

Data Path : Z:\SVOASRV\HPCHEM1\BNA M\DATA\BM120419\  
 Data File : BM023999.D  
 Acq On : 04 Dec 2019 13:37  
 Operator : JU  
 Sample : K4649-01 5X  
 Misc :  
 ALS Vial : 7 Sample Multiplier: 1

Instrument :  
 BNA\_M  
 ClientSampleId :  
 A5167

Manual Integrations  
 APPROVED

mohammad  
 12/5/2019 10:50:01 AM

Quant Time: Dec 04 15:15:00 2019  
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA\_M\METHODS\SOM-EPA-BM112719MA.M  
 Quant Title : SVOA CALIBRATION  
 QLast Update : Wed Dec 04 13:35:21 2019  
 Response via : Initial Calibration

| Internal Standards        | R.T.  | QIon | Response | Conc  | Units | Dev(Min) |
|---------------------------|-------|------|----------|-------|-------|----------|
| 1) 1,4-Dichlorobenzene-d4 | 7.48  | 152  | 347519   | 20.00 | ng/ul | 0.00     |
| 18) Naphthalene-d8        | 10.25 | 136  | 1404782  | 20.00 | ng/ul | 0.00     |
| 36) Acenaphthene-d10      | 14.14 | 164  | 822419   | 20.00 | ng/ul | 0.00     |
| 62) Phenanthrene-d10      | 16.90 | 188  | 1744547  | 20.00 | ng/ul | 0.00     |
| 78) Chrysene-d12          | 21.12 | 240  | 1902246  | 20.00 | ng/ul | 0.01     |
| 86) Perylene-d12          | 23.27 | 264  | 2407325  | 20.00 | ng/ul | 0.02     |

## System Monitoring Compounds

|                                |       |     |        |      |       |      |
|--------------------------------|-------|-----|--------|------|-------|------|
| 3) 1,4-Dioxane-d8              | 3.04  | 96  | 6949   | 0.89 | ng/uL | 0.01 |
| 5) Phenol-d5                   | 6.68  | 99  | 160834 | 5.28 | ng/ul | 0.00 |
| 7) Bis-(2-Chloroethyl)ether-d  | 6.83  | 67  | 102487 | 5.79 | ng/ul | 0.00 |
| 9) 2-Chlorophenol-d4           | 7.02  | 132 | 128803 | 5.47 | ng/ul | 0.00 |
| 13) 4-Methylphenol-d8          | 8.20  | 113 | 118673 | 4.94 | ng/ul | 0.00 |
| 19) Nitrobenzene-d5            | 8.63  | 128 | 58694  | 5.38 | ng/ul | 0.00 |
| 22) 2-Nitrophenol-d4           | 9.36  | 143 | 59444  | 4.80 | ng/ul | 0.00 |
| 26) 2,4-Dichlorophenol-d3      | 9.89  | 165 | 111242 | 4.74 | ng/ul | 0.00 |
| 29) 4-Chloroaniline-d4         | 10.42 | 131 | 78459  | 3.05 | ng/ul | 0.02 |
| 44) Dimethylphthalate-d6       | 13.56 | 166 | 364349 | 5.70 | ng/ul | 0.00 |
| 47) Acenaphthylene-d8          | 13.83 | 160 | 411953 | 5.50 | ng/ul | 0.00 |
| 52) 4-Nitrophenol-d4           | 14.39 | 143 | 26842  | 2.50 | ng/ul | 0.02 |
| 58) Fluorene-d10               | 15.14 | 176 | 331922 | 6.17 | ng/ul | 0.00 |
| 63) 4,6-Dinitro-2-methylphenol | 15.30 | 200 | 23909  | 2.18 | ng/ul | 0.01 |
| 71) Anthracene-d10             | 17.00 | 188 | 517559 | 6.21 | ng/ul | 0.00 |
| 79) Pyrene-d10                 | 19.31 | 212 | 600298 | 6.11 | ng/ul | 0.01 |
| 90) Benzo(a)pyrene-d12         | 23.13 | 264 | 760177 | 5.97 | ng/ul | 0.01 |

## Target Compounds

|                            |       |     |           |         | Ovalue    |
|----------------------------|-------|-----|-----------|---------|-----------|
| 28) Naphthalene            | 10.30 | 128 | 1144787   | 15.458  | ng/ul 99  |
| 34) 2-Methylnaphthalene    | 11.93 | 142 | 285081    | 5.301   | ng/ul 99  |
| 35) 1-Methylnaphthalene    | 12.15 | 142 | 202574    | 3.837   | ng/ul 98  |
| 41) 1,1'-Biphenyl          | 12.97 | 154 | 108698    | 1.636   | ng/ul 98  |
| 45) Dimethylphthalate      | 13.61 | 163 | 95748     | 1.531   | ng/ul 98  |
| 50) Acenaphthene           | 14.20 | 153 | 2181807   | 40.551  | ng/ul 100 |
| 54) Dibenzofuran           | 14.55 | 168 | 1381516   | 18.148  | ng/ul 99  |
| 59) Fluorene               | 15.20 | 166 | 2066637   | 33.663  | ng/ul 99  |
| 70) Phenanthrene           | 16.94 | 178 | 20319884m | 206.183 | ng/ul     |
| 72) Anthracene             | 17.03 | 178 | 9227352   | 92.220  | ng/ul 98  |
| 75) Carbazole              | 17.30 | 167 | 4412933   | 50.934  | ng/ul 100 |
| 77) Fluoranthene           | 18.97 | 202 | 23444764m | 221.826 | ng/ul     |
| 80) Pyrene                 | 19.33 | 202 | 23672794m | 184.700 | ng/ul     |
| 83) Benzo(a)anthracene     | 21.10 | 228 | 18645360m | 146.644 | ng/ul     |
| 85) Chrysene               | 21.15 | 228 | 17260302m | 144.557 | ng/ul     |
| 88) Benzo(b)fluoranthene   | 22.63 | 252 | 25542982m | 171.574 | ng/ul     |
| 89) Benzo(k)fluoranthene   | 22.68 | 252 | 10874661m | 76.948  | ng/ul     |
| 91) Benzo(a)pyrene         | 23.18 | 252 | 20805407m | 147.805 | ng/ul     |
| 92) Indeno(1,2,3-cd)pyrene | 25.42 | 276 | 15477482  | 88.549  | ng/ul 97  |
| 93) Dibenzo(a,h)anthracene | 25.41 | 278 | 4193682m  | 28.565  | ng/ul     |
| 94) Benzo(a,h,i)perylene   | 26.06 | 276 | 11961182  | 81.711  | ng/ul 98  |

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Operator : JU  
Sample : K4649-01 5X  
Misc :  
ALS Vial : 7 Sample Multiplier: 1

Instrument :  
BNA\_M  
ClientSampleId :  
A5167

Manual Integrations  
APPROVED

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12/5/2019 10:50:01 AM

Quant Time: Dec 04 15:15:00 2019  
Quant Method : Z:\SVOASRV\HPCHEM1\BNA\_M\METHODS\SOM-EPA-BM112719MA.M  
Quant Title : SVOA CALIBRATION  
QLast Update : Wed Dec 04 13:35:21 2019  
Response via : Initial Calibration

| Internal Standards                                                         | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|----------------------------------------------------------------------------|------|------|----------|------|-------|----------|
| -----                                                                      |      |      |          |      |       |          |
| (#) = qualifier out of range (m) = manual integration (+) = signals summed |      |      |          |      |       |          |

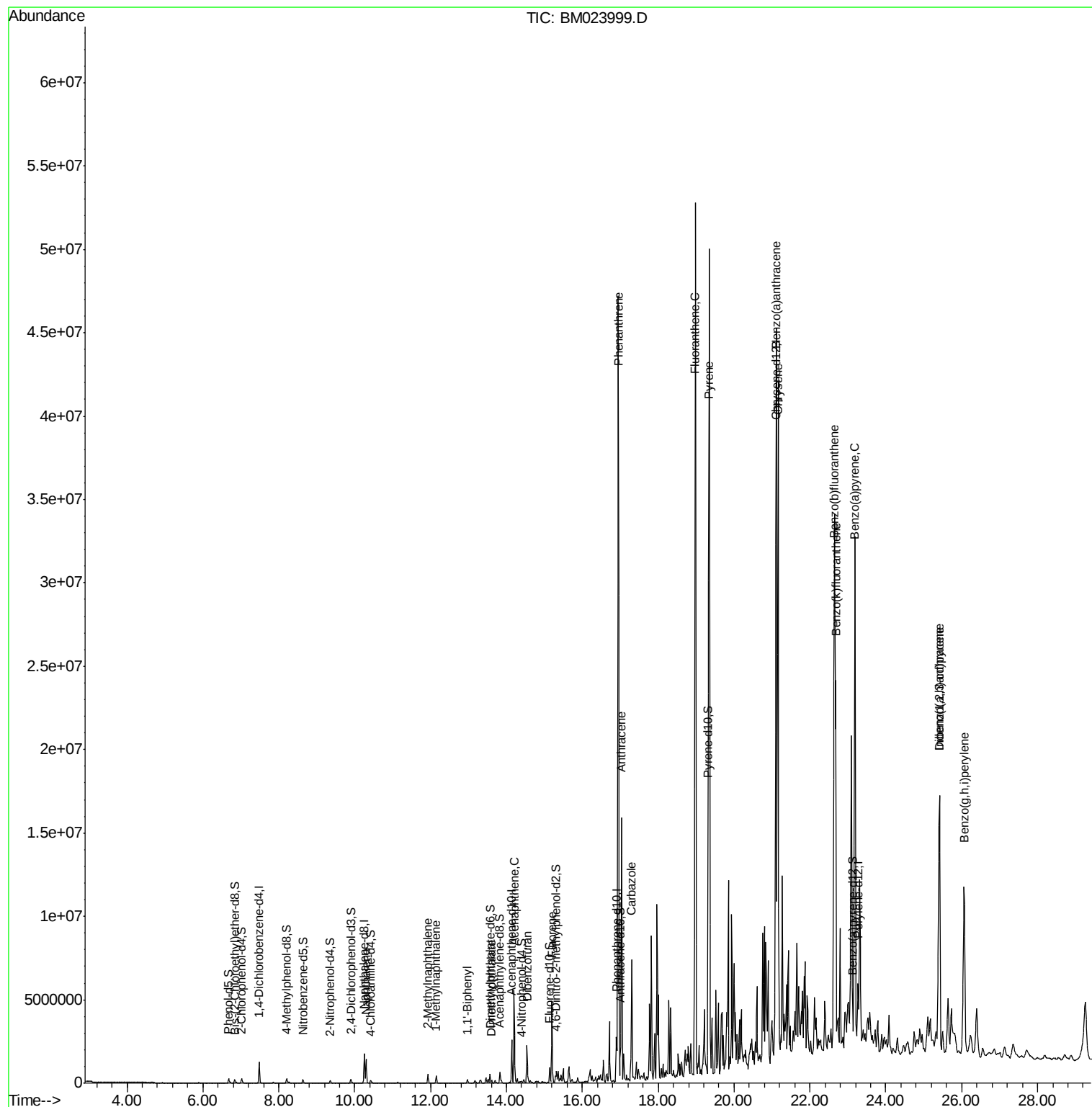
Data Path : Z:\SVOASRV\HPCHEM1\BNA M\DATA\BM120419\  
Data File : BM023999.D  
Acq On : 04 Dec 2019 13:37  
Operator : JU  
Sample : K4649-01 5X  
Misc :  
ALS Vial : 7 Sample Multiplier: 1

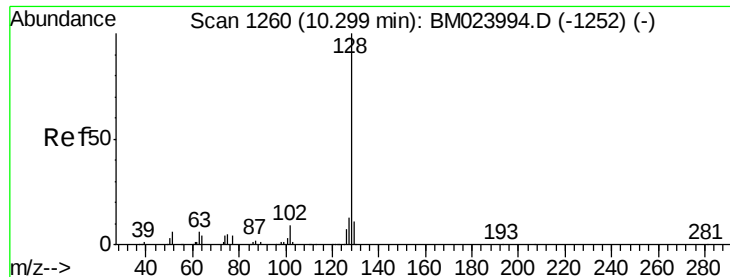
Instrument :  
BNA\_M  
ClientSampleId :  
A5167

Quant Time: Dec 04 15:15:00 2019  
Quant Method : Z:\SVOASRV\HPCHEM1\BNA\_M\METHODS\SOM-EPA-BM112719MA.M  
Quant Title : SVOA CALIBRATION  
QLast Update : Wed Dec 04 13:35:21 2019  
Response via : Initial Calibration

Manual Integrations  
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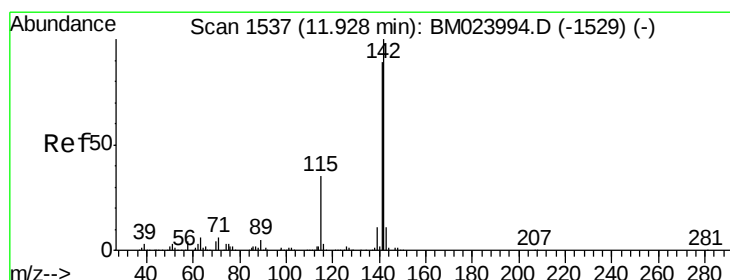
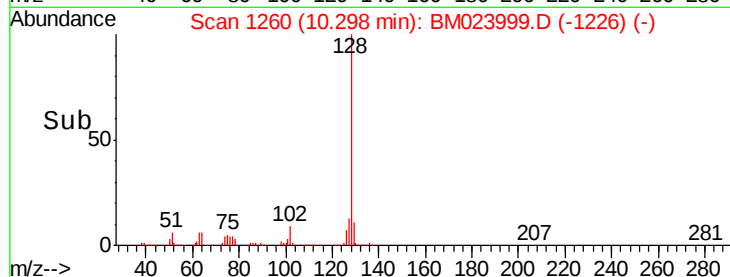
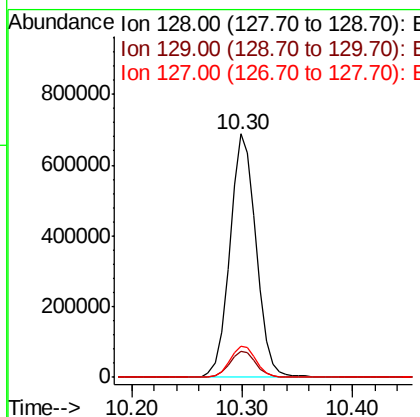
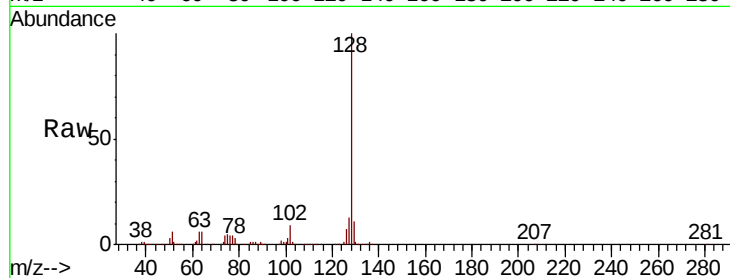
#28  
Naphthalene  
Concen: 15.458 ng/ul  
RT: 10.30 min Scan# 1260  
Delta R.T. -0.00 min  
Lab File: BM023999.D  
Acq: 04 Dec 2019 13:37

Instrument :  
BNA\_M  
ClientSampleId :  
A5167

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 128     | 100   |       |       |
| 129     | 10.8  | 8.8   | 13.2  |
| 127     | 12.8  | 10.5  | 15.7  |

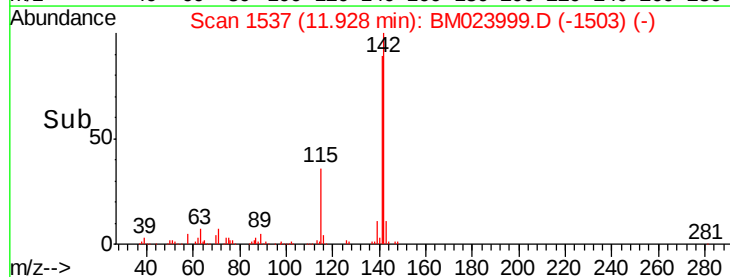
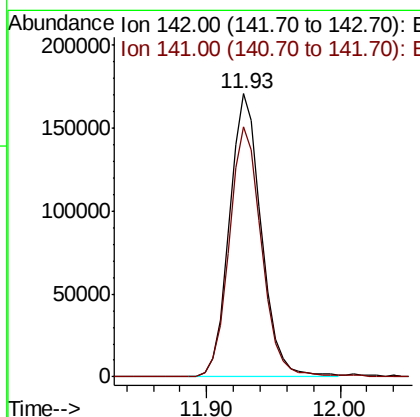
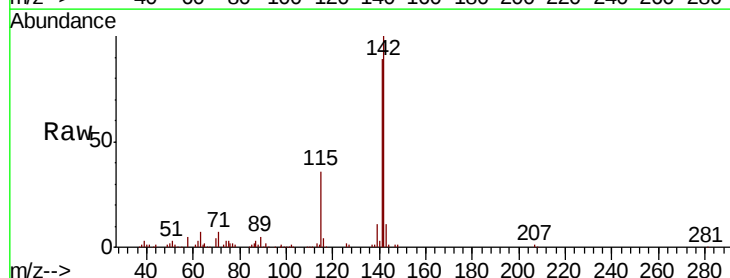
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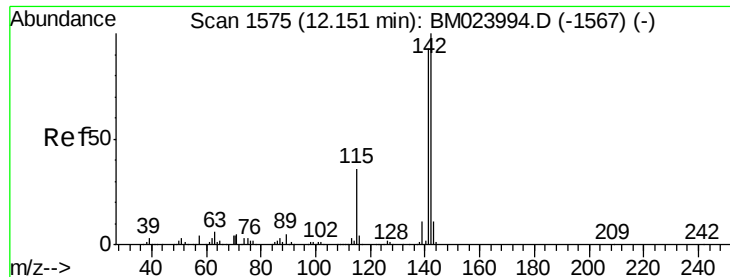
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#34  
2-Methylnaphthalene  
Concen: 5.301 ng/ul  
RT: 11.93 min Scan# 1537  
Delta R.T. -0.00 min  
Lab File: BM023999.D  
Acq: 04 Dec 2019 13:37

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 142     | 100   |       |       |
| 141     | 88.6  | 71.3  | 106.9 |





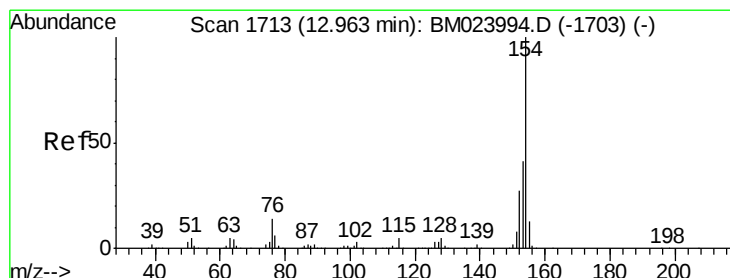
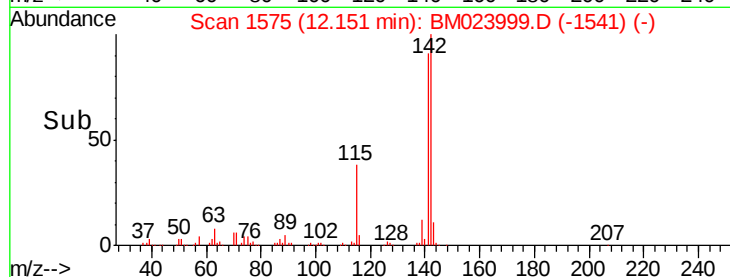
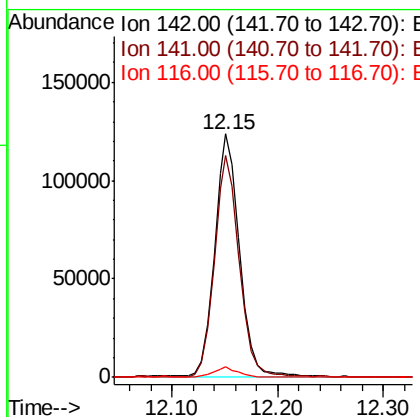
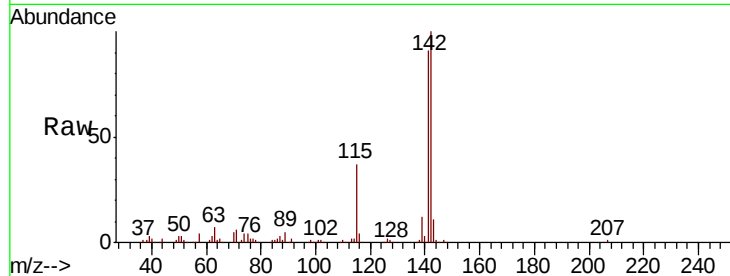
#35  
 1-Methylnaphthalene  
 Concen: 3.837 ng/ul  
 RT: 12.15 min Scan# 1575  
 Delta R.T. -0.00 min  
 Lab File: BM023999.D  
 Acq: 04 Dec 2019 13:37

Instrument :  
 BNA\_M  
 ClientSampleId :  
 A5167

|           |       |       |        |
|-----------|-------|-------|--------|
| Tot Ion:  | 142   | Resp: | 202574 |
| Ion Ratio | Lower | Upper |        |
| 142       | 100   |       |        |
| 141       | 91.0  | 74.2  | 111.4  |
| 116       | 4.3   | 3.0   | 4.4    |

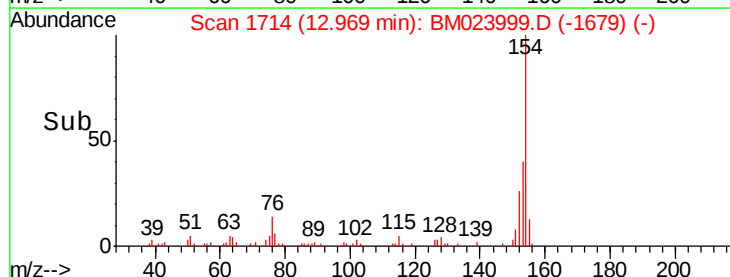
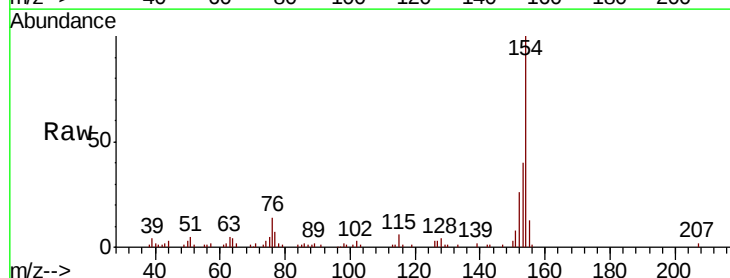
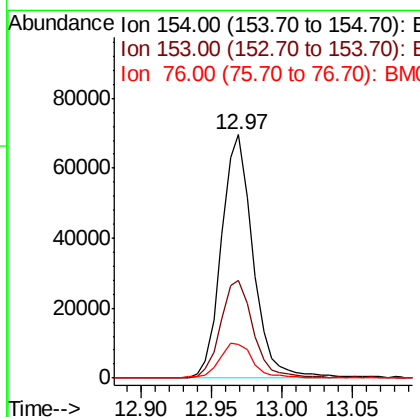
Manual Integrations  
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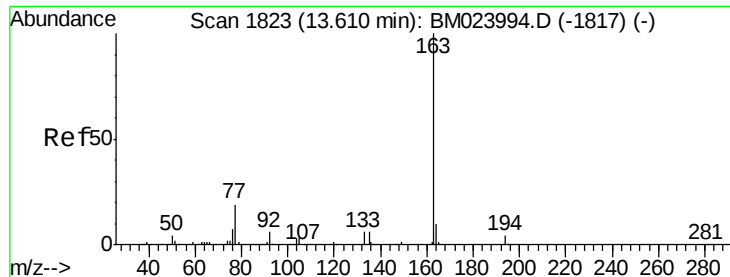
mohammad  
 12/5/2019 10:50:01 AM



#41  
 1,1'-Biphenyl  
 Concen: 1.636 ng/ul  
 RT: 12.97 min Scan# 1714  
 Delta R.T. 0.01 min  
 Lab File: BM023999.D  
 Acq: 04 Dec 2019 13:37

|           |       |       |        |
|-----------|-------|-------|--------|
| Tgt Ion:  | 154   | Resp: | 108698 |
| Ion Ratio | Lower | Upper |        |
| 154       | 100   |       |        |
| 153       | 40.0  | 32.9  | 49.3   |
| 76        | 13.6  | 11.1  | 16.7   |





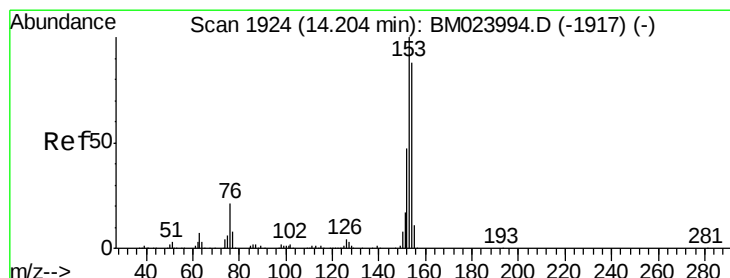
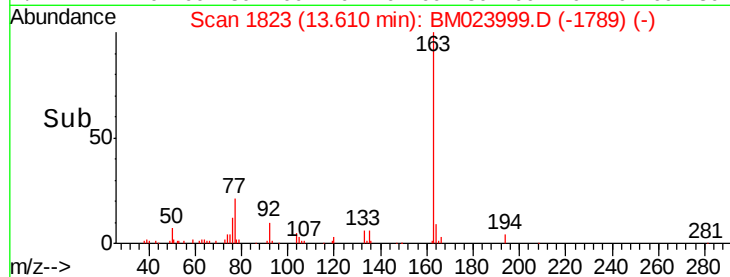
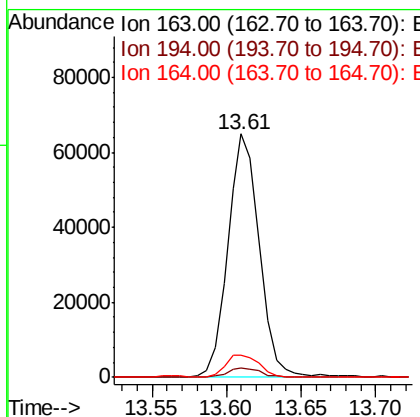
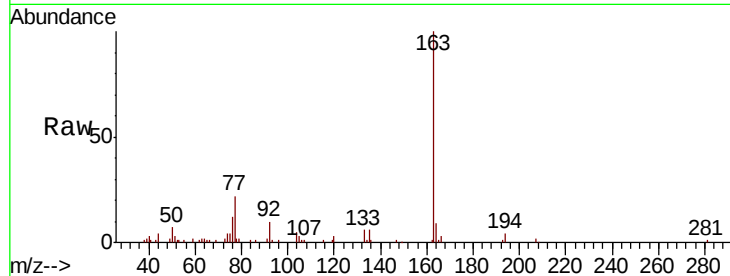
#45  
Dimethylphthalate  
Concen: 1.531 ng/ul  
RT: 13.61 min Scan# 1823  
Delta R.T. -0.00 min  
Lab File: BM023999.D  
Acq: 04 Dec 2019 13:37

Instrument :  
BNA\_M  
ClientSampleId :  
A5167

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 163     | 100   |       |       |
| 194     | 3.9   | 3.3   | 4.9   |
| 164     | 9.1   | 7.9   | 11.9  |

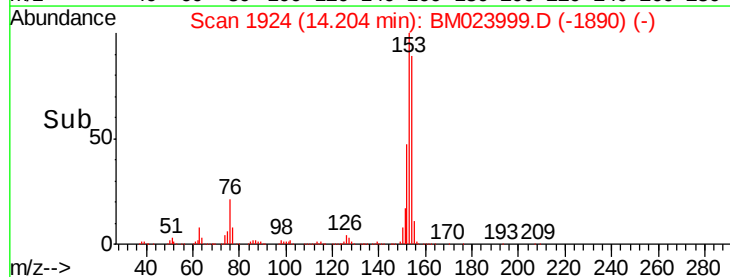
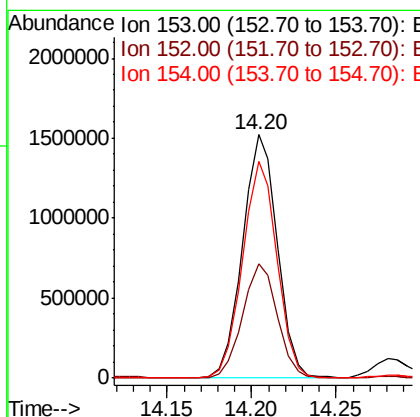
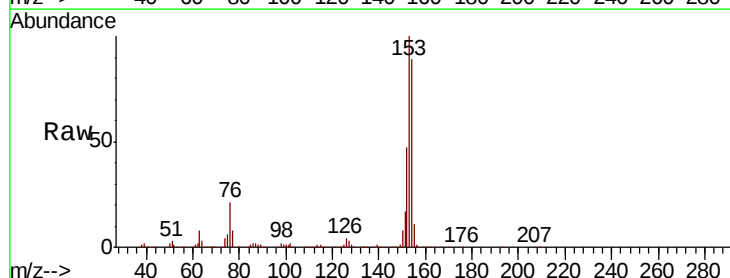
Manual Integrations  
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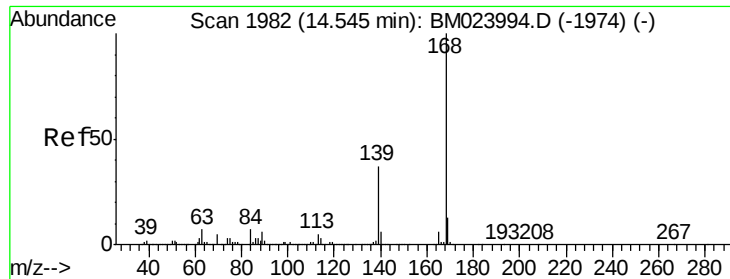
mohammad  
12/5/2019 10:50:01 AM



#50  
Acenaphthene  
Concen: 40.551 ng/ul  
RT: 14.20 min Scan# 1924  
Delta R.T. -0.00 min  
Lab File: BM023999.D  
Acq: 04 Dec 2019 13:37

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 153     | 100   |       |       |
| 152     | 46.7  | 37.5  | 56.3  |
| 154     | 89.0  | 70.7  | 106.1 |





#54

Dibenzofuran

Concen: 18.148 ng/ul

RT: 14.55 min Scan# 1982

Delta R.T. -0.00 min

Lab File: BM023999.D

Acq: 04 Dec 2019 13:37

Instrument :

BNA\_M

ClientSampleId :

A5167

Tot Ion:168 Resp: 1381516

Ion Ratio Lower Upper

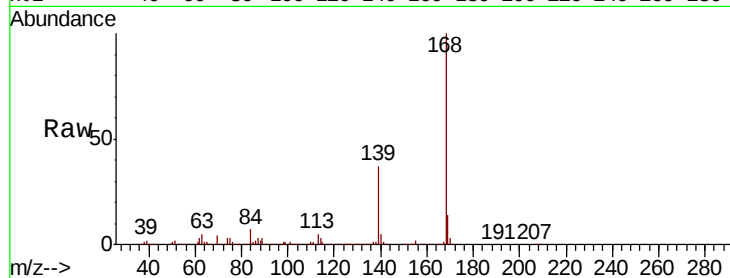
168 100

139 37.3 29.4 44.0

Manual Integrations  
APPROVED

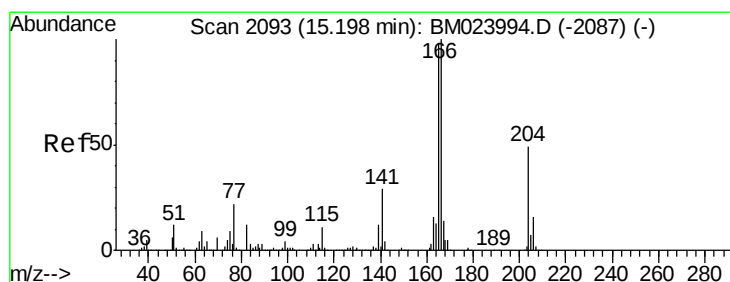
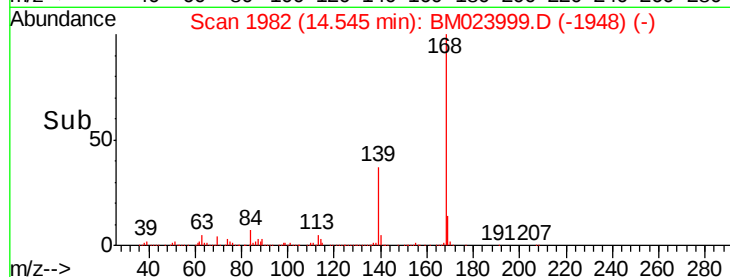
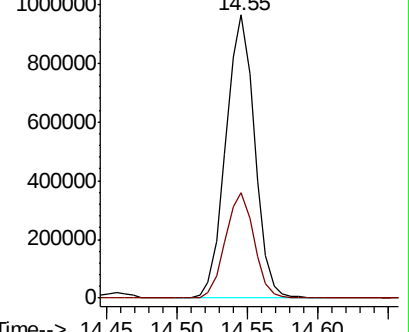
mohammad

12/5/2019 10:50:01 AM



Abundance Ion 168.00 (167.70 to 168.70): E

Ion 139.00 (138.70 to 139.70): E



#59

Fluorene

Concen: 33.663 ng/ul

RT: 15.20 min Scan# 2093

Delta R.T. -0.00 min

Lab File: BM023999.D

Acq: 04 Dec 2019 13:37

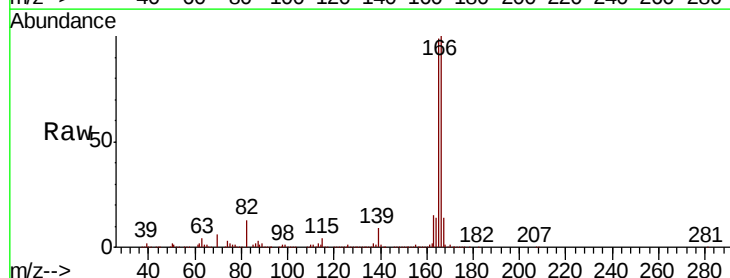
Tgt Ion:166 Resp: 2066637

Ion Ratio Lower Upper

166 100

165 99.2 78.6 118.0

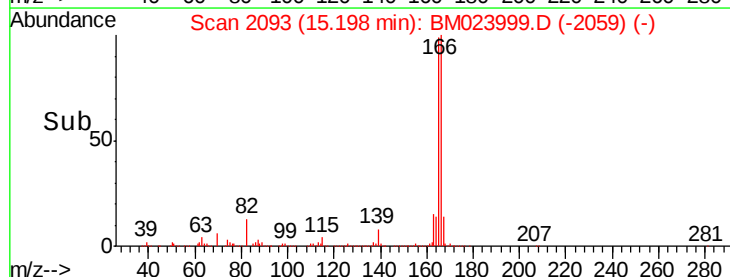
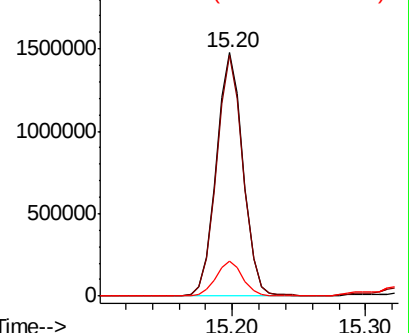
167 14.2 11.1 16.7

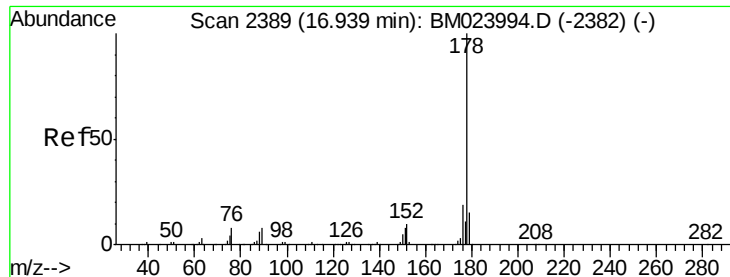


Abundance Ion 166.00 (165.70 to 166.70): E

Ion 165.00 (164.70 to 165.70): E

Ion 167.00 (166.70 to 167.70): E





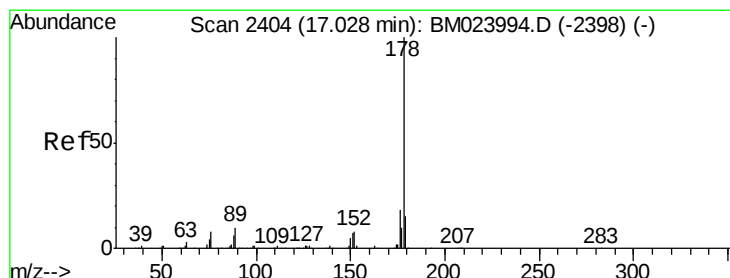
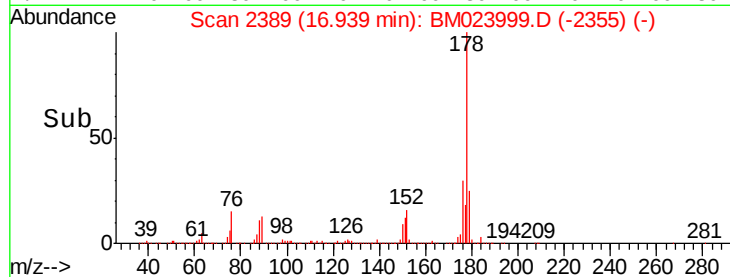
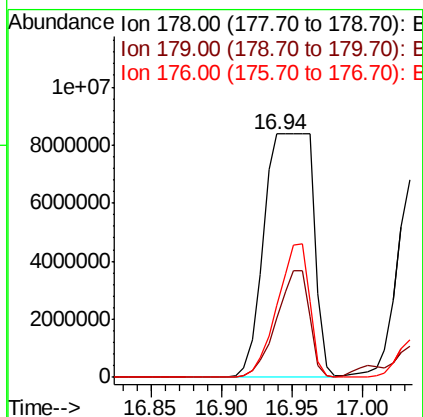
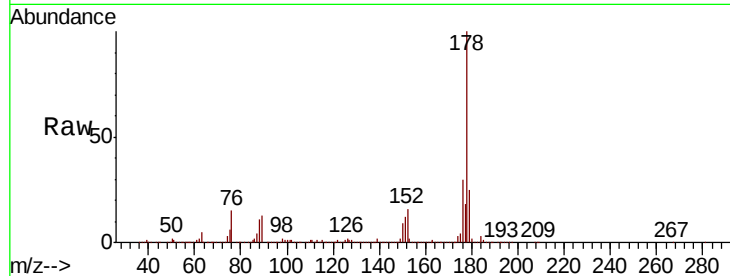
#70  
Phenanthrene  
Concen: 206.183 ng/ul m  
RT: 16.94 min Scan# 2389  
Delta R.T. -0.00 min  
Lab File: BM023999.D  
Acq: 04 Dec 2019 13:37

Instrument :  
BNA\_M  
ClientSampleId :  
A5167

Tot Ion:178 Resp:20319884  
Ion Ratio Lower Upper  
178 100  
179 24.5 12.0 18.0#  
176 29.6 15.1 22.7#

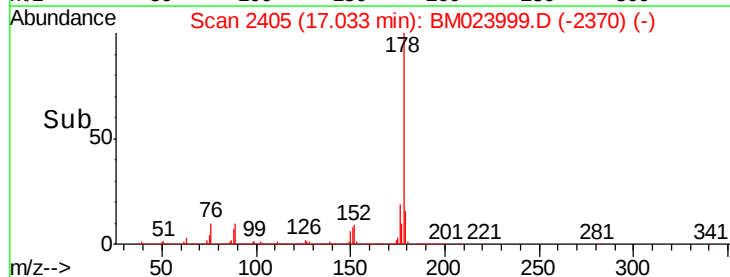
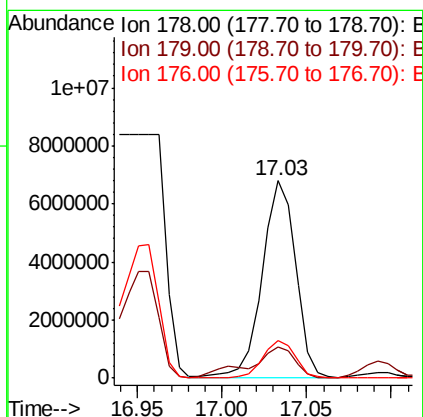
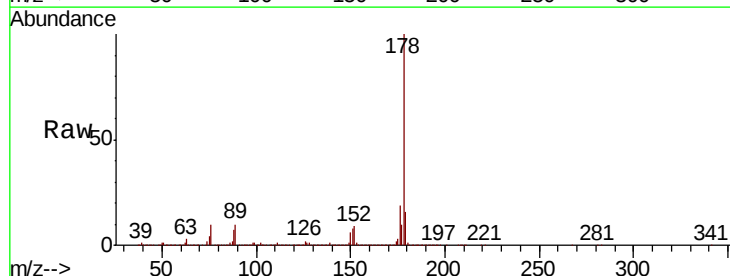
Manual Integrations  
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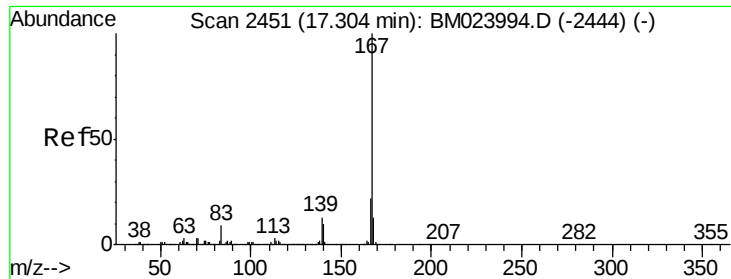
mohammad  
12/5/2019 10:50:01 AM



#72  
Anthracene  
Concen: 92.220 ng/ul  
RT: 17.03 min Scan# 2405  
Delta R.T. 0.01 min  
Lab File: BM023999.D  
Acq: 04 Dec 2019 13:37

Tgt Ion:178 Resp: 9227352  
Ion Ratio Lower Upper  
178 100  
179 16.0 11.9 17.9  
176 19.0 14.7 22.1





#75

Carbazole

Concen: 50.934 ng/ul

RT: 17.30 min Scan# 2451

Delta R.T. -0.00 min

Lab File: BM023999.D

Acq: 04 Dec 2019 13:37

Instrument :

BNA\_M

ClientSampleId :

A5167

Tot Ion:167 Resp: 4412933

Ion Ratio Lower Upper

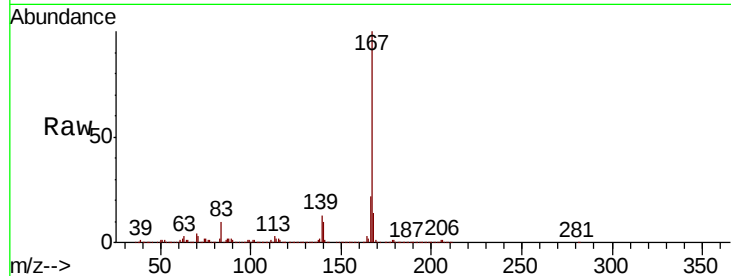
167 100

166 22.0 17.4 26.0

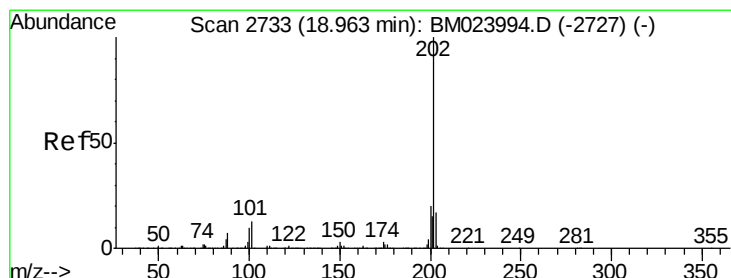
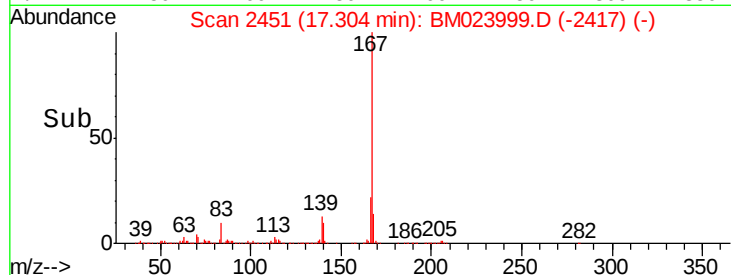
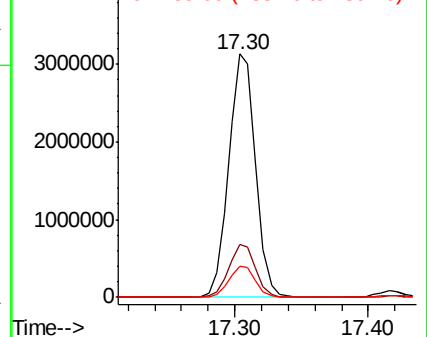
139 12.8 10.2 15.2

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mohammad  
12/5/2019 10:50:01 AM



Abundance Ion 167.00 (166.70 to 167.70): E  
Ion 166.00 (165.70 to 166.70): E  
Ion 139.00 (138.70 to 139.70): E



#77

Fluoranthene

Concen: 221.826 ng/ul m

RT: 18.97 min Scan# 2734

Delta R.T. 0.01 min

Lab File: BM023999.D

Acq: 04 Dec 2019 13:37

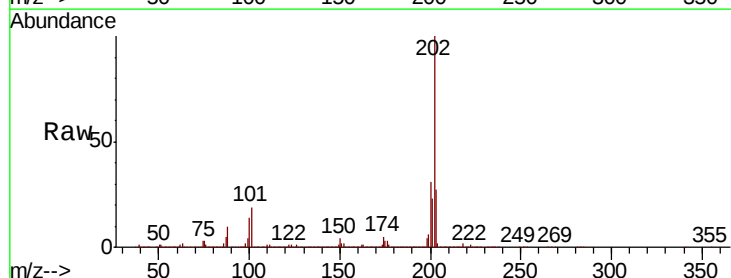
Tgt Ion:202 Resp:23444764

Ion Ratio Lower Upper

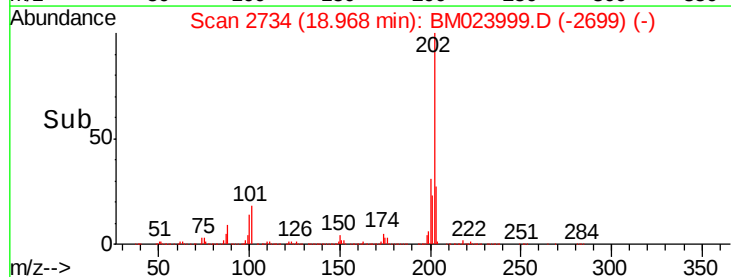
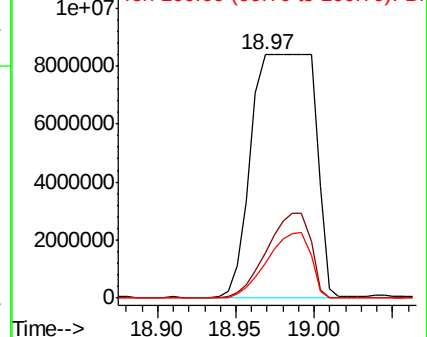
202 100

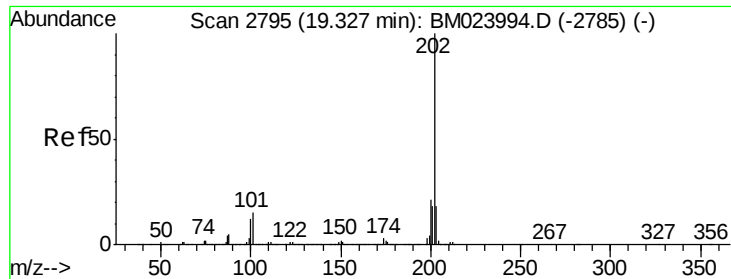
101 18.6 10.1 15.1#

100 14.4 7.8 11.6#



Abundance Ion 202.00 (201.70 to 202.70): E  
Ion 101.00 (100.70 to 101.70): E  
Ion 100.00 (99.70 to 100.70): B





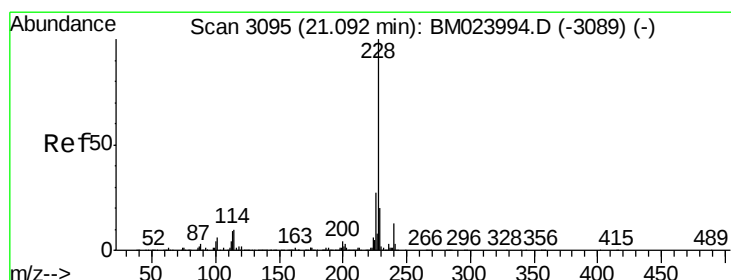
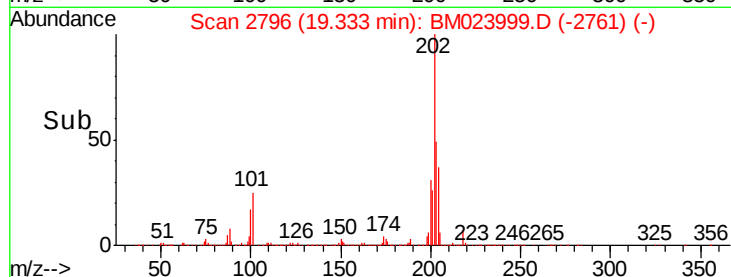
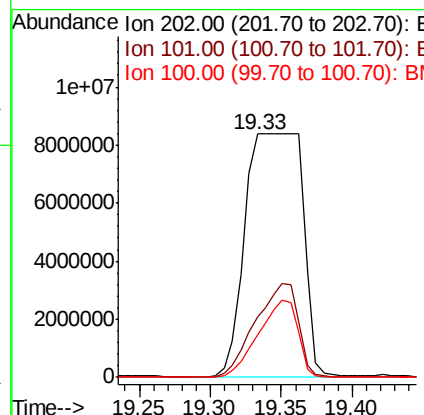
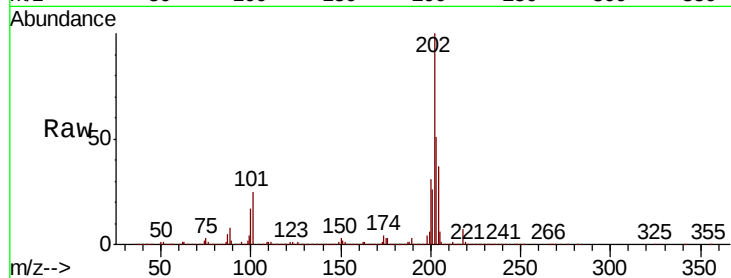
#80  
Pvrene  
Concen: 184.700 ng/ul m  
RT: 19.33 min Scan# 2796  
Delta R.T. 0.01 min  
Lab File: BM023999.D  
Acq: 04 Dec 2019 13:37

Instrument :  
BNA\_M  
ClientSampleId :  
A5167

Tot Ion:202 Resp:23672794  
Ion Ratio Lower Upper  
202 100  
101 24.8 11.8 17.6#  
100 17.4 9.8 14.6#

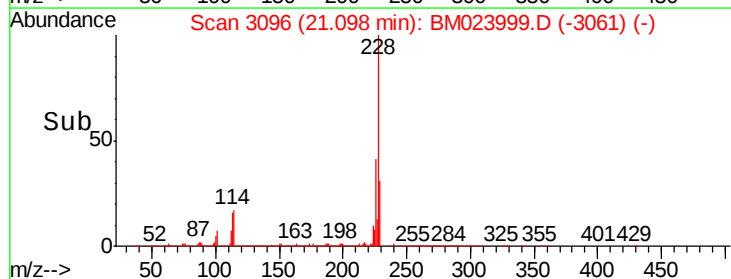
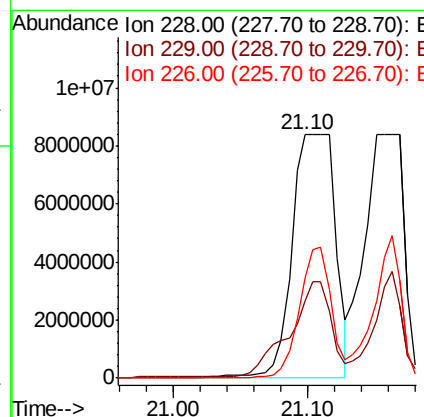
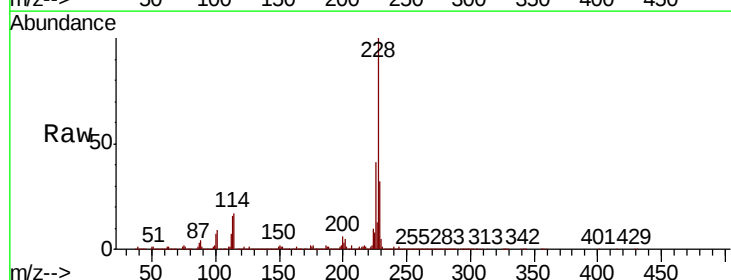
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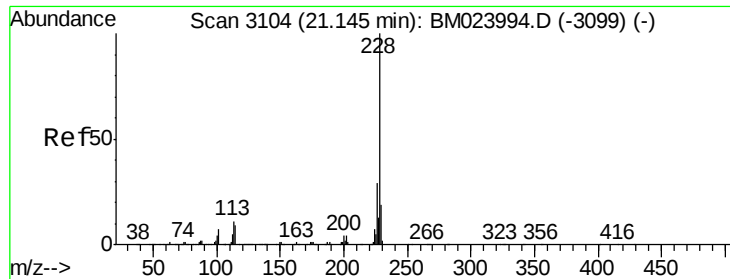
mohammad  
12/5/2019 10:50:01 AM



#83  
Benzo(a)anthracene  
Concen: 146.644 ng/ul m  
RT: 21.10 min Scan# 3096  
Delta R.T. 0.01 min  
Lab File: BM023999.D  
Acq: 04 Dec 2019 13:37

Tgt Ion:228 Resp:18645360  
Ion Ratio Lower Upper  
228 100  
229 31.9 15.6 23.4#  
226 40.9 21.4 32.0#





#85

Chrysene

Concen: 144.557 ng/ul m

RT: 21.15 min Scan# 3105

Delta R.T. 0.01 min

Lab File: BM023999.D

Acq: 04 Dec 2019 13:37

Instrument :

BNA\_M

ClientSampled :

A5167

Tot Ion:228 Resp:17260302

Ion Ratio Lower Upper

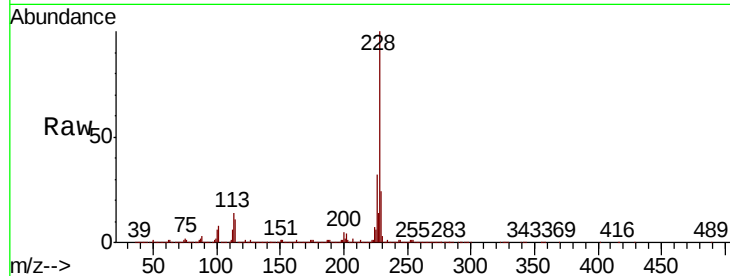
228 100

226 31.9 23.4 35.2

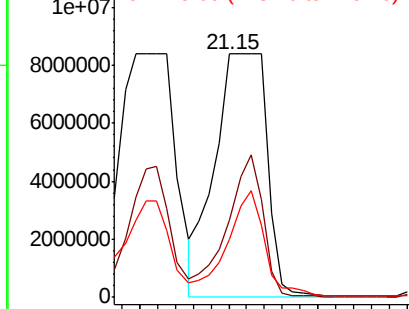
229 24.0 15.3 22.9#

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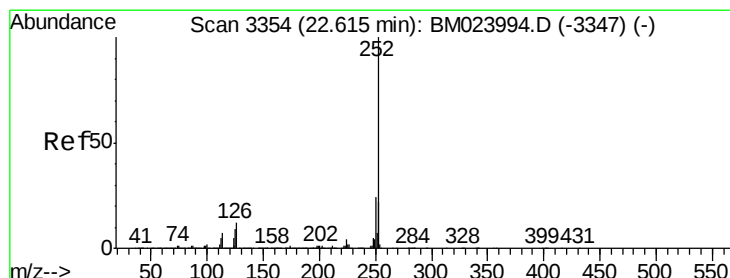
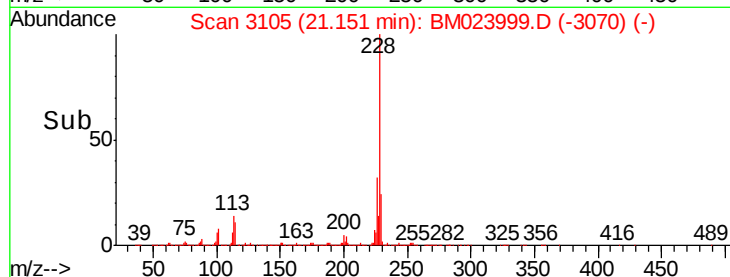
mohammad  
12/5/2019 10:50:01 AM



Abundance Ion 228.00 (227.70 to 228.70): E  
Ion 226.00 (225.70 to 226.70): E  
Ion 229.00 (228.70 to 229.70): E



Time-->



#88

Benzo(b)fluoranthene

Concen: 171.574 ng/ul m

RT: 22.63 min Scan# 3357

Delta R.T. 0.02 min

Lab File: BM023999.D

Acq: 04 Dec 2019 13:37

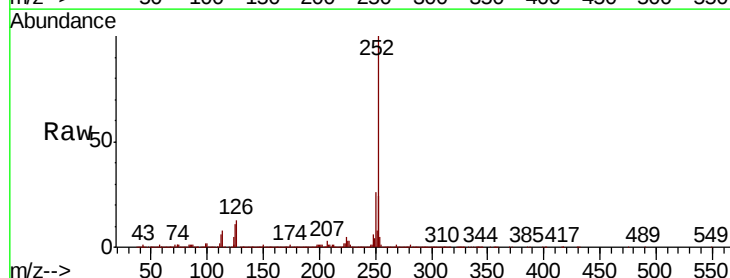
Tgt Ion:252 Resp:25542982

Ion Ratio Lower Upper

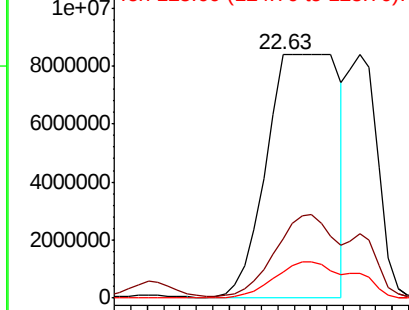
252 100

253 24.3 17.4 26.0

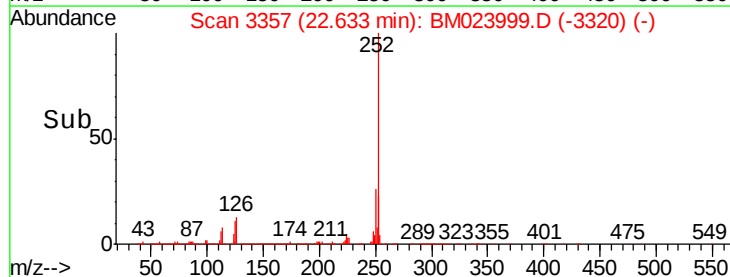
125 10.7 7.4 11.2

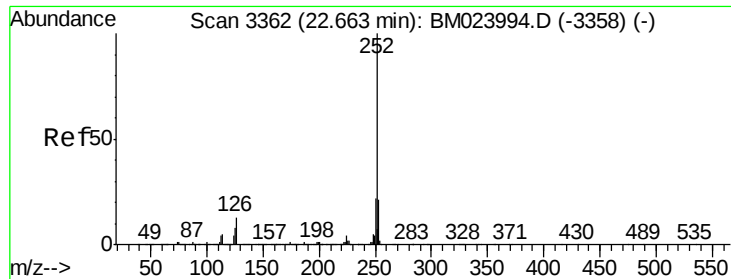


Abundance Ion 252.00 (251.70 to 252.70): E  
Ion 253.00 (252.70 to 253.70): E  
Ion 125.00 (124.70 to 125.70): E



Time-->





#89

Benzo(k)fluoranthene

Concen: 76.948 ng/ul m

RT: 22.68 min Scan# 3365

Delta R.T. 0.02 min

Lab File: BM023999.D

Acq: 04 Dec 2019 13:37

Instrument :

BNA\_M

ClientSampled :

A5167

Tot Ion:252 Resp:10874661

Ion Ratio Lower Upper

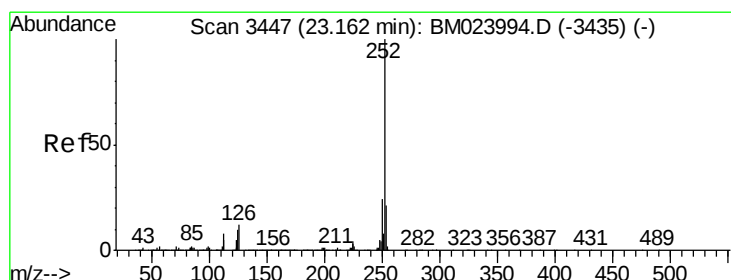
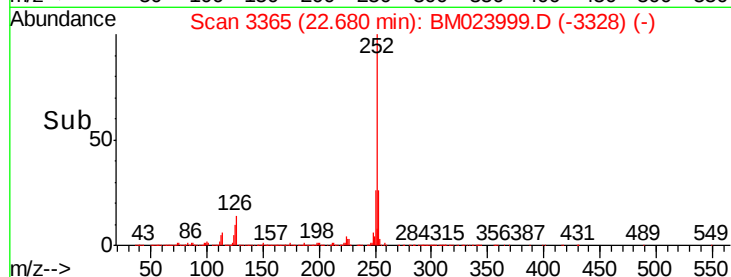
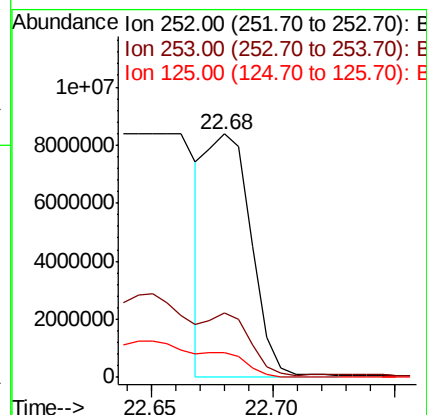
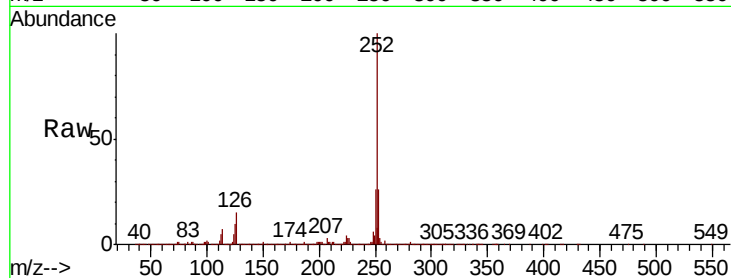
252 100

253 26.4 17.2 25.8#

125 10.3 7.0 10.4

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#91

Benzo(a)pyrene

Concen: 147.805 ng/ul m

RT: 23.18 min Scan# 3450

Delta R.T. 0.02 min

Lab File: BM023999.D

Acq: 04 Dec 2019 13:37

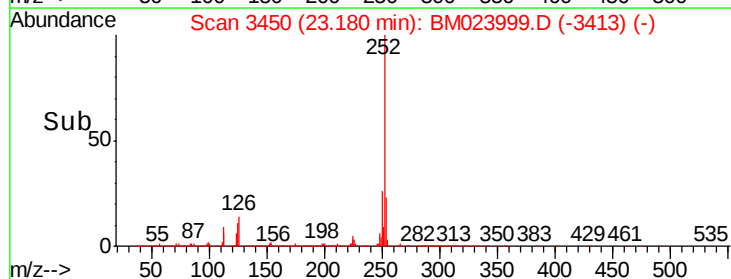
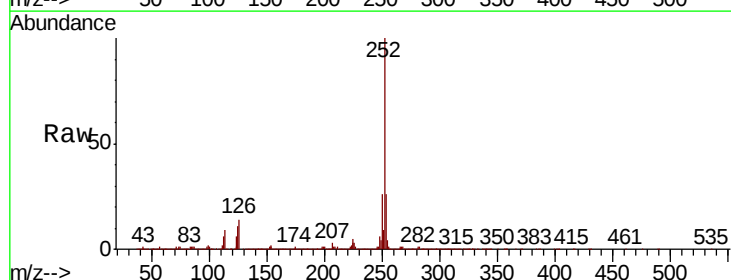
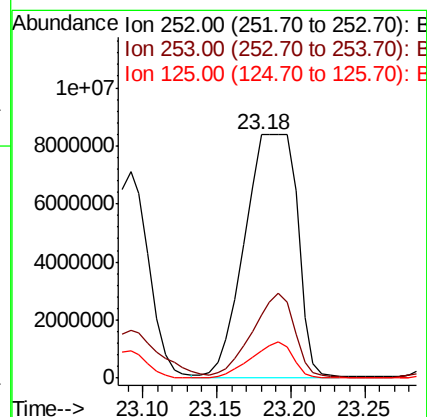
Tgt Ion:252 Resp:20805407

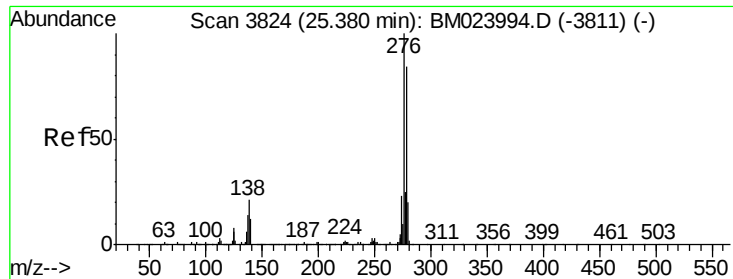
Ion Ratio Lower Upper

252 100

253 25.8 17.2 25.8

125 11.2 7.8 11.6





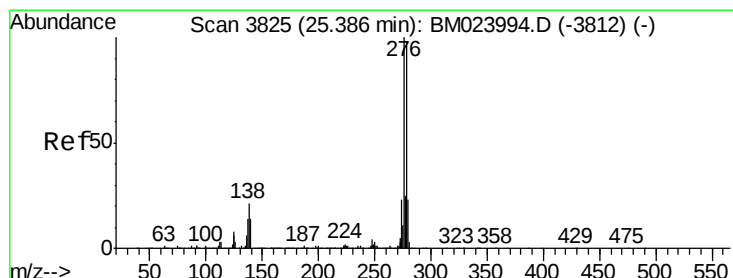
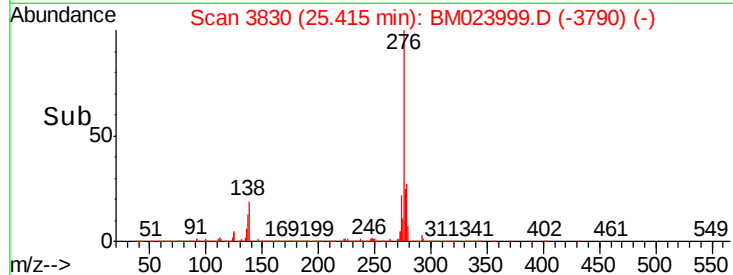
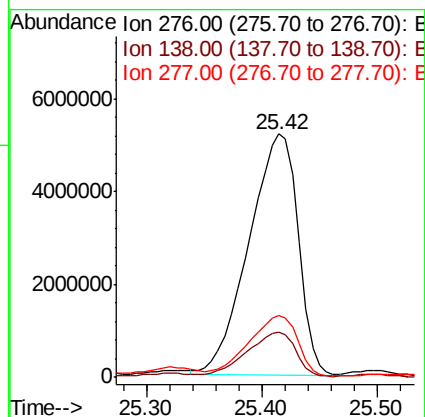
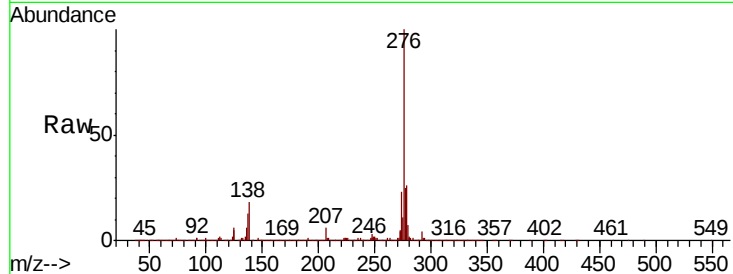
#92  
 Indeno(1,2,3-cd)pyrene  
 Concen: 88.549 ng/ul  
 RT: 25.42 min Scan# 3830  
 Delta R.T. 0.04 min  
 Lab File: BM023999.D  
 Acq: 04 Dec 2019 13:37

Instrument :  
 BNA\_M  
 ClientSampleId :  
 A5167

Tot Ion:276 Resp:15477482  
 Ion Ratio Lower Upper  
 276 100  
 138 18.5 17.0 25.6  
 277 25.3 19.8 29.8

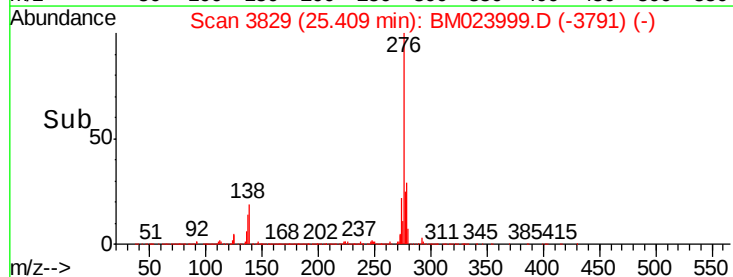
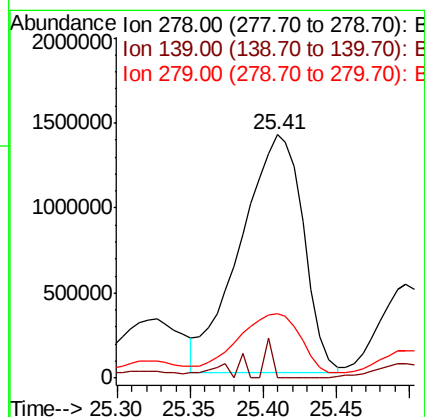
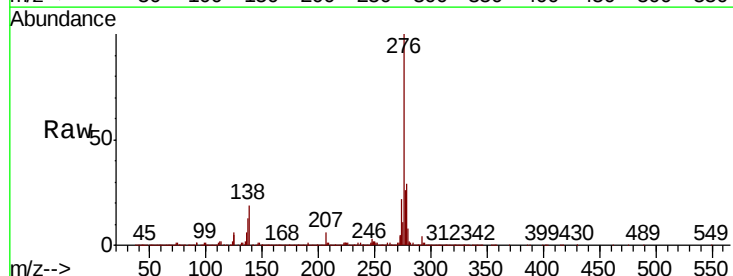
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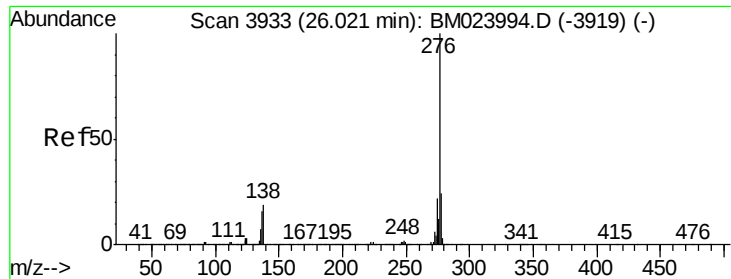
mohammad  
 12/5/2019 10:50:01 AM



#93  
 Dibenzo(a,h)anthracene  
 Concen: 28.565 ng/ul m  
 RT: 25.41 min Scan# 3829  
 Delta R.T. 0.02 min  
 Lab File: BM023999.D  
 Acq: 04 Dec 2019 13:37

Tgt Ion:278 Resp: 4193682  
 Ion Ratio Lower Upper  
 278 100  
 139 0.0 11.6 17.4#  
 279 26.5 19.1 28.7





#94  
 Benzo(a,h,i)perylene  
 Concen: 81.711 ng/ul  
 RT: 26.06 min Scan# 3940  
 Delta R.T. 0.04 min  
 Lab File: BM023999.D  
 Acq: 04 Dec 2019 13:37

Instrument :  
 BNA\_M  
 ClientSampleId :  
 A5167

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 276     | 100   |       |       |
| 138     | 18.9  | 14.9  | 22.3  |
| 277     | 25.0  | 19.1  | 28.7  |

Manual Integrations  
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 12/5/2019 10:50:01 AM

