Quantitation Report (Not Reviewed)

Data Path : Z:\svoasrv\HPCHEM1\BNA_N\Data\BN110322\
Data File : BN022476.D
Acq On : 03 Nov 2022 13:26
Operator : CG/JU
Sample : SSTDICC0.2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Quant Time: Nov 04 03:10:30 2022
Quant Method : Z:\svoasrv\HPCHEM1\BNA_N\Methods\8270-SIM-BN110322.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
QLast Update : Fri Nov 04 03:06:33 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-Dichlorobenzene-d4	7.928	152	2610	0.400	ng		0.00
7) Naphthalene-d8	10.752	136	8488	0.400	ng		0.00
13) Acenaphthene-d10	14.603	164	5403	0.400	ng		0.00
19) Phenanthrene-d10	17.354	188	11840	0.400	ng		0.00
29) Chrysene-d12	21.564	240	8682	0.400	ng		0.00
35) Perylene-d12	24.017	264	9376	0.400	ng		0.00
System Monitoring Compounds							
4) 2-Fluorophenol	5.458	112	1334	0.192	ng		0.00
5) Phenol-d6	7.090	99	1601	0.184	ng		0.00
8) Nitrobenzene-d5	9.108	82	1544	0.210	ng		0.00
11) 2-Methylnaphthalene-d10	12.353	152	2720	0.204	ng		0.00
14) 2,4,6-Tribromophenol	16.100	330	515	0.222	ng		0.00
15) 2-Fluorobiphenyl	13.224	172	4383	0.190	ng		0.00
27) Fluoranthene-d10	19.398	212	6518	0.199	ng		0.00
31) Terphenyl-d14	19.993	244	6419	0.284	ng		0.00
Target Compounds							Qvalue
2) 1,4-Dioxane	3.269	88	708	0.194	ng		95
3) n-Nitrosodimethylamine	3.616	42	674	0.173	ng		93
6) bis(2-Chloroethyl)ether	7.350	93	1226	0.147	ng		92
9) Naphthalene	10.805	128	5100	0.201	ng		98
10) Hexachlorobutadiene	11.083	225	881	0.205	ng	#	99
12) 2-Methylnaphthalene	12.073	142	1081	0.214	ng	#	74
16) Acenaphthylene	14.315	152	5048	0.193	ng		100
17) Acenaphthene	14.657	154	3435	0.192	ng		99
18) Fluorene	15.651	166	4832	0.194	ng		99
20) 4,6-Dinitro-2-methylph...	15.765	198	254	0.134	ng	#	66
21) 4-Bromophenyl-phenylether	16.547	248	1391	0.195	ng		95
22) Hexachlorobenzene	16.659	284	1657	0.202	ng		99
23) Atrazine	16.820	200	1274	0.213	ng		97
24) Pentachlorophenol	17.019	266	480	0.142	ng		95
25) Phenanthrene	17.403	178	7673	0.189	ng		99
26) Anthracene	17.490	178	6505	0.190	ng		99
28) Fluoranthene	19.428	202	8577	0.195	ng		99
30) Pyrene	19.790	202	8923	0.223	ng		100
32) Benzo(a)anthracene	21.546	228	6733	0.197	ng		98
33) Chrysene	21.600	228	6747	0.189	ng		97
34) Bis(2-ethylhexyl)phtha...	21.456	149	6138	0.234	ng	#	98
36) Indeno(1,2,3-cd)pyrene	26.592	276	9778	0.211	ng		100
37) Benzo(b)fluoranthene	23.262	252	6761	0.158	ng	#	89
38) Benzo(k)fluoranthene	23.312	252	6895	0.162	ng	#	90
39) Benzo(a)pyrene	23.908	252	5947	0.170	ng	#	82
40) Dibenzo(a,h)anthracene	26.610	278	7807	0.216	ng	#	91
41) Benzo(g,h,i)perylene	27.388	276	8286	0.217	ng		96

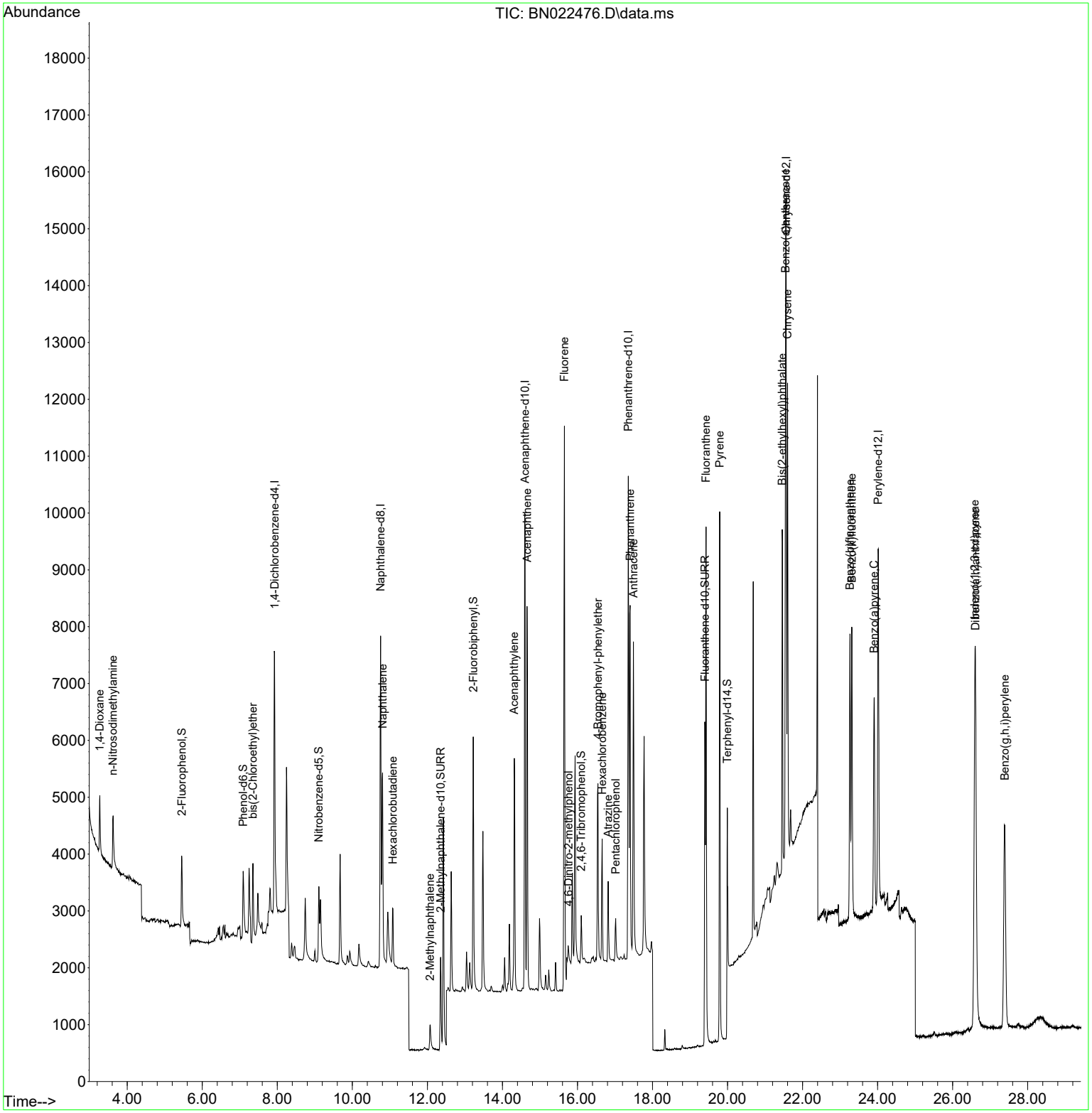
(#) = qualifier out of range (m) = manual integration (+) = signals summed

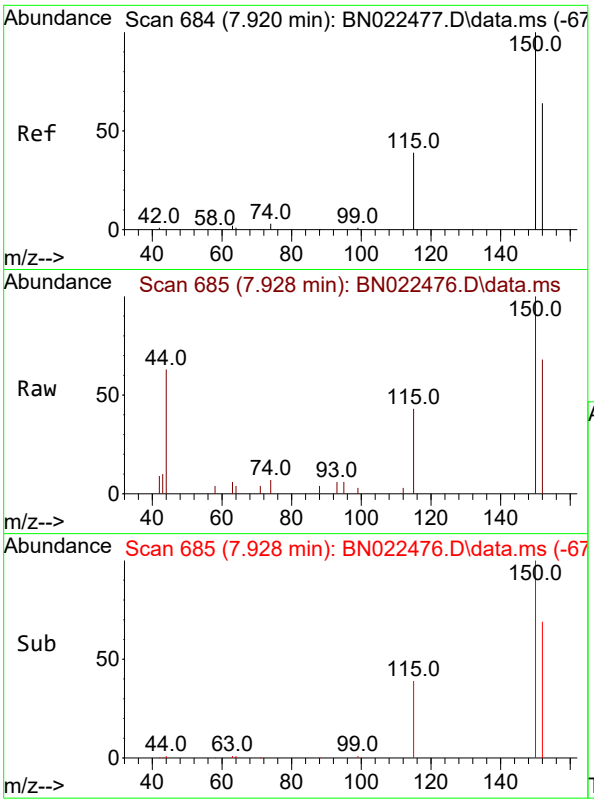
Quantitation Report (Not Reviewed)

Data Path : Z:\svoasrv\HPCHEM1\BNA_N\Data\BN110322\
Data File : BN022476.D
Acq On : 03 Nov 2022 13:26
Operator : CG/JU
Sample : SSTDICC0.2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Quant Time: Nov 04 03:10:30 2022
Quant Method : Z:\svoasrv\HPCHEM1\BNA_N\Methods\8270-SIM-BN110322.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION
QLast Update : Fri Nov 04 03:06:33 2022
Response via : Initial Calibration



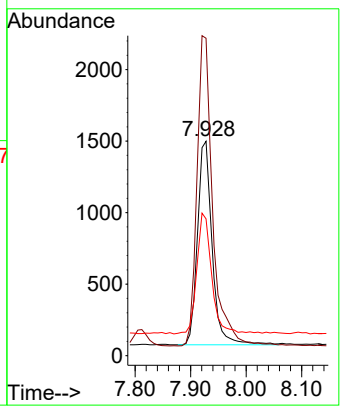


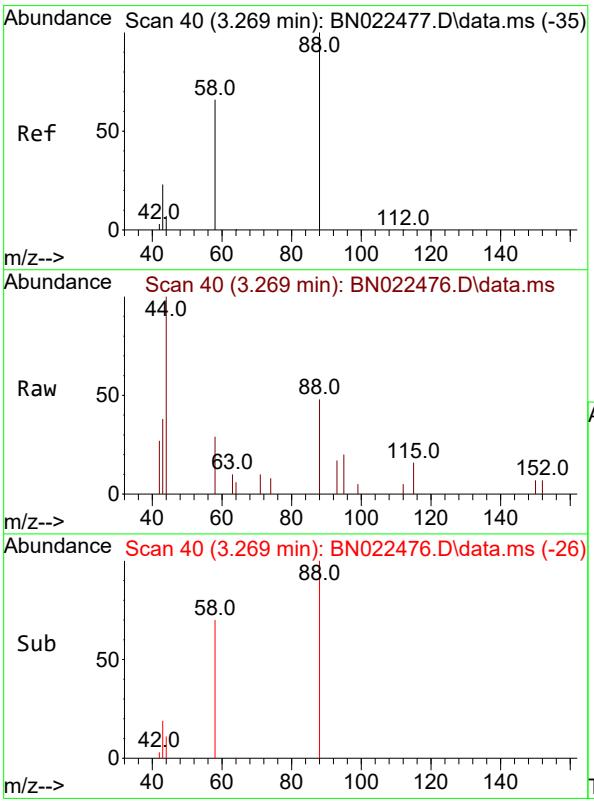
#1
1,4-Dichlorobenzene-d4
Concen: 0.400 ng
RT: 7.928 min Scan# 6
Delta R.T. 0.008 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:152 Resp: 2610

Ion	Ratio	Lower	Upper
152	100		
150	148.0	123.4	185.2
115	63.8	54.9	82.3

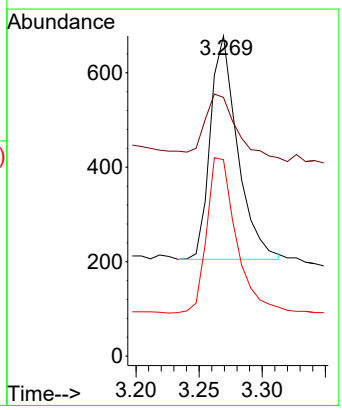


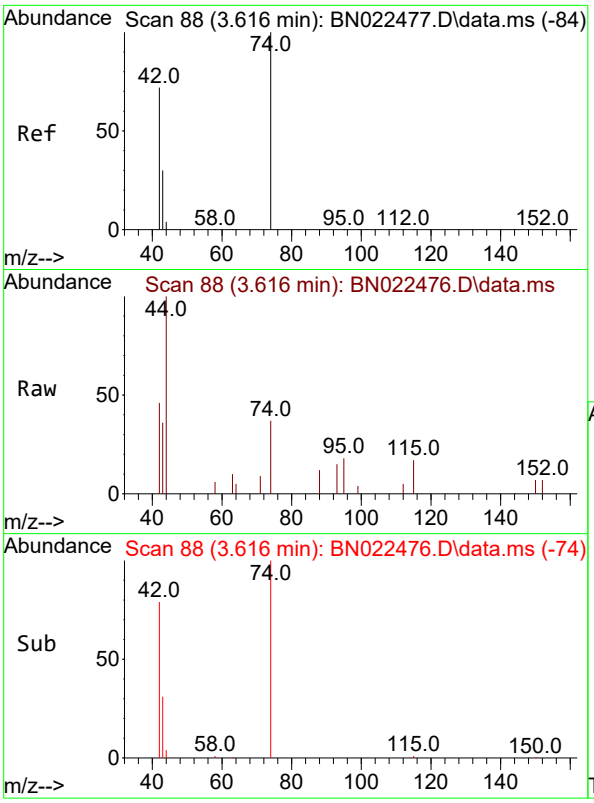


#2
1,4-Dioxane
Concen: 0.194 ng
RT: 3.269 min Scan# 40
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion: 88 Resp: 708

Ion	Ratio	Lower	Upper
88	100		
43	31.6	21.4	32.0
58	75.7	58.4	87.6



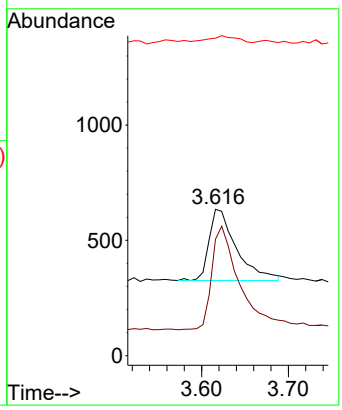


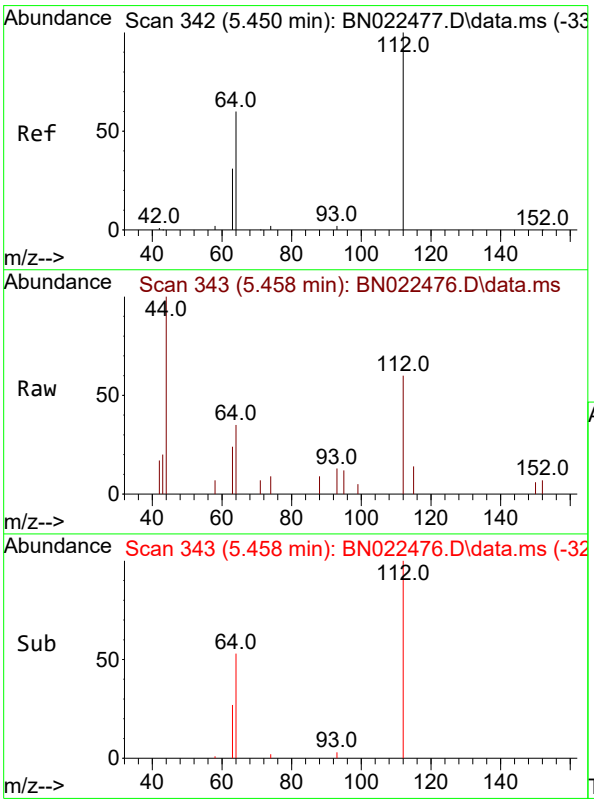
#3
n-Nitrosodimethylamine
Concen: 0.173 ng
RT: 3.616 min Scan# 8
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion: 42 Resp: 674

Ion	Ratio	Lower	Upper
42	100		
74	147.0	110.6	165.8
44	11.0	8.6	13.0

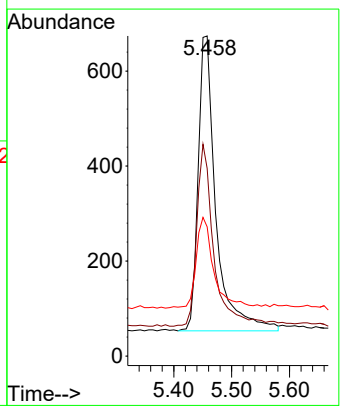


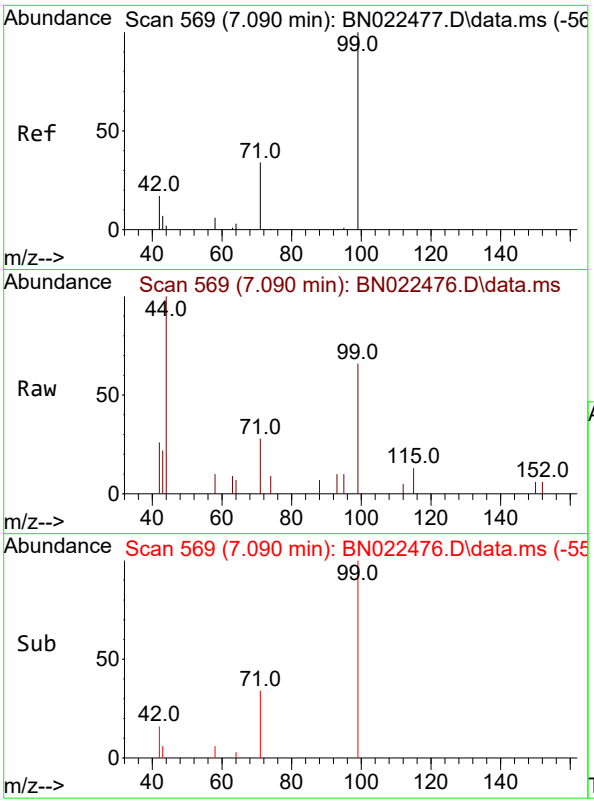


#4
2-Fluorophenol
Concen: 0.192 ng
RT: 5.458 min Scan# 343
Delta R.T. 0.007 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:112 Resp: 1334

Ion	Ratio	Lower	Upper
112	100		
64	59.5	47.1	70.7
63	30.2	24.6	36.8



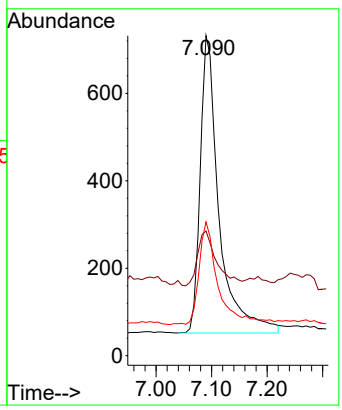


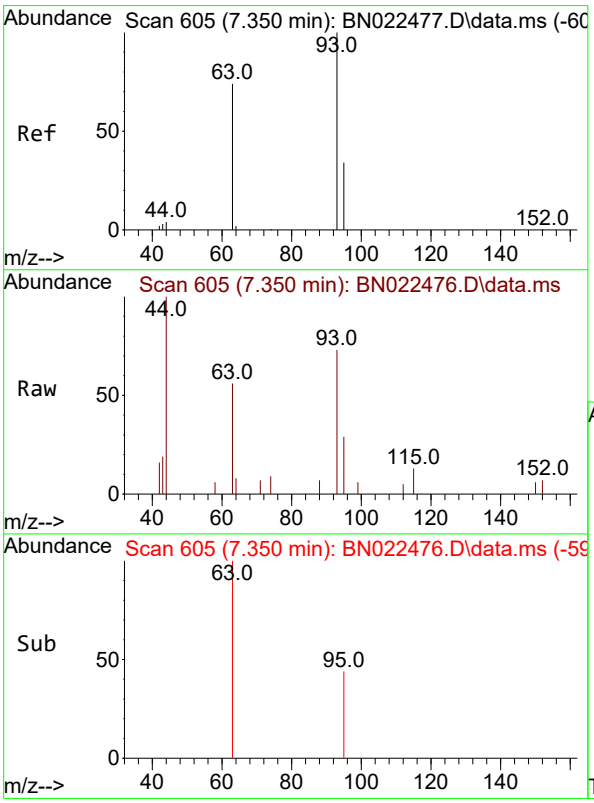
#5
Phenol-d6
Concen: 0.184 ng
RT: 7.090 min Scan# 5
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion: 99 Resp: 1601

Ion	Ratio	Lower	Upper
99	100		
42	18.6	14.7	22.1
71	35.0	27.0	40.6

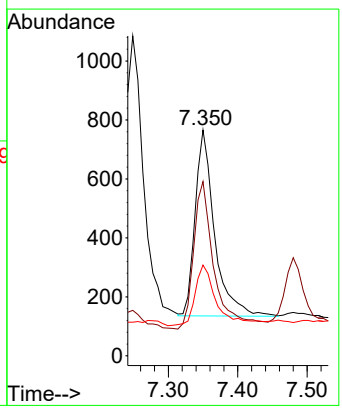


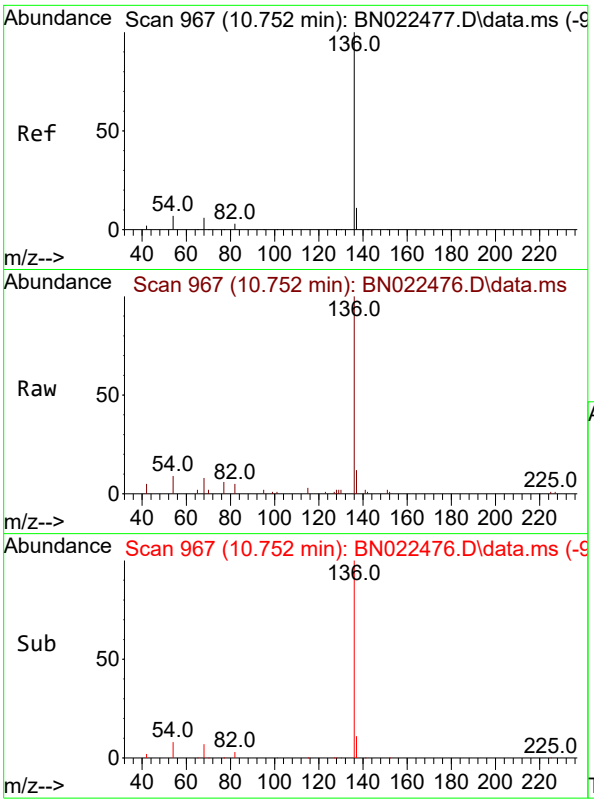


#6
bis(2-Chloroethyl)ether
Concen: 0.147 ng
RT: 7.350 min Scan# 605
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion: 93 Resp: 1226

Ion	Ratio	Lower	Upper
93	100		
63	83.8	61.2	91.8
95	36.3	25.7	38.5



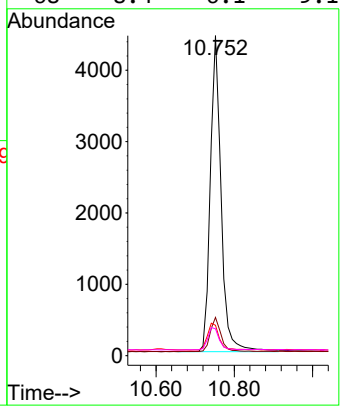


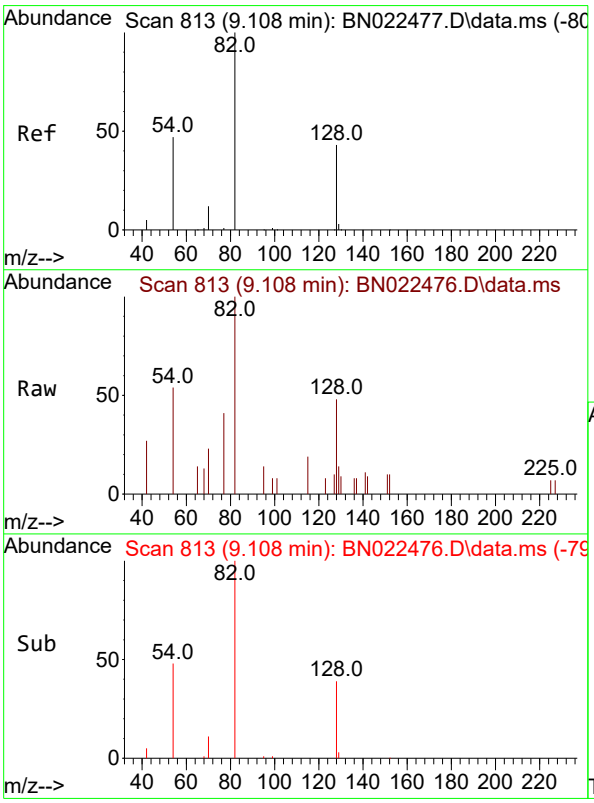
#7
Naphthalene-d8
Concen: 0.400 ng
RT: 10.752 min Scan# 9
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:136 Resp: 8488

Ion	Ratio	Lower	Upper
136	100		
137	12.0	9.5	14.3
54	9.5	7.1	10.7
68	8.4	6.1	9.1

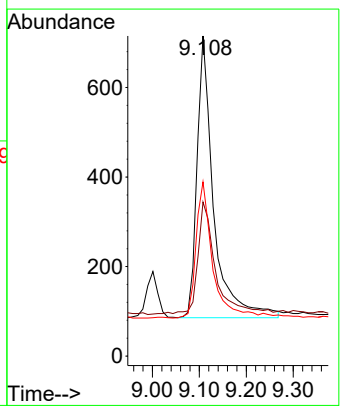


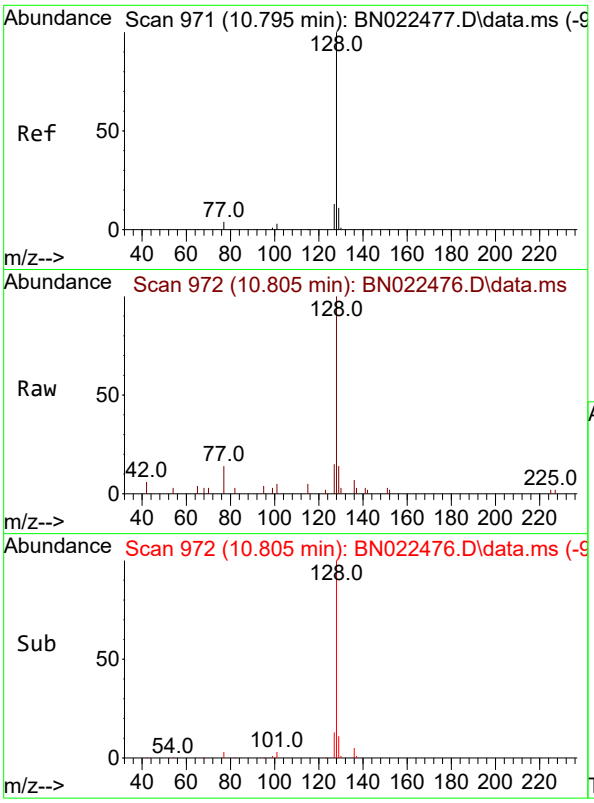


#8
Nitrobenzene-d5
Concen: 0.210 ng
RT: 9.108 min Scan# 813
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion: 82 Resp: 1544

Ion	Ratio	Lower	Upper
82	100		
128	48.1	37.3	55.9
54	54.4	40.0	60.0



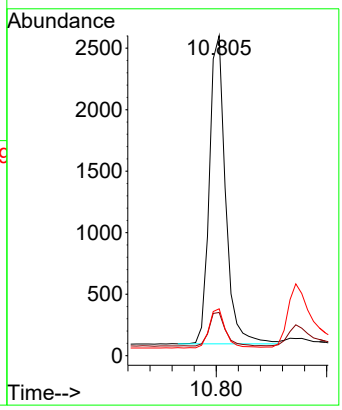


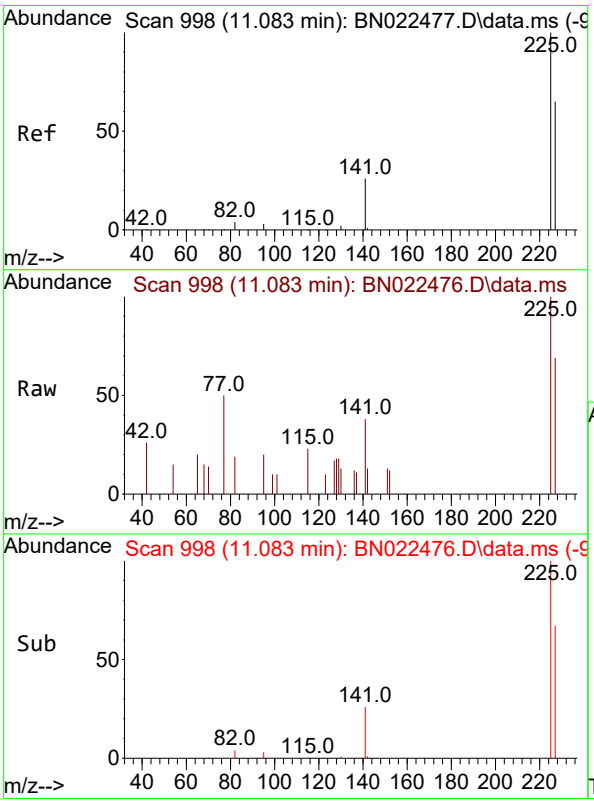
#9
Naphthalene
Concen: 0.201 ng
RT: 10.805 min Scan# 9
Delta R.T. 0.011 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:128 Resp: 5100

Ion	Ratio	Lower	Upper
128	100		
129	13.5	9.8	14.6
127	14.6	11.4	17.2

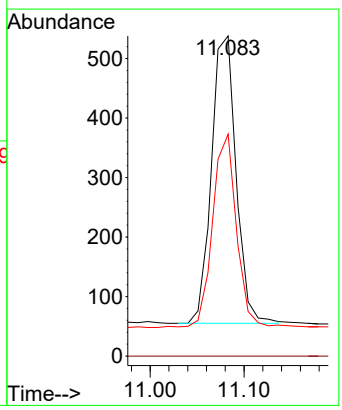


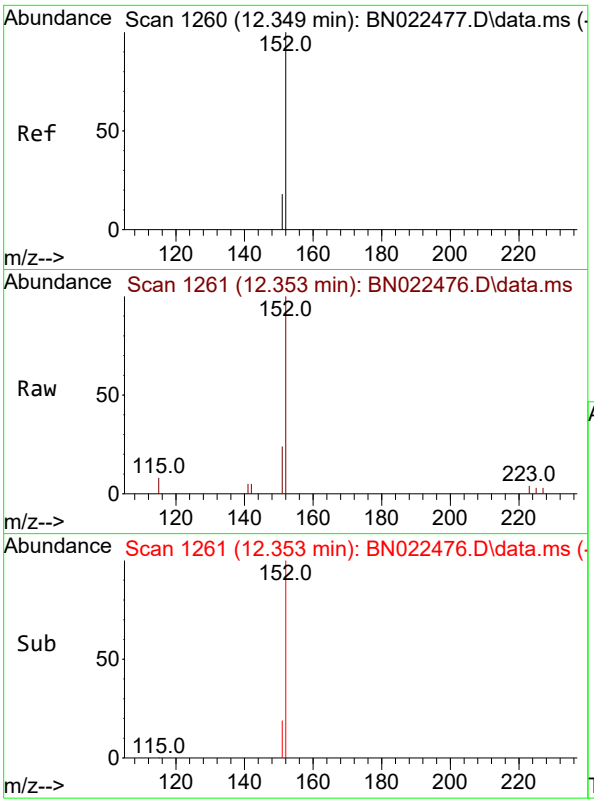


#10
Hexachlorobutadiene
Concen: 0.205 ng
RT: 11.083 min Scan# 998
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:225 Resp: 881

Ion	Ratio	Lower	Upper
225	100		
223	0.0	0.0	0.0
227	64.8	51.0	76.4



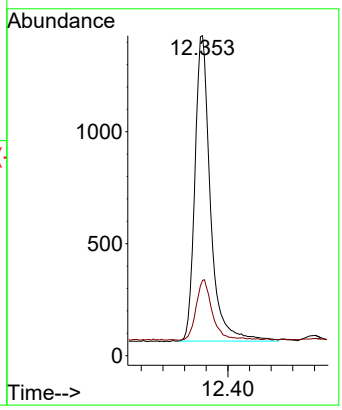


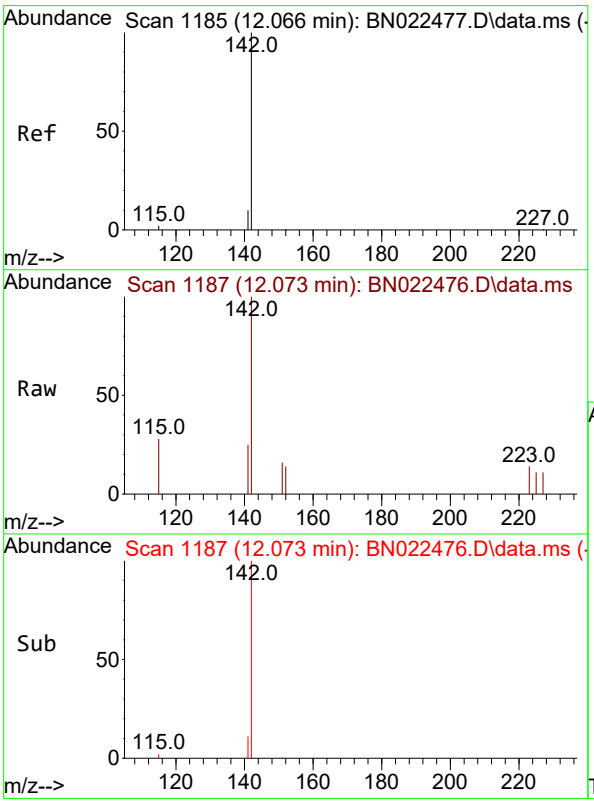
#11
2-Methylnaphthalene-d10
Concen: 0.204 ng
RT: 12.353 min Scan# 1
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:152 Resp: 2720

Ion	Ratio	Lower	Upper
152	100		
151	20.4	16.6	25.0

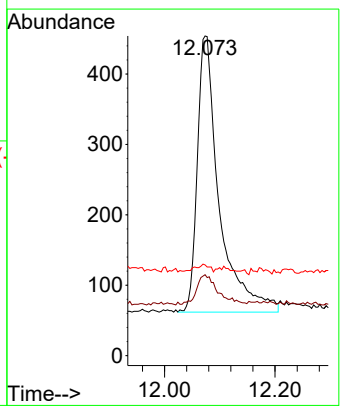


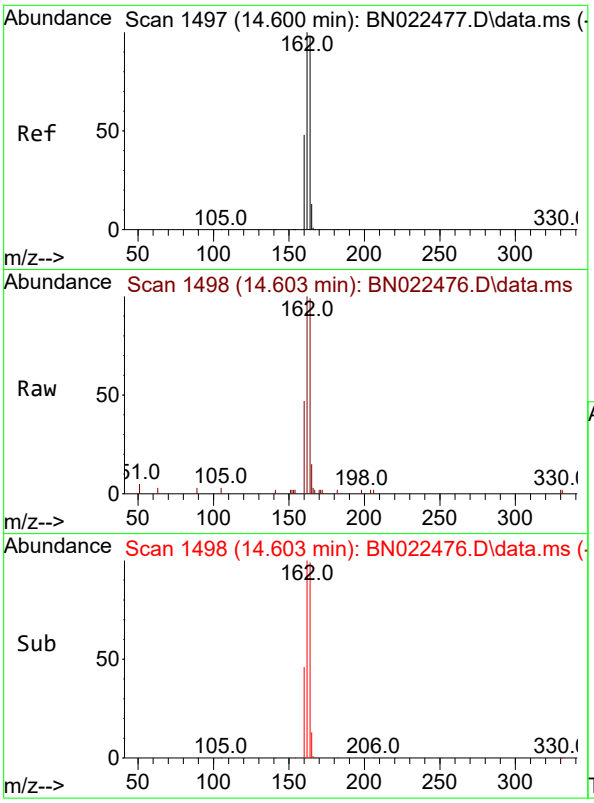


#12
2-Methylnaphthalene
Concen: 0.214 ng
RT: 12.073 min Scan# 1187
Delta R.T. 0.008 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:142 Resp: 1081

Ion	Ratio	Lower	Upper
142	100		
141	25.3	13.7	20.5#
115	28.4	11.4	17.2#



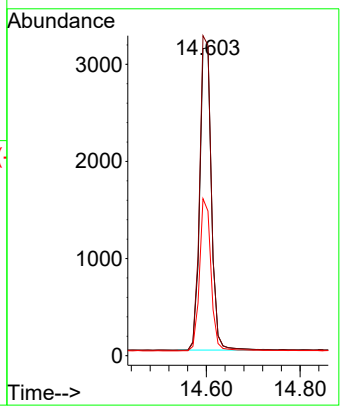


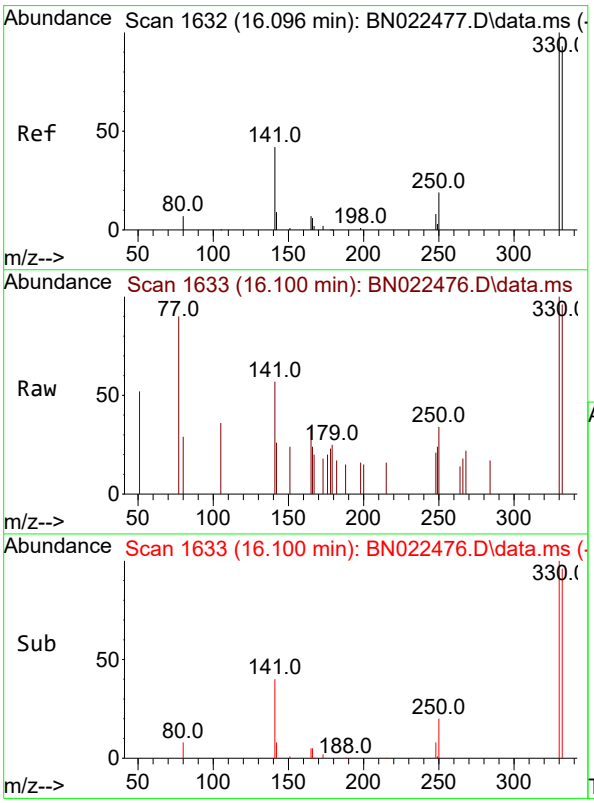
#13
Acenaphthene-d10
Concen: 0.400 ng
RT: 14.603 min Scan# 14
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:164 Resp: 5403

Ion	Ratio	Lower	Upper
164	100		
162	100.8	82.0	123.0
160	46.9	39.4	59.2

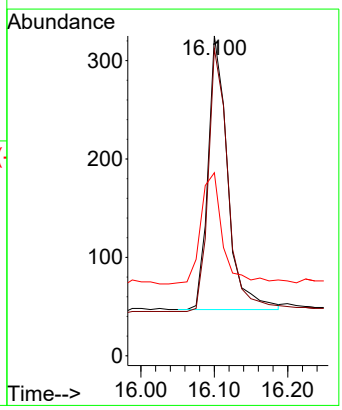


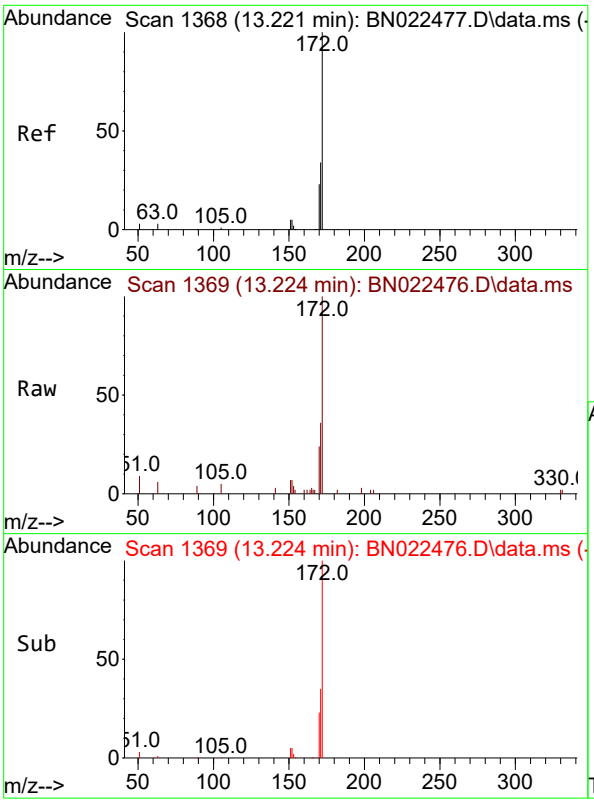


#14
2,4,6-Tribromophenol
Concen: 0.222 ng
RT: 16.100 min Scan# 1633
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:330 Resp: 515

Ion	Ratio	Lower	Upper
330	100		
332	98.3	77.8	116.8
141	46.0	35.0	52.6



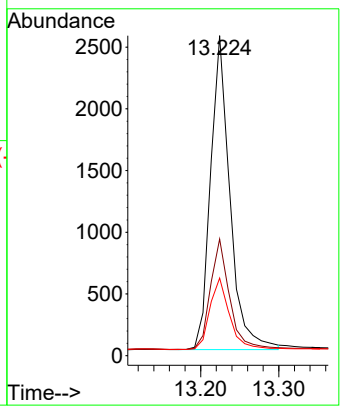


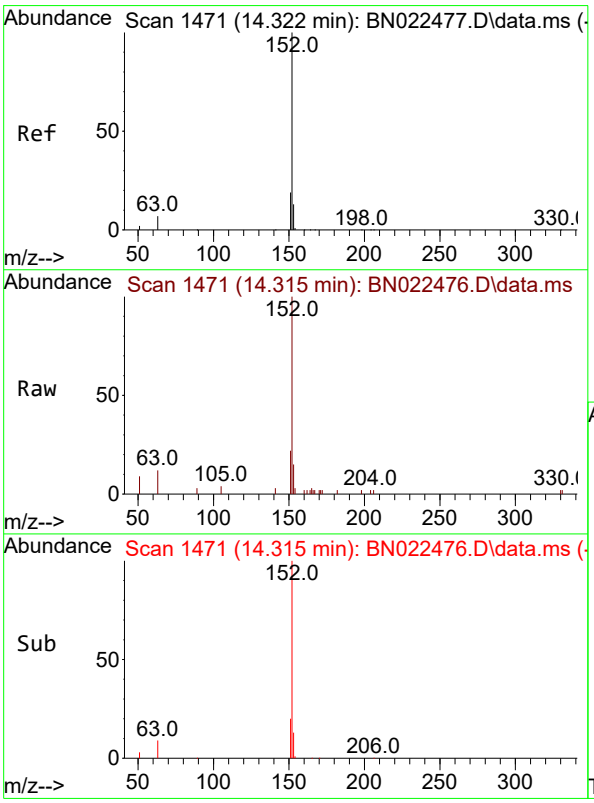
#15
2-Fluorobiphenyl
Concen: 0.190 ng
RT: 13.224 min Scan# 1
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:172 Resp: 4383

Ion	Ratio	Lower	Upper
172	100		
171	36.4	27.9	41.9
170	24.3	19.2	28.8

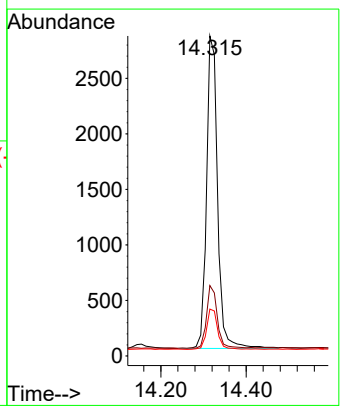


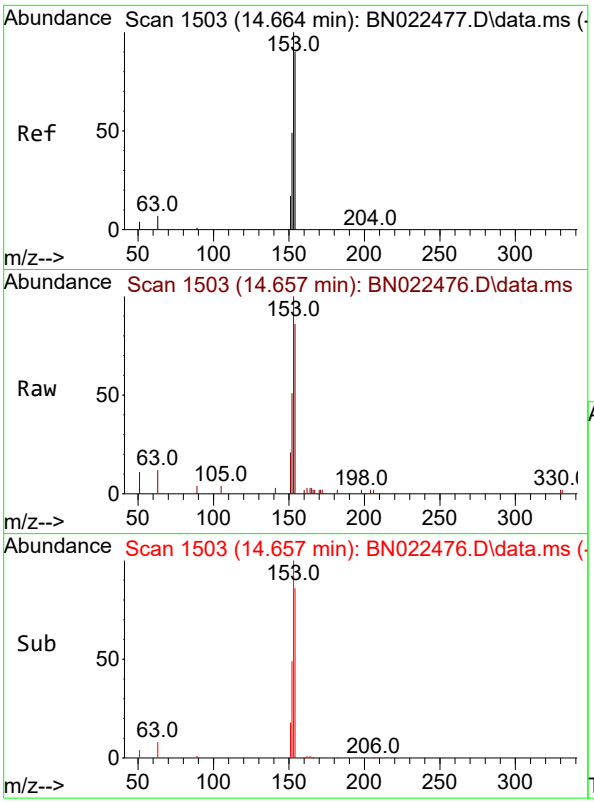


#16
Acenaphthylene
Concen: 0.193 ng
RT: 14.315 min Scan# 1471
Delta R.T. -0.007 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:152 Resp: 5048

Ion	Ratio	Lower	Upper
152	100		
151	19.6	15.8	23.6
153	13.0	10.3	15.5



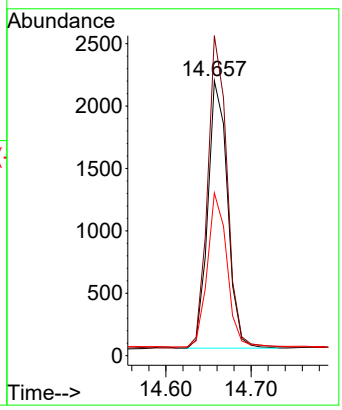


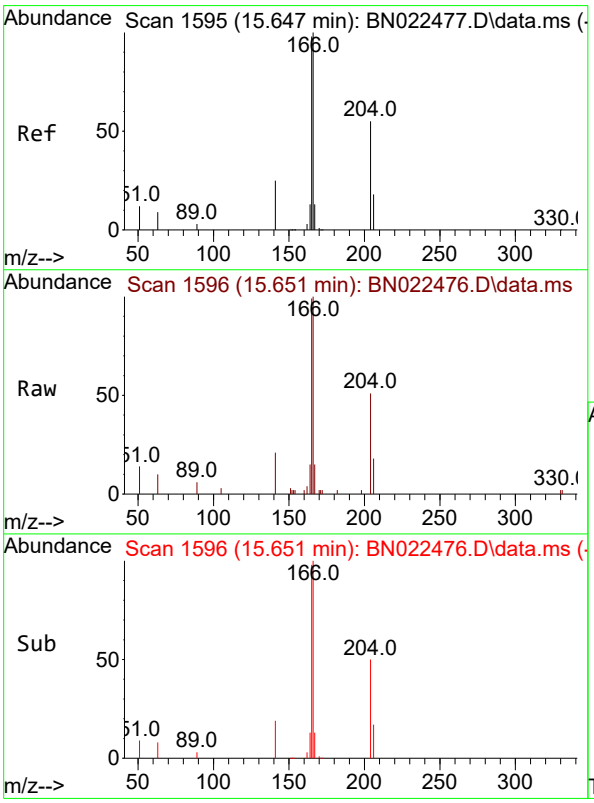
#17
Acenaphthene
Concen: 0.192 ng
RT: 14.657 min Scan# 1
Delta R.T. -0.007 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:154 Resp: 3435

Ion	Ratio	Lower	Upper
154	100		
153	116.2	91.8	137.8
152	57.0	45.7	68.5

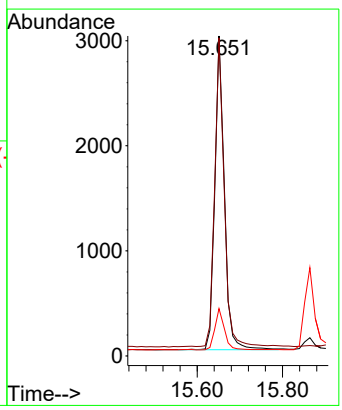


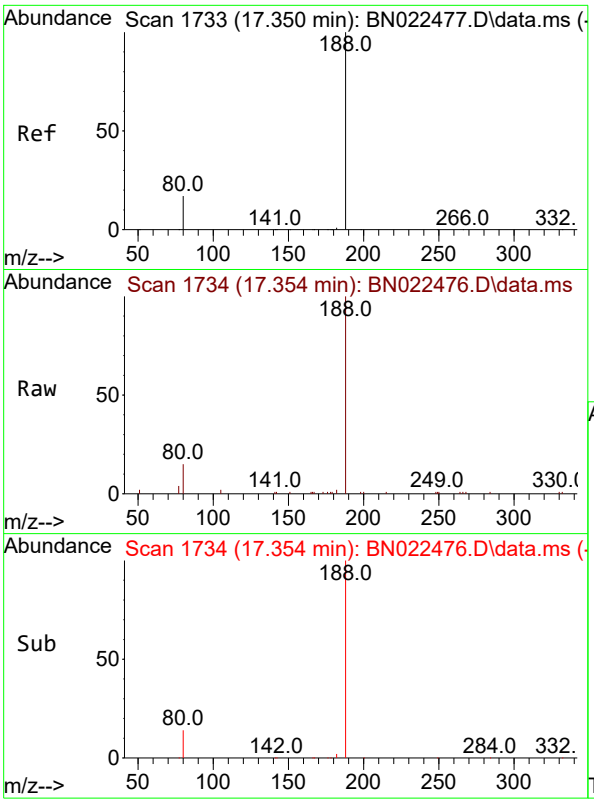


#18
Fluorene
Concen: 0.194 ng
RT: 15.651 min Scan# 1596
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:166 Resp: 4832

Ion	Ratio	Lower	Upper
166	100		
165	99.3	78.7	118.1
167	13.2	10.2	15.2



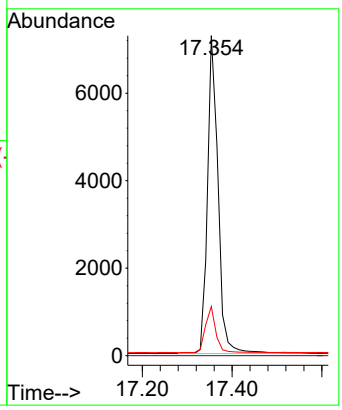


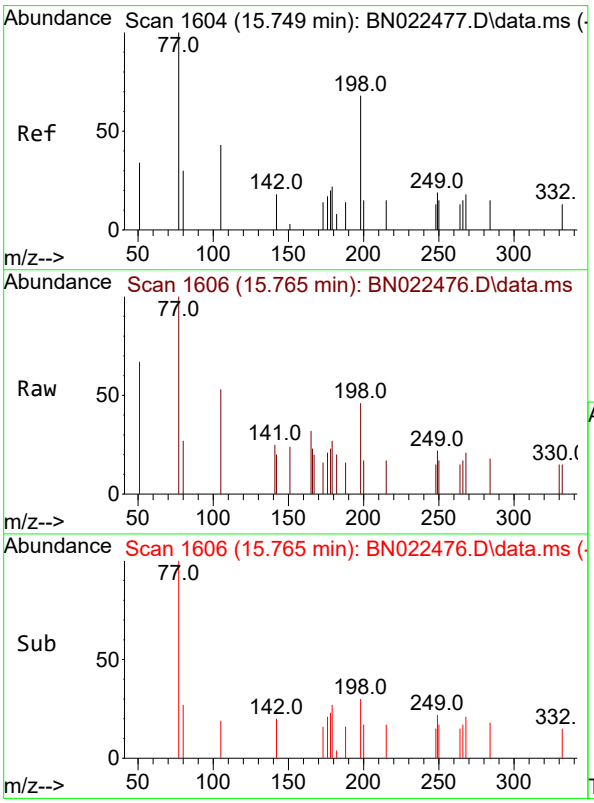
#19
Phenanthrene-d10
Concen: 0.400 ng
RT: 17.354 min Scan# 1
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:188 Resp: 11840

Ion	Ratio	Lower	Upper
188	100		
94	0.0	0.0	0.0
80	15.3	14.6	21.8

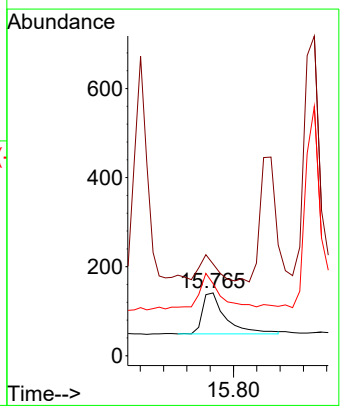


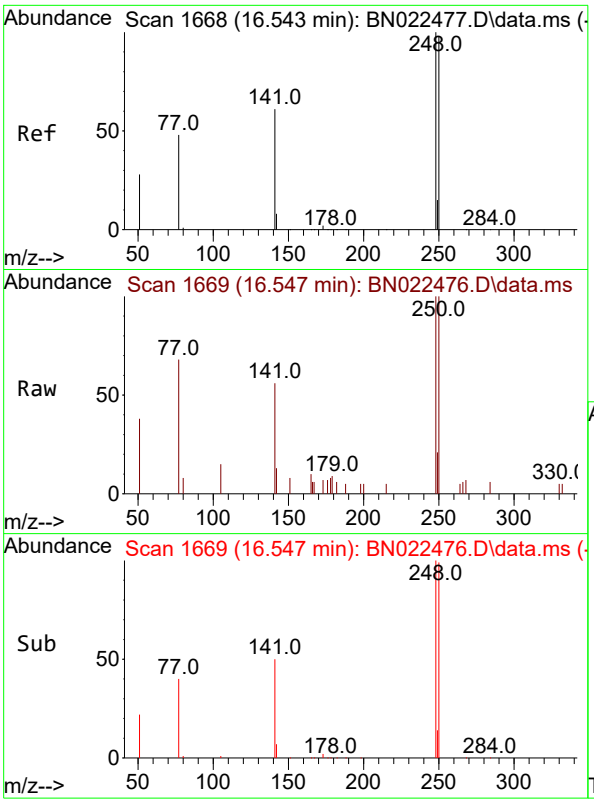


#20
4,6-Dinitro-2-methylphenol
Concen: 0.134 ng
RT: 15.765 min Scan# 1606
Delta R.T. 0.016 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:198 Resp: 254

Ion	Ratio	Lower	Upper
198	100		
51	146.1	83.8	125.8#
105	114.9	71.4	107.2#



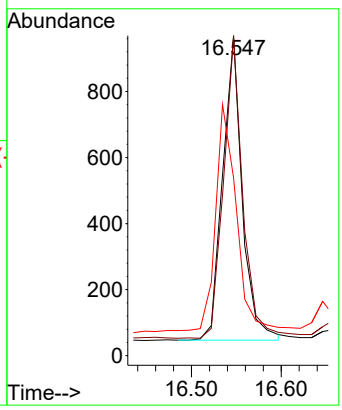


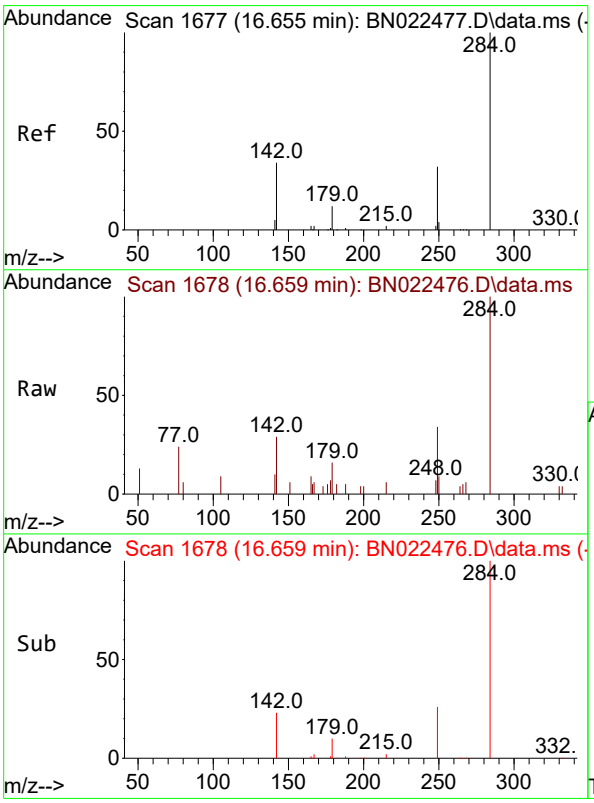
#21
4-Bromophenyl-phenylether
Concen: 0.195 ng
RT: 16.547 min Scan# 1
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:248 Resp: 1391

Ion	Ratio	Lower	Upper
248	100		
250	99.8	78.6	117.8
141	55.6	50.8	76.2

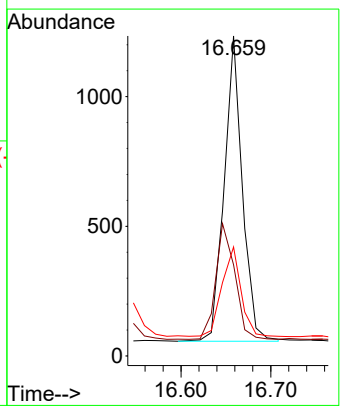


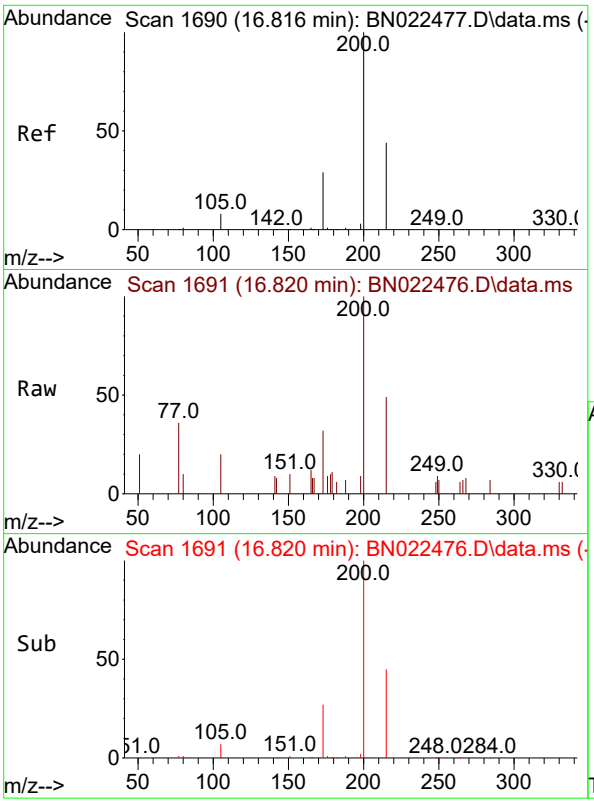


#22
Hexachlorobenzene
Concen: 0.202 ng
RT: 16.659 min Scan# 1678
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:284 Resp: 1657

Ion	Ratio	Lower	Upper
284	100		
142	39.6	32.4	48.6
249	30.5	24.8	37.2



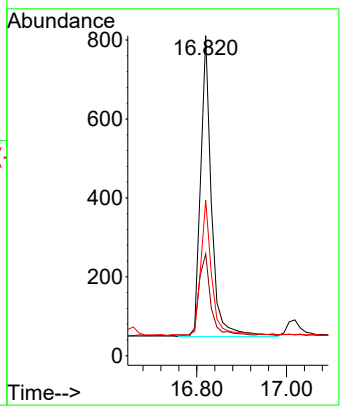


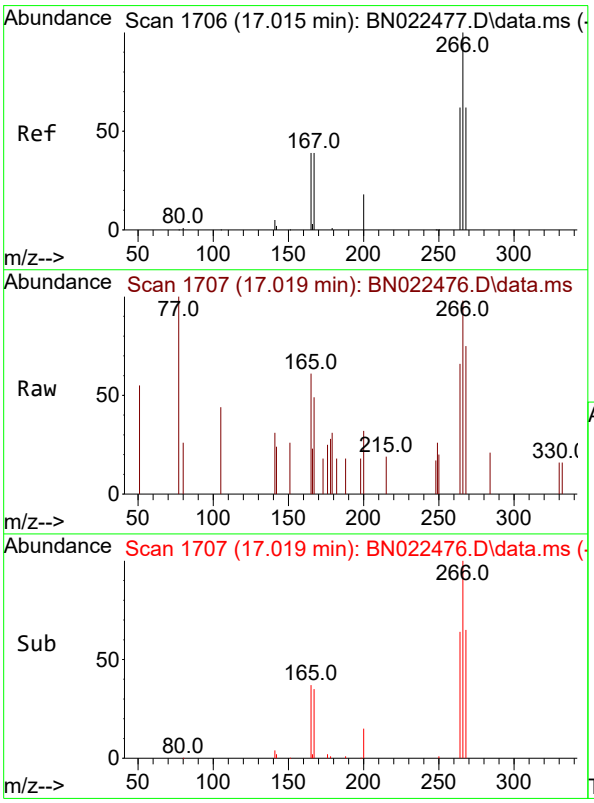
#23
Atrazine
Concen: 0.213 ng
RT: 16.820 min Scan# 1
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:200 Resp: 1274

Ion	Ratio	Lower	Upper
200	100		
173	31.8	25.2	37.8
215	48.6	36.6	55.0

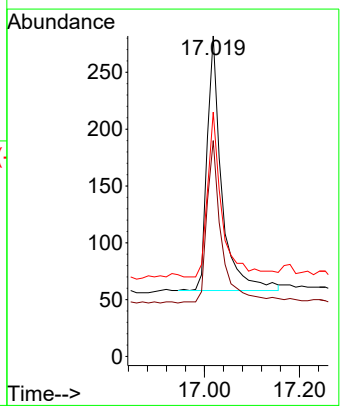


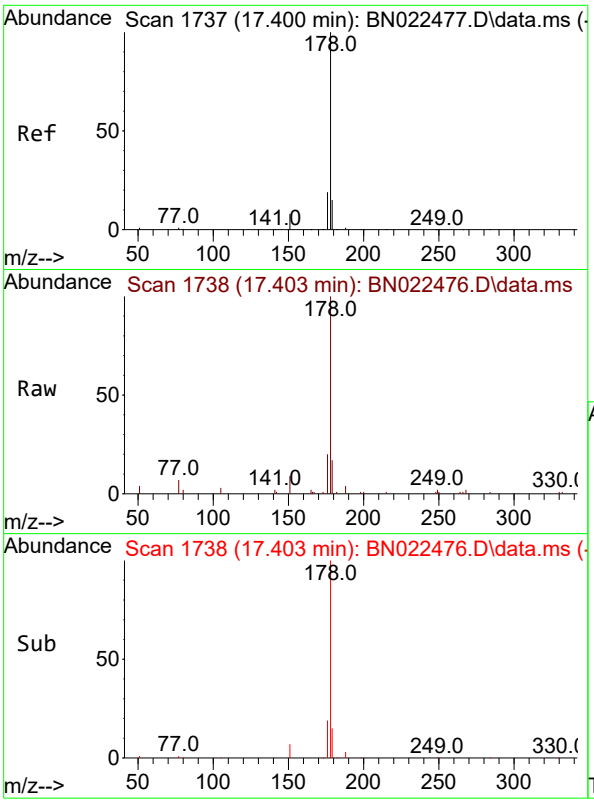


#24
Pentachlorophenol
Concen: 0.142 ng
RT: 17.019 min Scan# 1707
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:266 Resp: 480

Ion	Ratio	Lower	Upper
266	100		
264	65.8	50.6	75.8
268	62.9	54.1	81.1



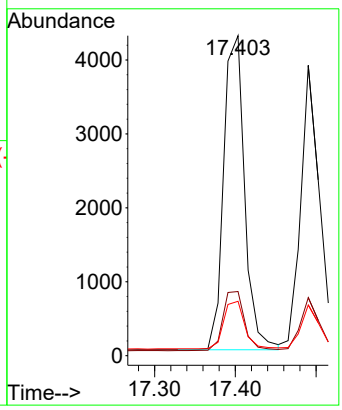


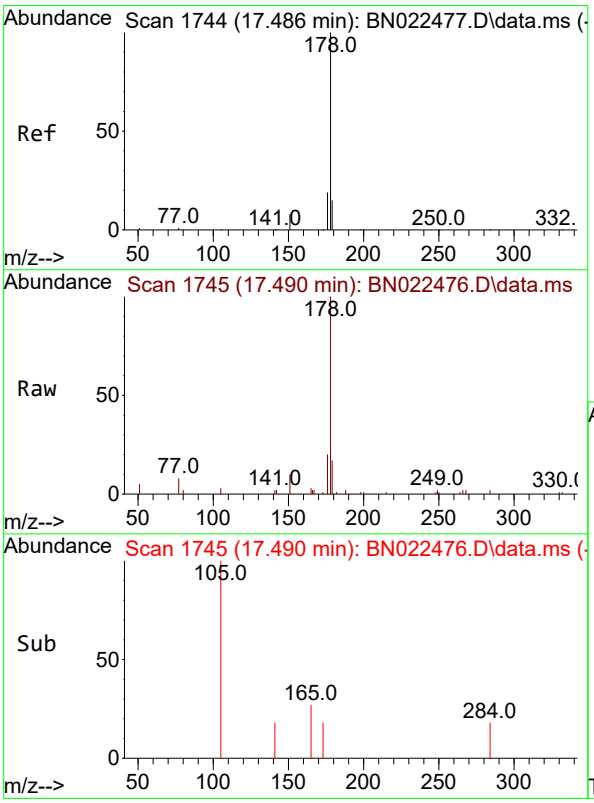
#25
Phenanthrene
Concen: 0.189 ng
RT: 17.403 min Scan# 1
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:178 Resp: 7673

Ion	Ratio	Lower	Upper
178	100		
176	19.5	15.4	23.2
179	15.7	12.2	18.4

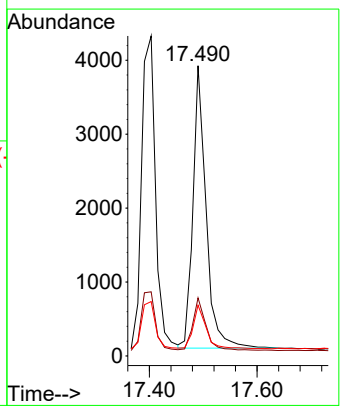


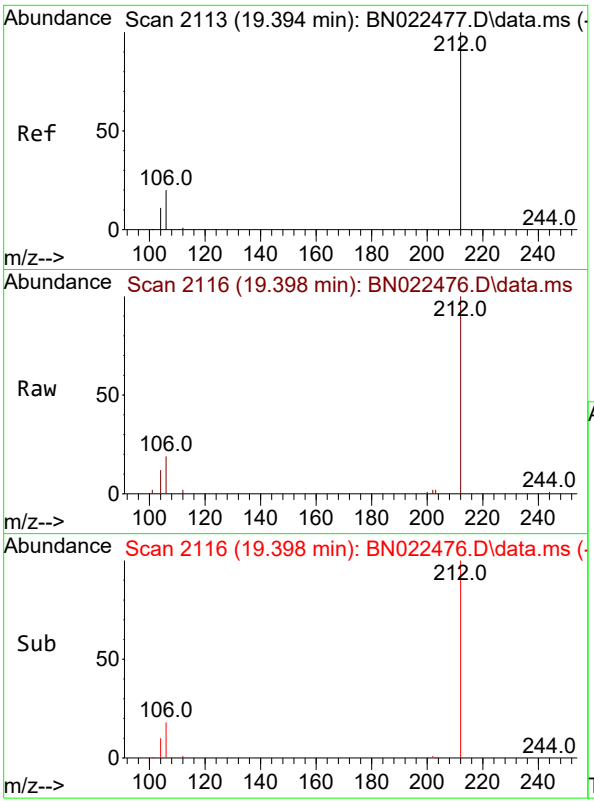


#26
Anthracene
Concen: 0.190 ng
RT: 17.490 min Scan# 1745
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:178 Resp: 6505

Ion	Ratio	Lower	Upper
178	100		
176	19.0	14.8	22.2
179	15.2	12.2	18.2



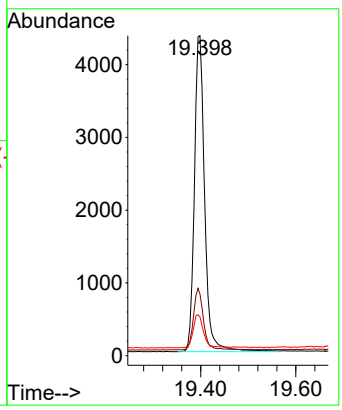


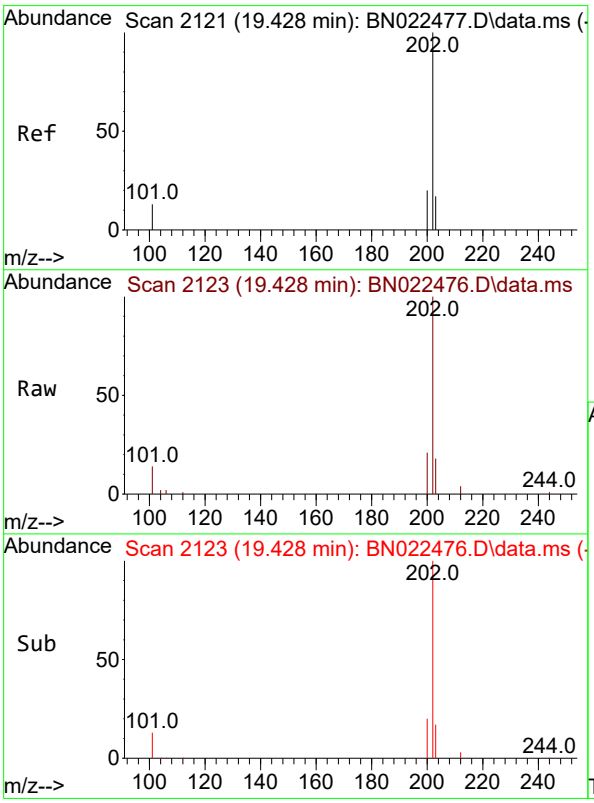
#27
Fluoranthene-d10
Concen: 0.199 ng
RT: 19.398 min Scan# 21
Delta R.T. 0.004 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:212 Resp: 6518

Ion	Ratio	Lower	Upper
212	100		
106	19.0	15.2	22.8
104	10.7	8.6	12.8

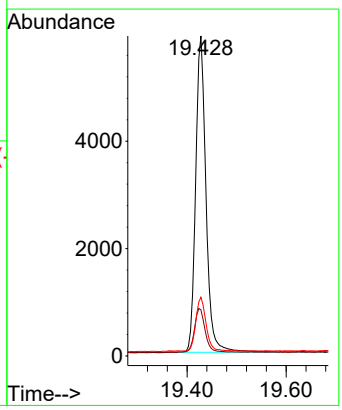


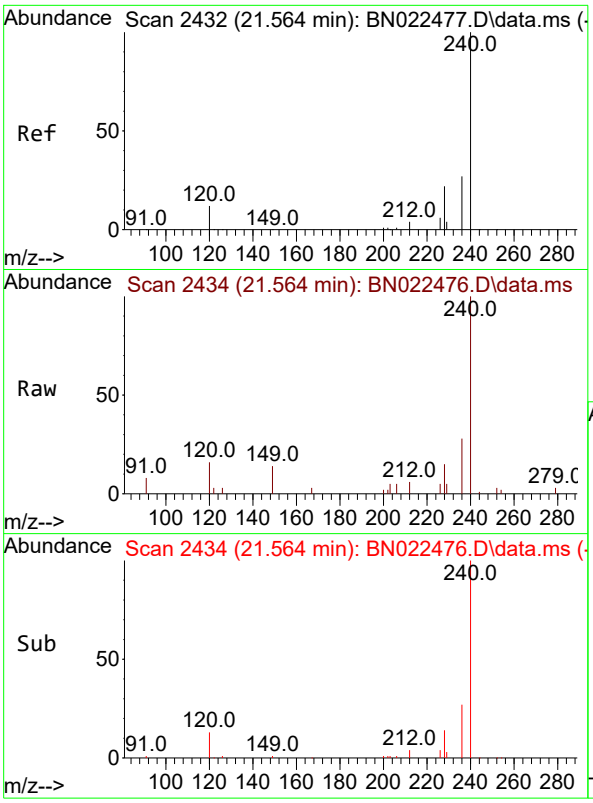


#28
Fluoranthene
Concen: 0.195 ng
RT: 19.428 min Scan# 2123
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:202 Resp: 8577

Ion	Ratio	Lower	Upper
202	100		
101	14.1	11.2	16.8
203	16.6	13.6	20.4



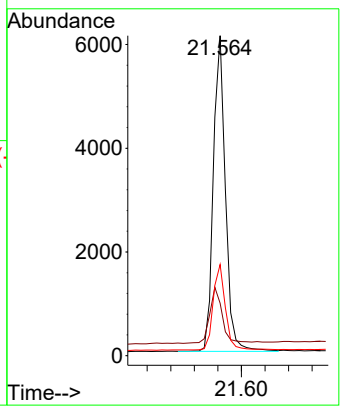


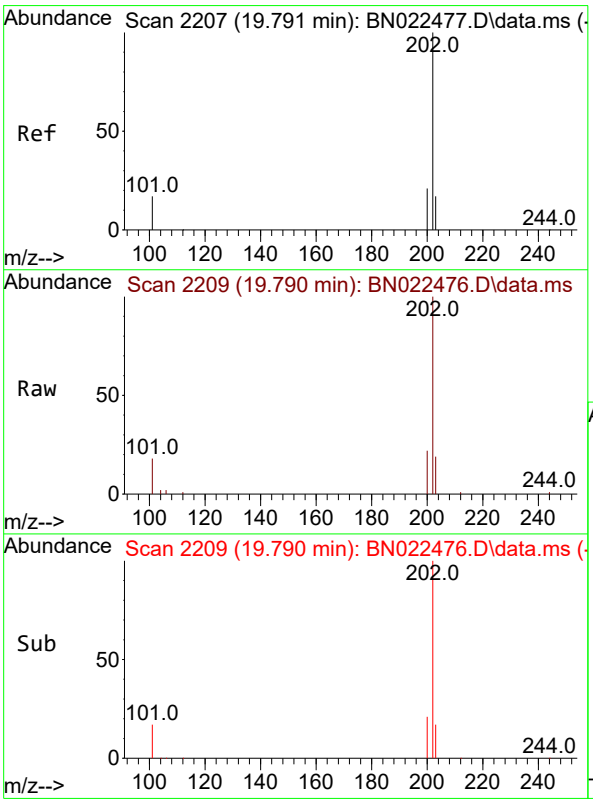
#29
Chrysene-d12
Concen: 0.400 ng
RT: 21.564 min Scan# 24
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:240 Resp: 8682

Ion	Ratio	Lower	Upper
240	100		
120	16.4	12.4	18.6
236	28.5	22.7	34.1

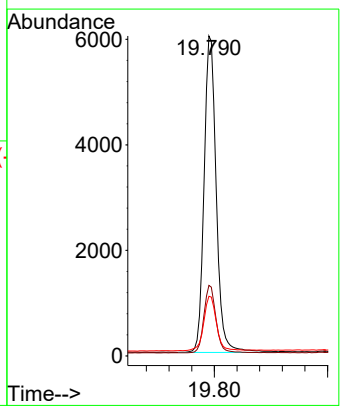


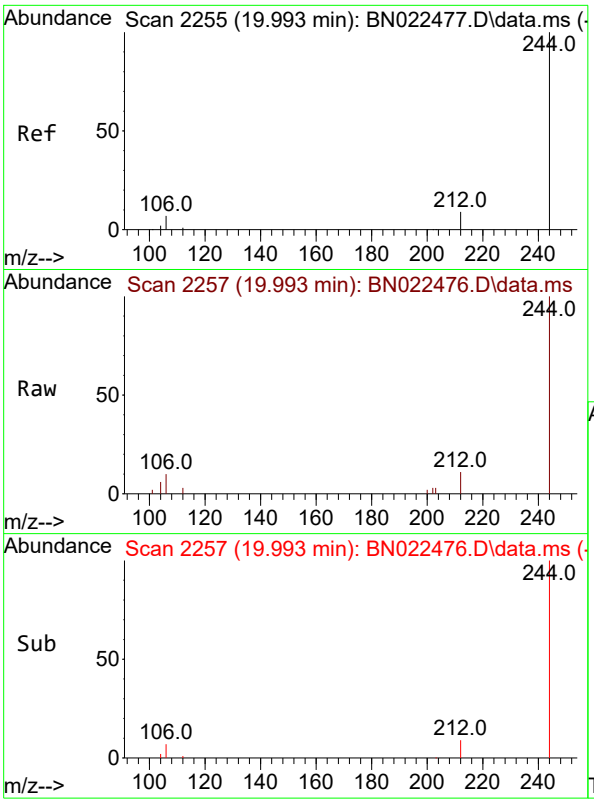


#30
Pyrene
Concen: 0.223 ng
RT: 19.790 min Scan# 2209
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:202 Resp: 8923

Ion	Ratio	Lower	Upper
202	100		
200	21.0	17.0	25.4
203	18.0	14.3	21.5



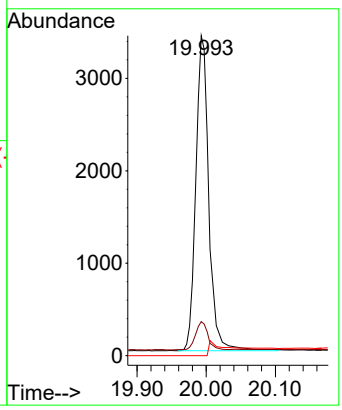


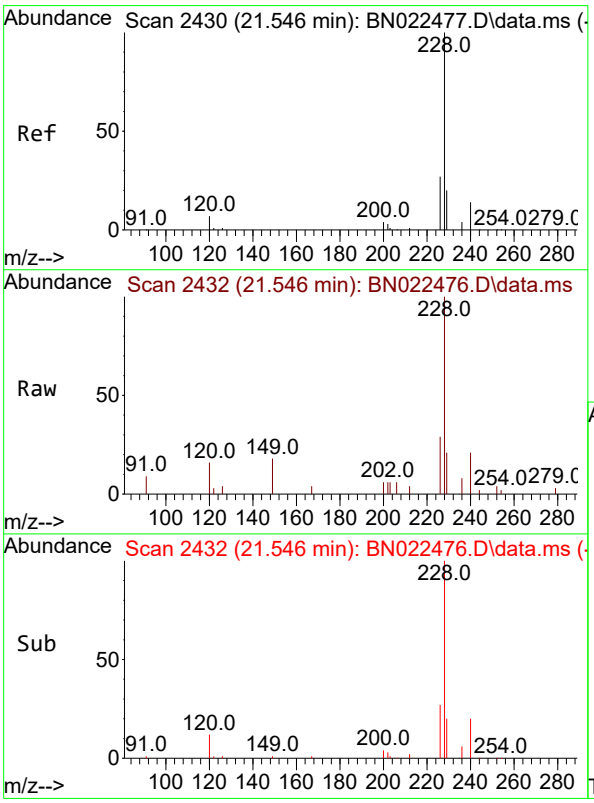
#31
Terphenyl-d14
Concen: 0.284 ng
RT: 19.993 min Scan# 2
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:244 Resp: 6419

Ion	Ratio	Lower	Upper
244	100		
212	10.7	7.8	11.8
122	0.0	0.0	0.0

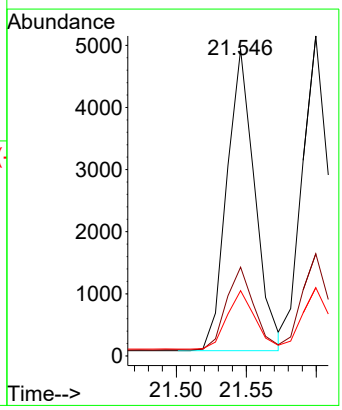


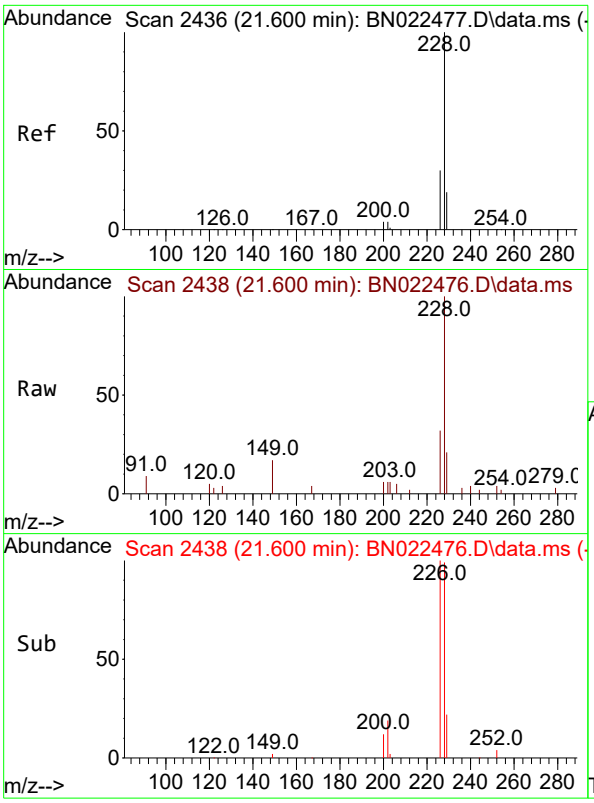


#32
Benzo(a)anthracene
Concen: 0.197 ng
RT: 21.546 min Scan# 2432
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:228 Resp: 6733

Ion	Ratio	Lower	Upper
228	100		
226	28.9	22.1	33.1
229	21.3	16.4	24.6



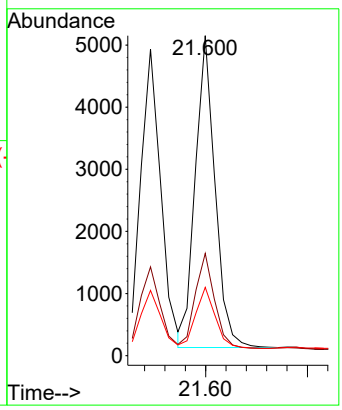


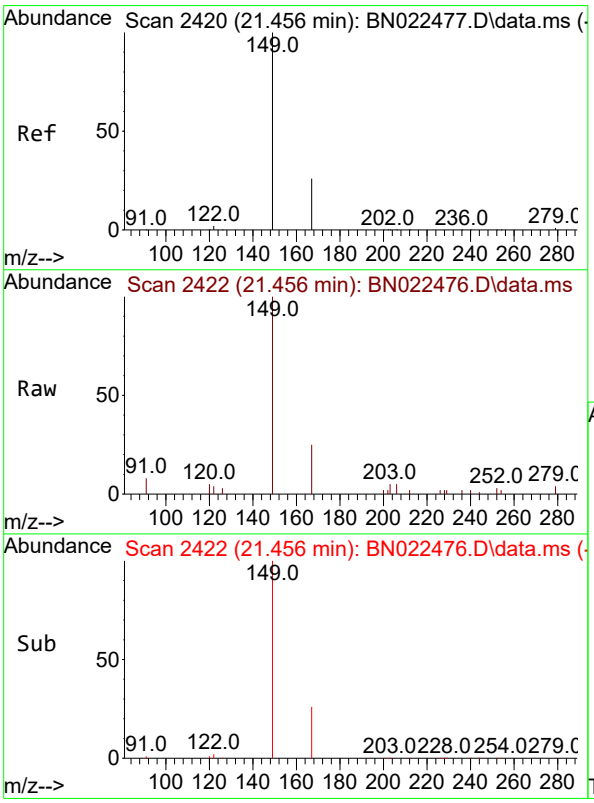
#33
Chrysene
Concen: 0.189 ng
RT: 21.600 min Scan# 24
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:228 Resp: 6747

Ion	Ratio	Lower	Upper
228	100		
226	32.0	24.1	36.1
229	21.3	15.9	23.9

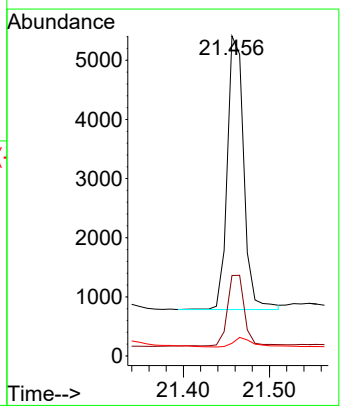


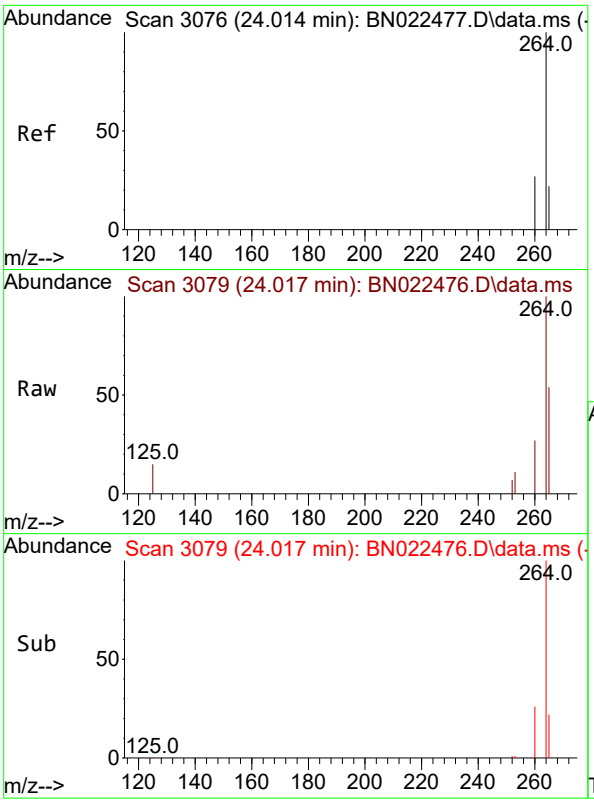


#34
Bis(2-ethylhexyl)phthalate
Concen: 0.234 ng
RT: 21.456 min Scan# 2422
Delta R.T. -0.000 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:149 Resp: 6138

Ion	Ratio	Lower	Upper
149	100		
167	27.4	21.3	31.9
279	4.3	2.7	4.1#



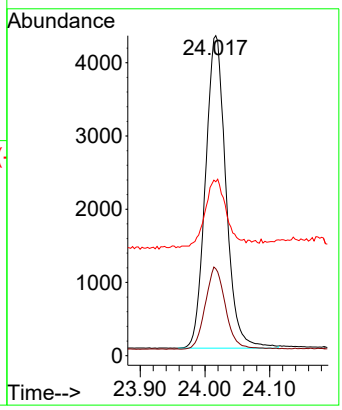


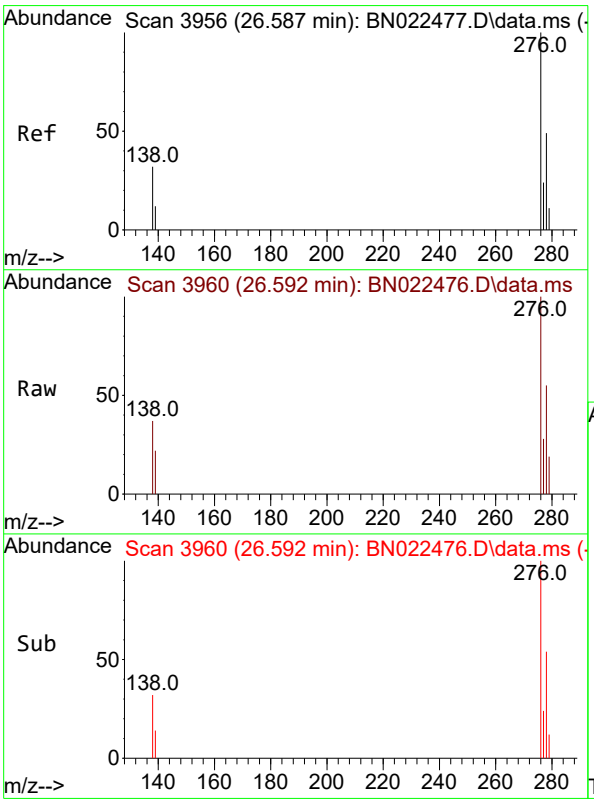
#35
Perylene-d12
Concen: 0.400 ng
RT: 24.017 min Scan# 3
Delta R.T. 0.003 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:264 Resp: 9376

Ion	Ratio	Lower	Upper
264	100		
260	27.1	22.4	33.6
265	54.4	44.4	66.6

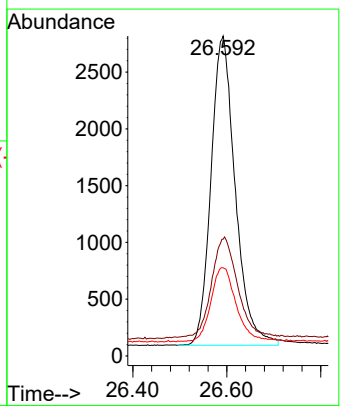


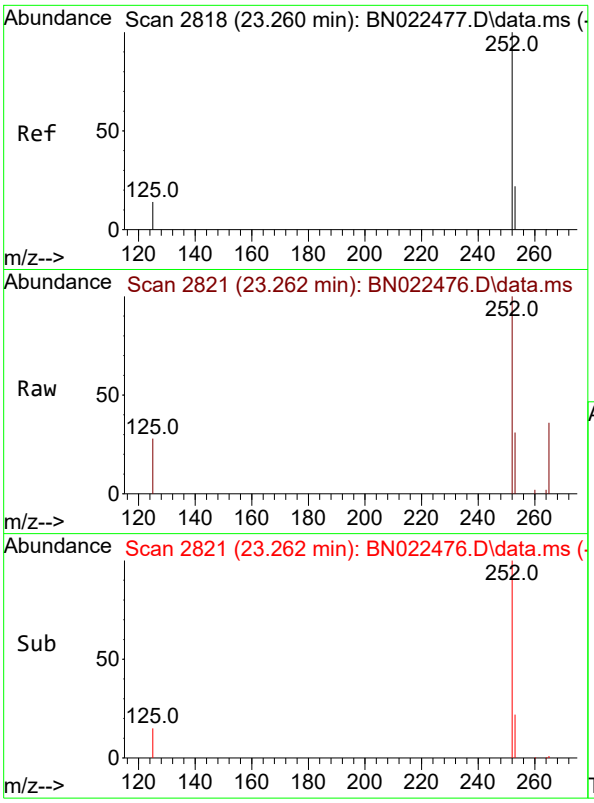


#36
Indeno(1,2,3-cd)pyrene
Concen: 0.211 ng
RT: 26.592 min Scan# 3960
Delta R.T. 0.006 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:276 Resp: 9778

Ion	Ratio	Lower	Upper
276	100		
138	34.7	27.5	41.3
277	24.6	19.8	29.6



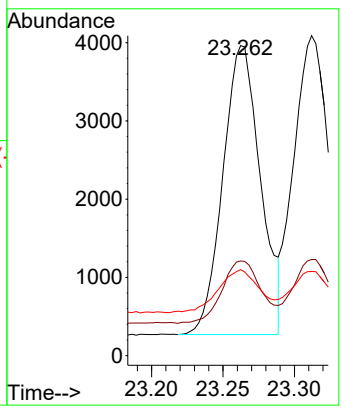


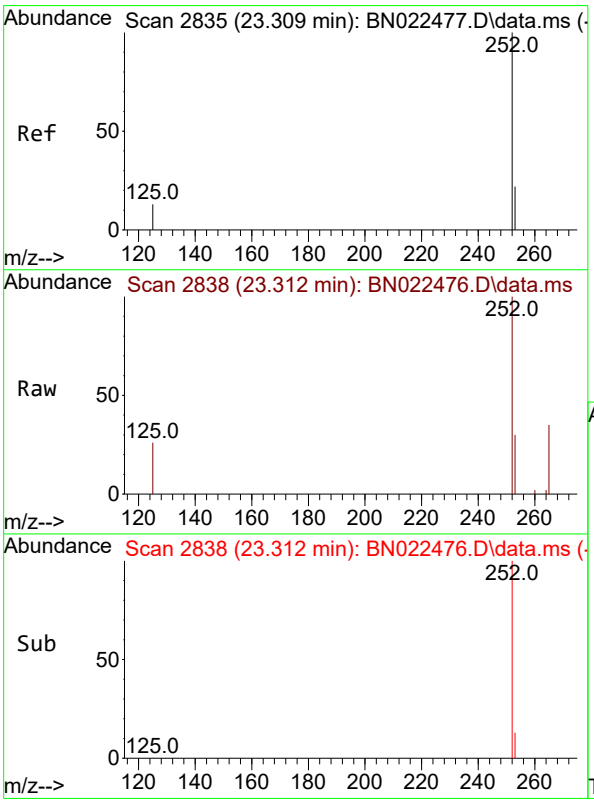
#37
Benzo(b)fluoranthene
Concen: 0.158 ng
RT: 23.262 min Scan# 2
Delta R.T. 0.003 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:252 Resp: 6761

Ion	Ratio	Lower	Upper
252	100		
253	30.6	21.1	31.7
125	27.7	16.8	25.2#

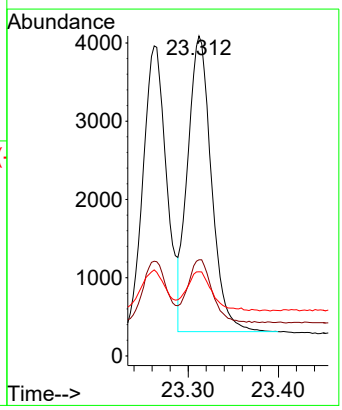


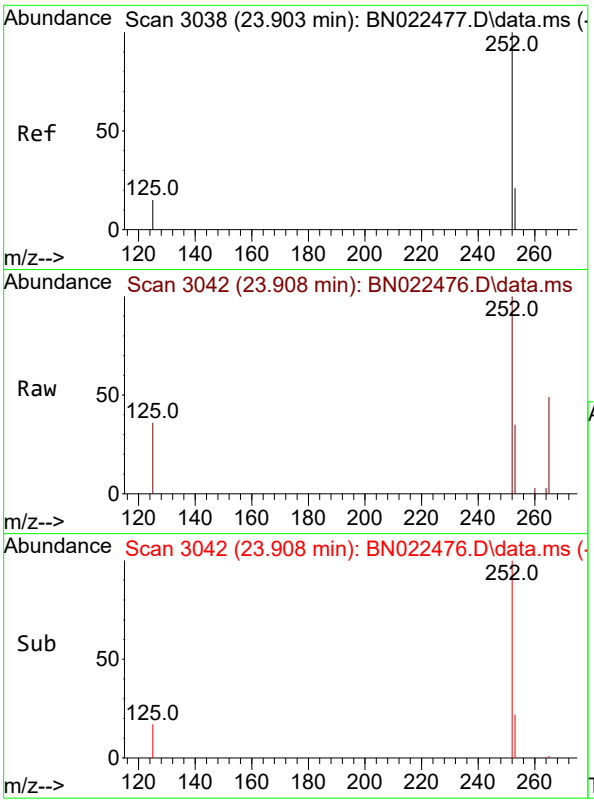


#38
Benzo(k)fluoranthene
Concen: 0.162 ng
RT: 23.312 min Scan# 2838
Delta R.T. 0.003 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:252 Resp: 6895

Ion	Ratio	Lower	Upper
252	100		
253	30.1	20.9	31.3
125	26.3	16.1	24.1#



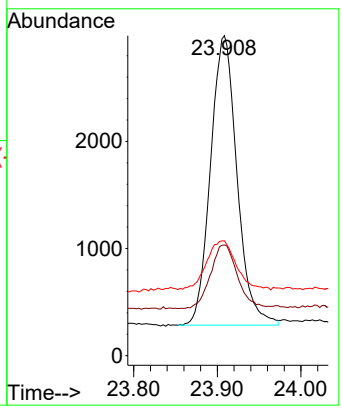


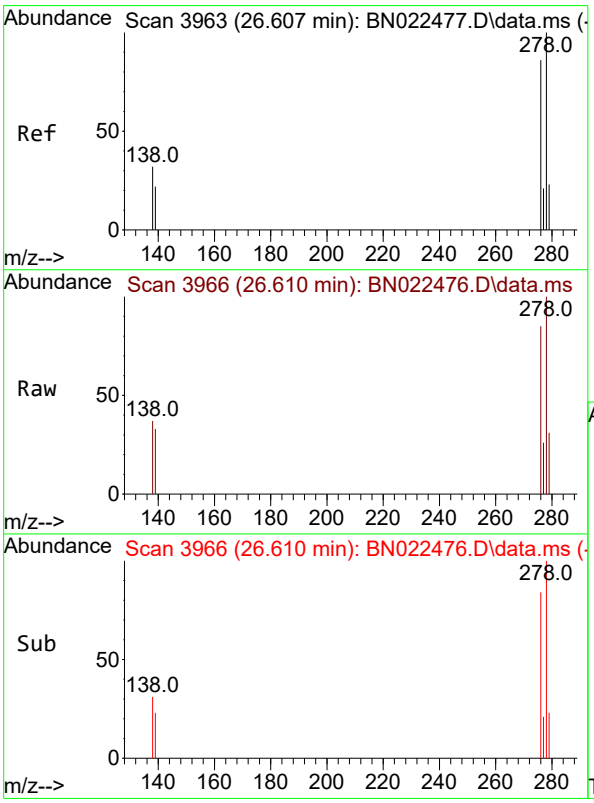
#39
Benzo(a)pyrene
Concen: 0.170 ng
RT: 23.908 min Scan# 3
Delta R.T. 0.006 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:252 Resp: 5947

Ion	Ratio	Lower	Upper
252	100		
253	34.6	22.0	33.0#
125	35.9	19.8	29.8#

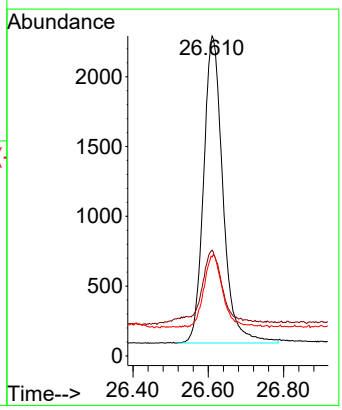


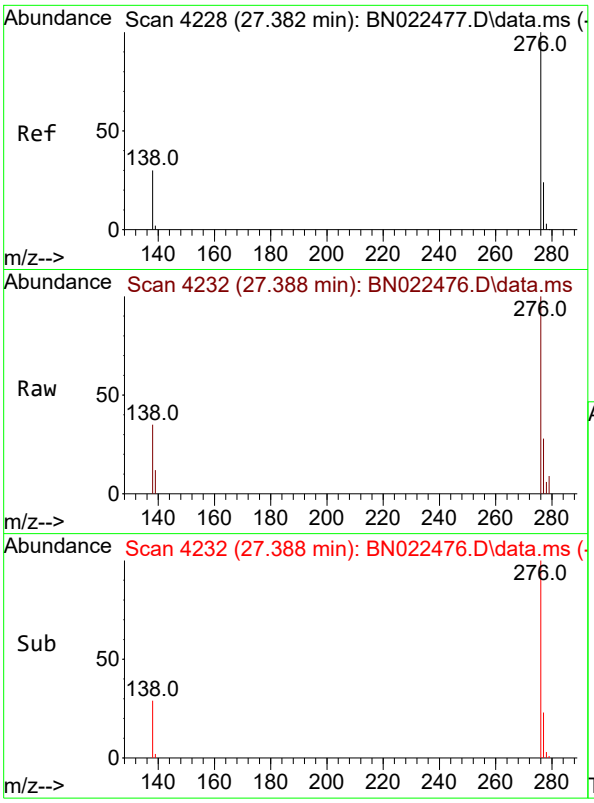


#40
Dibenzo(a,h)anthracene
Concen: 0.216 ng
RT: 26.610 min Scan# 3966
Delta R.T. 0.003 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Tgt Ion:278 Resp: 7807

Ion	Ratio	Lower	Upper
278	100		
139	33.0	21.8	32.6#
279	30.9	21.5	32.3





#41
Benzo(g,h,i)perylene
Concen: 0.217 ng
RT: 27.388 min Scan# 4
Delta R.T. 0.006 min
Lab File: BN022476.D
Acq: 03 Nov 2022 13:26

Instrument :
BNA_N
ClientSampleId :
SSTDICC0.2

Tgt Ion:276 Resp: 8286

Ion	Ratio	Lower	Upper
276	100		
277	27.9	21.0	31.4
138	35.0	26.0	39.0