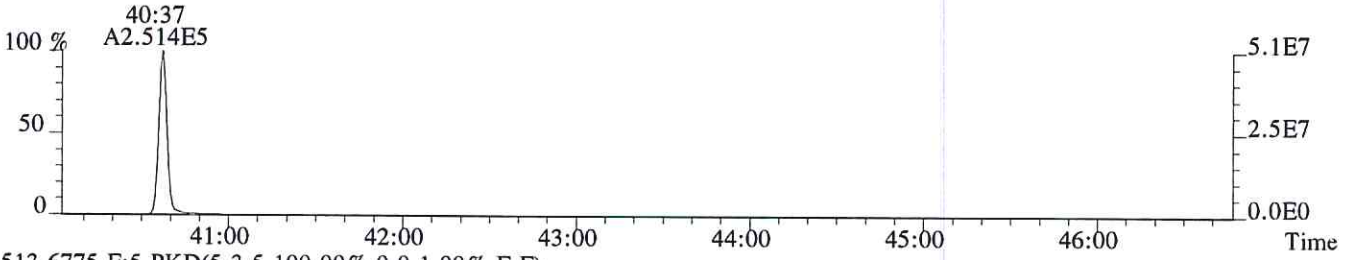
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,14120.0,0.40%,F,T)



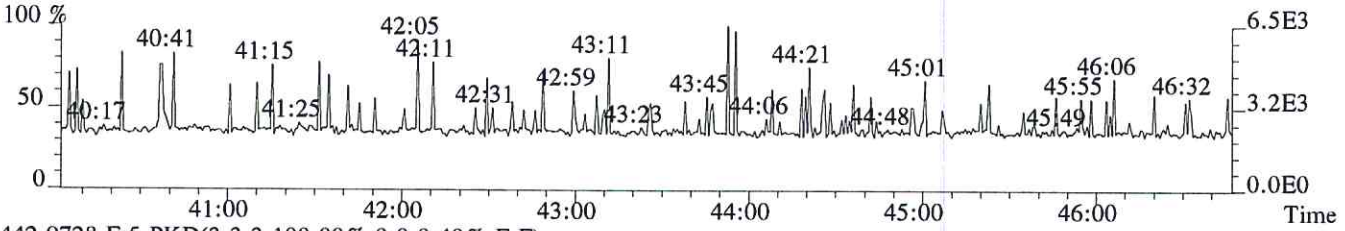
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,30300.0,0.40%,F,T)



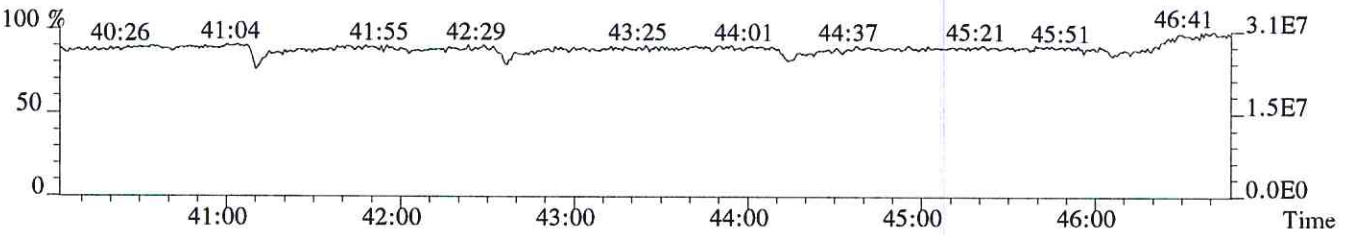
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,20500.0,0.40%,F,T)



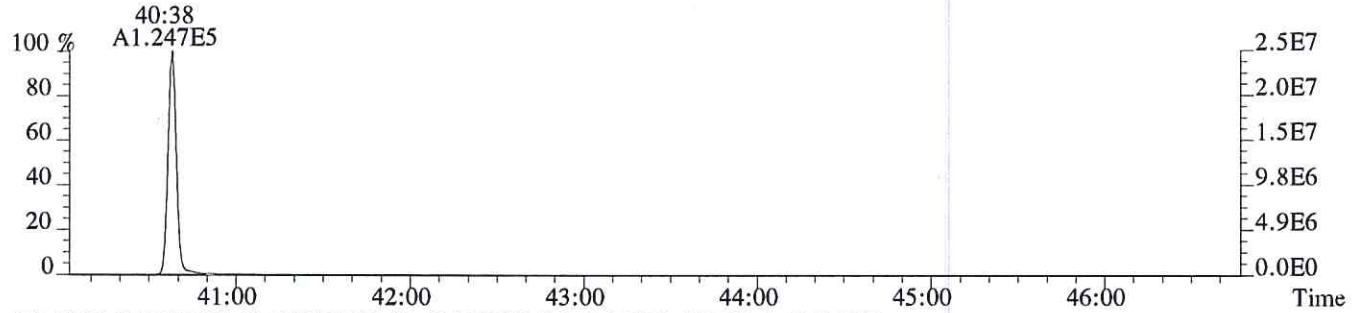
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



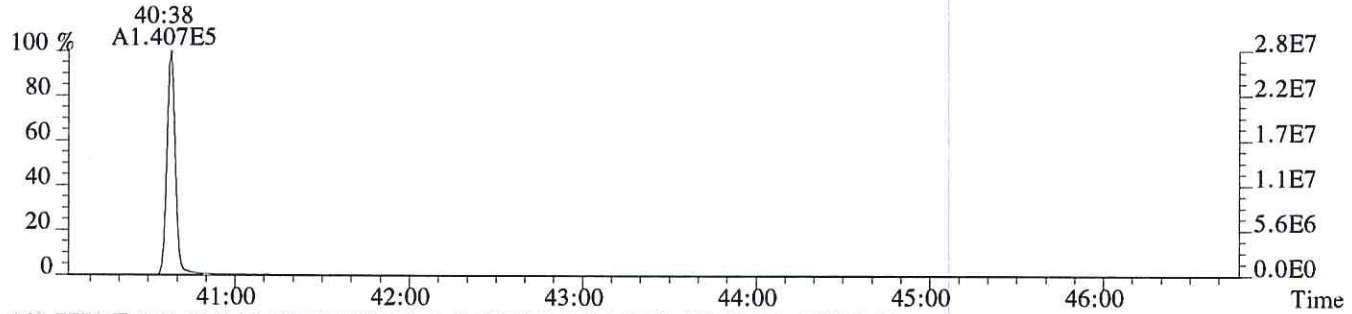
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



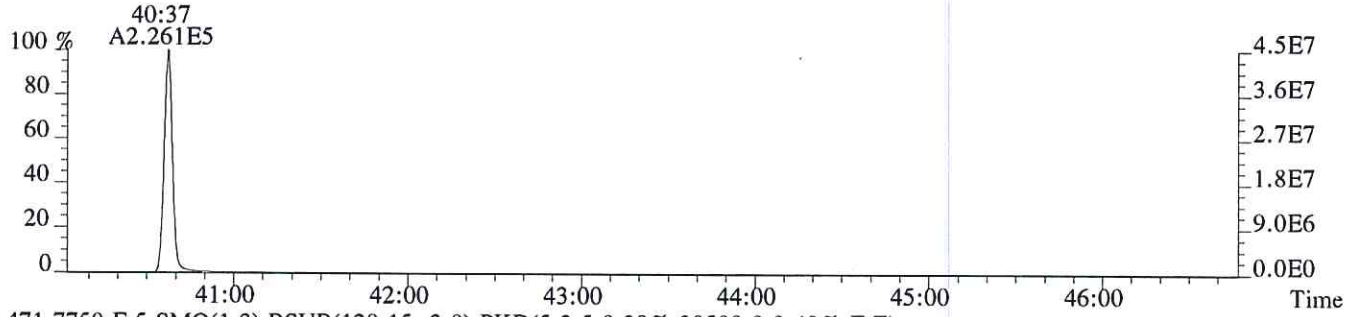
File:P607182 #1-607 Acq:16-MAY-2017 15:15:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,6924.0,0.40%,F,T)



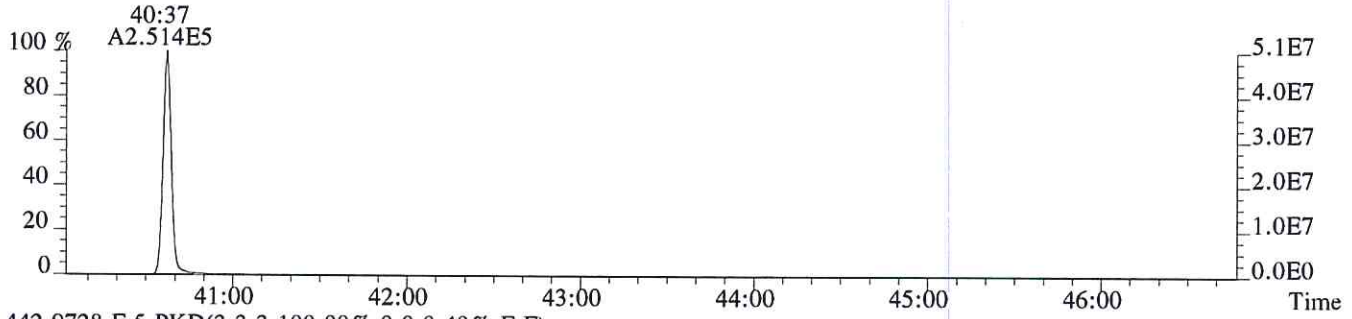
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8756.0,0.40%,F,T)



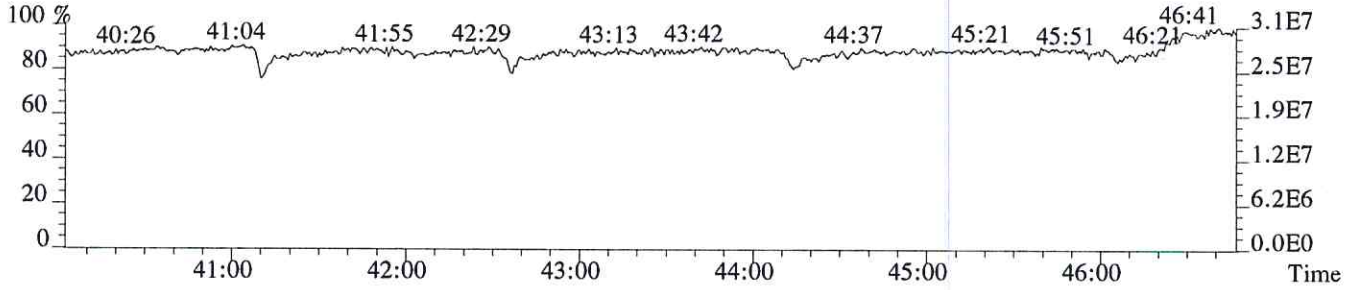
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,30300.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,20500.0,0.40%,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 P607183 Samp: 1 Inj: 1 Acquired: 16-MAY-17 16:05:29
Processed: 17-MAY-17 07:52:59 Sample ID: CS4

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:52	7.595e+04	9.857e+04	0.77	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:45	6.078e+05	3.894e+05	1.56	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:44	5.718e+05	3.687e+05	1.55	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:35	4.949e+05	4.000e+05	1.24	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:41	5.624e+05	4.533e+05	1.24	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:13	4.994e+05	4.037e+05	1.24	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:59	4.513e+05	3.624e+05	1.25	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:16	4.147e+05	3.998e+05	1.04	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:35	3.490e+05	3.404e+05	1.03	yes	no	1.341
10	Unk	OCDF	40:49	5.372e+05	5.981e+05	0.90	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:50	5.666e+04	7.291e+04	0.78	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:04	3.937e+05	2.518e+05	1.56	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:22	3.517e+05	2.822e+05	1.25	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:27	3.395e+05	2.745e+05	1.24	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:41	3.627e+05	2.906e+05	1.25	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:10	2.941e+05	2.815e+05	1.04	yes	no	1.048
17	Unk	OCDD	40:39	4.374e+05	4.944e+05	0.88	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:50	1.955e+05	2.475e+05	0.79	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:44	2.882e+05	1.816e+05	1.59	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:44	2.889e+05	1.835e+05	1.57	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:34	1.227e+05	2.325e+05	0.53	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:41	1.500e+05	2.824e+05	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:13	1.337e+05	2.534e+05	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:58	1.179e+05	2.244e+05	0.53	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:16	9.217e+04	2.044e+05	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:34	8.247e+04	1.809e+05	0.46	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:48	1.387e+05	1.755e+05	0.79	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	32:02	2.070e+05	1.311e+05	1.58	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:21	1.672e+05	1.326e+05	1.26	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:27	1.606e+05	1.288e+05	1.25	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:09	1.420e+05	1.351e+05	1.05	yes	no	0.884
32	IS	13C-OCDD	40:38	1.985e+05	2.200e+05	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:07	1.415e+05	1.758e+05	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:41	1.780e+05	1.408e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:50	1.347e+05				no	1.072

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76558

Run #5 Filename P607183 Samp: 1 Inj: 1 Acquired: 16-MAY-17 16:05:29
Processed: 17-MAY-17 07:52:59 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	1.11e+07	2.28e+02	4.9e+04	1.44e+07	1.42e+03	1.0e+04
2	1,2,3,7,8-PeCDF	1.07e+08	8.04e+02	1.3e+05	6.86e+07	2.58e+03	2.7e+04
3	2,3,4,7,8-PeCDF	1.06e+08	8.04e+02	1.3e+05	6.91e+07	2.58e+03	2.7e+04
4	1,2,3,4,7,8-HxCDF	1.05e+08	7.12e+02	1.5e+05	8.50e+07	1.34e+03	6.4e+04
5	1,2,3,6,7,8-HxCDF	1.14e+08	7.12e+02	1.6e+05	9.25e+07	1.34e+03	6.9e+04
6	2,3,4,6,7,8-HxCDF	1.06e+08	7.12e+02	1.5e+05	8.50e+07	1.34e+03	6.4e+04
7	1,2,3,7,8,9-HxCDF	9.55e+07	7.12e+02	1.3e+05	7.73e+07	1.34e+03	5.8e+04
8	1,2,3,4,6,7,8-HpCDF	9.29e+07	2.11e+04	4.4e+03	9.00e+07	4.37e+03	2.1e+04
9	1,2,3,4,7,8,9-HpCDF	7.70e+07	2.11e+04	3.6e+03	7.41e+07	4.37e+03	1.7e+04
10	OCDF	1.07e+08	2.56e+04	4.2e+03	1.20e+08	3.83e+04	3.1e+03
11	2,3,7,8-TCDD	9.22e+06	1.64e+03	5.6e+03	1.19e+07	8.40e+02	1.4e+04
12	1,2,3,7,8-PeCDD	7.33e+07	1.69e+03	4.3e+04	4.65e+07	1.04e+03	4.5e+04
13	1,2,3,4,7,8-HxCDD	7.80e+07	2.56e+02	3.0e+05	6.19e+07	2.40e+02	2.6e+05
14	1,2,3,6,7,8-HxCDD	7.31e+07	2.56e+02	2.9e+05	5.87e+07	2.40e+02	2.4e+05
15	1,2,3,7,8,9-HxCDD	7.74e+07	2.56e+02	3.0e+05	6.26e+07	2.40e+02	2.6e+05
16	1,2,3,4,6,7,8-HpCDD	6.69e+07	2.90e+03	2.3e+04	6.43e+07	2.50e+03	2.6e+04
17	OCDD	8.66e+07	1.61e+04	5.4e+03	9.81e+07	3.51e+04	2.8e+03
18	13C-2,3,7,8-TCDF	2.87e+07	1.22e+04	2.3e+03	3.63e+07	6.29e+03	5.8e+03
19	13C-1,2,3,7,8-PeCDF	4.98e+07	1.62e+03	3.1e+04	3.15e+07	2.38e+03	1.3e+04
20	13C-2,3,4,7,8-PeCDF	5.43e+07	1.62e+03	3.4e+04	3.46e+07	2.38e+03	1.5e+04
21	13C-1,2,3,4,7,8-HxCDF	2.62e+07	1.46e+03	1.8e+04	4.97e+07	2.35e+03	2.1e+04
22	13C-1,2,3,6,7,8-HxCDF	3.08e+07	1.46e+03	2.1e+04	5.86e+07	2.35e+03	2.5e+04
23	13C-2,3,4,6,7,8-HxCDF	2.81e+07	1.46e+03	1.9e+04	5.29e+07	2.35e+03	2.3e+04
24	13C-1,2,3,7,8,9-HxCDF	2.49e+07	1.46e+03	1.7e+04	4.77e+07	2.35e+03	2.0e+04
25	13C-1,2,3,4,6,7,8-HpCDF	2.06e+07	3.10e+03	6.6e+03	4.57e+07	2.12e+04	2.2e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.83e+07	3.10e+03	5.9e+03	3.99e+07	2.12e+04	1.9e+03
27	13C-2,3,7,8-TCDD	2.20e+07	5.38e+03	4.1e+03	2.77e+07	3.72e+03	7.5e+03
28	13C-1,2,3,7,8-PeCDD	3.86e+07	9.40e+02	4.1e+04	2.46e+07	2.12e+02	1.2e+05
29	13C-1,2,3,4,7,8-HxCDD	3.67e+07	1.43e+03	2.6e+04	2.87e+07	7.20e+02	4.0e+04
30	13C-1,2,3,6,7,8-HxCDD	3.45e+07	1.43e+03	2.4e+04	2.75e+07	7.20e+02	3.8e+04
31	13C-1,2,3,4,6,7,8-HpCDD	3.23e+07	1.99e+03	1.6e+04	3.04e+07	8.40e+02	3.6e+04
32	13C-OCDD	3.92e+07	1.53e+04	2.6e+03	4.33e+07	8.96e+03	4.8e+03
33	13C-1,2,3,4-TCDD	2.13e+07	5.38e+03	4.0e+03	2.65e+07	3.72e+03	7.1e+03
34	13C-1,2,3,7,8,9-HxCDD	3.76e+07	1.43e+03	2.6e+04	3.02e+07	7.20e+02	4.2e+04
35	37Cl-2,3,7,8-TCDD	2.21e+07	1.39e+03	1.6e+04			

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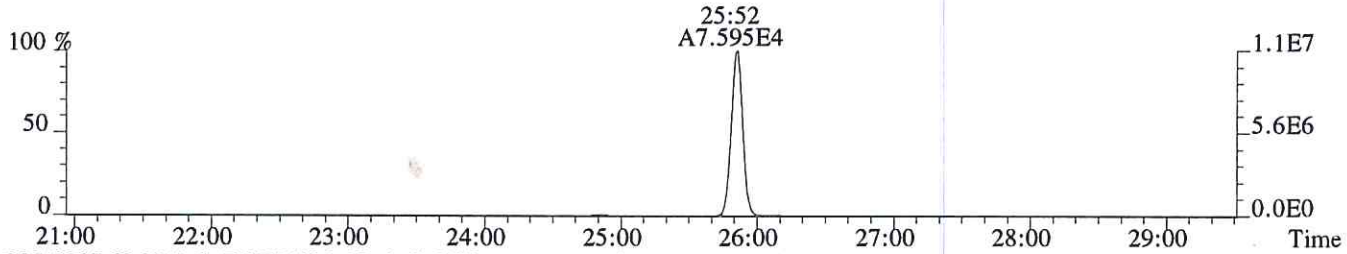
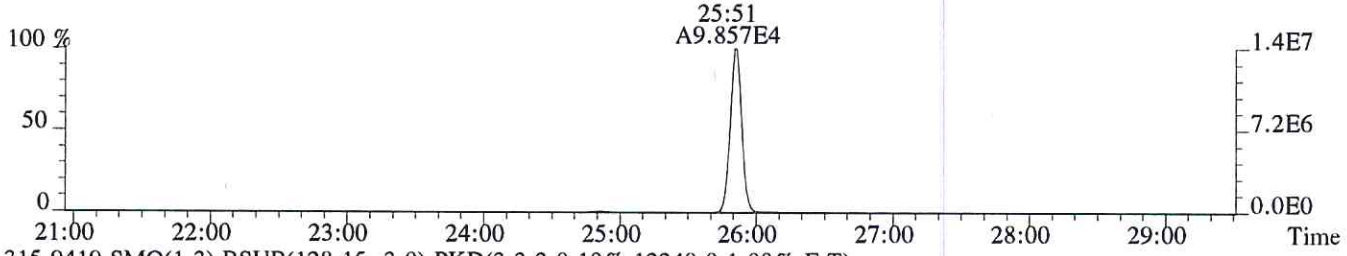
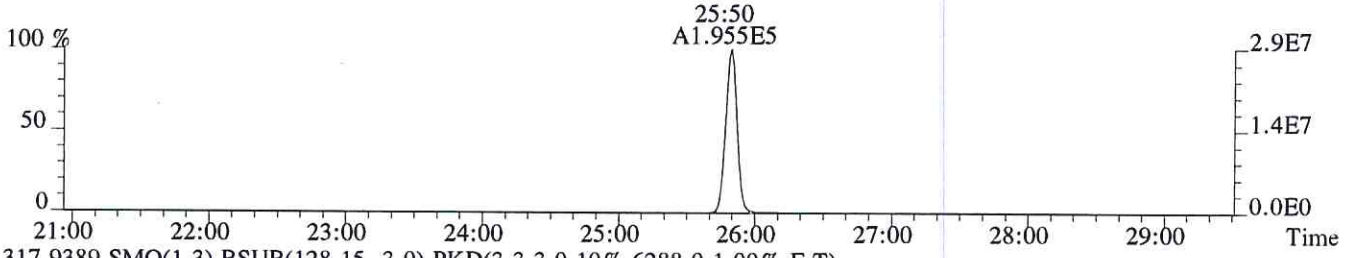
File:P607183 #1-609 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,228.0,1.00%,F,T)



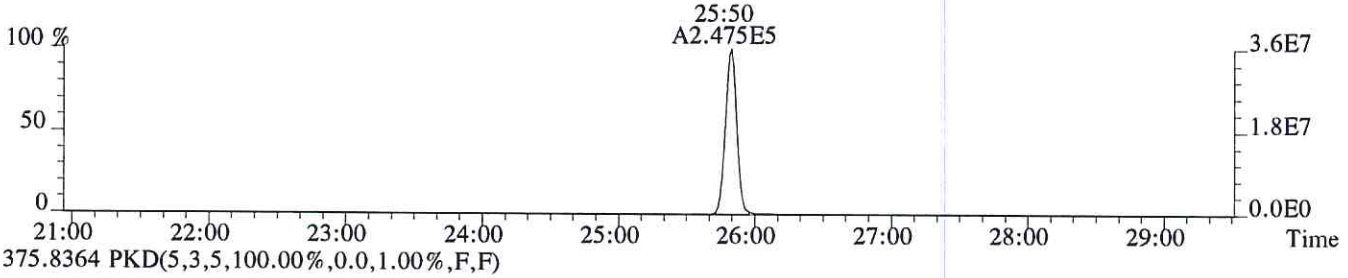
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1416.0,1.00%,F,T)



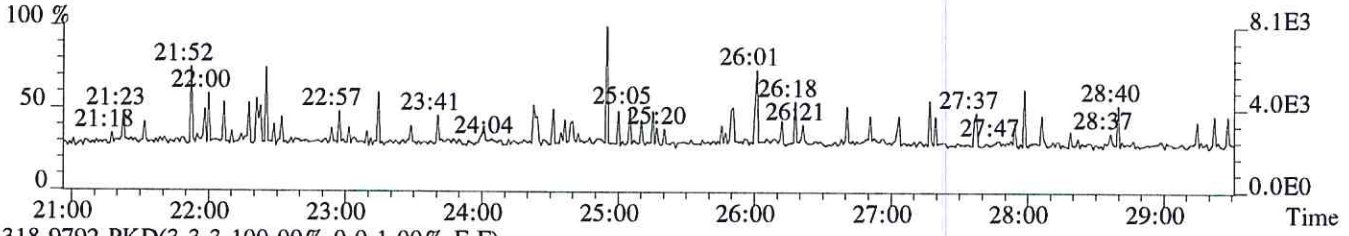
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12248.0,1.00%,F,T)



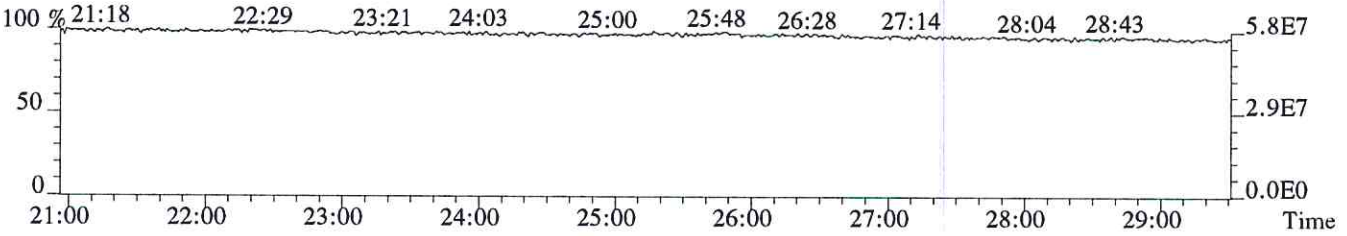
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6288.0,1.00%,F,T)



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

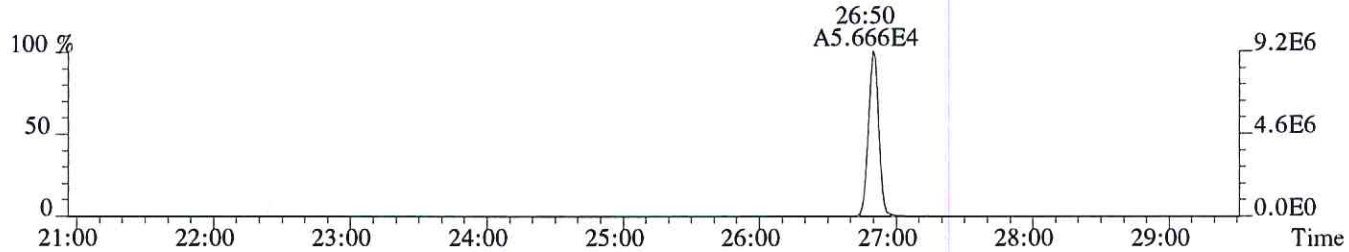


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

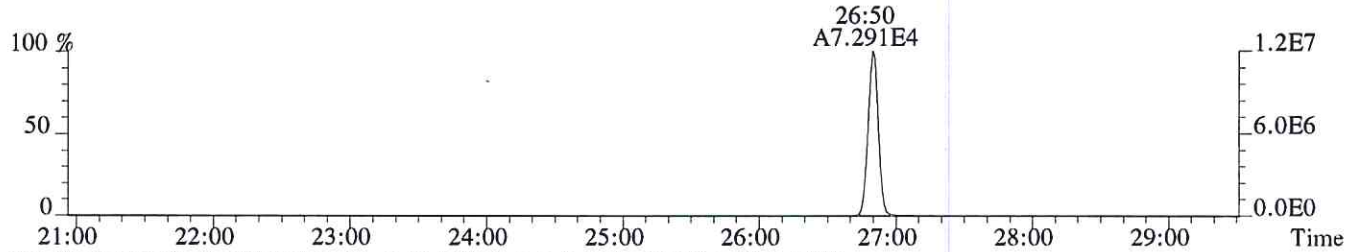


File:P607183 #1-609 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4

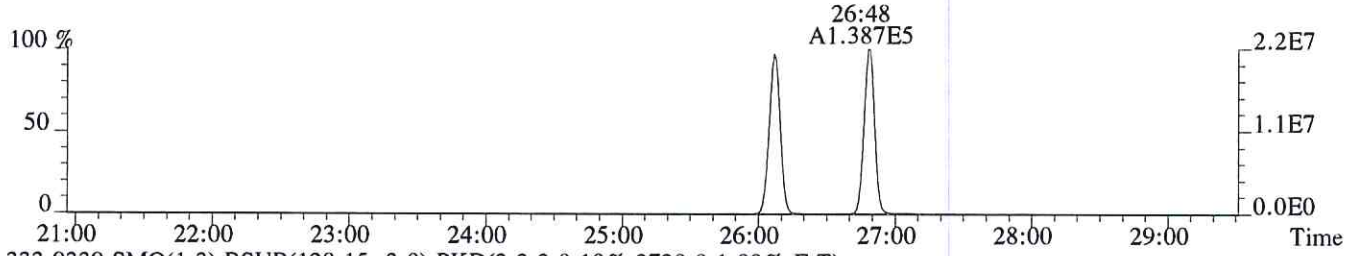
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1636.0,1.00%,F,T)



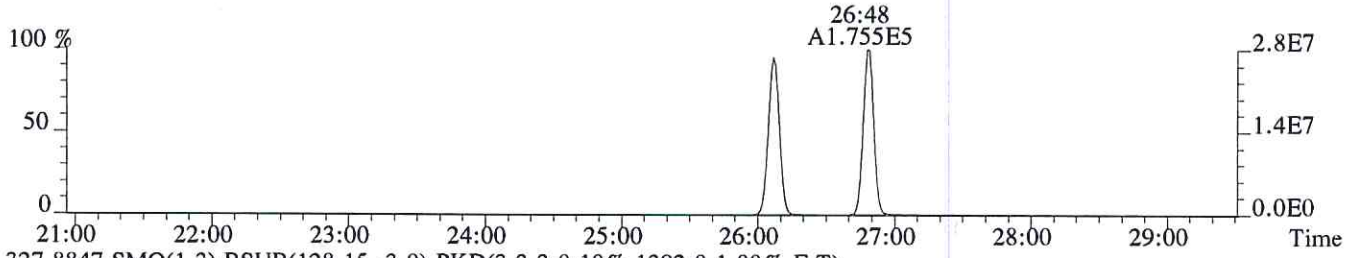
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,840.0,1.00%,F,T)



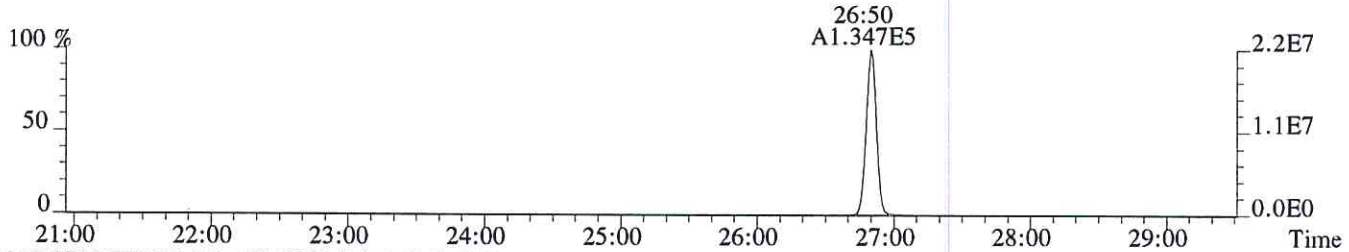
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5384.0,1.00%,F,T)



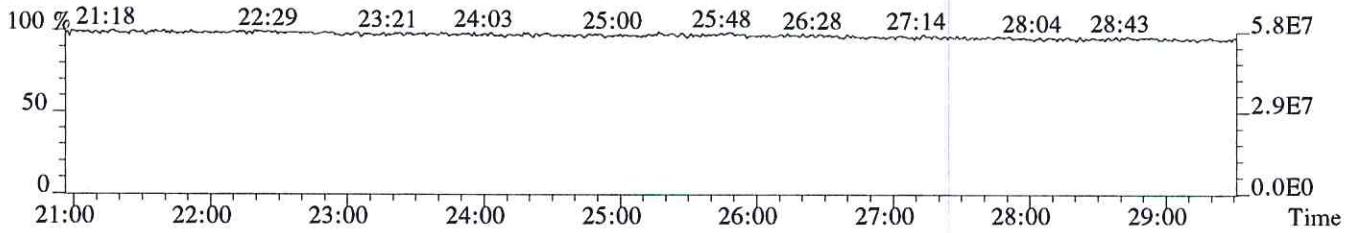
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3720.0,1.00%,F,T)



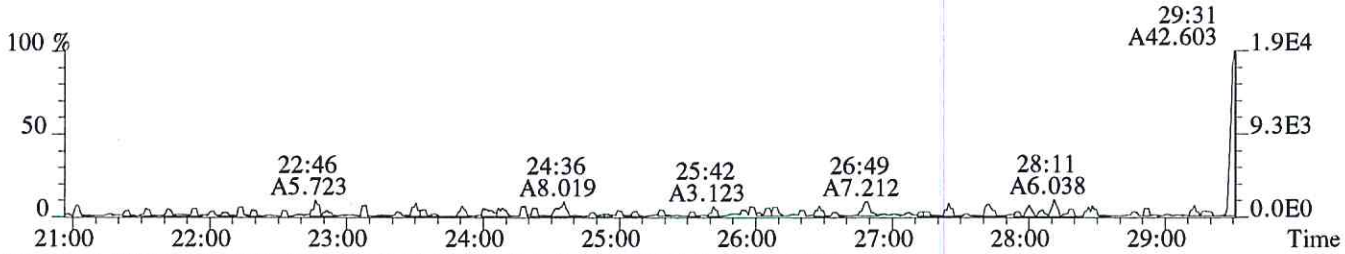
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1392.0,1.00%,F,T)



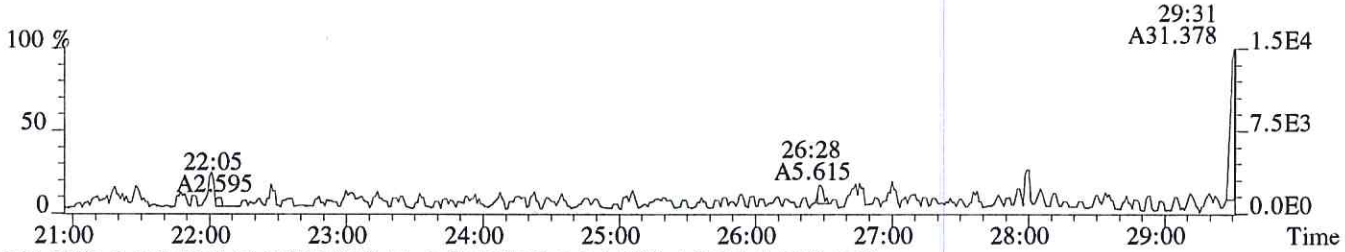
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



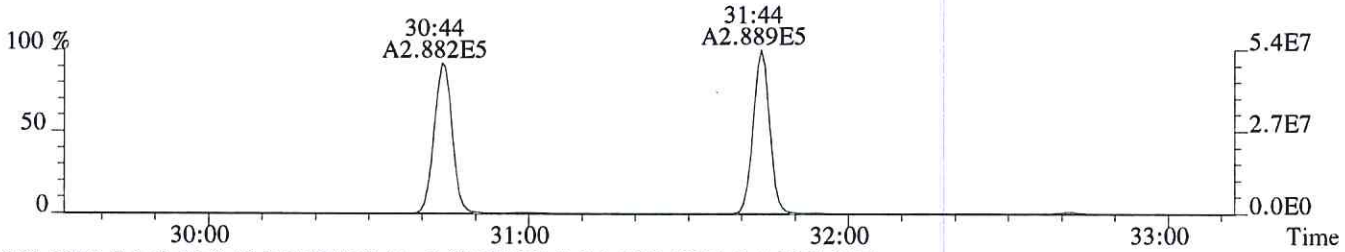
File:P607183 #1-609 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,208.0,1.00%,F,T)



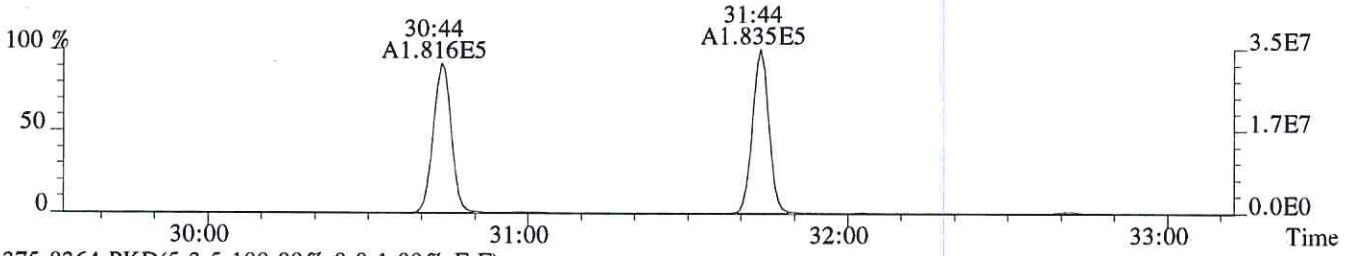
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1304.0,1.00%,F,T)



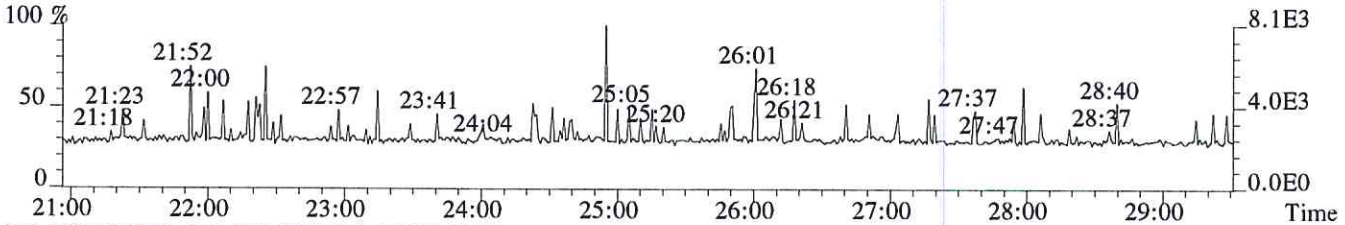
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1616.0,1.00%,F,T)



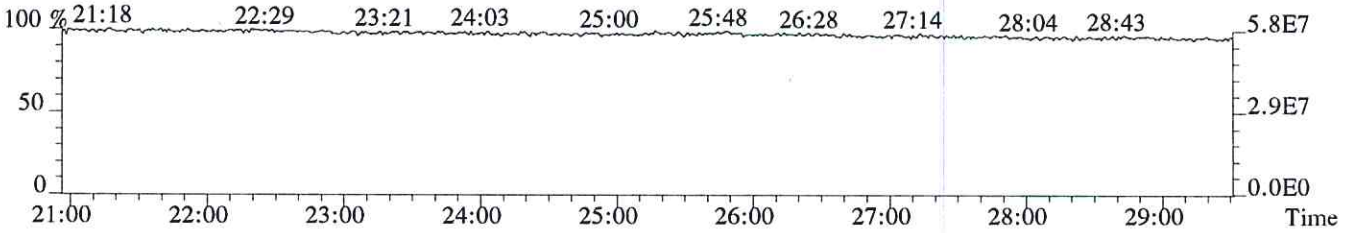
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2380.0,1.00%,F,T)



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

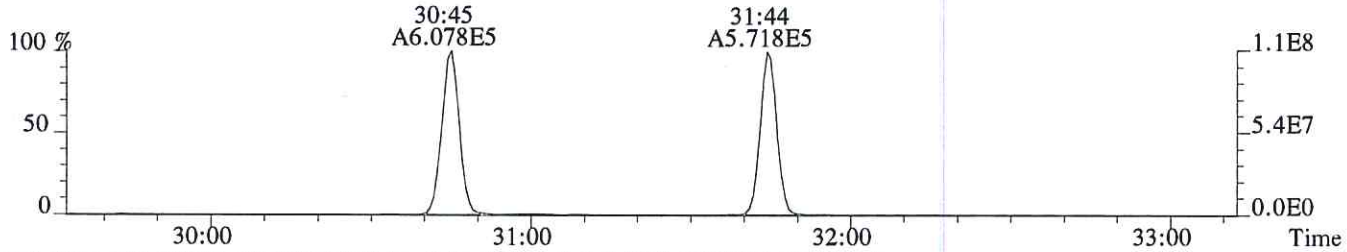


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

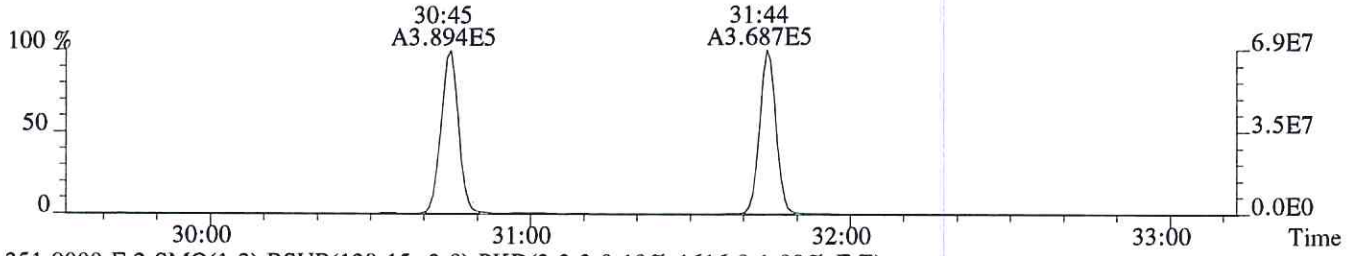


File:P607183 #1-330 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4

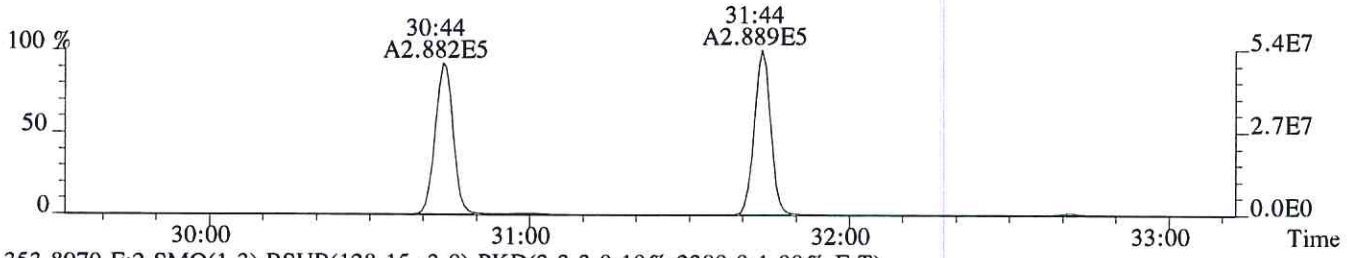
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,804.0,1.00%,F,T)



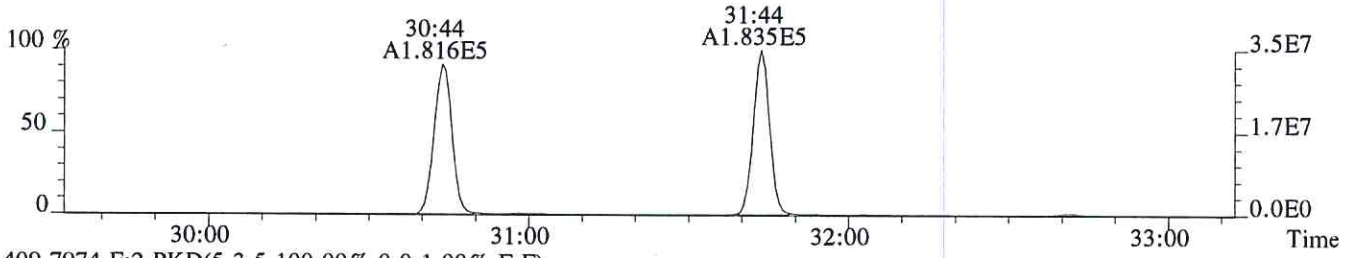
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2584.0,1.00%,F,T)



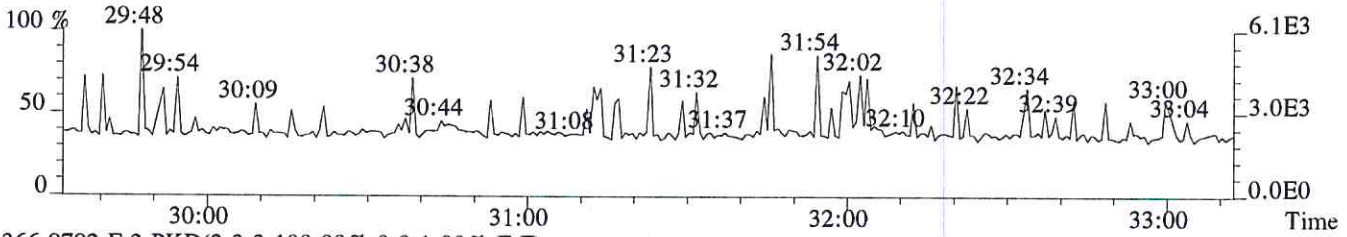
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1616.0,1.00%,F,T)



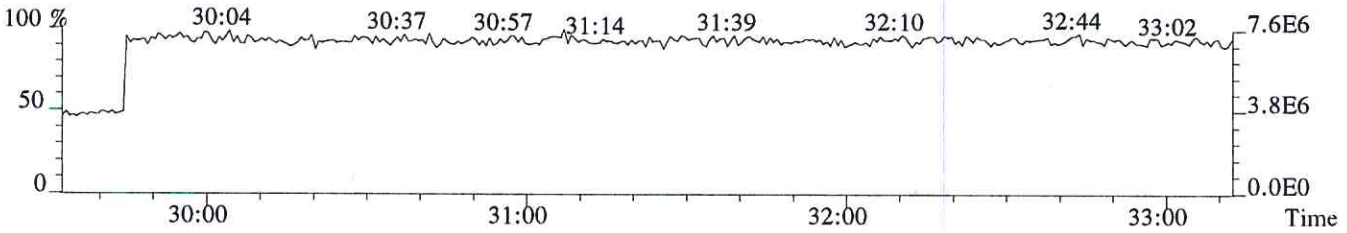
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2380.0,1.00%,F,T)



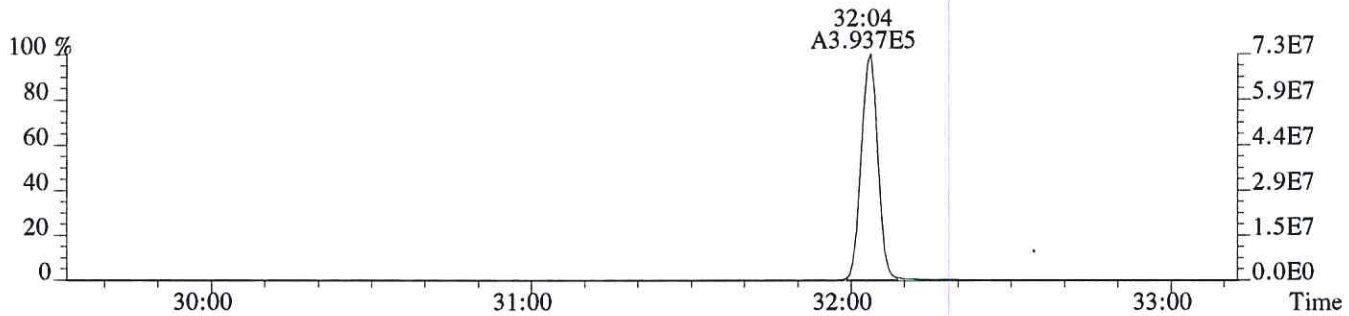
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



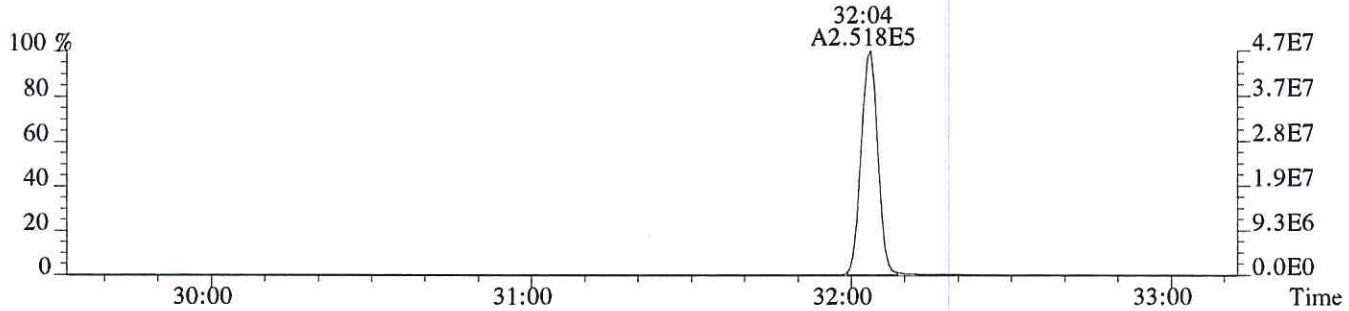
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



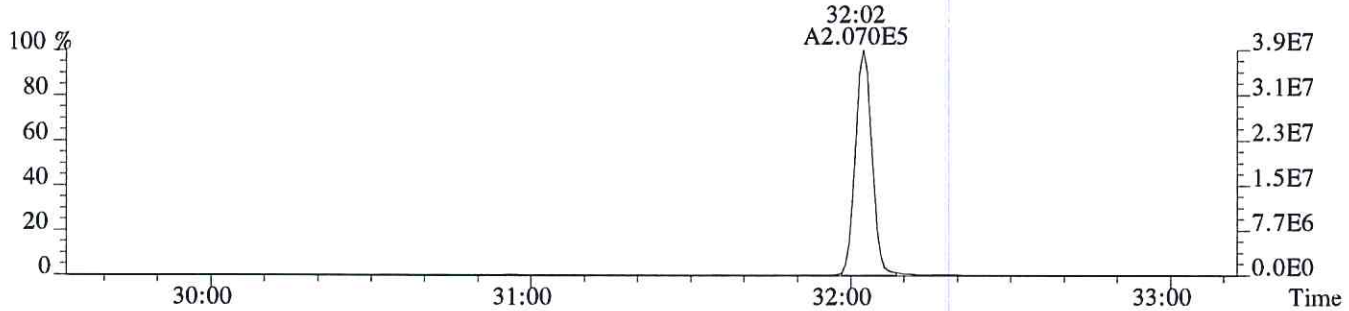
File:P607183 #1-330 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1688.0,1.00%,F,T)



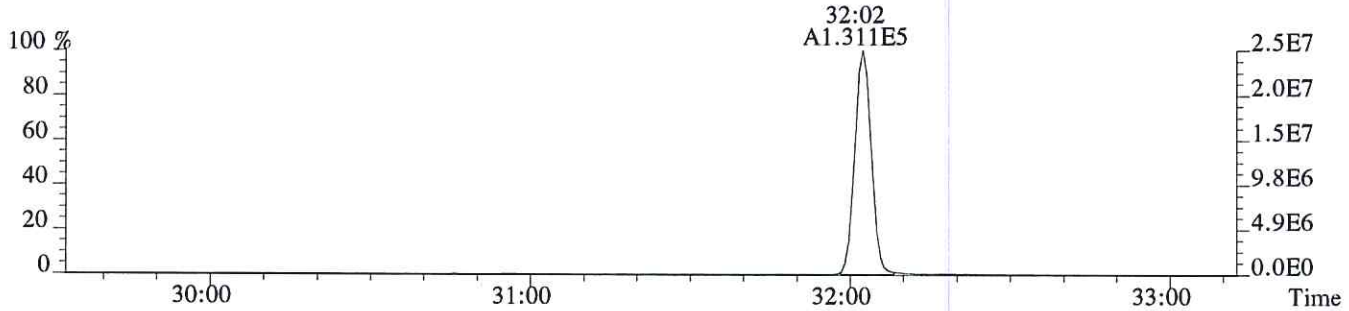
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1044.0,1.00%,F,T)



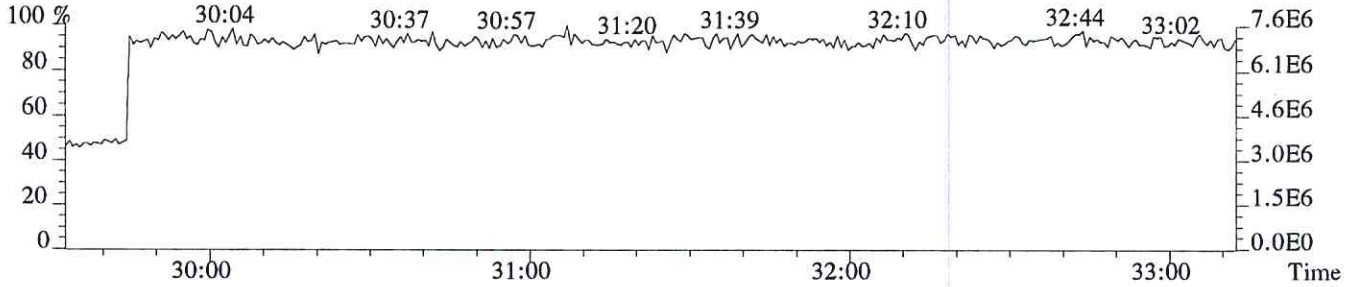
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,940.0,1.00%,F,T)



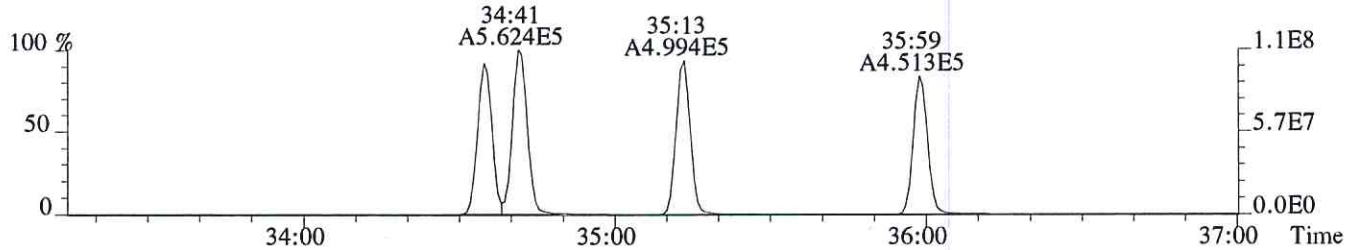
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,212.0,1.00%,F,T)



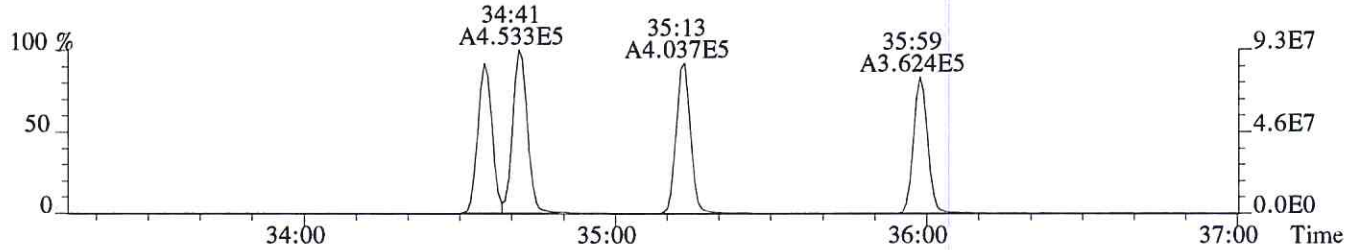
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



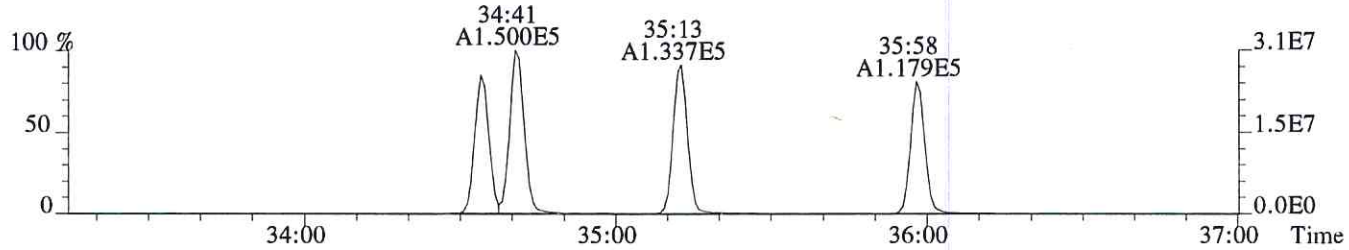
File:P607183 #1-339 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,712.0,0.40%,F,T)



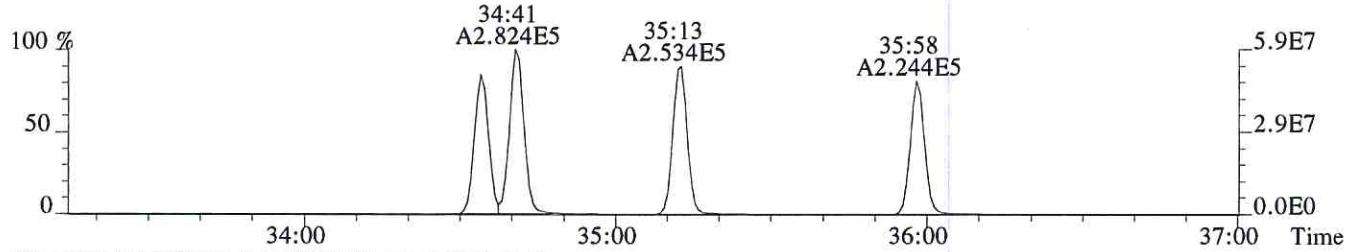
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1336.0,0.40%,F,T)



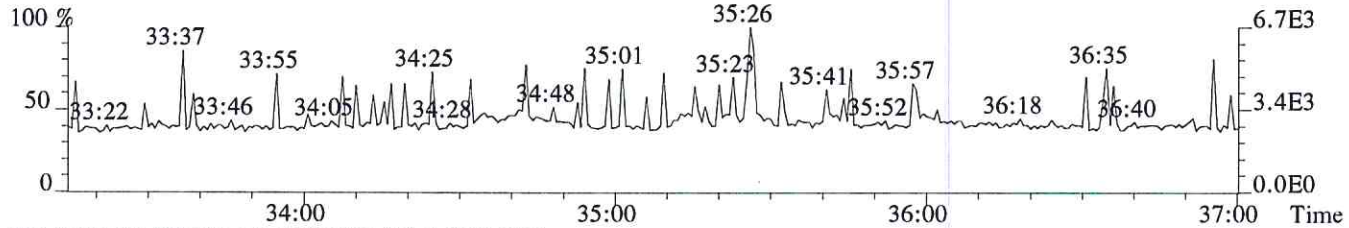
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1460.0,0.40%,F,T)



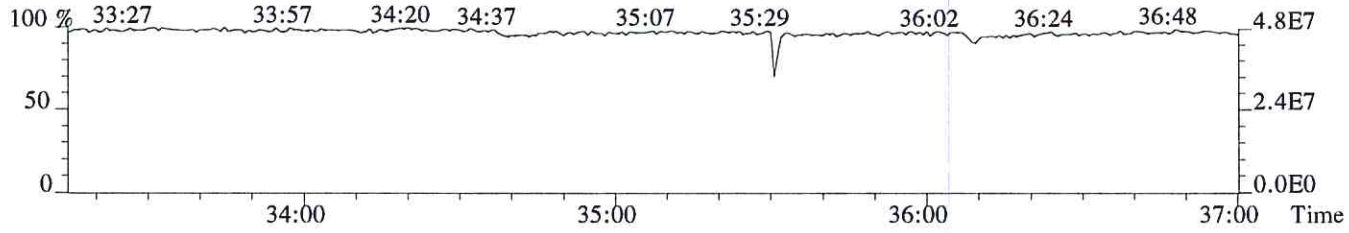
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2348.0,0.40%,F,T)



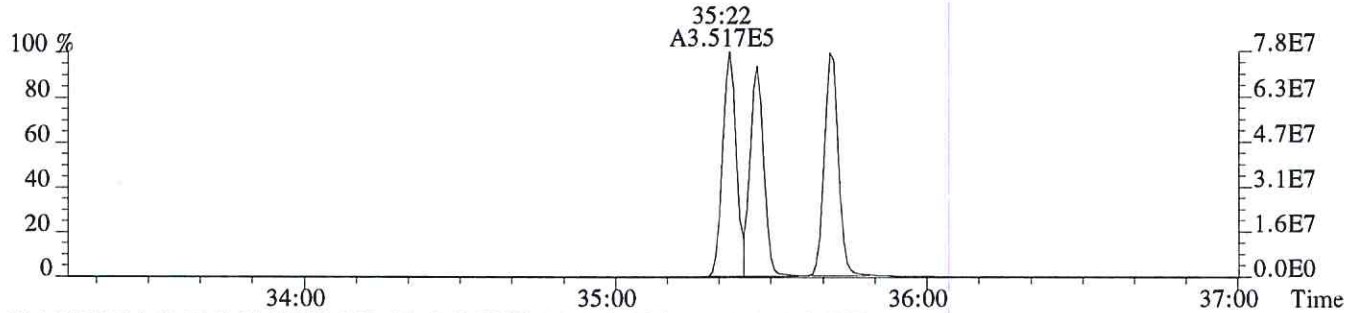
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



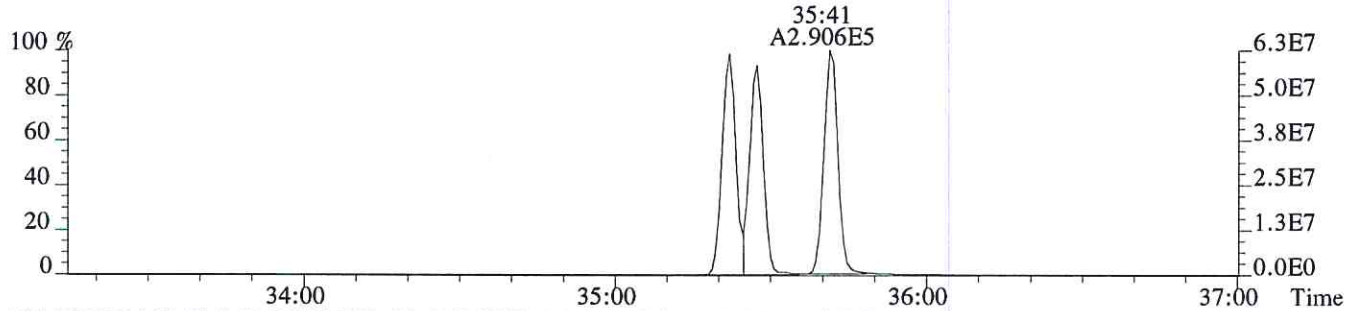
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



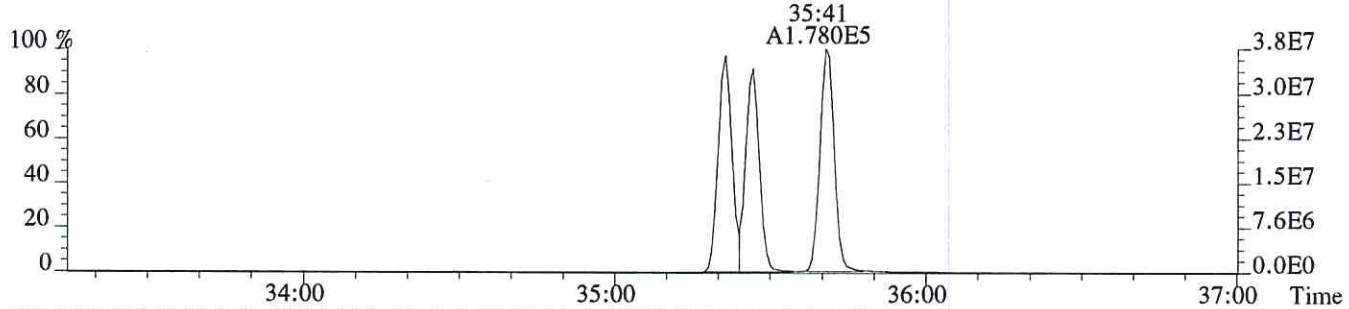
File:P607183 #1-339 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,256.0,0.40%,F,T)



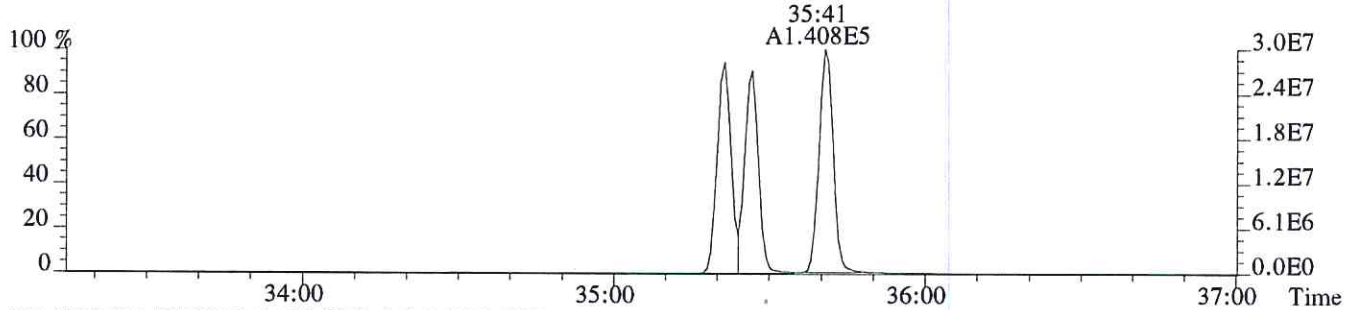
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,240.0,0.40%,F,T)



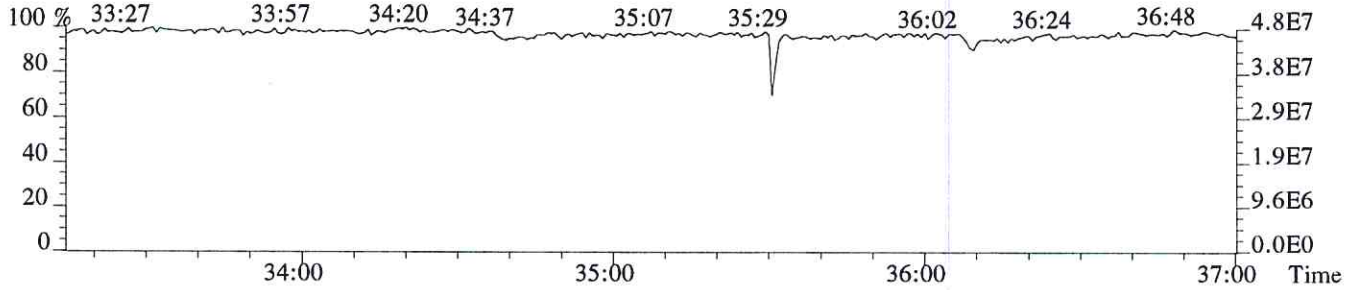
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1428.0,0.40%,F,T)



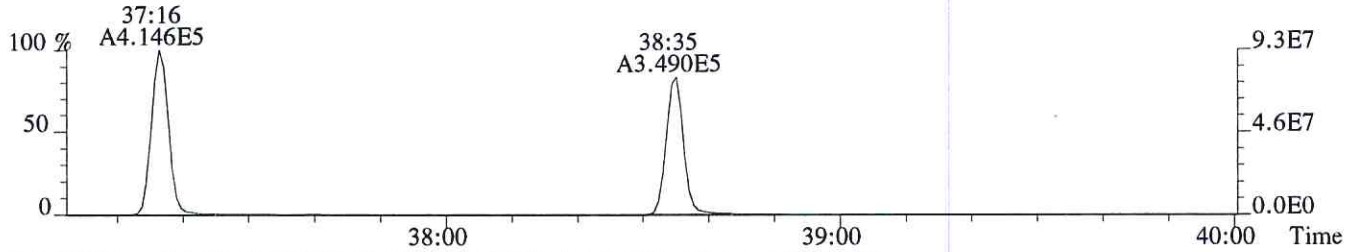
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,720.0,0.40%,F,T)



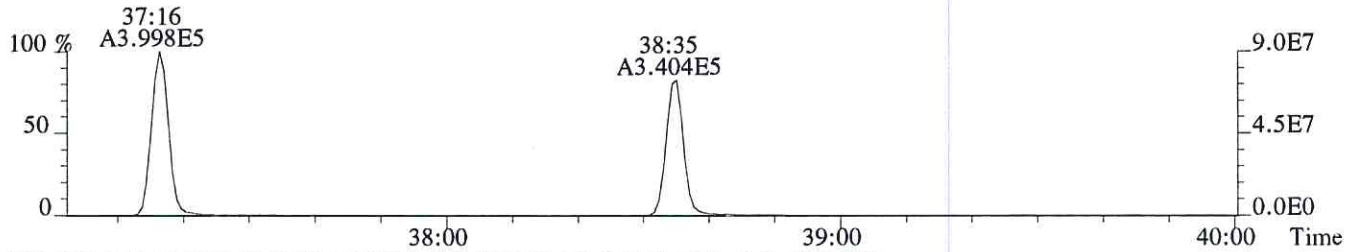
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



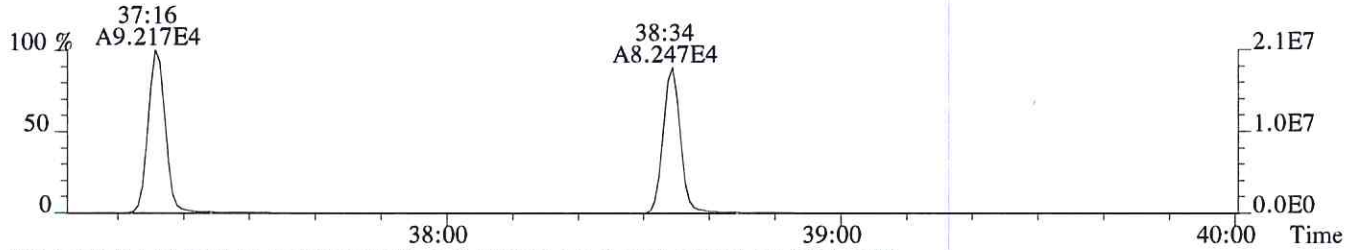
File:P607183 #1-268 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,21144.0,0.50%,F,T)



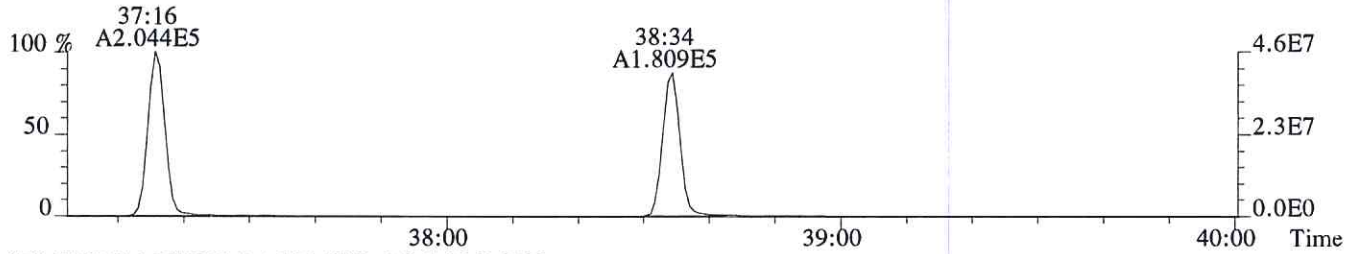
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4368.0,0.50%,F,T)



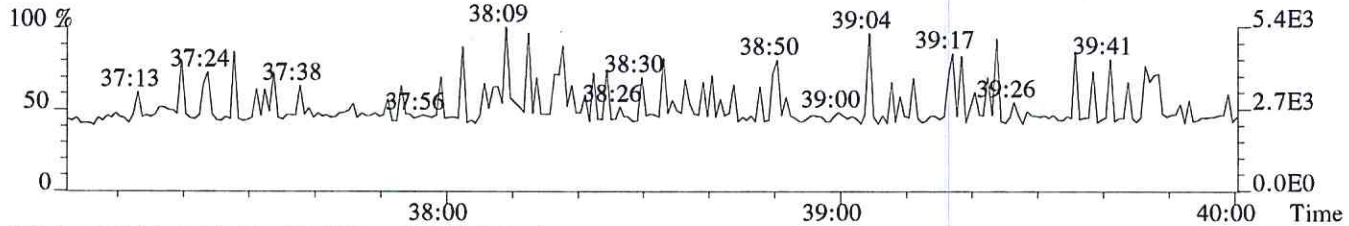
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3096.0,0.50%,F,T)



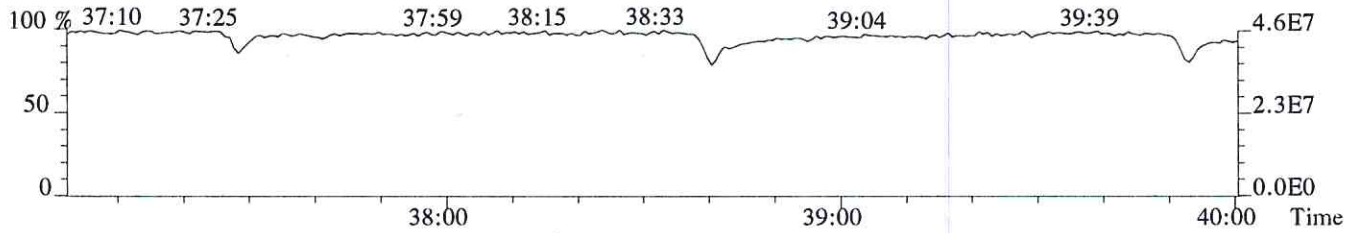
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,21224.0,0.50%,F,T)



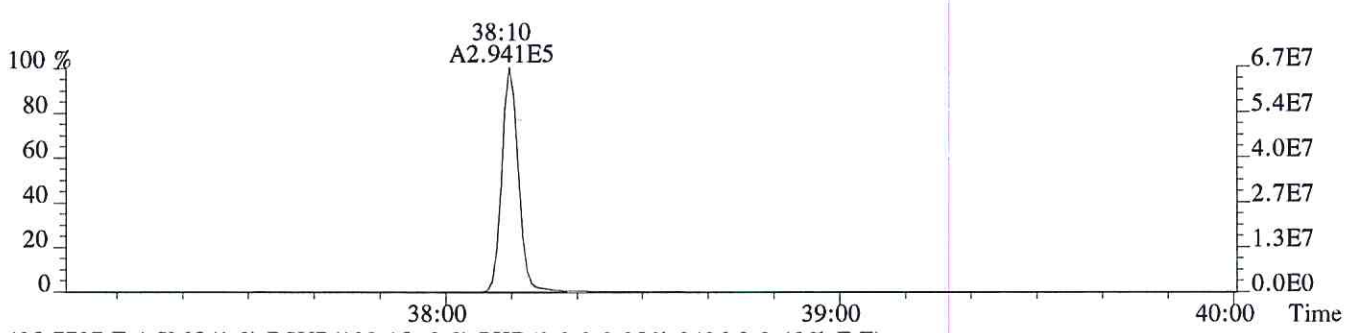
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



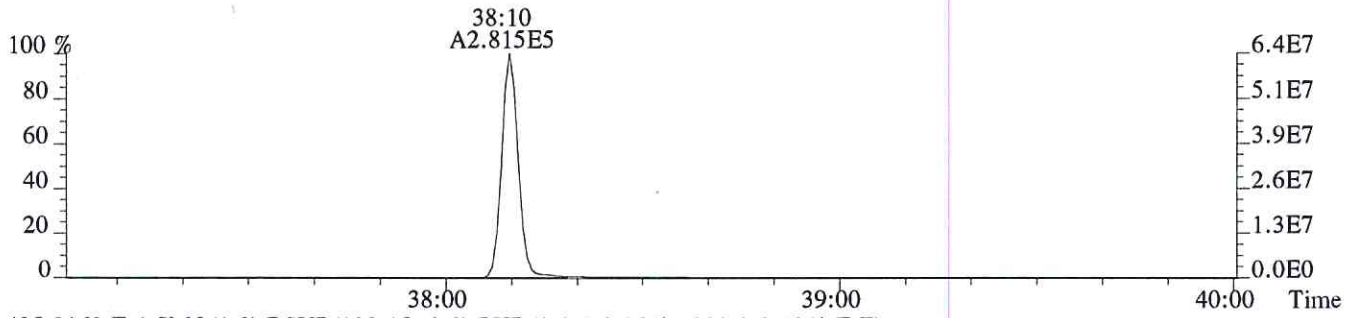
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



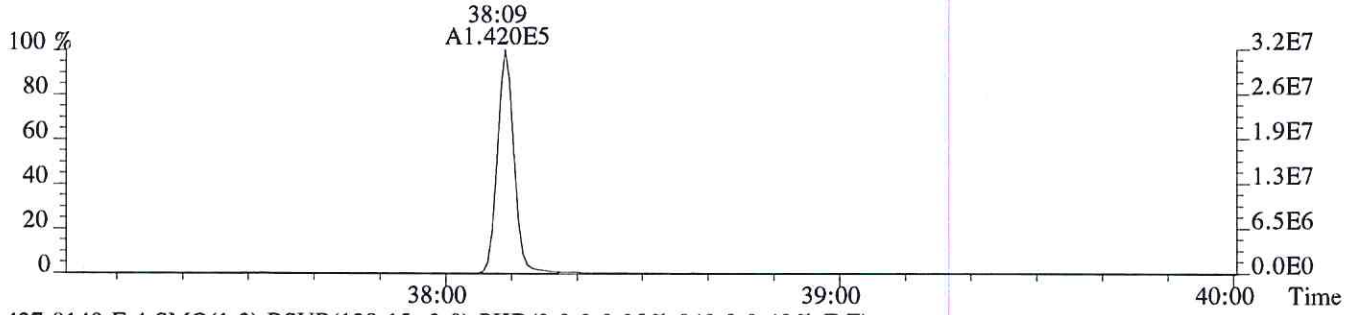
File:P607183 #1-268 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2904.0,0.40%,F,T)



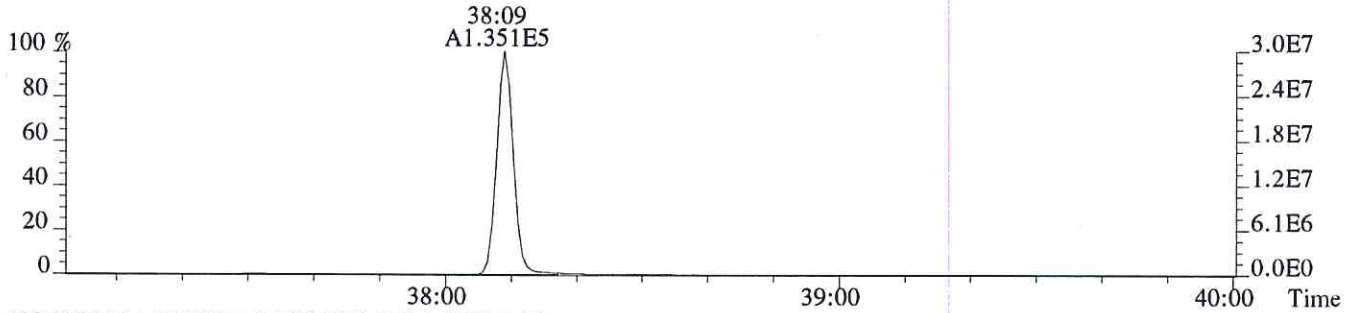
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2496.0,0.40%,F,T)



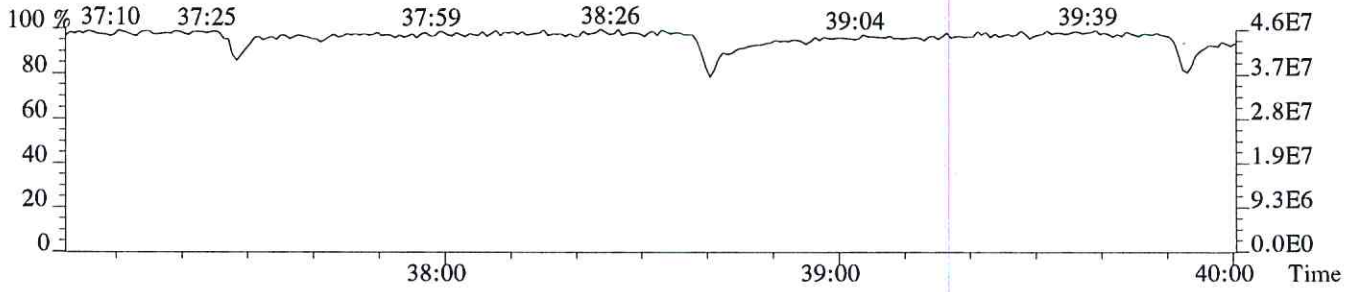
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1988.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,840.0,0.40%,F,T)

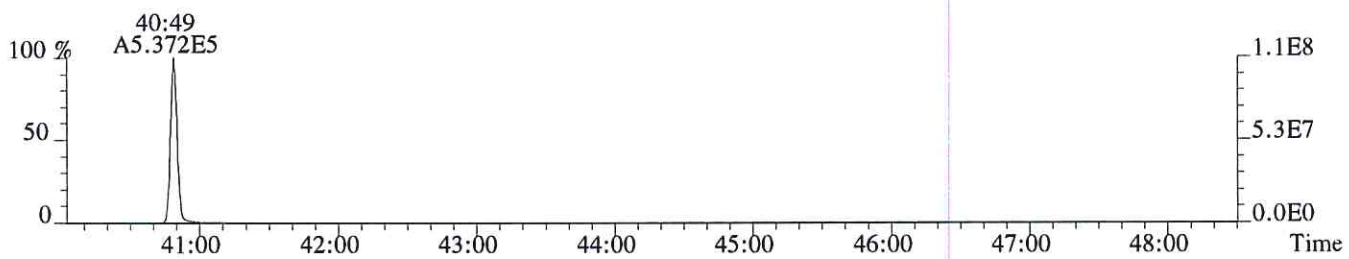


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

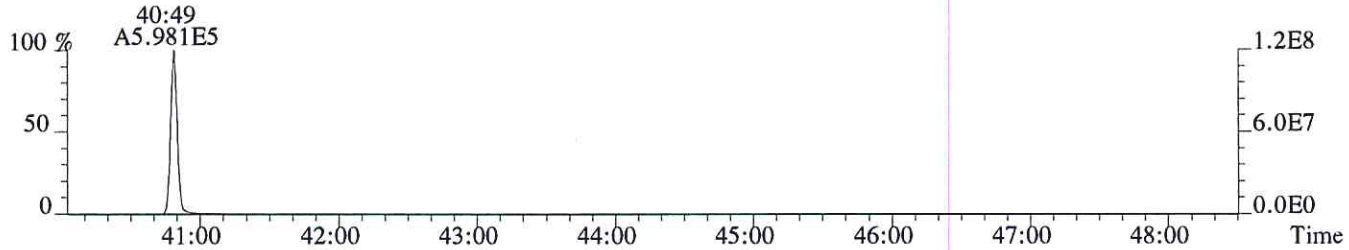


File:P607183 #1-762 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4

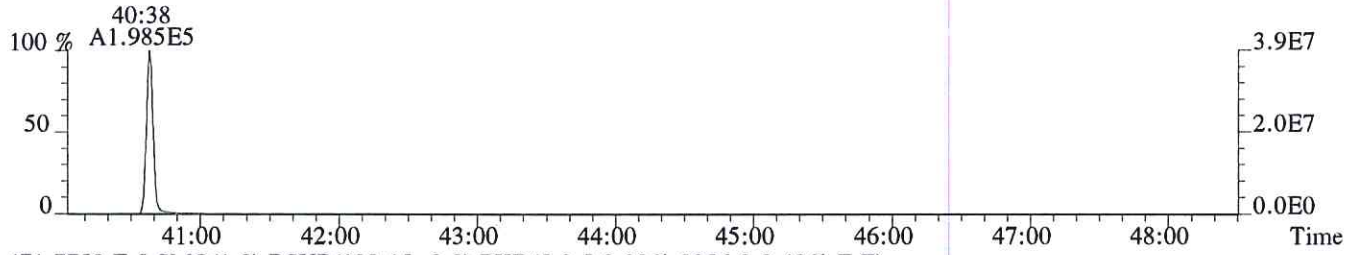
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,25616.0,0.40%,F,T)



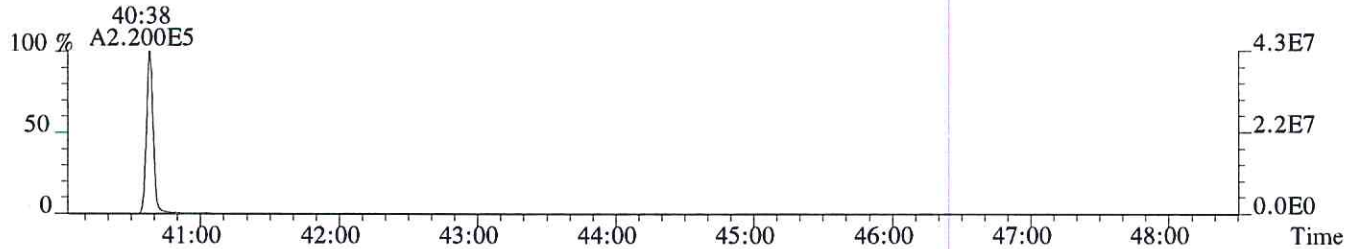
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,38344.0,0.40%,F,T)



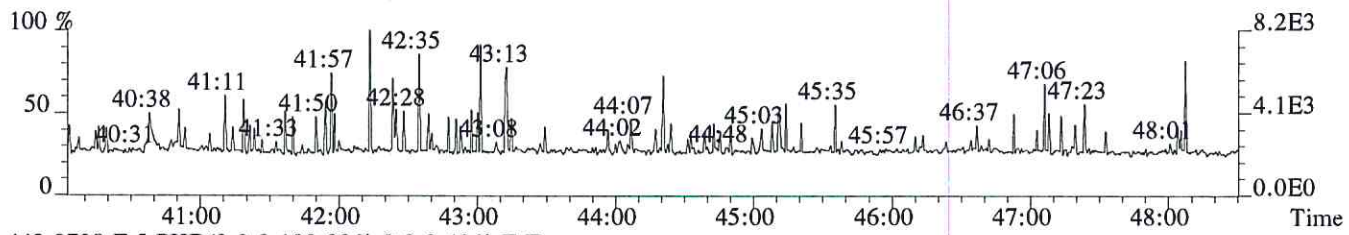
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,15288.0,0.40%,F,T)



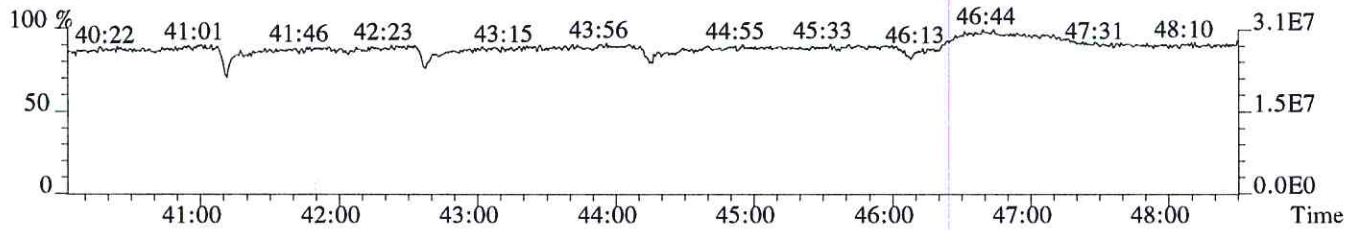
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8956.0,0.40%,F,T)



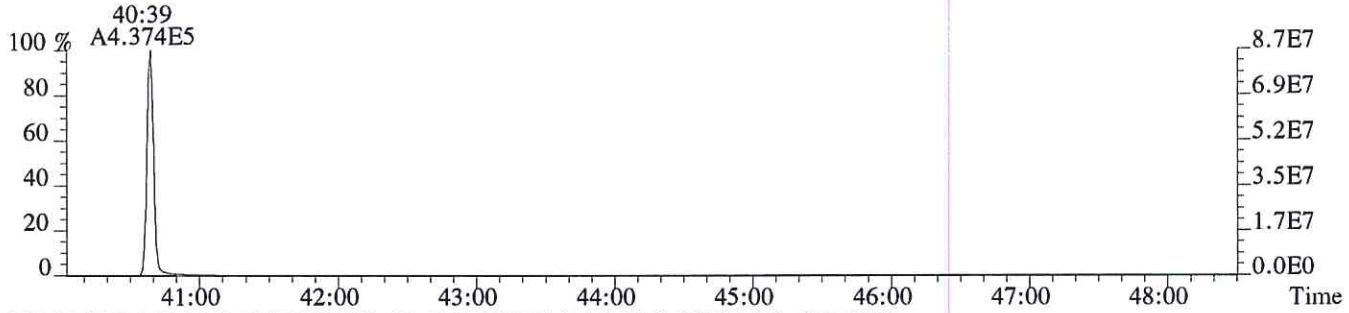
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



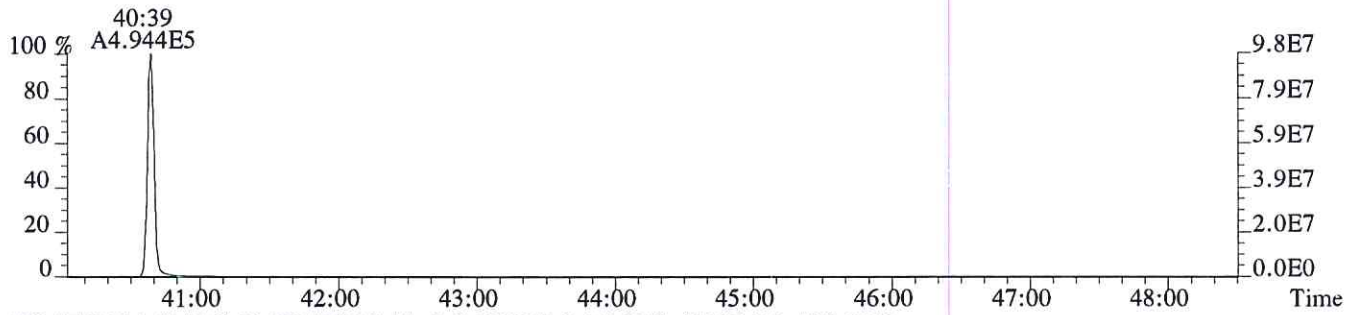
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



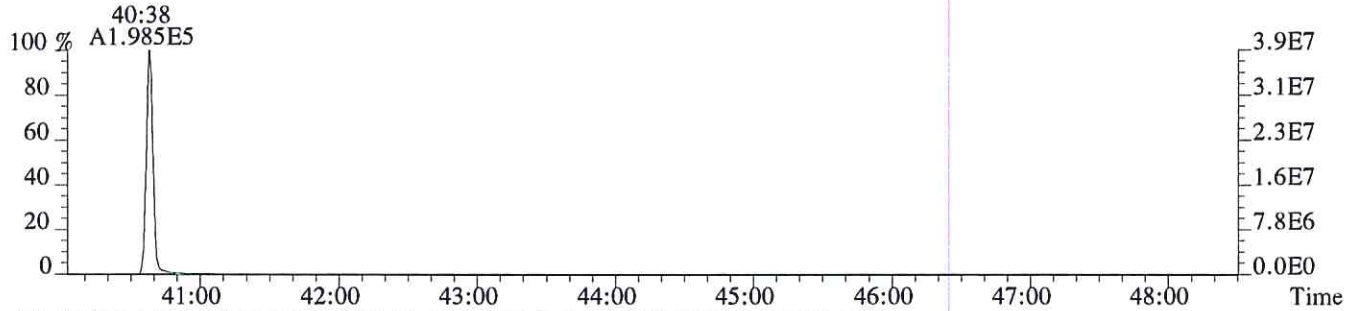
File:P607183 #1-762 Acq:16-MAY-2017 16:05:29 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,16144.0,0.40%,F,T)



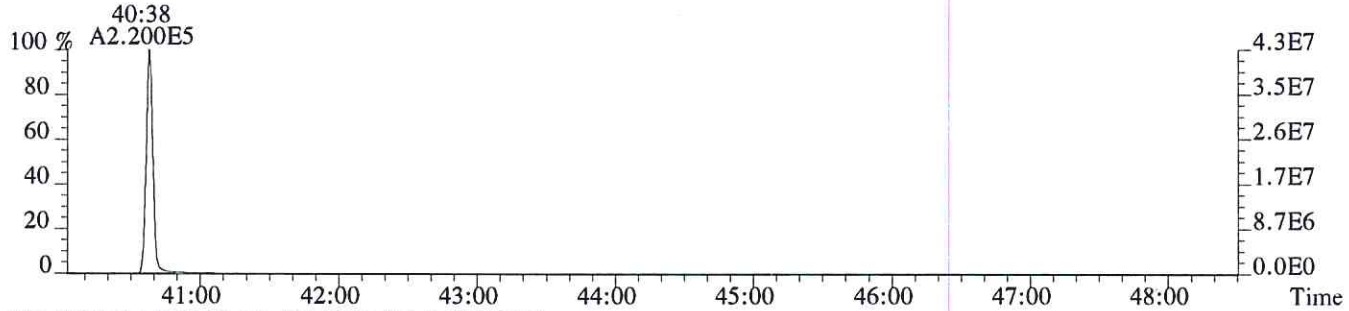
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,35104.0,0.40%,F,T)



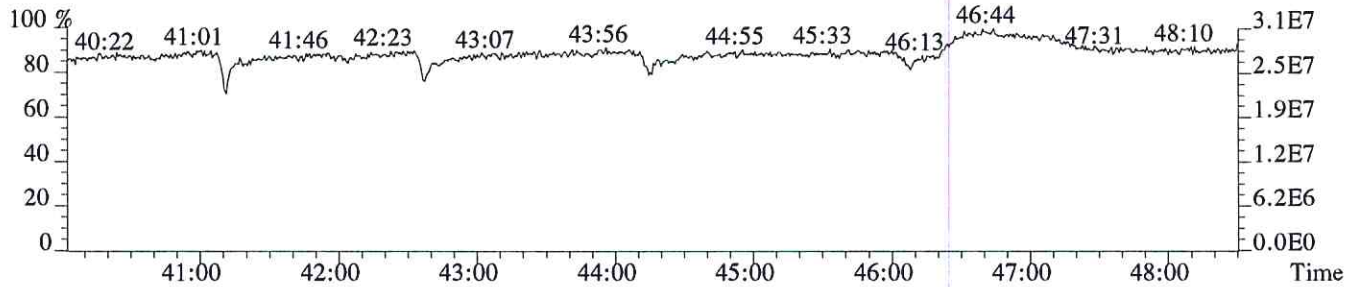
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,15288.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8956.0,0.40%,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.
82168

Run #6 Filename P607184 Samp: 1 Inj: 1 Acquired: 16-MAY-17 16:55:47
Processed: 17-MAY-17 07:53:00 Sample ID: CS5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:51	1.497e+05	1.912e+05	0.78	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:45	1.130e+06	7.268e+05	1.56	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:44	1.167e+06	7.508e+05	1.55	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:35	9.742e+05	7.856e+05	1.24	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:41	1.089e+06	8.739e+05	1.25	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:13	9.619e+05	7.735e+05	1.24	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:59	8.721e+05	6.979e+05	1.25	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:16	8.107e+05	7.806e+05	1.04	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:35	7.029e+05	6.833e+05	1.03	yes	no	1.341
10	Unk	OCDF	40:49	1.091e+06	1.201e+06	0.91	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:50	1.147e+05	1.461e+05	0.78	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:04	7.854e+05	5.019e+05	1.56	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:22	7.321e+05	5.872e+05	1.25	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:27	6.649e+05	5.336e+05	1.25	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:41	7.344e+05	5.870e+05	1.25	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:10	5.824e+05	5.623e+05	1.04	yes	no	1.048
17	Unk	OCDD	40:39	8.817e+05	1.000e+06	0.88	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:50	7.771e+04	9.829e+04	0.79	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:44	1.168e+05	7.392e+04	1.58	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:44	1.131e+05	7.188e+04	1.57	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:34	5.081e+04	9.735e+04	0.52	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:41	5.746e+04	1.103e+05	0.52	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:13	5.300e+04	1.016e+05	0.52	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:58	4.784e+04	9.061e+04	0.53	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:16	3.767e+04	8.314e+04	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:34	3.155e+04	7.023e+04	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:48	5.746e+04	7.322e+04	0.78	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	32:02	8.338e+04	5.330e+04	1.56	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:21	6.604e+04	5.272e+04	1.25	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:27	7.279e+04	5.834e+04	1.25	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:09	5.836e+04	5.533e+04	1.05	yes	no	0.884
32	IS	13C-OCDD	40:38	9.149e+04	1.008e+05	0.91	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:07	5.652e+04	7.147e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:41	7.174e+04	5.639e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:50	2.718e+05				no	1.072

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
82168

Run #6 Filename P607184 Samp: 1 Inj: 1 Acquired: 16-MAY-17 16:55:47
Processed: 17-MAY-17 07:53:00 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	2.17e+07	1.33e+03	1.6e+04	2.79e+07	1.18e+03	2.4e+04
2	1,2,3,7,8-PeCDF	1.97e+08	1.65e+04	1.2e+04	1.27e+08	9.81e+03	1.3e+04
3	2,3,4,7,8-PeCDF	2.17e+08	1.65e+04	1.3e+04	1.40e+08	9.81e+03	1.4e+04
4	1,2,3,4,7,8-HxCDF	2.04e+08	4.58e+03	4.4e+04	1.65e+08	2.35e+03	7.0e+04
5	1,2,3,6,7,8-HxCDF	2.23e+08	4.58e+03	4.9e+04	1.81e+08	2.35e+03	7.7e+04
6	2,3,4,6,7,8-HxCDF	2.03e+08	4.58e+03	4.4e+04	1.62e+08	2.35e+03	6.9e+04
7	1,2,3,7,8,9-HxCDF	1.87e+08	4.58e+03	4.1e+04	1.50e+08	2.35e+03	6.4e+04
8	1,2,3,4,6,7,8-HpCDF	1.79e+08	1.85e+04	9.7e+03	1.73e+08	5.49e+04	3.1e+03
9	1,2,3,4,7,8,9-HpCDF	1.52e+08	1.85e+04	8.2e+03	1.46e+08	5.49e+04	2.7e+03
10	OCDF	2.15e+08	1.36e+05	1.6e+03	2.39e+08	6.27e+04	3.8e+03
11	2,3,7,8-TCDD	1.87e+07	1.50e+03	1.2e+04	2.38e+07	3.48e+02	6.8e+04
12	1,2,3,7,8-PeCDD	1.48e+08	1.20e+03	1.2e+05	9.35e+07	1.00e+03	9.3e+04
13	1,2,3,4,7,8-HxCDD	1.62e+08	6.84e+02	2.4e+05	1.29e+08	3.16e+02	4.1e+05
14	1,2,3,6,7,8-HxCDD	1.41e+08	6.84e+02	2.1e+05	1.13e+08	3.16e+02	3.6e+05
15	1,2,3,7,8,9-HxCDD	1.57e+08	6.84e+02	2.3e+05	1.27e+08	3.16e+02	4.0e+05
16	1,2,3,4,6,7,8-HpCDD	1.33e+08	6.68e+03	2.0e+04	1.28e+08	3.04e+03	4.2e+04
17	OCDD	1.80e+08	5.70e+04	3.1e+03	2.03e+08	4.18e+04	4.9e+03
18	13C-2,3,7,8-TCDF	1.13e+07	1.70e+04	6.7e+02	1.41e+07	5.63e+03	2.5e+03
19	13C-1,2,3,7,8-PeCDF	2.02e+07	1.22e+03	1.7e+04	1.29e+07	2.11e+03	6.1e+03
20	13C-2,3,4,7,8-PeCDF	2.11e+07	1.22e+03	1.7e+04	1.34e+07	2.11e+03	6.4e+03
21	13C-1,2,3,4,7,8-HxCDF	1.07e+07	8.04e+02	1.3e+04	2.05e+07	1.51e+03	1.4e+04
22	13C-1,2,3,6,7,8-HxCDF	1.19e+07	8.04e+02	1.5e+04	2.27e+07	1.51e+03	1.5e+04
23	13C-2,3,4,6,7,8-HxCDF	1.12e+07	8.04e+02	1.4e+04	2.13e+07	1.51e+03	1.4e+04
24	13C-1,2,3,7,8,9-HxCDF	1.01e+07	8.04e+02	1.3e+04	1.93e+07	1.51e+03	1.3e+04
25	13C-1,2,3,4,6,7,8-HpCDF	8.24e+06	4.42e+03	1.9e+03	1.84e+07	9.41e+03	2.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.99e+06	4.42e+03	1.6e+03	1.54e+07	9.41e+03	1.6e+03
27	13C-2,3,7,8-TCDD	9.11e+06	5.94e+03	1.5e+03	1.15e+07	1.78e+03	6.5e+03
28	13C-1,2,3,7,8-PeCDD	1.57e+07	1.10e+03	1.4e+04	1.01e+07	2.20e+02	4.6e+04
29	13C-1,2,3,4,7,8-HxCDD	1.44e+07	2.46e+03	5.8e+03	1.13e+07	8.20e+02	1.4e+04
30	13C-1,2,3,6,7,8-HxCDD	1.54e+07	2.46e+03	6.3e+03	1.22e+07	8.20e+02	1.5e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.33e+07	1.90e+03	7.0e+03	1.26e+07	1.01e+03	1.2e+04
32	13C-OCDD	1.79e+07	5.02e+03	3.6e+03	2.00e+07	1.04e+04	1.9e+03
33	13C-1,2,3,4-TCDD	8.41e+06	5.94e+03	1.4e+03	1.09e+07	1.78e+03	6.1e+03
34	13C-1,2,3,7,8,9-HxCDD	1.56e+07	2.46e+03	6.3e+03	1.23e+07	8.20e+02	1.5e+04
35	37Cl-2,3,7,8-TCDD	4.44e+07	1.06e+03	4.2e+04			

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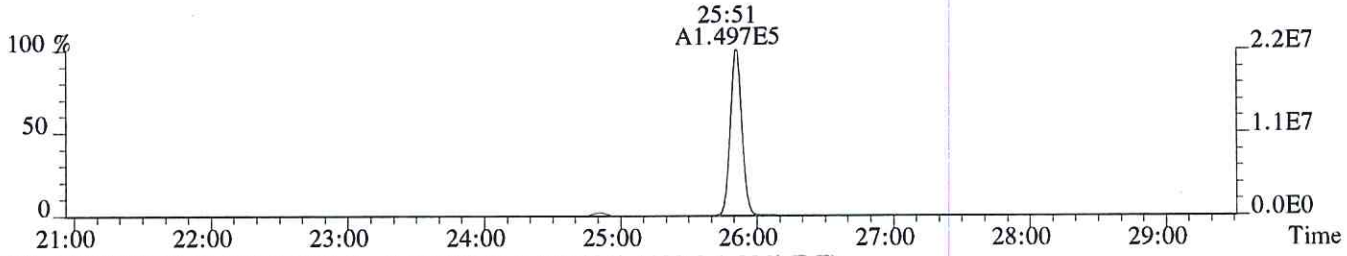
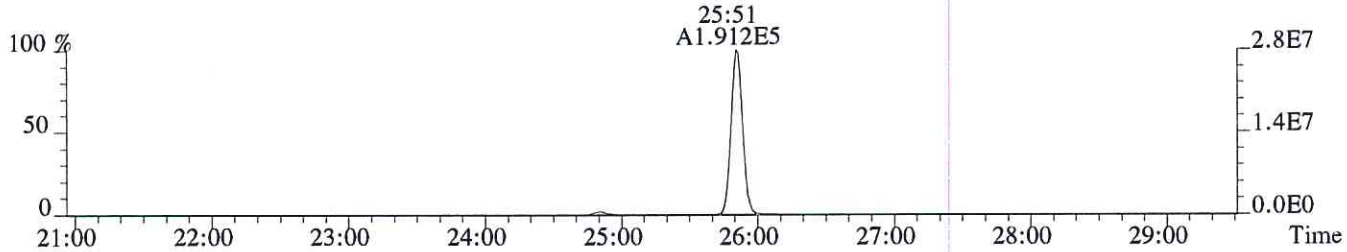
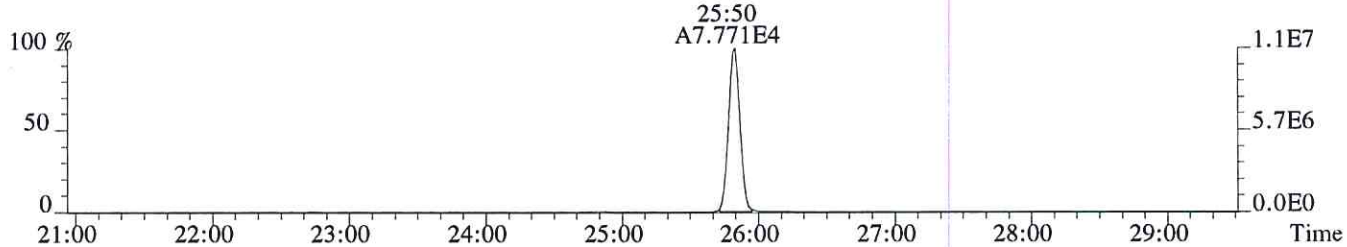
File:P607184 #1-609 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1332.0,1.00%,F,T)



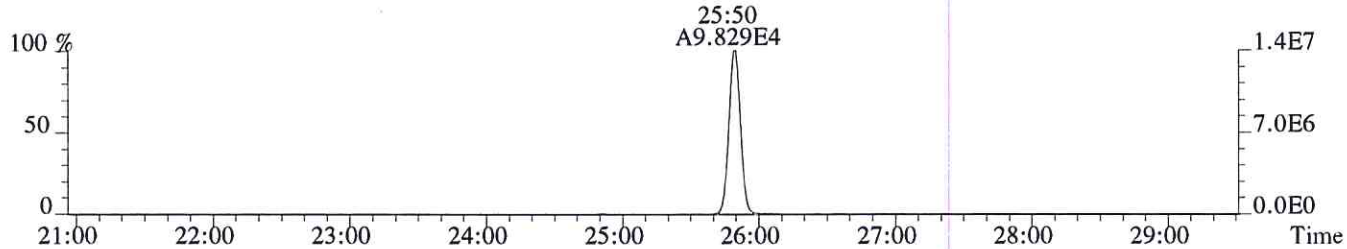
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1180.0,1.00%,F,T)



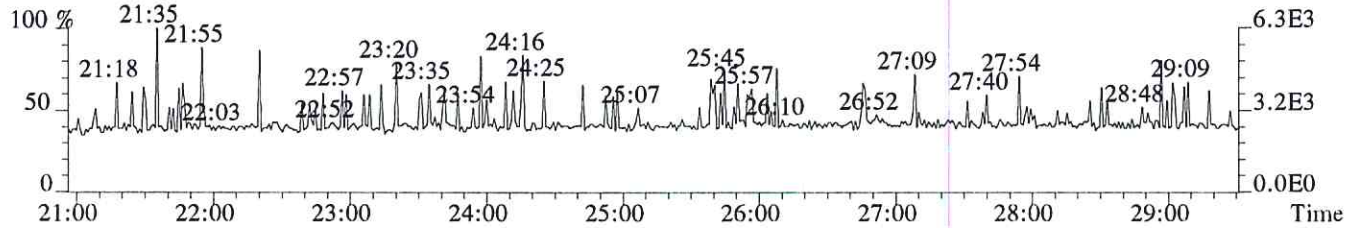
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16952.0,1.00%,F,T)



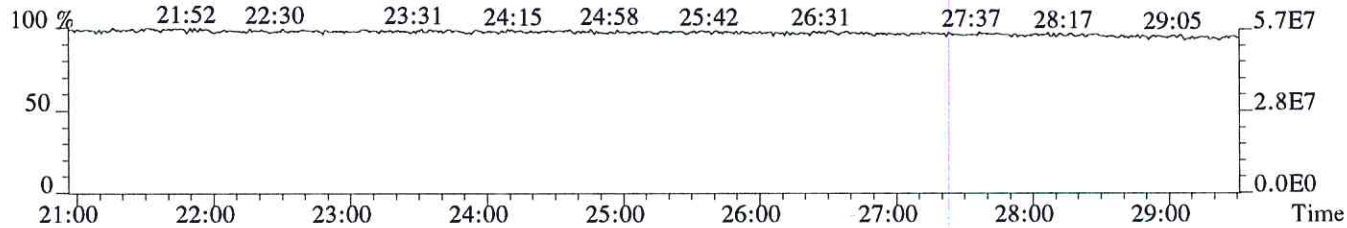
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5628.0,1.00%,F,T)



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

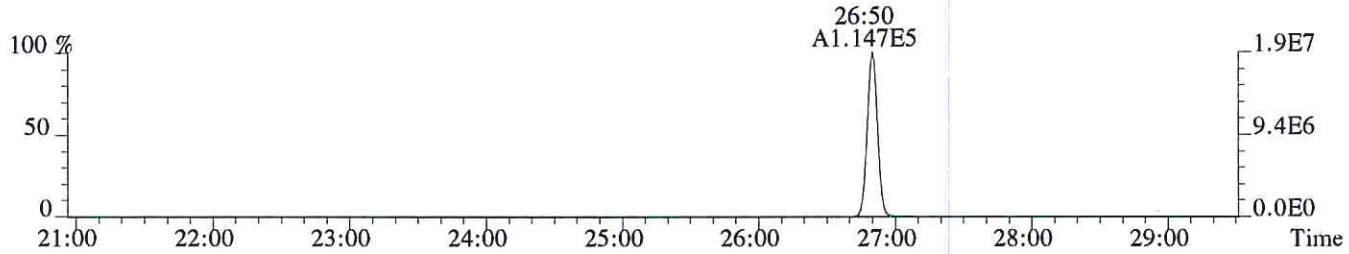


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

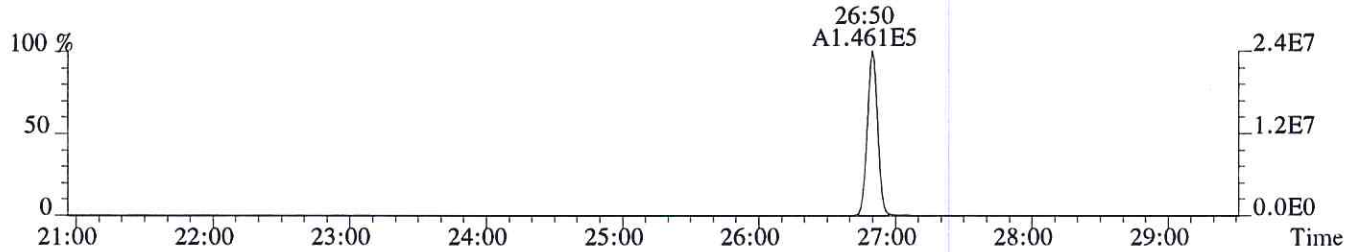


File:P607184 #1-609 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5

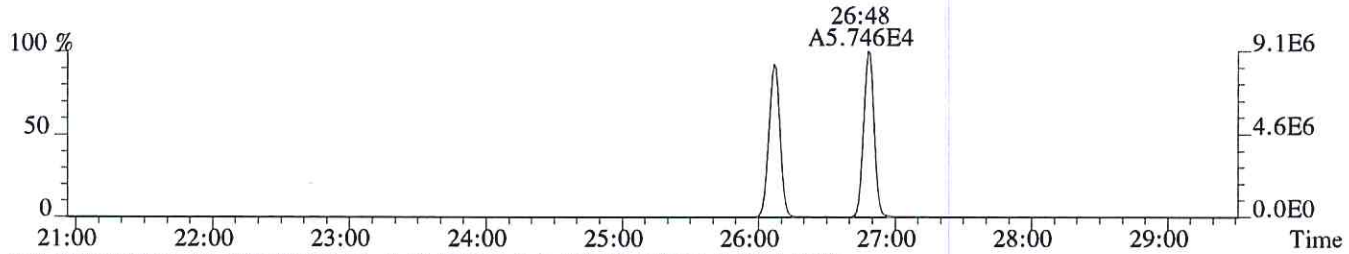
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1500.0,1.00%,F,T)



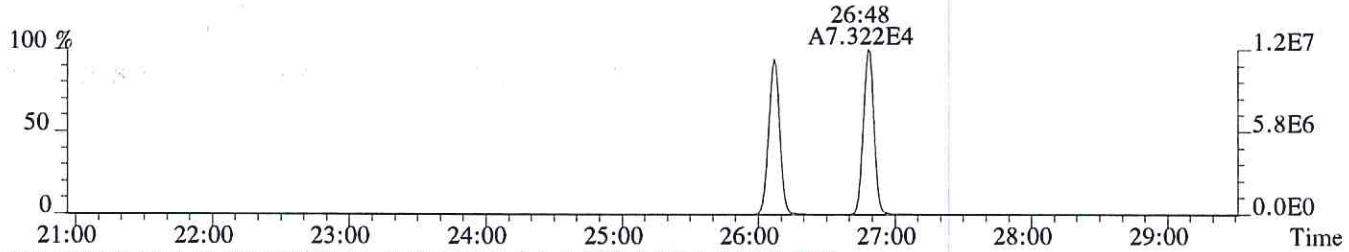
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,348.0,1.00%,F,T)



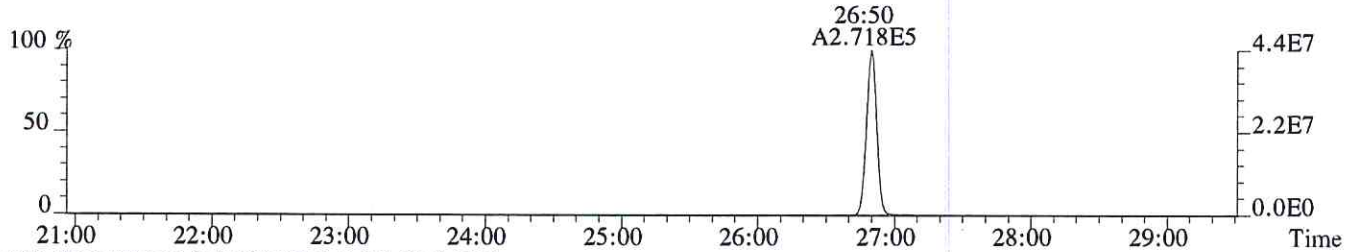
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5940.0,1.00%,F,T)



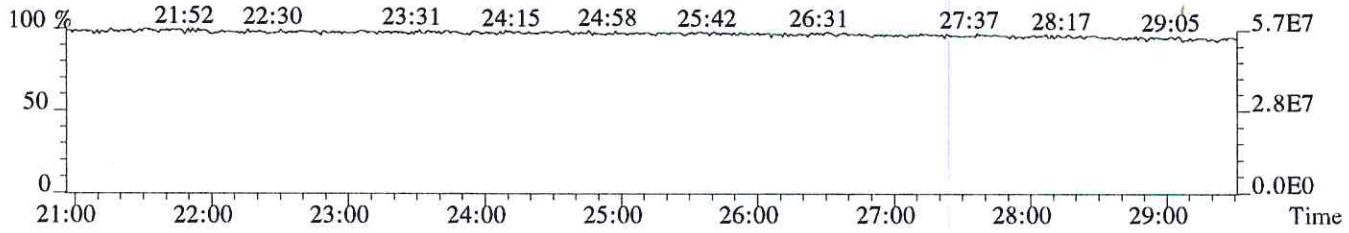
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1776.0,1.00%,F,T)



327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1056.0,1.00%,F,T)



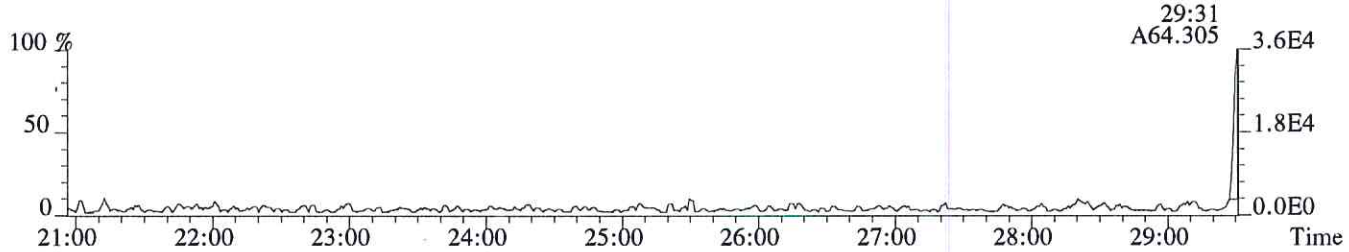
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



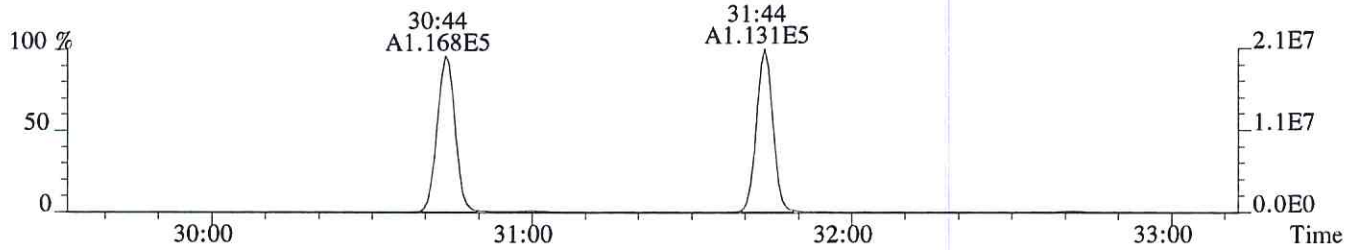
File:P607184 #1-609 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5

339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,132.0,1.00%,F,T)

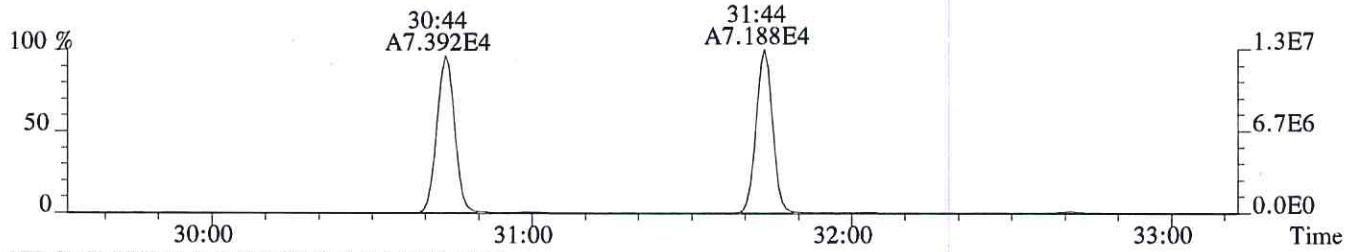
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1688.0,1.00%,F,T)



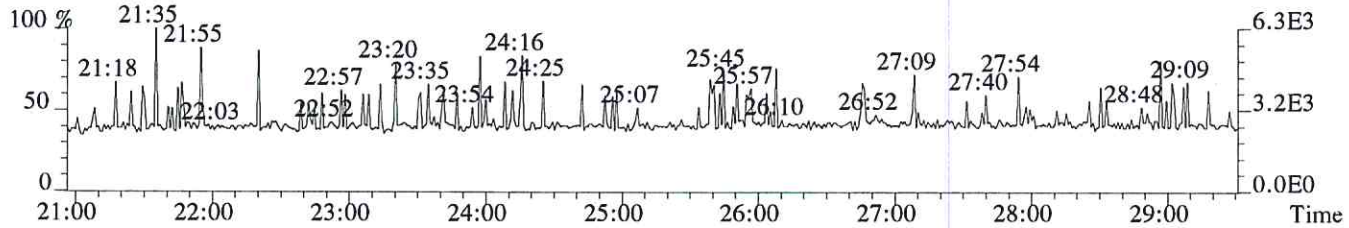
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1220.0,1.00%,F,T)



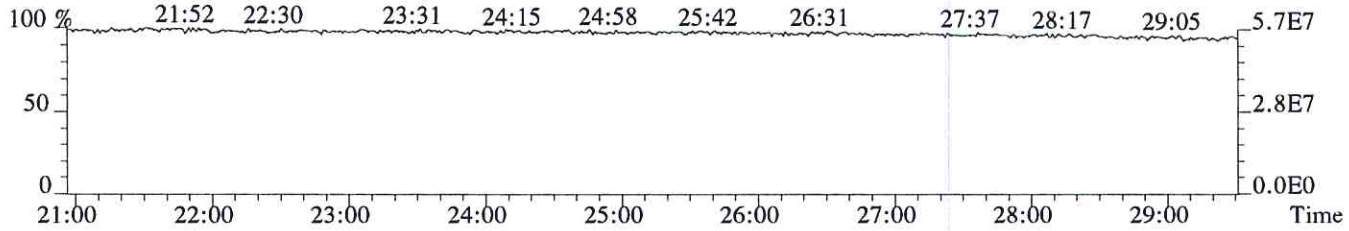
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2108.0,1.00%,F,T)



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

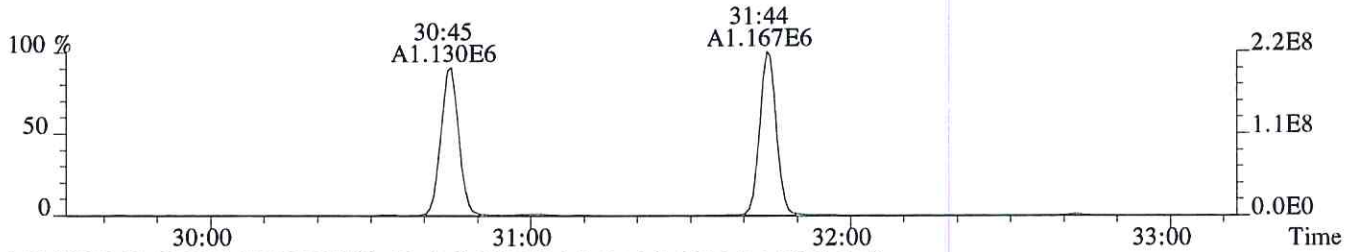


318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

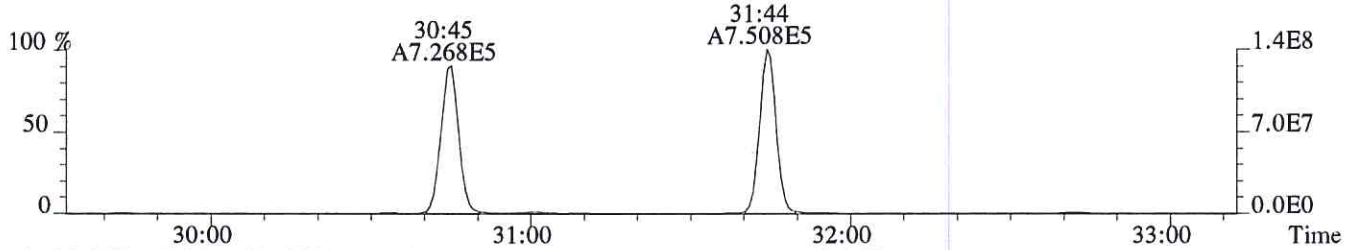


File:P607184 #1-330 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5

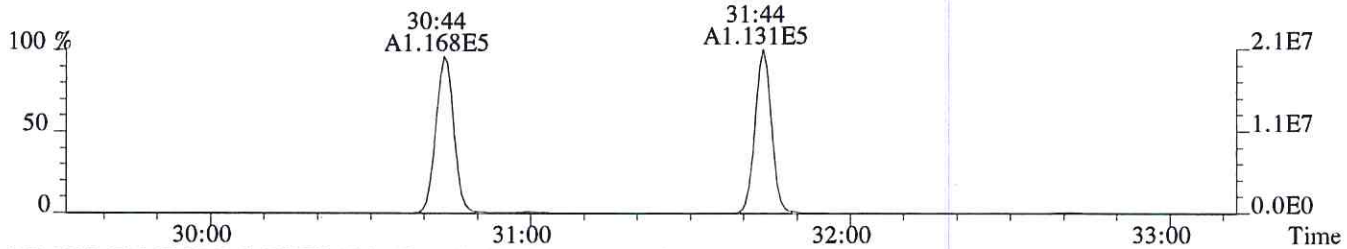
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,16496.0,1.00%,F,T)



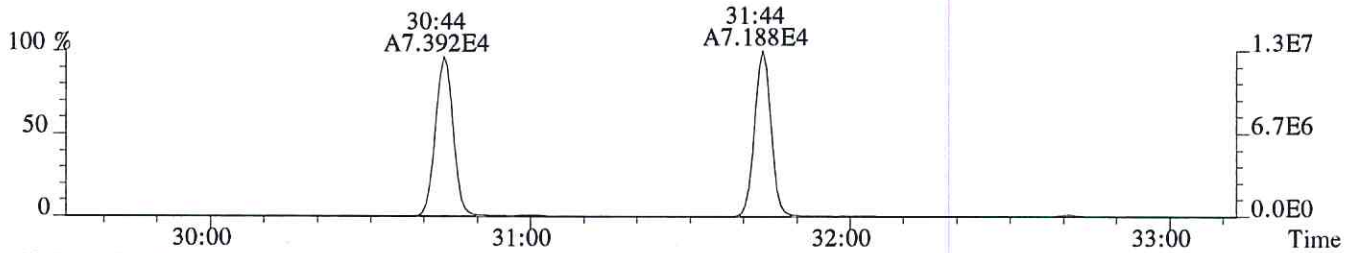
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9812.0,1.00%,F,T)



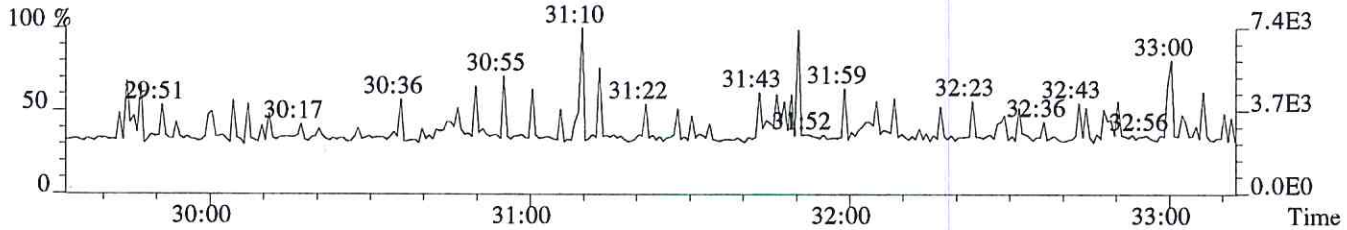
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1220.0,1.00%,F,T)



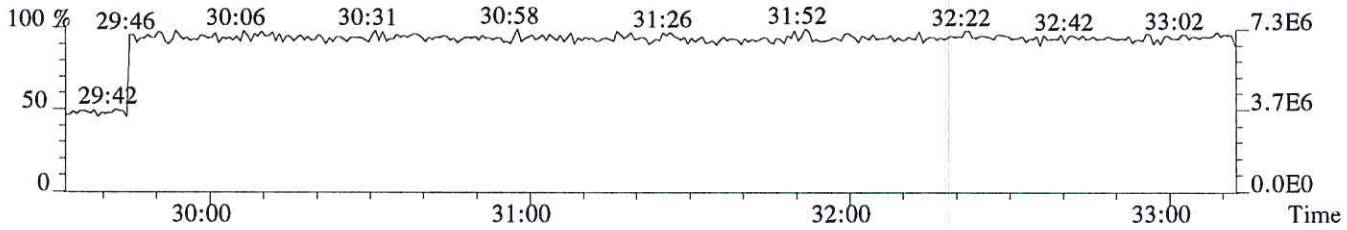
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2108.0,1.00%,F,T)



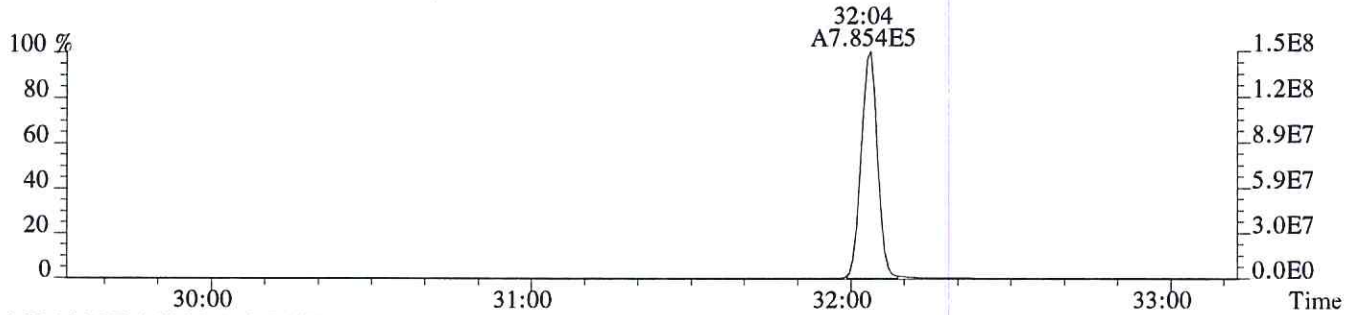
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



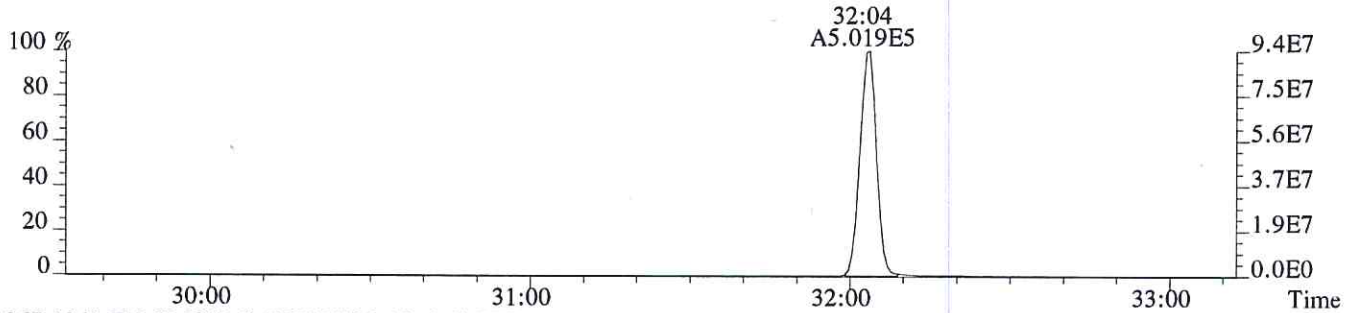
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



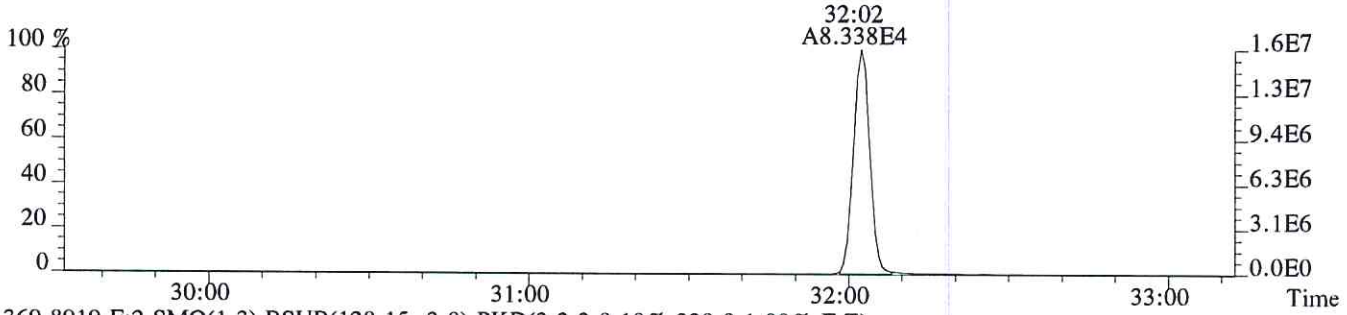
File:P607184 #1-330 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1200.0,1.00%,F,T)



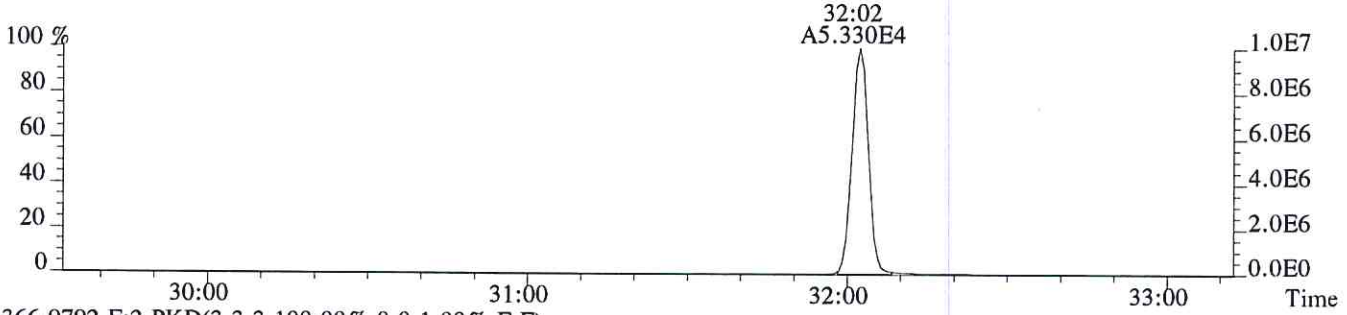
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1004.0,1.00%,F,T)



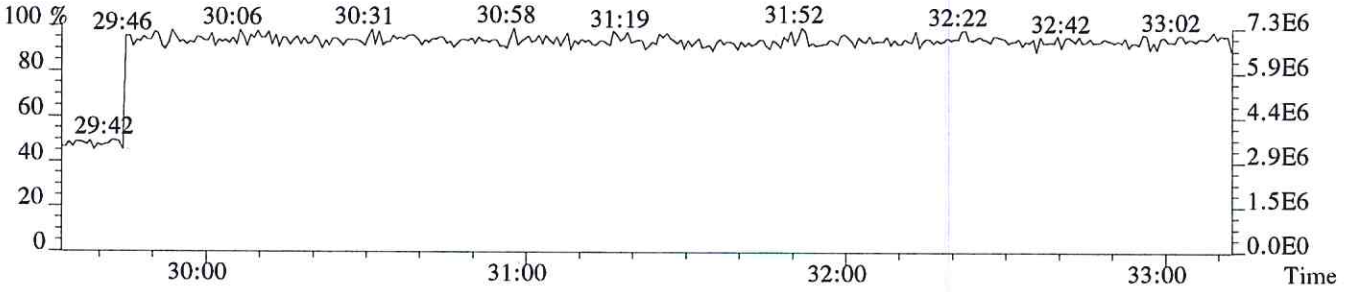
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1100.0,1.00%,F,T)



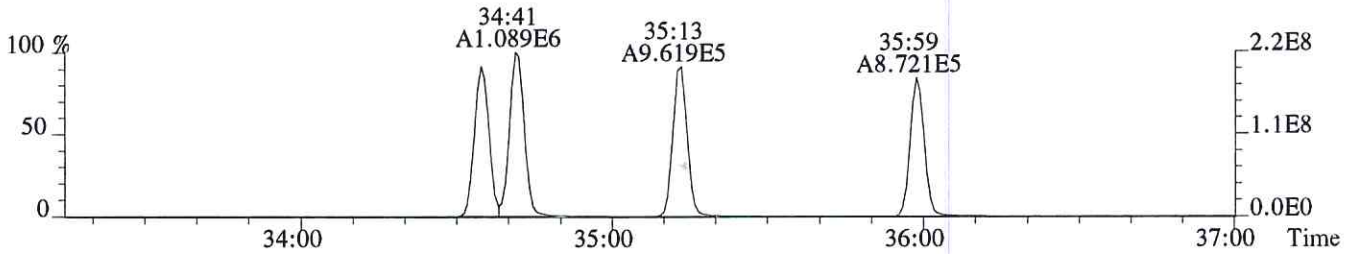
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,220.0,1.00%,F,T)



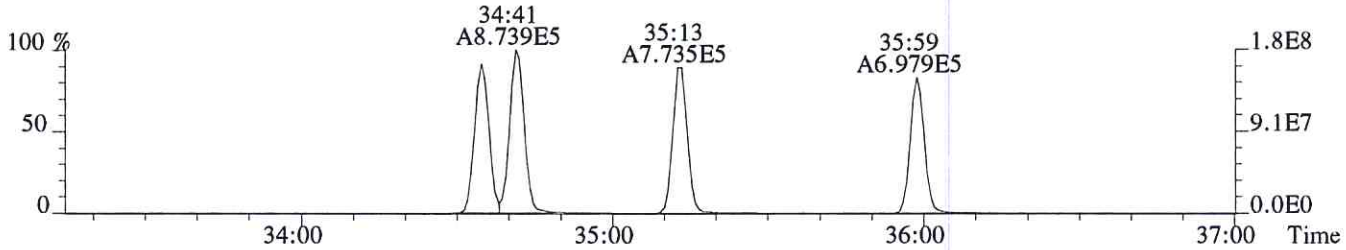
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



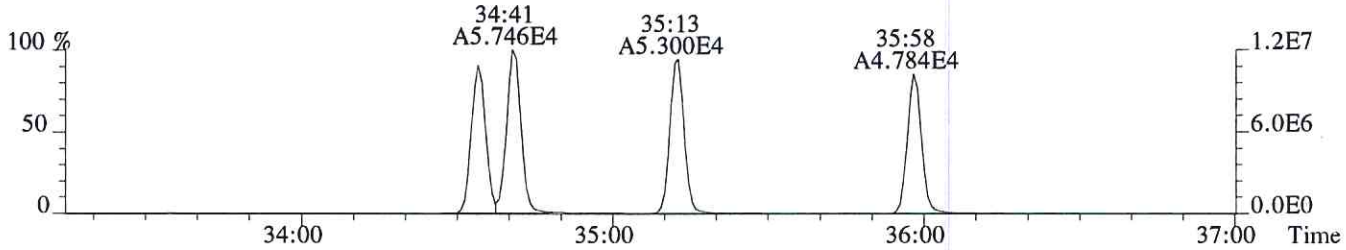
File:P607184 #1-339 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4584.0,0.40%,F,T)



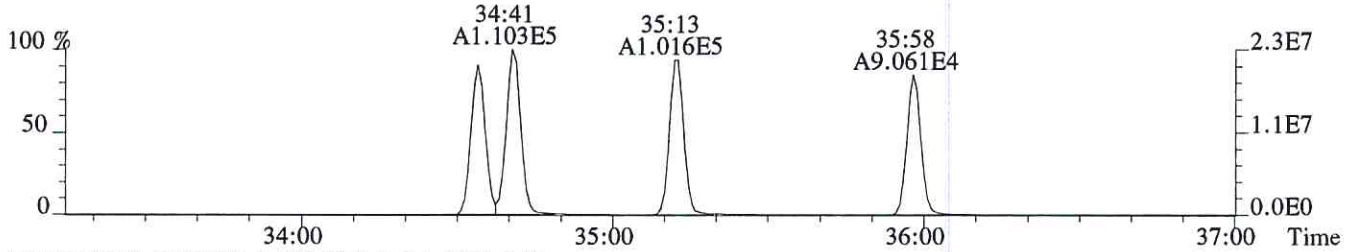
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2352.0,0.40%,F,T)



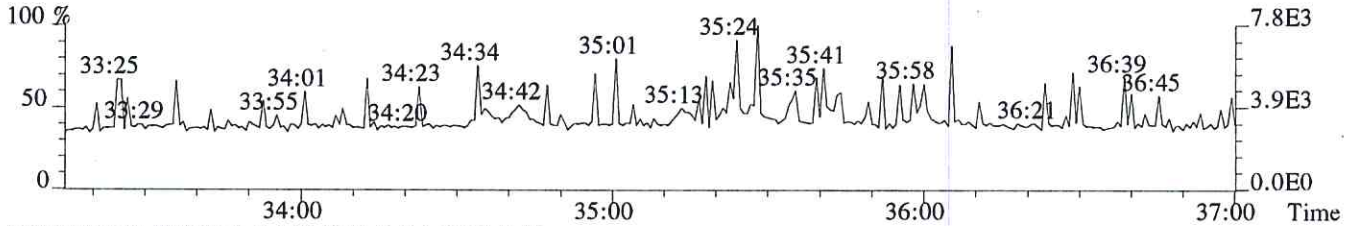
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,804.0,0.40%,F,T)



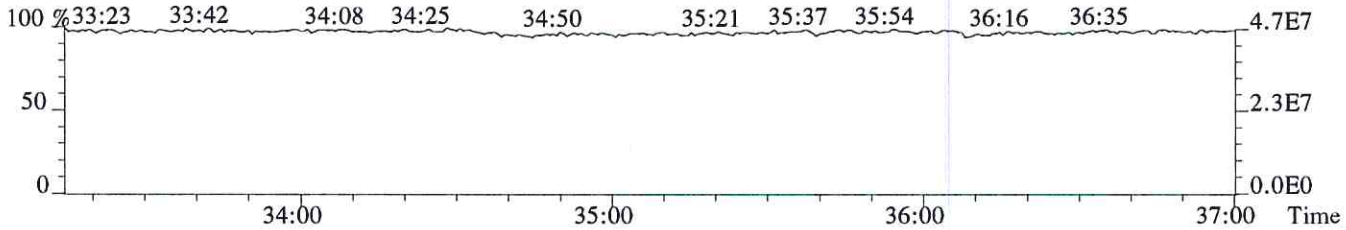
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1512.0,0.40%,F,T)



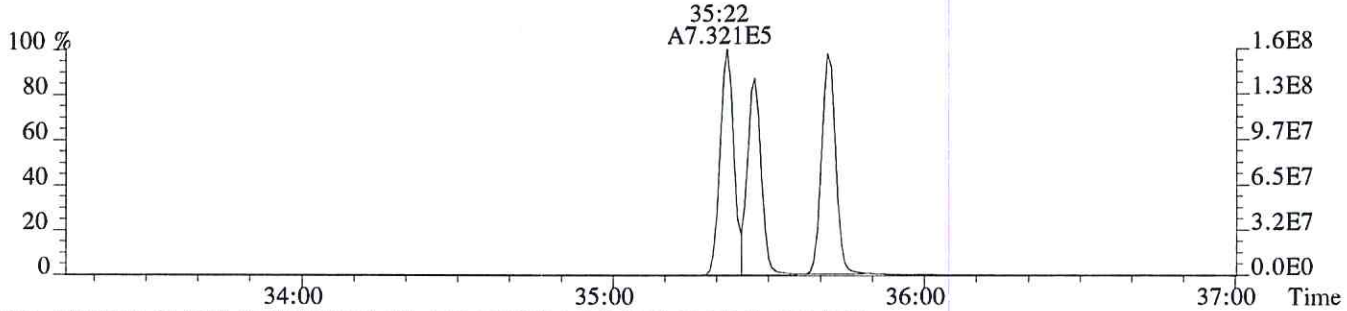
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



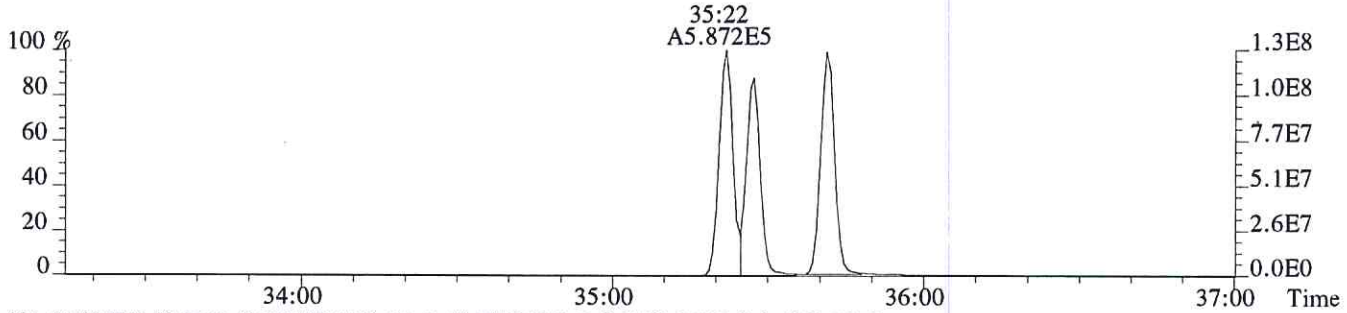
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



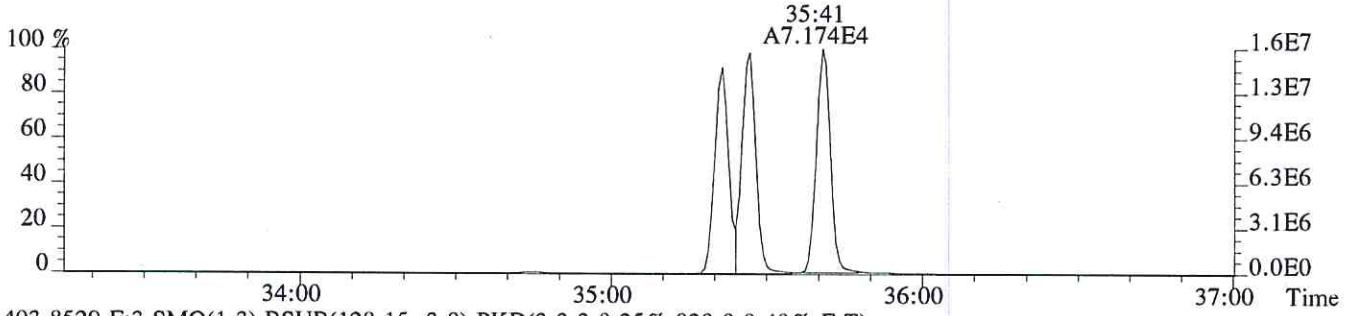
File:P607184 #1-339 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,684.0,0.40%,F,T)



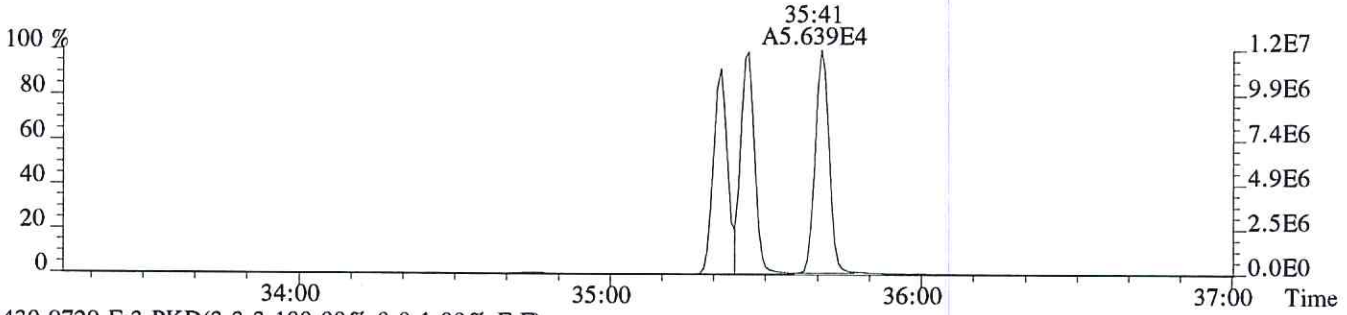
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,316.0,0.40%,F,T)



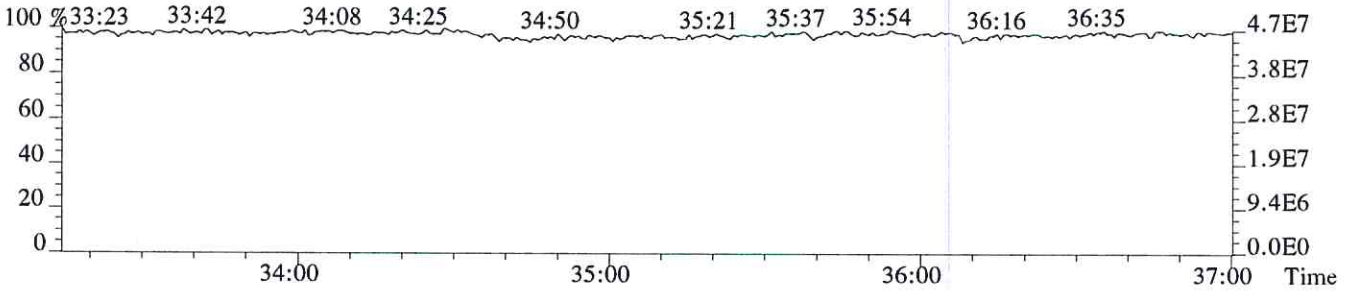
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2456.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,820.0,0.40%,F,T)

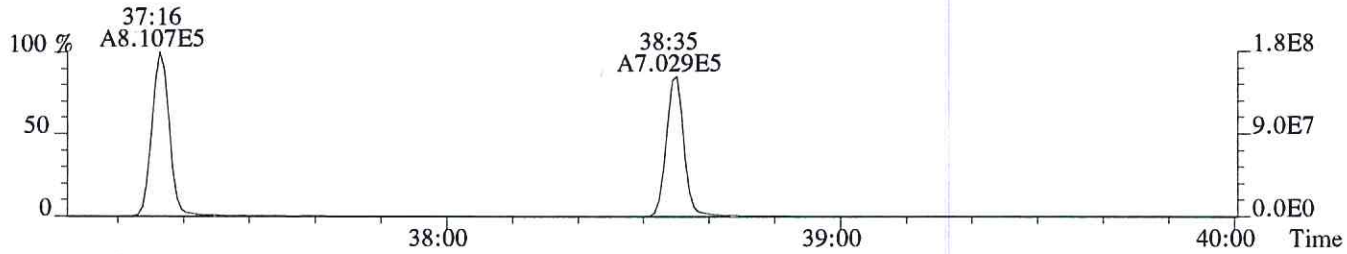


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

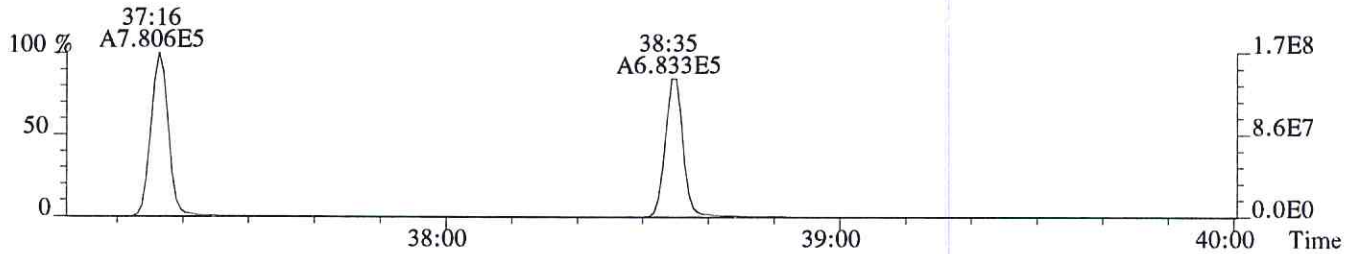


File:P607184 #1-268 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5

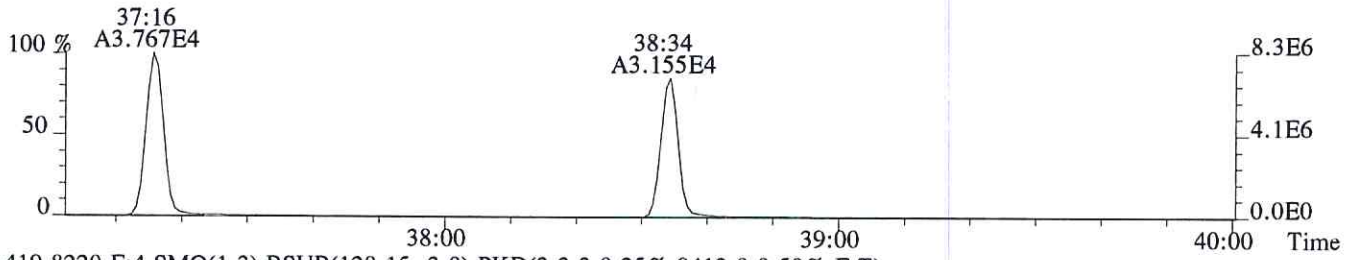
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,18456.0,0.50%,F,T)



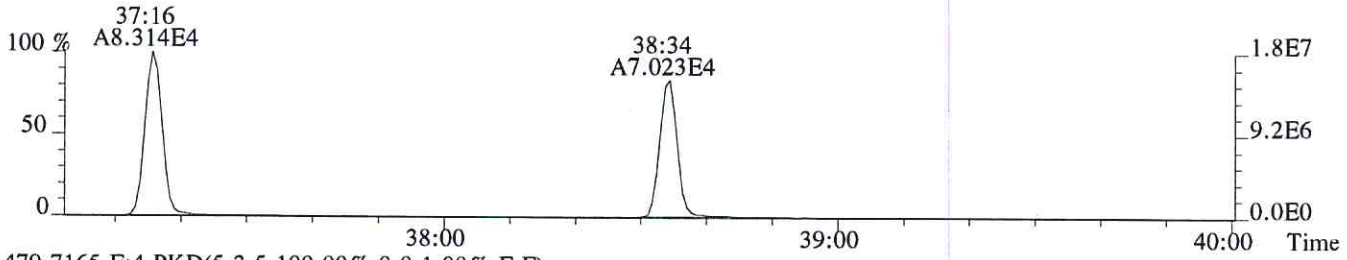
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,54876.0,0.50%,F,T)



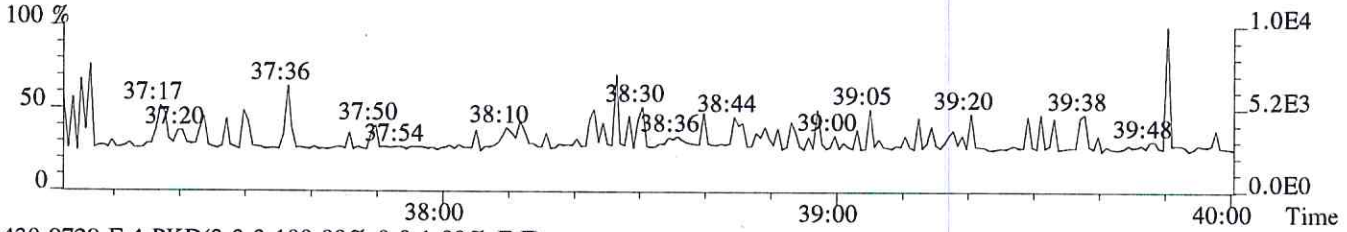
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4424.0,0.50%,F,T)



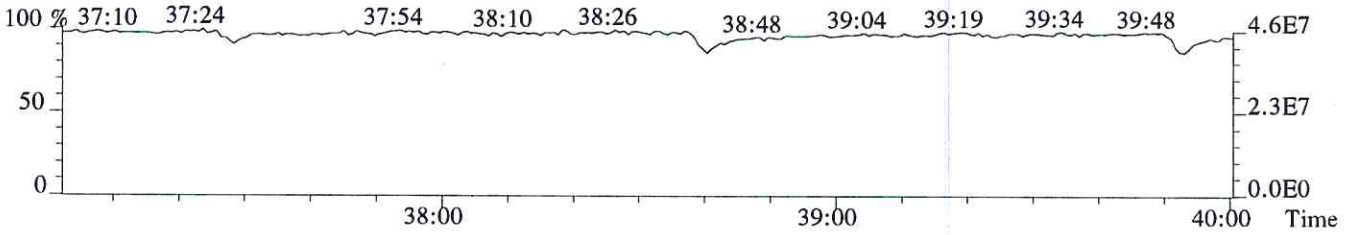
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9412.0,0.50%,F,T)



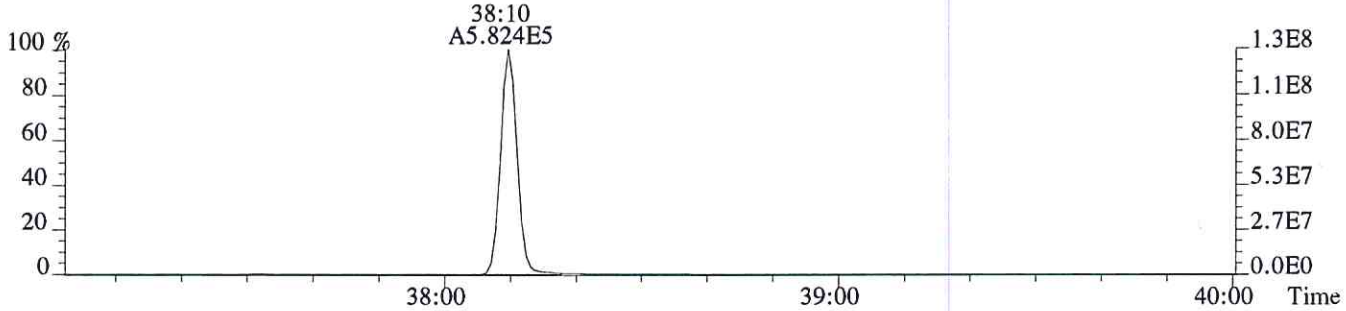
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



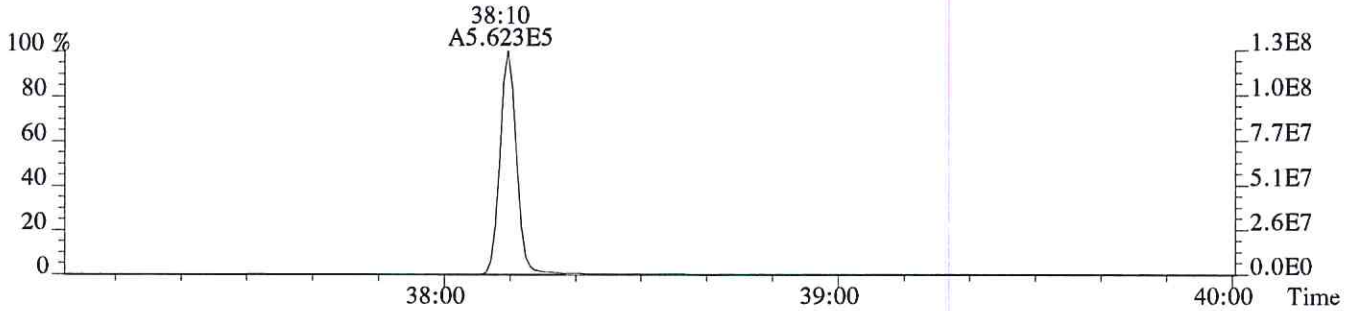
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



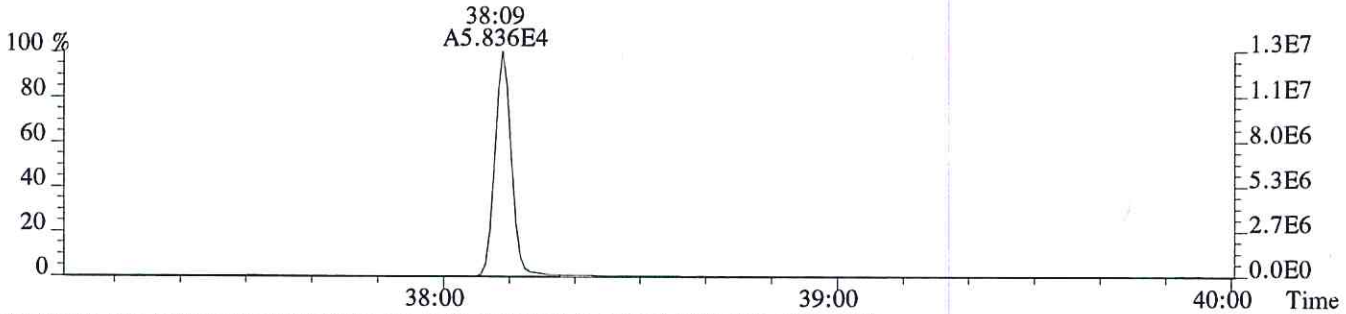
File:P607184 #1-268 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6684.0,0.40%,F,T)



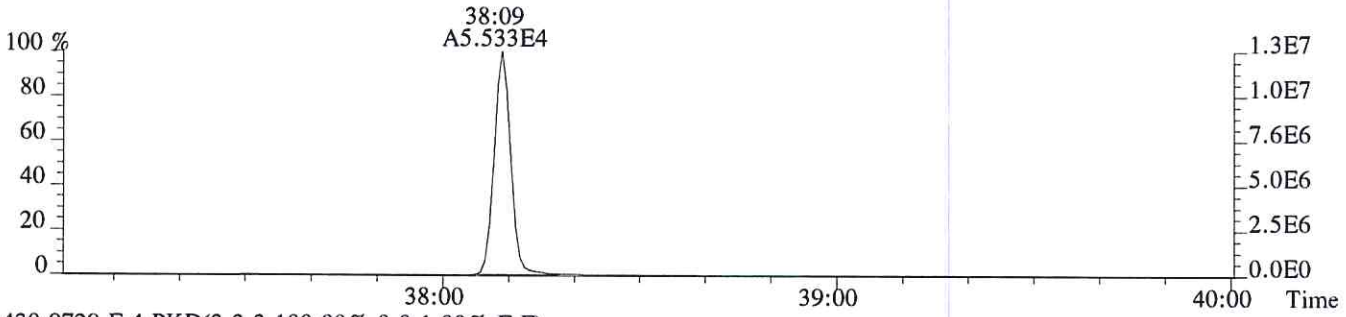
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3036.0,0.40%,F,T)



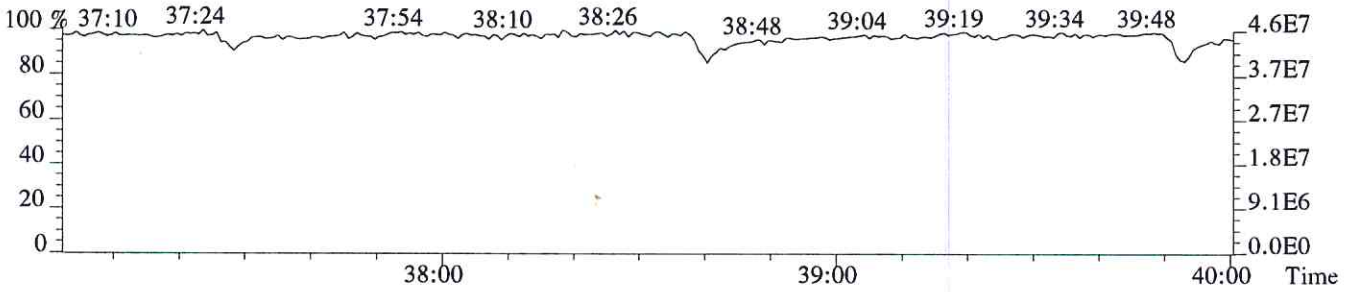
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1896.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1012.0,0.40%,F,T)

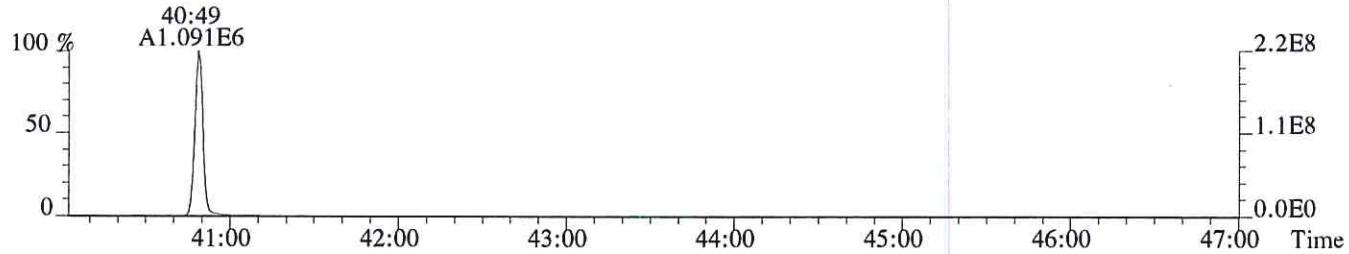


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

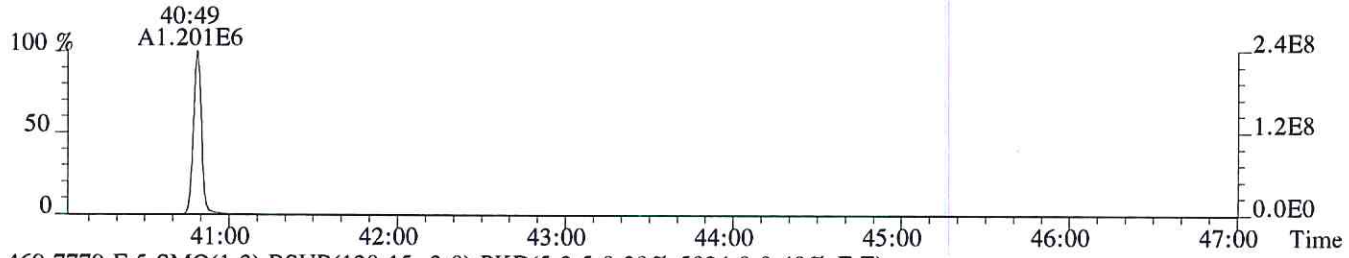


File:P607184 #1-627 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5

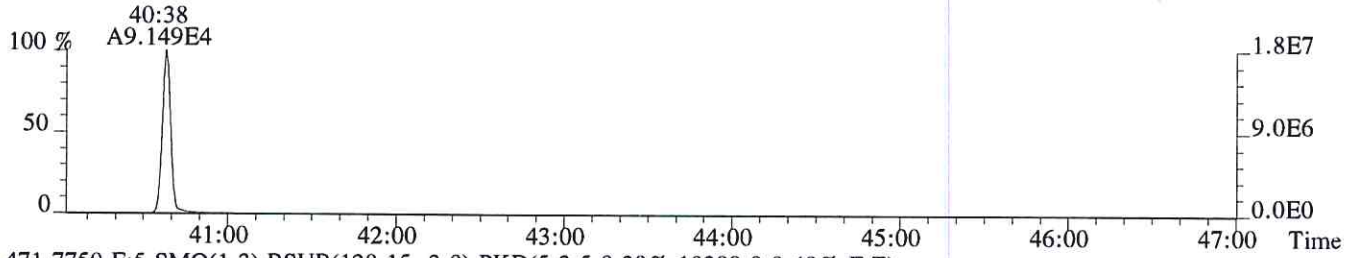
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,136040.0,0.40%,F,T)



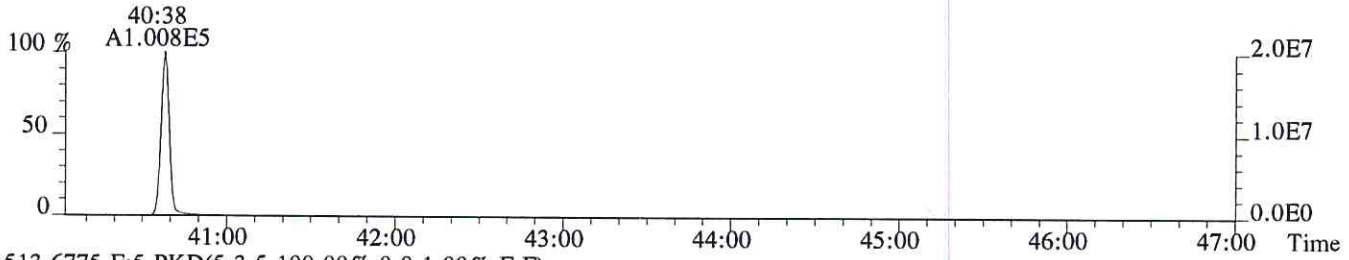
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,62728.0,0.40%,F,T)



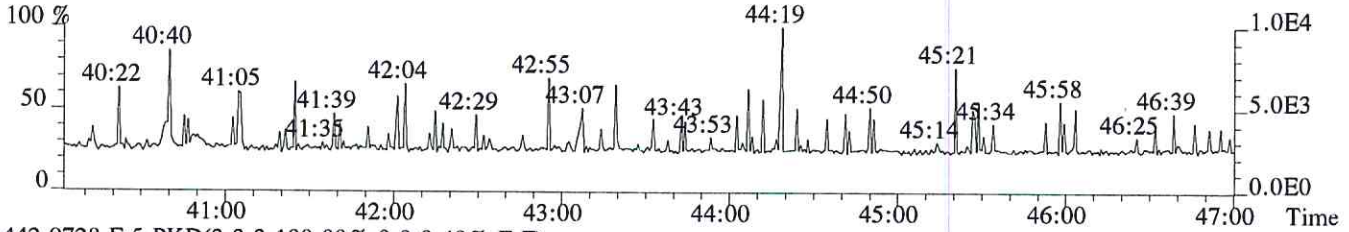
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5024.0,0.40%,F,T)



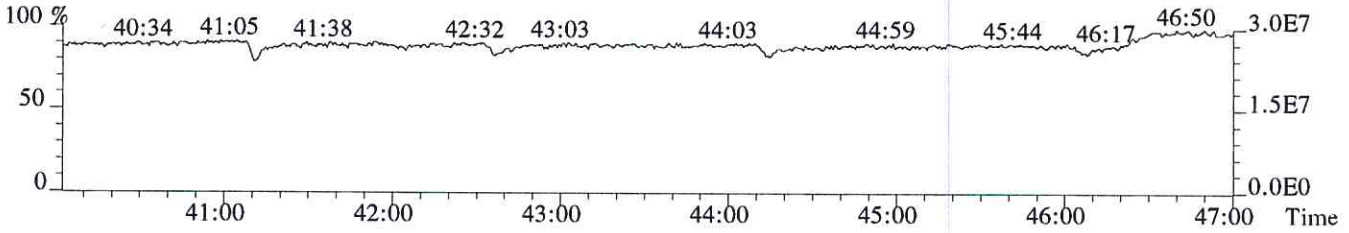
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,10388.0,0.40%,F,T)



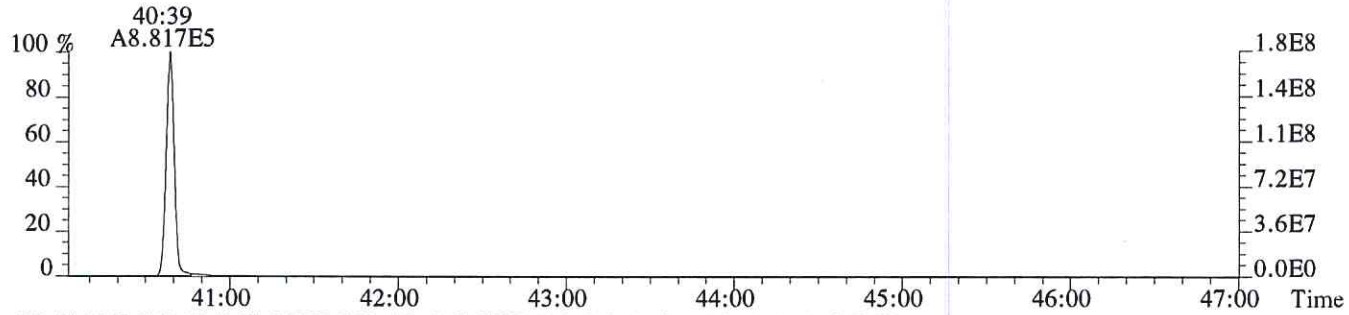
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



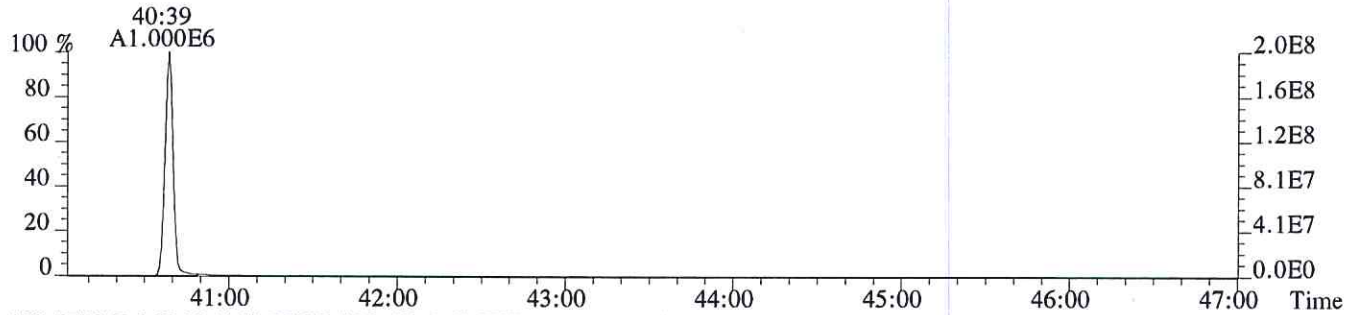
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



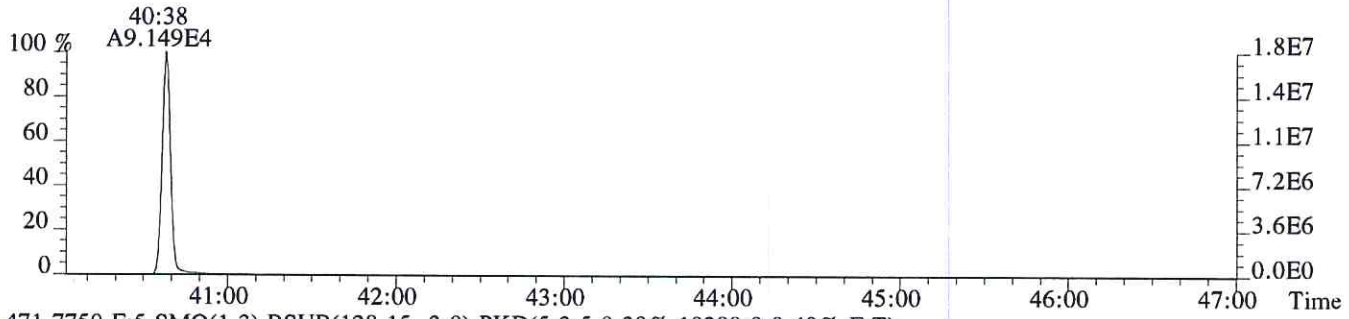
File:P607184 #1-627 Acq:16-MAY-2017 16:55:47 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,57044.0,0.40%,F,T)



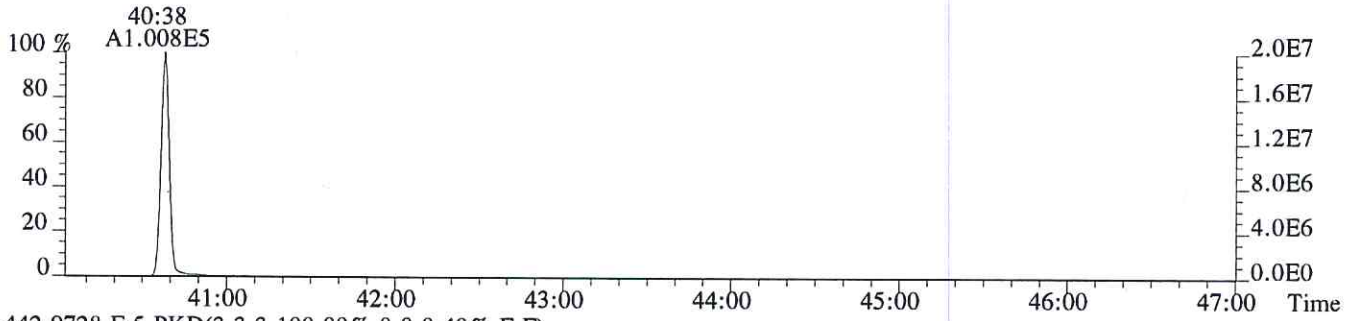
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,41804.0,0.40%,F,T)



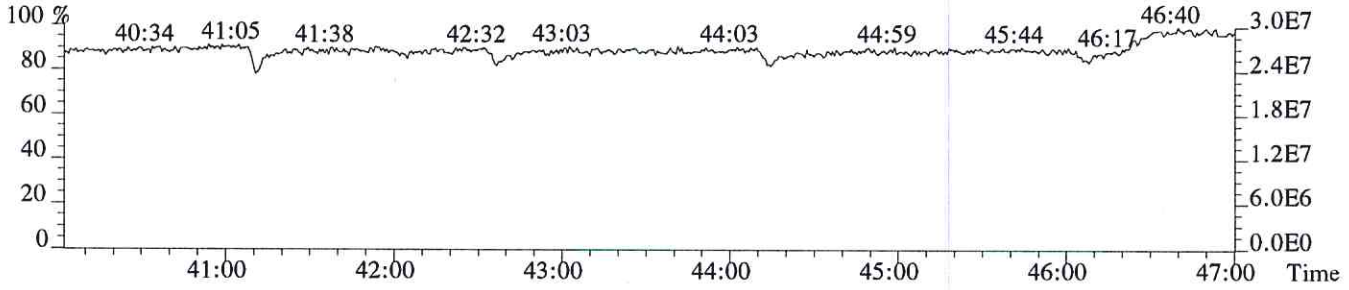
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,5024.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,10388.0,0.40%,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: 05/16/17

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P607186 Analysis Date: 16-MAY-17 Time: 18:45:06

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	9.8	7.8 - 12.9	-2.1
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	49	39 - 65	-1.3
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	48	39 - 64	-3.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	51	39 - 64	1.8
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	49	41 - 61	-1.5
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	50	43 - 58	-0.9
OCDD	M+2/M+4	0.90	0.76-1.02	100	79 - 126	0.0
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	9.7	8.4 - 12.0	-3.4
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	50	41 - 60	-0.5
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	49	41 - 61	-2.2
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	50	45 - 56	-0.5
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	49	44 - 57	-1.7
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	49	45 - 56	-1.1
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	1.04	0.88-1.20	50	45 - 55	-0.5
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	48	43 - 58	-3.8
OCDF	M+2/M+4	0.91	0.76-1.02	100	63 - 159	0.4

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 05/16/17

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P607186 Analysis Date: 16-MAY-17 Time: 18:45:06

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (5)
LABELED COMPOUNDS						
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	100	82 - 121	-0.2
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	95	62 - 160	-4.6
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	101	85 - 117	1.4
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	97	85 - 118	-3.1
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	99	72 - 138	-1.2
13C-OCDD	M+2/M+4	0.90	0.76-1.02	195	96 - 415	-2.6
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	101	71 - 140	1.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	97	76 - 130	-3.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	96	77 - 130	-4.1
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	101	76 - 131	0.6
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	97	70 - 143	-2.8
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	99	74 - 135	-1.4
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	99	73 - 137	-0.7
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	98	78 - 129	-1.9
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37-0.51	101	77 - 129	0.8
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				9.8	7.8 - 12.7	-2.4

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) 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)

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
75080

Run #7 Filename P607186 Samp: 1 Inj: 1 Acquired: 16-MAY-17 18:45:06
Processed: 17-MAY-17 07:57:37 Sample ID: 2ND SOURCE

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	25:50	1.553e+04	1.967e+04	0.79	yes	no	1.020
2	Unk	1,2,3,7,8-PeCDF	30:44	1.217e+05	7.783e+04	1.56	yes	no	1.058
3	Unk	2,3,4,7,8-PeCDF	31:44	1.135e+05	7.296e+04	1.56	yes	no	1.015
4	Unk	1,2,3,4,7,8-HxCDF	34:34	9.768e+04	8.003e+04	1.22	yes	no	1.257
5	Unk	1,2,3,6,7,8-HxCDF	34:41	1.060e+05	8.666e+04	1.22	yes	no	1.192
6	Unk	2,3,4,6,7,8-HxCDF	35:12	9.781e+04	7.934e+04	1.23	yes	no	1.176
7	Unk	1,2,3,7,8,9-HxCDF	35:58	8.937e+04	7.235e+04	1.24	yes	no	1.211
8	Unk	1,2,3,4,6,7,8-HpCDF	37:16	8.292e+04	7.993e+04	1.04	yes	no	1.392
9	Unk	1,2,3,4,7,8,9-HpCDF	38:34	7.090e+04	6.844e+04	1.04	yes	no	1.341
10	Unk	OCDF	40:48	1.101e+05	1.214e+05	0.91	yes	no	1.337
11	Unk	2,3,7,8-TCDD	26:49	1.162e+04	1.478e+04	0.79	yes	no	1.055
12	Unk	1,2,3,7,8-PeCDD	32:02	7.808e+04	5.026e+04	1.55	yes	no	0.964
13	Unk	1,2,3,4,7,8-HxCDD	35:21	6.991e+04	5.640e+04	1.24	yes	no	1.074
14	Unk	1,2,3,6,7,8-HxCDD	35:27	6.745e+04	5.397e+04	1.25	yes	no	1.037
15	Unk	1,2,3,7,8,9-HxCDD	35:41	7.459e+04	5.897e+04	1.26	yes	no	1.148
16	Unk	1,2,3,4,6,7,8-HpCDD	38:09	5.933e+04	5.705e+04	1.04	yes	no	1.048
17	Unk	OCDD	40:38	9.158e+04	1.016e+05	0.90	yes	no	1.120
18	IS	13C-2,3,7,8-TCDF	25:49	1.586e+05	1.989e+05	0.80	yes	no	1.364
19	IS	13C-1,2,3,7,8-PeCDF	30:43	2.322e+05	1.468e+05	1.58	yes	no	1.505
20	IS	13C-2,3,4,7,8-PeCDF	31:43	2.302e+05	1.456e+05	1.58	yes	no	1.510
21	IS	13C-1,2,3,4,7,8-HxCDF	34:33	9.775e+04	1.865e+05	0.52	yes	no	1.101
22	IS	13C-1,2,3,6,7,8-HxCDF	34:40	1.137e+05	2.152e+05	0.53	yes	no	1.319
23	IS	13C-2,3,4,6,7,8-HxCDF	35:11	1.055e+05	2.006e+05	0.53	yes	no	1.202
24	IS	13C-1,2,3,7,8,9-HxCDF	35:57	9.333e+04	1.768e+05	0.53	yes	no	1.068
25	IS	13C-1,2,3,4,6,7,8-HpCDF	37:15	7.299e+04	1.621e+05	0.45	yes	no	0.934
26	IS	13C-1,2,3,4,7,8,9-HpCDF	38:34	6.677e+04	1.493e+05	0.45	yes	no	0.836
27	IS	13C-2,3,7,8-TCDD	26:47	1.124e+05	1.432e+05	0.78	yes	no	0.987
28	IS	13C-1,2,3,7,8-PeCDD	32:02	1.652e+05	1.048e+05	1.58	yes	no	1.091
29	IS	13C-1,2,3,4,7,8-HxCDD	35:21	1.349e+05	1.077e+05	1.25	yes	no	0.933
30	IS	13C-1,2,3,6,7,8-HxCDD	35:26	1.286e+05	1.016e+05	1.27	yes	no	0.926
31	IS	13C-1,2,3,4,6,7,8-HpCDD	38:08	1.152e+05	1.088e+05	1.06	yes	no	0.884
32	IS	13C-OCDD	40:37	1.635e+05	1.815e+05	0.90	yes	no	0.691
33	RS/RT	13C-1,2,3,4-TCDD	26:06	1.152e+05	1.443e+05	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	35:40	1.427e+05	1.138e+05	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	26:49	2.716e+04				no	1.072

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Signal/Noise Height Ratio Summary

CLIENT ID.
75080

Run #7 Filename P607186 Samp: 1 Inj: 1 Acquired: 16-MAY-17 18:45:06
Processed: 17-MAY-17 07:57:37 LAB. ID: 2ND SOURCE

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	2.24e+06	2.40e+02	9.3e+03	2.86e+06	1.97e+03	1.5e+03
2	1,2,3,7,8-PeCDF	2.09e+07	9.88e+02	2.1e+04	1.35e+07	2.46e+03	5.5e+03
3	2,3,4,7,8-PeCDF	2.11e+07	9.88e+02	2.1e+04	1.37e+07	2.46e+03	5.6e+03
4	1,2,3,4,7,8-HxCDF	2.08e+07	1.11e+03	1.9e+04	1.69e+07	1.54e+03	1.1e+04
5	1,2,3,6,7,8-HxCDF	2.22e+07	1.11e+03	2.0e+04	1.82e+07	1.54e+03	1.2e+04
6	2,3,4,6,7,8-HxCDF	2.07e+07	1.11e+03	1.9e+04	1.69e+07	1.54e+03	1.1e+04
7	1,2,3,7,8,9-HxCDF	1.93e+07	1.11e+03	1.7e+04	1.54e+07	1.54e+03	1.0e+04
8	1,2,3,4,6,7,8-HpCDF	1.87e+07	8.43e+03	2.2e+03	1.79e+07	8.37e+03	2.1e+03
9	1,2,3,4,7,8,9-HpCDF	1.53e+07	8.43e+03	1.8e+03	1.49e+07	8.37e+03	1.8e+03
10	OCDF	2.15e+07	8.60e+03	2.5e+03	2.31e+07	1.30e+04	1.8e+03
11	2,3,7,8-TCDD	1.89e+06	1.32e+03	1.4e+03	2.42e+06	1.48e+02	1.6e+04
12	1,2,3,7,8-PeCDD	1.45e+07	1.49e+03	9.8e+03	9.38e+06	7.16e+02	1.3e+04
13	1,2,3,4,7,8-HxCDD	1.49e+07	3.48e+02	4.3e+04	1.19e+07	2.20e+02	5.4e+04
14	1,2,3,6,7,8-HxCDD	1.41e+07	3.48e+02	4.1e+04	1.12e+07	2.20e+02	5.1e+04
15	1,2,3,7,8,9-HxCDD	1.59e+07	3.48e+02	4.6e+04	1.28e+07	2.20e+02	5.8e+04
16	1,2,3,4,6,7,8-HpCDD	1.36e+07	1.88e+03	7.2e+03	1.31e+07	9.16e+02	1.4e+04
17	OCDD	1.77e+07	9.67e+03	1.8e+03	1.96e+07	1.30e+04	1.5e+03
18	13C-2,3,7,8-TCDF	2.33e+07	1.17e+04	2.0e+03	2.90e+07	5.70e+03	5.1e+03
19	13C-1,2,3,7,8-PeCDF	3.99e+07	2.71e+03	1.5e+04	2.53e+07	2.37e+03	1.1e+04
20	13C-2,3,4,7,8-PeCDF	4.30e+07	2.71e+03	1.6e+04	2.71e+07	2.37e+03	1.1e+04
21	13C-1,2,3,4,7,8-HxCDF	2.06e+07	1.31e+03	1.6e+04	3.95e+07	1.62e+03	2.4e+04
22	13C-1,2,3,6,7,8-HxCDF	2.35e+07	1.31e+03	1.8e+04	4.45e+07	1.62e+03	2.7e+04
23	13C-2,3,4,6,7,8-HxCDF	2.25e+07	1.31e+03	1.7e+04	4.31e+07	1.62e+03	2.7e+04
24	13C-1,2,3,7,8,9-HxCDF	2.02e+07	1.31e+03	1.5e+04	3.80e+07	1.62e+03	2.3e+04
25	13C-1,2,3,4,6,7,8-HpCDF	1.66e+07	1.18e+04	1.4e+03	3.64e+07	3.31e+04	1.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.44e+07	1.18e+04	1.2e+03	3.18e+07	3.31e+04	9.6e+02
27	13C-2,3,7,8-TCDD	1.79e+07	5.52e+03	3.2e+03	2.30e+07	3.63e+03	6.3e+03
28	13C-1,2,3,7,8-PeCDD	3.12e+07	1.19e+03	2.6e+04	1.96e+07	2.36e+02	8.3e+04
29	13C-1,2,3,4,7,8-HxCDD	2.85e+07	1.74e+03	1.6e+04	2.23e+07	1.27e+03	1.8e+04
30	13C-1,2,3,6,7,8-HxCDD	2.69e+07	1.74e+03	1.5e+04	2.12e+07	1.27e+03	1.7e+04
31	13C-1,2,3,4,6,7,8-HpCDD	2.62e+07	8.52e+02	3.1e+04	2.44e+07	1.43e+03	1.7e+04
32	13C-OCDD	3.20e+07	1.06e+04	3.0e+03	3.52e+07	1.47e+04	2.4e+03
33	13C-1,2,3,4-TCDD	1.74e+07	5.52e+03	3.1e+03	2.17e+07	3.63e+03	6.0e+03
34	13C-1,2,3,7,8,9-HxCDD	3.10e+07	1.74e+03	1.8e+04	2.47e+07	1.27e+03	2.0e+04
35	37Cl-2,3,7,8-TCDD	4.50e+06	1.38e+03	3.3e+03			

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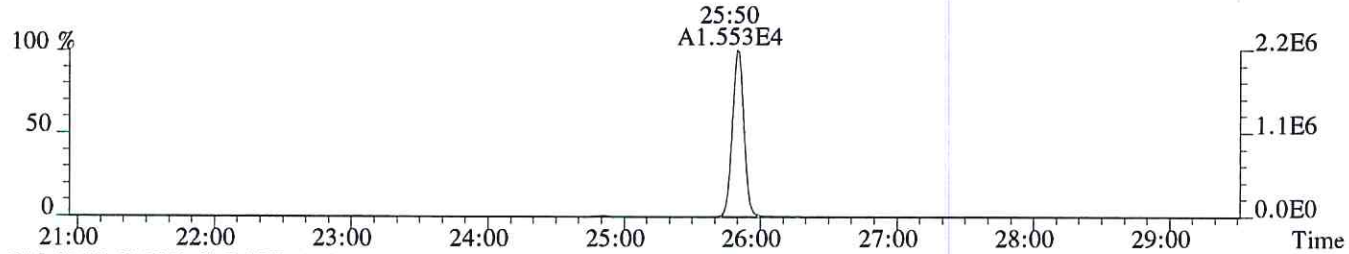
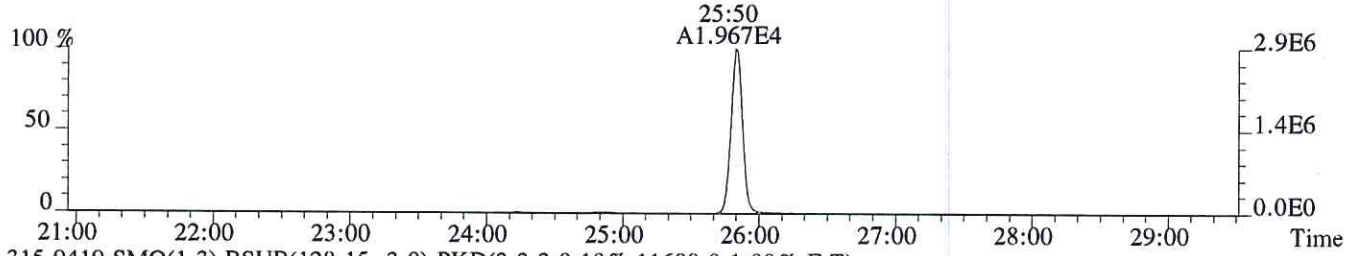
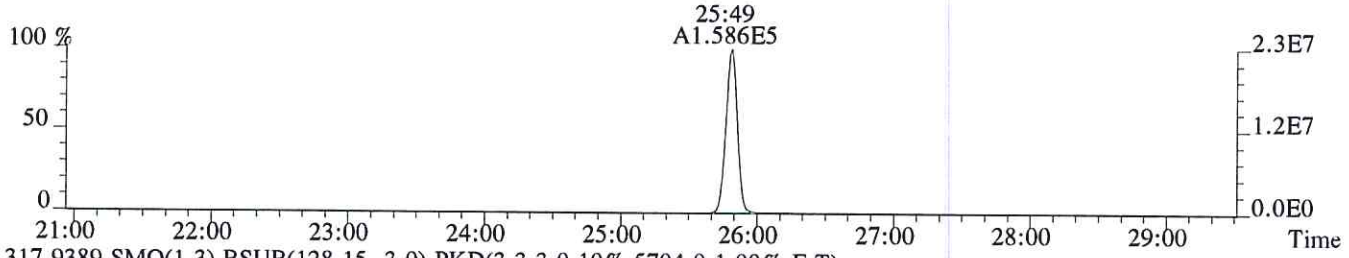
File:P607186 #1-609 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,240.0,1.00%,F,T)



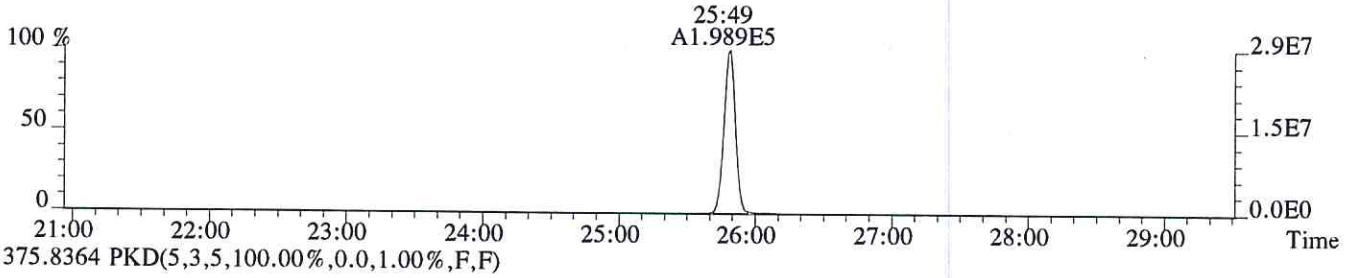
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1968.0,1.00%,F,T)



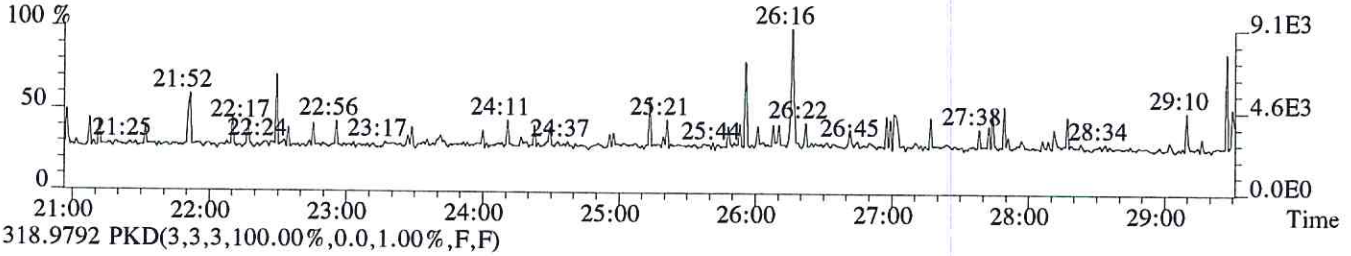
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11688.0,1.00%,F,T)



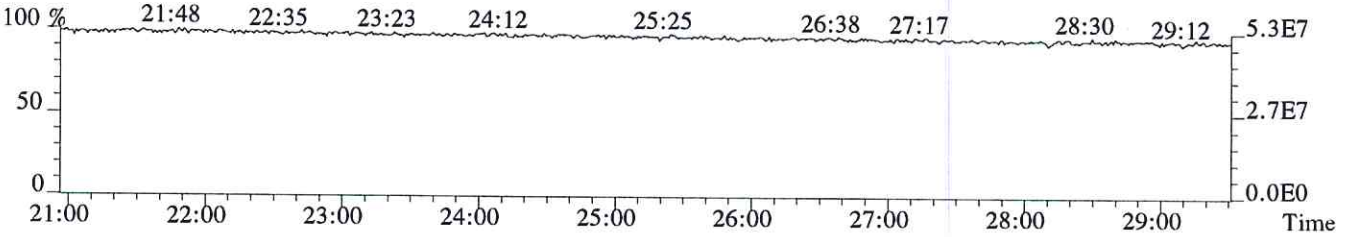
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5704.0,1.00%,F,T)



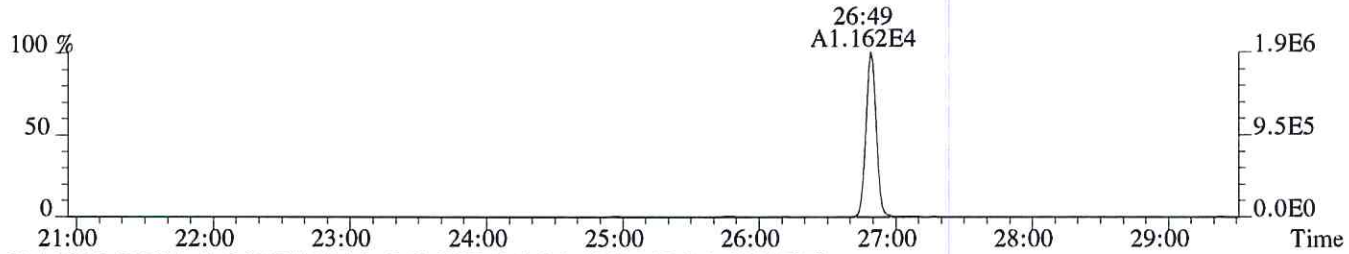
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



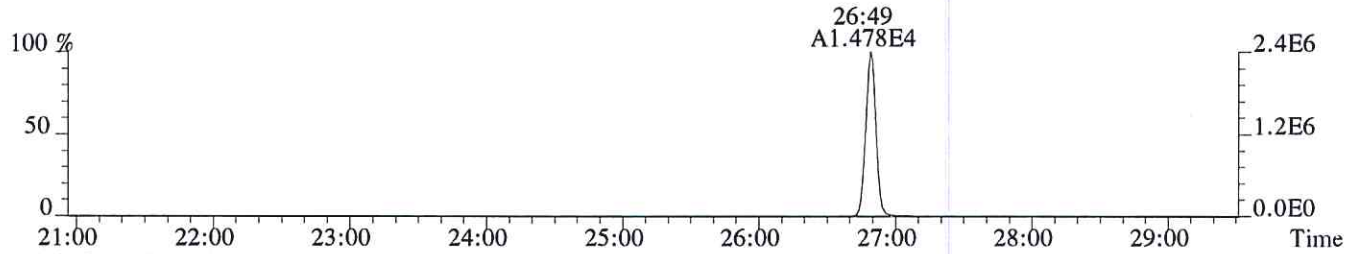
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



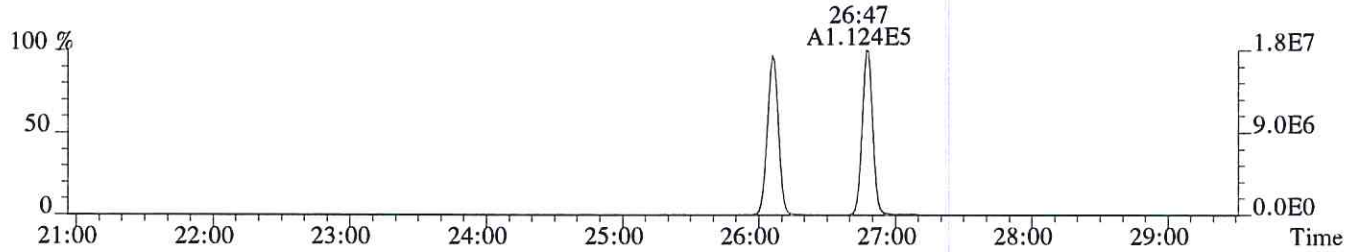
File:P607186 #1-609 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1324.0,1.00%,F,T)



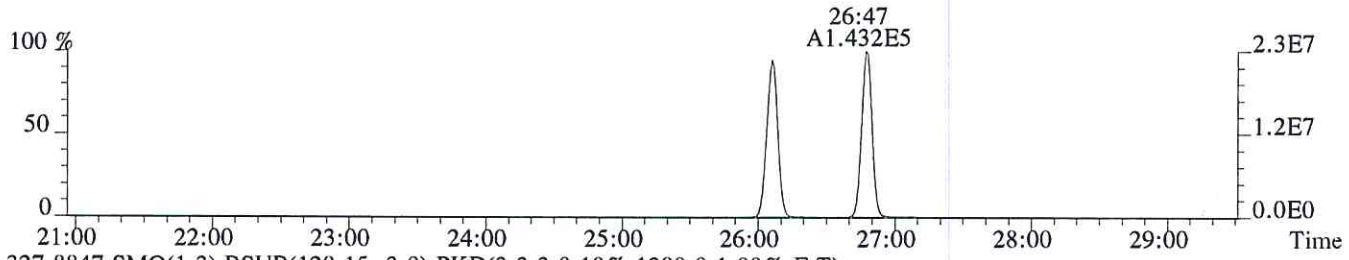
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,148.0,1.00%,F,T)



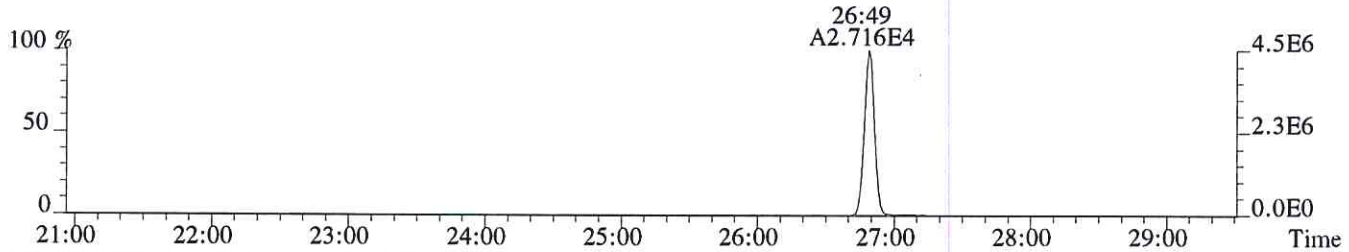
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5524.0,1.00%,F,T)



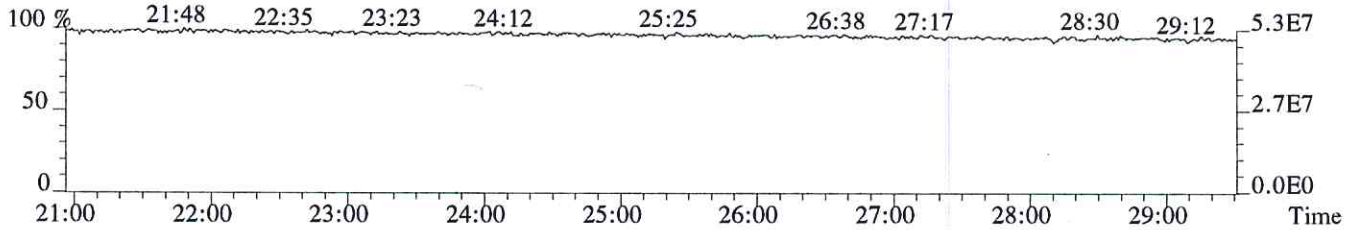
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3632.0,1.00%,F,T)



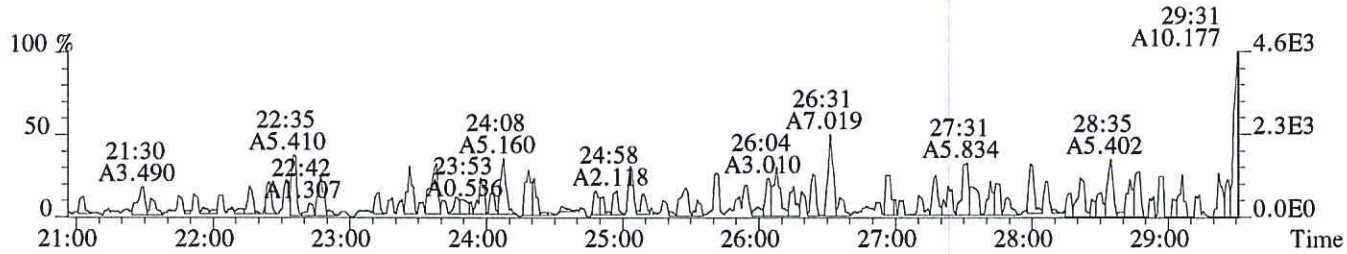
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1380.0,1.00%,F,T)



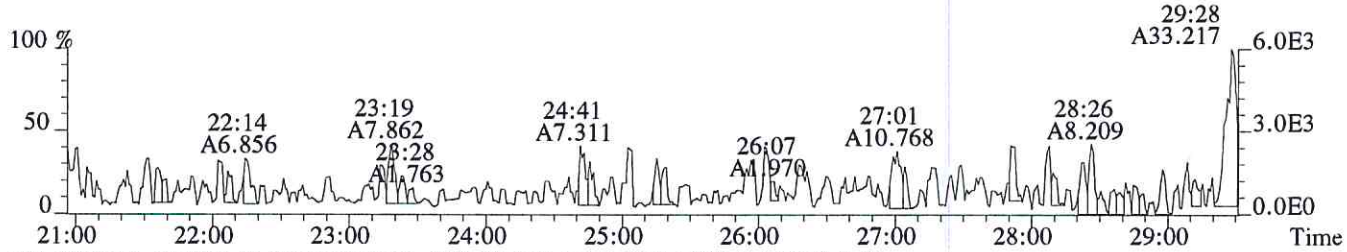
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



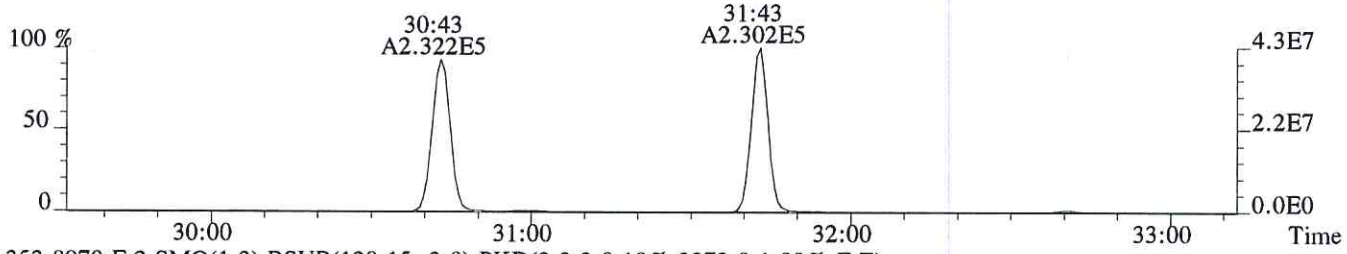
File:P607186 #1-609 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,204.0,1.00%,F,T)



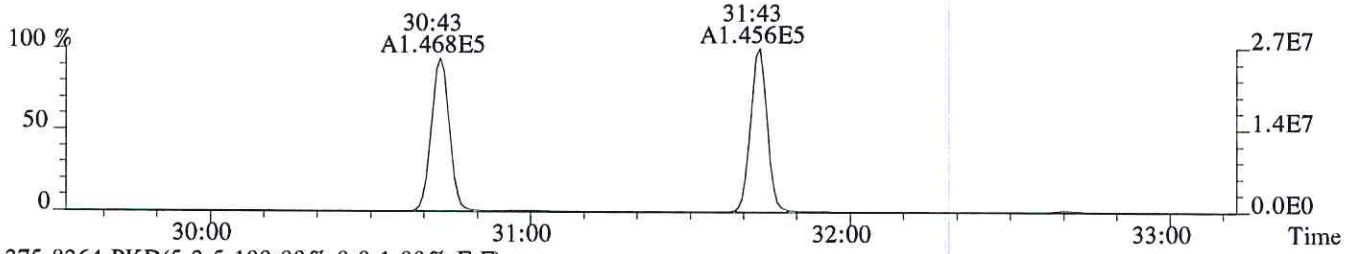
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,844.0,1.00%,F,T)



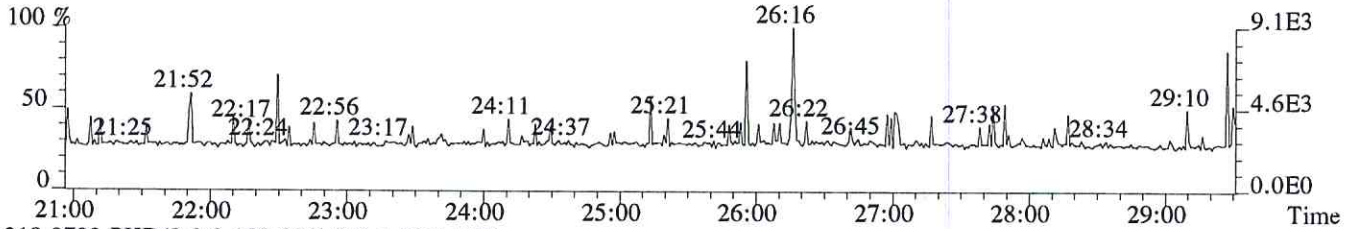
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2708.0,1.00%,F,T)



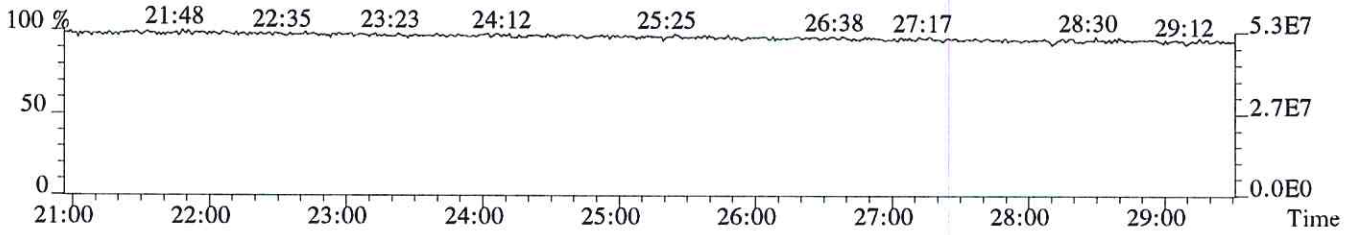
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2372.0,1.00%,F,T)



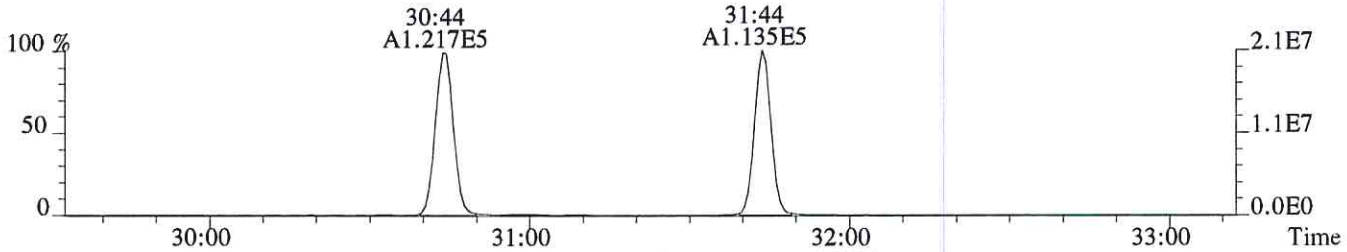
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



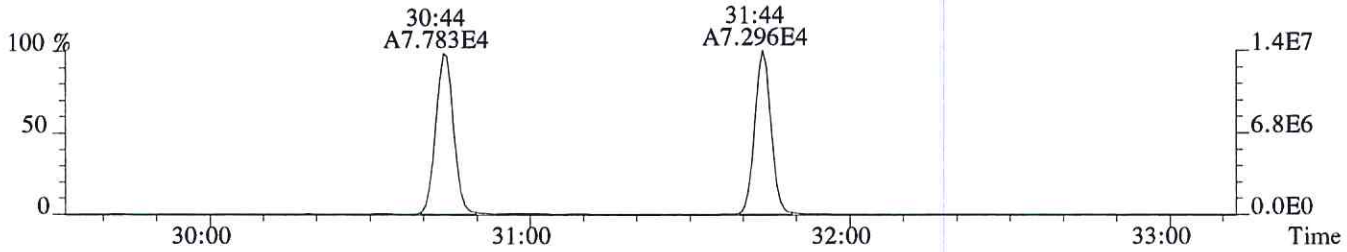
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



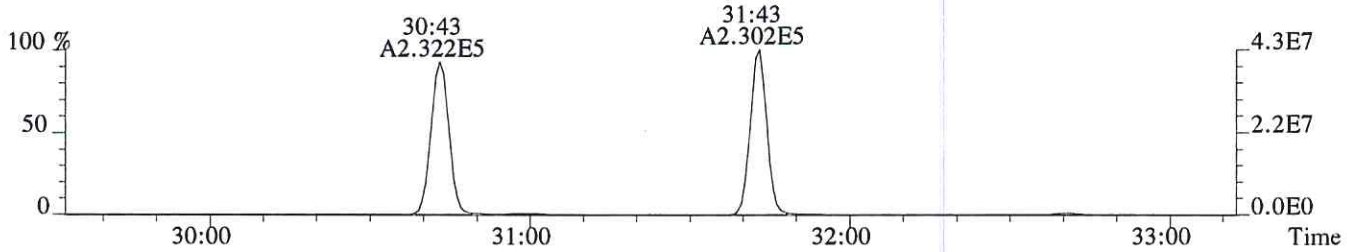
File:P607186 #1-330 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,988.0,1.00%,F,T)



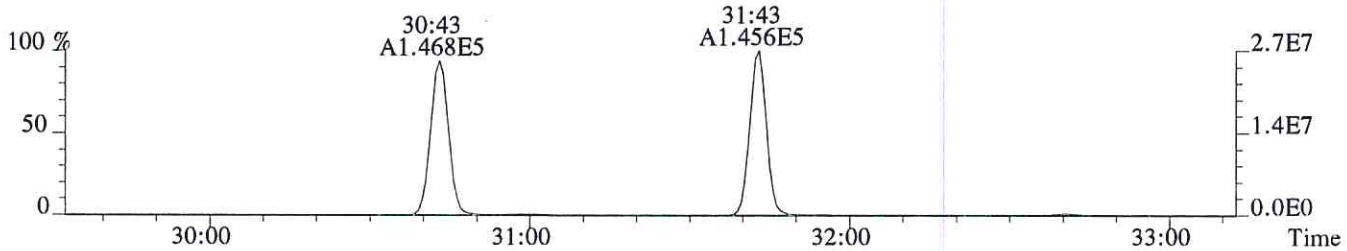
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2456.0,1.00%,F,T)



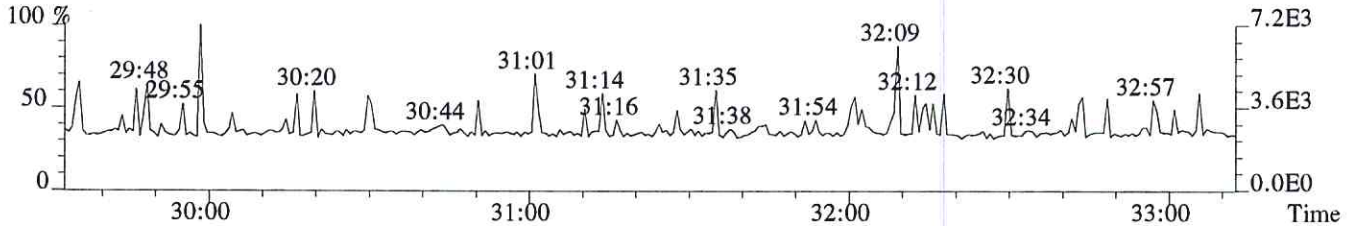
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2708.0,1.00%,F,T)



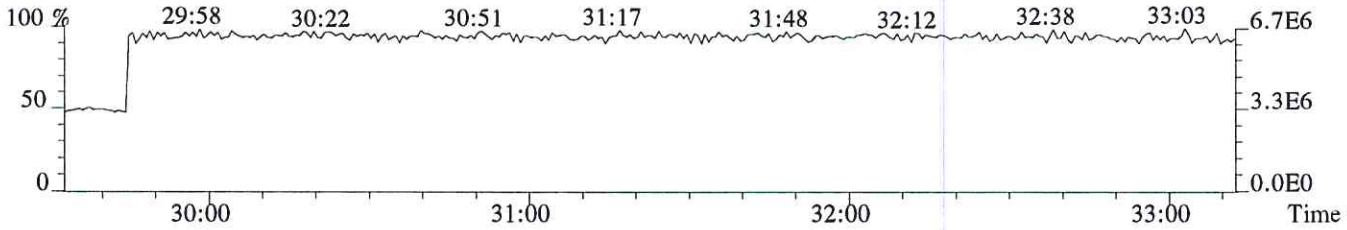
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2372.0,1.00%,F,T)



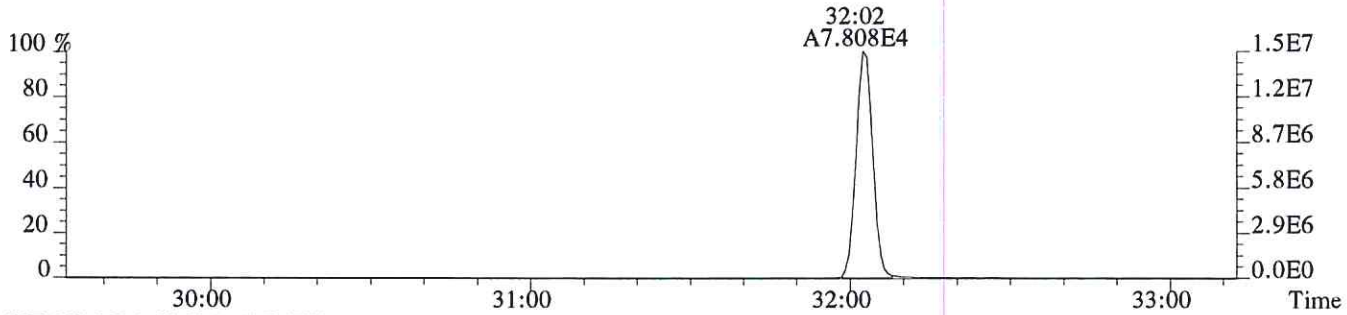
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



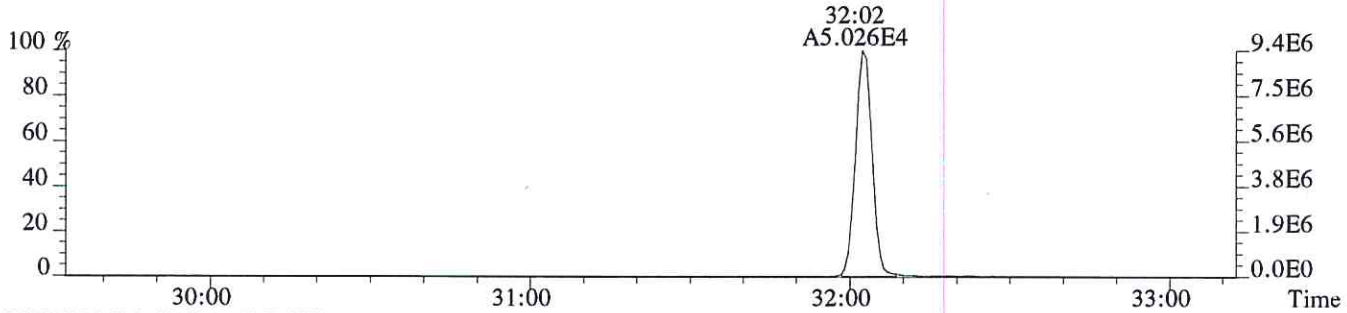
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



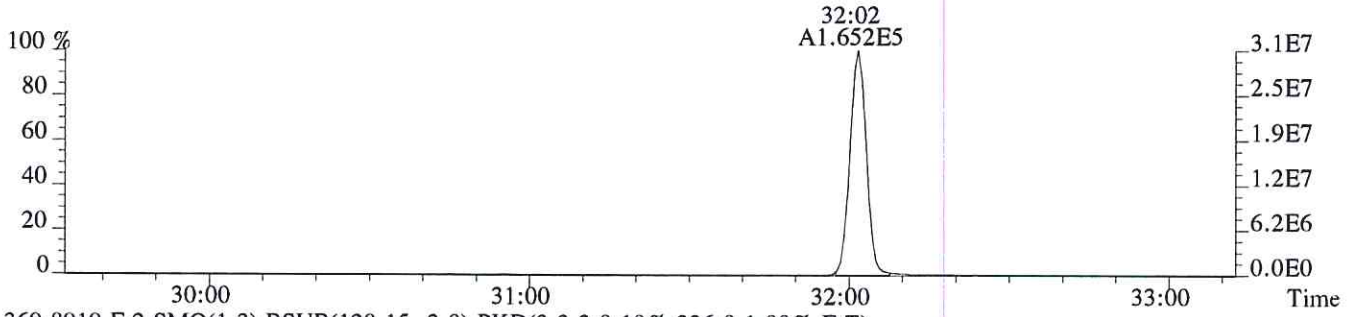
File:P607186 #1-330 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1488.0,1.00%,F,T)



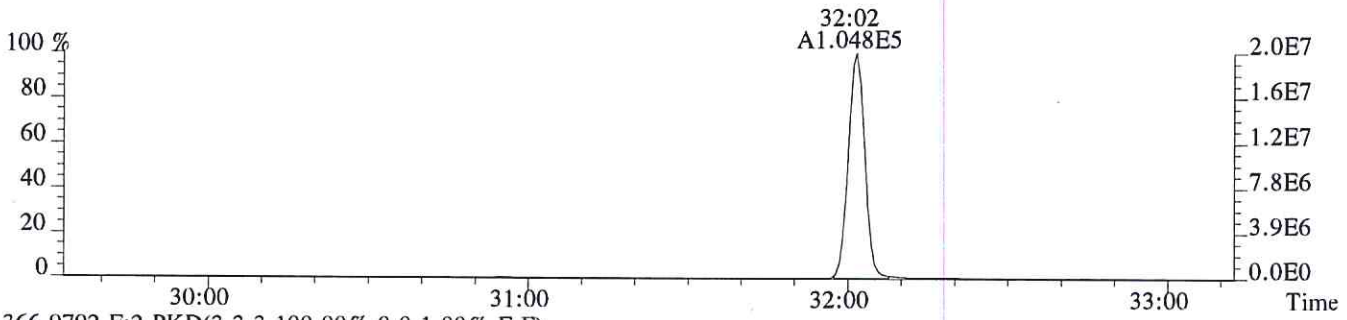
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,716.0,1.00%,F,T)



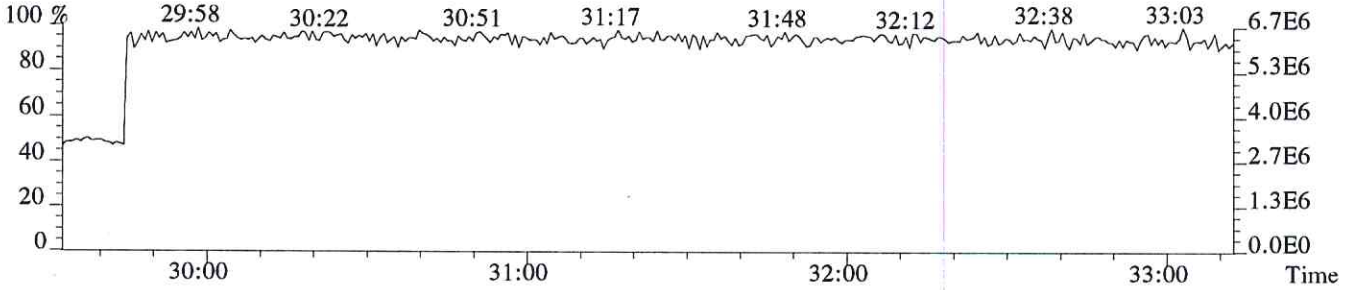
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1188.0,1.00%,F,T)



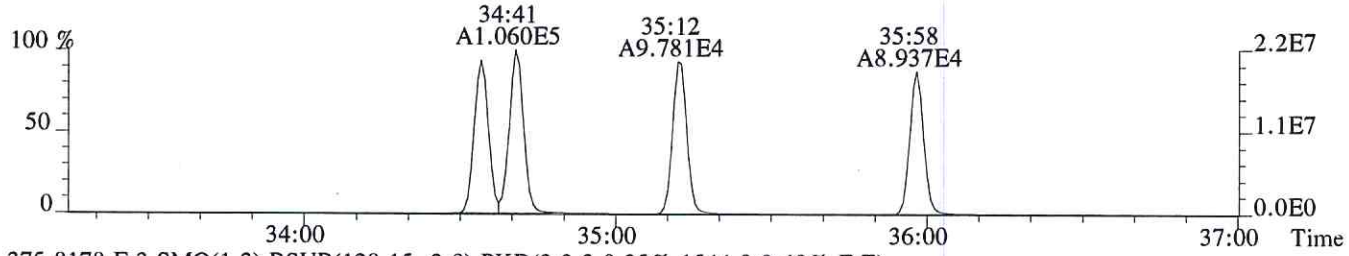
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,236.0,1.00%,F,T)



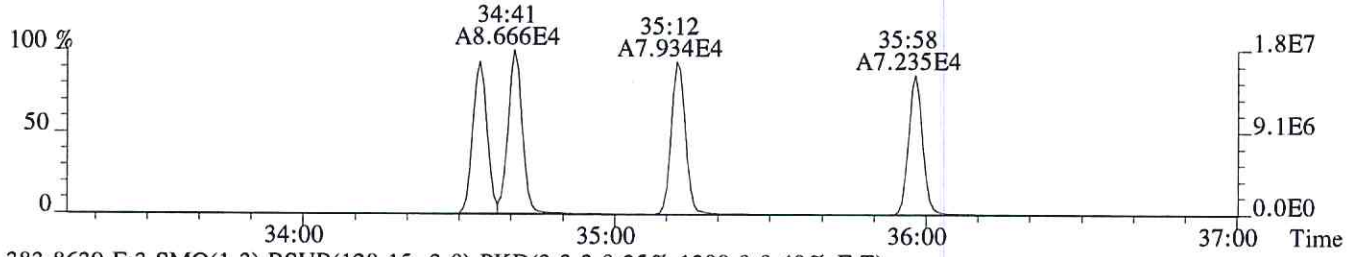
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



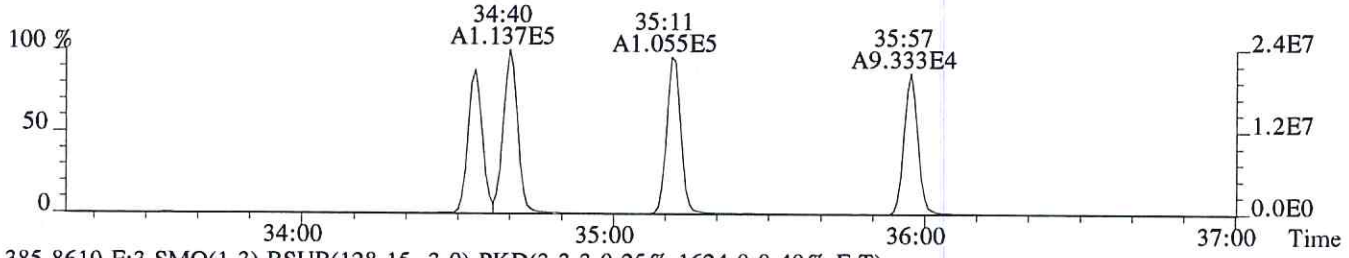
File:P607186 #1-339 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1112.0,0.40%,F,T)



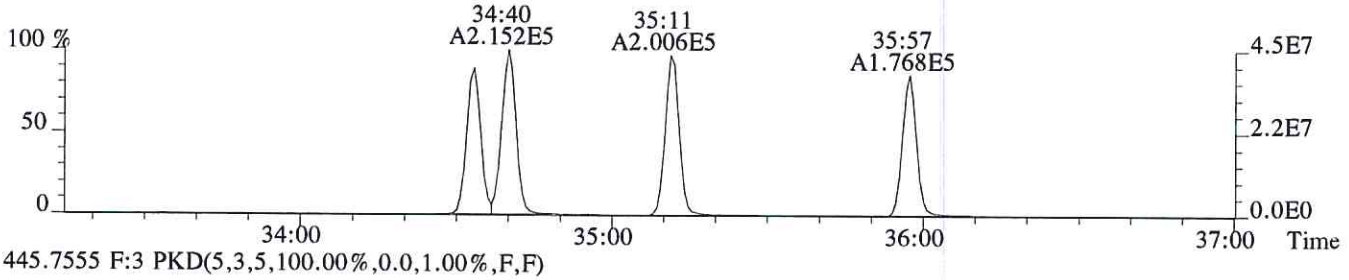
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1544.0,0.40%,F,T)



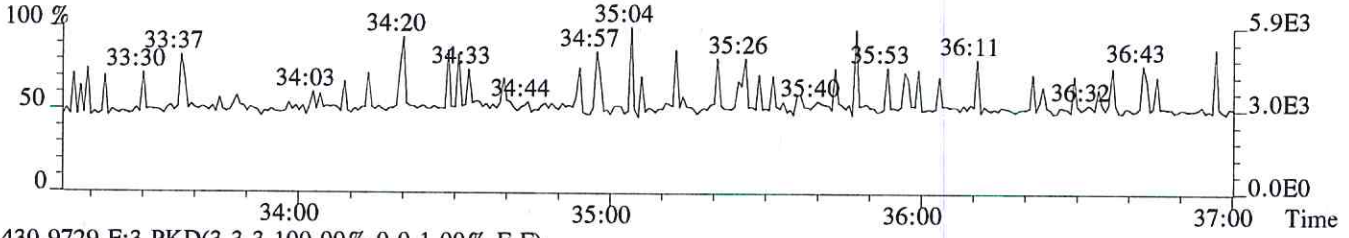
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1308.0,0.40%,F,T)



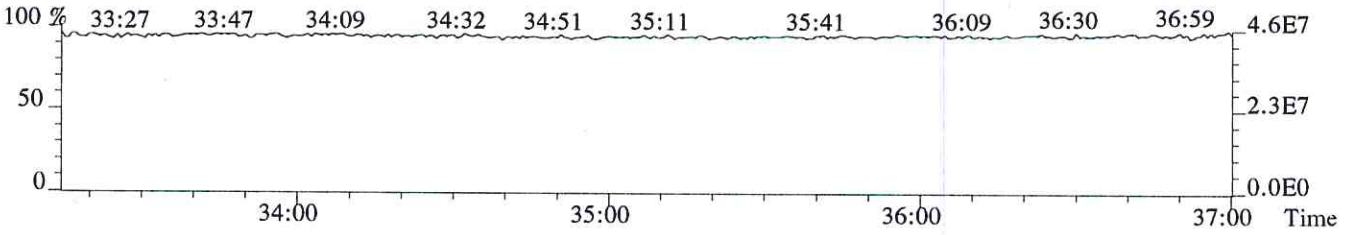
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1624.0,0.40%,F,T)



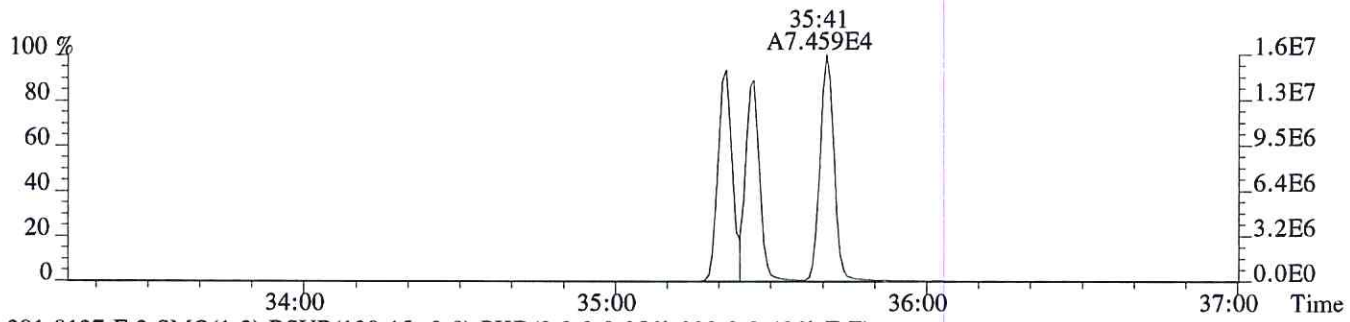
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



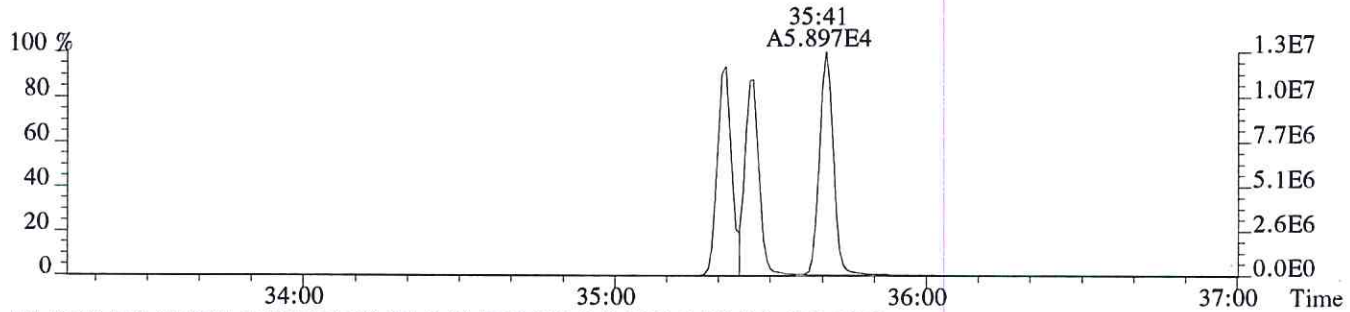
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



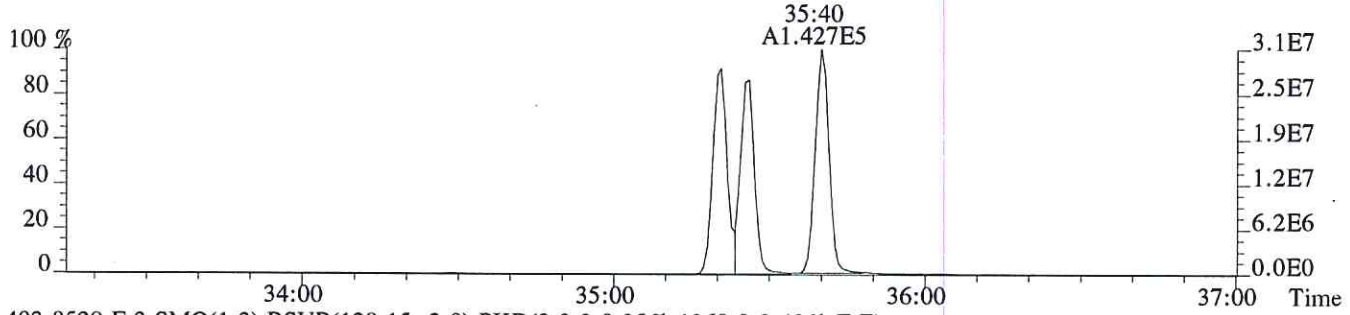
File:P607186 #1-339 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,348.0,0.40%,F,T)



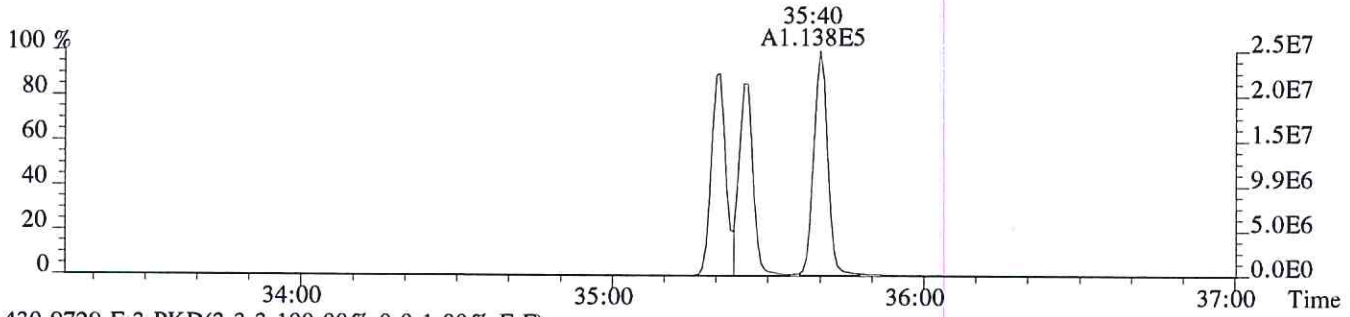
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,220.0,0.40%,F,T)



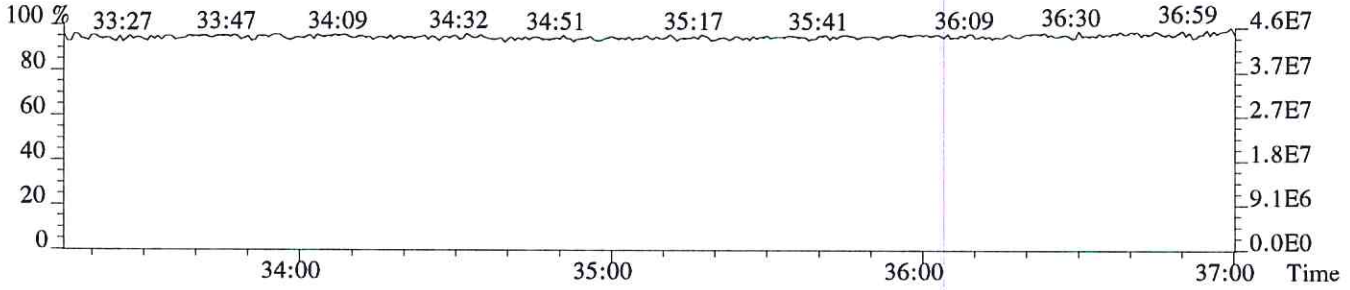
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1740.0,0.40%,F,T)



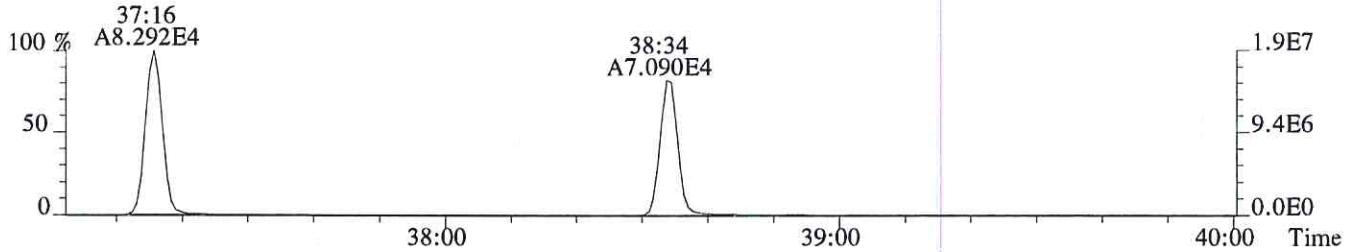
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1268.0,0.40%,F,T)



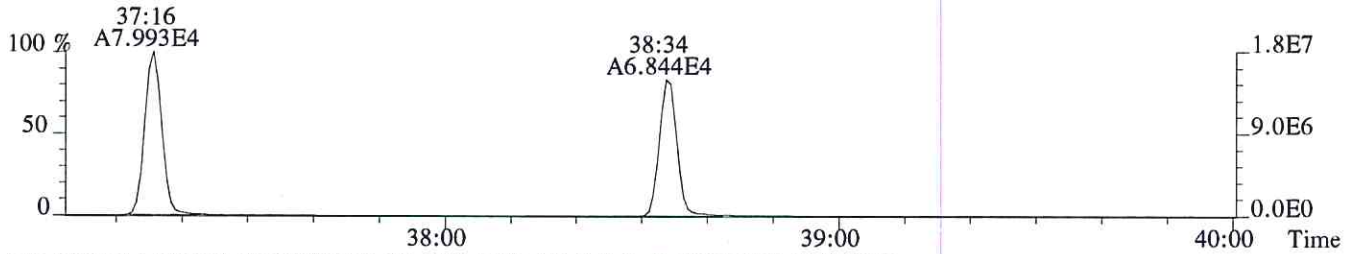
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



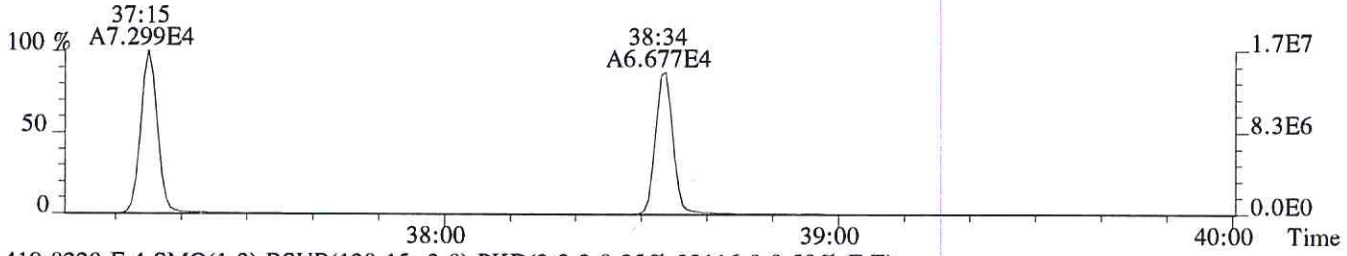
File:P607186 #1-268 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8428.0,0.50%,F,T)



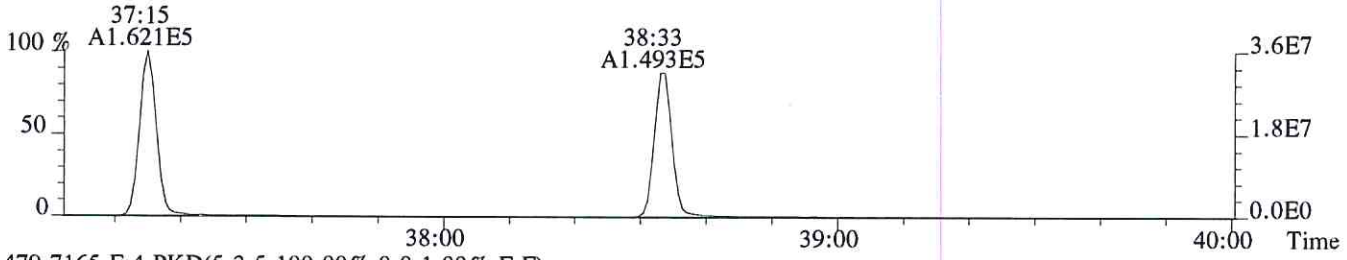
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,8372.0,0.50%,F,T)



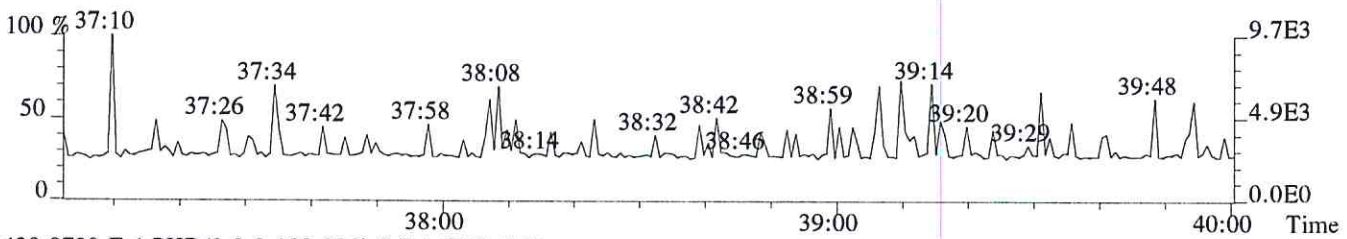
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11848.0,0.50%,F,T)



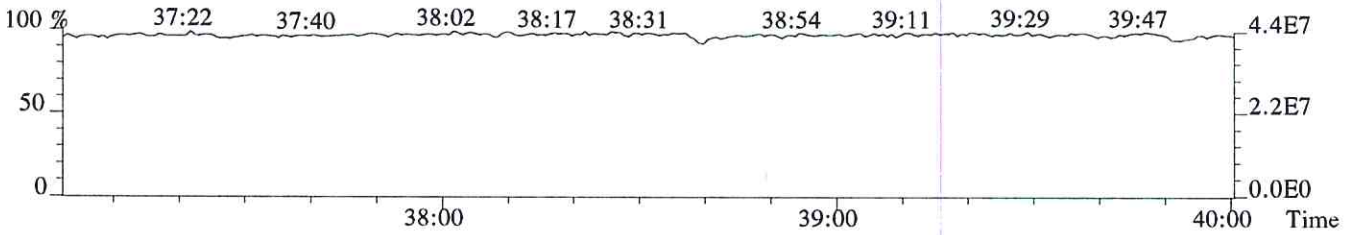
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,33116.0,0.50%,F,T)



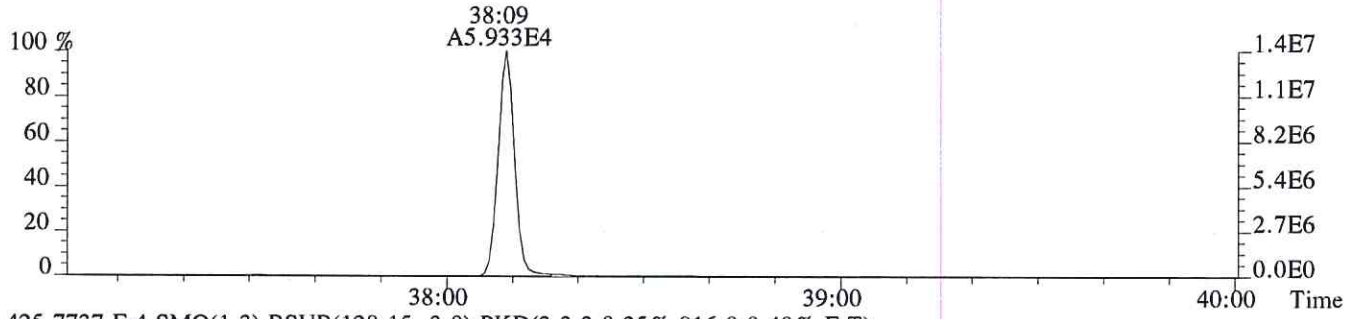
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



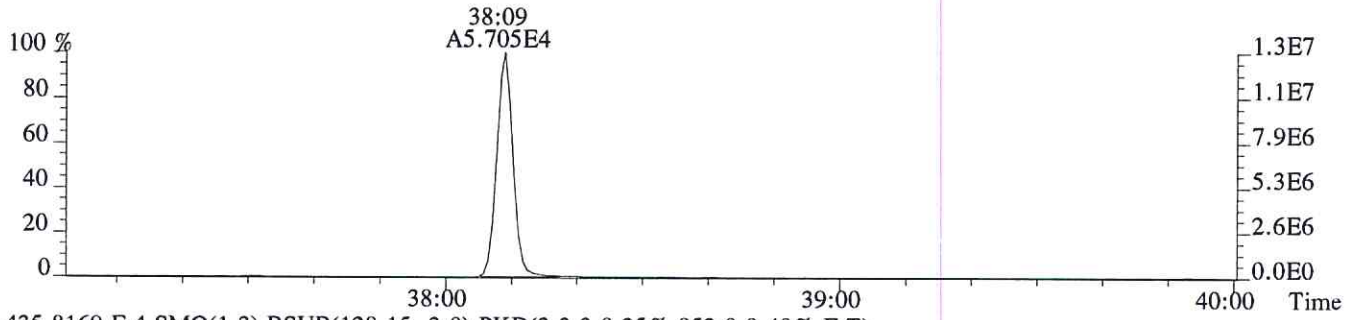
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



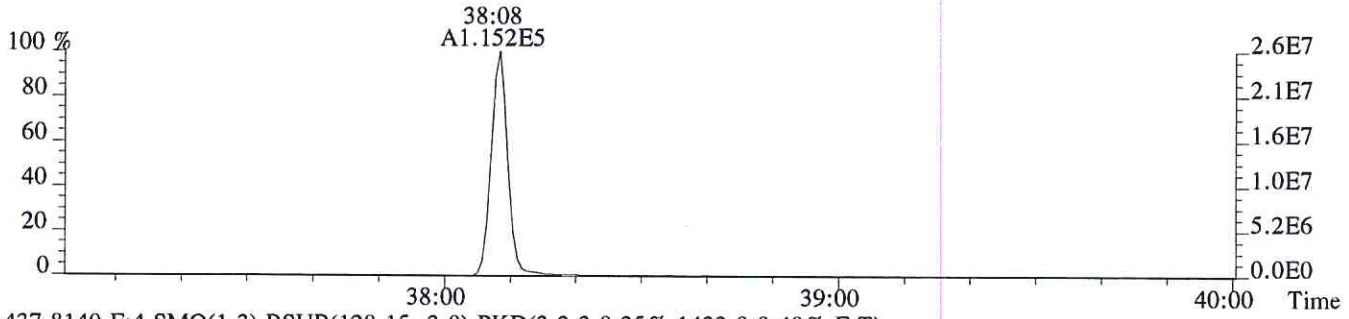
File:P607186 #1-268 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1880.0,0.40%,F,T)



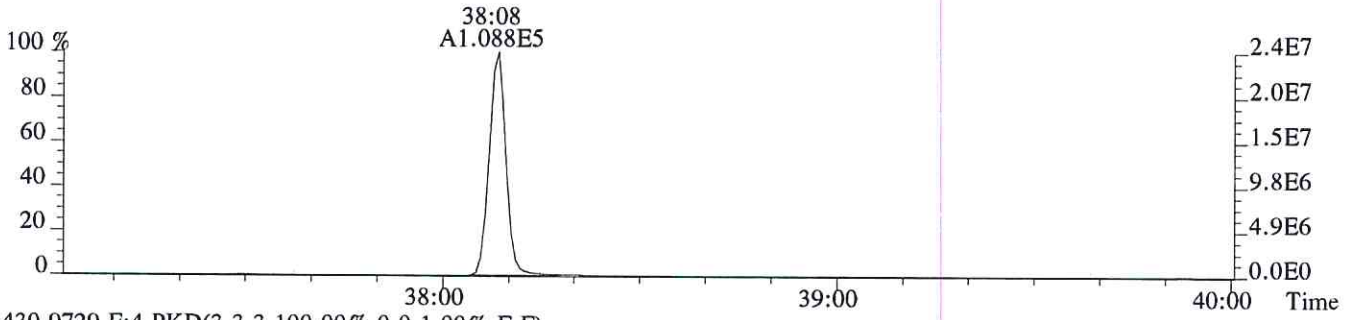
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,916.0,0.40%,F,T)



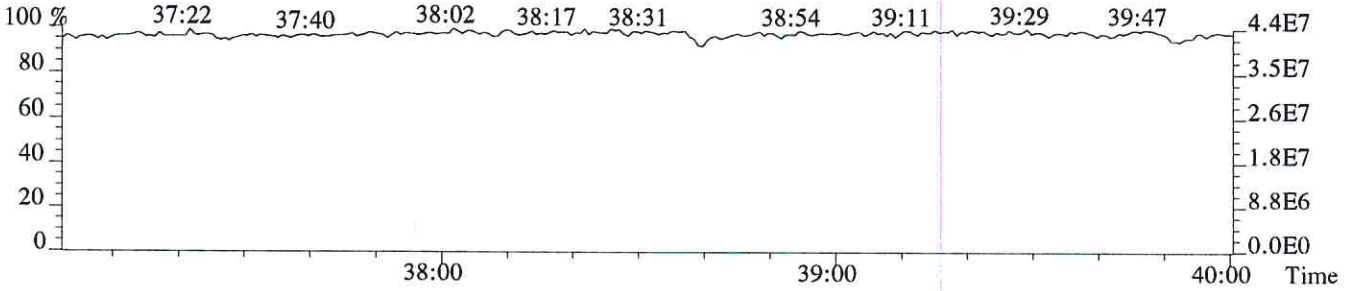
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,852.0,0.40%,F,T)



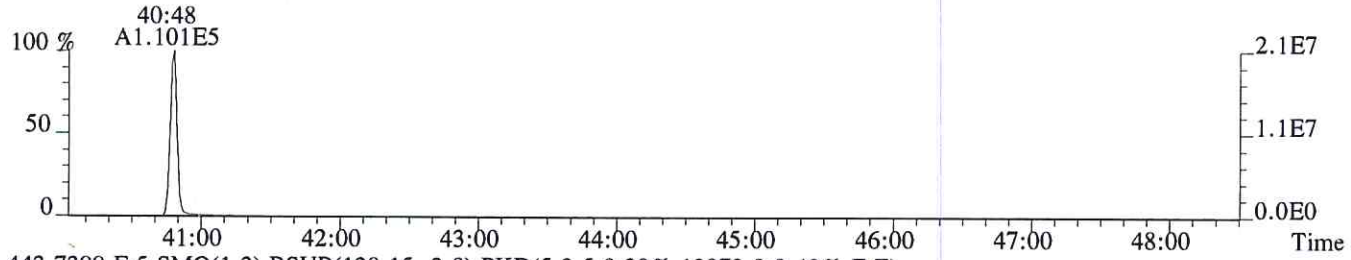
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1432.0,0.40%,F,T)



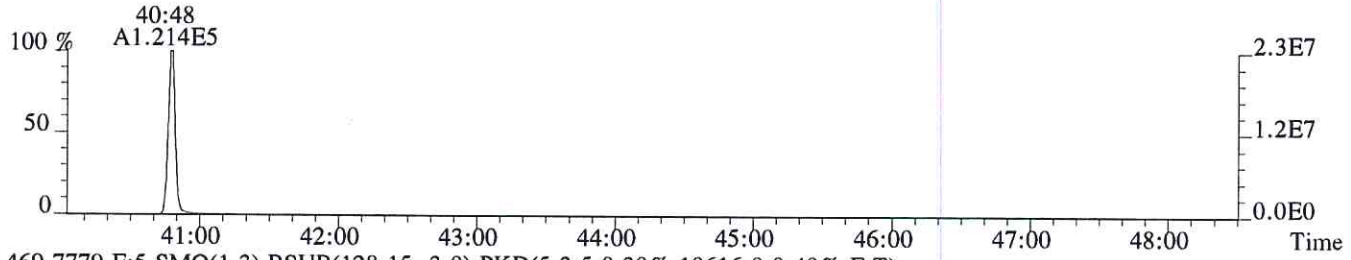
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



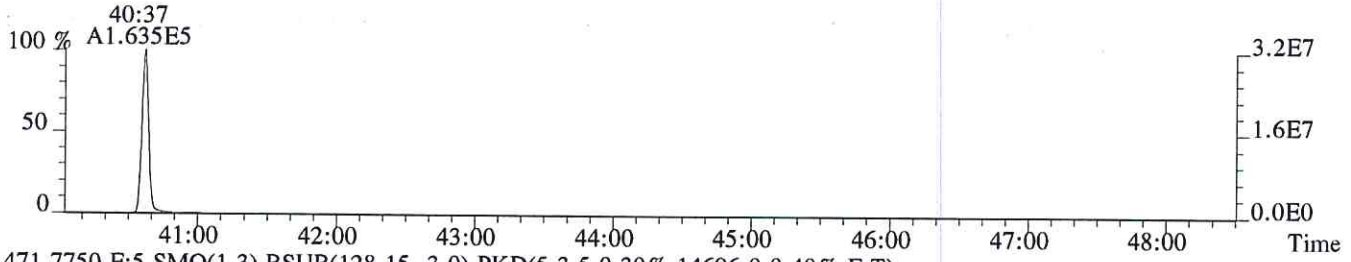
File:P607186 #1-762 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,8596.0,0.40%,F,T)



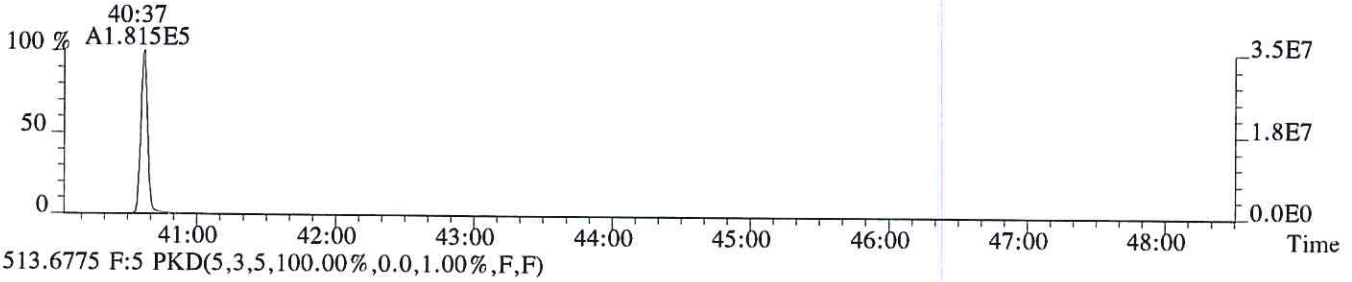
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,12972.0,0.40%,F,T)



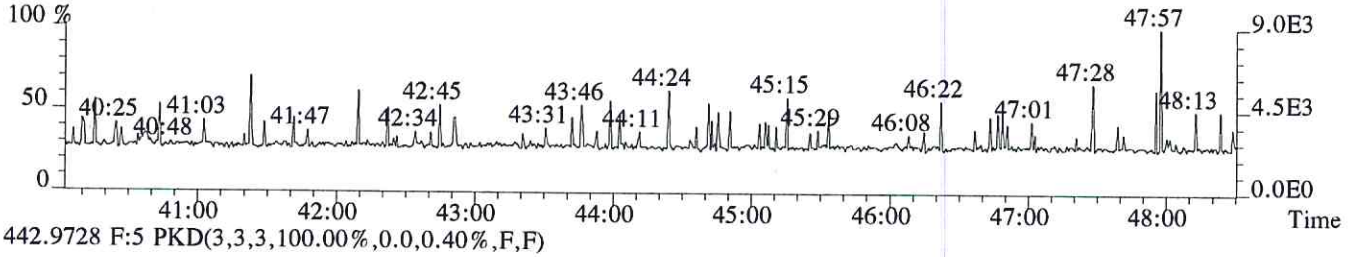
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,10616.0,0.40%,F,T)



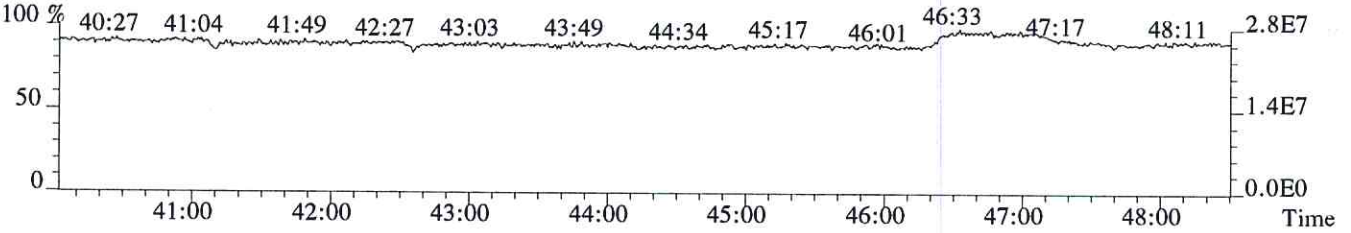
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,14696.0,0.40%,F,T)



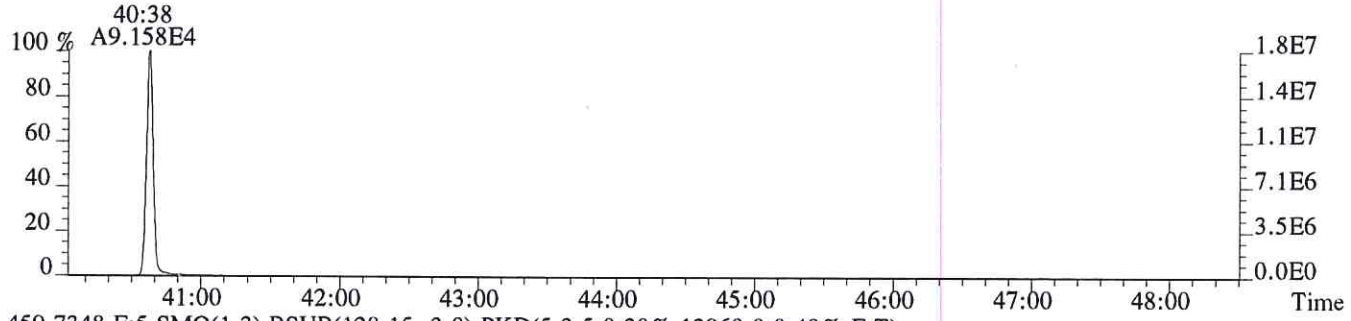
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



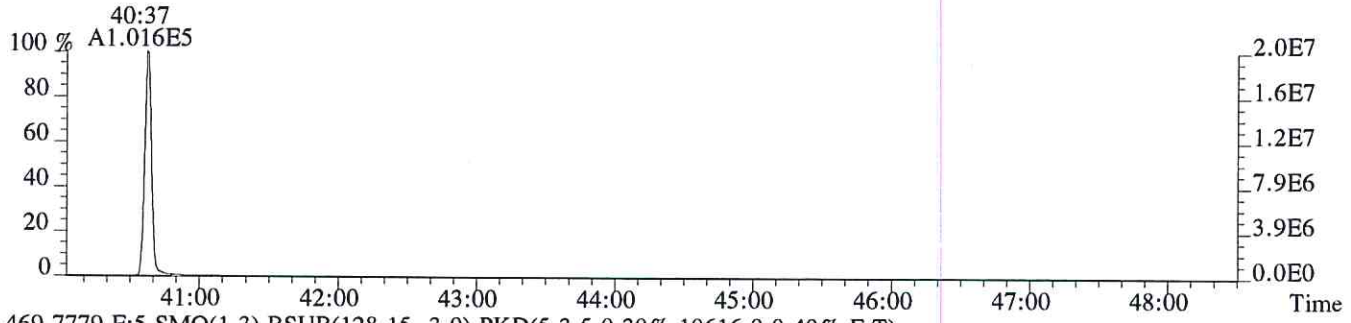
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



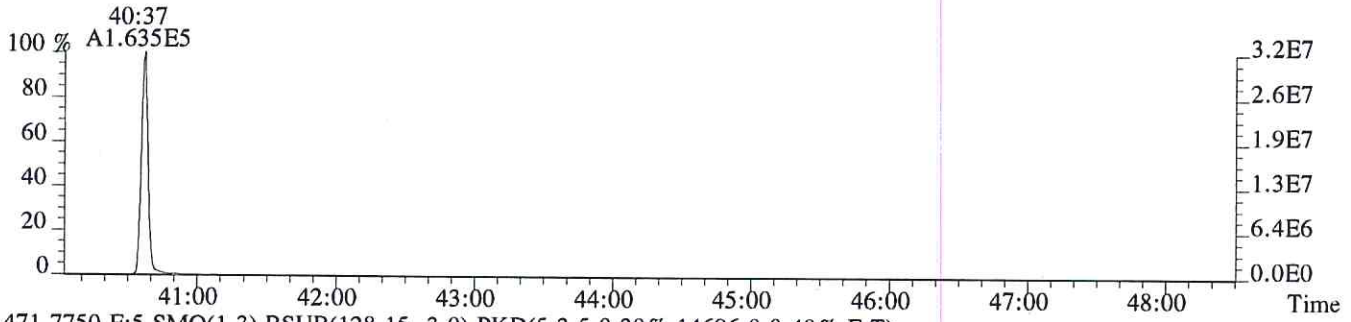
File:P607186 #1-762 Acq:16-MAY-2017 18:45:06 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:2ND SOURCE
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,9668.0,0.40%,F,T)



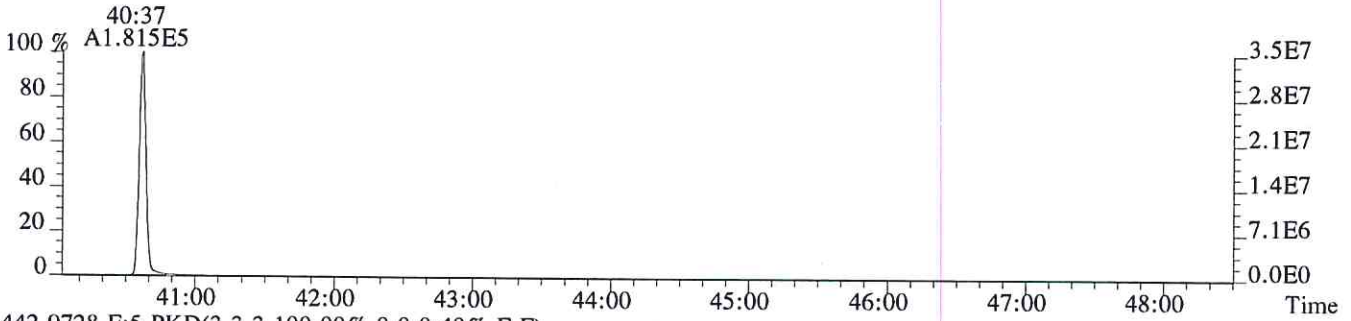
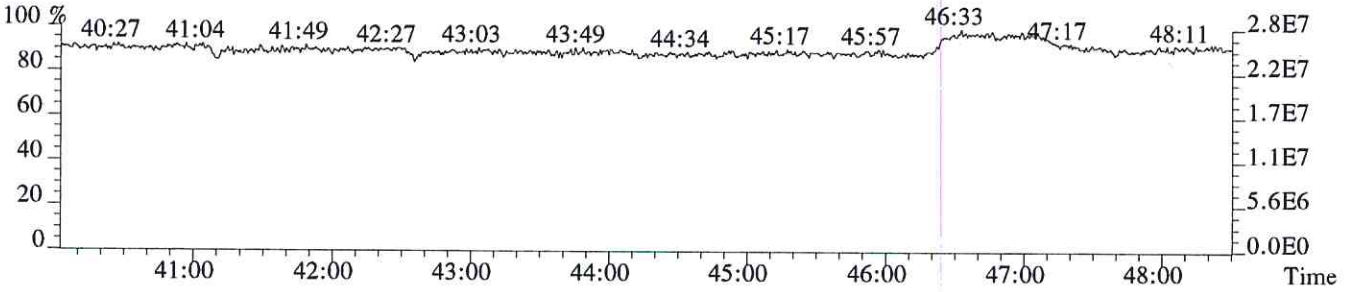
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,12960.0,0.40%,F,T)



469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,10616.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,14696.0,0.40%,F,T)



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