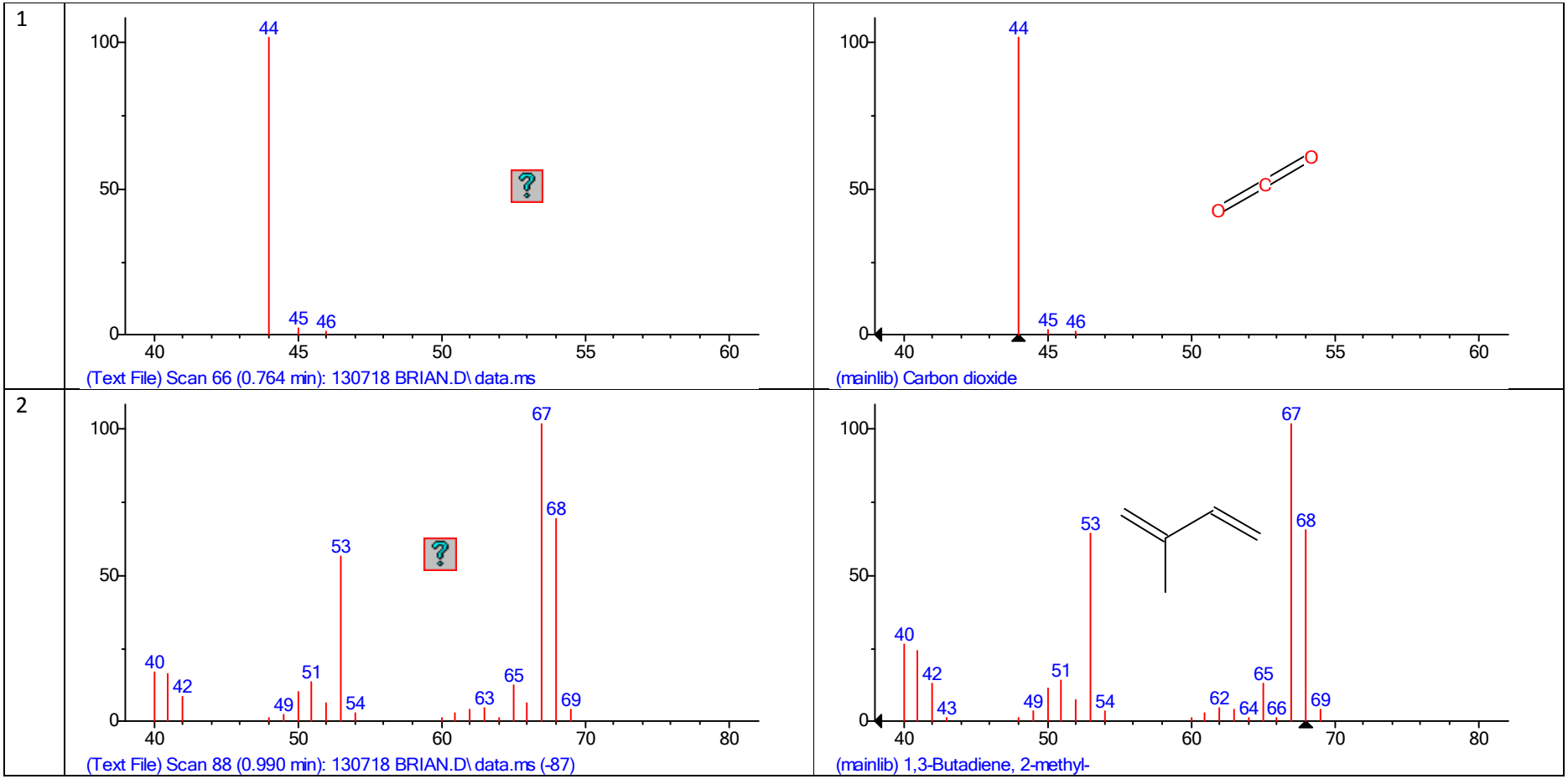
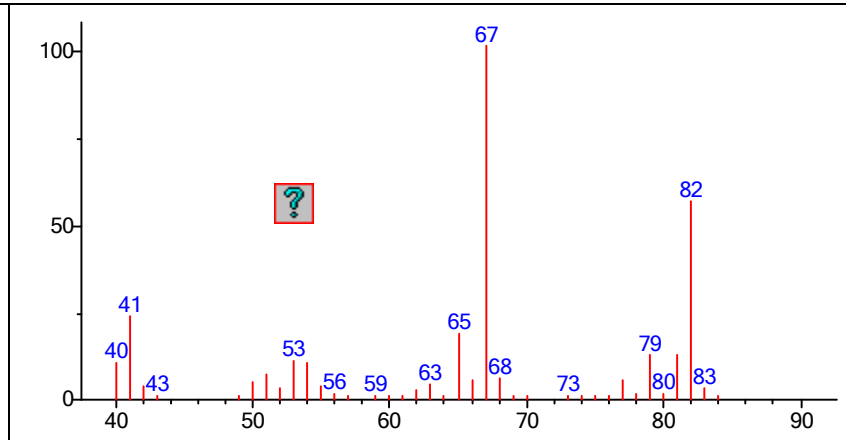
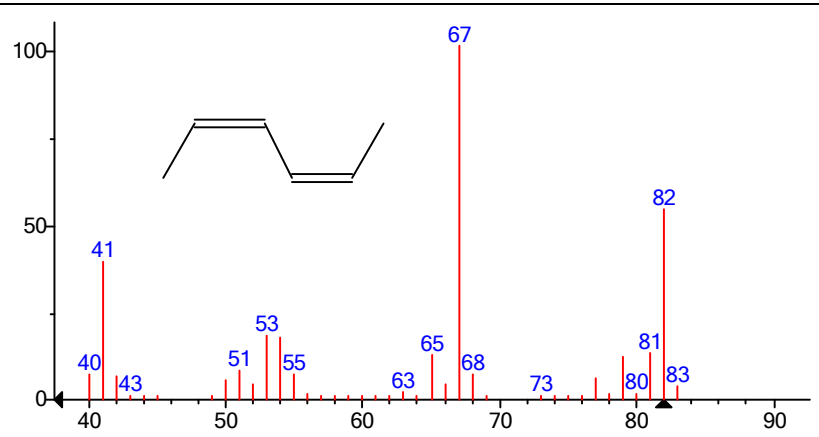
Table S1: Peak identifications according to NIST database search. Spectra of measured peaks are shown on the left. For a positive identification by NIST database search, the spectrum of the corresponding compound is shown on the right side.



3

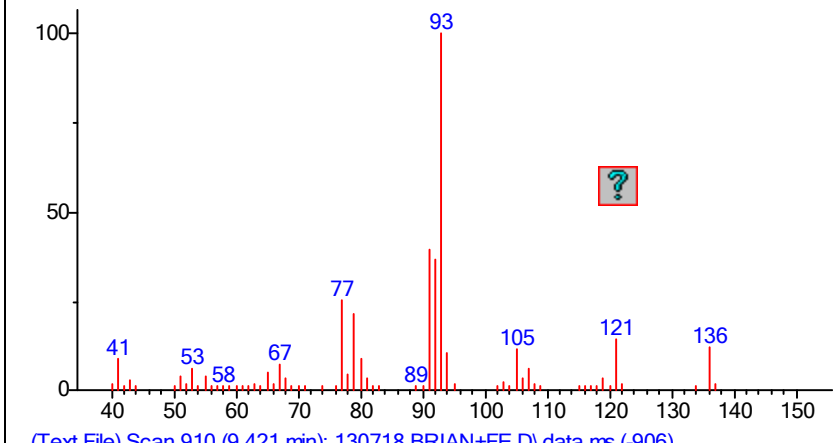


(Text File) Scan 149 (1.615 min): 130718 BRIAN.D\ data.ms (-147)

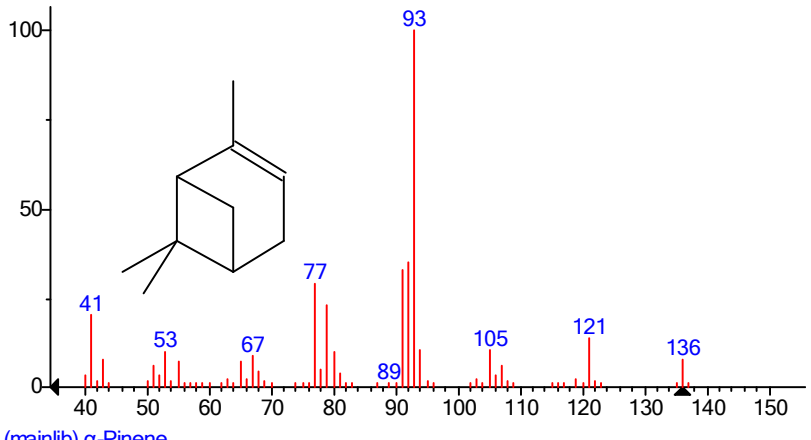


(replib) 2,4-Hexadiene, (Z,Z)-

4

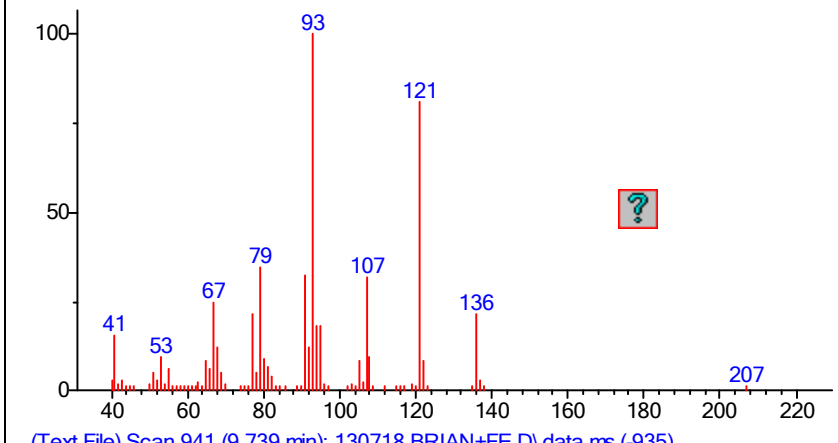


(Text File) Scan 910 (9.421 min): 130718 BRIAN+FE.D\ data.ms (-906)

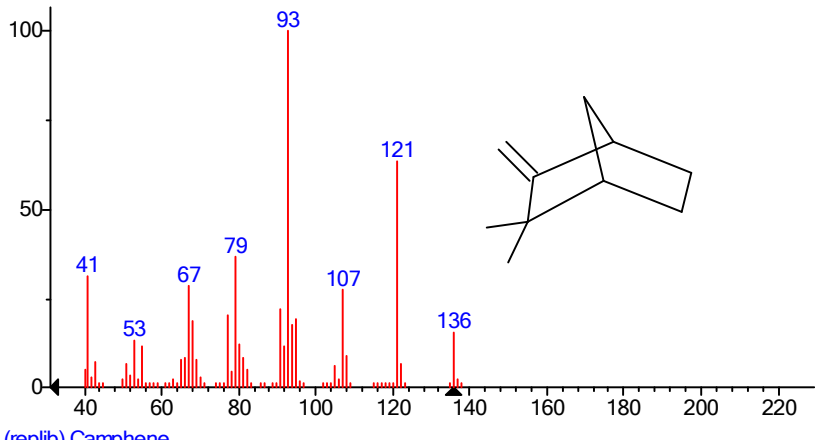


(mainlib) α-Pinene

5

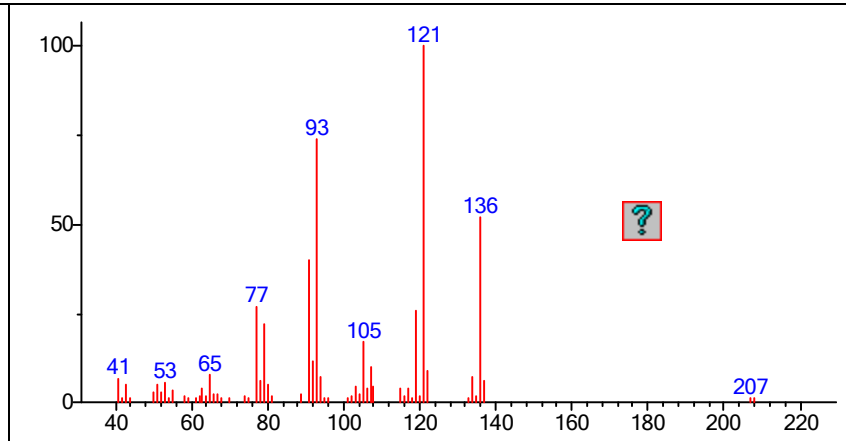


(Text File) Scan 941 (9.739 min): 130718 BRIAN+FE.D\ data.ms (-935)

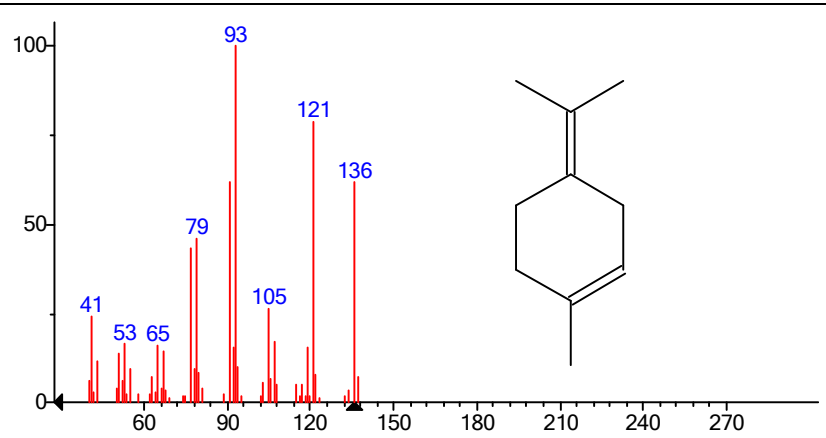


(replib) Camphene

6

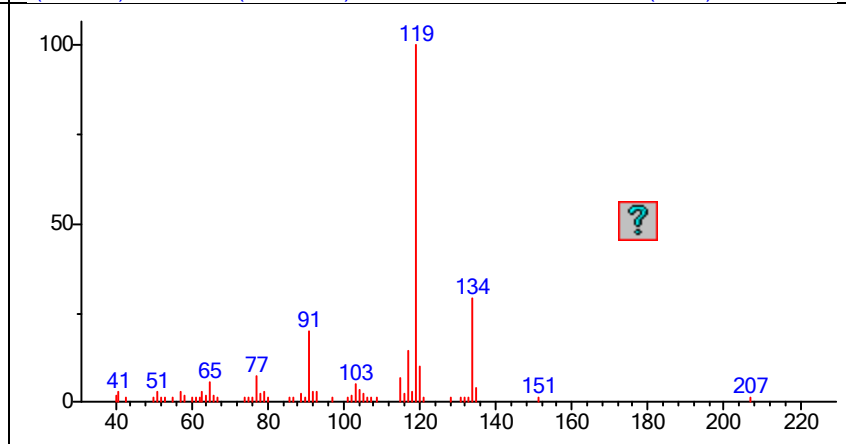


(Text File) Scan 1077 (11.134 min): 130718 BRIAN+FE.D\ data.ms (-1073)

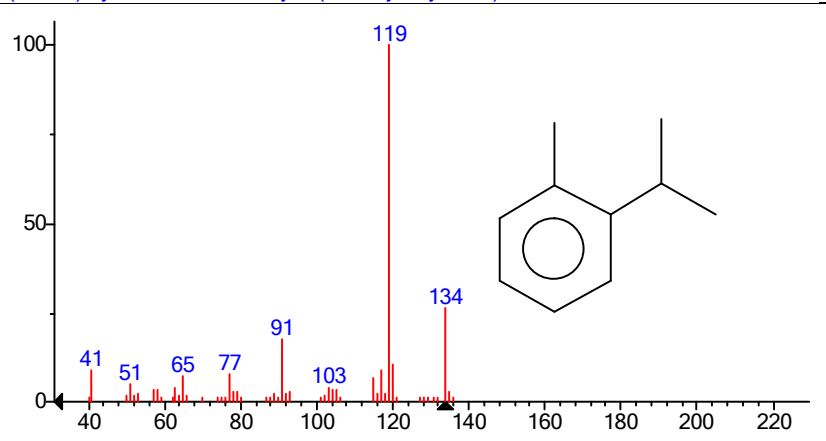


(mainlib) Cyclohexene, 1-methyl-4-(1-methylethylidene)-

7

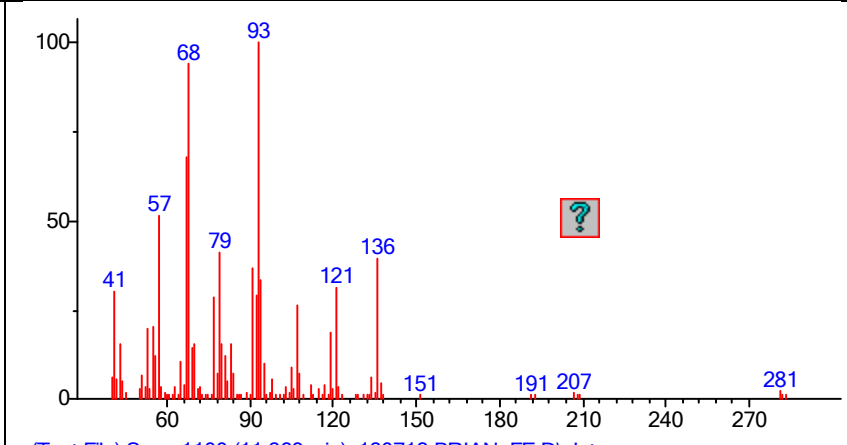


(Text File) Scan 1092 (11.287 min): 130718 BRIAN+FE.D\ data.ms (-1089)

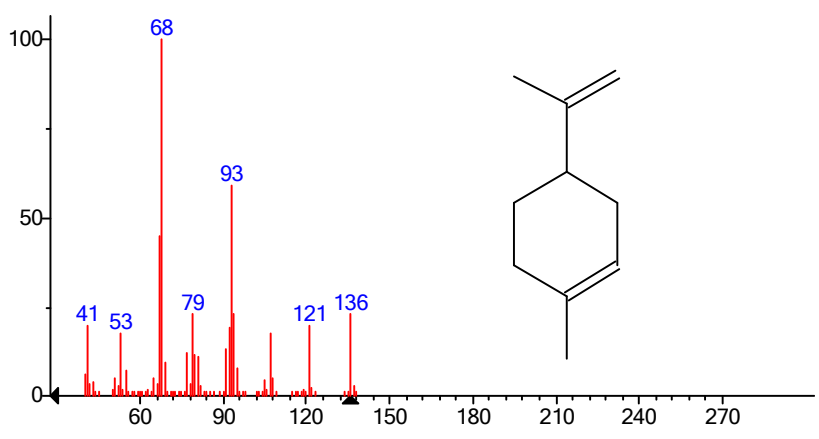


(replib) Benzene, 1-methyl-2-(1-methylethyl)-

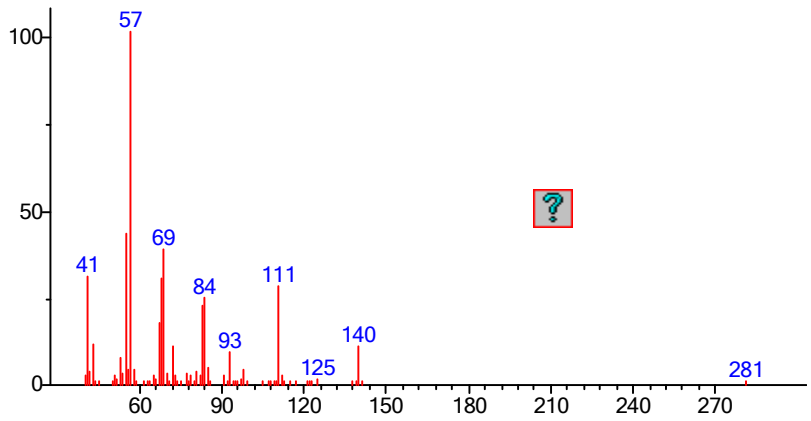
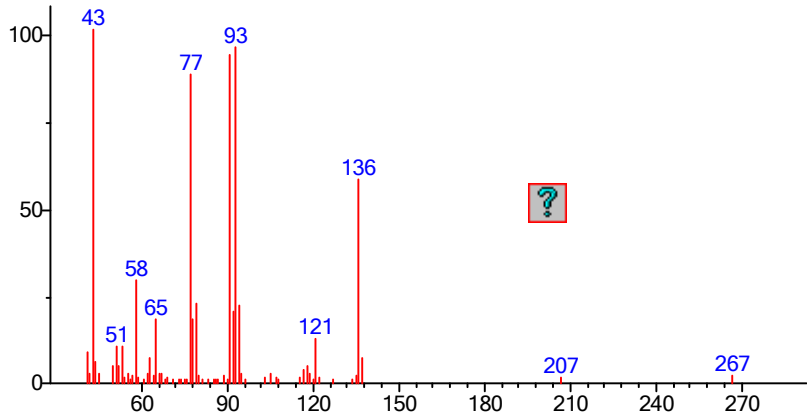
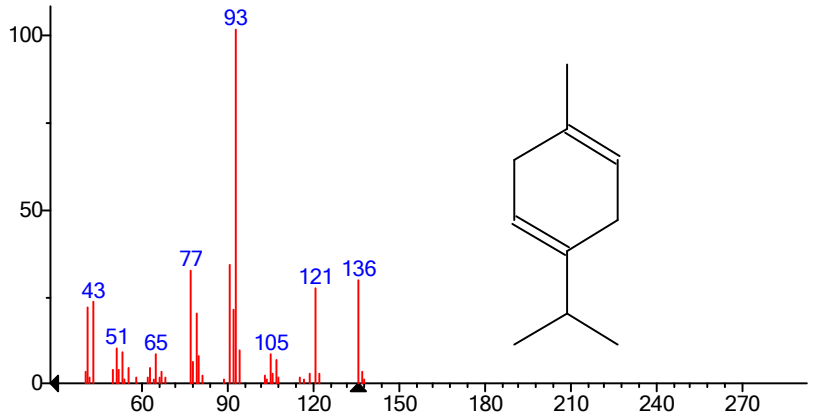
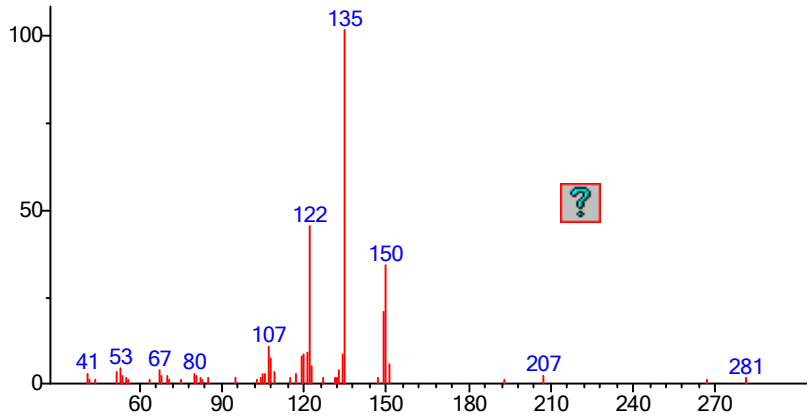
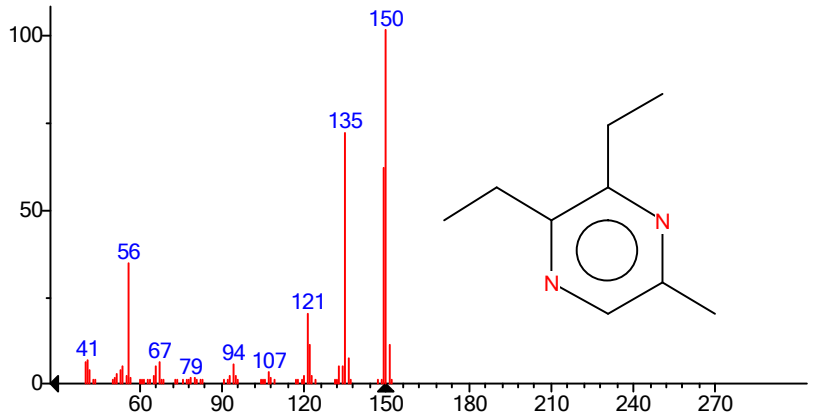
8



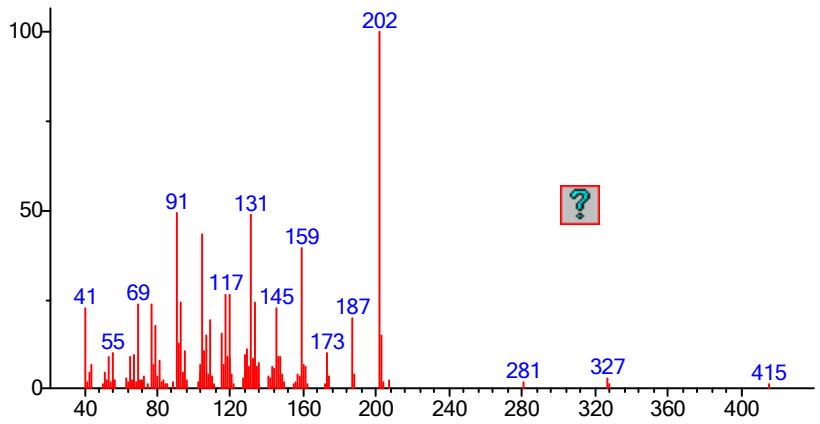
(Text File) Scan 1100 (11.369 min): 130718 BRIAN+FE.D\ data.ms



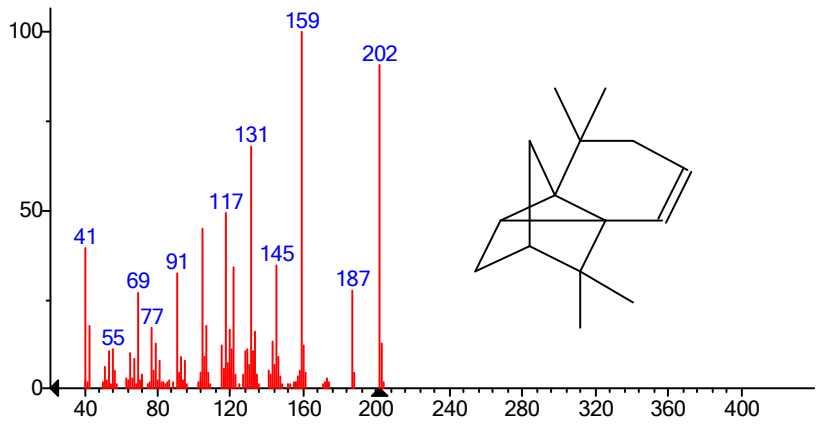
(mainlib) D-Limonene

9	 (Text File) Scan 1202 (12.415 min): 130718 BRIAN.D\ data.ms (-1199)	
10a	 (Text File) Scan 1331 (13.738 min): 130718 BRIAN.D\ data.ms	 (replib) 1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-
10b	 (Text File) Scan 1334 (13.769 min): 130718 BRIAN+FE.D\ data.ms (-1330)	 (mainlib) Pyrazine, 2,3-diethyl-5-methyl-

11

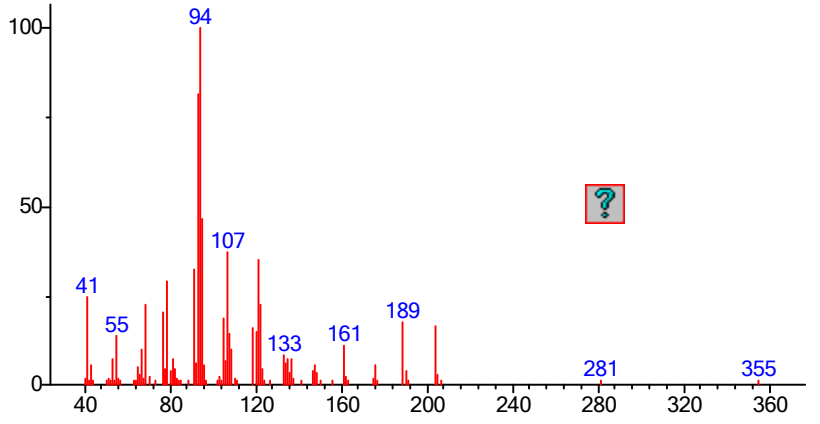


(Text File) Scan 2119 (21.821 min): 130718 BRIAN+FE.D\ data.ms

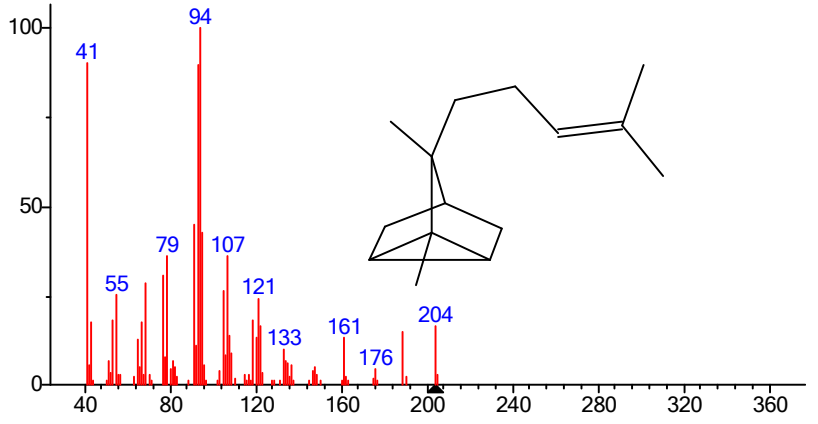


(mainlib) Cycloisolongifolene, 8,9-dehydro-

12

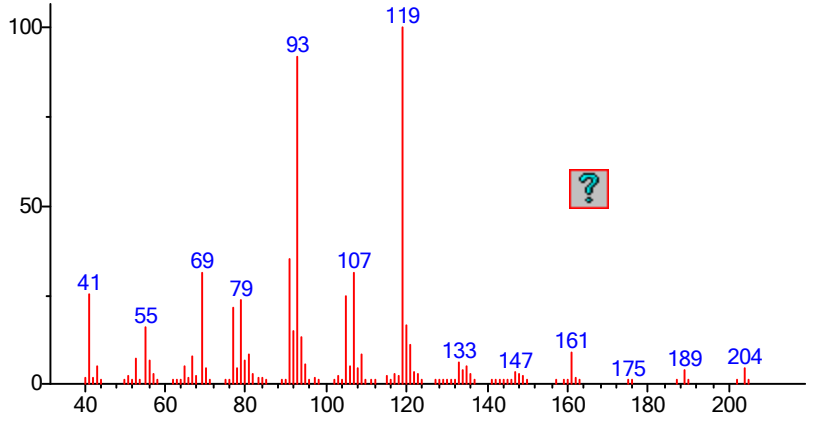


(Text File) Scan 2161 (22.251 min): 130718 BRIAN+FE.D\ data.ms (-2166)

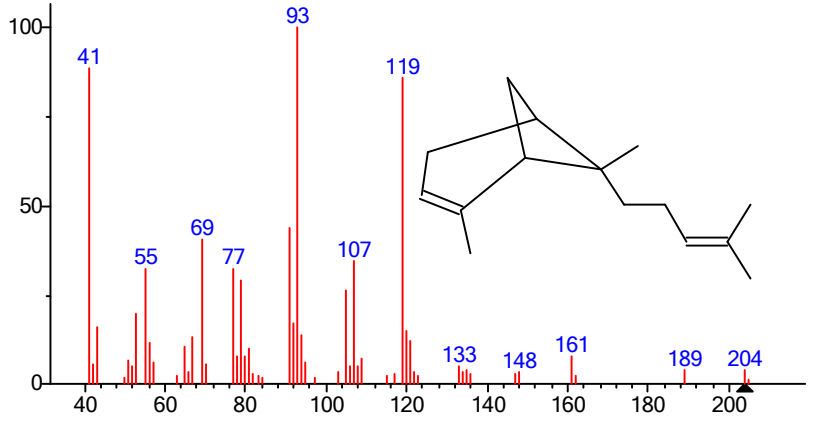


(replib) Tricyclo[2.2.1.0(2,6)]heptane, 1,7-dimethyl-7-(4-methyl-3-pentenyl)-, (-)-

13

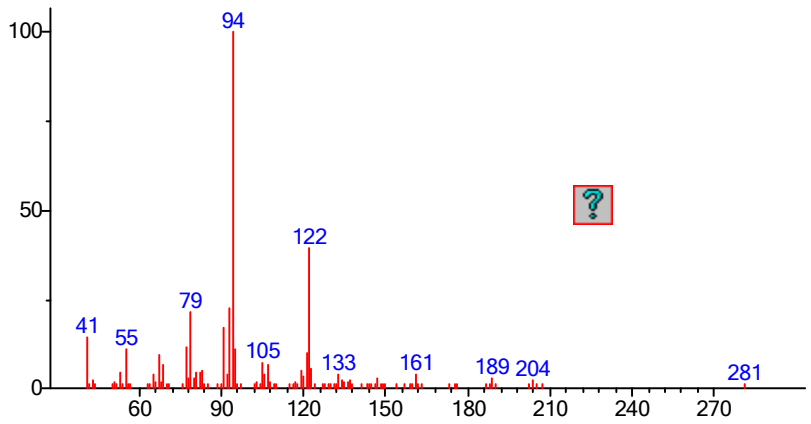


(Text File) Scan 2215 (22.805 min): 130718 BRIAN+FE.D\ data.ms

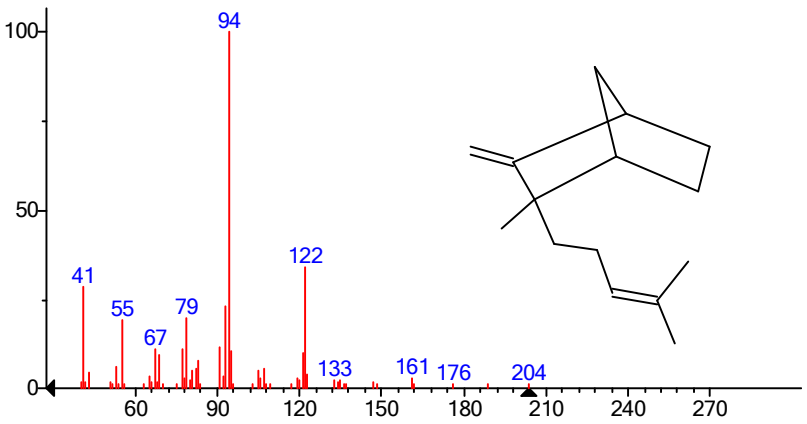


(mainlib) Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl-3-pentenyl)-

14

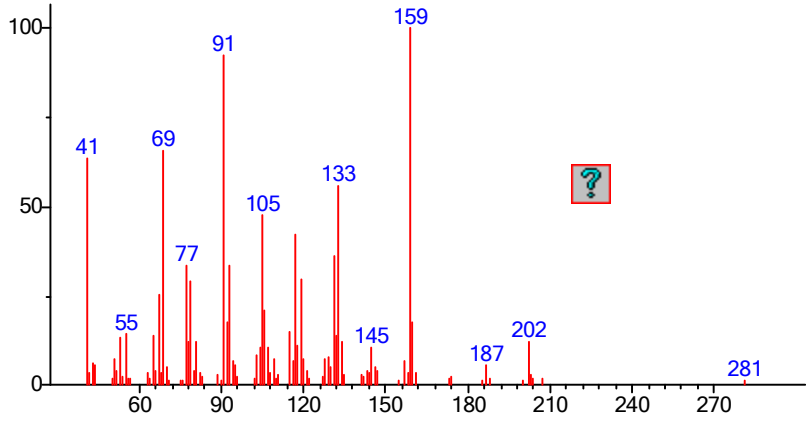


(Text File) Scan 2298 (23.657 min): 130718 BRIAN+FE.D\ data.ms



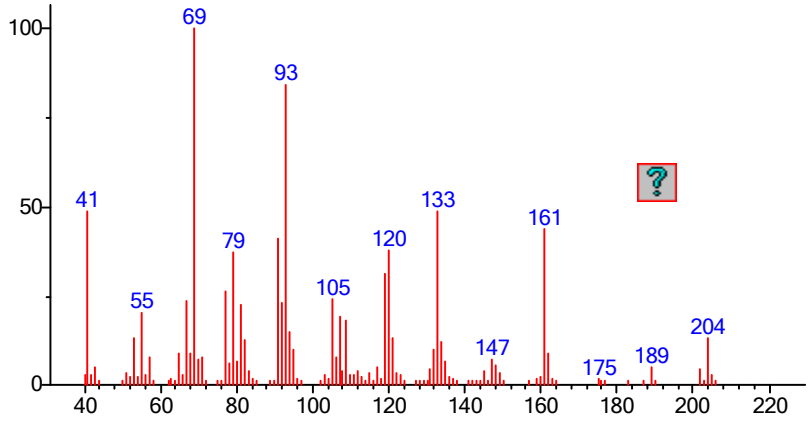
(replib) Bicyclo[2.2.1]heptane, 2-methyl-3-methylene-2-(4-methyl-3-pentenyl)-, (1S-exo)-

15

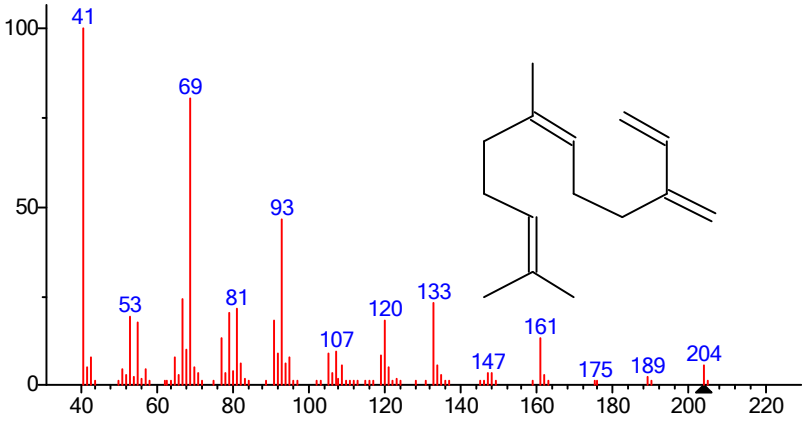


(Text File) Scan 2312 (23.800 min): 130718 BRIAN+FE.D\ data.ms

16

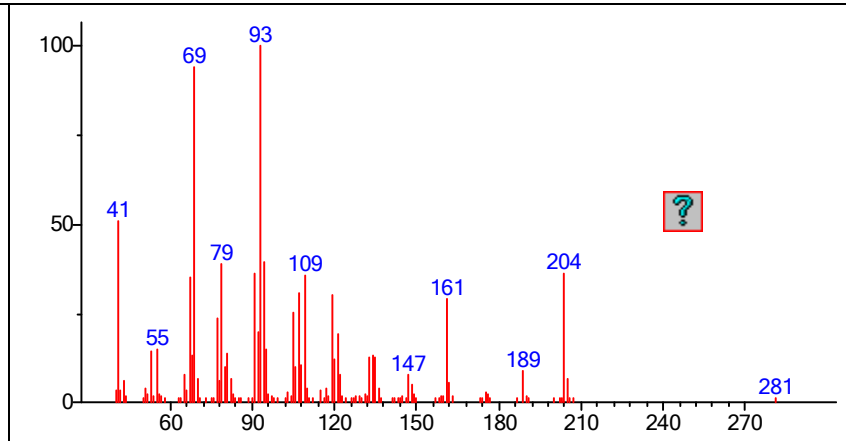


(Text File) Scan 2384 (24.539 min): 130718 BRIAN+FE.D\ data.ms

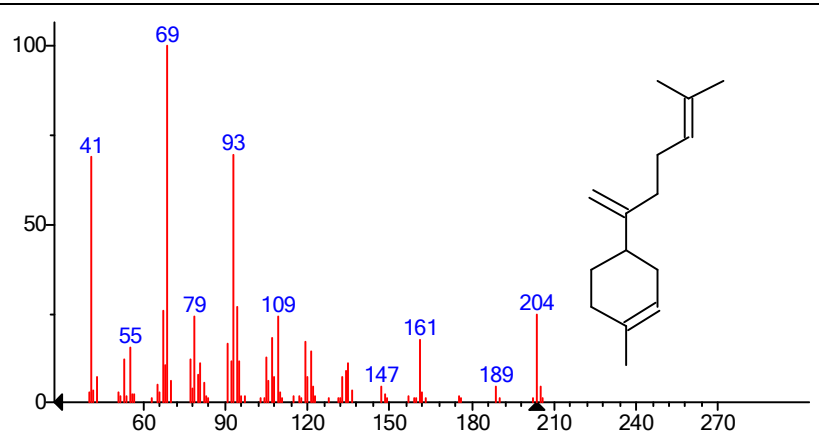


(mainlib) 1,6,10-Dodecatriene, 7,11-dimethyl-3-methylene-, (Z)-

17

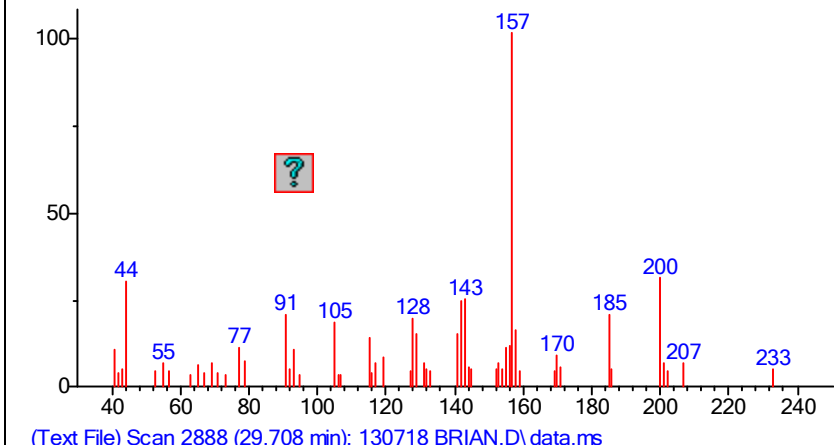


(Text File) Scan 2464 (25.359 min): 130718 BRIAN+FE.D\ data.ms

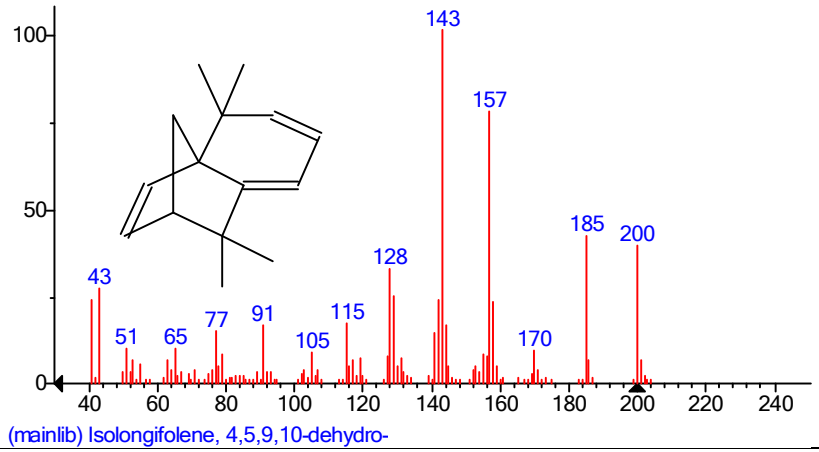


(mainlib) Cyclohexene, 1-methyl-4-(5-methyl-1-methylene-4-hexenyl)-, (S)-

18a

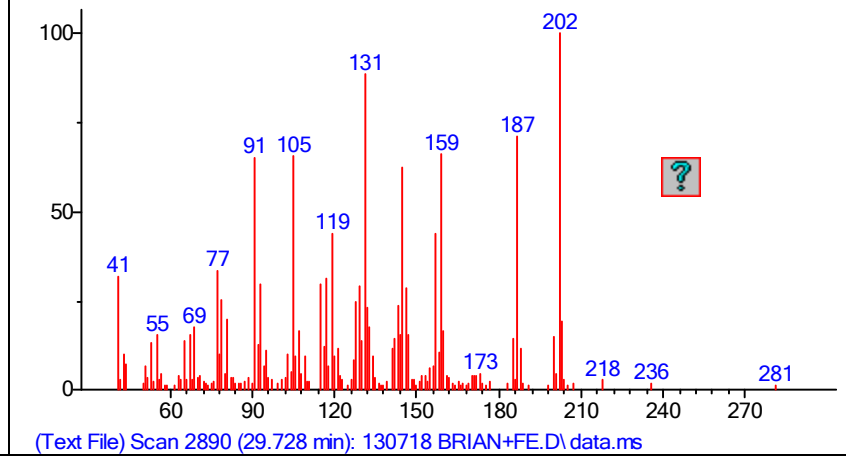


(Text File) Scan 2888 (29.708 min): 130718 BRIAN.D\ data.ms

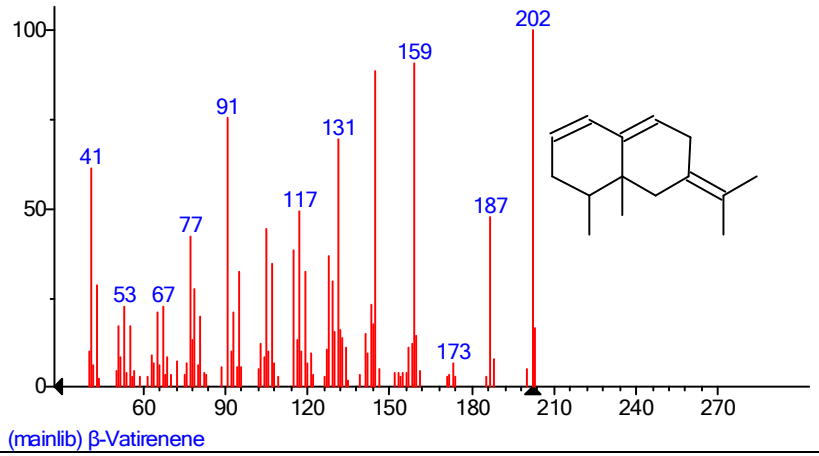


(mainlib) Isolongifolene, 4,5,9,10-dehydro-

18b

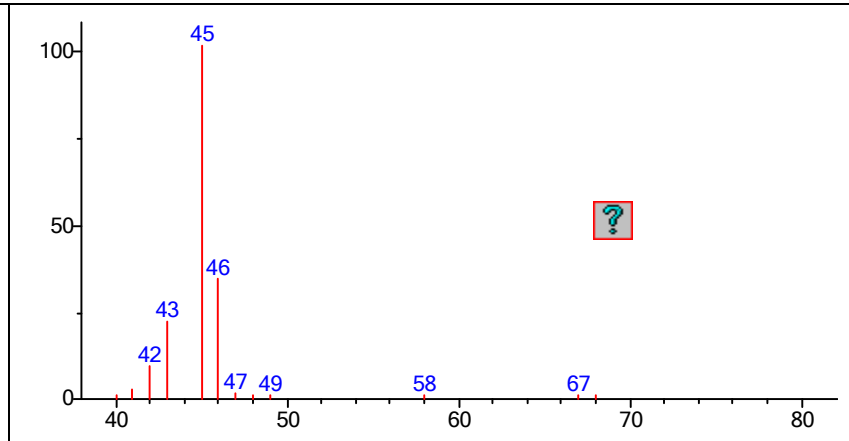


(Text File) Scan 2890 (29.728 min): 130718 BRIAN+FE.D\ data.ms

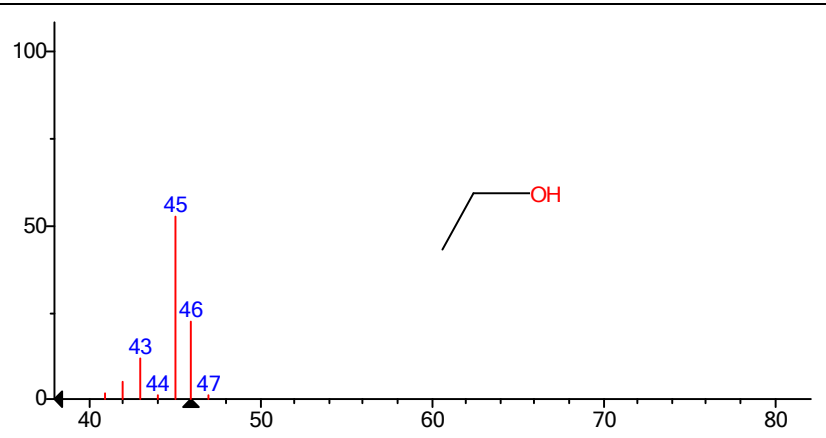


(mainlib) β-Vatirenene

19

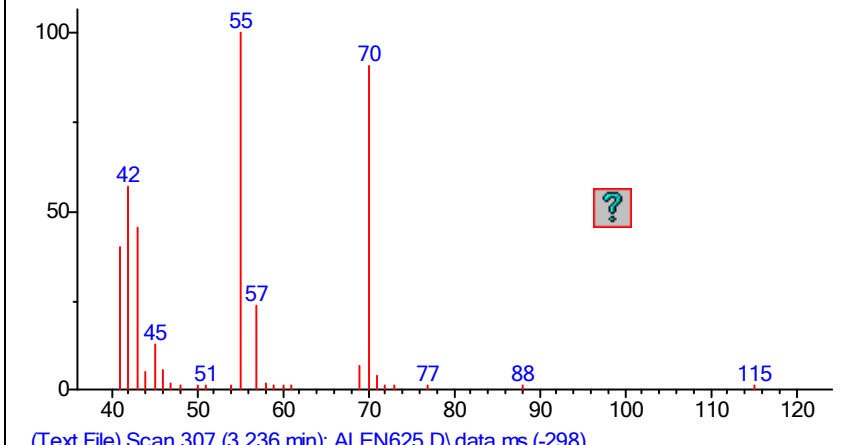


(Text File) Scan 78 (0.887 min): 130718 BRIAN+FE.D\data.ms (-76)

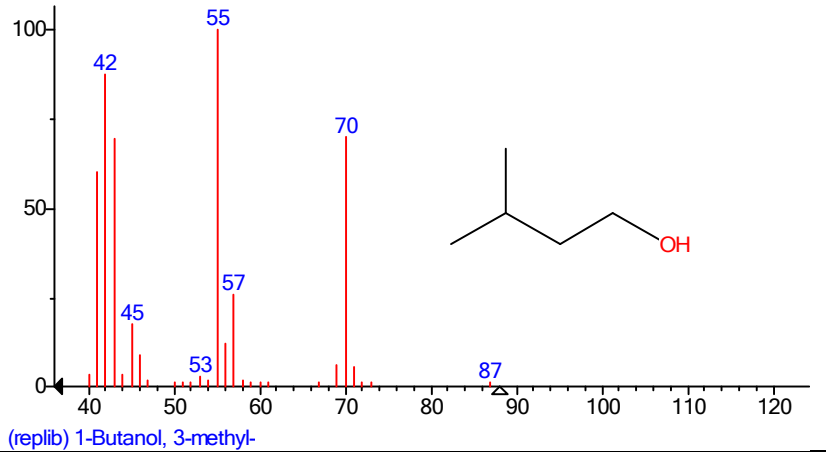


(mainlib) Ethanol

20

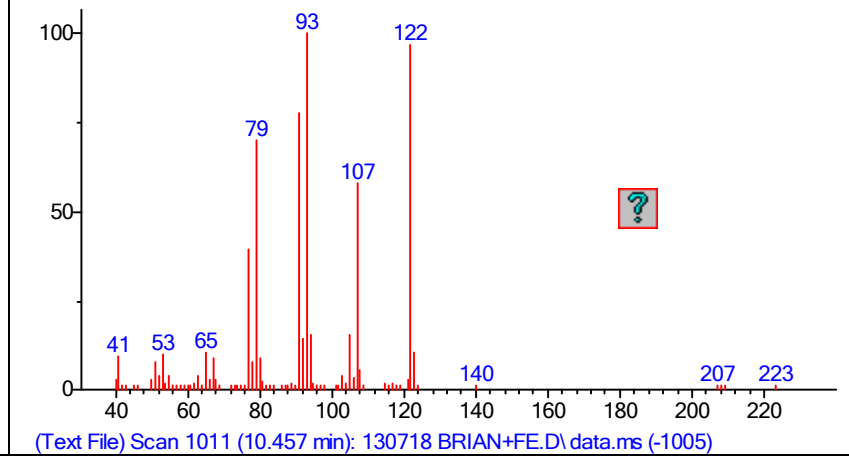


(Text File) Scan 307 (3.236 min): ALEN625.D\data.ms (-298)

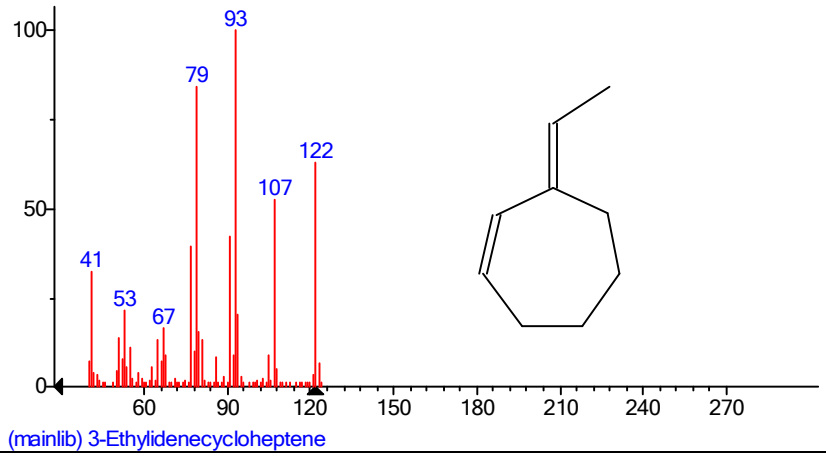


(replib) 1-Butanol, 3-methyl-

21

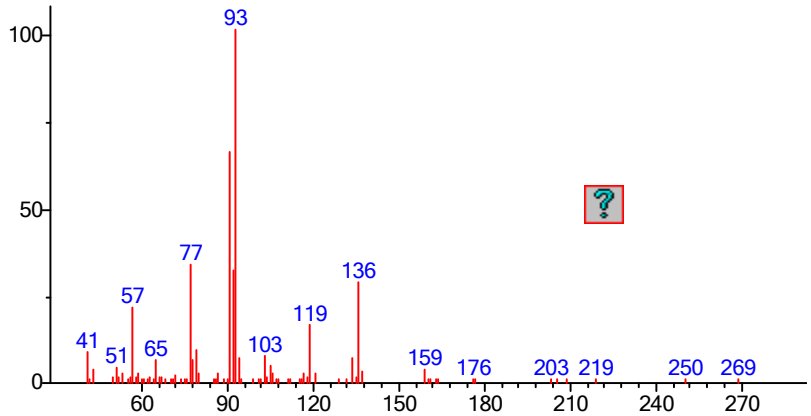


(Text File) Scan 1011 (10.457 min): 130718 BRIAN+FE.D\data.ms (-1005)

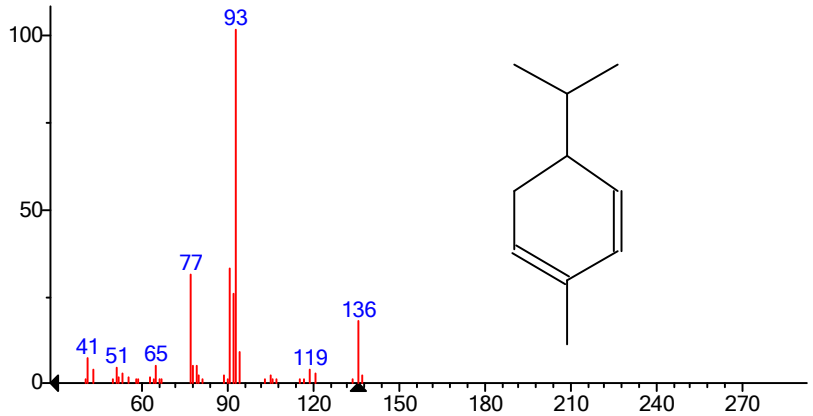


(mainlib) 3-Ethylidenecycloheptene

22

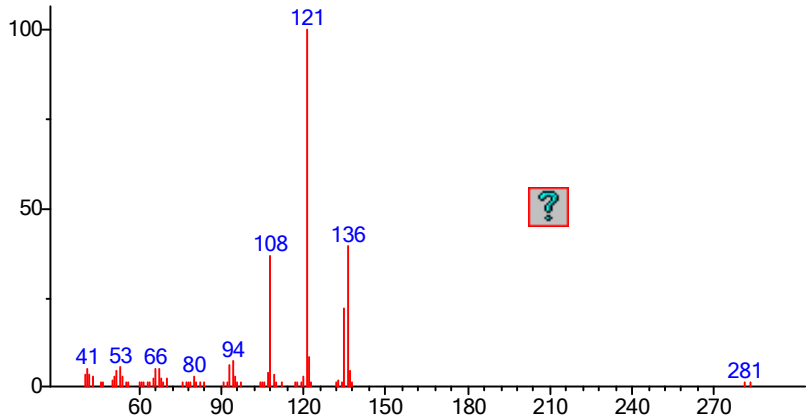


(Text File) Scan 1054 (10.898 min): 130718 BRIAN+FE.D\data.ms (-1052)

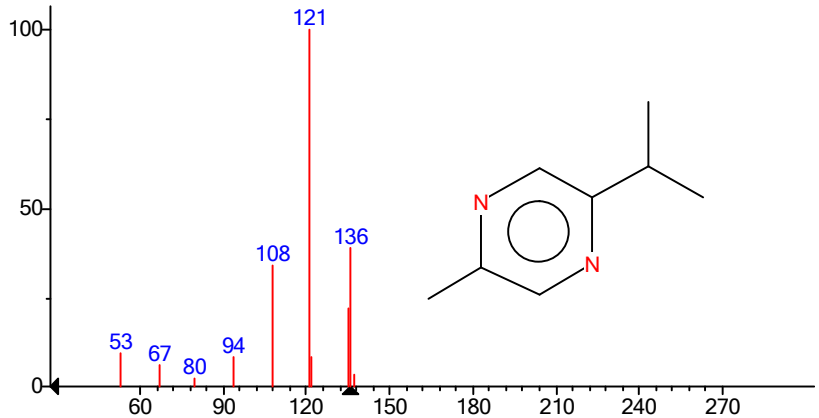


(replib) α-Phellandrene

23

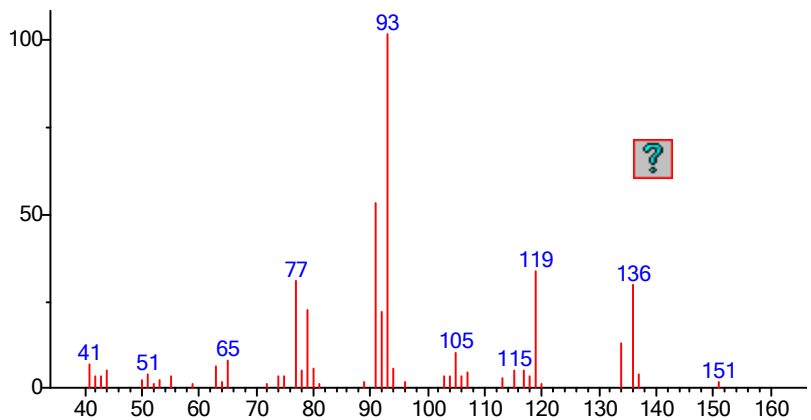


(Text File) Scan 1146 (11.841 min): 130718 BRIAN+FE.D\data.ms (-1141)

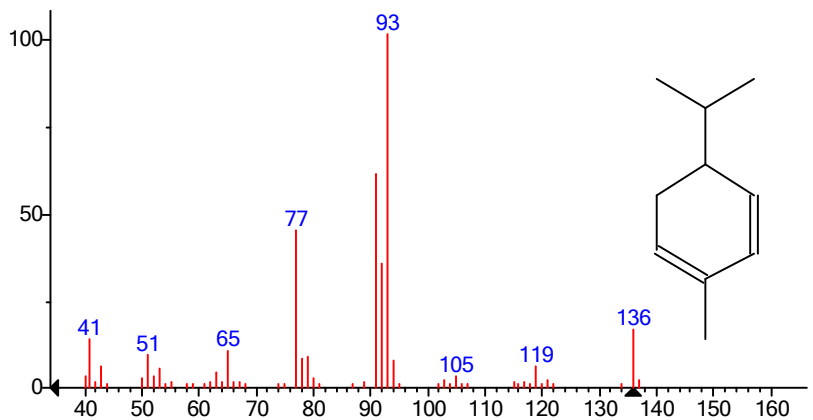


(mainlib) Pyrazine, 2-methyl-5-(1-methylethyl)-

24

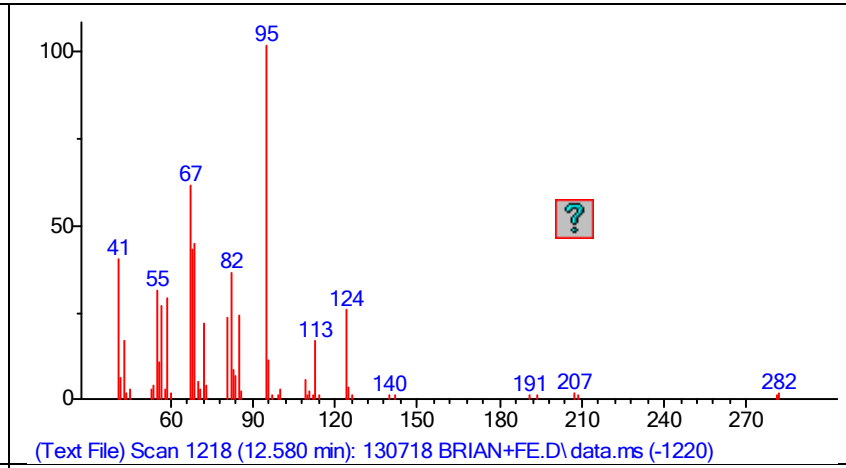


(Text File) Scan 1159 (11.975 min): 130718 BRIAN+FE.D\data.ms (-1156)

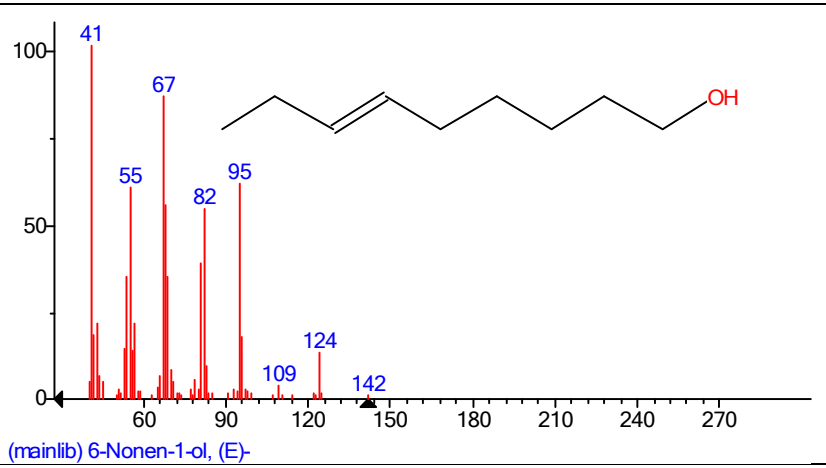


(replib) α-Phellandrene

25a

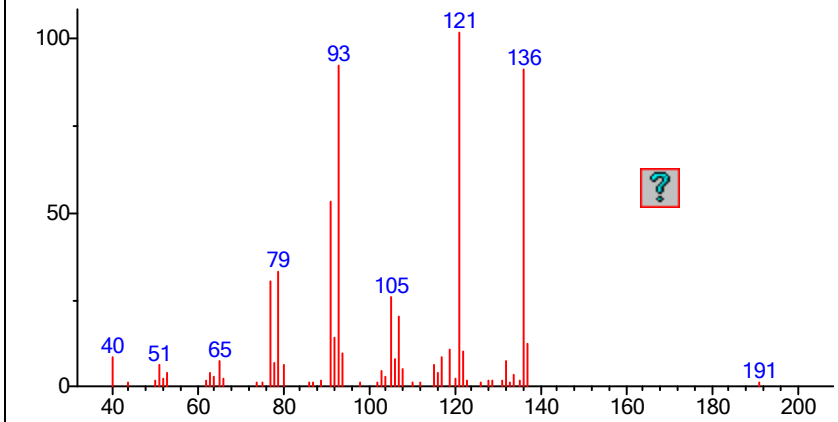


(Text File) Scan 1218 (12.580 min): 130718 BRIAN+FE.D\data.ms (-1220)

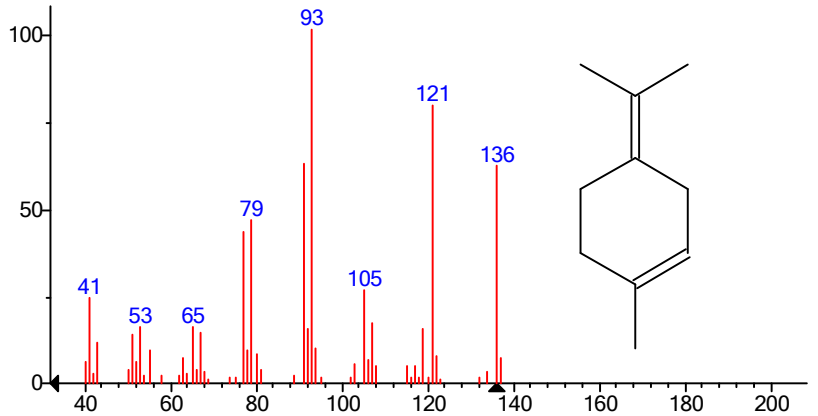


(mainlib) 6-Nonen-1-ol, (E)-

25b

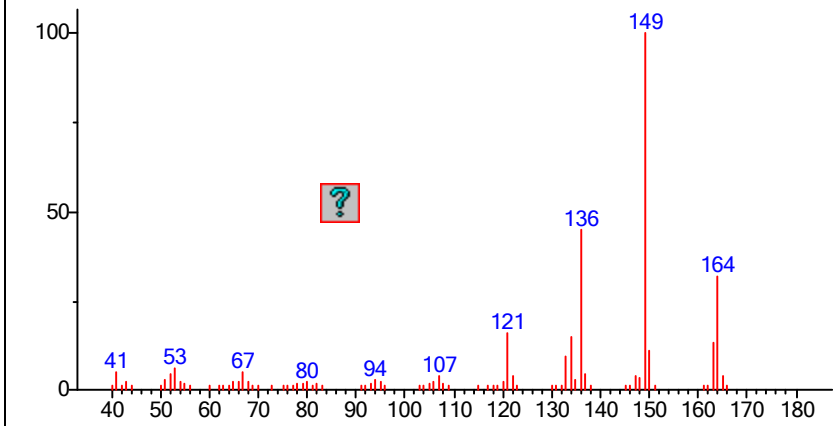


(Text File) Scan 1220 (12.600 min): 130718 BRIAN+FE.D\data.ms (-1217)

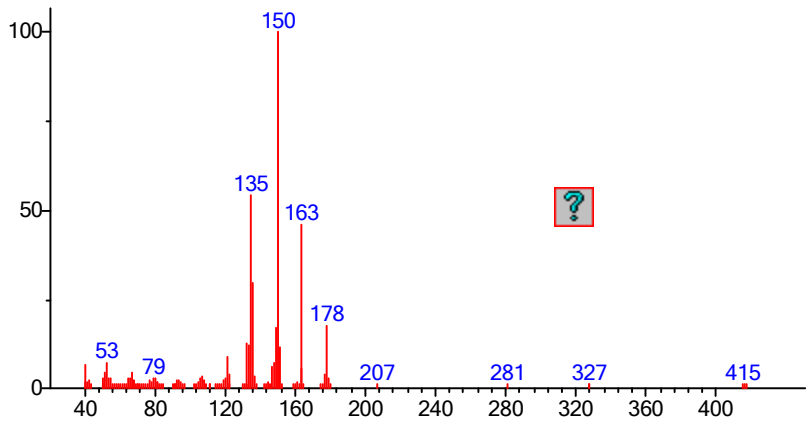
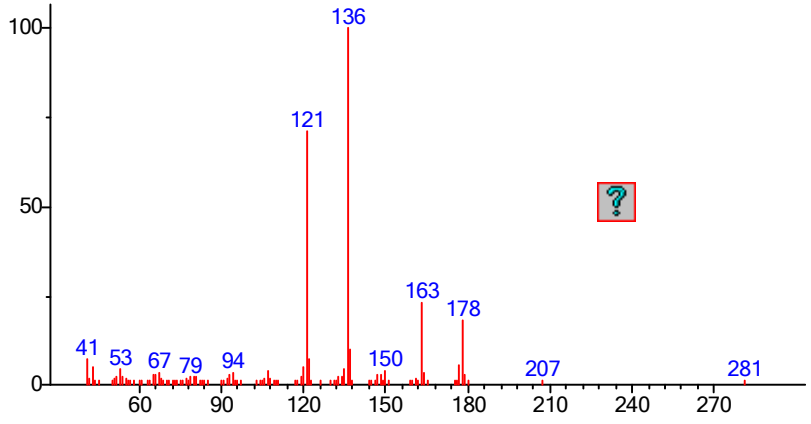
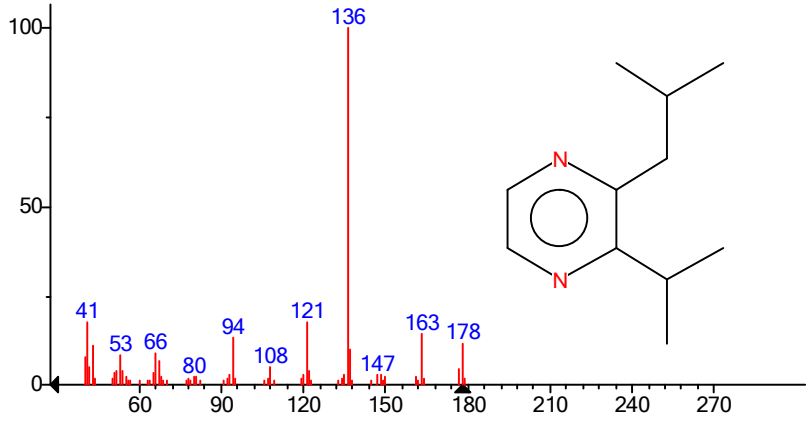
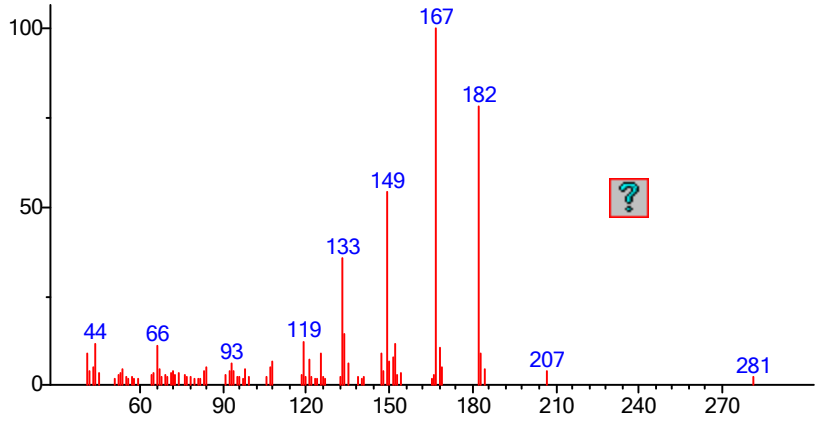
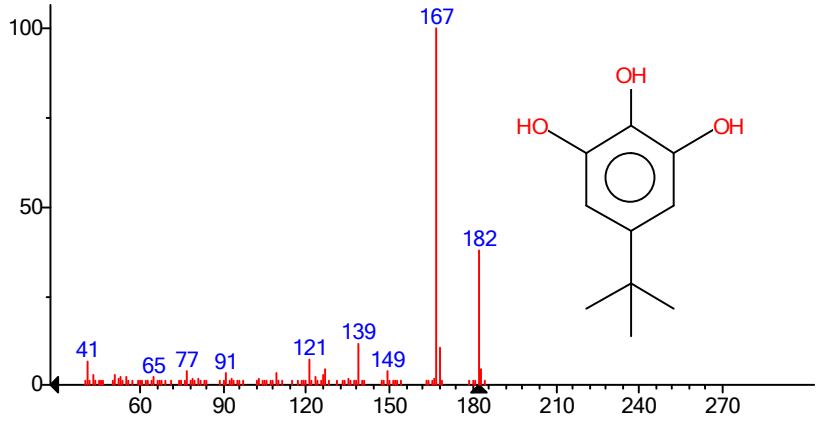


(mainlib) Cyclohexene, 1-methyl-4-(1-methylethylidene)-

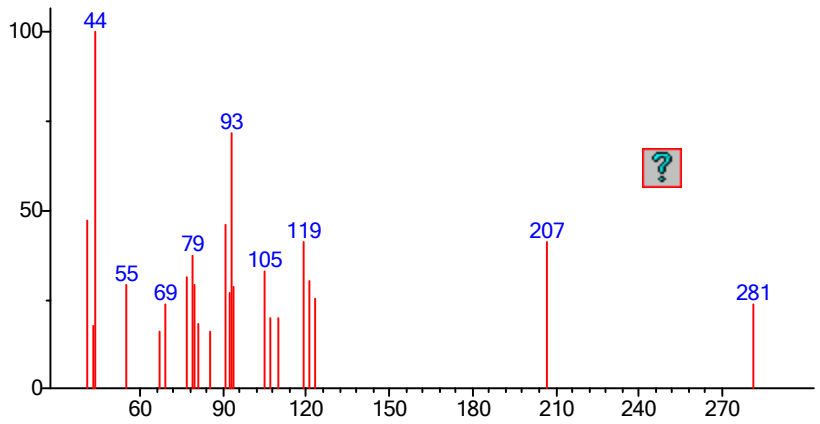
26



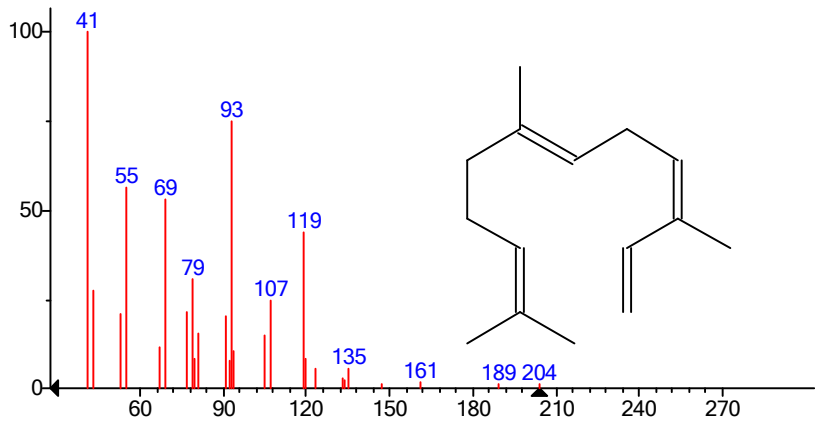
(Text File) Scan 1451 (14.970 min): 130906 BRIAN+FE PLUG.D\data.ms

27	 (Text File) Scan 1678 (17.298 min): 130906 BRIAN+FE PLUG.D\ data.ms	
28	 (Text File) Scan 1694 (17.462 min): 130906 BRIAN+FE PLUG.D\ data.ms	 (mainlib) 2-(2-Methylpropyl)-3-(1-methylethyl)pyrazine
29	 (Text File) Scan 1973 (20.323 min): 130718 BRIAN+FE.D\ data.ms	 (mainlib) 5-tert-Butylpyrogallol

30

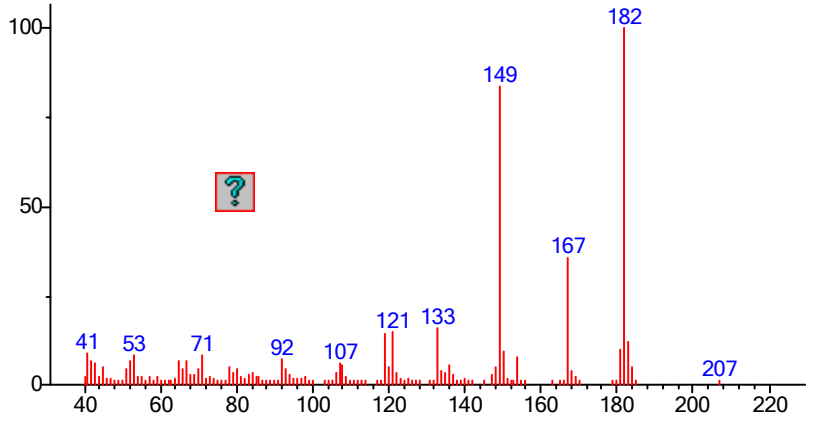


(Text File) Scan 1992 (20.518 min): 130718 BRIAN+FE.D\ data.ms

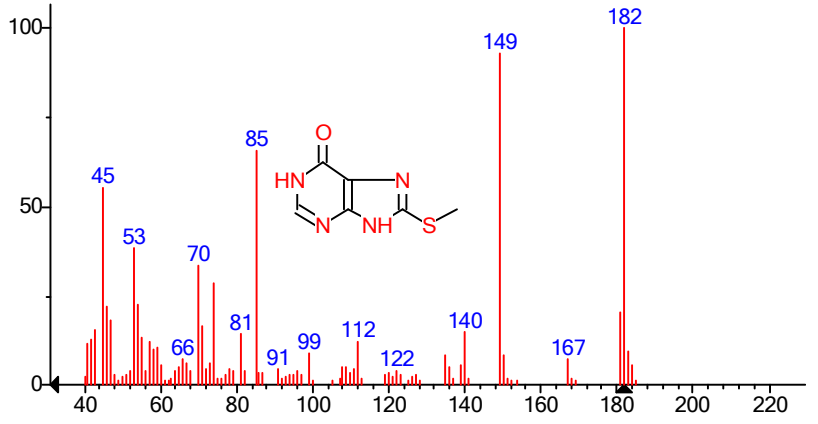


(replib) 1,3,6,10-Dodecatetraene, 3,7,11-trimethyl-, (Z,E)-

31

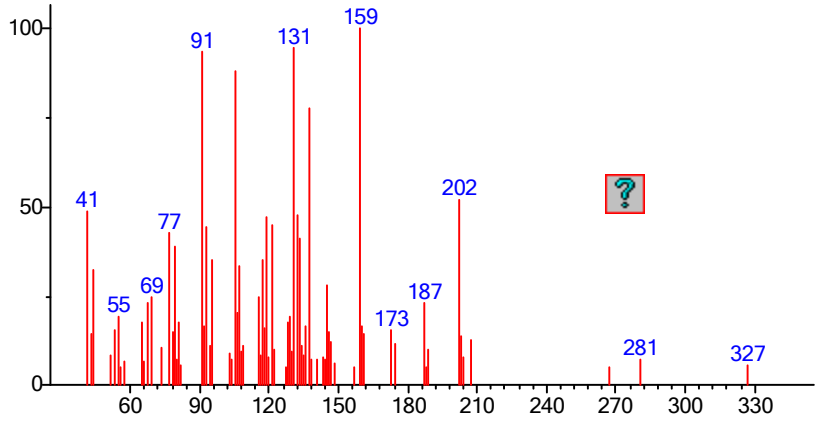


(Text File) Scan 2010 (20.703 min): 130906 BRIAN+FE PLUG.D\ data.ms



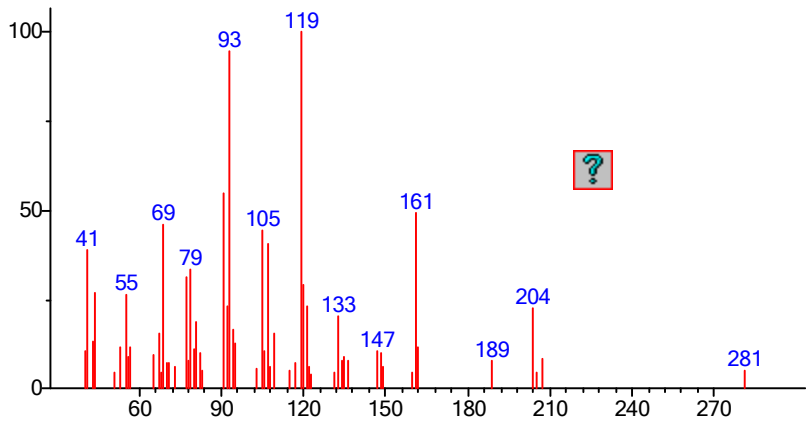
(mainlib) Purin-6(1H)-one, 8-methylthio-

32

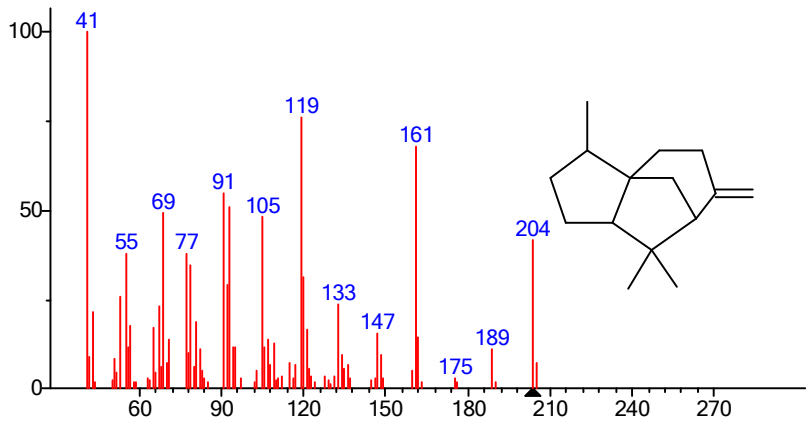


(Text File) Scan 2081 (21.431 min): 130718 BRIAN+FE.D\ data.ms

33

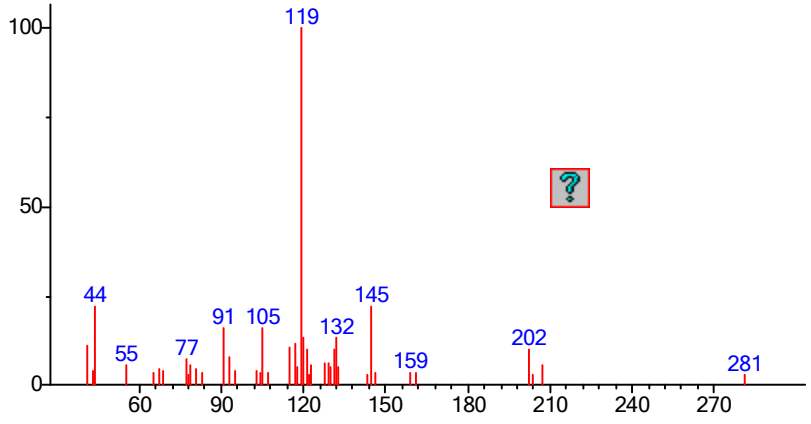


(Text File) Scan 2145 (22.087 min): 130718 BRIAN+FE.D\ data.ms

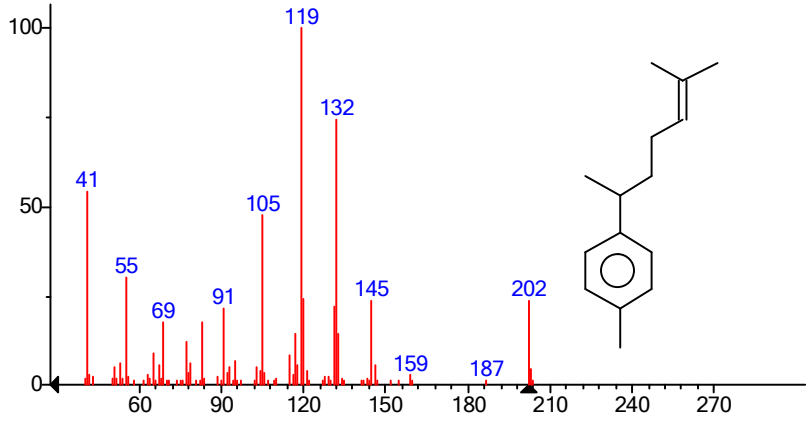


(mainlib) Cedrene

34

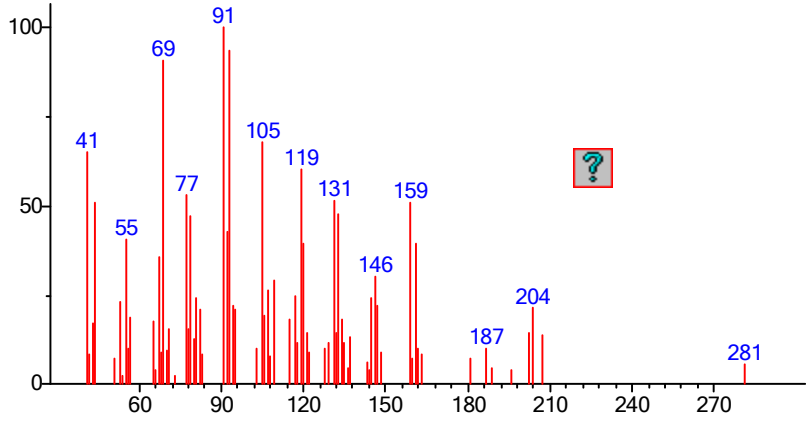


(Text File) Scan 2195 (22.600 min): 130718 BRIAN+FE.D\ data.ms



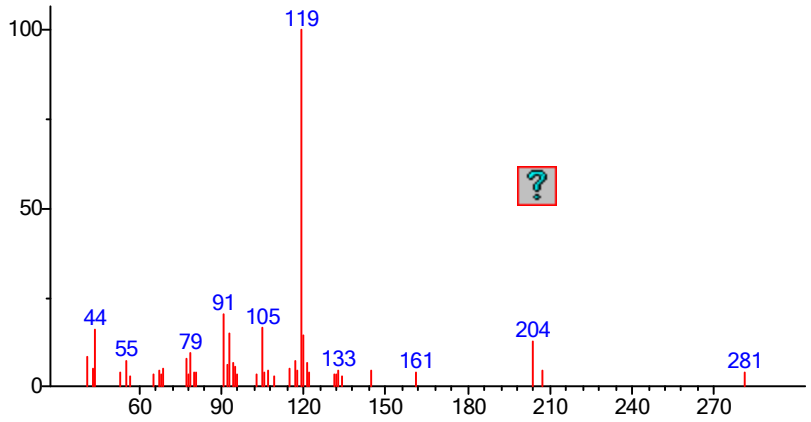
(mainlib) Benzene, 1-(1,5-dimethyl-4-hexenyl)-4-methyl-

35

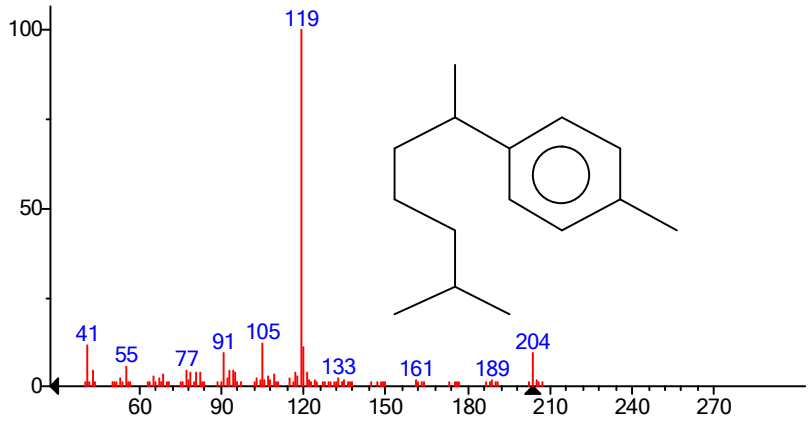


(Text File) Average of 23.031 to 23.062 min.: 130718 BRIAN+FE.D\ data.ms

36a

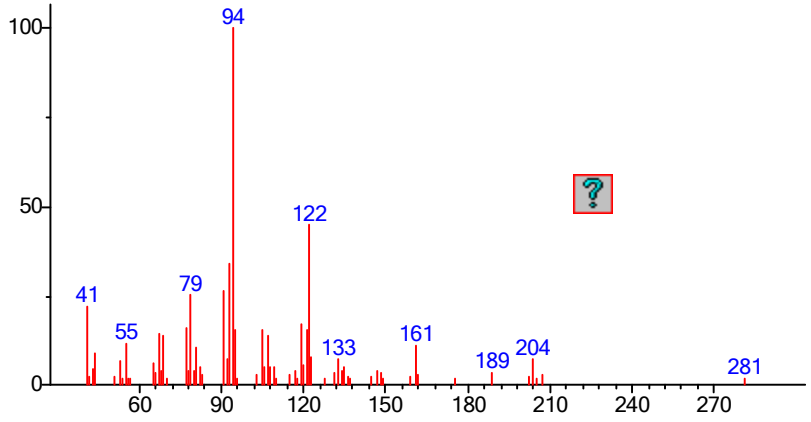


(Text File) Scan 2248 (23.144 min): 130718 BRIAN+FE.D\ data.ms

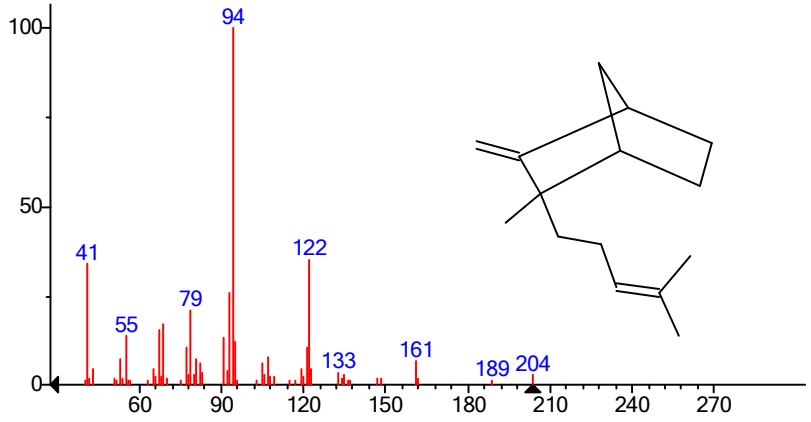


(mainlib) Benzene, 1-(1,5-dimethylhexyl)-4-methyl-

36b

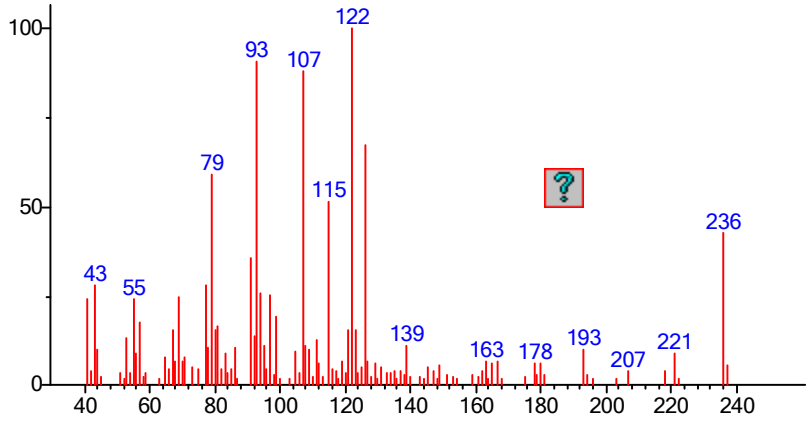


(Text File) Scan 2256 (23.226 min): 130718 BRIAN+FE.D\ data.ms



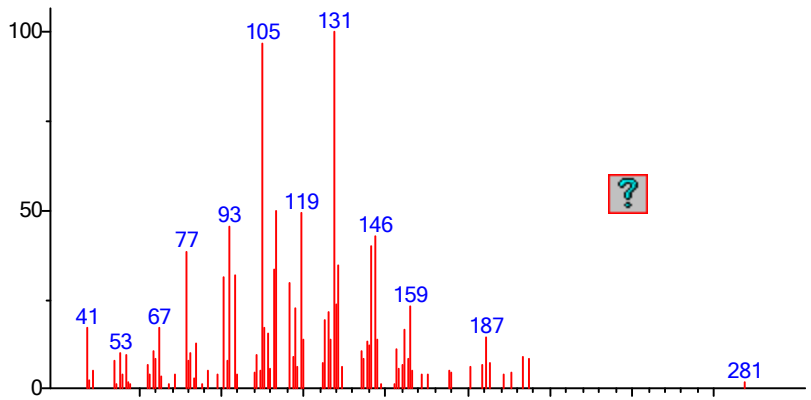
(replib) Bicyclo[2.2.1]heptane, 2-methyl-3-methylene-2-(4-methyl-3-pentenyl)-, (1S-endo)-

37

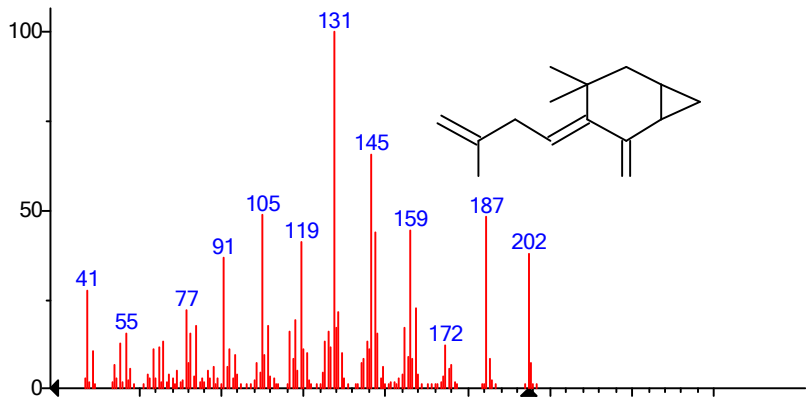


(Text File) Scan 2274 (23.410 min): 130718 BRIAN+FE.D\ data.ms

38

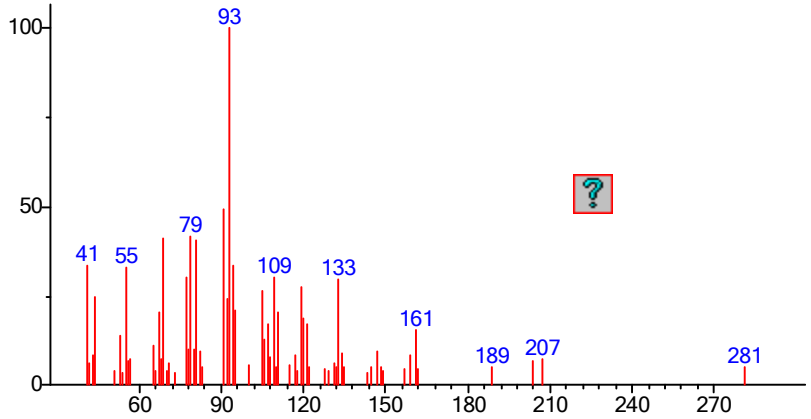


(Text File) Scan 2288 (23.554 min): 130718 BRIAN+FE.D\ data.ms (-2292)



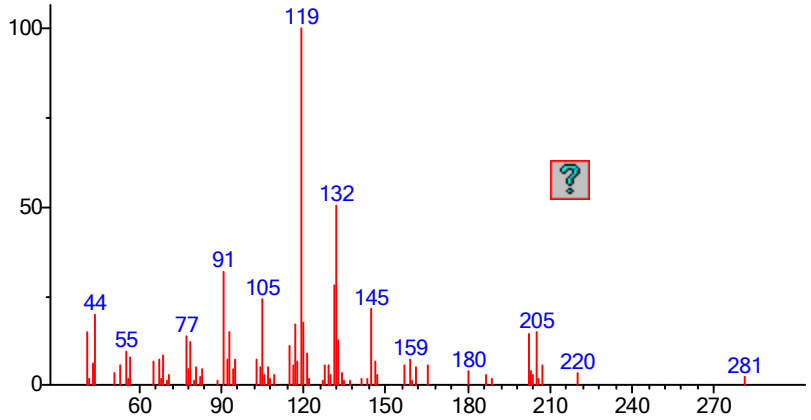
(mainlib) 4,4-Dimethyl-3-(3-methylbut-3-enylidene)-2-methylenebicyclo[4.1.0]heptane

39

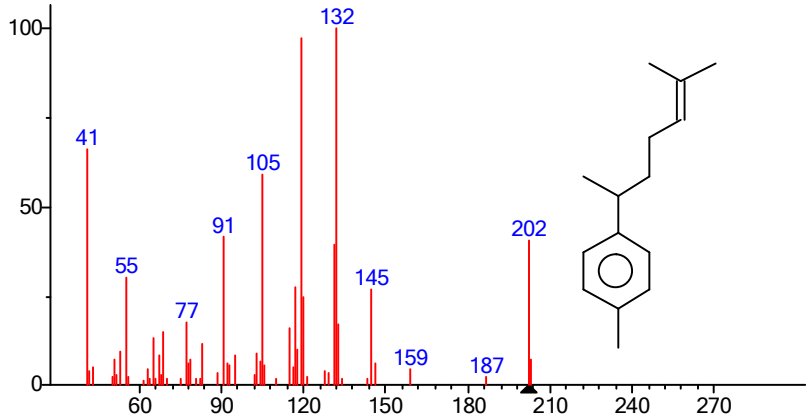


(Text File) Scan 2326 (23.944 min): 130718 BRIAN+FE.D\ data.ms

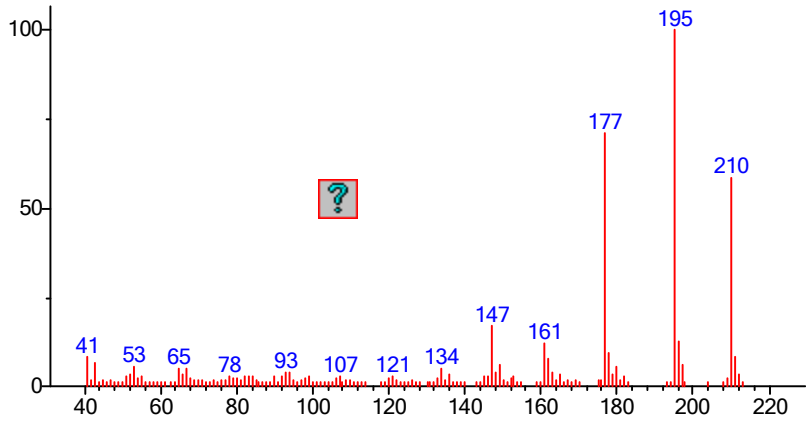
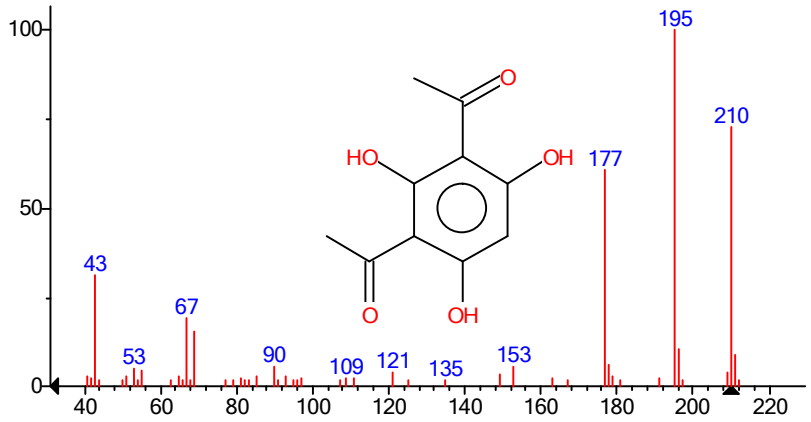
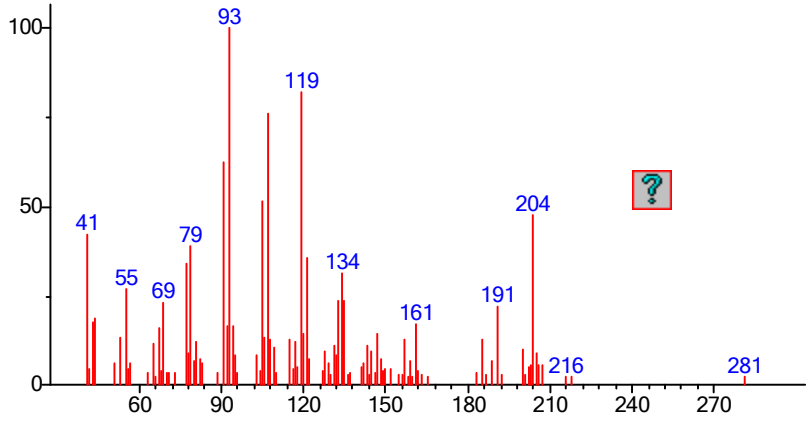
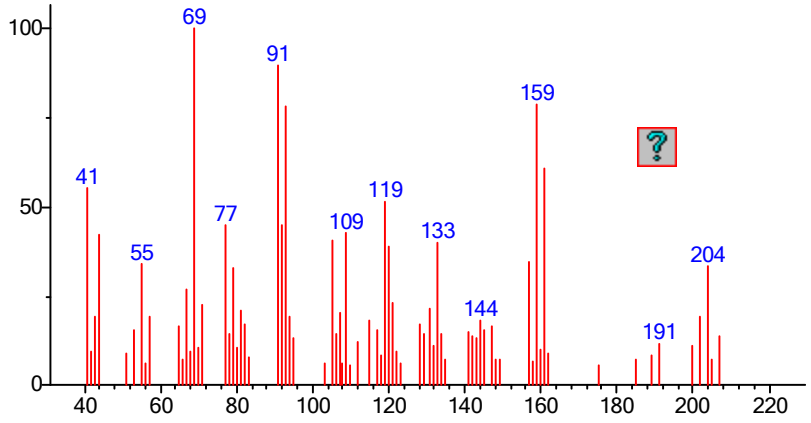
40

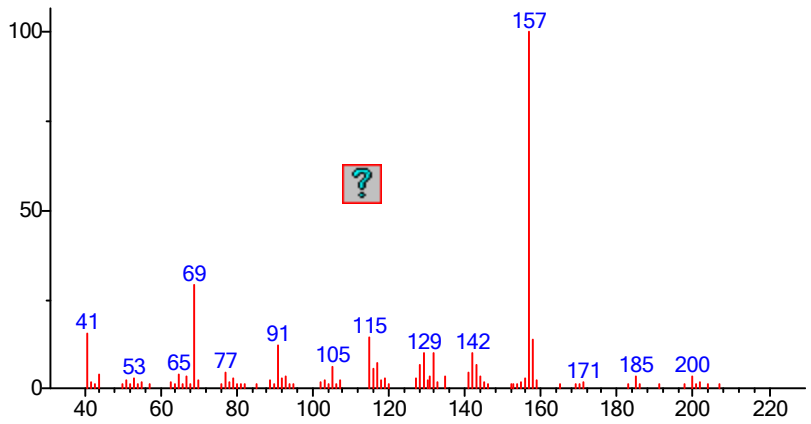
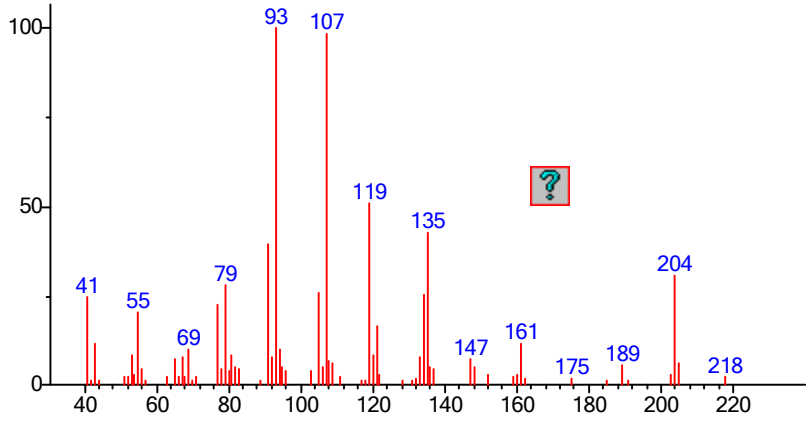
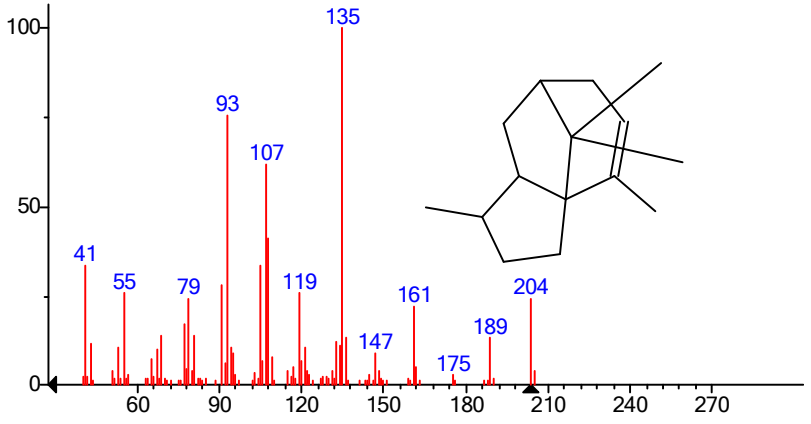
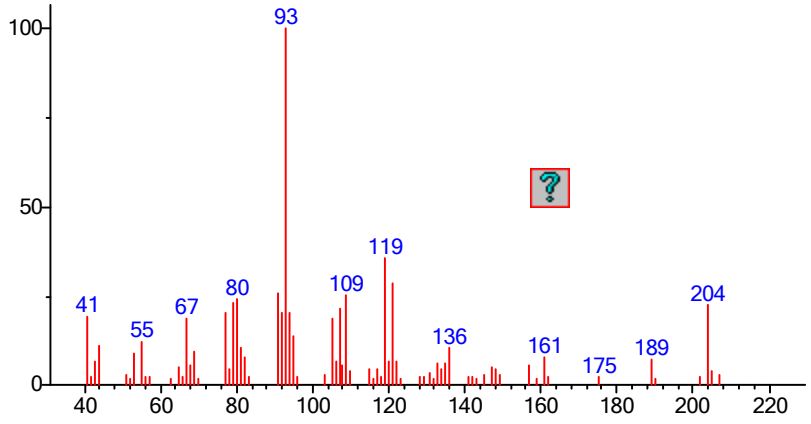
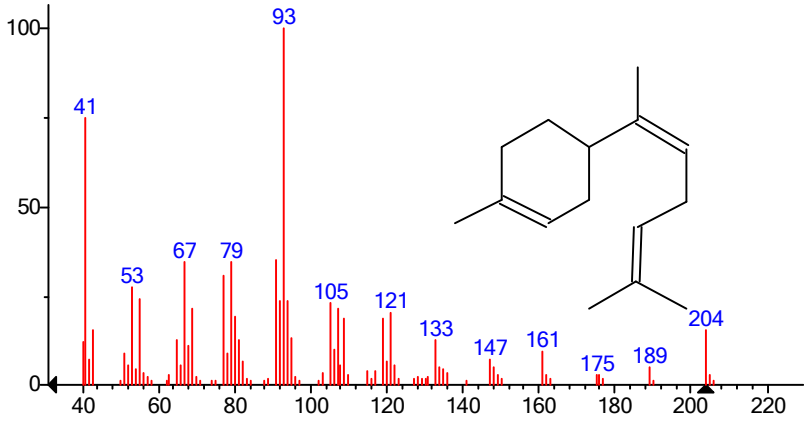


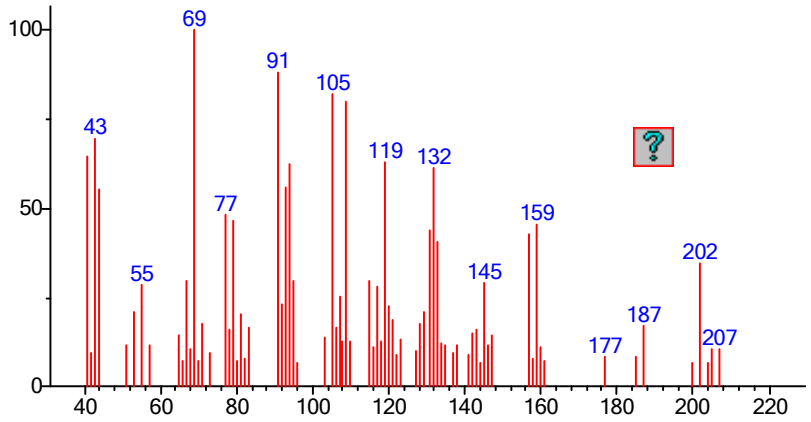
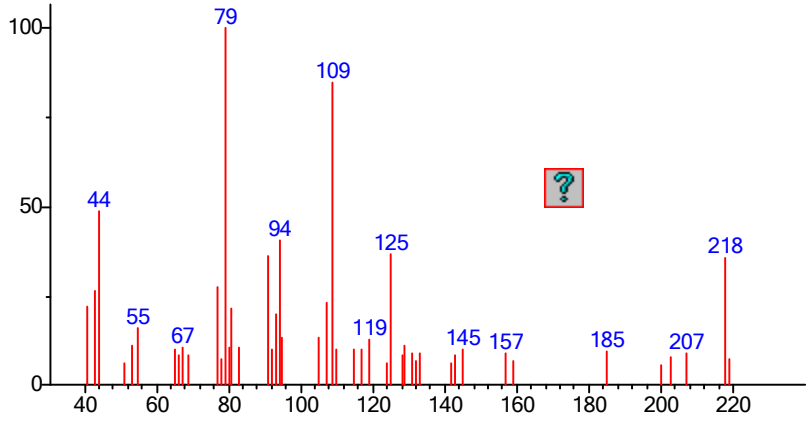
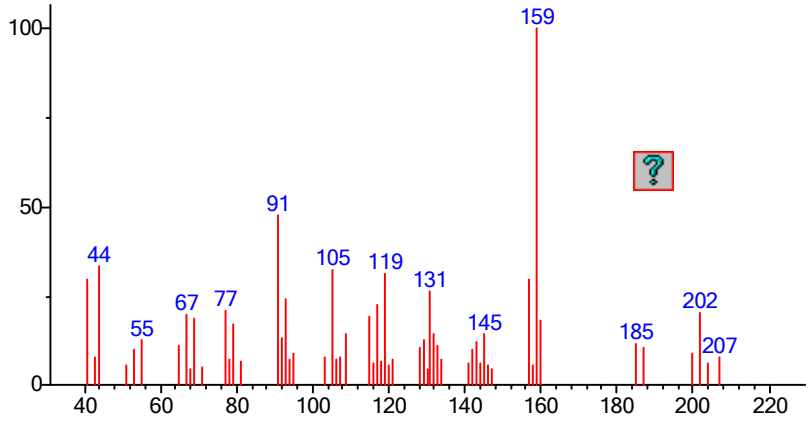
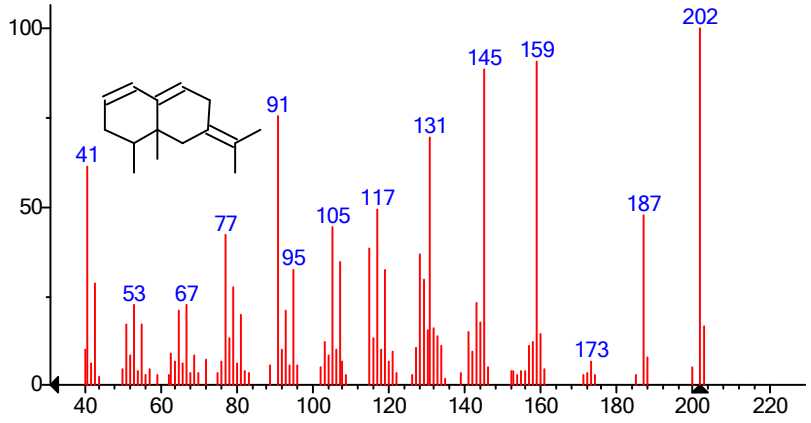
(Text File) Average of 24.016 to 24.046 min.: 130718 BRIAN+FE.D\ data.ms

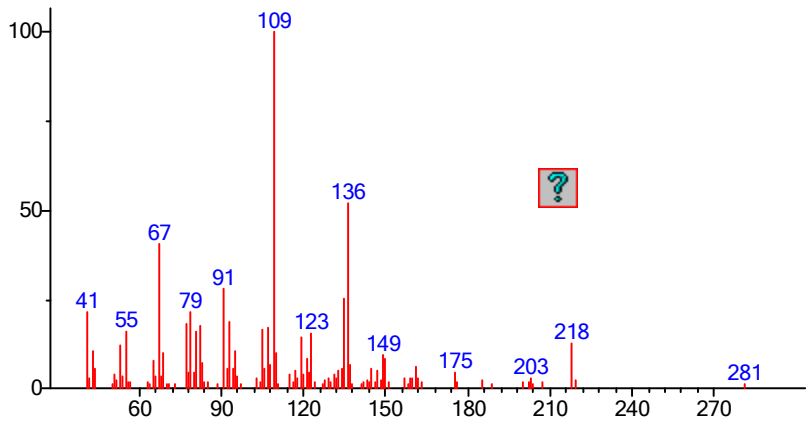
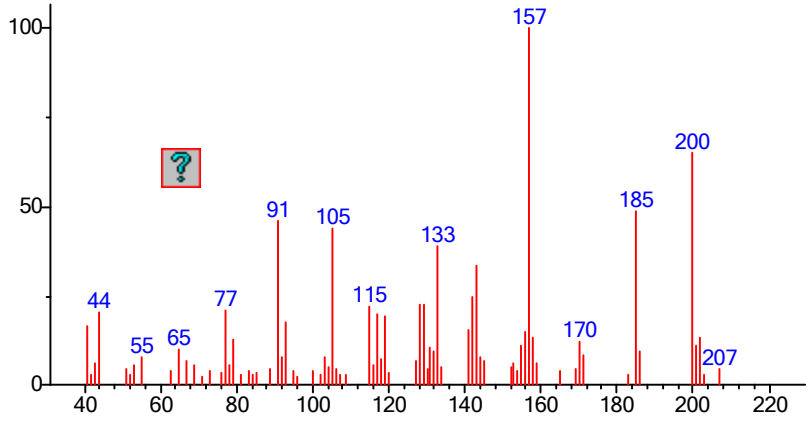
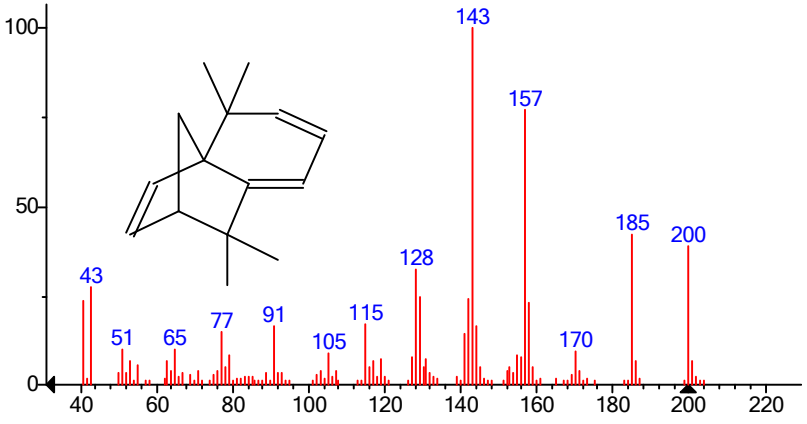
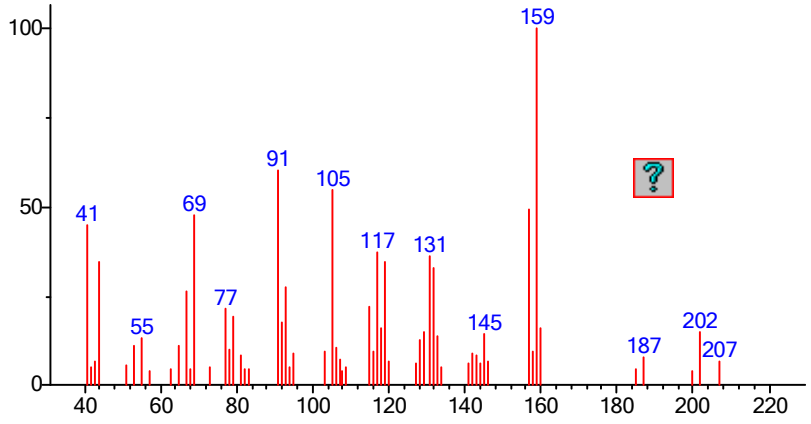


(replib) Benzene, 1-(1,5-dimethyl-4-hexenyl)-4-methyl-

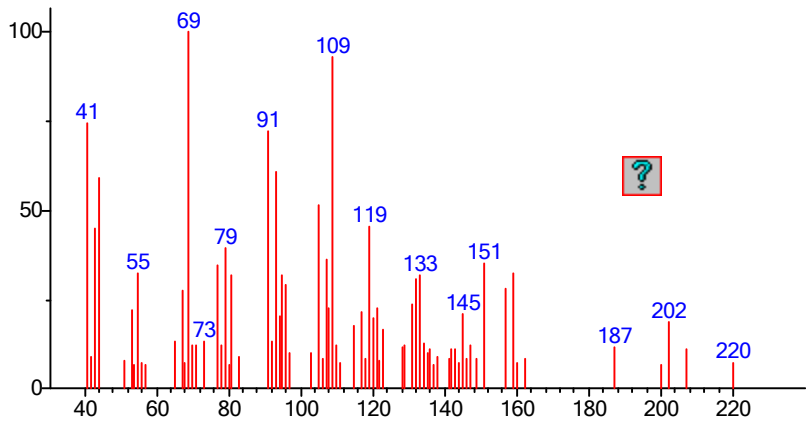
41	 (Text File) Scan 2364 (24.334 min): 130906 BRIAN+FE PLUG.D\ data.ms (-2370)	 (mainlib) Ethanone, 1,1'-(2,4,6-trihydroxy-1,3-phenylene)bis-
42	 (Text File) Scan 2489 (25.616 min): 130718 BRIAN+FE.D\ data.ms	
43	 (Text File) Scan 2517 (25.903 min): 130718 BRIAN+FE.D\ data.ms	

44	 (Text File) Scan 2537 (26.108 min): 130718 BRIAN+FE.D\ data.ms	
45	 (Text File) Scan 2545 (26.190 min): 130718 BRIAN+FE.D\ data.ms (-2541)	 (mainlib) 1H-3a,7-Methanoazulene, 2,3,6,7,8,8a-hexahydro-1,4,9,9-tetramethyl-, (1α,3aα
46	 (Text File) Scan 2582 (26.569 min): 130718 BRIAN+FE.D\ data.ms	 (mainlib) cis-α-Bisabolene

47	 (Text File) Scan 2598 (26.733 min): 130718 BRIAN+FE.D\ data.ms	
48	 (Text File) Scan 2615 (26.908 min): 130718 BRIAN+FE.D\ data.ms	
49	 (Text File) Scan 2638 (27.144 min): 130718 BRIAN+FE.D\ data.ms	 (mainlib) β-Vatirenene

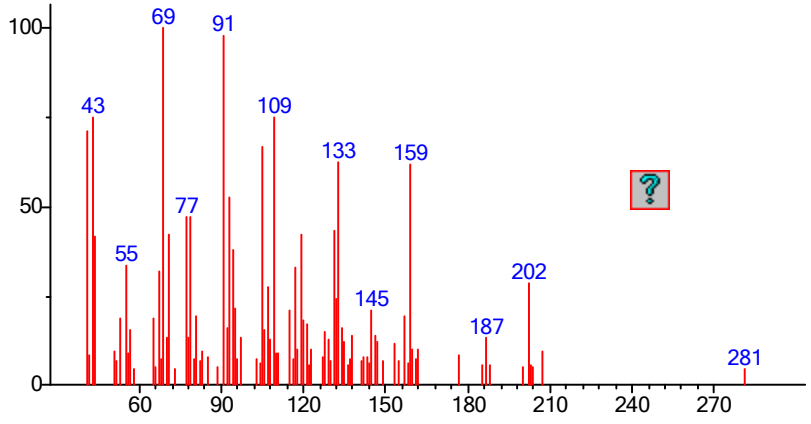
50	 (Text File) Scan 2669 (27.462 min): 130718 BRIAN+FE.D\ data.ms	
51	 (Text File) Scan 2695 (27.728 min): 130718 BRIAN+FE.D\ data.ms	 (mainlib) Isolongifolene, 4,5,9,10-dehydro-
52	 (Text File) Scan 2710 (27.882 min): 130718 BRIAN+FE.D\ data.ms	

53

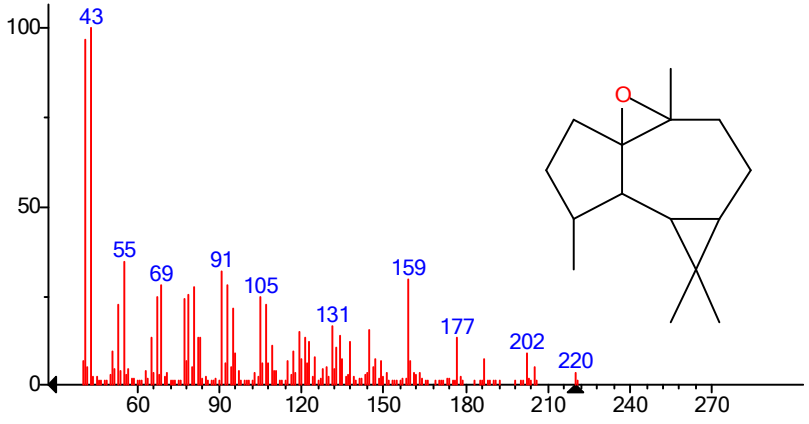


(Text File) Scan 2742 (28.210 min): 130718 BRIAN+FE.D\ data.ms

54

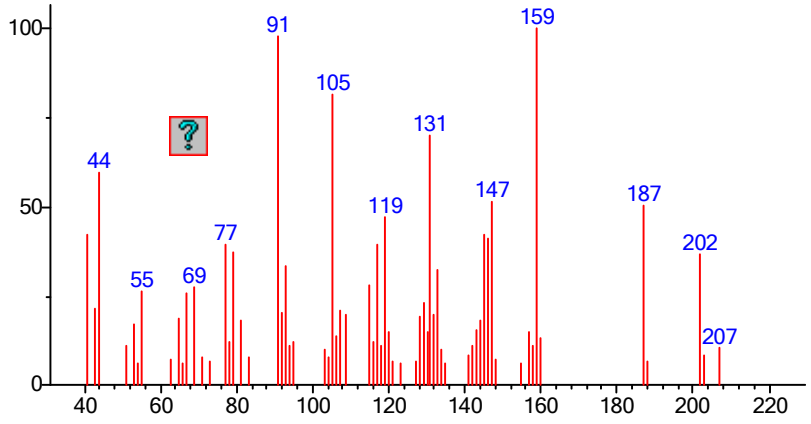


(Text File) Scan 2780 (28.600 min): 130718 BRIAN+FE.D\ data.ms

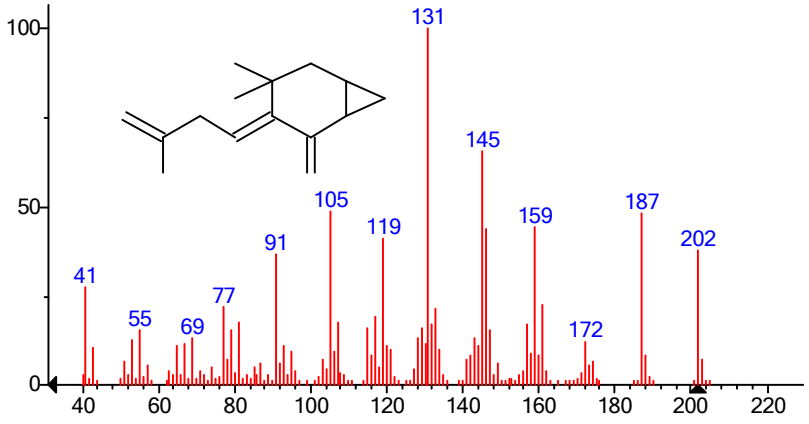


(mainlib) Ledene oxide-(II)

55

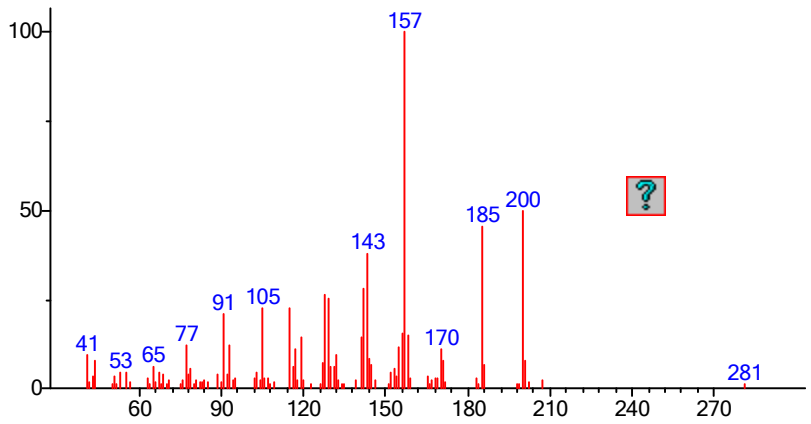


(Text File) Scan 2826 (29.072 min): 130718 BRIAN+FE.D\ data.ms

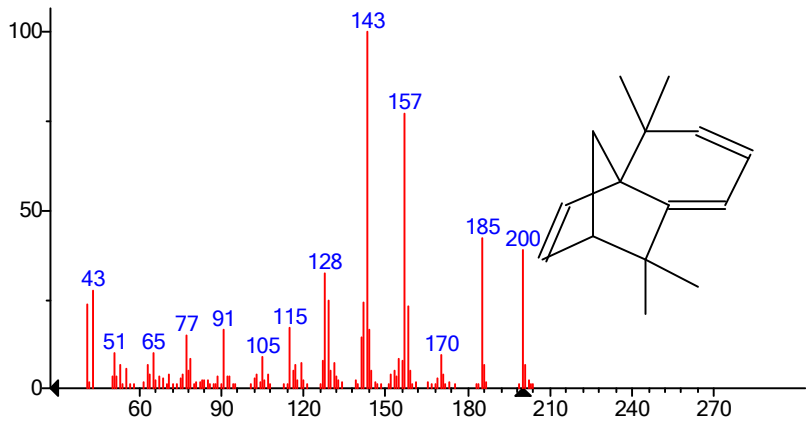


(mainlib) 4,4-Dimethyl-3-(3-methylbut-3-enylidene)-2-methylenebicyclo[4.1.0]heptane

56

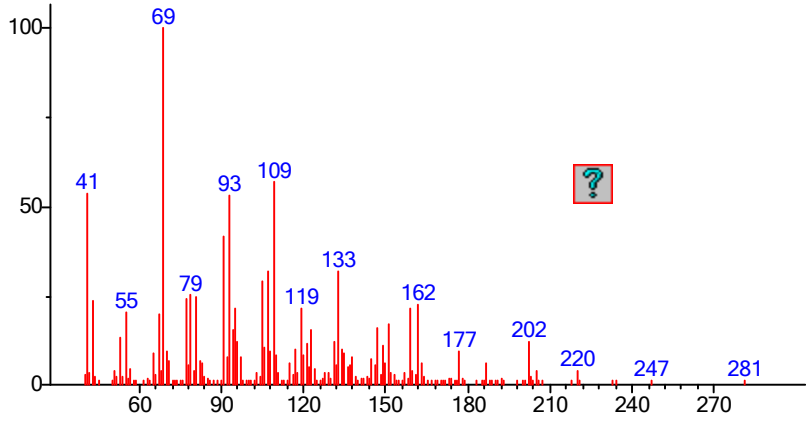


(Text File) Scan 2848 (29.298 min): 130718 BRIAN+FE.D\ data.ms

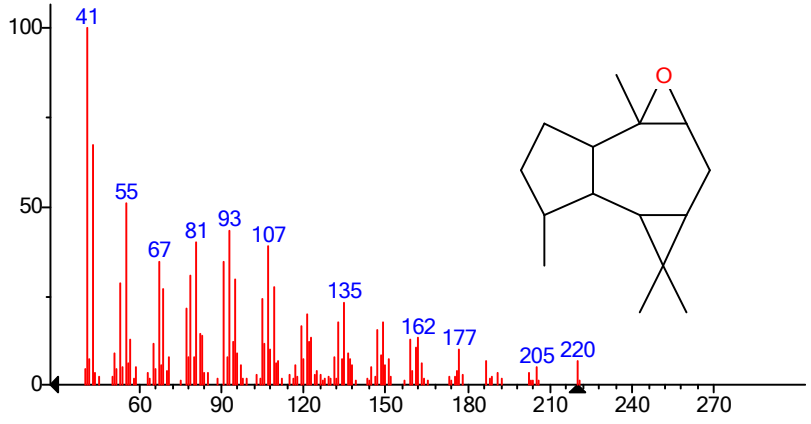


(mainlib) Isolongifolene, 4,5,9,10-dehydro-

57

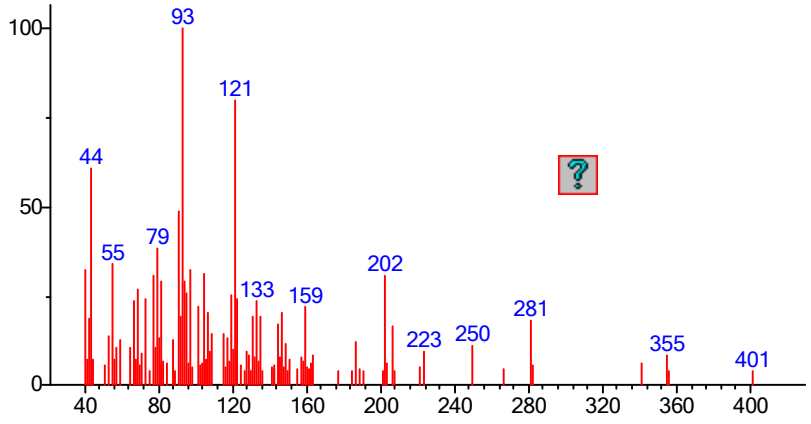


(Text File) Scan 2882 (29.646 min): 130718 BRIAN+FE.D\ data.ms

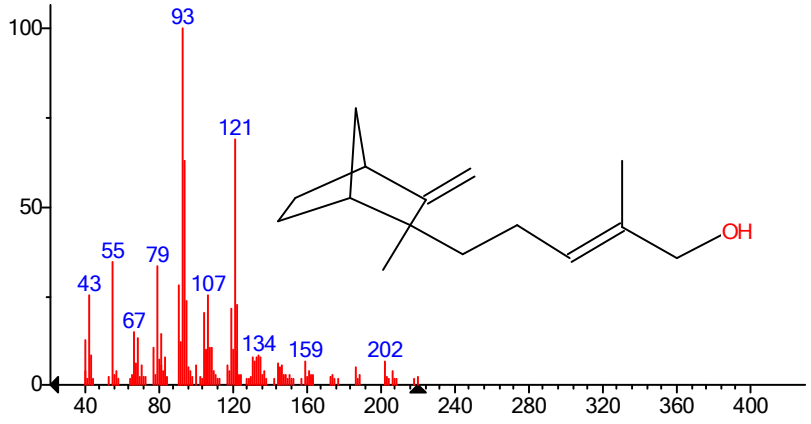


(mainlib) Isoaromadendrene epoxide

58

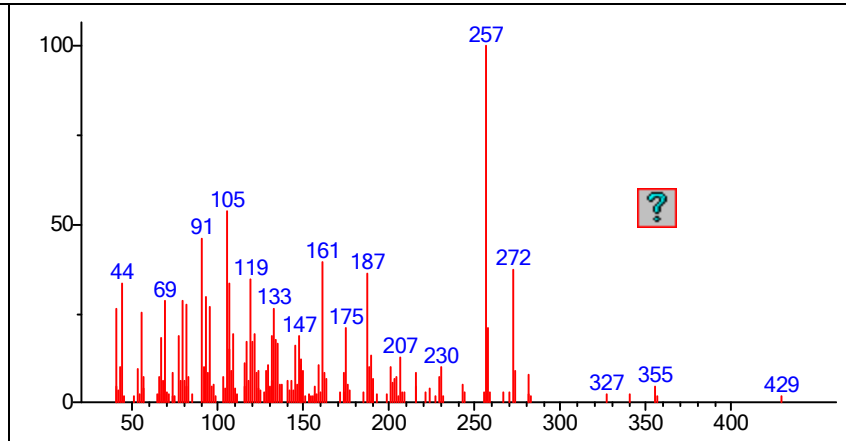


(Text File) Scan 2986 (30.713 min): 130718 BRIAN+FE.D\ data.ms

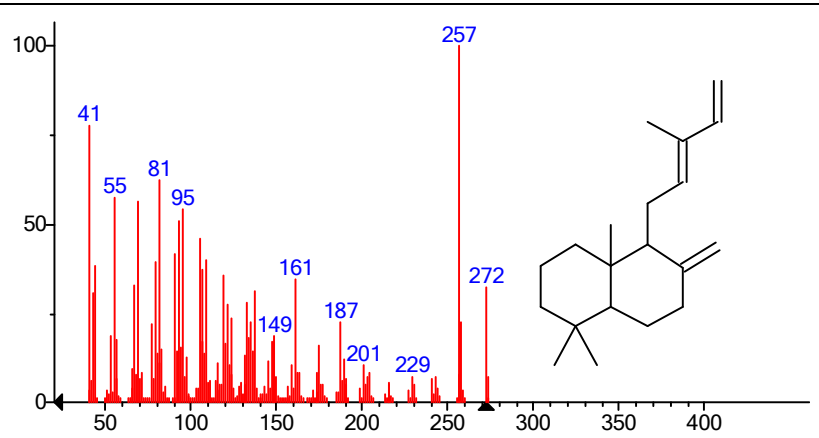


(mainlib) Santalol

59

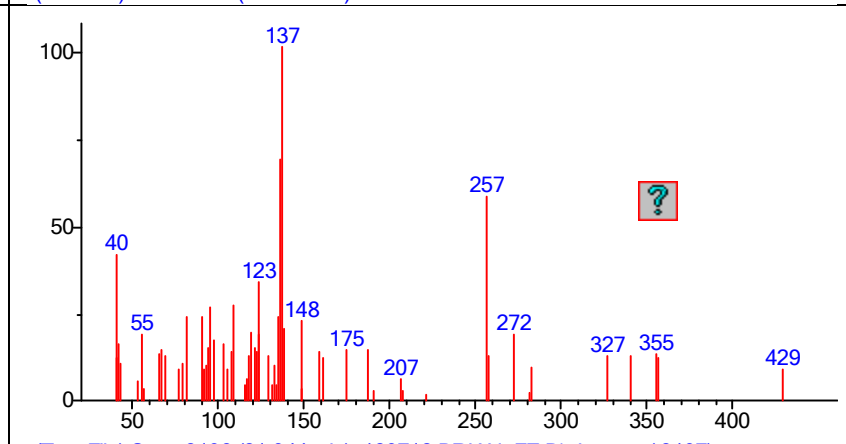


(Text File) Scan 3079 (31.667 min): 130718 BRIAN+FE.D\ data.ms

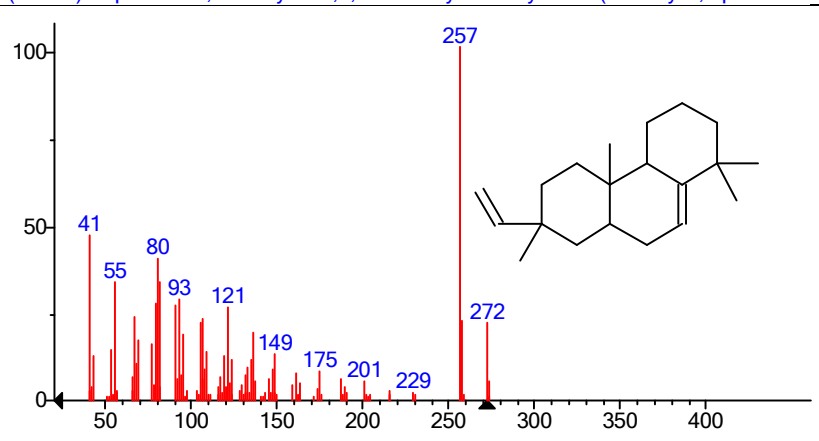


(mainlib) Naphthalene, decahydro-1,1,4a-trimethyl-6-methylene-5-(3-methyl-2,4-pentadier

60

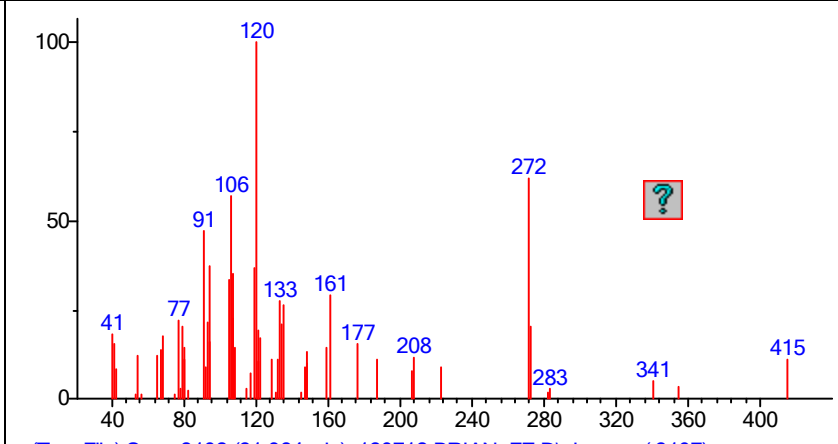


(Text File) Scan 3106 (31.944 min): 130718 BRIAN+FE.D\ data.ms (-3107)

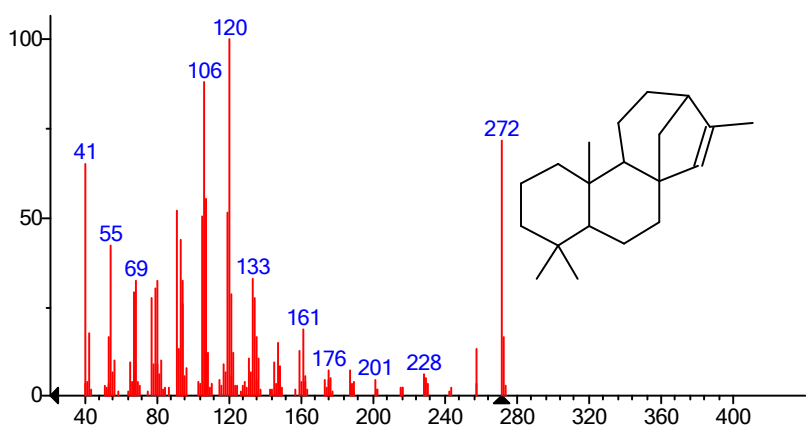


(mainlib) Phenanthrene, 7-ethenyl-1,2,3,4,4a,4b,5,6,7,8,8a,9-dodecahydro-1,1,4b,7-tetra

61

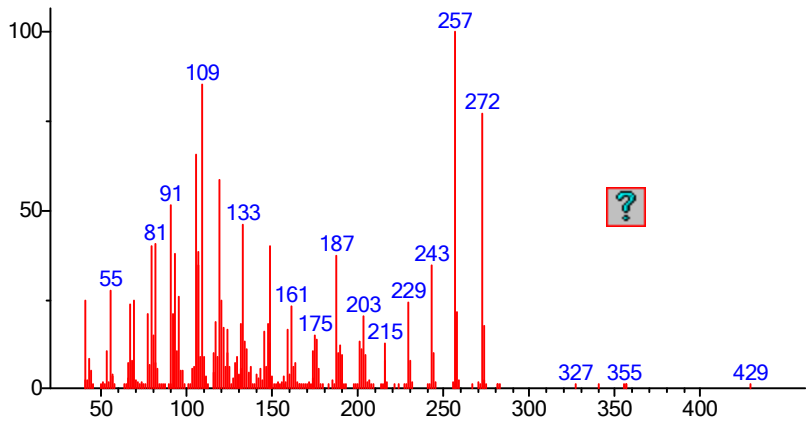


(Text File) Scan 3108 (31.964 min): 130718 BRIAN+FE.D\ data.ms (-3107)

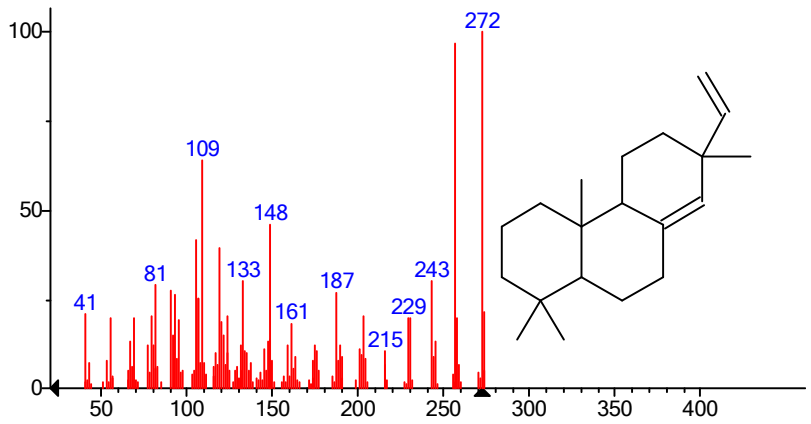


(replib) Kaur-15-ene, (5α,9α,10β)-

62

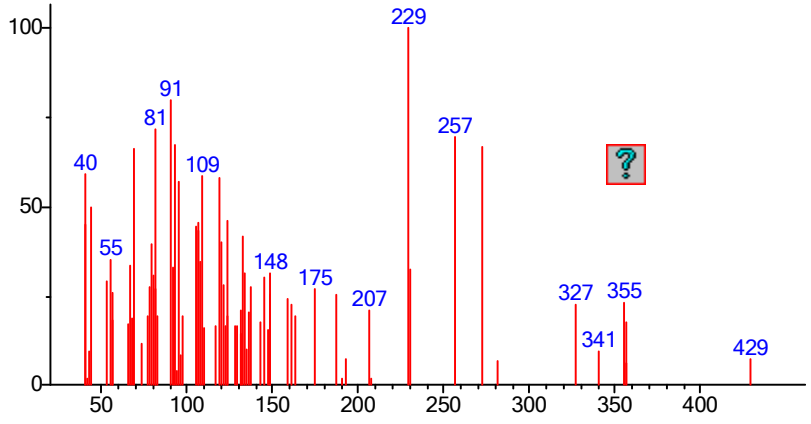


(Text File) Scan 3121 (32.098 min): 130718 BRIAN+FE.D\ data.ms

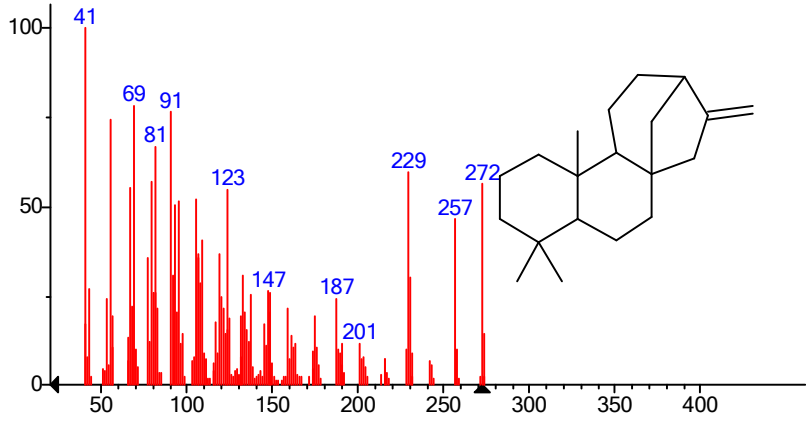


(mainlib) Phenanthrene, 7-ethenyl-1,2,3,4,4a,4b,5,6,7,9,10,10a-dodecahydro-1,1,4a,7-te

63

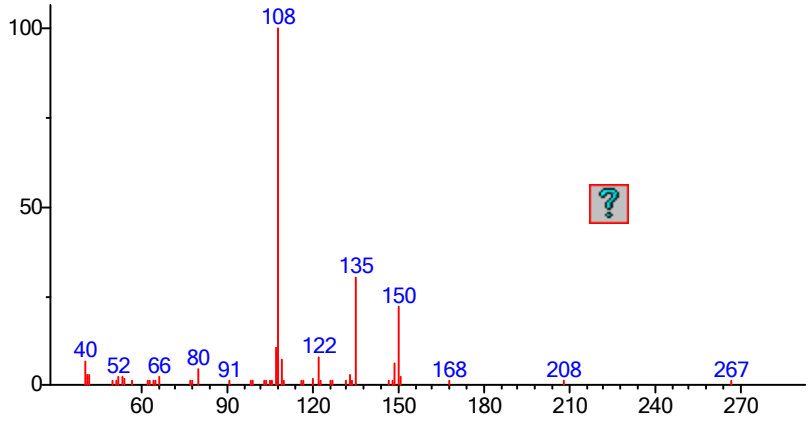


(Text File) Scan 3135 (32.241 min): 130718 BRIAN+FE.D\ data.ms (-3132)

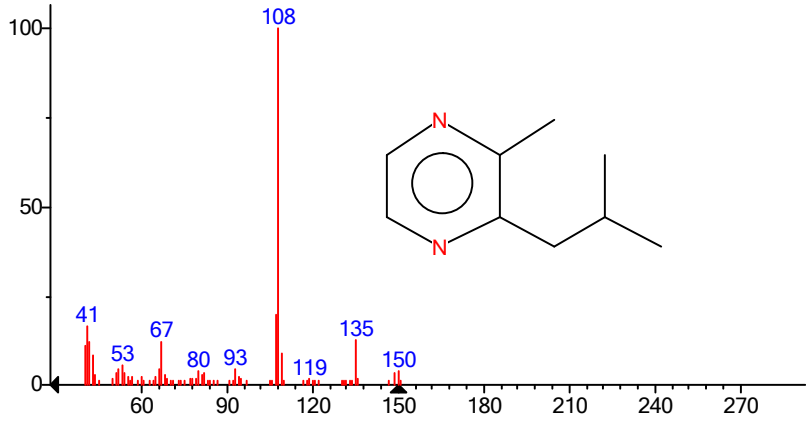


(replib) Kaur-16-ene, (8β,13β)-

64

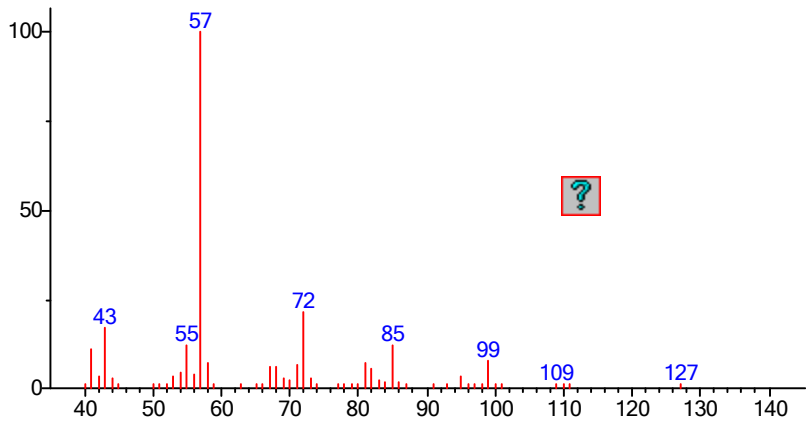


(Text File) Scan 1341 (13.841 min): 130906 BRIAN+FE PLUG.D\ data.ms (-1343)

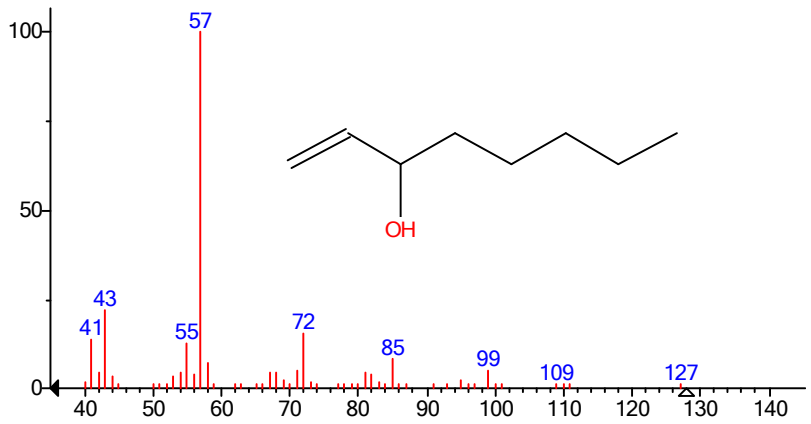


(replib) 2-Isobutyl-3-methylpyrazine

65

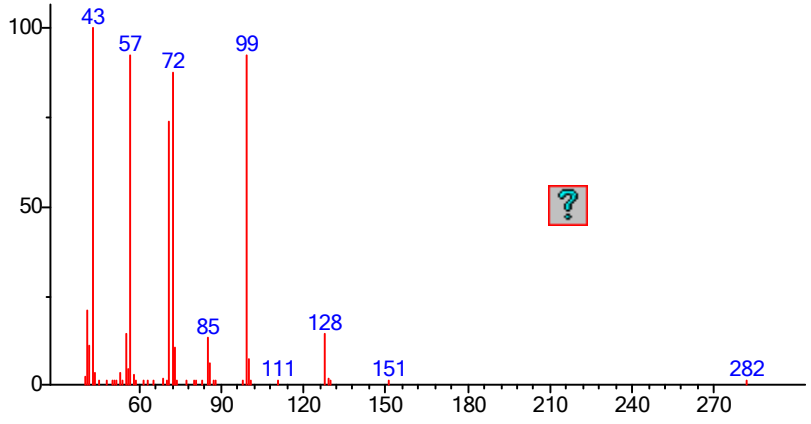


(Text File) Scan 988 (10.221 min): FOC 3 24H 30MIN EXPO.D\ data.ms (-997)

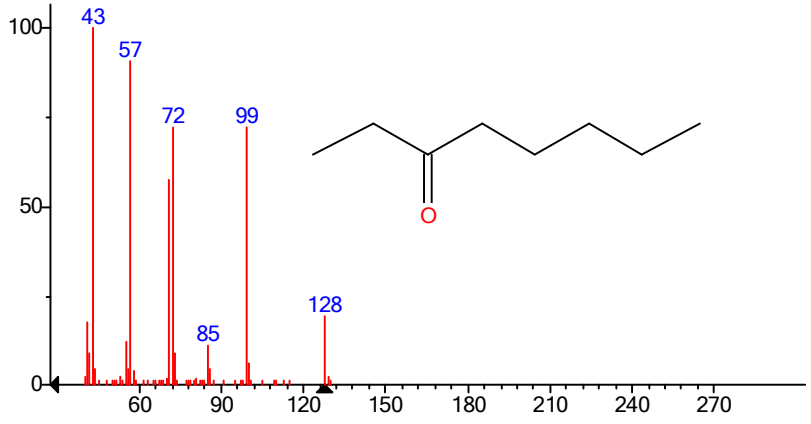


(mainlib) 1-Octen-3-ol

66

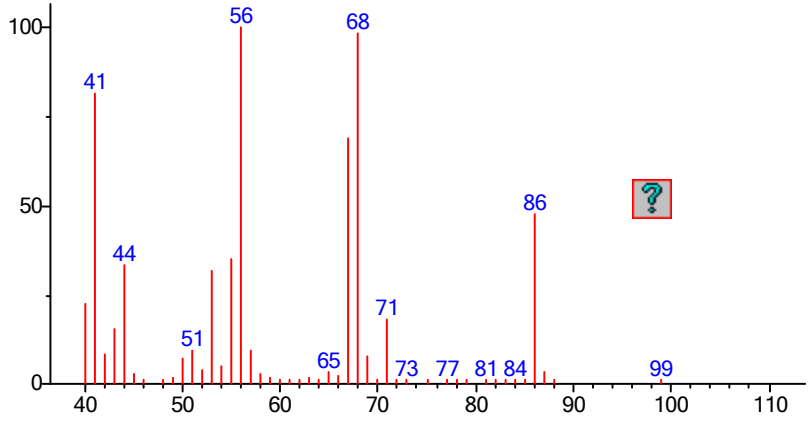


(Text File) Scan 1000 (10.344 min): FOC 3 24H 30MIN EXPO.D\ data.ms (-998)

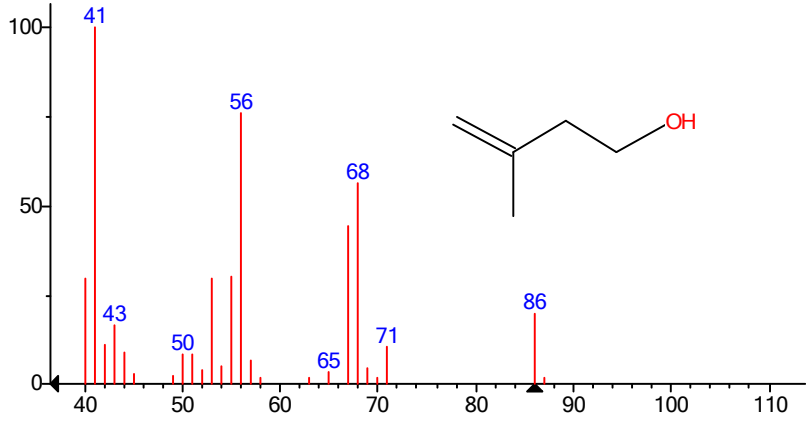


(replib) 3-Octanone

67

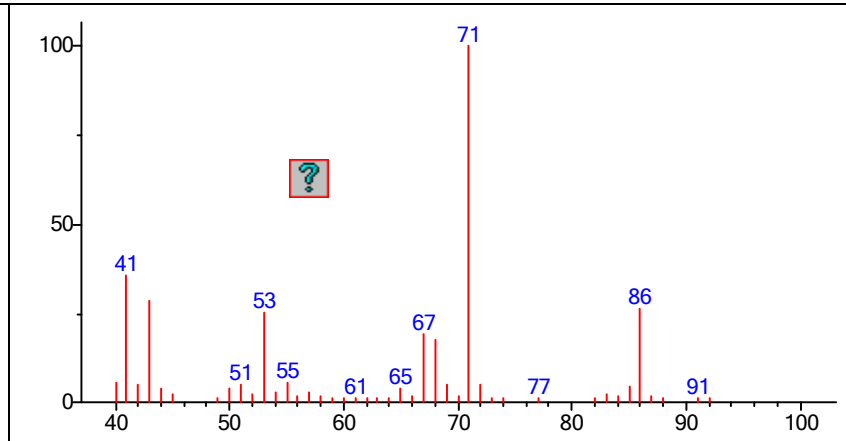


(Text File) Scan 289 (3.052 min): ALEN625.D\ data.ms

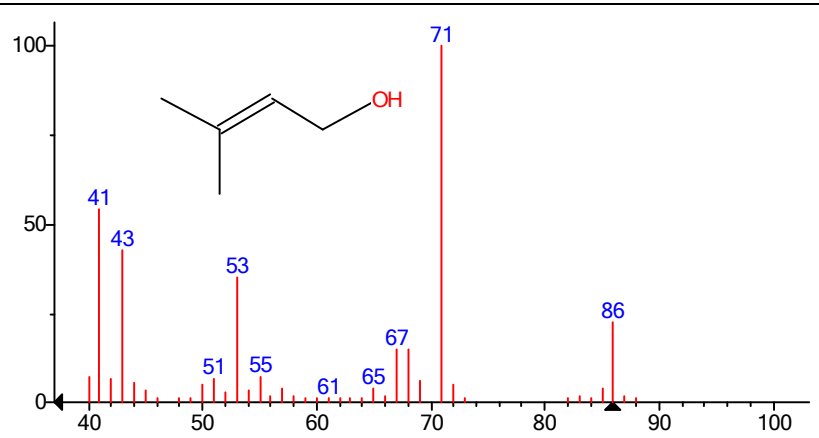


(replib) 3-Buten-1-ol, 3-methyl-

68

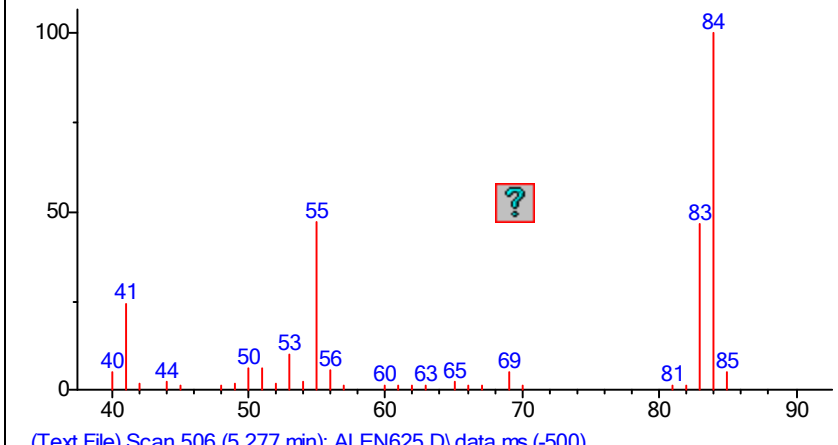


(Text File) Scan 482 (5.031 min): ALEN625.D\ data.ms

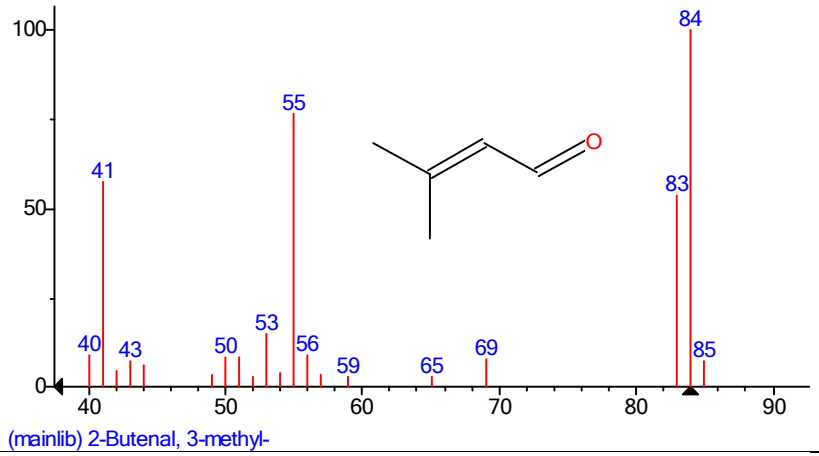


(mainlib) 2-Buten-1-ol, 3-methyl-

69

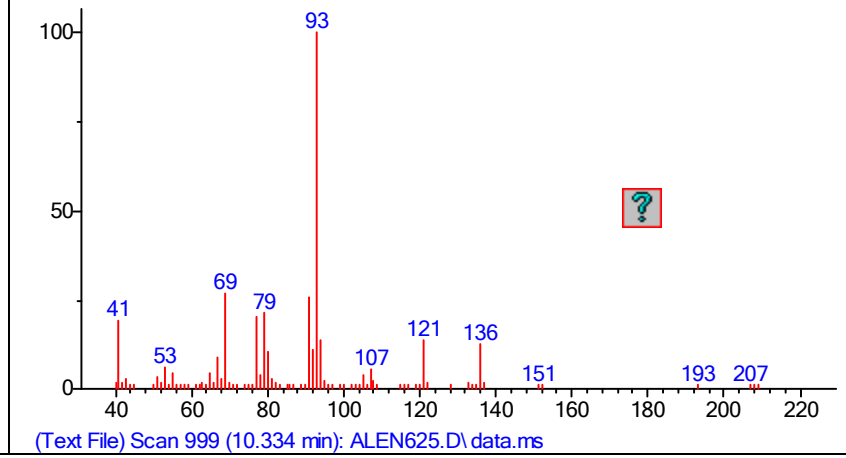


(Text File) Scan 506 (5.277 min): ALEN625.D\ data.ms (-500)

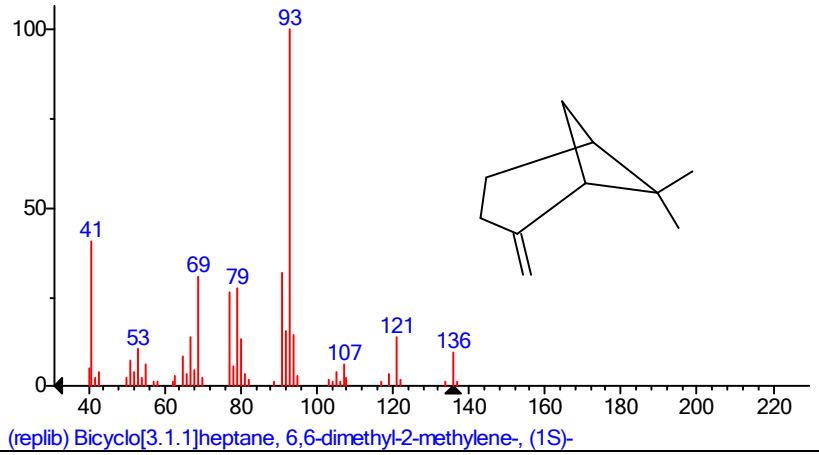


(mainlib) 2-Butenal, 3-methyl-

70

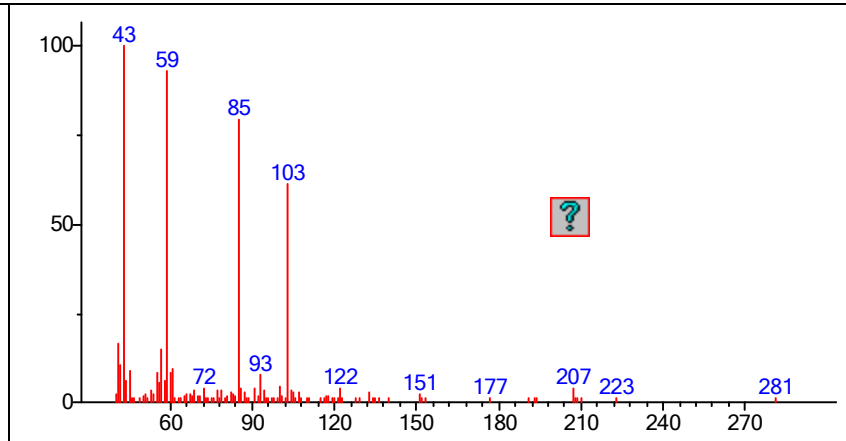


(Text File) Scan 999 (10.334 min): ALEN625.D\ data.ms

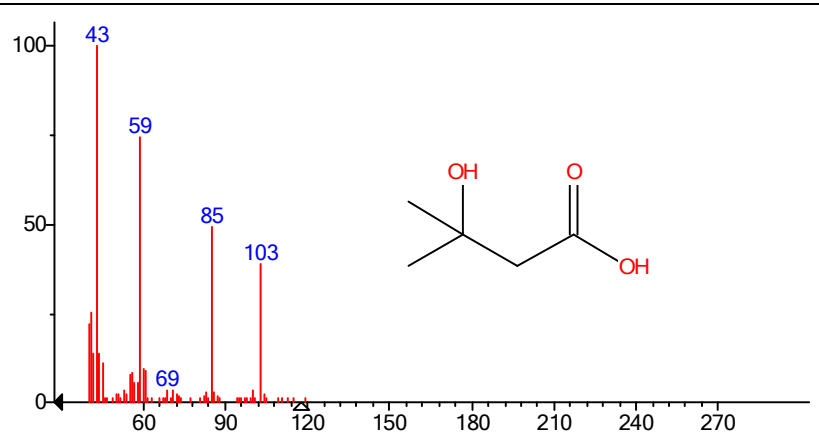


(replib) Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-, (1S)-

71

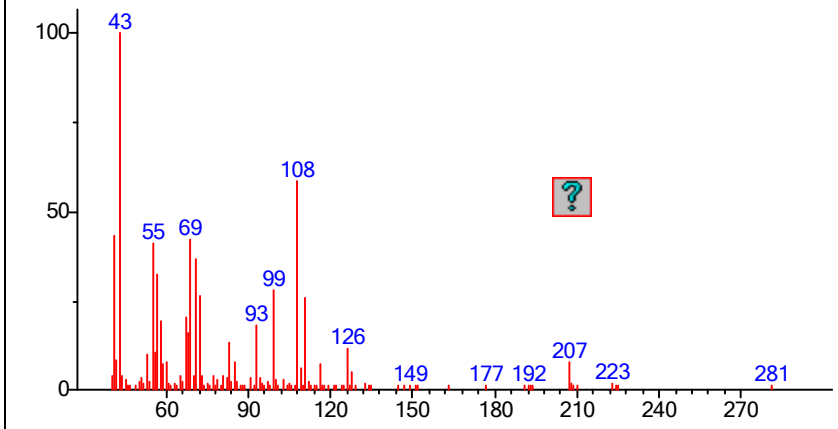


(Text File) Scan 1011 (10.457 min): ALEN625.D\ data.ms

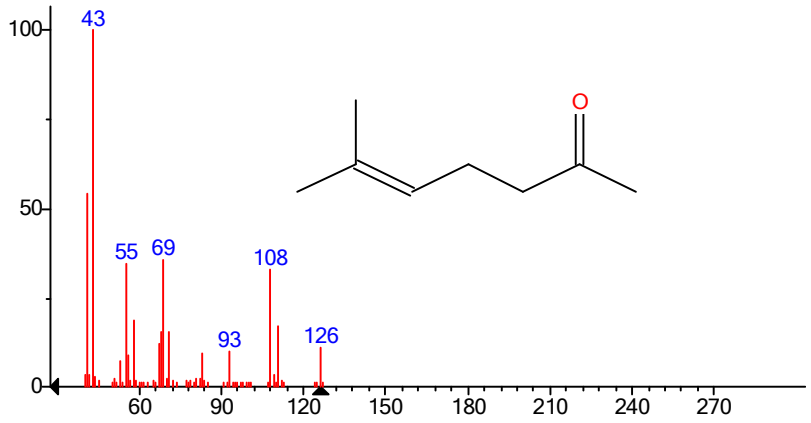


(replib) Butanoic acid, 3-hydroxy-3-methyl-

72

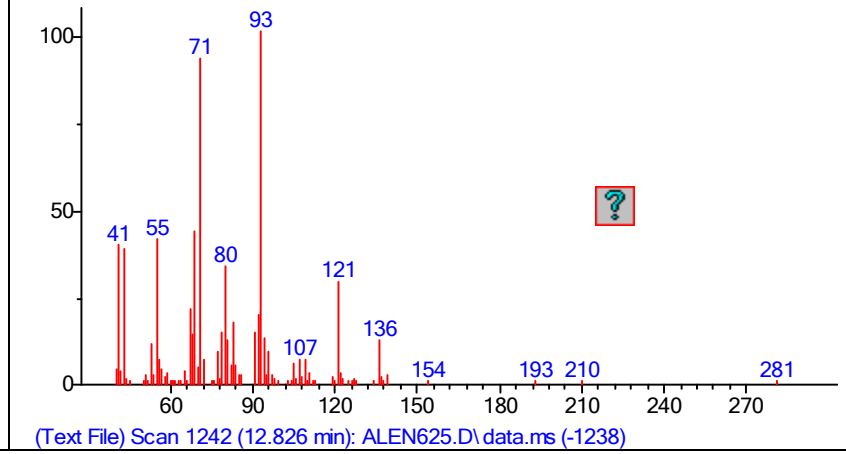


(Text File) Scan 1022 (10.570 min): ALEN625.D\ data.ms

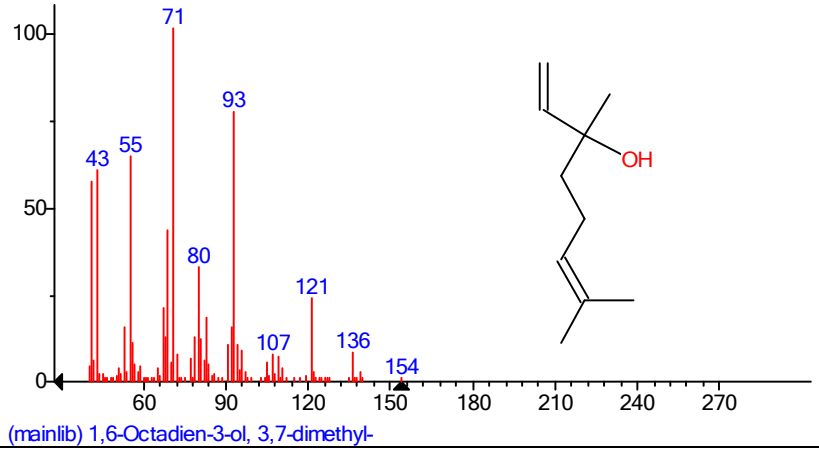


(replib) 5-Hepten-2-one, 6-methyl-

73

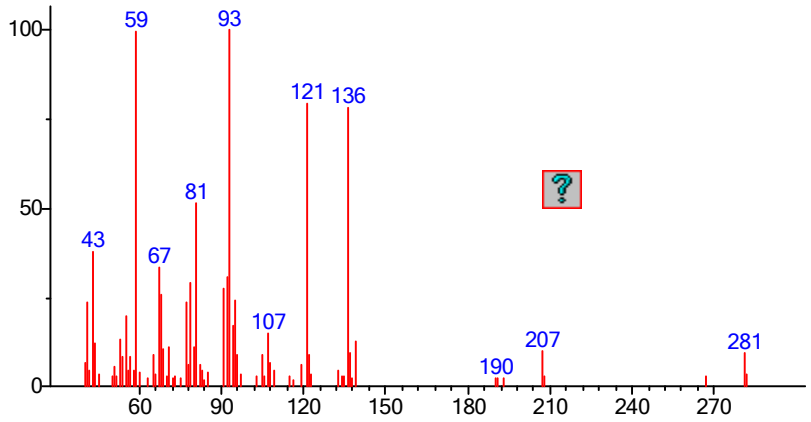


(Text File) Scan 1242 (12.826 min): ALEN625.D\ data.ms (-1238)

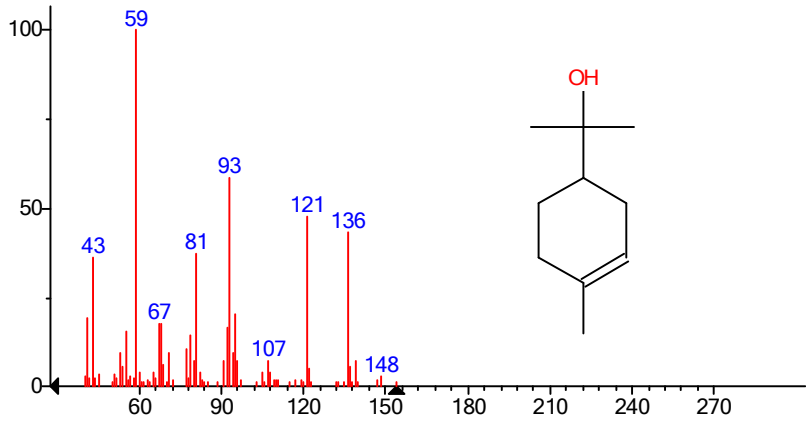


(mainlib) 1,6-Octadien-3-ol, 3,7-dimethyl-

74

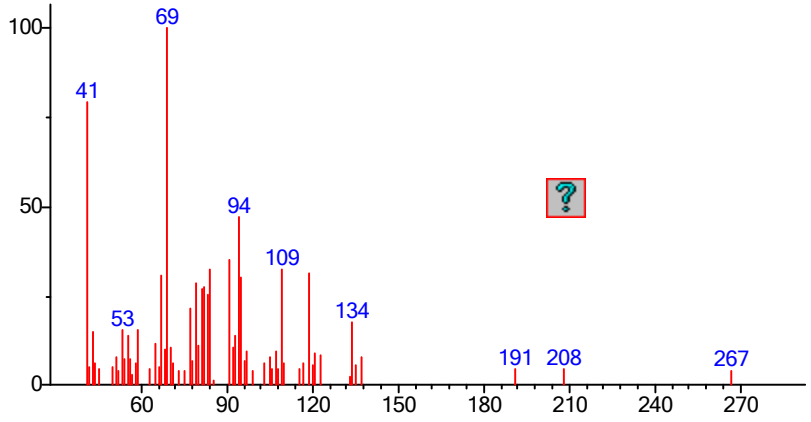


(Text File) Scan 1461 (15.072 min): ALEN625.D\ data.ms

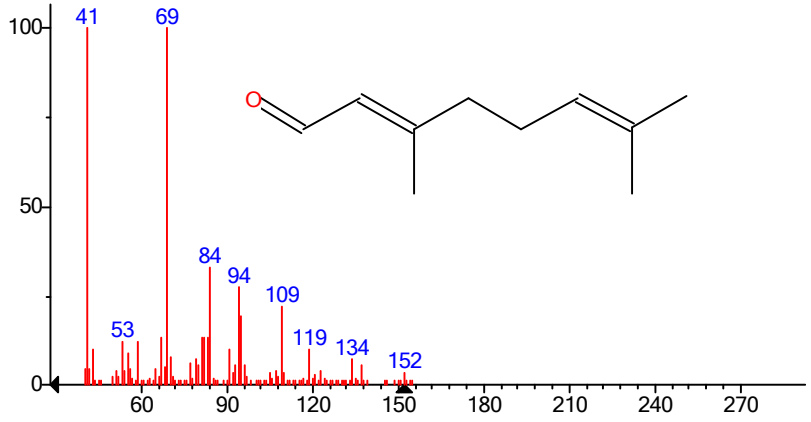


(replib) 3-Cyclohexene-1-methanol, α,α,4-trimethyl-, (S)-

72

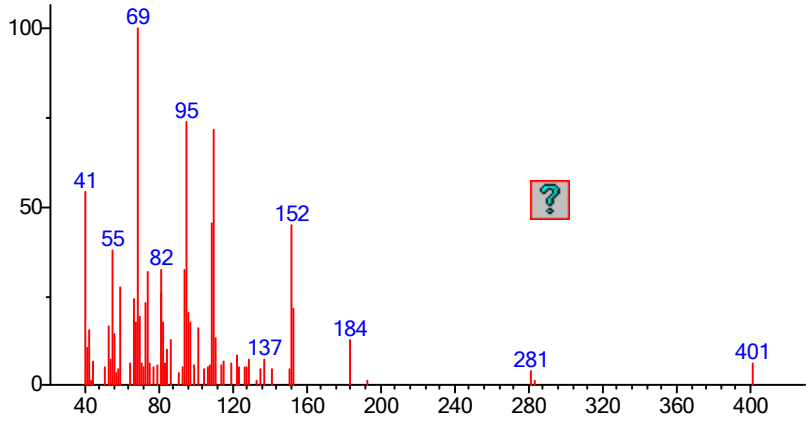


(Text File) Scan 1594 (16.436 min): ALEN625.D\ data.ms (-1589)

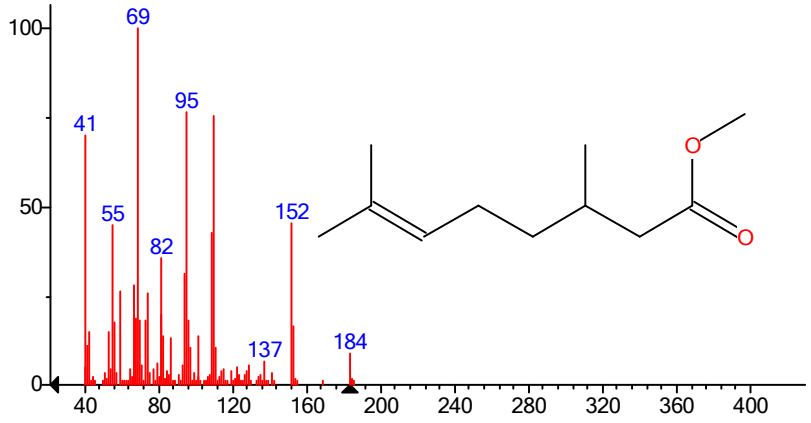


(replib) 2,6-Octadienal, 3,7-dimethyl-, (Z)-

76

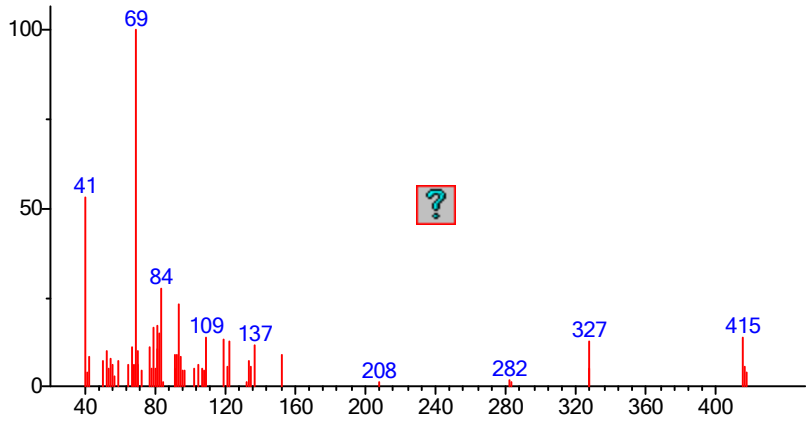


(Text File) Scan 1647 (16.980 min): ALEN625.D\ data.ms (-1641)

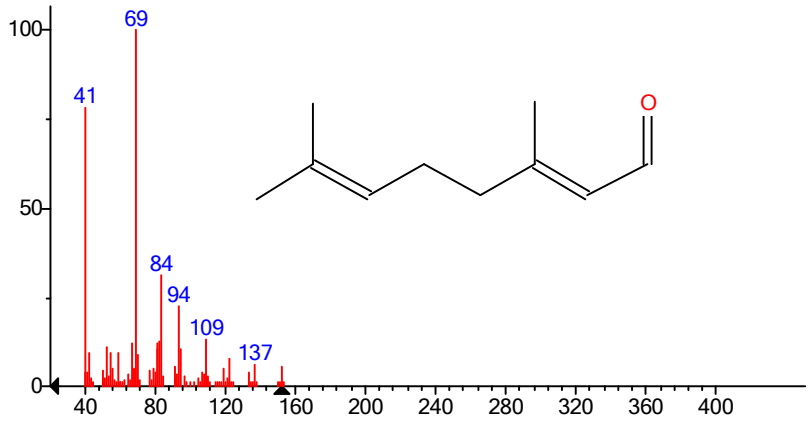


(mainlib) (S)-(-)-Citronellic acid, methyl ester

77

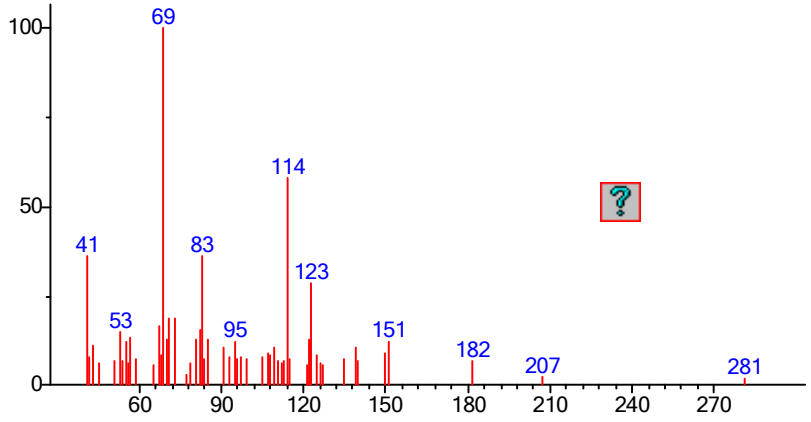


(Text File) Scan 1679 (17.308 min): ALEN625.D\ data.ms (-1672)

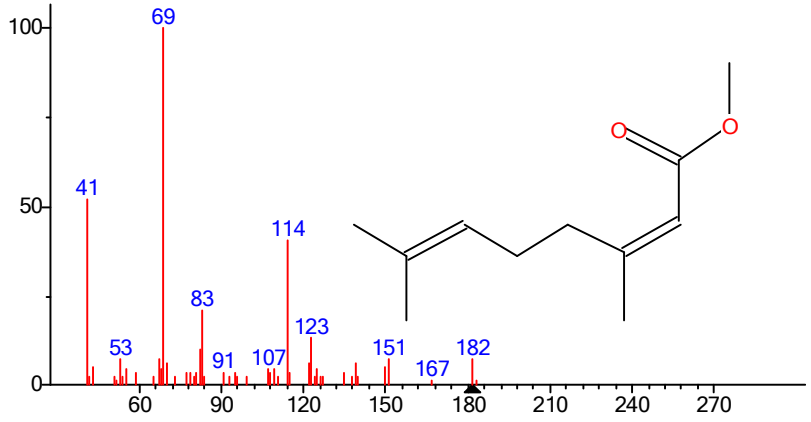


(replib) 2,6-Octadienal, 3,7-dimethyl-

78

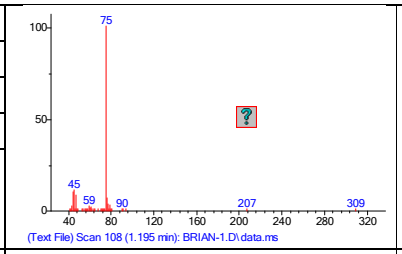
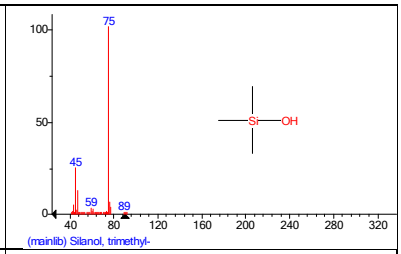
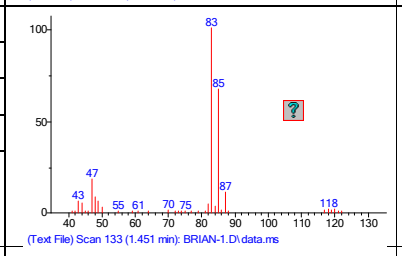
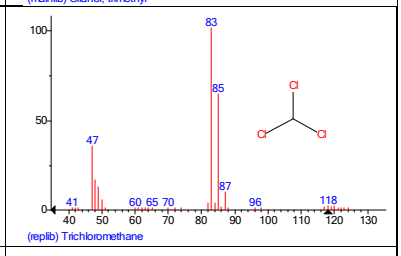
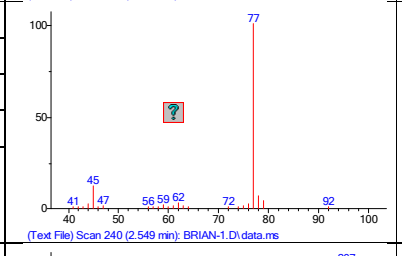
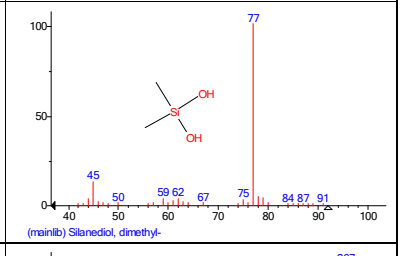
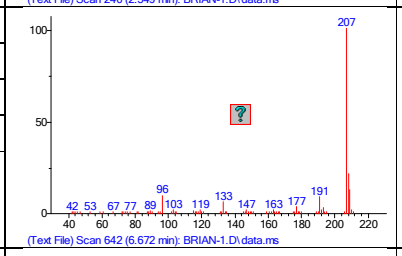
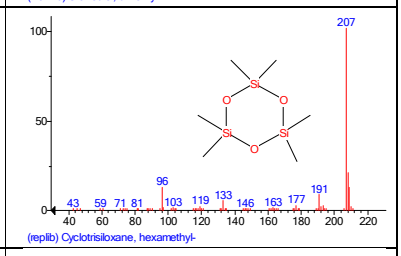
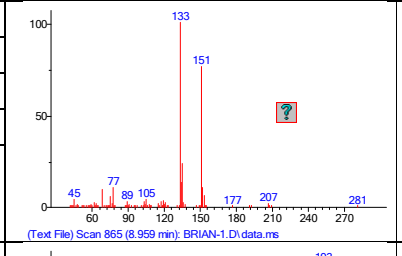
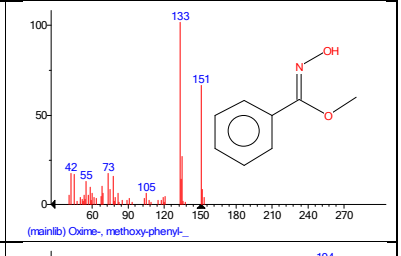
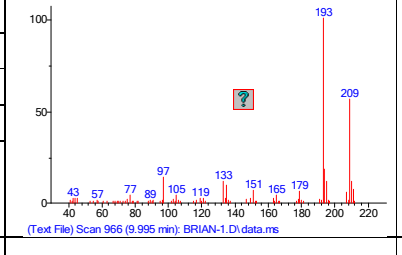
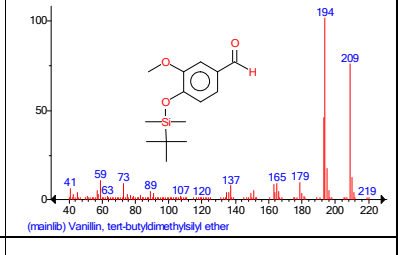


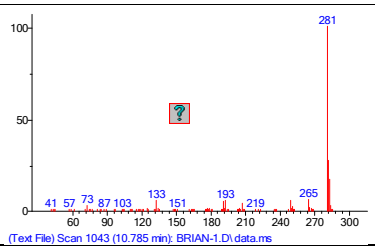
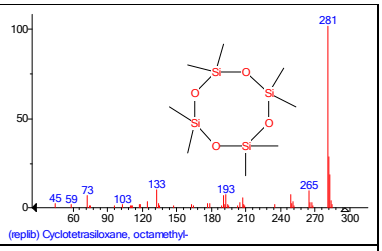
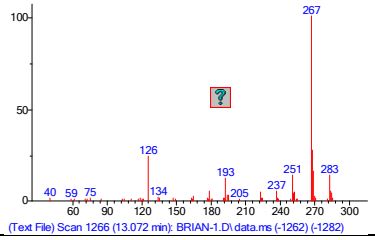
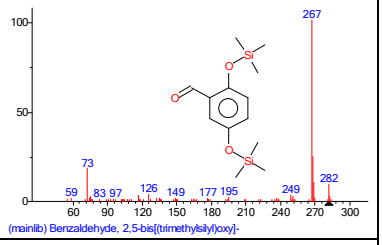
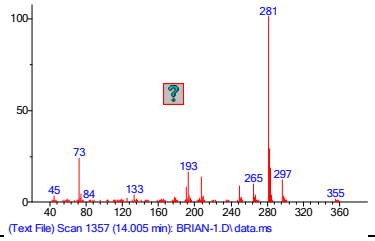
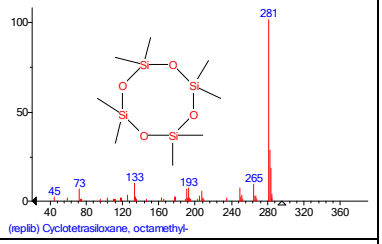
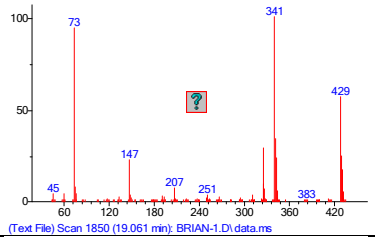
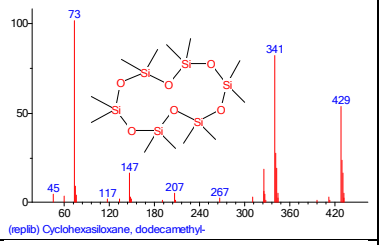
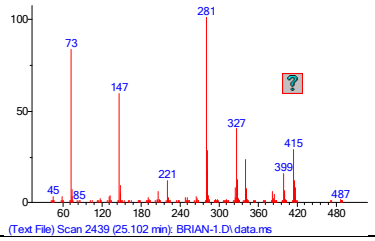
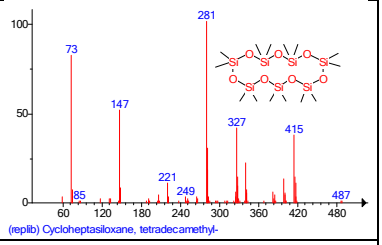
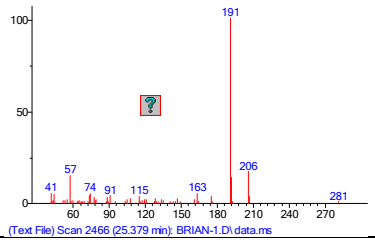
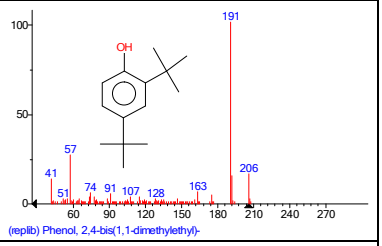
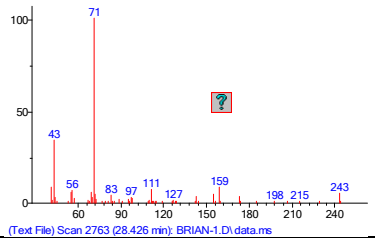
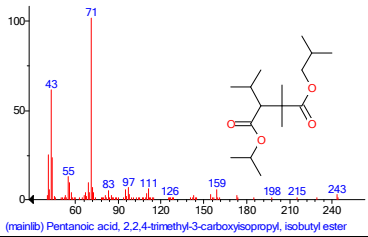
(Text File) Scan 1708 (17.606 min): ALEN625.D\ data.ms (-1714)



(mainlib) 2,6-Octadienoic acid, 3,7-dimethyl-, methyl ester, (Z)-

Table S2: Background contaminant identifications according to NIST database search. Shown are indentifications of the peaks in fig. S3 (left), the spectra of measured peaks (middle) and the spectra of the corresponding compounds found by NIST database search (right).

Peak	A		
retention time (min)	1.195		
formula	$C_3H_{10}OSi$		
probability	76 %		
trivial name	trimethylsilanol		
Peak	B		
retention time (min)	1.451		
formula	$CHCl_3$		
probability	86.2 %		
trivial name	trichloromethane		
Peak	C		
retention time (min)	2.549		
formula	$C_2H_8O_2Si$		
probability	86.4 %		
trivial name	dimethyl-silanediol		
Peak	D		
retention time (min)	6.672		
formula	$C_6H_{18}O_3Si_3$		
probability	96.2 %		
trivial name	hexamethyl-cyclotrisiloxane,		
Peak	E		
retention time (min)	8.959		
formula	$C_8H_9NO_2$		
probability	82.7 %		
trivial name	methoxy-phenyl-oxime		
Peak	F		
retention time (min)	9.995		
formula	$C_{14}H_{22}O_3Si$		
probability	29.3 %		
trivial name	vanillin-tert-butyldimethylsilylether		

Peak	G		
retention time (min)	10.785		
formula	$C_8H_{24}O_4Si_4$		
probability	95 %		
trivial name	octamethyl-cyclotetrasiloxane		
Peak	H		
retention time (min)	13.072		
formula	$C_{13}H_{22}O_3Si_2$		
probability	58.3 %		
trivial name	2,5-bis[(trimethylsilyl) oxy]-benzaldehyde		
Peak	I		
retention time (min)	14.005		
formula	$C_8H_{24}O_4Si_4$		
probability	86.5 %		
trivial name	octamethyl-cyclotetrasiloxane		
Peak	J		
retention time (min)	19.061		
formula	$C_{12}H_{36}O_6Si_6$		
probability	97.8 %		
trivial name	dodecamethyl-cyclohexasiloxane		
Peak	K		
retention time (min)	25.102		
formula	$C_{14}H_{42}O_7Si_7$		
probability	86.4 %		
trivial name	tetradecamethyl-ycloheptasiloxane		
Peak	L		
retention time (min)	25.379		
formula	$C_{14}H_{22}O$		
probability	59.2 %		
trivial name	2,4-bis(1,1-dimethylethyl)-phenol		
Peak	M		
retention time (min)	28.426		
formula	$C_{16}H_{30}O_4$		
probability	56.2 %		
trivial name	2,2,4-trimethyl-3-car boxyisopropylpentanoic acid isobutylester		

Peak	N		
retention time (min)	30.036		
formula	$C_{16}H_{48}O_8Si_8$		
probability	94.9 %		
trivial name	hexadecamethyl-cyclooctasiloxane		
Peak	O		
retention time (min)	31.154		
formula	$C_{18}H_{54}O_9Si_9$		
probability	89.7 %		
trivial name	octadecamethyl-cyclononasiloxane		
Peak	P		
retention time (min)	31.861		
formula	$C_{18}H_{54}O_9Si_9$		
probability	61.4 %		
trivial name	octadecamethyl-cyclononasiloxane		

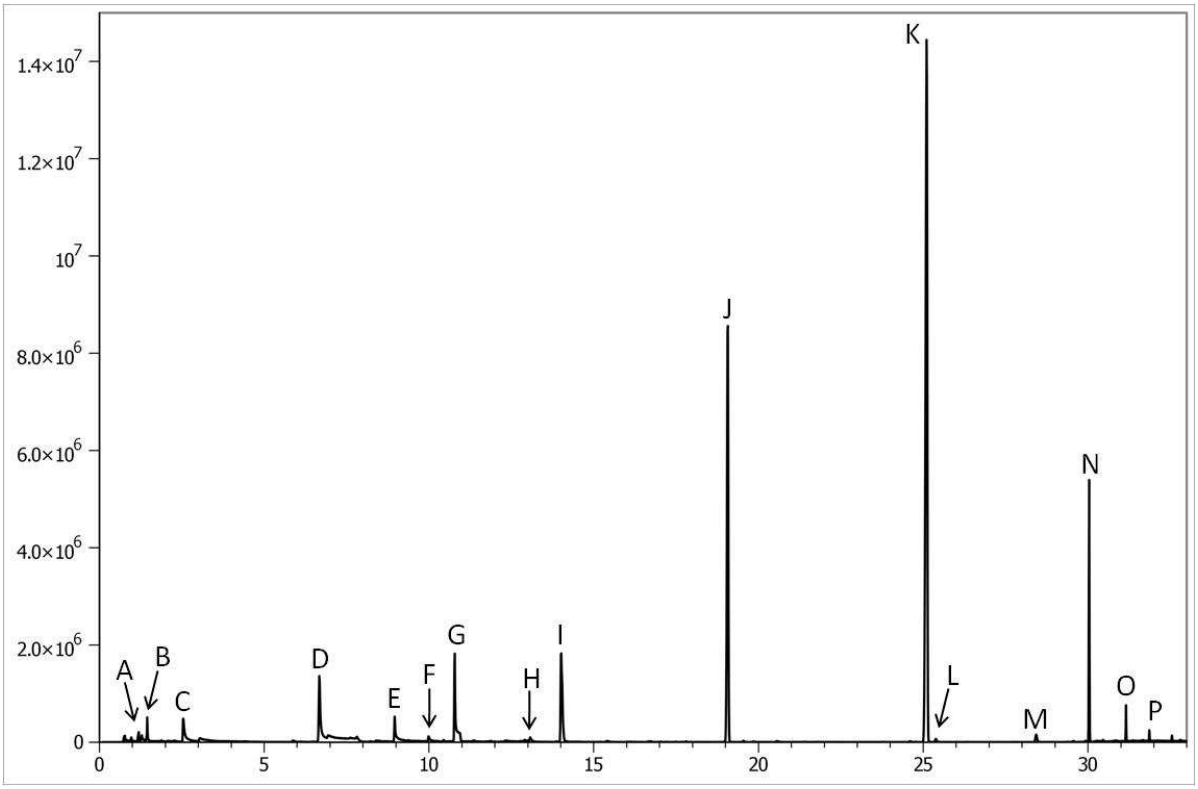


Figure S1: Analysis of background contaminants indicated in the main article by the (¤)-symbol. X-axis: time in minutes; Y-axis: ion count; medium: Brian's broth after 48 h incubation. Signals from this experimental control either origin from the SPME fiber or the sample vials, Brian medium itself does not release VOCs. Identifications are given in Table S2.

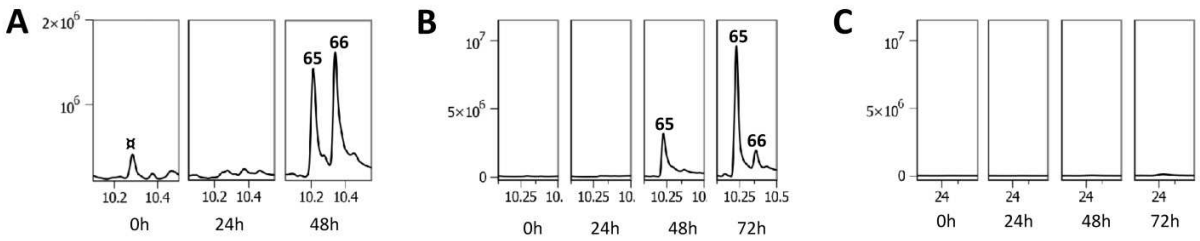


Figure S2: Volatile compounds from lipid degradation produced by *Aspergillus fumigatus*. X-axis: time in minutes; Y-axis: ion count. Contaminants are indicates by the (¤)-symbol. 1-octen-3-ol (peak 65) and 3-octanon (peak 66) were detected in the headspace of the fermentation vessel. **(A)** Production of compounds 65 and 66 after 24 h and 48 h of fermentation. 0 h: control before inoculation. **(B)** The compounds 65 and 66 can be extracted by SPME of condensate collected at the outlet of the fermenter. **(C)** The condensate samples do not contain terpenes (shown for the retention time of compound 16).