October 23, 2015 Service Request No:E1500972

Jacquelyn Young
San Jacinto River Coalition
3262 Westheimer Road #142
Houston, TX 77098

Laboratory Results for: San Jacinto River Coalition

Dear Jacquelyn,

Enclosed are the results of the sample(s) submitted to our laboratory September 25, 2015
For your reference, these analyses have been assigned our service request number **E1500972.**

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 2279. You may also contact me via email at Arthi.Kodur@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Arthi Kodur
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

9643806

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

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E1500972

ALS ENVIRONMENTAL

Client:	San Jacinto River Coalition	**Service Request No.:**	E1500972
Project:	San Jacinto River Coalition/ SJRC Rawl	**Date Received:**	9/25/15-9/29/15
Sample Matrix:	Water		

ALS ENVIRONMENTAL NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Two water samples were received for analysis at ALS Environmental – Houston HRMS on 9/25/15-9/29/15.

The samples were received between -1.8 to 0.4°C in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

The following discrepancies were also noted upon initial sample inspection: no custody seals on cooler. The exceptions are also noted on the cooler receipt and preservation form included in this data package.

The PCB fraction was sent to ALS Burlington for analysis by 1668A. The results are not included in this report.

Data Validation Notes and Discussion

Method Blank

The Method Blank EQ1500602-01 contained low levels of OCDD above the EDL, but below the Method Reporting Limit (MRL).

The associated compounds in the samples, regardless of concentration, are flagged with 'B' flags, which may be > or equal to 10 times the concentration in the MB.

MS/MSD

EQ1500602: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of an MS/DMS for this extraction batch. The batch quality control criteria were met.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions were sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

Manual Integrations

For this type of instrumentation and software, manual integration may be required frequently to correct inaccurate integrations performed by the processing software. These manual integrations are indicated in the raw data with a before and after chromatogram and are stamped with the reason for integration.

The TEQ Summary results for each sample have been calculated by ALS ENVIRONMENTAL/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: San Jacinto River Coalition **Service Request:**E1500972

Project: San Jacinto River Coalition/SJRC Rawl

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1500972-001	1R	9/29/2015	1220
E1500972-002	2R	9/29/2015	1220
E1500972-003	SJRC RAWL #3R	9/29/2015	1215
E1500972-004	ICP-TW(4R)	9/25/2015	1200

Service Request Summary

Folder #: **E1500972**
Client Name: San Jacinto River Coalition
Project Name: San Jacinto River Coalition
Project Number: SJRC Rawl

Report To: Jacquelyn Young
San Jacinto River Coalition
3262 Westheimer Road #142
Houston, TX 77098
USA
Phone Number: 281-414-3194
Cell Number:
Fax Number:
E-mail: jeyoung@texanstogether.org

Project Chemist: Arthi Kodur
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 09/25/15 - 09/29/15
Internal Due Date: 11/4/2015
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number:
EDD: No EDD Specified

3 1 each-Glass Vial VOA NaHSO4, MeOH
4 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserved
1 250 mL-Plastic Bottle Natural HCl Cleaned WM HCL
Location: SMO, E-Disposed, SUBBED
Pressure Gas:

				HOUSTON		Houston Full Service
Lab Samp No.	**Client Samp No**	**Matrix**	**Collected**	Cl Biphen Cong/1668C	Dioxins Furans/1613B	Misc Out 1/None
E1500972-001	1R	Water	09/29/15 1220		**IV**	
E1500972-002	2R	Water	09/29/15 1220	**IV**		
E1500972-003	SJRC RAWL #3R	Water	09/29/15 1215			**IV**
E1500972-004	ICP-TW(4R)	Water	09/25/15 1200			**IV**

Folder Comments:

sample E1500972-004 was rcvd on 9/25/15. Confirmed with client samples are for the SJRC Rawl Project. (ak 9/30/15)

Service Request Summary

Folder #: **E1500972**
Client Name: San Jacinto River Coalition
Project Name: San Jacinto River Coalition
Project Number: SJRC Rawl

Report To: Jacquelyn Young
San Jacinto River Coalition
3262 Westheimer Road #142
Houston, TX 77098
USA
Phone Number: 281-414-3194
Cell Number:
Fax Number:
E-mail: jeyoung@texanstogether.org

Project Chemist: Arthi Kodur
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 09/25/15 - 09/29/15
Internal Due Date: 11/4/2015
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number:
EDD: No EDD Specified

3 1 each-Glass Vial VOA NaHSO4, MeOH
4 1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserved
1 250 mL-Plastic Bottle Natural HCl Cleaned WM HCL

Location: SMO, E-Disposed, SUBBED

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	Cl Biphen Cong/1668C	1	subbed to burlington (ak 9/30/15)
Semivoa GCMS	Dioxins Furans/1613B	1	full list(ak 9/30/15)
SubLab	Misc Out 1/None	1	samples 3-4 subbed to Houston Full Service
SubLab	Misc Out 1/None	1	samples 3 and 4 subbed to Houston Full Service

Superset Summary

Service Request: E1500972 **SuperSet Reference:** 15-0000351499 rev 00

Analytical Method: **1613B**

Calibrations: 08/19/15

Data Files:

Raw Data	Begin CCAL	Method Blank	Lab ID
P600918	P600911	P600942	E1500972-001
P600942	P600939	P600942	EQ1500602-01
P600966	P600954	P600942	EQ1500602-02
P600967	P600954	P600942	EQ1500602-03

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has 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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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01	11/30/2015
Arizona Department of Health Services	AZ0793	5/27/2016
Arkansas Department of Environmental Quality	14-038-0	6/16/2016
California Department of Health Services	2452	2/28/2017
Florida Department of Health	E87611	6/30/2016
Kansas Department of Health and Environment	E-10406	1/31/2016
Louisiana Department of Environmental Quality	03048	6/30/2016
Louisiana Department of Health and Hospitals	LA150026	12/31/2015
Maine Center for Disease Control and Prevention	2014019	6/5/2016
Maryland Department of the Environment	343	6/30/2016
Michigan Depratment of Environmental Quality	9971	6/30/2016
Minnesota Department of Health	840911	12/31/2015
Nebraska Department of Health and Human Services	NE-OS-25-13	6/30/2016
New Mexico Environment Department	TX02694	6/30/2016
New York Department of Health	11707	4/1/2016
Oregon Environmental Laboratory Accreditation Program	TX200002	3/24/2016
Pennsylvania Department of Environmental Protection	68-03441	6/30/2016
Texas Commision on Environmental Quality	TX104704216-14-5	6/30/2016
United States Department of Agriculture	P330-14-00067	2/21/2017
Washington Department of Health	c819	11/14/2015
West Virginia Department of Environmental Protection	347	6/30/2016

ALS ENVIRONMENTAL – Houston

Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E1500972 DB-5MSUD SPB-Octyl

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

Date:	Analyst:	Samples:
10/22/15	JL	-001

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

Date:	Analyst:	Samples:
10/22/15	LKL	001

Chain of Custody

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

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E1500972

CHAIN OF CUSTODY - HRGC/HRMS - LABORATORY ANALYSIS REPORT FORM

ALS Environmental 10450 Stancliff Road, Suite 210, Houston, TX 77099 | 713.266.1599 | alsusa.hrms@alsglobal.com | www.alsglobal.com

DATE _____ PAGE ____ OF ____

Project Name: SJRC RAWL

Project #:

Company/Address: 3262 Westheimer Rd. #142 Houston, TX 77098

Phone: 281-414-3194

Report to: Jacquelyn Young

Analysis Request

SAMPLE I.D.	DATE	TIME	SAMPLE MATRIX	Number of Containers	8290	1613B	1613 TCDD only	1668 WHO	1668 Full List										REMARKS / SAMPLE LOCATION
1R	9-29-15	12:20pm	Water	1		X													
2R	9-29-15	12:20pm	Water	1					X										

E1500972 5
San Jacinto River Coalition
San Jacinto River Coalition

RELINQUISHED BY:	RECEIVED BY:	TURNAROUND REQUIREMENTS	DELIVERABLES	INVOICE INFORMATION:	SAMPLE RECEIPT
Signature: Jacki Young	Signature:	Dioxin Rush.....5 days	___ I. Analytical Report	P.O. #	Opened by:
Printed Name: Jacquelyn Young	Printed Name:	Dioxin Rush.....10 days	___ II. Analytical Report + QC	Bill to:	Inspected by:
Firm: SJRC	Firm:	Dioxin STD.....15 days	___ IV. Data Validation Report (includes all raw data)		Date:
Date/Time: 9-29-15 14:30	Date/Time:	Contact lab for available TAT on PCBs			Time:

RELINQUISHED BY:	RECEIVED BY:	Comments/Special Instructions:
Signature:	Signature:	Sampler's Signature Jacki Young
Printed Name:	Printed Name: Ashi Kalra	
Firm:	Firm: ALS HRMS	
Date/Time:	Date/Time: 9/29/15 1431	

DISTRIBUTION: WHITE - Laboratory Copy; YELLOW - Client Copy

E1500972

Chain of Custody Form

Page ____ of ____

ALS Environmental

ALS Environmental
North America Corporate Office
10450Stancliff Road, Suite 210
Houston, TX 77099

ALS Project Manager: | Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	San Jacinto River Coalition RAWL	A	SVOCs 8270
Work Order		Project Number		B	VOCs 8260
Company Name	ALS Houston Dioxins	Address	ALS Houston Dioxins	C	Metals + Mercury (Ba, Cd, Cr, Bo, Cu,Pb, Mn, Ni, Zn) 6020
Send Report To	Arthi Kodur	Invoice Attn.	Arthi Kodur	D	BTEX 8260
Address	10450 Stancliff Road Suite 210	Address	10450 Stancliff Road Suite 210	E	
				F	
City/State/Zip	Houston, Texas 77099	City/State/Zip	Houston, Texas 77099	G	
Phone	281-575-2279	Phone	281-575-2279	H	
Fax		Fax		I	
e-Mail Address	arthi.kodur@alsglobal.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SJRC RAWL #3R	9-29-15	12:15pm	Water		2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign: Jacquelyn Young Jacquelyn Young

Shipment Method:

Required Turnaround Time: ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Notes:
Jackie Young	9-29-15	14:30		
Relinquished by:	Date:	Time:	Received by (Laboratory): 9/29/15 1431	Cooler Temp.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

QC Package: (Check Box Below)

	Level II: Standard QC	TRRP-Checklist
	Level III: Std QC + Raw Data	TRRP Level IV
	Level IV: SW846 CLP-Like	

E1500972

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Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

Chain of Custody Form

Page _____ of _____

COC ID: 131389

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	San Jacinto River Coalition	A	SVOCs 8270
Work Order		Project Number		B	VOCs 8260
Company Name	ALS Houston Dioxins	Bill To Company	ALS Houston Dioxins	C	Metals + Mercury (Ba,Cd,Cr,Bo,Cu,Pb,Mn,Ni,Zn) 6020
Send Report To	Arthi Kodur	Invoice Attn	Arthi Kodur	D	BTEX 8260
Address	19408 Park Row, Suite 320	Address	19408 Park Row, Suite 320	E	
				F	
City/State/Zip	Houston	City/State/Zip	Houston	G	
Phone	(713) 266-1599	Phone	(713) 266-1599	H	
Fax		Fax		I	
e-Mail Address	arthi.kodur@alsglobal.com	e-Mail Address	arthi.kodur@alsglobal.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	ICP_TW	9-25-15	12:00pm														
2	8260_LL_W	9-25-15	12:00pm														
3	8260_LL_W	9-25-15	12:06pm														
4	8260_LL_W	9-25-15	12:07pm														
5	8270_LOW_S	9-25-15	12:09pm														
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Jacquelyn Young Jacqu Young

Shipment Method: Courier

Required Turnaround Time: (Check Box) ☐ Std 10 WK days ☒ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by	Date:	Time:	Received by:
Relinquished by:	Date: 9/25/15	Time: 13:00	Received by (Laboratory):
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
- ☒ Level 2 Std QC
- ☐ Level 3 Std QC/Row da
- ☐ Level 4 SW846/CLP
- ☐ Other/EDD _____
- ☐ TRRP ChkList
- ☐ TRRP Level 4

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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E1500972

Cooler Receipt Form

ALS Environmental

Project Chemist: AL

Client/Project: San Jacinto River Coalition

Thermometer ID: SMO 4

Date/Time Received: 9/29/15 1431 Initials: alf

Date/Time Logged in: 9/30/15 Initials AL

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? None
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?
N/A		9/29/15	1431	alf	-1.2	☐
N/A		9/29/15	~~1431~~ 1430	alf	-1.8	☐
						☐
N/A		9/25/15	13:00	AL	0.2/0.4	☐

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 that arrived on 9/25 are associated with samples that were received on ~~9/30~~ 9/29, AL 9/30/15 Client had to retrieve more sample AL 9/30/15

Service request Label: E1500972 5

San Jacinto River Coalition

San Jacinto River Coalition

Effective 10/04/2013

ALS Environmental - Houston HRMS

E1500972

ALS Environmental

Cooler Receipt Form

Project Chemist: AL 9/30/15 AK

Client/Project: San Jacinto River Coalition

Thermometer ID: SMG 4

Date/Time Received: 9/25/15 13:00 Initials: AL

Date/Time Logged in: 9/30/15 Initials: AL

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?
N/A		9/25/15		AL	0.2/0.4	☐
						☐
						☐
						☐

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:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

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

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E1500972

Preparation Information Benchsheet

Prep Run#: 246602 **Prep WorkFlow:** OrgExtAq(365) **Status:** Prepped
Team: Semivoa GCMS/LMCCRINK **Prep Method:** Method Sep Funnel/Jar **Prep Date/Time:** 10/8/15 07:50 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Sample Description
1	E1500939-001	10615148	.01	1613B/Dioxins Furans	7	Water	998mL	Yellow Cloudy
2	E1500947-001	2096625 001	.01	1613B/Dioxins Furans	7	Drinking Water	1059mL	Clear Liquid
3	E1500972-001	1R	.01	1613B/Dioxins Furans	7	Water	1044mL	Clear Liquid
4	E1500973-001	1H	.01	1613B/Dioxins Furans	7	Water	1050mL	Clear Liquid
5	E1500990-001	15J0011-01	.01	1613B/Dioxins Furans	7	Water	997mL	Clear Liquid
6	E1501001-001	Aqueous MDL Study-001	.01	1613B/Dioxins Furans	5	Water	1000mL	Clear Liquid
7	E1501001-002	Aqueous MDL Study-002	.02	1613B/Dioxins Furans	5	Water	1000mL	Clear Liquid
8	E1501001-003	Aqueous MDL Study-003	.02	1613B/Dioxins Furans	5	Water	1000mL	Clear Liquid
9	E1501001-004	Aqueous MDL Study-004	.02	1613B/Dioxins Furans	5	Water	1000mL	Clear Liquid
10	E1501001-005	Aqueous MDL Study-005	.02	1613B/Dioxins Furans	5	Water	1000mL	Clear Liquid
11	E1501001-006	Aqueous MDL Study-006	.02	1613B/Dioxins Furans	5	Water	1000mL	Clear Liquid
12	E1501001-007	Aqueous MDL Study-007	.02	1613B/Dioxins Furans	5	Water	1000mL	Clear Liquid
13	E1501001-008	Aqueous MDL Study-008	.02	1613B/Dioxins Furans	5	Water	1000mL	Clear Liquid
14	EQ1500602-01	MB		1613B/Dioxins Furans	5	Liquid	1000.0mL	
15	EQ1500602-02	LCS		1613B/Dioxins Furans	5	Liquid	1000mL	
16	EQ1500602-03	DLCS		1613B/Dioxins Furans	5	Liquid	1000mL	
17	R1505980-001RE	STE-07222015-24 HR	.01	1613B/Dioxin Furans Unadjusted	7	Water	1050.0mL	Clear Liquid

Preparation Information Benchsheet

Prep Run#: 246602 **Prep WorkFlow:** OrgExtAq(365) **Status:** Prepped
Team: Semivoa GCMS/LMCCRINK **Prep Method:** Method Sep Funnel/Jar **Prep Date/Time:** 10/8/15 07:50 AM

Spiking Solutions

Name:	1613B/23/TO-9A MDL Native Solution	Inventory ID	78144	Logbook Ref:	0.02-0.2ng/mL LM 1/16/15	Expires On:	01/13/2016

E1501001-001	100.00µL	E1501001-002	100.00µL	E1501001-003	100.00µL	E1501001-004	100.00µL	E1501001-005	100.00µL	E1501001-006	100.00µL
E1501001-007	100.00µL	E1501001-008	100.00µL								

Name:	1613B Matrix Working Standard	Inventory ID	84391	Logbook Ref:	84391 LM 9/21/15 2-20ng/ml	Expires On:	06/01/2016

EQ1500602-02	100.00µL	EQ1500602-02	100.00µL	EQ1500602-03	100.00µL	EQ1500602-03	100.00µL

Name:	8290/1613B Cleanup Working Standard	Inventory ID	84635	Logbook Ref:	10/01/2015 CID 8.0 ng/ml EXT	Expires On:	03/29/2016

E1500939-001	100.00µL	E1500947-001	100.00µL	E1500972-001	100.00µL	E1500973-001	100.00µL	E1500990-001	100.00µL	E1501001-001	100.00µL
E1501001-002	100.00µL	E1501001-003	100.00µL	E1501001-004	100.00µL	E1501001-005	100.00µL	E1501001-006	100.00µL	E1501001-007	100.00µL
E1501001-008	100.00µL	EQ1500602-01	100.00µL	EQ1500602-01	100.00µL	EQ1500602-02	100.00µL	EQ1500602-02	100.00µL	EQ1500602-03	100.00µL
EQ1500602-03	100.00µL	R1505980-001	100.00µL								

Name:	1613B Labeled Working Standard	Inventory ID	84765	Logbook Ref:	LM 10/7/15 2-4ng/ml 84765	Expires On:	03/08/2016

E1500939-001	1,000.00µL	E1500947-001	1,000.00µL	E1500972-001	1,000.00µL	E1500973-001	1,000.00µL	E1500990-001	1,000.00µL	E1501001-001	1,000.00µL
E1501001-002	1,000.00µL	E1501001-003	1,000.00µL	E1501001-004	1,000.00µL	E1501001-005	1,000.00µL	E1501001-006	1,000.00µL	E1501001-007	1,000.00µL
E1501001-008	1,000.00µL	EQ1500602-01	1,000.00µL	EQ1500602-01	1,000.00µL	EQ1500602-02	1,000.00µL	EQ1500602-02	1,000.00µL	EQ1500602-03	1,000.00µL
EQ1500602-03	1,000.00µL	R1505980-001	1,000.00µL								

Preparation Materials

Sensafe Free Chlorine WTR CHK	LM 3/19/15 (79756)	Carbon, High Purity	LM 9/1/15 (83844)	Ethyl Acetate 99.9% Minimum EtOAc	LM 10/8/15 (84814)
Glass Wool	CID 09/22/2015 (84411)	Sulfuric Acid Reagent Grade H2SO4	LM 3/4/15 (79265)	Hexanes 95%	10/7/15 DE (84759)
Dichloromethane (Methylene Chloride) 99.9% MeCl2	LM 10/5/15 (84703)	Sodium Hydroxide Reagent Grade NaOH	LM 09/02/14 (74232)	Sodium Sulfate Anhydrous Reagent Grade Na2SO4	LM 9/24/15 (84454)
Tridecane (n-Tridecane)	LM 8/27/15 (83731)	ColorpHast pH-Indicator Strips	AL 03/24/15 (79846)	Silica Gel	Carlos Diaz (84410)
Toluene 99.9% Minimum	JP 10-07-15 (84760)				

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	10/8/15 07:50	Started:	10/10/15 ~~14:20~~ 00:00	Started:	10/9/15 12:40	Started:	10/10/15 14:20
Finished:	10/8/15 09:40	Finished:	10/10/15 ~~14:45~~ 00:00	Finished:	10/9/15 14:10	Finished:	10/10/15 14:45
By:	LMCCRINK	By:	CDIAZ	By:	CDIAZ	By:	CDIAZ
Comments		Comments	ak 10/12/15	Comments		Comments	

E1500972

Preparation Information Benchsheet

Prep Run#: 246602
Team: Semivoa GCMS/LMCCRINK

Prep WorkFlow: OrgExtAq(365)
Prep Method: Method Sep Funnel/Jar

Status: Prepped
Prep Date/Time: 10/8/15 07:50 AM

Comments:

Reviewed By: ak Date: 10/12/15

Chain of Custody

Relinquished By: Date:

Received By: Date:

Extracts Examined

Yes No

E1500972

Analytical Results

ALS Environmental - Houston HRMS
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E1500972

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	09/29/15 12:20
Sample Matrix:	Water	**Date Received:**	09/29/15 14:31
Sample Name:	1R	**Units:**	pg/L
Lab Code:	E1500972-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/12/15 17:57
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1044mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600918	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600911

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.598	4.79			1
1,2,3,7,8-PeCDD	ND	U	0.804	23.9			1
1,2,3,4,7,8-HxCDD	ND	U	0.303	23.9			1
1,2,3,6,7,8-HxCDD	ND	U	0.312	23.9			1
1,2,3,7,8,9-HxCDD	ND	U	0.277	23.9			1
1,2,3,4,6,7,8-HpCDD	2.61**JK**		0.362	23.9	0.83	1.000	1
OCDD	19.9**BJ**		0.679	47.9	0.90	1.000	1
2,3,7,8-TCDF	ND	U	0.464	4.79			1
1,2,3,7,8-PeCDF	ND	U	0.367	23.9			1
2,3,4,7,8-PeCDF	ND	U	0.381	23.9			1
1,2,3,4,7,8-HxCDF	ND	U	0.220	23.9			1
1,2,3,6,7,8-HxCDF	ND	U	0.210	23.9			1
1,2,3,7,8,9-HxCDF	ND	U	0.246	23.9			1
2,3,4,6,7,8-HxCDF	ND	U	0.220	23.9			1
1,2,3,4,6,7,8-HpCDF	0.789**JK**		0.343	23.9	0.87	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.402	23.9			1
OCDF	1.97**JK**		0.595	47.9	0.68	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	09/29/15 12:20
Sample Matrix:	Water	**Date Received:**	09/29/15 14:31
Sample Name:	1R	**Units:**	pg/L
Lab Code:	E1500972-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/12/15 17:57
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1044mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600918	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600911

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.598	4.79			1
Total Penta-Dioxins	ND	U	0.804	23.9			1
Total Hexa-Dioxins	ND	U	0.296	23.9			1
Total Hepta-Dioxins	2.49**J**		0.362	23.9	1.03		1
Total Tetra-Furans	ND	U	0.464	4.79			1
Total Penta-Furans	ND	U	0.373	23.9			1
Total Hexa-Furans	ND	U	0.224	23.9			1
Total Hepta-Furans	ND	U	0.371	23.9			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	09/29/15 12:20
Sample Matrix:	Water	**Date Received:**	09/29/15 14:31
Sample Name:	1R	**Units:**	Percent
Lab Code:	E1500972-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/12/15 17:57
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1044mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600918	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600911

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	1159.180	58		25-164	0.80	1.020
13C-1,2,3,7,8-PeCDD	2000	1486.300	74		25-181	1.59	1.183
13C-1,2,3,4,7,8-HxCDD	2000	1435.507	72		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1567.869	78		28-130	1.25	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1257.578	63		23-140	1.05	1.066
13C-OCDD	4000	2350.122	59		17-157	0.89	1.140
13C-2,3,7,8-TCDF	2000	1392.154	70		24-169	0.78	0.993
13C-1,2,3,7,8-PeCDF	2000	1489.601	74		24-185	1.56	1.140
13C-2,3,4,7,8-PeCDF	2000	1482.174	74		21-178	1.56	1.173
13C-1,2,3,4,7,8-HxCDF	2000	1339.523	67		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1442.686	72		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1363.869	68		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1384.789	69		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1141.851	57		28-143	0.44	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	1075.475	54		26-138	0.44	1.079
37Cl-2,3,7,8-TCDD	800	517.734	65		35-197	NA	1.021

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	09/29/15 12:20
Sample Matrix:	Water	**Date Received:**	09/29/15 14:31
Sample Name:	1R	**Units:**	pg/L
Lab Code:	E1500972-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B

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	0.598	4.79	1	1	
1,2,3,7,8-PeCDD	ND	0.804	23.9	1	1	
1,2,3,4,7,8-HxCDD	ND	0.303	23.9	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.312	23.9	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.277	23.9	1	0.1	
1,2,3,4,6,7,8-HpCDD	**2.61**	0.362	23.9	1	0.01	0.0261
OCDD	**19.9**	0.679	47.9	1	0.0003	0.00597
2,3,7,8-TCDF	ND	0.464	4.79	1	0.1	
1,2,3,7,8-PeCDF	ND	0.367	23.9	1	0.03	
2,3,4,7,8-PeCDF	ND	0.381	23.9	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.220	23.9	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.210	23.9	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.246	23.9	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.220	23.9	1	0.1	
1,2,3,4,6,7,8-HpCDF	**0.789**	0.343	23.9	1	0.01	0.00789
1,2,3,4,7,8,9-HpCDF	ND	0.402	23.9	1	0.01	
OCDF	**1.97**	0.595	47.9	1	0.0003	0.000591
		Total TEQ				0.0406

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ1500602-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/13/15 16:12
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1000.0mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600942	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600939

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.739	5.00			1
1,2,3,7,8-PeCDD	ND	U	1.23	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.424	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.453	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.397	25.0			1
1,2,3,4,6,7,8-HpCDD	ND	U	0.605	25.0			1
OCDD	2.09**J**		0.619	50.0	0.87	1.000	1
2,3,7,8-TCDF	ND	U	0.707	5.00			1
1,2,3,7,8-PeCDF	ND	U	0.368	25.0			1
2,3,4,7,8-PeCDF	ND	U	0.379	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.202	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.191	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.223	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.194	25.0			1
1,2,3,4,6,7,8-HpCDF	ND	U	0.275	25.0			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.324	25.0			1
OCDF	ND	U	0.647	50.0			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ1500602-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/13/15 16:12
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1000.0mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600942	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600939

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.739	5.00			1
Total Penta-Dioxins	ND	U	1.23	25.0			1
Total Hexa-Dioxins	ND	U	0.423	25.0			1
Total Hepta-Dioxins	ND	U	0.605	25.0			1
Total Tetra-Furans	ND	U	0.707	5.00			1
Total Penta-Furans	ND	U	0.373	25.0			1
Total Hexa-Furans	ND	U	0.202	25.0			1
Total Hepta-Furans	ND	U	0.300	25.0			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1500602-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/13/15 16:12
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1000.0mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600942	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600939

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	1205.804	60		25-164	0.80	1.020
13C-1,2,3,7,8-PeCDD	2000	1543.149	77		25-181	1.59	1.183
13C-1,2,3,4,7,8-HxCDD	2000	1621.249	81		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1745.435	87		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1421.415	71		23-140	1.07	1.066
13C-OCDD	4000	2645.996	66		17-157	0.89	1.140
13C-2,3,7,8-TCDF	2000	1392.112	70		24-169	0.78	0.993
13C-1,2,3,7,8-PeCDF	2000	1545.086	77		24-185	1.57	1.141
13C-2,3,4,7,8-PeCDF	2000	1533.219	77		21-178	1.56	1.173
13C-1,2,3,4,7,8-HxCDF	2000	1482.794	74		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1600.588	80		26-123	0.51	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1522.801	76		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1562.132	78		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1331.638	67		28-143	0.43	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	1222.918	61		26-138	0.44	1.079
37Cl-2,3,7,8-TCDD	800	533.664	67		35-197	NA	1.021

Accuracy & Precision

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E1500972

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Analyzed:**	10/14/15
Sample Matrix:	Water	**Date Extracted:**	10/08/15

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

Analysis Method:	1613B	**Units:**	pg/L
Prep Method:	Method Sep Funnel/Jar	**Basis:**	NA
		Analysis Lot:	468365

	Lab Control Sample EQ1500602-02			Duplicate Lab Control Sample EQ1500602-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	1040	1000	104	1080	1000	108	70-140	3	50
1,2,3,4,7,8-HxCDD	1120	1000	112	1150	1000	115	70-164	2	50
1,2,3,6,7,8-HxCDD	1100	1000	110	1130	1000	113	76-134	3	50
1,2,3,7,8,9-HxCDD	1010	1000	101	1070	1000	107	64-162	5	50
1,2,3,7,8-PeCDD	1180	1000	118	1210	1000	121	70-142	2	50
2,3,7,8-TCDD	221	200	111	232	200	116	67-158	5	50
OCDD	2210	2000	110	2230	2000	111	78-144	1	50
1,2,3,4,6,7,8-HpCDF	1080	1000	108	1090	1000	109	82-122	1	50
1,2,3,4,7,8,9-HpCDF	1050	1000	105	1080	1000	108	78-138	2	50
1,2,3,4,7,8-HxCDF	1080	1000	108	1130	1000	113	72-134	4	50
1,2,3,6,7,8-HxCDF	1060	1000	106	1080	1000	108	84-130	2	50
1,2,3,7,8,9-HxCDF	1020	1000	102	1040	1000	104	78-130	2	50
1,2,3,7,8-PeCDF	1010	1000	101	1050	1000	105	80-134	4	50
2,3,4,6,7,8-HxCDF	1080	1000	108	1090	1000	109	70-156	1	50
2,3,4,7,8-PeCDF	1090	1000	109	1120	1000	112	68-160	3	50
2,3,7,8-TCDF	213	200	107	219	200	110	75-158	3	50
OCDF	2190	2000	109	2210	2000	110	63-170	1	50

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1500602-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/14/15 11:56
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600966	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600954

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	221		1.48	5.00	0.74	1.001	1
1,2,3,7,8-PeCDD	1180		2.17	25.0	1.58	1.001	1
1,2,3,4,7,8-HxCDD	1120		1.84	25.0	1.26	1.000	1
1,2,3,6,7,8-HxCDD	1100		1.92	25.0	1.27	1.000	1
1,2,3,7,8,9-HxCDD	1010		1.70	25.0	1.24	1.007	1
1,2,3,4,6,7,8-HpCDD	1040		1.32	25.0	1.03	1.000	1
OCDD	2210		1.11	50.0	0.88	1.000	1
2,3,7,8-TCDF	213		1.38	5.00	0.76	1.001	1
1,2,3,7,8-PeCDF	1010		1.57	25.0	1.55	1.000	1
2,3,4,7,8-PeCDF	1090		1.60	25.0	1.53	1.001	1
1,2,3,4,7,8-HxCDF	1080		0.816	25.0	1.23	1.000	1
1,2,3,6,7,8-HxCDF	1060		0.799	25.0	1.23	1.000	1
1,2,3,7,8,9-HxCDF	1020		1.02	25.0	1.24	1.000	1
2,3,4,6,7,8-HxCDF	1080		0.834	25.0	1.20	1.000	1
1,2,3,4,6,7,8-HpCDF	1080		1.41	25.0	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	1050		1.76	25.0	1.01	1.000	1
OCDF	2190		1.41	50.0	0.89	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1500602-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/14/15 11:56
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600966	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600954

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	221		1.48	5.00	0.74		1
Total Penta-Dioxins	1180		2.17	25.0	1.58		1
Total Hexa-Dioxins	3230		1.82	25.0	1.26		1
Total Hepta-Dioxins	1040		1.32	25.0	1.03		1
Total Tetra-Furans	215		1.38	5.00	0.76		1
Total Penta-Furans	2120		1.58	25.0	1.75		1
Total Hexa-Furans	4230		0.859	25.0	1.23		1
Total Hepta-Furans	2130		1.57	25.0	1.03		1

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Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1500602-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/14/15 11:56
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600966	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600954

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	1243.963	62		25-164	0.79	1.020
13C-1,2,3,7,8-PeCDD	2000	1627.557	81		25-181	1.58	1.182
13C-1,2,3,4,7,8-HxCDD	2000	1636.844	82		32-141	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1788.837	89		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1423.636	71		23-140	1.07	1.066
13C-OCDD	4000	2928.700	73		17-157	0.89	1.141
13C-2,3,7,8-TCDF	2000	1444.864	72		24-169	0.78	0.993
13C-1,2,3,7,8-PeCDF	2000	1637.271	82		24-185	1.58	1.141
13C-2,3,4,7,8-PeCDF	2000	1604.405	80		21-178	1.55	1.173
13C-1,2,3,4,7,8-HxCDF	2000	1521.511	76		26-152	0.51	0.972
13C-1,2,3,6,7,8-HxCDF	2000	1626.638	81		26-123	0.51	0.975
13C-1,2,3,7,8,9-HxCDF	2000	1388.518	69		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1499.234	75		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1329.878	66		28-143	0.43	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1204.385	60		26-138	0.43	1.079
37Cl-2,3,7,8-TCDD	800	539.098	67		35-197	NA	1.021

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1500602-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/14/15 12:45
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600967	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600954

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	232		0.379	5.00	0.78	1.001	1
1,2,3,7,8-PeCDD	1210		0.502	25.0	1.55	1.000	1
1,2,3,4,7,8-HxCDD	1150		0.368	25.0	1.25	1.000	1
1,2,3,6,7,8-HxCDD	1130		0.379	25.0	1.25	1.000	1
1,2,3,7,8,9-HxCDD	1070		0.337	25.0	1.22	1.007	1
1,2,3,4,6,7,8-HpCDD	1080		0.432	25.0	1.03	1.000	1
OCDD	2230		0.365	50.0	0.88	1.000	1
2,3,7,8-TCDF	219		0.485	5.00	0.75	1.001	1
1,2,3,7,8-PeCDF	1050		0.408	25.0	1.55	1.001	1
2,3,4,7,8-PeCDF	1120		0.412	25.0	1.53	1.000	1
1,2,3,4,7,8-HxCDF	1130		0.250	25.0	1.23	1.000	1
1,2,3,6,7,8-HxCDF	1080		0.230	25.0	1.23	1.000	1
1,2,3,7,8,9-HxCDF	1040		0.276	25.0	1.22	1.000	1
2,3,4,6,7,8-HxCDF	1090		0.239	25.0	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	1090		1.04	25.0	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	1080		1.22	25.0	1.02	1.000	1
OCDF	2210		0.367	50.0	0.90	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1500602-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/14/15 12:45
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600967	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600954

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	232		0.379	5.00	0.78		1
Total Penta-Dioxins	1210		0.502	25.0	1.55		1
Total Hexa-Dioxins	3350		0.362	25.0	1.25		1
Total Hepta-Dioxins	1080		0.432	25.0	0.90		1
Total Tetra-Furans	219		0.485	5.00	0.75		1
Total Penta-Furans	2170		0.410	25.0	1.55		1
Total Hexa-Furans	4340		0.248	25.0	1.23		1
Total Hepta-Furans	2170		1.13	25.0	1.03		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	San Jacinto River Coalition	**Service Request:**	E1500972
Project:	San Jacinto River Coalition/SJRC Rawl	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1500602-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	10/14/15 12:45
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	10/8/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P600967	**Blank File Name:**	P600942
ICAL Date:	08/19/15	**Cal Ver. File Name:**	P600954

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	1266.519	63		25-164	0.80	1.019
13C-1,2,3,7,8-PeCDD	2000	1726.806	86		25-181	1.58	1.182
13C-1,2,3,4,7,8-HxCDD	2000	1675.694	84		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1846.407	92		28-130	1.25	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1502.014	75		23-140	1.05	1.066
13C-OCDD	4000	3109.667	78		17-157	0.89	1.141
13C-2,3,7,8-TCDF	2000	1431.389	72		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1692.167	85		24-185	1.56	1.141
13C-2,3,4,7,8-PeCDF	2000	1696.197	85		21-178	1.57	1.173
13C-1,2,3,4,7,8-HxCDF	2000	1528.751	76		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1657.651	83		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1567.363	78		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1609.478	80		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1357.743	68		28-143	0.43	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1307.443	65		26-138	0.43	1.079
37Cl-2,3,7,8-TCDD	800	542.189	68		35-197	NA	1.020

Chromatograms and Selected Ion Monitoring

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E1500972

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
1R

Run #13 Filename P600918 Samp: 1 Inj: 1 Acquired: 12-OCT-15 17:57:00
Processed: 21-OCT-15 18:55:01 Sample ID: E1500972-001

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	0.941
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	yes	0.987
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.189
5	Unk	1,2,3,6,7,8-HxCDF	NotFnd	*	*	*	no	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.116
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	38:32	2.716e+01	3.105e+01	0.87	no	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	no	1.287
10	Unk	OCDF	42:24	4.045e+01	5.928e+01	0.68	no	no	1.257
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.010
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	yes	1.021
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	yes	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	39:27	7.331e+01	8.854e+01	0.83	no	no	1.034
17	Unk	OCDD	42:12	4.219e+02	4.683e+02	0.90	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	28:10	7.906e+04	1.010e+05	0.78	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	32:21	1.240e+05	7.938e+04	1.56	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:16	1.242e+05	7.941e+04	1.56	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	35:56	4.983e+04	9.759e+04	0.51	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:02	5.825e+04	1.128e+05	0.52	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	36:32	5.477e+04	1.059e+05	0.52	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:17	4.835e+04	9.462e+04	0.51	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:32	3.134e+04	7.151e+04	0.44	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:55	3.089e+04	6.979e+04	0.44	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	28:56	5.758e+04	7.210e+04	0.80	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	33:33	9.363e+04	5.880e+04	1.59	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	36:40	7.414e+04	5.906e+04	1.26	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	36:45	7.657e+04	6.147e+04	1.25	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:26	5.887e+04	5.604e+04	1.05	yes	no	0.892
32	IS	13C-OCDD	42:11	7.282e+04	8.161e+04	0.89	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	28:22	8.360e+04	1.040e+05	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:60	1.140e+05	9.078e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:57	6.133e+04				no	1.263

$$\text{OCDD} = \frac{(4.219e{+}02 + 4.683e{+}02) \times 4000 \text{ pg} \times 1}{(7.282e{+}04 + 8.161e{+}04) \times 1044 \text{ mL} \times 100 \;/\; 100 \times 1.111} = 19.9 \text{ pg/L}$$

MMo/23/15

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Office(281)530-5656. Fax(281)530-5887

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
1R

Run #13 Filename P600918 Samp: 1 Inj: 1 Acquired: 12-OCT-15 17:57:00
Processed: 21-OCT-15 18:55:01 LAB. ID: E1500972-001

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	1.14e+03	*	*	1.87e+03	*
2	1,2,3,7,8-PeCDF	*	9.88e+02	*	*	1.94e+03	*
3	2,3,4,7,8-PeCDF	*	9.88e+02	*	*	1.94e+03	*
4	1,2,3,4,7,8-HxCDF	*	1.22e+03	*	*	5.92e+02	*
5	1,2,3,6,7,8-HxCDF	*	1.22e+03	*	*	5.92e+02	*
6	2,3,4,6,7,8-HxCDF	*	1.22e+03	*	*	5.92e+02	*
7	1,2,3,7,8,9-HxCDF	*	1.22e+03	*	*	5.92e+02	*
8	1,2,3,4,6,7,8-HpCDF	6.39e+03	1.28e+03	5.0e+00	6.69e+03	9.72e+02	6.9e+00
9	1,2,3,4,7,8,9-HpCDF	*	1.28e+03	*	*	9.72e+02	*
10	OCDF	6.66e+03	1.01e+03	6.6e+00	1.05e+04	1.26e+03	8.4e+00
11	2,3,7,8-TCDD	*	1.83e+03	*	*	1.38e+03	*
12	1,2,3,7,8-PeCDD	*	3.20e+03	*	*	1.44e+03	*
13	1,2,3,4,7,8-HxCDD	*	6.56e+02	*	*	1.36e+03	*
14	1,2,3,6,7,8-HxCDD	*	6.56e+02	*	*	1.36e+03	*
15	1,2,3,7,8,9-HxCDD	*	6.56e+02	*	*	1.36e+03	*
16	1,2,3,4,6,7,8-HpCDD	1.53e+04	1.04e+03	1.5e+01	1.95e+04	9.08e+02	2.2e+01
17	OCDD	7.90e+04	1.23e+03	6.4e+01	8.43e+04	1.05e+03	8.0e+01
18	13C-2,3,7,8-TCDF	1.45e+07	3.48e+03	4.2e+03	1.85e+07	1.55e+03	1.2e+04
19	13C-1,2,3,7,8-PeCDF	2.35e+07	1.72e+03	1.4e+04	1.51e+07	1.74e+03	8.7e+03
20	13C-2,3,4,7,8-PeCDF	2.41e+07	1.72e+03	1.4e+04	1.53e+07	1.74e+03	8.8e+03
21	13C-1,2,3,4,7,8-HxCDF	1.12e+07	1.40e+03	8.0e+03	2.20e+07	1.12e+03	2.0e+04
22	13C-1,2,3,6,7,8-HxCDF	1.25e+07	1.40e+03	8.9e+03	2.41e+07	1.12e+03	2.2e+04
23	13C-2,3,4,6,7,8-HxCDF	1.21e+07	1.40e+03	8.6e+03	2.32e+07	1.12e+03	2.1e+04
24	13C-1,2,3,7,8,9-HxCDF	1.03e+07	1.40e+03	7.3e+03	2.02e+07	1.12e+03	1.8e+04
25	13C-1,2,3,4,6,7,8-HpCDF	7.00e+06	4.88e+03	1.4e+03	1.57e+07	4.56e+03	3.4e+03
26	13C-1,2,3,4,7,8,9-HpCDF	6.38e+06	4.88e+03	1.3e+03	1.44e+07	4.56e+03	3.2e+03
27	13C-2,3,7,8-TCDD	1.13e+07	6.02e+03	1.9e+03	1.40e+07	3.06e+03	4.6e+03
28	13C-1,2,3,7,8-PeCDD	1.82e+07	1.36e+03	1.3e+04	1.14e+07	8.00e+02	1.4e+04
29	13C-1,2,3,4,7,8-HxCDD	1.73e+07	3.04e+03	5.7e+03	1.38e+07	2.31e+03	6.0e+03
30	13C-1,2,3,6,7,8-HxCDD	1.69e+07	3.04e+03	5.6e+03	1.35e+07	2.31e+03	5.8e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.27e+07	2.03e+03	6.3e+03	1.21e+07	1.88e+03	6.5e+03
32	13C-OCDD	1.37e+07	1.45e+03	9.4e+03	1.53e+07	2.22e+03	6.9e+03
33	13C-1,2,3,4-TCDD	1.61e+07	6.02e+03	2.7e+03	2.00e+07	3.06e+03	6.5e+03
34	13C-1,2,3,7,8,9-HxCDD	2.47e+07	3.04e+03	8.1e+03	1.99e+07	2.31e+03	8.6e+03
35	37Cl-2,3,7,8-TCDD	1.15e+07	1.77e+03	6.5e+03			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (1.828e{+}03 + 1.376e{+}03) \times 2000}{(1.126e{+}07 + 1.405e{+}07) \times (\qquad) \times 1.010} =$$

ALS ENVIRONMENTAL
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ALS ENVIRONMENTAL
Peak List Summary

CLIENT ID.

1R

Entry: 44 Totals Name: Total Hepta-Dioxins

Run: 13 File: P600918 Sample:1 Injection:1 Function:4

Acquired: 12-OCT-15 17:57:00 Processed: 21-OCT-15 18:55:01

Mass: 423.7770 425.7740 Tot Response: 1.54e+02 RRF: 1.034

#	RT	Resp	Resp Ratio	Meet	Tot Resp	Name	Mod1?	Mod2
1	38:47	7.83e+01	7.60e+01	1.03	yes	1.54e+02	n	n

ALS ENVIRONMENTAL
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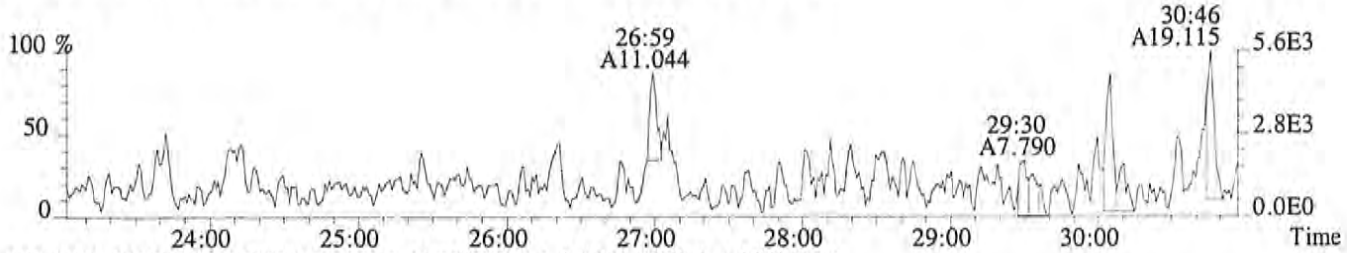
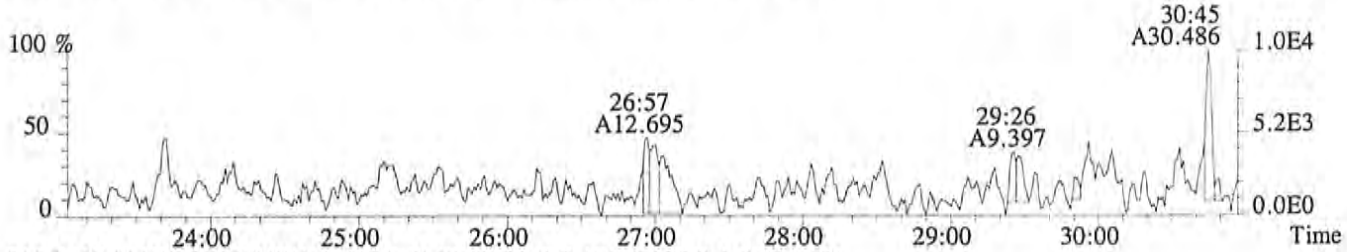
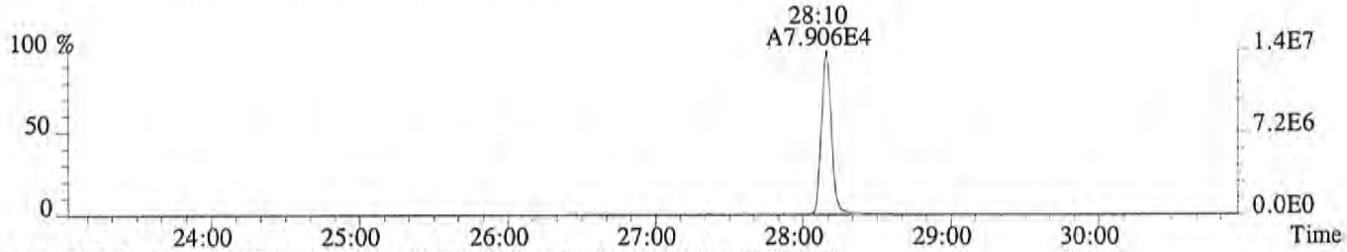
File:P600918 #1-562 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1144.0,1.00%,F,T)



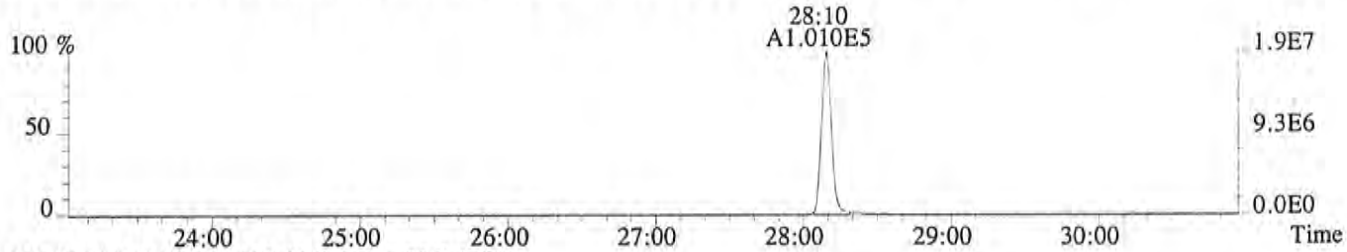
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1868.0,1.00%,F,T)



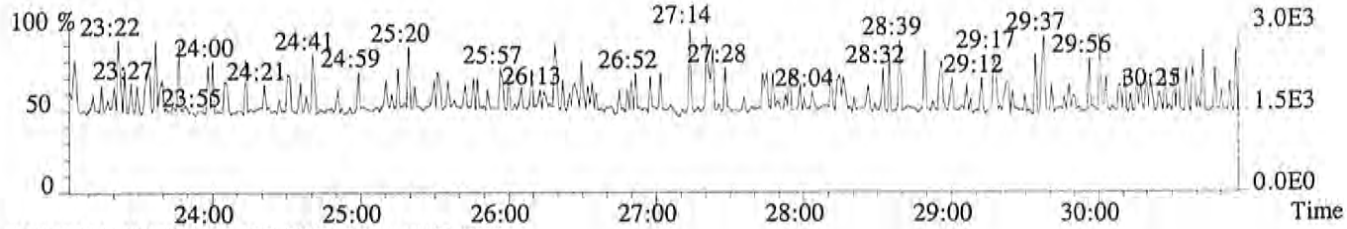
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3476.0,1.00%,F,T)



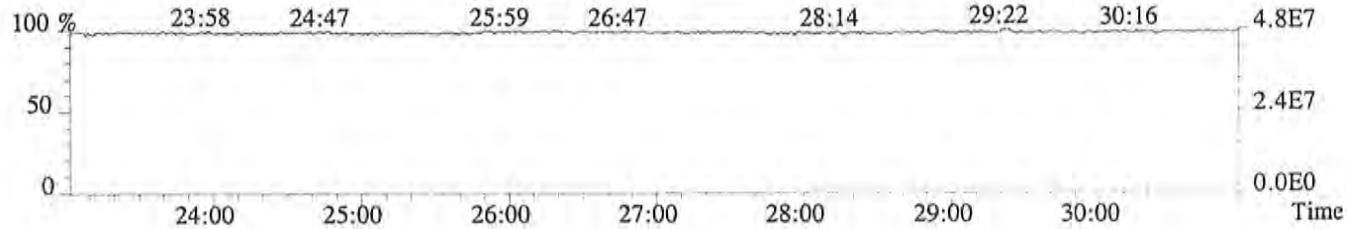
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1548.0,1.00%,F,T)



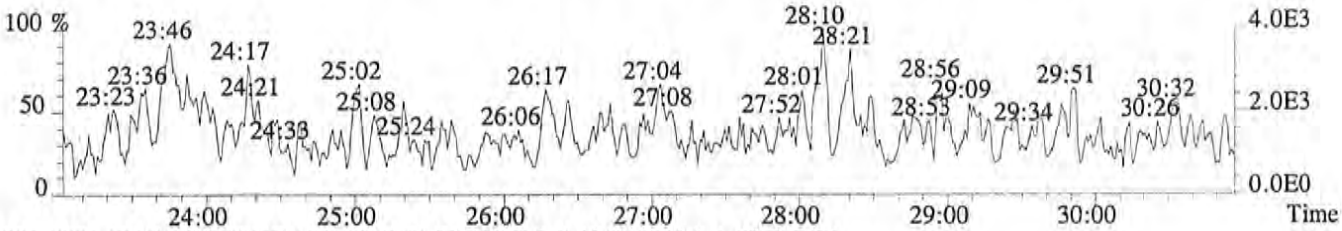
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



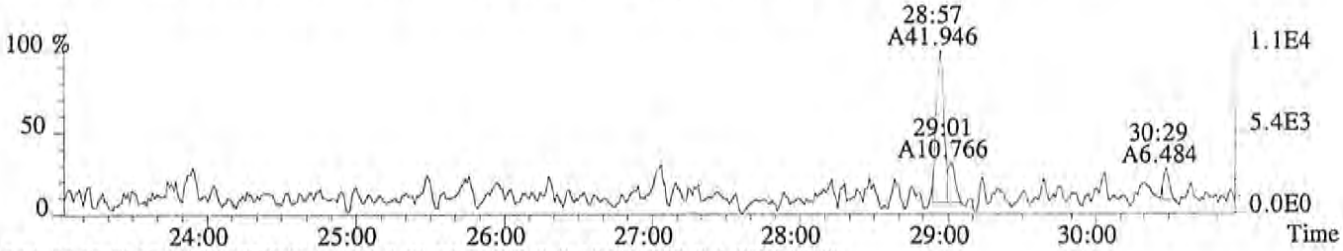
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



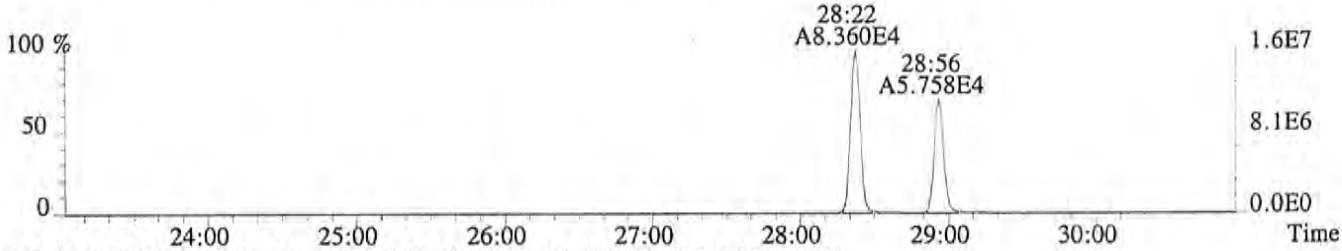
File:P600918 #1-562 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1828.0,1.00%,F,T)



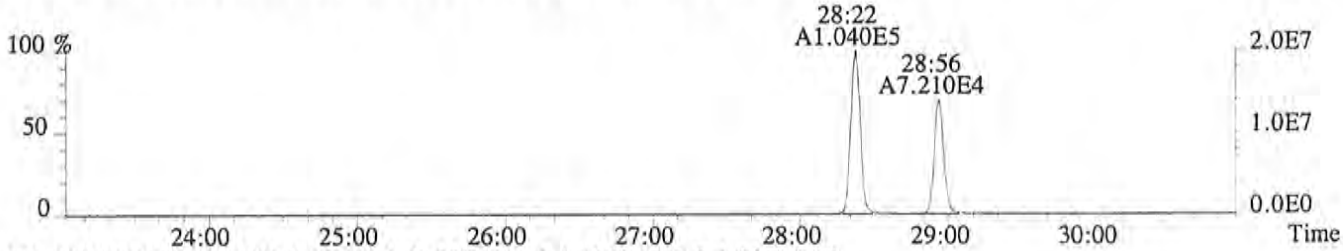
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1376.0,1.00%,F,T)



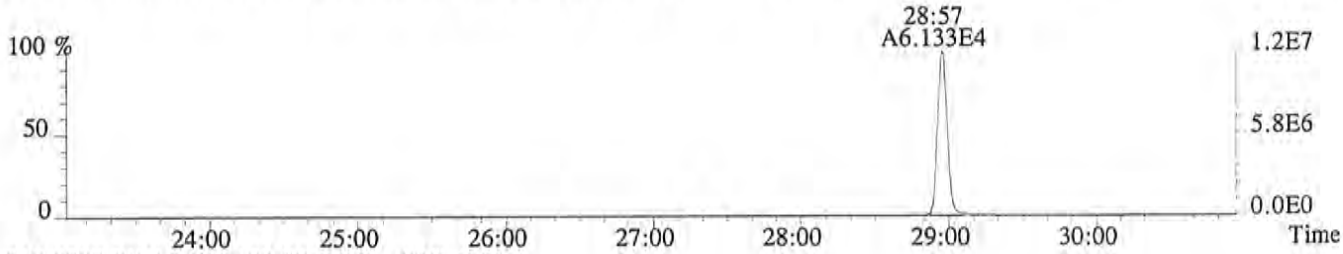
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6020.0,1.00%,F,T)



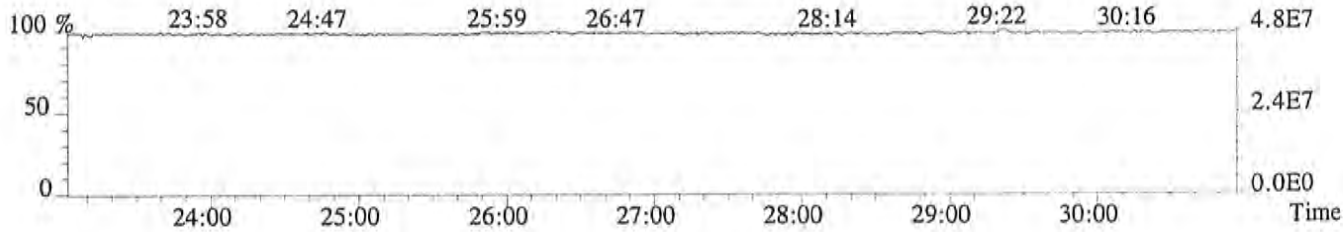
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3064.0,1.00%,F,T)



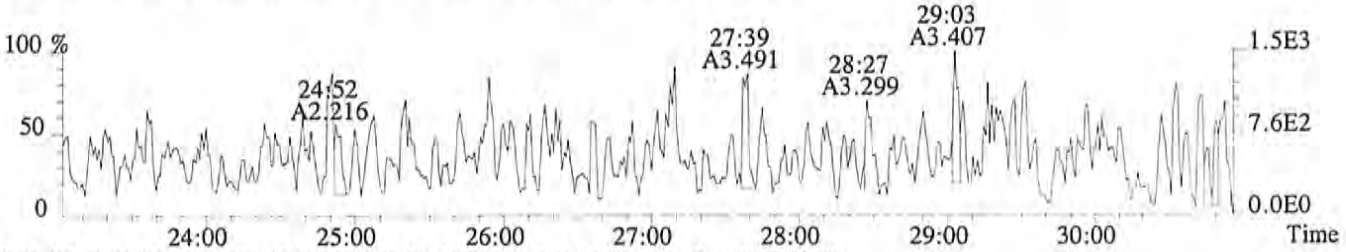
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1772.0,1.00%,F,T)



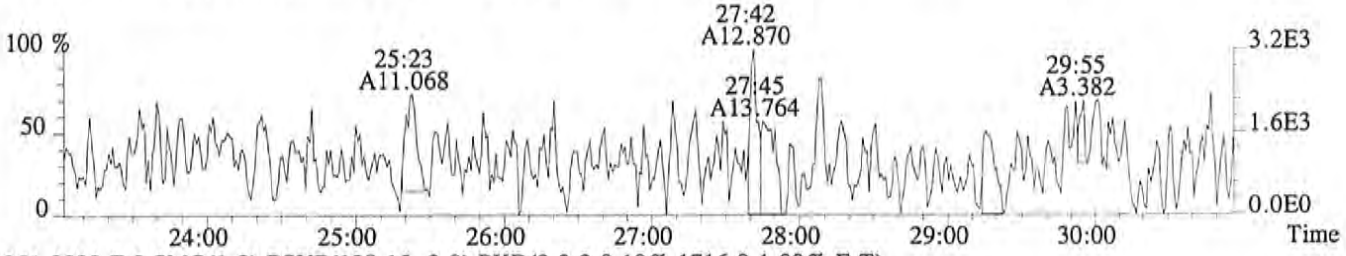
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



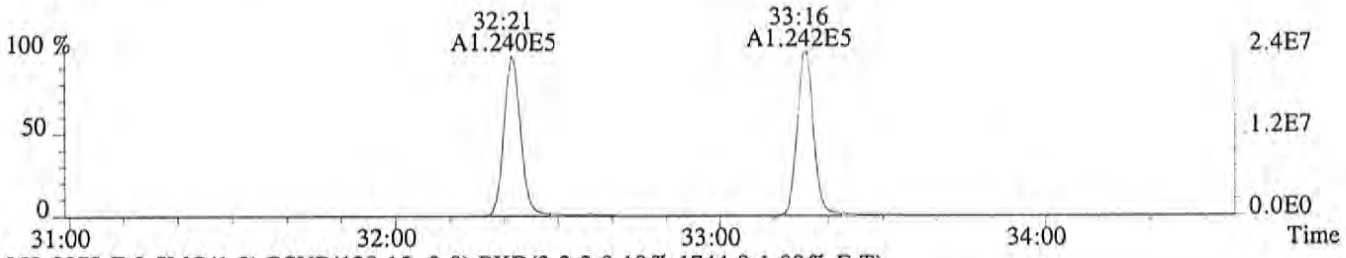
File:P600918 #1-562 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,612.0,1.00%,F,T)



341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1312.0,1.00%,F,T)



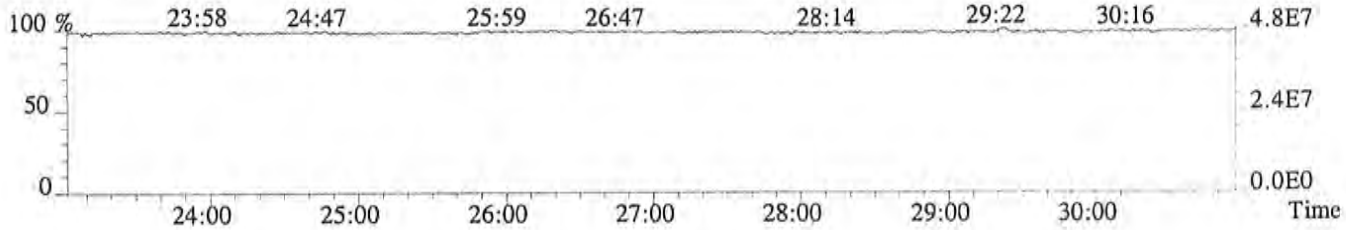
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1716.0,1.00%,F,T)



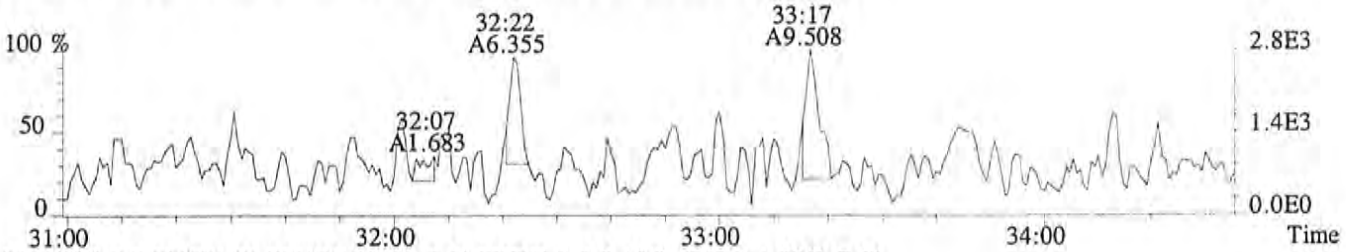
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1744.0,1.00%,F,T)

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

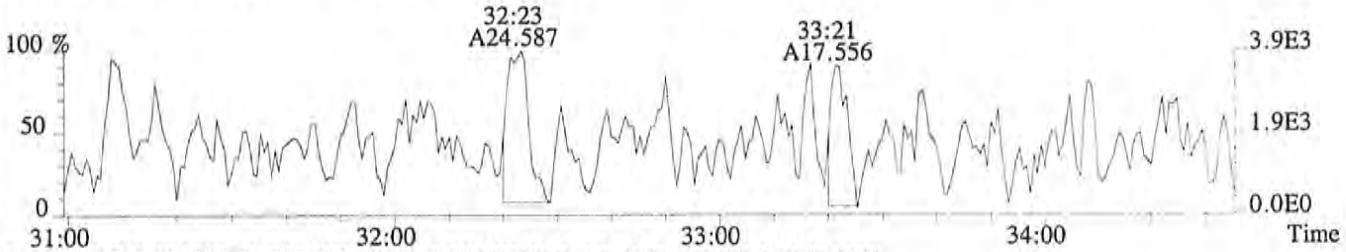
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



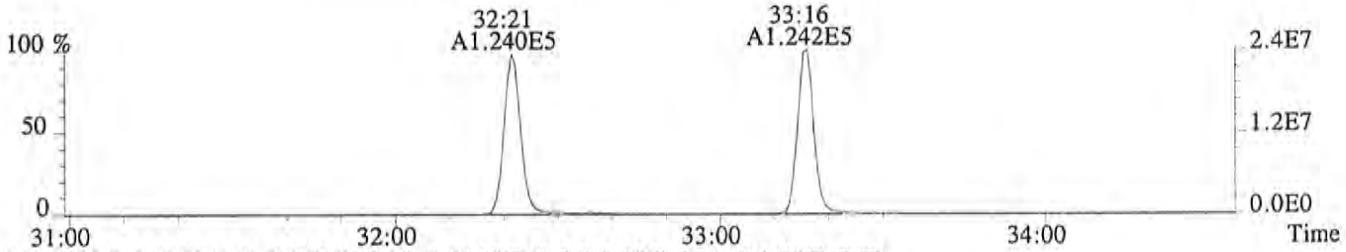
File:P600918 #1-325 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,988.0,1.00%,F,T)



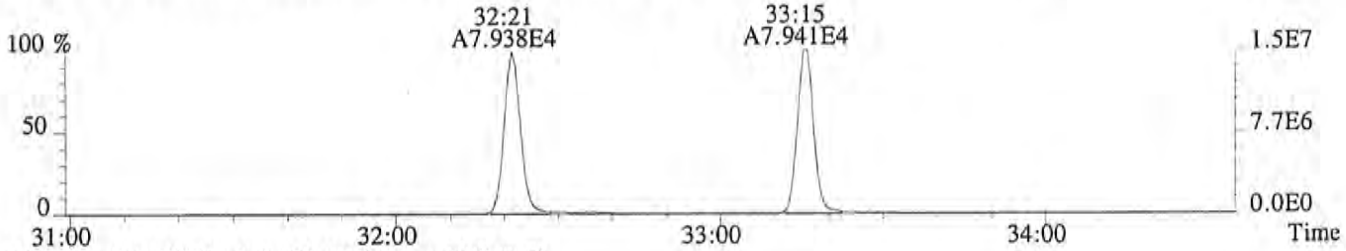
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1940.0,1.00%,F,T)



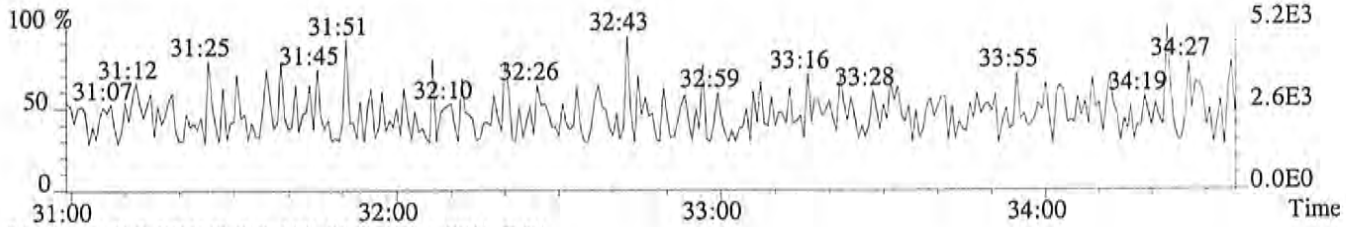
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1716.0,1.00%,F,T)



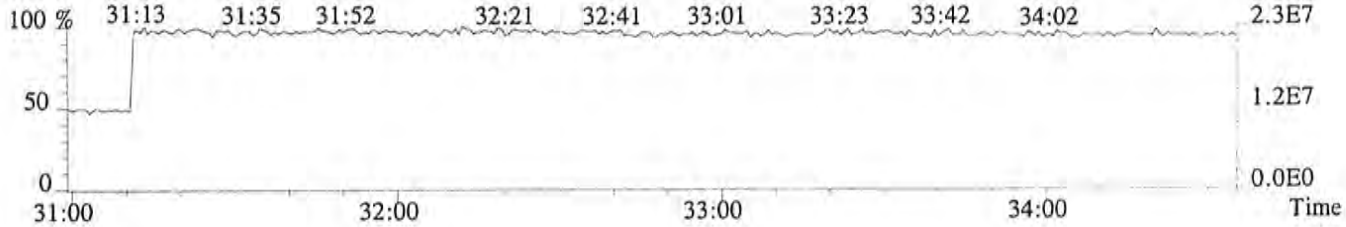
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1744.0,1.00%,F,T)



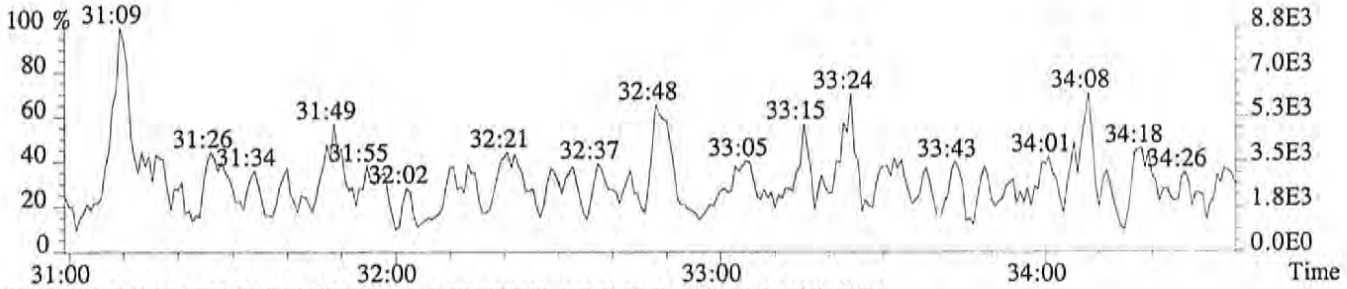
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



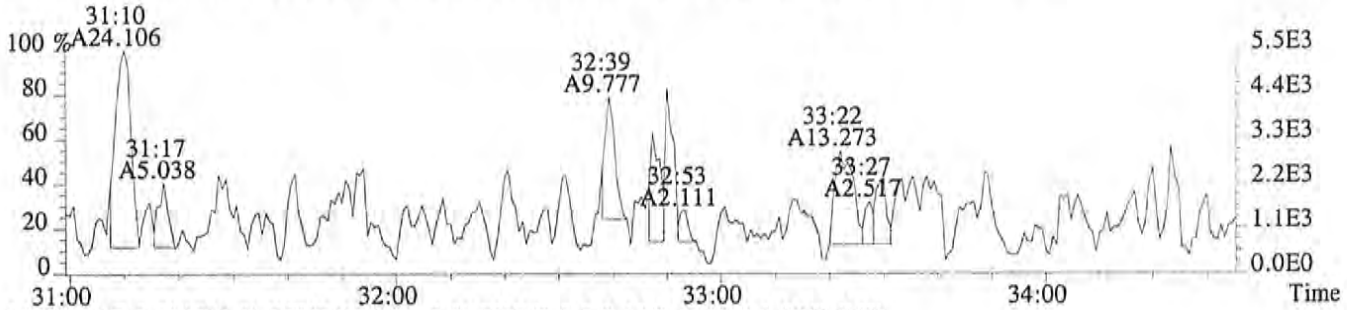
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



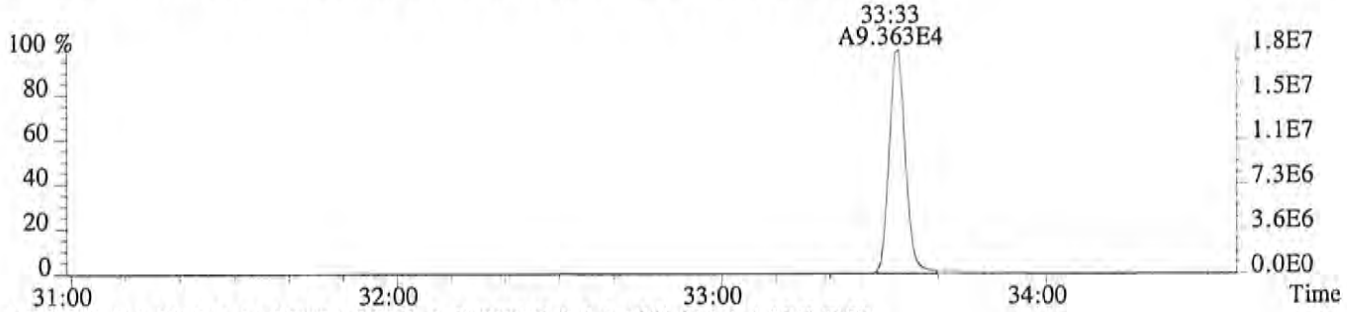
File:P600918 #1-325 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3196.0,1.00%,F,T)



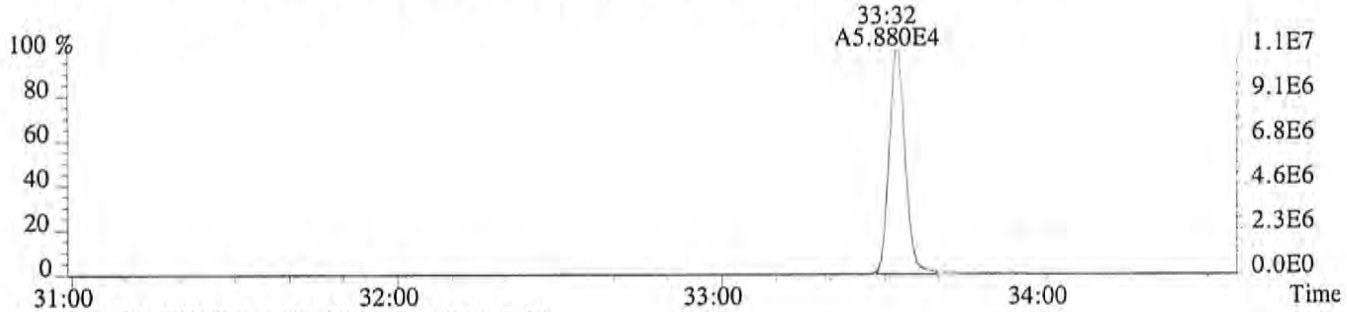
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1444.0,1.00%,F,T)



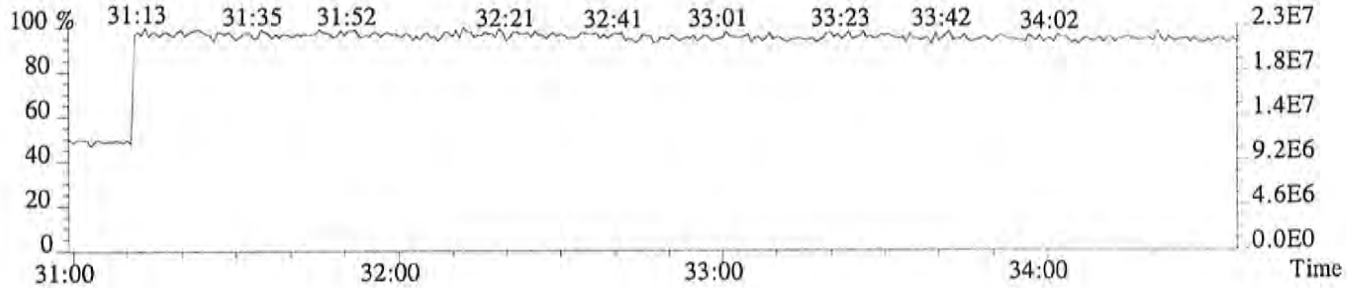
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1356.0,1.00%,F,T)



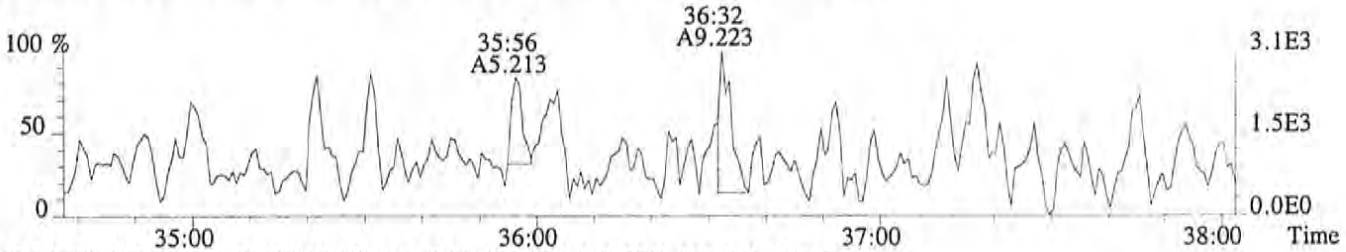
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,800.0,1.00%,F,T)



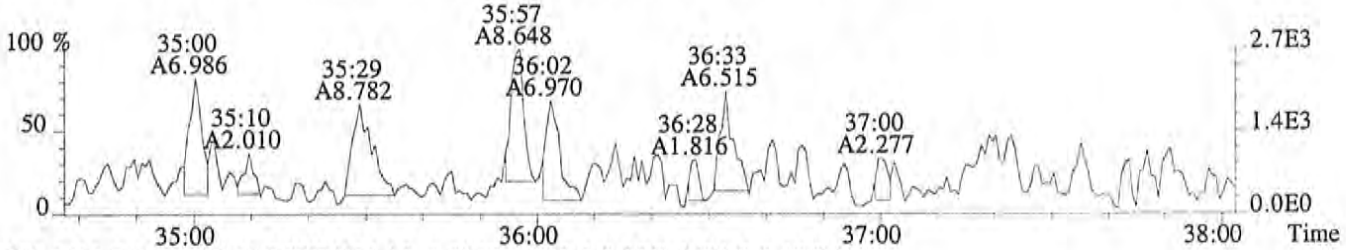
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



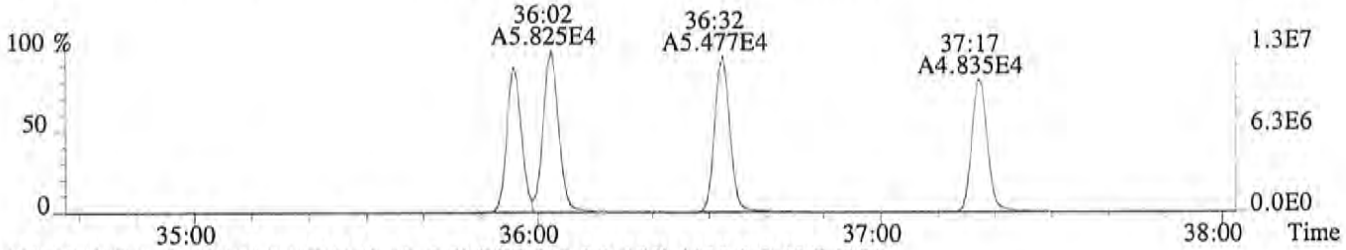
File:P600918 #1-308 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1224.0,0.40%,F,T)



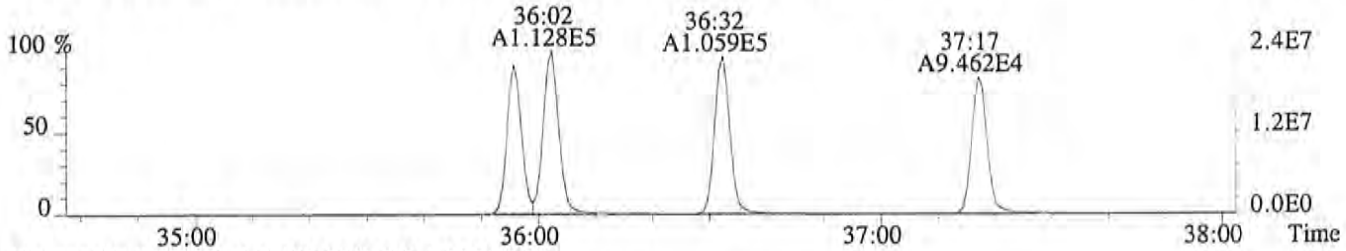
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,592.0,0.40%,F,T)



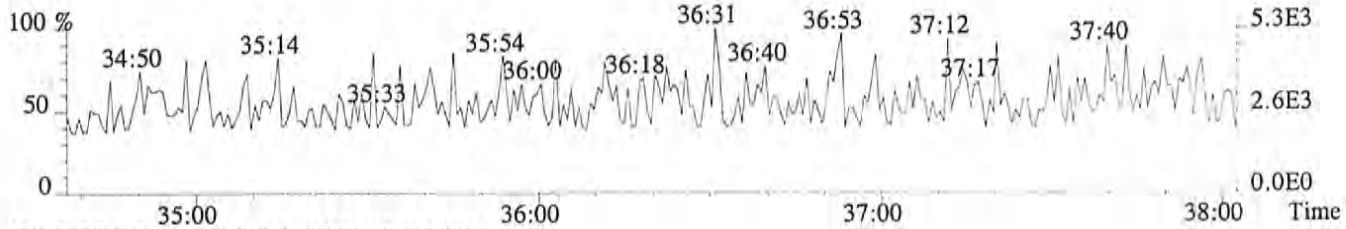
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1404.0,0.40%,F,T)



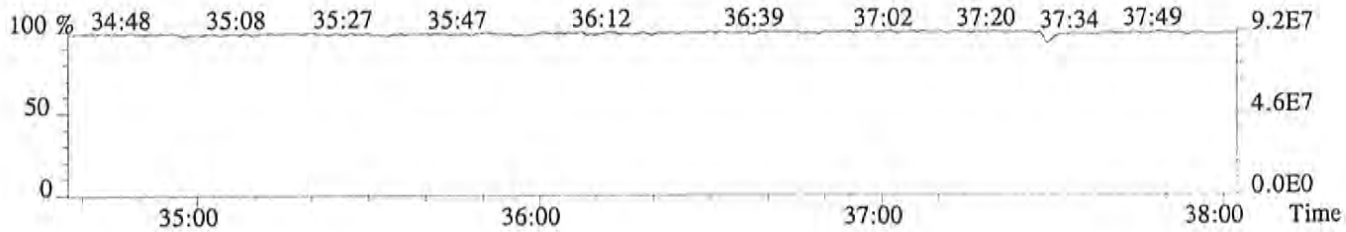
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1120.0,0.40%,F,T)



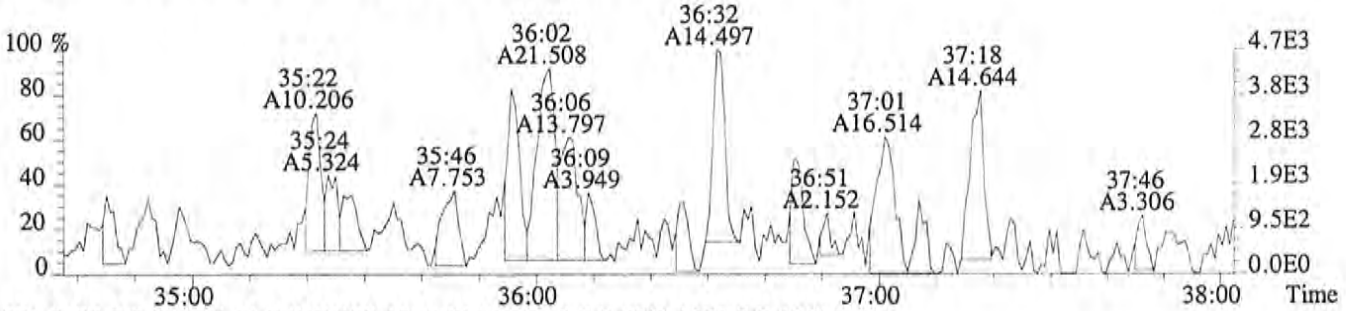
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



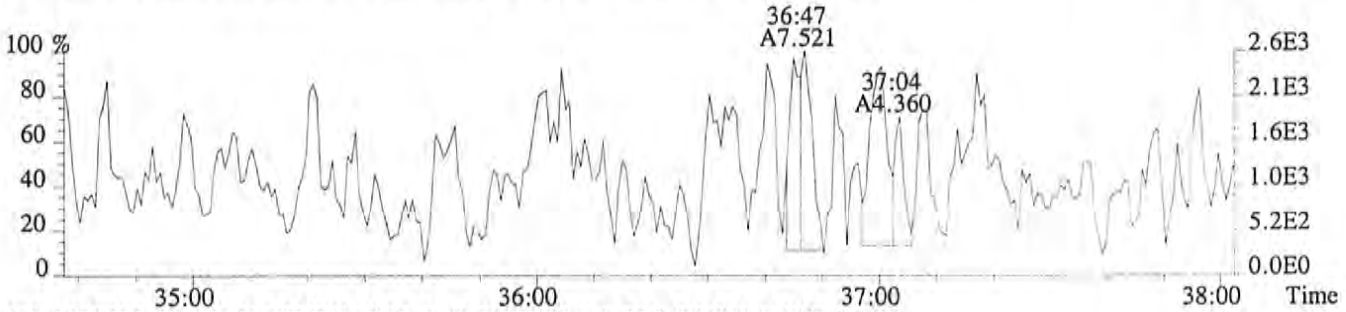
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



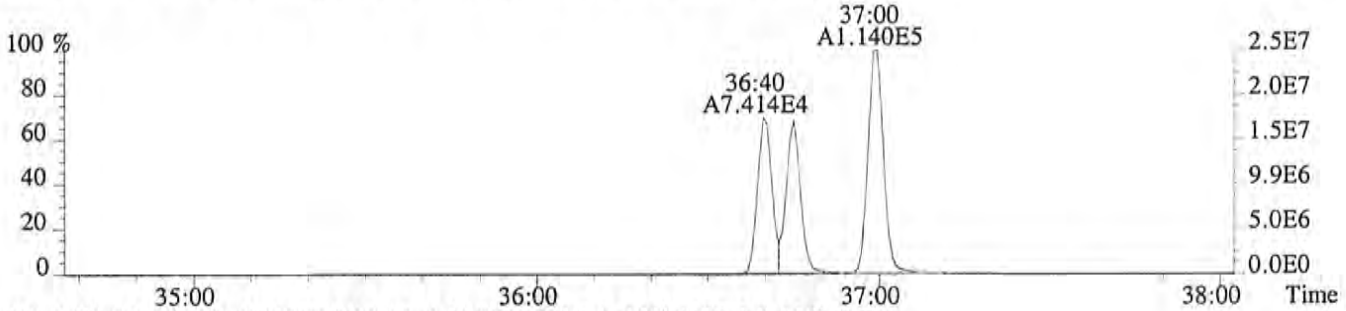
File:P600918 #1-308 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,656.0,0.40%,F,T)



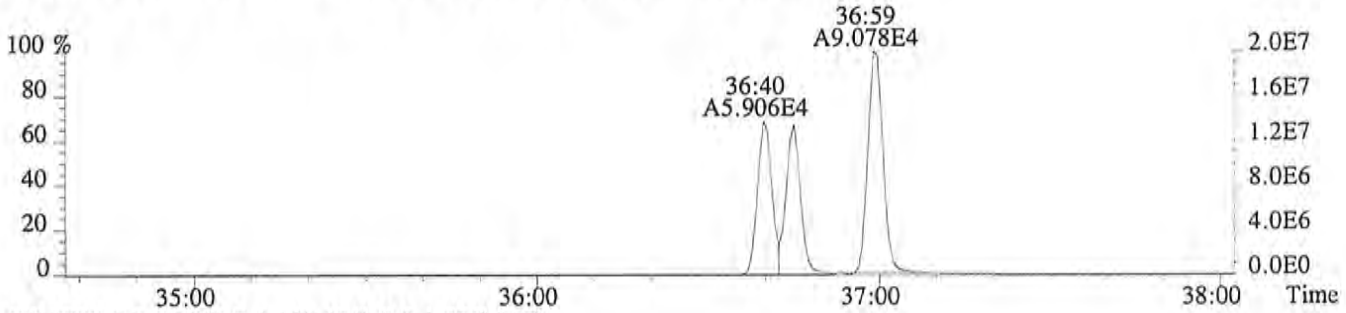
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1364.0,0.40%,F,T)



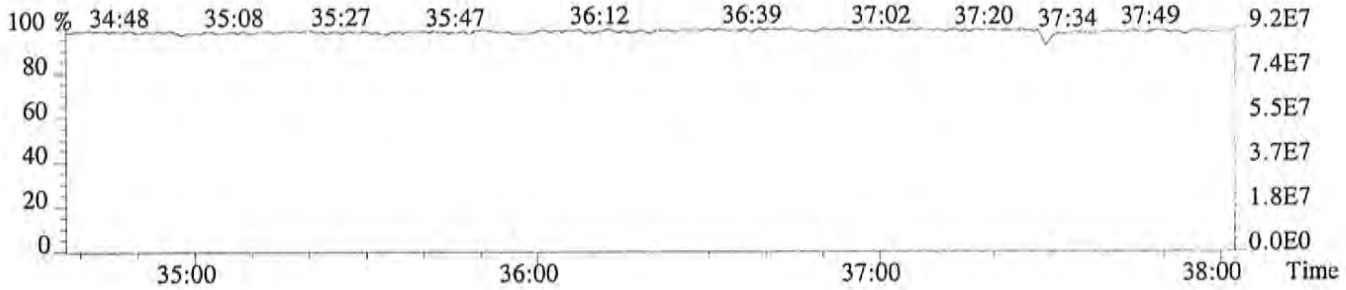
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3040.0,0.40%,F,T)



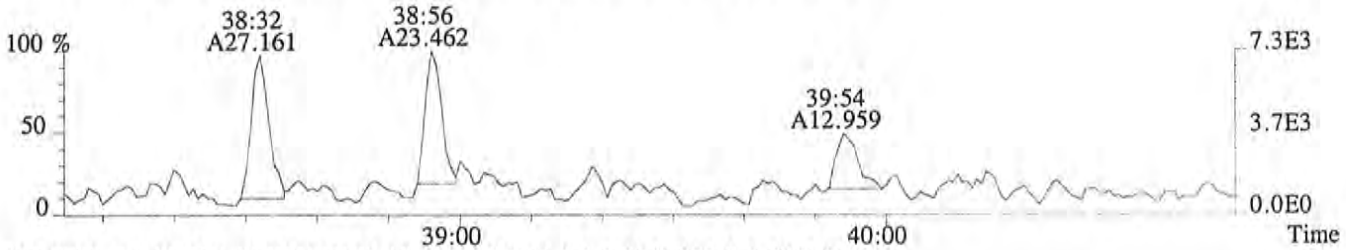
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2308.0,0.40%,F,T)



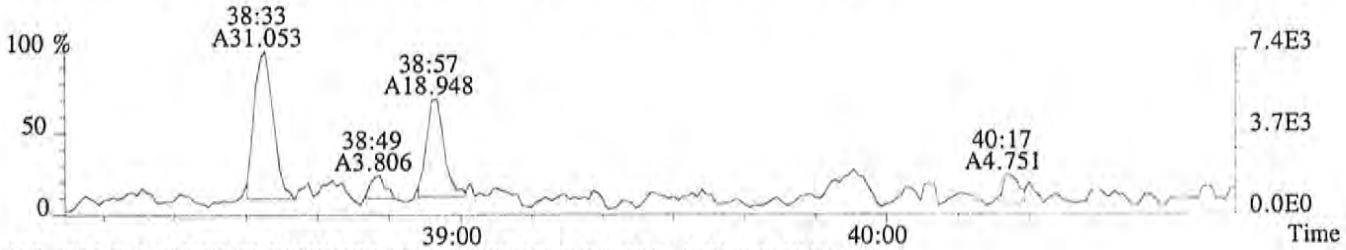
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



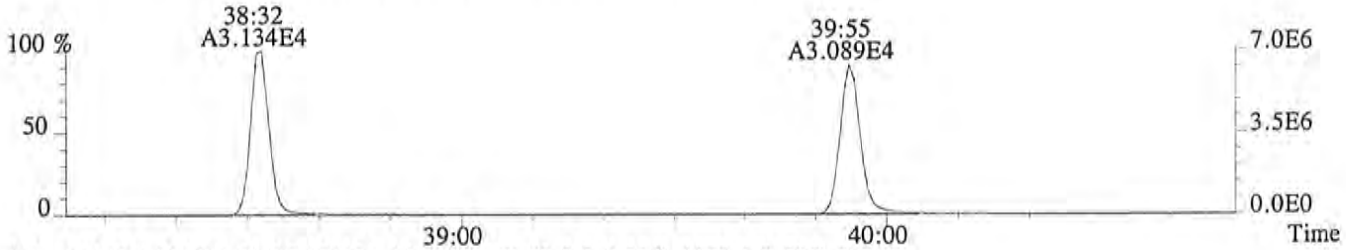
File:P600918 #1-248 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1276.0,0.50%,F,T)



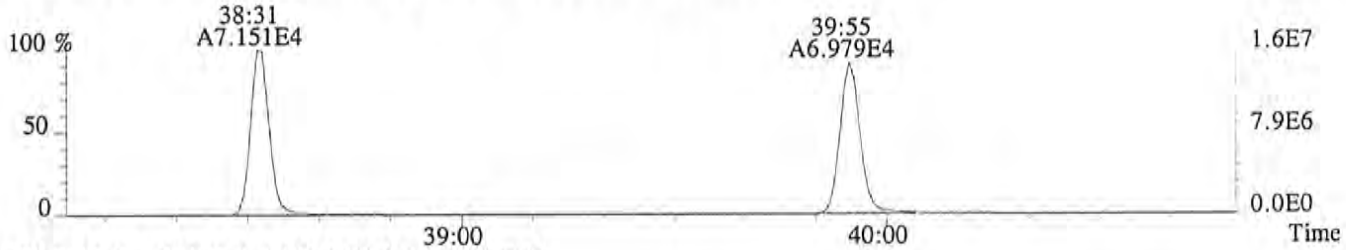
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,972.0,0.50%,F,T)



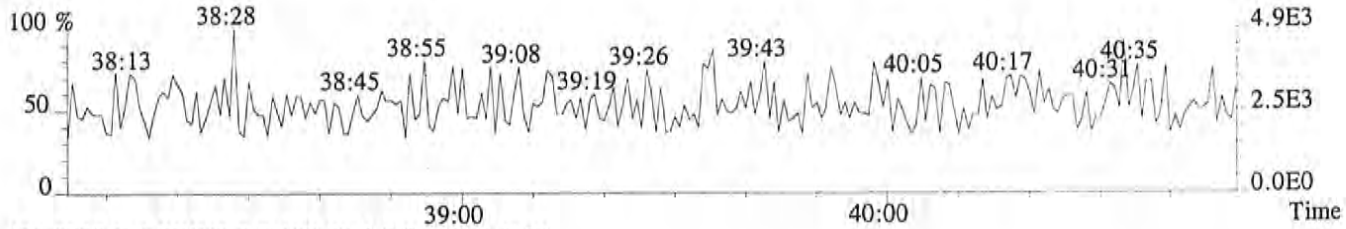
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4884.0,0.50%,F,T)



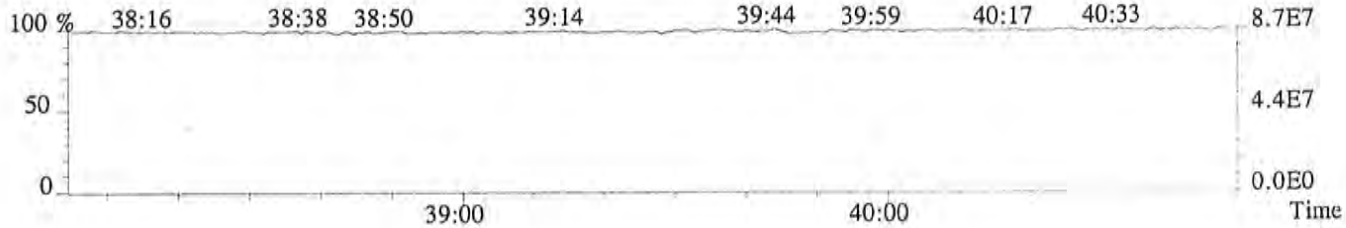
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4560.0,0.50%,F,T)



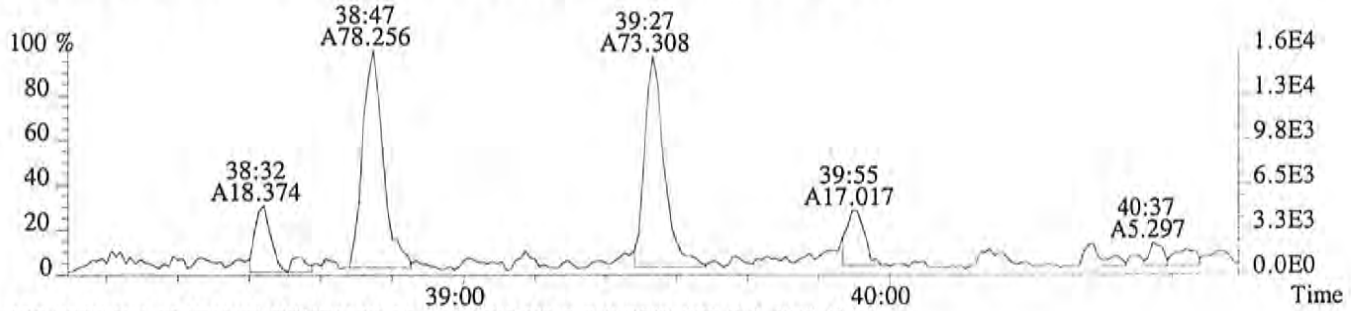
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



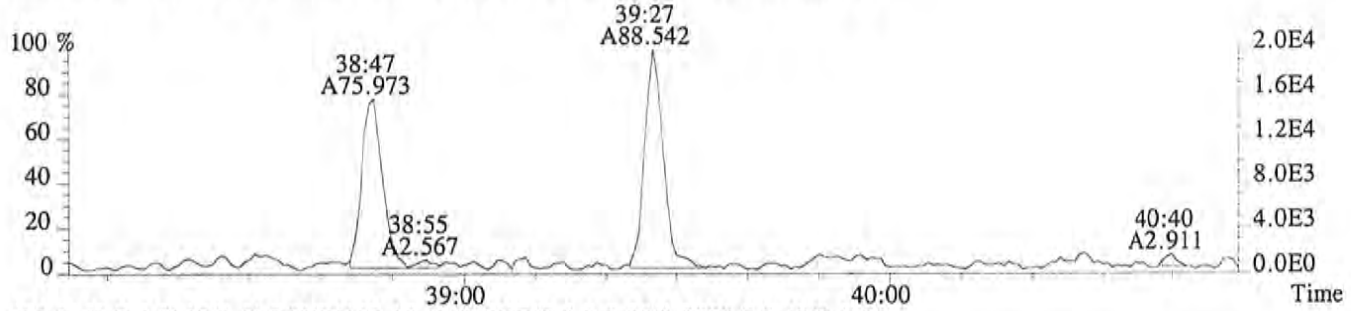
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



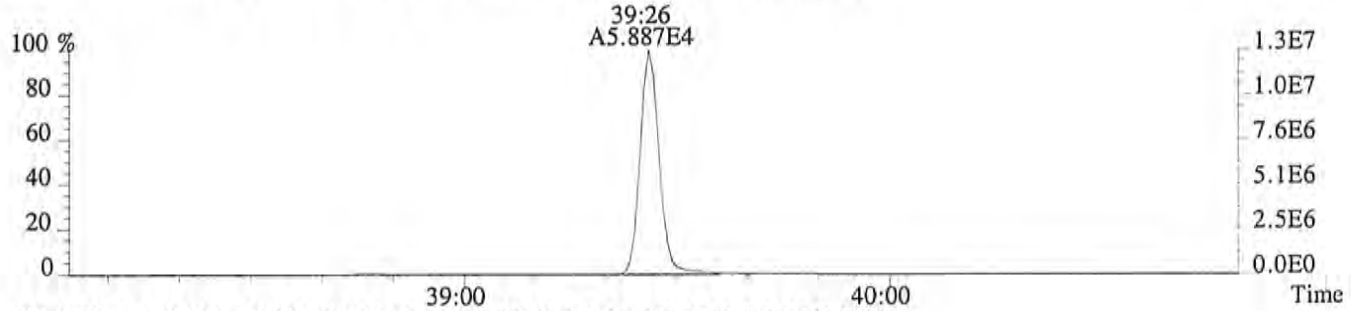
File:P600918 #1-248 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1036.0,0.40%,F,T)



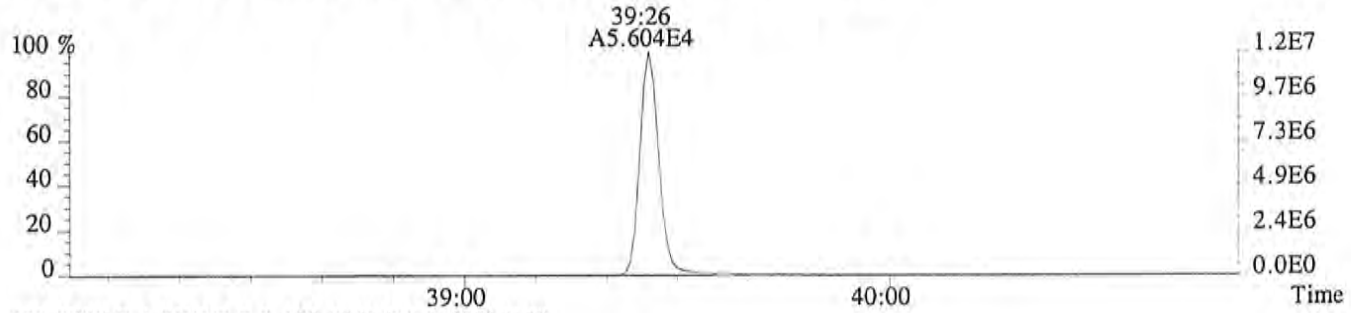
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,908.0,0.40%,F,T)



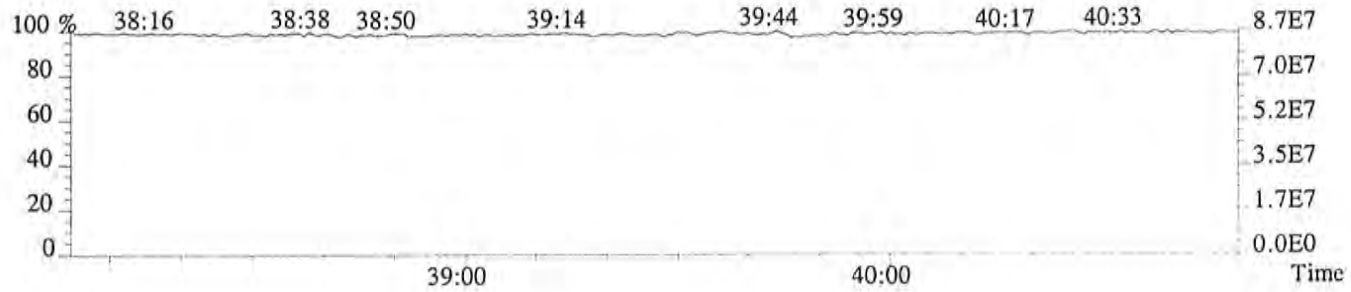
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2028.0,0.40%,F,T)



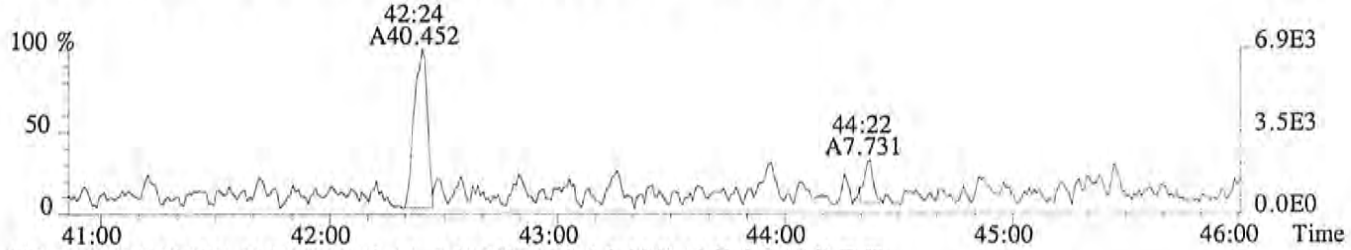
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1880.0,0.40%,F,T)



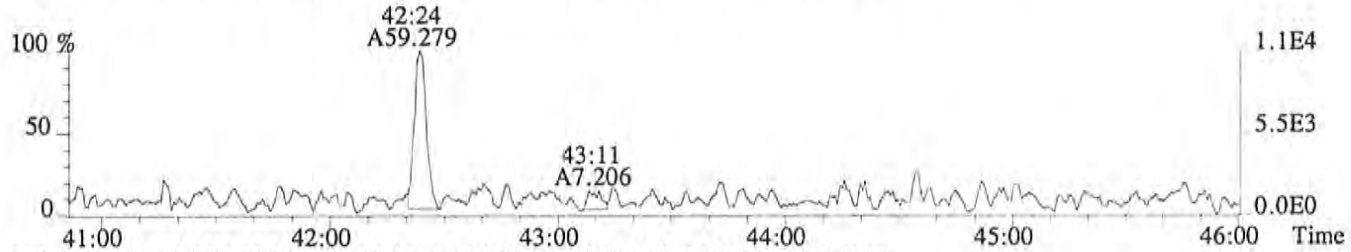
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



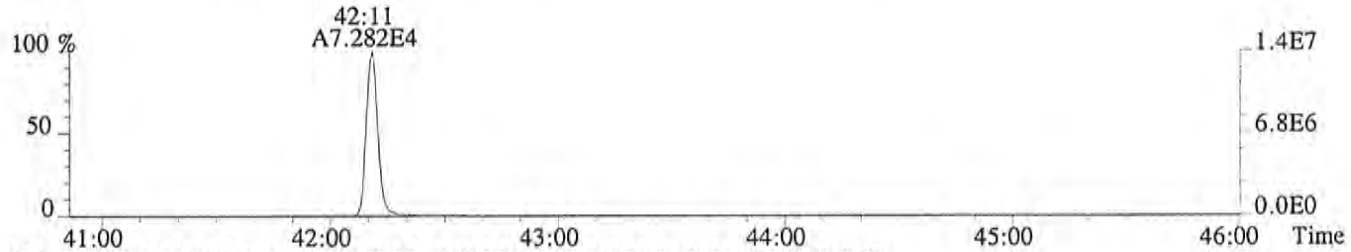
File:P600918 #1-464 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1008.0,0.40%,F,T)



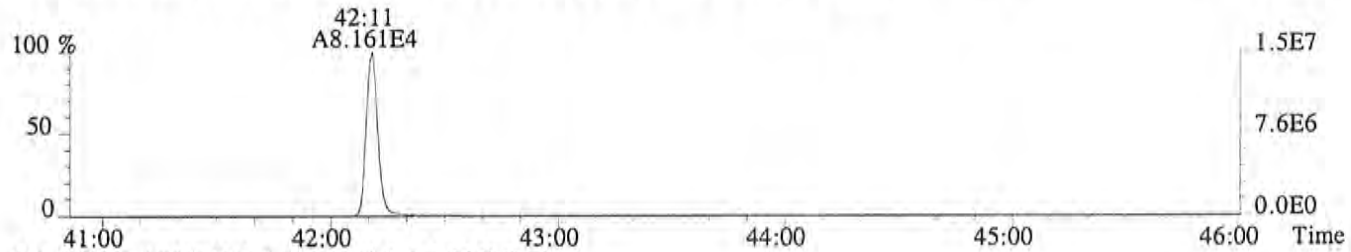
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1260.0,0.40%,F,T)



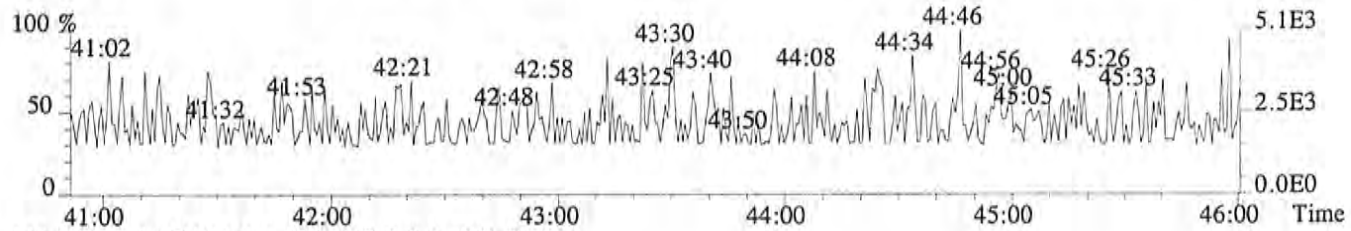
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1448.0,0.40%,F,T)



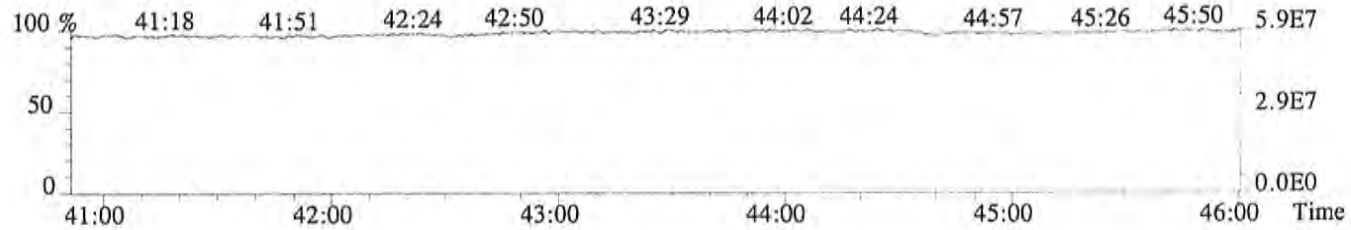
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2224.0,0.40%,F,T)



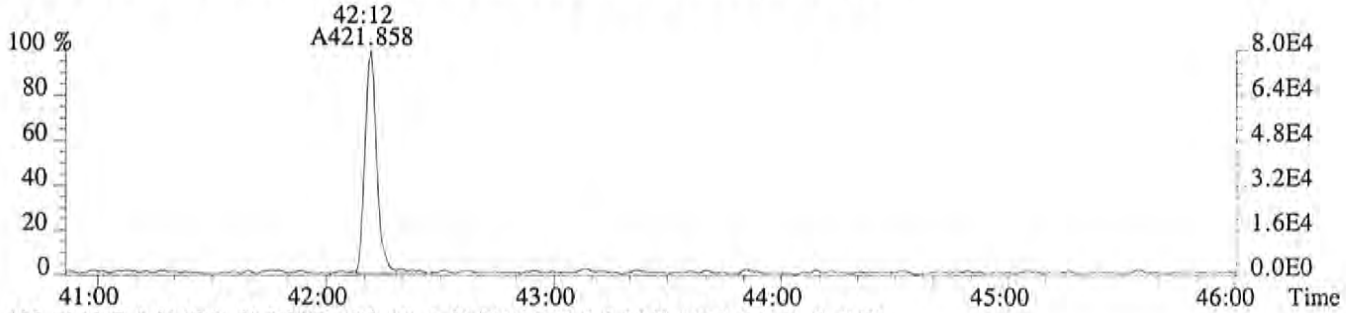
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



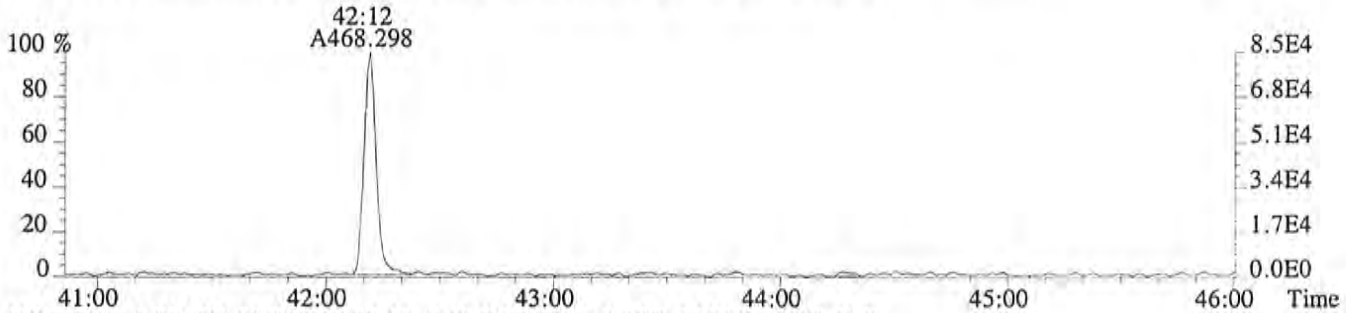
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



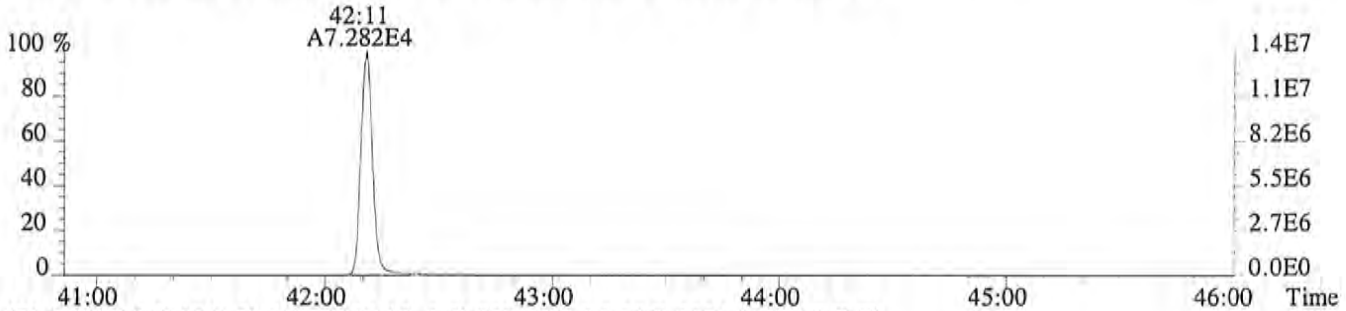
File:P600918 #1-464 Acq:12-OCT-2015 17:57:00 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:E1500972-001
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1232.0,0.40%,F,T)



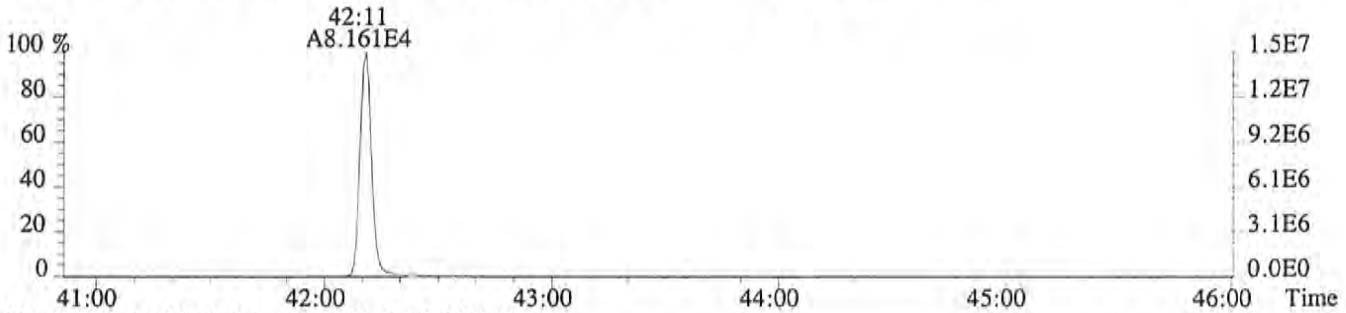
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1052.0,0.40%,F,T)



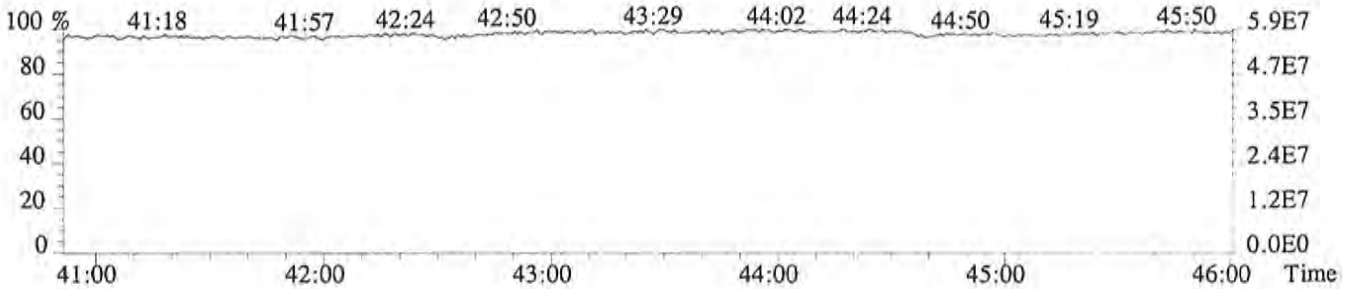
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1448.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2224.0,0.40%,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 P600942 Samp: 1 Inj: 1 Acquired: 13-OCT-15 16:12:14
Processed: 22-OCT-15 08:56:17 Sample ID: EQ1500602-01

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	NotFnd	*	*	*	no	no	0.941
2	Unk	1,2,3,7,8-PeCDF	NotFnd	*	*	*	no	no	0.987
3	Unk	2,3,4,7,8-PeCDF	NotFnd	*	*	*	no	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.189
5	Unk	1,2,3,6,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.126
6	Unk	2,3,4,6,7,8-HxCDF	NotFnd	*	*	*	no	yes	1.116
7	Unk	1,2,3,7,8,9-HxCDF	NotFnd	*	*	*	no	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	NotFnd	*	*	*	no	yes	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	NotFnd	*	*	*	no	yes	1.287
10	Unk	OCDF	NotFnd	*	*	*	no	no	1.257
11	Unk	2,3,7,8-TCDD	NotFnd	*	*	*	no	no	1.010
12	Unk	1,2,3,7,8-PeCDD	NotFnd	*	*	*	no	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	NotFnd	*	*	*	no	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	NotFnd	*	*	*	no	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	NotFnd	*	*	*	no	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	NotFnd	*	*	*	no	yes	1.034
17	Unk	OCDD	42:12	3.783e+01	4.370e+01	0.87	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	28:09	6.739e+04	8.607e+04	0.78	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	32:21	1.097e+05	7.007e+04	1.57	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:15	1.092e+05	7.024e+04	1.56	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	35:56	4.474e+04	8.742e+04	0.51	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:02	5.224e+04	1.015e+05	0.51	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	36:32	4.980e+04	9.700e+04	0.51	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:17	4.400e+04	8.528e+04	0.52	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:32	2.944e+04	6.770e+04	0.43	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:55	2.844e+04	6.427e+04	0.44	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	28:55	5.097e+04	6.400e+04	0.80	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	33:32	8.271e+04	5.217e+04	1.59	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	36:40	6.795e+04	5.388e+04	1.26	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	36:45	6.945e+04	5.499e+04	1.26	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:26	5.426e+04	5.092e+04	1.07	yes	no	0.892
32	IS	13C-OCDD	42:11	6.650e+04	7.431e+04	0.89	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	28:21	7.143e+04	8.843e+04	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:00	9.238e+04	7.348e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:57	5.388e+04				no	1.263

$$\text{OCDD} = \frac{(3.783e{+}01 + 4.370e{+}01)\ \times\ 4000\ \text{pg}\ \times\ 1}{(6.650e{+}04 + 7.431e{+}04)\ \times\ \text{g}\ \times\ /\ 100\ \times\ 1.111} =$$

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Houston, TX 77099
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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
METHOD BLANK

Run #9 Filename P600942 Samp: 1 Inj: 1 Acquired: 13-OCT-15 16:12:14
Processed: 22-OCT-15 08:56:17 LAB. ID: EQ1500602-01

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	*	1.18e+03	*	*	2.56e+03	*
2	1,2,3,7,8-PeCDF	*	7.00e+02	*	*	1.80e+03	*
3	2,3,4,7,8-PeCDF	*	7.00e+02	*	*	1.80e+03	*
4	1,2,3,4,7,8-HxCDF	*	1.10e+03	*	*	3.20e+02	*
5	1,2,3,6,7,8-HxCDF	*	1.10e+03	*	*	3.20e+02	*
6	2,3,4,6,7,8-HxCDF	*	1.10e+03	*	*	3.20e+02	*
7	1,2,3,7,8,9-HxCDF	*	1.10e+03	*	*	3.20e+02	*
8	1,2,3,4,6,7,8-HpCDF	*	9.68e+02	*	*	6.36e+02	*
9	1,2,3,4,7,8,9-HpCDF	*	9.68e+02	*	*	6.36e+02	*
10	OCDF	*	8.28e+02	*	*	1.29e+03	*
11	2,3,7,8-TCDD	*	1.84e+03	*	*	1.45e+03	*
12	1,2,3,7,8-PeCDD	*	3.65e+03	*	*	2.43e+03	*
13	1,2,3,4,7,8-HxCDD	*	1.34e+03	*	*	1.14e+03	*
14	1,2,3,6,7,8-HxCDD	*	1.34e+03	*	*	1.14e+03	*
15	1,2,3,7,8,9-HxCDD	*	1.34e+03	*	*	1.14e+03	*
16	1,2,3,4,6,7,8-HpCDD	*	1.65e+03	*	*	1.21e+03	*
17	OCDD	6.87e+03	8.04e+02	8.5e+00	7.34e+03	9.84e+02	7.5e+00
18	13C-2,3,7,8-TCDF	1.23e+07	2.68e+03	4.6e+03	1.57e+07	2.01e+03	7.8e+03
19	13C-1,2,3,7,8-PeCDF	2.09e+07	1.61e+03	1.3e+04	1.34e+07	1.57e+03	8.5e+03
20	13C-2,3,4,7,8-PeCDF	2.14e+07	1.61e+03	1.3e+04	1.38e+07	1.57e+03	8.8e+03
21	13C-1,2,3,4,7,8-HxCDF	1.00e+07	1.38e+03	7.2e+03	1.96e+07	2.30e+03	8.5e+03
22	13C-1,2,3,6,7,8-HxCDF	1.12e+07	1.38e+03	8.1e+03	2.17e+07	2.30e+03	9.4e+03
23	13C-2,3,4,6,7,8-HxCDF	1.11e+07	1.38e+03	8.0e+03	2.15e+07	2.30e+03	9.4e+03
24	13C-1,2,3,7,8,9-HxCDF	9.27e+06	1.38e+03	6.7e+03	1.82e+07	2.30e+03	7.9e+03
25	13C-1,2,3,4,6,7,8-HpCDF	6.47e+06	5.39e+03	1.2e+03	1.46e+07	3.85e+03	3.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	5.89e+06	5.39e+03	1.1e+03	1.32e+07	3.85e+03	3.4e+03
27	13C-2,3,7,8-TCDD	9.73e+06	4.76e+03	2.0e+03	1.22e+07	2.79e+03	4.4e+03
28	13C-1,2,3,7,8-PeCDD	1.62e+07	1.30e+03	1.2e+04	1.03e+07	7.80e+02	1.3e+04
29	13C-1,2,3,4,7,8-HxCDD	1.58e+07	3.26e+03	4.8e+03	1.26e+07	2.48e+03	5.1e+03
30	13C-1,2,3,6,7,8-HxCDD	1.49e+07	3.26e+03	4.6e+03	1.18e+07	2.48e+03	4.8e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.18e+07	1.65e+03	7.1e+03	1.10e+07	2.04e+03	5.4e+03
32	13C-OCDD	1.23e+07	1.91e+03	6.4e+03	1.36e+07	1.32e+03	1.0e+04
33	13C-1,2,3,4-TCDD	1.35e+07	4.76e+03	2.8e+03	1.69e+07	2.79e+03	6.0e+03
34	13C-1,2,3,7,8,9-HxCDD	2.00e+07	3.26e+03	6.1e+03	1.60e+07	2.48e+03	6.4e+03
35	37Cl-2,3,7,8-TCDD	1.04e+07	2.02e+03	5.2e+03			

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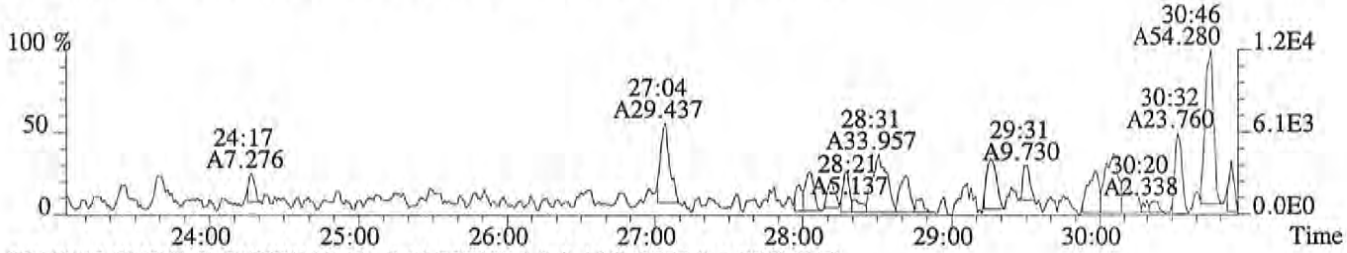
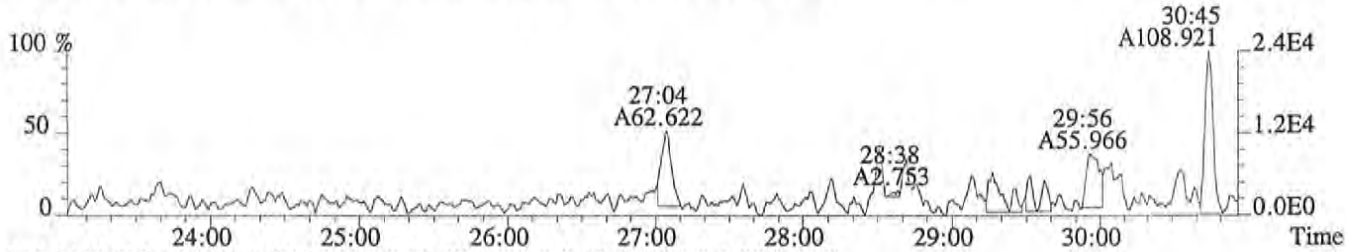
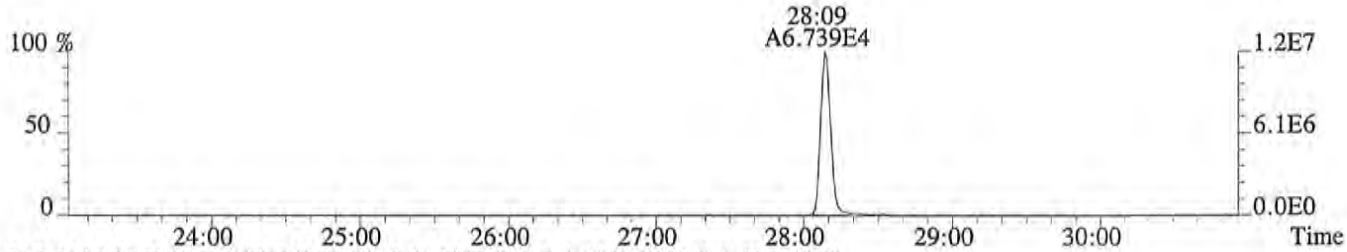
File:P600942 #1-562 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1180.0,1.00%,F,T)



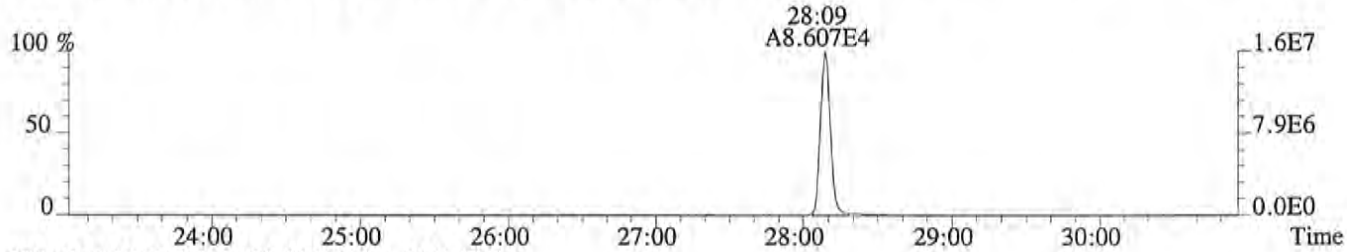
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2556.0,1.00%,F,T)



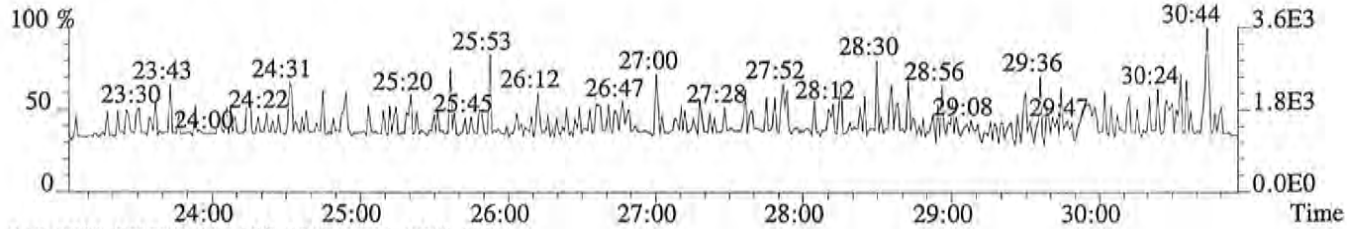
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2680.0,1.00%,F,T)



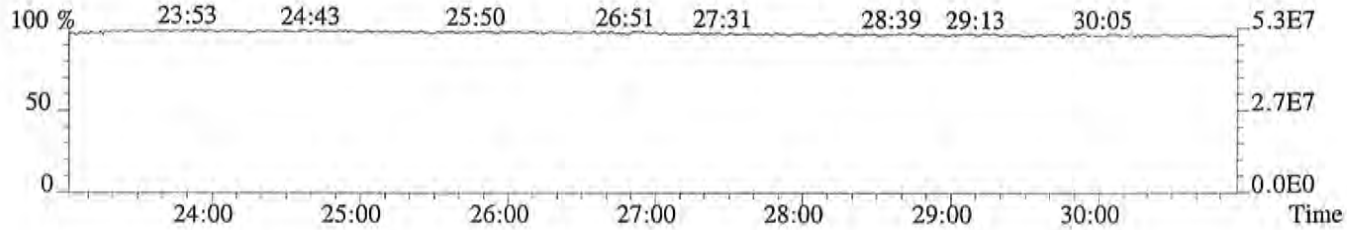
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2008.0,1.00%,F,T)



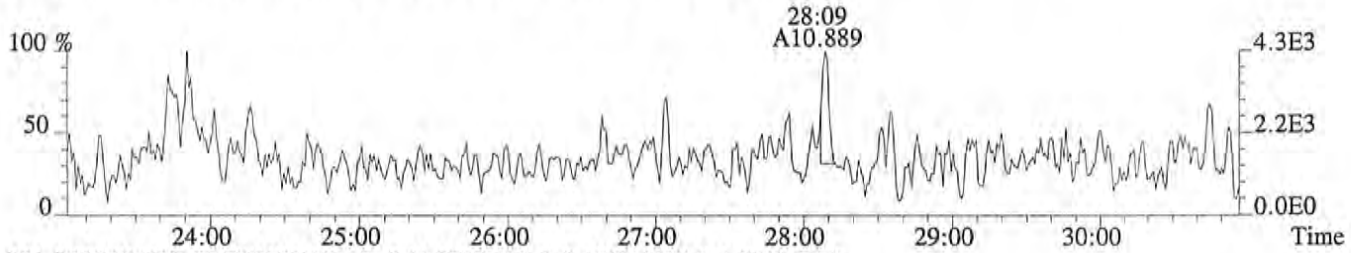
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



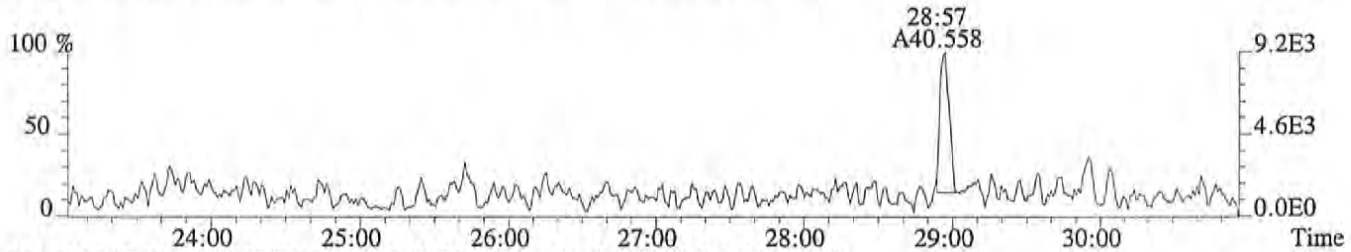
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



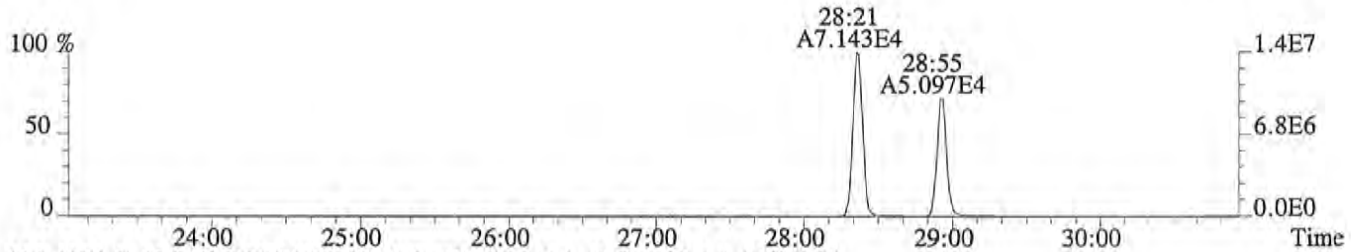
File:P600942 #1-562 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1844.0,1.00%,F,T)



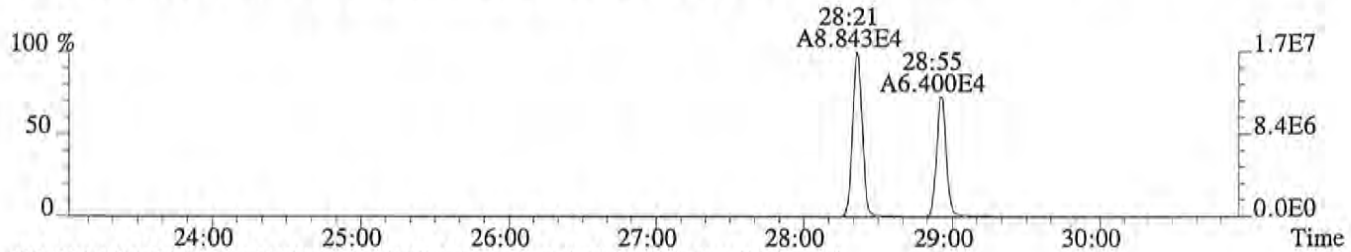
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1448.0,1.00%,F,T)



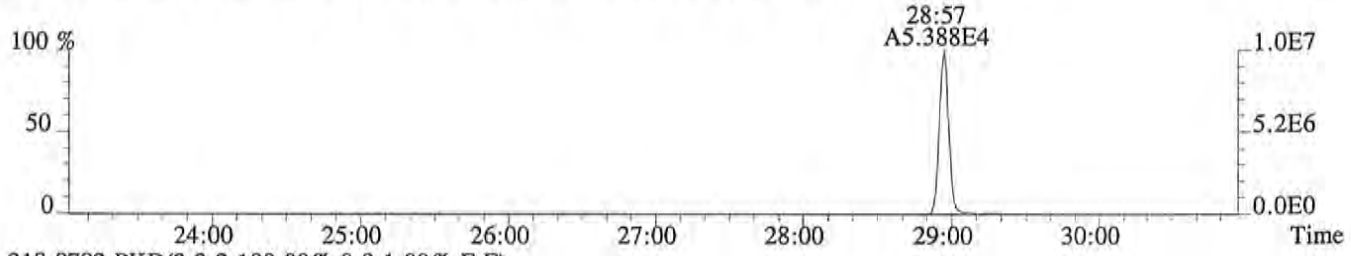
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4760.0,1.00%,F,T)



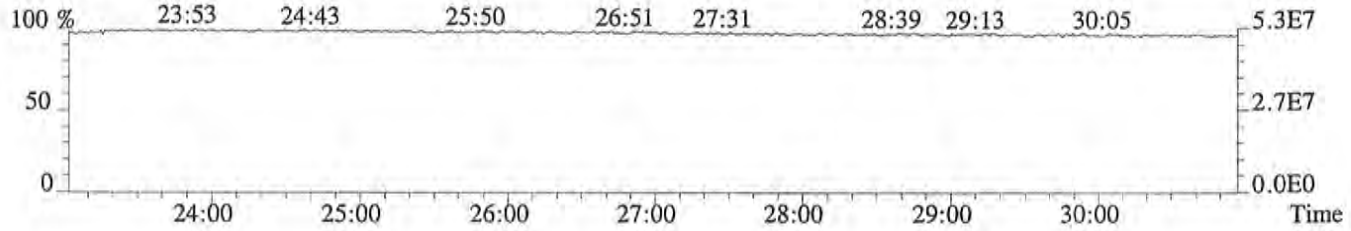
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2788.0,1.00%,F,T)



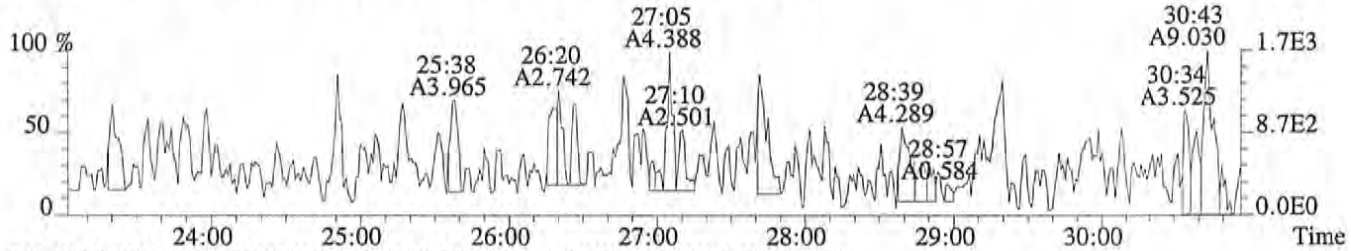
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2016.0,1.00%,F,T)



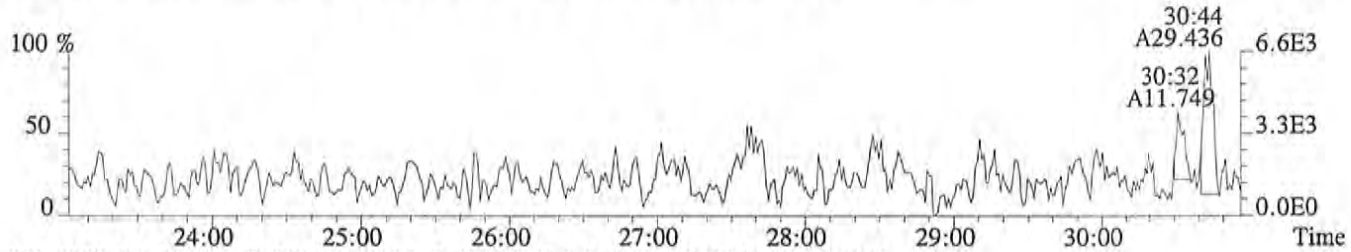
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



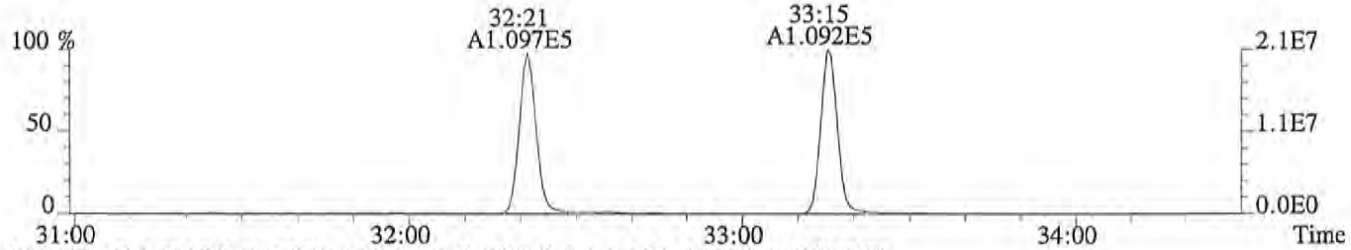
File:P600942 #1-562 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,568.0,1.00%,F,T)



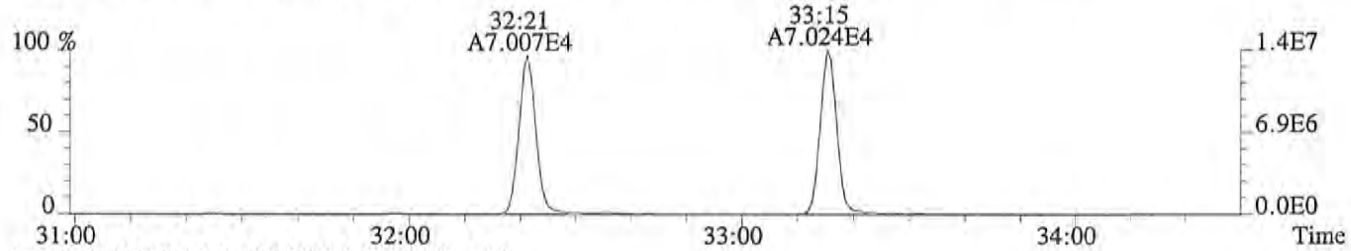
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1868.0,1.00%,F,T)



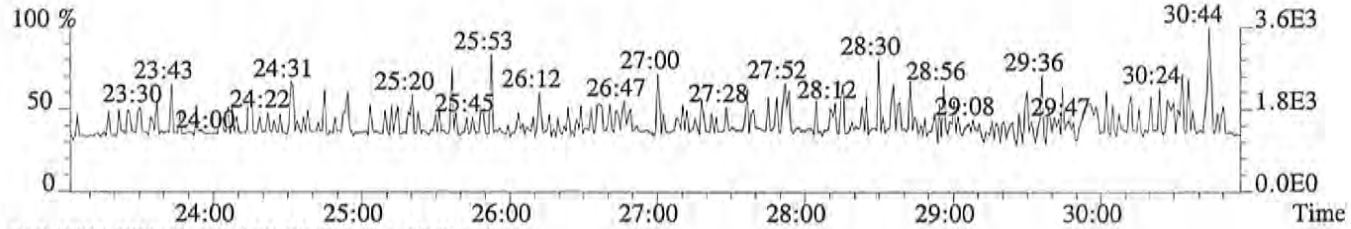
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1612.0,1.00%,F,T)



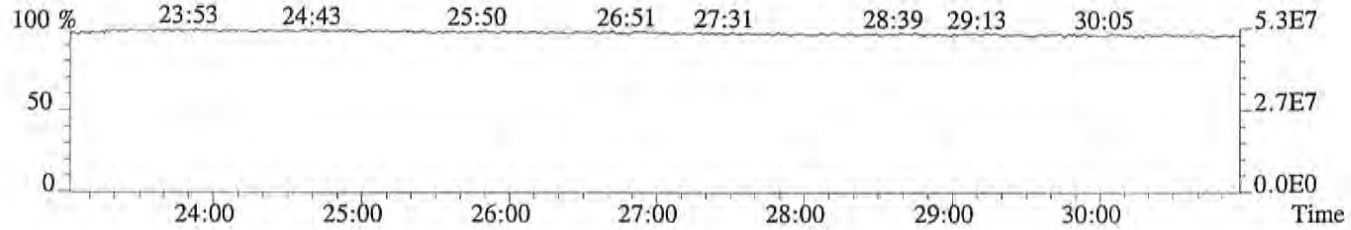
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1568.0,1.00%,F,T)



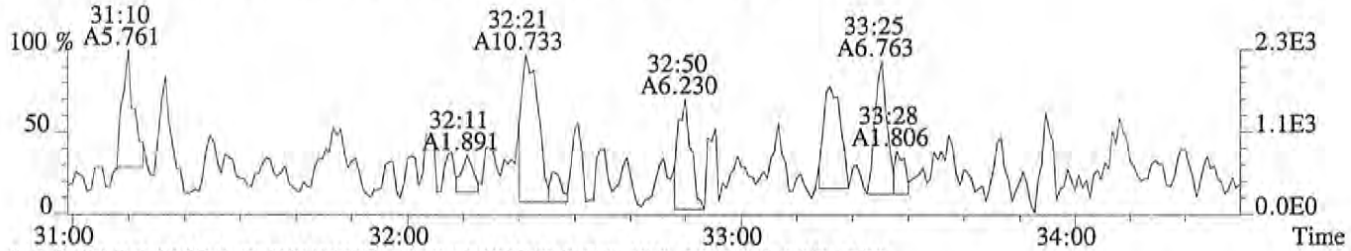
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



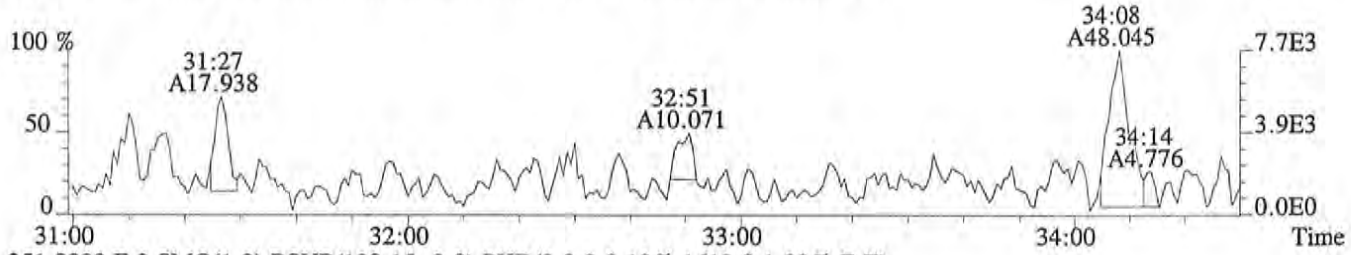
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



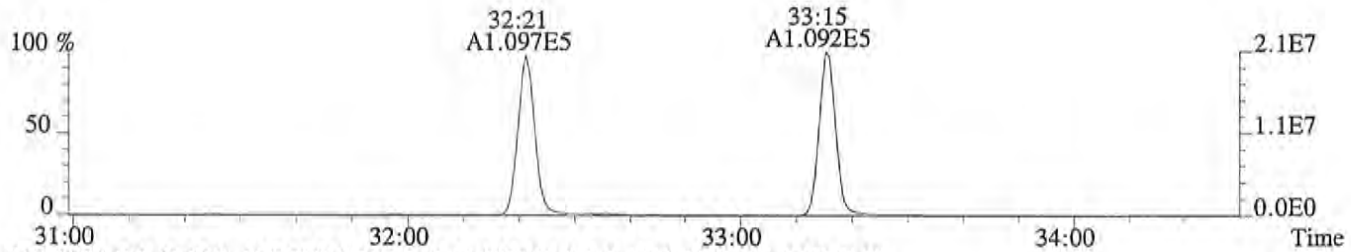
File:P600942 #1-317 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,700.0,1.00%,F,T)



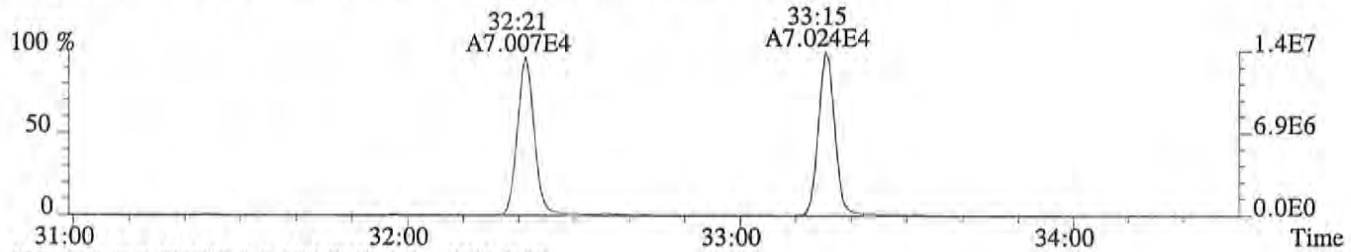
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1804.0,1.00%,F,T)



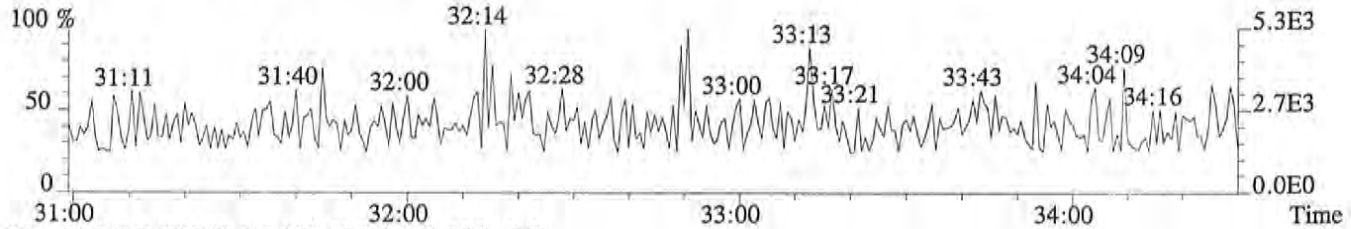
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1612.0,1.00%,F,T)



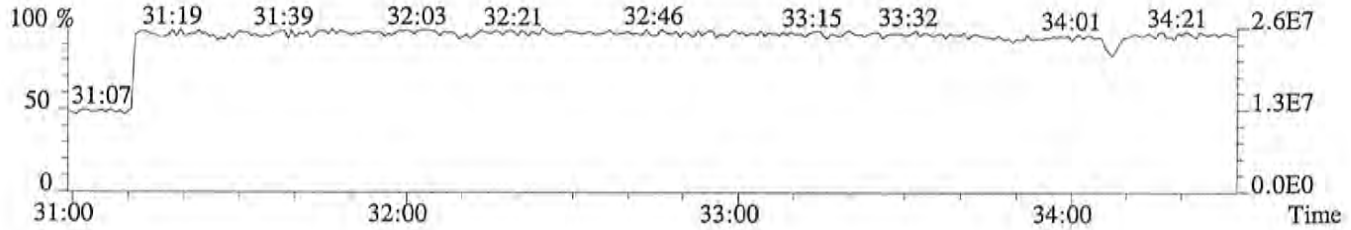
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1568.0,1.00%,F,T)



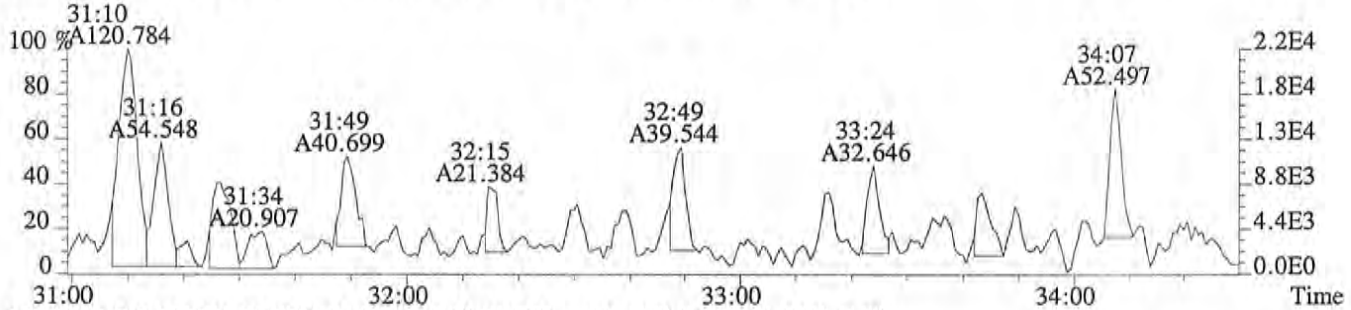
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



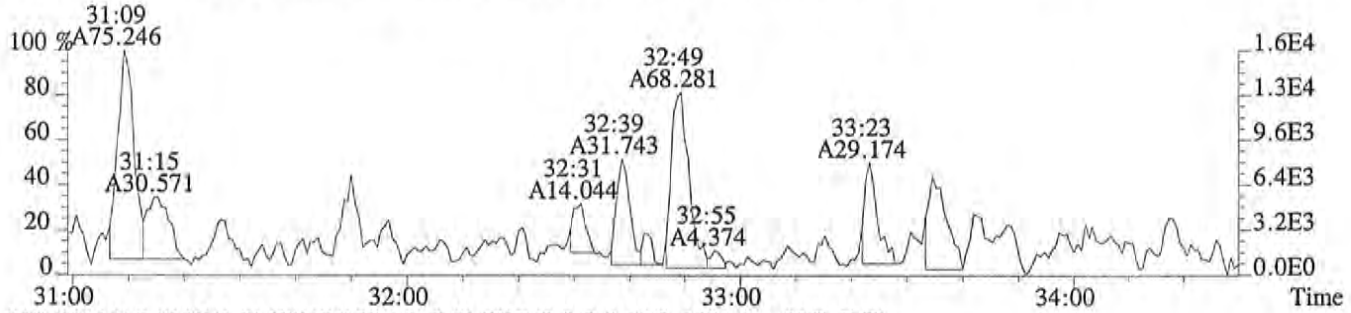
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



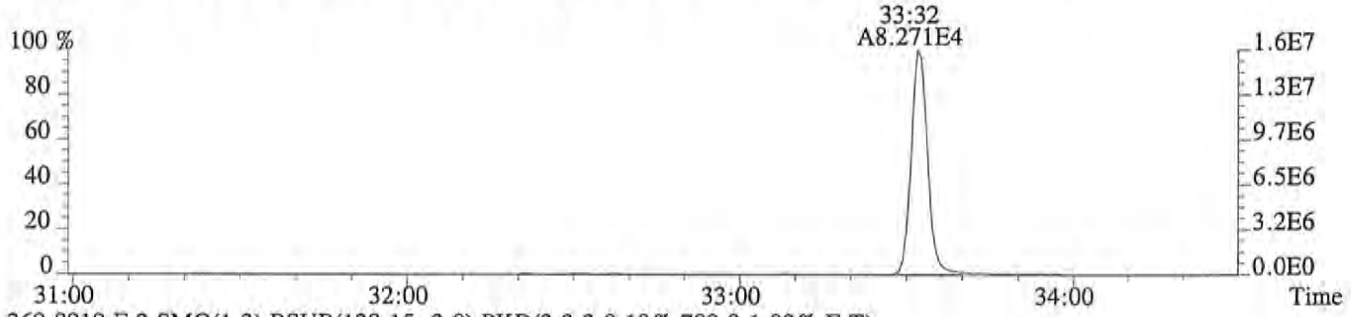
File:P600942 #1-317 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3652.0,1.00%,F,T)



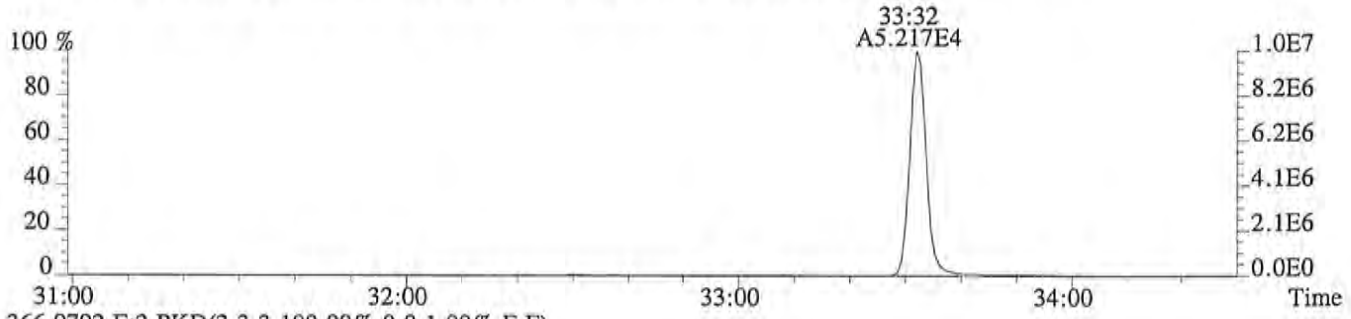
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2432.0,1.00%,F,T)



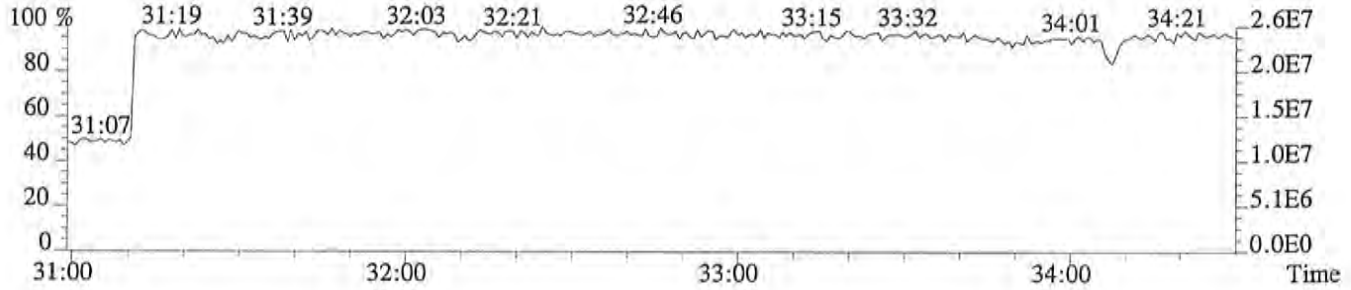
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1304.0,1.00%,F,T)



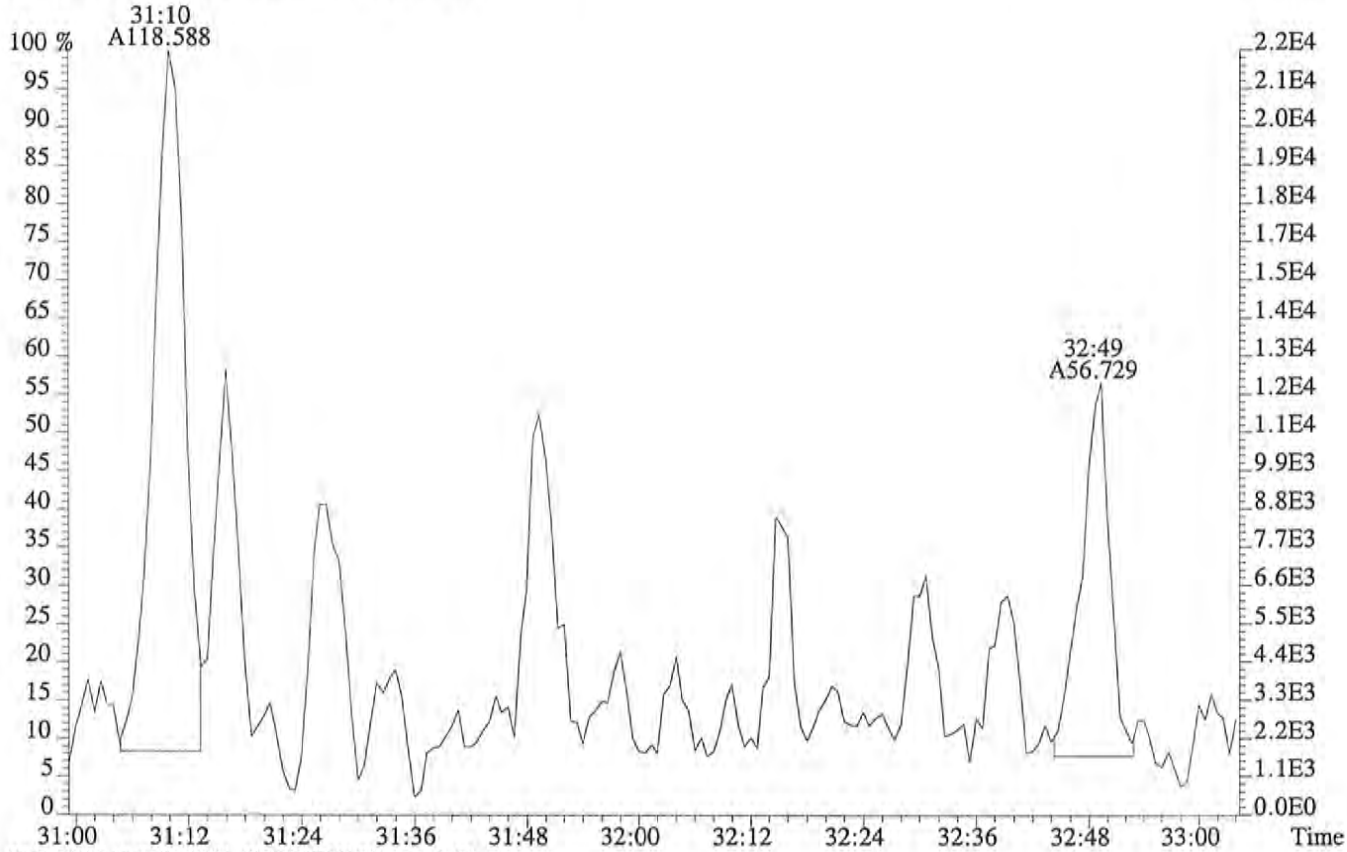
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,780.0,1.00%,F,T)



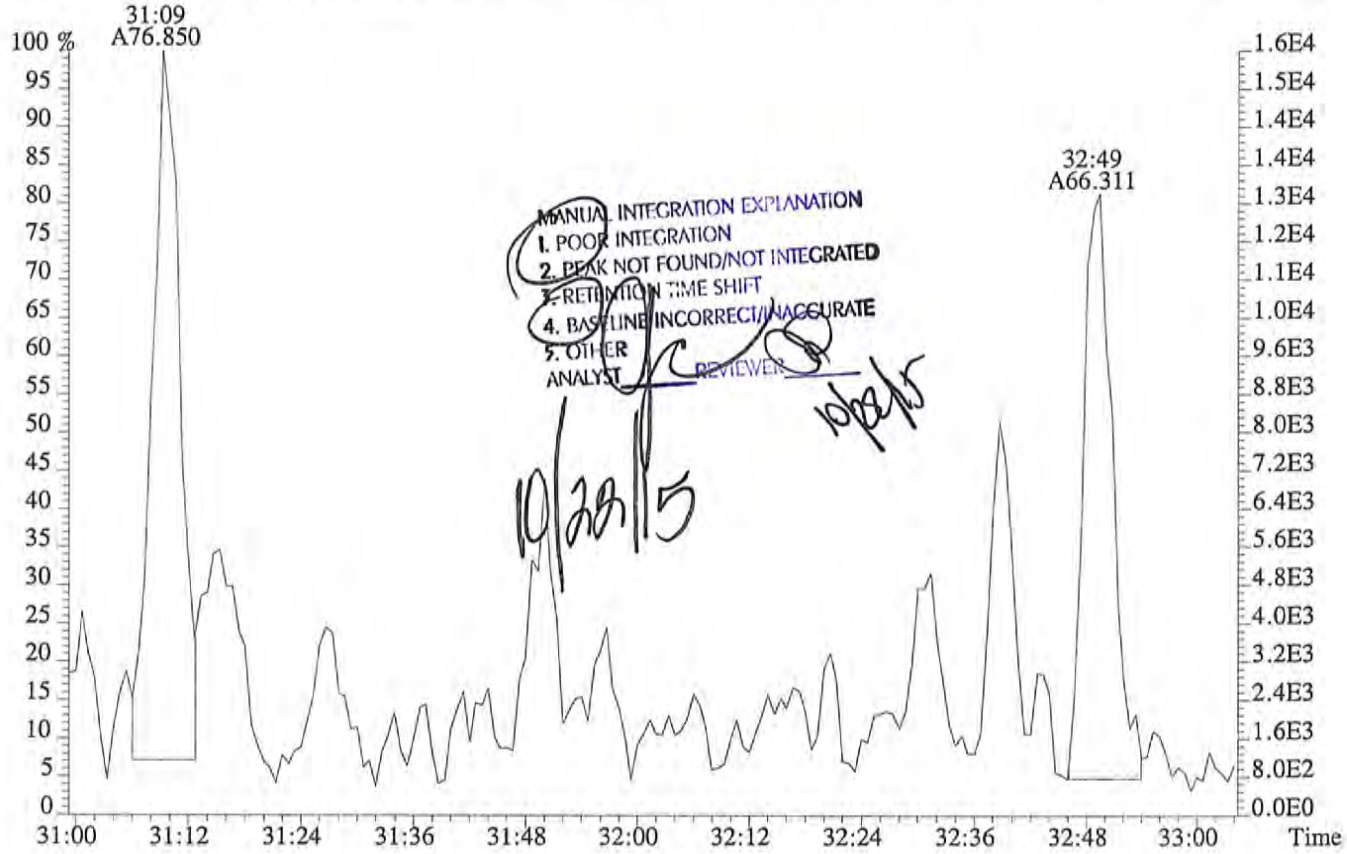
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P600942 #1-317 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0)

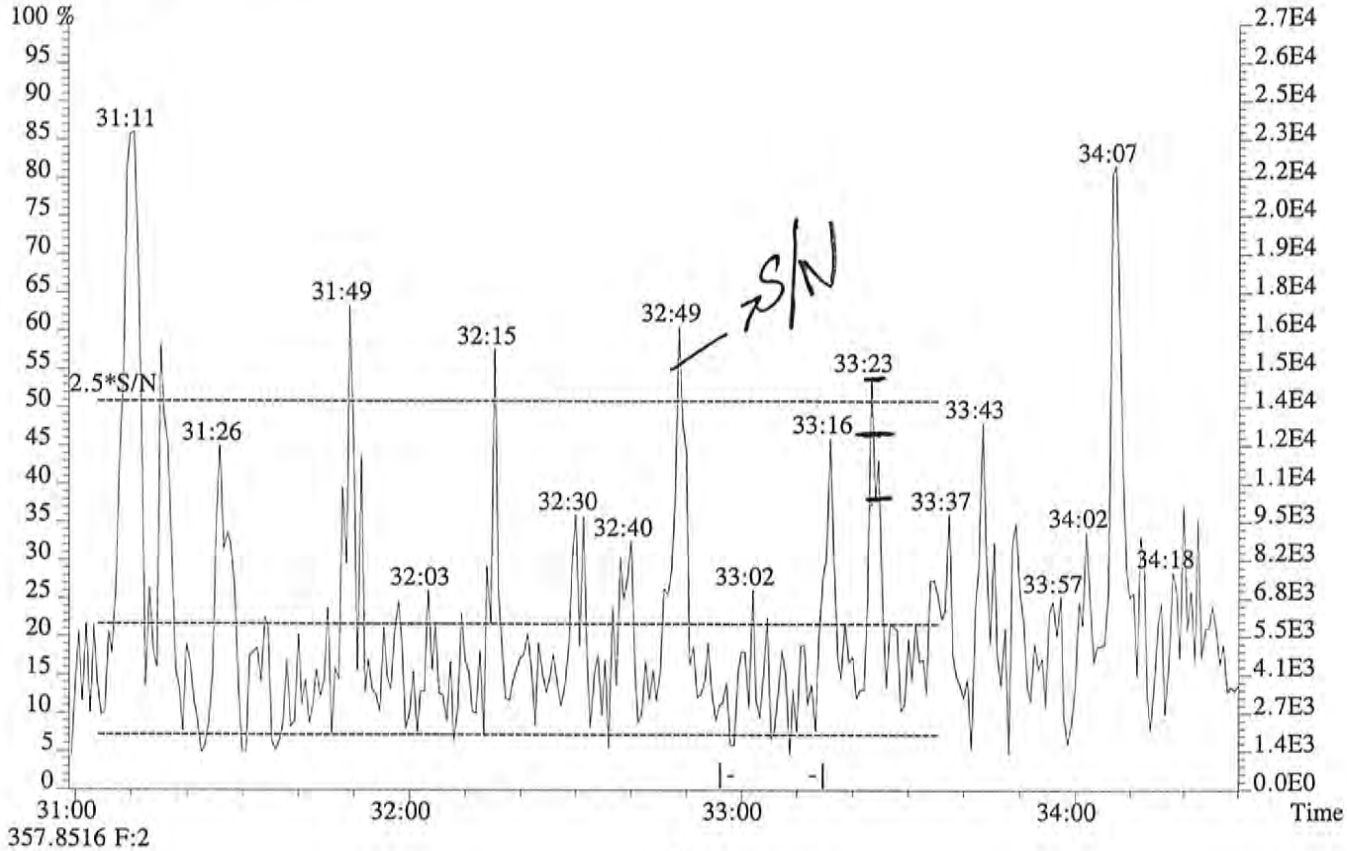


357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0)

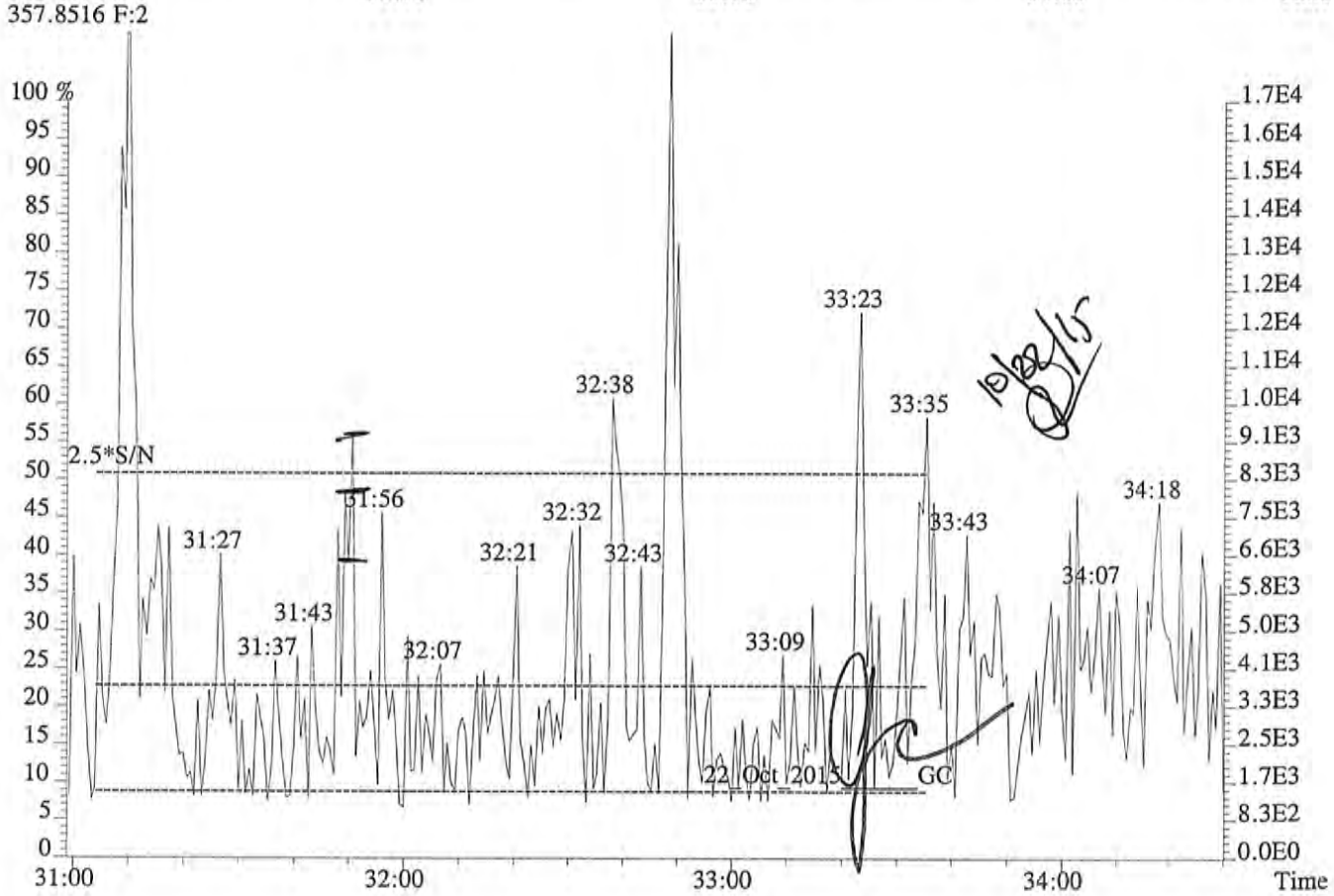


MANUAL INTEGRATION EXPLANATION
1. POOR INTEGRATION
2. PEAK NOT FOUND/NOT INTEGRATED
3. RETENTION TIME SHIFT
4. BASELINE INCORRECT/INACCURATE
5. OTHER
ANALYST 10/28/15 REVIEWER 10/28/15

File:P600942 #1-317 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
355.8546 F:2

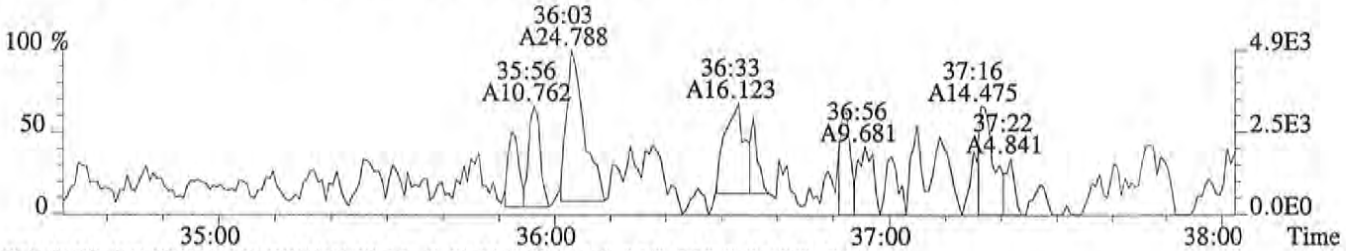


357.8516 F:2

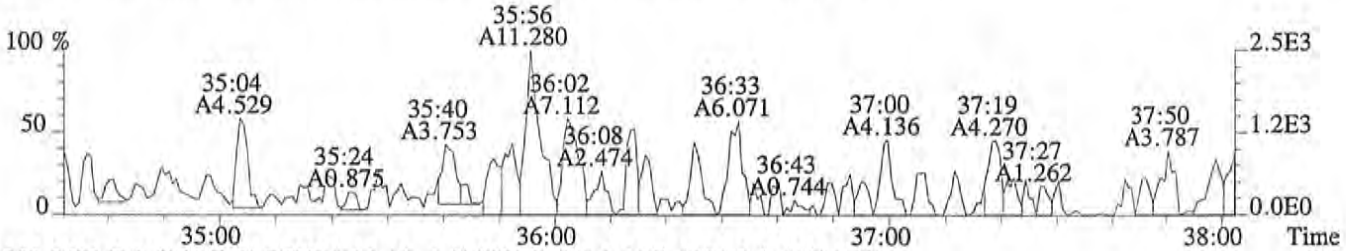


E1500972

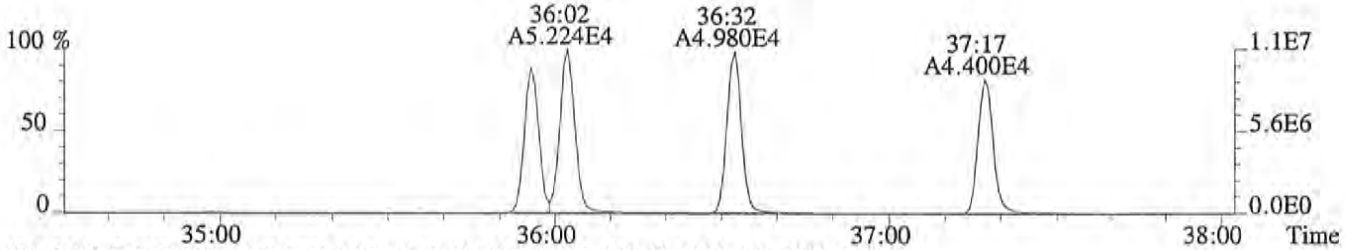
File:P600942 #1-316 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1104.0,0.40%,F,T)



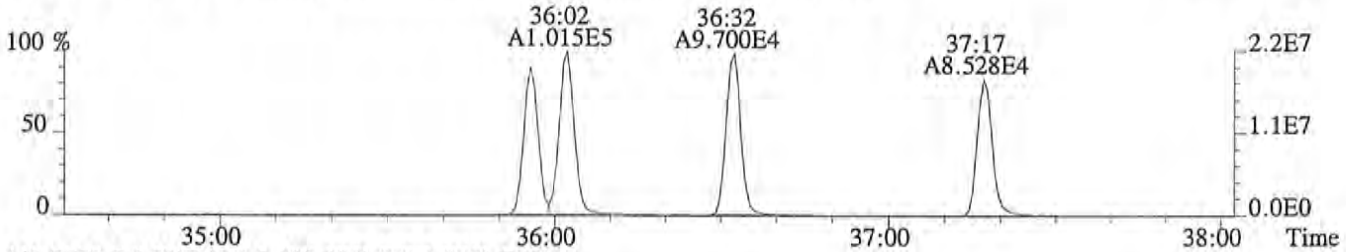
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,320.0,0.40%,F,T)



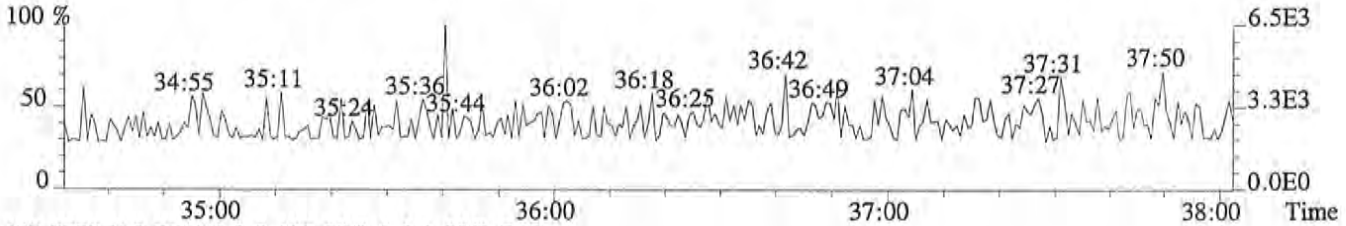
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1384.0,0.40%,F,T)



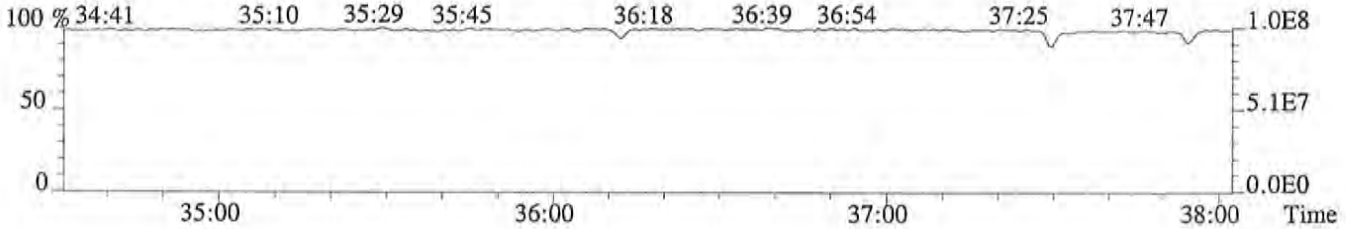
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2300.0,0.40%,F,T)



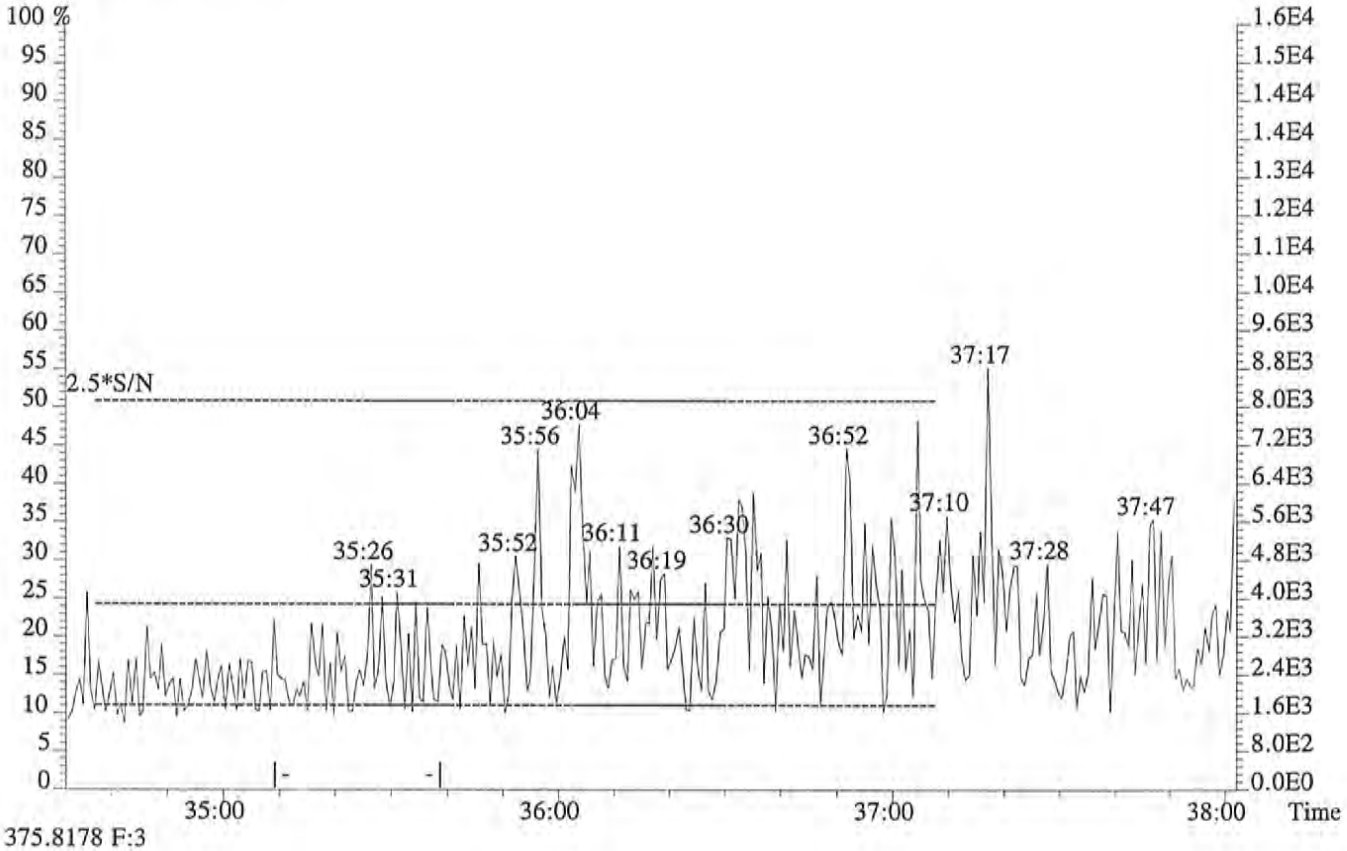
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



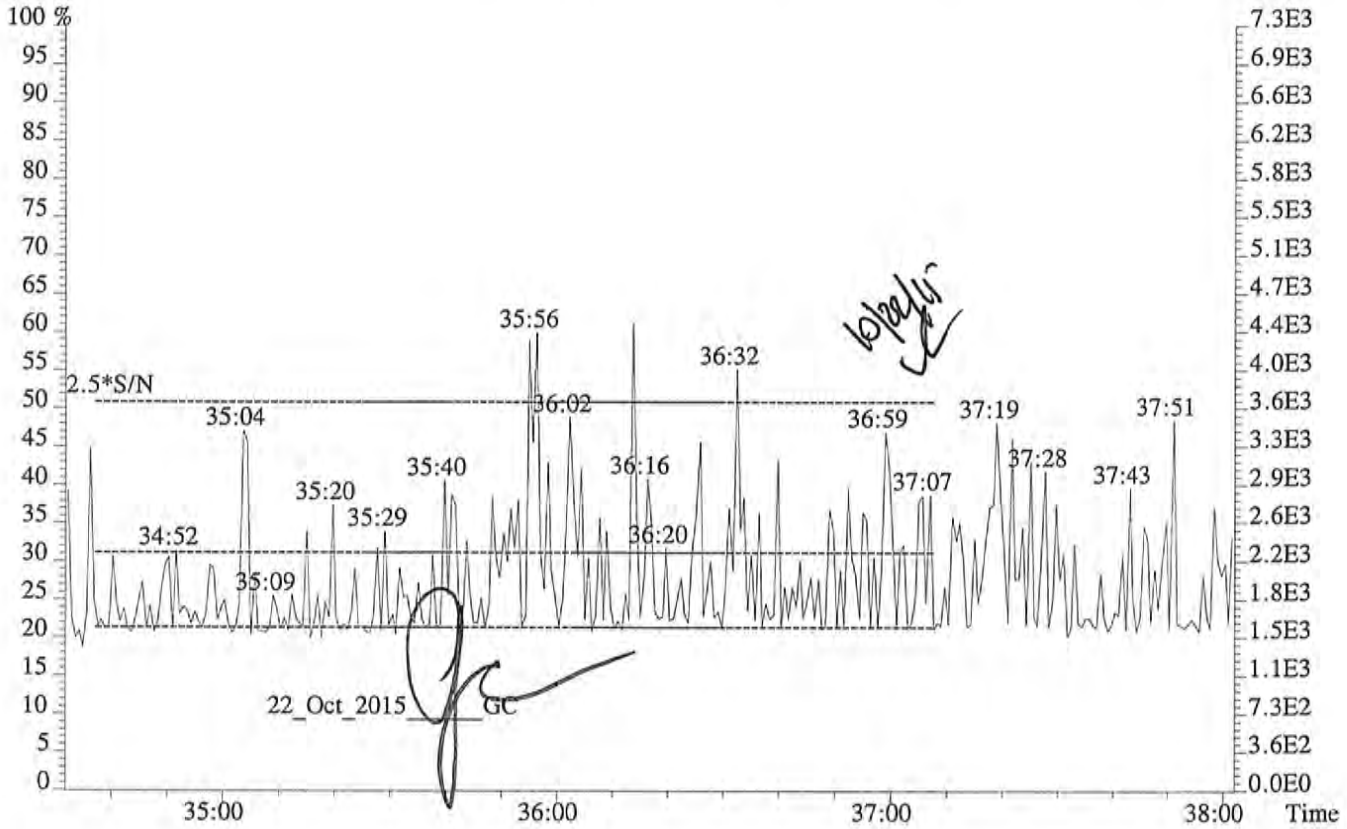
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P600942 #1-316 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
373.8208 F:3



375.8178 F:3



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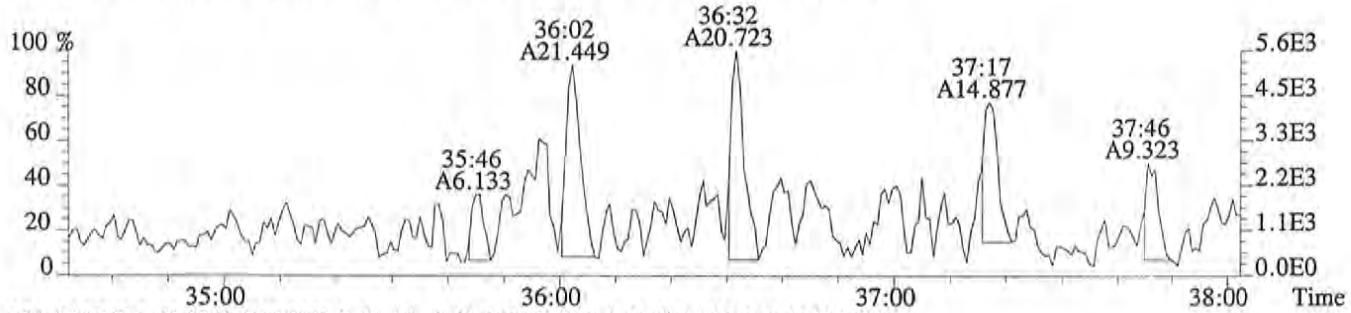
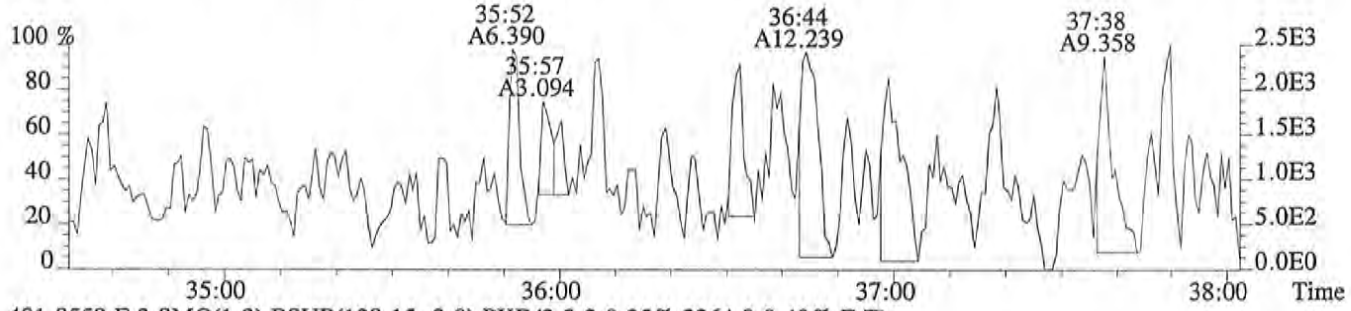
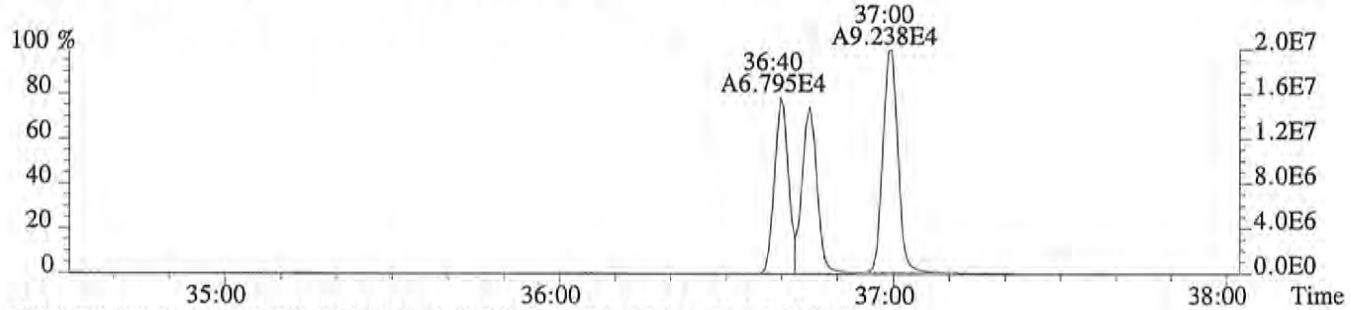
File:P600942 #1-316 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1336.0,0.40%,F,T)



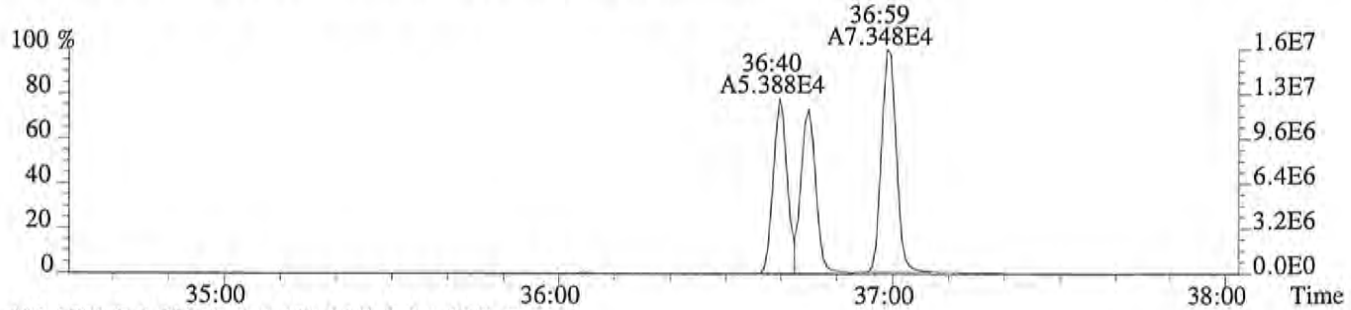
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1140.0,0.40%,F,T)



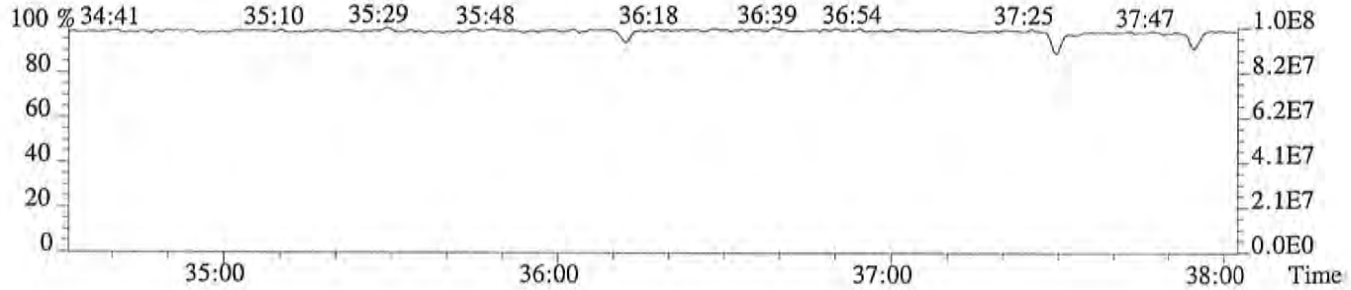
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3264.0,0.40%,F,T)



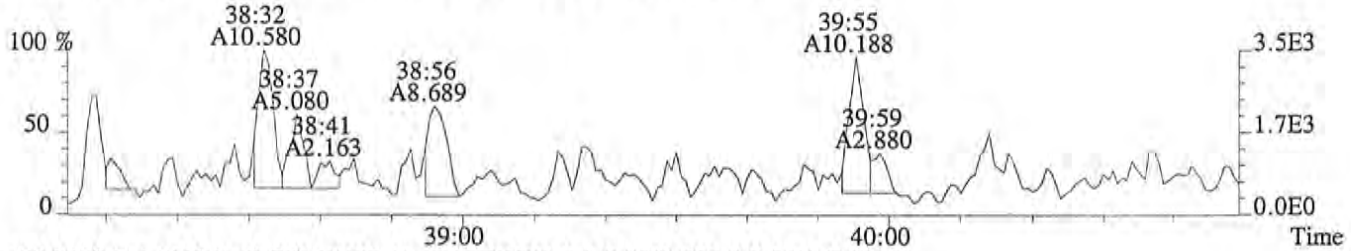
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2480.0,0.40%,F,T)



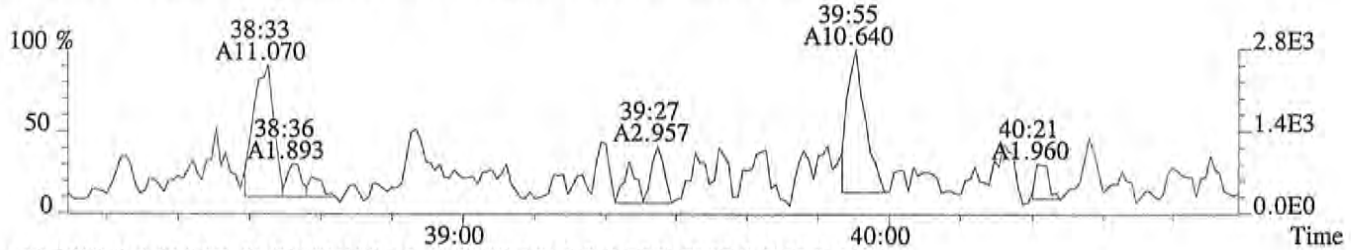
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



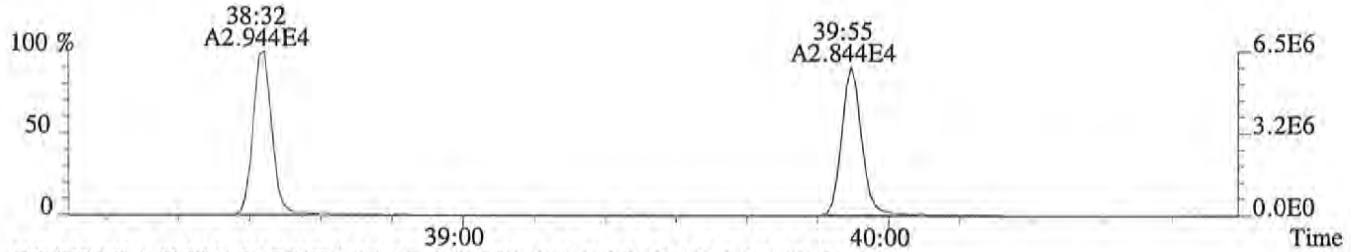
File:P600942 #1-248 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,968.0,0.50%,F,T)



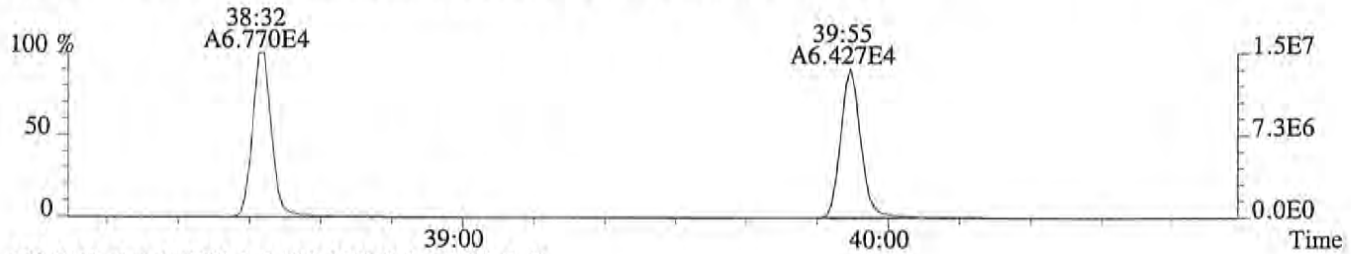
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,636.0,0.50%,F,T)



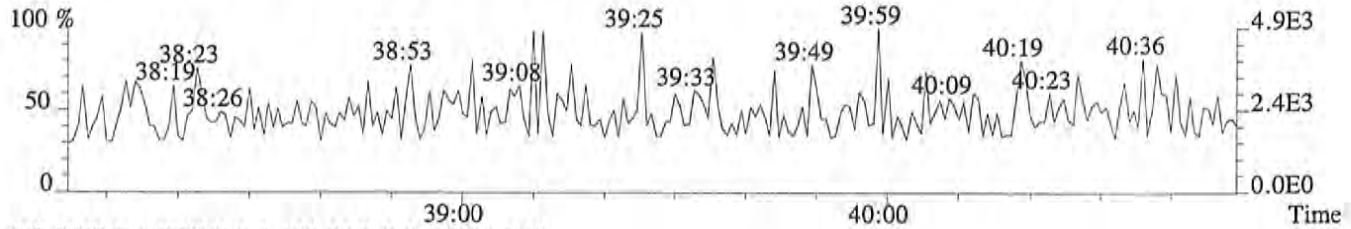
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5392.0,0.50%,F,T)



419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3852.0,0.50%,F,T)

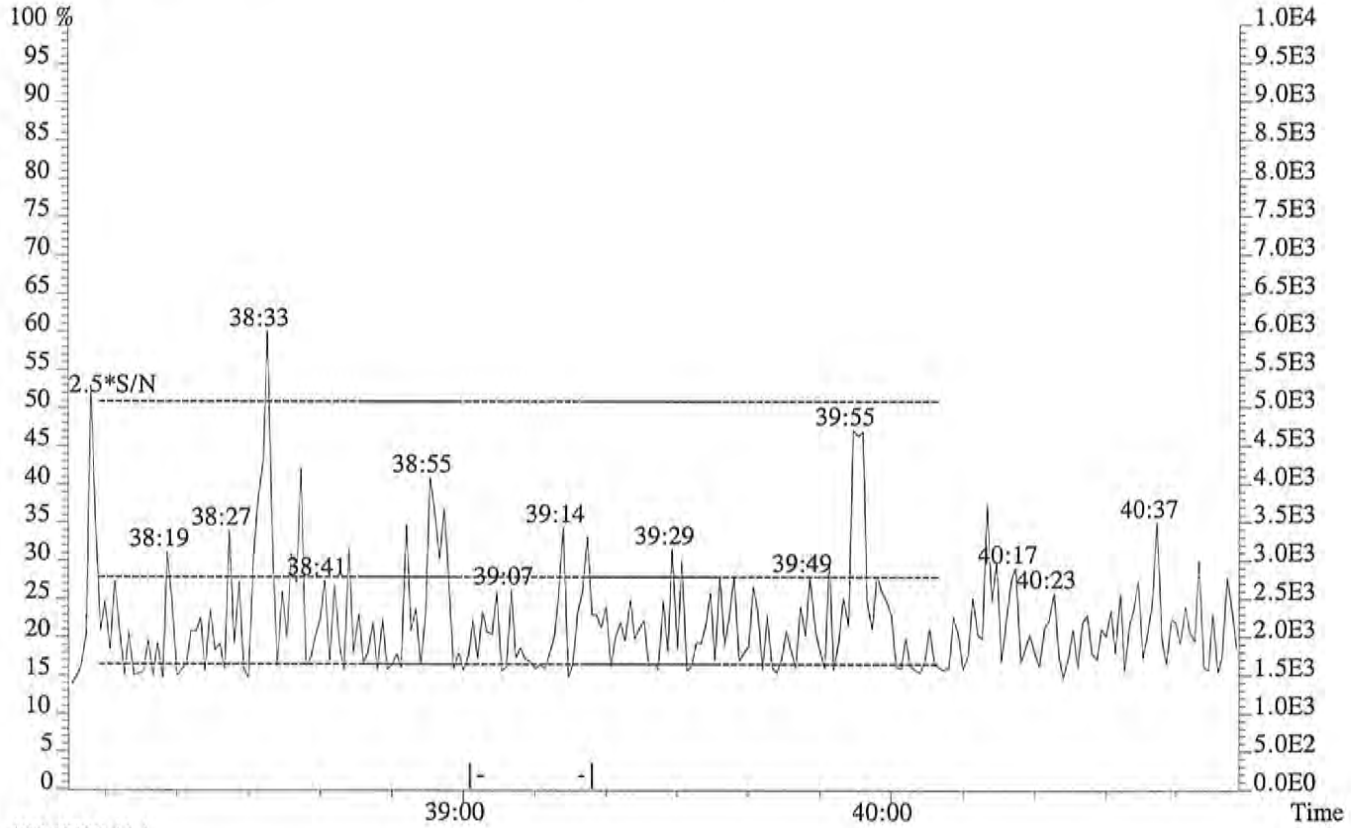


479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

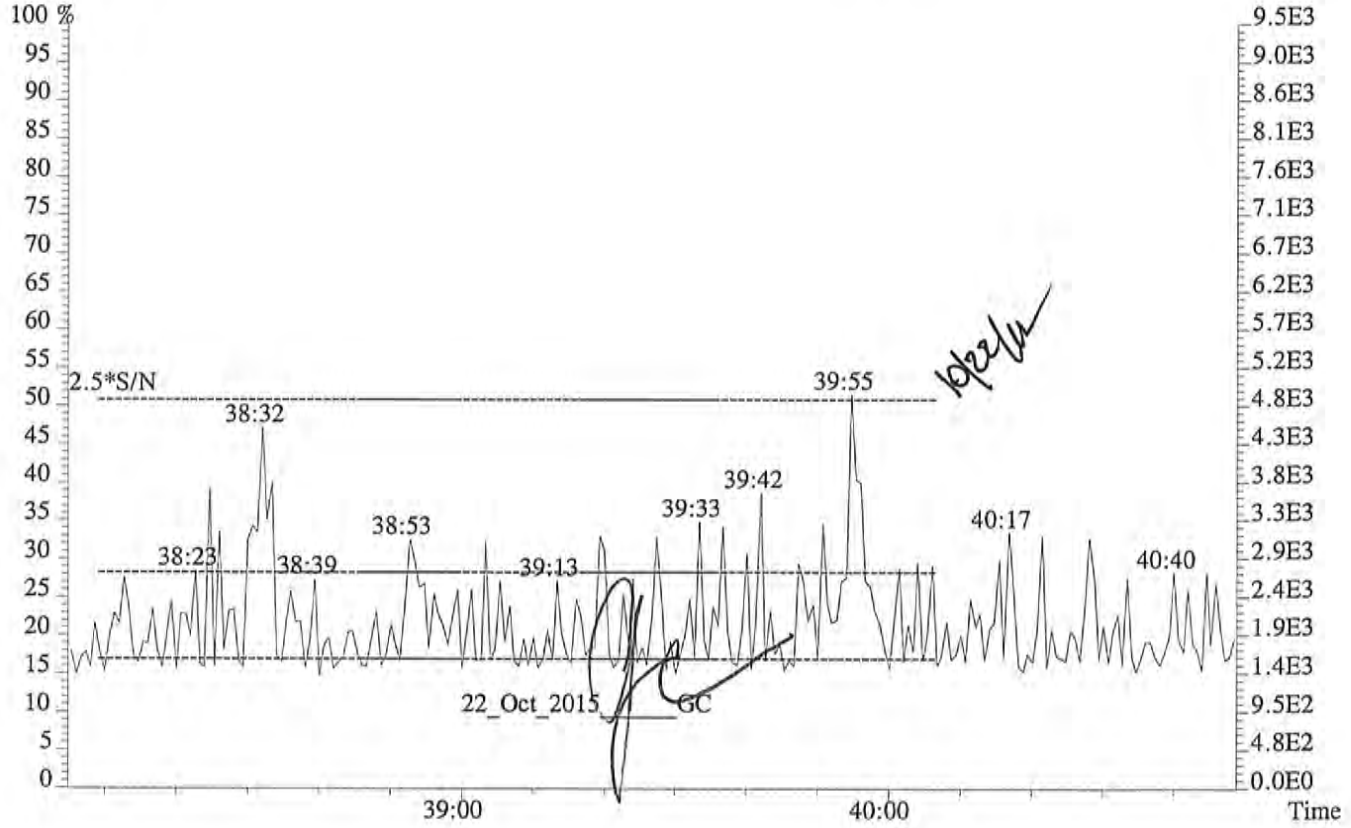


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

File:P600942 #1-248 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
407.7818 F:4



409.7789 F:4



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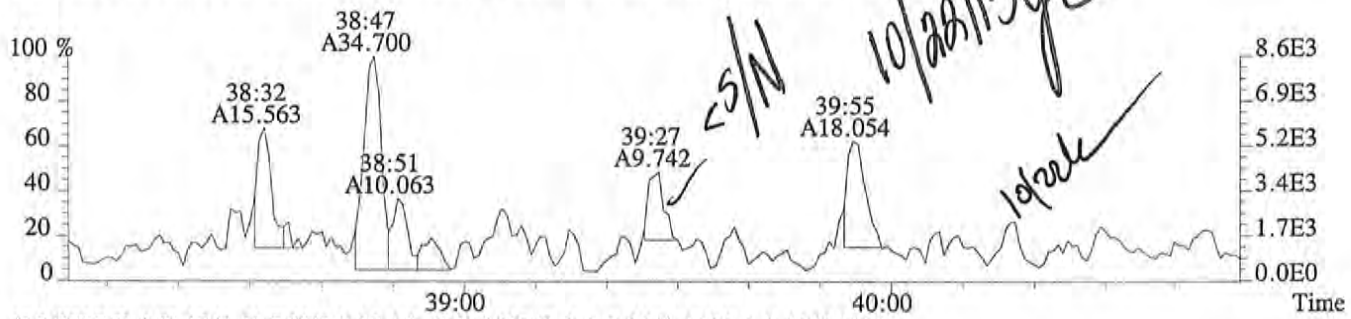
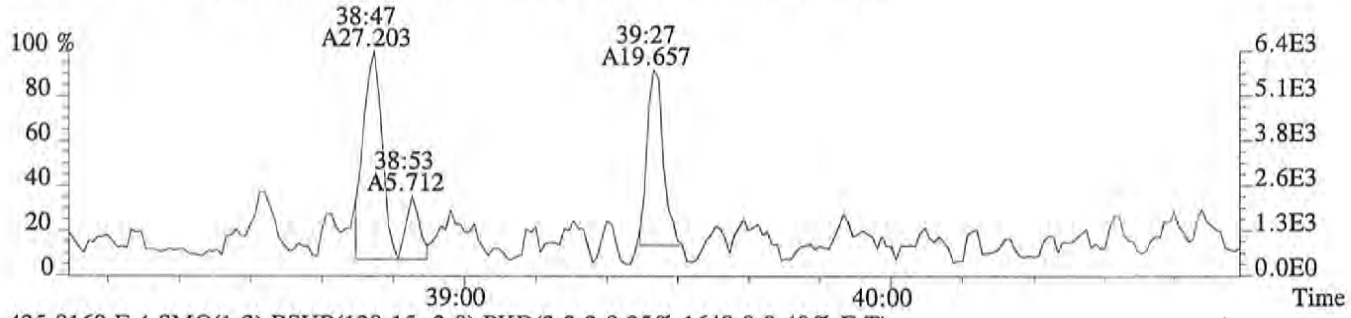
File:P600942 #1-248 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB

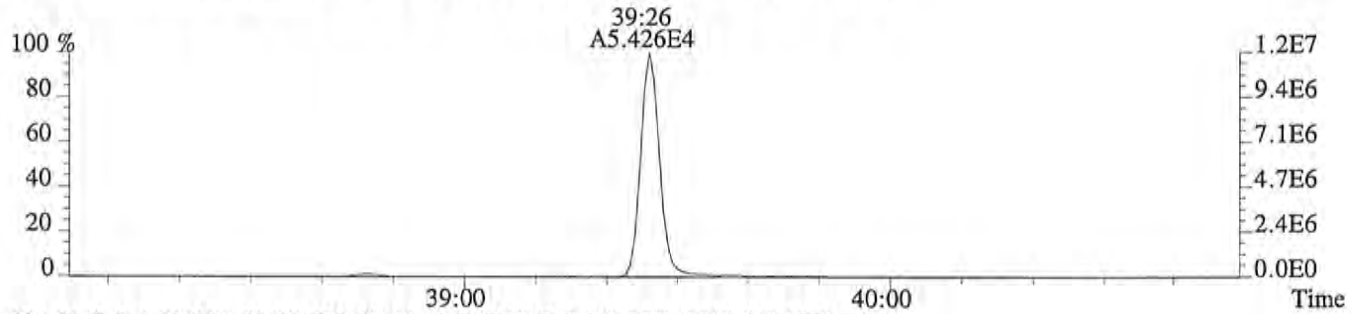
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1648.0,0.40%,F,T)



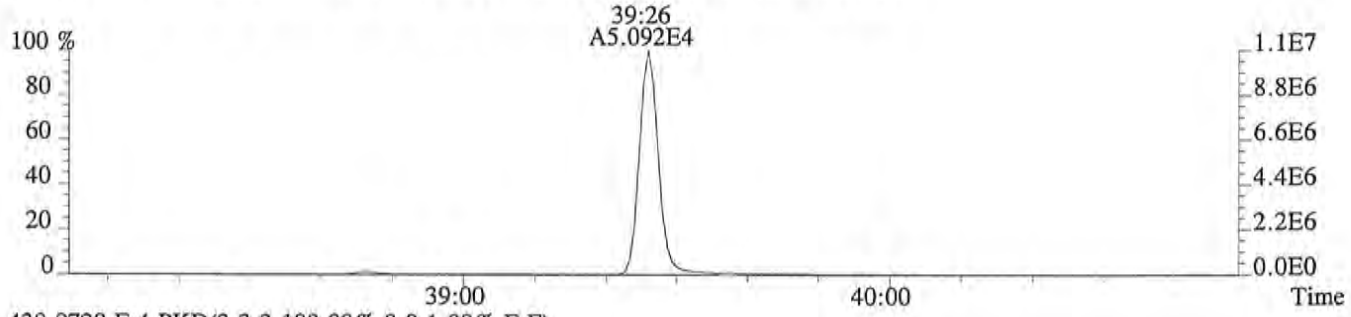
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1208.0,0.40%,F,T)



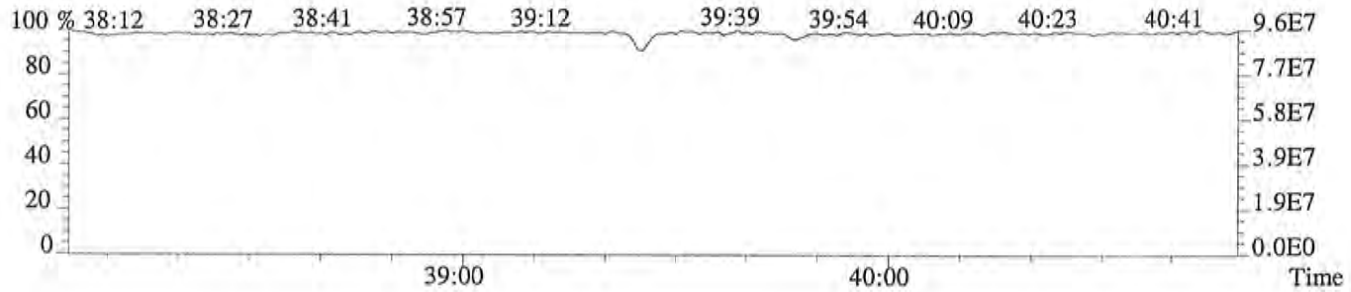
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1648.0,0.40%,F,T)



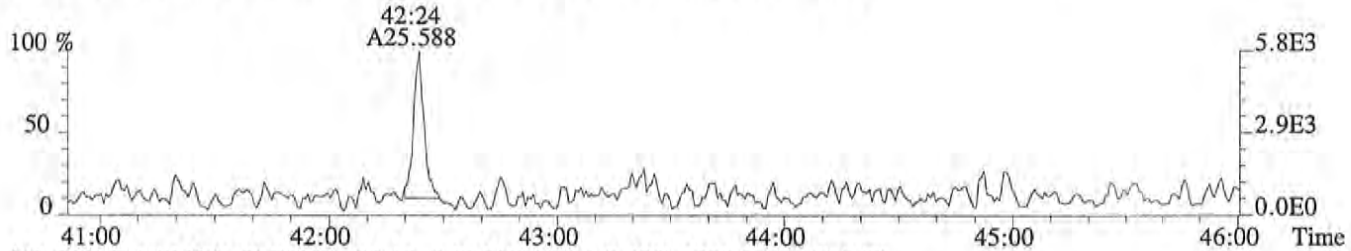
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2040.0,0.40%,F,T)



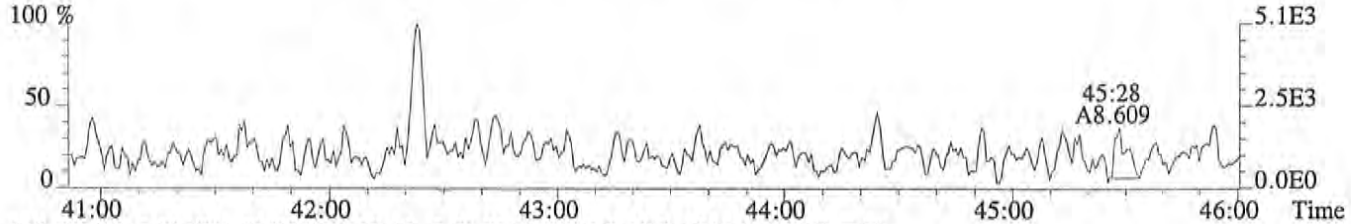
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



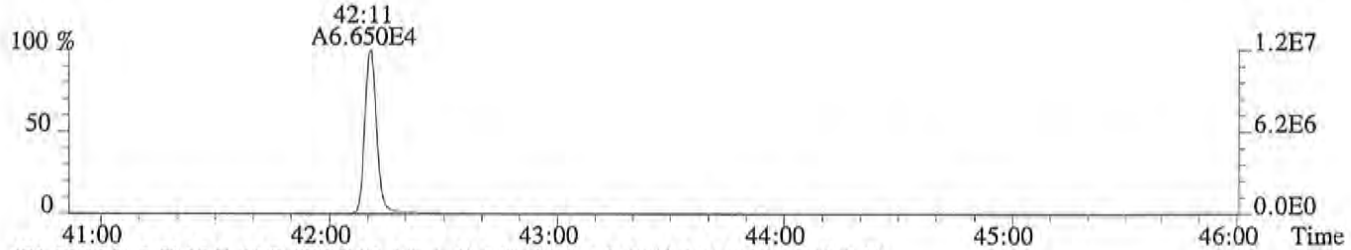
File:P600942 #1-464 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,828.0,0.40%,F,T)



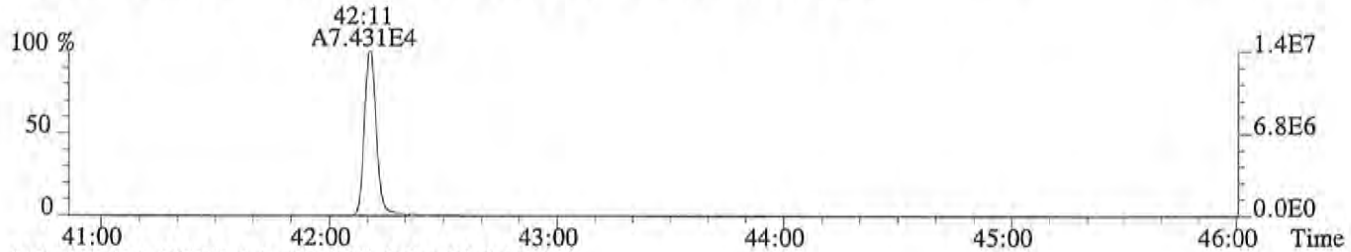
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1288.0,0.40%,F,T)



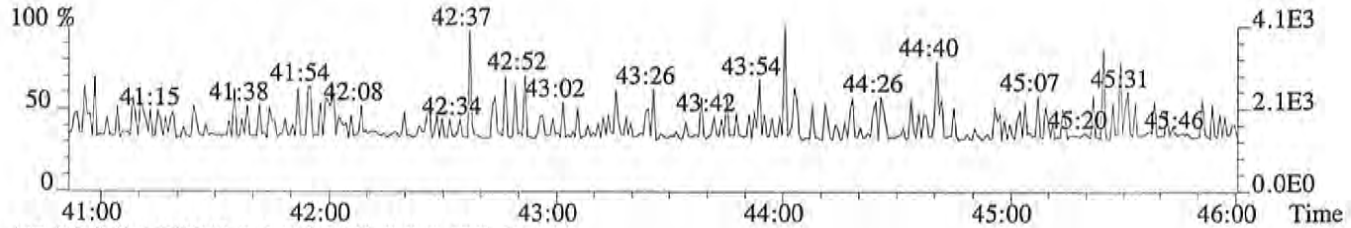
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1912.0,0.40%,F,T)



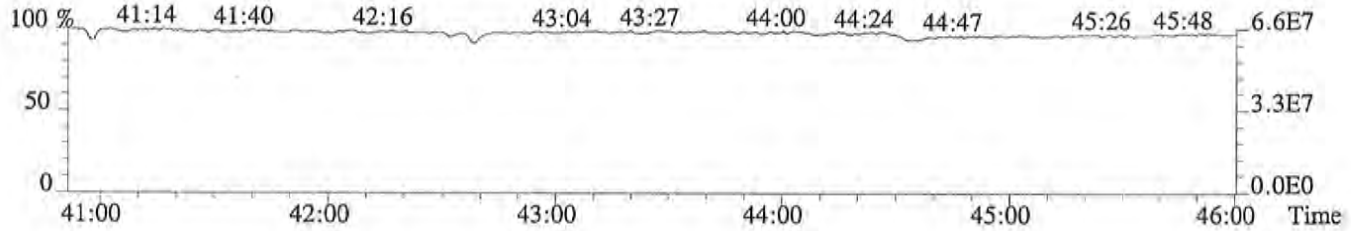
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1316.0,0.40%,F,T)



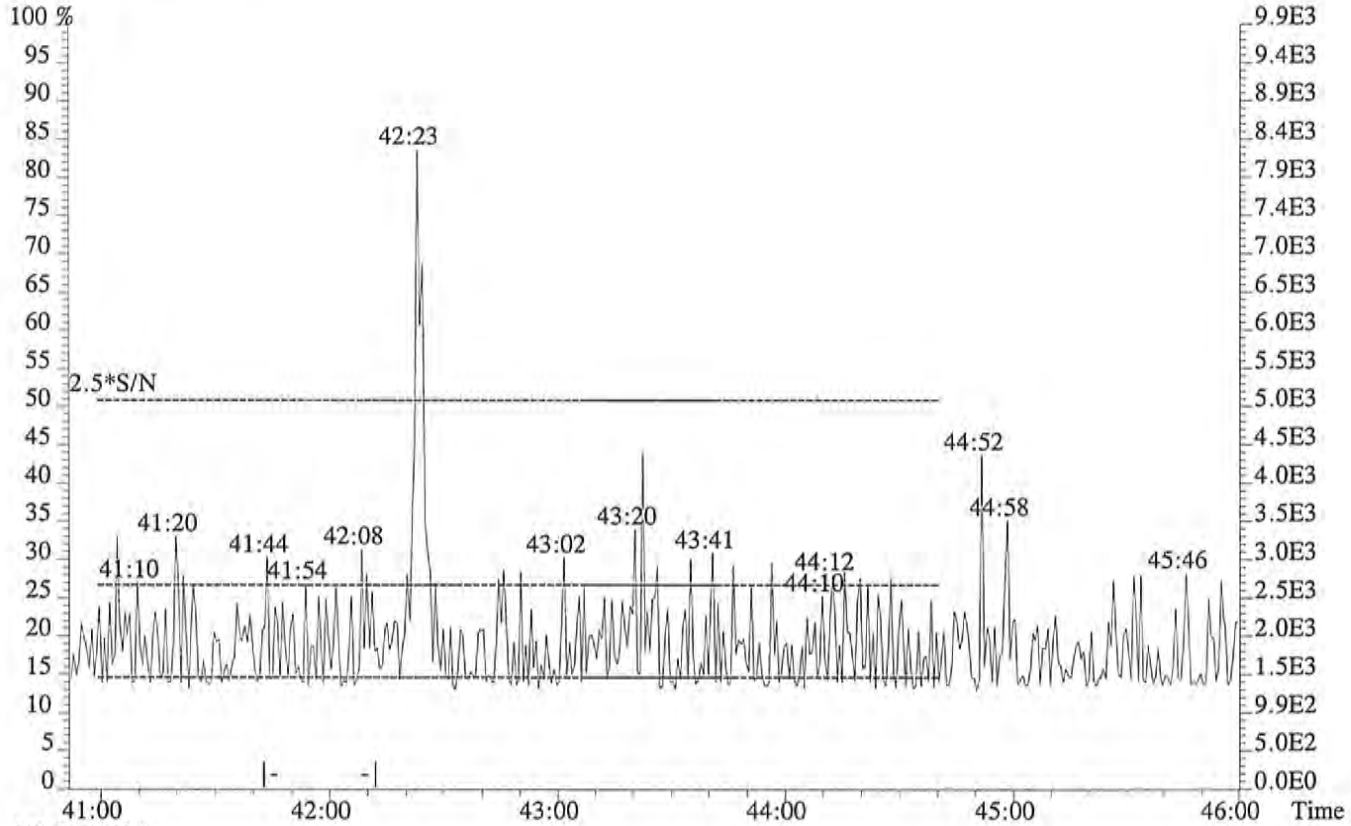
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



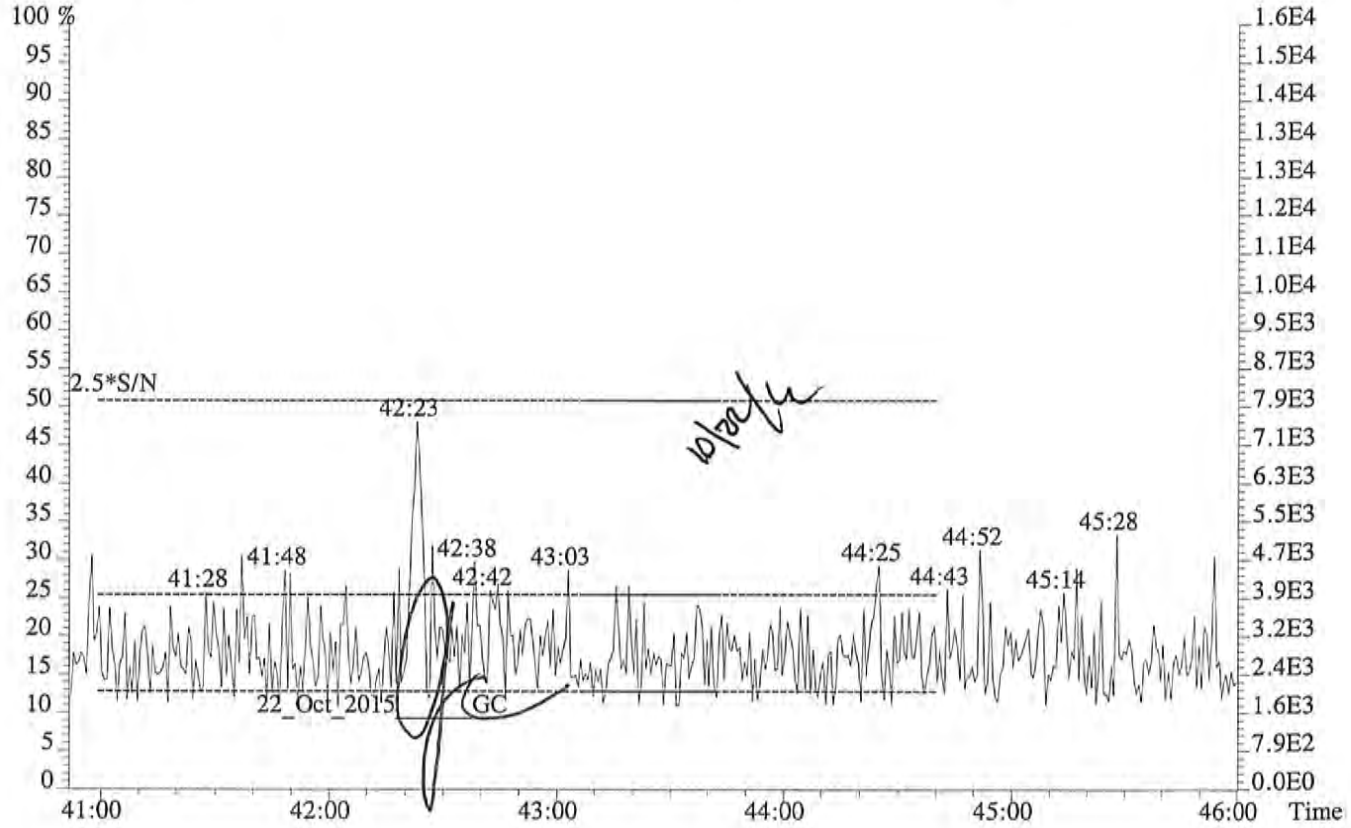
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



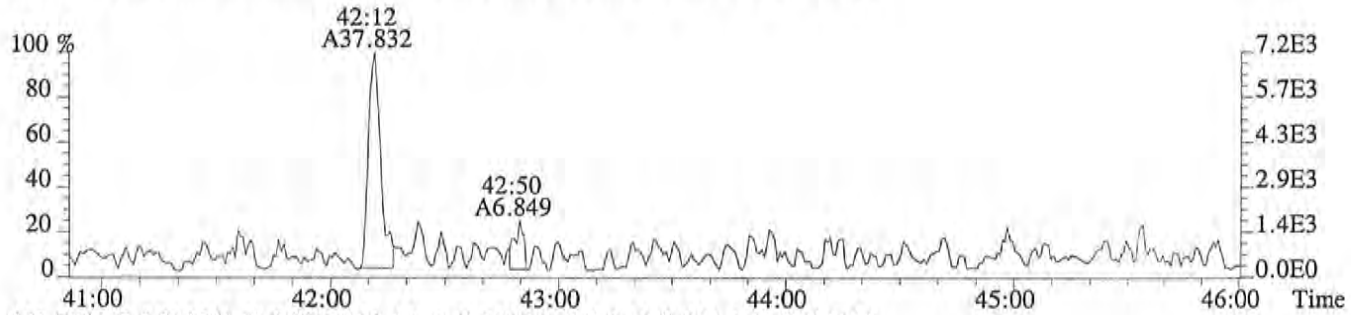
File:P600942 #1-464 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
441.7428 F:5



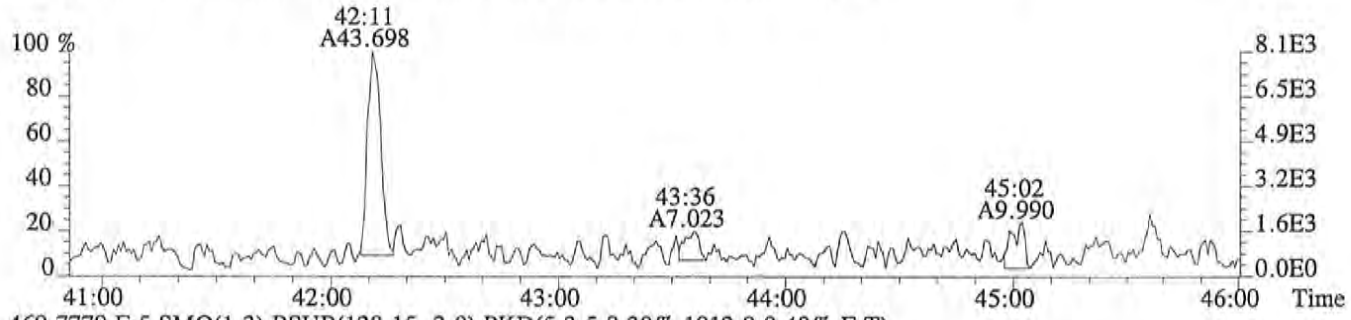
443.7399 F:5



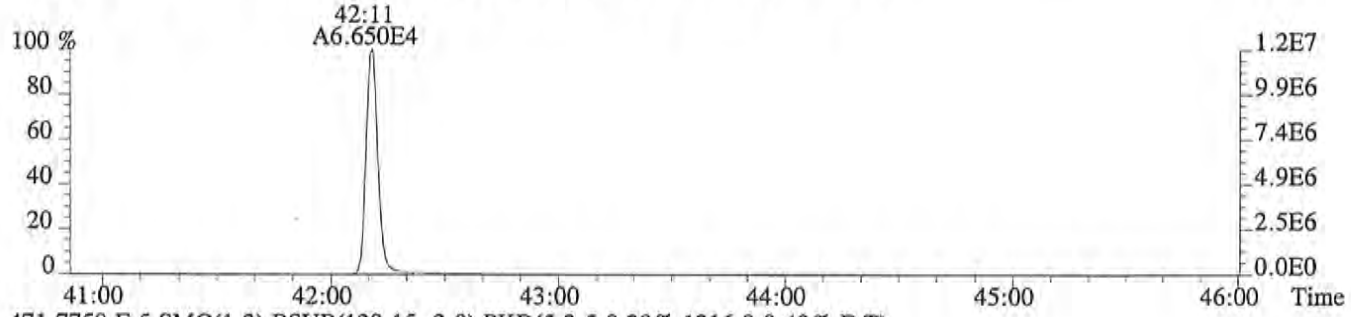
File:P600942 #1-464 Acq:13-OCT-2015 16:12:14 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:MB
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,804.0,0.40%,F,T)



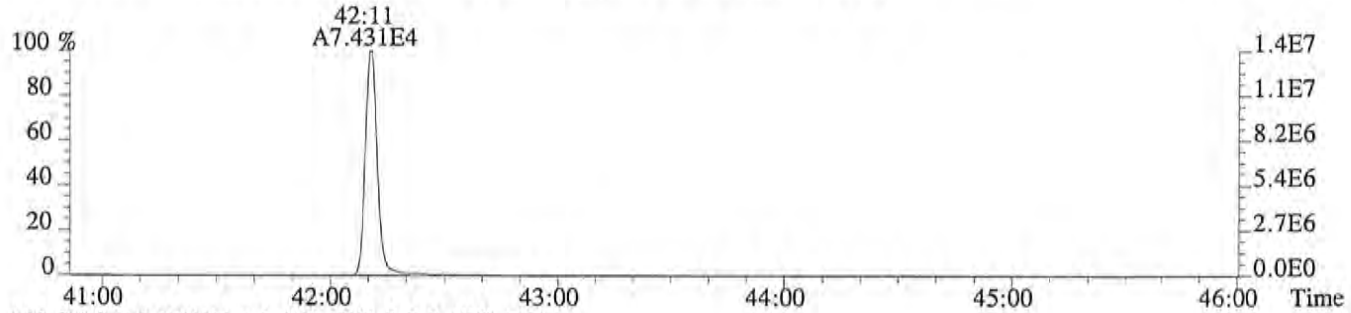
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,984.0,0.40%,F,T)



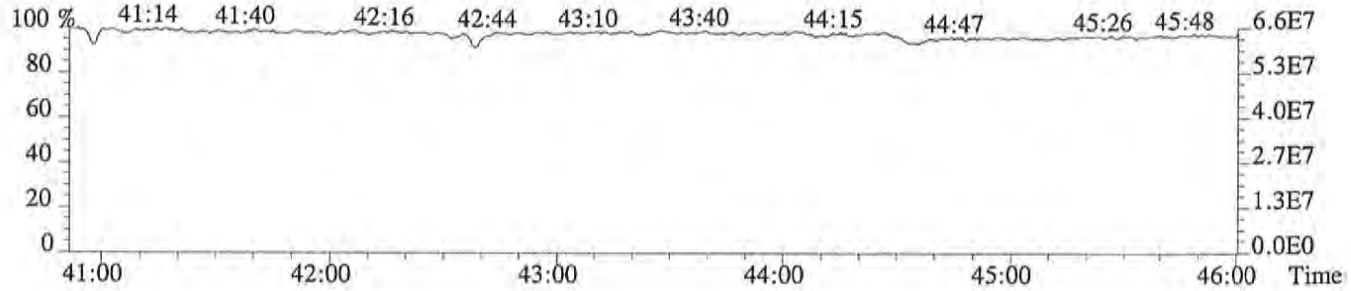
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1912.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1316.0,0.40%,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 #17 Filename P600966 Samp: 1 Inj: 1 Acquired: 14-OCT-15 11:56:44
Processed: 21-OCT-15 15:49:52 Sample ID: EQ1500602-02

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:10	2.326e+03	3.059e+03	0.76	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	32:21	1.940e+04	1.252e+04	1.55	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:16	1.953e+04	1.274e+04	1.53	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	35:56	1.731e+04	1.413e+04	1.23	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:02	1.846e+04	1.499e+04	1.23	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	36:32	1.662e+04	1.382e+04	1.20	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:17	1.384e+04	1.120e+04	1.24	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	38:31	1.314e+04	1.271e+04	1.03	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	39:55	1.121e+04	1.108e+04	1.01	yes	no	1.287
10	Unk	OCDF	42:22	1.817e+04	2.035e+04	0.89	yes	no	1.257
11	Unk	2,3,7,8-TCDD	28:56	1.897e+03	2.573e+03	0.74	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	33:33	1.624e+04	1.025e+04	1.58	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	36:40	1.420e+04	1.129e+04	1.26	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	36:45	1.439e+04	1.130e+04	1.27	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	36:59	1.435e+04	1.153e+04	1.24	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	39:26	1.039e+04	1.005e+04	1.03	yes	no	1.034
17	Unk	OCDD	42:10	1.611e+04	1.825e+04	0.88	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	28:09	2.347e+04	3.023e+04	0.78	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	32:21	3.930e+04	2.493e+04	1.58	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:15	3.851e+04	2.482e+04	1.55	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	35:55	1.657e+04	3.225e+04	0.51	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:02	1.894e+04	3.730e+04	0.51	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	36:32	1.727e+04	3.345e+04	0.52	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:16	1.447e+04	2.797e+04	0.52	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:31	1.049e+04	2.444e+04	0.43	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:54	9.883e+03	2.299e+04	0.43	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	28:55	1.769e+04	2.230e+04	0.79	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	33:31	2.940e+04	1.857e+04	1.58	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	36:39	2.459e+04	1.970e+04	1.25	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	36:44	2.568e+04	2.024e+04	1.27	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:25	1.963e+04	1.829e+04	1.07	yes	no	0.892
32	IS	13C-OCDD	42:10	2.640e+04	2.972e+04	0.89	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	28:21	2.419e+04	2.971e+04	0.81	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:58	3.387e+04	2.585e+04	1.31	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:56	1.835e+04				no	1.263

$$\text{OCDD} = \frac{(1.611e+04 + 1.825e+04) \times 4000 \text{ pg} \times 1}{(2.640e+04 + 2.972e+04) \times \quad g \quad \times \quad / 100 \times 1.111} =$$

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

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
LCS

Run #17 Filename P600966 Samp: 1 Inj: 1 Acquired: 14-OCT-15 11:56:44
Processed: 21-OCT-15 15:49:52 LAB. ID: EQ1500602-02

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	3.98e+05	6.72e+02	5.9e+02	5.23e+05	1.68e+03	3.1e+02
2	1,2,3,7,8-PeCDF	3.58e+06	9.40e+02	3.8e+03	2.30e+06	2.73e+03	8.4e+02
3	2,3,4,7,8-PeCDF	3.65e+06	9.40e+02	3.9e+03	2.40e+06	2.73e+03	8.8e+02
4	1,2,3,4,7,8-HxCDF	3.82e+06	1.42e+03	2.7e+03	3.11e+06	6.56e+02	4.7e+03
5	1,2,3,6,7,8-HxCDF	3.79e+06	1.42e+03	2.7e+03	3.03e+06	6.56e+02	4.6e+03
6	2,3,4,6,7,8-HxCDF	3.70e+06	1.42e+03	2.6e+03	3.02e+06	6.56e+02	4.6e+03
7	1,2,3,7,8,9-HxCDF	2.82e+06	1.42e+03	2.0e+03	2.30e+06	6.56e+02	3.5e+03
8	1,2,3,4,6,7,8-HpCDF	2.90e+06	1.80e+03	1.6e+03	2.83e+06	1.14e+03	2.5e+03
9	1,2,3,4,7,8,9-HpCDF	2.21e+06	1.80e+03	1.2e+03	2.19e+06	1.14e+03	1.9e+03
10	OCDF	3.30e+06	6.00e+02	5.5e+03	3.70e+06	1.26e+03	2.9e+03
11	2,3,7,8-TCDD	3.34e+05	1.08e+03	3.1e+02	4.69e+05	1.11e+03	4.2e+02
12	1,2,3,7,8-PeCDD	3.12e+06	2.12e+03	1.5e+03	1.94e+06	1.70e+03	1.1e+03
13	1,2,3,4,7,8-HxCDD	3.28e+06	2.30e+03	1.4e+03	2.60e+06	1.55e+03	1.7e+03
14	1,2,3,6,7,8-HxCDD	3.09e+06	2.30e+03	1.3e+03	2.41e+06	1.55e+03	1.6e+03
15	1,2,3,7,8,9-HxCDD	2.99e+06	2.30e+03	1.3e+03	2.44e+06	1.55e+03	1.6e+03
16	1,2,3,4,6,7,8-HpCDD	2.21e+06	1.08e+03	2.0e+03	2.14e+06	1.12e+03	1.9e+03
17	OCDD	2.98e+06	5.32e+02	5.6e+03	3.40e+06	7.64e+02	4.5e+03
18	13C-2,3,7,8-TCDF	3.97e+06	2.54e+03	1.6e+03	5.08e+06	1.39e+03	3.7e+03
19	13C-1,2,3,7,8-PeCDF	7.28e+06	6.52e+02	1.1e+04	4.55e+06	6.80e+02	6.7e+03
20	13C-2,3,4,7,8-PeCDF	7.44e+06	6.52e+02	1.1e+04	4.83e+06	6.80e+02	7.1e+03
21	13C-1,2,3,4,7,8-HxCDF	3.61e+06	1.32e+03	2.7e+03	7.04e+06	1.80e+03	3.9e+03
22	13C-1,2,3,6,7,8-HxCDF	3.89e+06	1.32e+03	3.0e+03	7.57e+06	1.80e+03	4.2e+03
23	13C-2,3,4,6,7,8-HxCDF	3.81e+06	1.32e+03	2.9e+03	7.29e+06	1.80e+03	4.1e+03
24	13C-1,2,3,7,8,9-HxCDF	2.98e+06	1.32e+03	2.3e+03	5.83e+06	1.80e+03	3.2e+03
25	13C-1,2,3,4,6,7,8-HpCDF	2.27e+06	2.83e+03	8.0e+02	5.36e+06	1.90e+03	2.8e+03
26	13C-1,2,3,4,7,8,9-HpCDF	1.96e+06	2.83e+03	6.9e+02	4.54e+06	1.90e+03	2.4e+03
27	13C-2,3,7,8-TCDD	3.22e+06	3.95e+03	8.1e+02	4.09e+06	2.45e+03	1.7e+03
28	13C-1,2,3,7,8-PeCDD	5.74e+06	1.29e+03	4.5e+03	3.66e+06	6.48e+02	5.6e+03
29	13C-1,2,3,4,7,8-HxCDD	5.65e+06	2.52e+03	2.2e+03	4.51e+06	2.54e+03	1.8e+03
30	13C-1,2,3,6,7,8-HxCDD	5.49e+06	2.52e+03	2.2e+03	4.29e+06	2.54e+03	1.7e+03
31	13C-1,2,3,4,6,7,8-HpCDD	4.17e+06	1.68e+03	2.5e+03	3.91e+06	2.01e+03	1.9e+03
32	13C-OCDD	4.95e+06	1.21e+03	4.1e+03	5.57e+06	1.51e+03	3.7e+03
33	13C-1,2,3,4-TCDD	4.38e+06	3.95e+03	1.1e+03	5.45e+06	2.45e+03	2.2e+03
34	13C-1,2,3,7,8,9-HxCDD	7.10e+06	2.52e+03	2.8e+03	5.61e+06	2.54e+03	2.2e+03
35	37Cl-2,3,7,8-TCDD	3.37e+06	1.42e+03	2.4e+03			

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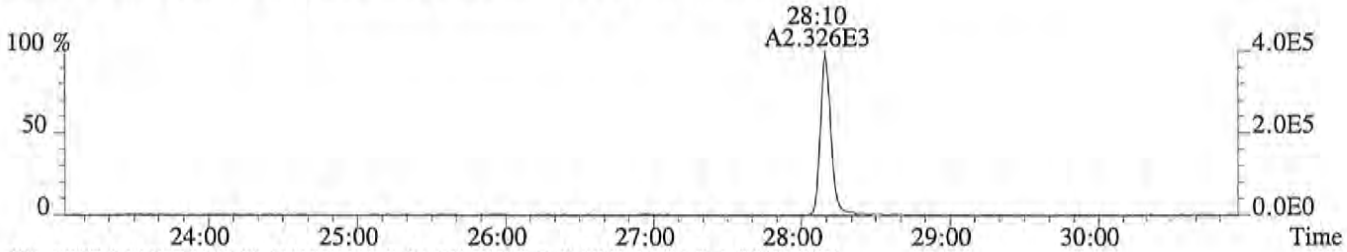
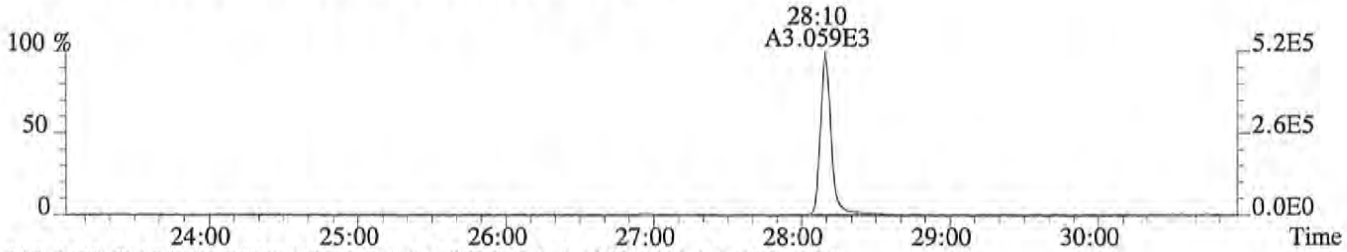
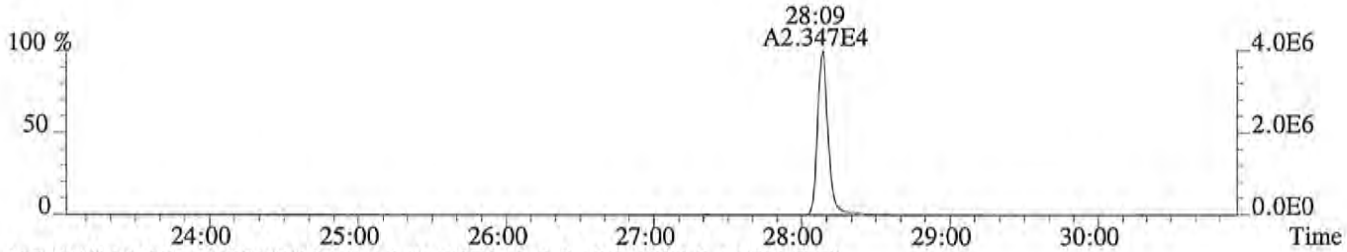
File:P600966 #1-562 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,672.0,1.00%,F,T)



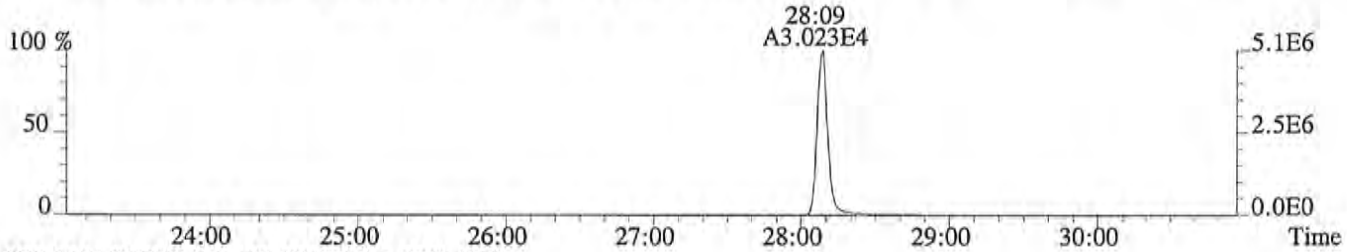
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1676.0,1.00%,F,T)



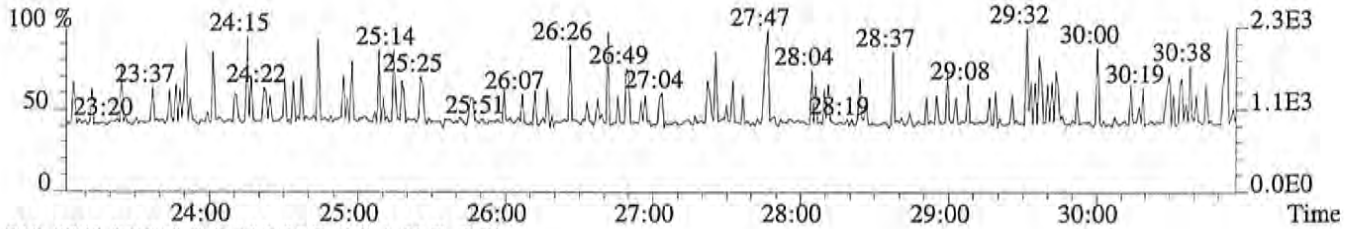
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2540.0,1.00%,F,T)



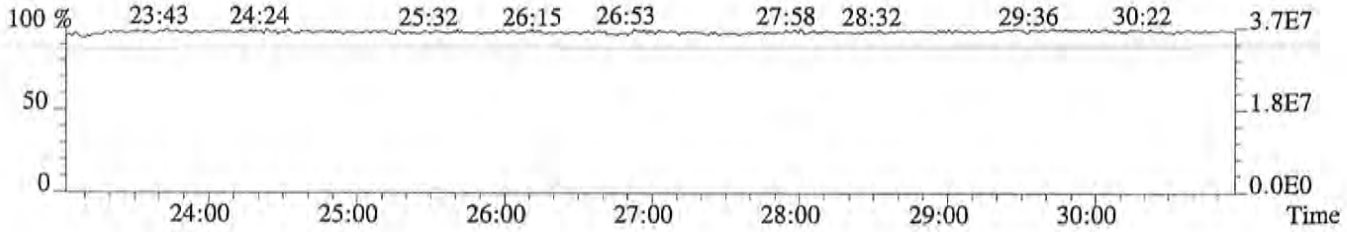
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1392.0,1.00%,F,T)



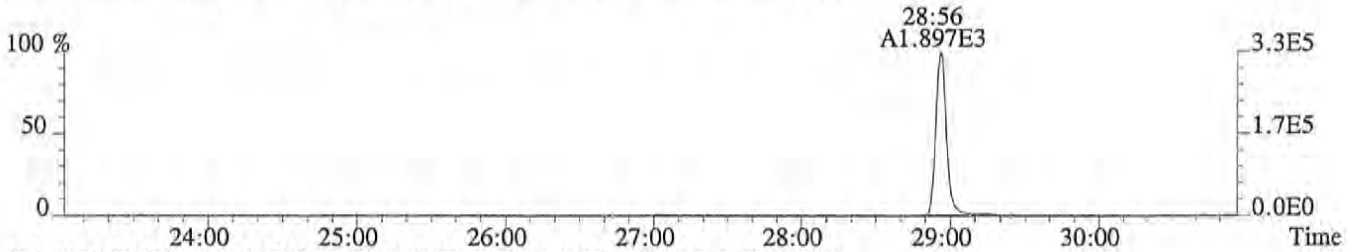
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



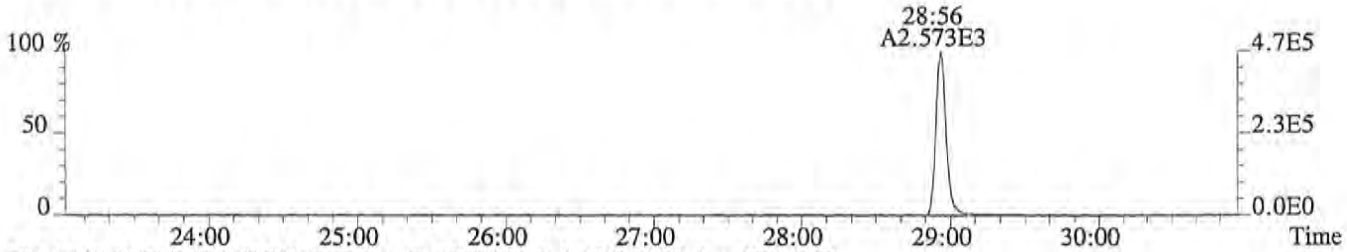
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



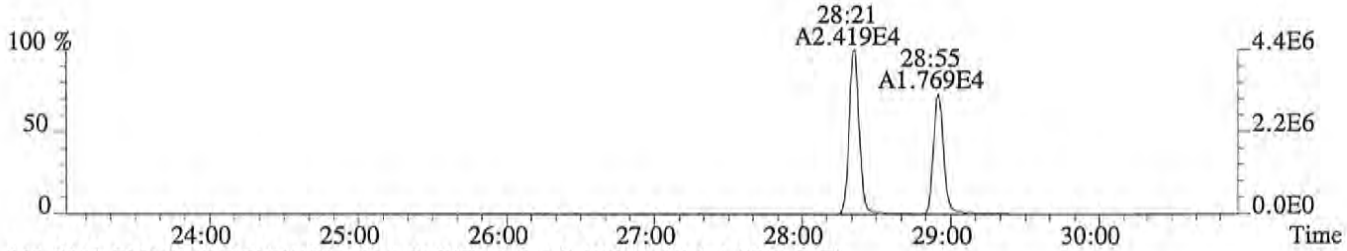
File:P600966 #1-562 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1084.0,1.00%,F,T)



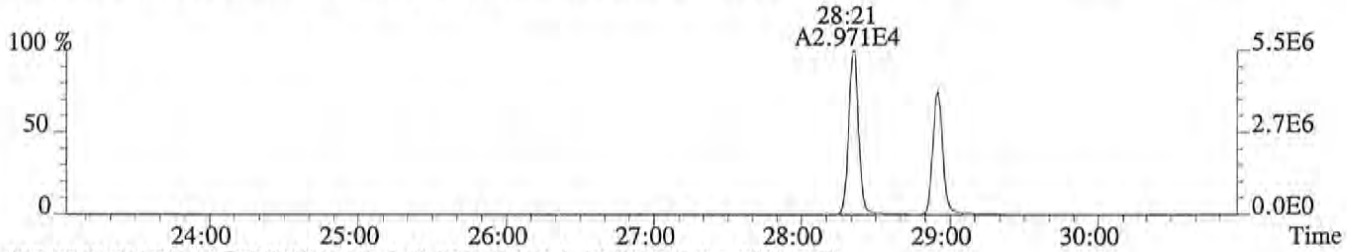
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1108.0,1.00%,F,T)



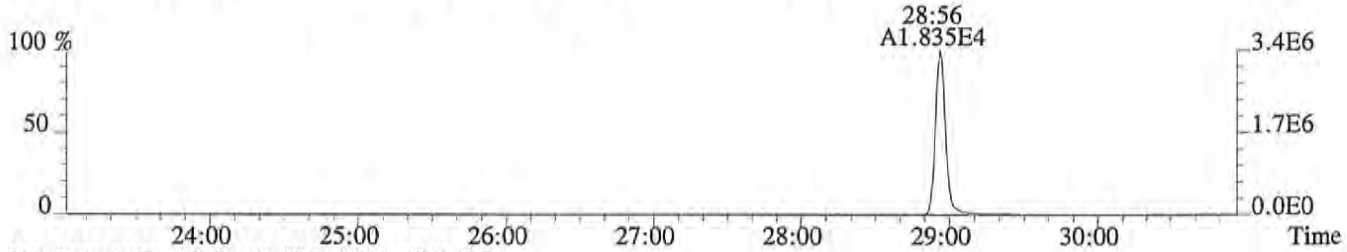
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3952.0,1.00%,F,T)



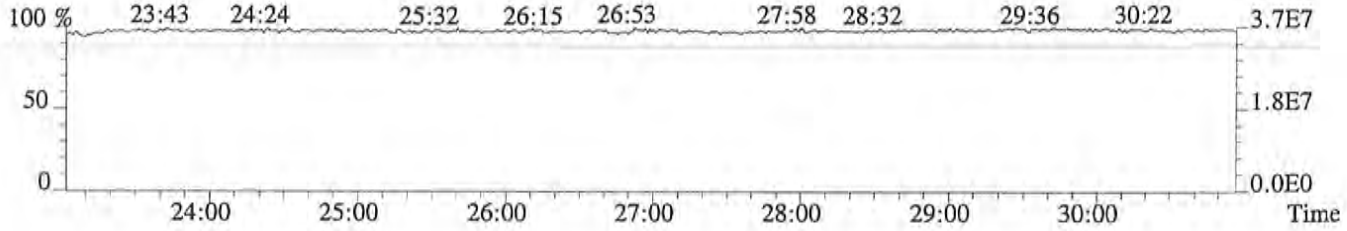
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2448.0,1.00%,F,T)



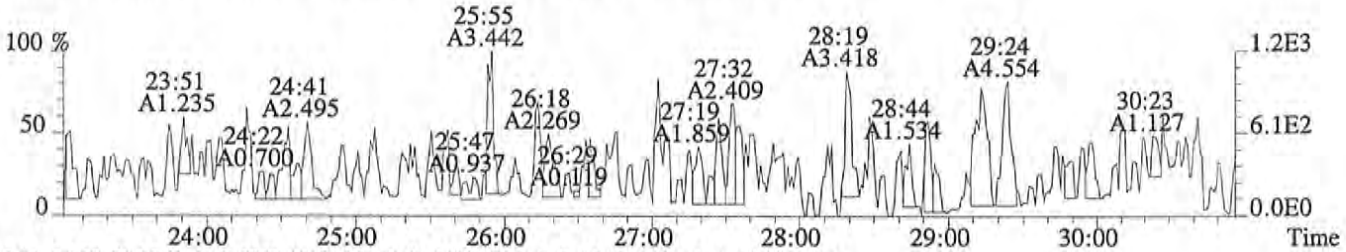
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1420.0,1.00%,F,T)



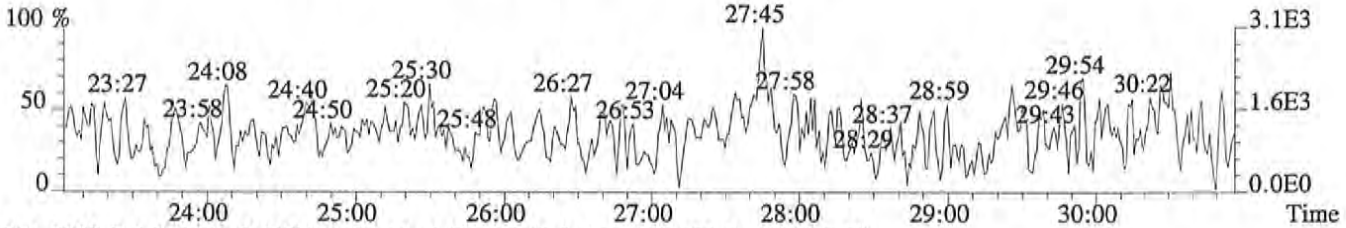
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



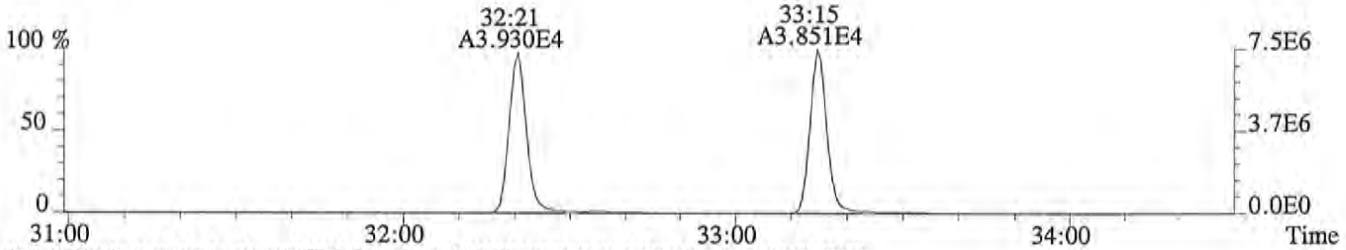
File:P600966 #1-562 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,320.0,1.00%,F,T)



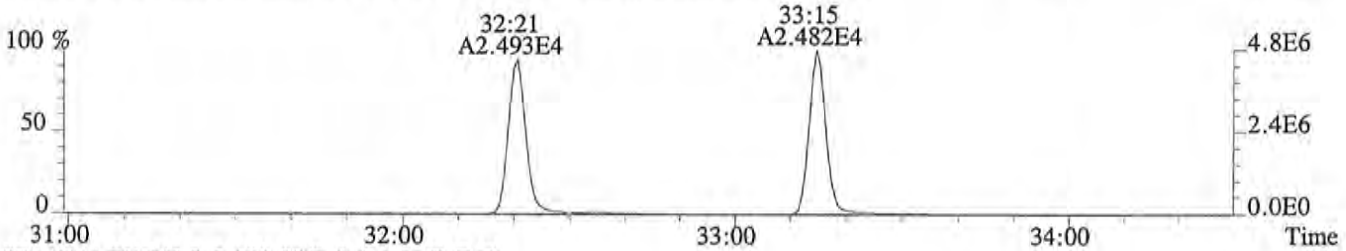
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1432.0,1.00%,F,T)



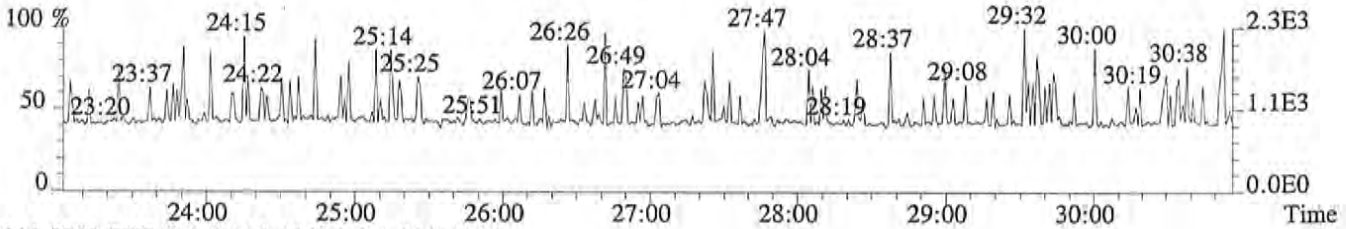
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,652.0,1.00%,F,T)



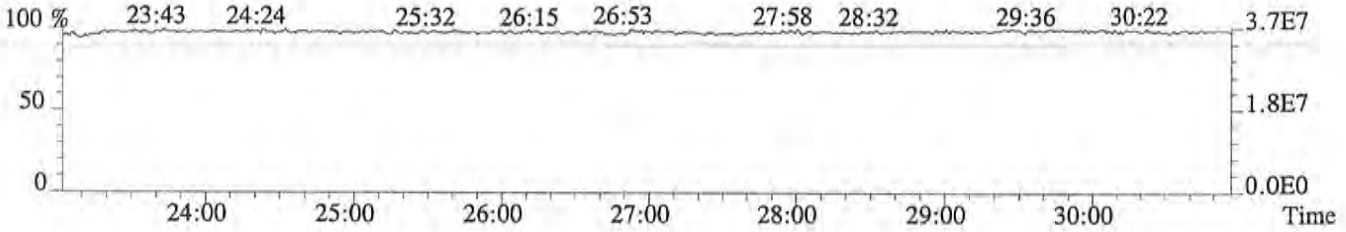
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,680.0,1.00%,F,T)



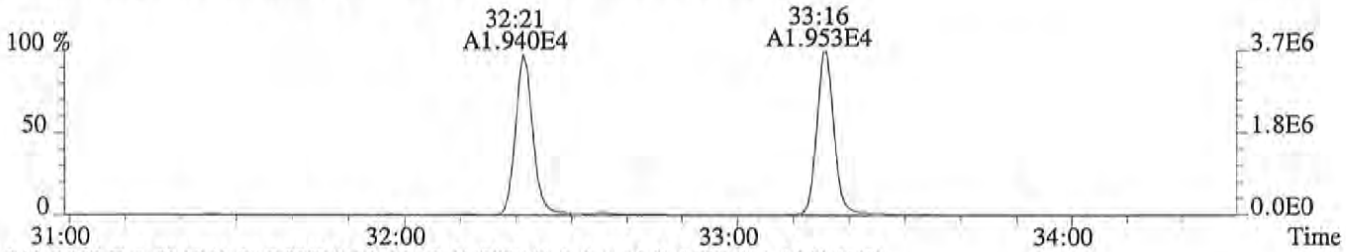
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



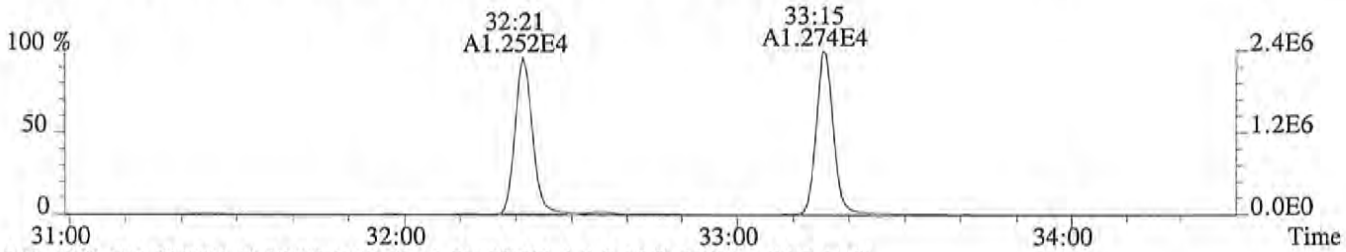
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



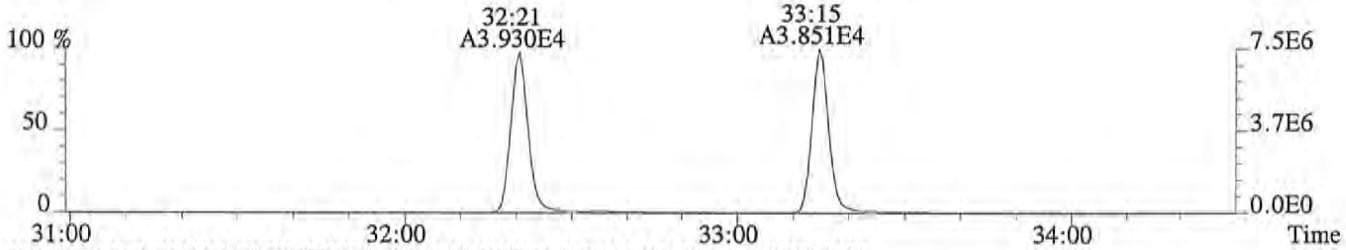
File:P600966 #1-317 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,940.0,1.00%,F,T)



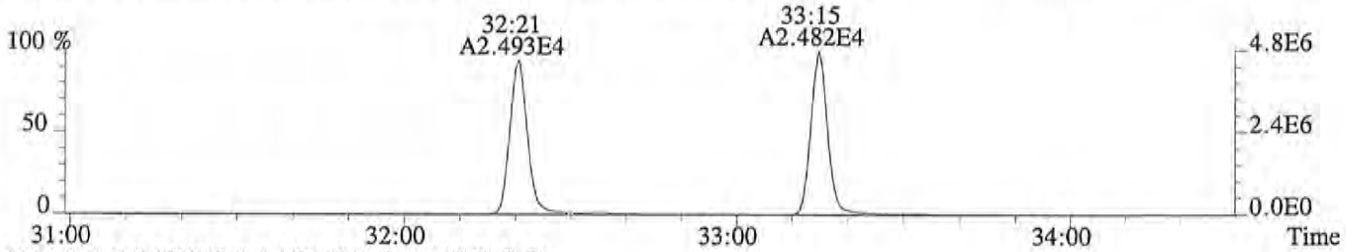
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2728.0,1.00%,F,T)



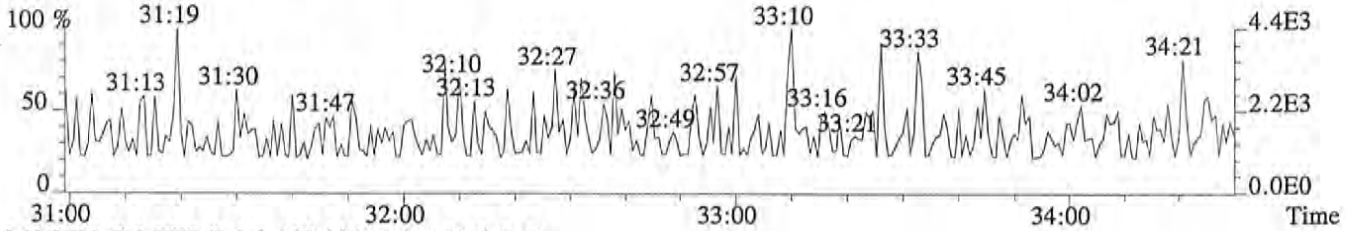
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,652.0,1.00%,F,T)



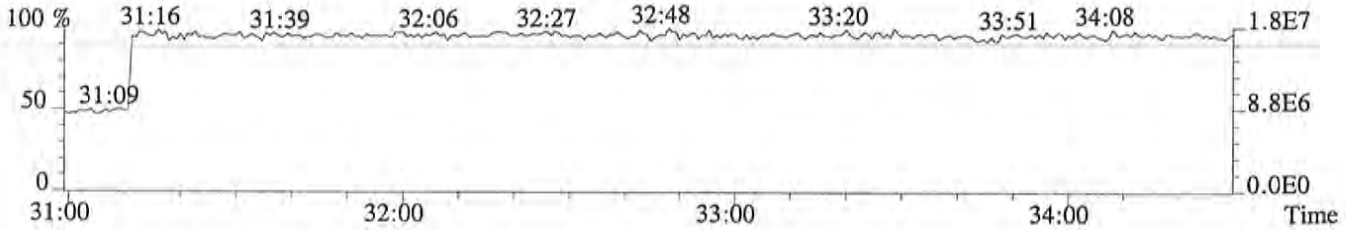
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,680.0,1.00%,F,T)



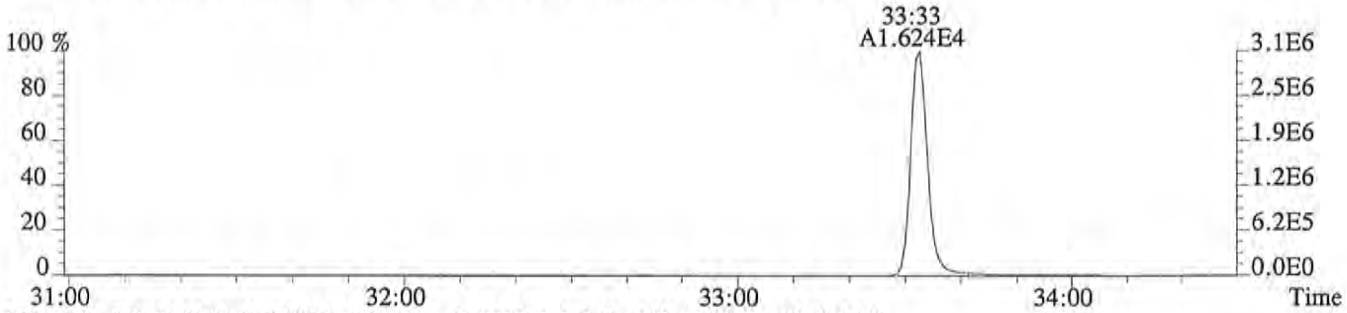
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



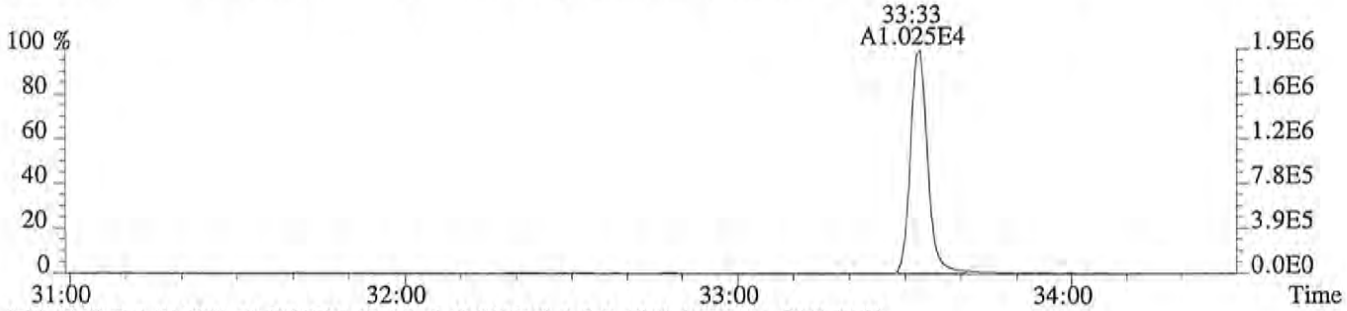
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



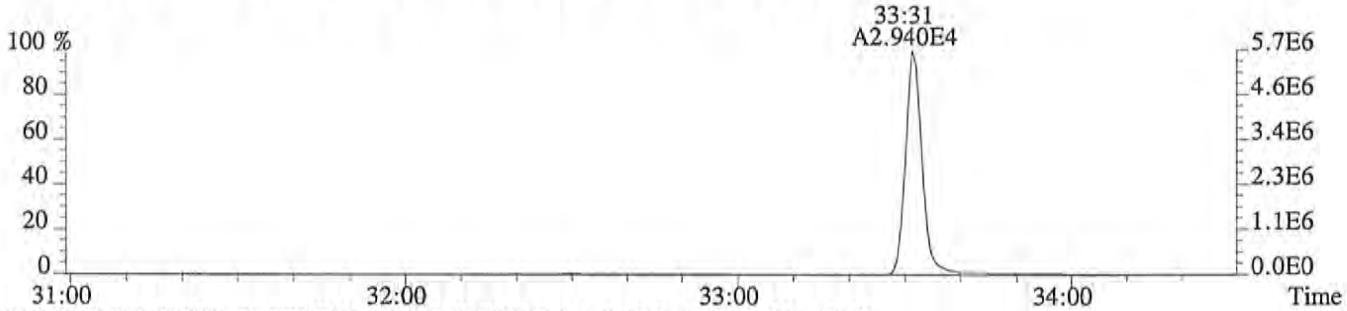
File:P600966 #1-317 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2116.0,1.00%,F,T)



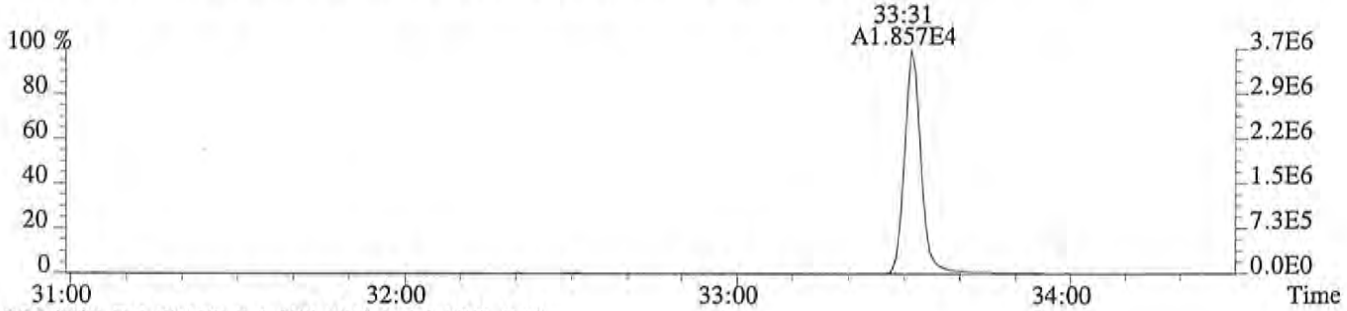
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1700.0,1.00%,F,T)



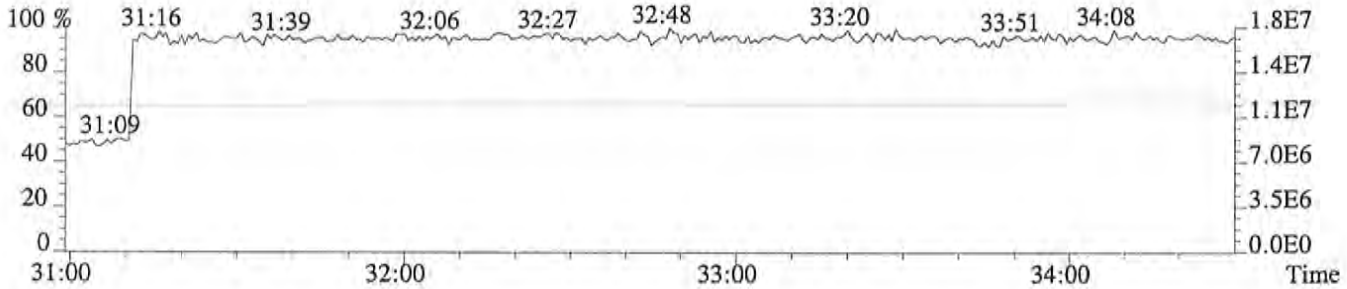
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1288.0,1.00%,F,T)



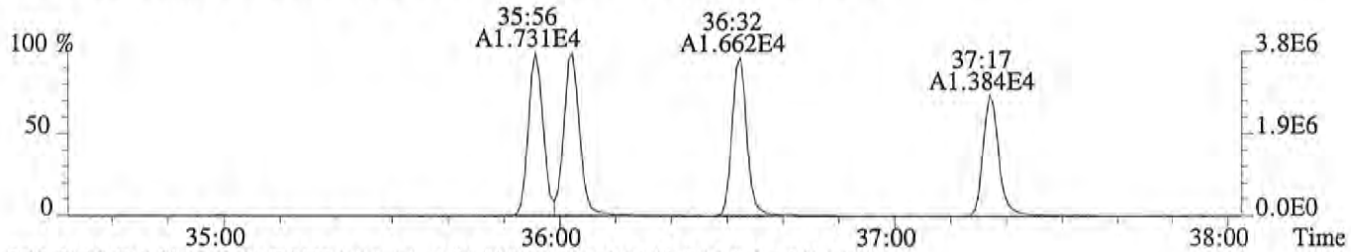
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,648.0,1.00%,F,T)



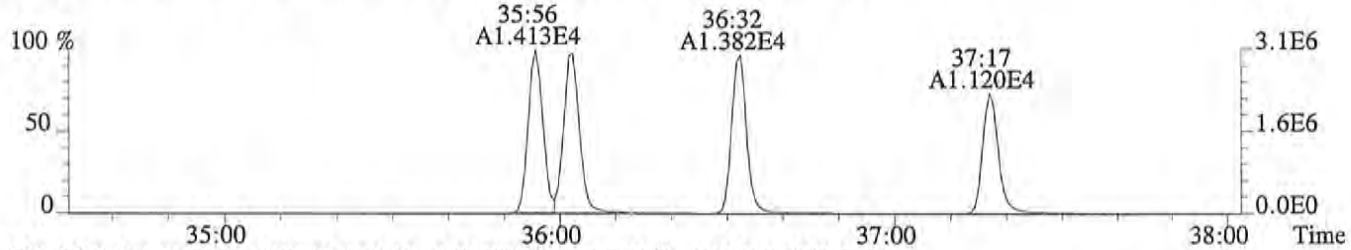
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



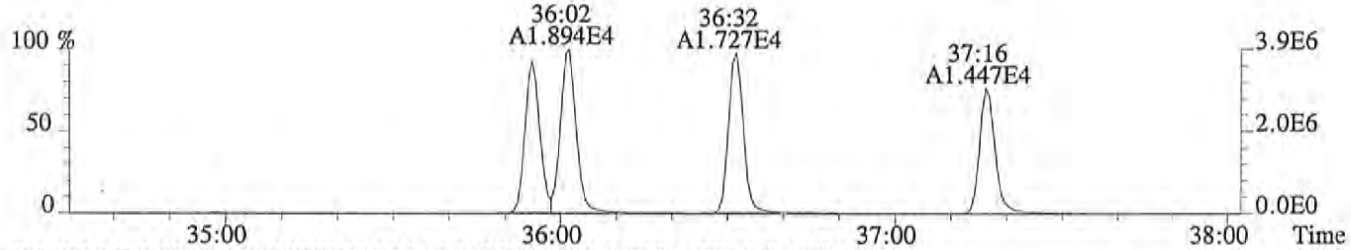
File:P600966 #1-316 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1420.0,0.40%,F,T)



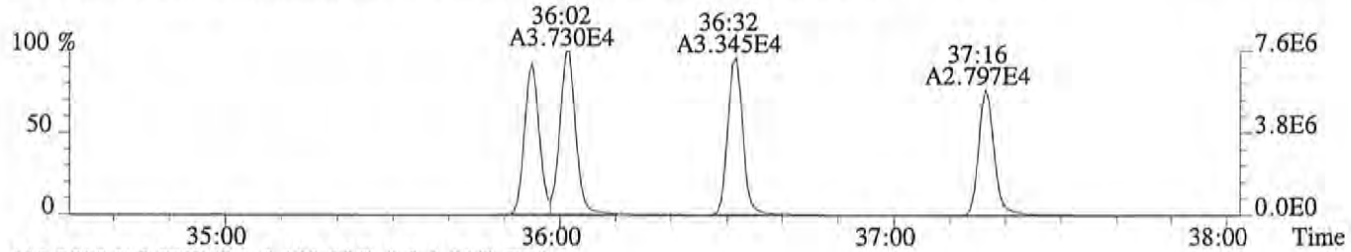
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,656.0,0.40%,F,T)



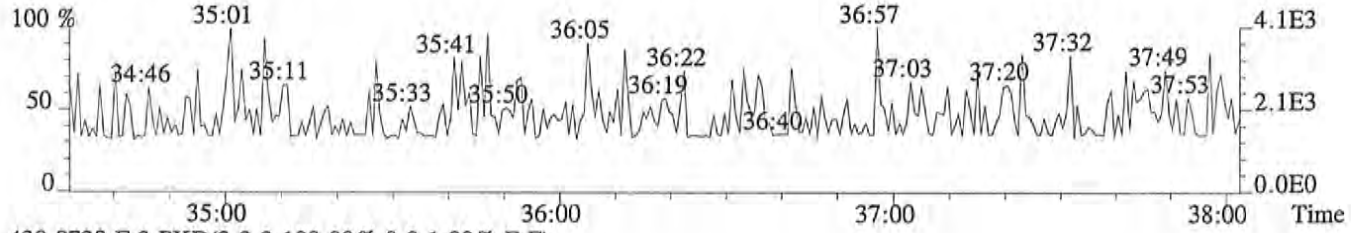
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1316.0,0.40%,F,T)



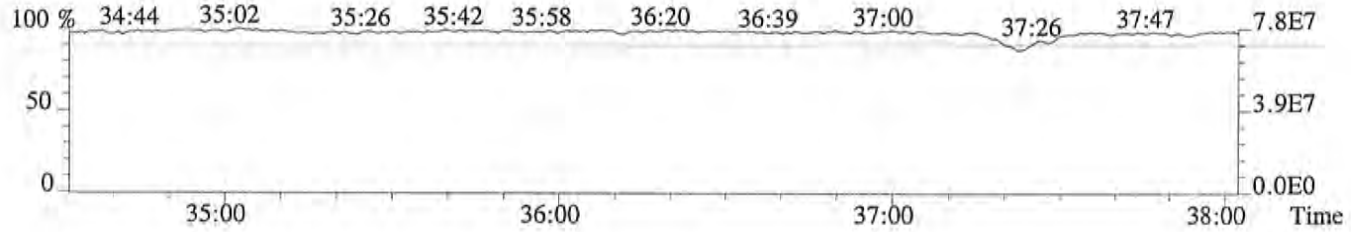
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1796.0,0.40%,F,T)



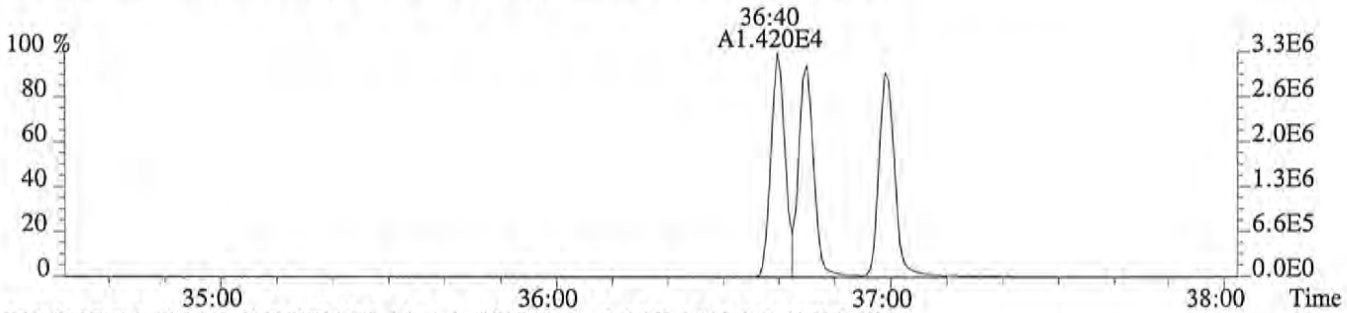
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



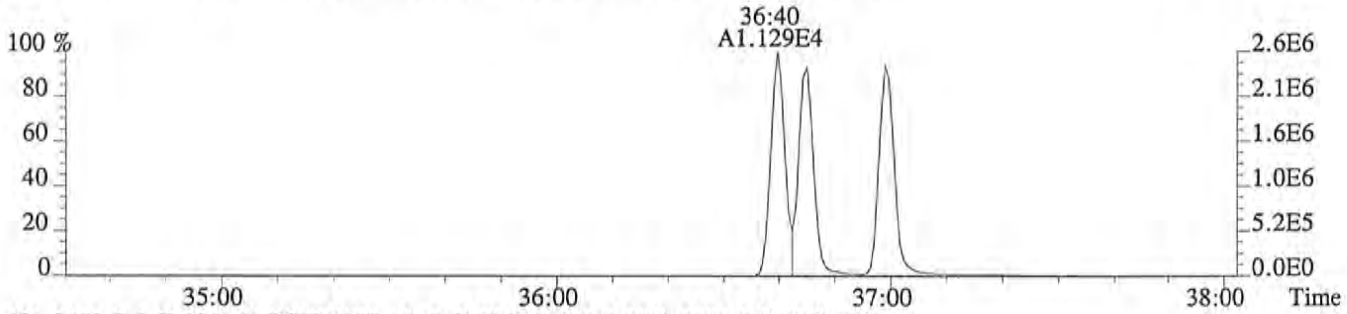
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



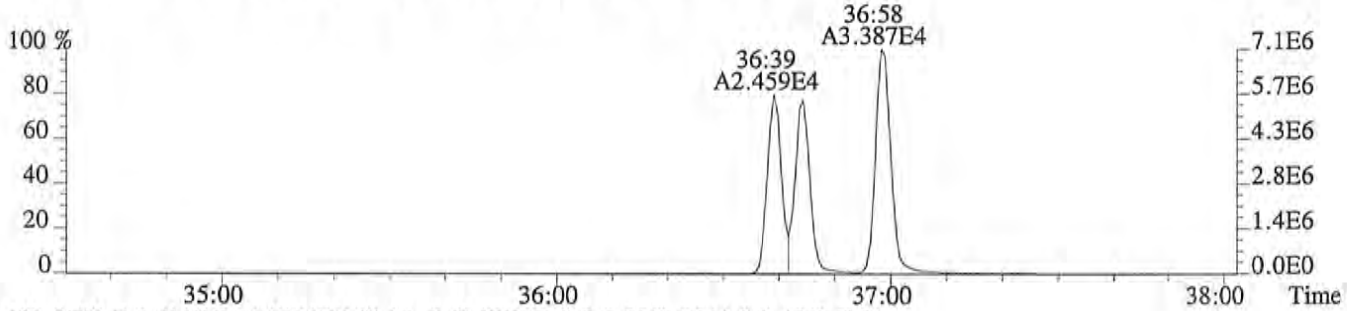
File:P600966 #1-316 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2296.0,0.40%,F,T)



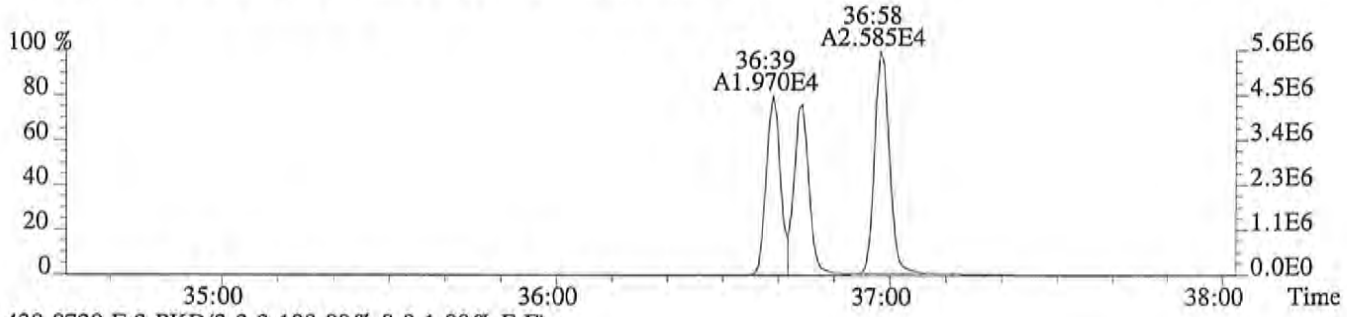
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1548.0,0.40%,F,T)



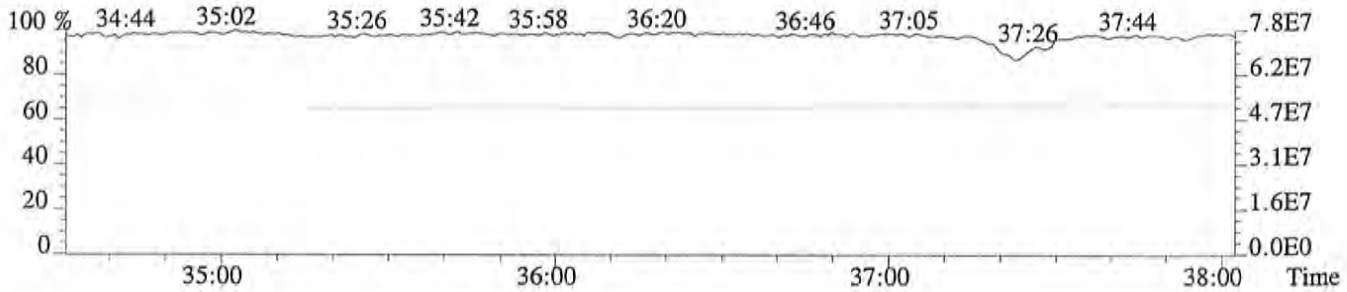
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2520.0,0.40%,F,T)



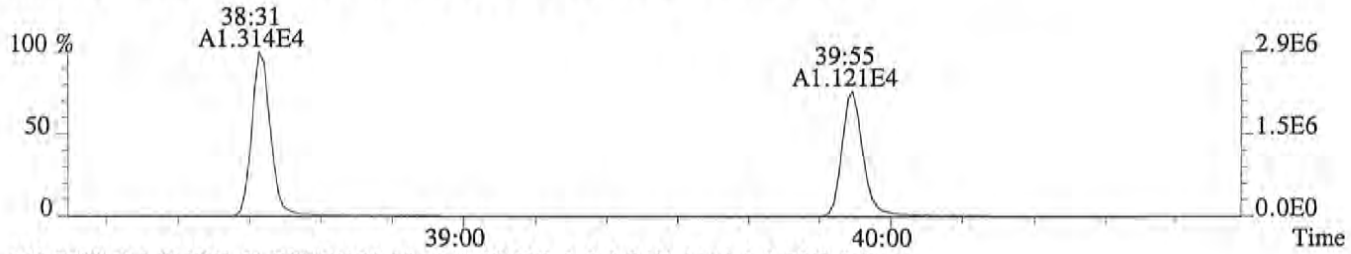
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2544.0,0.40%,F,T)



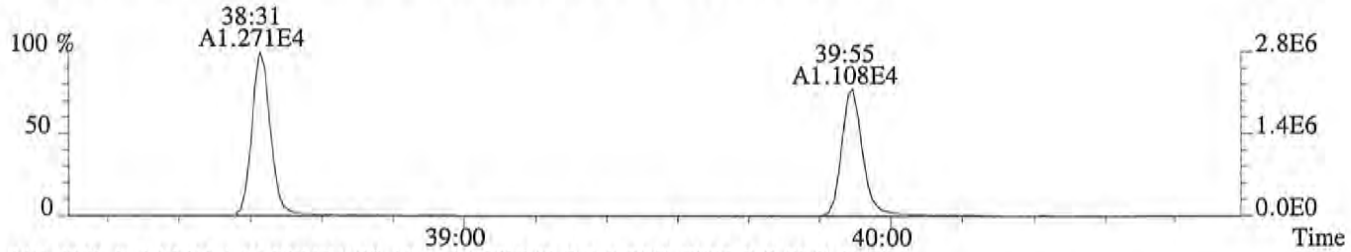
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



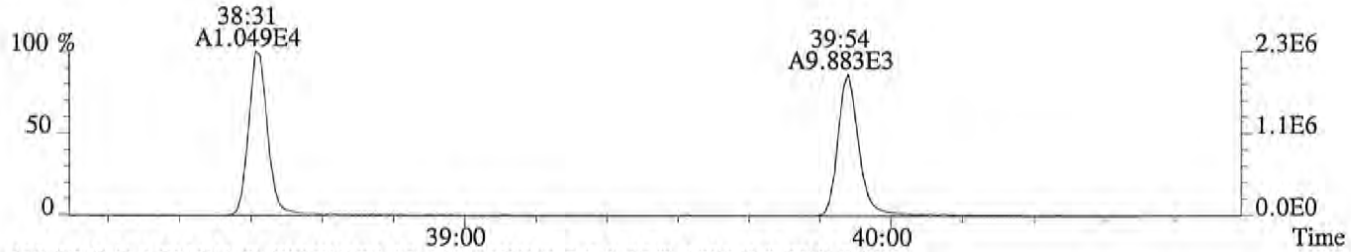
File:P600966 #1-248 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1796.0,0.50%,F,T)



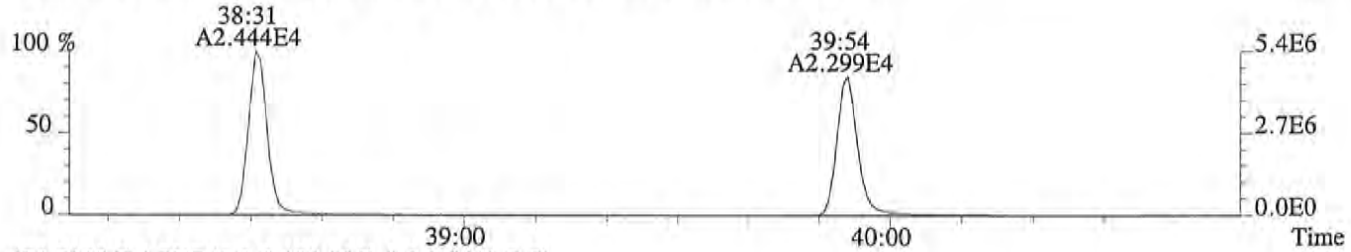
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1144.0,0.50%,F,T)



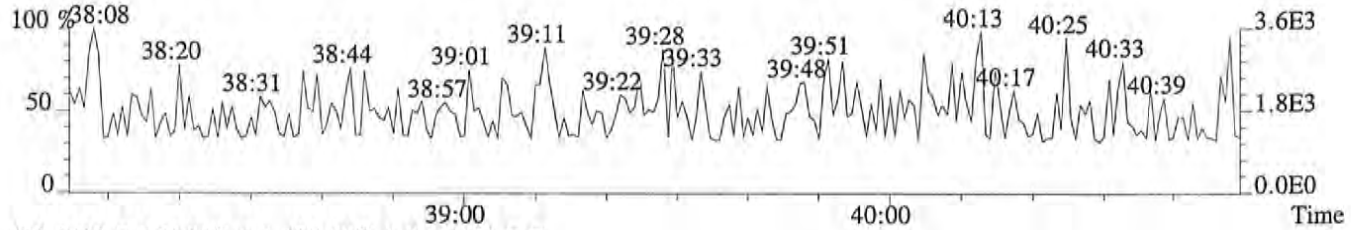
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2832.0,0.50%,F,T)



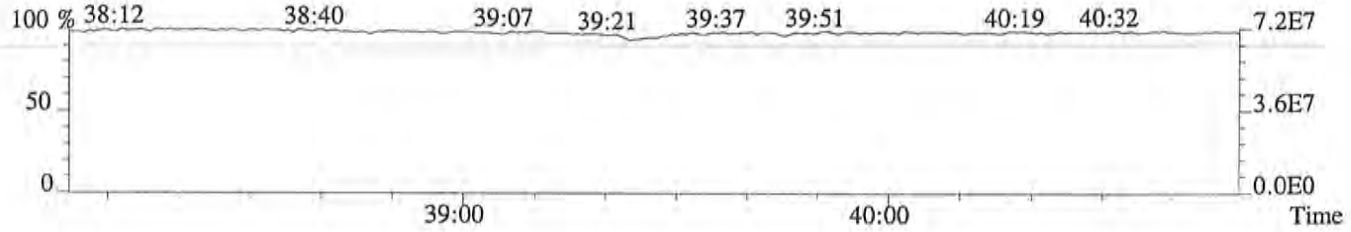
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1900.0,0.50%,F,T)



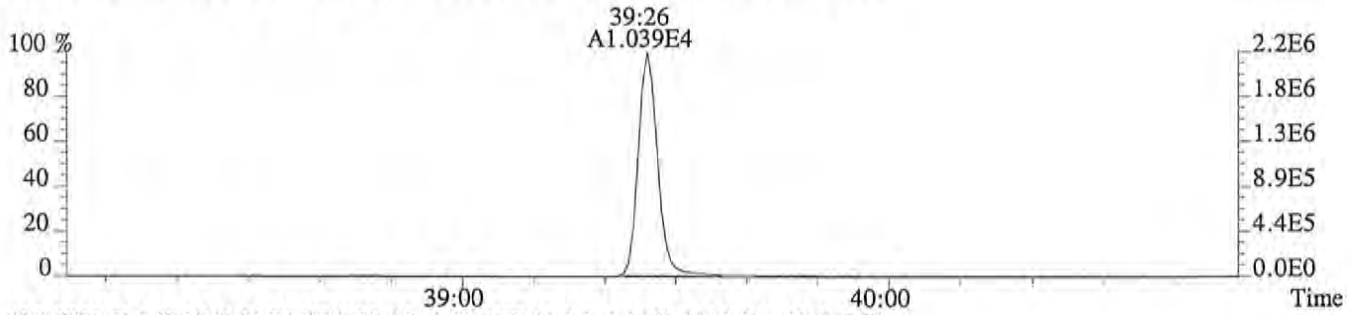
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



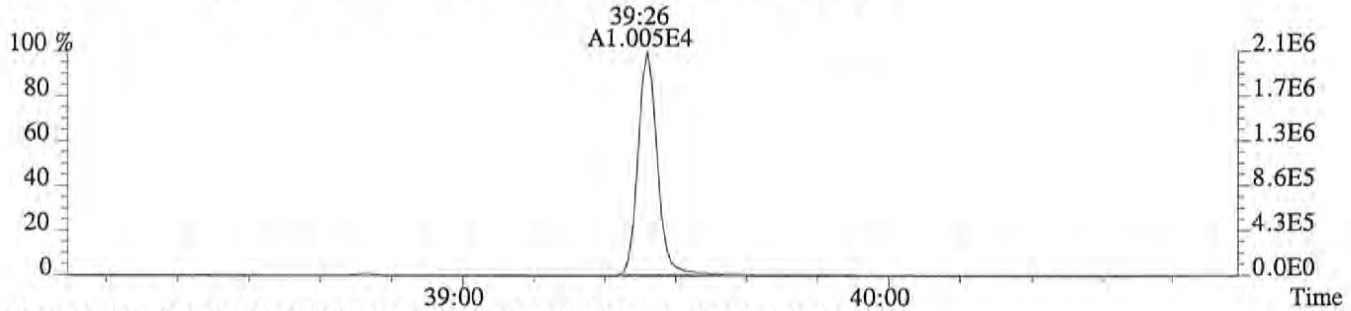
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



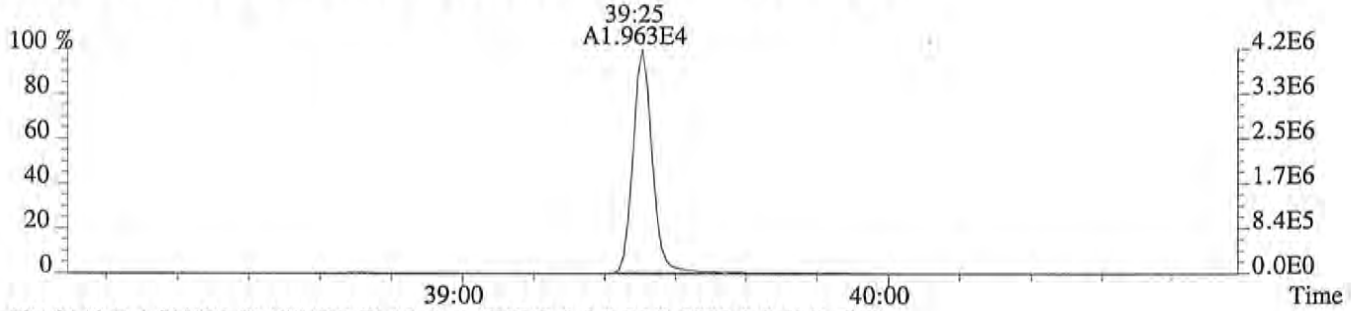
File:P600966 #1-248 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1080.0,0.40%,F,T)



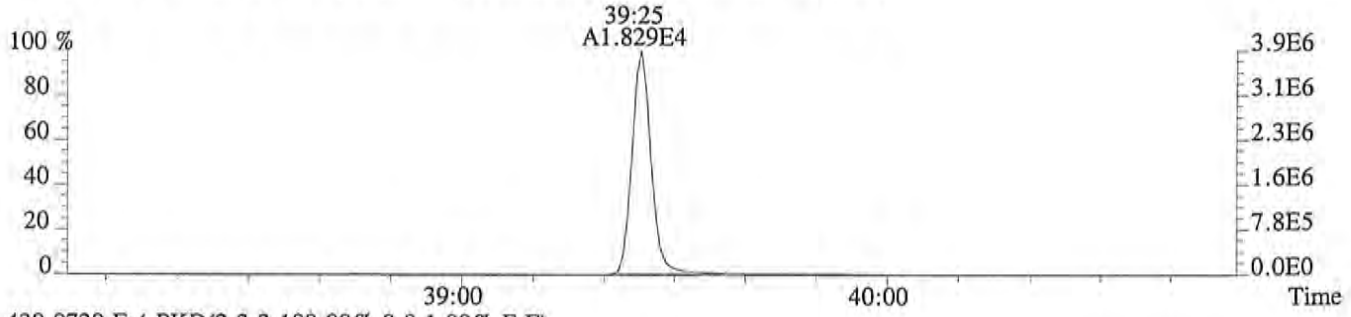
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1120.0,0.40%,F,T)



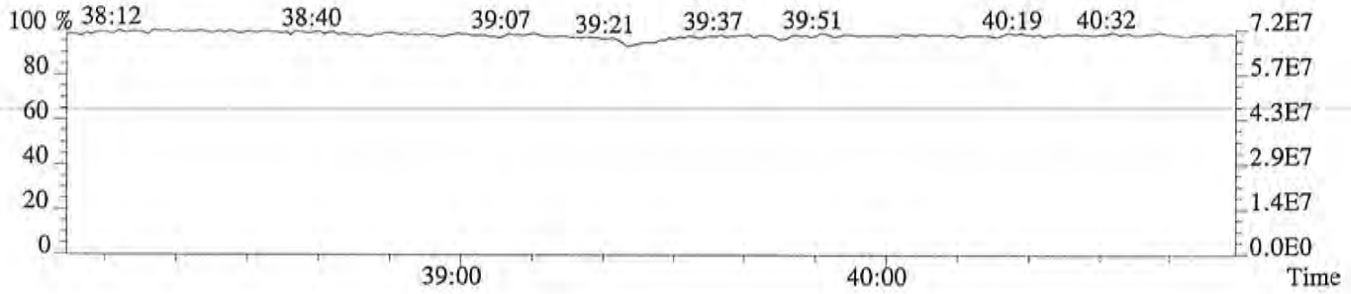
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1676.0,0.40%,F,T)



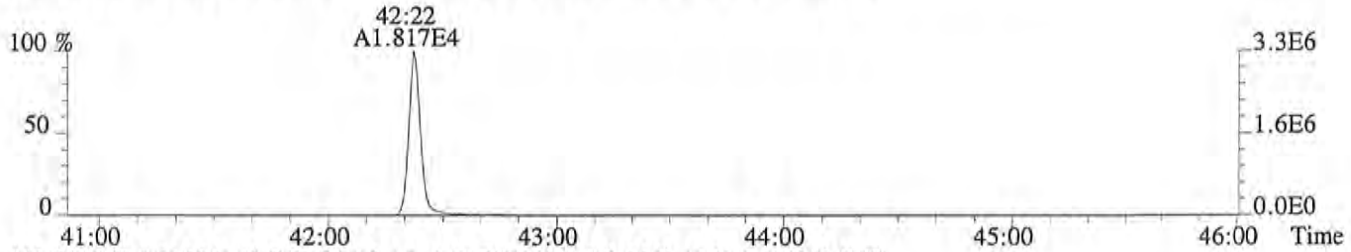
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2008.0,0.40%,F,T)



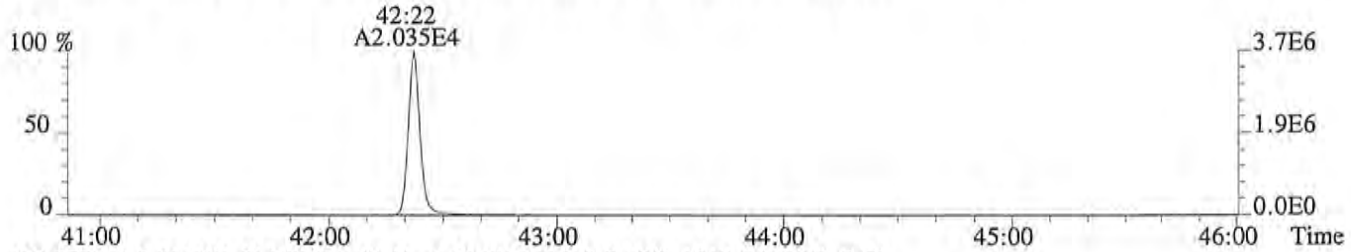
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



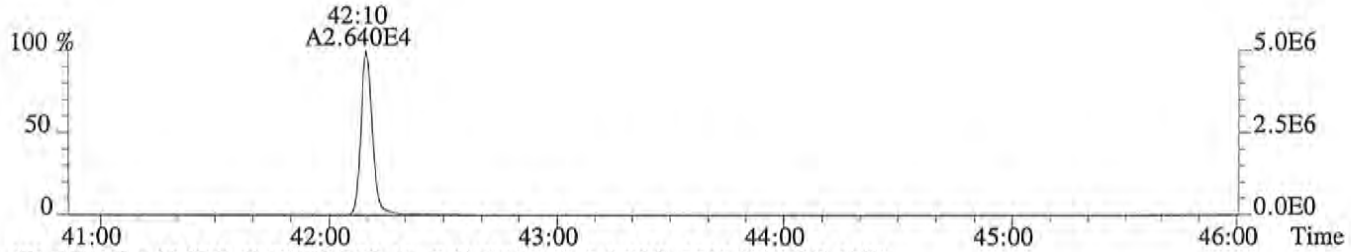
File:P600966 #1-464 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,600.0,0.40%,F,T)



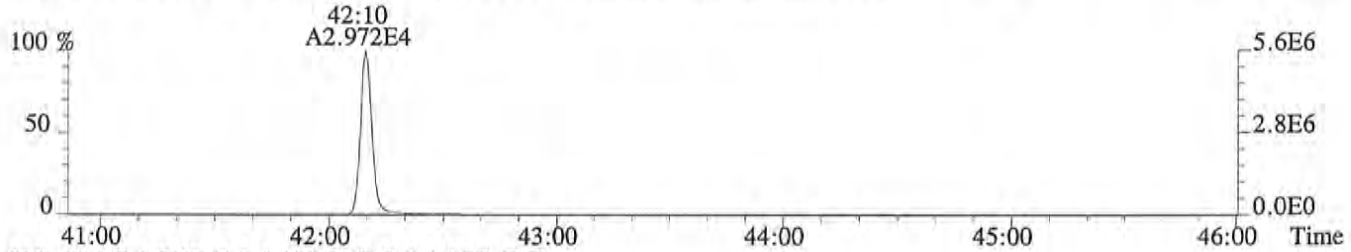
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1260.0,0.40%,F,T)



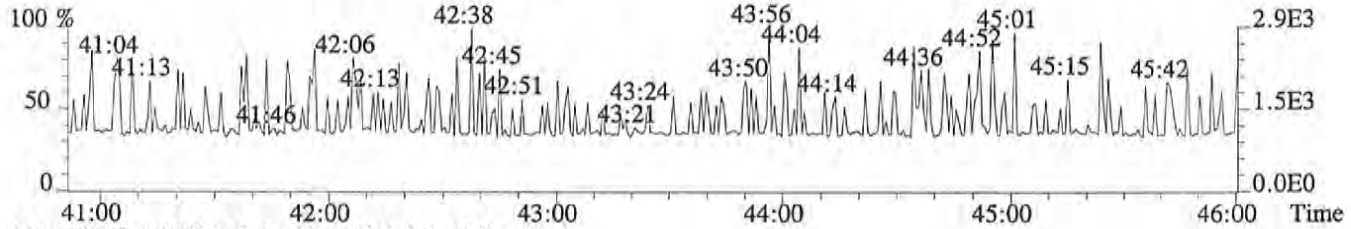
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1212.0,0.40%,F,T)



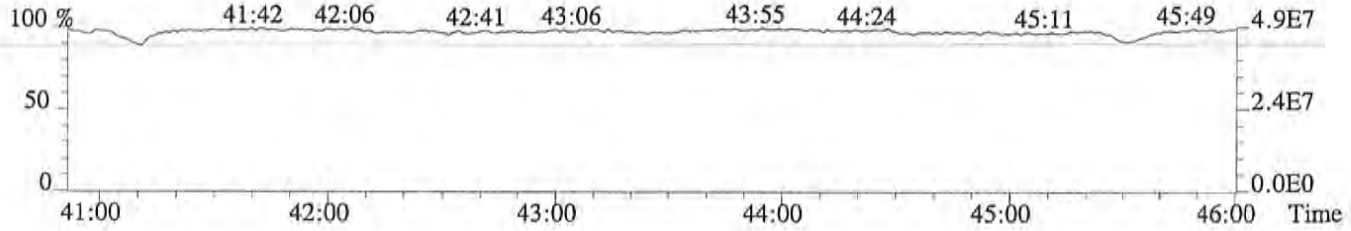
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1512.0,0.40%,F,T)



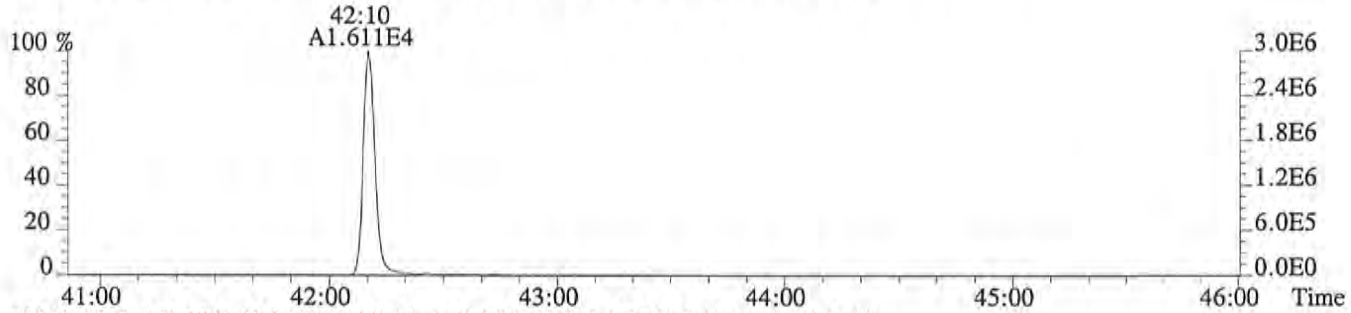
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



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

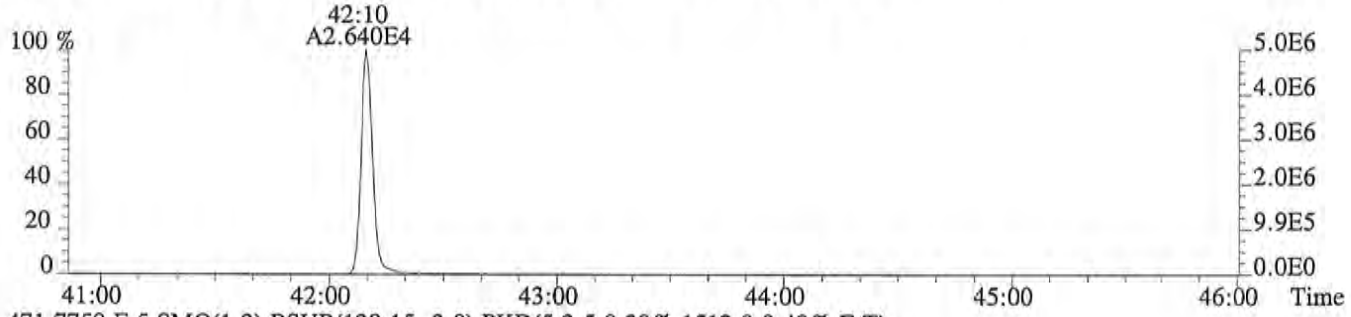


File:P600966 #1-464 Acq:14-OCT-2015 11:56:44 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-02
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,532.0,0.40%,F,T)

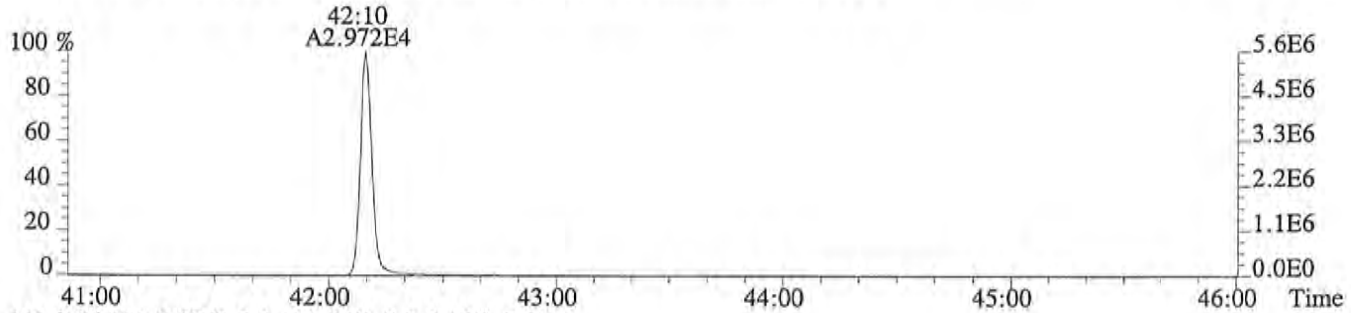


459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,764.0,0.40%,F,T)

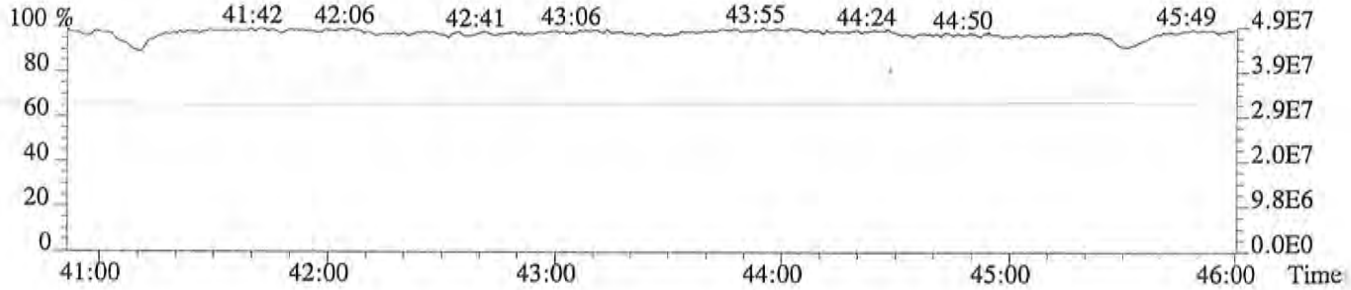
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1212.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1512.0,0.40%,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 #18 Filename P600967 Samp: 1 Inj: 1 Acquired: 14-OCT-15 12:45:45
Processed: 21-OCT-15 15:49:53 Sample ID: EQ1500602-03

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:09	5.976e+03	7.925e+03	0.75	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	32:21	5.293e+04	3.426e+04	1.55	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:15	5.367e+04	3.507e+04	1.53	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	35:55	4.736e+04	3.859e+04	1.23	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:02	5.034e+04	4.085e+04	1.23	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	36:32	4.780e+04	3.879e+04	1.23	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:17	4.168e+04	3.412e+04	1.22	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	38:31	3.557e+04	3.444e+04	1.03	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	39:54	3.276e+04	3.201e+04	1.02	yes	no	1.287
10	Unk	OCDF	42:22	5.112e+04	5.696e+04	0.90	yes	no	1.257
11	Unk	2,3,7,8-TCDD	28:55	5.295e+03	6.800e+03	0.78	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	33:32	4.433e+04	2.855e+04	1.55	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	36:40	3.886e+04	3.102e+04	1.25	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	36:44	3.969e+04	3.178e+04	1.25	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	36:59	4.033e+04	3.316e+04	1.22	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	39:26	2.963e+04	2.873e+04	1.03	yes	no	1.034
17	Unk	OCDD	42:10	4.521e+04	5.126e+04	0.88	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	28:08	5.931e+04	7.550e+04	0.79	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	32:20	1.026e+05	6.565e+04	1.56	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:15	1.037e+05	6.594e+04	1.57	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	35:54	4.335e+04	8.500e+04	0.51	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:01	5.099e+04	9.896e+04	0.52	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	36:31	4.864e+04	9.384e+04	0.52	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:16	4.246e+04	8.288e+04	0.51	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:31	2.811e+04	6.518e+04	0.43	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:53	2.829e+04	6.508e+04	0.43	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	28:54	4.580e+04	5.738e+04	0.80	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	33:31	7.890e+04	5.006e+04	1.58	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	36:39	6.628e+04	5.234e+04	1.27	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	36:44	6.898e+04	5.503e+04	1.25	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:25	5.363e+04	5.107e+04	1.05	yes	no	0.892
32	IS	13C-OCDD	42:10	7.362e+04	8.227e+04	0.89	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	28:21	6.038e+04	7.621e+04	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:58	8.727e+04	6.897e+04	1.27	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:55	4.677e+04				no	1.263

$$\text{OCDD} = \frac{(4.521e+04 + 5.126e+04)\ \text{x}\ 4000\ \text{pg x}\ 1}{(7.362e+04 + 8.227e+04)\ \text{x}\ \text{g x}\ /\ 100\ \text{x}\ 1.111} =$$

ALS ENVIRONMENTAL -- HOUSTON HRMS
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Houston, TX 77099
Telephone: (713)266-1599. Fax(713)266-0130

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
DLCS

Run #18 Filename P600967 Samp: 1 Inj: 1 Acquired: 14-OCT-15 12:45:45
Processed: 21-OCT-15 15:49:53 LAB. ID: EQ1500602-03

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.09e+06	7.96e+02	1.4e+03	1.43e+06	1.45e+03	9.9e+02
2	1,2,3,7,8-PeCDF	9.85e+06	2.76e+02	3.6e+04	6.44e+06	2.33e+03	2.8e+03
3	2,3,4,7,8-PeCDF	1.09e+07	2.76e+02	3.9e+04	6.96e+06	2.33e+03	3.0e+03
4	1,2,3,4,7,8-HxCDF	1.03e+07	1.12e+03	9.2e+03	8.56e+06	5.92e+02	1.4e+04
5	1,2,3,6,7,8-HxCDF	1.09e+07	1.12e+03	9.7e+03	8.88e+06	5.92e+02	1.5e+04
6	2,3,4,6,7,8-HxCDF	1.06e+07	1.12e+03	9.5e+03	8.72e+06	5.92e+02	1.5e+04
7	1,2,3,7,8,9-HxCDF	8.85e+06	1.12e+03	7.9e+03	7.20e+06	5.92e+02	1.2e+04
8	1,2,3,4,6,7,8-HpCDF	8.15e+06	2.81e+03	2.9e+03	7.82e+06	3.28e+03	2.4e+03
9	1,2,3,4,7,8,9-HpCDF	6.83e+06	2.81e+03	2.4e+03	6.70e+06	3.28e+03	2.0e+03
10	OCDF	9.28e+06	6.12e+02	1.5e+04	1.03e+07	7.56e+02	1.4e+04
11	2,3,7,8-TCDD	9.87e+05	5.96e+02	1.7e+03	1.30e+06	9.48e+02	1.4e+03
12	1,2,3,7,8-PeCDD	9.11e+06	1.44e+03	6.3e+03	5.81e+06	9.52e+02	6.1e+03
13	1,2,3,4,7,8-HxCDD	9.15e+06	1.02e+03	9.0e+03	7.18e+06	1.08e+03	6.7e+03
14	1,2,3,6,7,8-HxCDD	8.62e+06	1.02e+03	8.5e+03	6.97e+06	1.08e+03	6.5e+03
15	1,2,3,7,8,9-HxCDD	9.12e+06	1.02e+03	9.0e+03	7.41e+06	1.08e+03	6.9e+03
16	1,2,3,4,6,7,8-HpCDD	6.27e+06	1.13e+03	5.5e+03	6.05e+06	8.52e+02	7.1e+03
17	OCDD	8.57e+06	4.76e+02	1.8e+04	9.65e+06	7.24e+02	1.3e+04
18	13C-2,3,7,8-TCDF	1.09e+07	2.17e+03	5.0e+03	1.37e+07	1.31e+03	1.0e+04
19	13C-1,2,3,7,8-PeCDF	1.96e+07	9.00e+02	2.2e+04	1.26e+07	1.27e+03	9.9e+03
20	13C-2,3,4,7,8-PeCDF	2.06e+07	9.00e+02	2.3e+04	1.31e+07	1.27e+03	1.0e+04
21	13C-1,2,3,4,7,8-HxCDF	9.68e+06	1.38e+03	7.0e+03	1.90e+07	1.44e+03	1.3e+04
22	13C-1,2,3,6,7,8-HxCDF	1.12e+07	1.38e+03	8.1e+03	2.17e+07	1.44e+03	1.5e+04
23	13C-2,3,4,6,7,8-HxCDF	1.09e+07	1.38e+03	7.9e+03	2.11e+07	1.44e+03	1.5e+04
24	13C-1,2,3,7,8,9-HxCDF	9.10e+06	1.38e+03	6.6e+03	1.75e+07	1.44e+03	1.2e+04
25	13C-1,2,3,4,6,7,8-HpCDF	6.45e+06	3.59e+03	1.8e+03	1.49e+07	2.11e+03	7.1e+03
26	13C-1,2,3,4,7,8,9-HpCDF	5.88e+06	3.59e+03	1.6e+03	1.35e+07	2.11e+03	6.4e+03
27	13C-2,3,7,8-TCDD	8.94e+06	3.76e+03	2.4e+03	1.12e+07	2.71e+03	4.1e+03
28	13C-1,2,3,7,8-PeCDD	1.56e+07	7.36e+02	2.1e+04	9.84e+06	7.20e+02	1.4e+04
29	13C-1,2,3,4,7,8-HxCDD	1.56e+07	2.18e+03	7.1e+03	1.21e+07	1.32e+03	9.1e+03
30	13C-1,2,3,6,7,8-HxCDD	1.49e+07	2.18e+03	6.8e+03	1.20e+07	1.32e+03	9.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	1.13e+07	1.62e+03	6.9e+03	1.09e+07	1.50e+03	7.3e+03
32	13C-OCDD	1.40e+07	1.26e+03	1.1e+04	1.56e+07	1.14e+03	1.4e+04
33	13C-1,2,3,4-TCDD	1.16e+07	3.76e+03	3.1e+03	1.46e+07	2.71e+03	5.4e+03
34	13C-1,2,3,7,8,9-HxCDD	1.98e+07	2.18e+03	9.1e+03	1.57e+07	1.32e+03	1.2e+04
35	37Cl-2,3,7,8-TCDD	8.94e+06	1.38e+03	6.5e+03			

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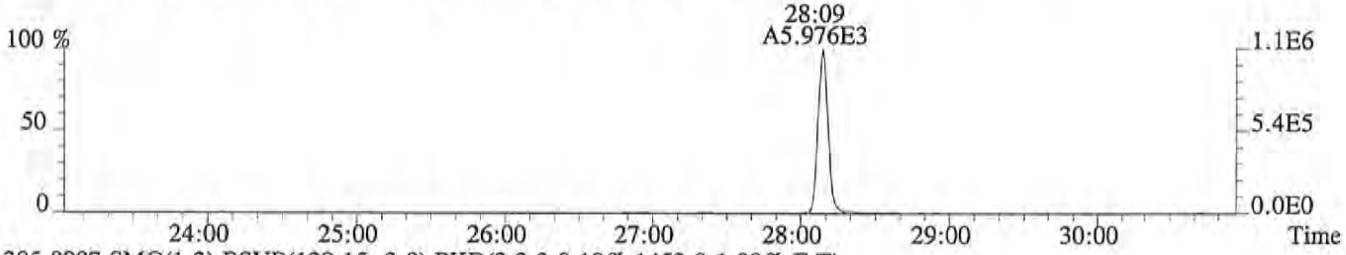
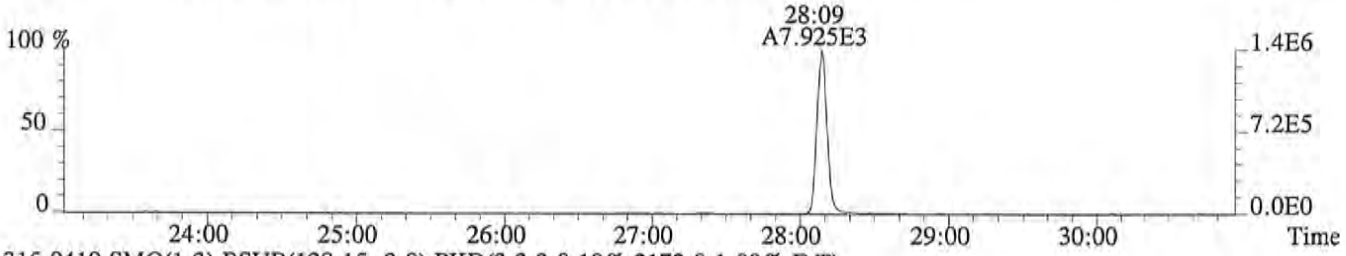
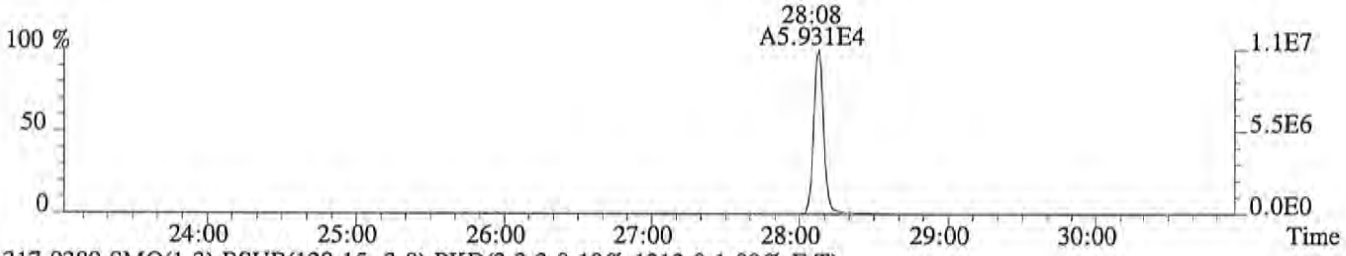
File:P600967 #1-562 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,796.0,1.00%,F,T)



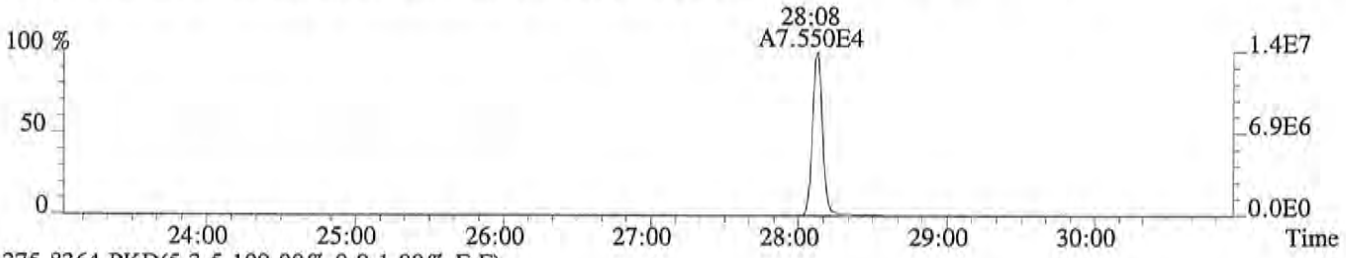
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1452.0,1.00%,F,T)



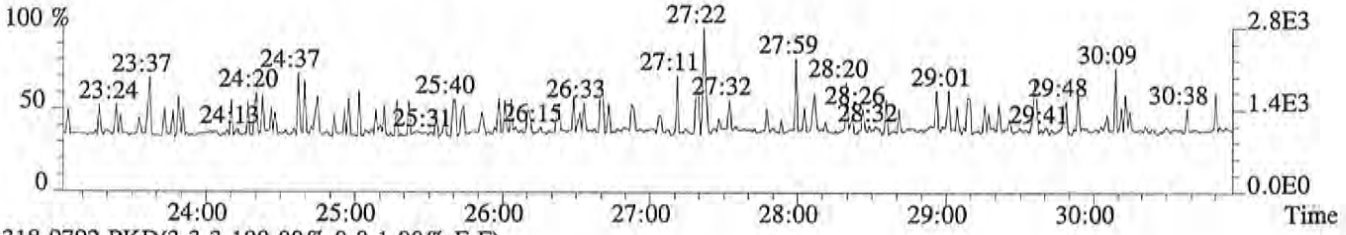
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2172.0,1.00%,F,T)



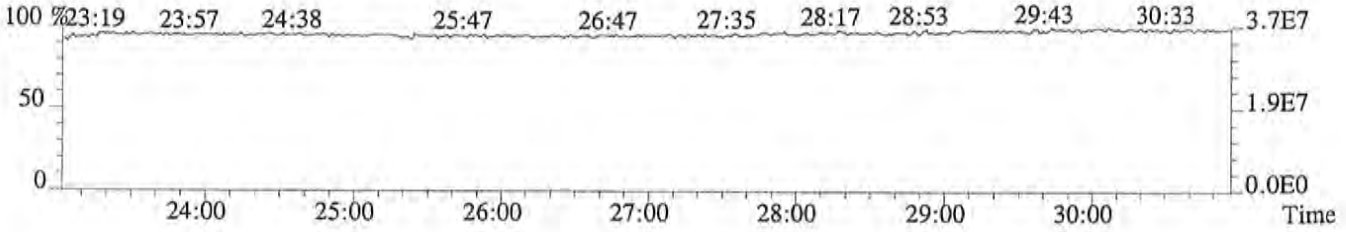
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1312.0,1.00%,F,T)



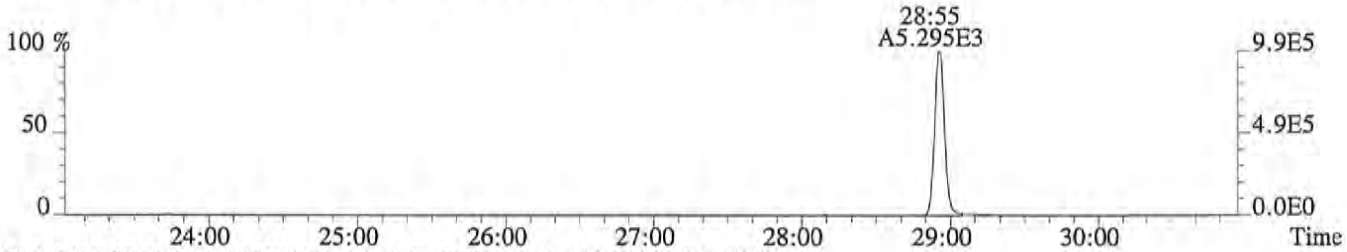
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



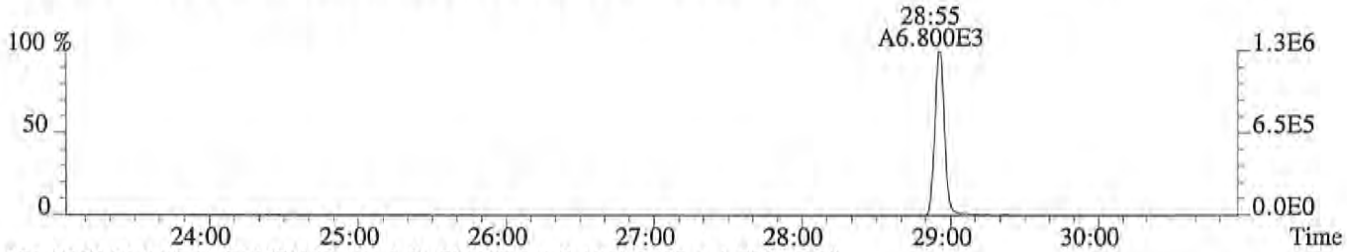
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



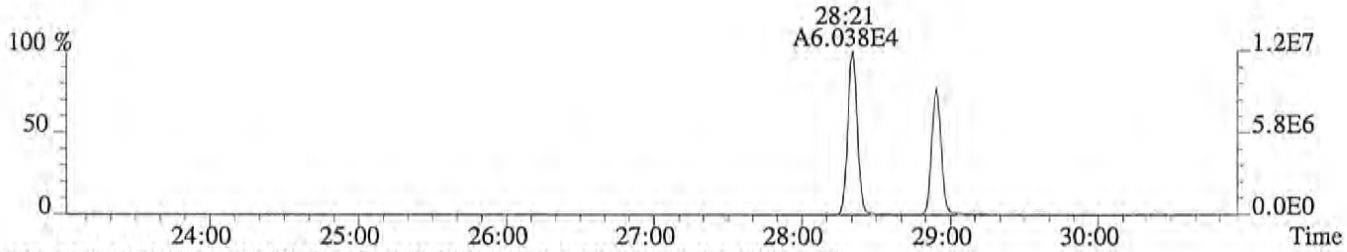
File:P600967 #1-562 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,596.0,1.00%,F,T)



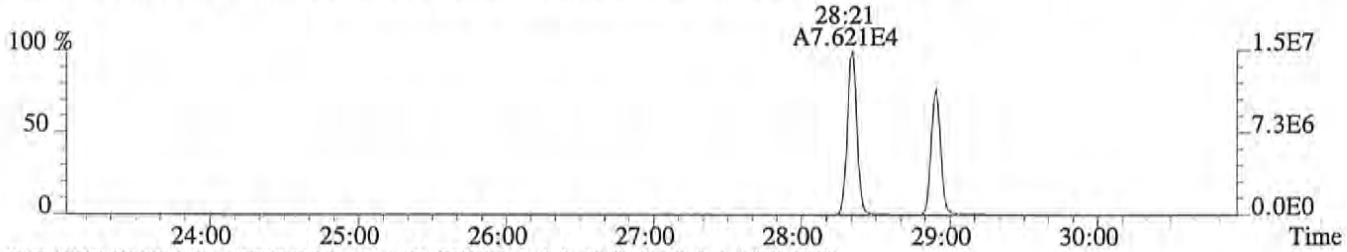
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,948.0,1.00%,F,T)



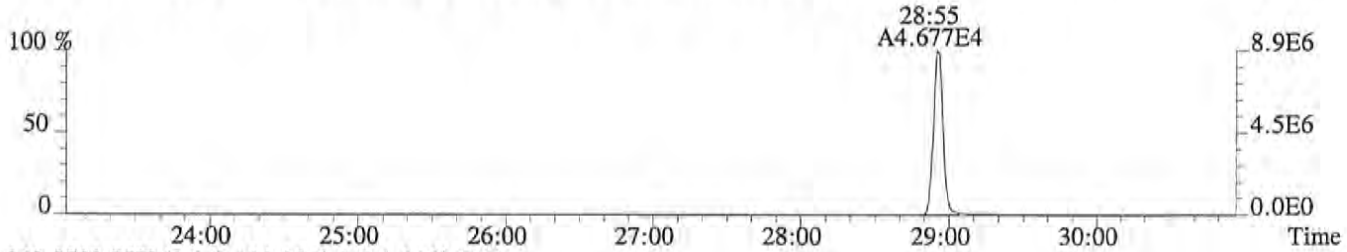
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3760.0,1.00%,F,T)



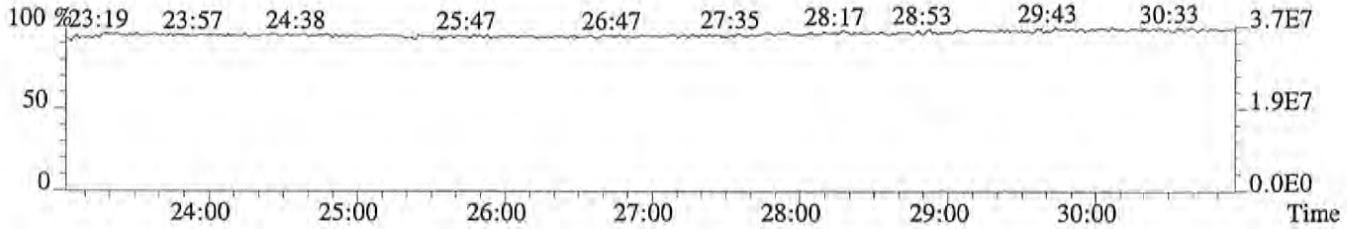
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2712.0,1.00%,F,T)



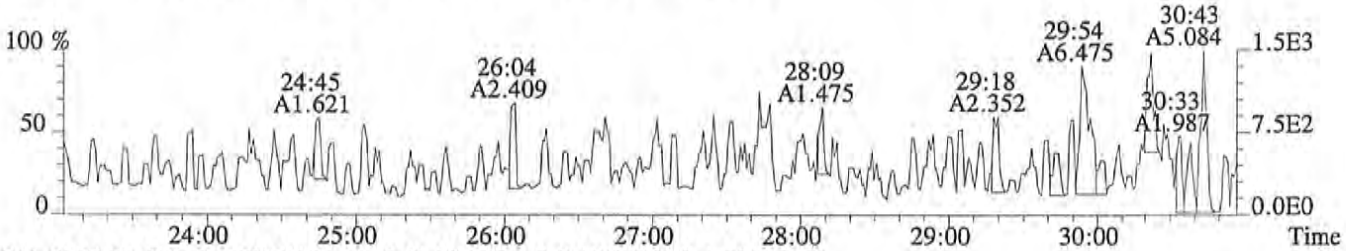
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1380.0,1.00%,F,T)



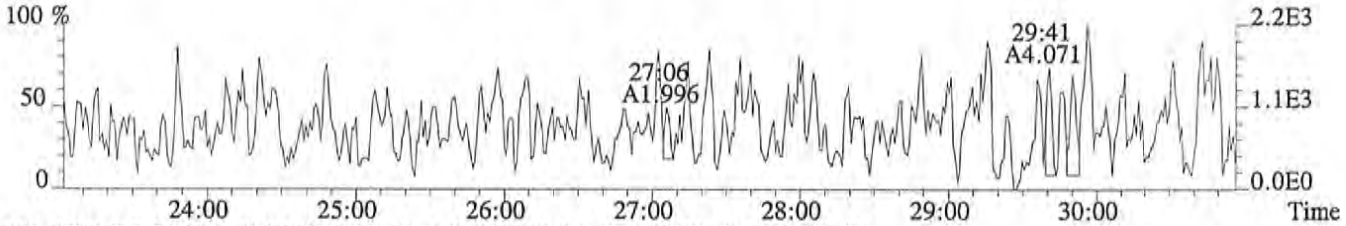
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



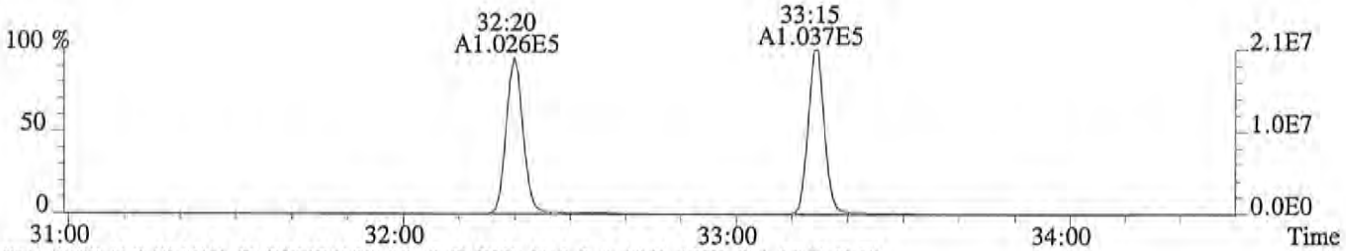
File:P600967 #1-562 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,T)



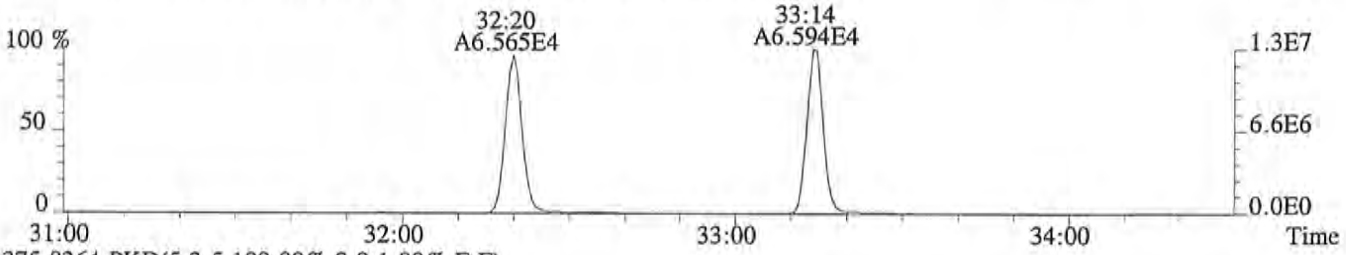
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,956.0,1.00%,F,T)



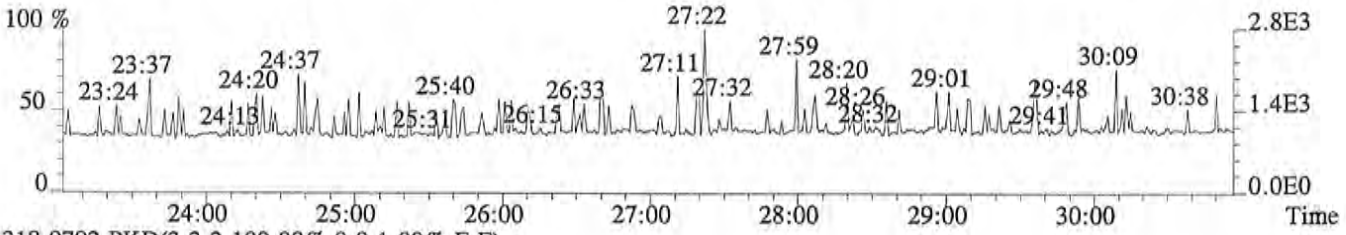
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,900.0,1.00%,F,T)



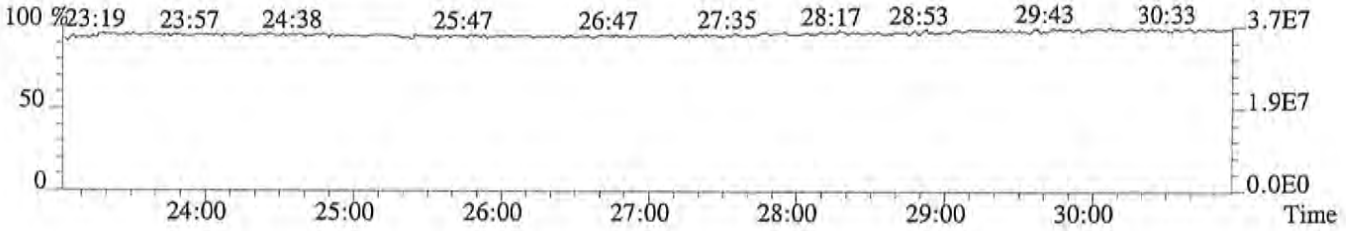
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1272.0,1.00%,F,T)



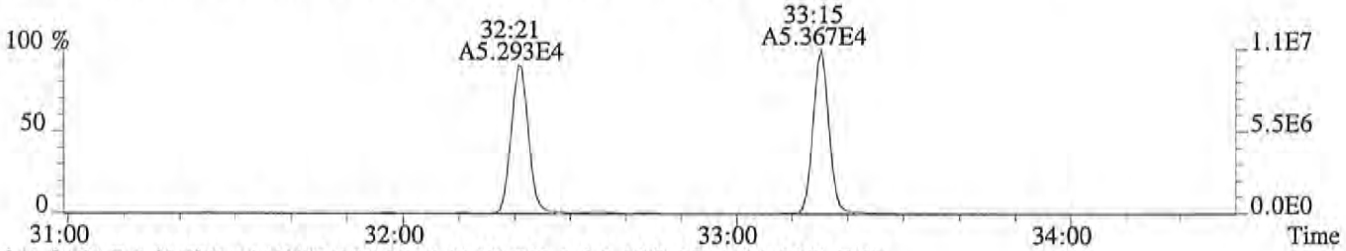
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



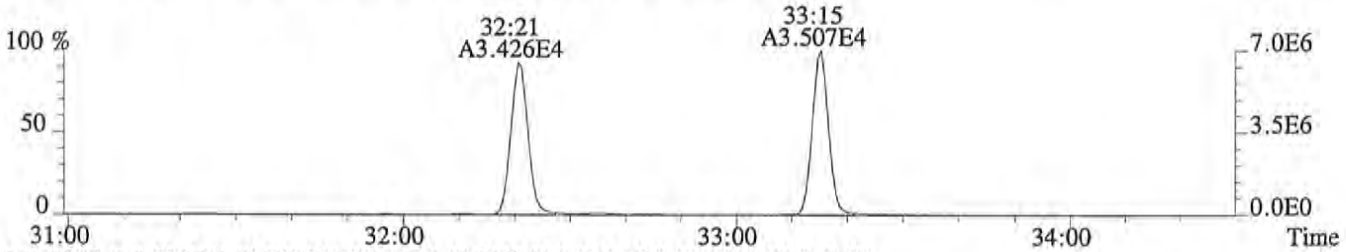
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



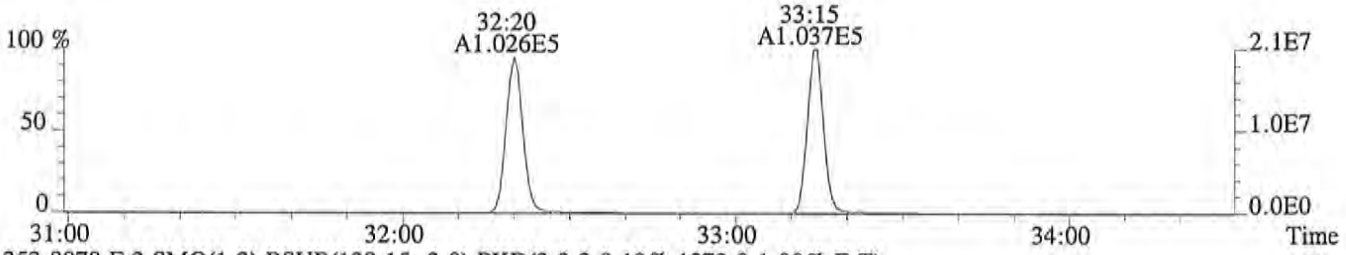
File:P600967 #1-317 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,276.0,1.00%,F,T)



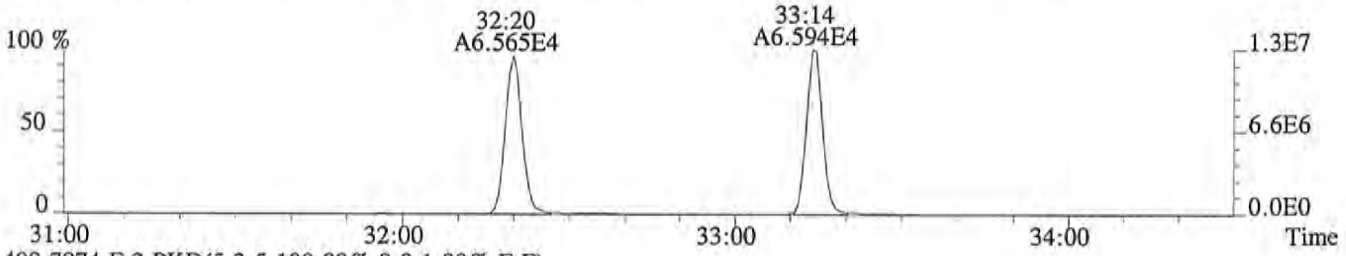
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2332.0,1.00%,F,T)



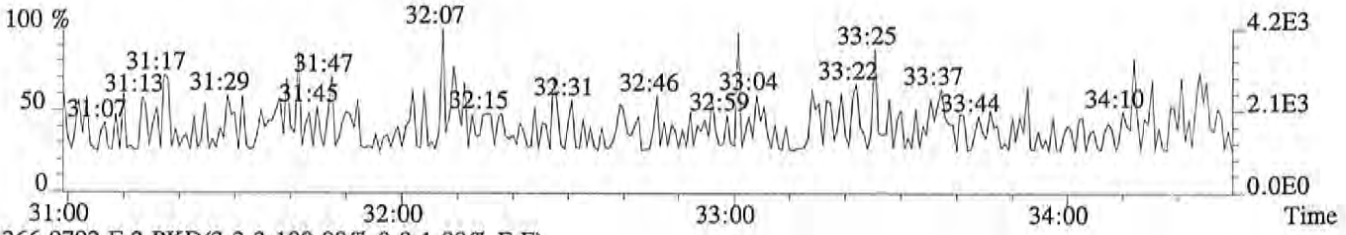
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,900.0,1.00%,F,T)



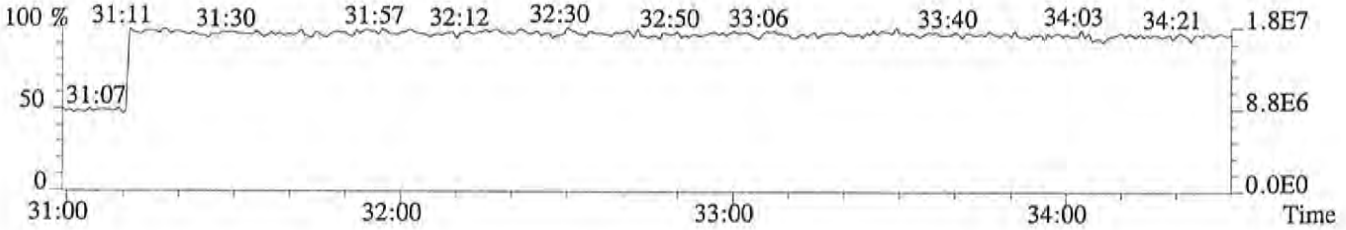
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1272.0,1.00%,F,T)



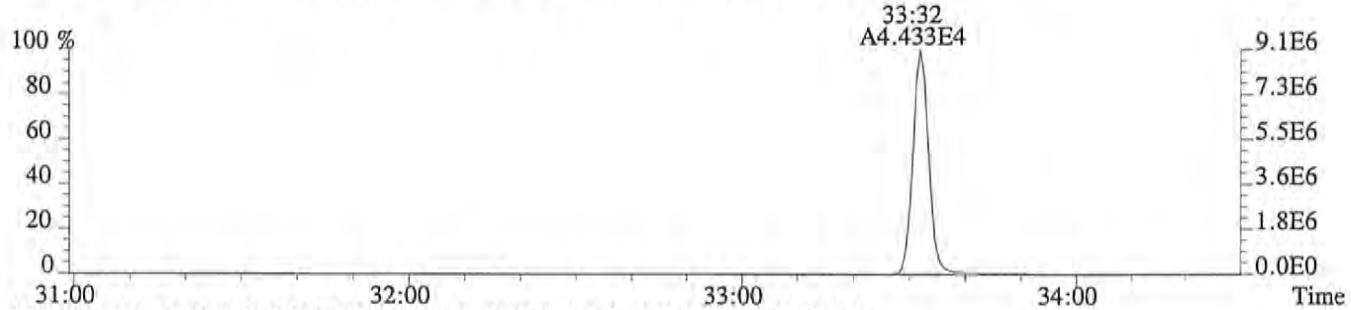
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



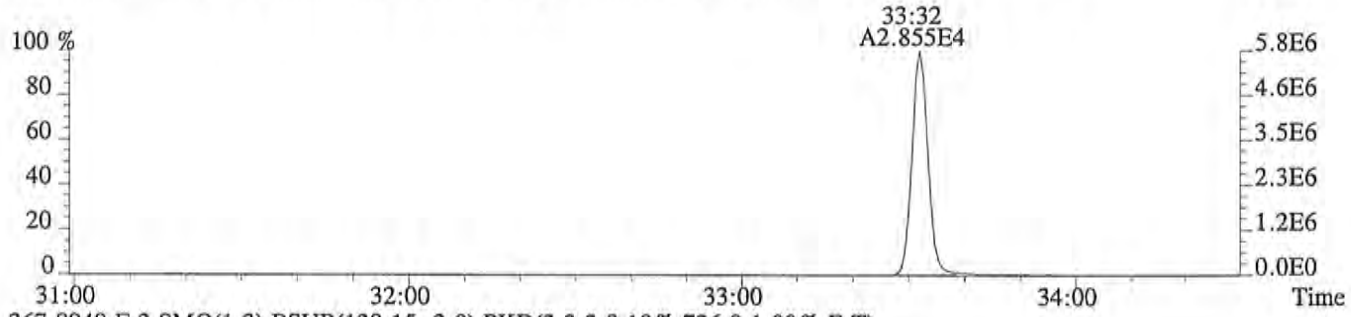
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



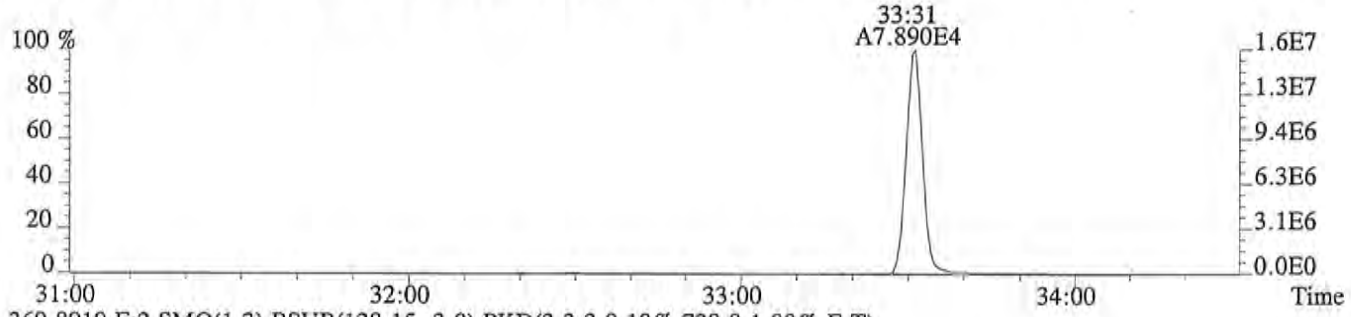
File:P600967 #1-317 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1440.0,1.00%,F,T)



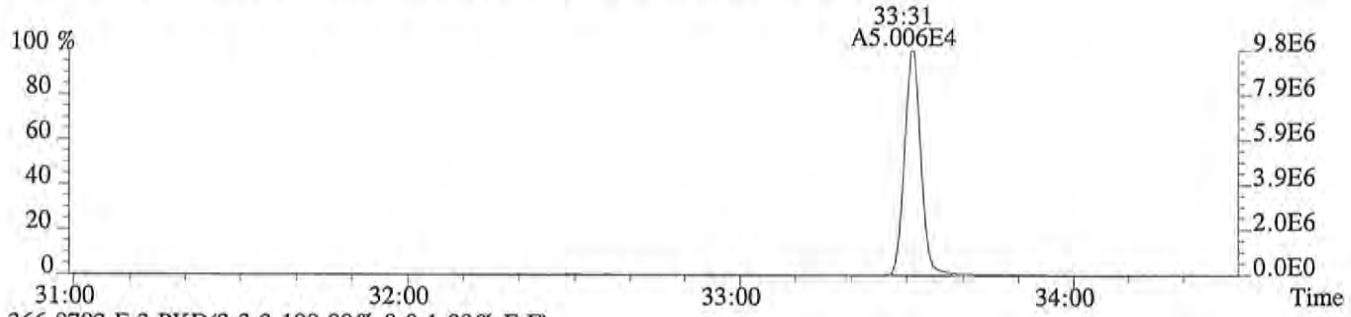
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,952.0,1.00%,F,T)



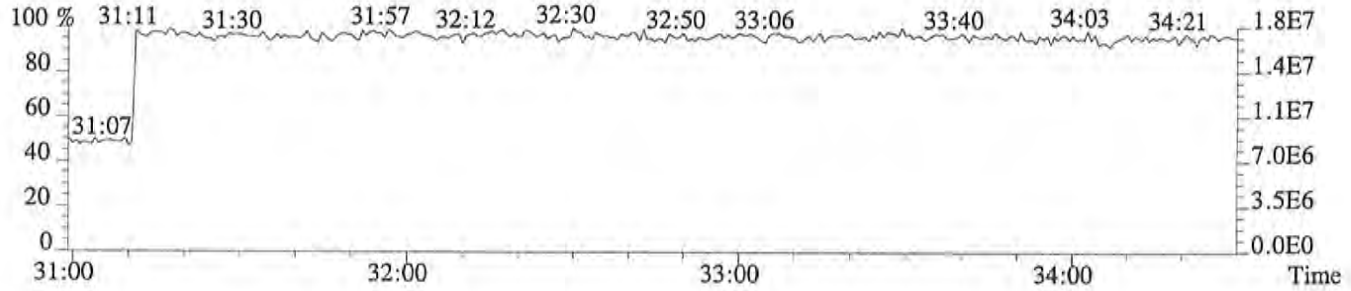
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,736.0,1.00%,F,T)



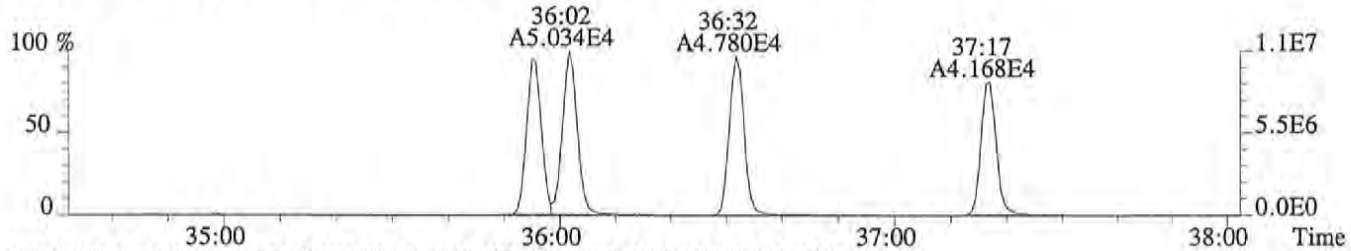
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,720.0,1.00%,F,T)



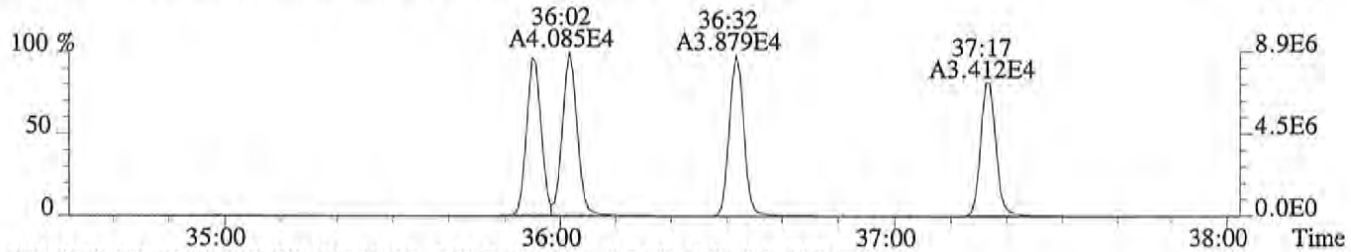
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



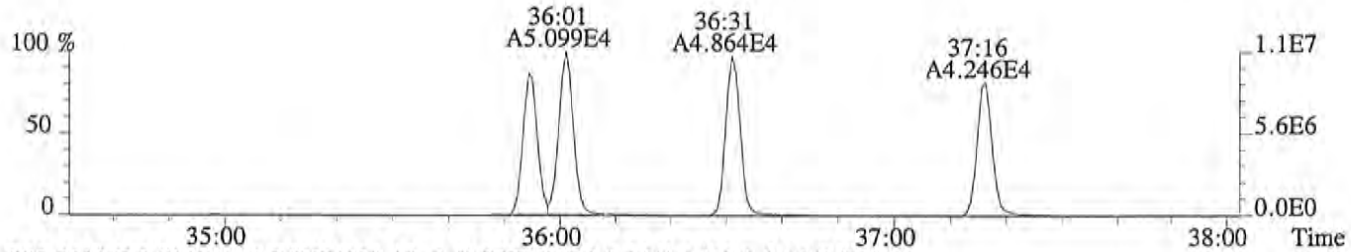
File:P600967 #1-316 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1120.0,0.40%,F,T)



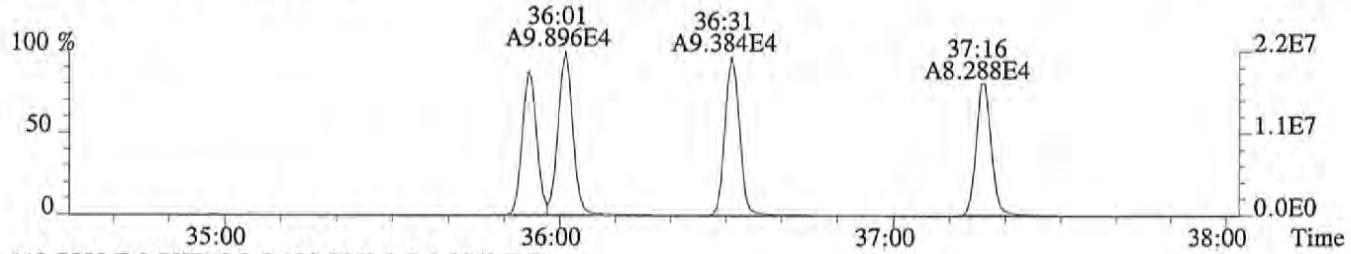
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,592.0,0.40%,F,T)



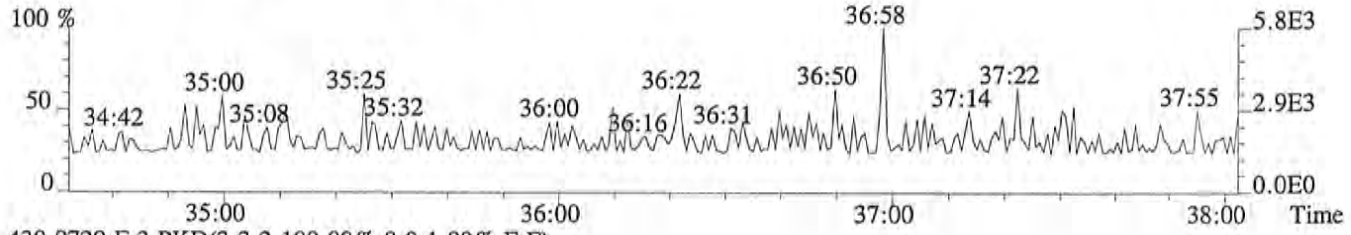
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1384.0,0.40%,F,T)



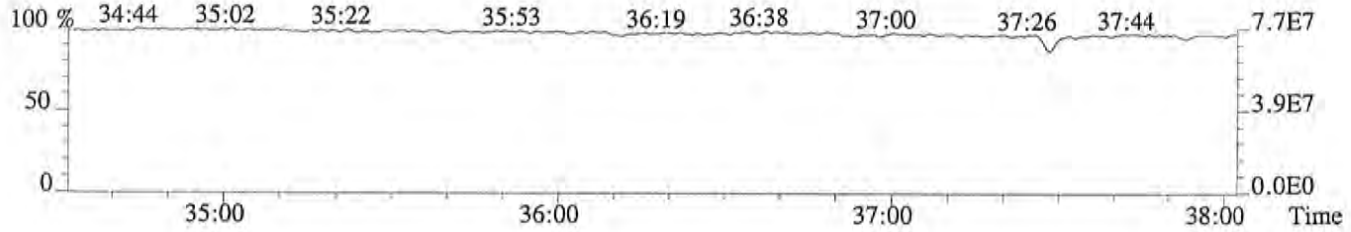
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1440.0,0.40%,F,T)



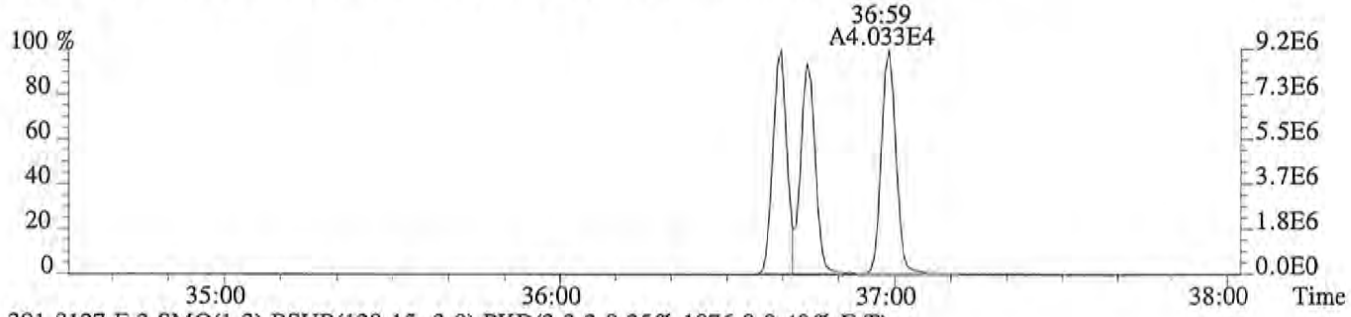
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



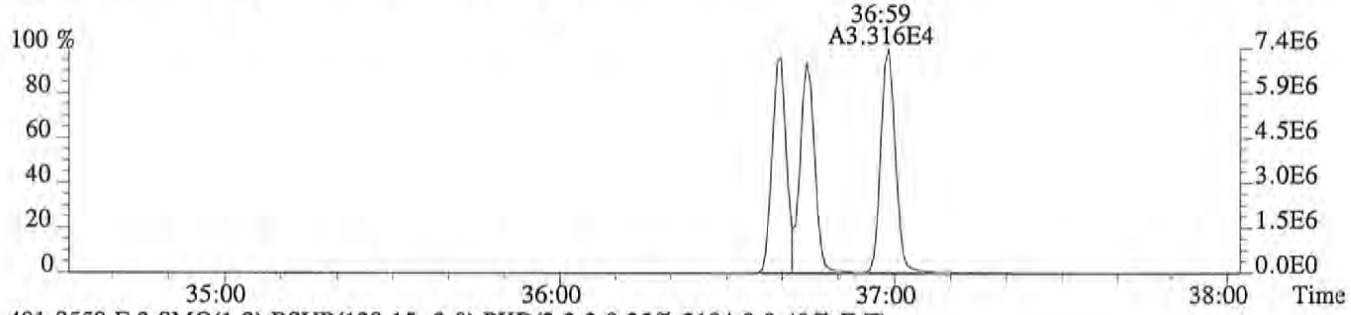
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



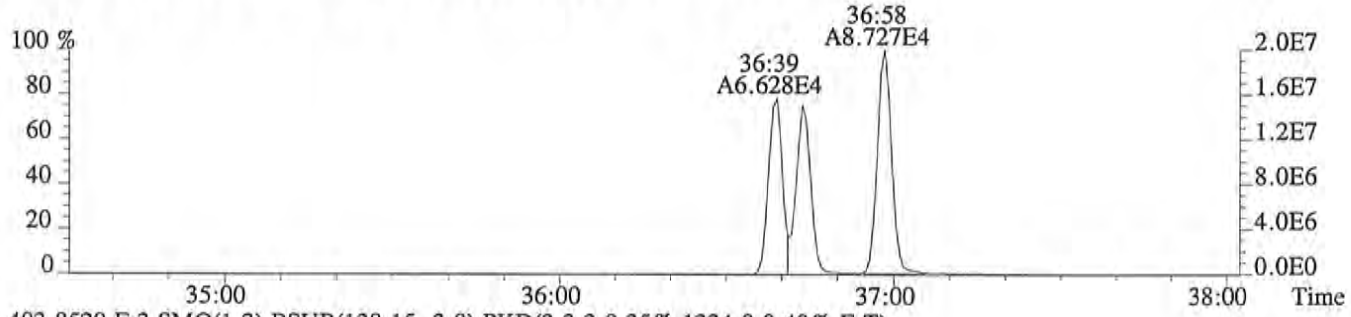
File:P600967 #1-316 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1016.0,0.40%,F,T)



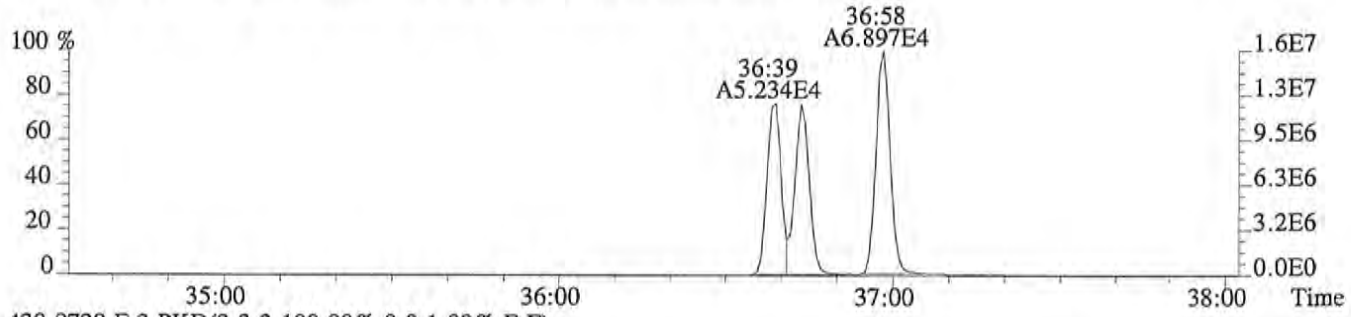
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1076.0,0.40%,F,T)



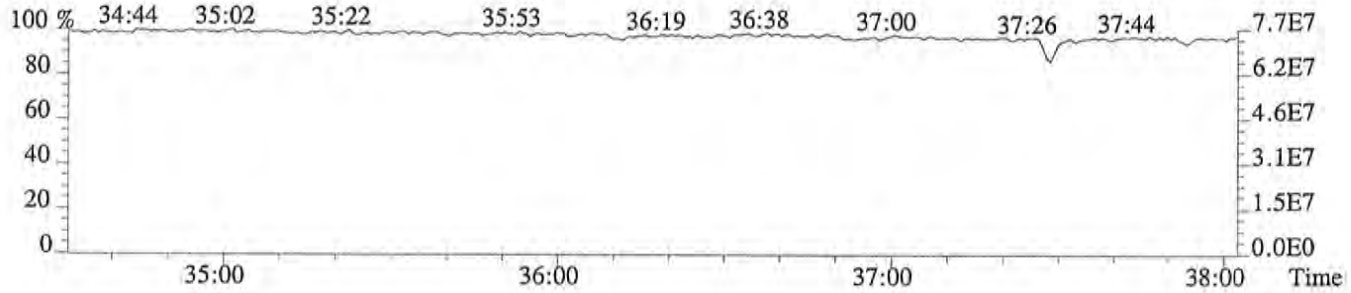
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2184.0,0.40%,F,T)



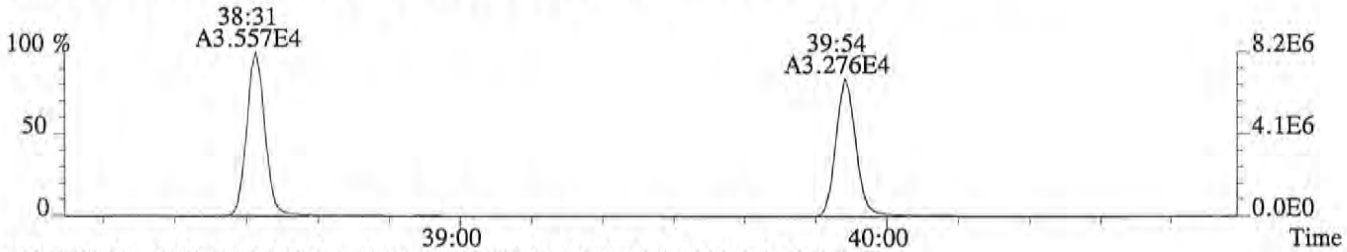
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1324.0,0.40%,F,T)



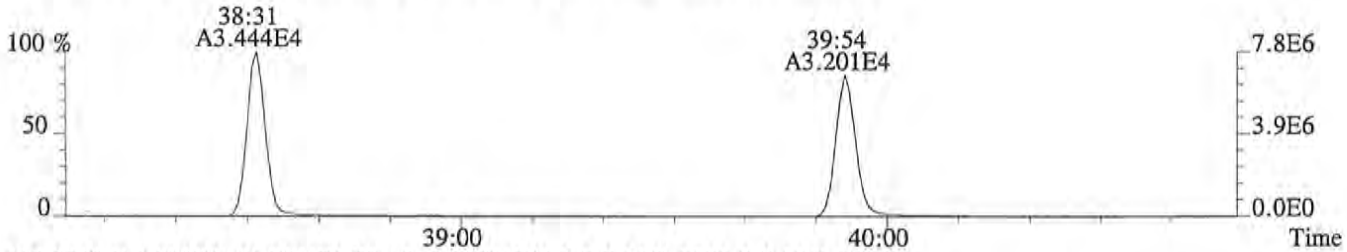
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



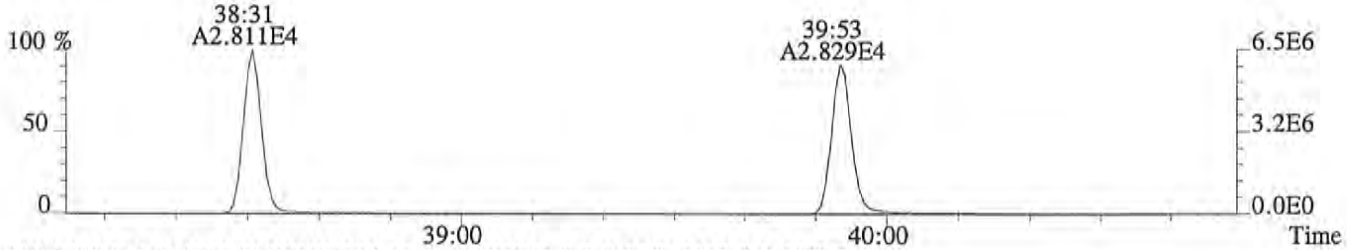
File:P600967 #1-248 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2808.0,0.50%,F,T)



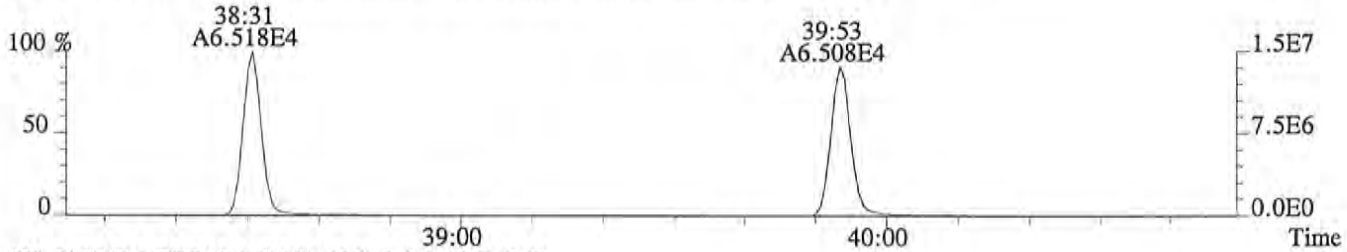
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3280.0,0.50%,F,T)



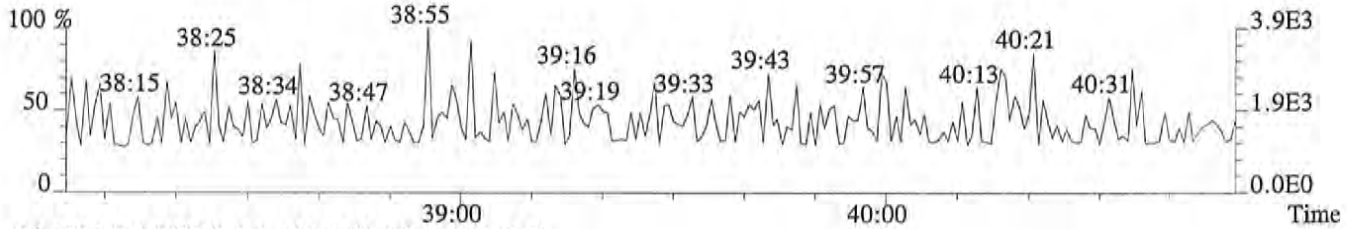
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3588.0,0.50%,F,T)



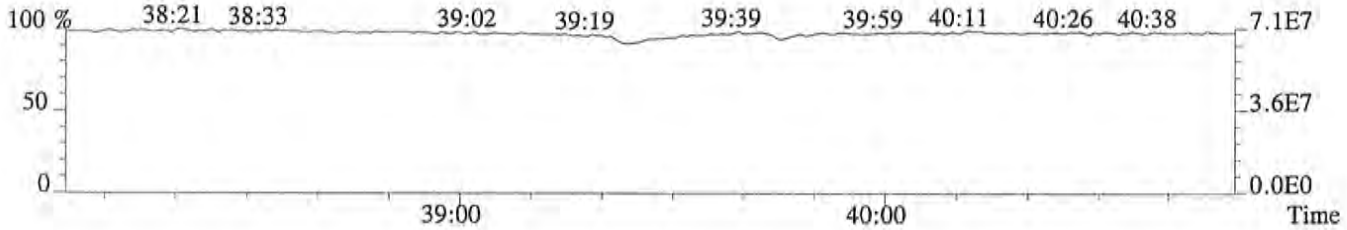
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2112.0,0.50%,F,T)



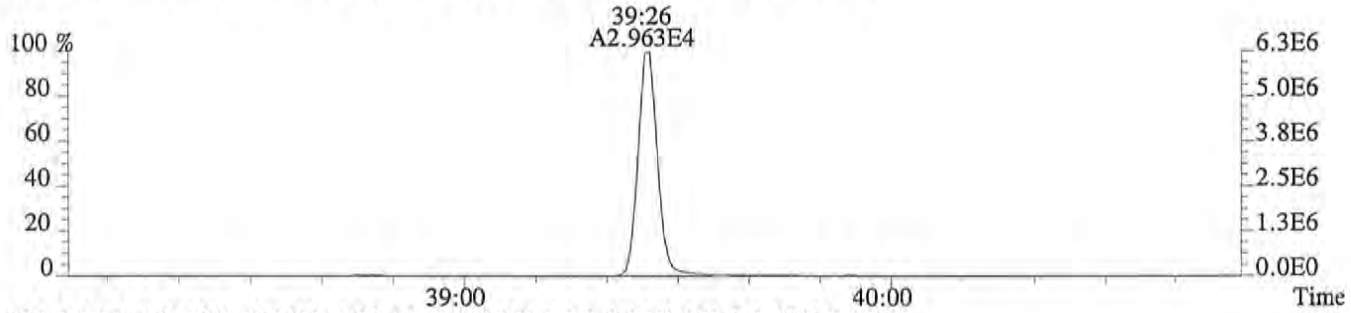
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



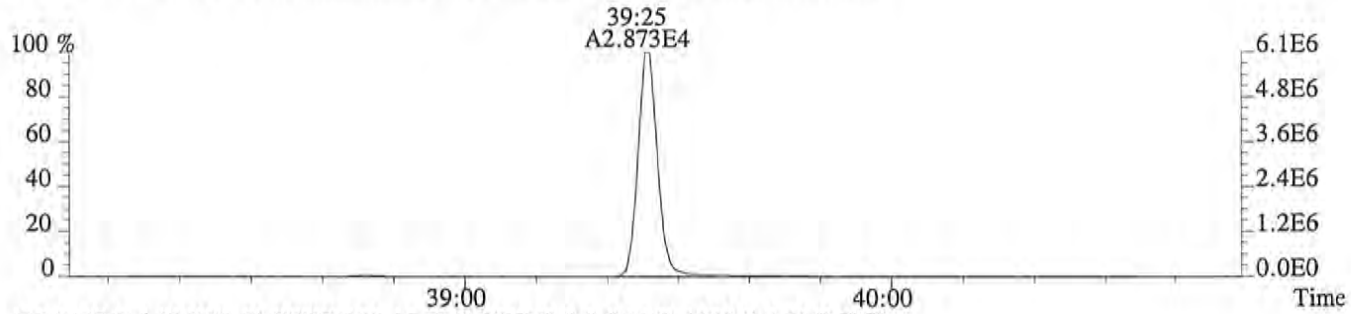
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



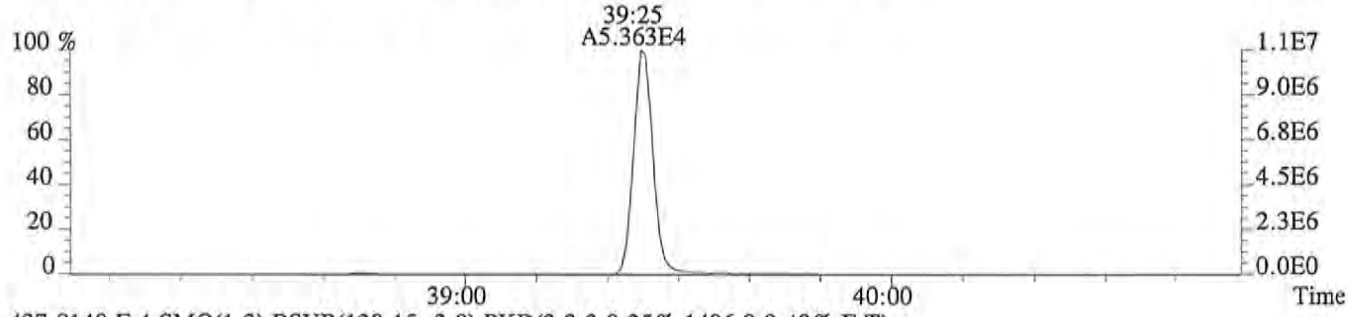
File:P600967 #1-248 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1132.0,0.40%,F,T)



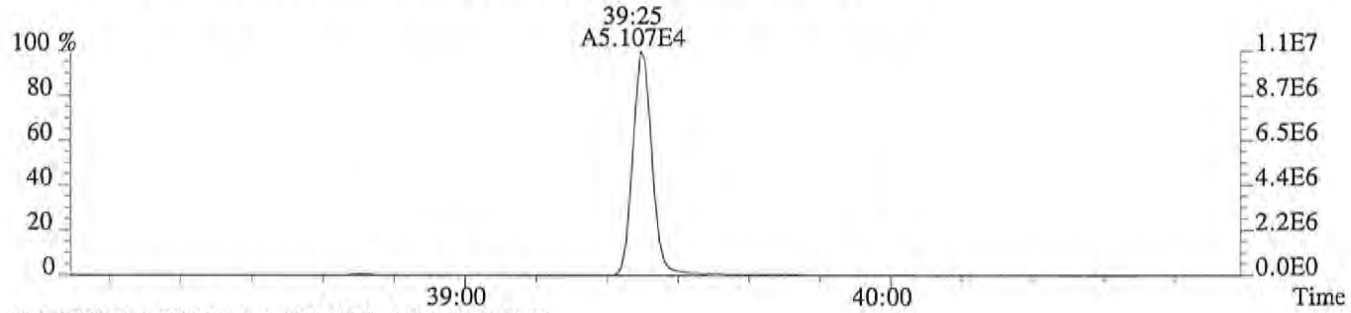
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,852.0,0.40%,F,T)



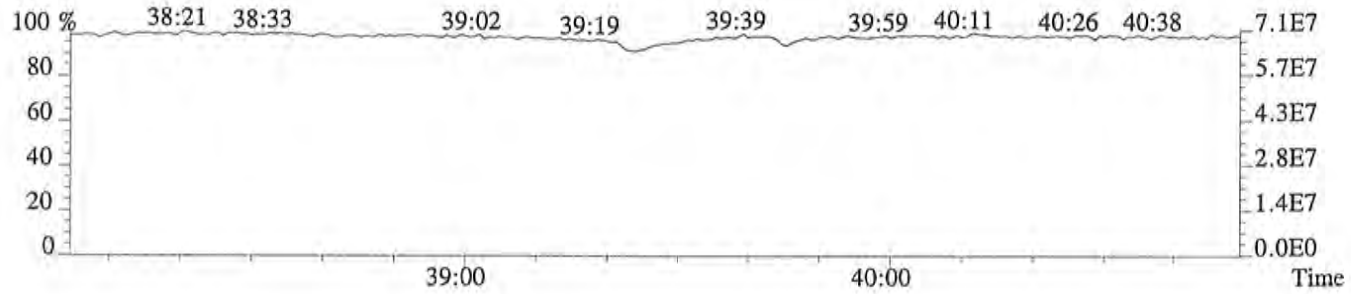
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1620.0,0.40%,F,T)



437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1496.0,0.40%,F,T)

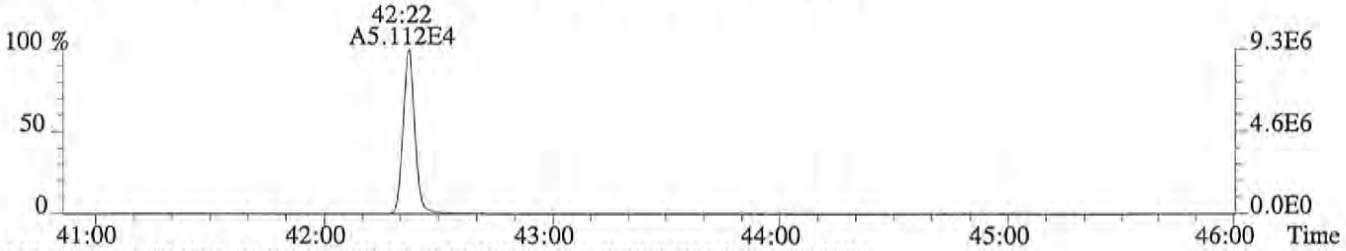


430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

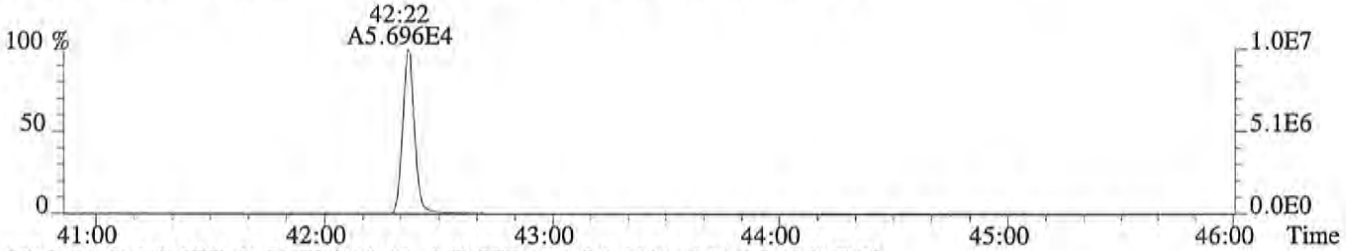


File:P600967 #1-464 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03

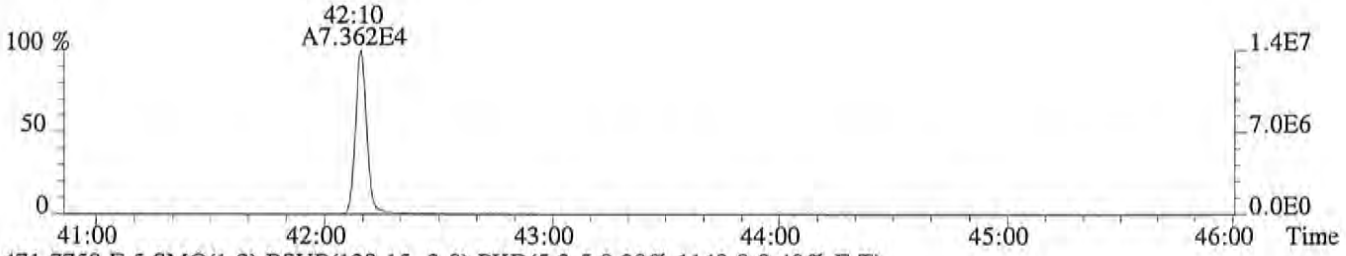
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,612.0,0.40%,F,T)



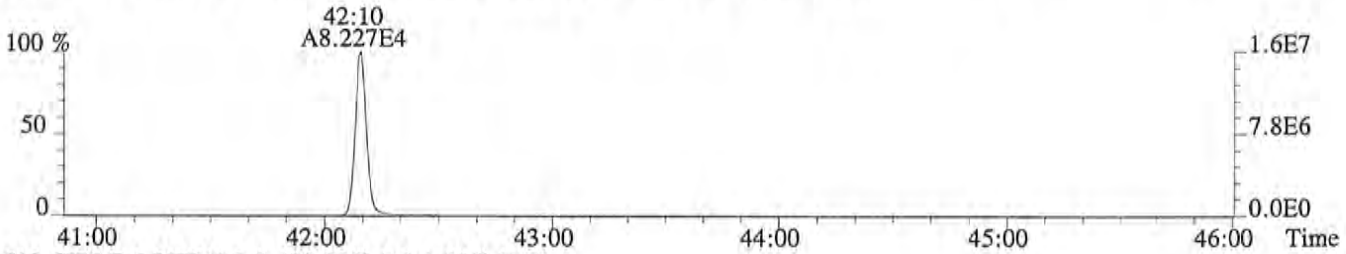
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,756.0,0.40%,F,T)



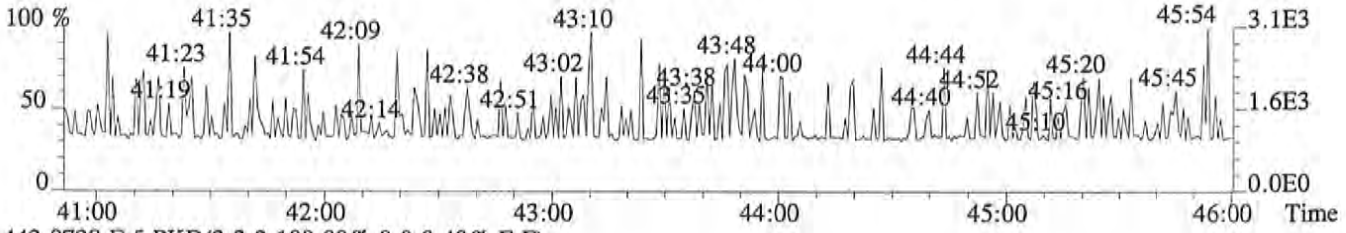
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1264.0,0.40%,F,T)



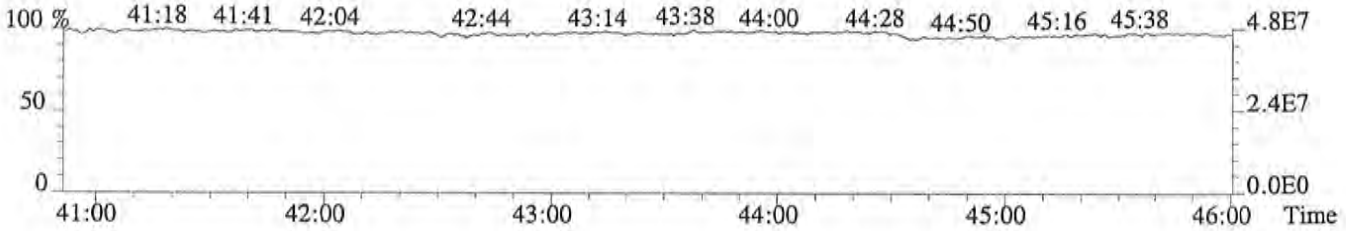
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1140.0,0.40%,F,T)



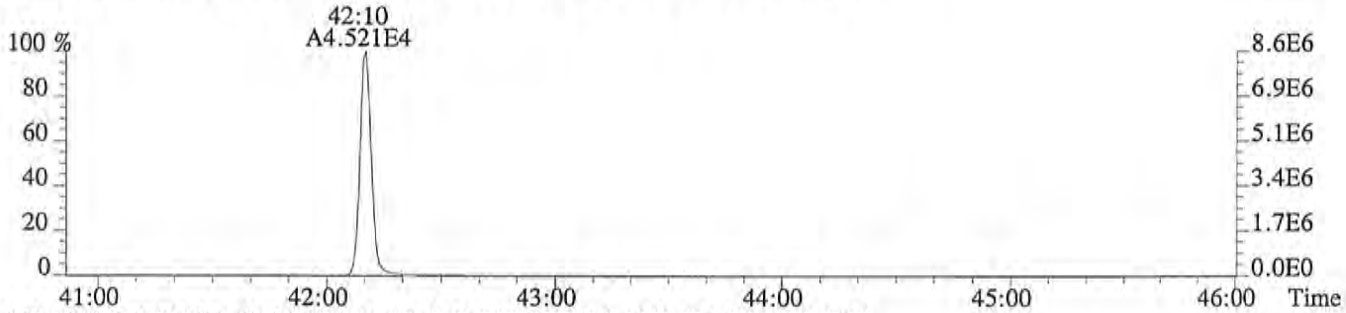
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



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



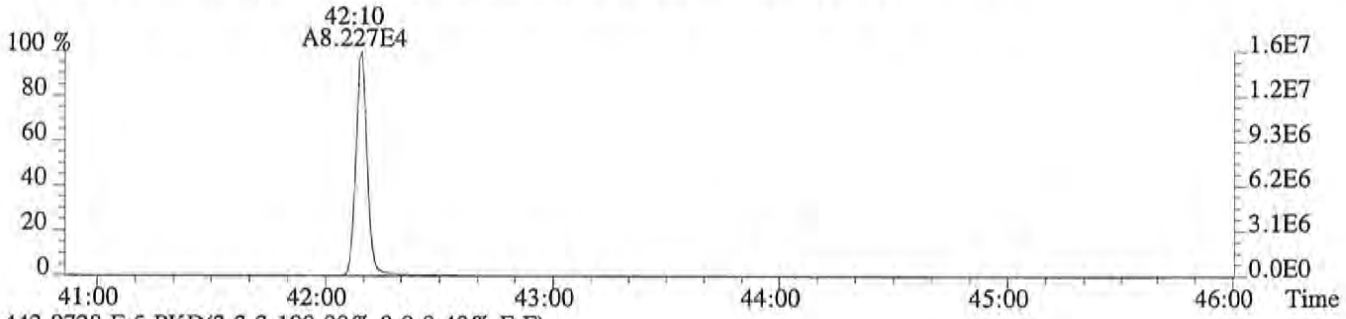
File:P600967 #1-464 Acq:14-OCT-2015 12:45:45 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:EQ1500602-03
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,476.0,0.40%,F,T)



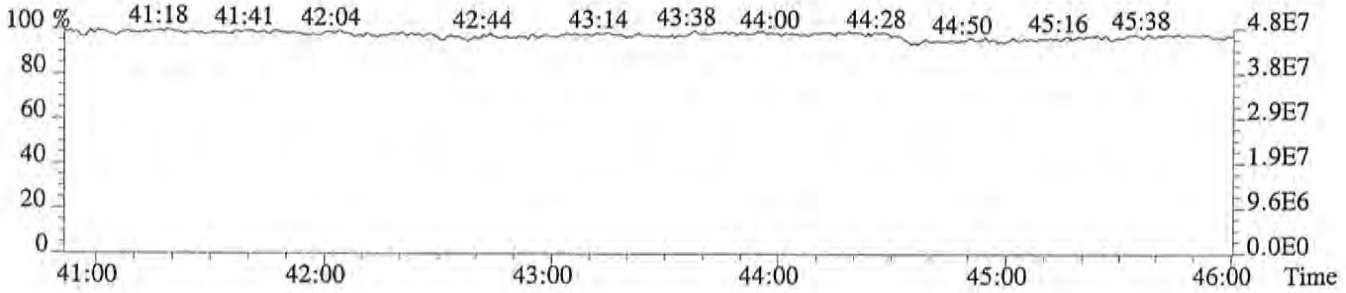
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,724.0,0.40%,F,T)

469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1264.0,0.40%,F,T)

471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1140.0,0.40%,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: P600911

Circle one: Beginning / Ending

Date: 10/12/15

Method: 1613 / 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	NA	N/A
Ending Calibration injected prior to end of 12 hour clock	NA	N/A

Analyst: JC

Second QC: LKL

ccalqc.xls 07/17/12

E1500972

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: 08/19/15

Init. Calib.Times: 10:52

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
84084	WINDOW DEFINE	P600912	12-OCT-15	11:10:35
84080	CS3	P600911	12-OCT-15	09:51:43
METHOD BLANK	EQ1500599-01	P600913	12-OCT-15	13:08:17
MIXED PRESSED SLUD	J1507732-003	P600914	12-OCT-15	13:56:05
BOILER WOOD FLY ASH	J1507732-004	P600915	12-OCT-15	14:45:10
10615148	E1500939-001	P600916	12-OCT-15	16:04:53
2096625 001	E1500947-001	P600917	12-OCT-15	17:09:10
1R	E1500972-001	P600918	12-OCT-15	17:57:00
1H	E1500973-001	P600919	12-OCT-15	18:46:02
15J0011-01	E1500990-001	P600920	12-OCT-15	19:35:03
5195B01BA	E1500859-001RE	P600921	12-OCT-15	20:24:09
5226B01BA	E1500859-002RE	P600922	12-OCT-15	21:13:08

E1500972

Sample List Report MassLynx 4.1 SCN815 SCN795

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20151012.SPL
Last Modified: Tuesday, October 13, 2015 11:48:07 Eastern Daylight Time
Printed: Tuesday, October 13, 2015 11:51:56 Eastern Daylight Time Page Position (1, 1)

OPD5-2 : P600911RES

	Date	Time	File Name	Lab Sample ID	Client File Text	Bottle	MS File	Inlet File	Analyst	Comments
1	10/12/15	09:51	P600911	84080	CS3	Tray1:1	EPA1613_ALS	Dioxin_ALS	XX	HRMS check 09:46
2		11:10	P600912	84084	WD	Tray1:2	EPA1613_ALS	Dioxin_ALS		
3		13:08	P600913	EQ1500599-01	MB	Tray1:3	EPA1613_ALS	Dioxin_ALS		HRMS Check 13:04
4		13:56	P600914	J1507732-003	J1507732-003	Tray1:4	EPA1613_ALS	Dioxin_ALS		
5		14:45	P600915	J1507732-004	J1507732-004	Tray1:5	EPA1613_ALS	Dioxin_ALS		
6		16:04	P600916	E1500939-001	E1500939-001	Tray1:6	EPA1613_ALS	Dioxin_ALS		
7		17:09	P600917	E1500947-001	E1500947-001	Tray1:7	EPA1613_ALS	Dioxin_ALS		
8		17:57	P600918	E1500972-001	E1500972-001	Tray1:8	EPA1613_ALS	Dioxin_ALS		
9		18:46	P600919	E1500973-001	E1500973-001	Tray1:9	EPA1613_ALS	Dioxin_ALS		
10		19:35	P600920	E1500990-001	E1500990-001	Tray1:10	EPA1613_ALS	Dioxin_ALS		
11		20:24	P600921	E1500859-001RE	E1500859-001RE	Tray1:11	EPA1613_ALS	Dioxin_ALS		
12		21:13	P600922	E1500859-002RE	E1500859-002RE	Tray1:12	EPA1613_ALS	Dioxin_ALS		
13		22:02	P600923	TEST	TEST	Tray1:13	EPA1613_ALS	Dioxin_ALS		
14		22:51	P600924	84080	CS3	Tray1:14	EPA1613_ALS	Dioxin_ALS		HRMS Check 12:22
15	---	---	---	---	---	Tray1:15	EPA1613_ALS	Dioxin_ALS		
16	---	---	---	---	---	Tray1:16	EPA1613_ALS	Dioxin_ALS	---	---
17	---	---	---	---	---	Tray1:17	EPA1613_ALS	Dioxin_ALS	---	---
18	---	---	---	---	---	Tray1:18	EPA1613_ALS	Dioxin_ALS	---	---
19	---	---	---	---	---	Tray1:19	EPA1613_ALS	Dioxin_ALS	---	---
20	---	---	---	---	---	Tray1:20	EPA1613_ALS	Dioxin_ALS	---	---
21	---	---	---	---	---	Tray1:21	EPA1613_ALS	Dioxin_ALS	---	---
22	---	---	---	---	---	Tray1:22	EPA1613_ALS	Dioxin_ALS	---	---
23	---	---	---	---	---	Tray1:23	EPA1613_ALS	Dioxin_ALS	---	---
24	---	---	---	---	---	Tray1:24	EPA1613_ALS	Dioxin_ALS	---	---
25	---	---	---	---	---	Tray1:25	EPA1613_ALS	Dioxin_ALS	---	---
26	---	---	---	---	---	Tray1:26	EPA1613_ALS	Dioxin_ALS	---	---
27	---	---	---	---	---	Tray1:27	EPA1613_ALS	Dioxin_ALS	---	---
28	---	---	---	---	---	Tray1:28	EPA1613_ALS	Dioxin_ALS	---	---
29	---	---	---	---	---	Tray1:29	EPA1613_ALS	Dioxin_ALS	---	---
30	---	---	---	---	---	Tray1:30	EPA1613_ALS	Dioxin_ALS	---	---
31	---	---	---	---	---	Tray1:31	EPA1613_ALS	Dioxin_ALS	---	---
32	---	---	---	---	---	Tray1:32	EPA1613_ALS	Dioxin_ALS	---	---
33	---	---	---	---	---	Tray1:33	EPA1613_ALS	Dioxin_ALS	---	---
34	---	---	---	---	---	Tray1:34	EPA1613_ALS	Dioxin_ALS	---	---
35	---	---	JC	10/22/15	---	Tray1:35	EPA1613_ALS	Dioxin_ALS	---	---
36	---	---	---	---	---	Tray1:36	EPA1613_ALS	Dioxin_ALS	---	---
37	---	---	---	---	---	Tray1:37	EPA1613_ALS	Dioxin_ALS	---	---
38	---	---	---	---	---	Tray1:38	EPA1613_ALS	Dioxin_ALS	---	---
39	---	---	---	---	---	Tray1:39	EPA1613_ALS	Dioxin_ALS	---	---

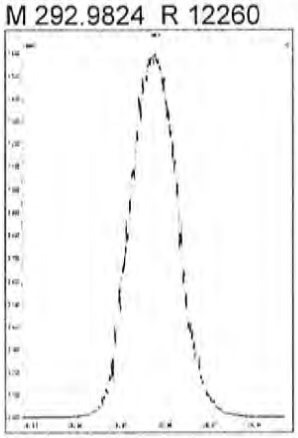
074

Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

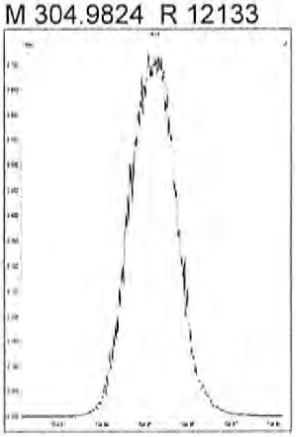
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Monday, October 12, 2015 09:46:00 Eastern Daylight Time

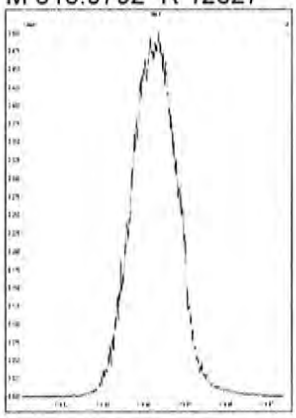
M 292.9824 R 12260



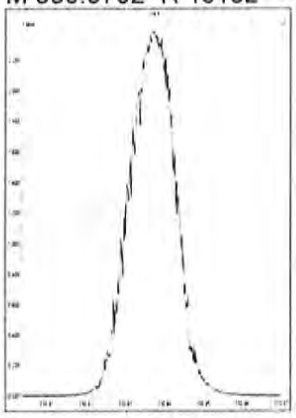
M 304.9824 R 12133



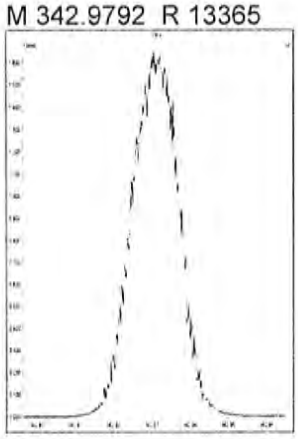
M 318.9792 R 12627



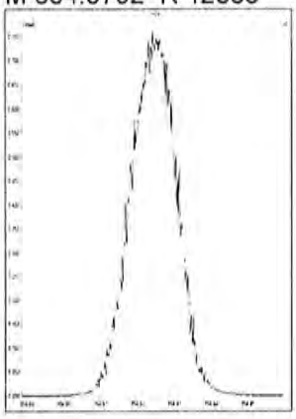
M 330.9792 R 13162



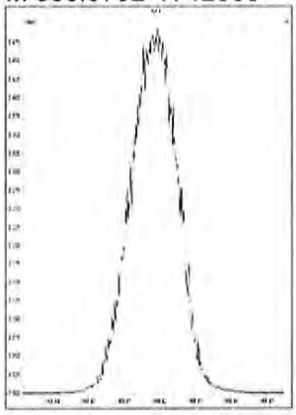
M 342.9792 R 13365



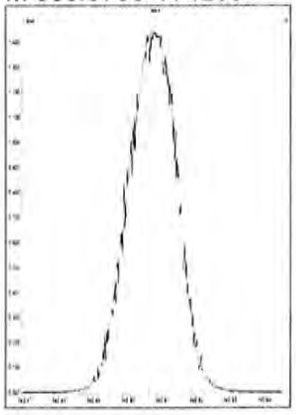
M 354.9792 R 12886



M 366.9792 R 12956



M 380.9760 R 12501

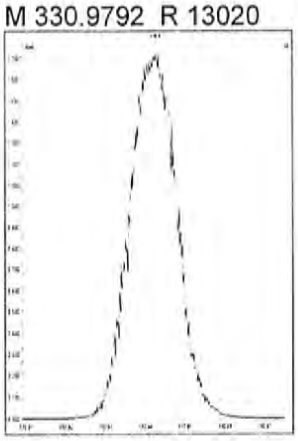


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

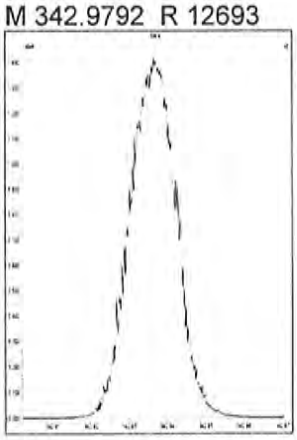
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Monday, October 12, 2015 09:46:48 Eastern Daylight Time

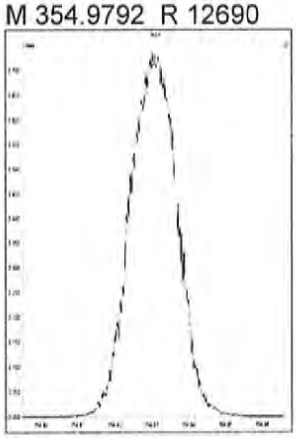
M 330.9792 R 13020



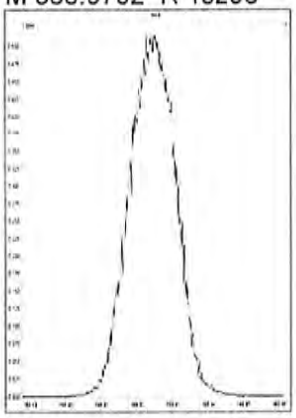
M 342.9792 R 12693



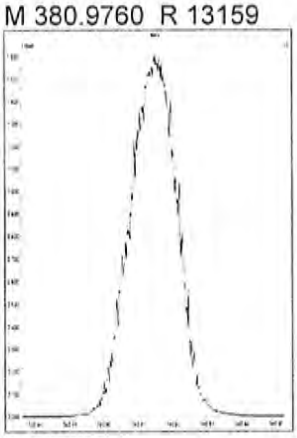
M 354.9792 R 12690



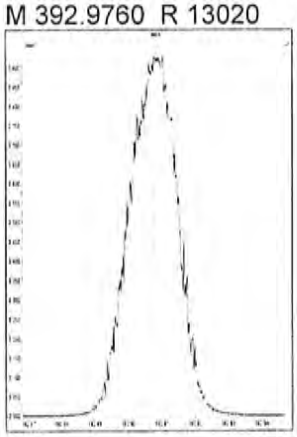
M 366.9792 R 13296



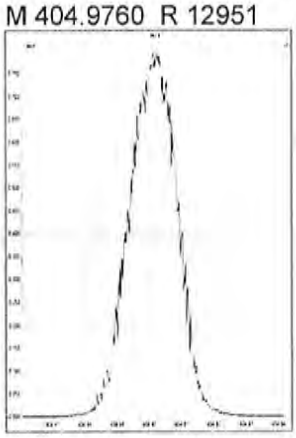
M 380.9760 R 13159



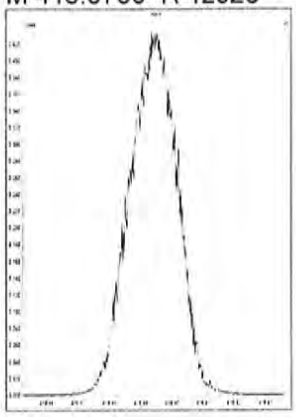
M 392.9760 R 13020



M 404.9760 R 12951



M 416.9760 R 12626

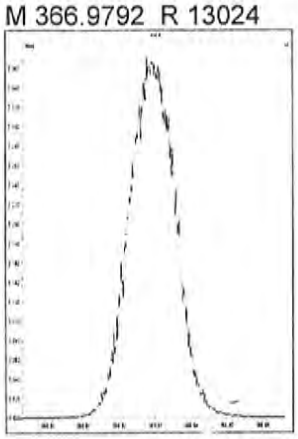


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

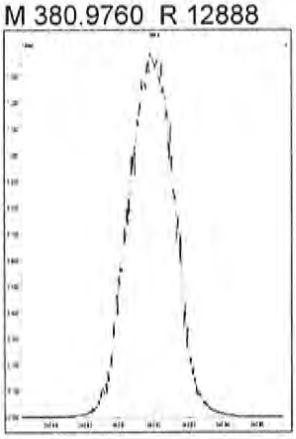
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Monday, October 12, 2015 09:47:31 Eastern Daylight Time

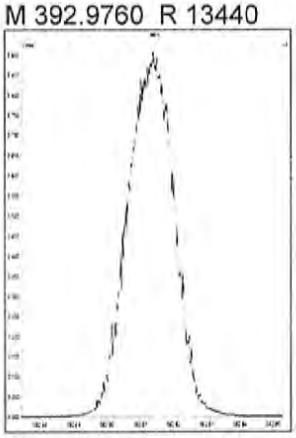
M 366.9792 R 13024



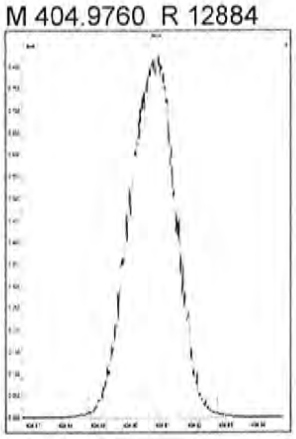
M 380.9760 R 12888



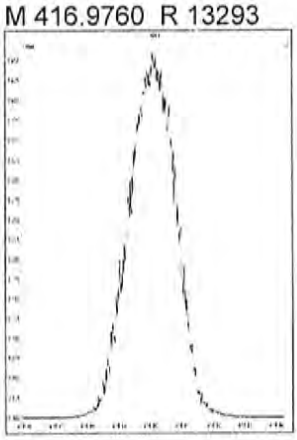
M 392.9760 R 13440



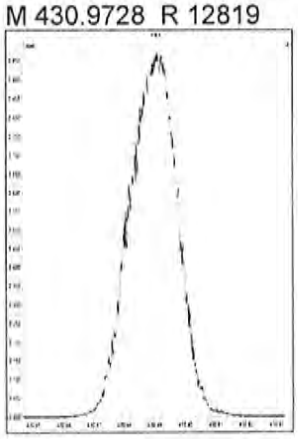
M 404.9760 R 12884



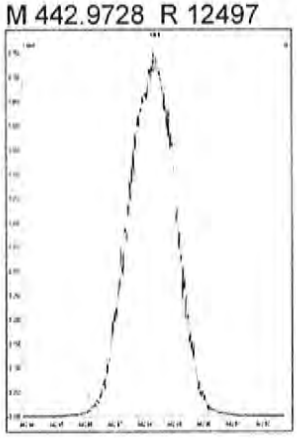
M 416.9760 R 13293



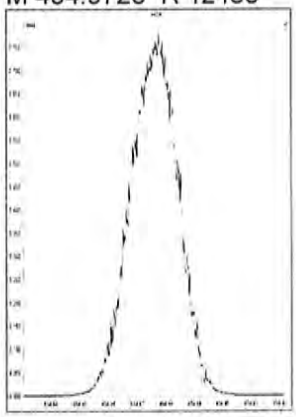
M 430.9728 R 12819



M 442.9728 R 12497



M 454.9728 R 12433

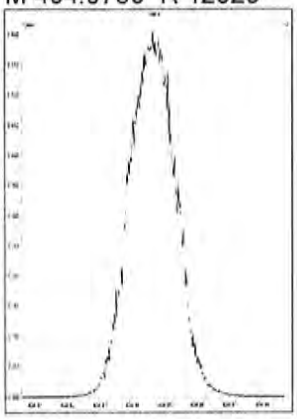


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

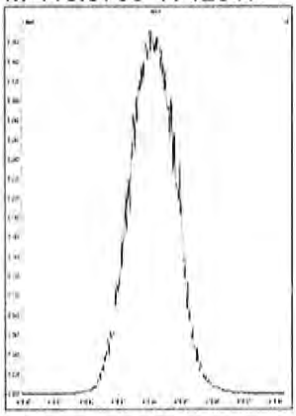
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Monday, October 12, 2015 09:48:08 Eastern Daylight Time

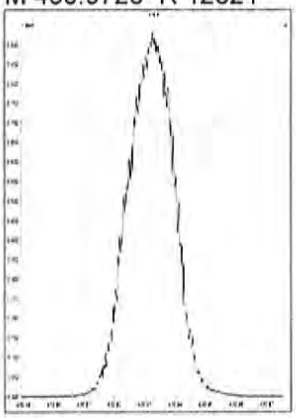
M 404.9760 R 12625



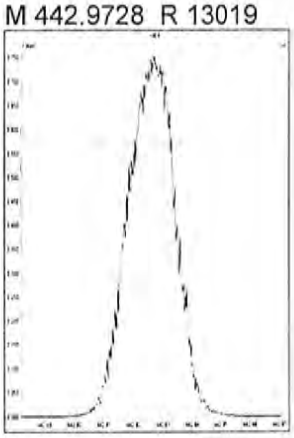
M 416.9760 R 12817



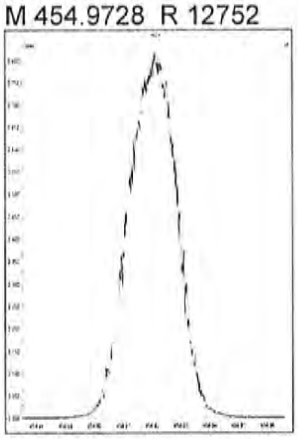
M 430.9728 R 12821



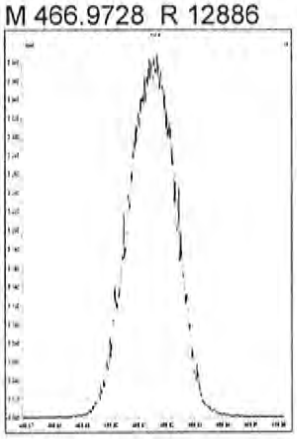
M 442.9728 R 13019



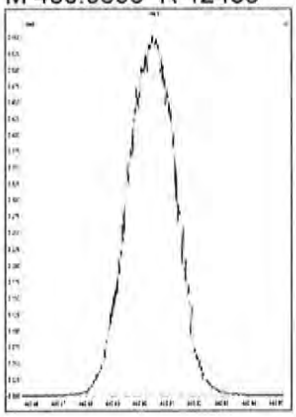
M 454.9728 R 12752



M 466.9728 R 12886



M 480.9696 R 12436

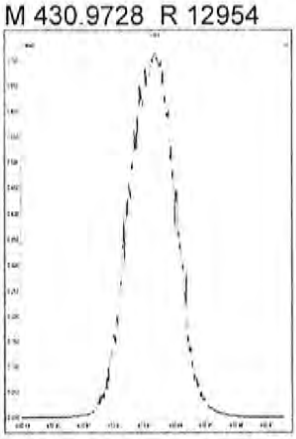


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

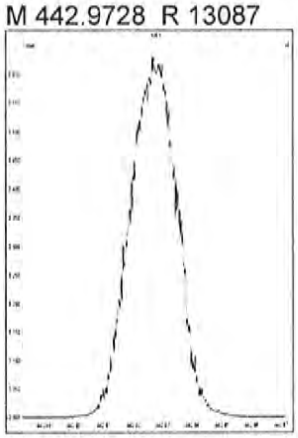
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Monday, October 12, 2015 09:50:02 Eastern Daylight Time

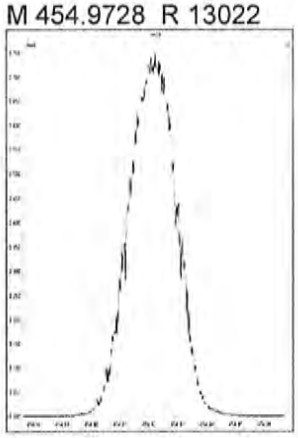
M 430.9728 R 12954



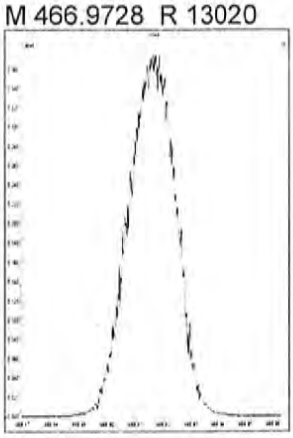
M 442.9728 R 13087



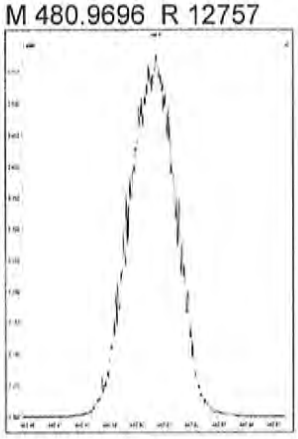
M 454.9728 R 13022



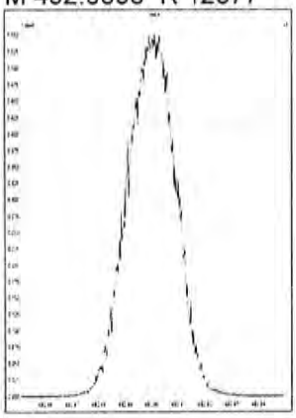
M 466.9728 R 13020



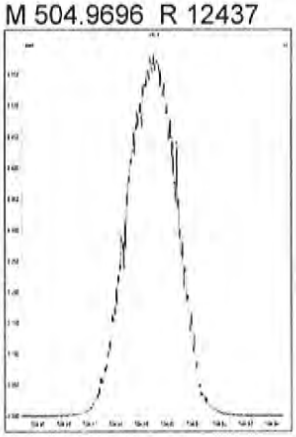
M 480.9696 R 12757



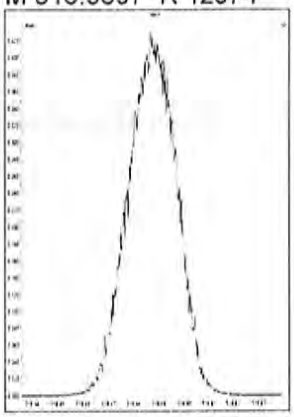
M 492.9696 R 12377



M 504.9696 R 12437



M 516.9697 R 12374

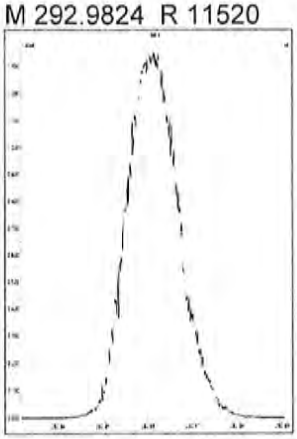


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

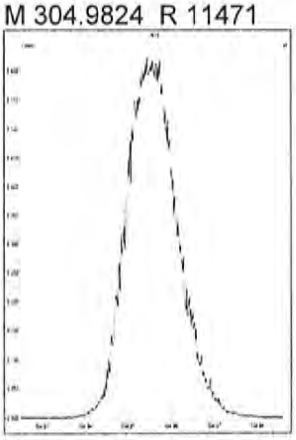
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Monday, October 12, 2015 13:04:58 Eastern Daylight Time

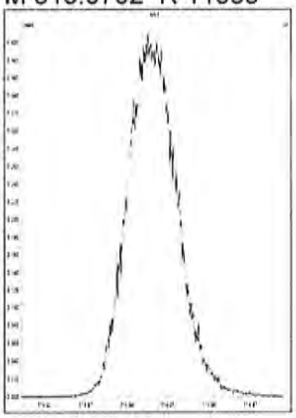
M 292.9824 R 11520



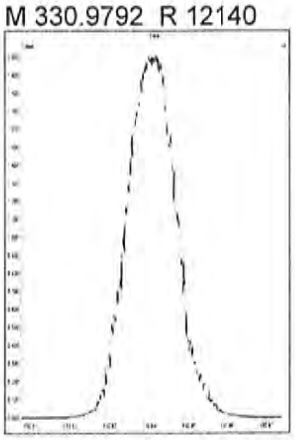
M 304.9824 R 11471



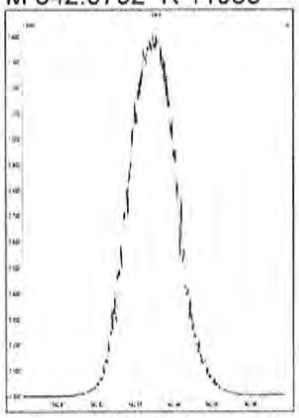
M 318.9792 R 11569



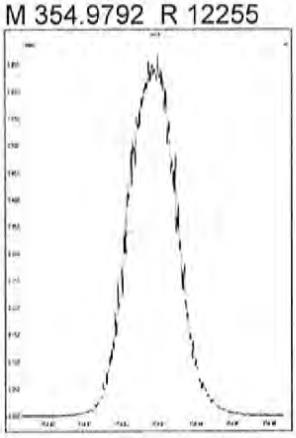
M 330.9792 R 12140



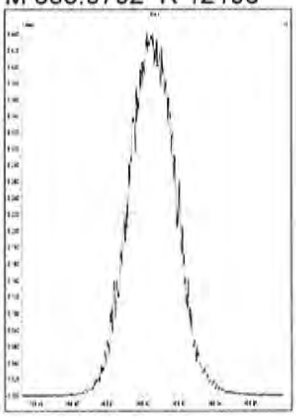
M 342.9792 R 11958



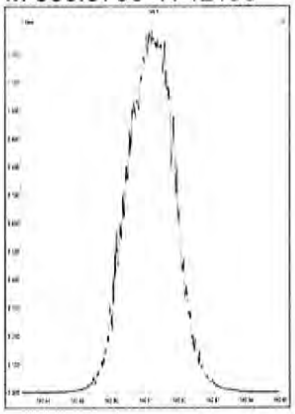
M 354.9792 R 12255



M 366.9792 R 12193



M 380.9760 R 12196

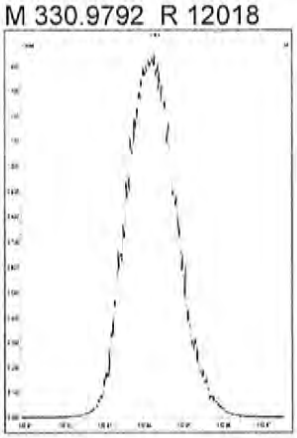


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

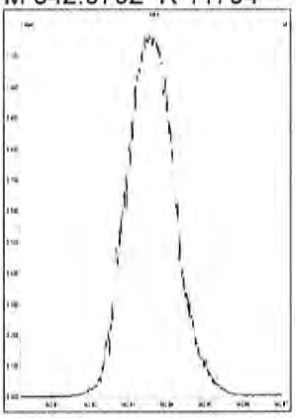
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Monday, October 12, 2015 13:05:38 Eastern Daylight Time

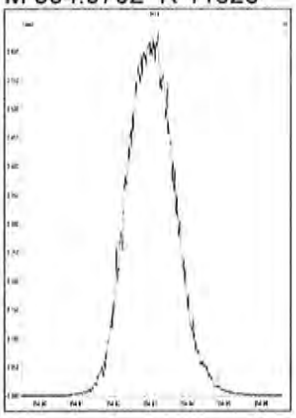
M 330.9792 R 12018



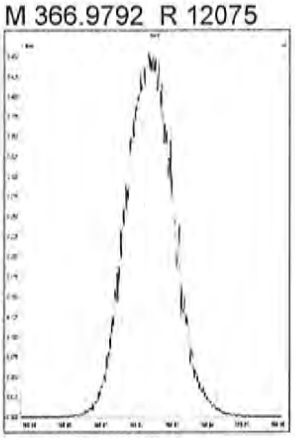
M 342.9792 R 11794



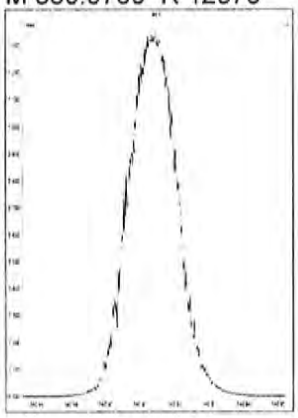
M 354.9792 R 11628



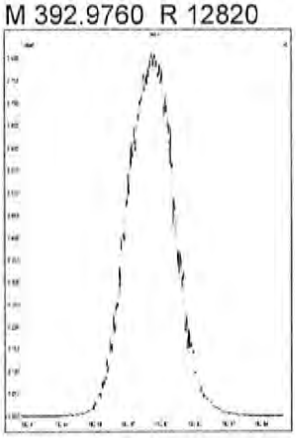
M 366.9792 R 12075



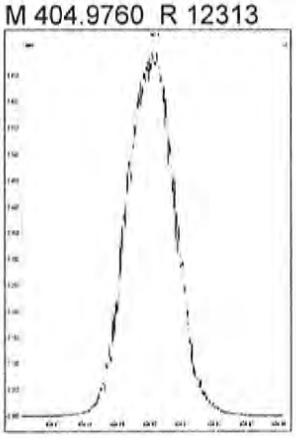
M 380.9760 R 12373



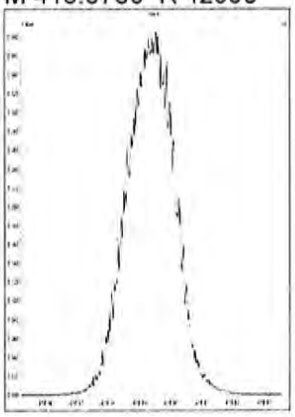
M 392.9760 R 12820



M 404.9760 R 12313



M 416.9760 R 12500

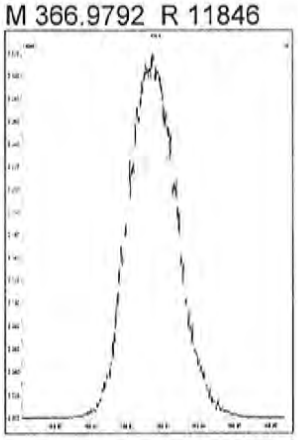


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

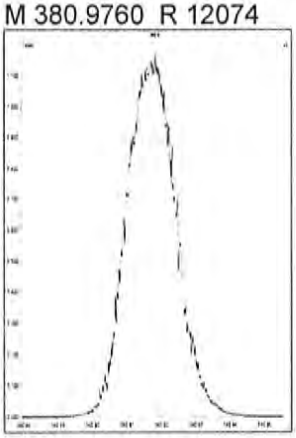
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Monday, October 12, 2015 13:06:17 Eastern Daylight Time

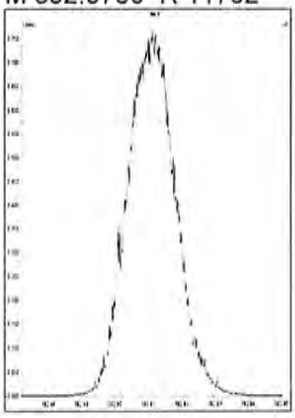
M 366.9792 R 11846



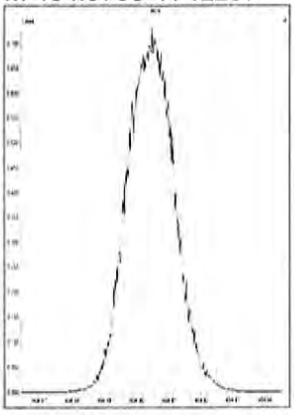
M 380.9760 R 12074



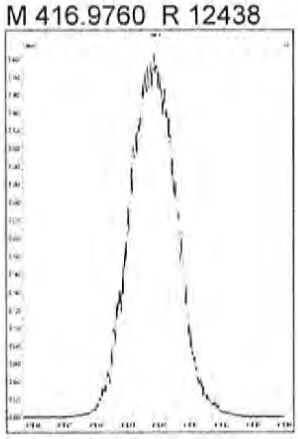
M 392.9760 R 11792



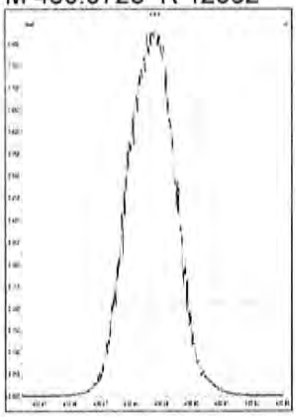
M 404.9760 R 12257



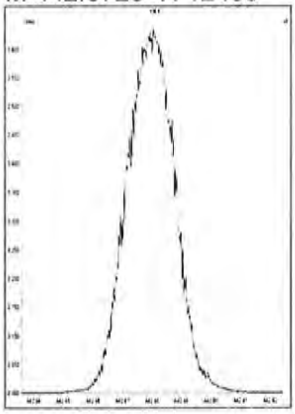
M 416.9760 R 12438



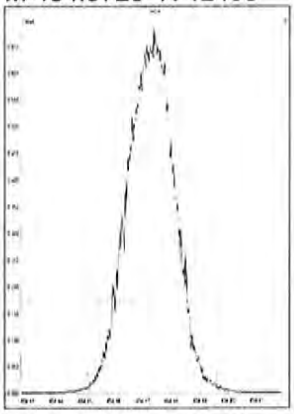
M 430.9728 R 12562



M 442.9728 R 12439



M 454.9728 R 12438

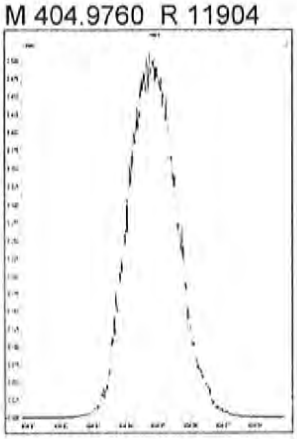


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

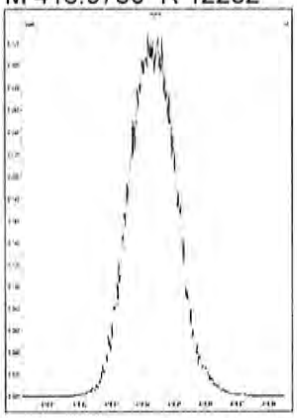
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Monday, October 12, 2015 13:06:54 Eastern Daylight Time

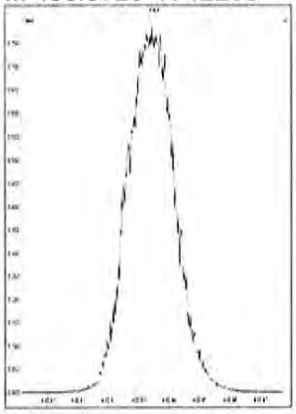
M 404.9760 R 11904



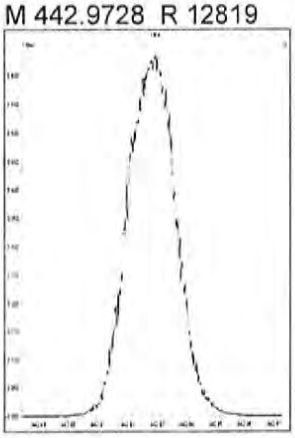
M 416.9760 R 12252



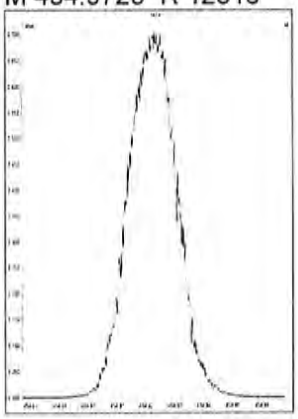
M 430.9728 R 12255



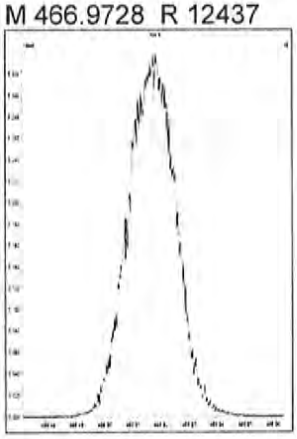
M 442.9728 R 12819



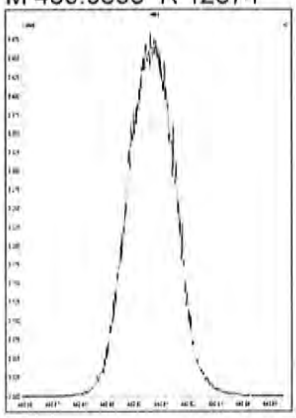
M 454.9728 R 12316



M 466.9728 R 12437



M 480.9696 R 12374

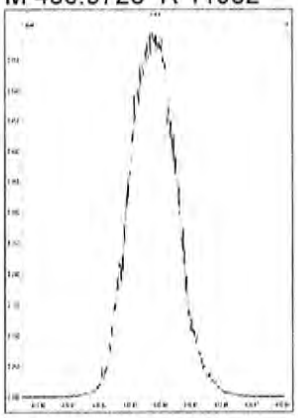


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

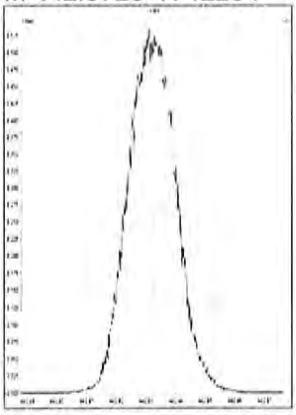
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Monday, October 12, 2015 13:07:36 Eastern Daylight Time

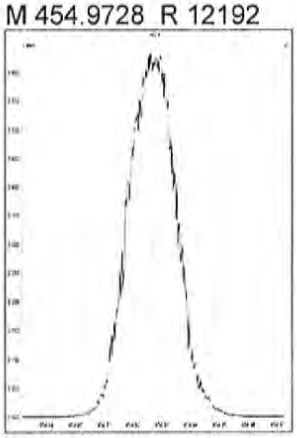
M 430.9728 R 11962



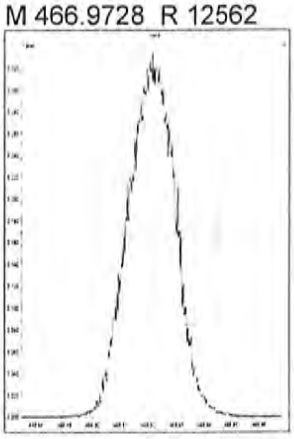
M 442.9728 R 12254



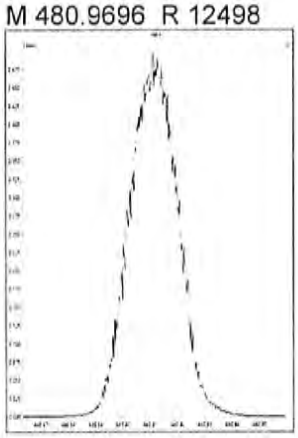
M 454.9728 R 12192



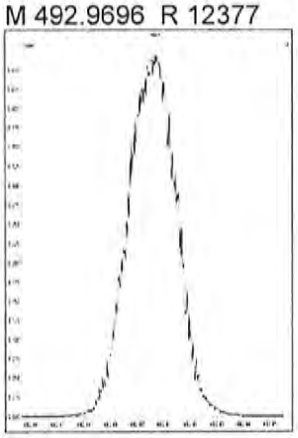
M 466.9728 R 12562



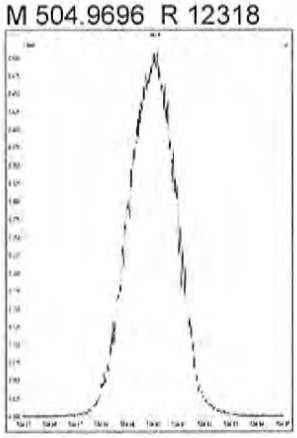
M 480.9696 R 12498



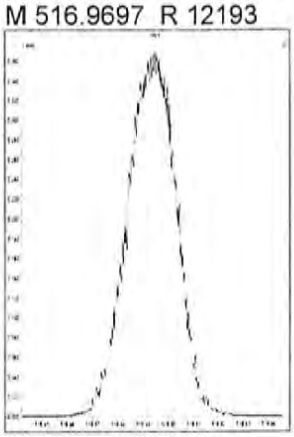
M 492.9696 R 12377



M 504.9696 R 12318



M 516.9697 R 12193

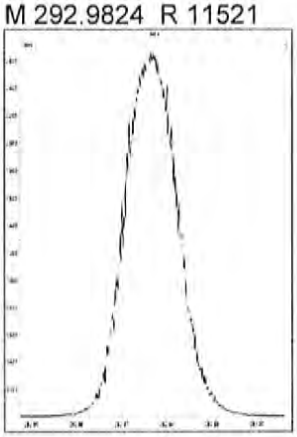


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

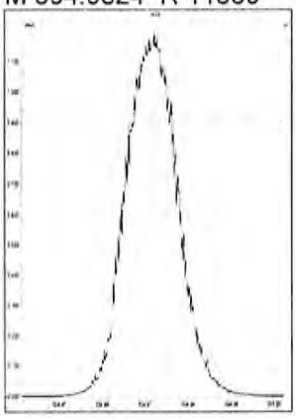
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 12:22:41 Eastern Daylight Time

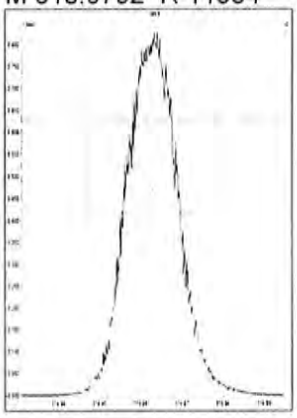
M 292.9824 R 11521



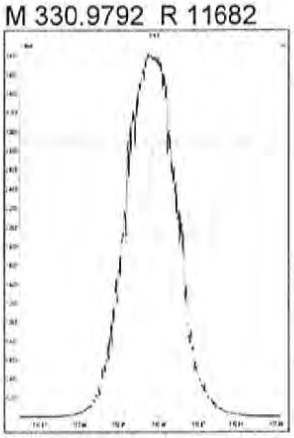
M 304.9824 R 11680



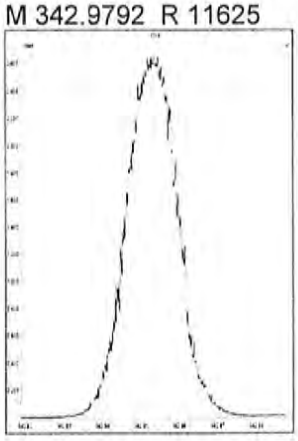
M 318.9792 R 11684



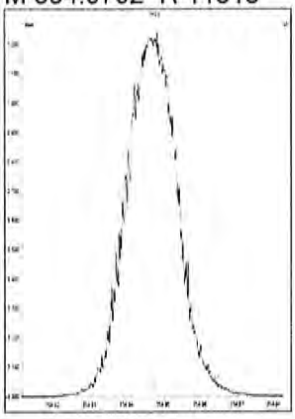
M 330.9792 R 11682



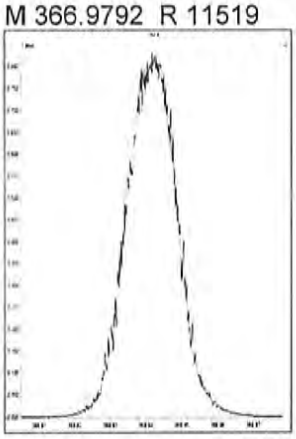
M 342.9792 R 11625



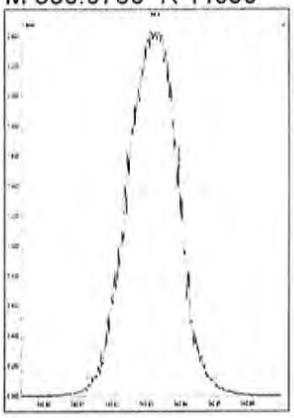
M 354.9792 R 11313



M 366.9792 R 11519



M 380.9760 R 11850

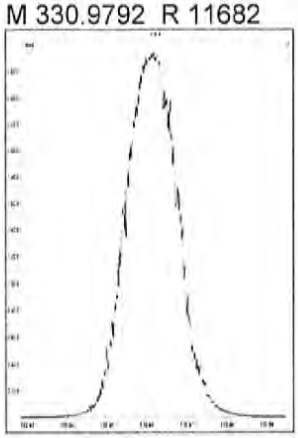


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

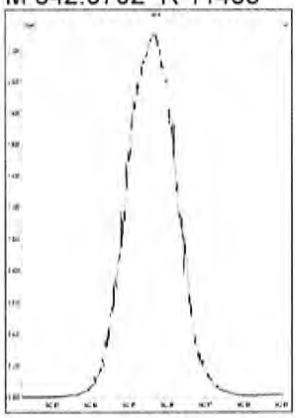
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 12:23:33 Eastern Daylight Time

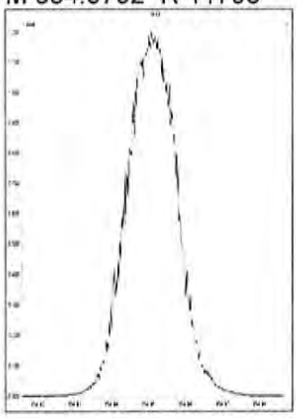
M 330.9792 R 11682



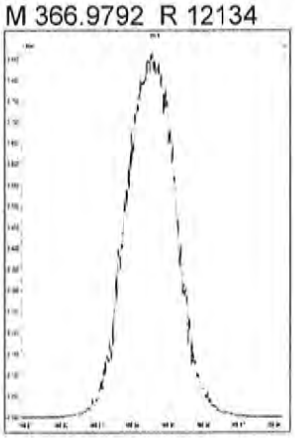
M 342.9792 R 11465



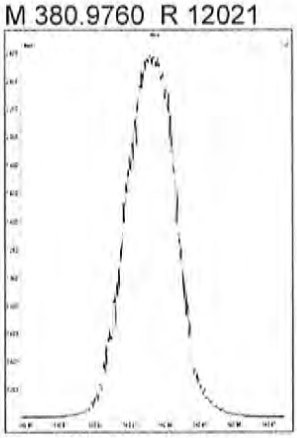
M 354.9792 R 11793



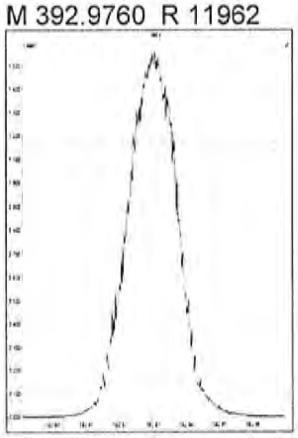
M 366.9792 R 12134



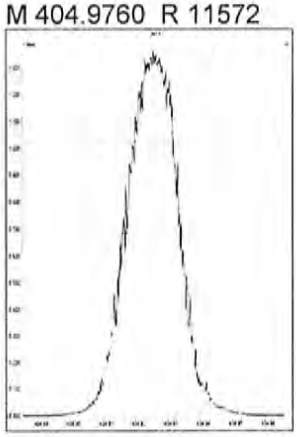
M 380.9760 R 12021



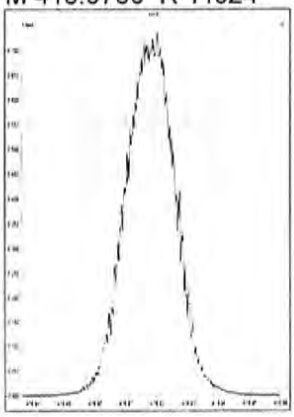
M 392.9760 R 11962



M 404.9760 R 11572



M 416.9760 R 11624

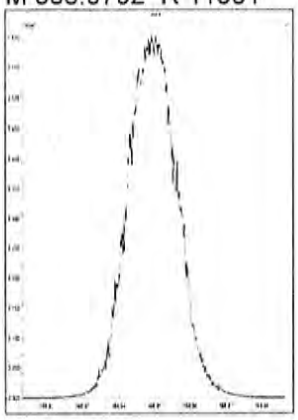


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

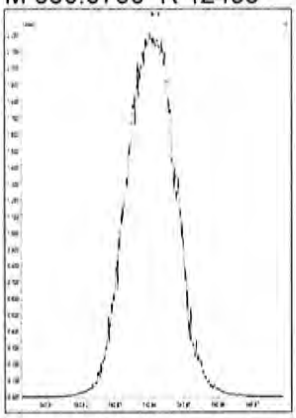
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 12:24:13 Eastern Daylight Time

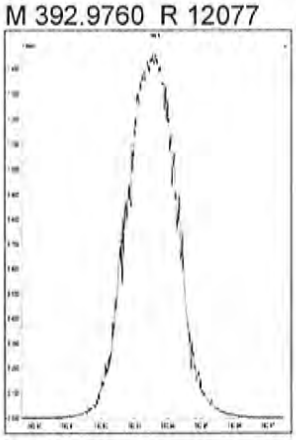
M 366.9792 R 11681



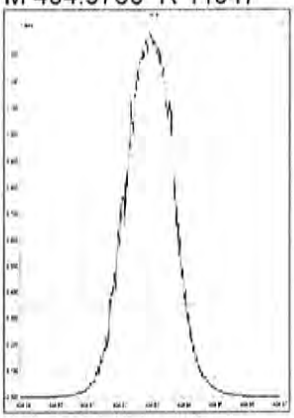
M 380.9760 R 12435



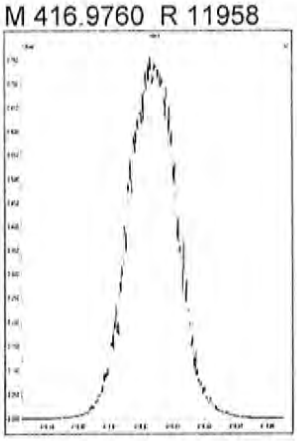
M 392.9760 R 12077



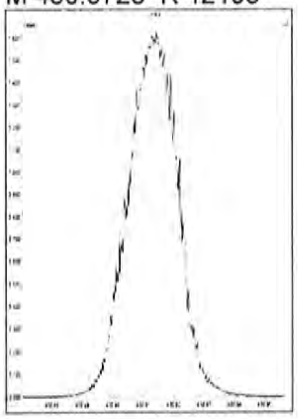
M 404.9760 R 11847



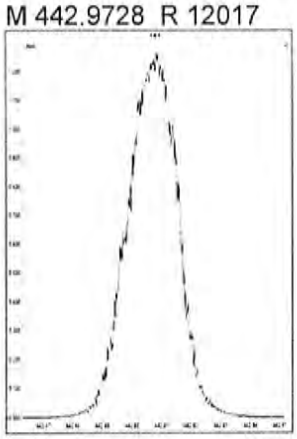
M 416.9760 R 11958



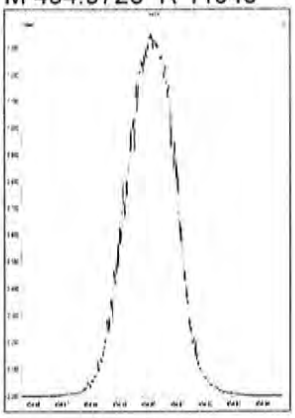
M 430.9728 R 12195



M 442.9728 R 12017



M 454.9728 R 11849

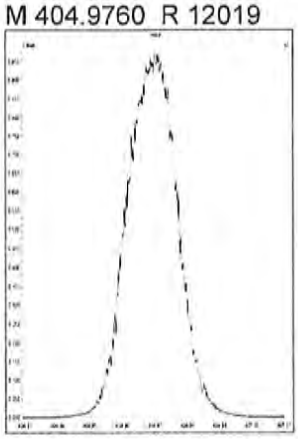


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

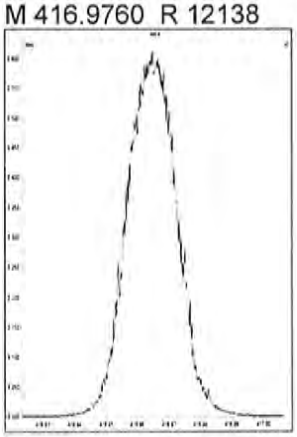
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 12:24:49 Eastern Daylight Time

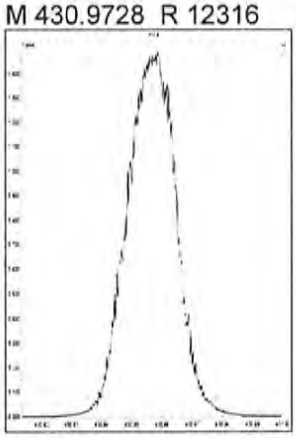
M 404.9760 R 12019



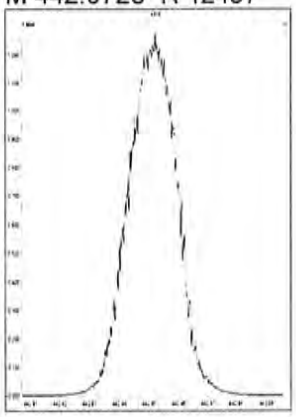
M 416.9760 R 12138



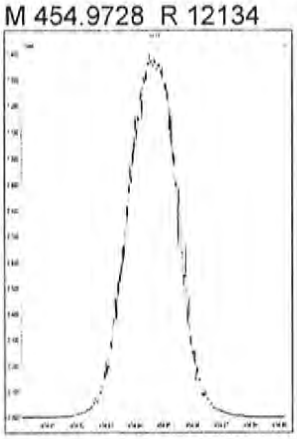
M 430.9728 R 12316



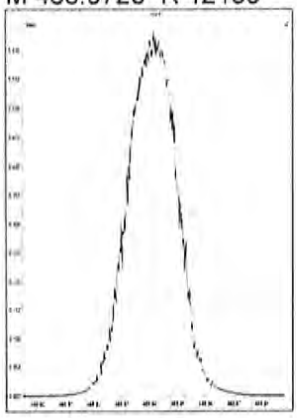
M 442.9728 R 12437



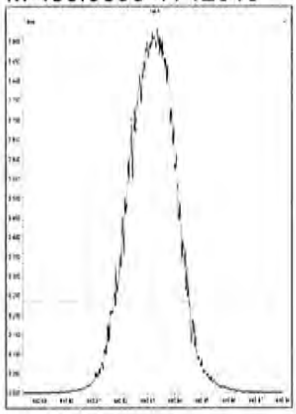
M 454.9728 R 12134



M 466.9728 R 12136



M 480.9696 R 12018

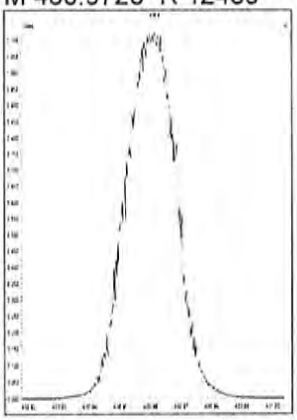


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

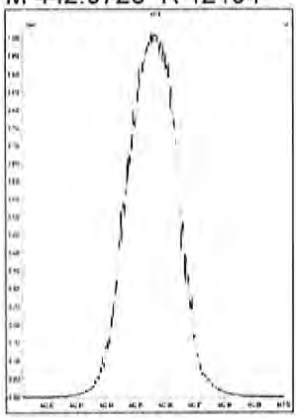
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 12:25:31 Eastern Daylight Time

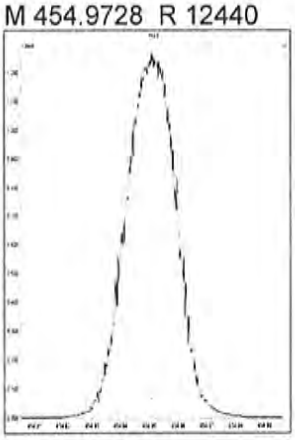
M 430.9728 R 12439



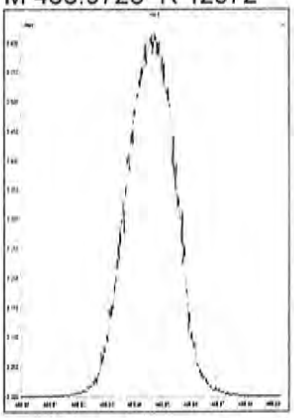
M 442.9728 R 12194



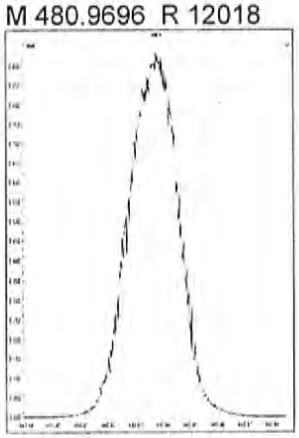
M 454.9728 R 12440



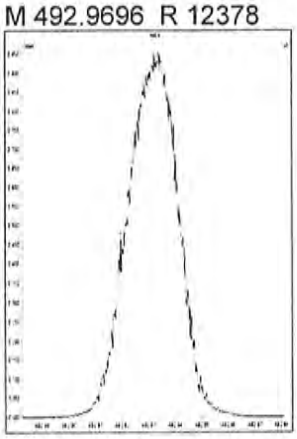
M 466.9728 R 12372



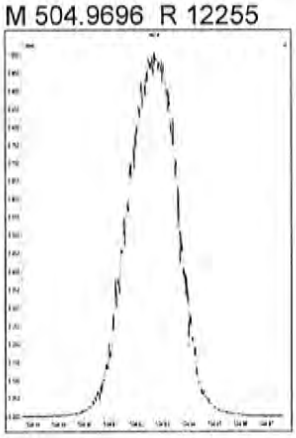
M 480.9696 R 12018



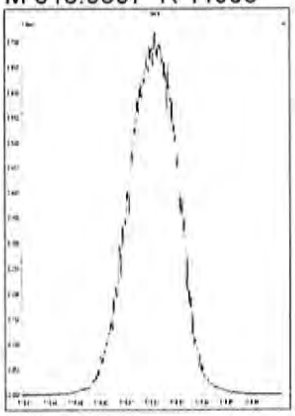
M 492.9696 R 12378



M 504.9696 R 12255



M 516.9697 R 11903



WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

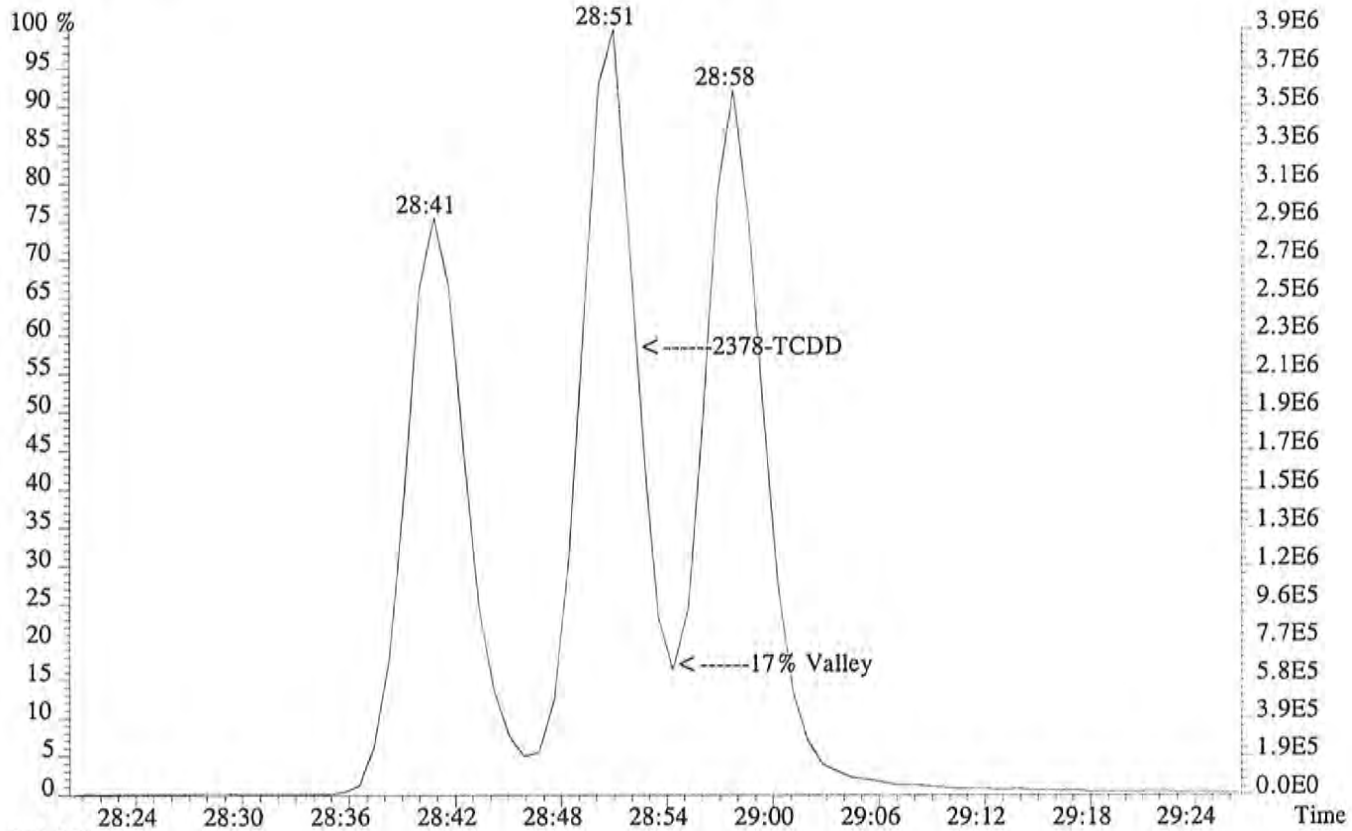
Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

Case No.: _____ SDG No.:
ID: 0.25 (mm)
Lab File ID: P600912
Date Analyzed: 12-OCT-2015
Time Analyzed: 11:10:35

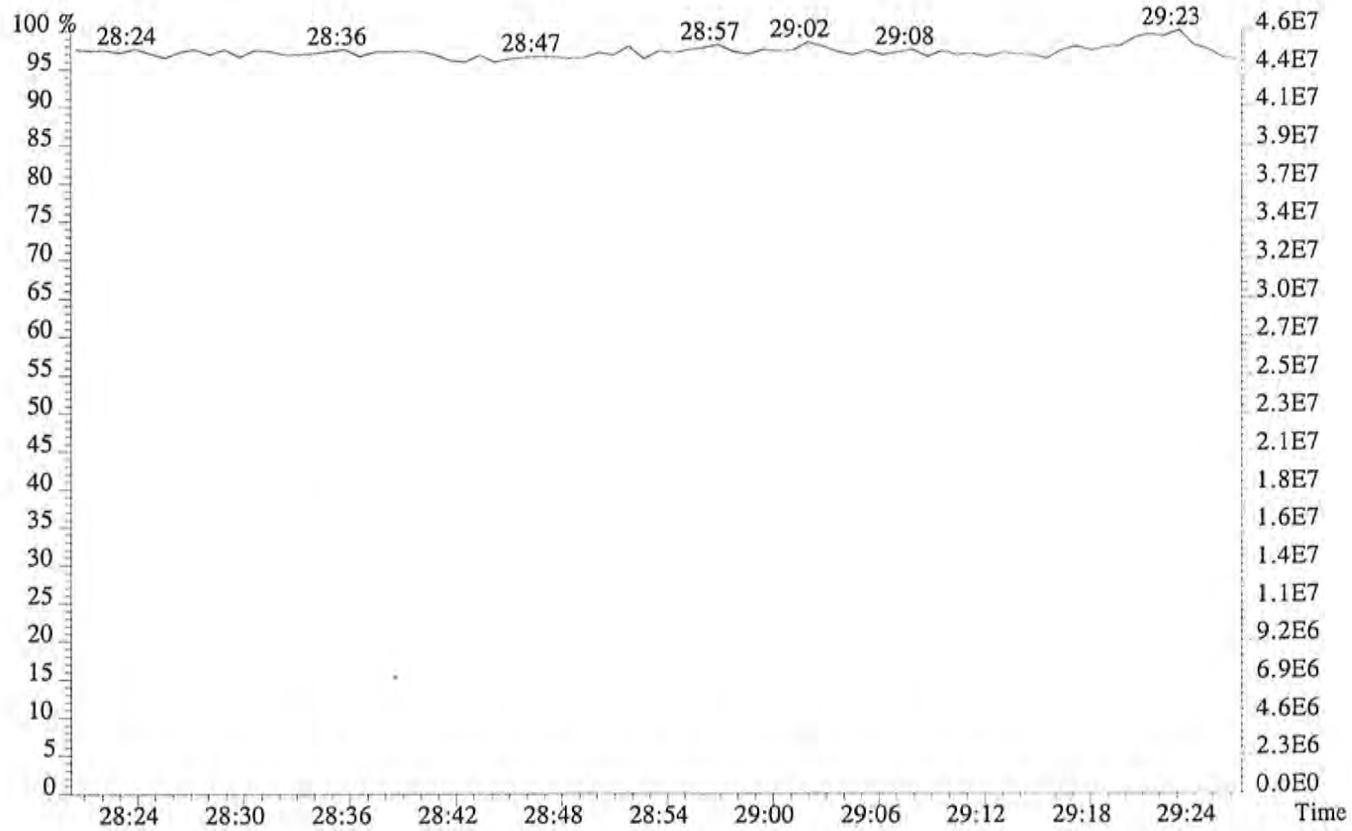
Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	23:41	30:00
TCDD	25:32	29:50
PeCDF	29:57	34:11
PeCDD	31:29	33:56
HxCDF	34:50	37:20
HxCDD	35:21	36:56
HpCDF	38:32	39:55
HpCDD	38:47	39:27

% Valley 2378-TCDD: 17 %

File:P600912 #1-562 Acq:12-OCT-2015 11:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
319.8965



318.9792



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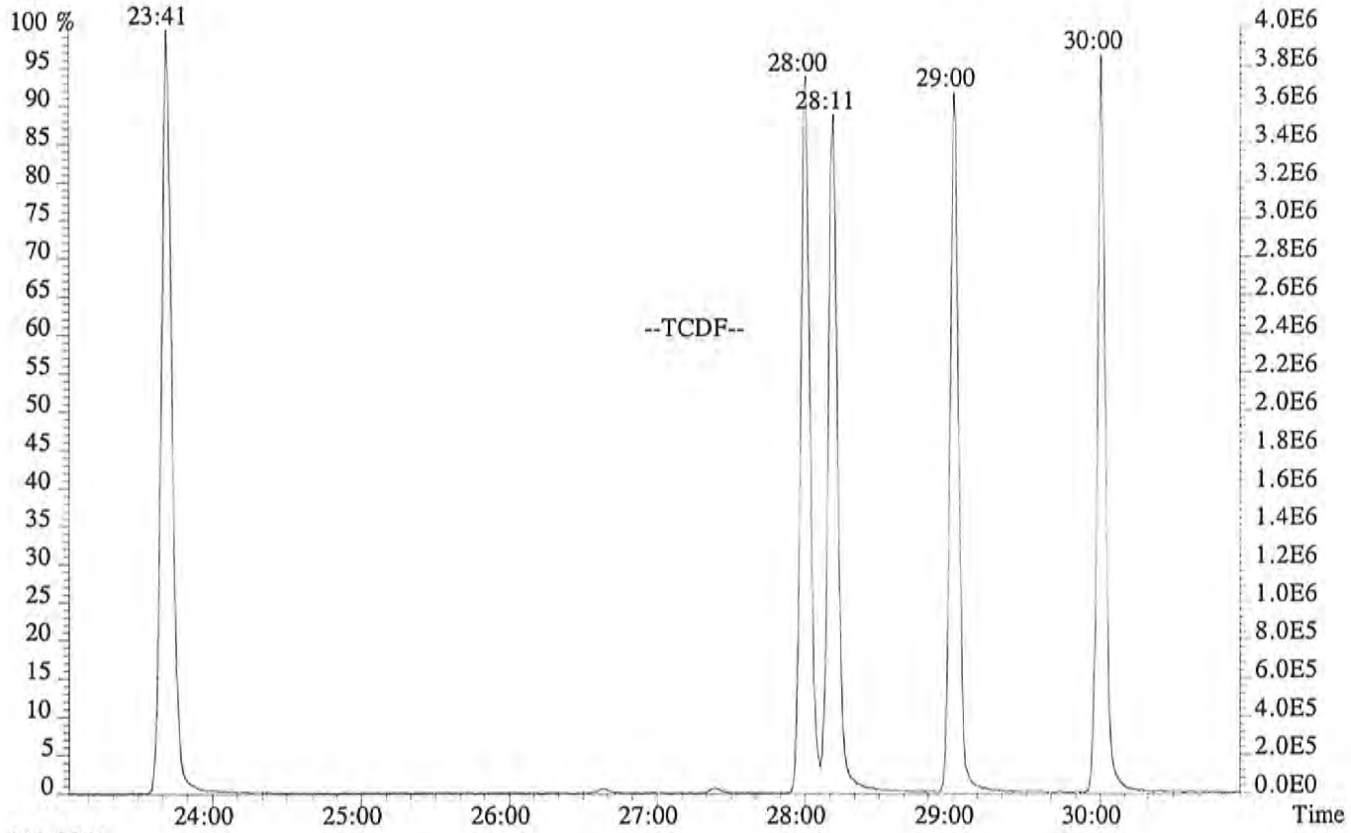
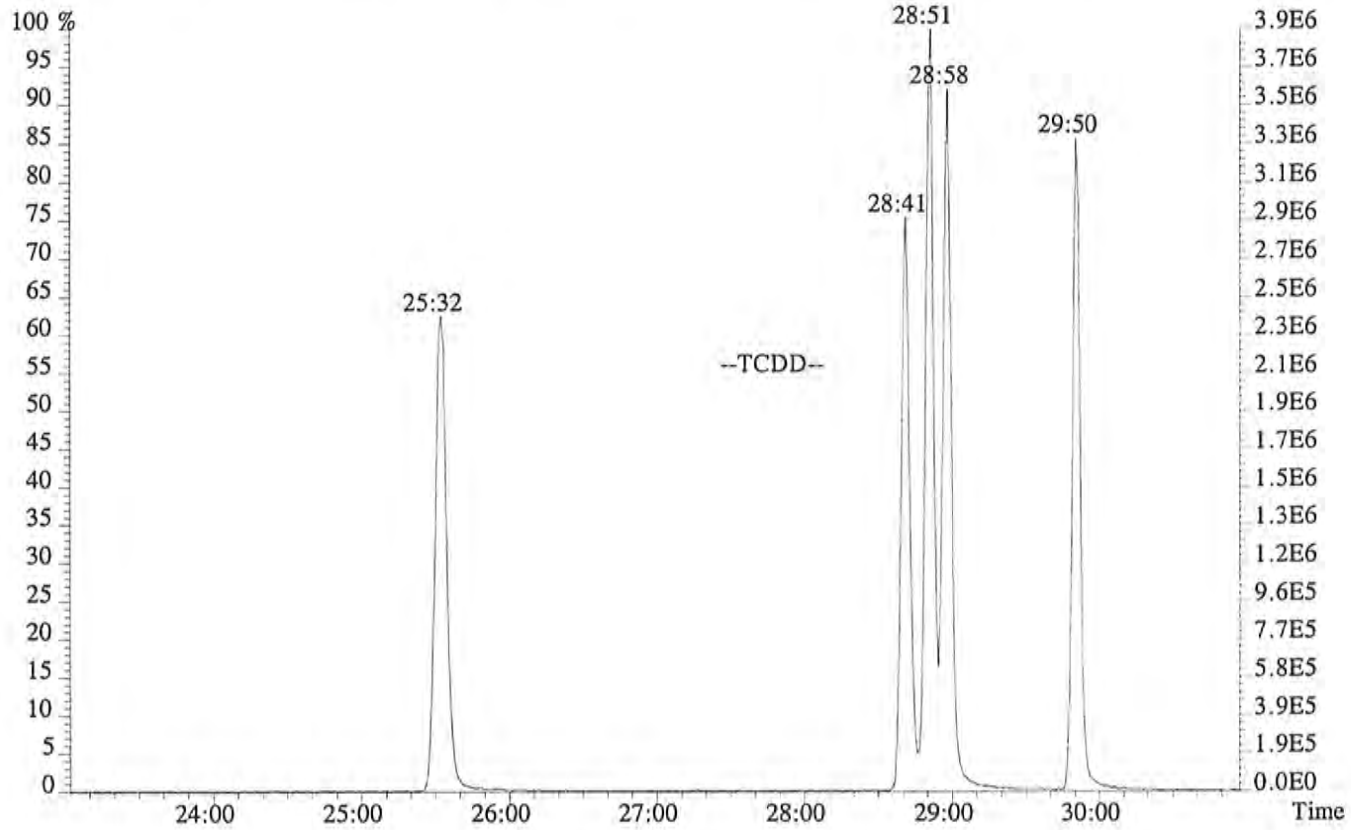
Sample#1 Exp:WD
303.9016

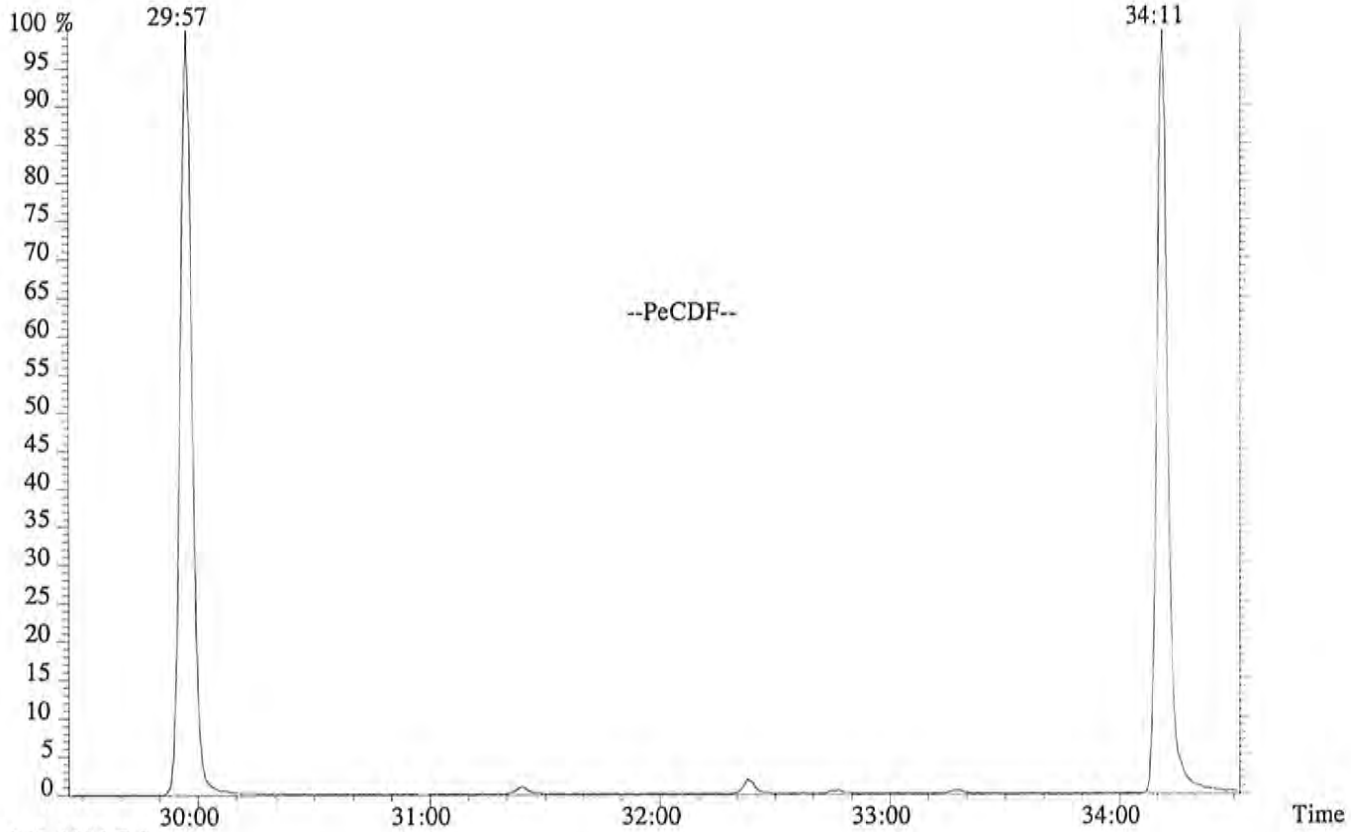


319.8965

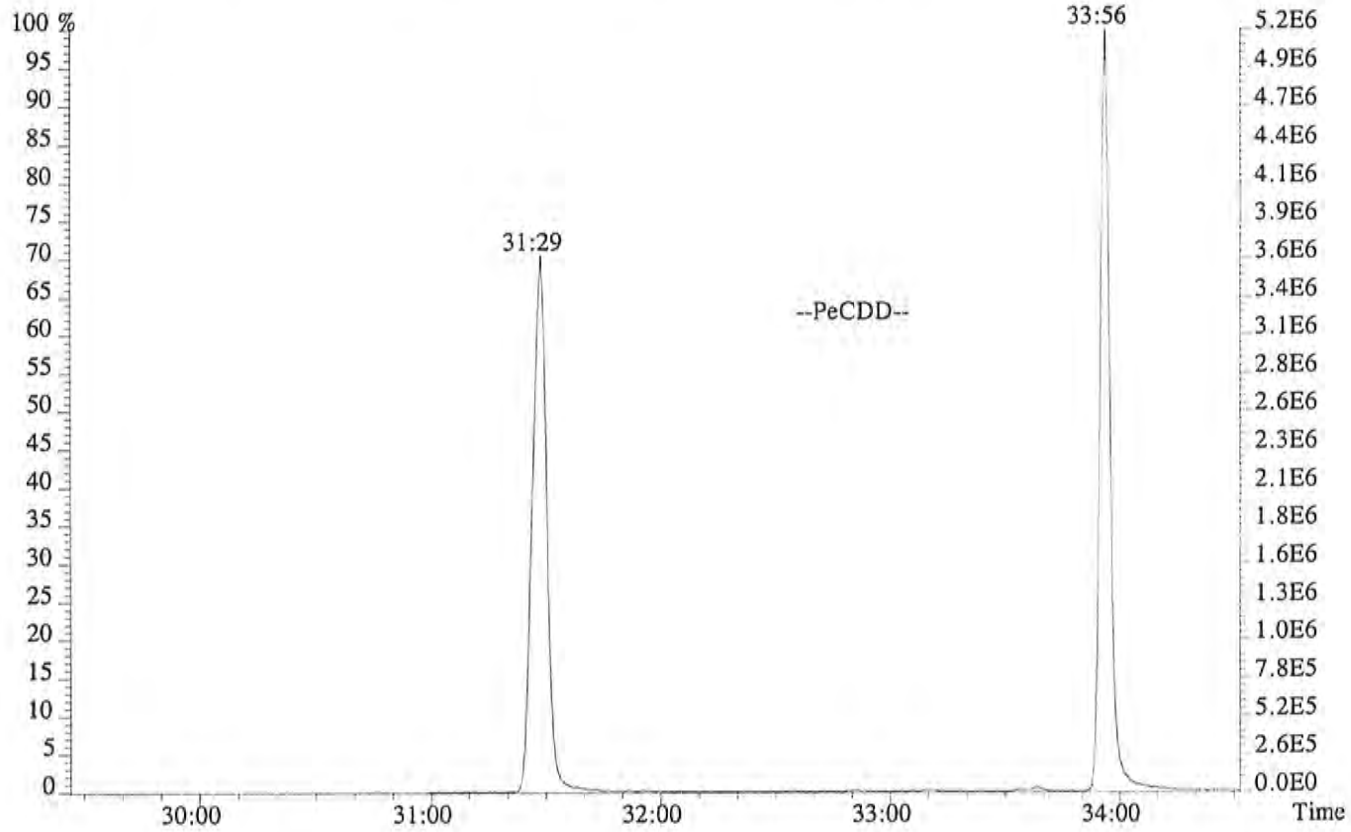


E1500972

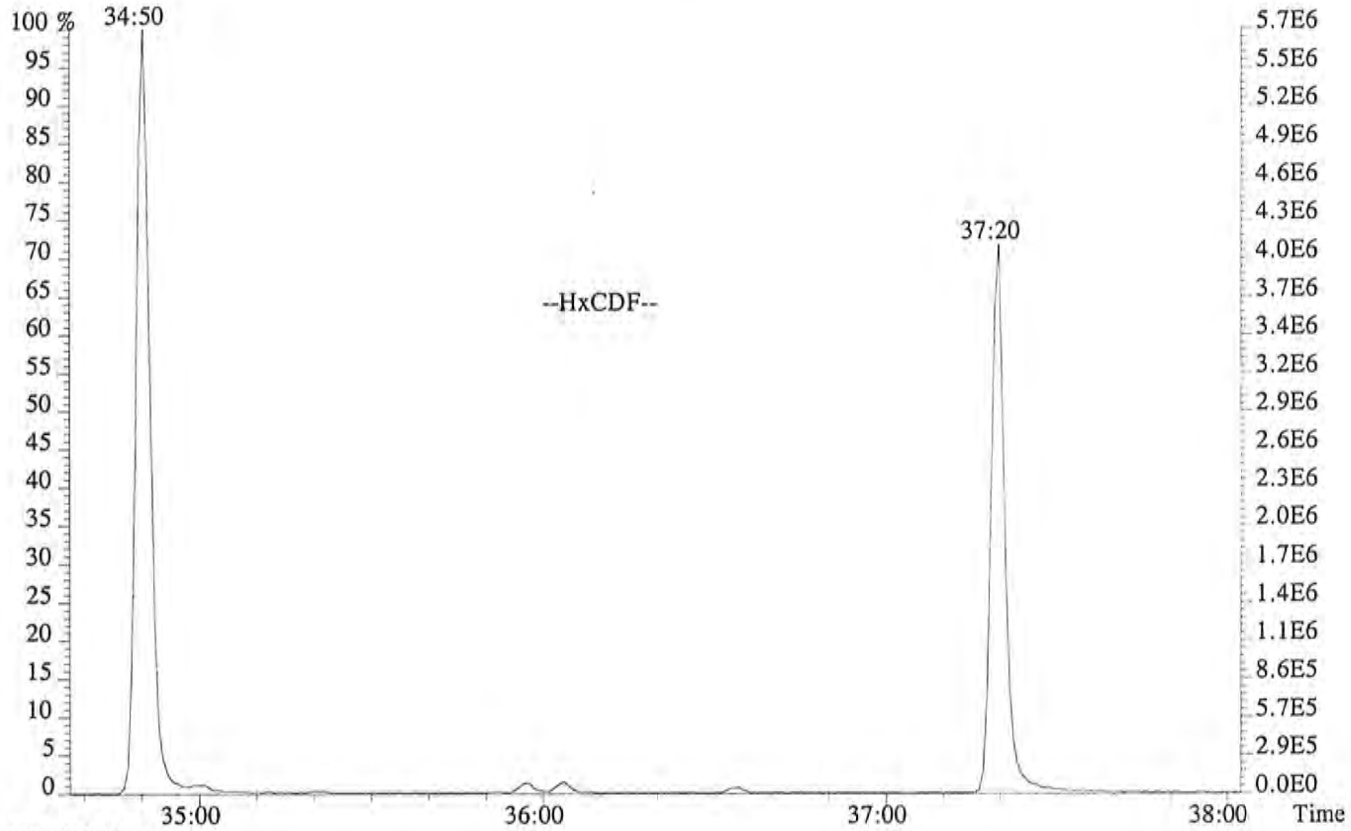
File:P600912 #1-562 Acq:12-OCT-2015 11:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
339.8597,339.8597 F:2



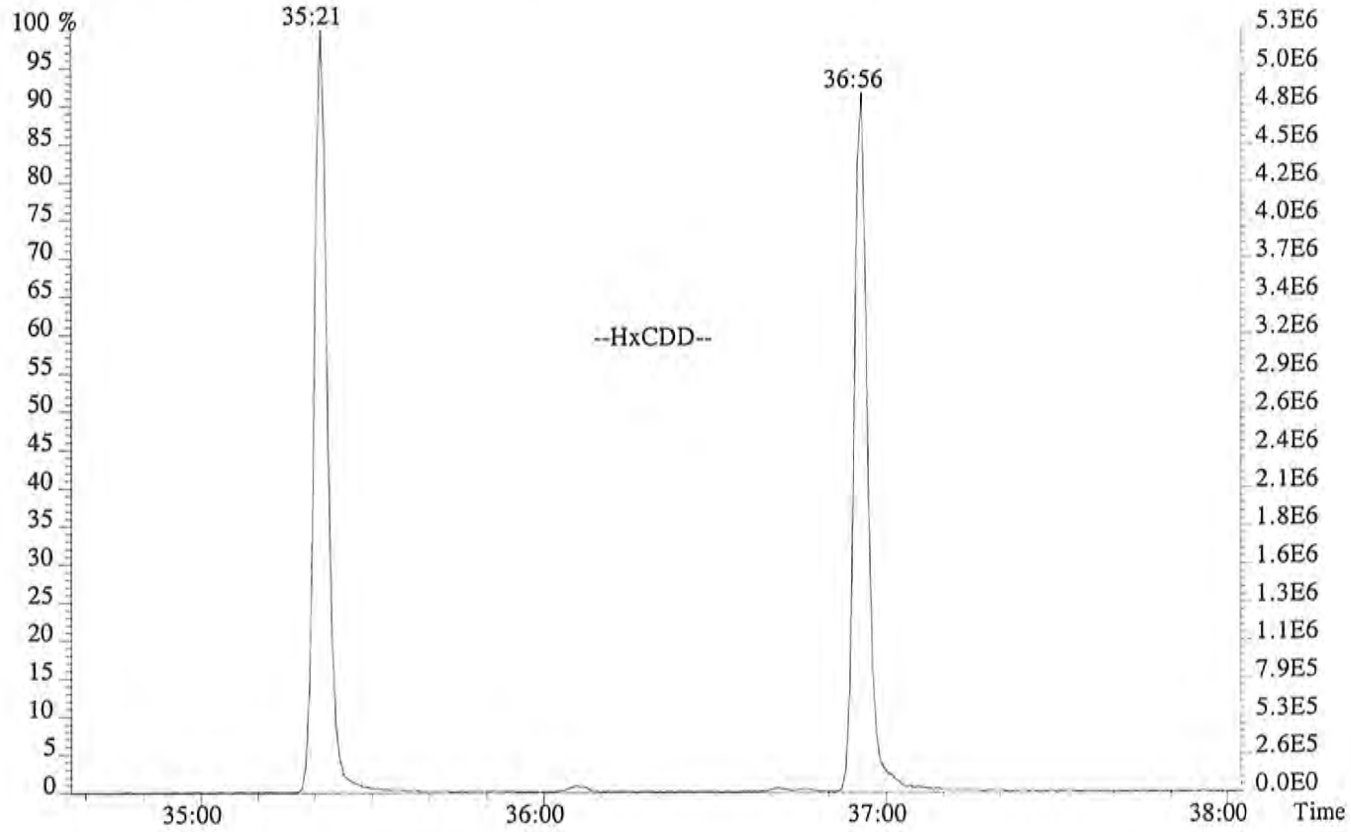
355.8546 F:2



File:P600912 #1-308 Acq:12-OCT-2015 11:10:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
373.8208 F:3



389.8157 F:3



E1500972

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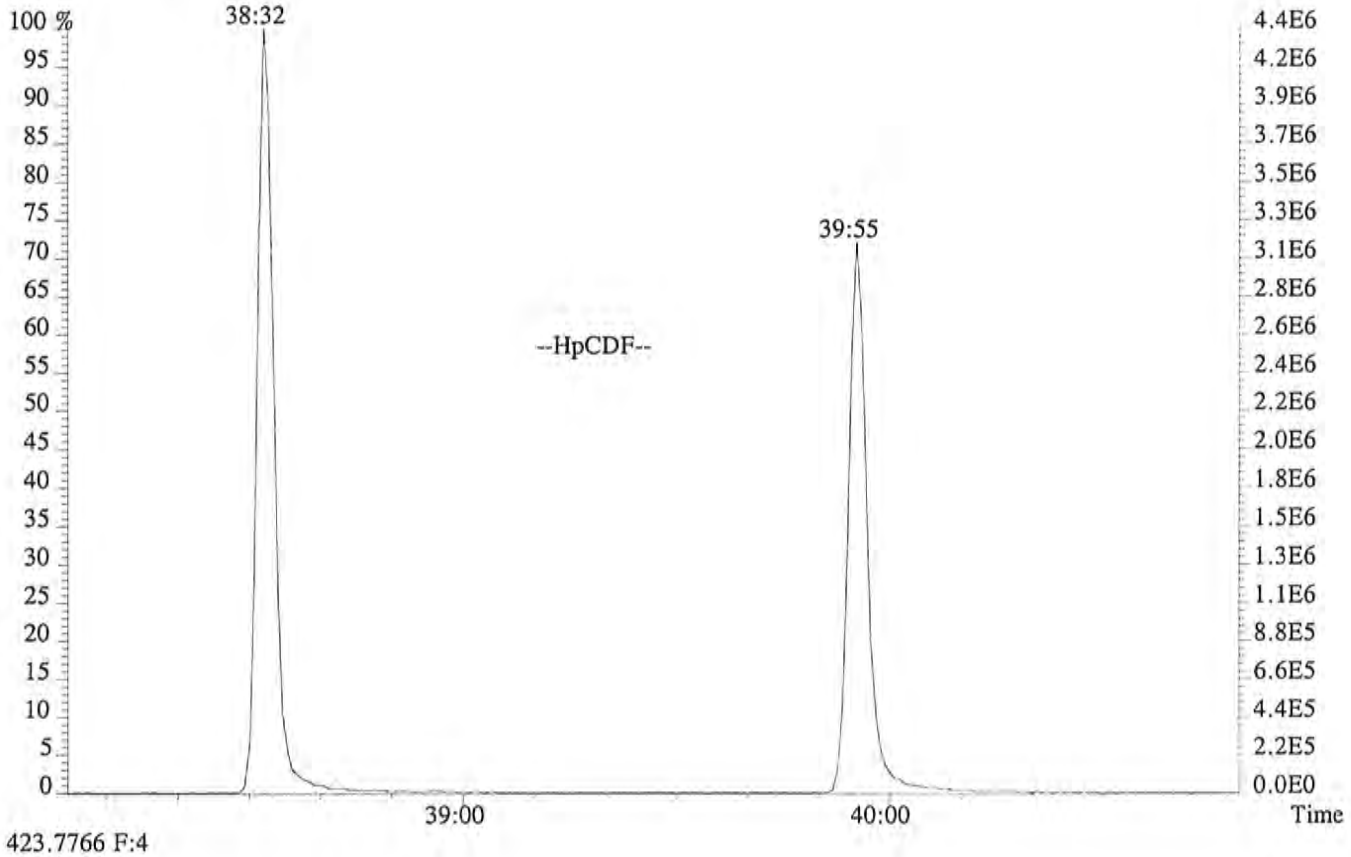
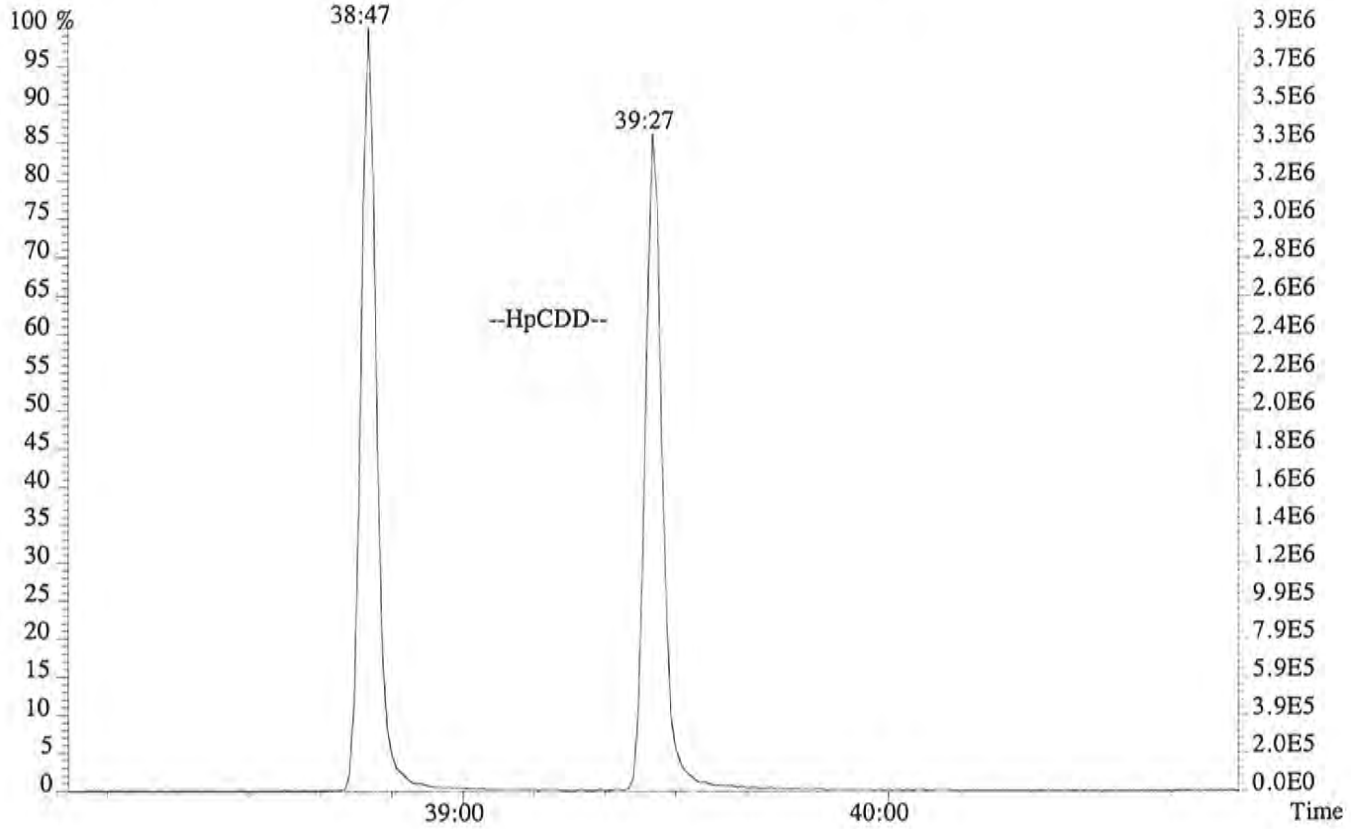
Sample#1 Exp:WD
407.7818 F:4



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: 08/19/15

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P600911 Analysis Date: 12-OCT-15 Time: 09:51:43

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.76	0.65-0.89	10.0	7.8 - 12.9	-0.1
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32-1.78	49	39 - 65	-2.3
1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	50	39 - 64	-0.5
1,2,3,6,7,8-HxCDD	M+2/M+4	1.20	1.05-1.43	47	39 - 64	-6.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	47	41 - 61	-6.1
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	47	43 - 58	-5.8
OCDD	M+2/M+4	0.88	0.76-1.02	96	79 - 126	-3.7
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	9.1	8.4 - 12.0	-8.6
1,2,3,7,8-PeCDF	M+2/M+4	1.53	1.32-1.78	47	41 - 60	-6.0
2,3,4,7,8-PeCDF	M+2/M+4	1.51	1.32-1.78	47	41 - 61	-6.3
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	48	45 - 56	-4.8
1,2,3,6,7,8-HxCDF	M+2/M+4	1.19	1.05-1.43	46	44 - 57	-7.3
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05-1.43	46	45 - 56	-7.6
2,3,4,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	46	44 - 57	-7.6
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.01	0.88-1.20	46	45 - 55	-7.4
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	46	43 - 58	-7.0
OCDF	M+2/M+4	0.89	0.76-1.02	90	63 - 159	-10.1

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 08/19/15

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P600911 Analysis Date: 12-OCT-15 Time: 09:51:43

	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	86	82 - 121	-13.6
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32-1.78	118	62 - 160	17.6
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	97	85 - 117	-2.8
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	107	85 - 118	7.4
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	111	72 - 138	10.9
13C-OCDD	M+2/M+4	0.90	0.76-1.02	273	96 - 415	36.4
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	103	71 - 140	3.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	113	76 - 130	12.6
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	115	77 - 130	15.3
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	88	76 - 131	-11.7
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	94	70 - 143	-5.5
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	94	74 - 135	-5.9
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	95	73 - 137	-4.7
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37-0.51	102	78 - 129	2.5
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	90	77 - 129	-10.1
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				8.5	7.8 - 12.7	-14.9

(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.
84080

Run #7 Filename P600911 Samp: 1 Inj: 1 Acquired: 12-OCT-15 09:51:43
Processed: 21-OCT-15 18:05:05 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:12	2.793e+03	3.585e+03	0.78	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	32:23	2.398e+04	1.573e+04	1.53	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:17	2.318e+04	1.539e+04	1.51	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	35:57	2.232e+04	1.805e+04	1.24	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:03	2.334e+04	1.958e+04	1.19	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	36:33	2.283e+04	1.899e+04	1.20	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:18	2.136e+04	1.736e+04	1.23	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	38:32	2.160e+04	2.149e+04	1.01	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	39:55	1.862e+04	1.833e+04	1.02	yes	no	1.287
10	Unk	OCDF	42:24	3.505e+04	3.927e+04	0.89	yes	no	1.257
11	Unk	2,3,7,8-TCDD	28:59	2.346e+03	3.087e+03	0.76	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	33:34	1.851e+04	1.205e+04	1.54	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	36:41	1.904e+04	1.474e+04	1.29	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	36:46	1.814e+04	1.516e+04	1.20	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	37:00	1.999e+04	1.607e+04	1.24	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	39:27	1.835e+04	1.785e+04	1.03	yes	no	1.034
17	Unk	OCDD	42:12	3.291e+04	3.744e+04	0.88	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	28:11	3.255e+04	4.164e+04	0.78	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	32:22	5.227e+04	3.328e+04	1.57	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:16	5.368e+04	3.449e+04	1.56	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	35:56	2.429e+04	4.700e+04	0.52	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:02	2.802e+04	5.420e+04	0.52	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	36:32	2.752e+04	5.364e+04	0.51	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:18	2.458e+04	4.782e+04	0.51	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:32	2.059e+04	4.717e+04	0.44	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:55	1.881e+04	4.298e+04	0.44	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	28:58	2.377e+04	3.002e+04	0.79	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	33:33	4.127e+04	2.585e+04	1.60	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	36:40	3.683e+04	2.939e+04	1.25	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	36:45	3.867e+04	3.071e+04	1.26	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:26	3.828e+04	3.608e+04	1.06	yes	no	0.892
32	IS	13C-OCDD	42:11	6.216e+04	6.939e+04	0.90	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	28:24	2.322e+04	2.898e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:60	4.196e+04	3.321e+04	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:59	5.610e+03				no	1.263

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

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
84080

Run #7 Filename P600911 Samp: 1 Inj: 1 Acquired: 12-OCT-15 09:51:43
Processed: 21-OCT-15 18:05:05 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	5.09e+05	7.28e+02	7.0e+02	6.54e+05	1.40e+03	4.7e+02
2	1,2,3,7,8-PeCDF	4.54e+06	7.40e+02	6.1e+03	2.97e+06	2.35e+03	1.3e+03
3	2,3,4,7,8-PeCDF	4.64e+06	7.40e+02	6.3e+03	3.08e+06	2.35e+03	1.3e+03
4	1,2,3,4,7,8-HxCDF	4.87e+06	9.48e+02	5.1e+03	3.96e+06	6.40e+02	6.2e+03
5	1,2,3,6,7,8-HxCDF	5.03e+06	9.48e+02	5.3e+03	4.17e+06	6.40e+02	6.5e+03
6	2,3,4,6,7,8-HxCDF	5.05e+06	9.48e+02	5.3e+03	4.23e+06	6.40e+02	6.6e+03
7	1,2,3,7,8,9-HxCDF	4.51e+06	9.48e+02	4.8e+03	3.67e+06	6.40e+02	5.7e+03
8	1,2,3,4,6,7,8-HpCDF	4.78e+06	1.98e+03	2.4e+03	4.79e+06	1.93e+03	2.5e+03
9	1,2,3,4,7,8,9-HpCDF	3.85e+06	1.98e+03	1.9e+03	3.81e+06	1.93e+03	2.0e+03
10	OCDF	6.50e+06	7.92e+02	8.2e+03	7.05e+06	1.17e+03	6.0e+03
11	2,3,7,8-TCDD	4.53e+05	7.56e+02	6.0e+02	5.86e+05	1.14e+03	5.1e+02
12	1,2,3,7,8-PeCDD	3.76e+06	1.43e+03	2.6e+03	2.40e+06	9.16e+02	2.6e+03
13	1,2,3,4,7,8-HxCDD	4.26e+06	6.88e+02	6.2e+03	3.43e+06	1.09e+03	3.1e+03
14	1,2,3,6,7,8-HxCDD	4.07e+06	6.88e+02	5.9e+03	3.26e+06	1.09e+03	3.0e+03
15	1,2,3,7,8,9-HxCDD	4.45e+06	6.88e+02	6.5e+03	3.53e+06	1.09e+03	3.2e+03
16	1,2,3,4,6,7,8-HpCDD	3.94e+06	7.60e+02	5.2e+03	3.86e+06	7.44e+02	5.2e+03
17	OCDD	6.20e+06	5.12e+02	1.2e+04	7.01e+06	8.84e+02	7.9e+03
18	13C-2,3,7,8-TCDF	5.93e+06	2.00e+03	3.0e+03	7.60e+06	1.42e+03	5.3e+03
19	13C-1,2,3,7,8-PeCDF	1.00e+07	1.08e+03	9.2e+03	6.35e+06	1.32e+03	4.8e+03
20	13C-2,3,4,7,8-PeCDF	1.07e+07	1.08e+03	9.8e+03	6.93e+06	1.32e+03	5.2e+03
21	13C-1,2,3,4,7,8-HxCDF	5.36e+06	1.04e+03	5.2e+03	1.03e+07	1.55e+03	6.6e+03
22	13C-1,2,3,6,7,8-HxCDF	6.01e+06	1.04e+03	5.8e+03	1.17e+07	1.55e+03	7.5e+03
23	13C-2,3,4,6,7,8-HxCDF	6.09e+06	1.04e+03	5.9e+03	1.19e+07	1.55e+03	7.7e+03
24	13C-1,2,3,7,8,9-HxCDF	5.19e+06	1.04e+03	5.0e+03	1.01e+07	1.55e+03	6.5e+03
25	13C-1,2,3,4,6,7,8-HpCDF	4.67e+06	1.00e+03	4.7e+03	1.05e+07	3.99e+03	2.6e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.91e+06	1.00e+03	3.9e+03	8.94e+06	3.99e+03	2.2e+03
27	13C-2,3,7,8-TCDD	4.60e+06	4.77e+03	9.6e+02	5.81e+06	2.08e+03	2.8e+03
28	13C-1,2,3,7,8-PeCDD	8.25e+06	1.26e+03	6.5e+03	5.15e+06	7.80e+02	6.6e+03
29	13C-1,2,3,4,7,8-HxCDD	8.72e+06	2.59e+03	3.4e+03	6.85e+06	1.62e+03	4.2e+03
30	13C-1,2,3,6,7,8-HxCDD	8.30e+06	2.59e+03	3.2e+03	6.63e+06	1.62e+03	4.1e+03
31	13C-1,2,3,4,6,7,8-HpCDD	8.25e+06	1.24e+03	6.7e+03	7.79e+06	6.56e+02	1.2e+04
32	13C-OCDD	1.17e+07	9.36e+02	1.3e+04	1.31e+07	1.06e+03	1.2e+04
33	13C-1,2,3,4-TCDD	4.48e+06	4.77e+03	9.4e+02	5.55e+06	2.08e+03	2.7e+03
34	13C-1,2,3,7,8,9-HxCDD	9.29e+06	2.59e+03	3.6e+03	7.39e+06	1.62e+03	4.6e+03
35	37Cl-2,3,7,8-TCDD	1.09e+06	1.36e+03	8.0e+02			

---Sample Calculation---

$$\text{D/L TCDD} = \frac{2.5 \times (7.560e+02 + 1.140e+03) \times 100}{(4.599e+06 + 5.808e+06) \times (\qquad) \times 1.010} =$$

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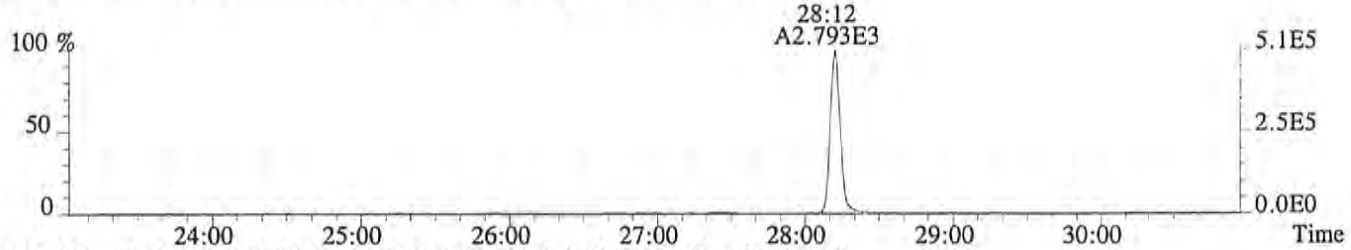
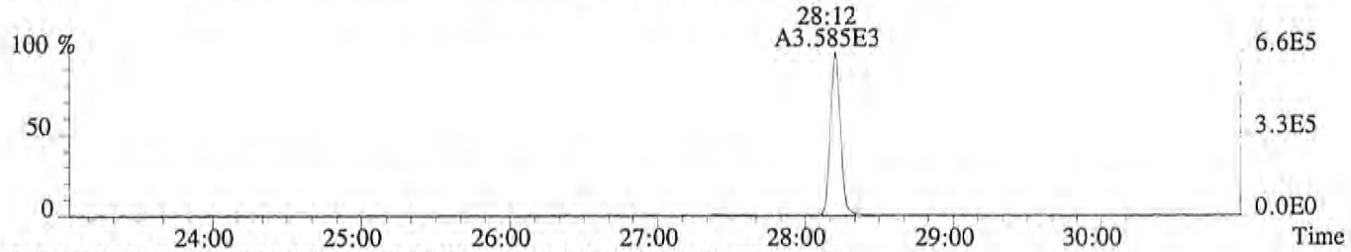
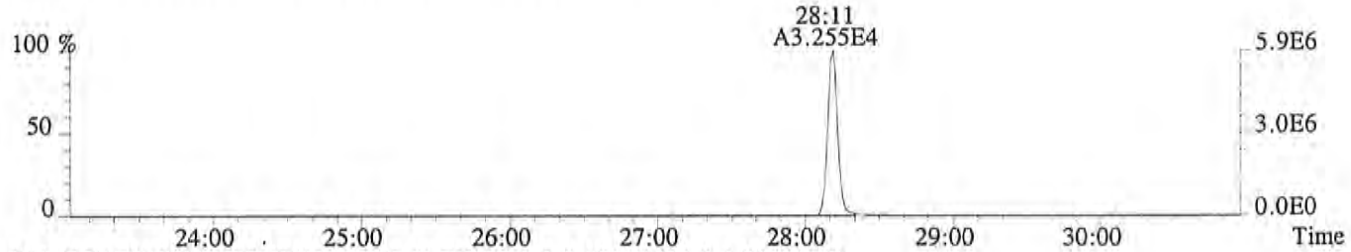
File:P600911 #1-562 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,T)



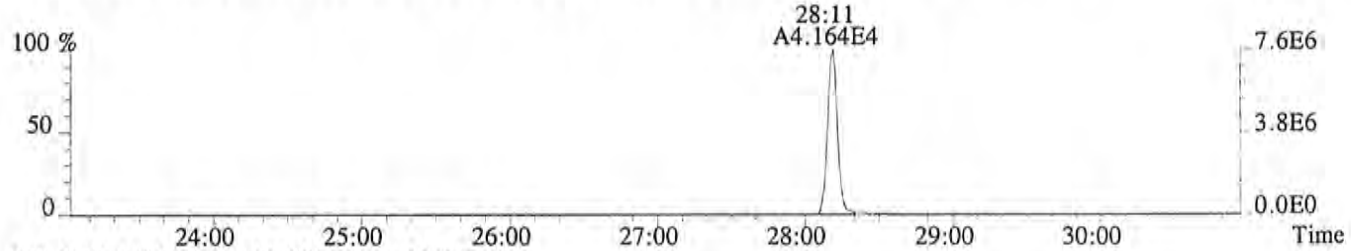
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1396.0,1.00%,F,T)



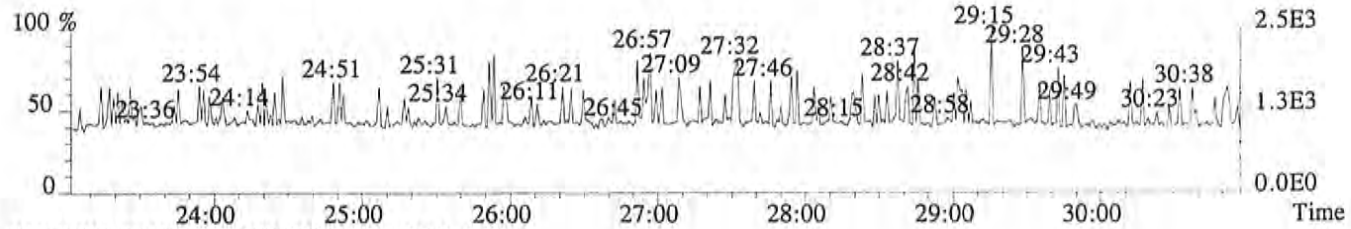
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2004.0,1.00%,F,T)



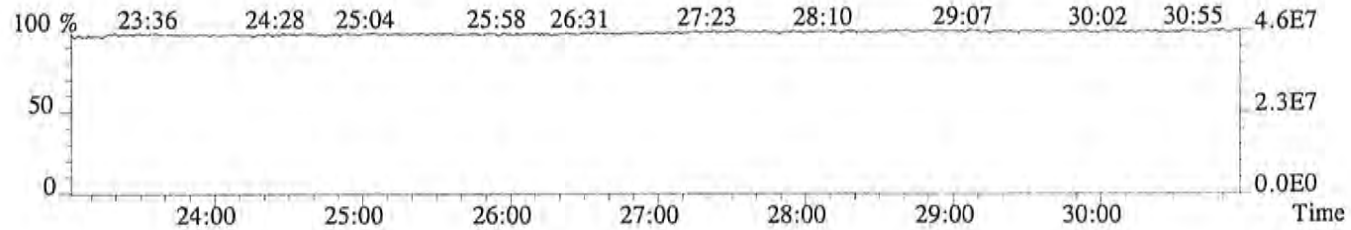
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1420.0,1.00%,F,T)



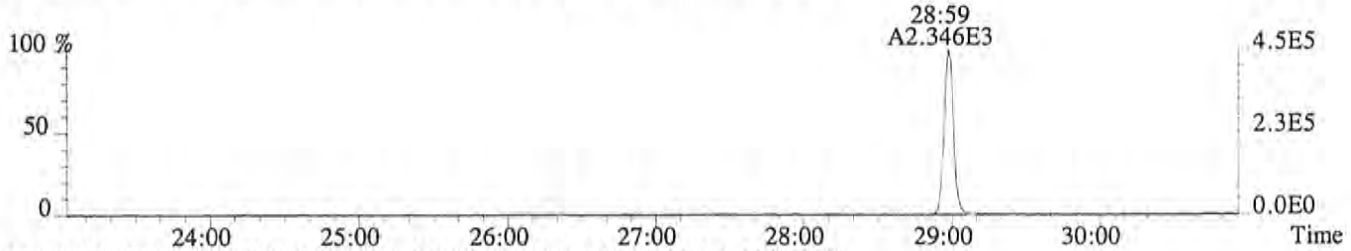
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



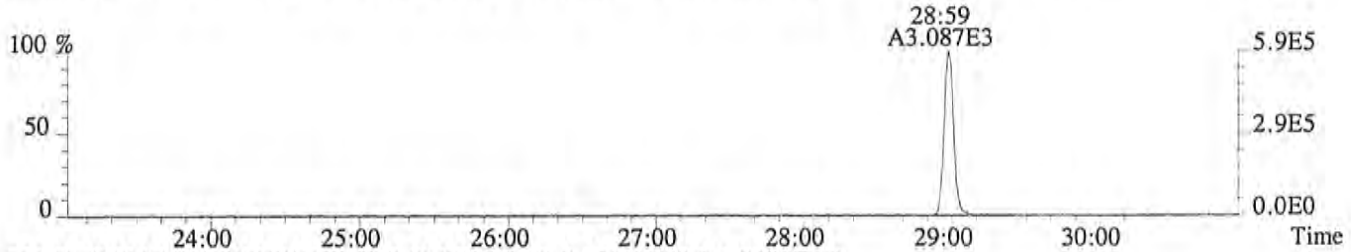
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



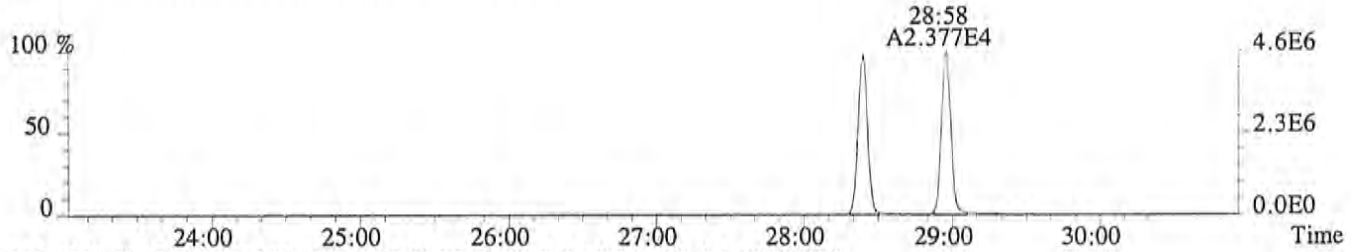
File:P600911 #1-562 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,756.0,1.00%,F,T)



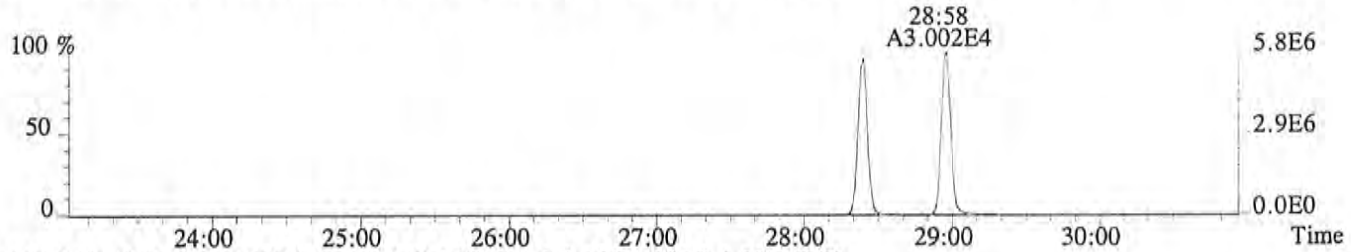
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1140.0,1.00%,F,T)



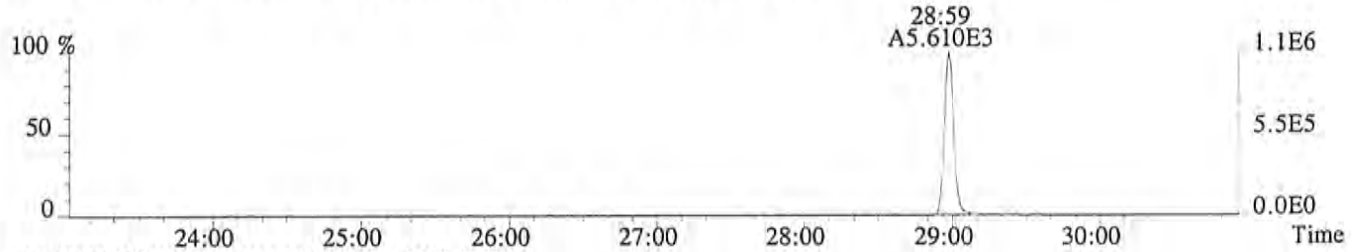
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4768.0,1.00%,F,T)



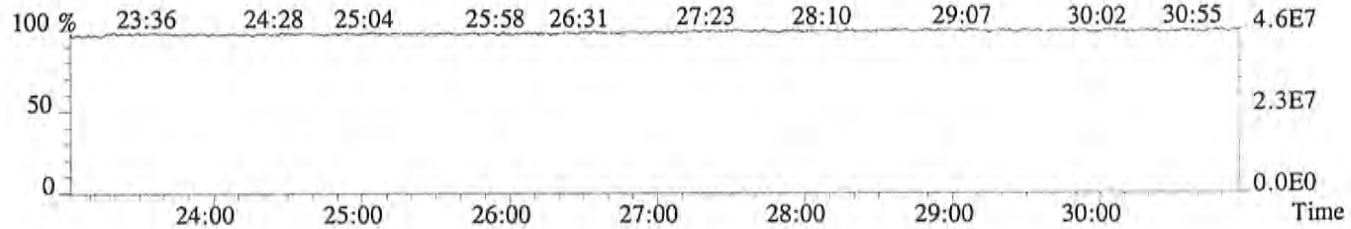
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2080.0,1.00%,F,T)



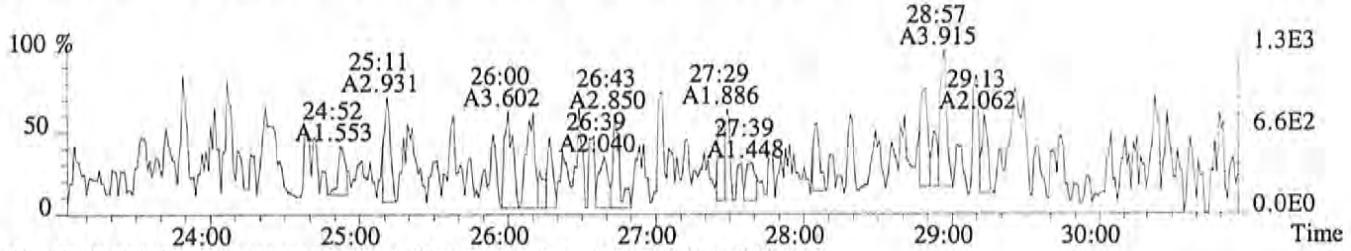
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1356.0,1.00%,F,T)



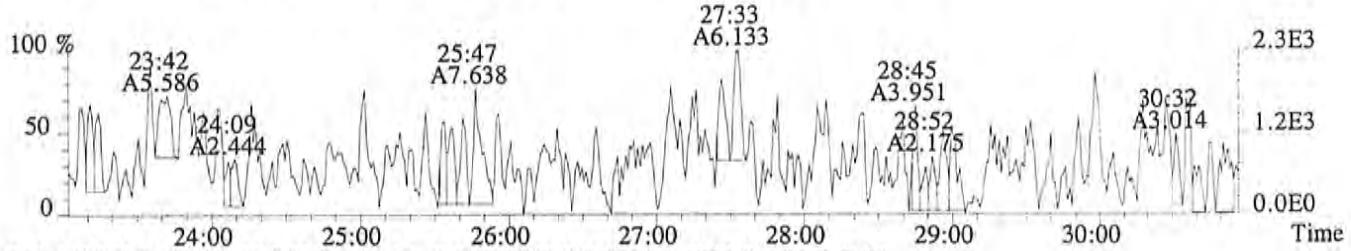
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



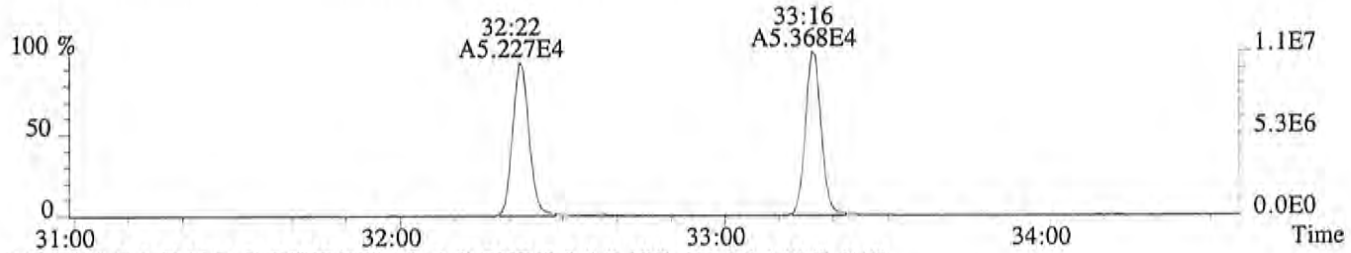
File:P600911 #1-562 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,380.0,1.00%,F,T)



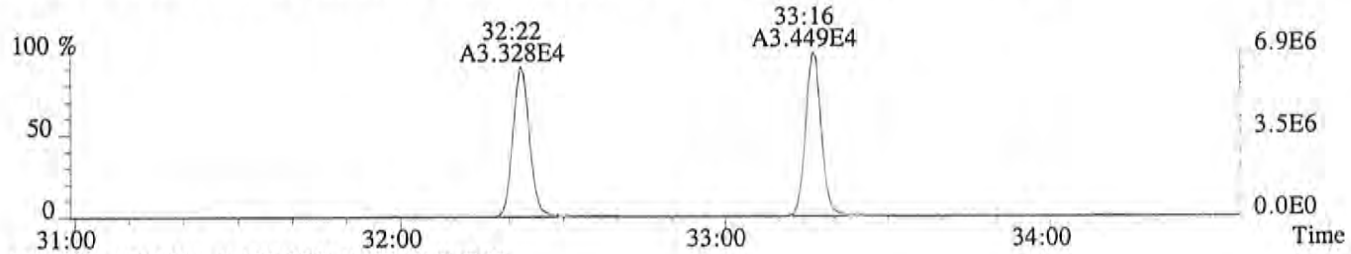
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,788.0,1.00%,F,T)



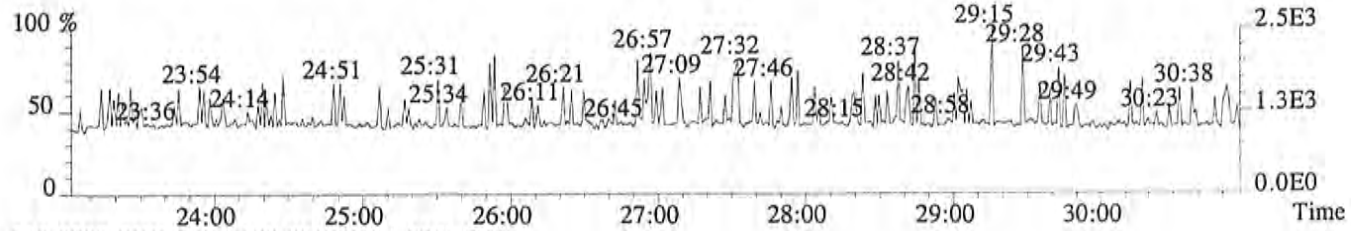
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1084.0,1.00%,F,T)



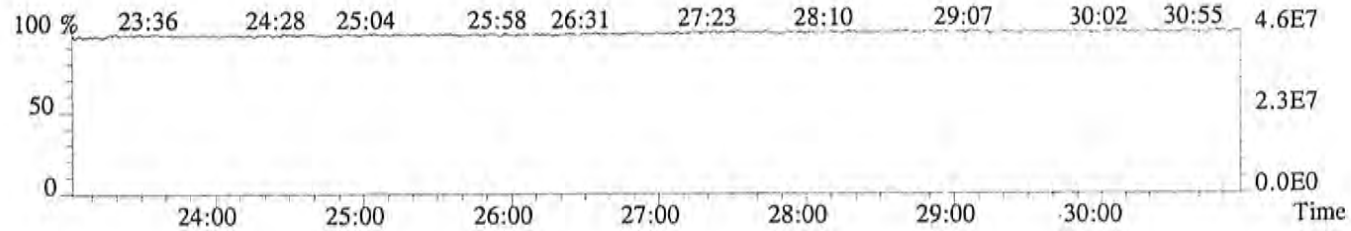
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1324.0,1.00%,F,T)



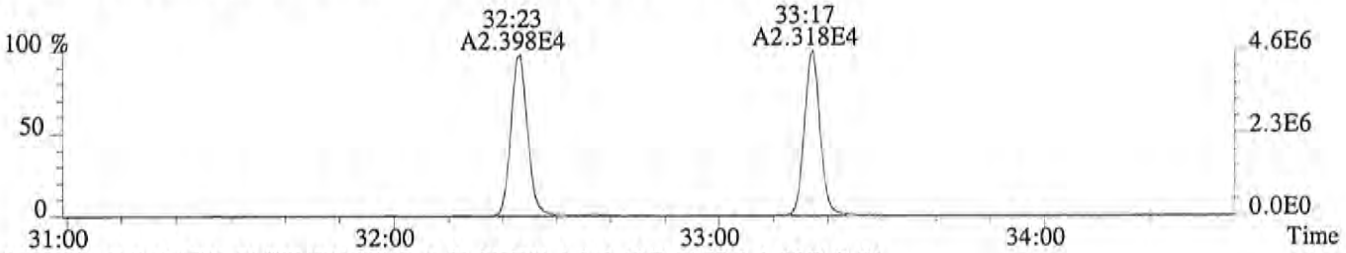
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



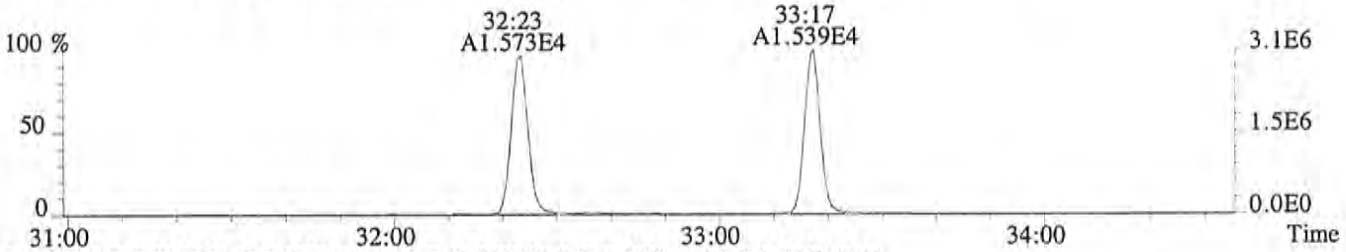
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



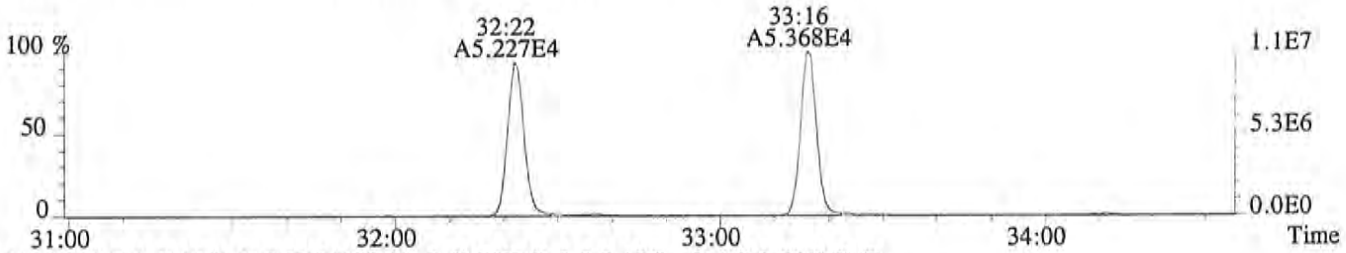
File:P600911 #1-325 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,740.0,1.00%,F,T)



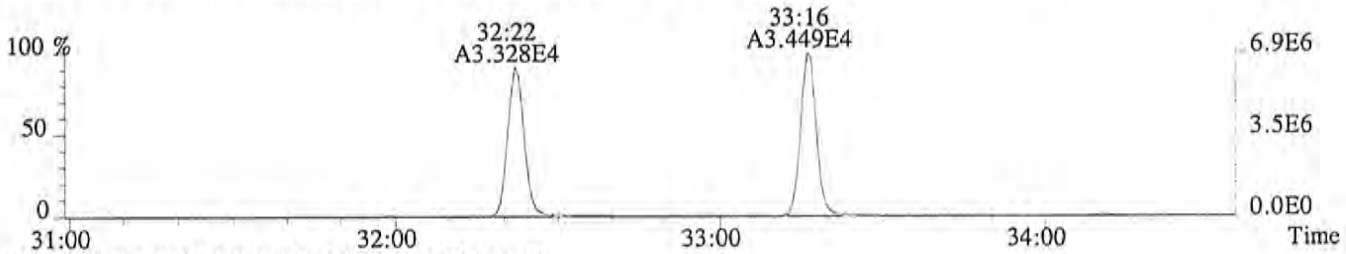
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2352.0,1.00%,F,T)



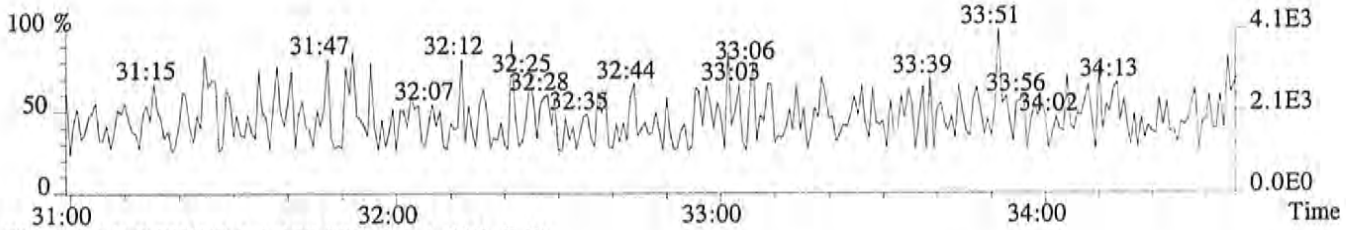
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1084.0,1.00%,F,T)



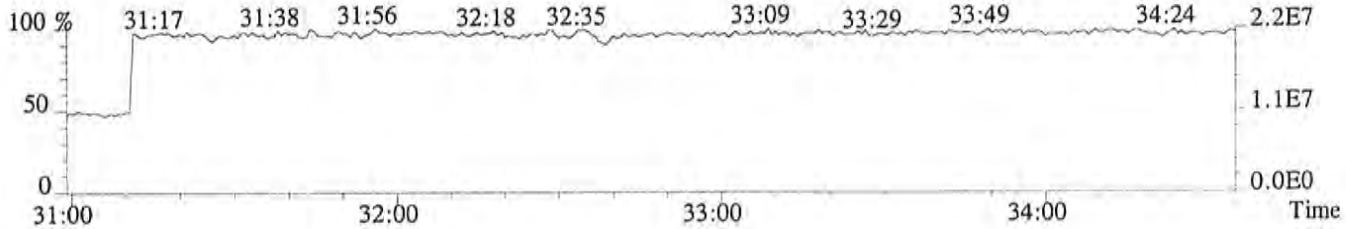
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1324.0,1.00%,F,T)



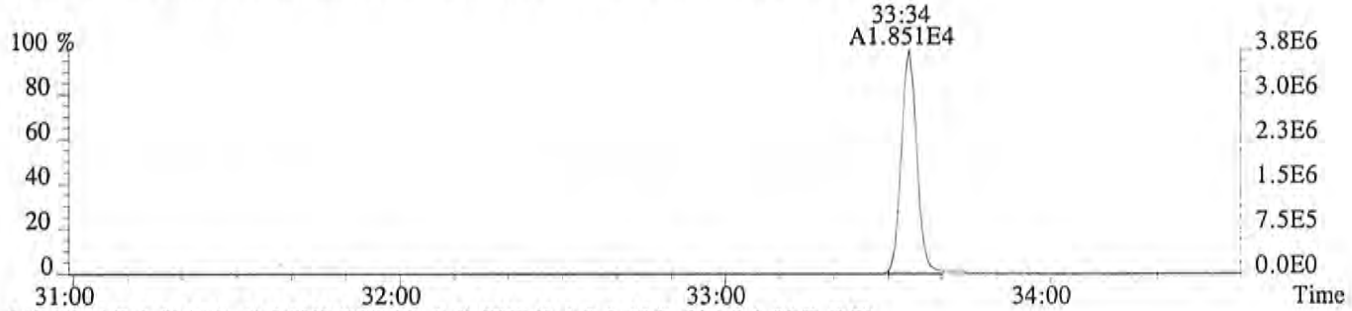
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



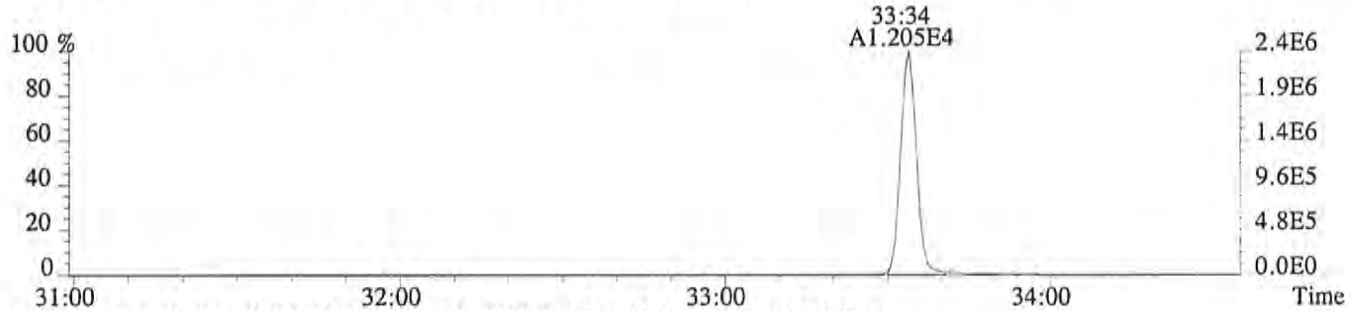
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



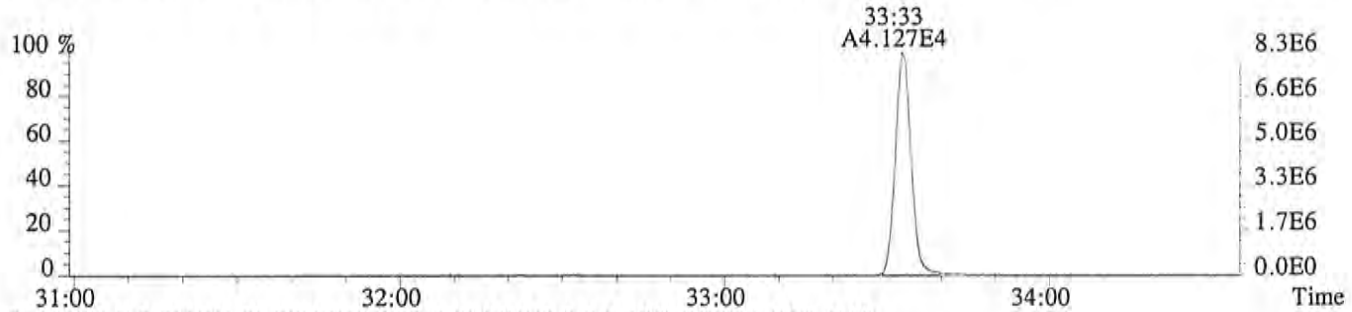
File:P600911 #1-325 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1432.0,1.00%,F,T)



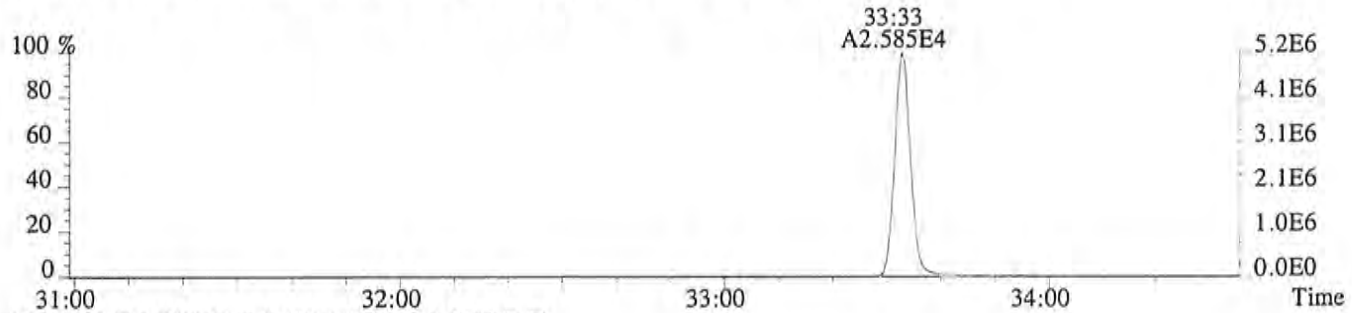
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,916.0,1.00%,F,T)



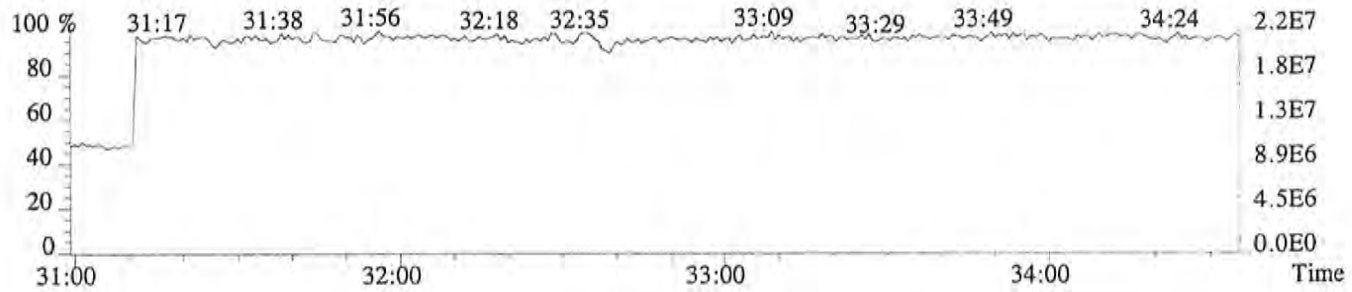
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1264.0,1.00%,F,T)



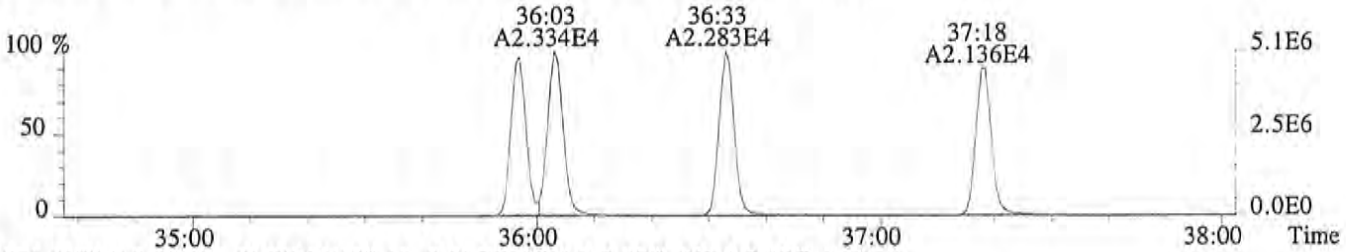
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,780.0,1.00%,F,T)



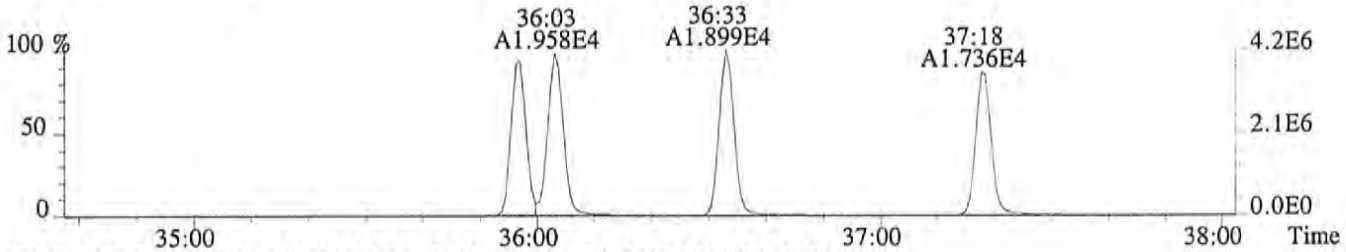
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



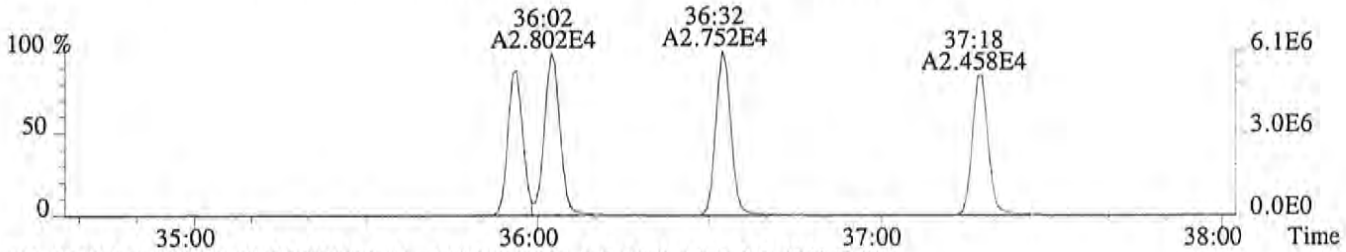
File:P600911 #1-308 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,948.0,0.40%,F,T)



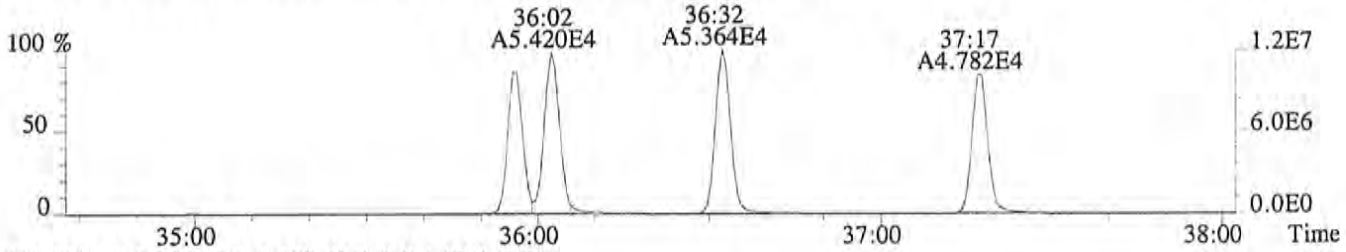
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,640.0,0.40%,F,T)



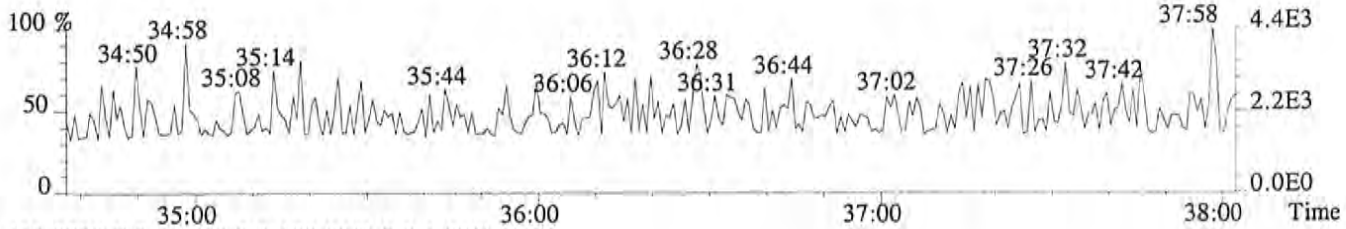
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1040.0,0.40%,F,T)



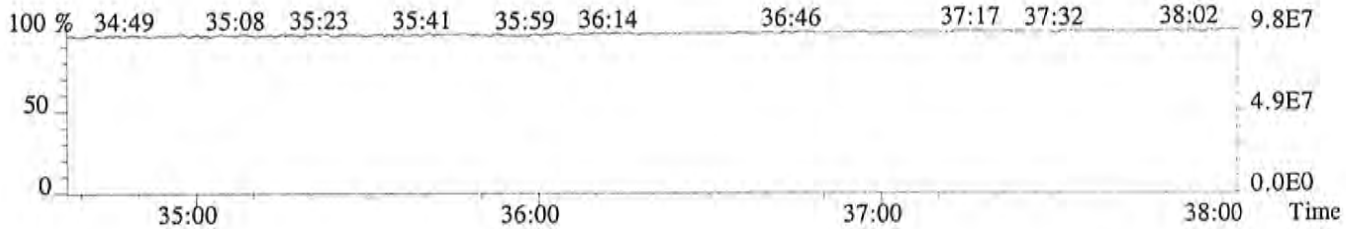
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1552.0,0.40%,F,T)



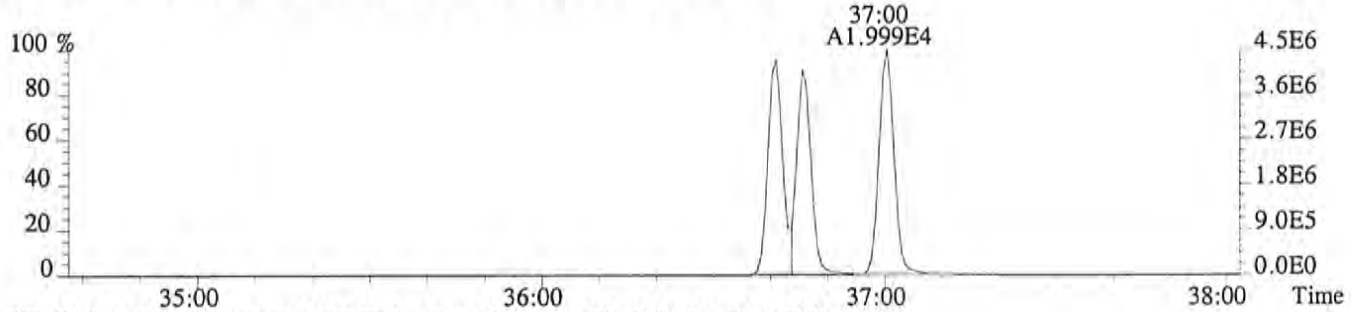
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



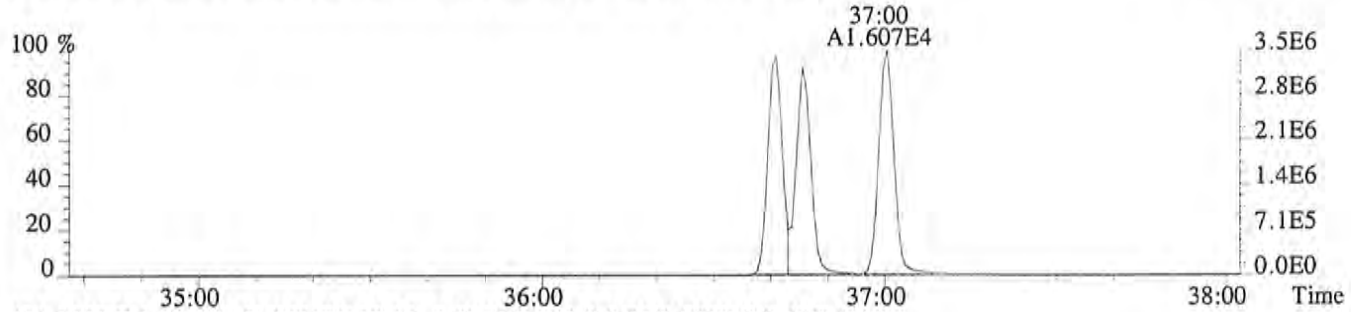
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



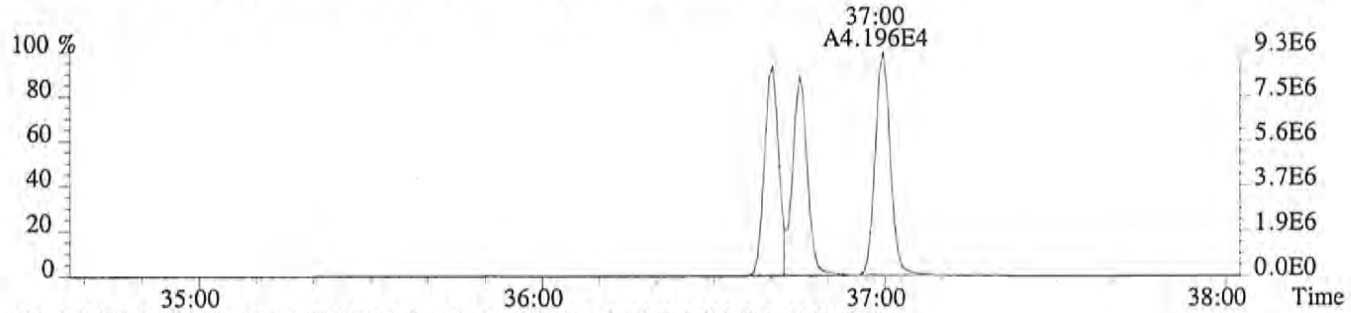
File:P600911 #1-308 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,688.0,0.40%,F,T)



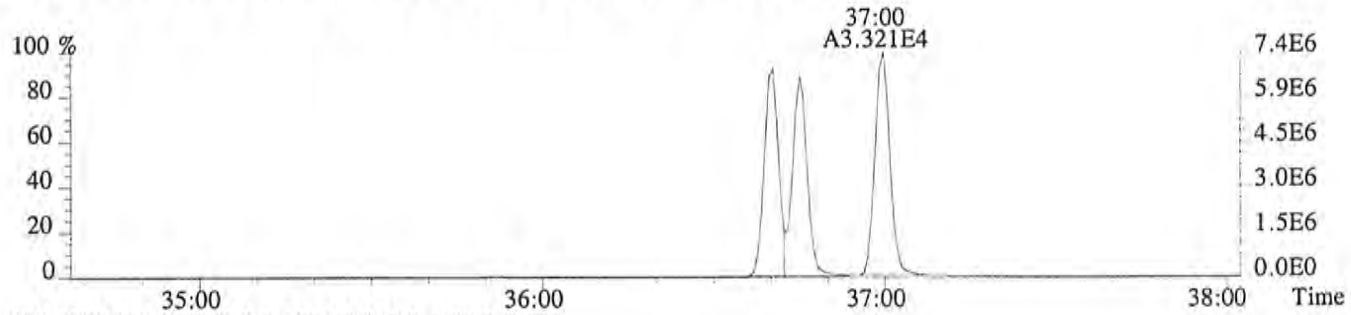
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1092.0,0.40%,F,T)



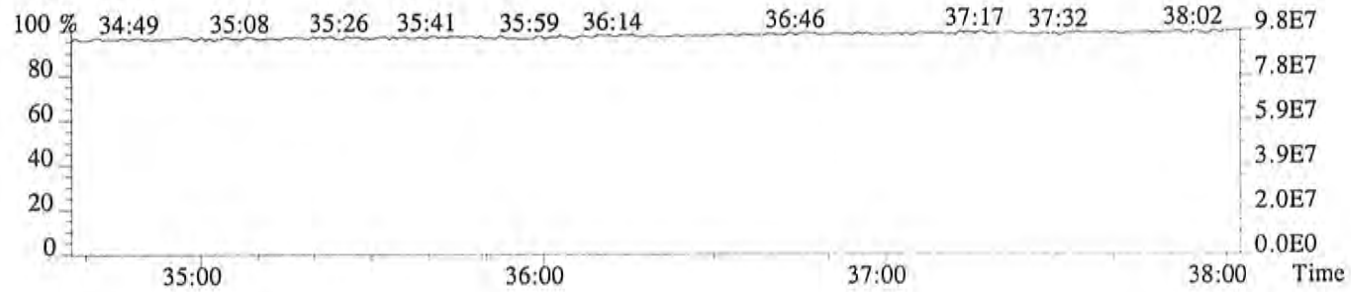
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2588.0,0.40%,F,T)



403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1620.0,0.40%,F,T)

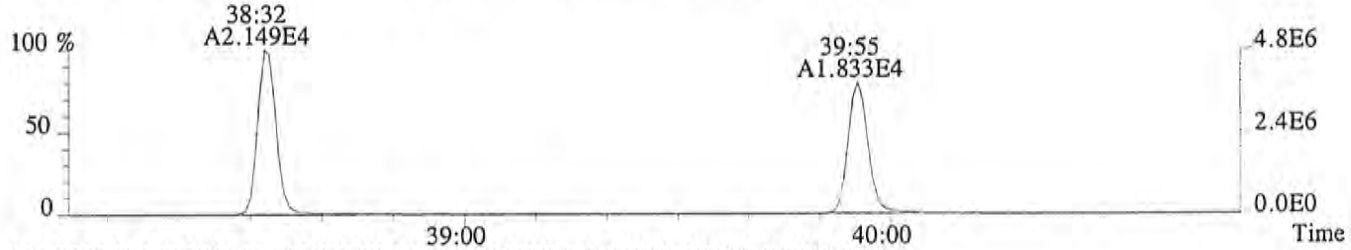


430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

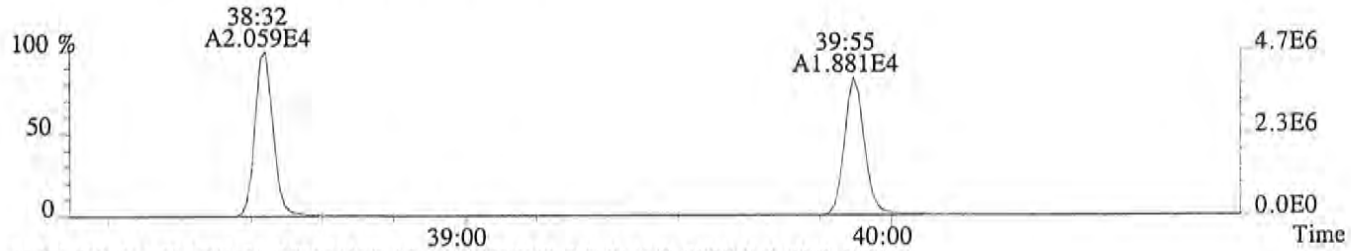


File:P600911 #1-248 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1980.0,0.50%,F,T)

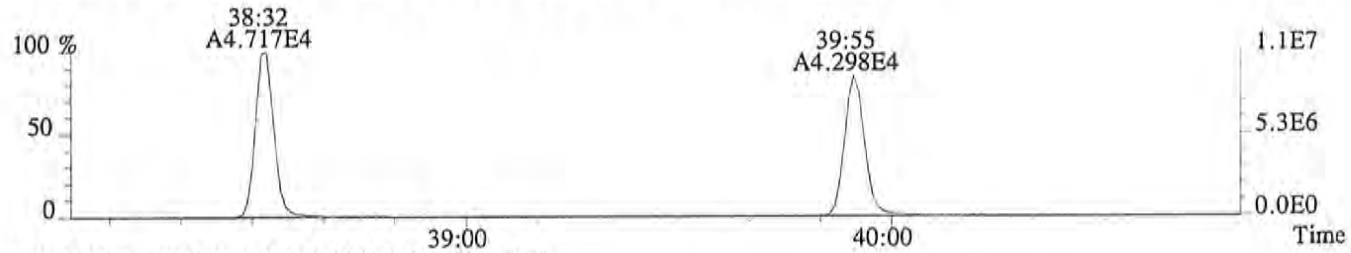
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1928.0,0.50%,F,T)



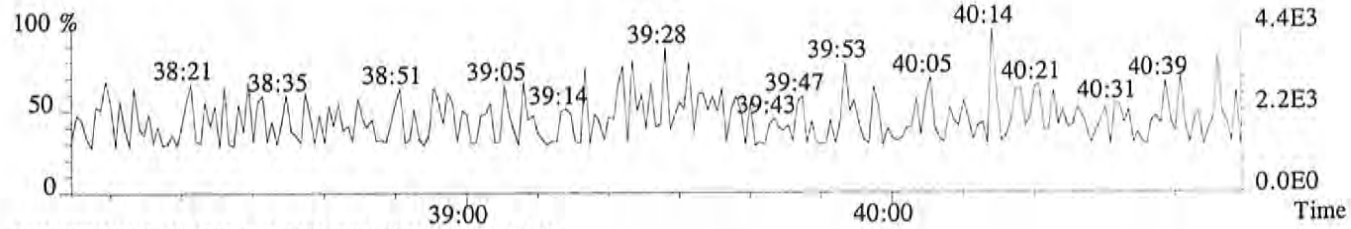
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1004.0,0.50%,F,T)



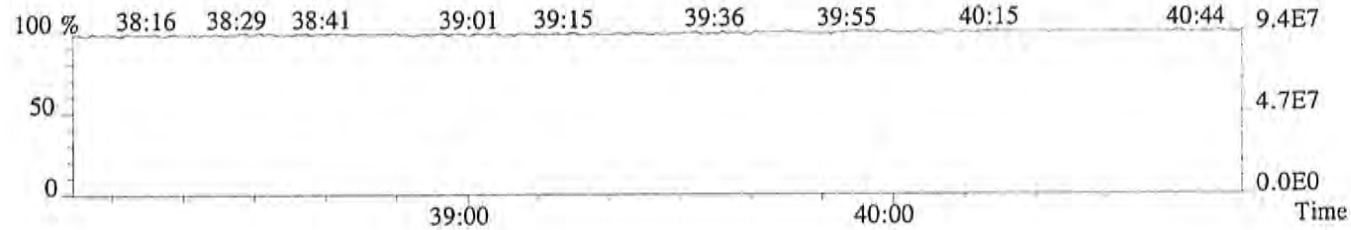
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3988.0,0.50%,F,T)



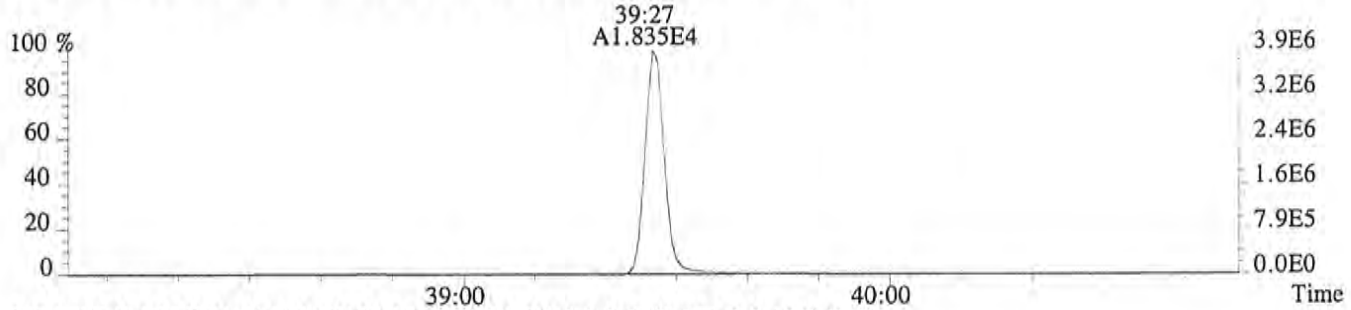
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



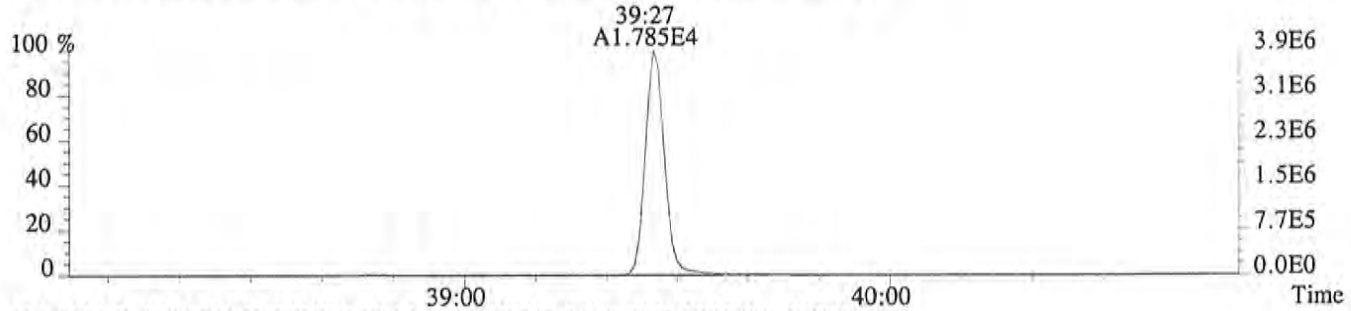
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



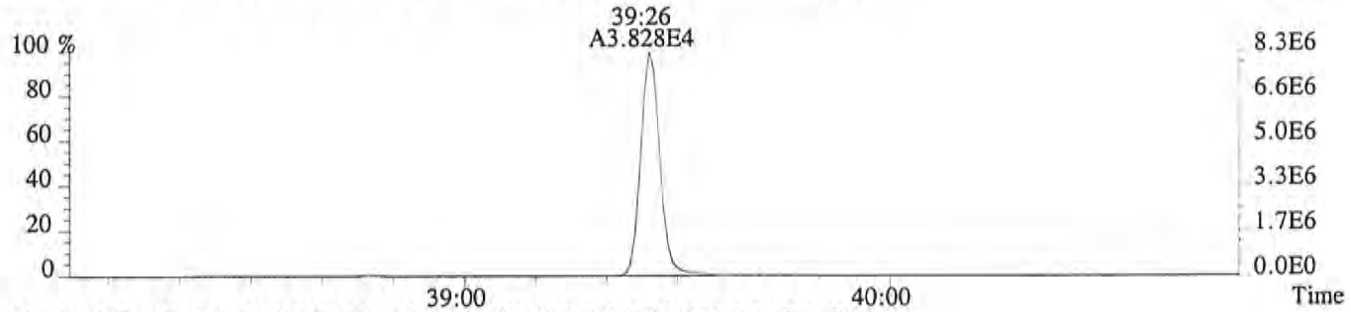
File:P600911 #1-248 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,760.0,0.40%,F,T)



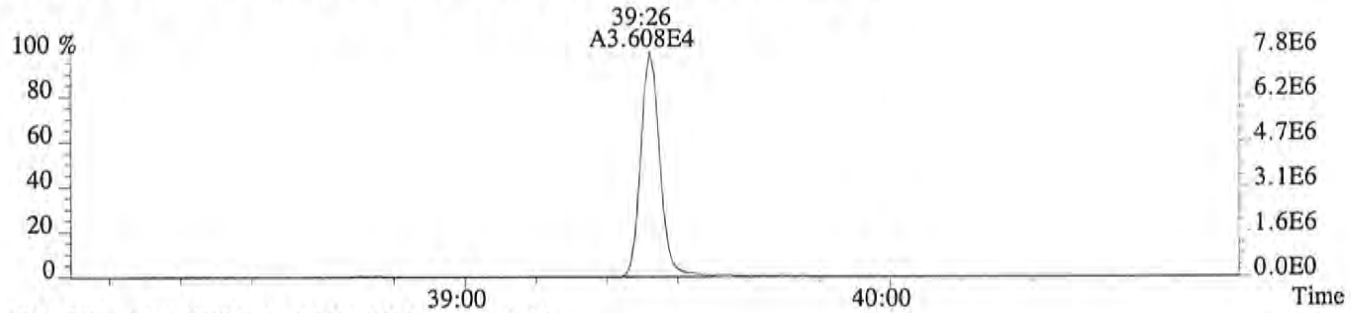
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,744.0,0.40%,F,T)



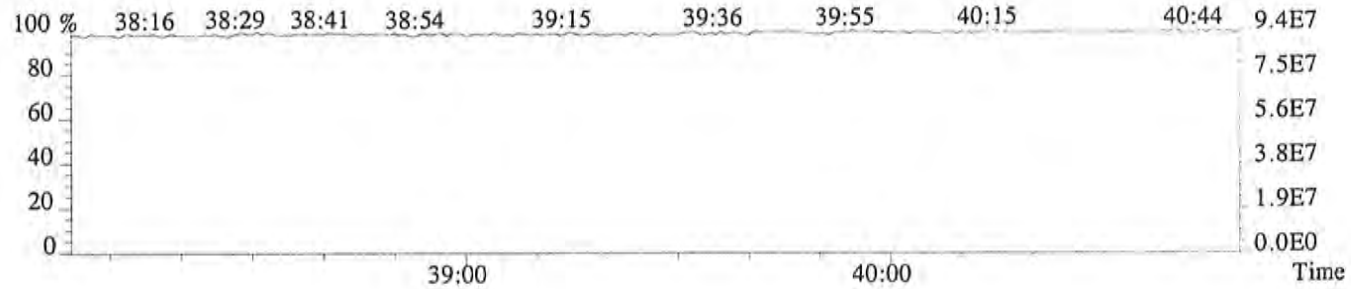
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1236.0,0.40%,F,T)



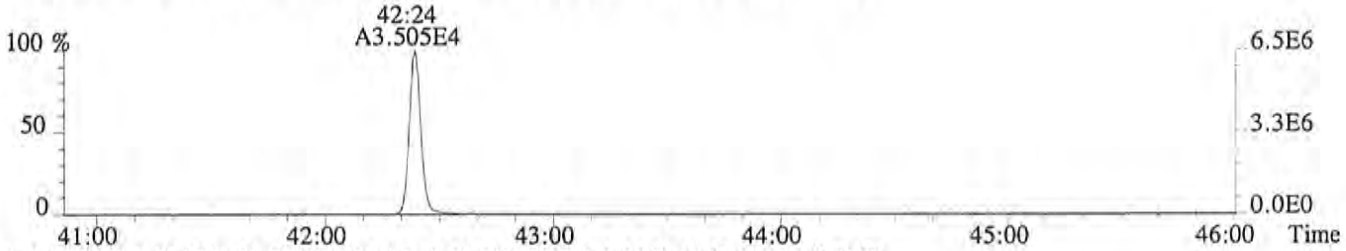
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,656.0,0.40%,F,T)



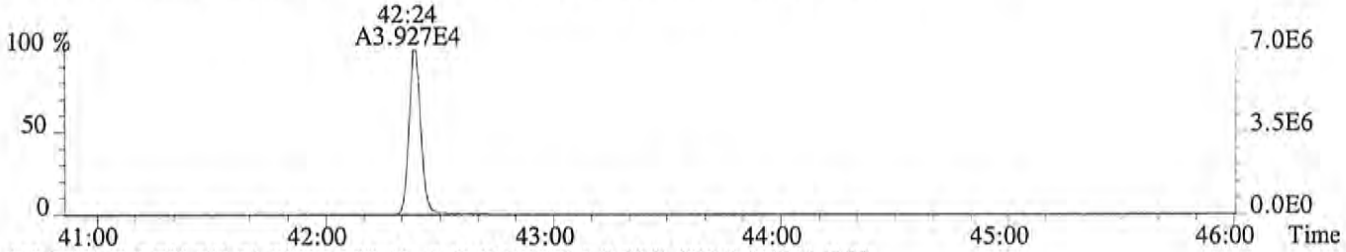
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



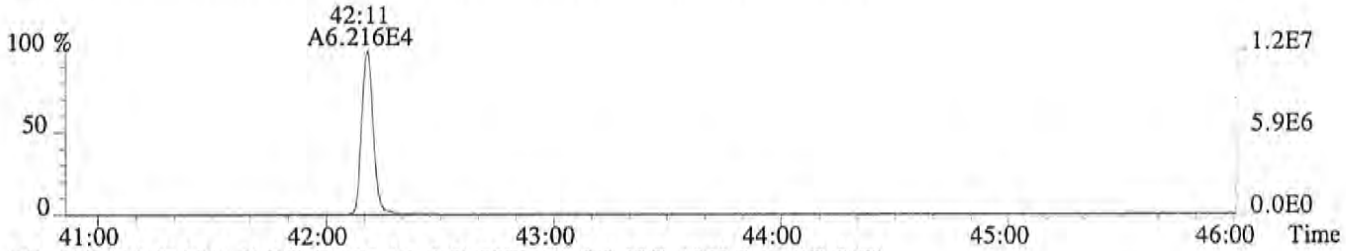
File:P600911 #1-464 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,792.0,0.40%,F,T)



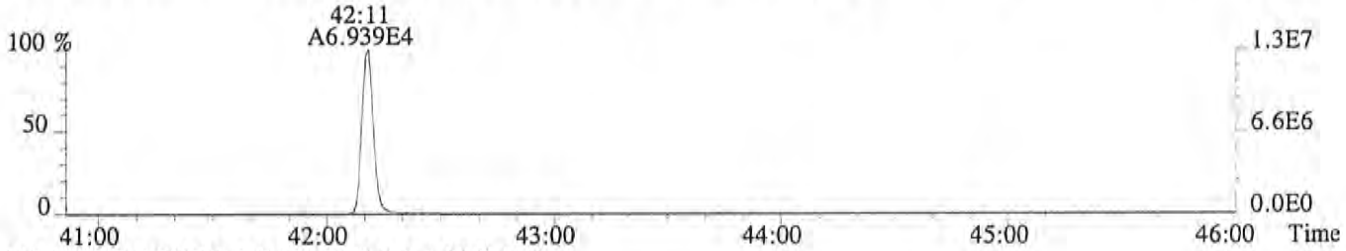
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1168.0,0.40%,F,T)



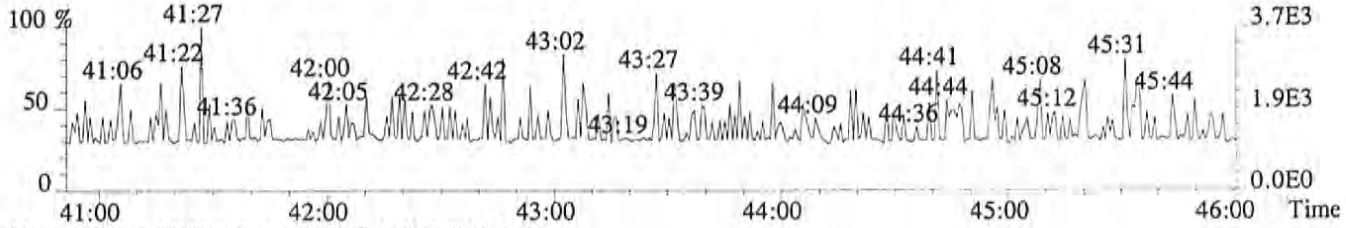
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,936.0,0.40%,F,T)



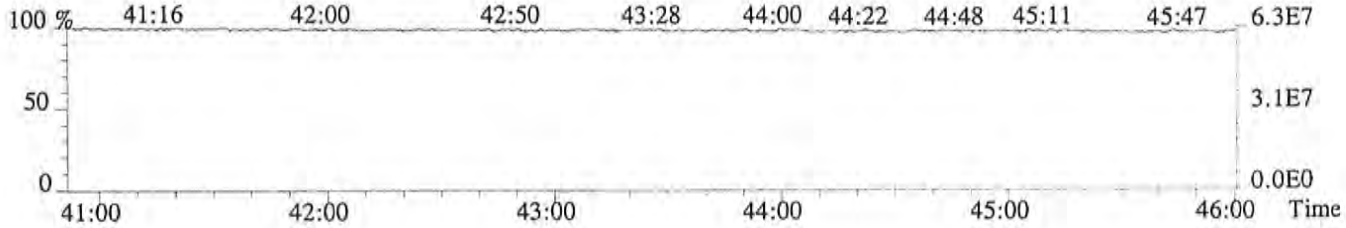
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1060.0,0.40%,F,T)



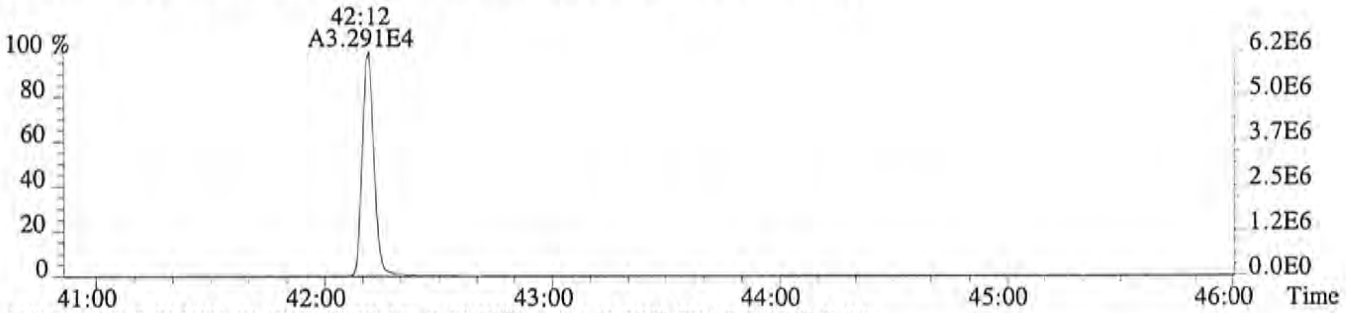
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



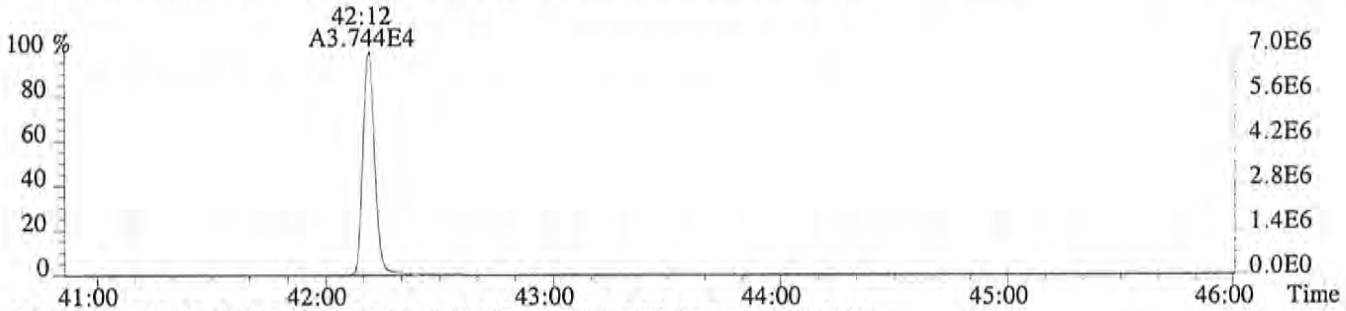
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



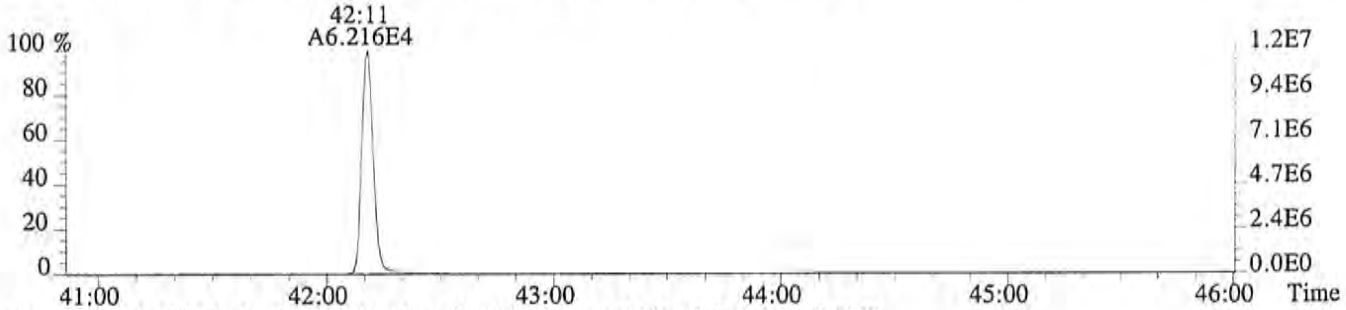
File:P600911 #1-464 Acq:12-OCT-2015 09:51:43 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,512.0,0.40%,F,T)



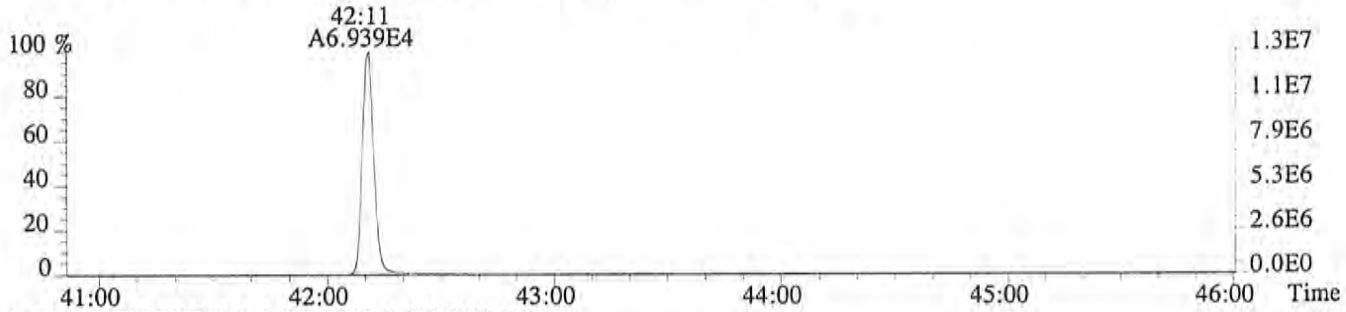
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,884.0,0.40%,F,T)



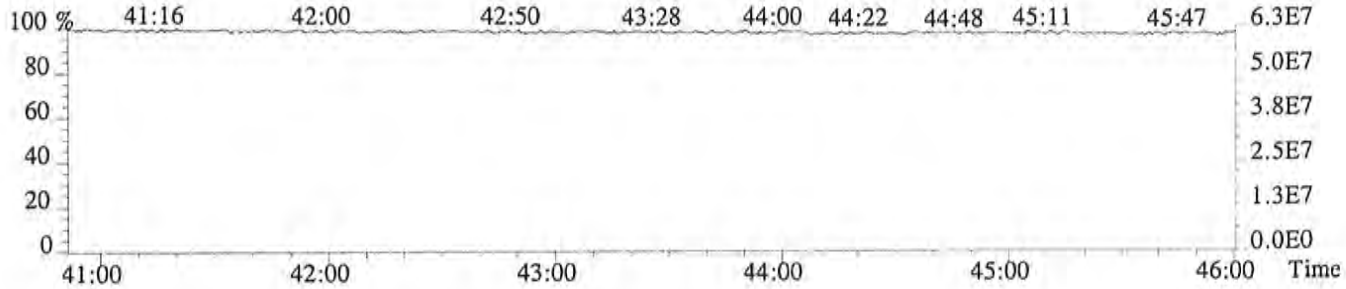
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,936.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1060.0,0.40%,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: PL600939

Date: 10/13/15

Circle one: Beginning / Ending

Method: 1613 / 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: _____ Second QC: _____

ccalqc.xls 07/17/12

E1500972

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 08/19/15

Init. Calib.Times: 10:52

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
84084	WINDOW DEFINE	P600940	13-OCT-15	13:17:56
84080	CS3	P600939	13-OCT-15	12:29:16
METHOD BLANK	EQ1500565-01	P600941	13-OCT-15	15:24:26
METHOD BLANK	EQ1500602-01	P600942	13-OCT-15	16:12:14
STE-07222015-24HR	R1505980-001RE	P600943	13-OCT-15	17:01:19
AQ 1.5-LOD-1613	E1500630-001RE	P600944	13-OCT-15	17:50:24
AQ 5-LO6-1613	E1500630-002	P600945	13-OCT-15	18:39:28
TISSUE 1.5-LOD-1613	E1500630-003	P600946	13-OCT-15	19:28:34
TISSUE 5-LOQ-1613	E1500630-004	P600947	13-OCT-15	20:17:35
SMS 1.5-LOD-1613	E1500630-005	P600948	13-OCT-15	21:06:39
SMS 5-LOQ-1613	E1500630-006	P600949	13-OCT-15	21:55:45

E1500972

Sample List Report MassLynx 4.1 SCN815 SCN795

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20151013.SPL
Last Modified: Wednesday, October 14, 2015 16:04:05 Eastern Daylight Time
Printed: Wednesday, October 14, 2015 16:04:19 Eastern Daylight Time Page Position (1, 1)

Opus 4(e) P600939res

	Date	Time	File Name	Lab Sample ID	Client File Text	Bottle	MS File	Inlet File	Analyst	Comments
1	10/13/15	12:29	P600939	84080	CS3	Tray1:1	EPA1613_ALS	Dioxin_ALS	LL	HRMS Check 12:22
2		13:17	P600940	84084	WD	Tray1:2	EPA1613_ALS	Dioxin_ALS		
3		15:24	P600941	EQ1500565-01	MB	Tray1:3	EPA1613_ALS	Dioxin_ALS		HRMS Check 15:01
4		16:12	P600942	EQ1500602-01	MB	Tray1:4	EPA1613_ALS	Dioxin_ALS		
5		17:01	P600943	R1505980-001RE	R1505980-001RE	Tray1:5	EPA1613_ALS	Dioxin_ALS		
6		17:50	P600944	E1500630-001RE	E1500630-001RE	Tray1:6	EPA1613_ALS	Dioxin_ALS		
7		18:39	P600945	E1500630-002	E1500630-002	Tray1:7	EPA1613_ALS	Dioxin_ALS		
8		19:28	P600946	E1500630-003	E1500630-003	Tray1:8	EPA1613_ALS	Dioxin_ALS		
9		20:17	P600947	E1500630-004	E1500630-004	Tray1:9	EPA1613_ALS	Dioxin_ALS		
10		21:06	P600948	E1500630-005	E1500630-005	Tray1:10	EPA1613_ALS	Dioxin_ALS		
11		21:55	P600949	E1500630-006	E1500630-006	Tray1:11	EPA1613_ALS	Dioxin_ALS		
12			P600950	E1500632-001	E1500632-001	Tray1:12	EPA1613_ALS	Dioxin_ALS		
13			P600951	E1500632-002	E1500632-002	Tray1:13	EPA1613_ALS	Dioxin_ALS		
14	10/14/15	00:22	P600952	TEST	TEST	Tray1:14	EPA1613_ALS	Dioxin_ALS		
15		01:11	P600953	84080	CS3	Tray1:15	EPA1613_ALS	Dioxin_ALS		
16			---	---	---	Tray1:16	EPA1613_ALS	Dioxin_ALS		HRMS Check 02:09
17			---	---	---	Tray1:17	EPA1613_ALS	Dioxin_ALS		
18			---	---	---	Tray1:18	EPA1613_ALS	Dioxin_ALS		
19			---	---	---	Tray1:19	EPA1613_ALS	Dioxin_ALS		
20			---	---	---	Tray1:20	EPA1613_ALS	Dioxin_ALS		
21			---	---	---	Tray1:21	EPA1613_ALS	Dioxin_ALS		
22			---	---	---	Tray1:22	EPA1613_ALS	Dioxin_ALS		
23			---	---	---	Tray1:23	EPA1613_ALS	Dioxin_ALS		
24			---	---	---	Tray1:24	EPA1613_ALS	Dioxin_ALS		
25			---	---	---	Tray1:25	EPA1613_ALS	Dioxin_ALS		
26	---	---	---	---	---	Tray1:26	EPA1613_ALS	Dioxin_ALS	---	---
27	---	---	---	---	---	Tray1:27	EPA1613_ALS	Dioxin_ALS	---	---
28	---	---	---	---	---	Tray1:28	EPA1613_ALS	Dioxin_ALS	---	---
29	---	---	---	---	---	Tray1:29	EPA1613_ALS	Dioxin_ALS	---	---
30	---	---	---	---	---	Tray1:30	EPA1613_ALS	Dioxin_ALS	---	---
31	---	---	---	---	---	Tray1:31	EPA1613_ALS	Dioxin_ALS	---	---
32	---	---	---	---	---	Tray1:32	EPA1613_ALS	Dioxin_ALS	---	---
33	---	---	---	---	---	Tray1:33	EPA1613_ALS	Dioxin_ALS	---	---
34	---	---	---	---	---	Tray1:34	EPA1613_ALS	Dioxin_ALS	---	---
35	---	---	---	---	---	Tray1:35	EPA1613_ALS	Dioxin_ALS	---	---
36	---	---	---	---	---	Tray1:36	EPA1613_ALS	Dioxin_ALS	---	---
37	---	---	---	---	---	Tray1:37	EPA1613_ALS	Dioxin_ALS	---	---
38	---	---	---	---	---	Tray1:38	EPA1613_ALS	Dioxin_ALS	---	---
39	---	---	---	---	---	Tray1:39	EPA1613_ALS	Dioxin_ALS	---	---

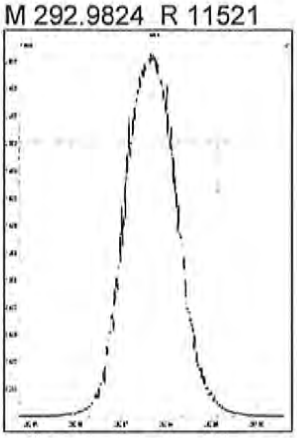
JC 10/22/15

Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

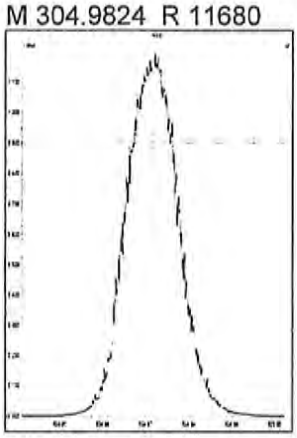
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 12:22:41 Eastern Daylight Time

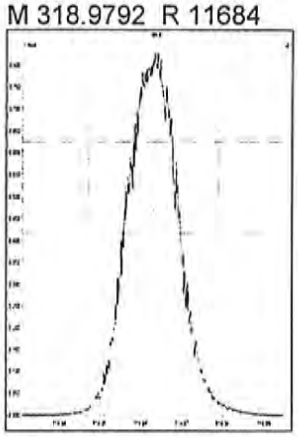
M 292.9824 R 11521



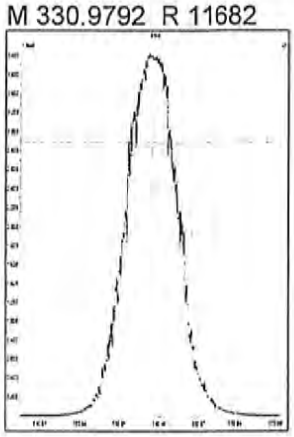
M 304.9824 R 11680



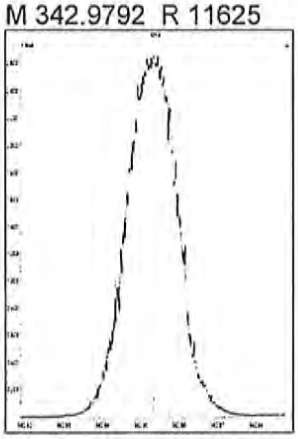
M 318.9792 R 11684



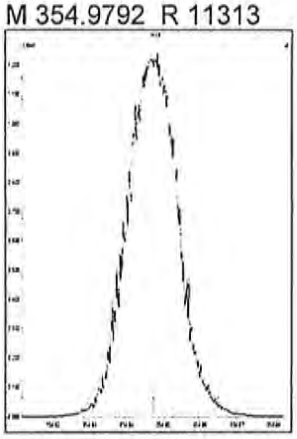
M 330.9792 R 11682



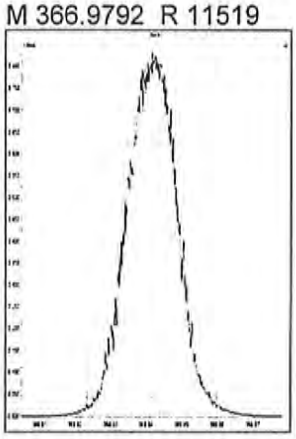
M 342.9792 R 11625



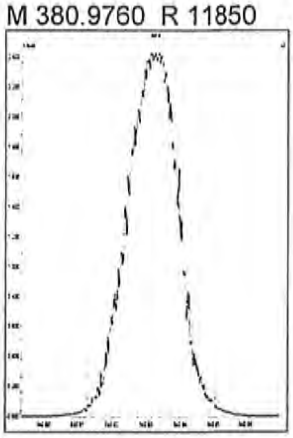
M 354.9792 R 11313



M 366.9792 R 11519



M 380.9760 R 11850

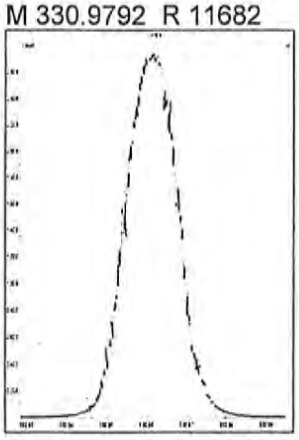


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

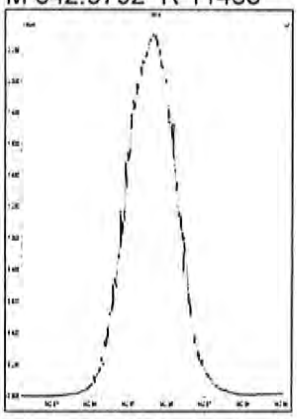
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 12:23:33 Eastern Daylight Time

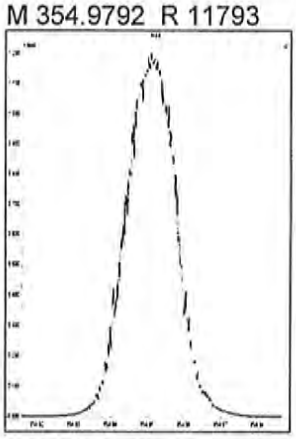
M 330.9792 R 11682



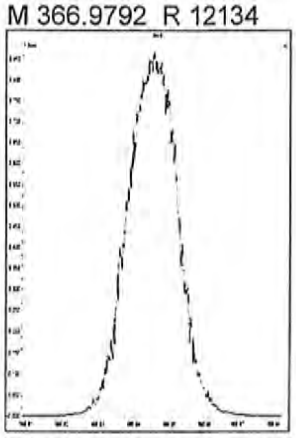
M 342.9792 R 11465



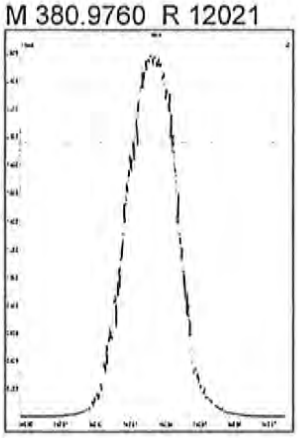
M 354.9792 R 11793



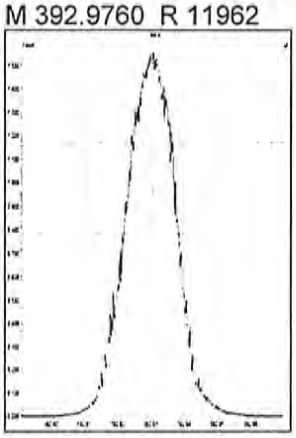
M 366.9792 R 12134



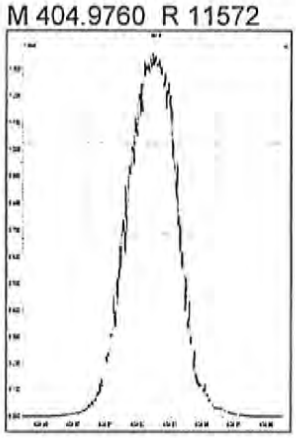
M 380.9760 R 12021



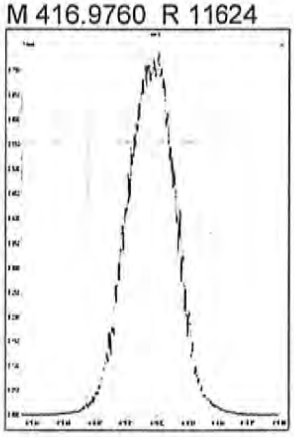
M 392.9760 R 11962



M 404.9760 R 11572



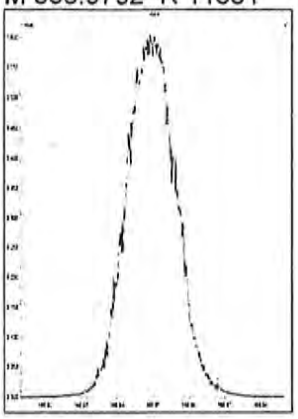
M 416.9760 R 11624



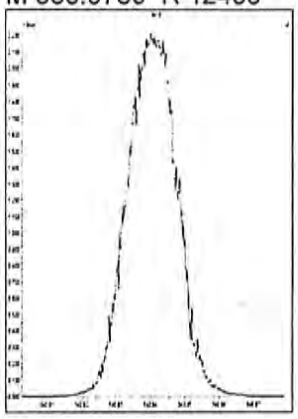
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 12:24:13 Eastern Daylight Time

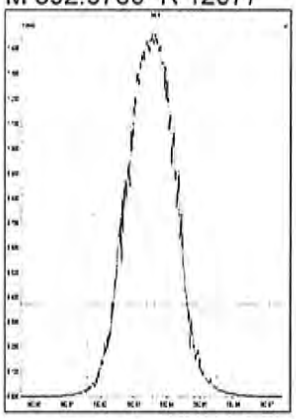
M 366.9792 R 11681



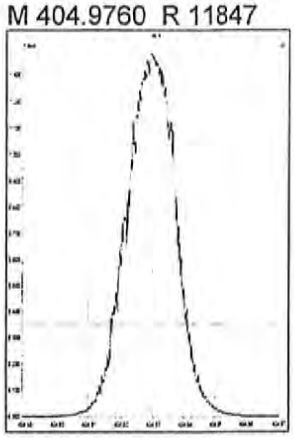
M 380.9760 R 12435



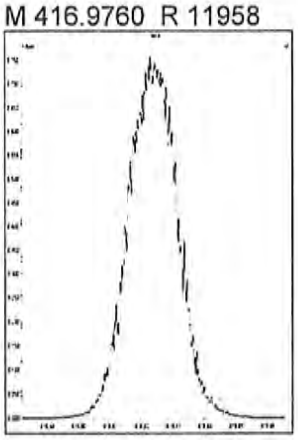
M 392.9760 R 12077



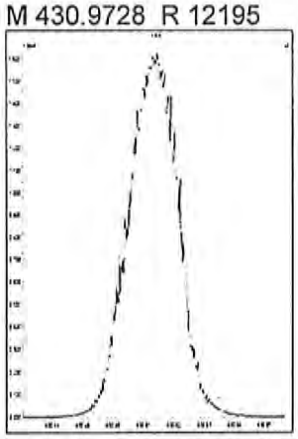
M 404.9760 R 11847



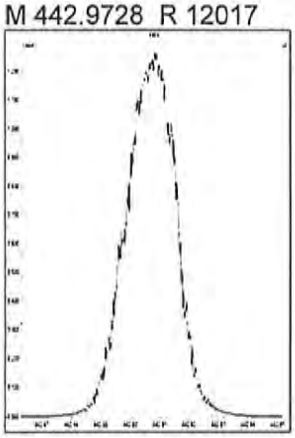
M 416.9760 R 11958



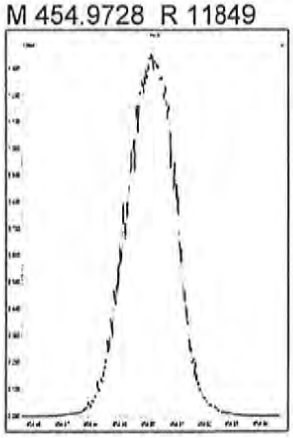
M 430.9728 R 12195



M 442.9728 R 12017



M 454.9728 R 11849

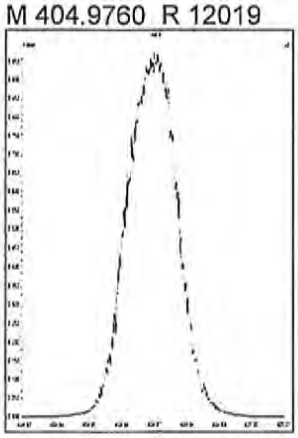


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

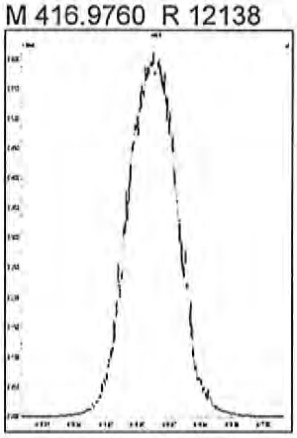
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 12:24:49 Eastern Daylight Time

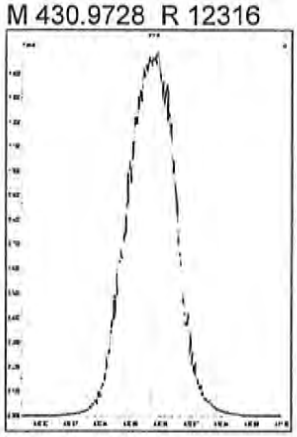
M 404.9760 R 12019



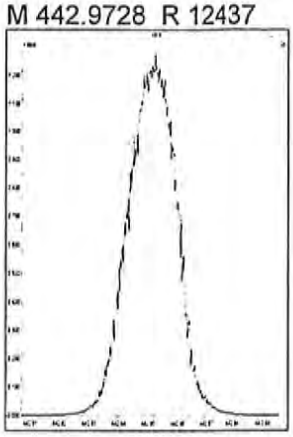
M 416.9760 R 12138



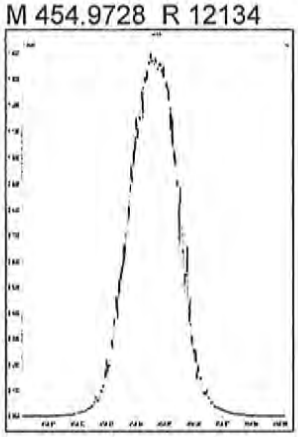
M 430.9728 R 12316



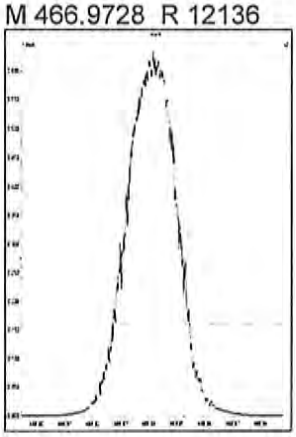
M 442.9728 R 12437



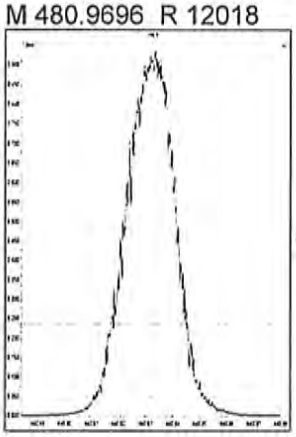
M 454.9728 R 12134



M 466.9728 R 12136



M 480.9696 R 12018

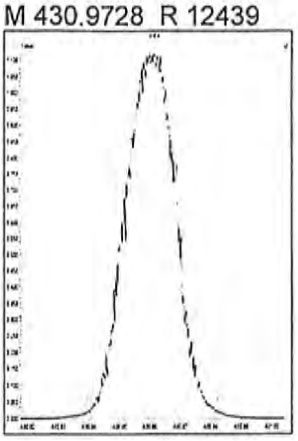


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

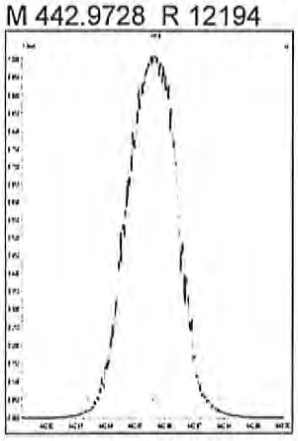
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 12:25:31 Eastern Daylight Time

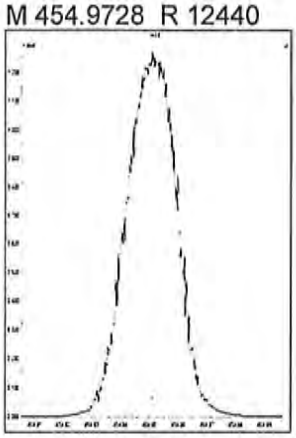
M 430.9728 R 12439



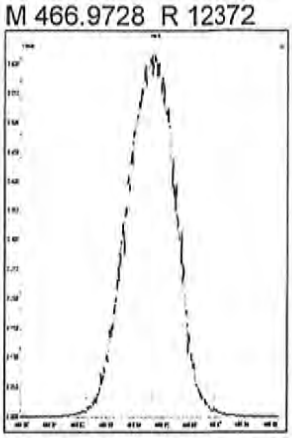
M 442.9728 R 12194



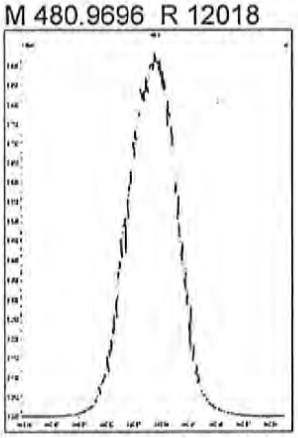
M 454.9728 R 12440



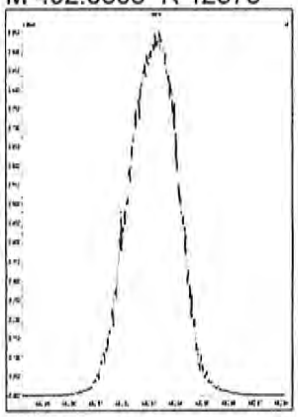
M 466.9728 R 12372



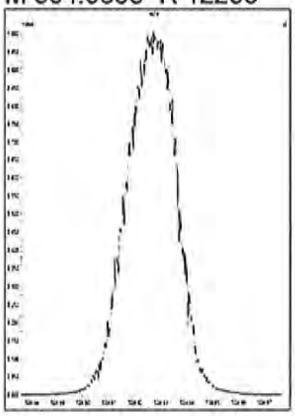
M 480.9696 R 12018



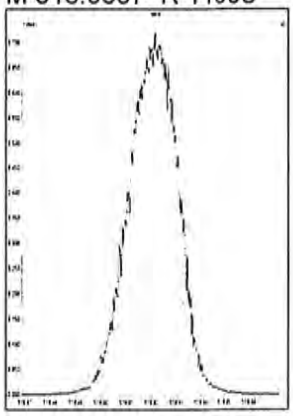
M 492.9696 R 12378



M 504.9696 R 12255



M 516.9697 R 11903

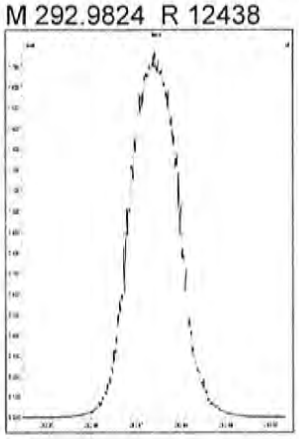


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

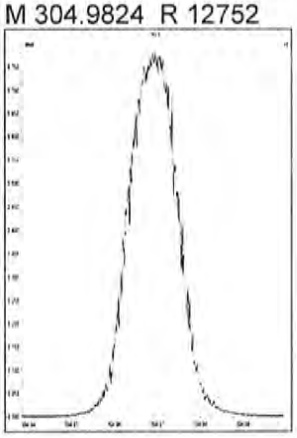
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 15:01:59 Eastern Daylight Time

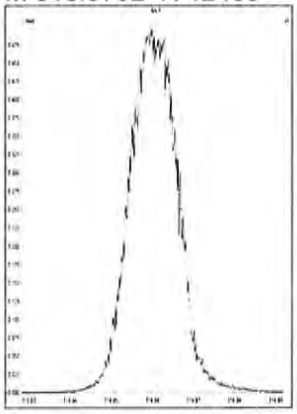
M 292.9824 R 12438



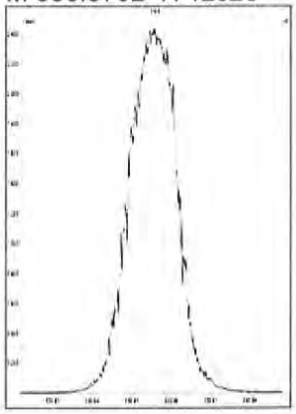
M 304.9824 R 12752



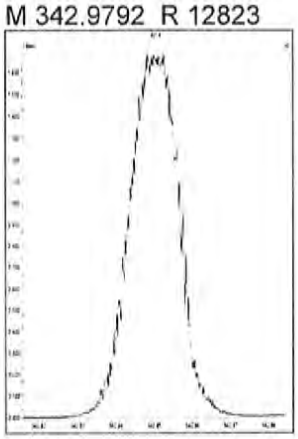
M 318.9792 R 12439



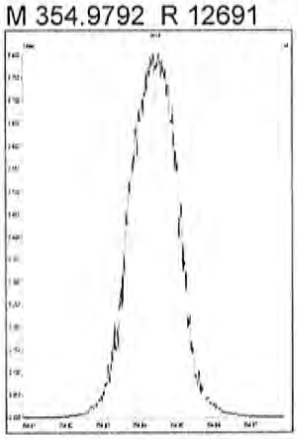
M 330.9792 R 12820



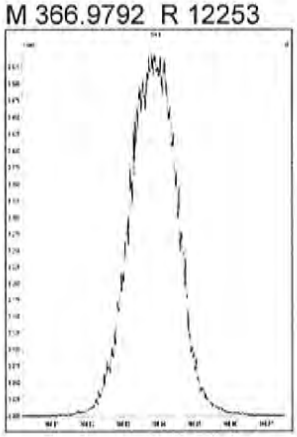
M 342.9792 R 12823



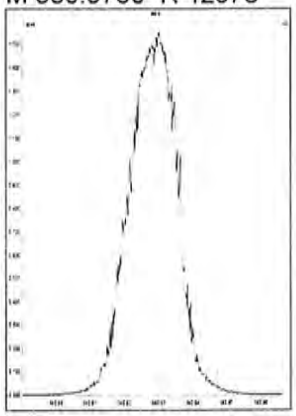
M 354.9792 R 12691



M 366.9792 R 12253



M 380.9760 R 12378

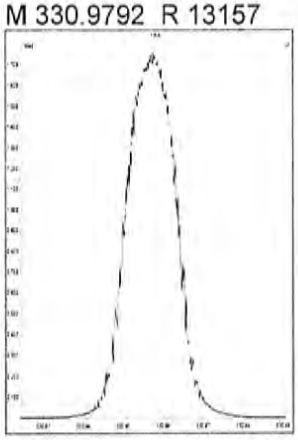


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

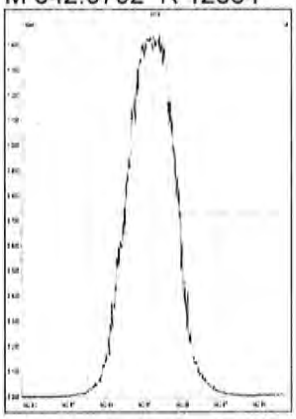
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 15:02:38 Eastern Daylight Time

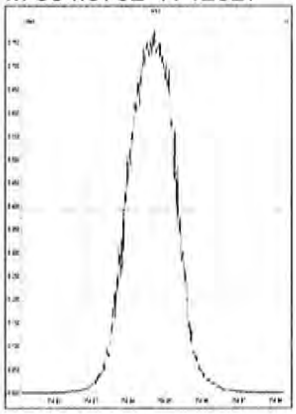
M 330.9792 R 13157



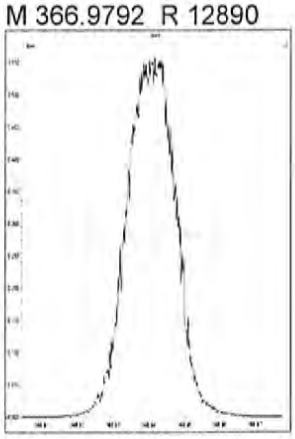
M 342.9792 R 12884



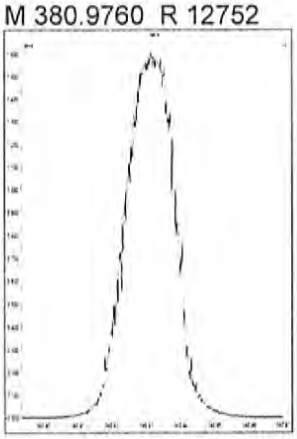
M 354.9792 R 12627



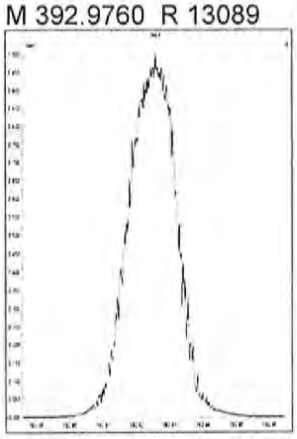
M 366.9792 R 12890



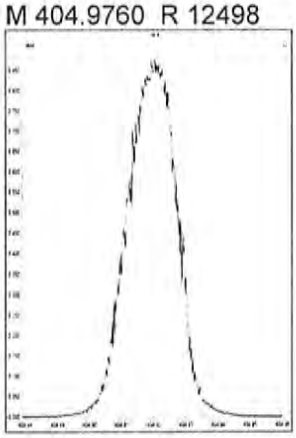
M 380.9760 R 12752



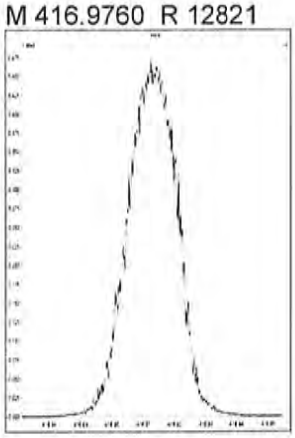
M 392.9760 R 13089



M 404.9760 R 12498



M 416.9760 R 12821

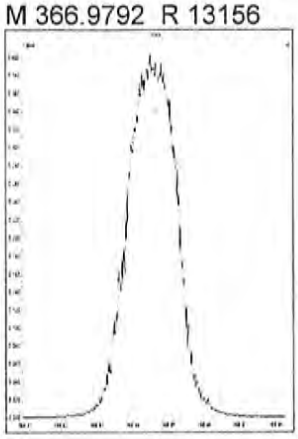


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

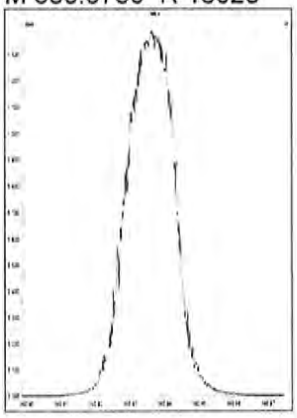
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, October 13, 2015 15:03:09 Eastern Daylight Time

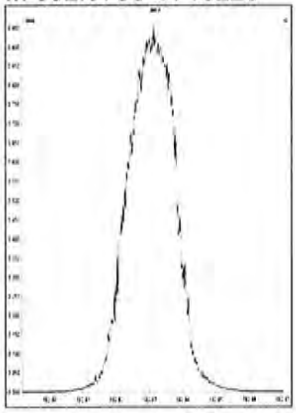
M 366.9792 R 13156



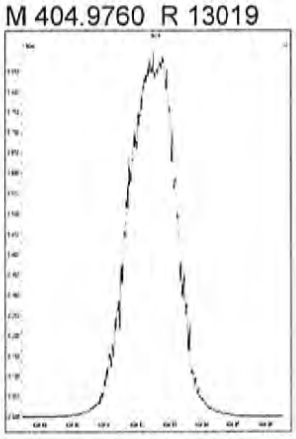
M 380.9760 R 13023



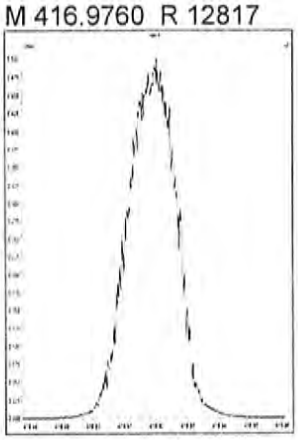
M 392.9760 R 13228



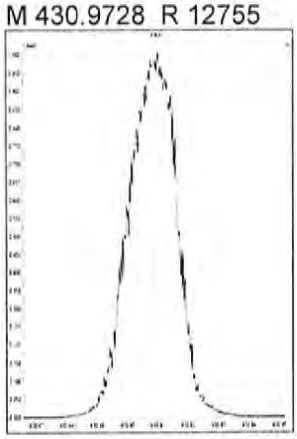
M 404.9760 R 13019



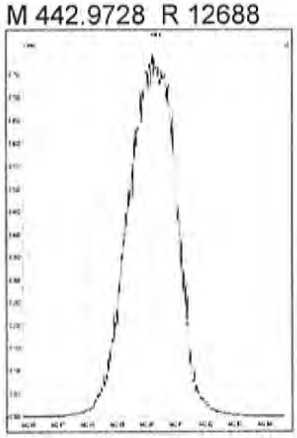
M 416.9760 R 12817



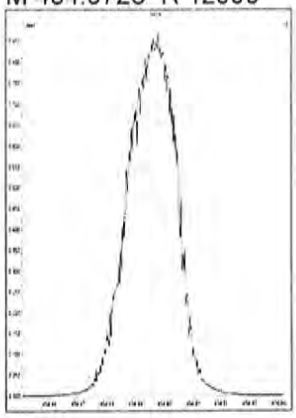
M 430.9728 R 12755



M 442.9728 R 12688



M 454.9728 R 12500



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

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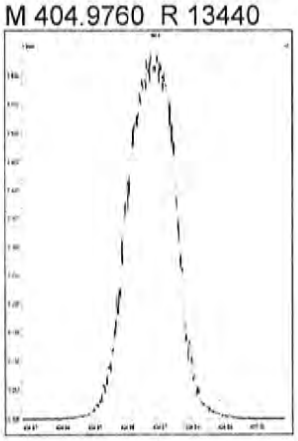
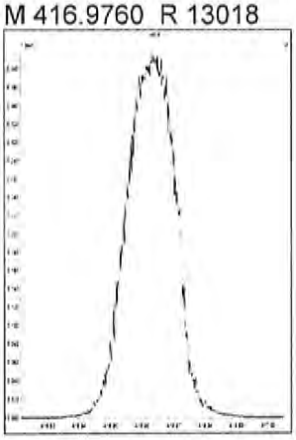
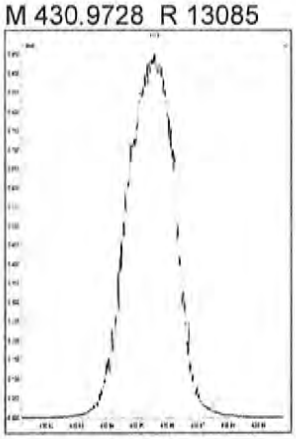
M 404.9760 R 13440



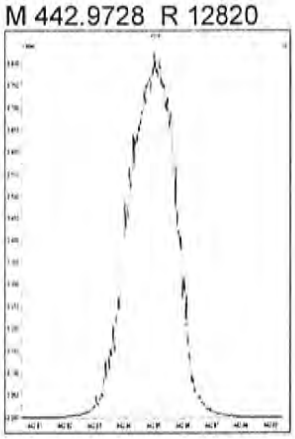
M 416.9760 R 13018



M 430.9728 R 13085



M 442.9728 R 12820



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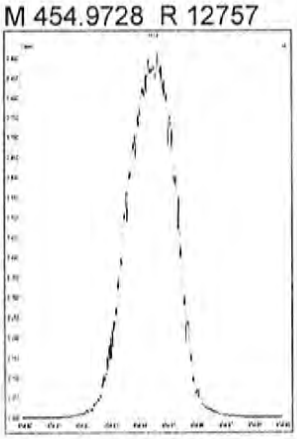
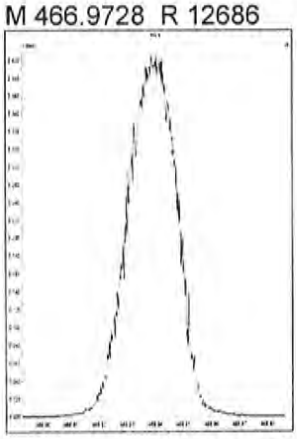
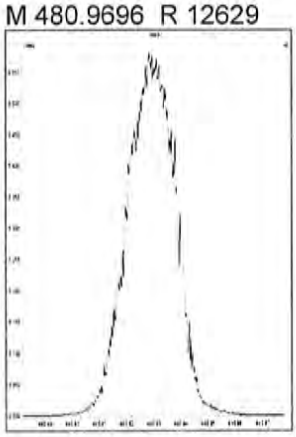


M 466.9728 R 12686



M 480.9696 R 12629



Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

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

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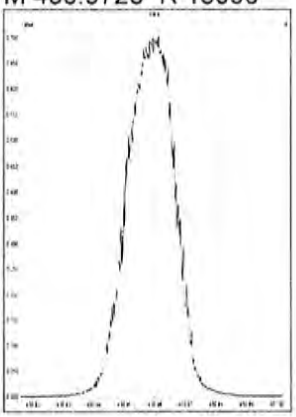
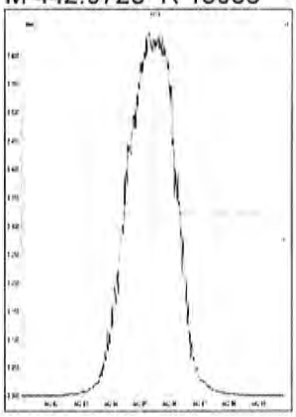
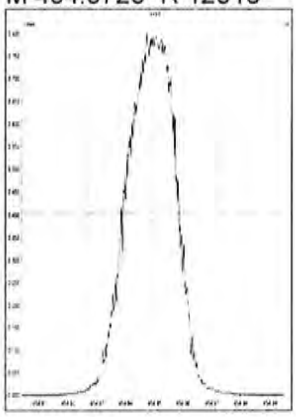
M 430.9728 R 13090



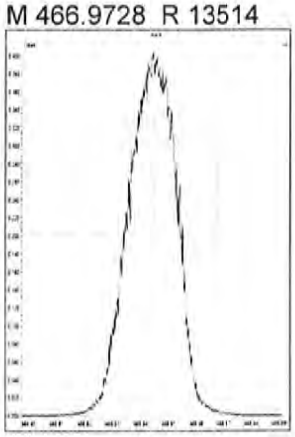
M 442.9728 R 13088



M 454.9728 R 12818



M 466.9728 R 13514



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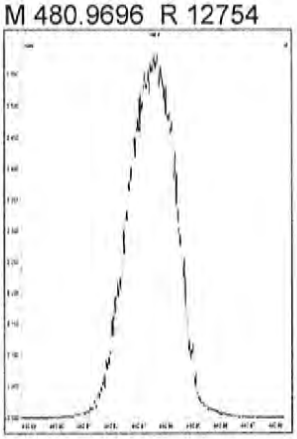
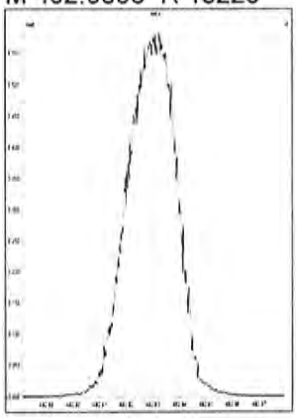


M 492.9696 R 13225



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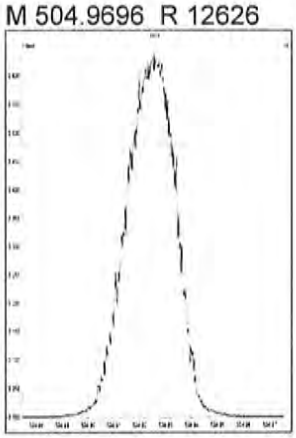
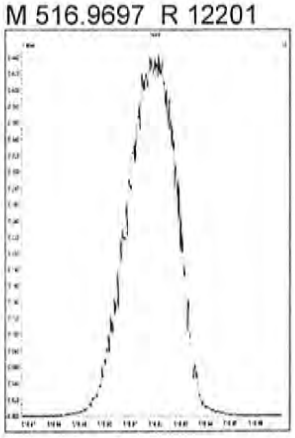


M 516.9697 R 12201



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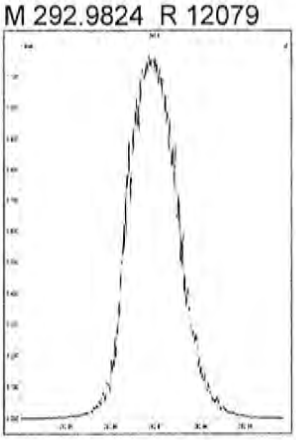
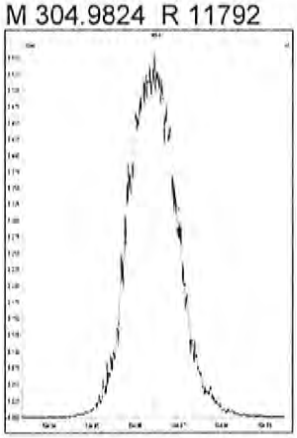
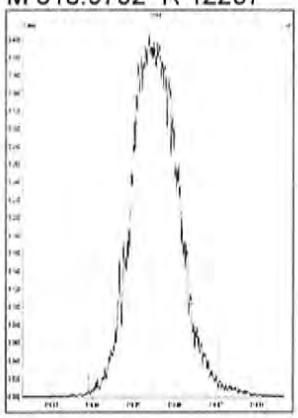
M 292.9824 R 12079



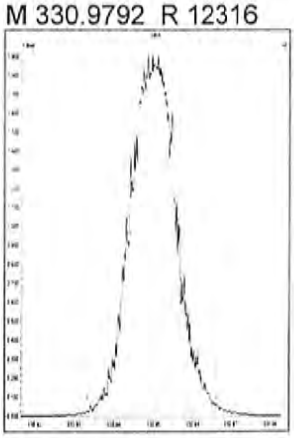
M 304.9824 R 11792



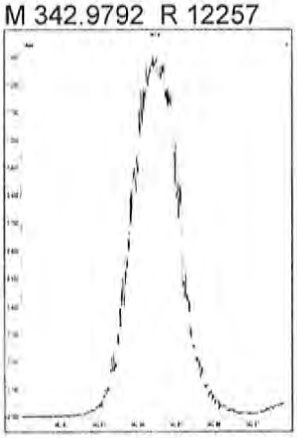
M 318.9792 R 12237



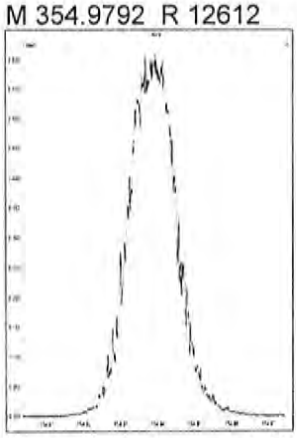
M 330.9792 R 12316



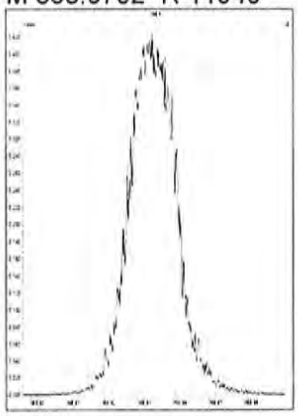
M 342.9792 R 12257



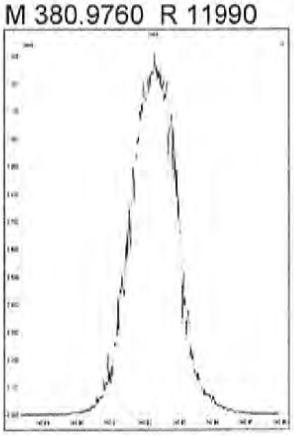
M 354.9792 R 12612



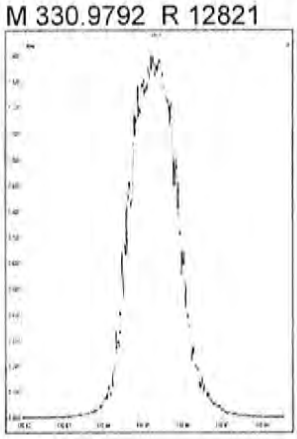
M 366.9792 R 11940



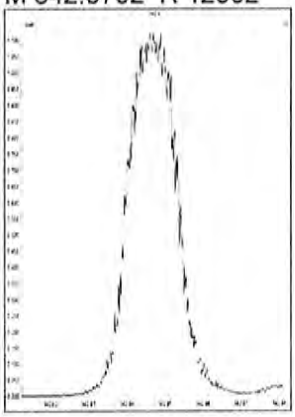
M 380.9760 R 11990



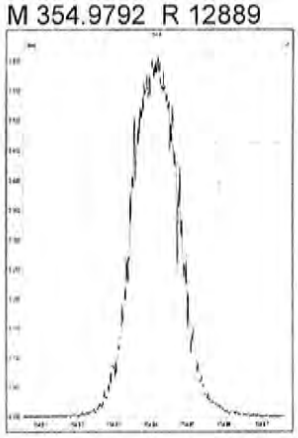
M 330.9792 R 12821



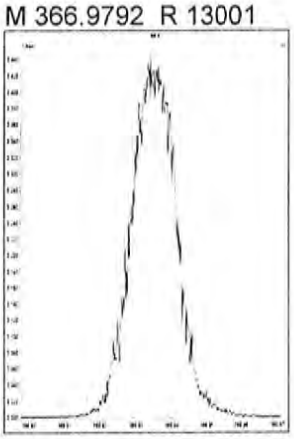
M 342.9792 R 12502



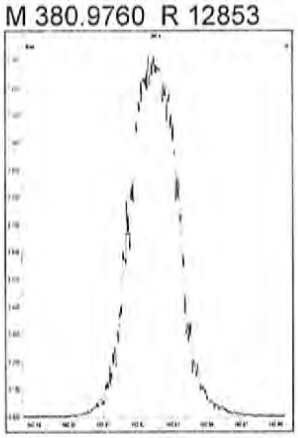
M 354.9792 R 12889



M 366.9792 R 13001



M 380.9760 R 12853



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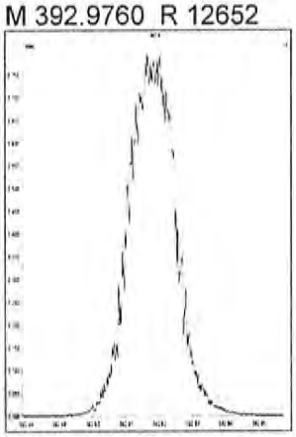
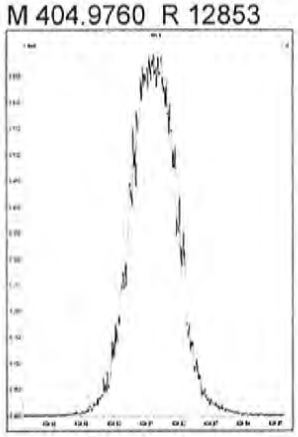
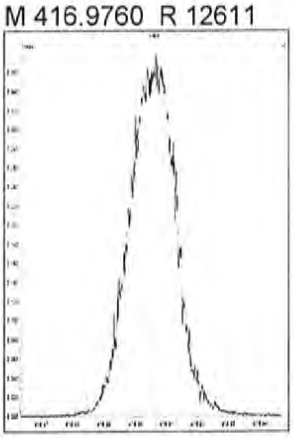


M 404.9760 R 12853



M 416.9760 R 12611



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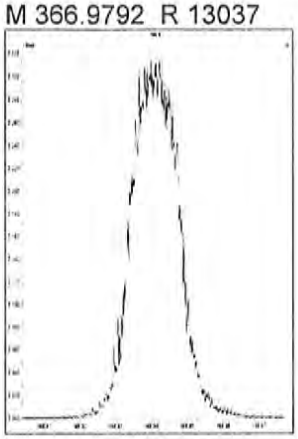
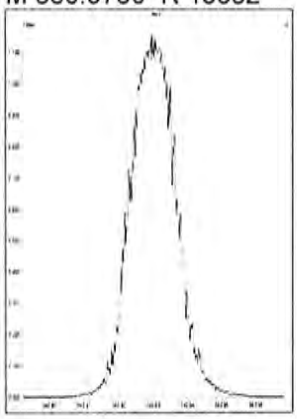
M 366.9792 R 13037



M 380.9760 R 13332



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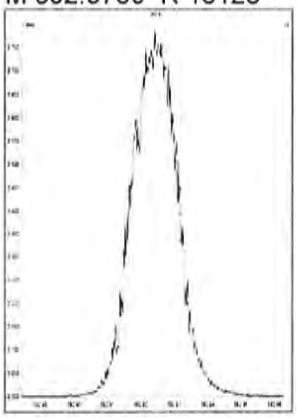

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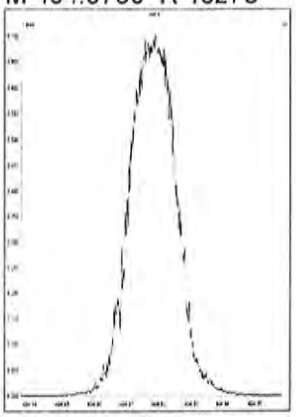
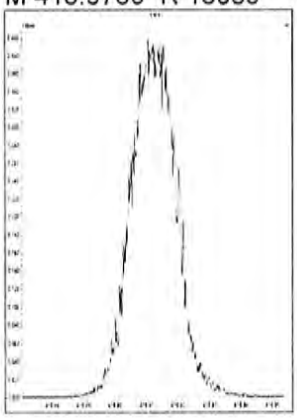
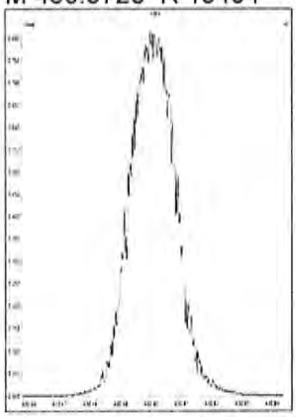


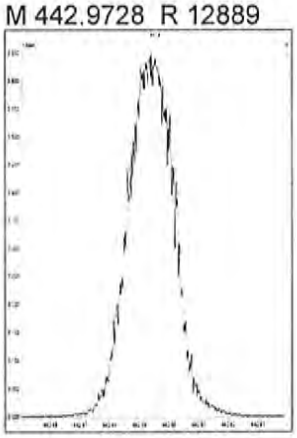
M 416.9760 R 13089



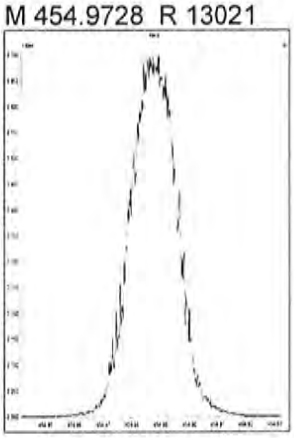
M 430.9728 R 13404



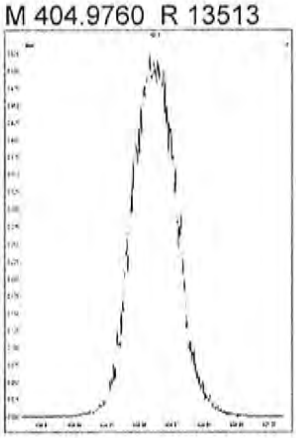
M 442.9728 R 12889



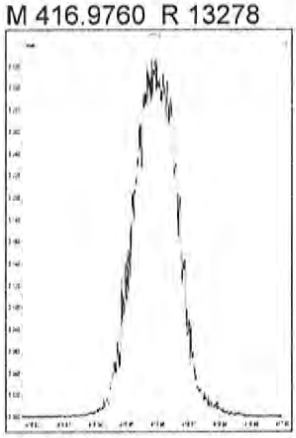
M 454.9728 R 13021



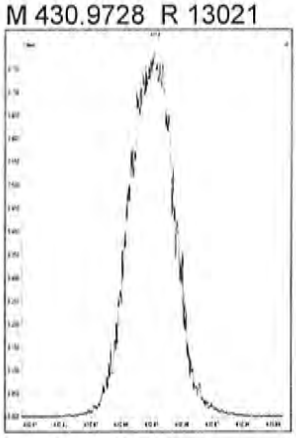
M 404.9760 R 13513



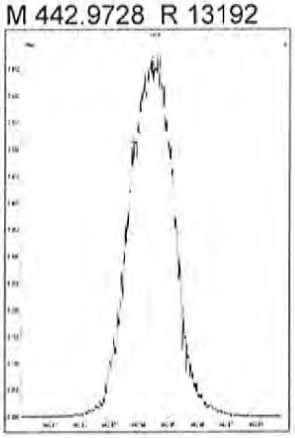
M 416.9760 R 13278



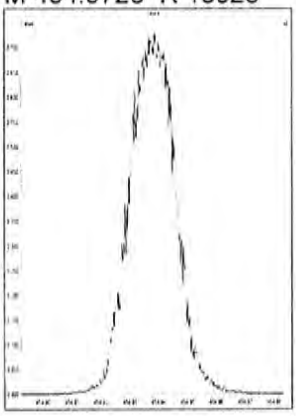
M 430.9728 R 13021



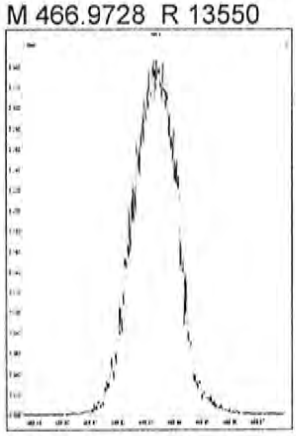
M 442.9728 R 13192



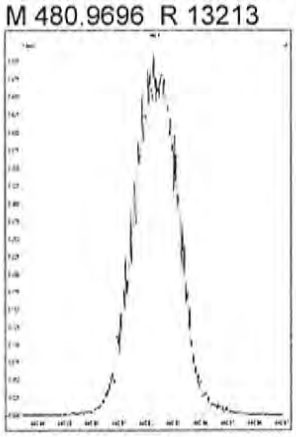
M 454.9728 R 13023



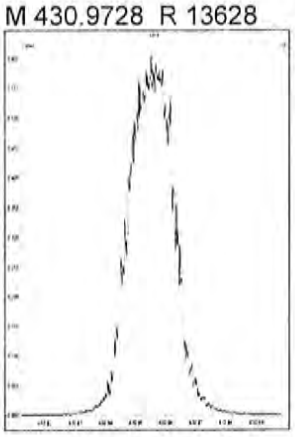
M 466.9728 R 13550



M 480.9696 R 13213



M 430.9728 R 13628



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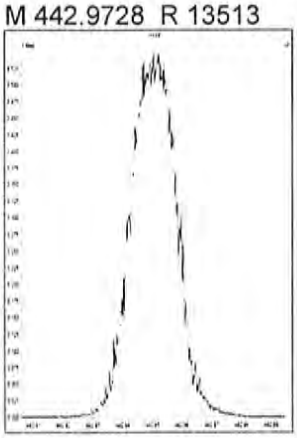
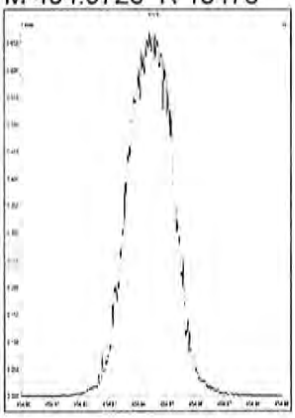
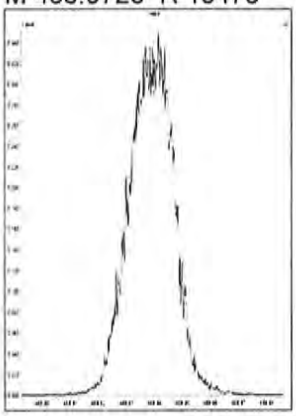
M 442.9728 R 13513



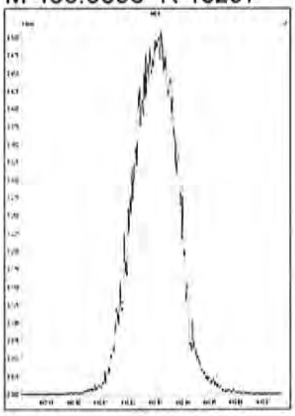
M 454.9728 R 13476



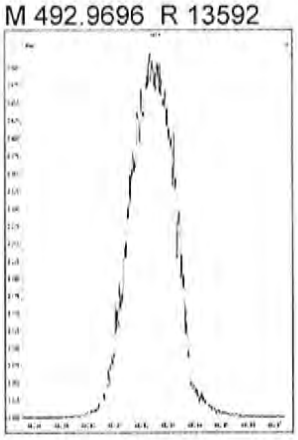
M 466.9728 R 13476



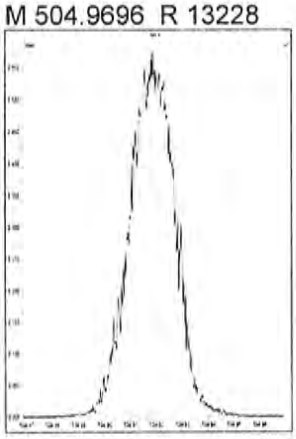
M 480.9696 R 13297



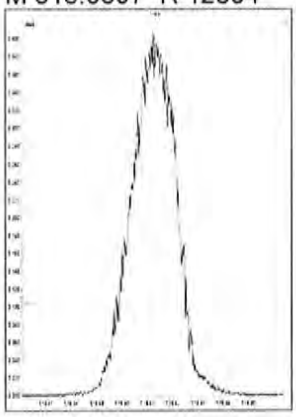
M 492.9696 R 13592



M 504.9696 R 13228



M 516.9697 R 12854



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

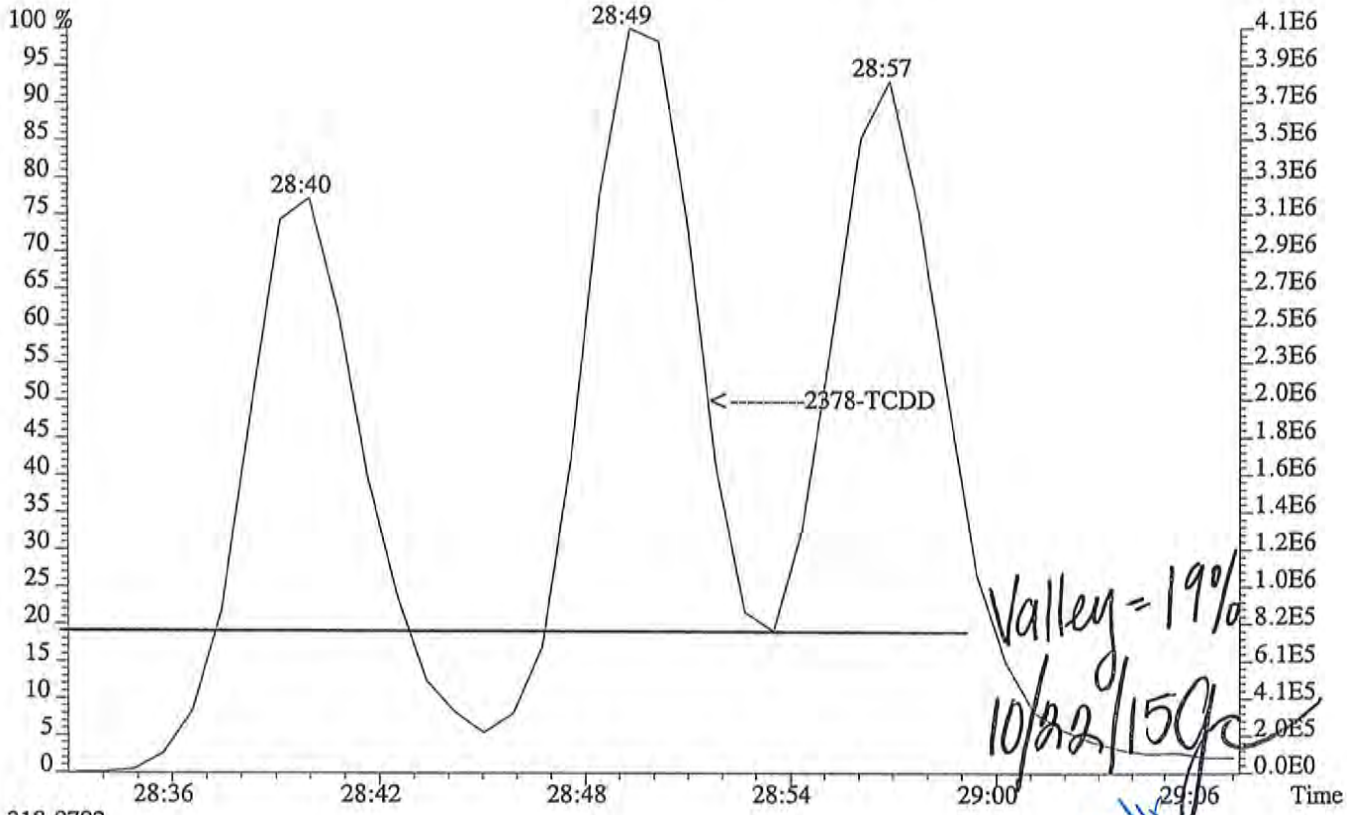
Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

Case No.: _____ SDG No.:
ID: 0.25 (mm)
Lab File ID: P600940
Date Analyzed: 13-OCT-2015
Time Analyzed: 13:17:56

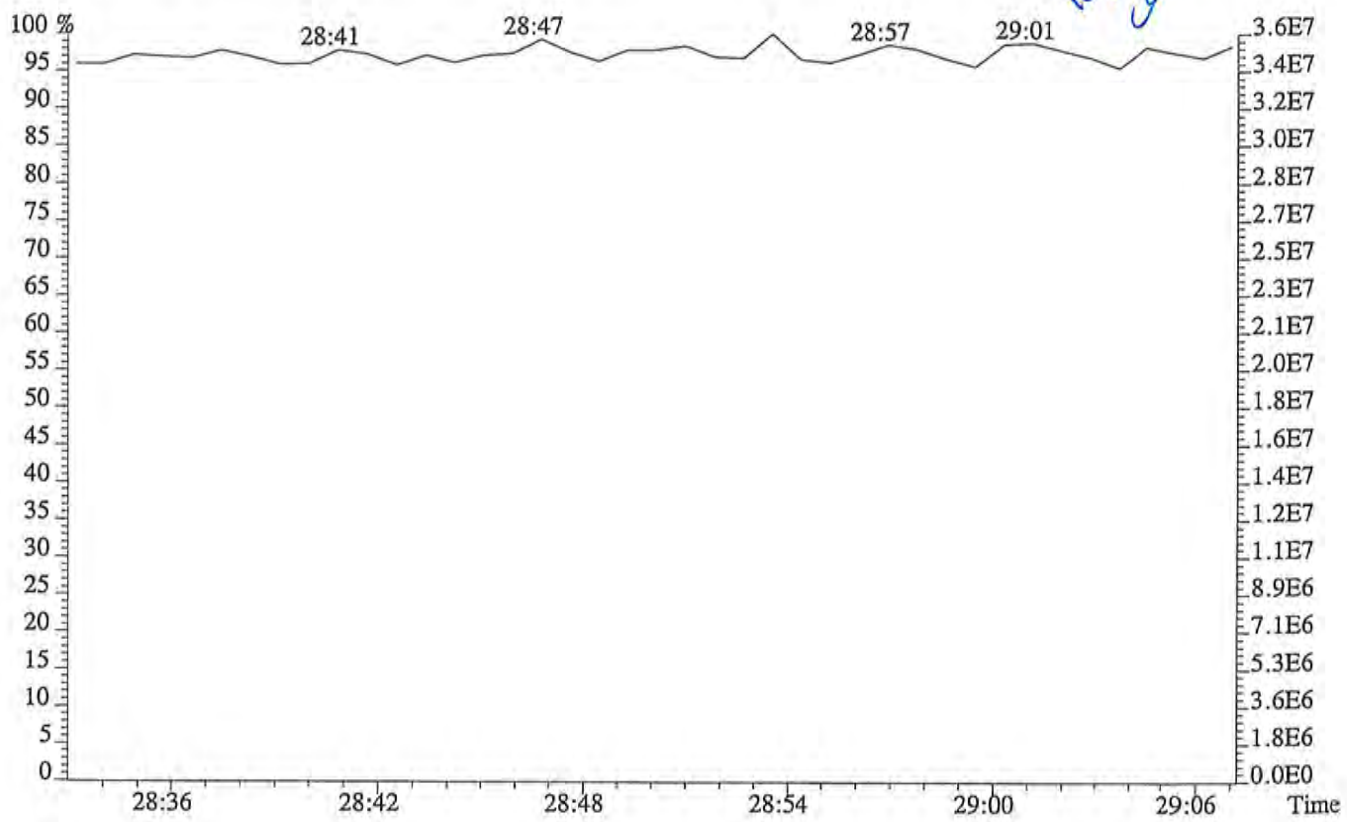
Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	23:40	29:59
TCDD	25:31	29:49
PeCDF	29:56	34:11
PeCDD	31:28	33:55
HxCDF	34:50	37:19
HxCDD	35:20	36:55
HpCDF	38:32	39:55
HpCDD	38:47	39:27

% Valley 2378-TCDD: 19 %

File:P600940 #1-562 Acq:13-OCT-2015 13:17:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
319.8965

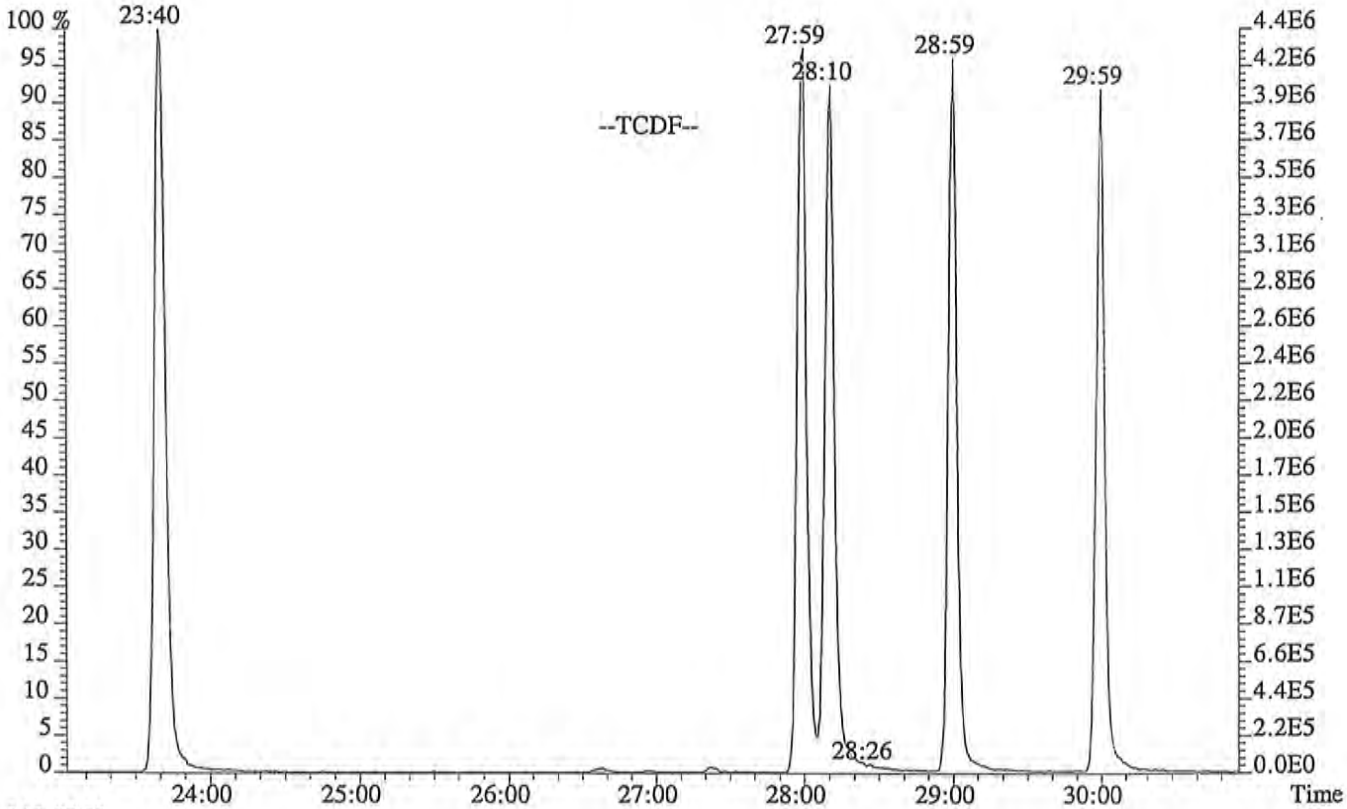


318.9792

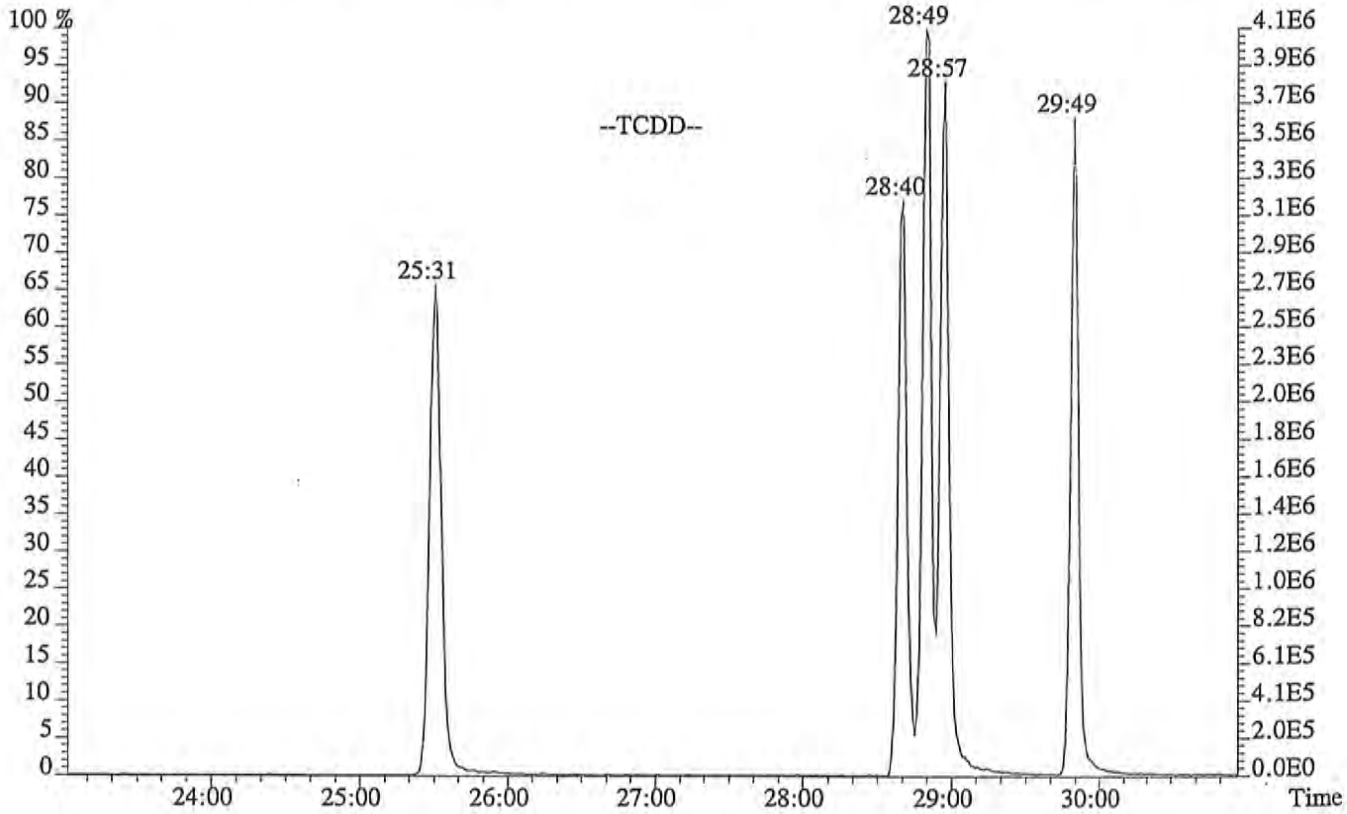


E1500972

File:P600940 #1-562 Acq:13-OCT-2015 13:17:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
303.9016

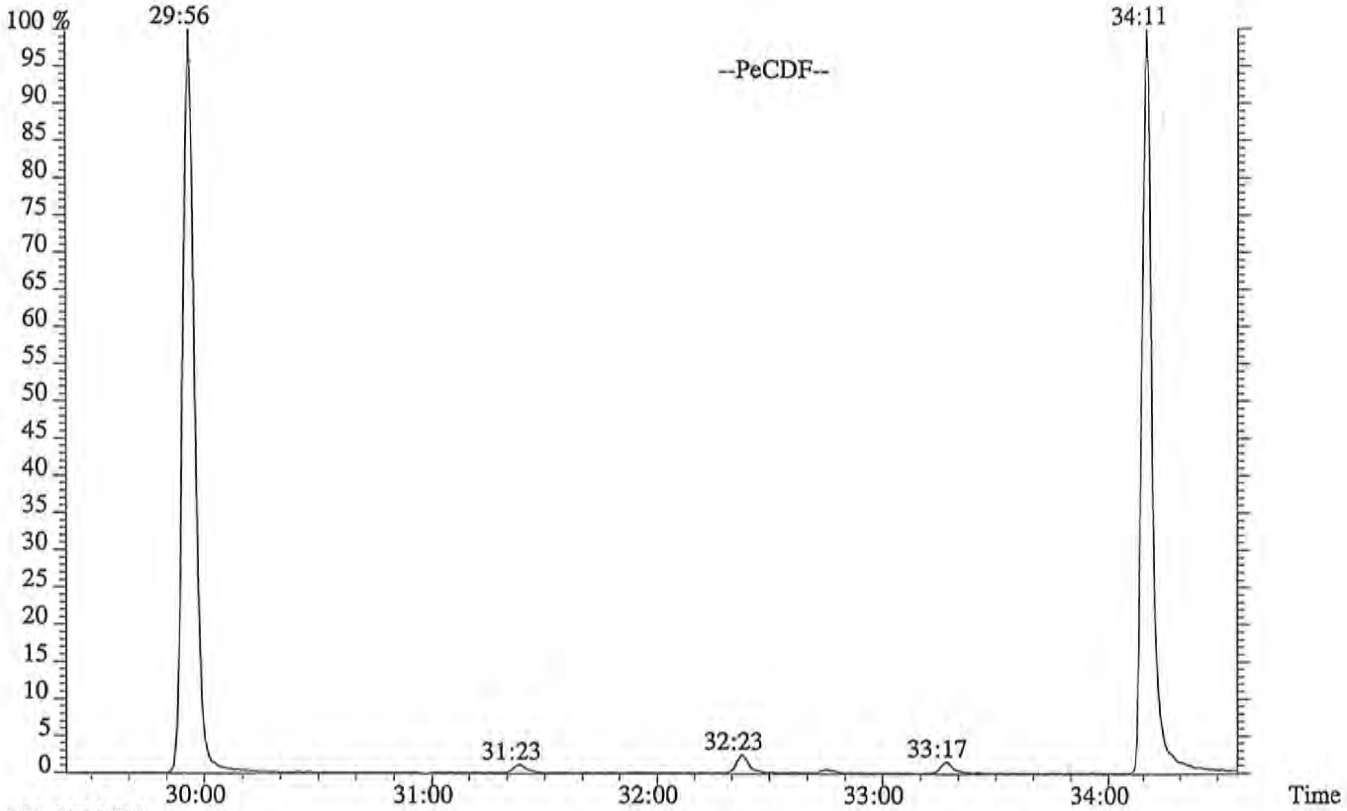


319.8965

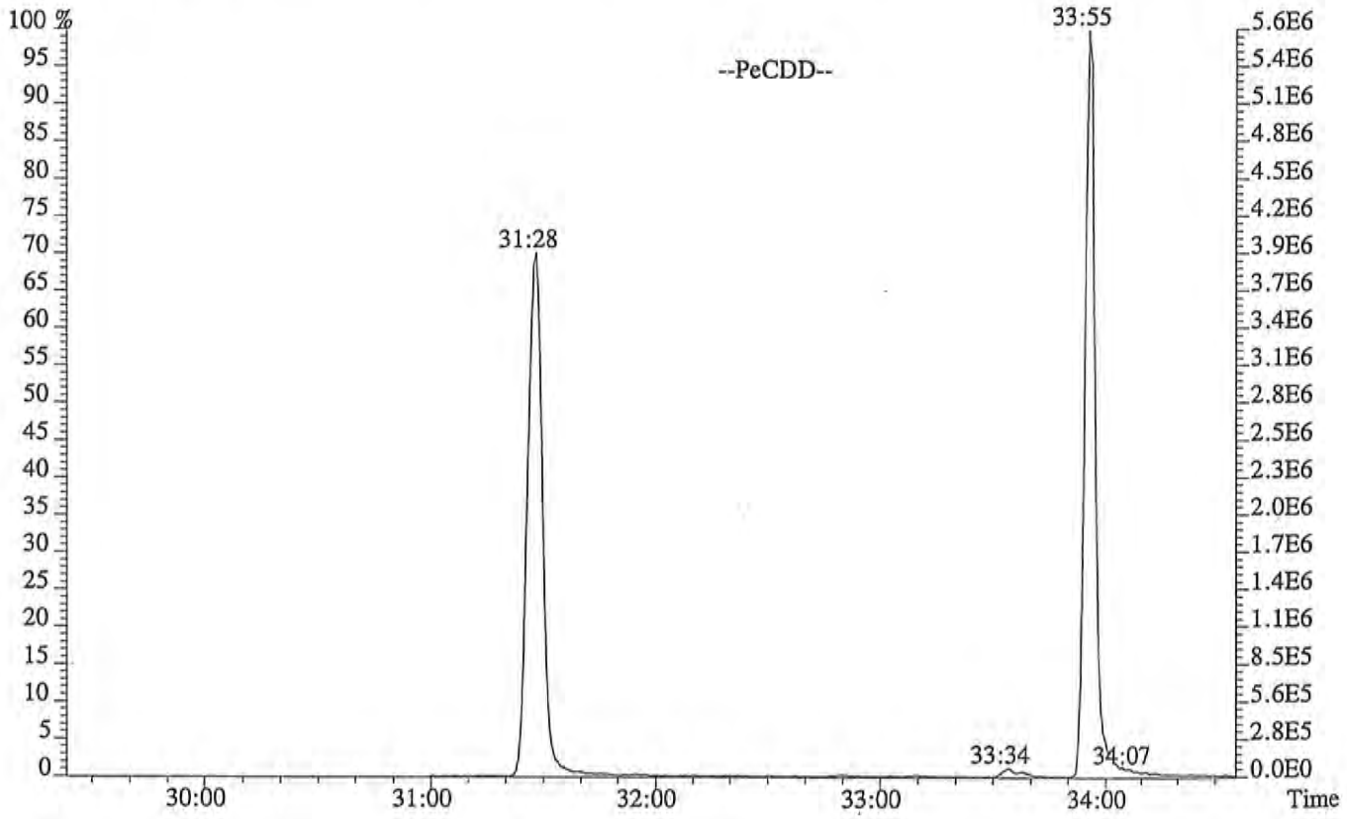


E1500972

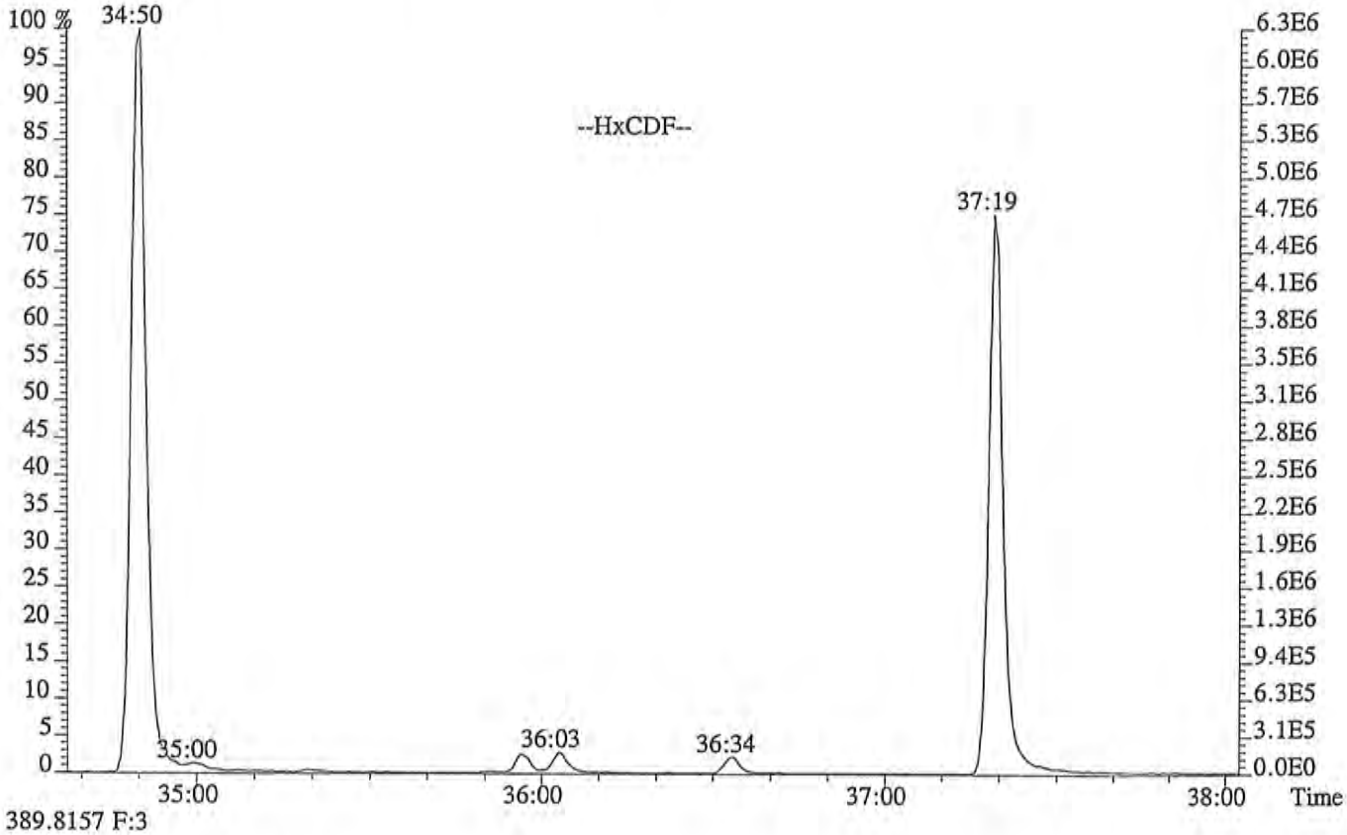
File:P600940 #1-562 Acq:13-OCT-2015 13:17:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
339.8597,339.8597 F:2



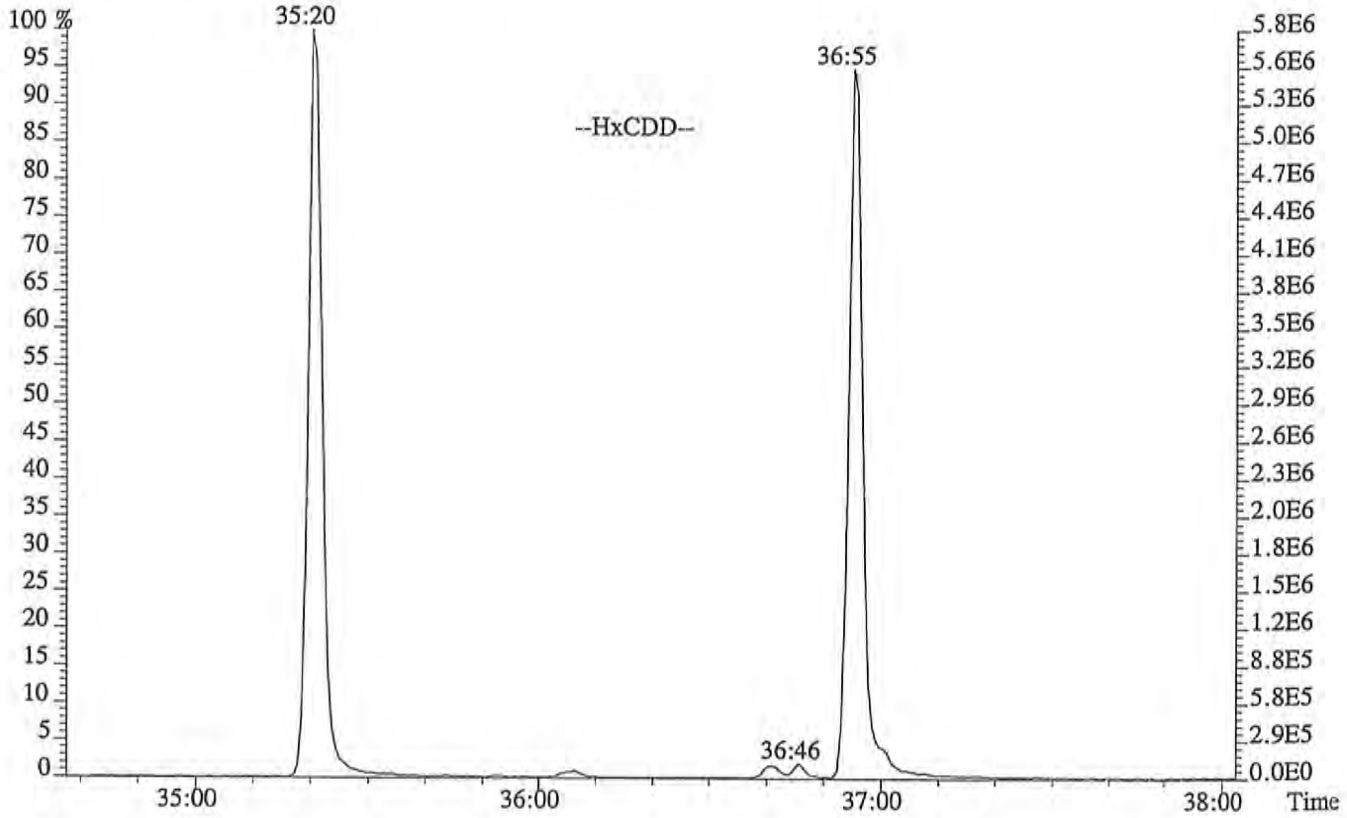
355.8546 F:2



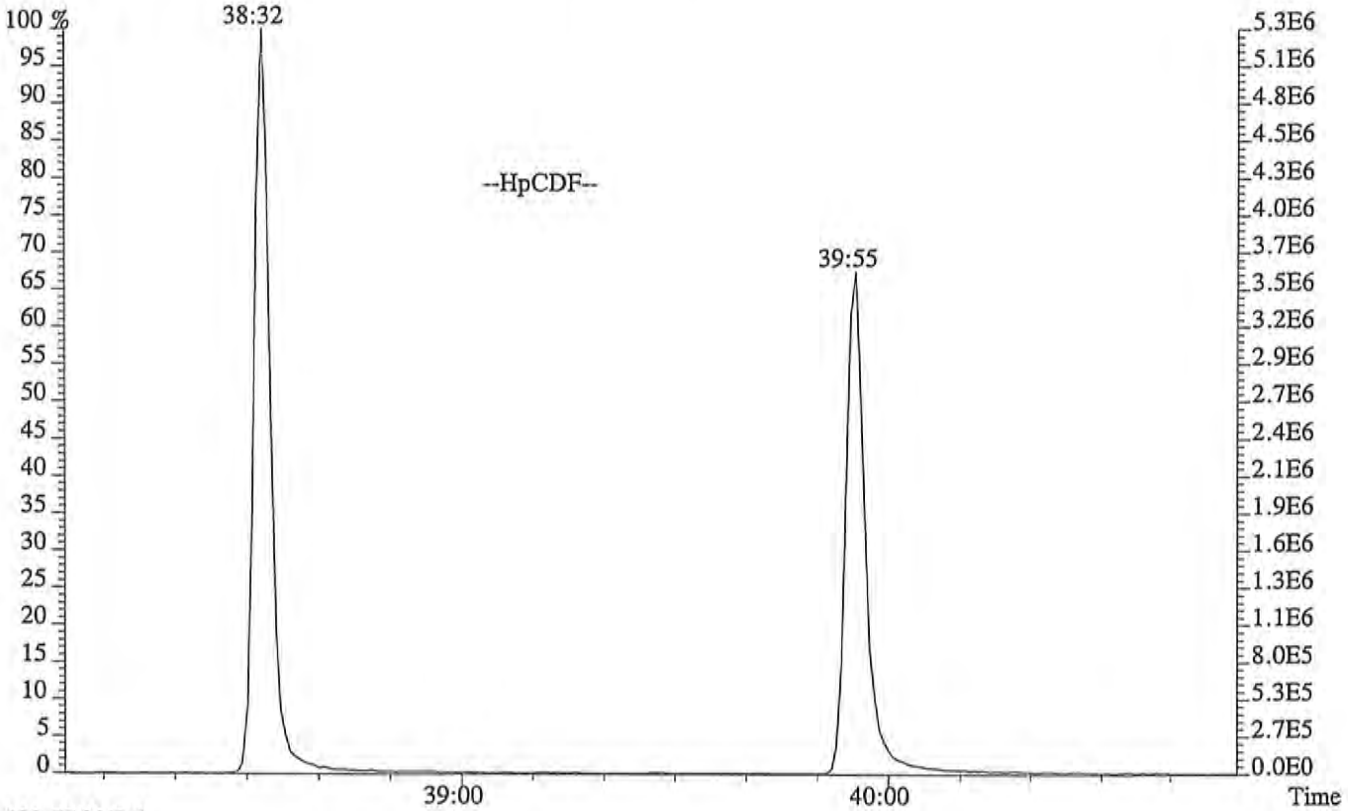
File:P600940 #1-308 Acq:13-OCT-2015 13:17:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
373.8208 F:3



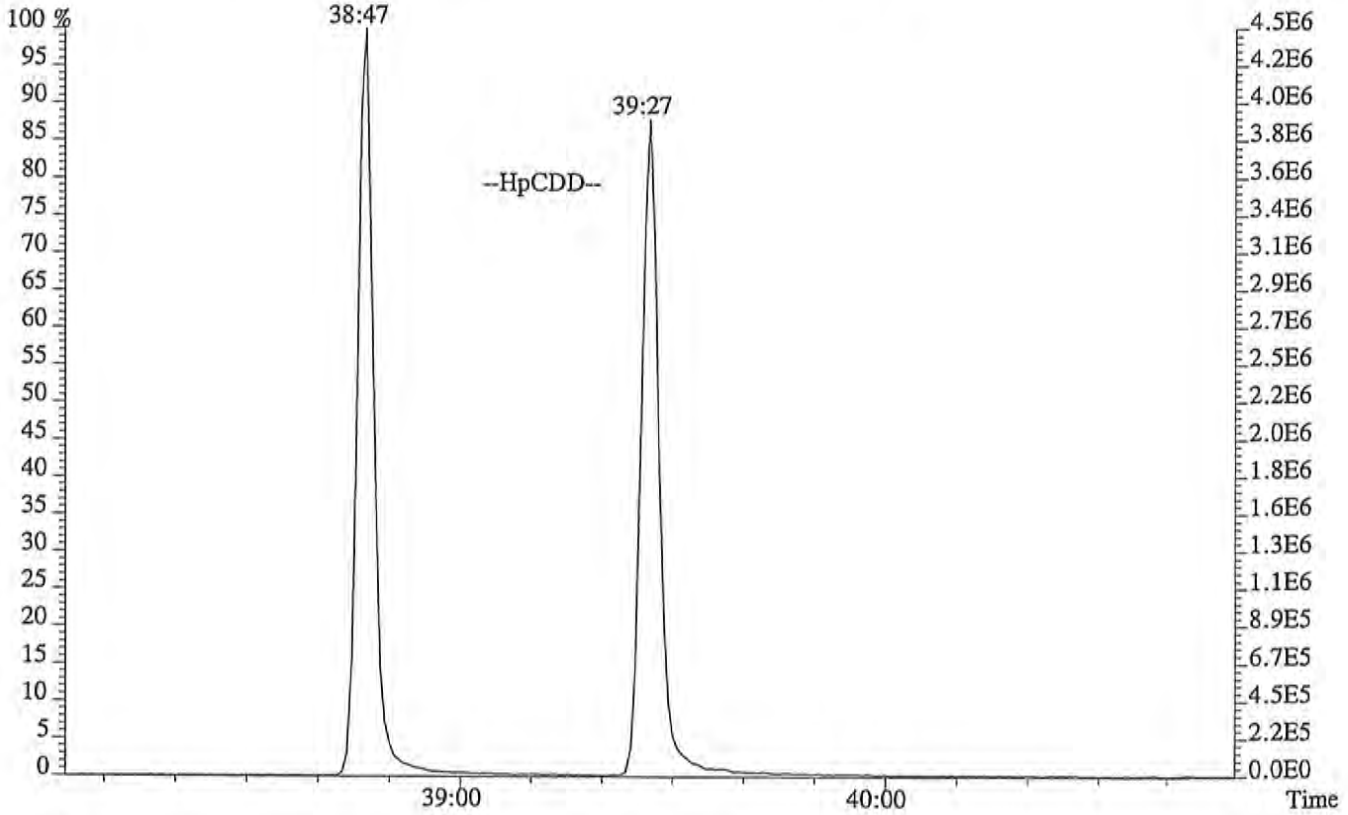
389.8157 F:3



File:P600940 #1-248 Acq:13-OCT-2015 13:17:56 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
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: 08/19/15

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P600939 Analysis Date: 13-OCT-15 Time: 12:29:16

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	10.3	7.8 - 12.9	3.1
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32-1.78	49	39 - 65	-1.1
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	49	39 - 64	-2.6
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	49	39 - 64	-2.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	47	41 - 61	-6.6
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	47	43 - 58	-6.7
OCDD	M+2/M+4	0.88	0.76-1.02	97	79 - 126	-3.5
2,3,7,8-TCDF	M/M+2	0.76	0.65-0.89	9.4	8.4 - 12.0	-5.8
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	48	41 - 60	-4.8
2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32-1.78	48	41 - 61	-4.4
1,2,3,4,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	47	45 - 56	-5.1
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	47	44 - 57	-6.6
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05-1.43	46	45 - 56	-8.3
2,3,4,6,7,8-HxCDF	M+2/M+4	1.21	1.05-1.43	47	44 - 57	-6.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	46	45 - 55	-7.4
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88-1.20	46	43 - 58	-7.5
OCDF	M+2/M+4	0.89	0.76-1.02	90	63 - 159	-9.7

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 08/19/15

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P600939 Analysis Date: 13-OCT-15 Time: 12:29:16

	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	82	82 - 121	-17.8
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	98	62 - 160	-2.1
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	103	85 - 117	3.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	105	85 - 118	5.2
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	98	72 - 138	-2.2
13C-OCDD	M+2/M+4	0.90	0.76-1.02	218	96 - 415	9.0
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	97	71 - 140	-3.2
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	97	76 - 130	-3.1
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	95	77 - 130	-4.9
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	95	76 - 131	-5.2
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	98	70 - 143	-2.1
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	92	74 - 135	-8.1
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	95	73 - 137	-5.2
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37-0.51	92	78 - 129	-7.6
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	77	77 - 129	-22.8
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				8.4	7.8 - 12.7	-15.9

(1) See Table 8, Method 1613B, for m/z specifications.
(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.
(3) Contract-required concentration range, as specified in Table 6, Method 1613B, under VER.
(4) 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.
84080

Run #7 Filename P600939 Samp: 1 Inj: 1 Acquired: 13-OCT-15 12:29:16
Processed: 22-OCT-15 08:56:16 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:10	3.811e+04	5.004e+04	0.76	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	32:21	2.992e+05	1.948e+05	1.54	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:15	2.802e+05	1.833e+05	1.53	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	35:56	2.487e+05	2.028e+05	1.23	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:02	2.574e+05	2.109e+05	1.22	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	36:32	2.425e+05	1.997e+05	1.21	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:17	2.166e+05	1.760e+05	1.23	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	38:31	2.048e+05	2.011e+05	1.02	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	39:54	1.668e+05	1.631e+05	1.02	yes	no	1.287
10	Unk	OCDF	42:22	2.943e+05	3.291e+05	0.89	yes	no	1.257
11	Unk	2,3,7,8-TCDD	28:56	3.312e+04	4.300e+04	0.77	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	33:32	2.228e+05	1.451e+05	1.54	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	36:40	2.024e+05	1.635e+05	1.24	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	36:45	1.968e+05	1.586e+05	1.24	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	36:59	2.114e+05	1.706e+05	1.24	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	39:26	1.674e+05	1.632e+05	1.03	yes	no	1.034
17	Unk	OCDD	42:10	2.760e+05	3.131e+05	0.88	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	28:08	4.365e+05	5.588e+05	0.78	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	32:21	6.408e+05	4.099e+05	1.56	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:15	6.335e+05	4.043e+05	1.57	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	35:55	2.721e+05	5.283e+05	0.52	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:01	3.042e+05	5.859e+05	0.52	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	36:31	2.882e+05	5.554e+05	0.52	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:16	2.518e+05	4.874e+05	0.52	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:31	1.963e+05	4.423e+05	0.44	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:53	1.695e+05	3.851e+05	0.44	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	28:55	3.238e+05	4.071e+05	0.80	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	33:31	4.891e+05	3.090e+05	1.58	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	36:39	4.082e+05	3.247e+05	1.26	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	36:44	3.961e+05	3.144e+05	1.26	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:25	3.506e+05	3.350e+05	1.05	yes	no	0.892
32	IS	13C-OCDD	42:10	5.196e+05	5.797e+05	0.90	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	28:21	3.310e+05	4.143e+05	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:58	4.385e+05	3.470e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:56	7.921e+04				no	1.263

ALS ENVIRONMENTAL
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Houston, TX 77099
Office(713)266-1599. Fax(713)266-0130

www.alsglobal.com

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
84080

Run #7 Filename P600939 Samp: 1 Inj: 1 Acquired: 13-OCT-15 12:29:16
Processed: 22-OCT-15 08:56:16 LAB. ID: CS3

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	7.15e+06	1.06e+03	6.8e+03	9.38e+06	3.01e+03	3.1e+03
2	1,2,3,7,8-PeCDF	5.81e+07	1.21e+03	4.8e+04	3.78e+07	2.52e+03	1.5e+04
3	2,3,4,7,8-PeCDF	5.67e+07	1.21e+03	4.7e+04	3.71e+07	2.52e+03	1.5e+04
4	1,2,3,4,7,8-HxCDF	5.62e+07	1.34e+03	4.2e+04	4.55e+07	1.30e+03	3.5e+04
5	1,2,3,6,7,8-HxCDF	5.56e+07	1.34e+03	4.1e+04	4.59e+07	1.30e+03	3.5e+04
6	2,3,4,6,7,8-HxCDF	5.38e+07	1.34e+03	4.0e+04	4.48e+07	1.30e+03	3.5e+04
7	1,2,3,7,8,9-HxCDF	4.77e+07	1.34e+03	3.5e+04	3.85e+07	1.30e+03	3.0e+04
8	1,2,3,4,6,7,8-HpCDF	4.73e+07	3.58e+03	1.3e+04	4.65e+07	9.21e+03	5.0e+03
9	1,2,3,4,7,8,9-HpCDF	3.51e+07	3.58e+03	9.8e+03	3.46e+07	9.21e+03	3.8e+03
10	OCDF	5.53e+07	1.20e+03	4.6e+04	6.20e+07	1.73e+03	3.6e+04
11	2,3,7,8-TCDD	6.56e+06	1.57e+03	4.2e+03	8.51e+06	2.03e+03	4.2e+03
12	1,2,3,7,8-PeCDD	4.49e+07	2.92e+03	1.5e+04	2.95e+07	1.55e+03	1.9e+04
13	1,2,3,4,7,8-HxCDD	4.72e+07	3.04e+03	1.6e+04	3.80e+07	2.32e+03	1.6e+04
14	1,2,3,6,7,8-HxCDD	4.37e+07	3.04e+03	1.4e+04	3.53e+07	2.32e+03	1.5e+04
15	1,2,3,7,8,9-HxCDD	4.90e+07	3.04e+03	1.6e+04	3.94e+07	2.32e+03	1.7e+04
16	1,2,3,4,6,7,8-HpCDD	3.68e+07	1.94e+03	1.9e+04	3.53e+07	2.54e+03	1.4e+04
17	OCDD	5.35e+07	1.40e+03	3.8e+04	6.05e+07	1.69e+03	3.6e+04
18	13C-2,3,7,8-TCDF	8.13e+07	3.24e+03	2.5e+04	1.04e+08	2.90e+03	3.6e+04
19	13C-1,2,3,7,8-PeCDF	1.23e+08	3.07e+03	4.0e+04	7.81e+07	2.20e+03	3.5e+04
20	13C-2,3,4,7,8-PeCDF	1.31e+08	3.07e+03	4.3e+04	8.38e+07	2.20e+03	3.8e+04
21	13C-1,2,3,4,7,8-HxCDF	6.10e+07	2.40e+03	2.5e+04	1.17e+08	3.22e+03	3.6e+04
22	13C-1,2,3,6,7,8-HxCDF	6.59e+07	2.40e+03	2.7e+04	1.28e+08	3.22e+03	4.0e+04
23	13C-2,3,4,6,7,8-HxCDF	6.37e+07	2.40e+03	2.7e+04	1.24e+08	3.22e+03	3.9e+04
24	13C-1,2,3,7,8,9-HxCDF	5.58e+07	2.40e+03	2.3e+04	1.07e+08	3.22e+03	3.3e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.55e+07	6.37e+03	7.1e+03	1.02e+08	4.64e+03	2.2e+04
26	13C-1,2,3,4,7,8,9-HpCDF	3.52e+07	6.37e+03	5.5e+03	8.08e+07	4.64e+03	1.7e+04
27	13C-2,3,7,8-TCDD	6.34e+07	5.88e+03	1.1e+04	7.96e+07	3.63e+03	2.2e+04
28	13C-1,2,3,7,8-PeCDD	1.01e+08	1.78e+03	5.7e+04	6.39e+07	9.04e+02	7.1e+04
29	13C-1,2,3,4,7,8-HxCDD	9.47e+07	5.74e+03	1.6e+04	7.51e+07	3.44e+03	2.2e+04
30	13C-1,2,3,6,7,8-HxCDD	8.76e+07	5.74e+03	1.5e+04	7.04e+07	3.44e+03	2.0e+04
31	13C-1,2,3,4,6,7,8-HpCDD	7.63e+07	2.26e+03	3.4e+04	7.22e+07	3.01e+03	2.4e+04
32	13C-OCDD	1.01e+08	2.76e+03	3.7e+04	1.13e+08	2.28e+03	5.0e+04
33	13C-1,2,3,4-TCDD	6.41e+07	5.88e+03	1.1e+04	8.00e+07	3.63e+03	2.2e+04
34	13C-1,2,3,7,8,9-HxCDD	1.02e+08	5.74e+03	1.8e+04	8.05e+07	3.44e+03	2.3e+04
35	37Cl-2,3,7,8-TCDD	1.57e+07	2.89e+03	5.4e+03			

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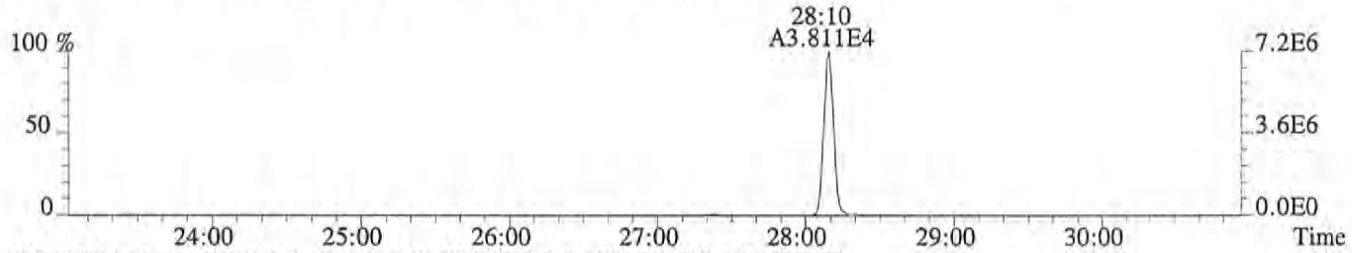
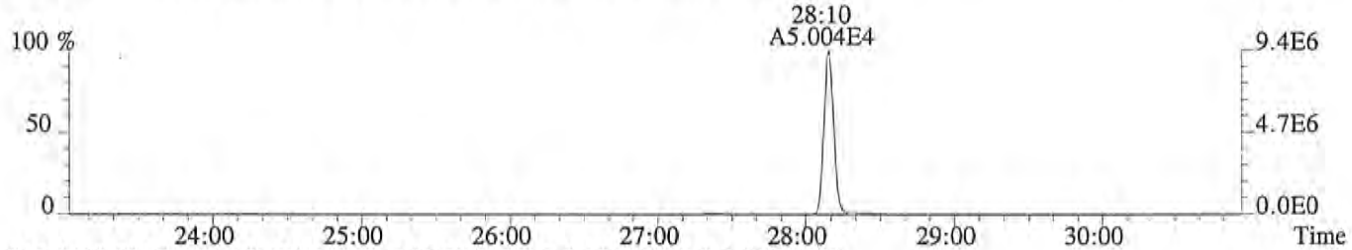
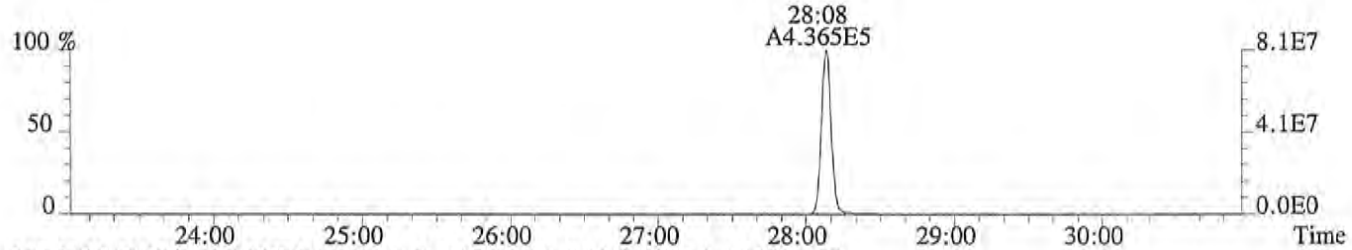
File:P600939 #1-562 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1056.0,1.00%,F,T)



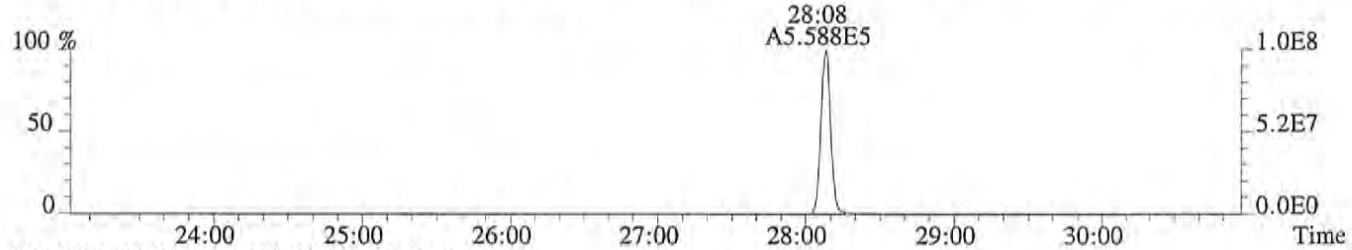
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3008.0,1.00%,F,T)



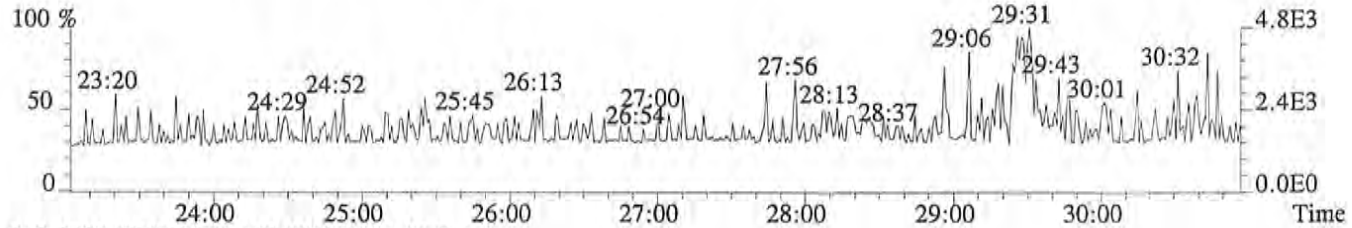
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3236.0,1.00%,F,T)



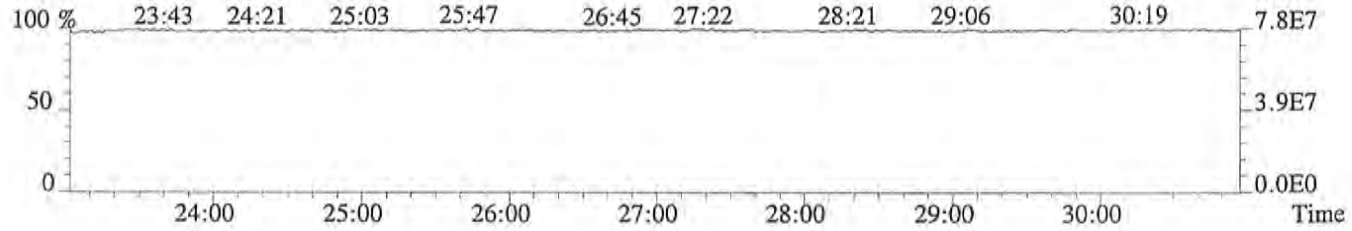
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2896.0,1.00%,F,T)



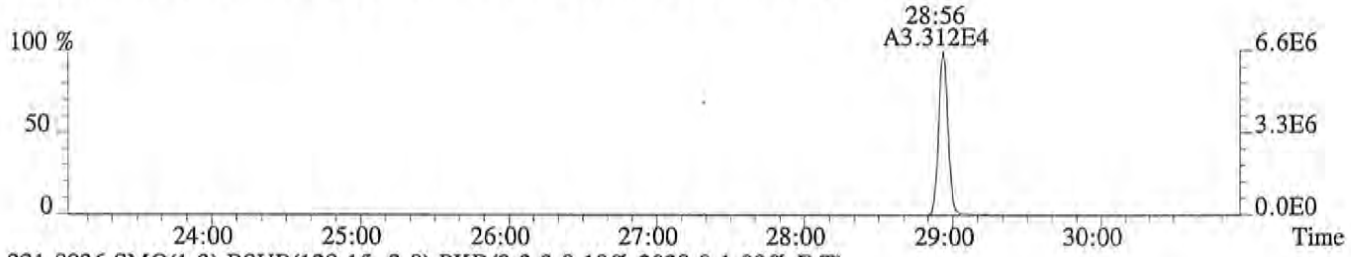
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



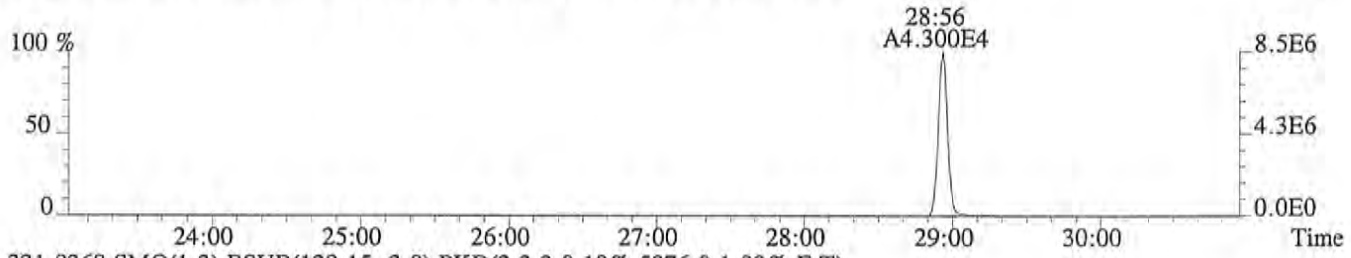
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



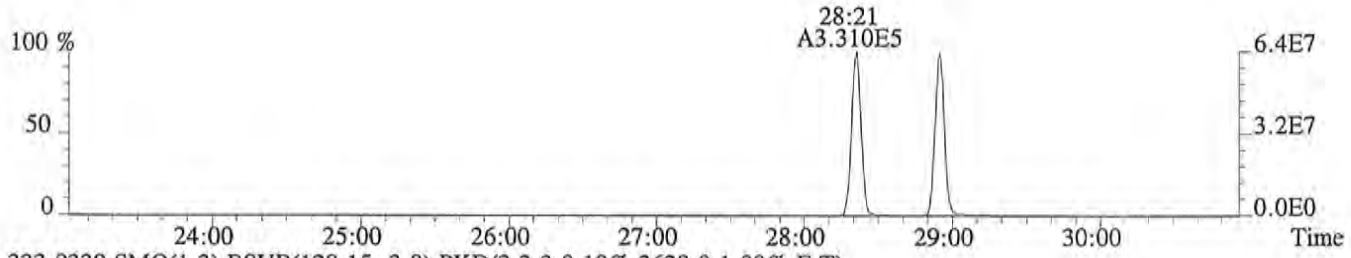
File:P600939 #1-562 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1572.0,1.00%,F,T)



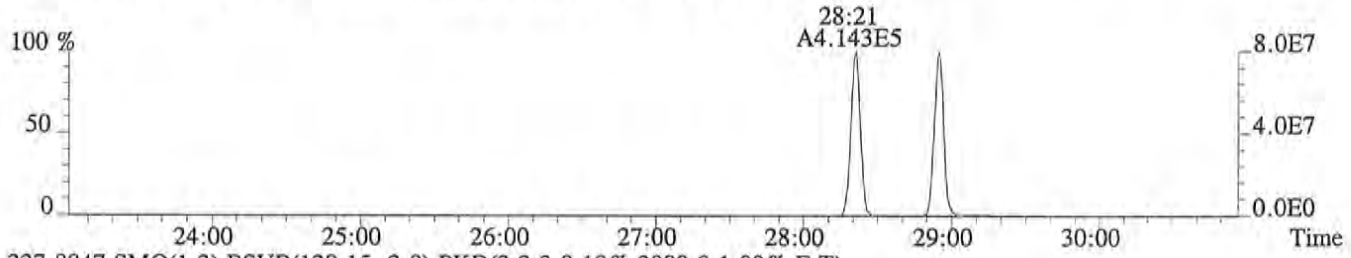
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2028.0,1.00%,F,T)



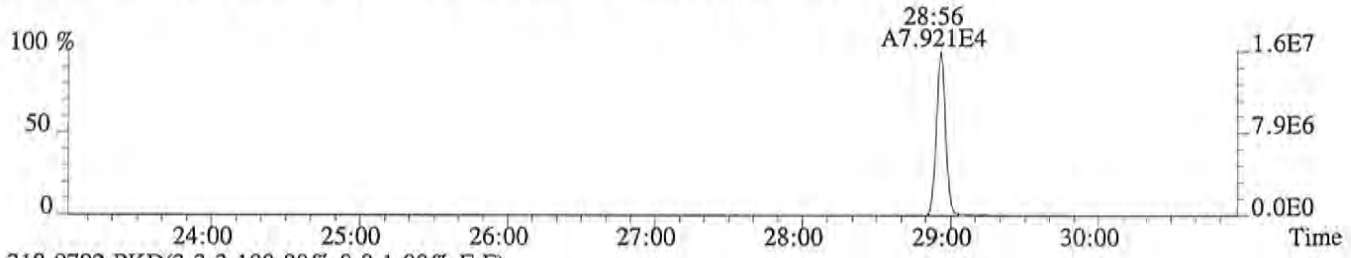
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5876.0,1.00%,F,T)



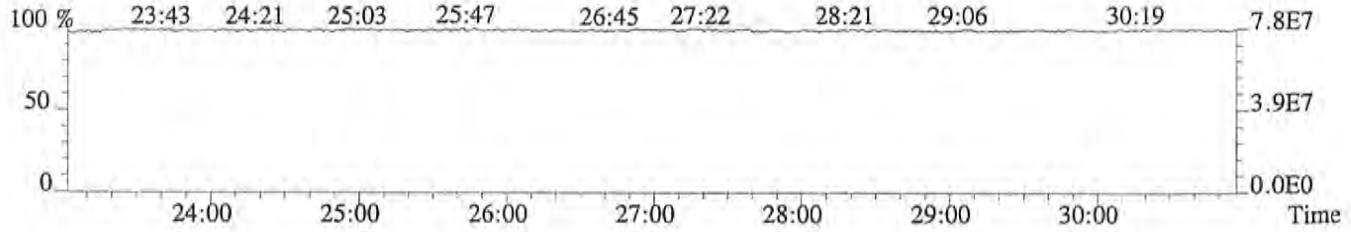
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3628.0,1.00%,F,T)



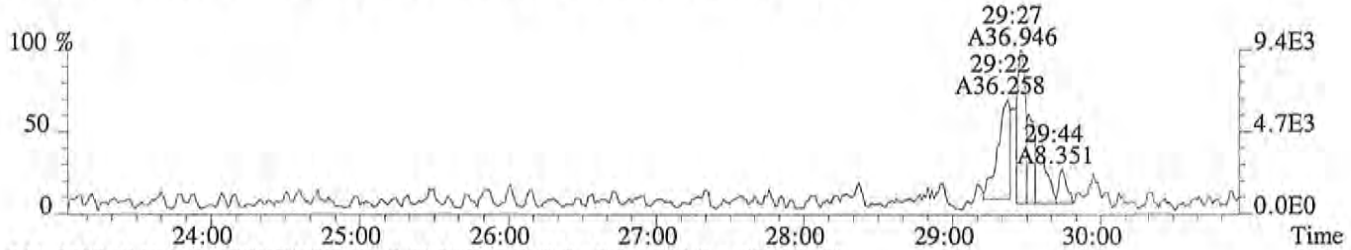
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2888.0,1.00%,F,T)



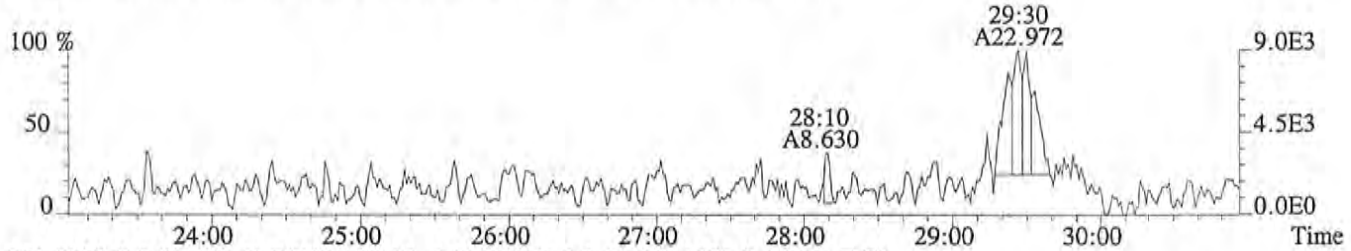
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



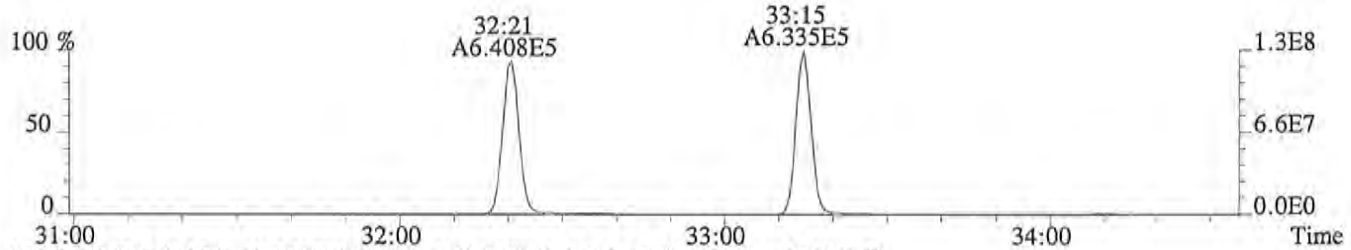
File:P600939 #1-562 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,920.0,1.00%,F,T)



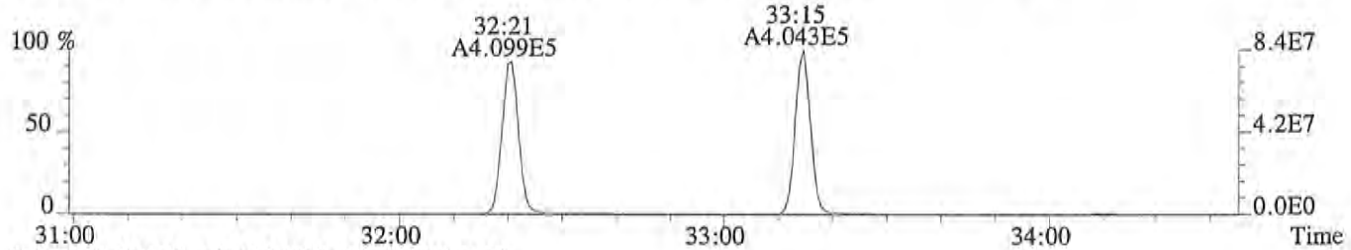
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1660.0,1.00%,F,T)



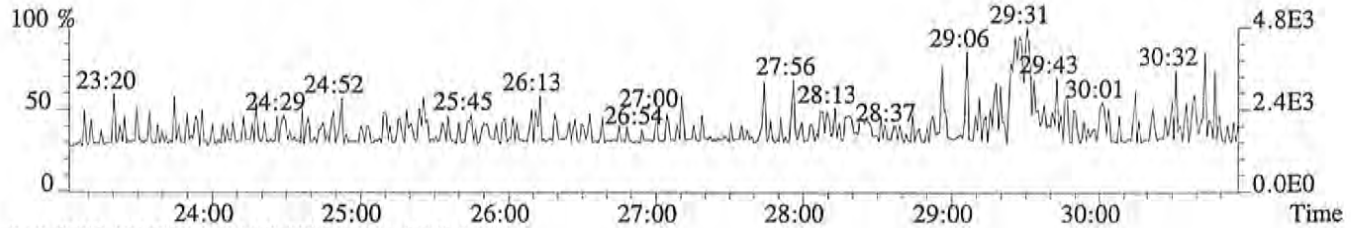
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3072.0,1.00%,F,T)



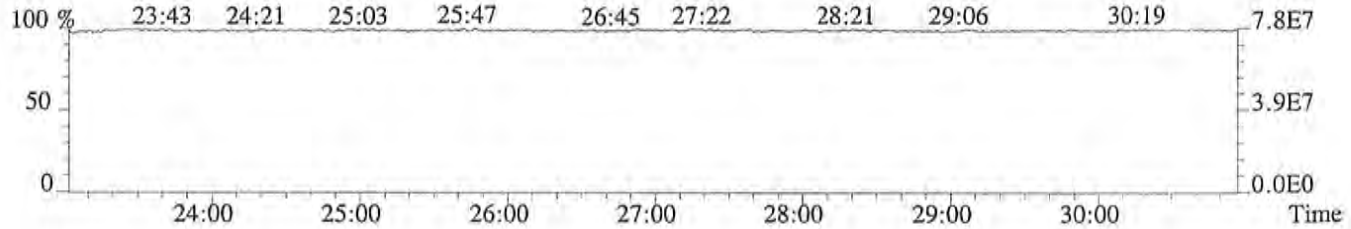
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2200.0,1.00%,F,T)



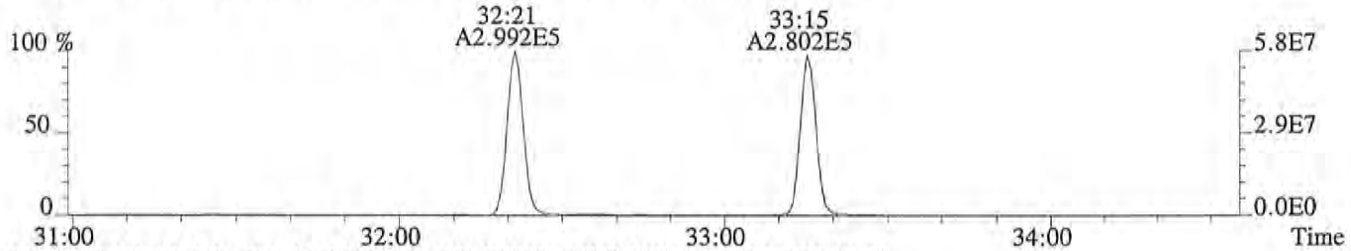
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



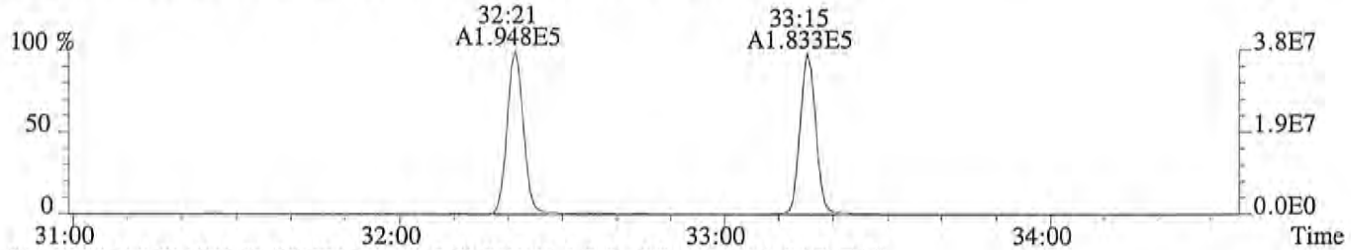
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



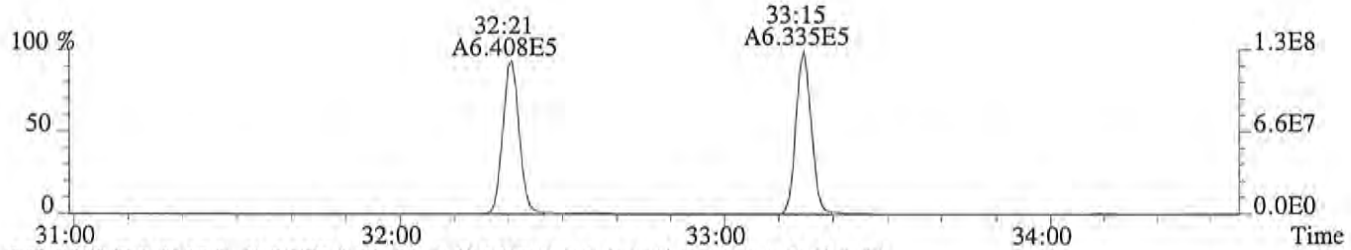
File:P600939 #1-325 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1208.0,1.00%,F,T)



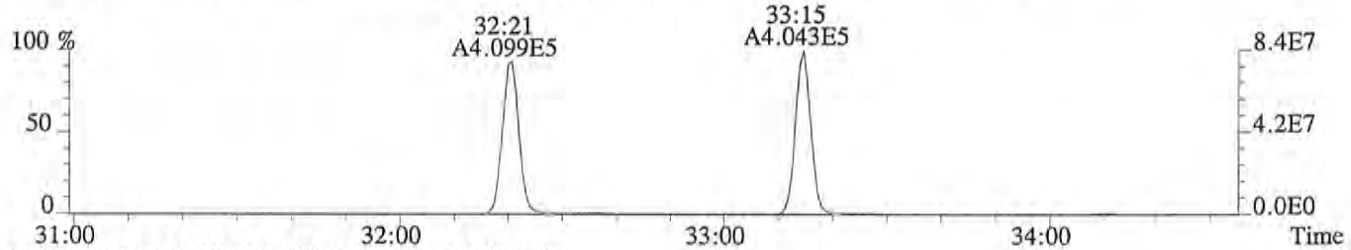
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2516.0,1.00%,F,T)



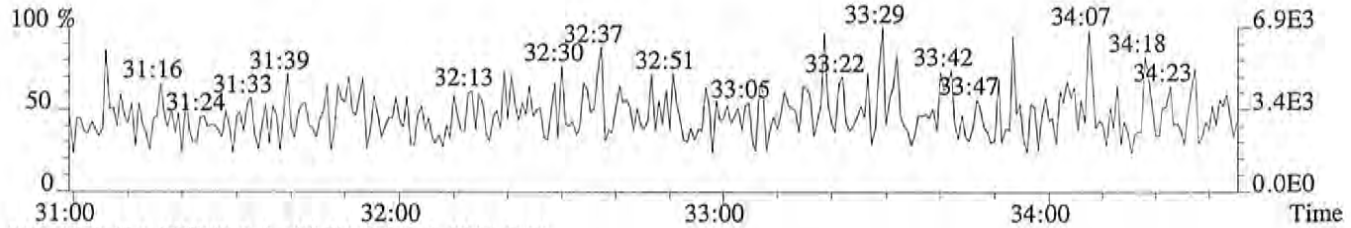
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3072.0,1.00%,F,T)



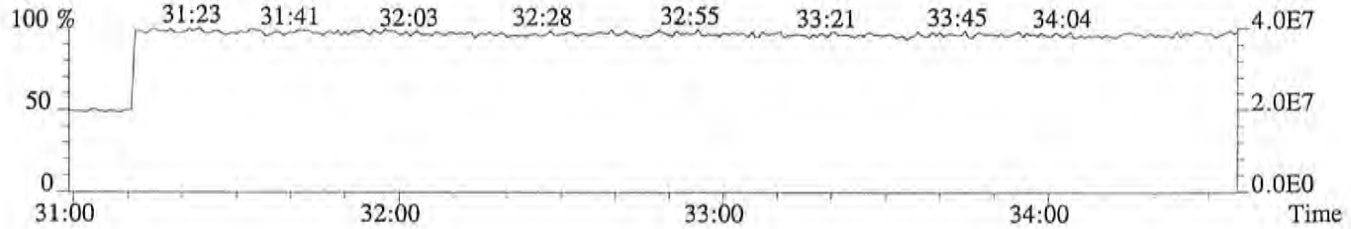
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2200.0,1.00%,F,T)



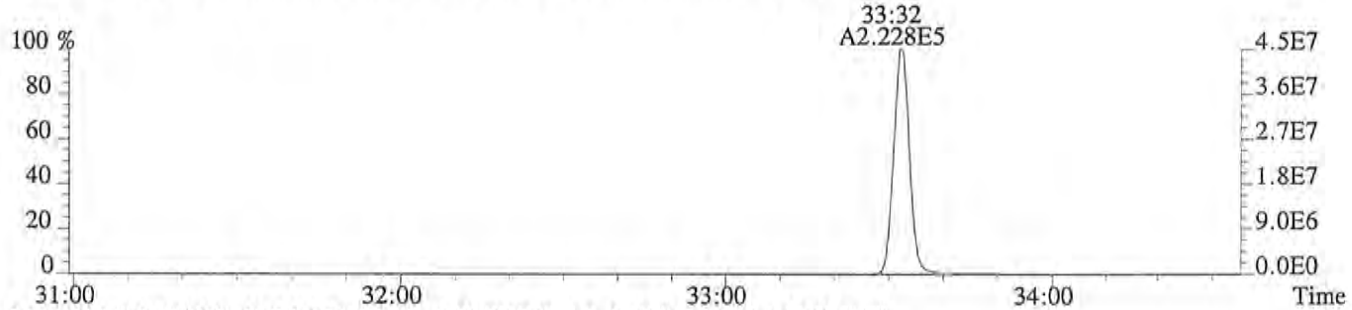
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



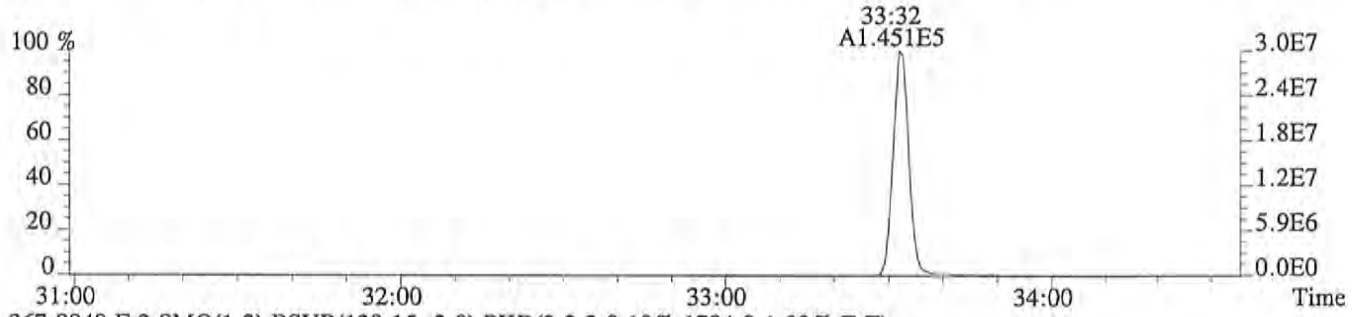
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



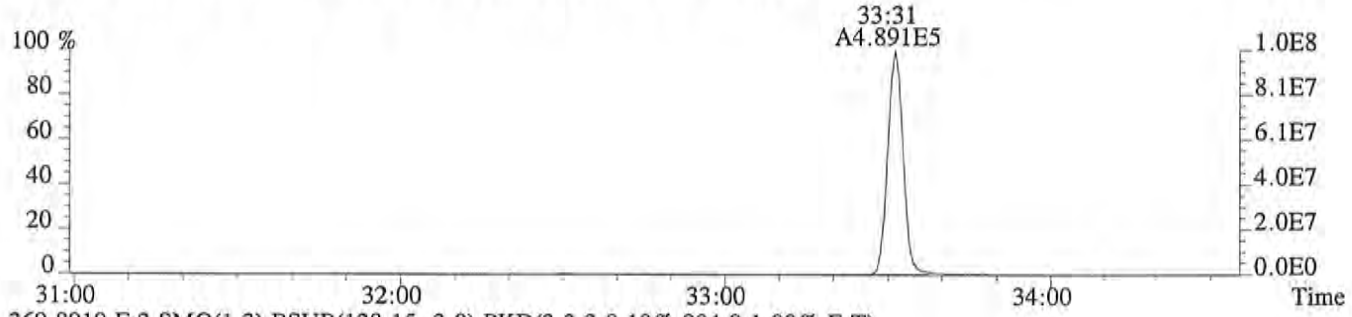
File:P600939 #1-325 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2920.0,1.00%,F,T)



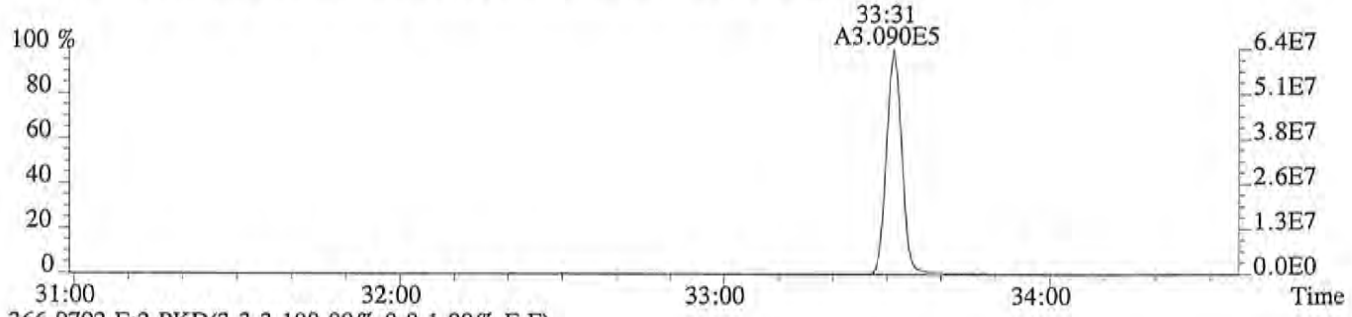
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1548.0,1.00%,F,T)



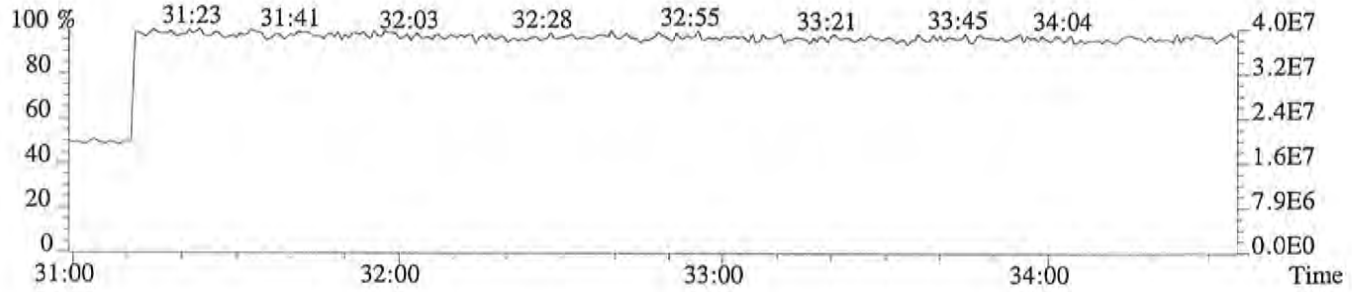
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1784.0,1.00%,F,T)



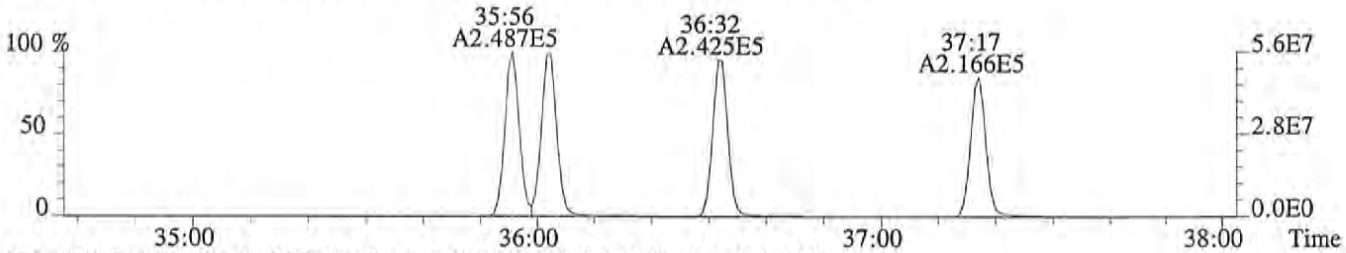
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,904.0,1.00%,F,T)



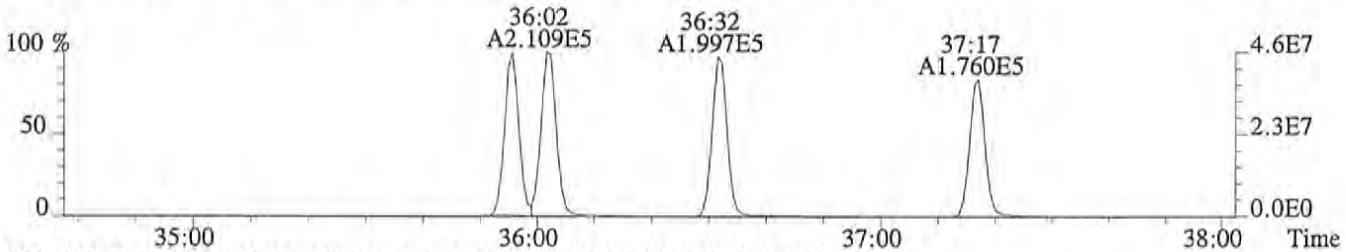
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



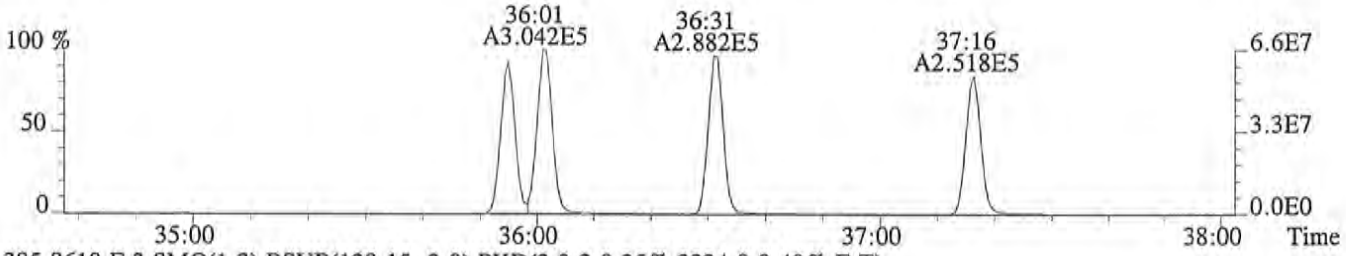
File:P600939 #1-308 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1344.0,0.40%,F,T)



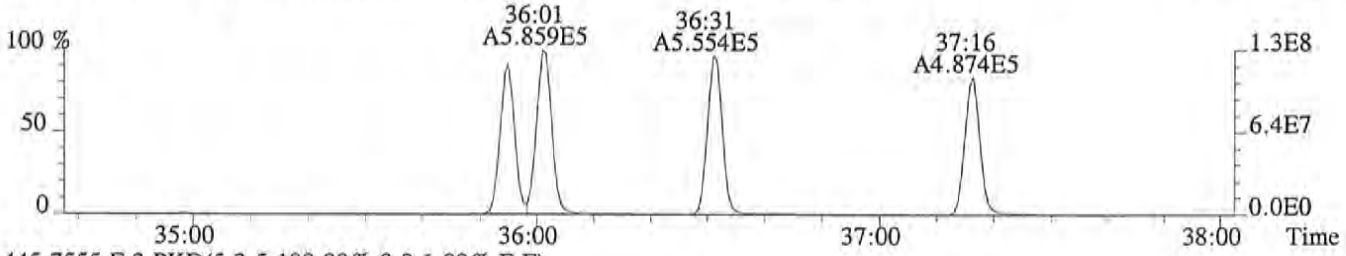
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1296.0,0.40%,F,T)



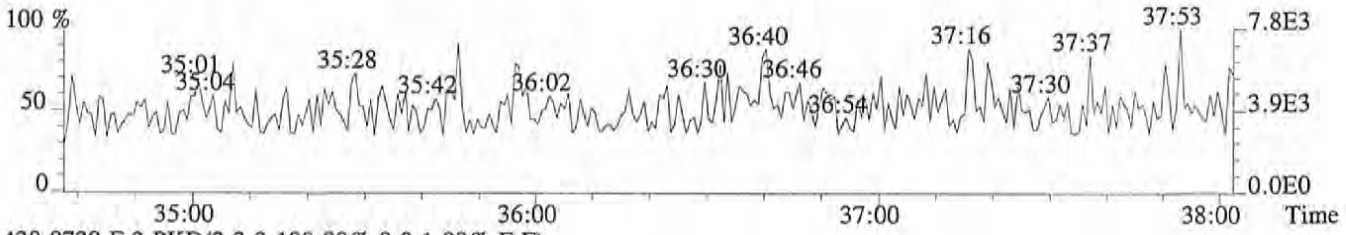
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2404.0,0.40%,F,T)



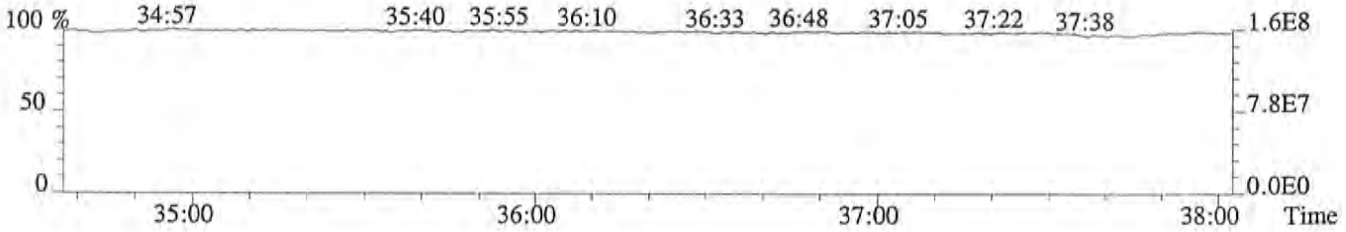
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3224.0,0.40%,F,T)



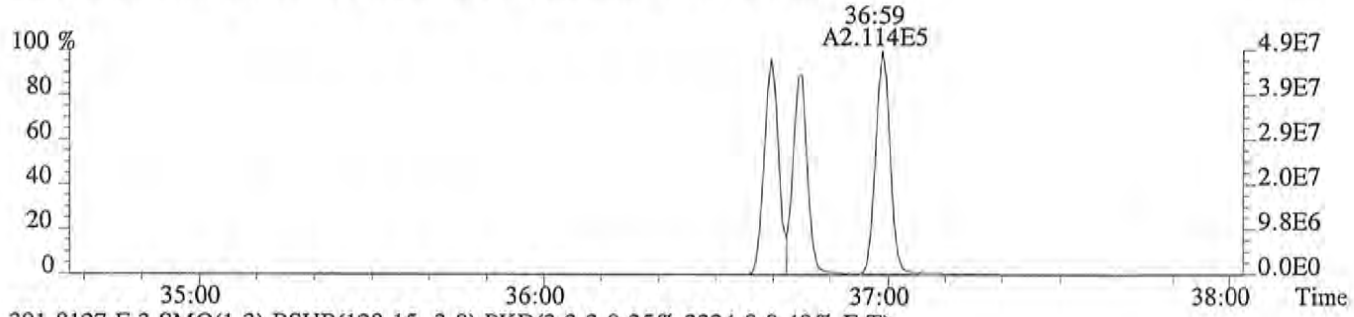
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



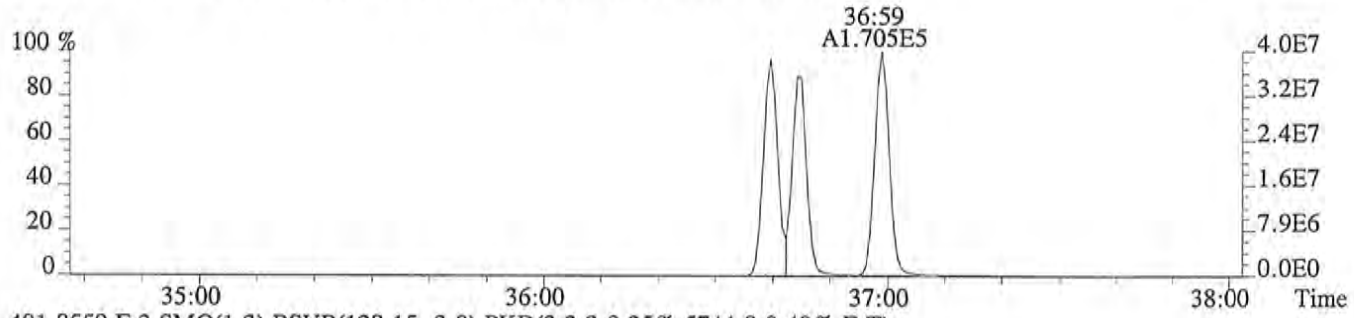
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



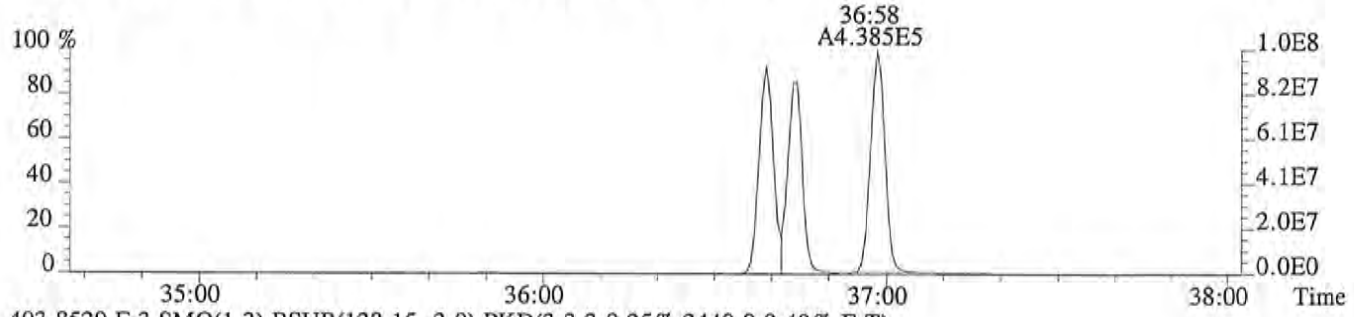
File:P600939 #1-308 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3044.0,0.40%,F,T)



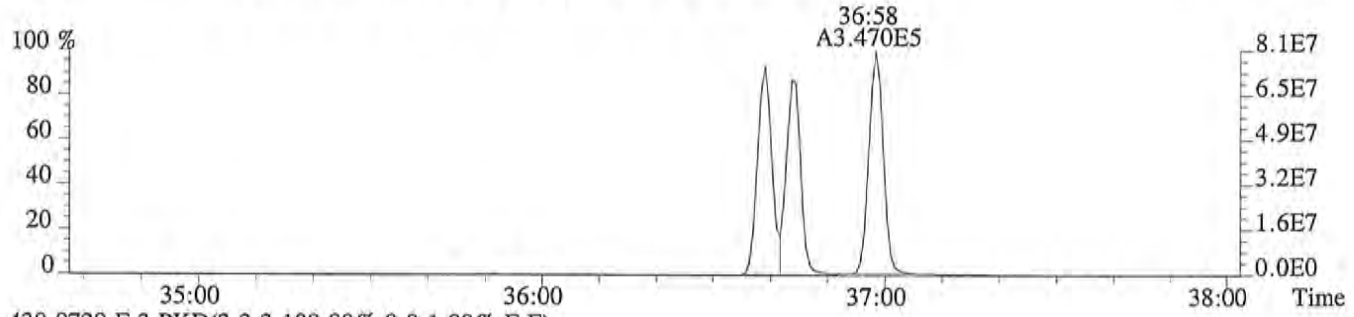
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2324.0,0.40%,F,T)



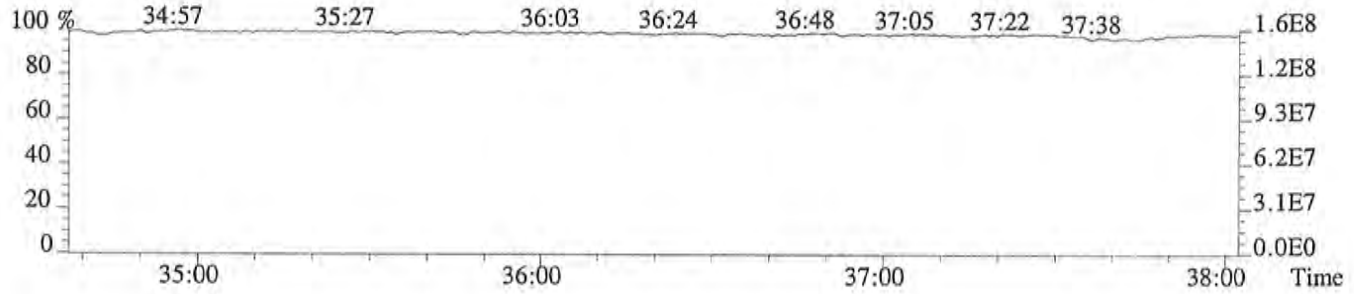
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5744.0,0.40%,F,T)



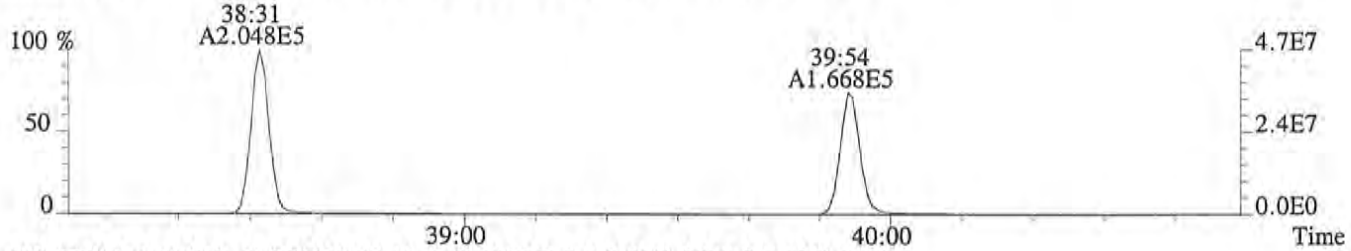
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3440.0,0.40%,F,T)



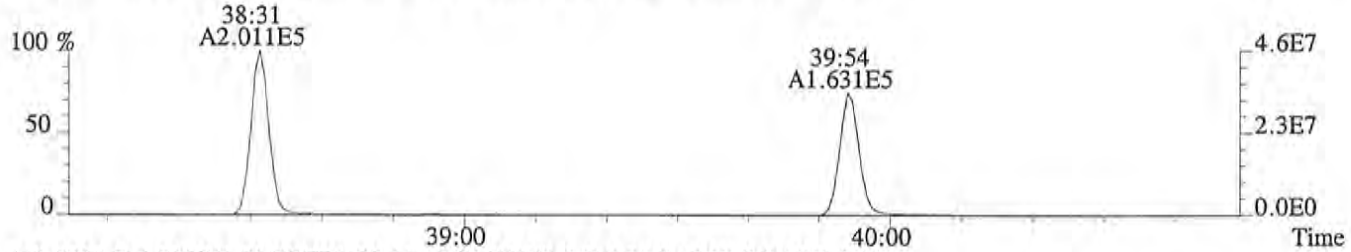
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



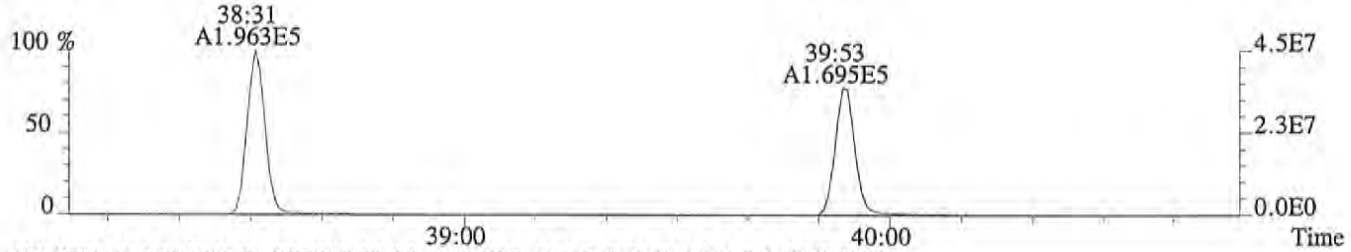
File:P600939 #1-248 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3576.0,0.50%,F,T)



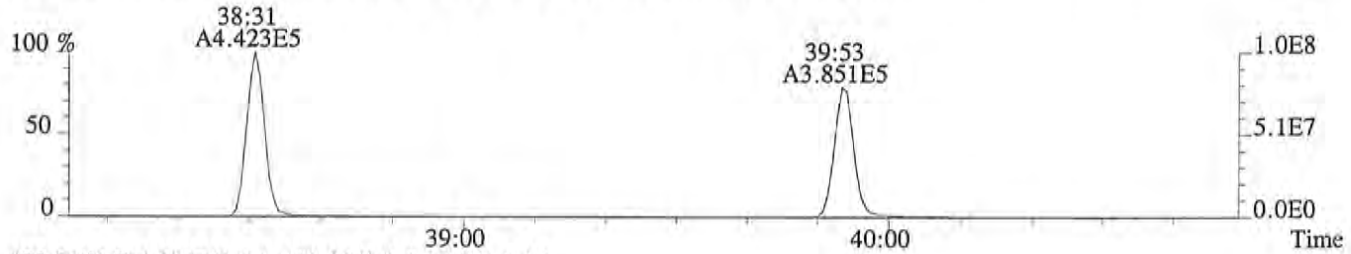
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9208.0,0.50%,F,T)



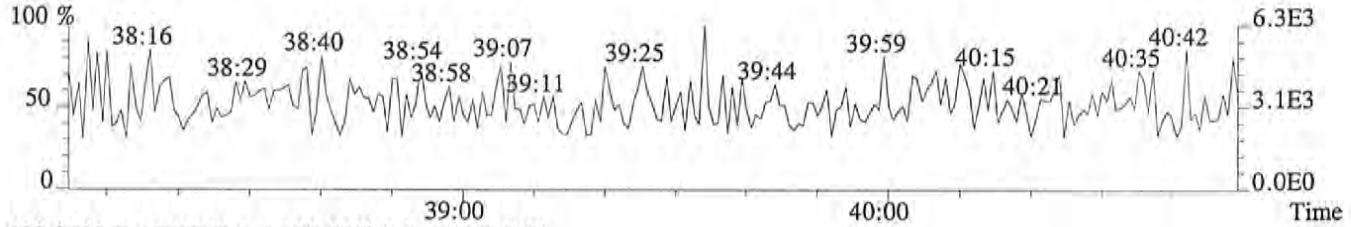
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6368.0,0.50%,F,T)



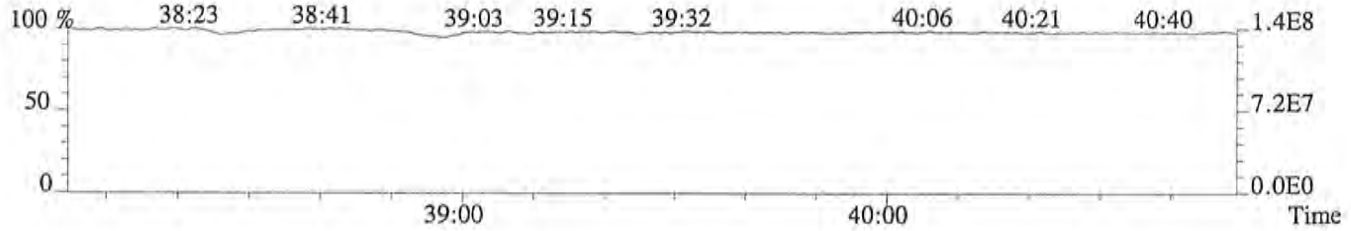
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4644.0,0.50%,F,T)



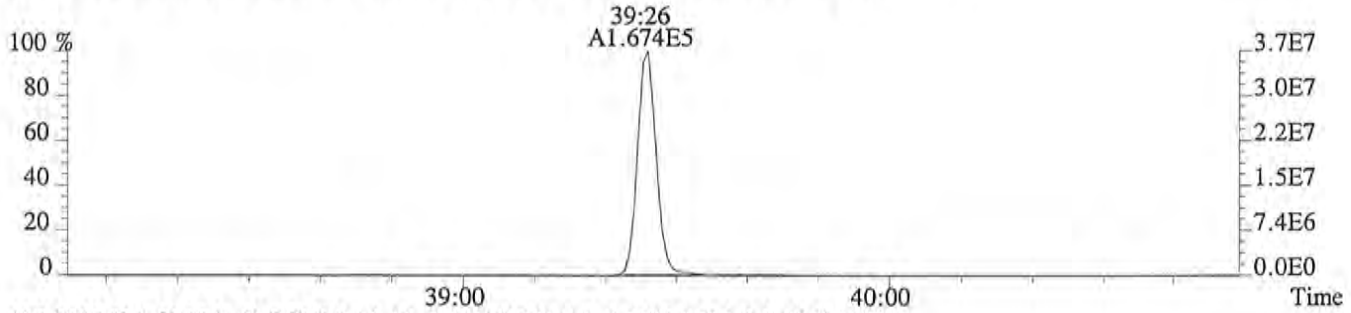
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



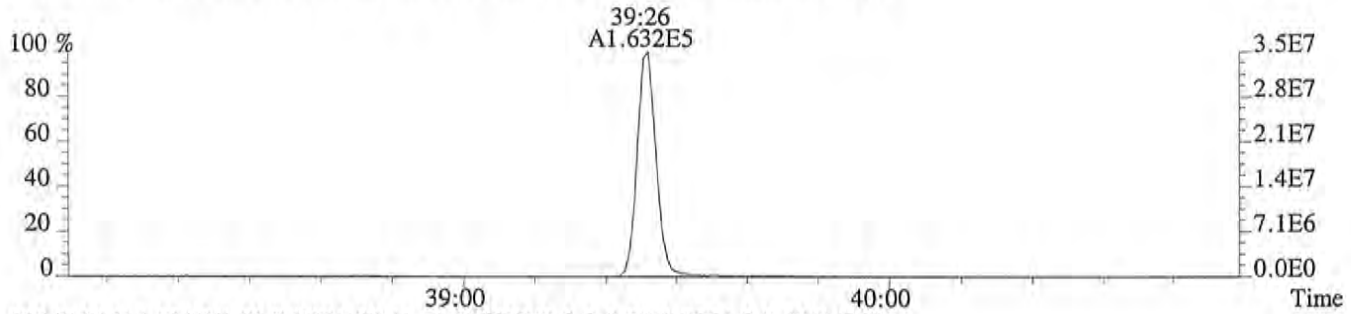
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



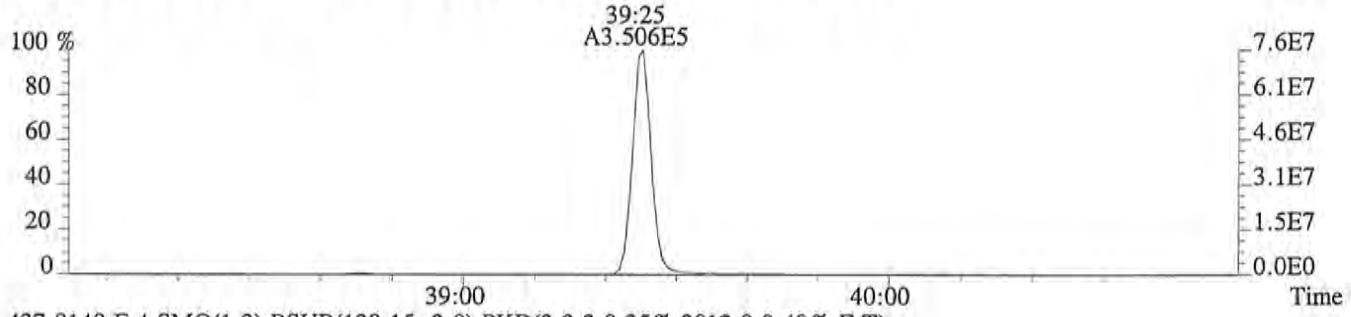
File:P600939 #1-248 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1936.0,0.40%,F,T)



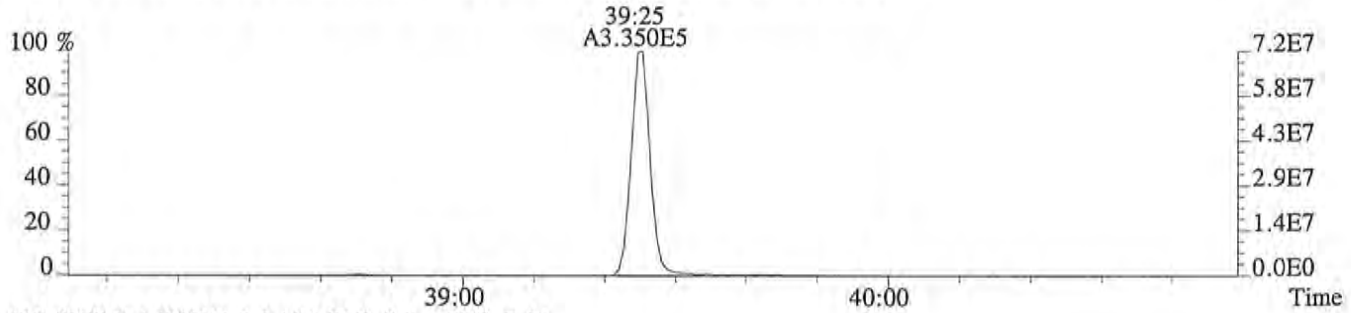
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2536.0,0.40%,F,T)



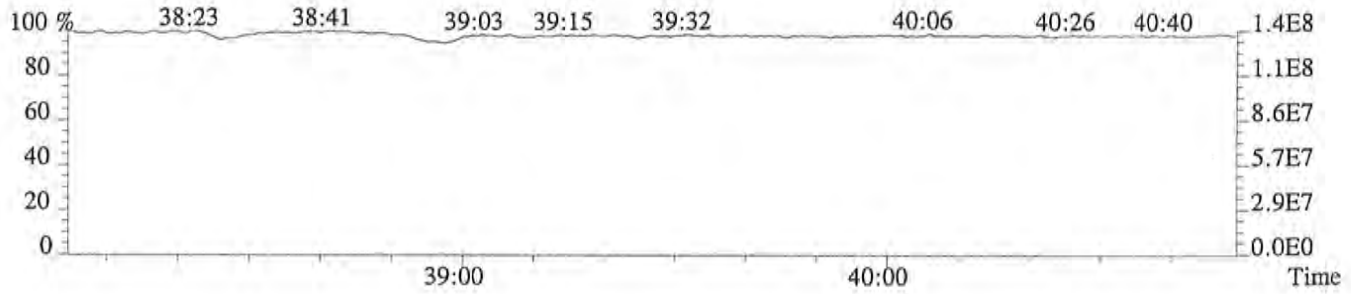
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2264.0,0.40%,F,T)



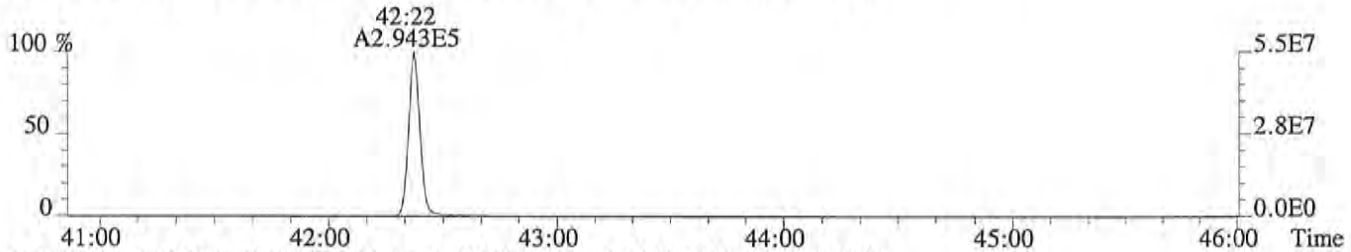
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3012.0,0.40%,F,T)



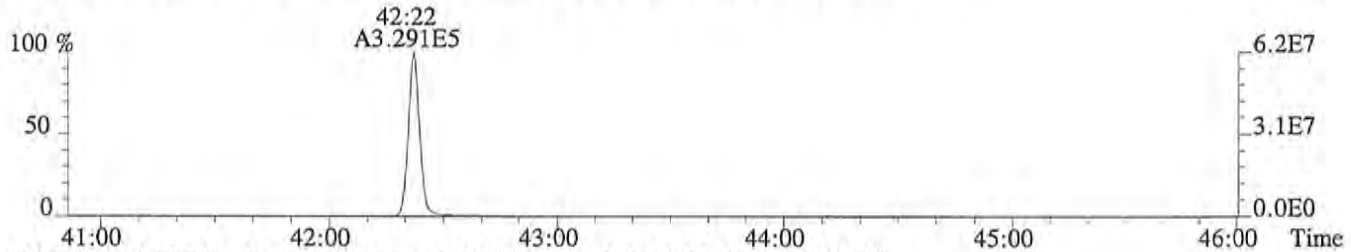
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



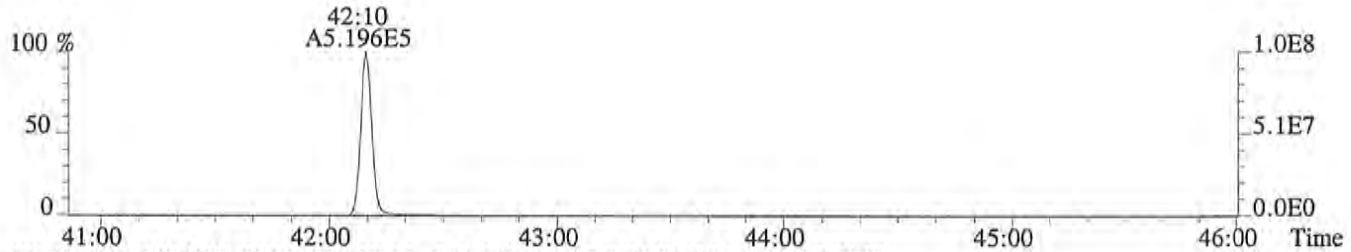
File:P600939 #1-464 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1196.0,0.40%,F,T)



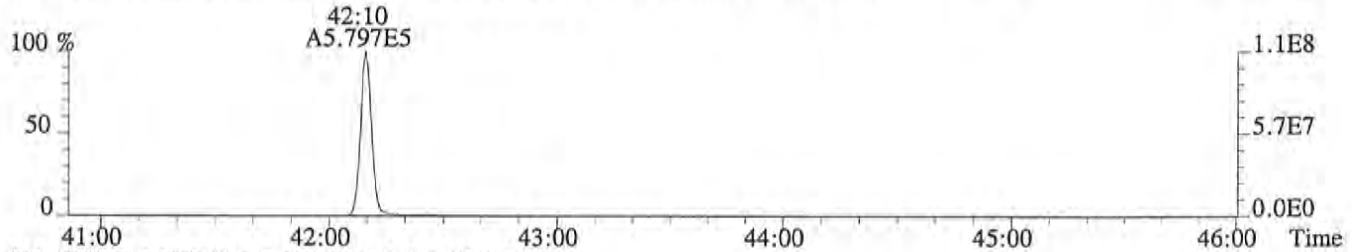
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1728.0,0.40%,F,T)



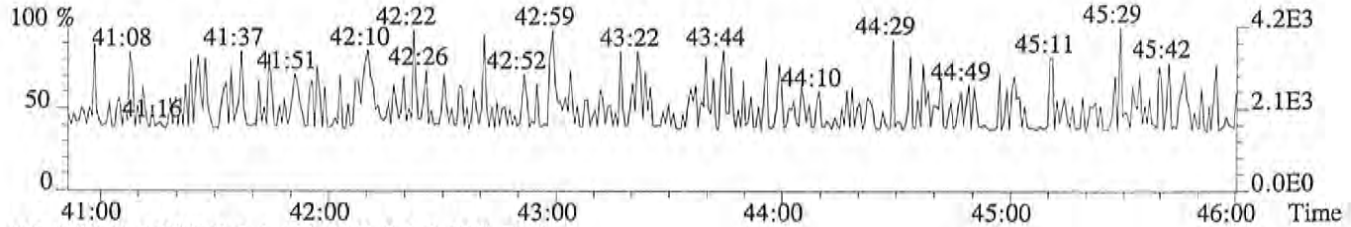
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2760.0,0.40%,F,T)



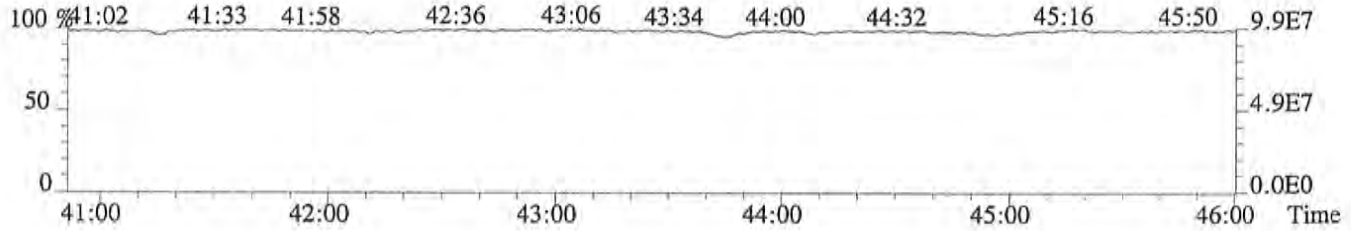
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2284.0,0.40%,F,T)



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

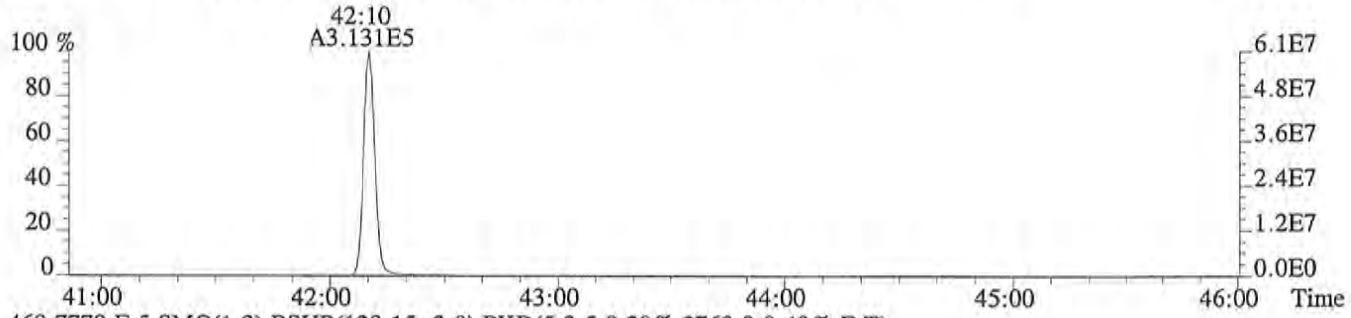


442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



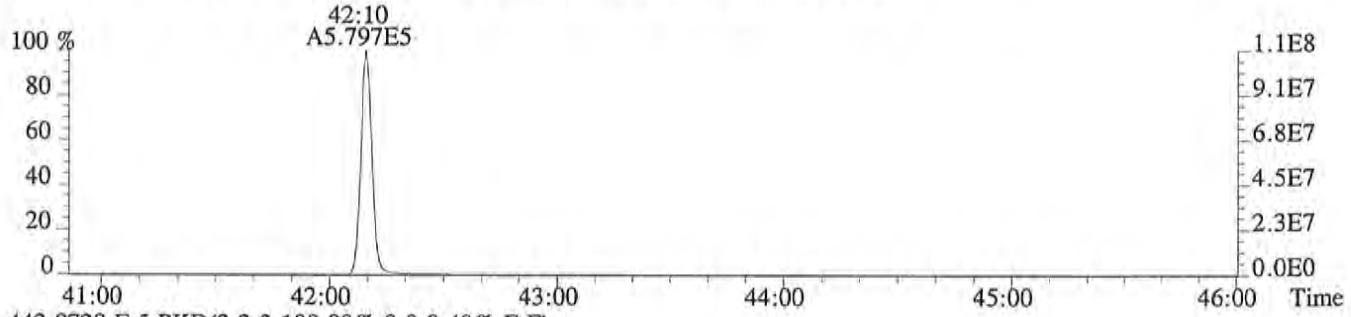
File:P600939 #1-464 Acq:13-OCT-2015 12:29:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1400.0,0.40%,F,T)

459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1692.0,0.40%,F,T)

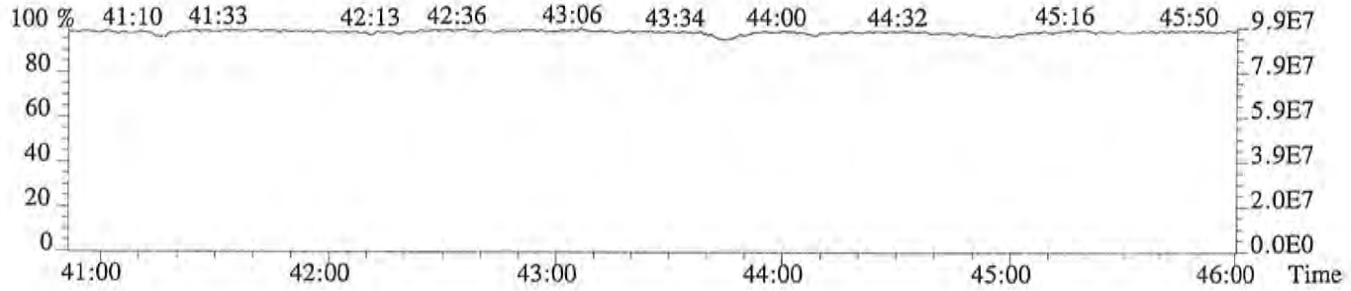


469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2760.0,0.40%,F,T)

471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2284.0,0.40%,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: P600954

Date: 10/14/15

Circle one: Beginning / Ending

Method: 1613 / 1613E / 8290/ VCP / Tetra / TCDD Only / TCDF Conf / VCP Conf / 8280 / M23 / TO-9A

Retention Window/Column Performance Check:	Analyst	Second Check
Windows in and first and last eluters labeled	✓	✓
Column Performance shows less than or equal to 25% valley between column specific 2378 isomer and its closest eluters	✓	✓
No QC ion deflections affect column specific 2378 isomer or its closest eluters (HRMS Only)	✓	✓

CS3 Continuing Calibration	Analyst	Second Check
Percent RSD within method criteria	✓	✓
All relative abundance ratios meet method criteria	✓	✓
No QC ion deflections of greater than 20% (HRMS Only)	✓	✓
Mass spectrometer resolution greater than or equal to 10,000 and documented (HRMS Only)	✓	✓
2378-TCDD elutes at 25 minutes or later on the DB-5 column / DB-5MSUI column	✓	✓
Signal-to-noise of all target analytes and their labeled standards at least 10:1	✓	✓
Valley between labeled 123478 and 123678 HxCDD peaks less than or equal to 50% (LRMS Only)	N/A	N/A
Ending Calibration injected prior to end of 12 hour clock	N/A	N/A

Analyst: _____ Second QC: _____

ccalqc.xls 07/17/12

E1500972

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name: ALS ENVIRONMENTAL Contract:

Lab Code: Case No.: Client No.: SDG No.:

GC Column: DB-5MSUI ID: 0.25 (mm)

Init. Calib. Date: 08/19/15

Init. Calib.Times: 10:52

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
84084	WINDOW DEFINE	P600956	14-OCT-15	03:46:09
84080	CS3	P600954	14-OCT-15	02:09:16
METHOD BLANK	EQ1500557-01	P600957	14-OCT-15	04:35:14
AQUEOUS MDL STUDY-╗	E1501001-001	P600958	14-OCT-15	05:24:19
AQUEOUS MDL STUDY-╗	E1501001-002	P600959	14-OCT-15	06:13:20
AQUEOUS MDL STUDY-╗	E1501001-003	P600960	14-OCT-15	07:02:25
AQUEOUS MDL STUDY-╗	E1501001-004	P600961	14-OCT-15	07:51:30
AQUEOUS MDL STUDY-╗	E1501001-005	P600962	14-OCT-15	08:40:31
AQUEOUS MDL STUDY-╗	E1501001-006	P600963	14-OCT-15	09:29:37
AQUEOUS MDL STUDY-╗	E1501001-007	P600964	14-OCT-15	10:18:38
AQUEOUS MDL STUDY-╗	E1501001-008	P600965	14-OCT-15	11:07:38
LCS	EQ1500602-02	P600966	14-OCT-15	11:56:44
DLCS	EQ1500602-03	P600967	14-OCT-15	12:45:45

E1500972

Sample List Report MassLynx 4.1 SCN815 SCN795

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20151013B.SPL
Last Modified: Wednesday, October 14, 2015 16:05:02 Eastern Daylight Time
Printed: Wednesday, October 14, 2015 16:05:12 Eastern Daylight Time

Page Position (1, 1)

Opus4(e) P600954res

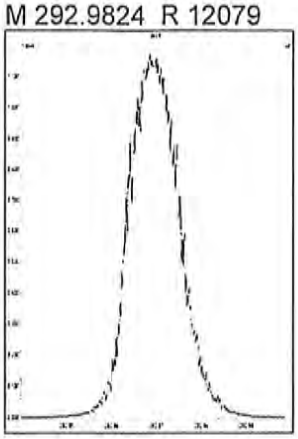
	Date	Time	File Name	Lab Sample ID	Client File Text	Bottle	MS File	Inlet File	Analyst	Comments
1	10/14/15	02:09	P600954	84080	CS3	Tray1:1	EPA1613_ALS	Dioxin_ALS	LL	HRMS check 02:09
2		02:57	P600955	84084	WD	Tray1:2	EPA1613_ALS	Dioxin_ALS		
3		03:46	P600956	84084	WD	Tray1:3	EPA1613_ALS	Dioxin_ALS		
4		04:35	P600957	EQ1500557-01	MB	Tray1:4	EPA1613_ALS	Dioxin_ALS		
5		05:24	P600958	E1501001-001	E1501001-001	Tray1:5	EPA1613_ALS	Dioxin_ALS		
6		06:13	P600959	E1501001-002	E1501001-002	Tray1:6	EPA1613_ALS	Dioxin_ALS		
7		07:02	P600960	E1501001-003	E1501001-003	Tray1:7	EPA1613_ALS	Dioxin_ALS		
8		07:51	P600961	E1501001-004	E1501001-004	Tray1:8	EPA1613_ALS	Dioxin_ALS		
9		08:40	P600962	E1501001-005	E1501001-005	Tray1:9	EPA1613_ALS	Dioxin_ALS		
10		09:29	P600963	E1501001-006	E1501001-006	Tray1:10	EPA1613_ALS	Dioxin_ALS		
11		10:18	P600964	E1501001-007	E1501001-007	Tray1:11	EPA1613_ALS	Dioxin_ALS		
12		11:07	P600965	E1501001-008	E1501001-008	Tray1:12	EPA1613_ALS	Dioxin_ALS		
13		11:56	P600966	EQ1500602-02	EQ1500602-02	Tray1:13	EPA1613_ALS	Dioxin_ALS		
14		12:45	P600967	EQ1500602-03	EQ1500602-03	Tray1:14	EPA1613_ALS	Dioxin_ALS		HRMS Check 13:42
15			---	---	---	Tray1:15	EPA1613_ALS	Dioxin_ALS		
16			---	---	---	Tray1:16	EPA1613_ALS	Dioxin_ALS		
17			---	---	---	Tray1:17	EPA1613_ALS	Dioxin_ALS		
18			---	---	---	Tray1:18	EPA1613_ALS	Dioxin_ALS		
19			---	---	---	Tray1:19	EPA1613_ALS	Dioxin_ALS		
20			---	---	---	Tray1:20	EPA1613_ALS	Dioxin_ALS		
21			---	---	---	Tray1:21	EPA1613_ALS	Dioxin_ALS		
22			---	---	---	Tray1:22	EPA1613_ALS	Dioxin_ALS		
23			---	---	---	Tray1:23	EPA1613_ALS	Dioxin_ALS		
24			---	---	---	Tray1:24	EPA1613_ALS	Dioxin_ALS		
25			---	---	---	Tray1:25	EPA1613_ALS	Dioxin_ALS		
26	---	---	---	---	---	Tray1:26	EPA1613_ALS	Dioxin_ALS	---	---
27	---	---	---	---	---	Tray1:27	EPA1613_ALS	Dioxin_ALS	---	---
28	---	---	---	---	---	Tray1:28	EPA1613_ALS	Dioxin_ALS	---	---
29	---	---	---	---	---	Tray1:29	EPA1613_ALS	Dioxin_ALS	---	---
30	---	---	---	---	---	Tray1:30	EPA1613_ALS	Dioxin_ALS	---	---
31	---	---	---	---	---	Tray1:31	EPA1613_ALS	Dioxin_ALS	---	---
32	---	---	---	---	---	Tray1:32	EPA1613_ALS	Dioxin_ALS	---	---
33	---	---	---	---	---	Tray1:33	EPA1613_ALS	Dioxin_ALS	---	---
34	---	---	---	---	---	Tray1:34	EPA1613_ALS	Dioxin_ALS	---	---
35	---	---	---	---	---	Tray1:35	EPA1613_ALS	Dioxin_ALS	---	---
36	---	---	---	---	---	Tray1:36	EPA1613_ALS	Dioxin_ALS	---	---
37	---	---	---	---	---	Tray1:37	EPA1613_ALS	Dioxin_ALS	---	---
38	---	---	---	---	---	Tray1:38	EPA1613_ALS	Dioxin_ALS	---	---
39	---	---	---	---	---	Tray1:39	EPA1613_ALS	Dioxin_ALS	---	---

JC 10/21/15

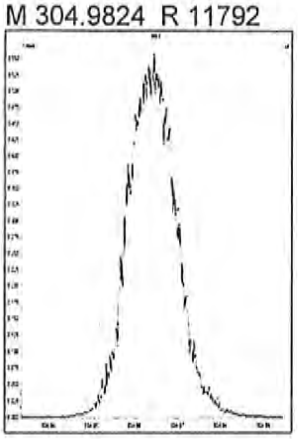
077

Printed: Wednesday, October 14, 2015 02:09:14 Eastern Daylight Time

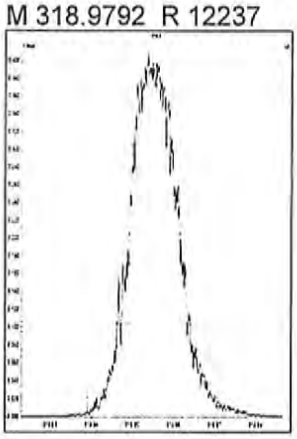
M 292.9824 R 12079



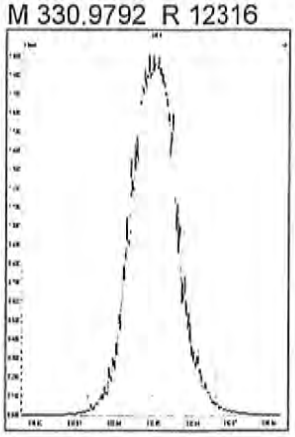
M 304.9824 R 11792



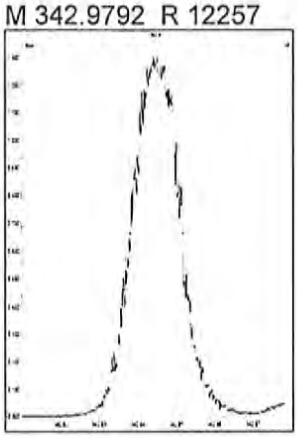
M 318.9792 R 12237



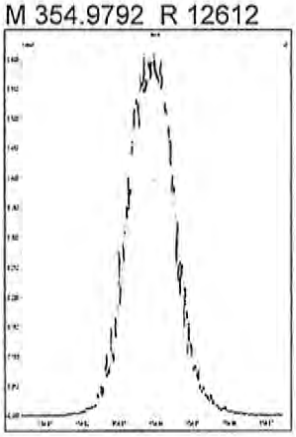
M 330.9792 R 12316



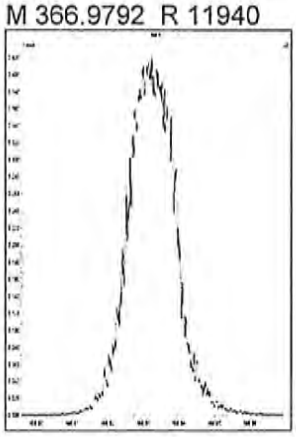
M 342.9792 R 12257



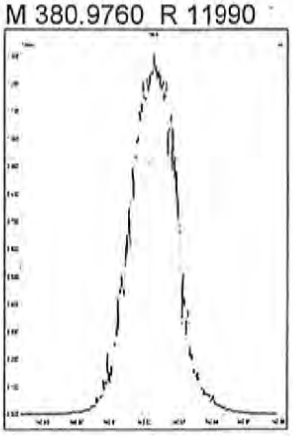
M 354.9792 R 12612



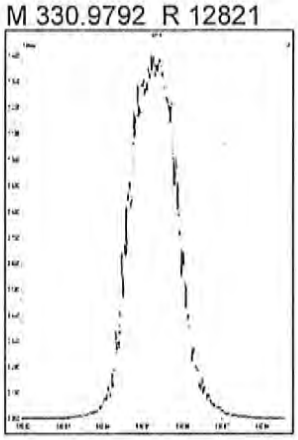
M 366.9792 R 11940



M 380.9760 R 11990



M 330.9792 R 12821



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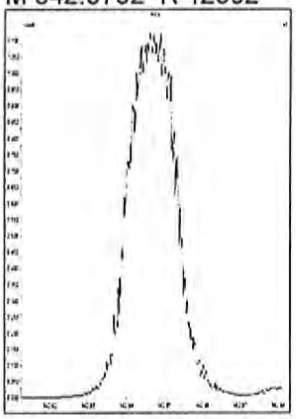
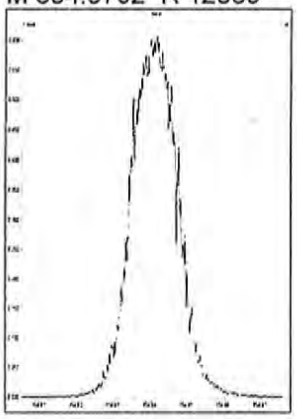


M 354.9792 R 12889



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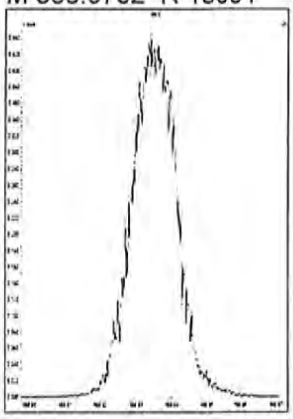
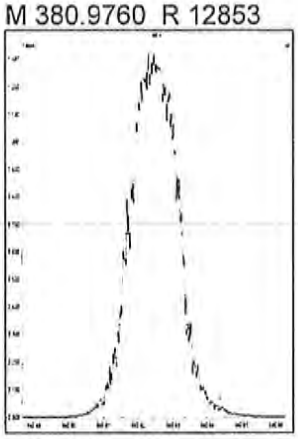


M 380.9760 R 12853



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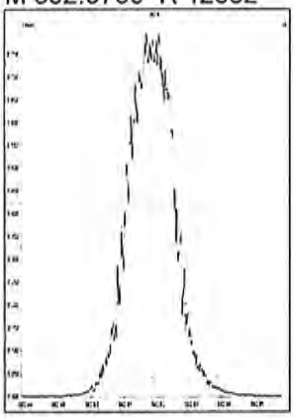
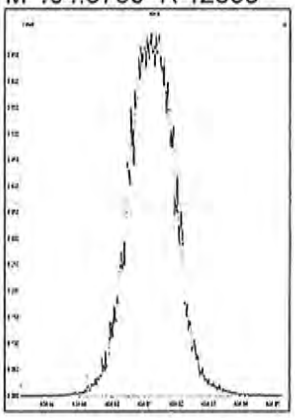
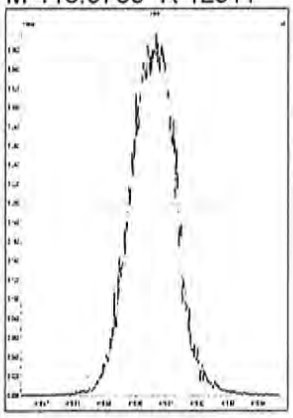


M 404.9760 R 12853



M 416.9760 R 12611



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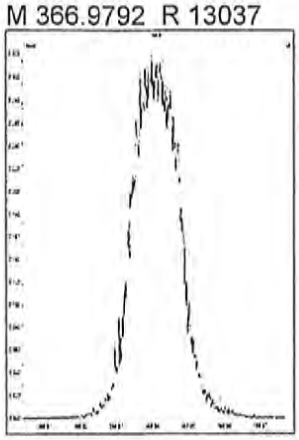
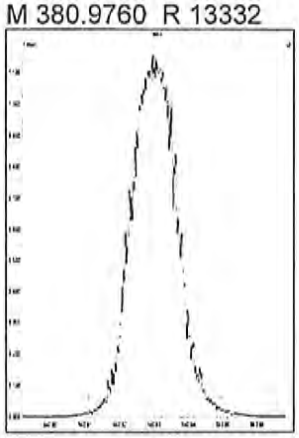
M 366.9792 R 13037



M 380.9760 R 13332



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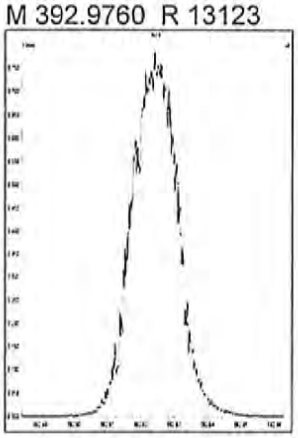

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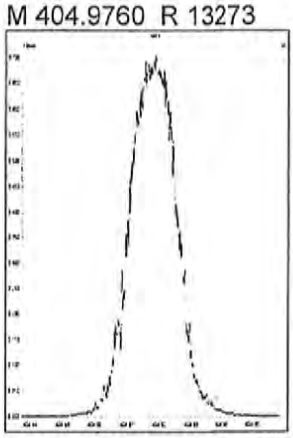
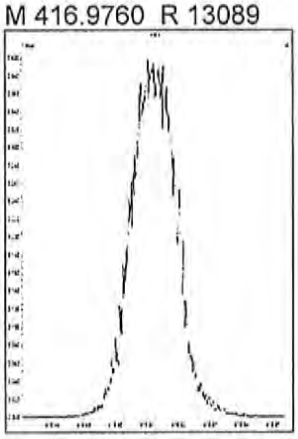
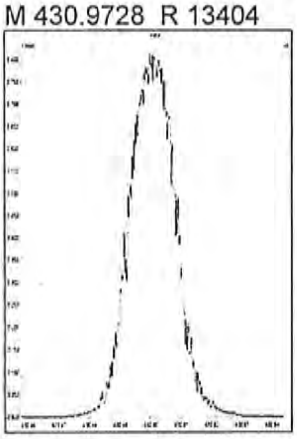


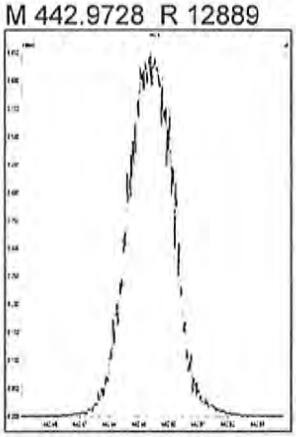
M 416.9760 R 13089



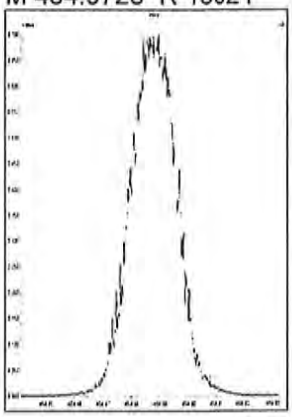
M 430.9728 R 13404



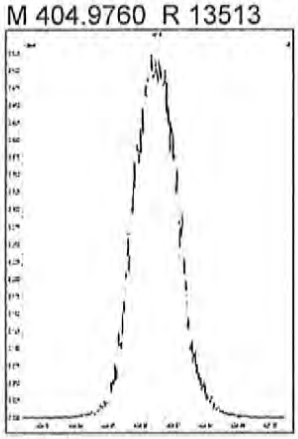
M 442.9728 R 12889



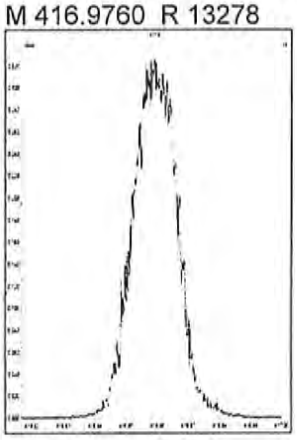
M 454.9728 R 13021



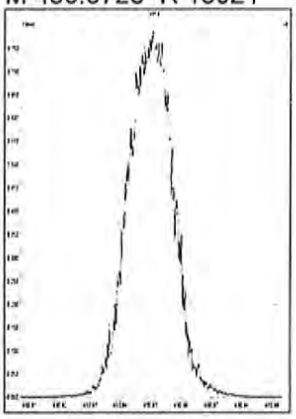
M 404.9760 R 13513



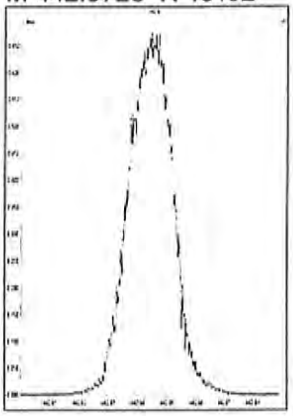
M 416.9760 R 13278



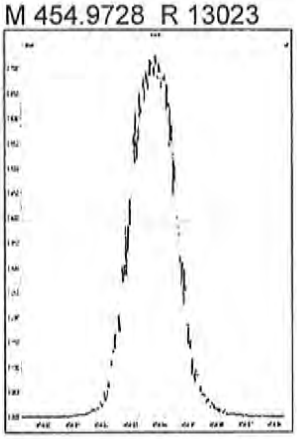
M 430.9728 R 13021



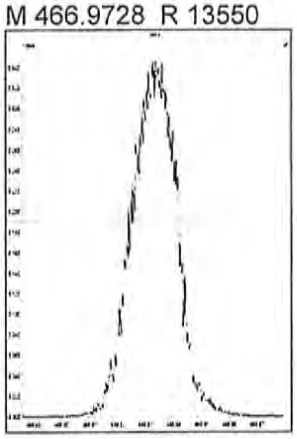
M 442.9728 R 13192



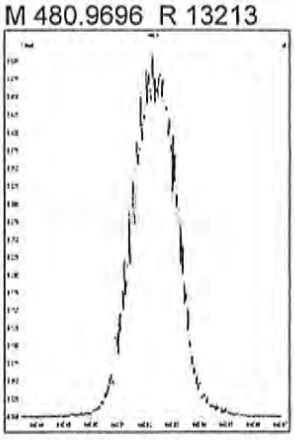
M 454.9728 R 13023



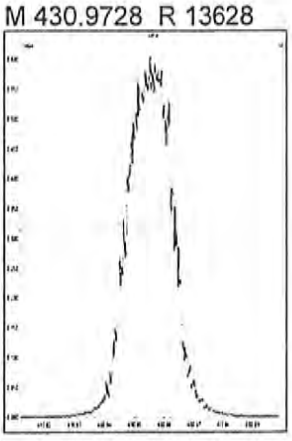
M 466.9728 R 13550



M 480.9696 R 13213



M 430.9728 R 13628



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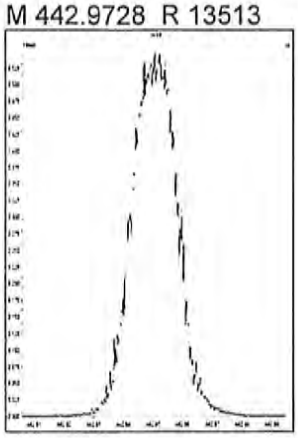
M 442.9728 R 13513



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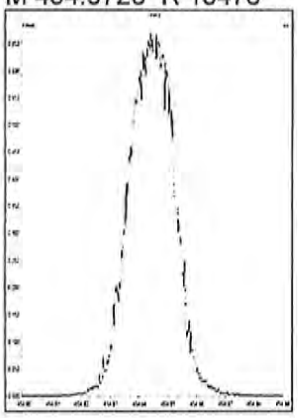
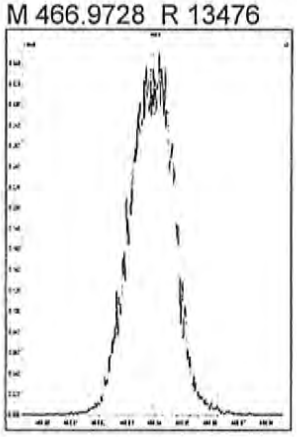
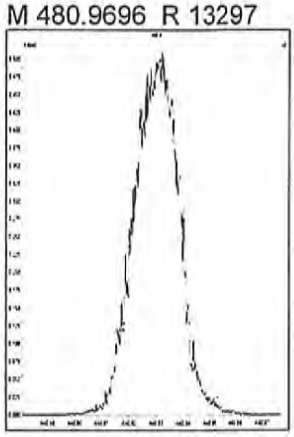


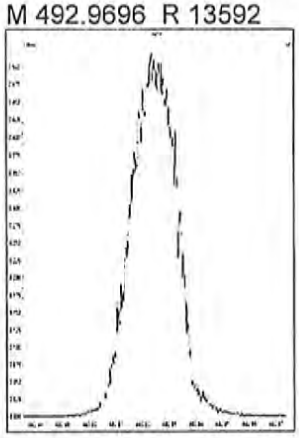
M 466.9728 R 13476



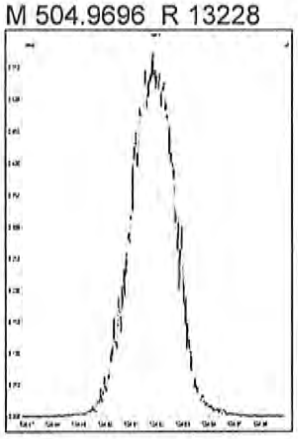
M 480.9696 R 13297



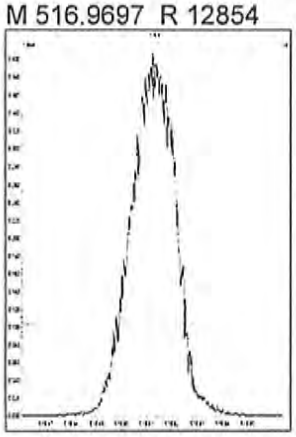
M 492.9696 R 13592



M 504.9696 R 13228



M 516.9697 R 12854



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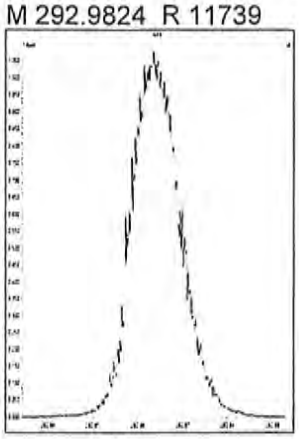
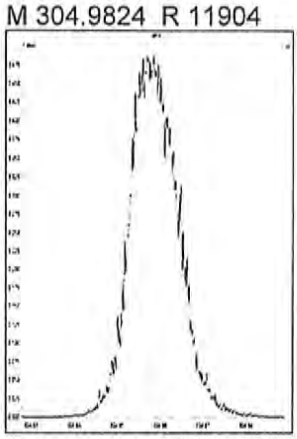
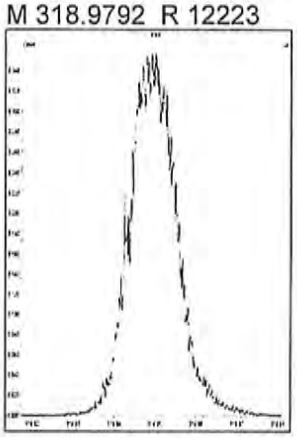


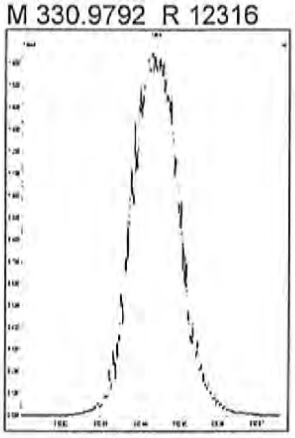
M 304.9824 R 11904



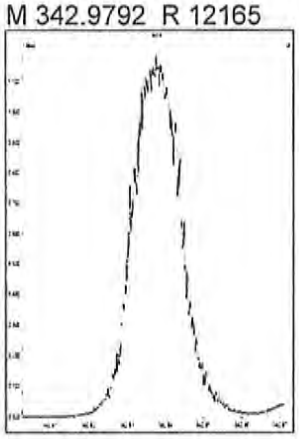
M 318.9792 R 12223



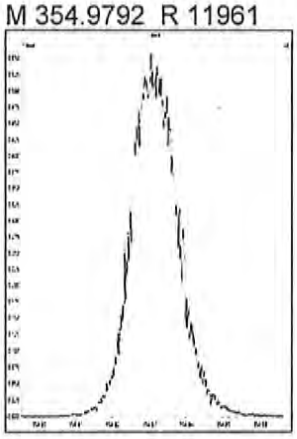
M 330.9792 R 12316



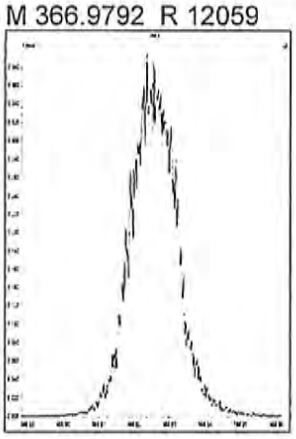
M 342.9792 R 12165



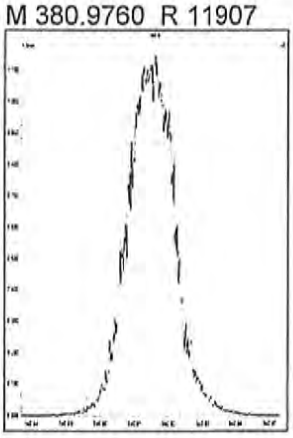
M 354.9792 R 11961



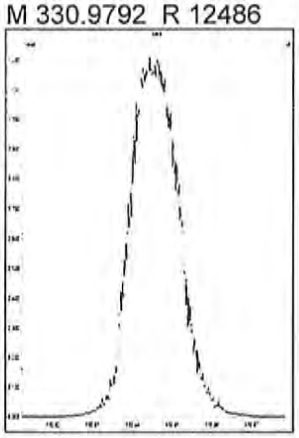
M 366.9792 R 12059



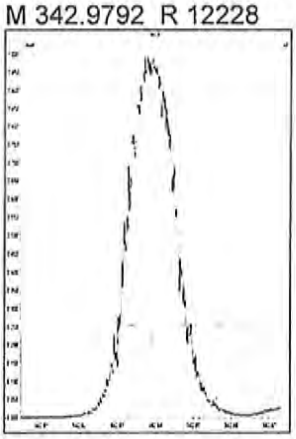
M 380.9760 R 11907



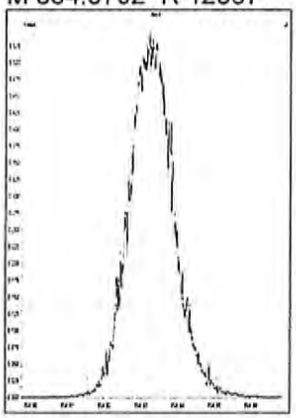
M 330.9792 R 12486



M 342.9792 R 12228



M 354.9792 R 12867



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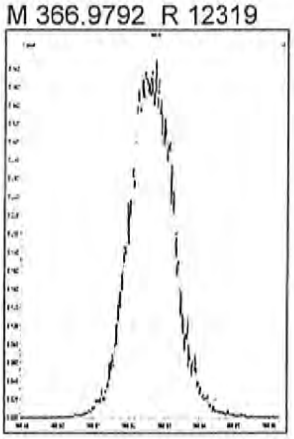
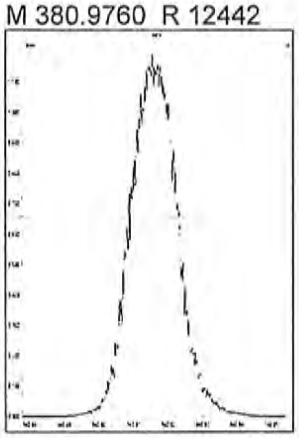
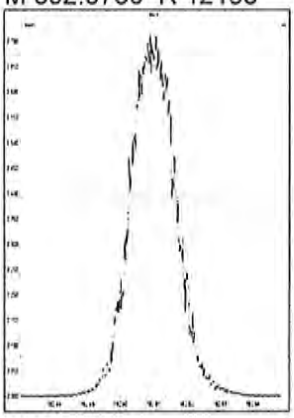


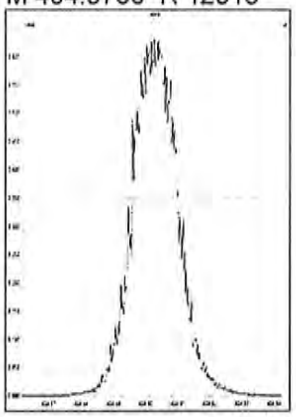
M 380.9760 R 12442



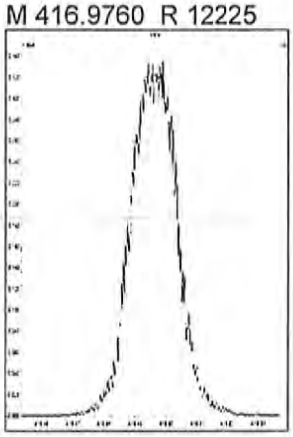
M 392.9760 R 12165



M 404.9760 R 12316



M 416.9760 R 12225



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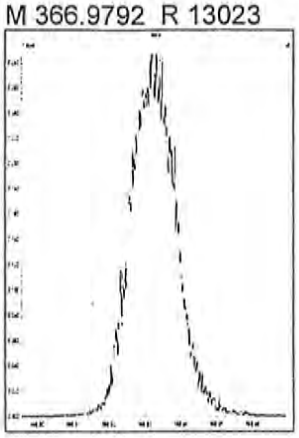
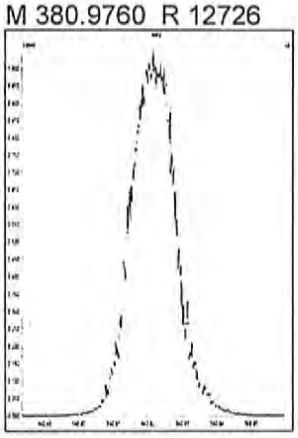
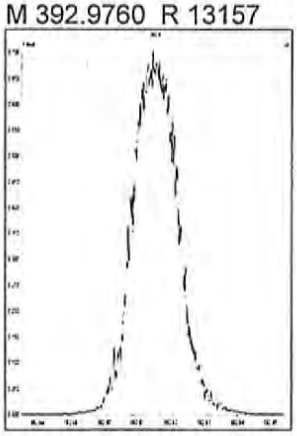
M 366.9792 R 13023



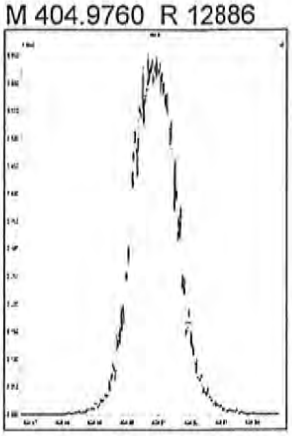
M 380.9760 R 12726



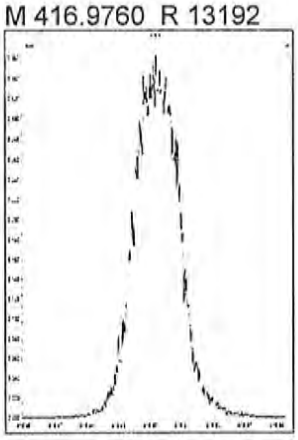
M 392.9760 R 13157



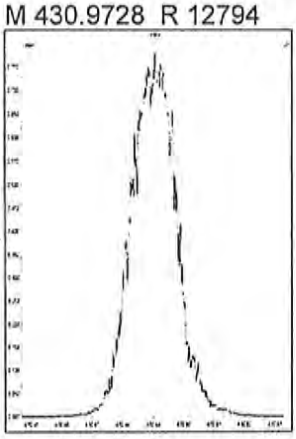
M 404.9760 R 12886



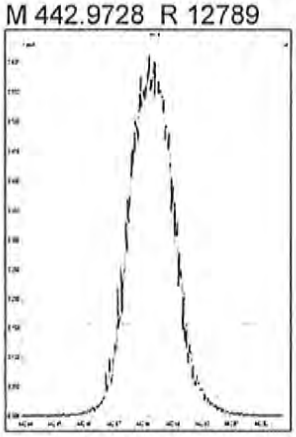
M 416.9760 R 13192



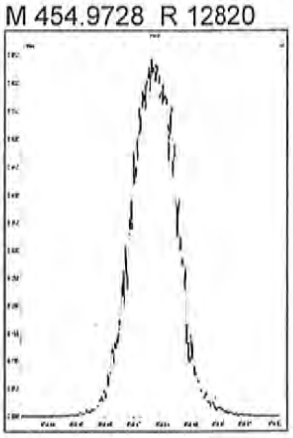
M 430.9728 R 12794



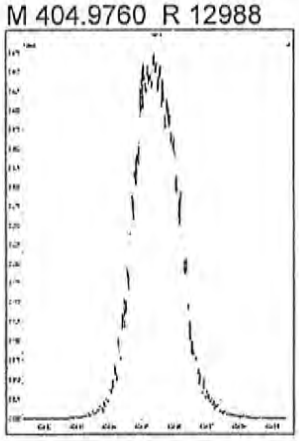
M 442.9728 R 12789



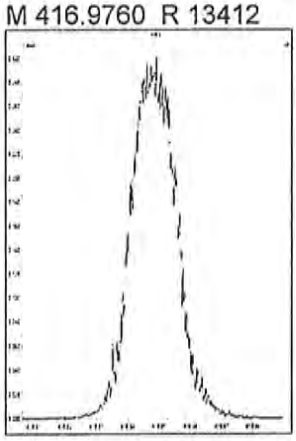
M 454.9728 R 12820



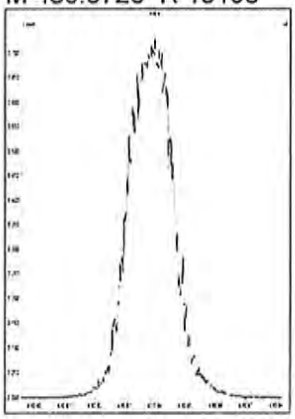
M 404.9760 R 12988



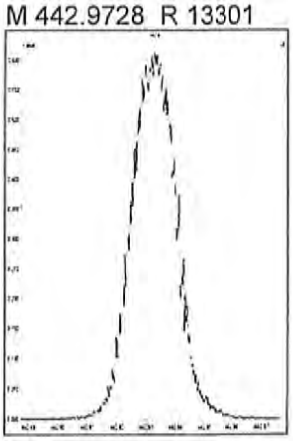
M 416.9760 R 13412



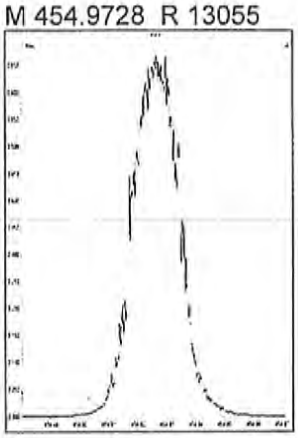
M 430.9728 R 13193



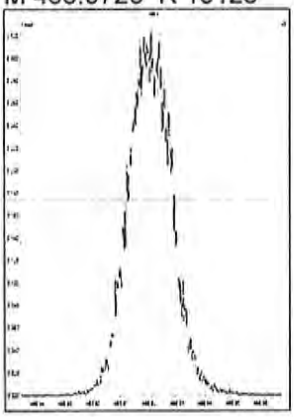
M 442.9728 R 13301



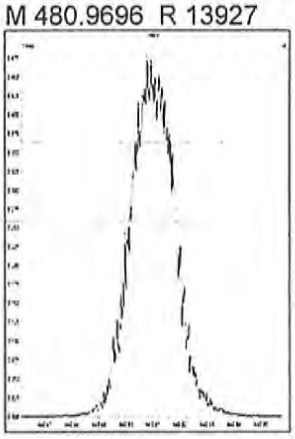
M 454.9728 R 13055



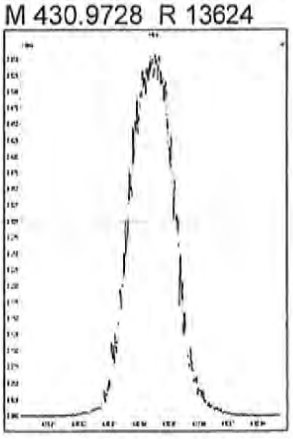
M 466.9728 R 13123



M 480.9696 R 13927

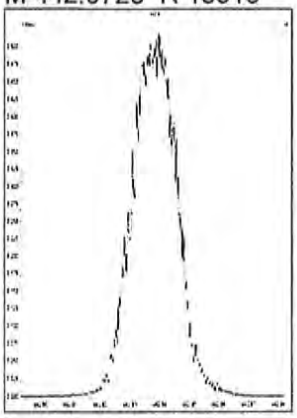


M 430.9728 R 13624

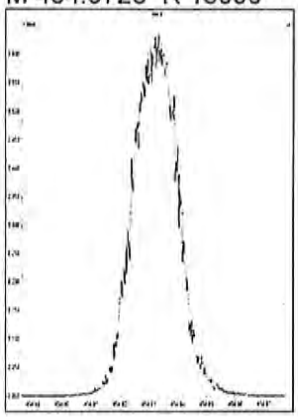


Printed: Wednesday, October 14, 2015 13:42:56 Eastern Daylight Time

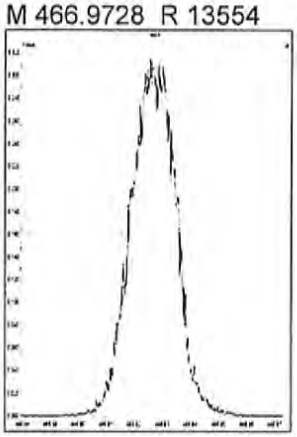
M 442.9728 R 13516



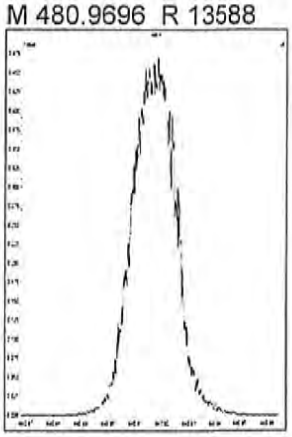
M 454.9728 R 13090



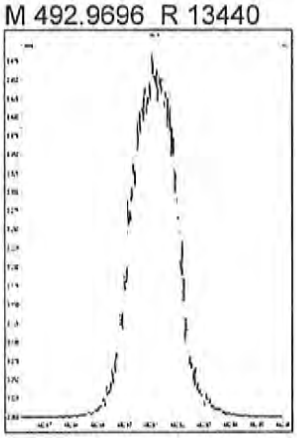
M 466.9728 R 13554



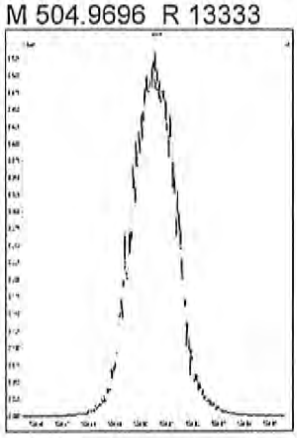
M 480.9696 R 13588



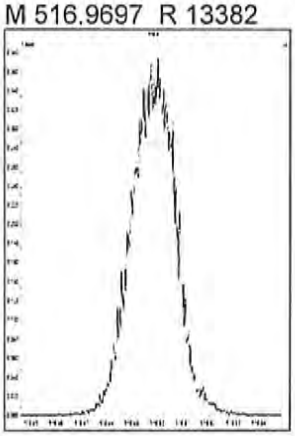
M 492.9696 R 13440



M 504.9696 R 13333



M 516.9697 R 13382



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

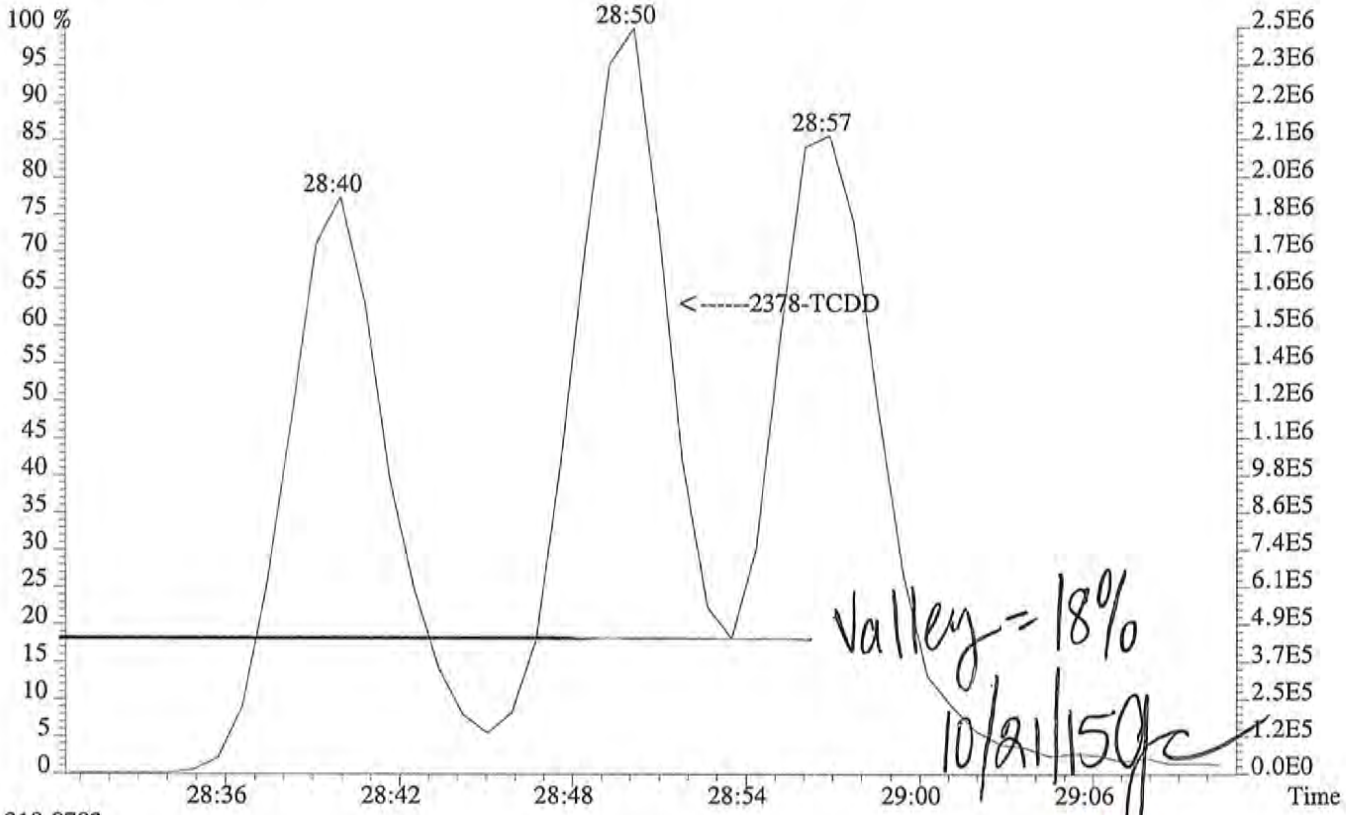
Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

Case No.: _____ SDG No.:
ID: 0.25 (mm)
Lab File ID: P600956
Date Analyzed: 14-OCT-2015
Time Analyzed: 03:46:09

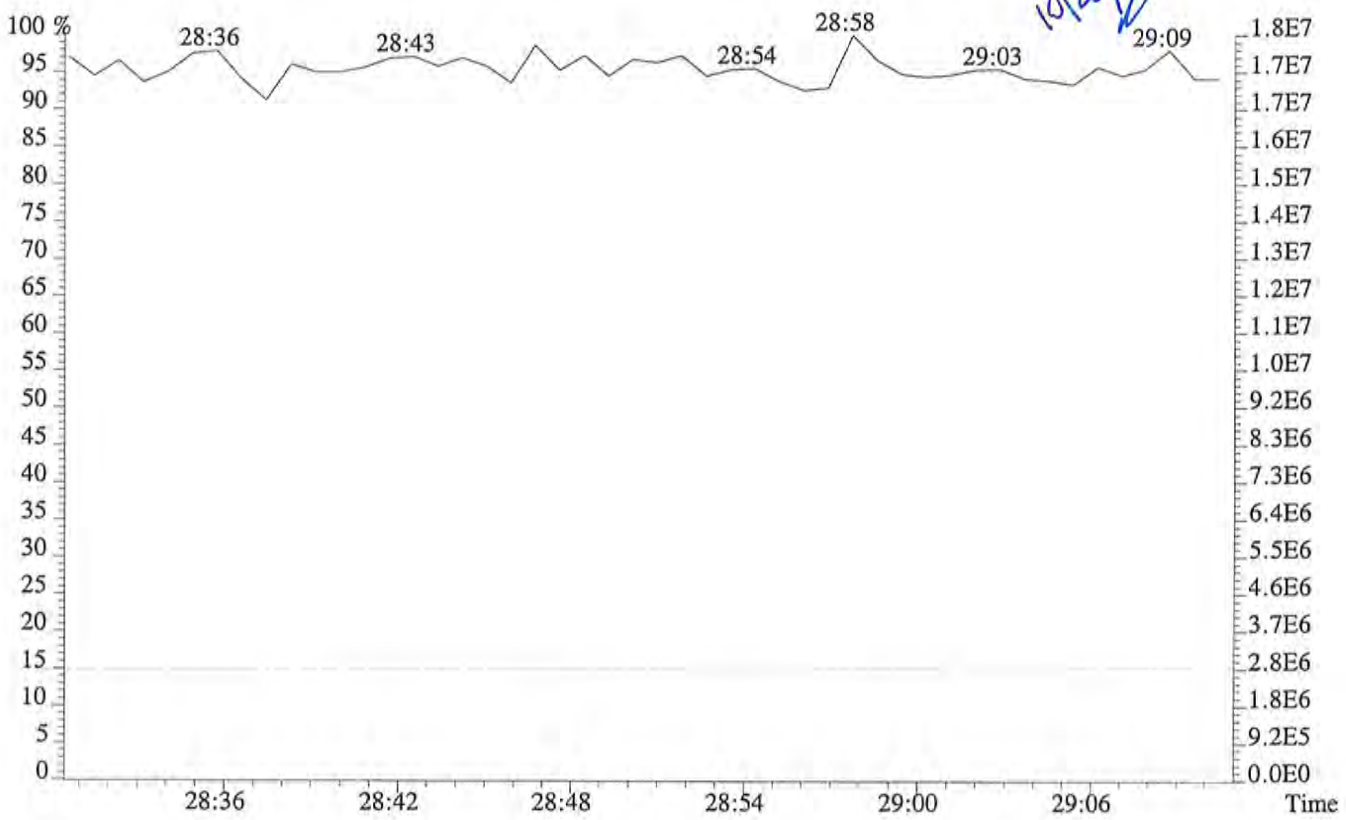
Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	23:41	29:59
TCDD	25:31	29:49
PeCDF	29:56	34:11
PeCDD	31:28	33:56
HxCDF	34:50	37:20
HxCDD	35:21	36:55
HpCDF	38:32	39:55
HpCDD	38:47	39:27

% Valley 2378-TCDD: 18 %

File:P600956 #1-562 Acq:14-OCT-2015 03:46:09 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
319.8965



318.9792



E1500972

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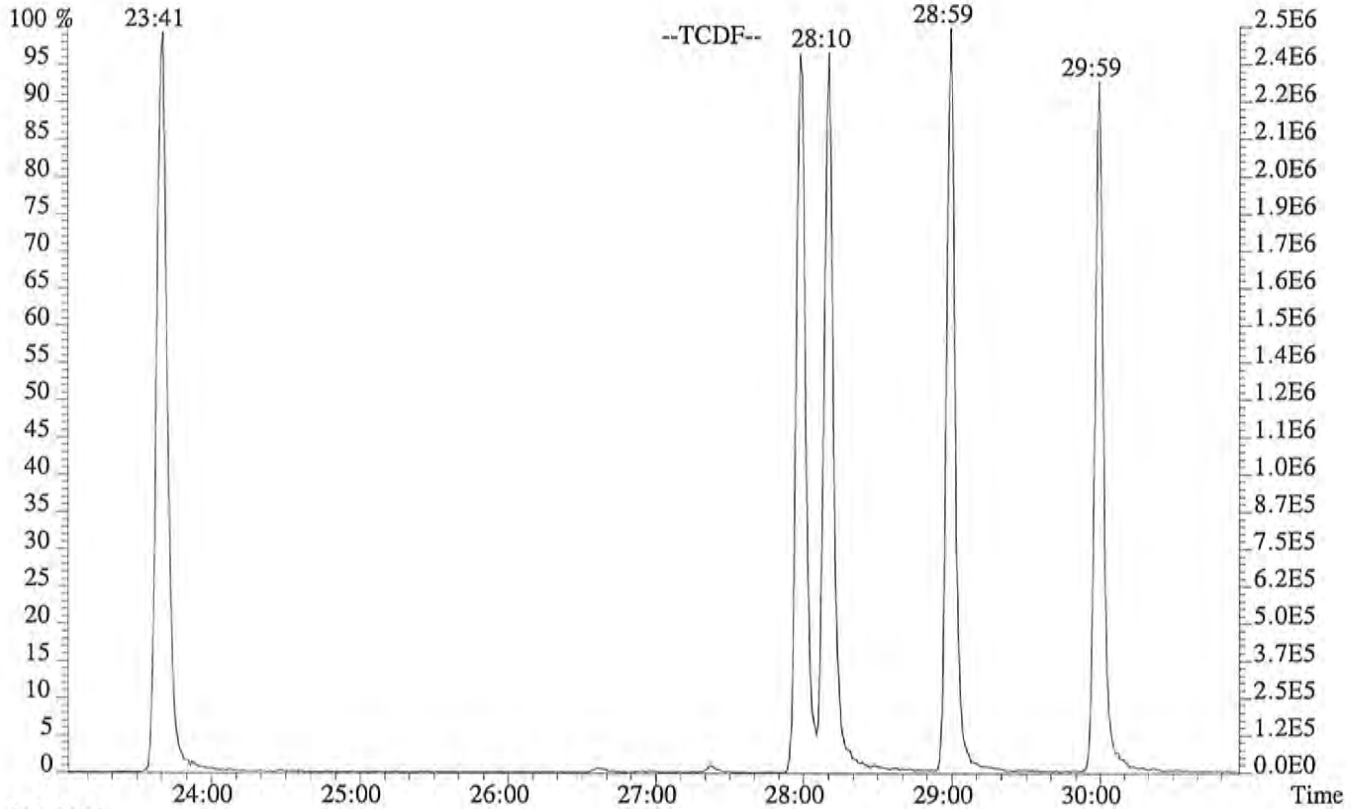
Sample#1 Exp:WD
303.9016



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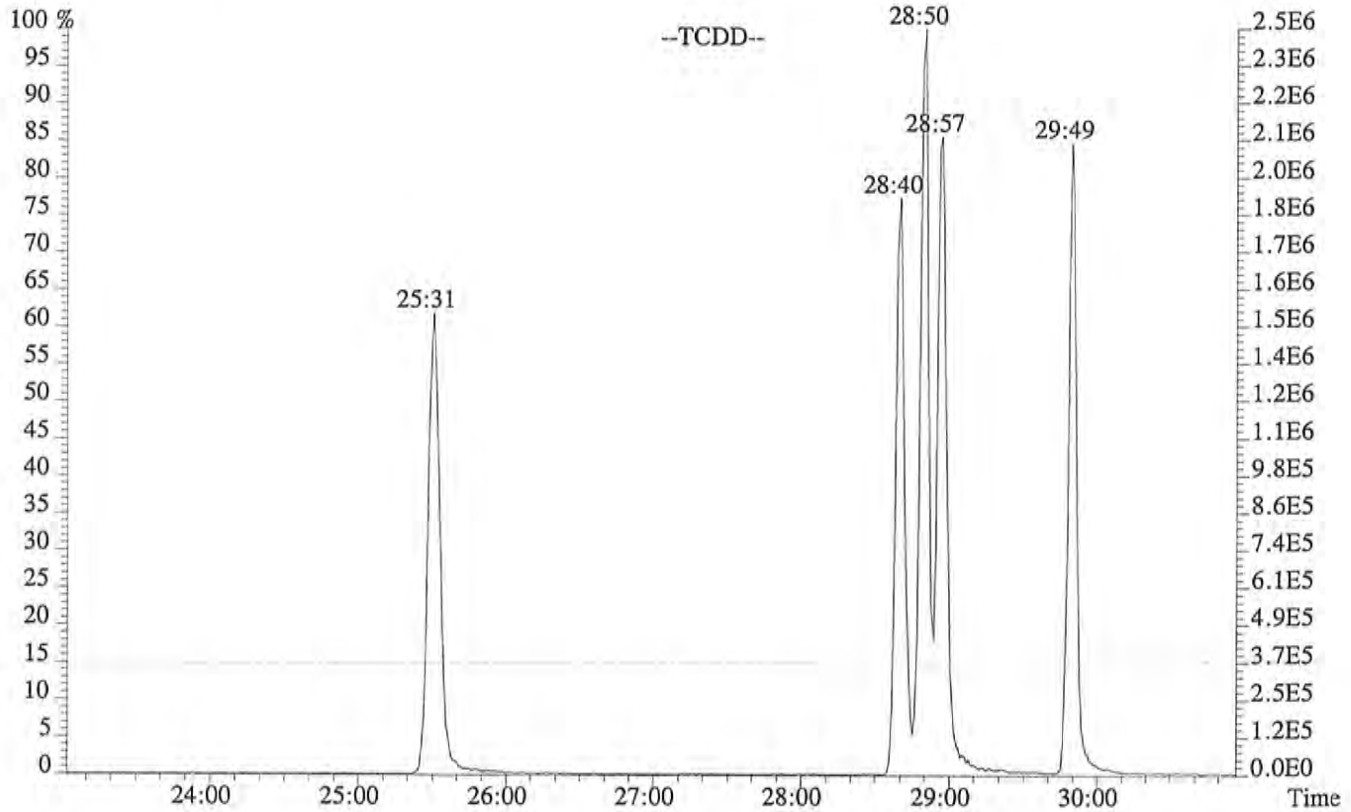

E1500972

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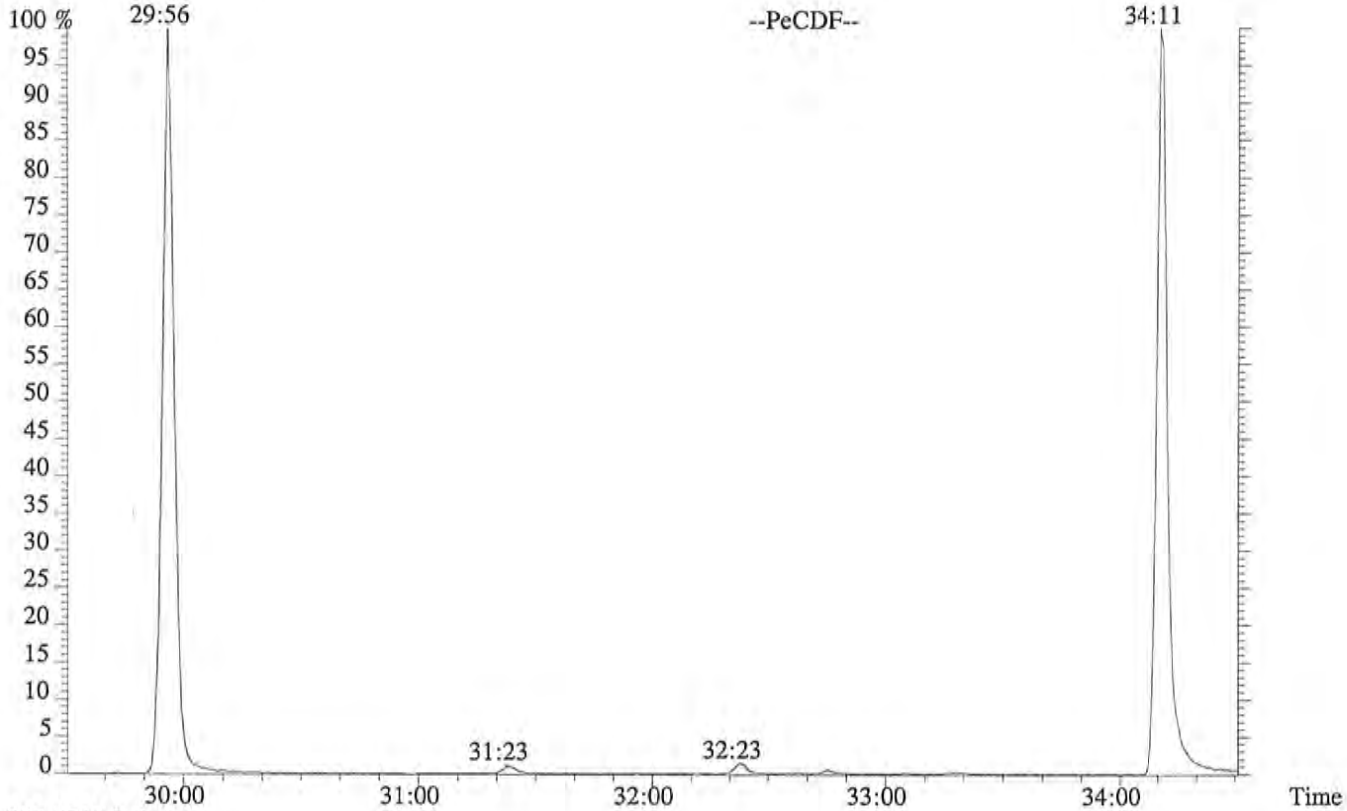
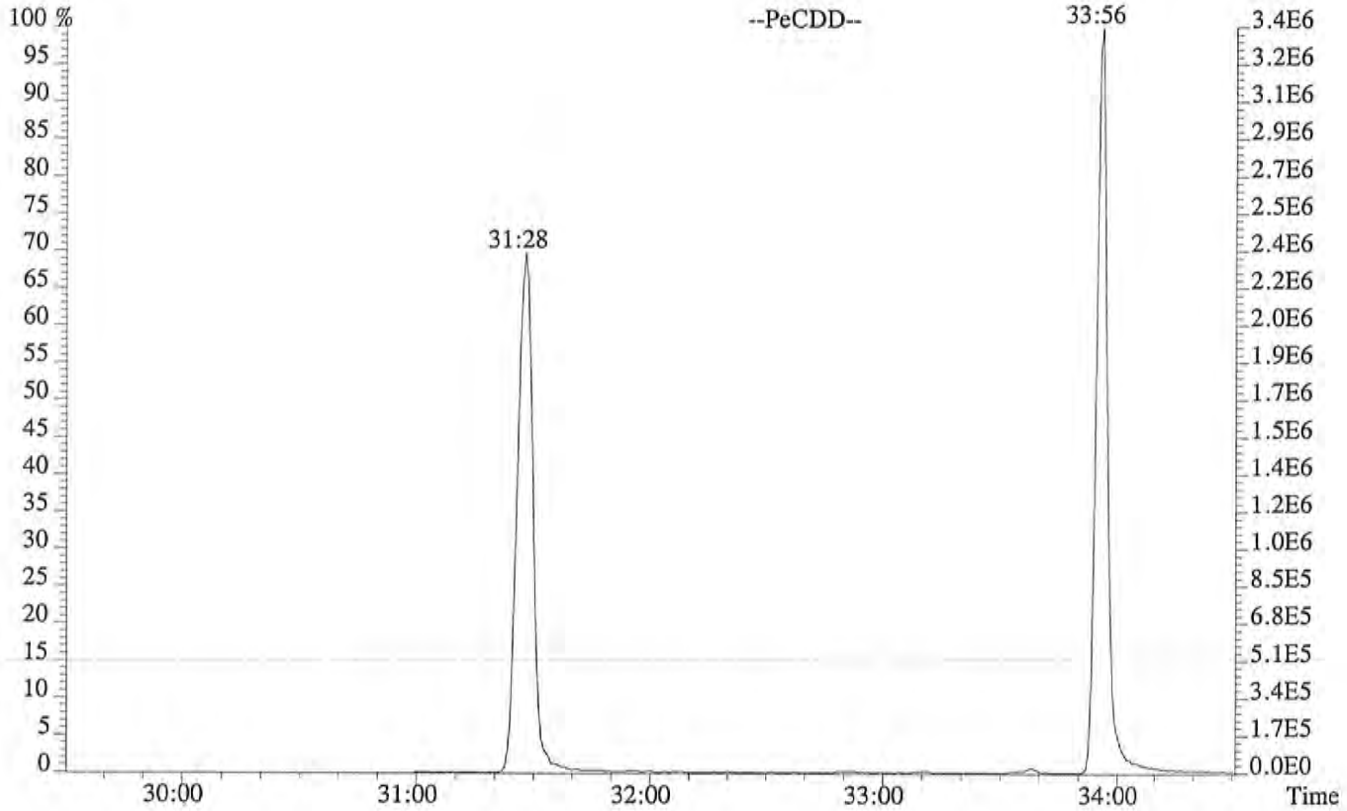
Sample#1 Exp:WD
339.8597,339.8597 F:2



355.8546 F:2



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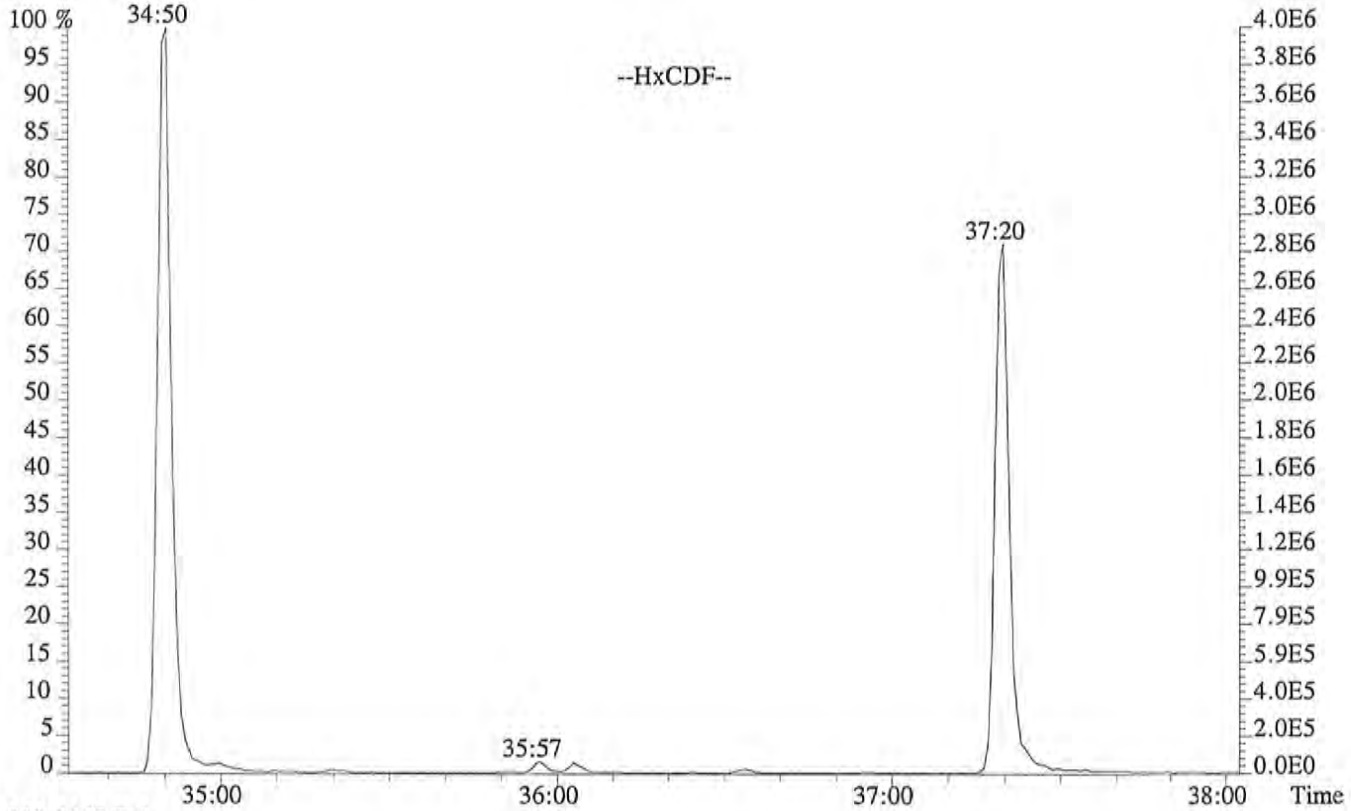
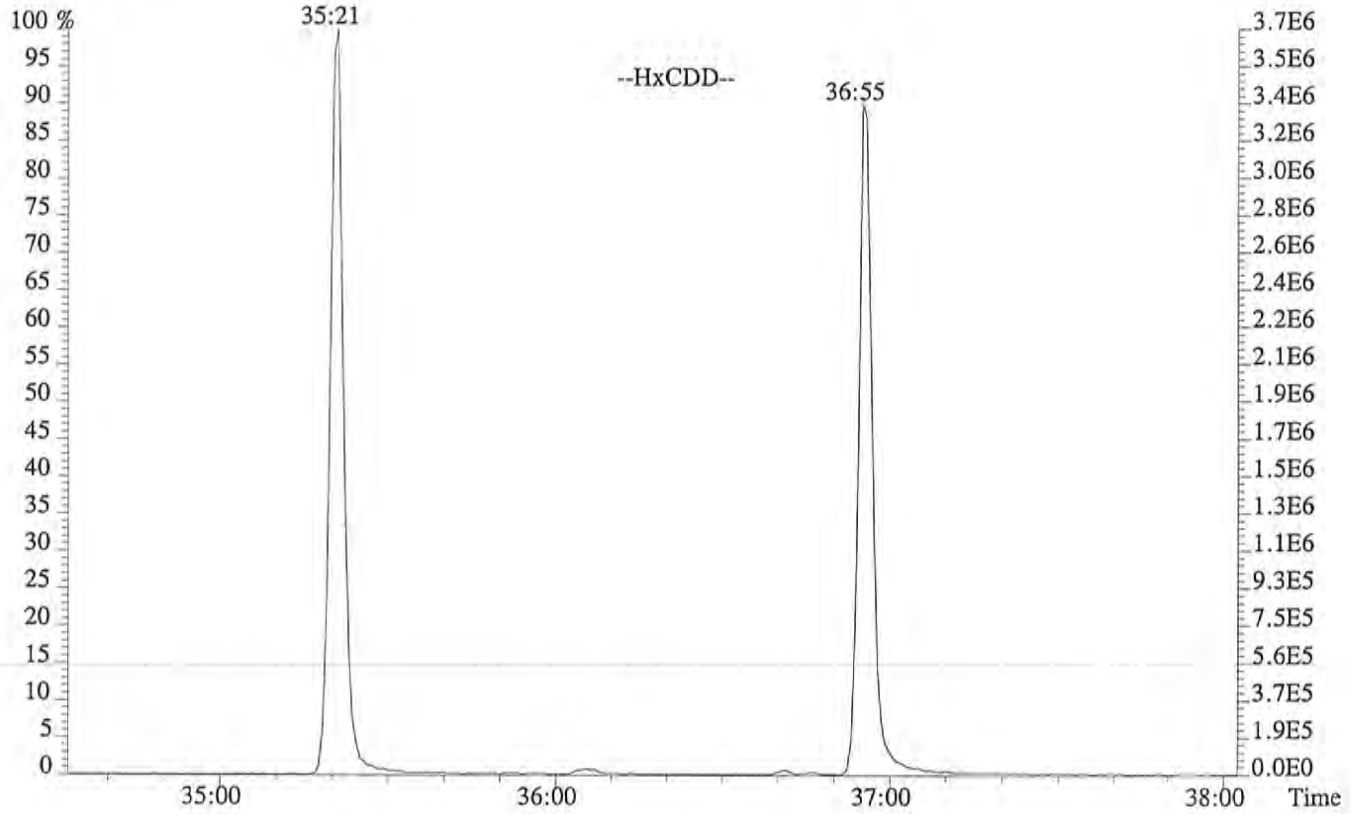
Sample#1 Exp:WD
373.8208 F:3



389.8157 F:3



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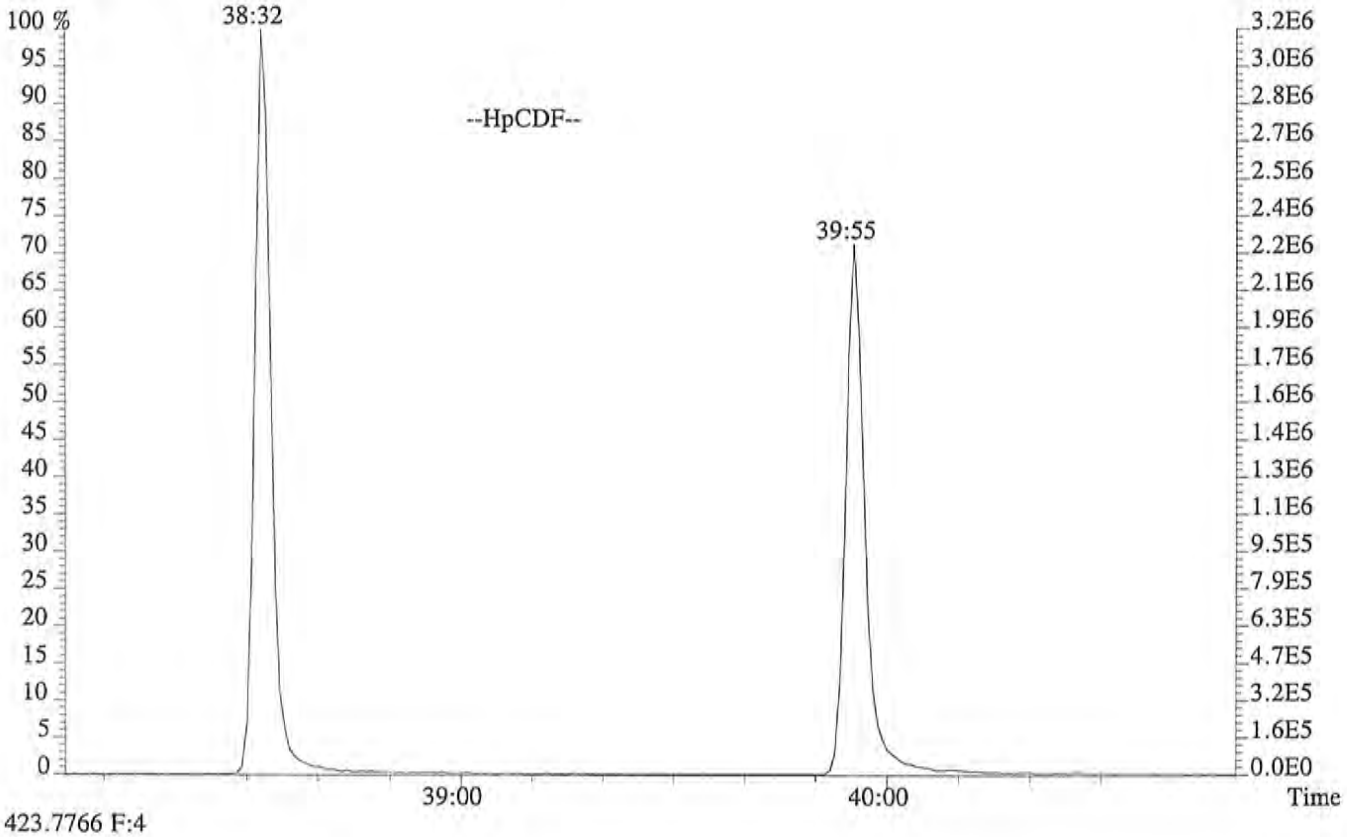
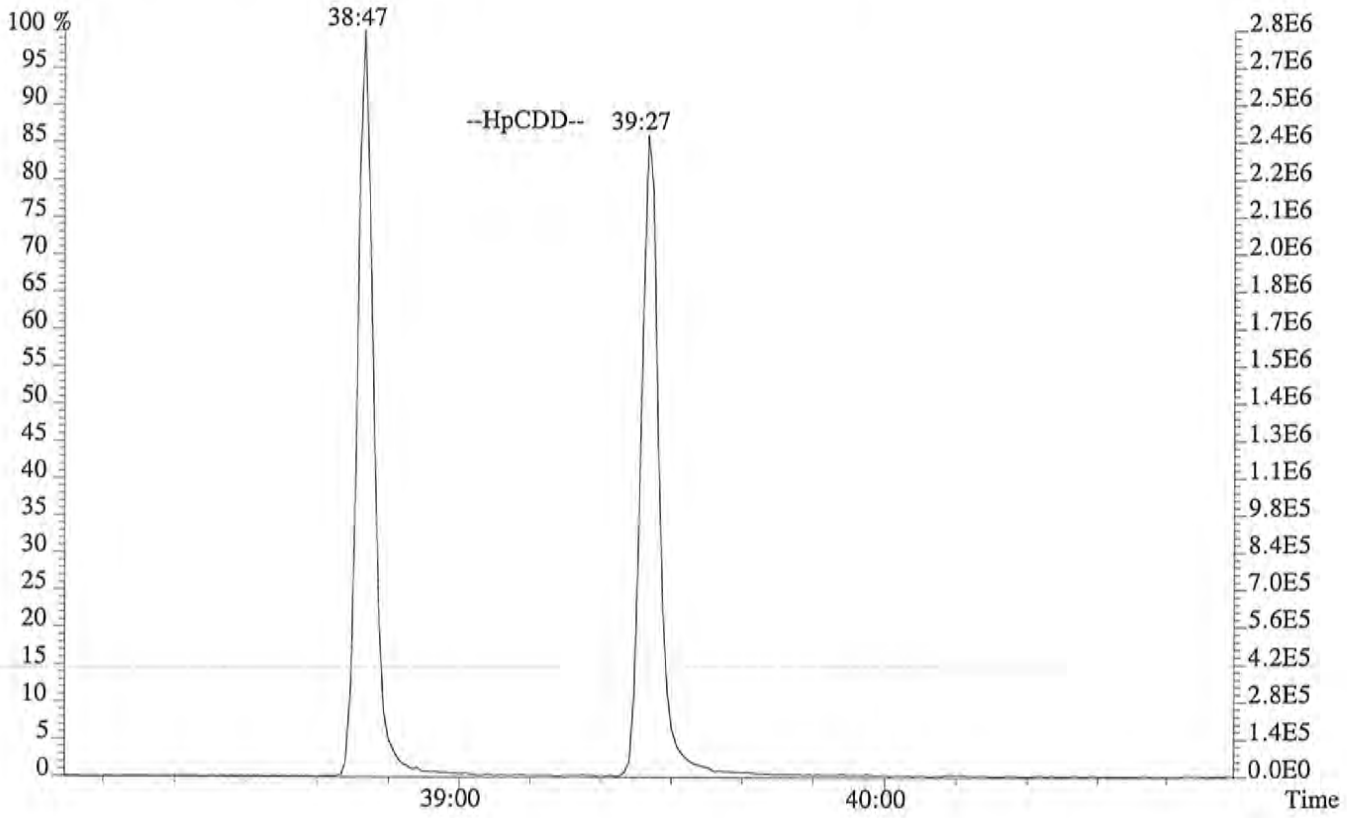
Sample#1 Exp:WD
407.7818 F:4



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: 08/19/15

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P600954 Analysis Date: 14-OCT-15 Time: 02:09:16

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.77	0.65-0.89	10.1	7.8 - 12.9	1.0
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32-1.78	50	39 - 65	-0.5
1,2,3,4,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	48	39 - 64	-3.1
1,2,3,6,7,8-HxCDD	M+2/M+4	1.19	1.05-1.43	48	39 - 64	-3.1
1,2,3,7,8,9-HxCDD	M+2/M+4	1.22	1.05-1.43	46	41 - 61	-7.6
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	47	43 - 58	-5.7
OCDD	M+2/M+4	0.88	0.76-1.02	97	79 - 126	-3.5
2,3,7,8-TCDF	M/M+2	0.76	0.65-0.89	9.2	8.4 - 12.0	-7.9
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	47	41 - 60	-5.5
2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32-1.78	47	41 - 61	-5.2
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	48	45 - 56	-3.7
1,2,3,6,7,8-HxCDF	M+2/M+4	1.21	1.05-1.43	46	44 - 57	-7.1
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05-1.43	46	45 - 56	-8.8
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	47	44 - 57	-6.3
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	46	45 - 55	-7.7
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88-1.20	46	43 - 58	-7.8
OCDF	M+2/M+4	0.90	0.76-1.02	90	63 - 159	-10.2

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 08/19/15

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P600954 Analysis Date: 14-OCT-15 Time: 02:09:16

	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	82	82 - 121	-17.6
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	103	62 - 160	3.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.33	1.05-1.43	102	85 - 117	1.7
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.20	1.05-1.43	106	85 - 118	6.0
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	99	72 - 138	-1.5
13C-OCDD	M+2/M+4	0.89	0.76-1.02	228	96 - 415	13.9
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	98	71 - 140	-2.4
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	102	76 - 130	1.7
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	101	77 - 130	0.6
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	91	76 - 131	-8.9
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	97	70 - 143	-2.7
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	91	74 - 135	-8.6
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	94	73 - 137	-6.0
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.43	0.37-0.51	92	78 - 129	-8.4
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	79	77 - 129	-20.8
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				8.3	7.8 - 12.7	-16.5

(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.
84080

Run #7 Filename P600954 Samp: 1 Inj: 1 Acquired: 14-OCT-15 02:09:16
Processed: 21-OCT-15 15:49:51 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	28:10	8.322e+03	1.094e+04	0.76	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	32:22	6.921e+04	4.490e+04	1.54	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:16	6.526e+04	4.260e+04	1.53	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	35:56	5.776e+04	4.623e+04	1.25	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:02	5.987e+04	4.946e+04	1.21	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	36:32	5.687e+04	4.637e+04	1.23	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:18	5.056e+04	4.111e+04	1.23	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	38:32	4.809e+04	4.662e+04	1.03	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	39:55	4.041e+04	3.924e+04	1.03	yes	no	1.287
10	Unk	OCDF	42:23	7.230e+04	8.065e+04	0.90	yes	no	1.257
11	Unk	2,3,7,8-TCDD	28:57	7.206e+03	9.374e+03	0.77	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	33:33	5.252e+04	3.389e+04	1.55	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	36:40	4.807e+04	3.681e+04	1.31	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	36:45	4.539e+04	3.819e+04	1.19	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	37:00	4.893e+04	4.005e+04	1.22	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	39:26	4.025e+04	3.922e+04	1.03	yes	no	1.034
17	Unk	OCDD	42:11	6.802e+04	7.722e+04	0.88	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	28:09	9.783e+04	1.247e+05	0.78	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	32:21	1.494e+05	9.530e+04	1.57	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:15	1.486e+05	9.506e+04	1.56	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	35:56	6.176e+04	1.198e+05	0.52	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:02	7.081e+04	1.382e+05	0.51	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	36:32	6.709e+04	1.305e+05	0.51	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:17	5.899e+04	1.145e+05	0.51	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	38:31	4.519e+04	1.042e+05	0.43	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	39:54	4.083e+04	9.342e+04	0.44	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	28:55	7.223e+04	9.027e+04	0.80	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	33:32	1.142e+05	7.215e+04	1.58	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	36:40	9.745e+04	7.340e+04	1.33	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	36:44	9.205e+04	7.695e+04	1.20	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:25	8.325e+04	7.983e+04	1.04	yes	no	0.892
32	IS	13C-OCDD	42:10	1.280e+05	1.431e+05	0.89	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	28:21	7.355e+04	9.178e+04	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	36:59	1.026e+05	8.283e+04	1.24	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	28:57	1.743e+04				no	1.263

ALS ENVIRONMENTAL
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Houston, TX 77099
Office(713)266-1599. Fax(713)266-0130

www.alsglobal.com

ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
84080

Run #7 Filename P600954 Samp: 1 Inj: 1 Acquired: 14-OCT-15 02:09:16
Processed: 21-OCT-15 15:49:51 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	1.51e+06	1.02e+03	1.5e+03	1.99e+06	1.70e+03	1.2e+03
2	1,2,3,7,8-PeCDF	1.32e+07	7.52e+02	1.8e+04	8.52e+06	1.70e+03	5.0e+03
3	2,3,4,7,8-PeCDF	1.31e+07	7.52e+02	1.7e+04	8.63e+06	1.70e+03	5.1e+03
4	1,2,3,4,7,8-HxCDF	1.25e+07	5.32e+02	2.4e+04	1.01e+07	3.48e+02	2.9e+04
5	1,2,3,6,7,8-HxCDF	1.29e+07	5.32e+02	2.4e+04	1.06e+07	3.48e+02	3.0e+04
6	2,3,4,6,7,8-HxCDF	1.27e+07	5.32e+02	2.4e+04	1.04e+07	3.48e+02	3.0e+04
7	1,2,3,7,8,9-HxCDF	1.05e+07	5.32e+02	2.0e+04	8.55e+06	3.48e+02	2.5e+04
8	1,2,3,4,6,7,8-HpCDF	1.09e+07	1.00e+03	1.1e+04	1.05e+07	5.21e+03	2.0e+03
9	1,2,3,4,7,8,9-HpCDF	8.32e+06	1.00e+03	8.3e+03	8.09e+06	5.21e+03	1.6e+03
10	OCDF	1.34e+07	6.72e+02	2.0e+04	1.46e+07	1.01e+03	1.4e+04
11	2,3,7,8-TCDD	1.41e+06	8.24e+02	1.7e+03	1.83e+06	9.92e+02	1.8e+03
12	1,2,3,7,8-PeCDD	1.05e+07	1.38e+03	7.6e+03	6.79e+06	6.96e+02	9.8e+03
13	1,2,3,4,7,8-HxCDD	1.09e+07	8.80e+02	1.2e+04	8.61e+06	8.20e+02	1.0e+04
14	1,2,3,6,7,8-HxCDD	1.01e+07	8.80e+02	1.1e+04	8.24e+06	8.20e+02	1.0e+04
15	1,2,3,7,8,9-HxCDD	1.10e+07	8.80e+02	1.3e+04	8.95e+06	8.20e+02	1.1e+04
16	1,2,3,4,6,7,8-HpCDD	8.54e+06	8.80e+02	9.7e+03	8.35e+06	9.04e+02	9.2e+03
17	OCDD	1.30e+07	8.36e+02	1.6e+04	1.47e+07	8.08e+02	1.8e+04
18	13C-2,3,7,8-TCDF	1.77e+07	2.52e+03	7.0e+03	2.27e+07	2.02e+03	1.1e+04
19	13C-1,2,3,7,8-PeCDF	2.82e+07	1.06e+03	2.7e+04	1.78e+07	1.73e+03	1.0e+04
20	13C-2,3,4,7,8-PeCDF	3.00e+07	1.06e+03	2.8e+04	1.92e+07	1.73e+03	1.1e+04
21	13C-1,2,3,4,7,8-HxCDF	1.37e+07	8.36e+02	1.6e+04	2.62e+07	1.46e+03	1.8e+04
22	13C-1,2,3,6,7,8-HxCDF	1.53e+07	8.36e+02	1.8e+04	3.02e+07	1.46e+03	2.1e+04
23	13C-2,3,4,6,7,8-HxCDF	1.50e+07	8.36e+02	1.8e+04	2.92e+07	1.46e+03	2.0e+04
24	13C-1,2,3,7,8,9-HxCDF	1.24e+07	8.36e+02	1.5e+04	2.40e+07	1.46e+03	1.6e+04
25	13C-1,2,3,4,6,7,8-HpCDF	1.03e+07	5.00e+03	2.1e+03	2.37e+07	1.27e+03	1.9e+04
26	13C-1,2,3,4,7,8,9-HpCDF	8.55e+06	5.00e+03	1.7e+03	1.94e+07	1.27e+03	1.5e+04
27	13C-2,3,7,8-TCDD	1.38e+07	3.87e+03	3.6e+03	1.73e+07	2.18e+03	7.9e+03
28	13C-1,2,3,7,8-PeCDD	2.30e+07	1.07e+03	2.1e+04	1.46e+07	8.00e+02	1.8e+04
29	13C-1,2,3,4,7,8-HxCDD	2.20e+07	2.59e+03	8.5e+03	1.72e+07	1.46e+03	1.2e+04
30	13C-1,2,3,6,7,8-HxCDD	2.08e+07	2.59e+03	8.0e+03	1.67e+07	1.46e+03	1.1e+04
31	13C-1,2,3,4,6,7,8-HpCDD	1.78e+07	1.33e+03	1.3e+04	1.73e+07	5.84e+02	3.0e+04
32	13C-OCDD	2.45e+07	6.20e+02	4.0e+04	2.72e+07	8.52e+02	3.2e+04
33	13C-1,2,3,4-TCDD	1.40e+07	3.87e+03	3.6e+03	1.75e+07	2.18e+03	8.1e+03
34	13C-1,2,3,7,8,9-HxCDD	2.33e+07	2.59e+03	9.0e+03	1.87e+07	1.46e+03	1.3e+04
35	37Cl-2,3,7,8-TCDD	3.40e+06	1.89e+03	1.8e+03			

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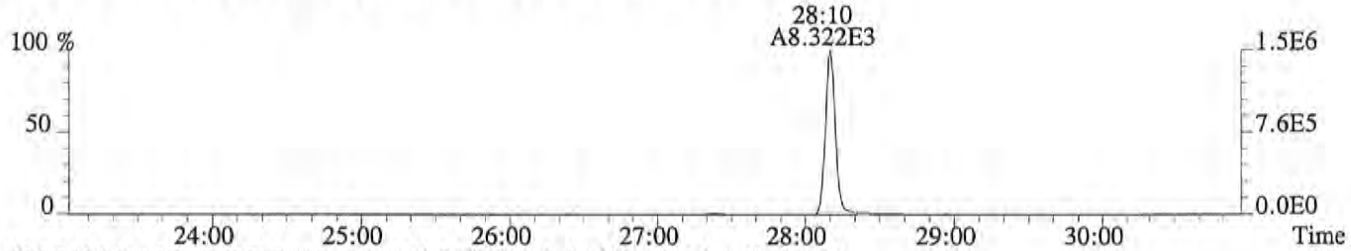
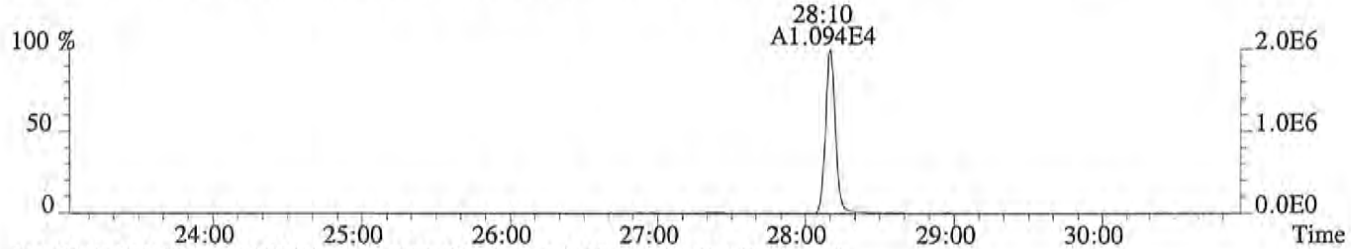
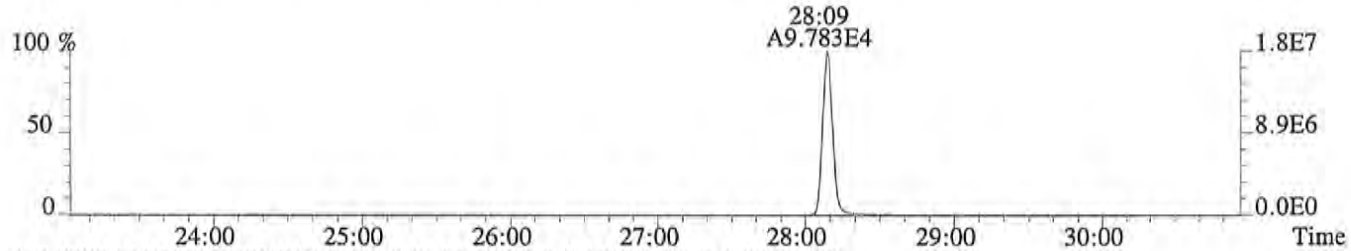
File:P600954 #1-562 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1020.0,1.00%,F,T)



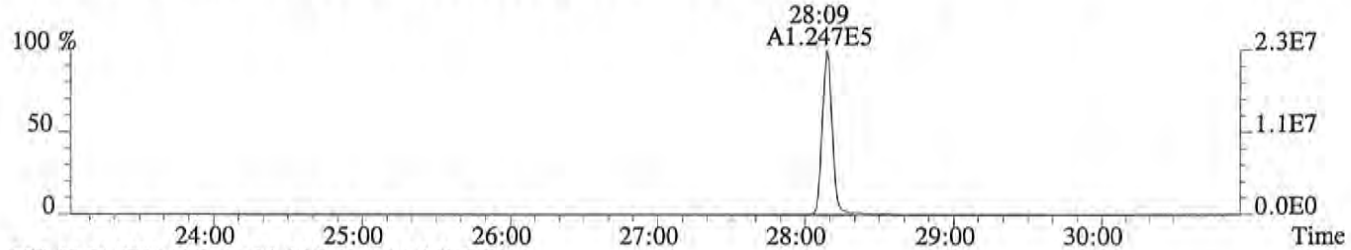
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1696.0,1.00%,F,T)



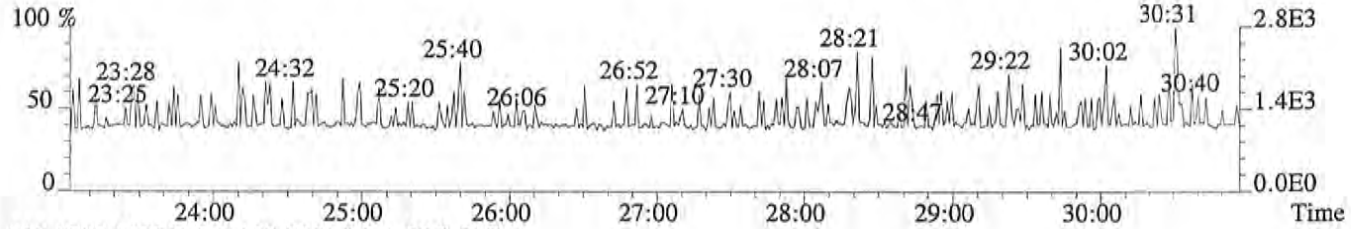
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2524.0,1.00%,F,T)



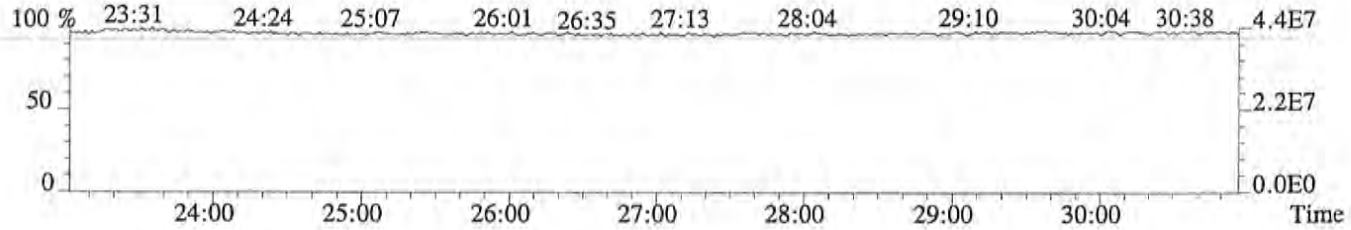
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2024.0,1.00%,F,T)



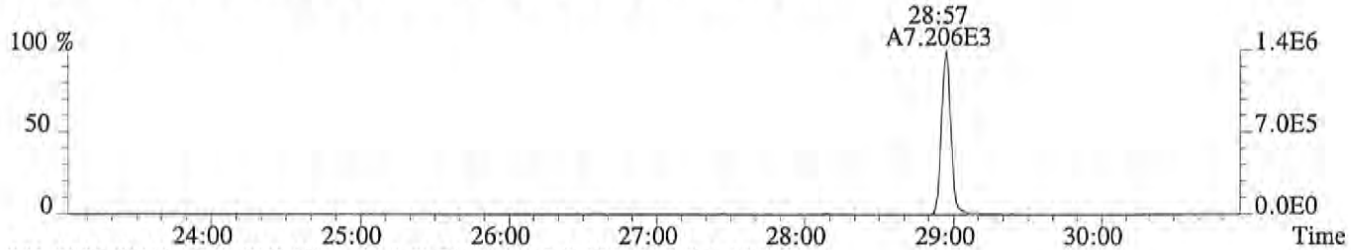
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



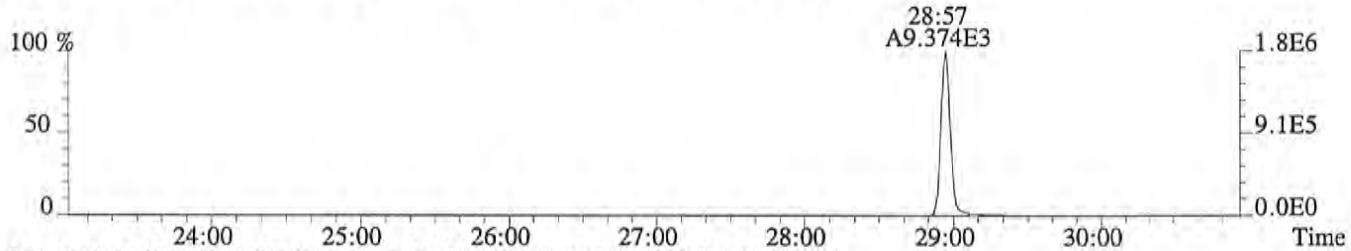
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



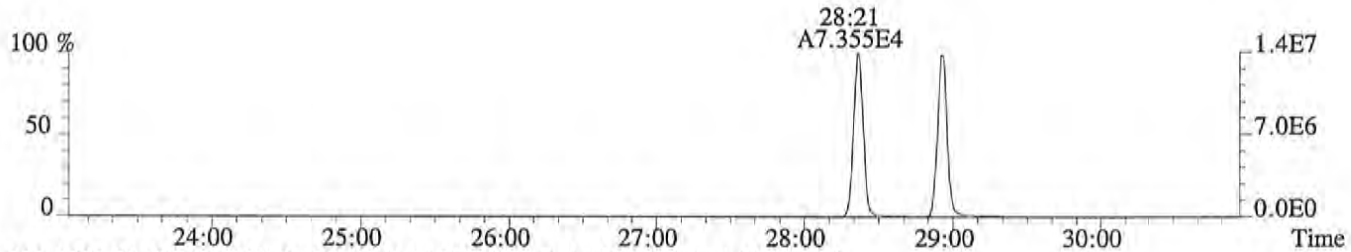
File:P600954 #1-562 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,824.0,1.00%,F,T)



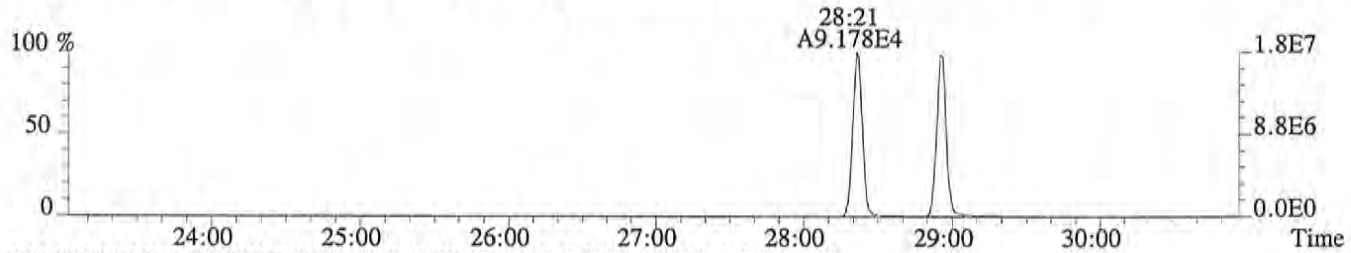
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,992.0,1.00%,F,T)



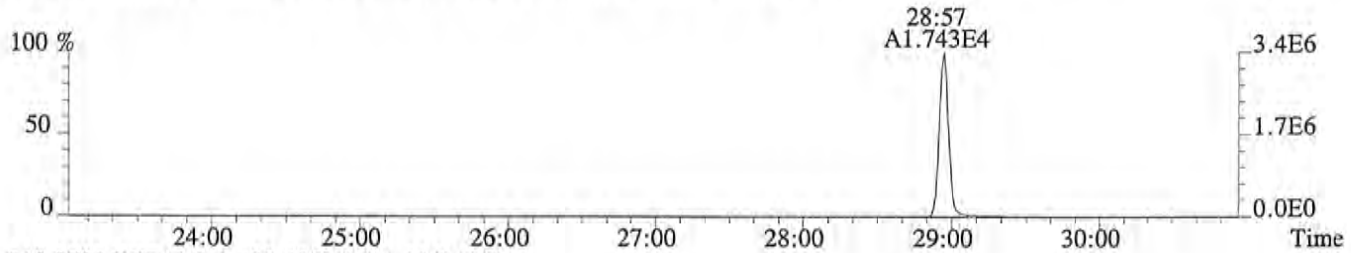
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3872.0,1.00%,F,T)



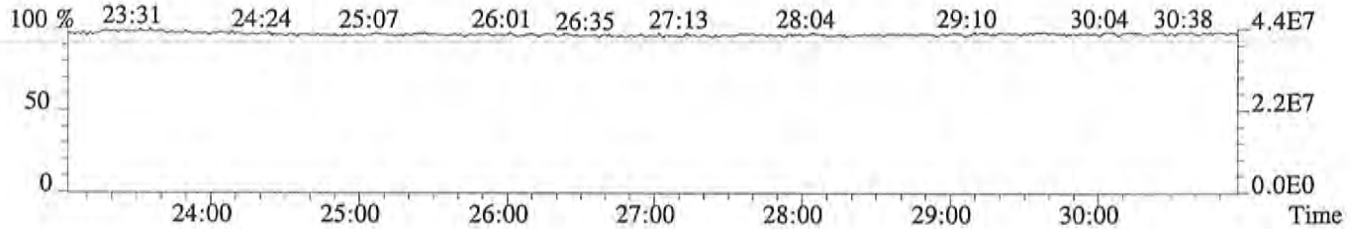
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,T)



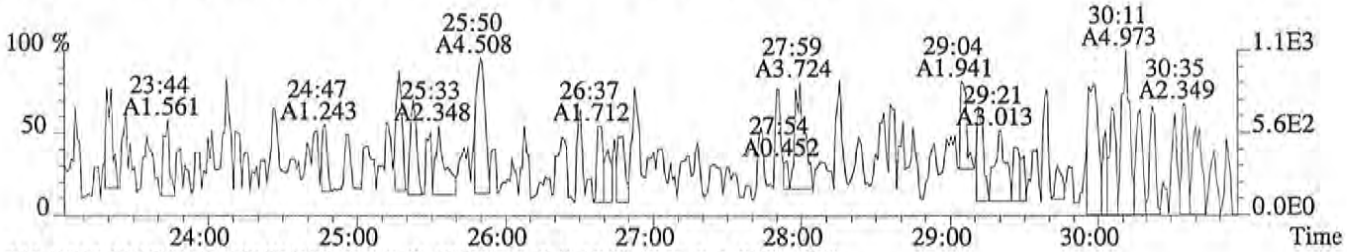
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1892.0,1.00%,F,T)



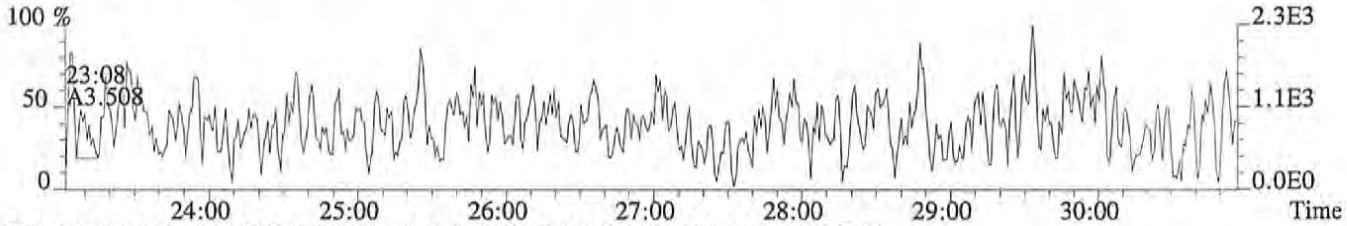
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



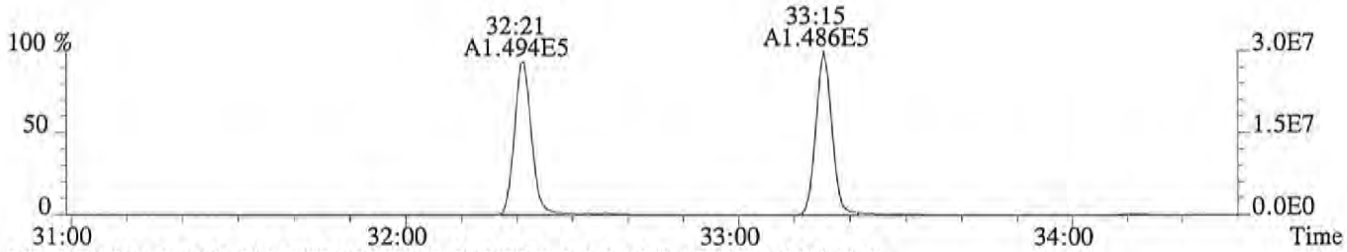
File:P600954 #1-562 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,360.0,1.00%,F,T)



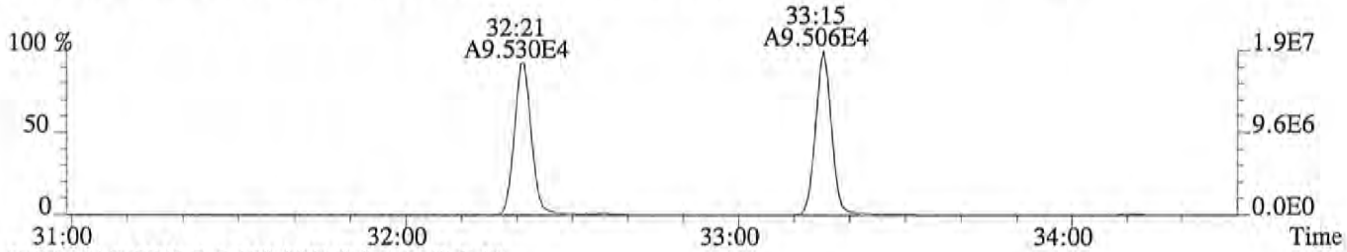
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1116.0,1.00%,F,T)



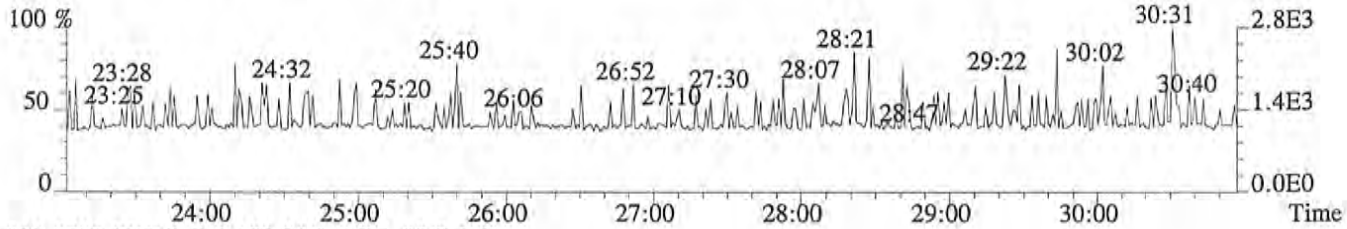
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1056.0,1.00%,F,T)



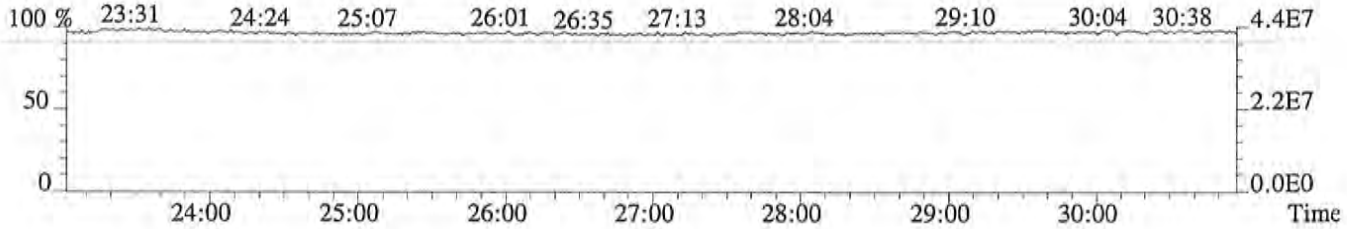
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1732.0,1.00%,F,T)



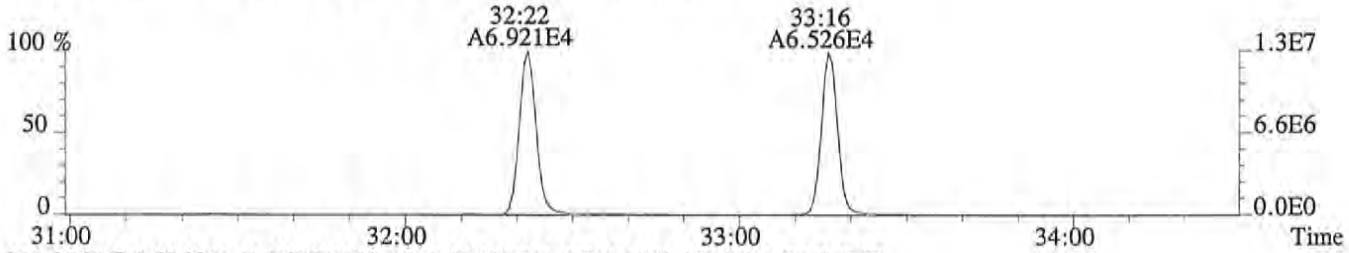
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



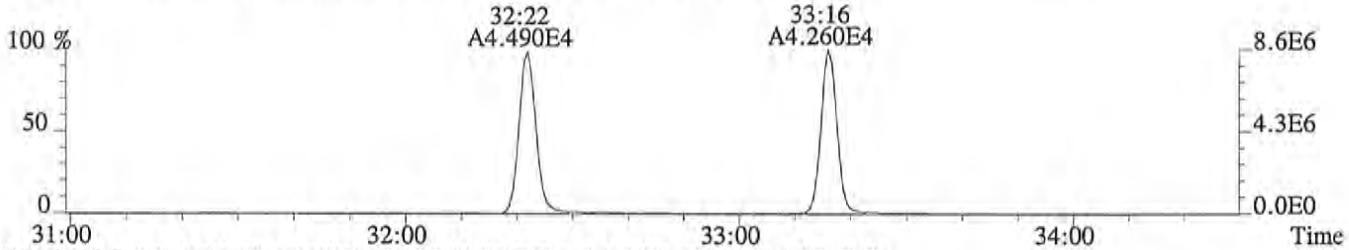
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



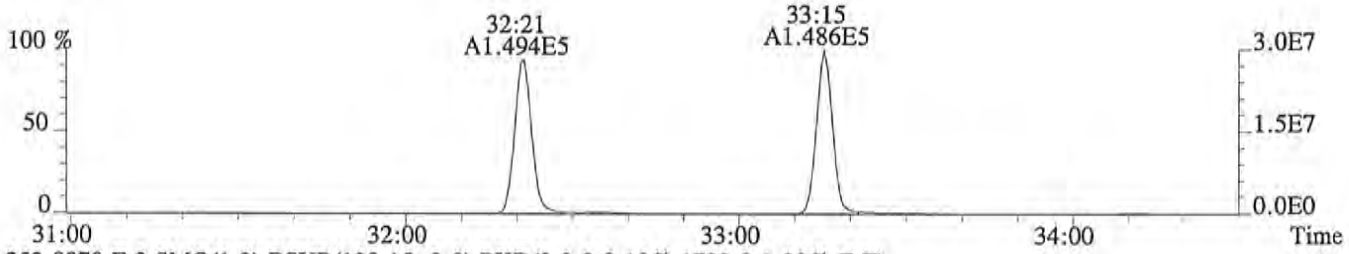
File:P600954 #1-317 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,752.0,1.00%,F,T)



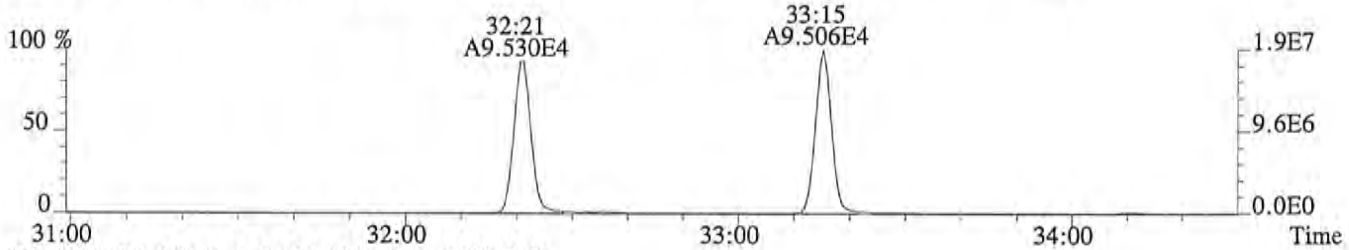
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1704.0,1.00%,F,T)



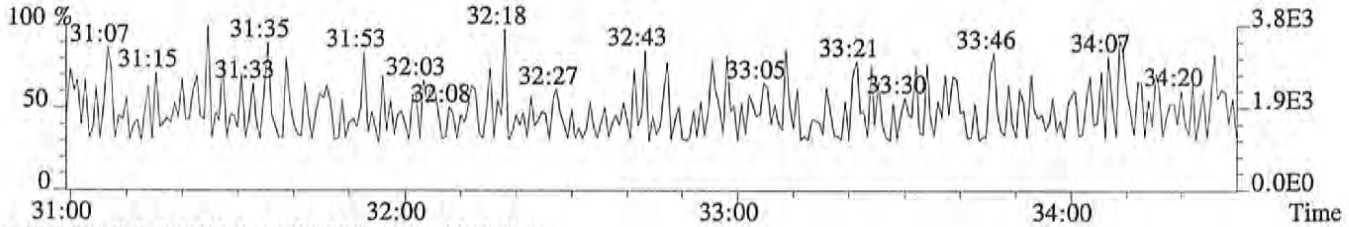
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1056.0,1.00%,F,T)



353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1732.0,1.00%,F,T)

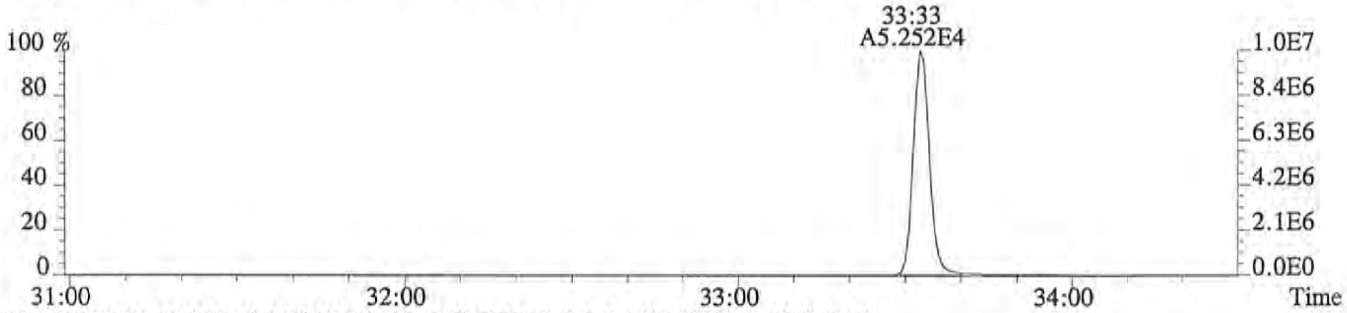


409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

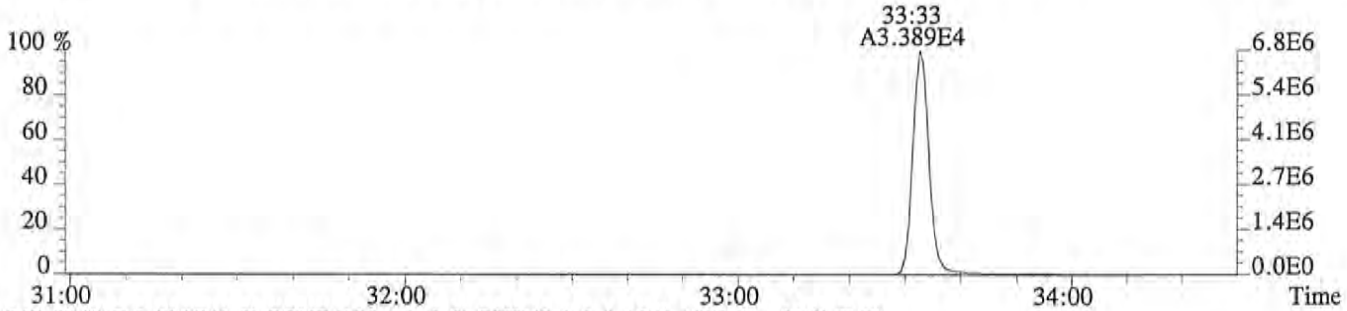


366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

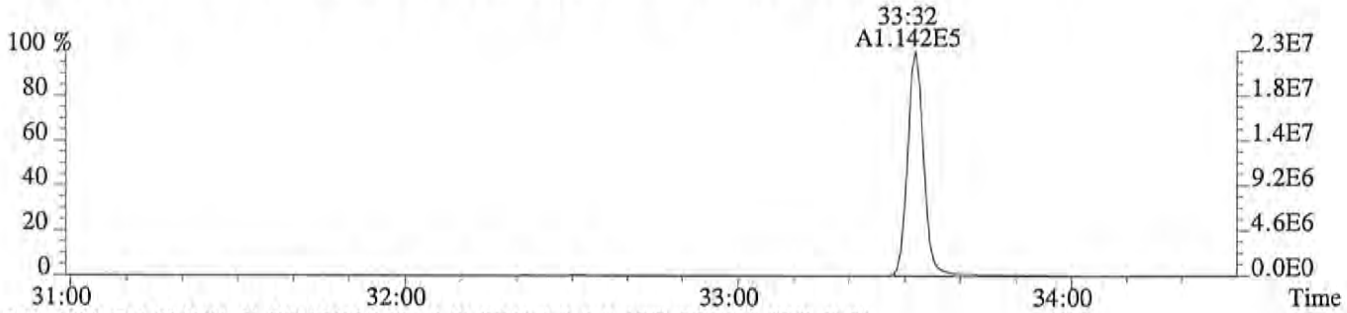
File:P600954 #1-317 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1384.0,1.00%,F,T)



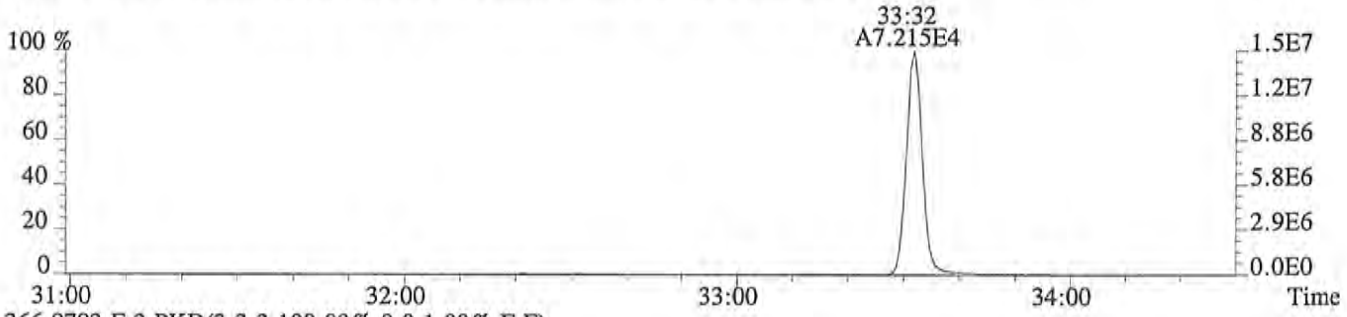
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,696.0,1.00%,F,T)



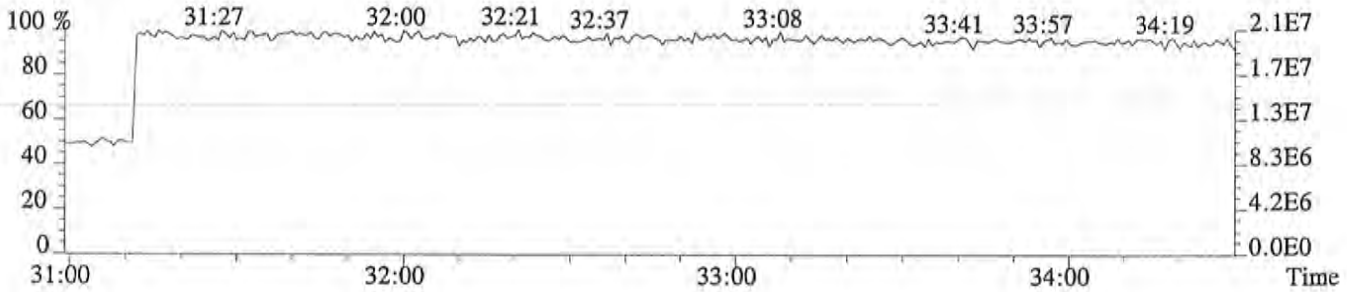
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1072.0,1.00%,F,T)



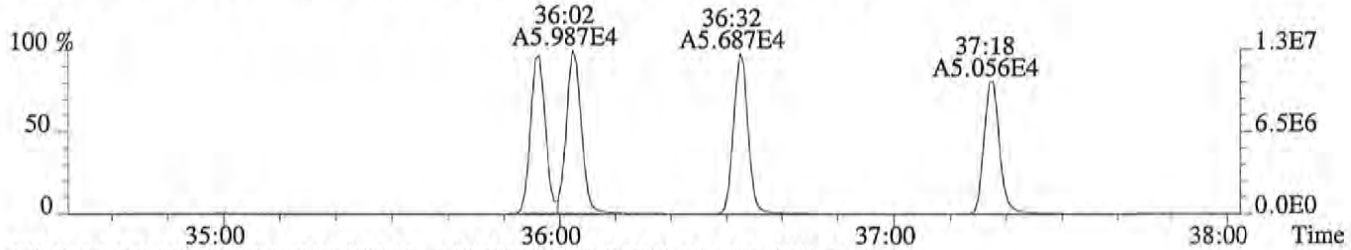
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,800.0,1.00%,F,T)



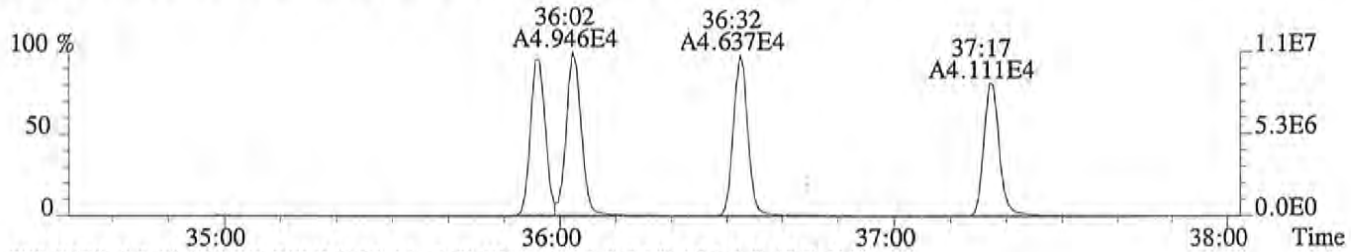
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



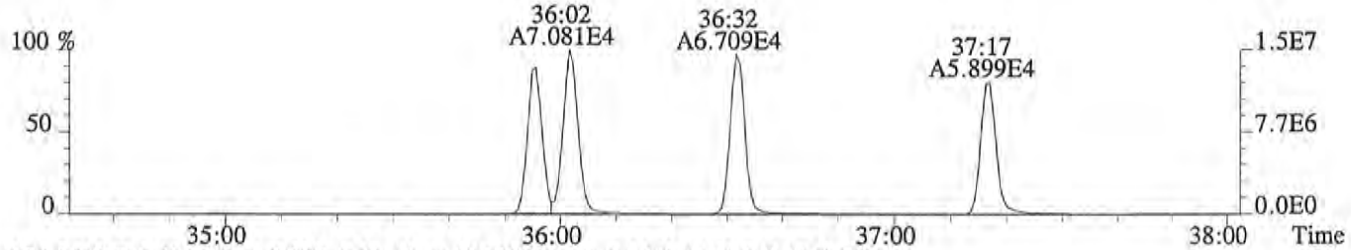
File:P600954 #1-316 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,532.0,0.40%,F,T)



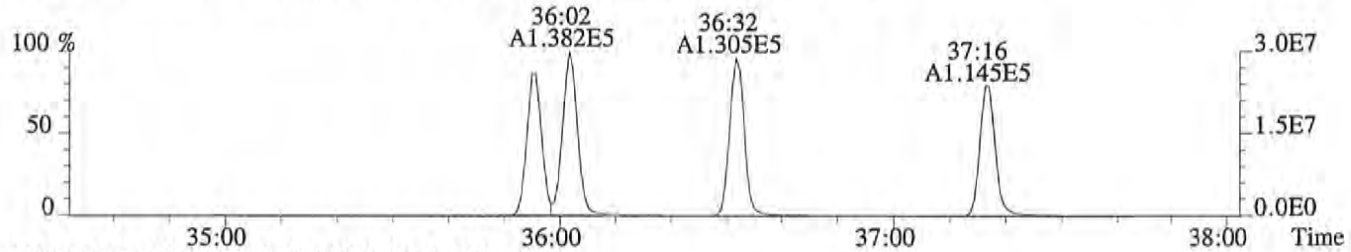
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,348.0,0.40%,F,T)



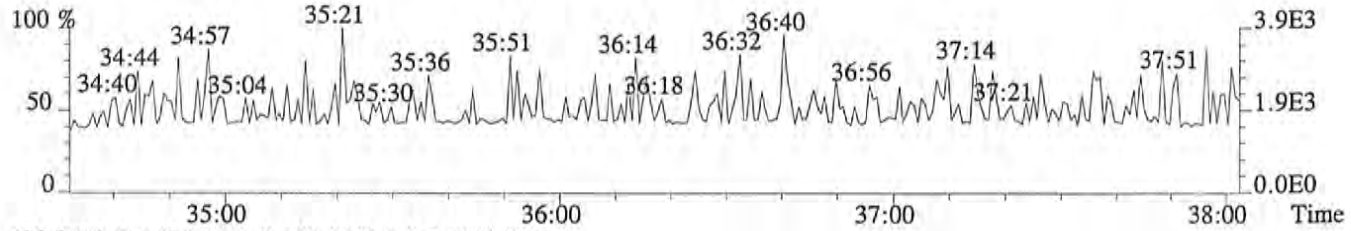
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,836.0,0.40%,F,T)



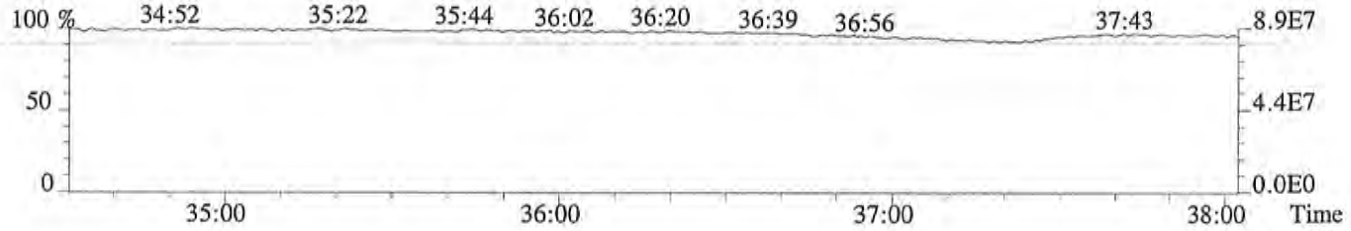
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1460.0,0.40%,F,T)



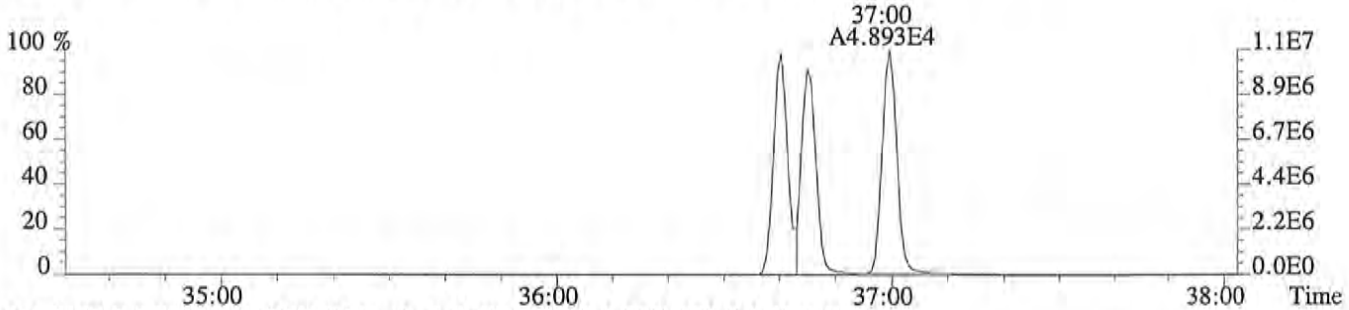
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



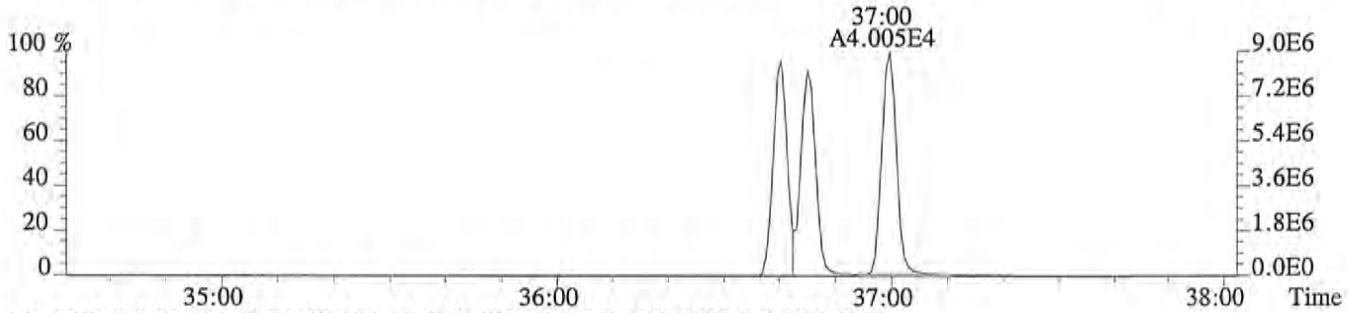
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



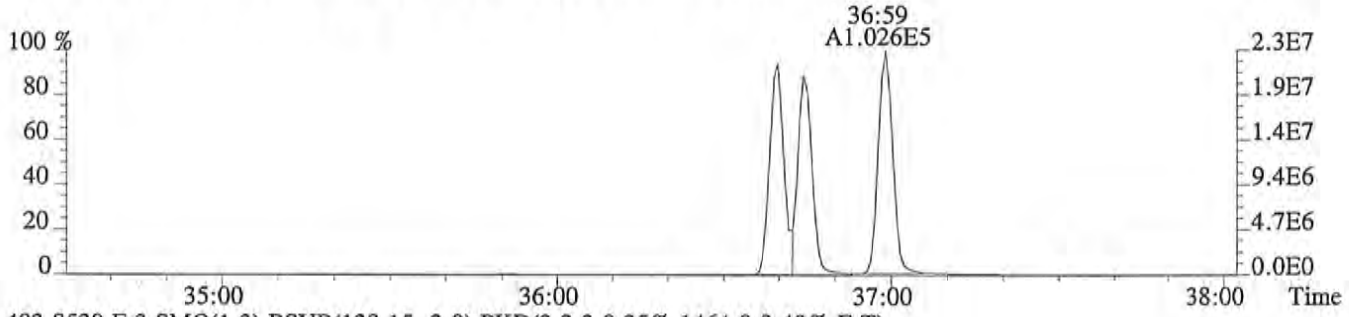
File:P600954 #1-316 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,880.0,0.40%,F,T)



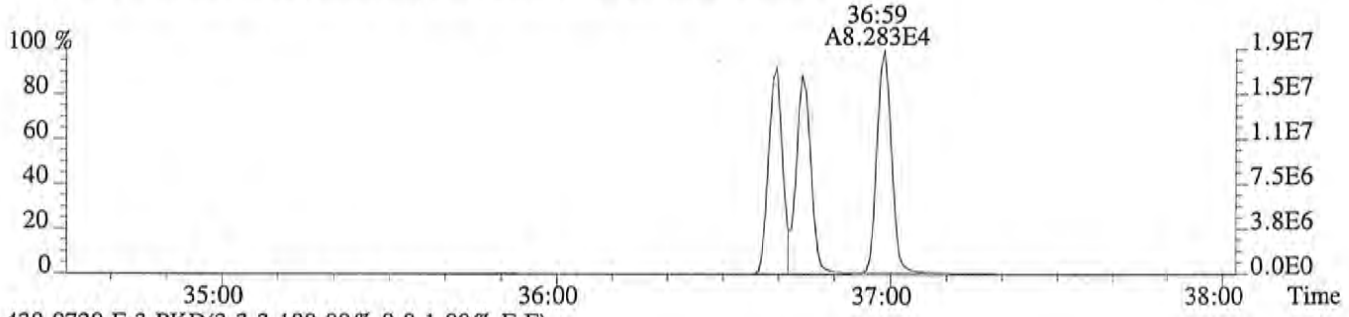
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,820.0,0.40%,F,T)



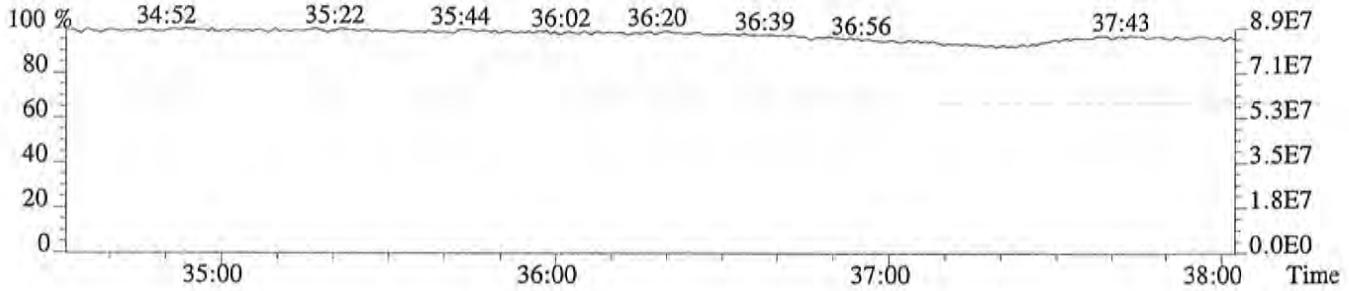
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2588.0,0.40%,F,T)



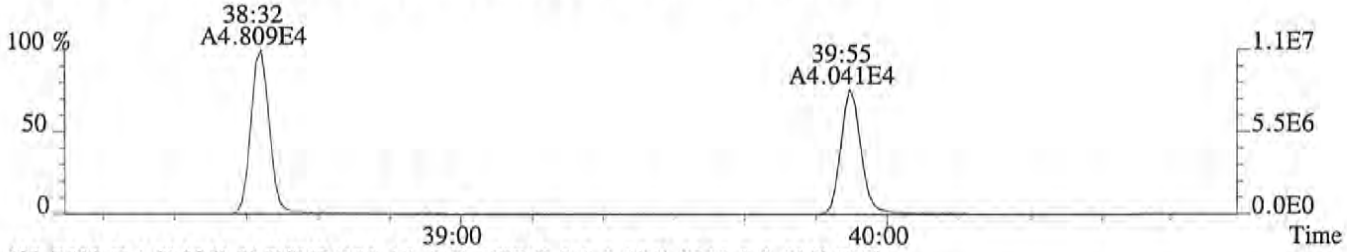
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1464.0,0.40%,F,T)



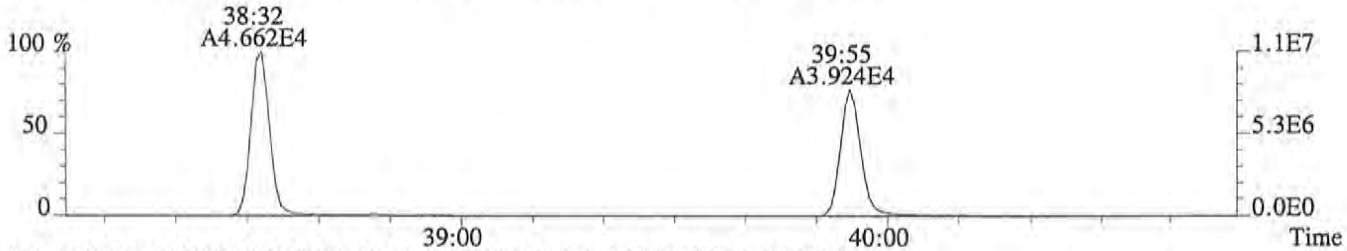
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



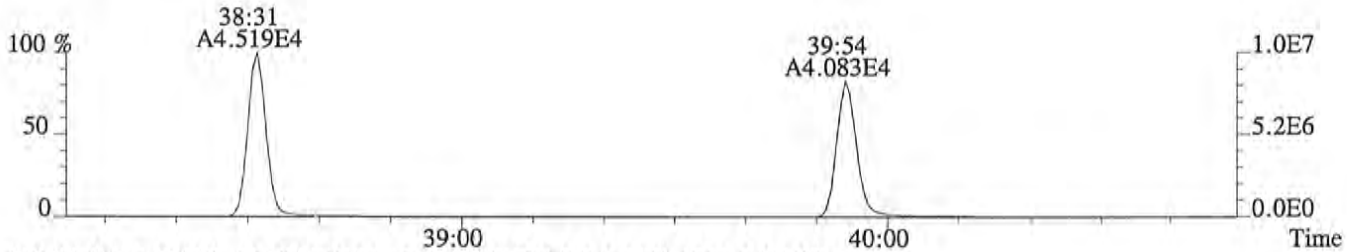
File:P600954 #1-248 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1004.0,0.50%,F,T)



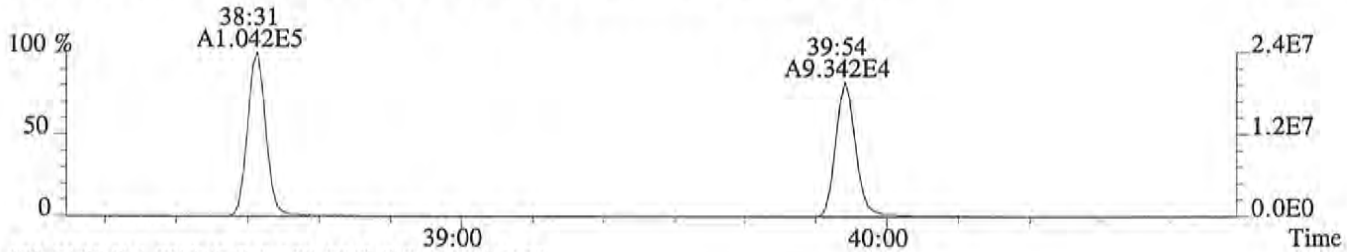
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5208.0,0.50%,F,T)



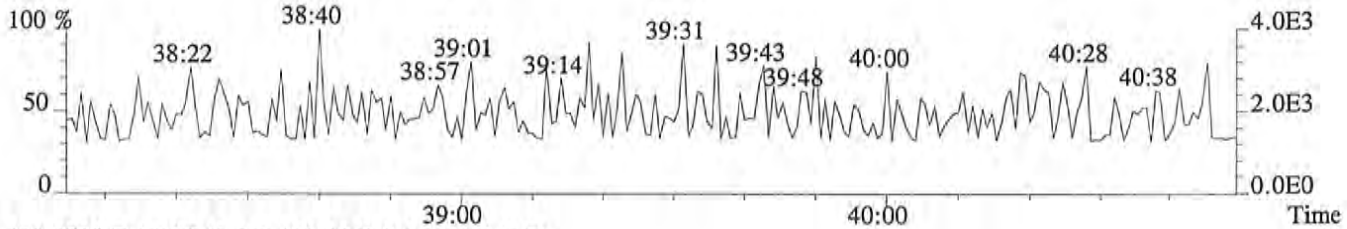
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4996.0,0.50%,F,T)



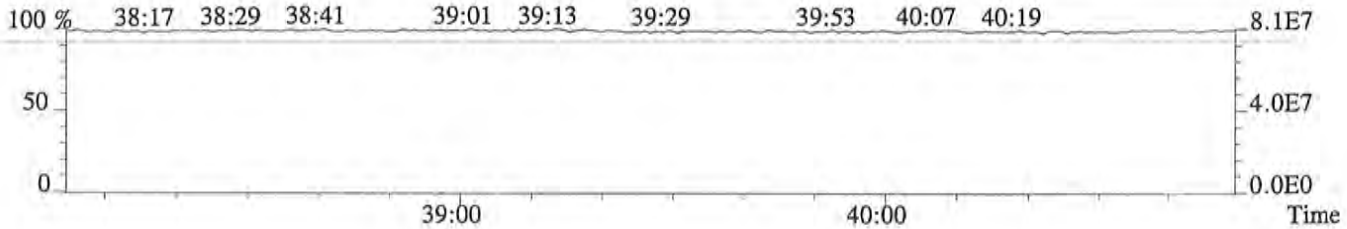
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1268.0,0.50%,F,T)



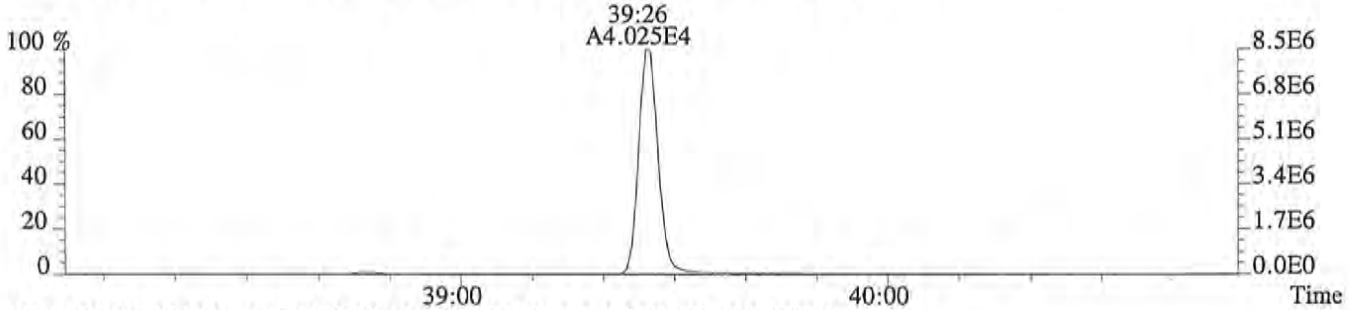
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



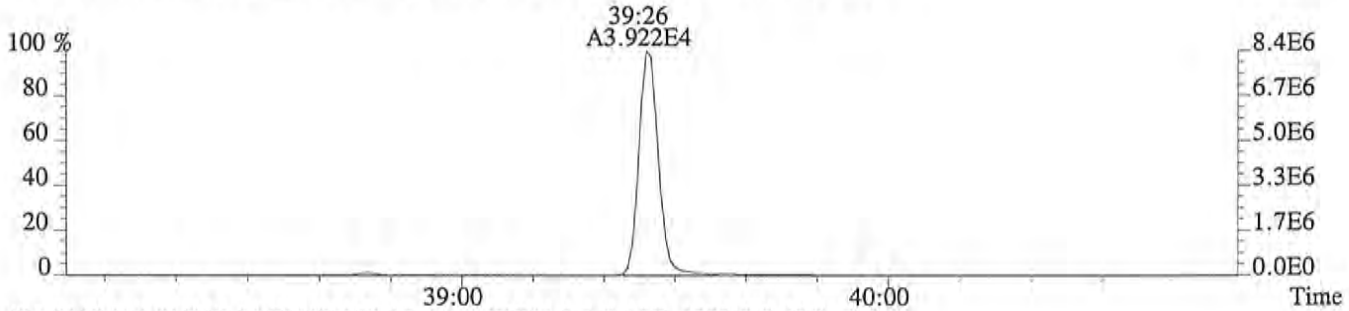
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



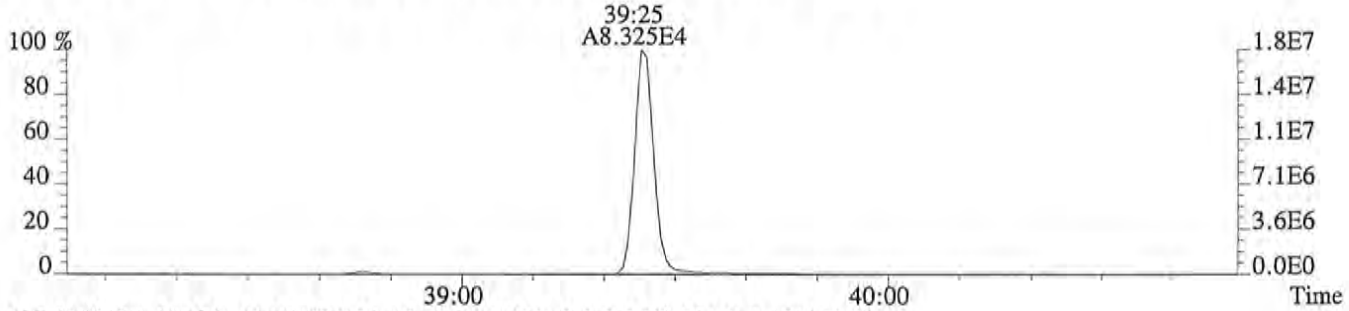
File:P600954 #1-248 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,880.0,0.40%,F,T)



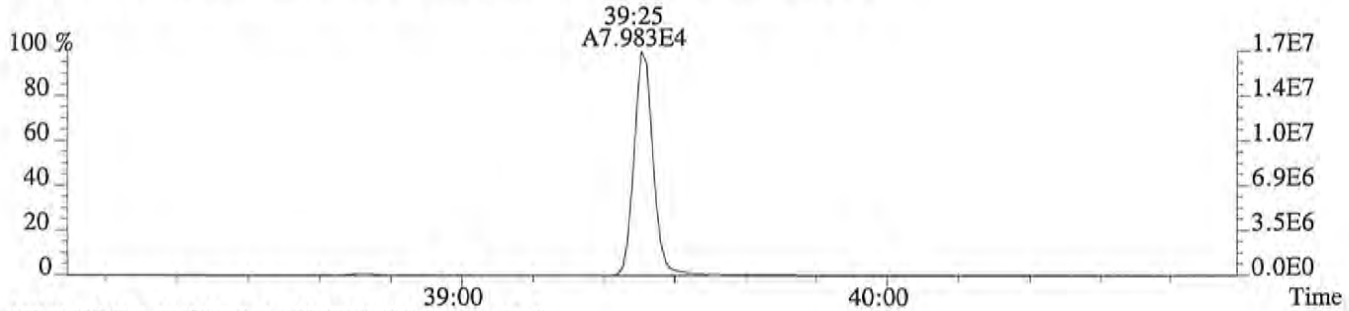
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,904.0,0.40%,F,T)



435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1332.0,0.40%,F,T)



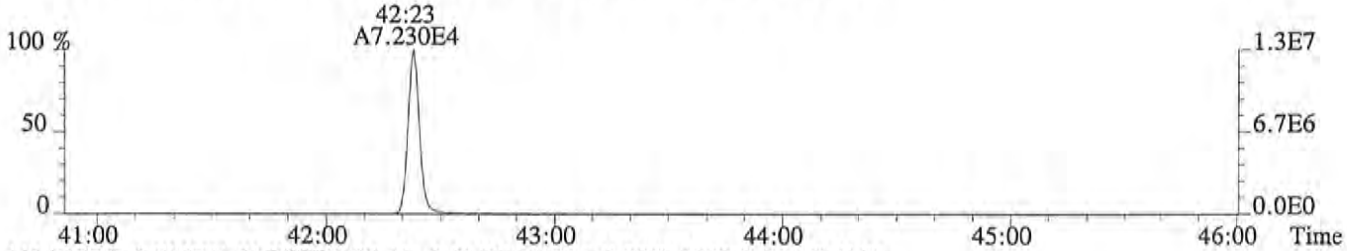
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,584.0,0.40%,F,T)



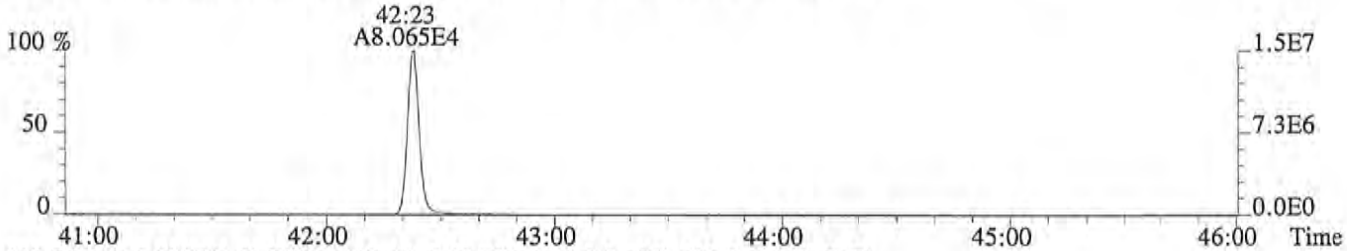
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

File:P600954 #1-464 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3

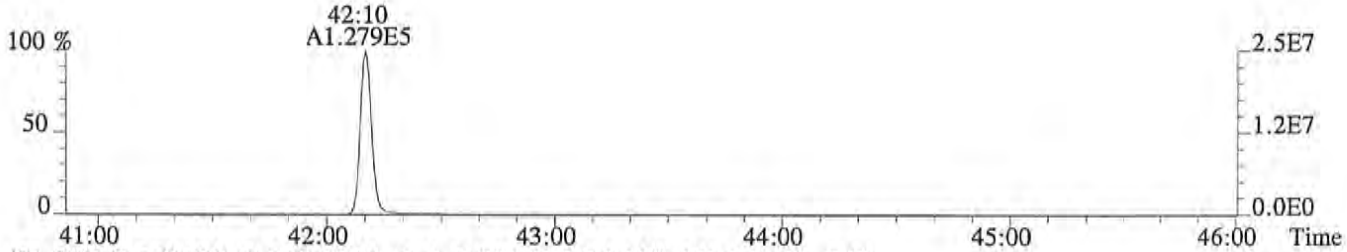
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,672.0,0.40%,F,T)



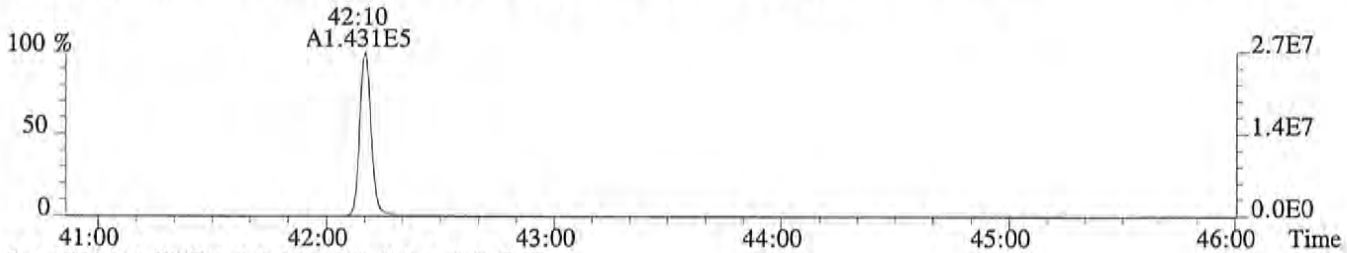
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1008.0,0.40%,F,T)



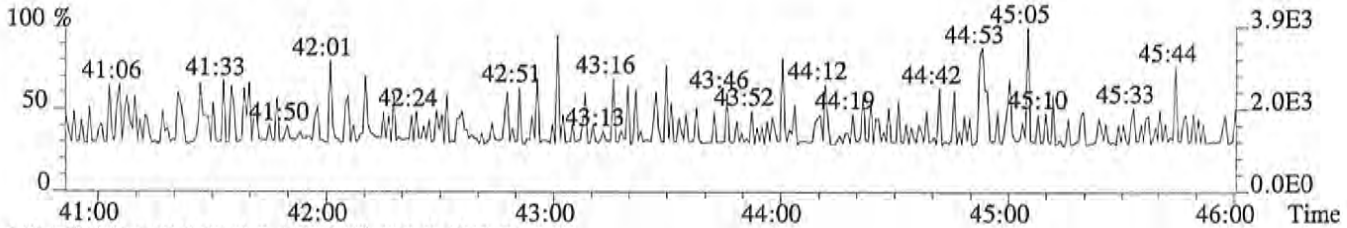
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,620.0,0.40%,F,T)



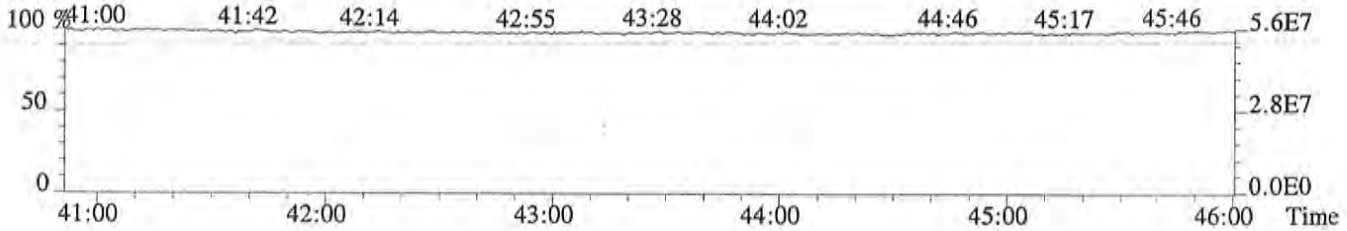
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,852.0,0.40%,F,T)



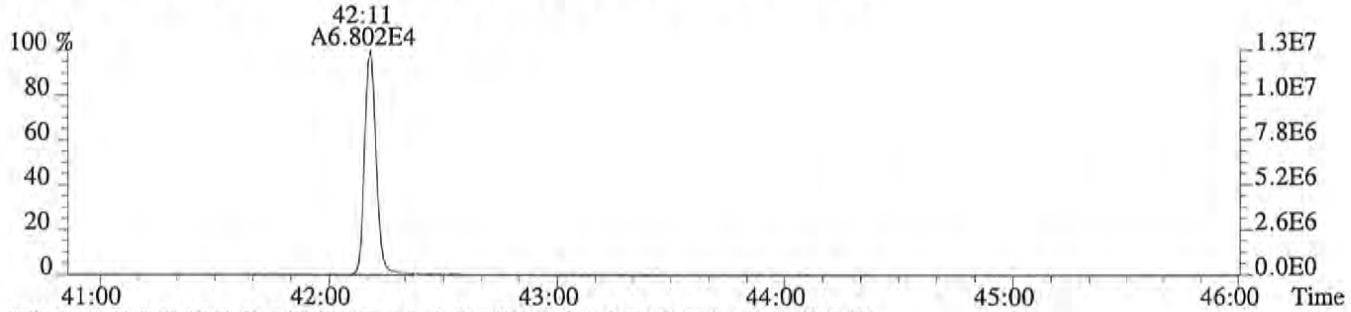
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



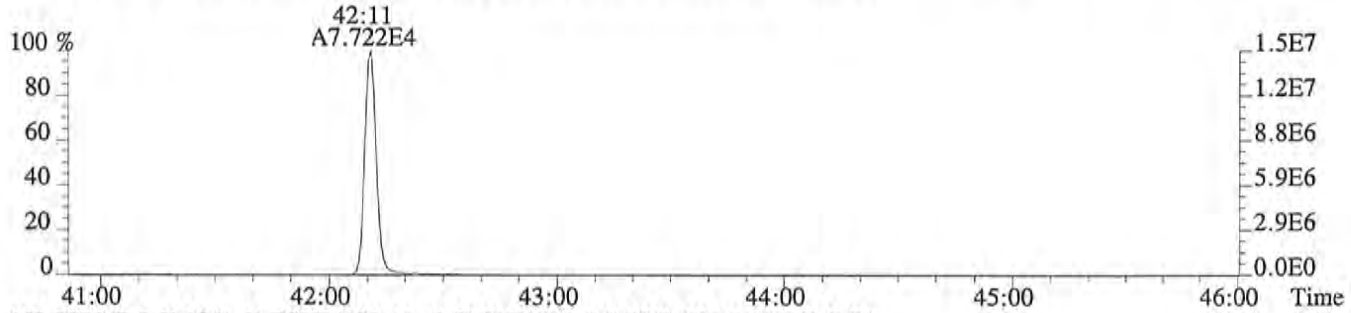
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



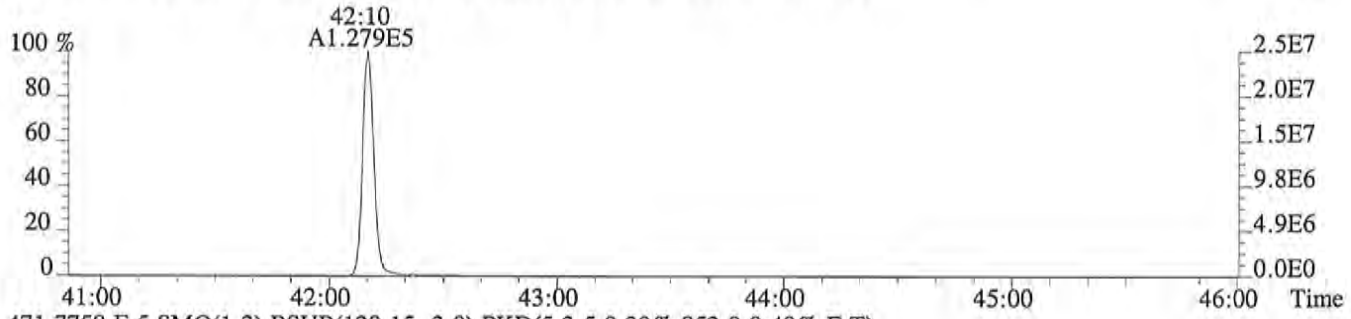
File:P600954 #1-464 Acq:14-OCT-2015 02:09:16 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,836.0,0.40%,F,T)



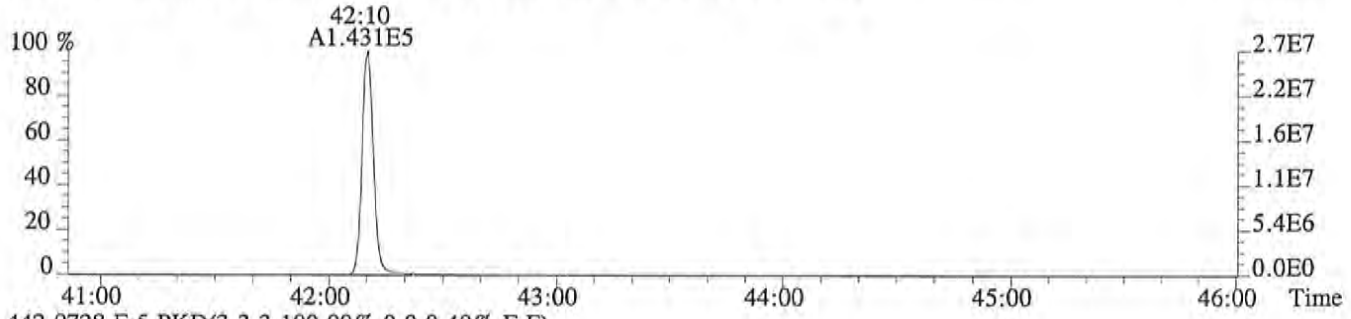
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,808.0,0.40%,F,T)



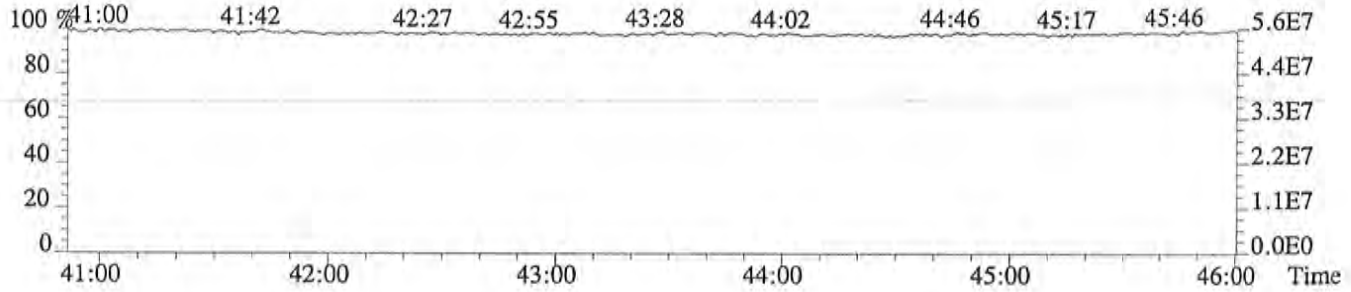
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,620.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,852.0,0.40%,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

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E1500972

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290	Process Date: 8/20/2015
Instrument Name: E-HRMS-08	Calibration File Name: P6-1508191613I
Processor Name: Gisela Cruz	Reviewer Name: Sameh Attalla
Supervisor: Lan Le	

Description	Yes	No	NA	NR	ER#
Analytical Sequence					
Does the analytical sequence summary accurately reflect the instrument run log, including ICV?	√				
Was a Mass Resolution Check performed at the beginning and end of the 12-hour sequence?	√				
Were all calibration standards and the ICV analyzed within the same 12-hour sequence?	√				
Were all calibration standards analyzed only once?	√				
Was the ICV analyzed after the ICAL, before analyzing samples?	√				
	√				
Mass Resolution Check					
Are beginning and ending resolution checks provided and legible?	√				
Were all target masses >10,000 resolving power at the beginning of the sequence?	√				
Were all target masses >10,000 resolving power at the end of the sequence?	√				
For PCB analysis, were masses at the low and high end of each function mass range >8,000?			√		
Where automatic printout of the mass resolution were not >10,000, was the resolution inspected by a trained analyst, including manual calculation of the resolution, if warranted?			√		
Window Define/209					
Is the window defining mix summary present, and accompanied by SICPs/Chromatograms for the WDM?	√				
Was the WDM/Column Performance/209 solution analyzed prior to the analysis of the calibration standards?	√				
Was 2,3,7,8-TCDD peak valley <25% to any other TCDD?	√				
Were all first and last eluters adequately resolved in each function?	√				
If first and last eluters were not resolved, was corrective action performed and documented, followed by a reanalysis of the WDM?			√		
Was the retention time of PCB 209 >55 min?			√		
Were the following congeners uniquely resolved (valley height <40% of the shortest peak)? PCB-34 and PCB-23 PCB-187 and PCB-182			√		
Did PCB 156/157 co-elute within 2 seconds at peak maximum?			√		
Calibration Standards					
Were there at least 5 calibration standards analyzed?	√				
If not all calibration standards were used, were the omitted standards either the lowest or highest calibration standard?			√		
Are all sample response summaries, S/N height summaries, and SICPs included (and legible) for the entire sequence?	√				

Laboratory Review Checklist: HRMS Initial Calibration

Method: 1613/8290	Process Date: 8/20/2015
Instrument Name: E-HRMS-08	Calibration File Name: P6-1508191613I
Processor Name: Gisela Cruz	Reviewer Name: Sameh Attalla
Supervisor: Lan Le	

Description	Yes	No	NA	NR	ER#
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: 08/20/2015
Instrument Name: E-HRMS-08	Calibration File Name: P6-1508191613I
Processor Name: Gisela Cruz	Reviewer Name:

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: 08/19/15

Init. Calib.Times: 10:52

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
WINDOW DEFINE	WINDOW DEFINE	P600002	19-AUG-15	10:52:49
76554	CS0.5	P600004	19-AUG-15	12:31:21
76555	CS1	P600005	19-AUG-15	13:20:24
76556	CS2	P600006	19-AUG-15	14:09:28
76557	CS3	P600007	19-AUG-15	14:58:32
76558	CS4	P600008	19-AUG-15	15:47:35
76956	CS5	P600009	19-AUG-15	16:36:39
CS3 SECOND SOURCE	CS3 SECOND SOU	P600011	19-AUG-15	18:14:46

e=opus 4

Sample List Report MassLynx 4.1 SCN815 SCN795

Sample List: C:\MassLynx\EHRMS08.PRO\SampleDB\20150819.SPL
Last Modified: Friday, August 21, 2015 09:39:32 Central Daylight Time
Printed: Friday, August 21, 2015 09:39:49 Central Daylight Time

Page Position (1, 1)

e: P6-150819 1613I e: P6 0001 1res
e: P6-150819 m23I e: P6 0001 1resm23

	Date	Time	File Name	Lab Sample ID	Client File Text	Sample Type	Bottle	MS File	Inlet File	Analyst	Comments
1	08/19/15	10:02	P600001	WD	WD	Standard	Tray1:1	EPA1613_ALS	Dioxin_ALS	LL	HRMS check 09:57
2		10:52	P600002	WD	WD	Standard	Tray1:1	EPA1613_ALS	Dioxin_ALS		
3		11:43	P600003	Nonane	Nonane	Blank	Tray1:2	EPA1613_ALS	Dioxin_ALS		
4		12:31	P600004	76554	CS0.5	Standard	Tray1:3	EPA1613_ALS	Dioxin_ALS		
5		13:20	P600005	76555	CS1	Standard	Tray1:4	EPA1613_ALS	Dioxin_ALS		
6		14:09	P600006	76556	CS2	Standard	Tray1:5	EPA1613_ALS	Dioxin_ALS		
7		14:58	P600007	76557	CS3	Standard	Tray1:6	EPA1613_ALS	Dioxin_ALS		
8		15:47	P600008	76558	CS4	Standard	Tray1:7	EPA1613_ALS	Dioxin_ALS		
9		16:36	P600009	76956	CS5	Standard	Tray1:8	EPA1613_ALS	Dioxin_ALS		
10		17:25	P600010	Nonane	Nonane	Blank	Tray1:2	EPA1613_ALS	Dioxin_ALS		
11		18:14	P600011	54819	CS3 Second Source	Standard	Tray1:9	EPA1613_ALS	Dioxin_ALS		HRMS check 19:12
12	---	---	---	---	---	Standard	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---

gc 08/20/15

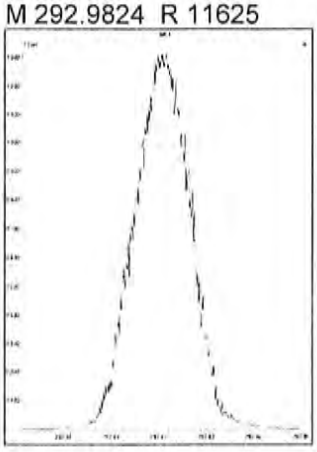
E1500972

Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

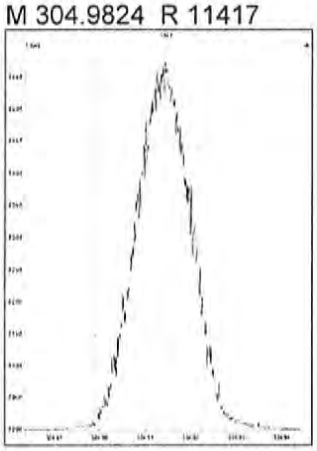
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, August 19, 2015 09:57:50 Central Daylight Time

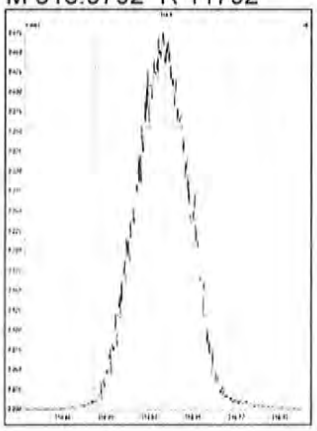
M 292.9824 R 11625



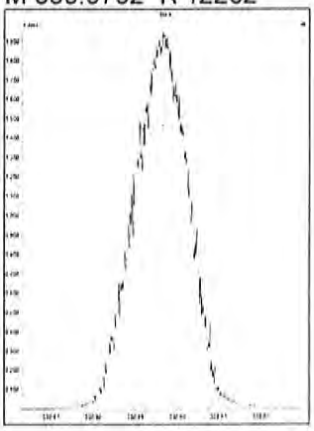
M 304.9824 R 11417



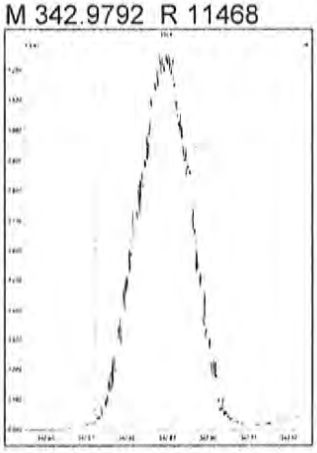
M 318.9792 R 11792



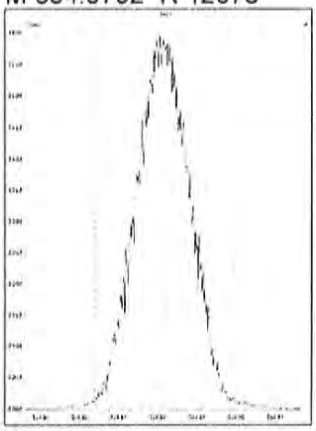
M 330.9792 R 12252



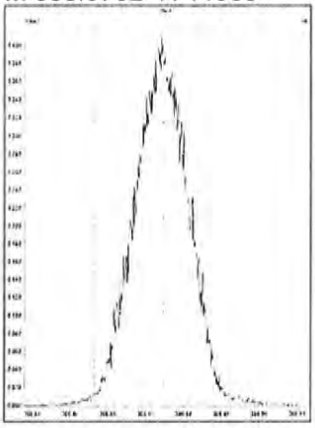
M 342.9792 R 11468



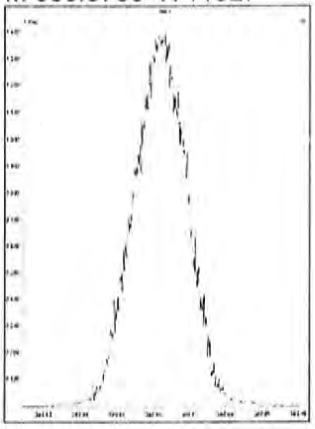
M 354.9792 R 12076



M 366.9792 R 11963



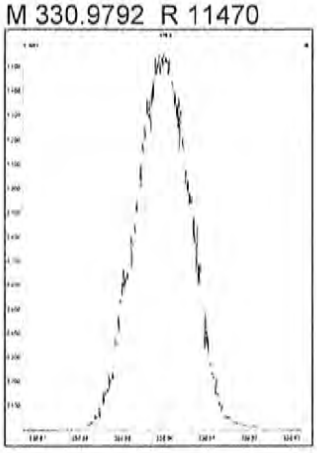
M 380.9760 R 11627



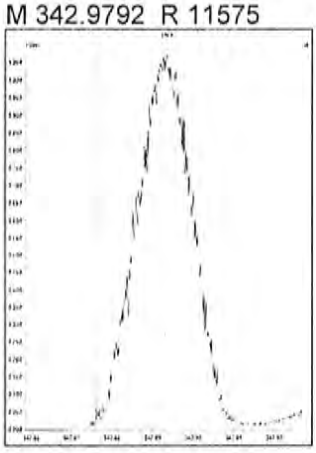
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, August 19, 2015 09:58:55 Central Daylight Time

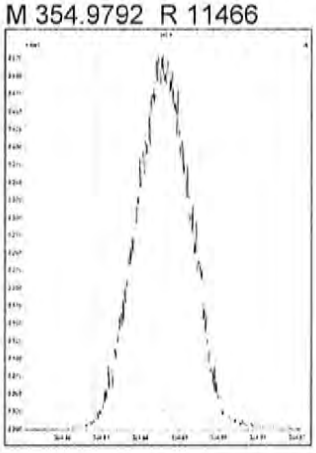
M 330.9792 R 11470



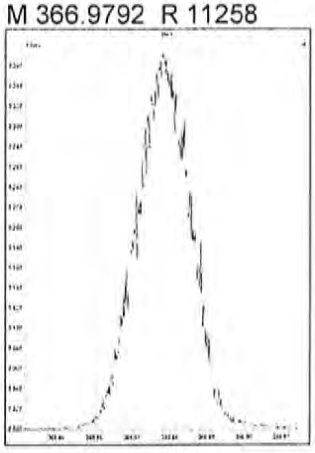
M 342.9792 R 11575



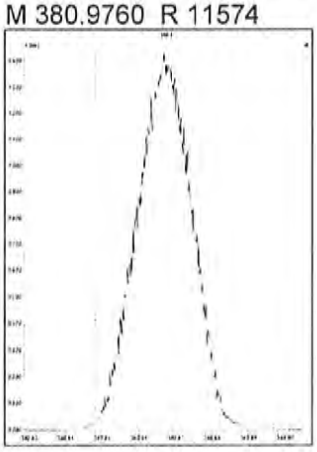
M 354.9792 R 11466



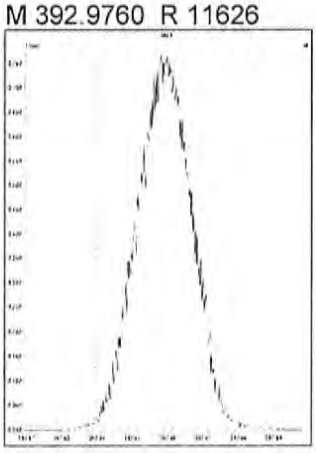
M 366.9792 R 11258



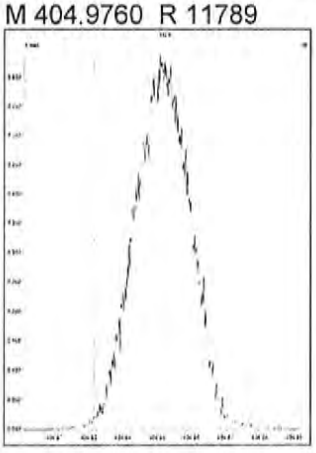
M 380.9760 R 11574



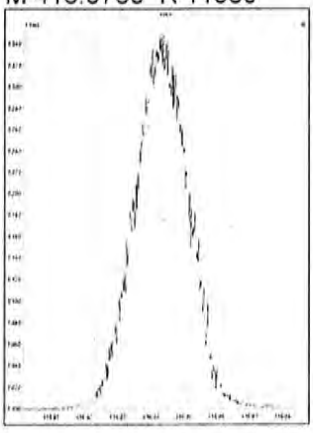
M 392.9760 R 11626



M 404.9760 R 11789



M 416.9760 R 11960

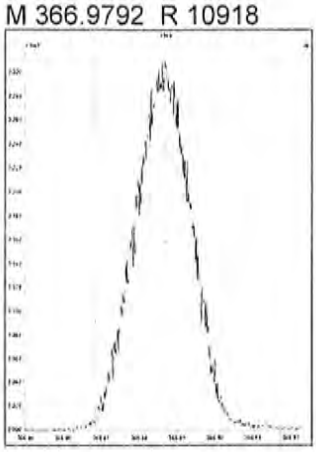


Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

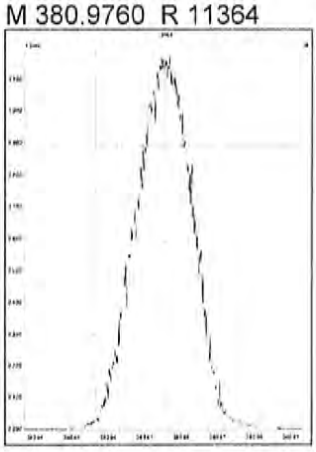
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, August 19, 2015 09:59:39 Central Daylight Time

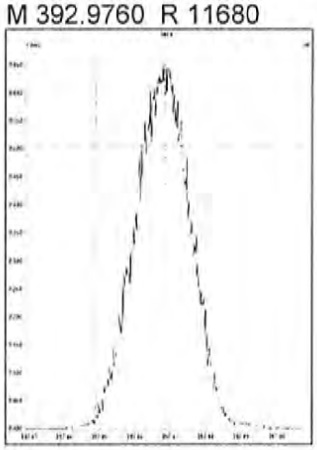
M 366.9792 R 10918



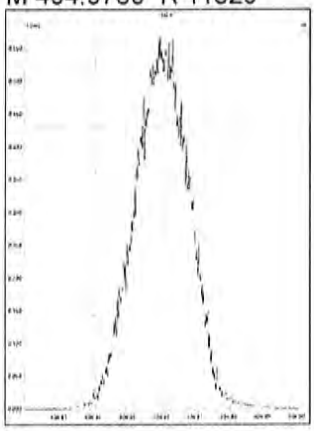
M 380.9760 R 11364



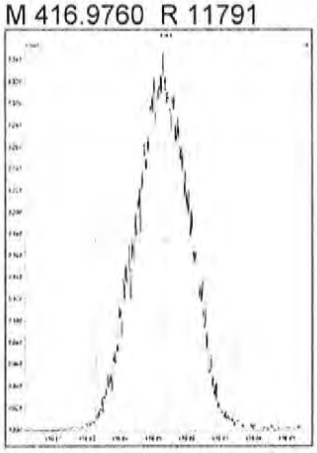
M 392.9760 R 11680



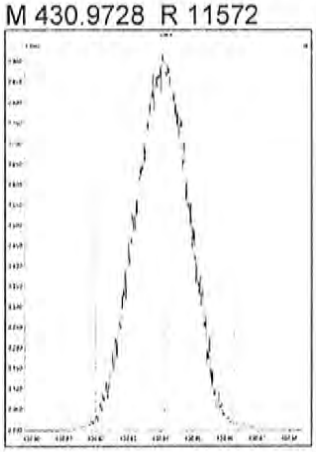
M 404.9760 R 11629



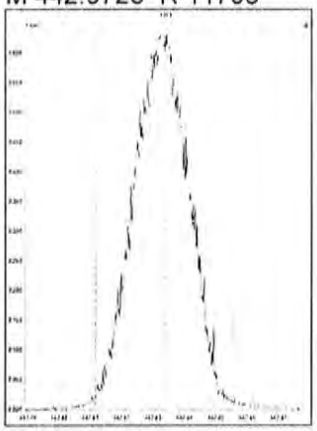
M 416.9760 R 11791



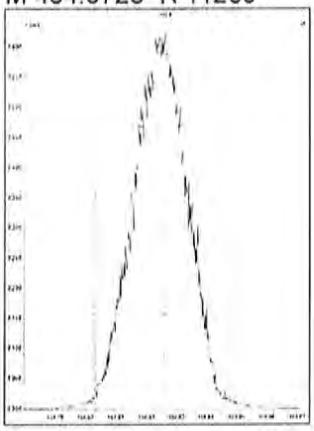
M 430.9728 R 11572



M 442.9728 R 11793



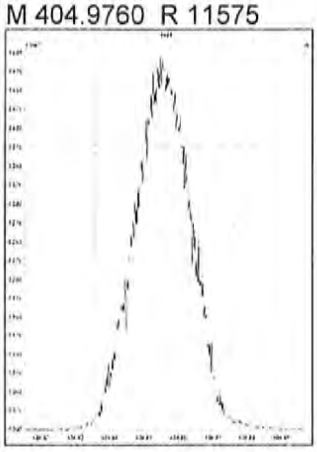
M 454.9728 R 11209



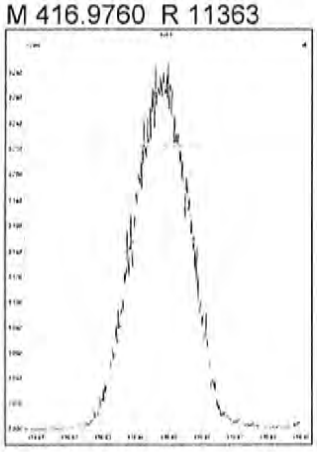
File: Experiment: EPA1613_ALS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, August 19, 2015 10:00:22 Central Daylight Time

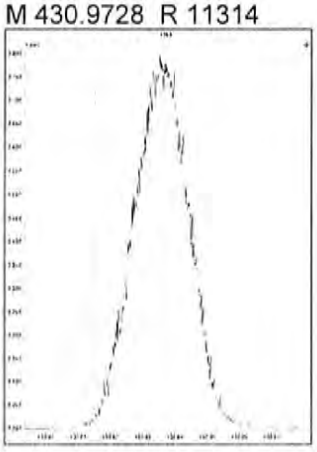
M 404.9760 R 11575



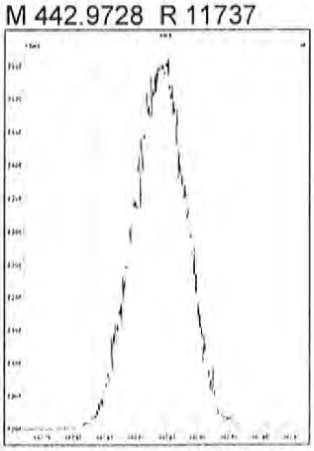
M 416.9760 R 11363



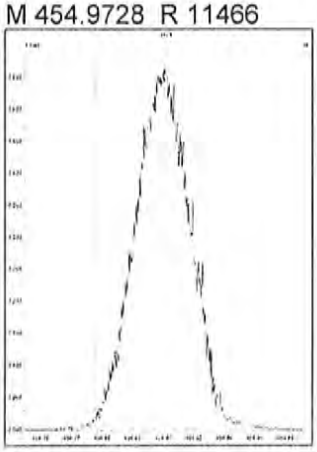
M 430.9728 R 11314



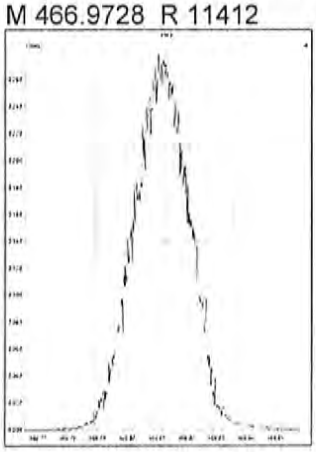
M 442.9728 R 11737



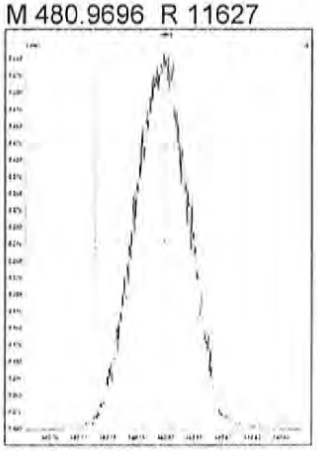
M 454.9728 R 11466



M 466.9728 R 11412



M 480.9696 R 11627



Experiment Calibration Report **MassLynx 4.1 SCN815 SCN795**

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

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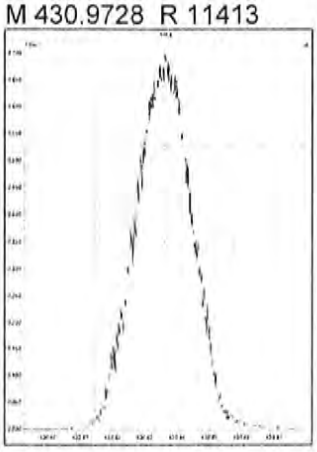
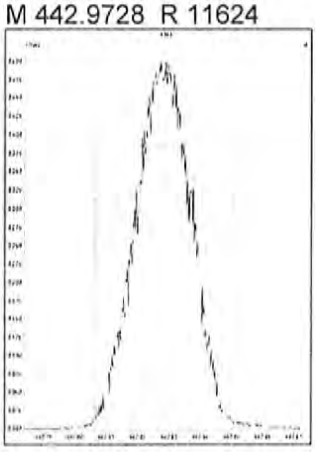
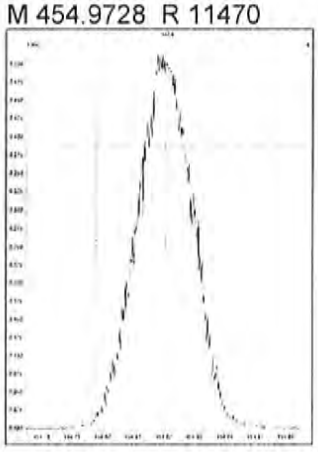
M 430.9728 R 11413



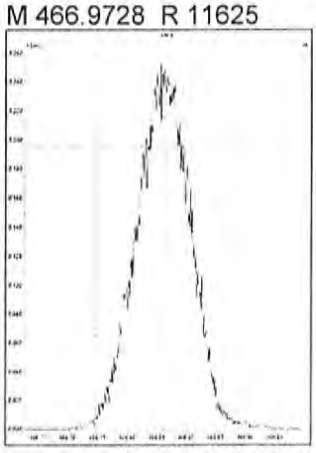
M 442.9728 R 11624



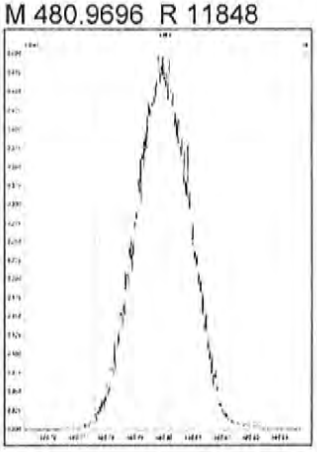
M 454.9728 R 11470



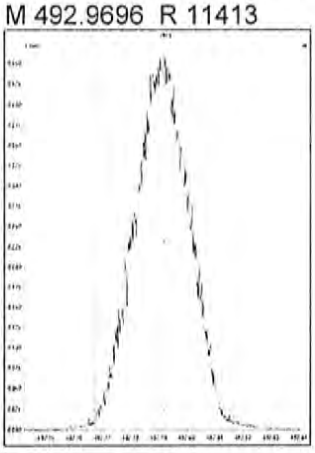
M 466.9728 R 11625



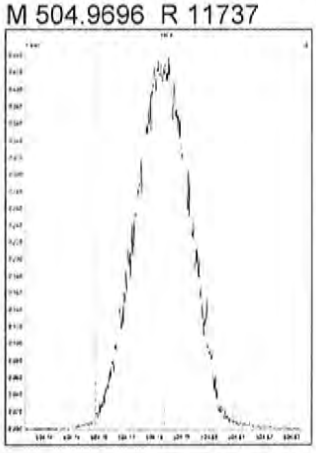
M 480.9696 R 11848



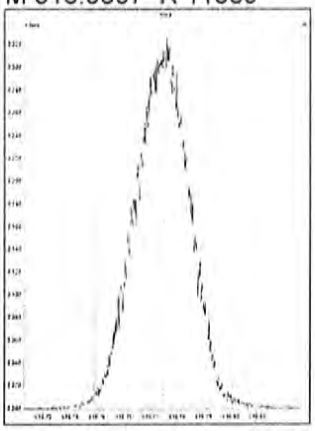
M 492.9696 R 11413



M 504.9696 R 11737



M 516.9697 R 11569



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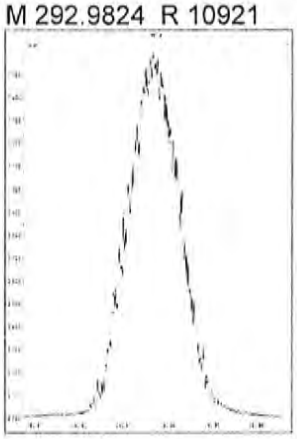
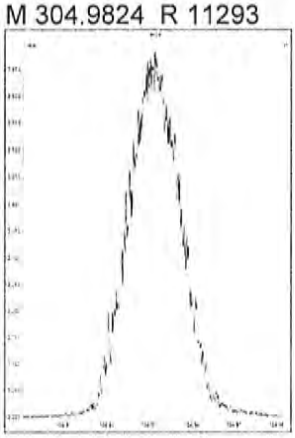
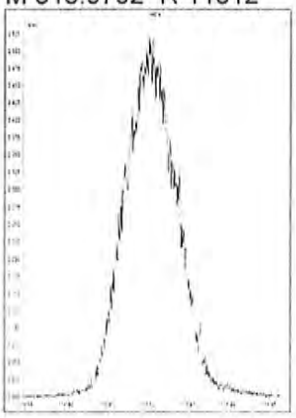
M 292.9824 R 10921



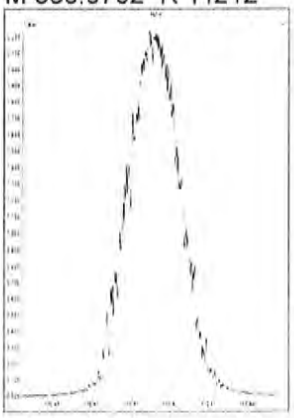
M 304.9824 R 11293



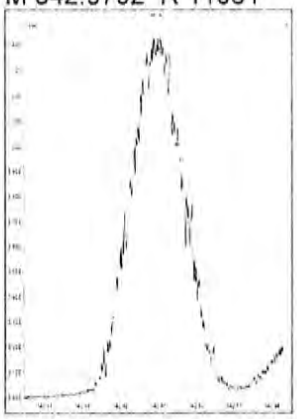
M 318.9792 R 11312



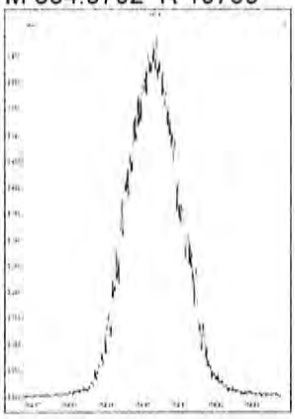
M 330.9792 R 11212



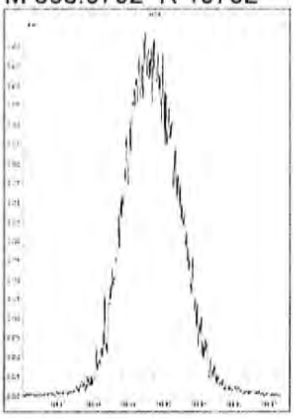
M 342.9792 R 11061



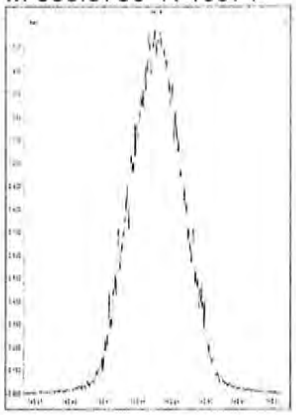
M 354.9792 R 10799



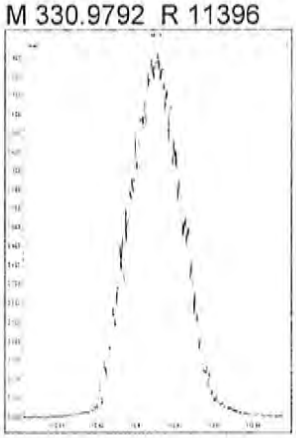
M 366.9792 R 10752



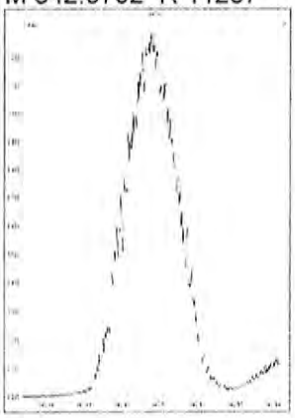
M 380.9760 R 10571



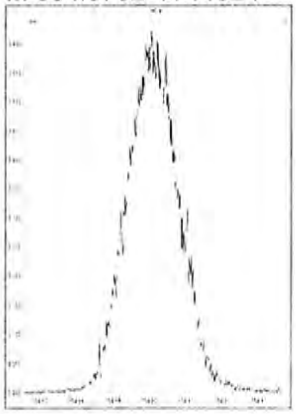
M 330.9792 R 11396



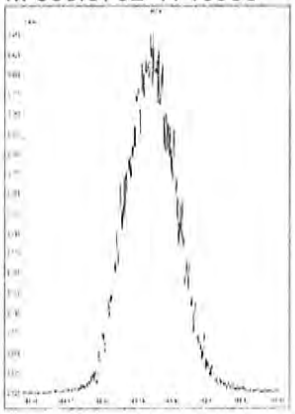
M 342.9792 R 11287



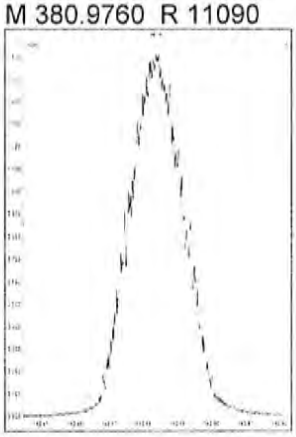
M 354.9792 R 11524



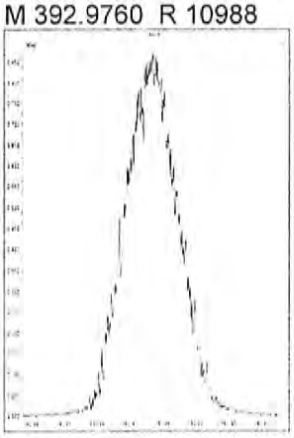
M 366.9792 R 10965



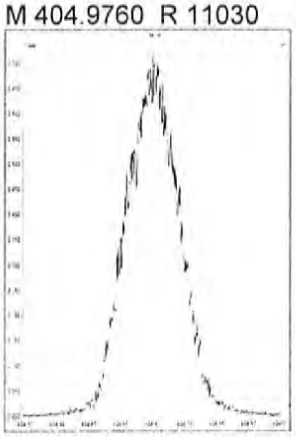
M 380.9760 R 11090



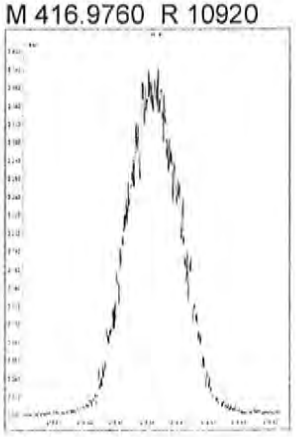
M 392.9760 R 10988



M 404.9760 R 11030



M 416.9760 R 10920



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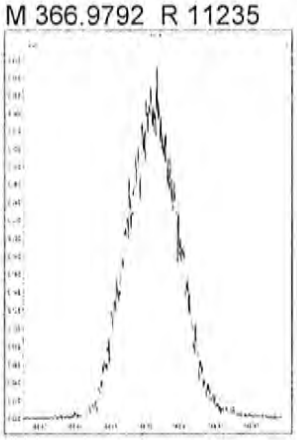
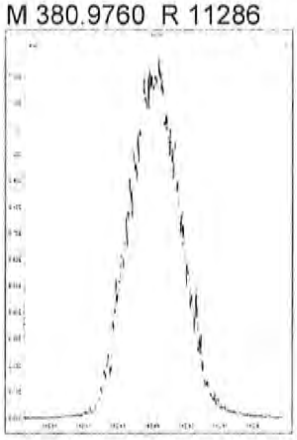
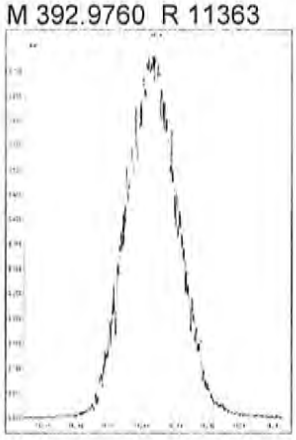
M 366.9792 R 11235



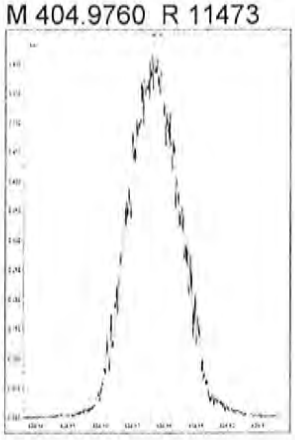
M 380.9760 R 11286



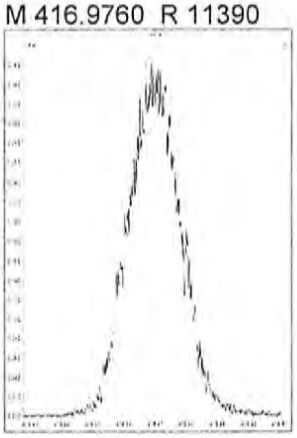
M 392.9760 R 11363



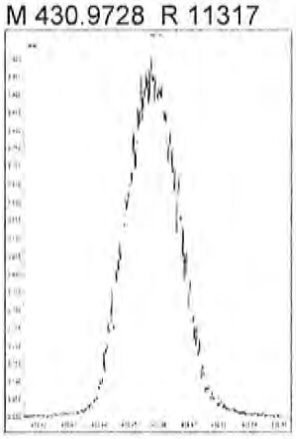
M 404.9760 R 11473



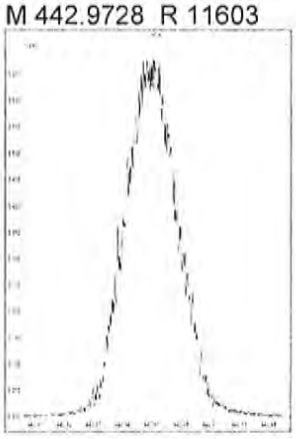
M 416.9760 R 11390



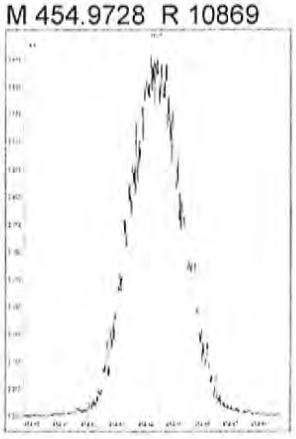
M 430.9728 R 11317



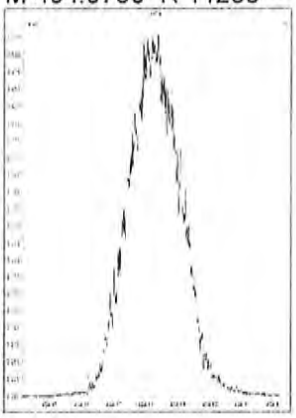
M 442.9728 R 11603



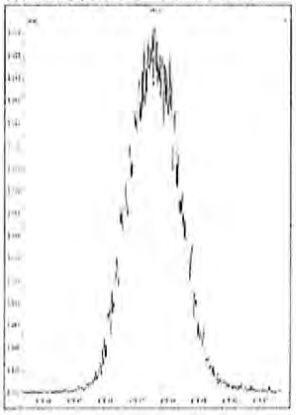
M 454.9728 R 10869



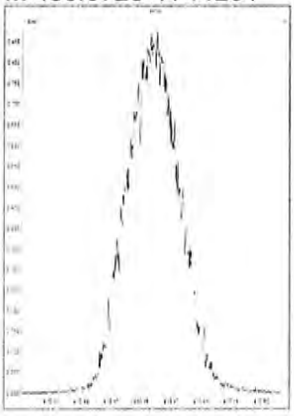
M 404.9760 R 11286



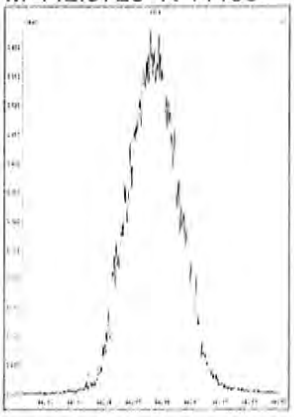
M 416.9760 R 11547



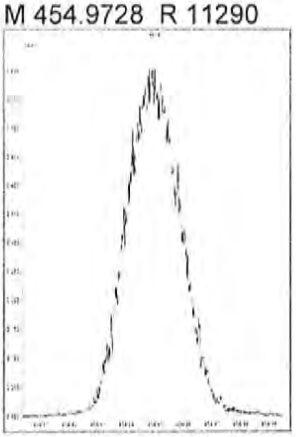
M 430.9728 R 11261



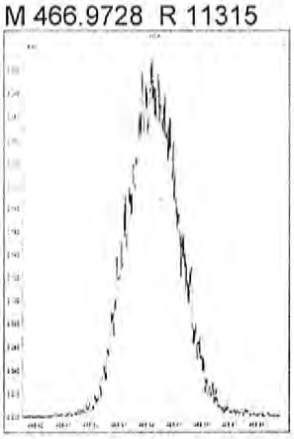
M 442.9728 R 11185



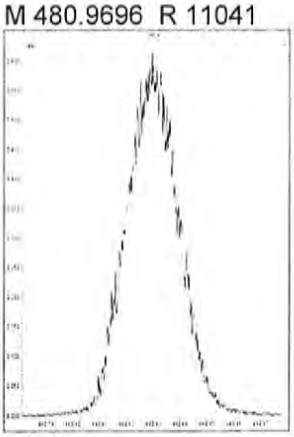
M 454.9728 R 11290



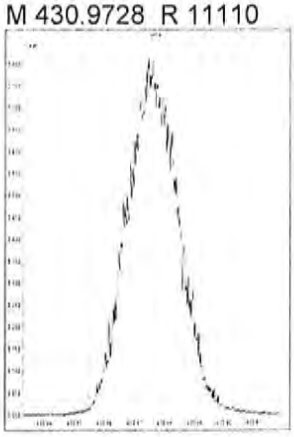
M 466.9728 R 11315



M 480.9696 R 11041

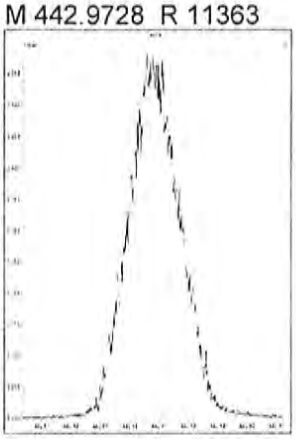


M 430.9728 R 11110

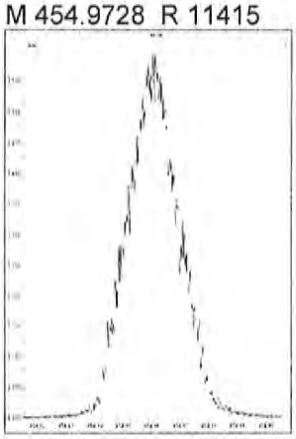


Printed: Wednesday, August 19, 2015 19:12:03 Central Daylight Time

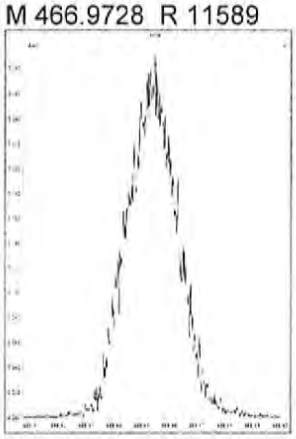
M 442.9728 R 11363



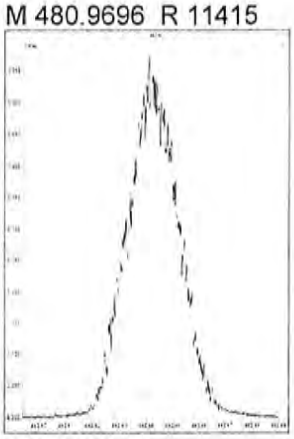
M 454.9728 R 11415



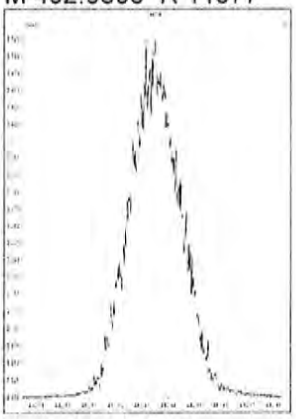
M 466.9728 R 11589



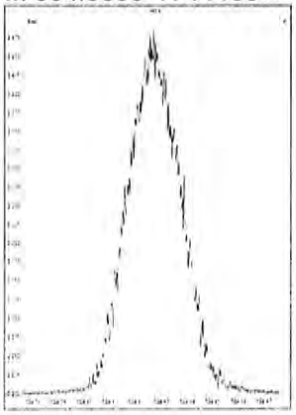
M 480.9696 R 11415



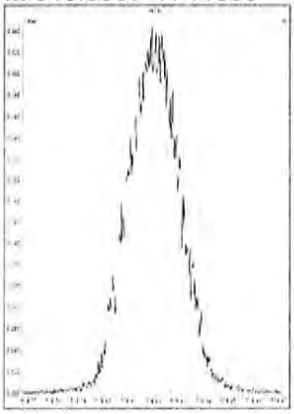
M 492.9696 R 11577



M 504.9696 R 11185



M 516.9697 R 11065



5DFA

WINDOW DEFINING MIX SUMMARY

CLIENT ID:

WDM

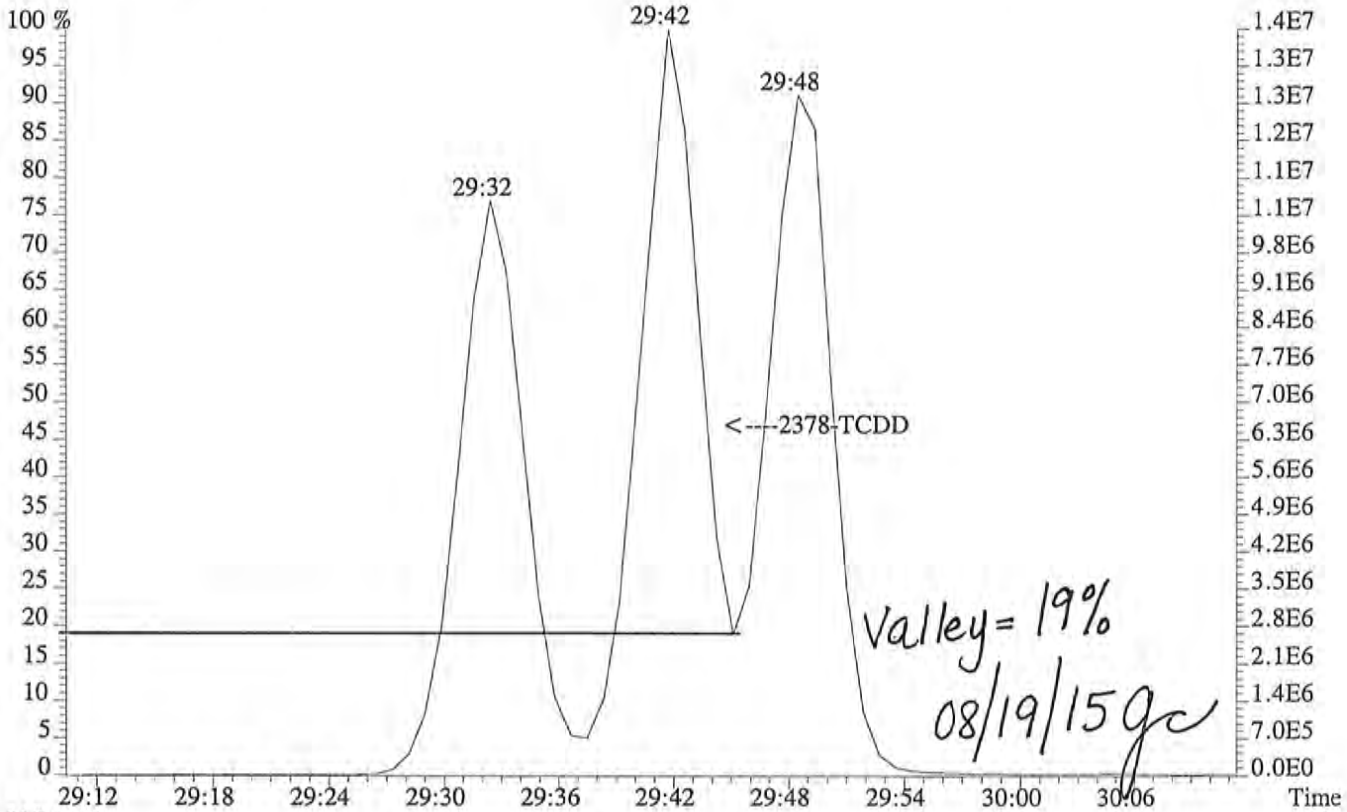
Lab Name: ALS Environmental
Lab Code: ALSTX
GC Column: DB-5MSUI

Case No.: _____ SDG No.:
ID: 0.25 (mm)
Lab File ID: P600002
Date Analyzed: 19-AUG-2015
Time Analyzed: 10:52:49

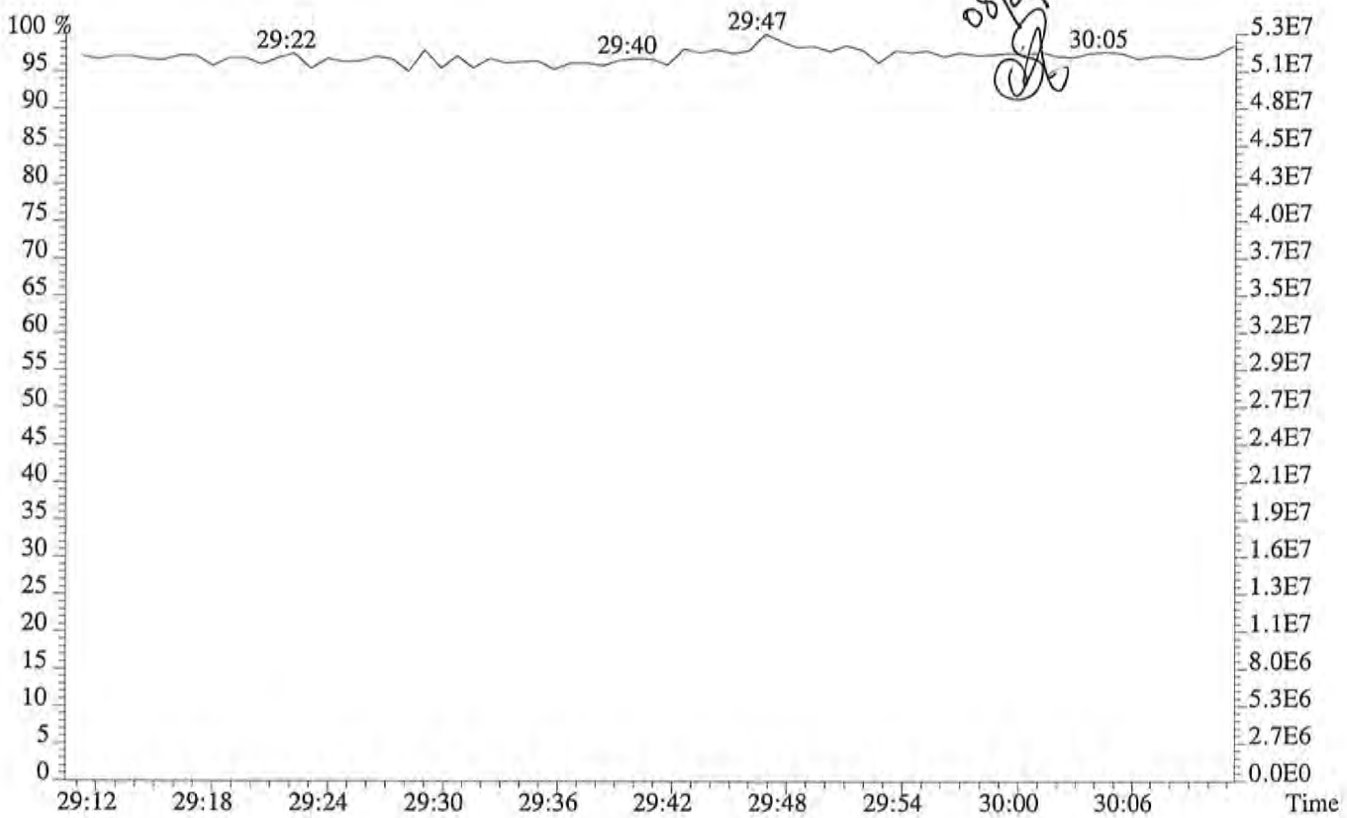
Congener	Retention Time First Eluting	Retention Time Last Eluting
TCDF	24:49	30:47
TCDD	26:40	30:38
PeCDF	30:43	34:48
PeCDD	32:11	34:33
HxCDF	35:26	37:52
HxCDD	35:56	37:28
HpCDF	39:04	40:30
HpCDD	39:19	40:00

% Valley 2378-TCDD: 19 %

File:P600002 #1-566 Acq:19-AUG-2015 10:52:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
319.8965

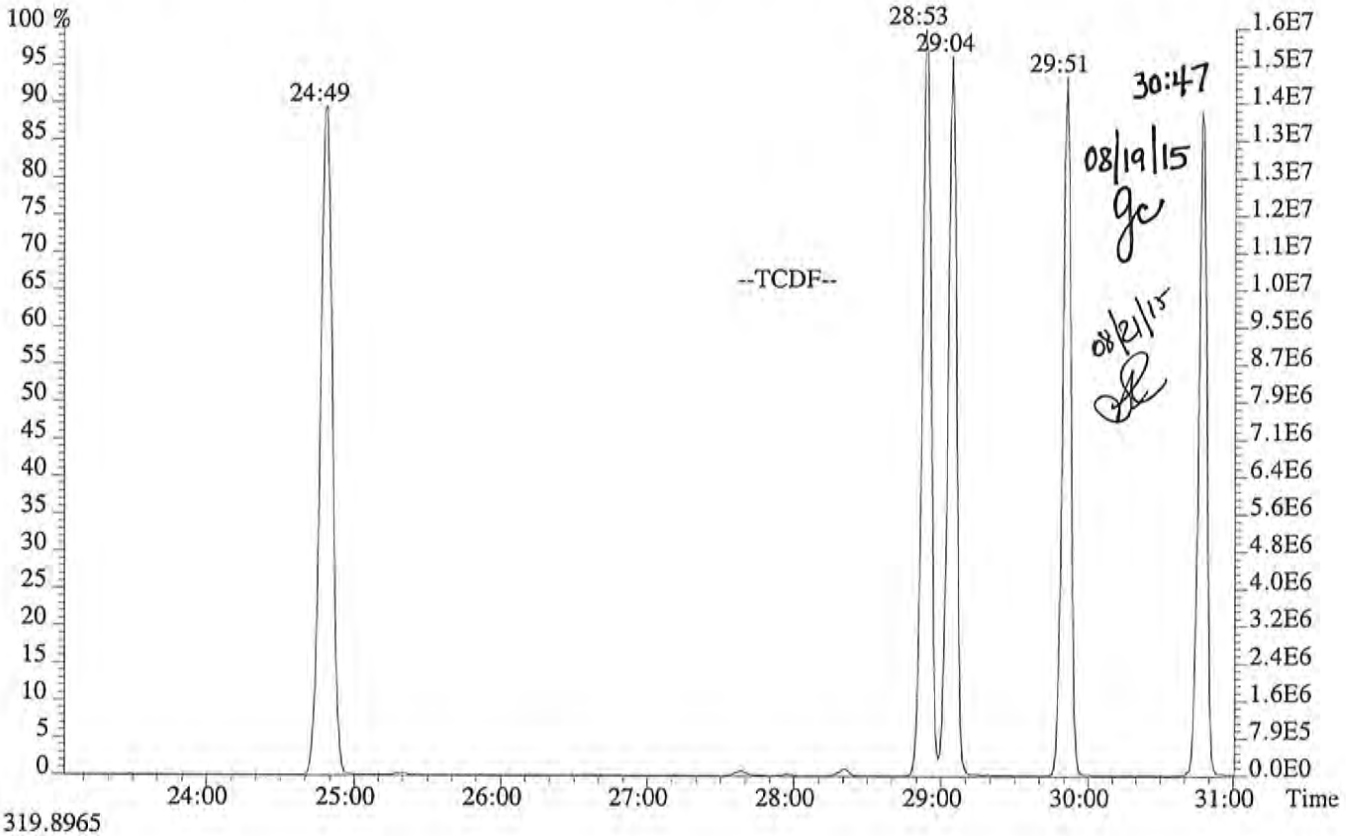


318.9792

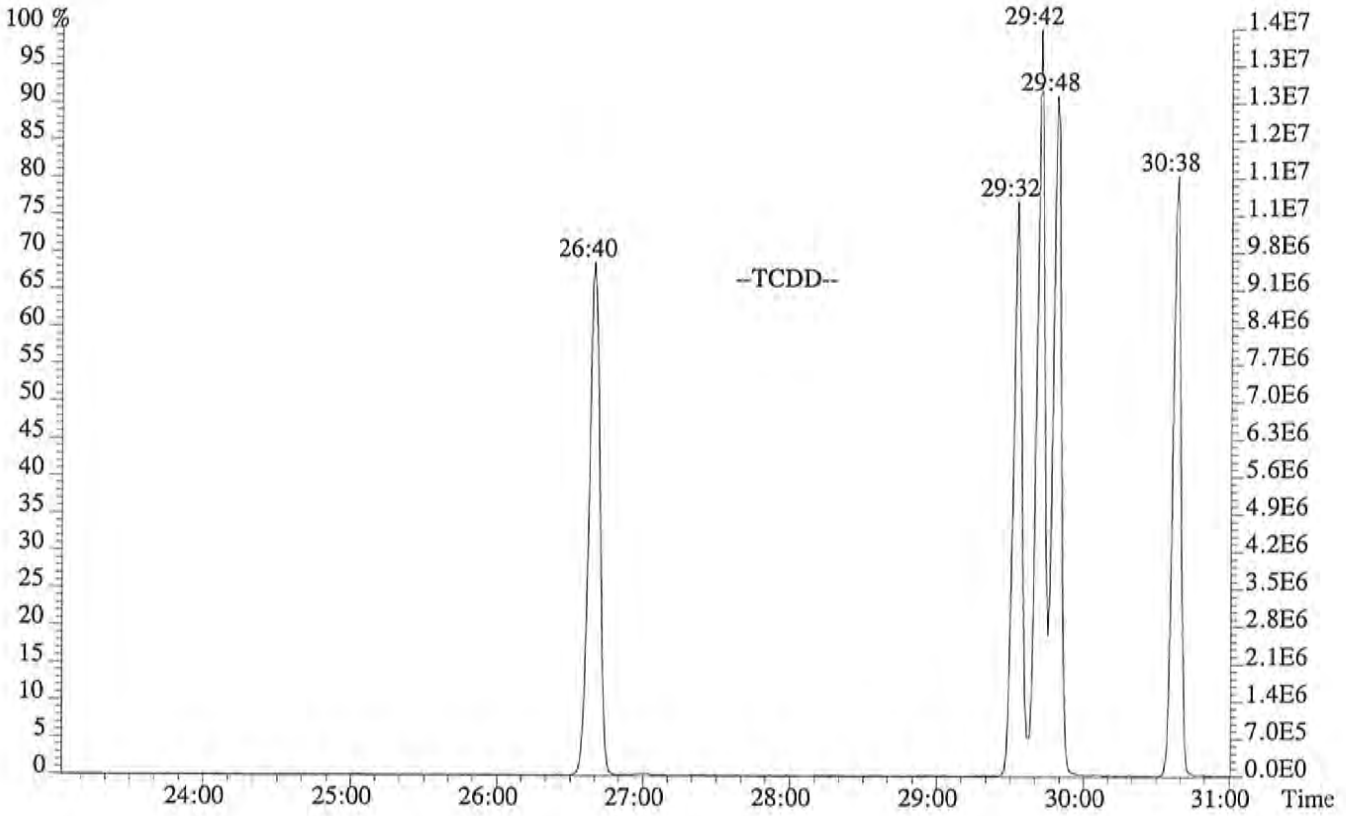


E1500972

File:P600002 #1-566 Acq:19-AUG-2015 10:52:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
303.9016

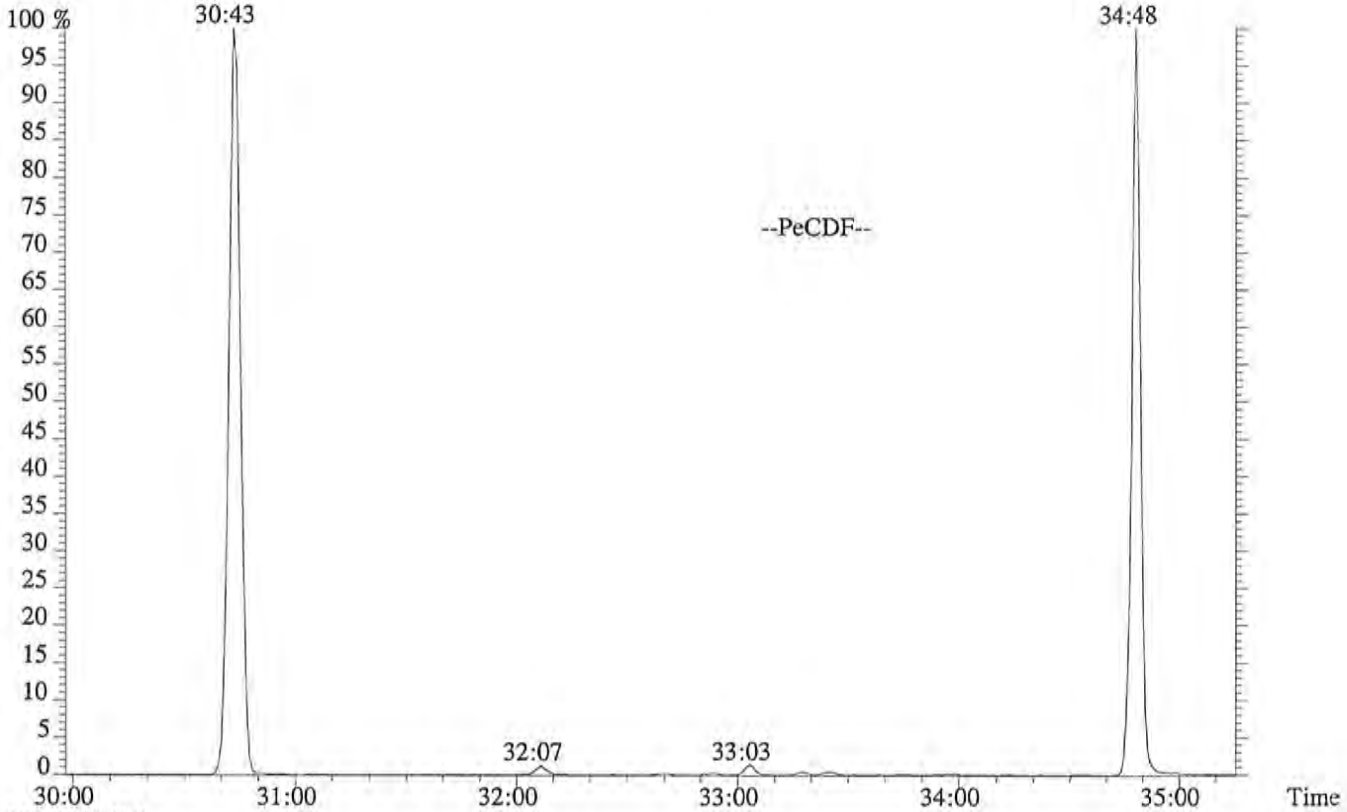


319.8965

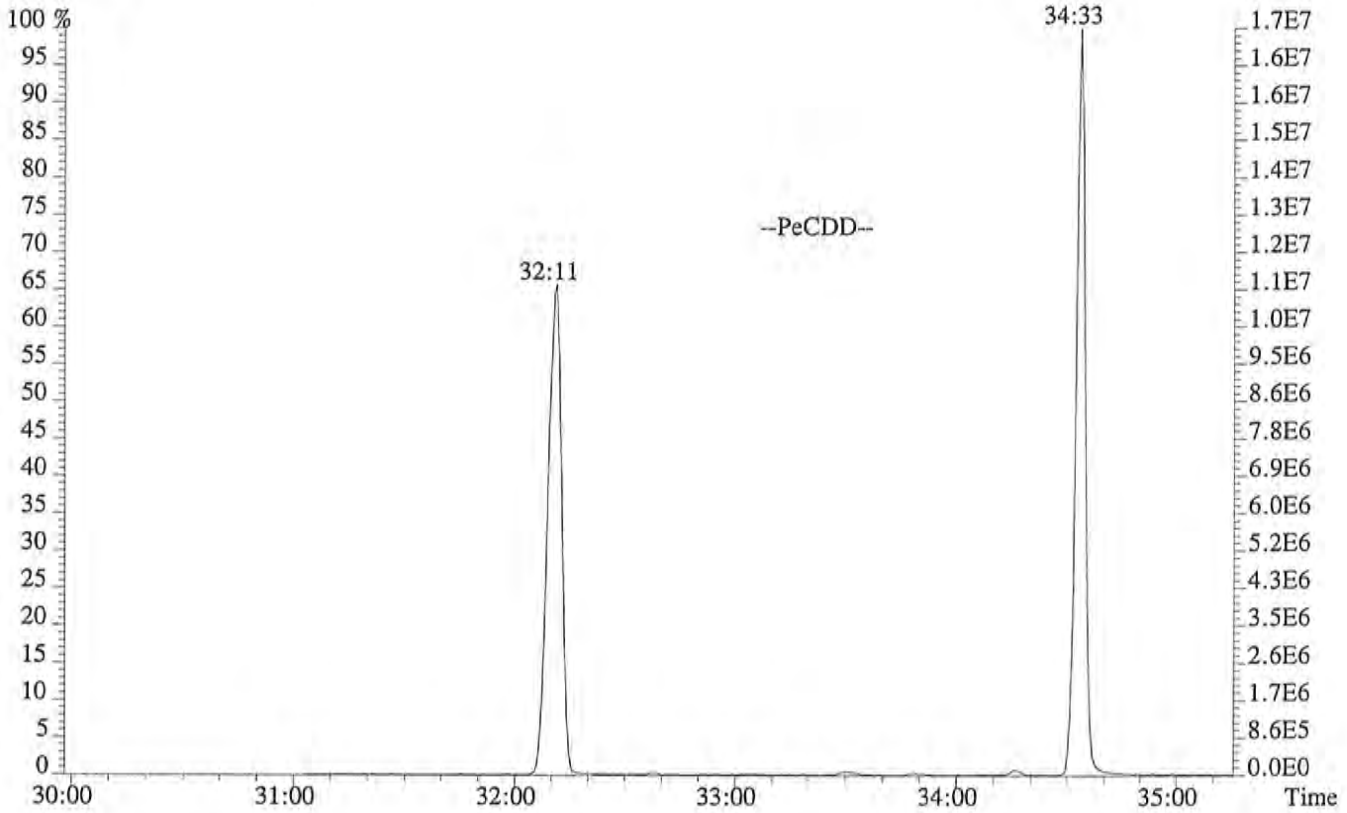


E1500972

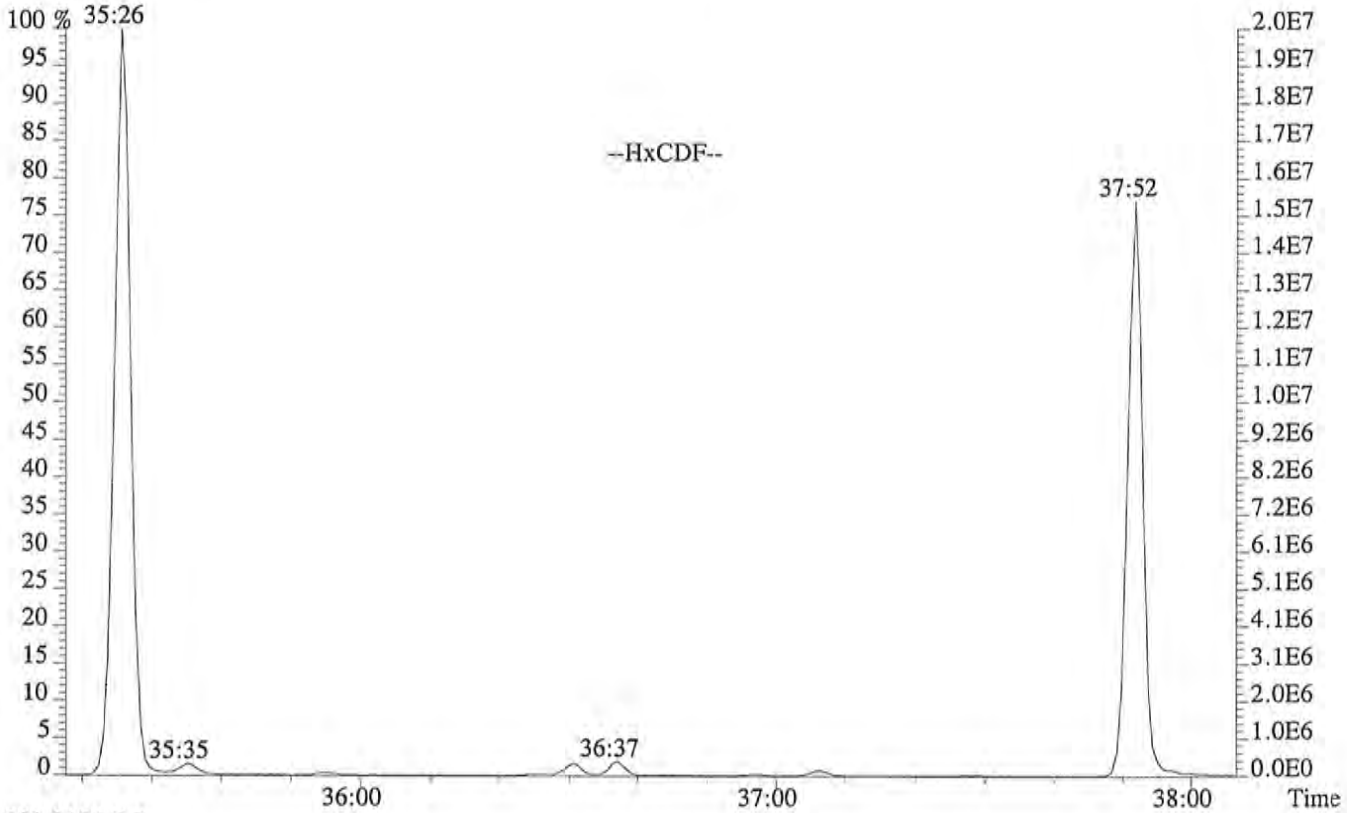
File:P600002 #1-566 Acq:19-AUG-2015 10:52:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
339.8597,339.8597 F:2



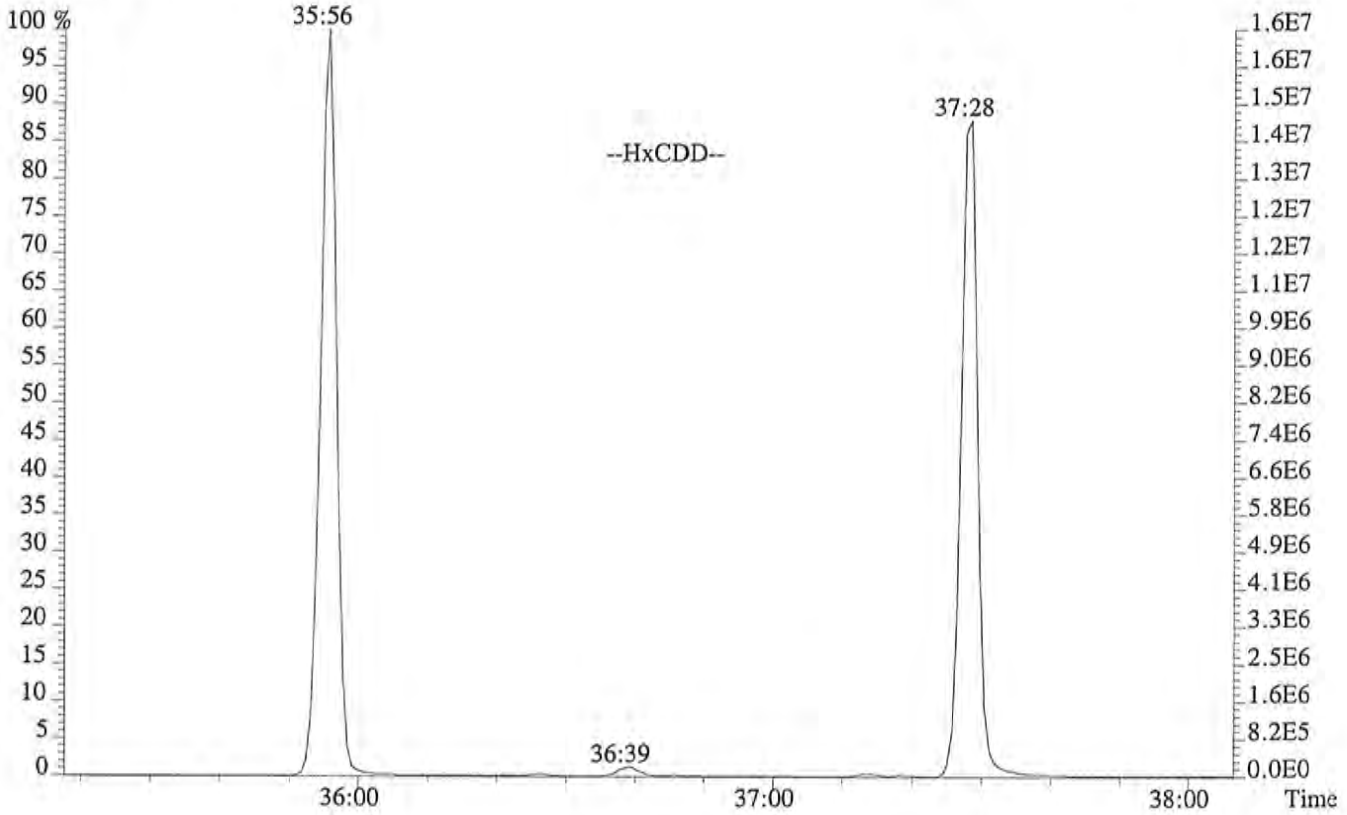
355.8546 F:2



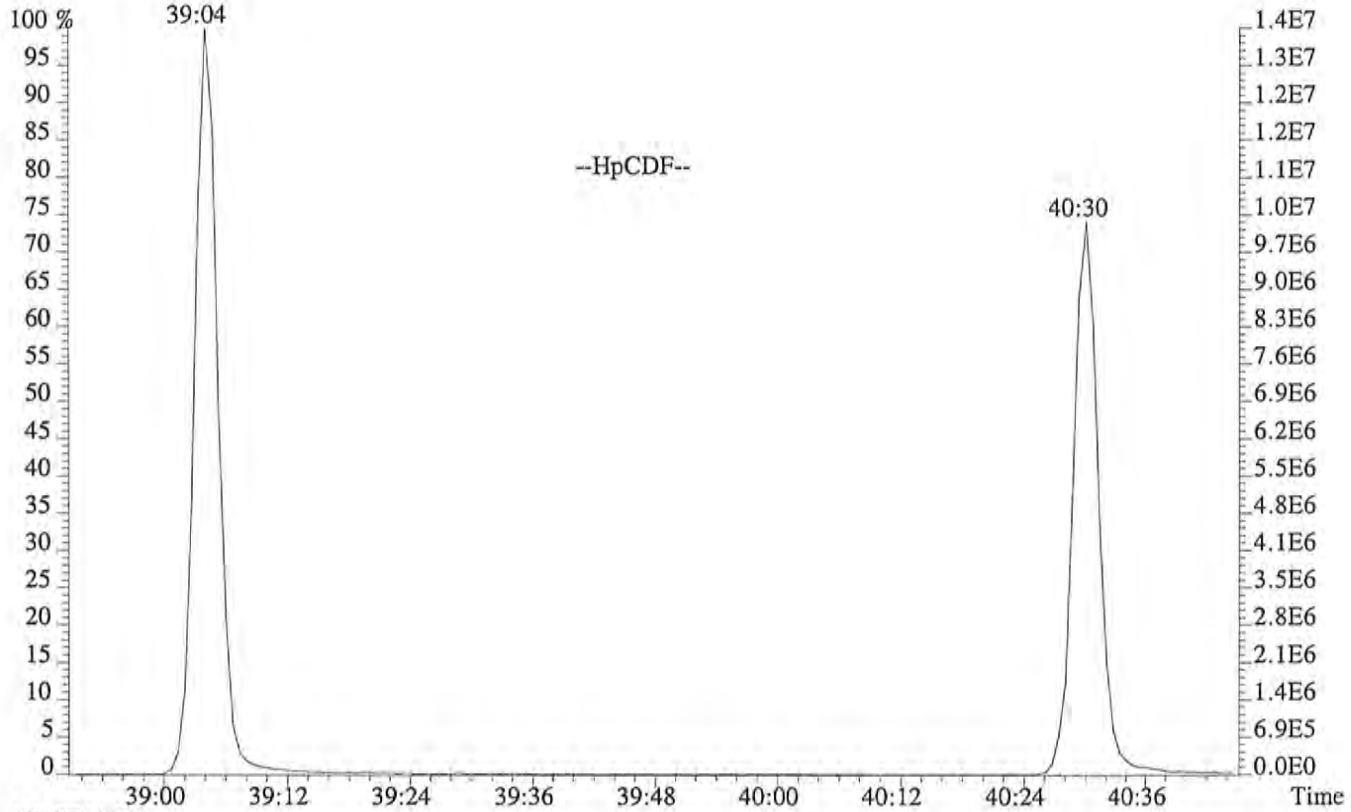
File:P600002 #1-299 Acq:19-AUG-2015 10:52:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
373.8208 F:3



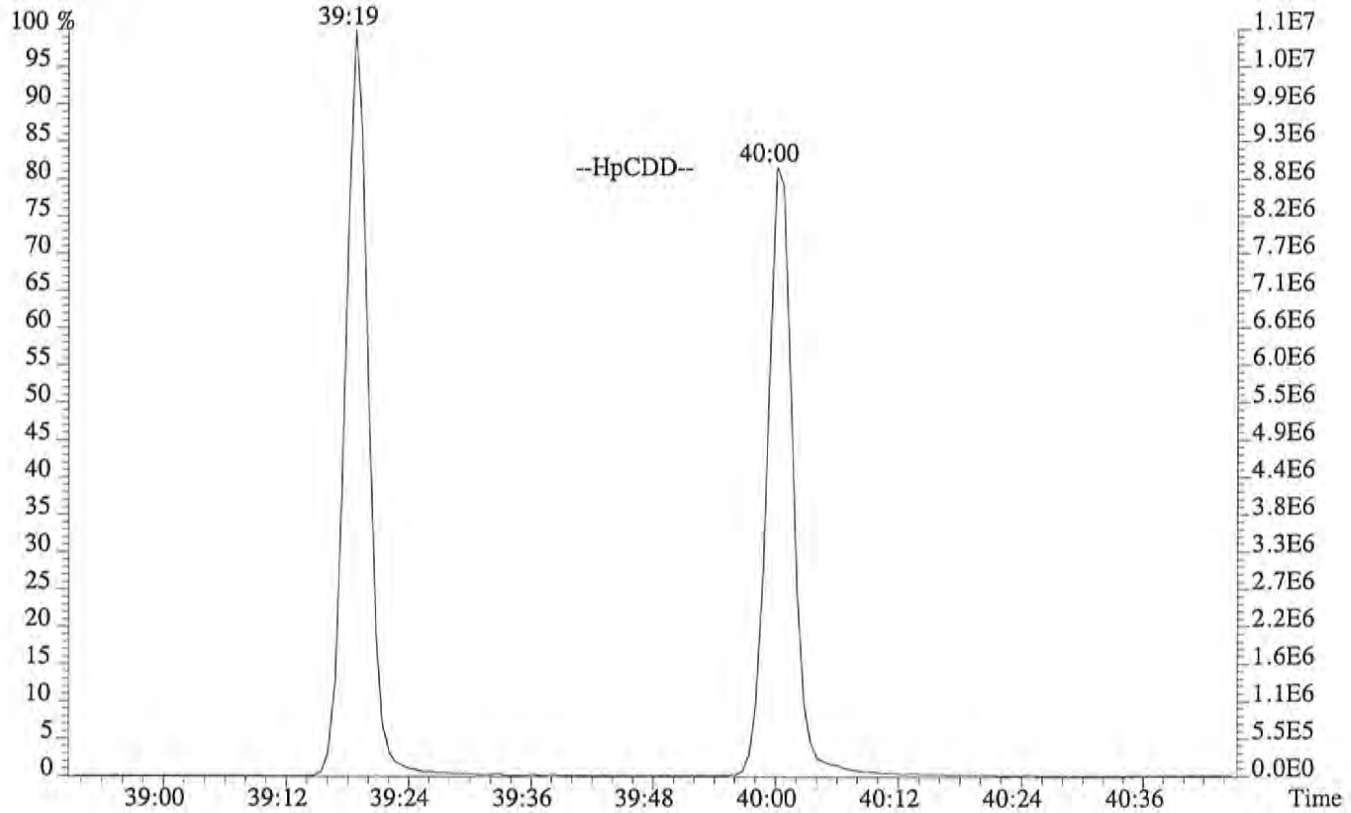
389.8157 F:3



File:P600002 #1-213 Acq:19-AUG-2015 10:52:49 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:WD
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).: 08/19/15 Method
Init. Calib. Time.: 10:52

Target Analytes	RR/RRF CS0.5	CS1	CS2	CS3	CS4	CS5	RR/RRF	MEAN %RSD	QC LIMITS
2,3,7,8-TCDD	1.01	1.03	1.01	1.00	1.00	1.01	1.01	0.91	+/-20%
2,3,7,8-TCDF	0.94	0.94	0.92	0.94	0.95	0.95	0.94	1.14	+/-20%
1,2,3,7,8-PeCDF	0.95	1.01	0.99	0.98	1.00	1.00	0.99	2.15	+/-20%
1,2,3,7,8-PeCDD	0.90	0.95	0.94	0.93	0.93	0.95	0.93	2.01	+/-20%
2,3,4,7,8-PeCDF	0.89	0.94	0.94	0.94	0.95	0.94	0.93	2.35	+/-20%
1,2,3,4,7,8-HxCDF	1.16	1.19	1.19	1.19	1.21	1.19	1.19	1.29	+/-20%
1,2,3,6,7,8-HxCDF	1.08	1.14	1.13	1.13	1.14	1.13	1.13	2.02	+/-20%
1,2,3,4,7,8-HxCDD	1.00	1.04	1.02	1.02	1.03	1.05	1.03	1.88	+/-20%
1,2,3,6,7,8-HxCDD	0.96	1.04	1.02	1.03	1.03	1.05	1.02	2.99	+/-20%
1,2,3,7,8,9-HxCDD	1.05	1.20	1.12	1.16	1.14	1.13	1.13	4.43	+/-20%
2,3,4,6,7,8-HxCDF	1.07	1.16	1.12	1.11	1.13	1.11	1.12	2.62	+/-20%
1,2,3,7,8,9-HxCDF	1.13	1.16	1.16	1.15	1.17	1.18	1.16	1.57	+/-20%
1,2,3,4,6,7,8-HpCDF	1.35	1.40	1.37	1.36	1.37	1.39	1.37	1.42	+/-20%
1,2,3,4,6,7,8-HpCDD	1.02	1.06	1.03	1.02	1.03	1.04	1.03	1.46	+/-20%
1,2,3,4,7,8,9-HpCDF	1.25	1.30	1.29	1.28	1.30	1.30	1.29	1.41	+/-20%
OCDD	1.11	1.15	1.11	1.10	1.11	1.10	1.11	1.59	+/-20%
OCDF	1.21	1.30	1.24	1.26	1.29	1.25	1.26	2.48	+/-20%
Labeled Compounds									
13C-2,3,7,8-TCDD	1.22	1.16	1.16	1.20	1.16	1.26	1.19	3.43	+/-35%
13C-1,2,3,7,8-PeCDD	0.94	1.11	1.14	1.00	1.06	1.32	1.09	12.11	+/-35%
13C-1,2,3,4,7,8-HxCDD	0.96	0.89	0.89	0.88	0.90	0.92	0.91	3.13	+/-35%
13C-1,2,3,6,7,8-HxCDD	0.90	0.83	0.89	0.83	0.85	0.86	0.86	3.23	+/-35%
13C-1,2,3,4,6,7,8-HpCDD	0.89	0.86	0.87	0.90	0.90	0.94	0.89	3.18	+/-35%
13C-OCDD	0.61	0.63	0.60	0.64	0.66	0.70	0.64	5.58	+/-35%
13C-2,3,7,8-TCDF	1.37	1.38	1.35	1.39	1.39	1.40	1.38	1.35	+/-35%
13C-1,2,3,7,8-PeCDF	1.31	1.43	1.48	1.38	1.42	1.72	1.46	9.66	+/-35%
13C-2,3,4,7,8-PeCDF	1.30	1.42	1.50	1.36	1.43	1.78	1.46	11.44	+/-35%
13C-1,2,3,4,7,8-HxCDF	1.10	1.08	1.12	1.02	1.07	1.06	1.07	2.93	+/-35%
13C-1,2,3,6,7,8-HxCDF	1.18	1.12	1.19	1.13	1.15	1.17	1.16	2.49	+/-35%
13C-2,3,4,6,7,8-HxCDF	1.21	1.10	1.12	1.11	1.12	1.14	1.13	3.45	+/-35%
13C-1,2,3,7,8,9-HxCDF	1.03	1.03	1.01	1.02	1.04	1.01	1.02	1.12	+/-35%
13C-1,2,3,4,6,7,8-HpCDF	0.88	0.86	0.87	0.87	0.89	0.91	0.88	2.12	+/-35%
13C-1,2,3,4,7,8,9-HpCDF	0.91	0.90	0.90	0.92	0.94	0.92	0.91	1.68	+/-35%
37Cl-2,3,7,8-TCDD	1.31	1.25	1.22	1.26	1.22	1.33	1.26	3.49	+/-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).: 08/19/15 Method
Init. Calib. Time.: 10:52

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	0.79	0.77	0.77	0.78	0.76	0.77		0.65-0.89
2,3,7,8-TCDD	320/322	0.76	0.78	0.78	0.78	0.78	0.78		0.65-0.89
1,2,3,7,8-PeCDF	340/342	1.59	1.55	1.55	1.55	1.55	1.51		1.32-1.78
2,3,4,7,8-PeCDF	340/342	1.59	1.59	1.56	1.56	1.54	1.48		1.32-1.78
1,2,3,7,8-PeCDD	356/358	1.53	1.56	1.57	1.55	1.56	1.56		1.32-1.78
1,2,3,4,7,8-HxCDF	374/376	1.22	1.22	1.19	1.22	1.22	1.15		1.05-1.43
1,2,3,6,7,8-HxCDF	374/376	1.27	1.23	1.20	1.24	1.24	1.18		1.05-1.43
2,3,4,6,7,8-HxCDF	374/376	1.24	1.24	1.22	1.22	1.23	1.15		1.05-1.43
1,2,3,7,8,9-HxCDF	374/376	1.23	1.25	1.21	1.24	1.23	1.21		1.05-1.43
1,2,3,4,7,8-HxCDD	390/392	1.22	1.28	1.25	1.25	1.24	1.25		1.05-1.43
1,2,3,6,7,8-HxCDD	390/392	1.21	1.24	1.24	1.25	1.24	1.25		1.05-1.43
1,2,3,7,8,9-HxCDD	390/392	1.28	1.31	1.26	1.24	1.25	1.25		1.05-1.43
1,2,3,4,6,7,8-HpCDF	408/410	1.02	1.02	1.04	1.02	1.01	1.02		0.88-1.20
1,2,3,4,7,8,9-HpCDF	408/410	1.00	1.01	1.02	1.02	1.03	1.03		0.88-1.20
1,2,3,4,6,7,8-HpCDD	424/426	1.01	1.04	1.02	1.05	1.04	1.04		0.88-1.20
OCDF	442/444	0.91	0.90	0.89	0.90	0.90	0.94		0.76-1.02
OCDD	458/460	0.88	0.88	0.90	0.89	0.89	0.90		0.76-1.02
13C-2,3,7,8-TCDD	332/334	0.79	0.79	0.79	0.78	0.79	0.79		0.65-0.89
13C-1,2,3,7,8-PeCDD	368/370	1.56	1.57	1.57	1.57	1.57	1.57		1.32-1.78
13C-1,2,3,4,7,8-HxCDD	402/404	1.26	1.27	1.27	1.26	1.26	1.26		1.05-1.43
13C-1,2,3,6,7,8-HxCDD	402/404	1.26	1.26	1.26	1.27	1.27	1.26		1.05-1.43
13C-1,2,3,4,6,7,8-HpCDD	436/438	1.05	1.06	1.06	1.05	1.06	1.06		0.88-1.20
13C-OCDD	470/472	0.90	0.90	0.90	0.90	0.89	0.90		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	1.57	1.58	1.58	1.57	1.58	1.58		1.32-1.78
13C-2,3,4,7,8-PeCDF	352/354	1.57	1.58	1.58	1.59	1.58	1.58		1.32-1.78
13C-1,2,3,4,7,8-HxCDF	384/386	0.52	0.52	0.52	0.52	0.52	0.52		0.43-0.59
13C-1,2,3,6,7,8-HxCDF	384/386	0.52	0.53	0.52	0.52	0.52	0.52		0.43-0.59
13C-2,3,4,6,7,8-HxCDF	384/386	0.52	0.52	0.53	0.52	0.53	0.52		0.43-0.59
13C-1,2,3,7,8,9-HxCDF	384/386	0.52	0.52	0.52	0.52	0.52	0.52		0.43-0.59
13C-1,2,3,4,6,7,8-HpCDF	418/420	0.44	0.45	0.44	0.44	0.44	0.45		0.37-0.51
13C-1,2,3,4,7,8,9-HpCDF	418/420	0.45	0.45	0.45	0.44	0.45	0.44		0.37-0.51
13C-1,2,3,4-TCDD	332/334	0.79	0.79	0.80	0.79	0.79	0.79		0.65-0.89
13C-1,2,3,7,8,9-HxCDD	402/404	1.26	1.26	1.26	1.26	1.25	1.25		1.05-1.43

Quality Control (QC) limits represent +/- 15% window around the theoretical ion abundance ratio. The laboratory must flag any analyte in any calibration solution which does not meet the ion abundance ratio QC limit by placing an asterisk in the flag column.

ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76554

Run #1 Filename P600004 Samp: 1 Inj: 1 Acquired: 19-AUG-15 12:31:21
Processed: 19-AUG-15 16:14:16 Sample ID: CS0.5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	29:04	1.117e+03	1.416e+03	0.79	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	33:03	7.510e+03	4.712e+03	1.59	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:55	6.945e+03	4.373e+03	1.59	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	36:30	5.825e+03	4.782e+03	1.22	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:37	5.972e+03	4.720e+03	1.27	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	37:06	5.975e+03	4.815e+03	1.24	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:50	5.354e+03	4.348e+03	1.23	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	39:04	5.016e+03	4.919e+03	1.02	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	40:30	4.739e+03	4.724e+03	1.00	yes	no	1.287
10	Unk	OCDF	43:04	5.845e+03	6.423e+03	0.91	yes	no	1.257
11	Unk	2,3,7,8-TCDD	29:48	1.037e+03	1.371e+03	0.76	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	34:12	4.987e+03	3.252e+03	1.53	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	37:14	4.362e+03	3.576e+03	1.22	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	37:18	3.954e+03	3.266e+03	1.21	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	37:32	4.546e+03	3.539e+03	1.28	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	40:01	3.801e+03	3.761e+03	1.01	yes	no	1.034
17	Unk	OCDD	42:52	5.248e+03	5.994e+03	0.88	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	29:03	4.752e+05	5.998e+05	0.79	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	33:03	6.283e+05	4.004e+05	1.57	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:55	6.205e+05	3.964e+05	1.57	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	36:30	2.506e+05	4.797e+05	0.52	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:36	2.713e+05	5.186e+05	0.52	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	37:05	2.767e+05	5.291e+05	0.52	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:50	2.351e+05	4.532e+05	0.52	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	39:04	1.809e+05	4.065e+05	0.44	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:29	1.859e+05	4.177e+05	0.45	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	29:48	4.212e+05	5.354e+05	0.79	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	34:11	4.478e+05	2.864e+05	1.56	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	37:13	3.553e+05	2.821e+05	1.26	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	37:18	3.347e+05	2.651e+05	1.26	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:59	3.052e+05	2.899e+05	1.05	yes	no	0.892
32	IS	13C-OCDD	42:51	3.843e+05	4.272e+05	0.90	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	29:15	3.458e+05	4.378e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:32	3.710e+05	2.956e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:48	2.559e+03				no	1.263

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ALS ENVIRONMENTAL
Signal/Noise Height Ratio Summary

CLIENT ID.
76554

Run #1 Filename P600004 Samp: 1 Inj: 1 Acquired: 19-AUG-15 12:31:21
Processed: 19-AUG-15 16:14:16 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	2.10e+05	1.90e+03	1.1e+02	2.58e+05	1.84e+03	1.4e+02
2	1,2,3,7,8-PeCDF	1.49e+06	1.84e+03	8.1e+02	9.38e+05	3.10e+03	3.0e+02
3	2,3,4,7,8-PeCDF	1.42e+06	1.84e+03	7.7e+02	8.87e+05	3.10e+03	2.9e+02
4	1,2,3,4,7,8-HxCDF	1.28e+06	2.02e+03	6.3e+02	1.05e+06	6.08e+02	1.7e+03
5	1,2,3,6,7,8-HxCDF	1.30e+06	2.02e+03	6.4e+02	1.04e+06	6.08e+02	1.7e+03
6	2,3,4,6,7,8-HxCDF	1.37e+06	2.02e+03	6.8e+02	1.08e+06	6.08e+02	1.8e+03
7	1,2,3,7,8,9-HxCDF	1.15e+06	2.02e+03	5.7e+02	9.32e+05	6.08e+02	1.5e+03
8	1,2,3,4,6,7,8-HpCDF	1.10e+06	1.84e+03	5.9e+02	1.10e+06	1.67e+03	6.6e+02
9	1,2,3,4,7,8,9-HpCDF	1.01e+06	1.84e+03	5.5e+02	9.84e+05	1.67e+03	5.9e+02
10	OCDF	1.06e+06	1.48e+03	7.2e+02	1.16e+06	2.44e+03	4.8e+02
11	2,3,7,8-TCDD	2.09e+05	1.95e+03	1.1e+02	2.78e+05	2.54e+03	1.1e+02
12	1,2,3,7,8-PeCDD	1.02e+06	3.83e+03	2.7e+02	6.47e+05	2.19e+03	3.0e+02
13	1,2,3,4,7,8-HxCDD	9.98e+05	1.84e+03	5.4e+02	8.15e+05	2.27e+03	3.6e+02
14	1,2,3,6,7,8-HxCDD	8.80e+05	1.84e+03	4.8e+02	7.43e+05	2.27e+03	3.3e+02
15	1,2,3,7,8,9-HxCDD	9.63e+05	1.84e+03	5.2e+02	7.66e+05	2.27e+03	3.4e+02
16	1,2,3,4,6,7,8-HpCDD	7.79e+05	1.88e+03	4.1e+02	7.55e+05	8.00e+02	9.4e+02
17	OCDD	9.49e+05	1.08e+03	8.8e+02	1.09e+06	1.89e+03	5.8e+02
18	13C-2,3,7,8-TCDF	8.93e+07	5.81e+03	1.5e+04	1.13e+08	3.58e+03	3.2e+04
19	13C-1,2,3,7,8-PeCDF	1.22e+08	1.62e+03	7.5e+04	7.74e+07	2.34e+03	3.3e+04
20	13C-2,3,4,7,8-PeCDF	1.24e+08	1.62e+03	7.7e+04	7.87e+07	2.34e+03	3.4e+04
21	13C-1,2,3,4,7,8-HxCDF	5.47e+07	1.35e+03	4.1e+04	1.05e+08	3.21e+03	3.3e+04
22	13C-1,2,3,6,7,8-HxCDF	5.98e+07	1.35e+03	4.4e+04	1.14e+08	3.21e+03	3.6e+04
23	13C-2,3,4,6,7,8-HxCDF	6.16e+07	1.35e+03	4.6e+04	1.19e+08	3.21e+03	3.7e+04
24	13C-1,2,3,7,8,9-HxCDF	5.06e+07	1.35e+03	3.8e+04	9.74e+07	3.21e+03	3.0e+04
25	13C-1,2,3,4,6,7,8-HpCDF	3.88e+07	9.26e+03	4.2e+03	8.85e+07	1.02e+04	8.7e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.87e+07	9.26e+03	4.2e+03	8.73e+07	1.02e+04	8.6e+03
27	13C-2,3,7,8-TCDD	8.43e+07	9.59e+03	8.8e+03	1.07e+08	5.35e+03	2.0e+04
28	13C-1,2,3,7,8-PeCDD	9.07e+07	2.35e+03	3.9e+04	5.81e+07	2.18e+03	2.7e+04
29	13C-1,2,3,4,7,8-HxCDD	8.00e+07	6.37e+03	1.3e+04	6.32e+07	2.40e+03	2.6e+04
30	13C-1,2,3,6,7,8-HxCDD	7.39e+07	6.37e+03	1.2e+04	5.94e+07	2.40e+03	2.5e+04
31	13C-1,2,3,4,6,7,8-HpCDD	6.27e+07	1.40e+03	4.5e+04	6.02e+07	8.36e+02	7.2e+04
32	13C-OCDD	7.03e+07	1.26e+03	5.6e+04	7.87e+07	1.65e+03	4.8e+04
33	13C-1,2,3,4-TCDD	6.67e+07	9.59e+03	7.0e+03	8.50e+07	5.35e+03	1.6e+04
34	13C-1,2,3,7,8,9-HxCDD	8.19e+07	6.37e+03	1.3e+04	6.60e+07	2.40e+03	2.7e+04
35	37Cl-2,3,7,8-TCDD	5.20e+05	3.14e+03	1.7e+02			

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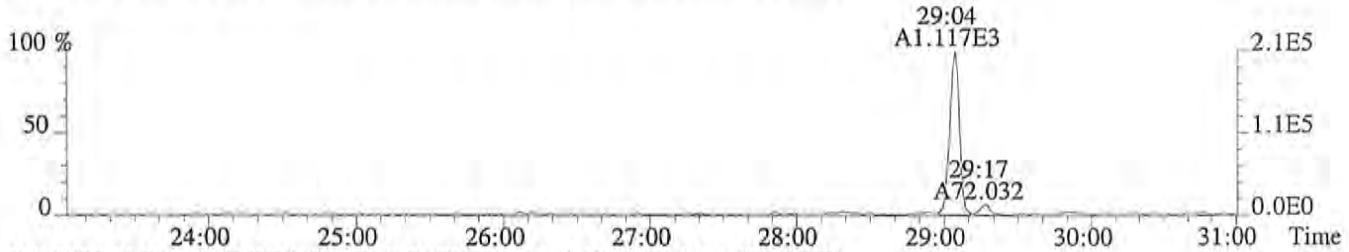
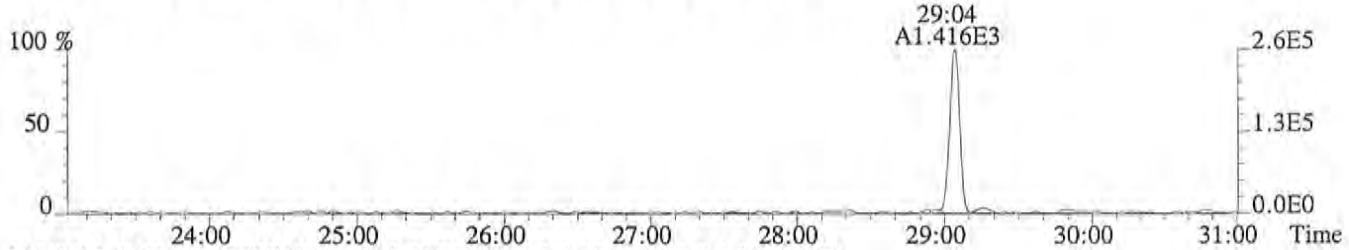
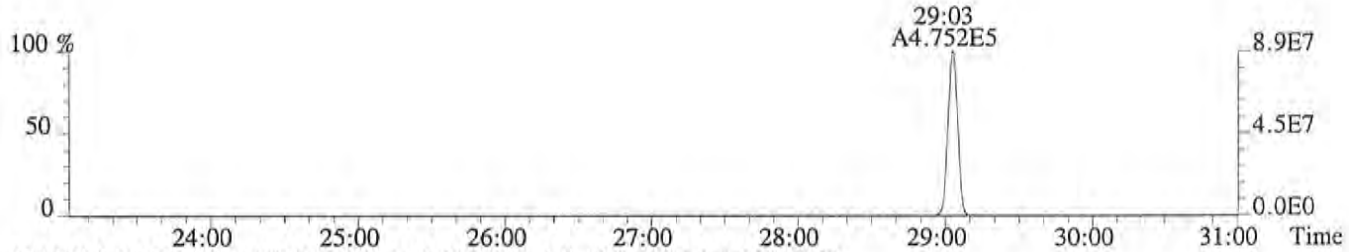
File:P600004 #1-566 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1896.0,1.00%,F,T)



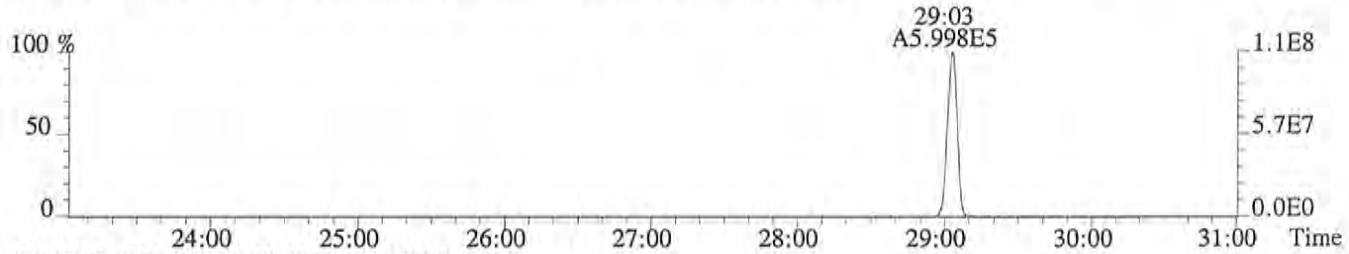
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1844.0,1.00%,F,T)



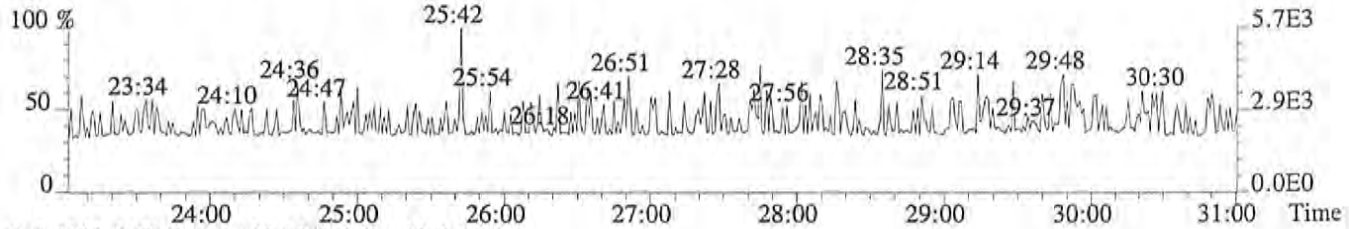
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5812.0,1.00%,F,T)



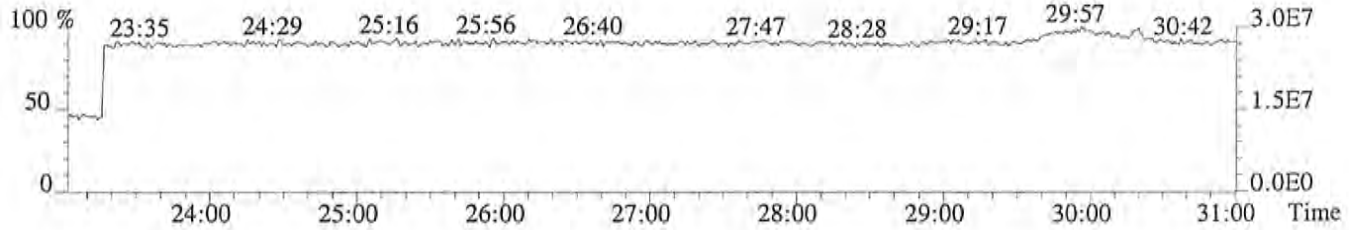
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3576.0,1.00%,F,T)



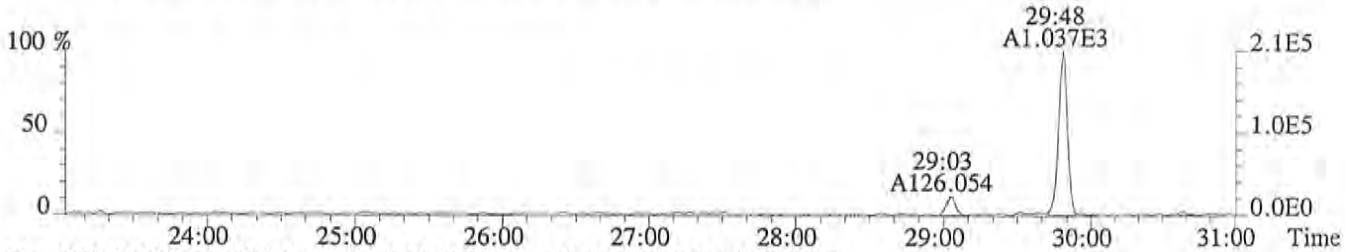
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



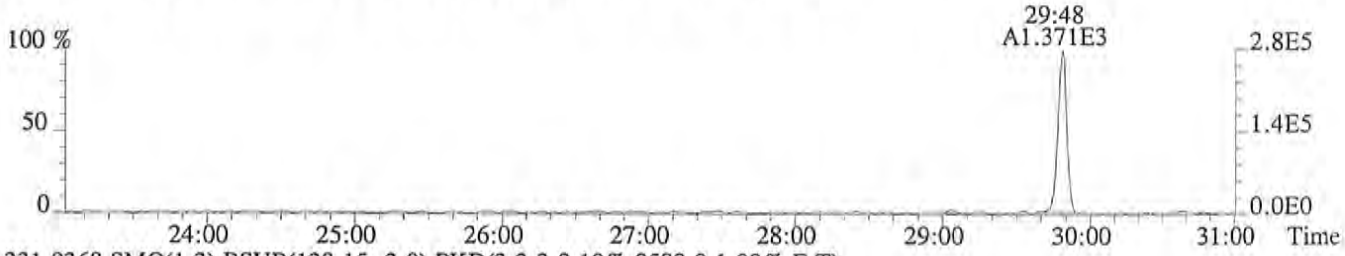
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



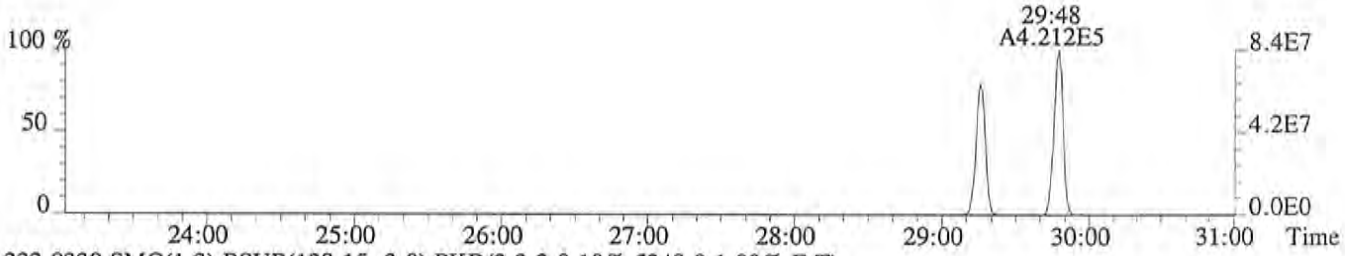
File:P600004 #1-566 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1948.0,1.00%,F,T)



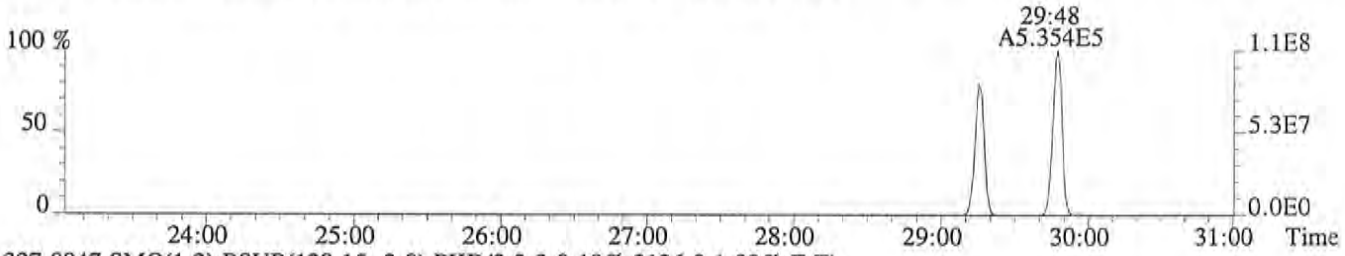
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2540.0,1.00%,F,T)



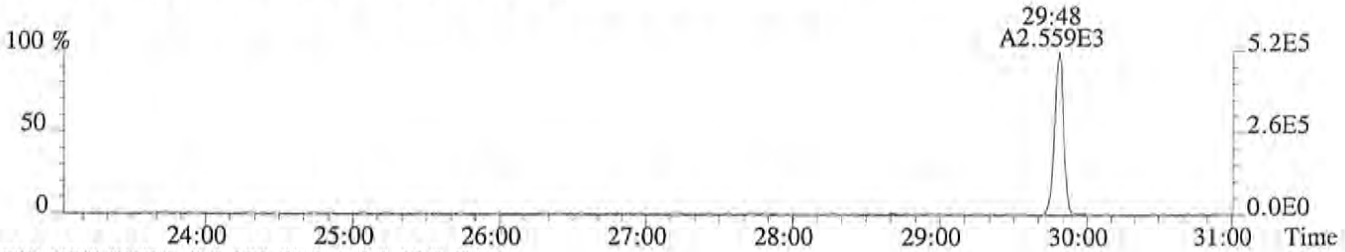
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9588.0,1.00%,F,T)



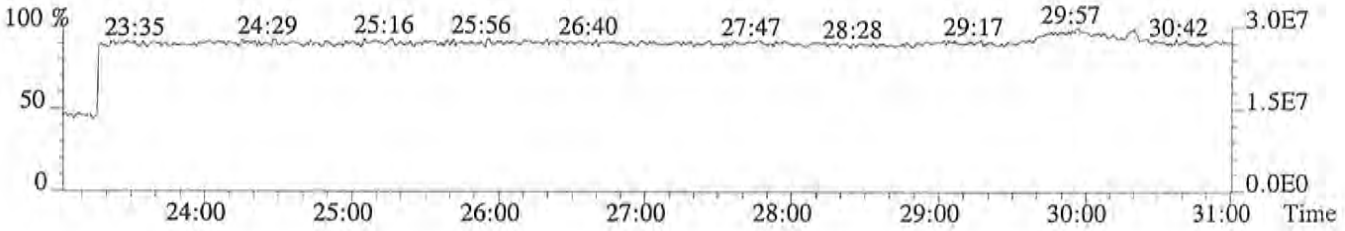
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5348.0,1.00%,F,T)



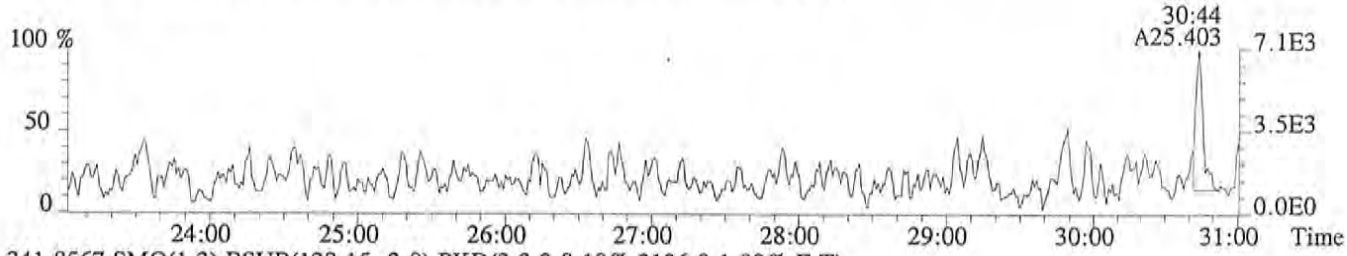
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3136.0,1.00%,F,T)



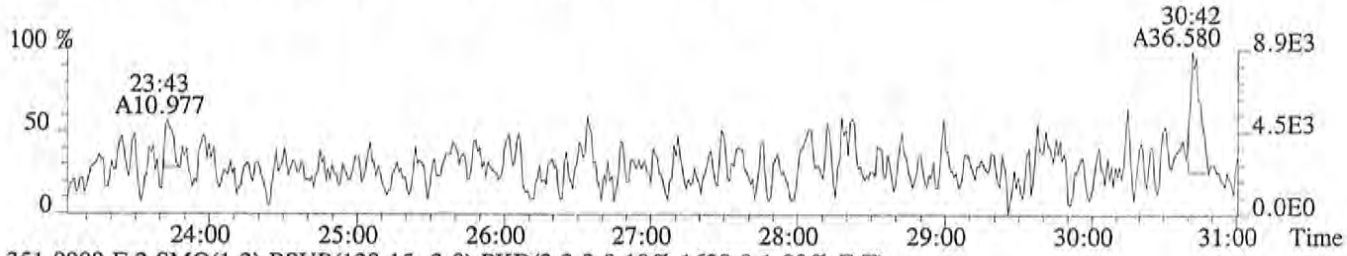
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



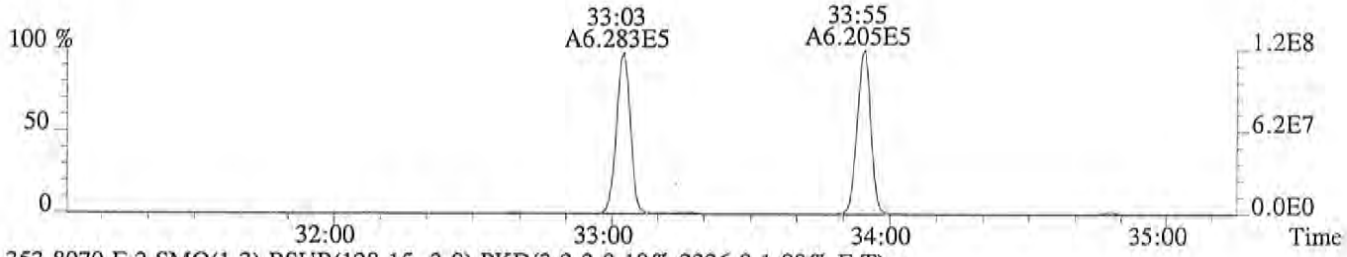
File:P600004 #1-566 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1760.0,1.00%,F,T)



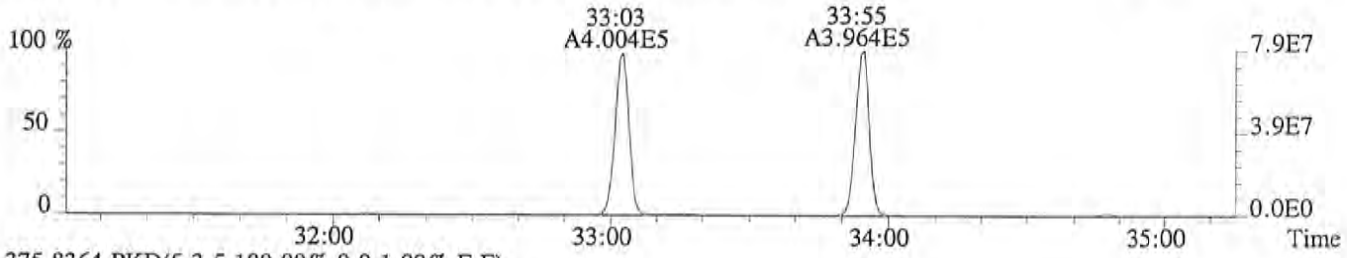
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3136.0,1.00%,F,T)



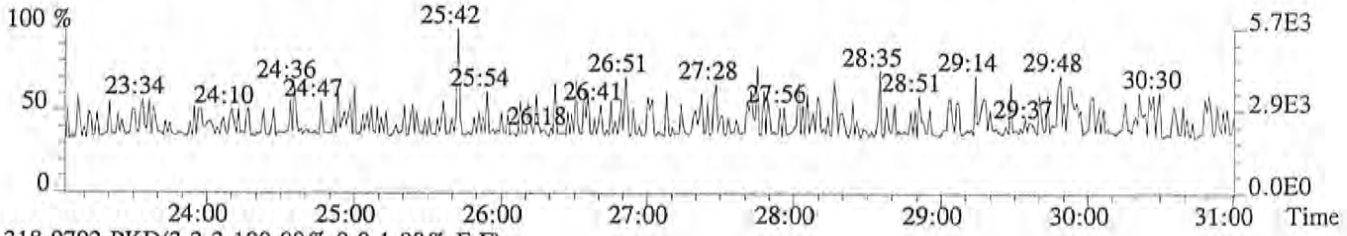
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1620.0,1.00%,F,T)



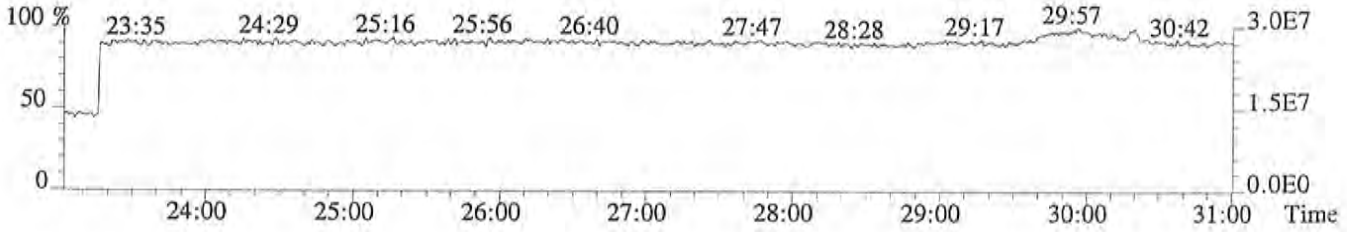
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2336.0,1.00%,F,T)



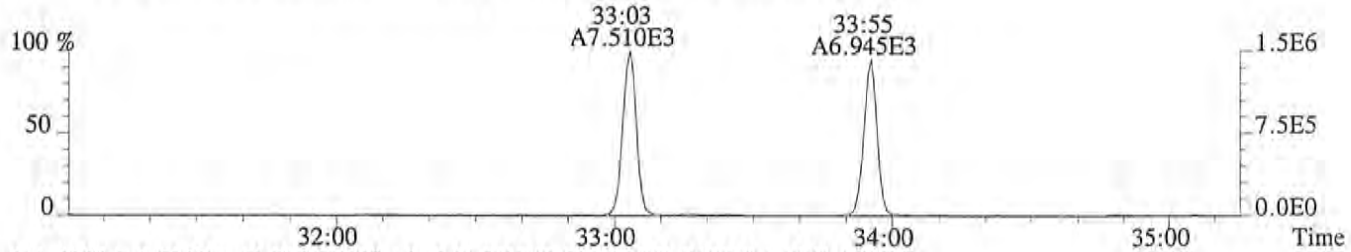
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



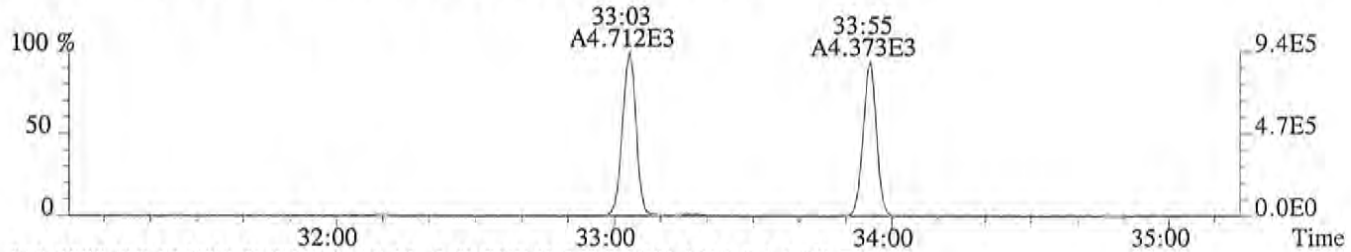
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



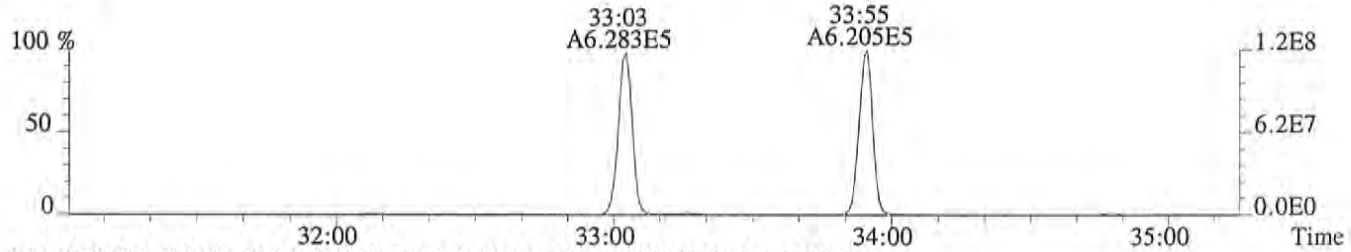
File:P600004 #1-380 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1844.0,1.00%,F,T)



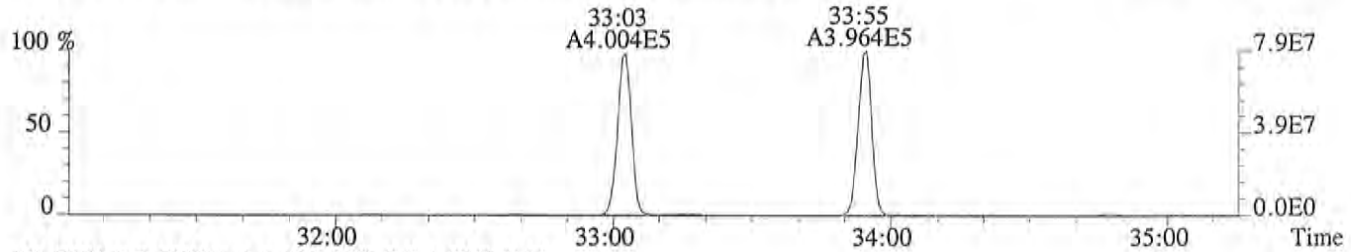
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3100.0,1.00%,F,T)



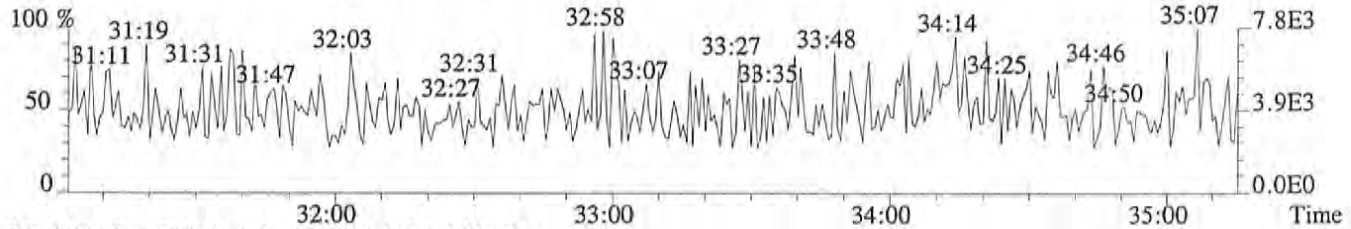
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1620.0,1.00%,F,T)



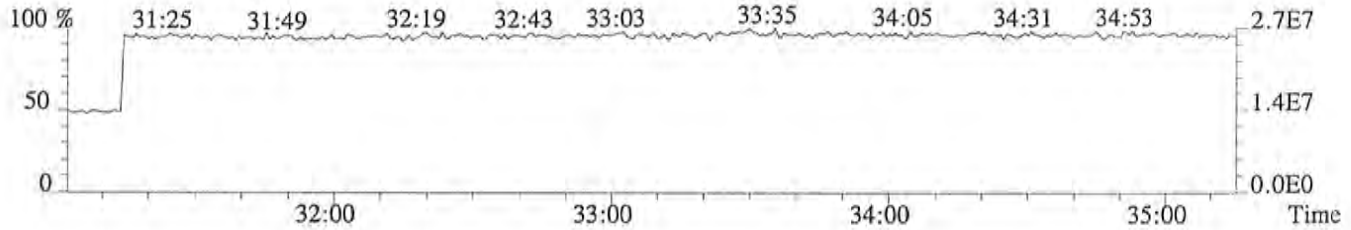
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2336.0,1.00%,F,T)



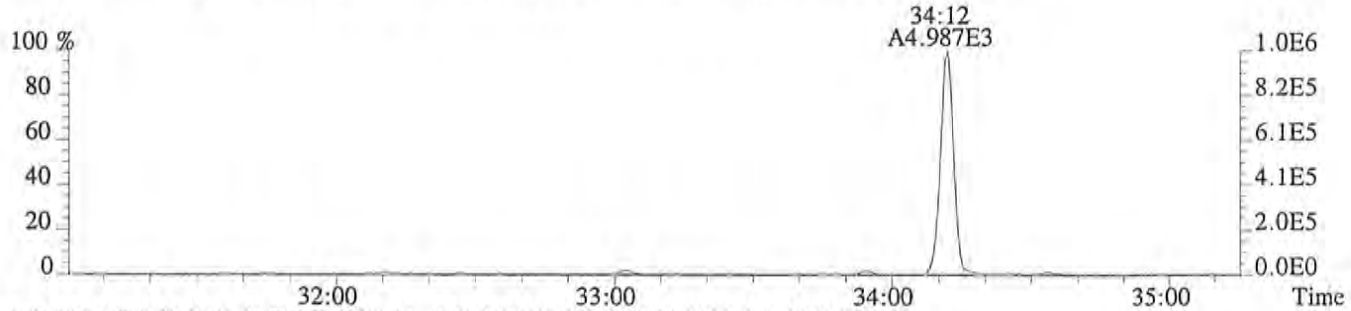
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



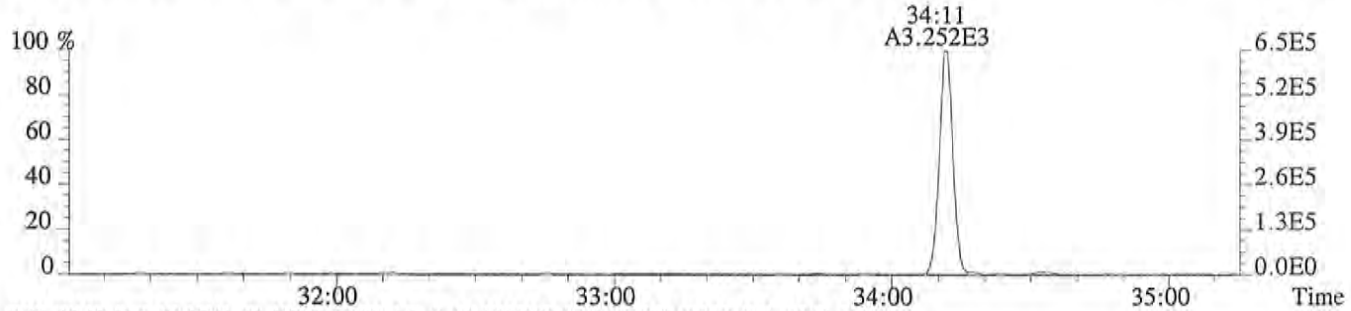
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



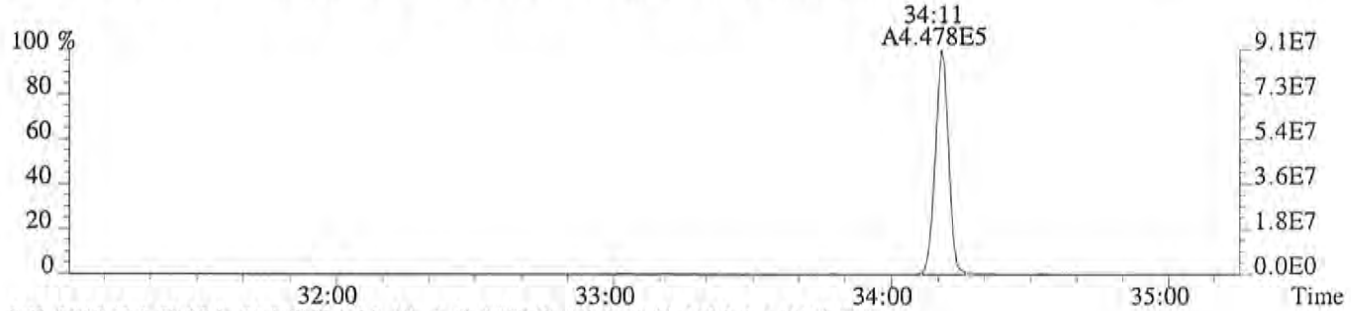
File:P600004 #1-380 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3832.0,1.00%,F,T)



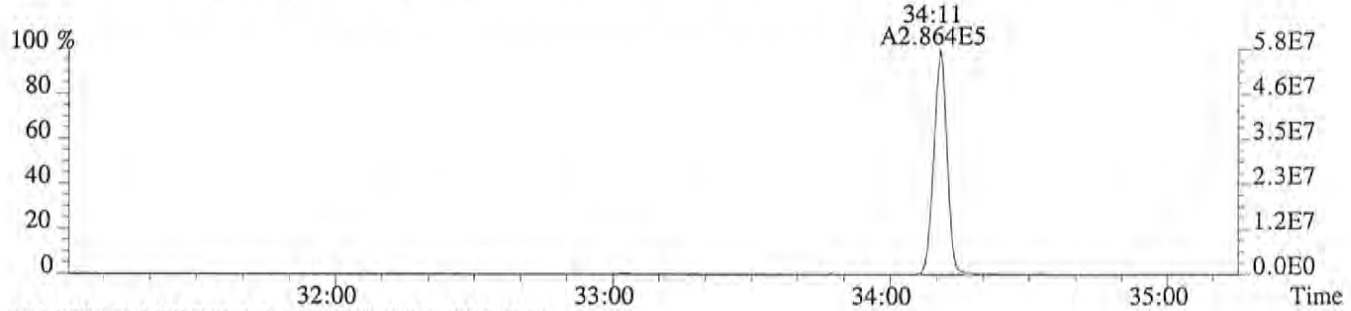
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2192.0,1.00%,F,T)



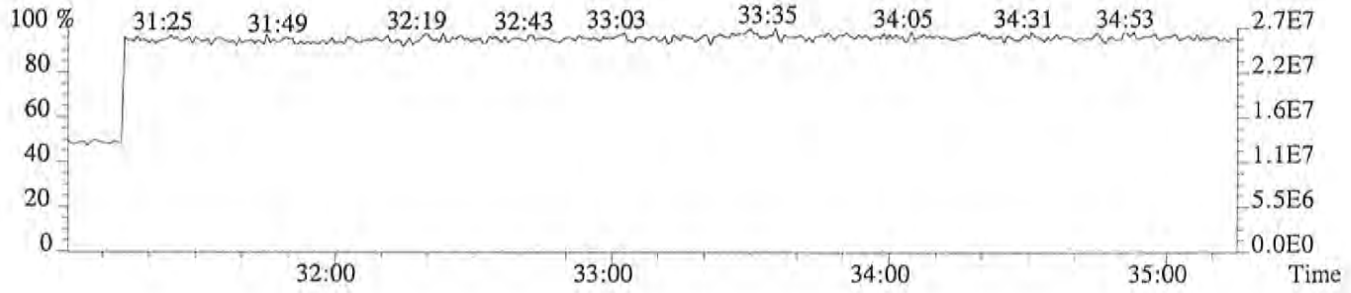
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2348.0,1.00%,F,T)



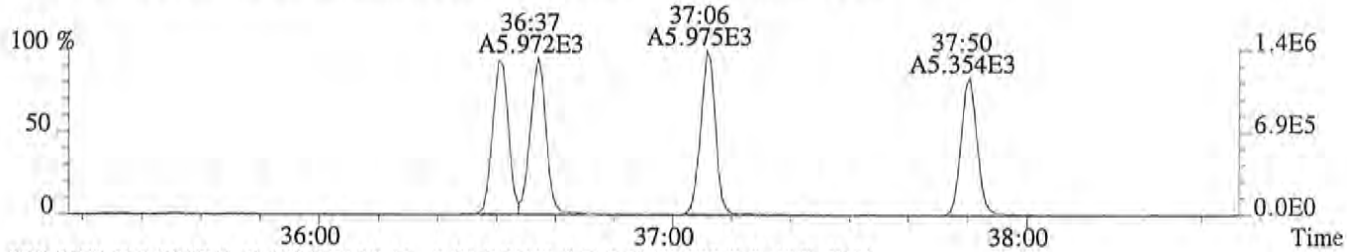
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2180.0,1.00%,F,T)



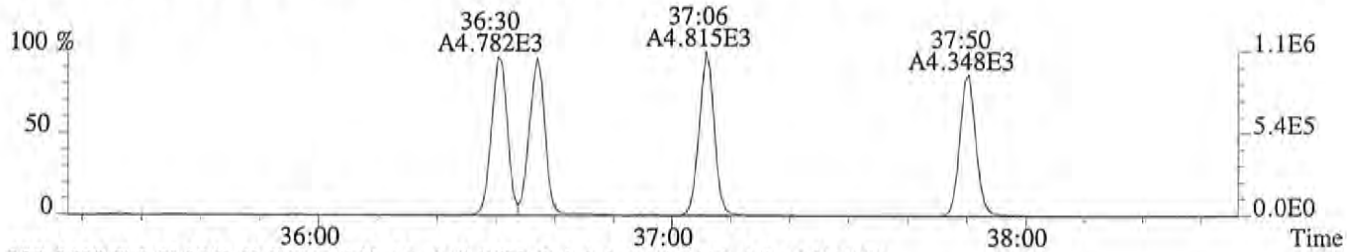
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



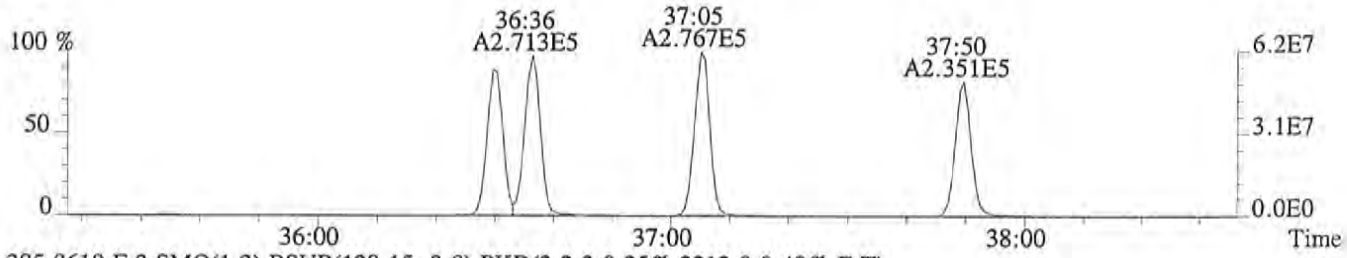
File:P600004 #1-299 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2020.0,0.40%,F,T)



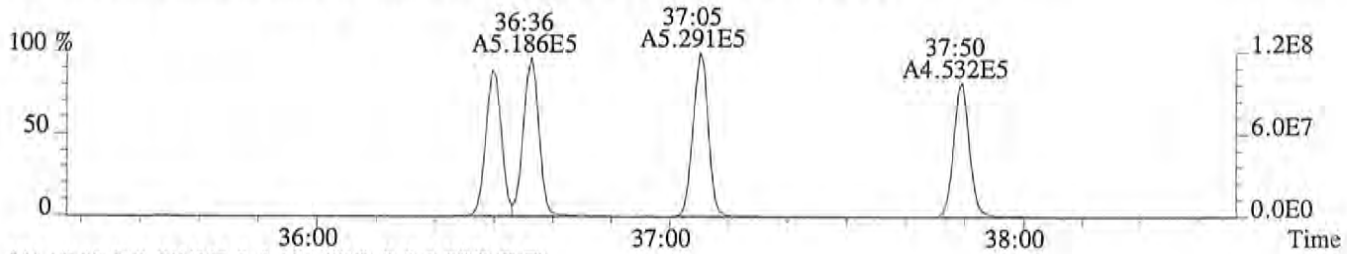
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,608.0,0.40%,F,T)



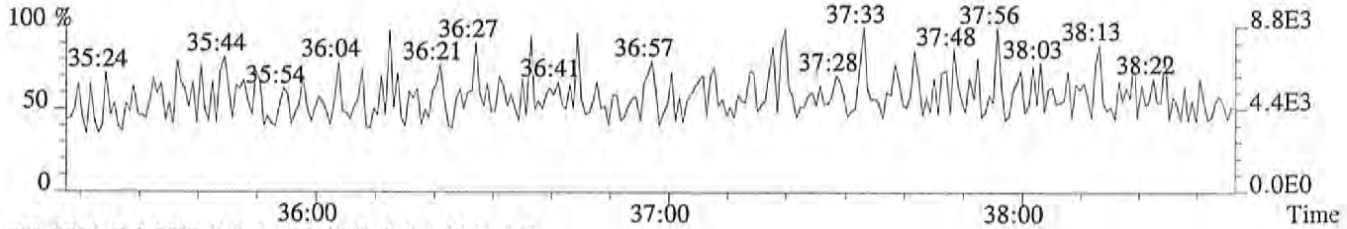
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1348.0,0.40%,F,T)



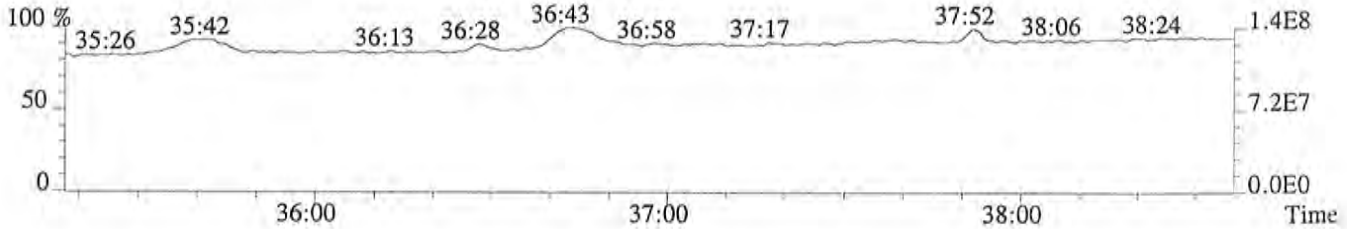
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3212.0,0.40%,F,T)



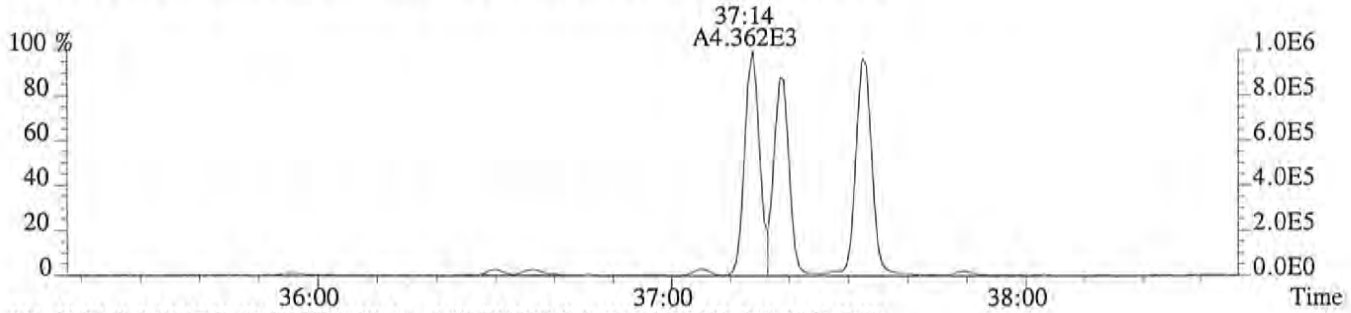
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



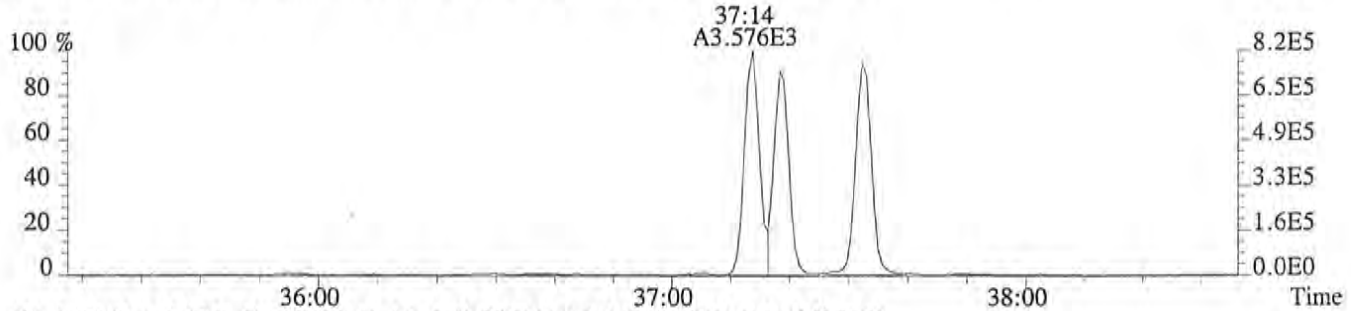
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



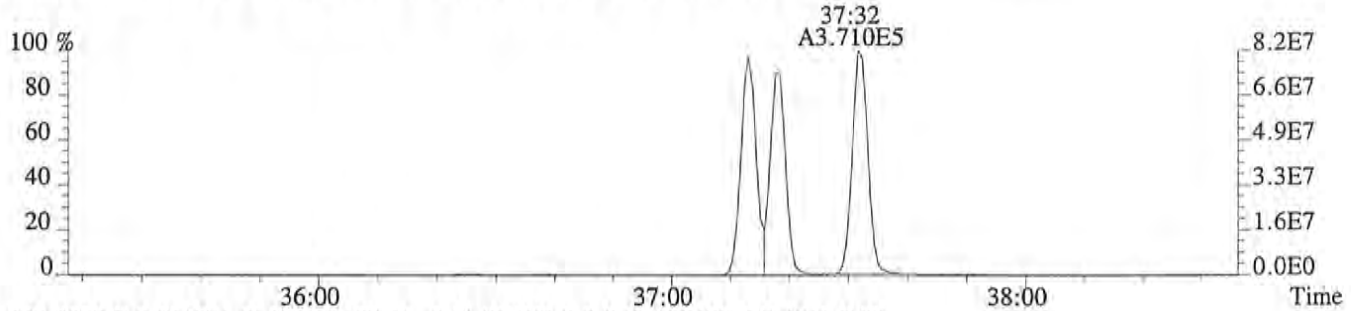
File:P600004 #1-299 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1844.0,0.40%,F,T)



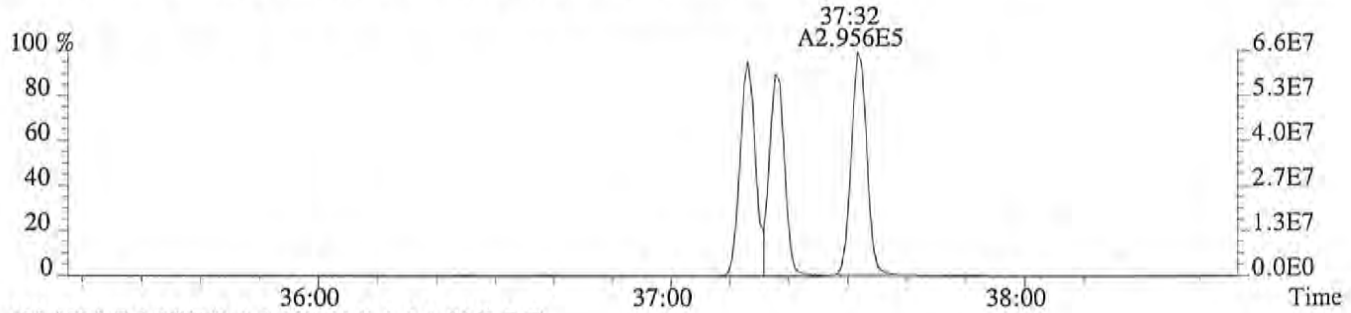
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2272.0,0.40%,F,T)



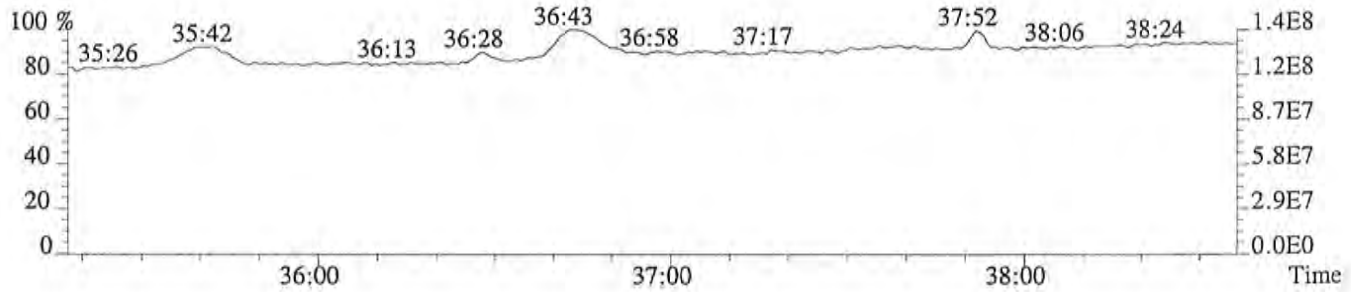
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6372.0,0.40%,F,T)



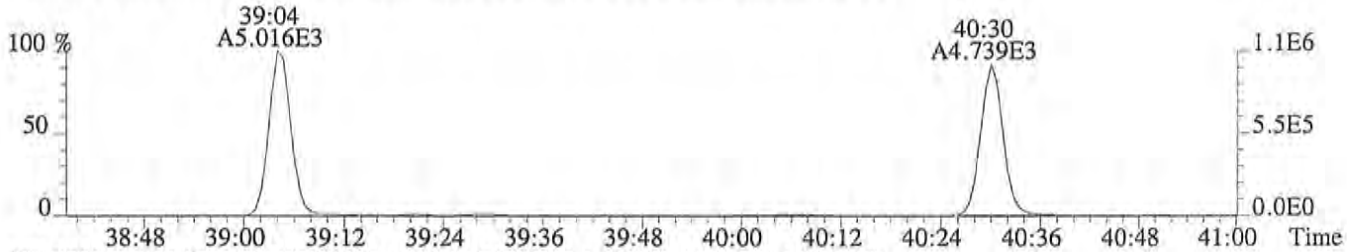
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2400.0,0.40%,F,T)



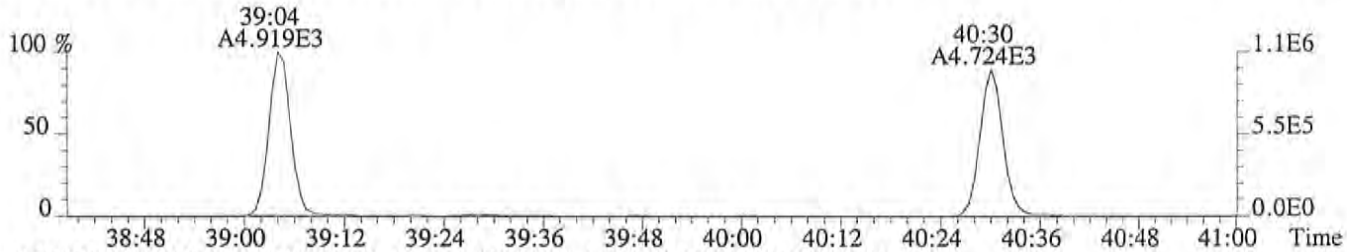
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



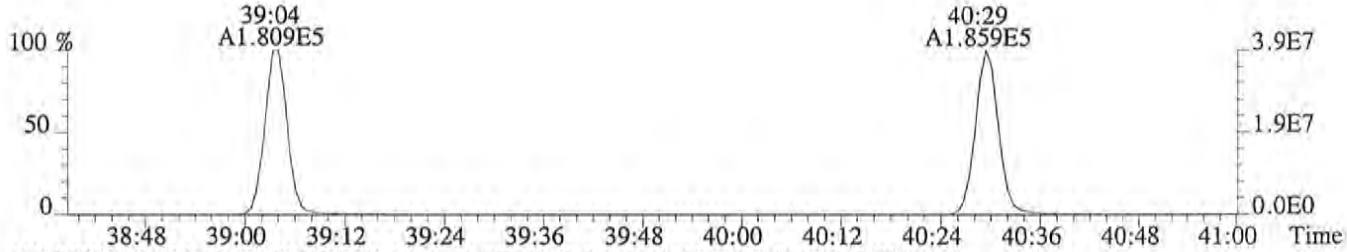
File:P600004 #1-213 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1844.0,0.50%,F,T)



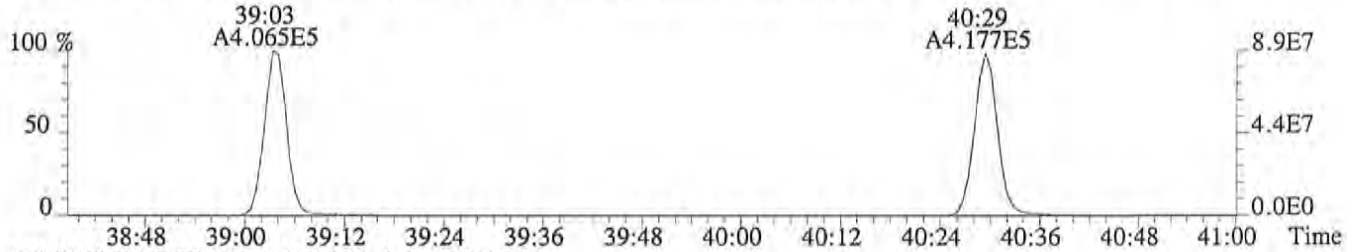
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1672.0,0.50%,F,T)



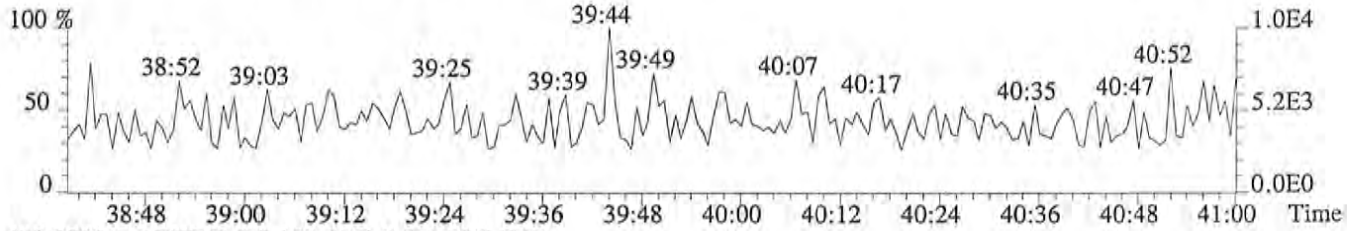
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9264.0,0.50%,F,T)



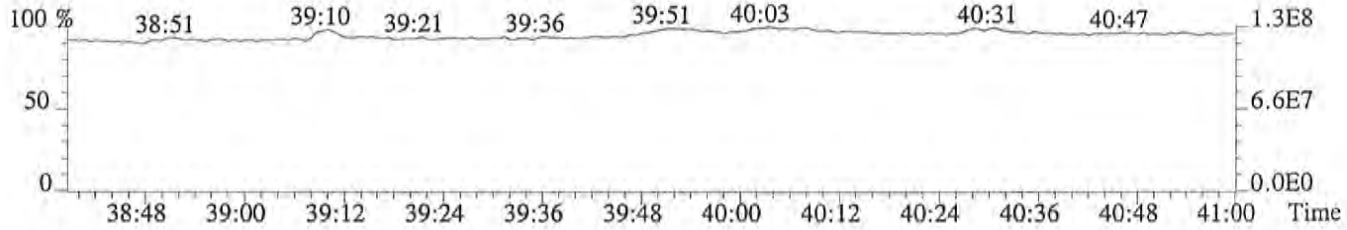
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10200.0,0.50%,F,T)



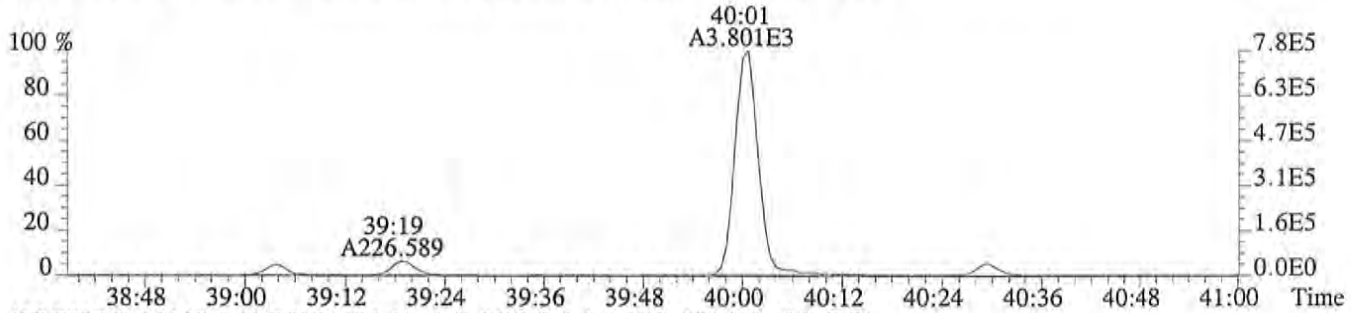
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



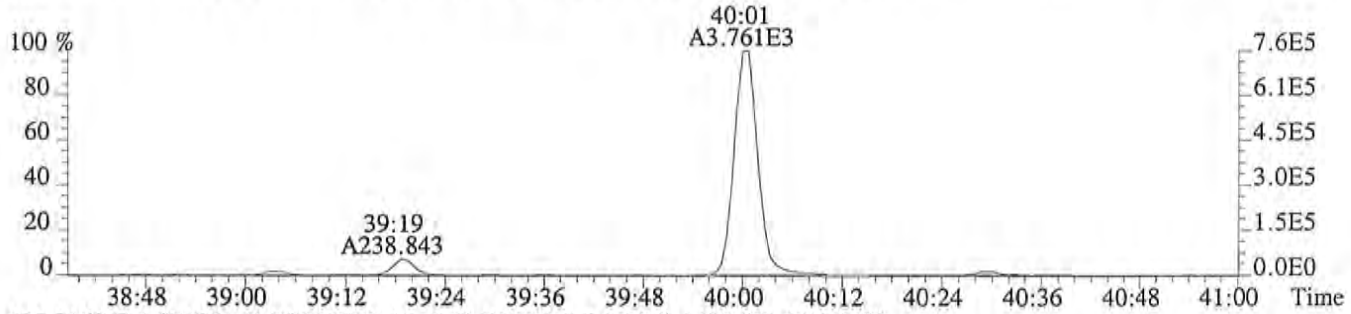
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



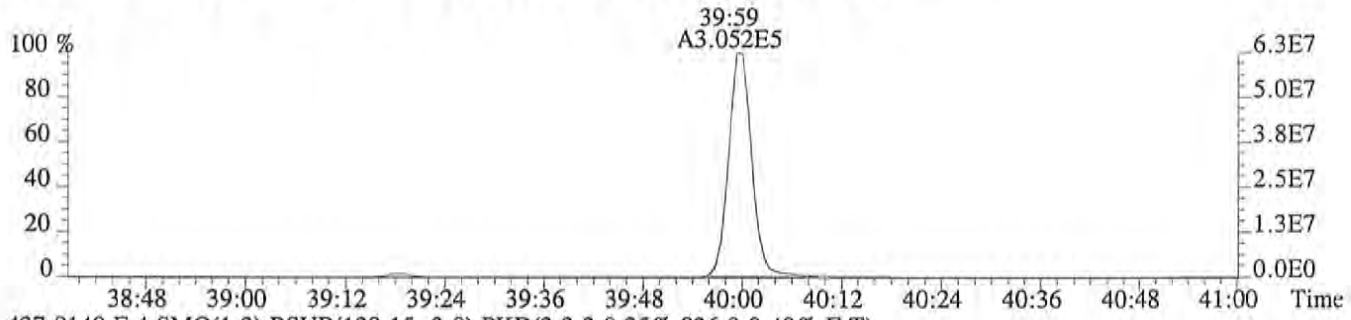
File:P600004 #1-213 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1884.0,0.40%,F,T)



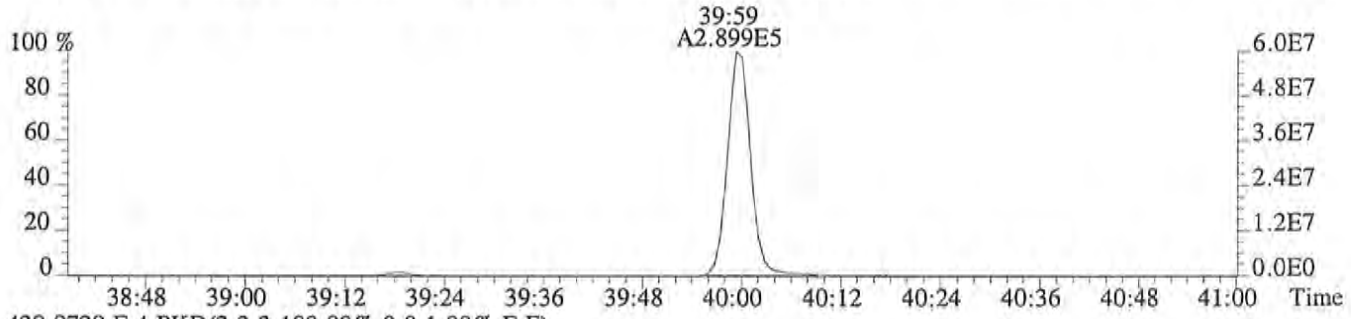
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,800.0,0.40%,F,T)



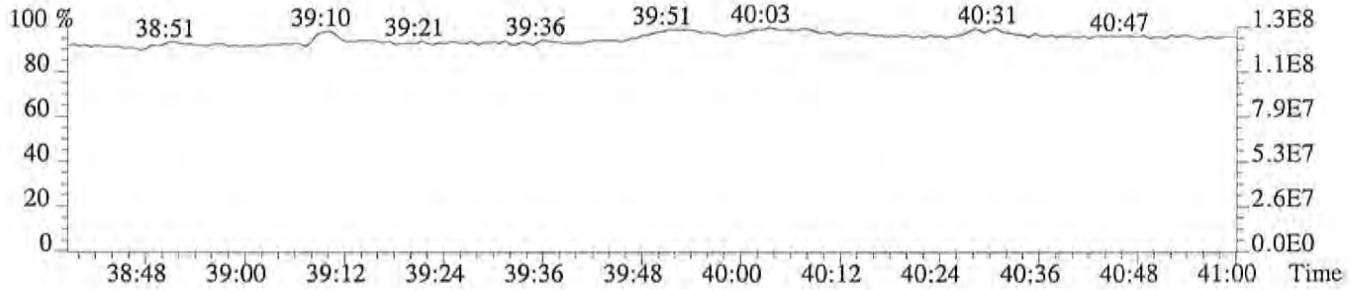
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1400.0,0.40%,F,T)



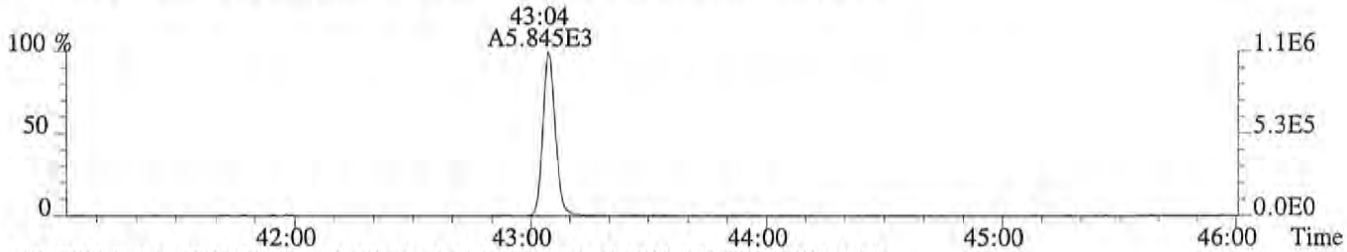
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,836.0,0.40%,F,T)



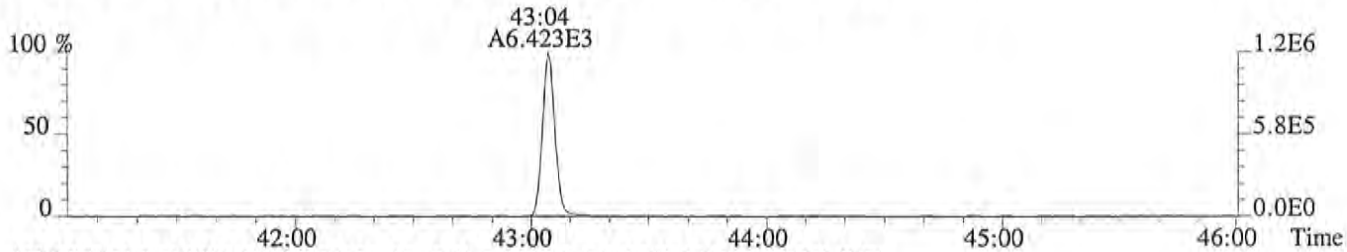
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



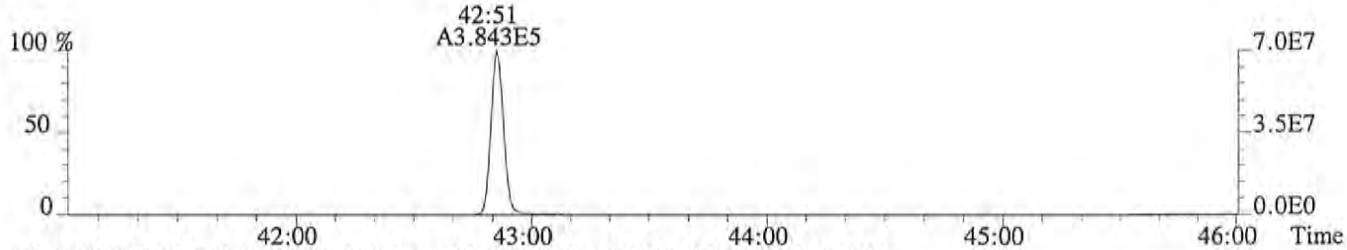
File:P600004 #1-448 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1476.0,0.40%,F,T)



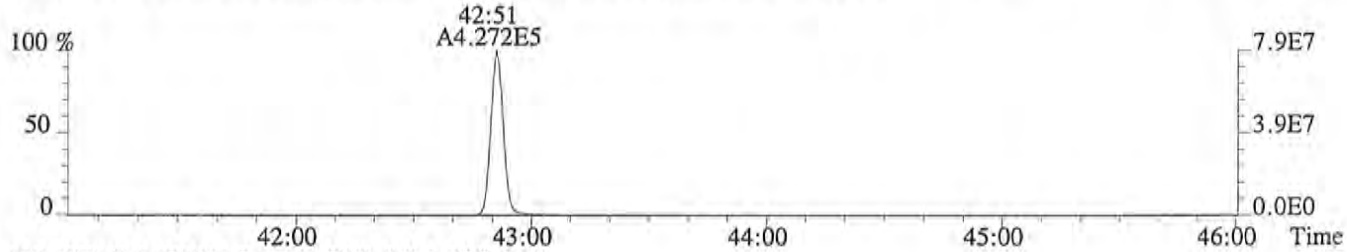
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2444.0,0.40%,F,T)



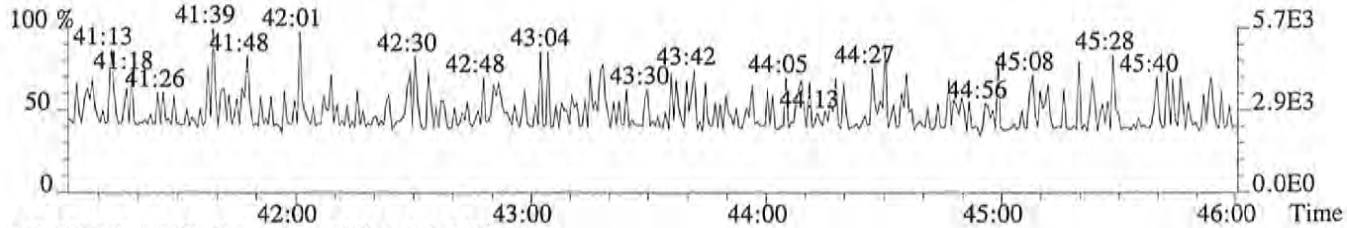
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1260.0,0.40%,F,T)



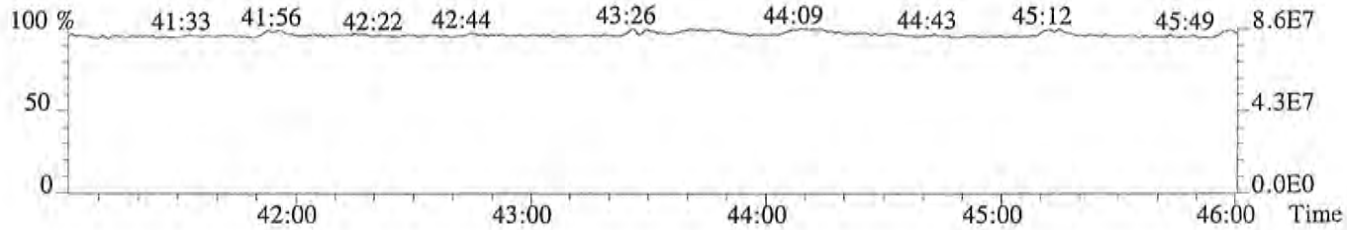
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1652.0,0.40%,F,T)



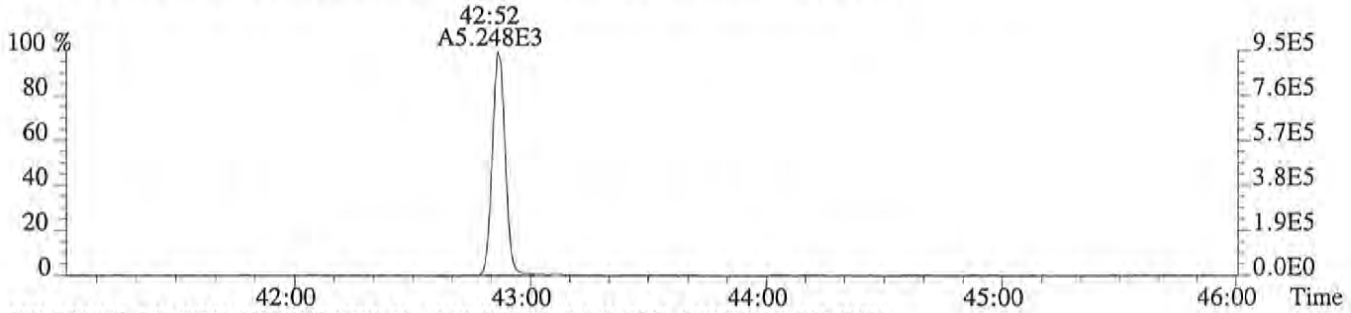
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



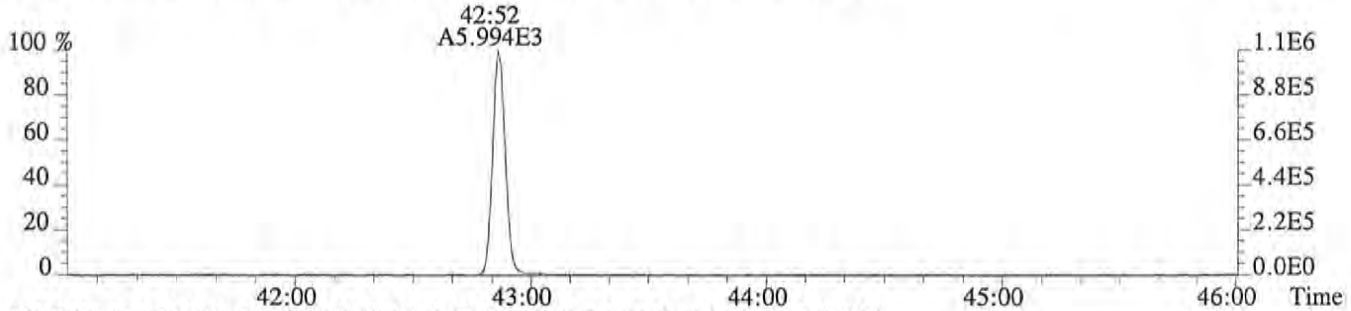
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



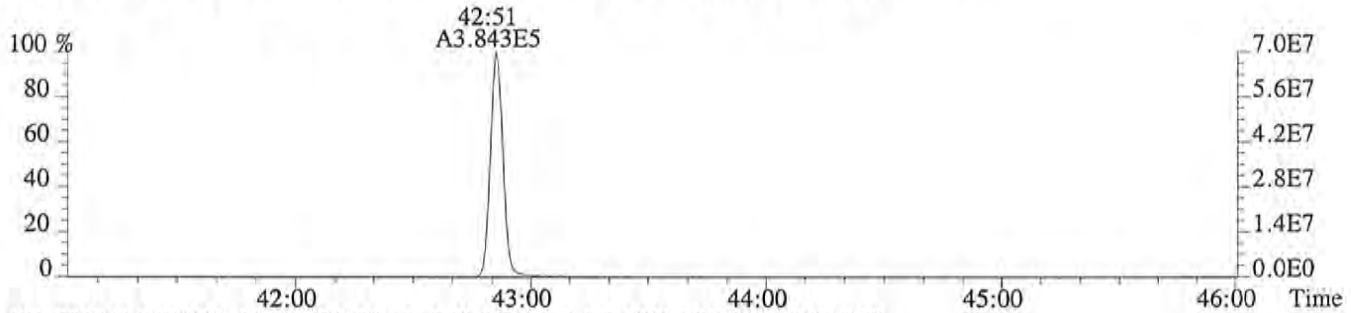
File:P600004 #1-448 Acq:19-AUG-2015 12:31:21 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS0.5
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1080.0,0.40%,F,T)



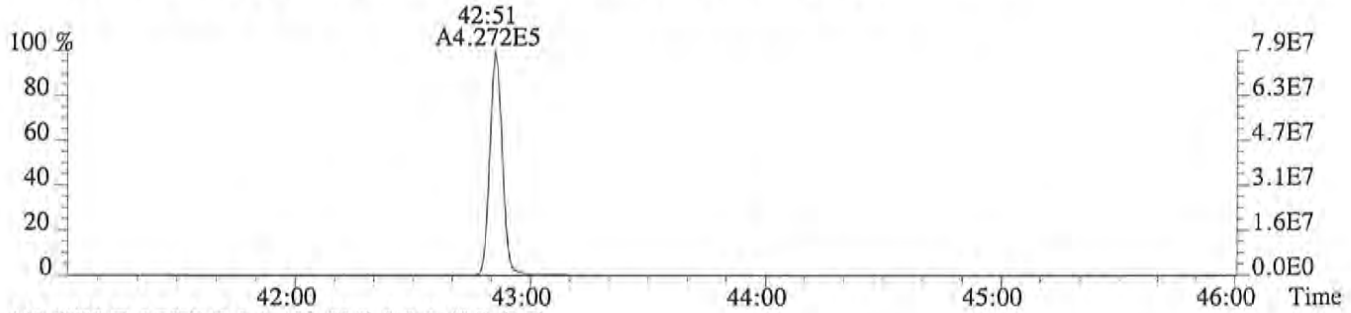
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1892.0,0.40%,F,T)



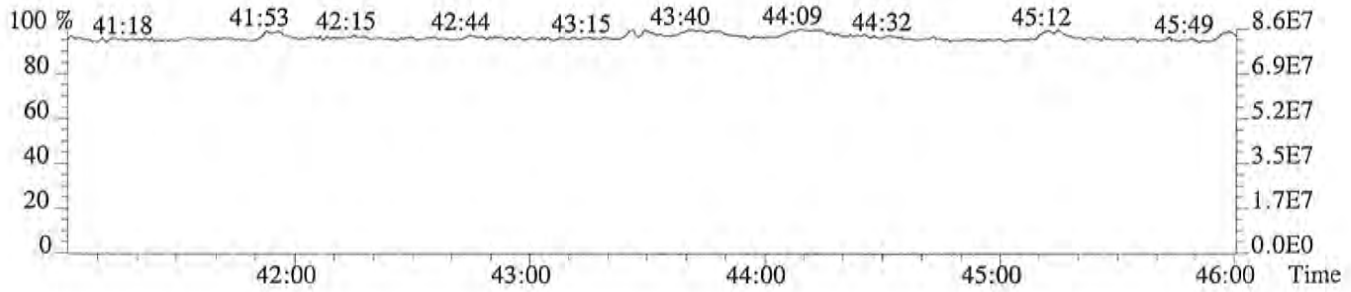
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1260.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1652.0,0.40%,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 P600005 Samp: 1 Inj: 1 Acquired: 19-AUG-15 13:20:24
Processed: 19-AUG-15 16:14:16 Sample ID: CS1

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	29:04	2.223e+03	2.898e+03	0.77	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	33:03	1.719e+04	1.109e+04	1.55	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:55	1.607e+04	1.012e+04	1.59	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	36:30	1.414e+04	1.156e+04	1.22	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:37	1.407e+04	1.145e+04	1.23	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	37:06	1.406e+04	1.136e+04	1.24	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:50	1.329e+04	1.063e+04	1.25	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	39:04	1.212e+04	1.191e+04	1.02	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	40:30	1.178e+04	1.163e+04	1.01	yes	no	1.287
10	Unk	OCDF	43:05	1.550e+04	1.716e+04	0.90	yes	no	1.257
11	Unk	2,3,7,8-TCDD	29:48	2.052e+03	2.618e+03	0.78	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	34:12	1.256e+04	8.073e+03	1.56	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	37:14	1.030e+04	8.055e+03	1.28	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	37:19	9.553e+03	7.673e+03	1.24	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	37:33	1.167e+04	8.883e+03	1.31	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	40:01	9.232e+03	8.895e+03	1.04	yes	no	1.034
17	Unk	OCDD	42:52	1.351e+04	1.536e+04	0.88	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	29:03	4.804e+05	6.071e+05	0.79	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	33:03	6.866e+05	4.355e+05	1.58	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:55	6.829e+05	4.331e+05	1.58	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	36:30	2.953e+05	5.664e+05	0.52	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:36	3.081e+05	5.838e+05	0.53	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	37:05	3.005e+05	5.763e+05	0.52	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:50	2.807e+05	5.421e+05	0.52	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	39:04	2.120e+05	4.726e+05	0.45	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:29	2.215e+05	4.965e+05	0.45	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	29:48	4.011e+05	5.083e+05	0.79	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	34:11	5.317e+05	3.387e+05	1.57	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	37:13	3.949e+05	3.122e+05	1.27	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	37:18	3.708e+05	2.945e+05	1.26	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	40:00	3.517e+05	3.330e+05	1.06	yes	no	0.892
32	IS	13C-OCDD	42:51	4.770e+05	5.317e+05	0.90	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	29:15	3.478e+05	4.386e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:32	4.451e+05	3.534e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:48	4.909e+03				no	1.263

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Signal/Noise Height Ratio Summary

CLIENT ID.
76555

Run #2 Filename P600005 Samp: 1 Inj: 1 Acquired: 19-AUG-15 13:20:24
Processed: 19-AUG-15 16:14:16 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	4.14e+05	2.02e+03	2.1e+02	5.45e+05	1.85e+03	2.9e+02
2	1,2,3,7,8-PeCDF	3.37e+06	1.72e+03	2.0e+03	2.17e+06	4.40e+03	4.9e+02
3	2,3,4,7,8-PeCDF	3.22e+06	1.72e+03	1.9e+03	2.02e+06	4.40e+03	4.6e+02
4	1,2,3,4,7,8-HxCDF	2.96e+06	1.39e+03	2.1e+03	2.43e+06	8.44e+02	2.9e+03
5	1,2,3,6,7,8-HxCDF	3.05e+06	1.39e+03	2.2e+03	2.47e+06	8.44e+02	2.9e+03
6	2,3,4,6,7,8-HxCDF	3.06e+06	1.39e+03	2.2e+03	2.48e+06	8.44e+02	2.9e+03
7	1,2,3,7,8,9-HxCDF	2.86e+06	1.39e+03	2.1e+03	2.25e+06	8.44e+02	2.7e+03
8	1,2,3,4,6,7,8-HpCDF	2.62e+06	1.51e+03	1.7e+03	2.57e+06	2.16e+03	1.2e+03
9	1,2,3,4,7,8,9-HpCDF	2.40e+06	1.51e+03	1.6e+03	2.37e+06	2.16e+03	1.1e+03
10	OCDF	2.66e+06	1.55e+03	1.7e+03	3.06e+06	2.28e+03	1.3e+03
11	2,3,7,8-TCDD	4.09e+05	2.26e+03	1.8e+02	5.20e+05	2.18e+03	2.4e+02
12	1,2,3,7,8-PeCDD	2.53e+06	2.62e+03	9.7e+02	1.64e+06	1.84e+03	8.9e+02
13	1,2,3,4,7,8-HxCDD	2.34e+06	1.32e+03	1.8e+03	1.82e+06	2.42e+03	7.5e+02
14	1,2,3,6,7,8-HxCDD	2.07e+06	1.32e+03	1.6e+03	1.69e+06	2.42e+03	7.0e+02
15	1,2,3,7,8,9-HxCDD	2.48e+06	1.32e+03	1.9e+03	1.92e+06	2.42e+03	7.9e+02
16	1,2,3,4,6,7,8-HpCDD	1.93e+06	1.49e+03	1.3e+03	1.82e+06	1.76e+03	1.0e+03
17	OCDD	2.46e+06	1.24e+03	2.0e+03	2.82e+06	1.88e+03	1.5e+03
18	13C-2,3,7,8-TCDF	8.89e+07	5.34e+03	1.7e+04	1.13e+08	3.42e+03	3.3e+04
19	13C-1,2,3,7,8-PeCDF	1.29e+08	1.80e+03	7.2e+04	8.15e+07	1.70e+03	4.8e+04
20	13C-2,3,4,7,8-PeCDF	1.35e+08	1.80e+03	7.5e+04	8.53e+07	1.70e+03	5.0e+04
21	13C-1,2,3,4,7,8-HxCDF	6.25e+07	2.66e+03	2.4e+04	1.21e+08	3.55e+03	3.4e+04
22	13C-1,2,3,6,7,8-HxCDF	6.60e+07	2.66e+03	2.5e+04	1.26e+08	3.55e+03	3.5e+04
23	13C-2,3,4,6,7,8-HxCDF	6.57e+07	2.66e+03	2.5e+04	1.27e+08	3.55e+03	3.6e+04
24	13C-1,2,3,7,8,9-HxCDF	6.03e+07	2.66e+03	2.3e+04	1.16e+08	3.55e+03	3.3e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.54e+07	9.87e+03	4.6e+03	1.01e+08	1.07e+04	9.5e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.45e+07	9.87e+03	4.5e+03	1.00e+08	1.07e+04	9.4e+03
27	13C-2,3,7,8-TCDD	7.93e+07	9.97e+03	8.0e+03	9.97e+07	6.10e+03	1.6e+04
28	13C-1,2,3,7,8-PeCDD	1.07e+08	2.26e+03	4.7e+04	6.82e+07	1.62e+03	4.2e+04
29	13C-1,2,3,4,7,8-HxCDD	8.85e+07	6.34e+03	1.4e+04	6.96e+07	3.31e+03	2.1e+04
30	13C-1,2,3,6,7,8-HxCDD	8.03e+07	6.34e+03	1.3e+04	6.45e+07	3.31e+03	2.0e+04
31	13C-1,2,3,4,6,7,8-HpCDD	7.26e+07	1.95e+03	3.7e+04	6.82e+07	1.87e+03	3.6e+04
32	13C-OCDD	8.62e+07	2.08e+03	4.1e+04	9.64e+07	2.02e+03	4.8e+04
33	13C-1,2,3,4-TCDD	6.71e+07	9.97e+03	6.7e+03	8.46e+07	6.10e+03	1.4e+04
34	13C-1,2,3,7,8,9-HxCDD	9.54e+07	6.34e+03	1.5e+04	7.59e+07	3.31e+03	2.3e+04
35	37Cl-2,3,7,8-TCDD	9.89e+05	3.67e+03	2.7e+02			

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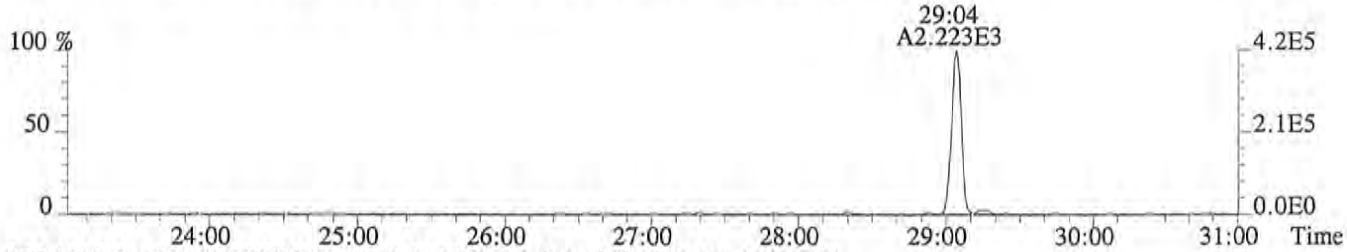
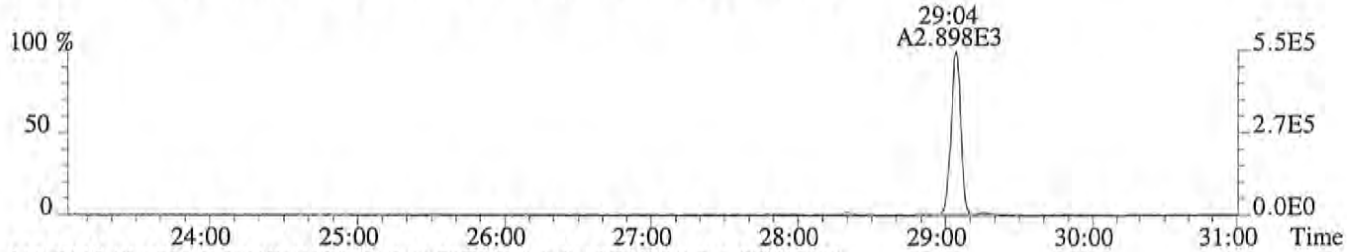
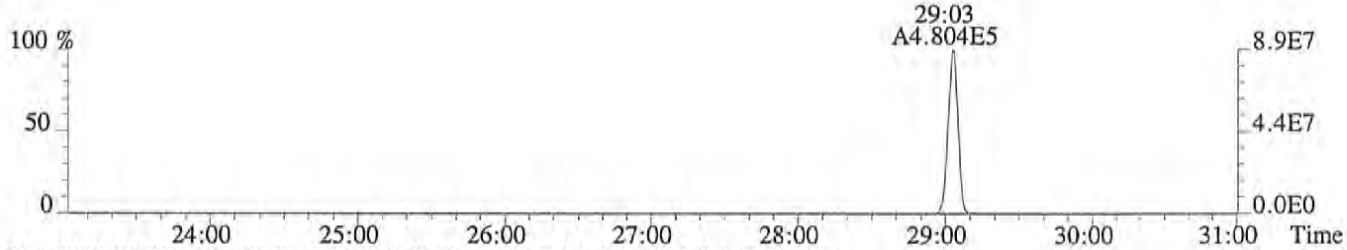
File:P600005 #1-566 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2020.0,1.00%,F,T)



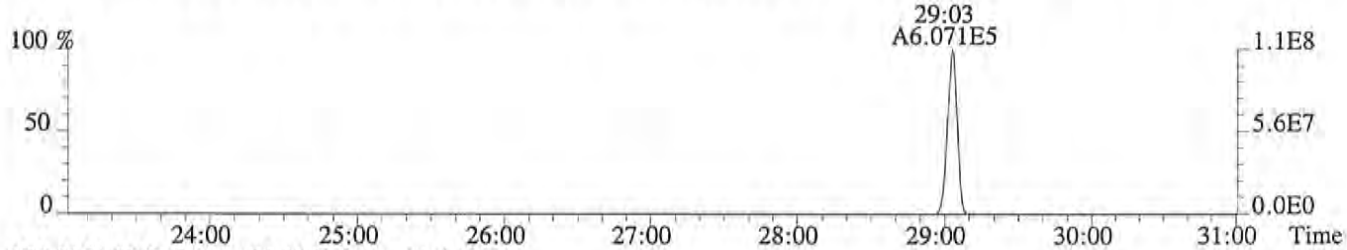
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1852.0,1.00%,F,T)



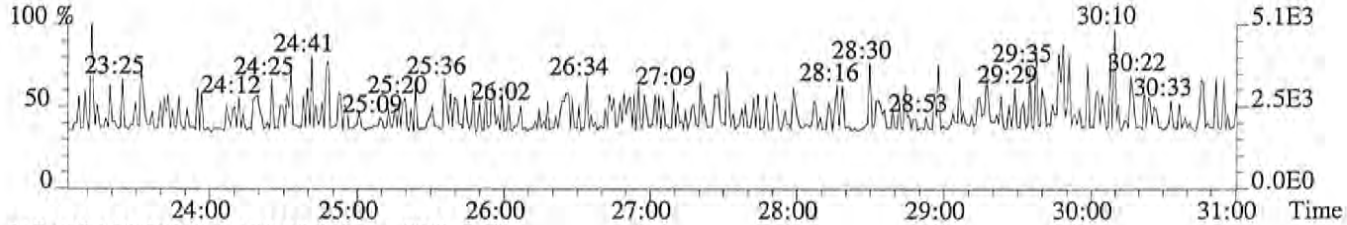
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5340.0,1.00%,F,T)



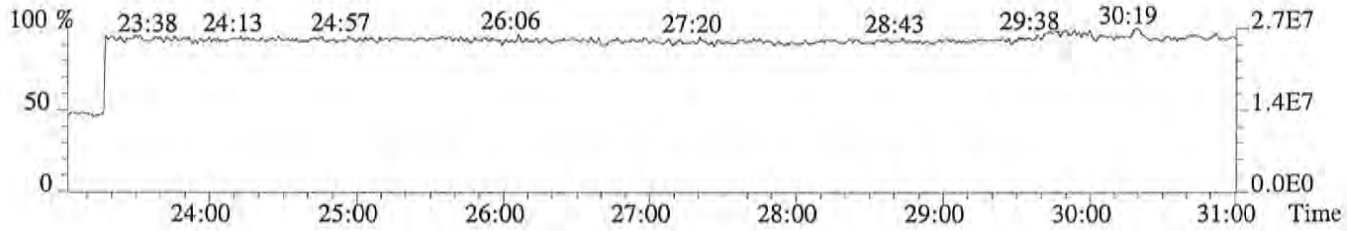
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3424.0,1.00%,F,T)



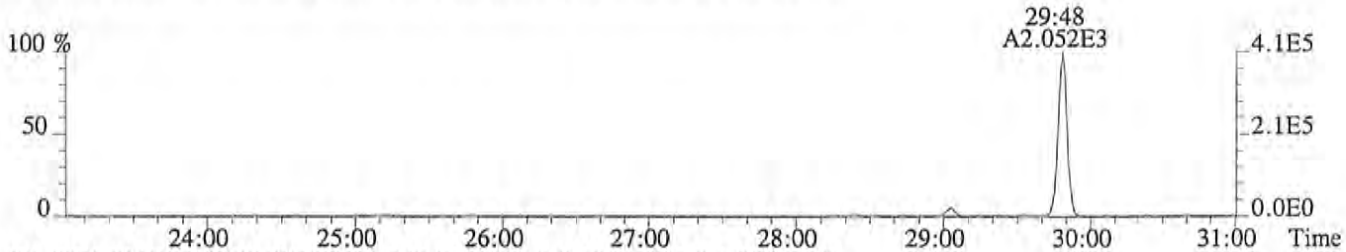
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



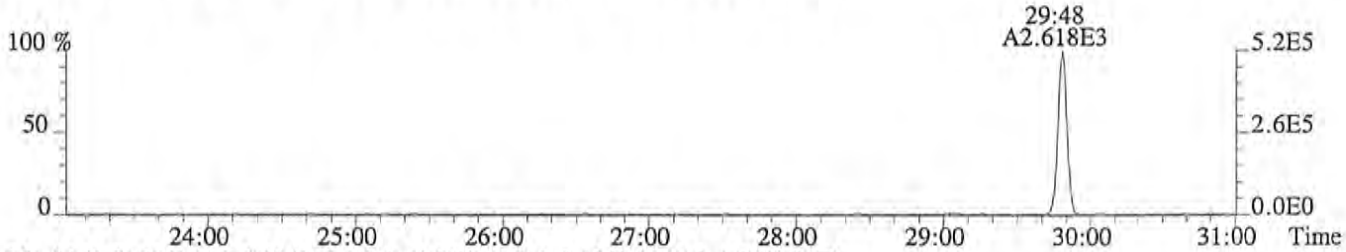
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



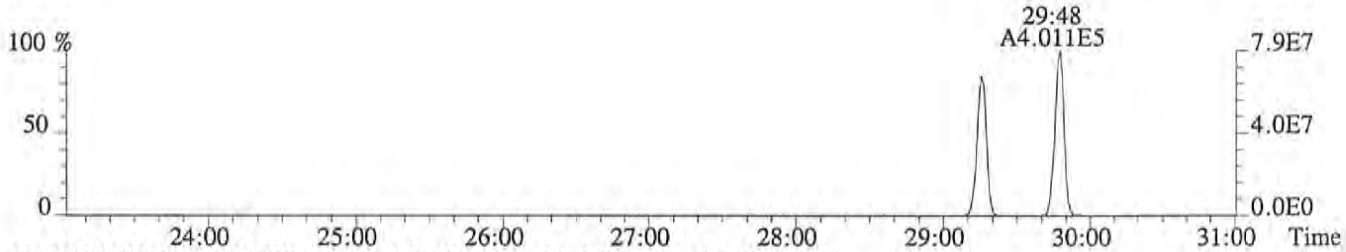
File:P600005 #1-566 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2260.0,1.00%,F,T)



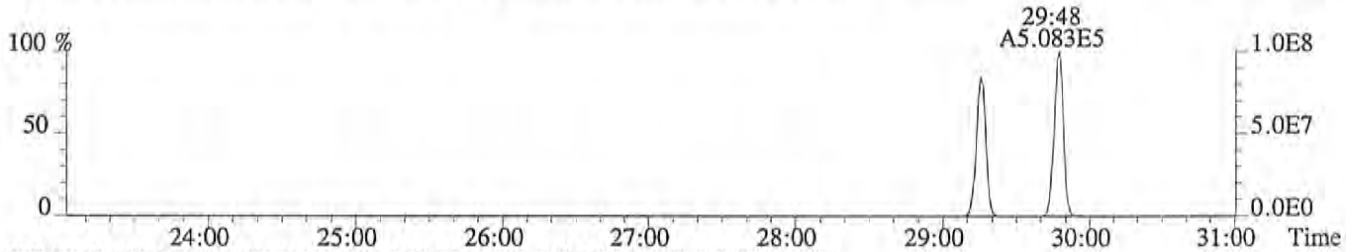
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,T)



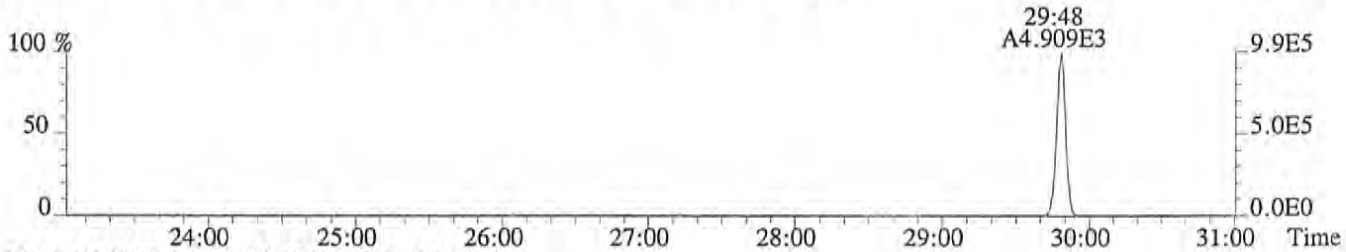
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9968.0,1.00%,F,T)



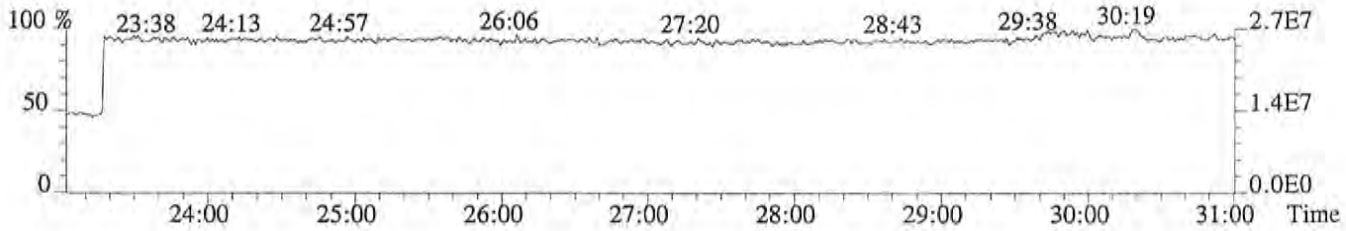
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6100.0,1.00%,F,T)



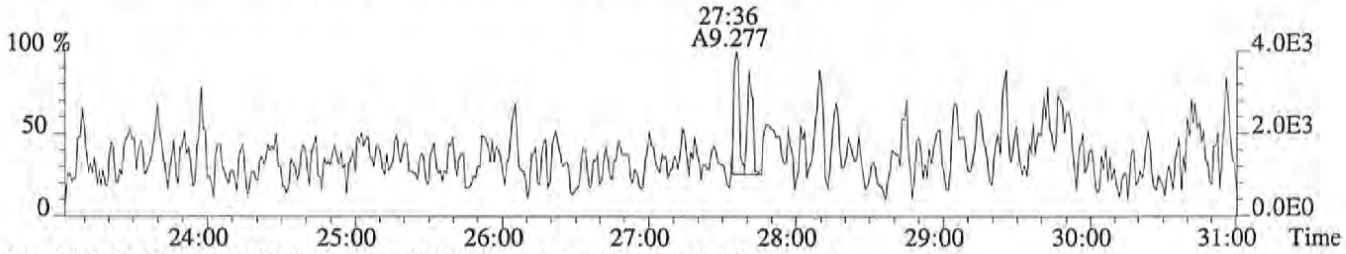
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3668.0,1.00%,F,T)



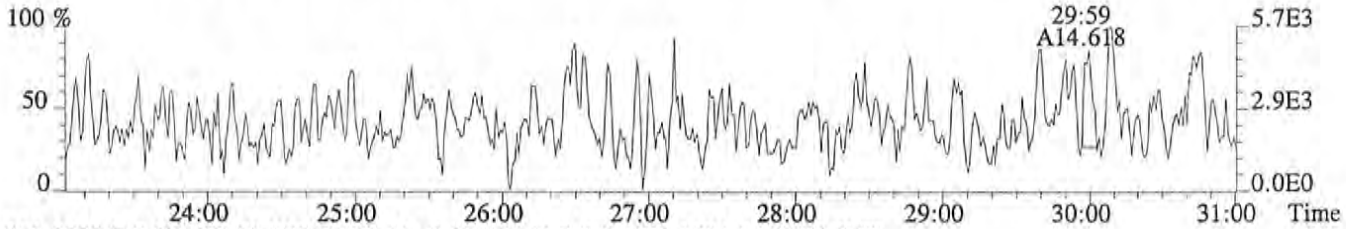
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



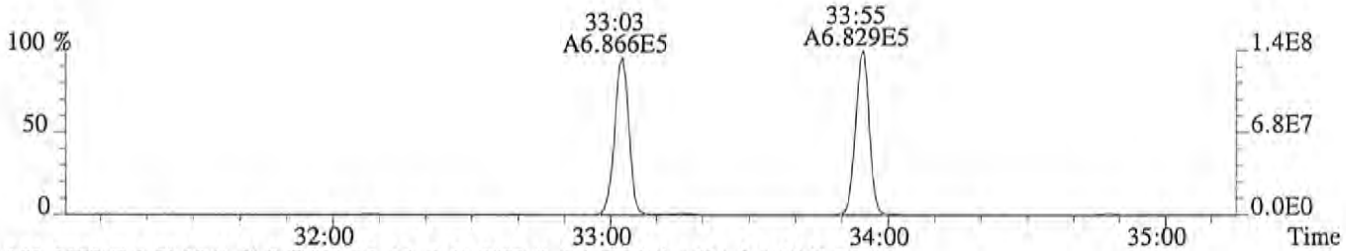
File:P600005 #1-566 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1716.0,1.00%,F,T)



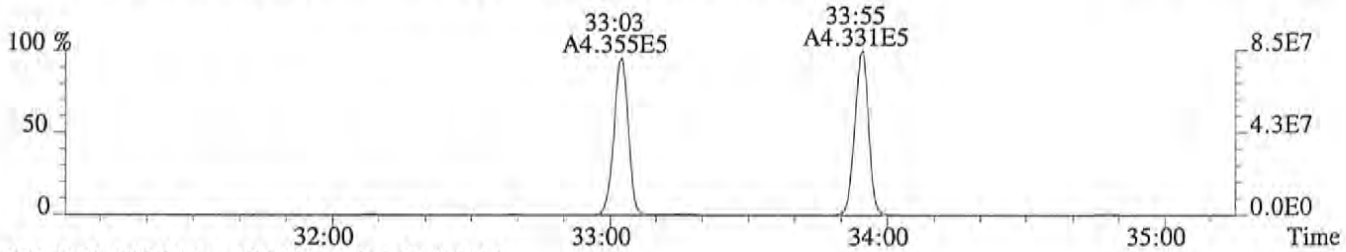
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2992.0,1.00%,F,T)



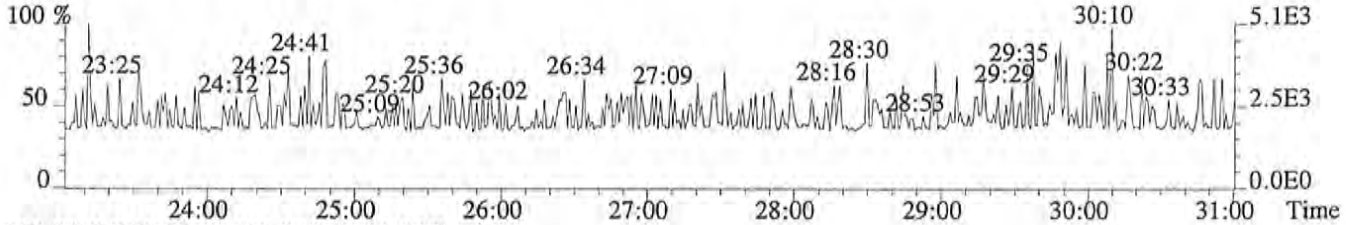
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1804.0,1.00%,F,T)



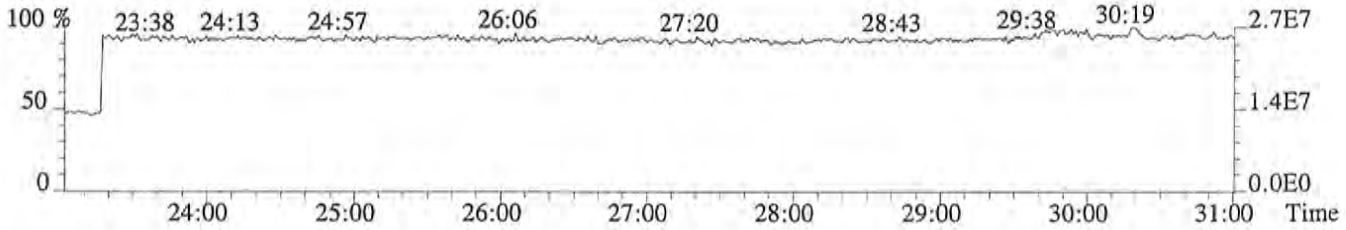
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1704.0,1.00%,F,T)



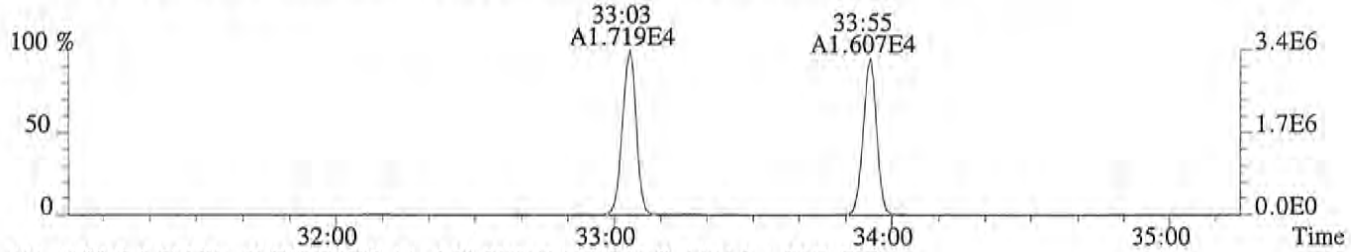
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



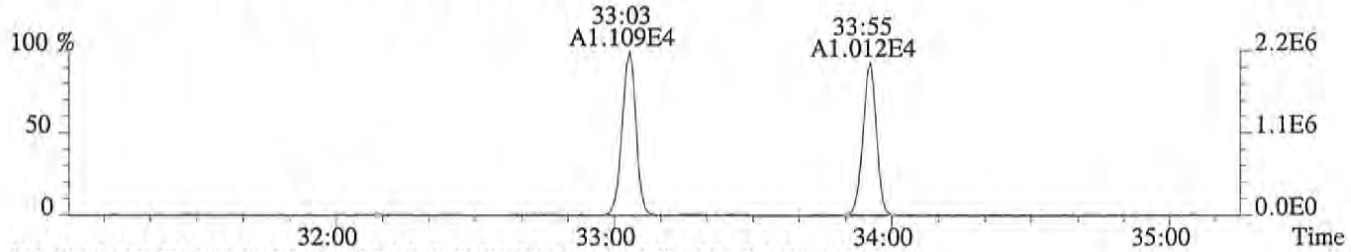
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



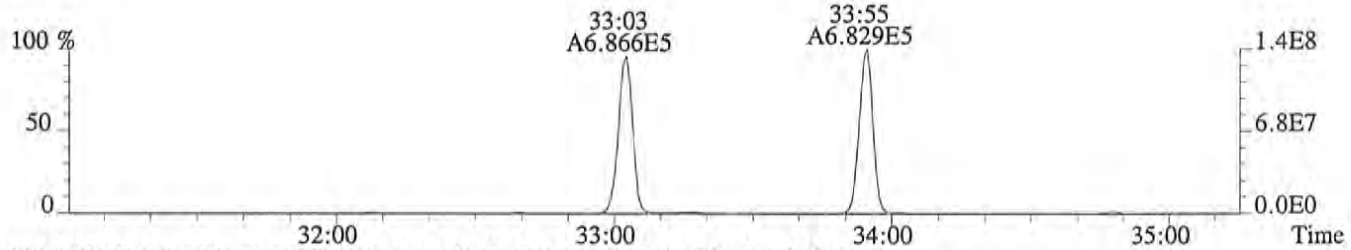
File:P600005 #1-380 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:CS1
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1724.0,1.00%,F,T)



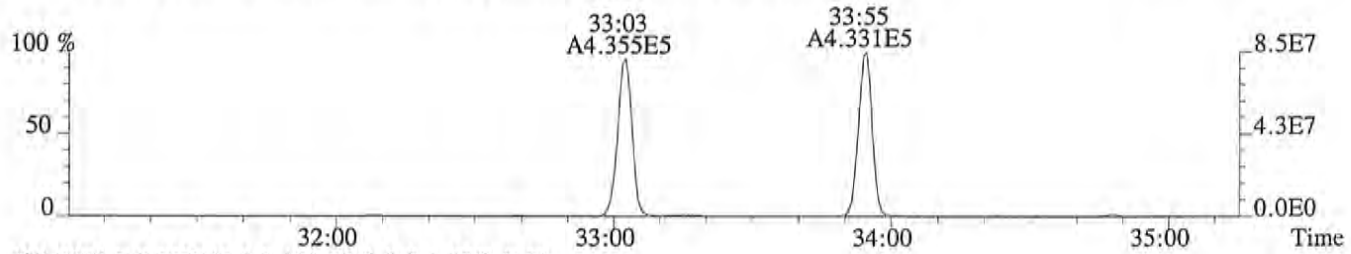
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4404.0,1.00%,F,T)



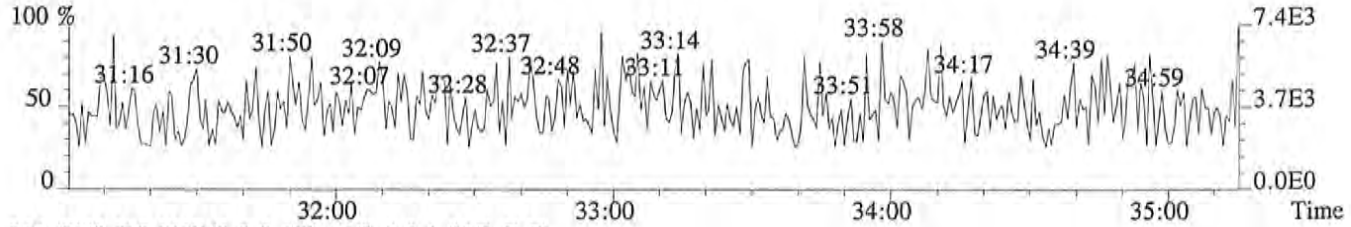
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1804.0,1.00%,F,T)



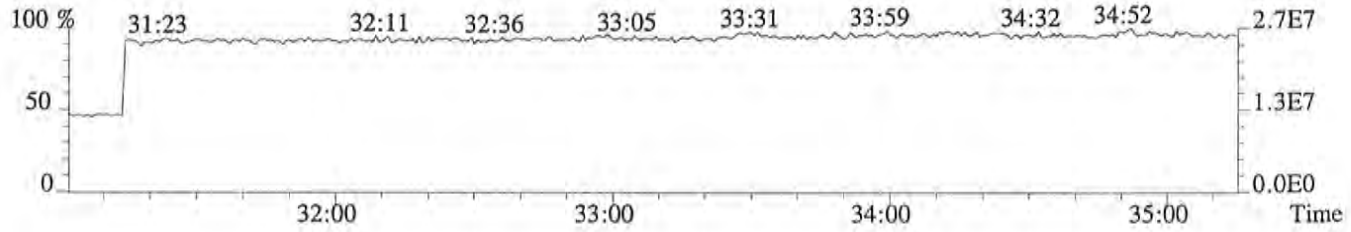
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1704.0,1.00%,F,T)



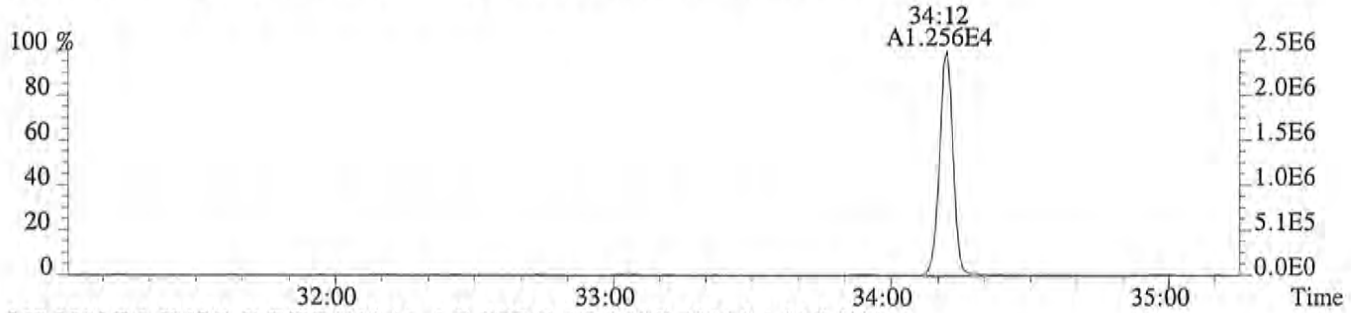
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



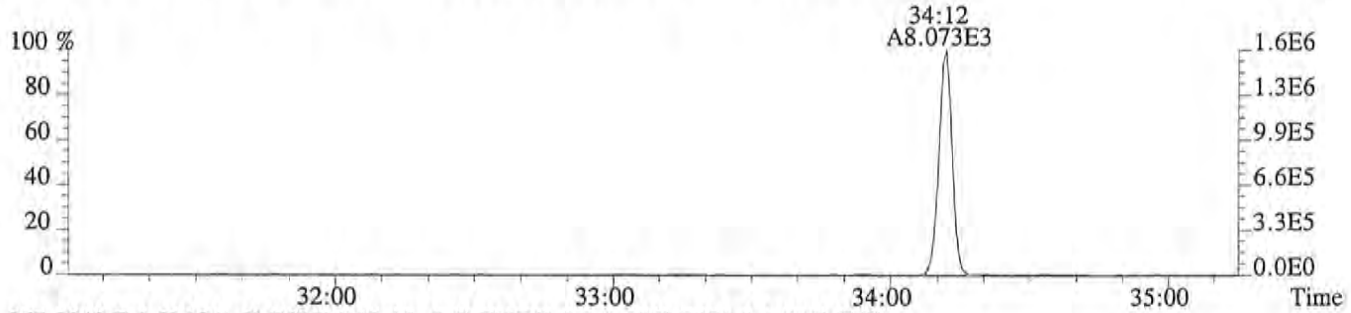
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



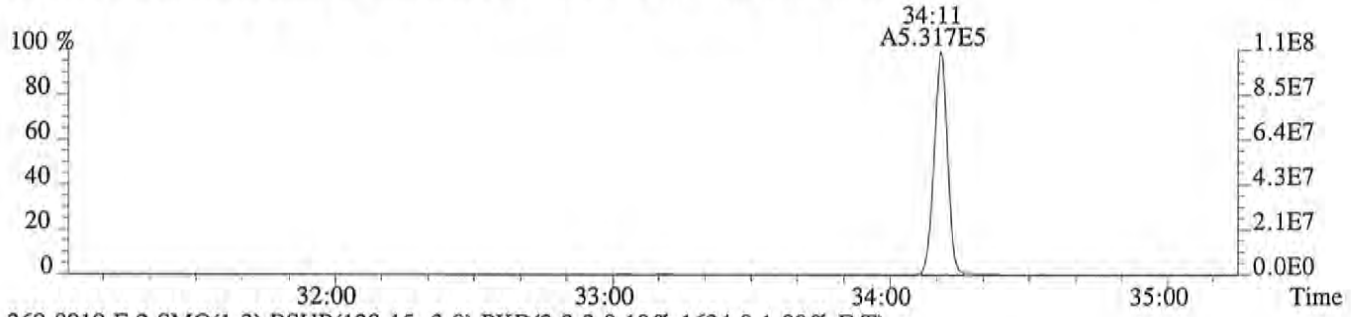
File:P600005 #1-380 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2616.0,1.00%,F,T)



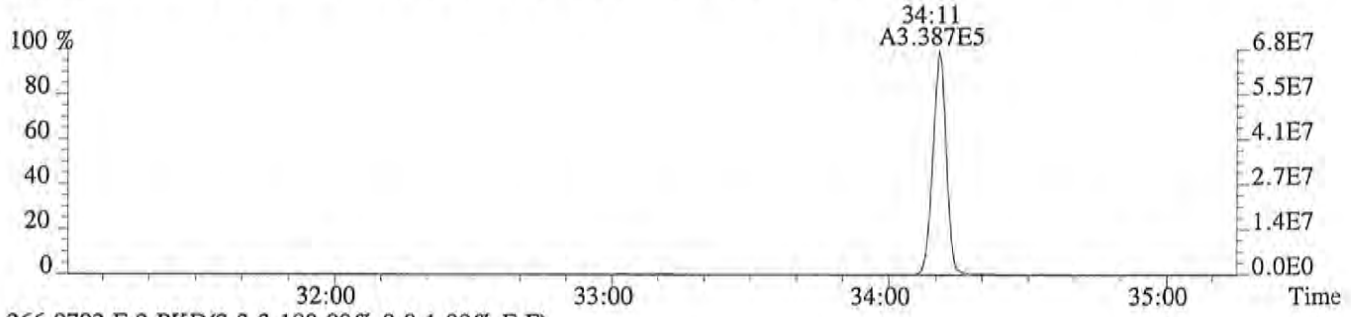
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1836.0,1.00%,F,T)



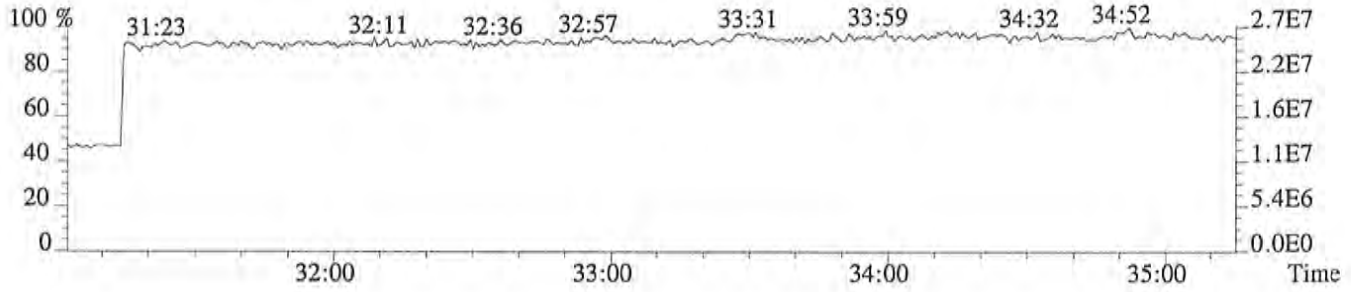
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2256.0,1.00%,F,T)



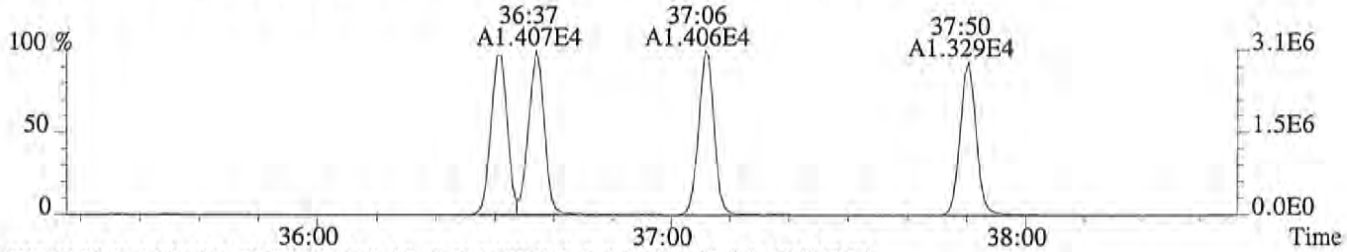
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1624.0,1.00%,F,T)



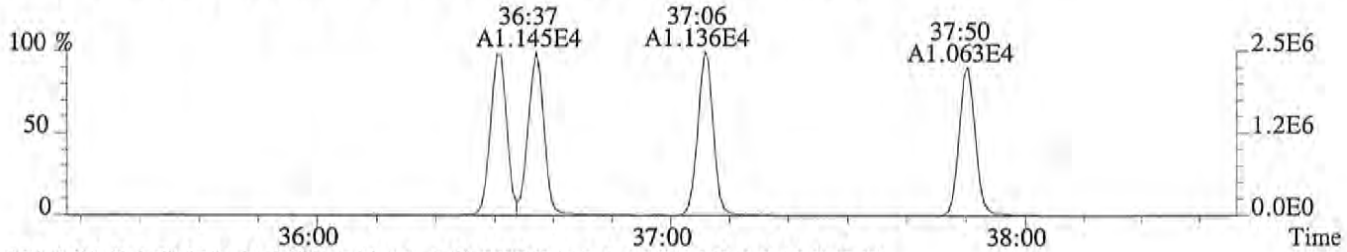
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



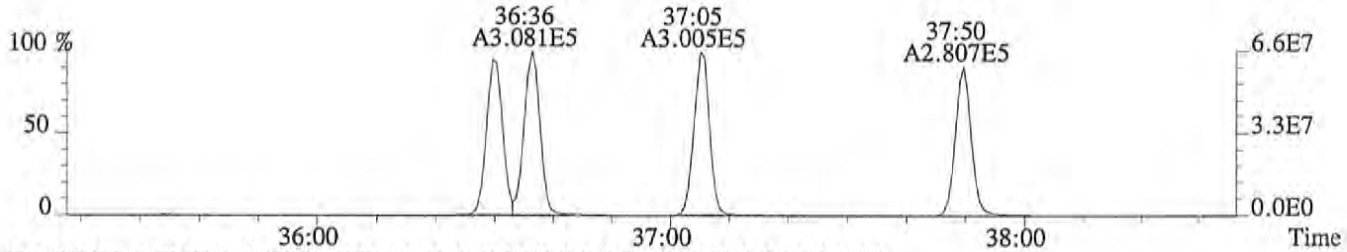
File:P600005 #1-299 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1392.0,0.40%,F,T)



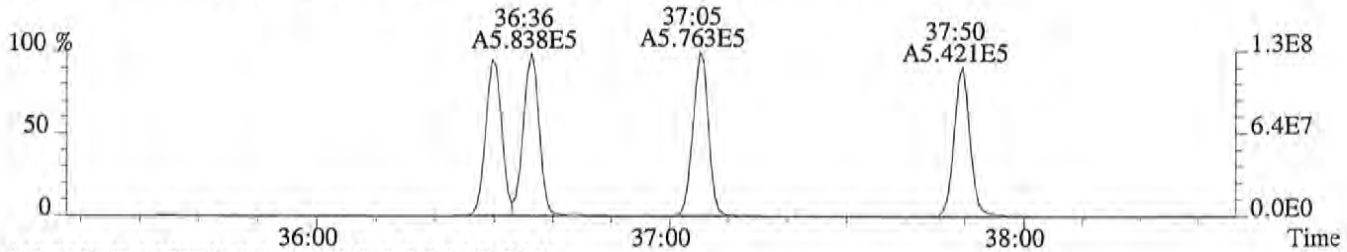
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,844.0,0.40%,F,T)



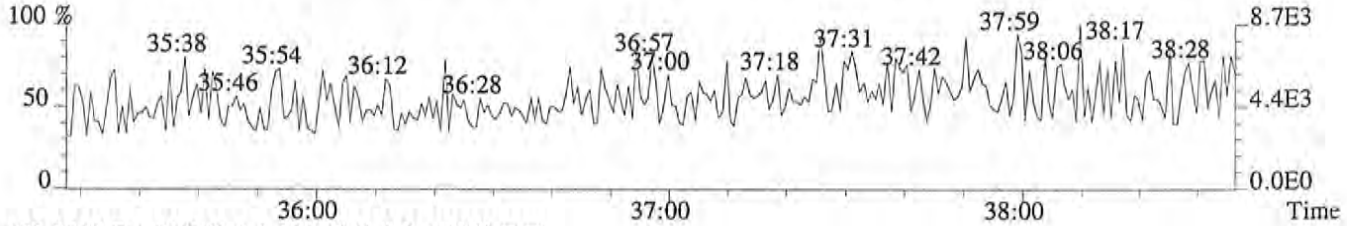
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2660.0,0.40%,F,T)



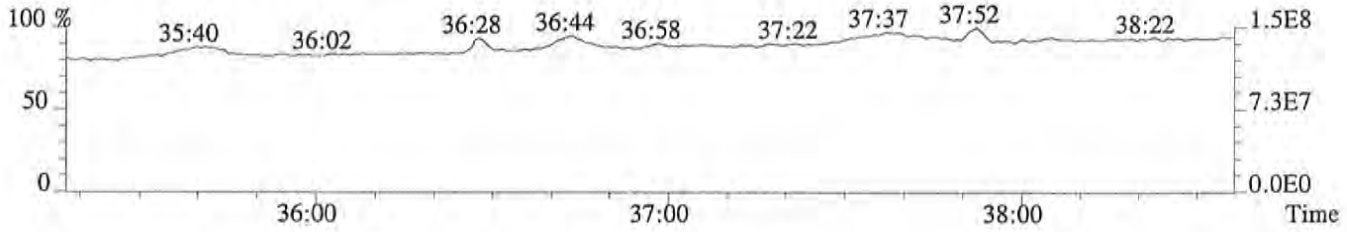
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3552.0,0.40%,F,T)



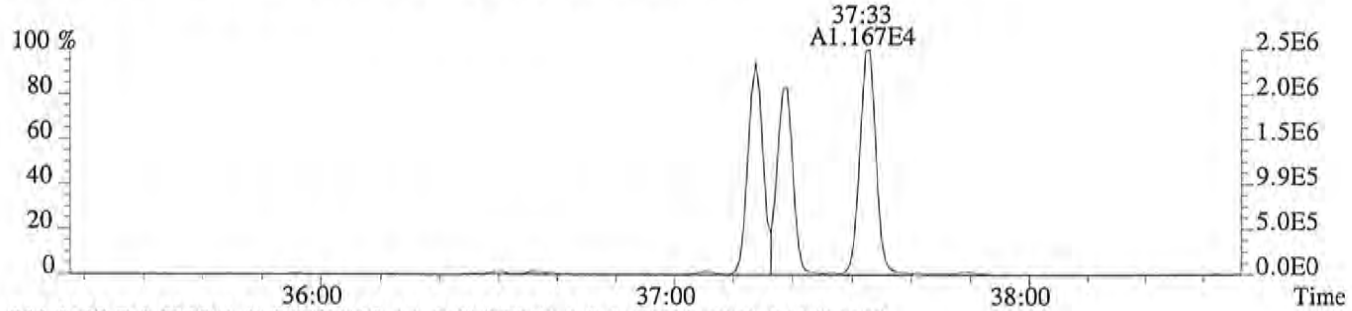
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



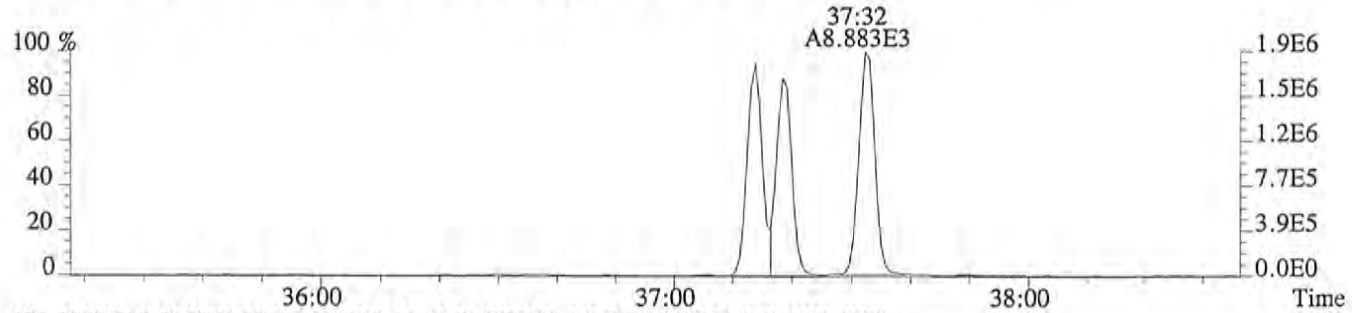
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



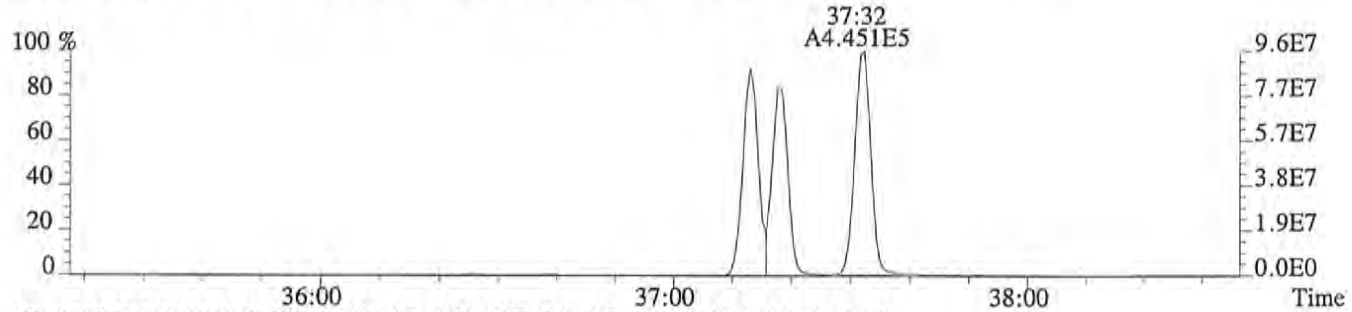
File:P600005 #1-299 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1320.0,0.40%,F,T)



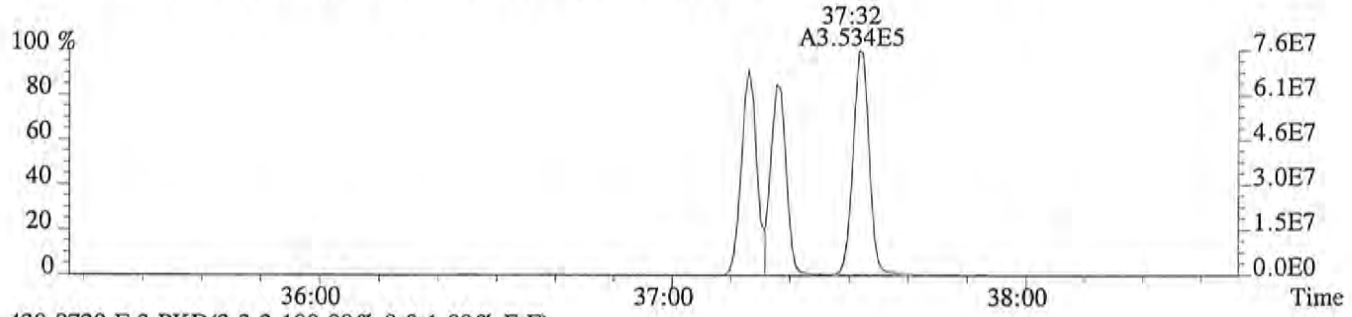
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2420.0,0.40%,F,T)



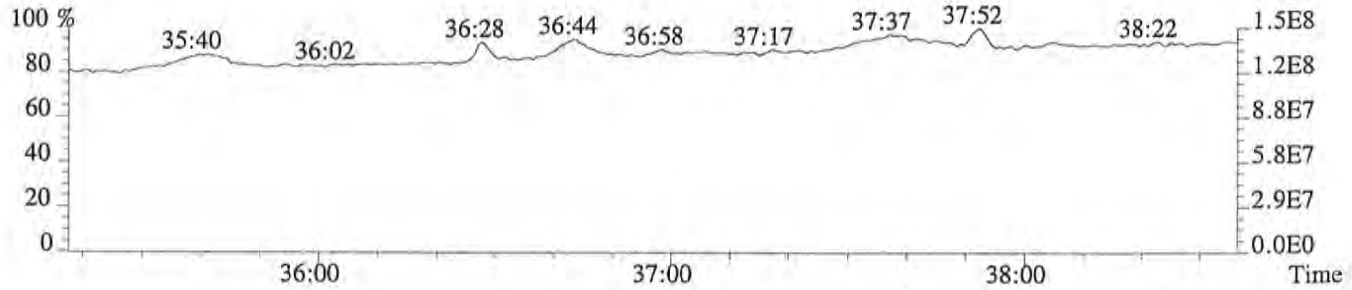
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6344.0,0.40%,F,T)



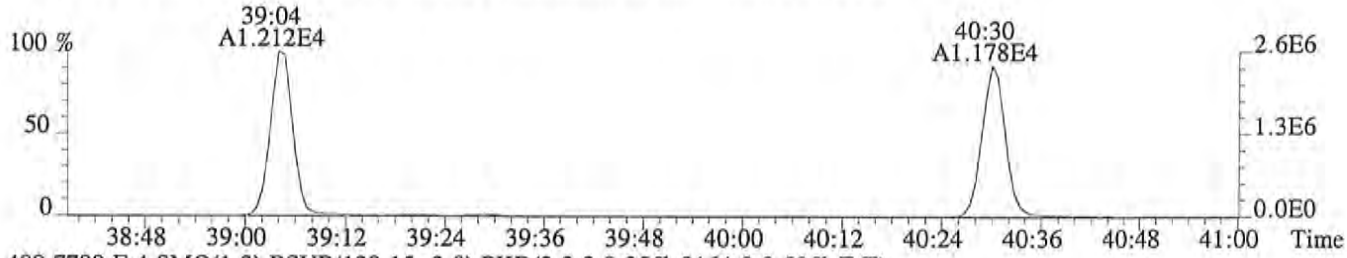
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3308.0,0.40%,F,T)



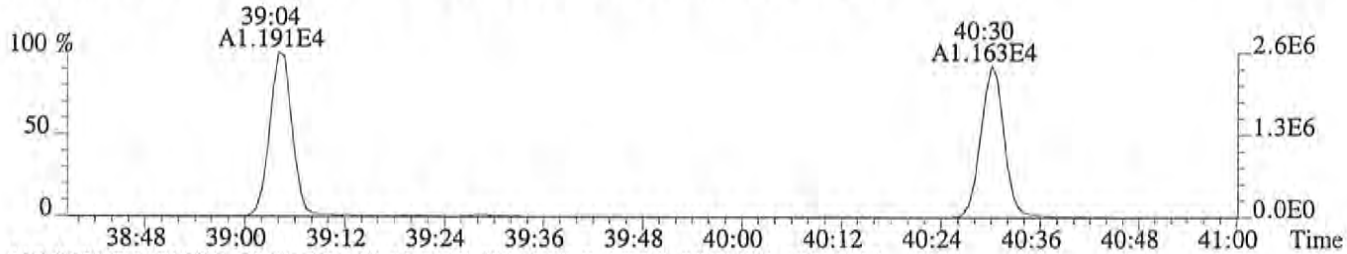
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



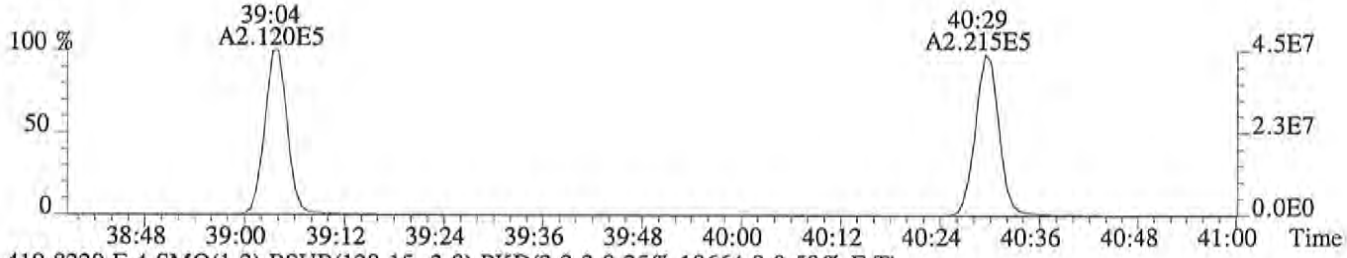
File:P600005 #1-213 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1508.0,0.50%,F,T)



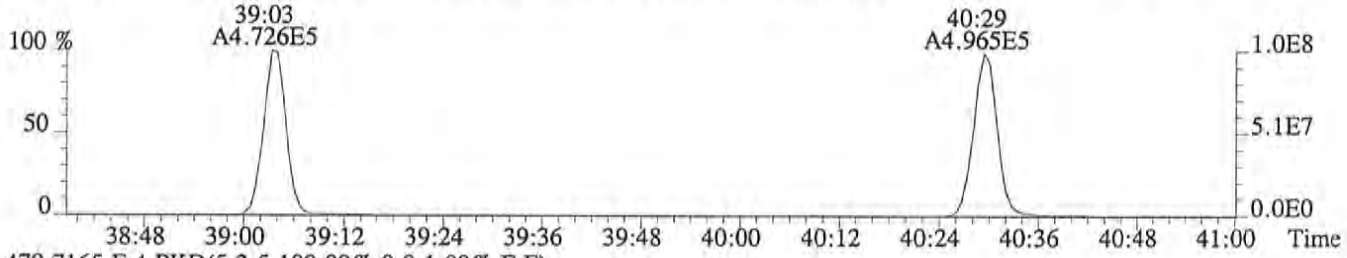
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2164.0,0.50%,F,T)



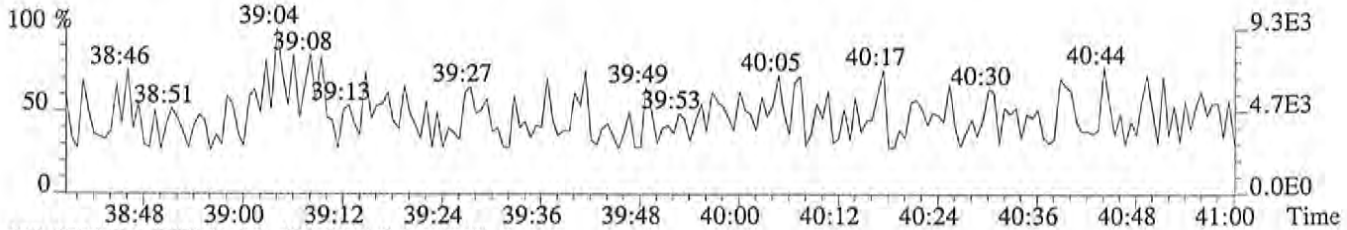
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,9868.0,0.50%,F,T)



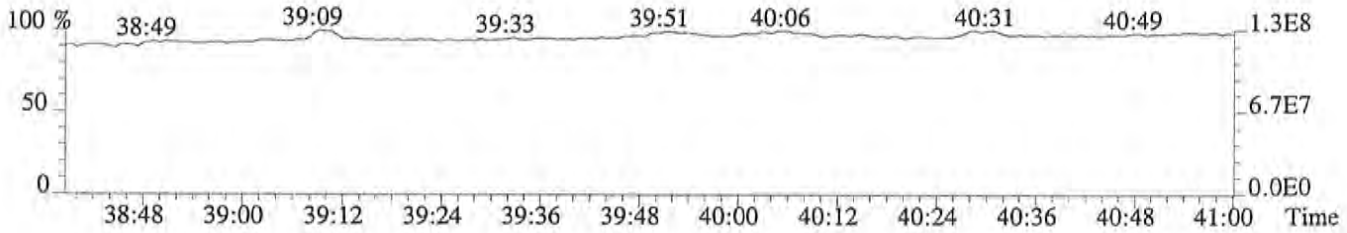
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10664.0,0.50%,F,T)



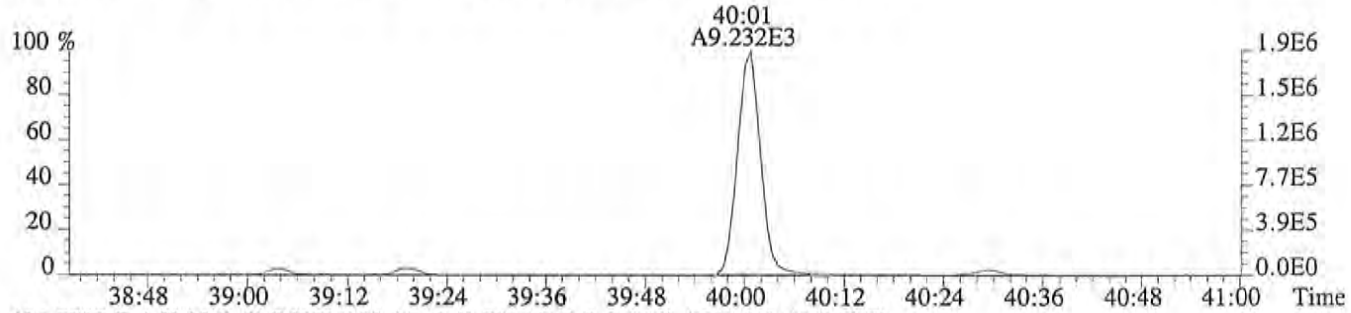
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



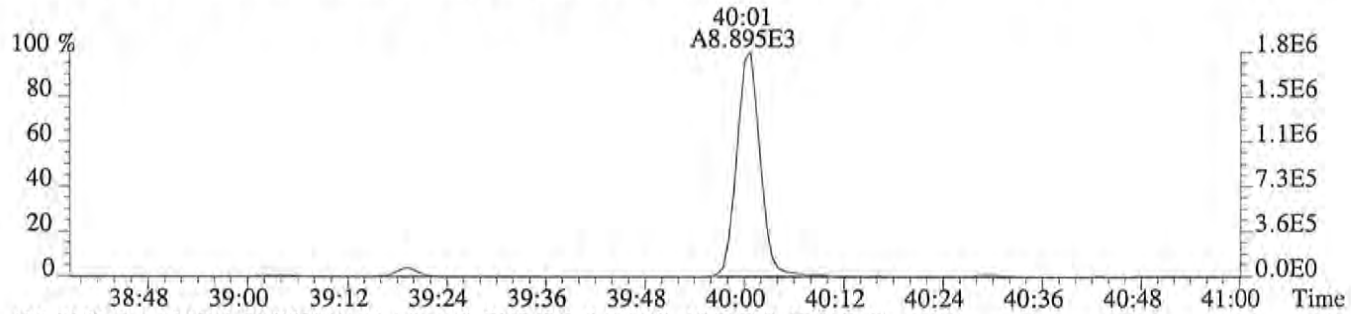
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



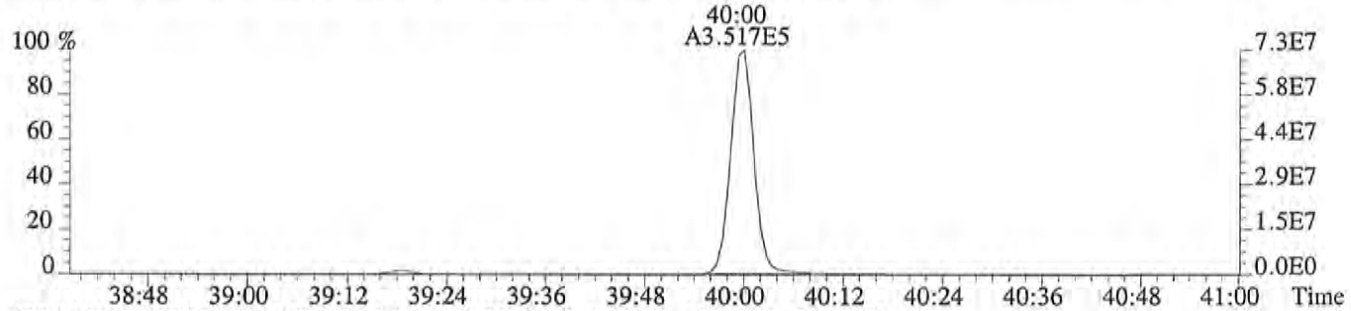
File:P600005 #1-213 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1488.0,0.40%,F,T)



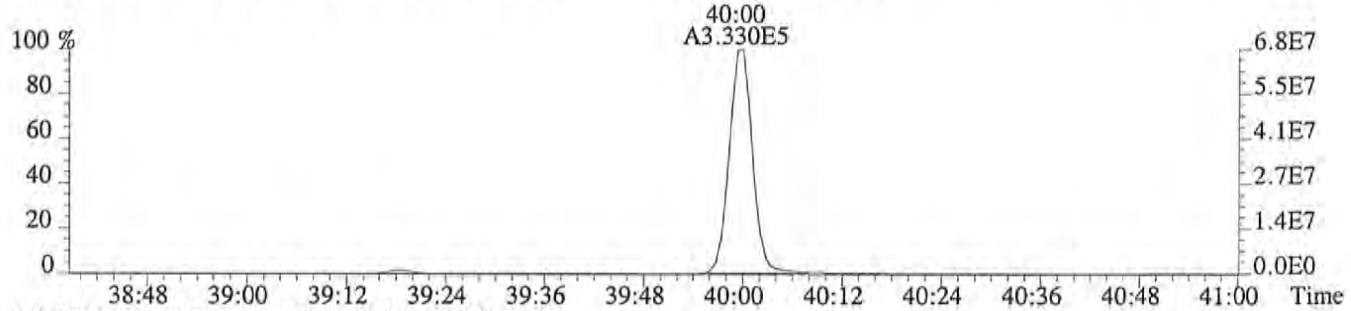
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1760.0,0.40%,F,T)



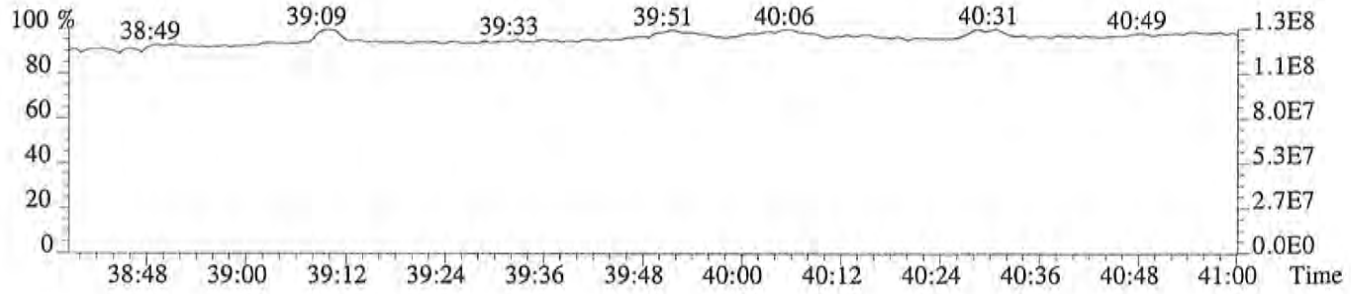
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1952.0,0.40%,F,T)



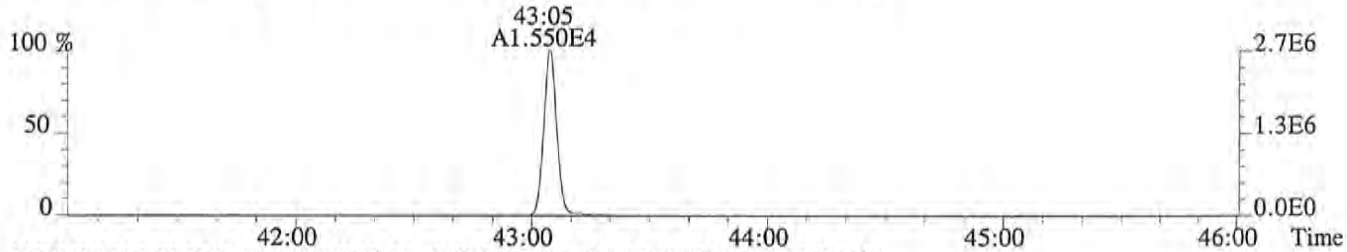
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1872.0,0.40%,F,T)



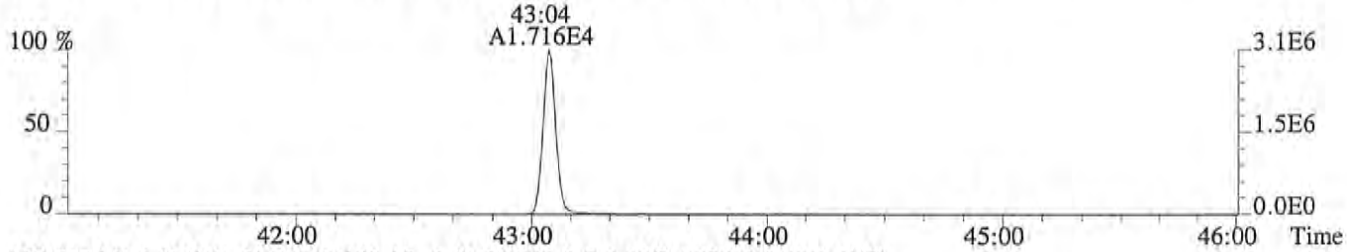
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



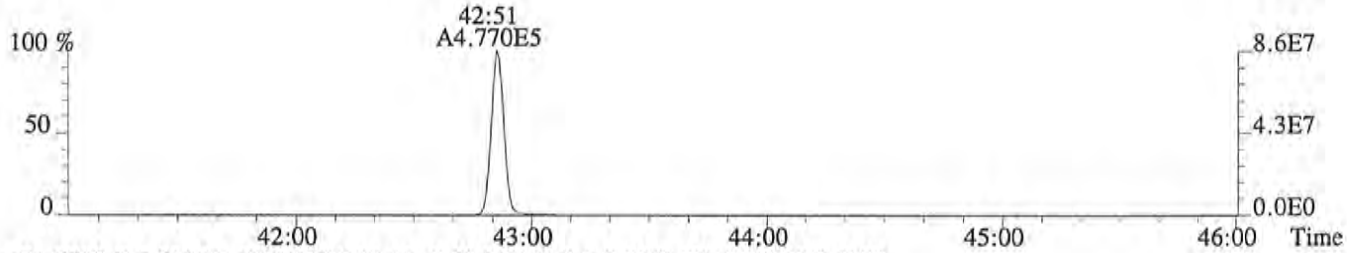
File:P600005 #1-448 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1552.0,0.40%,F,T)



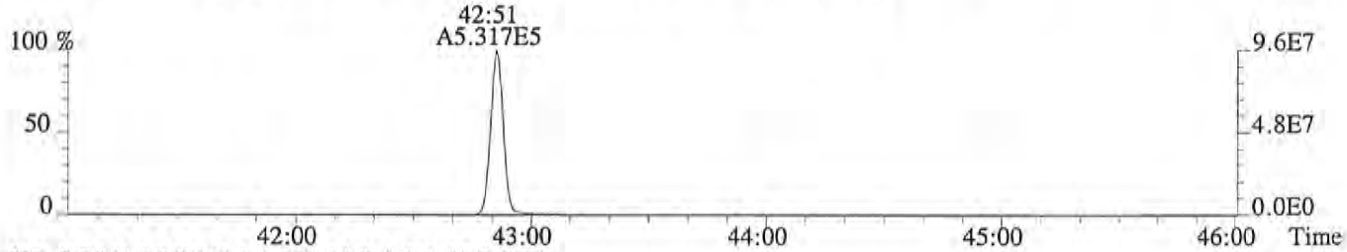
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2284.0,0.40%,F,T)



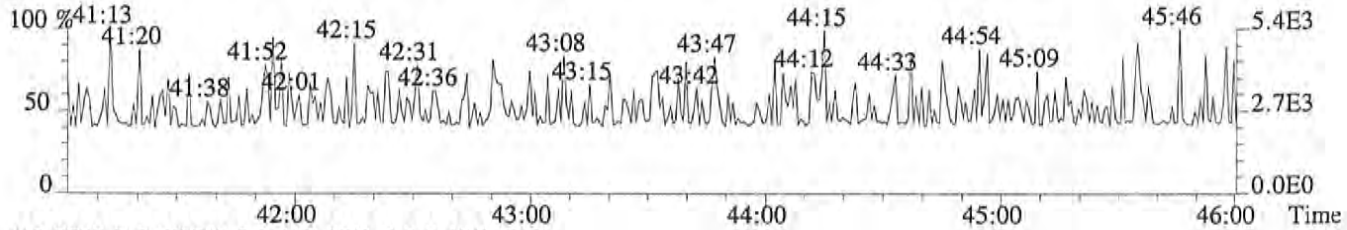
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2080.0,0.40%,F,T)



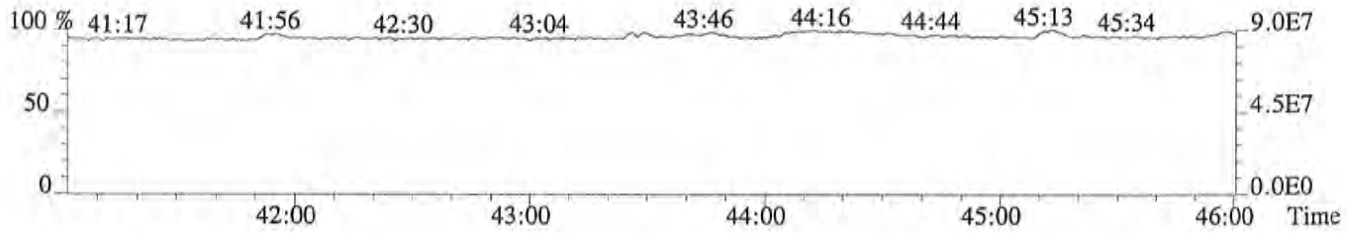
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2024.0,0.40%,F,T)



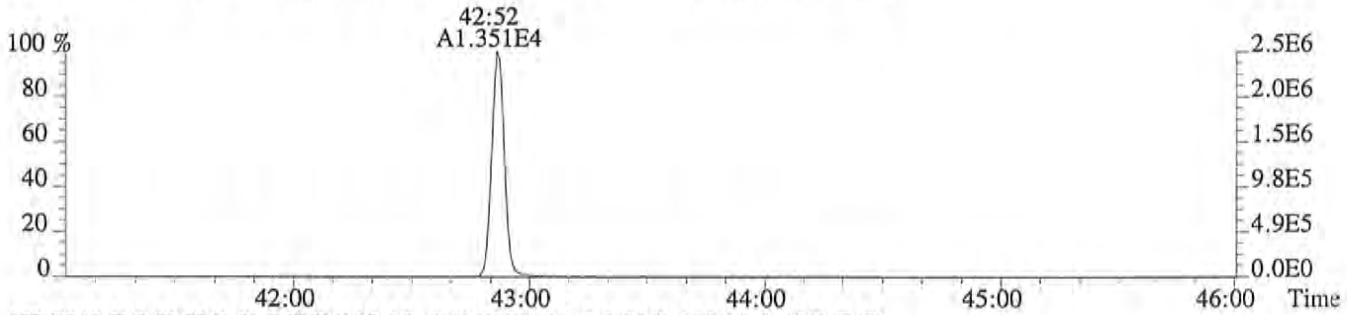
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



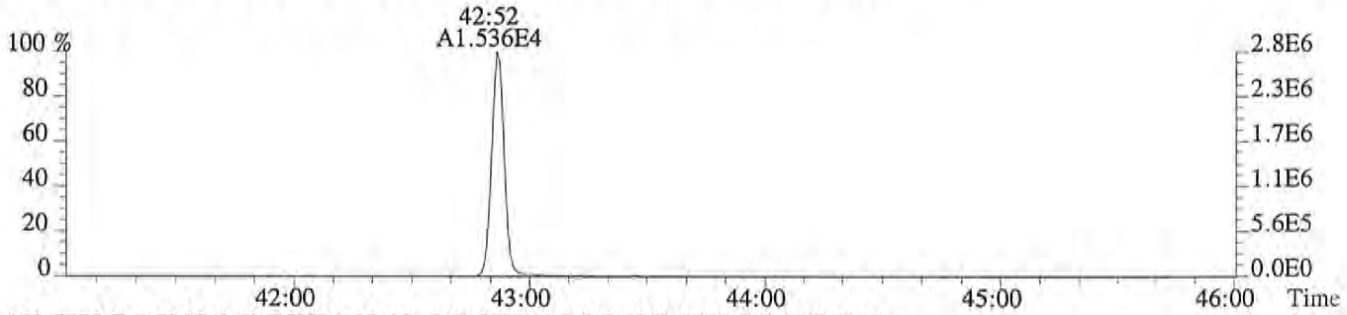
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



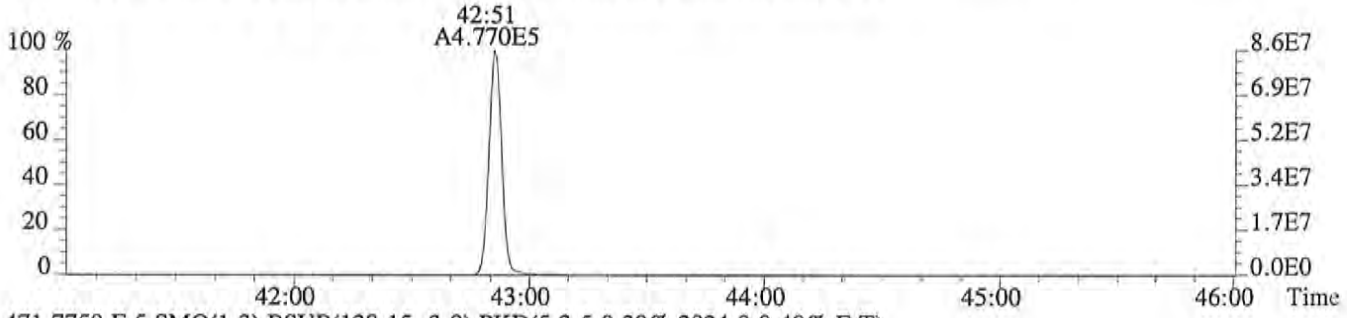
File:P600005 #1-448 Acq:19-AUG-2015 13:20:24 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS1
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1240.0,0.40%,F,T)



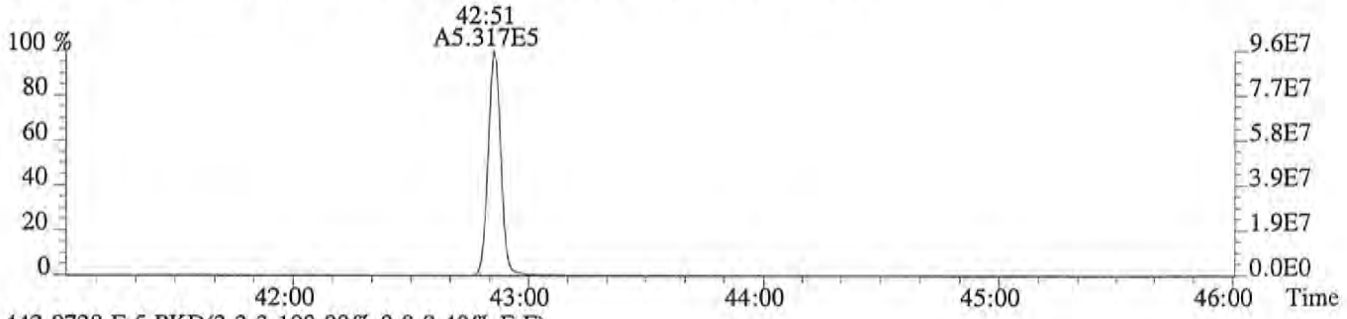
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1880.0,0.40%,F,T)



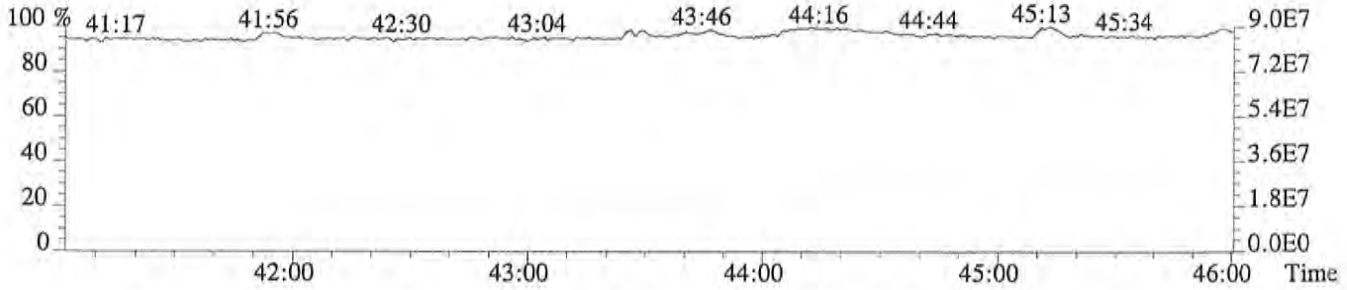
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2080.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2024.0,0.40%,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 P600006 Samp: 1 Inj: 1 Acquired: 19-AUG-15 14:09:28
Processed: 19-AUG-15 16:14:16 Sample ID: CS2

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	29:04	6.831e+03	8.903e+03	0.77	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	33:03	5.624e+04	3.620e+04	1.55	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:55	5.470e+04	3.513e+04	1.56	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	36:30	4.851e+04	4.061e+04	1.19	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:37	4.902e+04	4.085e+04	1.20	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	37:06	4.644e+04	3.802e+04	1.22	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:50	4.318e+04	3.558e+04	1.21	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	39:04	4.095e+04	3.921e+04	1.04	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	40:30	3.945e+04	3.867e+04	1.02	yes	no	1.287
10	Unk	OCDF	43:04	4.756e+04	5.329e+04	0.89	yes	no	1.257
11	Unk	2,3,7,8-TCDD	29:48	6.531e+03	8.367e+03	0.78	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	34:11	4.132e+04	2.625e+04	1.57	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	37:13	3.390e+04	2.716e+04	1.25	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	37:18	3.366e+04	2.706e+04	1.24	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	37:32	3.749e+04	2.976e+04	1.26	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	40:00	3.040e+04	2.966e+04	1.02	yes	no	1.034
17	Unk	OCDD	42:52	4.260e+04	4.727e+04	0.90	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	29:03	3.756e+05	4.770e+05	0.79	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	33:02	5.735e+05	3.632e+05	1.58	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:54	5.834e+05	3.699e+05	1.58	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	36:30	2.587e+05	4.931e+05	0.52	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:36	2.746e+05	5.242e+05	0.52	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	37:05	2.607e+05	4.955e+05	0.53	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:49	2.327e+05	4.478e+05	0.52	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	39:03	1.791e+05	4.052e+05	0.44	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:29	1.869e+05	4.195e+05	0.45	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	29:47	3.240e+05	4.110e+05	0.79	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	34:11	4.400e+05	2.800e+05	1.57	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	37:13	3.350e+05	2.646e+05	1.27	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	37:18	3.326e+05	2.649e+05	1.26	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:59	3.000e+05	2.829e+05	1.06	yes	no	0.892
32	IS	13C-OCDD	42:51	3.844e+05	4.278e+05	0.90	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	29:15	2.808e+05	3.530e+05	0.80	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:32	3.755e+05	2.984e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:48	1.549e+04				no	1.263

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Signal/Noise Height Ratio Summary

CLIENT ID.
76556

Run #3 Filename P600006 Samp: 1 Inj: 1 Acquired: 19-AUG-15 14:09:28
Processed: 19-AUG-15 16:14:16 LAB. ID: CS2

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	1.33e+06	1.92e+03	7.0e+02	1.77e+06	2.31e+03	7.7e+02
2	1,2,3,7,8-PeCDF	1.11e+07	2.06e+03	5.4e+03	7.11e+06	4.36e+03	1.6e+03
3	2,3,4,7,8-PeCDF	1.15e+07	2.06e+03	5.6e+03	7.43e+06	4.36e+03	1.7e+03
4	1,2,3,4,7,8-HxCDF	1.11e+07	2.51e+03	4.4e+03	9.27e+06	1.32e+03	7.0e+03
5	1,2,3,6,7,8-HxCDF	1.09e+07	2.51e+03	4.3e+03	8.97e+06	1.32e+03	6.8e+03
6	2,3,4,6,7,8-HxCDF	1.09e+07	2.51e+03	4.3e+03	8.92e+06	1.32e+03	6.8e+03
7	1,2,3,7,8,9-HxCDF	9.44e+06	2.51e+03	3.8e+03	7.85e+06	1.32e+03	5.9e+03
8	1,2,3,4,6,7,8-HpCDF	9.29e+06	2.30e+03	4.0e+03	8.87e+06	2.67e+03	3.3e+03
9	1,2,3,4,7,8,9-HpCDF	8.32e+06	2.30e+03	3.6e+03	8.08e+06	2.67e+03	3.0e+03
10	OCDF	8.71e+06	1.61e+03	5.4e+03	9.69e+06	2.88e+03	3.4e+03
11	2,3,7,8-TCDD	1.36e+06	1.46e+03	9.3e+02	1.76e+06	1.87e+03	9.4e+02
12	1,2,3,7,8-PeCDD	8.89e+06	2.56e+03	3.5e+03	5.63e+06	1.18e+03	4.8e+03
13	1,2,3,4,7,8-HxCDD	7.85e+06	1.48e+03	5.3e+03	6.25e+06	2.25e+03	2.8e+03
14	1,2,3,6,7,8-HxCDD	7.75e+06	1.48e+03	5.2e+03	6.23e+06	2.25e+03	2.8e+03
15	1,2,3,7,8,9-HxCDD	8.75e+06	1.48e+03	5.9e+03	6.96e+06	2.25e+03	3.1e+03
16	1,2,3,4,6,7,8-HpCDD	6.55e+06	1.72e+03	3.8e+03	6.45e+06	1.38e+03	4.7e+03
17	OCDD	8.05e+06	1.17e+03	6.9e+03	8.97e+06	2.14e+03	4.2e+03
18	13C-2,3,7,8-TCDF	7.51e+07	6.10e+03	1.2e+04	9.59e+07	3.40e+03	2.8e+04
19	13C-1,2,3,7,8-PeCDF	1.15e+08	9.08e+02	1.3e+05	7.32e+07	2.60e+03	2.8e+04
20	13C-2,3,4,7,8-PeCDF	1.23e+08	9.08e+02	1.4e+05	7.86e+07	2.60e+03	3.0e+04
21	13C-1,2,3,4,7,8-HxCDF	5.85e+07	2.50e+03	2.3e+04	1.11e+08	3.68e+03	3.0e+04
22	13C-1,2,3,6,7,8-HxCDF	6.06e+07	2.50e+03	2.4e+04	1.14e+08	3.68e+03	3.1e+04
23	13C-2,3,4,6,7,8-HxCDF	6.08e+07	2.50e+03	2.4e+04	1.15e+08	3.68e+03	3.1e+04
24	13C-1,2,3,7,8,9-HxCDF	5.10e+07	2.50e+03	2.0e+04	9.88e+07	3.68e+03	2.7e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.06e+07	6.06e+03	6.7e+03	9.25e+07	1.74e+04	5.3e+03
26	13C-1,2,3,4,7,8,9-HpCDF	3.94e+07	6.06e+03	6.5e+03	8.82e+07	1.74e+04	5.1e+03
27	13C-2,3,7,8-TCDD	6.67e+07	1.14e+04	5.9e+03	8.49e+07	5.64e+03	1.5e+04
28	13C-1,2,3,7,8-PeCDD	9.46e+07	2.58e+03	3.7e+04	5.97e+07	1.92e+03	3.1e+04
29	13C-1,2,3,4,7,8-HxCDD	7.70e+07	6.96e+03	1.1e+04	6.12e+07	3.23e+03	1.9e+04
30	13C-1,2,3,6,7,8-HxCDD	7.58e+07	6.96e+03	1.1e+04	6.04e+07	3.23e+03	1.9e+04
31	13C-1,2,3,4,6,7,8-HpCDD	6.47e+07	2.50e+03	2.6e+04	6.11e+07	1.71e+03	3.6e+04
32	13C-OCDD	7.28e+07	1.45e+03	5.0e+04	8.10e+07	1.89e+03	4.3e+04
33	13C-1,2,3,4-TCDD	5.80e+07	1.14e+04	5.1e+03	7.31e+07	5.64e+03	1.3e+04
34	13C-1,2,3,7,8,9-HxCDD	8.72e+07	6.96e+03	1.3e+04	6.94e+07	3.23e+03	2.1e+04
35	37Cl-2,3,7,8-TCDD	3.31e+06	3.01e+03	1.1e+03			

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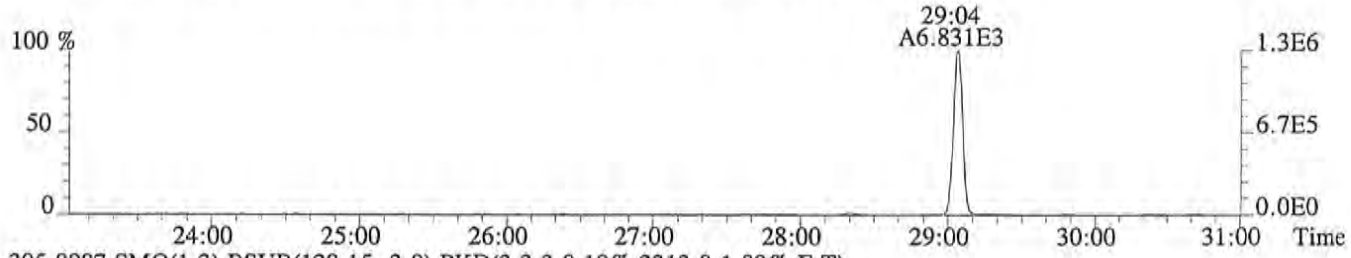
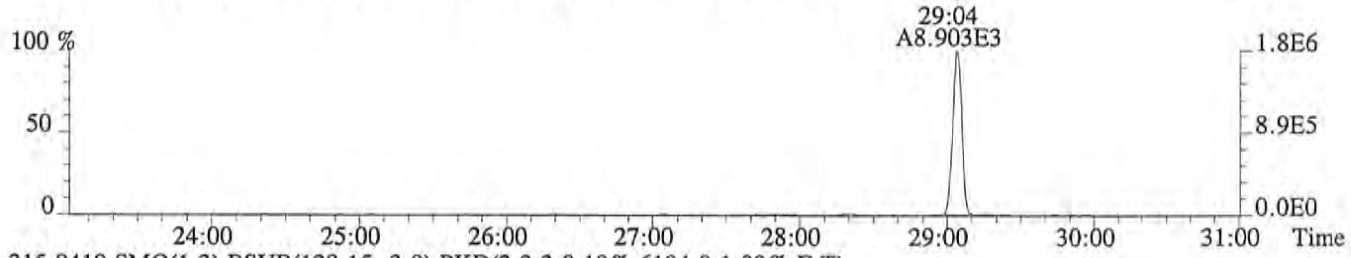
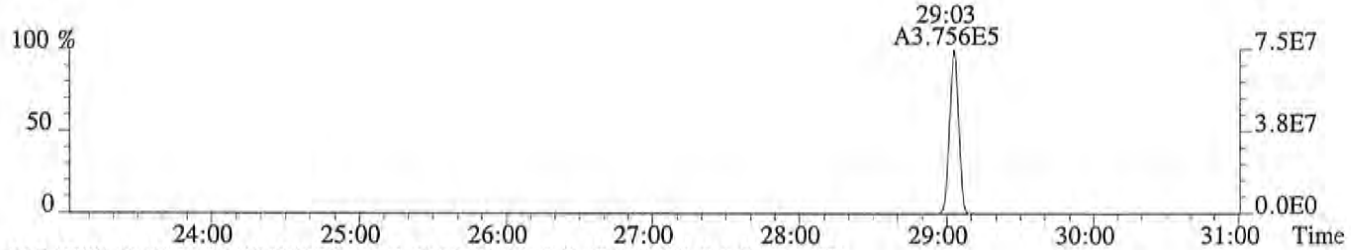
File:P600006 #1-566 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1916.0,1.00%,F,T)



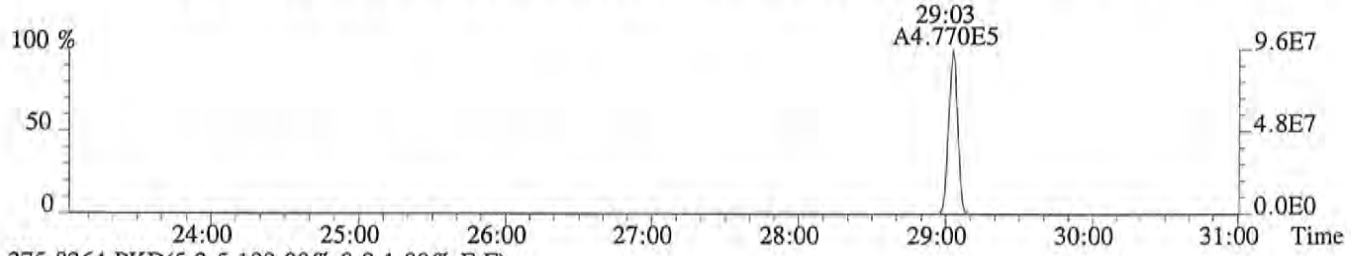
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2312.0,1.00%,F,T)



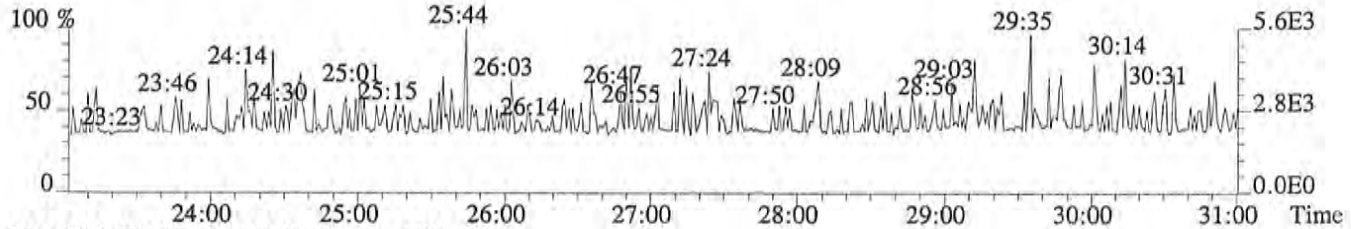
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6104.0,1.00%,F,T)



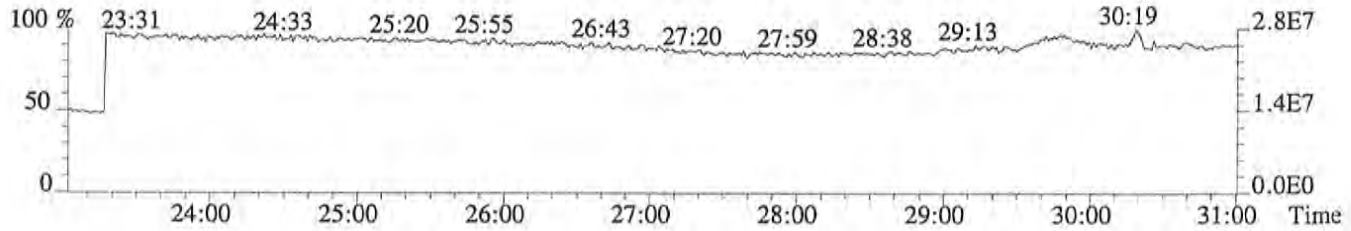
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3400.0,1.00%,F,T)



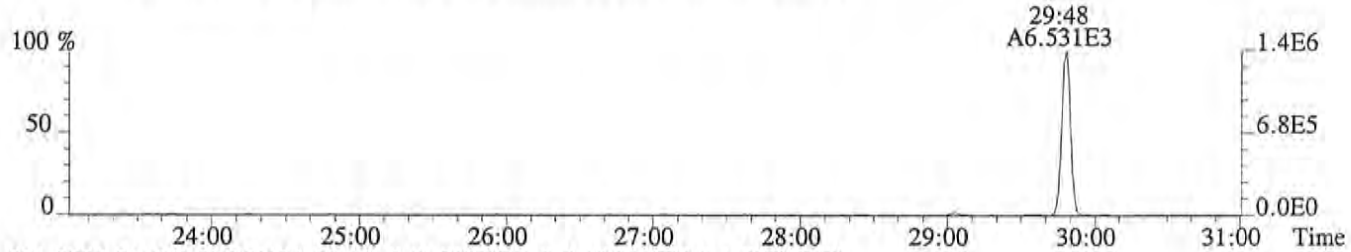
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



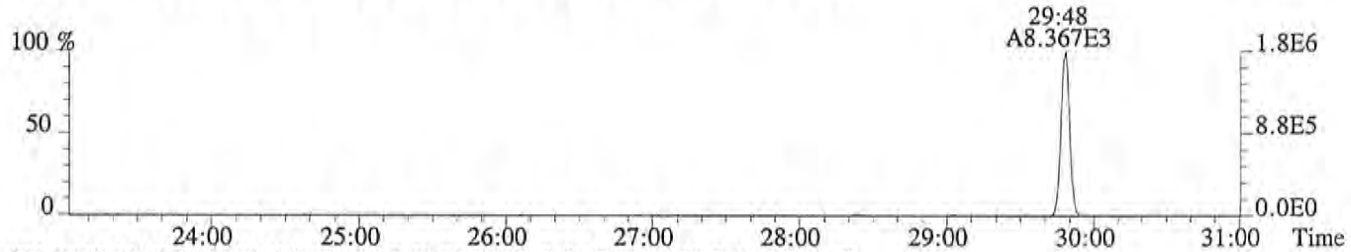
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



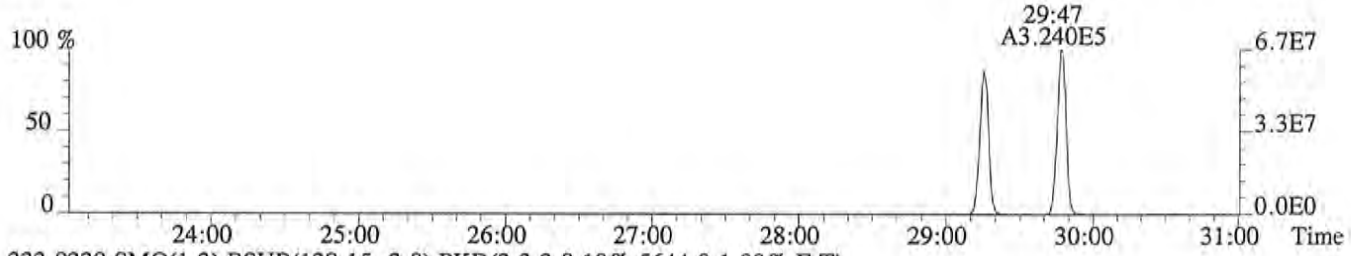
File:P600006 #1-566 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1456.0,1.00%,F,T)



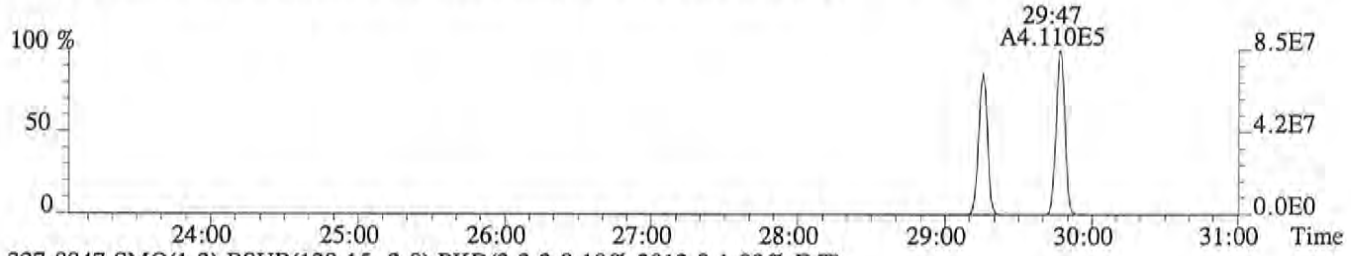
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1872.0,1.00%,F,T)



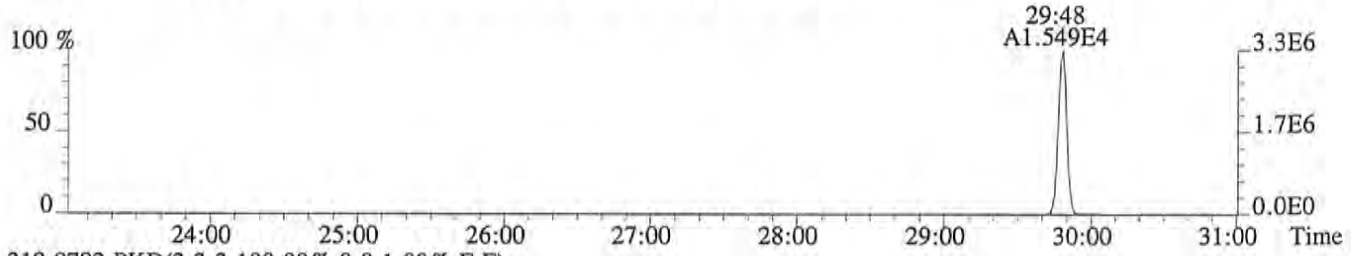
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,11360.0,1.00%,F,T)



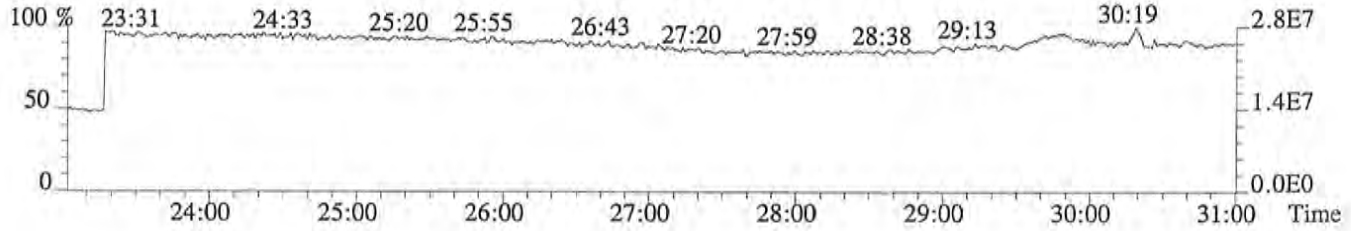
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5644.0,1.00%,F,T)



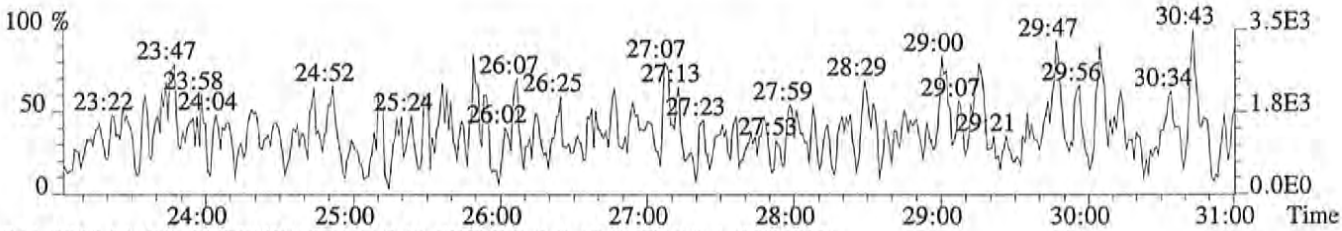
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3012.0,1.00%,F,T)



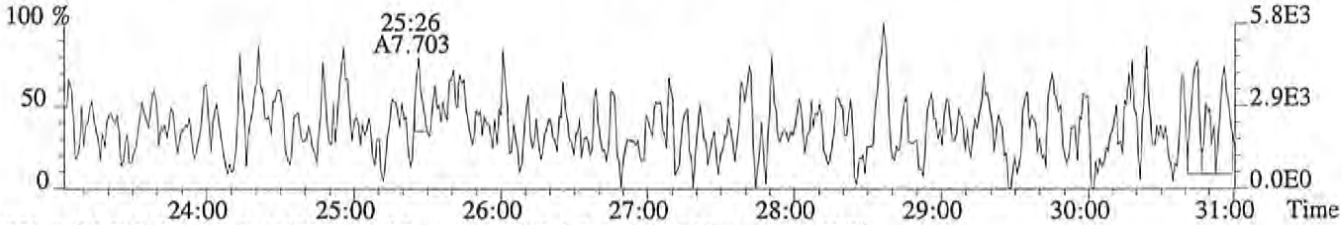
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



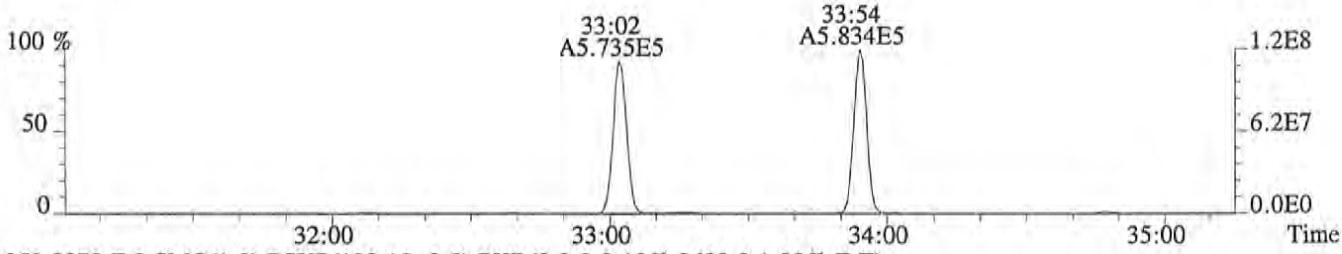
File:P600006 #1-566 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1496.0,1.00%,F,T)



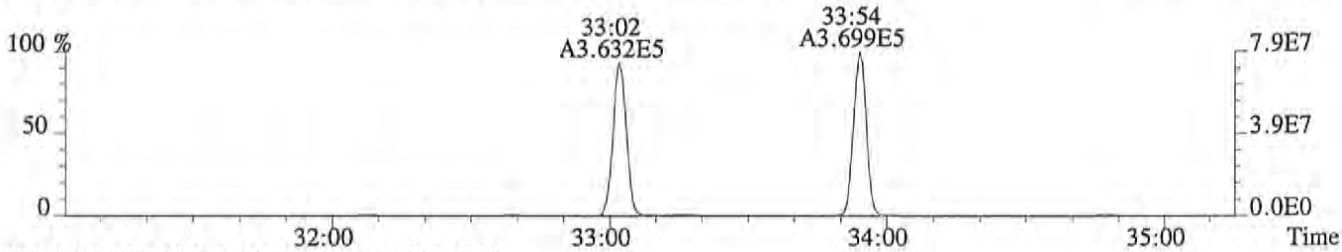
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2616.0,1.00%,F,T)



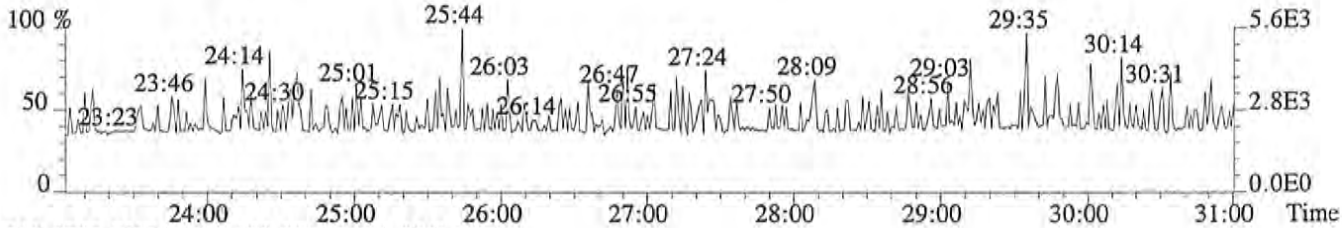
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,908.0,1.00%,F,T)



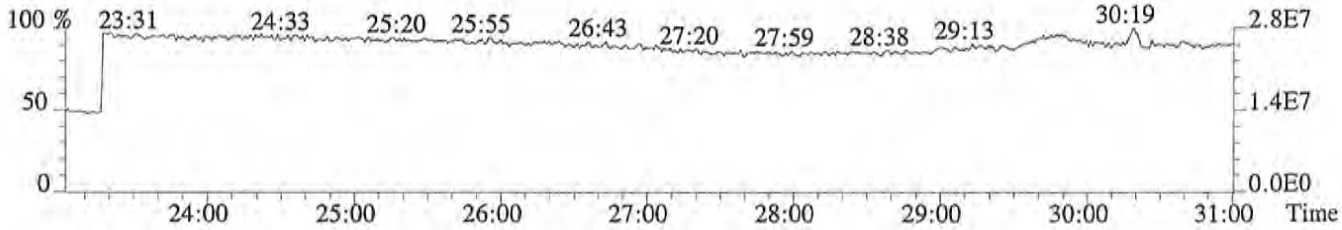
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2600.0,1.00%,F,T)



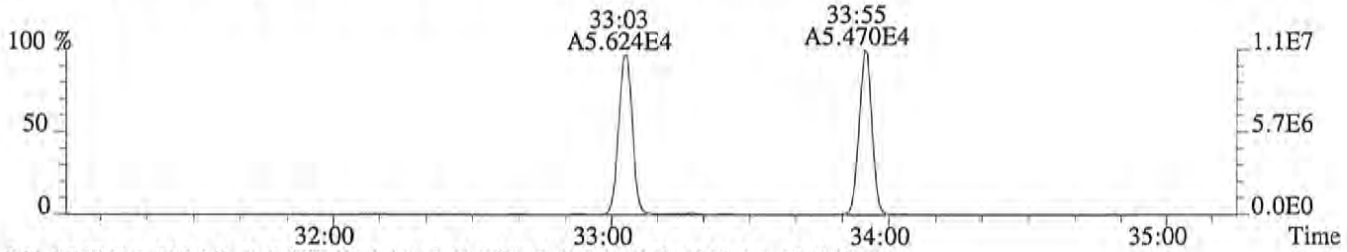
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



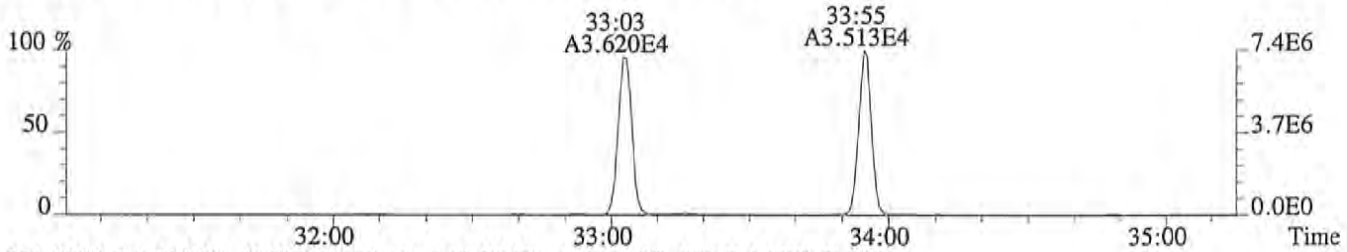
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



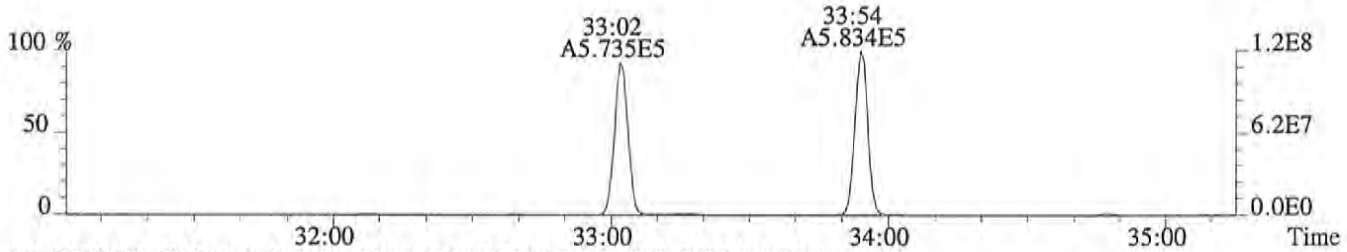
File:P600006 #1-380 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2060.0,1.00%,F,T)



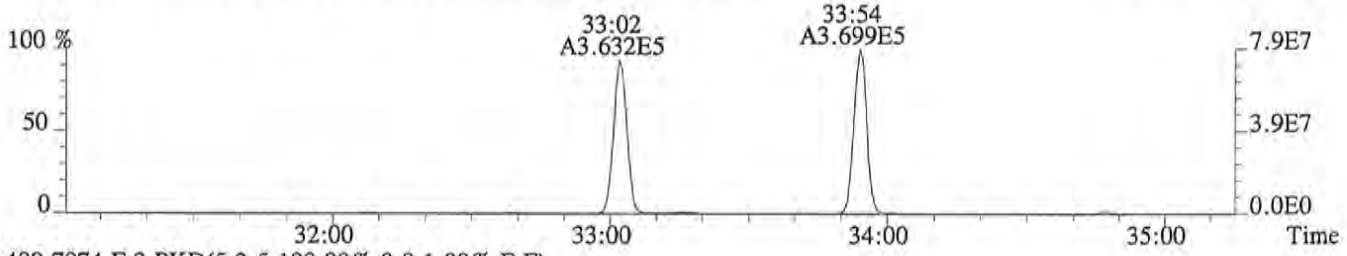
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4360.0,1.00%,F,T)



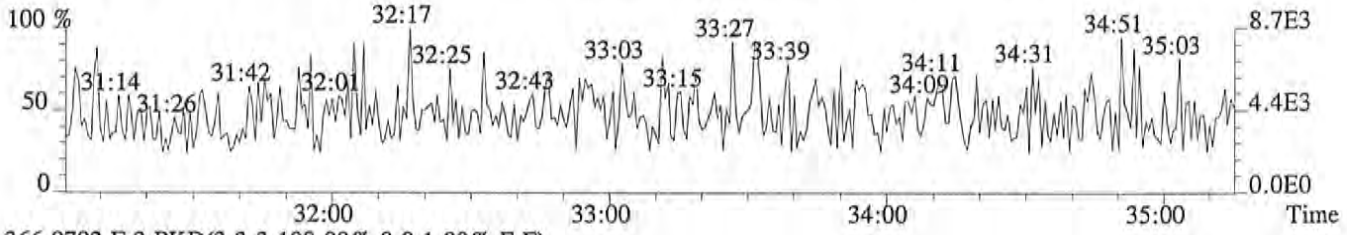
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,908.0,1.00%,F,T)



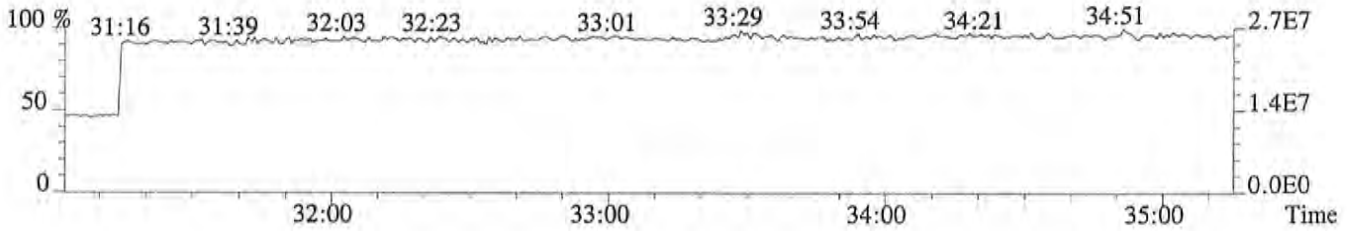
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2600.0,1.00%,F,T)



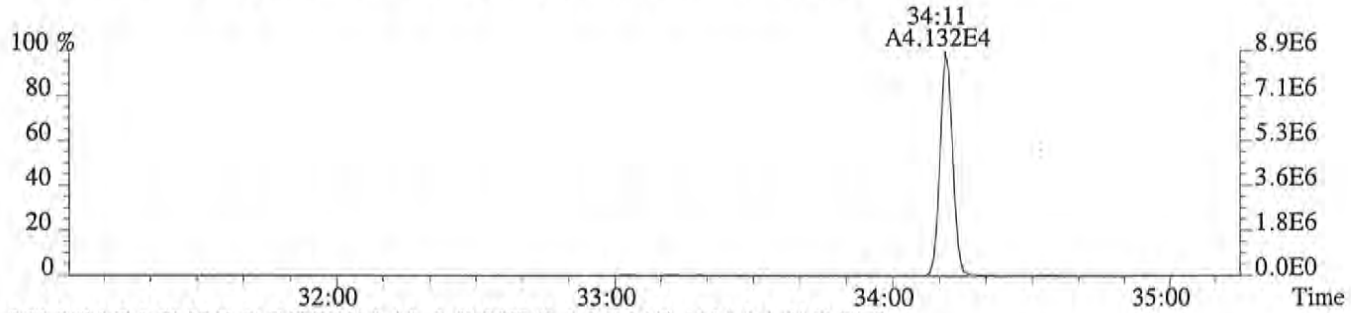
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



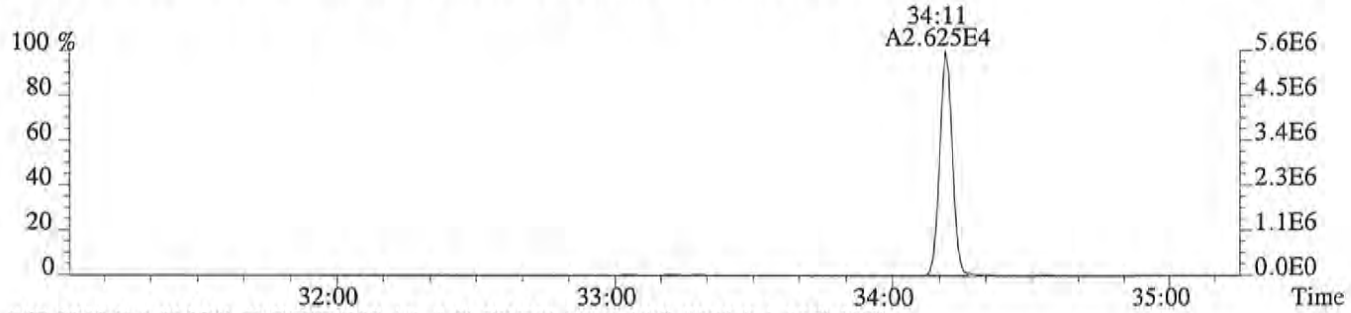
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



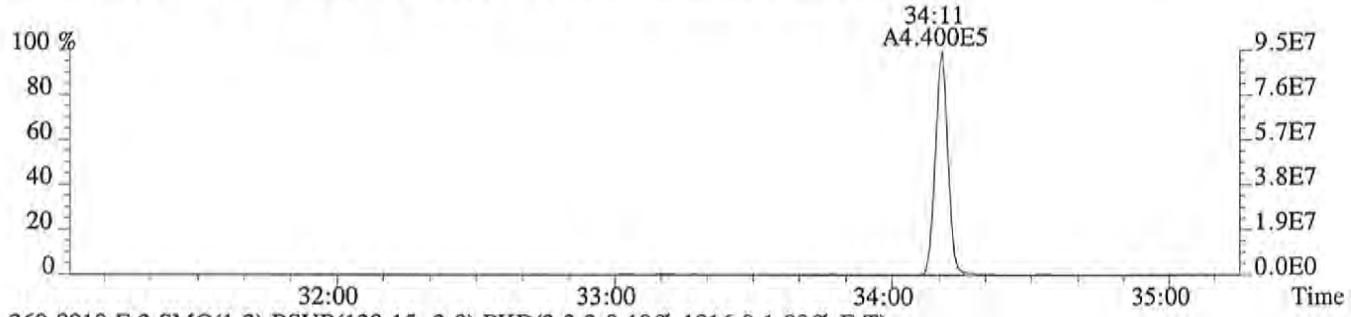
File:P600006 #1-380 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2564.0,1.00%,F,T)



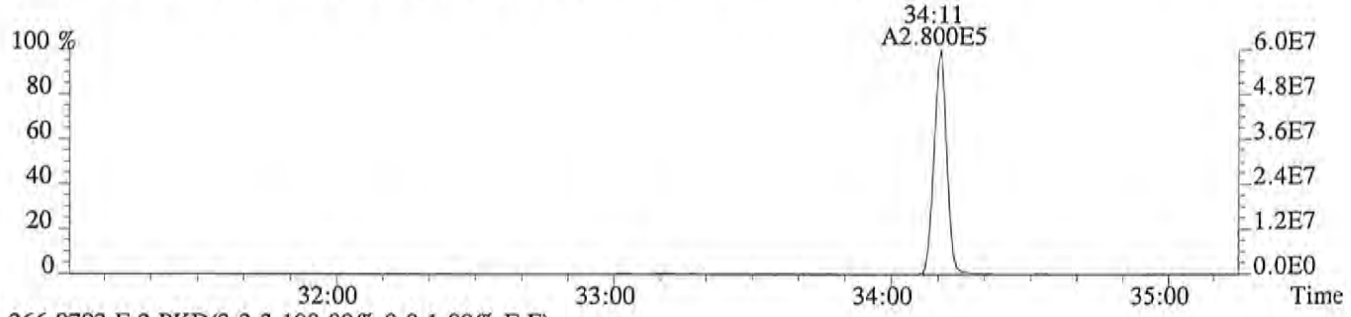
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1184.0,1.00%,F,T)



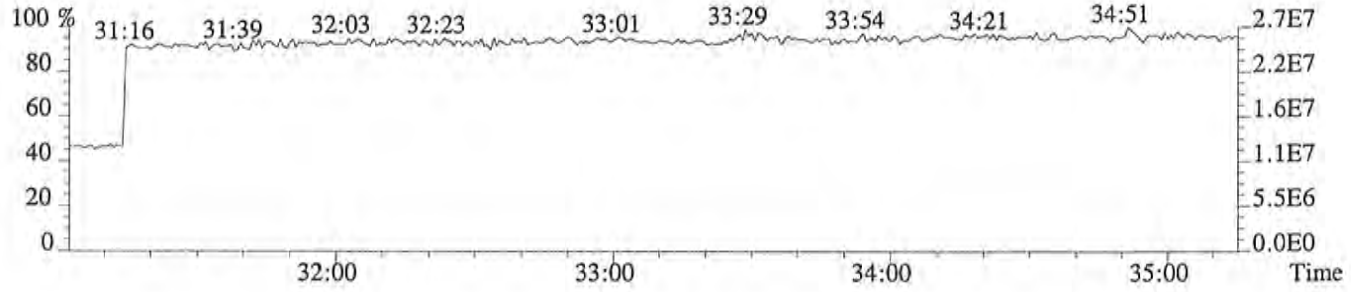
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2580.0,1.00%,F,T)



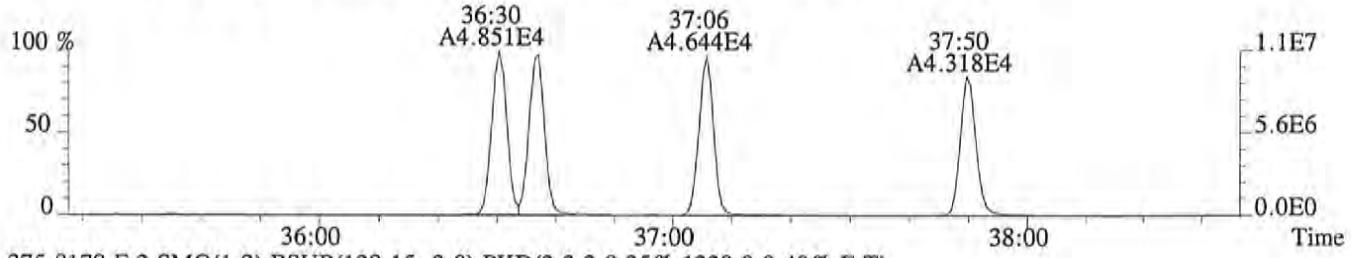
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1916.0,1.00%,F,T)



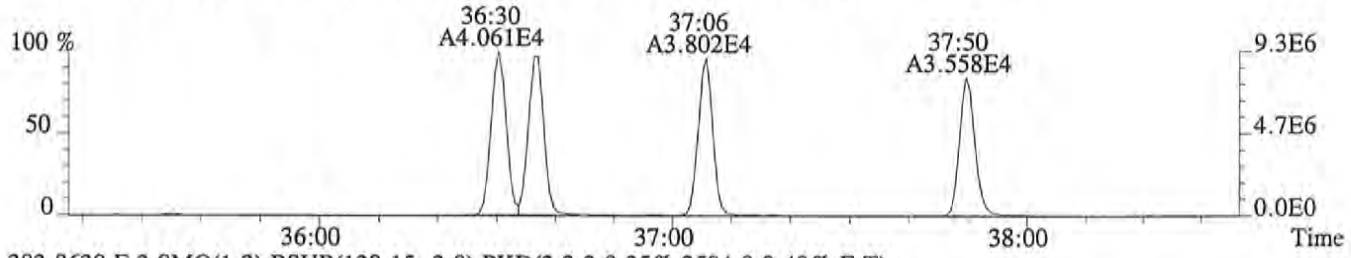
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



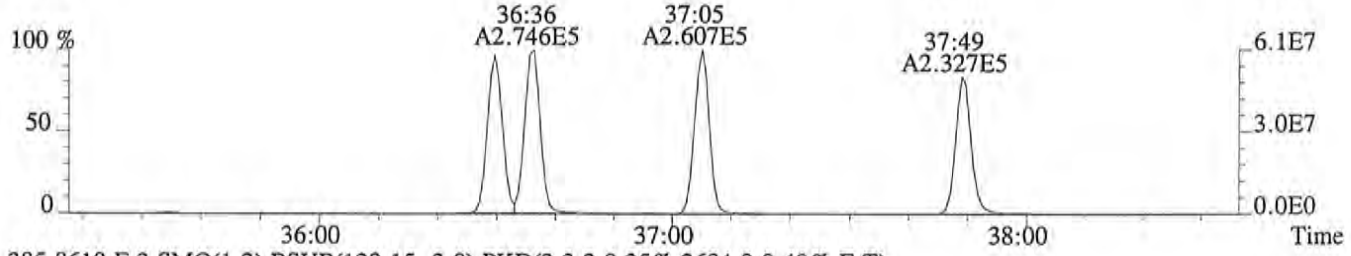
File:P600006 #1-299 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spectf
Sample#1 Exp:CS2
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2512.0,0.40%,F,T)



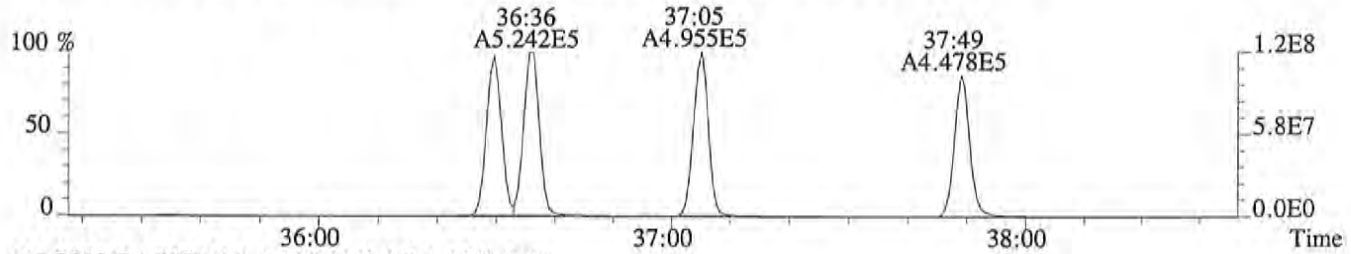
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1320.0,0.40%,F,T)



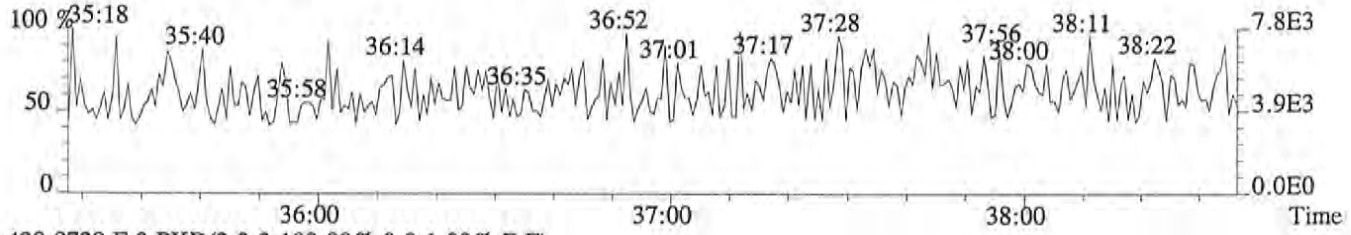
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2504.0,0.40%,F,T)



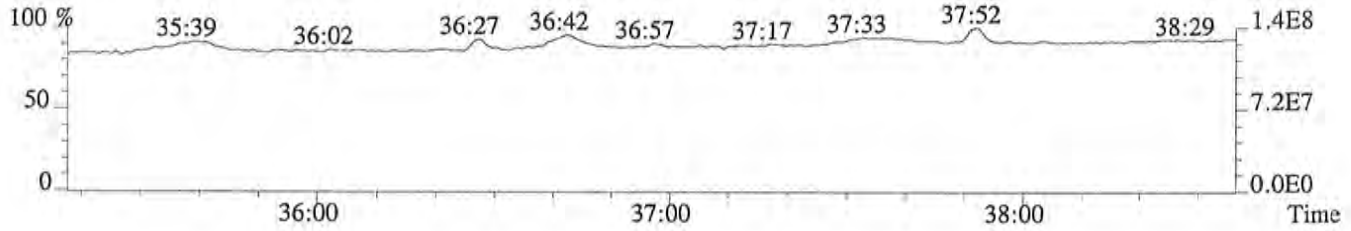
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3684.0,0.40%,F,T)



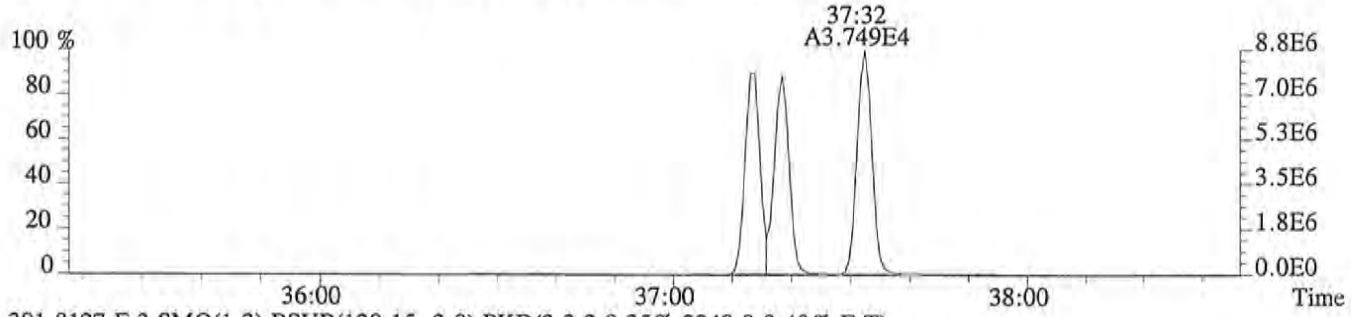
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



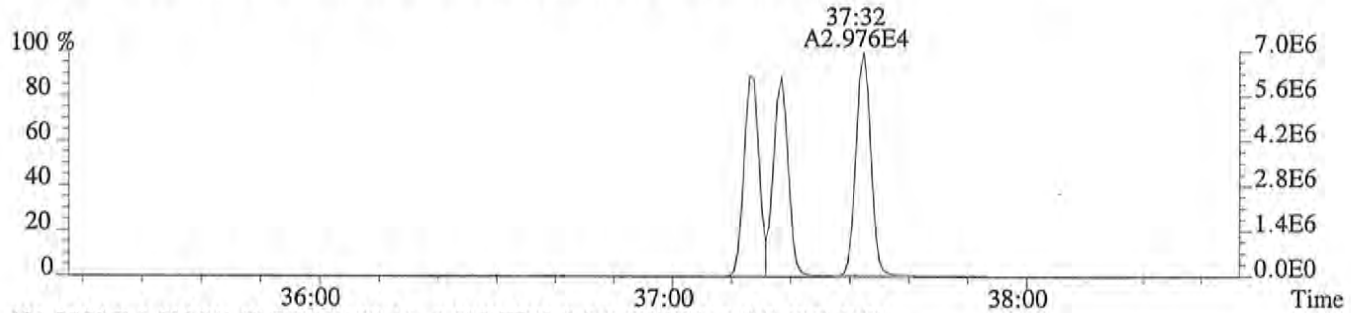
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



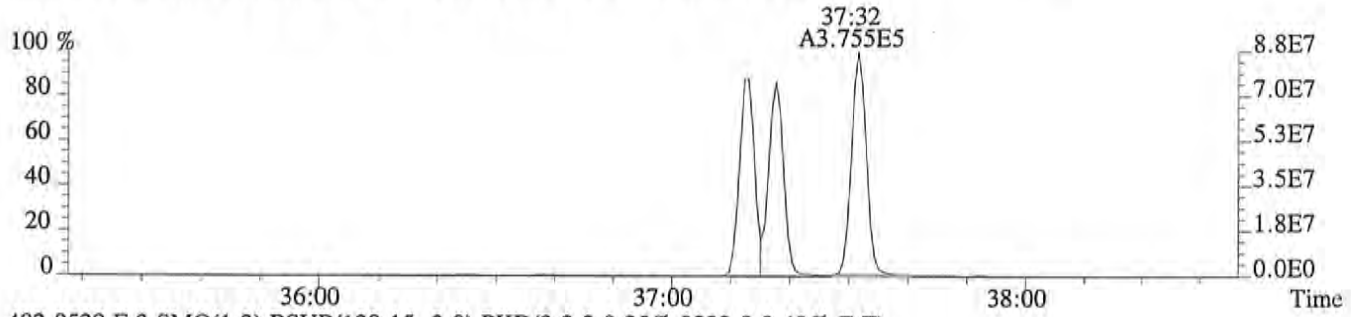
File:P600006 #1-299 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1476.0,0.40%,F,T)



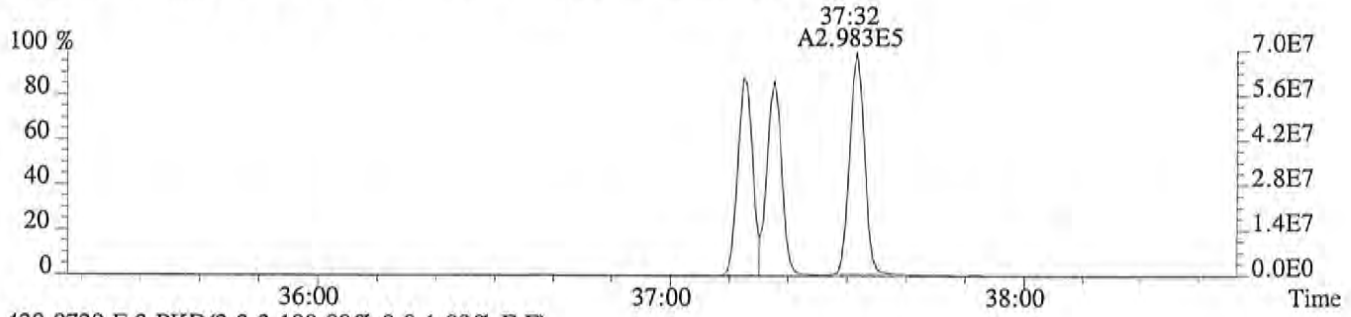
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2248.0,0.40%,F,T)



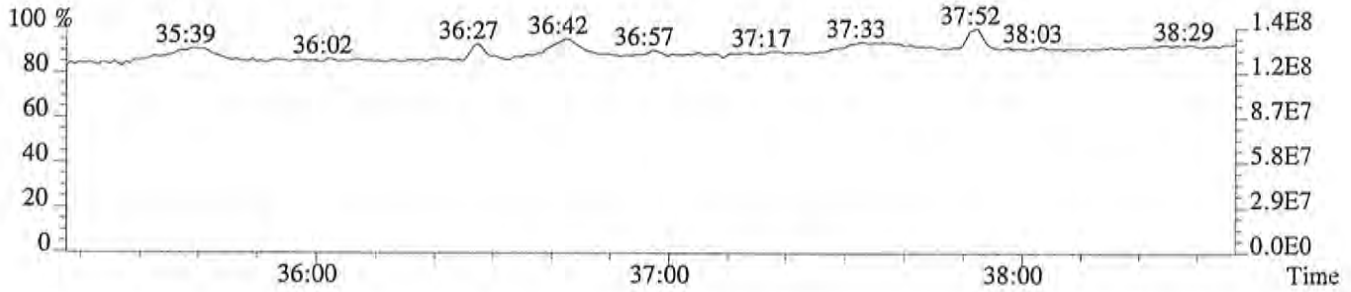
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6960.0,0.40%,F,T)



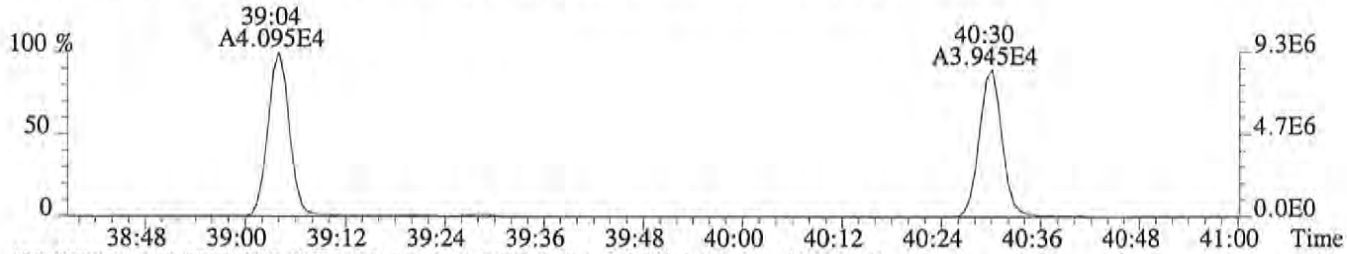
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3232.0,0.40%,F,T)



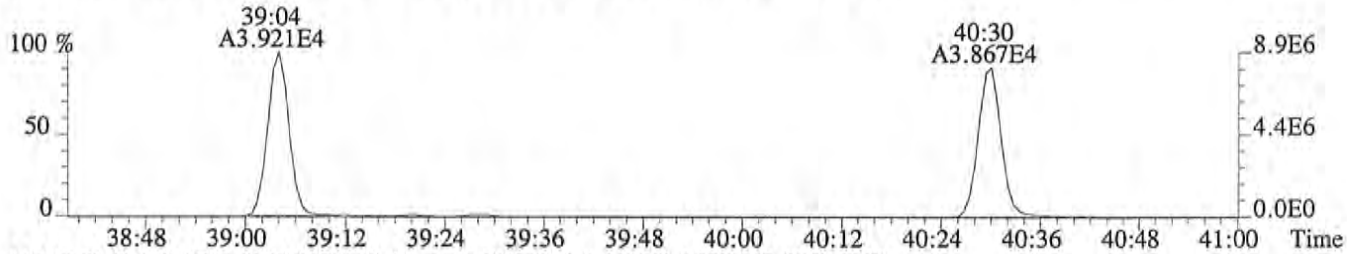
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



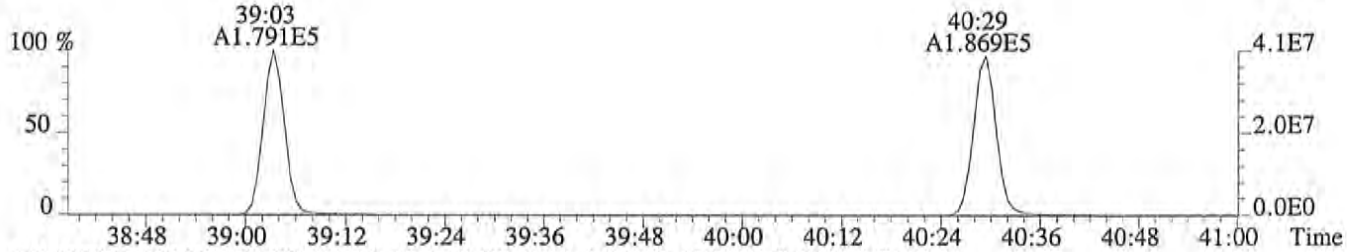
File:P600006 #1-213 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2304.0,0.50%,F,T)



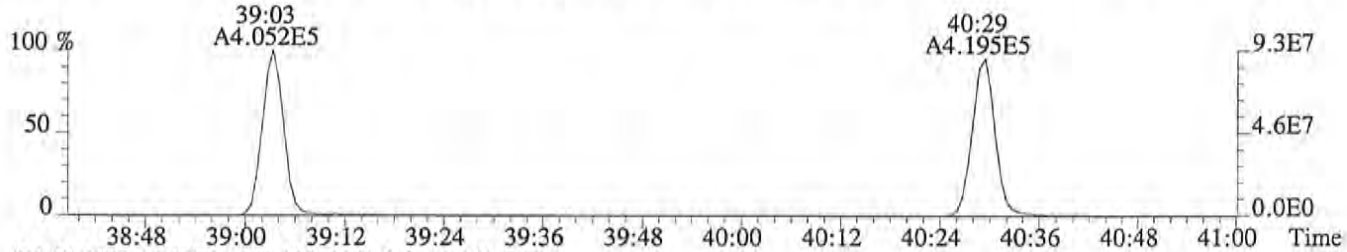
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2672.0,0.50%,F,T)



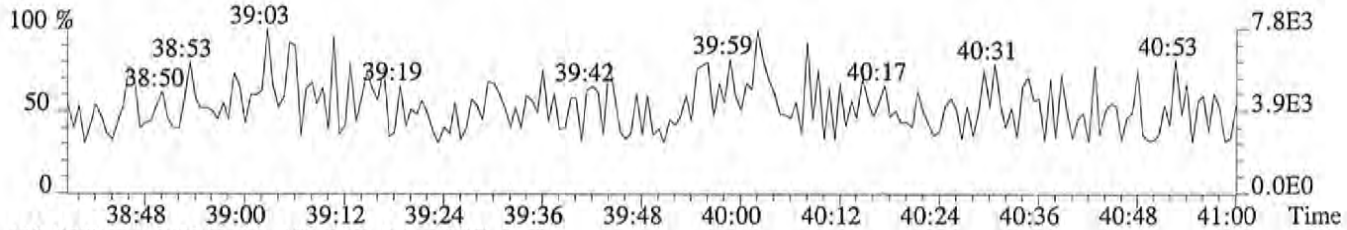
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6060.0,0.50%,F,T)



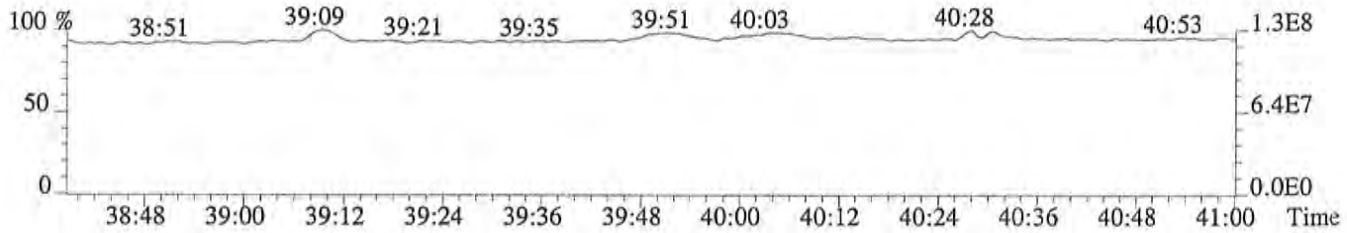
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,17444.0,0.50%,F,T)



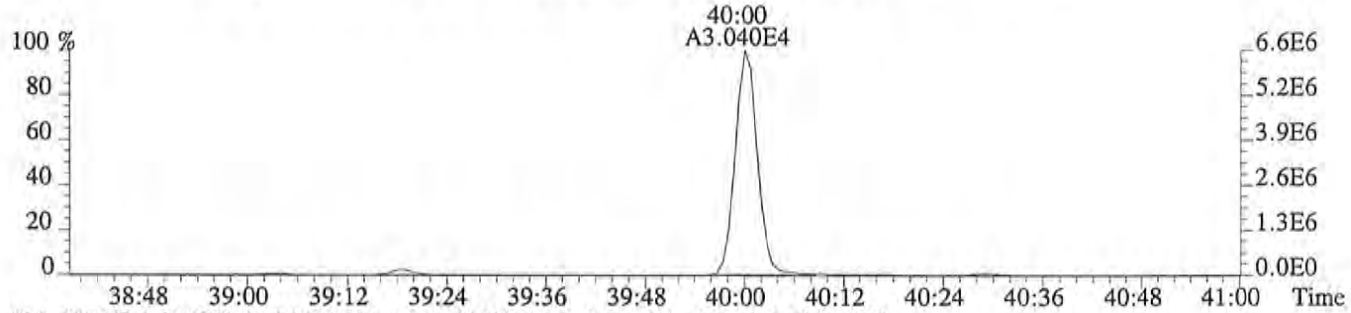
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



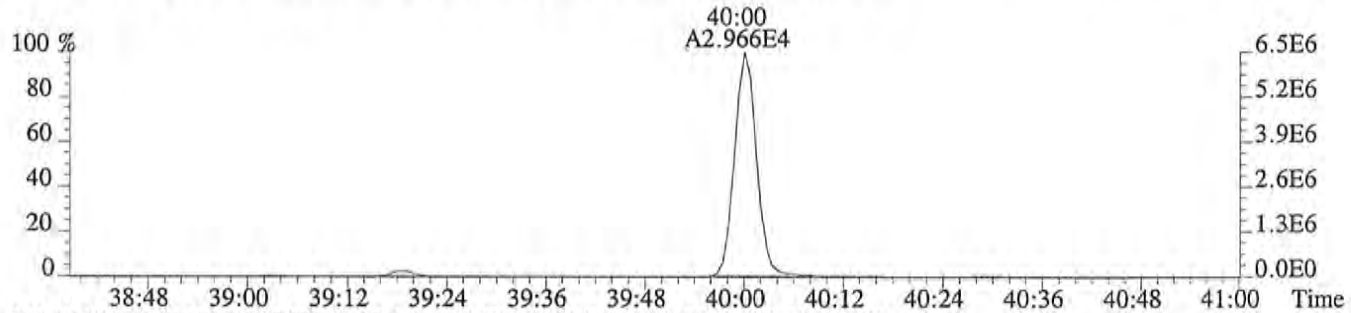
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



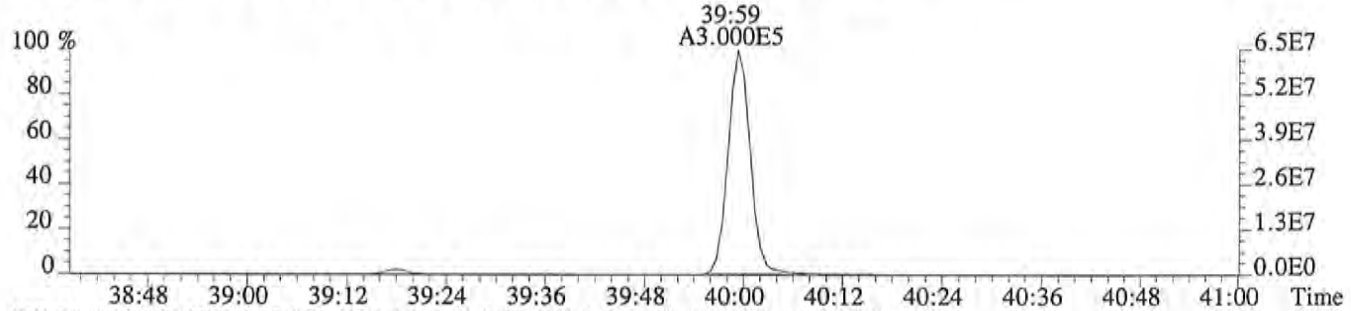
File:P600006 #1-213 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1716.0,0.40%,F,T)



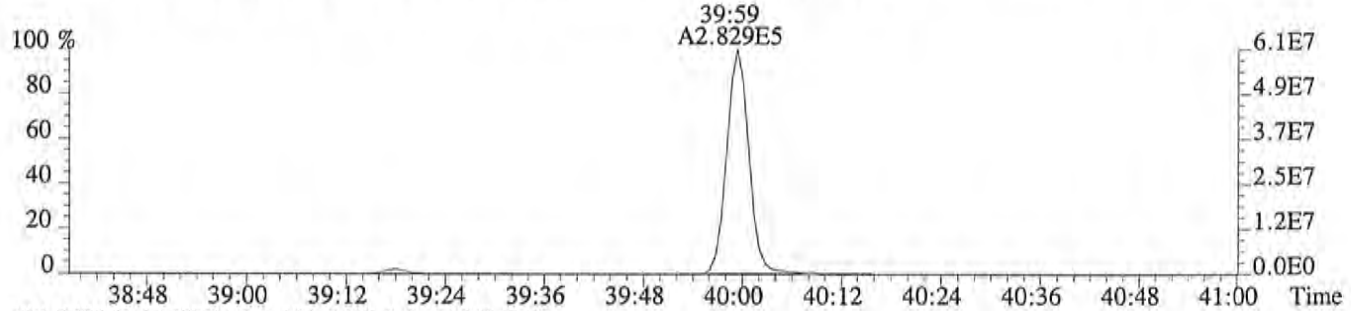
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1380.0,0.40%,F,T)



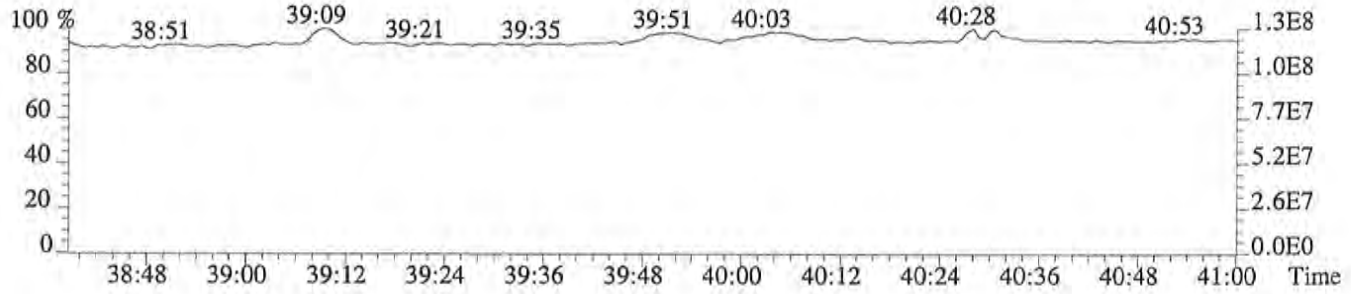
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2504.0,0.40%,F,T)



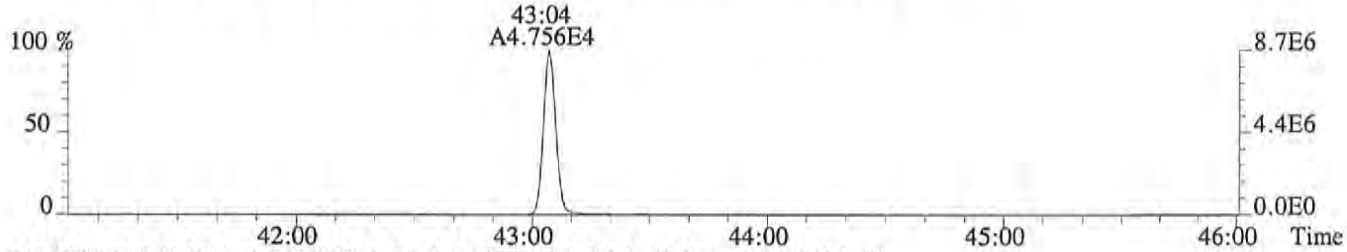
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1712.0,0.40%,F,T)



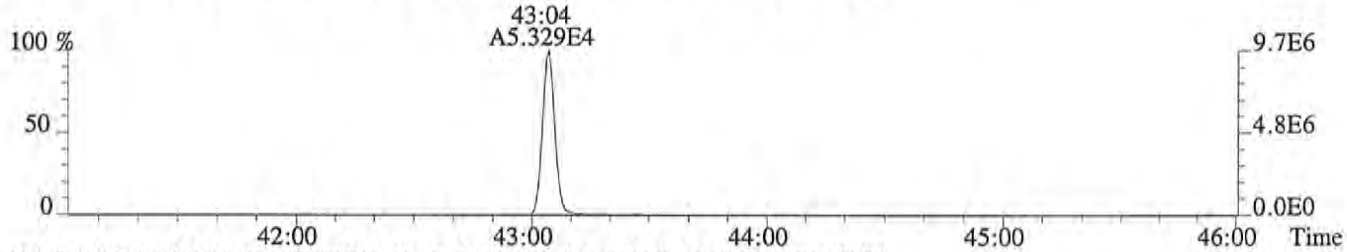
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



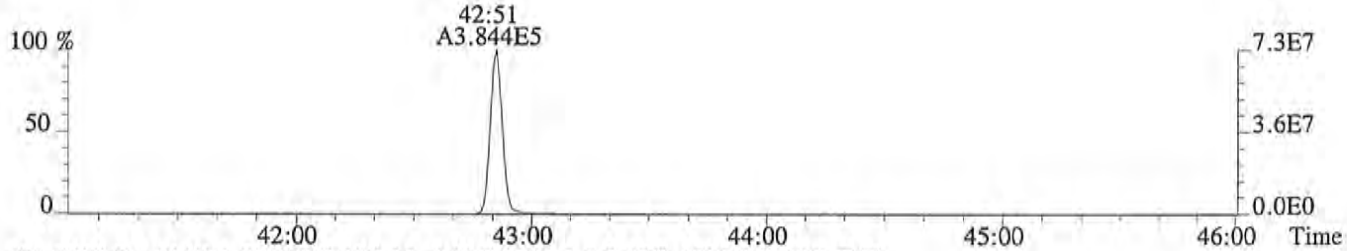
File:P600006 #1-448 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1608.0,0.40%,F,T)



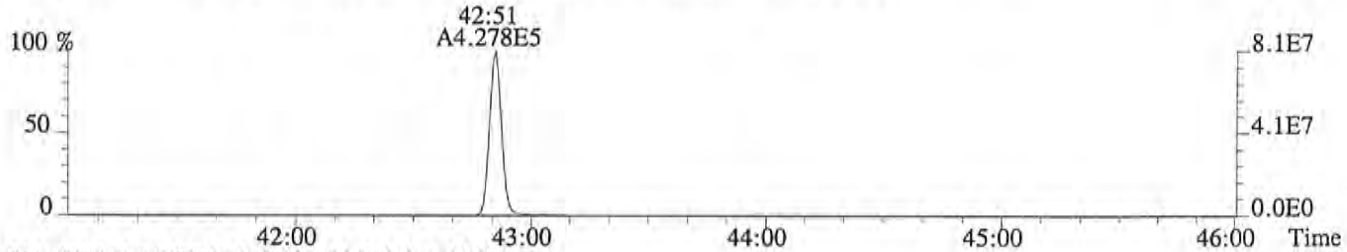
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2880.0,0.40%,F,T)



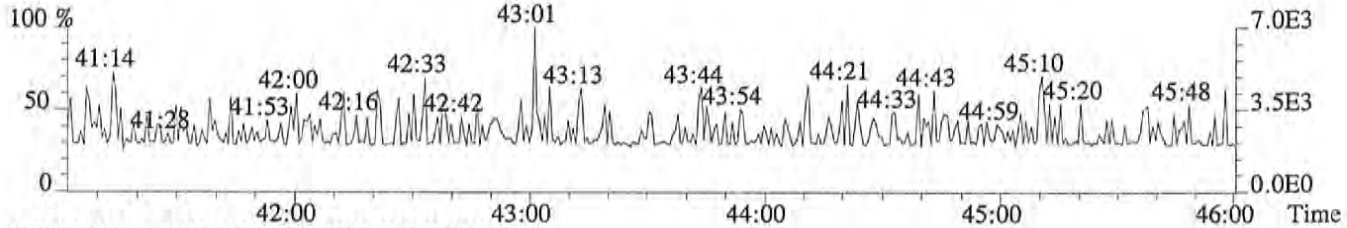
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1448.0,0.40%,F,T)



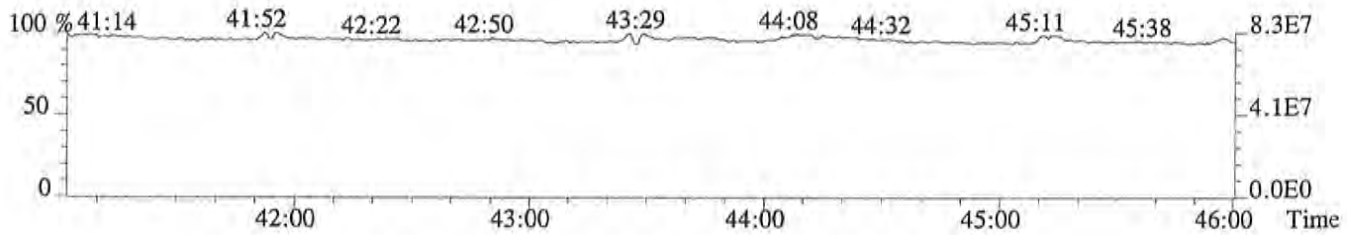
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1892.0,0.40%,F,T)



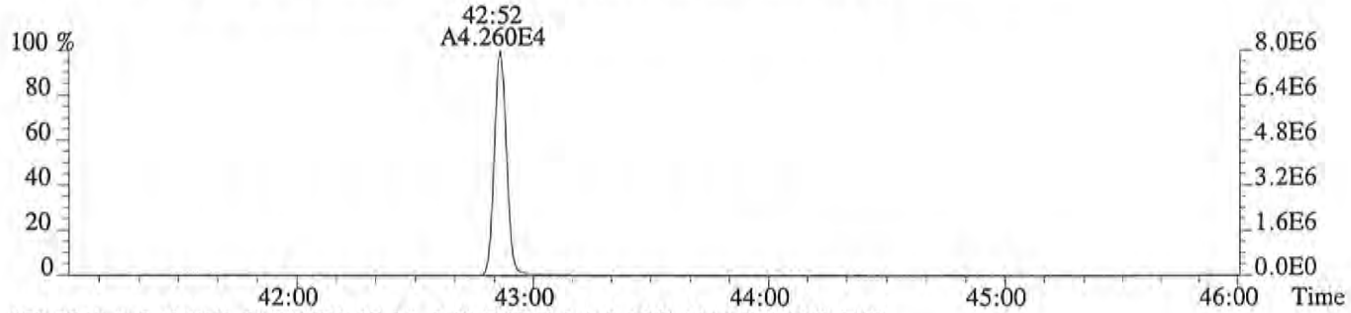
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



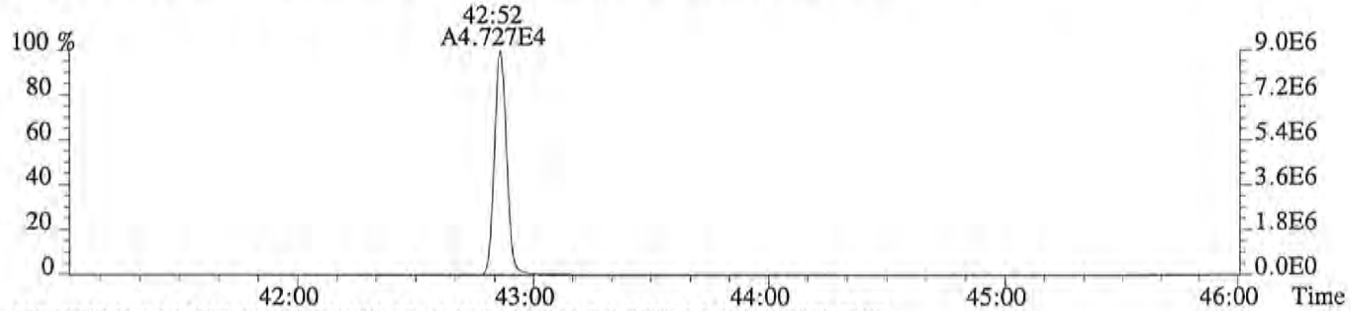
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



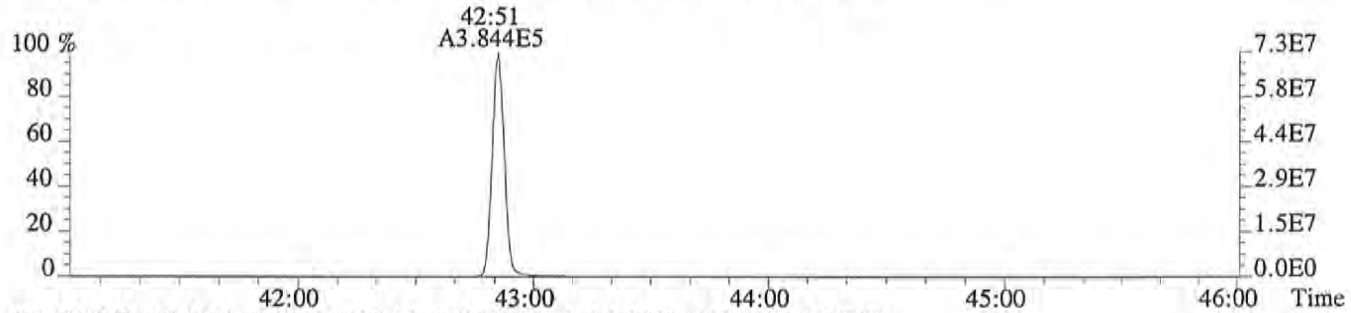
File:P600006 #1-448 Acq:19-AUG-2015 14:09:28 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS2
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1168.0,0.40%,F,T)



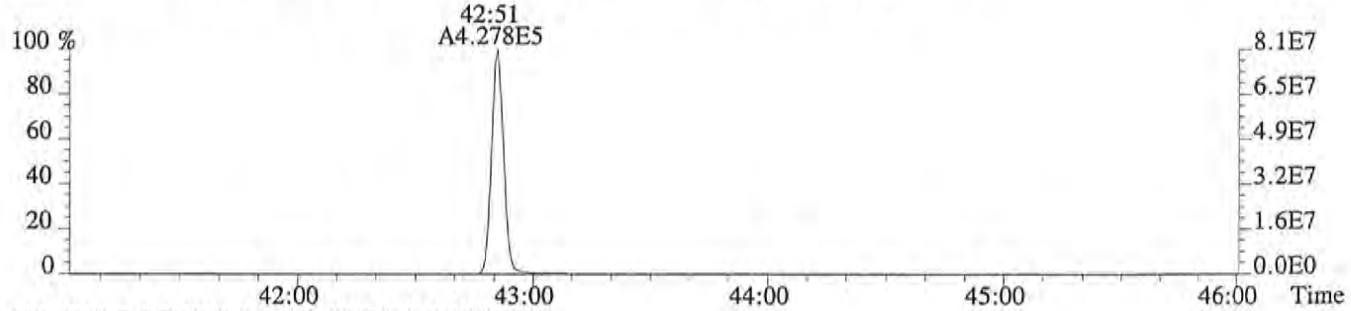
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2144.0,0.40%,F,T)



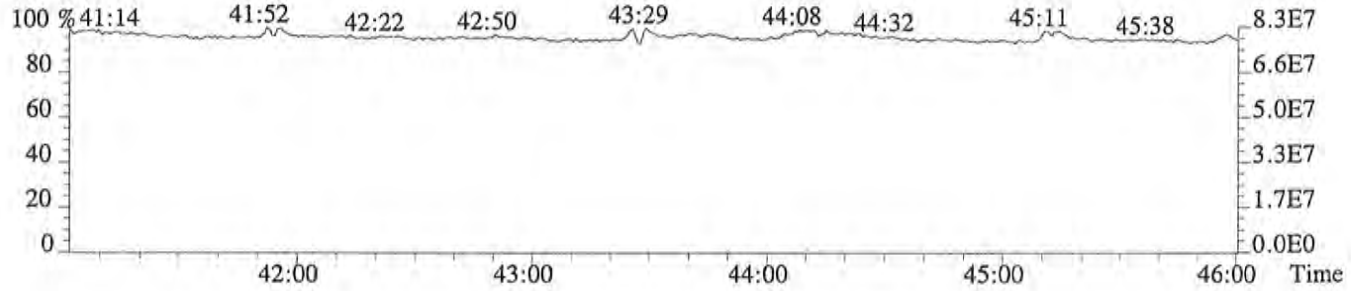
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1448.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1892.0,0.40%,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 P600007 Samp: 1 Inj: 1 Acquired: 19-AUG-15 14:58:32
Processed: 20-AUG-15 08:56:29 Sample ID: CS3

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	29:04	4.407e+04	5.668e+04	0.78	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	33:03	3.175e+05	2.047e+05	1.55	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:55	3.027e+05	1.939e+05	1.56	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	36:31	2.587e+05	2.127e+05	1.22	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:37	2.739e+05	2.213e+05	1.24	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	37:06	2.622e+05	2.144e+05	1.22	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:50	2.507e+05	2.019e+05	1.24	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	39:05	2.308e+05	2.261e+05	1.02	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	40:30	2.304e+05	2.259e+05	1.02	yes	no	1.287
10	Unk	OCDF	43:05	2.970e+05	3.304e+05	0.90	yes	no	1.257
11	Unk	2,3,7,8-TCDD	29:48	4.111e+04	5.238e+04	0.78	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	34:12	2.193e+05	1.417e+05	1.55	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	37:14	1.930e+05	1.541e+05	1.25	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	37:19	1.835e+05	1.464e+05	1.25	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	37:33	2.122e+05	1.715e+05	1.24	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	40:01	1.822e+05	1.734e+05	1.05	yes	no	1.034
17	Unk	OCDD	42:52	2.569e+05	2.902e+05	0.89	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	29:03	4.740e+05	6.028e+05	0.79	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	33:03	6.539e+05	4.153e+05	1.57	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:55	6.503e+05	4.095e+05	1.59	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	36:30	2.717e+05	5.183e+05	0.52	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:36	2.988e+05	5.753e+05	0.52	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	37:06	2.937e+05	5.667e+05	0.52	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:50	2.685e+05	5.191e+05	0.52	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	39:04	2.065e+05	4.673e+05	0.44	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:29	2.196e+05	4.943e+05	0.44	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	29:48	4.102e+05	5.235e+05	0.78	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	34:11	4.759e+05	3.025e+05	1.57	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	37:13	3.801e+05	3.019e+05	1.26	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	37:18	3.596e+05	2.838e+05	1.27	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	40:00	3.565e+05	3.383e+05	1.05	yes	no	0.892
32	IS	13C-OCDD	42:51	4.715e+05	5.243e+05	0.90	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	29:15	3.435e+05	4.336e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:32	4.300e+05	3.424e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:48	9.764e+04				no	1.263

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Signal/Noise Height Ratio Summary

CLIENT ID.
76557

Run #4 Filename P600007 Samp: 1 Inj: 1 Acquired: 19-AUG-15 14:58:32
Processed: 20-AUG-15 08:56:29 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	8.44e+06	1.93e+03	4.4e+03	1.08e+07	2.52e+03	4.3e+03
2	1,2,3,7,8-PeCDF	6.21e+07	1.64e+03	3.8e+04	3.99e+07	4.21e+03	9.5e+03
3	2,3,4,7,8-PeCDF	6.23e+07	1.64e+03	3.8e+04	4.00e+07	4.21e+03	9.5e+03
4	1,2,3,4,7,8-HxCDF	5.65e+07	2.31e+03	2.4e+04	4.59e+07	2.90e+03	1.6e+04
5	1,2,3,6,7,8-HxCDF	5.83e+07	2.31e+03	2.5e+04	4.70e+07	2.90e+03	1.6e+04
6	2,3,4,6,7,8-HxCDF	5.71e+07	2.31e+03	2.5e+04	4.65e+07	2.90e+03	1.6e+04
7	1,2,3,7,8,9-HxCDF	5.42e+07	2.31e+03	2.3e+04	4.36e+07	2.90e+03	1.5e+04
8	1,2,3,4,6,7,8-HpCDF	4.99e+07	1.17e+04	4.3e+03	4.83e+07	5.15e+03	9.4e+03
9	1,2,3,4,7,8,9-HpCDF	4.73e+07	1.17e+04	4.0e+03	4.65e+07	5.15e+03	9.0e+03
10	OCDF	5.30e+07	1.30e+03	4.1e+04	5.85e+07	2.57e+03	2.3e+04
11	2,3,7,8-TCDD	8.34e+06	1.86e+03	4.5e+03	1.06e+07	2.33e+03	4.6e+03
12	1,2,3,7,8-PeCDD	4.51e+07	3.20e+03	1.4e+04	2.93e+07	2.36e+03	1.2e+04
13	1,2,3,4,7,8-HxCDD	4.40e+07	1.47e+03	3.0e+04	3.52e+07	1.56e+03	2.3e+04
14	1,2,3,6,7,8-HxCDD	4.04e+07	1.47e+03	2.7e+04	3.21e+07	1.56e+03	2.1e+04
15	1,2,3,7,8,9-HxCDD	4.66e+07	1.47e+03	3.2e+04	3.72e+07	1.56e+03	2.4e+04
16	1,2,3,4,6,7,8-HpCDD	3.84e+07	1.02e+03	3.8e+04	3.62e+07	9.08e+02	4.0e+04
17	OCDD	4.66e+07	9.64e+02	4.8e+04	5.29e+07	1.77e+03	3.0e+04
18	13C-2,3,7,8-TCDF	8.78e+07	6.22e+03	1.4e+04	1.12e+08	3.87e+03	2.9e+04
19	13C-1,2,3,7,8-PeCDF	1.27e+08	1.82e+03	7.0e+04	8.04e+07	2.30e+03	3.5e+04
20	13C-2,3,4,7,8-PeCDF	1.33e+08	1.82e+03	7.3e+04	8.37e+07	2.30e+03	3.6e+04
21	13C-1,2,3,4,7,8-HxCDF	5.91e+07	2.01e+03	2.9e+04	1.12e+08	3.86e+03	2.9e+04
22	13C-1,2,3,6,7,8-HxCDF	6.38e+07	2.01e+03	3.2e+04	1.24e+08	3.86e+03	3.2e+04
23	13C-2,3,4,6,7,8-HxCDF	6.39e+07	2.01e+03	3.2e+04	1.23e+08	3.86e+03	3.2e+04
24	13C-1,2,3,7,8,9-HxCDF	5.80e+07	2.01e+03	2.9e+04	1.13e+08	3.86e+03	2.9e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.46e+07	1.07e+04	4.2e+03	1.00e+08	1.12e+04	9.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.45e+07	1.07e+04	4.1e+03	1.01e+08	1.12e+04	9.0e+03
27	13C-2,3,7,8-TCDD	8.22e+07	1.09e+04	7.5e+03	1.05e+08	5.44e+03	1.9e+04
28	13C-1,2,3,7,8-PeCDD	9.47e+07	1.79e+03	5.3e+04	6.09e+07	1.44e+03	4.2e+04
29	13C-1,2,3,4,7,8-HxCDD	8.65e+07	5.96e+03	1.5e+04	6.88e+07	3.70e+03	1.9e+04
30	13C-1,2,3,6,7,8-HxCDD	7.96e+07	5.96e+03	1.3e+04	6.27e+07	3.70e+03	1.7e+04
31	13C-1,2,3,4,6,7,8-HpCDD	7.40e+07	2.78e+03	2.7e+04	6.99e+07	1.59e+03	4.4e+04
32	13C-OCDD	8.49e+07	1.58e+03	5.4e+04	9.49e+07	1.54e+03	6.2e+04
33	13C-1,2,3,4-TCDD	6.58e+07	1.09e+04	6.0e+03	8.38e+07	5.44e+03	1.5e+04
34	13C-1,2,3,7,8,9-HxCDD	9.48e+07	5.96e+03	1.6e+04	7.46e+07	3.70e+03	2.0e+04
35	37Cl-2,3,7,8-TCDD	1.99e+07	2.81e+03	7.1e+03			

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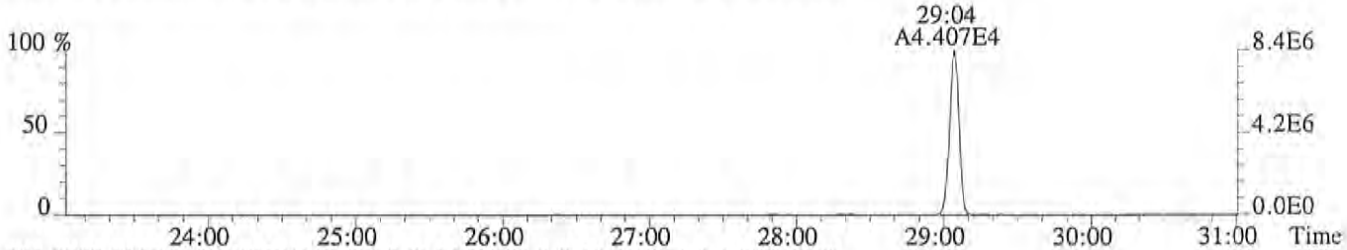
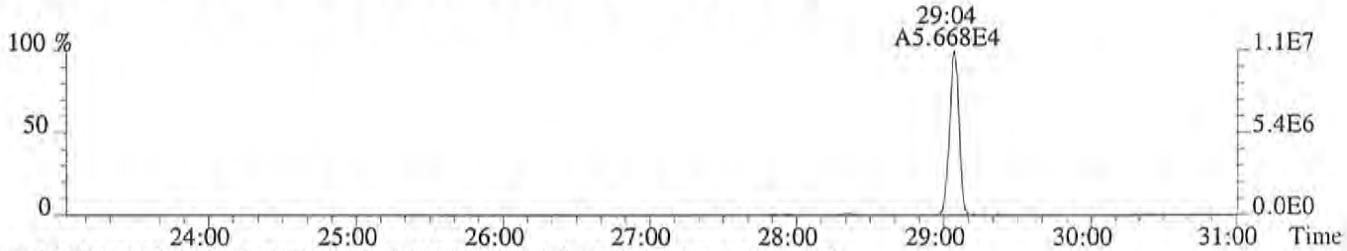
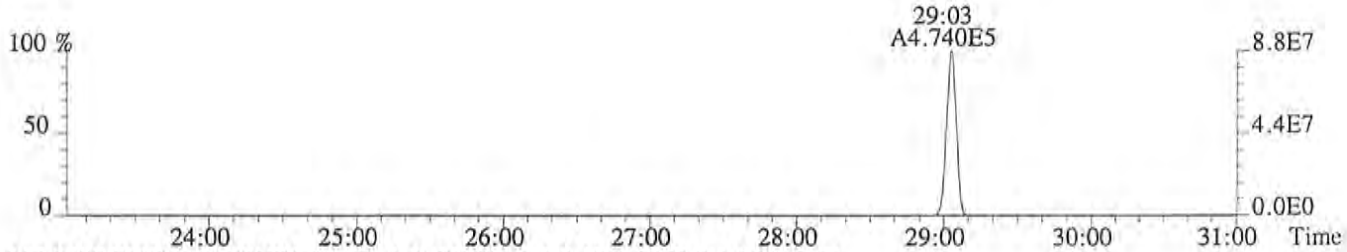
File:P600007 #1-566 Acq:19-AUG-2015 14:58:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1932.0,1.00%,F,T)



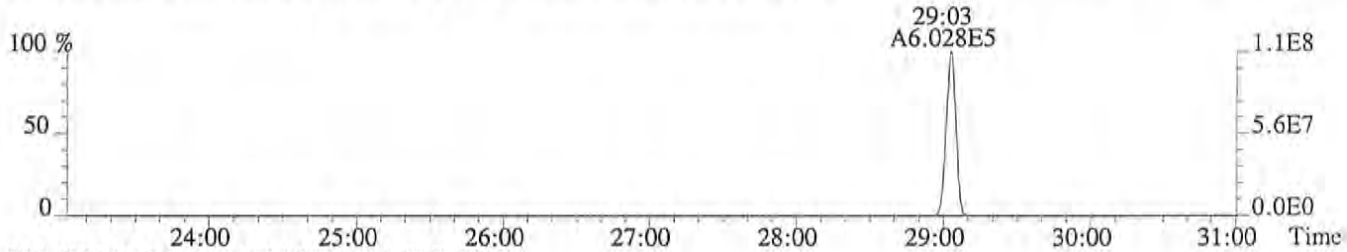
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2524.0,1.00%,F,T)



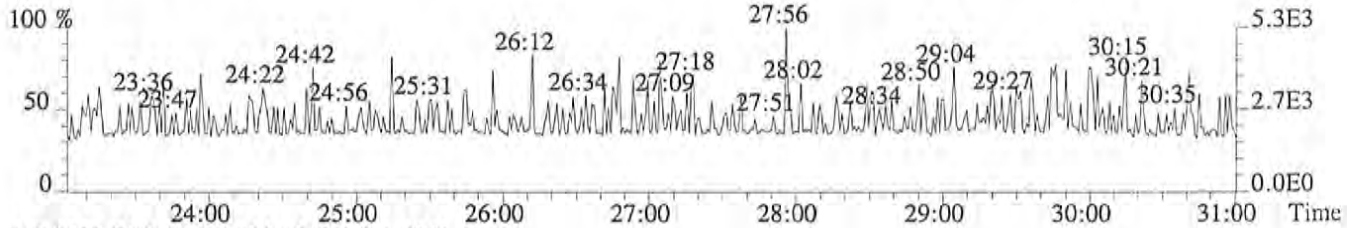
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6216.0,1.00%,F,T)



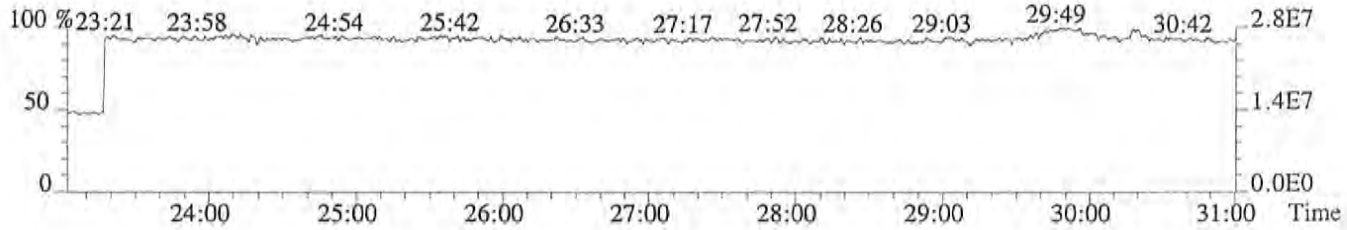
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3872.0,1.00%,F,T)



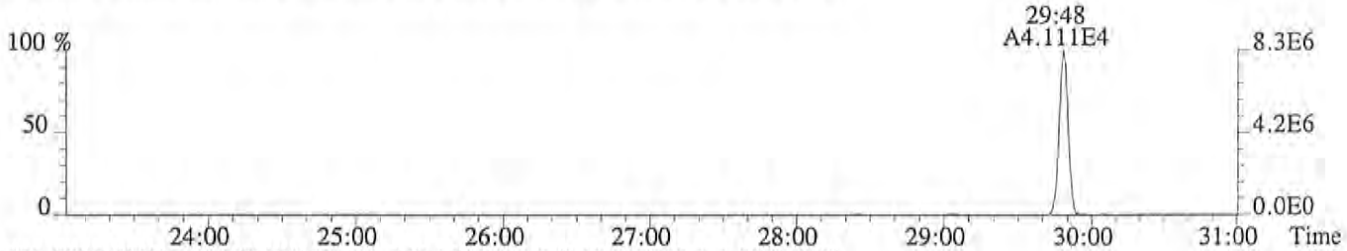
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



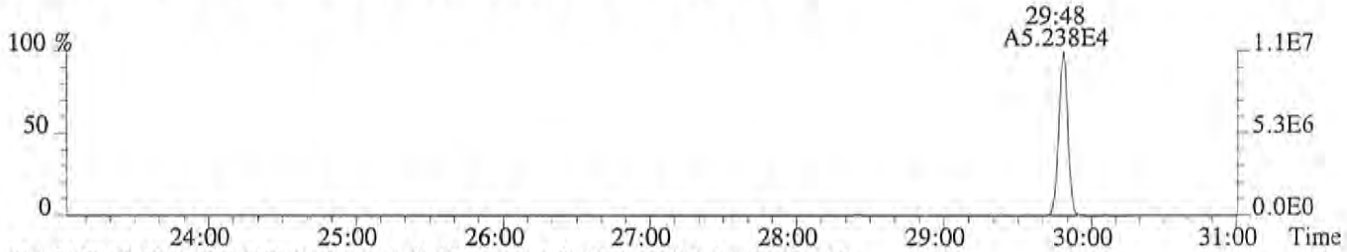
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



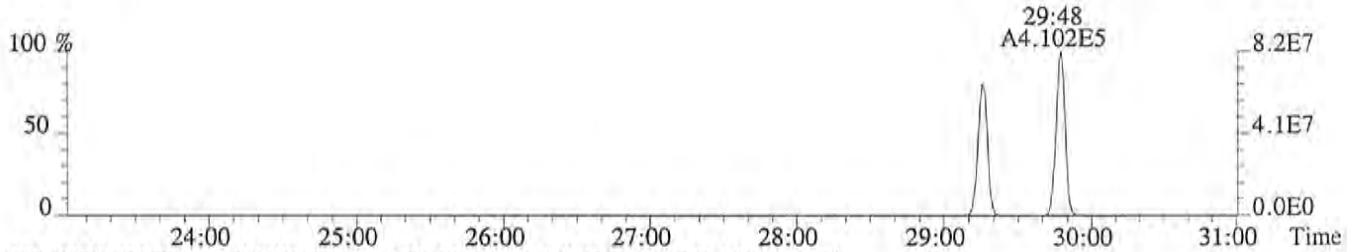
File:P600007 #1-566 Acq:19-AUG-2015 14:58:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1864.0,1.00%,F,T)



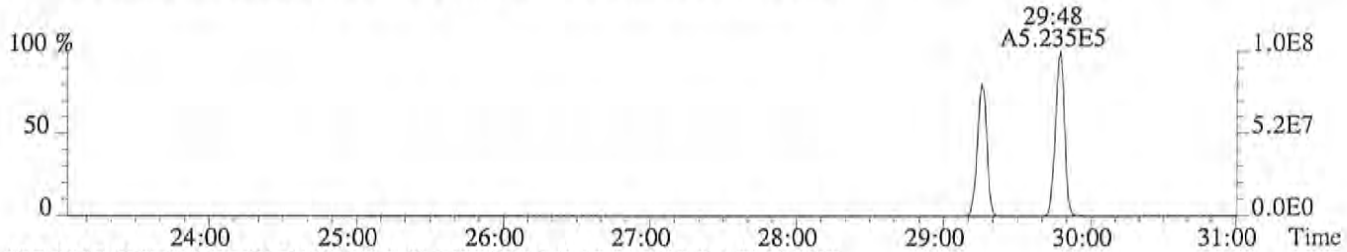
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2328.0,1.00%,F,T)



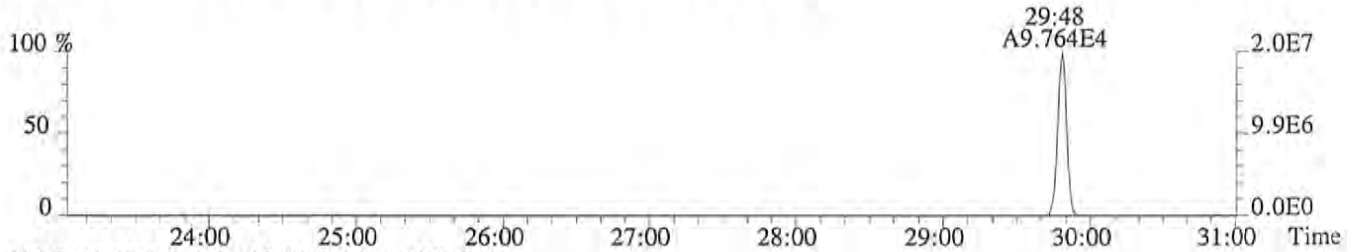
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10896.0,1.00%,F,T)



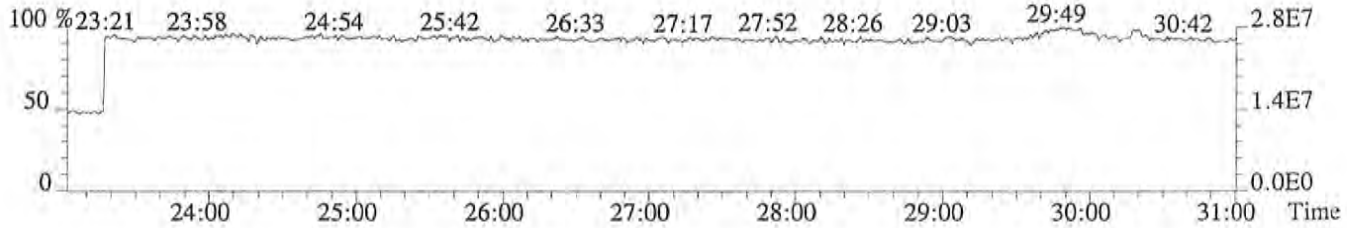
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5444.0,1.00%,F,T)



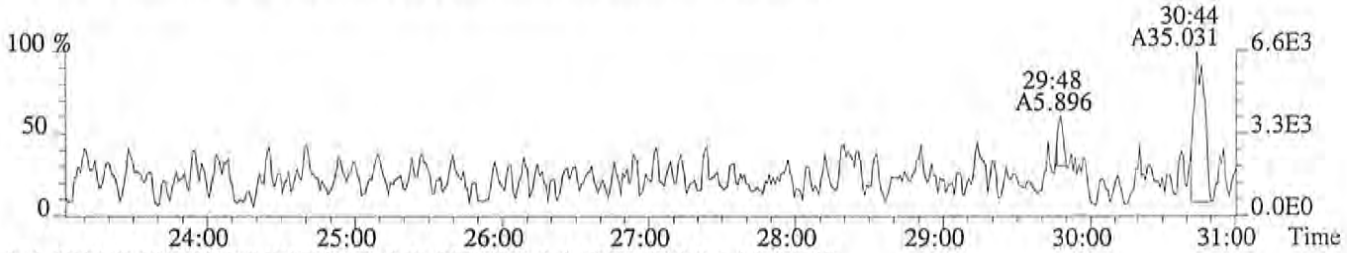
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2812.0,1.00%,F,T)



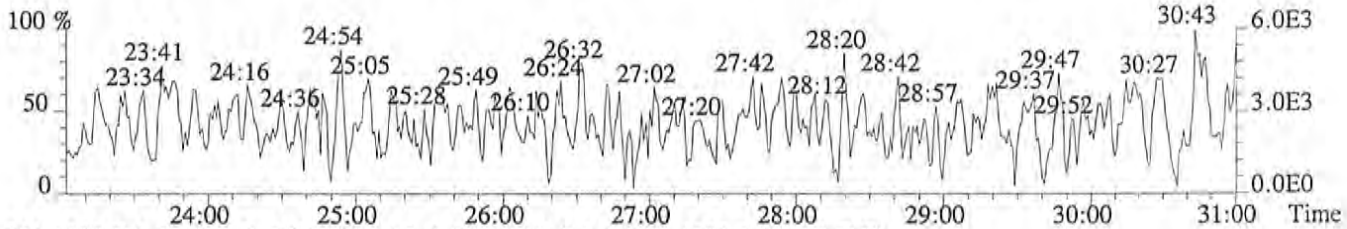
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



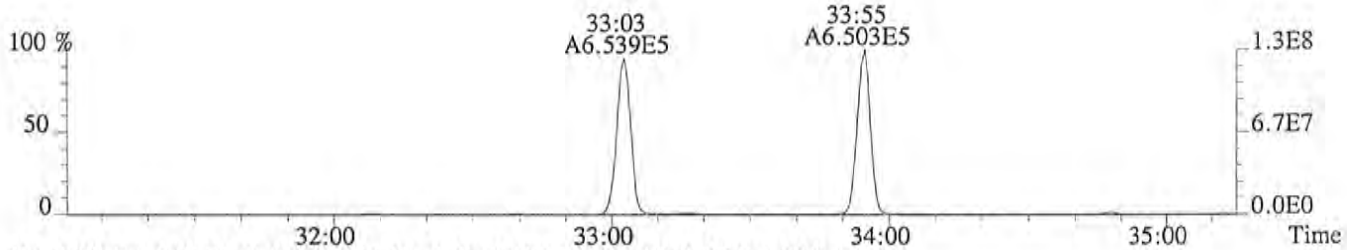
File:P600007 #1-566 Acq:19-AUG-2015 14:58:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1760.0,1.00%,F,T)



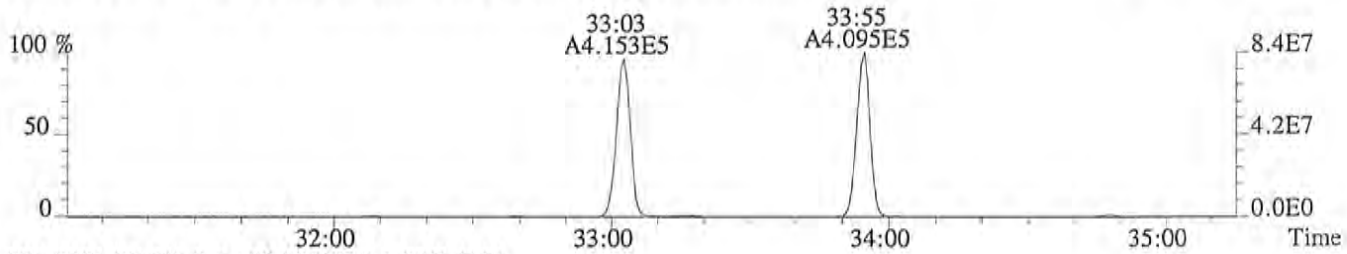
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3348.0,1.00%,F,T)



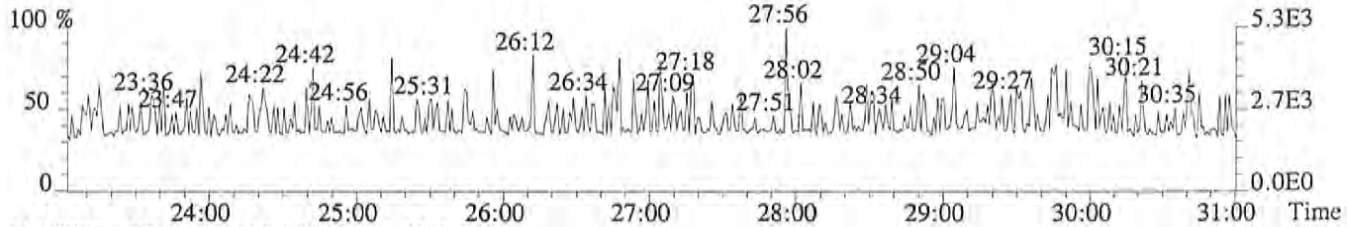
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1820.0,1.00%,F,T)



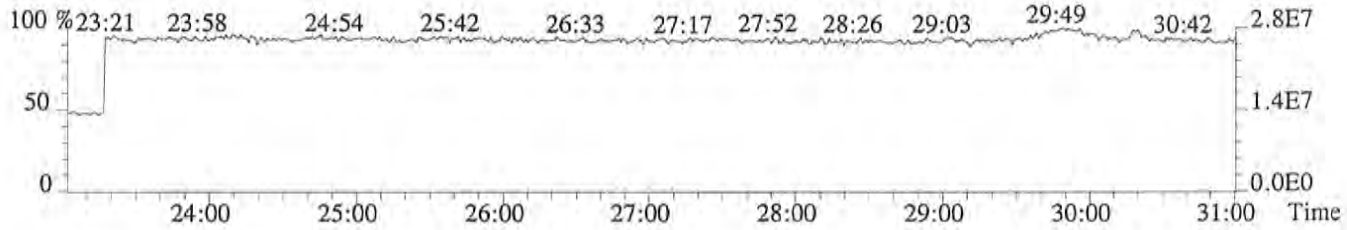
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2296.0,1.00%,F,T)



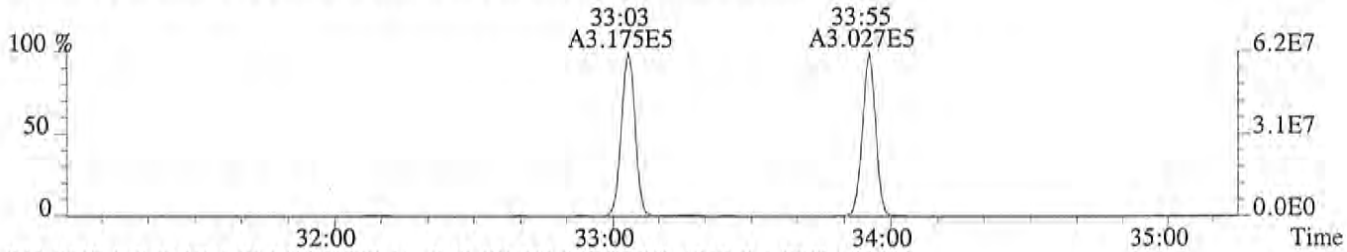
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



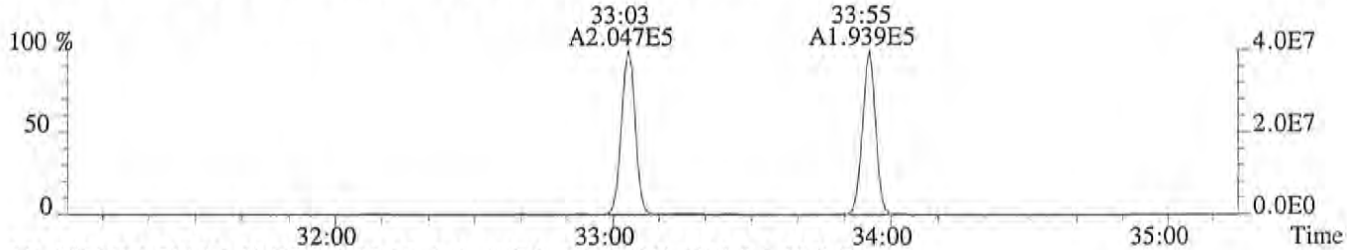
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



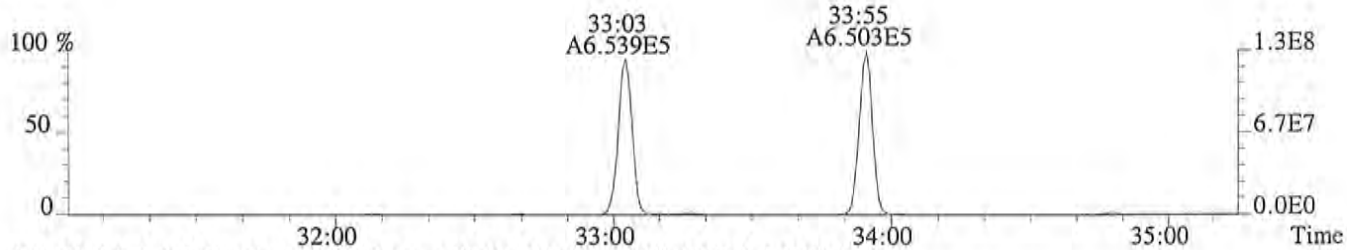
File:P600007 #1-380 Acq:19-AUG-2015 14:58:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1636.0,1.00%,F,T)



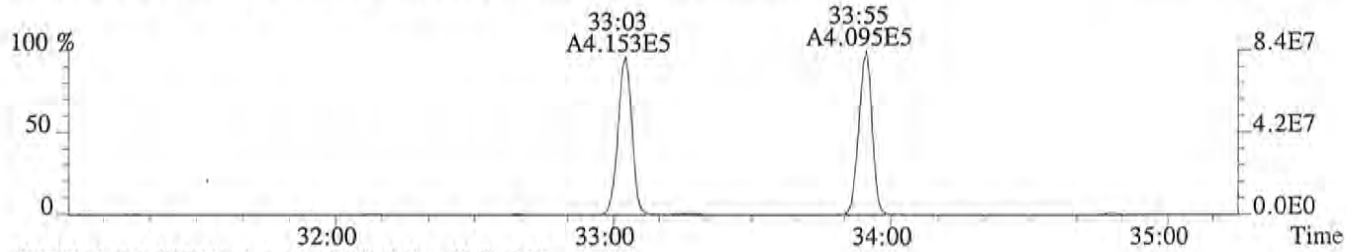
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4212.0,1.00%,F,T)



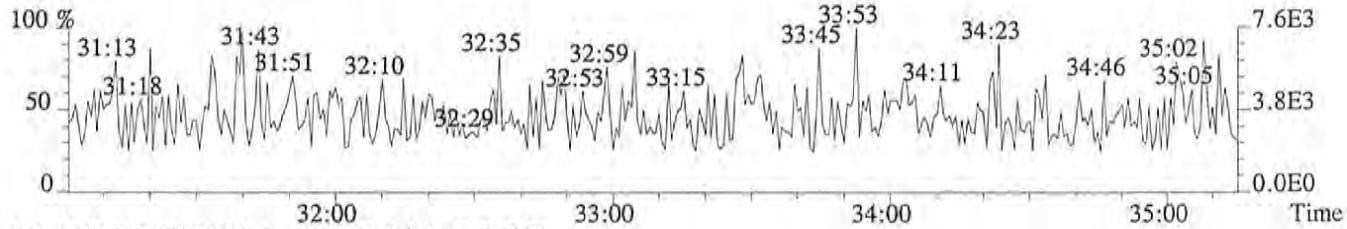
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1820.0,1.00%,F,T)



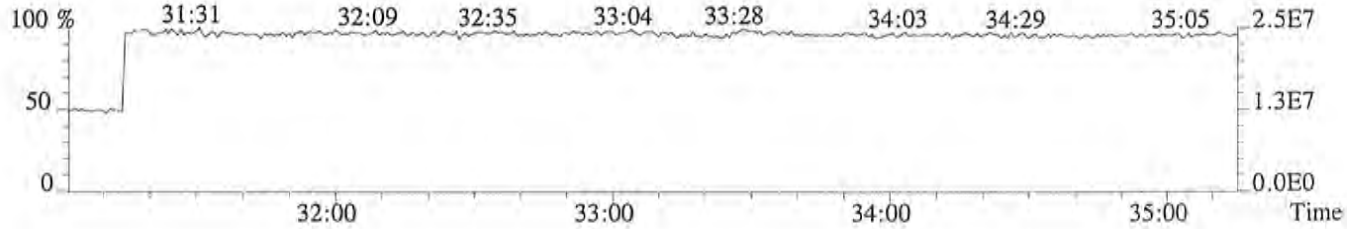
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2296.0,1.00%,F,T)



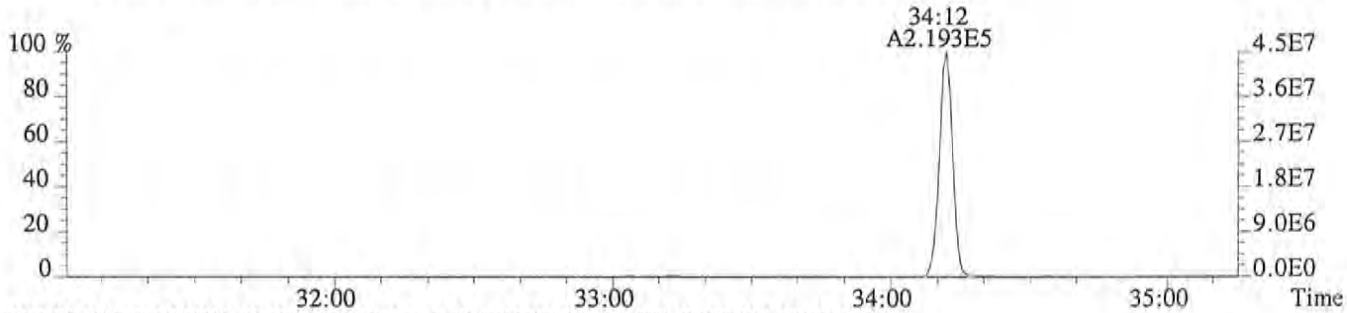
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



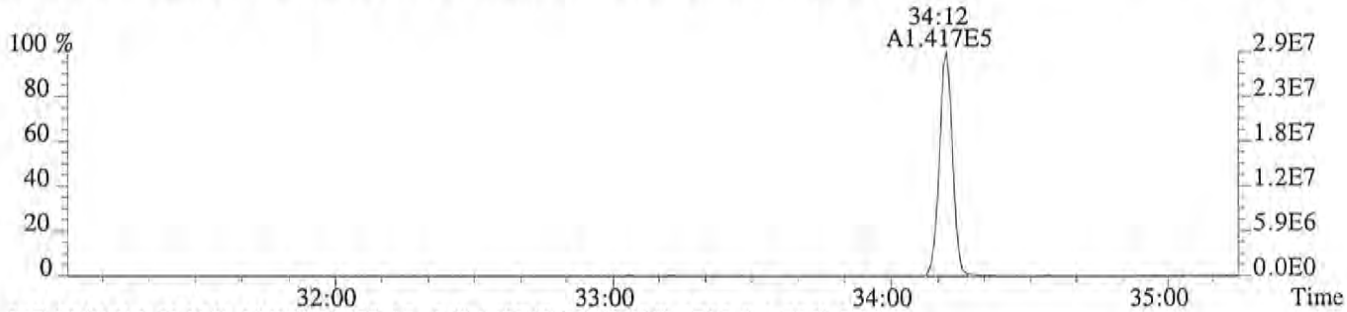
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:P600007 #1-380 Acq:19-AUG-2015 14:58:32 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%,3196.0,1.00%,F,T)

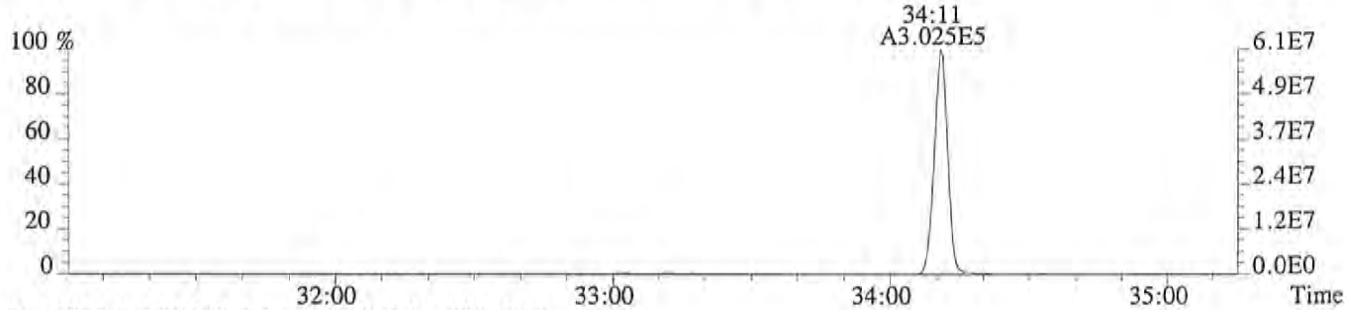


357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2356.0,1.00%,F,T)

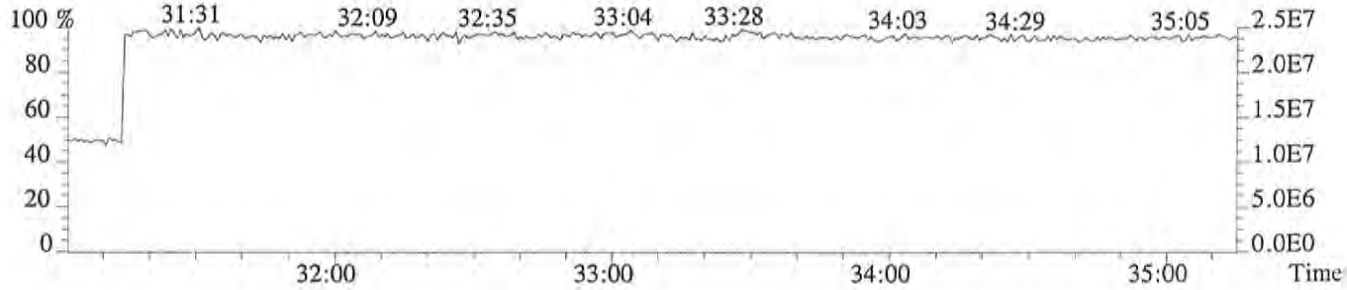


367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1792.0,1.00%,F,T)

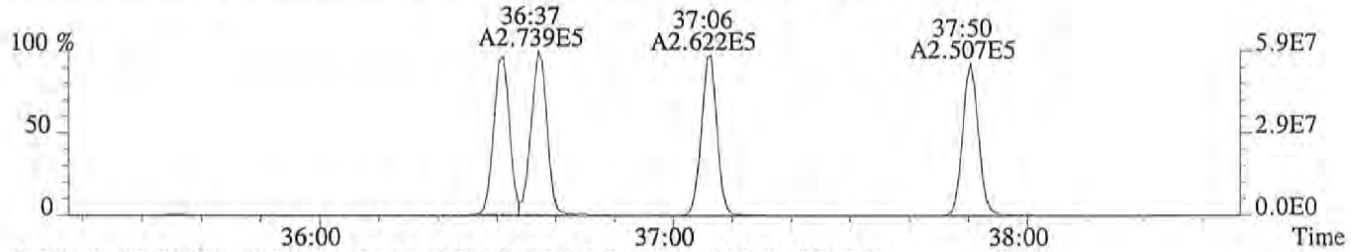
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1440.0,1.00%,F,T)



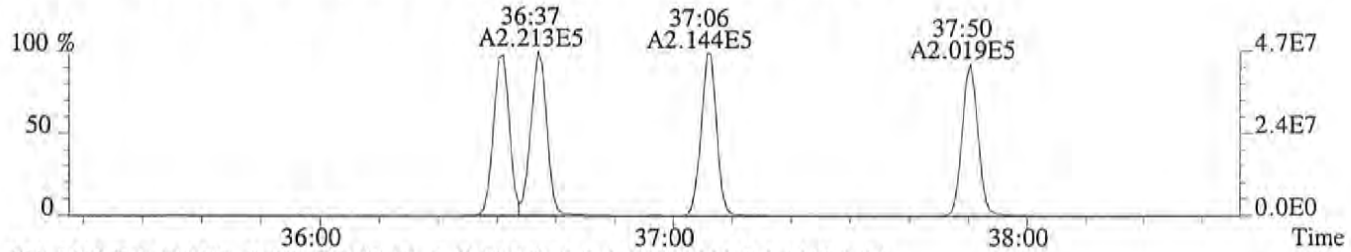
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



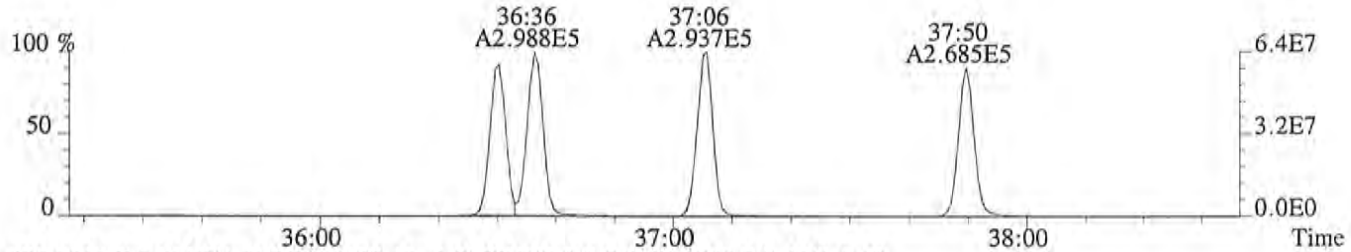
File:P600007 #1-299 Acq:19-AUG-2015 14:58:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2312.0,0.40%,F,T)



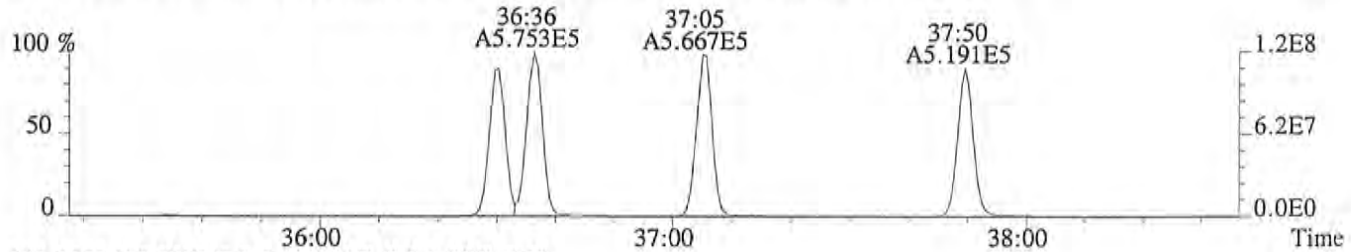
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2900.0,0.40%,F,T)



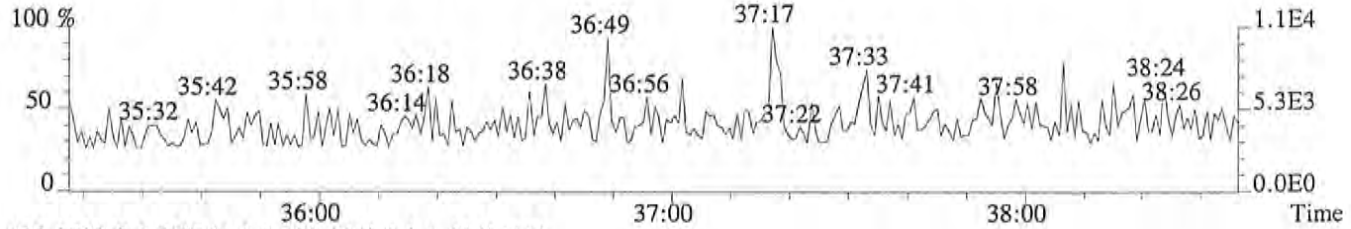
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2008.0,0.40%,F,T)



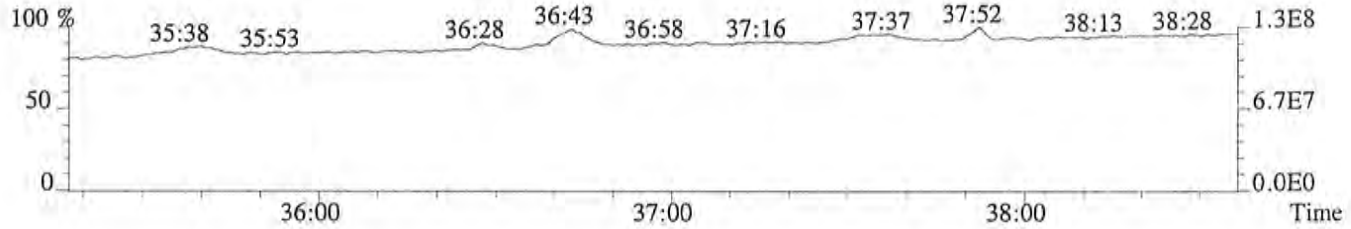
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3856.0,0.40%,F,T)



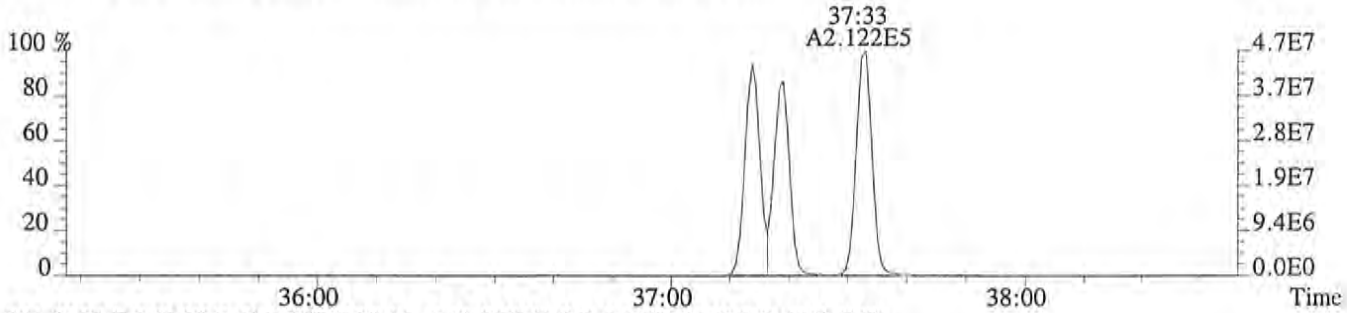
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



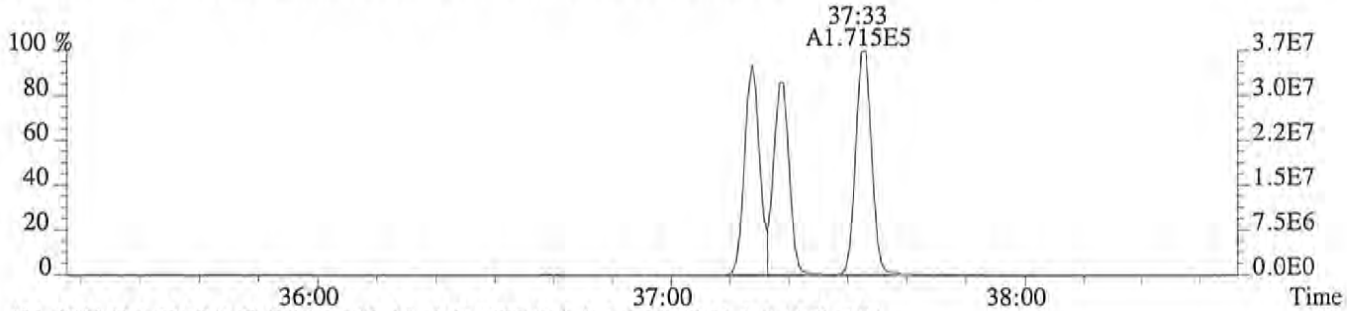
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



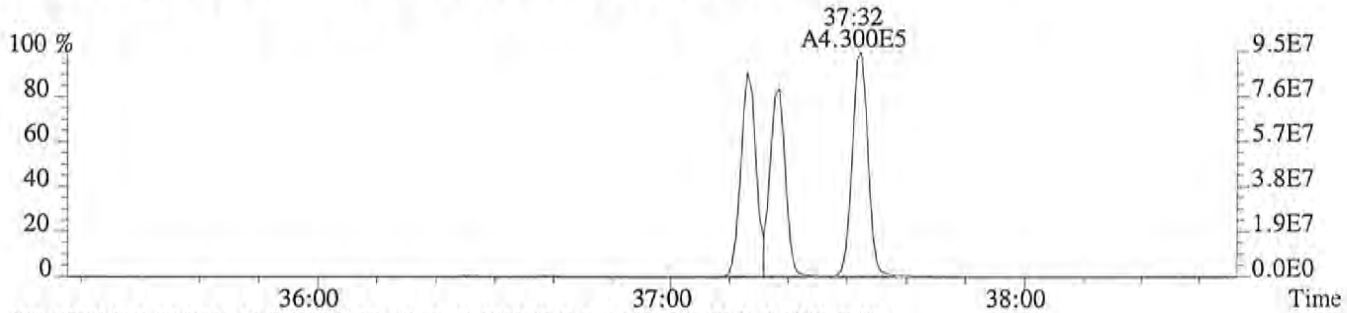
File:P600007 #1-299 Acq:19-AUG-2015 14:58:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1472.0,0.40%,F,T)



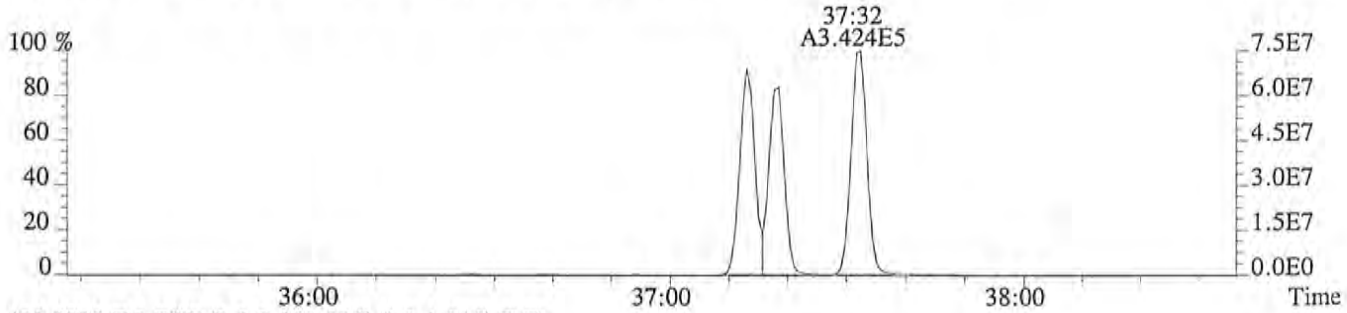
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1560.0,0.40%,F,T)



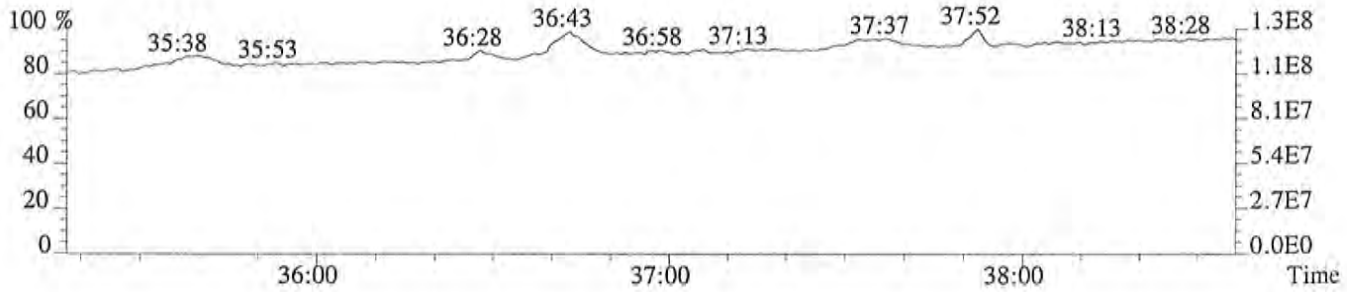
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5960.0,0.40%,F,T)



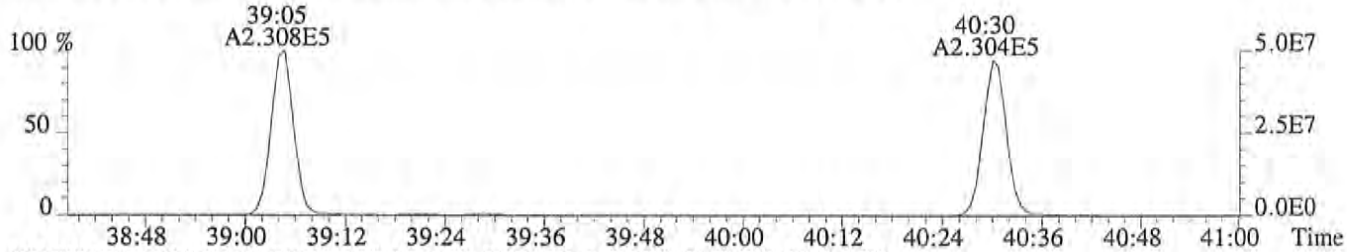
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3700.0,0.40%,F,T)



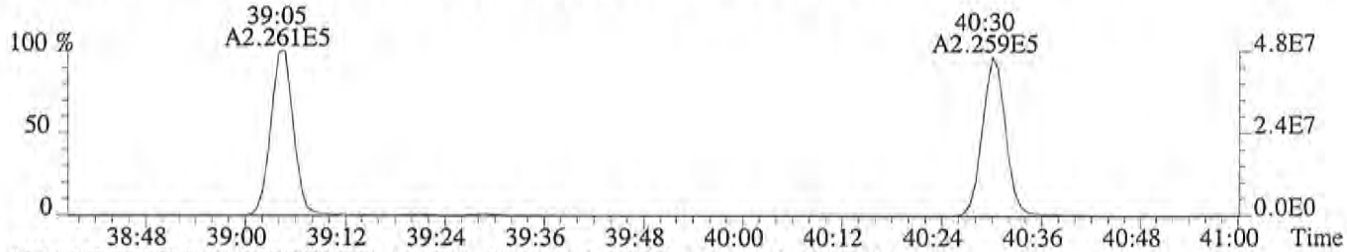
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



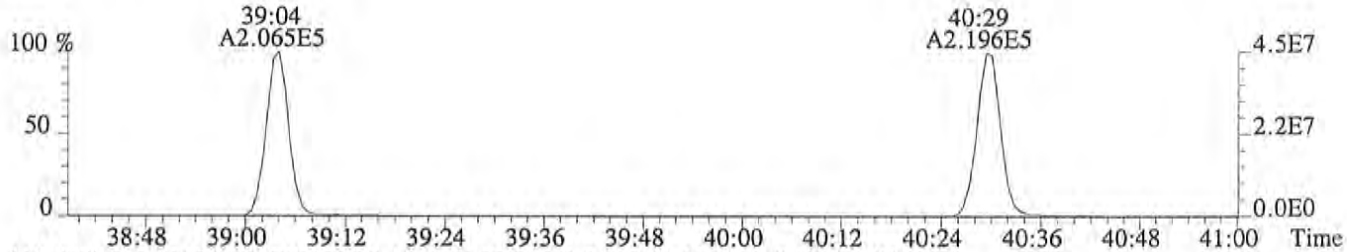
File:P600007 #1-213 Acq:19-AUG-2015 14:58:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11736.0,0.50%,F,T)



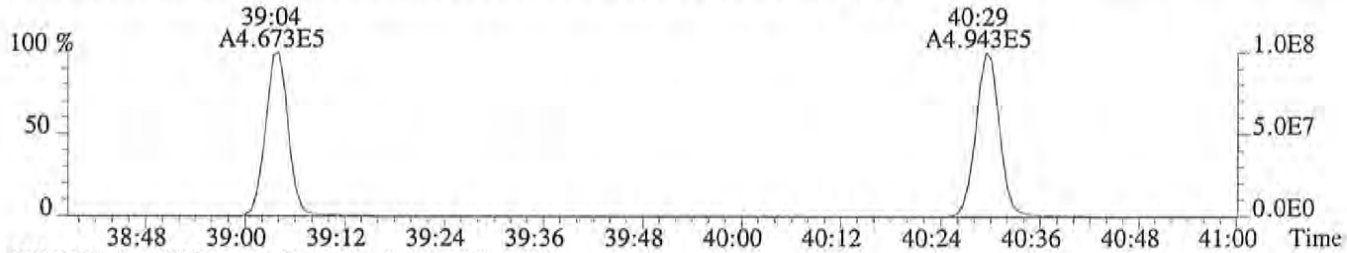
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5148.0,0.50%,F,T)



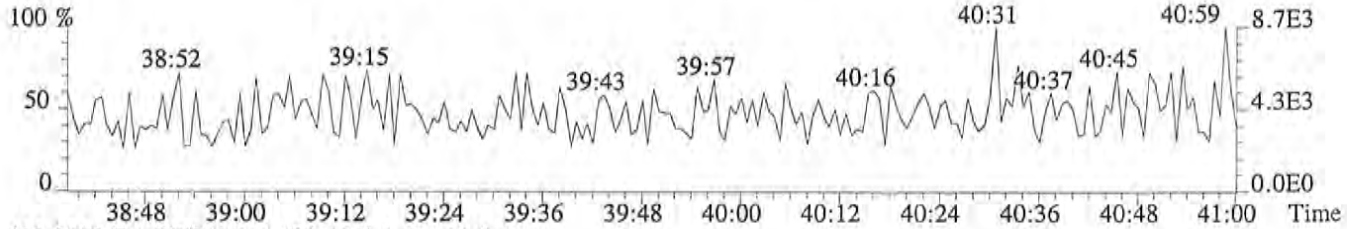
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10736.0,0.50%,F,T)



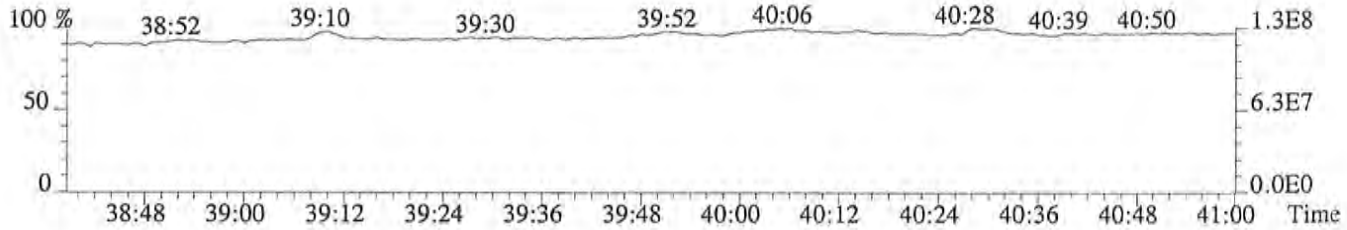
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,11184.0,0.50%,F,T)



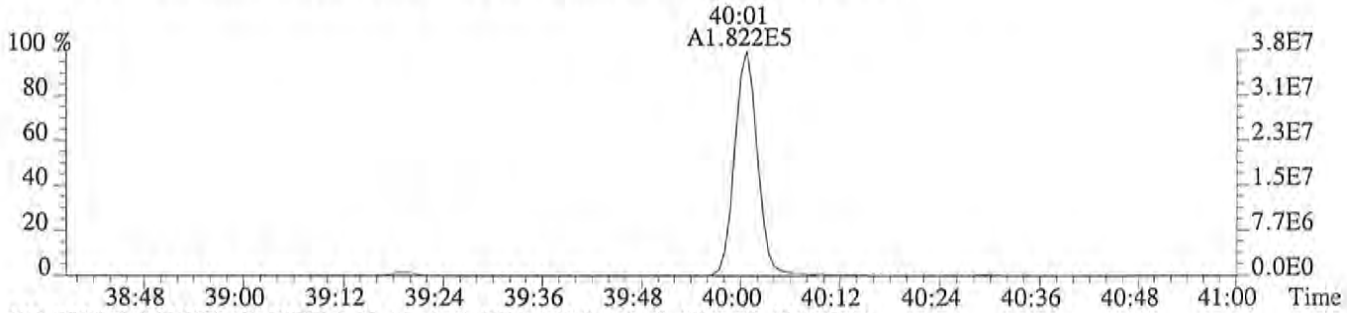
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



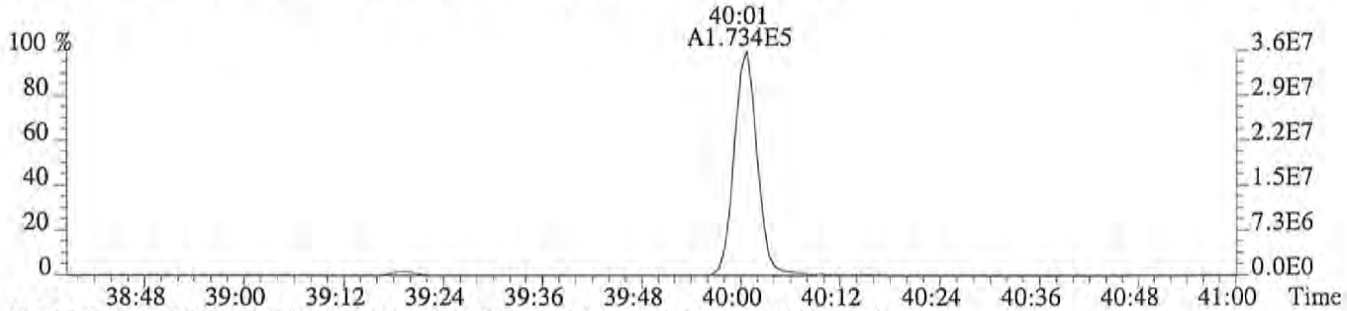
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



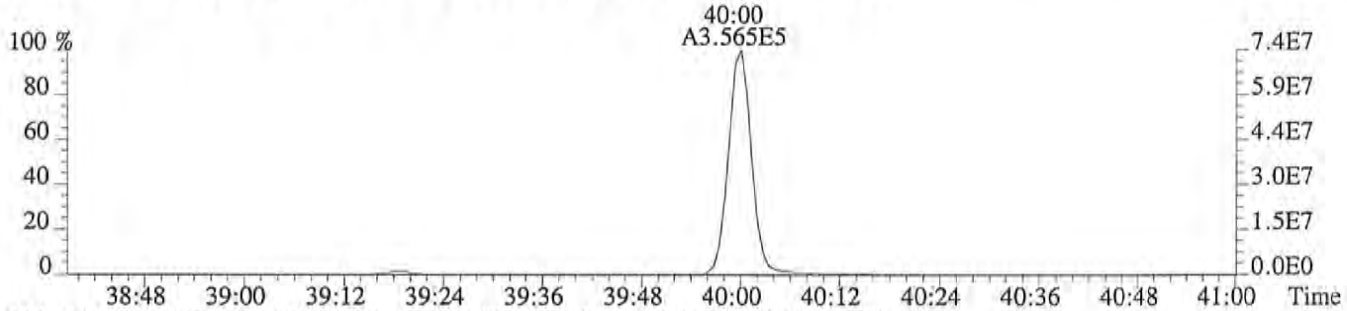
File:P600007 #1-213 Acq:19-AUG-2015 14:58:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1020.0,0.40%,F,T)



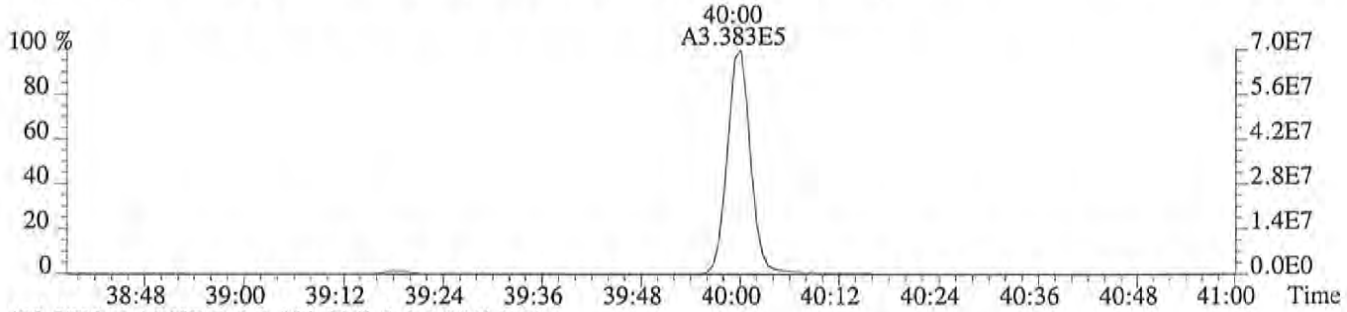
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,908.0,0.40%,F,T)



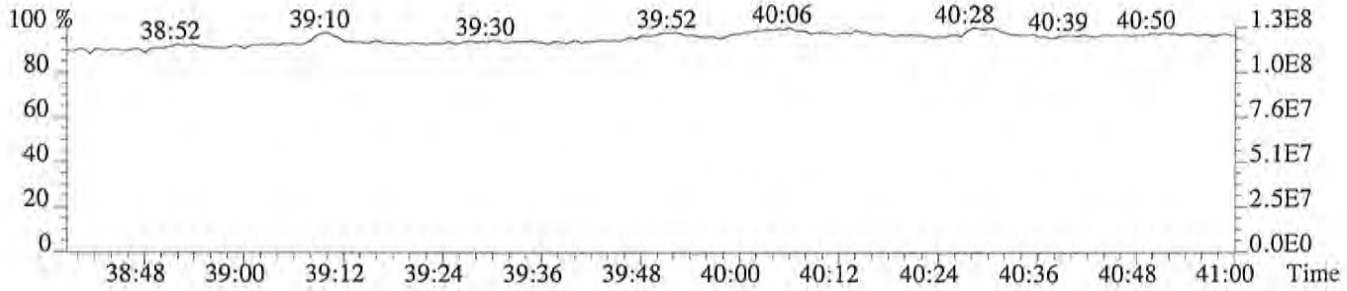
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2784.0,0.40%,F,T)



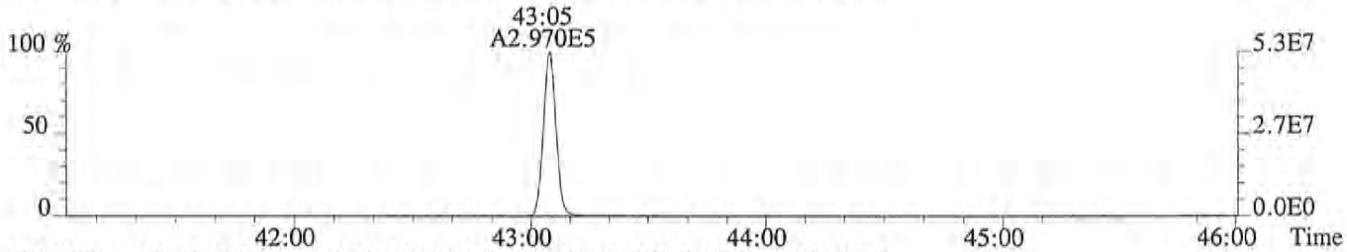
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1592.0,0.40%,F,T)



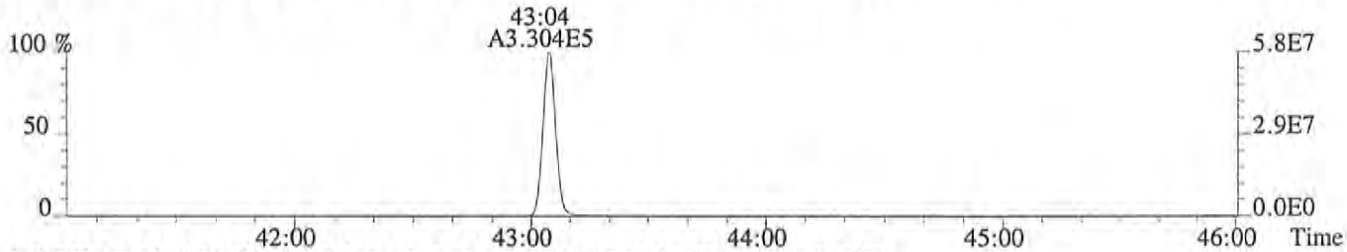
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



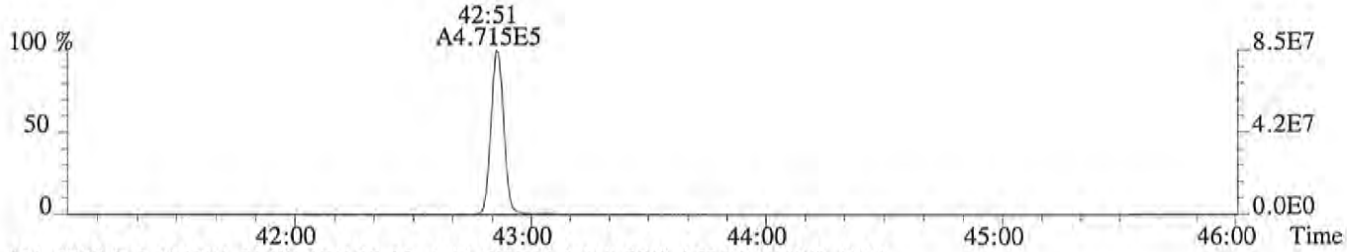
File:P600007 #1-448 Acq:19-AUG-2015 14:58:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1296.0,0.40%,F,T)



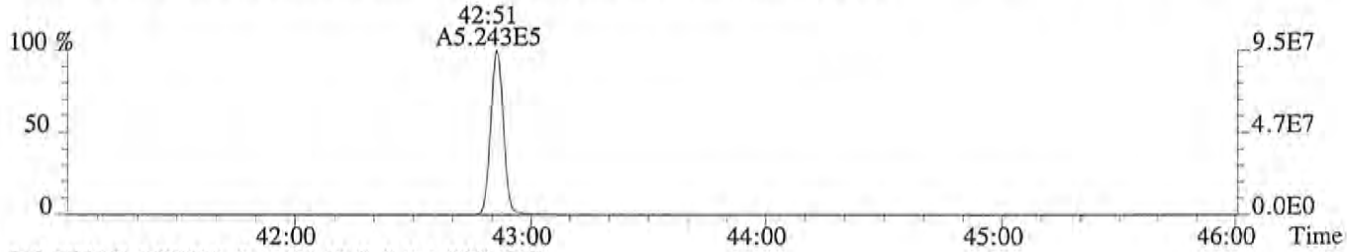
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2572.0,0.40%,F,T)



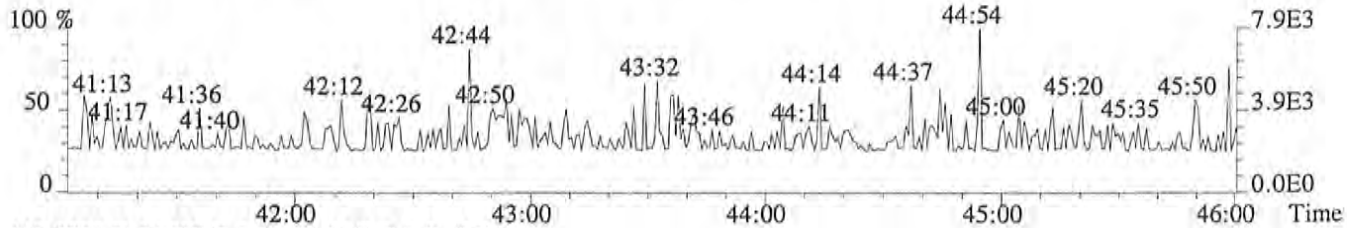
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1576.0,0.40%,F,T)



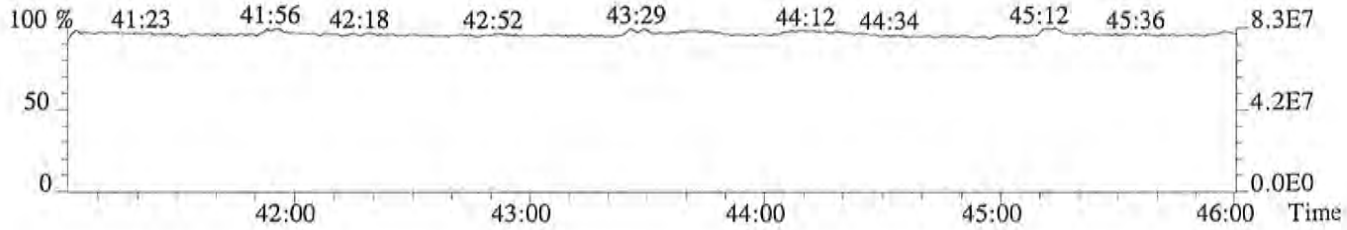
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1536.0,0.40%,F,T)



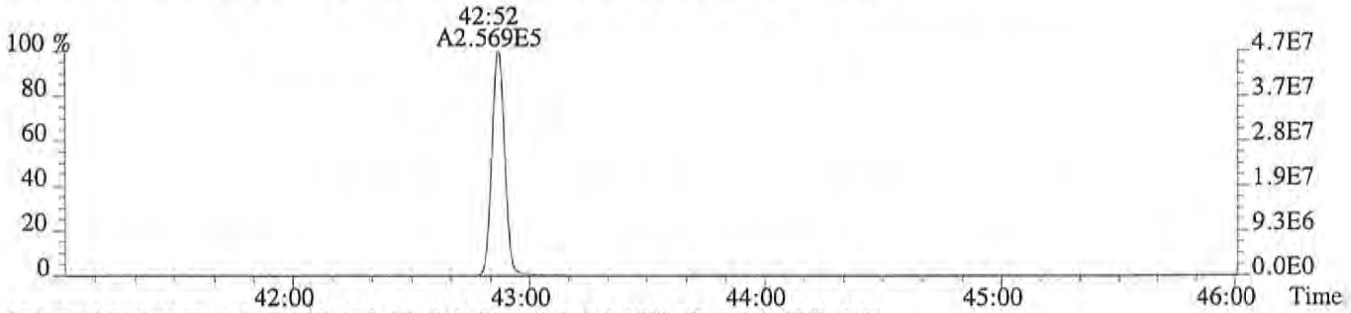
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



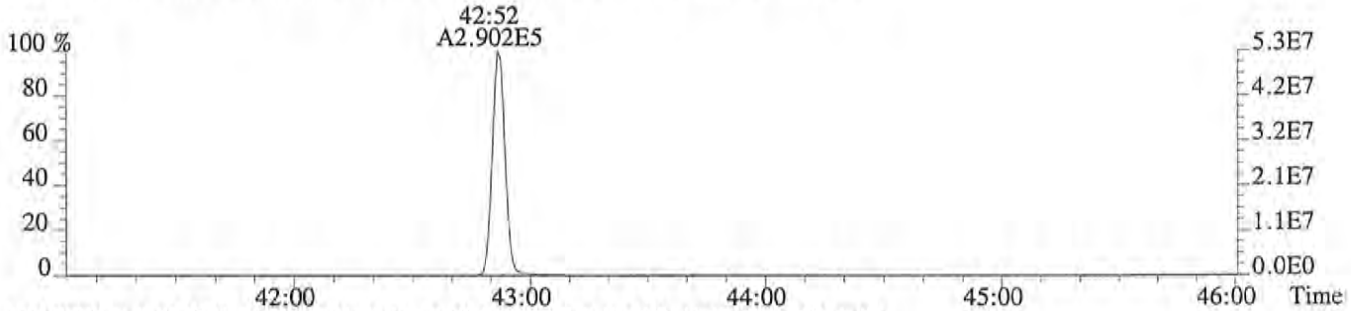
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



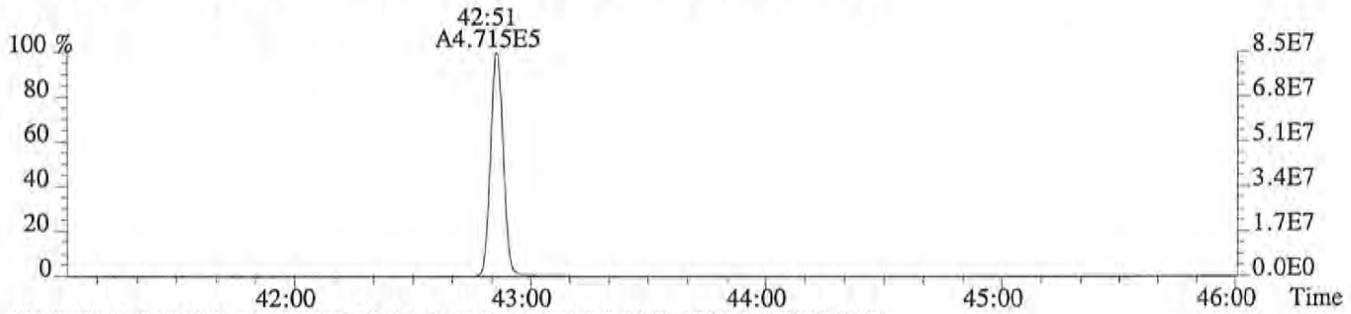
File:P600007 #1-448 Acq:19-AUG-2015 14:58:32 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,964.0,0.40%,F,T)



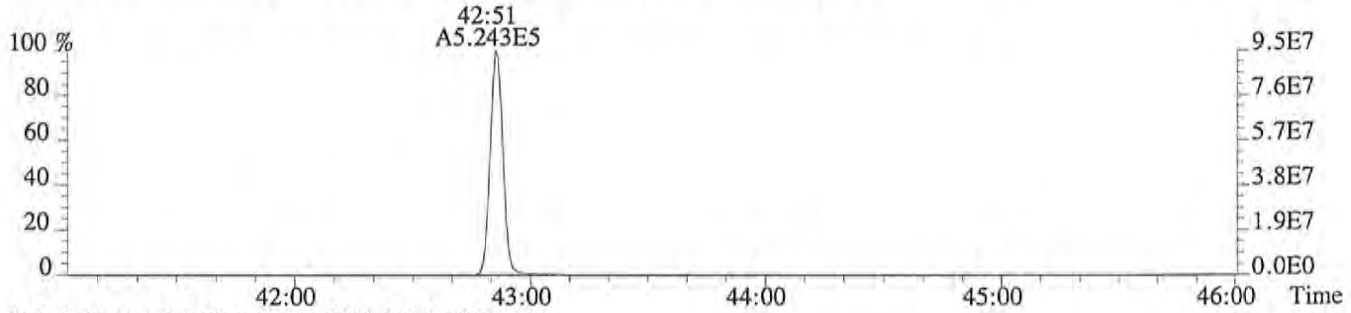
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1768.0,0.40%,F,T)



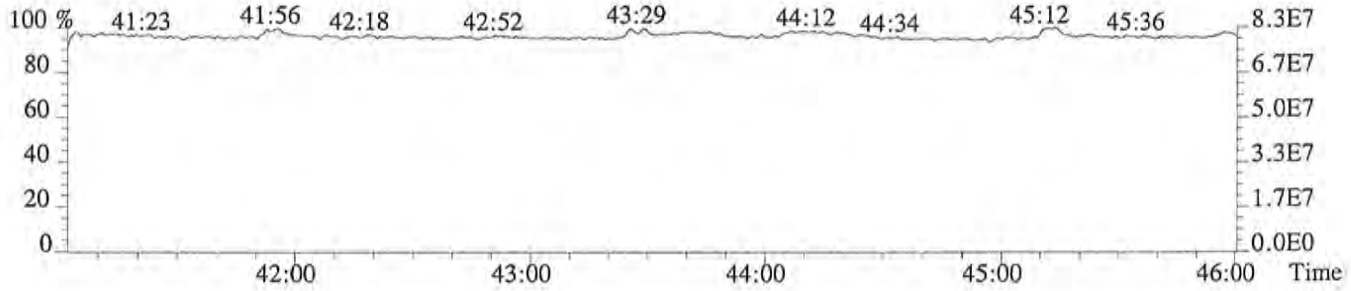
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1576.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1536.0,0.40%,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 P600008 Samp: 1 Inj: 1 Acquired: 19-AUG-15 15:47:35
Processed: 20-AUG-15 08:56:29 Sample ID: CS4

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	29:04	1.687e+05	2.207e+05	0.76	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	33:03	1.274e+06	8.207e+05	1.55	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:55	1.215e+06	7.888e+05	1.54	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	36:31	1.049e+06	8.590e+05	1.22	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:37	1.078e+06	8.697e+05	1.24	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	37:06	1.028e+06	8.378e+05	1.23	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:50	9.900e+05	8.048e+05	1.23	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	39:04	9.017e+05	8.896e+05	1.01	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	40:30	9.086e+05	8.823e+05	1.03	yes	no	1.287
10	Unk	OCDF	43:05	1.194e+06	1.326e+06	0.90	yes	no	1.257
11	Unk	2,3,7,8-TCDD	29:48	1.507e+05	1.934e+05	0.78	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	34:12	8.898e+05	5.694e+05	1.56	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	37:14	7.584e+05	6.099e+05	1.24	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	37:19	7.164e+05	5.773e+05	1.24	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	37:33	8.161e+05	6.543e+05	1.25	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	40:01	6.982e+05	6.733e+05	1.04	yes	no	1.034
17	Unk	OCDD	42:52	1.023e+06	1.149e+06	0.89	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	29:03	4.546e+05	5.724e+05	0.79	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	33:03	6.414e+05	4.062e+05	1.58	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:55	6.443e+05	4.075e+05	1.58	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	36:30	2.707e+05	5.188e+05	0.52	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:36	2.921e+05	5.589e+05	0.52	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	37:05	2.847e+05	5.403e+05	0.53	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:50	2.621e+05	5.028e+05	0.52	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	39:04	2.007e+05	4.552e+05	0.44	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:29	2.129e+05	4.784e+05	0.45	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	29:48	3.775e+05	4.793e+05	0.79	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	34:11	4.772e+05	3.040e+05	1.57	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	37:13	3.698e+05	2.938e+05	1.26	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	37:18	3.505e+05	2.764e+05	1.27	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	40:00	3.425e+05	3.233e+05	1.06	yes	no	0.892
32	IS	13C-OCDD	42:51	4.626e+05	5.176e+05	0.89	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	29:15	3.253e+05	4.121e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:32	4.098e+05	3.273e+05	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:48	3.596e+05				no	1.263

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Signal/Noise Height Ratio Summary

CLIENT ID.
76558

Run #5 Filename P600008 Samp: 1 Inj: 1 Acquired: 19-AUG-15 15:47:35
Processed: 20-AUG-15 08:56:29 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	3.19e+07	2.13e+03	1.5e+04	4.14e+07	2.68e+03	1.5e+04
2	1,2,3,7,8-PeCDF	2.51e+08	2.28e+03	1.1e+05	1.61e+08	3.81e+03	4.2e+04
3	2,3,4,7,8-PeCDF	2.50e+08	2.28e+03	1.1e+05	1.62e+08	3.81e+03	4.2e+04
4	1,2,3,4,7,8-HxCDF	2.26e+08	3.59e+03	6.3e+04	1.85e+08	1.92e+03	9.7e+04
5	1,2,3,6,7,8-HxCDF	2.37e+08	3.59e+03	6.6e+04	1.91e+08	1.92e+03	1.0e+05
6	2,3,4,6,7,8-HxCDF	2.27e+08	3.59e+03	6.3e+04	1.87e+08	1.92e+03	9.8e+04
7	1,2,3,7,8,9-HxCDF	2.16e+08	3.59e+03	6.0e+04	1.75e+08	1.92e+03	9.1e+04
8	1,2,3,4,6,7,8-HpCDF	1.94e+08	2.06e+04	9.4e+03	1.94e+08	1.09e+04	1.8e+04
9	1,2,3,4,7,8,9-HpCDF	1.89e+08	2.06e+04	9.2e+03	1.85e+08	1.09e+04	1.7e+04
10	OCDF	2.16e+08	1.33e+03	1.6e+05	2.39e+08	3.02e+03	7.9e+04
11	2,3,7,8-TCDD	3.06e+07	1.70e+03	1.8e+04	3.92e+07	2.12e+03	1.8e+04
12	1,2,3,7,8-PeCDD	1.81e+08	3.26e+03	5.6e+04	1.15e+08	2.08e+03	5.5e+04
13	1,2,3,4,7,8-HxCDD	1.72e+08	1.51e+03	1.1e+05	1.38e+08	1.90e+03	7.3e+04
14	1,2,3,6,7,8-HxCDD	1.58e+08	1.51e+03	1.0e+05	1.29e+08	1.90e+03	6.8e+04
15	1,2,3,7,8,9-HxCDD	1.78e+08	1.51e+03	1.2e+05	1.44e+08	1.90e+03	7.6e+04
16	1,2,3,4,6,7,8-HpCDD	1.49e+08	1.97e+03	7.5e+04	1.43e+08	2.87e+03	5.0e+04
17	OCDD	1.89e+08	1.17e+03	1.6e+05	2.13e+08	2.25e+03	9.5e+04
18	13C-2,3,7,8-TCDF	8.58e+07	6.27e+03	1.4e+04	1.09e+08	3.26e+03	3.3e+04
19	13C-1,2,3,7,8-PeCDF	1.25e+08	1.66e+03	7.5e+04	7.87e+07	2.52e+03	3.1e+04
20	13C-2,3,4,7,8-PeCDF	1.31e+08	1.66e+03	7.9e+04	8.26e+07	2.52e+03	3.3e+04
21	13C-1,2,3,4,7,8-HxCDF	5.77e+07	3.12e+03	1.9e+04	1.11e+08	3.24e+03	3.4e+04
22	13C-1,2,3,6,7,8-HxCDF	6.34e+07	3.12e+03	2.0e+04	1.23e+08	3.24e+03	3.8e+04
23	13C-2,3,4,6,7,8-HxCDF	6.32e+07	3.12e+03	2.0e+04	1.20e+08	3.24e+03	3.7e+04
24	13C-1,2,3,7,8,9-HxCDF	5.72e+07	3.12e+03	1.8e+04	1.09e+08	3.24e+03	3.4e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.33e+07	1.03e+04	4.2e+03	9.74e+07	1.40e+04	7.0e+03
26	13C-1,2,3,4,7,8,9-HpCDF	4.31e+07	1.03e+04	4.2e+03	9.83e+07	1.40e+04	7.0e+03
27	13C-2,3,7,8-TCDD	7.56e+07	8.87e+03	8.5e+03	9.56e+07	4.60e+03	2.1e+04
28	13C-1,2,3,7,8-PeCDD	9.68e+07	2.12e+03	4.6e+04	6.20e+07	1.55e+03	4.0e+04
29	13C-1,2,3,4,7,8-HxCDD	8.40e+07	7.04e+03	1.2e+04	6.64e+07	2.89e+03	2.3e+04
30	13C-1,2,3,6,7,8-HxCDD	7.75e+07	7.04e+03	1.1e+04	6.14e+07	2.89e+03	2.1e+04
31	13C-1,2,3,4,6,7,8-HpCDD	7.21e+07	2.10e+03	3.4e+04	6.75e+07	1.63e+03	4.1e+04
32	13C-OCDD	8.47e+07	1.62e+03	5.2e+04	9.56e+07	1.40e+03	6.8e+04
33	13C-1,2,3,4-TCDD	6.26e+07	8.87e+03	7.1e+03	7.97e+07	4.60e+03	1.7e+04
34	13C-1,2,3,7,8,9-HxCDD	9.00e+07	7.04e+03	1.3e+04	7.17e+07	2.89e+03	2.5e+04
35	37Cl-2,3,7,8-TCDD	7.29e+07	2.57e+03	2.8e+04			

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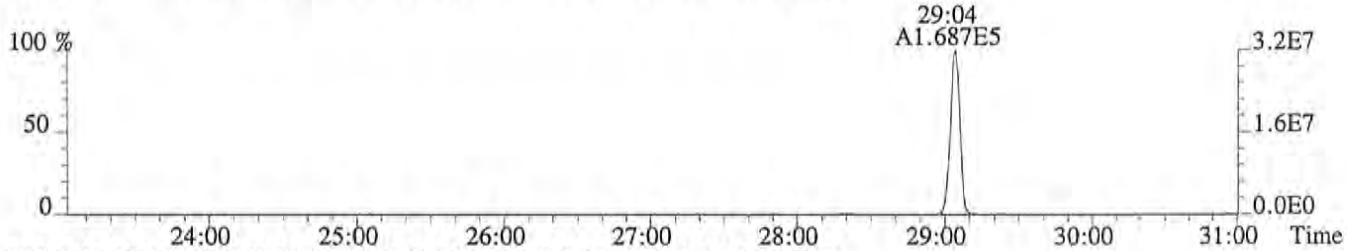
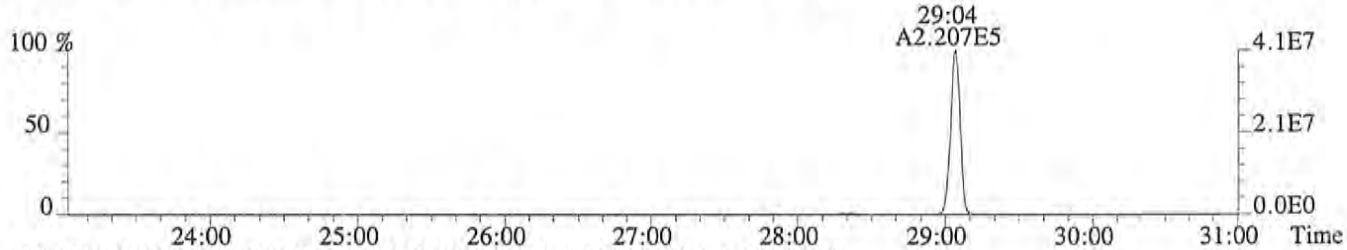
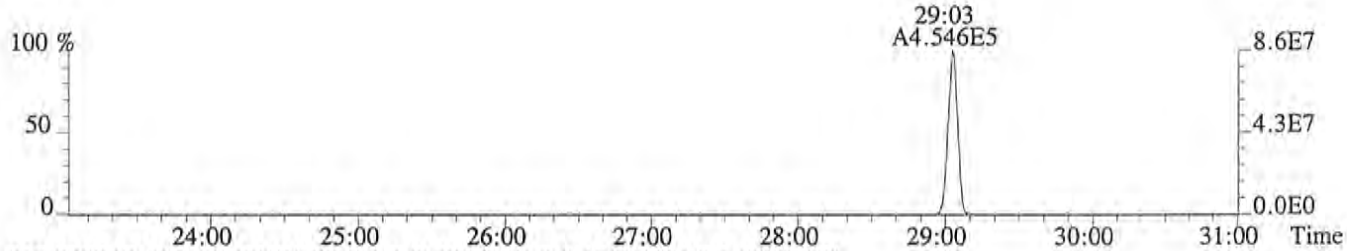
File:P600008 #1-566 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2132.0,1.00%,F,T)



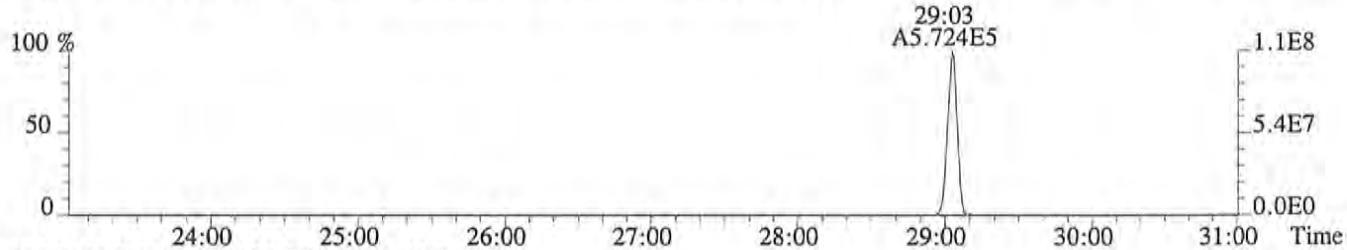
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2684.0,1.00%,F,T)



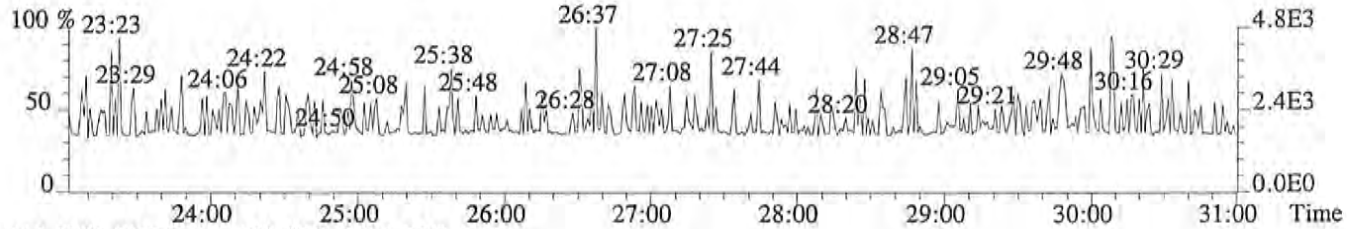
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6268.0,1.00%,F,T)



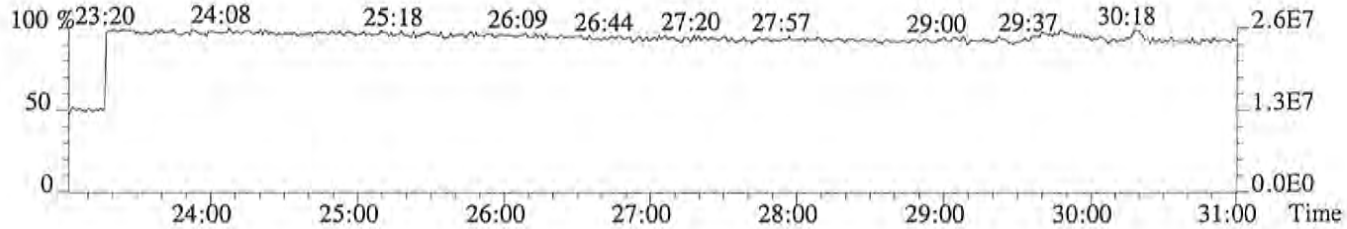
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3264.0,1.00%,F,T)



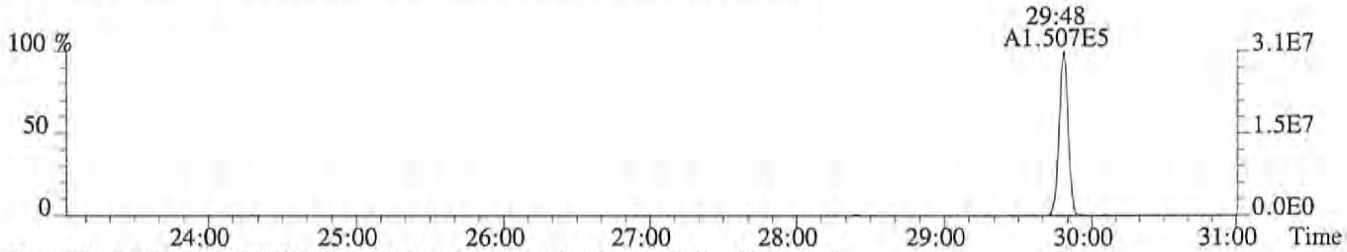
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



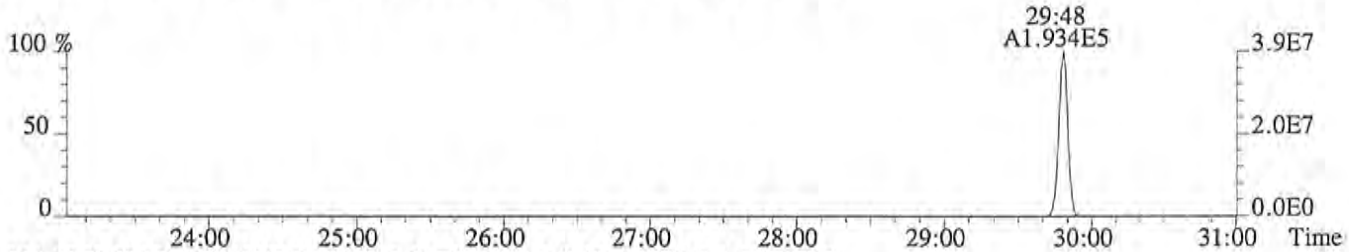
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



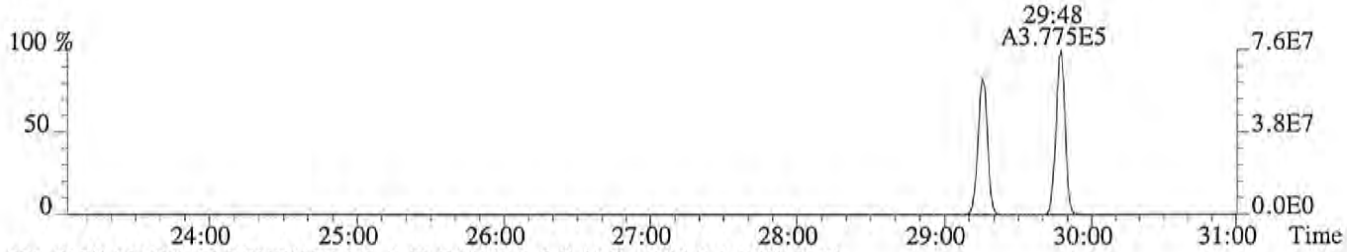
File:P600008 #1-566 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1704.0,1.00%,F,T)



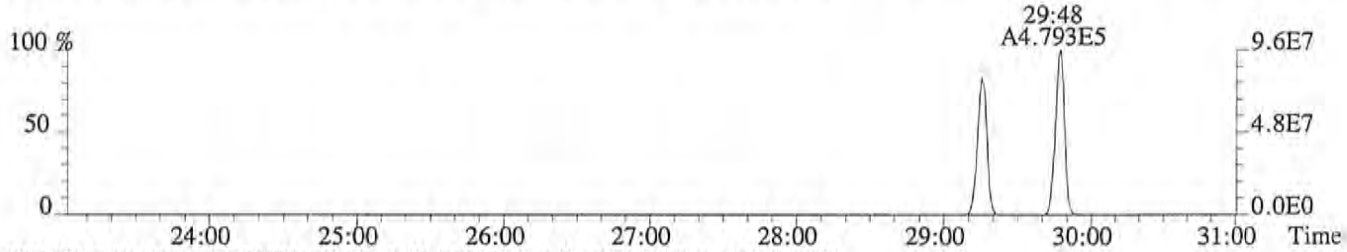
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2124.0,1.00%,F,T)



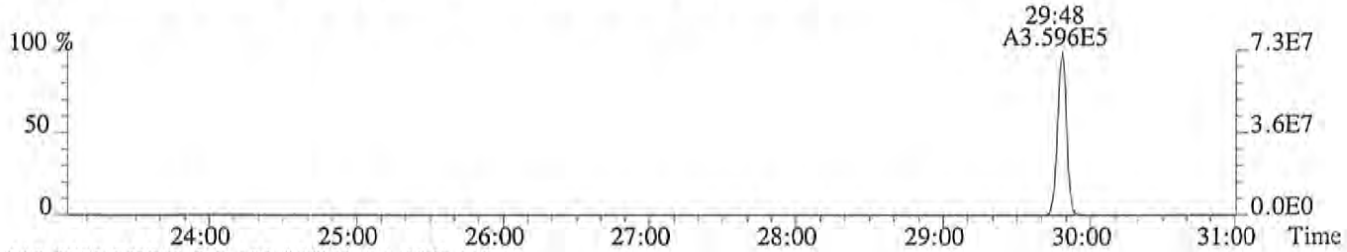
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8872.0,1.00%,F,T)



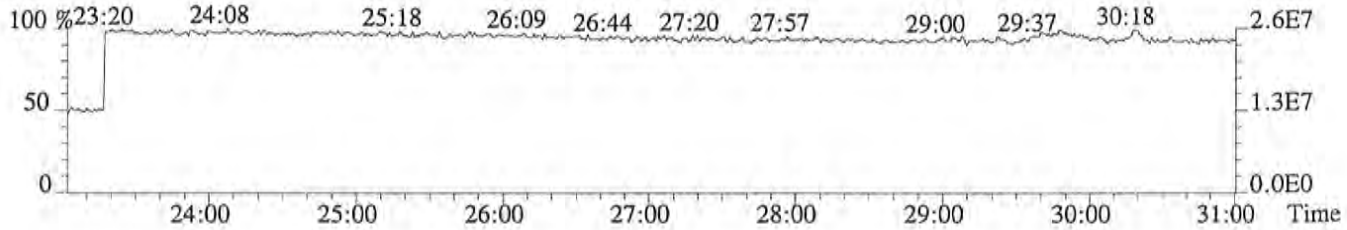
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4600.0,1.00%,F,T)



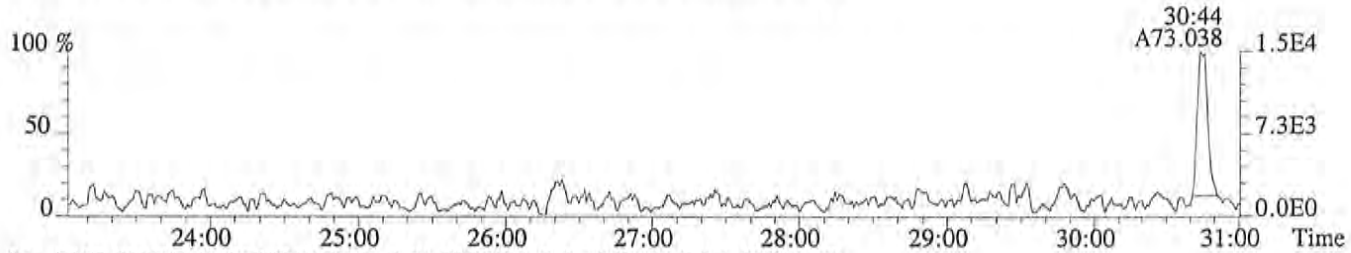
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2568.0,1.00%,F,T)



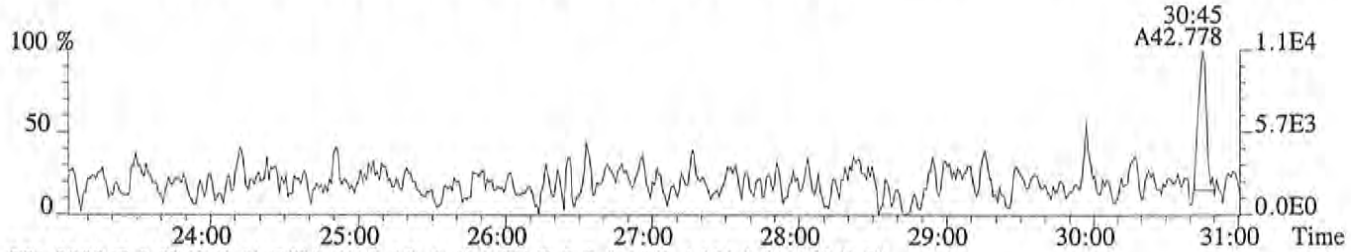
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



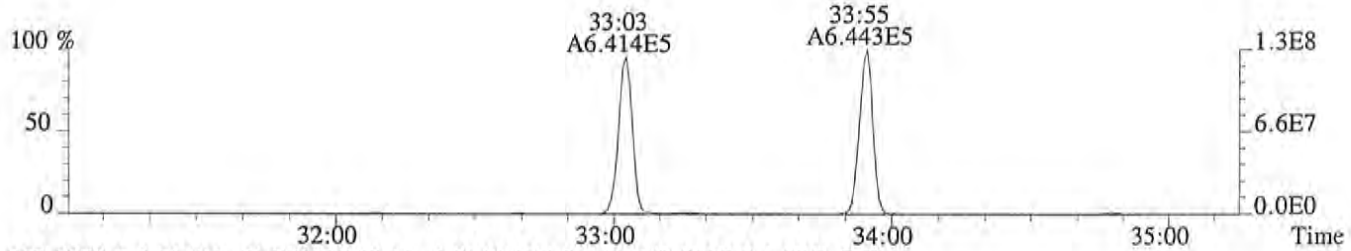
File:P600008 #1-566 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1604.0,1.00%,F,T)



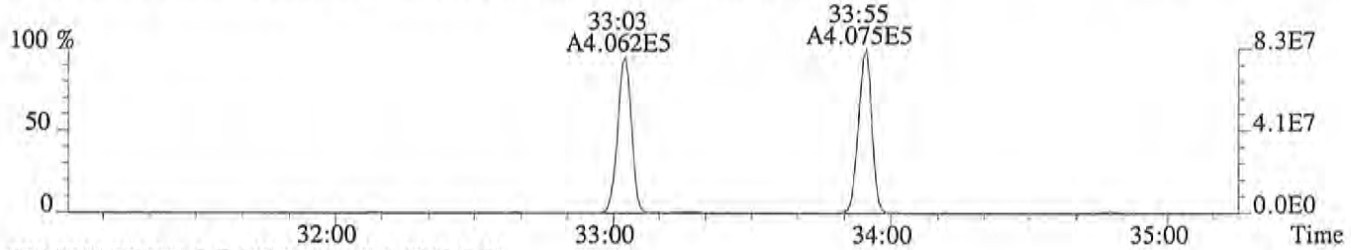
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2856.0,1.00%,F,T)



351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1664.0,1.00%,F,T)

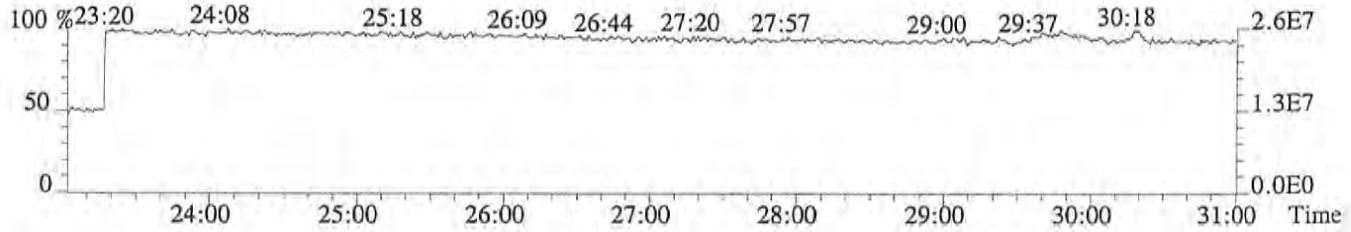


353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2520.0,1.00%,F,T)

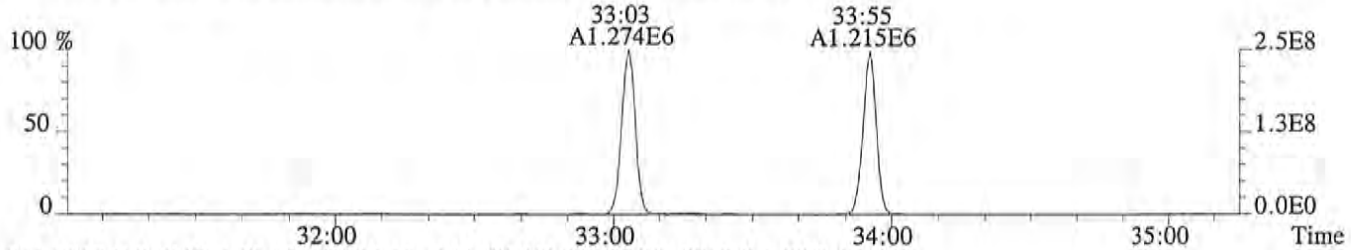


375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)

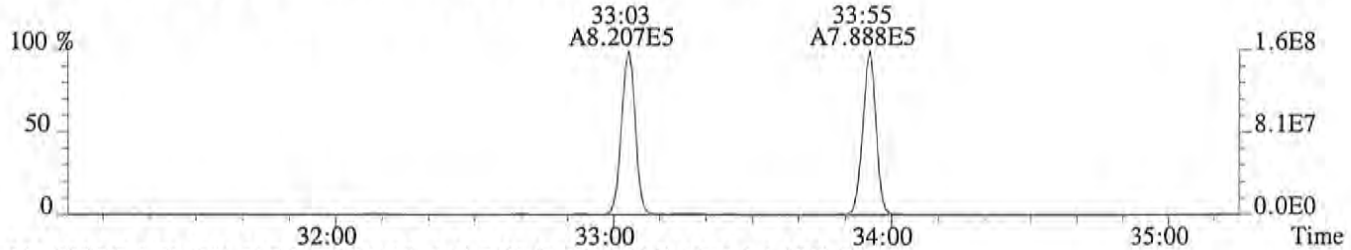
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



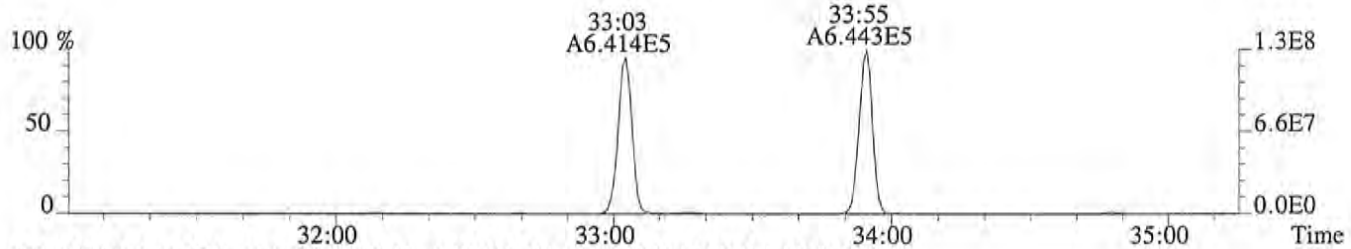
File:P600008 #1-380 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2284.0,1.00%,F,T)



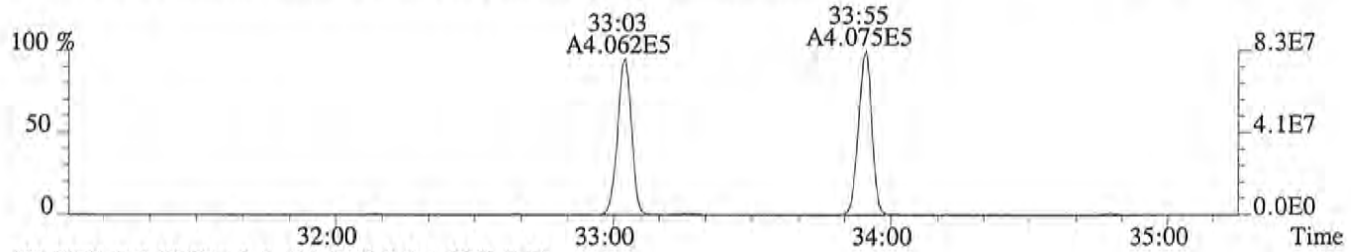
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3812.0,1.00%,F,T)



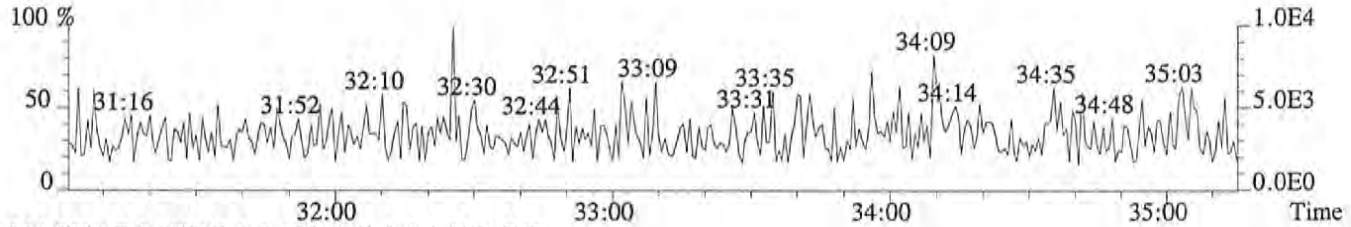
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1664.0,1.00%,F,T)



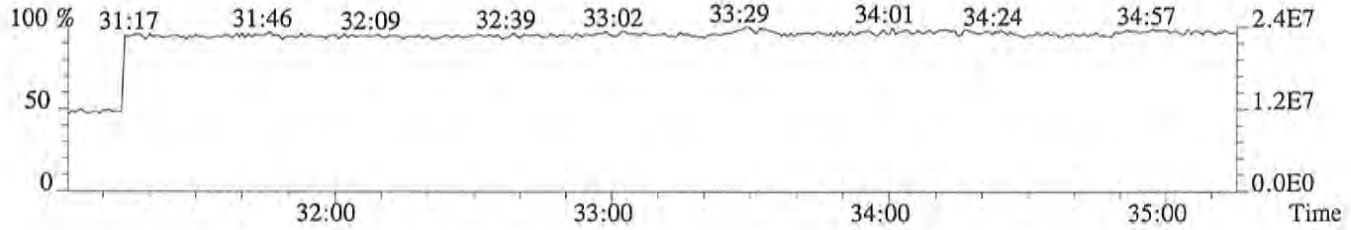
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2520.0,1.00%,F,T)



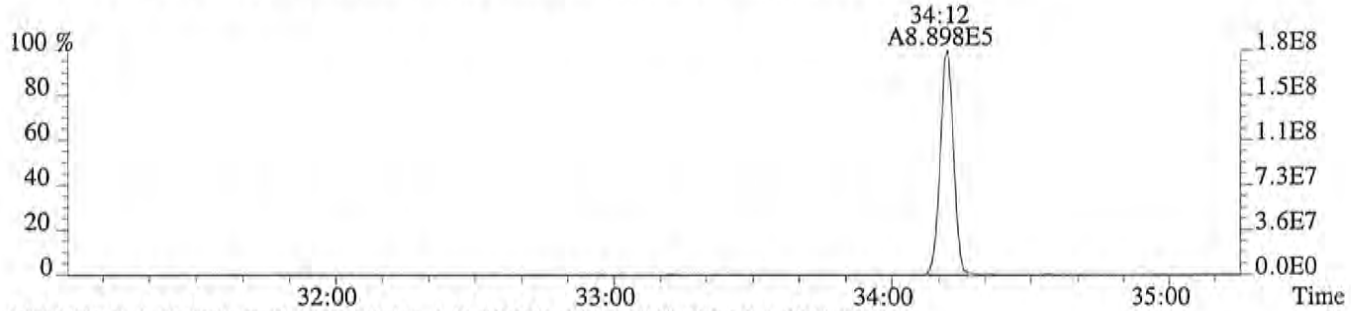
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



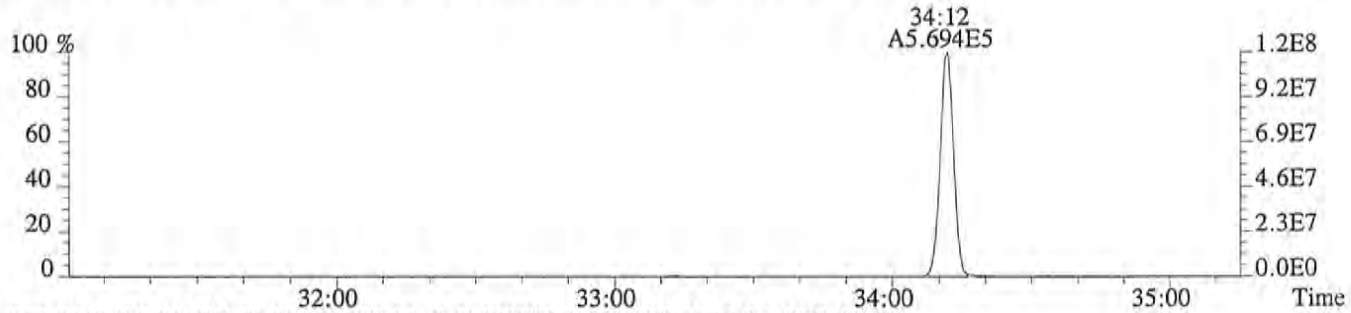
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



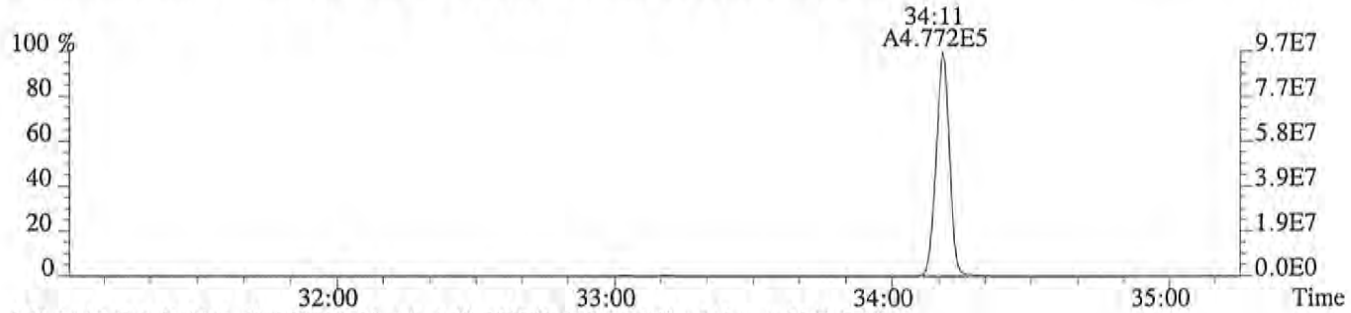
File:P600008 #1-380 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3260.0,1.00%,F,T)



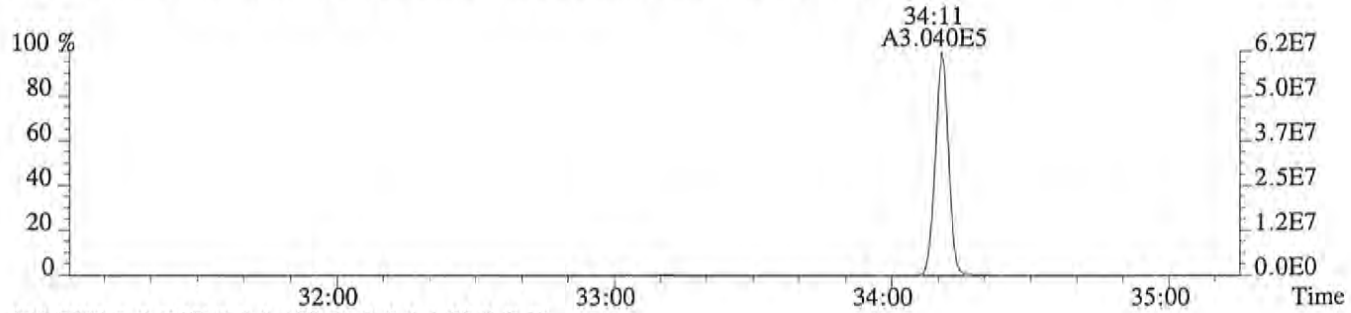
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2084.0,1.00%,F,T)



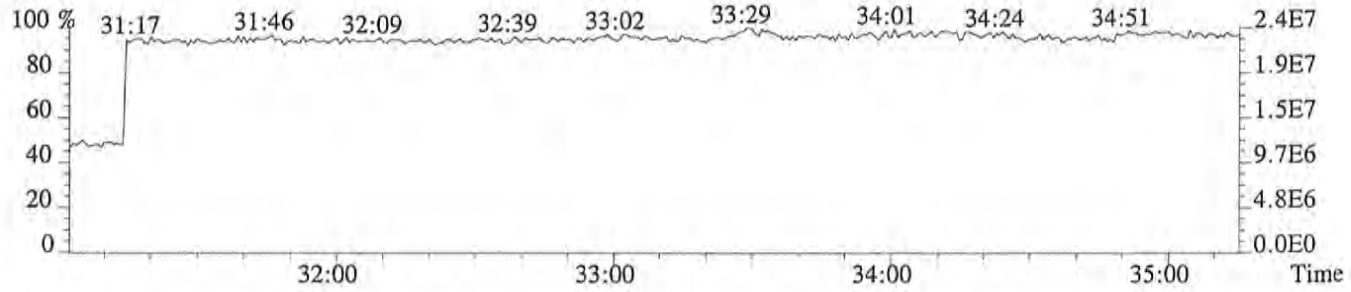
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2116.0,1.00%,F,T)



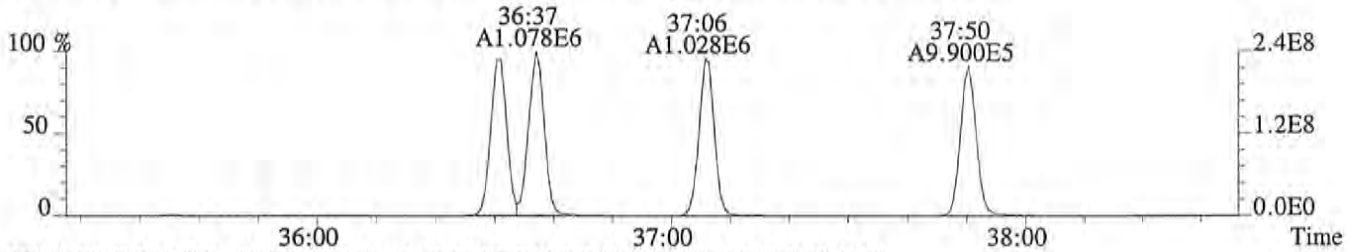
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1548.0,1.00%,F,T)



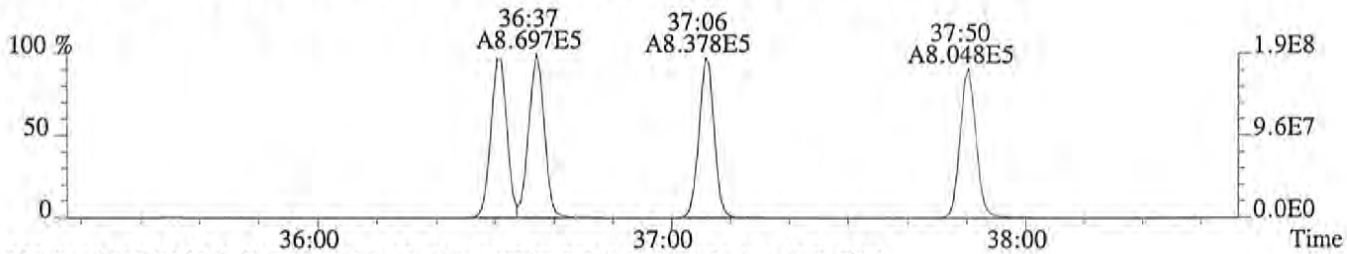
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



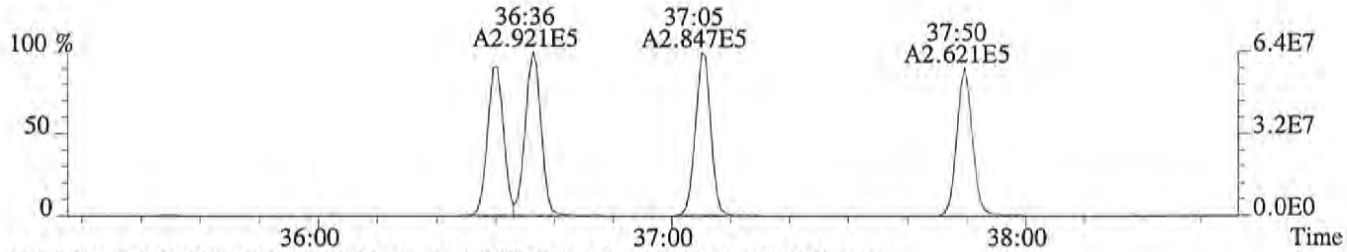
File:P600008 #1-299 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3588.0,0.40%,F,T)



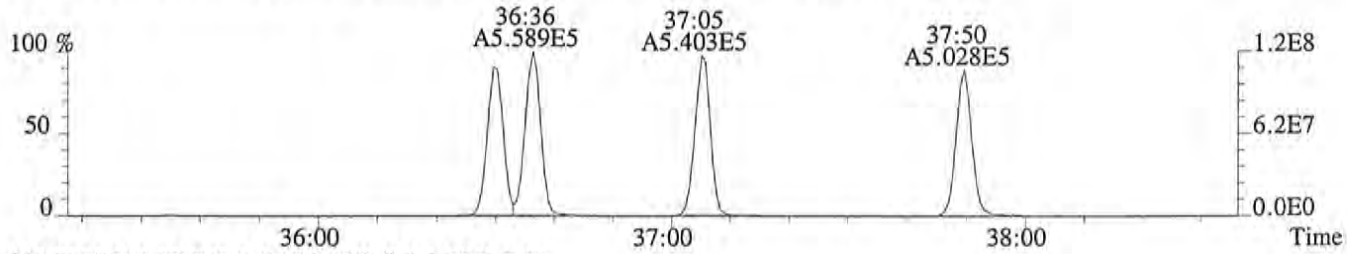
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1916.0,0.40%,F,T)



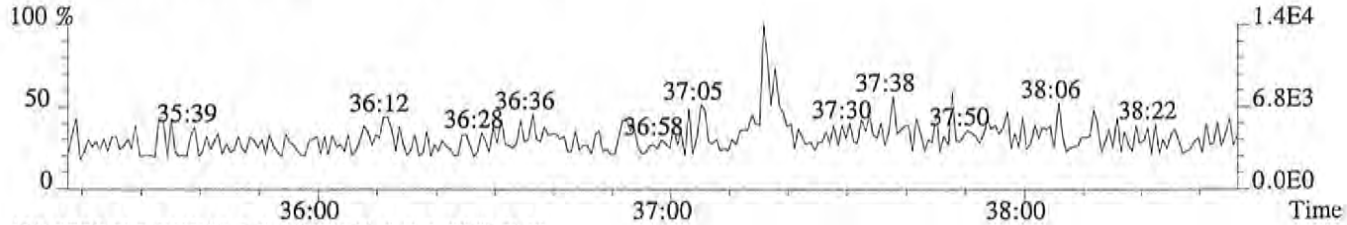
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3120.0,0.40%,F,T)



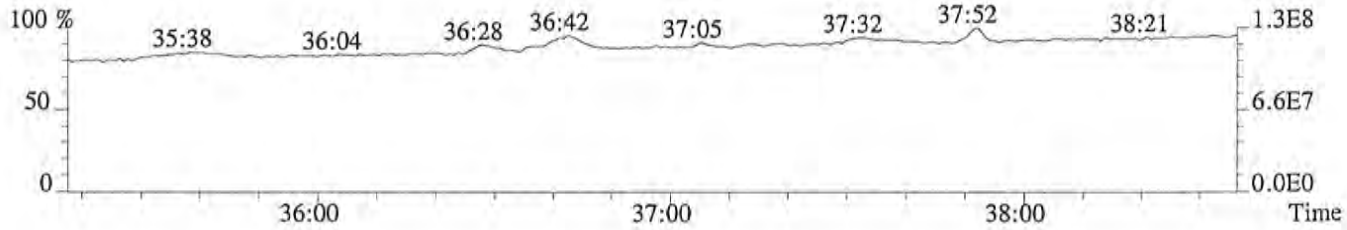
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3244.0,0.40%,F,T)



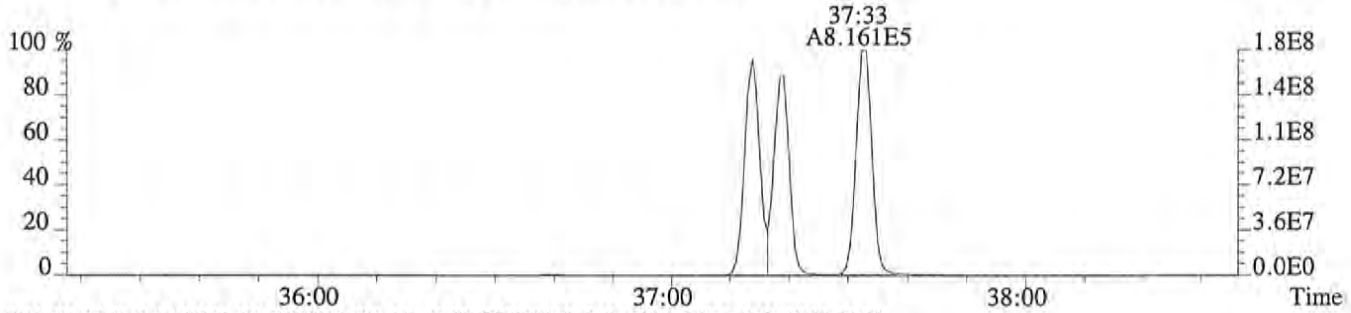
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



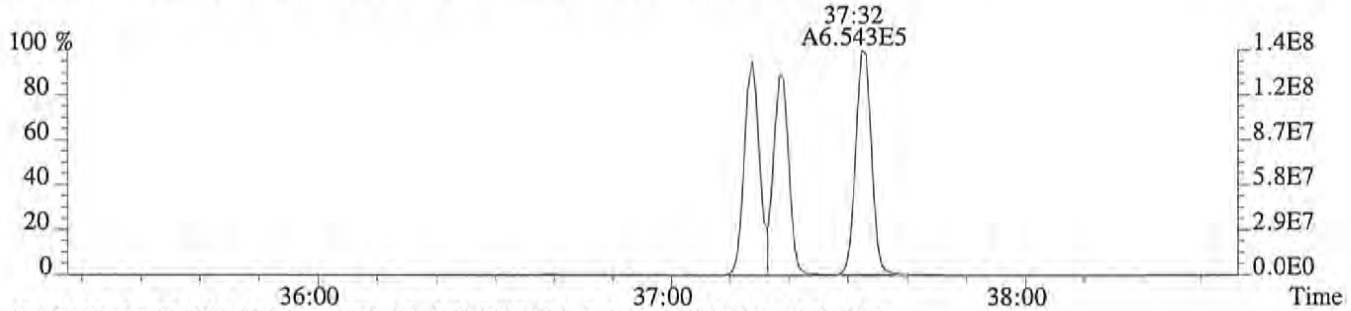
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



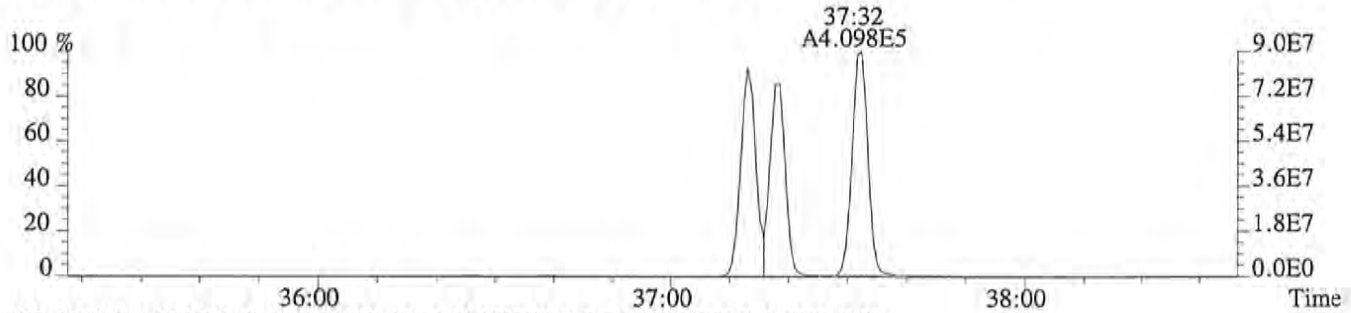
File:P600008 #1-299 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1512.0,0.40%,F,T)



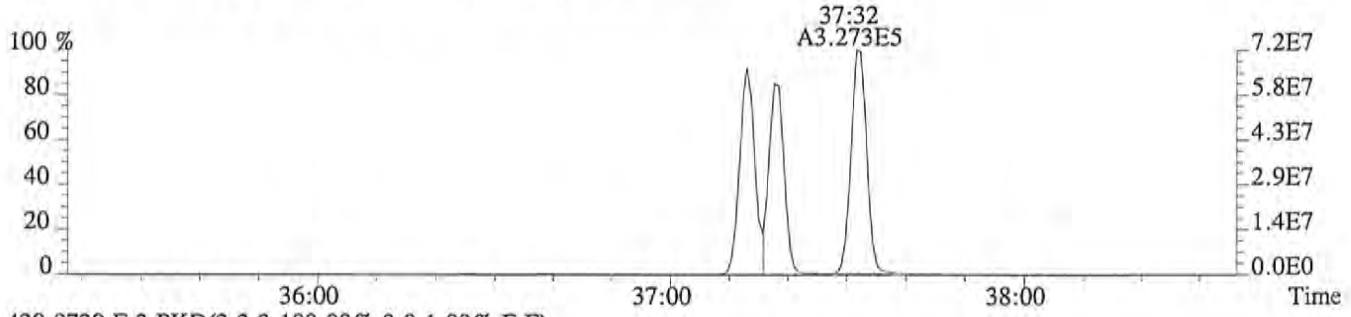
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1896.0,0.40%,F,T)



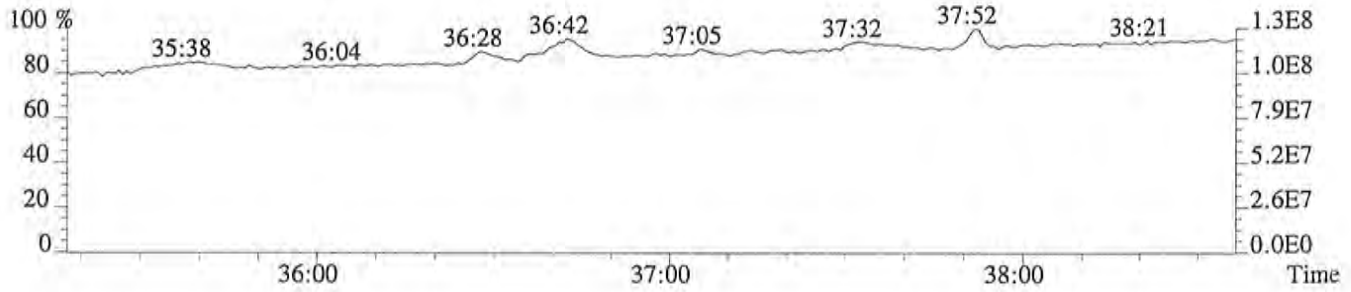
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7044.0,0.40%,F,T)



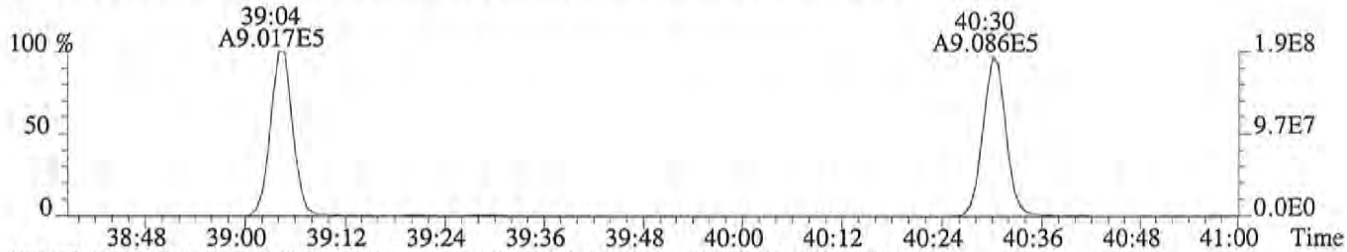
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2888.0,0.40%,F,T)



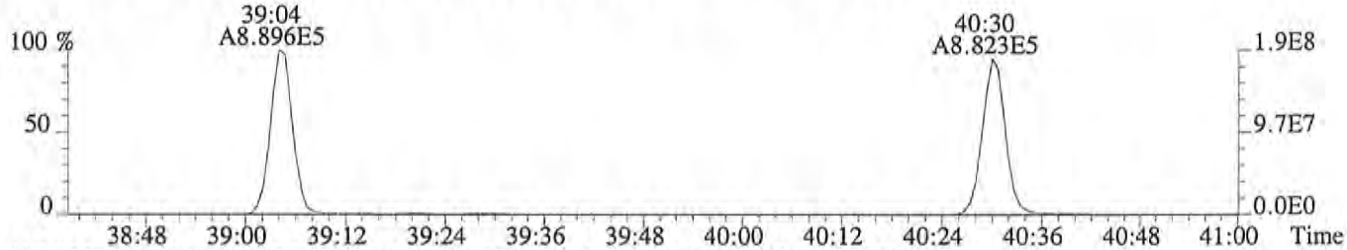
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



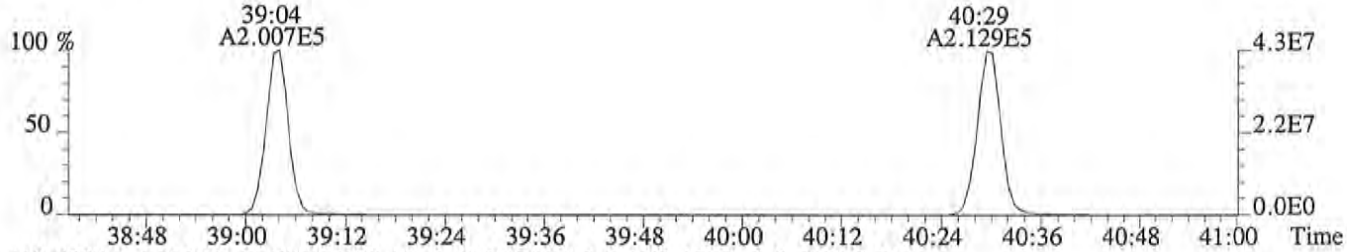
File:P600008 #1-213 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,20640.0,0.50%,F,T)



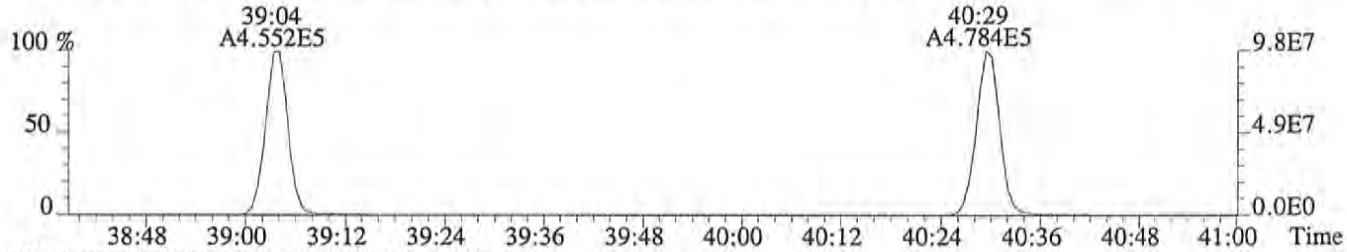
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10900.0,0.50%,F,T)



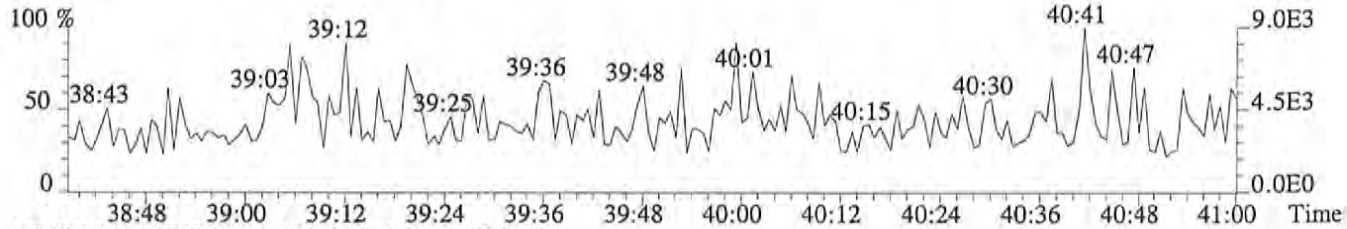
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10272.0,0.50%,F,T)



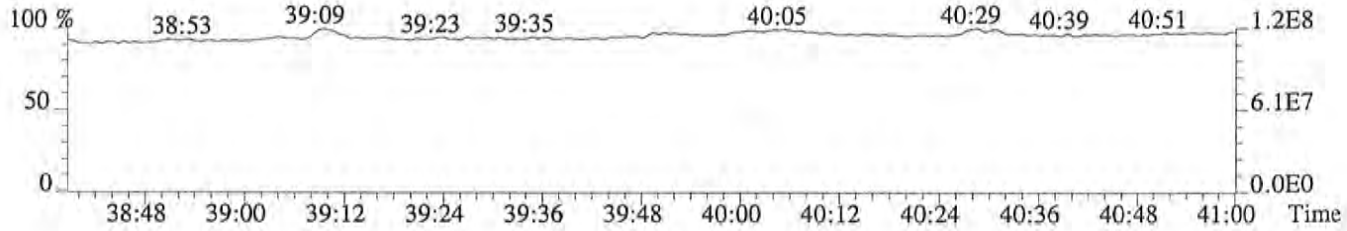
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,13964.0,0.50%,F,T)



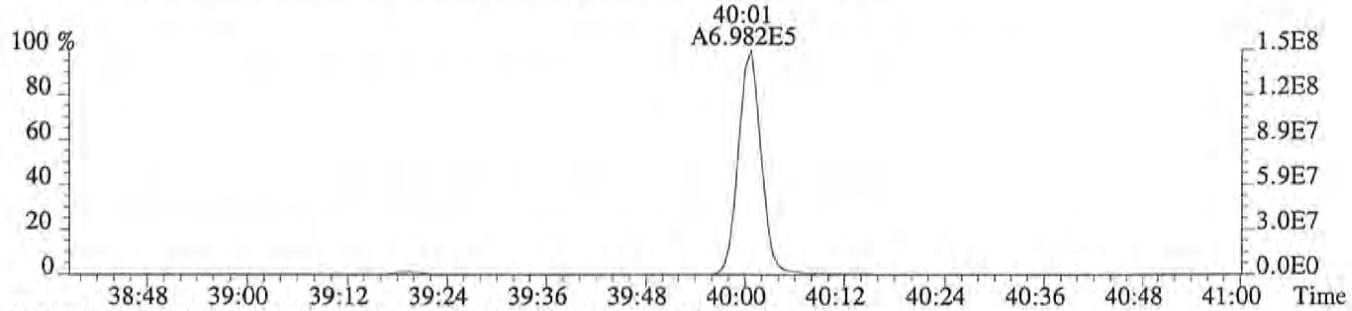
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



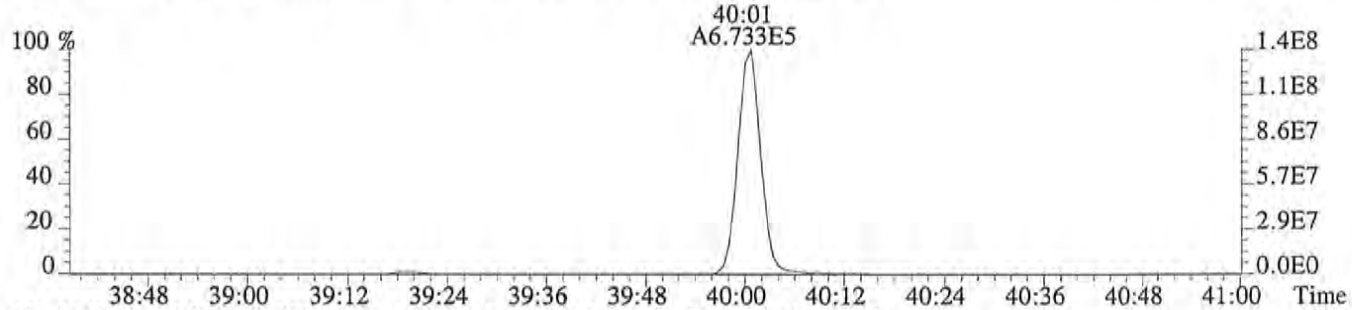
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



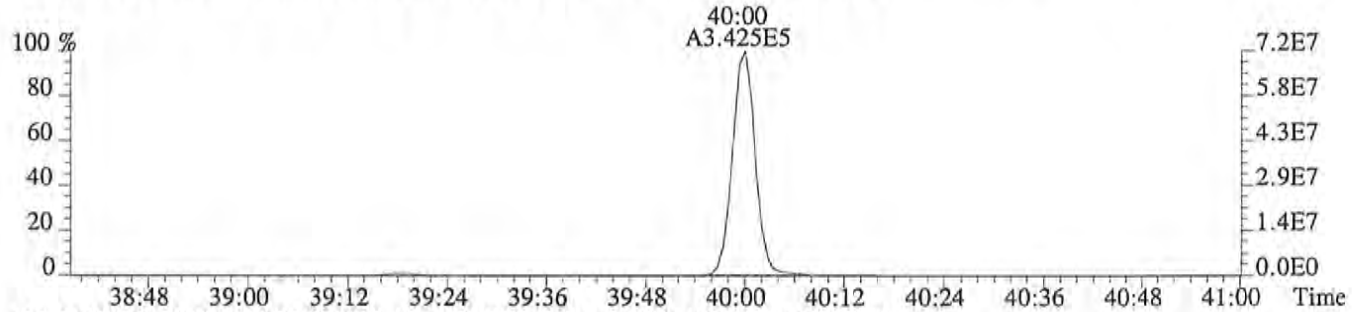
File:P600008 #1-213 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1972.0,0.40%,F,T)



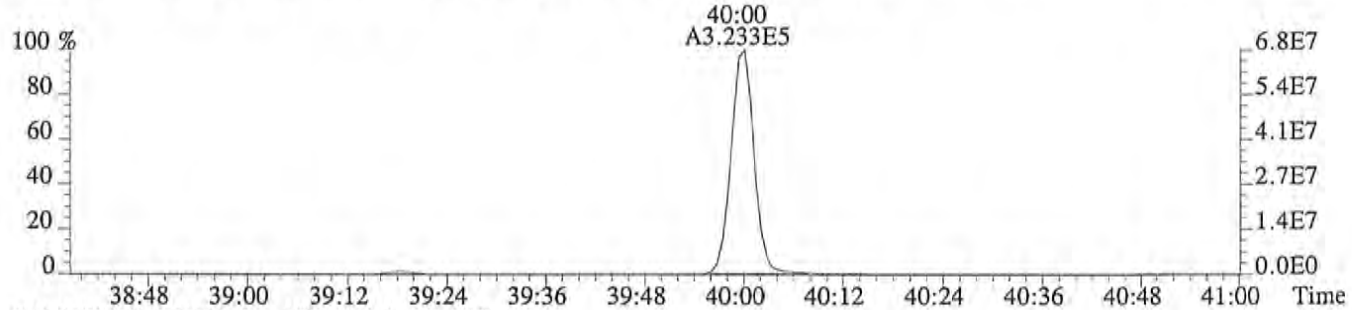
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2868.0,0.40%,F,T)



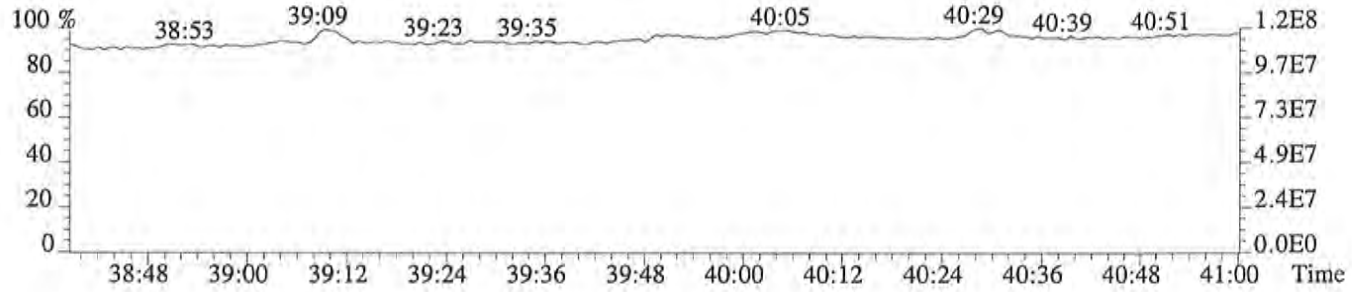
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2104.0,0.40%,F,T)



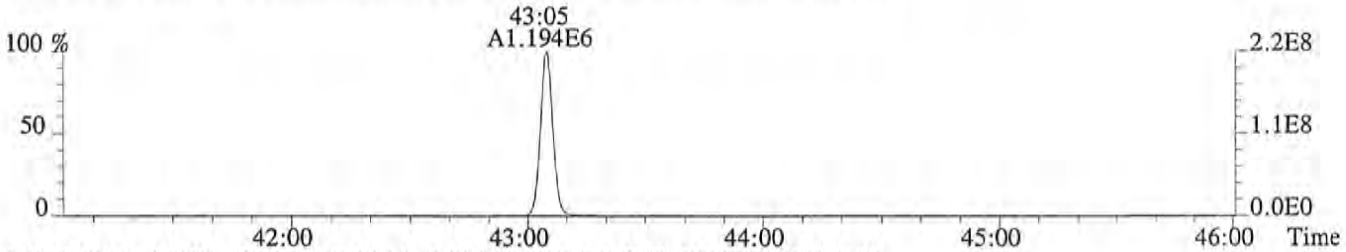
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1628.0,0.40%,F,T)



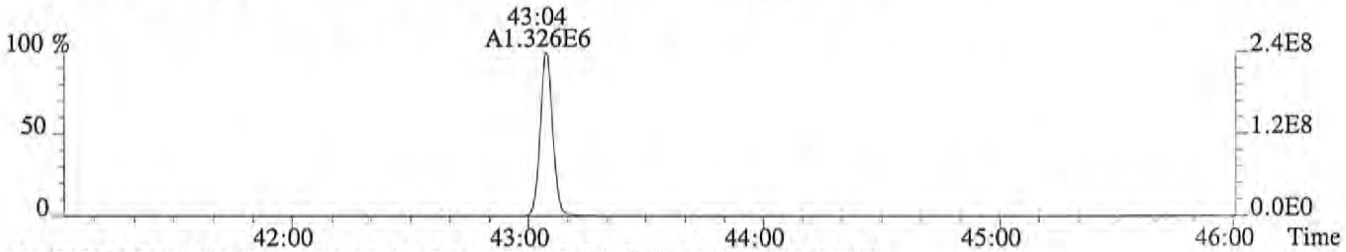
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



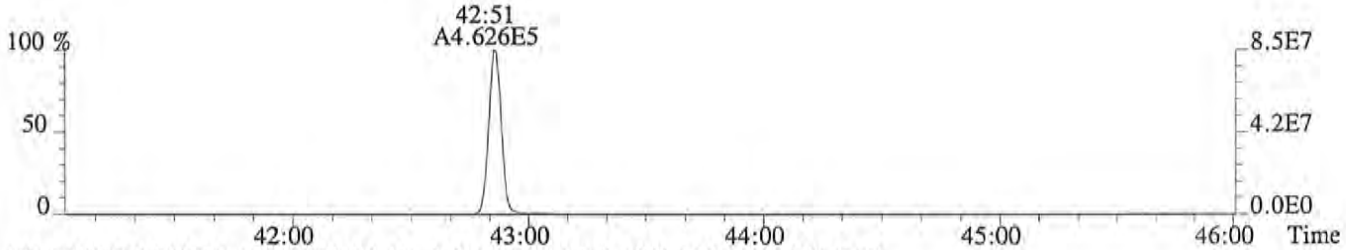
File:P600008 #1-448 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1332.0,0.40%,F,T)



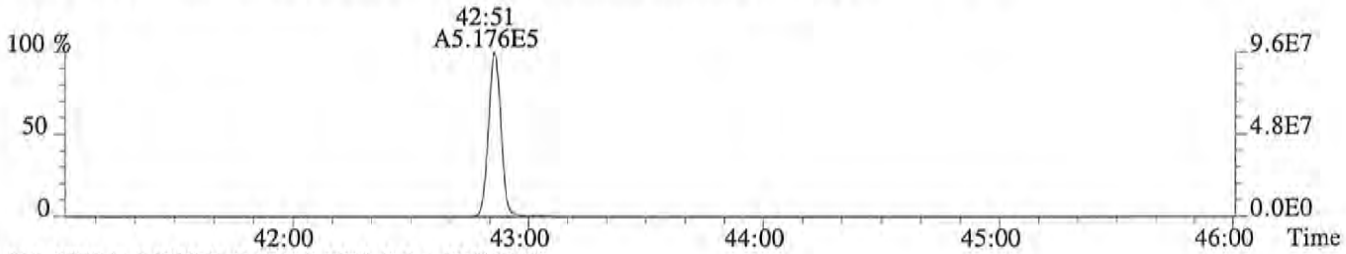
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,3020.0,0.40%,F,T)



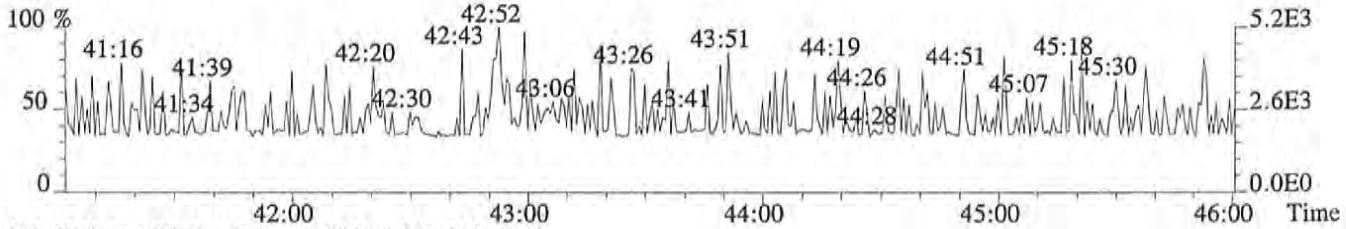
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1620.0,0.40%,F,T)



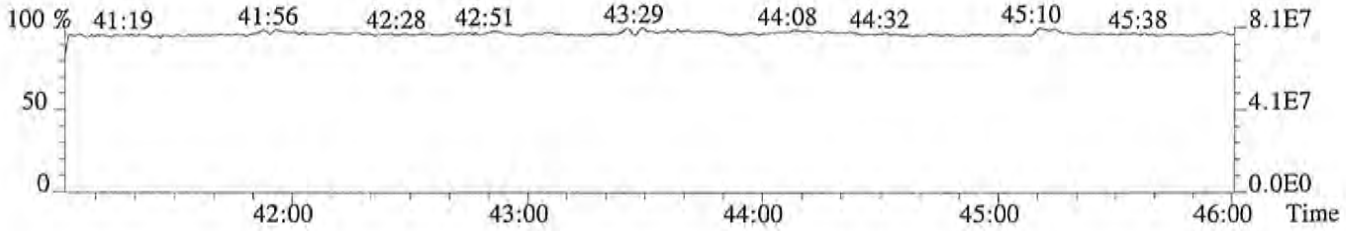
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1396.0,0.40%,F,T)



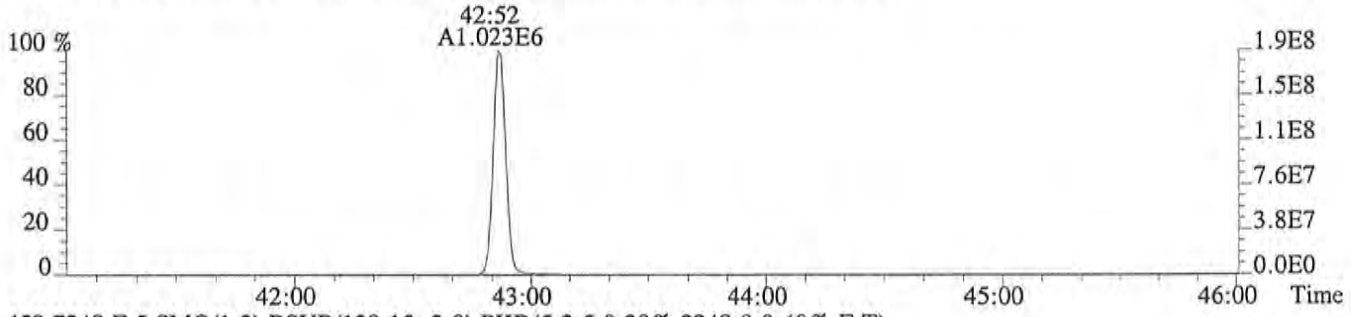
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



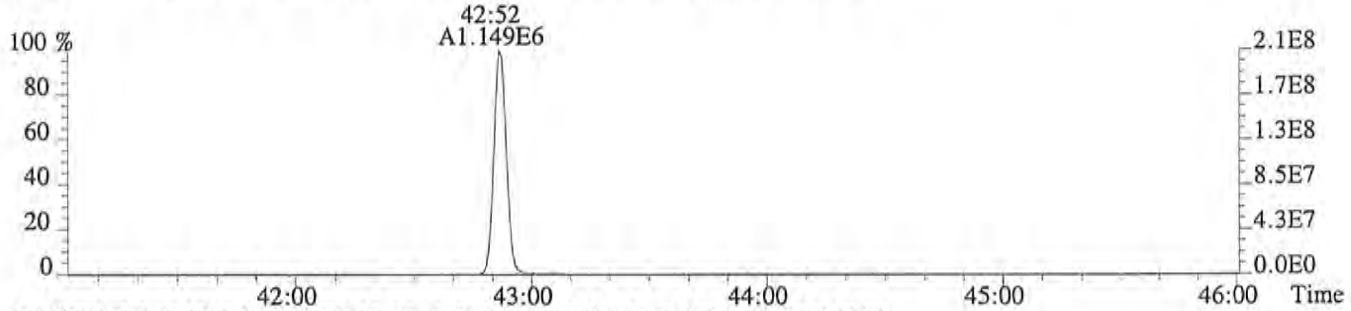
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



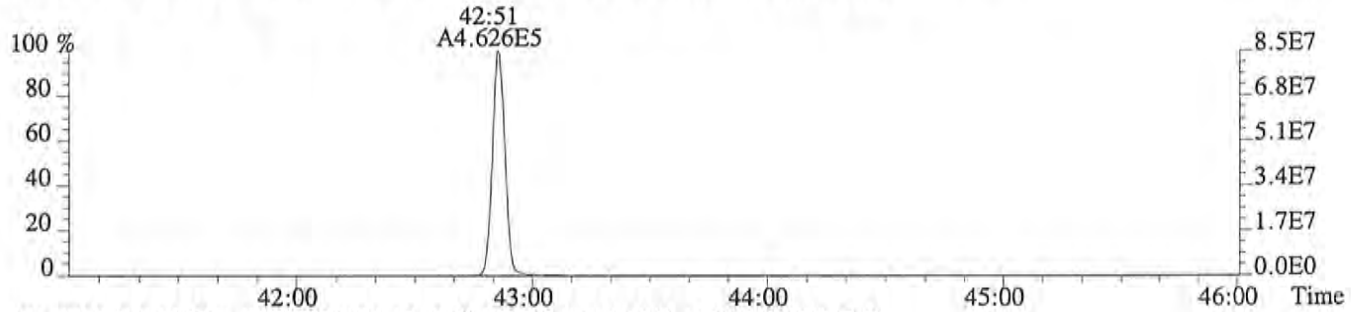
File:P600008 #1-448 Acq:19-AUG-2015 15:47:35 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS4
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1168.0,0.40%,F,T)



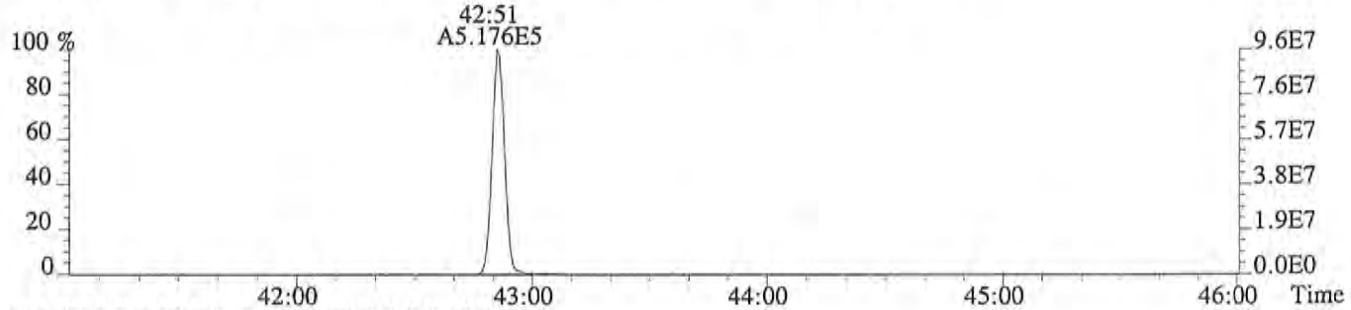
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2248.0,0.40%,F,T)



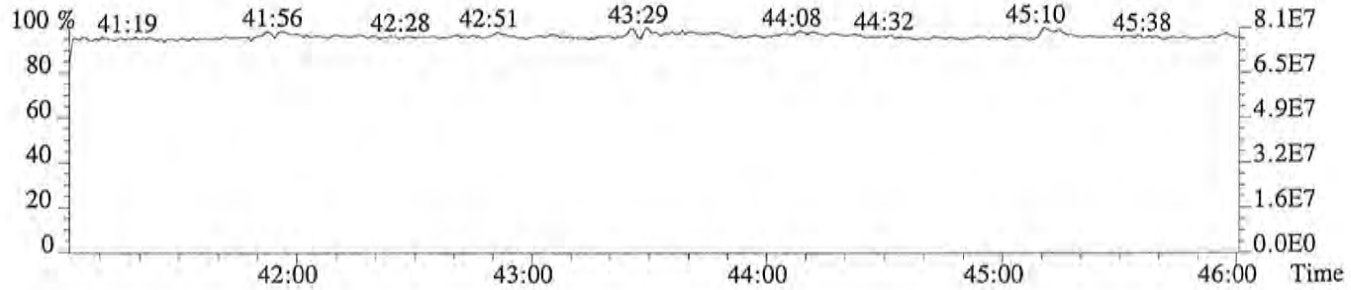
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1620.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1396.0,0.40%,F,T)



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



ALS ENVIRONMENTAL
Sample Response Summary

CLIENT ID.
76956

Run #6 Filename P600009 Samp: 1 Inj: 1 Acquired: 19-AUG-15 16:36:39
Processed: 20-AUG-15 08:56:30 Sample ID: CS5

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	29:04	5.698e+05	7.358e+05	0.77	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	33:03	5.069e+06	3.368e+06	1.51	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:55	4.895e+06	3.303e+06	1.48	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	36:30	4.378e+06	3.792e+06	1.15	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:37	4.614e+06	3.895e+06	1.18	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	37:06	4.324e+06	3.774e+06	1.15	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:50	4.202e+06	3.469e+06	1.21	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	39:04	4.112e+06	4.014e+06	1.02	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	40:30	3.888e+06	3.787e+06	1.03	yes	no	1.287
10	Unk	OCDF	43:05	5.424e+06	5.771e+06	0.94	yes	no	1.257
11	Unk	2,3,7,8-TCDD	29:48	5.437e+05	7.011e+05	0.78	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	34:12	3.735e+06	2.401e+06	1.56	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	37:14	3.464e+06	2.775e+06	1.25	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	37:18	3.218e+06	2.567e+06	1.25	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	37:32	3.598e+06	2.877e+06	1.25	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	40:01	3.202e+06	3.074e+06	1.04	yes	no	1.034
17	Unk	OCDD	42:52	4.667e+06	5.176e+06	0.90	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	29:04	3.019e+05	3.824e+05	0.79	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	33:03	5.165e+05	3.261e+05	1.58	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:55	5.329e+05	3.377e+05	1.58	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	36:30	2.330e+05	4.514e+05	0.52	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:36	2.592e+05	4.960e+05	0.52	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	37:05	2.509e+05	4.802e+05	0.52	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:50	2.239e+05	4.271e+05	0.52	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	39:03	1.807e+05	4.047e+05	0.45	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:29	1.815e+05	4.093e+05	0.44	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	29:48	2.709e+05	3.451e+05	0.79	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	34:11	3.952e+05	2.519e+05	1.57	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	37:13	3.311e+05	2.621e+05	1.26	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	37:18	3.070e+05	2.433e+05	1.26	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	40:00	3.096e+05	2.924e+05	1.06	yes	no	0.892
32	IS	13C-OCDD	42:52	4.253e+05	4.724e+05	0.90	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	29:15	2.161e+05	2.739e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:32	3.579e+05	2.852e+05	1.25	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:48	1.300e+06				no	1.263

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Signal/Noise Height Ratio Summary

CLIENT ID.
76956

Run #6 Filename P600009 Samp: 1 Inj: 1 Acquired: 19-AUG-15 16:36:39
Processed: 20-AUG-15 08:56:30 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	1.17e+08	1.82e+03	6.4e+04	1.51e+08	2.56e+03	5.9e+04
2	1,2,3,7,8-PeCDF	1.04e+09	4.22e+03	2.5e+05	7.01e+08	3.35e+03	2.1e+05
3	2,3,4,7,8-PeCDF	1.05e+09	4.22e+03	2.5e+05	7.21e+08	3.35e+03	2.2e+05
4	1,2,3,4,7,8-HxCDF	9.69e+08	4.94e+03	2.0e+05	8.70e+08	1.94e+03	4.5e+05
5	1,2,3,6,7,8-HxCDF	1.05e+09	4.94e+03	2.1e+05	9.13e+08	1.94e+03	4.7e+05
6	2,3,4,6,7,8-HxCDF	9.97e+08	4.94e+03	2.0e+05	9.00e+08	1.94e+03	4.6e+05
7	1,2,3,7,8,9-HxCDF	9.56e+08	4.94e+03	1.9e+05	7.83e+08	1.94e+03	4.0e+05
8	1,2,3,4,6,7,8-HpCDF	9.41e+08	7.45e+04	1.3e+04	9.27e+08	6.28e+04	1.5e+04
9	1,2,3,4,7,8,9-HpCDF	8.46e+08	7.45e+04	1.1e+04	8.25e+08	6.28e+04	1.3e+04
10	OCDF	1.02e+09	1.29e+03	7.9e+05	1.03e+09	2.48e+03	4.1e+05
11	2,3,7,8-TCDD	1.16e+08	2.61e+03	4.4e+04	1.50e+08	2.32e+03	6.5e+04
12	1,2,3,7,8-PeCDD	8.04e+08	3.48e+03	2.3e+05	5.13e+08	2.10e+03	2.4e+05
13	1,2,3,4,7,8-HxCDD	8.19e+08	1.94e+03	4.2e+05	6.51e+08	1.46e+03	4.5e+05
14	1,2,3,6,7,8-HxCDD	7.51e+08	1.94e+03	3.9e+05	6.07e+08	1.46e+03	4.2e+05
15	1,2,3,7,8,9-HxCDD	8.35e+08	1.94e+03	4.3e+05	6.74e+08	1.46e+03	4.6e+05
16	1,2,3,4,6,7,8-HpCDD	6.97e+08	1.48e+04	4.7e+04	6.63e+08	1.69e+04	3.9e+04
17	OCDD	8.88e+08	1.77e+03	5.0e+05	9.65e+08	1.72e+03	5.6e+05
18	13C-2,3,7,8-TCDF	6.06e+07	7.00e+03	8.7e+03	7.67e+07	3.24e+03	2.4e+04
19	13C-1,2,3,7,8-PeCDF	1.07e+08	2.01e+03	5.3e+04	6.70e+07	3.20e+03	2.1e+04
20	13C-2,3,4,7,8-PeCDF	1.14e+08	2.01e+03	5.7e+04	7.23e+07	3.20e+03	2.3e+04
21	13C-1,2,3,4,7,8-HxCDF	5.21e+07	1.12e+03	4.6e+04	1.02e+08	3.30e+03	3.1e+04
22	13C-1,2,3,6,7,8-HxCDF	6.00e+07	1.12e+03	5.4e+04	1.16e+08	3.30e+03	3.5e+04
23	13C-2,3,4,6,7,8-HxCDF	5.82e+07	1.12e+03	5.2e+04	1.13e+08	3.30e+03	3.4e+04
24	13C-1,2,3,7,8,9-HxCDF	5.08e+07	1.12e+03	4.5e+04	9.71e+07	3.30e+03	2.9e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.05e+07	5.44e+03	7.4e+03	9.21e+07	2.72e+03	3.4e+04
26	13C-1,2,3,4,7,8,9-HpCDF	3.89e+07	5.44e+03	7.1e+03	8.85e+07	2.72e+03	3.3e+04
27	13C-2,3,7,8-TCDD	5.82e+07	1.09e+04	5.3e+03	7.39e+07	4.66e+03	1.6e+04
28	13C-1,2,3,7,8-PeCDD	8.53e+07	2.62e+03	3.3e+04	5.47e+07	1.81e+03	3.0e+04
29	13C-1,2,3,4,7,8-HxCDD	7.80e+07	6.01e+03	1.3e+04	6.12e+07	3.18e+03	1.9e+04
30	13C-1,2,3,6,7,8-HxCDD	7.07e+07	6.01e+03	1.2e+04	5.69e+07	3.18e+03	1.8e+04
31	13C-1,2,3,4,6,7,8-HpCDD	6.58e+07	2.96e+03	2.2e+04	6.18e+07	2.63e+03	2.3e+04
32	13C-OCDD	8.04e+07	1.98e+03	4.1e+04	8.87e+07	1.82e+03	4.9e+04
33	13C-1,2,3,4-TCDD	4.39e+07	1.09e+04	4.0e+03	5.59e+07	4.66e+03	1.2e+04
34	13C-1,2,3,7,8,9-HxCDD	8.14e+07	6.01e+03	1.4e+04	6.56e+07	3.18e+03	2.1e+04
35	37Cl-2,3,7,8-TCDD	2.80e+08	3.21e+03	8.7e+04			

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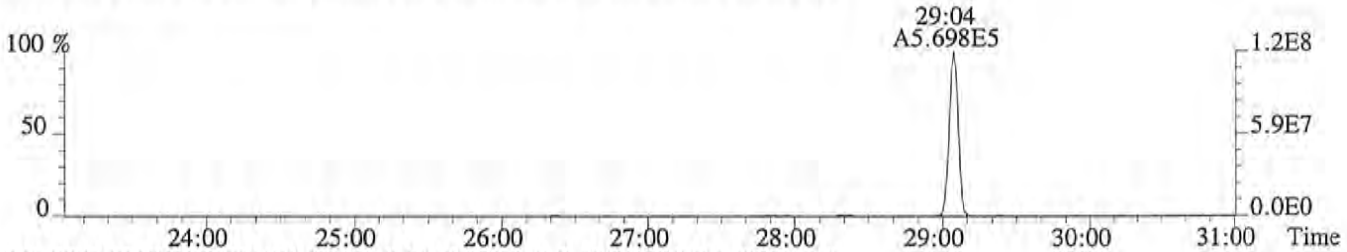
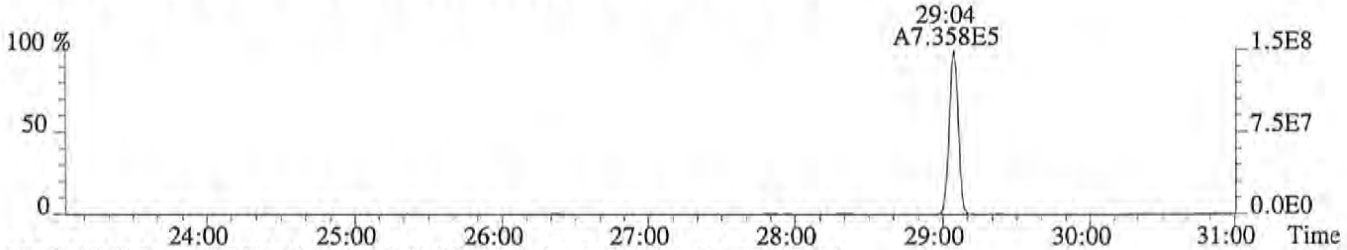
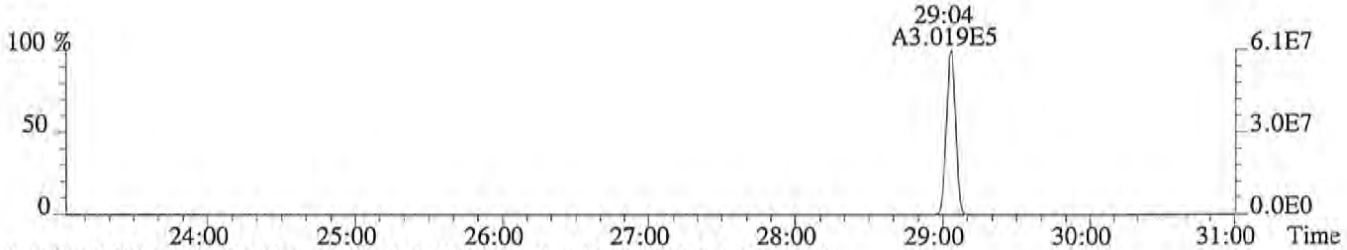
File:P600009 #1-566 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1816.0,1.00%,F,T)



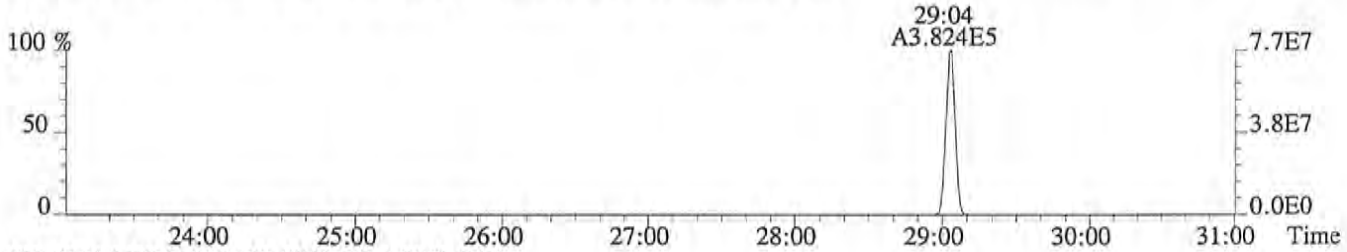
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2560.0,1.00%,F,T)



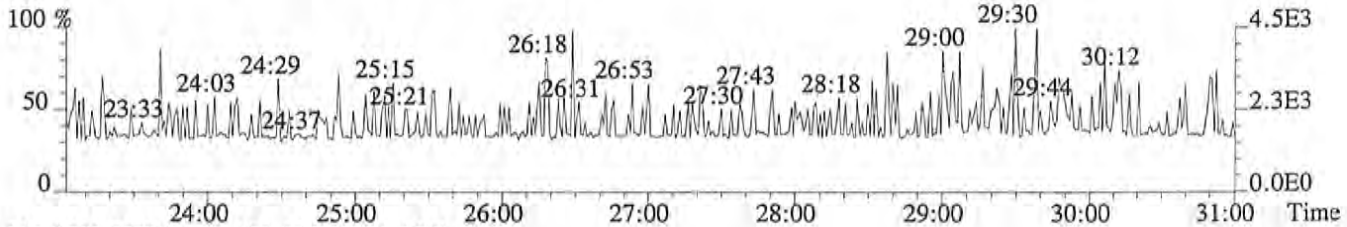
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7004.0,1.00%,F,T)



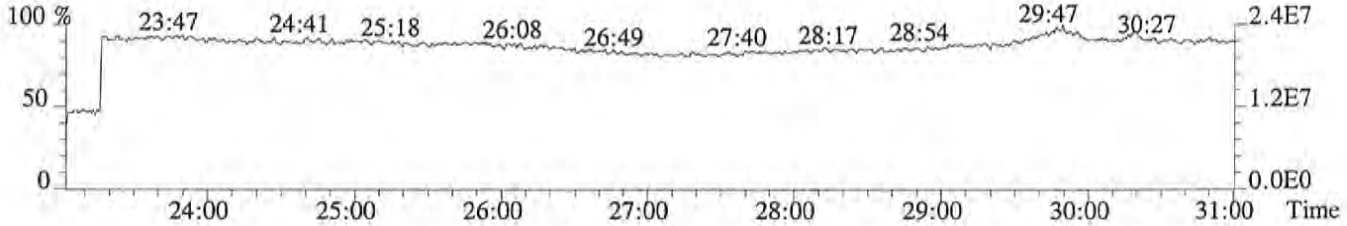
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3244.0,1.00%,F,T)



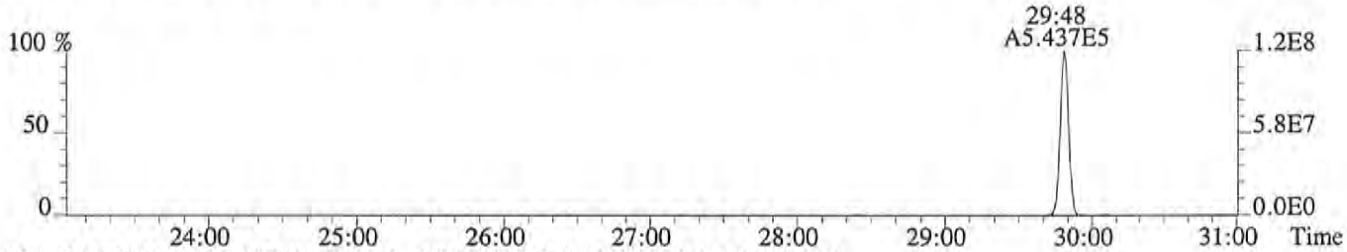
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



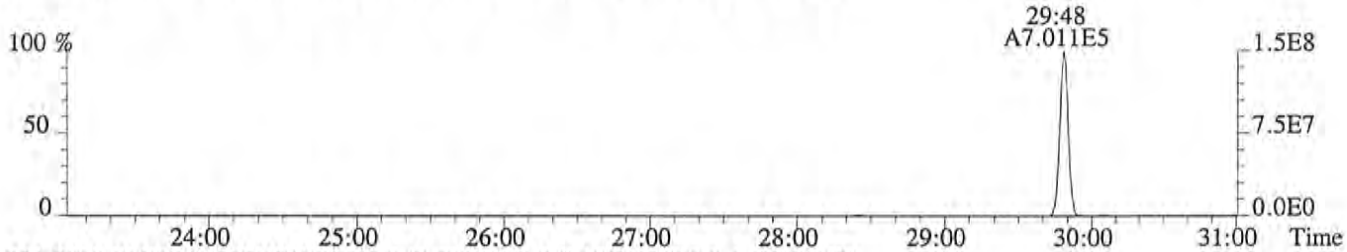
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



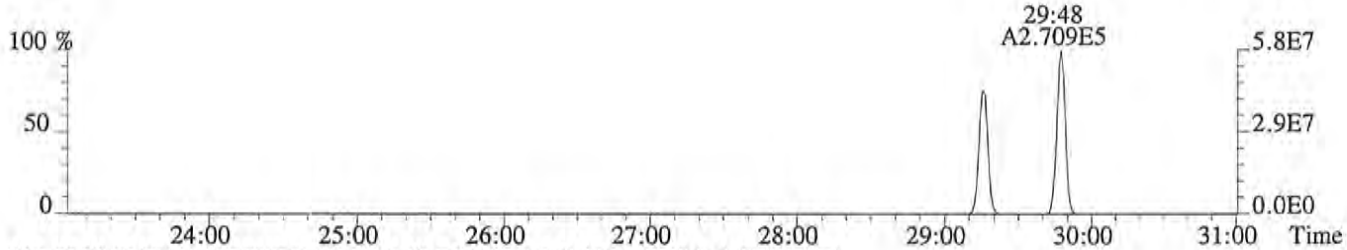
File:P600009 #1-566 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2612.0,1.00%,F,T)



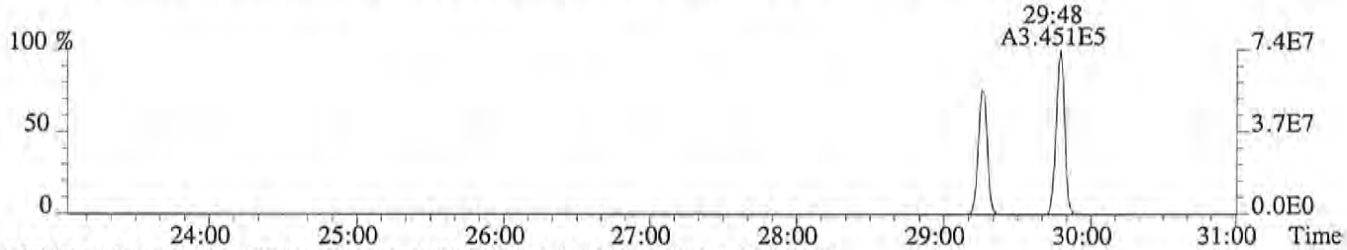
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2320.0,1.00%,F,T)



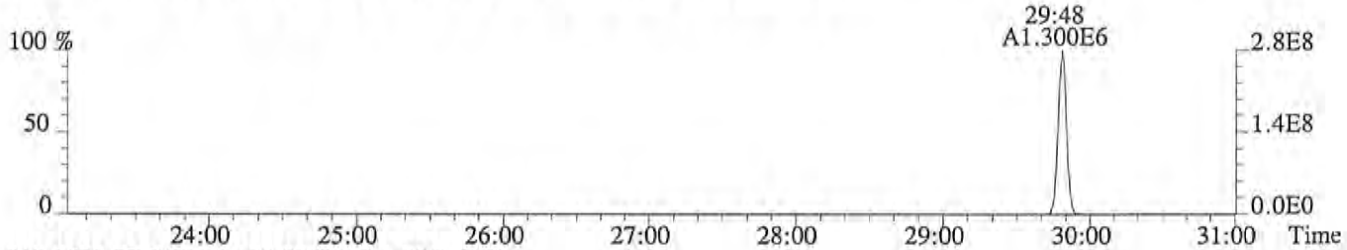
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,10896.0,1.00%,F,T)



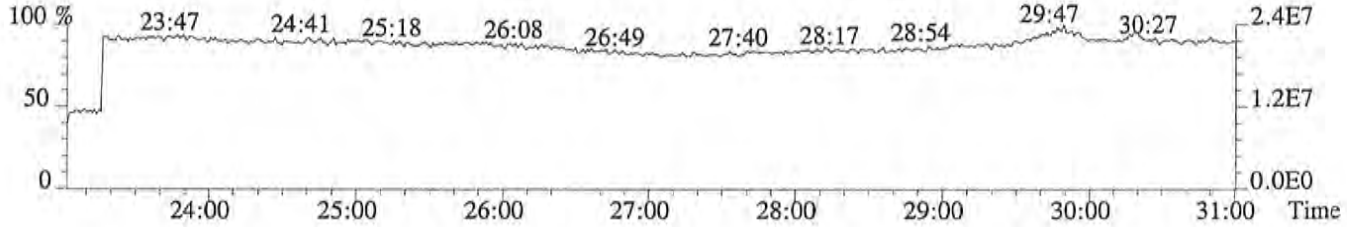
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4660.0,1.00%,F,T)



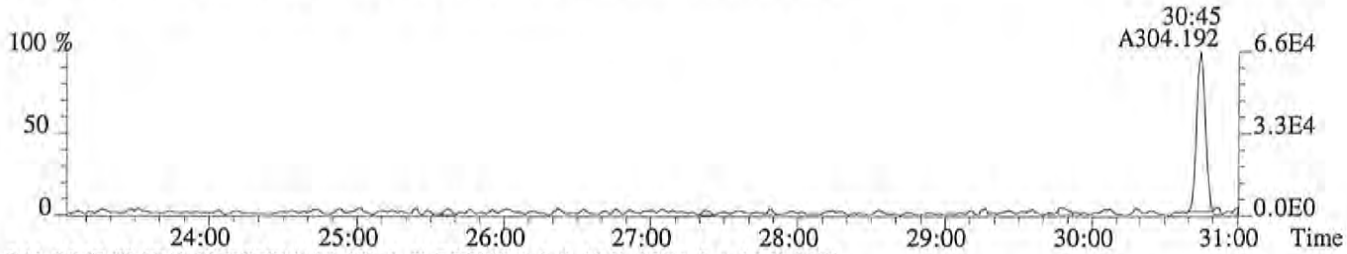
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3208.0,1.00%,F,T)



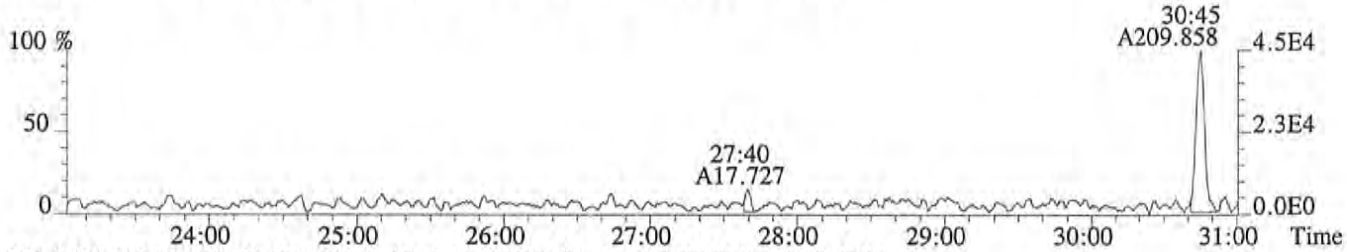
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



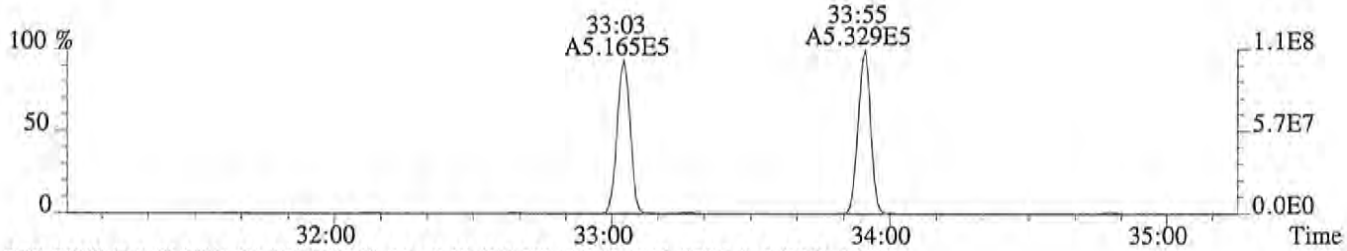
File:P600009 #1-566 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1568.0,1.00%,F,T)



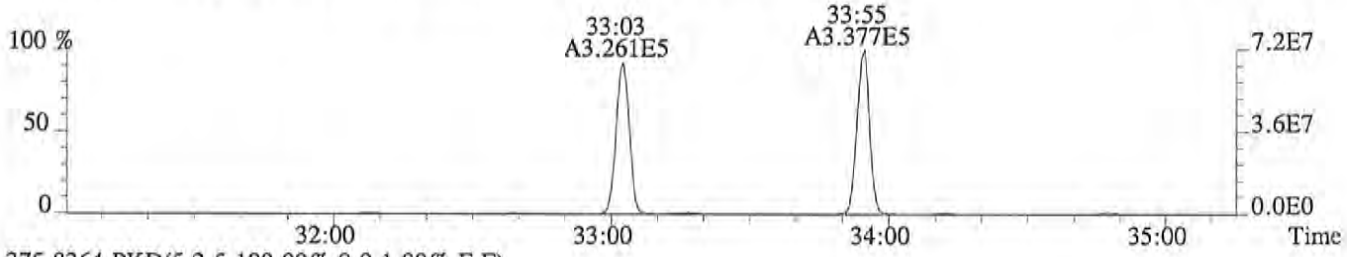
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3272.0,1.00%,F,T)



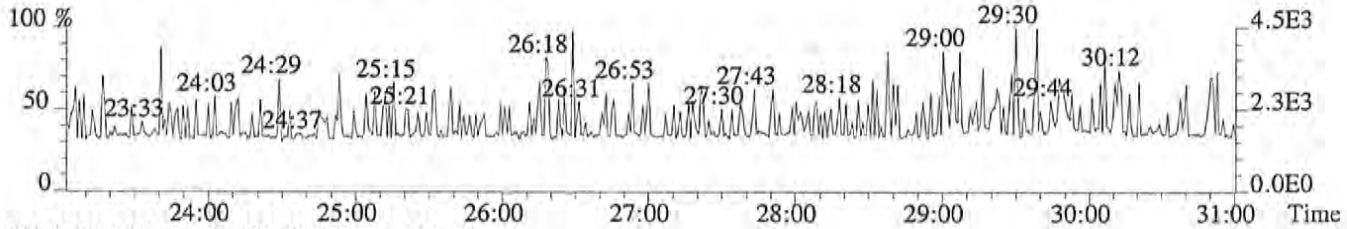
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2008.0,1.00%,F,T)



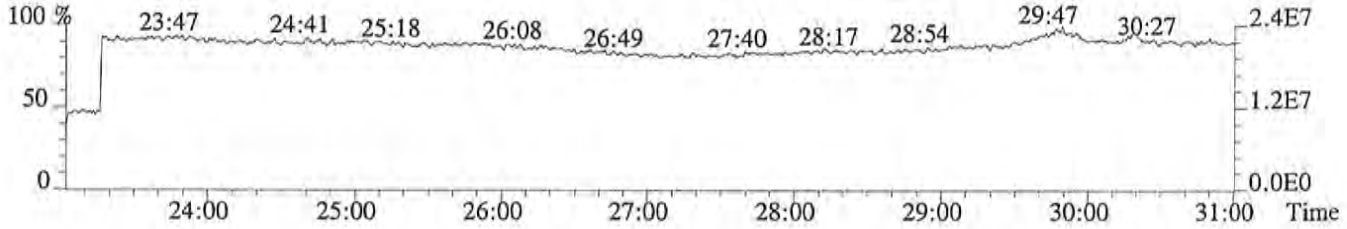
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3196.0,1.00%,F,T)



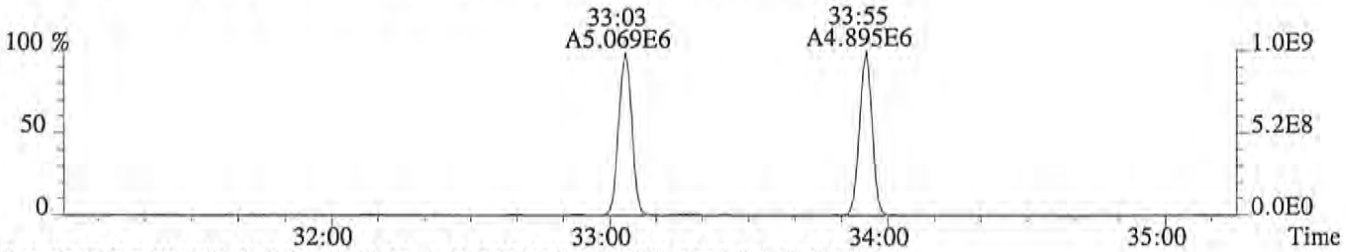
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



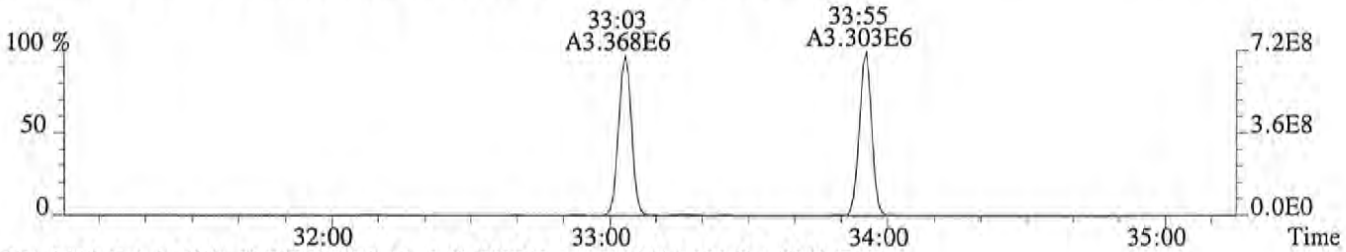
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



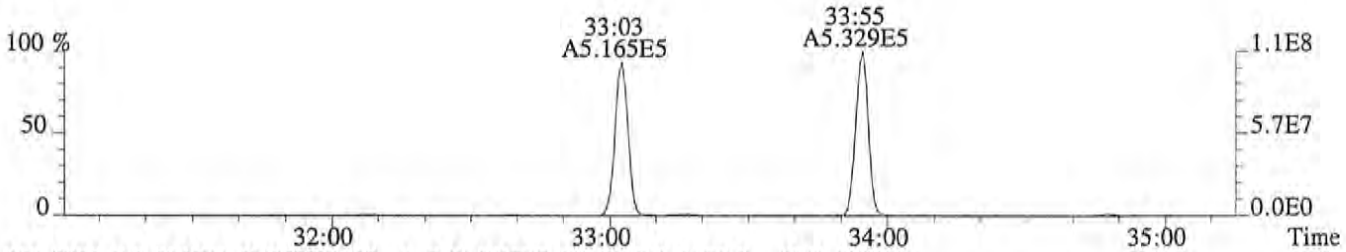
File:P600009 #1-380 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4216.0,1.00%,F,T)



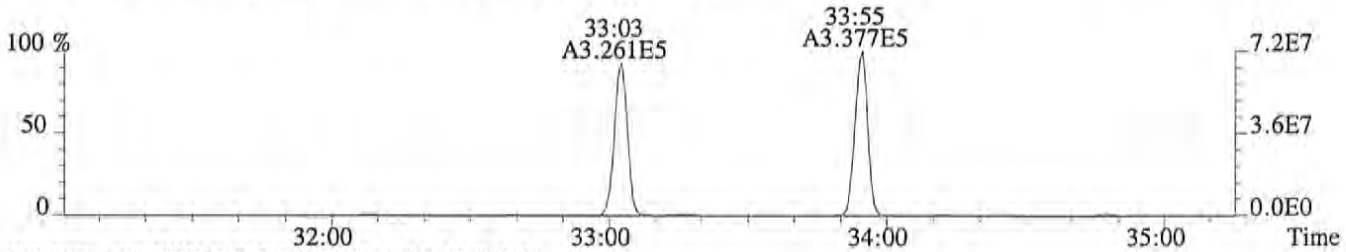
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3352.0,1.00%,F,T)



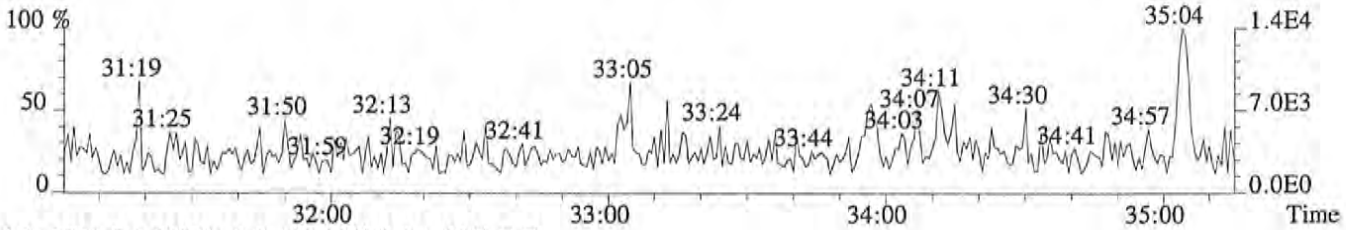
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2008.0,1.00%,F,T)



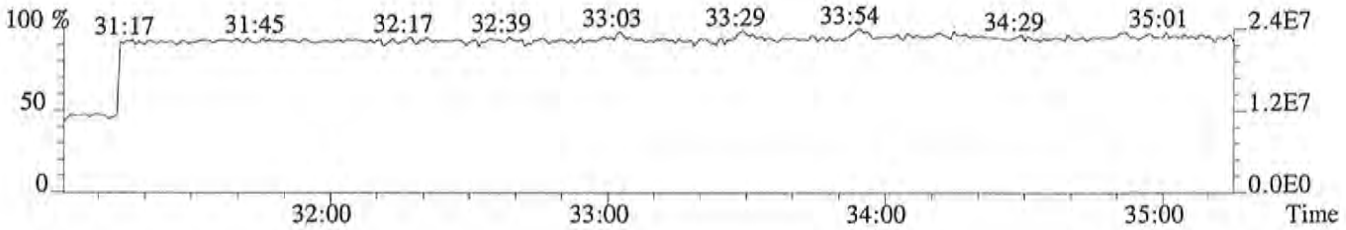
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3196.0,1.00%,F,T)



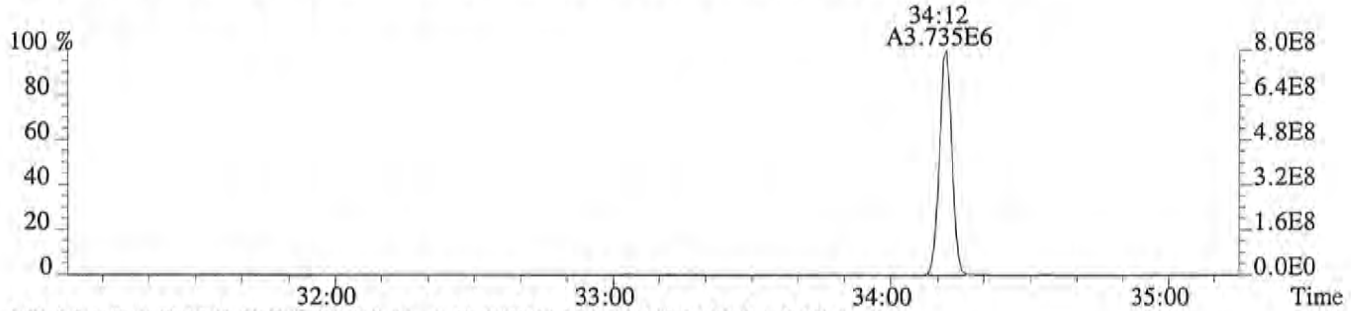
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



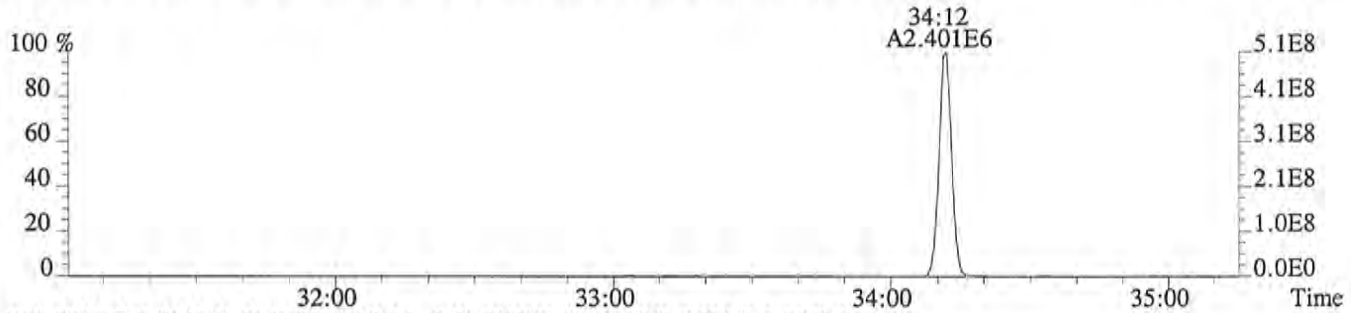
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



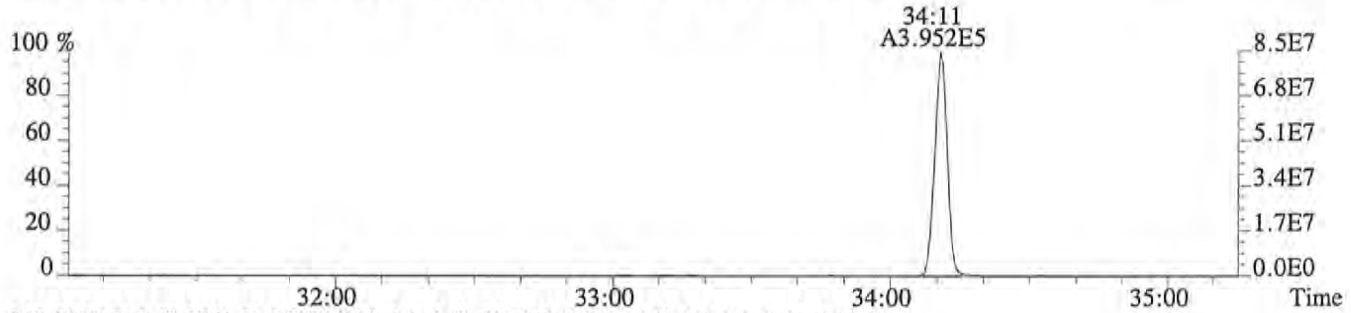
File:P600009 #1-380 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3476.0,1.00%,F,T)



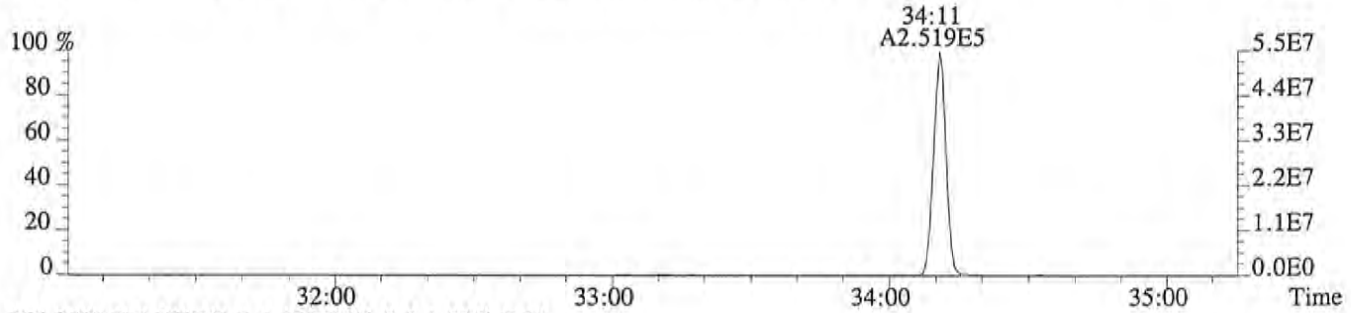
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2100.0,1.00%,F,T)



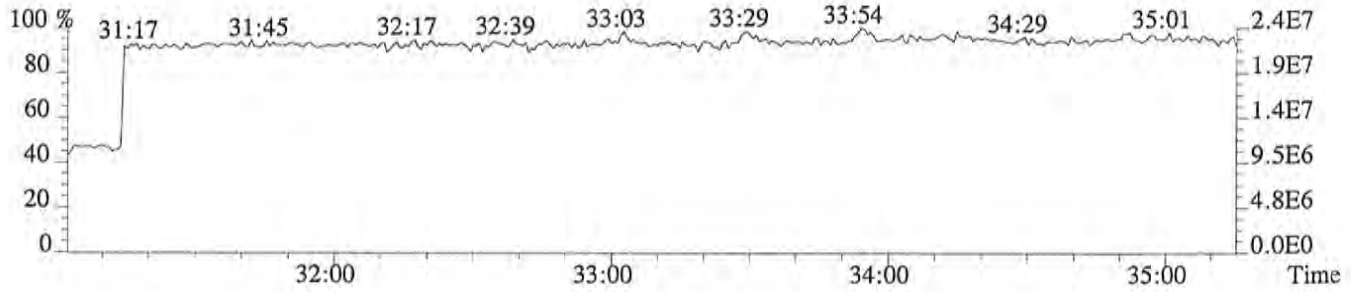
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2624.0,1.00%,F,T)



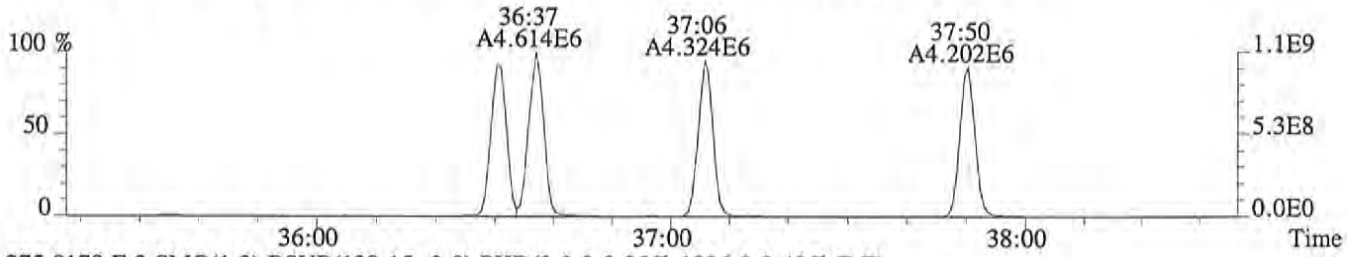
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1812.0,1.00%,F,T)



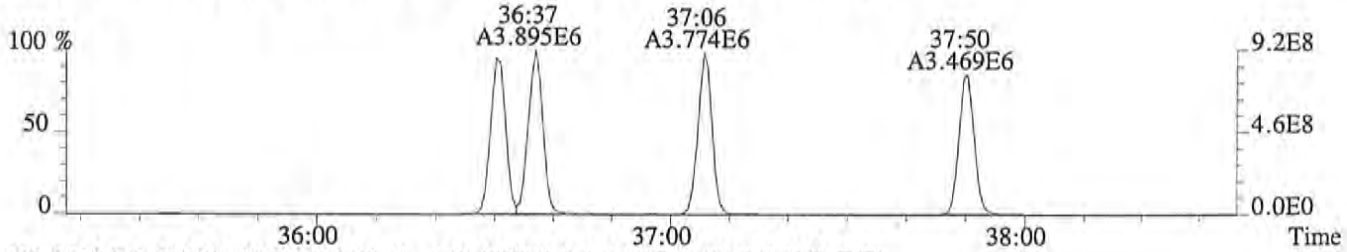
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



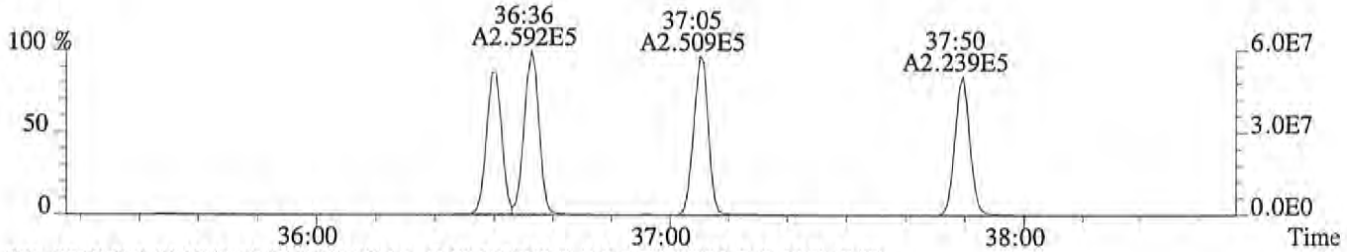
File:P600009 #1-299 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4944.0,0.40%,F,T)



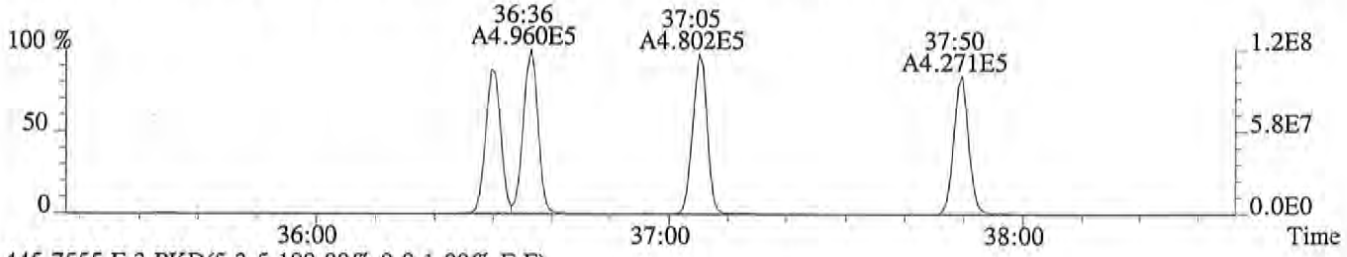
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1936.0,0.40%,F,T)



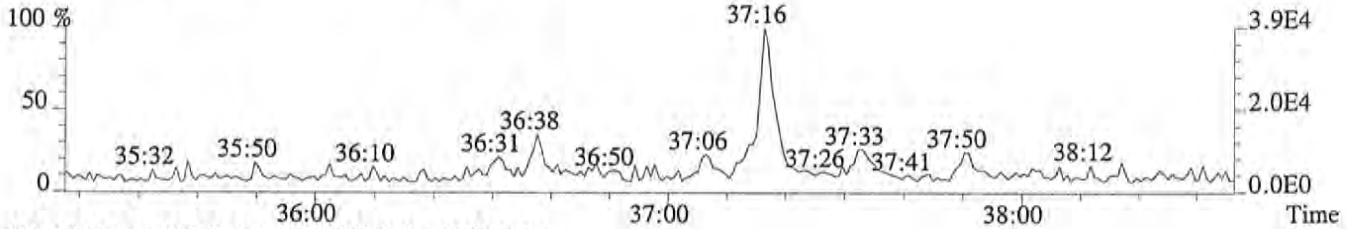
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1120.0,0.40%,F,T)



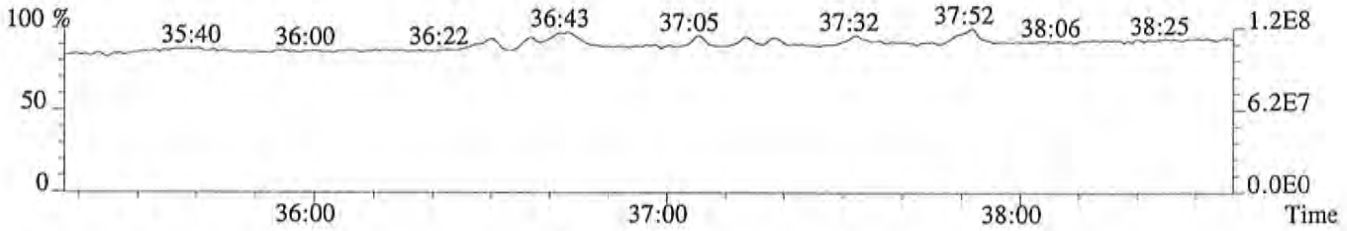
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3304.0,0.40%,F,T)



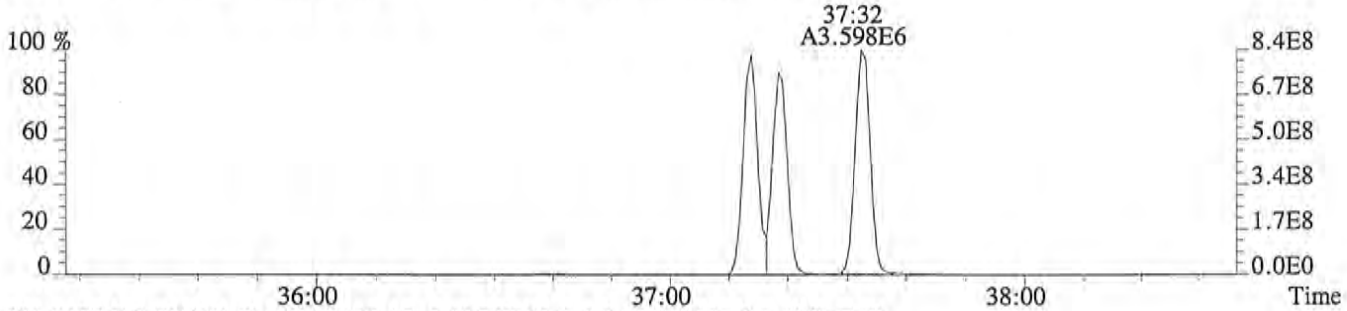
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



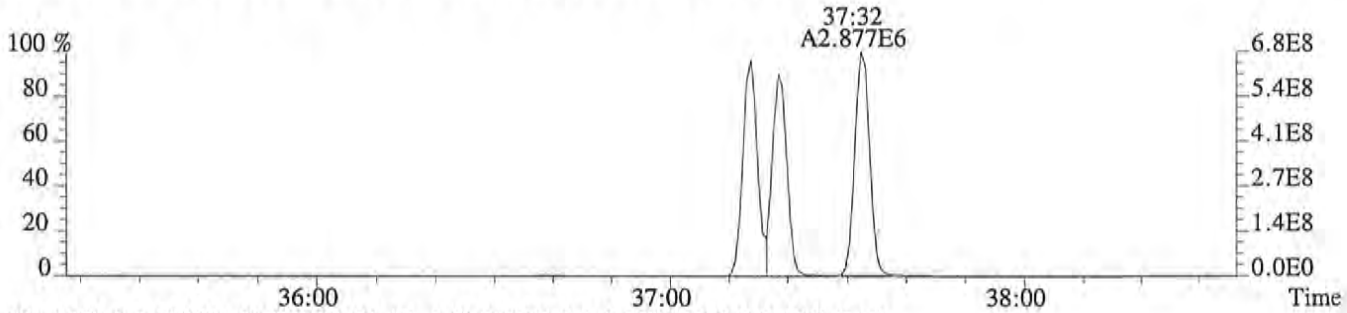
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



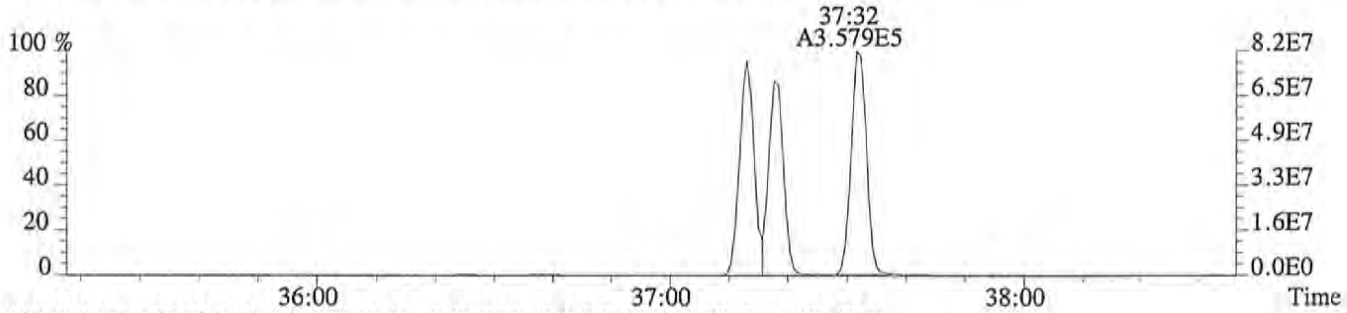
File:P600009 #1-299 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1936.0,0.40%,F,T)



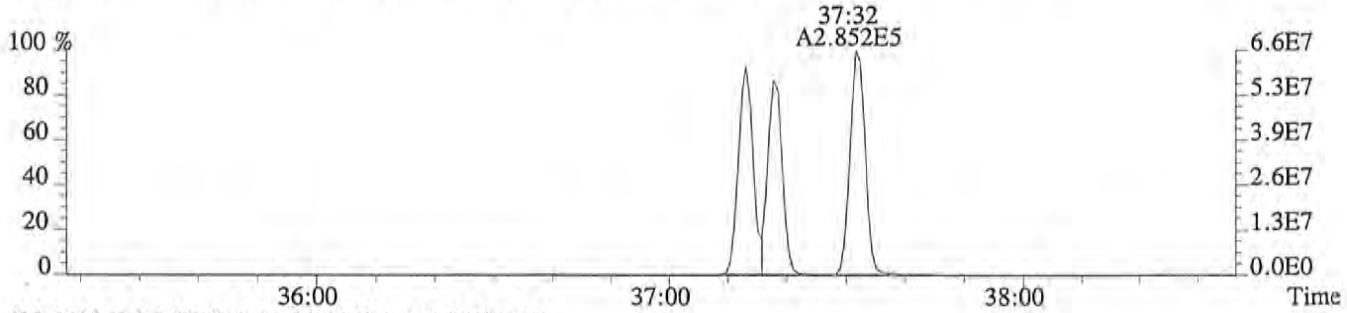
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1456.0,0.40%,F,T)



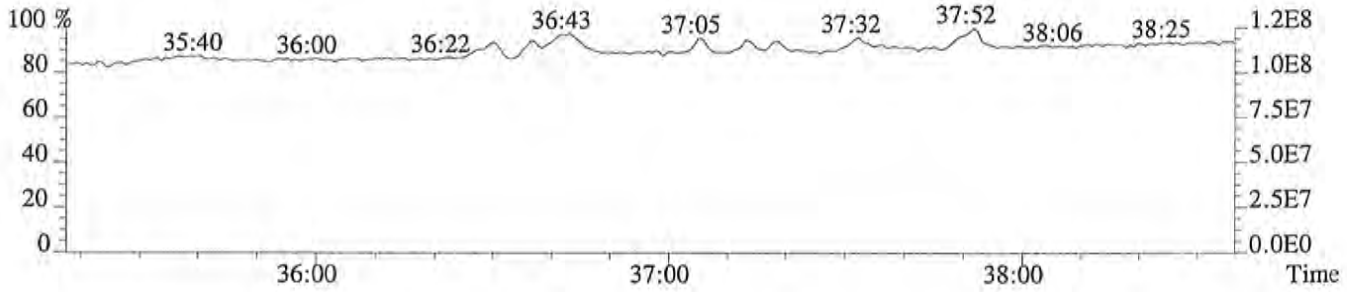
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6008.0,0.40%,F,T)



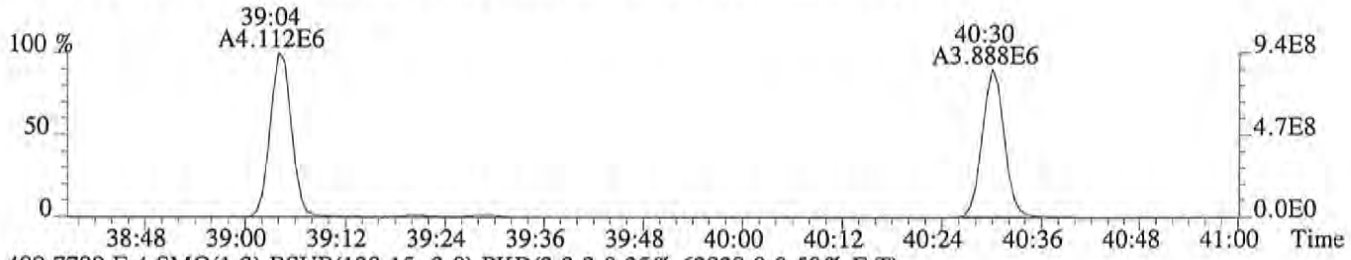
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3180.0,0.40%,F,T)



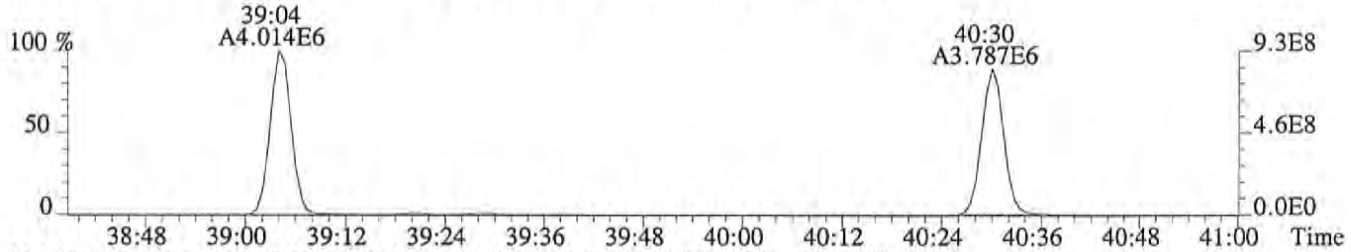
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



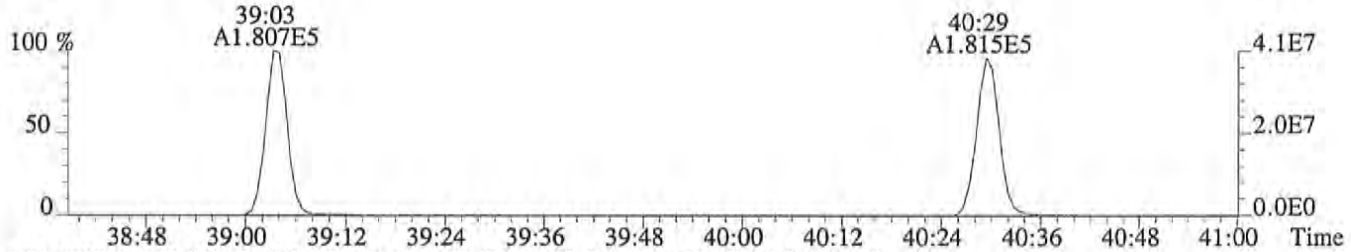
File:P600009 #1-213 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,74492.0,0.50%,F,T)



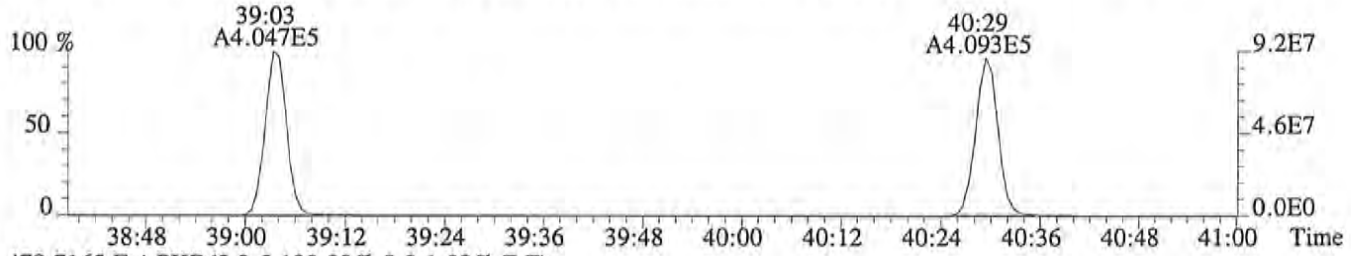
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,62828.0,0.50%,F,T)



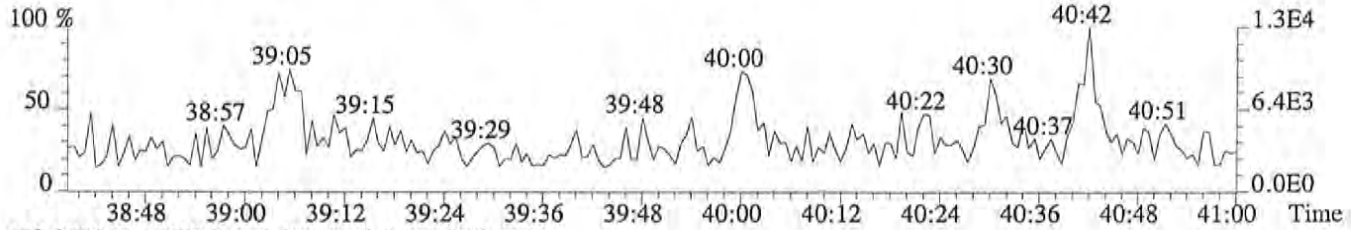
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5444.0,0.50%,F,T)



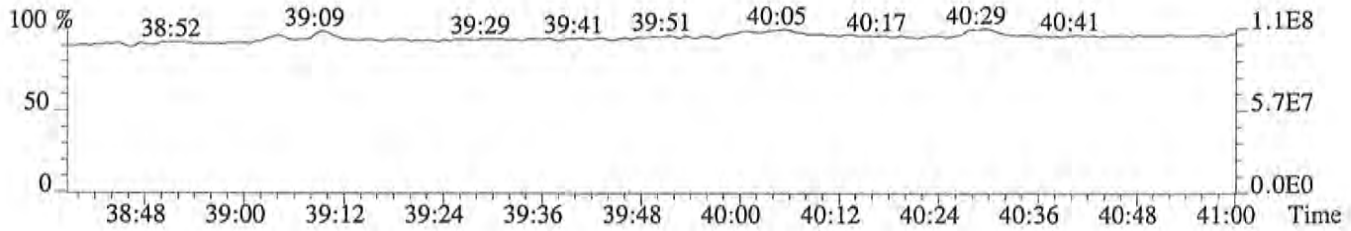
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2716.0,0.50%,F,T)



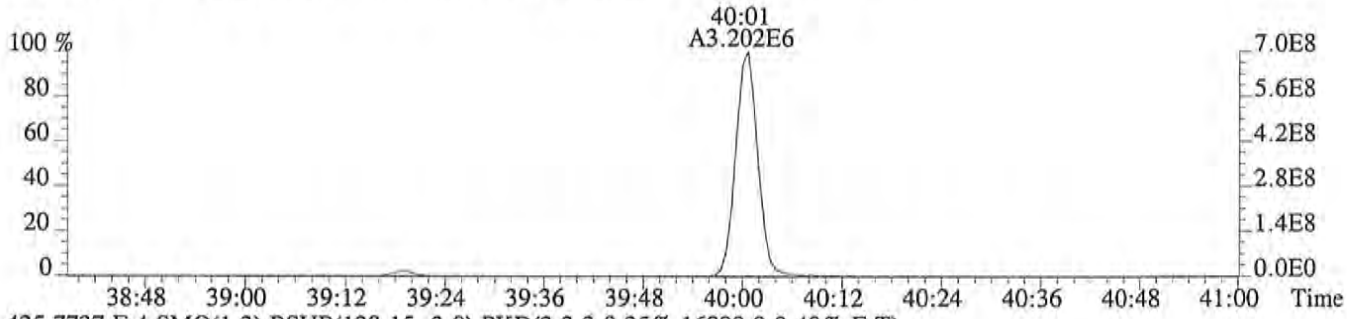
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



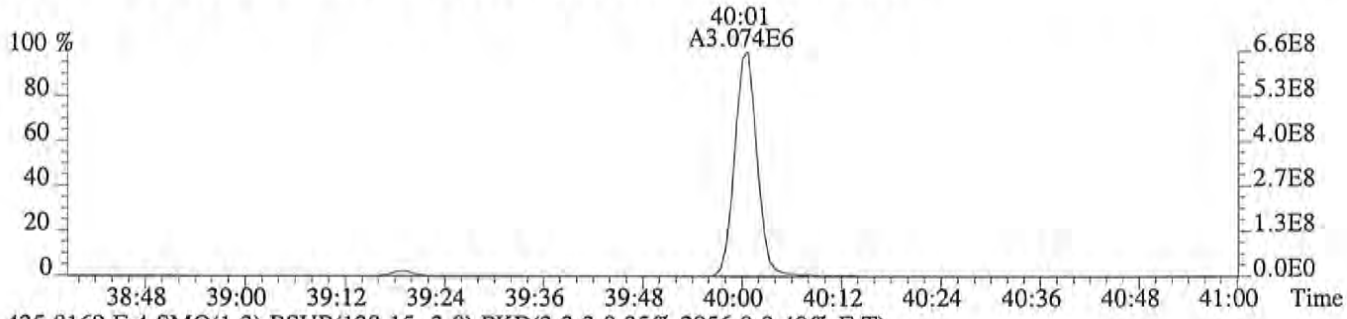
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



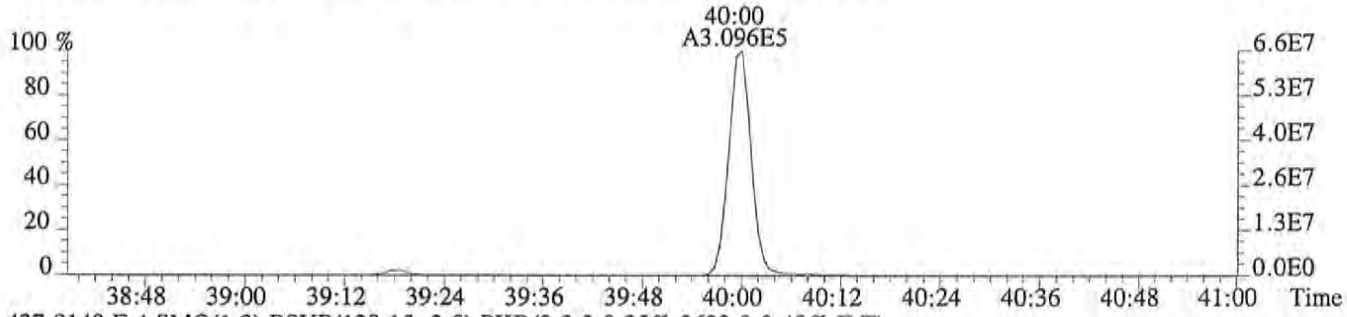
File:P600009 #1-213 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,14836.0,0.40%,F,T)



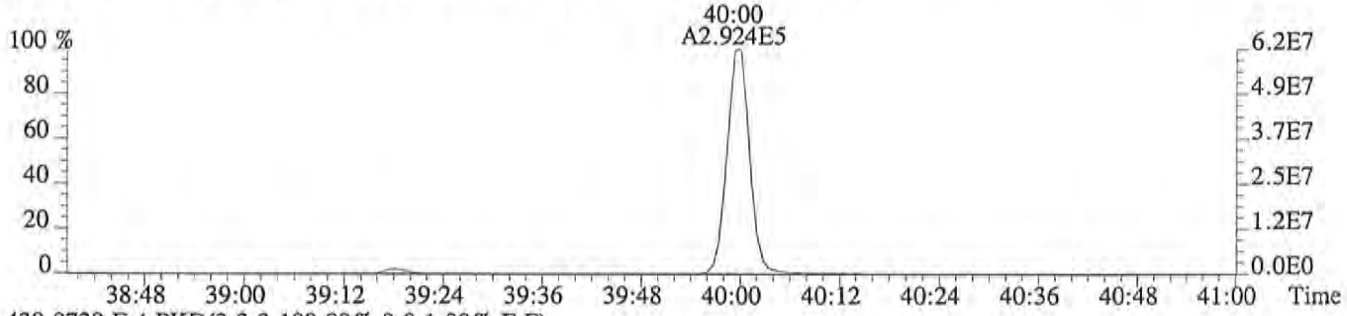
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,16880.0,0.40%,F,T)



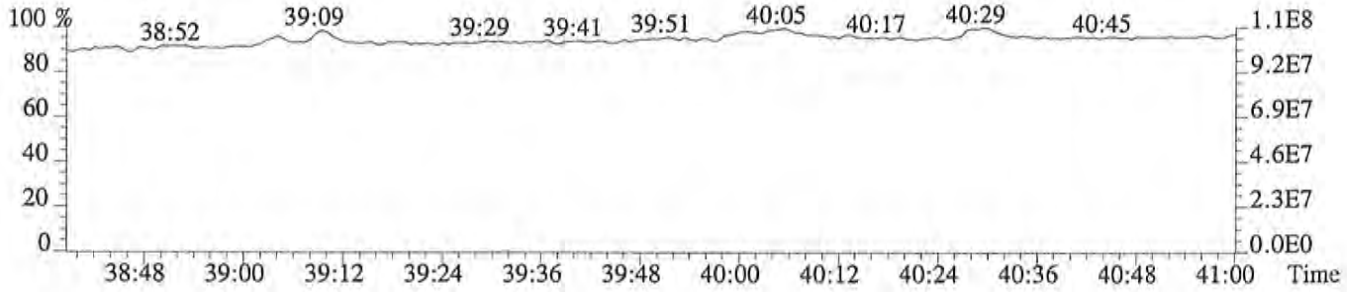
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2956.0,0.40%,F,T)



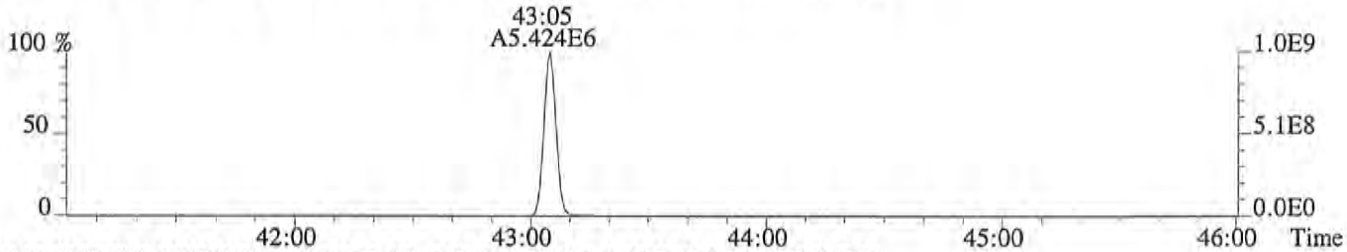
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2632.0,0.40%,F,T)



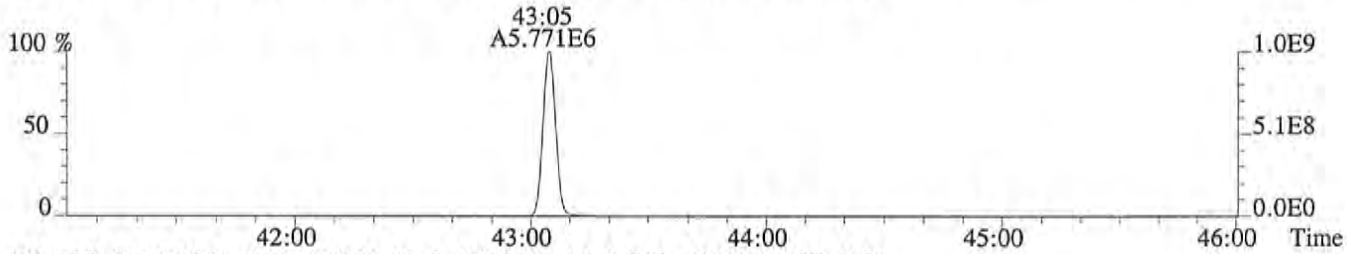
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



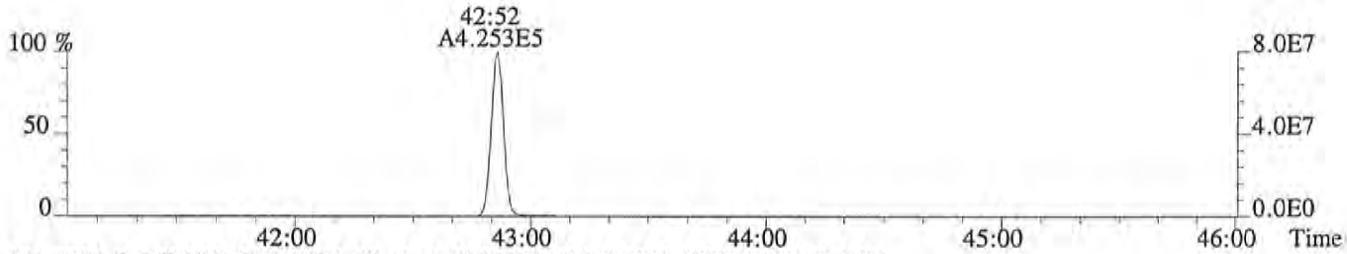
File:P600009 #1-448 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1288.0,0.40%,F,T)



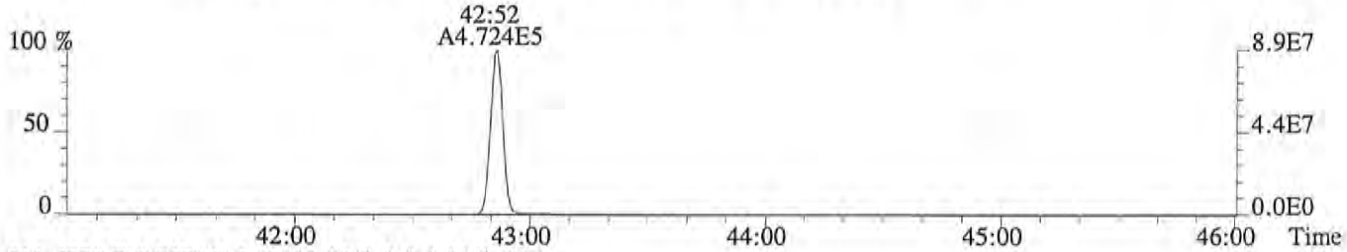
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2484.0,0.40%,F,T)



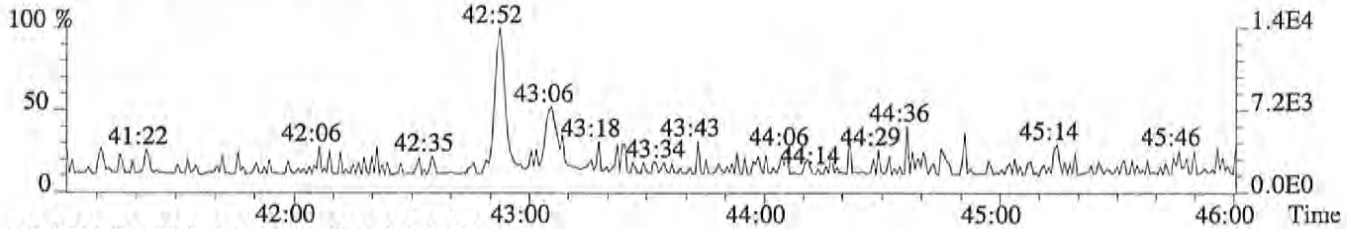
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1980.0,0.40%,F,T)



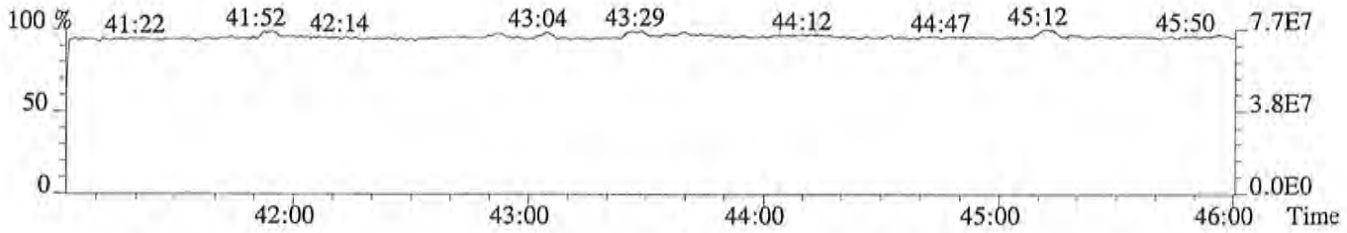
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1820.0,0.40%,F,T)



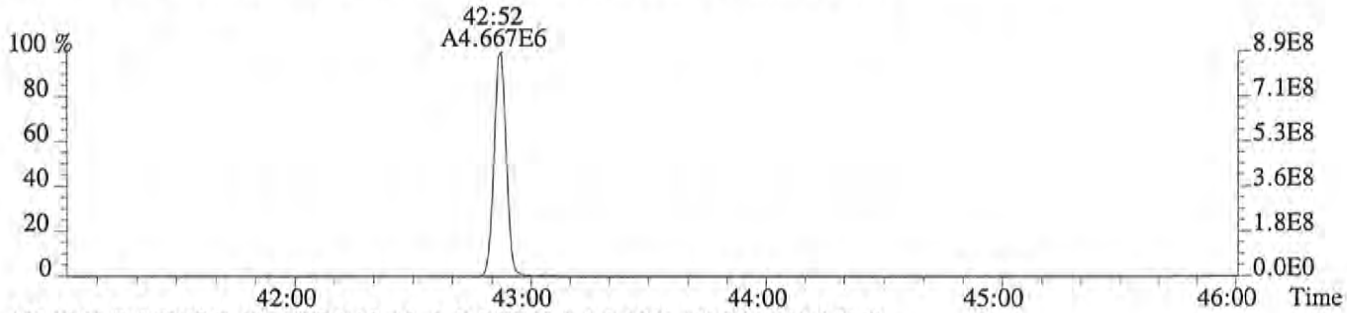
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



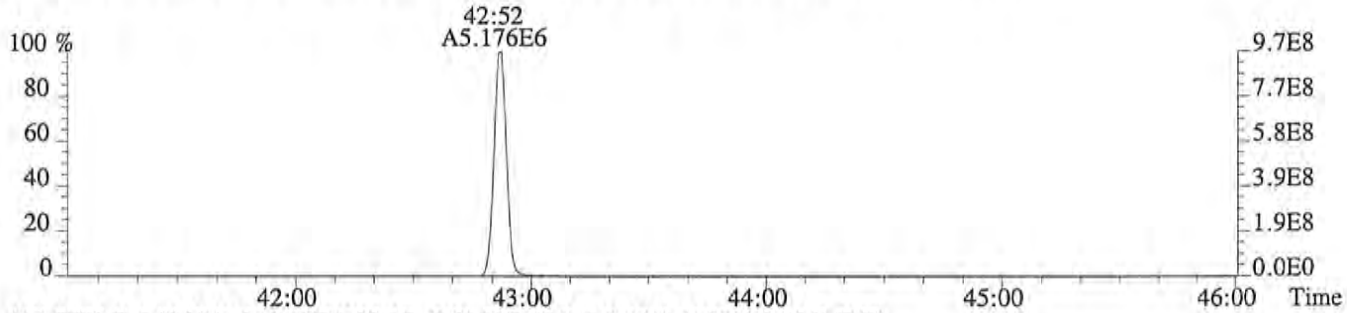
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



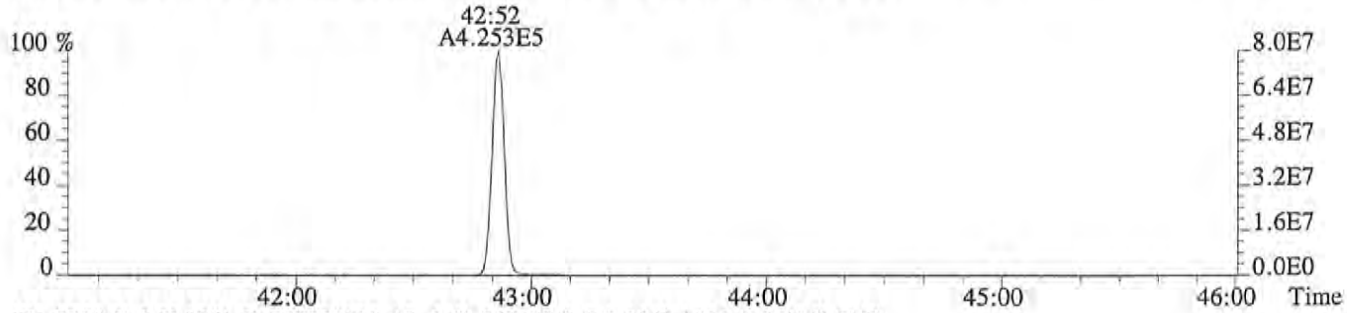
File:P600009 #1-448 Acq:19-AUG-2015 16:36:39 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS5
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1772.0,0.40%,F,T)



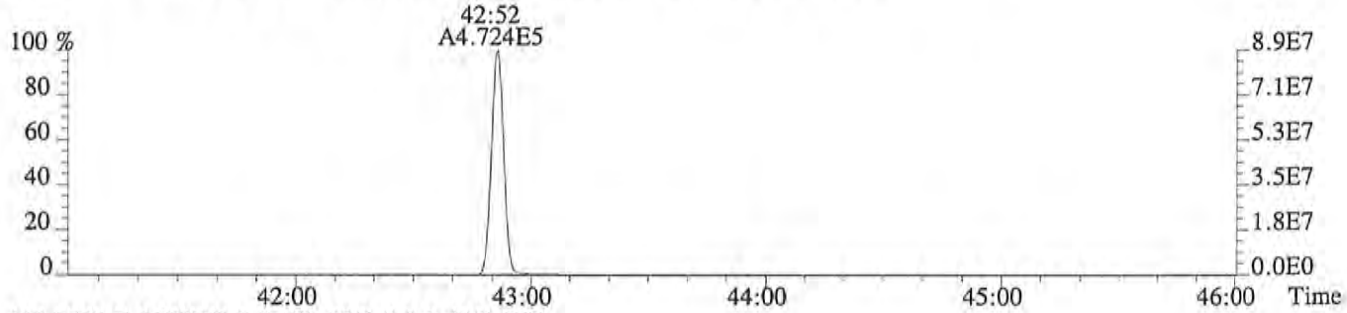
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1720.0,0.40%,F,T)



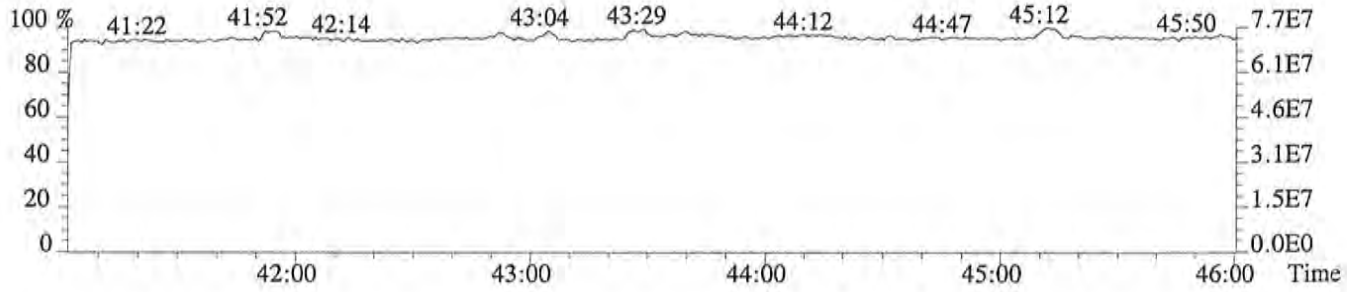
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1980.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1820.0,0.40%,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: 08/19/15

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P600011 Analysis Date: 19-AUG-15 Time: 18:14:46

NATIVE ANALYTES	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	CONC. FOUND	CONC. RANGE (3) (ng/mL)	%RSD (4)
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	9.8	7.8 - 12.9	-1.6
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	50	39 - 65	1.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	50	39 - 64	-1.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	50	39 - 64	0.2
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	48	41 - 61	-3.9
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	50	43 - 58	-0.1
OCDD	M+2/M+4	0.89	0.76-1.02	99	79 - 126	-0.6
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	10.1	8.4 - 12.0	0.7
1,2,3,7,8-PeCDF	M+2/M+4	1.53	1.32-1.78	50	41 - 60	0.4
2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	50	41 - 61	0.6
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	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	50	44 - 57	0.1
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	50	45 - 56	0.3
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	49	44 - 57	-1.2
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	50	45 - 55	-0.6
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88-1.20	49	43 - 58	-1.1
OCDF	M+2/M+4	0.90	0.76-1.02	100	63 - 159	-0.2

(1) See Table 8, Method 1613B, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613B.

(3) Contract-required concentration range as specified in Table 6, Method 1613B, under VER.

(4) The beginning CCAL %RSD for the 17 unlabeled standard must not exceed +/- 20%, Section 7.7.4.1. The ending CCAL must not exceed +/-25%, Section 8.3.2.4, Method 8290

12/2012
1613F4A.FRM

USEPA - ITD

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: ALS ENVIRONMENTAL Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 08/19/15

Instrument ID: E-HRMS-08 GC Column ID: DB-5MSUI

VER Data Filename: P600011 Analysis Date: 19-AUG-15 Time: 18:14:46

	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	103	82 - 121	2.9
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32-1.78	104	62 - 160	3.6
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	101	85 - 117	0.8
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	105	85 - 118	4.7
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	108	72 - 138	7.9
13C-OCDD	M+2/M+4	0.90	0.76-1.02	218	96 - 415	9.0
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	98	71 - 140	-1.6
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	101	76 - 130	1.4
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	105	77 - 130	4.6
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	100	76 - 131	-0.2
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	102	70 - 143	2.5
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	100	74 - 135	-0.4
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	102	73 - 137	2.1
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	104	78 - 129	4.1
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	106	77 - 129	6.3
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD				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.
54819

Run #7 Filename P600011 Samp: 1 Inj: 1 Acquired: 19-AUG-15 18:14:46
Processed: 20-AUG-15 09:52:05 Sample ID: CS3 SECOND SOURCE

	Typ	Name	RT-1	Resp 1	Resp 2	Ratio	Meet	Mod?	RRF
1	Unk	2,3,7,8-TCDF	29:04	3.220e+04	4.203e+04	0.77	yes	no	0.941
2	Unk	1,2,3,7,8-PeCDF	33:03	2.558e+05	1.669e+05	1.53	yes	no	0.987
3	Unk	2,3,4,7,8-PeCDF	33:55	2.522e+05	1.639e+05	1.54	yes	no	0.934
4	Unk	1,2,3,4,7,8-HxCDF	36:30	2.262e+05	1.847e+05	1.22	yes	no	1.189
5	Unk	1,2,3,6,7,8-HxCDF	36:37	2.391e+05	1.949e+05	1.23	yes	no	1.126
6	Unk	2,3,4,6,7,8-HxCDF	37:06	2.279e+05	1.862e+05	1.22	yes	no	1.116
7	Unk	1,2,3,7,8,9-HxCDF	37:50	2.134e+05	1.710e+05	1.25	yes	no	1.158
8	Unk	1,2,3,4,6,7,8-HpCDF	39:04	2.059e+05	1.995e+05	1.03	yes	no	1.373
9	Unk	1,2,3,4,7,8,9-HpCDF	40:30	2.036e+05	1.977e+05	1.03	yes	no	1.287
10	Unk	OCDF	43:04	2.706e+05	2.991e+05	0.90	yes	no	1.257
11	Unk	2,3,7,8-TCDD	29:48	3.083e+04	3.972e+04	0.78	yes	no	1.010
12	Unk	1,2,3,7,8-PeCDD	34:11	1.875e+05	1.205e+05	1.56	yes	no	0.932
13	Unk	1,2,3,4,7,8-HxCDD	37:13	1.676e+05	1.334e+05	1.26	yes	no	1.026
14	Unk	1,2,3,6,7,8-HxCDD	37:18	1.649e+05	1.338e+05	1.23	yes	no	1.021
15	Unk	1,2,3,7,8,9-HxCDD	37:32	1.778e+05	1.424e+05	1.25	yes	no	1.133
16	Unk	1,2,3,4,6,7,8-HpCDD	40:00	1.643e+05	1.586e+05	1.04	yes	no	1.034
17	Unk	OCDD	42:52	2.361e+05	2.654e+05	0.89	yes	no	1.111
18	IS	13C-2,3,7,8-TCDF	29:03	3.474e+05	4.365e+05	0.80	yes	no	1.379
19	IS	13C-1,2,3,7,8-PeCDF	33:02	5.231e+05	3.296e+05	1.59	yes	no	1.456
20	IS	13C-2,3,4,7,8-PeCDF	33:54	5.419e+05	3.435e+05	1.58	yes	no	1.465
21	IS	13C-1,2,3,4,7,8-HxCDF	36:30	2.378e+05	4.585e+05	0.52	yes	no	1.075
22	IS	13C-1,2,3,6,7,8-HxCDF	36:36	2.623e+05	5.077e+05	0.52	yes	no	1.158
23	IS	13C-2,3,4,6,7,8-HxCDF	37:05	2.558e+05	4.955e+05	0.52	yes	no	1.133
24	IS	13C-1,2,3,7,8,9-HxCDF	37:49	2.258e+05	4.363e+05	0.52	yes	no	1.024
25	IS	13C-1,2,3,4,6,7,8-HpCDF	39:03	1.837e+05	4.106e+05	0.45	yes	no	0.880
26	IS	13C-1,2,3,4,7,8,9-HpCDF	40:29	1.939e+05	4.371e+05	0.44	yes	no	0.914
27	IS	13C-2,3,7,8-TCDD	29:47	3.128e+05	3.967e+05	0.79	yes	no	1.193
28	IS	13C-1,2,3,7,8-PeCDD	34:11	4.007e+05	2.535e+05	1.58	yes	no	1.094
29	IS	13C-1,2,3,4,7,8-HxCDD	37:12	3.309e+05	2.619e+05	1.26	yes	no	0.906
30	IS	13C-1,2,3,6,7,8-HxCDD	37:18	3.263e+05	2.579e+05	1.27	yes	no	0.860
31	IS	13C-1,2,3,4,6,7,8-HpCDD	39:59	3.204e+05	3.046e+05	1.05	yes	no	0.892
32	IS	13C-OCDD	42:51	4.295e+05	4.787e+05	0.90	yes	no	0.642
33	RS/RT	13C-1,2,3,4-TCDD	29:15	2.554e+05	3.223e+05	0.79	yes	no	-
34	RS/RT	13C-1,2,3,7,8,9-HxCDD	37:32	3.615e+05	2.876e+05	1.26	yes	no	-
35	C/Up	37Cl-2,3,7,8-TCDD	29:48	7.431e+04				no	1.263

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Signal/Noise Height Ratio Summary

CLIENT ID.
54819

Run #7 Filename P600011 Samp: 1 Inj: 1 Acquired: 19-AUG-15 18:14:46
Processed: 20-AUG-15 09:52:05 LAB. ID: CS3 SECOND SOURCE

	Name	Signal 1	Noise 1	S/N Rat.1	Signal 2	Noise 2	S/N Rat.2
1	2,3,7,8-TCDF	6.39e+06	2.09e+03	3.1e+03	8.47e+06	2.94e+03	2.9e+03
2	1,2,3,7,8-PeCDF	5.15e+07	2.39e+03	2.2e+04	3.41e+07	3.88e+03	8.8e+03
3	2,3,4,7,8-PeCDF	5.36e+07	2.39e+03	2.2e+04	3.50e+07	3.88e+03	9.0e+03
4	1,2,3,4,7,8-HxCDF	5.20e+07	3.05e+03	1.7e+04	4.23e+07	2.12e+03	2.0e+04
5	1,2,3,6,7,8-HxCDF	5.32e+07	3.05e+03	1.7e+04	4.32e+07	2.12e+03	2.0e+04
6	2,3,4,6,7,8-HxCDF	5.25e+07	3.05e+03	1.7e+04	4.29e+07	2.12e+03	2.0e+04
7	1,2,3,7,8,9-HxCDF	4.68e+07	3.05e+03	1.5e+04	3.78e+07	2.12e+03	1.8e+04
8	1,2,3,4,6,7,8-HpCDF	4.77e+07	1.04e+04	4.6e+03	4.57e+07	3.52e+03	1.3e+04
9	1,2,3,4,7,8,9-HpCDF	4.21e+07	1.04e+04	4.0e+03	4.05e+07	3.52e+03	1.2e+04
10	OCDF	5.05e+07	1.25e+03	4.0e+04	5.46e+07	2.46e+03	2.2e+04
11	2,3,7,8-TCDD	6.55e+06	1.91e+03	3.4e+03	8.46e+06	2.52e+03	3.4e+03
12	1,2,3,7,8-PeCDD	4.04e+07	3.51e+03	1.2e+04	2.61e+07	2.18e+03	1.2e+04
13	1,2,3,4,7,8-HxCDD	3.92e+07	1.29e+03	3.0e+04	3.12e+07	1.84e+03	1.7e+04
14	1,2,3,6,7,8-HxCDD	3.80e+07	1.29e+03	3.0e+04	3.11e+07	1.84e+03	1.7e+04
15	1,2,3,7,8,9-HxCDD	4.13e+07	1.29e+03	3.2e+04	3.28e+07	1.84e+03	1.8e+04
16	1,2,3,4,6,7,8-HpCDD	3.53e+07	3.24e+03	1.1e+04	3.41e+07	1.98e+03	1.7e+04
17	OCDD	4.42e+07	1.13e+03	3.9e+04	4.93e+07	1.52e+03	3.2e+04
18	13C-2,3,7,8-TCDF	7.01e+07	5.42e+03	1.3e+04	8.78e+07	2.58e+03	3.4e+04
19	13C-1,2,3,7,8-PeCDF	1.08e+08	2.96e+03	3.6e+04	6.81e+07	2.28e+03	3.0e+04
20	13C-2,3,4,7,8-PeCDF	1.17e+08	2.96e+03	3.9e+04	7.45e+07	2.28e+03	3.3e+04
21	13C-1,2,3,4,7,8-HxCDF	5.44e+07	1.82e+03	3.0e+04	1.05e+08	4.44e+03	2.4e+04
22	13C-1,2,3,6,7,8-HxCDF	5.73e+07	1.82e+03	3.1e+04	1.12e+08	4.44e+03	2.5e+04
23	13C-2,3,4,6,7,8-HxCDF	5.95e+07	1.82e+03	3.3e+04	1.14e+08	4.44e+03	2.6e+04
24	13C-1,2,3,7,8,9-HxCDF	5.01e+07	1.82e+03	2.7e+04	9.76e+07	4.44e+03	2.2e+04
25	13C-1,2,3,4,6,7,8-HpCDF	4.25e+07	5.19e+03	8.2e+03	9.47e+07	7.77e+03	1.2e+04
26	13C-1,2,3,4,7,8,9-HpCDF	4.04e+07	5.19e+03	7.8e+03	9.00e+07	7.77e+03	1.2e+04
27	13C-2,3,7,8-TCDD	6.58e+07	9.84e+03	6.7e+03	8.37e+07	5.09e+03	1.6e+04
28	13C-1,2,3,7,8-PeCDD	8.52e+07	2.40e+03	3.6e+04	5.36e+07	1.52e+03	3.5e+04
29	13C-1,2,3,4,7,8-HxCDD	7.68e+07	6.38e+03	1.2e+04	6.10e+07	3.96e+03	1.5e+04
30	13C-1,2,3,6,7,8-HxCDD	7.48e+07	6.38e+03	1.2e+04	5.91e+07	3.96e+03	1.5e+04
31	13C-1,2,3,4,6,7,8-HpCDD	6.89e+07	3.54e+03	1.9e+04	6.56e+07	2.36e+03	2.8e+04
32	13C-OCDD	7.99e+07	1.25e+03	6.4e+04	8.87e+07	1.28e+03	7.0e+04
33	13C-1,2,3,4-TCDD	5.27e+07	9.84e+03	5.4e+03	6.64e+07	5.09e+03	1.3e+04
34	13C-1,2,3,7,8,9-HxCDD	8.45e+07	6.38e+03	1.3e+04	6.67e+07	3.96e+03	1.7e+04
35	37Cl-2,3,7,8-TCDD	1.57e+07	3.34e+03	4.7e+03			

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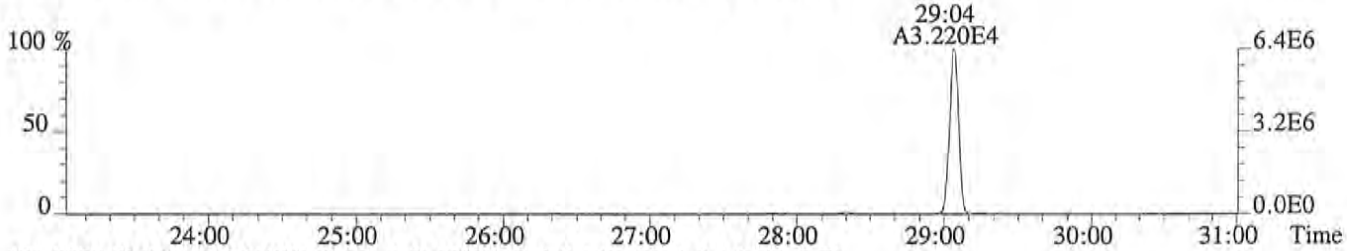
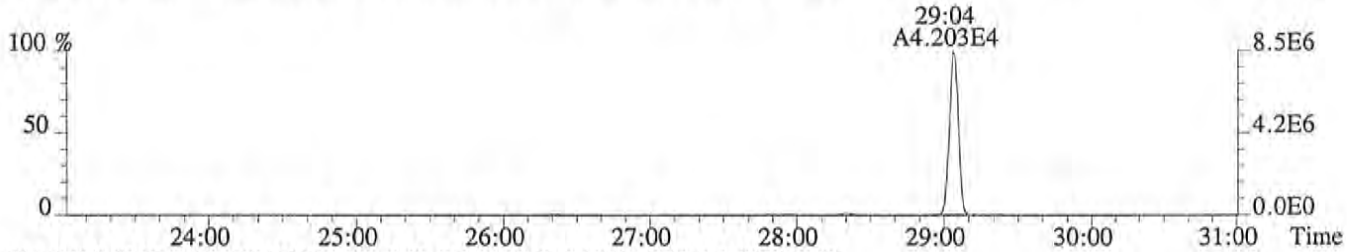
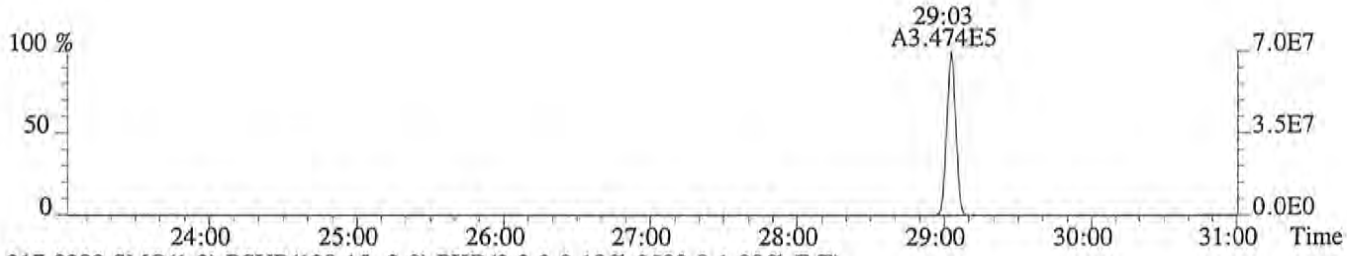
File:P600011 #1-566 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
303.9016 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2088.0,1.00%,F,T)



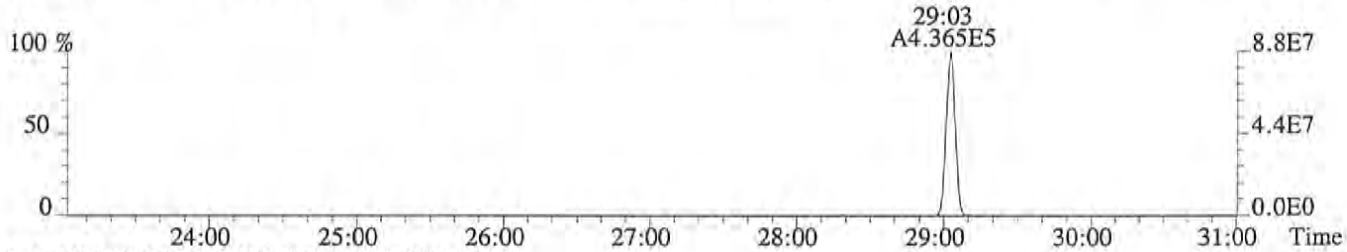
305.8987 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2944.0,1.00%,F,T)



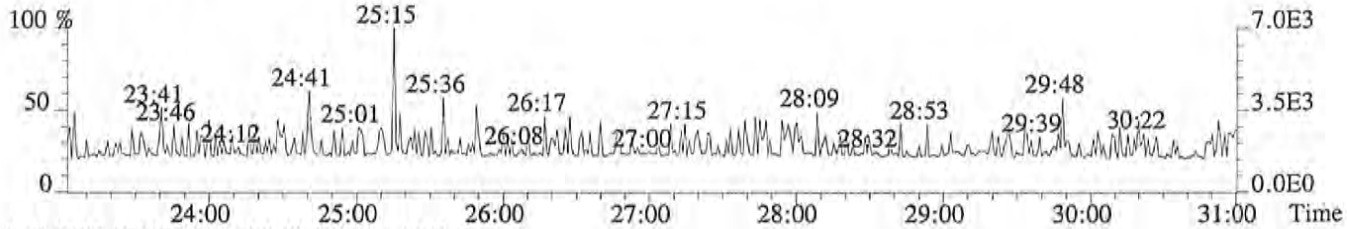
315.9419 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5420.0,1.00%,F,T)



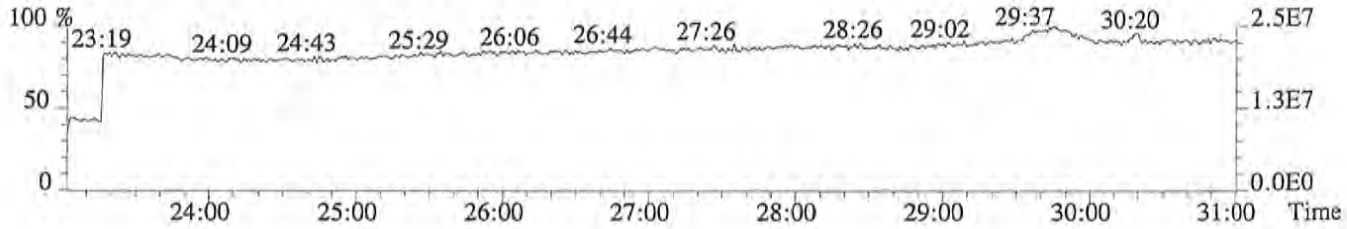
317.9389 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2580.0,1.00%,F,T)



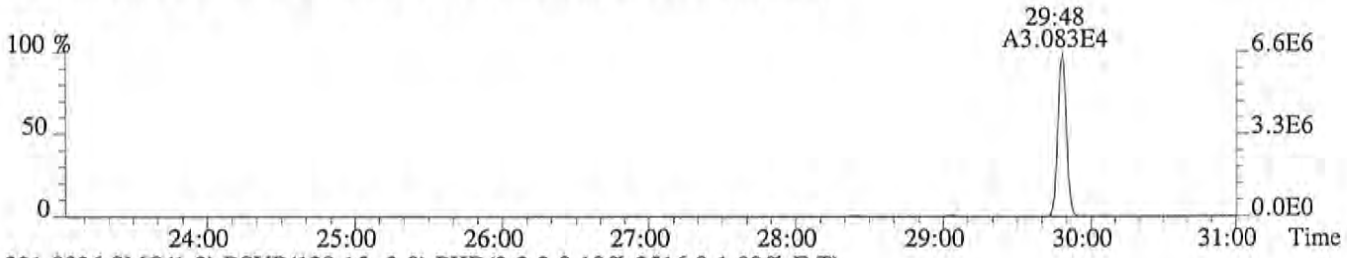
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



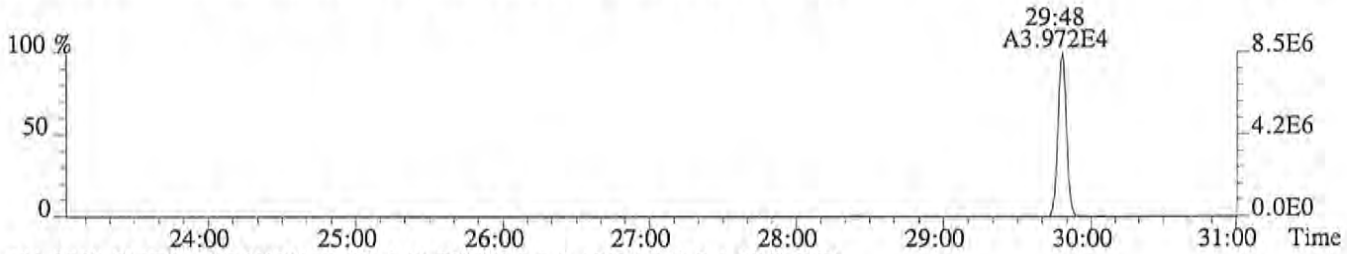
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



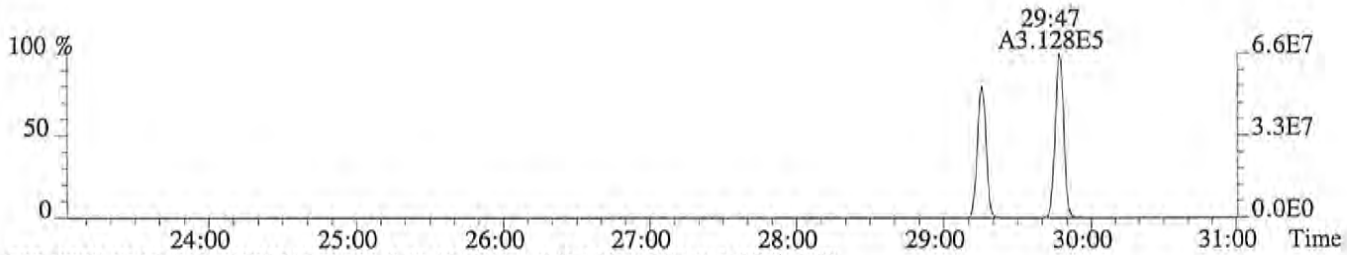
File:P600011 #1-566 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
319.8965 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1912.0,1.00%,F,T)



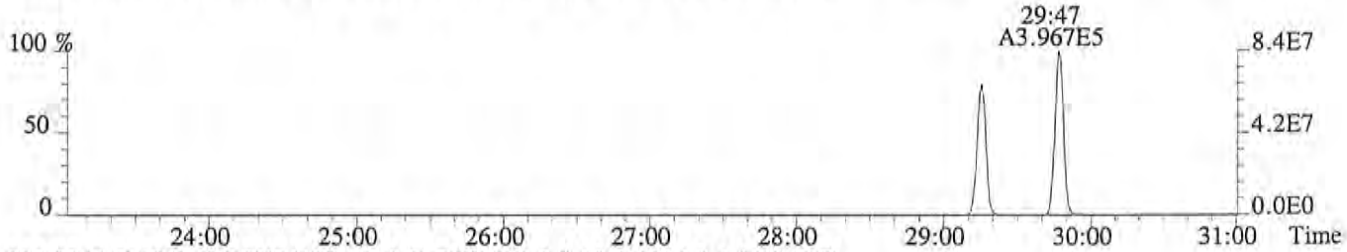
321.8936 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2516.0,1.00%,F,T)



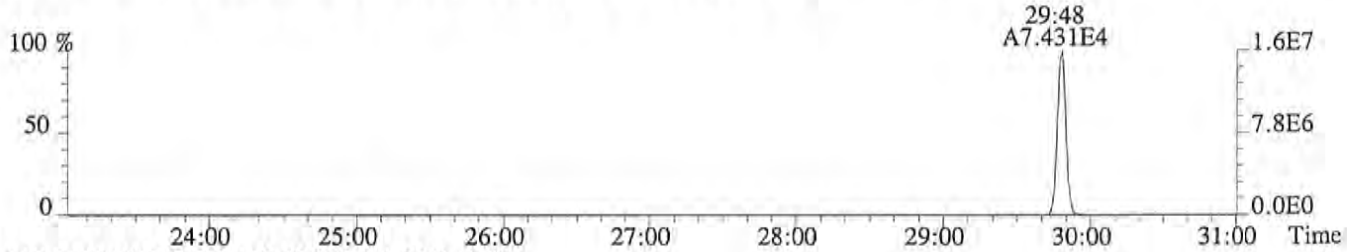
331.9368 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9840.0,1.00%,F,T)



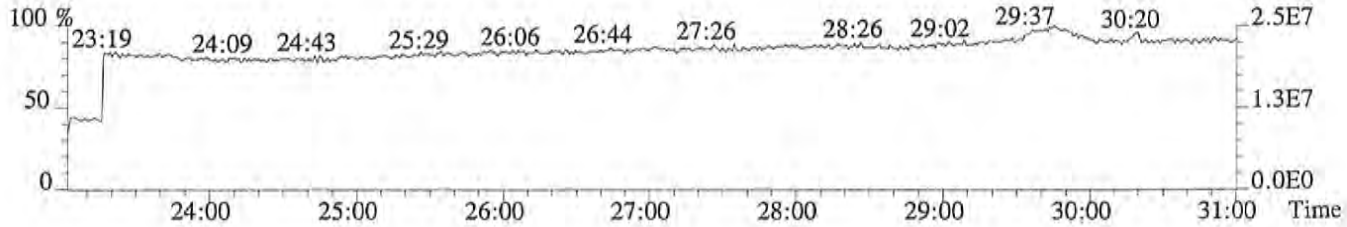
333.9339 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5092.0,1.00%,F,T)



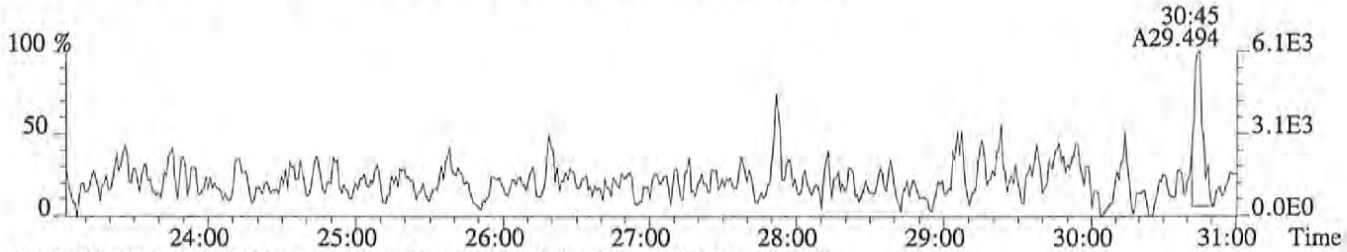
327.8847 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3336.0,1.00%,F,T)



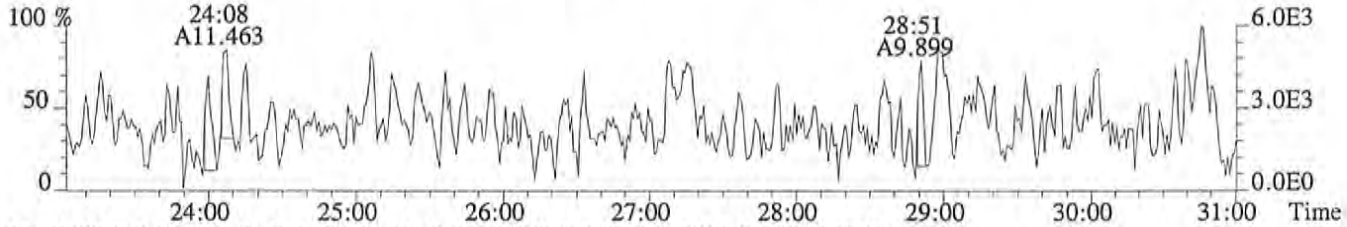
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



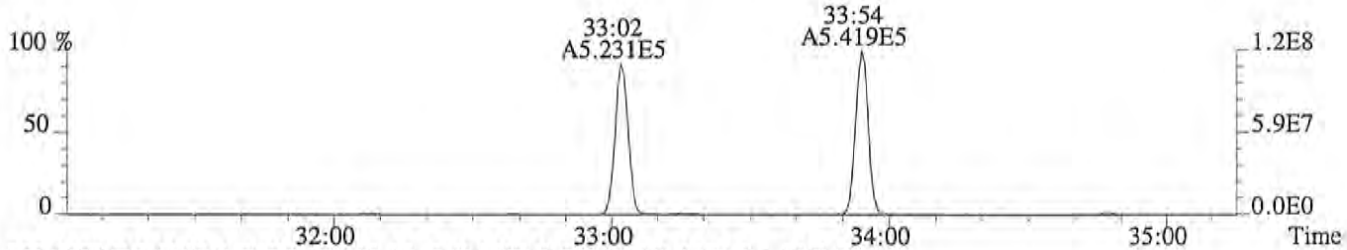
File:P600011 #1-566 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
339.8597 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1556.0,1.00%,F,T)



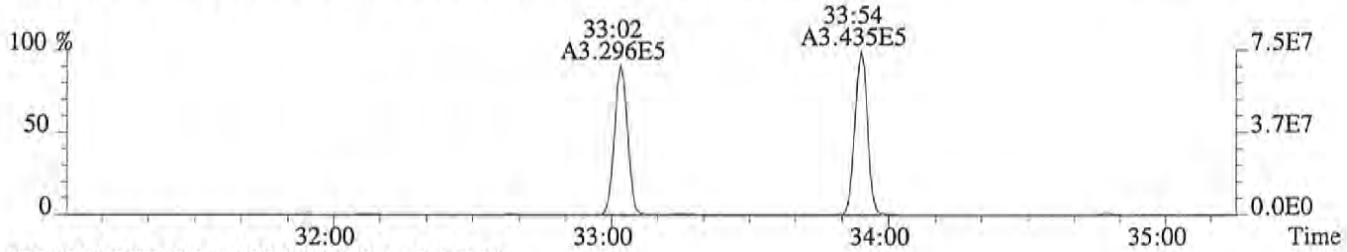
341.8567 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2888.0,1.00%,F,T)



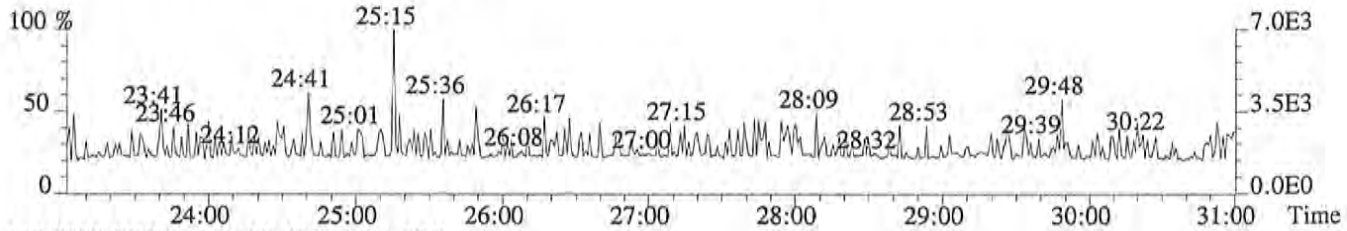
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2964.0,1.00%,F,T)



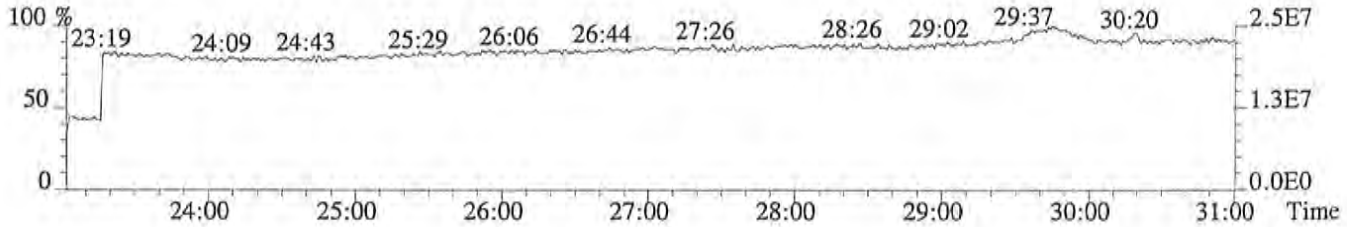
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2276.0,1.00%,F,T)



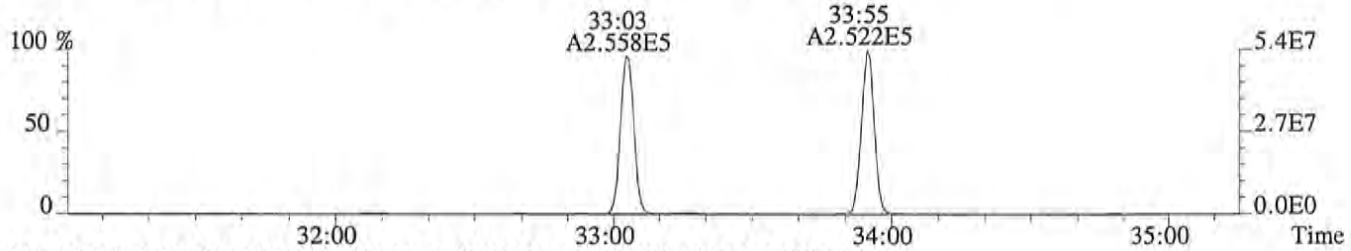
375.8364 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



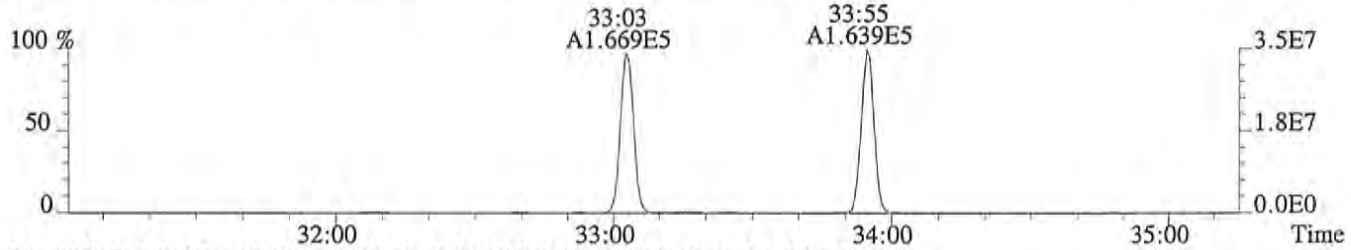
318.9792 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



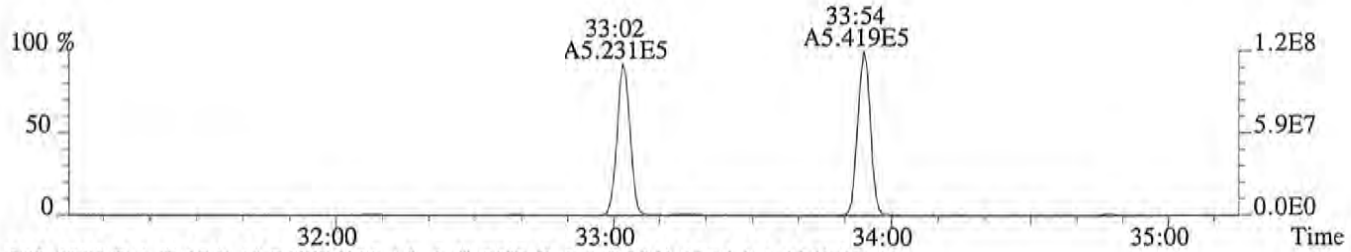
File:P600011 #1-380 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
339.8597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2392.0,1.00%,F,T)



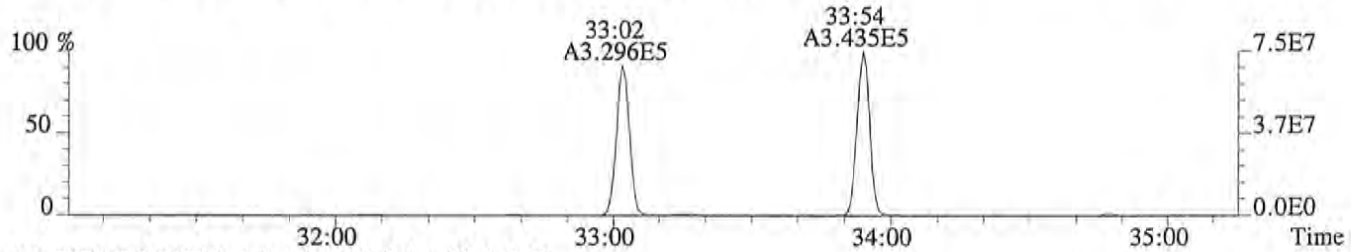
341.8567 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3880.0,1.00%,F,T)



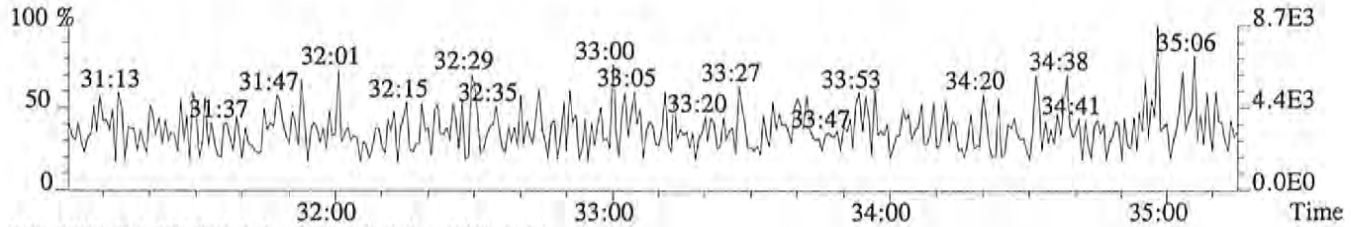
351.9000 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2964.0,1.00%,F,T)



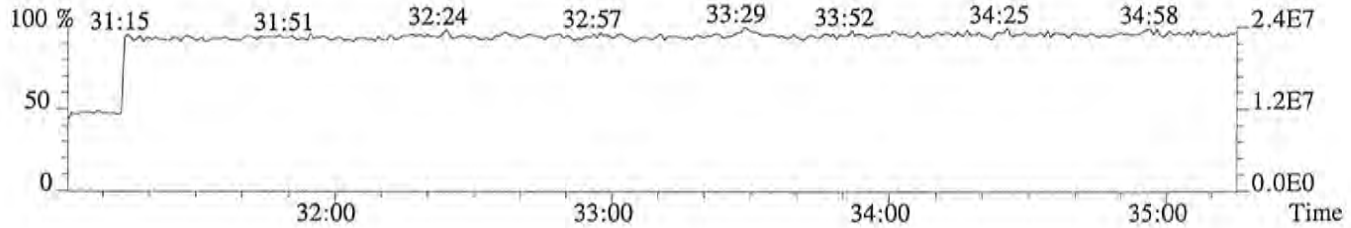
353.8970 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2276.0,1.00%,F,T)



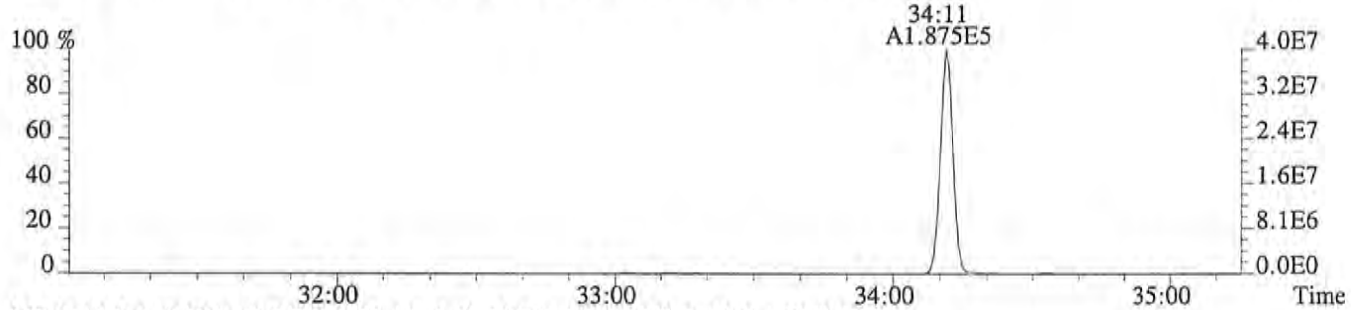
409.7974 F:2 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



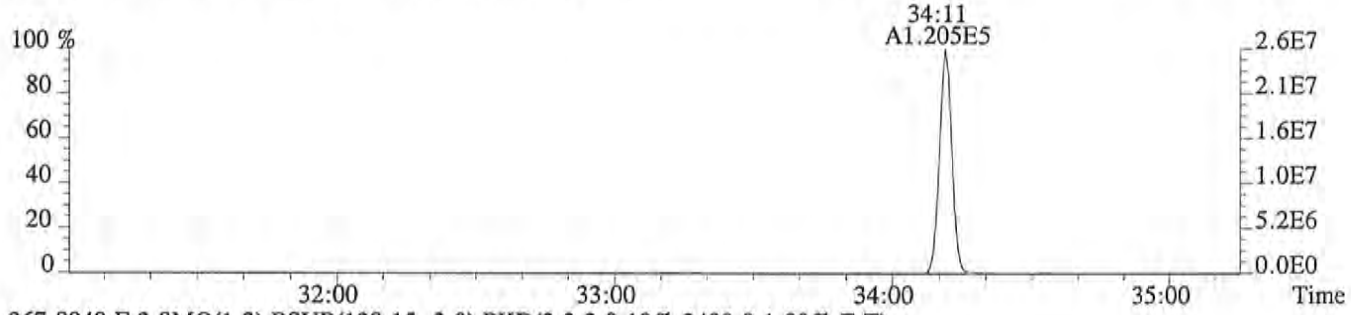
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



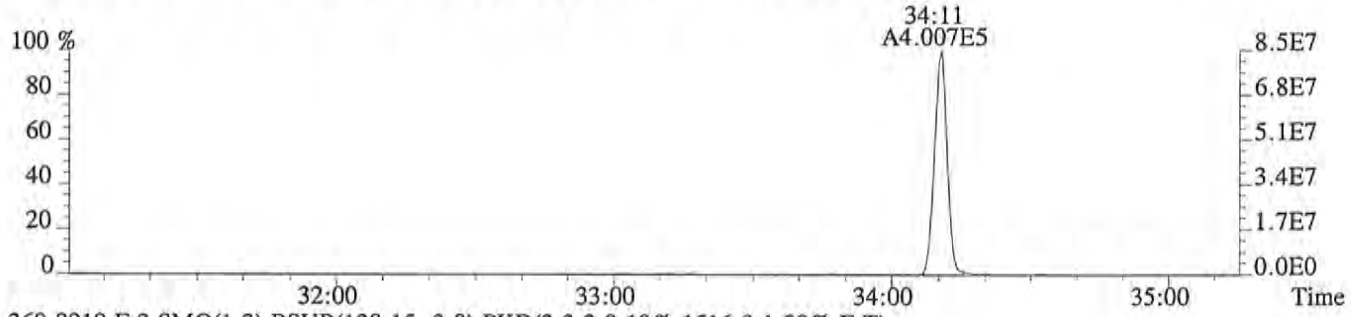
File:P600011 #1-380 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
355.8546 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3512.0,1.00%,F,T)



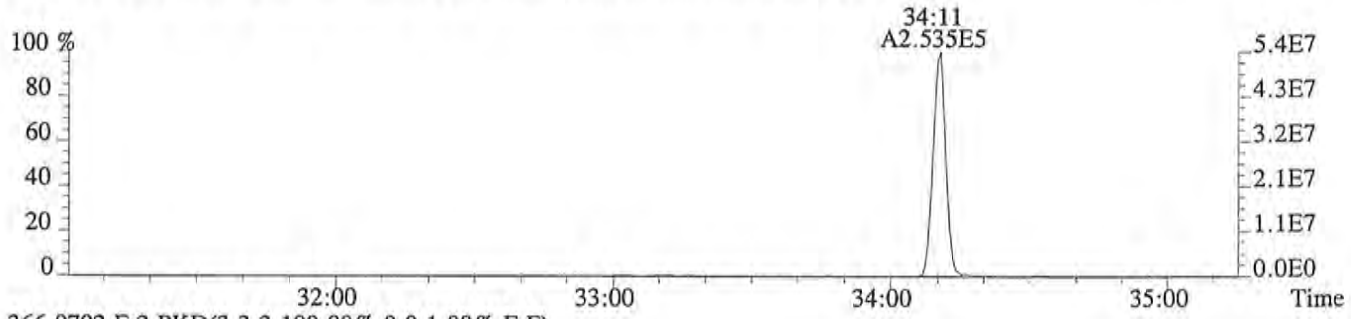
357.8516 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,T)



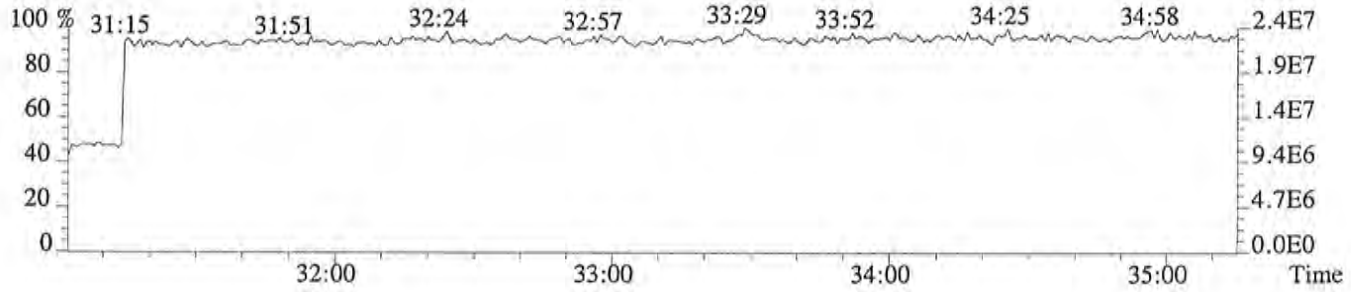
367.8949 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2400.0,1.00%,F,T)



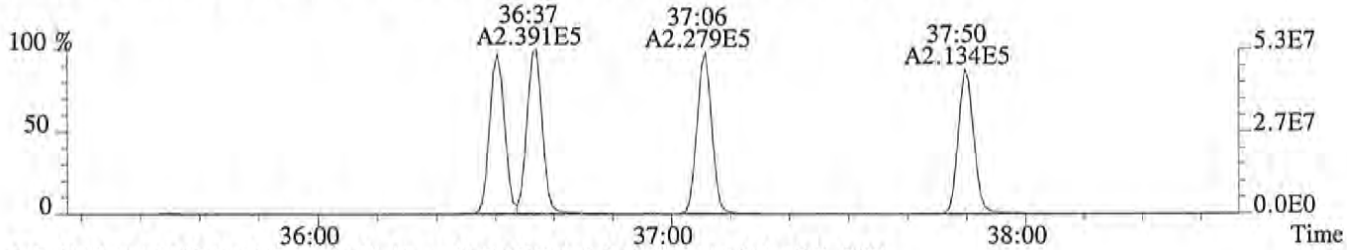
369.8919 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1516.0,1.00%,F,T)



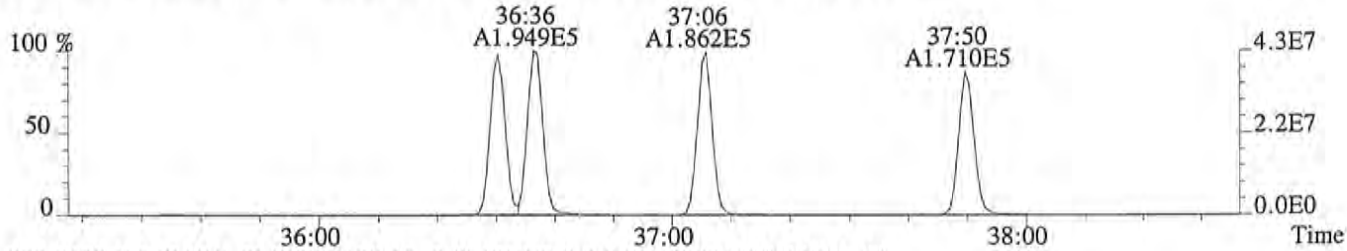
366.9792 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



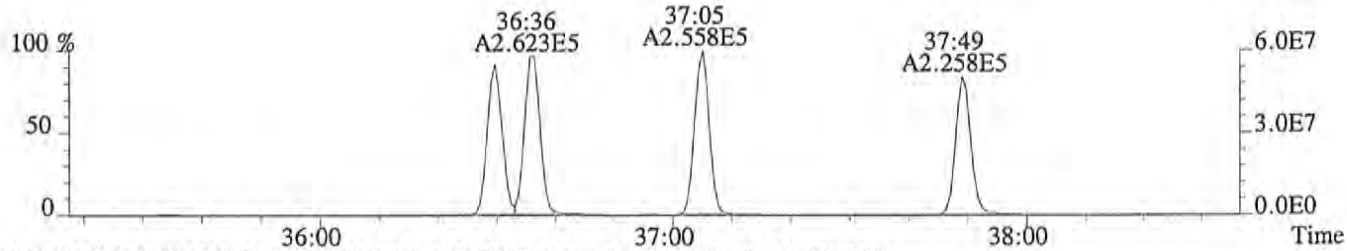
File:P600011 #1-299 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
373.8208 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3048.0,0.40%,F,T)



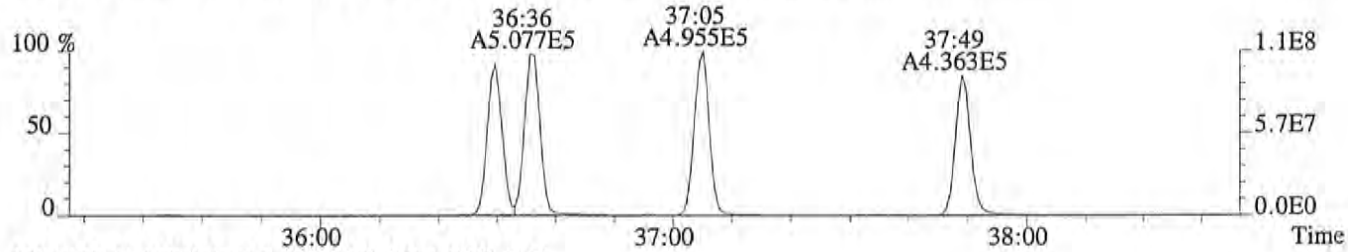
375.8178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2116.0,0.40%,F,T)



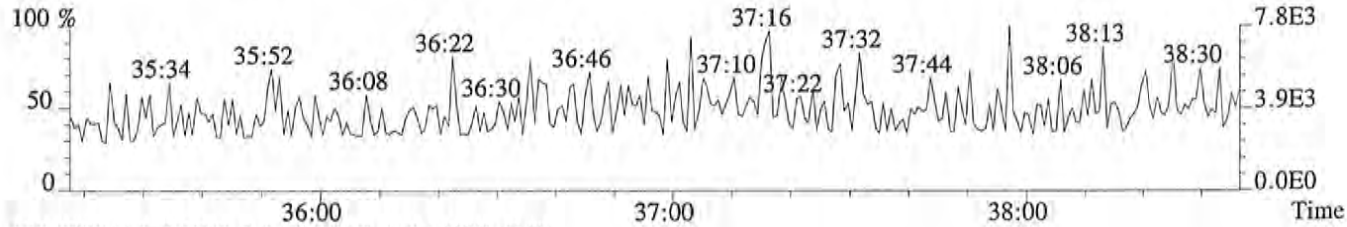
383.8639 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1824.0,0.40%,F,T)



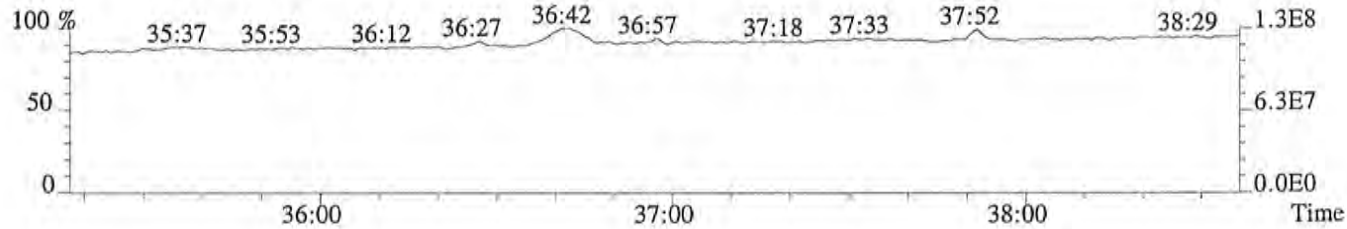
385.8610 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,4436.0,0.40%,F,T)



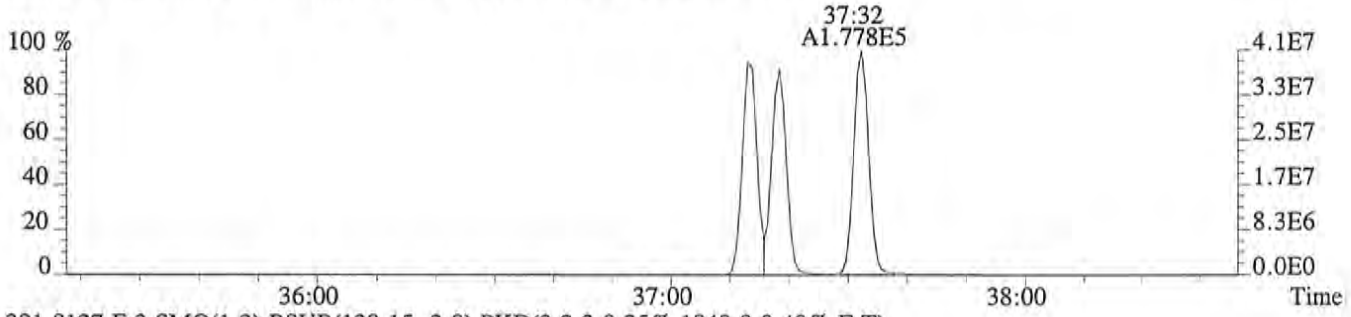
445.7555 F:3 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



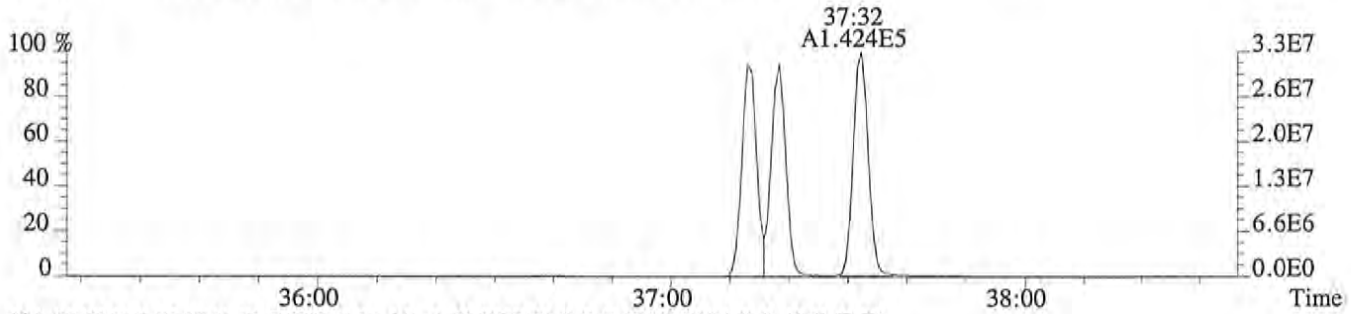
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



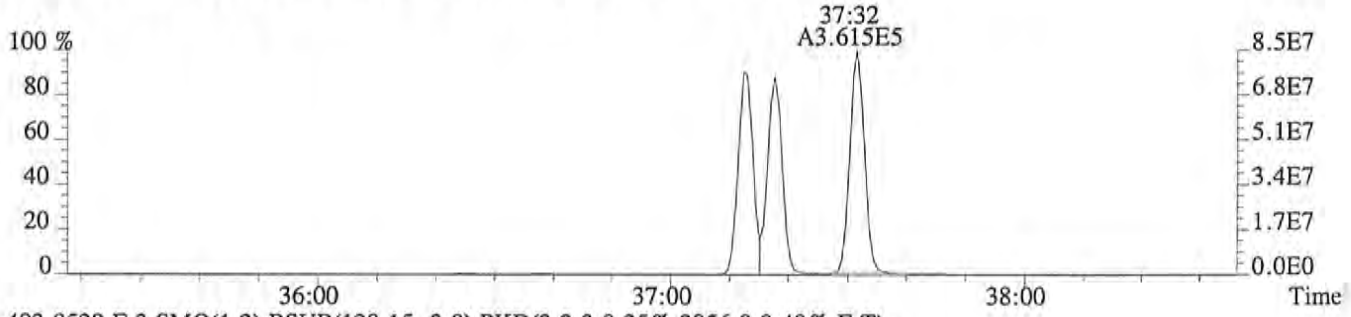
File:P600011 #1-299 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
389.8157 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1288.0,0.40%,F,T)



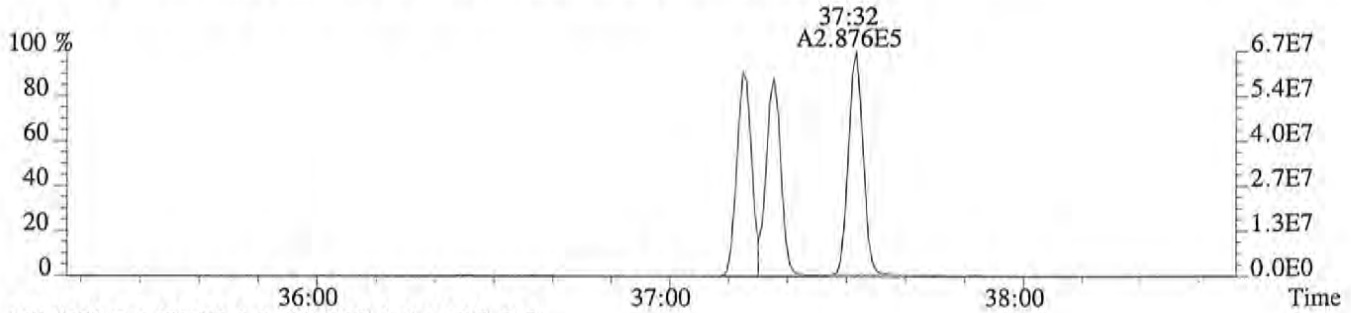
391.8127 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1840.0,0.40%,F,T)



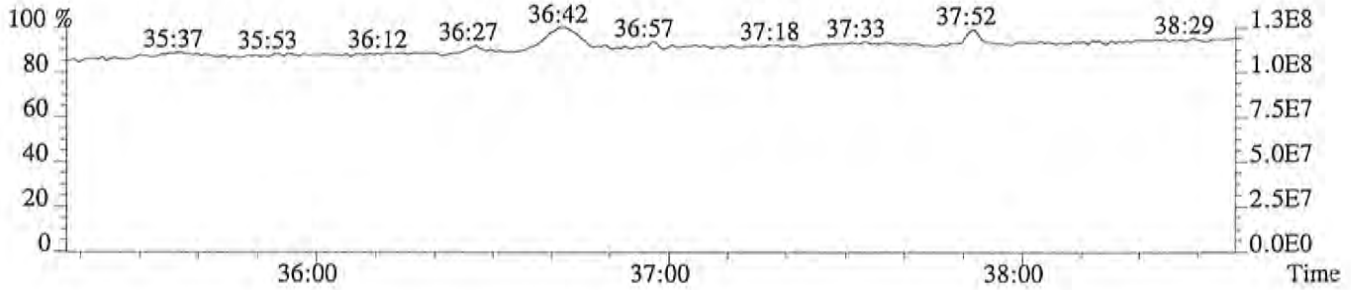
401.8559 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,6384.0,0.40%,F,T)



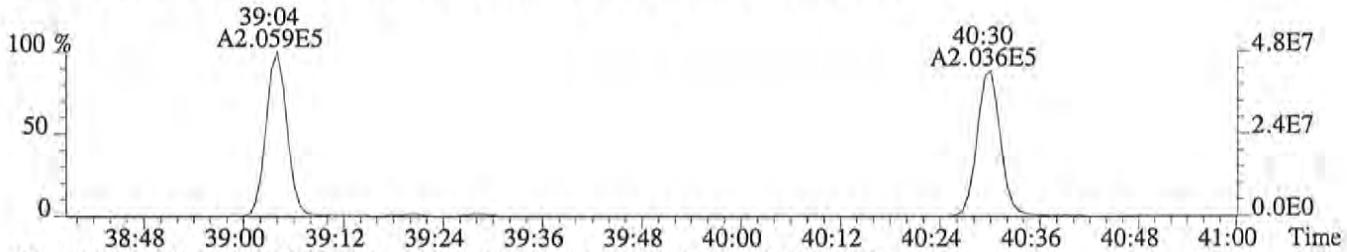
403.8529 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3956.0,0.40%,F,T)



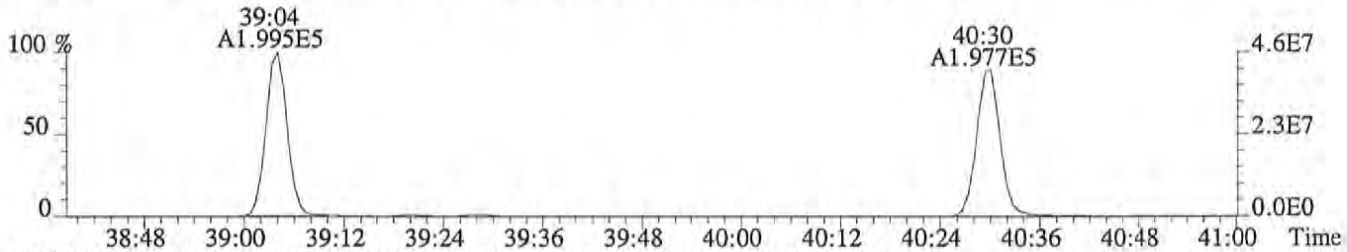
430.9729 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



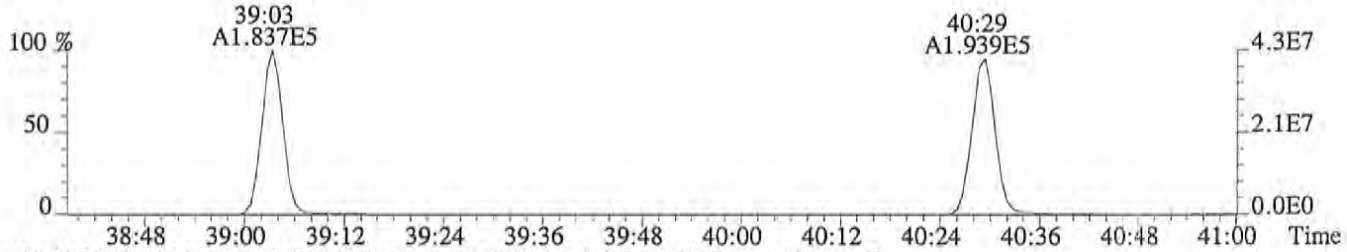
File:P600011 #1-213 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
407.7818 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,10444.0,0.50%,F,T)



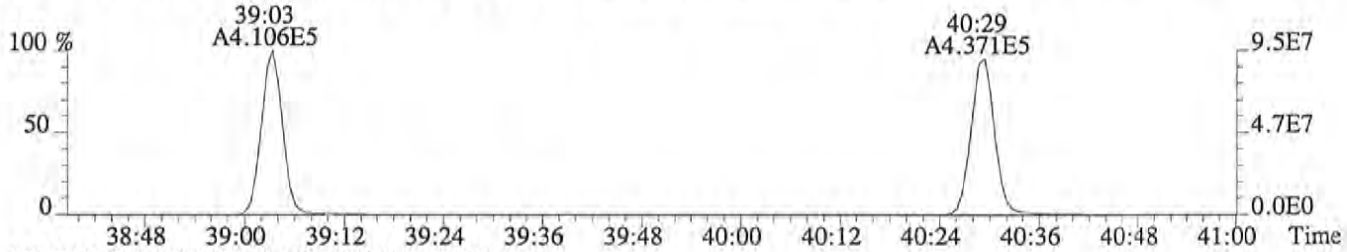
409.7789 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3524.0,0.50%,F,T)



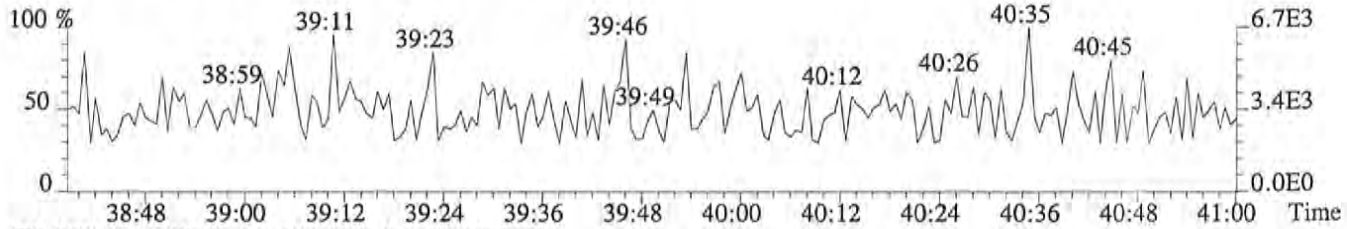
417.8253 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,5188.0,0.50%,F,T)



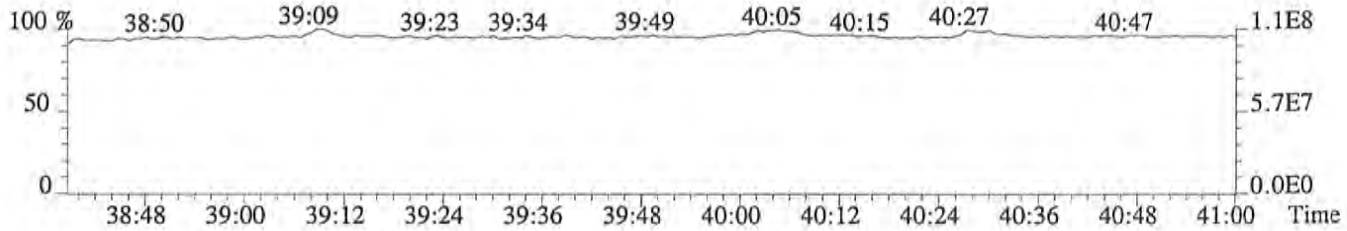
419.8220 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,7768.0,0.50%,F,T)



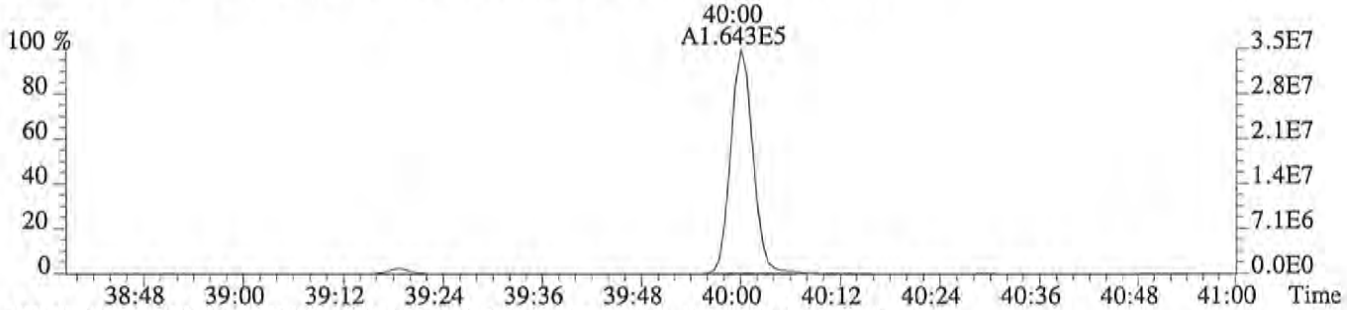
479.7165 F:4 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



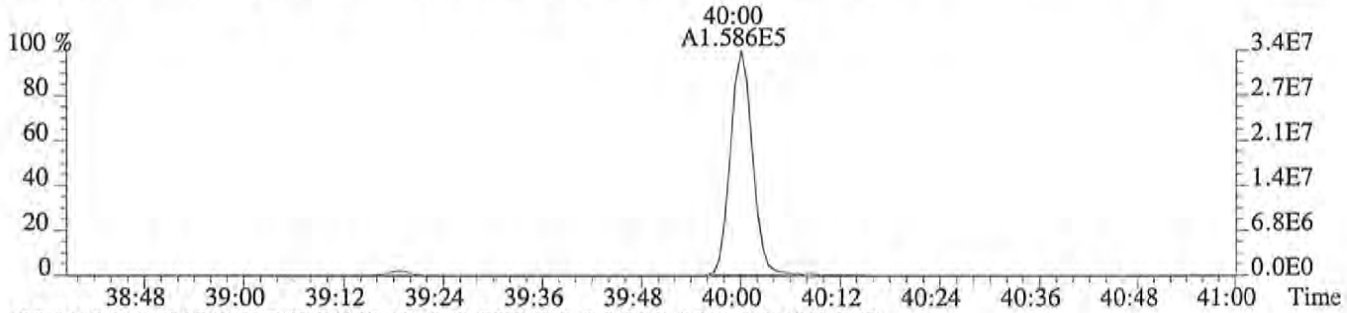
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



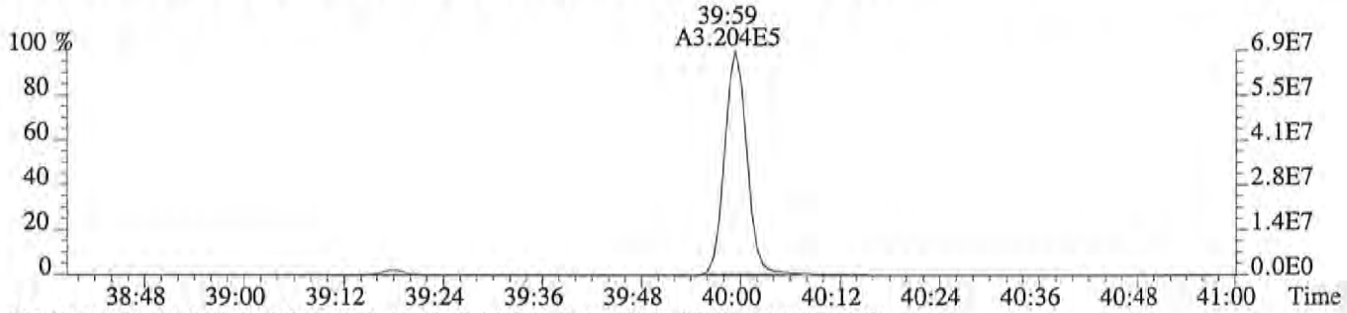
File:P600011 #1-213 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
423.7766 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3240.0,0.40%,F,T)



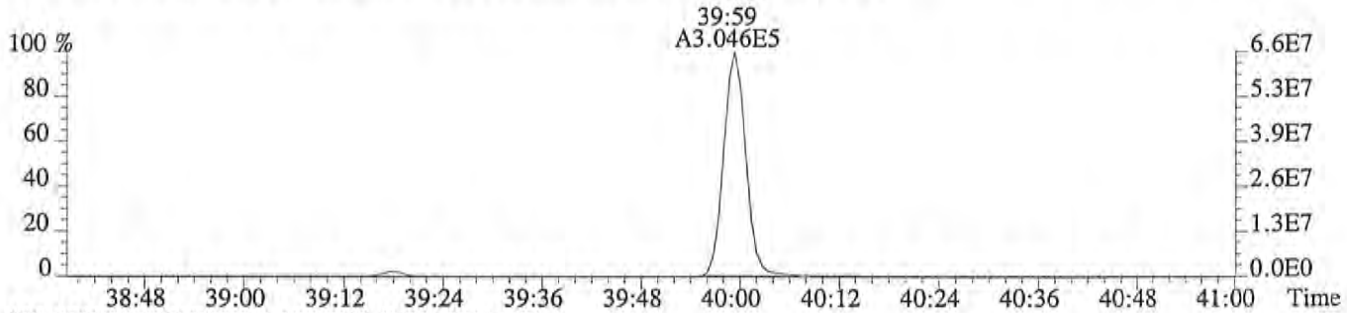
425.7737 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,1984.0,0.40%,F,T)



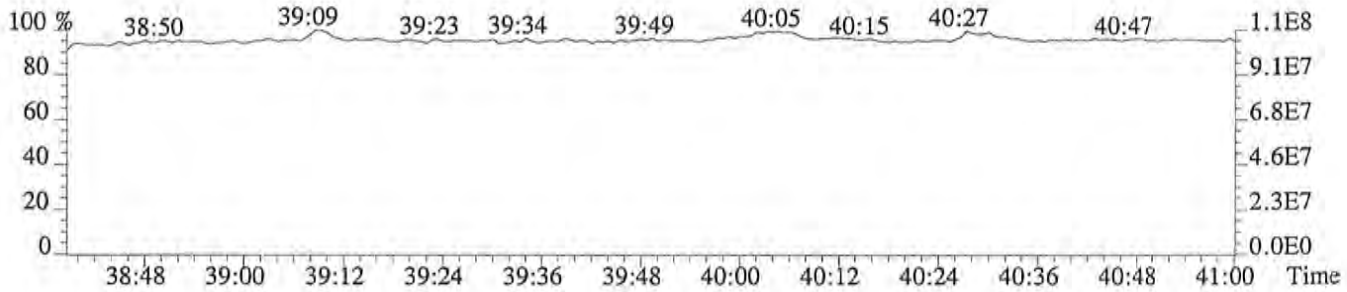
435.8169 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,3536.0,0.40%,F,T)



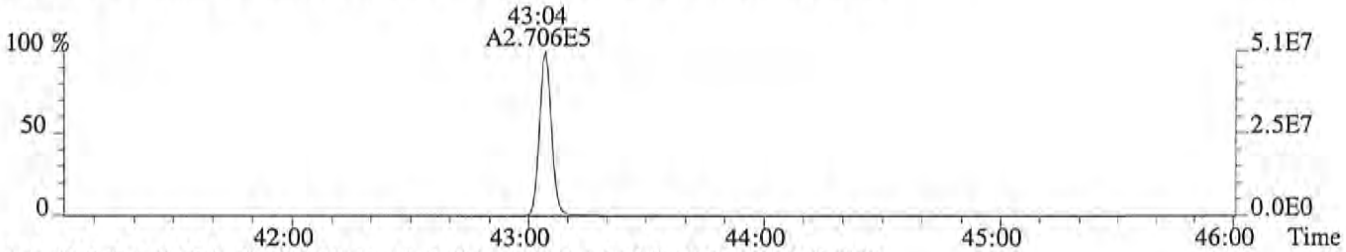
437.8140 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.25%,2360.0,0.40%,F,T)



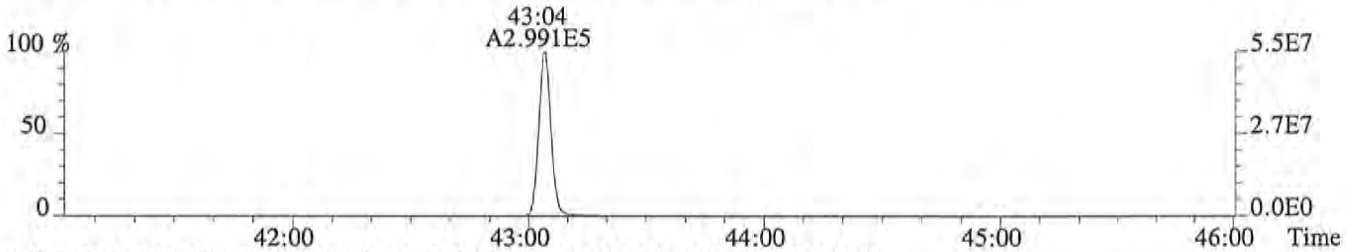
430.9729 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



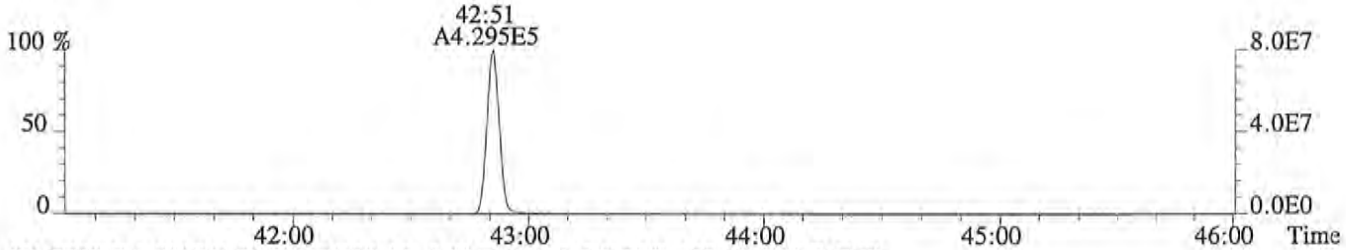
File:P600011 #1-448 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
441.7428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1248.0,0.40%,F,T)



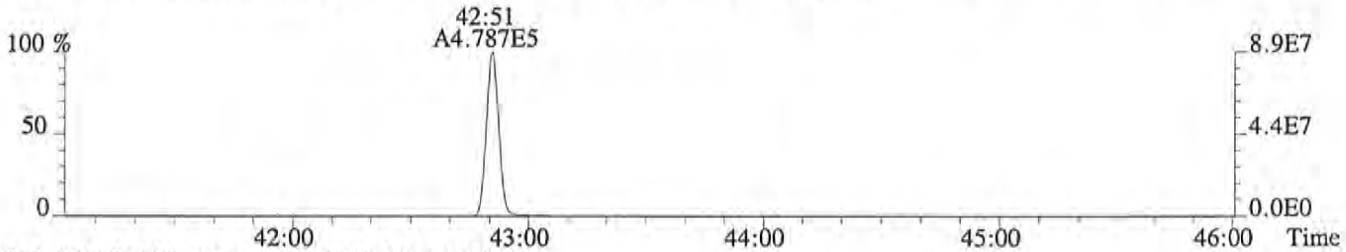
443.7399 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,2460.0,0.40%,F,T)



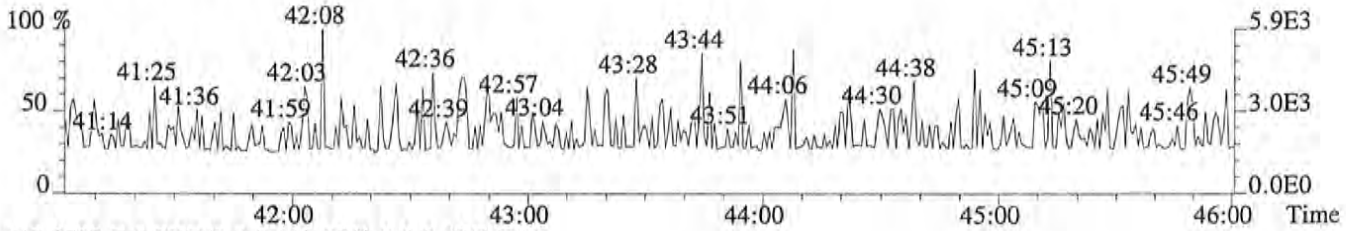
469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1248.0,0.40%,F,T)



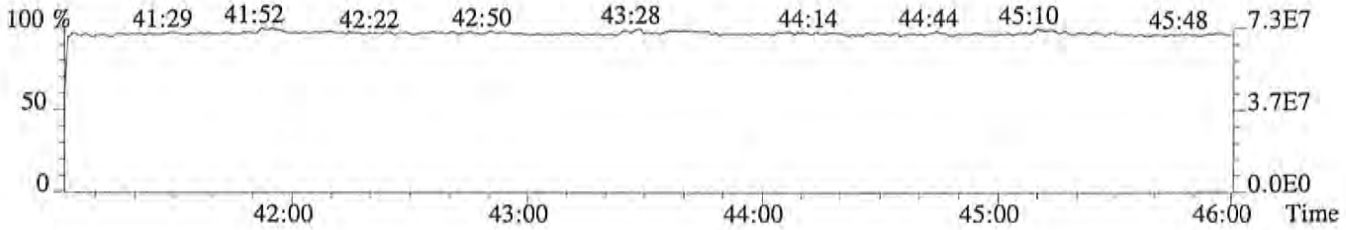
471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1276.0,0.40%,F,T)



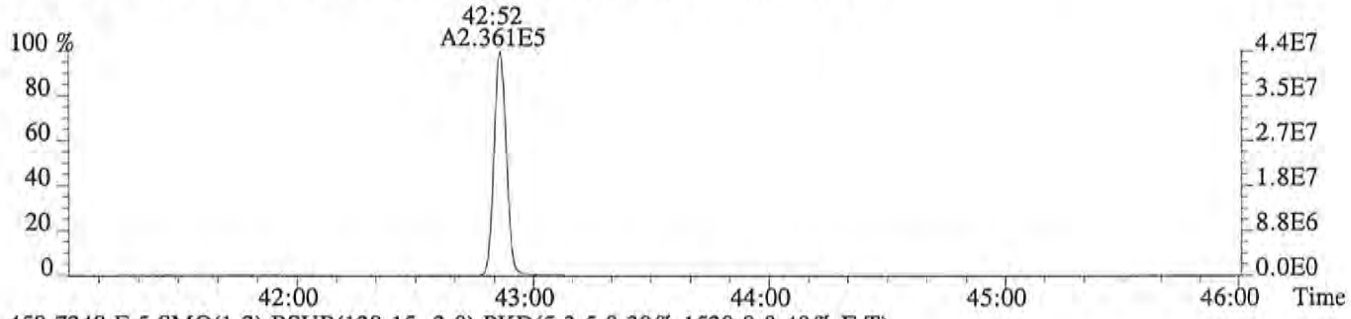
513.6775 F:5 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



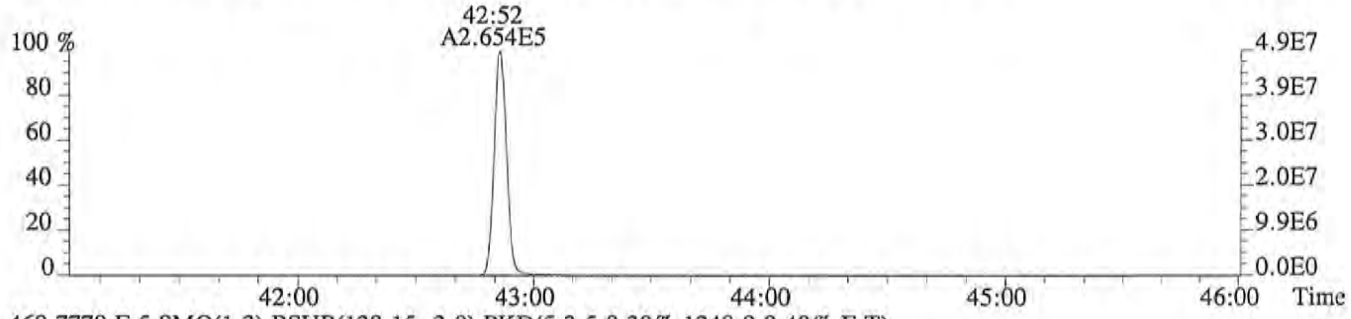
442.9728 F:5 PKD(3,3,3,100.00%,0.0,0.40%,F,F)



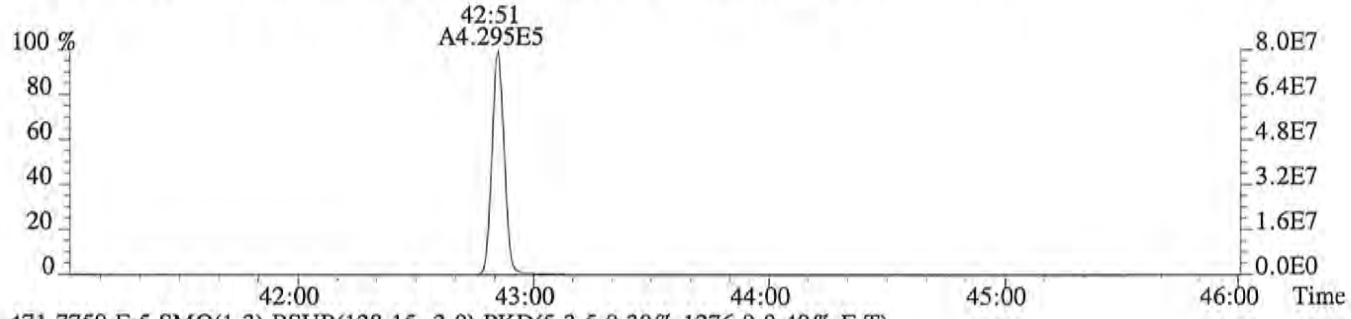
File:P600011 #1-448 Acq:19-AUG-2015 18:14:46 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 Exp:CS3 Second Source
457.7377 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1128.0,0.40%,F,T)



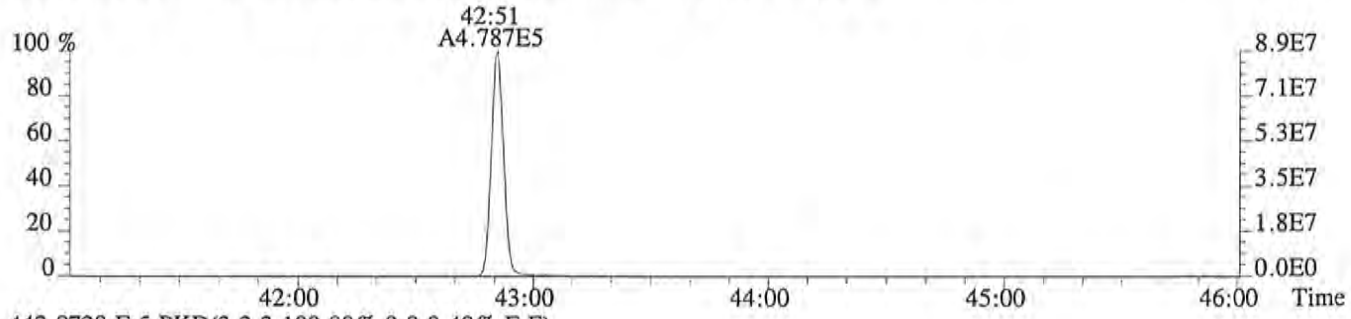
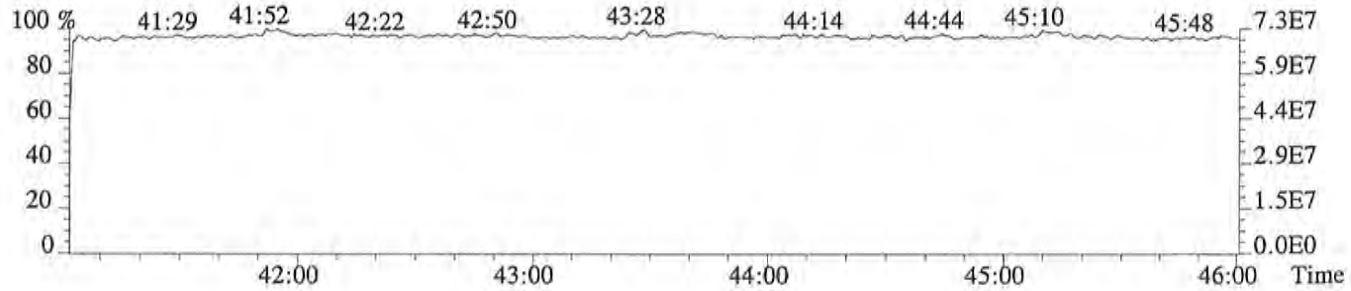
459.7348 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1520.0,0.40%,F,T)



469.7779 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1248.0,0.40%,F,T)



471.7750 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(5,3,5,0.30%,1276.0,0.40%,F,T)



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