— CITY OF PORTLAND —
ENVIRONMENTAL SERVICES
1120 SW Fifth Avenue, Room 1000, Portland, Oregon 97204-1912 ▪ Sam Adams, Commissioner ▪ Dean Marriott, Director

**TECHNICAL MEMORANDUM No. OF50-1**

# Outfall Basin 50
# Pollution Reduction Pond Solids Investigation

**TO:** Karen Tarnow, Oregon Department of Environmental Quality (DEQ)

**FROM:** Linda Scheffler, City of Portland, Bureau of Environmental Services (BES) LWS
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**DATE:** August 5, 2008

**SUBJECT:** **Portland Harbor Source Control Investigation**

## Introduction

This technical memorandum summarizes the results of the City of Portland BES source control investigation of solids from the Outfall Basin 50 stormwater pollution reduction pond located at the BES Water Pollution Control Laboratory (WPCL). This Basin 50 investigation was conducted as part of the City's ongoing source control program associated with the Portland Harbor City of Portland Outfalls Project. These investigation results are submitted pursuant to the August 13, 2003, Intergovernmental Agreement between DEQ and the City.

The Outfall Basin 50 pollution reduction pond was designed as a model for removing solids from stormwater runoff before it is discharged to the Willamette River. Elevated metals were detected in sediments adjacent to Outfall 50 and were attributed by the City to upriver sources during the outfall source investigation prioritization process (CH2M HILL, 2004) (GSI, 2006). The objectives of this source control investigation were to determine whether solids discharging from Outfall 50 are a source of elevated metals in river sediment and whether significant pollutant sources are present in the basin.

In June 2007, a composite solids sample was collected from the vicinity of the pond outlet -- a location that is representative of potential solids contributions to the river. The investigation results support that the pond is not a source for the in-river sediment contamination identified near Outfall 50 and that there do not appear to be any significant uncontrolled sources in the Outfall 50 basin. The in-river sediment contamination is consistent with contamination documented at the Crawford Street Corporation site located upriver from Basin 50.

# Basin 50 Configuration and Background

**Basin Physical System.** Outfall 50 discharges to the east side of the Willamette River near river mile 6. Figure 1 provides an overview of the Basin 50 stormwater conveyance system. Basin 50 receives stormwater from approximately 40 acres of residential, commercial, and industrial properties in the St. Johns area. Outfall 50 is a 30-inch-diameter pipe that was constructed in 1906 as a combined sewer outfall. The conveyance system was separated in 1995 as part of the St. Johns Separation Project and has been a stormwater-only outfall since that time.

Construction of the stormwater pollution reduction pond was initiated in 1996 and the pond began operating in 1997. The pond was engineered as a treatment system to remove pollutants from stormwater runoff through solids capture and natural vegetation filtration before discharging to Outfall 50. Located near the end of the basin to treat the majority of basin discharges, the pond was constructed to contain a "Water Quality Design Storm" size of 0.83"over 24 hours. The intent of this design criteria was to treat all stormwater "first-flush" discharges and all stormwater flow from 95% of annual storm events (BES, 2004). Stormwater passes through a sedimentation manhole before being discharged to the pond via a 12-inch line and vegetated spillway. When the pond volume exceeds the 224,000-gallon capacity, treated stormwater is discharged through an outlet grate at the west end of the pond and to Outfall 50 via a 12-inch line. If stormwater flows exceed the pond design criteria, the excess flow is diverted through a 30-inch bypass diversion line to Outfall 50 thereby averting damage or sediment agitation in the pond during high flows.

Runoff from the WPCL main parking lot and the building roof discharges to onsite landscaped treatment swales. Treated stormwater that does not infiltrate into treatment swale soils is discharged to Outfall 50. Portions of the northeast parking lot discharge to the pond.

Solids that had accumulated in the spillway area of the pollution reduction pond were removed in 2004. A sample of the removed solids was analyzed for eight (RCRA) metals and petroleum hydrocarbons for disposal characterization purposes. The analytical results for this sample are summarized on Table 1.

Discharges from Outfall 50 are covered under the City's NPDES Municipal Separate Storm Sewer System Discharge (MS4) permit. As part of the best management practices monitoring conducted for the permit, the City collected and analyzed stormwater samples from the pond inlet and outlet between April 1998 and November 1999 (BES, 2000). The results indicated that the pond was meeting solids removal objectives.

**Upriver Sources.** The Crawford Street site [DEQ Environmental Cleanup Site Database (ECSI) No. 2363) is located immediately upriver from the WPCL and some stormwater from the southern area of the site discharges to Outfall 50 via overland flow to the WPCL site. The site is currently occupied by Lampros Steel and Columbia Forge & Machine Works and is used for machining and storing structural steel beams. In the winter of 1977-1978 when the Crawford Street site was occupied by a former sawmill, up to 6 feet of black sand were placed as fill in the northwest part of the site along the river bank. The black sand was obtained from a local sandblasting company that cleaned oil tanks. The sand apparently contained residual oil from the tank cleaning operations. Winter rains reportedly flushed oil from the sand and the oily water flowed into the Willamette River, creating an oil slick. The United States Coast Guard warned the sawmill owner and filling operations were halted (Sweet-Edwards/EMCON, 1988).

The black sand apparently migrated into the river from the Crawford Street site (Integral, 2007). In 2001, approximately 381 tons of black sand were removed from the southwest area of the Crawford Street site, along the beach and riverbank. However, metal concentrations (specifically chromium, copper, lead and zinc) were similar or higher in samples collected from this area following the removal action. These data are summarized in the table in the following subsection.

Contaminants of interest (COI) at the Crawford Street site include PCBs, metals, petroleum hydrocarbons, and semivolatile organic compounds (SVOCs). A stormwater evaluation is being conducted at this site and is anticipated to be completed in the near future.

**In-river Sediment Investigations.** The City designated Basin 50 as a Priority 3 basin for source investigation based on elevated concentrations of chromium, copper, lead and zinc in surface sediment samples collected by the City in the vicinity of the outfall in 2002 (CH2M HILL, 2004). Priority 3 designations were assigned to basins where significant contaminant concentrations in sediment likely are attributable to known upriver or nearby sources currently being investigated under DEQ and/or EPA oversight.

In addition to the City's 2002 sediment investigation, other investigations have been conducted immediately upriver of the outfall, along the Crawford Street site. These investigations include:

- October 2001 Samples - Crawford Street Site - Black Sand Beach Removal Action
- December 2001 Samples - Crawford Street Site - Post Removal Beach Sampling
- 2002 Portland Harbor RI/FS – Round 1 Sediment Investigations

The following table summarizes previous results for the four metals that resulted in the City's Priority 3 designation for the basin (GSI, 2006).

| Sample Event | City In-River Sediment Investigation[1] | | Crawford Street Site Beach Pre-Removal Action Samples[2] | | Crawford Street Site Beach[3] Post Removal Action Samples | LWG Round 1[4] |
|---|---|---|---|---|---|---|
| Location | Beach Sample at Outfall 50 | 4 Beach Samples from vicinity of Outfall 50 | 11 Beach Samples | 3 Samples from vicinity of an historic private outfall | 25+ Beach Samples | 1 Sample from Crawford beach |
| Sample date | October 2002 | October 2002 | April 2001 | April 2001 | Oct – Dec 2001 | October 2002 |
| Chromium mg/kg | 147 | 137 - 212 | 69 - 202 | 49 - 812 | 33 - 179 | 77 |
| Copper mg/kg | 613 | 251 - 475 | 170* | 136 - 612 | 32 - 1890 | 606 |
| Lead mg/kg | 79.1 | 107 - 332 | 26 - 2150 | 106 - 184 | 10 - 3130 | 28 |
| Zinc mg/kg | 315 | 256 - 654 | 178* | 246 - 626 | 95 - 384 | 107 |

*Only one sample was analyzed for this metal

[1]Programmatic Source Control Remedial Investigation Work Plan for the City of Portland Outfalls Project (CH2M HILL, 2004).

[2]Preliminary Assessment Soil and Groundwater Sampling Report, Crawford Street Site, Portland Oregon (Bridgewater, 2002b).

(3)Black Sand Removal Action, Crawford Street Site, Portland, Oregon (Bridgewater, 2002a).
(4)Portland Harbor RI/FS Round 1 Site Characterization Summary Report (Integral, 2004). Note that no samples were collected adjacent to the WPCL site during this investigation and Round 2 samples were all at least 60' offshore.

The highest chromium, copper and lead concentrations were detected in beach samples associated with the black sand fill on the Crawford Street site. Upland soil samples of black sand material at the Crawford Street site had higher levels of chromium and zinc (Bridgewater, 2002b). Black sand reportedly has migrated into the river from the site and contamination remains below the water line even after the removal action (DEQ, 2005). The investigations of the black sand contamination on the Crawford Street beach included a limited analyte list which lacked analyses for some key contaminants, such as arsenic and PCBs. The ongoing stormwater pathway evaluation at this site may generate additional data relevant to this issue.

The 2004 Portland Harbor Multibeam Bathymetric Survey identified the hydrodynamic conditions adjacent to Outfall 50 as a transport/non-depositional zone with minimal sediment accretion (Integral, 2004). This hydrodynamic condition suggests that, over time, sediments in this section of the river likely are transported from the upriver Crawford Street site to areas downriver, including Outfall 50.

Based on in-river sediment data, the area adjacent to the WPCL and Crawford Street sites has been identified as an area of potential concern for copper, chromium, lead, zinc and tributyltin by EPA (EPA, 2005), and for PCBs and arsenic by the Lower Willamette Group (LWG) (Integral, 2007).

# Field Activities

The City coordinated with DEQ regarding this source control investigation before conducting this work. The solids sample was collected from the pollution reduction pond, adjacent to the pond's discharge grate (Figure 1). Photographs of the sampling locations and collected solids are included in Attachment A. Field notes taken during sampling activities are provided in Attachment B.

Three discrete subsamples were collected adjacent to the discharge grate located in the pond water flow control wall (photographs 1 and 2 in Attachment A). The subsamples were thoroughly mixed and homogenized with a stainless steel spoon and bowl in accordance with BES Field Operations' Standard Operating Procedures, to create one composite sample.

# Summary of Results

The composite sample was analyzed for metals, PCB Aroclors, PCB congeners, pesticides, herbicides, polynuclear aromatic hydrocarbons (PAHs), phthalates, SVOCs, total organic carbon (TOC), total solids (TS), and grain size. Tables 1 and 2 summarize the physical and chemical analytical data results. The laboratory analytical results and data review summary for the sample are provided in Attachment C.

The analytical results were compared with the Joint Source Control Strategy (JSCS) toxicity and bioaccumulation screening level values (SLVs) (DEQ/EPA, 2005) and the City's 2002 in-river sediment sample data (CH2M HILL, 2004).

As the 2004 pond solids removal activity was limited to the spillway area near the inlet, the pond sample collected in 2007 represents solids that have accumulated in the pond since it became operational. For reference, the 2007 metals data also are compared to the 2004 pond cleanout sample data. The results of the comparisons are summarized as follows:

- **Metals.** The 2007 pond sample was analyzed for aluminum, antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc. All metals concentrations are below JSCS toxicity SLVs. Three metals (lead, mercury, and selenium) were detected at concentrations slightly higher than the bioaccumulation SLVs.

  The concentrations of chromium, copper and lead in the pond sample are significantly less than the in-river sediment concentrations presented in the previous table. The zinc concentration is similar to the in-river concentrations. However, the zinc concentrations in the in-river samples and the pond sample are all relatively low and do not indicate the presence of significant zinc sources in Basin 50. The arsenic concentration in the pond sample is an order of magnitude less than the concentrations detected in the in-river sediment samples adjacent to Outfall 50.

  The 2004 pond cleanout sample was analyzed for eight (RCRA) metals for waste disposal. The detected concentrations of metals analyzed in both the 2004 and 2007 pond samples are similar, as shown on Table 1. This similarity in concentrations indicates that for these constituents, the 2007 pond solids sample is representative of historical and current basin discharges.

- **PCBs.** PCB Aroclors 1254 and 1260 were detected at concentrations significantly less than their respective JSCS toxicity SLVs. Individual PCB congener concentrations were less than the JSCS bioaccumulation SLVs, with the exception of PCB congener 118 which exceeded the bioaccumulation SLV. Total PCBs were between the bioaccumulation and toxicity SLVs.

  The City's in-river sediment samples were analyzed for PCB congeners. The total PCB congener concentrations in the pond sample and the in-river samples are similar. These concentrations are all low and do not indicate the presence of significant PCB sources in Basin 50.

- **Pesticides.** DDT and its metabolites and total chlordane were detected at concentrations greater than JSCS bioaccumulation SLVs but significantly less than toxicity SLVs.

  The total DDT concentrations in the pond sample and the in-river samples are similar. Chlordane compounds were not detected in the in-river samples. The DDT and chlordane concentrations in the pond sample and the DDT concentrations in the in-river samples are all low and do not indicate the presence of significant pesticide sources in Basin 50.

- **Herbicides.** No herbicides were detected in the pond sample. Pentachlorophenol was detected at a minor concentration and was the only herbicide detected in the in-river sample collected from near Outfall 50.

- **PAHs.** PAH concentrations were low in the pond sample. Benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene were detected at concentrations greater than JSCS toxicity SLVs.

The total PAH concentrations in the pond sample and the in-river samples are similar. These concentrations are relatively low and do not indicate the presence of significant PAH sources in Basin 50.

- **Phthalates.** Bis(2-ethylhexyl)phthalate (BEHP) was detected at a concentration greater than the JSCS SLVs. No other phthalates were detected in the sample.

  The concentration of BEHP detected in the pond sample is an order of magnitude greater than the in-river sediment sample concentrations. However, these concentrations are all low and do not indicated the presence of significant BEHP sources in Basin 50.

- **SVOCs.** In addition to the PAHs and phthalate identified above, 4-methylphenol was the only other SVOC detected in the sample. No JSCS SLV has been established for this constituent.

  Other than a low concentration of carbazole in one sample, SVOCs were not detected in the in-river sediment samples.

# Conclusions and Next Steps

The City's Priority 3 designation for Basin 50 was based on elevated chromium, copper, lead and zinc concentrations in in-river sediment samples collected near Outfall 50. The results of the Basin 50 source control investigation indicate that these metals have been discharged to the City stormwater conveyance system at concentrations that are too low to be the source of the chromium, copper, and lead found in the river sediment samples. The upriver Crawford Street site is a likely source for these metals based on (1) a comparison of concentrations detected in the WPCL pond solids sample with the adjacent City and Crawford Street beach data and (2) the hydrodynamic conditions in this section of the river indicating that, over time, sediment has been transported from the upriver Crawford Street site to downriver areas.

With regard to zinc, the concentration detected in the pond sample is similar to the concentration detected in the river sediment sample collected closest to the outfall, and both concentrations are less than the JSCS SLV. In-river sediment concentrations of zinc in the vicinity of the outfall are also similar to concentrations detected in the Crawford site beach sediments, making it difficult to discern whether stormwater solids from Basin 50 are contributing zinc to river sediment. However, because chromium, copper and lead concentrations in the vicinity of Outfall 50 are likely attributable to an upriver source currently being investigated under DEQ oversight, the basin's Priority 3 status will be maintained at this time.

In addition to metals, relatively low concentrations of other constituents were detected in the pond solids sample. Concentrations of these constituents do not indicate that significant uncontrolled sources appear to be present within the basin. Additionally, because the pollution reduction pond was designed as a settling basin for stormwater solids transported through the Basin 50 drainage system, overall loading of stormwater solids to the Willamette River from Basin 50 has been significantly reduced.

Between September and December 2007, the City collected stormwater samples in Basin 50 at a manhole location downstream of discharges from the pollution reduction pond and all known connections to the outfall. The resulting stormwater data will be evaluated to determine whether additional source investigation is warranted in Basin 50.

# References

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## Tables

Table 1 - *Summary of Chemical Analytical Results*
Table 2 – *Summary of Polychlorinated Biphenyl Congener Analytical Results*

## Figure

Figure 1 – *Basin 50, Pollution Reduction Pond Sediment Sampling Location*

## Attachments

Attachment A - *Field Photographs*
Attachment B - *Field Notes*
Attachment C - *Laboratory Reports*

**Table 1**
**Summary of Chemical Analytical Results**
**Pollution Reduction Pond Solids Sample**
**Outfall Basin 50**

| Class | Analyte | Units | WPCL Pond Solids: 2004 Waste Characterization Sample[1] 7/19/2004 | WPCL Pond Solids: Adjacent to Outlet Grate SW-50-AAE629-0607 6/1/2007 | JSCS[2] Screening Level Value (Toxicity) | JSCS[2] Screening Level Value (Bioaccumulation) |
|---|---|---|---|---|---|---|
| Total Organic Carbon (EPA 9060 MOD) | | | | | | |
| | TOC | mg/Kg | NA | 48700 | -- | -- |
| Total Solids (SM 2540 G)[3] | | | | | | |
| | TS | % | 52.5 | 55.2 (48.6) | -- | -- |
| Metals (EPA 6020) | | | | | | |
| | Aluminum (EPA 6010) | mg/Kg | NA | 28200 | -- | -- |
| | Antimony | mg/Kg | NA | 2.3 | 64 | -- |
| | Arsenic | mg/Kg | 3.24 | 5.74 | 33 | 7 |
| | Barium | mg/Kg | 185 | NA | -- | -- |
| | Cadmium | mg/Kg | 0.99 | 0.75 | 4.98 | 1 |
| | Chromium | mg/Kg | 51.0 | 38.3 | 111 | -- |
| | Copper | mg/Kg | NA | 72.8 | 149 | -- |
| | Lead | mg/Kg | **84.9** | **57.2** | 128 | 17 |
| | Mercury | mg/Kg | **0.076** | **0.097** | 1.06 | 0.07 |
| | Nickel | mg/Kg | NA | 22.3 | 48.6 | -- |
| | Selenium | mg/Kg | 1 U | **3.39** | 5 | 2 |
| | Silver | mg/Kg | 0.17 | 0.1 U | 5 | -- |
| | Zinc | mg/Kg | NA | 358 | 459 | -- |
| Organochlorine Pesticides (EPA 8081A) | | | | | | |
| | 4,4'-DDD | ug/Kg | NA | **3.7** P | 28 | 0.33 |
| | 4,4'-DDE | ug/Kg | NA | **2.7** | 31.3 | 0.33 |
| | 4,4'-DDT | ug/Kg | NA | **7.4** | 62.9 | 0.33 |
| | Estimated Total DDT[4] | ug/Kg | NA | **13.8** | -- | 0.33 |
| | Aldrin | ug/Kg | NA | 0.99 U | 40 | -- |
| | alpha-BHC (α-BHC) | ug/Kg | NA | 0.99 U | -- | -- |
| | beta-BHC (β-BHC) | ug/Kg | NA | 0.99 U | -- | -- |
| | delta-BHC (δ-BHC) | ug/Kg | NA | 0.99 U | -- | -- |
| | gamma-BHC (γ-BHC, Lindane) | ug/Kg | NA | 0.99 U | 4.99 | -- |
| | alpha-Chlordane[5] | ug/Kg | NA | 1.9 | -- | -- |
| | beta-Chlordane[5] | ug/Kg | NA | 3 | -- | -- |
| | Oxychlordane | ug/Kg | NA | NA | | |
| | cis-Nonachlor | ug/Kg | NA | NA | | |
| | trans-Nonachlor | ug/Kg | NA | NA | | |
| | Total Chlordane[6] | ug/Kg | NA | **4.9** | 17.6 | 0.37 |
| | Dieldrin | ug/Kg | NA | 0.99 U | 61.8 | 0.0081 |
| | Endosulfan I | ug/Kg | NA | 0.99 U | -- | -- |
| | Endosulfan II | ug/Kg | NA | 0.99 U | -- | -- |
| | Endosulfan sulfate | ug/Kg | NA | 0.99 U | -- | -- |
| | Endrin | ug/Kg | NA | 0.99 U | 207 | -- |
| | Endrin aldehyde | ug/Kg | NA | 1.4 Ui | -- | -- |
| | Endrin ketone | ug/Kg | NA | 2.7 Ui | -- | -- |
| | Heptachlor | ug/Kg | NA | 0.99 U | 10 | -- |
| | Heptachlor epoxide | ug/Kg | NA | 0.99 U | 16 | -- |
| | Methoxychlor | ug/Kg | NA | 0.99 U | -- | -- |
| | Toxaphene | ug/Kg | NA | 83 Ui | -- | -- |
| Chlorinated Herbicides (EPA 8151) | | | | | | |
| | 2,4,5-T | mg/Kg | NA | 0.0898 U | -- | -- |
| | 2,4,5-TP (Silvex) | mg/Kg | NA | 0.0898 U | -- | -- |
| | 2,4-D | mg/Kg | NA | 0.0898 U | -- | -- |
| | 2,4-DB | mg/Kg | NA | 0.0898 U | -- | -- |
| | Dalapon | mg/Kg | NA | 0.0898 U | -- | -- |
| | Dicamba | mg/Kg | NA | 0.0898 U | -- | -- |
| | Dichlorprop | mg/Kg | NA | 0.0898 U | -- | -- |
| | Dinoseb | mg/Kg | NA | 0.0898 U | -- | -- |
| | MCPA | mg/Kg | NA | 8.98 U | -- | -- |
| | MCPP | mg/Kg | NA | 8.98 U | -- | -- |

**Table 1**
**Summary of Chemical Analytical Results**
**Pollution Reduction Pond Solids Sample**
**Outfall Basin 50**

| | | | WPCL Pond Solids | | JSCS[2] Screening Level Value | |
|---|---|---|---|---|---|---|
| | | | 2004 Waste Characterization Sample[1] | Adjacent to Outlet Grate SW-50-AAE629-0607 | | |
| **Class** | **Analyte** | **Units** | 7/19/2004 | 6/1/2007 | **(Toxicity)** | **(Bioaccumulation)** |
| Polychlorinated Biphenyls(PCBs) (EPA 8082) | | | | | | |
| | Aroclor 1016 | ug/Kg | NA | 9.9 U | 530 | -- |
| | Aroclor 1221 | ug/Kg | NA | 20 U | -- | -- |
| | Aroclor 1232 | ug/Kg | NA | 9.9 U | -- | -- |
| | Aroclor 1242 | ug/Kg | NA | 9.9 U | -- | -- |
| | Aroclor 1248 | ug/Kg | NA | 9.9 U | 1500 | -- |
| | Aroclor 1254 | ug/Kg | NA | 43 | 300 | -- |
| | Aroclor 1260 | ug/Kg | NA | 59 | 200 | -- |
| | Aroclor 1262 | ug/Kg | NA | 9.9 U | -- | -- |
| | Aroclor 1268 | ug/Kg | NA | 9.9 U | -- | -- |
| | Total PCBs | ug/Kg | NA | **102** | 676 | 0.39 |
| Polynuclear Aromatic Hydrocarbons(PAH) (EPA 8270C-SIM) | | | | | | |
| | 2-Methylnaphthalene | ug/Kg | NA | 8.9 | 200 | -- |
| | Acenaphthene | ug/Kg | NA | 14 | 300 | -- |
| | Acenaphthylene | ug/Kg | NA | 5.3 | 200 | -- |
| | Anthracene | ug/Kg | NA | 26 | 845 | -- |
| | Benzo(a)anthracene | ug/Kg | NA | 240 | 1050 | -- |
| | Benzo(a)pyrene | ug/Kg | NA | 370 | 1450 | -- |
| | Benzo(b)fluoranthene | ug/Kg | NA | 570 | -- | -- |
| | Benzo(g,h,i)perylene | ug/Kg | NA | 430 | 300 | -- |
| | Benzo(k)fluoranthene | ug/Kg | NA | 210 | 13000 | -- |
| | Chrysene | ug/Kg | NA | 350 | 1290 | -- |
| | Dibenzo(a,h)anthracene | ug/Kg | NA | 87 | 1300 | -- |
| | Dibenzofuran | ug/Kg | NA | 6.1 | -- | -- |
| | Fluoranthene | ug/Kg | NA | 370 | 2230 | 37000 |
| | Fluorene | ug/Kg | NA | 10 | 536 | -- |
| | Indeno(1,2,3-cd)pyrene | ug/Kg | NA | 440 | 100 | -- |
| | Naphthalene | ug/Kg | NA | 18 | 561 | -- |
| | Phenanthrene | ug/Kg | NA | 140 | 1170 | -- |
| | Pyrene | ug/Kg | NA | 330 | 1520 | 1900 |
| | Total PAH | ug/Kg | NA | 3625.3 | -- | -- |
| Phthalates (EPA8270C) | | | | | | |
| | Bis(2-ethylhexyl) phthalate (BEHP) | ug/Kg | NA | **1700** | 800 | 330 |
| | Butyl Benzyl Phthalate | ug/Kg | NA | 52 U | -- | -- |
| | Diethyl phthalate | ug/Kg | NA | 52 U | 600 | -- |
| | Dimethyl phthalate | ug/Kg | NA | 52 U | -- | -- |
| | Di-n-butyl phthalate | ug/Kg | NA | 52 U | 100 | 60 |
| | Di-n-octyl phthalate | ug/Kg | NA | 52 U | -- | -- |
| Semi-Volatile Organic Compounds (SVOC) (EPA8270LV) | | | | | | |
| | 1,2,4-Trichlorobenzene | ug/Kg | NA | 52 U | 9200 | -- |
| | 1,2-Dichlorobenzene | ug/Kg | NA | 52 U | 1700 | -- |
| | 1,3-Dichlorobenzene | ug/Kg | NA | 52 U | 300 | -- |
| | 1,4-Dichlorobenzene | ug/Kg | NA | 52 U | 300 | -- |
| | 2,4,5-Trichlorophenol | ug/Kg | NA | 52 U | -- | -- |
| | 2,4,6-Trichlorophenol | ug/Kg | NA | 52 U | -- | -- |
| | 2,4-Dichlorophenol | ug/Kg | NA | 52 U | -- | -- |
| | 2,4-Dimethylphenol | ug/Kg | NA | 260 U | -- | -- |
| | 2,4-Dinitrophenol | ug/Kg | NA | 1100 U | -- | -- |
| | 2,4-Dinitrotoluene | ug/Kg | NA | 52 U | -- | -- |
| | 2,6-Dinitrotoluene | ug/Kg | NA | 52 U | -- | -- |
| | 2-Chloronaphthalene | ug/Kg | NA | 52 U | -- | -- |
| | 2-Chlorophenol | ug/Kg | NA | 52 U | -- | -- |
| | 2-Methyl-4,6-dinitrophenol | ug/Kg | NA | 520 U | -- | -- |
| | 2-Methylphenol | ug/Kg | NA | 52 U | -- | -- |
| | 2-Nitroaniline | ug/Kg | NA | 110 U | -- | -- |
| | 2-Nitrophenol | ug/Kg | NA | 52 U | -- | -- |
| | 3,3'-Dichlorobenzidine | ug/Kg | NA | 520 U | -- | -- |
| | 3-Nitroaniline | ug/Kg | NA | 110 U | -- | -- |

**Table 1**
**Summary of Chemical Analytical Results**
**Pollution Reduction Pond Solids Sample**
**Outfall Basin 50**

| | | | WPCL Pond Solids | | JSCS[2] Screening Level Value | |
|---|---|---|---|---|---|---|
| | | | 2004 Waste Characterization Sample[1] | Adjacent to Outlet Grate SW-50-AAE629-0607 | | |
| **Class** | **Analyte** | **Units** | 7/19/2004 | 6/1/2007 | **(Toxicity)** | **(Bioaccumulation)** |
| | 4-Bromophenylphenyl ether | ug/Kg | NA | 52 U | -- | -- |
| | 4-Chloro-3-methylphenol | ug/Kg | NA | 52 U | -- | -- |
| | 4-Chloroaniline | ug/Kg | NA | 52 U | -- | -- |
| | 4-Chlorophenyl phenyl ether | ug/Kg | NA | 52 U | -- | -- |
| | 4-Methylphenol[7] | ug/Kg | NA | 120 | -- | -- |
| | 4-Nitroaniline | ug/Kg | NA | 110 U | -- | -- |
| | 4-Nitrophenol | ug/Kg | NA | 520 U | -- | -- |
| | Benzoic acid | ug/Kg | NA | 1100 U | -- | -- |
| | Benzyl alcohol | ug/Kg | NA | 110 U | -- | -- |
| | Bis(2-chloroethoxy) methane | ug/Kg | NA | 52 U | -- | -- |
| | Bis(2-chloroethyl) ether | ug/Kg | NA | 52 U | -- | -- |
| | Bis(2-chloroisopropyl) ether | ug/Kg | NA | 52 U | -- | -- |
| | Hexachlorobenzene | ug/Kg | NA | 52 U | 100 | 19 |
| | Hexachlorobutadiene | ug/Kg | NA | 52 U | 600 | -- |
| | Hexachlorocyclopentadiene | ug/Kg | NA | 300 U | 400 | -- |
| | Hexachloroethane | ug/Kg | NA | 52 U | -- | -- |
| | Isophorone | ug/Kg | NA | 52 U | -- | -- |
| | Nitrobenzene | ug/Kg | NA | 52 U | -- | -- |
| | N-Nitrosodi-n-propylamine | ug/Kg | NA | 52 U | -- | -- |
| | N-Nitrosodiphenylamine | ug/Kg | NA | 52 U | -- | -- |
| | Pentachlorophenol | ug/Kg | NA | 520 U | 1000 | 250 |
| | Phenol | ug/Kg | NA | 160 U | 50 | -- |

Notes:

i = The MRL/MDL has been elevated due to matrix interference.

P = The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).

U = The analyte was not detected above the reported sample quantification limit.

NA = Not analyzed.

-- No JSCS screening level available.

ug/Kg = Micrograms per kilogram.

mg/Kg = Milligrams per kilogram.

(1) This sample was also analyzed for petroleum hydrocarbons. Motor oil-range hydrocarbons were detected at a concentration of 5,170 mg/Kg; no other hydrocarbons were detected.

[2]JSCS - Portland Harbor Joint Source Control Strategy (DEQ/EPA Final December 2005, Amended 2007).

[3] Total solid concentrations in parenthesis are from CAS using EPA 160.3M.

[4] Estimated Total DDT is the sum of 4,4'-DDE, 4,4'-DDD and 4,4'-DDT.

[5] Alpha-chlordane is known as cis-Chlordane. Beta-Chlordane is known as trans-chlordane and gamma-chlordane.

[6] Total Chlordane is sum of alpha-, beta-, oxy- isomers and cis-, trans-nonachlor.

[7]This analyte cannot be separated from 3-Methylphenol.

**bold** = concentration exceeds JSCS Bioaccumulation Screening Level Value

= concentration exceeds JSCS Toxicity Screening Level Value

**Table 2**
**Summary of Polychlorinated Biphenyl Congener Analytical Results**
**Pollution Reduction Pond Solids Sample**
**Outfall Basin 50**

| IUPAC Number[1] | Chemical Name | Units | WPCL Pond Solids<br>Adjacent to Outlet Grate<br>SW-50-AAE629-0607<br>6/1/2007 | JSCS[1] Screening Level Value<br>(Toxicity) | <br>(Bioaccumulation) |
|---|---|---|---|---|---|
| Chlorinated Biphenyl Congeners (EPA 1668A) | | | | | |
| PCB 1 | 2-MoCB | ug/Kg | 0.10466 | -- | -- |
| PCB 2 | 3-MoCB | ug/Kg | 0.01629 | -- | -- |
| PCB 3 | 4-MoCB | ug/Kg | 0.05236 | -- | -- |
| PCB 4 | 2,2'-DiCB | ug/Kg | 0.07064 | -- | -- |
| PCB 5 | 2,3-DiCB | ug/Kg | 0.09163 | -- | -- |
| PCB 6 | 2,3'-DiCB | ug/Kg | 0.03453 | -- | -- |
| PCB 7 | 2,4-DiCB | ug/Kg | 0.02004 U | -- | -- |
| PCB 8 | 2,4'-DiCB | ug/Kg | 0.02193 U | -- | -- |
| PCB 9 | 2,5-DiCB | ug/Kg | 0.02277 U | -- | -- |
| PCB 10 | 2,6-DiCB | ug/Kg | 0.02077 U | -- | -- |
| PCB 11 | 3,3'-DiCB | ug/Kg | 0.29066 | -- | -- |
| PCB 12/13 | 3,4-DiCB + 3,4'-DiCB | ug/Kg | 0.02406 U | -- | -- |
| PCB 14 | 3,5-DiCB | ug/Kg | 0.02393 U | -- | -- |
| PCB 15 | 4,4'-DiCB | ug/Kg | 0.1287 | -- | -- |
| PCB 16 | 2,2',3-TriCB | ug/Kg | 0.06093 | -- | -- |
| PCB 17 | 2,2',4-TriCB | ug/Kg | 0.06747 | -- | -- |
| PCB 18/30 | 2,2',5-TriCB + 2,4,6-TriCB | ug/Kg | 0.15369 | -- | -- |
| PCB 19 | 2,2',6-TriCB | ug/Kg | 0.03068 U | -- | -- |
| PCB 20/28 | 2,3,3'-TriCB + 2,4,4'-TriCB | ug/Kg | 0.2896 | -- | -- |
| PCB 21/33 | 2,3,4-TriCB + 2',3,4-TriCB | ug/Kg | 0.13545 | -- | -- |
| PCB 22 | 2,3,4'-TriCB | ug/Kg | 0.08976 | -- | -- |
| PCB 23 | 2,3,5-TriCB | ug/Kg | 0.01263 U | -- | -- |
| PCB 24/27 | 2,3,6-TriCB + 2,3',6-TriCB | ug/Kg | 0.01465 U | -- | -- |
| PCB 25 | 2,3',4-TriCB | ug/Kg | 0.00787 U | -- | -- |
| PCB 26/29 | 2,3',5-TriCB + 2,4,5-TriCB | ug/Kg | 0.02118 | -- | -- |
| PCB 31 | 2,4',5-TriCB | ug/Kg | 0.26432 | -- | -- |
| PCB 32 | 2,4',6-TriCB | ug/Kg | 0.06437 | -- | -- |
| PCB 34 | 2',3,5-TriCB | ug/Kg | 0.01161 U | -- | -- |
| PCB 35 | 3,3',4-TriCB | ug/Kg | 0.00661 U | -- | -- |
| PCB 36 | 3,3',5-TriCB | ug/Kg | 0.00609 U | -- | -- |
| PCB 37 | 3,4,4'-TriCB | ug/Kg | 0.11283 | -- | -- |
| PCB 38 | 3,4,5-TriCB | ug/Kg | 0.00634 U | -- | -- |
| PCB 39 | 3,4',5-TriCB | ug/Kg | 0.00561 U | -- | -- |
| PCB 40/41/71 | 2,2',3,3'-TeCB + 2,2',3,4-TeCB + 2,3',4',6-TeCB | ug/Kg | 0.18443 | -- | -- |
| PCB 42 | 2,2',3,4'-TeCB | ug/Kg | 0.0652 | -- | -- |
| PCB 43/52/73 | 2,2',3,5-TeCB + 2,2',5,5'-TeCB + 2,3',5',6-TeCB | ug/Kg | 0.41418 | -- | -- |
| PCB 44/47/65 | 2,2',3,5'-TeCB + 2,2',4,4'-TeCB + 2,3,5,6-TeCB | ug/Kg | 0.26732 | -- | -- |
| PCB 45/51 | 2,2',3,6-TeCB + 2,2',4,6'-TeCB | ug/Kg | 0.01287 U | -- | -- |
| PCB 46 | 2,2',3,6'-TeCB | ug/Kg | 0.01422 U | -- | -- |
| PCB 48 | 2,2',4,5-TeCB | ug/Kg | 0.02471 | -- | -- |
| PCB 49/69 | 2,2',4,5'-TeCB + 2,3',4,6-TeCB | ug/Kg | 0.16547 | -- | -- |
| PCB 50/53 | 2,2',4,6-TeCB + 2,2',5,6'-TeCB | ug/Kg | 0.01299 U | -- | -- |
| PCB 54 | 2,2',6,6'-TeCB | ug/Kg | 0.00607 U | -- | -- |
| PCB 55 | 2,3,3',4-TeCB | ug/Kg | 0.01944 U | -- | -- |
| PCB 56 | 2,3,3',4'-TeCB | ug/Kg | 0.1194 | -- | -- |
| PCB 57 | 2,3,3',5-TeCB | ug/Kg | 0.01888 U | -- | -- |
| PCB 58 | 2,3,3',5'-TeCB | ug/Kg | 0.01331 U | -- | -- |
| PCB 59/62/75 | 2,3,3',6-TeCB + 2,3,4,6-TeCB + 2,4,4',6-TeCB | ug/Kg | 0.0089 U | -- | -- |
| PCB 60 | 2,3,4,4'-TeCB | ug/Kg | 0.04433 | -- | -- |
| PCB 61/70/74/76 | 2,3,4,5-TeCB + 2,3',4',5-TeCB + 2,4,4',5-TeCB + 2',3,4,5-TeCB | ug/Kg | 0.43526 | -- | -- |
| PCB 63 | 2,3,4',5-TeCB | ug/Kg | 0.01758 U | -- | -- |
| PCB 64 | 2,3,4',6-TeCB | ug/Kg | 0.2939 | -- | -- |
| PCB 66 | 2,3',4,4'-TeCB | ug/Kg | 0.19682 | -- | -- |
| PCB 67 | 2,3',4,5-TeCB | ug/Kg | 0.02312 U | -- | -- |
| PCB 68 | 2,3',4,5'-TeCB | ug/Kg | 0.01663 U | -- | -- |
| PCB 72 | 2,3',5,5'-TeCB | ug/Kg | 0.01807 U | -- | -- |
| PCB 77 | 3,3',4,4'-TeCB | ug/Kg | 0.03274 | -- | 0.052 |
| PCB 78 | 3,3',4,5-TeCB | ug/Kg | 0.01822 U | -- | -- |
| PCB 79 | 3,3',4,5'-TeCB | ug/Kg | 0.01668 U | -- | -- |
| PCB 80 | 3,3',5,5'-TeCB | ug/Kg | 0.01533 U | -- | -- |
| PCB 81 | 3,4,4',5-TeCB | ug/Kg | 0.01116 U | -- | 0.017 |
| PCB 82 | 2,2',3,3',4-PeCB | ug/Kg | 0.01058 U | -- | -- |
| PCB 83/99 | 2,2',3,3',5-PeCB + 2,2',4,4',5-PeCB | ug/Kg | 0.20764 | -- | -- |
| PCB 84 | 2,2',3,3',6-PeCB | ug/Kg | 0.13019 | -- | -- |
| PCB 85/116/117 | 2,2',3,4,4'-PeCB + 2,3,4,5,6-PeCB + 2,3,4',5,6-PeCB | ug/Kg | 0.00962 | -- | -- |
| PCB 86/87/97/108/119/125 | 2,2',3,4,5-PeCB + 2,2',3,4,5'-PeCB + 2,2',3',4,5-PeCB + 2,3,3',4,5'-PeCB + 2,3',4,4',6-PeCB + 2',3,4,5,6'-PeCB | ug/Kg | 0.37056 | -- | -- |

**Table 2**
**Summary of Polychlorinated Biphenyl Congener Analytical Results**
**Pollution Reduction Pond Solids Sample**
**Outfall Basin 50**

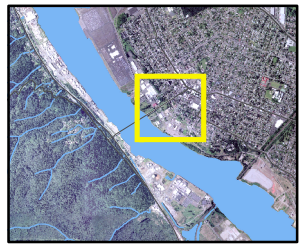
| | | | WPCL Pond Solids<br>Adjacent to Outlet Grate<br>SW-50-AAE629-0607 | JSCS[1] Screening Level Value | |
|---|---|---|---|---|---|
| **IUPAC Number[1]** | **Chemical Name** | **Units** | 6/1/2007 | **(Toxicity)** | **(Bioaccumulation)** |
| PCB 88/91 | 2,2',3,4,6-PeCB + 2,2',3,4',6-PeCB | ug/Kg | 0.06157 | -- | -- |
| PCB 89 | 2,2',3,4,6'-PeCB | ug/Kg | 0.00785 U | -- | -- |
| PCB 90/101/113 | 2,2',3,4',5-PeCB + 2,2',4,5,5'-PeCB + 2,3,3',5',6-PeCB | ug/Kg | 0.60859 | -- | -- |
| PCB 92 | 2,2',3,5,5'-PeCB | ug/Kg | 0.08864 | -- | -- |
| PCB 93/95/100 | 2,2',3,5,6-PeCB + 2,2',3,5',6-PeCB + 2,2',4,4',6-PeCB | ug/Kg | 0.57963 | -- | -- |
| PCB 94 | 2,2',3,5,6'-PeCB | ug/Kg | 0.00729 U | -- | -- |
| PCB 96 | 2,2',3,6,6'-PeCB | ug/Kg | 0.00141 U | -- | -- |
| PCB 98/102 | 2,2',3',4,6-PeCB + 2,2',4,5,6'-PeCB | ug/Kg | 0.00611 U | -- | -- |
| PCB 103 | 2,2',4,5',6-PeCB | ug/Kg | 0.00669 U | -- | -- |
| PCB 104 | 2,2',4,6,6'-PeCB | ug/Kg | 0.00241 U | -- | -- |
| PCB 105 | 2,3,3',4,4'-PeCB | ug/Kg | 0.16221 | -- | 0.17 |
| PCB 106 | 2,3,3',4,5-PeCB | ug/Kg | 0.00128 U | -- | -- |
| PCB 107/124 | 2,3,3',4',5-PeCB + 2',3,4,5,5'-PeCB | ug/Kg | 0.0174 | -- | -- |
| PCB 109 | 2,3,3',4,6-PeCB | ug/Kg | 0.0185 | -- | -- |
| PCB 110/115 | 2,3,3',4',6-PeCB + 2,3,4,4',6-PeCB | ug/Kg | 1.1029 | -- | -- |
| PCB 111 | 2,3,3',5,5'-PeCB | ug/Kg | 0.03244 | -- | -- |
| PCB 112 | 2,3,3',5,6-PeCB | ug/Kg | 0.00749 U | -- | -- |
| PCB 114 | 2,3,4,4',5-PeCB | ug/Kg | 0.00072 U | -- | 0.17 |
| PCB 118 | 2,3',4,4',5-PeCB | ug/Kg | **0.46204** | -- | 0.12 |
| PCB 120 | 2,3',4,5,5'-PeCB | ug/Kg | 0.00462 U | -- | -- |
| PCB 121 | 2,3',4,5',6-PeCB | ug/Kg | 0.00486 U | -- | -- |
| PCB 122 | 2',3,3',4,5-PeCB | ug/Kg | 0.00075 U | -- | -- |
| PCB 123 | 2',3,4,4',5-PeCB | ug/Kg | 0.0007 U | -- | 0.21 |
| PCB 126 | 3,3',4,4',5-PeCB | ug/Kg | 0.00069 U | -- | 0.00005 |
| PCB 127 | 3,3',4,5,5'-PeCB | ug/Kg | 0.00084 U | -- | -- |
| PCB 128/166 | 2,2',3,3',4,4'-HxCB + 2,3,4,4',5,6-HxCB | ug/Kg | 0.13358 | -- | -- |
| PCB 129/138/160/163 | 2,2',3,3',4,5-HxCB + 2,2',3,4,4',5'-HxCB + 2,3,3',4,5,6-HxCB + 2,3,3',4',5,6-HxCB | ug/Kg | 0.89219 | -- | -- |
| PCB 130 | 2,2',3,3',4,5'-HxCB | ug/Kg | 0.01756 | -- | -- |
| PCB 131/142 | 2,2',3,3',4,6-HxCB + 2,2',3,4,5,6-HxCB | ug/Kg | 0.007 U | -- | -- |
| PCB 132 | 2,2',3,3',4,6'-HxCB | ug/Kg | 0.28837 | -- | -- |
| PCB 133 | 2,2',3,3',5,5'-HxCB | ug/Kg | 0.00658 U | -- | -- |
| PCB 134/147/149 | 2,2',3,3',5,6-HxCB + 2,2',3,4',5,6-HxCB + 2,2',3,4',5',6-HxCB | ug/Kg | 0.90622 | -- | -- |
| PCB 135/151/154 | 2,2',3,3',5,6'-HxCB + 2,2',3,5,5',6-HxCB + 2,2',4,4',5,6'-HxCB | ug/Kg | 0.25538 | -- | -- |
| PCB 136 | 2,2',3,3',6,6'-HxCB | ug/Kg | 0.001 U | -- | -- |
| PCB 137 | 2,2',3,4,4',5-HxCB | ug/Kg | 0.00548 | -- | -- |
| PCB 139/140 | 2,2',3,4,4',6-HxCB + 2,2',3,4,4',6'-HxCB | ug/Kg | 0.00524 U | -- | -- |
| PCB 141 | 2,2',3,4,5,5'-HxCB | ug/Kg | 0.18632 | -- | -- |
| PCB 143 | 2,2',3,4,5,6'-HxCB | ug/Kg | 0.00351 U | -- | -- |
| PCB 144 | 2,2',3,4,5',6-HxCB | ug/Kg | 0.01162 | -- | -- |
| PCB 145 | 2,2',3,4,6,6'-HxCB | ug/Kg | 0.0877 | -- | -- |
| PCB 146 | 2,2',3,4',5,5'-HxCB | ug/Kg | 0.0626 | -- | -- |
| PCB 148 | 2,2',3,4',5,6'-HxCB | ug/Kg | 0.00104 U | -- | -- |
| PCB 150/152 | 2,2',3,4',6,6'-HxCB + 2,2',3,5,6,6'-HxCB | ug/Kg | 0.00075 U | -- | -- |
| PCB 153/168 | 2,2',4,4',5,5'-HxCB + 2,3',4,4',5',6-HxCB | ug/Kg | 0.7854 | -- | -- |
| PCB 155 | 2,2',4,4',6,6'-HxCB | ug/Kg | 0.00118 U | -- | -- |
| PCB 156/157 | 2,3,3',4,4',5-HxCB + 2,3,3',4,4',5'-HxCB | ug/Kg | 0.10514 | -- | 0.42 |
| PCB 158 | 2,3,3',4,4',6-HxCB | ug/Kg | 0.06454 | -- | -- |
| PCB 159 | 2,3,3',4,5,5'-HxCB | ug/Kg | 0.00626 U | -- | -- |
| PCB 161 | 2,3,3',4,5',6-HxCB | ug/Kg | 0.0077 U | -- | -- |
| PCB 162 | 2,3,3',4',5,5'-HxCB | ug/Kg | 0.00615 U | -- | -- |
| PCB 164 | 2,3,3',4',5',6-HxCB | ug/Kg | 0.00577 U | -- | -- |
| PCB 165 | 2,3,3',5,5',6-HxCB | ug/Kg | 0.00455 U | -- | -- |
| PCB 167 | 2,3',4,4',5,5'-HxCB | ug/Kg | 0.0367 | -- | 0.21 |
| PCB 169 | 3,3',4,4',5,5'-HxCB | ug/Kg | 0.00434 U | -- | 0.00021 |
| PCB 170 | 2,2',3,3',4,4',5-HpCB | ug/Kg | 0.40714 | -- | -- |
| PCB 171/173 | 2,2',3,3',4,4',6-HpCB + 2,2',3,3',4,5,6-HpCB | ug/Kg | 0.09072 | -- | -- |
| PCB 172 | 2,2',3,3',4,5,5'-HpCB | ug/Kg | 0.05308 | -- | -- |
| PCB 174 | 2,2',3,3',4,5,6'-HpCB | ug/Kg | 0.34191 | -- | -- |
| PCB 175 | 2,2',3,3',4,5',6-HpCB | ug/Kg | 0.00628 U | -- | -- |
| PCB 176 | 2,2',3,3',4,6,6'-HpCB | ug/Kg | 0.03947 | -- | -- |
| PCB 177 | 2,2',3,3',4',5,6-HpCB | ug/Kg | 0.19329 | -- | -- |
| PCB 178 | 2,2',3,3',5,5',6-HpCB | ug/Kg | 0.10543 | -- | -- |
| PCB 179 | 2,2',3,3',5,6,6'-HpCB | ug/Kg | 0.13704 | -- | -- |
| PCB 180/193 | 2,2',3,4,4',5,5'-HpCB + 2,3,3',4',5,5',6-HpCB | ug/Kg | 0.90331 | -- | -- |

**Table 2**
**Summary of Polychlorinated Biphenyl Congener Analytical Results**
**Pollution Reduction Pond Solids Sample**
**Outfall Basin 50**

| IUPAC Number[1] | Chemical Name | Units | WPCL Pond Solids<br>Adjacent to Outlet Grate<br>SW-50-AAE629-0607<br>6/1/2007 | JSCS[1] Screening Level Value<br>(Toxicity) | <br>(Bioaccumulation) |
|---|---|---|---|---|---|
| PCB 181 | 2,2',3,4,4',5,6-HpCB | ug/Kg | 0.00836 U | -- | -- |
| PCB 182 | 2,2',3,4,4',5,6'-HpCB | ug/Kg | 0.0075 U | -- | -- |
| PCB 183 | 2,2',3,4,4',5',6-HpCB | ug/Kg | 0.17257 | -- | -- |
| PCB 184 | 2,2',3,4,4',6,6'-HpCB | ug/Kg | 0.00132 U | -- | -- |
| PCB 185 | 2,2',3,4,5,5',6-HpCB | ug/Kg | 0.0109 U | -- | -- |
| PCB 186 | 2,2',3,4,5,6,6'-HpCB | ug/Kg | 0.00143 U | -- | -- |
| PCB 187 | 2,2',3,4',5,5',6-HpCB | ug/Kg | 1.20833 | -- | -- |
| PCB 188 | 2,2',3,4',5,6,6'-HpCB | ug/Kg | 0.00204 U | -- | -- |
| PCB 189 | 2,3,3',4,4',5,5'-HpCB | ug/Kg | 0.01092 | -- | 1.2 |
| PCB 190 | 2,3,3',4,4',5,6-HpCB | ug/Kg | 0.07325 | -- | -- |
| PCB 191 | 2,3,3',4,4',5',6-HpCB | ug/Kg | 0.01331 | -- | -- |
| PCB 192 | 2,3,3',4,5,5',6-HpCB | ug/Kg | 0.00761 U | -- | -- |
| PCB 194 | 2,2',3,3',4,4',5,5'-OcCB | ug/Kg | 0.20132 | -- | -- |
| PCB 195 | 2,2',3,3',4,4',5,6-OcCB | ug/Kg | 0.08064 | -- | -- |
| PCB 196 | 2,2',3,3',4,4',5,6'-OcCB | ug/Kg | 0.08761 | -- | -- |
| PCB 197/200 | 2,2',3,3',4,4',6,6'-OcCB + 2,2',3,3',4,5,6,6'-OcCB | ug/Kg | 0.0284 | -- | -- |
| PCB 198/199 | 2,2',3,3',4,5,5',6-OcCB + 2,2',3,3',4,5,5',6'-OcCB | ug/Kg | 0.2228 | -- | -- |
| PCB 201 | 2,2',3,3',4,5',6,6'-OcCB | ug/Kg | 0.02358 | -- | -- |
| PCB 202 | 2,2',3,3',5,5',6,6'-OcCB | ug/Kg | 0.04124 | -- | -- |
| PCB 203 | 2,2',3,4,4',5,5',6-OcCB | ug/Kg | 0.17065 | -- | -- |
| PCB 204 | 2,2',3,4,4',5,6,6'-OcCB | ug/Kg | 0.00511 U | -- | -- |
| PCB 205 | 2,3,3',4,4',5,5',6-OcCB | ug/Kg | 0.00808 | -- | -- |
| PCB 206 | 2,2',3,3',4,4',5,5',6-NoCB | ug/Kg | 0.10042 | -- | -- |
| PCB 207 | 2,2',3,3',4,4',5,6,6'-NoCB | ug/Kg | 0.01016 | -- | -- |
| PCB 208 | 2,2',3,3',4,5,5',6,6'-NoCB | ug/Kg | 0.02844 | -- | -- |
| PCB 209 | Decachlorobipheny | ug/Kg | 0.03447 | -- | -- |
| | Total Monochlorobiphenyls | ug/Kg | 0.17331 | -- | -- |
| | Total Dichlorobiphenyls | ug/Kg | 0.61616 | -- | -- |
| | Total Trichlorobiphenyls | ug/Kg | 1.2596 | -- | -- |
| | Total Tetrachlorobiphenyls | ug/Kg | 2.24376 | -- | -- |
| | Total Pentachlorobiphenyls | ug/Kg | 3.85193 | -- | -- |
| | Total Hexachlorobiphenyls | ug/Kg | 3.8388 | -- | -- |
| | Total Heptachlorobiphenyls | ug/Kg | 3.74977 | -- | -- |
| | Total Octachlorobiphenyls | ug/Kg | 0.86432 | -- | -- |
| | Total Nonachlorobiphenyls | ug/Kg | 0.13902 | -- | -- |
| | Total Decachlorobiphenyls | ug/Kg | 0.03447 | -- | -- |
| | Total PCBs | ug/Kg | **16.77114** | 676 | 0.39 |

Notes:

MoCB = Monochlorobiphenyl
DiCB = Dichlorobiphenyl
TriCB = Trichlorobiphenyl
TeCB = Tetrachlorobiphenyl
PeCB = Pentachlorobiphenyl
HeCB = Hexachlorobiphenyl
HpCB = Heptachlorobiphenyl
OcCB = Octachlorobiphenyl
NoCB = Nonachlorobiphenyl
-- No JSCS screening level available.
U = The analyte was not detected above the reported sample quanitfication limit.
ug/Kg = Micrograms per kilogram.
[1]IUPAC - International Union of Pure and Applied Chemistry
[2]JSCS - Portland Harbor Joint Source Control Strategy (DEQ/EPA Final December 2005, Amended July 2007).
**bold** = concentration exceeds JSCS Bioaccumulation Screening Level Value

## Legend

- Storm Pipe
- Basin 50 Boundary
- Taxlot
- Non-City Outfall
- City Outfall
- Manhole
- Sample Location
- DEQ Environmental Cleanup Sites

0 2,500 5,000 10,000 Feet

Information contained on this map is accurate according to available records, however, the City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published

**Figure 1**
**Basin 50**
**Pollution Reduction Pond**
**Sediment Sampling Location**

| | |
|---|---|
| **Source:** City of Portland BES Aerial photo 2006 | Environmental Services City of Portland 1120 SW Fifth Avenue, Room 1000 Portland Oregon, 97204-1912 |
| **File Name:** s:\gis\outfalls\outfall50\ sampling\of50basin.mxd | **Program Manager:** Dawn Sanders Portland Harbor Superfund |
| **Sheet No.** 1 OF 1 | **Date Printed:** 06/12/2008 **Prepared by:** Sara Gardner |

# Attachment A
# Field Photographs

**Photograph 1 (June 1, 2007).** Basin 50 Stormwater Pollution Reduction Pond at the WPCL. The solids sample was collected adjacent to the discharge grate on the far side of the wall.

**Photograph 2 (June 1, 2007).** The solids sample consisted of 3 subsamples collected in the vicinity of the discharge grate.

# Attachment B
# Field Notes

**City of Portland**
**Environmental Services**

# DAILY FIELD REPORT



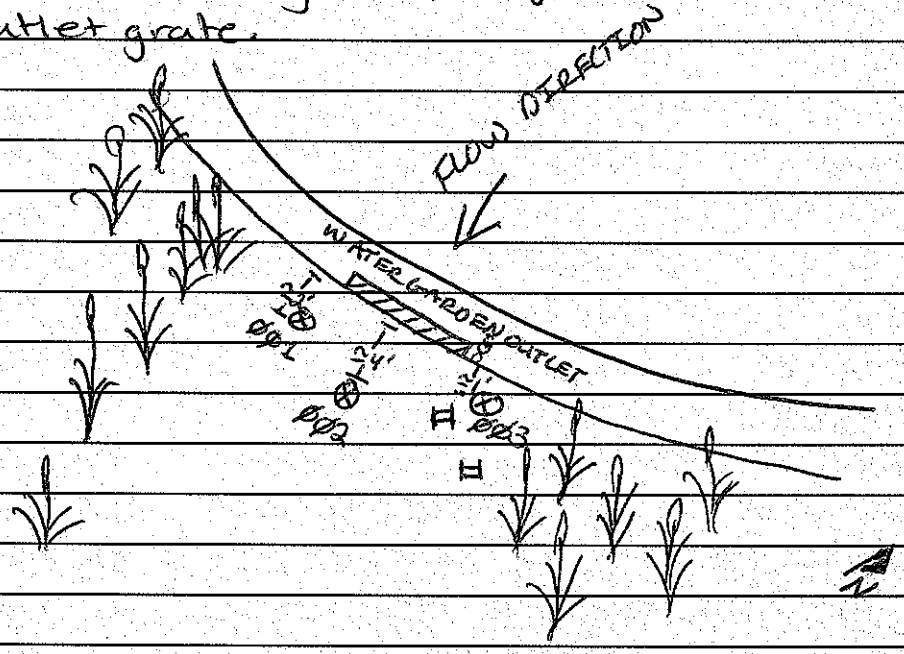
Project PORTLAND HARBOR STORMWATER SAMP. Project No. 1020.005

Location WPCL WATER GARDEN - OF50 Date 6/1/07

Subject BACKGROUND COMPOSITE SEDIMENT SAMP. By JXB

1148 PDT - Left WPCL and arrived on site at WPCL water garden.

1150 - Began site assessment. Randomly assigned three (3) sub-sample points downstream of water garden outlet. Sub-sample PRINT ØØ1 located ~2' downstream of water garden retaining wall, adjacent to southwest corner of outlet grate. Sub-sample point ØØ2 located ~4' downstream of from JXB outlet's center. Grab Sub-sample point ØØ3 located ~1' downstream of water garden retaining wall, adjacent to southeast corner of outlet grate.




1159 - Proceeded to collect sediment sub-samples at all three sample points (ØØ1, ØØ2 & ØØ3). Sediment sub-samples were collected at an average depth of ~2-7" below sediment sub-surface to avoid inclusions of native soil in composite, using decontaminated stainless-steel shovel and auger.

Attachments

City of Portland
Environmental Services

# DAILY FIELD REPORT



Project PORTLAND HARBOR STORMWATER SAMP
Project No. 1020.005
Location WPCL WATER GARDEN - OF50
Date 6/1/07
Subject BACKGROUND COMPOSITE SEDIMENT SAMP
By JXB

1159 (cont.) - Average depth of water above sediment sub-sample points was ≈ 0.5'-1'.

1215 - Decanted water from sediment sub-sample bowl. Composited subsamples, removing <1% decomposing organic matter.

1220 - Thoughrly homogenized composite was transfered into pre-labled sample jars. Composite sample was placed into cooler with blueice for transport back to WPCL.

1230 - Returned to WPCL to relinquish composite sample.

Attachments

# Attachment C
# Laboratory Reports

GSI Water Solutions, Inc.
55 SW Yamhill Street, Suite 400 Portland, OR 97204
P: 503.239.8799 F: 503.239.8940
info@gsiwatersolutions.com www.gsiwatersolutions.com

# Laboratory Data QA/QC Review
# Upland Source Control Investigation
# City Outfall Basin 50

**To:** Linda Scheffler, City of Portland BES

**From:** Robyn Cook, GSI

**Date:** November 19, 2007

This memorandum presents a quality assurance/quality control (QA/QC) review of the laboratory data generated during source control investigation sampling and analyses recently conducted by the City of Portland (City) in Outfall Basin 50. The results of the sampling and analysis are presented in Technical Memorandum No. OF 50-1.

The laboratory analyses of the Basin 50 pollution reduction ponds solids sample were completed by the City's Water Pollution Control Laboratory (WPCL) and three subcontracted laboratories. The following analyses were conducted by each laboratory:

- WPCL
    - Total Solids (SM 2540G)
    - Metals (EPA Method 6020)
- ARI Laboratory
    - Grain Size Analysis (ASTM D421/422)
- Test America Laboratory
    - Total Organic Carbon (EPA 9060 MOD)
    - Chlorinated Herbicides (EPA Method 8151)
- Columbia Analytical Services Laboratory
    - Organochlorine Pesticides (EPA Method 8081A)
    - Polychlorinated Biphenyls (PCB) – Aroclors (EPA Method 8082)
    - Polychlorinated Biphenyls (PCB) – Congeners (EPA Method 1668B)
    - Polynuclear Aromatics (EPA Method 8270-SIM)
    - Semivolatile Organics (EPA Method 8270 LV)

The laboratory data reports are included along with this QA/QC review in Attachment C to Technical Memorandum No. OF 50-1.

This QA/QC review of the analytical data, based on the available documentation supplied by the laboratory, consisted of reviewing the following:

- Chain-of-custody – for completeness and continuous custody
- Analysis conducted within holding times
- Chemicals of interest detected in method blanks
- Surrogate recoveries within accuracy control limits
- Laboratory duplicates within analytical accuracy control limits
- Laboratory blank spike duplicate results within analytical precision control limits
- Matrix spike duplicate results within analytical precision control limits

The results of the laboratory report QA/QC review are presented below.

## Chain-of-Custody

The chain-of-custody forms showed continuous custody of the samples. The chain-of-custody procedures were adequate and sample integrity was maintained through the sample collection and delivery process.

## Analysis Holding Times

All samples were extracted and analyzed within the required holding times.

## Method Blanks

Method blanks were processed during the laboratory analyses of metals, total organic carbon, PCB Aroclors, PCB congeners, semi-volatile organic compounds (SVOC), polynuclear aromatics (PAH), pesticides and herbicides. No chemicals were detected in the method blanks associated with any of the analyses, with the exception of PCB congeners. Thirty congeners were detected in the method blank. Twenty-nine of the congeners detected in the method blank were also found in the associated field samples. The concentrations detected in the field samples are present at concentrations greater than 10 times the blank, and therefore no data are qualified. The congener PCB 25 (PCB 25/2,3',4-TriCB) found in the blank was not detected in the field sample, therefore no data are qualified.

## Surrogate Recoveries

Surrogate recoveries were completed during the laboratory analysis of SVOCs, PCBs aroclors, PAHs, pesticides and herbicides. Surrogate recoveries were within laboratory control limits for all of the analyses with the exception of SVOCs and herbicides. One of the surrogates analyzed with the method blank during the SVOC analysis was outside laboratory control limits. The

surrogate recovery was just outside of the range of acceptable limits, and recoveries were within laboratory control limits for the remaining surrogates; therefore no SVOC data are qualified. The surrogate analyzed with the matrix spike duplicate during the herbicide analysis was slightly outside laboratory control limits; however, because the surrogate recovery was within laboratory control limits for the matrix spike sample, no data are qualified.

## Laboratory Duplicate

A laboratory duplicate was processed during the laboratory analyses of total organic carbon. The relative percent difference (RPDs) was within the laboratory's stated analytical accuracy control limits.

## Laboratory Control Samples

Laboratory control samples were processed during the laboratory analyses of TOC, herbicides and PCB congeners. All laboratory control sample recoveries were within laboratory control limits.

## Laboratory Control Sample Duplicate

A laboratory control sample duplicate was processed during the laboratory analysis of PCB congeners. The relative percent difference of the laboratory control sample and laboratory control sample duplicate was within laboratory control limits.

## Matrix Spikes

A matrix spike was processed during the laboratory analyses of SVOCs and herbicides. The laboratory reported that matrix spike recovery of 1,4-Dichlorobenzene was outside of laboratory control limits for the SVOCs analysis. Based on the other QA/QC results, the data were considered acceptable and therefore the laboratories did not qualify the data. One of the matrix spike recoveries during the herbicide analysis was outside laboratory control limits. Because recoveries were within laboratory control limits for the remaining analytes in the matrix spike and for all analytes in the matrix spike duplicate, no herbicide data are qualified.

## Matrix Spike Duplicates

Matrix spike duplicates were processed during the laboratory analyses of SVOCs and herbicides. The laboratory reported that the matrix spike duplicate recovery for one analyte was outside of laboratory control limits for the SVOCs analysis. Based on other QA/QC results, the data were considered acceptable and therefore the laboratories did not qualify the data. The relative percent differences for three analytes between the matrix spike and the matrix spike duplicate for the herbicide analysis were the outside of control limits. Based on other QA/QC results, the data were considered acceptable and therefore no data were qualified.

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
(503) 823-5696

# City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 6/1/07
Page: 1 of 1
Collected By: JXB

**Project Name:** PORTLAND HARBOR STORMWATER SAMP
**File Number:** 1020.005 **Matrix:** SEDIMENT

OUTFALL 50 CHAIN-OF-CUSTODY

## Requested Analyses

| WPCL Sample I.D. | Location | Point Code | Sample Date | Sample Time | Sample Type | General: PCB Congeners | PCB Aroclors | SVOCs | PAH + Phthalites | Pesticides | Herbicides | TOC | TS | Grain Size | | | Metals: Total Metals (Al, Sb, As, Cd Cr Cu, Pb, Ni, Se, Ag, Zn) + Hg | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FO 070665 | SW-50-AAE629-0607 6543 N BURLINGTON AVE | 50_1 | 6/1/07 | 1220 | C | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | ● | | | |
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| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. | Relinquished By: 4. |
|---|---|---|---|
| Signature: | Signature: | Signature: | Signature: |
| Time: 1244 | Time: | Time: | Time: |
| Printed Name: Jeremiah Bawden | Printed Name: | Printed Name: | Printed Name: |
| Date: 6/1/07 | Date: | Date: | Date: |
| **Received By:** 1. | **Received By:** 2. | **Received By:** 3. | **Received By:** 4. |
| Signature: | Signature: | Signature: | Signature: |
| Time: 1244 | Time: | Time: | Time: |
| Printed Name: KRIS DENNIS | Printed Name: | Printed Name: | Printed Name: |
| Date: 6/1/07 | Date: | Date: | Date: |

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

# LABORATORY ANALYSIS REPORT

**Sample ID:** **FO070665** **Sample Collected:** 6/1/2007 12:20 **Sample Received:** 06/01/07 **Sample Status:** COMPLETE AND VALIDATED

**Proj./Company Name:** PORTLAND HARBOR STORMWATER SAMP
**Address/Location:** SW-50-AAE629-0607
6543 N BURLINGTON AVE-WPCL WATER GARDEN
**Sample Point Code:** 50_1
**Sample Type:** COMPOSITE
**Sample Matrix:** SEDIMENT

**Report Page:** Page 1 of 5
**System ID:** AL05173
**EID File # :** 1020.005
**LocCode:** PORTHASW
**Collected By:** JXB

**Comments:**
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

| Test Parameter | Result | Units | MRL | Method | Analysis Date |
|---|---|---|---|---|---|
| **GENERAL** | | | | | |
| TOTAL SOLIDS | 55.2 | % W/W | 0.01 | SM 2540 G | 06/01/07 |
| **METALS** | | | | | |
| ALUMINUM | 28200 | mg/Kg dry wt | 2.5 | EPA 6010 | 06/12/07 |
| ANTIMONY | 2.30 | mg/Kg dry wt | 0.10 | EPA 6020 | 06/13/07 |
| ARSENIC | 5.74 | mg/Kg dry wt | 0.50 | EPA 6020 | 06/13/07 |
| CADMIUM | 0.75 | mg/Kg dry wt | 0.10 | EPA 6020 | 06/13/07 |
| CHROMIUM | 38.3 | mg/Kg dry wt | 0.50 | EPA 6020 | 06/13/07 |
| COPPER | 72.8 | mg/Kg dry wt | 0.20 | EPA 6020 | 06/13/07 |
| LEAD | 57.2 | mg/Kg dry wt | 0.10 | EPA 6020 | 06/13/07 |
| MERCURY | 0.097 | mg/Kg dry wt | 0.010 | EPA 6020 | 06/13/07 |
| NICKEL | 22.3 | mg/Kg dry wt | 0.20 | EPA 6020 | 06/13/07 |
| SELENIUM | 3.39 | mg/Kg dry wt | 0.50 | EPA 6020 | 06/13/07 |
| SILVER | <0.10 | mg/Kg dry wt | 0.10 | EPA 6020 | 06/13/07 |
| ZINC | 358 | mg/Kg dry wt | 0.50 | EPA 6020 | 06/13/07 |
| **OUTSIDE ANALYSIS** | | | | | |
| TOTAL ORGANIC CARBON | 48700 | mg/Kg dry wt | 1000 | EPA 9060 MOD | 06/07/07 |
| **GRAIN SIZE BY ASTM - ARI** | | | | | |
| Clay (<3.2 µm) | 14.4 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| Coarse Sand (4750-2000 µm) | 4.3 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| Fine Sand (425-75 µm) | 8.0 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| Gravel (>4750 µm) | 14.8 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| Medium Sand (2000-425 µm) | 8.2 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| Silt (13-9 µm) | 3.9 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| Silt (22-13 µm) | 8.3 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| Silt (32-22 µm) | 6.1 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| Silt (7-3.2 µm) | 7.8 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| Silt (75-32 µm) | 17.4 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| Silt (9-7 µm) | 6.7 | Fract % | 0.1 | ASTM D421/422 | 06/05/07 |
| **HERBICIDES-CHLORINATED - TA** | | | | | |
| 2,4,5-T | <0.0898 | mg/Kg dry wt | 0.0898 | EPA 8151 | 06/04/07 |
| 2,4,5-TP (Silvex) | <0.0898 | mg/Kg dry wt | 0.0898 | EPA 8151 | 06/04/07 |
| 2,4-D | <0.0898 | mg/Kg dry wt | 0.0898 | EPA 8151 | 06/04/07 |
| 2,4-DB | <0.0898 | mg/Kg dry wt | 0.0898 | EPA 8151 | 06/04/07 |

**Report Date: 08/15/07** **Validated By: Signature on File**

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

# LABORATORY ANALYSIS REPORT

**Sample ID:** **FO070665** **Sample Collected:** 6/1/2007 12:20 **Sample Received:** 06/01/07 **Sample Status:** **COMPLETE AND VALIDATED**

**Proj./Company Name:** PORTLAND HARBOR STORMWATER SAMP
**Address/Location:** SW-50-AAE629-0607
6543 N BURLINGTON AVE-WPCL WATER GARDEN
**Sample Point Code:** 50_1
**Sample Type:** COMPOSITE
**Sample Matrix:** SEDIMENT



**System ID:** AL05173
**EID File # :** 1020.005
**LocCode:** PORTHASW
**Collected By:** JXB

**Comments:**
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

| Test Parameter | Result | Units | MRL | Method | Analysis Date |
|---|---|---|---|---|---|
| Dalapon | <0.0898 | mg/Kg dry wt | 0.0898 | EPA 8151 | 06/04/07 |
| Dicamba | <0.0898 | mg/Kg dry wt | 0.0898 | EPA 8151 | 06/04/07 |
| Dichlorprop | <0.0898 | mg/Kg dry wt | 0.0898 | EPA 8151 | 06/04/07 |
| Dinoseb | <0.0898 | mg/Kg dry wt | 0.0898 | EPA 8151 | 06/04/07 |
| MCPA | <8.980 | mg/Kg dry wt | 8.980 | EPA 8151 | 06/04/07 |
| MCPP | <8.980 | mg/Kg dry wt | 8.980 | EPA 8151 | 06/04/07 |
| **PESTICIDES BY EPA 8081 - CAS** | | | | | |
| 4,4'-DDD | 3.7 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| 4,4'-DDE | 2.7 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| 4,4'-DDT | 7.4 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Aldrin | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Alpha-BHC | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Alpha-Chlordane | 1.9 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Beta-BHC | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Delta-BHC | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Dieldrin | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Endosulfan I | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Endosulfan II | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Endosulfan Sulfate | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Endrin | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Endrin Aldehyde | <1.4 | µg/Kg dry wt | 1.4 | EPA 8081A | 06/13/07 |
| Endrin Ketone | <2.7 | µg/Kg dry wt | 2.7 | EPA 8081A | 06/13/07 |
| Gamma-BHC(Lindane) | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Gamma-Chlordane | 3.0 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Heptachlor | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Heptachlor Epoxide | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Methoxychlor | <0.99 | µg/Kg dry wt | 0.99 | EPA 8081A | 06/13/07 |
| Toxaphene | <83 | µg/Kg dry wt | 83 | EPA 8081A | 06/13/07 |
| **POLYCHLORINATED BIPHENYL CONGENERS** | | | | | |
| Refer to Contract Report | Completed | µg/Kg dry wt | | EPA 1668A | 06/15/07 |
| **POLYCHLORINATED BIPHENYLS (PCB)** | | | | | |
| Aroclor 1016 | <9.9 | µg/Kg dry wt | 9.9 | EPA 8082 | 06/13/07 |
| Aroclor 1221 | <20 | µg/Kg dry wt | 20 | EPA 8082 | 06/13/07 |
| Aroclor 1232 | <9.9 | µg/Kg dry wt | 9.9 | EPA 8082 | 06/13/07 |

**Report Date: 08/15/07** **Validated By: Signature on File**

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

# LABORATORY ANALYSIS REPORT

**Sample ID:** **FO070665** **Sample Collected:** 6/1/2007 12:20 **Sample Received:** 06/01/07 **Sample Status:** COMPLETE AND VALIDATED

**Proj./Company Name:** PORTLAND HARBOR STORMWATER SAMP
**Address/Location:** SW-50-AAE629-0607
6543 N BURLINGTON AVE-WPCL WATER GARDEN
**Sample Point Code:** 50_1
**Sample Type:** COMPOSITE
**Sample Matrix:** SEDIMENT



**System ID:** AL05173
**EID File # :** 1020.005
**LocCode:** PORTHASW
**Collected By:** JXB

**Comments:**
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

| Test Parameter | Result | Units | MRL | Method | Analysis Date |
|---|---|---|---|---|---|
| Aroclor 1242 | <9.9 | µg/Kg dry wt | 9.9 | EPA 8082 | 06/13/07 |
| Aroclor 1248 | <9.9 | µg/Kg dry wt | 9.9 | EPA 8082 | 06/13/07 |
| Aroclor 1254 | 43 | µg/Kg dry wt | 9.9 | EPA 8082 | 06/13/07 |
| Aroclor 1260 | 59 | µg/Kg dry wt | 9.9 | EPA 8082 | 06/13/07 |
| **POLYNUCLEAR AROMATICS - CAS** | | | | | |
| 2-Methylnaphthalene | 8.9 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Acenaphthene | 14 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Acenaphthylene | 5.3 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Anthracene | 26 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Benzo(a)anthracene | 240 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Benzo(a)pyrene | 370 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Benzo(b)fluoranthene | 570 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Benzo(ghi)perylene | 430 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Benzo(k)fluoranthene | 210 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Chrysene | 350 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Dibenzo(a,h)anthracene | 87 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Dibenzofuran | 6.1 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Fluoranthene | 370 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Fluorene | 10 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Indeno(1,2,3-cd)pyrene | 440 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Naphthalene | 18 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Phenanthrene | 140 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| Pyrene | 330 | µg/Kg dry wt | 5.2 | EPA 8270M-SIM | 06/15/07 |
| **SEMI-VOLATILE ORGANICS - CAS** | | | | | |
| 1,2,4-Trichlorobenzene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 1,2-Dichlorobenzene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 1,3-Dichlorobenzene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 1,4-Dichlorobenzene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 2,4,5-Trichlorophenol | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 2,4,6-Trichlorophenol | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 2,4-Dichlorophenol | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 2,4-Dimethylphenol | <260 | µg/Kg dry wt | 260 | EPA 8270 LV | 06/15/07 |
| 2,4-Dinitrophenol | <1100 | µg/Kg dry wt | 1100 | EPA 8270 LV | 06/15/07 |
| 2,4-Dinitrotoluene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 2,6-Dinitrotoluene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |

**Report Date: 08/15/07** **Validated By: Signature on File**

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

# LABORATORY ANALYSIS REPORT

**Sample ID:** **FO070665** **Sample Collected:** 6/1/2007 12:20 **Sample Received:** 06/01/07 **Sample Status:** **COMPLETE AND VALIDATED**

**Proj./Company Name:** PORTLAND HARBOR STORMWATER SAMP
**Address/Location:** SW-50-AAE629-0607
6543 N BURLINGTON AVE-WPCL WATER GARDEN
**Sample Point Code:** 50_1
**Sample Type:** COMPOSITE
**Sample Matrix:** SEDIMENT



**System ID:** AL05173
**EID File # :** 1020.005
**LocCode:** PORTHASW
**Collected By:** JXB

**Comments:**
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

| Test Parameter | Result | Units | MRL | Method | Analysis Date |
|---|---|---|---|---|---|
| 2-Chloronaphthalene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 2-Chlorophenol | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 2-Methylnaphthalene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 2-Methylphenol | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 2-Nitroaniline | <110 | µg/Kg dry wt | 110 | EPA 8270 LV | 06/15/07 |
| 2-Nitrophenol | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 3,3'-Dichlorobenzidine | <520 | µg/Kg dry wt | 520 | EPA 8270 LV | 06/15/07 |
| 3-Nitroaniline | <110 | µg/Kg dry wt | 110 | EPA 8270 LV | 06/15/07 |
| 4,6-Dinitro-2-methylphenol | <520 | µg/Kg dry wt | 520 | EPA 8270 LV | 06/15/07 |
| 4-Bromophenylphenyl ether | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 4-Chloro-3-methylphenol | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 4-Chloroaniline | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 4-Chlorophenylphenyl ether | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 4-Methylphenol | 120 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| 4-Nitroaniline | <110 | µg/Kg dry wt | 110 | EPA 8270 LV | 06/15/07 |
| 4-Nitrophenol | <520 | µg/Kg dry wt | 520 | EPA 8270 LV | 06/15/07 |
| Acenaphthene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Acenaphthylene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Anthracene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Benzo(a)anthracene | 230 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Benzo(a)pyrene | 350 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Benzo(b)fluoranthene | 570 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Benzo(g,h,i)perylene | 410 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Benzo(k)fluoranthene | 180 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Benzoic acid | <1100 | µg/Kg dry wt | 1100 | EPA 8270 LV | 06/15/07 |
| Benzyl alcohol | <110 | µg/Kg dry wt | 110 | EPA 8270 LV | 06/15/07 |
| Bis(2-chloroethoxy) methane | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Bis(2-chloroethyl) ether | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Bis(2-chloroisopropyl) ether | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Bis(2-ethylhexyl) phthalate | 1700 | µg/Kg dry wt | 520 | EPA 8270 LV | 06/15/07 |
| Butyl benzyl phthalate | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Chrysene | 330 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Dibenzo(a,h)anthracene | 79 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Dibenzofuran | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Diethyl phthalate | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Dimethyl phthalate | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |

**Report Date: 08/15/07** **Validated By: Signature on File**

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

# LABORATORY ANALYSIS REPORT

**Sample ID:** **FO070665** **Sample Collected:** 6/1/2007 12:20 **Sample Received:** 06/01/07 **Sample Status:** **COMPLETE AND VALIDATED**

**Proj./Company Name:** PORTLAND HARBOR STORMWATER SAMP
**Address/Location:** SW-50-AAE629-0607
6543 N BURLINGTON AVE-WPCL WATER GARDEN
**Sample Point Code:** 50_1
**Sample Type:** COMPOSITE
**Sample Matrix:** SEDIMENT

**Report Page:** Page 5 of 5
**System ID:** AL05173
**EID File # :** 1020.005
**LocCode:** PORTHASW
**Collected By:** JXB

**Comments:**
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

| Test Parameter | Result | Units | MRL | Method | Analysis Date |
|---|---|---|---|---|---|
| Di-n-butyl phthalate | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Di-n-octyl phthalate | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Fluoranthene | 290 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Fluorene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Hexachlorobenzene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Hexachlorobutadiene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Hexachlorocyclopentadiene | <300 | µg/Kg dry wt | 300 | EPA 8270 LV | 06/15/07 |
| Hexachloroethane | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Indeno(1,2,3-cd)pyrene | 430 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Isophorone | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Naphthalene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Nitrobenzene | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| N-Nitrosodi-n-propylamine | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| N-Nitrosodiphenylamine | <52 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Pentachlorophenol | <520 | µg/Kg dry wt | 520 | EPA 8270 LV | 06/15/07 |
| Phenanthrene | 120 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |
| Phenol | <160 | µg/Kg dry wt | 160 | EPA 8270 LV | 06/15/07 |
| Pyrene | 310 | µg/Kg dry wt | 52 | EPA 8270 LV | 06/15/07 |

**End of Report for Sample ID: FO070665**

**Report Date: 08/15/07** **Validated By: Signature on File**

TestAmerica
ANALYTICAL TESTING CORPORATION

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

June 30, 2007

Jennifer Shackelford
City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

RE: Portland Harbor

Enclosed are the results of analyses for samples received by the laboratory on 06/01/07 16:19. The following list is a summary of the Work Orders contained in this report, generated on 06/30/07 10:05.

If you have any questions concerning this report, please feel free to contact me.

| Work Order | Project | ProjectNumber |
|---|---|---|
| PQF0060 | Portland Harbor | 36238 |

TestAmerica - Portland, OR

Howard Holmes, Project Manager

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| | | | |
|---|---|---|---|
| **City of Portland Water Pollution Laboratory** | Project Name: | **Portland Harbor** | |
| 6543 N. Burlington Ave. | Project Number: | 36238 | Report Created: |
| Portland, OR 97203 | Project Manager: | Jennifer Shackelford | 06/30/07 10:05 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| FO 07665 | PQF0060-01 | Soil | 06/01/07 12:20 | 06/01/07 16:19 |

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Howard Holmes, Project Manager

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| | | |
|---|---|---|
| **City of Portland Water Pollution Laboratory** | Project Name: **Portland Harbor** | |
| 6543 N. Burlington Ave. | Project Number: 36238 | Report Created: |
| Portland, OR 97203 | Project Manager: Jennifer Shackelford | 06/30/07 10:05 |

## Chlorinated Herbicides per EPA Method 8151A Modified

TestAmerica - Portland, OR

| Analyte | Method | Result | MDL* | MRL | Units | Dil | Batch | Prepared | Analyzed | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **PQF0060-01 (FO 07665)** | | **Soil** | | | **Sampled: 06/01/07 12:20** | | | | | **RL1** |
| 2,4-D | 8151mod | ND | ----- | 89.8 | ug/kg dry | 2x | 7060082 | 06/04/07 09:55 | 06/08/07 00:16 | |
| 2,4-DB | " | ND | ----- | 89.8 | " | " | " | " | " | |
| 2,4,5-T | " | ND | ----- | 89.8 | " | " | " | " | " | |
| 2,4,5-TP (Silvex) | " | ND | ----- | 89.8 | " | " | " | " | " | |
| Dalapon | " | ND | ----- | 89.8 | " | " | " | " | " | |
| Dicamba | " | ND | ----- | 89.8 | " | " | " | " | " | |
| Dichlorprop | " | ND | ----- | 89.8 | " | " | " | " | " | |
| Dinoseb | " | ND | ----- | 89.8 | " | " | " | " | " | |
| MCPA | " | ND | ----- | 8980 | " | " | " | " | " | |
| MCPP | " | ND | ----- | 8980 | " | " | " | " | " | |
| *Surrogate(s): 2,4-Dichlorophenylacetic acid* | | *76.7%* | | | *30 - 140 %* | " | | | " | |

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| | | | |
|---|---|---|---|
| **City of Portland Water Pollution Laboratory** | Project Name: | **Portland Harbor** | |
| 6543 N. Burlington Ave. | Project Number: | 36238 | Report Created: |
| Portland, OR 97203 | Project Manager: | Jennifer Shackelford | 06/30/07 10:05 |

## Percent Dry Weight (Solids) per Standard Methods

TestAmerica - Portland, OR

| Analyte | Method | Result | MDL* | MRL | Units | Dil | Batch | Prepared | Analyzed | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **PQF0060-01 (FO 07665)** | | **Soil** | | | **Sampled: 06/01/07 12:20** | | | | | |
| **% Solids** | NCA SOP | **44.5** | ----- | 0.00 | % by Weight | 1x | 7060113 | 06/04/07 14:30 | 06/04/07 14:30 | |

TestAmerica - Portland, OR

Howard Holmes, Project Manager

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|---|---|---|---|
| **City of Portland Water Pollution Laboratory** | Project Name: | **Portland Harbor** | |
| 6543 N. Burlington Ave. | Project Number: | 36238 | Report Created: |
| Portland, OR 97203 | Project Manager: | Jennifer Shackelford | 06/30/07 10:05 |

## General Chemistry Parameters

TestAmerica - Nashville, TN

| Analyte | Method | Result | MDL* | MRL | Units | Dil | Batch | Prepared | Analyzed | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **PQF0060-01 (FO 07665)** | | **Soil** | | | | **Sampled: 06/01/07 12:20** | | | | |
| **Total Organic Carbon** | SW846 9060M | **48700** | ----- | 1000 | mg/Kg dry | 1x | 7061027 | 06/07/07 06:53 | 06/08/07 15:57 | |

TestAmerica - Portland, OR

Howard Holmes, Project Manager

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| | | |
|---|---|---|
| **City of Portland Water Pollution Laboratory** | Project Name: **Portland Harbor** | |
| 6543 N. Burlington Ave. | Project Number: 36238 | Report Created: |
| Portland, OR 97203 | Project Manager: Jennifer Shackelford | 06/30/07 10:05 |

## Chlorinated Herbicides per EPA Method 8151A Modified - Laboratory Quality Control Results

TestAmerica - Portland, OR

**QC Batch: 7060082** **Soil Preparation Method: ASE 200**

| Analyte | Method | Result | MDL* | MRL | Units | Dil | Source Result | Spike Amt | % REC | (Limits) | % RPD | (Limits) | Analyzed | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (7060082-BLK1)** | | | | | | | | | **Extracted: 06/04/07 09:55** | | | | | |
| 2,4-D | 8151mod | ND | --- | 20.0 | ug/kg wet | 1x | -- | -- | -- | -- | -- | -- | 06/07/07 19:51 | |
| 2,4-DB | " | ND | --- | 20.0 | " | " | -- | -- | -- | -- | -- | -- | " | |
| 2,4,5-T | " | ND | --- | 20.0 | " | " | -- | -- | -- | -- | -- | -- | " | |
| 2,4,5-TP (Silvex) | " | ND | --- | 20.0 | " | " | -- | -- | -- | -- | -- | -- | " | |
| Dalapon | " | ND | --- | 20.0 | " | " | -- | -- | -- | -- | -- | -- | " | |
| Dicamba | " | ND | --- | 20.0 | " | " | -- | -- | -- | -- | -- | -- | " | |
| Dichlorprop | " | ND | --- | 20.0 | " | " | -- | -- | -- | -- | -- | -- | " | |
| Dinoseb | " | ND | --- | 20.0 | " | " | -- | -- | -- | -- | -- | -- | " | |
| MCPA | " | ND | --- | 2000 | " | " | -- | -- | -- | -- | -- | -- | " | |
| MCPP | " | ND | --- | 2000 | " | " | -- | -- | -- | -- | -- | -- | " | |
| *Surrogate(s): 2,4-Dichlorophenylacetic acid* | | *Recovery: 93.1%* | | | *Limits: 30-140%* | " | | | | | | | *06/07/07 19:51* | |
| **LCS (7060082-BS1)** | | | | | | | | | **Extracted: 06/04/07 09:55** | | | | | |
| 2,4-D | 8151mod | 78.2 | --- | 20.0 | ug/kg wet | 1x | -- | 100 | 78.2% | (30-120) | -- | -- | 06/07/07 20:15 | |
| 2,4-DB | " | 63.2 | --- | 20.0 | " | " | -- | " | 63.2% | (30-130) | -- | -- | " | |
| 2,4,5-T | " | 62.8 | --- | 20.0 | " | " | -- | " | 62.8% | (25-125) | -- | -- | " | |
| 2,4,5-TP (Silvex) | " | 63.7 | --- | 20.0 | " | " | -- | " | 63.7% | (35-100) | -- | -- | " | |
| Dalapon | " | 73.8 | --- | 20.0 | " | " | -- | " | 73.8% | (20-110) | -- | -- | " | |
| Dicamba | " | 72.3 | --- | 20.0 | " | " | -- | " | 72.3% | (30-115) | -- | -- | " | |
| Dichlorprop | " | 89.9 | --- | 20.0 | " | " | -- | " | 89.9% | (50-100) | -- | -- | " | |
| Dinoseb | " | 54.1 | --- | 20.0 | " | " | -- | " | 54.1% | (10-130) | -- | -- | " | |
| MCPA | " | 7050 | --- | 2000 | " | " | -- | 10000 | 70.5% | (30-105) | -- | -- | " | |
| MCPP | " | 4750 | --- | 2000 | " | " | -- | " | 47.5% | (15-115) | -- | -- | " | |
| *Surrogate(s): 2,4-Dichlorophenylacetic acid* | | *Recovery: 93.1%* | | | *Limits: 45-125%* | " | | | | | | | *06/07/07 20:15* | |
| **Matrix Spike (7060082-MS1)** | | | | | **QC Source: PQE1042-01** | | | | **Extracted: 06/04/07 09:55** | | | | | |
| 2,4-D | 8151mod | 64.0 | --- | 199 | ug/kg wet | 10x | ND | 99.6 | 64.3% | (15-110) | -- | -- | 06/07/07 22:39 | |
| 2,4-DB | " | 56.6 | --- | 199 | " | " | ND | " | 56.8% | (10-135) | -- | -- | " | |
| 2,4,5-T | " | 59.0 | --- | 199 | " | " | ND | " | 59.2% | (15-120) | -- | -- | " | |
| 2,4,5-TP (Silvex) | " | 69.7 | --- | 199 | " | " | ND | " | 69.9% | (20-105) | -- | -- | " | |
| Dalapon | " | 66.7 | --- | 199 | " | " | ND | " | 66.9% | (15-105) | -- | -- | " | |
| Dicamba | " | 59.1 | --- | 199 | " | " | ND | " | 59.3% | " | -- | -- | " | |
| Dichlorprop | " | 54.0 | --- | 199 | " | " | ND | " | 54.2% | (25-105) | -- | -- | " | |
| Dinoseb | " | 71.0 | --- | 199 | " | " | ND | " | 71.2% | (15-125) | -- | -- | " | |
| MCPA | " | 11700 | --- | 19900 | " | " | ND | 9960 | 117% | (15-105) | -- | -- | " | M7 |
| MCPP | " | 4460 | --- | 19900 | " | " | ND | " | 44.7% | (15-110) | -- | -- | " | |
| *Surrogate(s): 2,4-Dichlorophenylacetic acid* | | *Recovery: 62.3%* | | | *Limits: 20-125%* | " | | | | | | | *06/07/07 22:39* | |

TestAmerica - Portland, OR

Howard Holmes, Project Manager

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| | | | |
|---|---|---|---|
| **City of Portland Water Pollution Laboratory** | Project Name: | **Portland Harbor** | |
| 6543 N. Burlington Ave. | Project Number: | 36238 | Report Created: |
| Portland, OR 97203 | Project Manager: | Jennifer Shackelford | 06/30/07 10:05 |

## Chlorinated Herbicides per EPA Method 8151A Modified - Laboratory Quality Control Results

TestAmerica - Portland, OR

**QC Batch: 7060082** **Soil Preparation Method: ASE 200**

| Analyte | Method | Result | MDL* | MRL | Units | Dil | Source Result | Spike Amt | % REC | (Limits) | % RPD | (Limits) | Analyzed | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Matrix Spike Dup (7060082-MSD1)** | | | | | **QC Source: PQE1042-01** | | | | **Extracted: 06/04/07 09:55** | | | | | |
| 2,4-D | 8151mod | 95.5 | --- | 200 | ug/kg wet | 10x | ND | 100 | 95.5% | (15-110) | 39.4% | (30) | 06/07/07 23:03 | R2 |
| 2,4-DB | " | 80.7 | --- | 200 | " | " | ND | " | 80.7% | (10-135) | 35.1% | (40) | " | |
| 2,4,5-T | " | 82.6 | --- | 200 | " | " | ND | " | 82.6% | (15-120) | 33.2% | " | " | |
| 2,4,5-TP (Silvex) | " | 93.8 | --- | 200 | " | " | ND | " | 93.8% | (20-105) | 29.6% | " | " | |
| Dalapon | " | 71.1 | --- | 200 | " | " | ND | " | 71.1% | (15-105) | 6.32% | " | " | |
| Dicamba | " | 82.4 | --- | 200 | " | " | ND | " | 82.4% | " | 33.0% | " | " | |
| Dichlorprop | " | 77.1 | --- | 200 | " | " | ND | " | 77.1% | (25-105) | 35.4% | " | " | |
| Dinoseb | " | 88.3 | --- | 200 | " | " | ND | " | 88.3% | (15-125) | 21.8% | " | " | |
| MCPA | " | 7000 | --- | 20000 | " | " | ND | 10000 | 70.0% | (15-105) | 50.2% | " | " | R2 |
| MCPP | " | 7150 | --- | 20000 | " | " | ND | " | 71.5% | (15-110) | 46.4% | " | " | R2 |
| *Surrogate(s): 2,4-Dichlorophenylacetic acid* | | *Recovery: 126%* | | | *Limits: 20-125%* | " | | | | | | | *06/07/07 23:03* | *Z1* |

TestAmerica - Portland, OR

Howard Holmes, Project Manager

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| | | | |
|---|---|---|---|
| **City of Portland Water Pollution Laboratory** | Project Name: | **Portland Harbor** | |
| 6543 N. Burlington Ave. | Project Number: | 36238 | Report Created: |
| Portland, OR 97203 | Project Manager: | Jennifer Shackelford | 06/30/07 10:05 |

## Percent Dry Weight (Solids) per Standard Methods - Laboratory Quality Control Results

TestAmerica - Portland, OR

**QC Batch: 7060113** **Soil Preparation Method: Dry Weight**

| Analyte | Method | Result | MDL* | MRL | Units | Dil | Source Result | Spike Amt | % REC | (Limits) | % RPD | (Limits) | Analyzed | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Duplicate (7060113-DUP1)** | | | | | **QC Source: PQF0057-01** | | | | **Extracted: 06/04/07 14:30** | | | | | |
| % Solids | NCA SOP | 75.8 | --- | 0.00 | % by Weight | 1x | 74.7 | -- | -- | -- | 1.46% | (20) | 06/04/07 14:30 | |

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| | | | |
|---|---|---|---|
| **City of Portland Water Pollution Laboratory** | Project Name: | **Portland Harbor** | |
| 6543 N. Burlington Ave. | Project Number: | 36238 | Report Created: |
| Portland, OR 97203 | Project Manager: | Jennifer Shackelford | 06/30/07 10:05 |

## General Chemistry Parameters - Laboratory Quality Control Results

TestAmerica - Nashville, TN

**QC Batch: 7061027** **Soil Preparation Method: METHOD PREP**

| Analyte | Method | Result | MDL* | MRL | Units | Dil | Source Result | Spike Amt | % REC | (Limits) | % RPD | (Limits) | Analyzed | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blank (7061027-BLK1)** | | | | | | | | **Extracted: 06/07/07 06:53** | | | | | | |
| Total Organic Carbon | SW846 9060M | ND | --- | 1000 | mg/Kg dry | 1x | -- | -- | -- | -- | -- | -- | 06/08/07 15:57 | |
| **LCS (7061027-BS1)** | | | | | | | | **Extracted: 06/07/07 06:53** | | | | | | |
| Total Organic Carbon | SW846 9060M | 29400 | --- | 1000 | mg/Kg dry | 1x | -- | 29900 | 98% | (90-110) | -- | -- | 06/08/07 15:57 | |
| **Duplicate (7061027-DUP1)** | | | | | | | **QC Source: PQF0060-01** | | **Extracted: 06/07/07 06:53** | | | | | |
| Total Organic Carbon | SW846 9060M | 49900 | --- | 1000 | mg/Kg dry | 1x | 48700 | -- | -- | -- | 2% | (20) | 06/08/07 15:57 | |

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|---|---|---|---|
| **City of Portland Water Pollution Laboratory** | Project Name: | **Portland Harbor** | |
| 6543 N. Burlington Ave. | Project Number: | 36238 | Report Created: |
| Portland, OR 97203 | Project Manager: | Jennifer Shackelford | 06/30/07 10:05 |

## Notes and Definitions

Report Specific Notes:

| | | |
|---|---|---|
| M7 | - | The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS). |
| R2 | - | The RPD exceeded the acceptance limit. |
| RL1 | - | Reporting limit raised due to sample matrix effects. |
| Z1 | - | Surrogate recovery was above acceptance limits. |

Laboratory Reporting Conventions:

| | | |
|---|---|---|
| DET | - | Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only. |
| ND | - | Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate). |
| NR/NA | - | Not Reported / Not Available |
| dry | - | Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight. |
| wet | - | Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis. |
| RPD | - | RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries). |
| MRL | - | METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table. |
| MDL* | - | METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results. |
| Dil | - | Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data. |
| Reporting Limits | - | Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable. |
| Electronic Signature | - | Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature. |

TestAmerica - Portland, OR

Howard Holmes, Project Manager

TestAmerica
ANALYTICAL TESTING CORPORATION

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210 X
2000 W International Airport Rd Ste A10, Anchorage, AK 99502 1119 907-563-9200 FAX 563-9210

# CHAIN OF CUSTODY REPORT

Work Order #: FQF0070

CLIENT: CITY OF PORTLAND
INVOICE TO: CHARLES LYTLE
REPORT TO: JENNIFER SMACKELFORD
ADDRESS:
PHONE: FAX:
P.O. NUMBER: 36238
PROJECT NAME: PORTLAND HARBOR STORMWATER SAMP
PROJECT NUMBER:
SAMPLED BY:

**TURNAROUND REQUEST**
in Business Days *
Organic & Inorganic Analyses: [X] STD [7] [5] [4] [3] [2] [1] [<1]
Petroleum Hydrocarbon Analyses: [X] STD [4] [3] [2] [1] [<1]
[OTHER] Specify:
* Turnaround Requests less than standard may incur Rush Charges.

| | CLIENT SAMPLE IDENTIFICATION | SAMPLING DATE/TIME | PRESERVATIVE / REQUESTED ANALYSES: NO Containers EPA 1668A | PCB Aroclors EPA 8082 | Organochlorine Pesticides EPA 8081A | Semi-Volatiles EPA 8270 | PAH+Phthalates EPA 8270-SIM | TOC | Hexane Extr. EPA 8151 | Grain Size | MATRIX (W, S, O) | # OF CONT. | LOCATION / COMMENTS | TA WO ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | FO 070665 | 6/1/07 1220 | X | X | X | X | X | X | X | X | O | 8 | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |

RELEASED BY: PRINT NAME: FIRM: DATE: 6-1-07 TIME: 15:19
RECEIVED BY: PRINT NAME: Jeremy Morgan FIRM: TAP DATE: 6-1-07 TIME: 15:19
RELEASED BY: PRINT NAME: JASON DAHL FIRM: WPCL DATE: 6/1/07 TIME: 15:19
RECEIVED BY: PRINT NAME: FIRM: Lab DATE: 6/1/9 TIME:

ADDITIONAL REMARKS: * PLEASE SEND SAMPLE FOR THESE ANALYSES TO COLUMBIA ANALYTICAL SERVICES
PLEASE SEE HOWARD HOLMES, IF QUESTIONS.

TEMP:

COC REV 09/2004 PAGE 1 OF 1

# TestAmerica Sample Receipt Checklist

Cooler ID(s): 28C

Received by: (section A) Date: 6-1-07 Time: 1513 Initials: [illegible]

Unpacked by: (section B) Date: 6/4/07 Initials: CA

Logged-in by: Date: 6/4/07 Initials: CA

Work Order No.: PQF0060

Client: COP

Project: Portland Harbor

Temperature out of range:
___No Ice
___Ice Melted
___Within 4 Hours
___Other:_____

***ESI Clients (see Section C)

Cooler Temperature (IR):_____°C plastic glass NA (oil/air samples, ESI client)

## A

Custody Seals: (#____)

Signature: (Y) N Dated: 6-1-07

____None

Container Type:

__1__#Cooler(s)

____#Box(s)

____None (___#Other:_____)

Coolant Type:

____Gel Ice

__X__Loose Ice

____None

Packing Material:

____Bubble Bags

____Styrofoam Cubbies

____None (__2__Other: plastic bags)

Received from:

__X__TA Courier

____Senvoy

____UPS

____Fed Ex

____Client

____TDP

____DHL

____SDS

____Mid-Valley

____GS/TA

____GS/Senvoy

____Other:_____

## B

Sample Status:

(If N circled, see NOD)

General:

| | | | |
|---|---|---|---|
| Intact? | (Y) | N | |
| # Containers Match COC? | (Y) | N | none given |
| IDs Match COC? | (Y) | N | |

For Analyses Requested:

| | | | |
|---|---|---|---|
| Correct Type & Preservation? | (Y) | N | |
| Adequate Volume? | (Y) | N | |
| Within Hold Time? | (Y) | N | |

Volatiles:

| | | | | |
|---|---|---|---|---|
| VOAs Free of Headspace? | | Y | N | (NA) |
| TB on COC? | not provided | Y | N | (NA) |

Metals:

| | | | |
|---|---|---|---|
| HNO3 Preserved? | Y | N | (NA) |

## C

***ESI Clients Only:

Temperature Blank: _____°C not provided

All preserved bottles checked Y N NA (voas/soils/all unp.)

All preserved accordingly? Y N (see NOD) NA (voas/soils/all unp.)

Army Corp: Geiger (ticks/min): ___ ___ ___ ___

Temperatures (IR): _____°C _____°C _____°C _____°C

(left) (middle) (right) (air)

**Project Managers:**

Comments:_____

PM Reviewed:_____ (Initial/Date)

## COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | Portland, City of | **Service Request:** | K0704820 |
| **Project:** | PCBs and Pesticides in Storm Water | **Date Collected:** | 06-01-2007 |
| **Sample Matrix:** | Sludge, solid | **Date Received:** | 06-05-2007 |

### Polychlorinated Biphenyls (PCBs)

| | | | |
|---|---|---|---|
| **Sample Name:** | FO 070665 | **Units:** | ug/Kg |
| **Lab Code:** | K0704820-001 | **Basis:** | Dry |
| **Extraction Method:** | EPA 3540C | **Level:** | Low |
| **Analysis Method:** | 8082 | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND | U | 9.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1221 | ND | U | 20 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1232 | ND | U | 9.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1242 | ND | U | 9.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1248 | ND | U | 9.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| **Aroclor 1254** | **43** | | 9.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| **Aroclor 1260** | **59** | | 9.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1262 | ND | U | 9.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1268 | ND | U | 9.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Decachlorobiphenyl | 101 | 33-141 | 06-27-07 | Acceptable |

**Comments:**

## COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | Portland, City of | **Service Request:** | K0704820 |
| **Project:** | PCBs and Pesticides in Storm Water | **Date Collected:** | NA |
| **Sample Matrix:** | Sediment | **Date Received:** | NA |

### Polychlorinated Biphenyls (PCBs)

| | | | |
|---|---|---|---|
| **Sample Name:** | Method Blank | **Units:** | ug/Kg |
| **Lab Code:** | KWG0706579-4 | **Basis:** | Dry |
| **Extraction Method:** | EPA 3540C | **Level:** | Low |
| **Analysis Method:** | 8082 | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND | U | 4.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1221 | ND | U | 9.7 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1232 | ND | U | 4.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1242 | ND | U | 4.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1248 | ND | U | 4.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1254 | ND | U | 4.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1260 | ND | U | 4.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1262 | ND | U | 4.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |
| Aroclor 1268 | ND | U | 4.9 | 1 | 06/13/07 | 06-27-07 | KWG0706579 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Decachlorobiphenyl | 92 | 33-141 | 06-27-07 | Acceptable |

**Comments:**

10655 Richmond Avenue Suite 130 A Houston, TX 77042 (713) 266-1599 (713) 266-0130 fax

Columbia Analytical Services INC.
An Employee - Owned Company

July 31, 2007

Loan Vo, Ph.D.
Columbia Analytical Services, Inc
1317 South 13th Avenue
Kelso, WA 98626

***CAS/Houston SR: K0704820***
***Project: City of Portland/PCBs and Pesticides in Storm Water***

Dear Loan,

Enclosed please find the results of the samples submitted to our laboratory for PCB testing on June 12, 2007. For your reference, these analyses have been assigned our service request number K0704820.

All analyses were performed according to our laboratory's quality assurance program. The test results meet the requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 23. You may also contact me via email at jfreemyer@houston.caslab.com.

Respectfully submitted,
**COLUMBIA ANALYTICAL SERVICES, INC**

Jane Freemyer
Project Manager

Page 1 of _____

Columbia Analytical Services INC.

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# Certificate of Analysis

10655 Richmond Avenue, Suite 130-A, Houston, TX 77042
Phone (713)266-1599 Fax (713)266-0130
www.caslab.com

## COLUMBIA ANALYTICAL SERVICES, INC

| | | | |
|---|---|---|---|
| **Client:** | Portland, City of | **Service Request No.:** | K0704820 |
| **Project:** | PCBs and Pesticides in Storm Water | **Date Received:** | 06/12/07 |
| **Sample Matrix:** | Solid | | |

## CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier I. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

One solid sample was received for analysis at Columbia Analytical Services on 06/12/07.

The sample was received at 2°C in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

### Data Validation Notes and Discussion

### Y flags – Labeled Standards

Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y' flags on the Form 2s. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.

### MS/MSD

EQ0700194-02/03: Laboratory Control Spike /Laboratory Control Spike Duplicate (LCS/LCSD) samples were analyzed and reported in lieu of an MS/MSD for this extraction batch. The batch quality control criteria were met. The LCS/LCSD results are not included in this report.

### Detection Limits

Detection limits are calculated for each congener 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.

**Approved by** Xiangqiu Liang **Date** 8/1/07

**Xiangqiu Liang, Laboratory Director**

## SAMPLE CROSS-REFERENCE

| SAMPLE # | CLIENT SAMPLE ID | DATE | TIME |
|---|---|---|---|
| K0704820-001 | FO 070665 | 06/01/07 | 12:20 |

## Data Qualifier Flags
## Method 1668A

U Indicates the compound was analyzed and the analyte was not detected

Y Indicates the recovery of the labeled standard does not fall within the established control limits

DL Indicates the analysis was performed on a diluted sample. Performed when the initial analysis indicates that one or more analytes are present at a concentration above the upper end of the linear calibration range. Can be found as a suffix on the field sample identification.

# CAS/HOU - Form Production, Peer Review & Project Review Signatures

SR# Unique ID: K0704820

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

| | | | |
|---|---|---|---|
| Date | 07/30/07 | Person 1 | cee |
| Date | | Person 2 | |

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

| | | | |
|---|---|---|---|
| Date | 07/30/07 | Primary Data Reviewer | mc |
| Date | | Secondary Data Reviewer | |

**Project Level - Review** – to be filled by person doing project compliance review

| | | | |
|---|---|---|---|
| Date | 7/31/7 | Reviewer | DF |

Columbia Analytical Services INC.

An Employee - Owned Company

# PCBs
# Analytical Report

10655 Richmond Avenue, Suite 130-A, Houston, TX 77042
Phone (713)266-1599 Fax (713)266-0130
www.caslab.com

Form 1

PCB ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
METHOD BLANK

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 1668A Lab Sample ID: EQ0700194-01

Client Name: Sample Wt/Vol: 10.000 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 09/25/06

Sample Receipt Date: Instrument ID: AutoSpec-Ultima

Ext. Date: 06/26/07 GC Column:SPB-OCTYL

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U210821

Analysis Date: 25-JUL-07 Time: 12:33:52 Blank Data Filename: U210821

Dilution Factor: 1 Cal. Ver. Data Filename: U210820

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

| ANALYTE | IUPAC# | COELUTIONS | CONCENTRATION FOUND | DETECTION LIMIT | ION ABUND. RATIO(1) | RRT (1) |
|---|---|---|---|---|---|---|
| Chlorination 1 | | | | | | |
| 2-MoCB | 1- | | 2.01 | 0.95 | 2.09 | 1.000 |
| 3-MoCB | 2 | | * | 0.86 | * | * |
| 4-MoCB | 3- | | * | 0.82 | * | * |
| Chlorination 2 | | | | | | |
| 22'-DiCB | 4- | | 2.66 | 2.00 | 0.74 | 0.999 |
| 26-DiCB | 10 | | * | 0.84 | * | * |
| 25-DiCB | 9 | | * | 1.53 | * | * |
| 24-DiCB | 7 | | * | 1.35 | * | * |
| 23'-DiCB | 6 | | * | 1.52 | * | * |
| 23-DiCB | 5 | | 6.89 | 1.45 | 1.42 | 1.186 |
| 2,4'-DiCB | 8 | | * | 1.47 | * | * |
| 35-DiCB | 14 | | * | 1.61 | * | * |
| 33'-DiCB | 11 | | * | 1.81 | * | * |
| 34-DiCB | 12/╗ | 12+13 | * | 1.62 | * | * |
| 44'-DiCB | 15- | | * | 1.22 | * | * |
| Chlorination 3 | | | | | | |
| 22'6-TrCB | 19- | | * | 1.06 | * | * |
| 22'5-TrCB | 18/╗ | 18+30 | 6.11 | 0.63 | 0.92 | 1.084 |
| 22'4-TrCB | 17 | | * | 0.77 | * | * |
| 23'6-TrCB | 27/╗ | 27+24 | * | 0.55 | * | * |
| 22'3-TrCB | 16 | | 1.60 | 1.28 | 1.40 | 1.142 |
| 24'6-TrCB | 32 | | * | 0.71 | * | * |
| 2'35-TrCB | 34 | | * | 0.78 | * | * |
| 235-TrCB | 23 | | * | 0.85 | * | * |
| 23'5-TrCB | 26/╗ | 26+29 | * | 0.75 | * | * |
| 23'4-TrCB | 25 | | 3.30 | 0.79 | 1.10 | 0.843 |
| 24'5-TrCB | 31 | | 2.56 | 0.73 | 1.24 | 0.853 |
| 233'-TrCB | 20/╗ | 20+28 | 1.20 | 0.64 | 1.31 | 0.864 |
| 234-TrCB | 21/╗ | 21+33 | * | 0.76 | * | * |

CLIENT ID.

Analysis Date: 25-JUL-07 Time: 12:33:52

METHOD BLANK

| | | | | | | |
|---|---|---|---|---|---|---|
| 234'-TrCB | 22 | | 2.11 | 0.66 | 1.12 | 0.880 |
| 33'5-TrCB | 36 | | * | 0.61 | * | * |
| 34'5-TrCB | 39 | | * | 0.56 | * | * |
| 345-TrCB | 38 | | * | 0.64 | * | * |
| 33'4-TrCB | 35 | | * | 0.67 | * | * |
| 344'-TrCB | 37- | | 0.95 | 0.42 | 0.99 | 1.001 |
| Chlorination 4 | | | | | | |
| 22'66'-TeCB | 54- | | * | 1.94 | * | * |
| 22'46-TeCB | 50/╗ | 50+53 | * | 1.26 | * | * |
| 22'36-TeCB | 45/╗ | 45+51 | * | 1.25 | * | * |
| 22'36'-TeCB | 46 | | * | 1.38 | * | * |
| 22'55'-TeCB | 52/╗ | 52+43+73 | 4.10 | 1.02 | 0.82 | 1.198 |
| 22'45'-TeCB | 49/╗ | 49+69 | * | 0.93 | * | * |
| 22'45-TeCB | 48 | | * | 1.08 | * | * |
| 22'35'-TeCB | 44/╗ | 44+47+65 | * | 1.00 | * | * |
| 233'6-TeCB | 59/╗ | 59+62+75 | * | 0.86 | * | * |
| 22'34'-TeCB | 42 | | * | 1.75 | * | * |
| 22'34-TeCB | 41/╗ | 41+71+40 | * | 1.28 | * | * |
| 234'6-TeCB | 64 | | 1.85 | 1.34 | 0.78 | 1.300 |
| 23'55'-TeCB | 72 | | * | 0.61 | * | * |
| 23'45'-TeCB | 68 | | * | 0.57 | * | * |
| 233'5-TeCB | 57 | | * | 0.64 | * | * |
| 233'5'-TeCB | 58 | | * | 0.45 | * | * |
| 23'45-TeCB | 67 | | * | 0.79 | * | * |
| 234'5-TeCB | 63 | | * | 0.60 | * | * |
| 23'4'5-TeCB | 70/╗ | 70+61+74+76 | 3.01 | 0.59 | 0.78 | 0.880 |
| 23'44'-TeCB | 66 | | 1.13 | 0.57 | 0.96 | 0.890 |
| 233'4-TeCB | 55 | | * | 0.66 | * | * |
| 233'4'-TeCB | 56 | | * | 0.61 | * | * |
| 2344'-TeCB | 60 | | * | 0.60 | * | * |
| 33'55'-TeCB | 80 | | * | 0.52 | * | * |
| 33'45'-TeCB | 79 | | * | 0.57 | * | * |
| 33'45-TeCB | 78 | | * | 0.62 | * | * |
| 344'5-TeCB | 81- | | * | 0.32 | * | * |
| 33'44'-TeCB | 77- | | * | 0.37 | * | * |
| Chlorination 5 | | | | | | |
| 22'466'-PeCB | 104- | | * | 1.15 | * | * |
| 22'366'-PeCB | 96 | | * | 0.50 | * | * |
| 22'45'6-PeCB | 103 | | * | 0.56 | * | * |
| 22'356'-PeCB | 94 | | * | 0.61 | * | * |
| 22'35'6-PeCB | 95/╗ | 95+93+100 | 3.15 | 0.58 | 1.57 | 1.119 |
| 22'3'46-PeCB | 98/╗ | 98+102 | * | 0.51 | * | * |
| 22'346-PeCB | 88/╗ | 88+91 | * | 0.58 | * | * |
| 22'33'6-PeCB | 84 | | * | 0.65 | * | * |
| 22'346'-PeCB | 89 | | * | 0.66 | * | * |
| 23'45'6-PeCB | 121 | | * | 0.41 | * | * |
| 22'355'-PeCB | 92 | | * | 0.61 | * | * |
| 22'34'5-PeCB | 90/╗ | 90+101+113 | 2.89 | 0.47 | 1.46 | 0.876 |
| 22'33'5-PeCB | 83/╗ | 83+99 | 0.85 | 0.43 | 1.48 | 0.891 |
| 233'56-PeCB | 112 | | * | 0.63 | * | * |
| 22'345-PeCB | 86/╗ | 86+87+97+ 108+119+125 | * | 0.46 | * | * |
| 22'344'-PeCB | 85/╗ | 85+116+117 | * | 0.57 | * | * |
| 233'4'6-PeCB | 110╗ | 110+115 | 3.71 | 0.56 | 1.48 | 0.933 |
| 22'33'4-PeCB | 82 | | * | 0.88 | * | * |

Analysis Date: 25-JUL-07 Time: 12:33:52

CLIENT ID.
METHOD BLANK

| | | | | | | |
|---|---|---|---|---|---|---|
| 233'55'-PeCB | 111 | | * | 0.39 | * | * |
| 23'455'-PeCB | 120 | | * | 0.39 | * | * |
| 233'4'5-PeCB | 107╗ | 107+124 | * | 0.46 | * | * |
| 233'46-PeCB | 109 | | * | 0.36 | * | * |
| 2'344'5-PeCB | 123- | | * | 0.33 | * | * |
| 233'45-PeCB | 106 | | * | 0.72 | * | * |
| 23'44'5-PeCB | 118- | | 1.18 | 0.27 | 1.69 | 1.000 |
| 2'33'45-PeCB | 122 | | * | 0.42 | * | * |
| 2344'5-PeCB | 114- | | * | 0.32 | * | * |
| 233'44'-PeCB | 105- | | 0.54 | 0.26 | 1.81 | 1.000 |
| 33'455'-PeCB | 127 | | * | 0.47 | * | * |
| 33'44'5-PeCB | 126- | | * | 0.27 | * | * |
| Chlorination 6 | | | | | | |
| 22'44'66'-HxCB | 155- | | * | 0.50 | * | * |
| 22'3566'-HxCB | 152╗ | 152+150 | * | 0.22 | * | * |
| 22'33'66'-HxCB | 136 | | * | 0.29 | * | * |
| 22'3466'-HxCB | 145 | | * | 0.18 | * | * |
| 22'34'56'-HxCB | 148 | | * | 0.30 | * | * |
| 22'33'56'-HxCB | 135╗ | 135+151+154 | * | 0.27 | * | * |
| 22'345'6-HxCB | 144 | | * | 0.31 | * | * |
| 22'34'56-HxCB | 147╗ | 134+147+149 | 0.68 | 0.48 | 0.85 | 1.135 |
| 22'3456'-HxCB | 143 | | * | 0.21 | * | * |
| 22'344'6-HxCB | 139╗ | 139+140 | * | 0.32 | * | * |
| 22'33'46-HxCB | 131╗ | 131+142 | * | 0.42 | * | * |
| 22'33'46'-HxCB | 132 | | * | 0.38 | * | * |
| 22'33'55'-HxCB | 133 | | * | 0.40 | * | * |
| 233'55'6-HxCB | 165 | | * | 0.27 | * | * |
| 22'34'55'-HxCB | 146 | | * | 0.22 | * | * |
| 233'45'6-HxCB | 161 | | * | 0.46 | * | * |
| 22'44'55'-HxCB | 153╗ | 153+168 | * | 0.25 | * | * |
| 22'3455'-HxCB | 141 | | * | 0.41 | * | * |
| 22'33'45'-HxCB | 130 | | * | 0.36 | * | * |
| 22'344'5-HxCB | 137 | | * | 0.27 | * | * |
| 233'4'5'6-HxCB | 164 | | * | 0.35 | * | * |
| 22'33'45-HxCB | 129╗ | 129+138+160+163 | 1.63 | 0.30 | 1.01 | 0.934 |
| 233'44'6-HxCB | 158 | | * | 0.25 | * | * |
| 22'33'44'-HxCB | 128╗ | 128+166 | * | 0.30 | * | * |
| 233'455'-HxCB | 159 | | * | 0.64 | * | * |
| 233'4'55'-HxCB | 162 | | * | 0.63 | * | * |
| 23'44'55'-HxCB | 167- | | * | 0.37 | * | * |
| 233'44'5-HxCB | 156╗ | 156+157 | * | 0.59 | * | * |
| 33'44'55'-HxCB | 169- | | * | 0.37 | * | * |
| Chlorination 7 | | | | | | |
| 22'34'566'-HpCB | 188- | | * | 0.53 | * | * |
| 22'33'566'-HpCB | 179 | | * | 0.32 | * | * |
| 22'344'66'-HpCB | 184 | | * | 0.28 | * | * |
| 22'33'466'-HpCB | 176 | | * | 0.32 | * | * |
| 22'34566'-HpCB | 186 | | * | 0.30 | * | * |
| 22'33'55'6-HpCB | 178 | | * | 0.90 | * | * |
| 22'33'45'6-HpCB | 175 | | * | 1.33 | * | * |
| 22'34'55'6-HpCB | 187 | | 18.91 | 0.98 | 1.03 | 1.108 |
| 22'344'56'-HpCB | 182 | | * | 1.59 | * | * |

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METHOD BLANK

| | | | | | | |
|---|---|---|---|---|---|---|
| 22'344'5'6-HpCB | 183 | | * | 0.38 | * | * |
| 22'3455'6-HpCB | 185 | | * | 1.08 | * | * |
| 22'33'456'-HpCB | 174 | | * | 1.04 | * | * |
| 22'33'4'56-HpCB | 177 | | * | 0.98 | * | * |
| 22'344'56-HpCB | 181 | | * | 0.83 | * | * |
| 22'33'44'6-HpCB | 171╗ | 171+173 | * | 0.92 | * | * |
| 22'33'455'-HpCB | 172 | | * | 1.03 | * | * |
| 233'455'6-HpCB | 192 | | * | 0.76 | * | * |
| 22'344'55'-HpCB | 180╗ | 180+193 | 8.86 | 0.77 | 0.89 | 0.913 |
| 233'44'5'6-HpCB | 191 | | * | 0.76 | * | * |
| 22'33'44'5-HpCB | 170 | | * | 1.06 | * | * |
| 233'44'56-HpCB | 190 | | * | 0.78 | * | * |
| 233'44'55'-HpCB | 189- | | * | 0.35 | * | * |
| Chlorination 8 | | | | | | |
| 22'33'55'66'-OcCB | 202- | | * | 1.01 | * | * |
| 22'33'45'66'-OcCB | 201 | | * | 0.61 | * | * |
| 22'344'566'-OcCB | 204 | | * | 0.59 | * | * |
| 22'33'44'66'-OcCB | 197╗ | 197+200 | * | 0.59 | * | * |
| 22'33'455'6-OcCB | 198╗ | 198+199 | 8.77 | 0.83 | 0.84 | 1.114 |
| 22'33'44'56'-OcCB | 196 | | 3.15 | 0.79 | 0.89 | 0.918 |
| 22'344'55'6-OcCB | 203 | | 4.79 | 0.87 | 0.66 | 0.922 |
| 22'33'44'56-OcCB | 195 | | 1.44 | 0.98 | 0.86 | 0.949 |
| 22'33'44'55'-OcCB | 194 | | 6.75 | 0.98 | 0.78 | 0.991 |
| 233'44'55'6-OcCB | 205- | | * | 0.45 | * | * |
| Chlorination 9 | | | | | | |
| 22'33'4'55'66'-NoCB | 208- | | * | 0.33 | * | * |
| 22'33'44'566'-NoCB | 207 | | * | 0.29 | * | * |
| 22'33'44'55'6-NoCB | 206- | | 4.18 | 0.73 | 0.69 | 1.000 |
| Chlorination 10 | | | | | | |
| DeCB | 209- | | * | 0.62 | * | * |

(1) RRTs and ion ratios are specified in Tables 2 and 8, Method 1668A.

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CLIENT ID.

FORM 2: 1668A PCB LABELED COMPOUND AND CLEANUP STANDARD RECOVERIES

METHOD BLANK

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method:1668A Lab ID:EQ0700194-01

Client Name: Sample Wt/Vol: 10.000 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): solid Initial Calibration Date: 09/25/06

Sample Receipt Date: Instrument ID: AutoSpec-Ultima

Ext. Date: 06/26/07 GC Column ID: SPB-OCTYL

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U210821

Analysis Date: 25-JUL-07 Time: 12:33:52 Blank Data Filename: U210821

Dilution Factor: 1 Cal. Ver. Data Filename: U210820

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture/Lipids:

| LABELED COMPOUNDS | IUPAC | SPIKE Conc(pg) | CONC. FOUND(ug) | R(%) (1) | Qual. (1) | ION ABUND. RATIO (2) | RRT (2) |
|---|---|---|---|---|---|---|---|
| 13C-2-MoCB | 1L | 2000 | 342.57 | 17.13 | | 2.94 | 0.746 |
| 13C-4-MoCB | 3L | 2000 | 449.12 | 22.46 | | 3.38 | 0.868 |
| 13C-22'-DiCB | 4L | 2000 | 610.63 | 30.53 | | 1.47 | 0.880 |
| 13C-44'-DiCB | 15L | 2000 | 1074.75 | 53.74 | | 1.52 | 1.222 |
| 13C-22'6'-TrCB | 19L | 2000 | 1012.10 | 50.61 | | 0.90 | 1.068 |
| 13C-344'-TrCB | 37L | 2000 | 648.30 | 32.42 | | 0.95 | 1.092 |
| 13C-22'66'-TeCB | 54L | 2000 | 606.06 | 30.30 | | 0.75 | 0.836 |
| 13C-344'5-TeCB | 81L | 2000 | 720.22 | 36.01 | | 0.75 | 1.342 |
| 13C-33'44'-TeCB | 77L | 2000 | 780.35 | 39.02 | | 0.74 | 1.367 |
| 13C-22'466'-PeCB | 104L | 2000 | 645.35 | 32.27 | | 1.50 | 0.821 |
| 13C-2'344'5-PeCB | 123L | 2000 | 808.43 | 40.42 | | 1.50 | 1.142 |
| 13C-23'44'5-PeCB | 118L | 2000 | 824.70 | 41.24 | | 1.52 | 1.151 |
| 13C-2344'5-PeCB | 114L | 2000 | 792.30 | 39.62 | | 1.48 | 1.168 |
| 13C-233'44'-PeCB | 105L | 2000 | 831.51 | 41.58 | | 1.49 | 1.193 |
| 13C-33'44'5-PeCB | 126L | 2000 | 871.25 | 43.56 | | 1.50 | 1.287 |
| 13C-22'44'66'-HxCB | 155L | 2000 | 741.30 | 37.06 | | 1.23 | 0.789 |
| 13C-23'44'55'-HxCB | 167L | 2000 | 989.21 | 49.46 | | 1.26 | 1.071 |
| 13C-233'44'5'-HxCB | 156╗ | 4000 | 2151.43 | 53.79 | | 1.24 | 1.101 |
| 13C-PCB156 + 13C-PCB157 Coelution | | | | | | | |
| 13C-33'44'55'-HxCB | 169L | 2000 | 1089.65 | 54.48 | | 1.26 | 1.185 |
| 13C-22'34'566'-HpCB | 188L | 2000 | 766.83 | 38.34 | | 1.03 | 0.719 |
| 13C-233'44'55'-HpCB | 189L | 2000 | 916.09 | 45.80 | | 1.00 | 0.962 |
| 13C-22'33'55'66'-OcCB | 202L | 2000 | 791.50 | 39.58 | | 0.89 | 0.820 |
| 13C-233'44'55'6-OcCB | 205L | 2000 | 1019.43 | 50.97 | | 0.88 | 1.009 |
| 13C-22'33'4'55'66'-NoCB | 208L | 2000 | 901.50 | 45.08 | | 0.80 | 0.946 |
| 13C-22'33'44'55'6-NoCB | 206L | 2000 | 1118.15 | 55.91 | | 0.79 | 1.040 |
| 13C-DeCB | 209L | 2000 | 1203.88 | 60.19 | | 1.22 | 1.066 |

CLIENT ID.

METHOD BLANK

CLEANUP STANDARD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 13C-244'-TrCB | 28L | 2000 | 712.62 | 35.63 | | 1.00 | 0.930 |
| 13C-233'55'-PeCB | 111L | 2000 | 906.68 | 45.33 | | 1.54 | 1.076 |
| 13C-22'33'55'6-HpCB | 178L | 2000 | 1031.14 | 51.56 | | 1.04 | 1.006 |

(1) Contract-required limits for percent recovery (R) are 15-150% for labeled standards, 30-135% for cleanup stands, Table 6, Method 1668A.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables A-1 and 8, respectively, Method 1668A.

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USEPA - CLP

Form3

PCB TOTAL HOMOLOGOUS CONCENTRATION

CLIENT ID.

METHOD BLANK

Lab Name: Columbia Analytical Services Contract:
Lab Code: CAS Case No.: Lab ID: EQ0700194-01
Client Name: Sample Wt/Vol: 10.000 g
Matrix(Solid/Aqueous/Waste/Ash): solid Initial Calibration Date: 09/25/06
Sample Receipt Date: Instrument ID: AutoSpec-Ultima
Ext. Date 6/26/2007 GC Column ID: SPB-OCTYL
Ext. Vol(ul): 20.0 Inj. Vol(ul):1.0 Sample Date Filename: U210821
Analysis Date: 25-Jul-07 Blank Data Filename: U210821
Dilution Factor: 1 Cal. Ver. Date Filename: U210820
CONCENTRATION UNITS: (pg/L or ng/Kg) ng/Kg %Moisture

| TARGET ANALYTE | CONCENTRATION |
|---|---|
| Tot MoCB | 2.01 |
| Tot DiCB | 9.55 |
| Tot TriCB | 17.83 |
| Tot TeCB | 10.09 |
| Tot PeCB | 12.32 |
| Tot HxCB | 2.31 |
| Tot HpCB | 27.77 |
| Tot OcCB | 24.90 |
| Tot NoCB | 4.18 |
| Tot DeCB | * |
| | |
| Total PCB | 110.96 |

Form 1

CLIENT ID.

PCB ANALYSIS DATA SHEET
Use for Sample and Blank Results FO 070665

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method: 1668A Lab Sample ID: K0704820-001

Client Name: CITY OF PORTLAND Sample Wt/Vol: 4.989 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 09/25/06

Sample Receipt Date: 06/12/07 Instrument ID: AutoSpec-Ultima

Ext. Date: 06/26/07 GC Column:SPB-OCTYL

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U210822

Analysis Date: 25-JUL-07 Time: 13:35:50 Blank Data Filename: U210821

Dilution Factor: 1 Cal. Ver. Data Filename: U210820

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 51.40

| ANALYTE | IUPAC# | COELUTIONS | CONCENTRATION FOUND | DETECTION LIMIT | ION ABUND. RATIO(1) | RRT (1) |
|---|---|---|---|---|---|---|
| Chlorination 1 | | | | | | |
| 2-MoCB | 1- | | 104.66 | 4.45 | 3.26 | 1.001 |
| 3-MoCB | 2 | | 16.29 | 4.96 | 3.21 | 0.988 |
| 4-MoCB | 3- | | 52.36 | 5.50 | 3.44 | 1.001 |
| Chlorination 2 | | | | | | |
| 22'-DiCB | 4- | | 70.64 | 52.05 | 1.35 | 1.001 |
| 26-DiCB | 10 | | * | 20.77 | * | * |
| 25-DiCB | 9 | | * | 22.77 | * | * |
| 24-DiCB | 7 | | * | 20.04 | * | * |
| 23'-DiCB | 6 | | 34.53 | 22.63 | 1.36 | 1.143 |
| 23-DiCB | 5 | | 91.63 | 21.64 | 1.65 | 1.168 |
| 2,4'-DiCB | 8 | | * | 21.93 | * | * |
| 35-DiCB | 14 | | * | 23.93 | * | * |
| 33'-DiCB | 11 | | 290.66 | 26.88 | 1.73 | 0.964 |
| 34-DiCB | 12/╗ | 12+13 | * | 24.06 | * | * |
| 44'-DiCB | 15- | | 128.70 | 17.42 | 1.68 | 1.002 |
| Chlorination 3 | | | | | | |
| 22'6-TrCB | 19- | | * | 30.68 | * | * |
| 22'5-TrCB | 18/╗ | 18+30 | 153.69 | 16.85 | 0.88 | 1.098 |
| 22'4-TrCB | 17 | | 67.47 | 20.68 | 1.00 | 1.115 |
| 23'6-TrCB | 27/╗ | 27+24 | * | 14.65 | * | * |
| 22'3-TrCB | 16 | | 60.93 | 24.56 | 1.06 | 1.153 |
| 24'6-TrCB | 32 | | 64.37 | 13.65 | 0.83 | 1.175 |
| 2'35-TrCB | 34 | | * | 11.61 | * | * |
| 235-TrCB | 23 | | * | 12.63 | * | * |
| 23'5-TrCB | 26/╗ | 26+29 | 21.18 | 7.47 | 0.85 | 1.262 |
| 23'4-TrCB | 25 | | * | 7.87 | * | * |
| 24'5-TrCB | 31 | | 264.32 | 7.26 | 0.96 | 0.844 |
| 233'-TrCB | 20/╗ | 20+28 | 289.60 | 6.36 | 1.09 | 0.853 |
| 234-TrCB | 21/╗ | 21+33 | 135.45 | 7.58 | 1.05 | 0.864 |

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|---|---|---|---|---|---|---|
| 234'-TrCB | 22 | | 89.76 | 6.54 | 1.03 | 0.880 |
| 33'5-TrCB | 36 | | * | 6.09 | * | * |
| 34'5-TrCB | 39 | | * | 5.61 | * | * |
| 345-TrCB | 38 | | * | 6.34 | * | * |
| 33'4-TrCB | 35 | | * | 6.61 | * | * |
| 344'-TrCB | 37- | | 112.83 | 4.23 | 1.03 | 1.001 |
| Chlorination 4 | | | | | | |
| 22'66'-TeCB | 54- | | * | 6.07 | * | * |
| 22'46-TeCB | 50/╗ | 50+53 | * | 12.99 | * | * |
| 22'36-TeCB | 45/╗ | 45+51 | * | 12.87 | * | * |
| 22'36'-TeCB | 46 | | * | 14.22 | * | * |
| 22'55'-TeCB | 52/╗ | 52+43+73 | 414.18 | 10.54 | 0.74 | 1.200 |
| 22'45'-TeCB | 49/╗ | 49+69 | 165.47 | 9.57 | 0.76 | 1.221 |
| 22'45-TeCB | 48 | | 24.71 | 11.18 | 0.71 | 1.232 |
| 22'35'-TeCB | 44/╗ | 44+47+65 | 267.32 | 10.35 | 0.73 | 1.250 |
| 233'6-TeCB | 59/╗ | 59+62+75 | * | 8.90 | * | * |
| 22'34'-TeCB | 42 | | 65.20 | 18.09 | 0.85 | 1.272 |
| 22'34-TeCB | 41/╗ | 41+71+40 | 184.43 | 13.16 | 0.66 | 1.296 |
| 234'6-TeCB | 64 | | 293.90 | 13.79 | 0.80 | 1.305 |
| 23'55'-TeCB | 72 | | * | 18.07 | * | * |
| 23'45'-TeCB | 68 | | * | 16.63 | * | * |
| 233'5-TeCB | 57 | | * | 18.88 | * | * |
| 233'5'-TeCB | 58 | | * | 13.31 | * | * |
| 23'45-TeCB | 67 | | * | 23.12 | * | * |
| 234'5-TeCB | 63 | | * | 17.58 | * | * |
| 23'4'5-TeCB | 70/╗ | 70+61+74+76 | 435.26 | 17.30 | 0.79 | 0.878 |
| 23'44'-TeCB | 66 | | 196.82 | 16.90 | 0.78 | 0.888 |
| 233'4-TeCB | 55 | | * | 19.44 | * | * |
| 233'4'-TeCB | 56 | | 119.40 | 18.03 | 0.80 | 0.911 |
| 2344'-TeCB | 60 | | 44.33 | 17.76 | 0.70 | 0.917 |
| 33'55'-TeCB | 80 | | * | 15.33 | * | * |
| 33'45'-TeCB | 79 | | * | 16.68 | * | * |
| 33'45-TeCB | 78 | | * | 18.22 | * | * |
| 344'5-TeCB | 81- | | * | 11.16 | * | * |
| 33'44'-TeCB | 77- | | 32.74 | 11.95 | 0.87 | 1.000 |
| Chlorination 5 | | | | | | |
| 22'466'-PeCB | 104- | | * | 2.41 | * | * |
| 22'366'-PeCB | 96 | | * | 1.41 | * | * |
| 22'45'6-PeCB | 103 | | * | 6.69 | * | * |
| 22'356'-PeCB | 94 | | * | 7.29 | * | * |
| 22'35'6-PeCB | 95/╗ | 95+93+100 | 579.63 | 6.99 | 1.57 | 1.117 |
| 22'3'46-PeCB | 98/╗ | 98+102 | * | 6.11 | * | * |
| 22'346-PeCB | 88/╗ | 88+91 | 61.57 | 6.88 | 1.60 | 1.146 |
| 22'33'6-PeCB | 84 | | 130.19 | 7.73 | 1.58 | 1.160 |
| 22'346'-PeCB | 89 | | * | 7.85 | * | * |
| 23'45'6-PeCB | 121 | | * | 4.86 | * | * |
| 22'355'-PeCB | 92 | | 88.64 | 7.30 | 1.65 | 0.862 |
| 22'34'5-PeCB | 90/╗ | 90+101+113 | 608.59 | 5.61 | 1.58 | 0.877 |
| 22'33'5-PeCB | 83/╗ | 83+99 | 207.64 | 5.13 | 1.61 | 0.891 |
| 233'56-PeCB | 112 | | * | 7.49 | * | * |
| 22'345-PeCB | 86/╗ | 86+87+97+ 108+119+125 | 370.56 | 5.54 | 1.60 | 0.913 |
| 22'344'-PeCB | 85/╗ | 85+116+117 | 9.62 | 6.78 | 1.89 | 0.923 |
| 233'4'6-PeCB | 110╗ | 110+115 | 1102.90 | 6.65 | 1.57 | 0.933 |
| 22'33'4-PeCB | 82 | | * | 10.58 | * | * |

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|---|---|---|---|---|---|---|
| 233'55'-PeCB | 111 | | 32.44 | 4.63 | 1.52 | 0.944 |
| 23'455'-PeCB | 120 | | * | 4.62 | * | * |
| 233'4'5-PeCB | 107╗ | 107+124 | 17.40 | 0.83 | 1.45 | 0.991 |
| 233'46-PeCB | 109 | | 18.50 | 0.63 | 1.95 | 0.998 |
| 2'344'5-PeCB | 123- | | * | 0.70 | * | * |
| 233'45-PeCB | 106 | | * | 1.28 | * | * |
| 23'44'5-PeCB | 118- | | 462.04 | 0.53 | 1.61 | 1.000 |
| 2'33'45-PeCB | 122 | | * | 0.75 | * | * |
| 2344'5-PeCB | 114- | | * | 0.72 | * | * |
| 233'44'-PeCB | 105- | | 162.21 | 0.59 | 1.56 | 1.000 |
| 33'455'-PeCB | 127 | | * | 0.84 | * | * |
| 33'44'5-PeCB | 126- | | * | 0.69 | * | * |
| Chlorination 6 | | | | | | |
| 22'44'66'-HxCB | 155- | | * | 1.18 | * | * |
| 22'3566'-HxCB | 152╗ | 152+150 | * | 0.75 | * | * |
| 22'33'66'-HxCB | 136 | | * | 1.00 | * | * |
| 22'3466'-HxCB | 145 | | 87.70 | 0.63 | 1.21 | 1.038 |
| 22'34'56'-HxCB | 148 | | * | 1.04 | * | * |
| 22'33'56'-HxCB | 135╗ | 135+151+154 | 255.38 | 0.92 | 1.13 | 1.106 |
| 22'345'6-HxCB | 144 | | 11.62 | 1.07 | 1.80 | 1.122 |
| 22'34'56-HxCB | 147╗ | 134+147+149 | 906.22 | 7.97 | 1.20 | 1.135 |
| 22'3456'-HxCB | 143 | | * | 3.51 | * | * |
| 22'344'6-HxCB | 139╗ | 139+140 | * | 5.24 | * | * |
| 22'33'46-HxCB | 131╗ | 131+142 | * | 7.00 | * | * |
| 22'33'46'-HxCB | 132 | | 288.37 | 6.39 | 1.07 | 1.178 |
| 22'33'55'-HxCB | 133 | | * | 6.58 | * | * |
| 233'55'6-HxCB | 165 | | * | 4.55 | * | * |
| 22'34'55'-HxCB | 146 | | 62.60 | 3.58 | 1.08 | 0.888 |
| 233'45'6-HxCB | 161 | | * | 7.70 | * | * |
| 22'44'55'-HxCB | 153╗ | 153+168 | 785.40 | 4.20 | 1.25 | 0.901 |
| 22'3455'-HxCB | 141 | | 186.32 | 6.82 | 1.23 | 0.909 |
| 22'33'45'-HxCB | 130 | | 17.56 | 6.01 | 1.82 | 0.919 |
| 22'344'5-HxCB | 137 | | 5.48 | 4.41 | 1.86 | 0.921 |
| 233'4'5'6-HxCB | 164 | | * | 5.77 | * | * |
| 22'33'45-HxCB | 129╗ | 129+138+160+163 | 892.19 | 4.92 | 1.28 | 0.933 |
| 233'44'6-HxCB | 158 | | 64.54 | 4.09 | 1.40 | 0.941 |
| 22'33'44'-HxCB | 128╗ | 128+166 | 133.58 | 5.05 | 1.33 | 0.966 |
| 233'455'-HxCB | 159 | | * | 6.26 | * | * |
| 233'4'55'-HxCB | 162 | | * | 6.15 | * | * |
| 23'44'55'-HxCB | 167- | | 36.70 | 3.97 | 1.25 | 1.001 |
| 233'44'5-HxCB | 156╗ | 156+157 | 105.14 | 7.41 | 1.15 | 0.998 |
| 33'44'55'-HxCB | 169- | | * | 4.34 | * | * |
| Chlorination 7 | | | | | | |
| 22'34'566'-HpCB | 188- | | * | 2.04 | * | * |
| 22'33'566'-HpCB | 179 | | 137.04 | 1.52 | 0.83 | 1.016 |
| 22'344'66'-HpCB | 184 | | * | 1.32 | * | * |
| 22'33'466'-HpCB | 176 | | 39.47 | 1.52 | 0.75 | 1.039 |
| 22'34566'-HpCB | 186 | | * | 1.43 | * | * |
| 22'33'55'6-HpCB | 178 | | 105.43 | 4.26 | 0.86 | 1.085 |
| 22'33'45'6-HpCB | 175 | | * | 6.28 | * | * |
| 22'34'55'6-HpCB | 187 | | 1208.33 | 4.60 | 0.91 | 1.109 |
| 22'344'56'-HpCB | 182 | | * | 7.50 | * | * |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 22'344'5'6-HpCB | 183 | | 172.57 | 1.80 | 0.84 | 1.124 |
| 22'3455'6-HpCB | 185 | | * | 10.90 | * | * |
| 22'33'456'-HpCB | 174 | | 341.91 | 10.43 | 0.93 | 1.136 |
| 22'33'4'56-HpCB | 177 | | 193.29 | 9.86 | 0.92 | 1.147 |
| 22'344'56-HpCB | 181 | | * | 8.36 | * | * |
| 22'33'44'6-HpCB | 171╗ | 171+173 | 90.72 | 9.25 | 0.83 | 1.163 |
| 22'33'455'-HpCB | 172 | | 53.08 | 10.37 | 0.83 | 0.900 |
| 233'455'6-HpCB | 192 | | * | 7.61 | * | * |
| 22'344'55'-HpCB | 180╗ | 180+193 | 903.31 | 7.74 | 0.89 | 0.913 |
| 233'44'5'6-HpCB | 191 | | 13.31 | 7.60 | 0.83 | 0.920 |
| 22'33'44'5-HpCB | 170 | | 407.14 | 10.70 | 0.90 | 0.940 |
| 233'44'56-HpCB | 190 | | 73.25 | 7.83 | 0.84 | 0.949 |
| 233'44'55'-HpCB | 189- | | 10.92 | 5.17 | 0.71 | 1.001 |
| Chlorination 8 | | | | | | |
| 22'33'55'66'-OcCB | 202- | | 41.24 | 7.88 | 0.85 | 1.001 |
| 22'33'45'66'-OcCB | 201 | | 23.58 | 5.26 | 0.97 | 1.022 |
| 22'344'566'-OcCB | 204 | | * | 5.11 | * | * |
| 22'33'44'66'-OcCB | 197╗ | 197+200 | 28.40 | 5.09 | 0.81 | 1.049 |
| 22'33'455'6-OcCB | 198╗ | 198+199 | 222.80 | 7.16 | 0.86 | 1.113 |
| 22'33'44'56'-OcCB | 196 | | 87.61 | 6.76 | 0.85 | 0.918 |
| 22'344'55'6-OcCB | 203 | | 170.65 | 7.46 | 0.83 | 0.921 |
| 22'33'44'56-OcCB | 195 | | 80.64 | 8.40 | 0.85 | 0.948 |
| 22'33'44'55'-OcCB | 194 | | 201.32 | 8.41 | 0.78 | 0.992 |
| 233'44'55'6-OcCB | 205- | | 8.08 | 4.37 | 0.86 | 1.000 |
| Chlorination 9 | | | | | | |
| 22'33'4'55'66'-NoCB | 208- | | 28.44 | 1.13 | 0.74 | 1.001 |
| 22'33'44'566'-NoCB | 207 | | 10.16 | 1.05 | 0.60 | 1.019 |
| 22'33'44'55'6-NoCB | 206- | | 100.42 | 2.60 | 0.73 | 1.000 |
| Chlorination 10 | | | | | | |
| DeCB | 209- | | 34.47 | 1.44 | 1.25 | 1.001 |

(1) RRTs and ion ratios are specified in Tables 2 and 8, Method 1668A.

sp156f1u.frm

CLIENT ID.

FO 070665

FORM 2: 1668A PCB LABELED COMPOUND AND CLEANUP STANDARD RECOVERIES

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS SDG No.: Method:1668A Lab ID:K0704820-001

Client Name: CITY OF PORTLAND Sample Wt/Vol: 4.989 g or mL: g

Matrix (Solid/Aqueous/Waste/Ash): solid Initial Calibration Date: 09/25/06

Sample Receipt Date: 06/12/07 Instrument ID: AutoSpec-Ultima

Ext. Date: 06/26/07 GC Column ID: SPB-OCTYL

Ext. Vol(ul): 20.0 Inj. Vol(ul): 1.0 Sample Data Filename: U210822

Analysis Date: 25-JUL-07 Time: 13:35:50 Blank Data Filename: U210821

Dilution Factor: 1 Cal. Ver. Data Filename: U210820

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture/Lipids: 51.40

| LABELED COMPOUNDS | IUPAC | SPIKE Conc(pg) | CONC. FOUND(ug) | R(%) (1) | Qual. (1) | ION ABUND. RATIO (2) | RRT (2) |
|---|---|---|---|---|---|---|---|
| 13C-2-MoCB | 1L | 2000 | 273.75 | 13.69 | Y | 2.93 | 0.759 |
| 13C-4-MoCB | 3L | 2000 | 300.77 | 15.04 | | 3.19 | 0.881 |
| 13C-22'-DiCB | 4L | 2000 | 359.46 | 17.97 | Y | 1.49 | 0.897 |
| 13C-44'-DiCB | 15L | 2000 | 658.23 | 32.91 | | 1.51 | 1.233 |
| 13C-22'6'-TrCB | 19L | 2000 | 557.36 | 27.87 | | 0.96 | 1.069 |
| 13C-344'-TrCB | 37L | 2000 | 903.12 | 45.16 | | 1.00 | 1.091 |
| 13C-22'66'-TeCB | 54L | 2000 | 738.47 | 36.92 | | 0.73 | 0.834 |
| 13C-344'5-TeCB | 81L | 2000 | 875.88 | 43.79 | | 0.75 | 1.345 |
| 13C-33'44'-TeCB | 77L | 2000 | 864.79 | 43.24 | | 0.73 | 1.370 |
| 13C-22'466'-PeCB | 104L | 2000 | 1036.92 | 51.85 | | 1.53 | 0.821 |
| 13C-2'344'5-PeCB | 123L | 2000 | 983.73 | 49.19 | | 1.49 | 1.142 |
| 13C-23'44'5-PeCB | 118L | 2000 | 1039.83 | 51.99 | | 1.52 | 1.152 |
| 13C-2344'5-PeCB | 114L | 2000 | 990.18 | 49.51 | | 1.49 | 1.169 |
| 13C-233'44'-PeCB | 105L | 2000 | 993.59 | 49.68 | | 1.52 | 1.194 |
| 13C-33'44'5-PeCB | 126L | 2000 | 994.08 | 49.70 | | 1.47 | 1.289 |
| 13C-22'44'66'-HxCB | 155L | 2000 | 1283.82 | 64.19 | | 1.20 | 0.790 |
| 13C-23'44'55'-HxCB | 167L | 2000 | 1313.64 | 65.68 | | 1.23 | 1.073 |
| 13C-233'44'5'-HxCB | 156╗ | 4000 | 2642.47 | 66.06 | | 1.24 | 1.106 |
| 13C-PCB156 + 13C-PCB157 Coelution | | | | | | | |
| 13C-33'44'55'-HxCB | 169L | 2000 | 1252.44 | 62.62 | | 1.26 | 1.185 |
| 13C-22'34'566'-HpCB | 188L | 2000 | 1108.87 | 55.44 | | 1.04 | 0.718 |
| 13C-233'44'55'-HpCB | 189L | 2000 | 952.88 | 47.64 | | 1.02 | 0.961 |
| 13C-22'33'55'66'-OcCB | 202L | 2000 | 1043.38 | 52.17 | | 0.87 | 0.821 |
| 13C-233'44'55'6-OcCB | 205L | 2000 | 1168.98 | 58.45 | | 0.89 | 1.009 |
| 13C-22'33'4'55'66'-NoCB | 208L | 2000 | 1038.20 | 51.91 | | 0.79 | 0.946 |
| 13C-22'33'44'55'6-NoCB | 206L | 2000 | 1298.42 | 64.92 | | 0.76 | 1.040 |
| 13C-DeCB | 209L | 2000 | 1355.13 | 67.76 | | 1.19 | 1.067 |

CLIENT ID.

FO 070665

CLEANUP STANDARD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 13C-244'-TrCB | 28L | 2000 | 1088.45 | 54.42 | | 1.01 | 0.931 |
| 13C-233'55'-PeCB | 111L | 2000 | 1427.79 | 71.39 | | 1.55 | 1.078 |
| 13C-22'33'55'6-HpCB | 178L | 2000 | 1447.75 | 72.39 | | 1.04 | 1.007 |

(1) Contract-required limits for percent recovery (R) are 15-150% for labeled standards, 30-135% for cleanup stands, Table 6, Method 1668A.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables A-1 and 8, respectively, Method 1668A.

sp156f2u.frm

USEPA - CLP

Form3

PCB TOTAL HOMOLOGOUS CONCENTRATION

CLIENT ID.

FO 70665

Lab Name: Columbia Analytical Services Contract:
Lab Code: CAS Case No.: Lab ID: K0704820-001
Client Name: CITY OF PORTLAND Sample Wt/Vol: 4.989 g
Matrix(Solid/Aqueous/Waste/Ash): solid Initial Calibration Date: 09/25/06
Sample Receipt Date 6/12/2007 Instrument ID: AutoSpec-Ultima
Ext. Date 6/26/2007 GC Column ID: SPB-OCTYL
Ext. Vol(ul): 20.0 Inj. Vol(ul):1.0 Sample Date Filename: U210822
Analysis Date: 25-Jul-07 Blank Data Filename: U210821
Dilution Factor: 1 Cal. Ver. Date Filename: U210820
CONCENTRATION UNITS: (pg/L or ng/Kg) ng/Kg %Moisture

| TARGET ANALYTE | CONCENTRATION |
|---|---|
| Tot MoCB | 173.31 |
| Tot DiCB | 616.16 |
| Tot TriCB | 1259.60 |
| Tot TeCB | 2243.76 |
| Tot PeCB | 3851.93 |
| Tot HxCB | 3838.80 |
| Tot HpCB | 3749.77 |
| Tot OcCB | 864.32 |
| Tot NoCB | 139.02 |
| Tot DeCB | 34.47 |
| | |
| Total PCB | 16771.14 |

Columbia Analytical Services INC.

An Employee - Owned Company

# Chain-of-custody

10655 Richmond Avenue, Suite 130-A, Houston, TX 77042
Phone (713)266-1599 Fax (713)266-0130
www.caslab.com

**Columbia Analytical Services Inc.**
**Cooler Receipt And Preservation Form**

Project/Client: PCBs and Pesticides in Storm Water/Portland, City of

Work Order: K0704820

Cooler received ~~on 06/05/2007~~ 6/12/07 and opened on 6/12/07 by 11:00

6/12/07

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. | Were custody seals on outside of cooler? | | Y N | 9. | Did all bottle labels and tags agree with custody papers? | NA | Y N |
| 2. | Were seals intact and signature & date correct? | NA | Y N | 10. | Were the correct types of bottles used for the tests indicated? | NA | Y N |
| 3. | Is the shipper's airbill available and filed? | | Y N | 11. | Were all of the preserved bottles received at the lab with the appropriate pH? | NA | Y N |
| 4. | COC # | | | 12. | Were VOA vials checked for absence of air bubbles, and if present, noted below? | NA | Y N |
| 5. | Were custody papers properly filled out (ink, signed, etc.)? | NA | Y N | 13. | Did the bottles originate from CAS/K or a branch laboratory? | | Y N |
| 6. | Type of packing material present | | | 14. | Are CWA Microbiology samples received with >½ the 24 hr. hold time remaining from collection? | NA | Y N |
| 7. | Did all bottles arrive in good condition (unbroken)? | NA | Y N | 15. | Was Cl2/Res negative? | NA | Y N |
| 8. | Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? | NA | Y N | | | | |

| Lab Code | Sample Name |
|---|---|
| K0704820-001 | FO 070665 |

4oz-Glass Jar WM CLEAR Teflon Liner(Unpreserved)



| Bottle ID | Barcode | Expected Conditions HS | pH | Temp | Received Conditions Cooler # | Temp deg C | pH Check | Rec HS | Seal Intact? | Corrective Action |
|---|---|---|---|---|---|---|---|---|---|---|
| K0704820-001.01 | | NA | | - | | | | NA | | |
| Test List: | 1668A | Composite | 8270C | | | | | | | |
| | 8081A | 8082 | Subsample | | | | | | | |
| | TS-MET | 8270C SIM | | | | | | | | |
| K0704820-001.02 | | NA | | - | | | | NA | | |
| Test List: | 1668A | Composite | 8270C | | | | | | | |
| | 8081A | 8082 | Subsample | | | | | | | |
| | TS-MET | 8270C SIM | | | | | | | | |
| K0704820-001.03 | | NA | | - | | | | NA | | |
| Test List: | 1668A | Composite | 8270C | | | | | | | |
| | 8081A | 8082 | Subsample | | | | | | | |
| | TS-MET | 8270C SIM | | | | | | | | |
| K0704820-001.04 | | NA | | - | | | | NA | | |
| Test List: | 1668A | Composite | 8270C | | | | | | | |
| | 8081A | 8082 | Subsample | | | | | | | |
| | TS-MET | 8270C SIM | | | | | | | | |

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Cooler Receipt Comments:

**All tests have one or more assigned bottles**

# Service Request Summary

**Folder #:** **K0704820**
Client Name: Portland, City of
Project Name: PCBs and Pesticides in Storm Water
Project Number:

**Report To:** Jennifer Shackelford
Portland, City of
1120 SW Fifth Avenue # 600
Portland, OR 97204
Phone Number: 503-823-5614
Cell Number:
Fax Number: 503-823-4500
E-mail: jennifers@bes.ci.portland.or.us

Project Chemist: Jane Freemyer
Originating Lab: KELSO
Logged By: TBLACK
Date Received: 06/05/2007
Internal Due Date: 06/24/2007
QAPP: LAB QAP
Qualifier Set: CAS Standard
Formset: CAS Standard
Merged?: Y
Report to MDL?: N
P.O. Number: 36238
EDD: No EDD Specified

4 - 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

**Location:** K-SAM-38, SUBBED

| | | | | | KELSO | KELSO | | | KELSO | | KELSO | SVM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS Samp No. | Client Samp No. | Matrix | Collected | | Sub Sample/ Subsample | Composite/ Composite | PCB_LL/ 8082 | PEST_OC_LL/ 8081A | PAH_SIM/ 8270C SIM | SVO_LL/ 8270C | Total Solids/ TS-MET | Cl Biphen Cong/ 1668A |
| K0704820-001 | FO 070665 | Sludge, | 6/1/07 1220 | | I | I | I | I | I | I | I | I |



## Test Comments:

| Group | Test/Method | Samples | Comments |
|---|---|---|---|
| GenChem | Sub Sample/Subsample | 1 | Sub sample for Houston |
| Semivoa GC | Composite/Composite | 1 | Composite four jars |

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Columbia Analytical Services INC.

An Employee - Owned Company

# Chromatograms & Selected Ion Monitoring

10655 Richmond Avenue, Suite 130-A, Houston, TX 77042
Phone (713)266-1599 Fax (713)266-0130
www.caslab.com

Columbia Analytical Services, Inc. 

Sample Response Summary CLIENT ID.
METHOD BLANK

Run #8 Filename U210821 #1 Samp: 1 Inj: 1 Acquired: 25-JUL-07 12:33:52
Processed: 27-JUL-07 16:06:33 Sample ID: EQ0700194-01

| | Typ | Name | RT-1 | Resp 1 | Resp 2 | Ratio | Meet | Mod? |
|---|---|---|---|---|---|---|---|---|
| 1 | 1- | 2-MoCB | 12:55 | 7.404e+01 | 3.540e+01 | 2.09 | no | yes |
| 2 | 2 | 3-MoCB | NotFnd | * | * | * | no | yes |
| 3 | 3- | 4-MoCB | NotFnd | * | * | * | no | yes |
| 4 | 4- | 22'-DiCB | 15:13 | 1.147e+02 | 1.546e+02 | 0.74 | no | yes |
| 5 | 10 | 26-DiCB | NotFnd | * | * | * | no | yes |
| 6 | 9 | 25-DiCB | NotFnd | * | * | * | no | no |
| 7 | 7 | 24-DiCB | NotFnd | * | * | * | no | no |
| 8 | 6 | 23'-DiCB | NotFnd | * | * | * | no | no |
| 9 | 5 | 23-DiCB | 18:04 | 4.320e+02 | 3.038e+02 | 1.42 | yes | yes |
| 10 | 8 | 2,4'-DiCB | NotFnd | * | * | * | no | no |
| 11 | 14 | 35-DiCB | NotFnd | * | * | * | no | no |
| 12 | 11 | 33'-DiCB | NotFnd | * | * | * | no | no |
| 13 | 12/1 | 34-DiCB | NotFnd | * | * | * | no | no |
| 14 | 15- | 44'-DiCB | NotFnd | * | * | * | no | no |
| 15 | 19- | 22'6-TrCB | NotFnd | * | * | * | no | no |
| 16 | 18/3 | 22'5-TrCB | 20:03 | 2.691e+02 | 2.910e+02 | 0.92 | yes | yes |
| 17 | 17 | 22'4-TrCB | NotFnd | * | * | * | no | no |
| 18 | 27/2 | 23'6-TrCB | NotFnd | * | * | * | no | no |
| 19 | 16 | 22'3-TrCB | 21:08 | 6.918e+01 | 4.943e+01 | 1.40 | no | no |
| 20 | 32 | 24'6-TrCB | NotFnd | * | * | * | no | no |
| 21 | 34 | 2'35-TrCB | NotFnd | * | * | * | no | no |
| 22 | 23 | 235-TrCB | NotFnd | * | * | * | no | no |
| 23 | 26/2 | 23'5-TrCB | NotFnd | * | * | * | no | no |
| 24 | 25 | 23'4-TrCB | 23:36 | 2.279e+02 | 2.070e+02 | 1.10 | yes | no |
| 25 | 31 | 24'5-TrCB | 23:53 | 2.222e+02 | 1.795e+02 | 1.24 | no | no |
| 26 | 20/2 | 233'-TrCB | 24:11 | 1.257e+02 | 9.561e+01 | 1.31 | no | no |
| 27 | 21/3 | 234-TrCB | NotFnd | * | * | * | no | no |
| 28 | 22 | 234'-TrCB | 24:38 | 1.766e+02 | 1.574e+02 | 1.12 | yes | yes |
| 29 | 36 | 33'5-TrCB | NotFnd | * | * | * | no | no |
| 30 | 39 | 34'5-TrCB | NotFnd | * | * | * | no | no |
| 31 | 38 | 345-TrCB | NotFnd | * | * | * | no | no |
| 32 | 35 | 33'4-TrCB | NotFnd | * | * | * | no | no |
| 33 | 37- | 344'-TrCB | 28:02 | 8.344e+01 | 8.394e+01 | 0.99 | yes | yes |
| 34 | 54- | 22'66'-TeCB | NotFnd | * | * | * | no | no |
| 35 | 50/5 | 22'46-TeCB | NotFnd | * | * | * | no | no |
| 36 | 45/5 | 22'36-TeCB | NotFnd | * | * | * | no | no |
| 37 | 46 | 22'36'-TeCB | NotFnd | * | * | * | no | no |
| 38 | 52/4 | 22'55'-TeCB | 25:41 | 2.510e+02 | 3.073e+02 | 0.82 | yes | yes |
| 39 | 49/6 | 22'45'-TeCB | NotFnd | * | * | * | no | no |
| 40 | 48 | 22'45-TeCB | NotFnd | * | * | * | no | no |
| 41 | 44/4 | 22'35'-TeCB | NotFnd | * | * | * | no | no |
| 42 | 59/6 | 233'6-TeCB | NotFnd | * | * | * | no | no |
| 43 | 42 | 22'34'-TeCB | NotFnd | * | * | * | no | no |
| 44 | 41/4 | 22'34-TeCB | NotFnd | * | * | * | no | no |
| 45 | 64 | 234'6-TeCB | 27:52 | 8.445e+01 | 1.083e+02 | 0.78 | yes | yes |
| 46 | 72 | 23'55'-TeCB | NotFnd | * | * | * | no | no |
| 47 | 68 | 23'45'-TeCB | NotFnd | * | * | * | no | no |
| 48 | 57 | 233'5-TeCB | NotFnd | * | * | * | no | no |
| 49 | 58 | 233'5'-TeCB | NotFnd | * | * | * | no | no |
| 50 | 67 | 23'45-TeCB | NotFnd | * | * | * | no | no |
| 51 | 63 | 234'5-TeCB | NotFnd | * | * | * | no | no |
| 52 | 70/7 | 23'4'5-TeCB | 30:16 | 2.395e+02 | 3.083e+02 | 0.78 | yes | no |
| 53 | 66 | 23'44'-TeCB | 30:37 | 1.[illegible]e+02 | 1.195e+02 | 0.96 | no | no |

Filename U210821 #1 Acquired: 25-JUL-07 12:33:52

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 54 | 55 | 233'4-TeCB | NotFnd | * | * | * | no | no |
| 55 | 56 | 233'4'-TeCB | 31:22 | 4.265e+01 | 5.374e+01 | 0.79 | yes | yes |
| 56 | 60 | 2344'-TeCB | 31:33 | 2.237e+01 | 4.238e+01 | 0.53 | no | yes |
| 57 | 80 | 33'55'-TeCB | NotFnd | * | * | * | no | no |
| 58 | 79 | 33'45'-TeCB | NotFnd | * | * | * | no | no |
| 59 | 78 | 33'45-TeCB | NotFnd | * | * | * | no | no |
| 60 | 81- | 344'5-TeCB | NotFnd | * | * | * | no | no |
| 61 | 77- | 33'44'-TeCB | NotFnd | * | * | * | no | no |
| 62 | 104- | 22'466'-PeCB | NotFnd | * | * | * | no | no |
| 63 | 96 | 22'366'-PeCB | NotFnd | * | * | * | no | no |
| 64 | 103 | 22'45'6-PeCB | NotFnd | * | * | * | no | no |
| 65 | 94 | 22'356'-PeCB | NotFnd | * | * | * | no | no |
| 66 | 95/1 | 22'35'6-PeCB | 29:31 | 2.251e+02 | 1.437e+02 | 1.57 | yes | yes |
| 67 | 98/1 | 22'3'46-PeCB | NotFnd | * | * | * | no | no |
| 68 | 88/9 | 22'346-PeCB | NotFnd | * | * | * | no | no |
| 69 | 84 | 22'33'6-PeCB | NotFnd | * | * | * | no | no |
| 70 | 89 | 22'346'-PeCB | NotFnd | * | * | * | no | no |
| 71 | 121 | 23'45'6-PeCB | NotFnd | * | * | * | no | no |
| 72 | 92 | 22'355'-PeCB | NotFnd | * | * | * | no | no |
| 73 | 90/1 | 22'34'5-PeCB | 32:08 | 2.504e+02 | 1.720e+02 | 1.46 | yes | yes |
| 74 | 83/9 | 22'33'5-PeCB | 32:40 | 8.087e+01 | 5.451e+01 | 1.48 | yes | yes |
| 75 | 112 | 233'56-PeCB | NotFnd | * | * | * | no | no |
| 76 | 86/8 | 22'345-PeCB | NotFnd | * | * | * | no | no |
| 77 | 85/1 | 22'344'-PeCB | NotFnd | * | * | * | no | no |
| 78 | 110/ | 233'4'6-PeCB | 34:13 | 2.731e+02 | 1.843e+02 | 1.48 | yes | yes |
| 79 | 82 | 22'33'4-PeCB | NotFnd | * | * | * | no | no |
| 80 | 111 | 233'55'-PeCB | NotFnd | * | * | * | no | no |
| 81 | 120 | 23'455'-PeCB | NotFnd | * | * | * | no | no |
| 82 | 107/ | 233'4'5-PeCB | NotFnd | * | * | * | no | no |
| 83 | 109 | 233'46-PeCB | NotFnd | * | * | * | no | no |
| 84 | 123- | 2'344'5-PeCB | NotFnd | * | * | * | no | no |
| 85 | 106 | 233'45-PeCB | NotFnd | * | * | * | no | yes |
| 86 | 118- | 23'44'5-PeCB | 36:59 | 1.369e+02 | 8.108e+01 | 1.69 | yes | yes |
| 87 | 122 | 2'33'45-PeCB | NotFnd | * | * | * | no | no |
| 88 | 114- | 2344'5-PeCB | NotFnd | * | * | * | no | no |
| 89 | 105- | 233'44'-PeCB | 38:18 | 6.982e+01 | 3.847e+01 | 1.81 | no | yes |
| 90 | 127 | 33'455'-PeCB | NotFnd | * | * | * | no | no |
| 91 | 126- | 33'44'5-PeCB | NotFnd | * | * | * | no | no |
| 92 | 155- | 22'44'66'-HxCB | NotFnd | * | * | * | no | no |
| 93 | 152/ | 22'3566'-HxCB | NotFnd | * | * | * | no | no |
| 94 | 136 | 22'33'66'-HxCB | NotFnd | * | * | * | no | no |
| 95 | 145 | 22'3466'-HxCB | NotFnd | * | * | * | no | no |
| 96 | 148 | 22'34'56'-HxCB | NotFnd | * | * | * | no | no |
| 97 | 135/ | 22'33'56'-HxCB | NotFnd | * | * | * | no | no |
| 98 | 144 | 22'345'6-HxCB | NotFnd | * | * | * | no | no |
| 99 | 147/ | 22'34'56-HxCB | 35:49 | 4.072e+01 | 4.791e+01 | 0.85 | no | no |
| 100 | 143 | 22'3456'-HxCB | NotFnd | * | * | * | no | no |
| 101 | 139/ | 22'344'6-HxCB | NotFnd | * | * | * | no | no |
| 102 | 131/ | 22'33'46-HxCB | NotFnd | * | * | * | no | no |
| 103 | 132 | 22'33'46'-HxCB | NotFnd | * | * | * | no | no |
| 104 | 133 | 22'33'55'-HxCB | NotFnd | * | * | * | no | no |
| 105 | 165 | 233'55'6-HxCB | NotFnd | * | * | * | no | no |
| 106 | 146 | 22'34'55'-HxCB | NotFnd | * | * | * | no | no |
| 107 | 161 | 233'45'6-HxCB | NotFnd | * | * | * | no | no |
| 108 | 153/ | 22'44'55'-HxCB | NotFnd | * | * | * | no | no |
| 109 | 141 | 22'3455'-HxCB | NotFnd | * | * | * | no | no |
| 110 | 130 | 22'33'45'-HxCB | NotFnd | * | * | * | no | no |
| 111 | 137 | 22'344'5-HxCB | NotFnd | * | * | * | no | no |
| 112 | 164 | 233'4'5'6-HxCB | NotFnd | * | * | * | no | no |

Filename U210821 #1 Acquired: 25-JUL-07 12:33:52

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 113 | 129/ | 22'33'45-HxCB | 40:00 | 1.587e+02 | 1.570e+02 | 1.01 | no | no |
| 114 | 158 | 233'44'6-HxCB | NotFnd | * | * | * | no | no |
| 115 | 128/ | 22'33'44'-HxCB | NotFnd | * | * | * | no | no |
| 116 | 159 | 233'455'-HxCB | NotFnd | * | * | * | no | no |
| 117 | 162 | 233'4'55'-HxCB | NotFnd | * | * | * | no | no |
| 118 | 167- | 23'44'55'-HxCB | NotFnd | * | * | * | no | no |
| 119 | 156/ | 233'44'5-HxCB | NotFnd | * | * | * | no | no |
| 120 | 169- | 33'44'55'-HxCB | NotFnd | * | * | * | no | no |
| 121 | 188- | 22'34'566'-HpCB | NotFnd | * | * | * | no | no |
| 122 | 179 | 22'33'566'-HpCB | NotFnd | * | * | * | no | no |
| 123 | 184 | 22'344'66'-HpCB | NotFnd | * | * | * | no | no |
| 124 | 176 | 22'33'466'-HpCB | NotFnd | * | * | * | no | no |
| 125 | 186 | 22'34566'-HpCB | NotFnd | * | * | * | no | no |
| 126 | 178 | 22'33'55'6-HpCB | NotFnd | * | * | * | no | no |
| 127 | 175 | 22'33'45'6-HpCB | NotFnd | * | * | * | no | no |
| 128 | 187 | 22'34'55'6-HpCB | 41:08 | 5.903e+02 | 5.703e+02 | 1.03 | yes | no |
| 129 | 182 | 22'344'56'-HpCB | NotFnd | * | * | * | no | no |
| 130 | 183 | 22'344'5'6-HpCB | NotFnd | * | * | * | no | no |
| 131 | 185 | 22'3455'6-HpCB | NotFnd | * | * | * | no | no |
| 132 | 174 | 22'33'456'-HpCB | NotFnd | * | * | * | no | no |
| 133 | 177 | 22'33'4'56-HpCB | NotFnd | * | * | * | no | no |
| 134 | 181 | 22'344'56-HpCB | NotFnd | * | * | * | no | no |
| 135 | 171/ | 22'33'44'6-HpCB | NotFnd | * | * | * | no | no |
| 136 | 172 | 22'33'455'-HpCB | NotFnd | * | * | * | no | no |
| 137 | 192 | 233'455'6-HpCB | NotFnd | * | * | * | no | no |
| 138 | 180/ | 22'344'55'-HpCB | 45:18 | 5.506e+02 | 6.198e+02 | 0.89 | no | no |
| 139 | 191 | 233'44'5'6-HpCB | NotFnd | * | * | * | no | no |
| 140 | 170 | 22'33'44'5-HpCB | NotFnd | * | * | * | no | no |
| 141 | 190 | 233'44'56-HpCB | NotFnd | * | * | * | no | no |
| 142 | 189- | 233'44'55'-HpCB | NotFnd | * | * | * | no | no |
| 143 | 202- | 22'33'55'66'-OcCB | NotFnd | * | * | * | no | no |
| 144 | 201 | 22'33'45'66'-OcCB | NotFnd | * | * | * | no | no |
| 145 | 204 | 22'344'566'-OcCB | NotFnd | * | * | * | no | no |
| 146 | 197/ | 22'33'44'66'-OcCB | NotFnd | * | * | * | no | no |
| 147 | 198/ | 22'33'455'6-OcCB | 47:11 | 4.081e+02 | 4.879e+02 | 0.84 | yes | yes |
| 148 | 196 | 22'33'44'56'-OcCB | 47:49 | 1.601e+02 | 1.809e+02 | 0.89 | yes | no |
| 149 | 203 | 22'344'55'6-OcCB | 48:00 | 2.212e+02 | 3.340e+02 | 0.66 | no | no |
| 150 | 195 | 22'33'44'56-OcCB | 49:24 | 5.829e+01 | 6.741e+01 | 0.86 | yes | no |
| 151 | 194 | 22'33'44'55'-OcCB | 51:37 | 2.563e+02 | 3.303e+02 | 0.78 | yes | no |
| 152 | 205- | 233'44'55'6-OcCB | NotFnd | * | * | * | no | no |
| 153 | 208- | 22'33'4'55'66'-NoCB | NotFnd | * | * | * | no | no |
| 154 | 207 | 22'33'44'566'-NoCB | NotFnd | * | * | * | no | no |
| 155 | 206- | 22'33'44'55'6-NoCB | 53:41 | 1.554e+02 | 2.249e+02 | 0.69 | yes | no |
| 156 | 209- | DeCB | 55:05 | 3.270e+01 | 3.454e+01 | 0.95 | no | yes |
| 157 | 1L | 13C-2-MoCB | 12:55 | 7.181e+03 | 2.445e+03 | 2.94 | yes | no |
| 158 | 3L | 13C-4-MoCB | 15:02 | 1.063e+04 | 3.143e+03 | 3.38 | yes | yes |
| 159 | 4L | 13C-22'-DiCB | 15:14 | 9.031e+03 | 6.158e+03 | 1.47 | yes | no |
| 160 | 15L | 13C-44'-DiCB | 21:10 | 1.613e+04 | 1.059e+04 | 1.52 | yes | no |
| 161 | 19L | 13C-22'6'-TrCB | 18:30 | 7.162e+03 | 7.937e+03 | 0.90 | yes | yes |
| 162 | 37L | 13C-344'-TrCB | 28:00 | 1.666e+04 | 1.760e+04 | 0.95 | yes | no |
| 163 | 54L | 13C-22'66'-TeCB | 21:26 | 1.131e+04 | 1.511e+04 | 0.75 | yes | yes |
| 164 | 81L | 13C-344'5-TeCB | 34:24 | 1.494e+04 | 1.999e+04 | 0.75 | yes | no |
| 165 | 77L | 13C-33'44'-TeCB | 35:02 | 1.631e+04 | 2.195e+04 | 0.74 | yes | no |
| 166 | 104L | 13C-22'466'-PeCB | 26:23 | 1.997e+04 | 1.334e+04 | 1.50 | yes | no |
| 167 | 123L | 13C-2'344'5-PeCB | 36:40 | 2.071e+04 | 1.384e+04 | 1.50 | yes | yes |
| 168 | 118L | 13C-23'44'5-PeCB | 36:58 | 2.154e+04 | 1.413e+04 | 1.52 | yes | yes |
| 169 | 114L | 13C-2344'5-PeCB | 37:30 | 2.125e+04 | 1.433e+04 | 1.48 | yes | no |
| 170 | 105L | 13C-233'44'-PeCB | 38:18 | 2.178e+04 | 1.462e+04 | 1.49 | yes | yes |
| 171 | 126L | 13C-33'44'5-PeCB | 41:21 | 2.367e+04 | 1.574e+04 | 1.50 | yes | yes |

Filename U210821 #1 Acquired: 25-JUL-07 12:33:52

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 172 | 155L | 13C-22'44'66'-HxCB | 31:34 | 2.184e+04 | 1.780e+04 | 1.23 | yes | no |
| 173 | 167L | 13C-23'44'55'-HxCB | 42:50 | 1.753e+04 | 1.393e+04 | 1.26 | yes | no |
| 174 | 156/ | 13C-233'44'5'-HxCB | 44:02 | 3.670e+04 | 2.962e+04 | 1.24 | yes | yes |
| 175 | 169L | 13C-33'44'55'-HxCB | 47:23 | 1.850e+04 | 1.471e+04 | 1.26 | yes | yes |
| 176 | 188L | 13C-22'34'566'-HpCB | 37:08 | 2.029e+04 | 1.979e+04 | 1.03 | yes | no |
| 177 | 189L | 13C-233'44'55'-HpCB | 49:38 | 1.566e+04 | 1.559e+04 | 1.00 | yes | no |
| 178 | 202L | 13C-22'33'55'66'-OcCB | 42:21 | 1.335e+04 | 1.497e+04 | 0.89 | yes | no |
| 179 | 205L | 13C-233'44'55'6-OcCB | 52:04 | 1.420e+04 | 1.611e+04 | 0.88 | yes | no |
| 180 | 208L | 13C-22'33'4'55'66'-NoCB | 48:50 | 1.343e+04 | 1.683e+04 | 0.80 | yes | no |
| 181 | 206L | 13C-22'33'44'55'6-NoCB | 53:40 | 8.880e+03 | 1.121e+04 | 0.79 | yes | no |
| 182 | 209L | 13C-DeCB | 55:02 | 1.514e+04 | 1.238e+04 | 1.22 | yes | no |
| 183 | 28L | 13C-244'-TrCB | 23:51 | 1.989e+04 | 1.983e+04 | 1.00 | yes | no |
| 184 | 111L | 13C-233'55'-PeCB | 34:34 | 2.661e+04 | 1.729e+04 | 1.54 | yes | no |
| 185 | 178L | 13C-22'33'55'6-HpCB | 40:13 | 1.803e+04 | 1.736e+04 | 1.04 | yes | no |
| 186 | 9L | 13C-2,5-DiCB | 17:19 | 3.009e+04 | 2.016e+04 | 1.49 | yes | no |
| 187 | 52L | 13C-22'55'-TeCB | 25:38 | 3.440e+04 | 4.520e+04 | 0.76 | yes | no |
| 188 | 101L | 13C-22'4'55'-PeCB | 32:07 | 4.411e+04 | 2.835e+04 | 1.56 | yes | no |
| 189 | 138L | 13C-22'3'44'5'-HxCB | 39:59 | 3.596e+04 | 2.907e+04 | 1.24 | yes | no |
| 190 | 194L | 13C-22'33'44'55'-OcCB | 51:37 | 2.194e+04 | 2.484e+04 | 0.88 | yes | no |

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Columbia Analytical Services,Inc. CLIENT ID.
Signal/Noise Height Ratio Summary METHOD BLANK

Run #8 Filename U210821#1 Samp: 1 Inj: 1 Acquired: 25-JUL-07 12:33:52

Processed: 27-JUL-07 16:06:33 LAB. ID: EQ0700194-01

| | Name | Signal 1 | Noise 1 | S/N Rat.1 | Signal 2 | Noise 2 | S/N Rat.2 |
|---|---|---|---|---|---|---|---|
| 1 | 2-MoCB | 2.11e+04 | 1.95e+03 | 1.1e+01 | 9.62e+03 | 3.60e+03 | 2.7e+00 |
| 2 | 3-MoCB | 1.07e+04 | 1.95e+03 | ~~5.5e+00~~ | ~~5.72e+03~~ | ~~3.60e+03~~ | ~~1.6e+00~~ S/N |
| 3 | 4-MoCB | 1.65e+04 | 1.95e+03 | ~~8.5e+00~~ | ~~5.54e+03~~ | ~~3.60e+03~~ | ~~1.5e+00~~ |
| 4 | 22'-DiCB | 2.34e+04 | 1.53e+03 | 1.5e+01 | 2.93e+04 | 7.70e+03 | 3.8e+00 |
| 5 | 26-DiCB | * | 1.53e+03 | * | * | 7.70e+03 | * |
| 6 | 25-DiCB | * | 8.64e+02 | * | * | 8.91e+03 | * |
| 7 | 24-DiCB | * | 8.64e+02 | * | * | 8.91e+03 | * |
| 8 | 23'-DiCB | * | 8.64e+02 | * | * | 8.91e+03 | * |
| 9 | 23-DiCB | 1.15e+05 | 8.64e+02 | 1.3e+02 | 7.75e+04 | 8.91e+03 | 8.7e+00 |
| 10 | 2,4'-DiCB | * | 8.64e+02 | * | * | 8.91e+03 | * |
| 11 | 35-DiCB | * | 8.64e+02 | * | * | 8.91e+03 | * |
| 12 | 33'-DiCB | * | 8.64e+02 | * | * | 8.91e+03 | * |
| 13 | 34-DiCB | * | 8.64e+02 | * | * | 8.91e+03 | * |
| 14 | 44'-DiCB | * | 8.64e+02 | * | * | 8.91e+03 | * |
| 15 | 22'6-TrCB | * | 9.60e+02 | * | * | 1.09e+03 | * |
| 16 | 22'5-TrCB | 4.26e+04 | 9.60e+02 | 4.4e+01 | 4.69e+04 | 1.09e+03 | 4.3e+01 |
| 17 | 22'4-TrCB | * | 9.60e+02 | * | * | 1.09e+03 | * |
| 18 | 23'6-TrCB | * | 9.60e+02 | * | * | 1.09e+03 | * |
| 19 | 22'3-TrCB | 9.46e+03 | 9.60e+02 | 9.9e+00 | 8.88e+03 | 1.90e+03 | 4.7e+00 |
| 20 | 24'6-TrCB | * | 9.60e+02 | * | * | 1.90e+03 | * |
| 21 | 2'35-TrCB | * | 2.21e+03 | * | * | 1.50e+03 | * |
| 22 | 235-TrCB | * | 2.21e+03 | * | * | 1.50e+03 | * |
| 23 | 23'5-TrCB | * | 2.21e+03 | * | * | 1.50e+03 | * |
| 24 | 23'4-TrCB | 4.29e+04 | 2.21e+03 | 1.9e+01 | 3.73e+04 | 1.50e+03 | 2.5e+01 |
| 25 | 24'5-TrCB | 4.07e+04 | 2.21e+03 | 1.8e+01 | 3.90e+04 | 1.50e+03 | 2.6e+01 |
| 26 | 233'-TrCB | 2.35e+04 | 2.21e+03 | 1.1e+01 | 2.25e+04 | 1.50e+03 | 1.5e+01 |
| 27 | 234-TrCB | * | 2.21e+03 | * | * | 1.50e+03 | * |
| 28 | 234'-TrCB | 2.02e+04 | 2.21e+03 | 9.2e+00 | 1.72e+04 | 1.50e+03 | 1.1e+01 |
| 29 | 33'5-TrCB | * | 2.21e+03 | * | * | 1.50e+03 | * |
| 30 | 34'5-TrCB | * | 2.21e+03 | * | * | 1.50e+03 | * |
| 31 | 345-TrCB | * | 2.21e+03 | * | * | 1.50e+03 | * |
| 32 | 33'4-TrCB | * | 2.21e+03 | * | * | 1.50e+03 | * |
| 33 | 344'-TrCB | 1.08e+04 | 2.21e+03 | 4.9e+00 | 1.37e+04 | 1.50e+03 | 9.2e+00 |
| 34 | 22'66'-TeCB | * | 1.41e+03 | * | * | 1.94e+03 | * |
| 35 | 22'46-TeCB | * | 2.03e+03 | * | * | 1.68e+03 | * |
| 36 | 22'36-TeCB | * | 2.03e+03 | * | * | 1.68e+03 | * |
| 37 | 22'36'-TeCB | * | 2.03e+03 | * | * | 1.68e+03 | * |
| 38 | 22'55'-TeCB | 1.88e+04 | 2.03e+03 | 9.2e+00 | 2.76e+04 | 1.68e+03 | 1.6e+01 |
| 39 | 22'45'-TeCB | * | 2.03e+03 | * | * | 1.68e+03 | * |
| 40 | 22'45-TeCB | * | 2.03e+03 | * | * | 1.68e+03 | * |
| 41 | 22'35'-TeCB | * | 2.03e+03 | * | * | 1.68e+03 | * |
| 42 | 233'6-TeCB | * | 2.03e+03 | * | * | 1.68e+03 | * |
| 43 | 22'34'-TeCB | * | 2.03e+03 | * | * | 1.68e+03 | * |
| 44 | 22'34-TeCB | * | 2.03e+03 | * | * | 1.68e+03 | * |
| 45 | 234'6-TeCB | 1.21e+04 | 2.03e+03 | 6.0e+00 | 1.30e+04 | 1.68e+03 | 7.7e+00 |
| 46 | 23'55'-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 47 | 23'45'-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 48 | 233'5-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 49 | 233'5'-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 50 | 23'45-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |

Run #8 Filename U210821#1 Samp: 1 Acquired: 25-JUL-07 12:33:52

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 51 | 234'5-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 52 | 23'4'5-TeCB | 2.88e+04 | 1.26e+03 | 2.3e+01 | 3.77e+04 | 1.59e+03 | 2.4e+01 |
| 53 | 23'44'-TeCB | 1.65e+04 | 1.26e+03 | 1.3e+01 | 1.74e+04 | 1.59e+03 | 1.1e+01 |
| 54 | 233'4-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 55 | 233'4'-TeCB | 6.80e+03 | 1.26e+03 | 5.4e+00 | 9.80e+03 | 1.59e+03 | 6.2e+00 |
| 56 | 2344'-TeCB | 3.74e+03 | 1.26e+03 | 3.0e+00 | 5.28e+03 | 1.59e+03 | 3.3e+00 |
| 57 | 33'55'-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 58 | 33'45'-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 59 | 33'45-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 60 | 344'5-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 61 | 33'44'-TeCB | * | 1.26e+03 | * | * | 1.59e+03 | * |
| 62 | 22'466'-PeCB | * | 1.28e+03 | * | * | 1.34e+03 | * |
| 63 | 22'366'-PeCB | * | 1.28e+03 | * | * | 1.34e+03 | * |
| 64 | 22'45'6-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 65 | 22'356'-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 66 | 22'35'6-PeCB | 1.69e+04 | 8.32e+02 | 2.0e+01 | 1.06e+04 | 1.30e+03 | 8.2e+00 |
| 67 | 22'3'46-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 68 | 22'346-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 69 | 22'33'6-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 70 | 22'346'-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 71 | 23'45'6-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 72 | 22'355'-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 73 | 22'34'5-PeCB | 2.90e+04 | 8.32e+02 | 3.5e+01 | 1.75e+04 | 1.30e+03 | 1.3e+01 |
| 74 | 22'33'5-PeCB | 9.71e+03 | 8.32e+02 | 1.2e+01 | 5.82e+03 | 1.30e+03 | 4.5e+00 |
| 75 | 233'56-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 76 | 22'345-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 77 | 22'344'-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 78 | 233'4'6-PeCB | 2.77e+04 | 8.32e+02 | 3.3e+01 | 1.81e+04 | 1.30e+03 | 1.4e+01 |
| 79 | 22'33'4-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 80 | 233'55'-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 81 | 23'455'-PeCB | * | 8.32e+02 | * | * | 1.30e+03 | * |
| 82 | 233'4'5-PeCB | * | 7.28e+02 | * | * | 1.98e+03 | * |
| 83 | 233'46-PeCB | * | 7.28e+02 | * | * | 1.98e+03 | * |
| 84 | 2'344'5-PeCB | * | 7.28e+02 | * | * | 1.98e+03 | * |
| 85 | 233'45-PeCB | * | 7.28e+02 | * | * | 1.98e+03 | * |
| 86 | 23'44'5-PeCB | 2.24e+04 | 7.28e+02 | 3.1e+01 | 1.17e+04 | 1.98e+03 | 5.9e+00 |
| 87 | 2'33'45-PeCB | * | 7.28e+02 | * | * | 1.98e+03 | * |
| 88 | 2344'5-PeCB | * | 7.28e+02 | * | * | 1.98e+03 | * |
| 89 | 233'44'-PeCB | 1.37e+04 | 7.28e+02 | 1.9e+01 | 6.71e+03 | 1.98e+03 | 3.4e+00 |
| 90 | 33'455'-PeCB | * | 7.28e+02 | * | * | 1.98e+03 | * |
| 91 | 33'44'5-PeCB | * | 7.28e+02 | * | * | 1.98e+03 | * |
| 92 | 22'44'66'-HxCB | * | 7.80e+02 | * | * | 8.76e+02 | * |
| 93 | 22'3566'-HxCB | * | 7.80e+02 | * | * | 8.76e+02 | * |
| 94 | 22'33'66'-HxCB | * | 7.80e+02 | * | * | 8.76e+02 | * |
| 95 | 22'3466'-HxCB | * | 7.80e+02 | * | * | 8.76e+02 | * |
| 96 | 22'34'56'-HxCB | * | 7.80e+02 | * | * | 8.76e+02 | * |
| 97 | 22'33'56'-HxCB | * | 7.80e+02 | * | * | 8.76e+02 | * |
| 98 | 22'345'6-HxCB | * | 7.80e+02 | * | * | 8.76e+02 | * |
| 99 | 22'34'56-HxCB | 9.29e+03 | 1.05e+03 | 8.9e+00 | 9.87e+03 | 8.92e+02 | 1.1e+01 |
| 100 | 22'3456'-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 101 | 22'344'6-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 102 | 22'33'46-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 103 | 22'33'46'-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 104 | 22'33'55'-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 105 | 233'55'6-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 106 | 22'34'55'-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 107 | 233'45'6-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 108 | 22'44'55'-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 109 | 22'3455'-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |

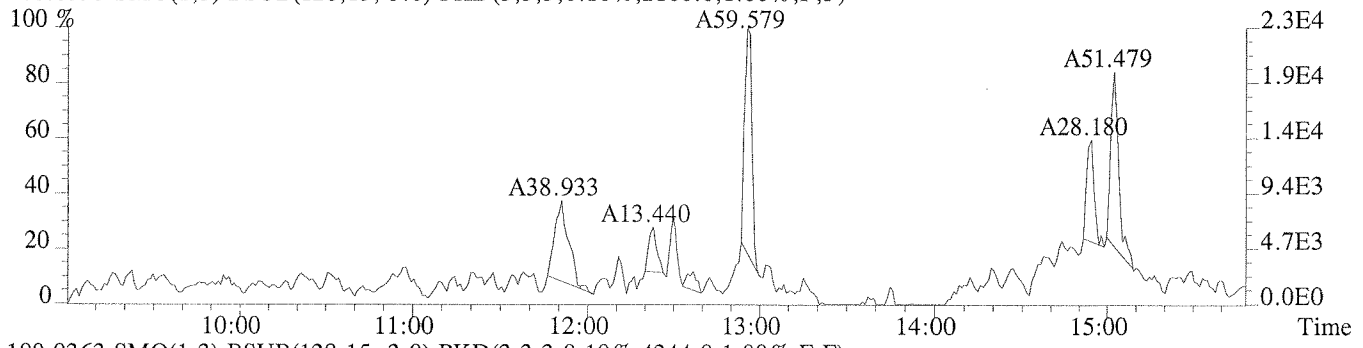
Run #8 Filename U210821#1 Samp: 1 Acquired: 25-JUL-07 12:33:52

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 110 | 22'33'45'-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 111 | 22'344'5-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 112 | 233'4'5'6-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 113 | 22'33'45-HxCB | 2.36e+04 | 1.05e+03 | 2.3e+01 | 1.91e+04 | 8.92e+02 | 2.1e+01 |
| 114 | 233'44'6-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 115 | 22'33'44'-HxCB | * | 1.05e+03 | * | * | 8.92e+02 | * |
| 116 | 233'455'-HxCB | * | 1.90e+03 | * | * | 1.90e+03 | * |
| 117 | 233'4'55'-HxCB | * | 1.90e+03 | * | * | 1.90e+03 | * |
| 118 | 23'44'55'-HxCB | * | 1.90e+03 | * | * | 1.90e+03 | * |
| 119 | 233'44'5-HxCB | * | 1.90e+03 | * | * | 1.90e+03 | * |
| 120 | 33'44'55'-HxCB | * | 1.90e+03 | * | * | 1.90e+03 | * |
| 121 | 22'34'566'-HpCB | * | 1.19e+03 | * | * | 5.40e+02 | * |
| 122 | 22'33'566'-HpCB | * | 1.19e+03 | * | * | 5.40e+02 | * |
| 123 | 22'344'66'-HpCB | * | 1.19e+03 | * | * | 5.40e+02 | * |
| 124 | 22'33'466'-HpCB | * | 1.19e+03 | * | * | 5.40e+02 | * |
| 125 | 22'34566'-HpCB | * | 1.19e+03 | * | * | 5.40e+02 | * |
| 126 | 22'33'55'6-HpCB | * | 1.19e+03 | * | * | 5.40e+02 | * |
| 127 | 22'33'45'6-HpCB | * | 1.19e+03 | * | * | 5.40e+02 | * |
| 128 | 22'34'55'6-HpCB | 4.37e+04 | 1.19e+03 | 3.7e+01 | 4.44e+04 | 5.40e+02 | 8.2e+01 |
| 129 | 22'344'56'-HpCB | * | 1.19e+03 | * | * | 5.40e+02 | * |
| 130 | 22'344'5'6-HpCB | * | 1.19e+03 | * | * | 5.40e+02 | * |
| 131 | 22'3455'6-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 132 | 22'33'456'-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 133 | 22'33'4'56-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 134 | 22'344'56-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 135 | 22'33'44'6-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 136 | 22'33'455'-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 137 | 233'455'6-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 138 | 22'344'55'-HpCB | 9.03e+04 | 1.97e+03 | 4.6e+01 | 8.97e+04 | 7.24e+02 | 1.2e+02 |
| 139 | 233'44'5'6-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 140 | 22'33'44'5-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 141 | 233'44'56-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 142 | 233'44'55'-HpCB | * | 1.97e+03 | * | * | 7.24e+02 | * |
| 143 | 22'33'55'66'-OcCB | * | 1.54e+03 | * | * | 1.49e+03 | * |
| 144 | 22'33'45'66'-OcCB | * | 1.54e+03 | * | * | 1.49e+03 | * |
| 145 | 22'344'566'-OcCB | * | 1.54e+03 | * | * | 1.49e+03 | * |
| 146 | 22'33'44'66'-OcCB | * | 1.54e+03 | * | * | 1.49e+03 | * |
| 147 | 22'33'455'6-OcCB | 3.66e+04 | 1.54e+03 | 2.4e+01 | 4.04e+04 | 1.49e+03 | 2.7e+01 |
| 148 | 22'33'44'56'-OcCB | 2.11e+04 | 1.54e+03 | 1.4e+01 | 2.57e+04 | 1.49e+03 | 1.7e+01 |
| 149 | 22'344'55'6-OcCB | 3.00e+04 | 1.54e+03 | 2.0e+01 | 4.11e+04 | 1.49e+03 | 2.8e+01 |
| 150 | 22'33'44'56-OcCB | 1.13e+04 | 1.54e+03 | 7.3e+00 | 1.04e+04 | 1.49e+03 | 7.0e+00 |
| 151 | 22'33'44'55'-OcCB | 3.33e+04 | 1.54e+03 | 2.2e+01 | 4.65e+04 | 1.49e+03 | 3.1e+01 |
| 152 | 233'44'55'6-OcCB | * | 1.54e+03 | * | * | 1.49e+03 | * |
| 153 | 22'33'4'55'66'-NoCB | * | 4.96e+02 | * | * | 6.72e+02 | * |
| 154 | 22'33'44'566'-NoCB | * | 4.96e+02 | * | * | 6.72e+02 | * |
| 155 | 22'33'44'55'6-NoCB | 1.82e+04 | 9.20e+02 | 2.0e+01 | 2.51e+04 | 1.54e+03 | 1.6e+01 |
| 156 | DeCB | 5.50e+03 | 1.36e+03 | 4.0e+00 | 3.72e+03 | 8.72e+02 | 4.3e+00 |
| | | | | | | | |
| 157 | 13C-2-MoCB | 2.14e+06 | 2.92e+03 | 7.3e+02 | 7.32e+05 | 2.44e+04 | 3.0e+01 |
| 158 | 13C-4-MoCB | 2.53e+06 | 2.92e+03 | 8.7e+02 | 8.23e+05 | 2.44e+04 | 3.4e+01 |
| 159 | 13C-22'-DiCB | 1.47e+06 | 3.68e+03 | 4.0e+02 | 1.00e+06 | 4.62e+03 | 2.2e+02 |
| 160 | 13C-44'-DiCB | 2.42e+06 | 5.44e+03 | 4.5e+02 | 1.62e+06 | 6.52e+03 | 2.5e+02 |
| 161 | 13C-22'6'-TrCB | 4.94e+05 | 1.21e+05 | 4.1e+00 | 5.32e+05 | 5.79e+04 | 9.2e+00 |
| 162 | 13C-344'-TrCB | 2.13e+06 | 4.40e+04 | 4.9e+01 | 2.20e+06 | 3.58e+04 | 6.1e+01 |
| 163 | 13C-22'66'-TeCB | 3.98e+05 | 5.37e+03 | 7.4e+01 | 5.35e+05 | 2.60e+03 | 2.1e+02 |
| 164 | 13C-344'5-TeCB | 1.96e+06 | 3.76e+03 | 5.2e+02 | 2.63e+06 | 2.40e+03 | 1.1e+03 |
| 165 | 13C-33'44'-TeCB | 1.76e+06 | 3.76e+03 | 4.7e+02 | 2.38e+06 | 2.40e+03 | 1.0e+03 |
| 166 | 13C-22'466'-PeCB | 7.25e+05 | 1.33e+03 | 5.4e+02 | 4.75e+05 | 1.15e+03 | 4.1e+02 |
| 167 | 13C-2'344'5-PeCB | 2.47e+06 | 4.14e+03 | 6.0e+02 | 1.64e+06 | 2.77e+03 | 5.9e+02 |
| 168 | 13C-23'44'5-PeCB | 2.94e+06 | 4.14e+03 | 7.1e+02 | 1.92e+06 | 2.77e+03 | 6.9e+02 |

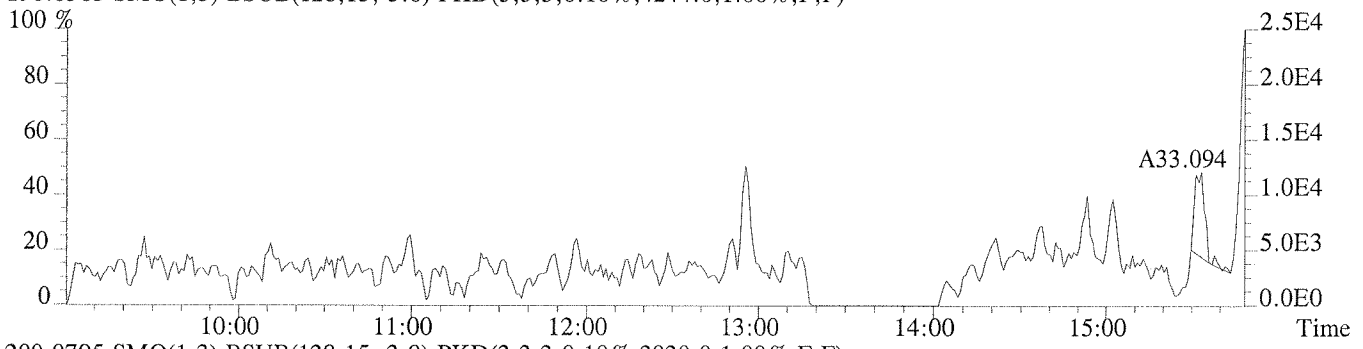
Run #8 Filename U210821#1 Samp: 1 Acquired: 25-JUL-07 12:33:52

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 169 | 13C-2344'5-PeCB | 2.64e+06 | 4.14e+03 | 6.4e+02 | 1.79e+06 | 2.77e+03 | 6.5e+02 |
| 170 | 13C-233'44'-PeCB | 3.10e+06 | 4.14e+03 | 7.5e+02 | 2.13e+06 | 2.77e+03 | 7.7e+02 |
| 171 | 13C-33'44'5-PeCB | 3.12e+06 | 4.14e+03 | 7.5e+02 | 2.12e+06 | 2.77e+03 | 7.6e+02 |
| 172 | 13C-22'44'66'-HxCB | 1.05e+06 | 7.04e+02 | 1.5e+03 | 8.55e+05 | 9.64e+02 | 8.9e+02 |
| 173 | 13C-23'44'55'-HxCB | 2.97e+06 | 2.64e+03 | 1.1e+03 | 2.35e+06 | 2.66e+03 | 8.8e+02 |
| 174 | 13C-233'44'5'-HxCB | 3.55e+06 | 2.64e+03 | 1.3e+03 | 2.90e+06 | 2.66e+03 | 1.1e+03 |
| 175 | 13C-33'44'55'-HxCB | 2.96e+06 | 2.64e+03 | 1.1e+03 | 2.35e+06 | 2.66e+03 | 8.8e+02 |
| 176 | 13C-22'34'566'-HpCB | 9.48e+05 | 1.70e+03 | 5.6e+02 | 9.17e+05 | 4.44e+02 | 2.1e+03 |
| 177 | 13C-233'44'55'-HpCB | 2.50e+06 | 2.51e+03 | 1.0e+03 | 2.44e+06 | 1.24e+03 | 2.0e+03 |
| 178 | 13C-22'33'55'66'-OcCB | 8.91e+05 | 1.03e+03 | 8.7e+02 | 9.79e+05 | 2.12e+03 | 4.6e+02 |
| 179 | 13C-233'44'55'6-OcCB | 1.90e+06 | 1.03e+03 | 1.9e+03 | 2.20e+06 | 2.12e+03 | 1.0e+03 |
| 180 | 13C-22'33'4'55'66'-NoCB | 9.43e+05 | 7.96e+02 | 1.2e+03 | 1.19e+06 | 4.04e+02 | 2.9e+03 |
| 181 | 13C-22'33'44'55'6-NoCB | 8.20e+05 | 8.04e+02 | 1.0e+03 | 1.03e+06 | 2.19e+03 | 4.7e+02 |
| 182 | 13C-DeCB | 1.14e+06 | 8.52e+02 | 1.3e+03 | 9.56e+05 | 9.16e+02 | 1.0e+03 |
| 183 | 13C-244'-TrCB | 2.65e+06 | 4.40e+04 | 6.0e+01 | 2.68e+06 | 3.58e+04 | 7.5e+01 |
| 184 | 13C-233'55'-PeCB | 2.86e+06 | 1.48e+03 | 1.9e+03 | 1.88e+06 | 1.16e+03 | 1.6e+03 |
| 185 | 13C-22'33'55'6-HpCB | 1.07e+06 | 1.70e+03 | 6.3e+02 | 1.02e+06 | 4.44e+02 | 2.3e+03 |
| 186 | 13C-2,5-DiCB | 4.50e+06 | 5.44e+03 | 8.3e+02 | 3.03e+06 | 6.52e+03 | 4.6e+02 |
| 187 | 13C-22'55'-TeCB | 2.93e+06 | 4.46e+03 | 6.6e+02 | 3.88e+06 | 2.97e+03 | 1.3e+03 |
| 188 | 13C-22'4'55'-PeCB | 4.39e+06 | 1.48e+03 | 3.0e+03 | 2.80e+06 | 1.16e+03 | 2.4e+03 |
| 189 | 13C-22'3'44'5'-HxCB | 4.01e+06 | 1.04e+03 | 3.8e+03 | 3.29e+06 | 1.49e+03 | 2.2e+03 |
| 190 | 13C-22'33'44'55'-OcCB | 2.93e+06 | 1.03e+03 | 2.9e+03 | 3.31e+06 | 2.12e+03 | 1.6e+03 |

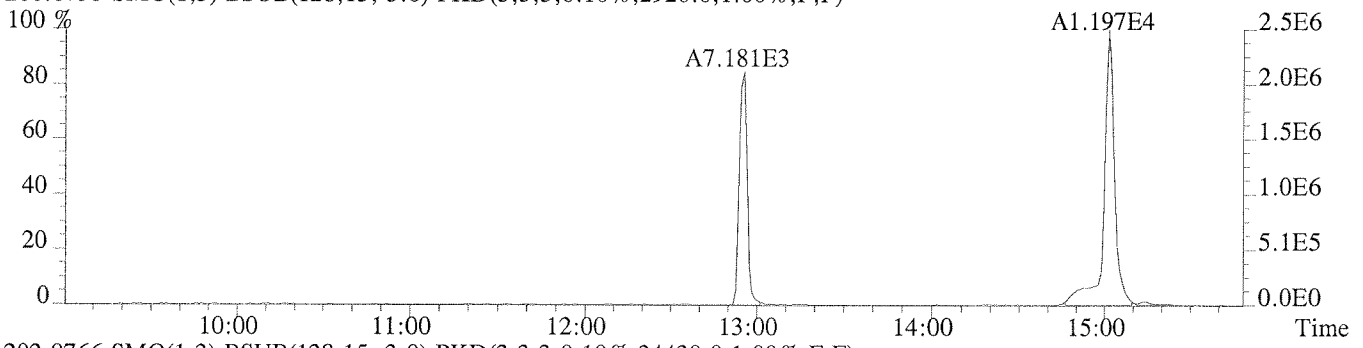
File:U210821 #1-437 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
188.0393 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2160.0,1.00%,F,F)



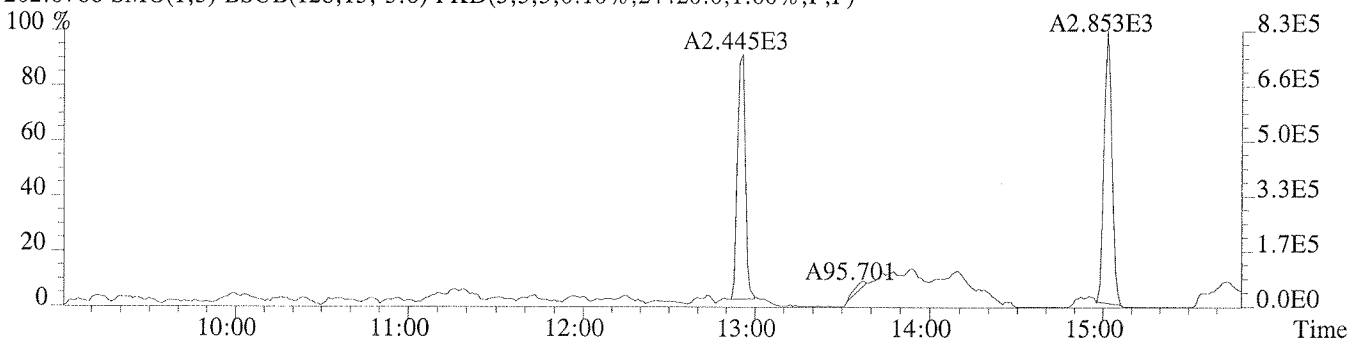

190.0363 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4244.0,1.00%,F,F)



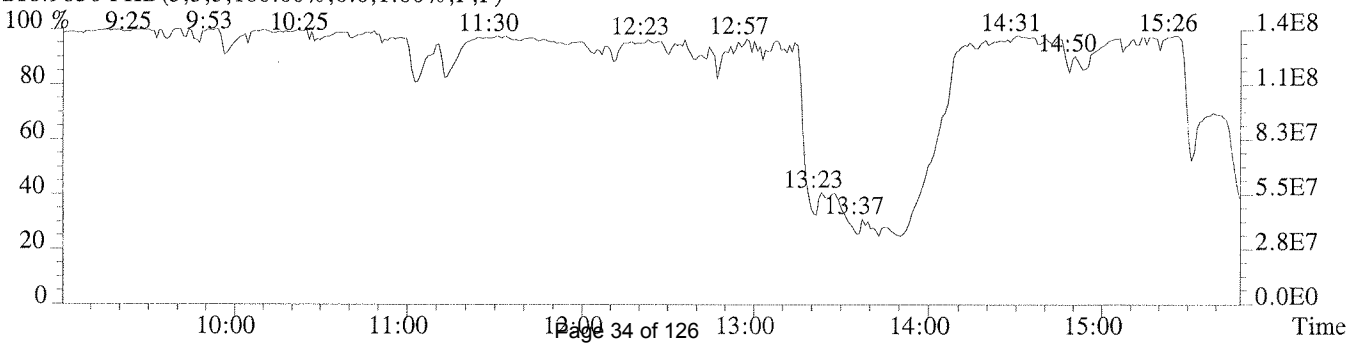

200.0795 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2920.0,1.00%,F,F)




202.0766 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,24420.0,1.00%,F,F)

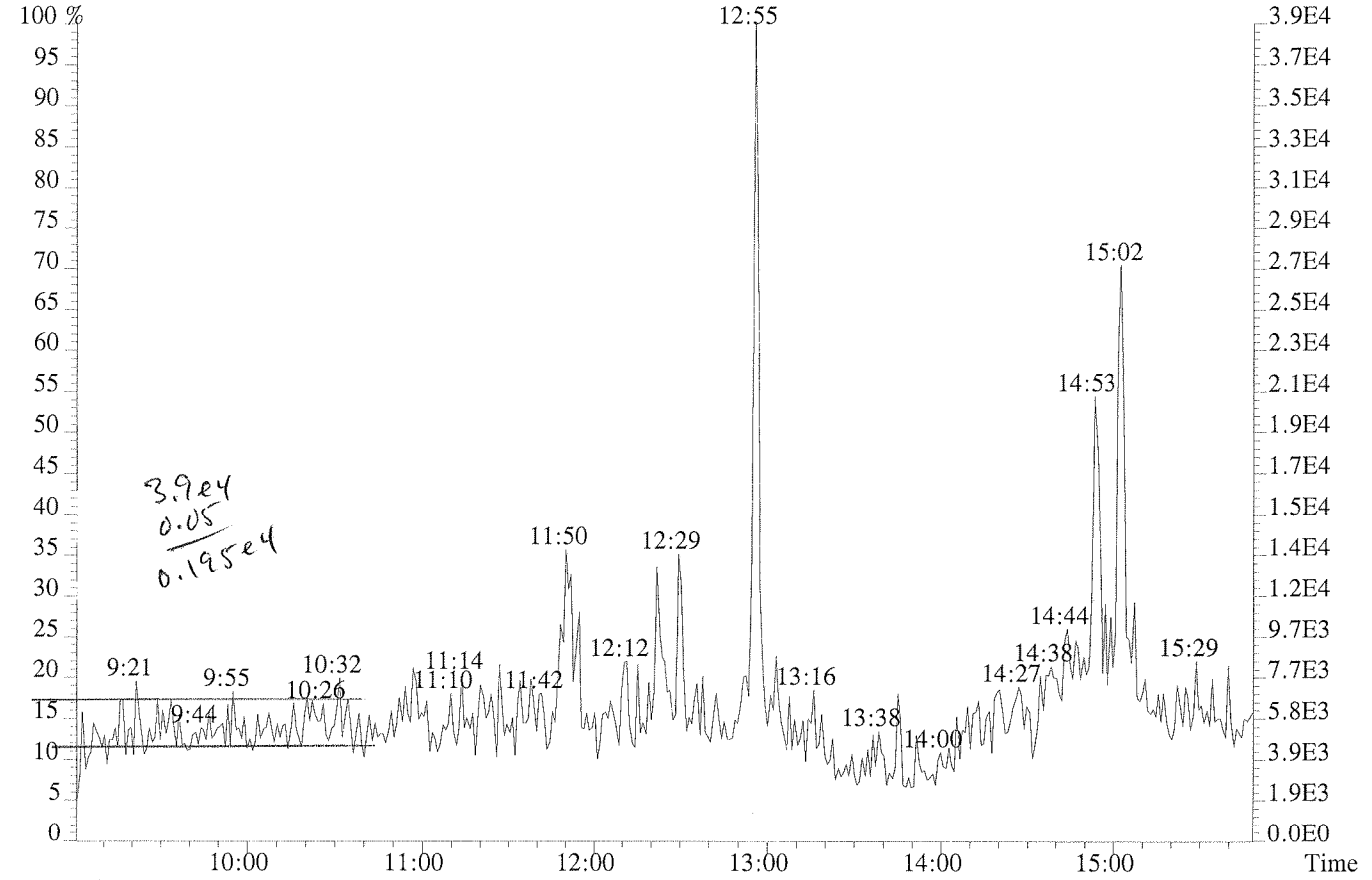



218.9856 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

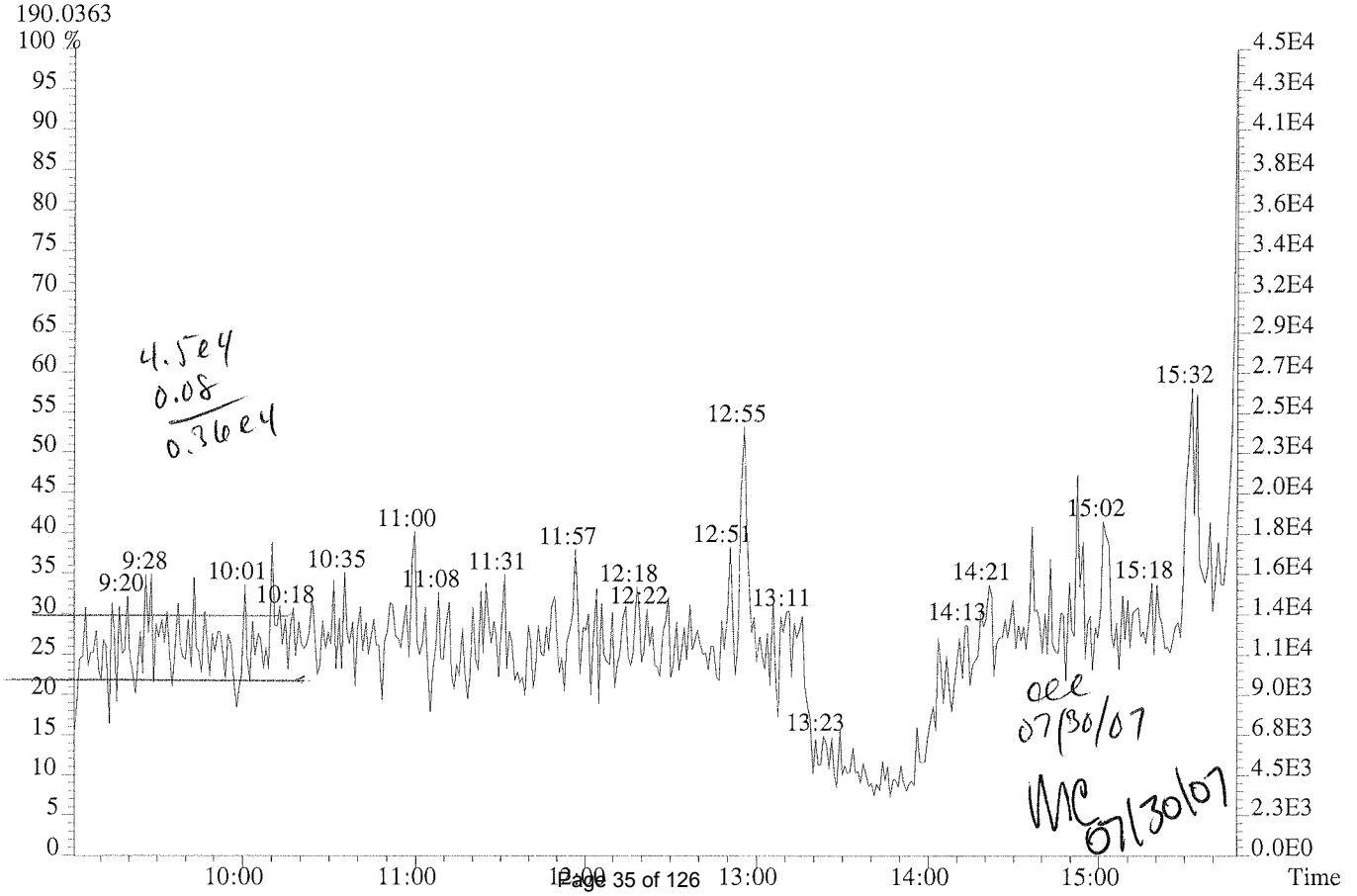


File:U210821 #1-437 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB

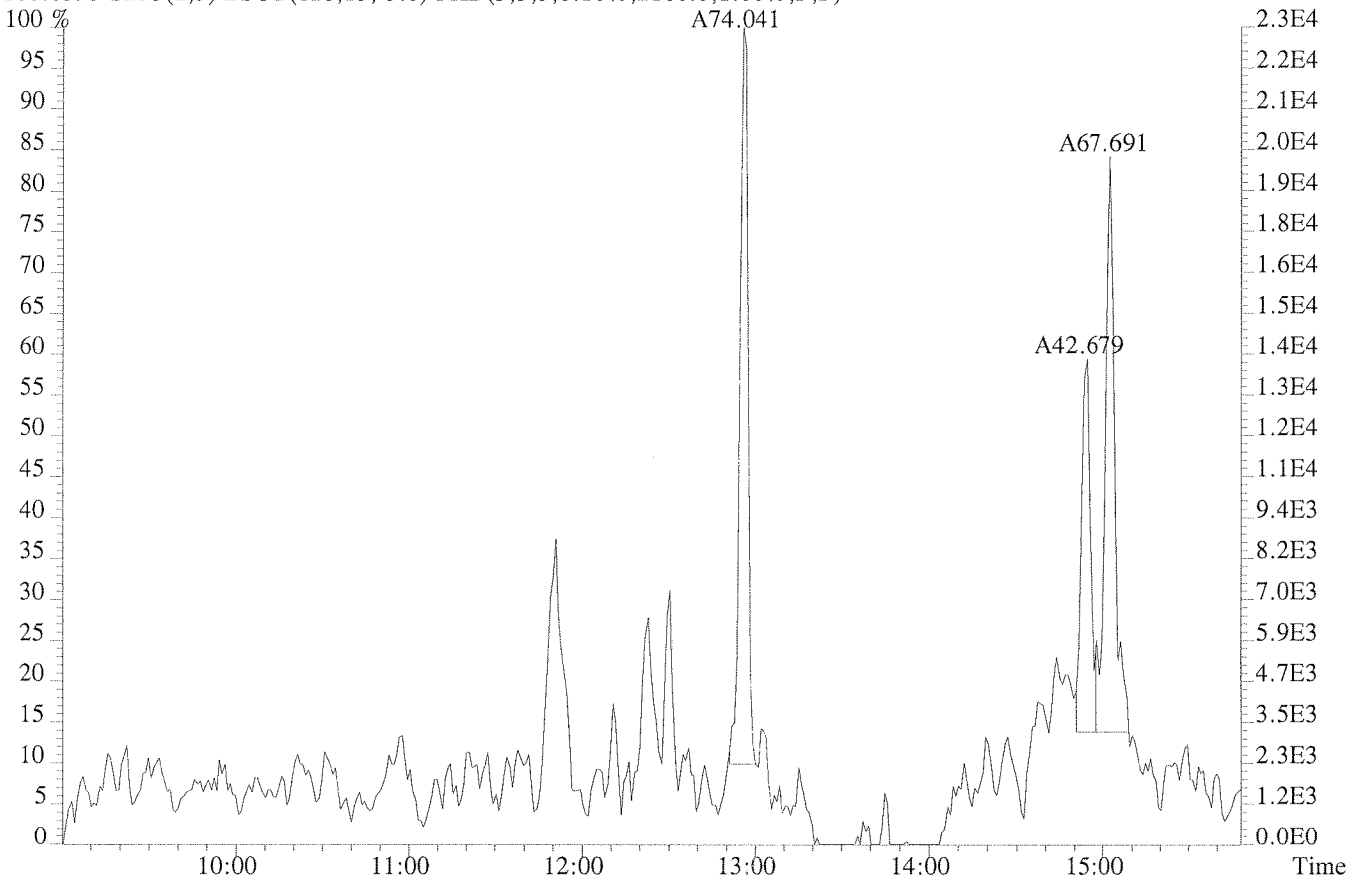
188.0393



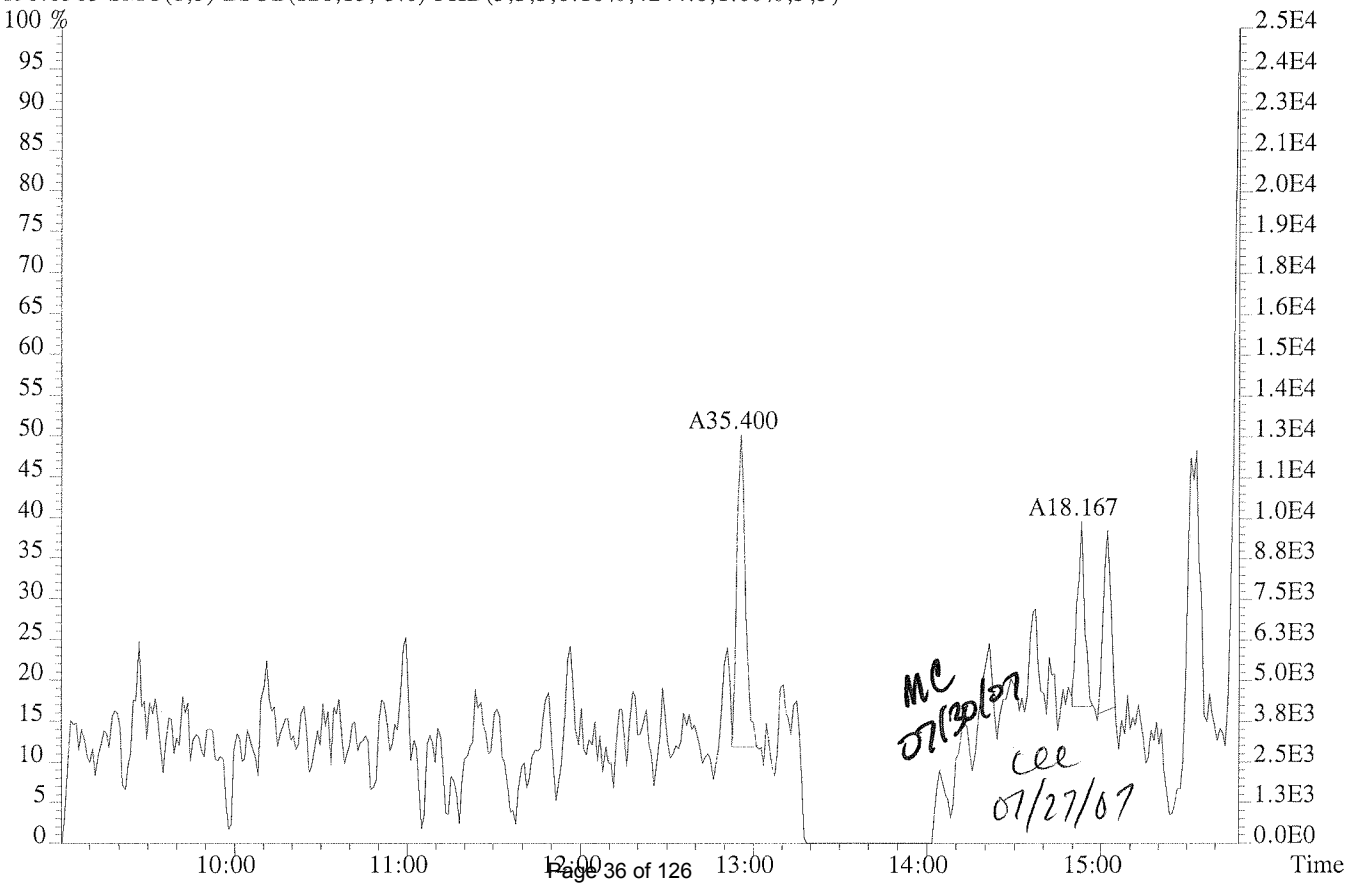

190.0363



File:U210821 #1-437 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
188.0393 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2160.0,1.00%,F,F)



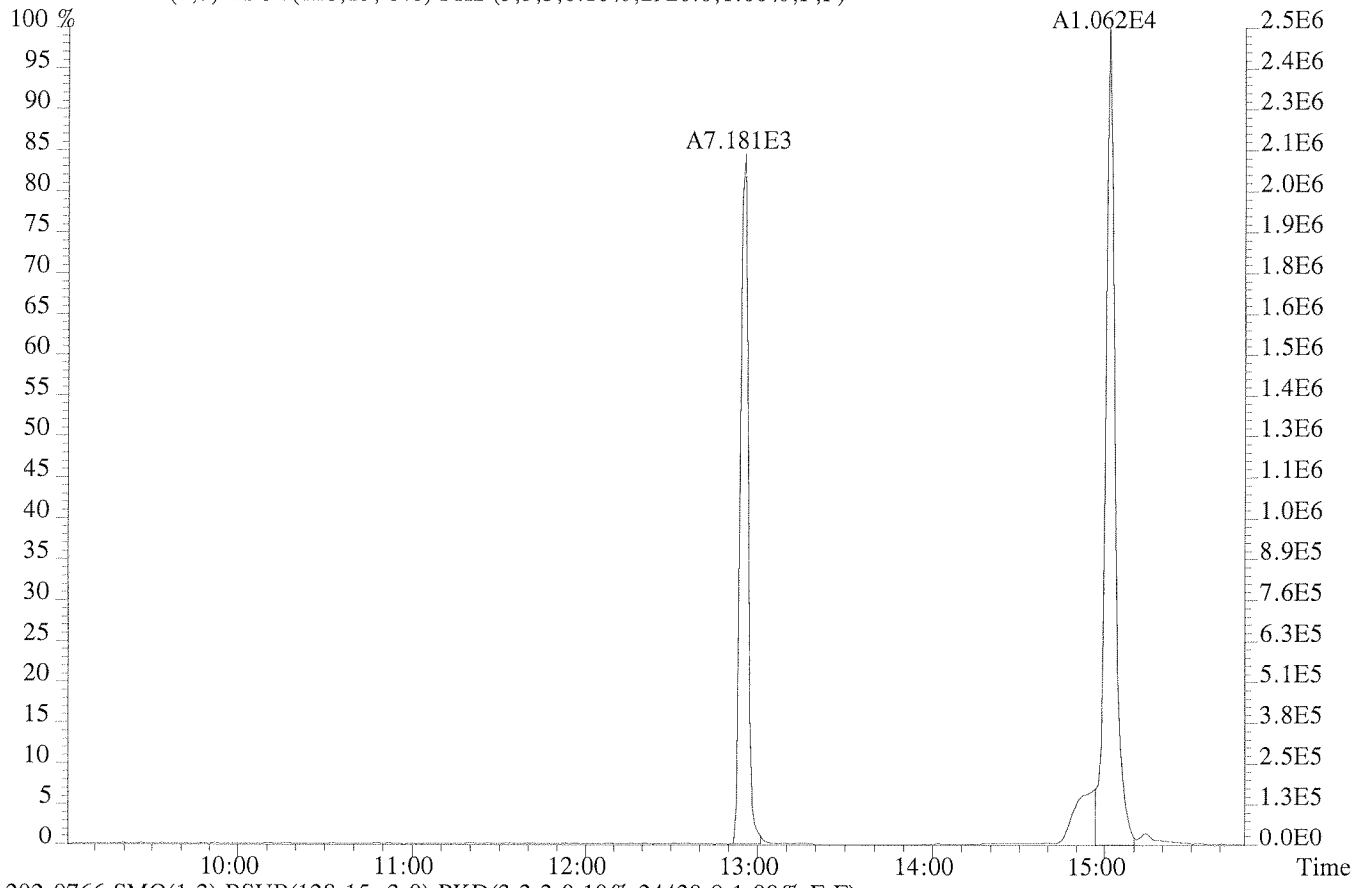

190.0363 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4244.0,1.00%,F,F)



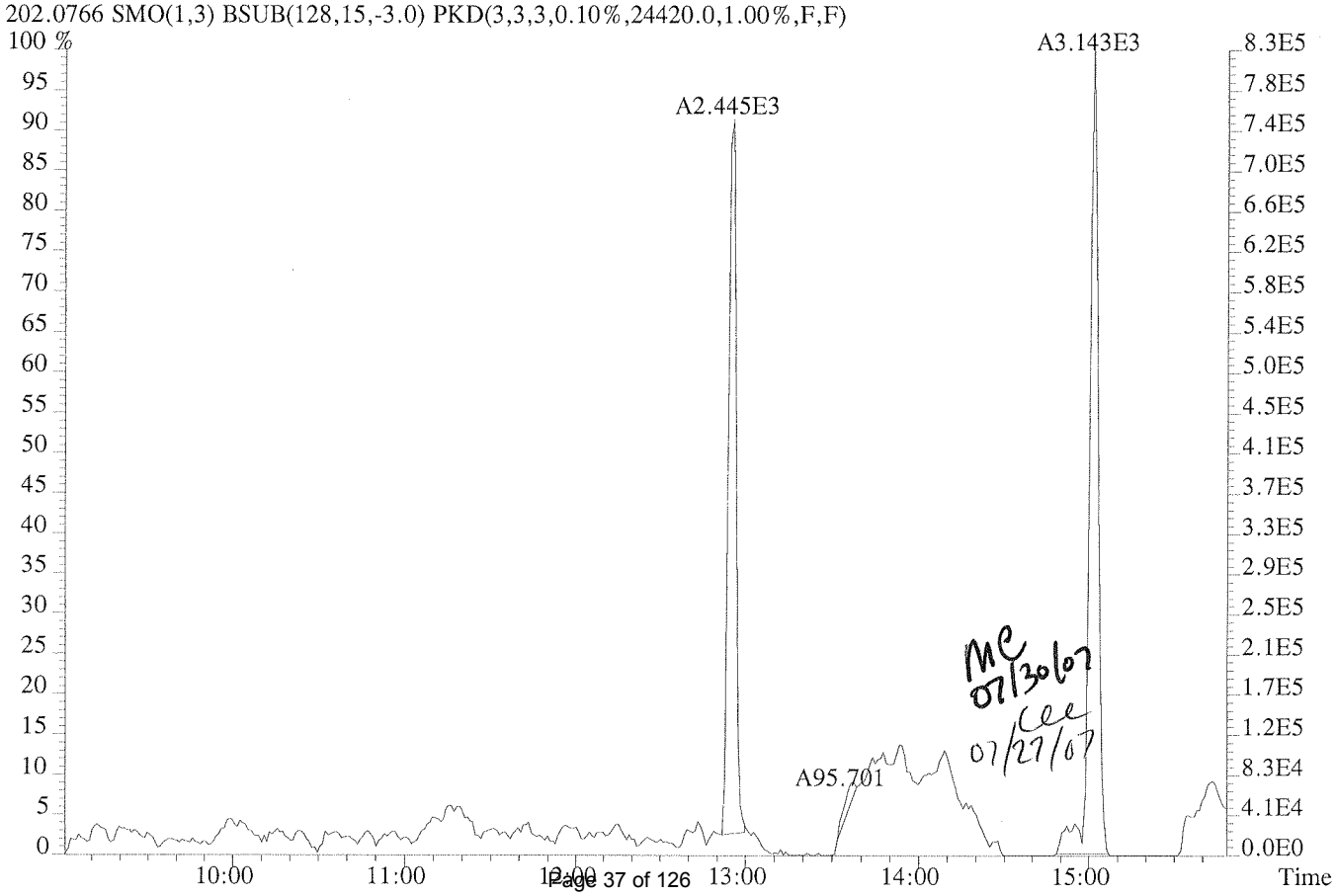

MC 01/29/07

cee 01/27/07

File:U210821 #1-437 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
200.0795 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2920.0,1.00%,F,F)

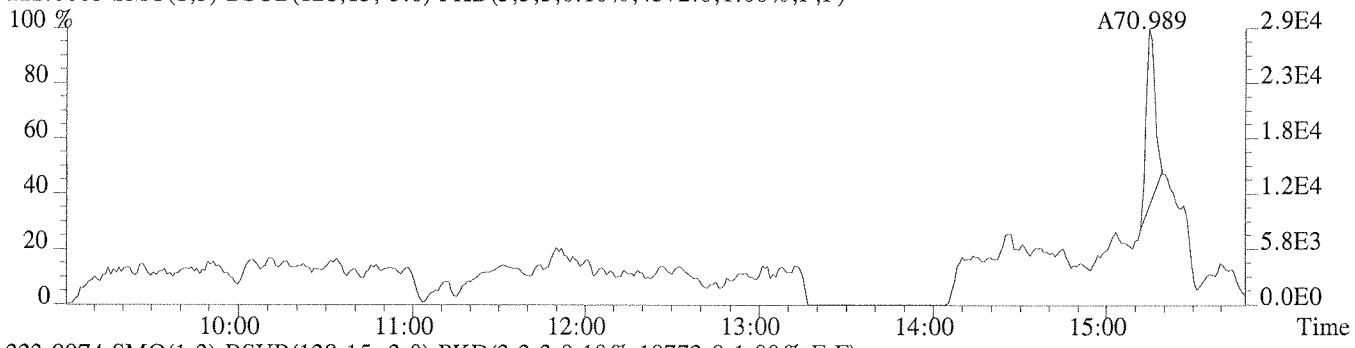



202.0766 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,24420.0,1.00%,F,F)

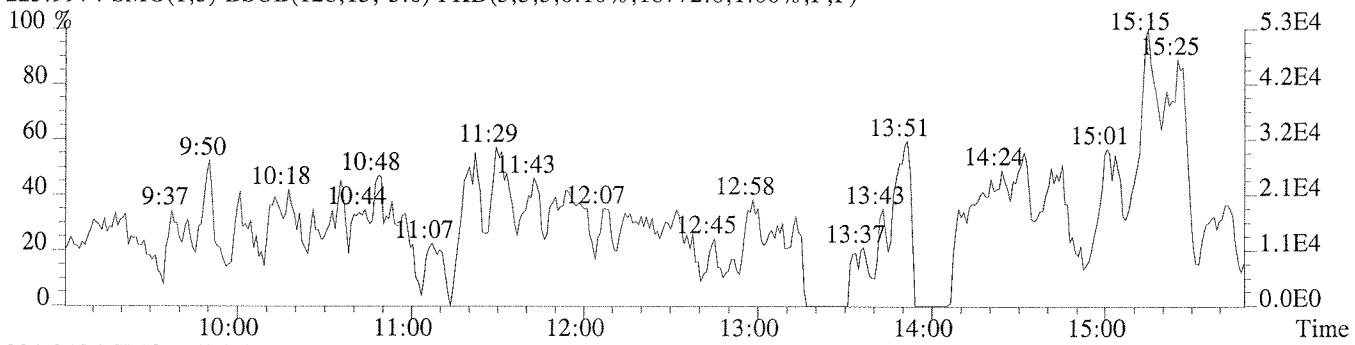



MC 07/30/07
Lee 07/27/07

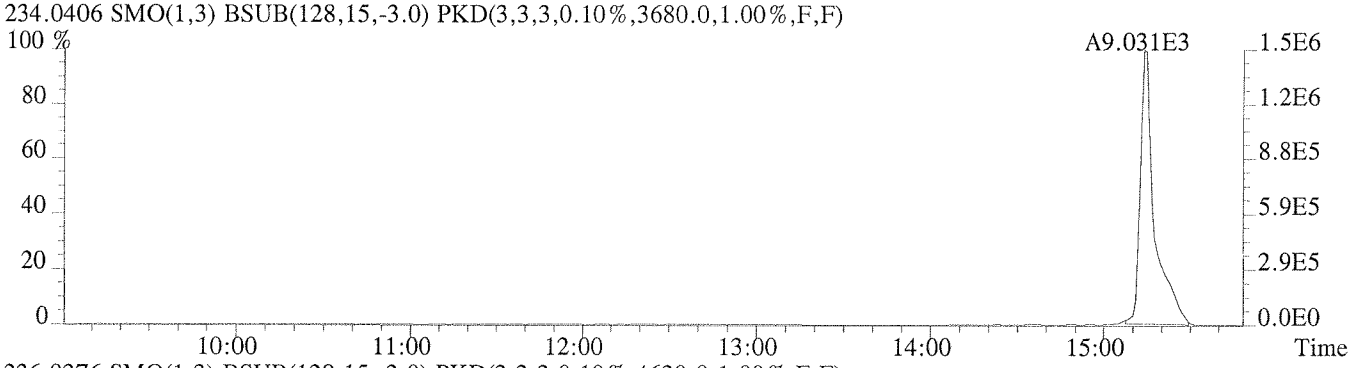
File:U210821 #1-437 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
222.0003 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4372.0,1.00%,F,F)



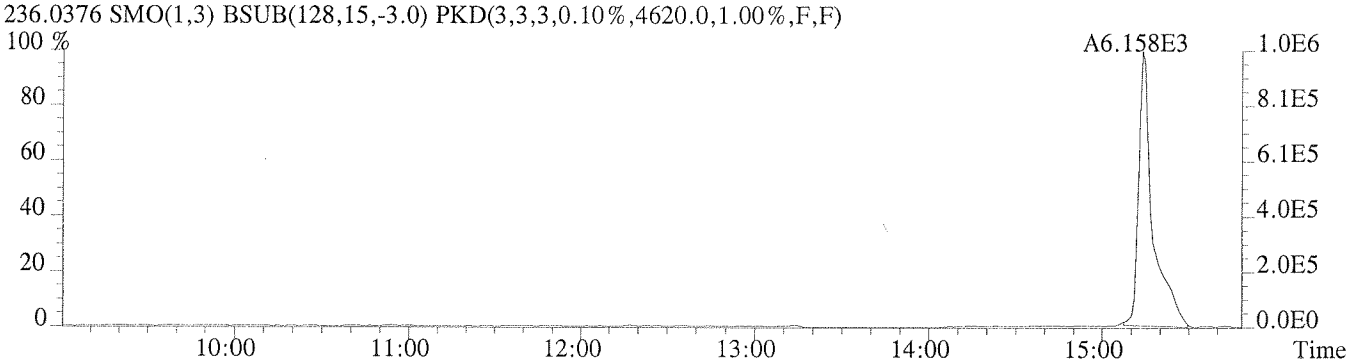

223.9974 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18772.0,1.00%,F,F)



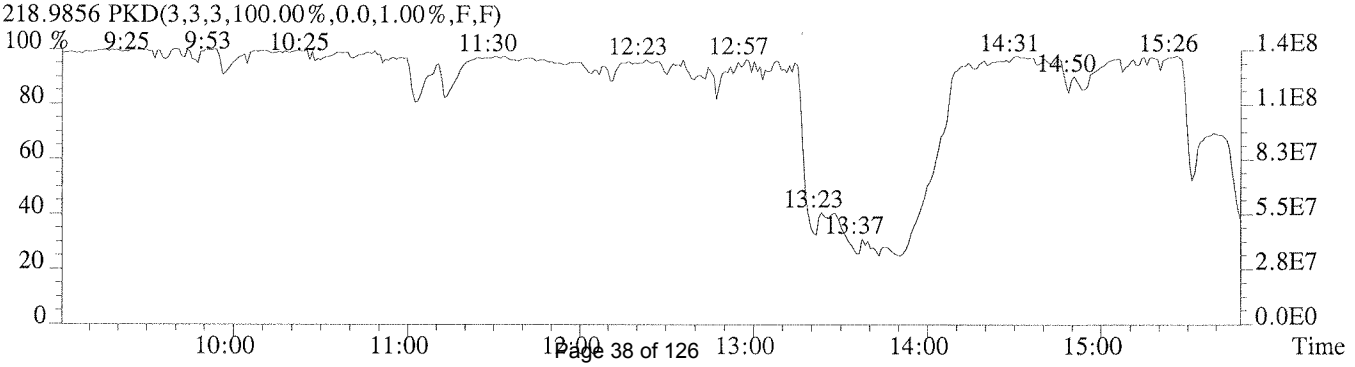

234.0406 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3680.0,1.00%,F,F)



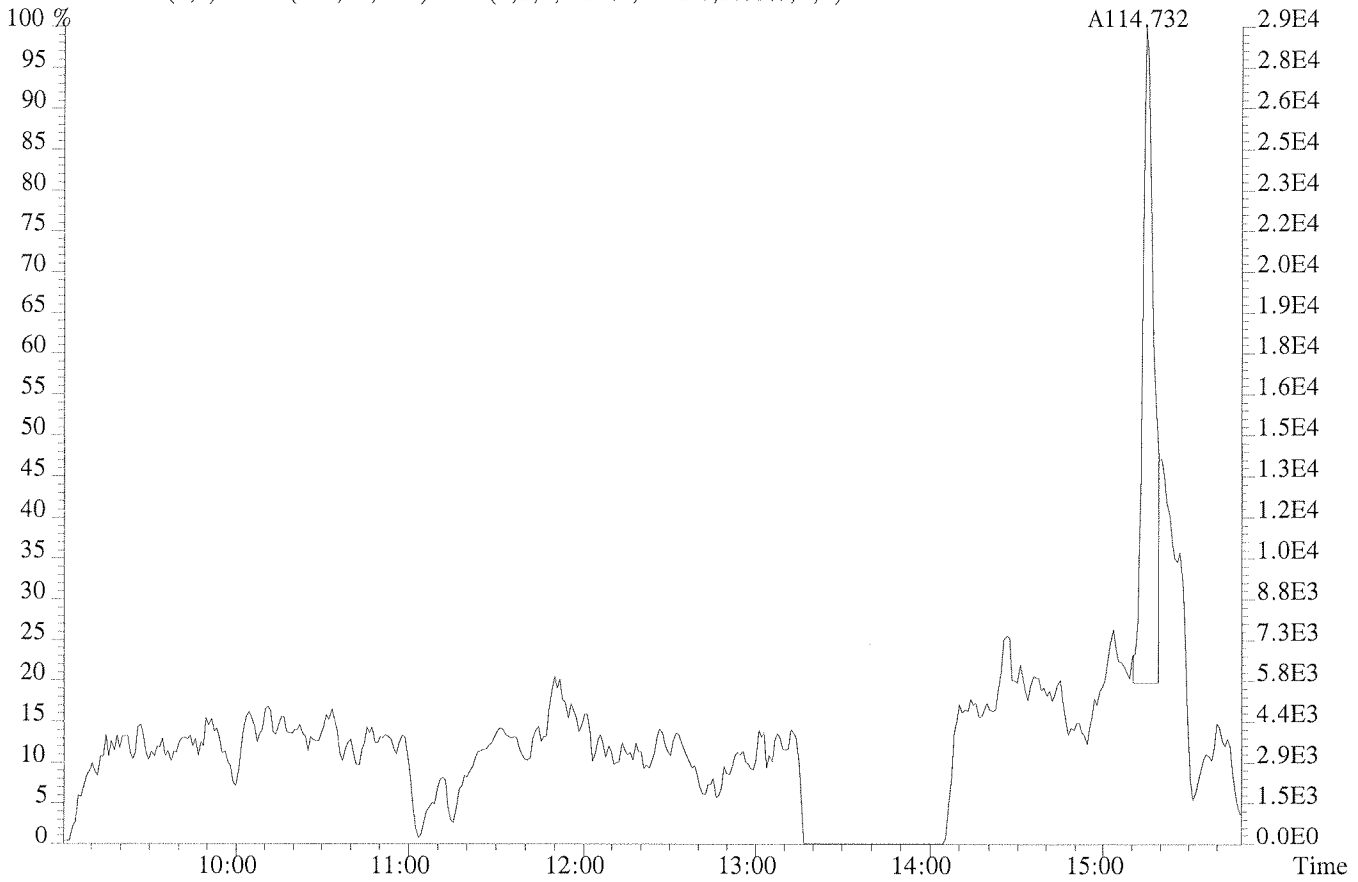

236.0376 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4620.0,1.00%,F,F)



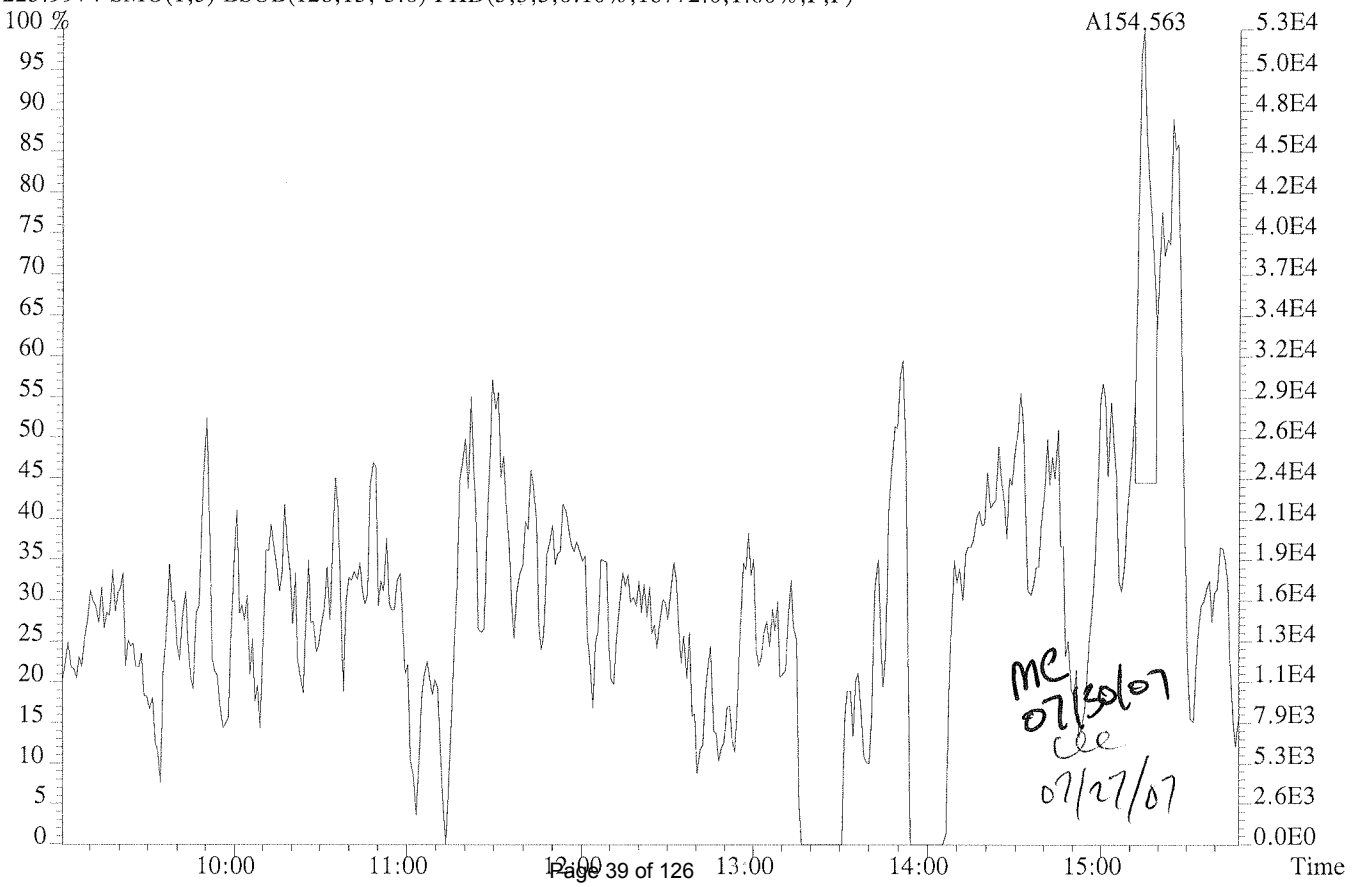

218.9856 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210821 #1-437 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
222.0003 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4372.0,1.00%,F,F)

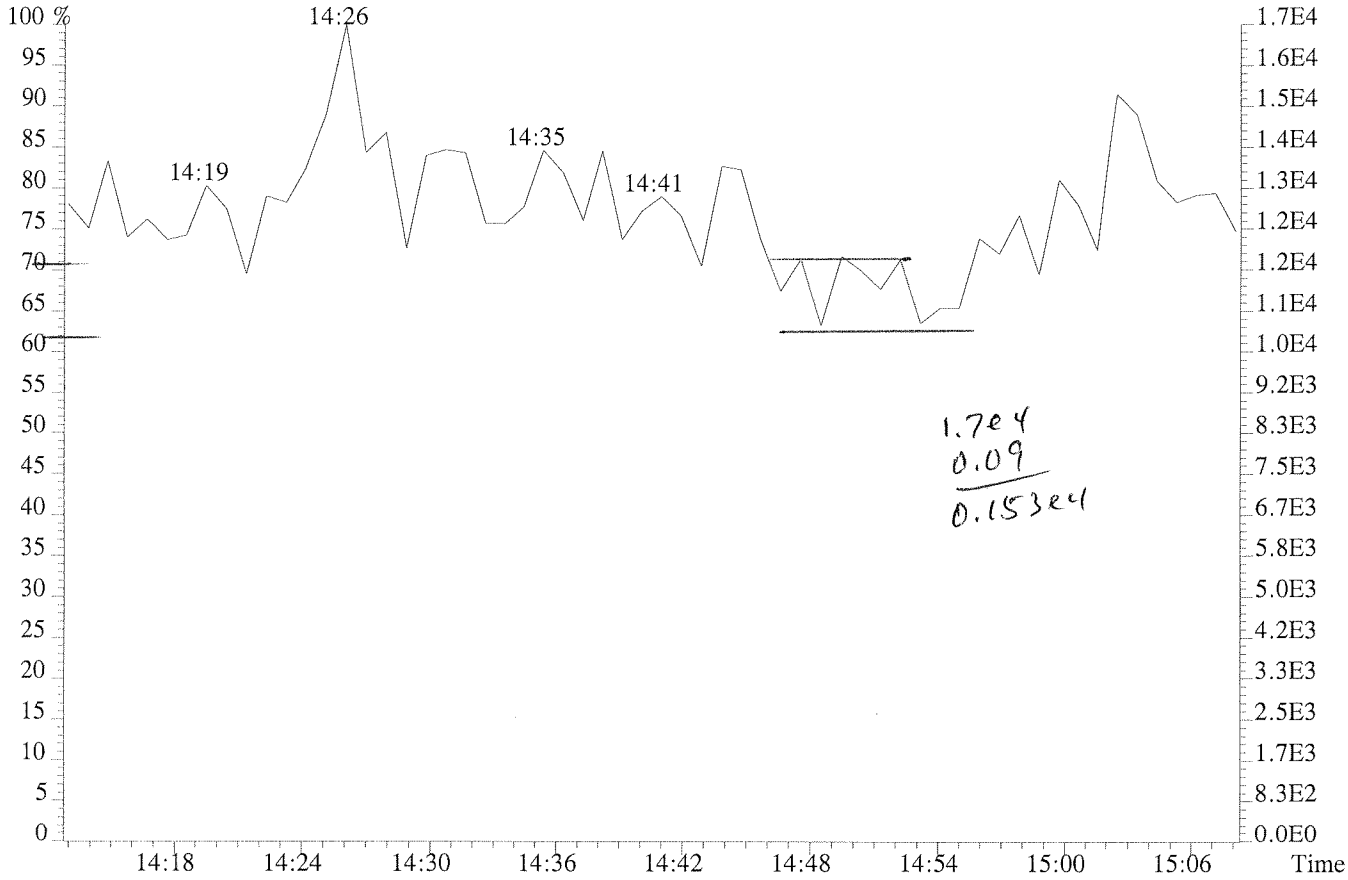



223.9974 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,18772.0,1.00%,F,F)



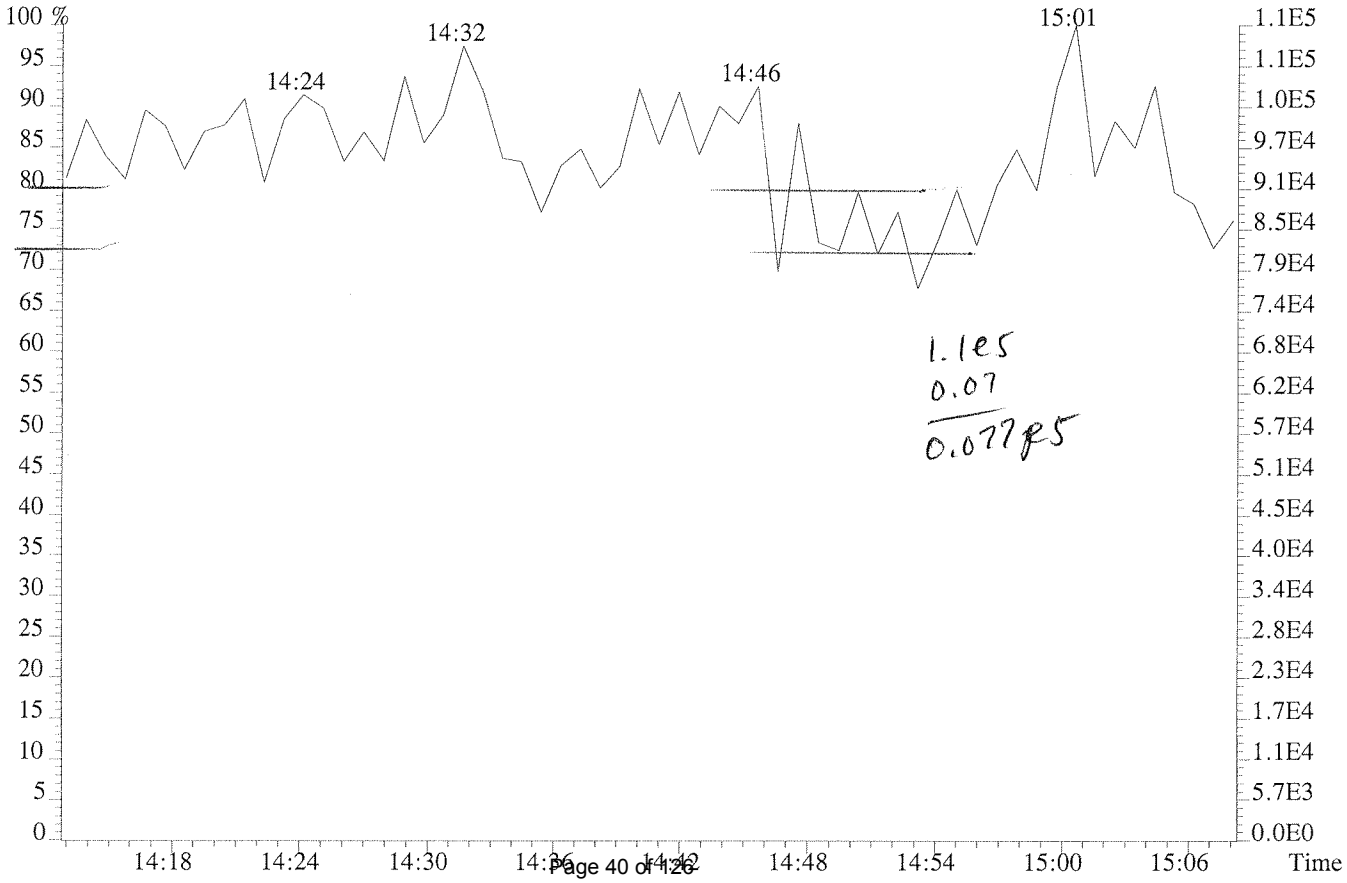

ME 07/30/07
Lee 07/27/07

File:U210821 #1-437 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
222.0003



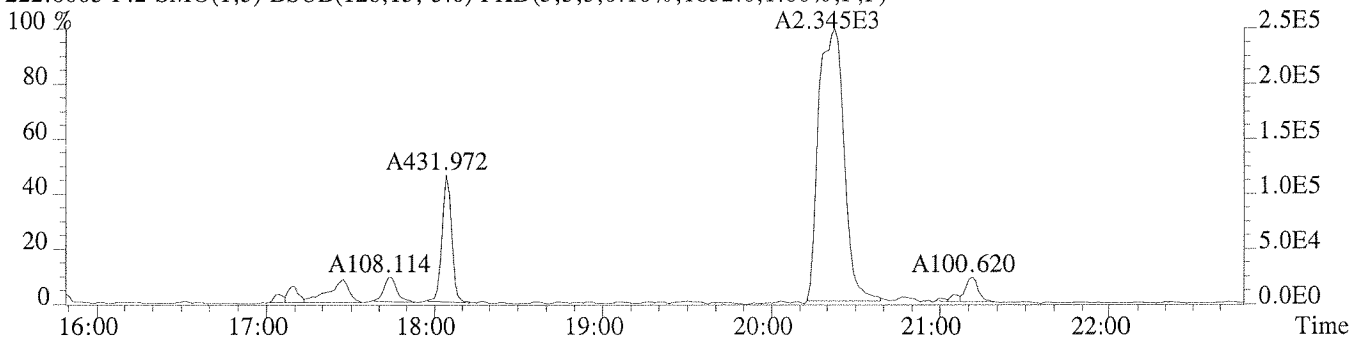

1.7e4
0.09
0.153e4

223.9974

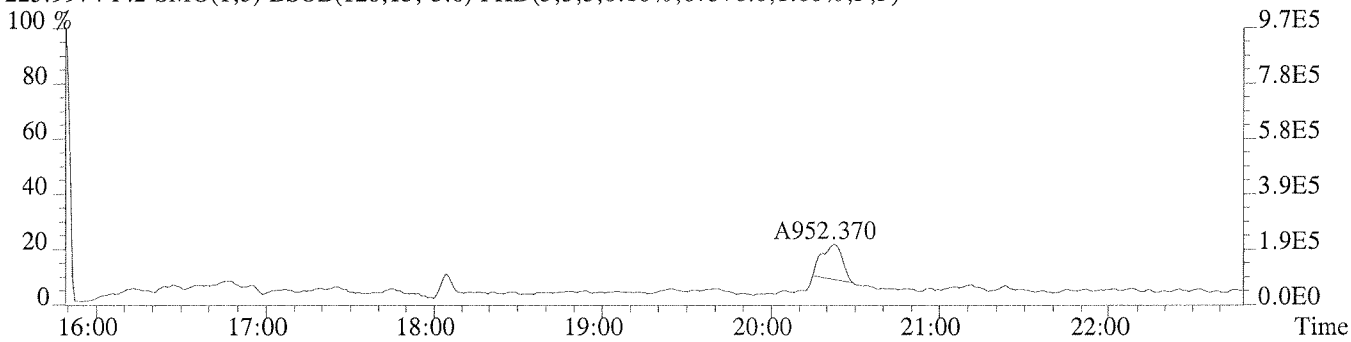



1.1e5
0.07
0.077e5

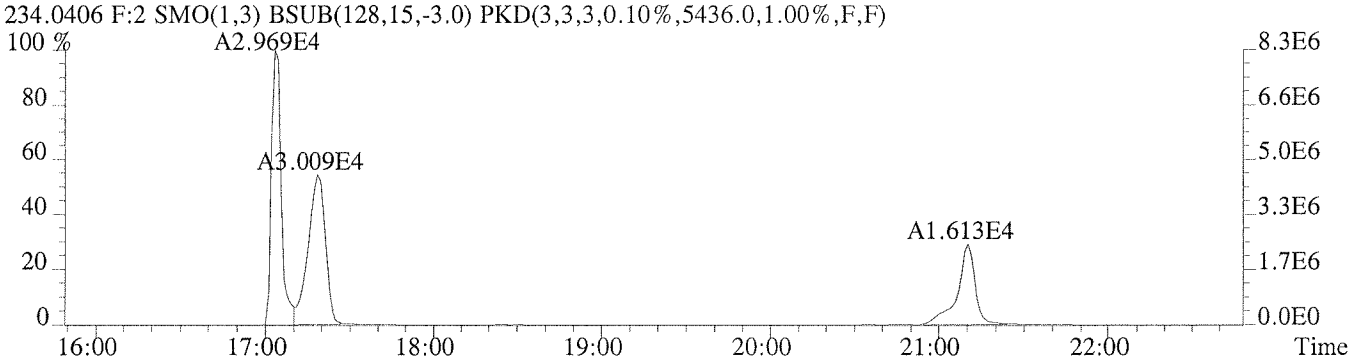
File:U210821 #1-386 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
222.0003 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1852.0,1.00%,F,F)



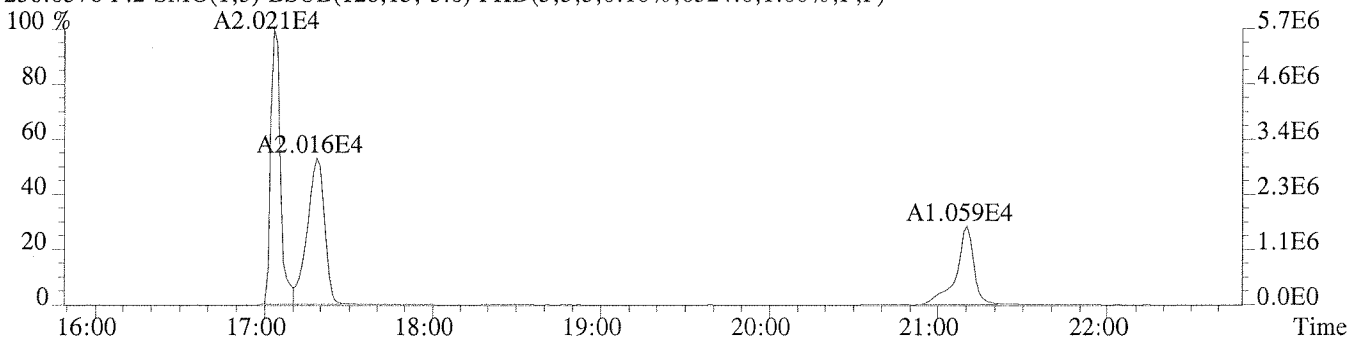

223.9974 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,67376.0,1.00%,F,F)



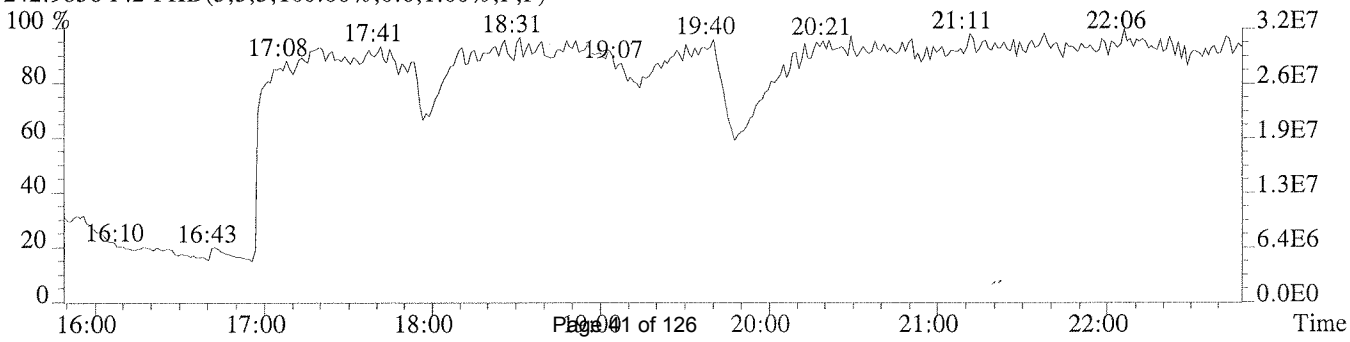

234.0406 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5436.0,1.00%,F,F)



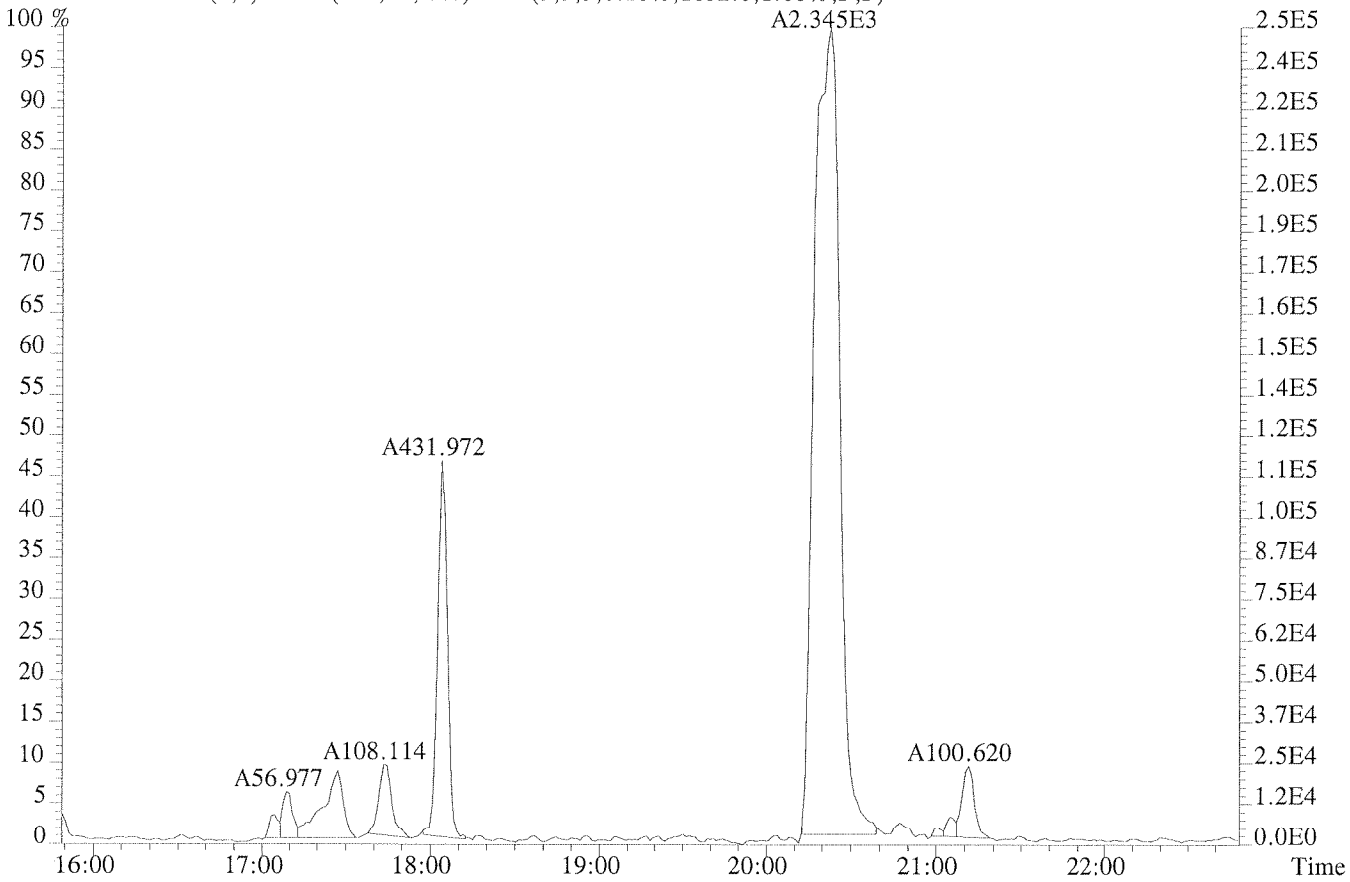

236.0376 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6524.0,1.00%,F,F)



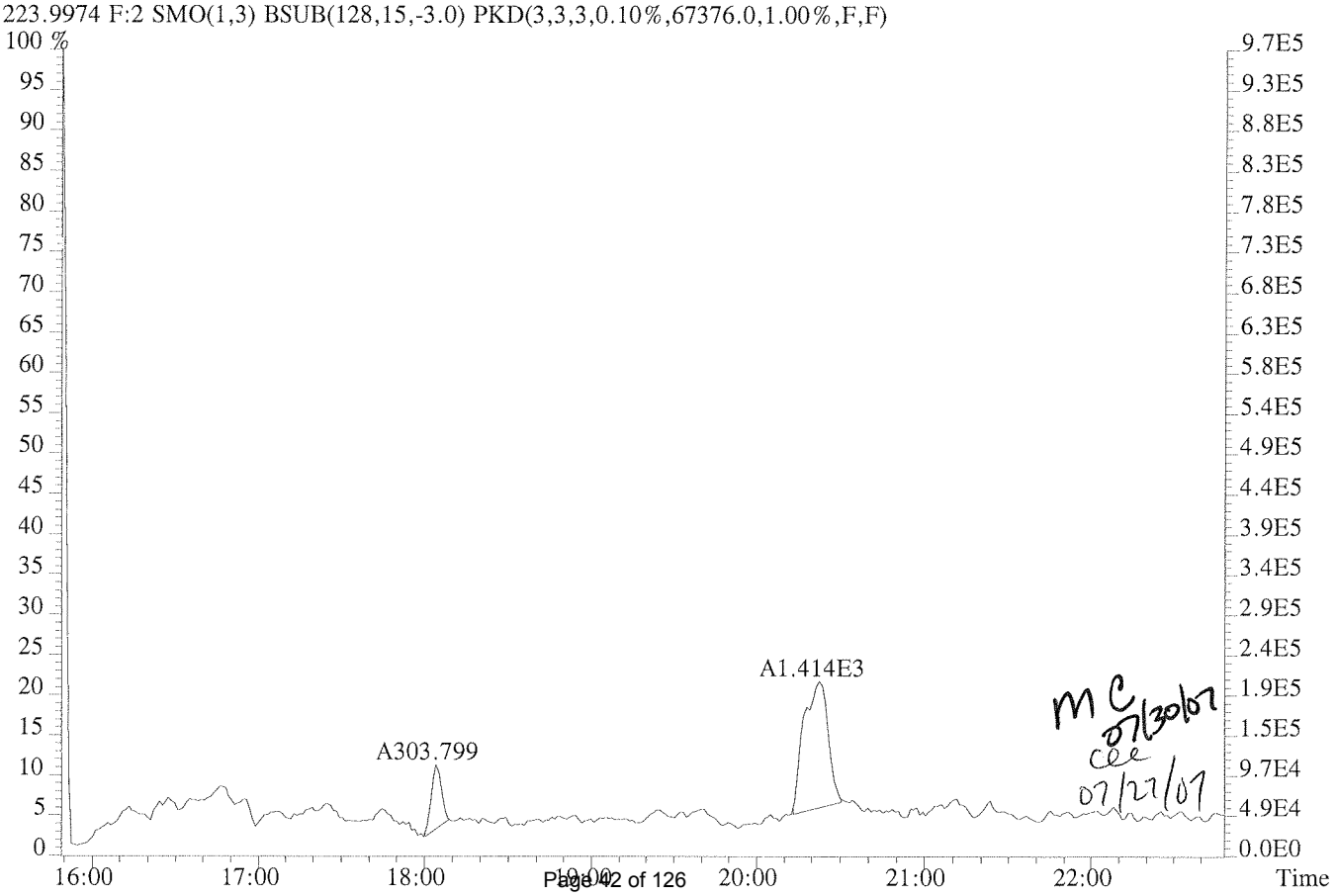

242.9856 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210821 #1-386 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
222.0003 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1852.0,1.00%,F,F)

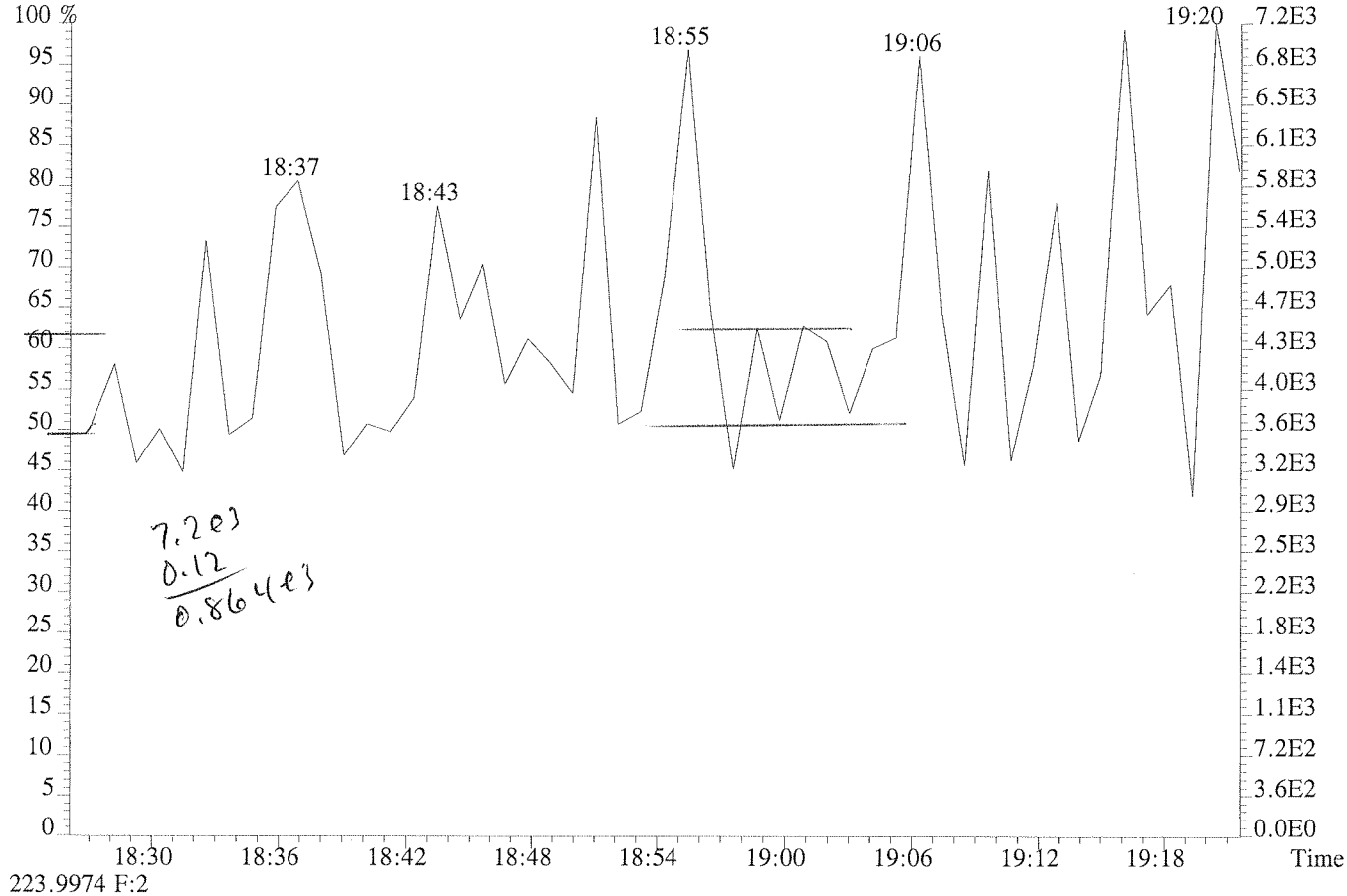



223.9974 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,67376.0,1.00%,F,F)

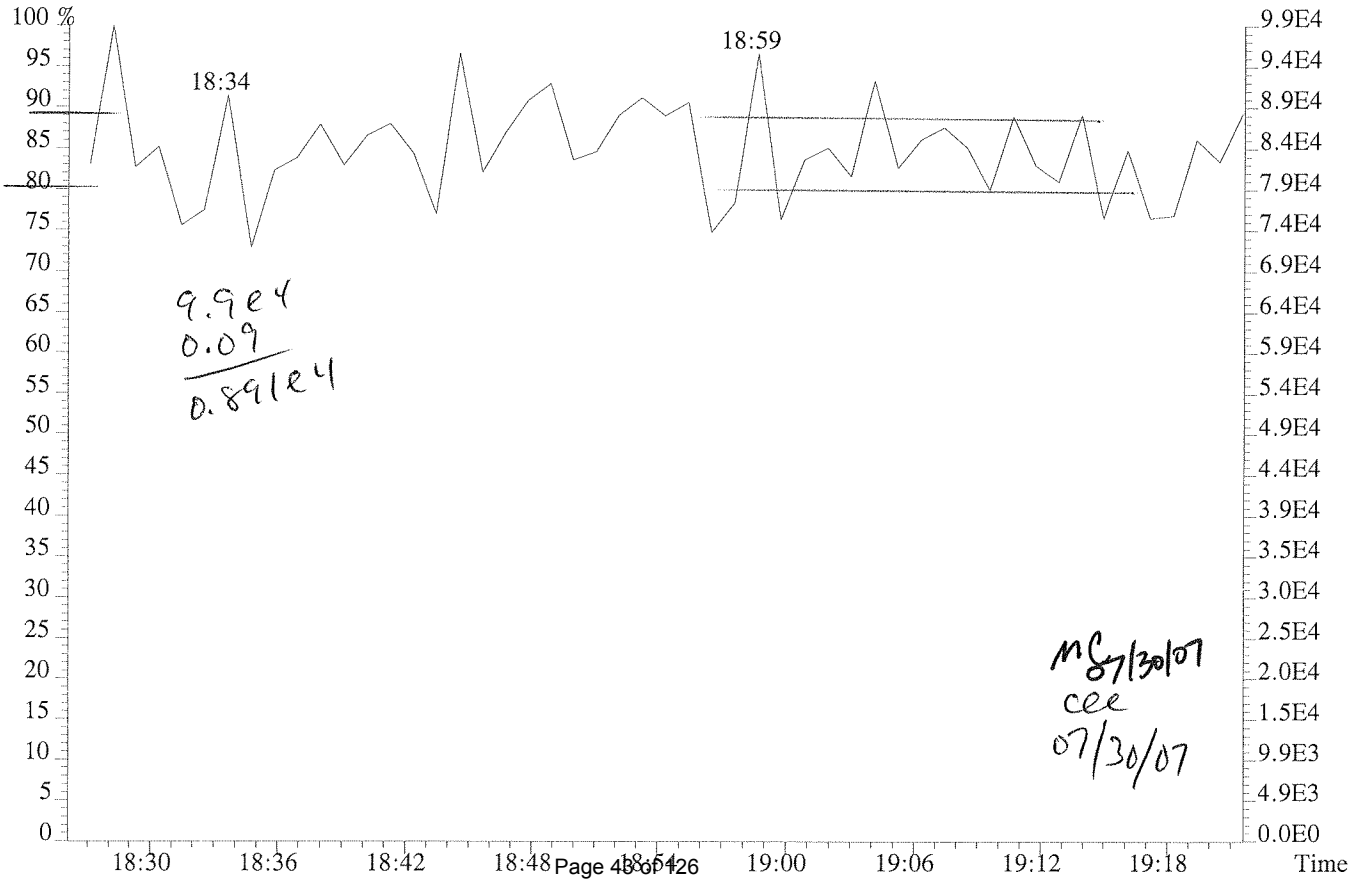



MC 07/30/07
CEE 07/27/07

File:U210821 #1-386 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
222.0003 F:2

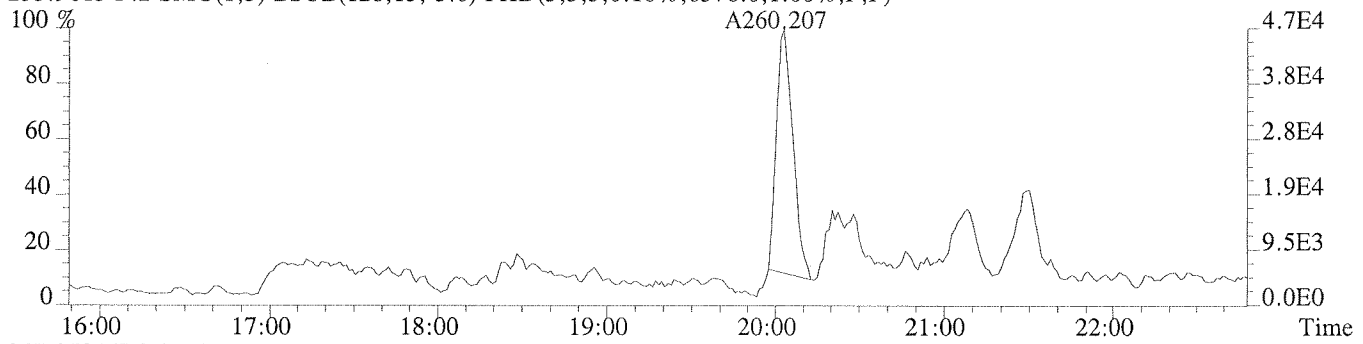



223.9974 F:2

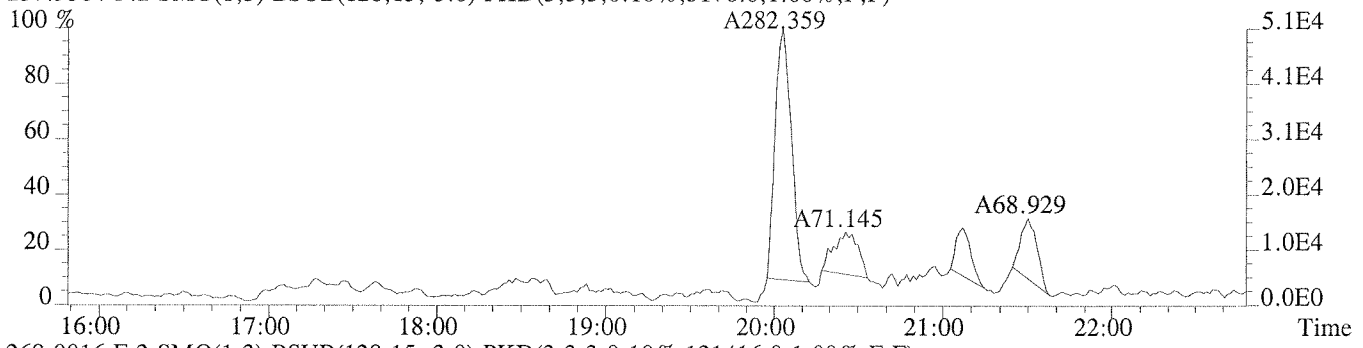



MS 7/30/07
cee
07/30/07

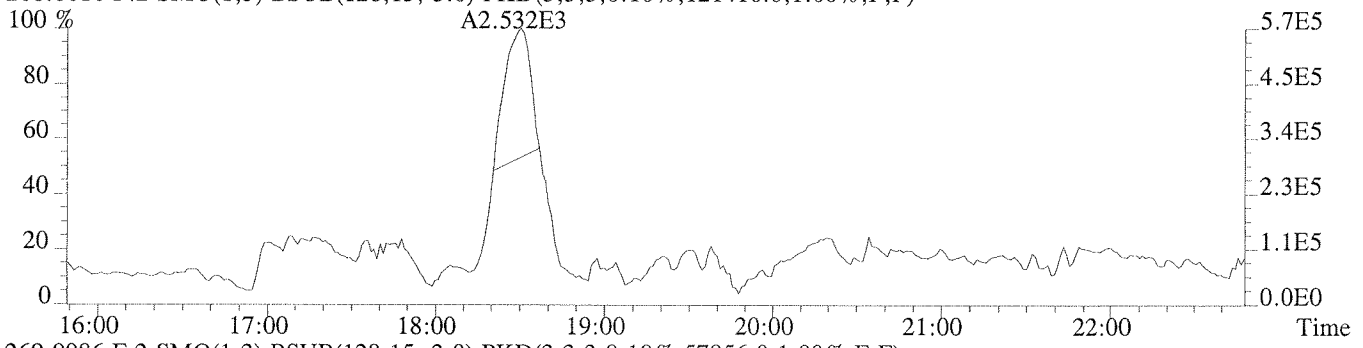
File:U210821 #1-386 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
255.9613 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6376.0,1.00%,F,F)



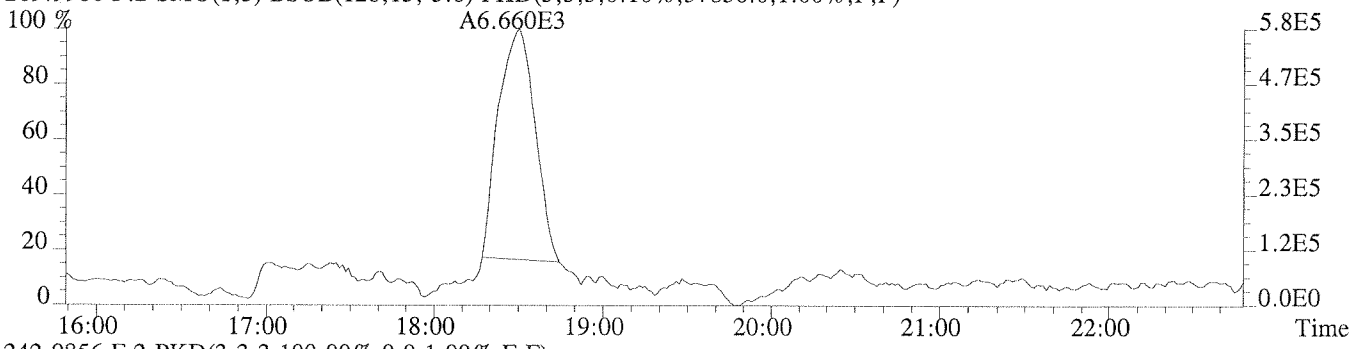

257.9584 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3176.0,1.00%,F,F)



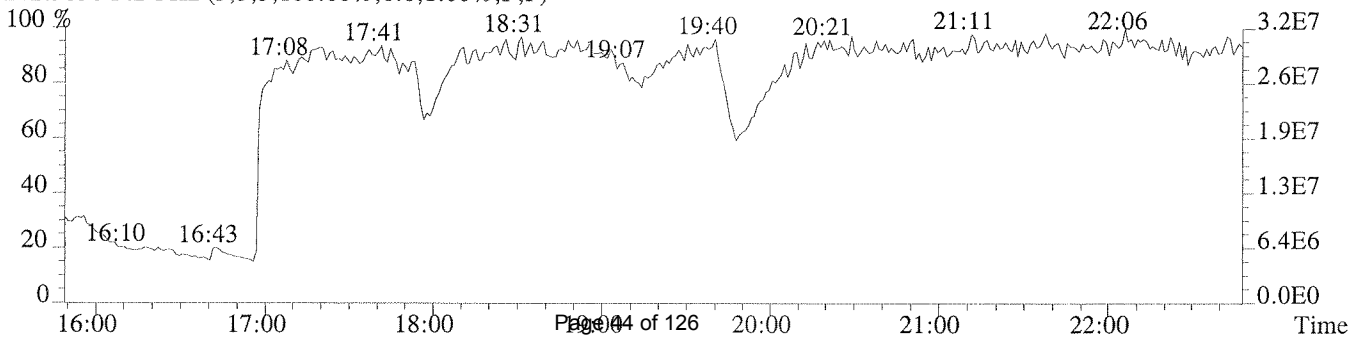

268.0016 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,121416.0,1.00%,F,F)



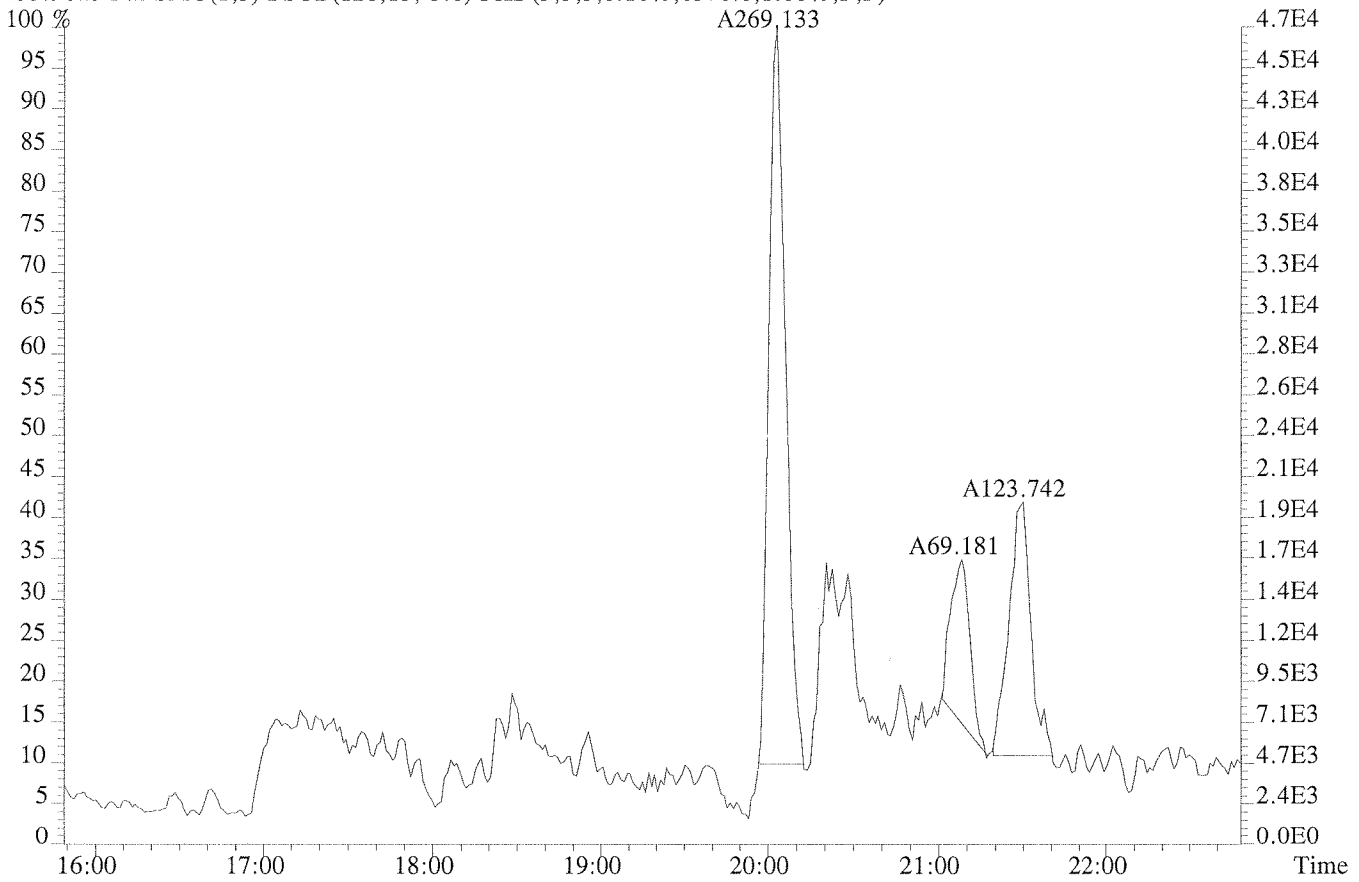

269.9986 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,57856.0,1.00%,F,F)



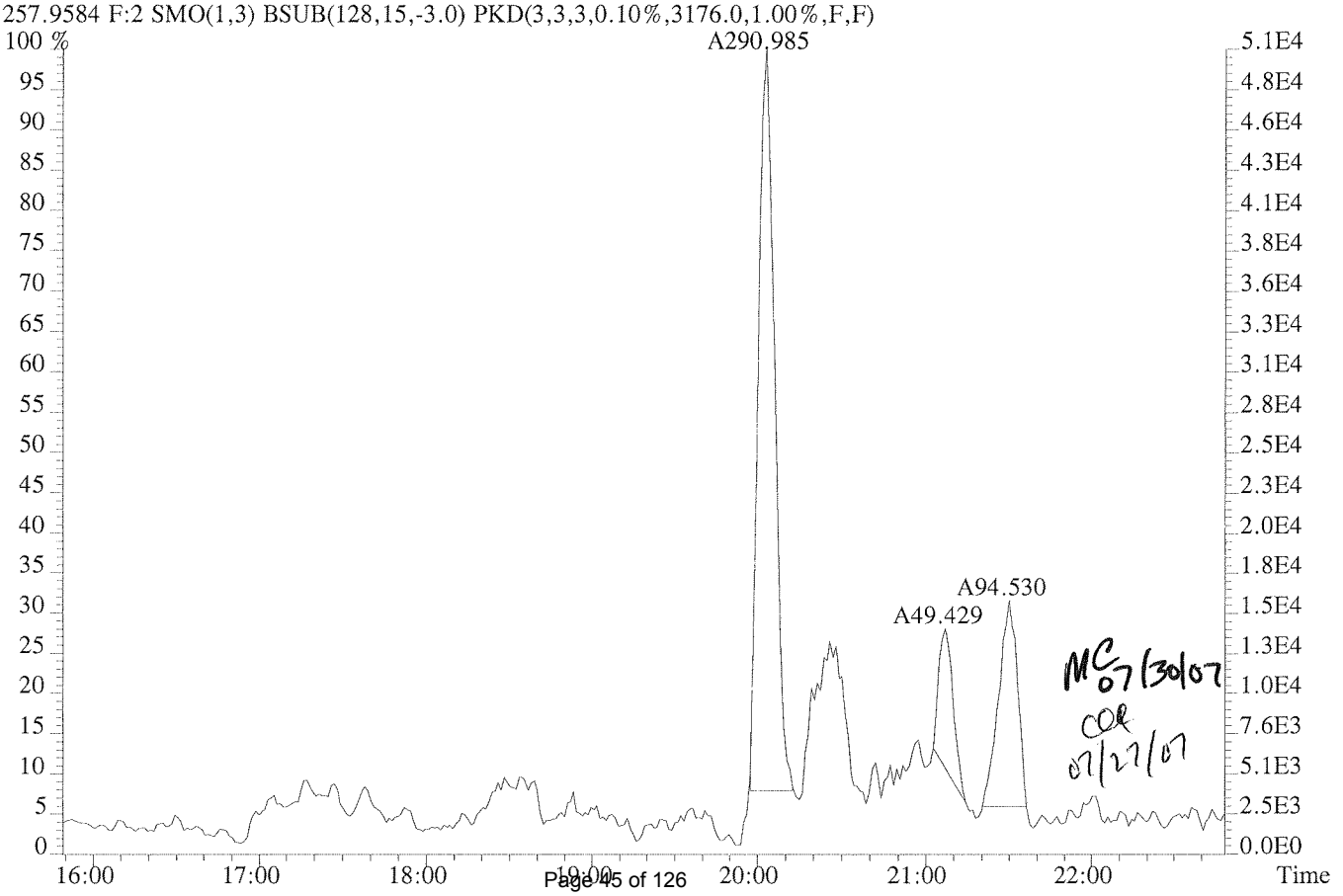

242.9856 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210821 #1-386 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
255.9613 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6376.0,1.00%,F,F)




257.9584 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3176.0,1.00%,F,F)




MC 07/30/07
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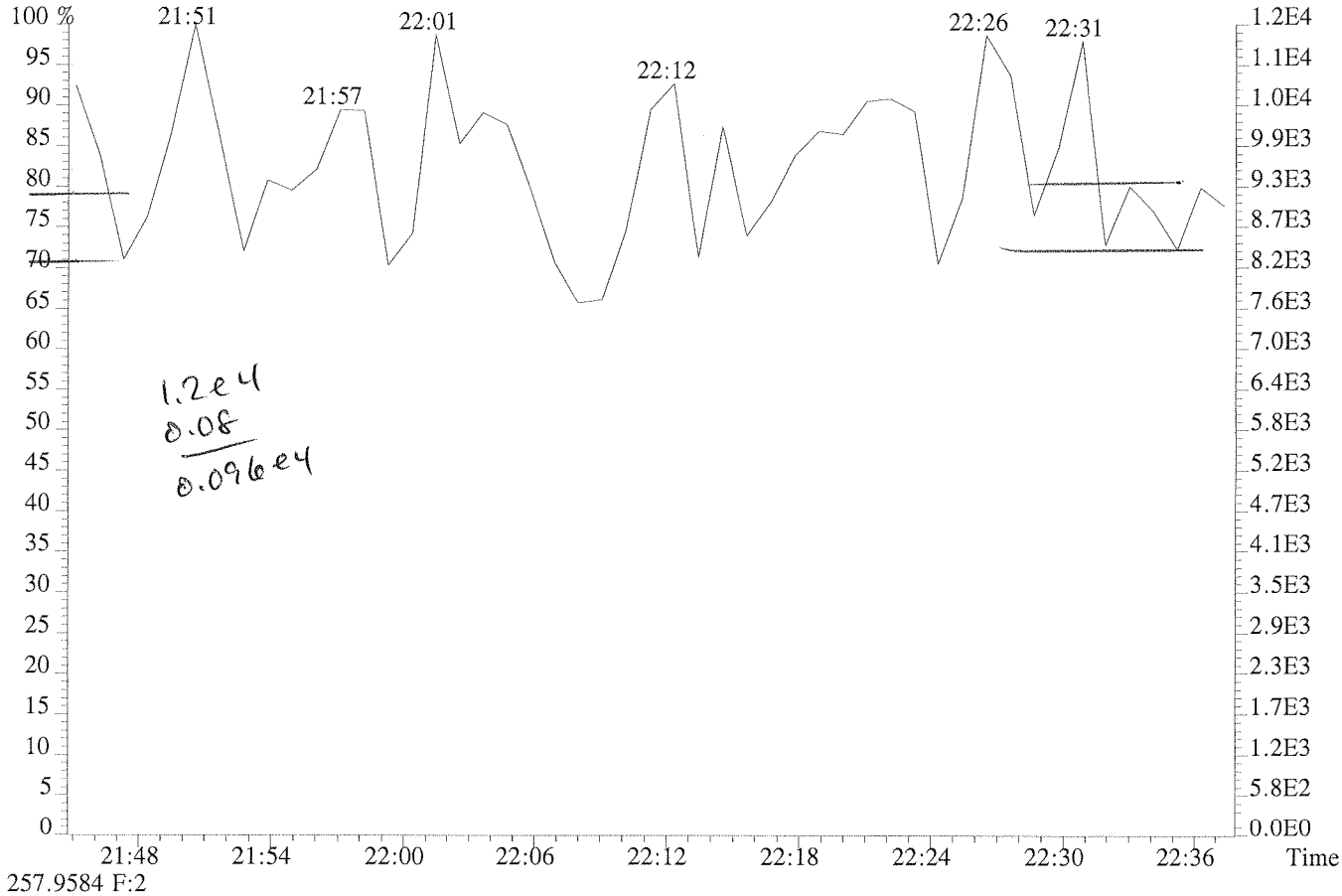
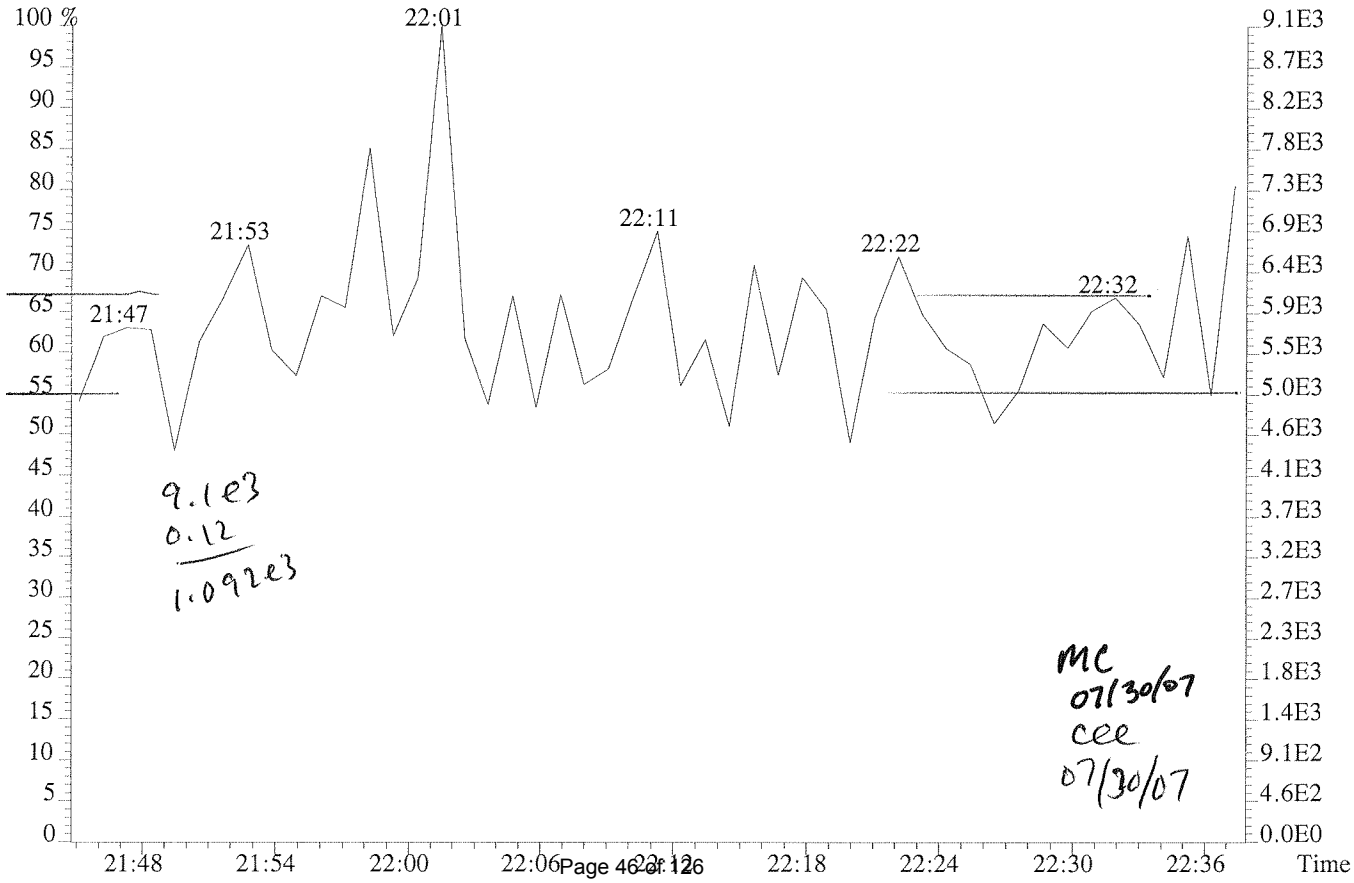
07/27/07

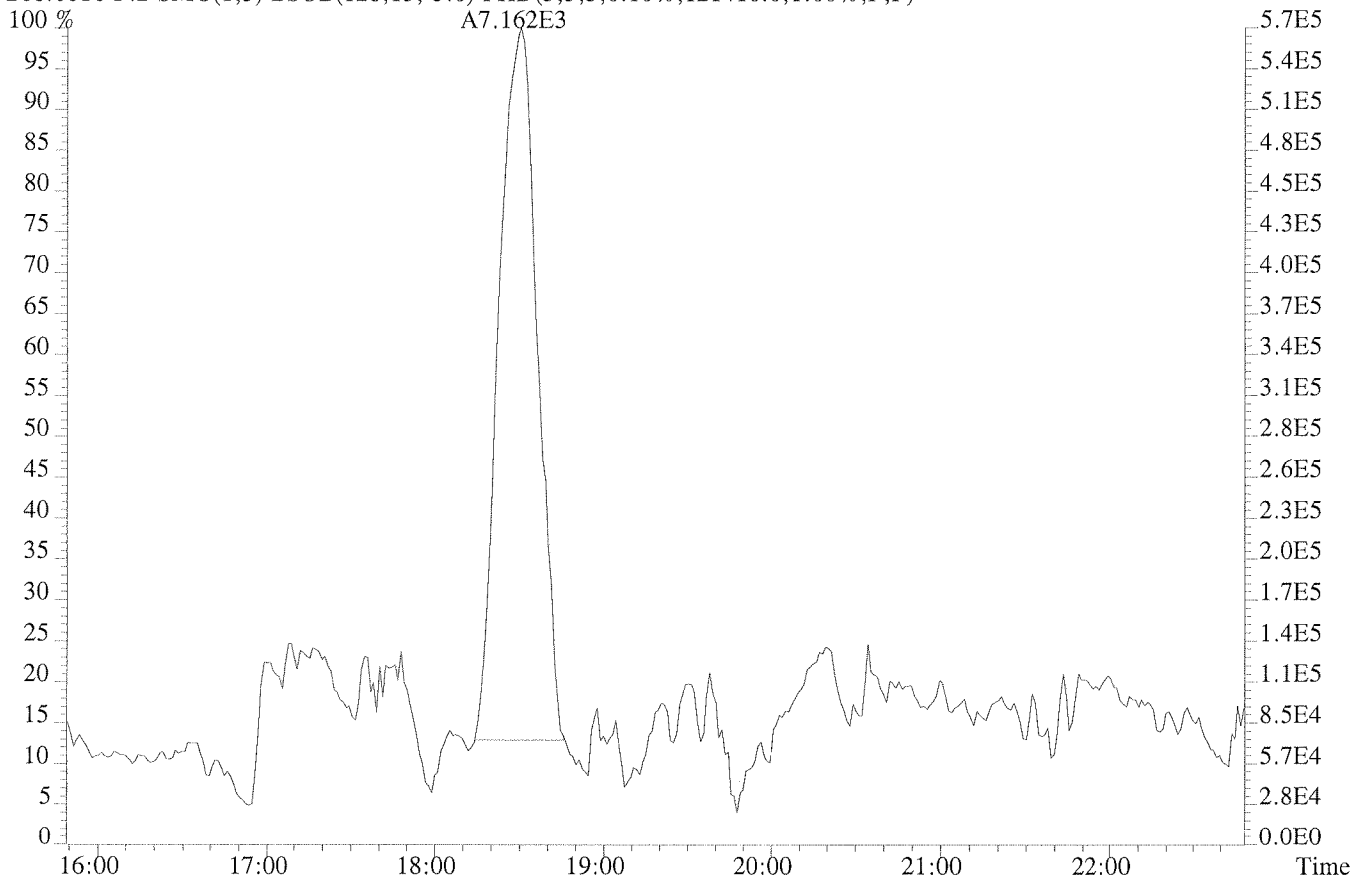
File:U210821 #1-386 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
255.9613 F:2



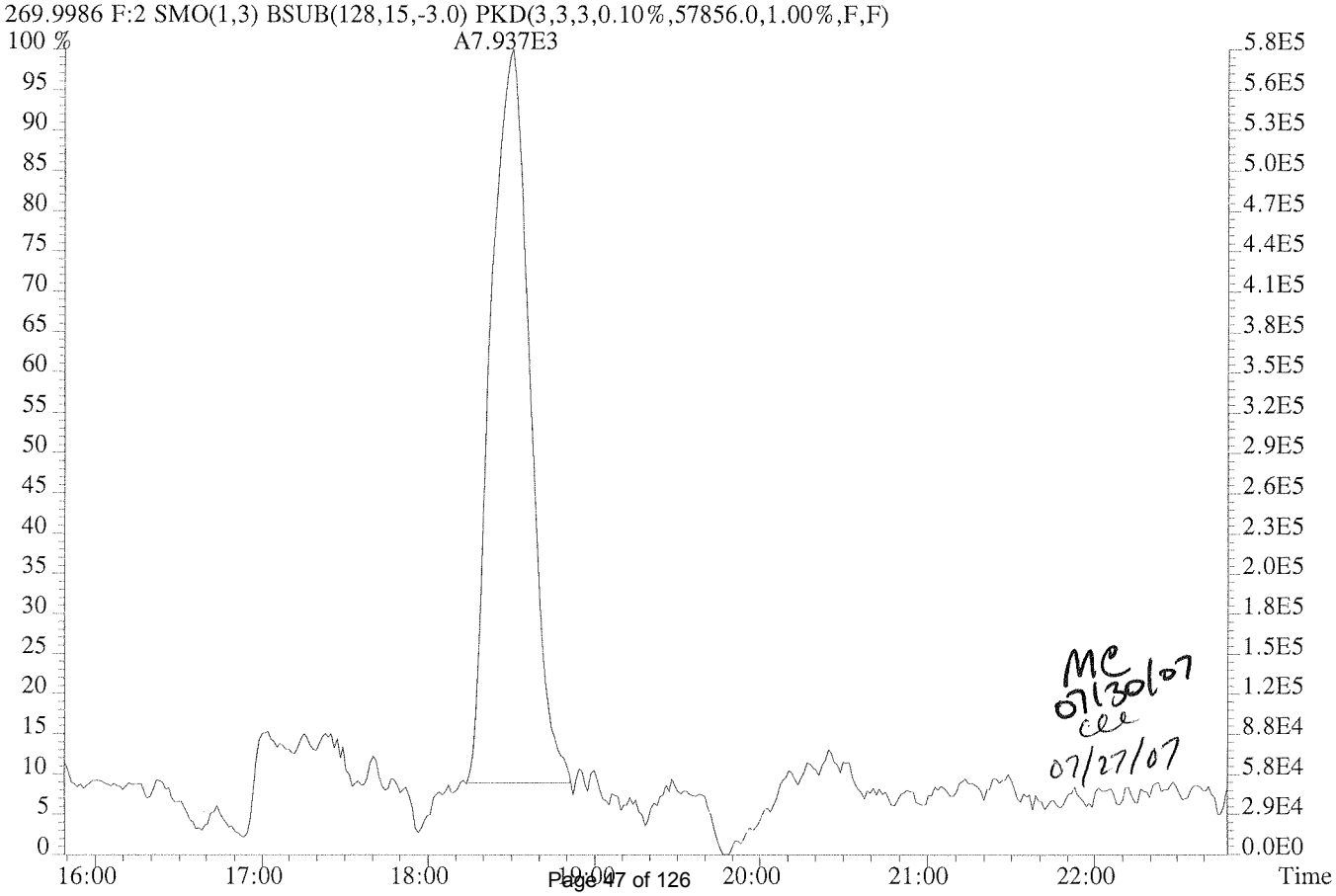

257.9584 F:2



File:U210821 #1-386 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
268.0016 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,121416.0,1.00%,F,F)

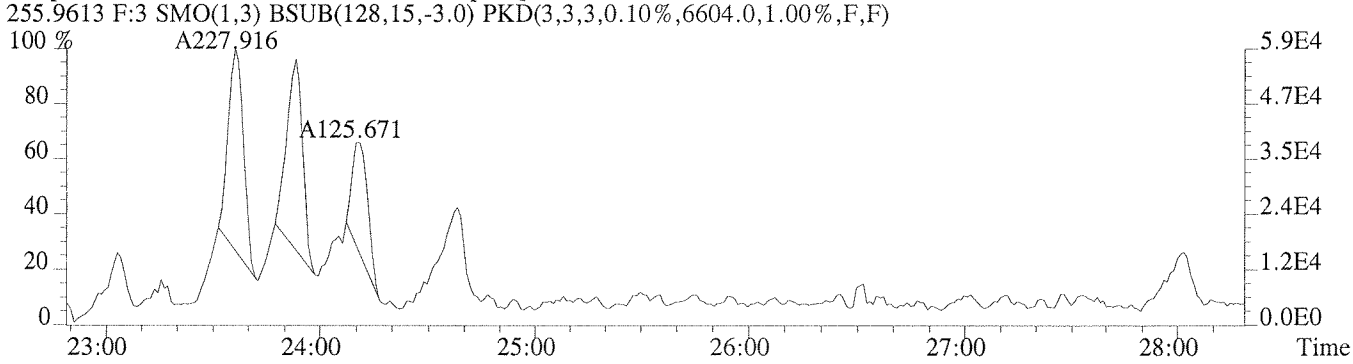



269.9986 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,57856.0,1.00%,F,F)

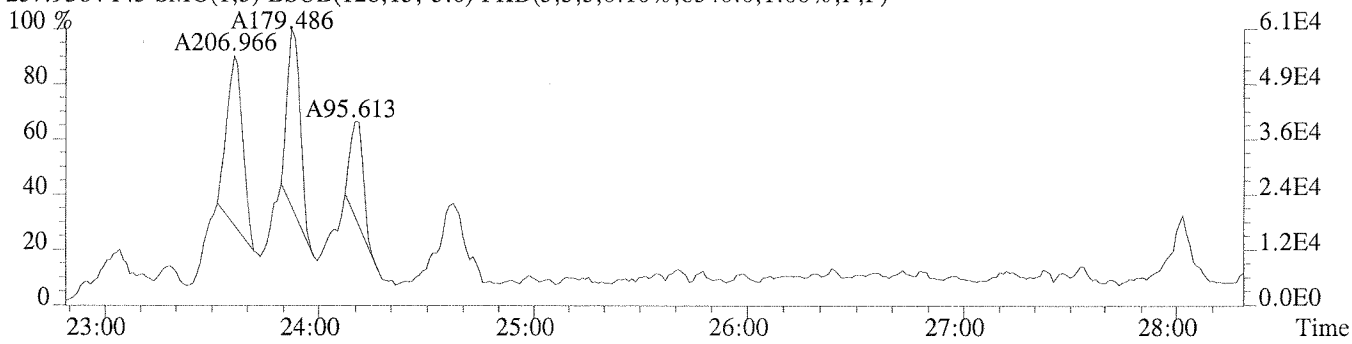



MC 07/30/07
cee 07/27/07

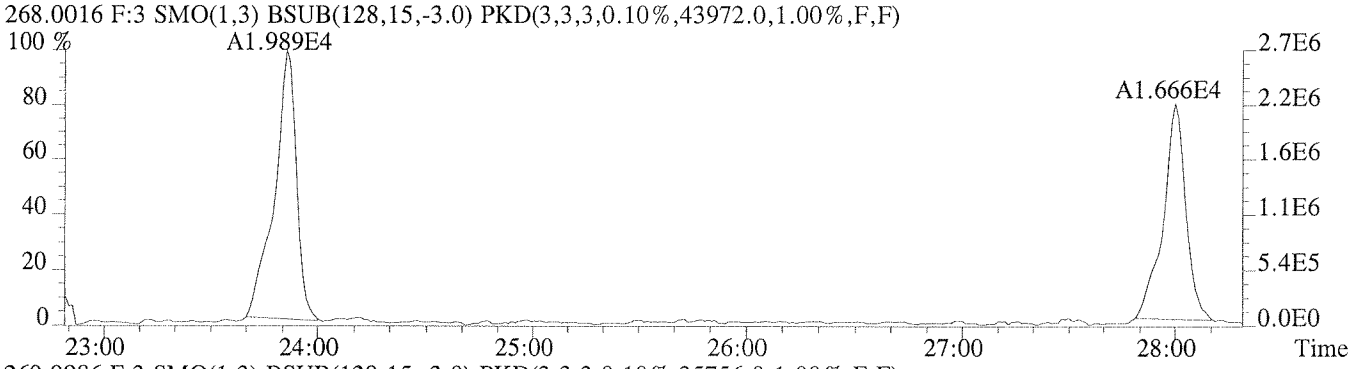
File:U210821 #1-352 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
255.9613 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6604.0,1.00%,F,F)



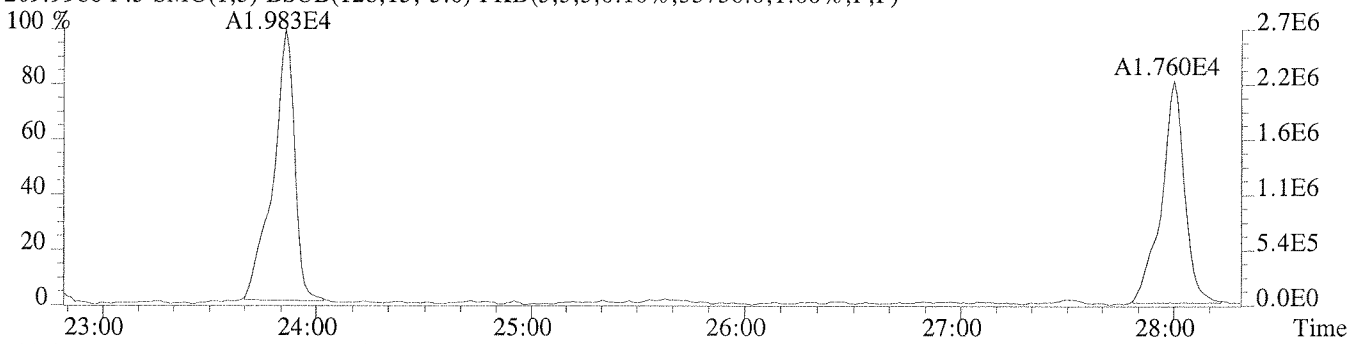

257.9584 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8340.0,1.00%,F,F)



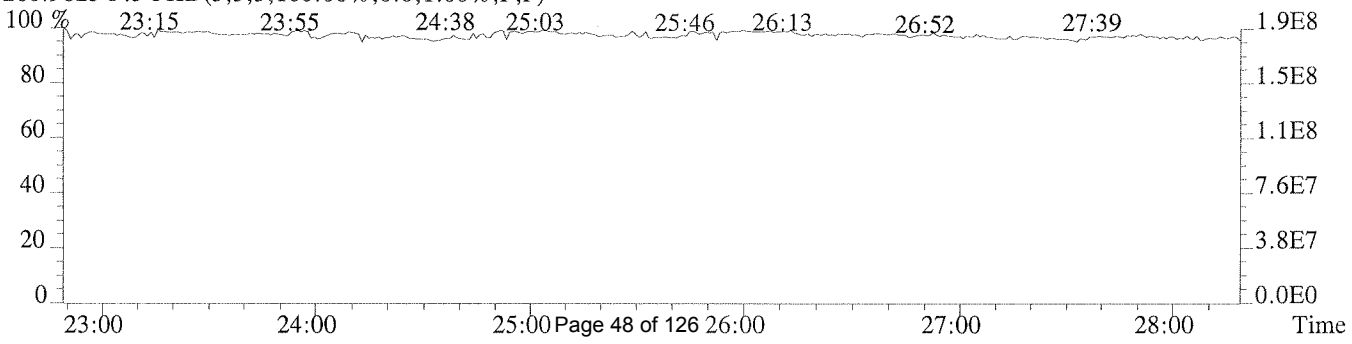

268.0016 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,43972.0,1.00%,F,F)



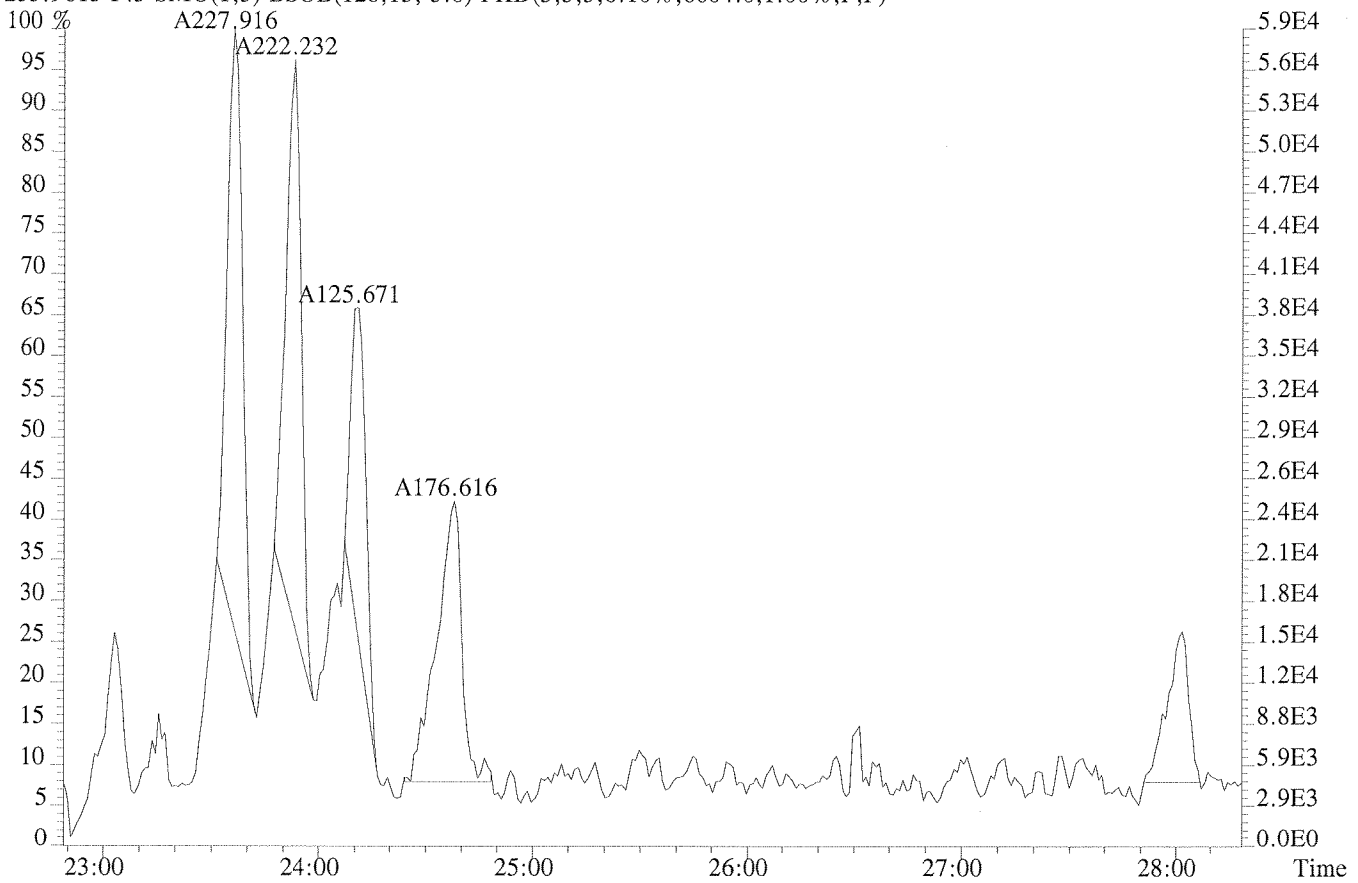

269.9986 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,35756.0,1.00%,F,F)



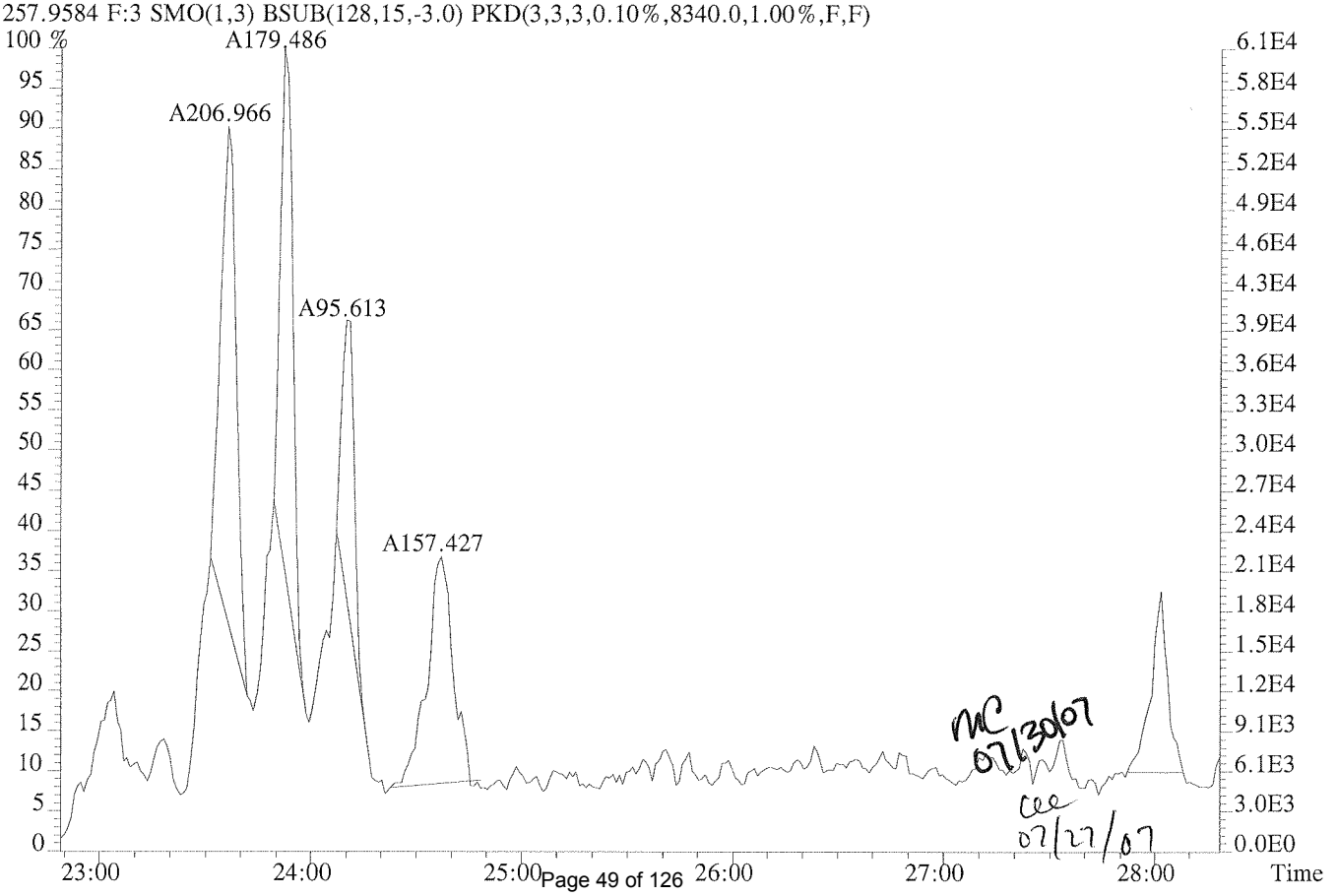

280.9825 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210821 #1-352 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
255.9613 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6604.0,1.00%,F,F)

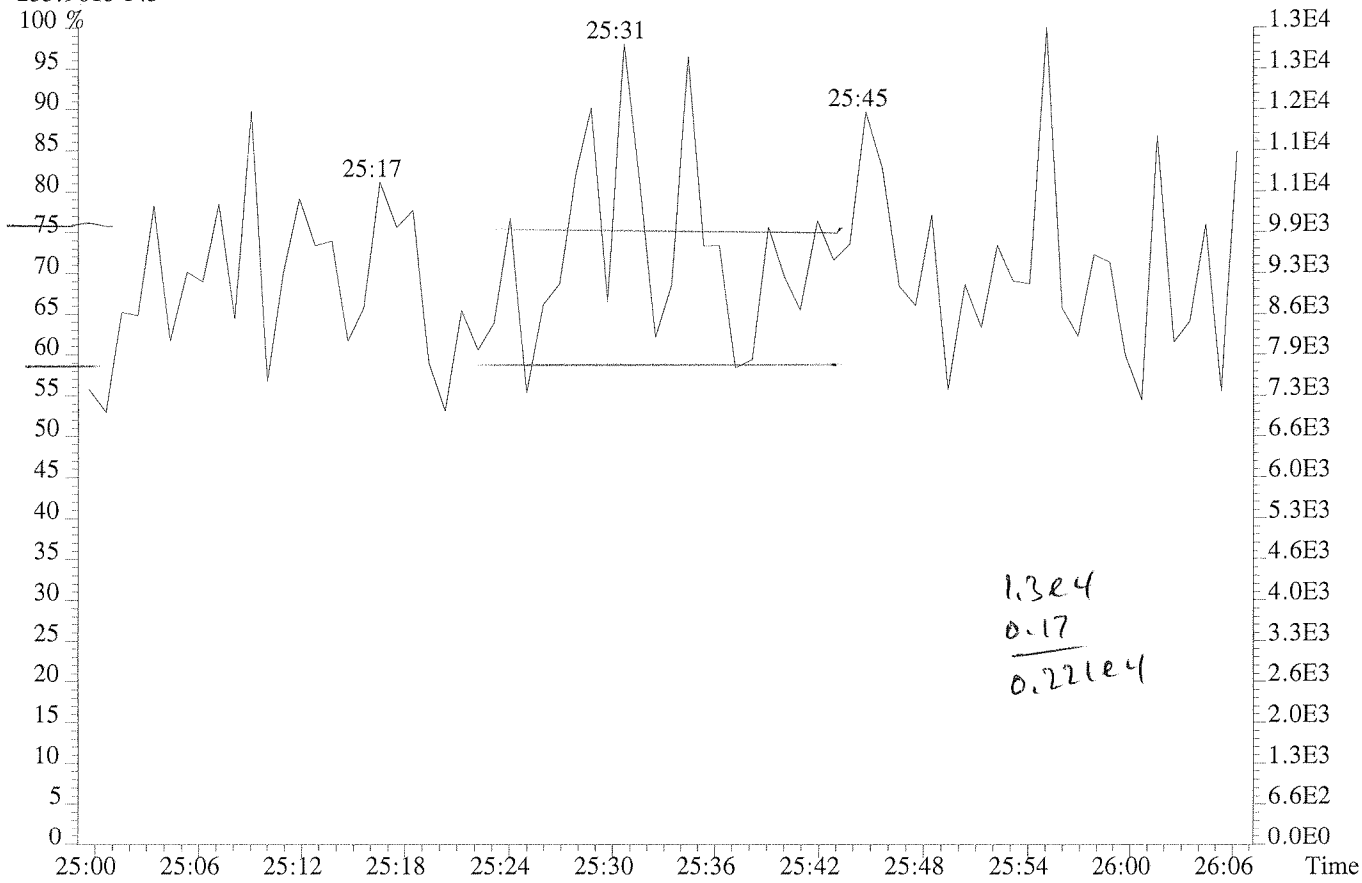



257.9584 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8340.0,1.00%,F,F)

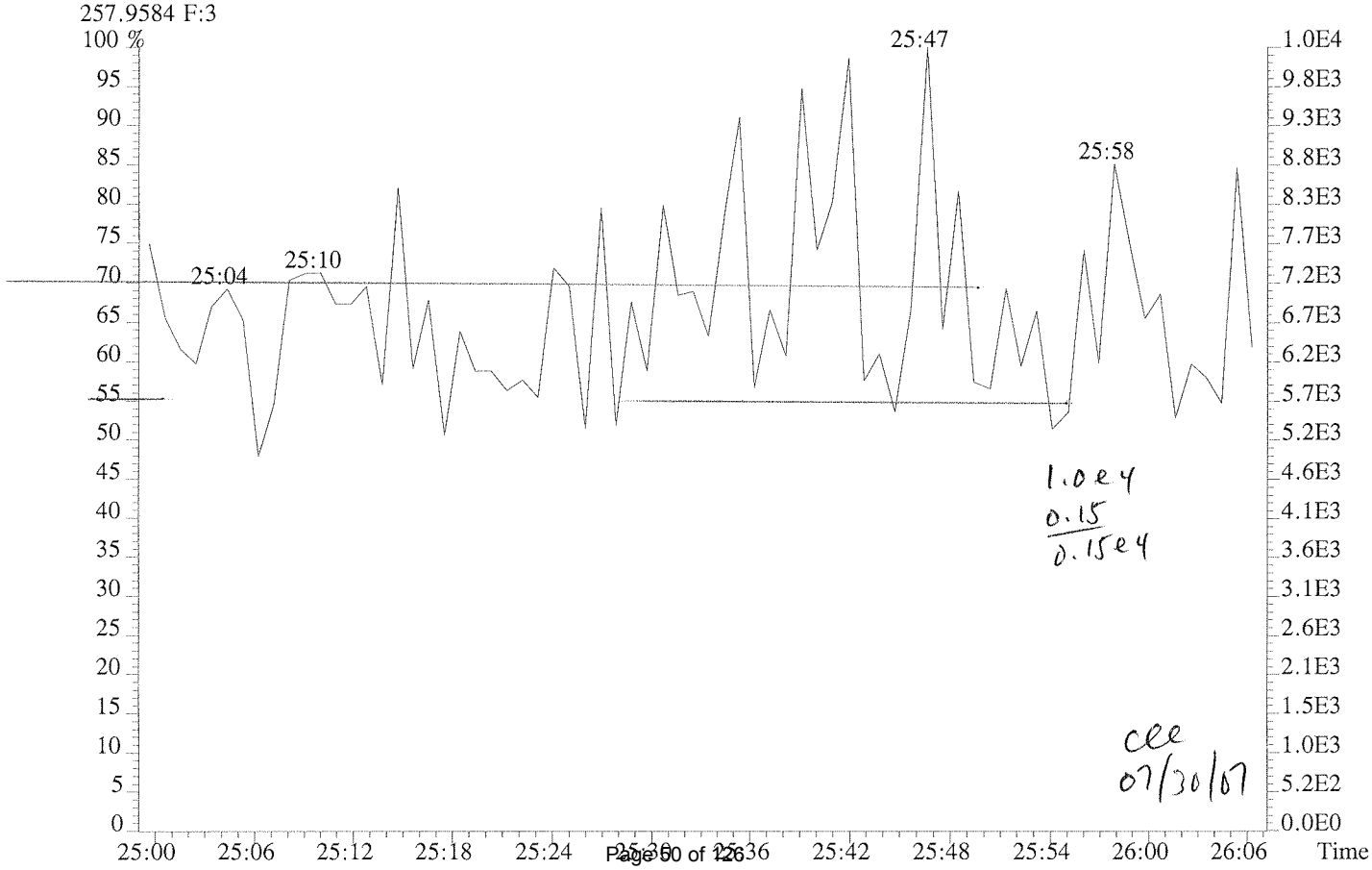



MC 07/30/07
CEE 07/27/07

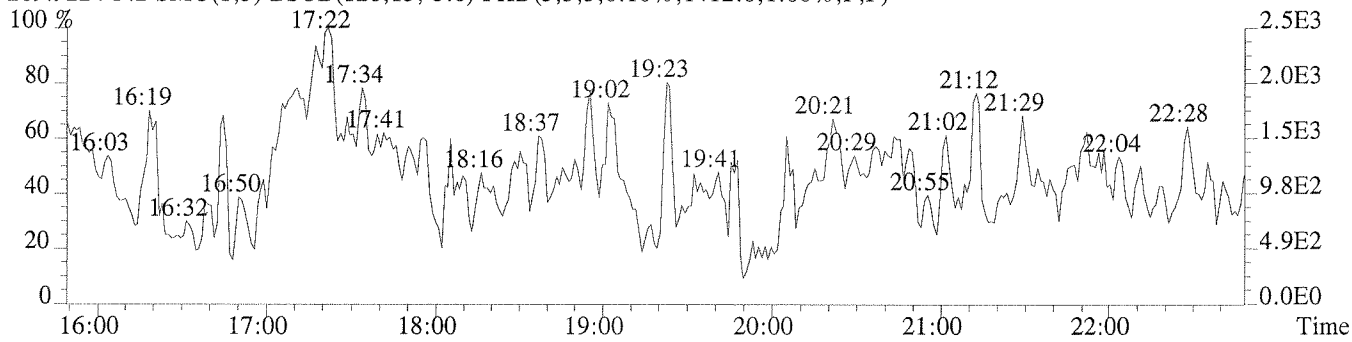
File:U210821 #1-352 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
255.9613 F:3



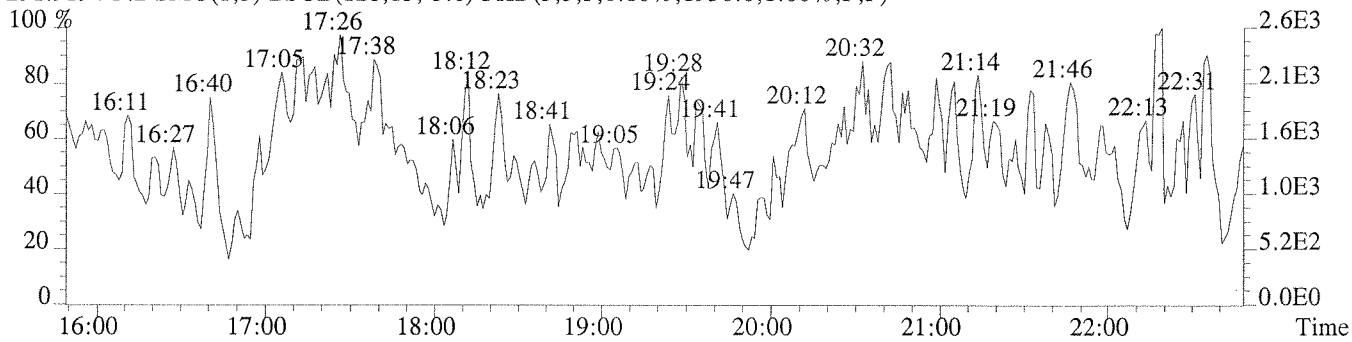

257.9584 F:3



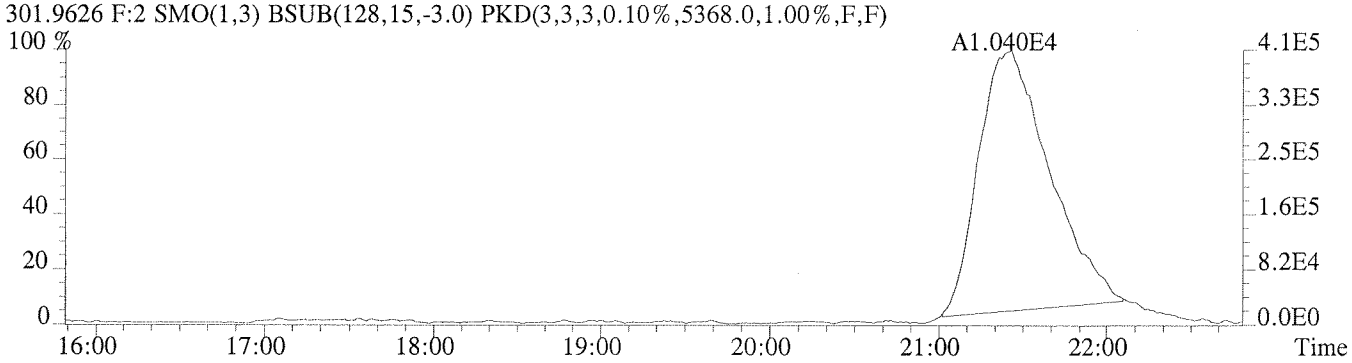
File:U210821 #1-386 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
289.9224 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1412.0,1.00%,F,F)



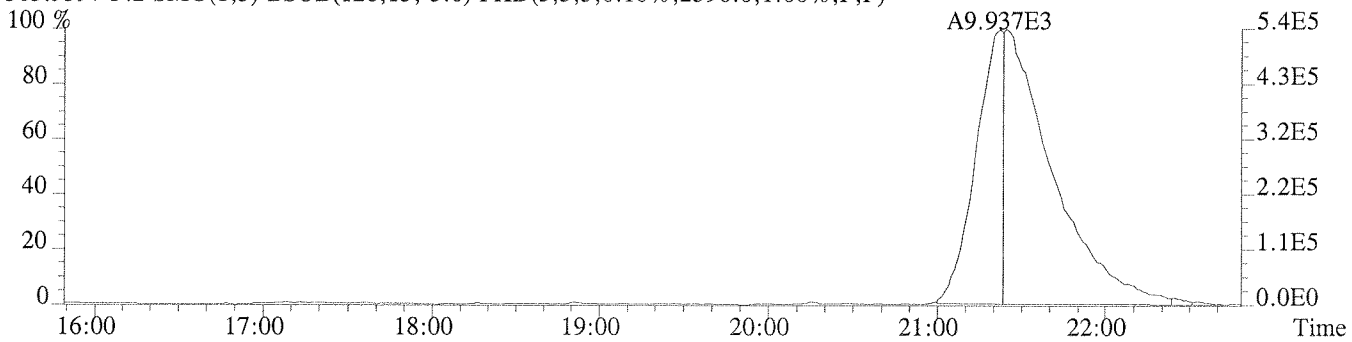

291.9194 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1936.0,1.00%,F,F)



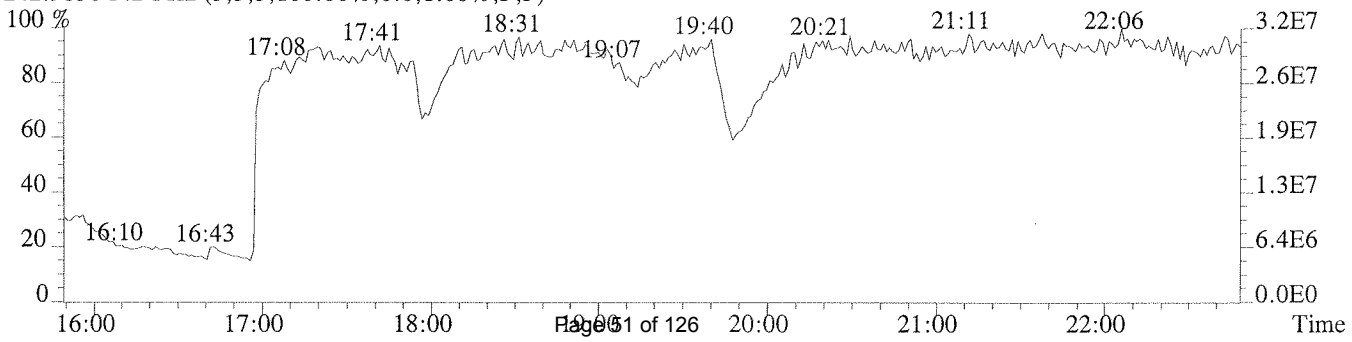

301.9626 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5368.0,1.00%,F,F)



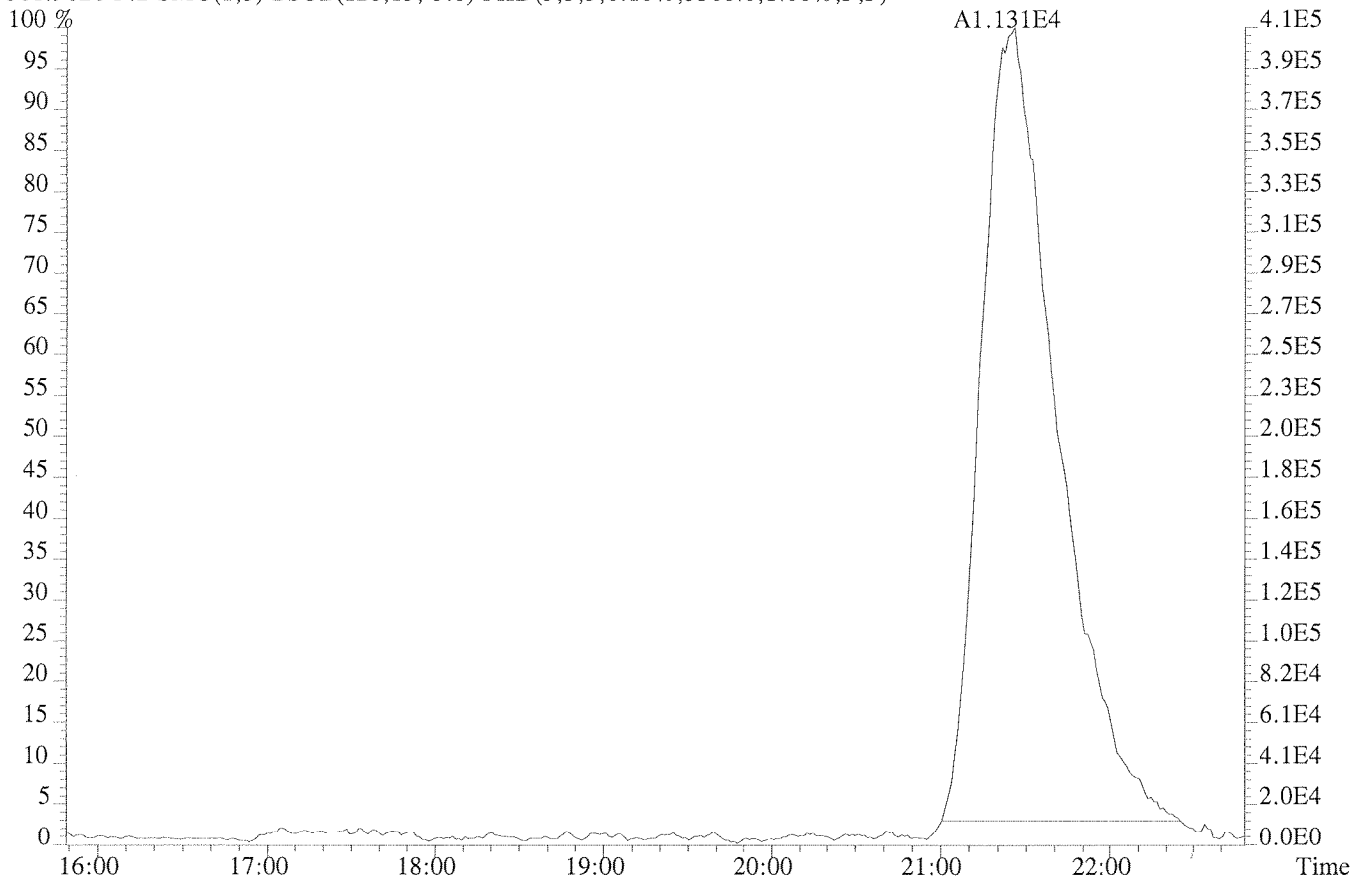

303.9597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2596.0,1.00%,F,F)



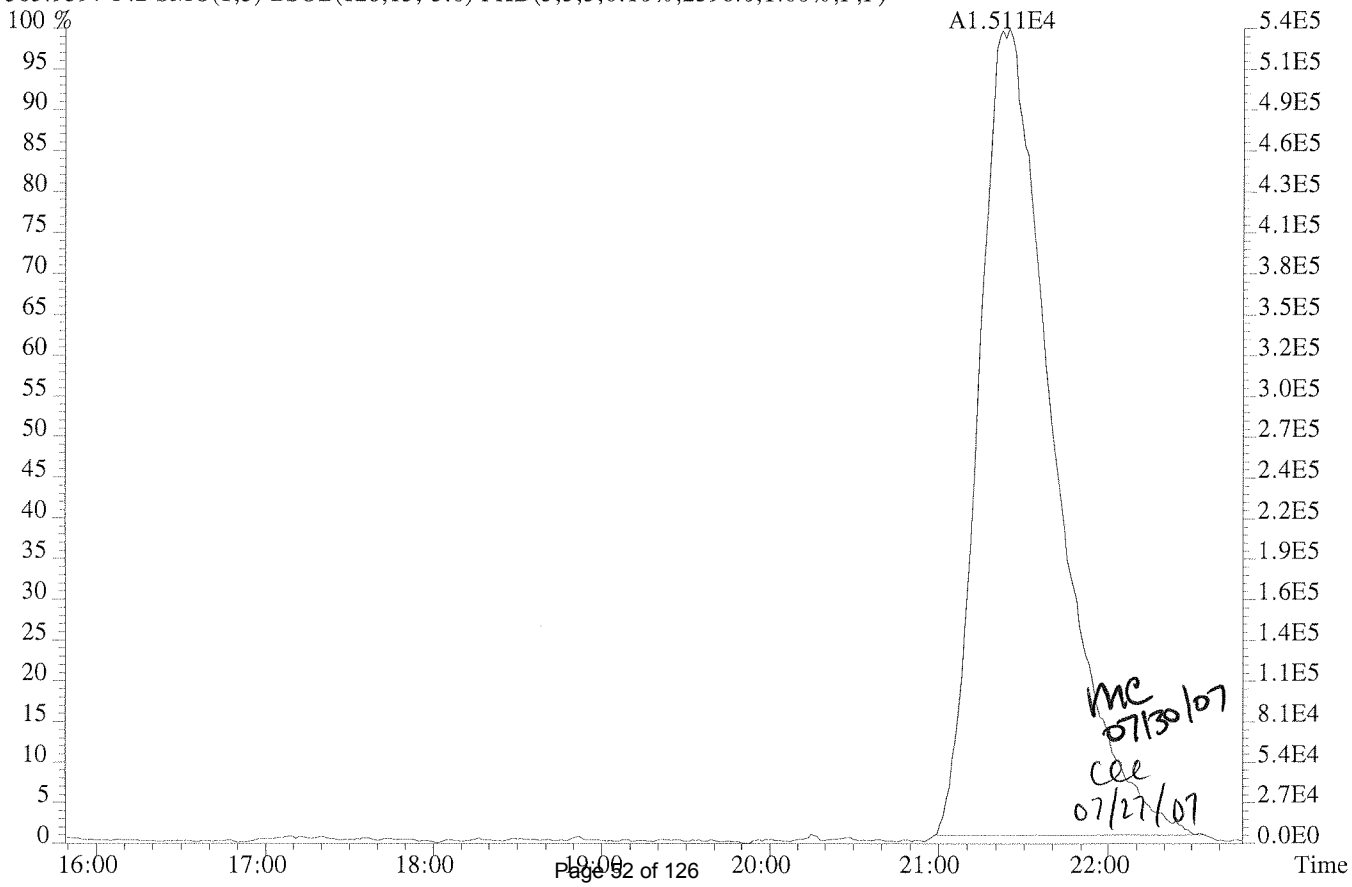

242.9856 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



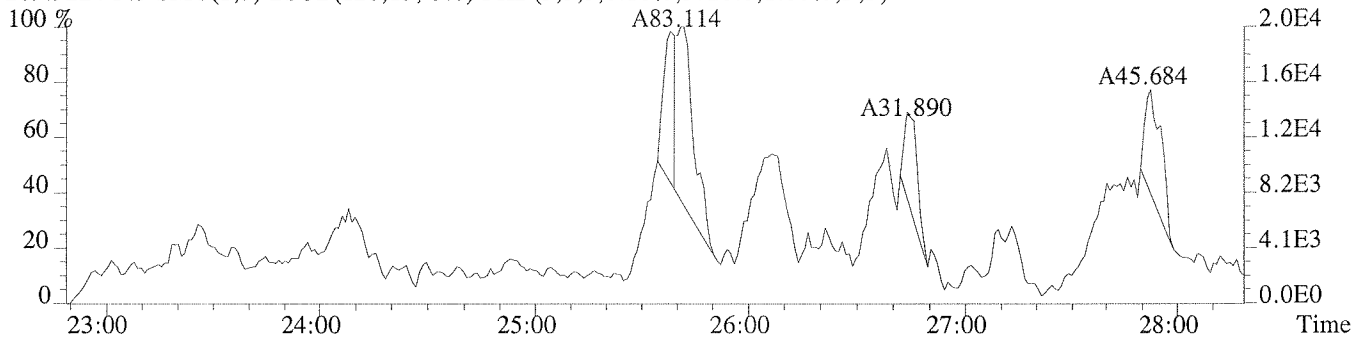
File:U210821 #1-386 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
301.9626 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5368.0,1.00%,F,F)



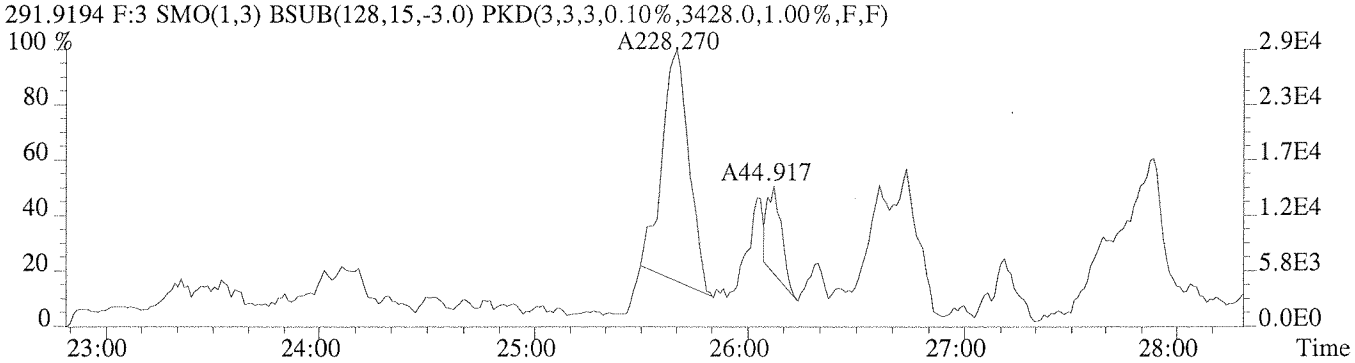

303.9597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2596.0,1.00%,F,F)



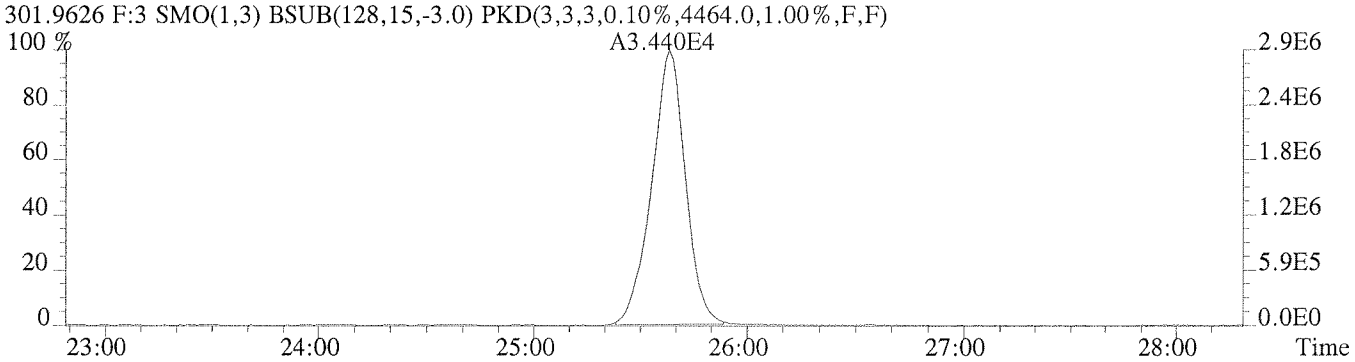
File:U210821 #1-352 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
289.9224 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3720.0,1.00%,F,F)



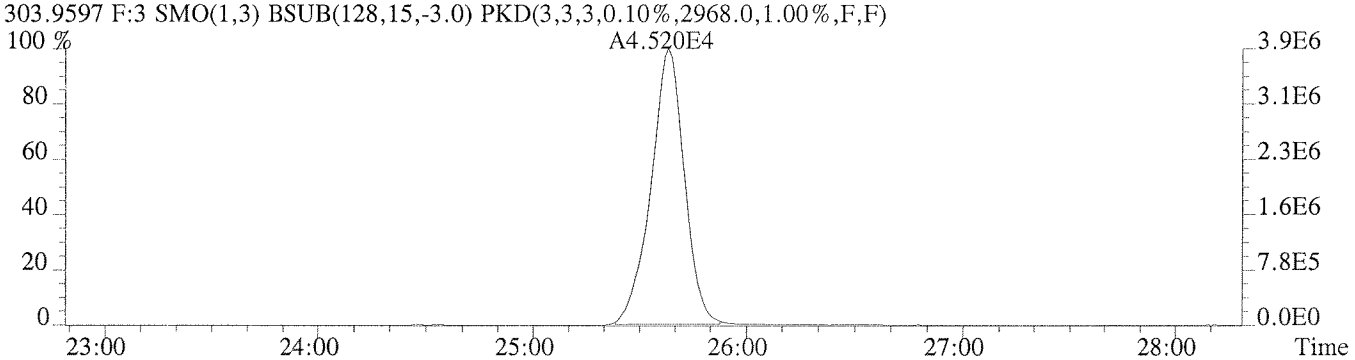

291.9194 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3428.0,1.00%,F,F)



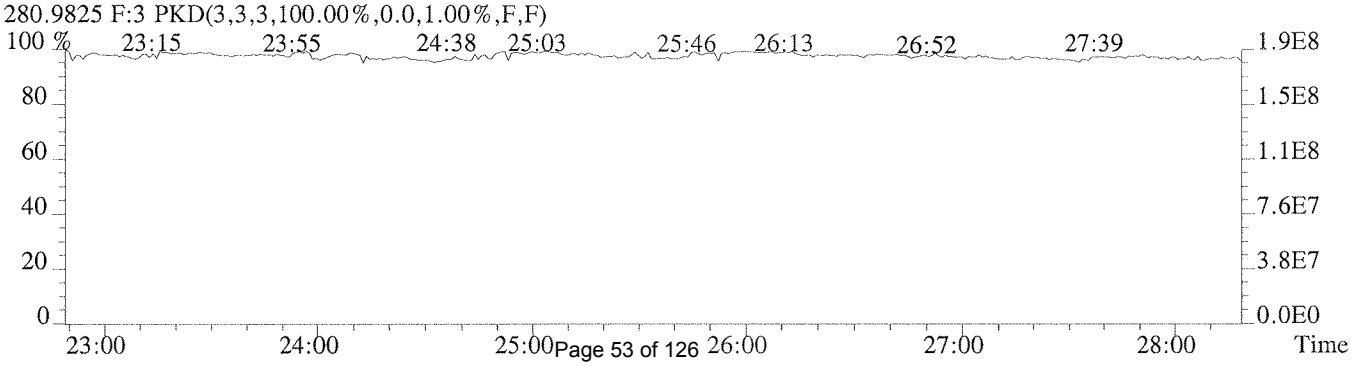

301.9626 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4464.0,1.00%,F,F)



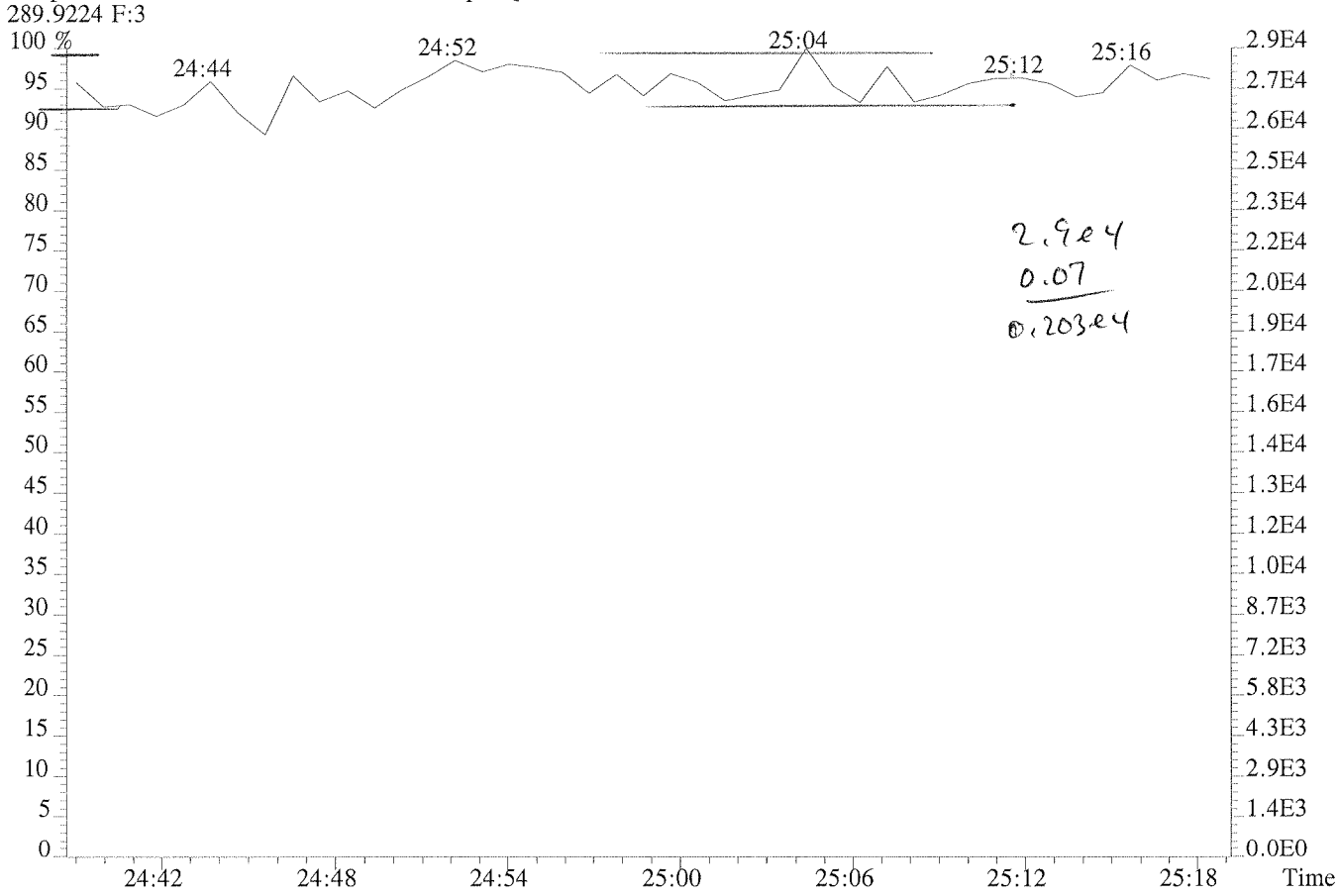

303.9597 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2968.0,1.00%,F,F)



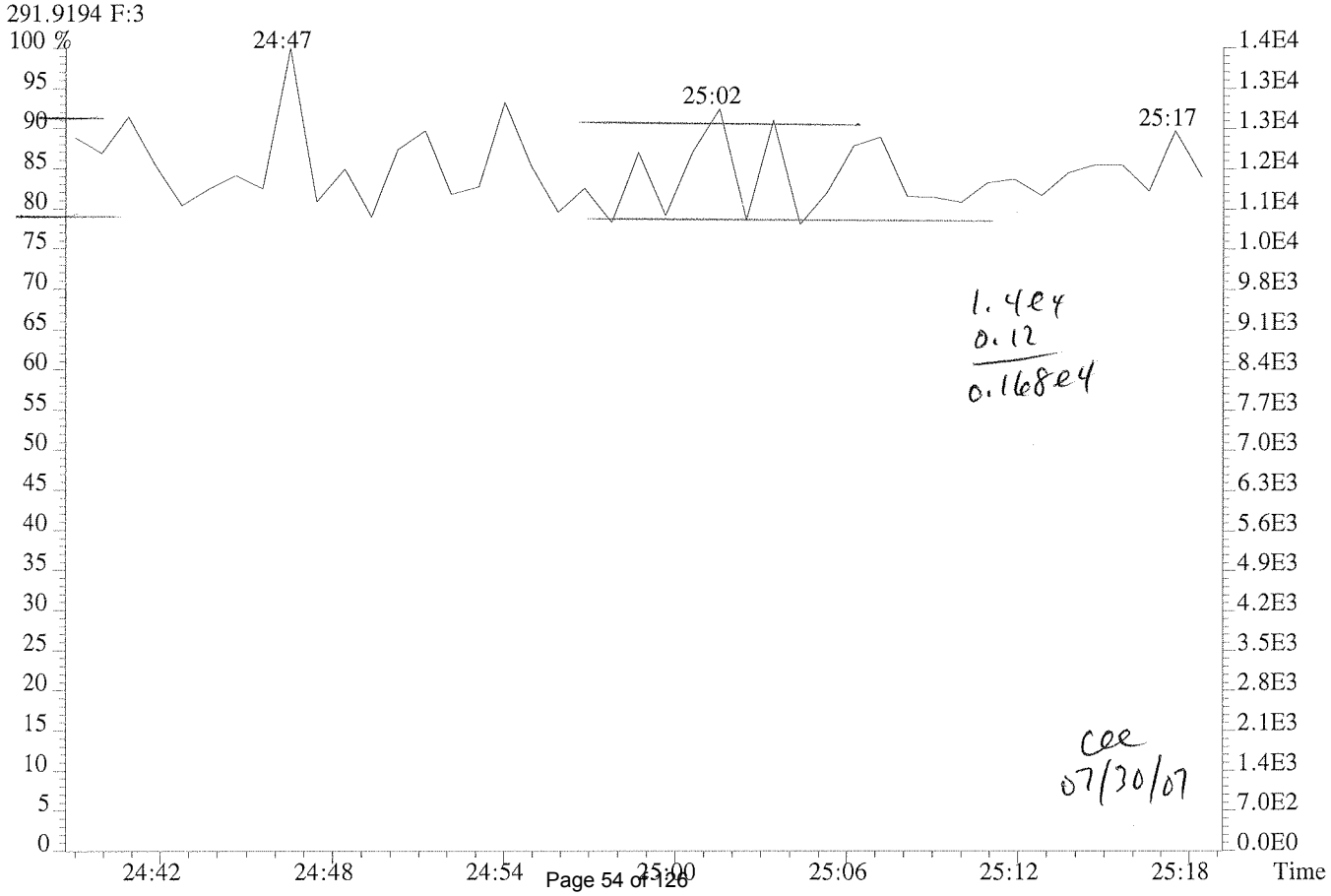

280.9825 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



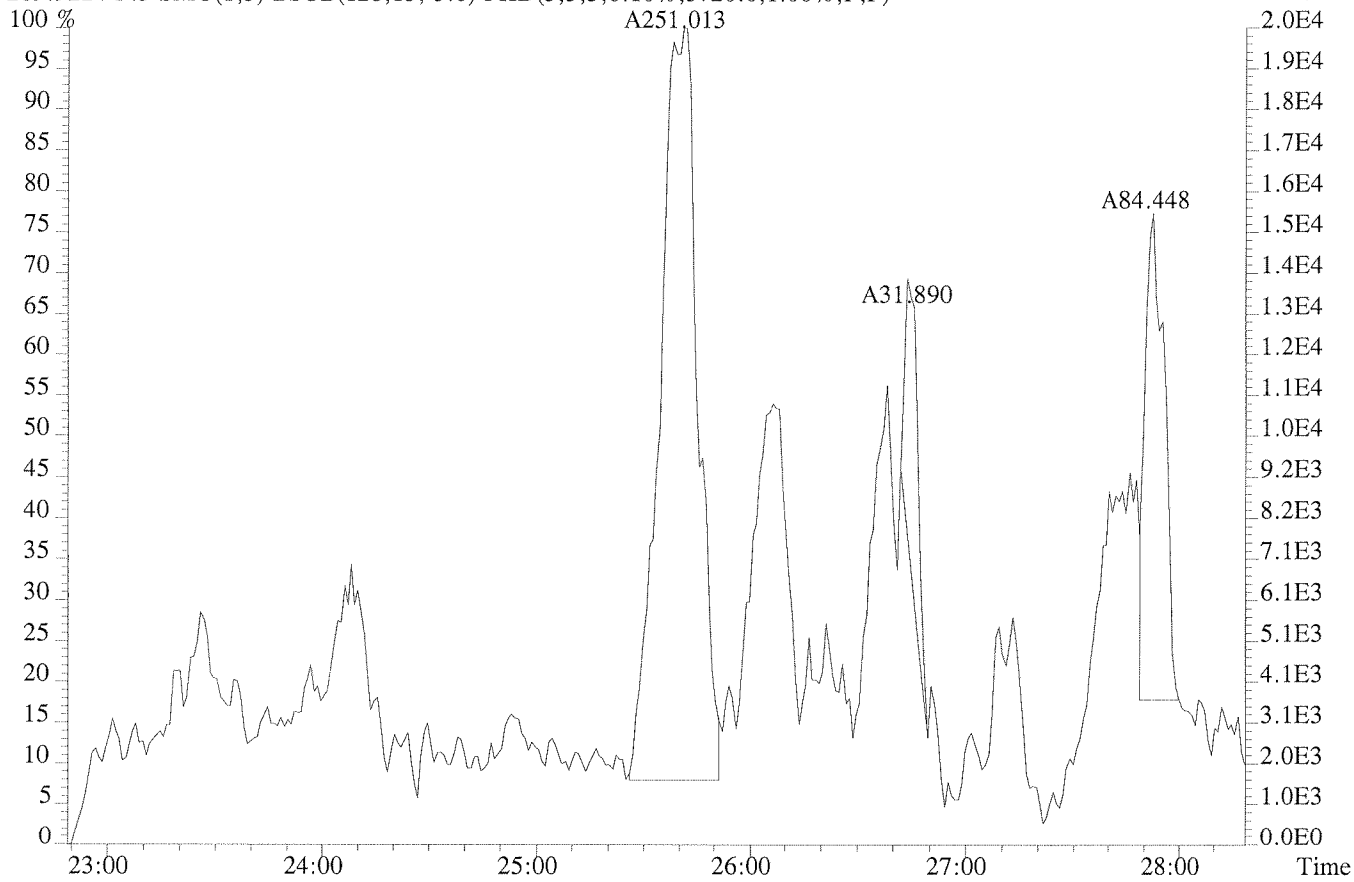
File:U210821 #1-352 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
289.9224 F:3



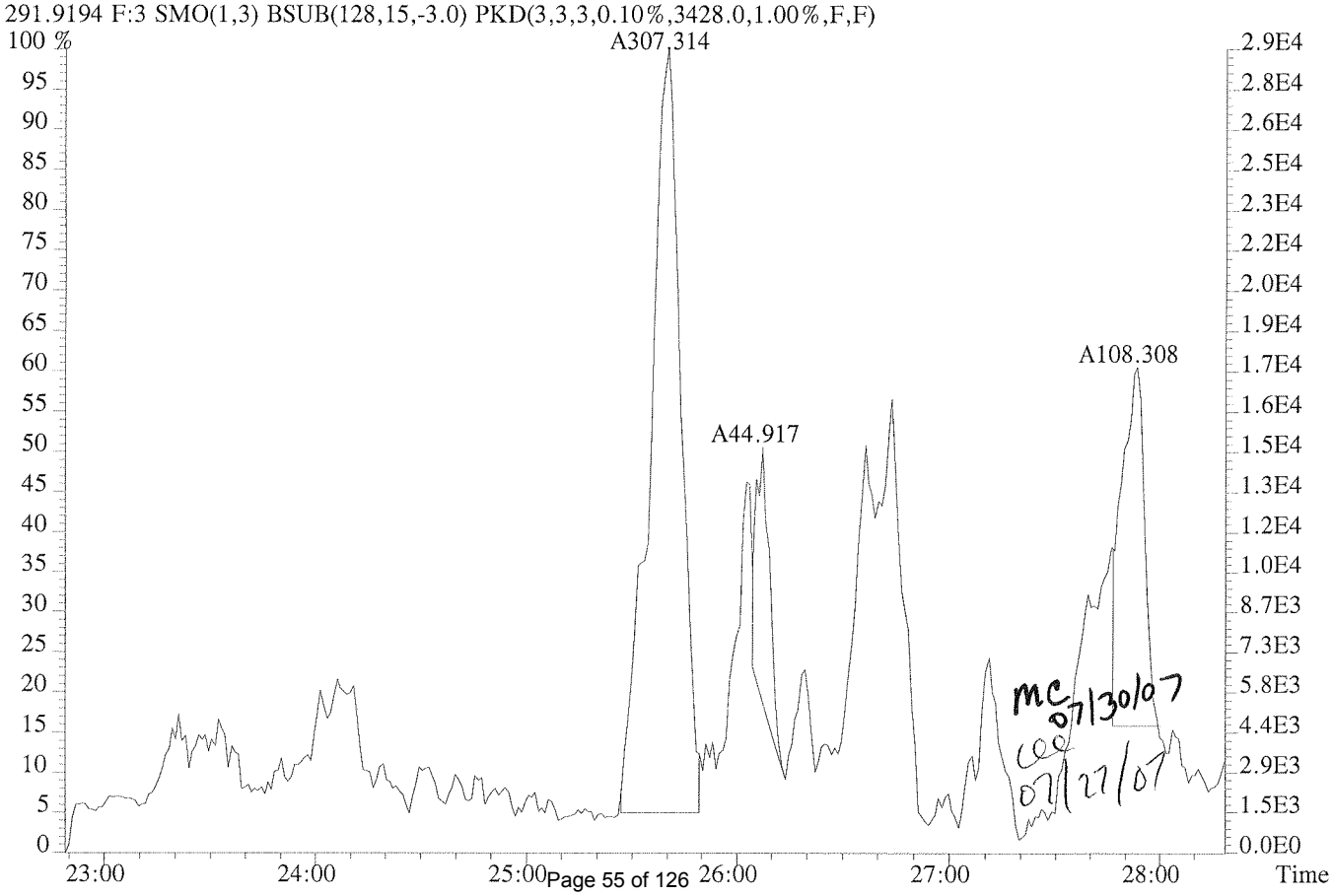

291.9194 F:3



File:U210821 #1-352 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
289.9224 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3720.0,1.00%,F,F)

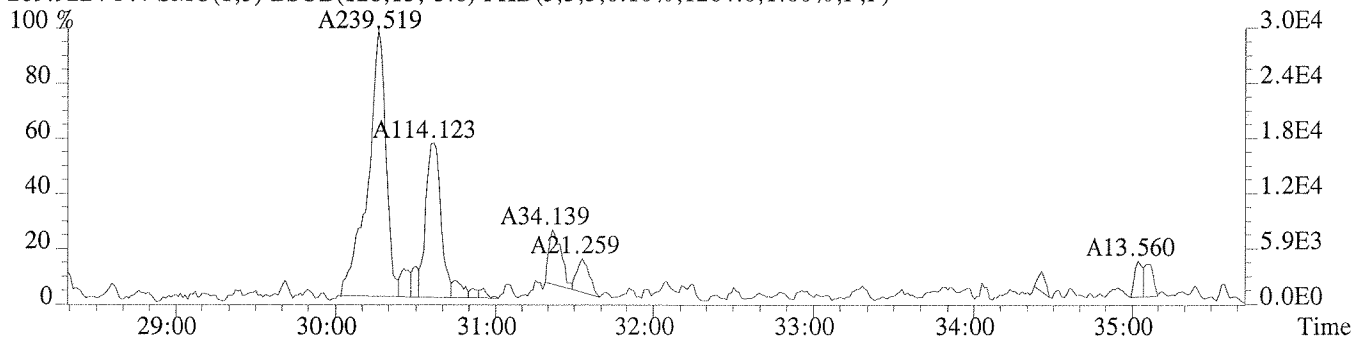



291.9194 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3428.0,1.00%,F,F)

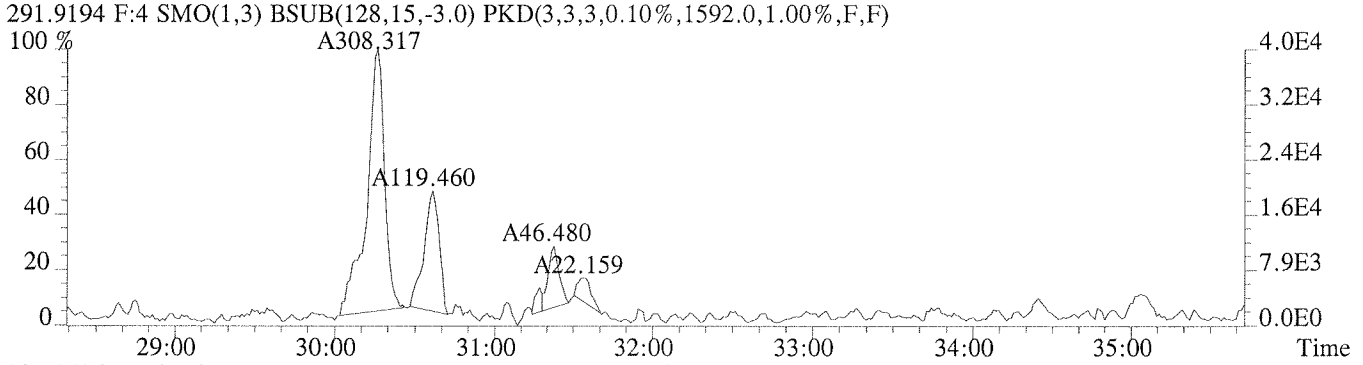



MC 07/30/07
CEO 07/27/07

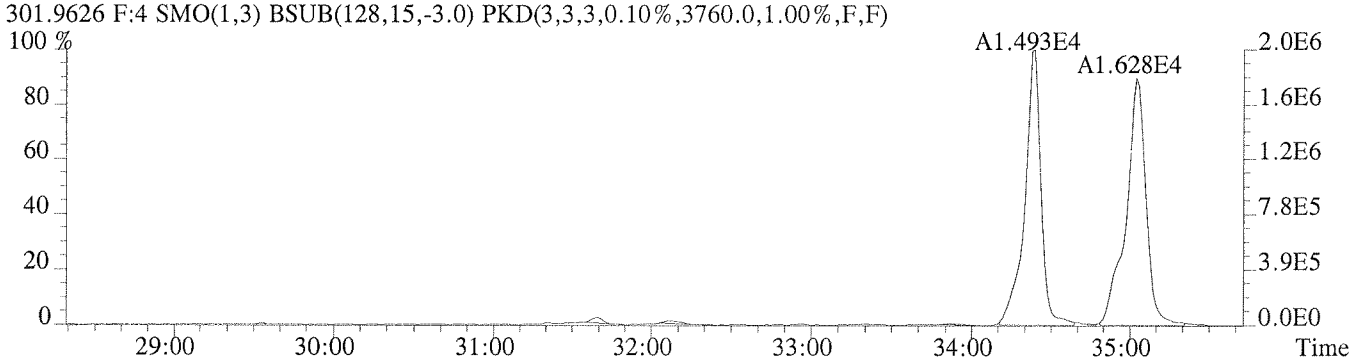
File:U210821 #1-473 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
289.9224 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1264.0,1.00%,F,F)



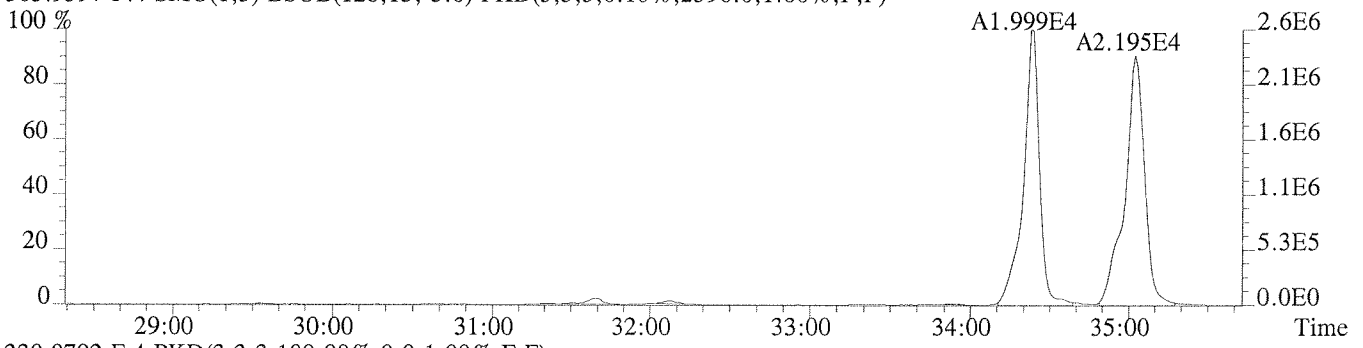

291.9194 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1592.0,1.00%,F,F)



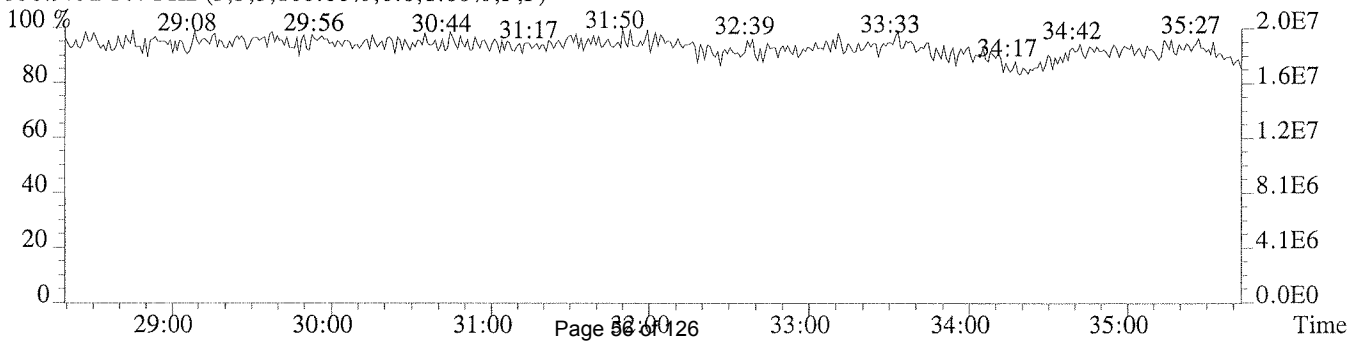

301.9626 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3760.0,1.00%,F,F)



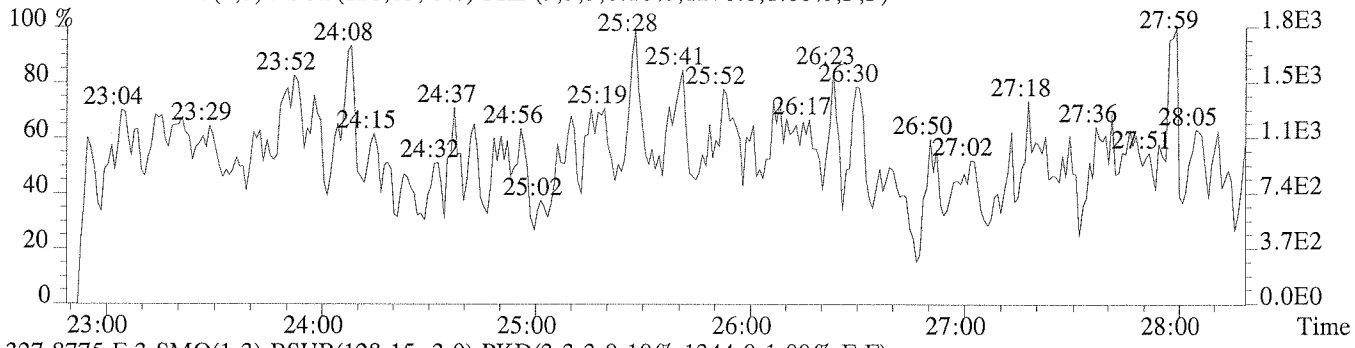

303.9597 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2396.0,1.00%,F,F)



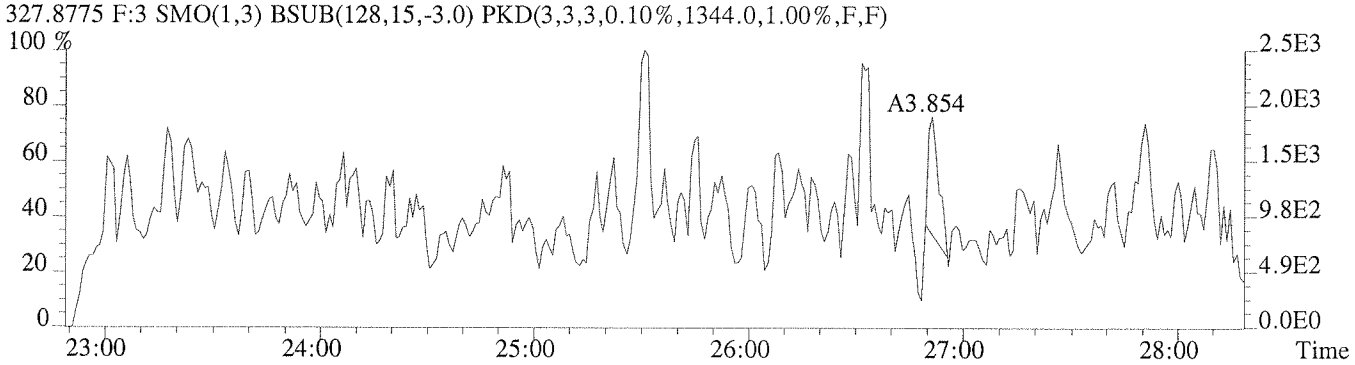

330.9792 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



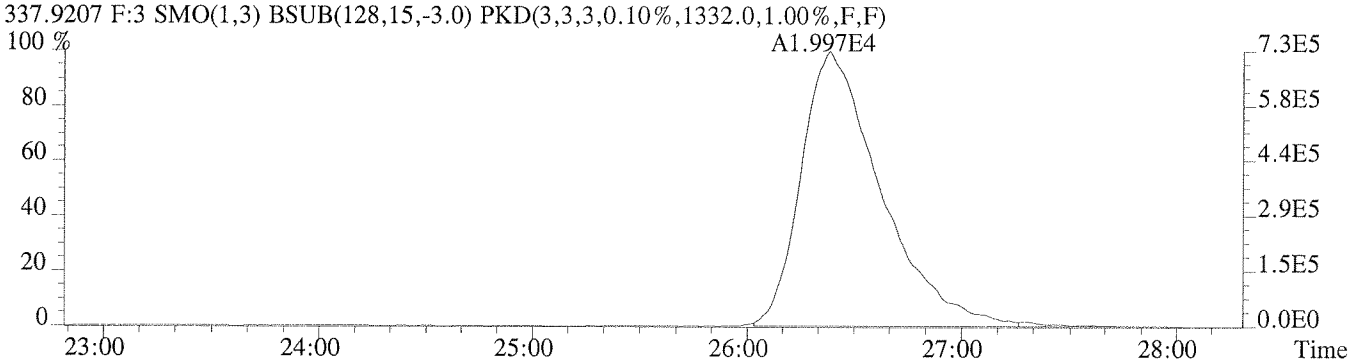
File:U210821 #1-352 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
325.8804 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1276.0,1.00%,F,F)



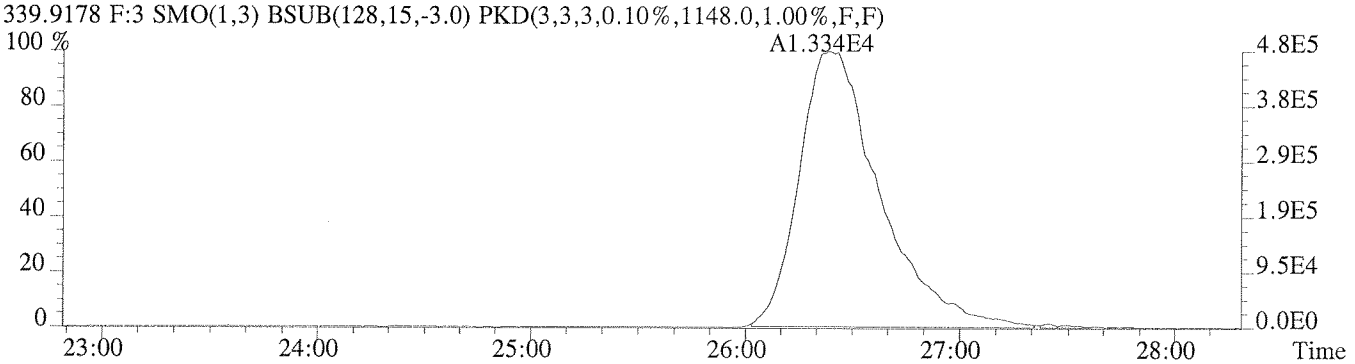

327.8775 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1344.0,1.00%,F,F)



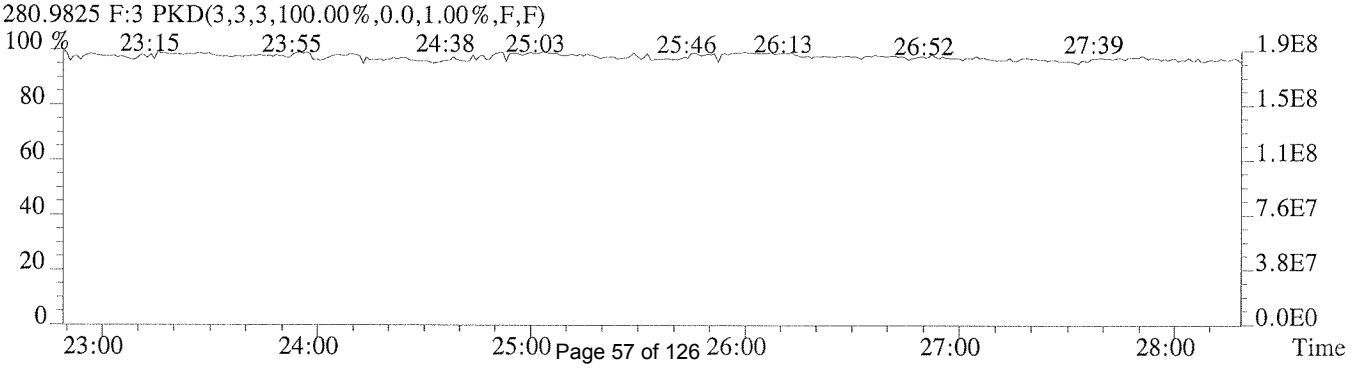

337.9207 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1332.0,1.00%,F,F)



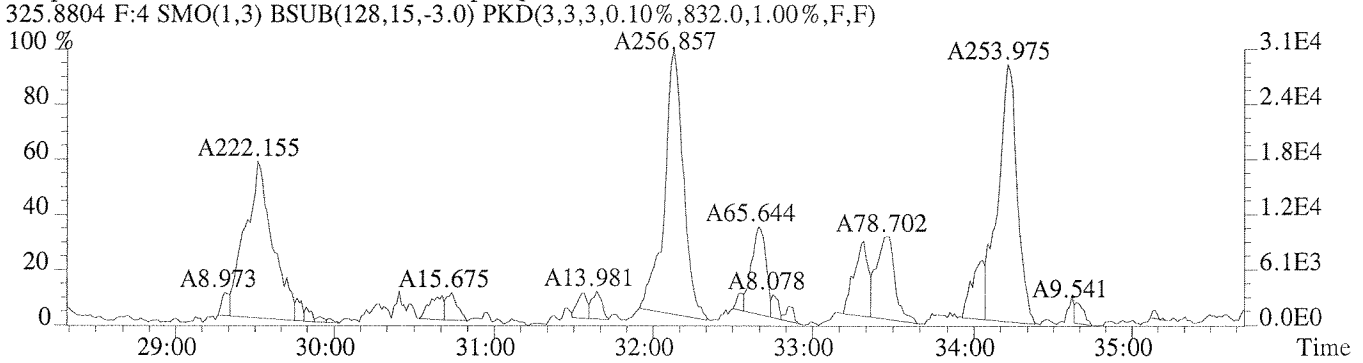

339.9178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1148.0,1.00%,F,F)



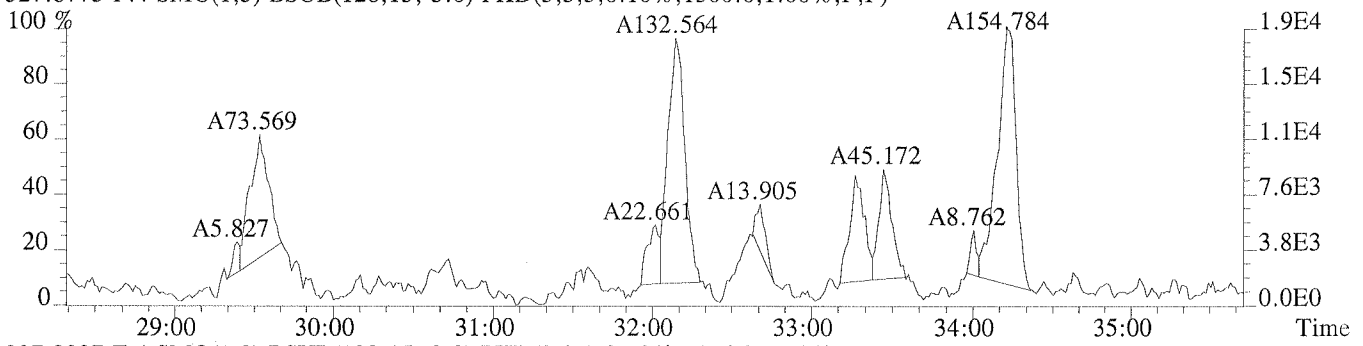

280.9825 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



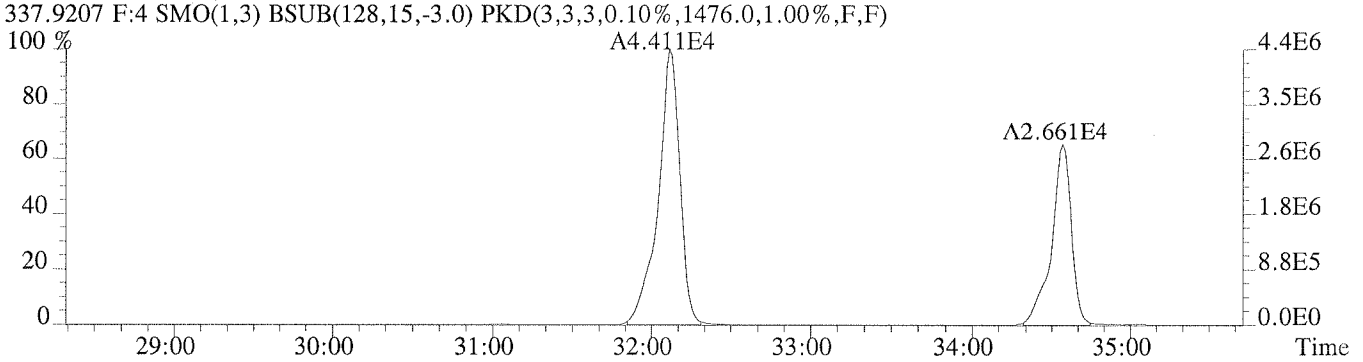
File:U210821 #1-473 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
325.8804 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,832.0,1.00%,F,F)



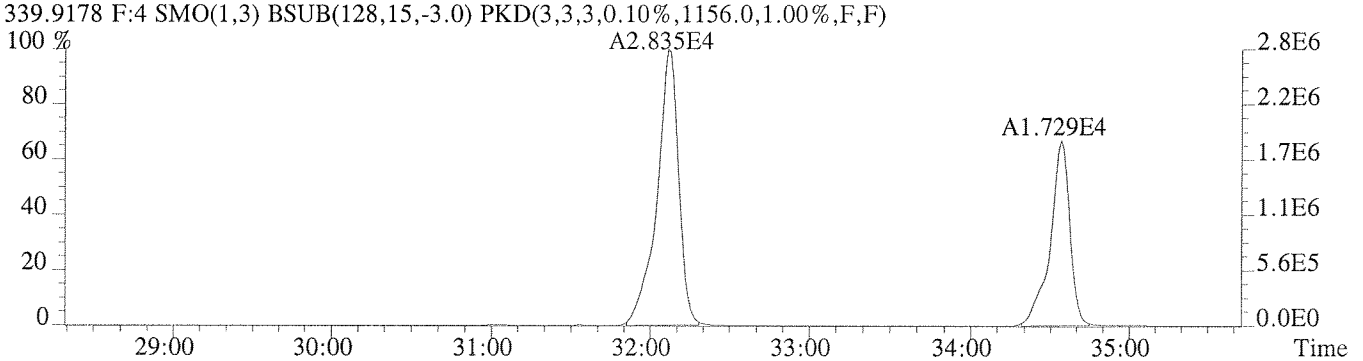

327.8775 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1300.0,1.00%,F,F)



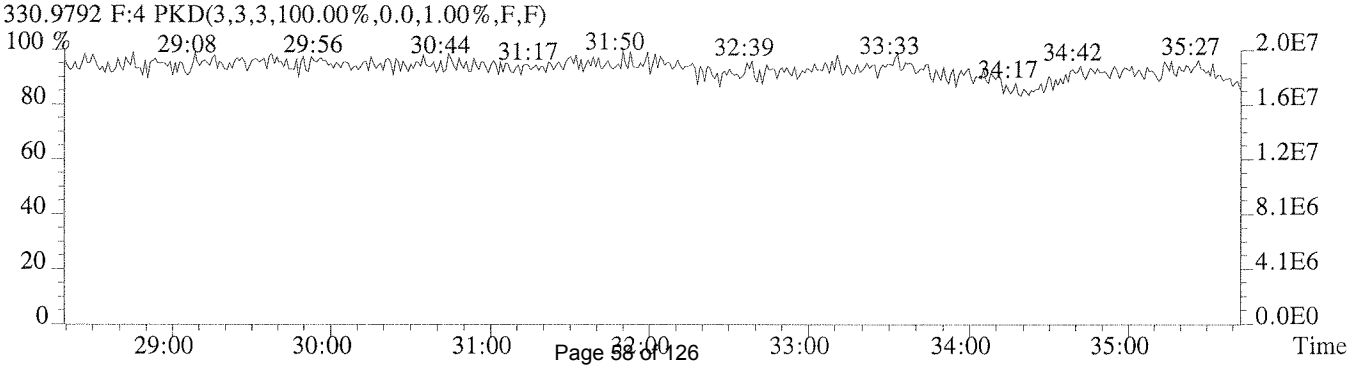

337.9207 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1476.0,1.00%,F,F)



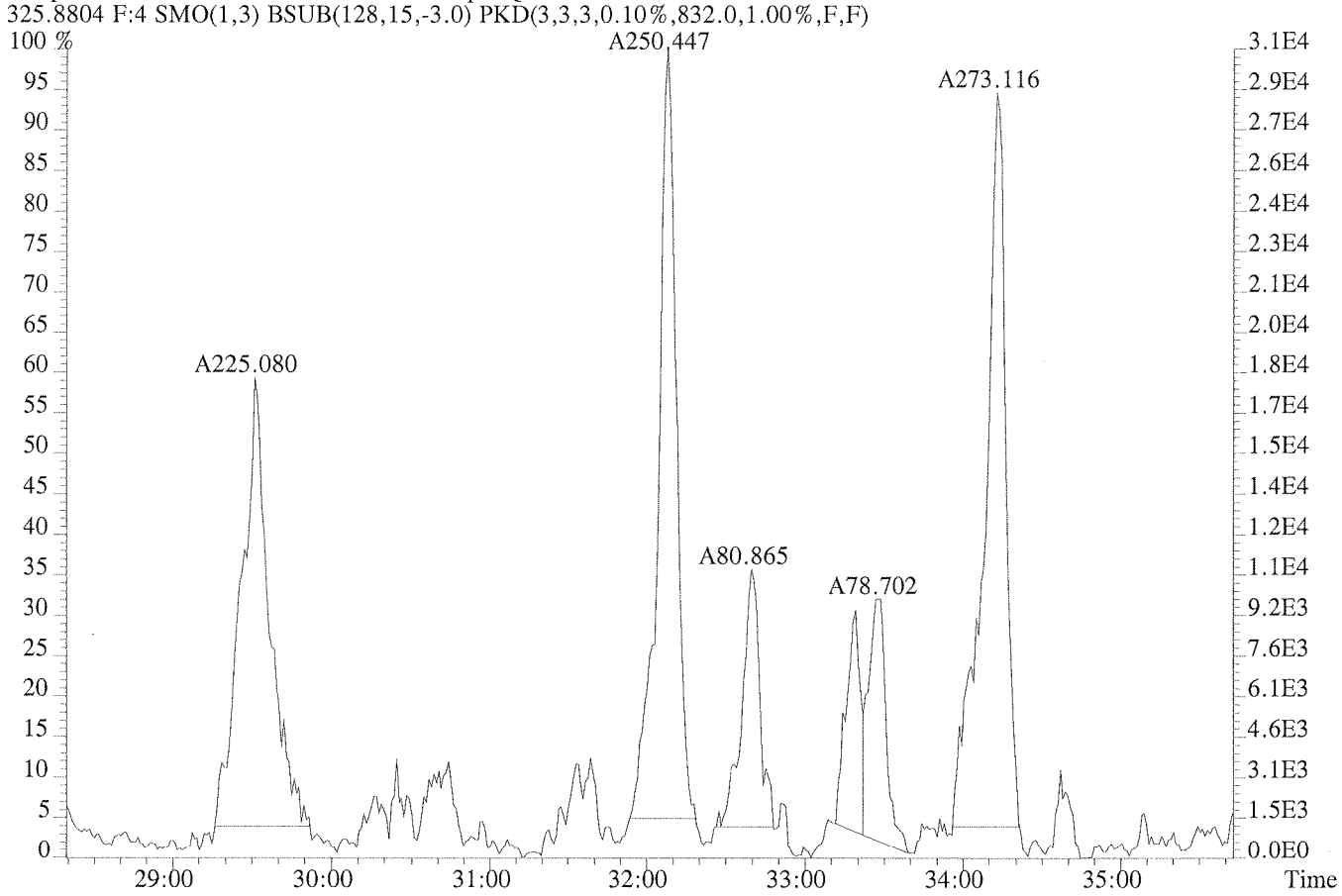

339.9178 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1156.0,1.00%,F,F)



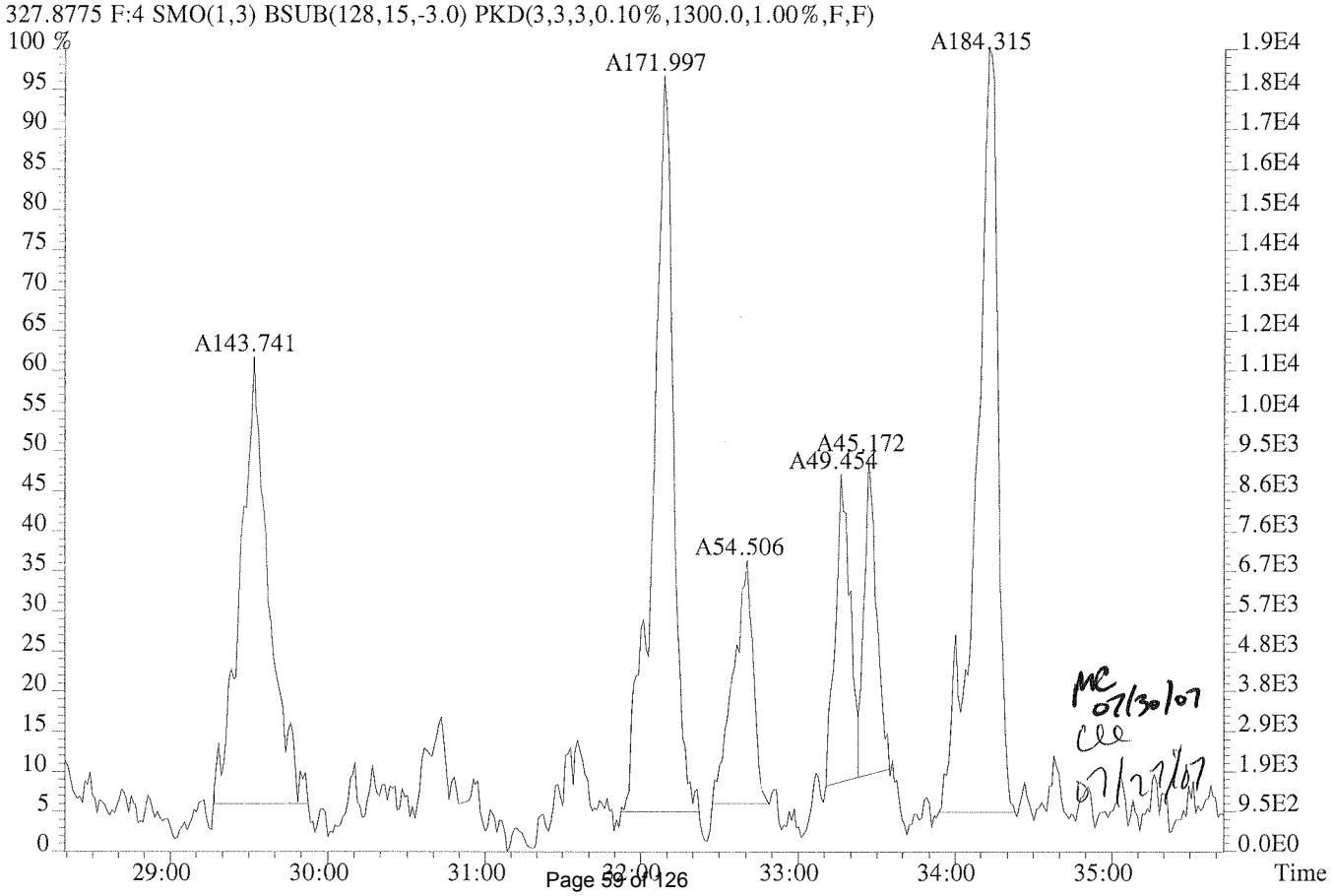

330.9792 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210821 #1-473 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
325.8804 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,832.0,1.00%,F,F)

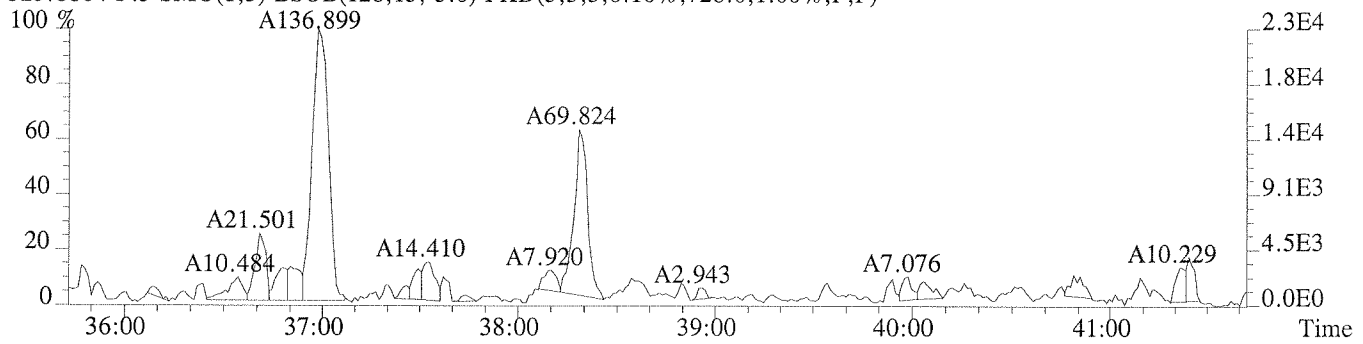



327.8775 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1300.0,1.00%,F,F)

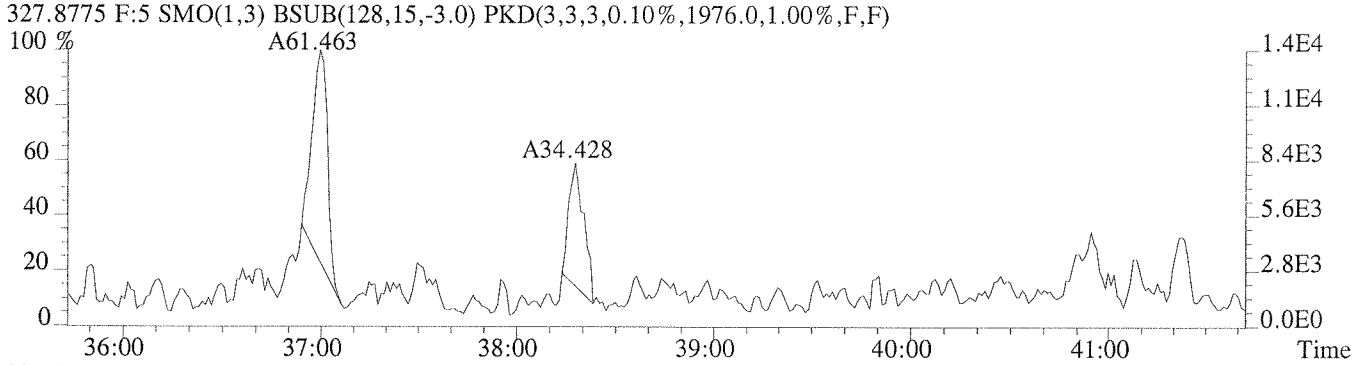



MC 07/30/07
CLE 7/27/07

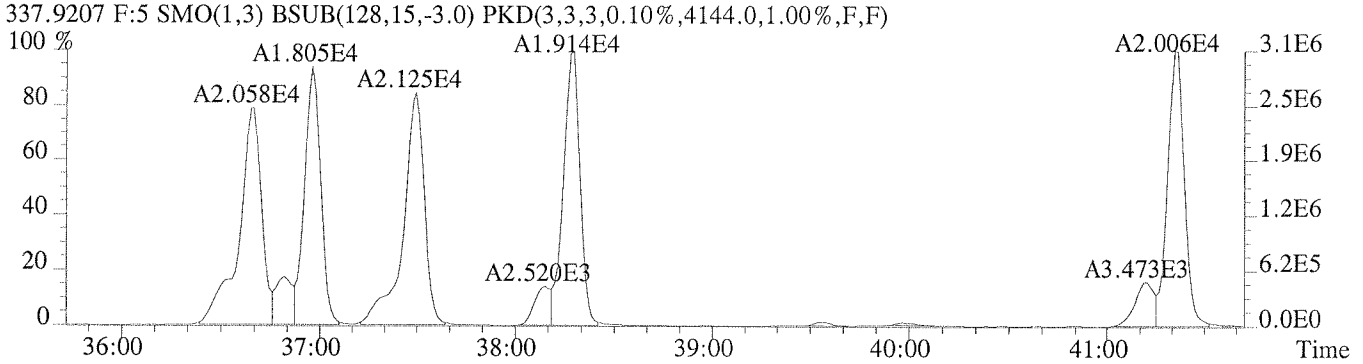
File:U210821 #1-383 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
325.8804 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,F)



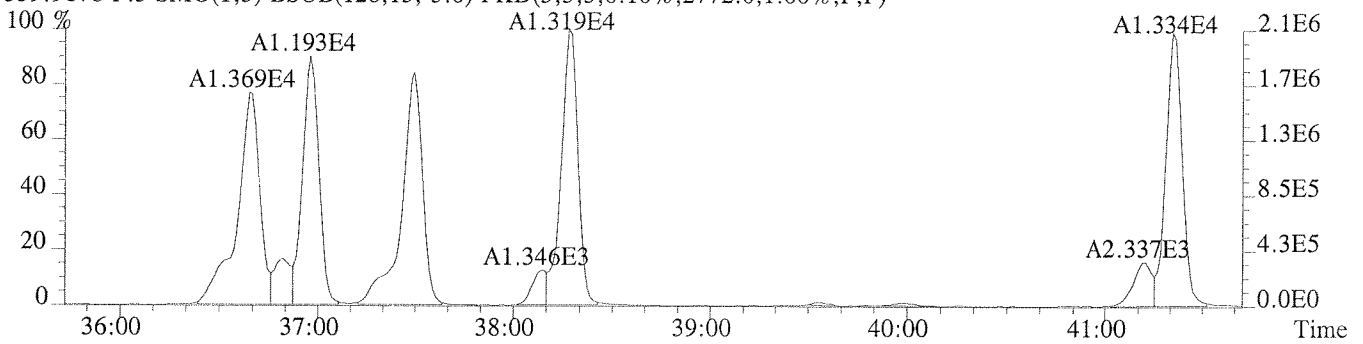

327.8775 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1976.0,1.00%,F,F)



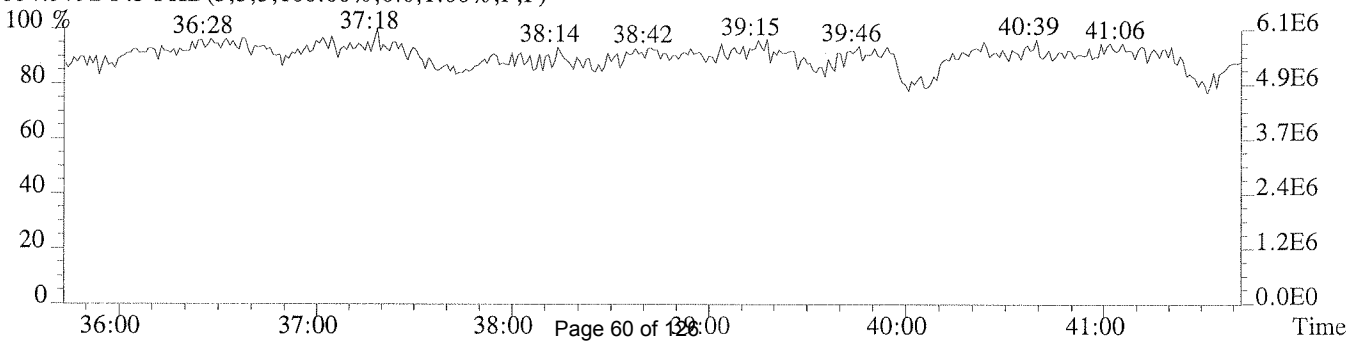

337.9207 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4144.0,1.00%,F,F)



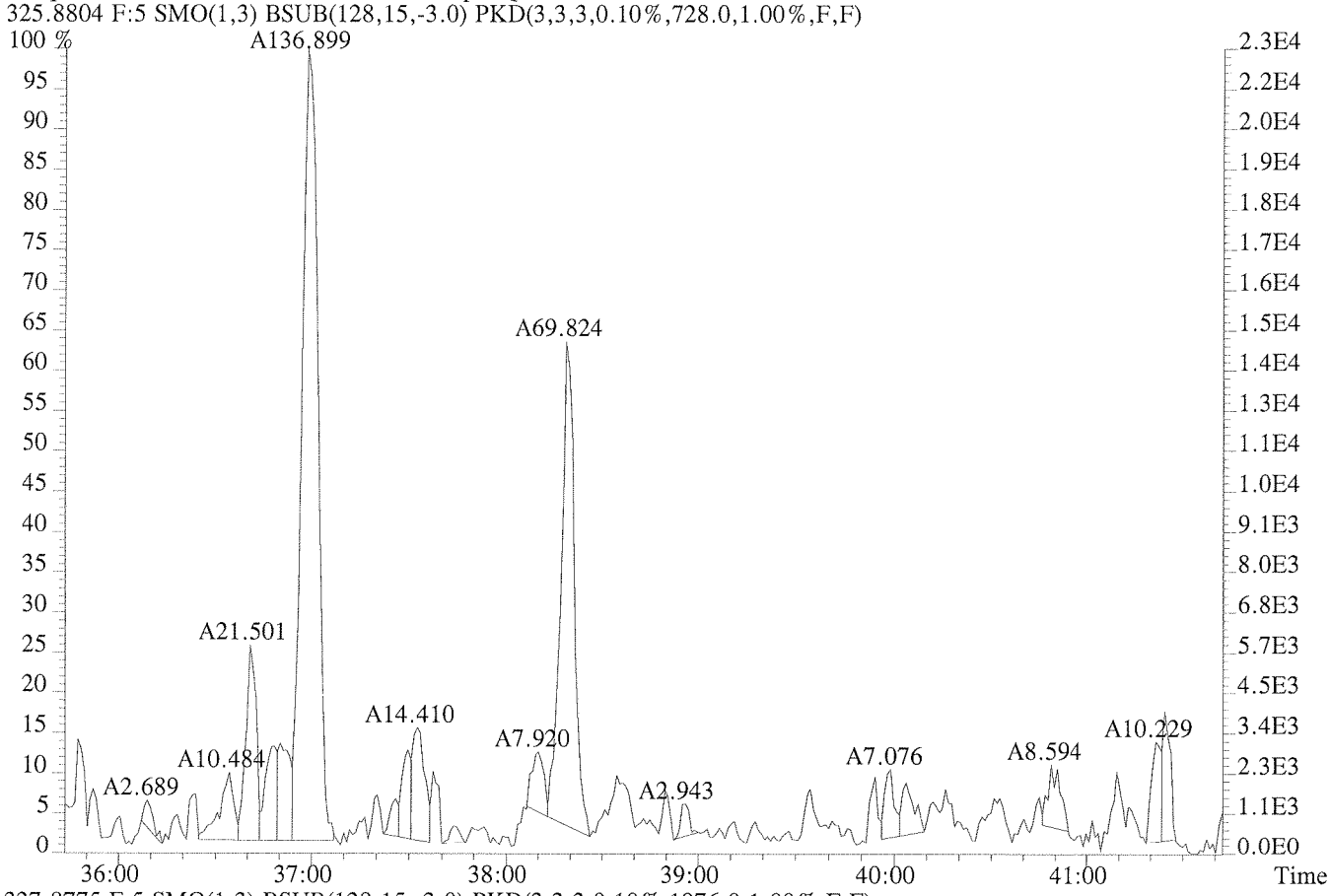

339.9178 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2772.0,1.00%,F,F)



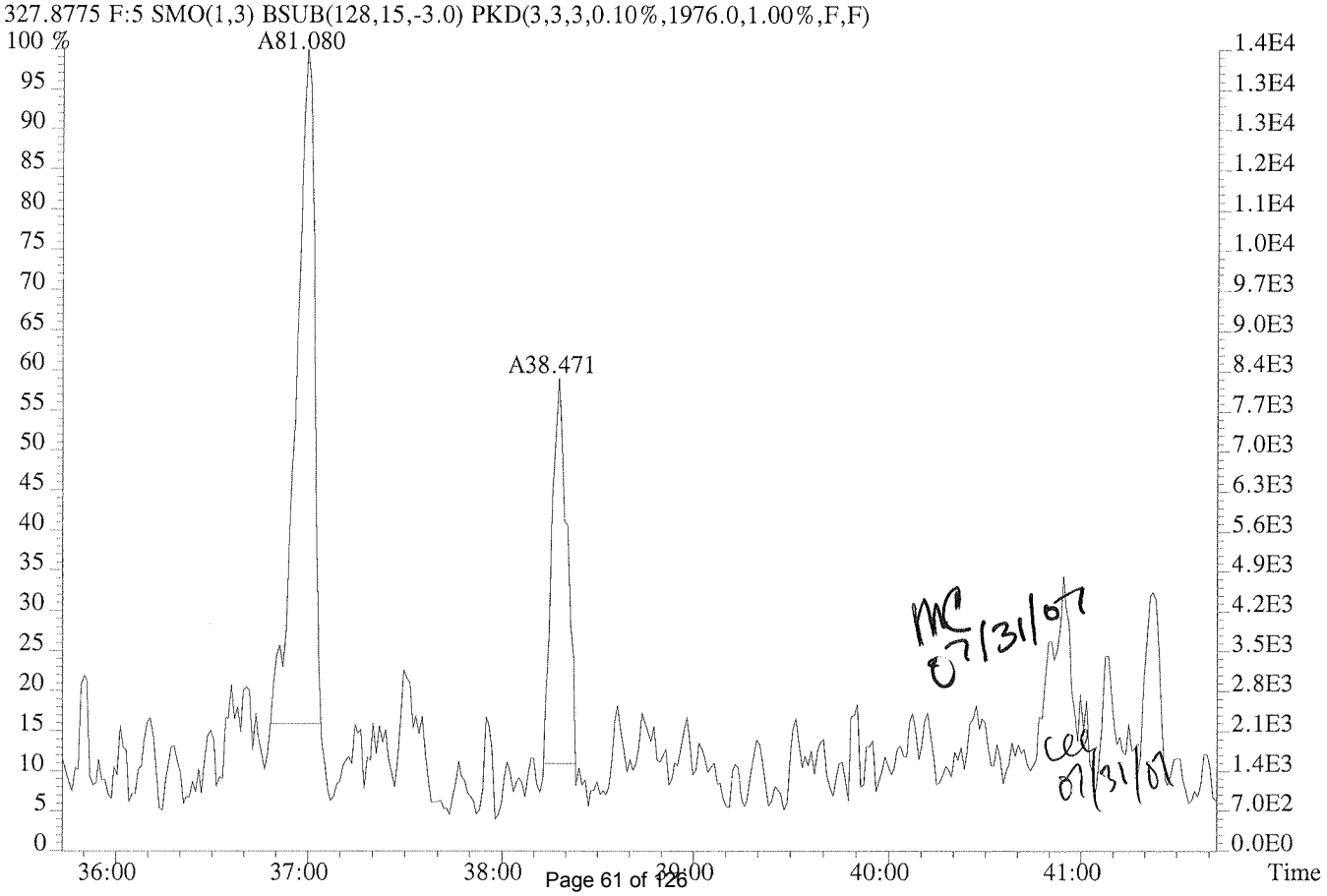

354.9792 F:5 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210821 #1-383 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
325.8804 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,F)



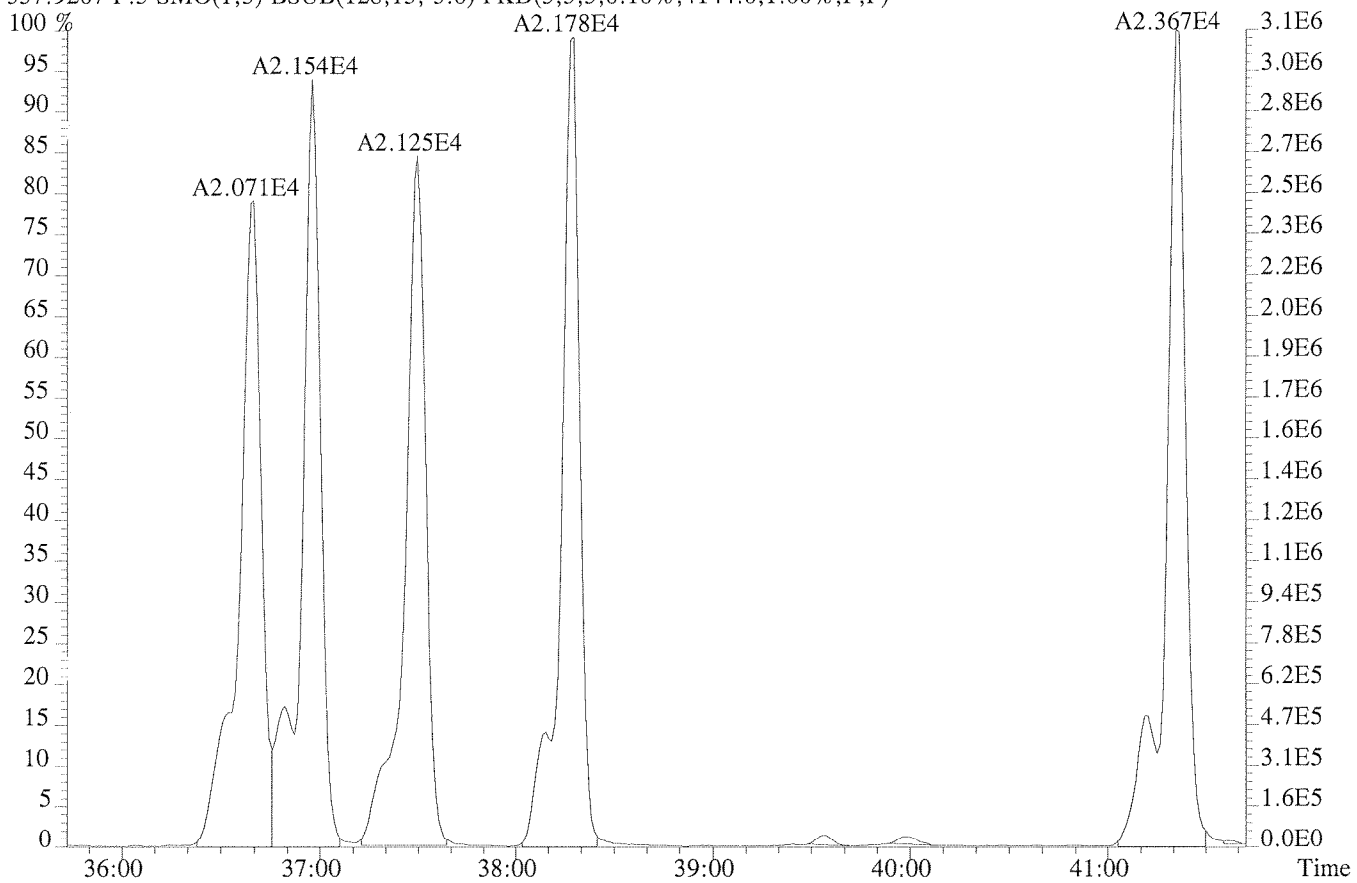

327.8775 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1976.0,1.00%,F,F)



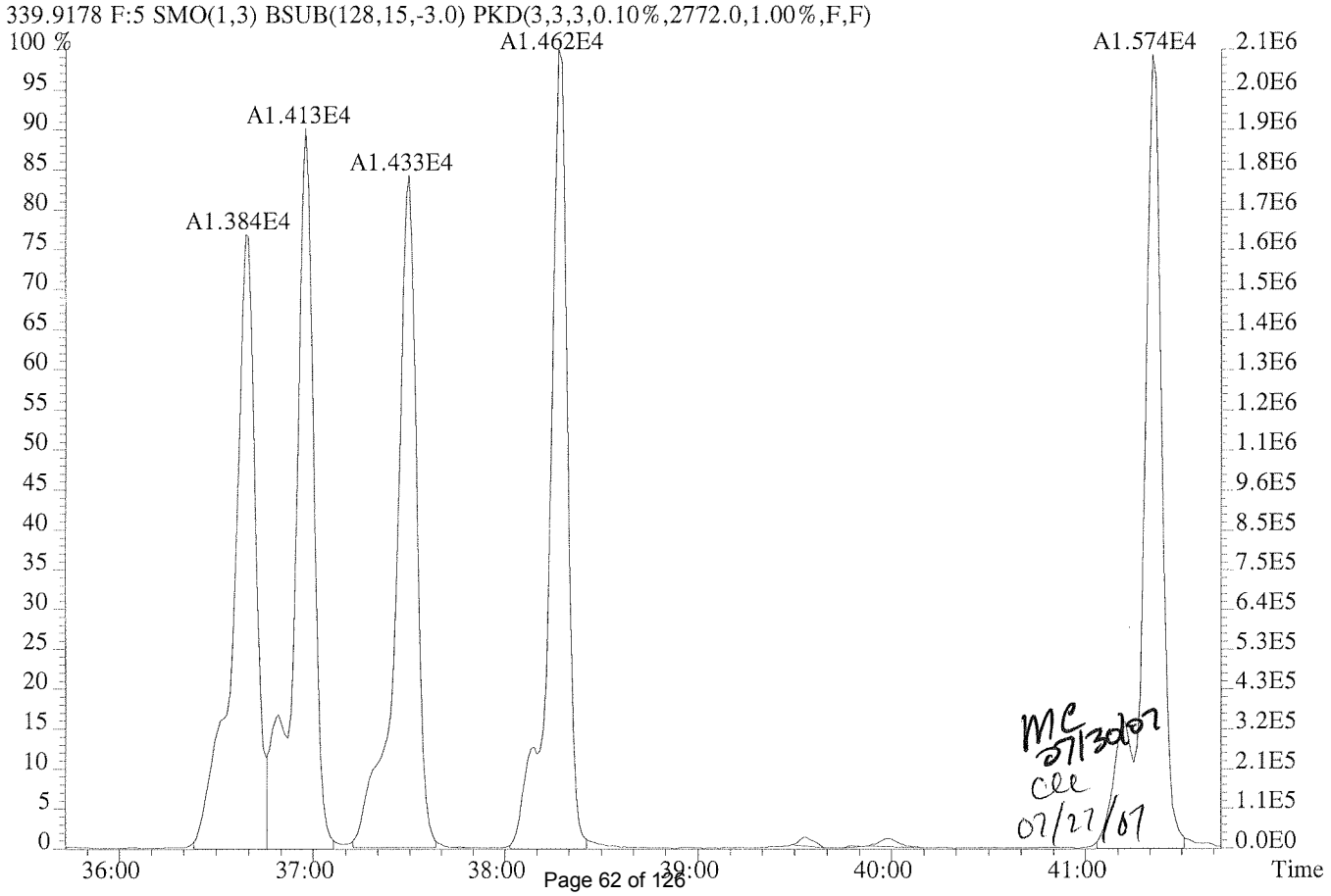

MC 07/31/07

CEE 07/31/07

File:U210821 #1-383 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
337.9207 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4144.0,1.00%,F,F)

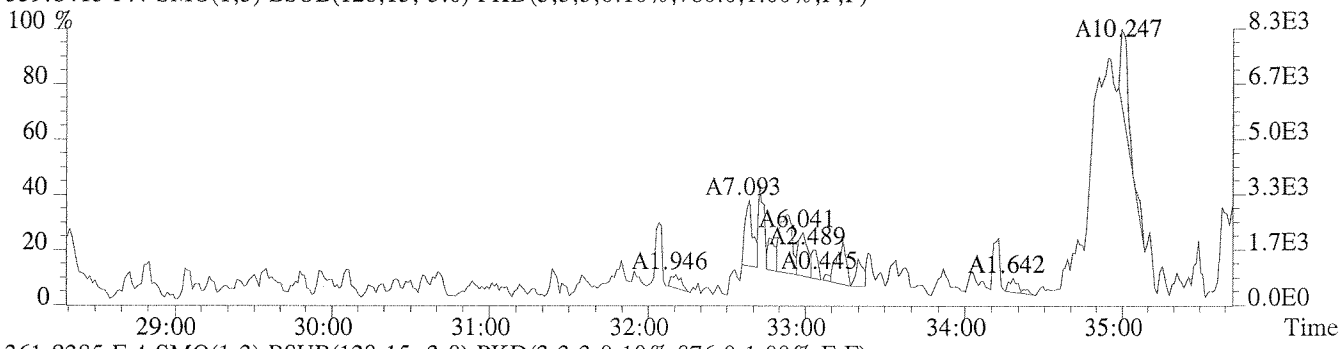



339.9178 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2772.0,1.00%,F,F)

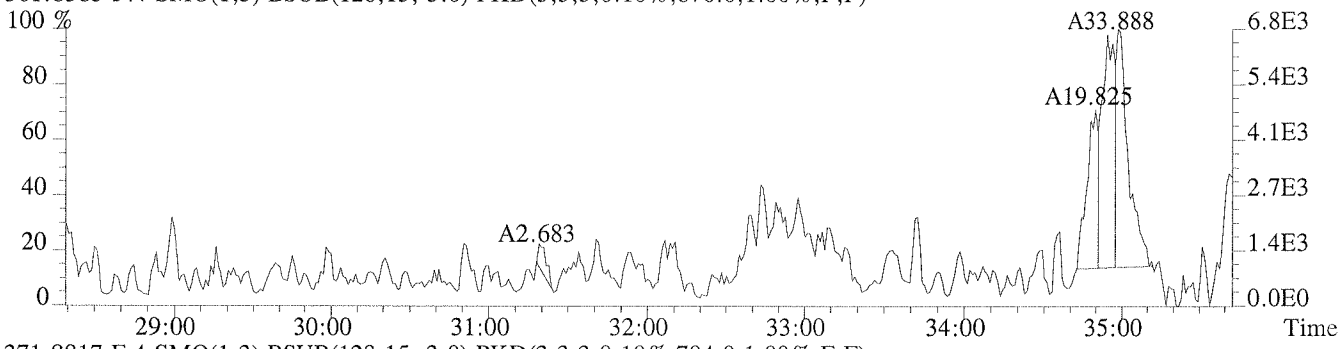



MC 7/30/07
CEE 07/27/07

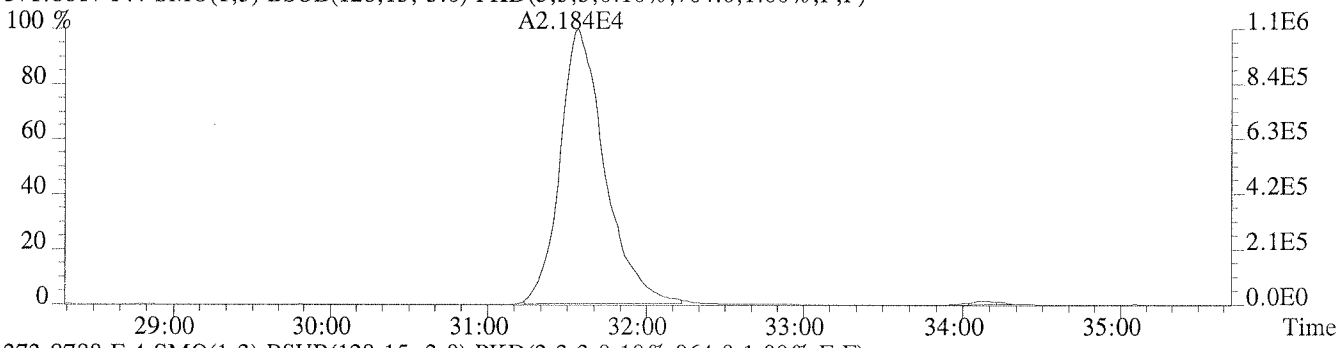
File:U210821 #1-473 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
359.8415 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,780.0,1.00%,F,F)



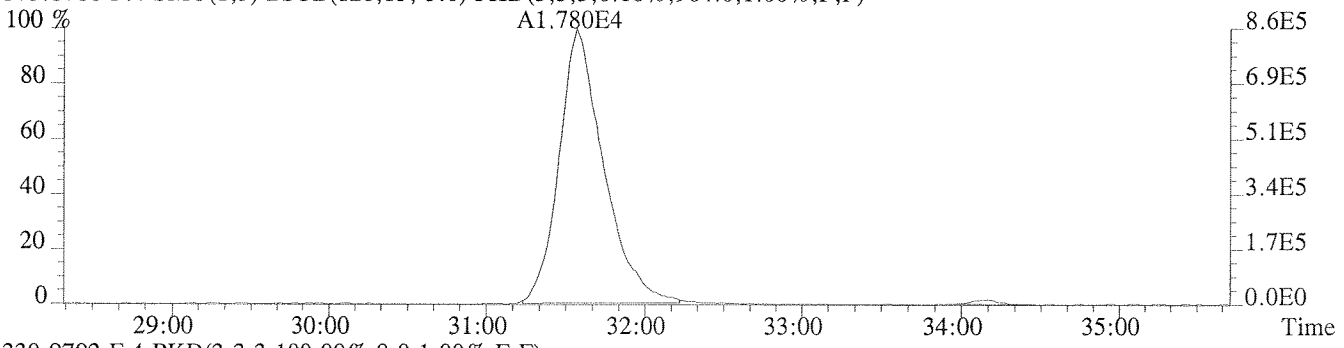

361.8385 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,876.0,1.00%,F,F)



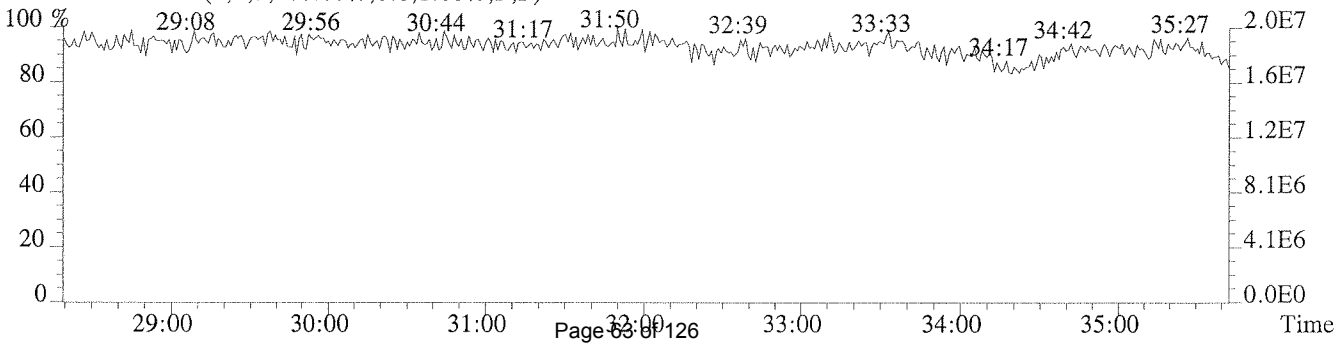

371.8817 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,704.0,1.00%,F,F)



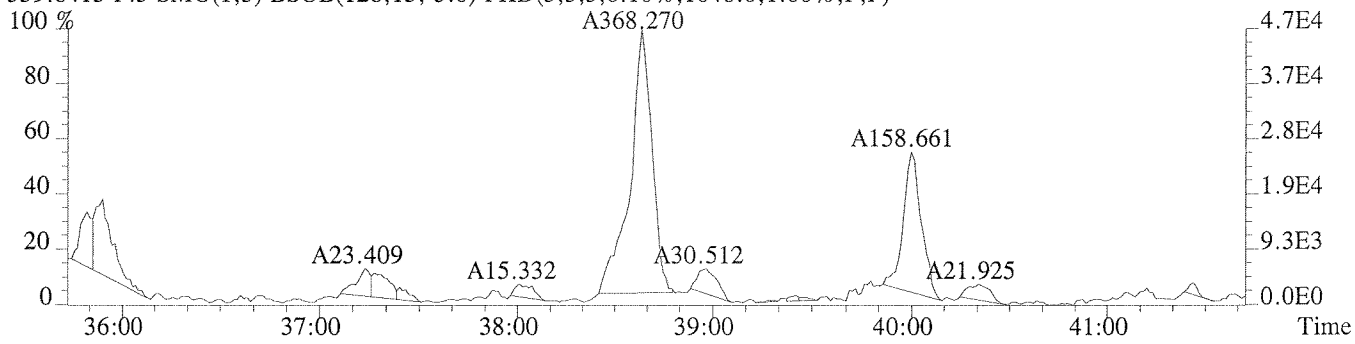

373.8788 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,964.0,1.00%,F,F)



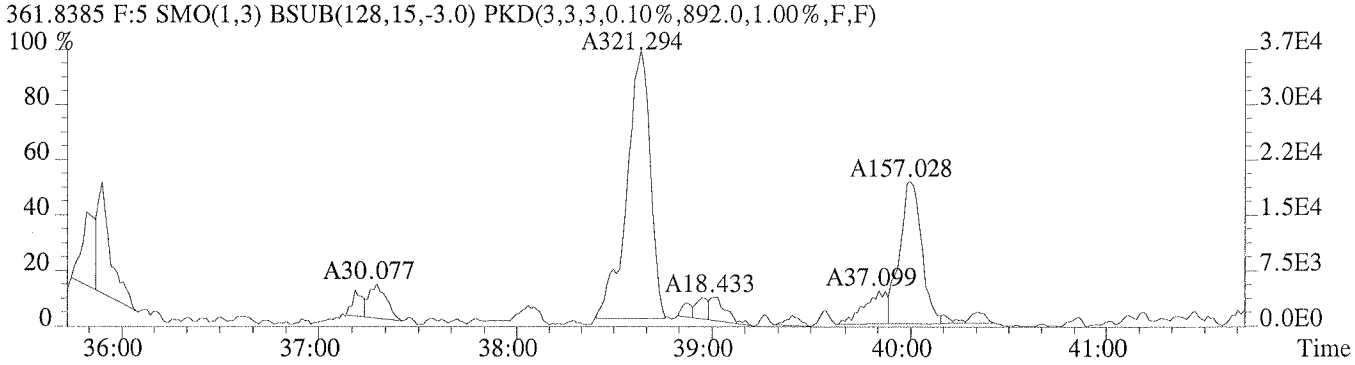

330.9792 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



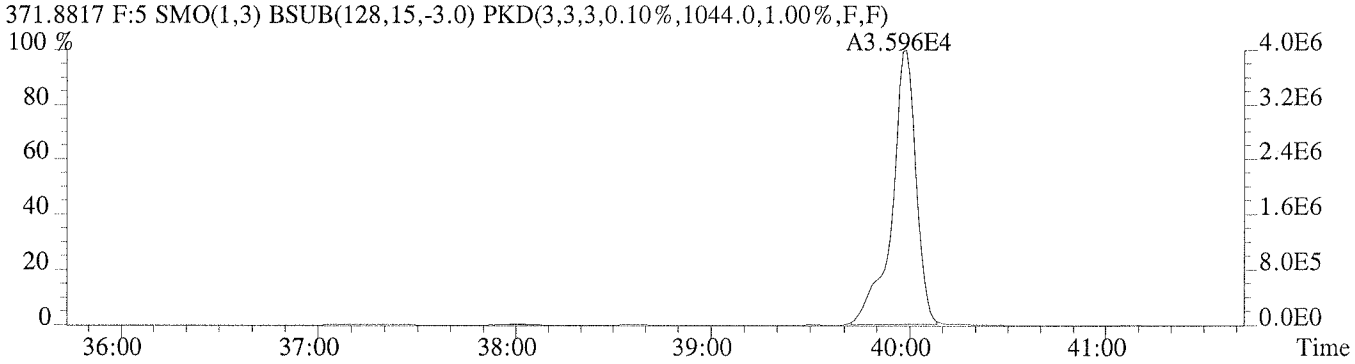
File:U210821 #1-383 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
359.8415 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1048.0,1.00%,F,F)



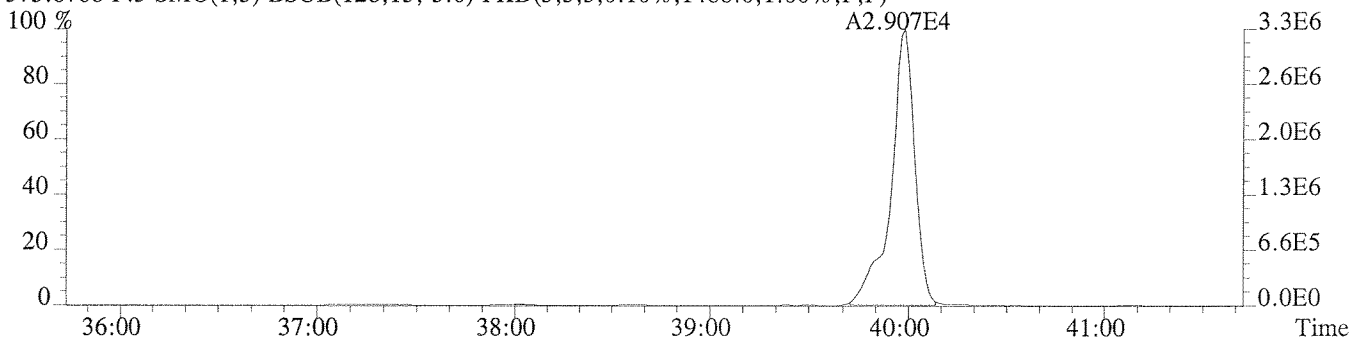

361.8385 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,892.0,1.00%,F,F)



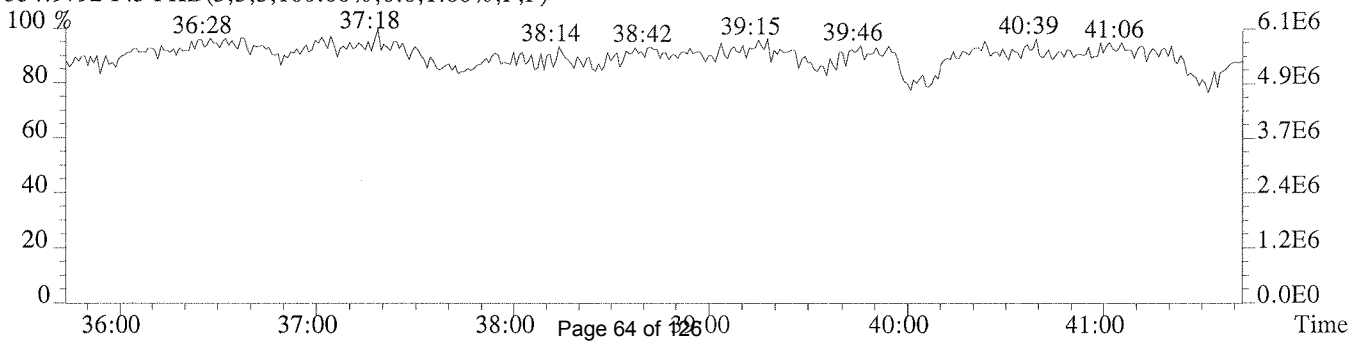

371.8817 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1044.0,1.00%,F,F)



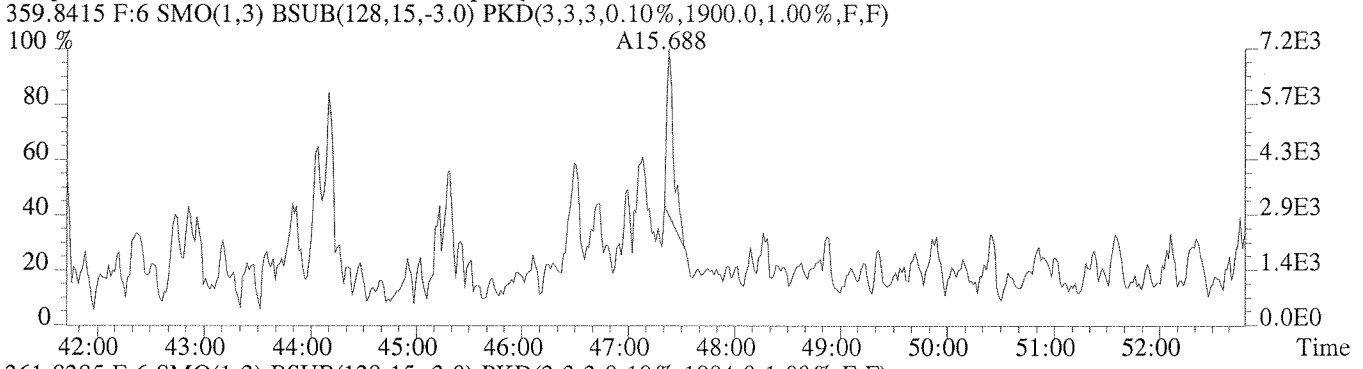

373.8788 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1488.0,1.00%,F,F)



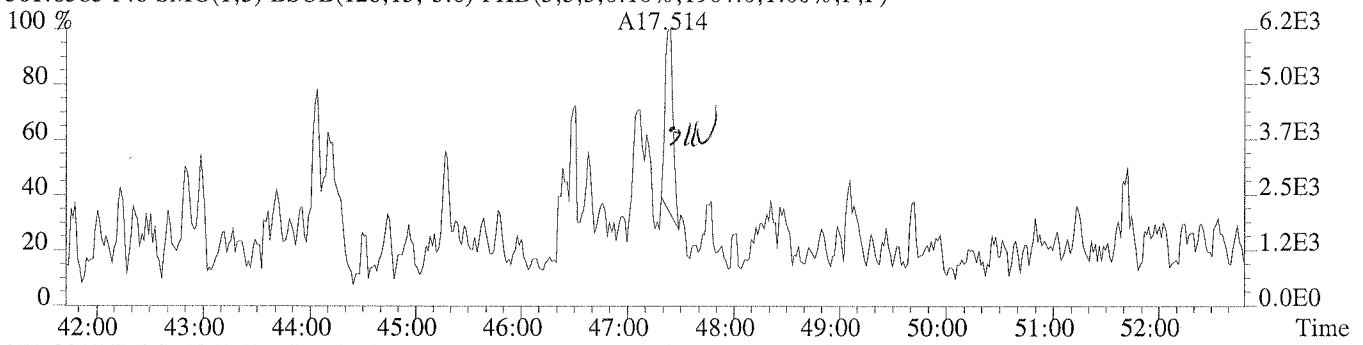

354.9792 F:5 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



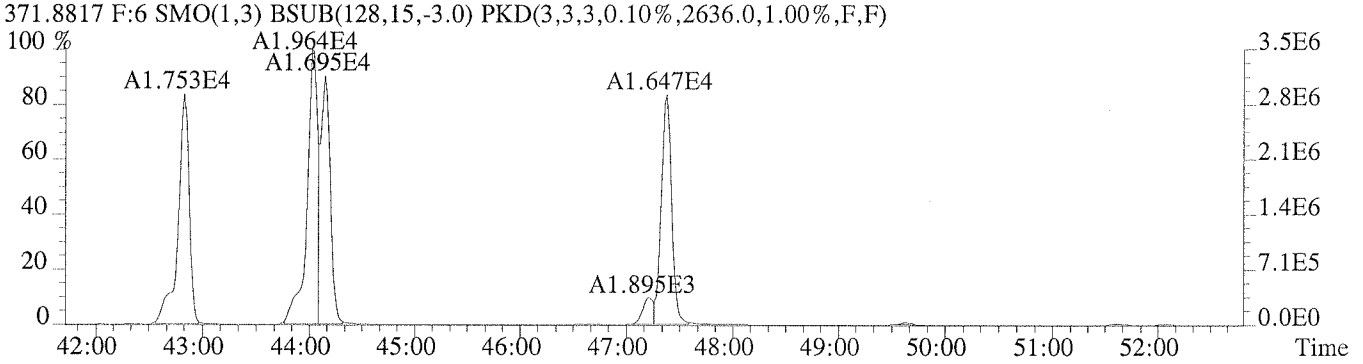
File:U210821 #1-550 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
359.8415 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1900.0,1.00%,F,F)



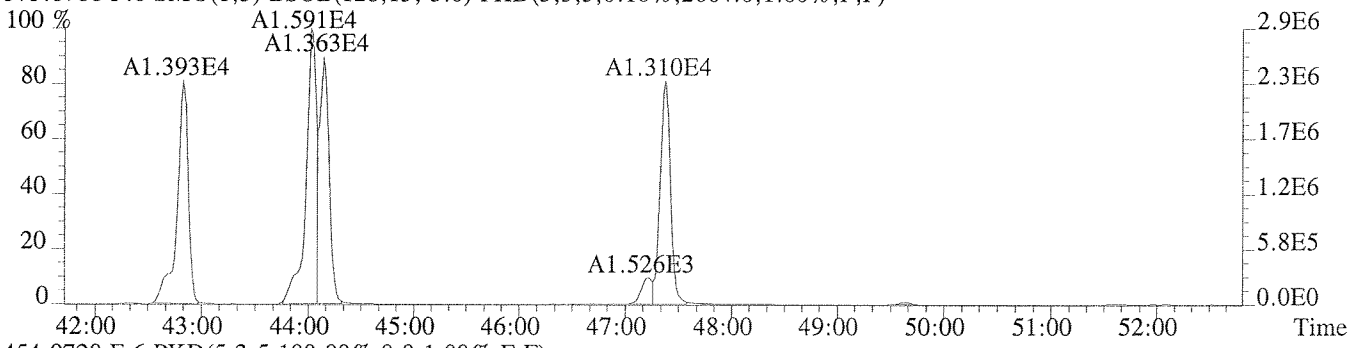

361.8385 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1904.0,1.00%,F,F)



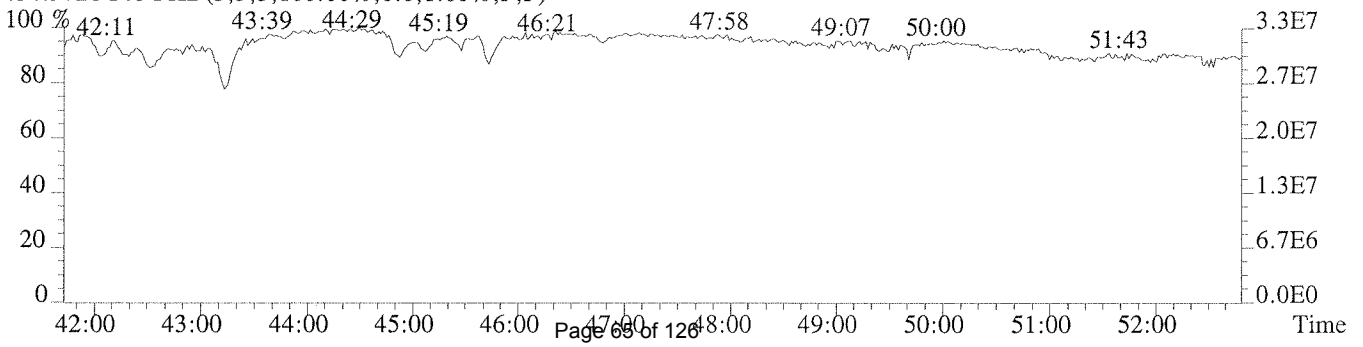

371.8817 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2636.0,1.00%,F,F)



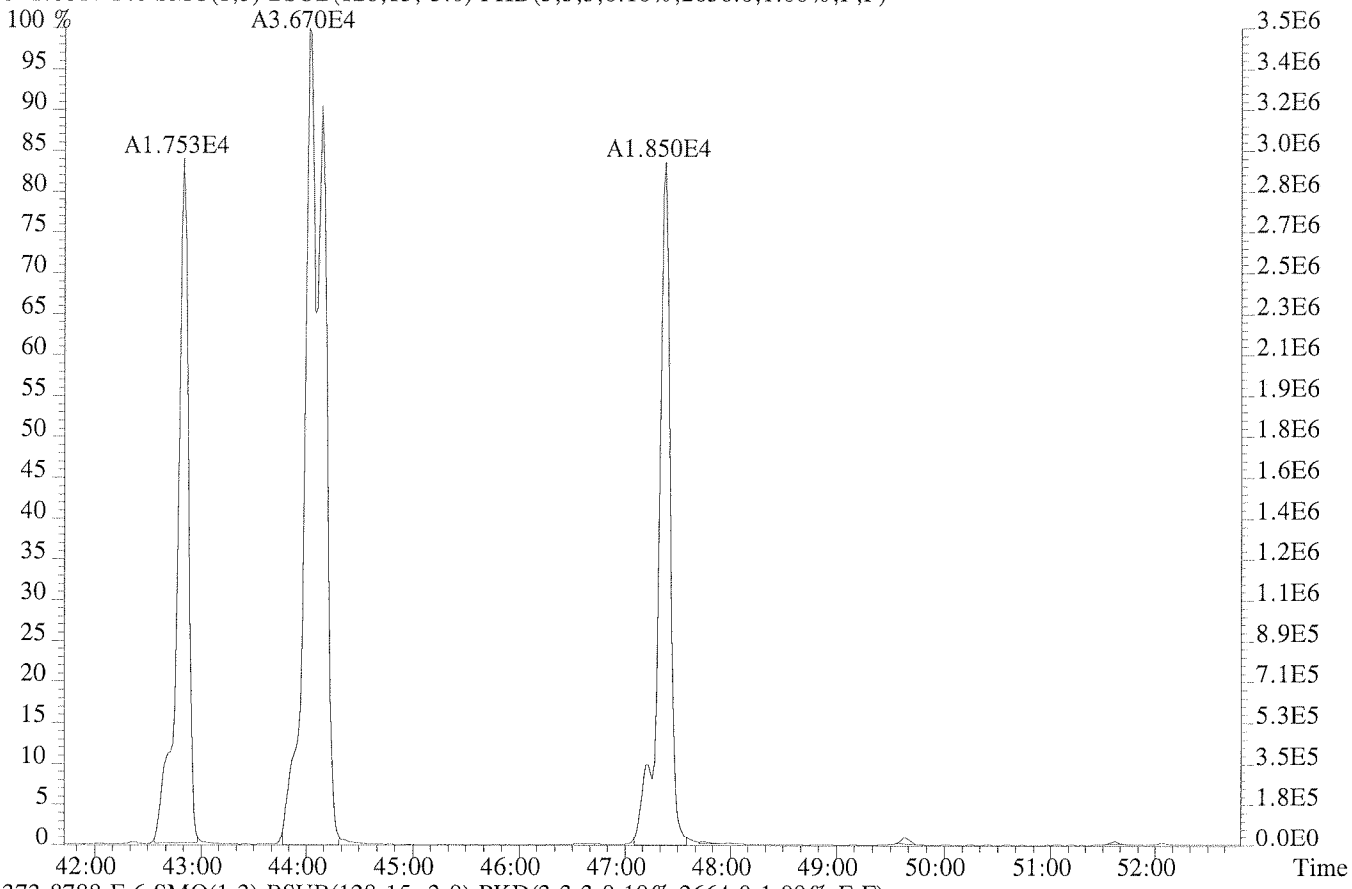

373.8788 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2664.0,1.00%,F,F)



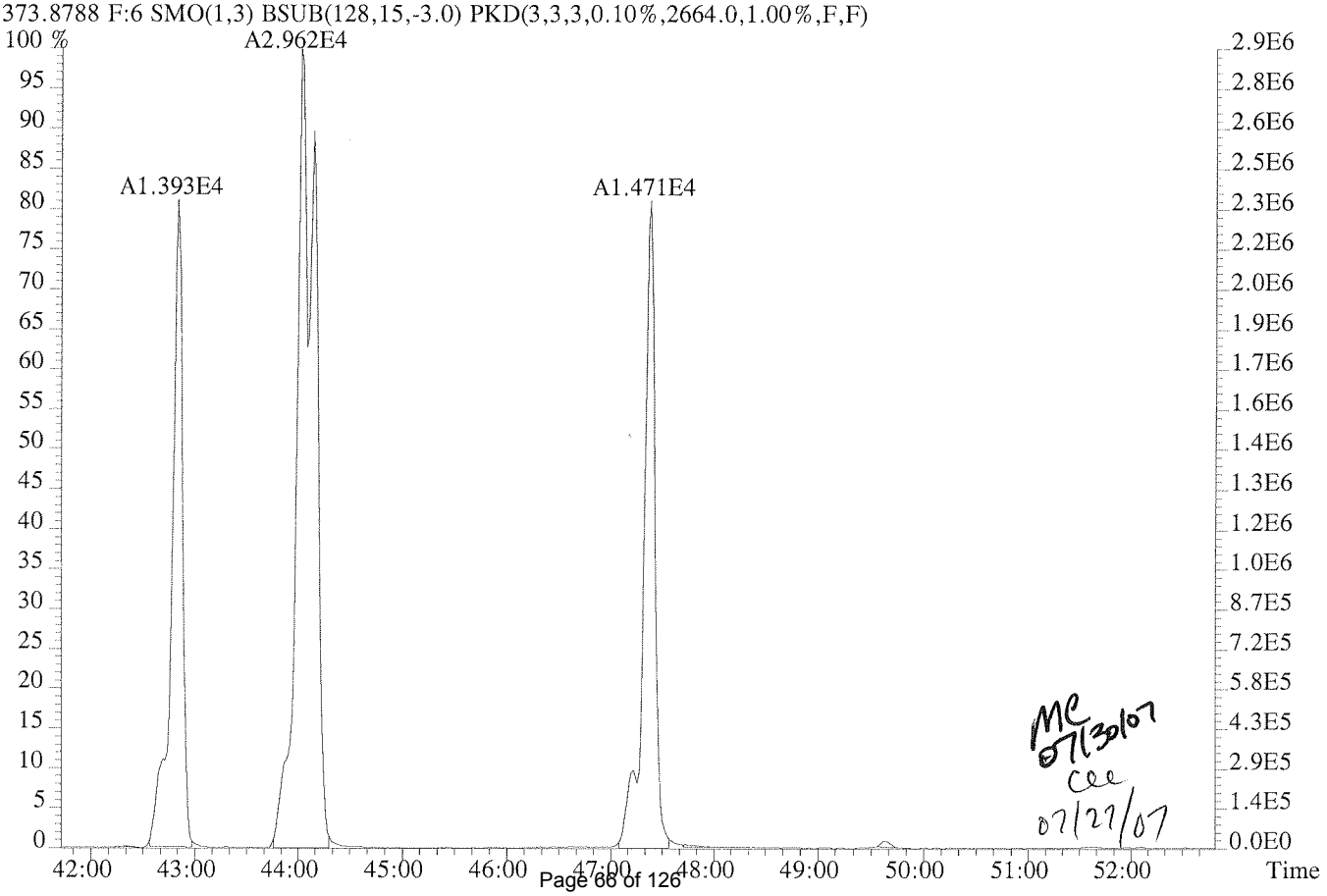

454.9728 F:6 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



File:U210821 #1-550 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
371.8817 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2636.0,1.00%,F,F)

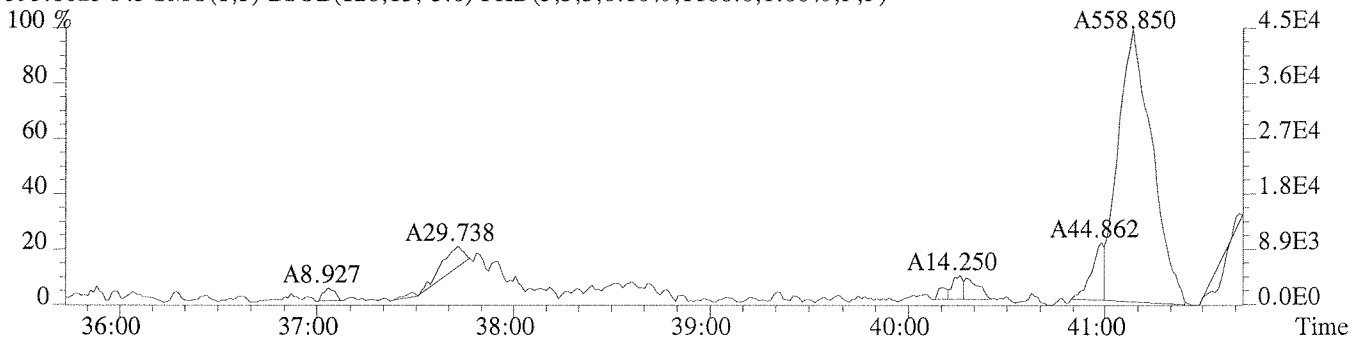



373.8788 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2664.0,1.00%,F,F)

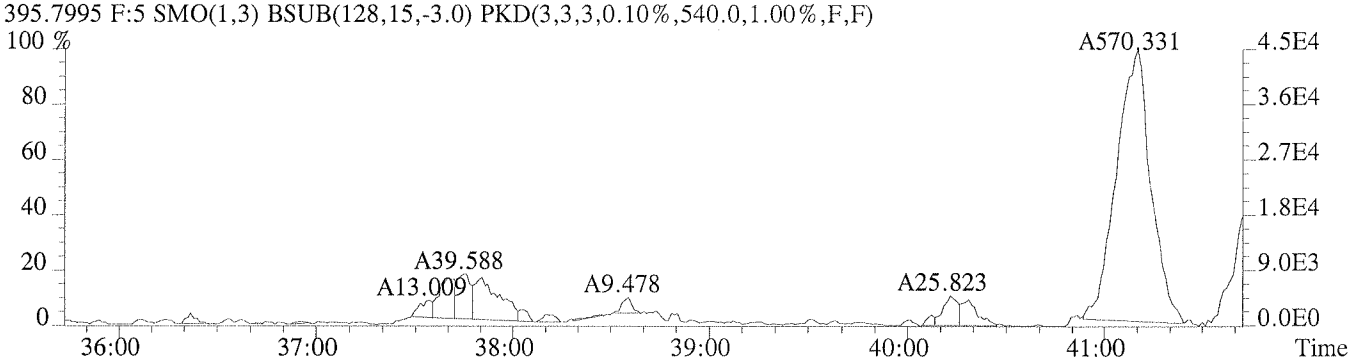



ME 07/30/07
CEE 07/27/07

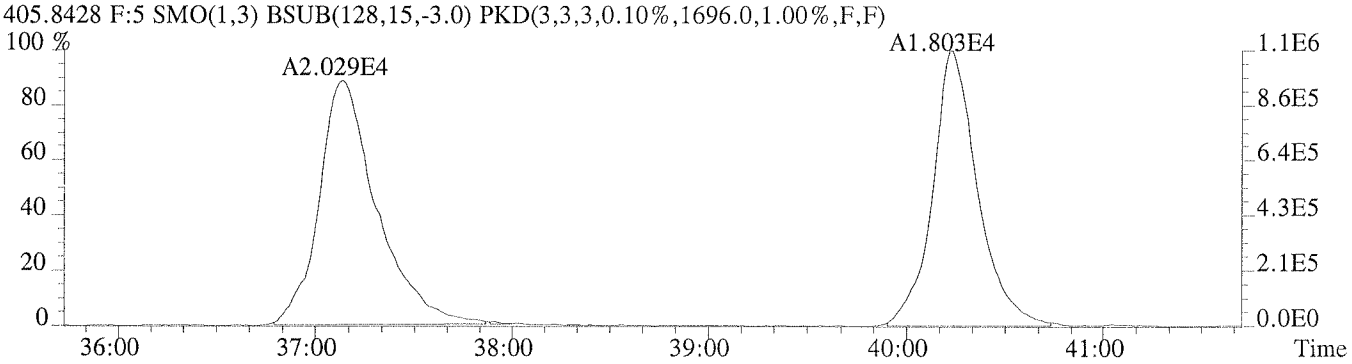
File:U210821 #1-383 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
393.8025 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1188.0,1.00%,F,F)



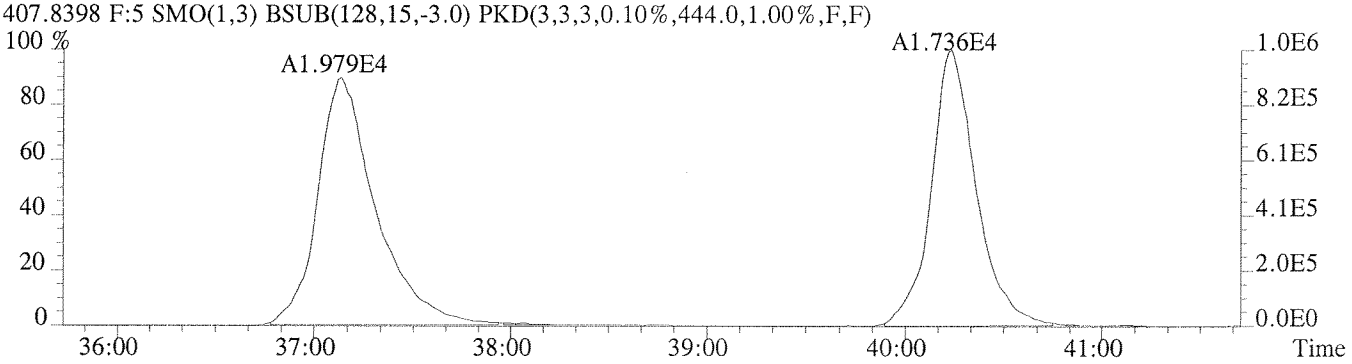

395.7995 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,540.0,1.00%,F,F)



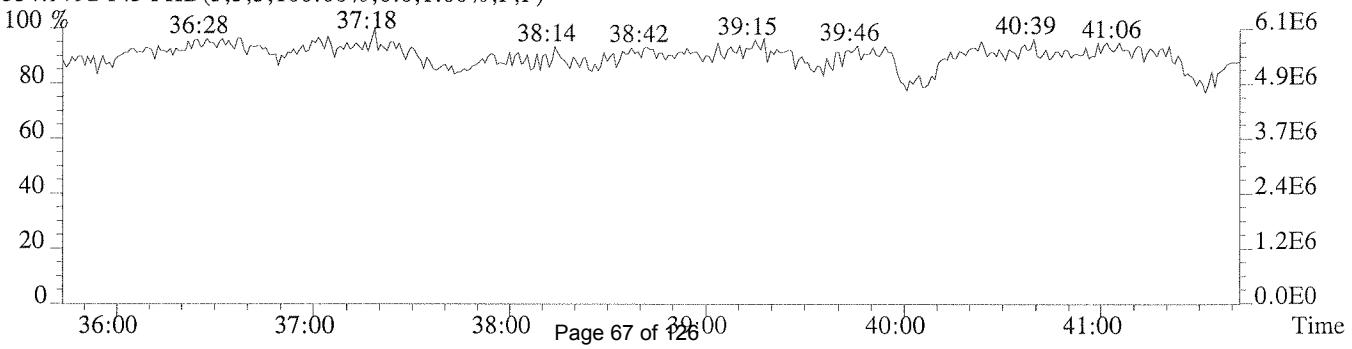

405.8428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1696.0,1.00%,F,F)



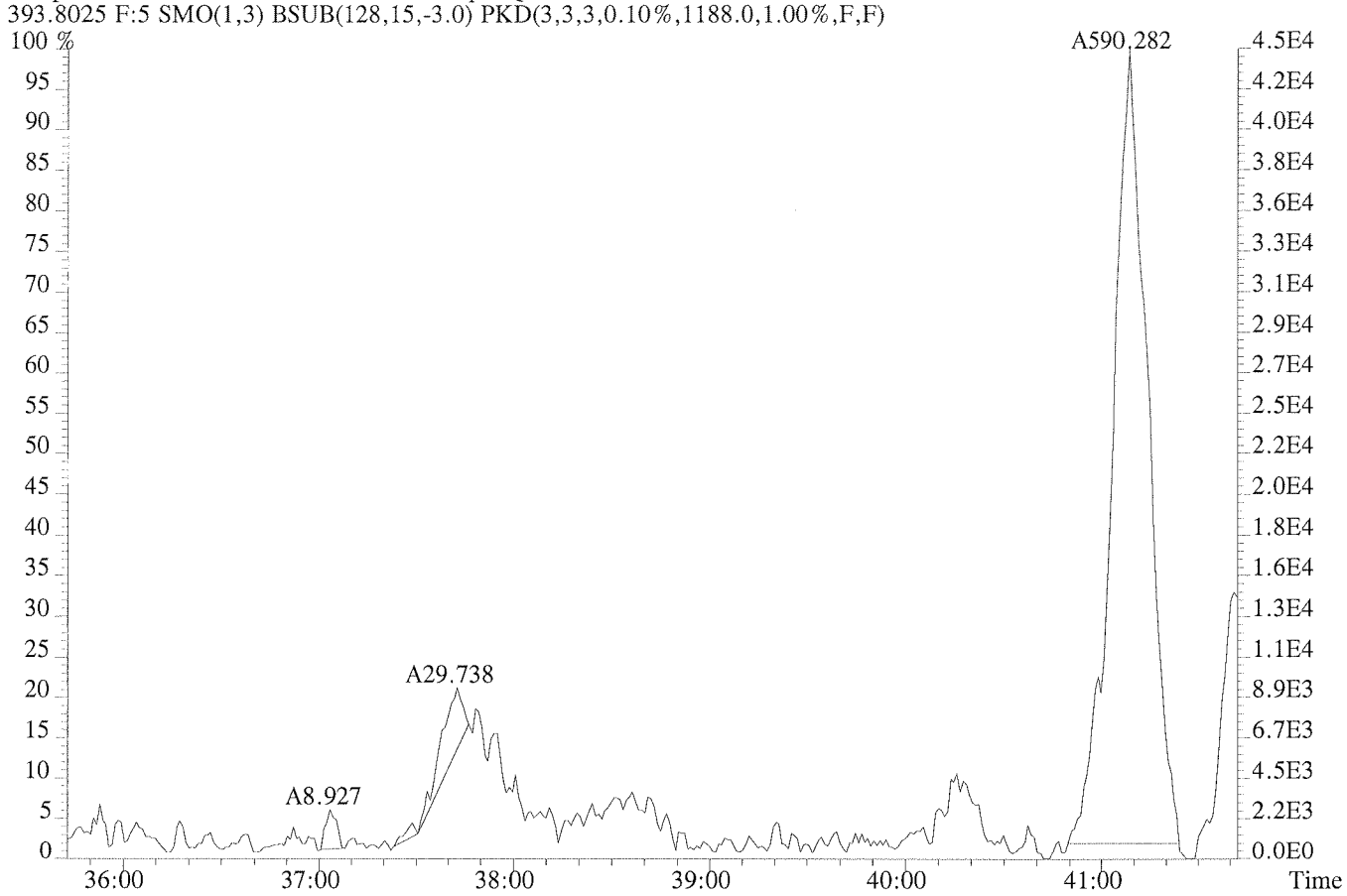

407.8398 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,444.0,1.00%,F,F)



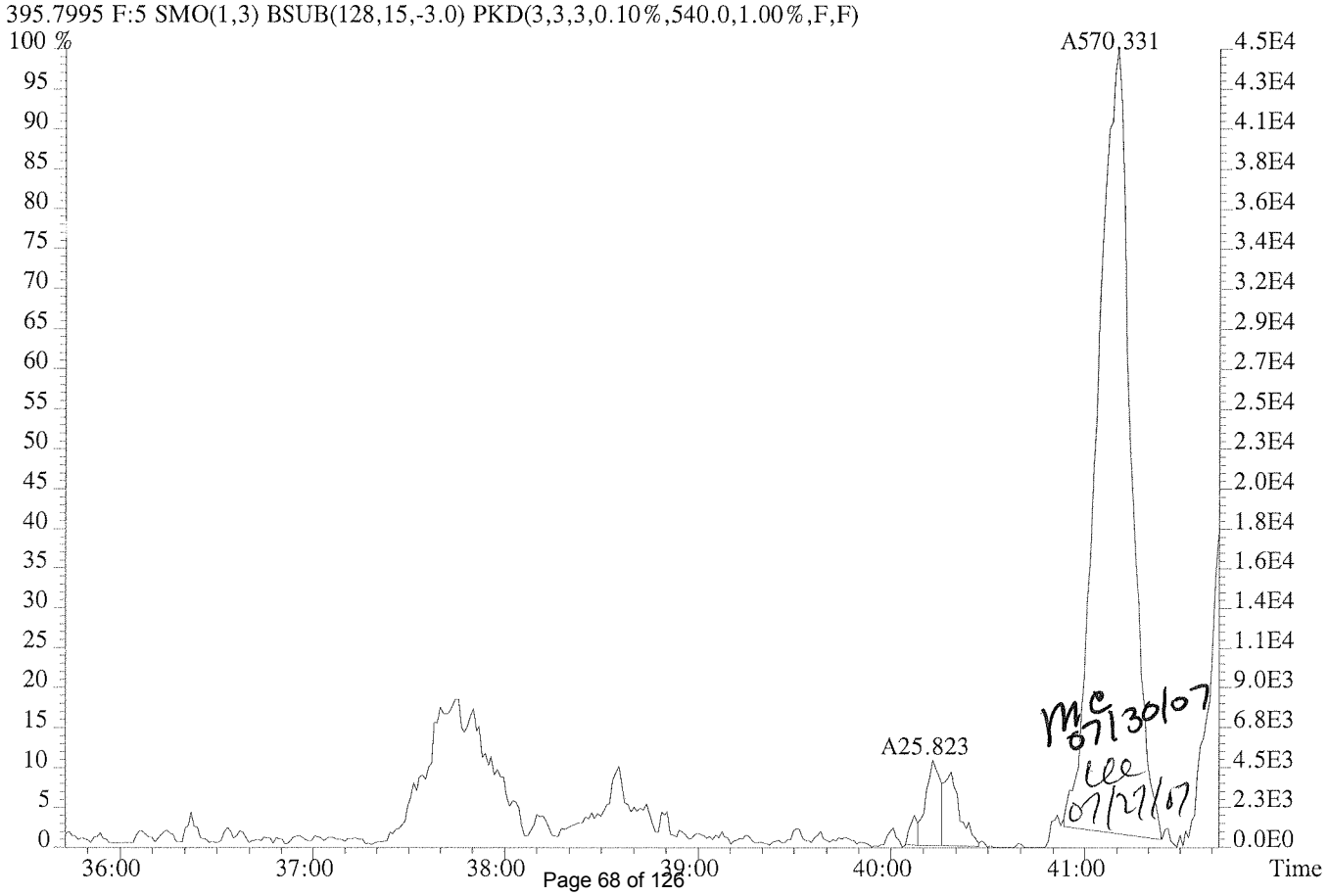

354.9792 F:5 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



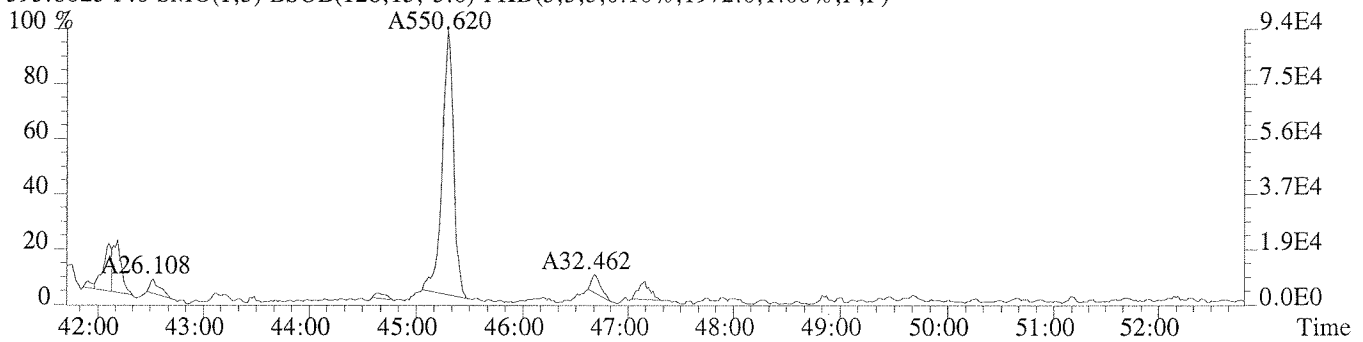
File:U210821 #1-383 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
393.8025 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1188.0,1.00%,F,F)



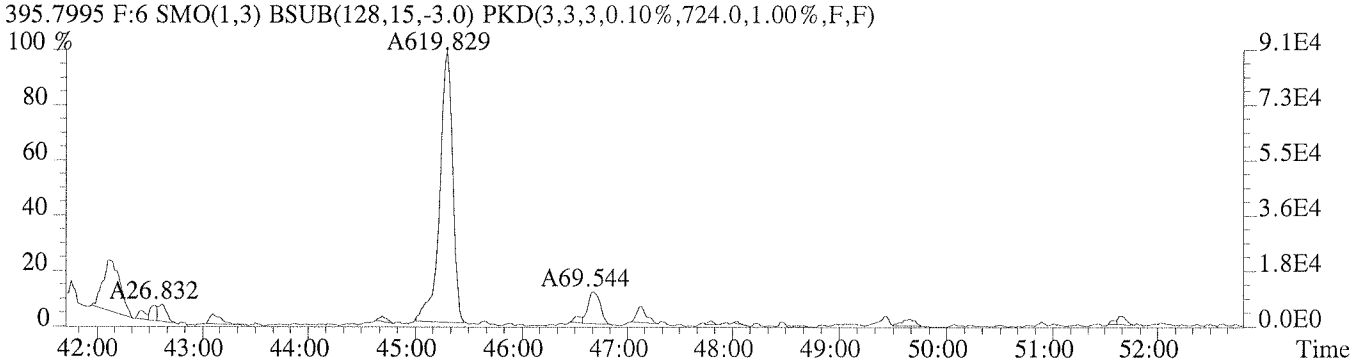

395.7995 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,540.0,1.00%,F,F)



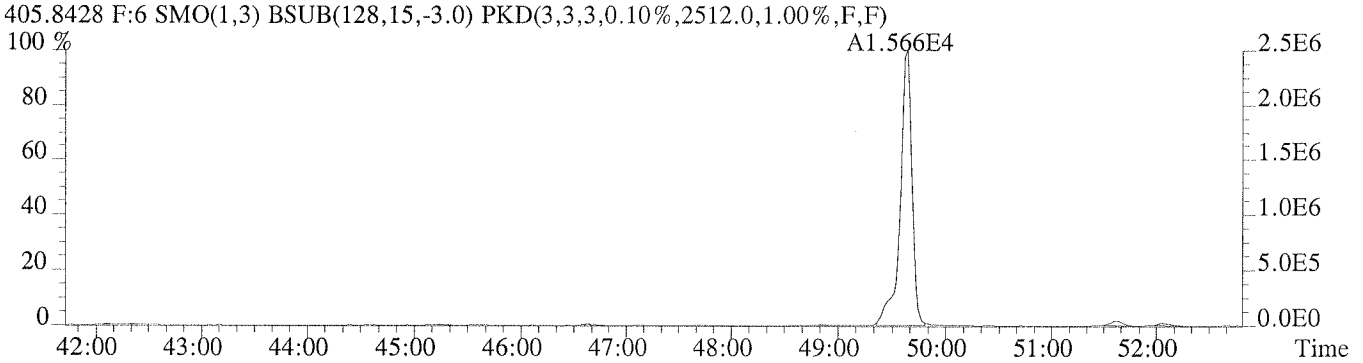
File:U210821 #1-550 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
393.8025 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1972.0,1.00%,F,F)



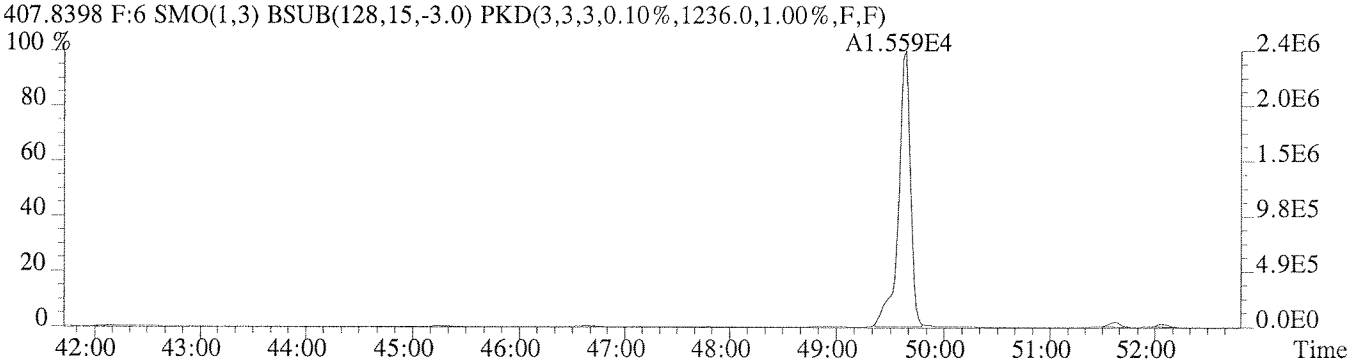

395.7995 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,724.0,1.00%,F,F)



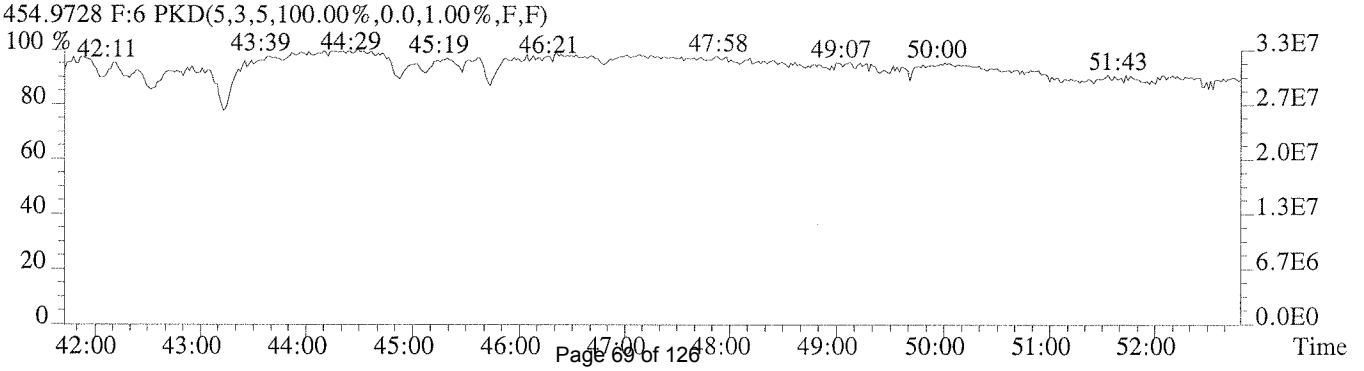

405.8428 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2512.0,1.00%,F,F)



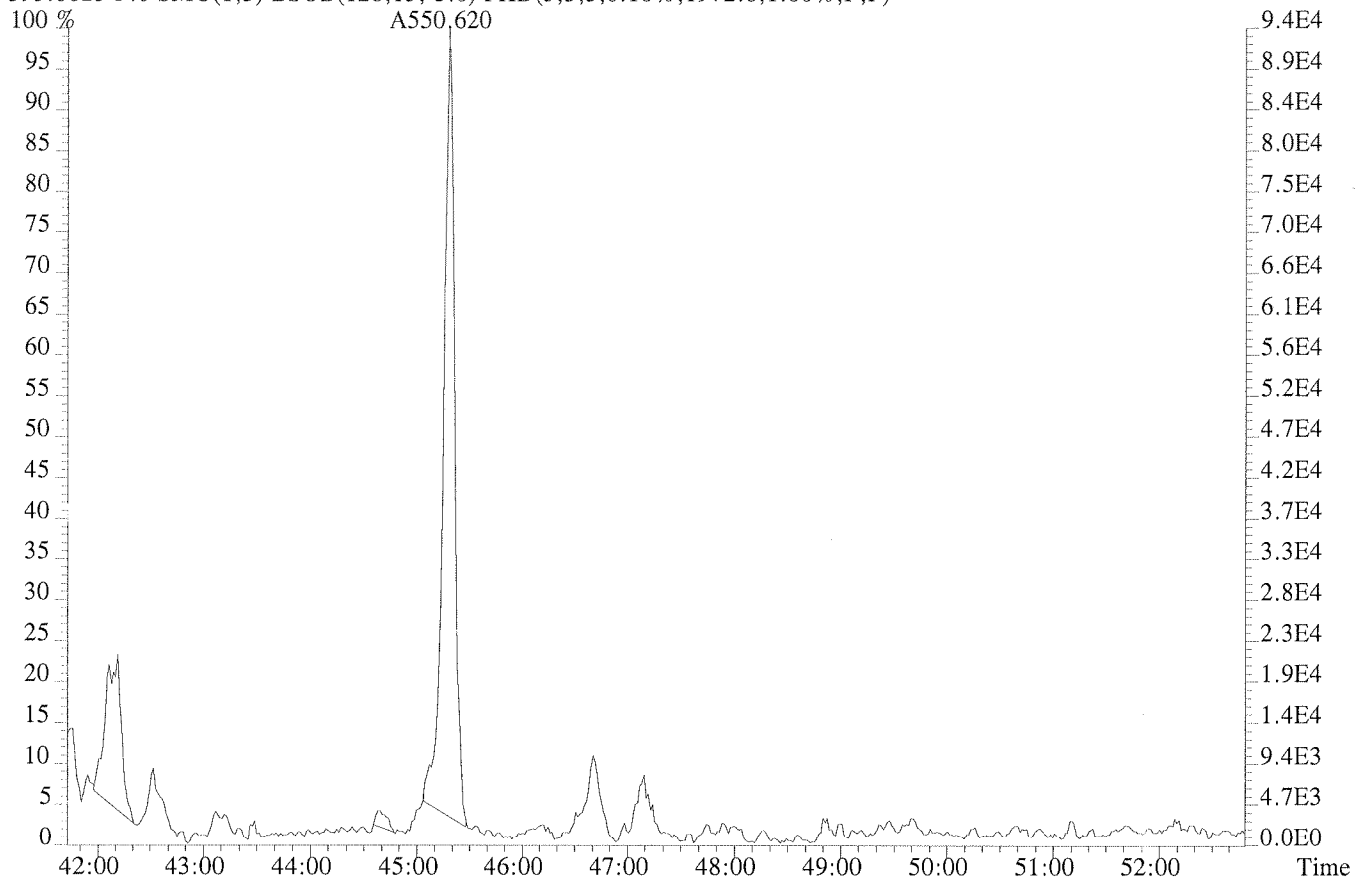

407.8398 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1236.0,1.00%,F,F)



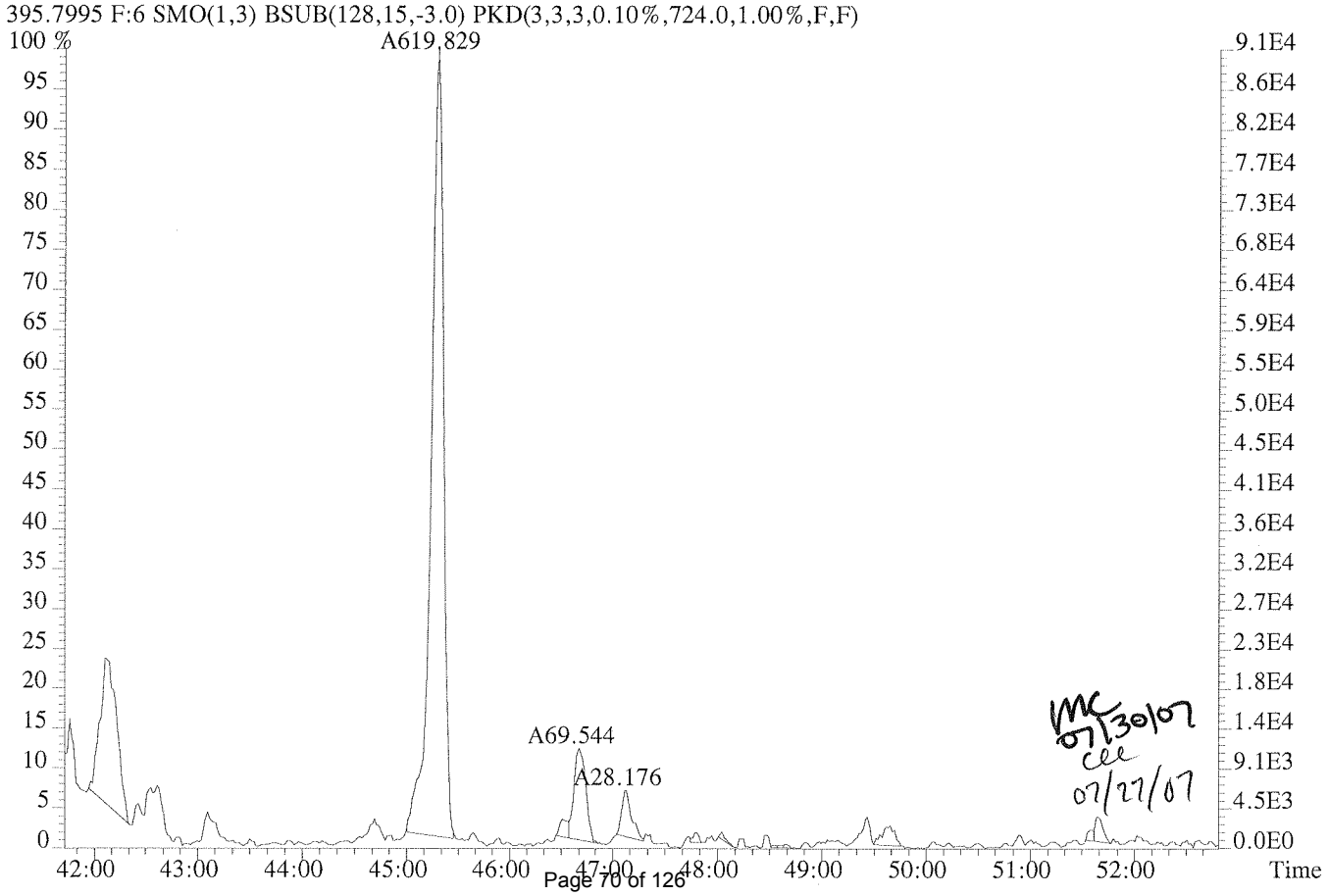

454.9728 F:6 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



File:U210821 #1-550 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
393.8025 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1972.0,1.00%,F,F)

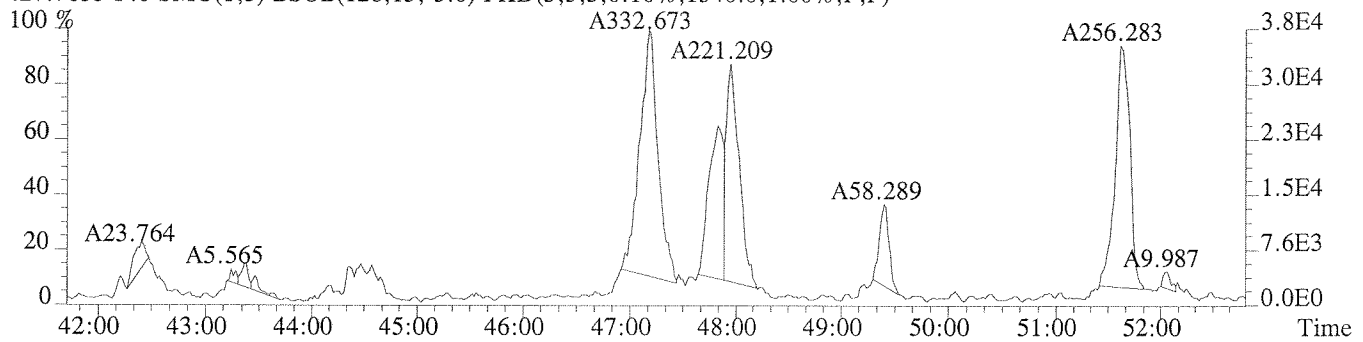



395.7995 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,724.0,1.00%,F,F)

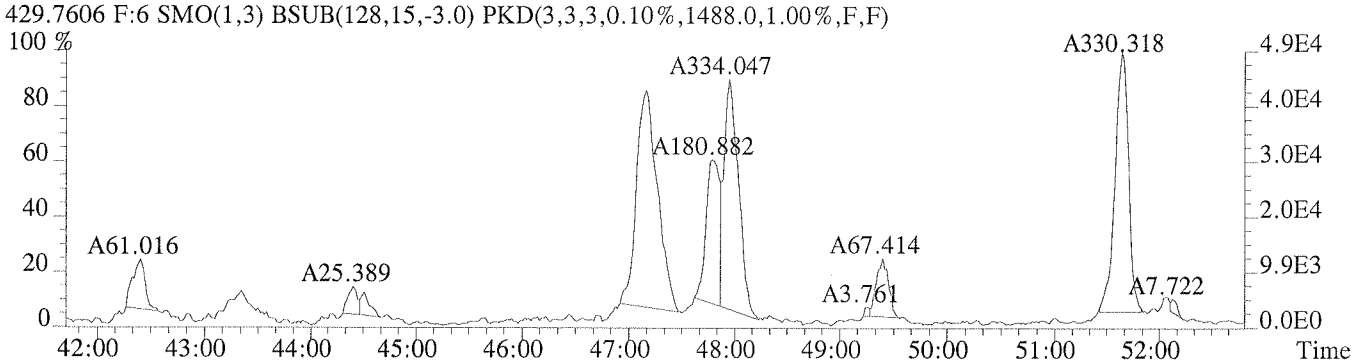



MC 07/30/07
cee 07/27/07

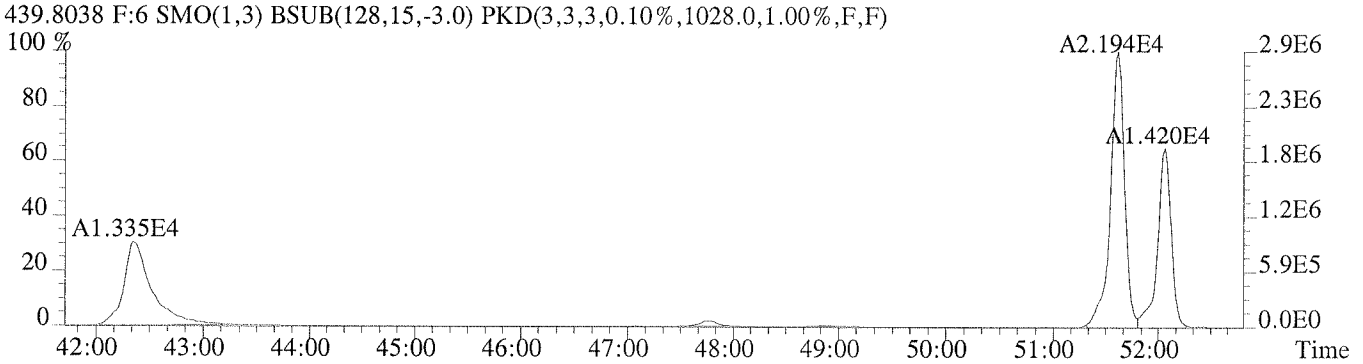
File:U210821 #1-550 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
427.7635 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1540.0,1.00%,F,F)



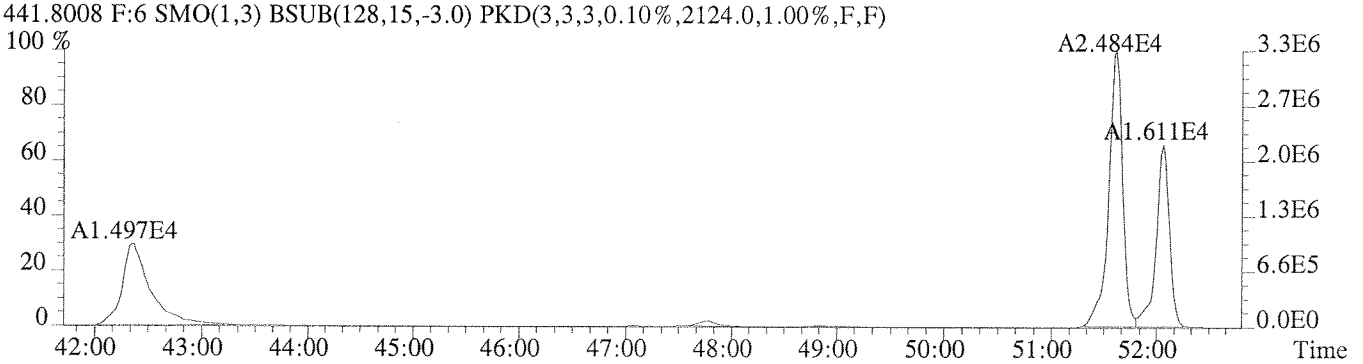

429.7606 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1488.0,1.00%,F,F)



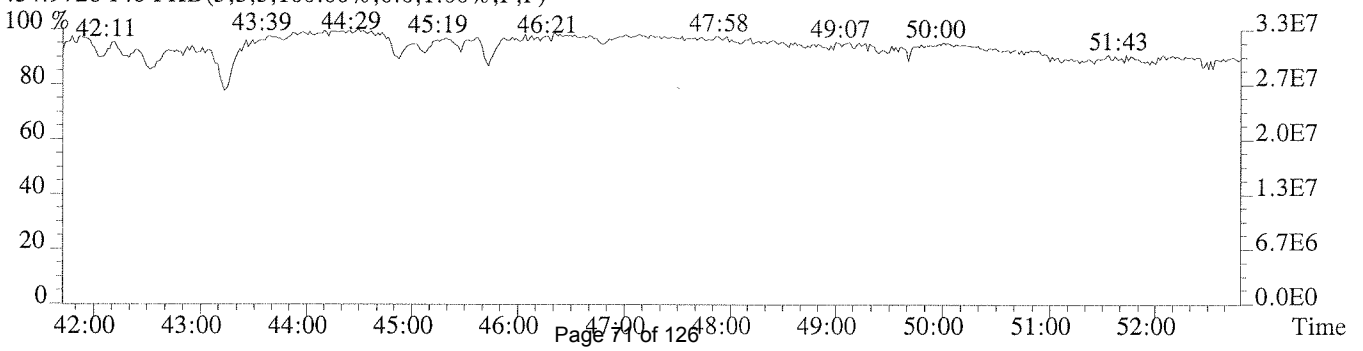

439.8038 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1028.0,1.00%,F,F)



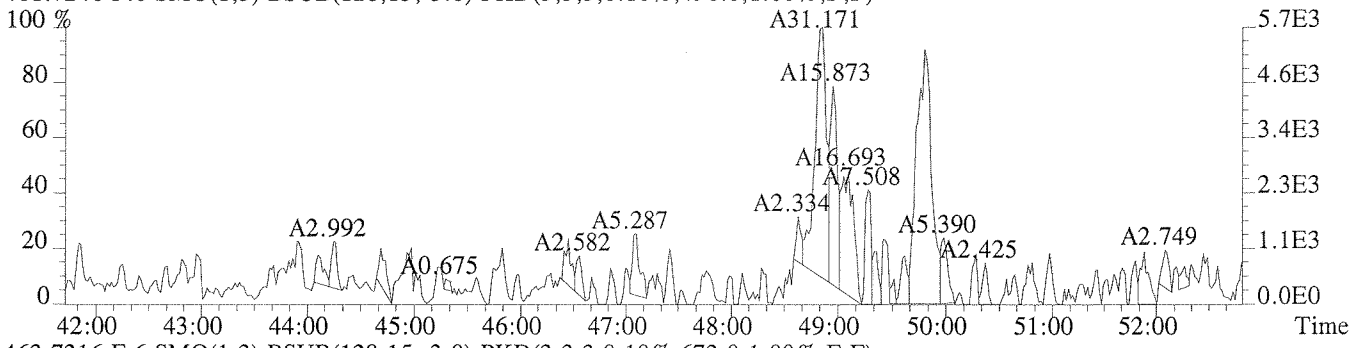

441.8008 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2124.0,1.00%,F,F)



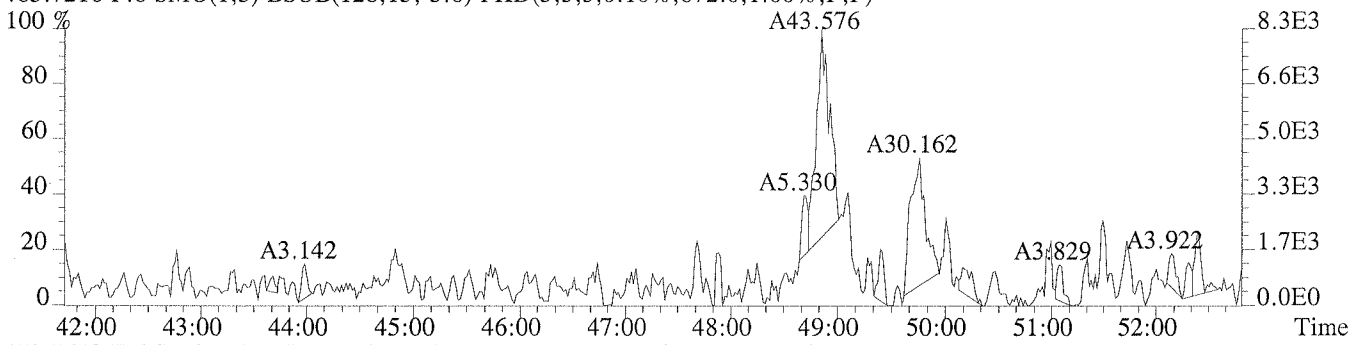

454.9728 F:6 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



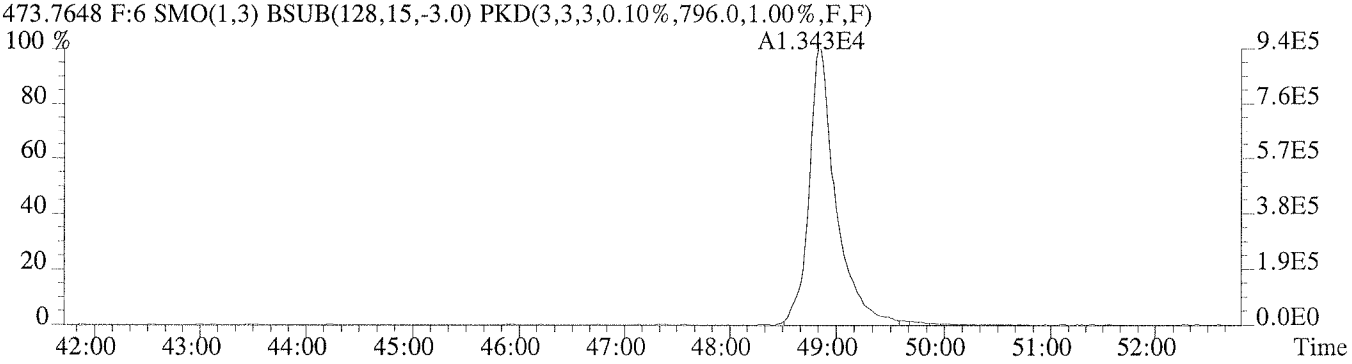
File:U210821 #1-550 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
461.7246 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,496.0,1.00%,F,F)



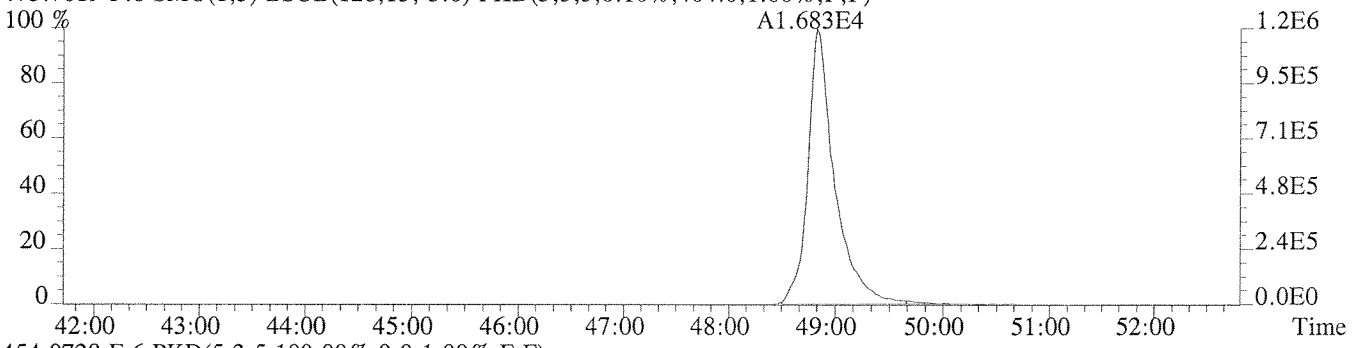

463.7216 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,672.0,1.00%,F,F)



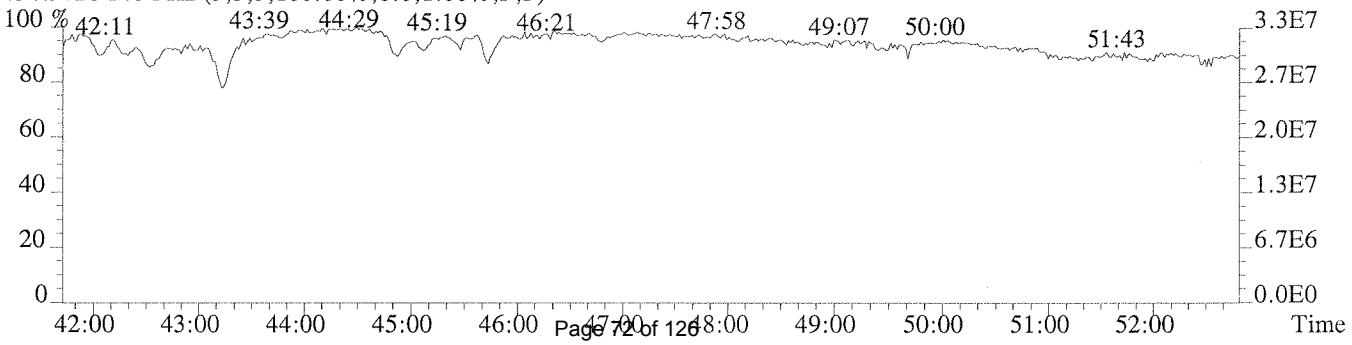

473.7648 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,796.0,1.00%,F,F)



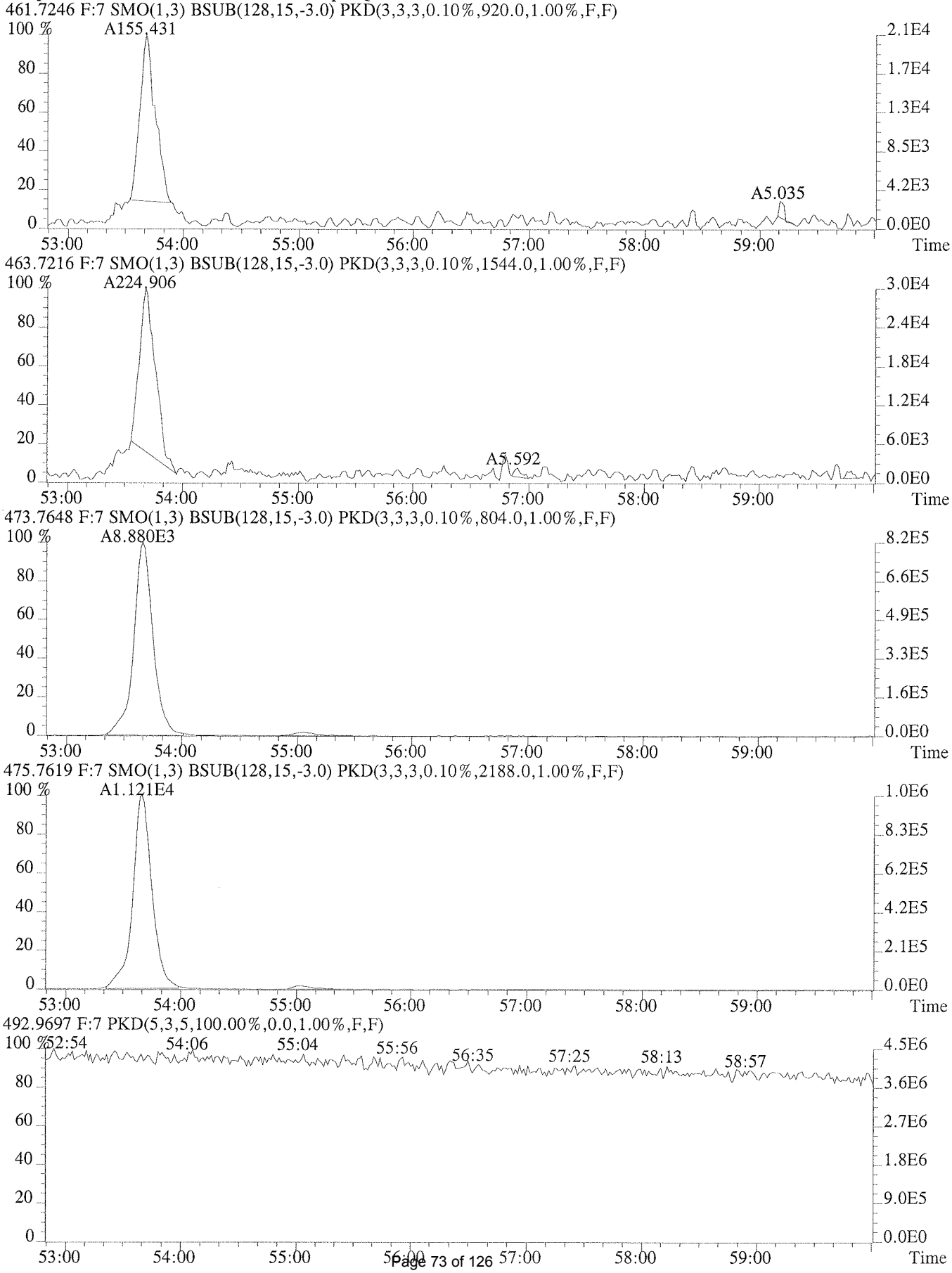

475.7619 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,404.0,1.00%,F,F)



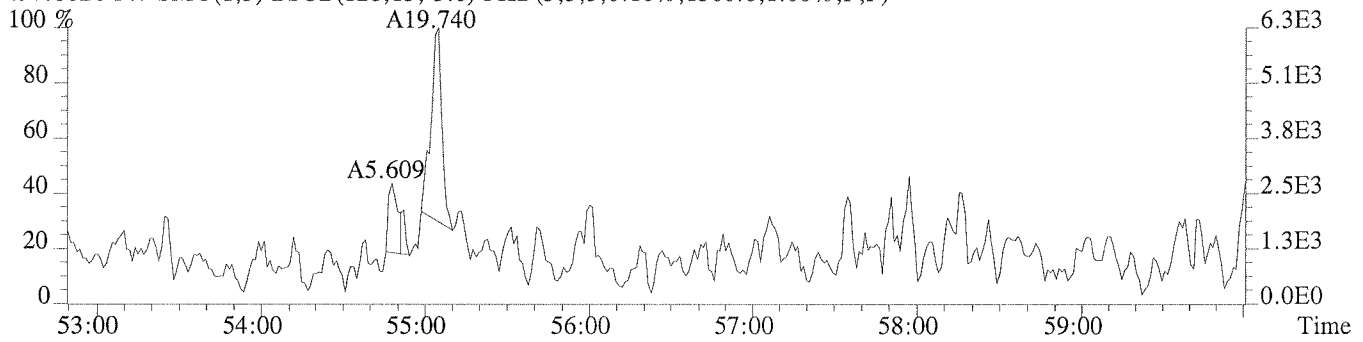

454.9728 F:6 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



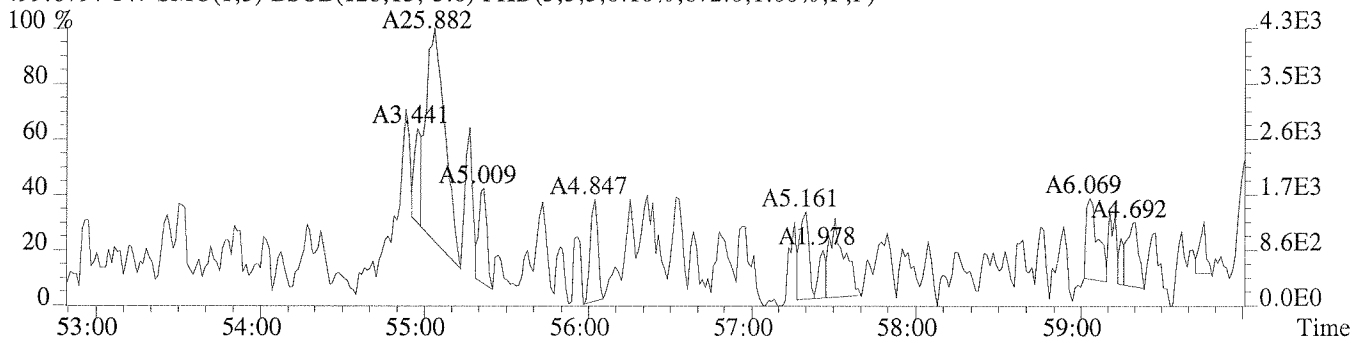
File:U210821 #1-406 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB



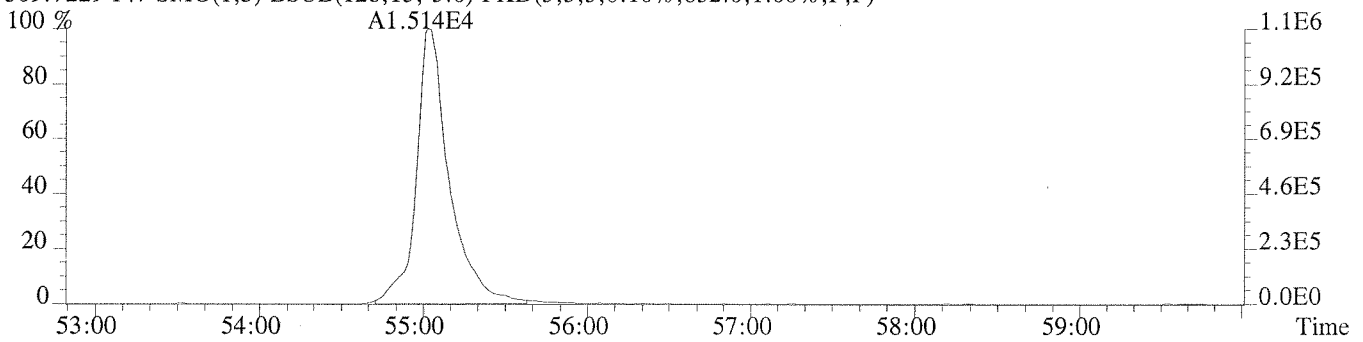
File:U210821 #1-406 Acq:25-JUL-2007 12:33:52 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:METHOD BLANK Exp:EQ0700194-01MB
497.6826 F:7 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1360.0,1.00%,F,F)



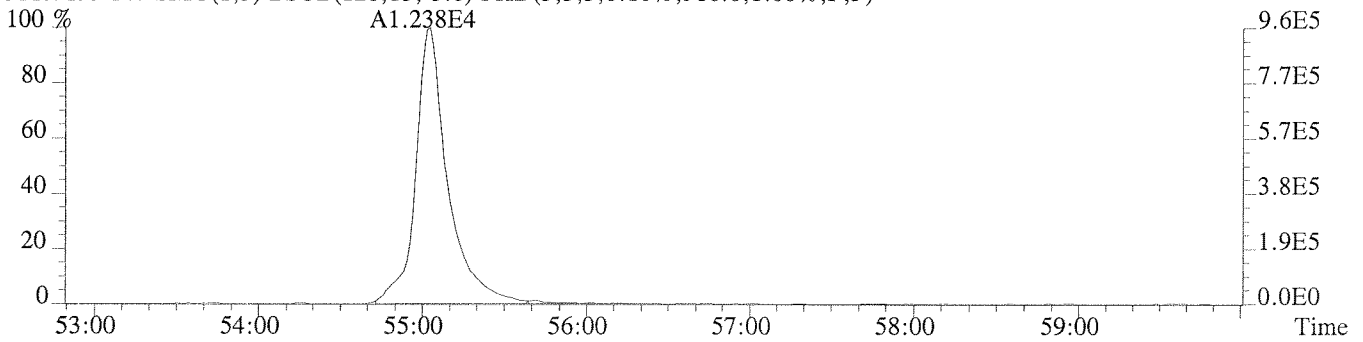

499.6797 F:7 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,872.0,1.00%,F,F)



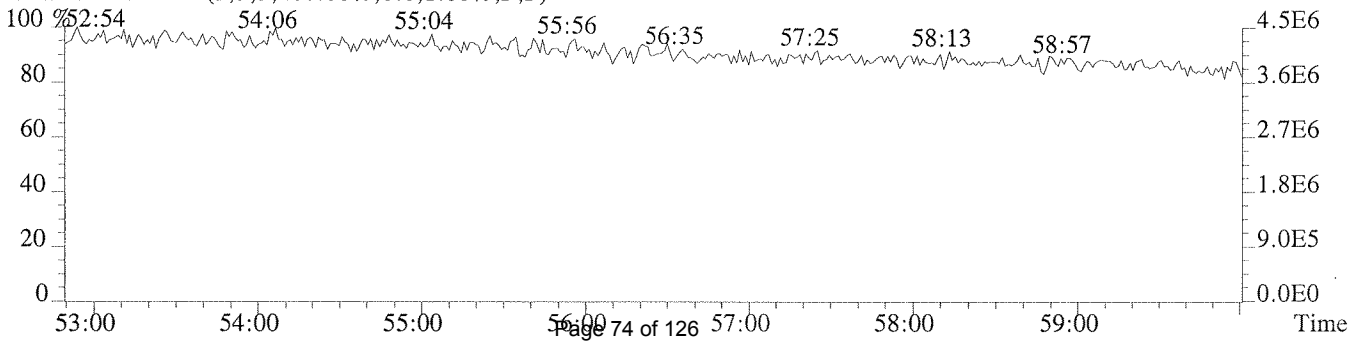

509.7229 F:7 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,852.0,1.00%,F,F)




511.7199 F:7 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,916.0,1.00%,F,F)




492.9697 F:7 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



Columbia Analytical Services, Inc.
Sample Response Summary



CLIENT ID.
FO 070665

Run #9 Filename U210822 #1 Samp: 1 Inj: 1 Acquired: 25-JUL-07 13:35:50
Processed: 30-JUL-07 10:04:59 Sample ID: K0704820-001

| | Typ | Name | RT-1 | Resp 1 | Resp 2 | Ratio | Meet | Mod? |
|---|---|---|---|---|---|---|---|---|
| 1 | 1- | 2-MoCB | 12:56 | 1.501e+03 | 4.602e+02 | 3.26 | yes | yes |
| 2 | 2 | 3-MoCB | 14:49 | 2.550e+02 | 7.941e+01 | 3.21 | yes | no |
| 3 | 3- | 4-MoCB | 15:01 | 8.888e+02 | 2.582e+02 | 3.44 | yes | no |
| 4 | 4- | 22'-DiCB | 15:17 | 8.136e+02 | 6.007e+02 | 1.35 | yes | yes |
| 5 | 10 | 26-DiCB | NotFnd | * | * | * | no | no |
| 6 | 9 | 25-DiCB | NotFnd | * | * | * | no | no |
| 7 | 7 | 24-DiCB | NotFnd | * | * | * | no | no |
| 8 | 6 | 23'-DiCB | 17:27 | 5.911e+02 | 4.336e+02 | 1.36 | yes | yes |
| 9 | 5 | 23-DiCB | 17:50 | 1.770e+03 | 1.073e+03 | 1.65 | yes | yes |
| 10 | 8 | 2,4'-DiCB | NotFnd | * | * | * | no | yes |
| 11 | 14 | 35-DiCB | NotFnd | * | * | * | no | no |
| 12 | 11 | 33'-DiCB | 20:14 | 4.596e+03 | 2.663e+03 | 1.73 | yes | yes |
| 13 | 12/1 | 34-DiCB | NotFnd | * | * | * | no | no |
| 14 | 15- | 44'-DiCB | 21:01 | 3.128e+03 | 1.859e+03 | 1.68 | yes | yes |
| 15 | 19- | 22'6-TrCB | NotFnd | * | * | * | no | no |
| 16 | 18/3 | 22'5-TrCB | 19:58 | 2.138e+03 | 2.424e+03 | 0.88 | no | no |
| 17 | 17 | 22'4-TrCB | 20:17 | 7.501e+02 | 7.503e+02 | 1.00 | yes | no |
| 18 | 27/2 | 23'6-TrCB | NotFnd | * | * | * | no | no |
| 19 | 16 | 22'3-TrCB | 20:58 | 5.873e+02 | 5.539e+02 | 1.06 | yes | no |
| 20 | 32 | 24'6-TrCB | 21:22 | 1.106e+03 | 1.334e+03 | 0.83 | no | no |
| 21 | 34 | 2'35-TrCB | NotFnd | * | * | * | no | no |
| 22 | 23 | 235-TrCB | NotFnd | * | * | * | no | no |
| 23 | 26/2 | 23'5-TrCB | 22:57 | 4.463e+02 | 5.252e+02 | 0.85 | no | no |
| 24 | 25 | 23'4-TrCB | NotFnd | * | * | * | no | no |
| 25 | 31 | 24'5-TrCB | 23:30 | 5.497e+03 | 5.743e+03 | 0.96 | yes | no |
| 26 | 20/2 | 233'-TrCB | 23:46 | 7.321e+03 | 6.729e+03 | 1.09 | yes | no |
| 27 | 21/3 | 234-TrCB | 24:04 | 2.830e+03 | 2.685e+03 | 1.05 | yes | no |
| 28 | 22 | 234'-TrCB | 24:31 | 2.152e+03 | 2.084e+03 | 1.03 | yes | no |
| 29 | 36 | 33'5-TrCB | NotFnd | * | * | * | no | no |
| 30 | 39 | 34'5-TrCB | NotFnd | * | * | * | no | no |
| 31 | 38 | 345-TrCB | NotFnd | * | * | * | no | no |
| 32 | 35 | 33'4-TrCB | NotFnd | * | * | * | no | no |
| 33 | 37- | 344'-TrCB | 27:53 | 3.129e+03 | 3.045e+03 | 1.03 | yes | no |
| 34 | 54- | 22'66'-TeCB | NotFnd | * | * | * | no | no |
| 35 | 50/5 | 22'46-TeCB | NotFnd | * | * | * | no | no |
| 36 | 45/5 | 22'36-TeCB | NotFnd | * | * | * | no | no |
| 37 | 46 | 22'36'-TeCB | NotFnd | * | * | * | no | no |
| 38 | 52/4 | 22'55'-TeCB | 25:33 | 6.337e+03 | 8.507e+03 | 0.74 | yes | no |
| 39 | 49/6 | 22'45'-TeCB | 25:59 | 2.827e+03 | 3.701e+03 | 0.76 | yes | no |
| 40 | 48 | 22'45-TeCB | 26:13 | 3.456e+02 | 4.886e+02 | 0.71 | yes | yes |
| 41 | 44/4 | 22'35'-TeCB | 26:36 | 4.105e+03 | 5.653e+03 | 0.73 | yes | yes |
| 42 | 59/6 | 233'6-TeCB | NotFnd | * | * | * | no | no |
| 43 | 42 | 22'34'-TeCB | 27:04 | 6.235e+02 | 7.375e+02 | 0.85 | yes | no |
| 44 | 41/4 | 22'34-TeCB | 27:35 | 2.102e+03 | 3.191e+03 | 0.66 | yes | yes |
| 45 | 64 | 234'6-TeCB | 27:46 | 3.588e+03 | 4.458e+03 | 0.80 | yes | yes |
| 46 | 72 | 23'55'-TeCB | NotFnd | * | * | * | no | no |
| 47 | 68 | 23'45'-TeCB | NotFnd | * | * | * | no | no |
| 48 | 57 | 233'5-TeCB | NotFnd | * | * | * | no | no |
| 49 | 58 | 233'5'-TeCB | NotFnd | * | * | * | no | no |
| 50 | 67 | 23'45-TeCB | NotFnd | * | * | * | no | no |
| 51 | 63 | 234'5-TeCB | NotFnd | * | * | * | no | no |
| 52 | 70/7 | 23'4'5-TeCB | 30:08 | 9.215e+03 | 1.164e+04 | 0.79 | yes | no |
| 53 | 66 | 23'44'-TeCB | 30:28 | 4.238e+03 | 5.419e+03 | 0.78 | yes | no |

Filename U210822 #1 Acquired: 25-JUL-07 13:35:50

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 54 | 55 | 233'4-TeCB | NotFnd | * | * | * | no | no |
| 55 | 56 | 233'4'-TeCB | 31:16 | 2.446e+03 | 3.044e+03 | 0.80 | yes | yes |
| 56 | 60 | 2344'-TeCB | 31:28 | 8.553e+02 | 1.214e+03 | 0.70 | yes | yes |
| 57 | 80 | 33'55'-TeCB | NotFnd | * | * | * | no | no |
| 58 | 79 | 33'45'-TeCB | NotFnd | * | * | * | no | no |
| 59 | 78 | 33'45-TeCB | NotFnd | * | * | * | no | no |
| 60 | 81- | 344'5-TeCB | NotFnd | * | * | * | no | no |
| 61 | 77- | 33'44'-TeCB | 34:59 | 6.759e+02 | 7.746e+02 | 0.87 | yes | yes |
| 62 | 104- | 22'466'-PeCB | NotFnd | * | * | * | no | no |
| 63 | 96 | 22'366'-PeCB | NotFnd | * | * | * | no | no |
| 64 | 103 | 22'45'6-PeCB | NotFnd | * | * | * | no | no |
| 65 | 94 | 22'356'-PeCB | NotFnd | * | * | * | no | no |
| 66 | 95/1 | 22'35'6-PeCB | 29:23 | 1.086e+04 | 6.911e+03 | 1.57 | yes | no |
| 67 | 98/1 | 22'3'46-PeCB | NotFnd | * | * | * | no | no |
| 68 | 88/9 | 22'346-PeCB | 30:09 | 1.181e+03 | 7.382e+02 | 1.60 | yes | yes |
| 69 | 84 | 22'33'6-PeCB | 30:30 | 2.212e+03 | 1.402e+03 | 1.58 | yes | no |
| 70 | 89 | 22'346'-PeCB | NotFnd | * | * | * | no | no |
| 71 | 121 | 23'45'6-PeCB | NotFnd | * | * | * | no | no |
| 72 | 92 | 22'355'-PeCB | 31:33 | 1.622e+03 | 9.839e+02 | 1.65 | yes | yes |
| 73 | 90/1 | 22'34'5-PeCB | 32:04 | 1.424e+04 | 9.037e+03 | 1.58 | yes | no |
| 74 | 83/9 | 22'33'5-PeCB | 32:35 | 5.354e+03 | 3.319e+03 | 1.61 | yes | no |
| 75 | 112 | 233'56-PeCB | NotFnd | * | * | * | no | no |
| 76 | 86/8 | 22'345-PeCB | 33:23 | 8.830e+03 | 5.509e+03 | 1.60 | yes | yes |
| 77 | 85/1 | 22'344'-PeCB | 33:45 | 2.254e+02 | 1.192e+02 | 1.89 | no | yes |
| 78 | 110/ | 233'4'6-PeCB | 34:09 | 2.172e+04 | 1.383e+04 | 1.57 | yes | no |
| 79 | 82 | 22'33'4-PeCB | NotFnd | * | * | * | no | no |
| 80 | 111 | 233'55'-PeCB | 34:32 | 9.078e+02 | 5.967e+02 | 1.52 | yes | no |
| 81 | 120 | 23'455'-PeCB | NotFnd | * | * | * | no | no |
| 82 | 107/ | 233'4'5-PeCB | 36:16 | 5.050e+02 | 3.477e+02 | 1.45 | yes | yes |
| 83 | 109 | 233'46-PeCB | 36:30 | 9.041e+02 | 4.626e+02 | 1.95 | no | yes |
| 84 | 123- | 2'344'5-PeCB | NotFnd | * | * | * | no | no |
| 85 | 106 | 233'45-PeCB | NotFnd | * | * | * | no | no |
| 86 | 118- | 23'44'5-PeCB | 36:55 | 1.305e+04 | 8.083e+03 | 1.61 | yes | yes |
| 87 | 122 | 2'33'45-PeCB | NotFnd | * | * | * | no | no |
| 88 | 114- | 2344'5-PeCB | NotFnd | * | * | * | no | no |
| 89 | 105- | 233'44'-PeCB | 38:15 | 4.200e+03 | 2.693e+03 | 1.56 | yes | no |
| 90 | 127 | 33'455'-PeCB | NotFnd | * | * | * | no | no |
| 91 | 126- | 33'44'5-PeCB | NotFnd | * | * | * | no | no |
| 92 | 155- | 22'44'66'-HxCB | NotFnd | * | * | * | no | no |
| 93 | 152/ | 22'3566'-HxCB | NotFnd | * | * | * | no | no |
| 94 | 136 | 22'33'66'-HxCB | NotFnd | * | * | * | no | no |
| 95 | 145 | 22'3466'-HxCB | 32:43 | 2.653e+03 | 2.199e+03 | 1.21 | yes | no |
| 96 | 148 | 22'34'56'-HxCB | NotFnd | * | * | * | no | no |
| 97 | 135/ | 22'33'56'-HxCB | 34:52 | 5.156e+03 | 4.547e+03 | 1.13 | yes | yes |
| 98 | 144 | 22'345'6-HxCB | 35:23 | 3.053e+02 | 1.695e+02 | 1.80 | no | no |
| 99 | 147/ | 22'34'56-HxCB | 35:47 | 1.012e+04 | 8.310e+03 | 1.22 | yes | yes |
| 100 | 143 | 22'3456'-HxCB | NotFnd | * | * | * | no | no |
| 101 | 139/ | 22'344'6-HxCB | NotFnd | * | * | * | no | no |
| 102 | 131/ | 22'33'46-HxCB | NotFnd | * | * | * | no | no |
| 103 | 132 | 22'33'46'-HxCB | 37:09 | 4.611e+03 | 4.299e+03 | 1.07 | yes | no |
| 104 | 133 | 22'33'55'-HxCB | NotFnd | * | * | * | no | no |
| 105 | 165 | 233'55'6-HxCB | NotFnd | * | * | * | no | no |
| 106 | 146 | 22'34'55'-HxCB | 38:02 | 1.790e+03 | 1.658e+03 | 1.08 | yes | yes |
| 107 | 161 | 233'45'6-HxCB | NotFnd | * | * | * | no | no |
| 108 | 153/ | 22'44'55'-HxCB | 38:36 | 2.050e+04 | 1.641e+04 | 1.25 | yes | no |
| 109 | 141 | 22'3455'-HxCB | 38:55 | 2.973e+03 | 2.416e+03 | 1.23 | yes | yes |
| 110 | 130 | 22'33'45'-HxCB | 39:21 | 4.688e+02 | 2.575e+02 | 1.82 | no | yes |
| 111 | 137 | 22'344'5-HxCB | 39:28 | 2.039e+02 | 1.096e+02 | 1.86 | no | yes |
| 112 | 164 | 233'4'5'6-HxCB | NotFnd | * | * | * | no | no |

Filename U210822 #1 Acquired: 25-JUL-07 13:35:50

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 113 | 129/ | 22'33'45-HxCB | 39:58 | 2.012e+04 | 1.567e+04 | 1.28 | yes | yes |
| 114 | 158 | 233'44'6-HxCB | 40:19 | 1.814e+03 | 1.299e+03 | 1.40 | yes | no |
| 115 | 128/ | 22'33'44'-HxCB | 41:22 | 2.979e+03 | 2.243e+03 | 1.33 | yes | no |
| 116 | 159 | 233'455'-HxCB | NotFnd | * | * | * | no | no |
| 117 | 162 | 233'4'55'-HxCB | NotFnd | * | * | * | no | no |
| 118 | 167- | 23'44'55'-HxCB | 42:52 | 6.993e+02 | 5.610e+02 | 1.25 | yes | no |
| 119 | 156/ | 233'44'5-HxCB | 44:04 | 1.920e+03 | 1.669e+03 | 1.15 | yes | no |
| 120 | 169- | 33'44'55'-HxCB | NotFnd | * | * | * | no | no |
| 121 | 188- | 22'34'566'-HpCB | NotFnd | * | * | * | no | no |
| 122 | 179 | 22'33'566'-HpCB | 37:41 | 2.786e+03 | 3.353e+03 | 0.83 | no | yes |
| 123 | 184 | 22'344'66'-HpCB | NotFnd | * | * | * | no | no |
| 124 | 176 | 22'33'466'-HpCB | 38:31 | 8.013e+02 | 1.071e+03 | 0.75 | no | no |
| 125 | 186 | 22'34566'-HpCB | NotFnd | * | * | * | no | no |
| 126 | 178 | 22'33'55'6-HpCB | 40:15 | 7.655e+02 | 8.892e+02 | 0.86 | no | no |
| 127 | 175 | 22'33'45'6-HpCB | NotFnd | * | * | * | no | no |
| 128 | 187 | 22'34'55'6-HpCB | 41:07 | 7.576e+03 | 8.283e+03 | 0.91 | yes | no |
| 129 | 182 | 22'344'56'-HpCB | NotFnd | * | * | * | no | no |
| 130 | 183 | 22'344'5'6-HpCB | 41:42 | 2.971e+03 | 3.545e+03 | 0.84 | no | yes |
| 131 | 185 | 22'3455'6-HpCB | NotFnd | * | * | * | no | no |
| 132 | 174 | 22'33'456'-HpCB | 42:08 | 3.165e+03 | 3.418e+03 | 0.93 | yes | no |
| 133 | 177 | 22'33'4'56-HpCB | 42:33 | 1.886e+03 | 2.052e+03 | 0.92 | yes | no |
| 134 | 181 | 22'344'56-HpCB | NotFnd | * | * | * | no | no |
| 135 | 171/ | 22'33'44'6-HpCB | 43:08 | 1.009e+03 | 1.223e+03 | 0.83 | no | no |
| 136 | 172 | 22'33'455'-HpCB | 44:40 | 5.263e+02 | 6.352e+02 | 0.83 | no | no |
| 137 | 192 | 233'455'6-HpCB | NotFnd | * | * | * | no | no |
| 138 | 180/ | 22'344'55'-HpCB | 45:18 | 1.107e+04 | 1.238e+04 | 0.89 | yes | no |
| 139 | 191 | 233'44'5'6-HpCB | 45:40 | 1.800e+02 | 2.175e+02 | 0.83 | no | no |
| 140 | 170 | 22'33'44'5-HpCB | 46:40 | 3.615e+03 | 4.024e+03 | 0.90 | yes | no |
| 141 | 190 | 233'44'56-HpCB | 47:07 | 9.621e+02 | 1.140e+03 | 0.84 | no | no |
| 142 | 189- | 233'44'55'-HpCB | 49:40 | 1.196e+02 | 1.680e+02 | 0.71 | no | no |
| 143 | 202- | 22'33'55'66'-OcCB | 42:25 | 4.748e+02 | 5.595e+02 | 0.85 | yes | yes |
| 144 | 201 | 22'33'45'66'-OcCB | 43:19 | 3.356e+02 | 3.445e+02 | 0.97 | yes | yes |
| 145 | 204 | 22'344'566'-OcCB | NotFnd | * | * | * | no | yes |
| 146 | 197/ | 22'33'44'66'-OcCB | 44:26 | 3.797e+02 | 4.669e+02 | 0.81 | yes | yes |
| 147 | 198/ | 22'33'455'6-OcCB | 47:09 | 2.179e+03 | 2.540e+03 | 0.86 | yes | no |
| 148 | 196 | 22'33'44'56'-OcCB | 47:48 | 9.045e+02 | 1.061e+03 | 0.85 | yes | no |
| 149 | 203 | 22'344'55'6-OcCB | 47:58 | 1.569e+03 | 1.900e+03 | 0.83 | yes | no |
| 150 | 195 | 22'33'44'56-OcCB | 49:24 | 6.707e+02 | 7.859e+02 | 0.85 | yes | no |
| 151 | 194 | 22'33'44'55'-OcCB | 51:41 | 1.594e+03 | 2.036e+03 | 0.78 | yes | no |
| 152 | 205- | 233'44'55'6-OcCB | 52:06 | 9.006e+01 | 1.051e+02 | 0.86 | yes | no |
| 153 | 208- | 22'33'4'55'66'-NoCB | 48:55 | 2.952e+02 | 3.980e+02 | 0.74 | yes | no |
| 154 | 207 | 22'33'44'566'-NoCB | 49:47 | 1.078e+02 | 1.808e+02 | 0.60 | no | no |
| 155 | 206- | 22'33'44'55'6-NoCB | 53:44 | 7.530e+02 | 1.036e+03 | 0.73 | yes | no |
| 156 | 209- | DeCB | 55:08 | 4.240e+02 | 3.403e+02 | 1.25 | yes | no |
| | | | | | | | | |
| 157 | 1L | 13C-2-MoCB | 12:55 | 1.141e+04 | 3.890e+03 | 2.93 | yes | no |
| 158 | 3L | 13C-4-MoCB | 15:00 | 1.396e+04 | 4.380e+03 | 3.19 | yes | no |
| 159 | 4L | 13C-22'-DiCB | 15:16 | 1.064e+04 | 7.150e+03 | 1.49 | yes | no |
| 160 | 15L | 13C-44'-DiCB | 20:59 | 1.959e+04 | 1.295e+04 | 1.51 | yes | no |
| 161 | 19L | 13C-22'6'-TrCB | 18:11 | 8.120e+03 | 8.421e+03 | 0.96 | yes | yes |
| 162 | 37L | 13C-344'-TrCB | 27:51 | 2.204e+04 | 2.208e+04 | 1.00 | yes | no |
| 163 | 54L | 13C-22'66'-TeCB | 21:17 | 1.261e+04 | 1.715e+04 | 0.73 | yes | no |
| 164 | 81L | 13C-344'5-TeCB | 34:19 | 1.679e+04 | 2.248e+04 | 0.75 | yes | no |
| 165 | 77L | 13C-33'44'-TeCB | 34:58 | 1.660e+04 | 2.261e+04 | 0.73 | yes | no |
| 166 | 104L | 13C-22'466'-PeCB | 26:18 | 2.634e+04 | 1.719e+04 | 1.53 | yes | no |
| 167 | 123L | 13C-2'344'5-PeCB | 36:35 | 2.045e+04 | 1.376e+04 | 1.49 | yes | yes |
| 168 | 118L | 13C-23'44'5-PeCB | 36:54 | 2.209e+04 | 1.450e+04 | 1.52 | yes | yes |
| 169 | 114L | 13C-2344'5-PeCB | 37:26 | 2.165e+04 | 1.452e+04 | 1.49 | yes | no |
| 170 | 105L | 13C-233'44'-PeCB | 38:14 | 2.135e+04 | 1.404e+04 | 1.52 | yes | yes |
| 171 | 126L | 13C-33'44'5-PeCB | 41:17 | 2.175e+04 | 1.483e+04 | 1.47 | yes | yes |

Filename U210822 Acquired: 25-JUL-07 13:35:50

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 172 | 155L | 13C-22'44'66'-HxCB | 31:32 | 2.615e+04 | 2.173e+04 | 1.20 | yes | no |
| 173 | 167L | 13C-23'44'55'-HxCB | 42:50 | 1.607e+04 | 1.307e+04 | 1.23 | yes | no |
| 174 | 156/ | 13C-233'44'5'-HxCB | 44:09 | 3.145e+04 | 2.535e+04 | 1.24 | yes | yes |
| 175 | 169L | 13C-33'44'55'-HxCB | 47:20 | 1.486e+04 | 1.176e+04 | 1.26 | yes | no |
| 176 | 188L | 13C-22'34'566'-HpCB | 37:05 | 2.057e+04 | 1.983e+04 | 1.04 | yes | no |
| 177 | 189L | 13C-233'44'55'-HpCB | 49:38 | 1.142e+04 | 1.122e+04 | 1.02 | yes | no |
| 178 | 202L | 13C-22'33'55'66'-OcCB | 42:22 | 1.212e+04 | 1.390e+04 | 0.87 | yes | no |
| 179 | 205L | 13C-233'44'55'6-OcCB | 52:05 | 1.141e+04 | 1.280e+04 | 0.89 | yes | no |
| 180 | 208L | 13C-22'33'4'55'66'-NoCB | 48:52 | 1.071e+04 | 1.357e+04 | 0.79 | yes | no |
| 181 | 206L | 13C-22'33'44'55'6-NoCB | 53:43 | 7.014e+03 | 9.244e+03 | 0.76 | yes | no |
| 182 | 209L | 13C-DeCB | 55:06 | 1.171e+04 | 9.875e+03 | 1.19 | yes | no |
| 183 | 28L | 13C-244'-TrCB | 23:45 | 2.823e+04 | 2.786e+04 | 1.01 | yes | no |
| 184 | 111L | 13C-233'55'-PeCB | 34:32 | 3.417e+04 | 2.206e+04 | 1.55 | yes | no |
| 185 | 178L | 13C-22'33'55'6-HpCB | 40:13 | 1.765e+04 | 1.701e+04 | 1.04 | yes | no |
| 186 | 9L | 13C-2,5-DiCB | 17:01 | 5.959e+04 | 4.037e+04 | 1.48 | yes | no |
| 187 | 52L | 13C-22'55'-TeCB | 25:31 | 3.169e+04 | 4.190e+04 | 0.76 | yes | no |
| 188 | 101L | 13C-22'4'55'-PeCB | 32:02 | 3.617e+04 | 2.278e+04 | 1.59 | yes | no |
| 189 | 138L | 13C-22'3'44'5'-HxCB | 39:56 | 2.503e+04 | 2.032e+04 | 1.23 | yes | no |
| 190 | 194L | 13C-22'33'44'55'-OcCB | 51:38 | 1.541e+04 | 1.719e+04 | 0.90 | yes | no |

-- Sample Calculation--

$$\text{DeCB} = \frac{(4.240e+02 + 3.403e+02) \times 2000\ \text{pg} \times 1}{(1.171e+04 + 9.875e+03) \times (4.989\ \text{g}) \times (100 - 51.40)/100 \times 0.8488} = 34.4\ \text{pg/dry gm}$$

cee 07/30/07

me 07/30/07

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sp1668respa
08/2006

Columbia Analytical Services,Inc. CLIENT ID.
Signal/Noise Height Ratio Summary FO 070665

Run #9 Filename U210822#1 Samp: 1 Inj: 1 Acquired: 25-JUL-07 13:35:50

Processed: 30-JUL-07 10:04:59 LAB. ID: K0704820-001

| | Name | Signal 1 | Noise 1 | S/N Rat.1 | Signal 2 | Noise 2 | S/N Rat.2 |
|---|---|---|---|---|---|---|---|
| 1 | 2-MoCB | 4.72e+05 | 3.02e+03 | 1.6e+02 | 1.47e+05 | 7.73e+03 | 1.9e+01 |
| 2 | 3-MoCB | 5.99e+04 | 3.02e+03 | 2.0e+01 | 1.92e+04 | 7.73e+03 | 2.5e+00 |
| 3 | 4-MoCB | 1.95e+05 | 3.02e+03 | 6.5e+01 | 6.18e+04 | 7.73e+03 | 8.0e+00 |
| 4 | 22'-DiCB | 1.03e+05 | 7.82e+03 | 1.3e+01 | 7.18e+04 | 5.06e+03 | 1.4e+01 |
| 5 | 26-DiCB | * | 7.82e+03 | * | * | 5.06e+03 | * |
| 6 | 25-DiCB | * | 1.84e+03 | * | * | 3.56e+04 | * |
| 7 | 24-DiCB | * | 1.84e+03 | * | * | 3.56e+04 | * |
| 8 | 23'-DiCB | 1.36e+05 | 1.84e+03 | 7.4e+01 | 1.01e+05 | 3.56e+04 | 2.9e+00 |
| 9 | 23-DiCB | 3.08e+05 | 1.84e+03 | 1.7e+02 | 2.02e+05 | 3.56e+04 | 5.7e+00 |
| 10 | 2,4'-DiCB | * | 1.84e+03 | * | * | 3.56e+04 | * |
| 11 | 35-DiCB | * | 1.84e+03 | * | * | 3.56e+04 | * |
| 12 | 33'-DiCB | 5.31e+05 | 1.84e+03 | 2.9e+02 | 3.38e+05 | 3.56e+04 | 9.5e+00 |
| 13 | 34-DiCB | * | 1.84e+03 | * | * | 3.56e+04 | * |
| 14 | 44'-DiCB | 4.39e+05 | 1.84e+03 | 2.4e+02 | 2.71e+05 | 3.56e+04 | 7.6e+00 |
| 15 | 22'6-TrCB | * | 1.23e+04 | * | * | 3.97e+03 | * |
| 16 | 22'5-TrCB | 2.79e+05 | 1.23e+04 | 2.3e+01 | 3.15e+05 | 3.97e+03 | 7.9e+01 |
| 17 | 22'4-TrCB | 8.15e+04 | 1.23e+04 | 6.6e+00 | 7.96e+04 | 3.97e+03 | 2.0e+01 |
| 18 | 23'6-TrCB | * | 1.23e+04 | * | * | 3.97e+03 | * |
| 19 | 22'3-TrCB | 7.15e+04 | 1.23e+04 | 5.8e+00 | 7.38e+04 | 3.97e+03 | 1.9e+01 |
| 20 | 24'6-TrCB | 1.42e+05 | 1.23e+04 | 1.2e+01 | 1.60e+05 | 3.97e+03 | 4.0e+01 |
| 21 | 2'35-TrCB | * | 1.23e+04 | * | * | 3.97e+03 | * |
| 22 | 235-TrCB | * | 1.23e+04 | * | * | 3.97e+03 | * |
| 23 | 23'5-TrCB | 6.33e+04 | 6.60e+03 | 9.6e+00 | 7.24e+04 | 4.32e+03 | 1.7e+01 |
| 24 | 23'4-TrCB | * | 6.60e+03 | * | * | 4.32e+03 | * |
| 25 | 24'5-TrCB | 6.04e+05 | 6.60e+03 | 9.2e+01 | 6.09e+05 | 4.32e+03 | 1.4e+02 |
| 26 | 233'-TrCB | 8.47e+05 | 6.60e+03 | 1.3e+02 | 7.61e+05 | 4.32e+03 | 1.8e+02 |
| 27 | 234-TrCB | 2.81e+05 | 6.60e+03 | 4.3e+01 | 2.75e+05 | 4.32e+03 | 6.4e+01 |
| 28 | 234'-TrCB | 2.68e+05 | 6.60e+03 | 4.1e+01 | 2.54e+05 | 4.32e+03 | 5.9e+01 |
| 29 | 33'5-TrCB | * | 6.60e+03 | * | * | 4.32e+03 | * |
| 30 | 34'5-TrCB | * | 6.60e+03 | * | * | 4.32e+03 | * |
| 31 | 345-TrCB | * | 6.60e+03 | * | * | 4.32e+03 | * |
| 32 | 33'4-TrCB | * | 6.60e+03 | * | * | 4.32e+03 | * |
| 33 | 344'-TrCB | 3.73e+05 | 6.60e+03 | 5.7e+01 | 3.82e+05 | 4.32e+03 | 8.8e+01 |
| 34 | 22'66'-TeCB | * | 1.54e+03 | * | * | 1.87e+03 | * |
| 35 | 22'46-TeCB | * | 9.28e+03 | * | * | 1.75e+03 | * |
| 36 | 22'36-TeCB | * | 9.28e+03 | * | * | 1.75e+03 | * |
| 37 | 22'36'-TeCB | * | 9.28e+03 | * | * | 1.75e+03 | * |
| 38 | 22'55'-TeCB | 5.52e+05 | 9.28e+03 | 5.9e+01 | 7.52e+05 | 1.75e+03 | 4.3e+02 |
| 39 | 22'45'-TeCB | 2.74e+05 | 9.28e+03 | 3.0e+01 | 3.52e+05 | 1.75e+03 | 2.0e+02 |
| 40 | 22'45-TeCB | 5.13e+04 | 9.28e+03 | 5.5e+00 | 7.19e+04 | 1.75e+03 | 4.1e+01 |
| 41 | 22'35'-TeCB | 3.28e+05 | 9.28e+03 | 3.5e+01 | 4.28e+05 | 1.75e+03 | 2.4e+02 |
| 42 | 233'6-TeCB | * | 9.28e+03 | * | * | 1.75e+03 | * |
| 43 | 22'34'-TeCB | 8.46e+04 | 9.28e+03 | 9.1e+00 | 1.09e+05 | 1.75e+03 | 6.2e+01 |
| 44 | 22'34-TeCB | 2.34e+05 | 9.28e+03 | 2.5e+01 | 3.10e+05 | 1.75e+03 | 1.8e+02 |
| 45 | 234'6-TeCB | 4.04e+05 | 9.28e+03 | 4.3e+01 | 5.42e+05 | 1.75e+03 | 3.1e+02 |
| 46 | 23'55'-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |
| 47 | 23'45'-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |
| 48 | 233'5-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |
| 49 | 233'5'-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |
| 50 | 23'45-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |

Run #9 Filename U210822#1 Samp: 1 Acquired: 25-JUL-07 13:35:50

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 51 | 234'5-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |
| 52 | 23'4'5-TeCB | 9.88e+05 | 8.72e+03 | 1.1e+02 | 1.31e+06 | 1.55e+04 | 8.4e+01 |
| 53 | 23'44'-TeCB | 5.15e+05 | 8.72e+03 | 5.9e+01 | 6.63e+05 | 1.55e+04 | 4.3e+01 |
| 54 | 233'4-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |
| 55 | 233'4'-TeCB | 2.42e+05 | 8.72e+03 | 2.8e+01 | 2.95e+05 | 1.55e+04 | 1.9e+01 |
| 56 | 2344'-TeCB | 1.01e+05 | 8.72e+03 | 1.2e+01 | 1.45e+05 | 1.55e+04 | 9.3e+00 |
| 57 | 33'55'-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |
| 58 | 33'45'-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |
| 59 | 33'45-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |
| 60 | 344'5-TeCB | * | 8.72e+03 | * | * | 1.55e+04 | * |
| 61 | 33'44'-TeCB | 7.79e+04 | 8.72e+03 | 8.9e+00 | 9.96e+04 | 1.55e+04 | 6.4e+00 |
| 62 | 22'466'-PeCB | * | 8.56e+02 | * | * | 1.16e+03 | * |
| 63 | 22'366'-PeCB | * | 8.56e+02 | * | * | 1.16e+03 | * |
| 64 | 22'45'6-PeCB | * | 4.67e+03 | * | * | 2.32e+03 | * |
| 65 | 22'356'-PeCB | * | 4.67e+03 | * | * | 2.32e+03 | * |
| 66 | 22'35'6-PeCB | 7.34e+05 | 4.67e+03 | 1.6e+02 | 4.67e+05 | 2.32e+03 | 2.0e+02 |
| 67 | 22'3'46-PeCB | * | 4.67e+03 | * | * | 2.32e+03 | * |
| 68 | 22'346-PeCB | 1.07e+05 | 4.67e+03 | 2.3e+01 | 6.44e+04 | 2.32e+03 | 2.8e+01 |
| 69 | 22'33'6-PeCB | 2.00e+05 | 4.67e+03 | 4.3e+01 | 1.32e+05 | 2.32e+03 | 5.7e+01 |
| 70 | 22'346'-PeCB | * | 4.67e+03 | * | * | 2.32e+03 | * |
| 71 | 23'45'6-PeCB | * | 4.67e+03 | * | * | 2.32e+03 | * |
| 72 | 22'355'-PeCB | 1.79e+05 | 4.67e+03 | 3.8e+01 | 1.12e+05 | 2.32e+03 | 4.8e+01 |
| 73 | 22'34'5-PeCB | 1.49e+06 | 4.67e+03 | 3.2e+02 | 9.31e+05 | 2.32e+03 | 4.0e+02 |
| 74 | 22'33'5-PeCB | 5.92e+05 | 4.67e+03 | 1.3e+02 | 3.78e+05 | 2.32e+03 | 1.6e+02 |
| 75 | 233'56-PeCB | * | 4.67e+03 | * | * | 2.32e+03 | * |
| 76 | 22'345-PeCB | 5.35e+05 | 4.67e+03 | 1.1e+02 | 3.36e+05 | 2.32e+03 | 1.4e+02 |
| 77 | 22'344'-PeCB | 3.43e+04 | 4.67e+03 | 7.3e+00 | 2.41e+04 | 2.32e+03 | 1.0e+01 |
| 78 | 233'4'6-PeCB | 2.14e+06 | 4.67e+03 | 4.6e+02 | 1.33e+06 | 2.32e+03 | 5.7e+02 |
| 79 | 22'33'4-PeCB | * | 4.67e+03 | * | * | 2.32e+03 | * |
| 80 | 233'55'-PeCB | 1.26e+05 | 4.67e+03 | 2.7e+01 | 8.18e+04 | 2.32e+03 | 3.5e+01 |
| 81 | 23'455'-PeCB | * | 4.67e+03 | * | * | 2.32e+03 | * |
| 82 | 233'4'5-PeCB | 6.22e+04 | 5.64e+02 | 1.1e+02 | 3.87e+04 | 7.56e+02 | 5.1e+01 |
| 83 | 233'46-PeCB | 1.09e+05 | 5.64e+02 | 1.9e+02 | 5.92e+04 | 7.56e+02 | 7.8e+01 |
| 84 | 2'344'5-PeCB | * | 5.64e+02 | * | * | 7.56e+02 | * |
| 85 | 233'45-PeCB | * | 5.64e+02 | * | * | 7.56e+02 | * |
| 86 | 23'44'5-PeCB | 1.86e+06 | 5.64e+02 | 3.3e+03 | 1.17e+06 | 7.56e+02 | 1.6e+03 |
| 87 | 2'33'45-PeCB | * | 5.64e+02 | * | * | 7.56e+02 | * |
| 88 | 2344'5-PeCB | * | 5.64e+02 | * | * | 7.56e+02 | * |
| 89 | 233'44'-PeCB | 6.88e+05 | 5.64e+02 | 1.2e+03 | 4.31e+05 | 7.56e+02 | 5.7e+02 |
| 90 | 33'455'-PeCB | * | 5.64e+02 | * | * | 7.56e+02 | * |
| 91 | 33'44'5-PeCB | * | 5.64e+02 | * | * | 7.56e+02 | * |
| 92 | 22'44'66'-HxCB | * | 5.76e+02 | * | * | 7.64e+02 | * |
| 93 | 22'3566'-HxCB | * | 5.76e+02 | * | * | 7.64e+02 | * |
| 94 | 22'33'66'-HxCB | * | 5.76e+02 | * | * | 7.64e+02 | * |
| 95 | 22'3466'-HxCB | 1.25e+05 | 5.76e+02 | 2.2e+02 | 1.07e+05 | 7.64e+02 | 1.4e+02 |
| 96 | 22'34'56'-HxCB | * | 5.76e+02 | * | * | 7.64e+02 | * |
| 97 | 22'33'56'-HxCB | 3.17e+05 | 5.76e+02 | 5.5e+02 | 2.94e+05 | 7.64e+02 | 3.9e+02 |
| 98 | 22'345'6-HxCB | 4.44e+04 | 5.76e+02 | 7.7e+01 | 3.04e+04 | 7.64e+02 | 4.0e+01 |
| 99 | 22'34'56-HxCB | 1.07e+06 | 4.77e+03 | 2.2e+02 | 8.41e+05 | 2.80e+03 | 3.0e+02 |
| 100 | 22'3456'-HxCB | * | 4.77e+03 | * | * | 2.80e+03 | * |
| 101 | 22'344'6-HxCB | * | 4.77e+03 | * | * | 2.80e+03 | * |
| 102 | 22'33'46-HxCB | * | 4.77e+03 | * | * | 2.80e+03 | * |
| 103 | 22'33'46'-HxCB | 4.71e+05 | 4.77e+03 | 9.9e+01 | 3.94e+05 | 2.80e+03 | 1.4e+02 |
| 104 | 22'33'55'-HxCB | * | 4.77e+03 | * | * | 2.80e+03 | * |
| 105 | 233'55'6-HxCB | * | 4.77e+03 | * | * | 2.80e+03 | * |
| 106 | 22'34'55'-HxCB | 2.13e+05 | 4.77e+03 | 4.5e+01 | 1.82e+05 | 2.80e+03 | 6.5e+01 |
| 107 | 233'45'6-HxCB | * | 4.77e+03 | * | * | 2.80e+03 | * |
| 108 | 22'44'55'-HxCB | 2.32e+06 | 4.77e+03 | 4.9e+02 | 1.84e+06 | 2.80e+03 | 6.6e+02 |
| 109 | 22'3455'-HxCB | 3.82e+05 | 4.77e+03 | 8.0e+01 | 3.00e+05 | 2.80e+03 | 1.1e+02 |

Run #9 Filename U210822#1 Samp: 1 Acquired: 25-JUL-07 13:35:50

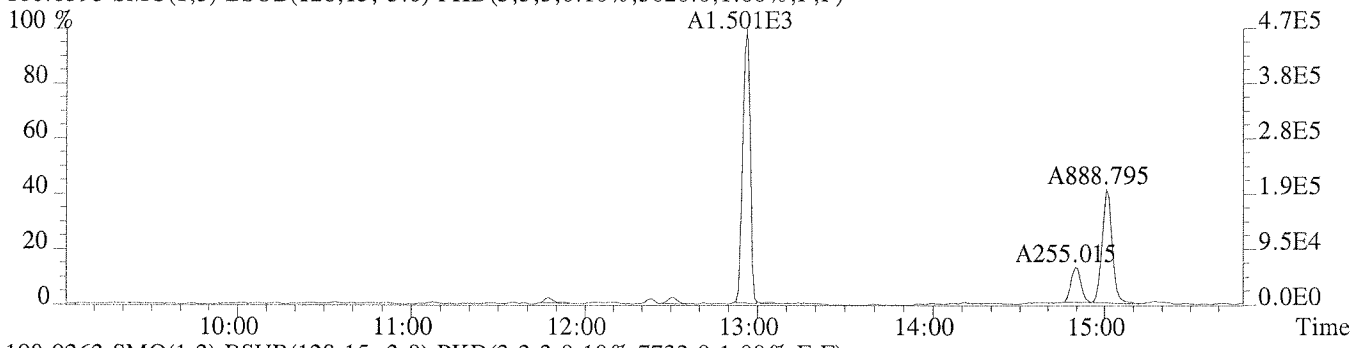
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 110 | 22'33'45'-HxCB | 7.24e+04 | 4.77e+03 | 1.5e+01 | 4.17e+04 | 2.80e+03 | 1.5e+01 |
| 111 | 22'344'5-HxCB | 3.67e+04 | 4.77e+03 | 7.7e+00 | 2.24e+04 | 2.80e+03 | 8.0e+00 |
| 112 | 233'4'5'6-HxCB | * | 4.77e+03 | * | * | 2.80e+03 | * |
| 113 | 22'33'45-HxCB | 2.09e+06 | 4.77e+03 | 4.4e+02 | 1.66e+06 | 2.80e+03 | 5.9e+02 |
| 114 | 233'44'6-HxCB | 2.44e+05 | 4.77e+03 | 5.1e+01 | 1.76e+05 | 2.80e+03 | 6.3e+01 |
| 115 | 22'33'44'-HxCB | 3.37e+05 | 4.77e+03 | 7.1e+01 | 2.58e+05 | 2.80e+03 | 9.2e+01 |
| 116 | 233'455'-HxCB | * | 5.89e+03 | * | * | 2.80e+03 | * |
| 117 | 233'4'55'-HxCB | * | 5.89e+03 | * | * | 2.80e+03 | * |
| 118 | 23'44'55'-HxCB | 1.21e+05 | 5.89e+03 | 2.1e+01 | 1.05e+05 | 2.80e+03 | 3.8e+01 |
| 119 | 233'44'5-HxCB | 2.70e+05 | 5.89e+03 | 4.6e+01 | 2.18e+05 | 2.80e+03 | 7.8e+01 |
| 120 | 33'44'55'-HxCB | * | 5.89e+03 | * | * | 2.80e+03 | * |
| 121 | 22'34'566'-HpCB | * | 1.59e+03 | * | * | 4.80e+02 | * |
| 122 | 22'33'566'-HpCB | 1.60e+05 | 1.59e+03 | 1.0e+02 | 1.72e+05 | 4.80e+02 | 3.6e+02 |
| 123 | 22'344'66'-HpCB | * | 1.59e+03 | * | * | 4.80e+02 | * |
| 124 | 22'33'466'-HpCB | 5.60e+04 | 1.59e+03 | 3.5e+01 | 6.68e+04 | 4.80e+02 | 1.4e+02 |
| 125 | 22'34566'-HpCB | * | 1.59e+03 | * | * | 4.80e+02 | * |
| 126 | 22'33'55'6-HpCB | 6.11e+04 | 1.59e+03 | 3.8e+01 | 7.29e+04 | 4.80e+02 | 1.5e+02 |
| 127 | 22'33'45'6-HpCB | * | 1.59e+03 | * | * | 4.80e+02 | * |
| 128 | 22'34'55'6-HpCB | 6.38e+05 | 1.59e+03 | 4.0e+02 | 6.93e+05 | 4.80e+02 | 1.4e+03 |
| 129 | 22'344'56'-HpCB | * | 1.59e+03 | * | * | 4.80e+02 | * |
| 130 | 22'344'5'6-HpCB | 3.40e+05 | 1.59e+03 | 2.1e+02 | 3.81e+05 | 4.80e+02 | 7.9e+02 |
| 131 | 22'3455'6-HpCB | * | 5.96e+03 | * | * | 9.12e+02 | * |
| 132 | 22'33'456'-HpCB | 3.90e+05 | 5.96e+03 | 6.5e+01 | 4.13e+05 | 9.12e+02 | 4.5e+02 |
| 133 | 22'33'4'56-HpCB | 2.40e+05 | 5.96e+03 | 4.0e+01 | 2.56e+05 | 9.12e+02 | 2.8e+02 |
| 134 | 22'344'56-HpCB | * | 5.96e+03 | * | * | 9.12e+02 | * |
| 135 | 22'33'44'6-HpCB | 1.33e+05 | 5.96e+03 | 2.2e+01 | 1.59e+05 | 9.12e+02 | 1.7e+02 |
| 136 | 22'33'455'-HpCB | 7.85e+04 | 5.96e+03 | 1.3e+01 | 8.92e+04 | 9.12e+02 | 9.8e+01 |
| 137 | 233'455'6-HpCB | * | 5.96e+03 | * | * | 9.12e+02 | * |
| 138 | 22'344'55'-HpCB | 1.60e+06 | 5.96e+03 | 2.7e+02 | 1.80e+06 | 9.12e+02 | 2.0e+03 |
| 139 | 233'44'5'6-HpCB | 2.77e+04 | 5.96e+03 | 4.6e+00 | 3.27e+04 | 9.12e+02 | 3.6e+01 |
| 140 | 22'33'44'5-HpCB | 5.66e+05 | 5.96e+03 | 9.5e+01 | 5.86e+05 | 9.12e+02 | 6.4e+02 |
| 141 | 233'44'56-HpCB | 1.56e+05 | 5.96e+03 | 2.6e+01 | 1.86e+05 | 9.12e+02 | 2.0e+02 |
| 142 | 233'44'55'-HpCB | 2.22e+04 | 5.96e+03 | 3.7e+00 | 2.90e+04 | 9.12e+02 | 3.2e+01 |
| 143 | 22'33'55'66'-OcCB | 4.20e+04 | 1.39e+03 | 3.0e+01 | 5.26e+04 | 5.12e+03 | 1.0e+01 |
| 144 | 22'33'45'66'-OcCB | 3.43e+04 | 1.39e+03 | 2.5e+01 | 3.49e+04 | 5.12e+03 | 6.8e+00 |
| 145 | 22'344'566'-OcCB | * | 1.39e+03 | * | * | 5.12e+03 | * |
| 146 | 22'33'44'66'-OcCB | 3.24e+04 | 1.39e+03 | 2.3e+01 | 4.18e+04 | 5.12e+03 | 8.2e+00 |
| 147 | 22'33'455'6-OcCB | 2.40e+05 | 1.39e+03 | 1.7e+02 | 2.95e+05 | 5.12e+03 | 5.8e+01 |
| 148 | 22'33'44'56'-OcCB | 1.29e+05 | 1.39e+03 | 9.3e+01 | 1.58e+05 | 5.12e+03 | 3.1e+01 |
| 149 | 22'344'55'6-OcCB | 1.93e+05 | 1.39e+03 | 1.4e+02 | 2.26e+05 | 5.12e+03 | 4.4e+01 |
| 150 | 22'33'44'56-OcCB | 8.78e+04 | 1.39e+03 | 6.3e+01 | 1.03e+05 | 5.12e+03 | 2.0e+01 |
| 151 | 22'33'44'55'-OcCB | 2.40e+05 | 1.39e+03 | 1.7e+02 | 3.12e+05 | 5.12e+03 | 6.1e+01 |
| 152 | 233'44'55'6-OcCB | 1.44e+04 | 1.39e+03 | 1.0e+01 | 1.78e+04 | 5.12e+03 | 3.5e+00 |
| 153 | 22'33'4'55'66'-NoCB | 3.15e+04 | 6.04e+02 | 5.2e+01 | 4.07e+04 | 4.72e+02 | 8.6e+01 |
| 154 | 22'33'44'566'-NoCB | 1.32e+04 | 6.04e+02 | 2.2e+01 | 1.93e+04 | 4.72e+02 | 4.1e+01 |
| 155 | 22'33'44'55'6-NoCB | 9.02e+04 | 9.40e+02 | 9.6e+01 | 1.19e+05 | 1.16e+03 | 1.0e+02 |
| 156 | DeCB | 4.51e+04 | 5.76e+02 | 7.8e+01 | 3.87e+04 | 7.28e+02 | 5.3e+01 |
| | | | | | | | |
| 157 | 13C-2-MoCB | 3.65e+06 | 3.90e+03 | 9.3e+02 | 1.26e+06 | 6.89e+04 | 1.8e+01 |
| 158 | 13C-4-MoCB | 3.03e+06 | 3.90e+03 | 7.8e+02 | 9.95e+05 | 6.89e+04 | 1.4e+01 |
| 159 | 13C-22'-DiCB | 1.48e+06 | 6.86e+03 | 2.2e+02 | 1.00e+06 | 6.74e+03 | 1.5e+02 |
| 160 | 13C-44'-DiCB | 2.68e+06 | 8.74e+03 | 3.1e+02 | 1.80e+06 | 9.17e+03 | 2.0e+02 |
| 161 | 13C-22'6'-TrCB | 5.86e+05 | 1.03e+05 | 5.7e+00 | 5.80e+05 | 7.68e+04 | 7.5e+00 |
| 162 | 13C-344'-TrCB | 2.58e+06 | 4.42e+04 | 5.8e+01 | 2.61e+06 | 3.42e+04 | 7.7e+01 |
| 163 | 13C-22'66'-TeCB | 5.41e+05 | 6.22e+03 | 8.7e+01 | 7.06e+05 | 6.16e+03 | 1.1e+02 |
| 164 | 13C-344'5-TeCB | 1.94e+06 | 4.05e+03 | 4.8e+02 | 2.60e+06 | 4.00e+03 | 6.5e+02 |
| 165 | 13C-33'44'-TeCB | 1.91e+06 | 4.05e+03 | 4.7e+02 | 2.55e+06 | 4.00e+03 | 6.4e+02 |
| 166 | 13C-22'466'-PeCB | 1.11e+06 | 1.34e+03 | 8.3e+02 | 7.08e+05 | 1.16e+03 | 6.1e+02 |
| 167 | 13C-2'344'5-PeCB | 2.37e+06 | 3.27e+03 | 7.3e+02 | 1.54e+06 | 3.28e+03 | 4.7e+02 |
| 168 | 13C-23'44'5-PeCB | 2.95e+06 | 3.27e+03 | 9.0e+02 | 1.96e+06 | 3.28e+03 | 6.0e+02 |

Run #9 Filename U210822#1 Samp: 1 Acquired: 25-JUL-07 13:35:50

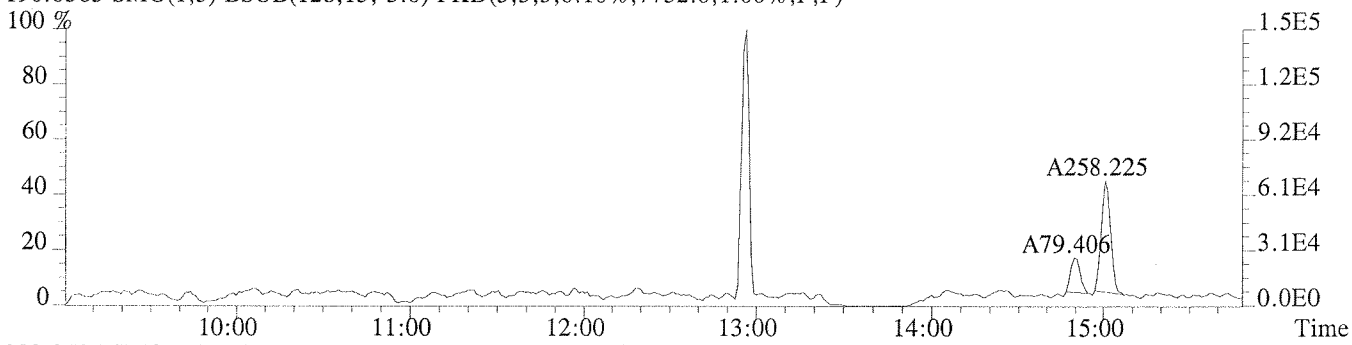
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 169 | 13C-2344'5-PeCB | 2.40e+06 | 3.27e+03 | 7.3e+02 | 1.61e+06 | 3.28e+03 | 4.9e+02 |
| 170 | 13C-233'44'-PeCB | 2.79e+06 | 3.27e+03 | 8.5e+02 | 1.85e+06 | 3.28e+03 | 5.6e+02 |
| 171 | 13C-33'44'5-PeCB | 2.49e+06 | 3.27e+03 | 7.6e+02 | 1.67e+06 | 3.28e+03 | 5.1e+02 |
| 172 | 13C-22'44'66'-HxCB | 1.49e+06 | 5.64e+02 | 2.6e+03 | 1.22e+06 | 1.06e+03 | 1.1e+03 |
| 173 | 13C-23'44'55'-HxCB | 2.54e+06 | 2.18e+03 | 1.2e+03 | 2.08e+06 | 2.96e+03 | 7.0e+02 |
| 174 | 13C-233'44'5'-HxCB | 2.70e+06 | 2.18e+03 | 1.2e+03 | 2.17e+06 | 2.96e+03 | 7.3e+02 |
| 175 | 13C-33'44'55'-HxCB | 2.40e+06 | 2.18e+03 | 1.1e+03 | 1.91e+06 | 2.96e+03 | 6.4e+02 |
| 176 | 13C-22'34'566'-HpCB | 1.22e+06 | 1.16e+03 | 1.1e+03 | 1.16e+06 | 2.84e+02 | 4.1e+03 |
| 177 | 13C-233'44'55'-HpCB | 1.78e+06 | 9.64e+02 | 1.8e+03 | 1.73e+06 | 8.88e+02 | 1.9e+03 |
| 178 | 13C-22'33'55'66'-OcCB | 1.01e+06 | 5.56e+02 | 1.8e+03 | 1.12e+06 | 2.06e+03 | 5.4e+02 |
| 179 | 13C-233'44'55'6-OcCB | 1.75e+06 | 5.56e+02 | 3.1e+03 | 1.97e+06 | 2.06e+03 | 9.5e+02 |
| 180 | 13C-22'33'4'55'66'-NoCB | 1.05e+06 | 5.56e+02 | 1.9e+03 | 1.31e+06 | 2.64e+02 | 4.9e+03 |
| 181 | 13C-22'33'44'55'6-NoCB | 7.97e+05 | 1.03e+03 | 7.7e+02 | 1.04e+06 | 8.84e+02 | 1.2e+03 |
| 182 | 13C-DeCB | 1.20e+06 | 5.20e+02 | 2.3e+03 | 9.92e+05 | 4.56e+02 | 2.2e+03 |
| 183 | 13C-244'-TrCB | 3.14e+06 | 4.42e+04 | 7.1e+01 | 3.12e+06 | 3.42e+04 | 9.1e+01 |
| 184 | 13C-233'55'-PeCB | 3.60e+06 | 1.58e+03 | 2.3e+03 | 2.35e+06 | 9.36e+02 | 2.5e+03 |
| 185 | 13C-22'33'55'6-HpCB | 1.21e+06 | 1.16e+03 | 1.0e+03 | 1.16e+06 | 2.84e+02 | 4.1e+03 |
| 186 | 13C-2,5-DiCB | 8.46e+06 | 8.74e+03 | 9.7e+02 | 5.72e+06 | 9.17e+03 | 6.2e+02 |
| 187 | 13C-22'55'-TeCB | 2.68e+06 | 3.06e+03 | 8.8e+02 | 3.54e+06 | 3.54e+03 | 1.0e+03 |
| 188 | 13C-22'4'55'-PeCB | 3.62e+06 | 1.58e+03 | 2.3e+03 | 2.25e+06 | 9.36e+02 | 2.4e+03 |
| 189 | 13C-22'3'44'5'-HxCB | 2.63e+06 | 6.40e+02 | 4.1e+03 | 2.14e+06 | 1.28e+03 | 1.7e+03 |
| 190 | 13C-22'33'44'55'-OcCB | 2.24e+06 | 5.56e+02 | 4.0e+03 | 2.51e+06 | 2.06e+03 | 1.2e+03 |

File:U210822 #1-437 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001

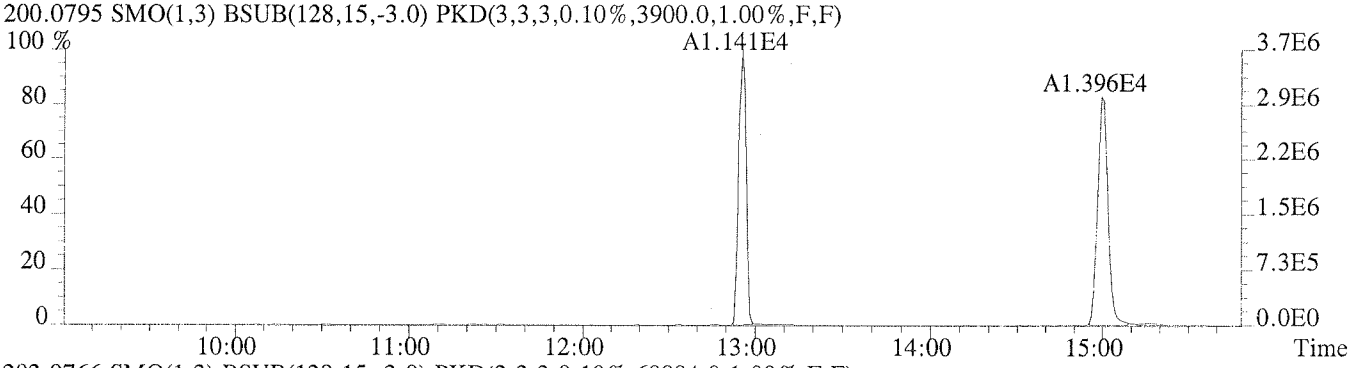
188.0393 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3020.0,1.00%,F,F)



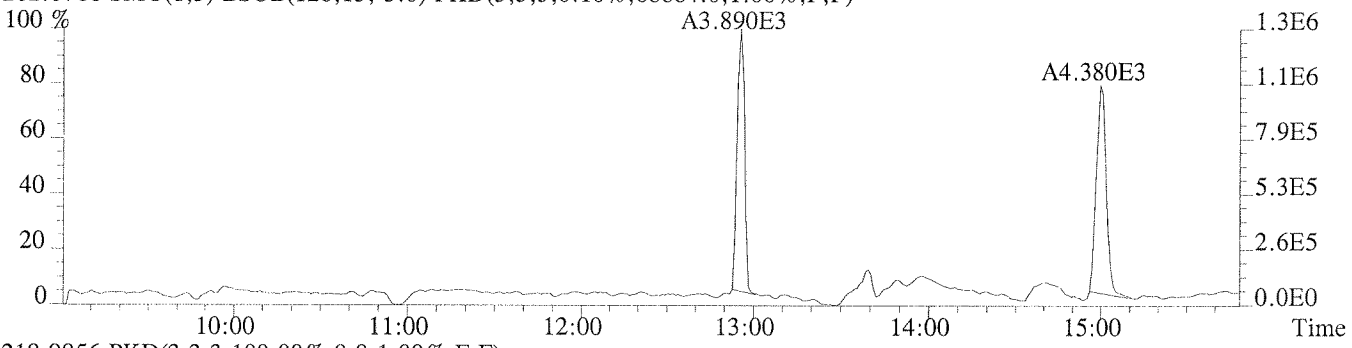

190.0363 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7732.0,1.00%,F,F)



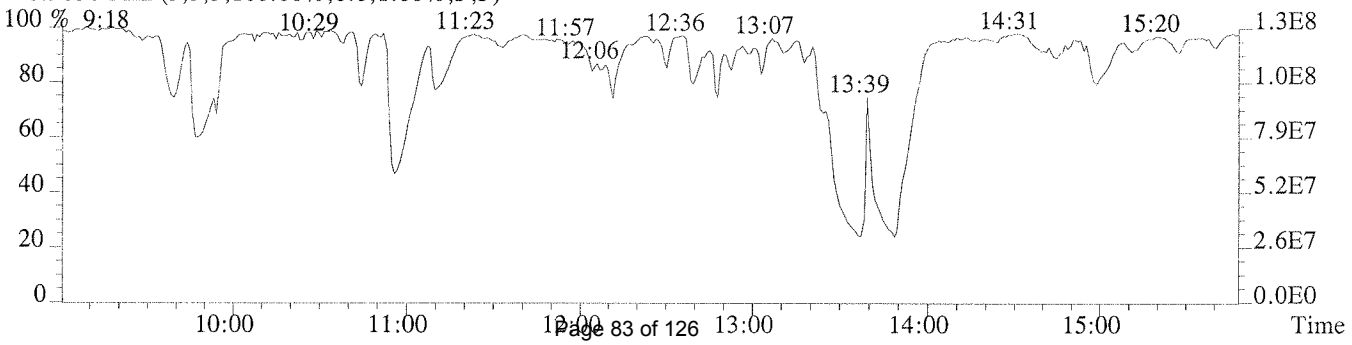

200.0795 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3900.0,1.00%,F,F)



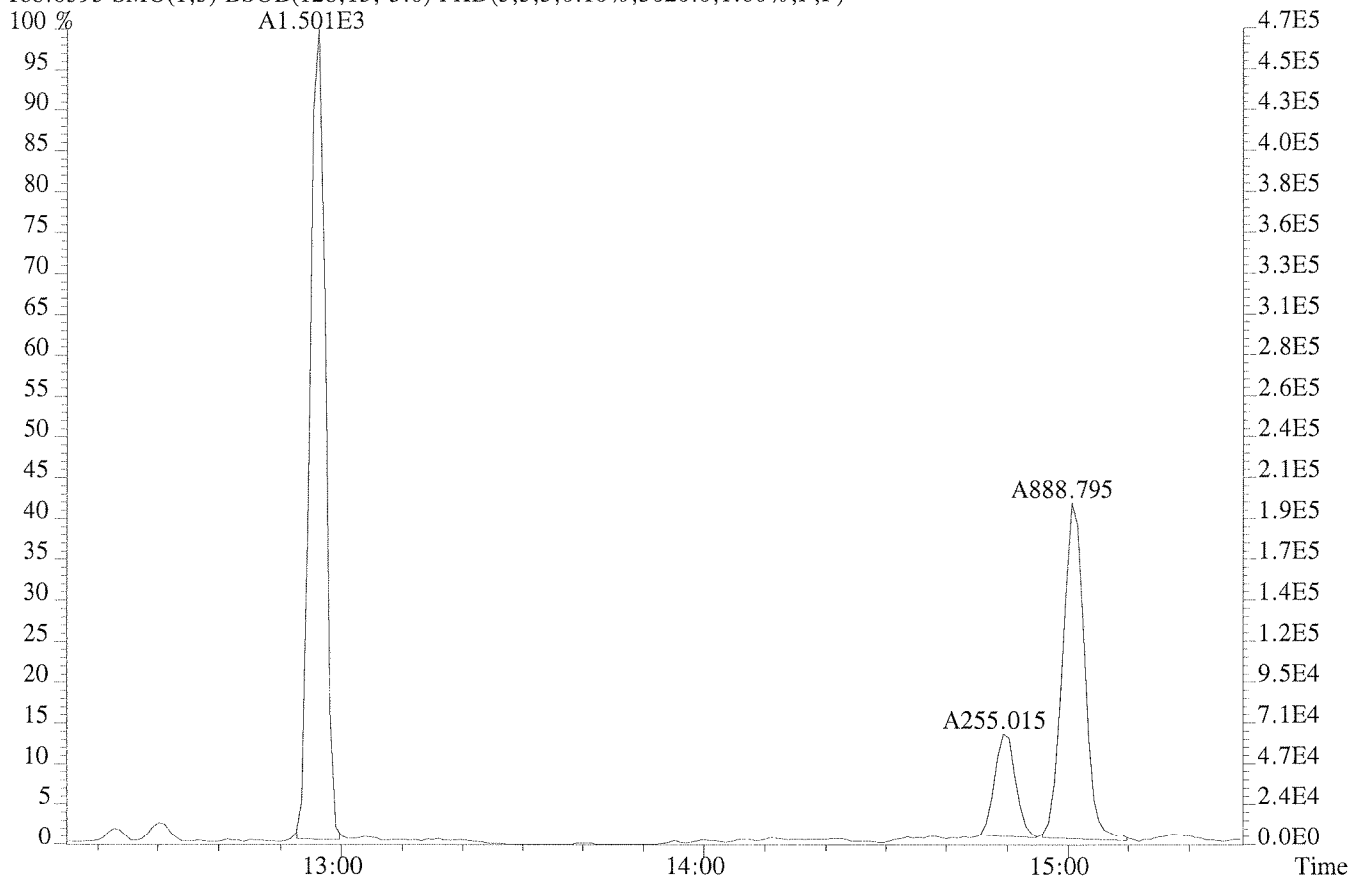

202.0766 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,68884.0,1.00%,F,F)



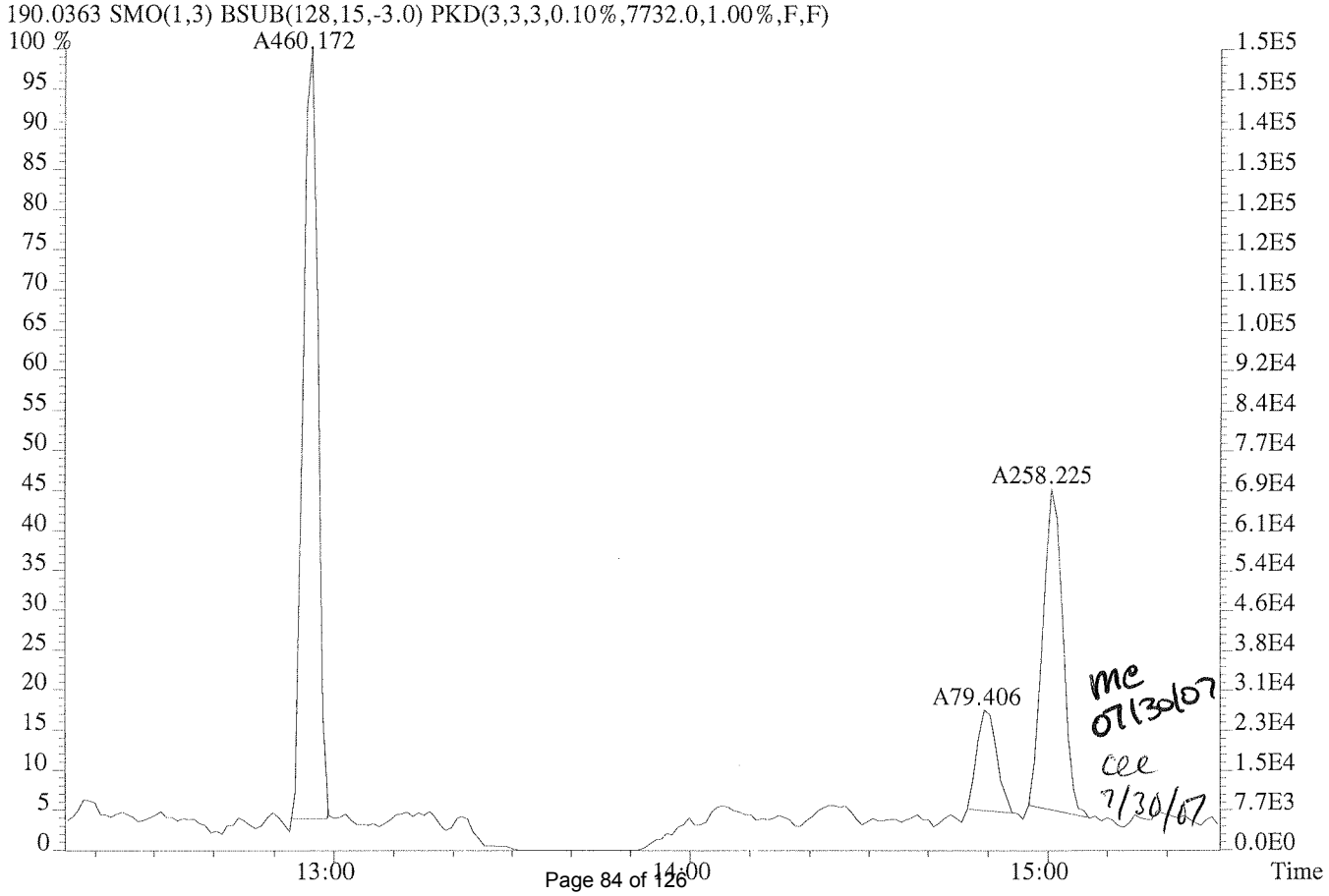

218.9856 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210822 #1-437 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
188.0393 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3020.0,1.00%,F,F)




190.0363 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7732.0,1.00%,F,F)

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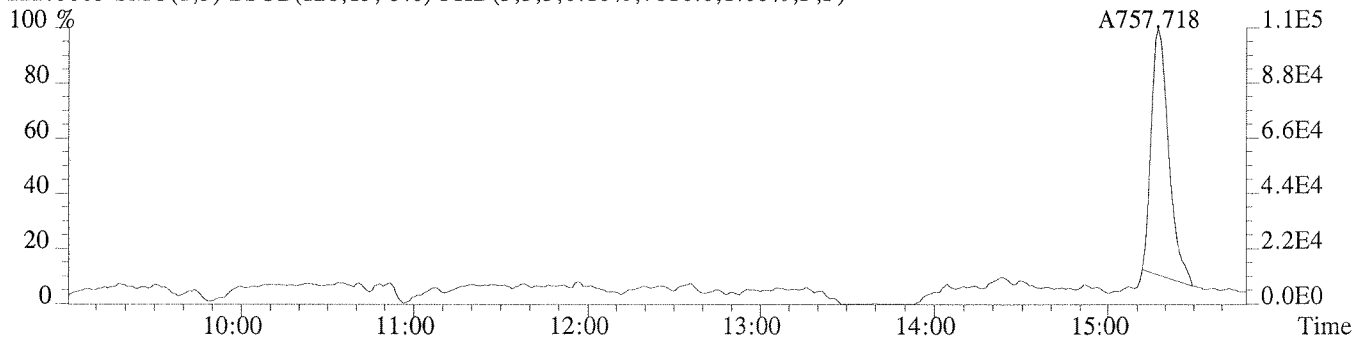
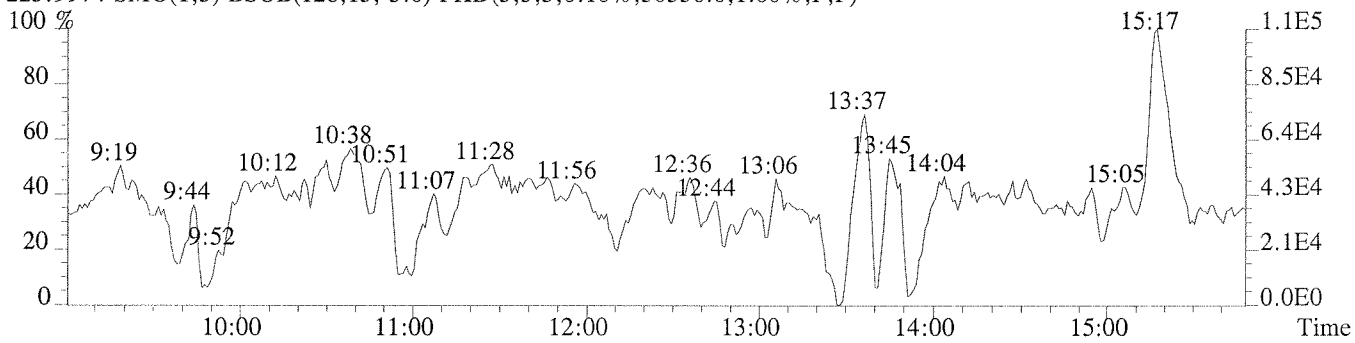
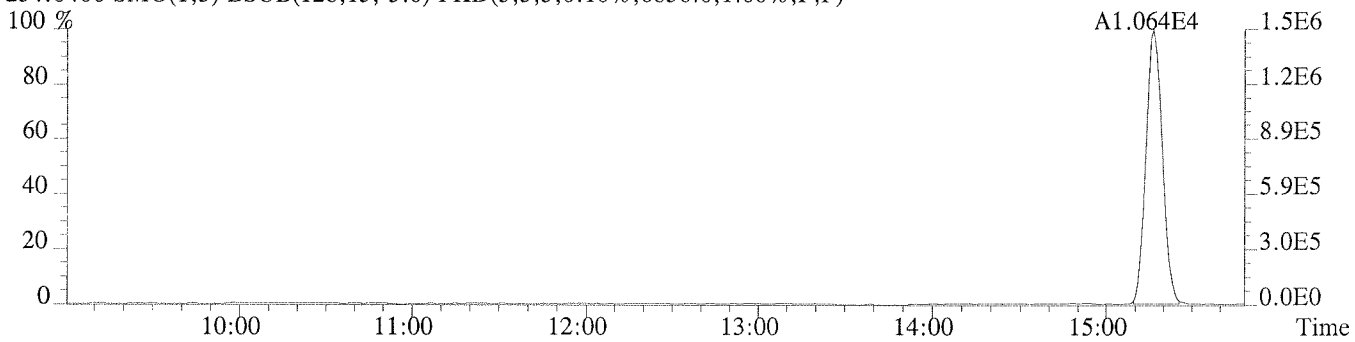
File:U210822 #1-437 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
222.0003 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7816.0,1.00%,F,F)



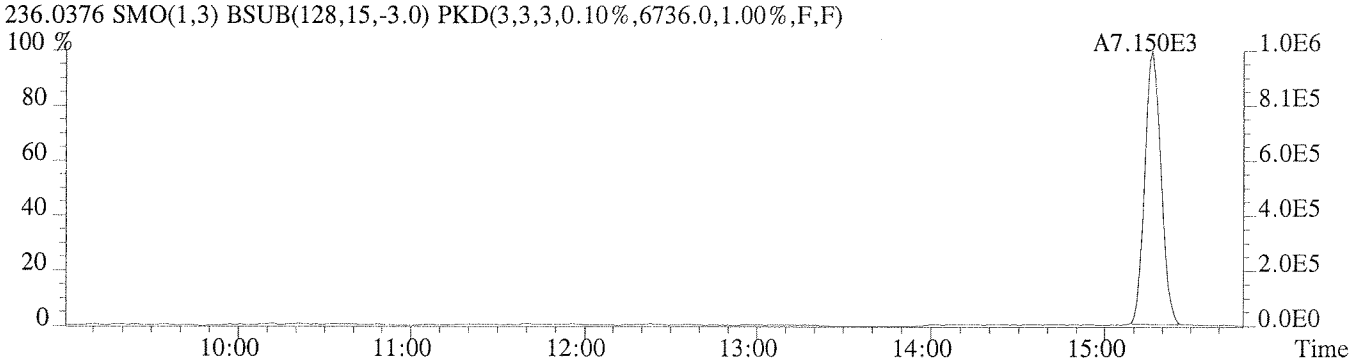

223.9974 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,50556.0,1.00%,F,F)



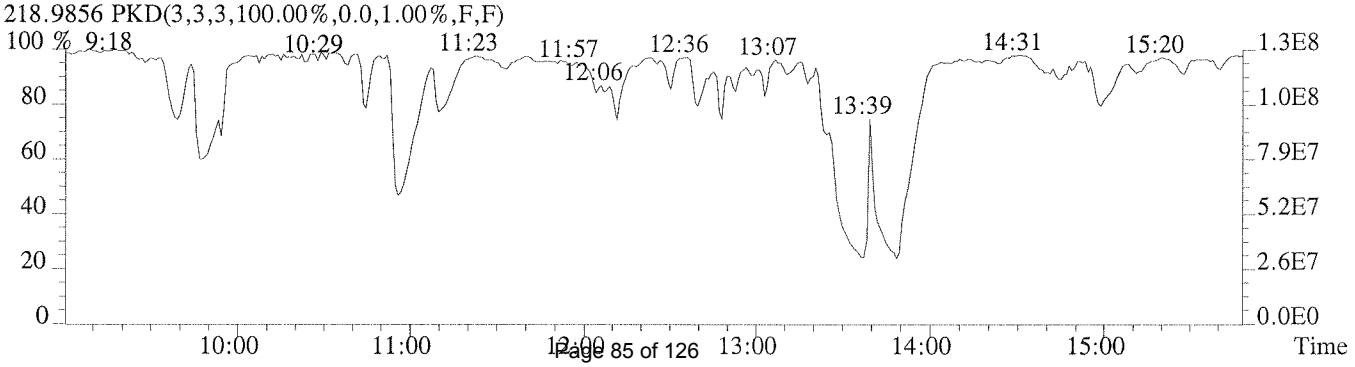

234.0406 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6856.0,1.00%,F,F)



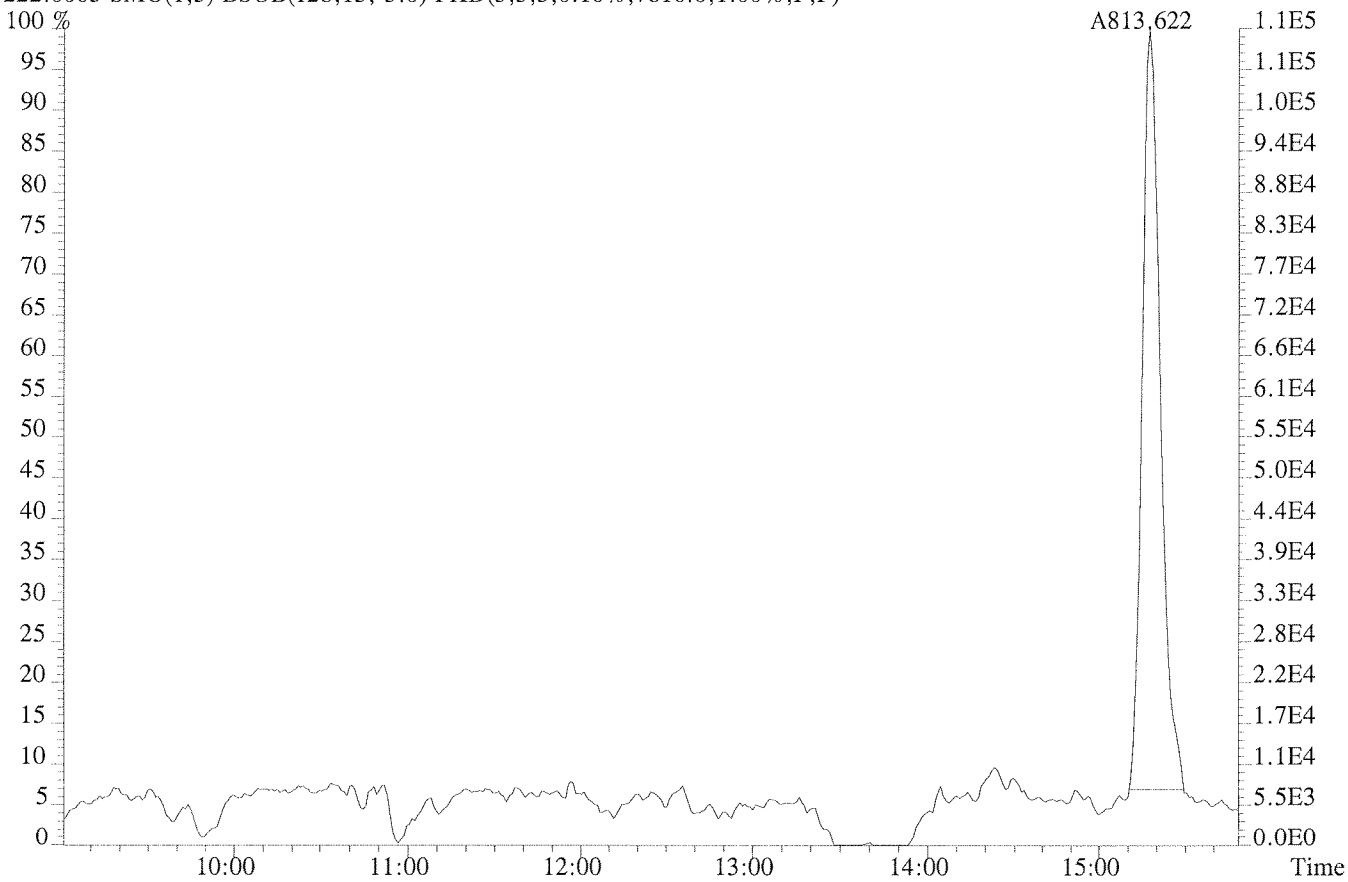

236.0376 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6736.0,1.00%,F,F)



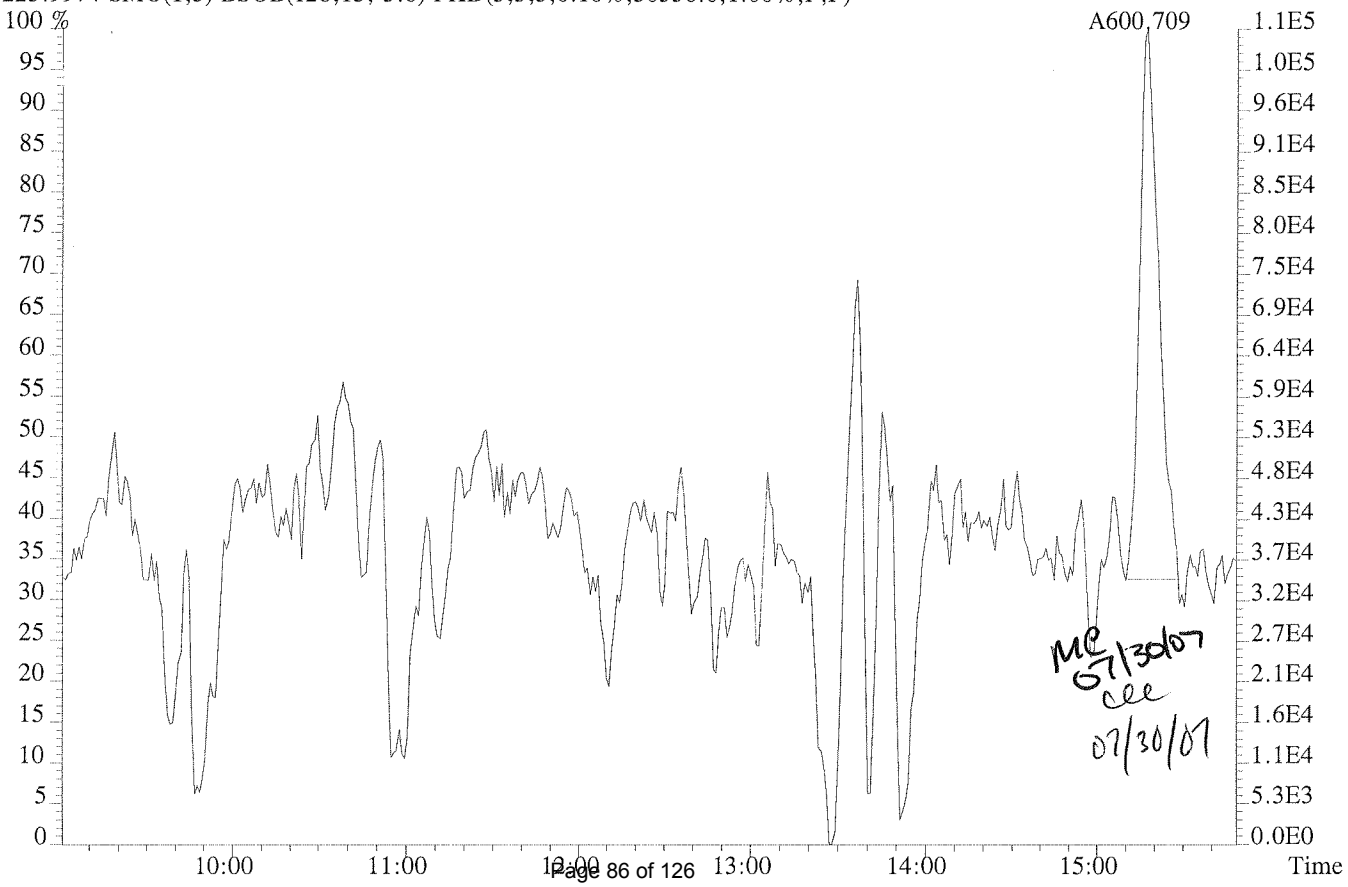

218.9856 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210822 #1-437 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
222.0003 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,7816.0,1.00%,F,F)




223.9974 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,50556.0,1.00%,F,F)

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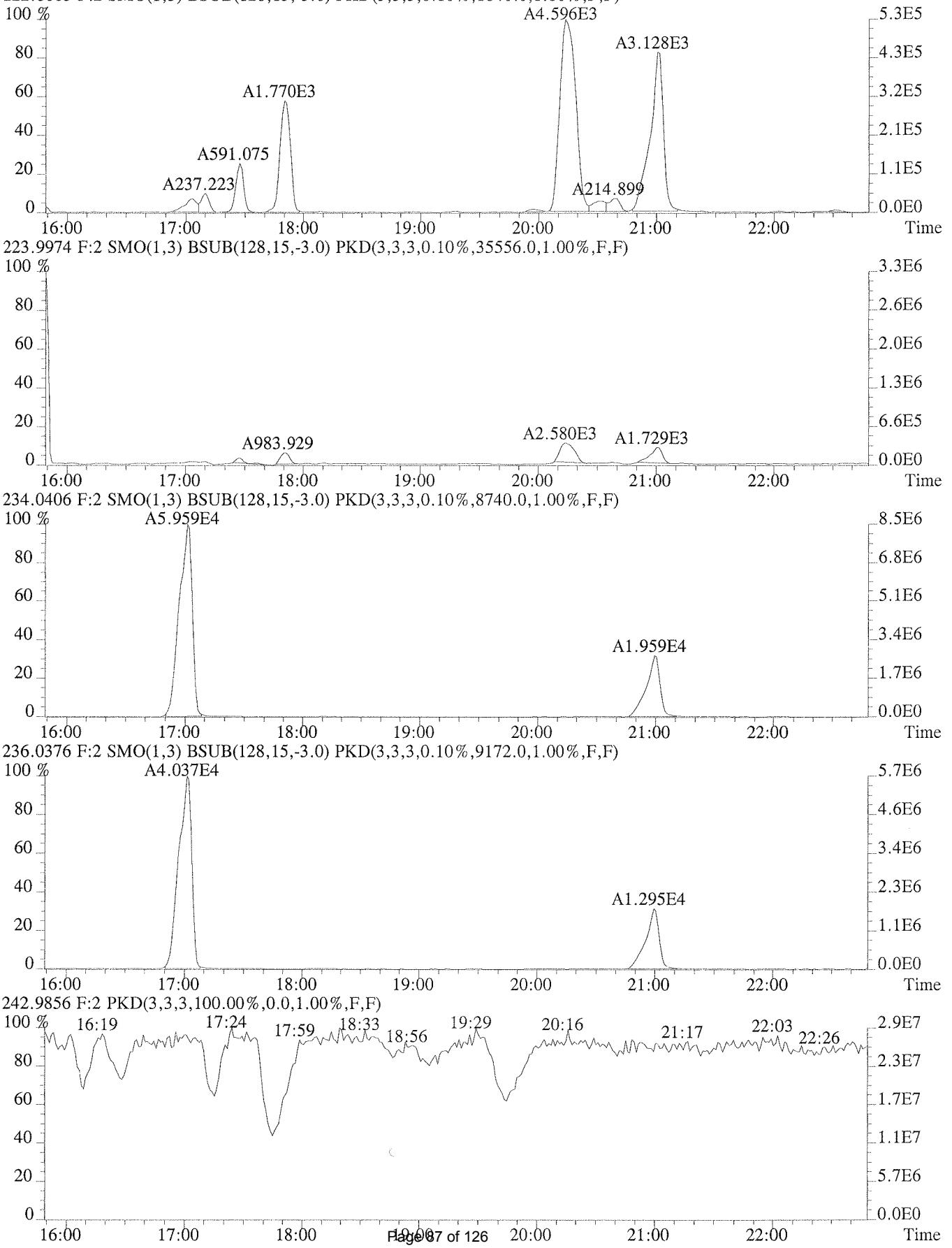
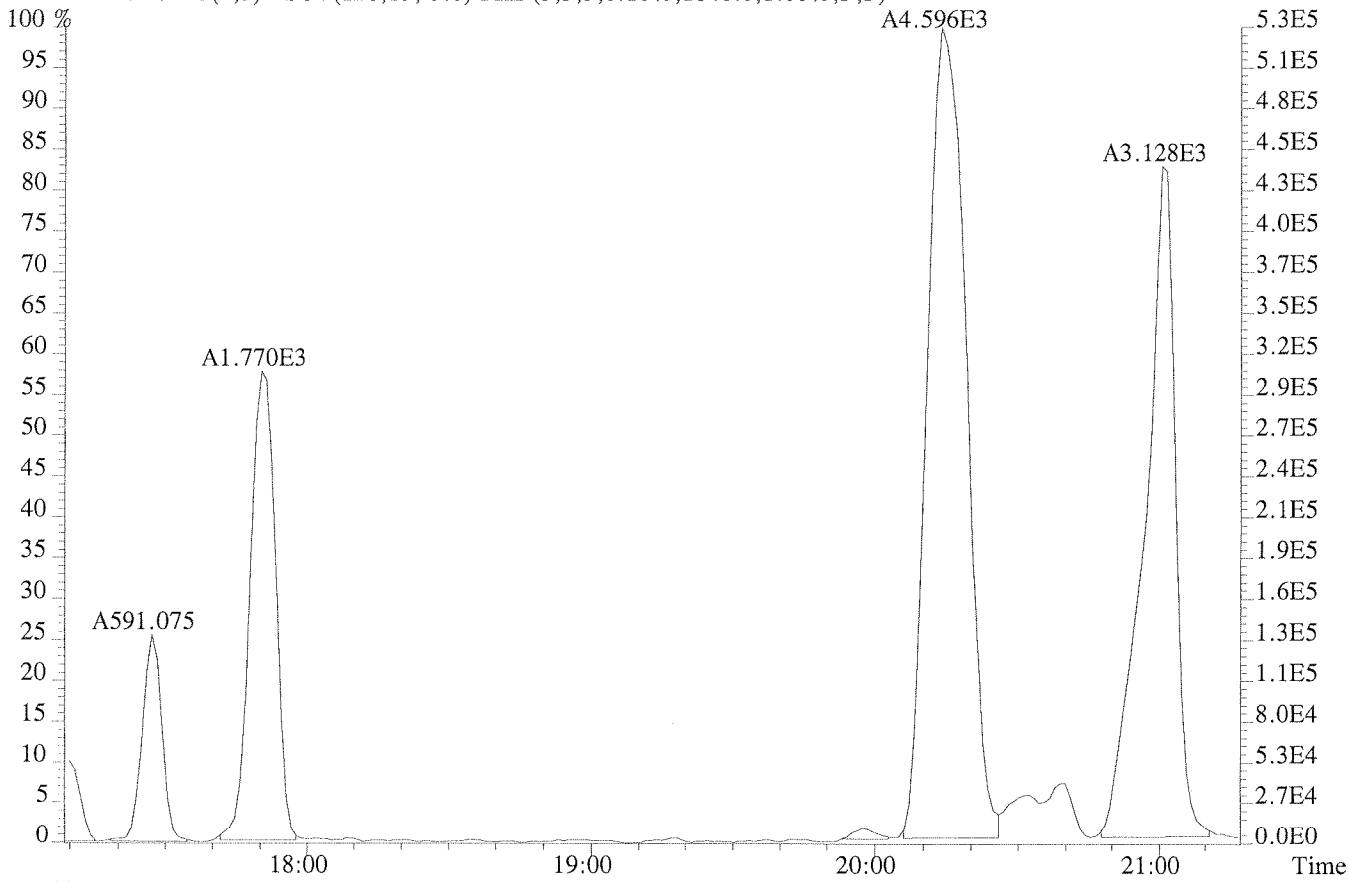
cee 07/30/07

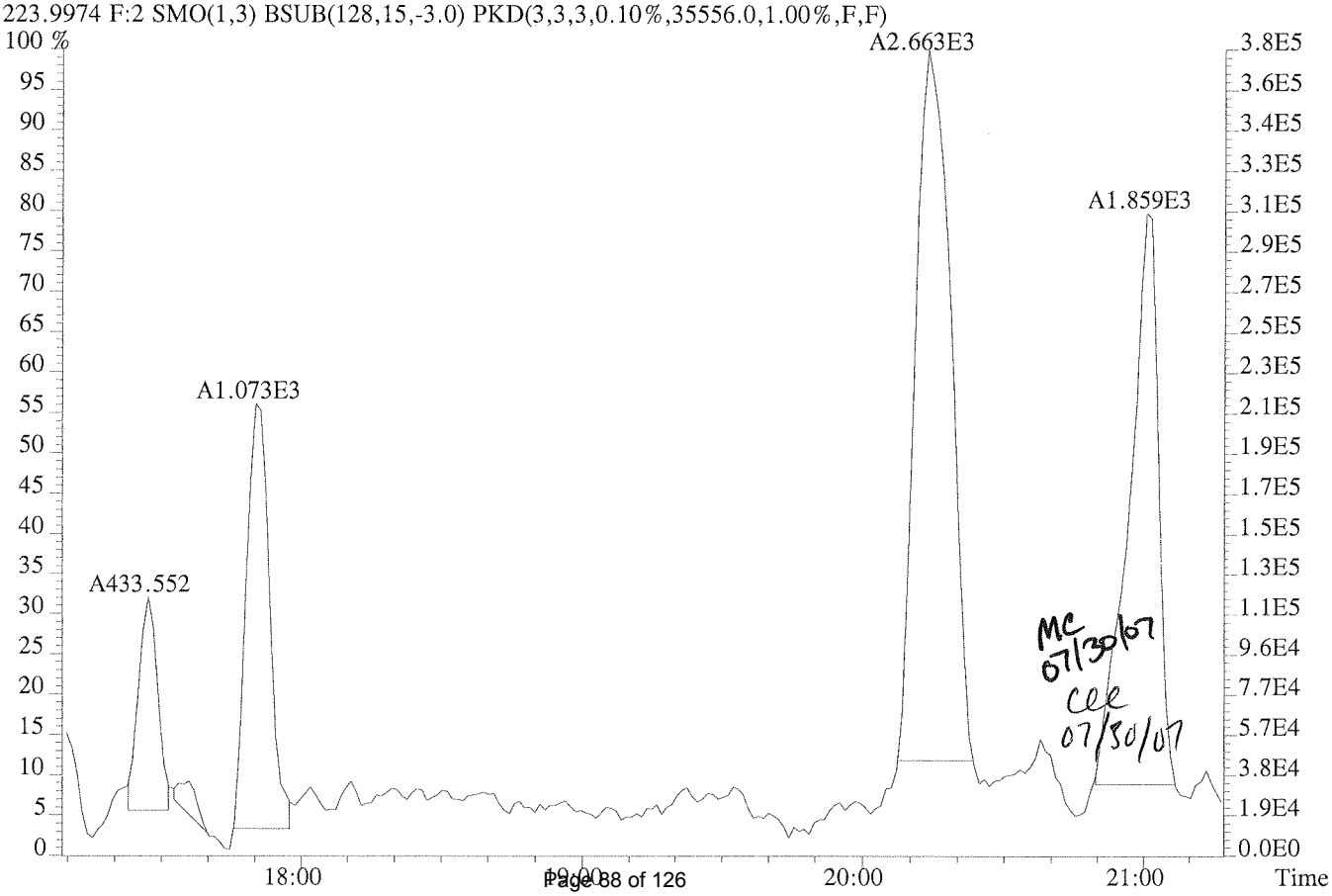
File:U210822 #1-386 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001



File:U210822 #1-386 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
222.0003 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1840.0,1.00%,F,F)




223.9974 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,35556.0,1.00%,F,F)

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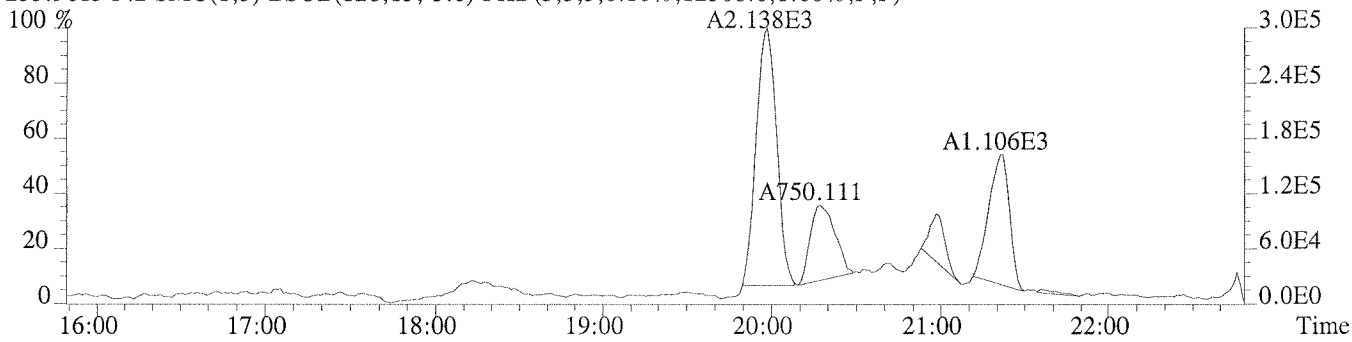
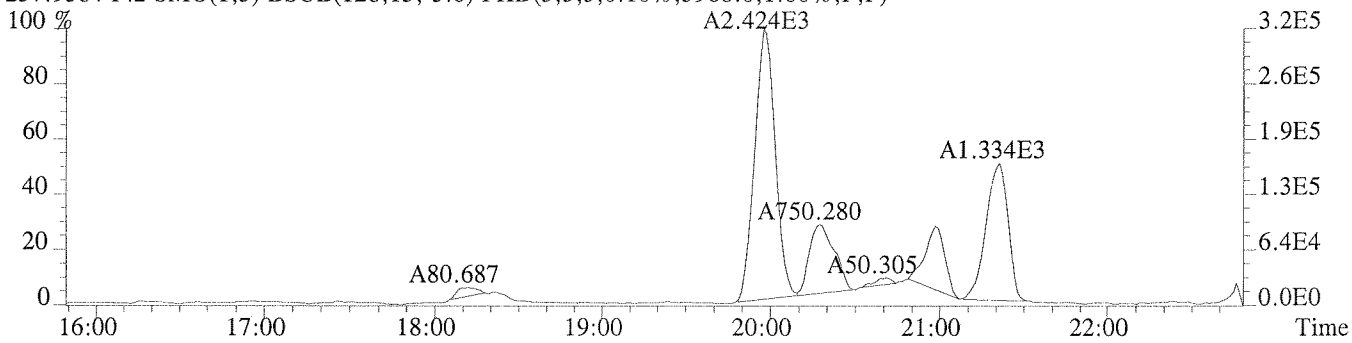
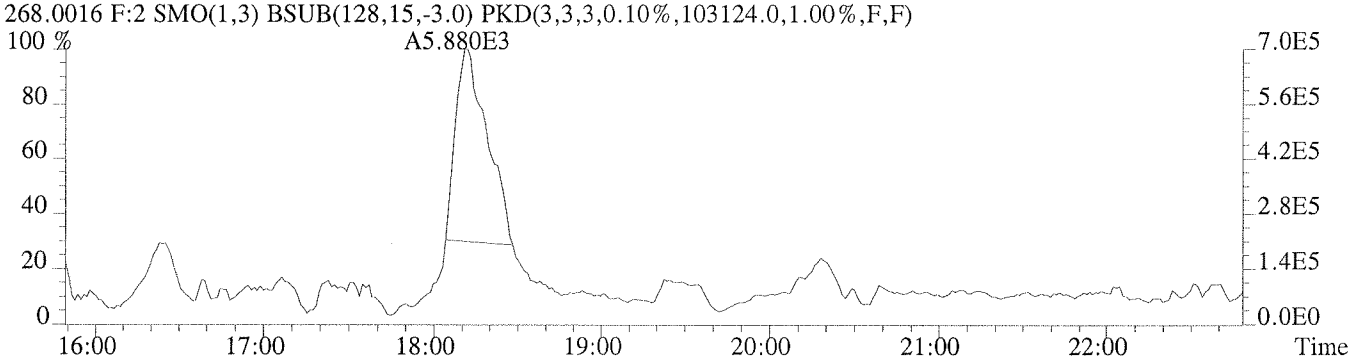
File:U210822 #1-386 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
255.9613 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12308.0,1.00%,F,F)



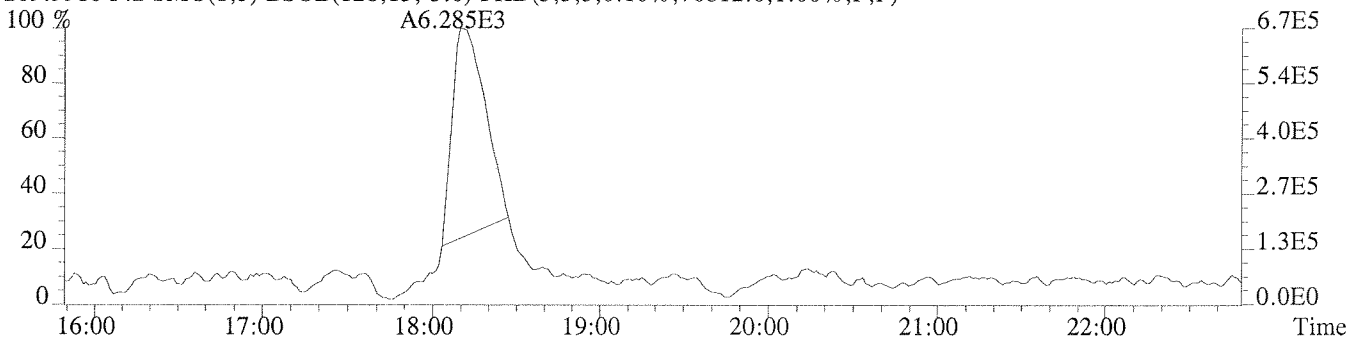

257.9584 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3968.0,1.00%,F,F)



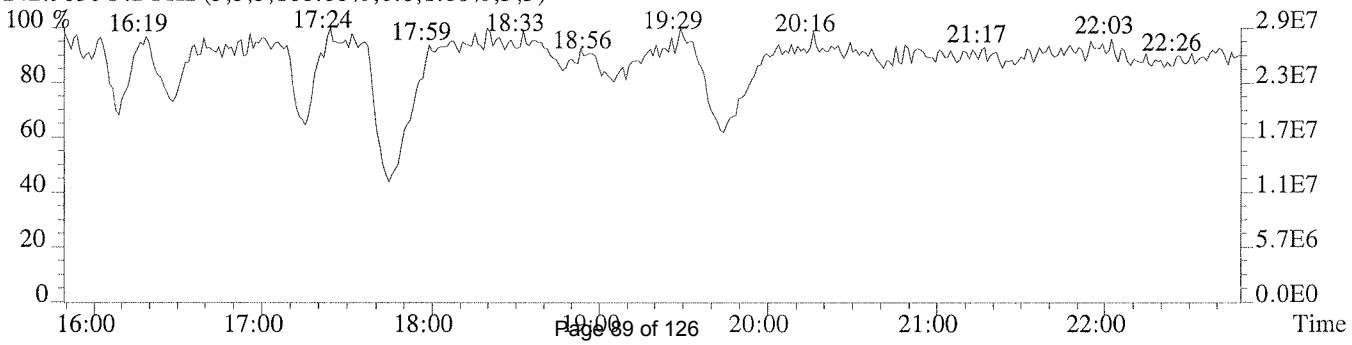

268.0016 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,103124.0,1.00%,F,F)



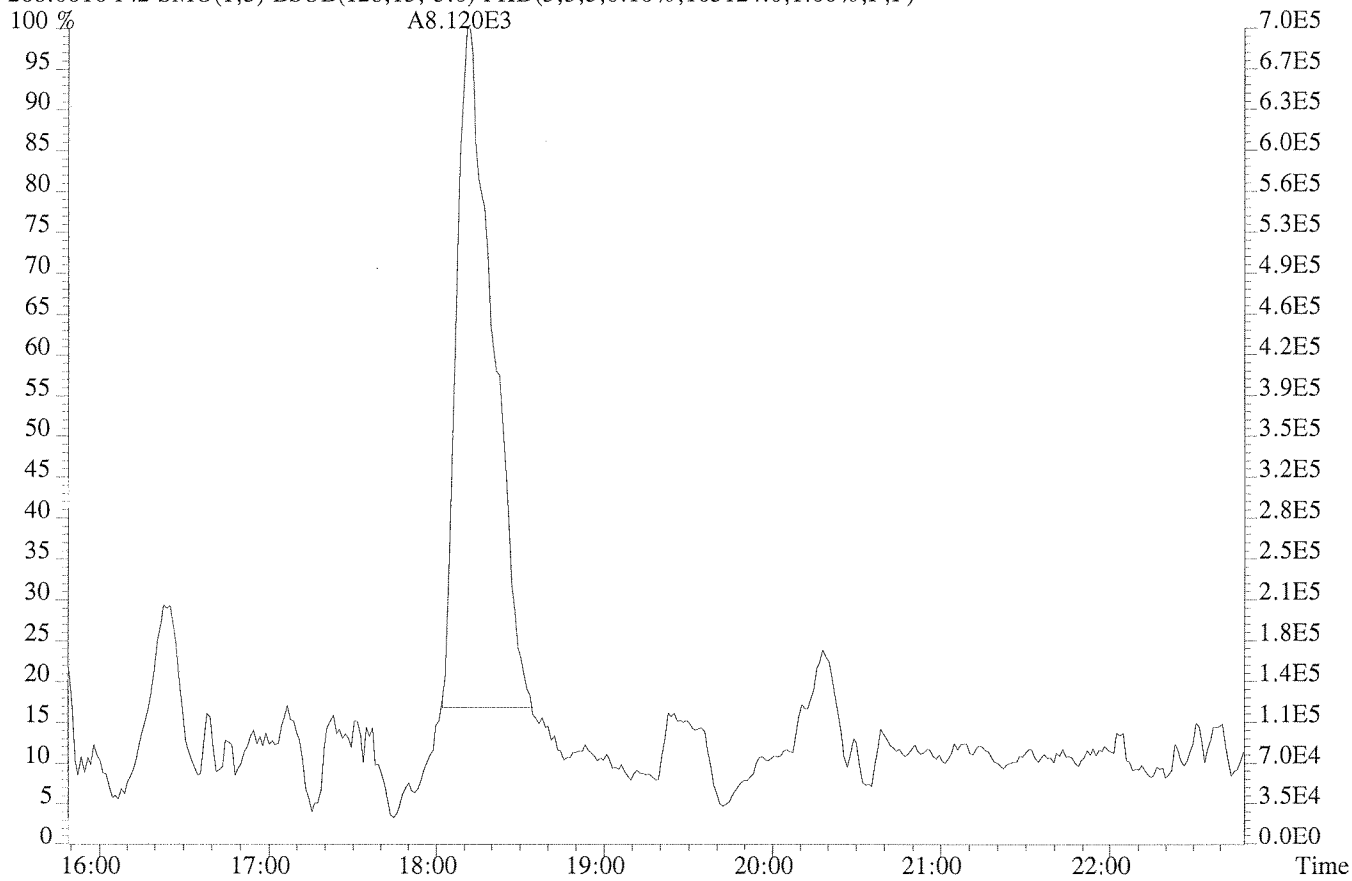

269.9986 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,76812.0,1.00%,F,F)



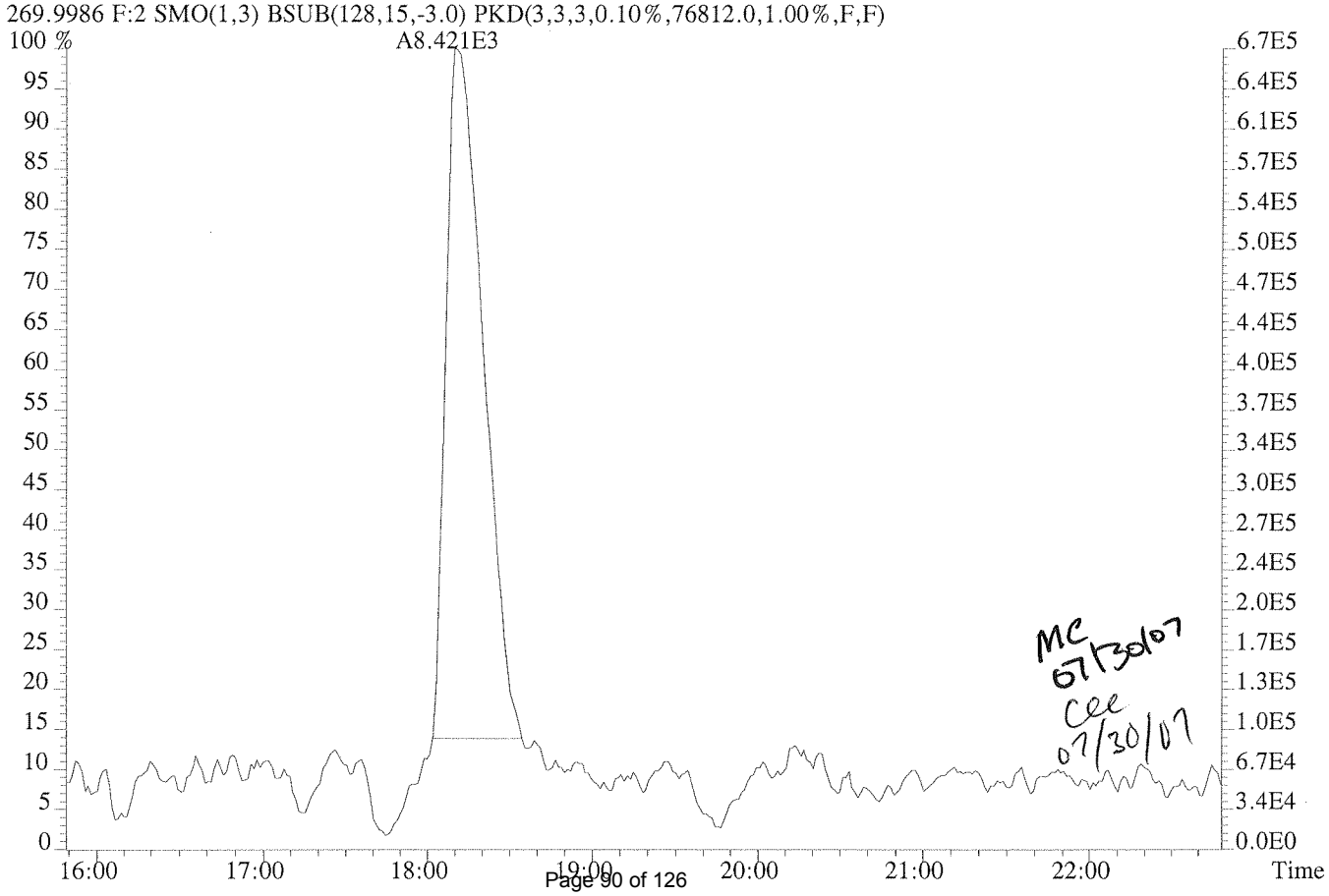

242.9856 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210822 #1-386 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
268.0016 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,103124.0,1.00%,F,F)




269.9986 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,76812.0,1.00%,F,F)

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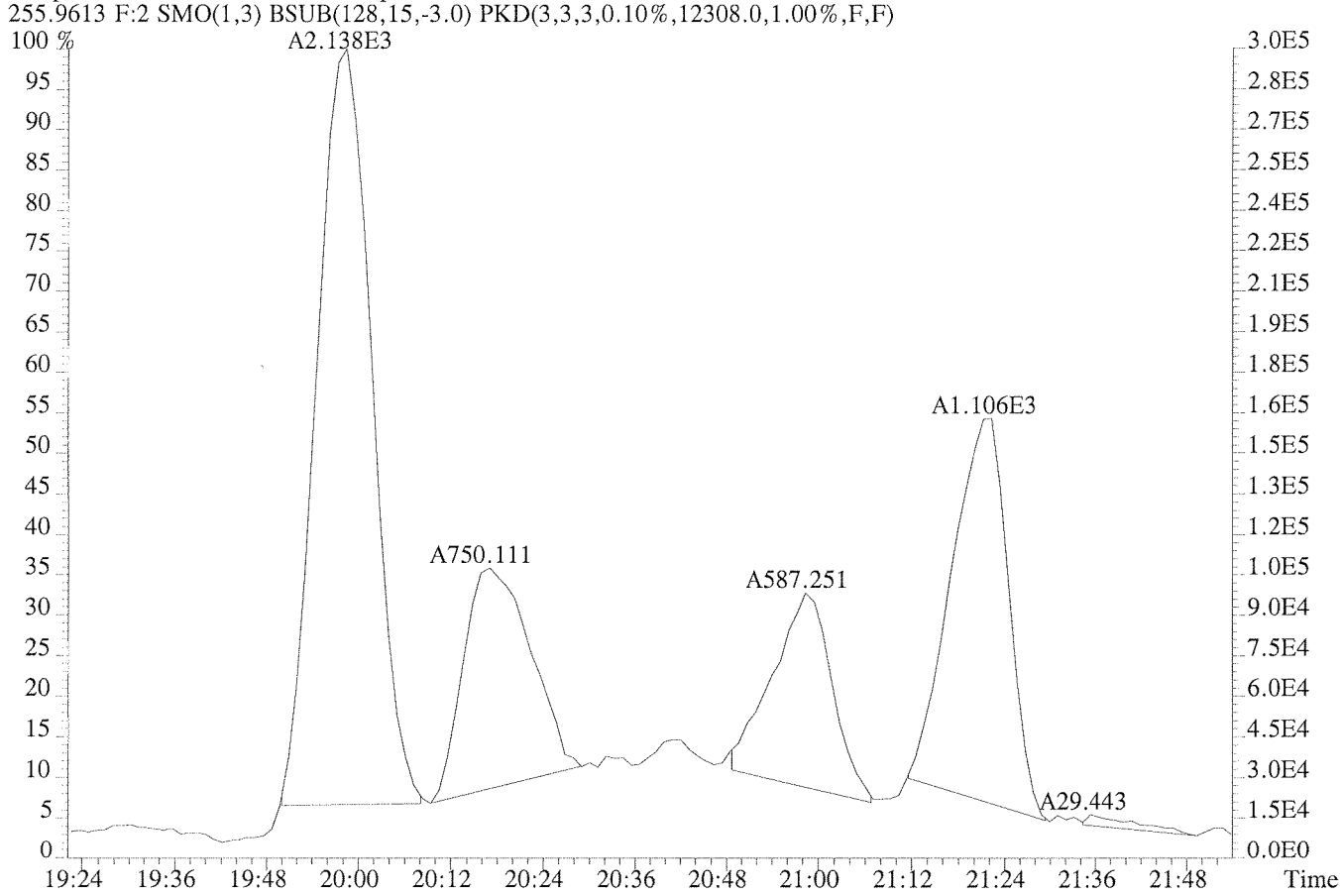
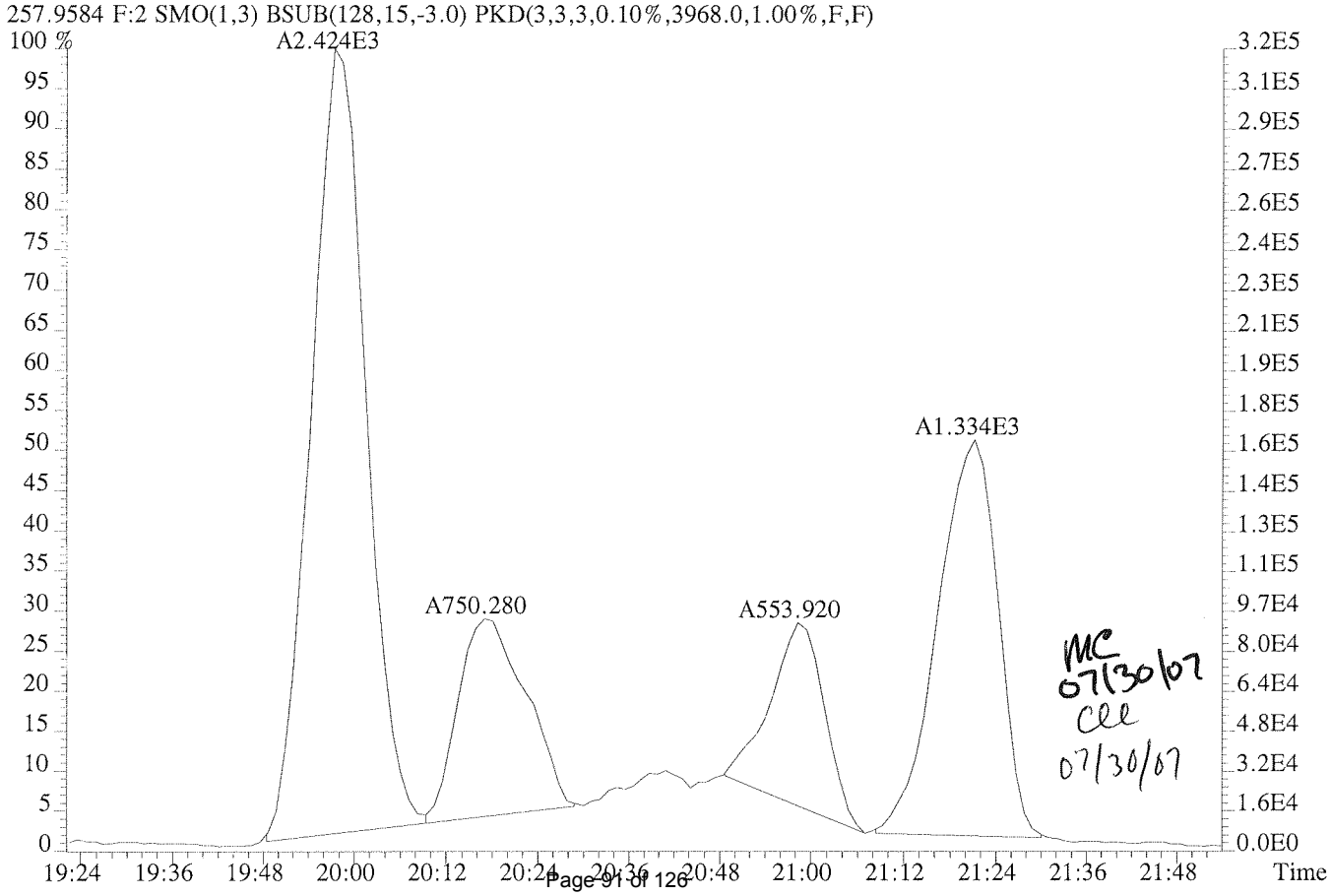
Cee 07/30/07

File:U210822 #1-386 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
255.9613 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,12308.0,1.00%,F,F)

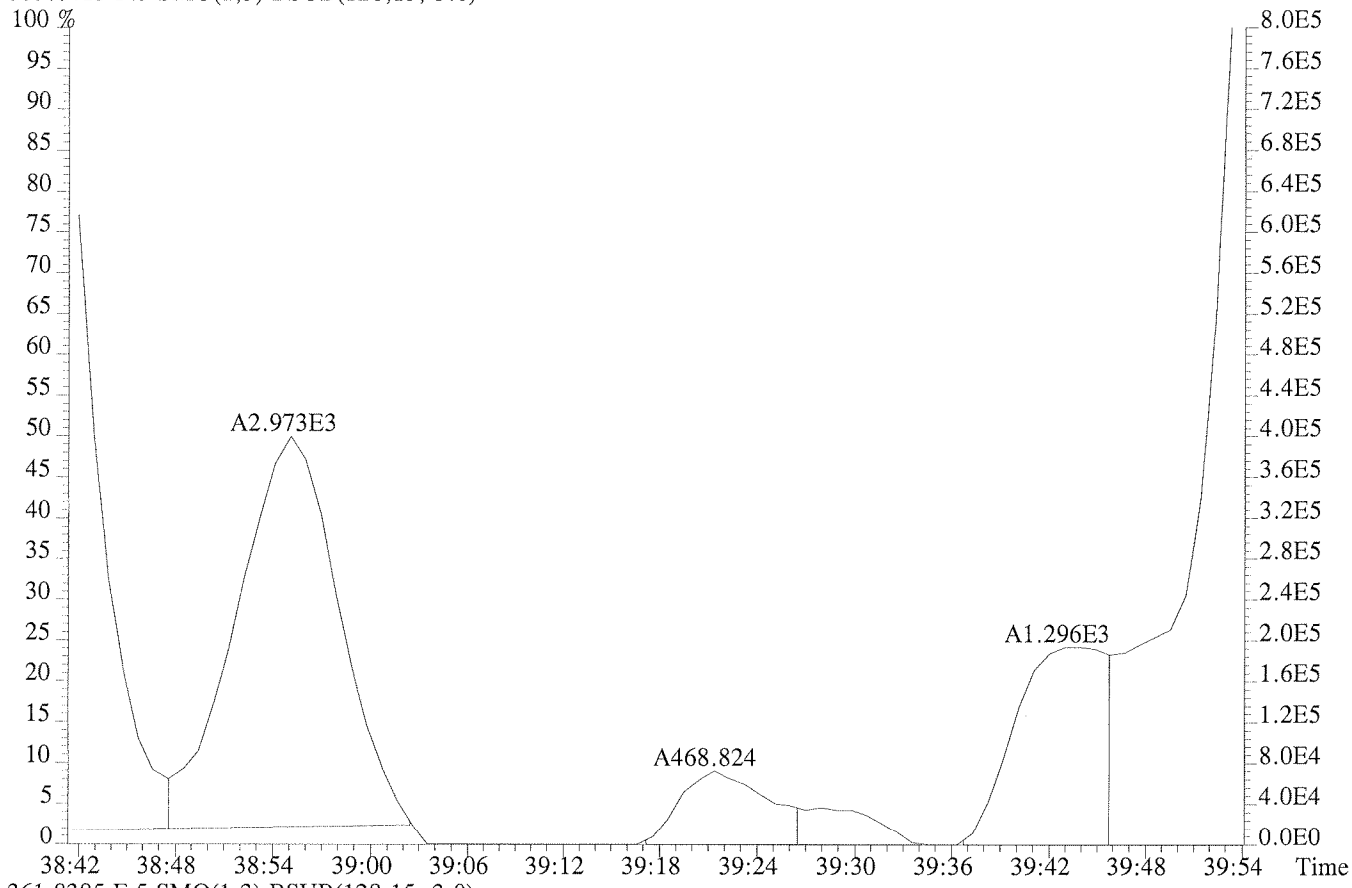



257.9584 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3968.0,1.00%,F,F)

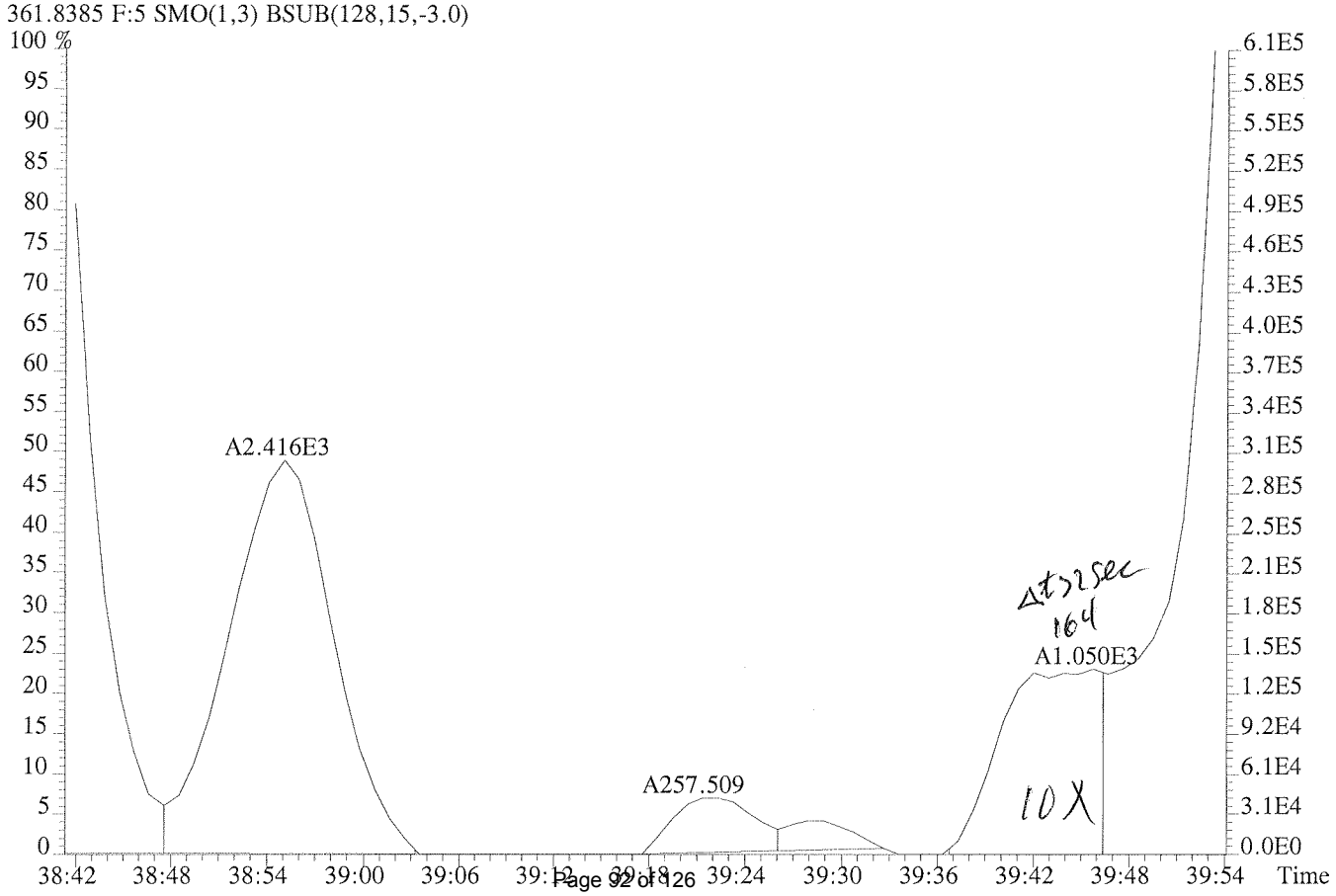



MC 07/30/07
CLL 07/30/07

File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
359.8415 F:5 SMO(1,3) BSUB(128,15,-3.0)

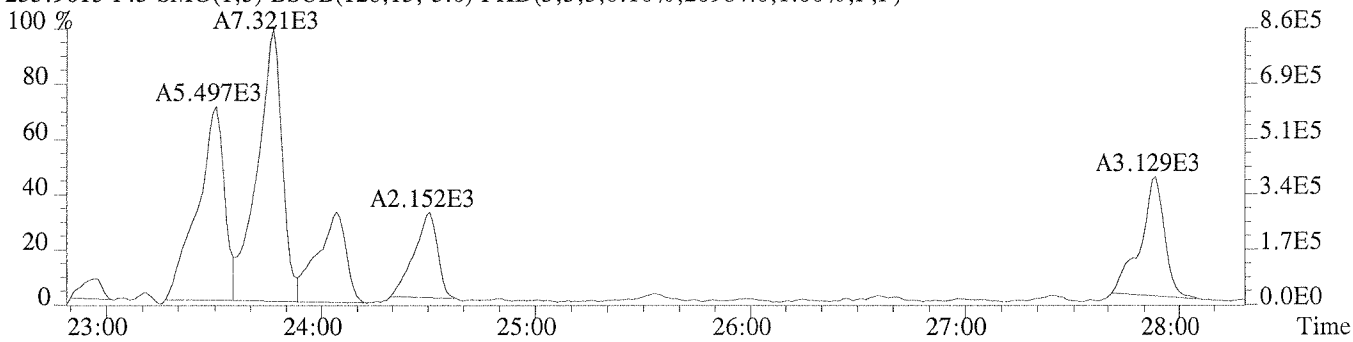



361.8385 F:5 SMO(1,3) BSUB(128,15,-3.0)

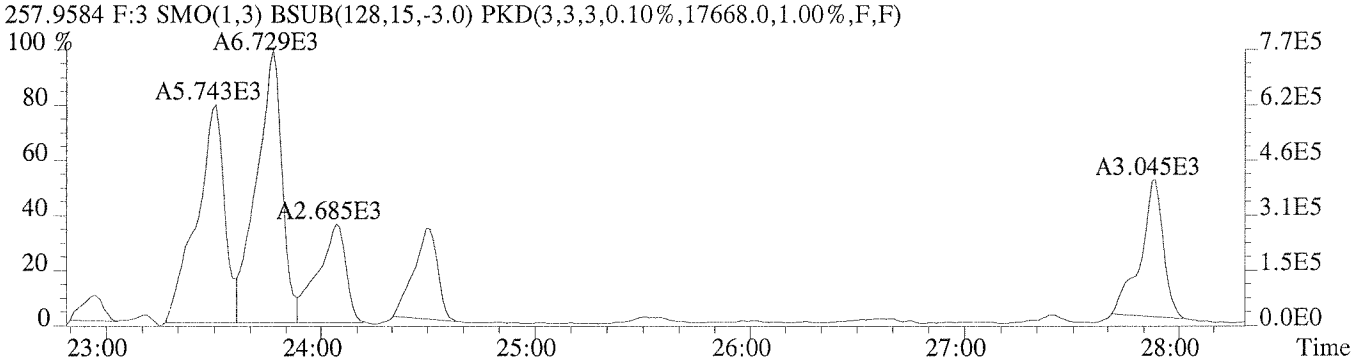


File:U210822 #1-352 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001

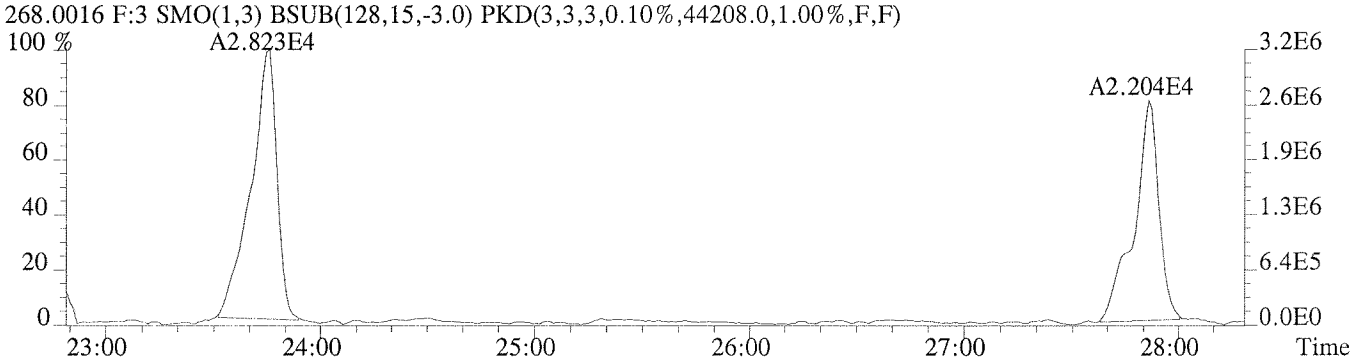
255.9613 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,20984.0,1.00%,F,F)



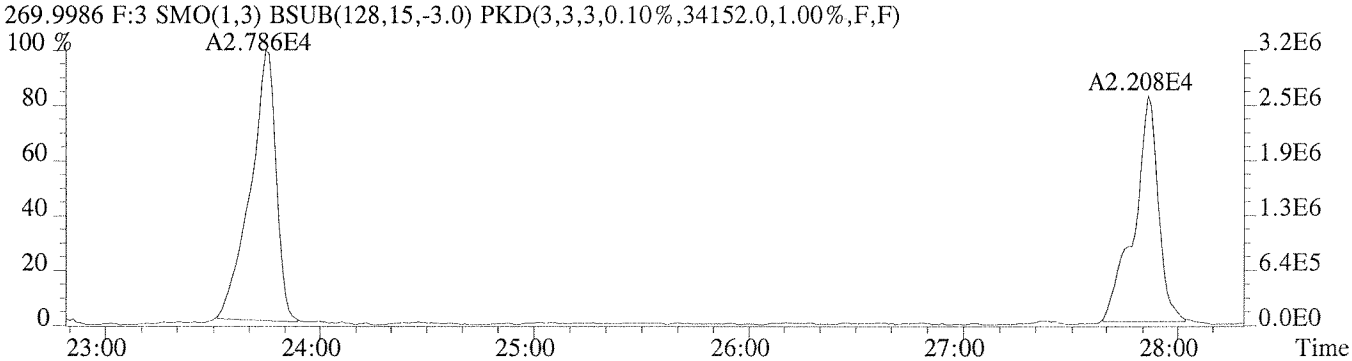

257.9584 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,17668.0,1.00%,F,F)



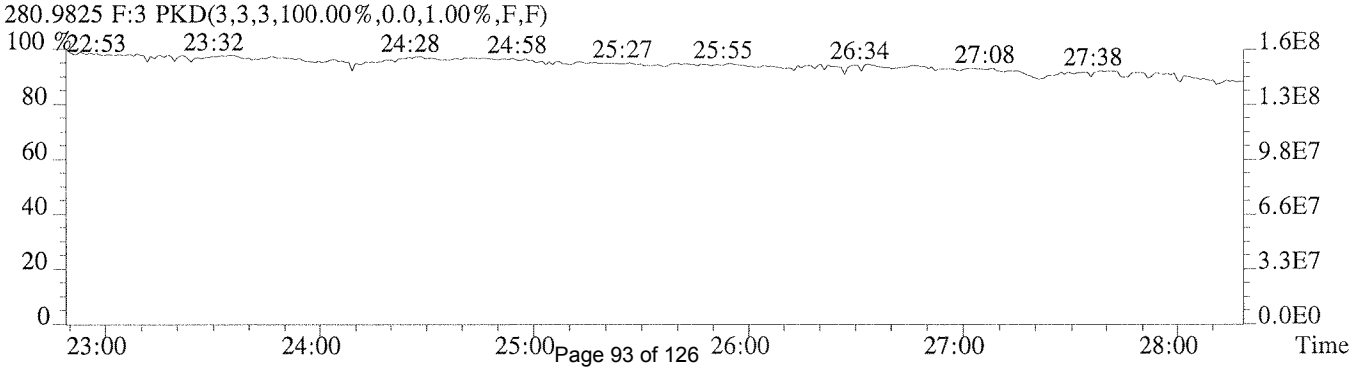

268.0016 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,44208.0,1.00%,F,F)



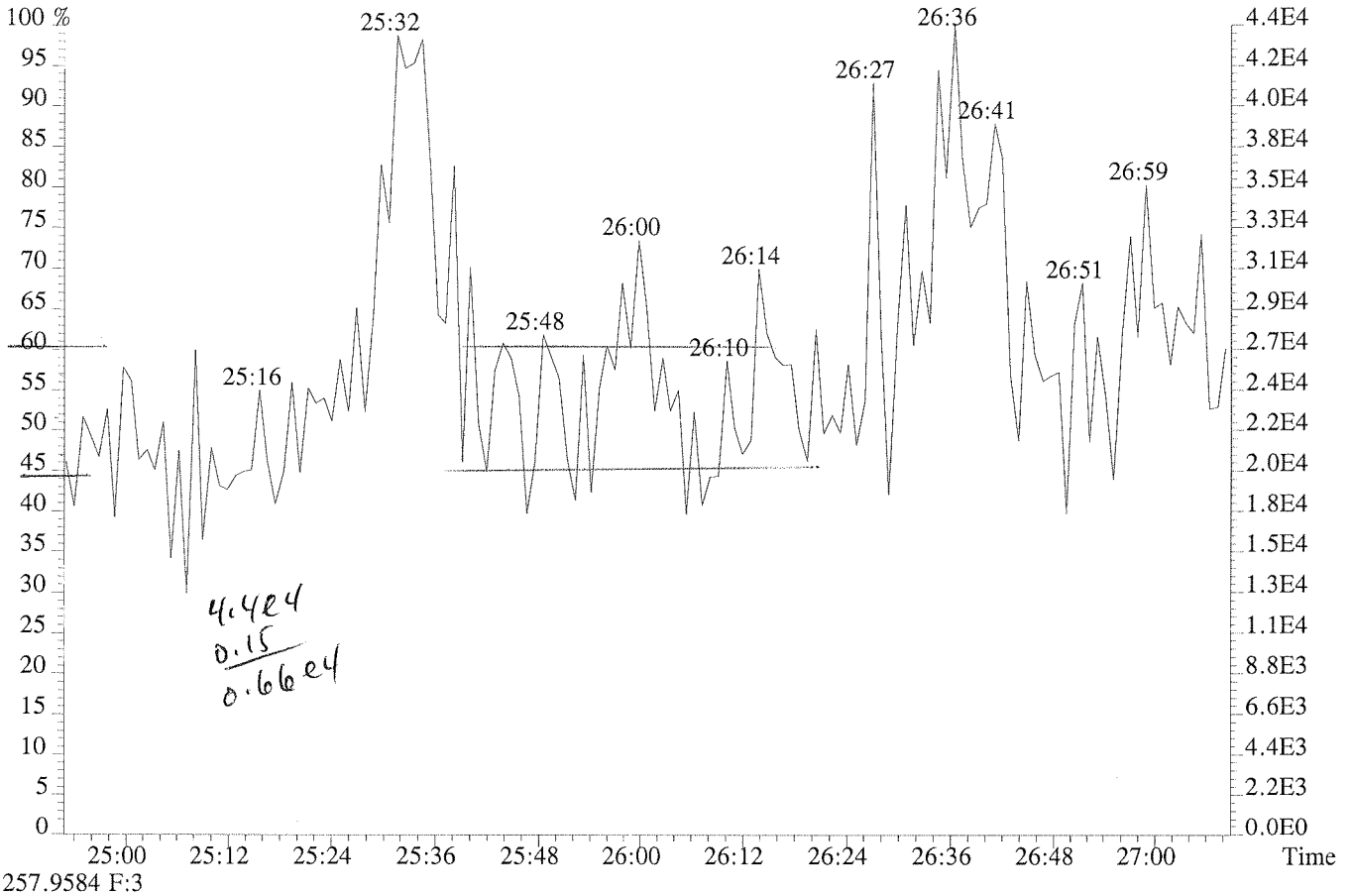

269.9986 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,34152.0,1.00%,F,F)



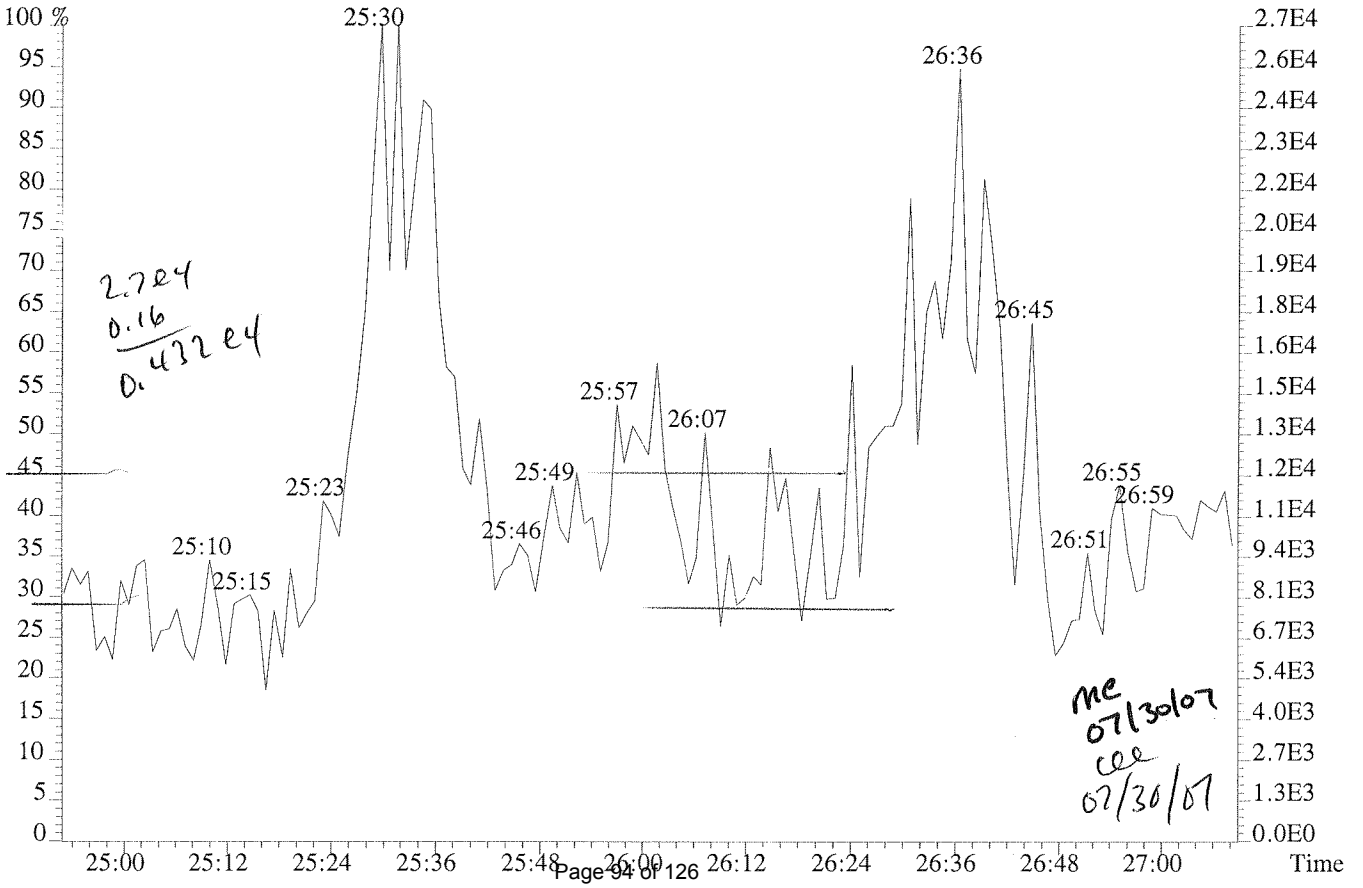

280.9825 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210822 #1-352 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
255.9613 F:3

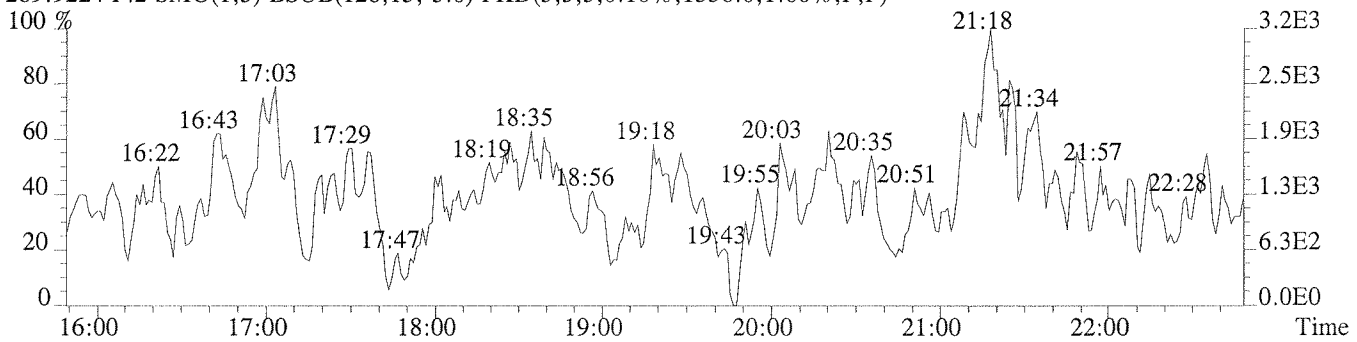



257.9584 F:3

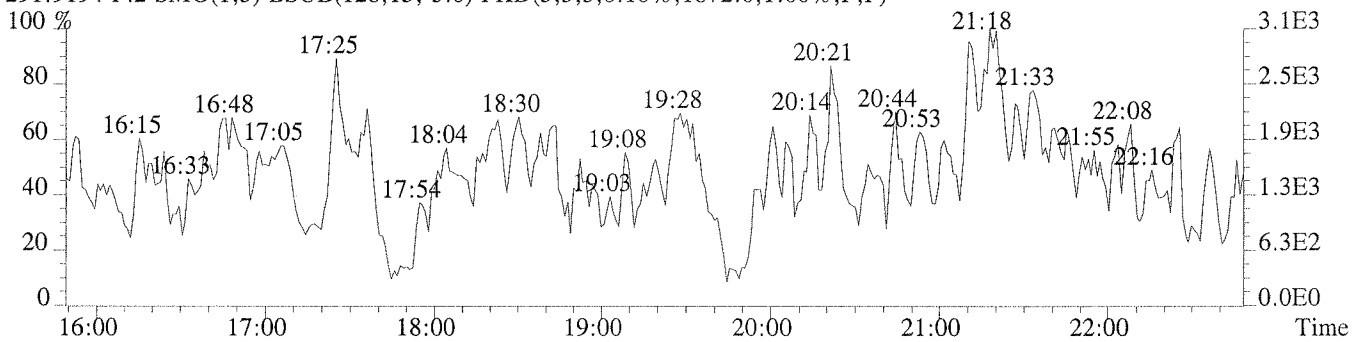


File:U210822 #1-386 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001

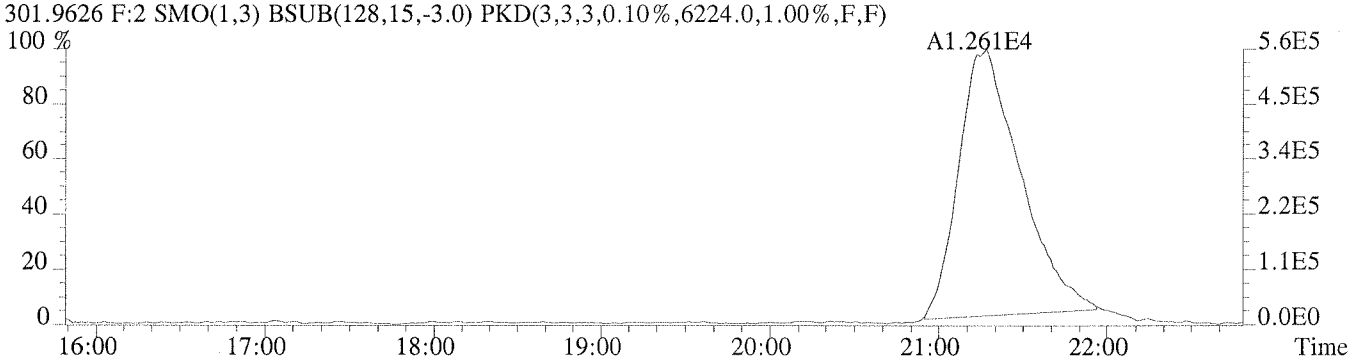
289.9224 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1536.0,1.00%,F,F)



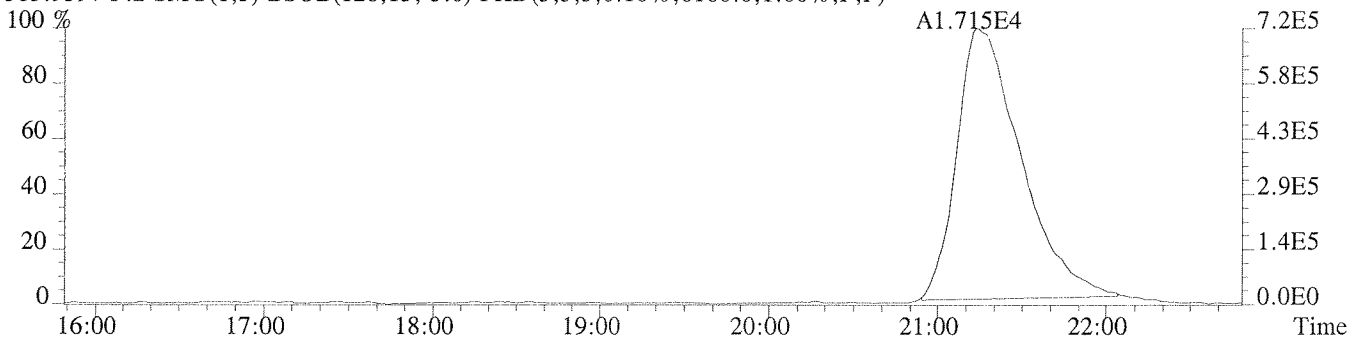

291.9194 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1872.0,1.00%,F,F)



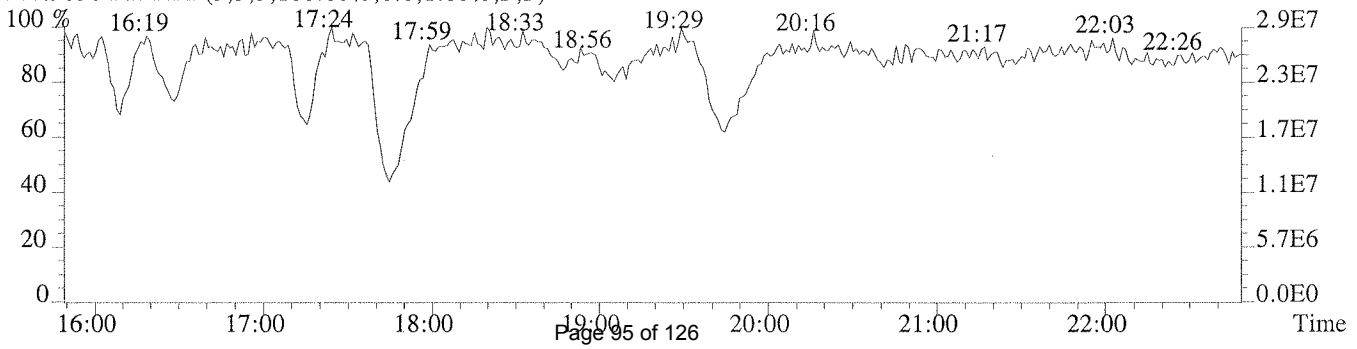

301.9626 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6224.0,1.00%,F,F)




303.9597 F:2 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6160.0,1.00%,F,F)

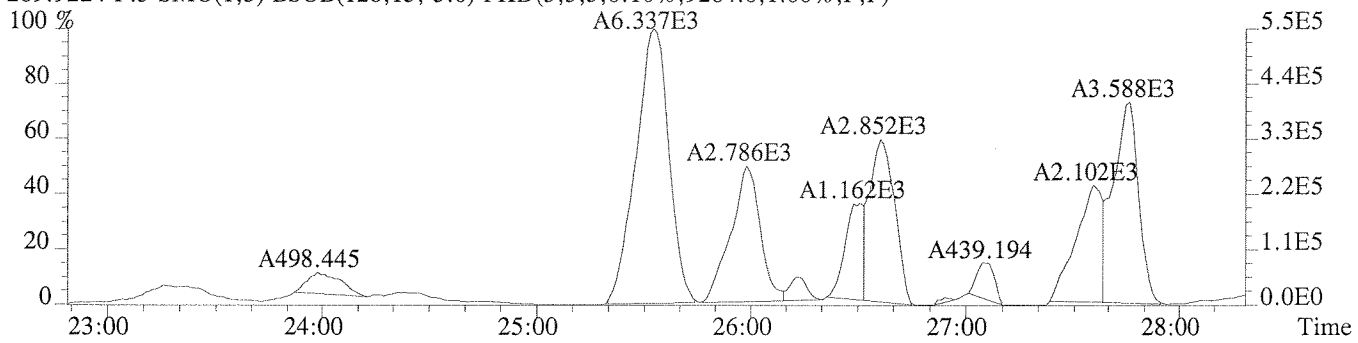



242.9856 F:2 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

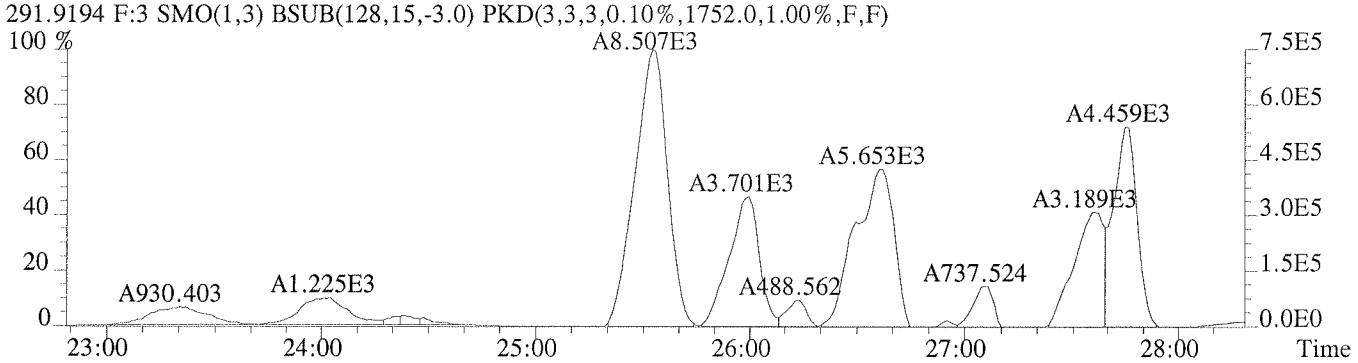


File:U210822 #1-352 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001

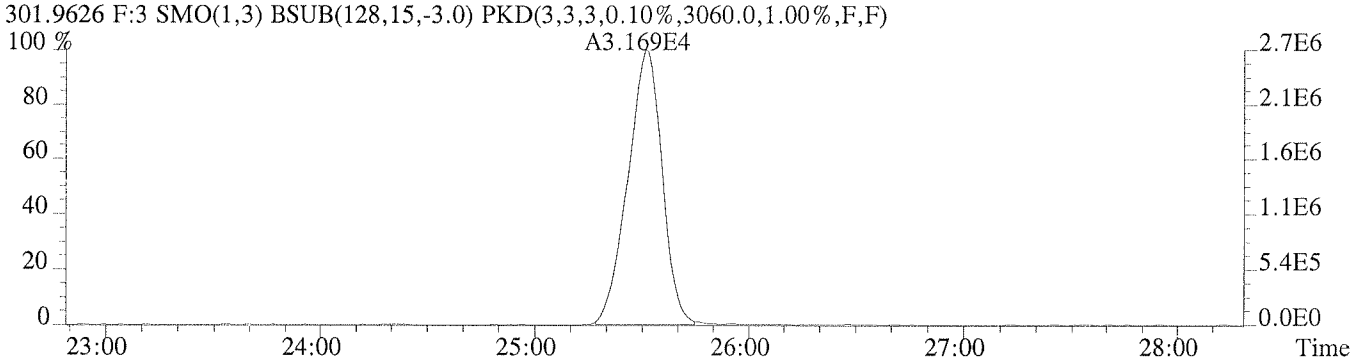
289.9224 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9284.0,1.00%,F,F)



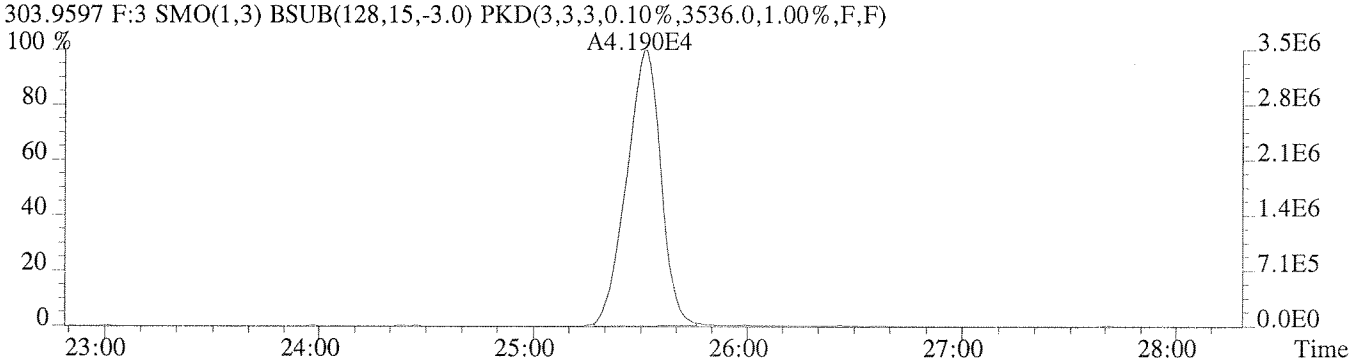

291.9194 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1752.0,1.00%,F,F)



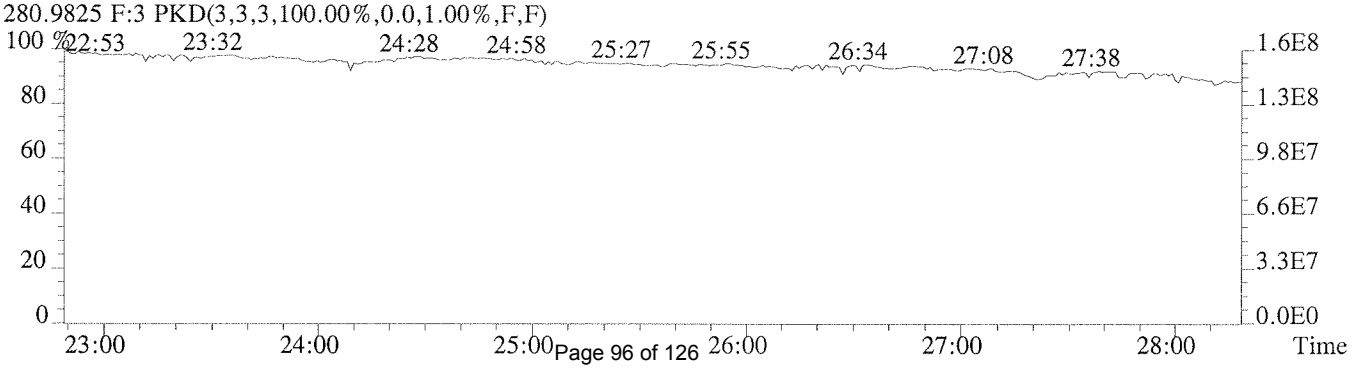

301.9626 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3060.0,1.00%,F,F)



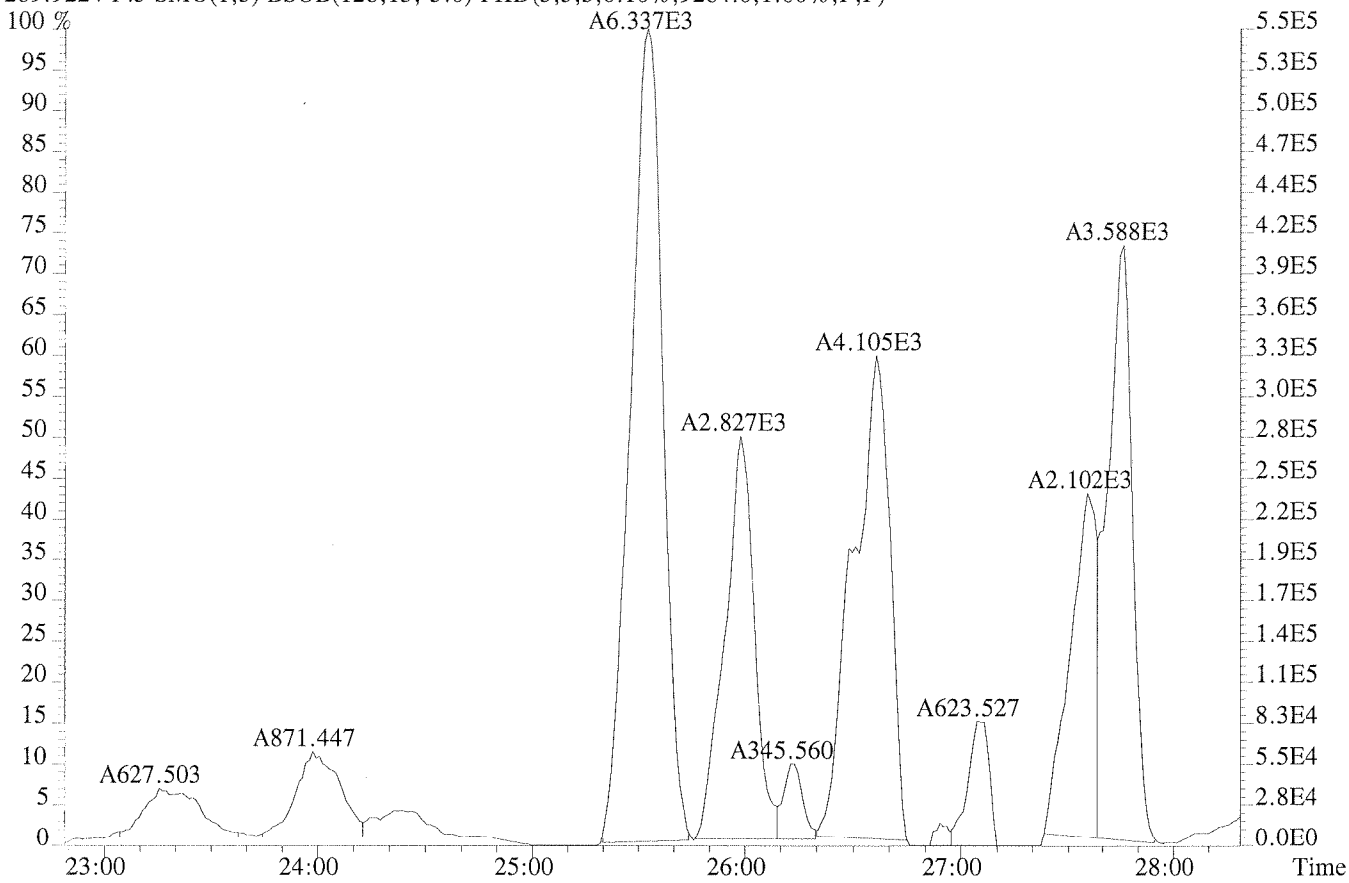

303.9597 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3536.0,1.00%,F,F)



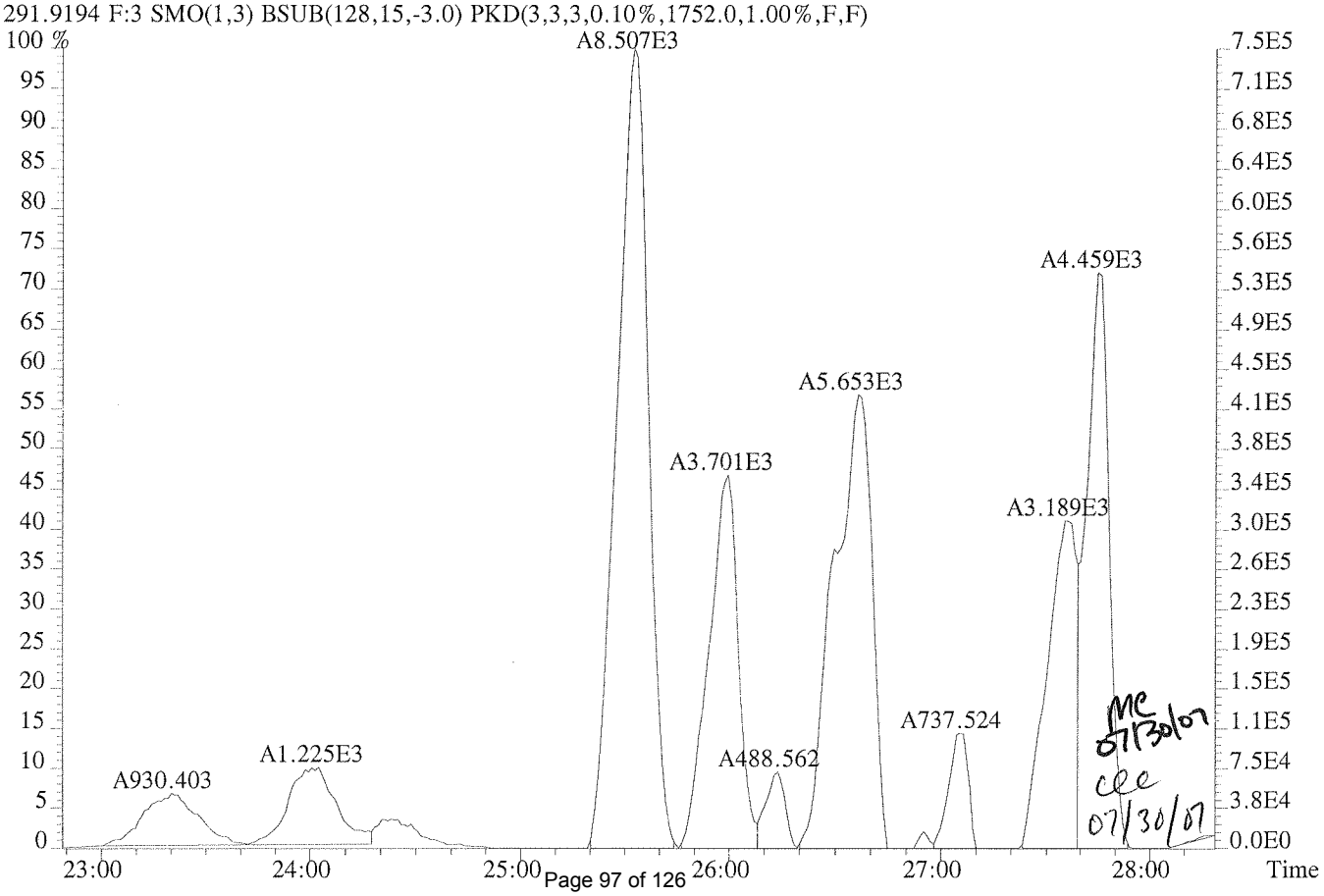

280.9825 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210822 #1-352 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
289.9224 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,9284.0,1.00%,F,F)




291.9194 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1752.0,1.00%,F,F)

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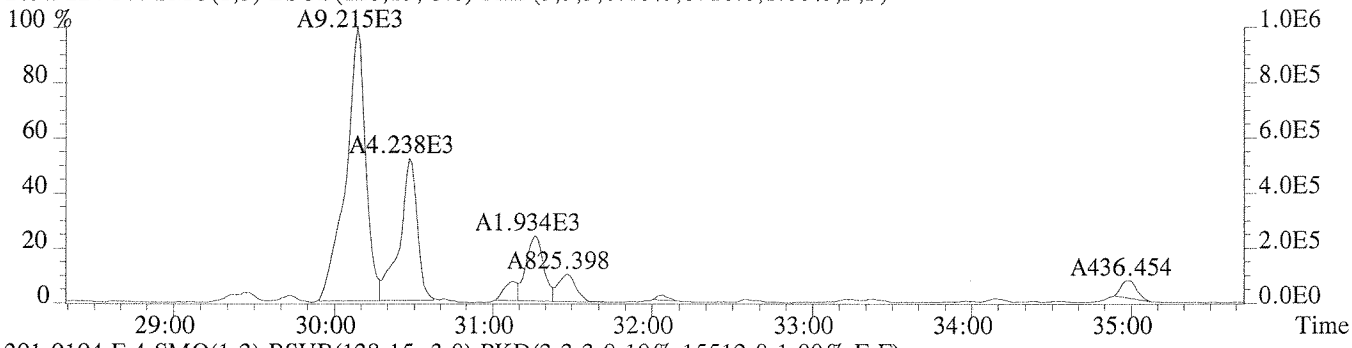
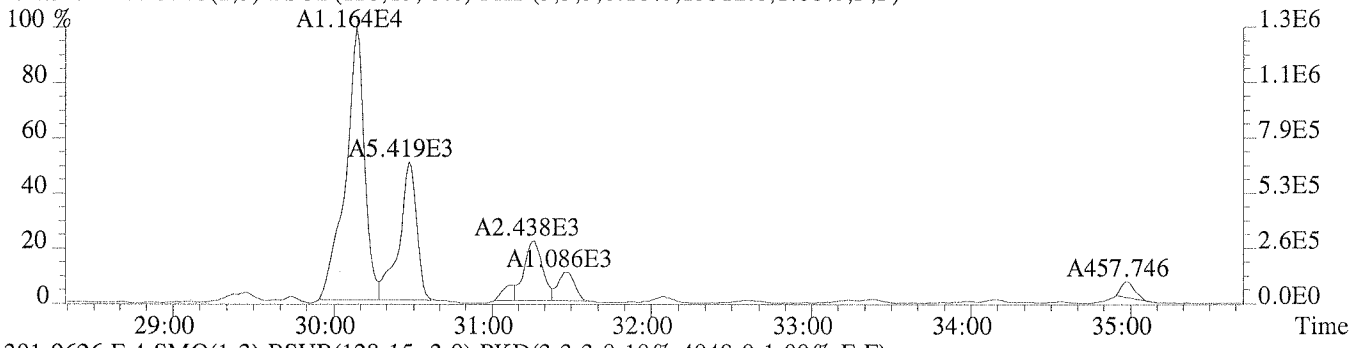
File:U210822 #1-473 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001

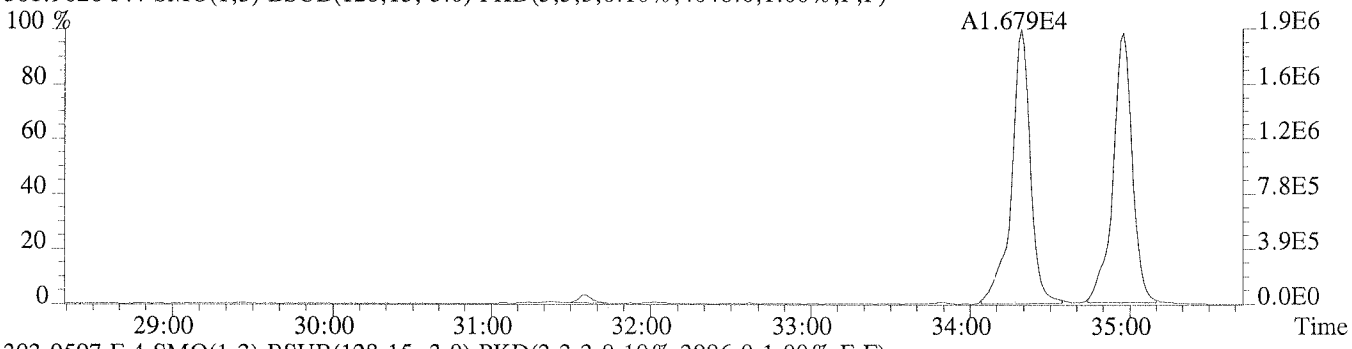
289.9224 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8716.0,1.00%,F,F)



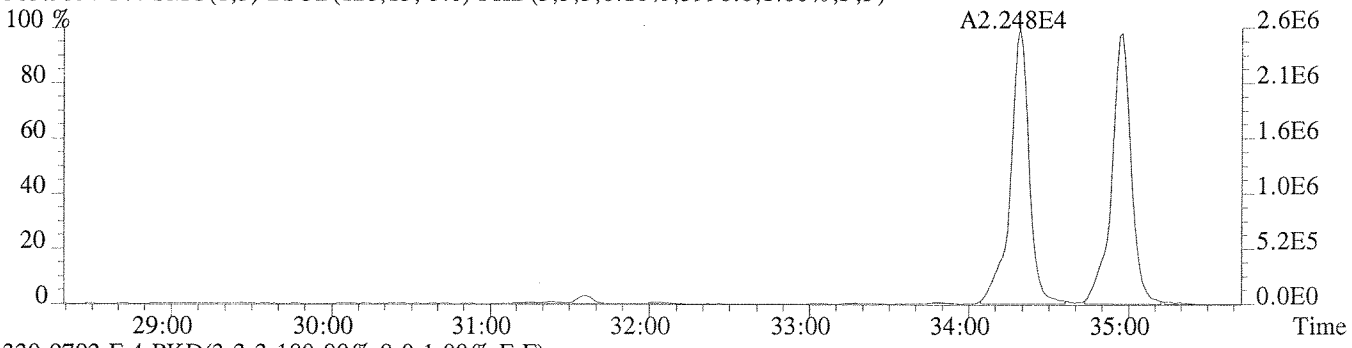

291.9194 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15512.0,1.00%,F,F)



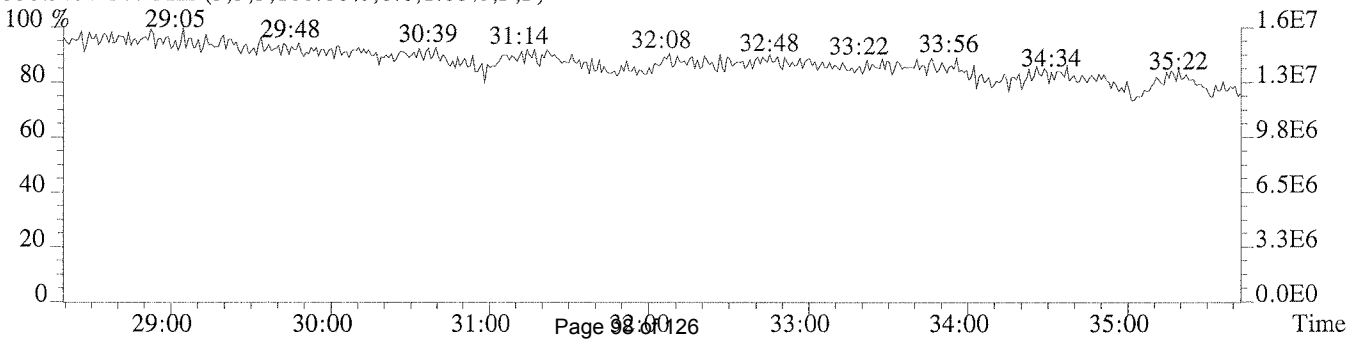

301.9626 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4048.0,1.00%,F,F)



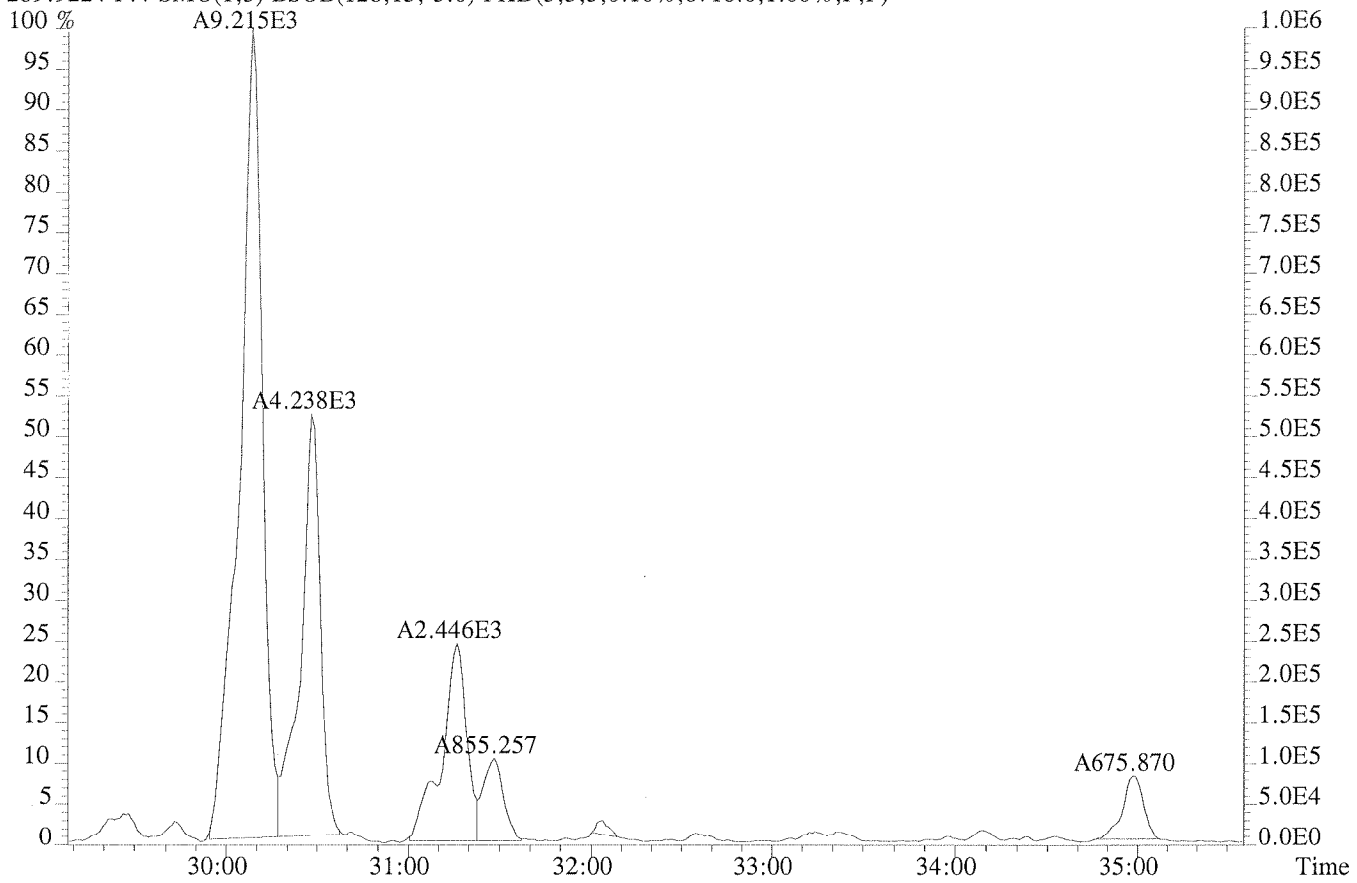

303.9597 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3996.0,1.00%,F,F)



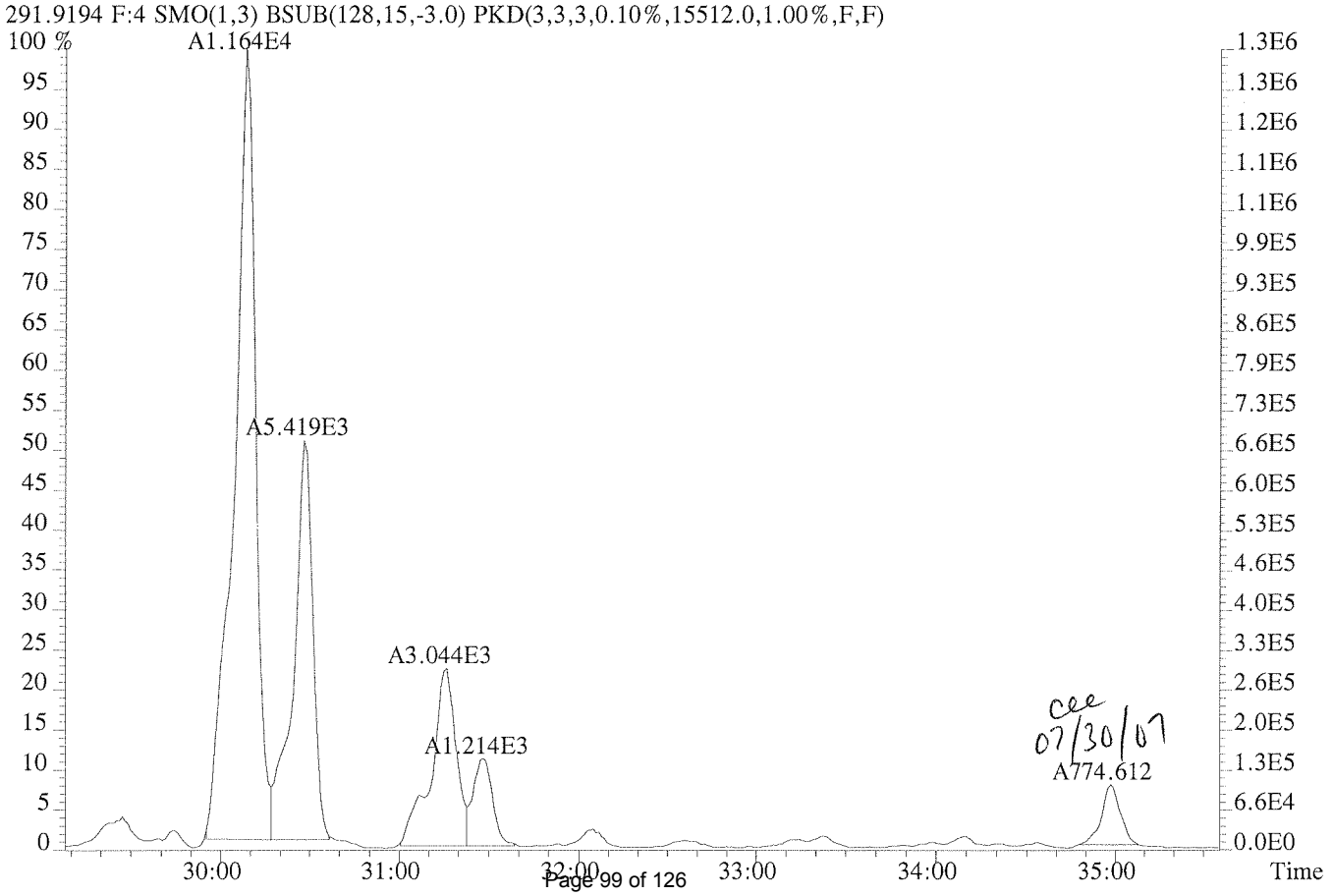

330.9792 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210822 #1-473 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
289.9224 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,8716.0,1.00%,F,F)




291.9194 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15512.0,1.00%,F,F)

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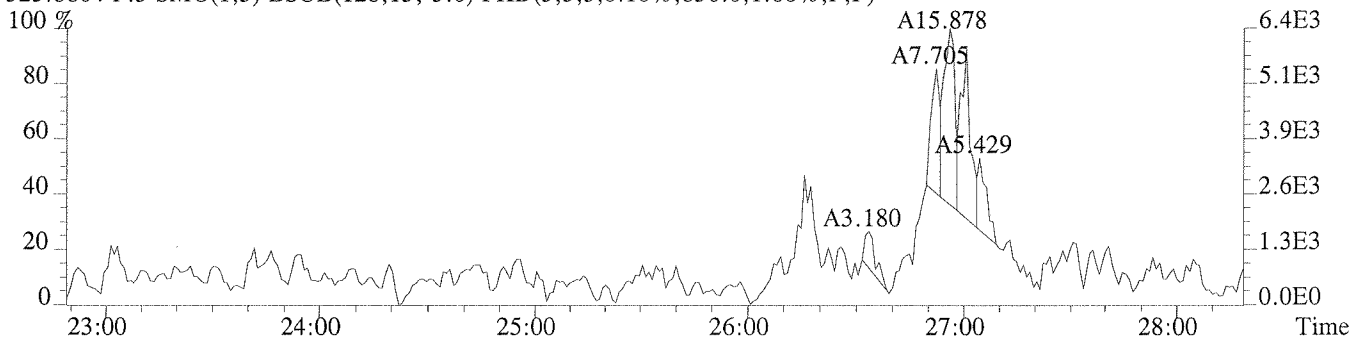
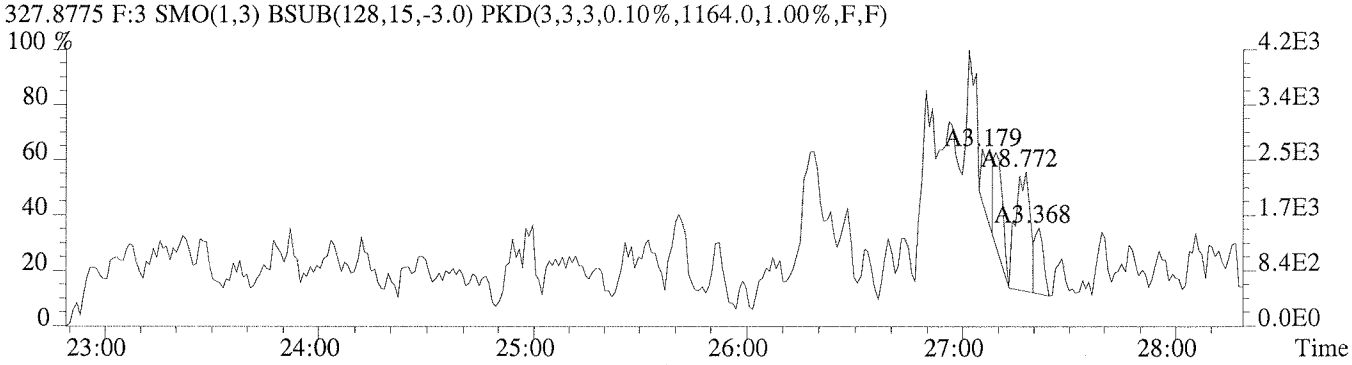
File:U210822 #1-352 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001

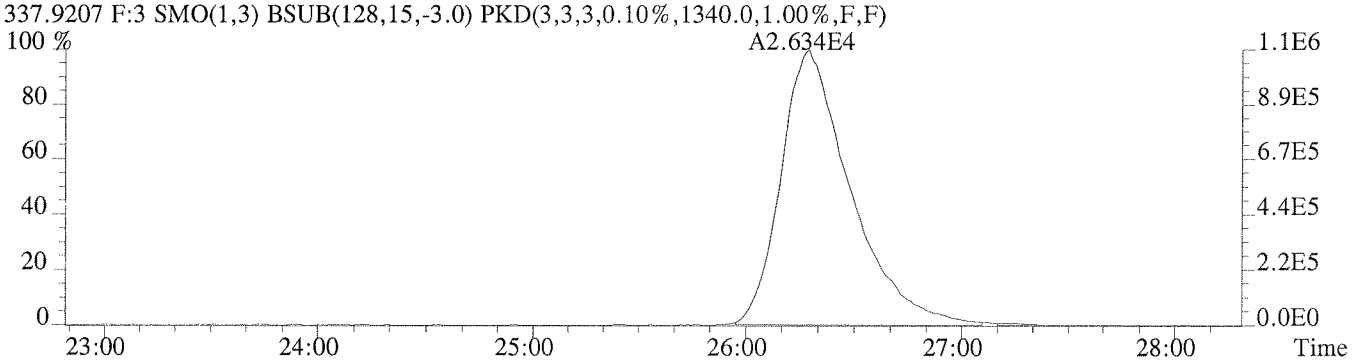
325.8804 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,856.0,1.00%,F,F)



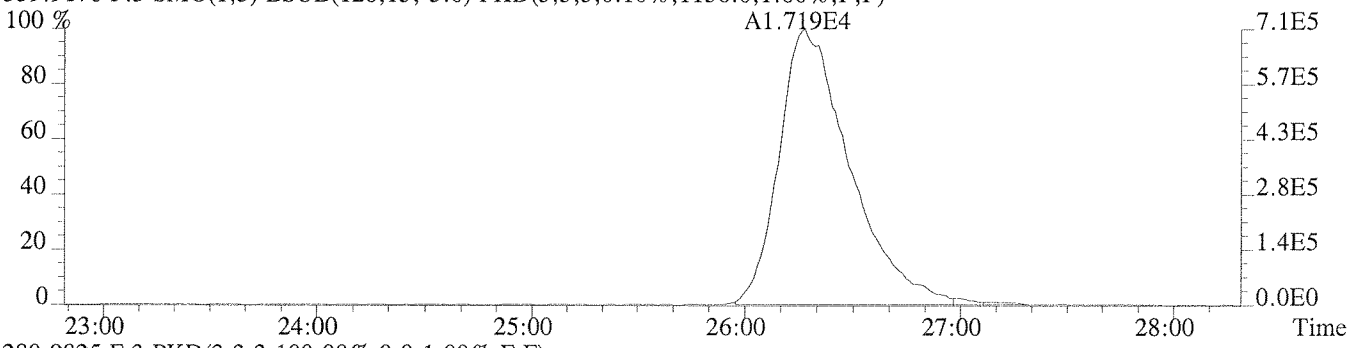

327.8775 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1164.0,1.00%,F,F)



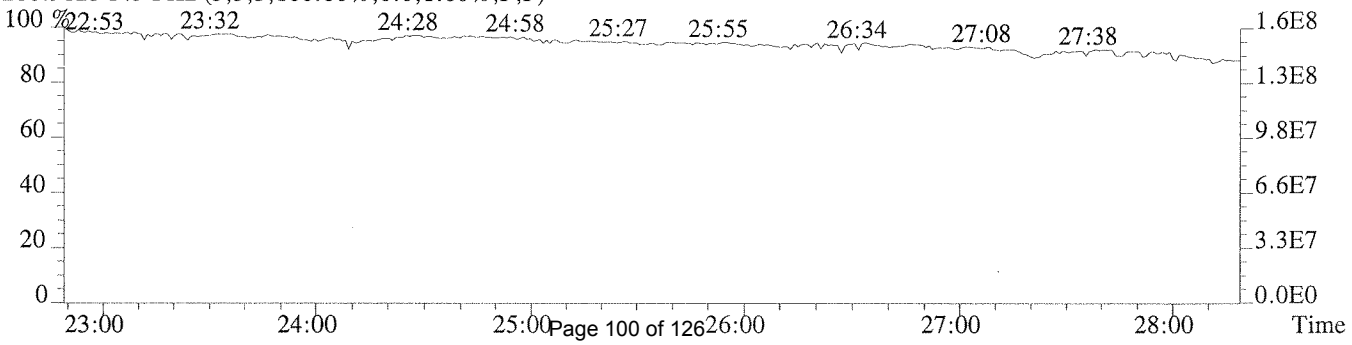

337.9207 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1340.0,1.00%,F,F)




339.9178 F:3 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1156.0,1.00%,F,F)

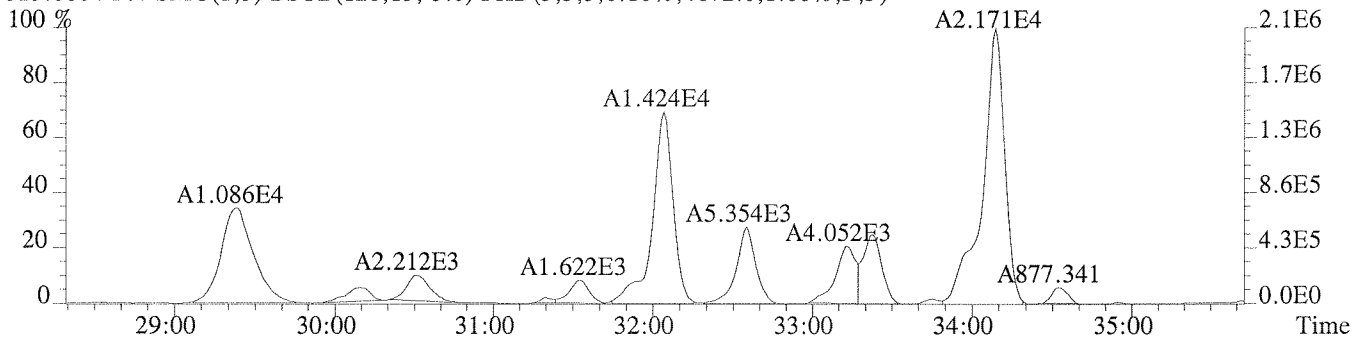



280.9825 F:3 PKD(3,3,3,100.00%,0.0,1.00%,F,F)

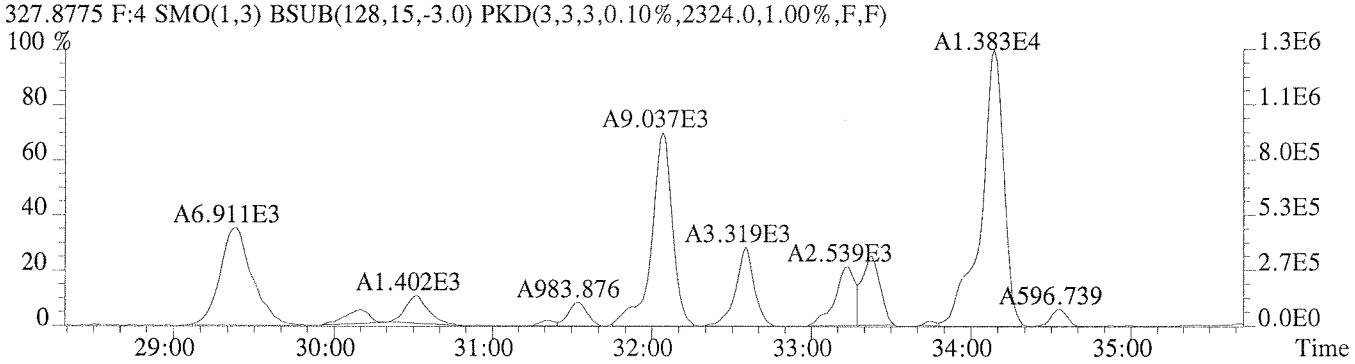


File:U210822 #1-473 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001

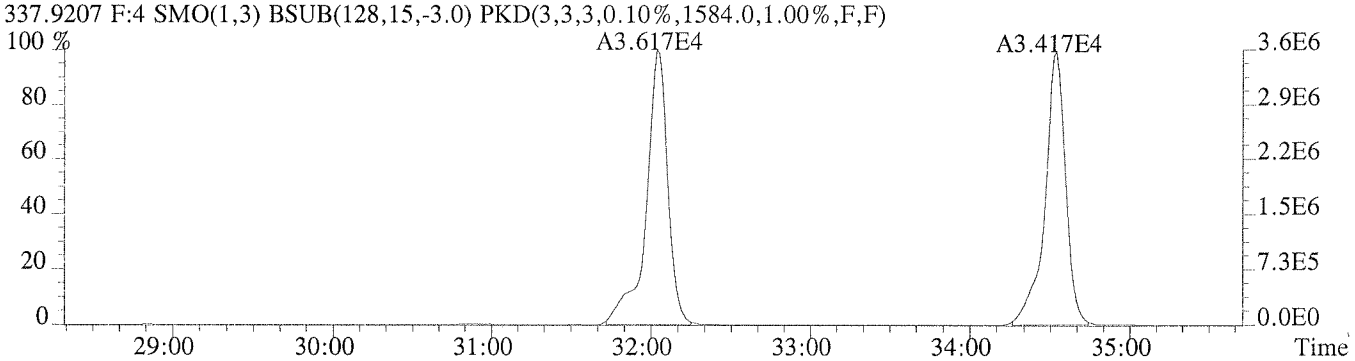
325.8804 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,4672.0,1.00%,F,F)



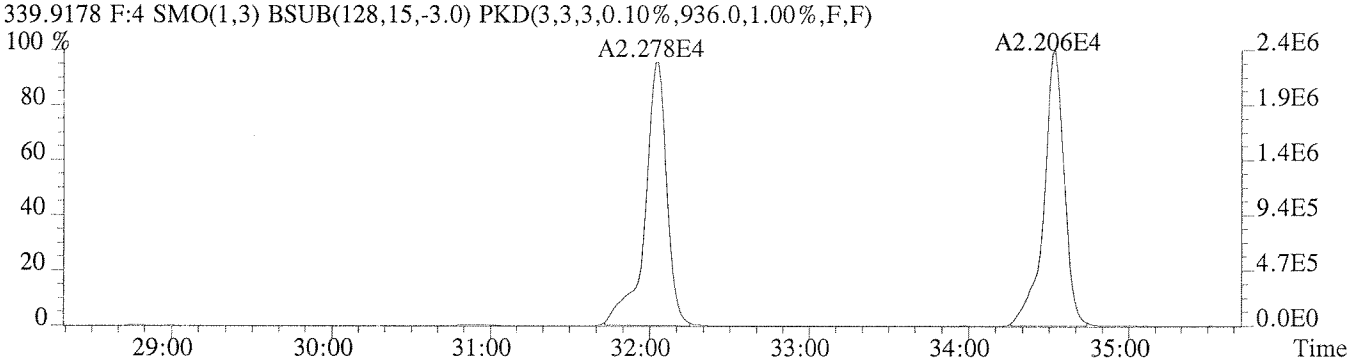

327.8775 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2324.0,1.00%,F,F)



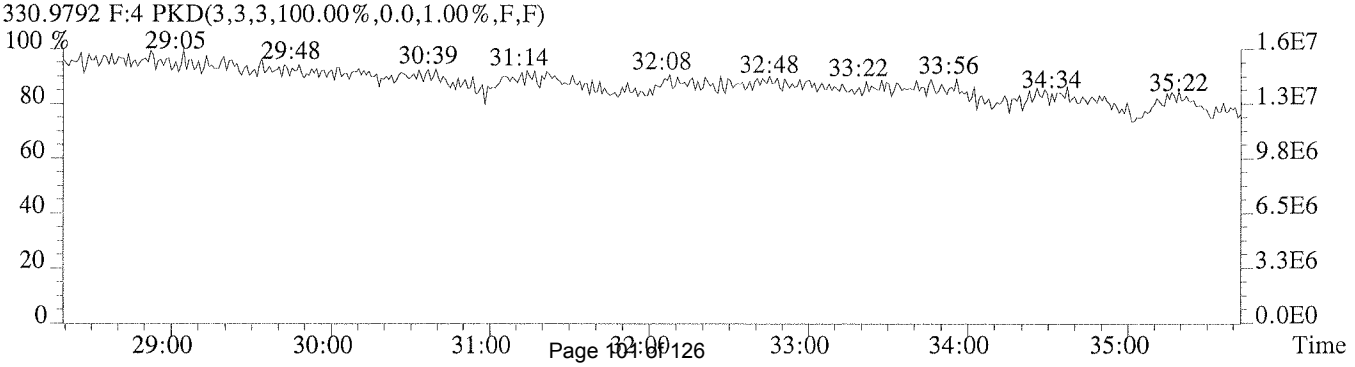

337.9207 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1584.0,1.00%,F,F)



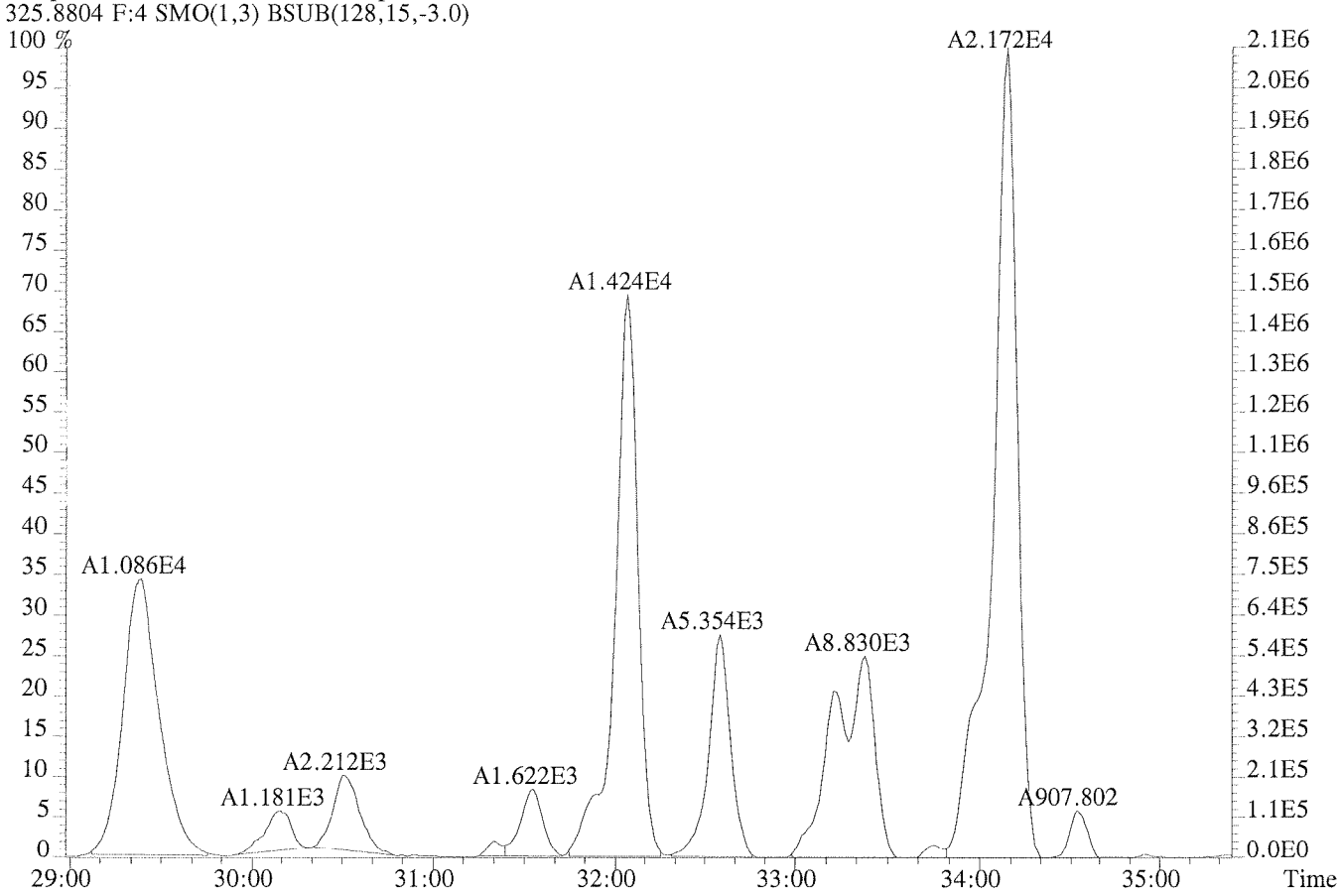

339.9178 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,936.0,1.00%,F,F)



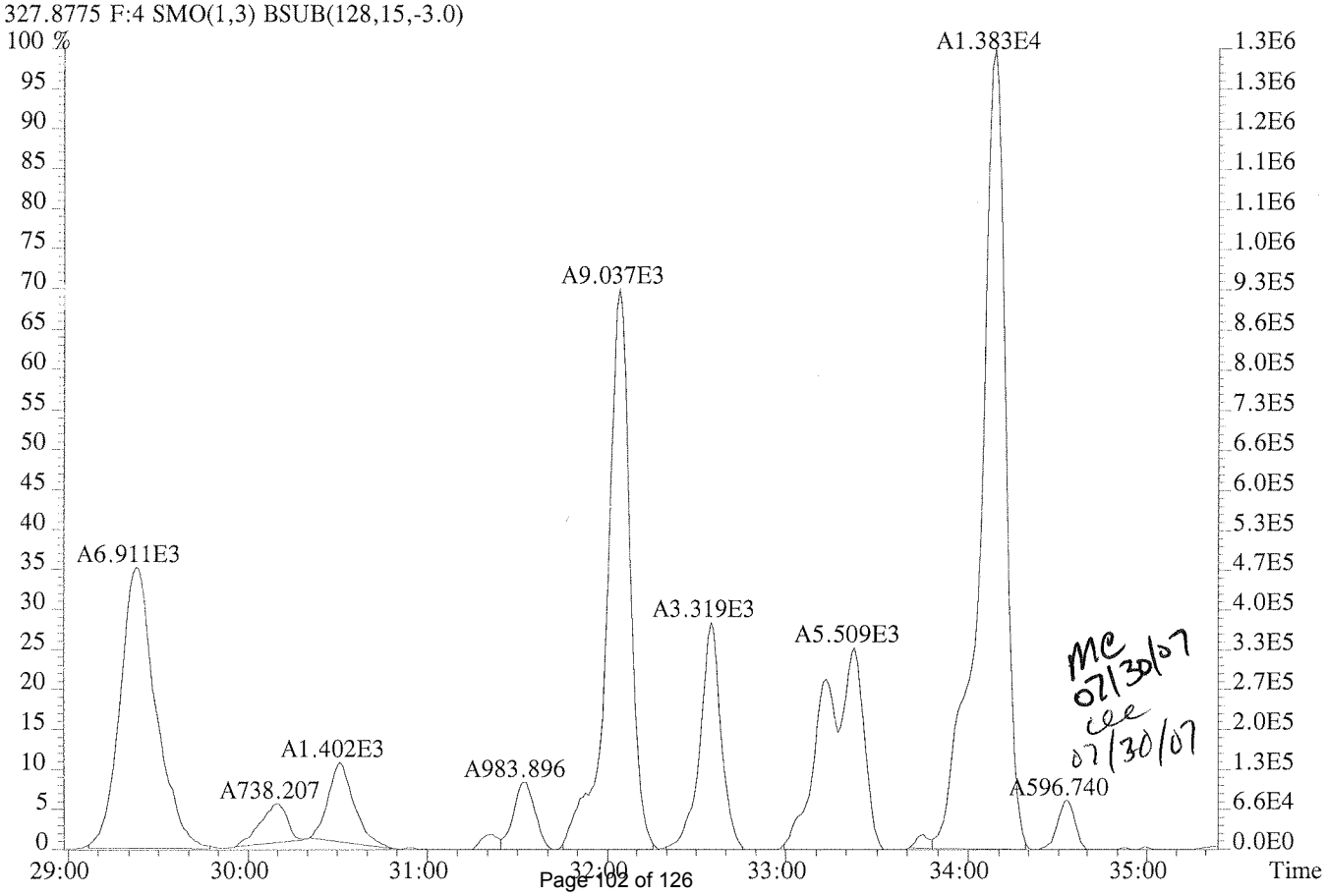

330.9792 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



File:U210822 #1-473 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
325.8804 F:4 SMO(1,3) BSUB(128,15,-3.0)




327.8775 F:4 SMO(1,3) BSUB(128,15,-3.0)

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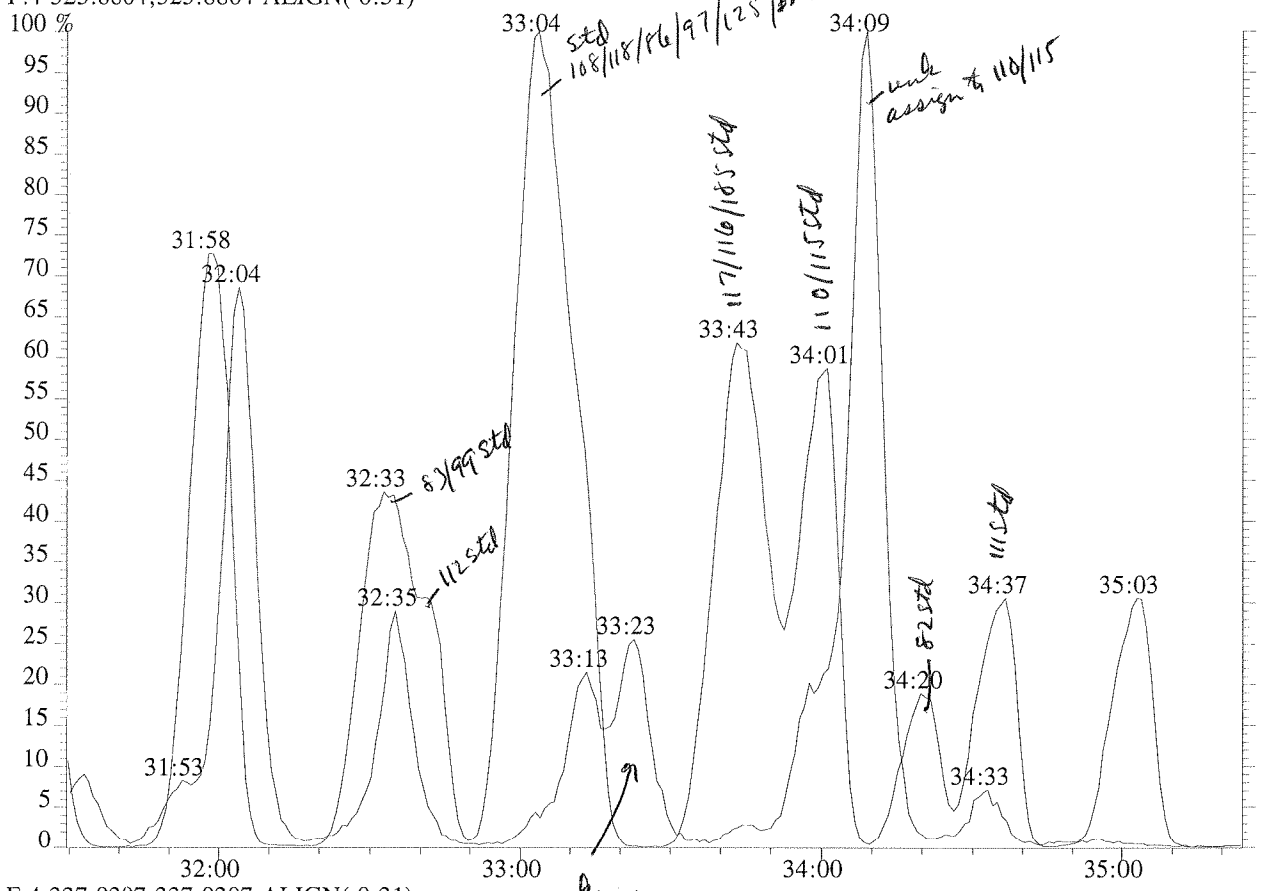
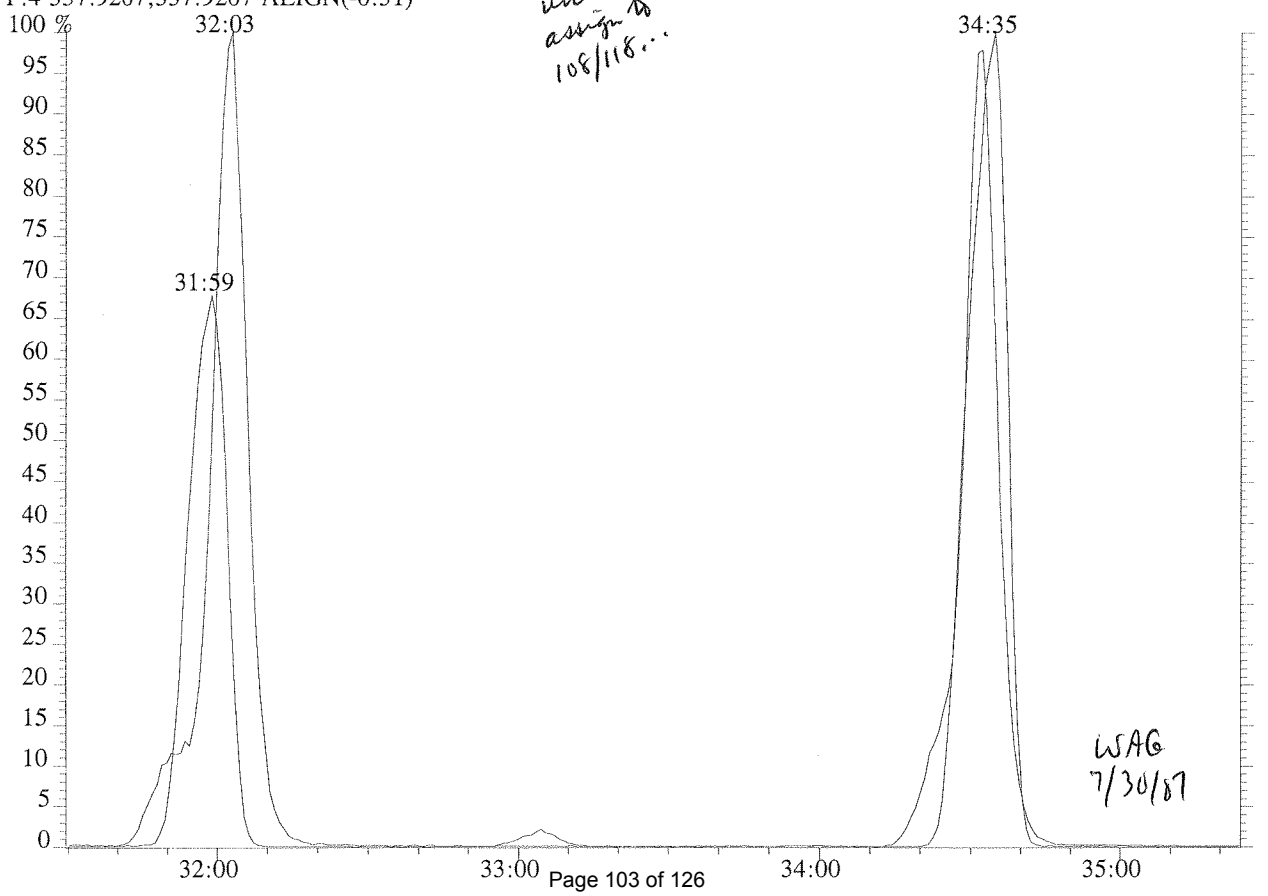
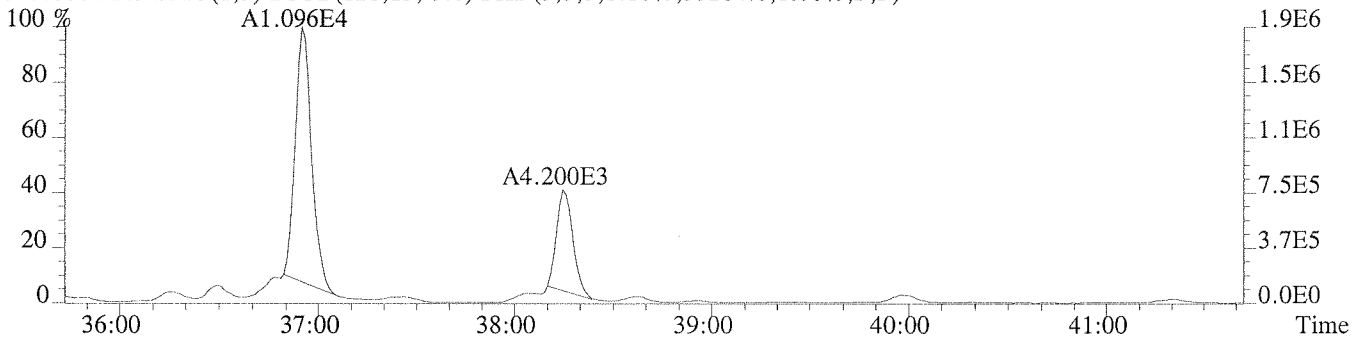
File:U210822 #1-473 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
F:4 325.8804,325.8804 ALIGN(-0:31)



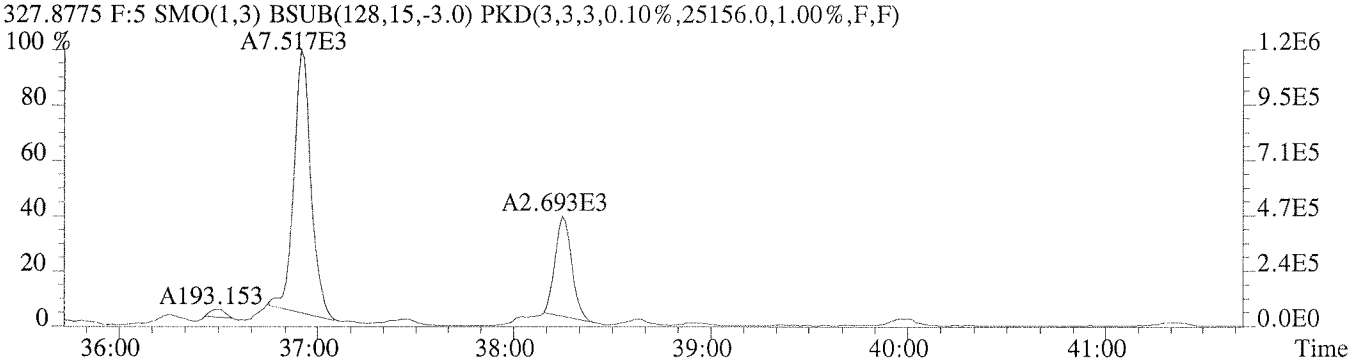

F:4 337.9207,337.9207 ALIGN(-0:31)



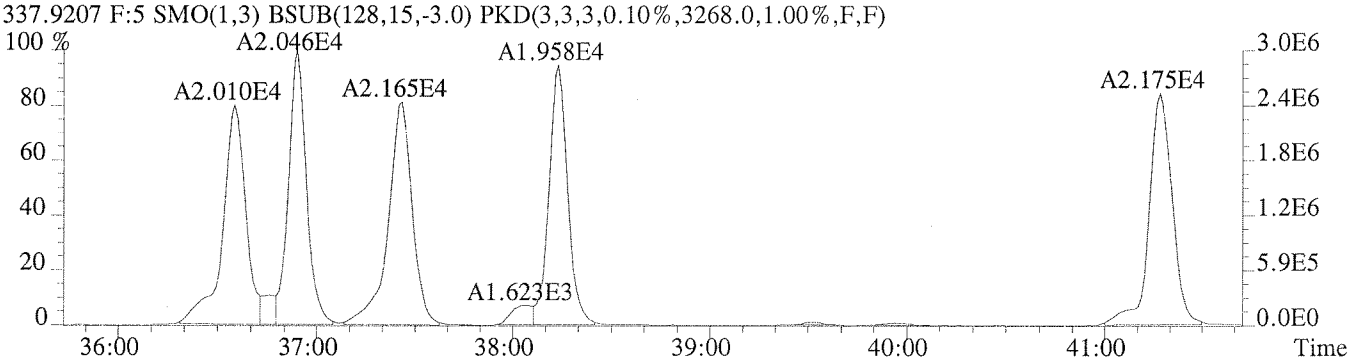
File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
325.8804 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,55284.0,1.00%,F,F)



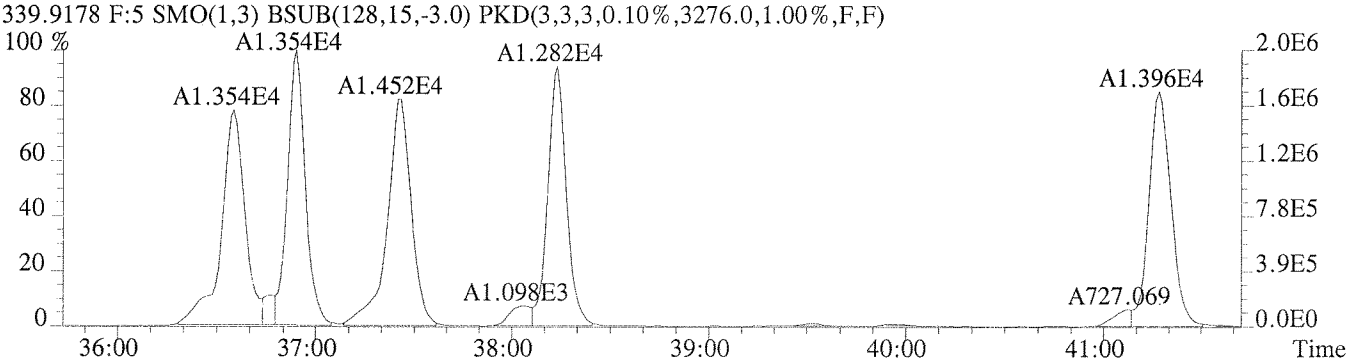

327.8775 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,25156.0,1.00%,F,F)



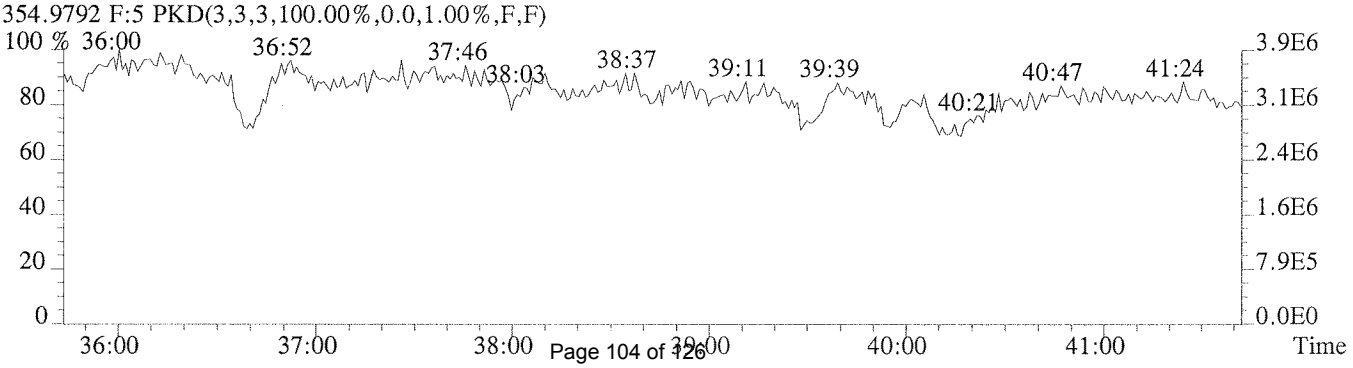

337.9207 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3268.0,1.00%,F,F)



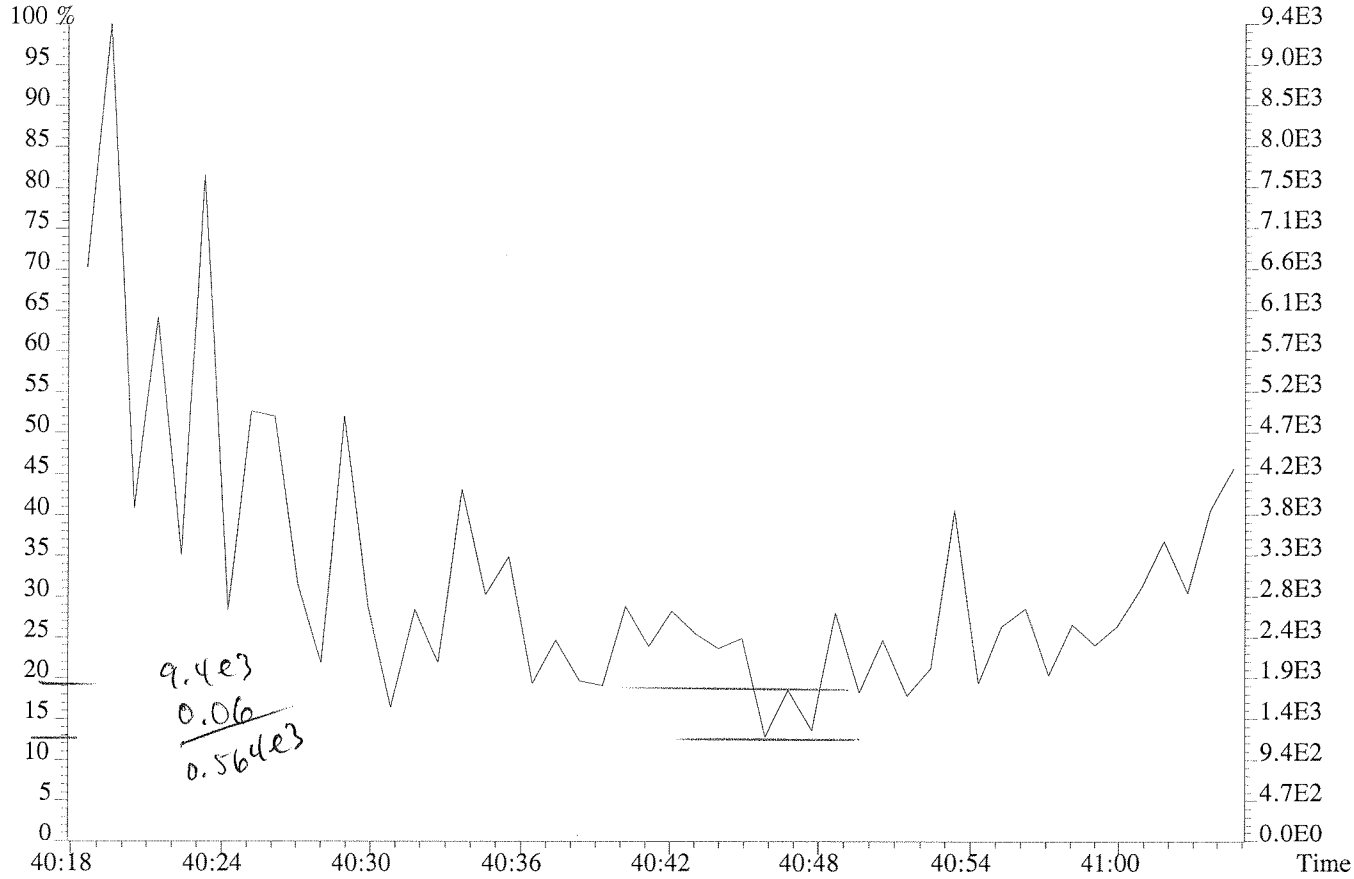

339.9178 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3276.0,1.00%,F,F)



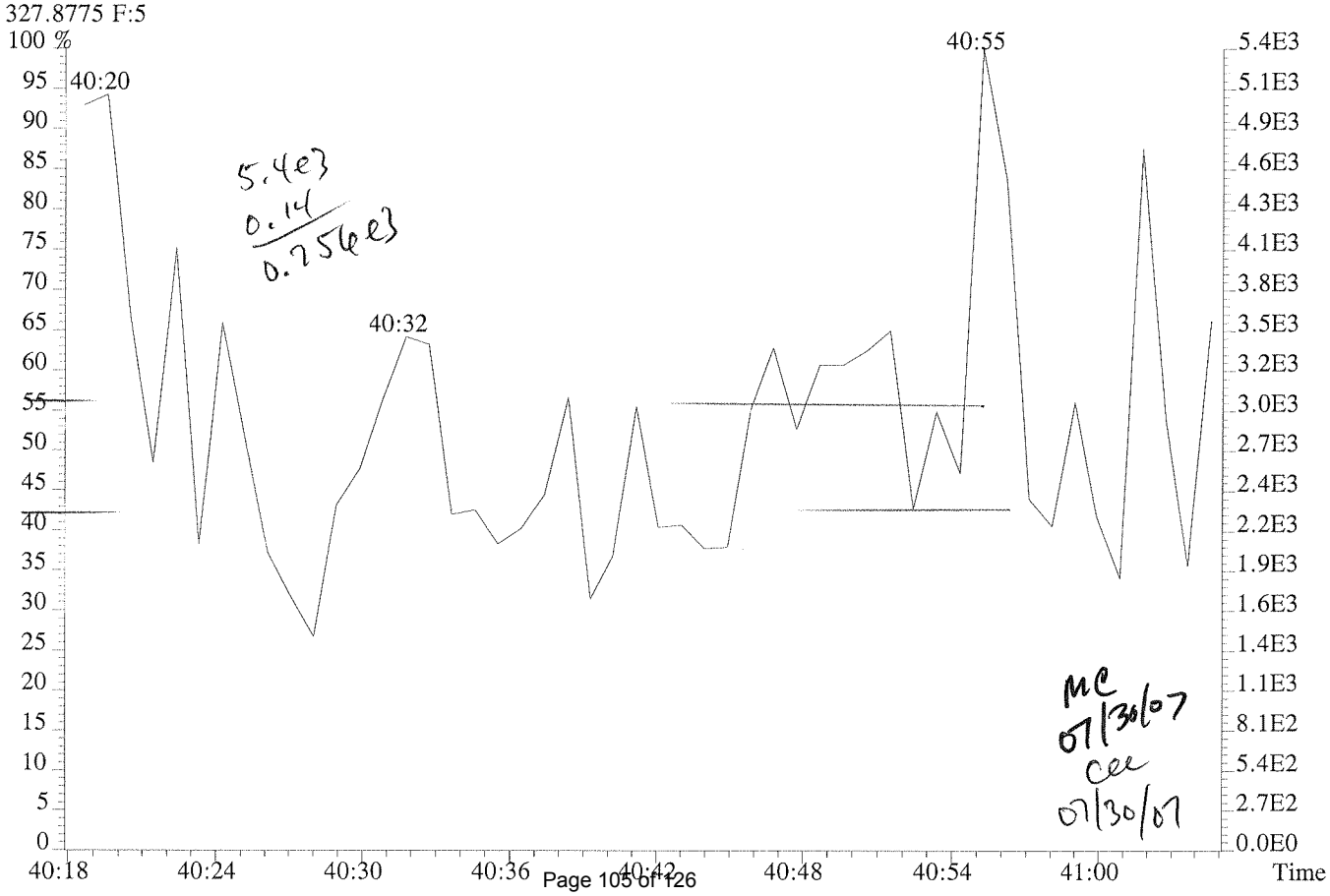

354.9792 F:5 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



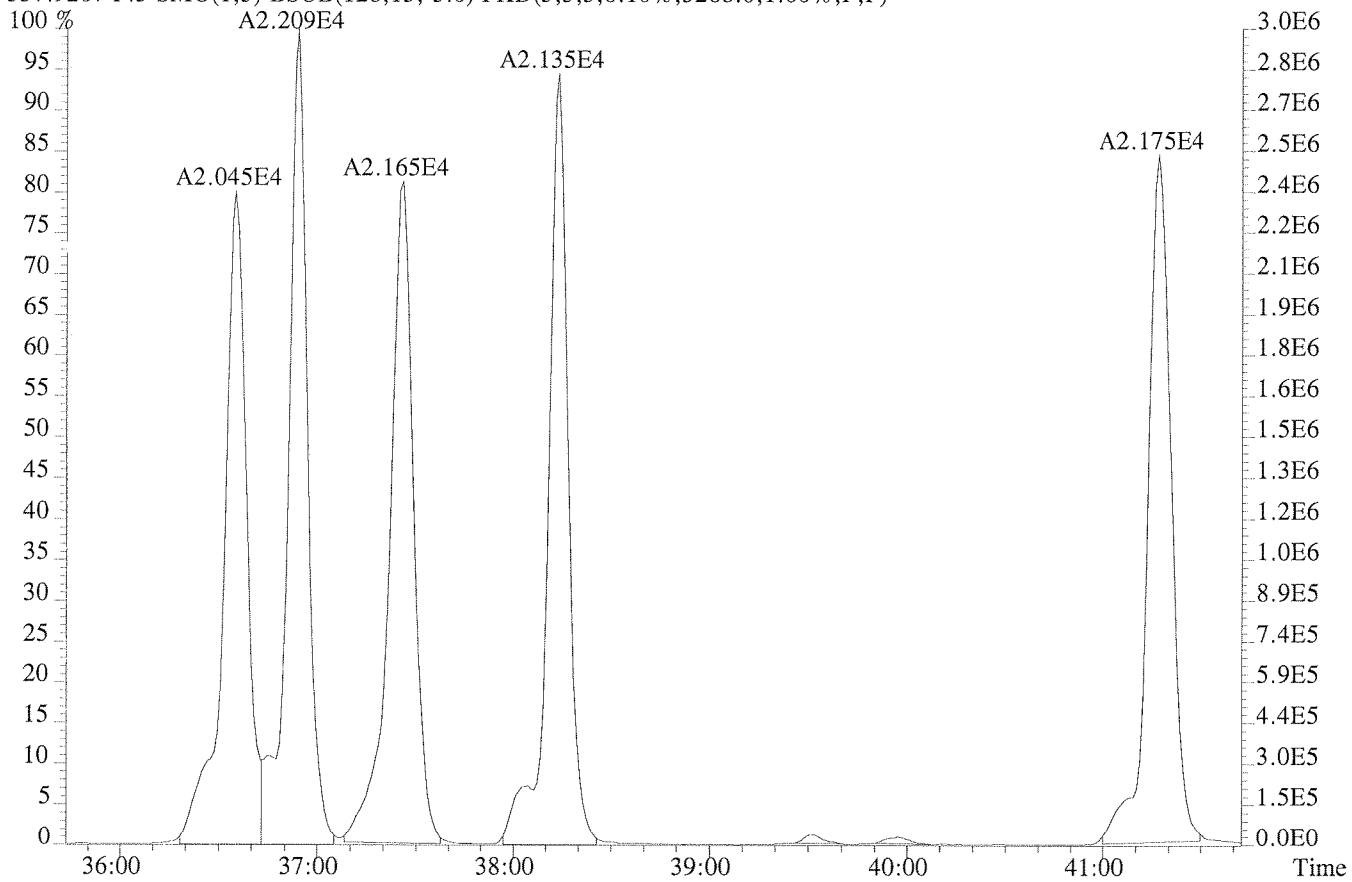
File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
325.8804 F:5



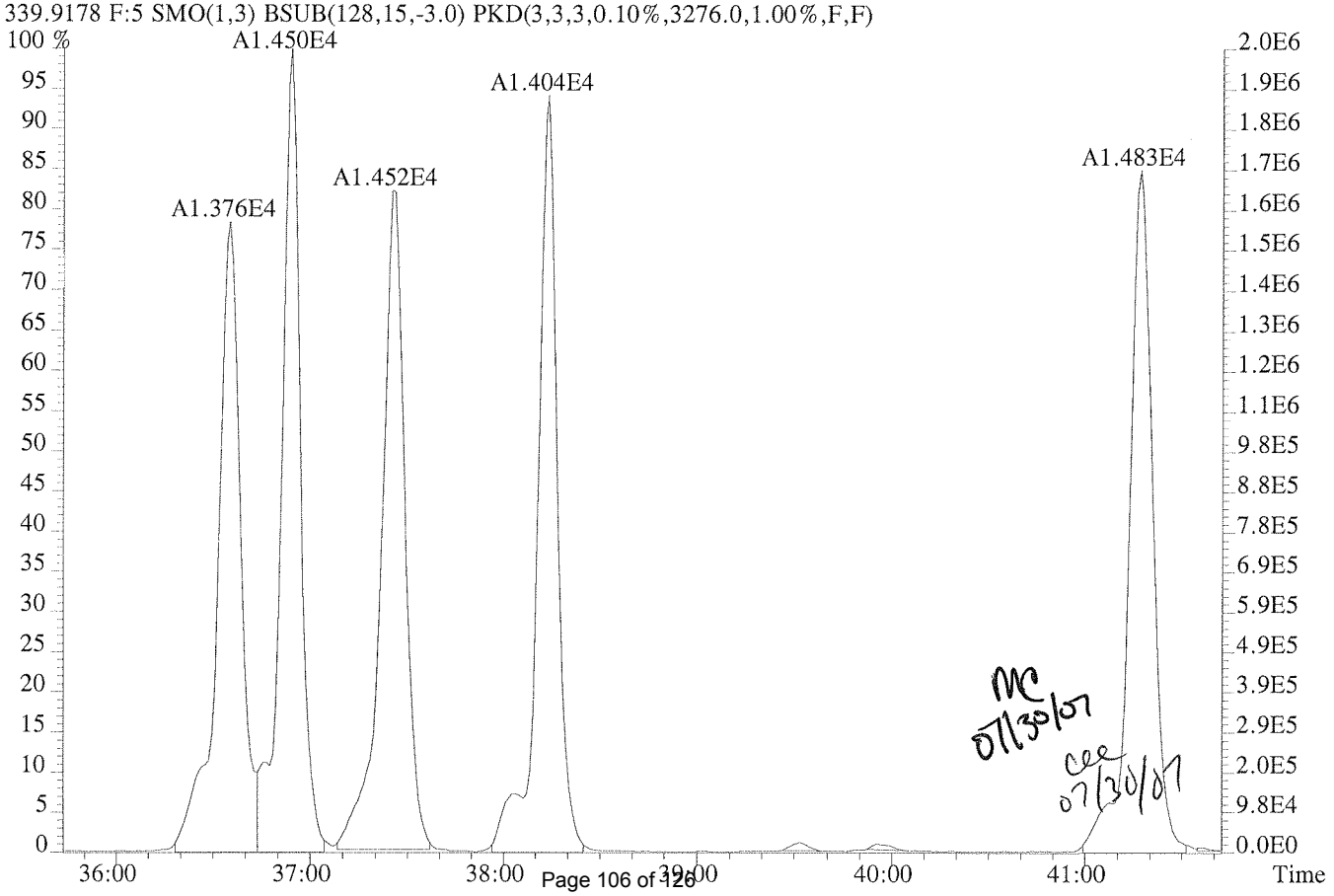

327.8775 F:5



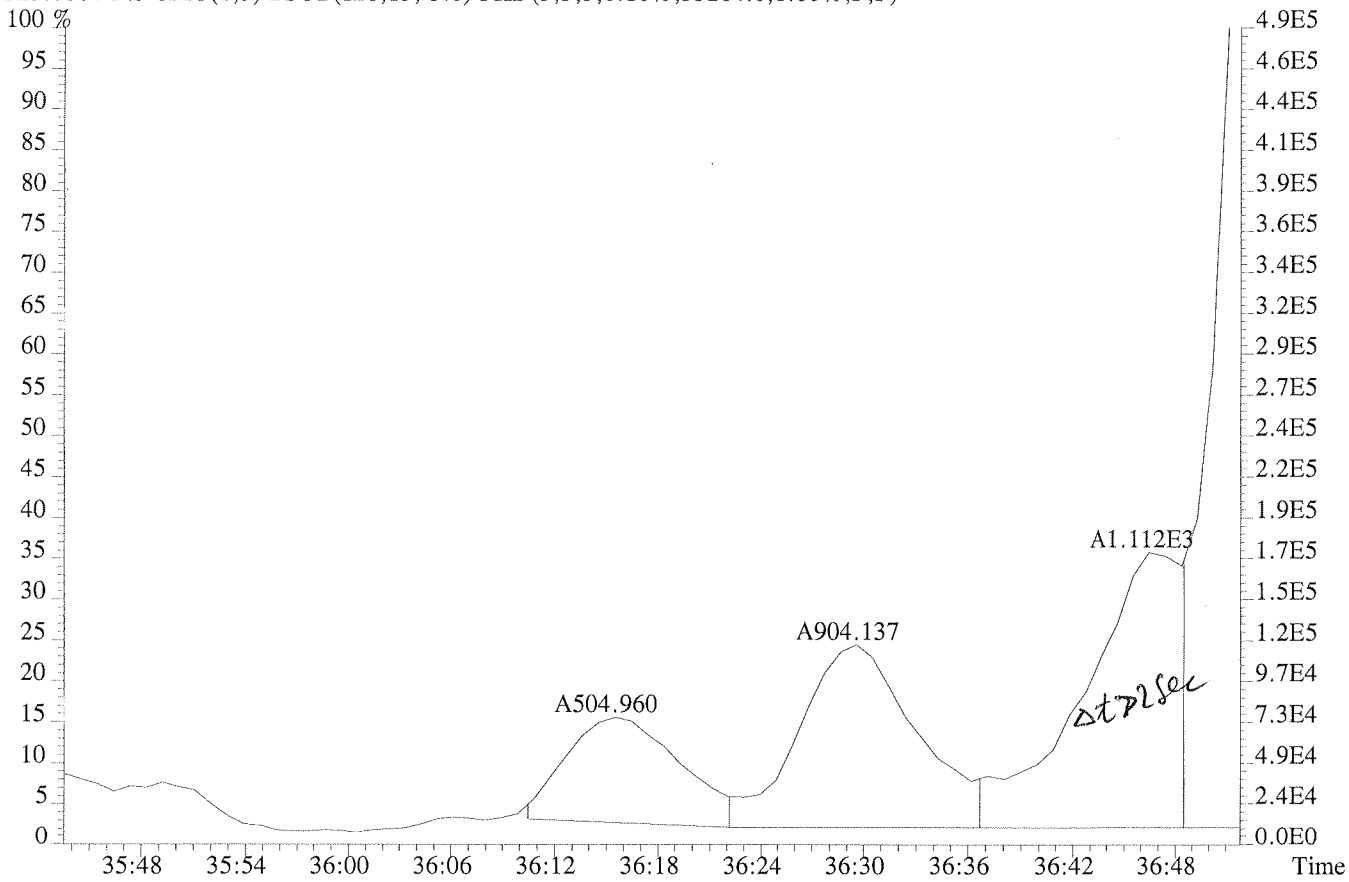
File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
337.9207 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3268.0,1.00%,F,F)



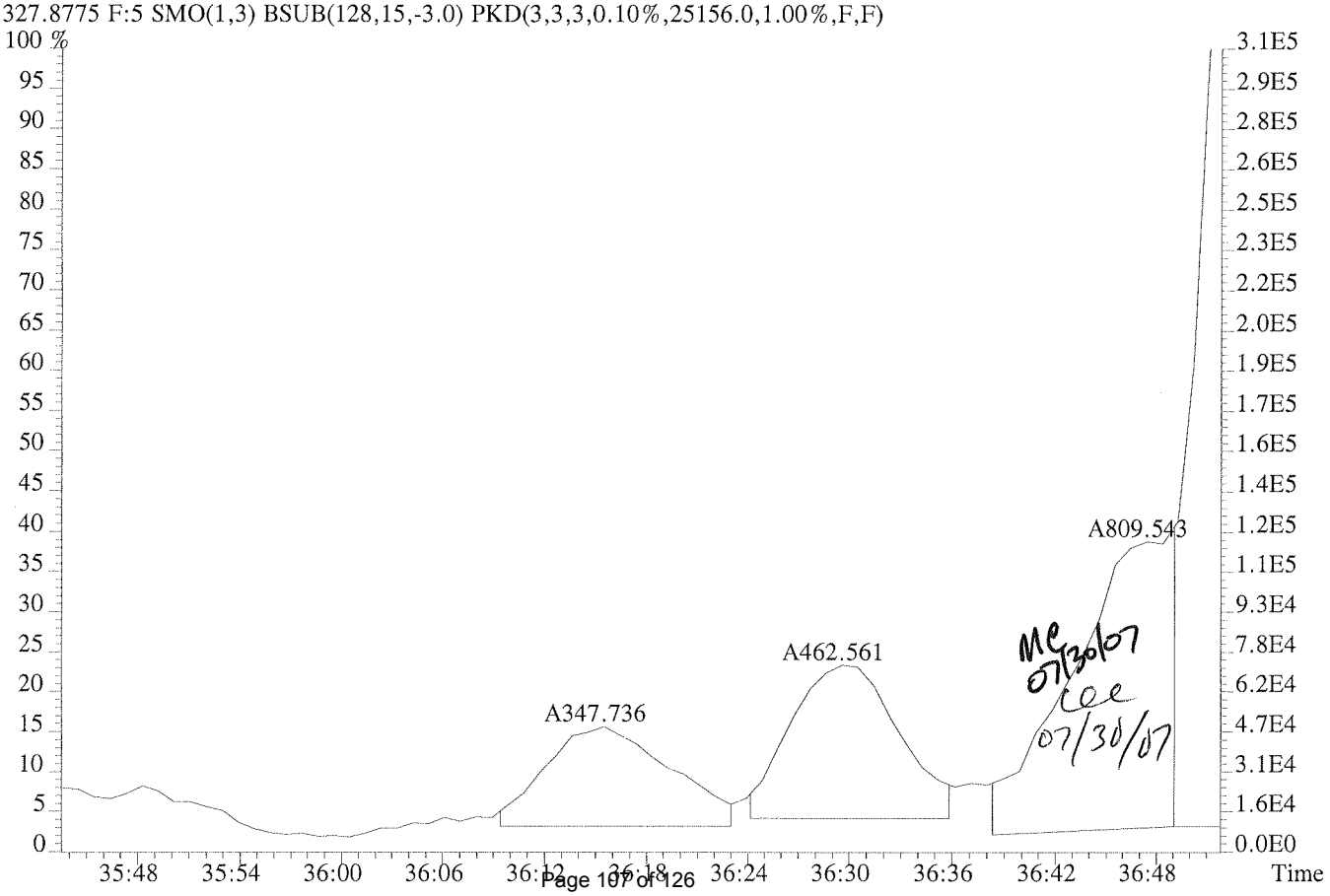

339.9178 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,3276.0,1.00%,F,F)



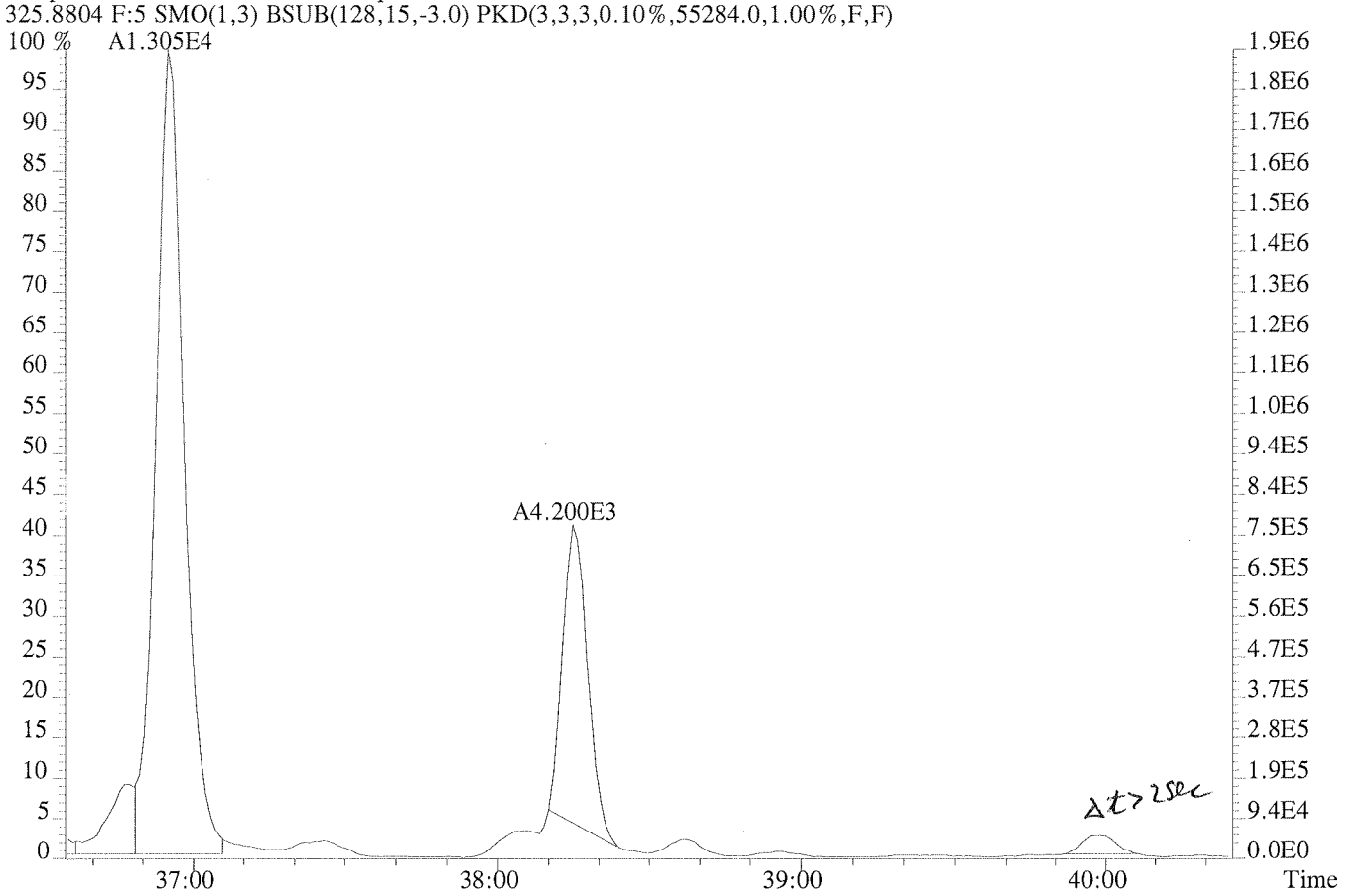
File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
325.8804 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,55284.0,1.00%,F,F)



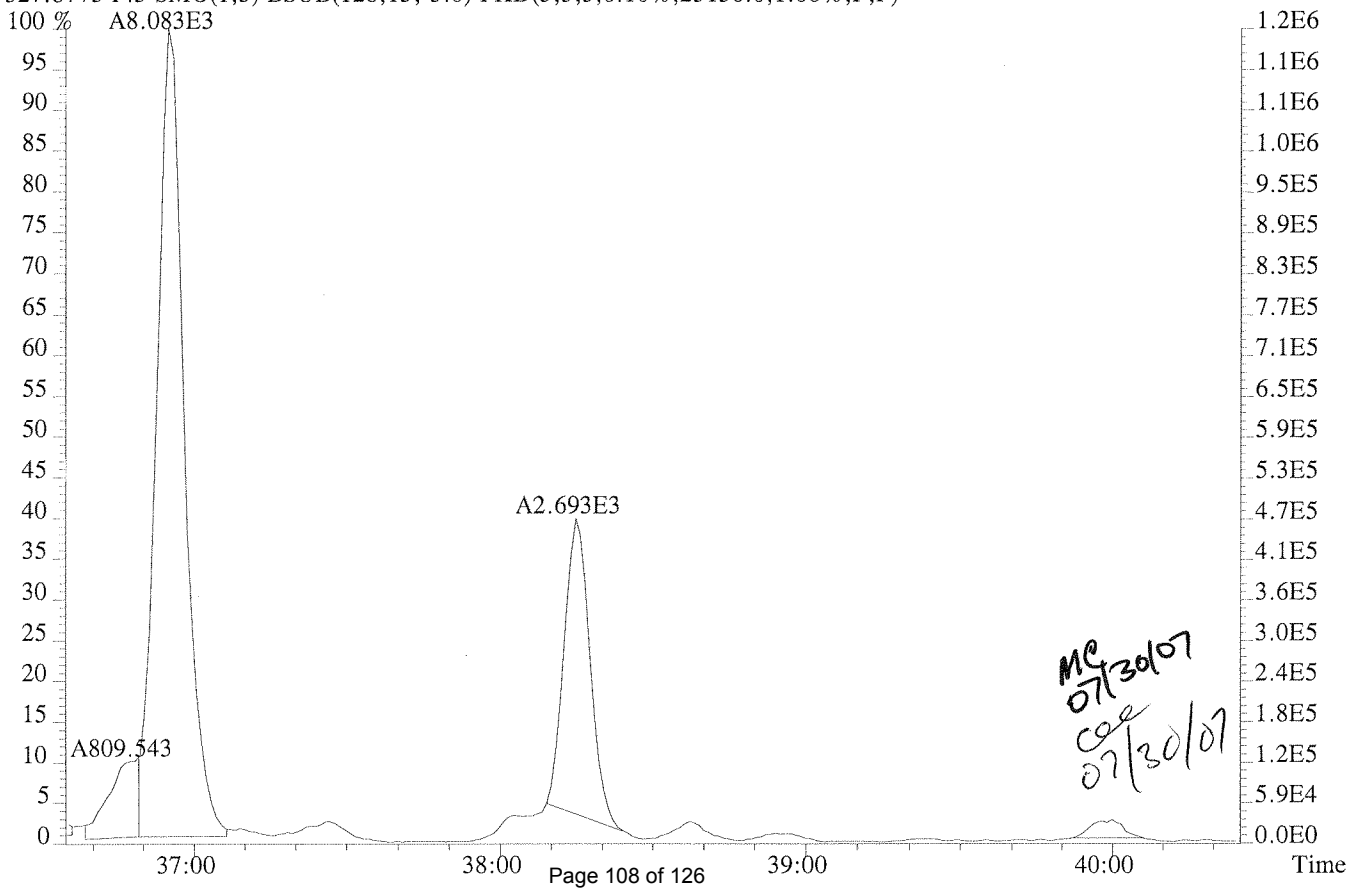

327.8775 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,25156.0,1.00%,F,F)



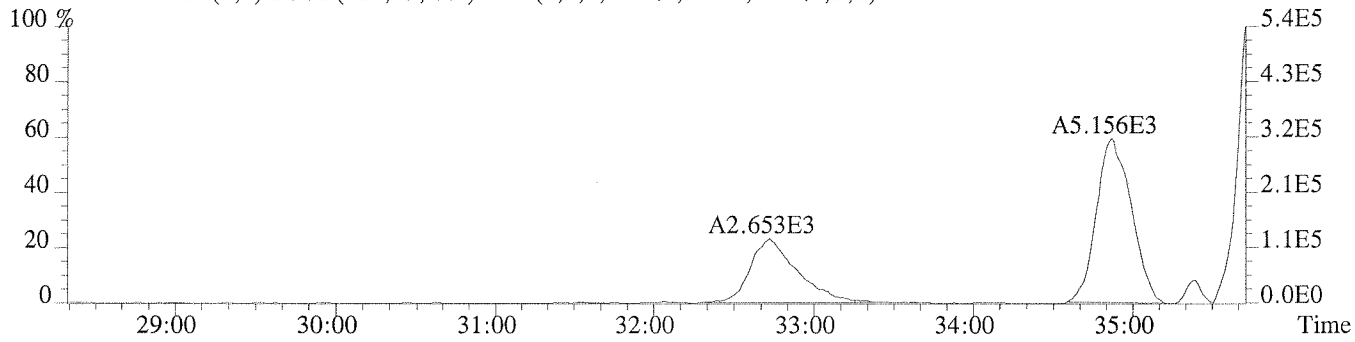
File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
325.8804 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,55284.0,1.00%,F,F)



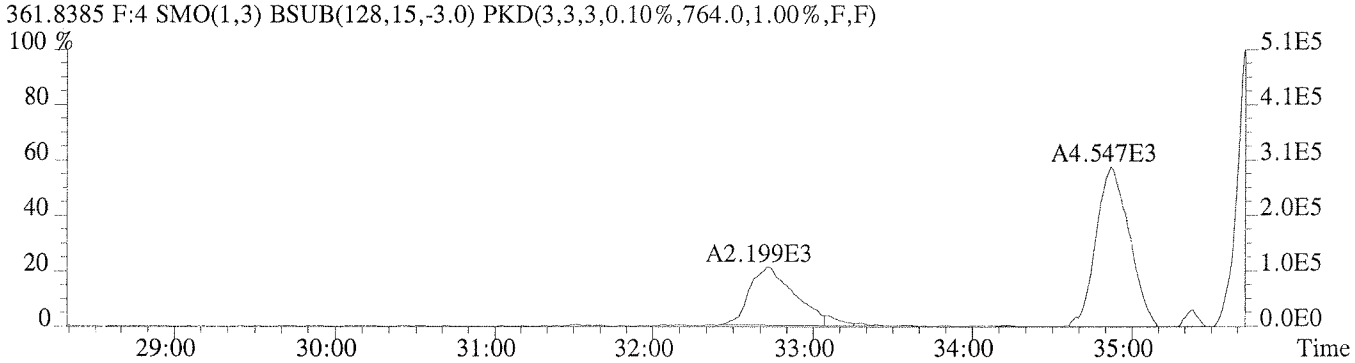

327.8775 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,25156.0,1.00%,F,F)



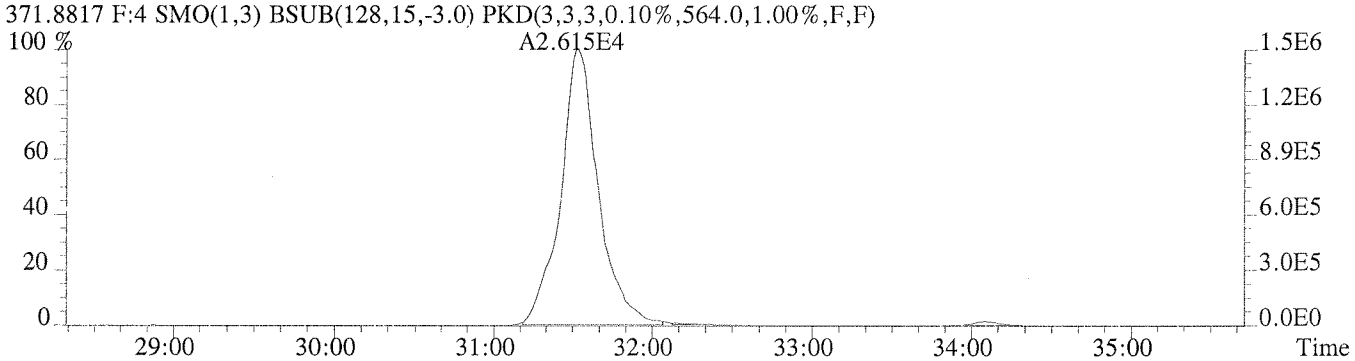
File:U210822 #1-473 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
359.8415 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,576.0,1.00%,F,F)



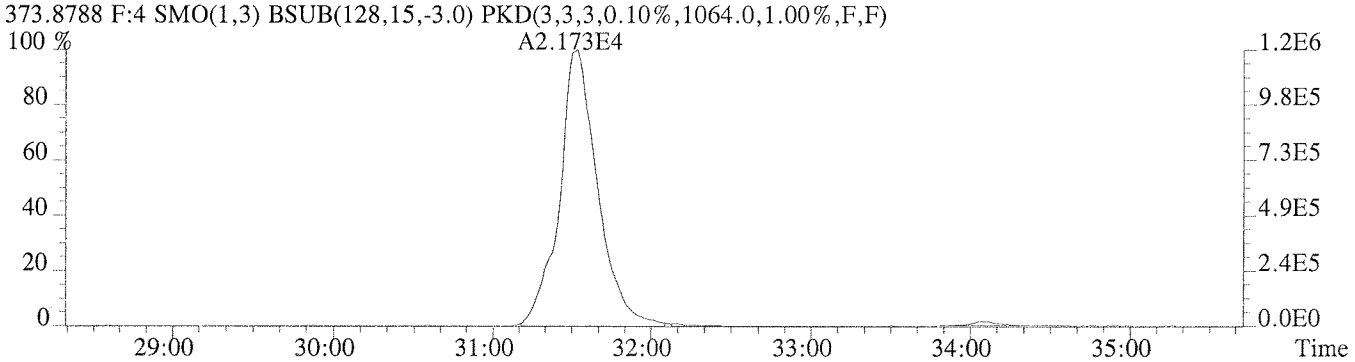

361.8385 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,764.0,1.00%,F,F)



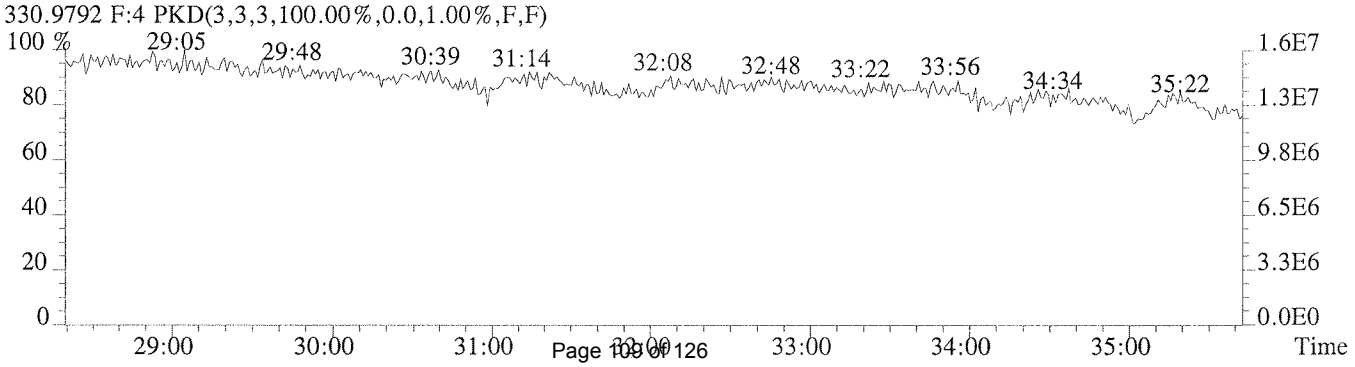

371.8817 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,564.0,1.00%,F,F)



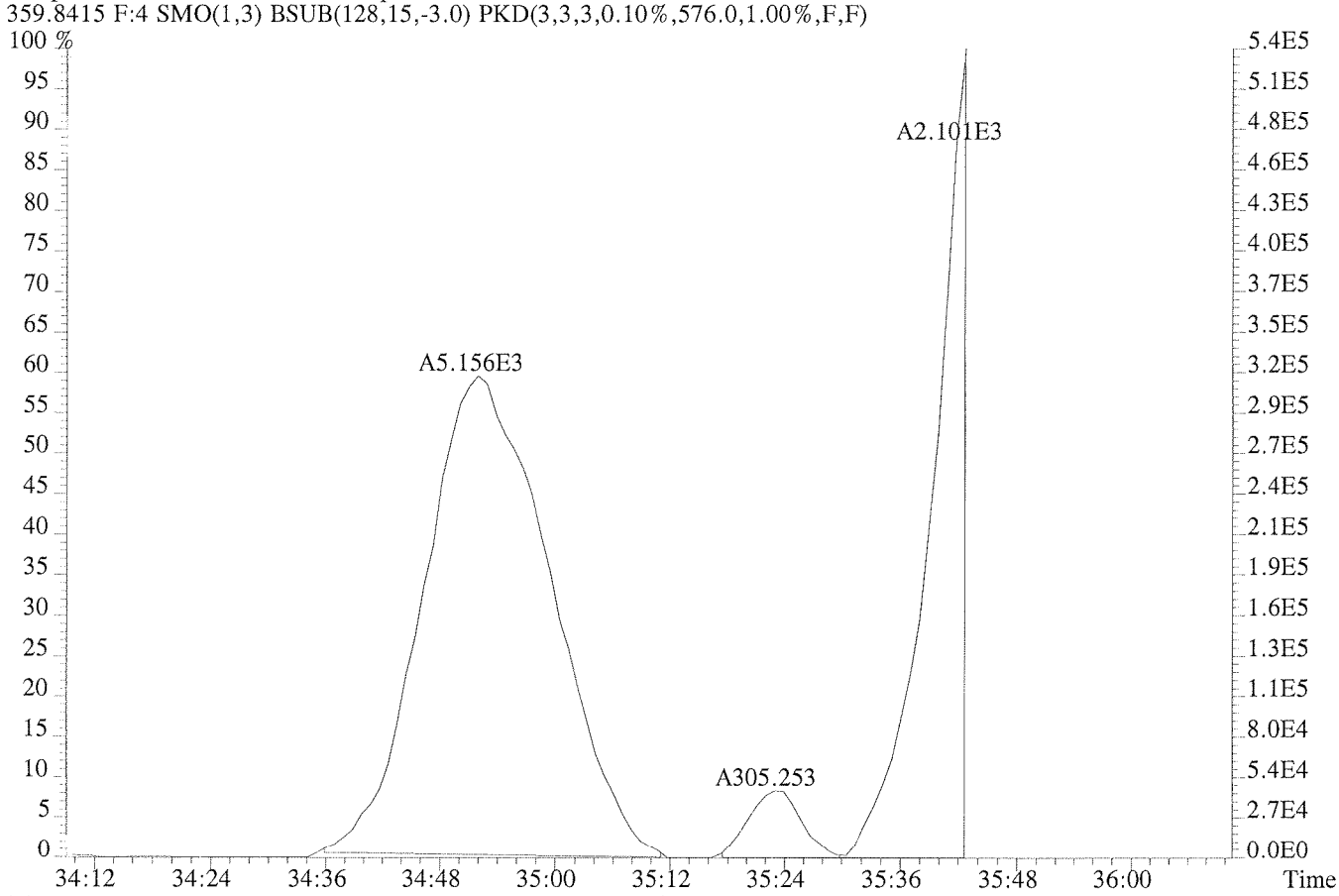

373.8788 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1064.0,1.00%,F,F)



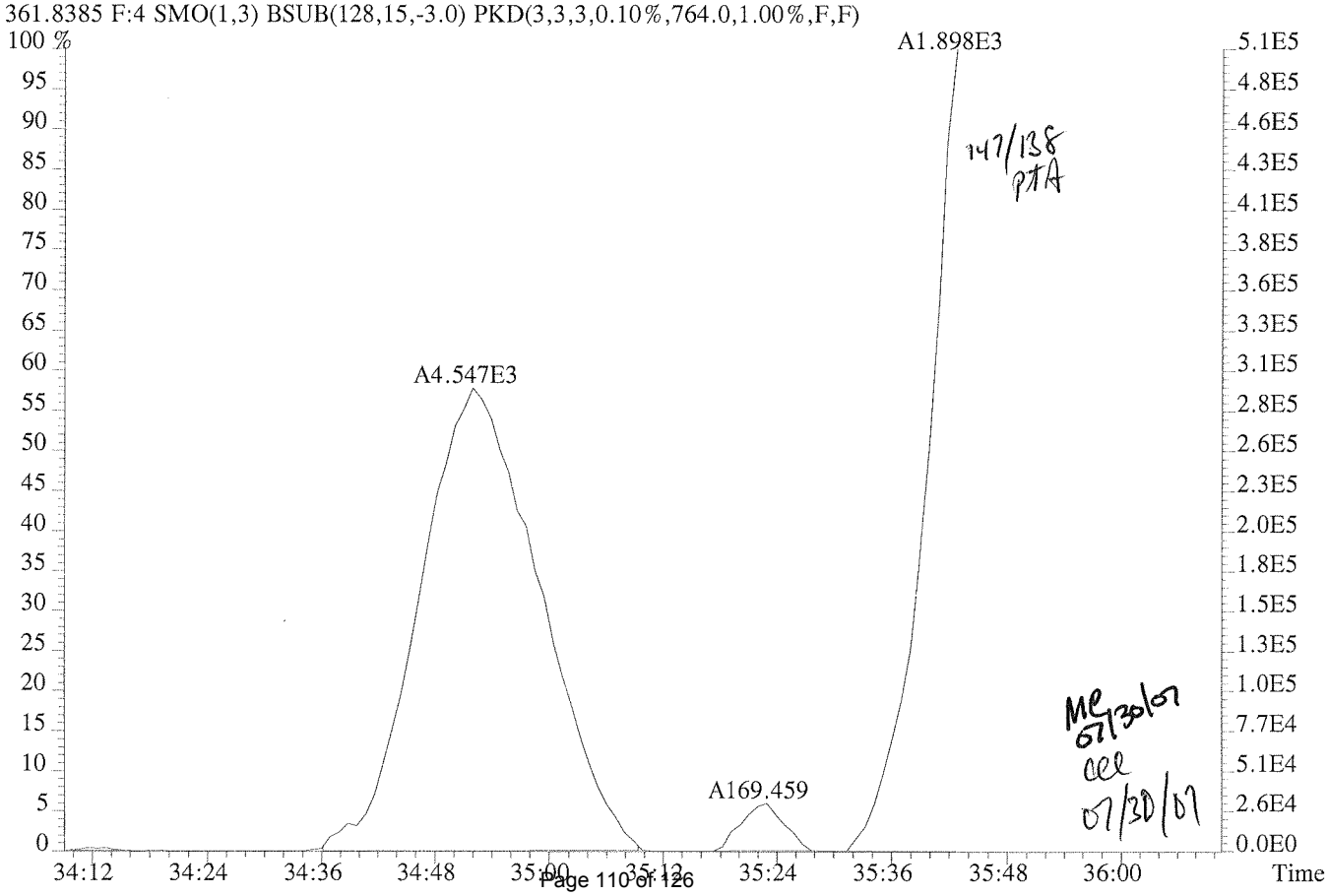

330.9792 F:4 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



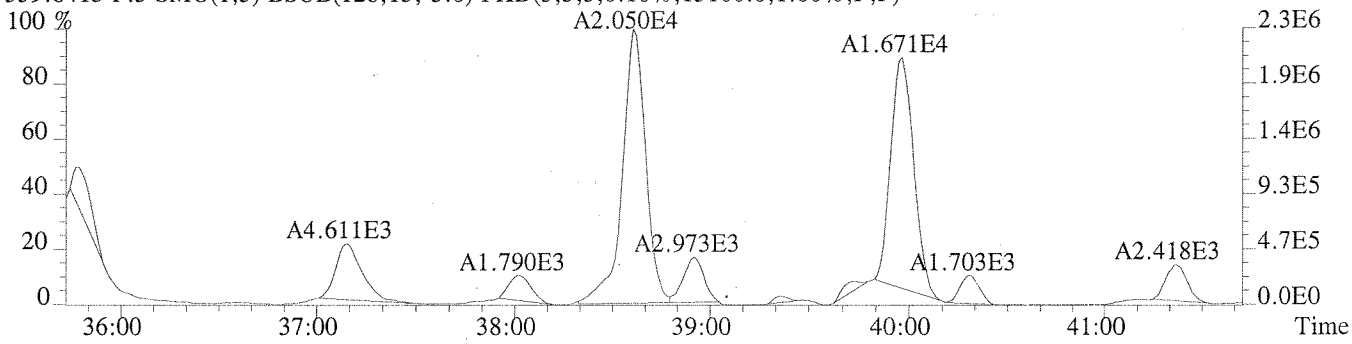
File:U210822 #1-473 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
359.8415 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,576.0,1.00%,F,F)



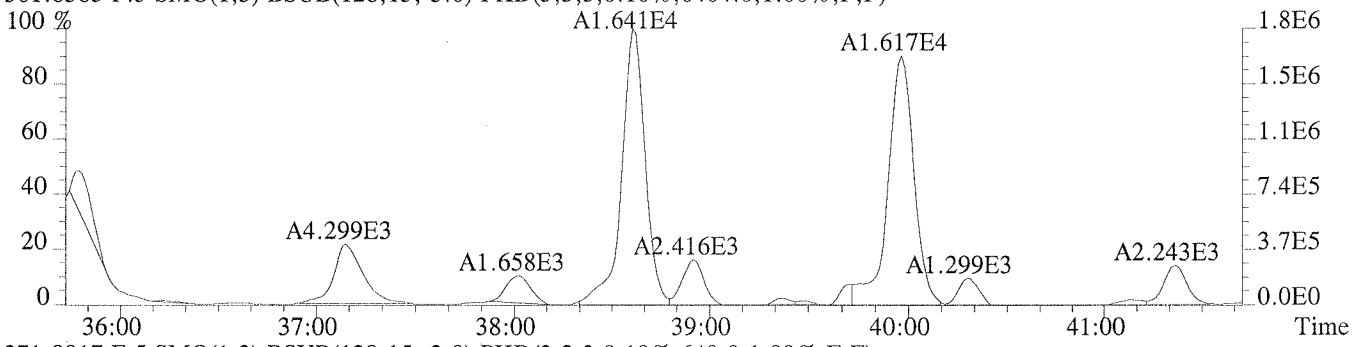

361.8385 F:4 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,764.0,1.00%,F,F)



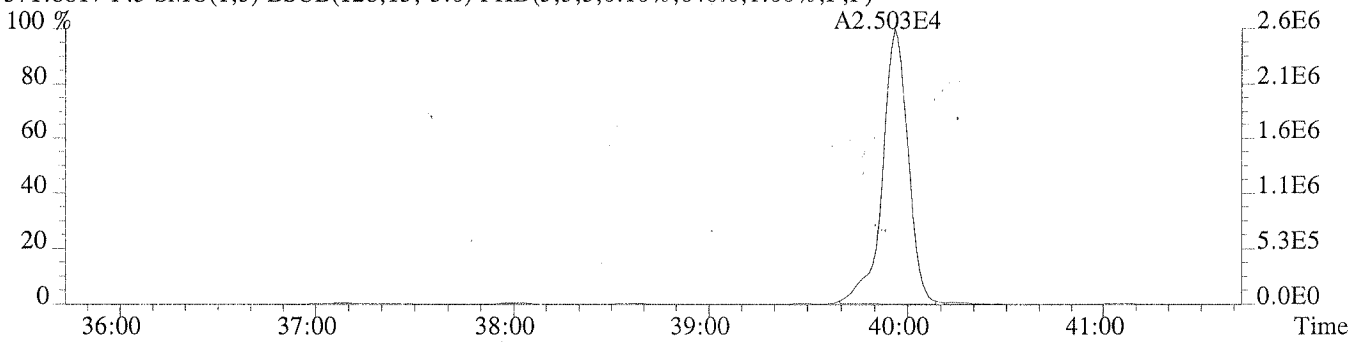
File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
359.8415 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15100.0,1.00%,F,F)



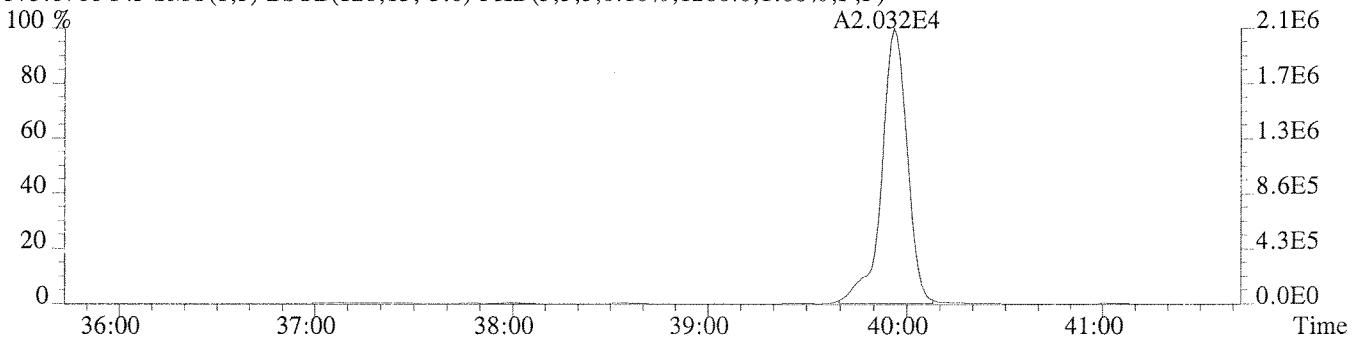

361.8385 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6404.0,1.00%,F,F)



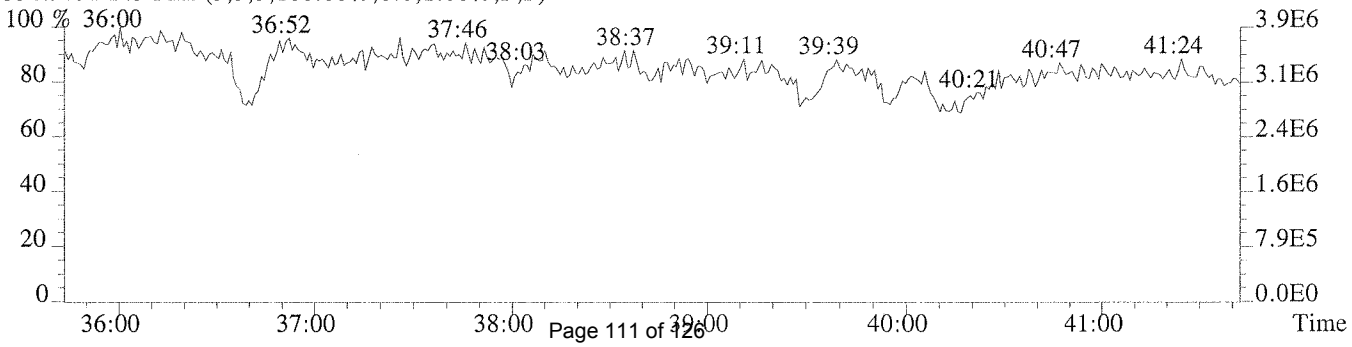

371.8817 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,640.0,1.00%,F,F)



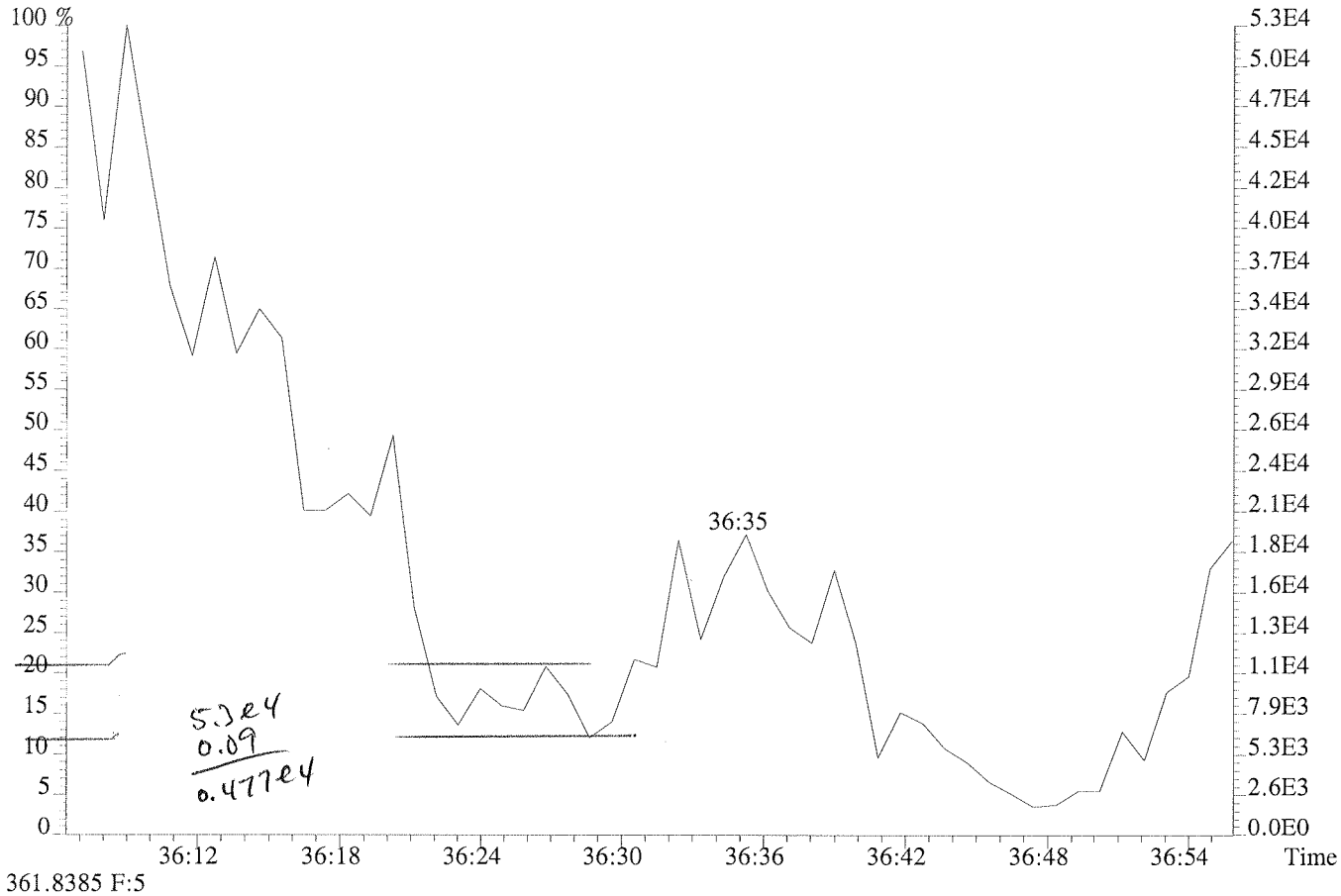

373.8788 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1280.0,1.00%,F,F)



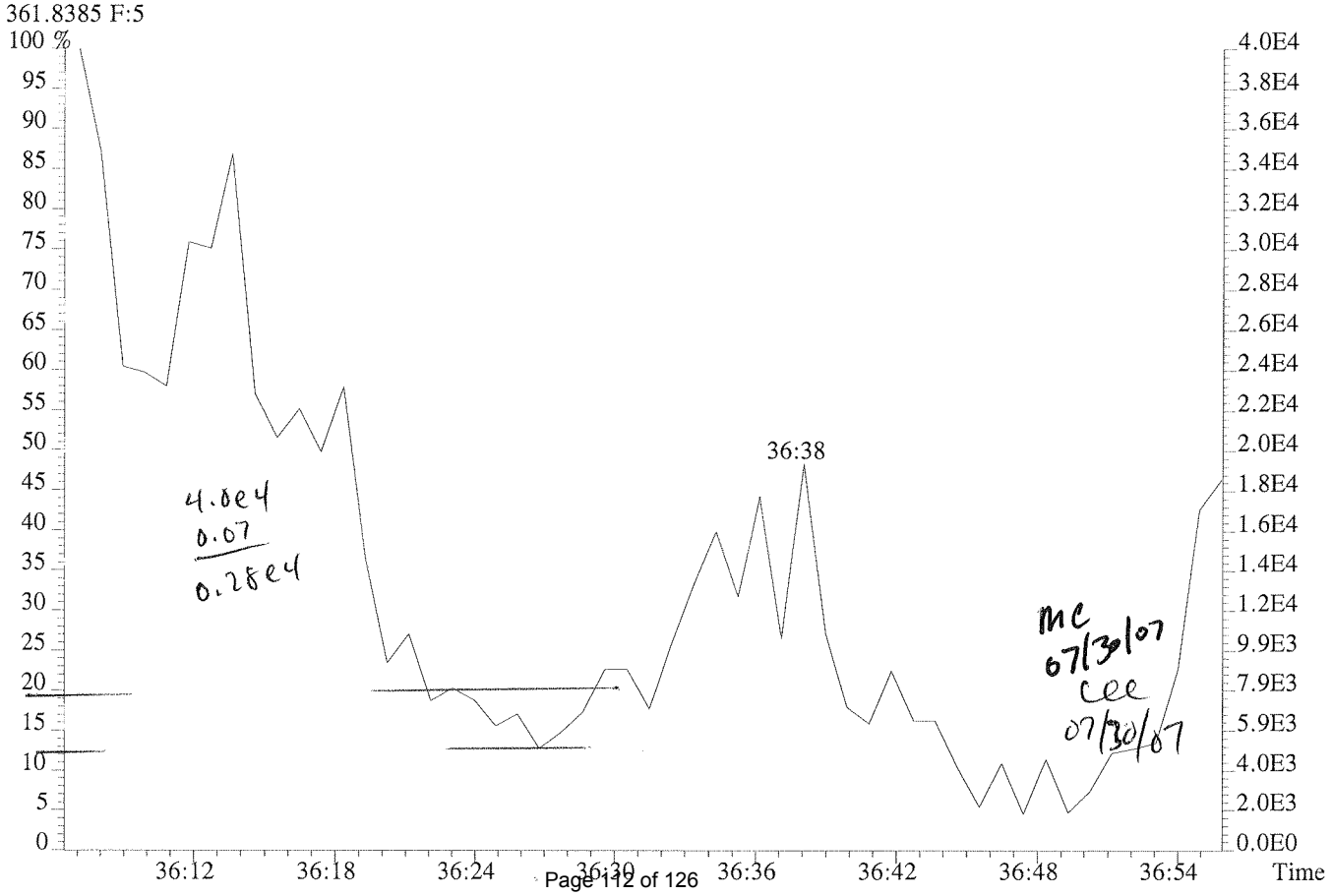

354.9792 F:5 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



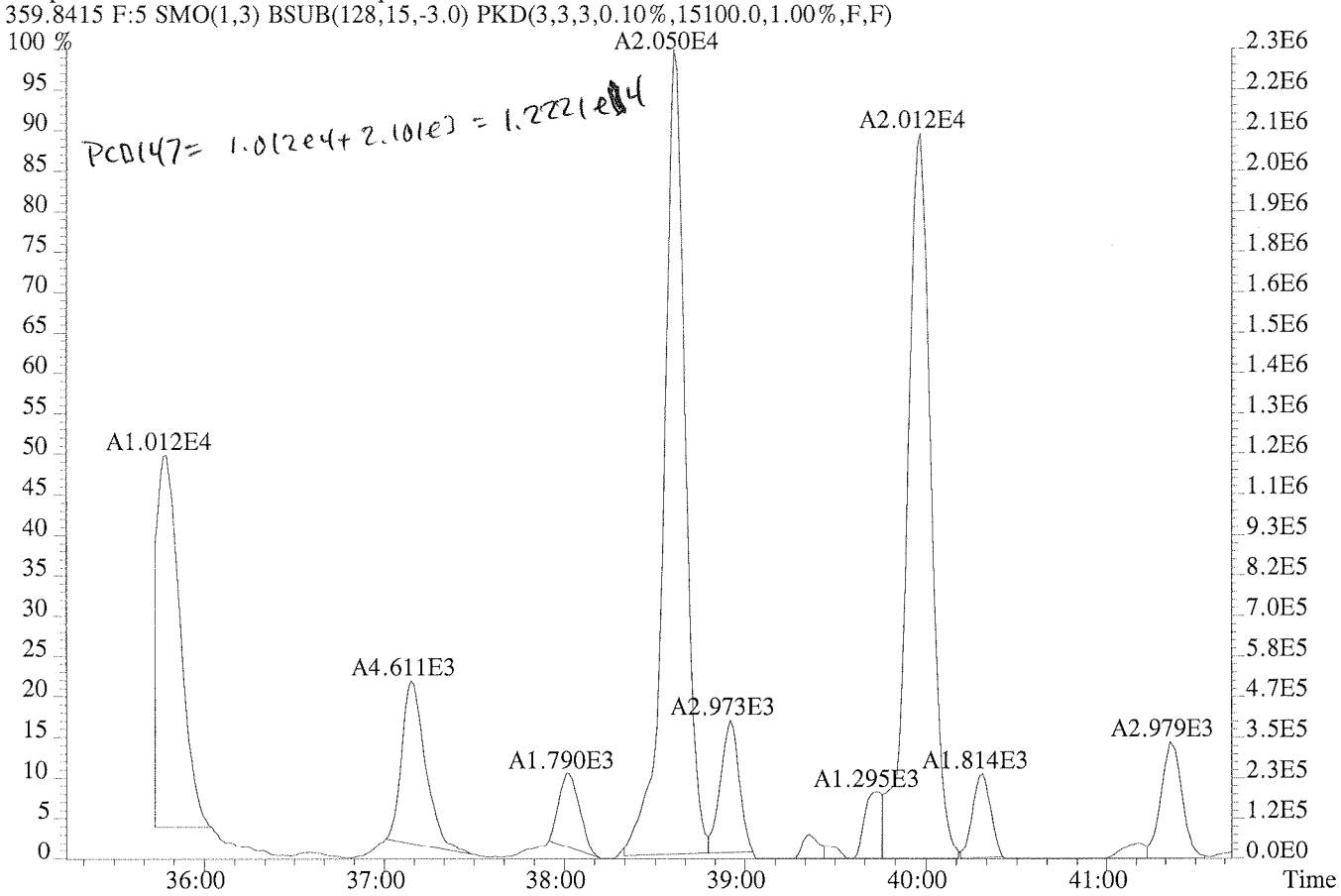
File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
359.8415 F:5



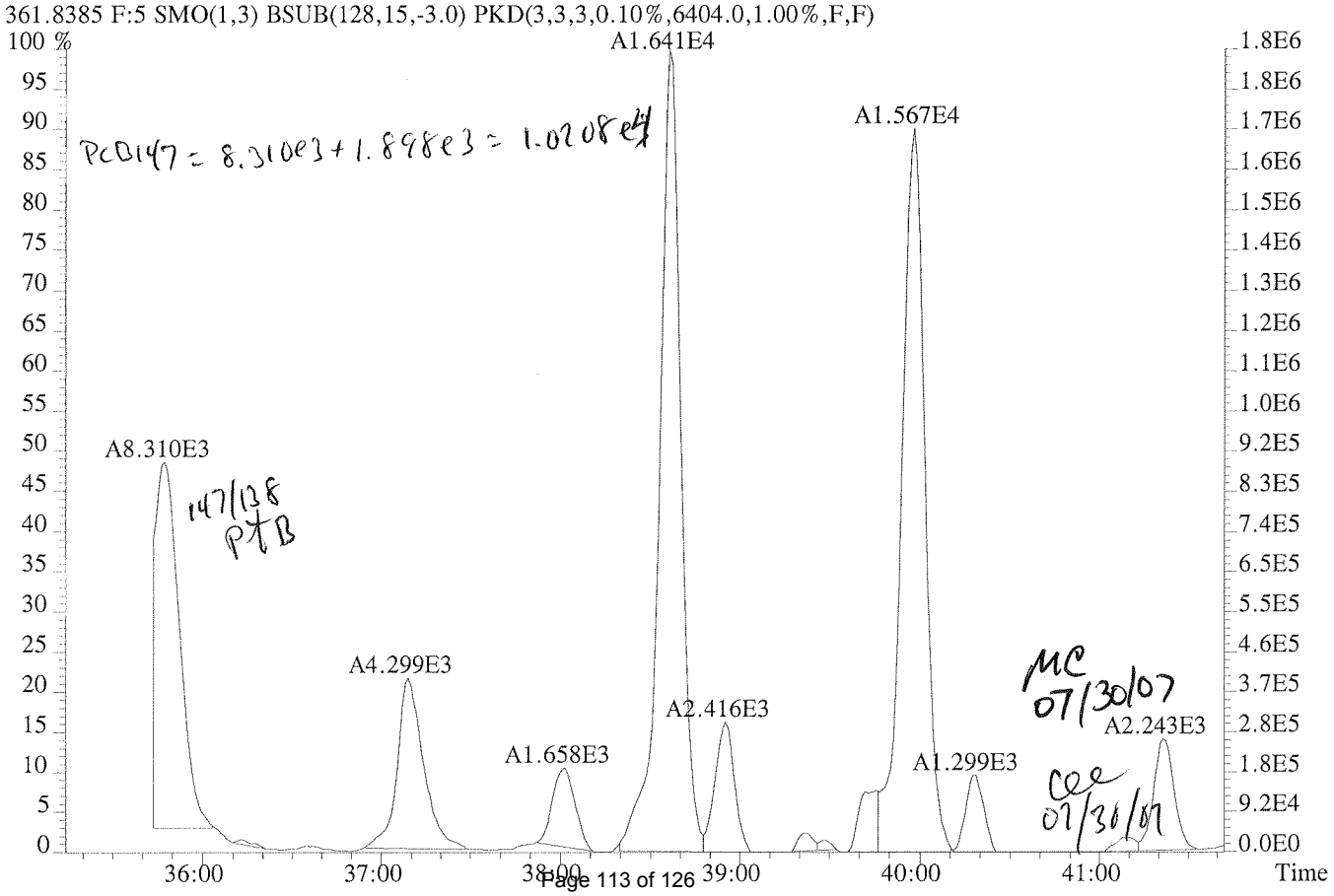

361.8385 F:5



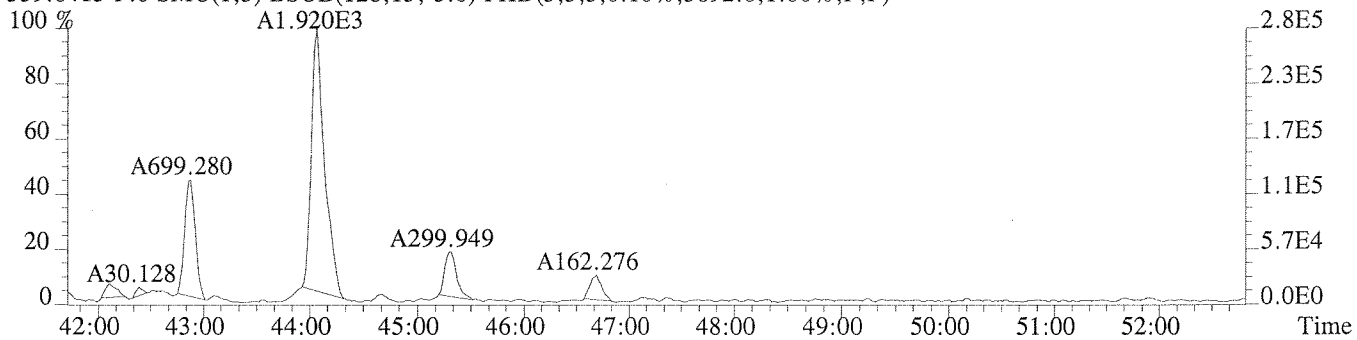
File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
359.8415 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,15100.0,1.00%,F,F)



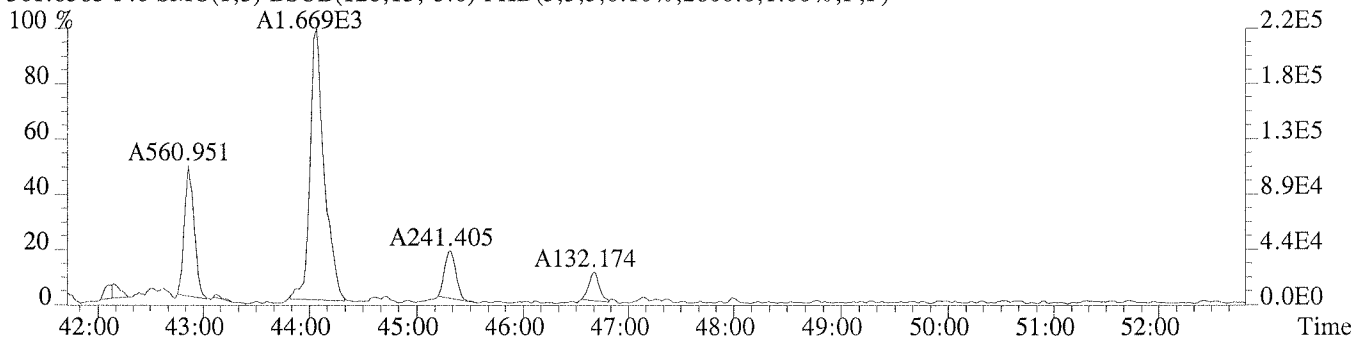

361.8385 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,6404.0,1.00%,F,F)



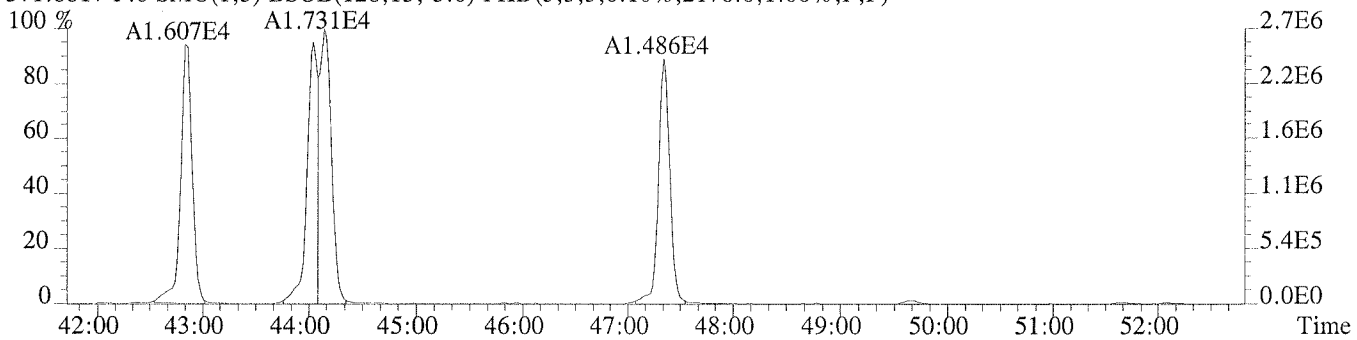
File:U210822 #1-550 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
359.8415 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5892.0,1.00%,F,F)



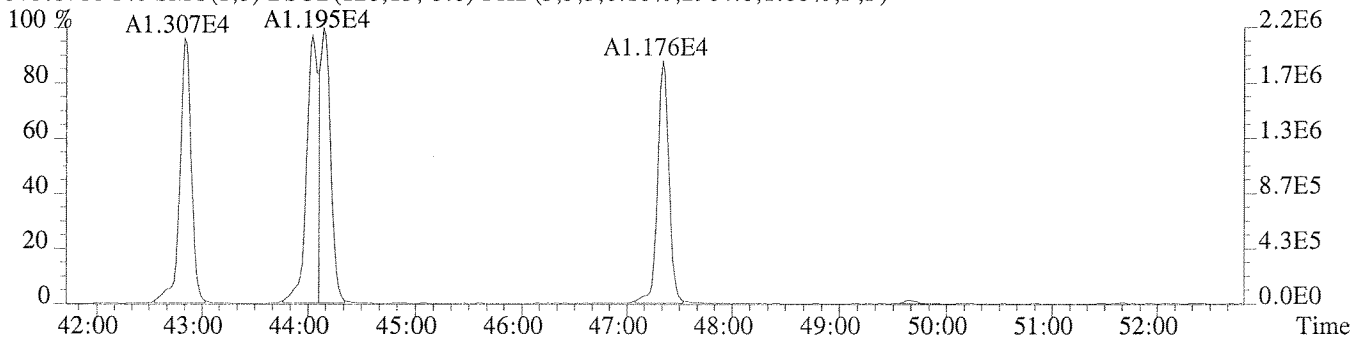

361.8385 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2800.0,1.00%,F,F)



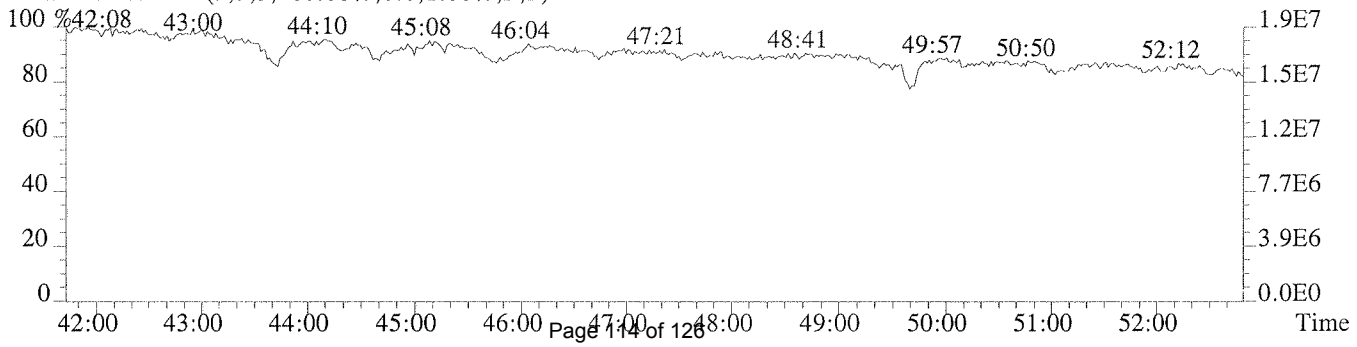

371.8817 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,F)



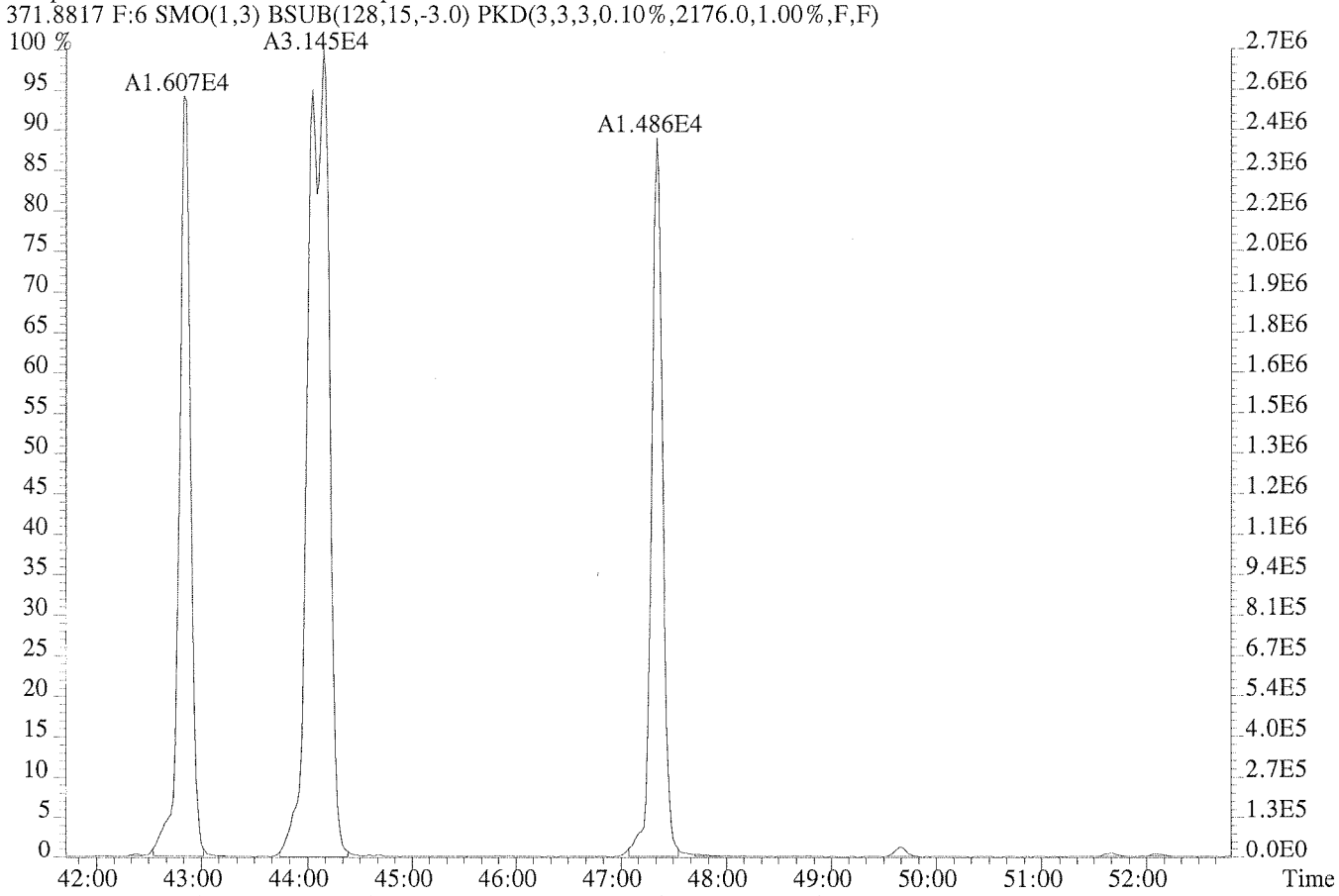

373.8788 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2964.0,1.00%,F,F)



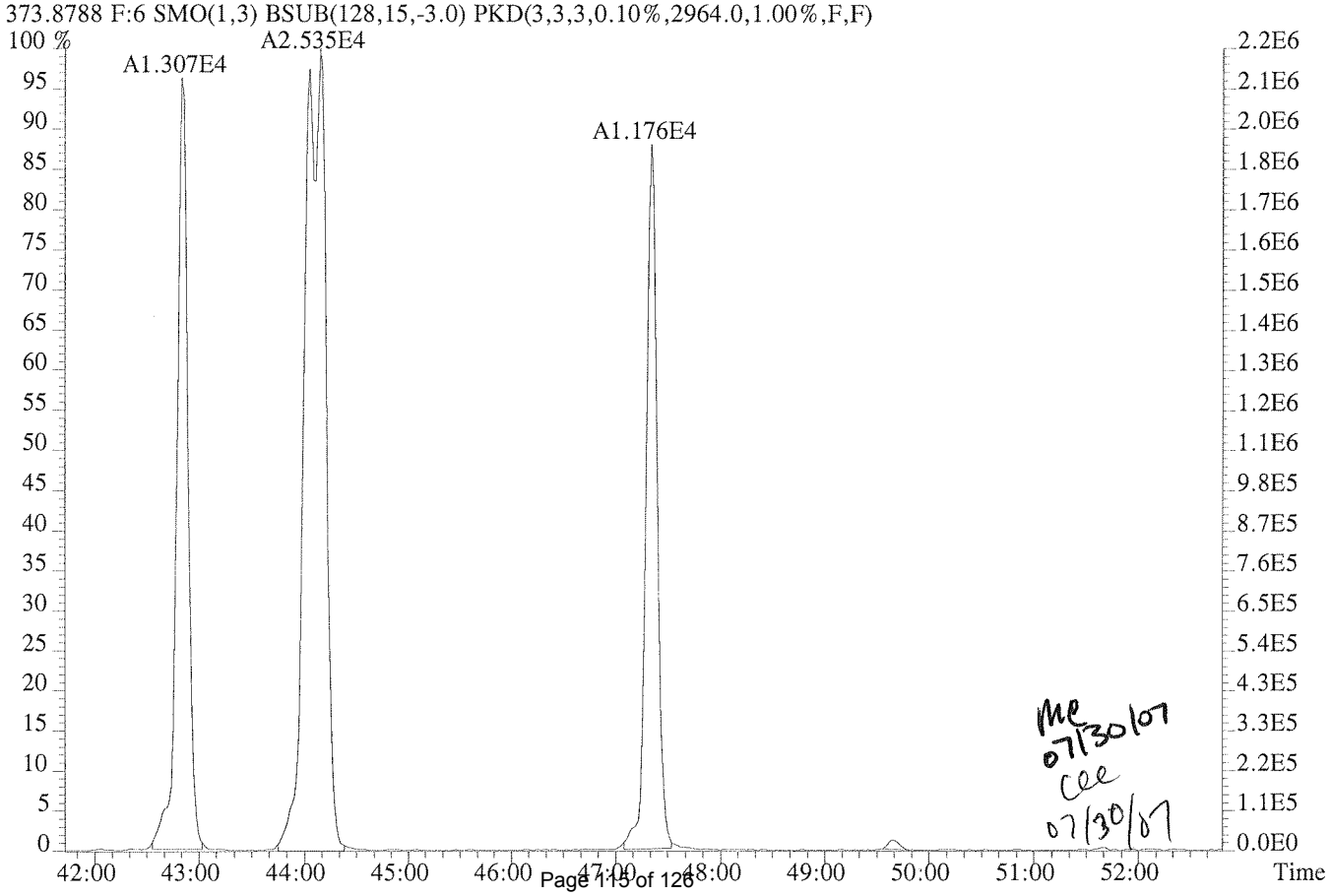

454.9728 F:6 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



File:U210822 #1-550 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
371.8817 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2176.0,1.00%,F,F)

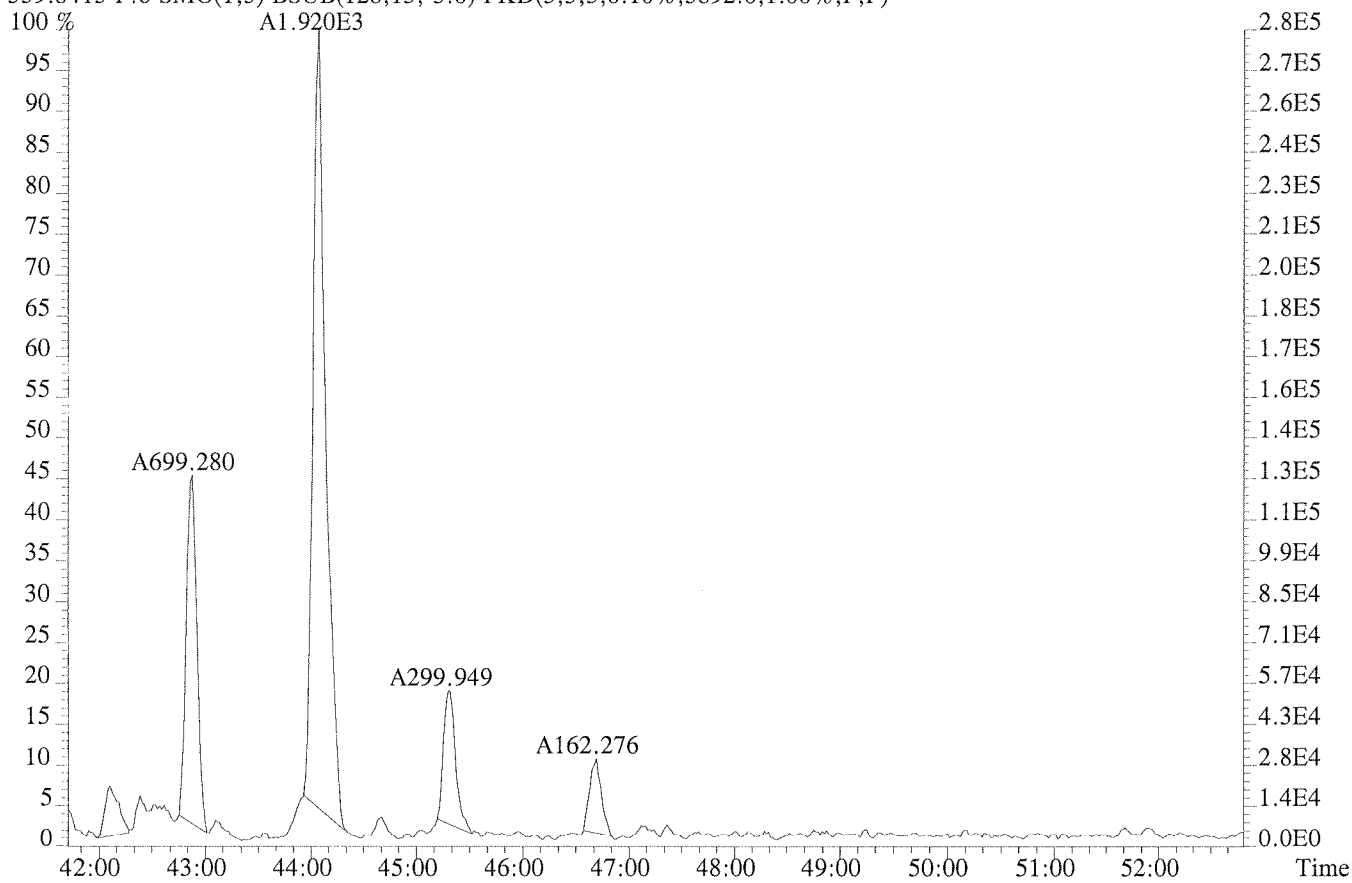



373.8788 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2964.0,1.00%,F,F)

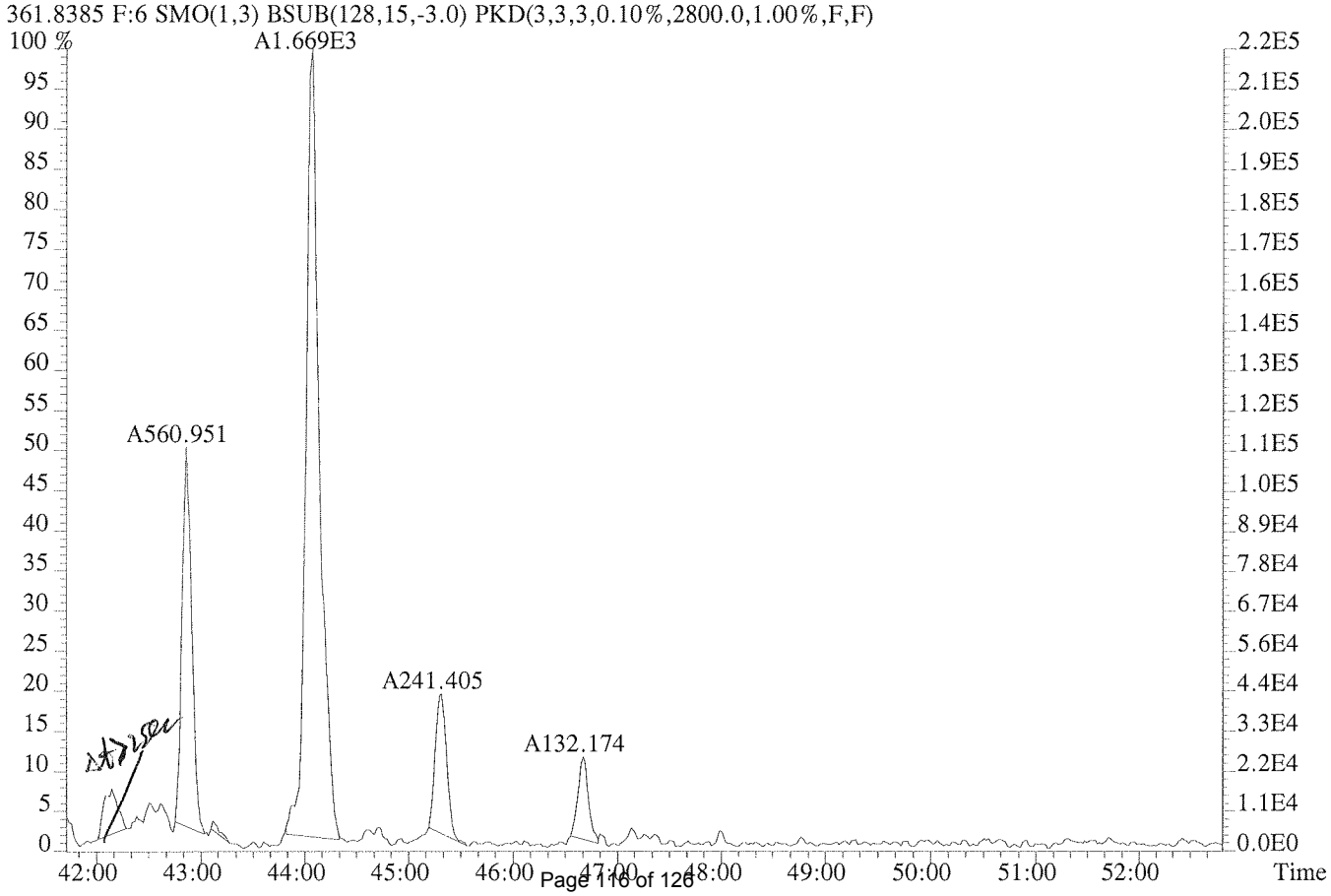



ME 07/30/07
CEE 07/30/07

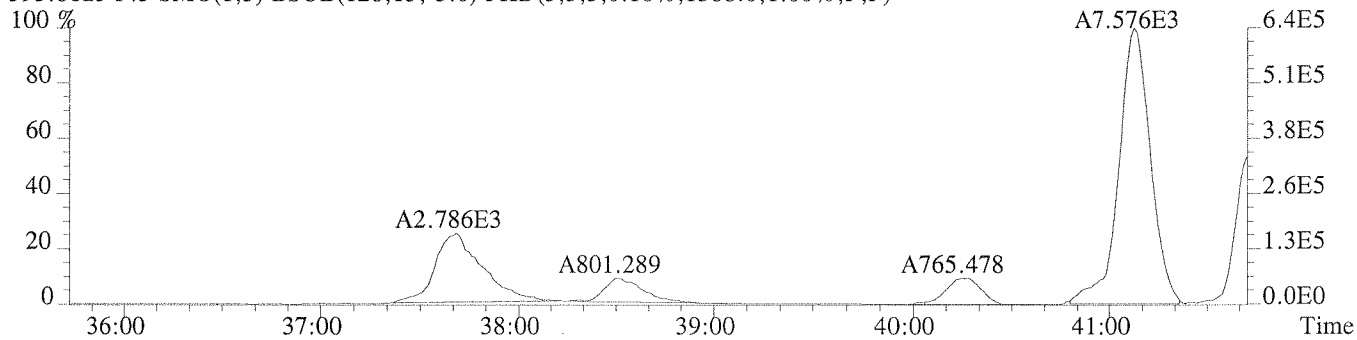
File:U210822 #1-550 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
359.8415 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5892.0,1.00%,F,F)



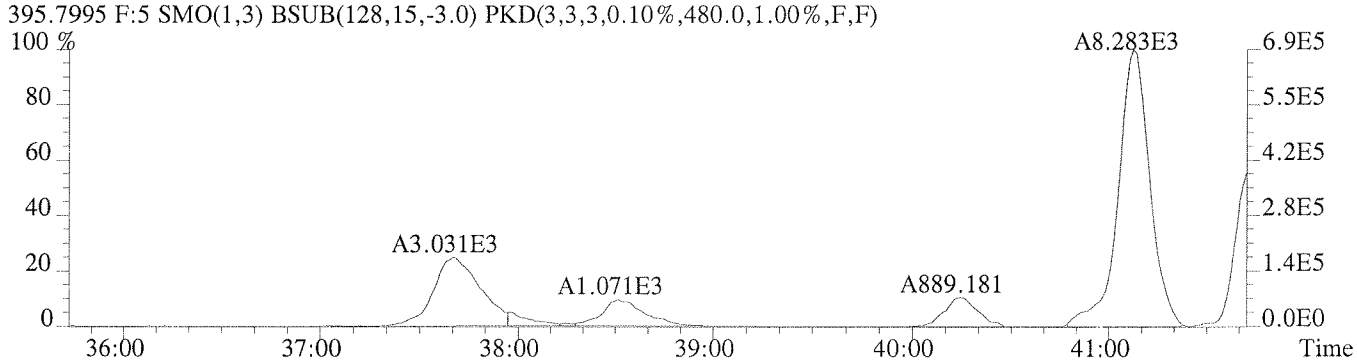

361.8385 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,2800.0,1.00%,F,F)



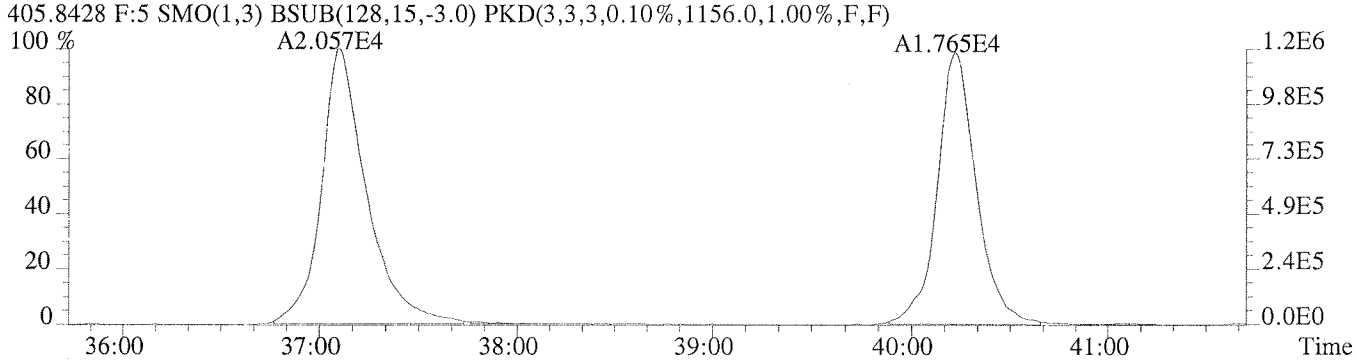
File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
393.8025 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1588.0,1.00%,F,F)



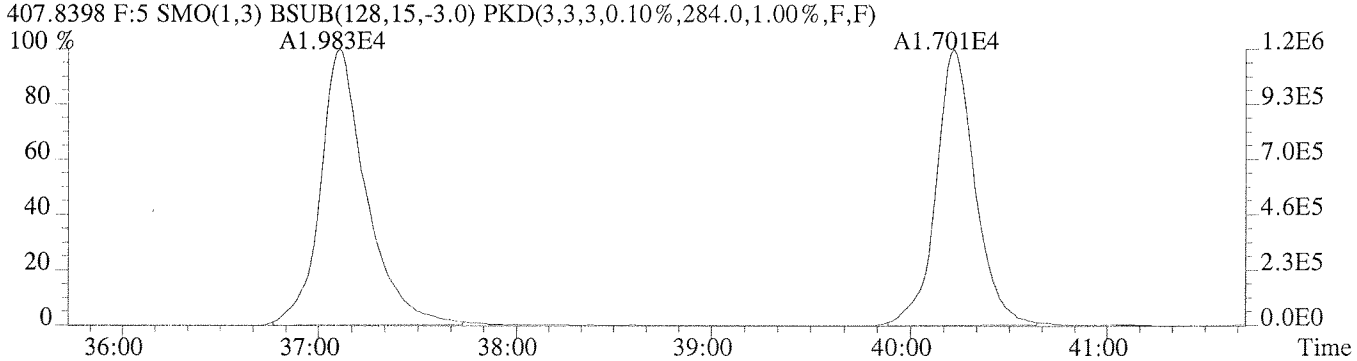

395.7995 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,480.0,1.00%,F,F)



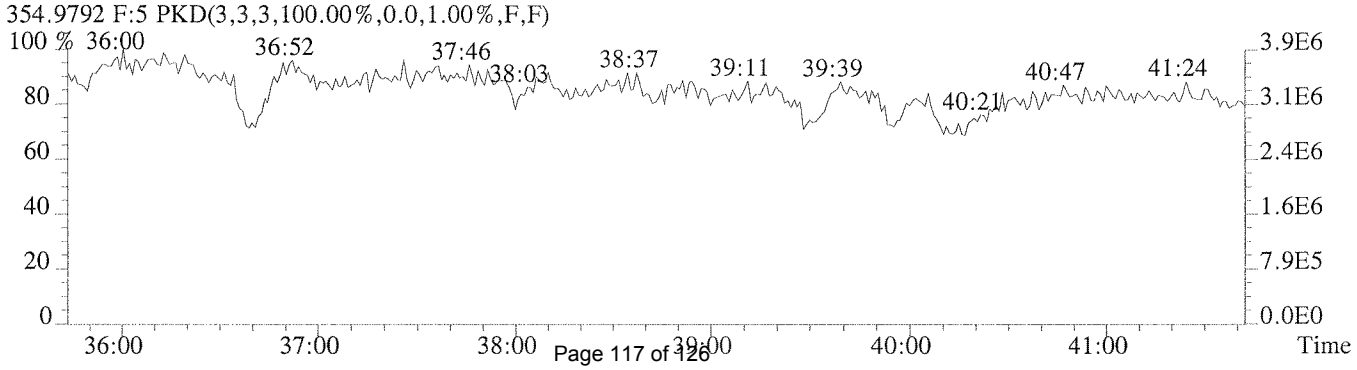

405.8428 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1156.0,1.00%,F,F)



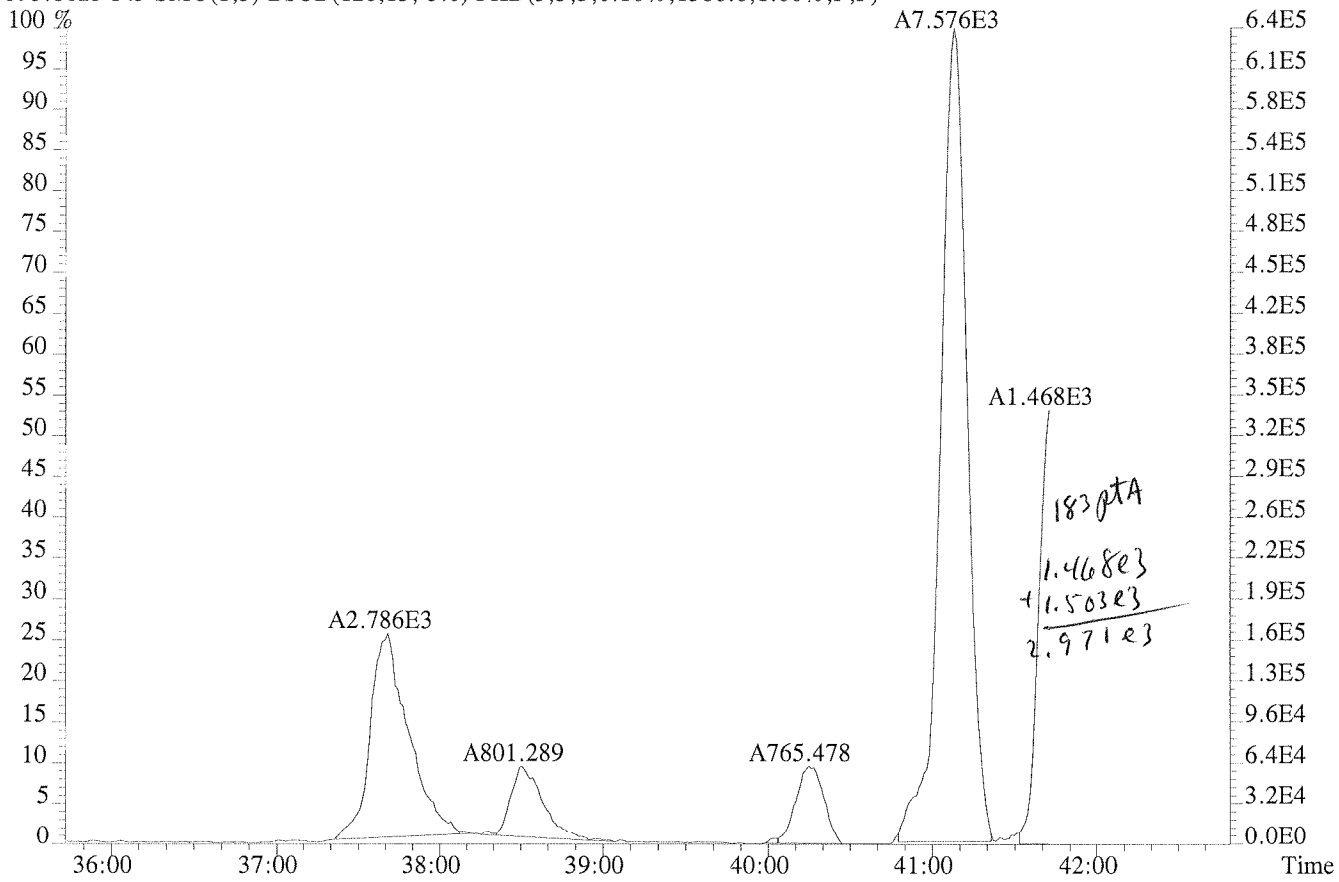

407.8398 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,284.0,1.00%,F,F)



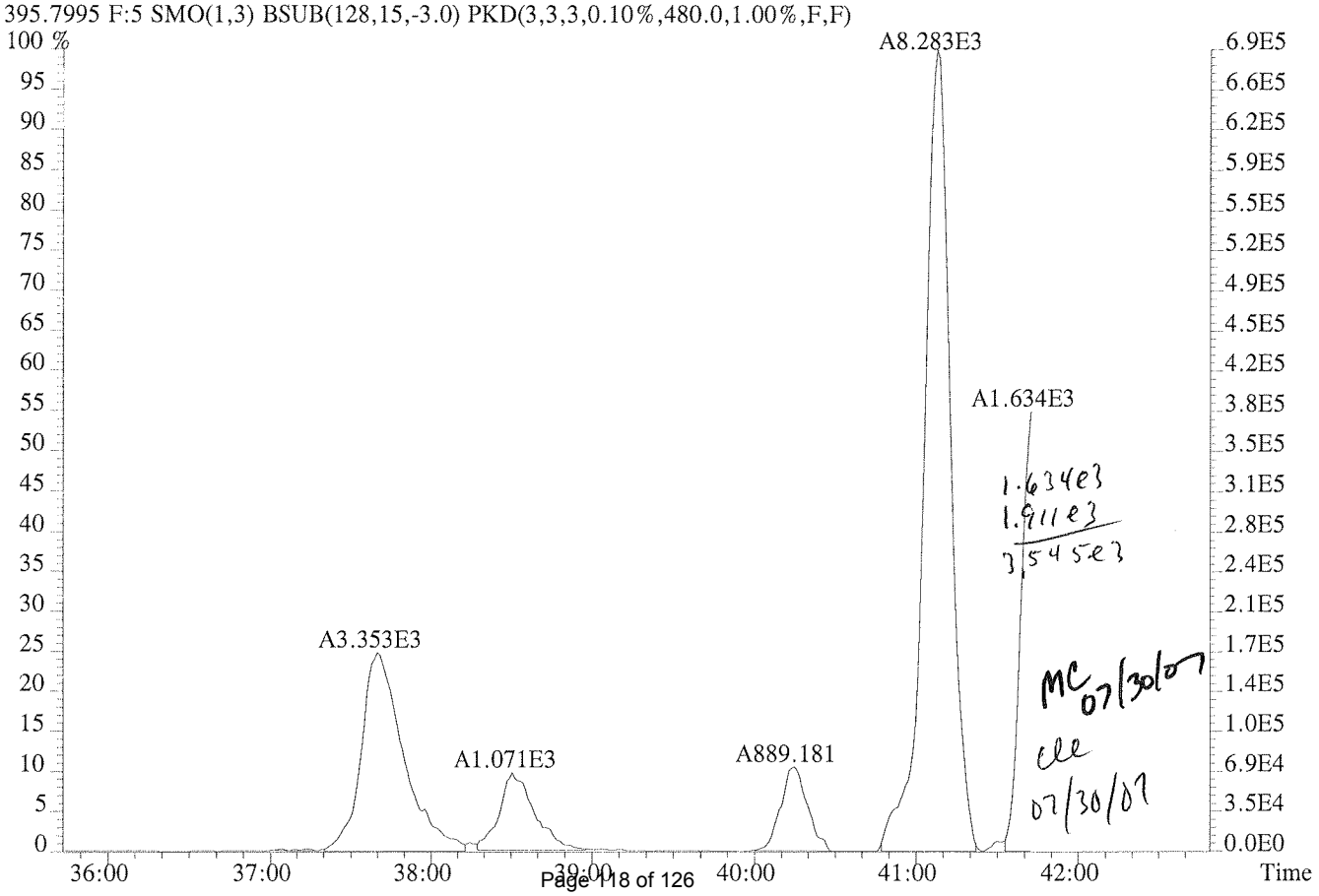

354.9792 F:5 PKD(3,3,3,100.00%,0.0,1.00%,F,F)



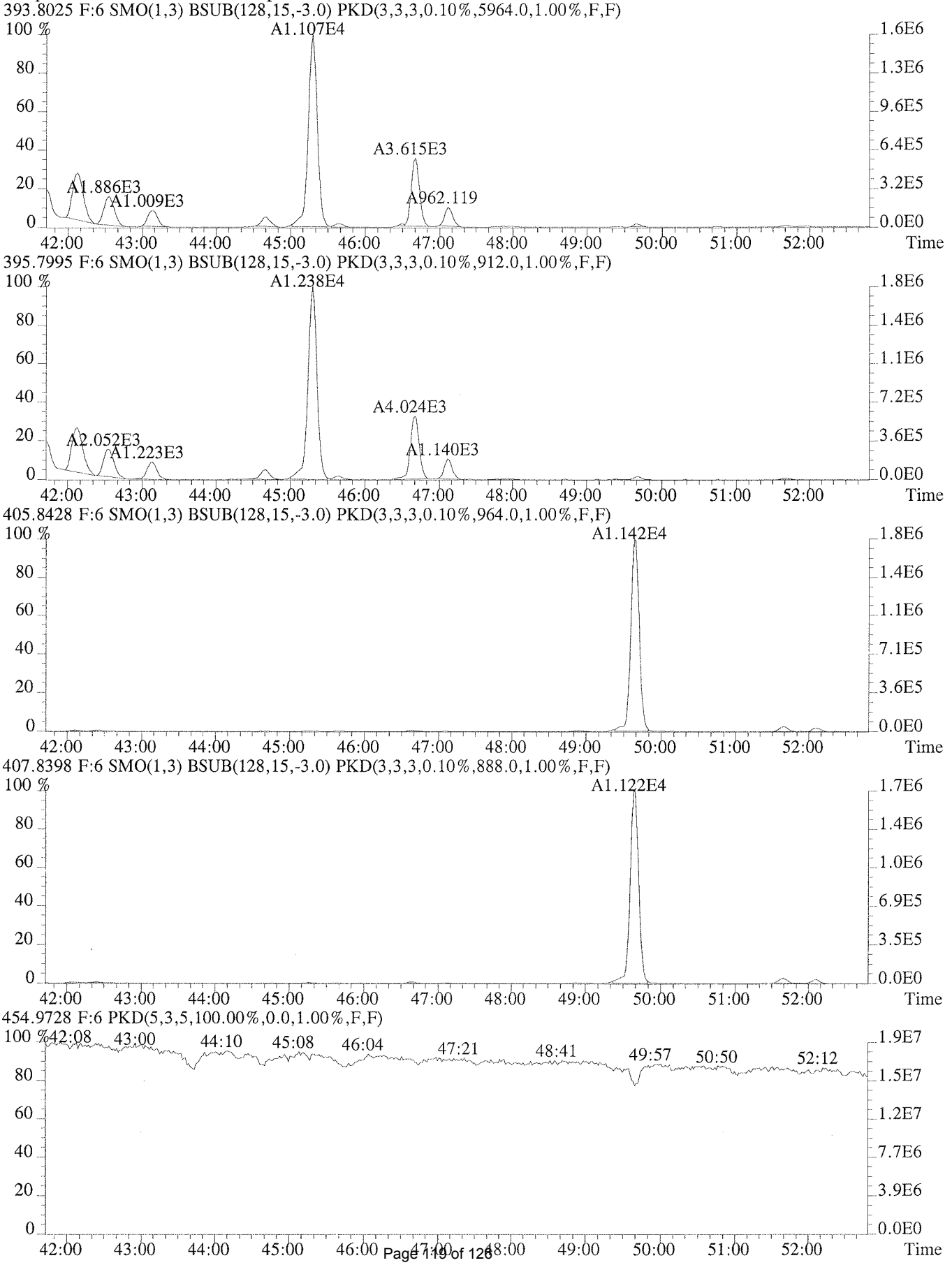
File:U210822 #1-383 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
393.8025 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1588.0,1.00%,F,F)



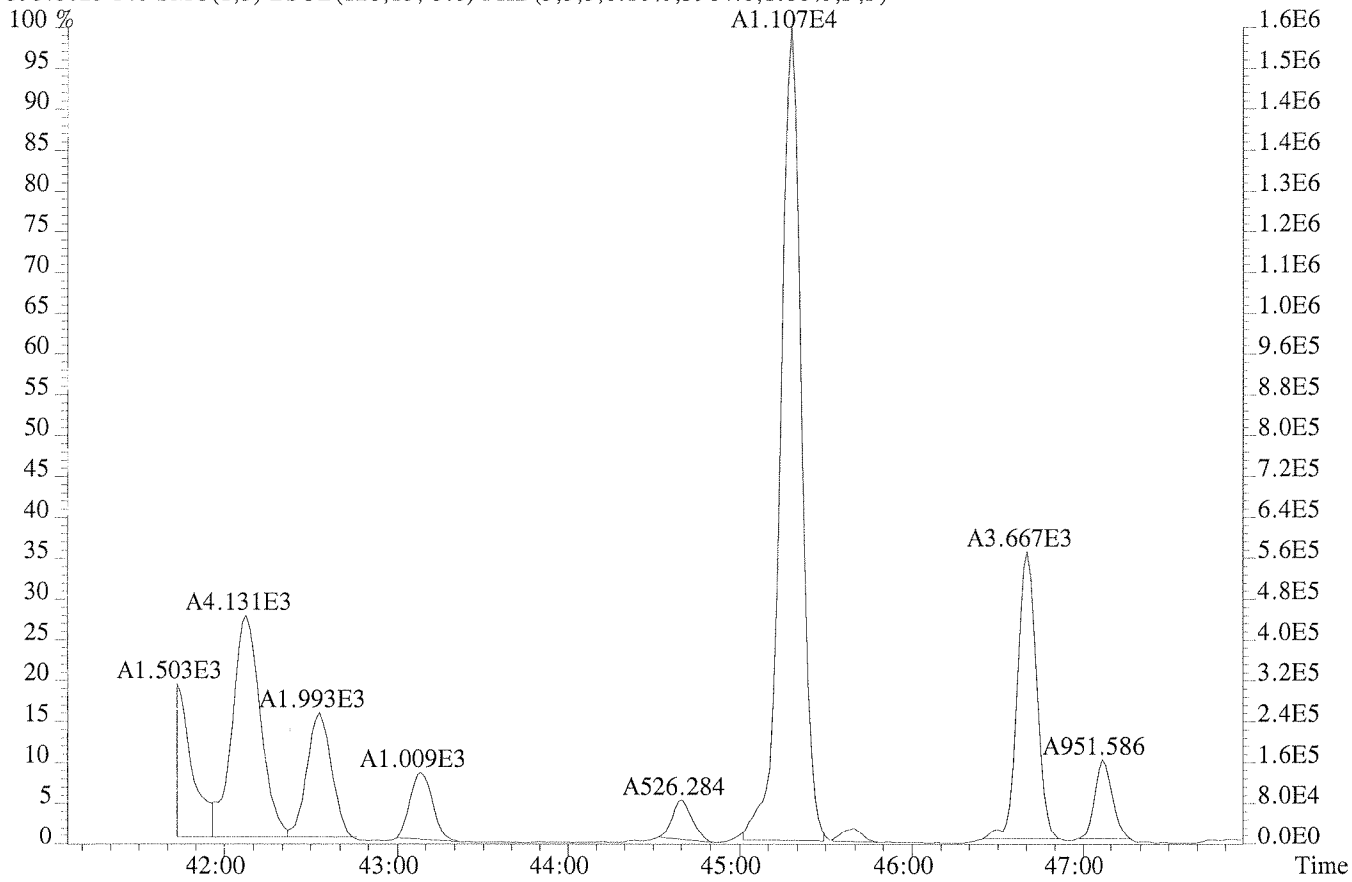

395.7995 F:5 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,480.0,1.00%,F,F)



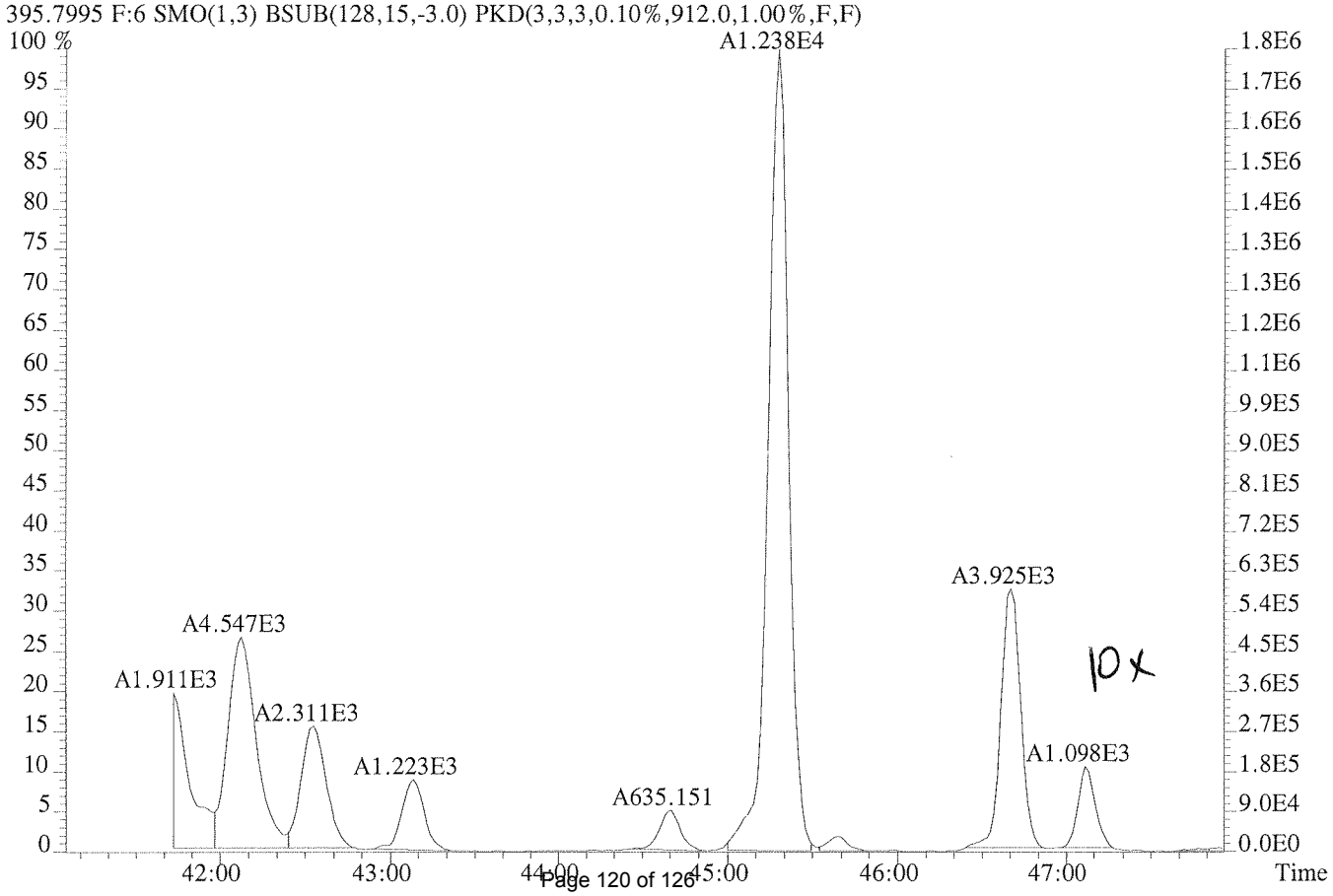
File:U210822 #1-550 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001



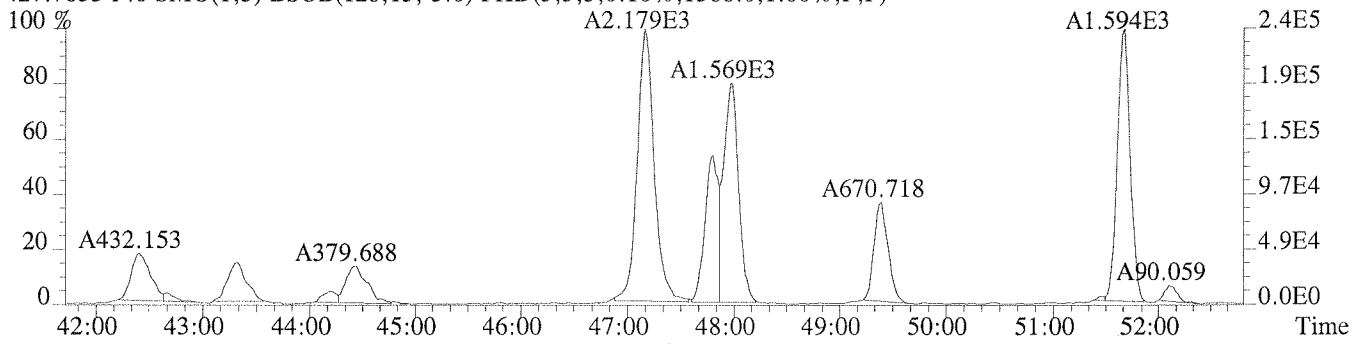
File:U210822 #1-550 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
393.8025 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5964.0,1.00%,F,F)

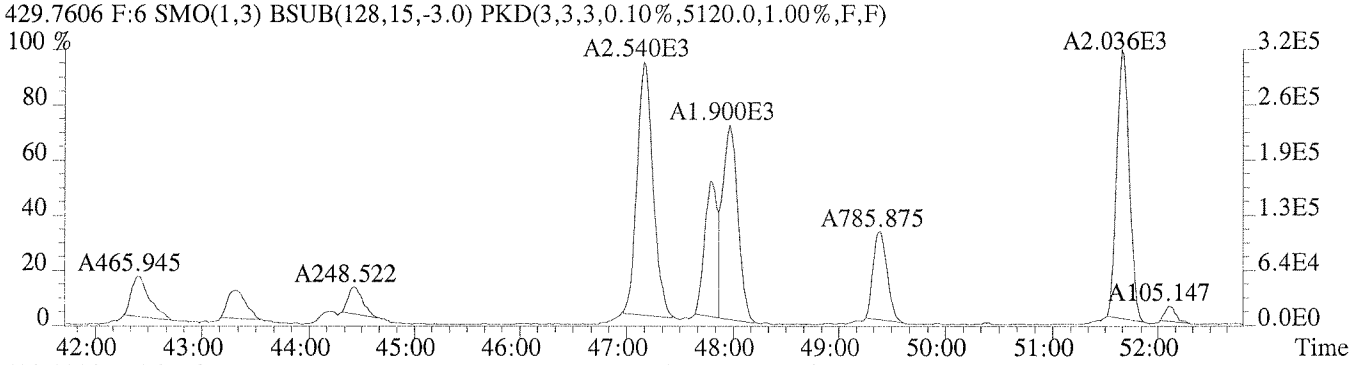


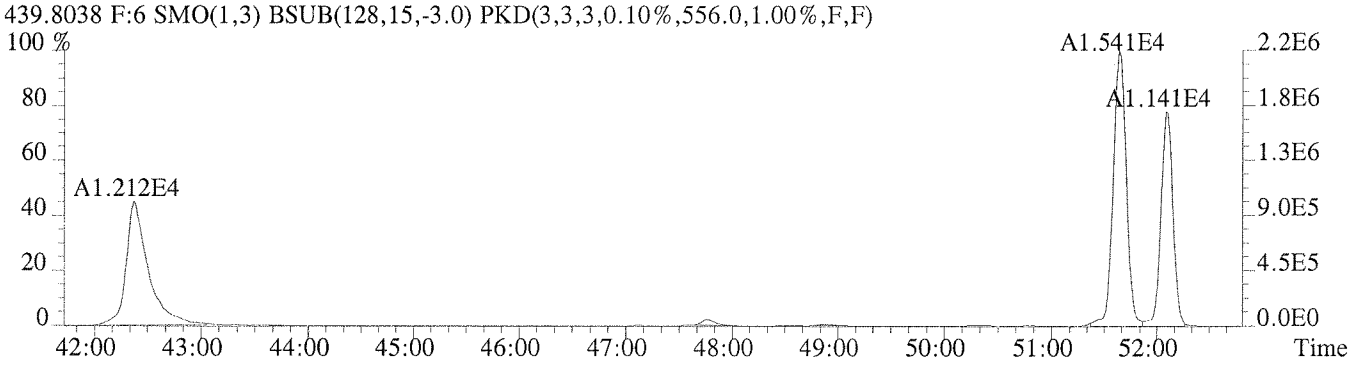

395.7995 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,912.0,1.00%,F,F)

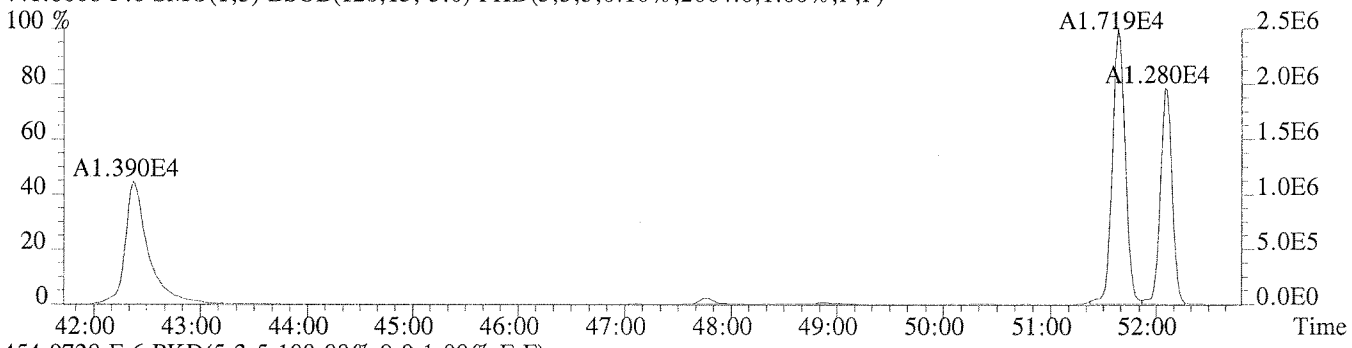


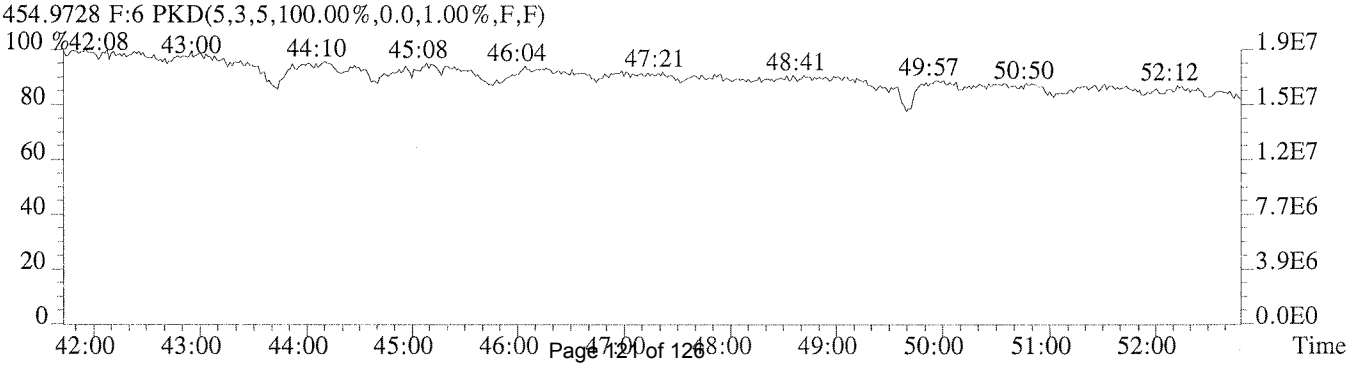
File:U210822 #1-550 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001



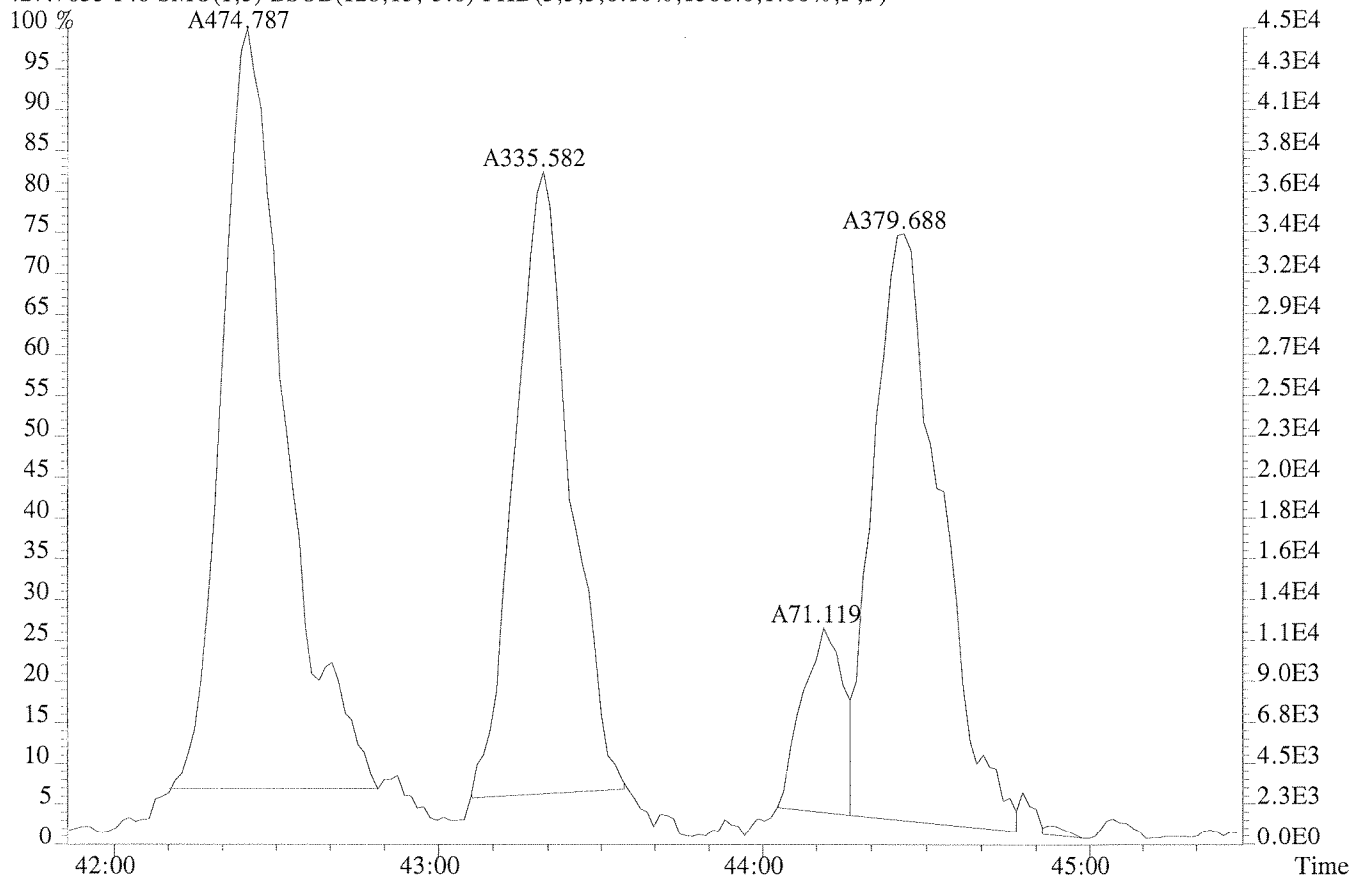



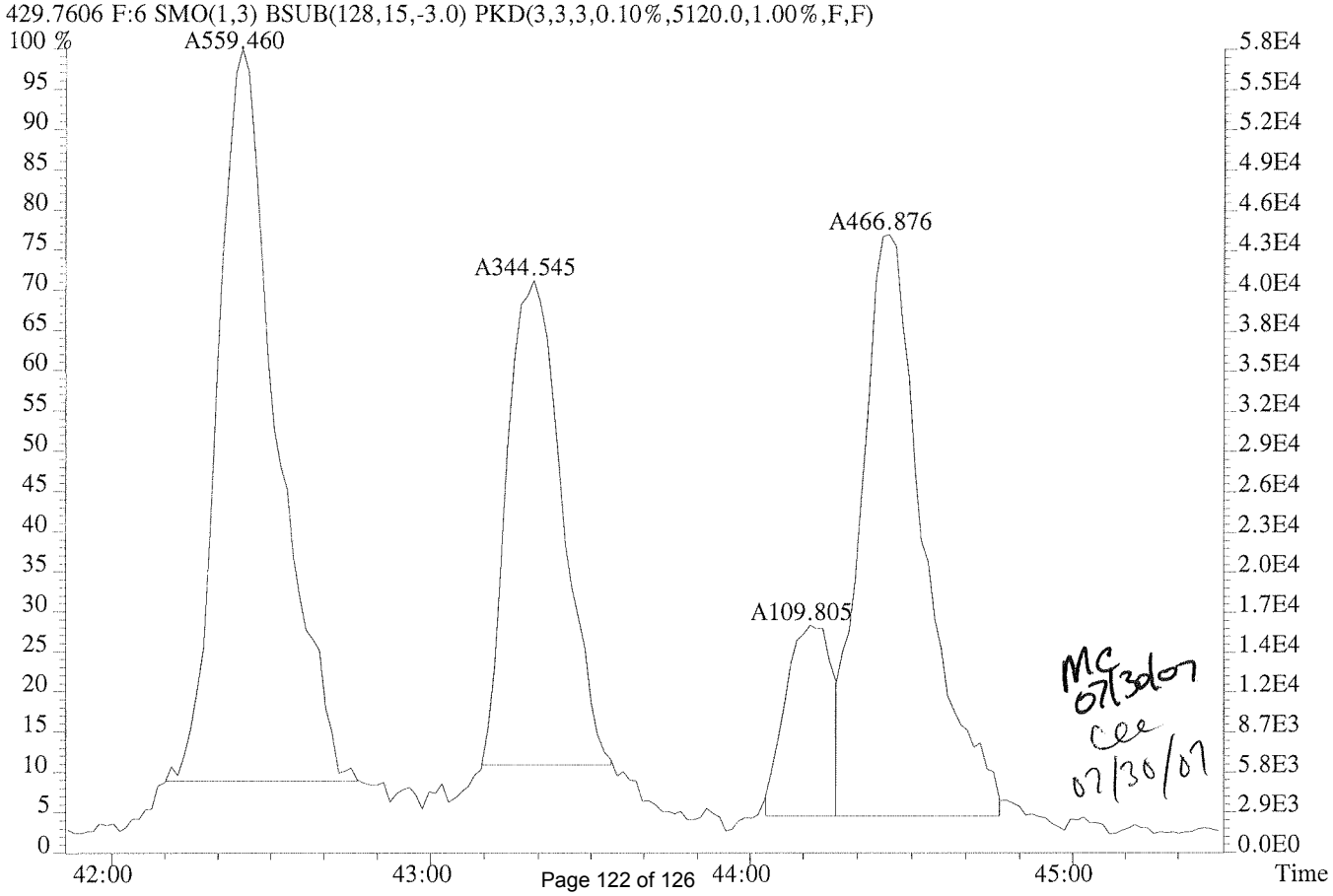



File:U210822 #1-550 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
427.7635 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,1388.0,1.00%,F,F)



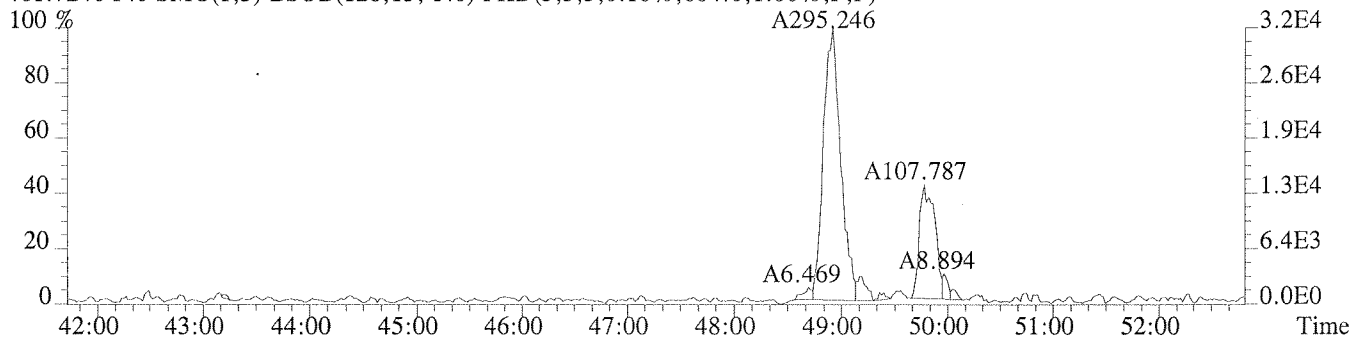

429.7606 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,5120.0,1.00%,F,F)



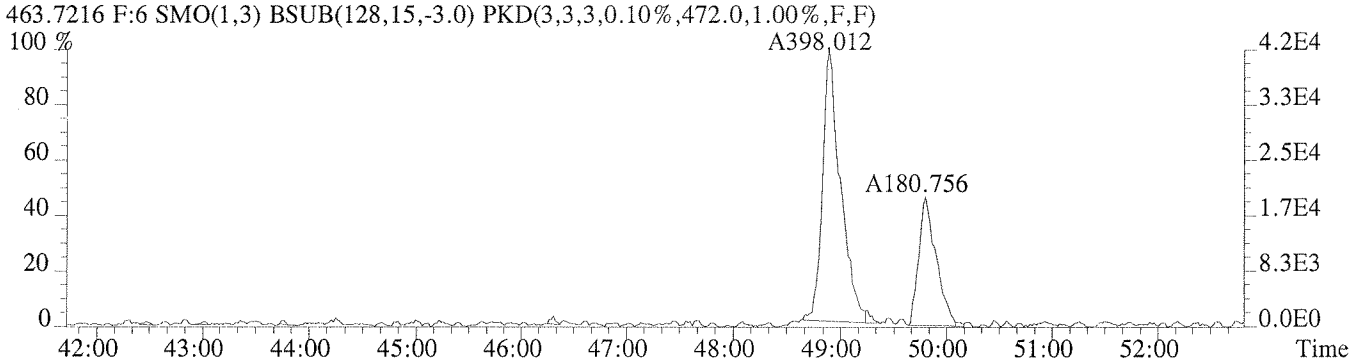

MC 07/30/07
cee 07/30/07

File:U210822 #1-550 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001

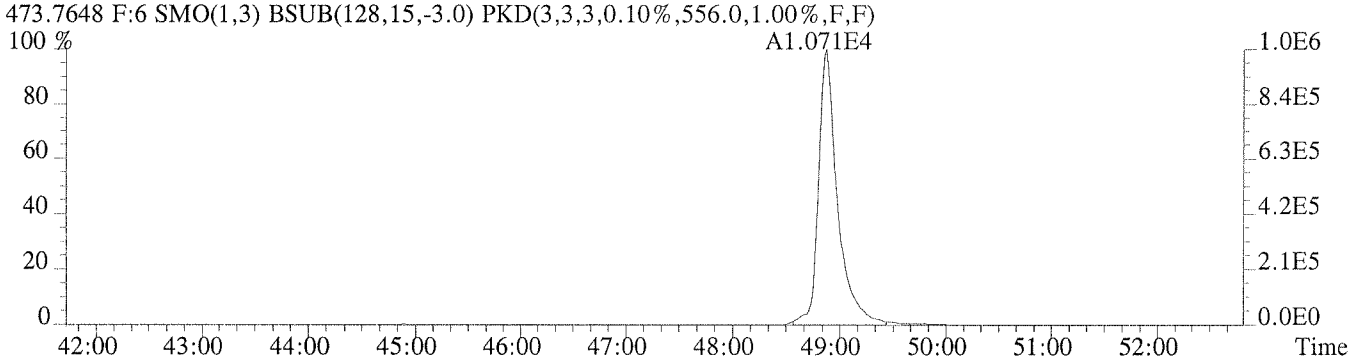
461.7246 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,604.0,1.00%,F,F)



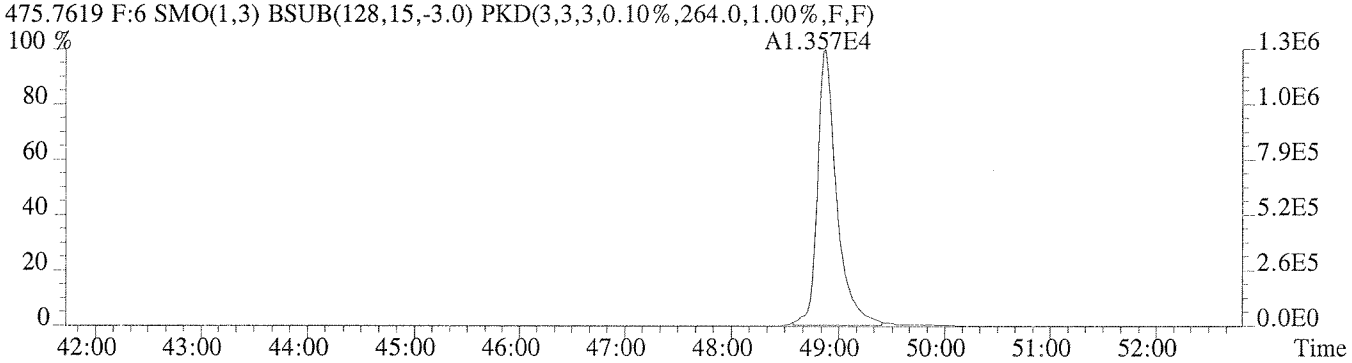

463.7216 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,472.0,1.00%,F,F)



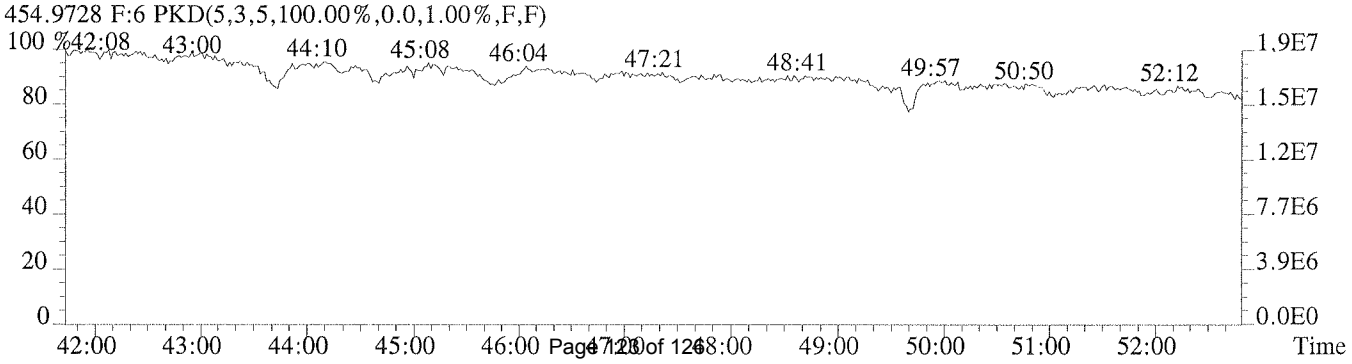

473.7648 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,556.0,1.00%,F,F)



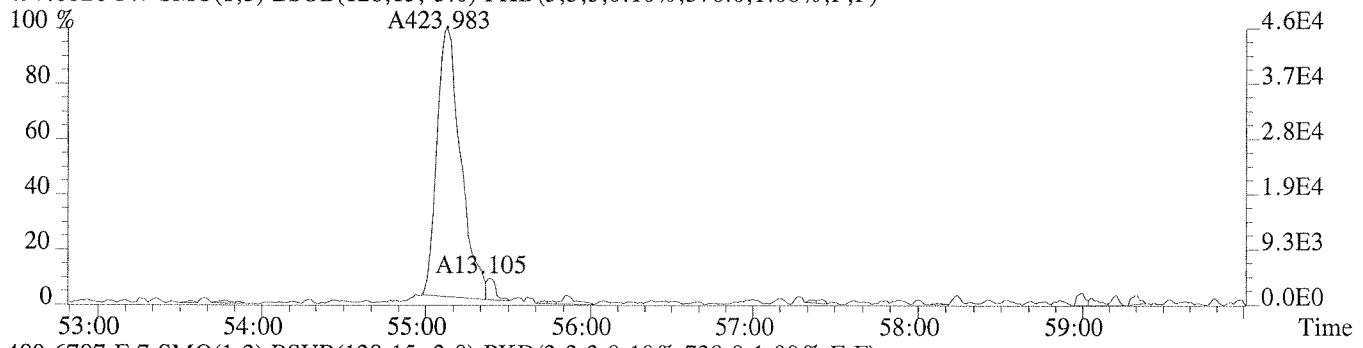

475.7619 F:6 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,264.0,1.00%,F,F)



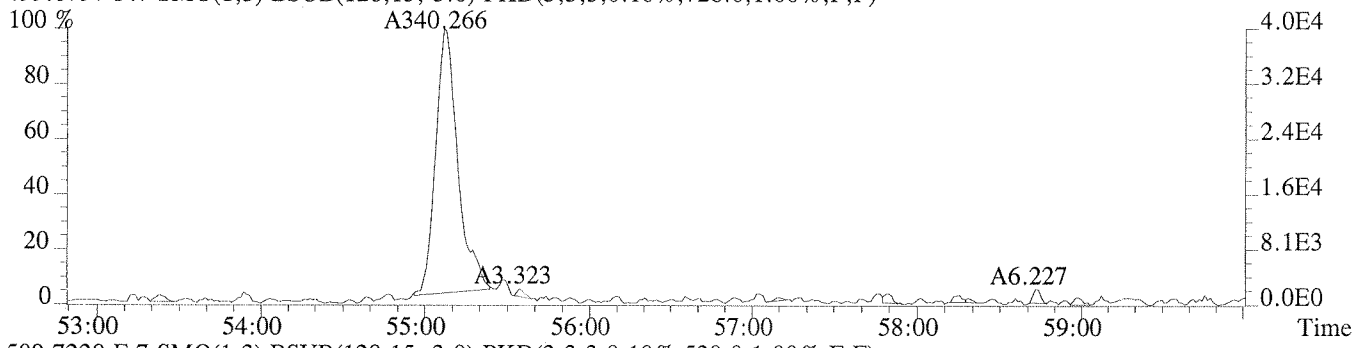

454.9728 F:6 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



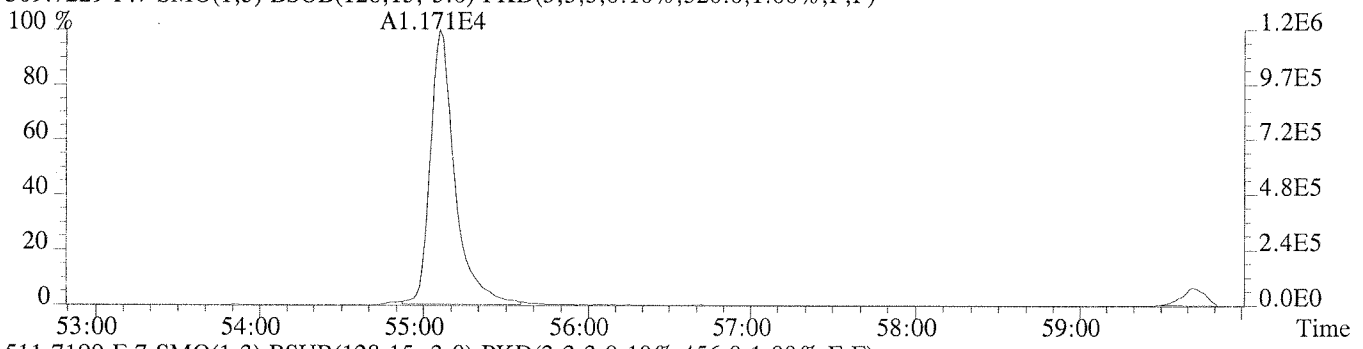
File:U210822 #1-406 Acq:25-JUL-2007 13:35:50 Probe EI+ Magnet SIR VG BioTech Mass spect£
Sample#1 File Text:FO 070665 Exp:K0704820-001
497.6826 F:7 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,576.0,1.00%,F,F)



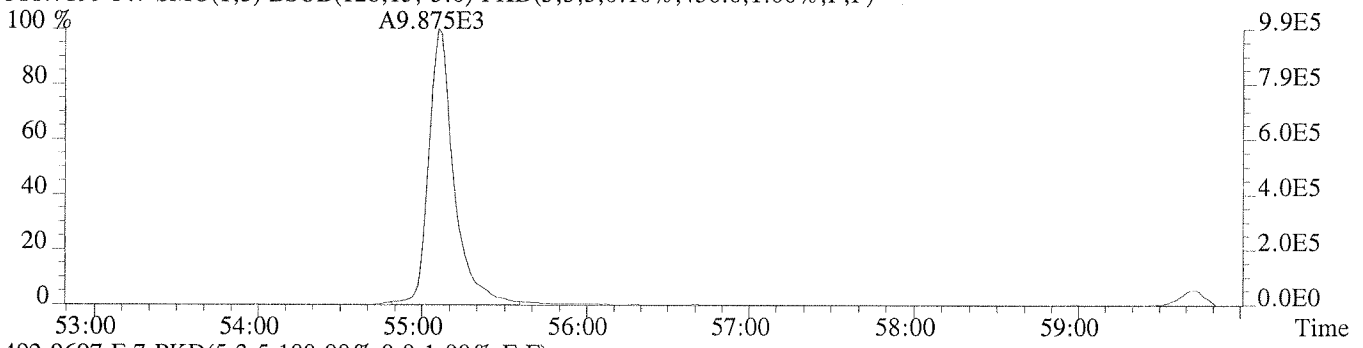

499.6797 F:7 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,728.0,1.00%,F,F)



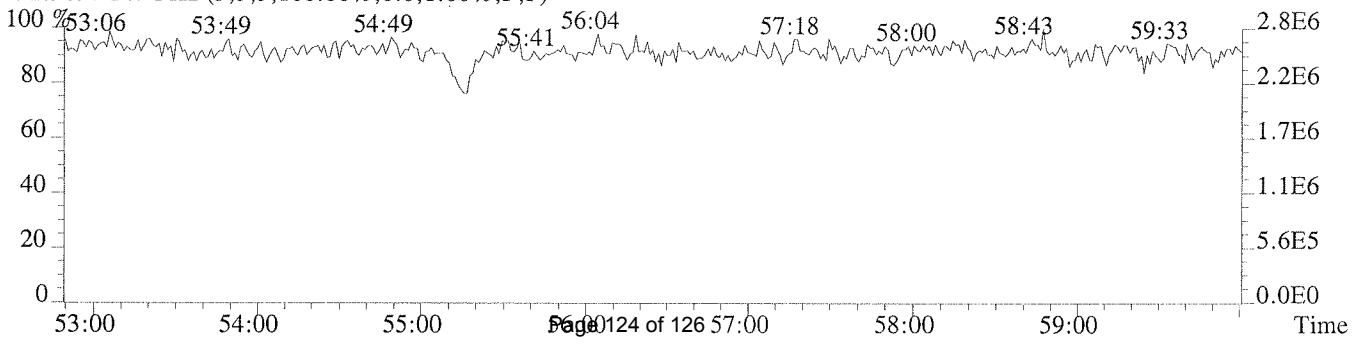

509.7229 F:7 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,520.0,1.00%,F,F)




511.7199 F:7 SMO(1,3) BSUB(128,15,-3.0) PKD(3,3,3,0.10%,456.0,1.00%,F,F)




492.9697 F:7 PKD(5,3,5,100.00%,0.0,1.00%,F,F)



| No | Project ID | Lab ID | Client ID | Sample Size g | Tare Vial | Tare & Wet Sample | Tare & Dry Sample | Calculated Percent Solid | Calculated Percent Moisture | Dry Weight | Sample Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MB | | EQ0700194-01 | Method Blank | 10.000 | | | | | | | |
| LCS | | EQ0700194-02 | Lab Control Spike | 10.000 | | | | | | | |
| DLCS | | EQ0700194-03 | Lab Control Spike Dup | 10.000 | | | | | | | |
| 1 | K0704820 | K0704820-001 | FO 070665 | 4.989 | | | | 48.60 | 51.40 | 2.42 | Brown mud |
| 2 | K0704924 | K0704924-001 | F0070711 | 5.142 | 12.965 | 20.668 | 17.953 | 64.75 | 35.25 | 3.33 | Brown mud |
| 3 | K0704924 | K0704924-002 | F0070712 | 4.562 | 13.001 | 23.333 | 19.780 | 65.61 | 34.39 | 2.99 | Brown mud |
| 4 | K0704924 | K0704924-003 | F0070713 | 4.825 | 13.023 | 22.637 | 18.953 | 61.68 | 38.32 | 2.98 | Brown mud |
| 5 | K0705126 | K0705126-001 | PCS-10/06 | 4.604 | | | | 40.30 | 59.70 | 1.86 | Gray Sludge |
| 6 | K0705251 | K0705251-001 | SB-G-6.5-7.5-0307 | 4.518 | 13.011 | 22.630 | 19.368 | 66.09 | 33.91 | 2.99 | Brown mud |
| 7 | K0705251 | K0705251-002 | SB-G-10.5-11-0307 | 5.375 | 13.006 | 24.189 | 20.333 | 65.52 | 34.48 | 3.52 | Brown mud |
| 8 | K0705251 | K0705251-003 | SB-G-15.5-16-0307 | 6.457 | 13.036 | 23.063 | 20.138 | 70.83 | 29.17 | 4.57 | Brown mud |
| 9 | K0705251 | K0705251-004 | SJ-J-11-11.5-0307 | 4.738 | 13.005 | 22.305 | 19.540 | 70.27 | 29.73 | 3.33 | Brown mud |
| 10 | K0705251 | K0705251-005 | SB-I-7-7.5-0307 | 5.375 | 12.965 | 21.706 | 18.453 | 62.78 | 37.22 | 3.37 | Brown mud |
| 11 | K0705251 | K0705251-006 | SB-F-13-13.5-0307 | 5.092 | 13.007 | 23.571 | 21.166 | 77.23 | 22.77 | 3.93 | Brown mud |
| 12 | K0705261 | K0705261-001 | FO 070746 | 6.498 | 12.982 | 22.481 | 19.329 | 66.82 | 33.18 | 4.34 | Black mud |
| 13 | K0705261 | K0705261-002 | FO 070778 | 4.847 | 13.072 | 21.805 | 18.681 | 64.23 | 35.77 | 3.11 | Black mud |
| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |
| 16 | | | | | | | | | | | |
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| 26 | | | | | | | | | | | |


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SODIUM SULFATE C1-119-005
ACETONE C1-87-2
TOLUENE C1-119-002
GLASS WOOL C1-110-2
DICHLOROMETHANE C1-119-003
ETHYL ACETATE C1-114-002
HEXANE C1-121-001

SAND C1-99-1
TRIDECANE C1-120-001
SULFURIC ACID C1-118-002
SODIUM HYDROXIDE C1-102-005
CARBON C1-120-005
SILICA GEL C1-118-004
NONANE C1-117-002

| Standard: | Internal | Matrix |
|---|---|---|
| Solution ID: | B1-79-4 | B1-79-5 |
| Volume: | 1000 uL | 1000 uL |
| Spiker: | ASB | ASB |
| Witness: | SM | SM |
| Date: | 06/26/07 | 06/26/07 |

| Standard: | Cleanup | Recovery |
|---|---|---|
| Solution ID: | B1-79-2 | B1-60-1 |
| Volume: | 100 uL | 2.0 uL |
| Spiker: | ASB | |
| Witness: | SM | |
| Date: | 06/29/07 | |

EXTRACTION START: 6/26/07
EXTRACTION END: 6/27/07
EXTRACTION TECHNIQUE: ASE

TIME STARTED: 1600
TIME FINISHED: 0200

EXTRACTS RECEIVED BY _____

DATE RECEIVED 7/18/07

**Columbia Analytical Services, INC.**

**EQ0700194** **1668A** **Prep Run: 50256**

Sulfuric Acid Cleanup: 6/29/07
Silica Gel/Carbon Column: 7/5/07

# Intra-Network Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 360-577-7222 • FAX 360-636-1068

CAS Contact: Loan Vo, Ph.D.

6/9

**Project Name:** PCBs and Pesticides in Storm Water
**Project Number:**
**Project Manager:** Jennifer Shackelford
**Company:** Portland, City of

| Lab Code | Client Sample ID | # of Cont. | Matrix | Sample Date | Sample Time | Date Received | Send To | Cl Biphen Cong 1668A |
|---|---|---|---|---|---|---|---|---|
| K0704820-001 | FO 070665 | | Aqueous Liquid | 06/01/07 | 1220 | 06/05/07 | HOUSTON | I |



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**Special Instructions/Comments**

**Turnaround Requirements**

____**RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

✓ **STANDARD**

Requested FAX Date: _____

Requested Report Date: 06/23/07

**Report Requirements**

✓ I. Results Only

____ II. Results + QC Summaries

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

PQL/MDL/J N

EDD N

**Invoice Information**

PO# K0704820

Bill to

Relinquished By: Amanda Juell 6-11-07 0900

Received By: 6/12/07 11:00

Airbill Number:

2°C