CASE STUDY
Perfume: Generic vs. Name Brand

PROBLEM
A personal care products formulation lab was trying to understand how their version of a popular designer perfume compared to the "real thing". Sensory tests demonstrated that the scent of their version faded more quickly, and that their product dried the skin. Jordi's role was to determine the source of the unfavorable effects to aid them in improving their formula.

ANALYTICAL STRATEGY
After an initial consultation call to understand the customer's ultimate goals for the investigative analysis, Jordi Labs prepared a thorough technical proposal detailing a tailored series of recommended analytical techniques and their applicability to solving the customer's problem. The final analytical approach agreed to by both parties is outlined below.

GC-FID was used to screen for the relative quantity of alcohol between the two products and to screen for other potential volatiles. A greater alcohol concentration can affect drying of the skin.

DMS was used to compare the chemistry of the oils and fragrance package in the two materials. This technique is not strictly quantitative, but an estimation of relative quantities between the products was achieved by comparing peak areas.

TGA was used to compare the percentage residuals, relating to inorganic sample components.

CONCLUSIONS
We found that the customer's product had a notably higher alcohol content and different fragrance package as compared to the competitive product.

Read the following report to see the full analysis.

MATERIAL SOLUTIONS. UNCOMPROMISING INTEGRITY.
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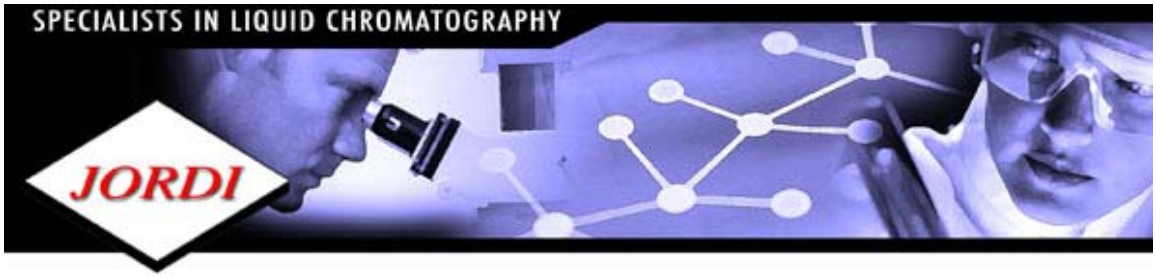
Final Report

Jordi Labs Perfume Analysis

Date: 06/30/10

Prepared by:
Dr. Mark Jordi
President
Jordi Labs LLC

Report Number: J4916



June 30, 2010

Your Name Here
Your Company Name Here
P: xxx-xxx-xxx
E: xxxxx@xxxx.com

Dear Client,

Please find enclosed the test results for your sample described as:

1. Designer – Original Designer Product
2. Imitation – Imitation Product

The following tests were performed:

1. Desorption Mass Spectroscopy (DMS)
2. Thermogravimetric Analysis (TGA)
3. Gas Chromatography - Flame Ionization Detector (GC-FID)

Objective

The objective of this work is to compare a designer and an imitation perfume. Special attention is paid to sources of fragrance longevity and materials which may cause drying of the skin.

Summary of Results

The perfumes were found to contain similar components by DMS. The *Designer* sample was found to contain some additional fragrance components and a UV-B absorber. The *Imitation* sample was found to contain isopropyl myristate, which is reported to be an emollient. GC-FID and TGA were able to show the composition differences in the samples. The *Designer* sample was found to contain larger fragrance content, and correspondingly a lower amount of ethanol.

Individual Test Results

A summary of the individual test results is provided below. All accompanying data, including spectra, has been included in the data section of this report.

DMS: – The fragrance mixture and other volatile sample components were investigated by DMS. The samples were analyzed using an injection port temperature of 310ºC. Identifications are based on comparison with the NIST spectral library of over 147,350 compounds. Match quality is based on a 1000 scale with a perfect match indicted by a score of 1000. **Table I** contains a list of the components that were detected in each sample.

Table I
DMS Results

Component	*Designer*	*Imitation*	Retention Time (minutes)	Apparent Purpose
Ethanol	X	X	3.2	Solvent
Propylene glycol		X	4.3	Carrier
Pinene	X	X	5.6 (α), 6.0 (β)	Fragrance
Myrcene	X		6.1	Fragrance
Limonene	X	X	6.6	Fragrance
3,7-dimethyl-1,6-Octadien-3-ol (Linalool)	X	X	7.3	Fragrance
Laevo-camphor	X		7.8	Fragrance
Benzyl Acetate	X	X	7.9	Fragrance
Estragole	X		8.4	Fragrance
Turpineol		X	8.2	Fragrance
Benzene propanol		X	8.6	Fragrance
Citronellol	X	X	8.7	Fragrance
3,7-dimethyl-2-aminobenzoate-1,6-octadien-3-ol	X	X	8.9	Fragrance
(E)-citral	X		9.1	Fragrance
2,6-dimethyl-2,6-octadiene	X	X	9.8	Fragrance
Neryl Acetate	X	X	9.9	Fragrance
Geranyl Acetate	X	X	10.1	Fragrance
Vanillin	X	X	10.8	Fragrance
Coumarin	X	X	11.0	Fragrance
Diethyl phthalate	X	X	12.3	
Cedrol		X	12.3	Fragrance
Methyl dihydrojasmonate	X	X	12.9	Fragrance
Cubenol		X	12.6	Fragrance
Nuciferol	X		13.4	Fragrance
Benzyl Benzoate		X	13.5	Stabilizer

Component	*Designer*	*Imitation*	Retention Time (minutes)	Apparent Purpose
Cedryl acetate	X	X	13.8	Fragrance
Isopropyl Myristate		X	13.8	Emollient
6,7-diethyl-1,2,3,4-tetrahydro-1,1,4,4-tetramethyl-naphthalene	X		14.0	Fragrance
Versalide	X	X	14.4	Fragrance
Isophytol	X		14.8	Fragrance
Musk ketone	X	X	15.3	Fragrance
Ethylene brassylate	X	X	15.5	Fragrance
Octyl methoxycinnamate	X		17.3	UV-B absorber
Cinnamyl cinnamate	X		17.9	Fragrance

* **X** indicates that a particular compound was detected in the sample.

TGA

The sample was subjected to TGA analysis over the temperature range from ambient to 1000ºC. The samples were analyzed under nitrogen. Analysis results are shown in **Table II.** The decomposition of the *Designer* sample took place in three steps. The large initial weight loss is most likely due to loss of the ethanol solvent which accounted for approximately 85% of the total sample. The remaining two losses can be attributed to evaporation and thermal degradation of the fragrance components.

The thermogram for the *Imitation* sample only exhibited two recognizable weight losses. Again the first can be attributed to the loss of ethanol, and the second to the loss of fragrance components. The major difference between the two samples is the relative amount of loss observed in each portion. The *Imitation* sample lost 94% at low temperature as compared to 84% for the *Designer* sample. This observation agrees with data from GC-FID, confirming that the *Imitation* sample contains more ethanol and less of the fragrance components. The Imitation sample was also observed to contain slightly more (~0.3%) residual inorganic material.

Table II
TGA Weight Loss

Sample	Weight Loss Step	Weight Loss %	Total % Weight Loss	% Residual
Designer	1	84.97	99.49	0.51
	2	10.40		
	3	4.123		
Imitation	1	93.82	99.15	0.85
	2	5.333		

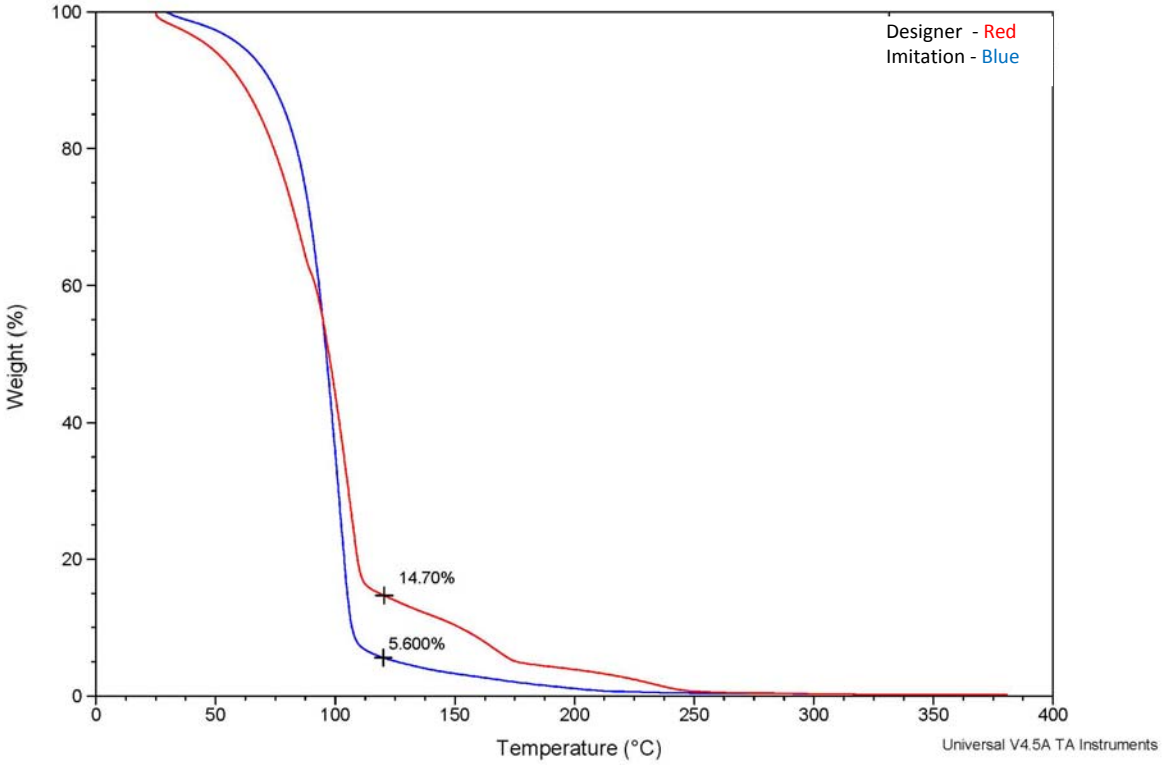


Figure I – Overlay of TGA thermograms.

GC-FID

GC-FID was used to screen the samples for the relative quantity of the solvent and other volatile materials. The *Imitation* sample was observed to contain a larger amount of ethanol than was observed for the *Designer* sample. This conclusion is based on the observed peak area of the peak at 2.5 minutes retention time. **Figure II** contains an overlay of the GC-FID chromatograms in this region.

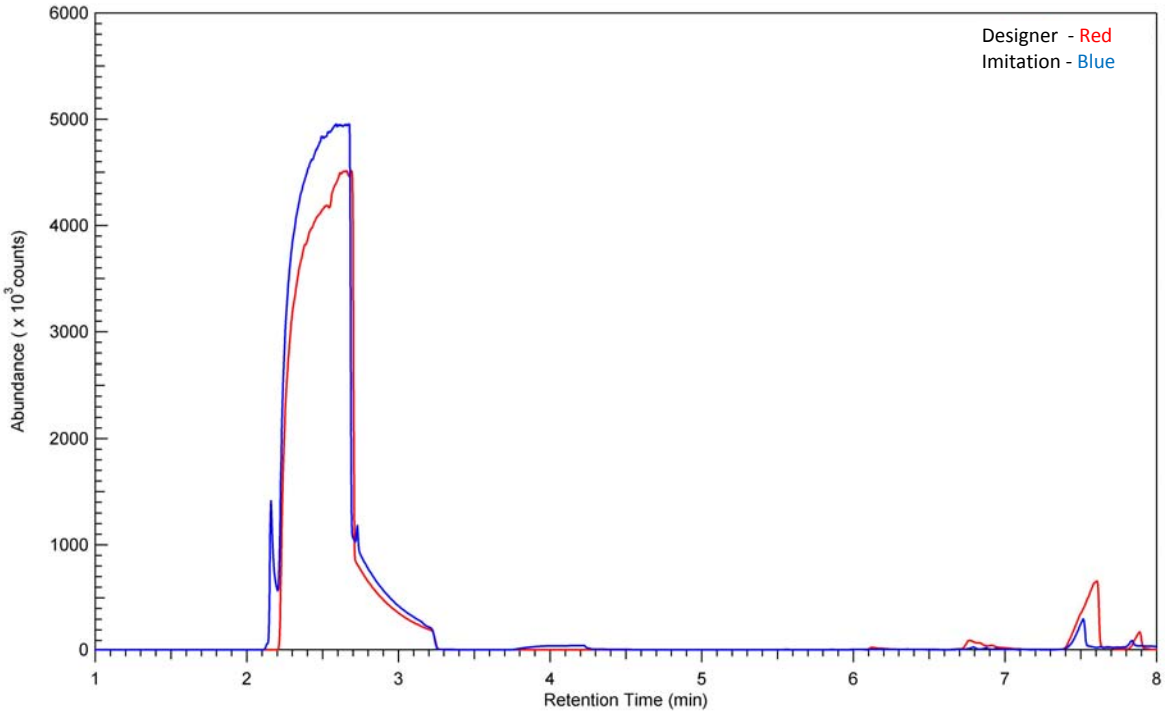


Figure II – Overlay of GC-FID chromatograms in the solvent region.

Additional components, including the fragrances detected, were observed between 6 and 20 minutes retention time. All components observed in the *Imitation* sample appear at lower concentration than those observed in the *Designer* sample. **Figure III** contains an overlay of sample chromatograms in this region.

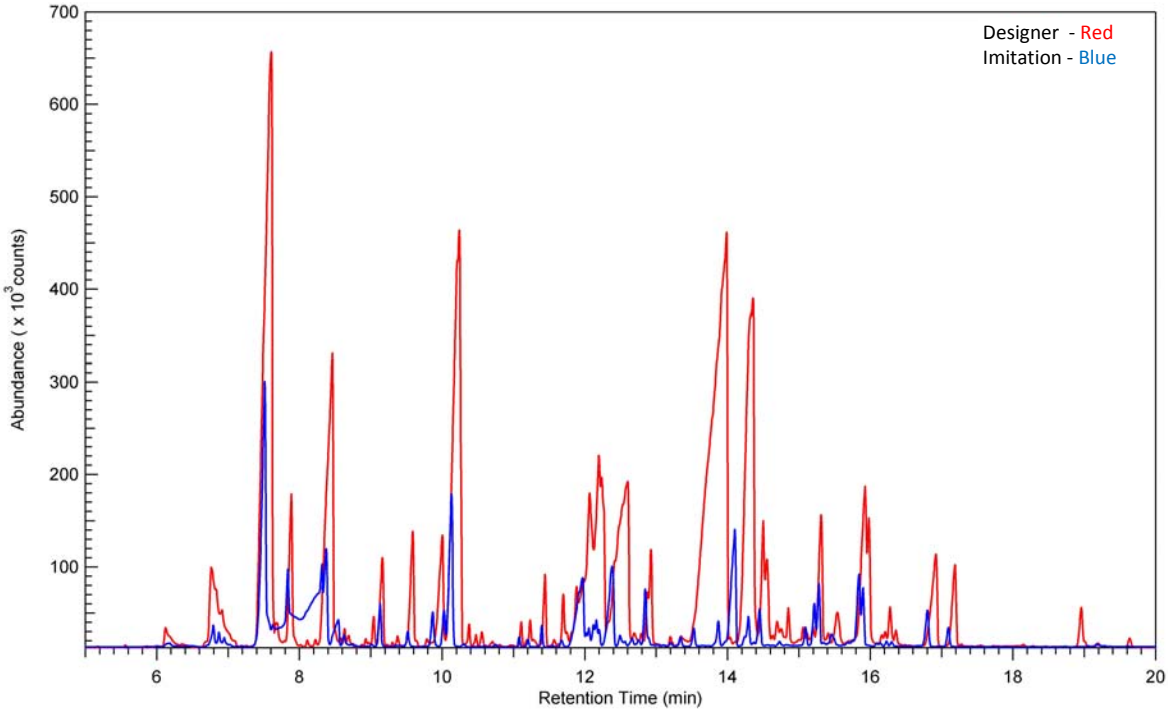


Figure III – Overlay of GC-FID chromatograms in the fragrance region.

Analysis Conditions

DMS

The samples were analyzed using a Hewlet 5890 gas chromatograph in conjunction with a 5972 mass selective detector and a thermal desorption attachment. Data acquisition was accomplished using chemstation software. Sample peaks were compared with over 147,350 reference compounds using the NIST/EPA/NIH mass spectral search program.

A blank run was used immediately before analysis of the samples to ensure the absence of contaminants. The sample was analyzed in duplicate to confirm the repeatability of the results.

Sample Size = 0.1µL
Initial Delay = 2.0 minutes
Initial Temperature: 50ºC
Final Temperature: 320ºC
Temperature Ramp Rate 1: 15ºC per minute
Injector Port Temperature: 310ºC
Detector Temperature: 310ºC
Injector Split = NA
Mass Range: Low Mass = 29, High Mass = 550

TGA

Analysis of samples was accomplished using a TA 500 Thermogravimetric Analyzer in combination with TA Universal Analysis software. Approximately 30mg of the sample was weighed into a platinum weigh boat for each analysis. Samples were run under a nitrogen atmosphere and heated from ambient to 1000°C at a rate of 20°C per minute.

GC-FID

The samples were analyzed directly using an HP 5890a gas chromatograph in conjunction with a flame ionization detector. Data acquisition was accomplished using chemstation software. A blank run was used immediately before analysis of the samples to insure the absence of contaminants.

The following run conditions were applied for Gas Chromatographic analysis:

Injection Size = 1uL
Initial Temperature: 50ºC
Final Temperature: 320ºC
Temperature Ramp Rate 1: 15ºC per minute
Injector Port Temperature: 310ºC
Detector Temperature: 320ºC

Injector Split = NA
Column = RTX-5MS 30m x .25mm

Closing Comments

Deformulation of an unknown material is intended to provide a best estimate of the chemical nature of the sample. All chemical structures are supported by the evidence presented but are subject to revision upon receipt of additional evidence. Additional factors such as material processing conditions may also affect final material properties.

Jordi Labs' reports are issued solely for the use of the clients to whom they are addressed. No quotations from reports or use of the Jordi name is permitted except as authorized in writing. The liability of Jordi Labs with respect to the services rendered shall be limited to the amount of consideration paid for such services and do not include any consequential damages.

Jordi Labs specializes in polymer testing and has 25 years experience doing complete polymer deformulations. We are one of the few labs in the country specialized in this type of testing. We will work closely with you to help explain your test results and solve your problem. We appreciate your business and are looking forward to speaking with you concerning these results.

Sincerely,

Mark Jordi

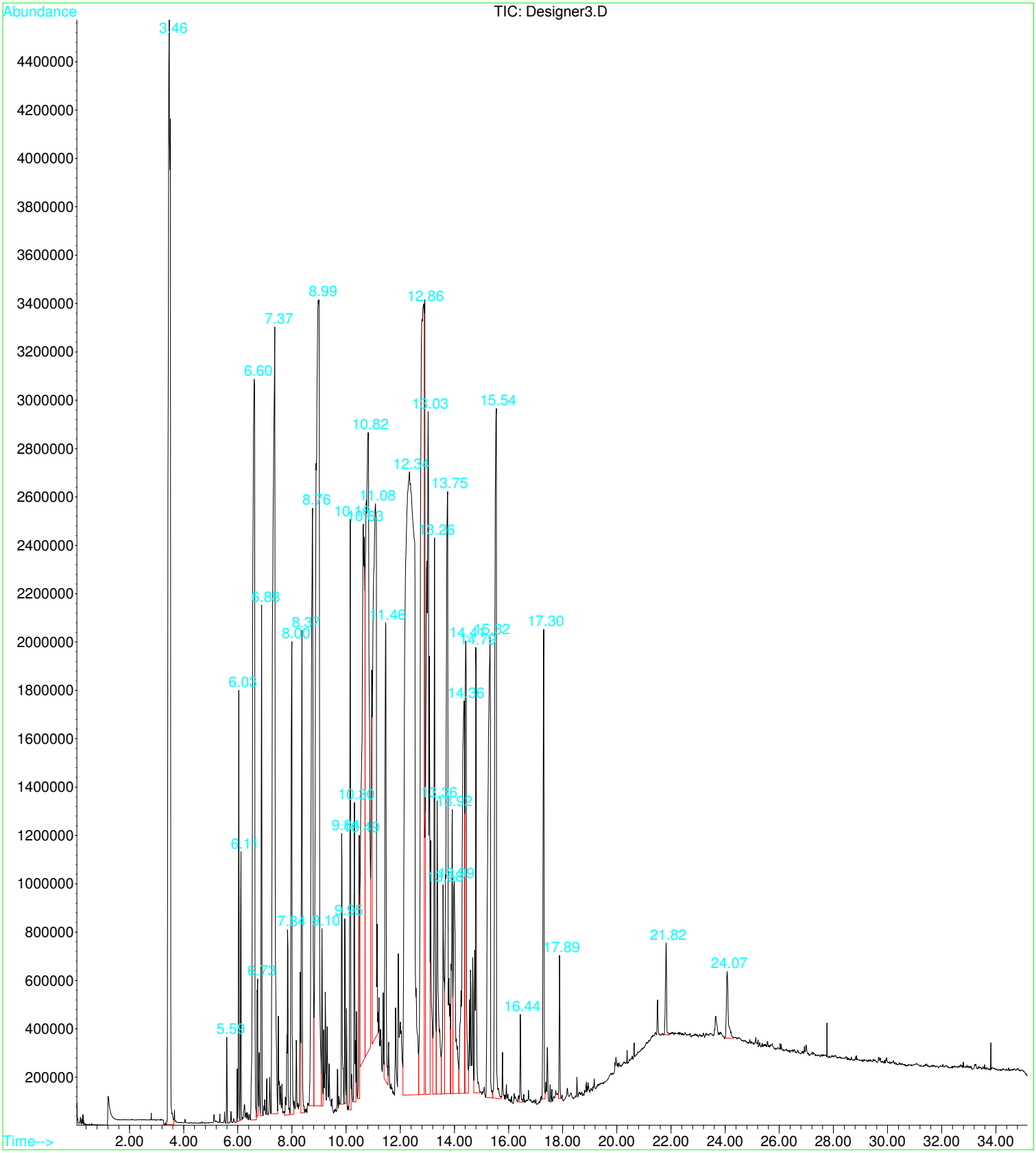
Mark Jordi, Ph. D.
President
Jordi Labs LLC

Appendix

Table of Contents

DMS RESULTS Designer

File : C:\HPCHEM\1\DATA\2010\JOB2010\EXPDEF\Designer.D
Operator : KR
Acquired : 5 Jun 2010 21:35 using AcqMethod DESORP2
Instrument : DMS Instr
Sample Name: Designer .1ul
Misc Info : desorp2 inj 310 ramp 50-320 15C/min
Vial Number: 100



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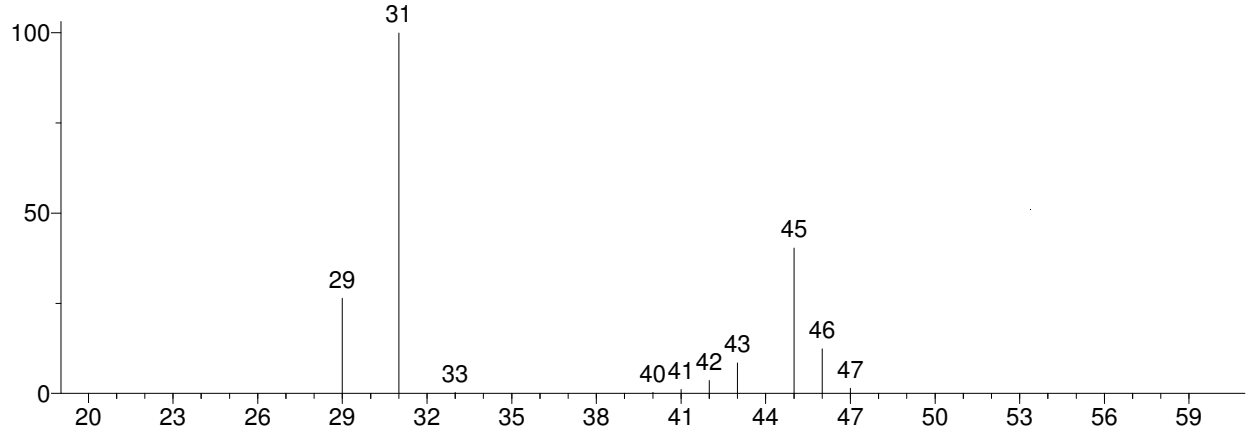
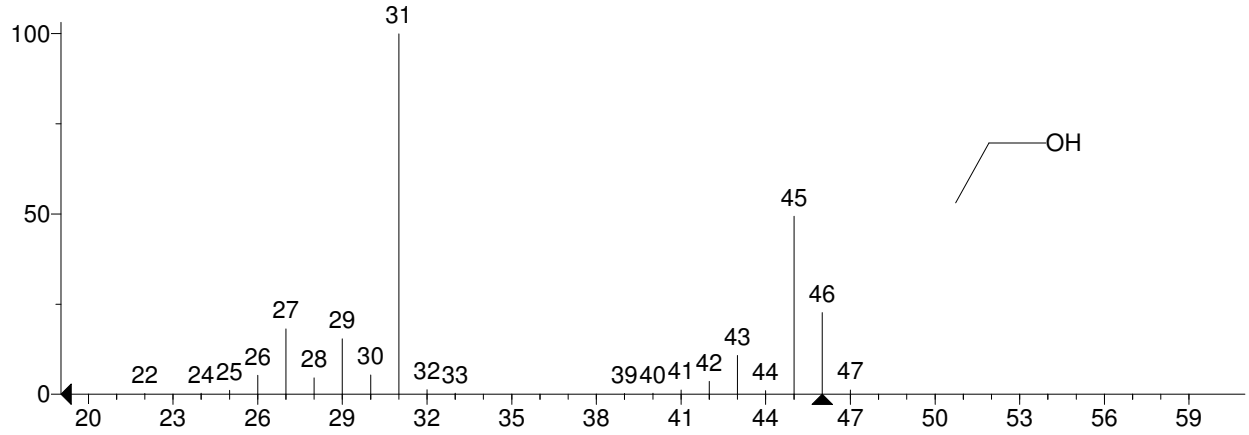
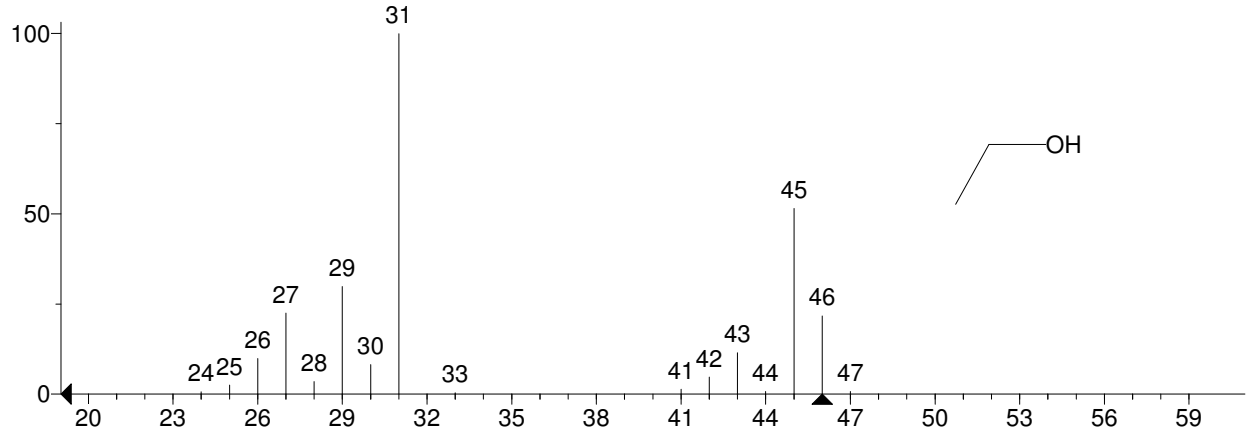


Hit 1 : Ethyl alcohol
C2H6O; MF: 921; RMF: 921; Prob 94.3%; CAS: 64-17-5; Lib: replib; ID: 551.



Hit 2 : Ethyl alcohol
C2H6O; MF: 912; RMF: 913; Prob 94.3%; CAS: 64-17-5; Lib: mainlib; ID: 1334.



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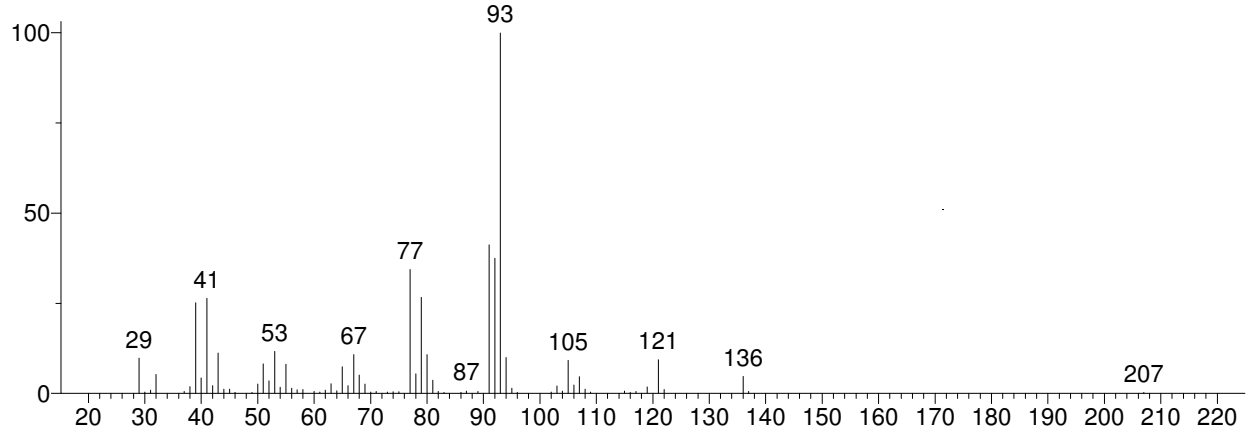
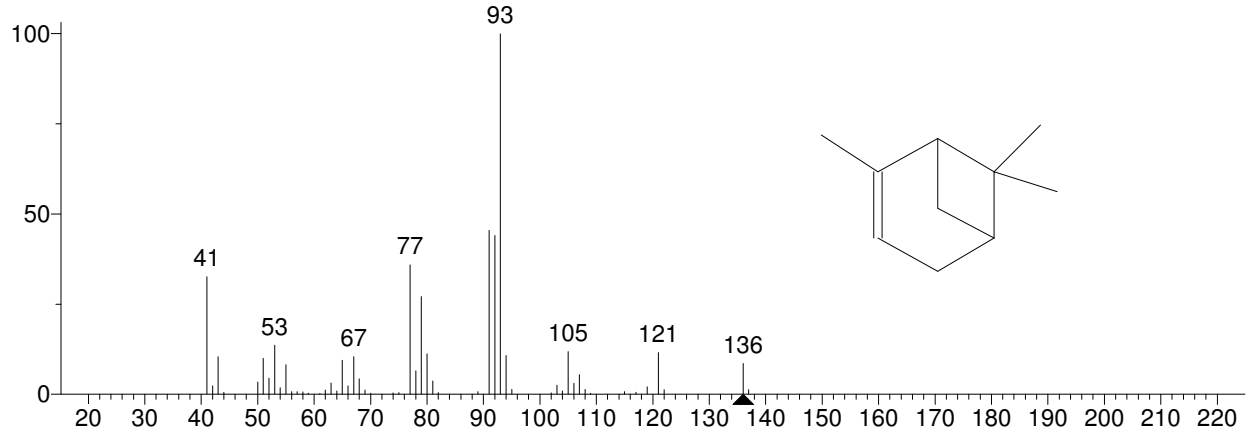


Hit 1 : 1R-.alpha.-Pinene
C10H16; MF: 947; RMF: 952; Prob 17.0%; CAS: 7785-70-8; Lib: replib; ID: 12053.



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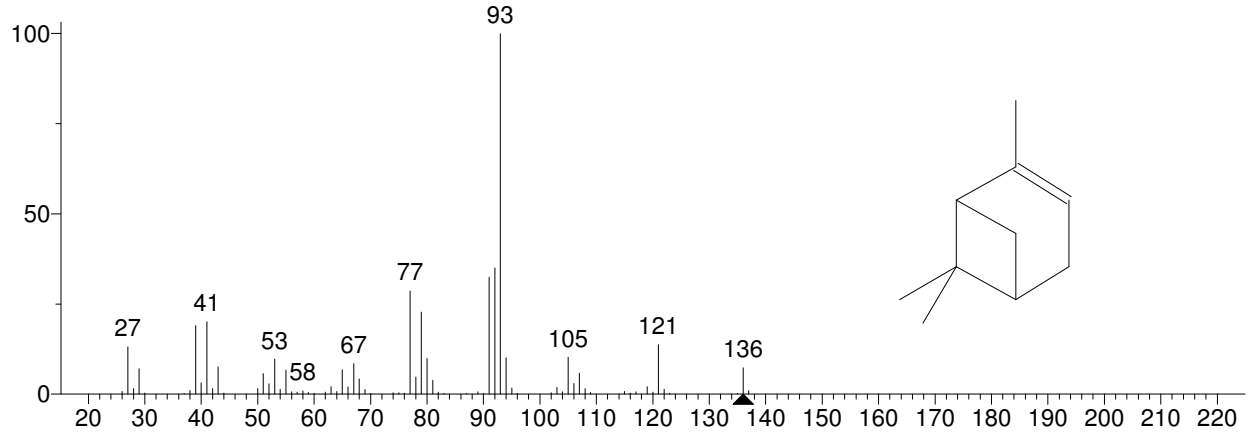

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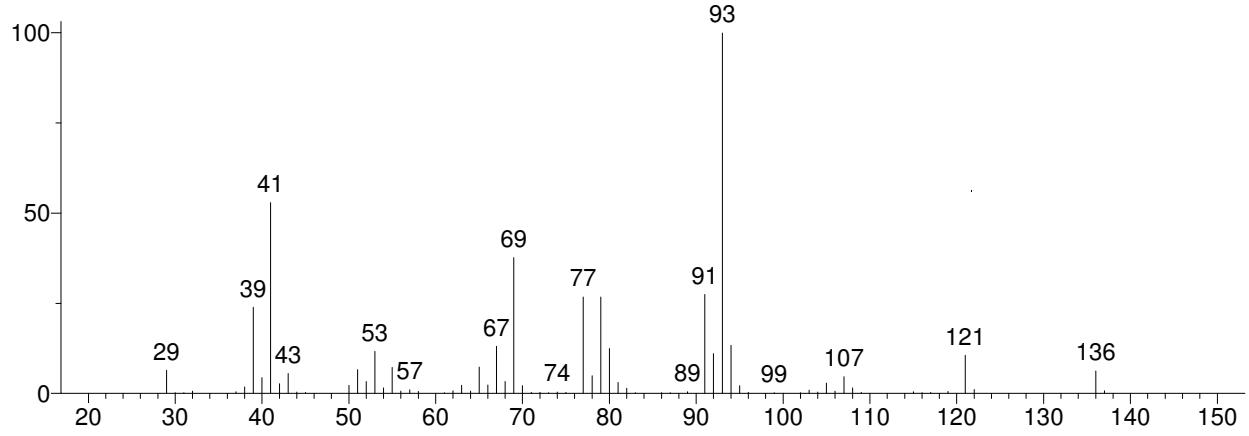

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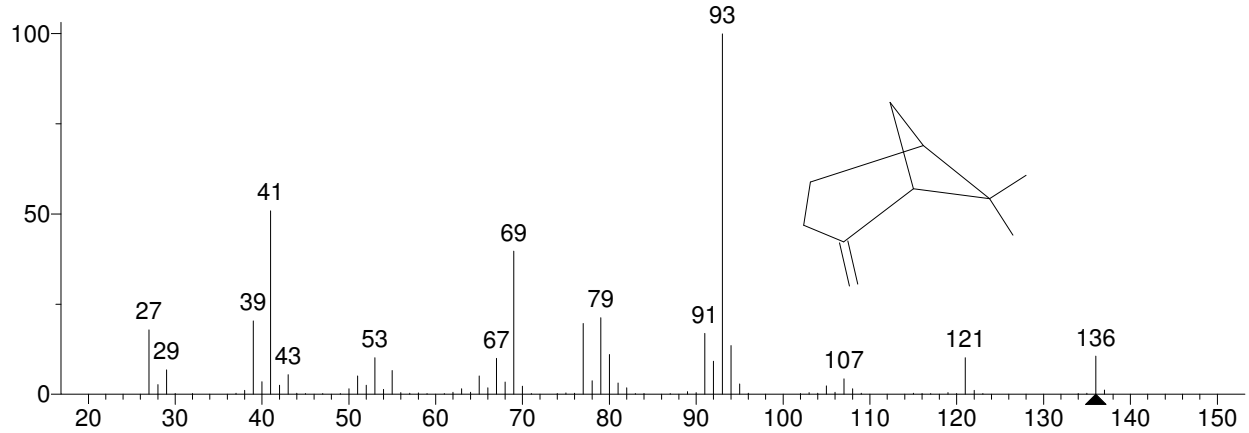
C10H16; MF: 941; RMF: 941; Prob 31.9%; CAS: 127-91-3; Lib: replib; ID: 11947.



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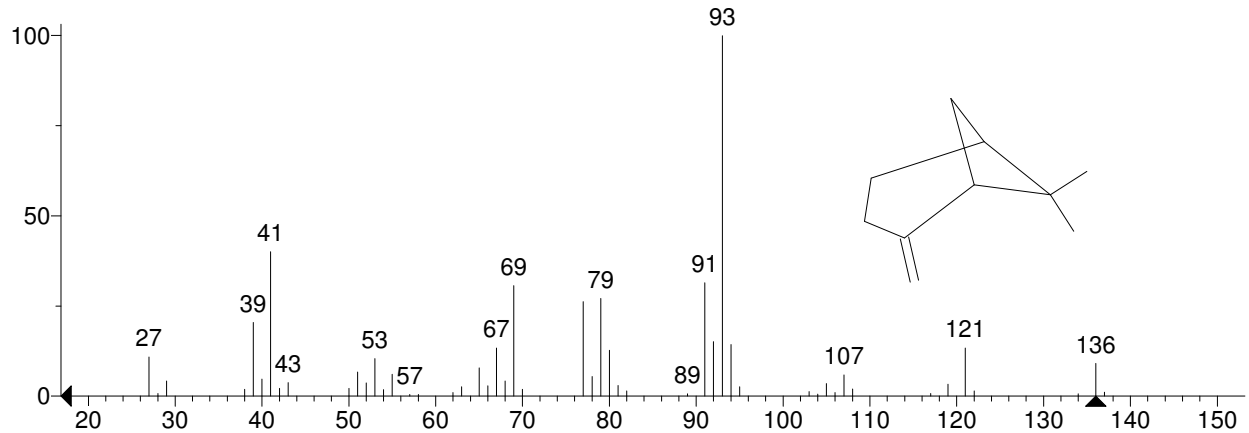

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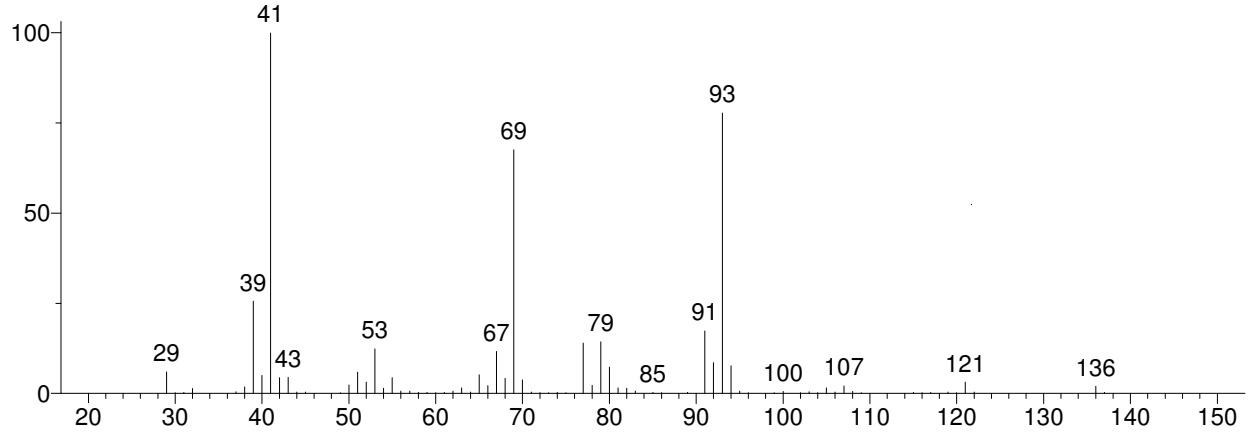

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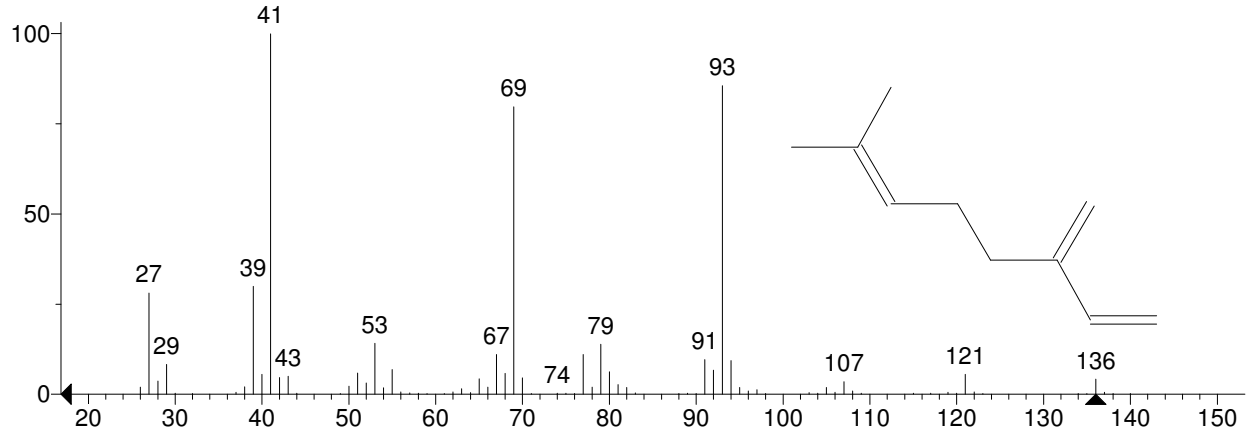
C10H16; MF: 913; RMF: 915; Prob 53.6%; CAS: 123-35-3; Lib: mainlib; ID: 3407.



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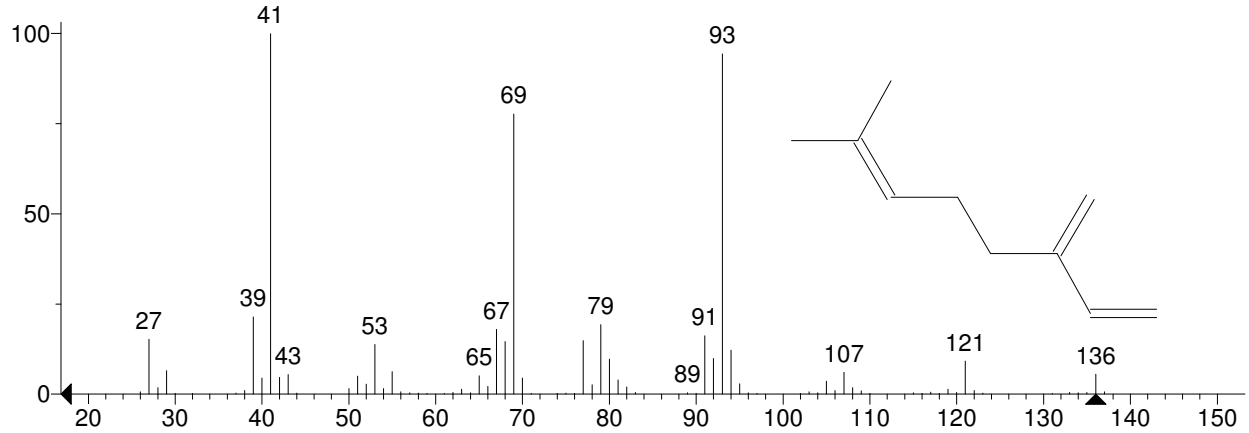

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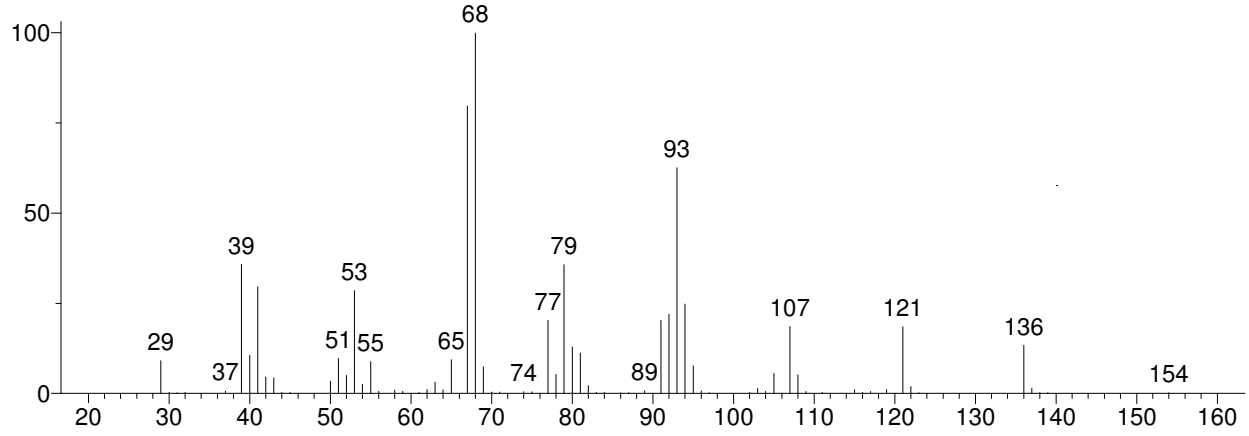

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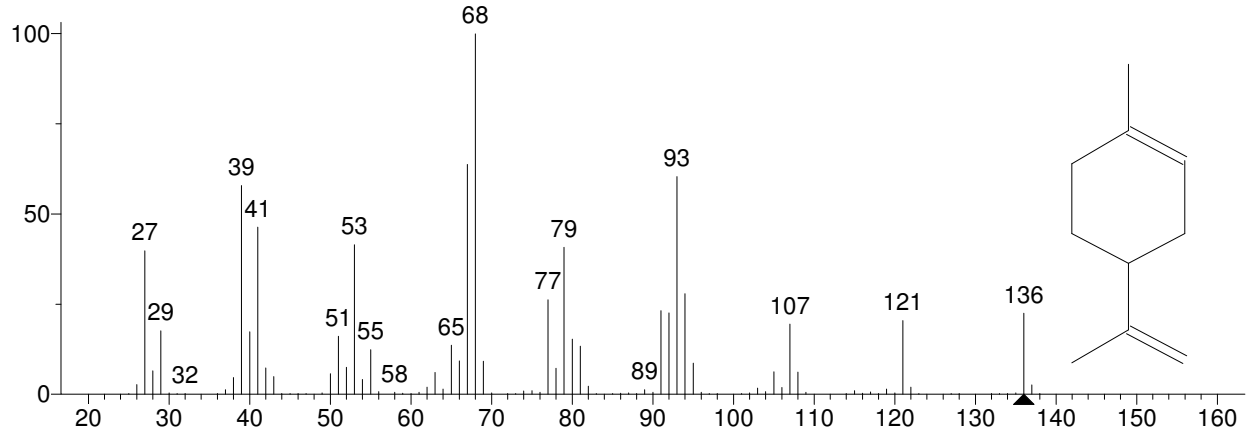

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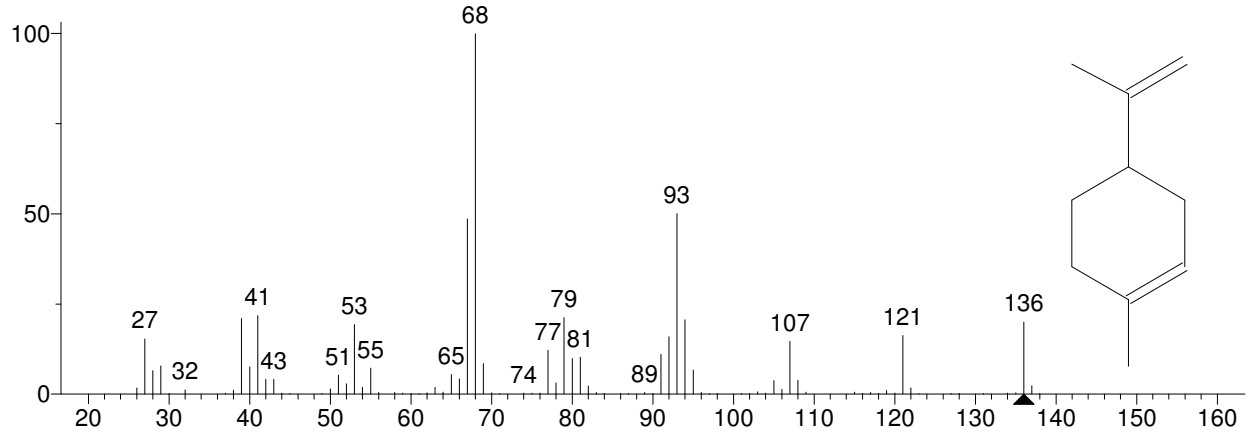

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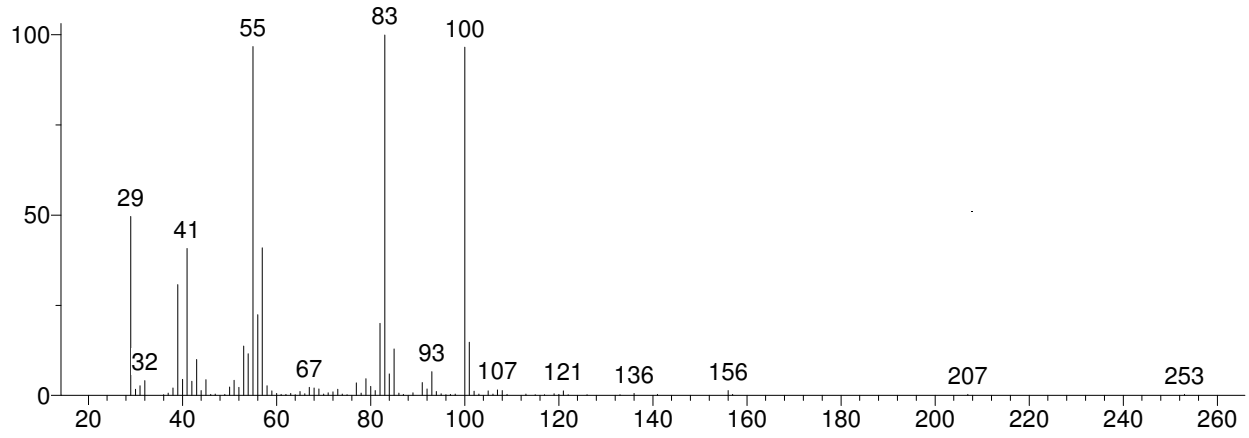
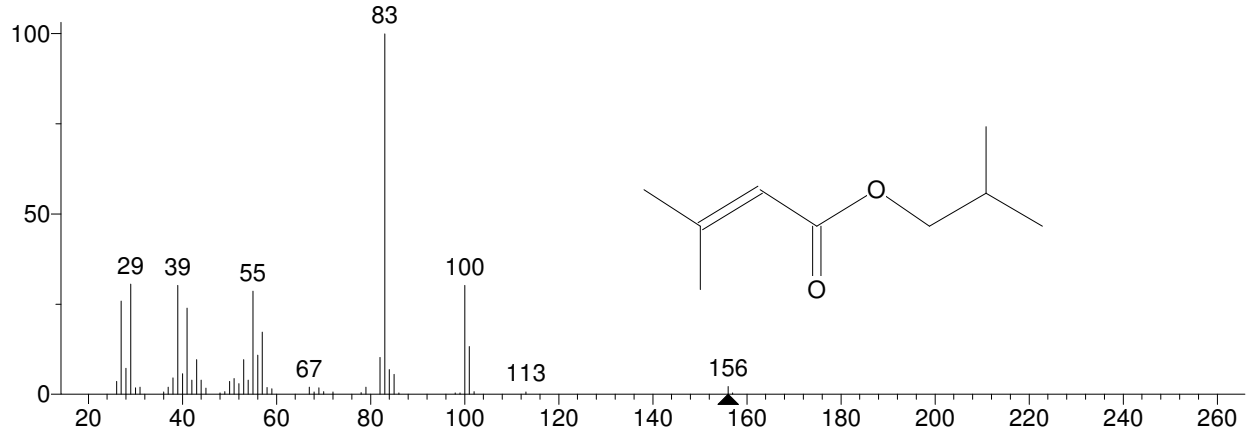


Hit 1 : 2-Butenoic acid, 3-methyl-, 2-methylpropyl ester
C9H16O2; MF: 818; RMF: 858; Prob 21.2%; CAS: 30434-54-9; Lib: mainlib; ID: 40872.



Hit 2 : 3-Methyl-2-butenoic acid, heptyl ester
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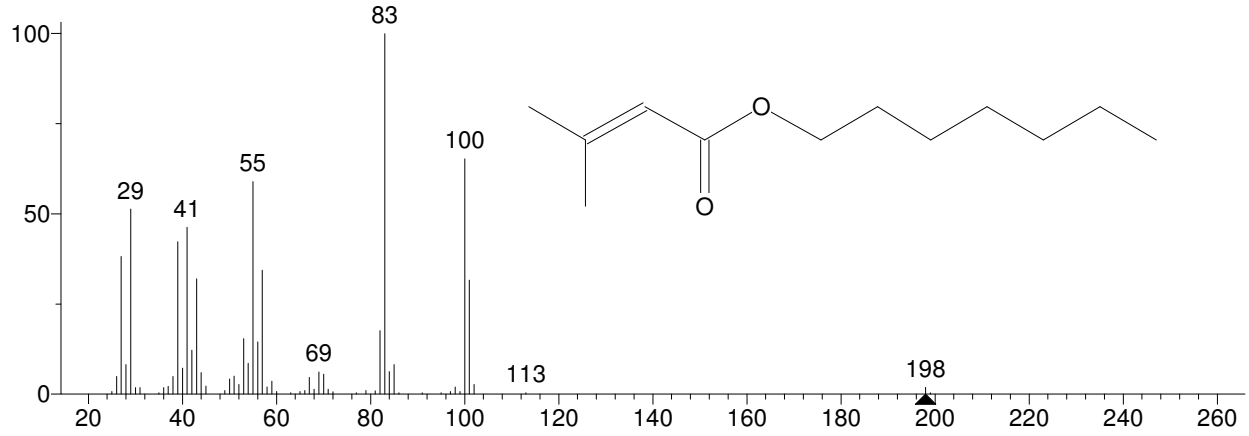

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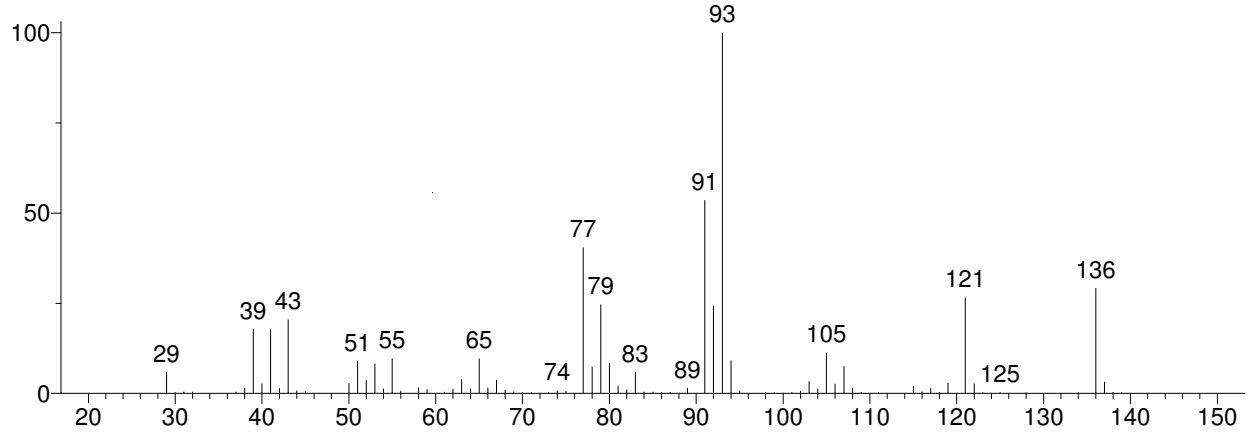

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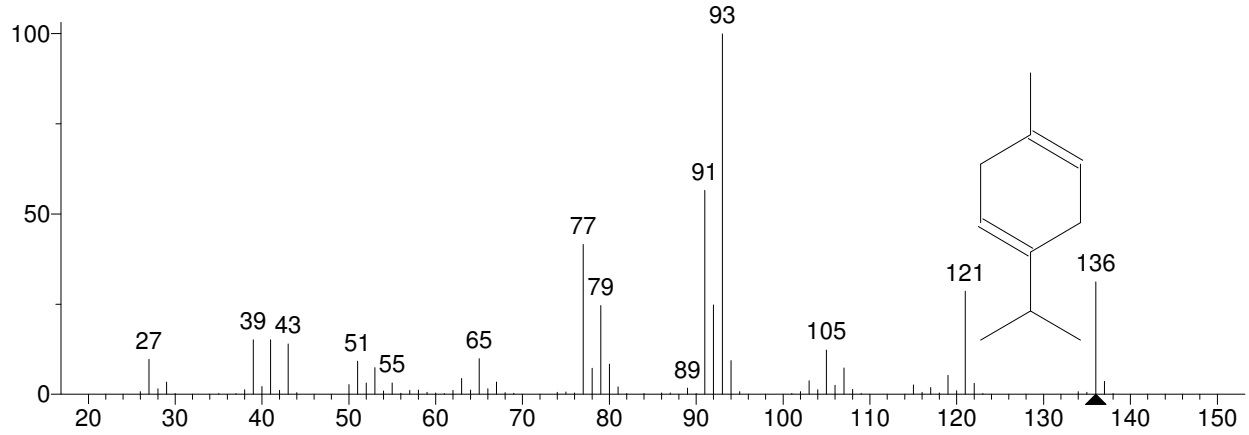

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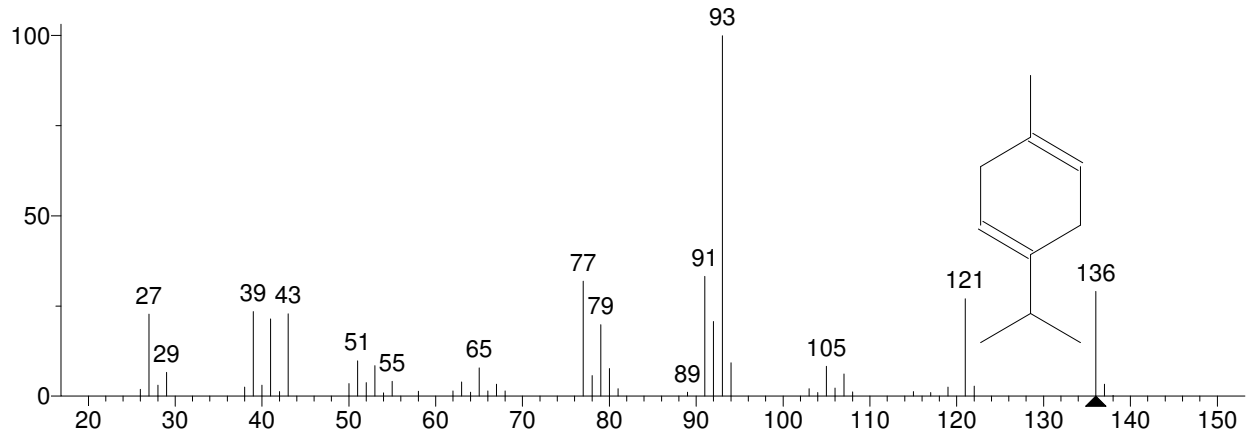

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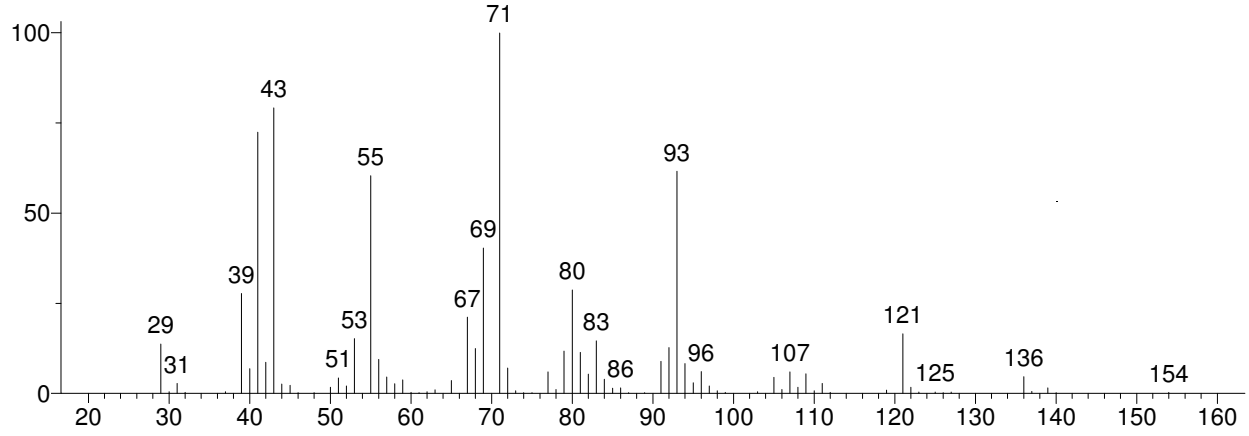

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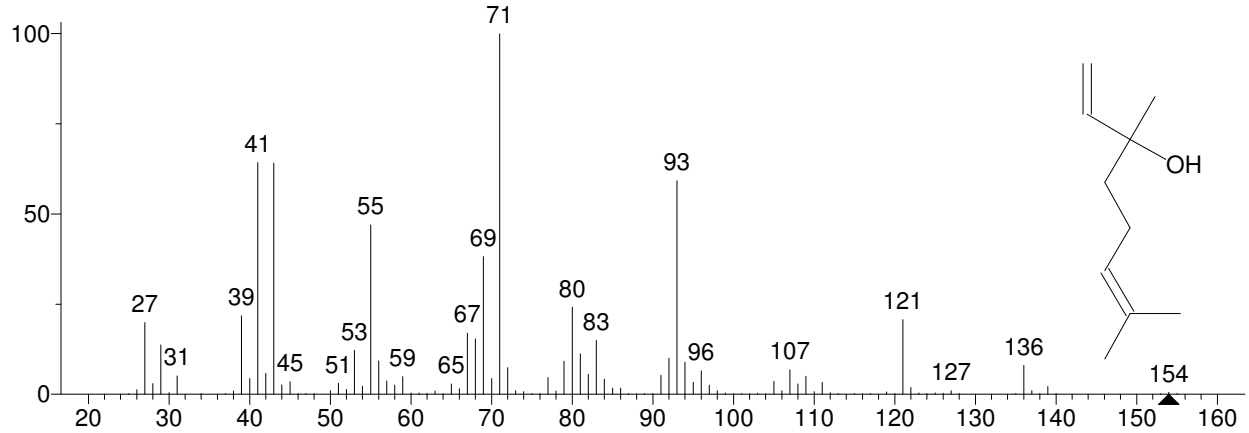
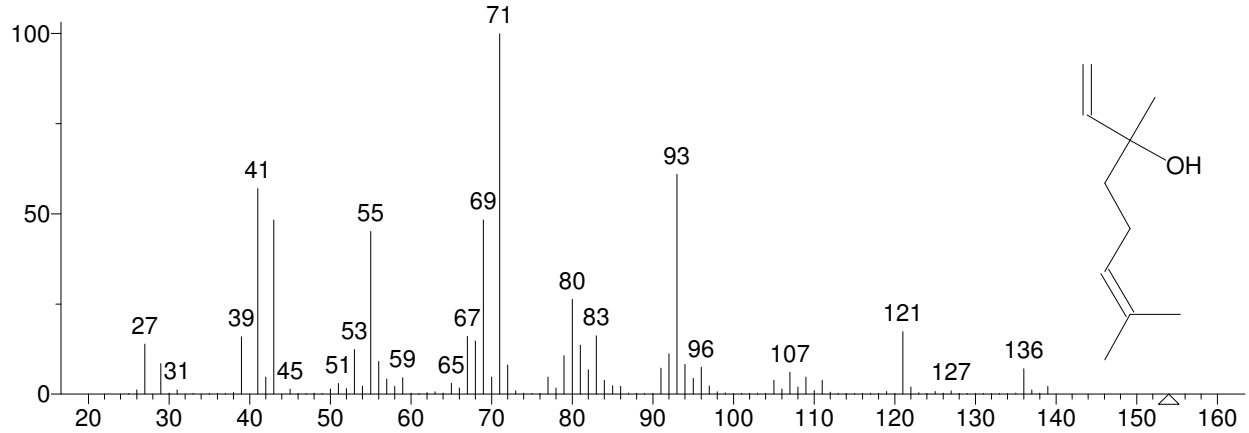


Hit 2 : 1,6-Octadien-3-ol, 3,7-dimethyl-
C10H18O; MF: 915; RMF: 919; Prob 74.5%; CAS: 78-70-6; Lib: replib; ID: 8161.



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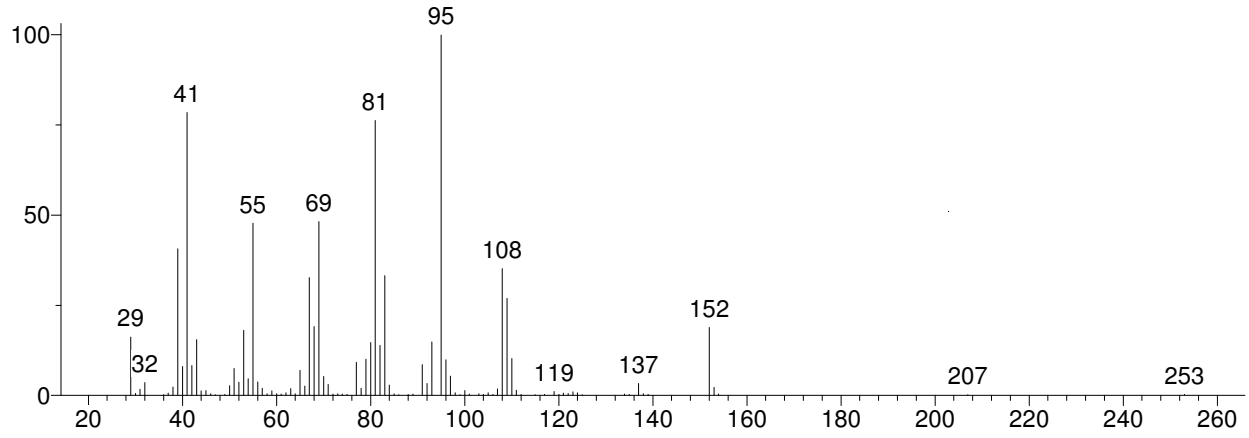
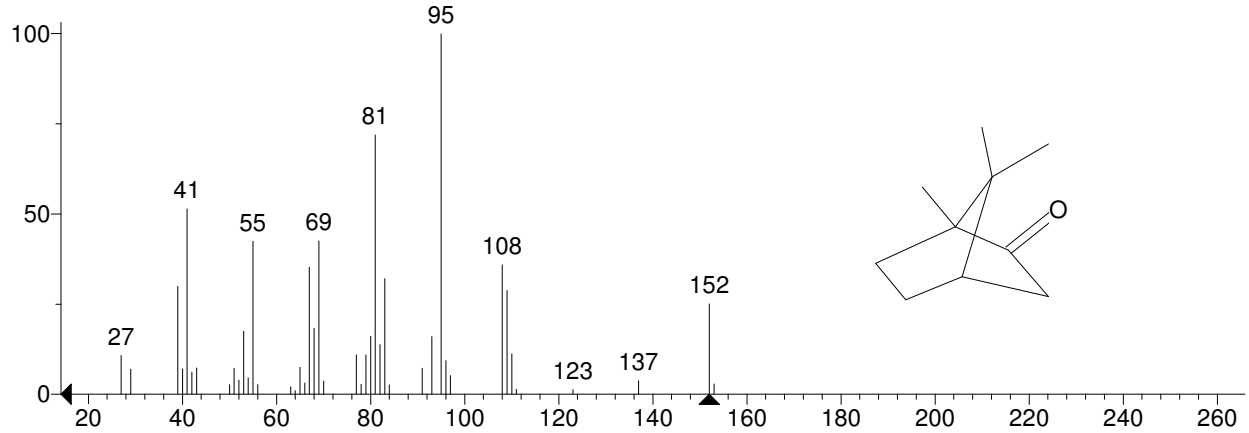
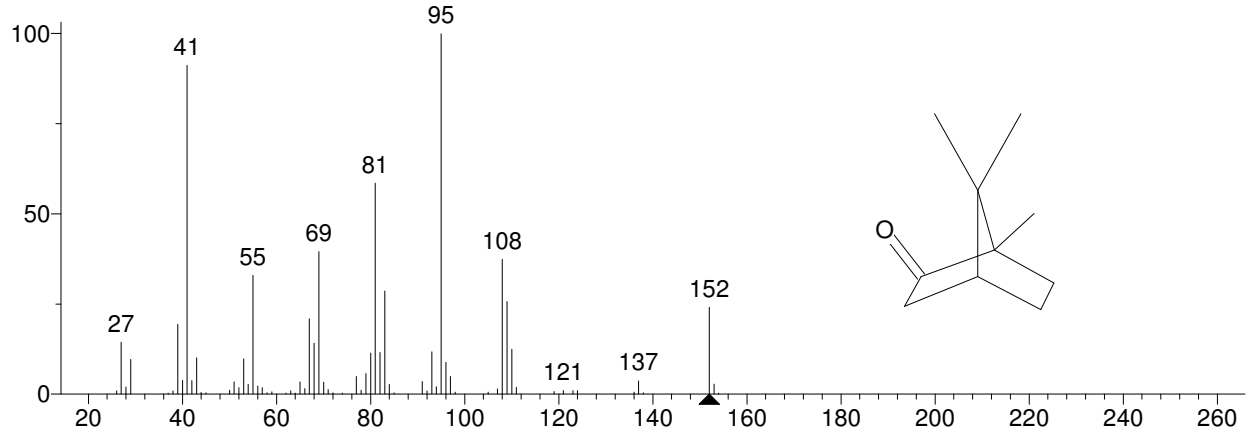


Hit 1 : Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-, (1S)-
C10H16O; MF: 942; RMF: 967; Prob 43.8%; CAS: 464-48-2; Lib: mainlib; ID: 53149.

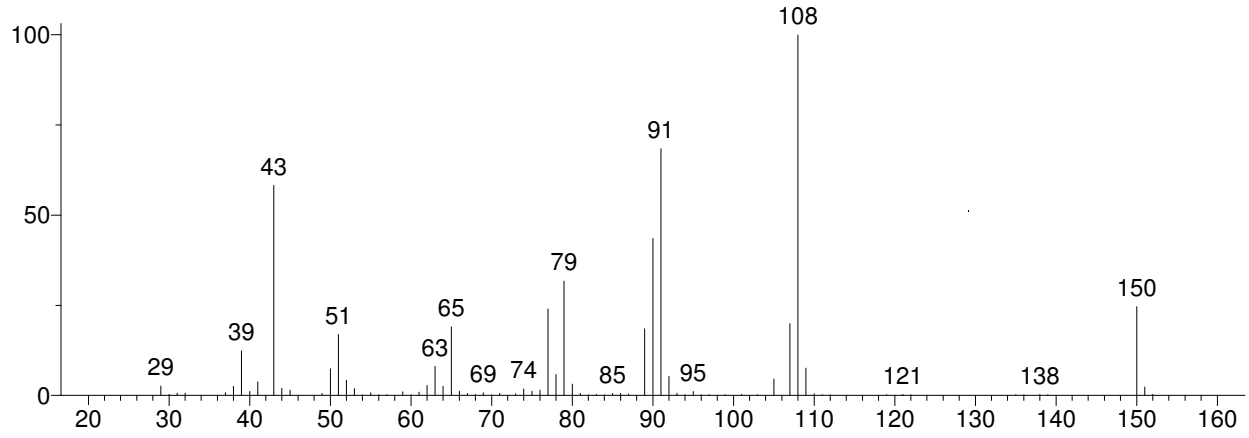


Hit 2 : Camphor
C10H16O; MF: 928; RMF: 936; Prob 27.4%; CAS: 76-22-2; Lib: replib; ID: 12335.

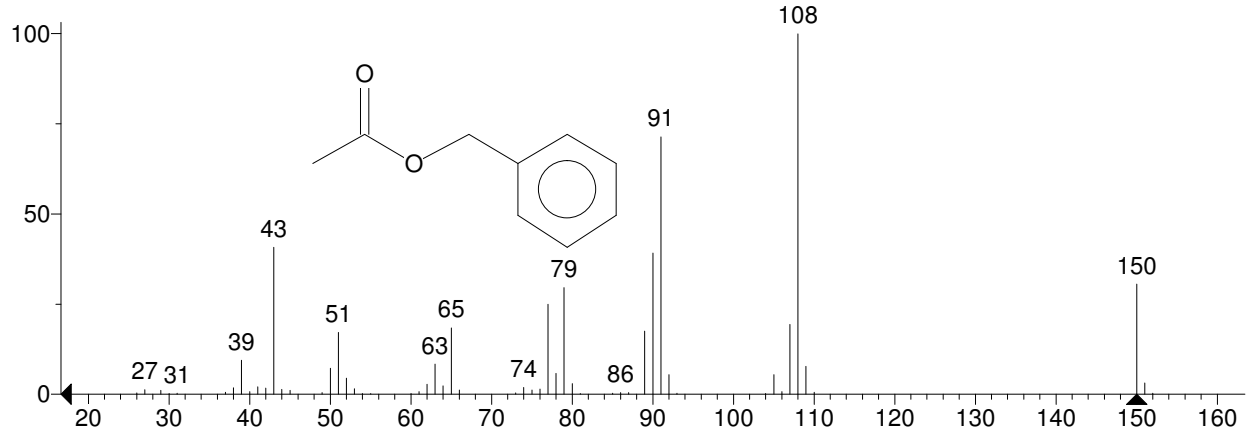


** Search Report Page 1 of 1 **

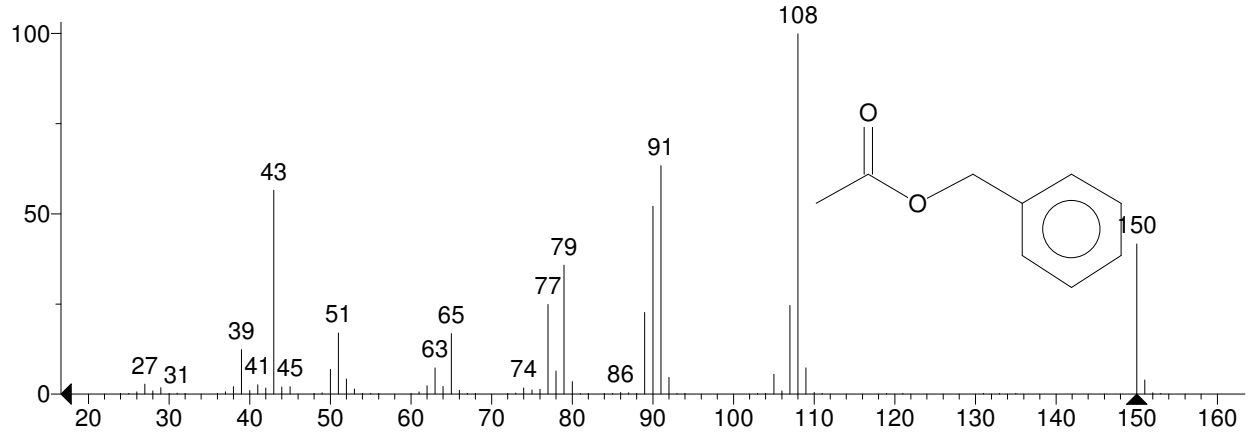
Unknown: Scan 697 (7.997 min): Designer3.D
Compound in Library Factor = 336



Hit 1 : Acetic acid, phenylmethyl ester
C9H10O2; MF: 944; RMF: 949; Prob 89.2%; CAS: 140-11-4; Lib: replib; ID: 14560.

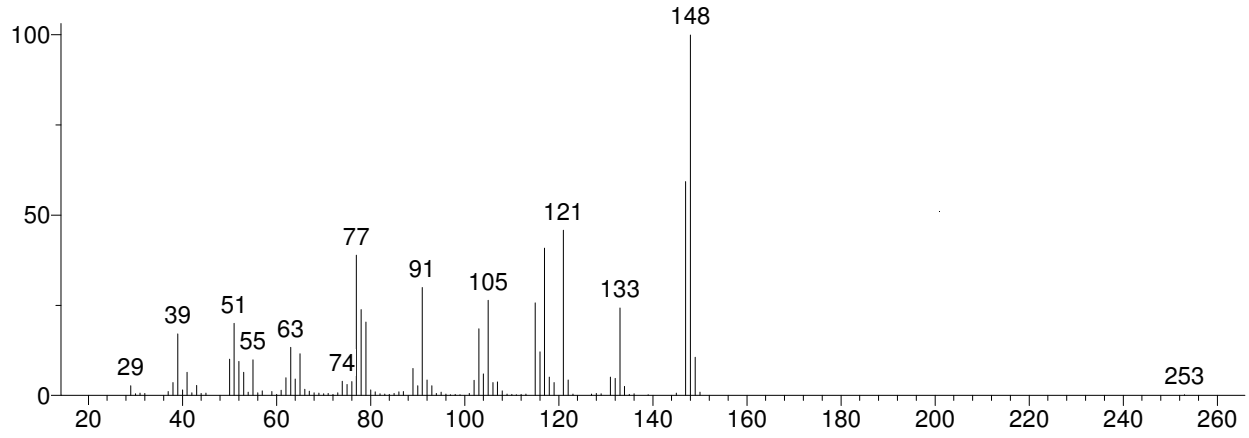


Hit 2 : Acetic acid, phenylmethyl ester
C9H10O2; MF: 933; RMF: 938; Prob 89.2%; CAS: 140-11-4; Lib: mainlib; ID: 64787.

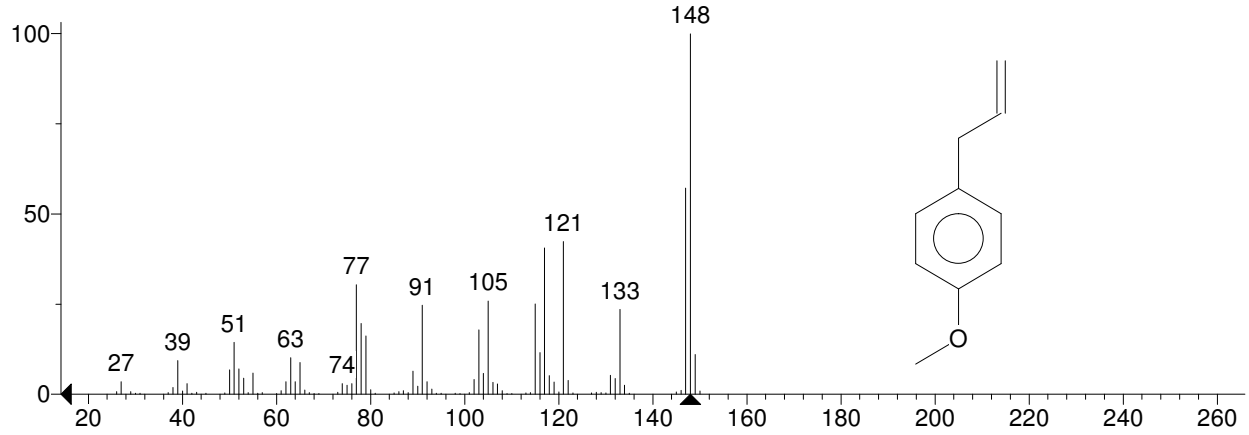


** Search Report Page 1 of 1 **

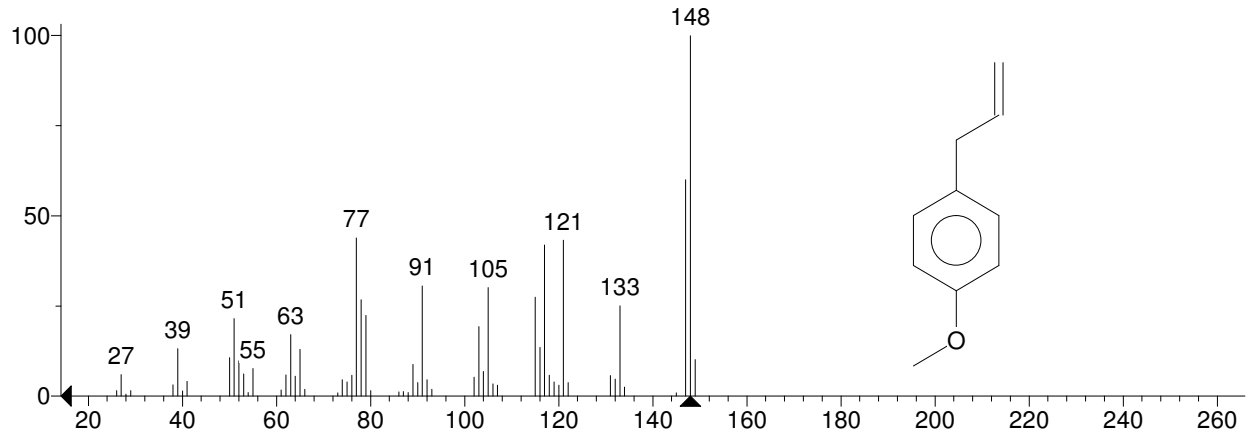
Unknown: Scan 730 (8.374 min): Designer3.D
Compound in Library Factor = 342



Hit 1 : Estragole
C10H12O; MF: 960; RMF: 962; Prob 75.2%; CAS: 140-67-0; Lib: replib; ID: 19656.

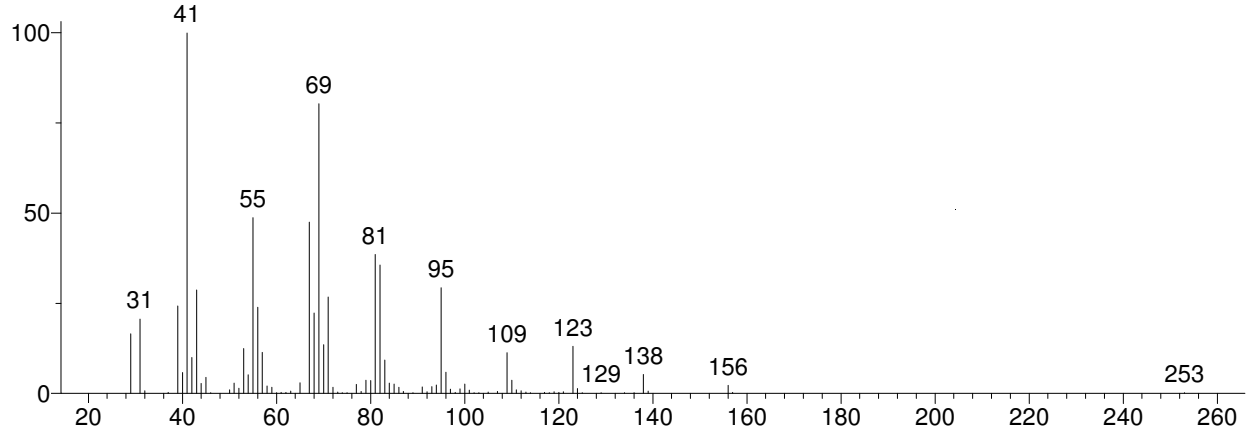


Hit 2 : Estragole
C10H12O; MF: 959; RMF: 972; Prob 75.2%; CAS: 140-67-0; Lib: mainlib; ID: 94865.

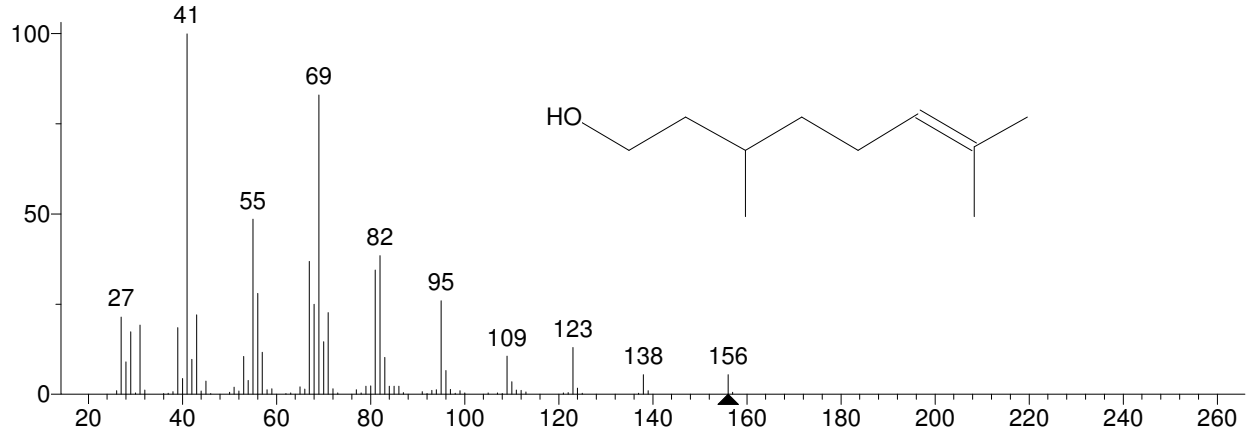


** Search Report Page 1 of 1 **

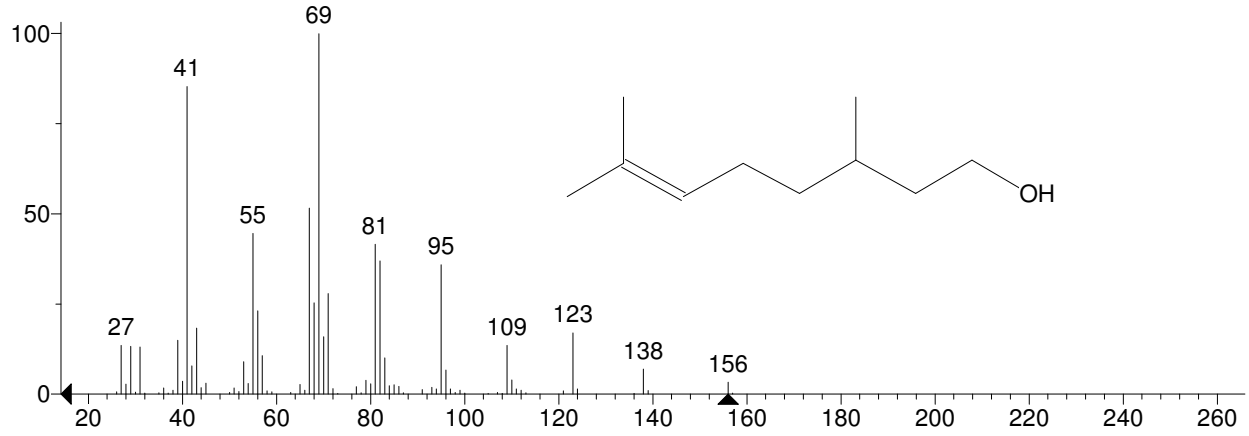
Unknown: Scan 764 (8.762 min): Designer3.D
Compound in Library Factor = -107



Hit 1 : 6-Octen-1-ol, 3,7-dimethyl-
C10H20O; MF: 922; RMF: 924; Prob 31.9%; CAS: 106-22-9; Lib: mainlib; ID: 3042.

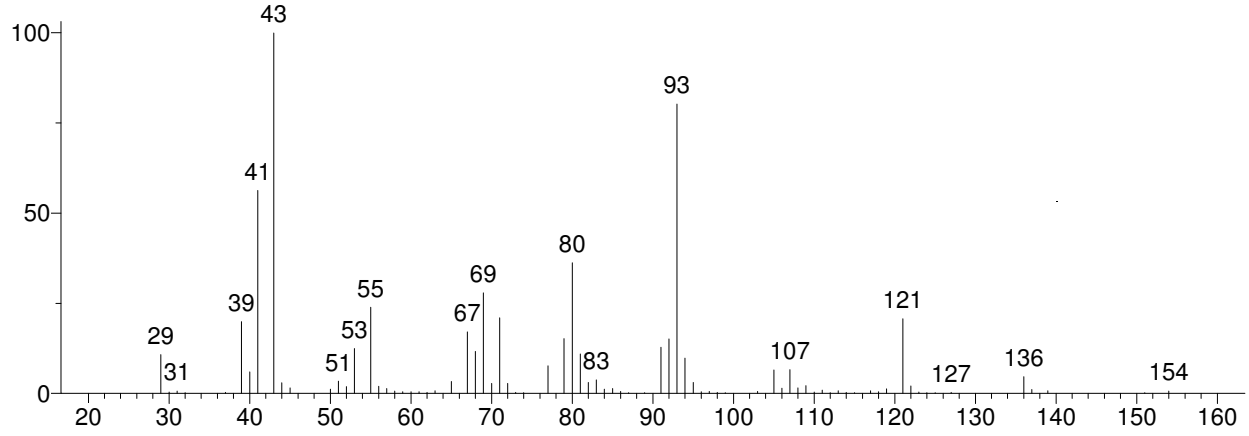


Hit 2 : 6-Octen-1-ol, 3,7-dimethyl-, (R)-
C10H20O; MF: 918; RMF: 921; Prob 26.9%; CAS: 1117-61-9; Lib: mainlib; ID: 28138.

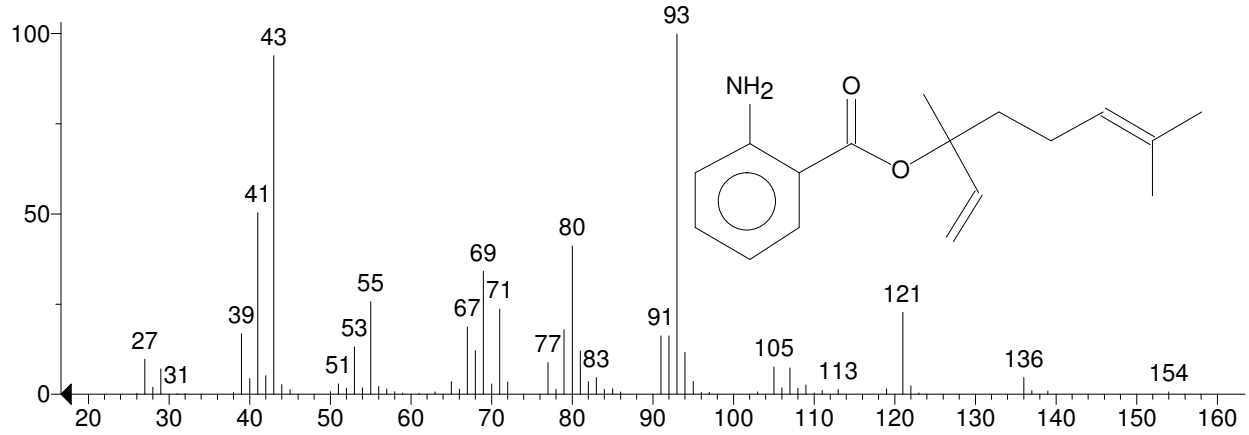


** Search Report Page 1 of 1 **

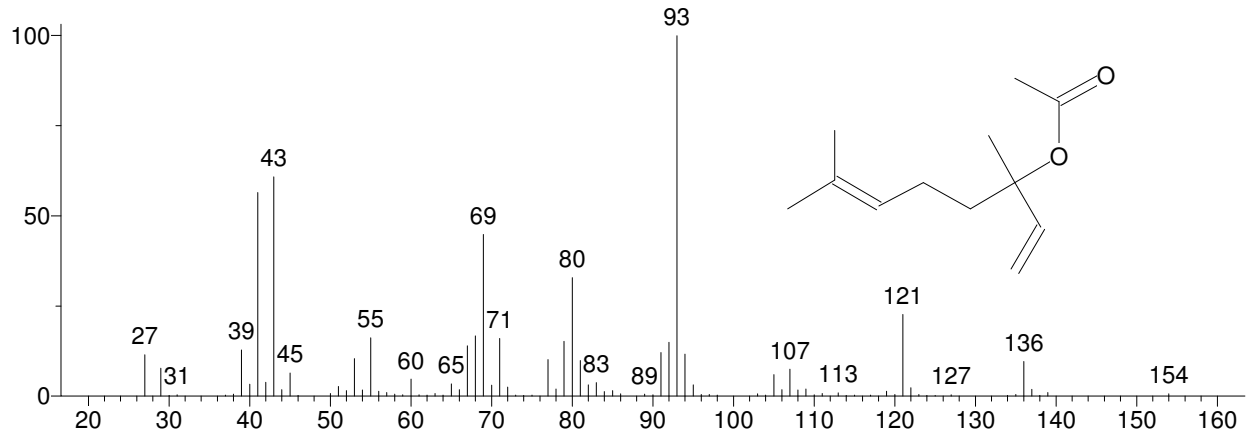
Unknown: Scan 784 (8.991 min): Designer3.D
Compound in Library Factor = 170



Hit 1 : 1,6-Octadien-3-ol, 3,7-dimethyl-, 2-aminobenzoate
C17H23NO2; MF: 962; RMF: 966; Prob 76.1%; CAS: 7149-26-0; Lib: mainlib; ID: 51289.

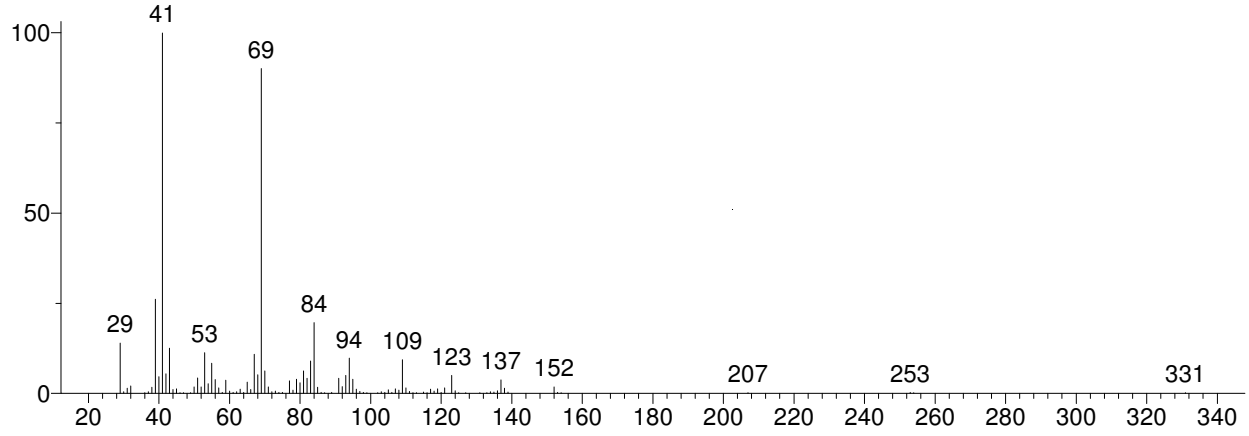


Hit 2 : 1,6-Octadien-3-ol, 3,7-dimethyl-, acetate
C12H20O2; MF: 912; RMF: 912; Prob 15.5%; CAS: 115-95-7; Lib: mainlib; ID: 51290.

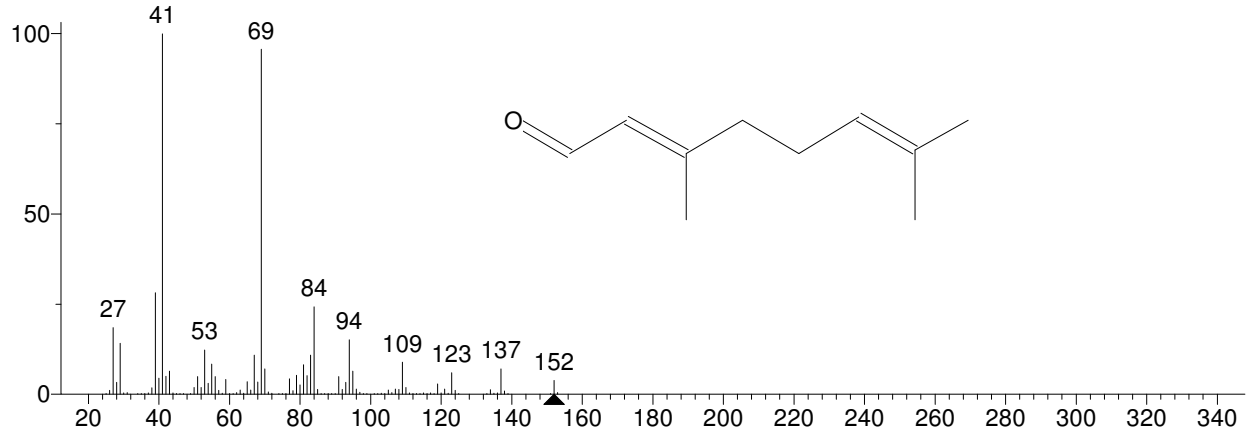


** Search Report Page 1 of 1 **

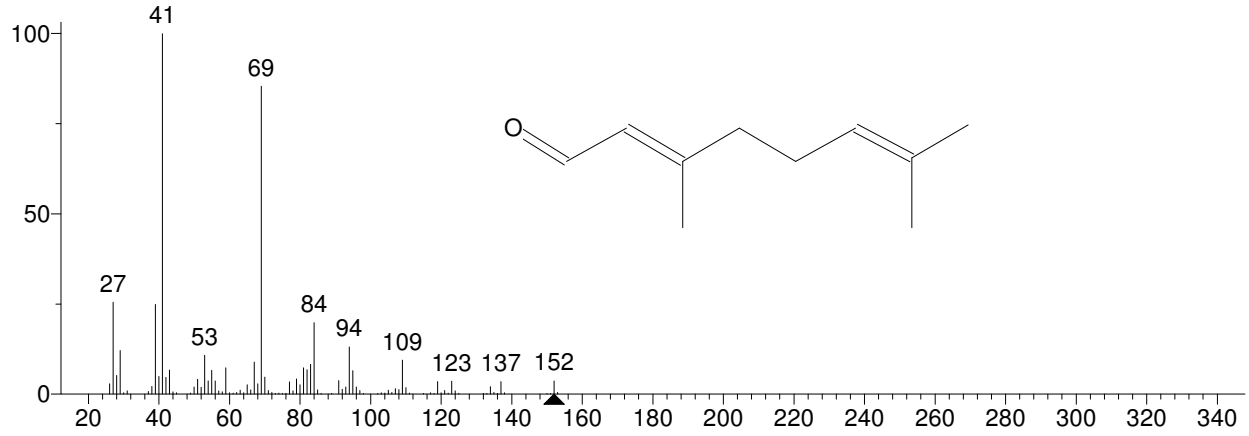
Unknown: Scan 794 (9.105 min): Designer3.D
Compound in Library Factor = 112



Hit 1 : 2,6-Octadienal, 3,7-dimethyl-, (E)-
C10H16O; MF: 885; RMF: 889; Prob 39.1%; CAS: 141-27-5; Lib: mainlib; ID: 2980.

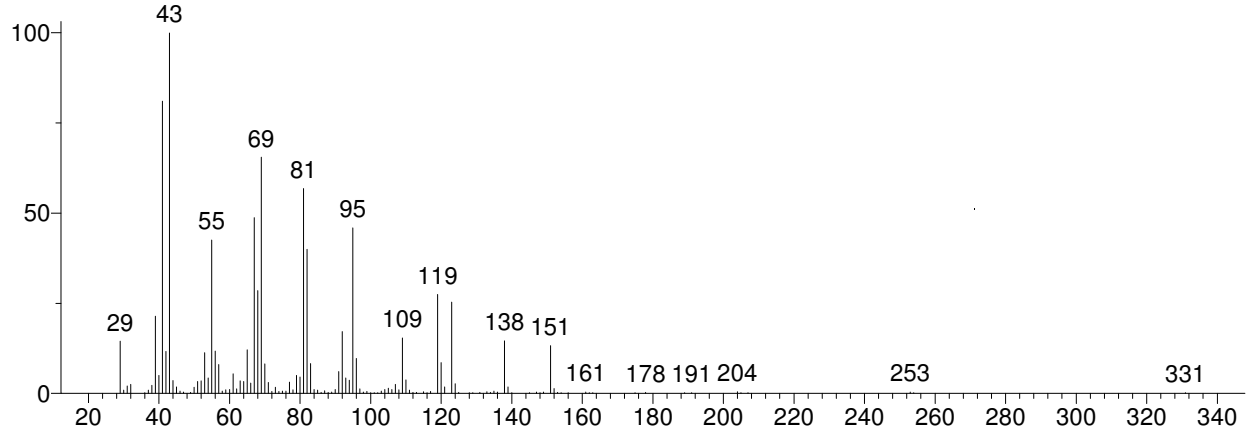


Hit 2 : 2,6-Octadienal, 3,7-dimethyl-, (Z)-
C10H16O; MF: 873; RMF: 878; Prob 26.0%; CAS: 106-26-3; Lib: mainlib; ID: 2942.

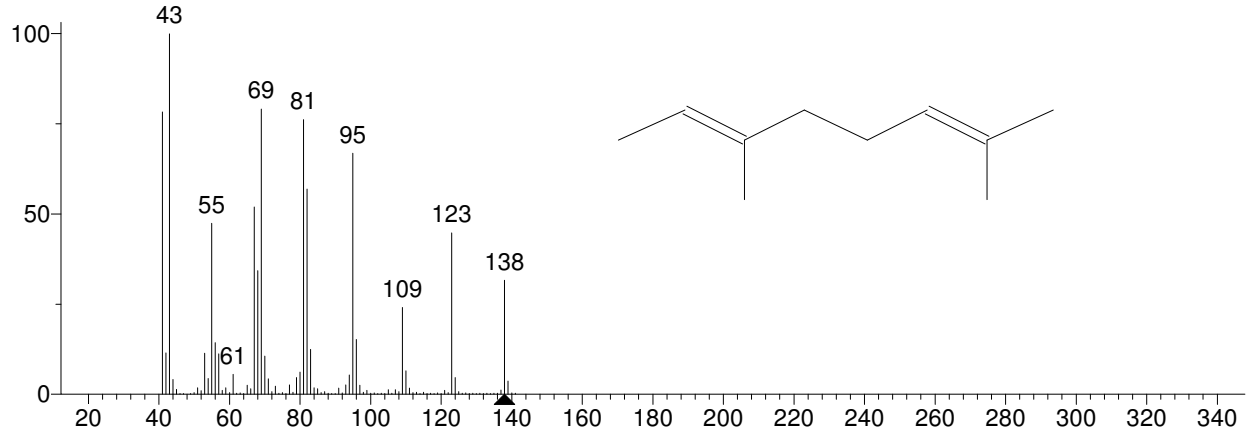


** Search Report Page 1 of 1 **

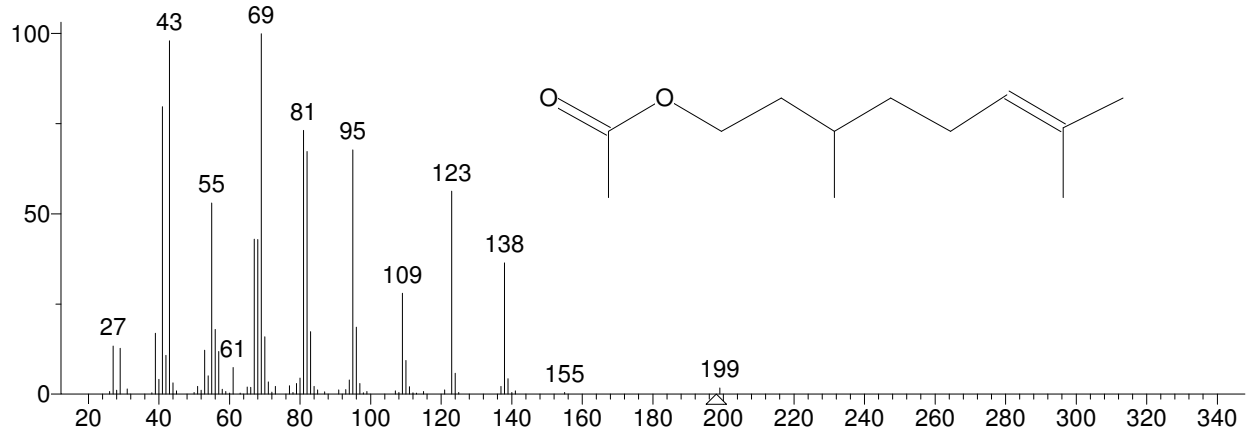
Unknown: Scan 858 (9.836 min): Designer3.D
Compound in Library Factor = -388



Hit 1 : 2,6-Octadiene, 2,6-dimethyl-
C10H18; MF: 801; RMF: 822; Prob 14.3%; CAS: 2792-39-4; Lib: replib; ID: 2290.

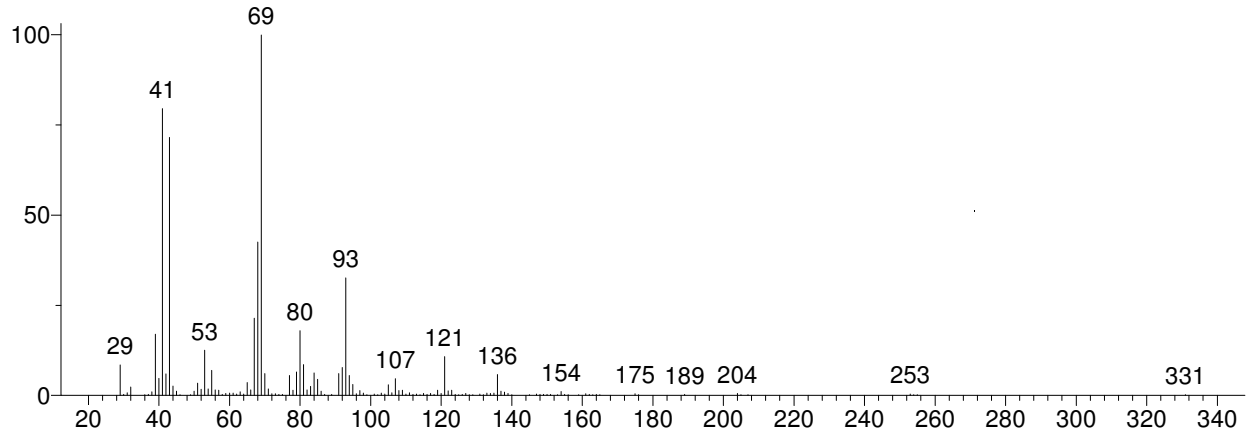


Hit 2 : 6-Octen-1-ol, 3,7-dimethyl-, acetate
C12H22O2; MF: 799; RMF: 882; Prob 13.2%; CAS: 150-84-5; Lib: replib; ID: 7605.

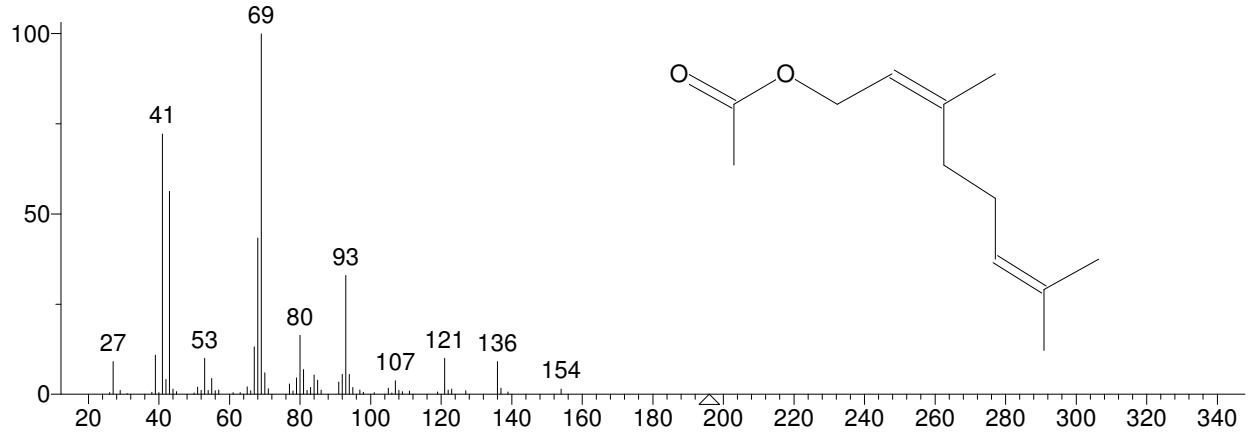


** Search Report Page 1 of 1 **

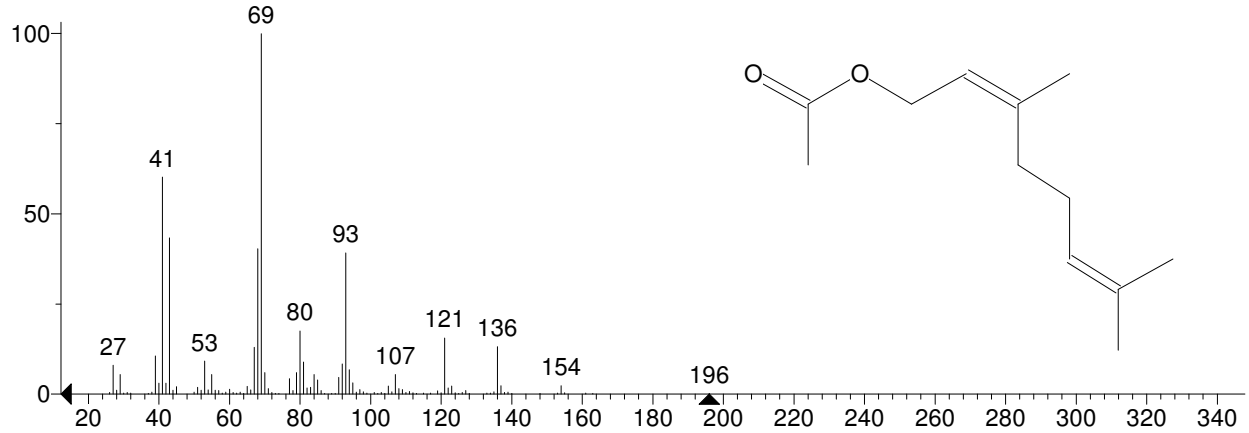
Unknown: Scan 868 (9.950 min): Designer3.D
Compound in Library Factor = 103



Hit 1 : 2,6-Octadien-1-ol, 3,7-dimethyl-, acetate, (Z)-
C12H20O2; MF: 916; RMF: 944; Prob 44.9%; CAS: 141-12-8; Lib: replib; ID: 7487.

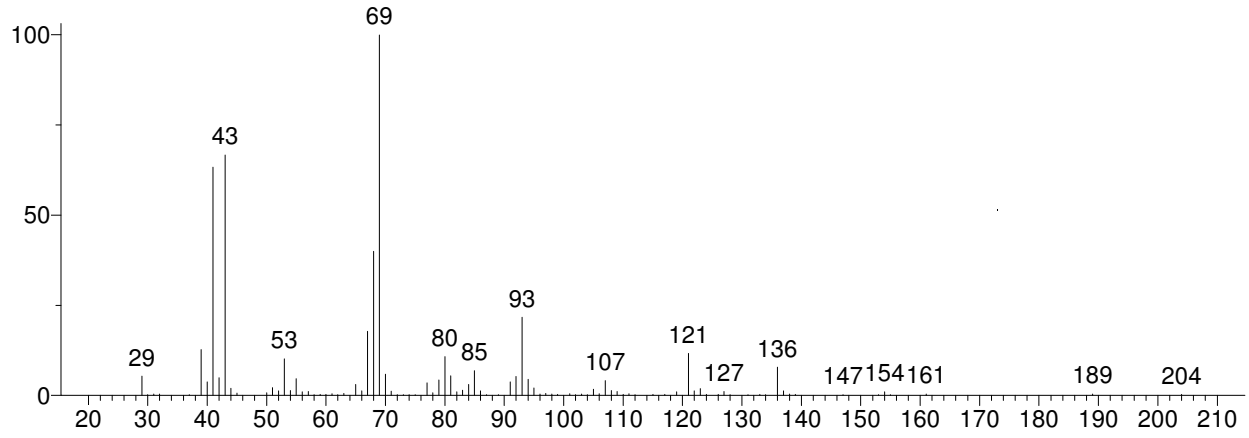


Hit 2 : 2,6-Octadien-1-ol, 3,7-dimethyl-, acetate, (Z)-
C12H20O2; MF: 898; RMF: 906; Prob 44.9%; CAS: 141-12-8; Lib: mainlib; ID: 28008.

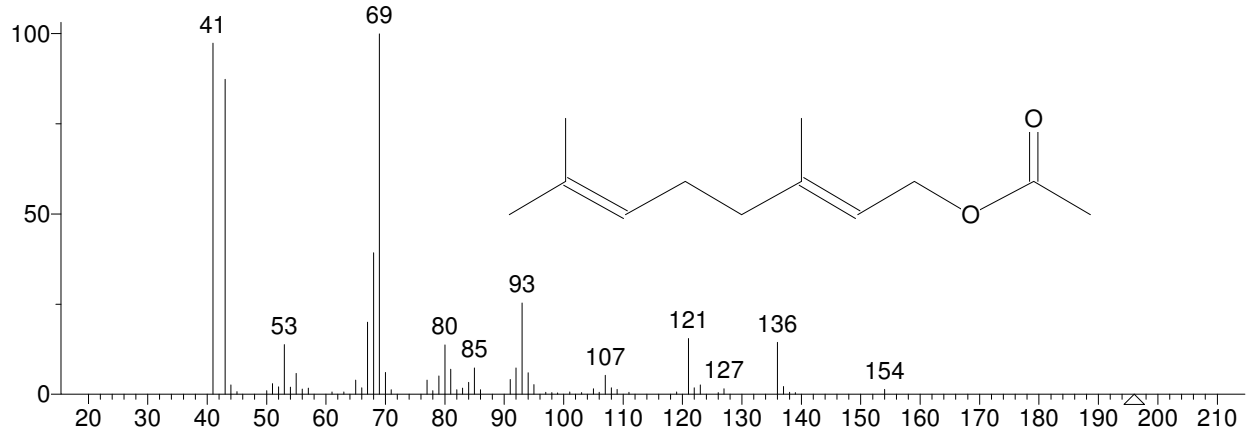


** Search Report Page 1 of 1 **

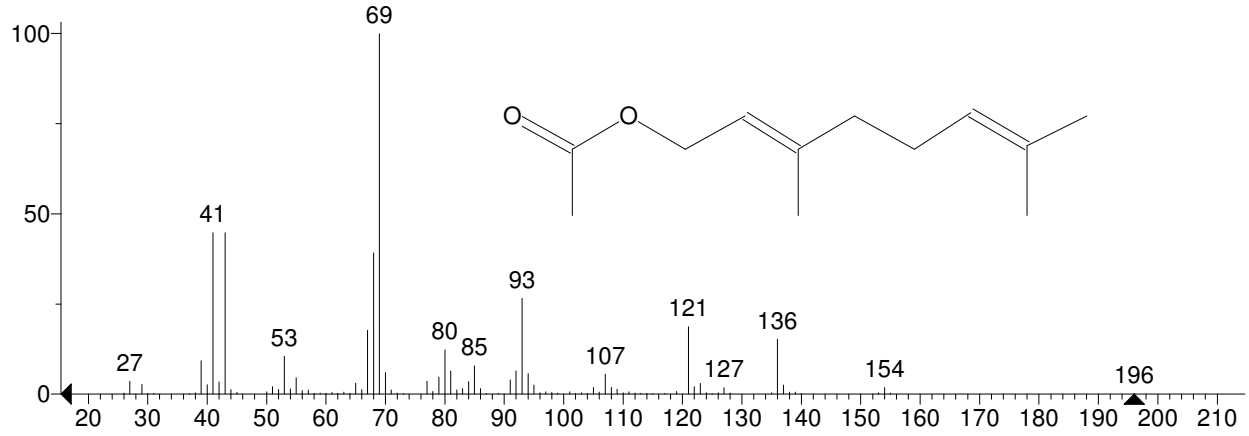
Unknown: Scan 886 (10.155 min): Designer3.D
Compound in Library Factor = 168



Hit 1 : 2,6-Octadien-1-ol, 3,7-dimethyl-, acetate
C12H20O2; MF: 957; RMF: 966; Prob 47.4%; CAS: 16409-44-2; Lib: replib; ID: 7488.

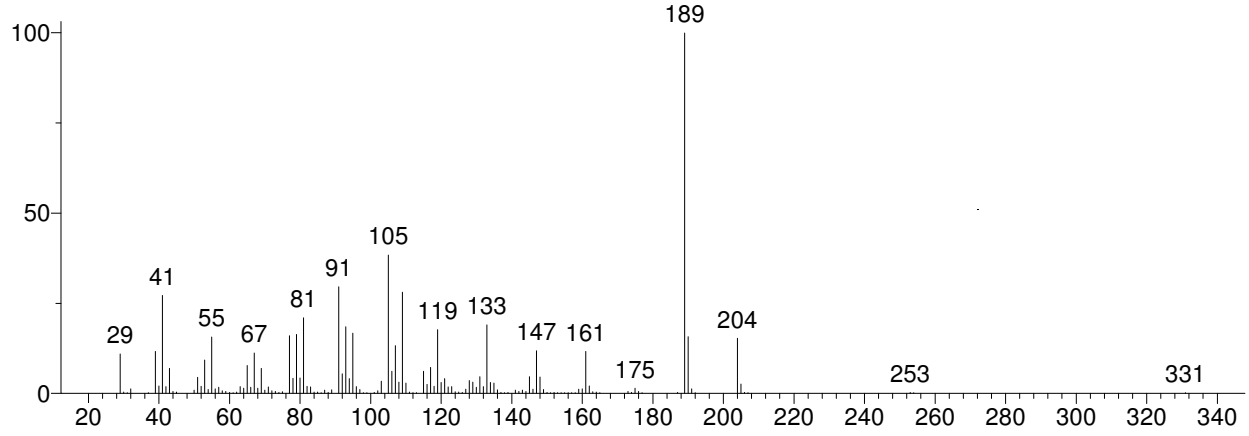


Hit 2 : 2,6-Octadien-1-ol, 3,7-dimethyl-, acetate, (E)-
C12H20O2; MF: 947; RMF: 950; Prob 33.5%; CAS: 105-87-3; Lib: replib; ID: 7492.

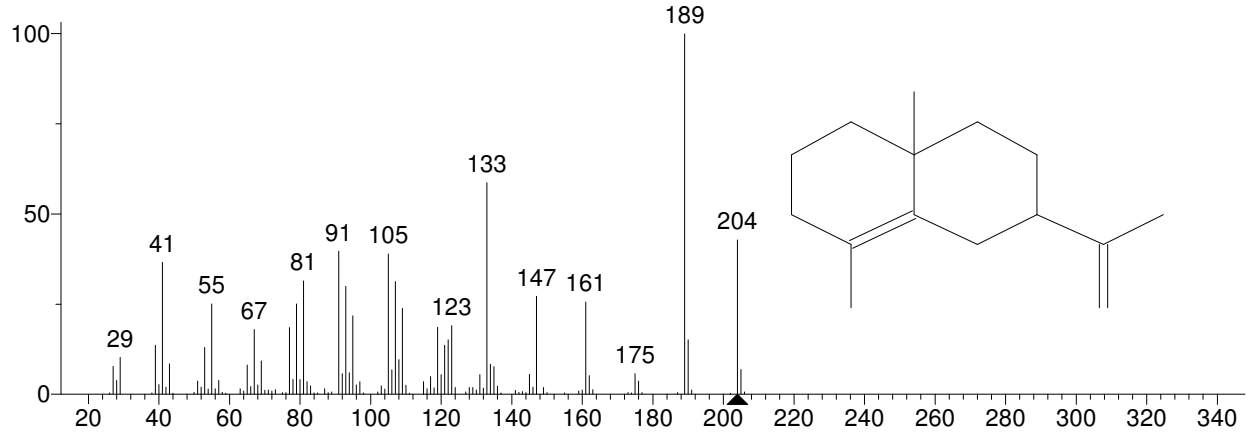


** Search Report Page 1 of 1 **

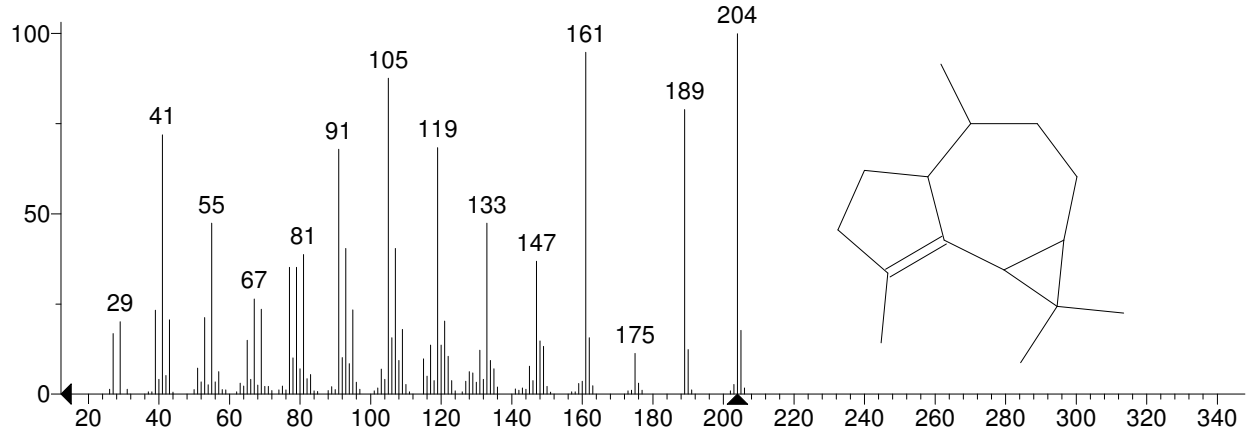
Unknown: Scan 899 (10.304 min): Designer3.D
Compound in Library Factor = -185



Hit 1 : 2-Isopropenyl-4a,8-dimethyl-1,2,3,4,4a,5,6,7-octahydronaphthalene
C15H24; MF: 881; RMF: 888; Prob 16.0%; Lib: mainlib; ID: 118910.

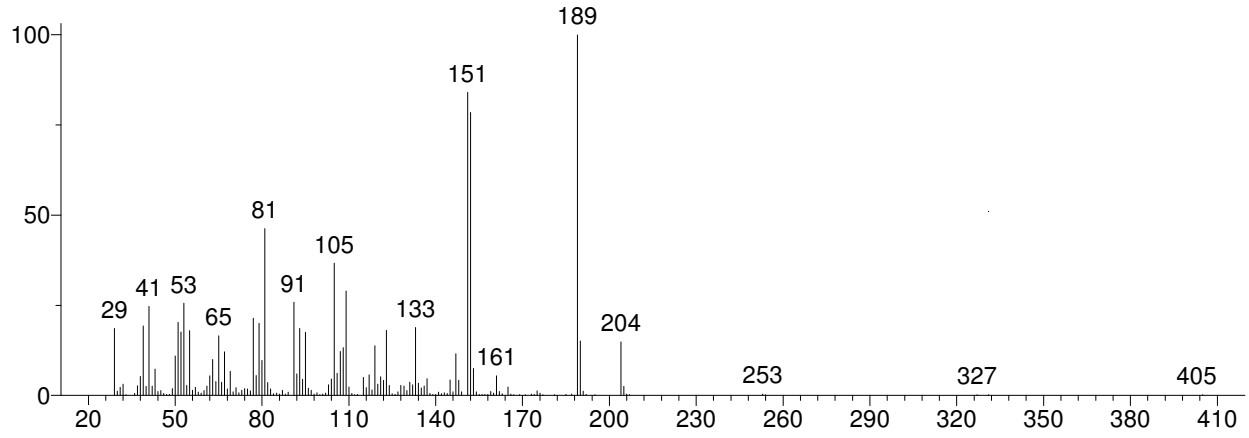


Hit 2 : 1H-Cycloprop[e]azulene, 1a,2,3,4,4a,5,6,7b-octahydro-1,1,4,7-tetramethyl-, [1aR-(1a.alpha.,4.alpha.,4a.beta.,7
C15H24; MF: 862; RMF: 865; Prob 7.74%; CAS: 489-40-7; Lib: mainlib; ID: 125451.

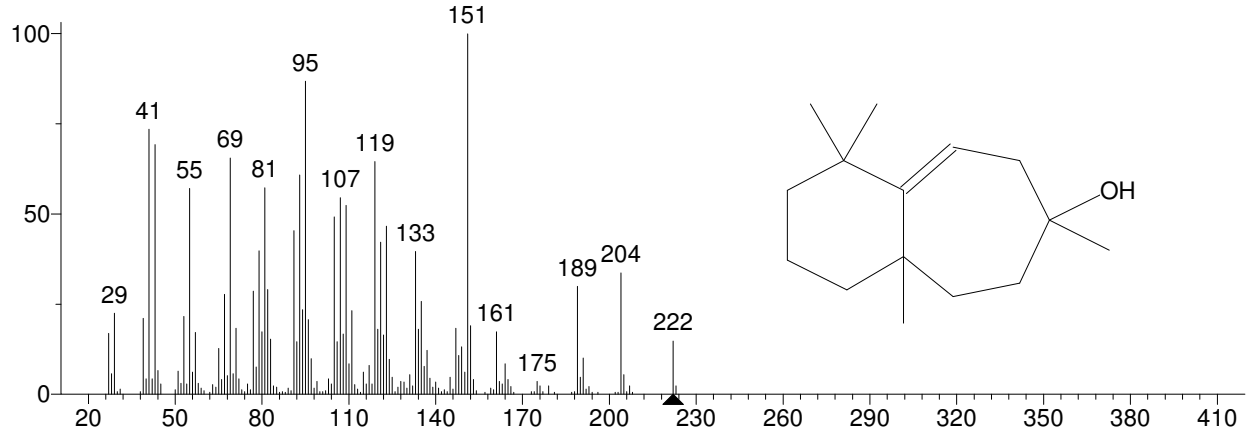


** Search Report Page 1 of 1 **

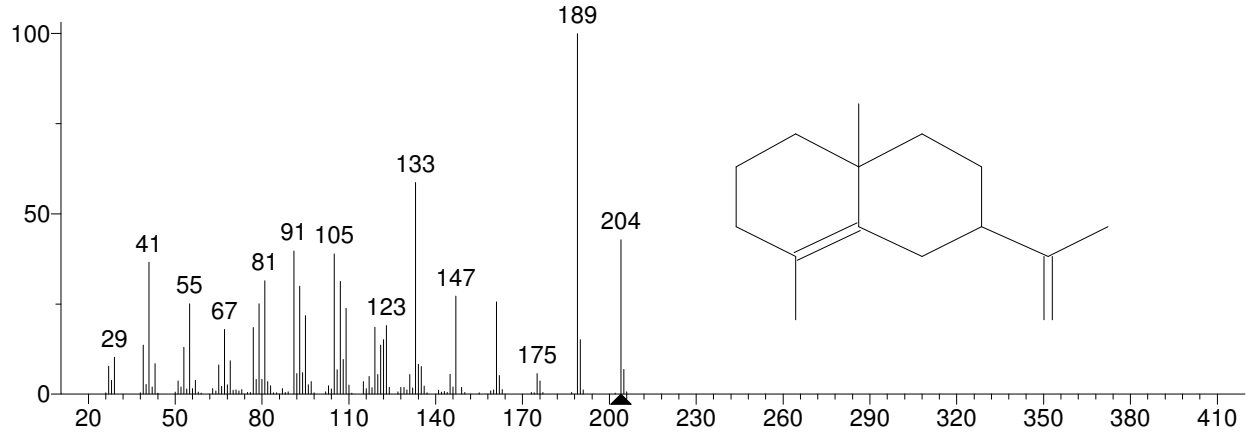
Unknown: Scan 915 (10.486 min): Designer3.D
Compound in Library Factor = -733



Hit 1 : 1H-Benzocycloheptен-7-ol, 2,3,4,4a,5,6,7,8-octahydro-1,1,4a,7-tetramethyl-, cis-
C15H26O; MF: 742; RMF: 745; Prob 20.8%; CAS: 6892-80-4; Lib: replib; ID: 19977.

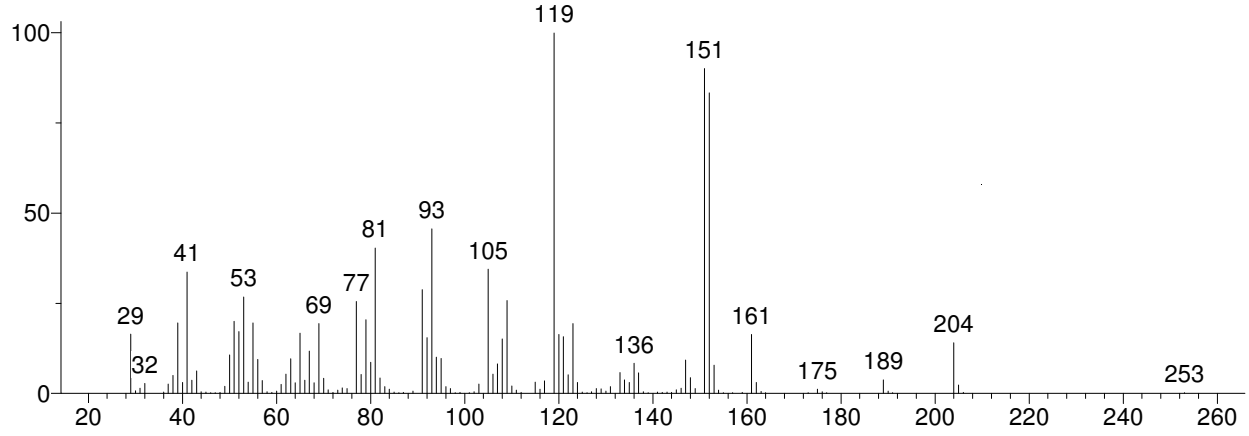


Hit 2 : 2-Isopropenyl-4a,8-dimethyl-1,2,3,4,4a,5,6,7-octahydronaphthalene
C15H24; MF: 728; RMF: 853; Prob 13.0%; Lib: mainlib; ID: 118910.

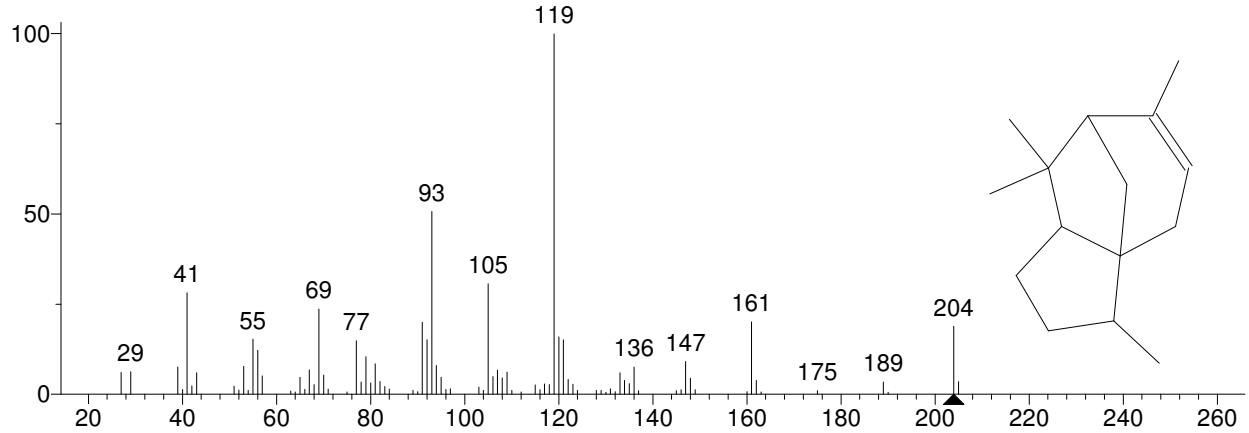


** Search Report Page 1 of 1 **

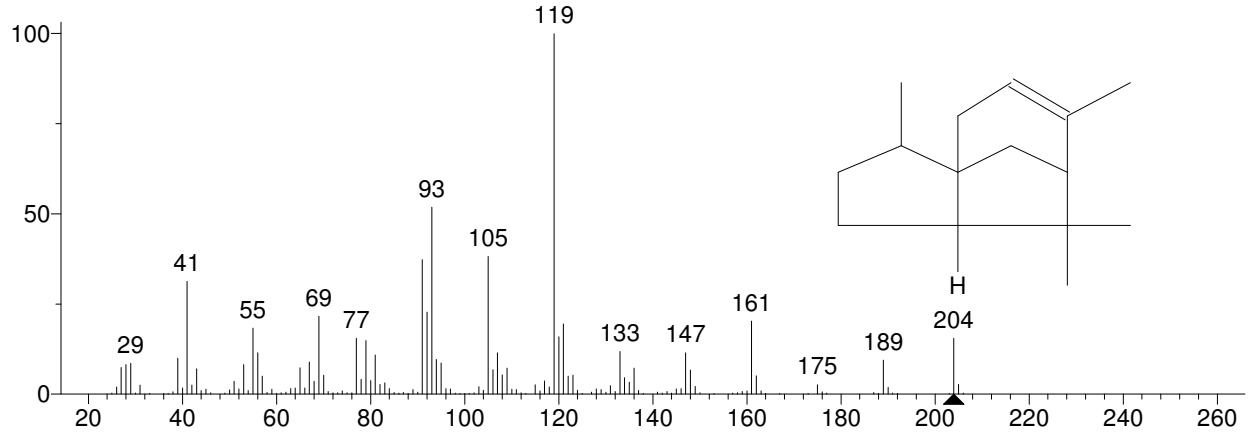
Unknown: Scan 928 (10.635 min): Designer3.D
Compound in Library Factor = -804



Hit 1 : 1H-3a,7-Methanoazulene, 2,3,4,7,8,8a-hexahydro-3,6,8,8-tetramethyl-, [3R-(3.alpha.,3a.beta.,7.beta.,8a.alpha
C15H24; MF: 743; RMF: 887; Prob 13.3%; CAS: 469-61-4; Lib: replib; ID: 15877.

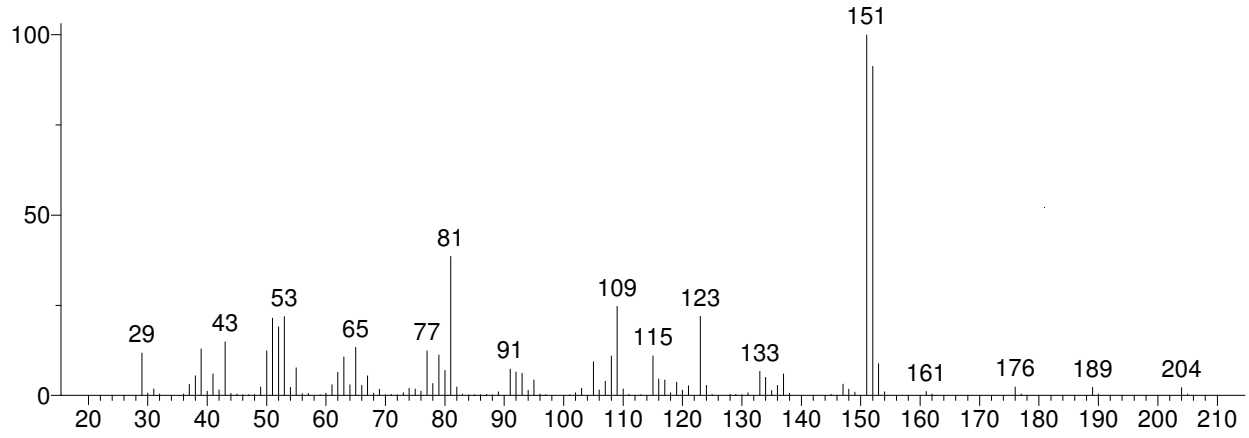


Hit 2 : Di-epi-.alpha.-cedrene
C15H24; MF: 740; RMF: 859; Prob 11.8%; Lib: mainlib; ID: 72092.

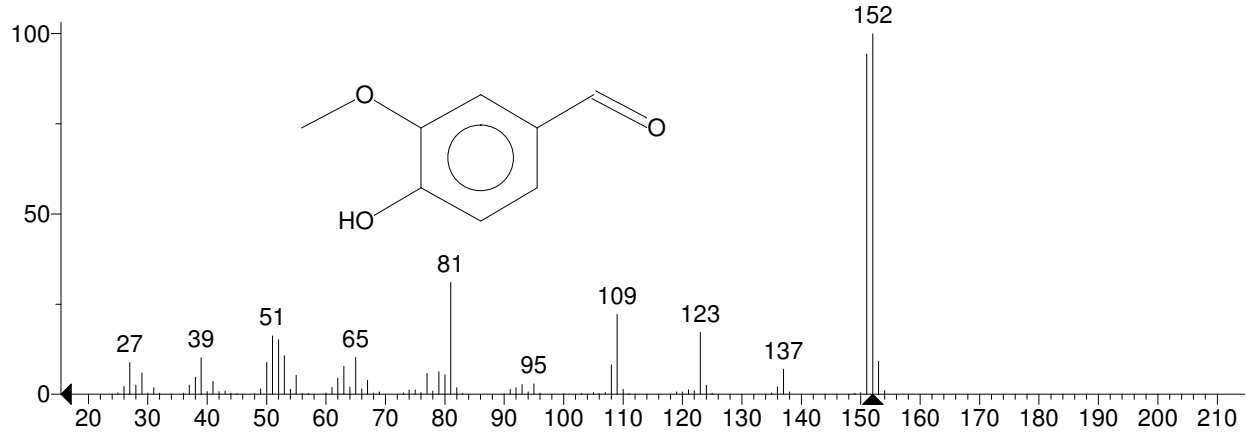


** Search Report Page 1 of 1 **

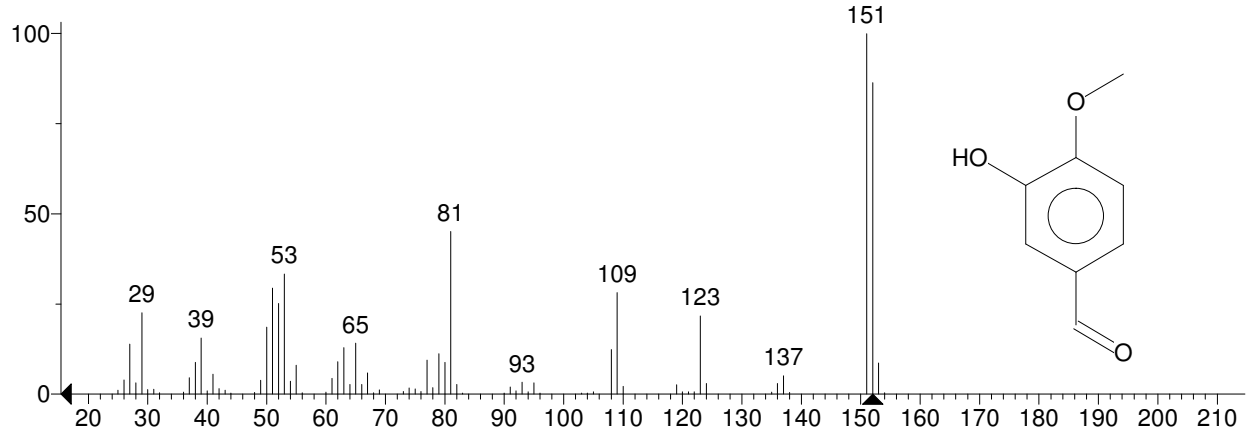
Unknown: Scan 944 (10.818 min): Designer3.D
Compound in Library Factor = -181



Hit 1 : Vanillin
C8H8O3; MF: 855; RMF: 905; Prob 37.2%; CAS: 121-33-5; Lib: mainlib; ID: 98716.

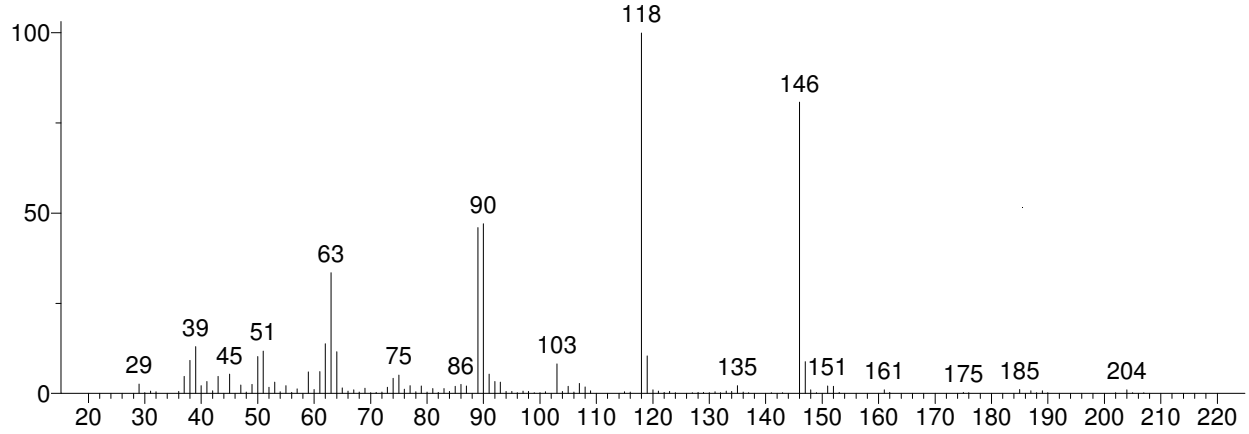


Hit 2 : Benzaldehyde, 3-hydroxy-4-methoxy-
C8H8O3; MF: 854; RMF: 912; Prob 35.8%; CAS: 621-59-0; Lib: replib; ID: 20012.

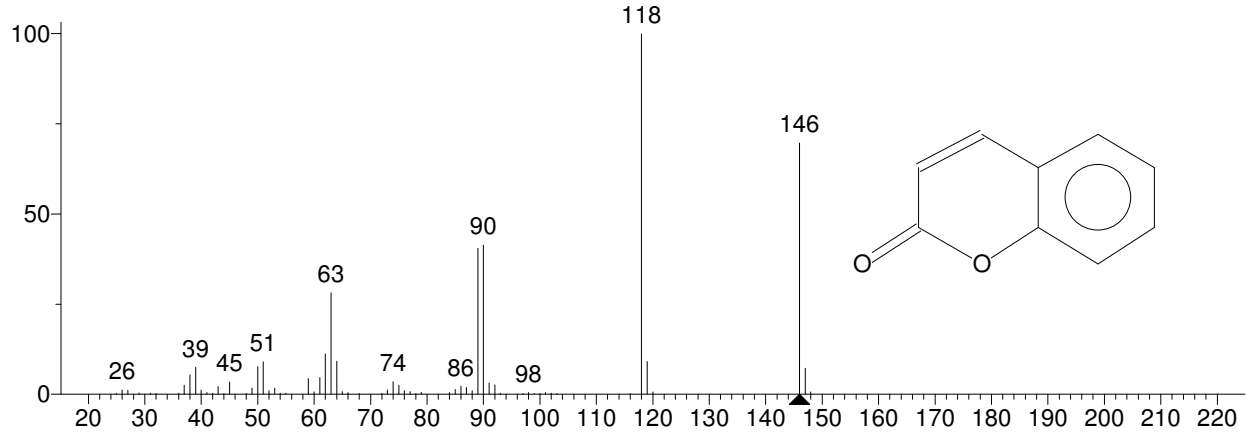


** Search Report Page 1 of 1 **

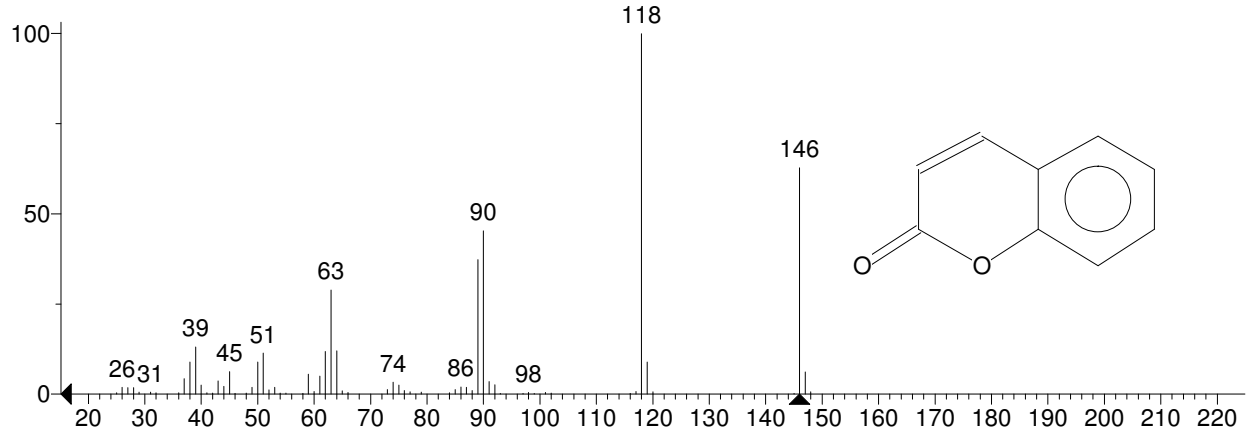
Unknown: Scan 967 (11.080 min): Designer3.D
Compound in Library Factor = 143



Hit 1 : 2H-1-Benzopyran-2-one
C9H6O2; MF: 868; RMF: 908; Prob 77.2%; CAS: 91-64-5; Lib: replib; ID: 15749.

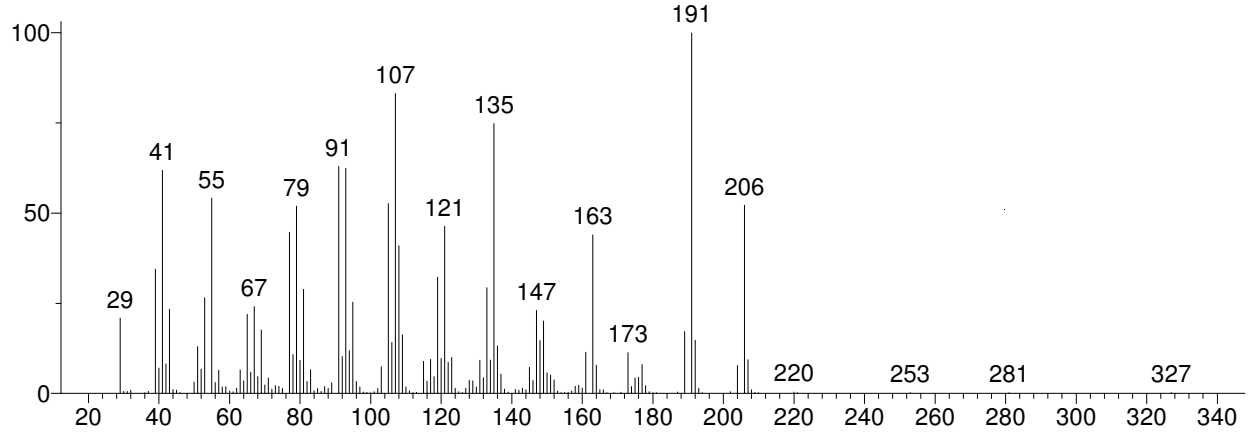


Hit 2 : 2H-1-Benzopyran-2-one
C9H6O2; MF: 862; RMF: 913; Prob 77.2%; CAS: 91-64-5; Lib: replib; ID: 15748.

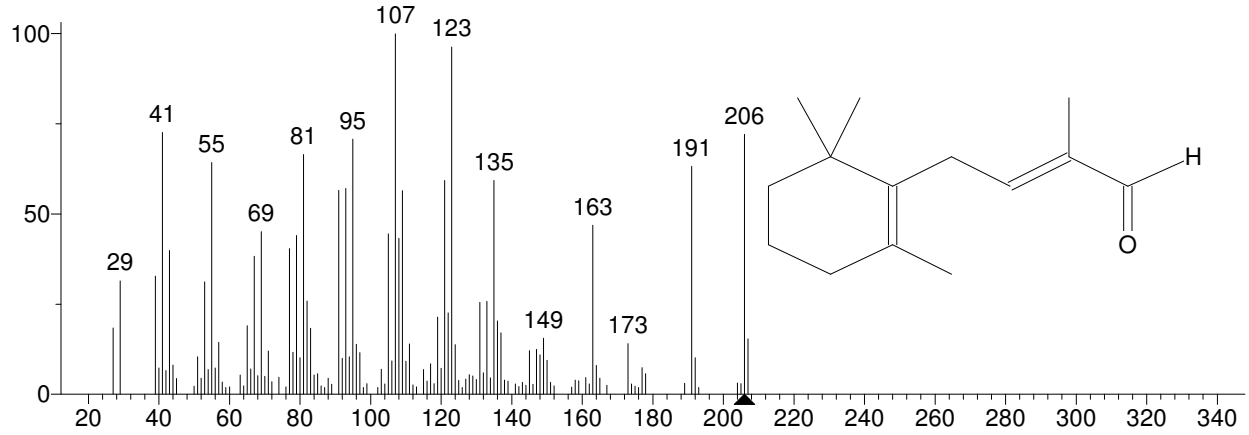


** Search Report Page 1 of 1 **

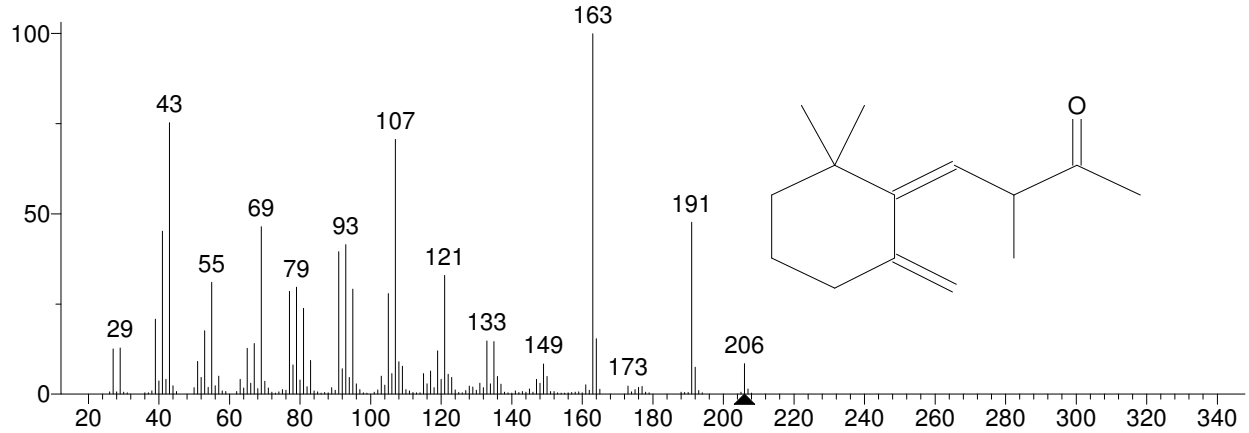
Unknown: Scan 1000 (11.457 min): Designer3.D
Compound in Library Factor = -328



Hit 1 : 2-Butenal, 2-methyl-4-(2,6,6-trimethyl-1-cyclohexen-1-yl)-
C14H22O; MF: 834; RMF: 838; Prob 22.1%; CAS: 3155-71-3; Lib: mainlib; ID: 64185.

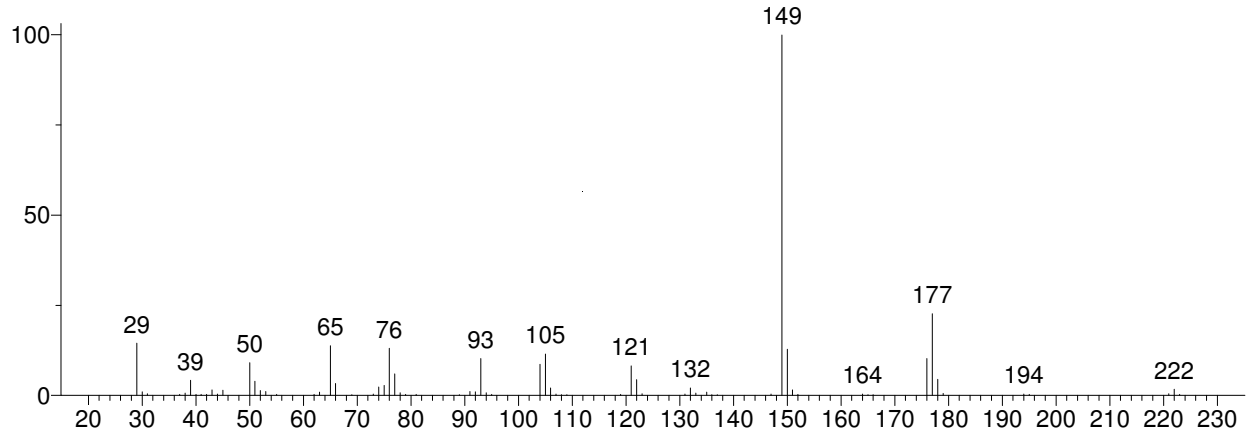


Hit 2 : 4-(2,2-Dimethyl-6-methylenecyclohexylidene)-3-methylbutan-2-one
C14H22O; MF: 829; RMF: 834; Prob 17.8%; CAS: 93175-74-7; Lib: mainlib; ID: 104424.

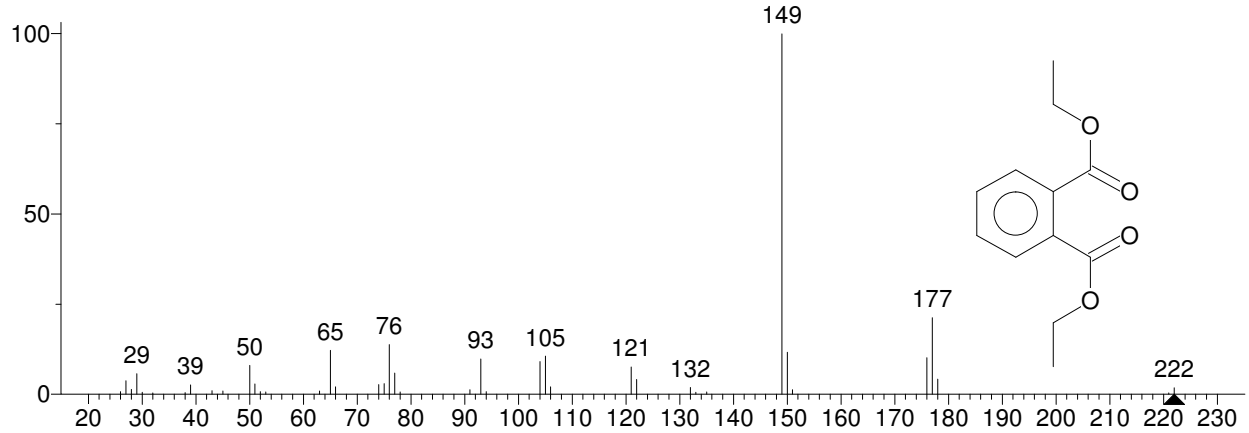


** Search Report Page 1 of 1 **

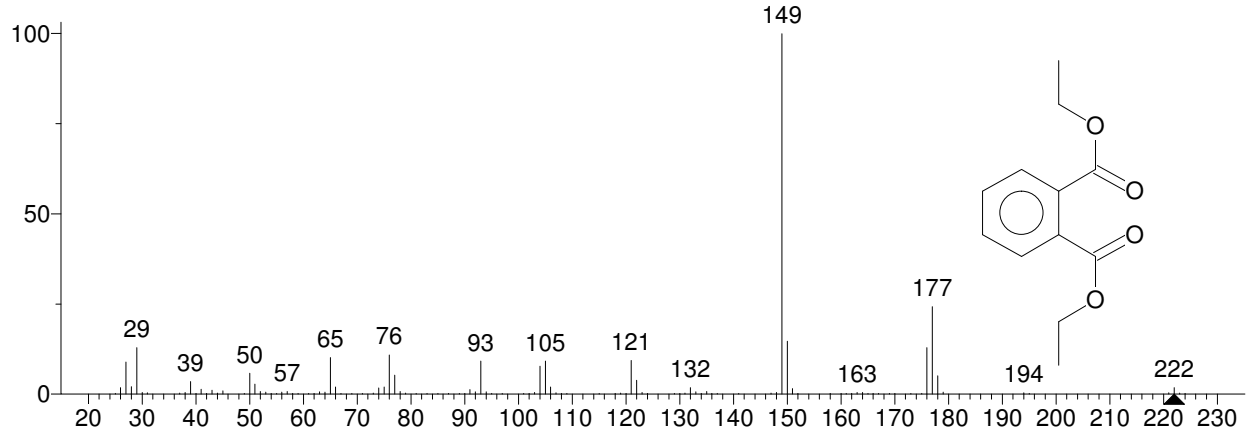
Unknown: Scan 1077 (12.336 min): Designer3.D
Compound in Library Factor = 513



Hit 1 : Diethyl Phthalate
C12H14O4; MF: 961; RMF: 974; Prob 90.7%; CAS: 84-66-2; Lib: replib; ID: 19810.

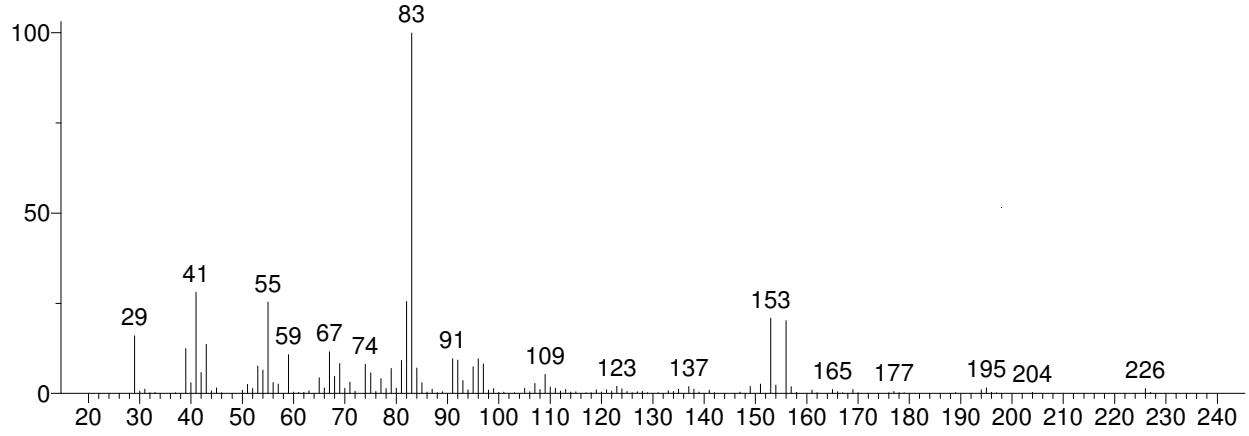


Hit 2 : Diethyl Phthalate
C12H14O4; MF: 947; RMF: 948; Prob 90.7%; CAS: 84-66-2; Lib: replib; ID: 19812.

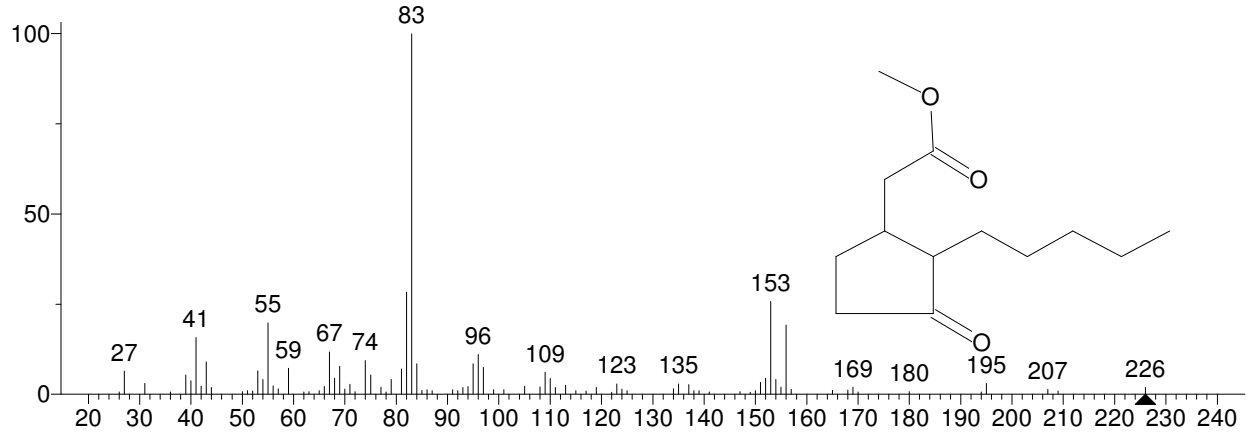


** Search Report Page 1 of 1 **

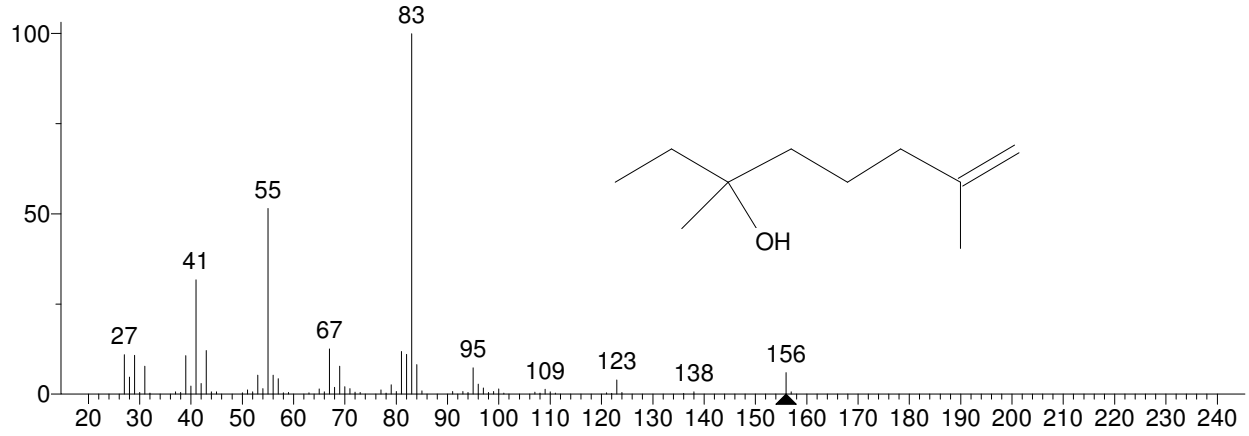
Unknown: Scan 1123 (12.861 min): Designer3.D
Compound in Library Factor = -137



Hit 1 : Cyclopentaneacetic acid, 3-oxo-2-pentyl-, methyl ester
C13H22O3; MF: 797; RMF: 825; Prob 70.7%; CAS: 24851-98-7; Lib: mainlib; ID: 41498.

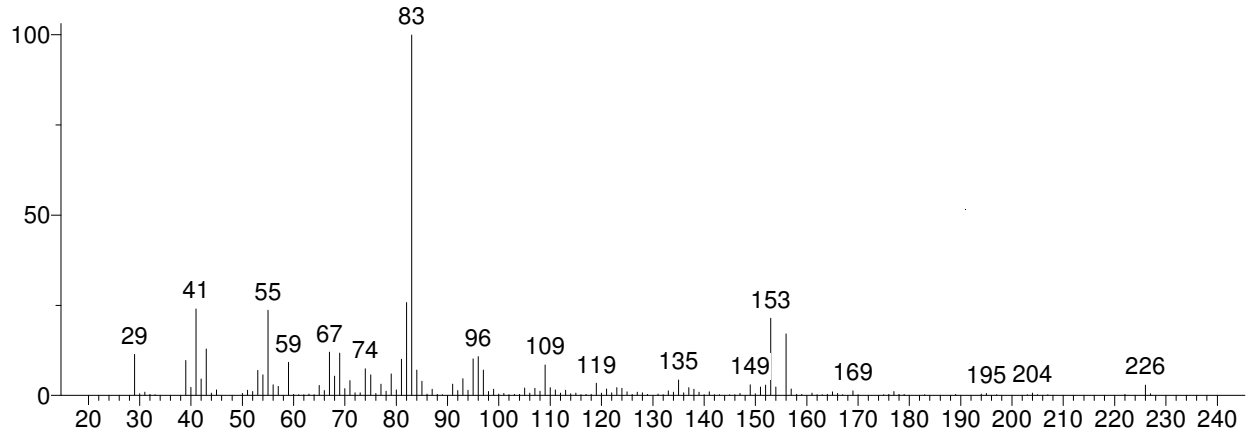


Hit 2 : Isocitronellol
C10H20O; MF: 687; RMF: 799; Prob 4.52%; CAS: 18479-52-2; Lib: mainlib; ID: 41109.

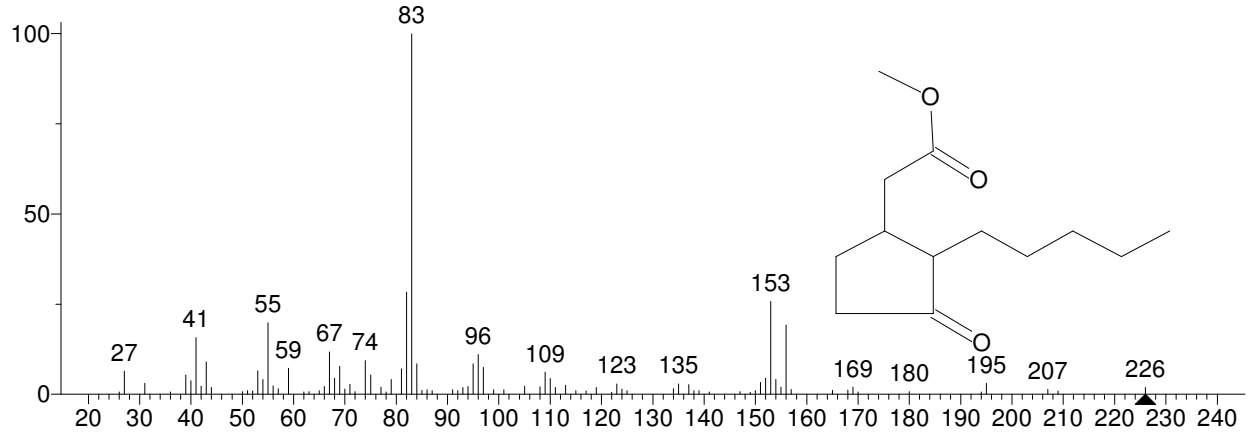


** Search Report Page 1 of 1 **

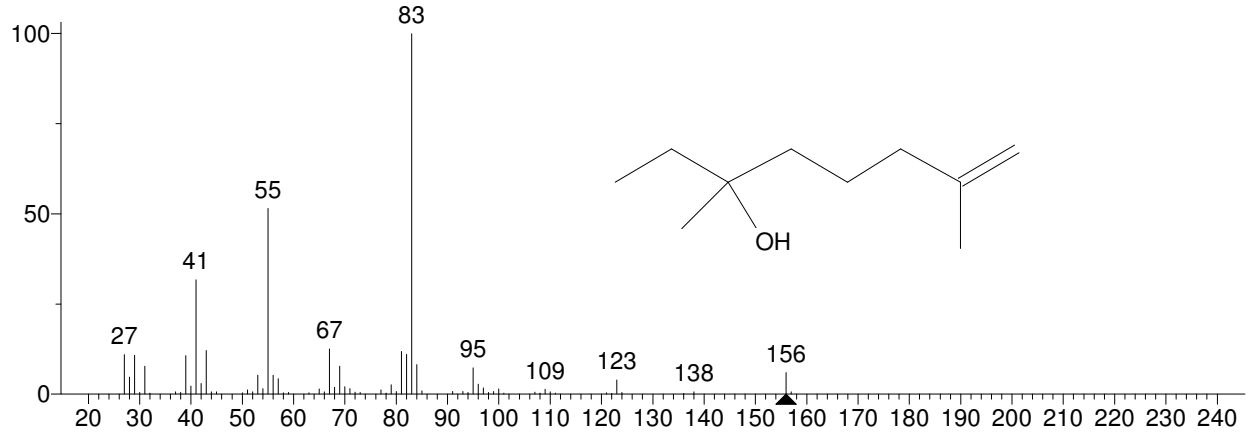
Unknown: Scan 1138 (13.033 min): Designer3.D
Compound in Library Factor = 123



Hit 1 : Cyclopentaneacetic acid, 3-oxo-2-pentyl-, methyl ester
C13H22O3; MF: 811; RMF: 849; Prob 66.3%; CAS: 24851-98-7; Lib: mainlib; ID: 41498.

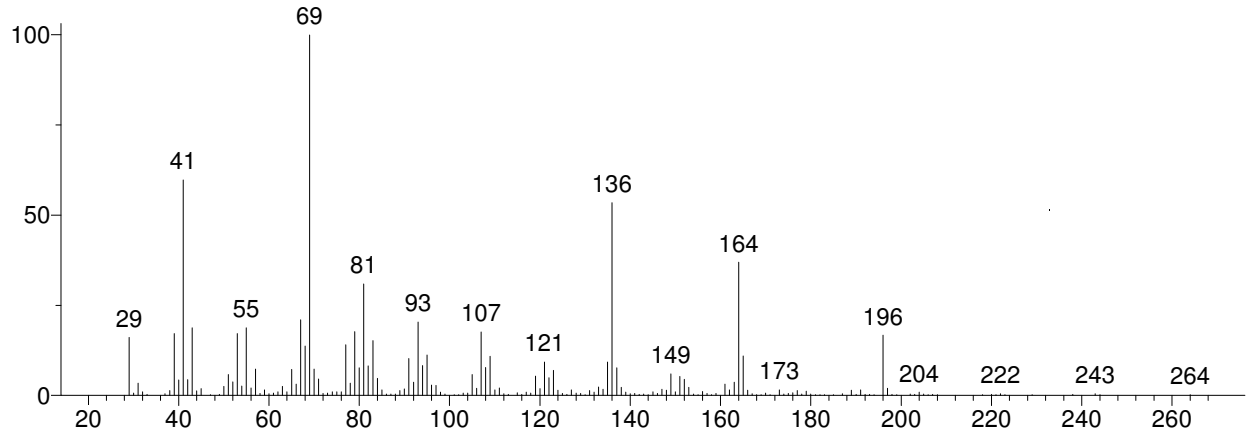


Hit 2 : Isocitronellol
C10H20O; MF: 676; RMF: 806; Prob 2.51%; CAS: 18479-52-2; Lib: mainlib; ID: 41109.

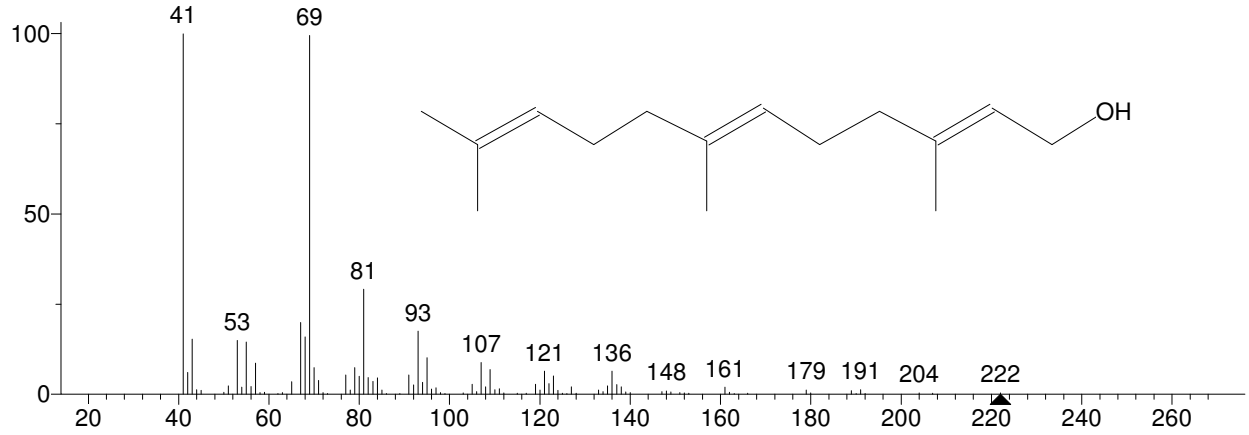


** Search Report Page 1 of 1 **

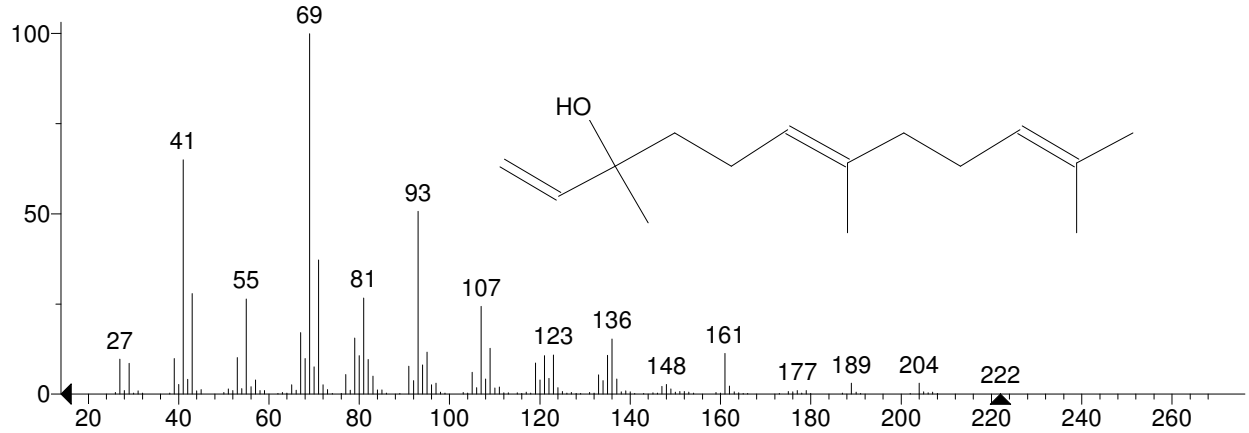
Unknown: Scan 1158 (13.261 min): Designer3.D
Compound in Library Factor = -1120



Hit 1 : 2,6,10-Dodecatrien-1-ol, 3,7,11-trimethyl-, (E,E)-
C15H26O; MF: 740; RMF: 846; Prob 7.52%; CAS: 106-28-5; Lib: mainlib; ID: 3080.

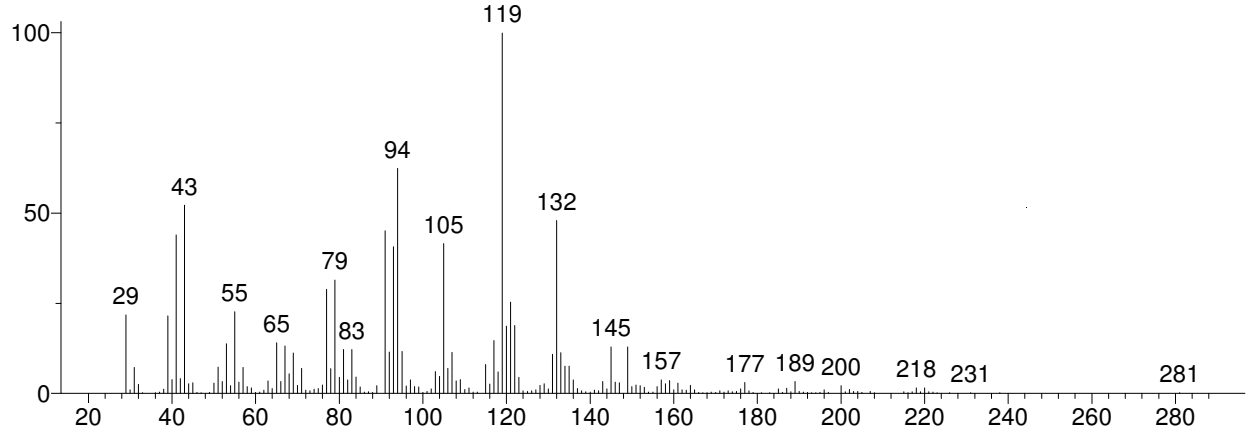


Hit 2 : 1,6,10-Dodecatrien-3-ol, 3,7,11-trimethyl-
C15H26O; MF: 736; RMF: 763; Prob 6.35%; CAS: 7212-44-4; Lib: replib; ID: 7568.

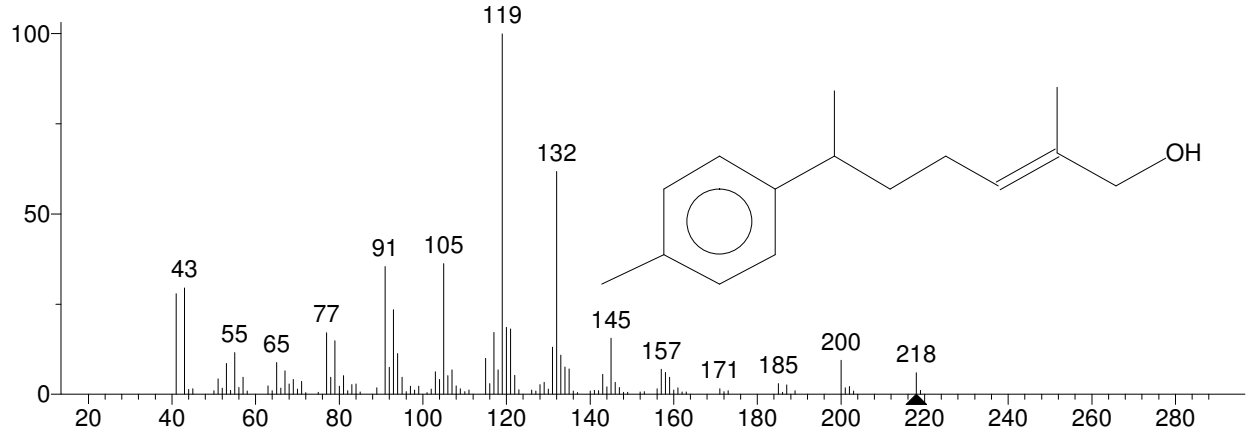


** Search Report Page 1 of 1 **

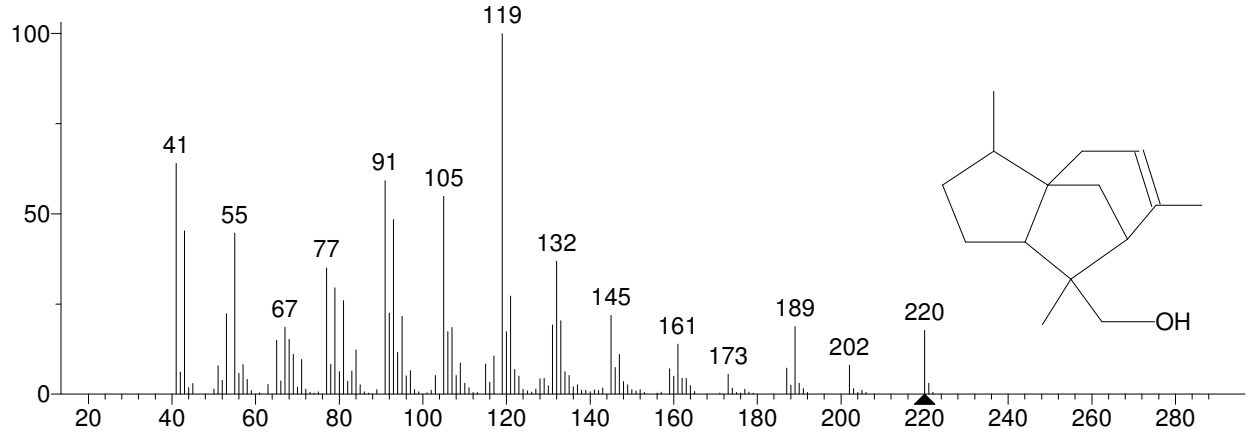
Unknown: Scan 1167 (13.364 min): Designer3.D
Compound in Library Factor = -117



Hit 1 : 6-(p-Tolyl)-2-methyl-2-heptenol
C15H22O; MF: 867; RMF: 892; Prob 60.9%; CAS: 39599-18-3; Lib: mainlib; ID: 72280.

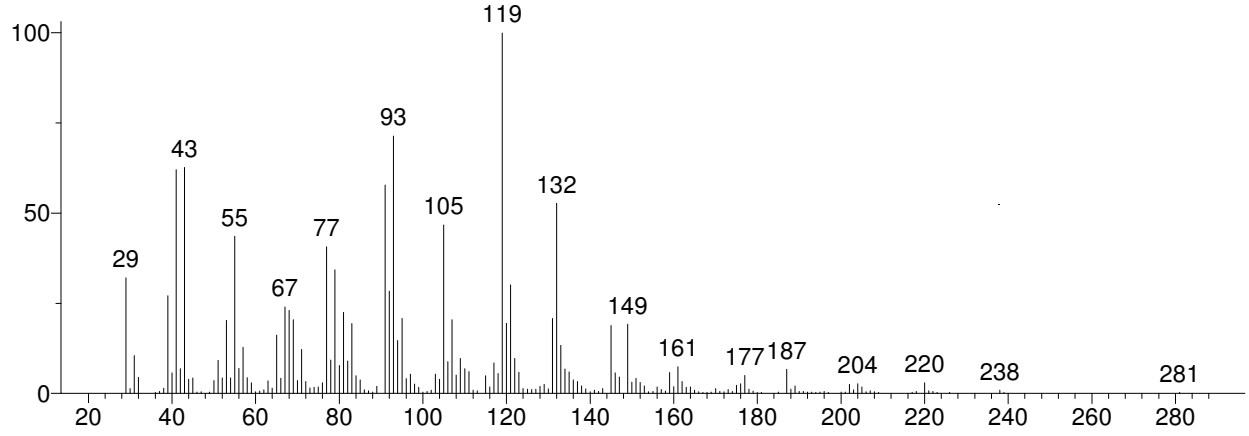


Hit 2 : Cedren-13-ol, 8-
C15H24O; MF: 802; RMF: 822; Prob 9.80%; CAS: 18319-35-2; Lib: mainlib; ID: 71326.

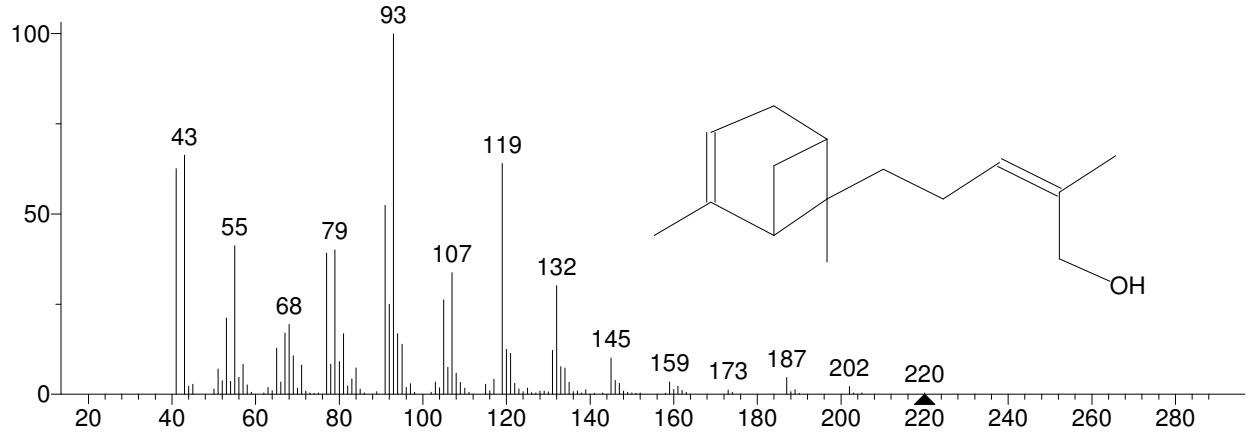


** Search Report Page 1 of 1 **

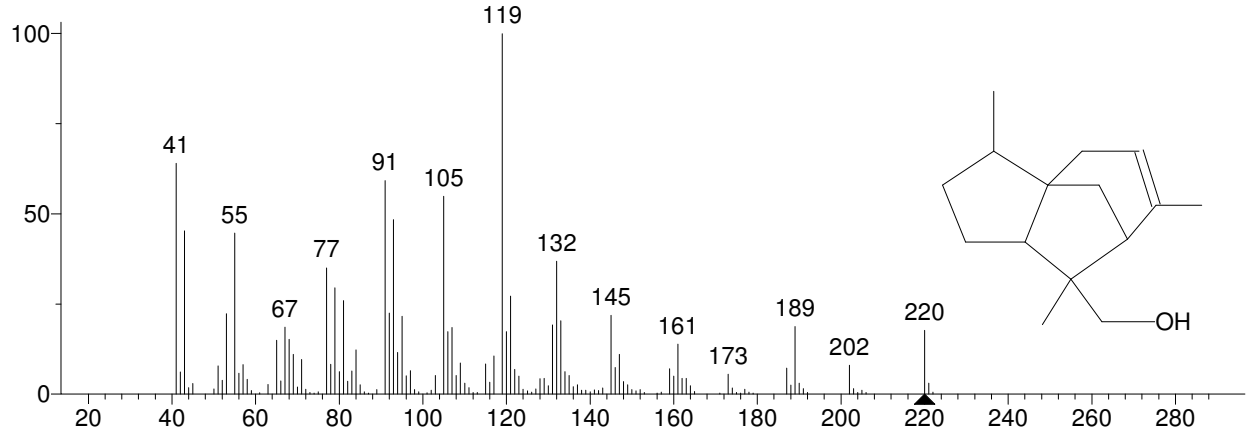
Unknown: Scan 1186 (13.581 min): Designer3.D
Compound in Library Factor = -278



Hit 1 : Bergamotol, Z-.alpha.-trans-
C15H24O; MF: 839; RMF: 873; Prob 34.9%; CAS: 88034-74-6; Lib: mainlib; ID: 51309.

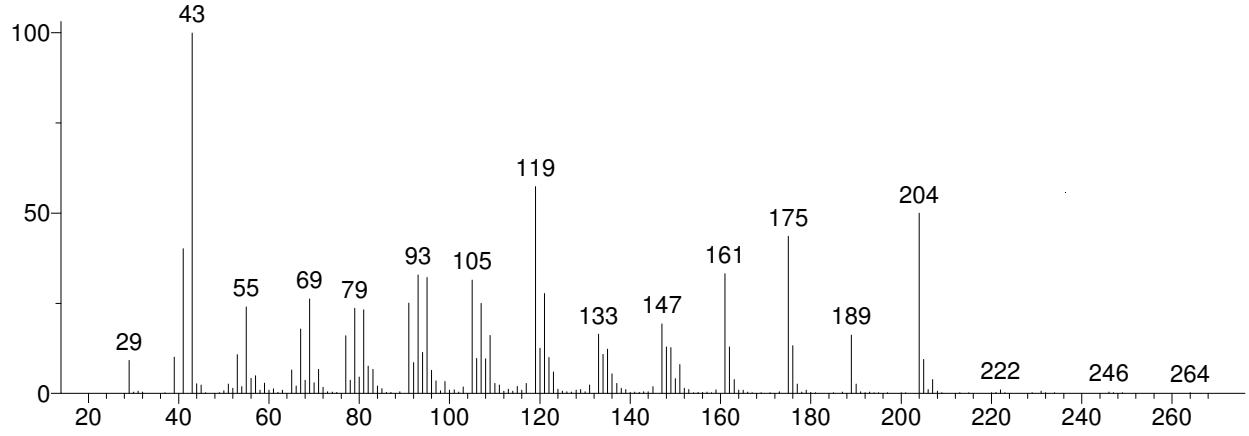


Hit 2 : Cedren-13-ol, 8-
C15H24O; MF: 830; RMF: 845; Prob 25.4%; CAS: 18319-35-2; Lib: mainlib; ID: 71326.

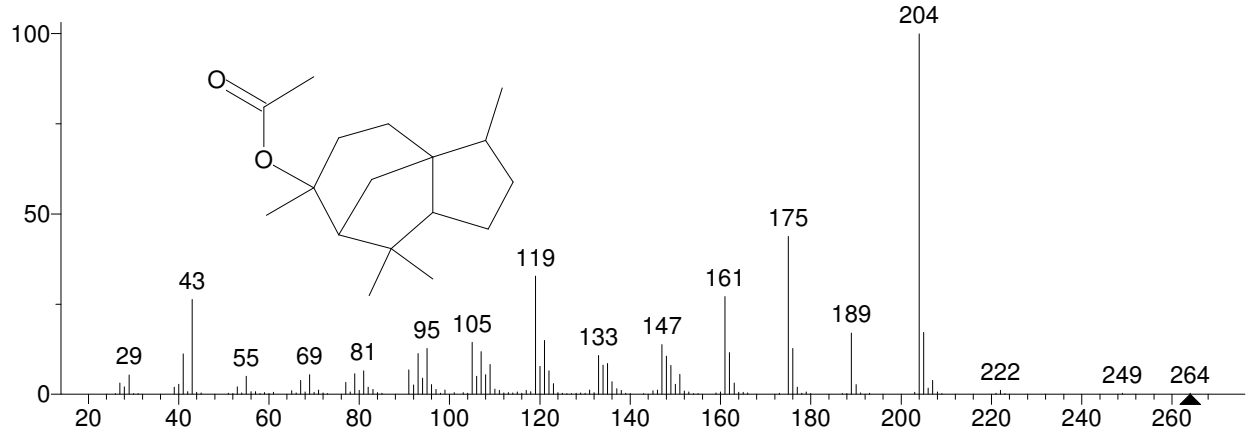


** Search Report Page 1 of 1 **

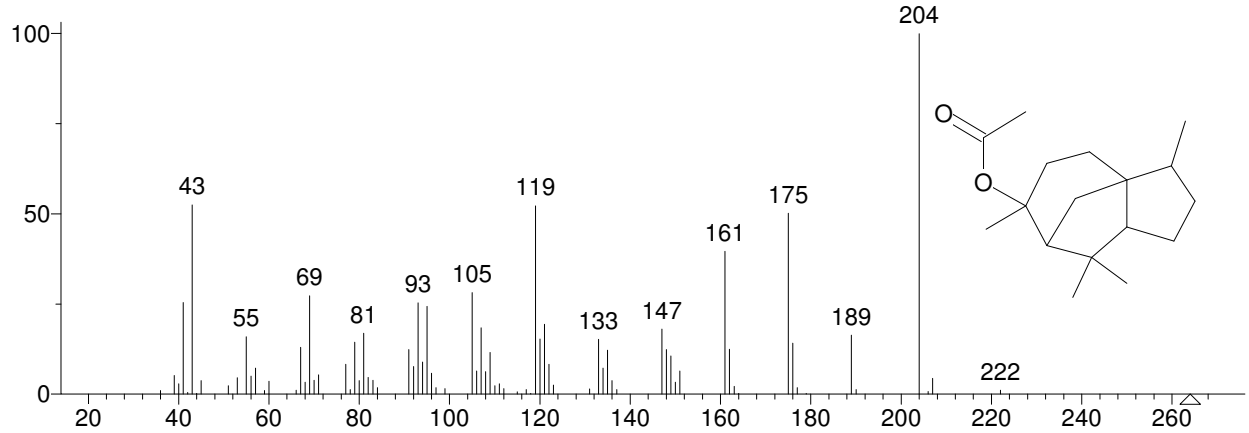
Unknown: Scan 1201 (13.752 min): Designer3.D
Compound in Library Factor = 120



Hit 1 : 1H-3a,7-Methanoazulen-6-ol, octahydro-3,6,8,8-tetramethyl-, acetate, [3R-(3.alpha.,3a.beta.,6.alpha.,7.beta.,8
C17H28O2; MF: 892; RMF: 897; Prob 20.7%; CAS: 77-54-3; Lib: mainlib; ID: 125471.

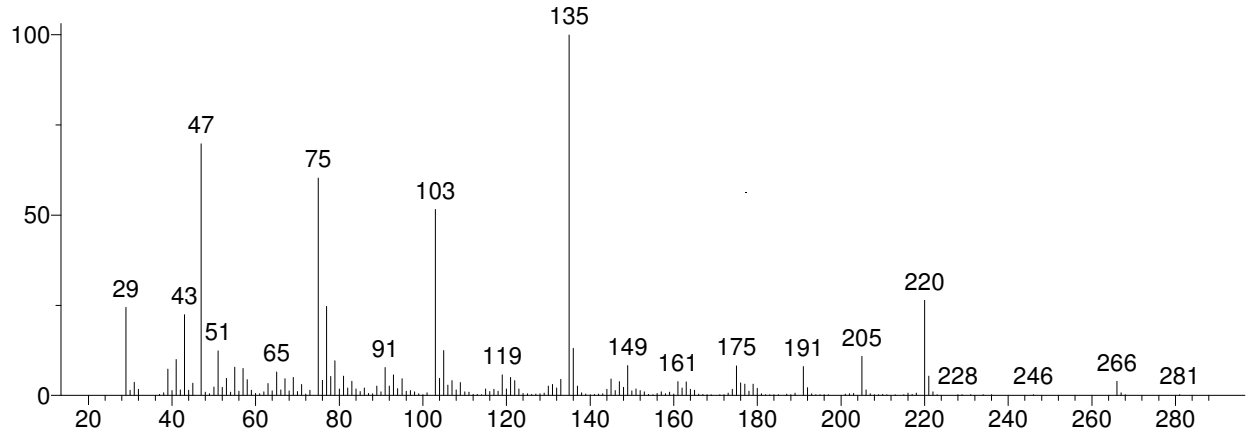


Hit 2 : 1H-3a,7-Methanoazulen-6-ol, octahydro-3,6,8,8-tetramethyl-, acetate, [3R-(3.alpha.,3a.beta.,6.alpha.,7.beta.,8
C17H28O2; MF: 870; RMF: 904; Prob 20.7%; CAS: 77-54-3; Lib: replib; ID: 24049.

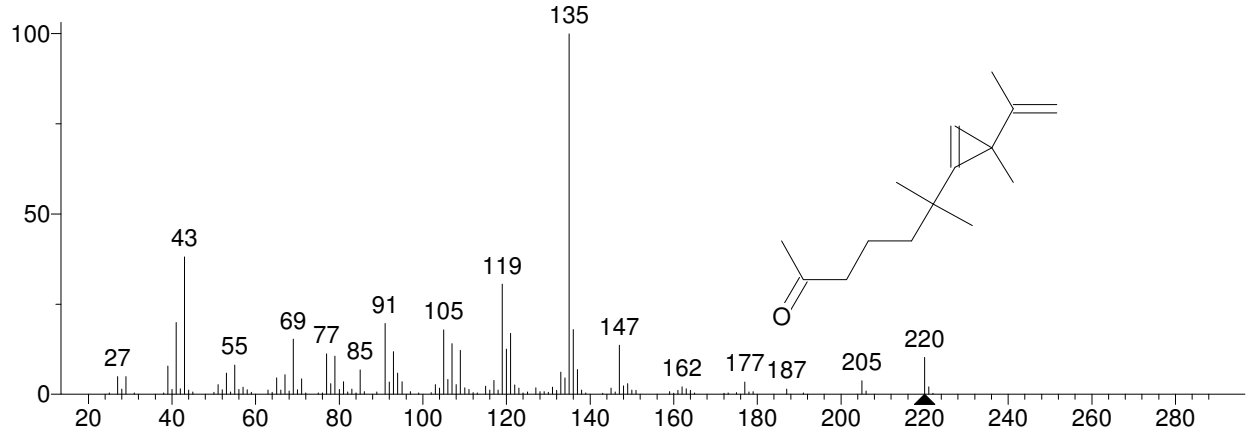


** Search Report Page 1 of 1 **

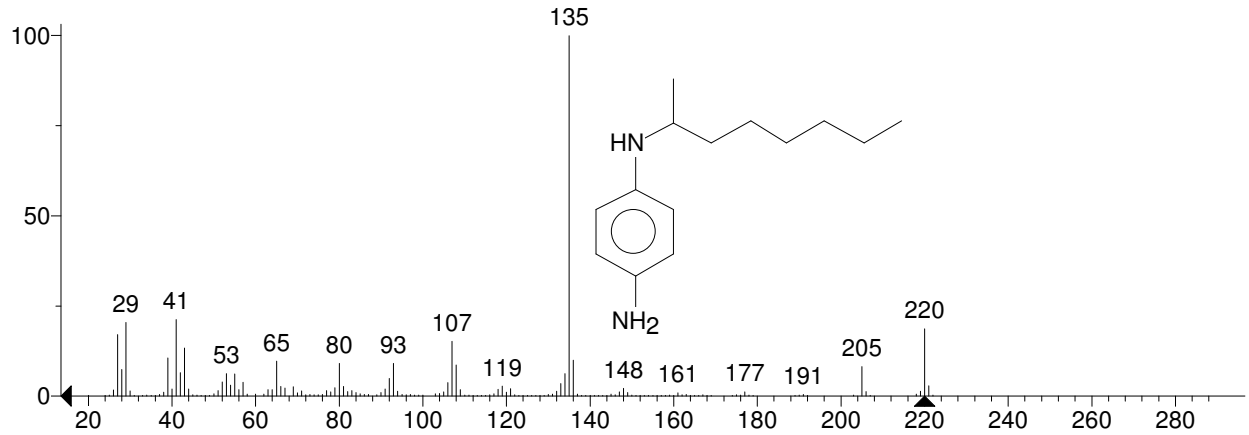
Unknown: Scan 1216 (13.923 min): Designer3.D
Compound in Library Factor = -1149



Hit 1 : 2-Heptanone, 6-methyl-6-[3-methyl-3-(1-methylethenyl)-1-cyclopropen-1-yl]-
C15H24O; MF: 672; RMF: 719; Prob 17.4%; CAS: 69296-87-3; Lib: mainlib; ID: 84618.

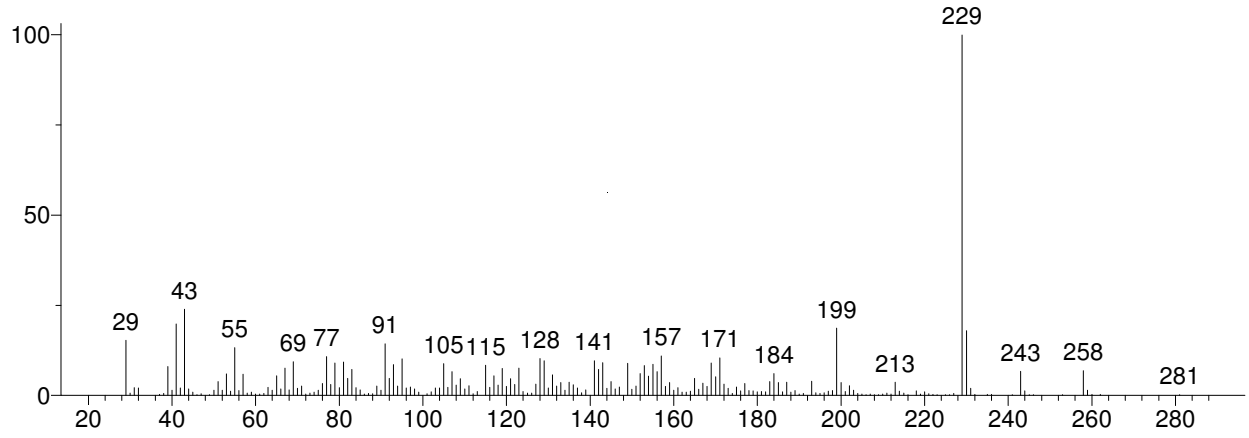


Hit 2 : 1,4-Benzenediamine, N-(1-methylheptyl)-
C14H24N2; MF: 670; RMF: 682; Prob 16.1%; CAS: 39563-50-3; Lib: mainlib; ID: 84554.

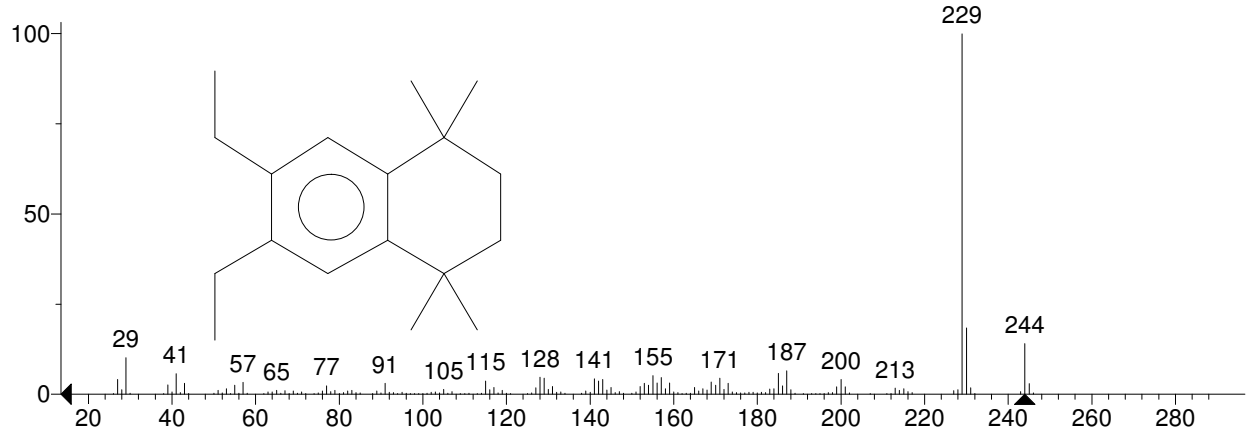


** Search Report Page 1 of 1 **

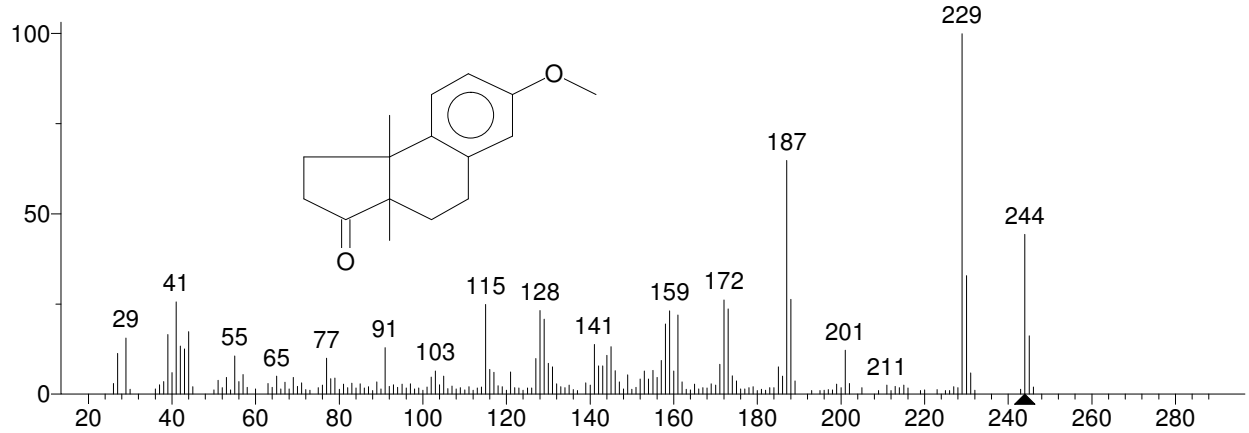
Unknown: Scan 1222 (13.992 min): Designer3.D
Compound in Library Factor = -513



Hit 1 : Naphthalene, 6,7-diethyl-1,2,3,4-tetrahydro-1,1,4,4-tetramethyl-
C18H28; MF: 746; RMF: 780; Prob 56.5%; CAS: 55741-10-1; Lib: mainlib; ID: 134407.

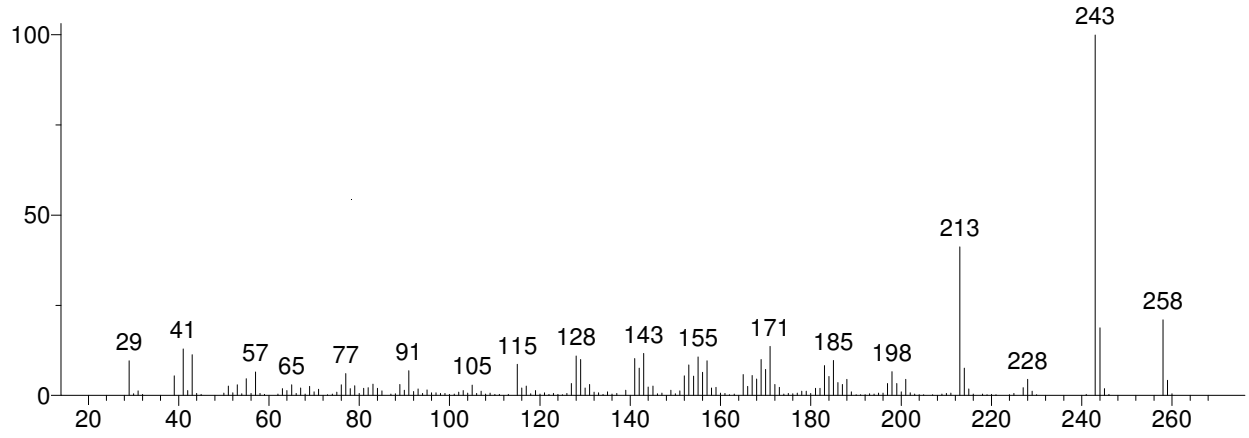


Hit 2 : Benzo[e](1H)indene, 1,2,3a,4,5,9b-hexahydro-7-methoxy-3-oxo-3a,9b-dimethyl-
C16H20O2; MF: 698; RMF: 712; Prob 11.7%; Lib: mainlib; ID: 134337.

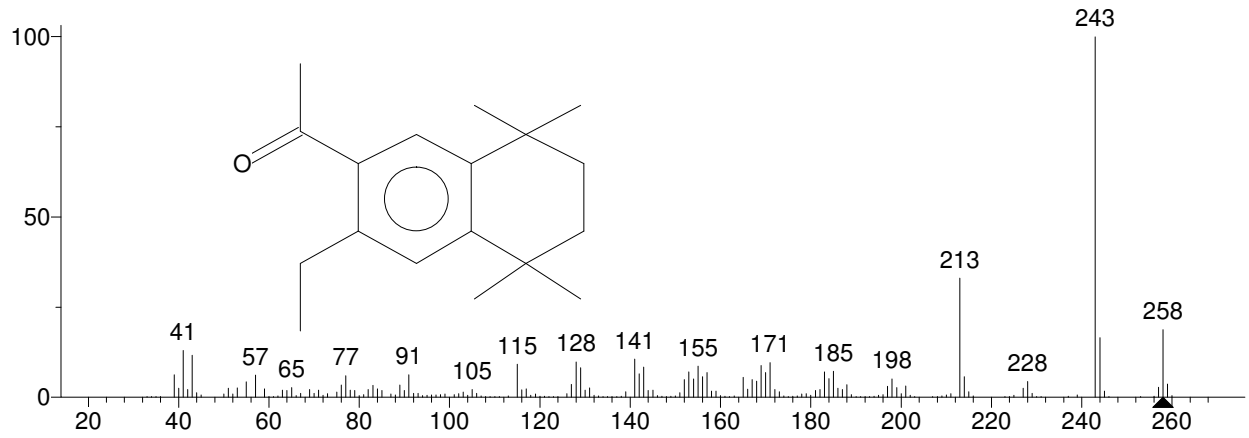


** Search Report Page 1 of 1 **

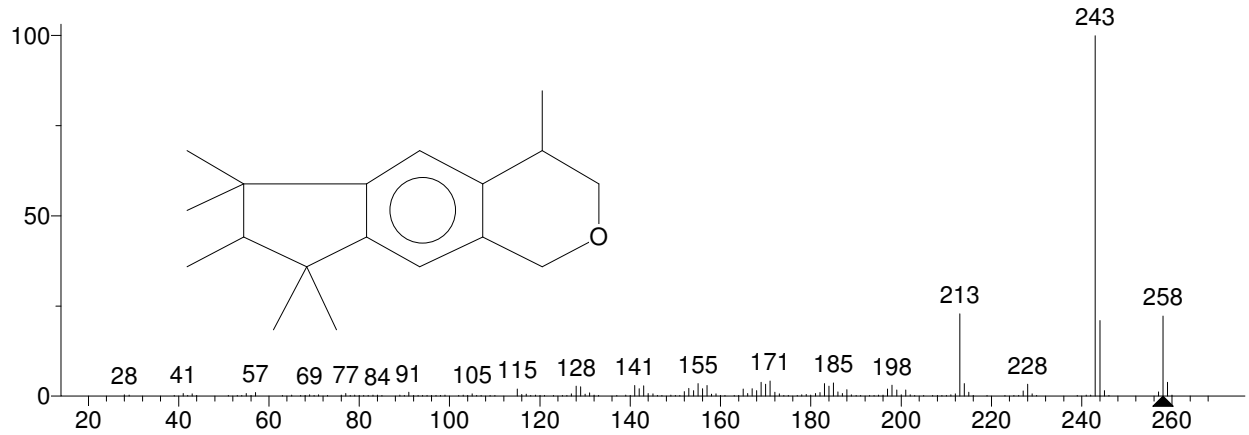
Unknown: Scan 1254 (14.357 min): Designer3.D
Compound in Library Factor = 316



Hit 1 : 7-Acetyl-6-ethyl-1,1,4,4-tetramethyltetralin
C18H26O; MF: 925; RMF: 928; Prob 81.8%; CAS: 88-29-9; Lib: replib; ID: 25619.

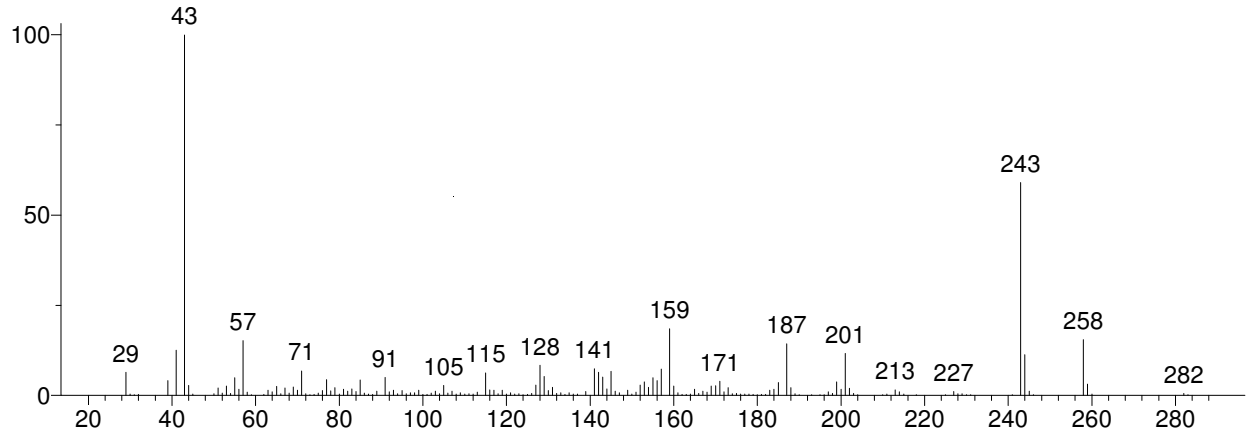


Hit 2 : Cyclopenta[g]-2-benzopyran, 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethyl-
C18H26O; MF: 872; RMF: 886; Prob 16.2%; CAS: 1222-05-5; Lib: mainlib; ID: 138703.

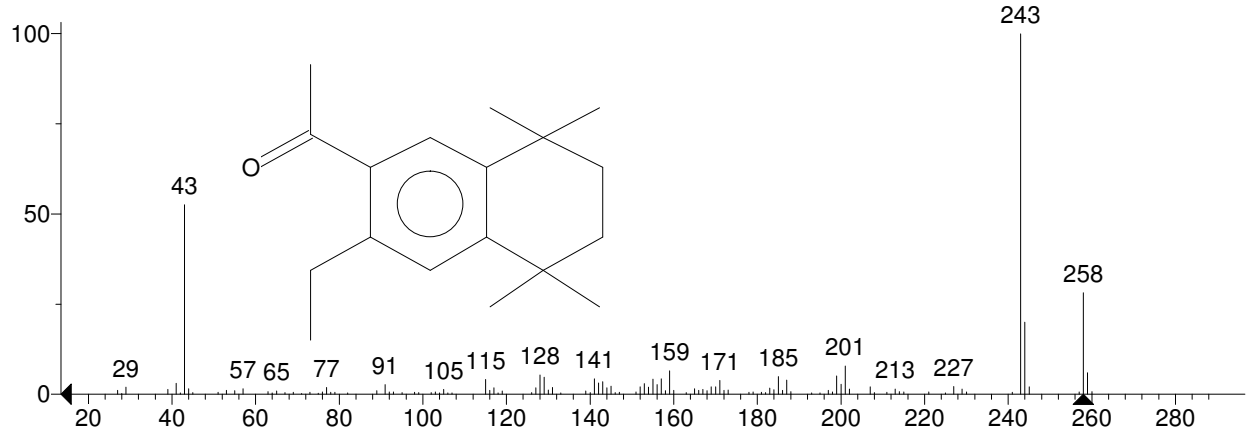


** Search Report Page 1 of 1 **

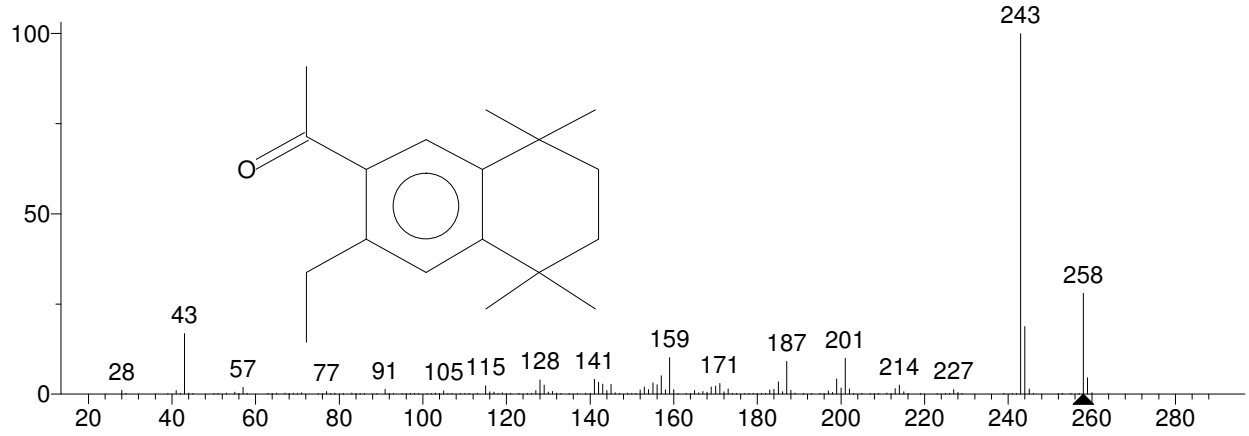
Unknown: Scan 1259 (14.414 min): Designer3.D
Compound in Library Factor = -109



Hit 1 : 7-Acetyl-6-ethyl-1,1,4,4-tetramethyltetralin
C18H26O; MF: 841; RMF: 873; Prob 75.2%; CAS: 88-29-9; Lib: replib; ID: 25601.

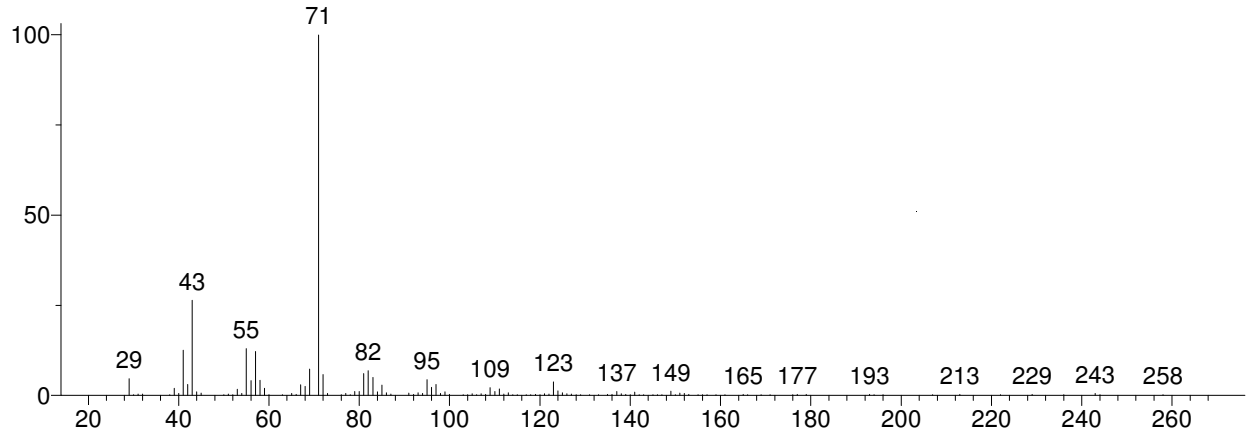


Hit 2 : 7-Acetyl-6-ethyl-1,1,4,4-tetramethyltetralin
C18H26O; MF: 827; RMF: 850; Prob 75.2%; CAS: 88-29-9; Lib: mainlib; ID: 138812.

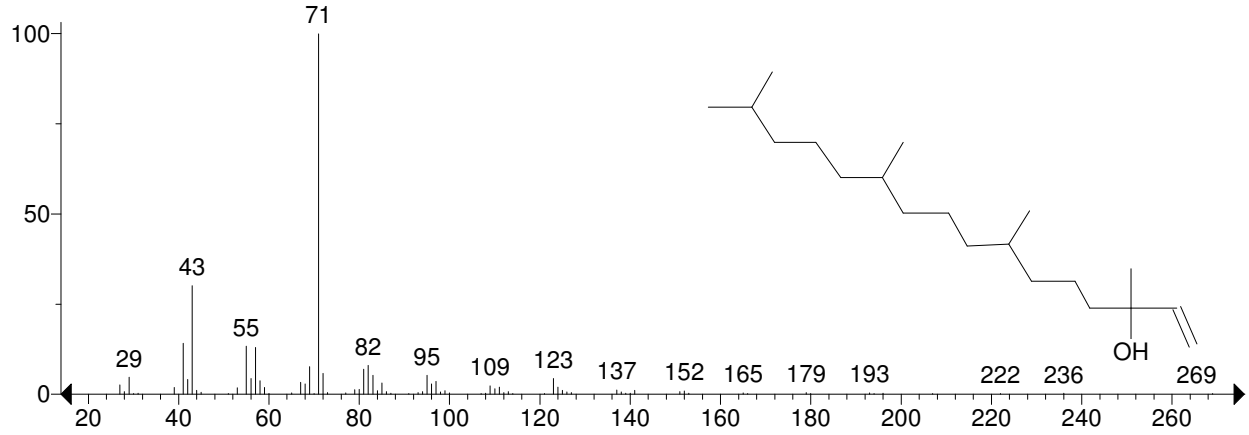


** Search Report Page 1 of 1 **

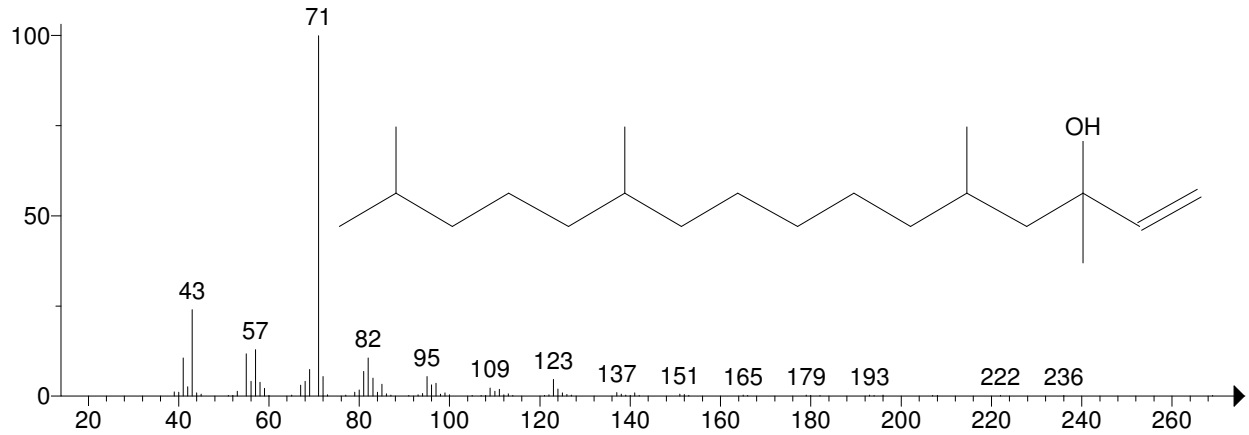
Unknown: Scan 1292 (14.791 min): Designer3.D
Compound in Library Factor = 298



Hit 1 : Isophytol
C20H40O; MF: 914; RMF: 933; Prob 54.4%; CAS: 505-32-8; Lib: replib; ID: 8047.

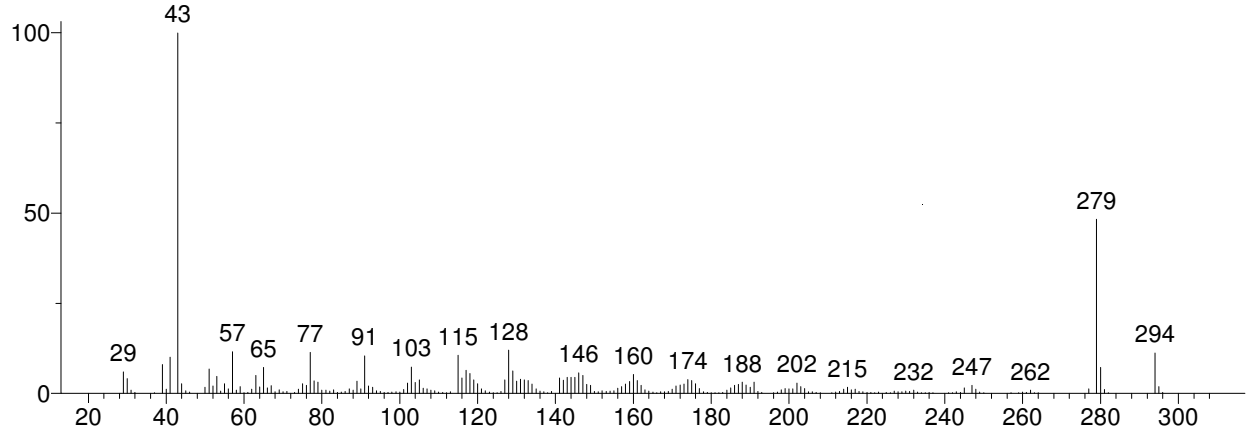


Hit 2 : 1-Hexadecen-3-ol, 3,5,11,15-tetramethyl-
C20H40O; MF: 902; RMF: 920; Prob 36.3%; Lib: mainlib; ID: 30894.

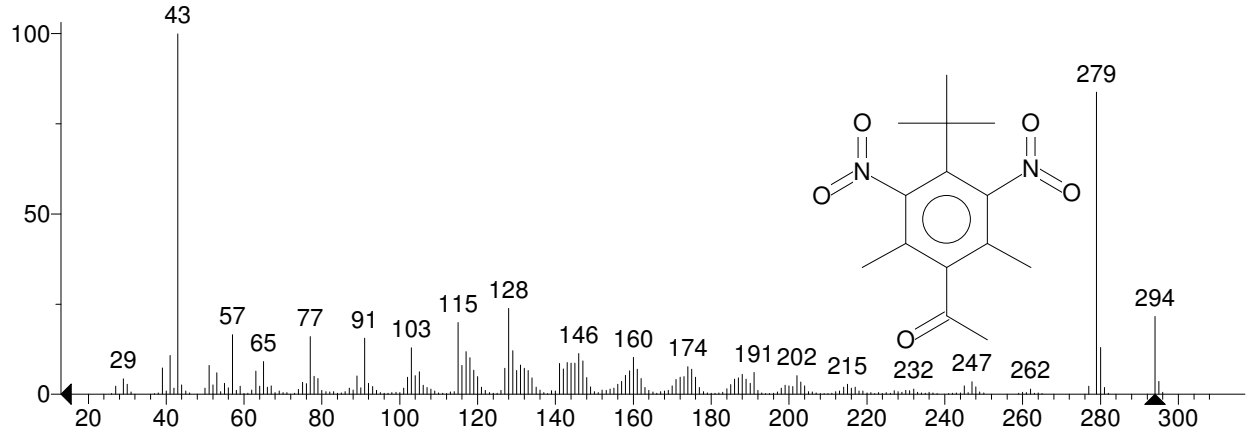


** Search Report Page 1 of 1 **

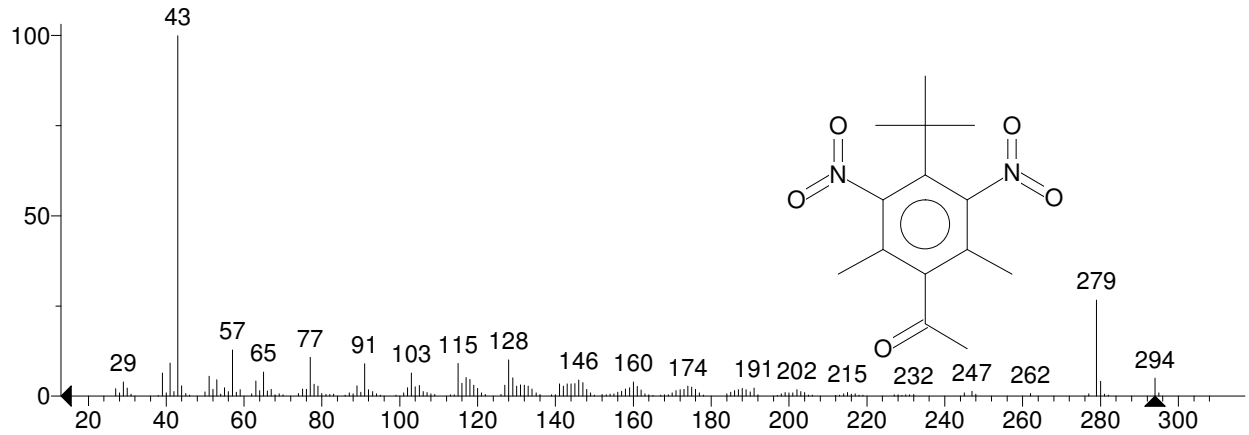
Unknown: Scan 1338 (15.316 min): Designer3.D
Compound in Library Factor = 993



Hit 1 : Ethanone, 1-[4-(1,1-dimethylethyl)-2,6-dimethyl-3,5-dinitrophenyl]-
C14H18N2O5; MF: 958; RMF: 958; Prob 93.1%; CAS: 81-14-1; Lib: replib; ID: 3079.

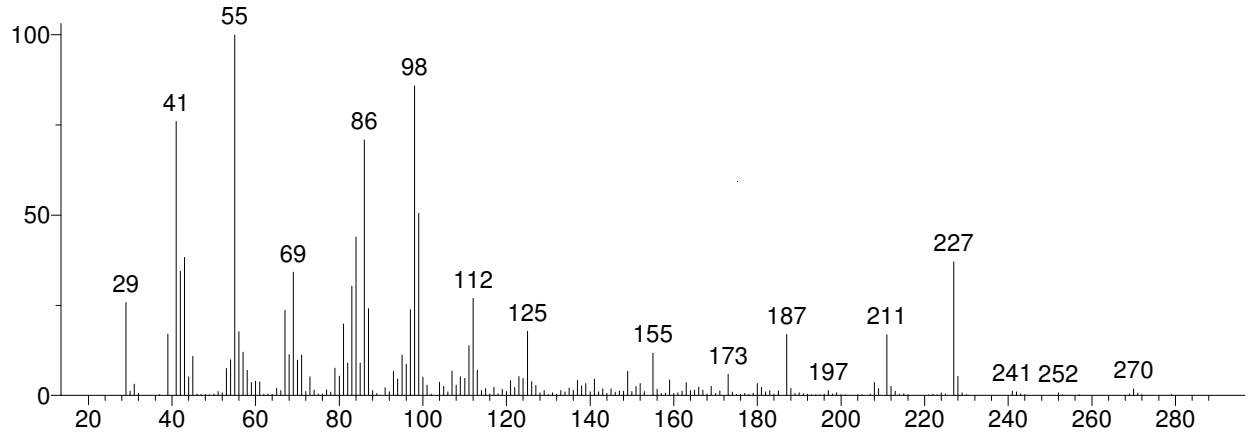


Hit 2 : Ethanone, 1-[4-(1,1-dimethylethyl)-2,6-dimethyl-3,5-dinitrophenyl]-
C14H18N2O5; MF: 943; RMF: 953; Prob 93.1%; CAS: 81-14-1; Lib: replib; ID: 3078.

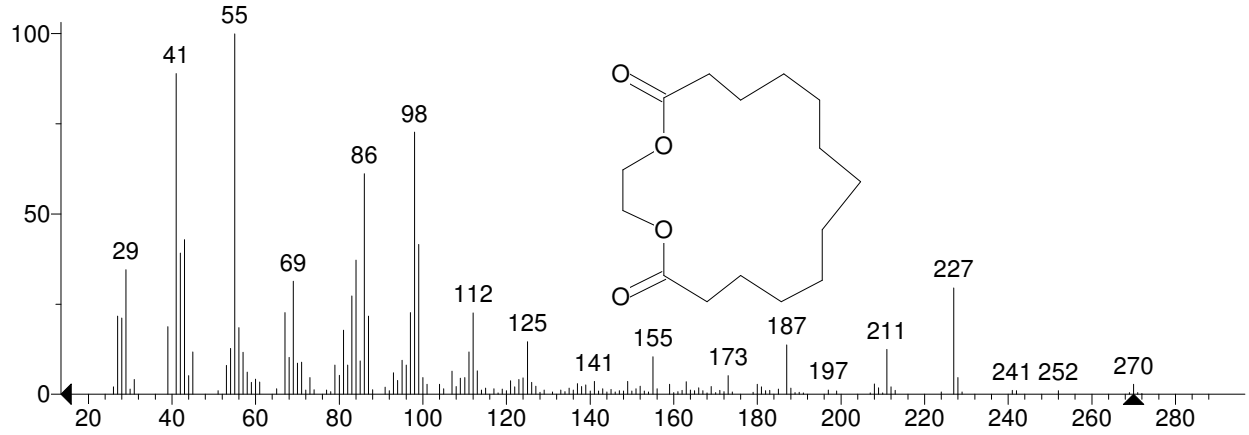


** Search Report Page 1 of 1 **

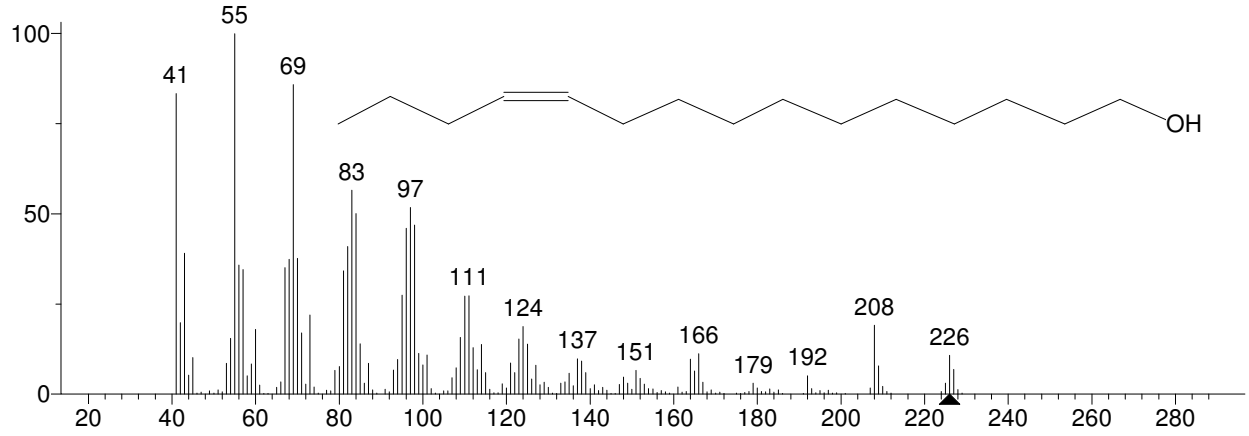
Unknown: Scan 1358 (15.545 min): Designer3.D
Compound in Library Factor = 885



Hit 1 : Ethylene brassylate
C15H26O4; MF: 960; RMF: 967; Prob 92.0%; CAS: 105-95-3; Lib: mainlib; ID: 16894.

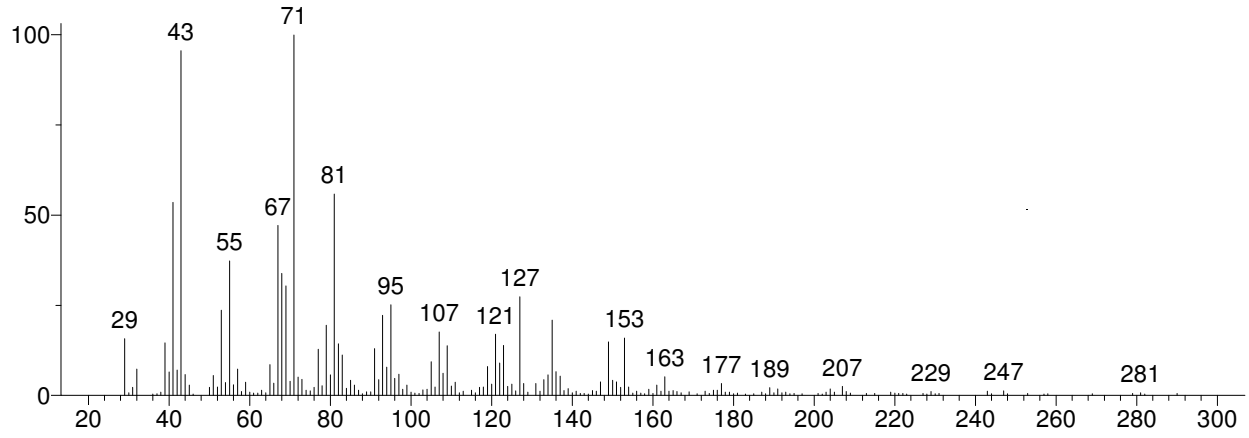


Hit 2 : Z-11-Pentadecenol
C15H30O; MF: 684; RMF: 709; Prob 0.91%; Lib: mainlib; ID: 17391.

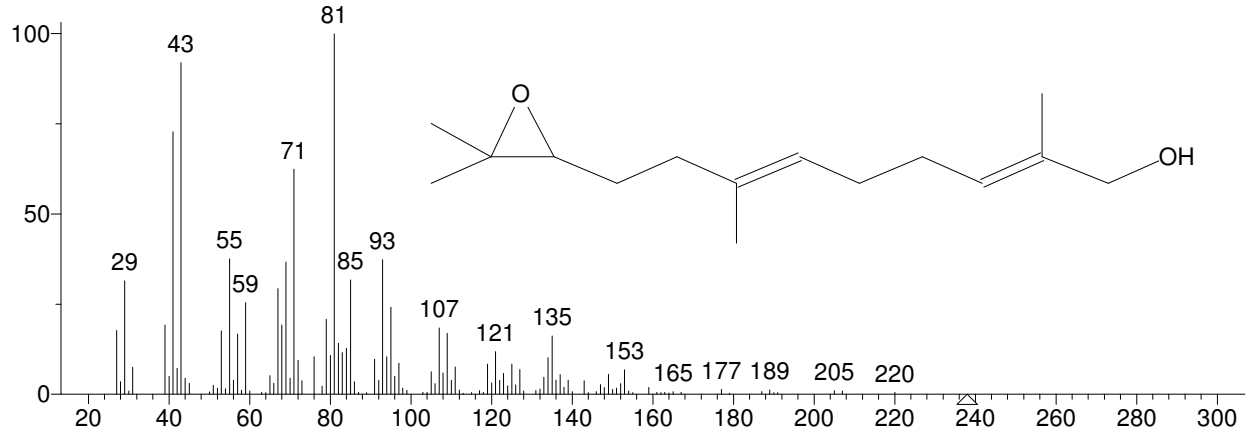


** Search Report Page 1 of 1 **

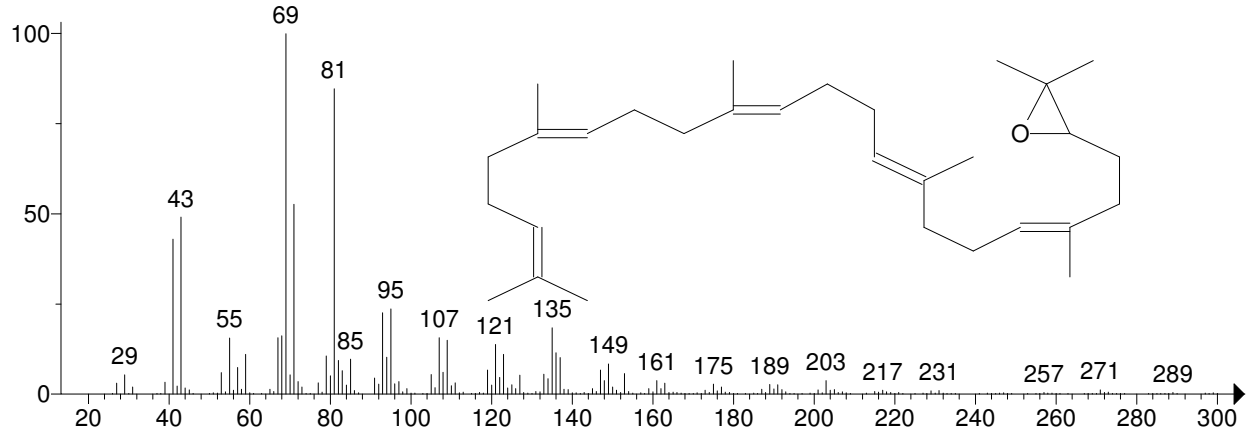
Unknown: Scan 1436 (16.435 min): Designer3.D
Compound in Library Factor = -520



Hit 1 : 9-(3,3-Dimethyloxiran-2-yl)-2,7-dimethylnona-2,6-dien-1-ol
C15H26O2; MF: 783; RMF: 832; Prob 12.5%; Lib: mainlib; ID: 39428.

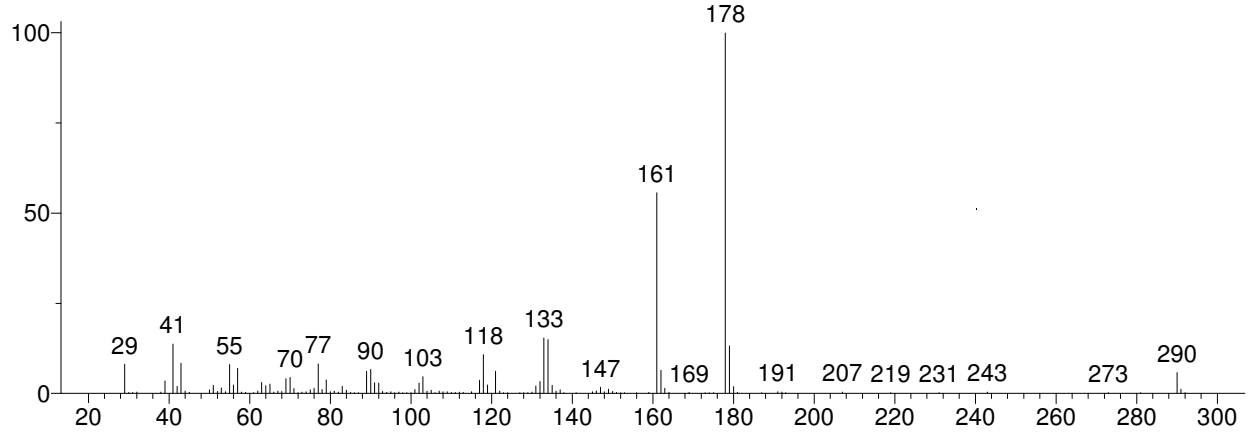


Hit 2 : Oxirane, 2,2-dimethyl-3-(3,7,12,16,20-pentamethyl-3,7,11,15,19-heneicosapentaenyl)-, (all-E)-
C30H50O; MF: 781; RMF: 798; Prob 11.5%; CAS: 7200-26-2; Lib: mainlib; ID: 28997.

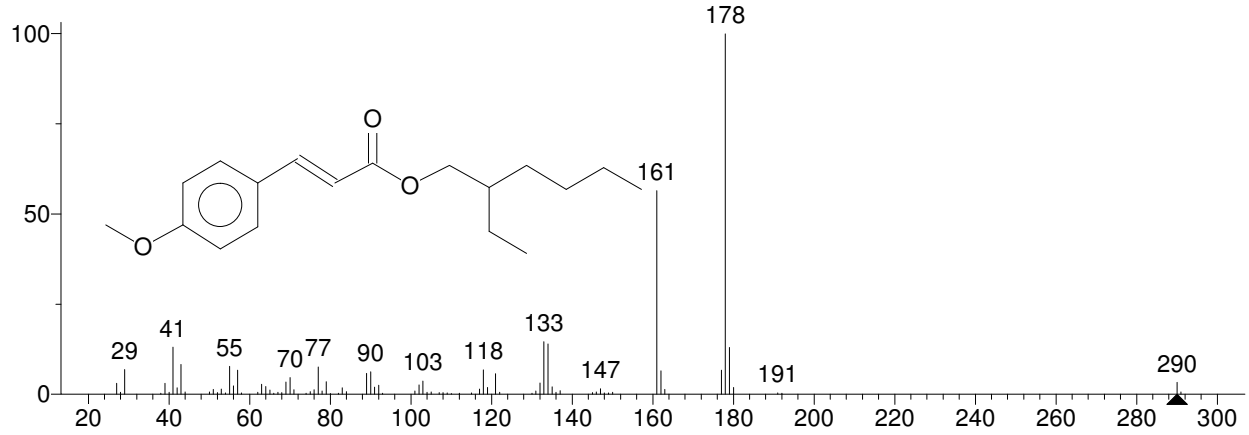


** Search Report Page 1 of 1 **

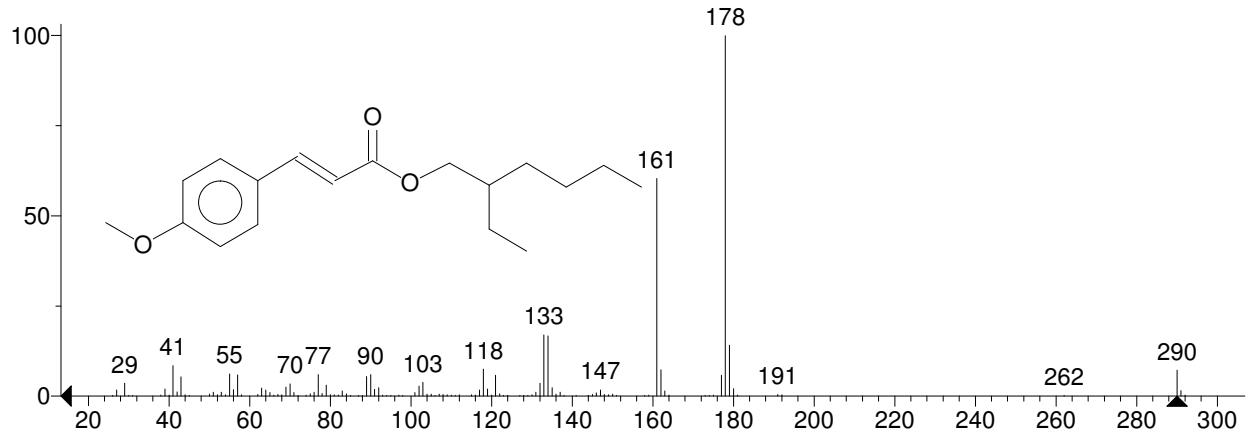
Unknown: Scan 1512 (17.303 min): Designer3.D
Compound in Library Factor = 256



Hit 1 : 2-Propenoic acid, 3-(4-methoxyphenyl)-, 2-ethylhexyl ester
C18H26O3; MF: 929; RMF: 935; Prob 82.4%; CAS: 5466-77-3; Lib: mainlib; ID: 113107.

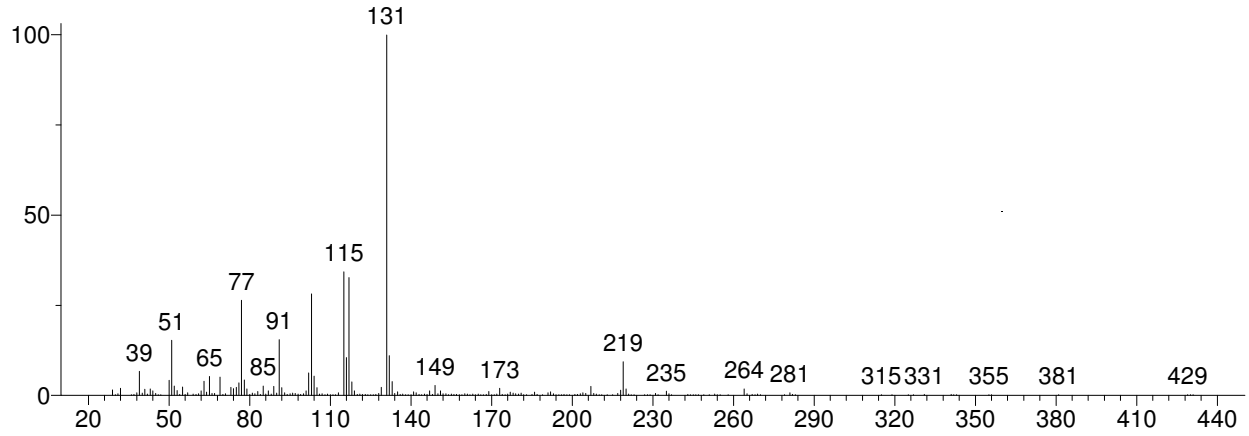


Hit 2 : 2-Propenoic acid, 3-(4-methoxyphenyl)-, 2-ethylhexyl ester
C18H26O3; MF: 928; RMF: 931; Prob 82.4%; CAS: 5466-77-3; Lib: replib; ID: 22337.

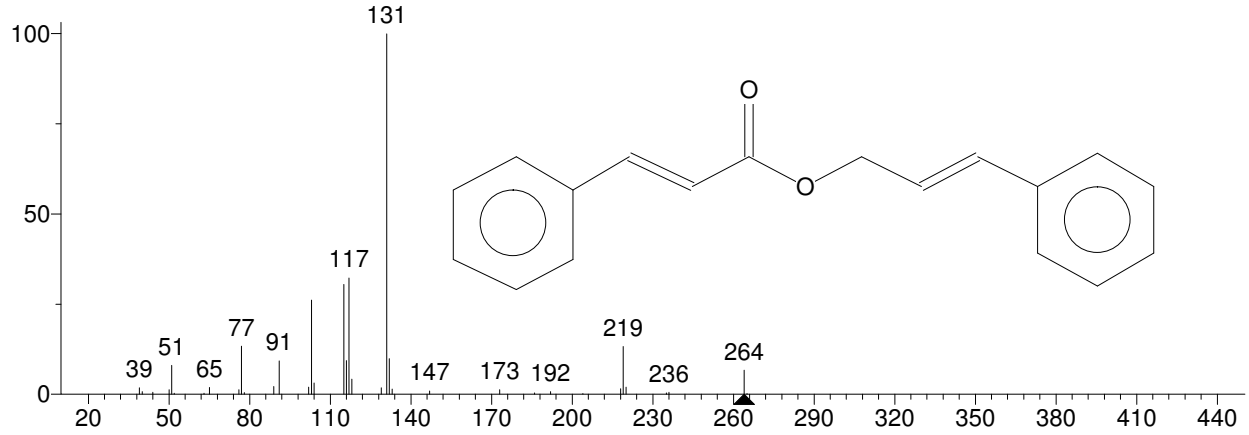


** Search Report Page 1 of 1 **

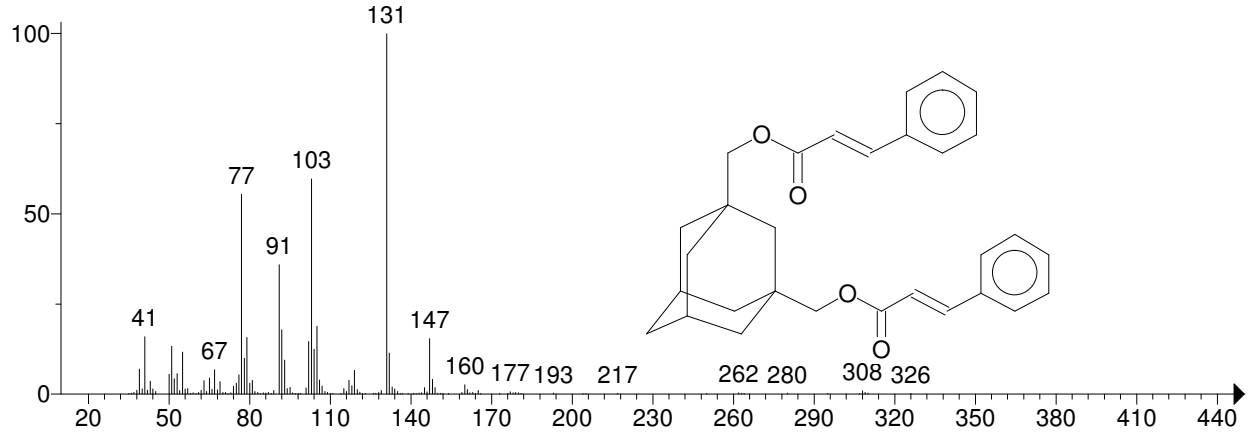
Unknown: Scan 1563 (17.885 min): Designer3.D
Compound in Library Factor = -207



Hit 1 : Cinnamyl cinnamate
C18H16O2; MF: 761; RMF: 874; Prob 45.6%; CAS: 122-69-0; Lib: mainlib; ID: 82160.

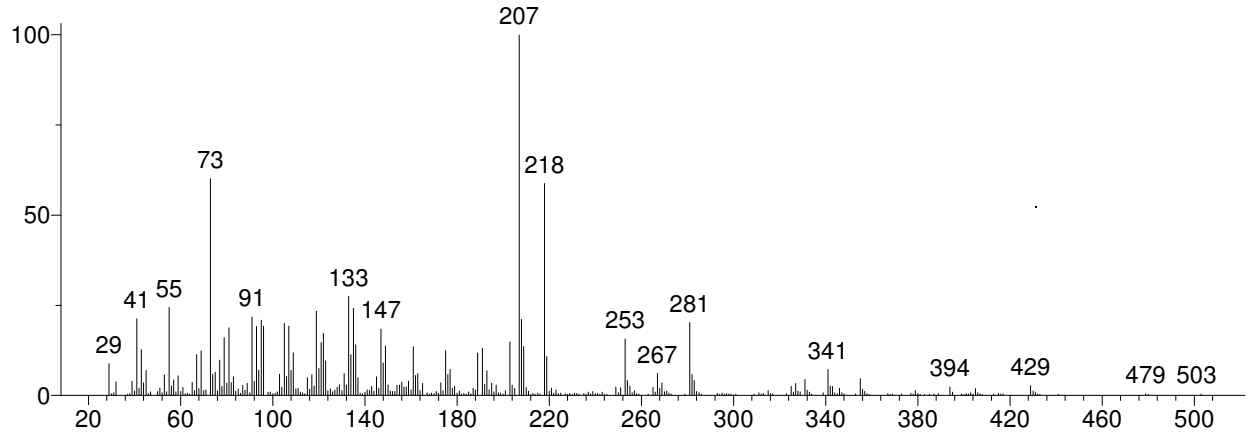


Hit 2 : 1,3-Bis(cinnamoyloxymethyl)adamantane
C30H32O4; MF: 667; RMF: 715; Prob 3.73%; CAS: 303797-58-2; Lib: mainlib; ID: 82083.

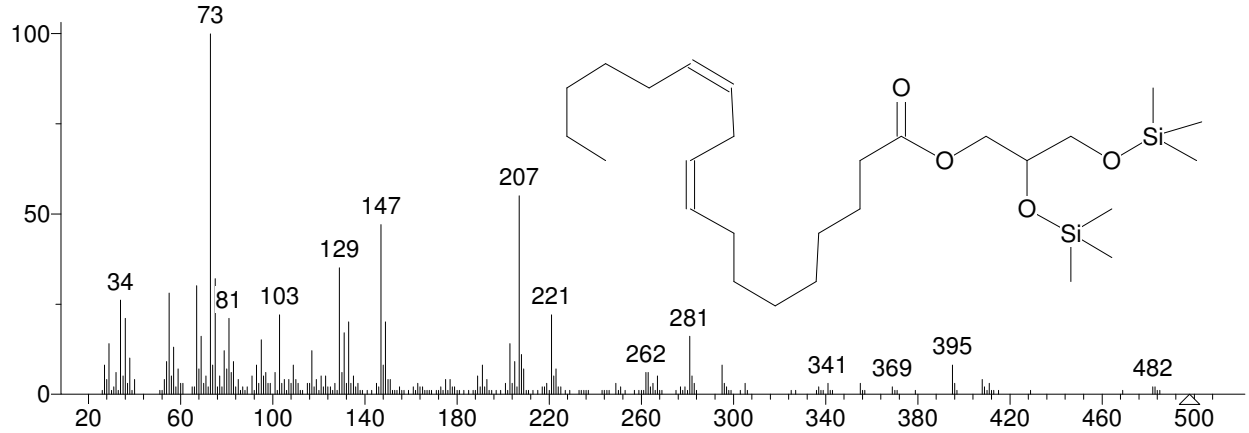


** Search Report Page 1 of 1 **

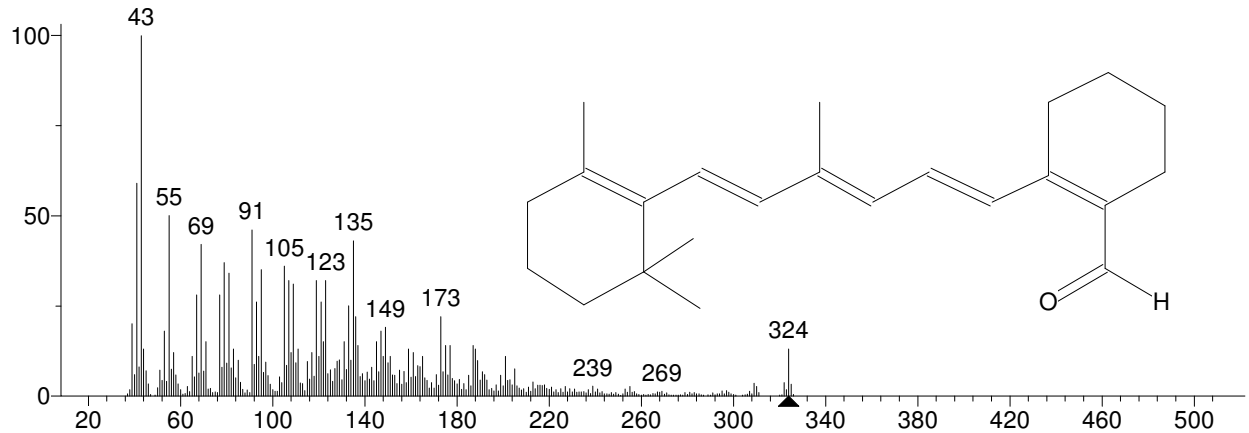
Unknown: Scan 1908 (21.825 min): Designer3.D
Compound in Library Factor = -1210



Hit 1 : 1-Monolinoleoylglycerol trimethylsilyl ether
C27H54O4Si2; MF: 653; RMF: 693; Prob 11.3%; CAS: 54284-45-6; Lib: mainlib; ID: 34242.

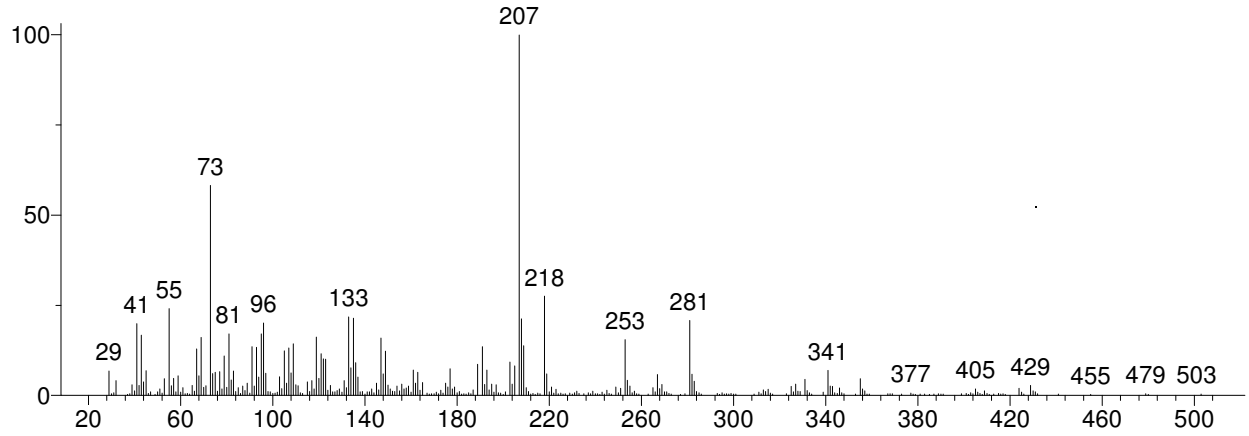


Hit 2 : 2-[4-methyl-6-(2,6,6-trimethylcyclohex-1-enyl)hexa-1,3,5-trienyl]cyclohex-1-en-1-carboxaldehyde
C23H32O; MF: 652; RMF: 689; Prob 10.9%; Lib: mainlib; ID: 5319.

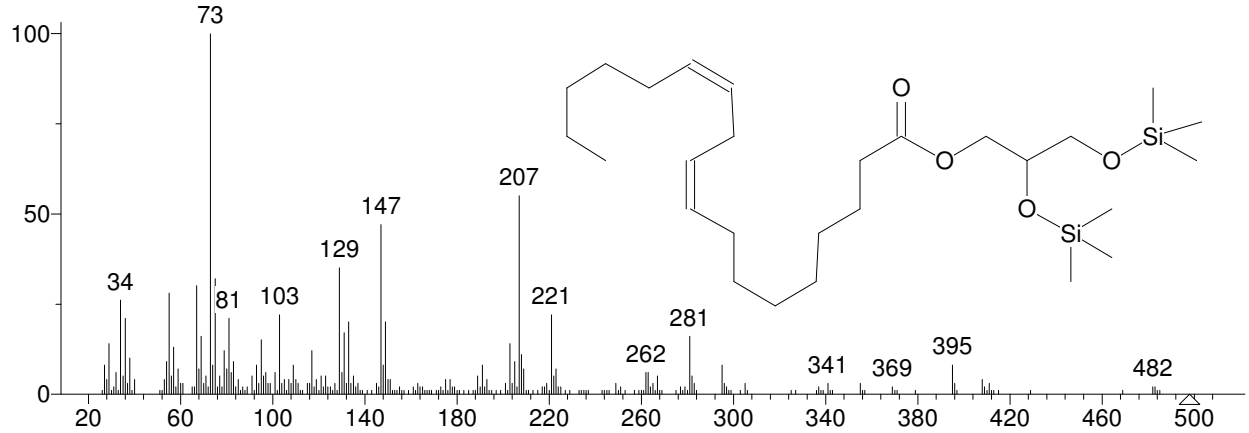


** Search Report Page 1 of 1 **

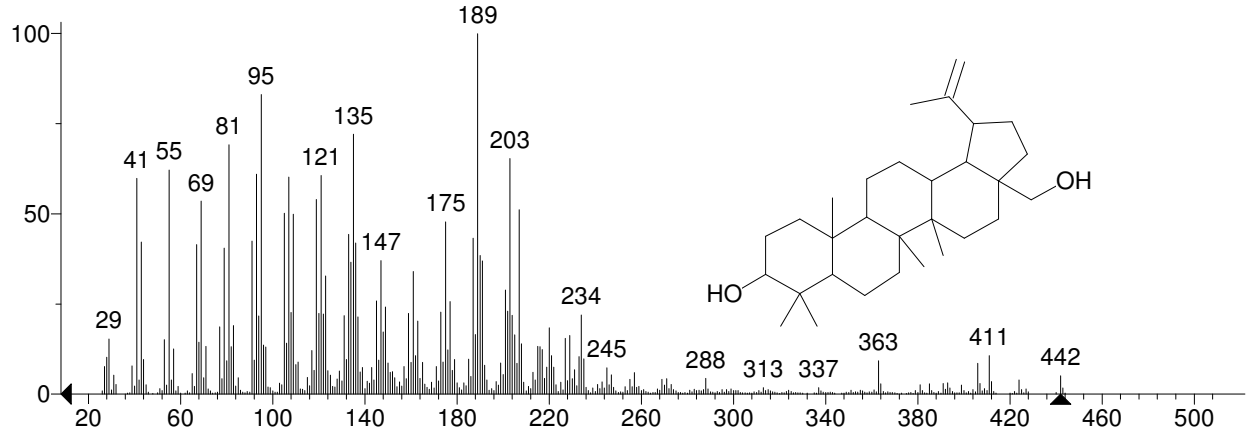
Unknown: Scan 2105 (24.074 min): Designer3.D
Compound in Library Factor = -1169



Hit 1 : 1-Monolinoleoylglycerol trimethylsilyl ether
C27H54O4Si2; MF: 665; RMF: 718; Prob 16.3%; CAS: 54284-45-6; Lib: mainlib; ID: 34242.



Hit 2 : Betulin
C30H50O2; MF: 648; RMF: 660; Prob 8.87%; CAS: 473-98-3; Lib: replib; ID: 23168.



DMS RESULTS
Imitation

```
File       : C:\HPCHEM\1\DATA\2010\JOB2010\EXPDEF\Imitation2.D
Operator   : KR
Acquired   :  5 Jun 2010  20:55     using AcqMethod DESORP2
Instrument :   DMS Instr
Sample Name: Imitation .1ul
Misc Info  : desorp2 inj 310 ramp 50-320 15C/min
Vial Number: 100
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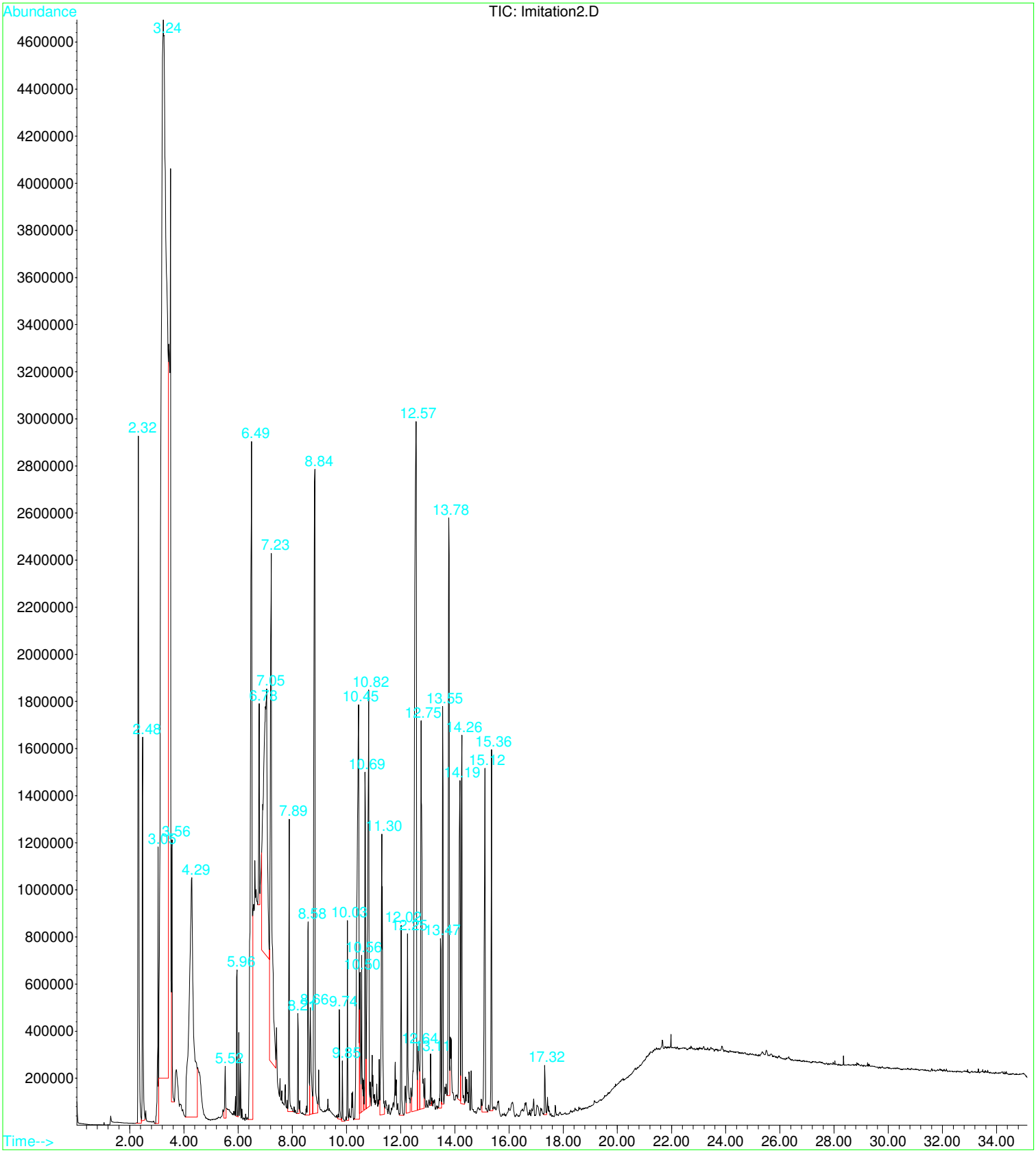
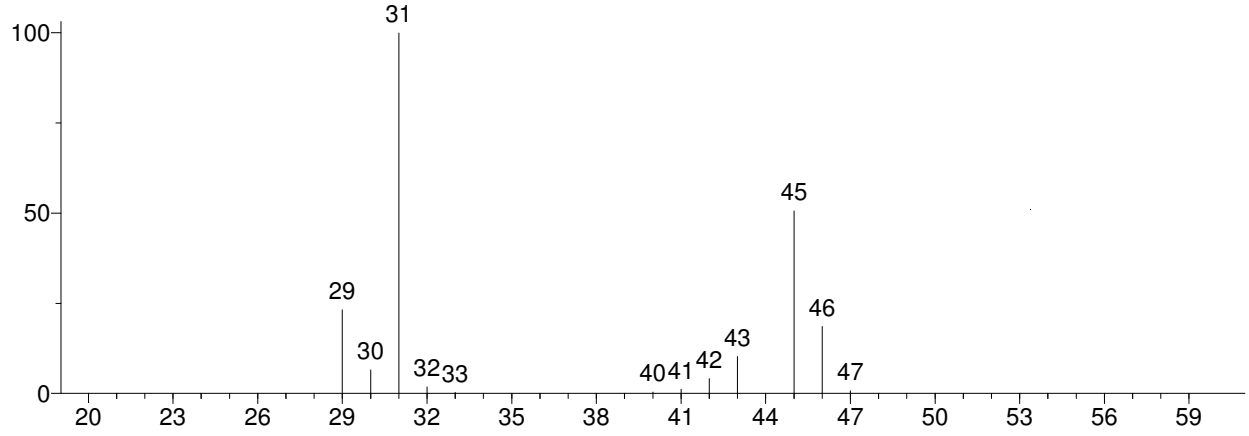
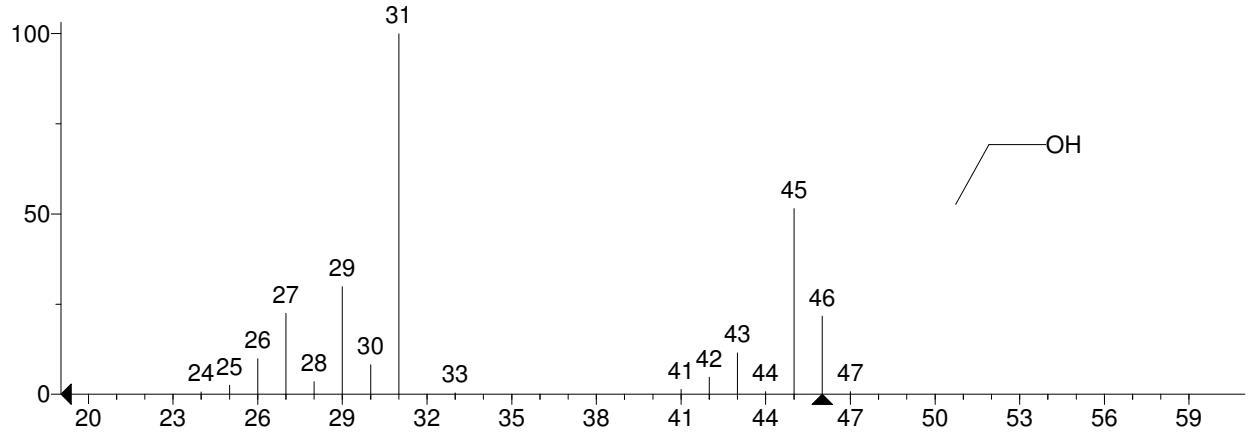


** Search Report Page 1 of 1 **

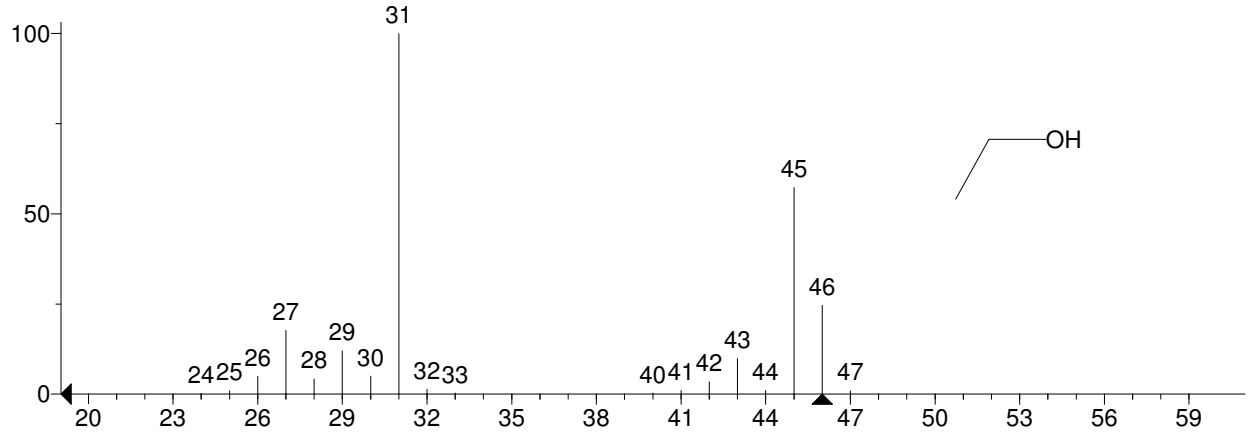
Unknown: Scan 200 (2.316 min): Imitation2.D
Compound in Library Factor = 614



Hit 1 : Ethyl alcohol
C2H6O; MF: 973; RMF: 978; Prob 98.1%; CAS: 64-17-5; Lib: mainlib; ID: 1334.

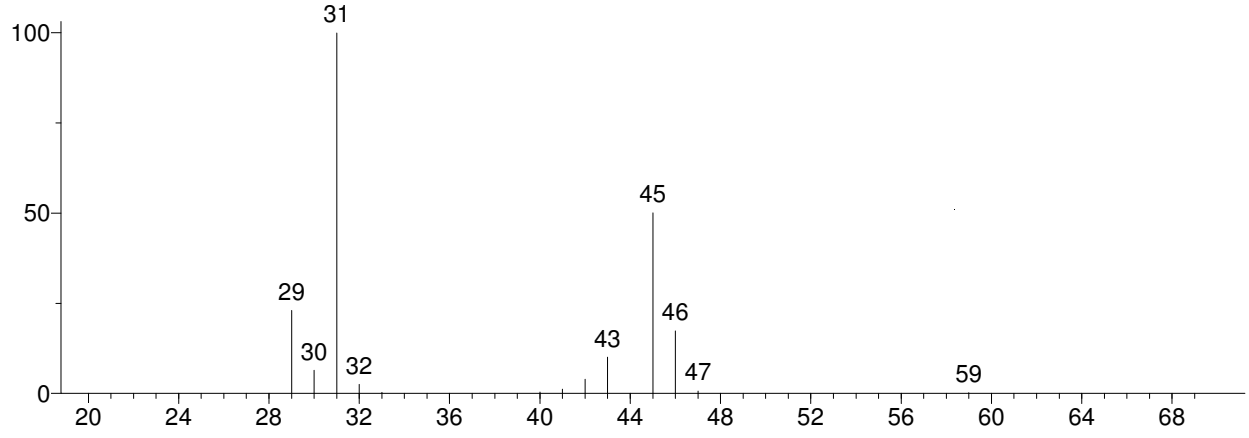


Hit 2 : Ethyl alcohol
C2H6O; MF: 945; RMF: 945; Prob 98.1%; CAS: 64-17-5; Lib: replib; ID: 552.

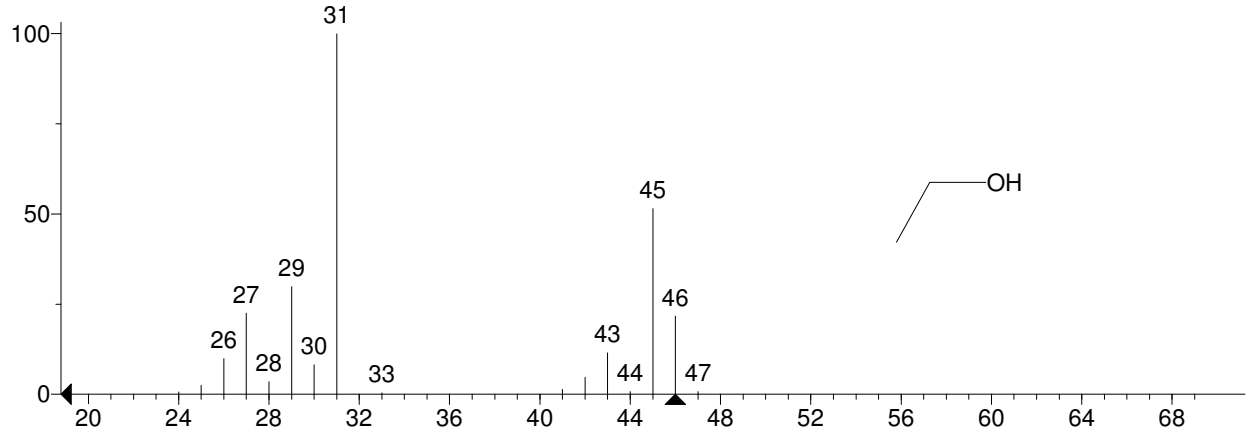


** Search Report Page 1 of 1 **

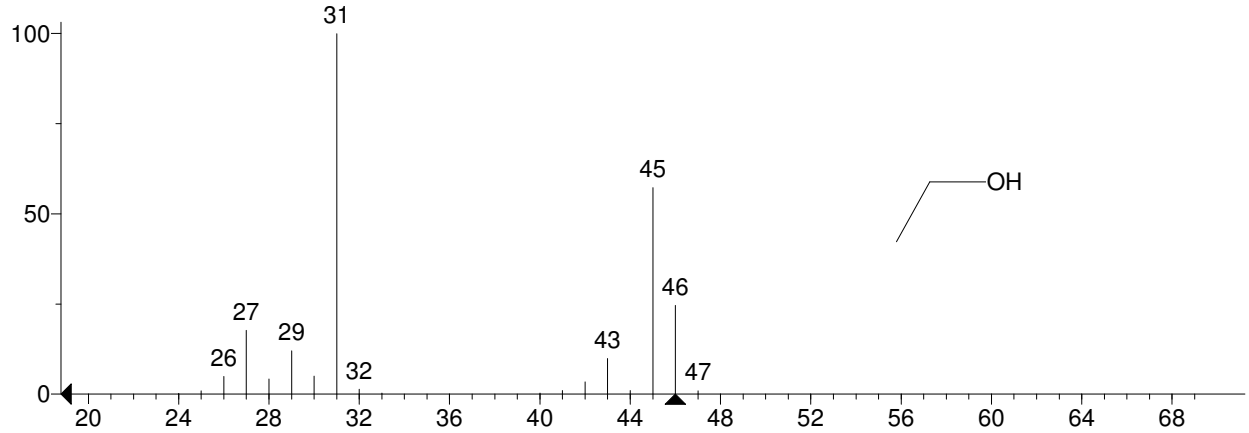
Unknown: Scan 214 (2.475 min): Imitation2.D
Compound in Library Factor = 614



Hit 1 : Ethyl alcohol
C2H6O; MF: 971; RMF: 978; Prob 97.7%; CAS: 64-17-5; Lib: mainlib; ID: 1334.

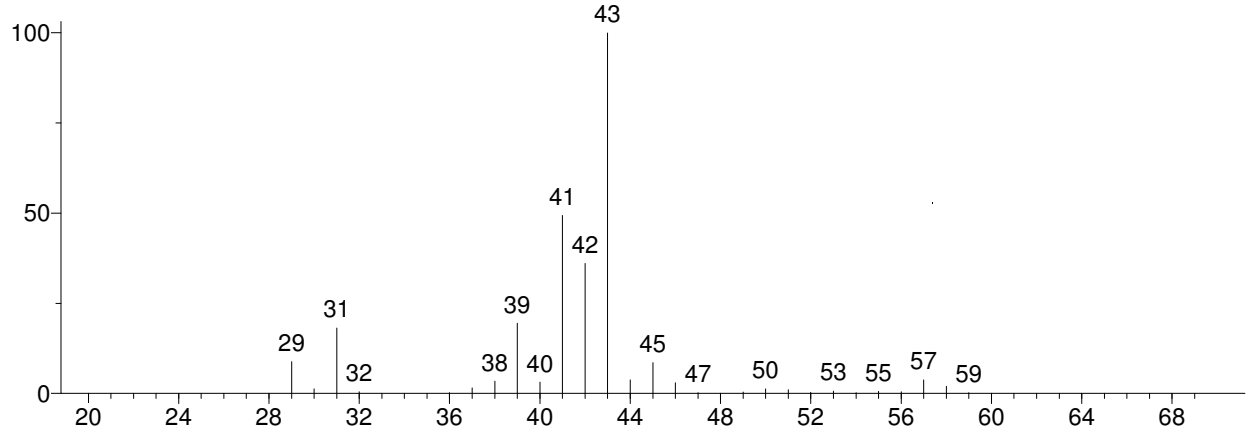


Hit 2 : Ethyl alcohol
C2H6O; MF: 934; RMF: 934; Prob 97.7%; CAS: 64-17-5; Lib: replib; ID: 552.

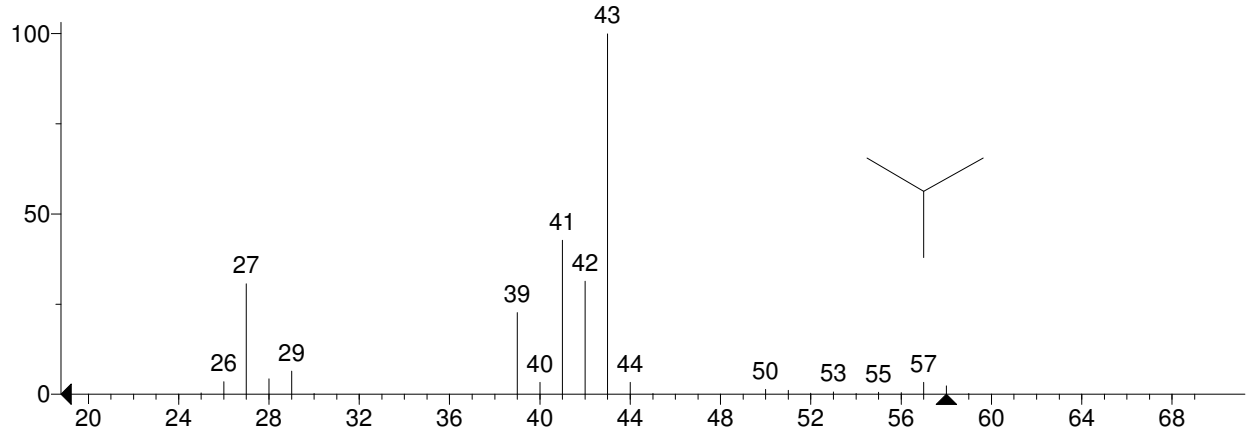


** Search Report Page 1 of 1 **

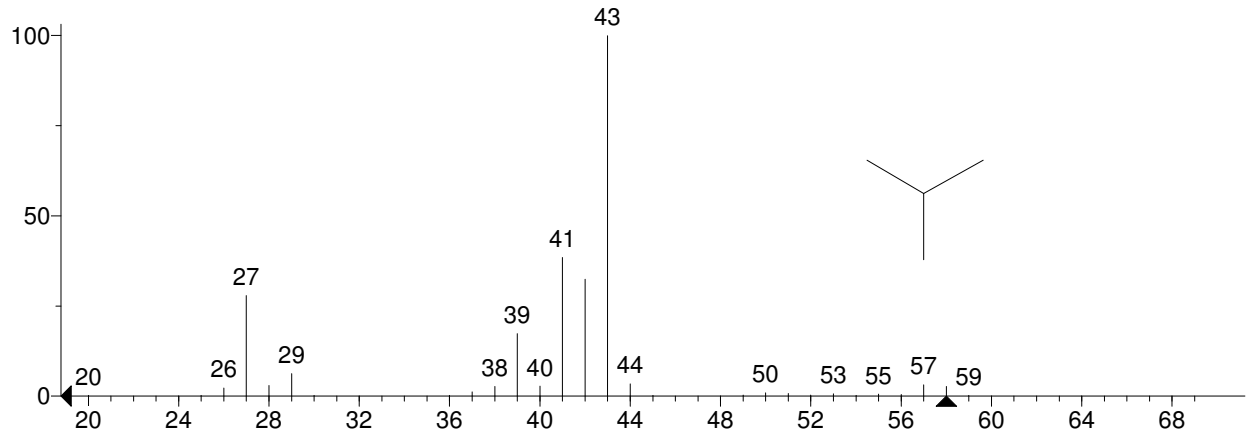
Unknown: Scan 264 (3.046 min): Imitation2.D
Compound in Library Factor = 199



Hit 1 : Isobutane
C4H10; MF: 898; RMF: 962; Prob 83.5%; CAS: 75-28-5; Lib: replib; ID: 1629.

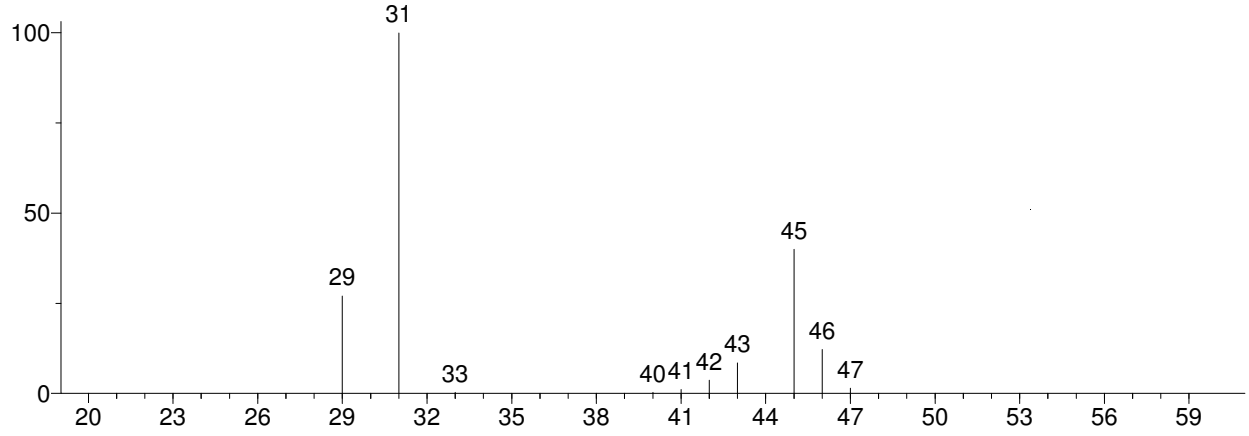


Hit 2 : Isobutane
C4H10; MF: 889; RMF: 923; Prob 83.5%; CAS: 75-28-5; Lib: mainlib; ID: 5254.

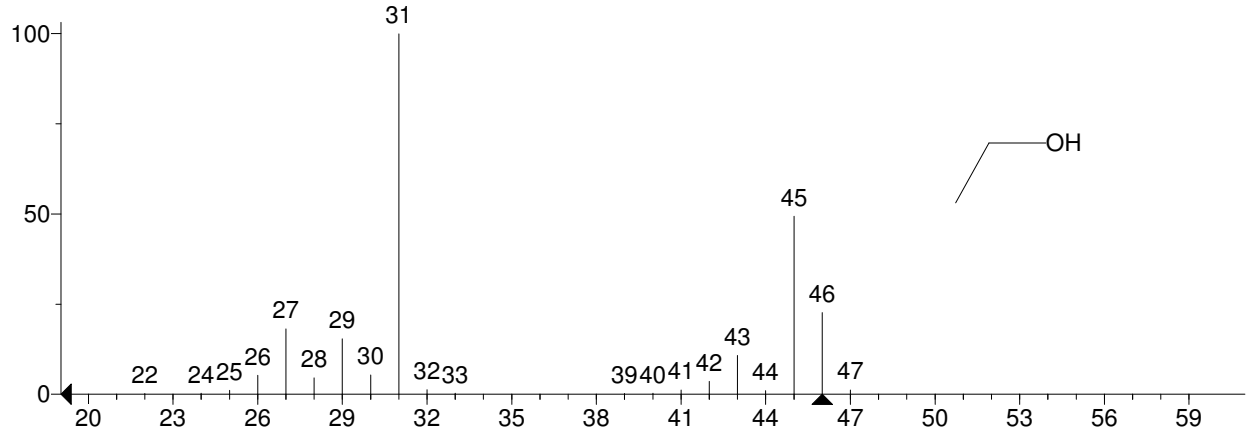


** Search Report Page 1 of 1 **

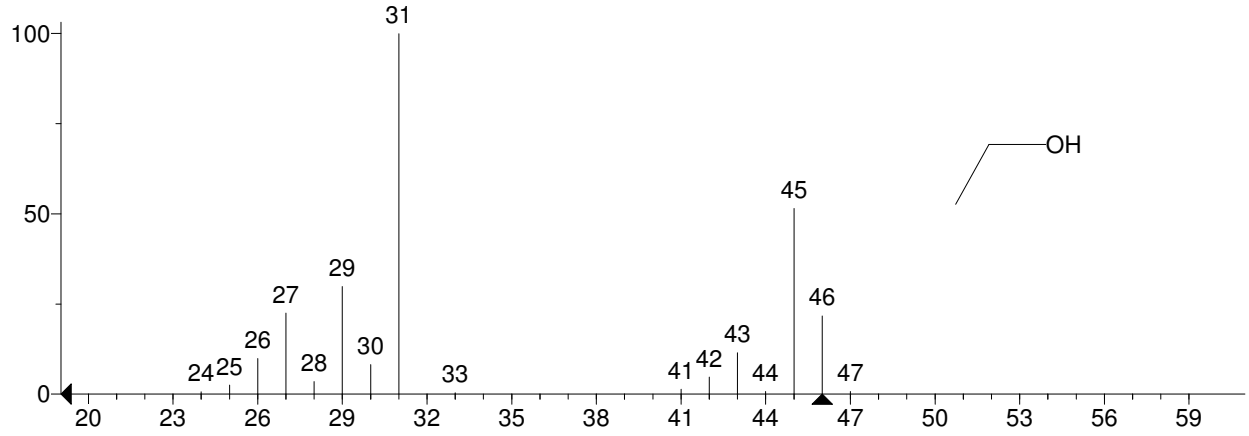
Unknown: Scan 281 (3.240 min): Imitation.D
Compound in Library Factor = 449



Hit 1 : Ethyl alcohol
C2H6O; MF: 918; RMF: 918; Prob 93.9%; CAS: 64-17-5; Lib: replib; ID: 551.

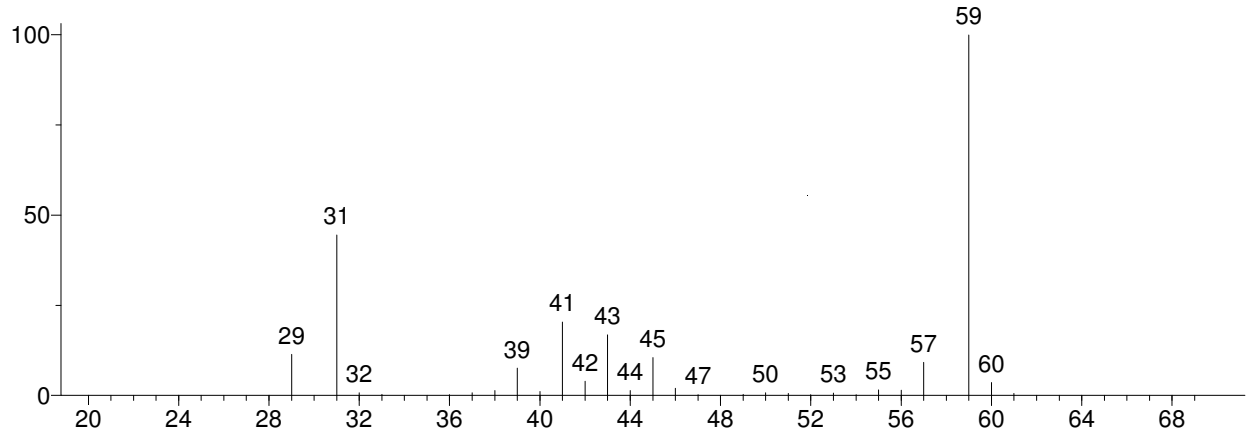


Hit 2 : Ethyl alcohol
C2H6O; MF: 911; RMF: 912; Prob 93.9%; CAS: 64-17-5; Lib: mainlib; ID: 1334.

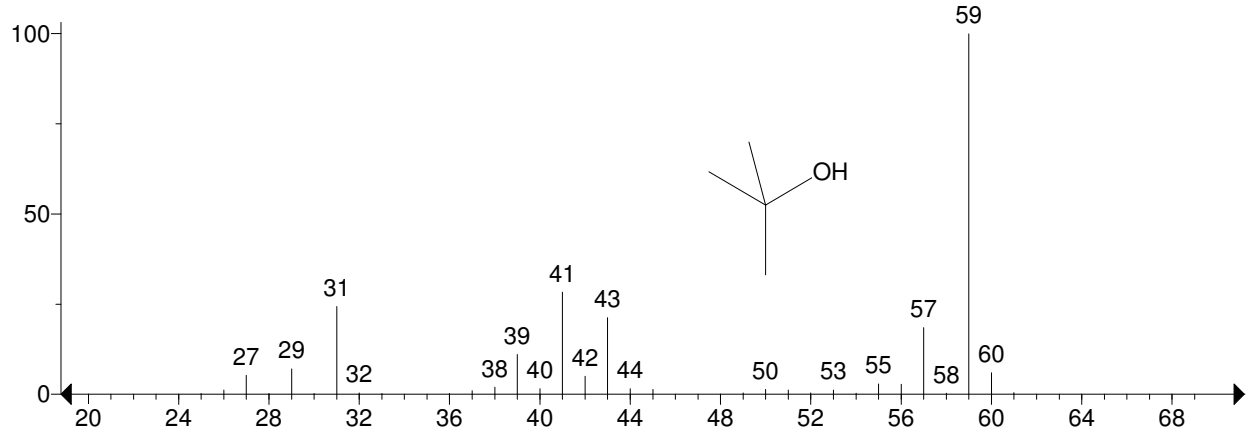


** Search Report Page 1 of 1 **

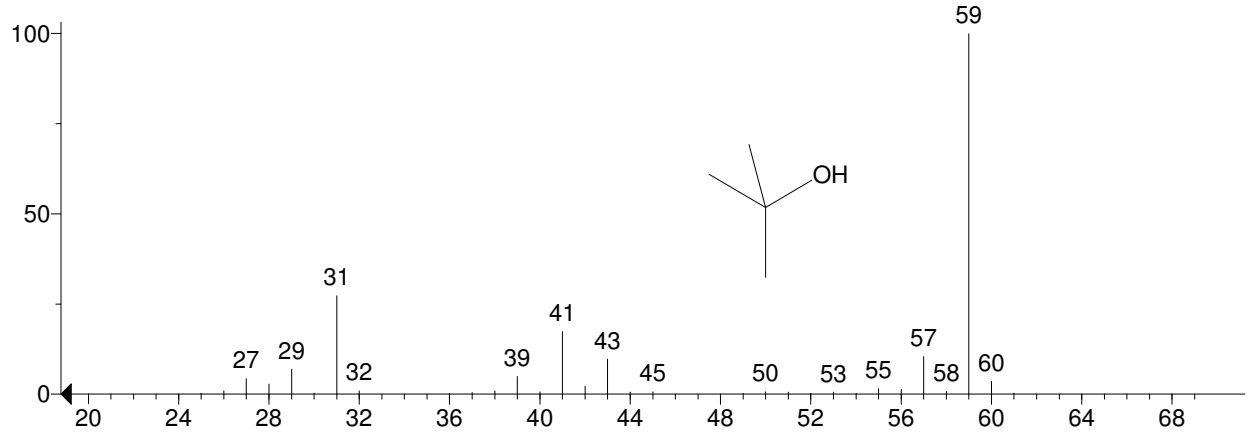
Unknown: Scan 309 (3.560 min): Imitation.D
Compound in Library Factor = 178



Hit 1 : 2-Propanol, 2-methyl-
C4H10O; MF: 913; RMF: 916; Prob 61.7%; CAS: 75-65-0; Lib: replib; ID: 6416.

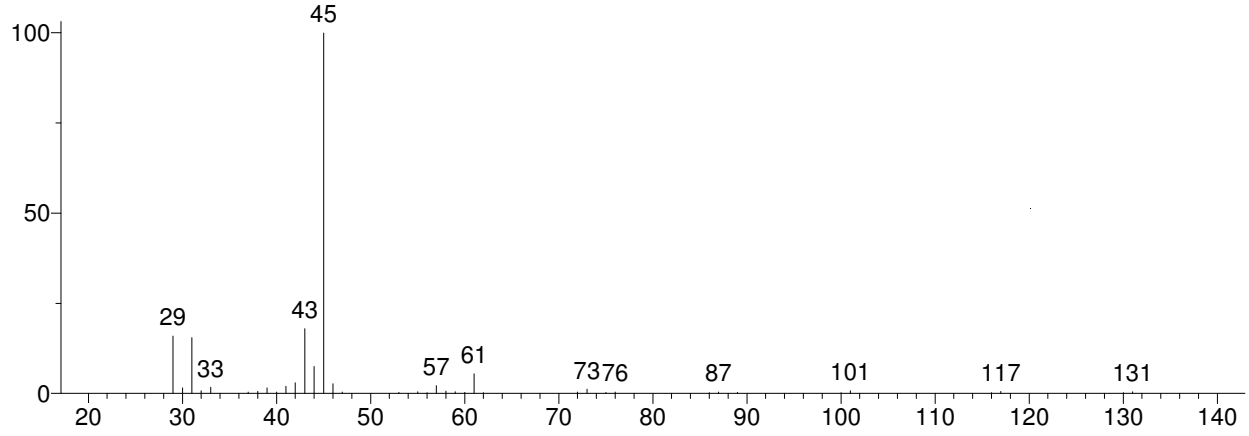


Hit 2 : 2-Propanol, 2-methyl-
C4H10O; MF: 909; RMF: 914; Prob 61.7%; CAS: 75-65-0; Lib: replib; ID: 6395.

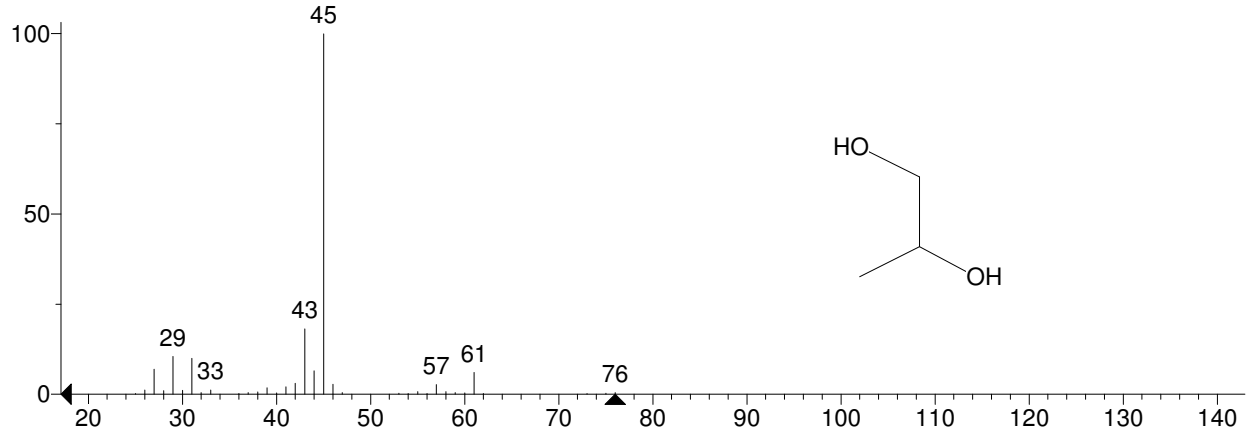


** Search Report Page 1 of 1 **

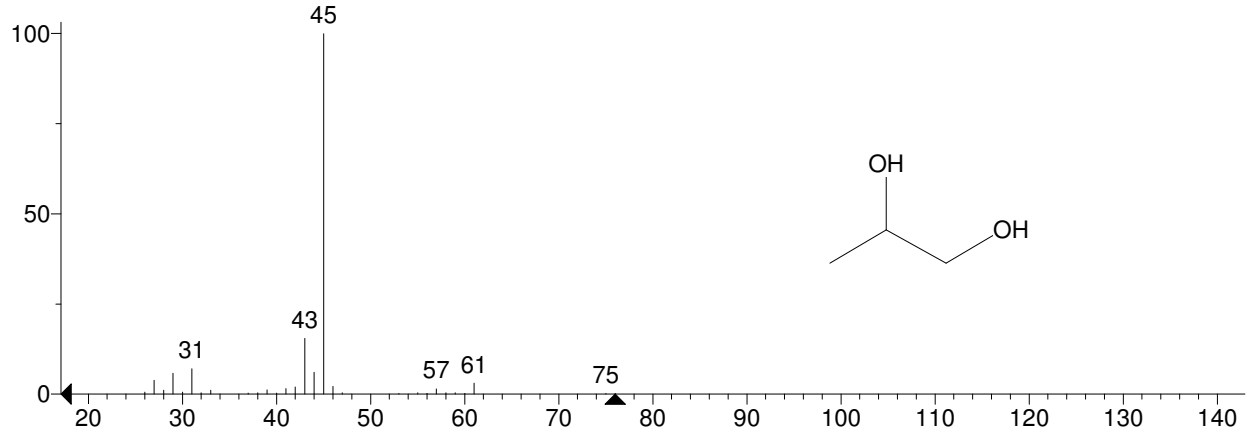
Unknown: Scan 373 (4.291 min): Imitation2.D
Compound in Library Factor = 242



Hit 1 : Propylene Glycol
C3H8O2; MF: 913; RMF: 929; Prob 39.3%; CAS: 57-55-6; Lib: replib; ID: 3553.

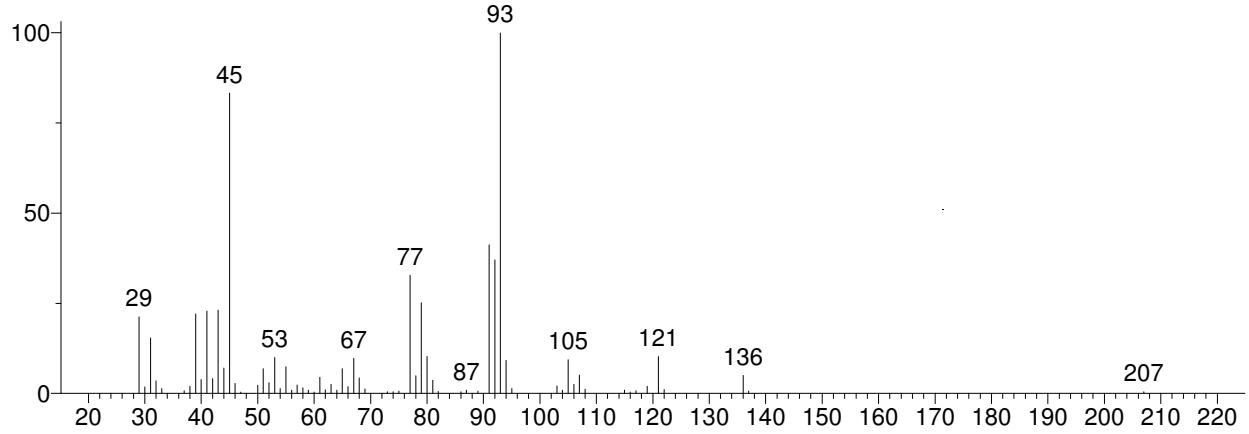


Hit 2 : (S)-(+)-1,2-Propanediol
C3H8O2; MF: 912; RMF: 933; Prob 37.8%; CAS: 4254-15-3; Lib: replib; ID: 3557.

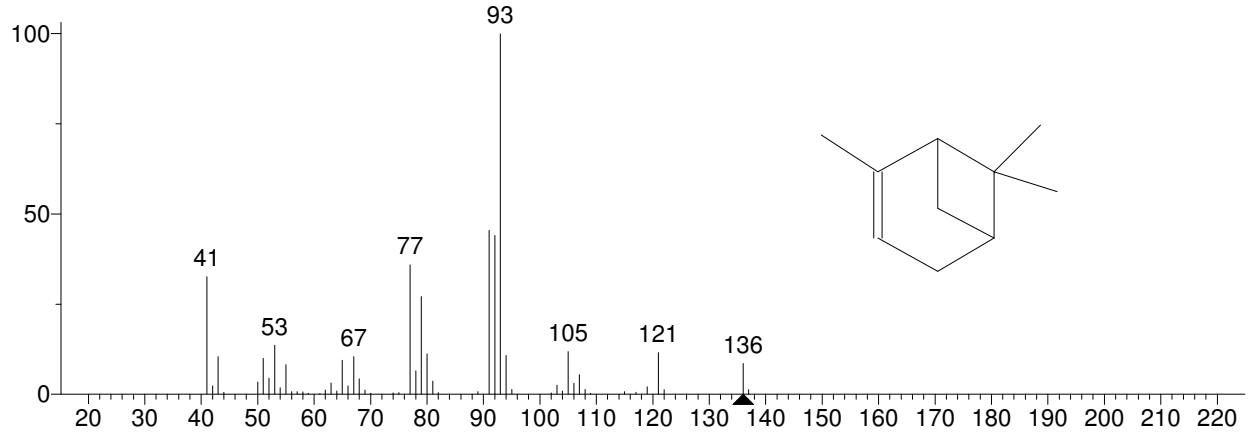


** Search Report Page 1 of 1 **

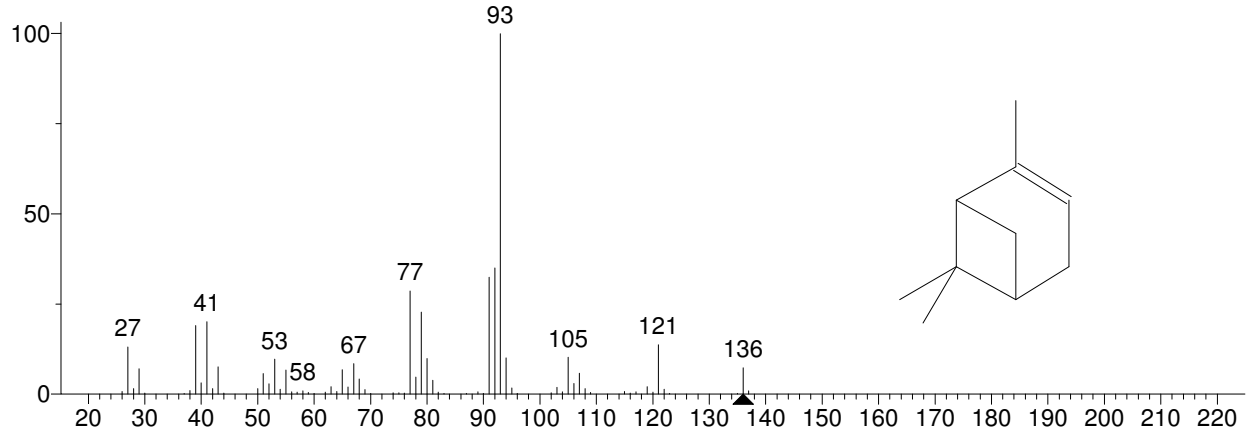
Unknown: Scan 481 (5.524 min): Imitation.D
Compound in Library Factor = -217



Hit 1 : 1R-.alpha.-Pinene
C10H16; MF: 880; RMF: 937; Prob 17.6%; CAS: 7785-70-8; Lib: replib; ID: 12053.

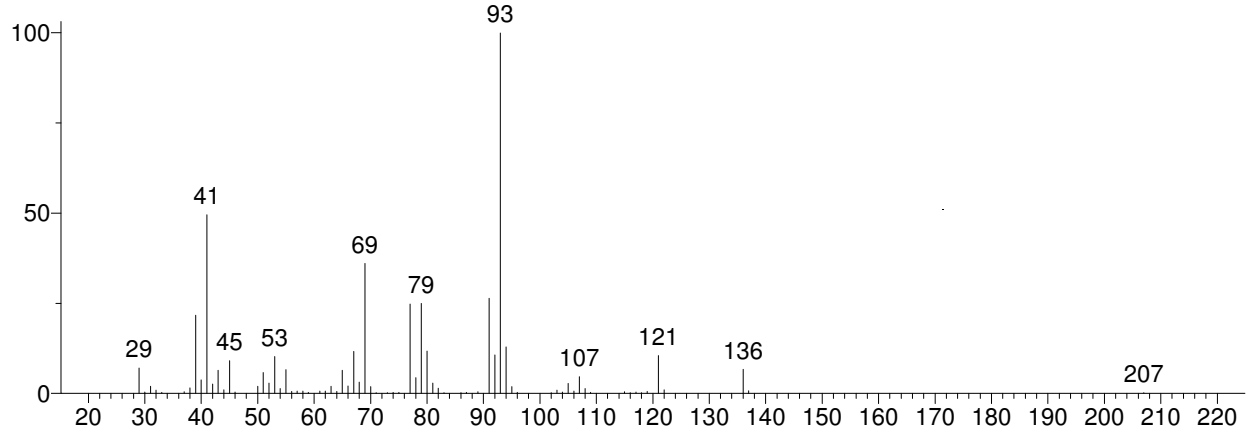


Hit 2 : .alpha.-Pinene
C10H16; MF: 876; RMF: 941; Prob 14.9%; CAS: 80-56-8; Lib: mainlib; ID: 51652.

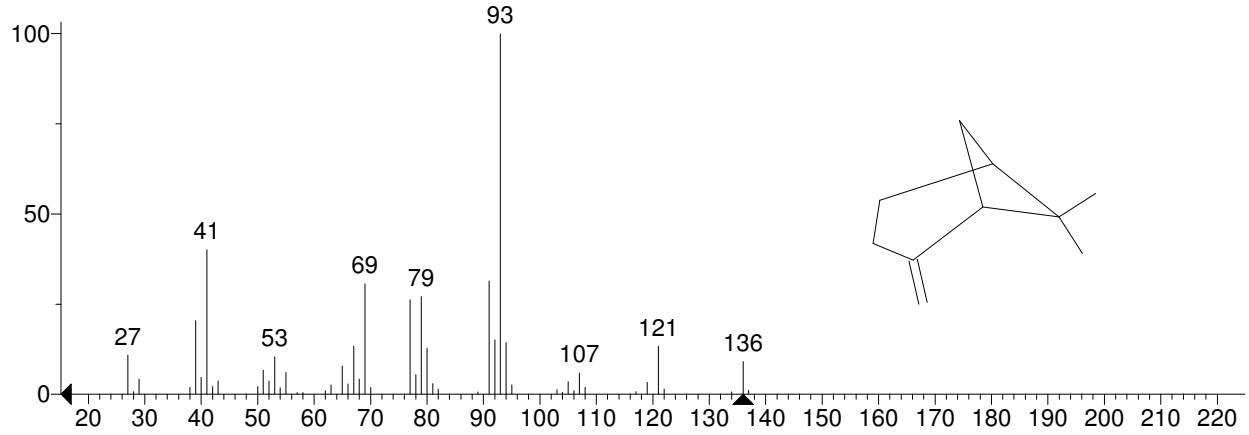


** Search Report Page 1 of 1 **

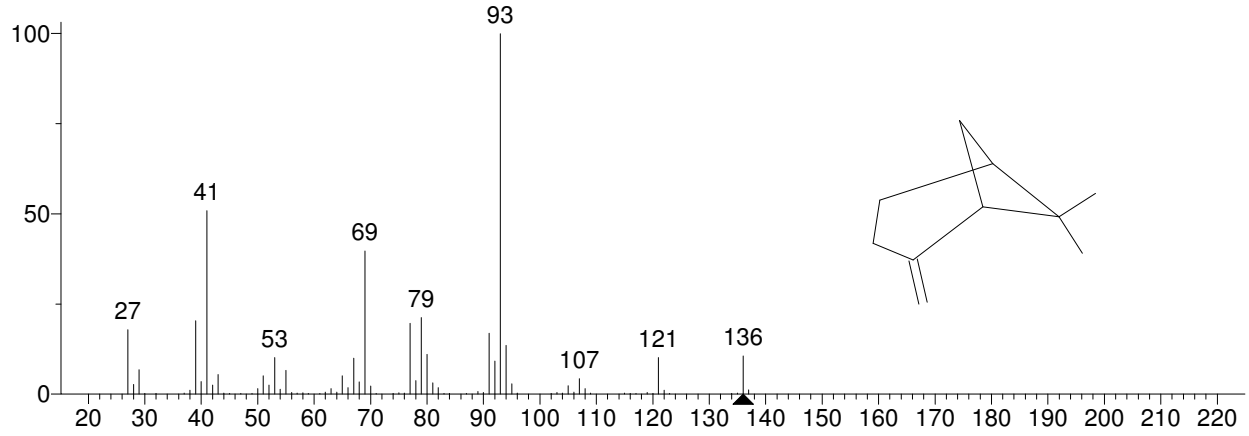
Unknown: Scan 519 (5.958 min): Imitation2.D
Compound in Library Factor = -107



Hit 1 : Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-, (1S)-
C10H16; MF: 929; RMF: 942; Prob 28.4%; CAS: 18172-67-3; Lib: replib; ID: 11958.

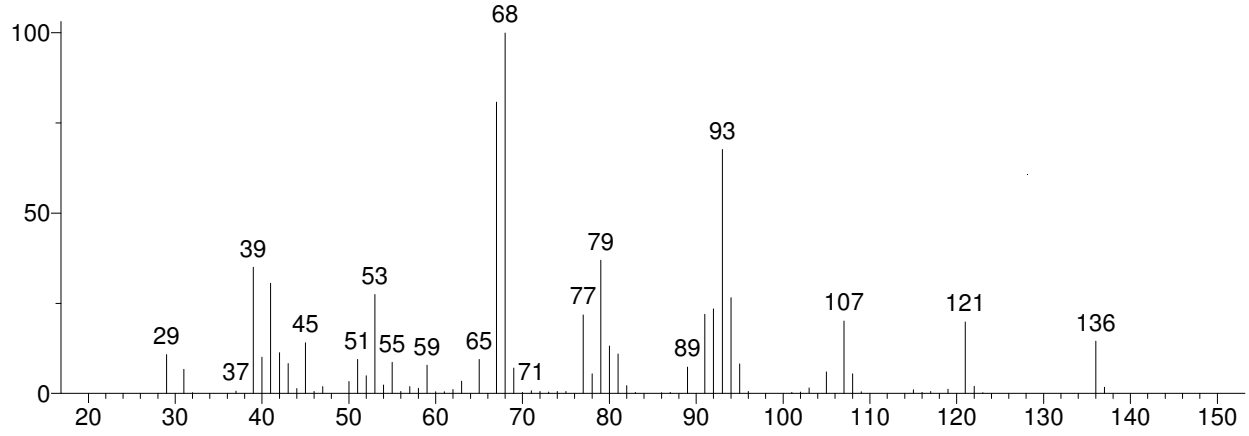


Hit 2 : .beta.-Pinene
C10H16; MF: 927; RMF: 929; Prob 26.2%; CAS: 127-91-3; Lib: replib; ID: 11947.

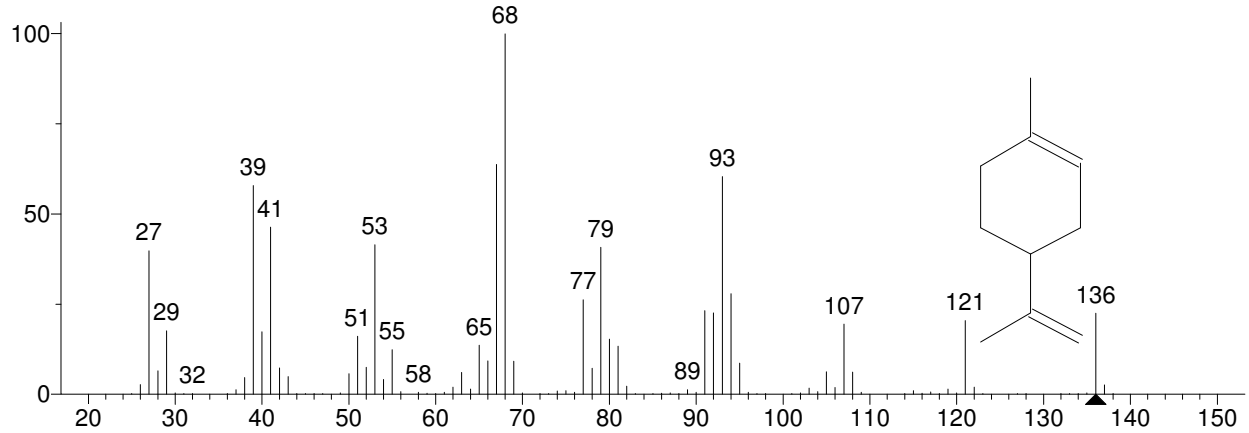


** Search Report Page 1 of 1 **

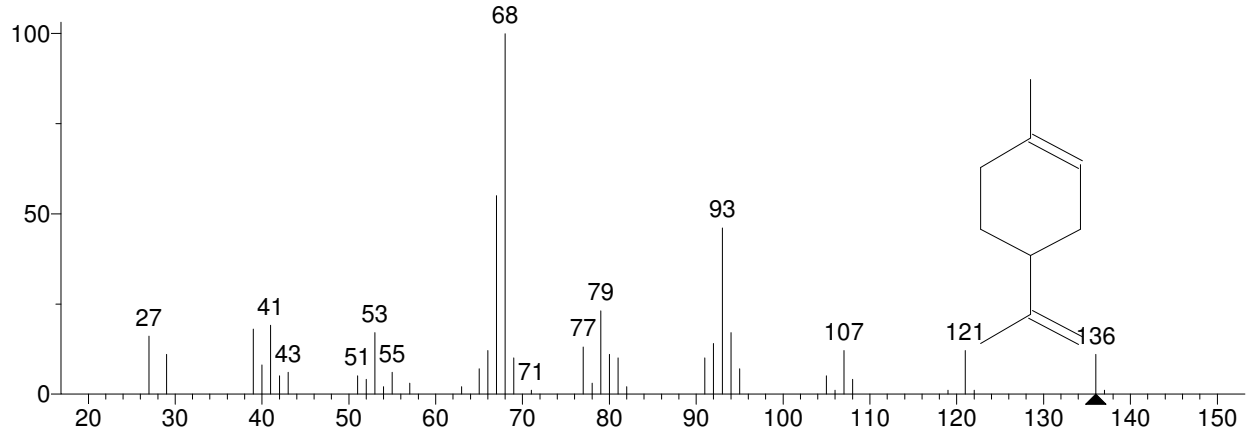
Unknown: Scan 566 (6.495 min): Imitation2.D
Compound in Library Factor = -113



Hit 1 : Limonene
C10H16; MF: 912; RMF: 919; Prob 25.0%; CAS: 138-86-3; Lib: replib; ID: 7399.

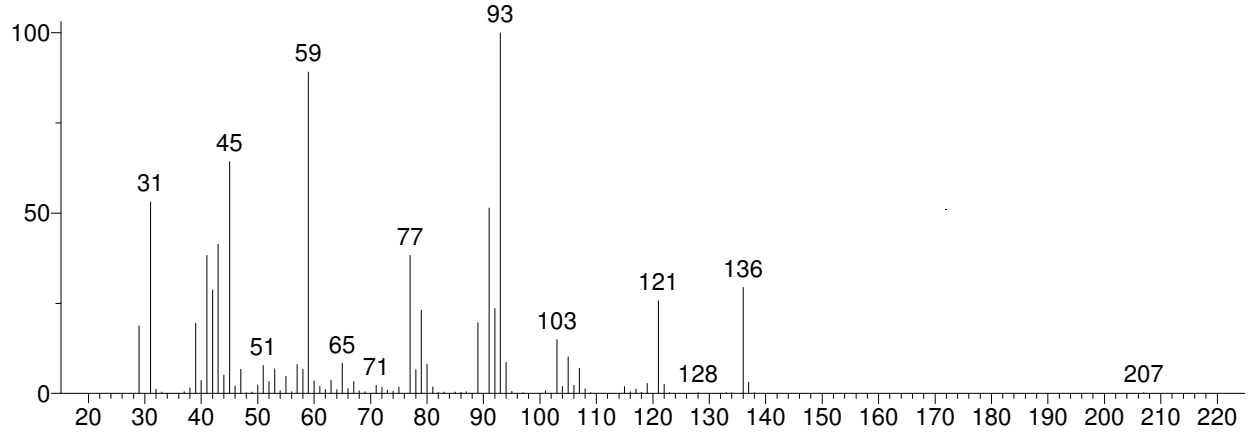


Hit 2 : Limonene
C10H16; MF: 897; RMF: 932; Prob 25.0%; CAS: 138-86-3; Lib: replib; ID: 7398.

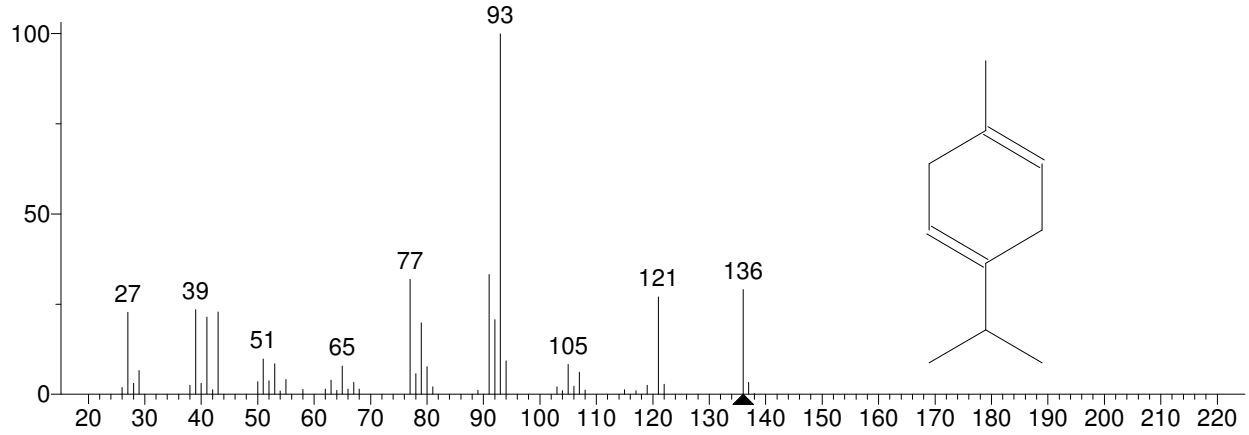


** Search Report Page 1 of 1 **

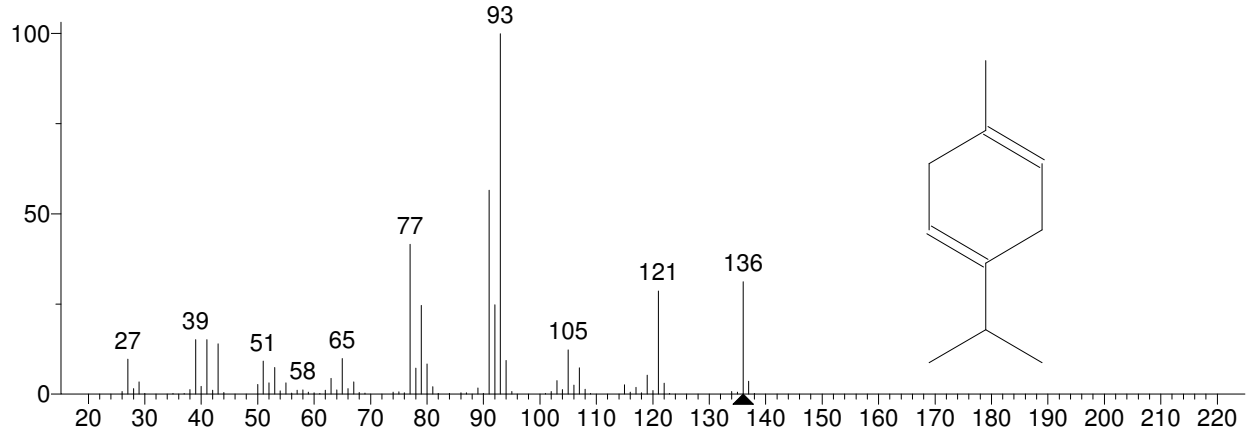
Unknown: Scan 591 (6.780 min): Imitation2.D
Compound in Library Factor = -394



Hit 1 : 1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-
C10H16; MF: 793; RMF: 903; Prob 22.6%; CAS: 99-85-4; Lib: replib; ID: 12040.

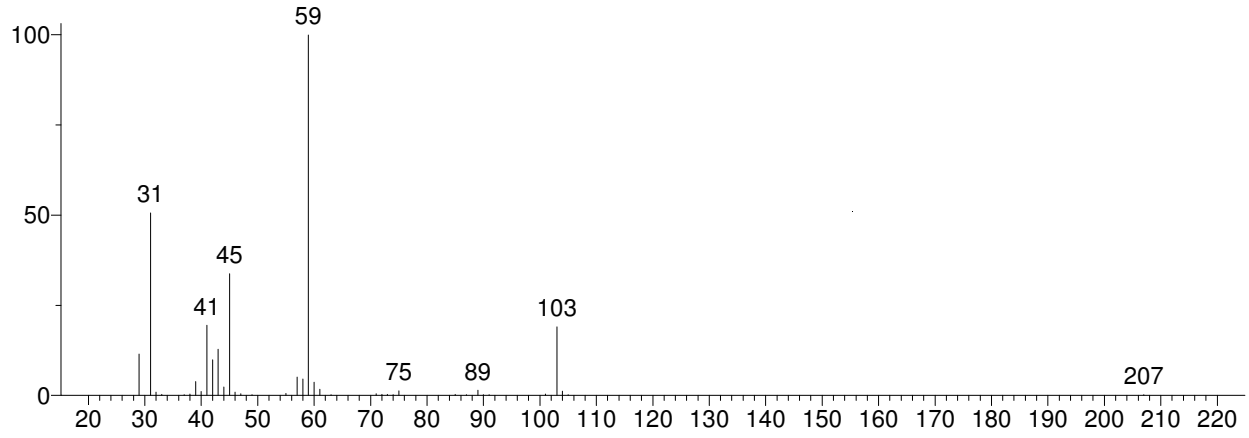


Hit 2 : 1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-
C10H16; MF: 785; RMF: 829; Prob 22.6%; CAS: 99-85-4; Lib: replib; ID: 12042.

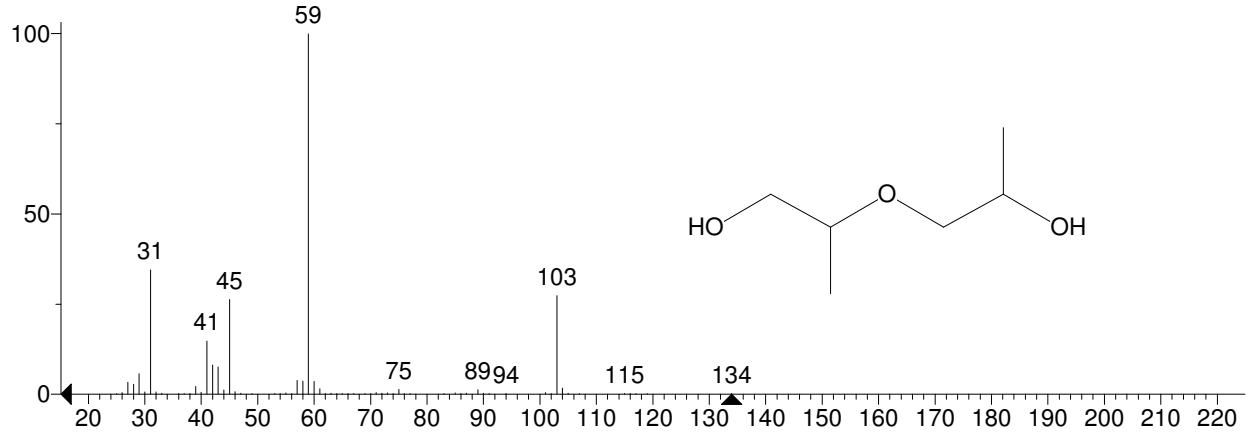


** Search Report Page 1 of 1 **

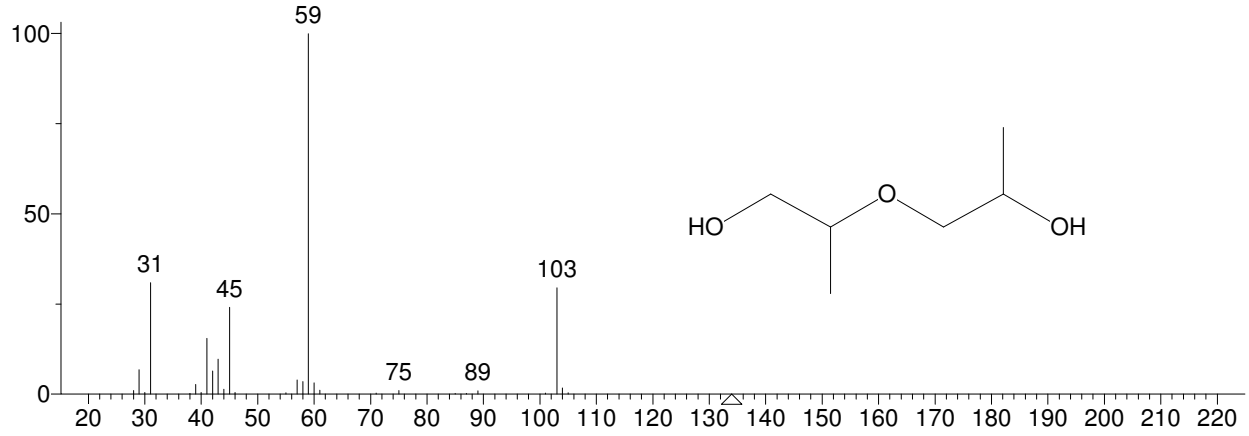
Unknown: Scan 615 (7.054 min): Imitation2.D
Compound in Library Factor = 125



Hit 1 : 1-Propanol, 2-(2-hydroxypropoxy)-
C6H14O3; MF: 918; RMF: 918; Prob 38.3%; CAS: 106-62-7; Lib: mainlib; ID: 24523.

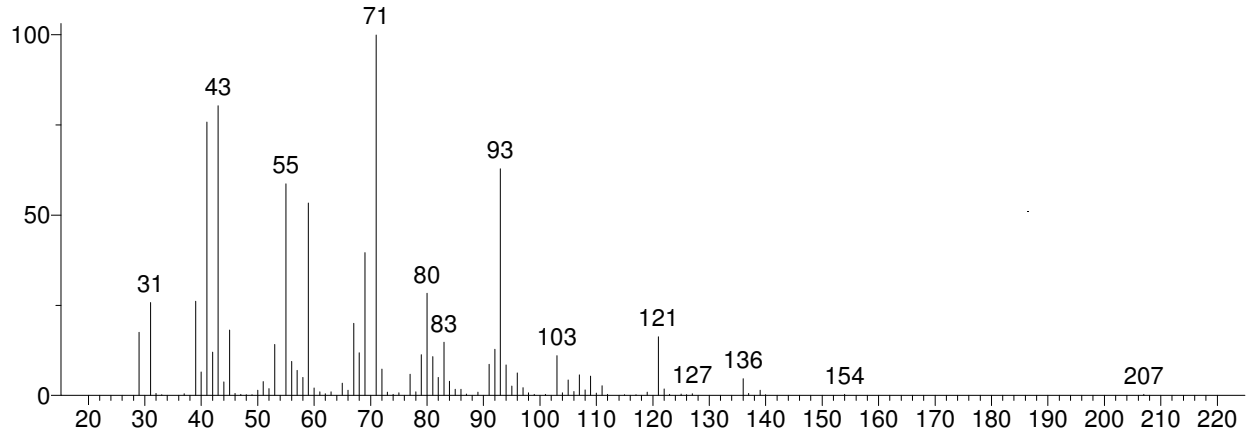


Hit 2 : 1-Propanol, 2-(2-hydroxypropoxy)-
C6H14O3; MF: 916; RMF: 919; Prob 38.3%; CAS: 106-62-7; Lib: replib; ID: 6407.

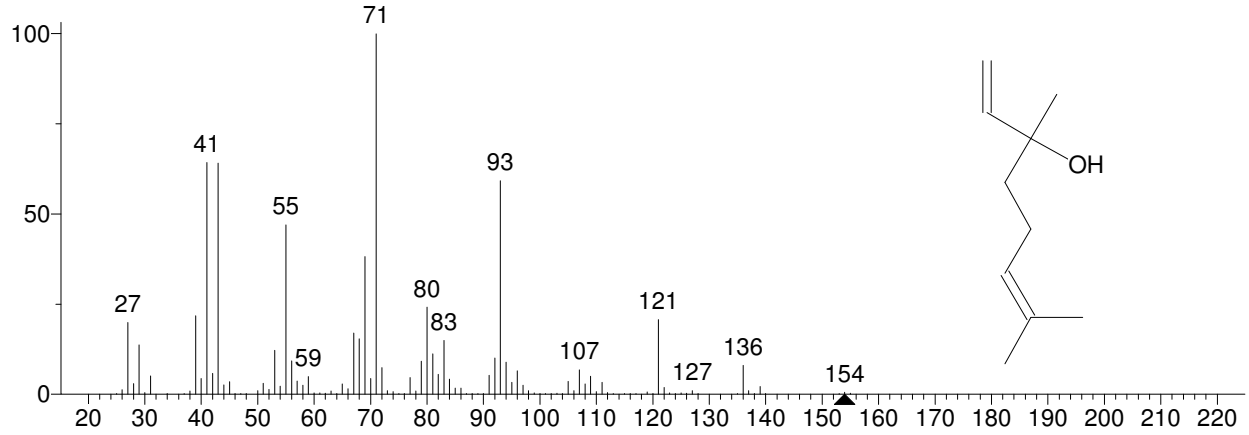


** Search Report Page 1 of 1 **

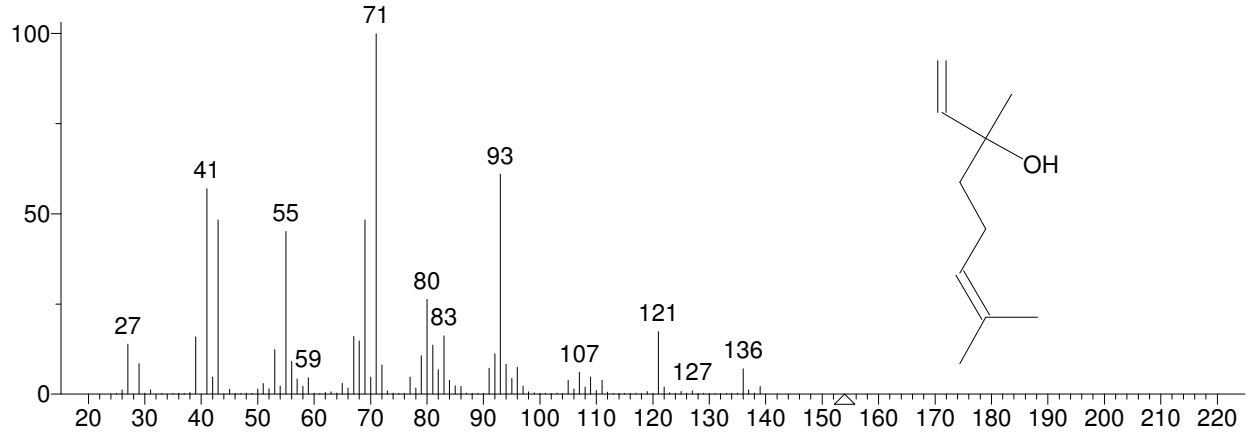
Unknown: Scan 630 (7.225 min): Imitation2.D
Compound in Library Factor = 102



Hit 1 : 1,6-Octadien-3-ol, 3,7-dimethyl-
C10H18O; MF: 875; RMF: 876; Prob 64.7%; CAS: 78-70-6; Lib: mainlib; ID: 30690.

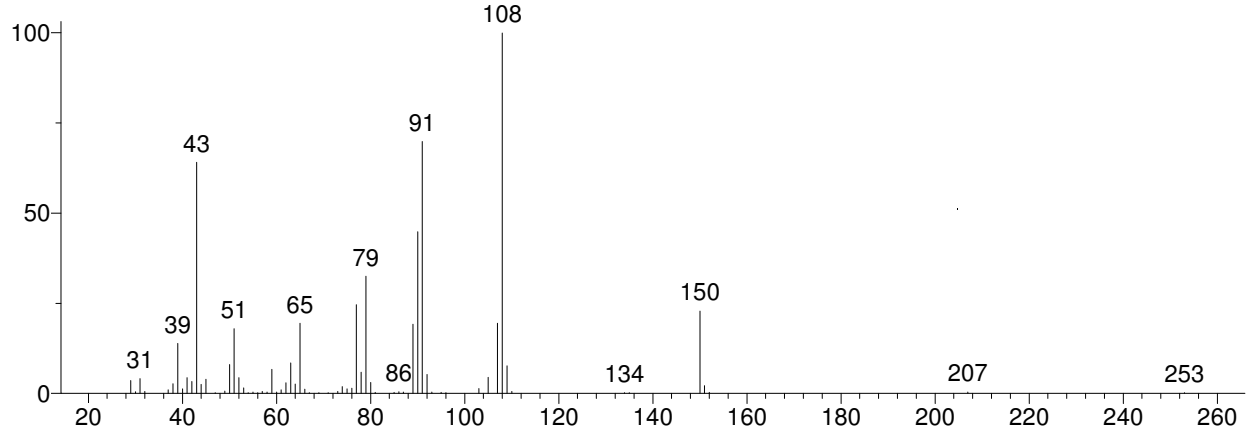


Hit 2 : 1,6-Octadien-3-ol, 3,7-dimethyl-
C10H18O; MF: 868; RMF: 874; Prob 64.7%; CAS: 78-70-6; Lib: replib; ID: 8161.

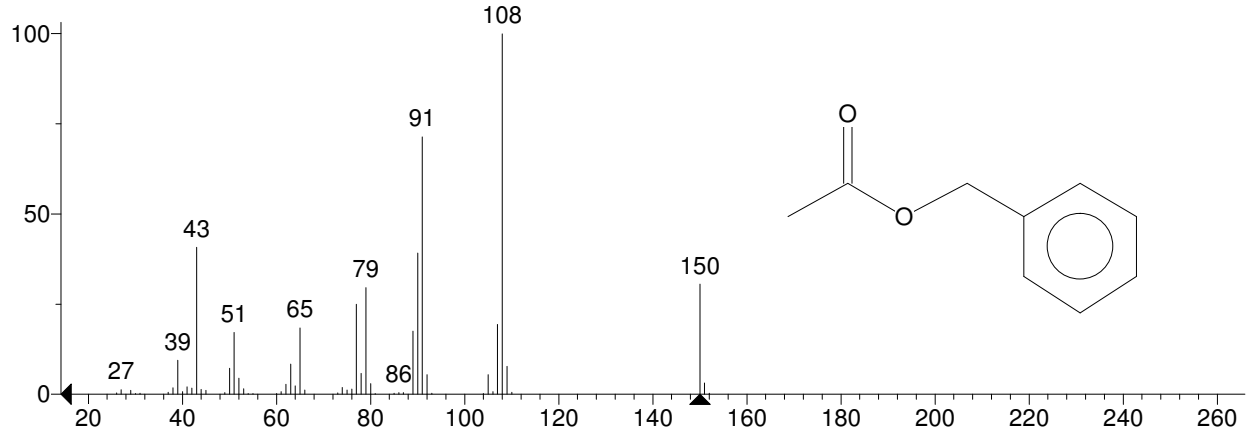


** Search Report Page 1 of 1 **

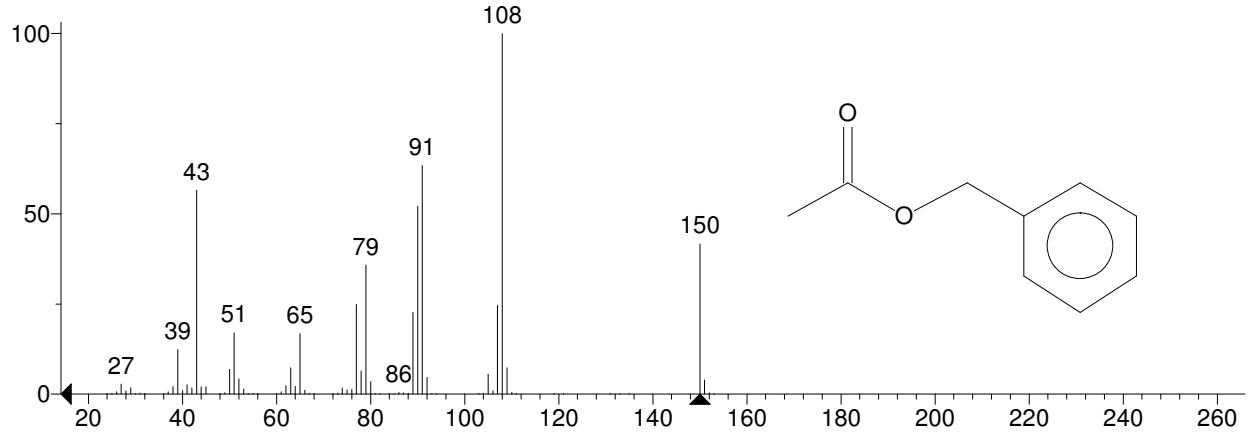
Unknown: Scan 688 (7.888 min): Imitation2.D
Compound in Library Factor = 265



Hit 1 : Acetic acid, phenylmethyl ester
C9H10O2; MF: 935; RMF: 943; Prob 85.6%; CAS: 140-11-4; Lib: replib; ID: 14560.

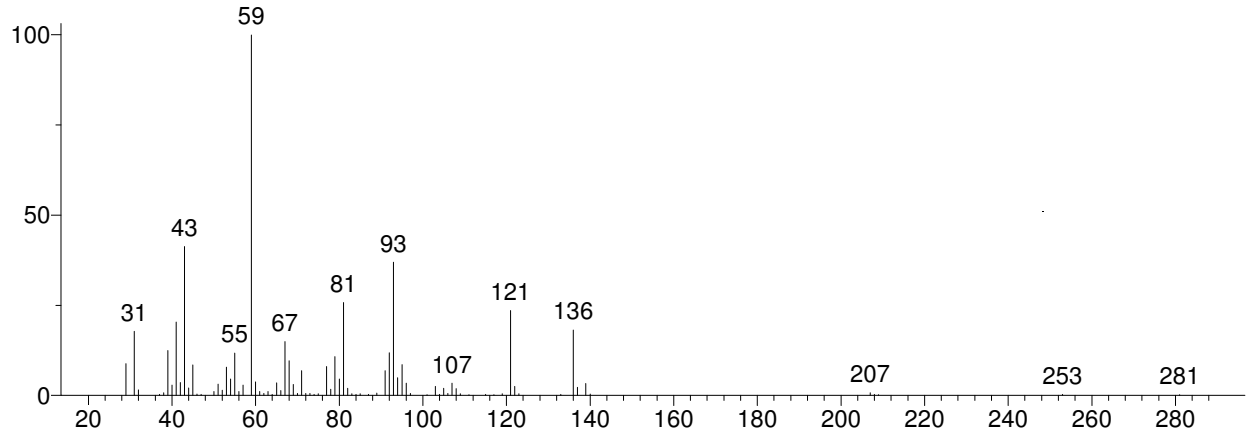


Hit 2 : Acetic acid, phenylmethyl ester
C9H10O2; MF: 928; RMF: 936; Prob 85.6%; CAS: 140-11-4; Lib: mainlib; ID: 64787.

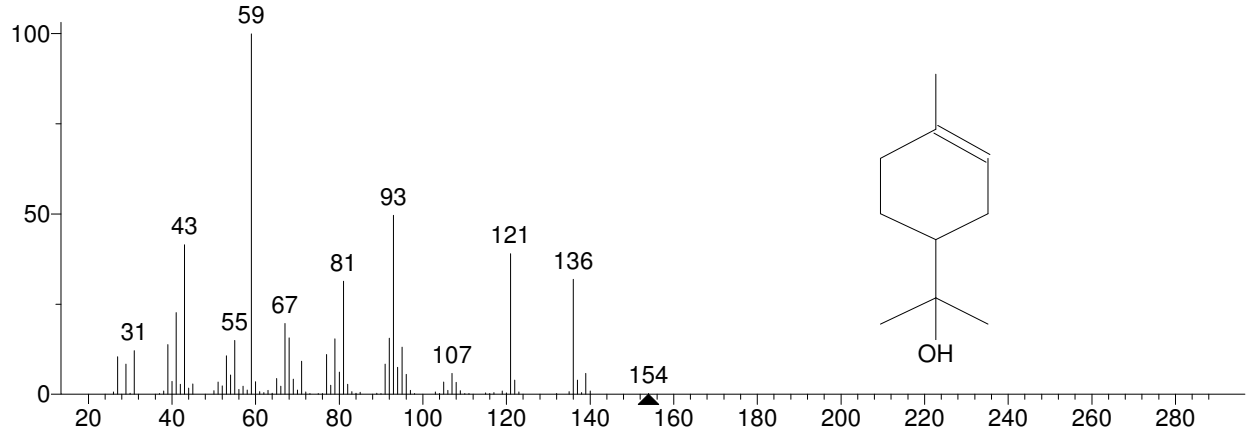


** Search Report Page 1 of 1 **

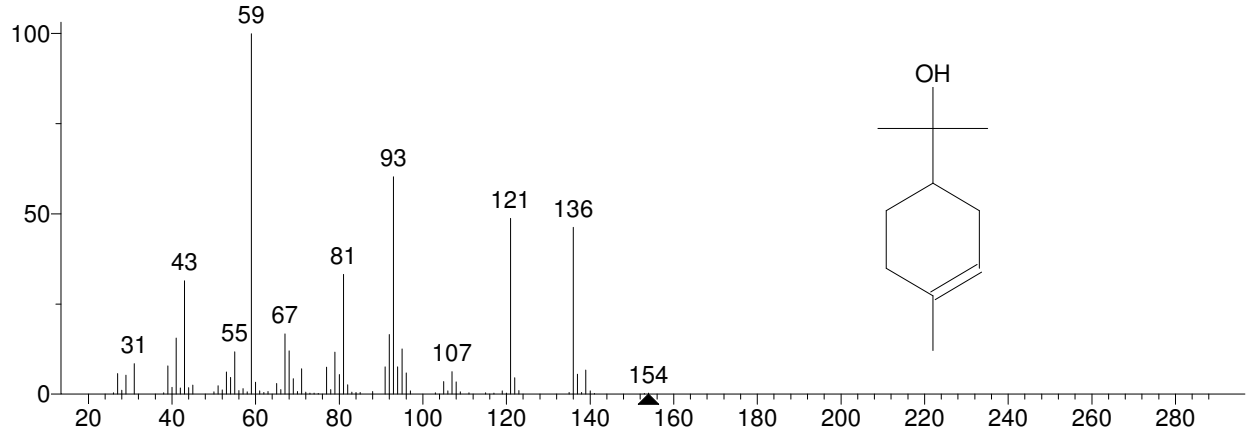
Unknown: Scan 716 (8.207 min): Imitation2.D
Compound in Library Factor = 242



Hit 1 : p-menth-1-en-8-ol
C10H18O; MF: 918; RMF: 925; Prob 44.4%; Lib: mainlib; ID: 25072.

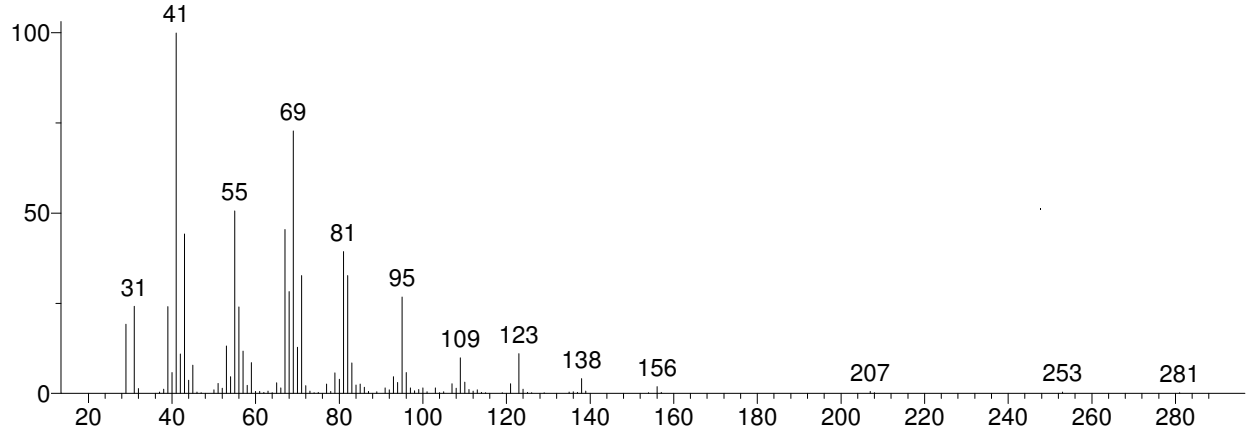


Hit 2 : 3-Cyclohexene-1-methanol, .alpha.,.alpha.4-trimethyl-
C10H18O; MF: 906; RMF: 912; Prob 29.6%; CAS: 98-55-5; Lib: replib; ID: 6602.

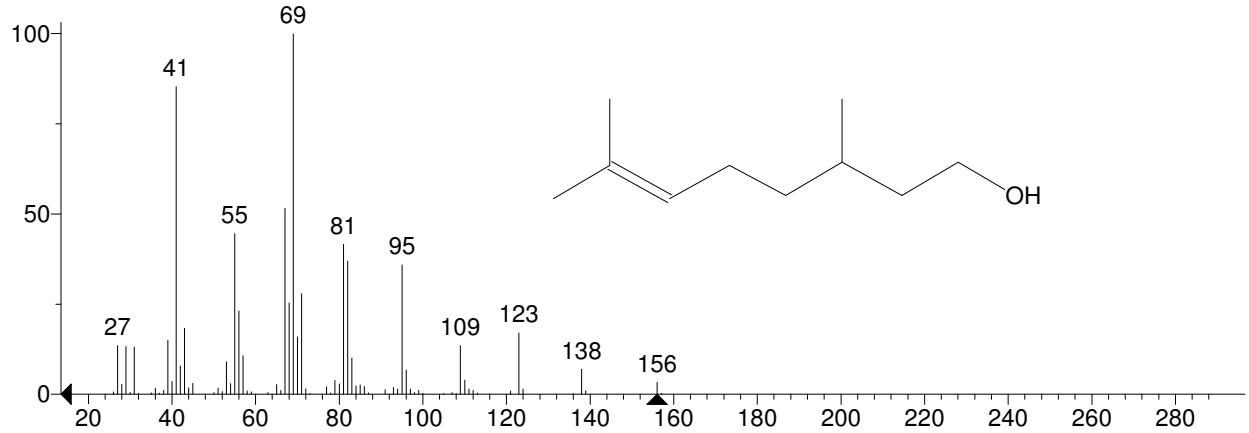


** Search Report Page 1 of 1 **

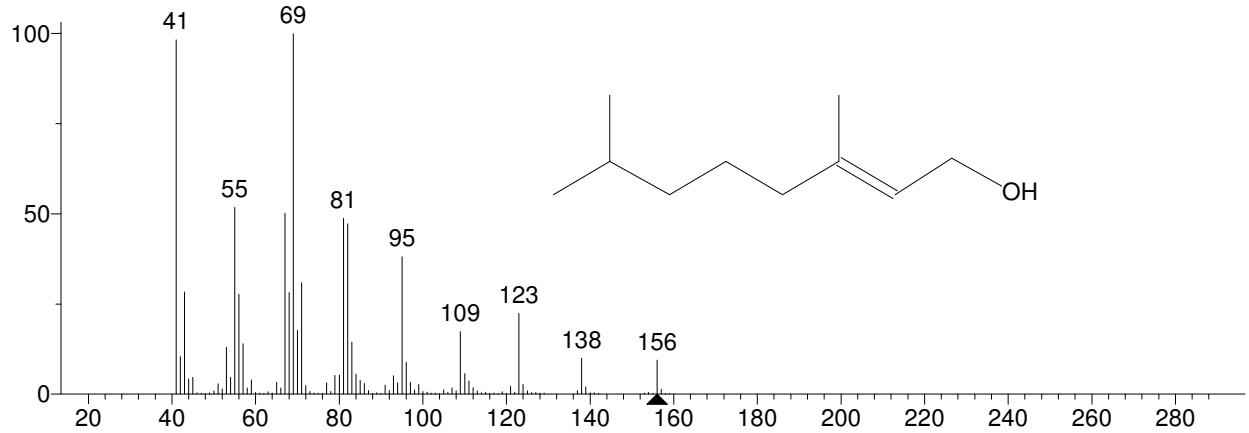
Unknown: Scan 749 (8.584 min): Imitation2.D
Compound in Library Factor = -168



Hit 1 : 6-Octen-1-ol, 3,7-dimethyl-, (R)-
C10H20O; MF: 888; RMF: 898; Prob 24.4%; CAS: 1117-61-9; Lib: mainlib; ID: 28138.

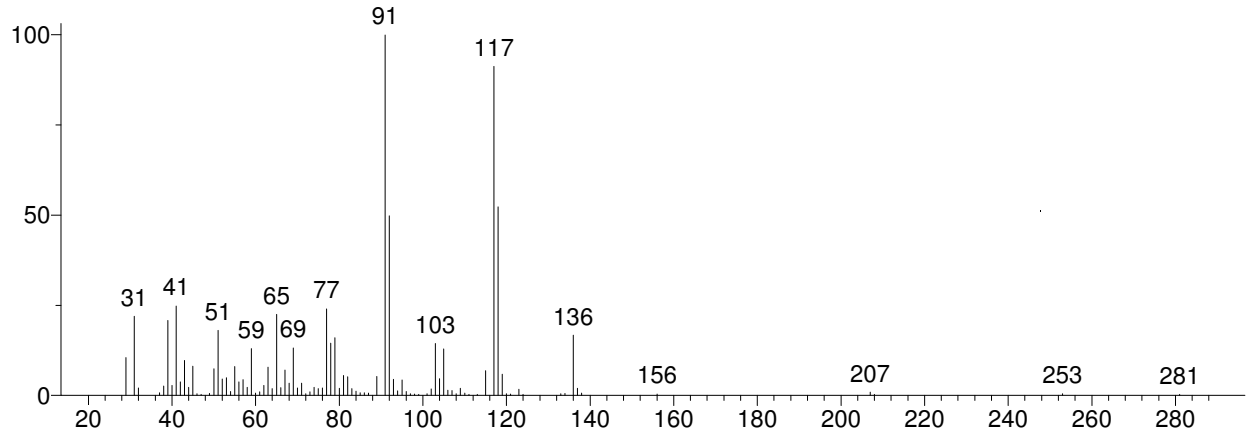


Hit 2 : 2-Octen-1-ol, 3,7-dimethyl-
C10H20O; MF: 888; RMF: 891; Prob 24.4%; CAS: 40607-48-5; Lib: mainlib; ID: 28107.

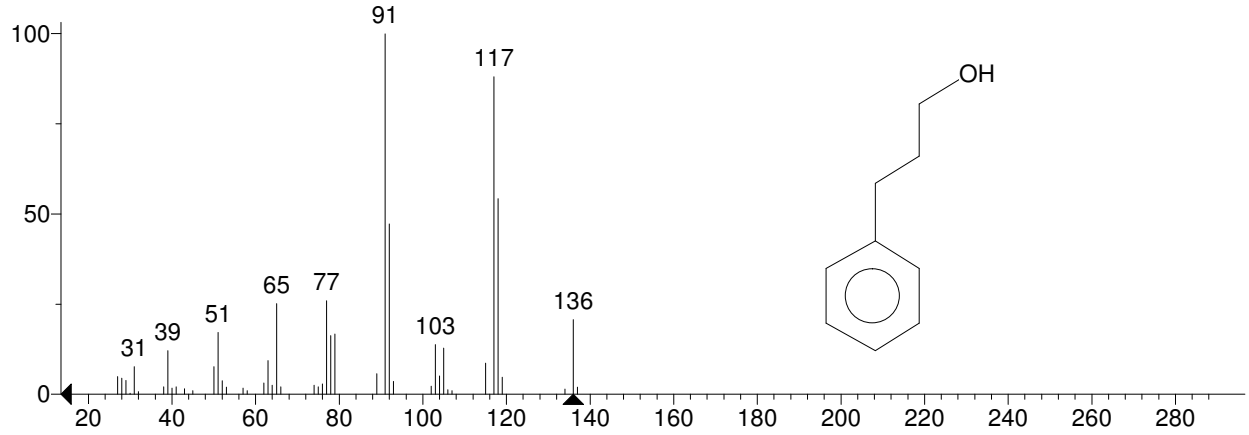


** Search Report Page 1 of 1 **

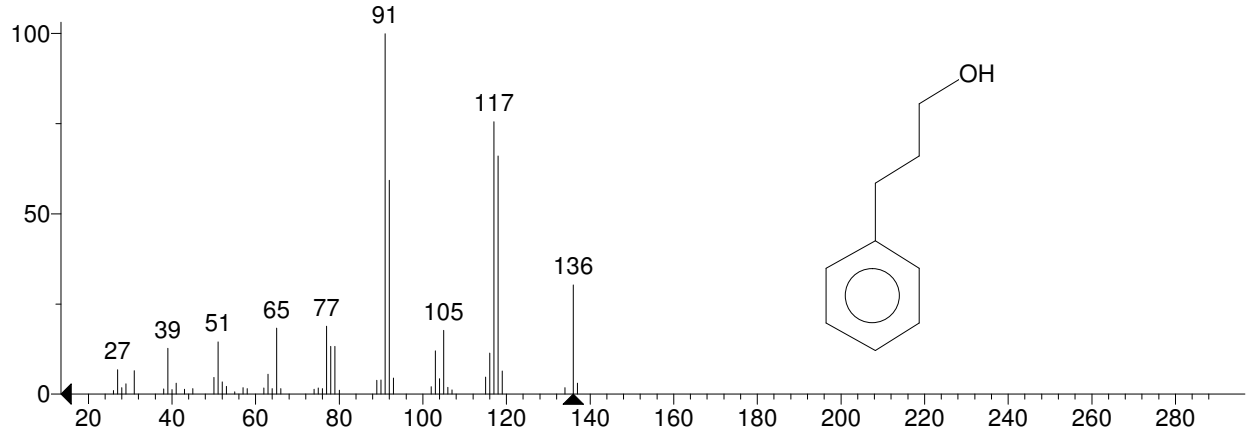
Unknown: Scan 756 (8.664 min): Imitation2.D
Compound in Library Factor = -103



Hit 1 : Benzenepropanol
C9H12O; MF: 873; RMF: 944; Prob 68.4%; CAS: 122-97-4; Lib: replib; ID: 11463.

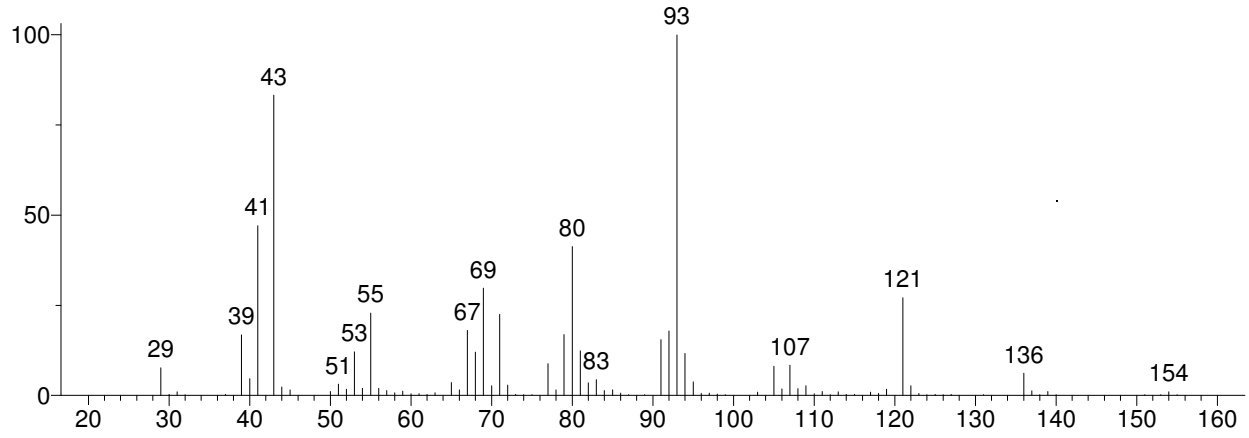


Hit 2 : Benzenepropanol
C9H12O; MF: 845; RMF: 909; Prob 68.4%; CAS: 122-97-4; Lib: mainlib; ID: 48216.

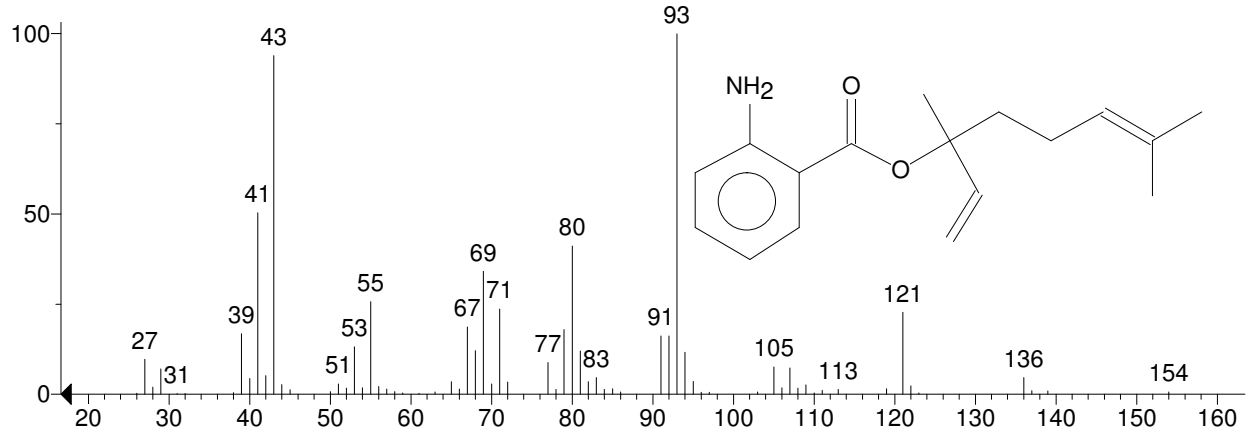


** Search Report Page 1 of 1 **

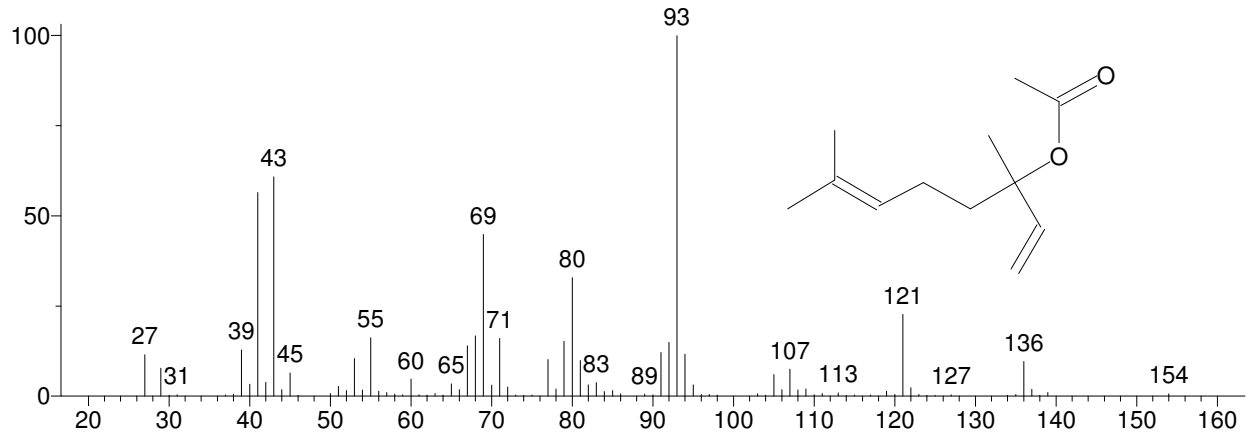
Unknown: Scan 771 (8.835 min): Imitation2.D
Compound in Library Factor = 146



Hit 1 : 1,6-Octadien-3-ol, 3,7-dimethyl-, 2-aminobenzoate
C17H23NO2; MF: 963; RMF: 967; Prob 72.7%; CAS: 7149-26-0; Lib: mainlib; ID: 51289.

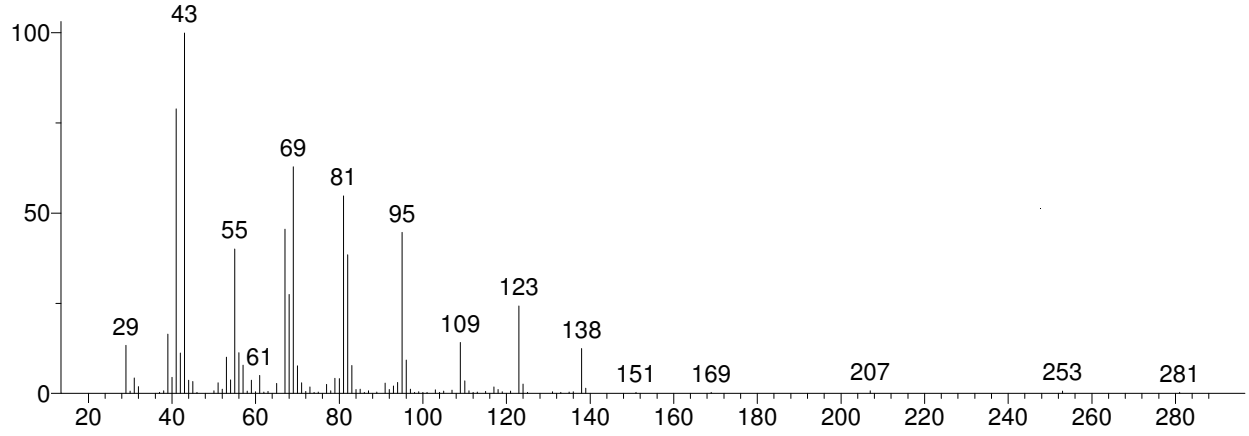


Hit 2 : 1,6-Octadien-3-ol, 3,7-dimethyl-, acetate
C12H20O2; MF: 916; RMF: 917; Prob 15.2%; CAS: 115-95-7; Lib: mainlib; ID: 51290.

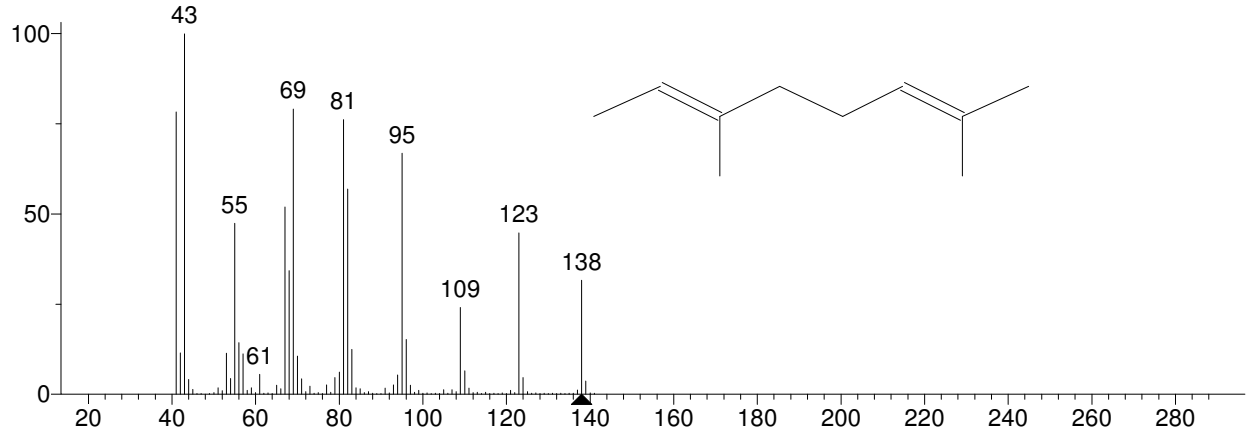


** Search Report Page 1 of 1 **

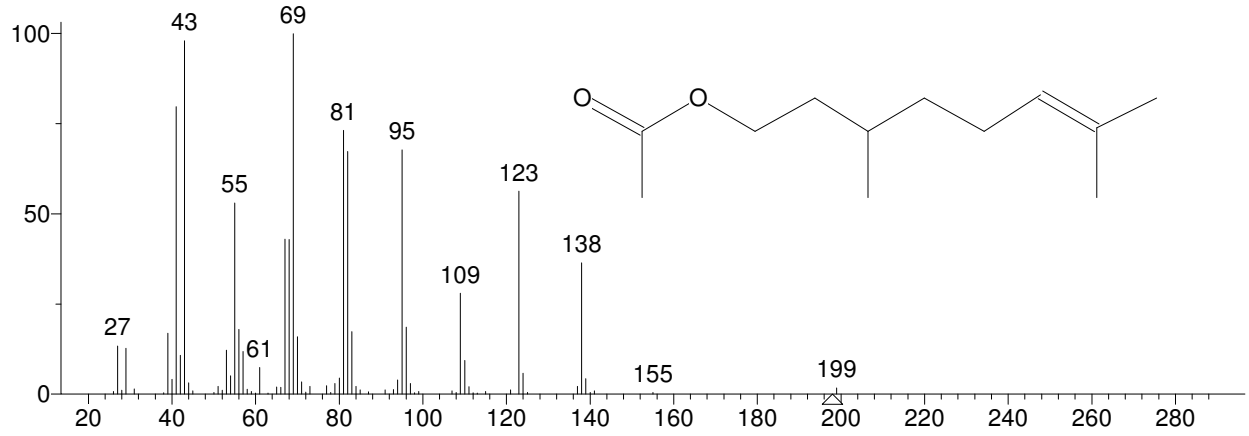
Unknown: Scan 850 (9.737 min): Imitation2.D
Compound in Library Factor = -151



Hit 1 : 2,6-Octadiene, 2,6-dimethyl-
C10H18; MF: 896; RMF: 901; Prob 24.6%; CAS: 2792-39-4; Lib: replib; ID: 2290.

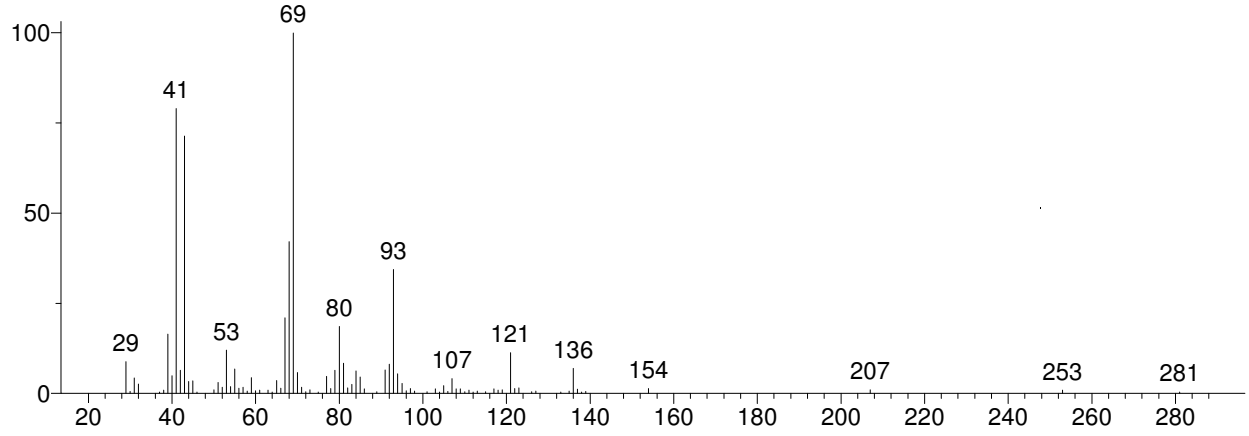


Hit 2 : 6-Octen-1-ol, 3,7-dimethyl-, acetate
C12H22O2; MF: 889; RMF: 905; Prob 18.8%; CAS: 150-84-5; Lib: replib; ID: 7605.

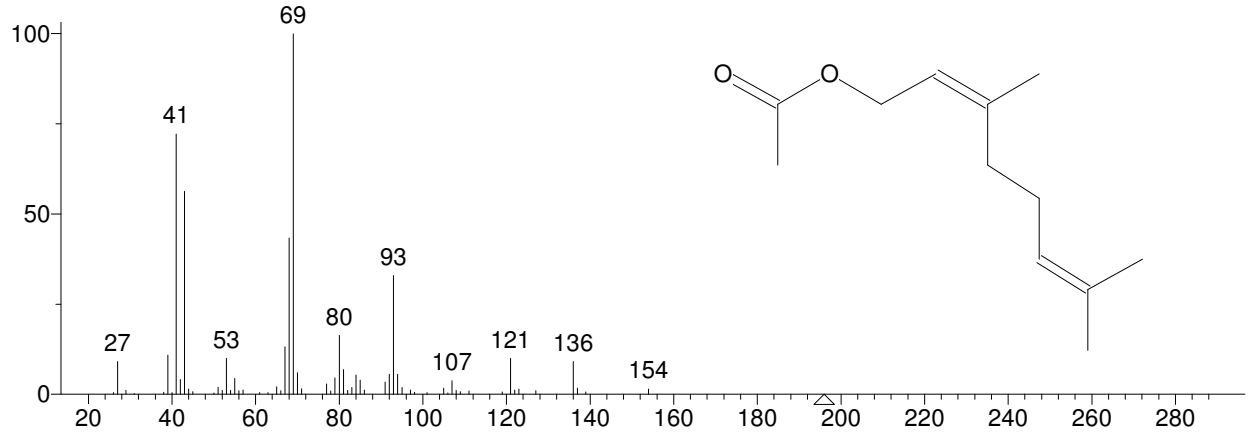


** Search Report Page 1 of 1 **

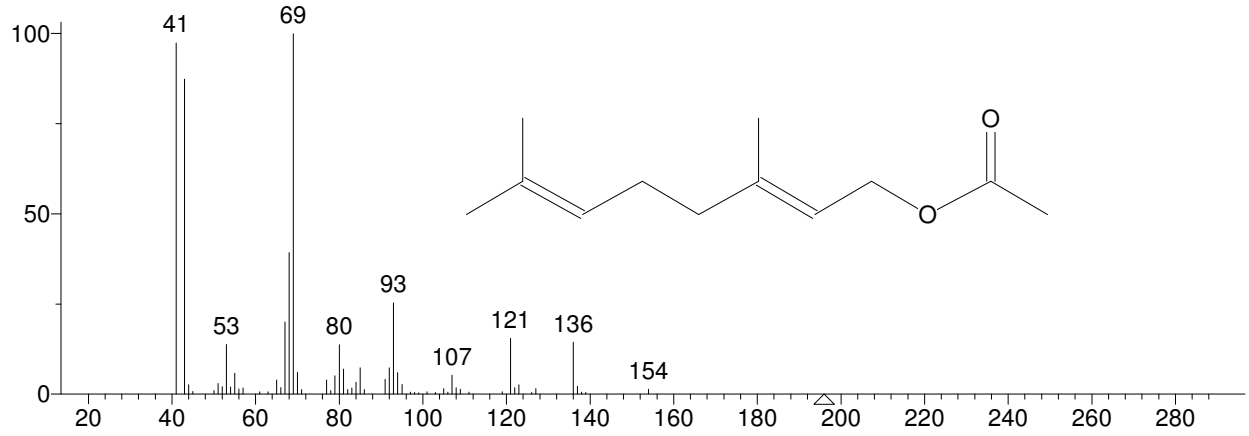
Unknown: Scan 860 (9.852 min): Imitation2.D
Compound in Library Factor = 103



Hit 1 : 2,6-Octadien-1-ol, 3,7-dimethyl-, acetate, (Z)-
C12H20O2; MF: 918; RMF: 947; Prob 51.8%; CAS: 141-12-8; Lib: replib; ID: 7487.

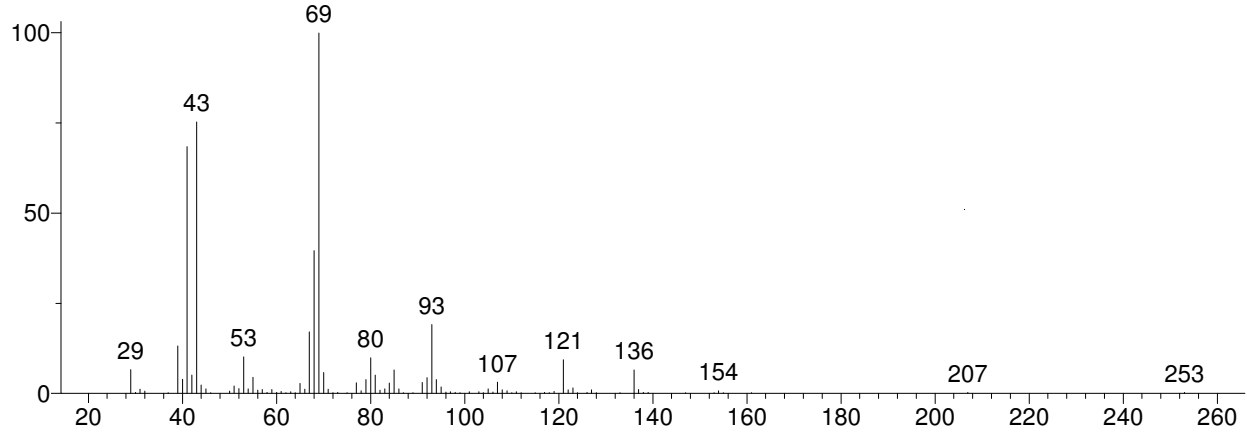


Hit 2 : 2,6-Octadien-1-ol, 3,7-dimethyl-, acetate
C12H20O2; MF: 897; RMF: 926; Prob 22.1%; CAS: 16409-44-2; Lib: replib; ID: 7488.

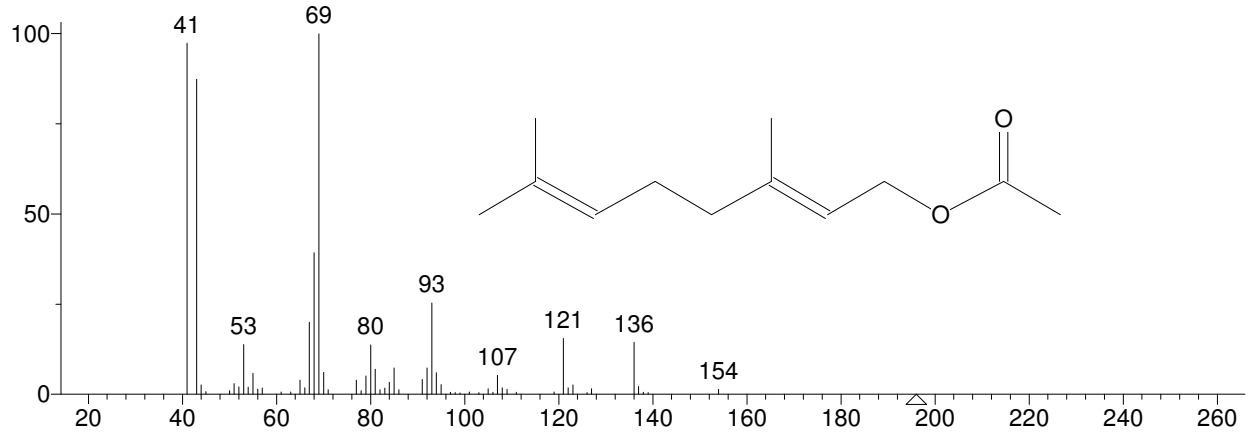


** Search Report Page 1 of 1 **

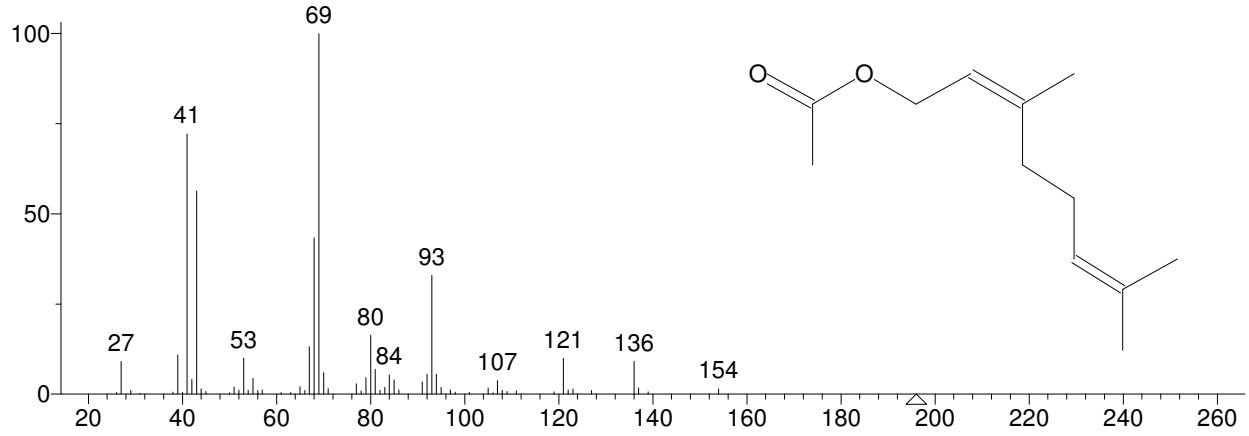
Unknown: Scan 876 (10.034 min): Imitation2.D
Compound in Library Factor = 141



Hit 1 : 2,6-Octadien-1-ol, 3,7-dimethyl-, acetate
C12H20O2; MF: 944; RMF: 952; Prob 50.6%; CAS: 16409-44-2; Lib: replib; ID: 7488.

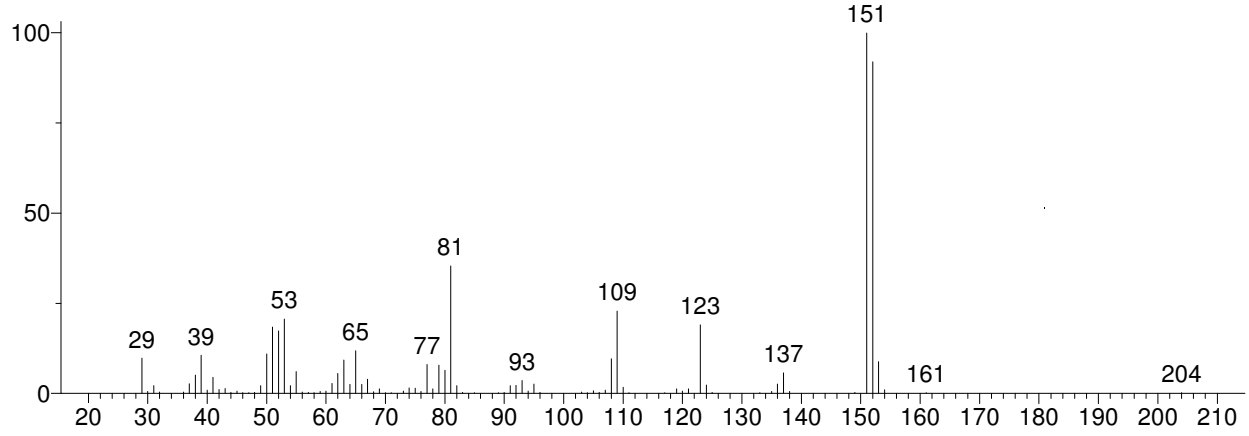


Hit 2 : 2,6-Octadien-1-ol, 3,7-dimethyl-, acetate, (Z)-
C12H20O2; MF: 923; RMF: 930; Prob 21.5%; CAS: 141-12-8; Lib: replib; ID: 7487.

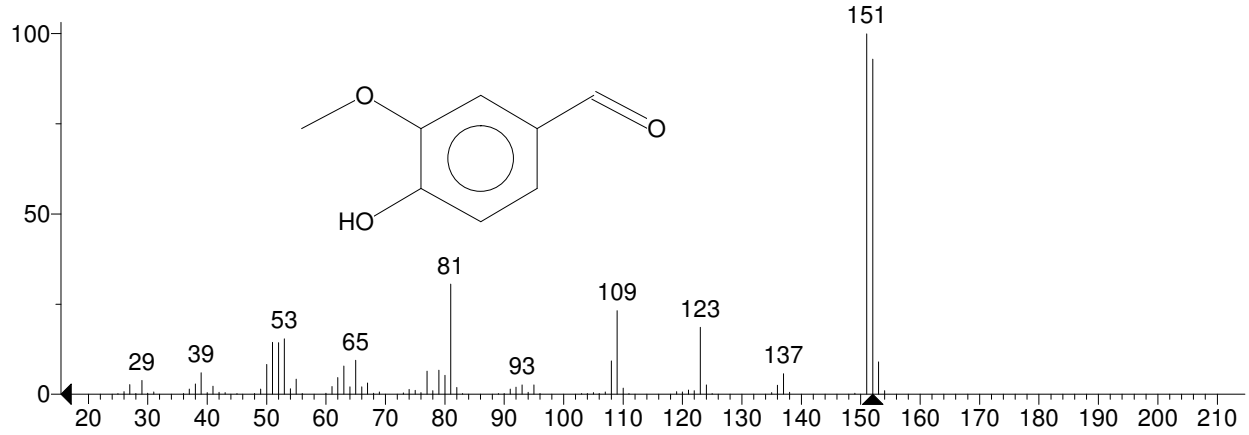


** Search Report Page 1 of 1 **

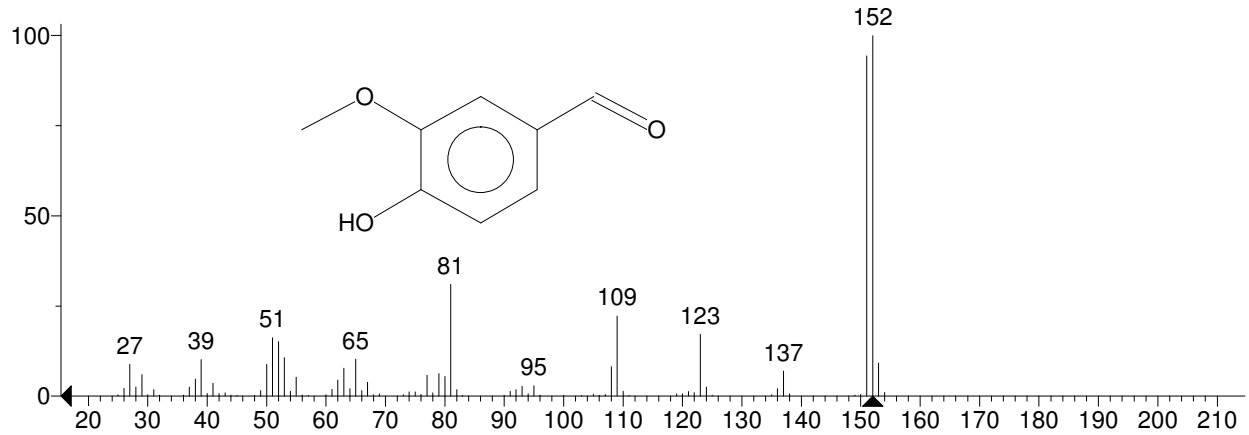
Unknown: Scan 912 (10.445 min): Imitation2.D
Compound in Library Factor = 144



Hit 1 : Vanillin
C8H8O3; MF: 952; RMF: 952; Prob 59.4%; CAS: 121-33-5; Lib: replib; ID: 20015.

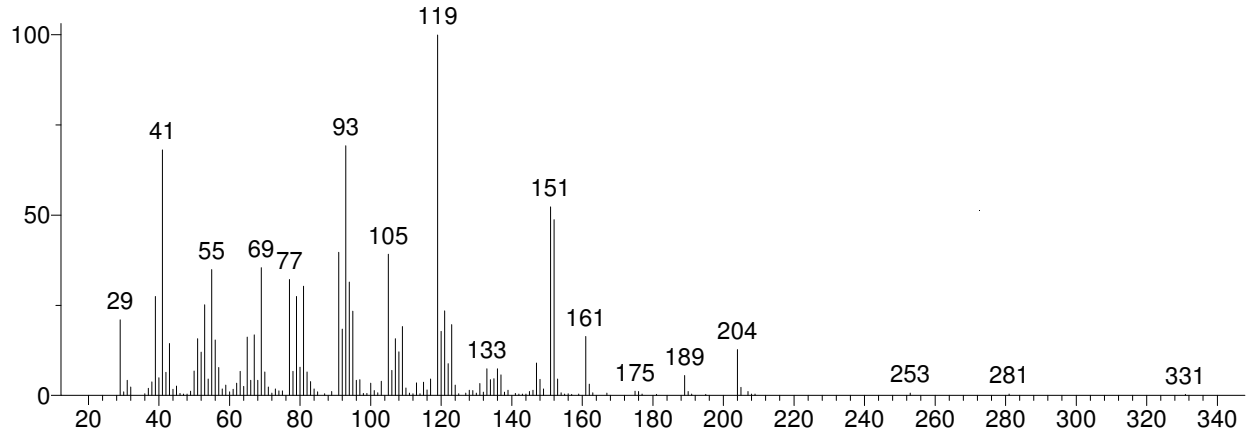


Hit 2 : Vanillin
C8H8O3; MF: 944; RMF: 944; Prob 59.4%; CAS: 121-33-5; Lib: mainlib; ID: 98716.

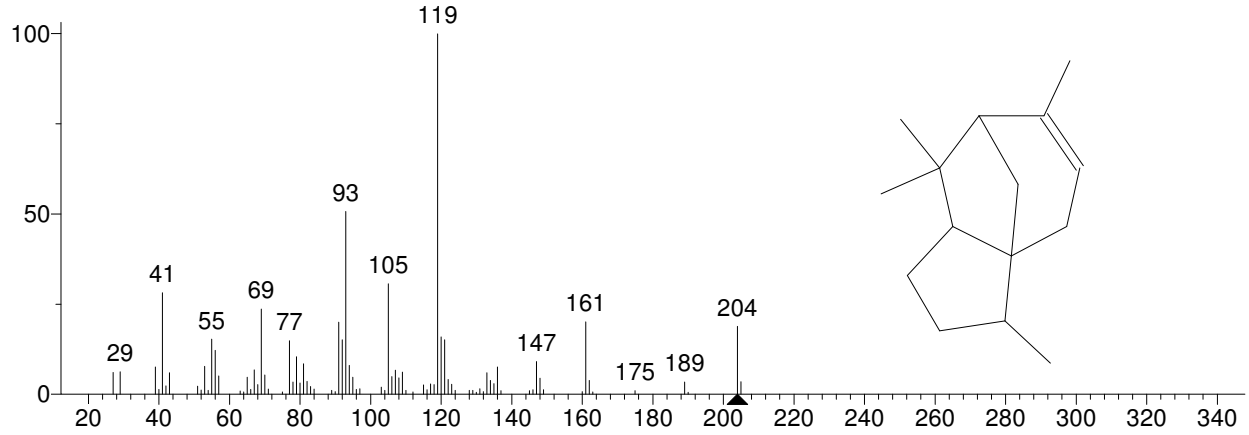


** Search Report Page 1 of 1 **

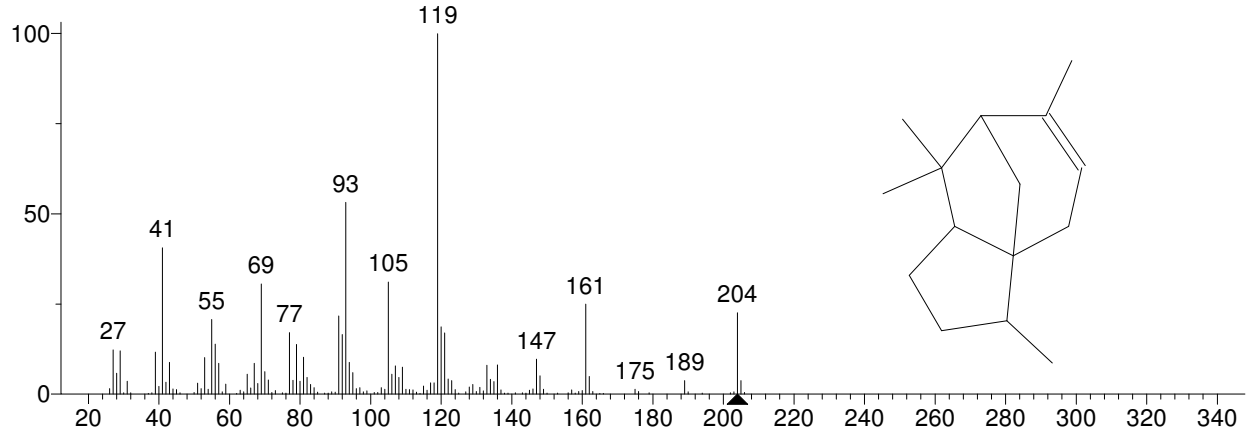
Unknown: Scan 917 (10.502 min): Imitation2.D
Compound in Library Factor = -509



Hit 1 : 1H-3a,7-Methanoazulene, 2,3,4,7,8,8a-hexahydro-3,6,8,8-tetramethyl-, [3R-(3.alpha.,3a.beta.,7.beta.,8a.alpha
C15H24; MF: 796; RMF: 893; Prob 11.2%; CAS: 469-61-4; Lib: replib; ID: 15877.

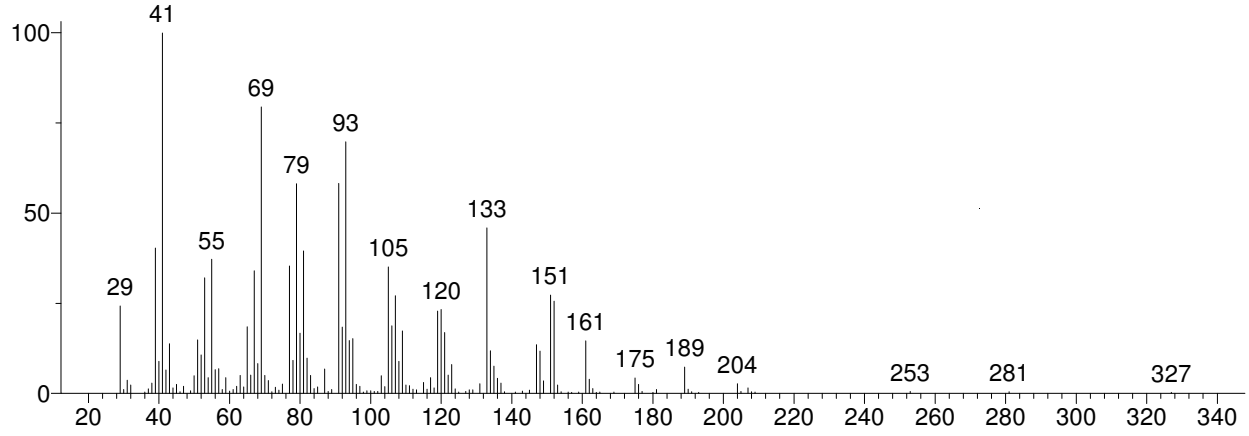


Hit 2 : 1H-3a,7-Methanoazulene, 2,3,4,7,8,8a-hexahydro-3,6,8,8-tetramethyl-, [3R-(3.alpha.,3a.beta.,7.beta.,8a.alpha
C15H24; MF: 788; RMF: 862; Prob 11.2%; CAS: 469-61-4; Lib: replib; ID: 15876.

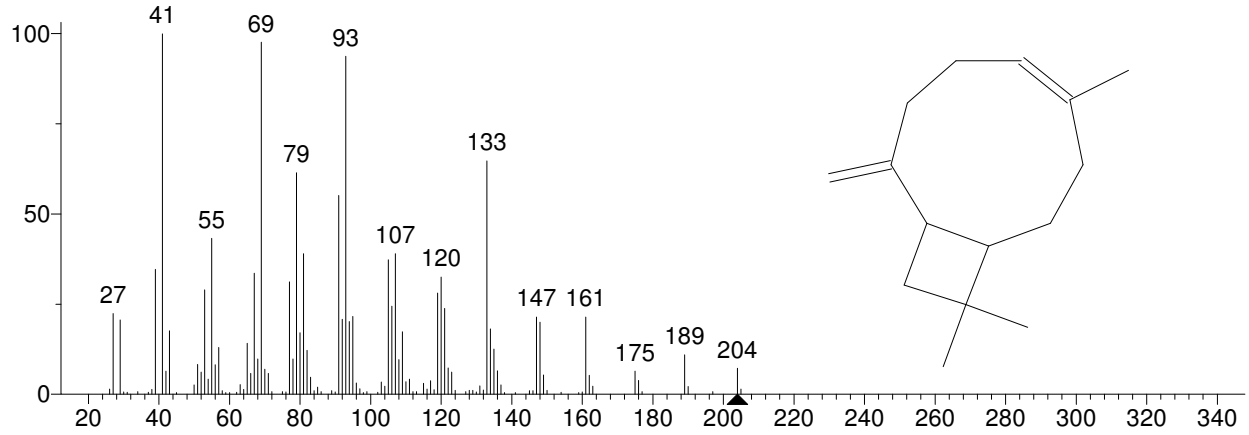


** Search Report Page 1 of 1 **

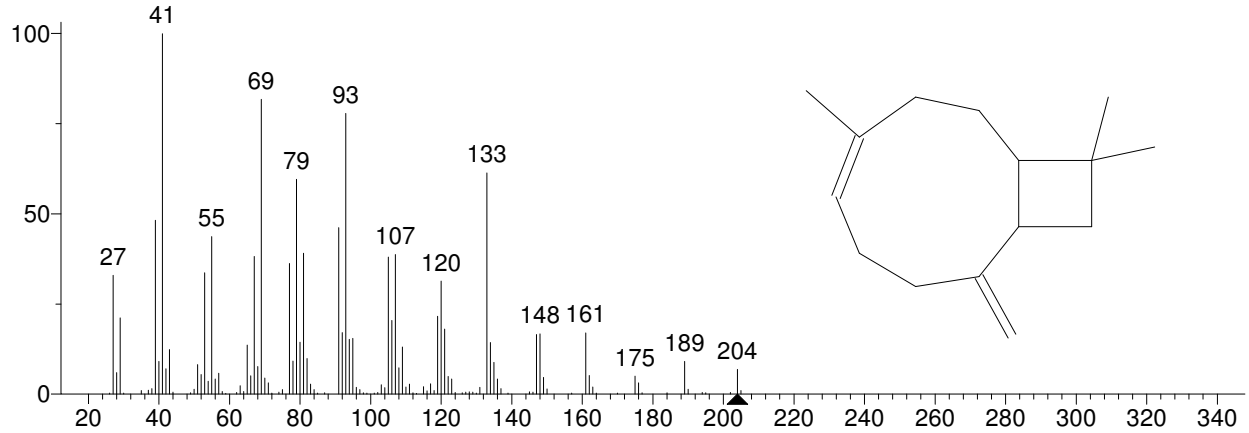
Unknown: Scan 922 (10.559 min): Imitation2.D
Compound in Library Factor = -168



Hit 1 : Caryophyllene
C15H24; MF: 883; RMF: 938; Prob 32.9%; CAS: 87-44-5; Lib: replib; ID: 1122.

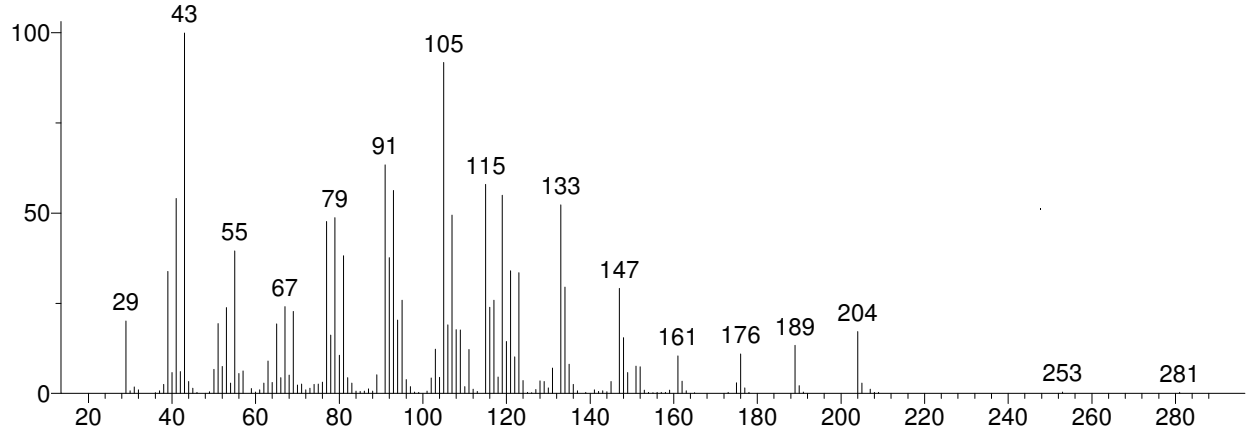


Hit 2 : Bicyclo[7.2.0]undec-4-ene, 4,11,11-trimethyl-8-methylene-,[1R-(1R*,4Z,9S*)]-
C15H24; MF: 860; RMF: 910; Prob 12.0%; CAS: 118-65-0; Lib: replib; ID: 1121.

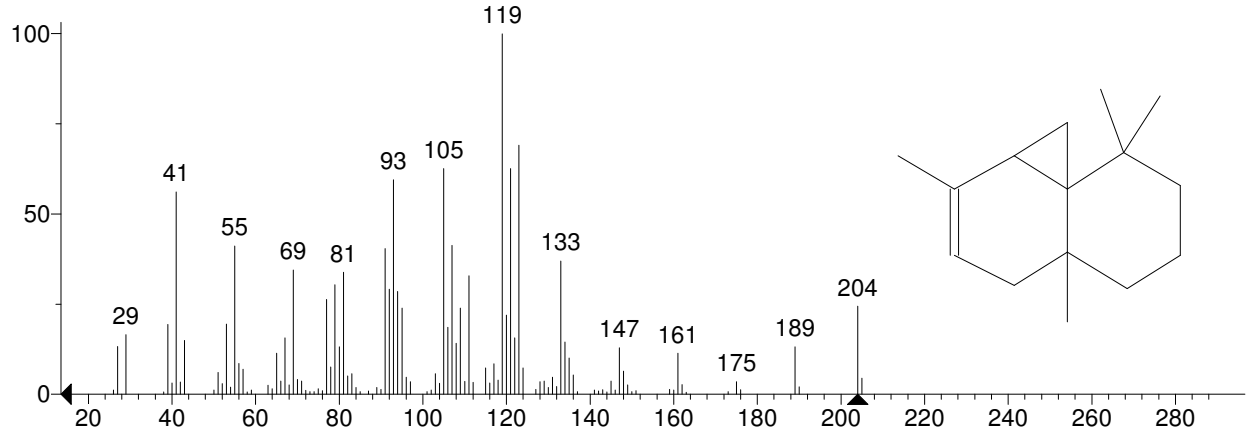


** Search Report Page 1 of 1 **

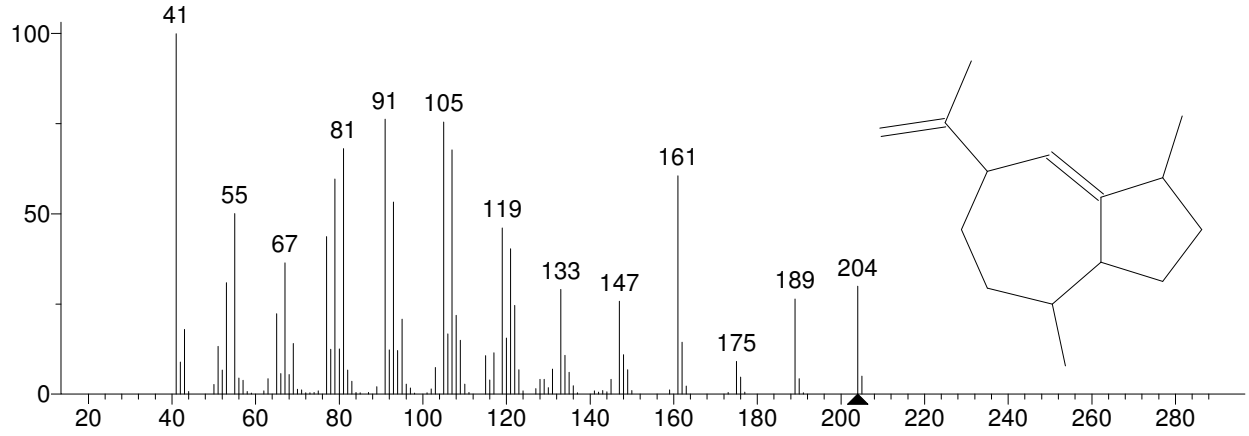
Unknown: Scan 933 (10.685 min): Imitation2.D
Compound in Library Factor = -331



Hit 1 : Thujopsene
C15H24; MF: 847; RMF: 857; Prob 9.31%; CAS: 470-40-6; Lib: mainlib; ID: 72266.

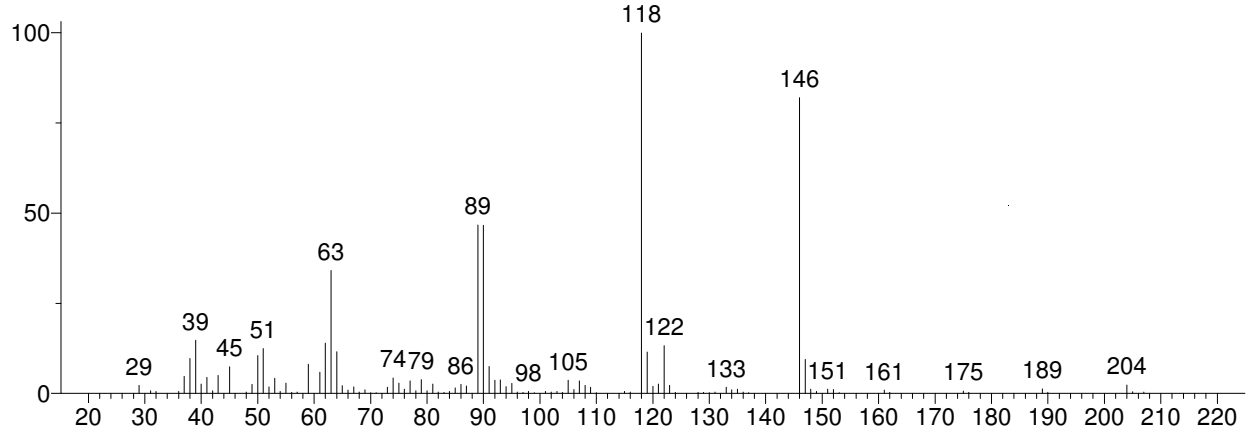


Hit 2 : Azulene, 1,2,3,3a,4,5,6,7-octahydro-1,4-dimethyl-7-(1-methylethenyl)-, [1R-(1.alpha.,3a.beta.,4.alpha.,7.beta.)]
C15H24; MF: 830; RMF: 846; Prob 5.08%; CAS: 22567-17-5; Lib: replib; ID: 1192.

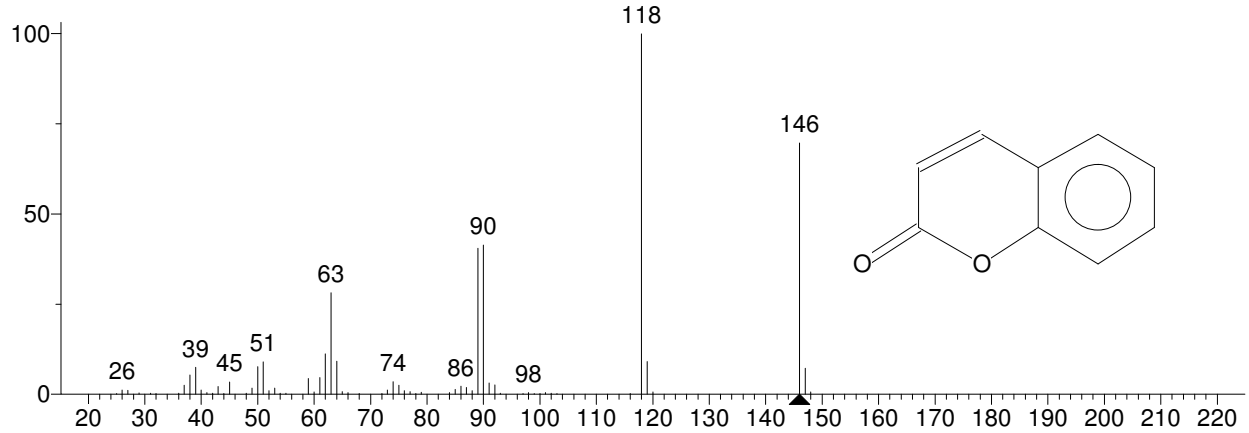


** Search Report Page 1 of 1 **

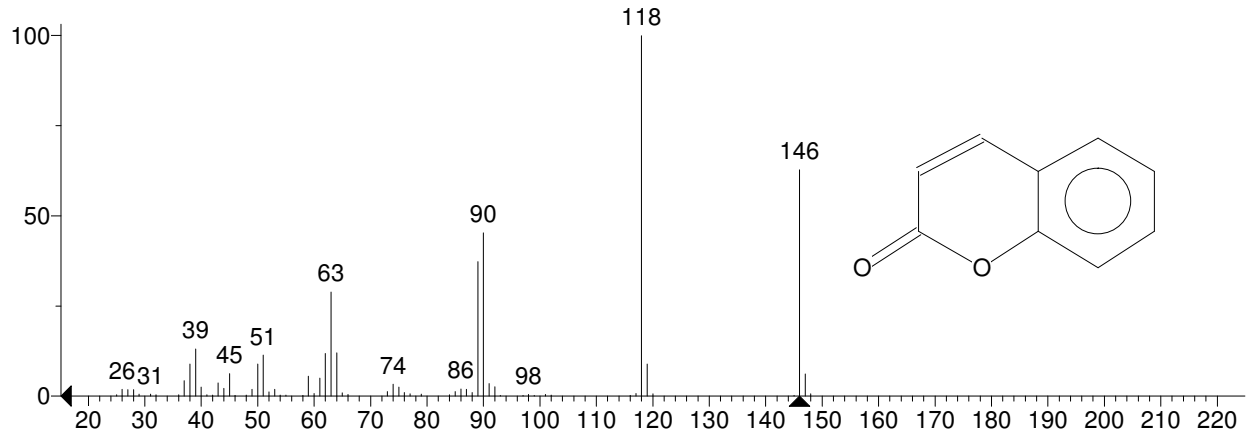
Unknown: Scan 945 (10.822 min): Imitation.D
Compound in Library Factor = -119



Hit 1 : 2H-1-Benzopyran-2-one
C9H6O2; MF: 840; RMF: 907; Prob 73.3%; CAS: 91-64-5; Lib: replib; ID: 15749.

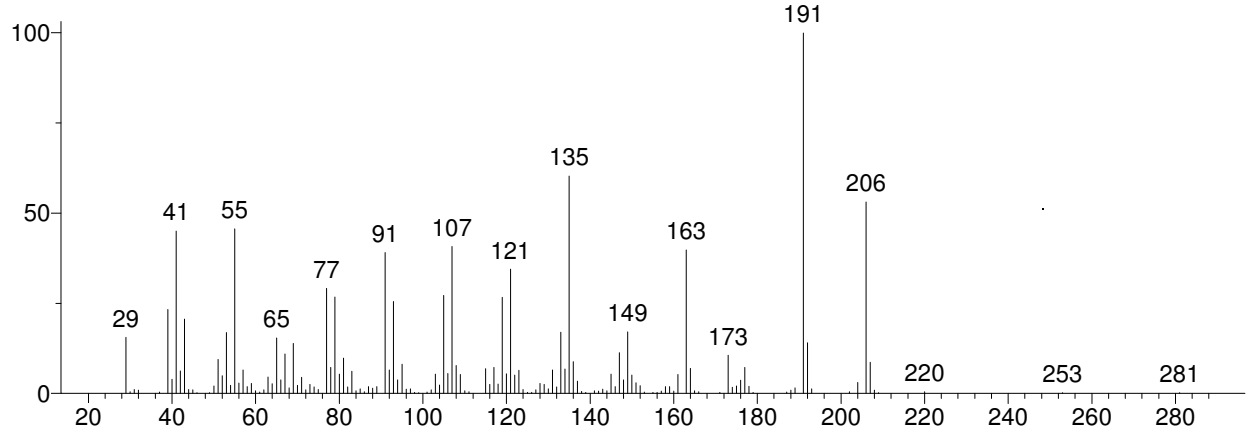


Hit 2 : 2H-1-Benzopyran-2-one
C9H6O2; MF: 839; RMF: 908; Prob 73.3%; CAS: 91-64-5; Lib: replib; ID: 15748.

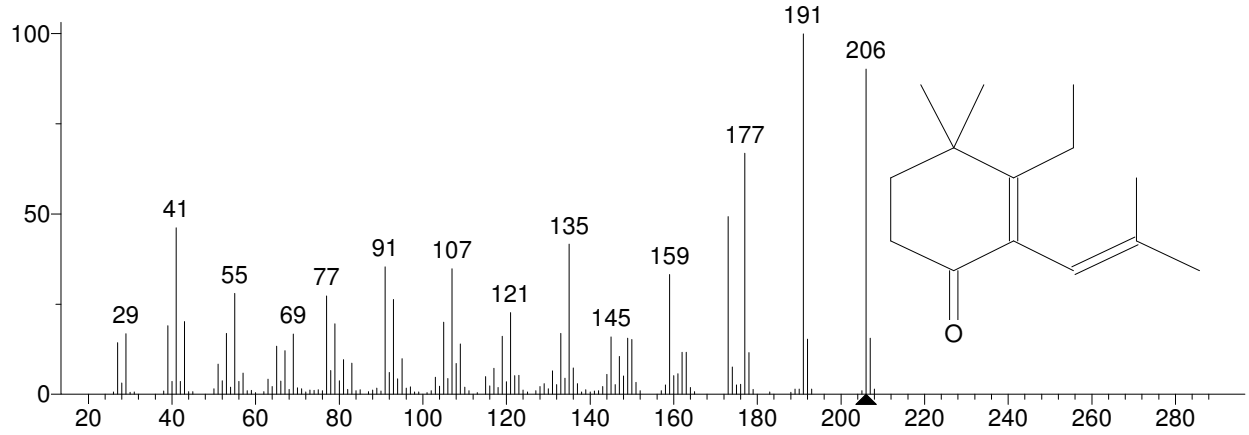


** Search Report Page 1 of 1 **

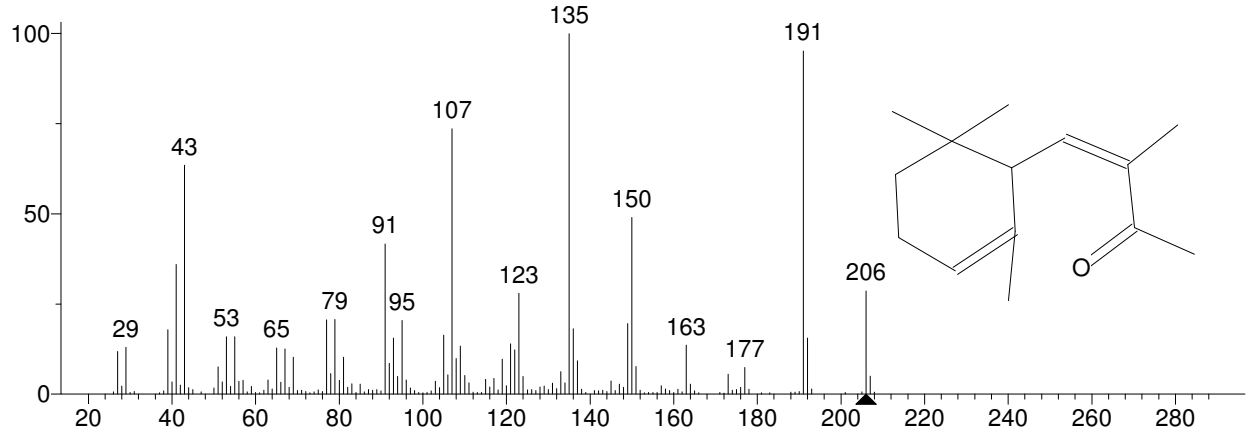
Unknown: Scan 987 (11.302 min): Imitation2.D
Compound in Library Factor = -328



Hit 1 : 3-Ethyl-4,4-dimethyl-2-(2-methylpropenyl)cyclohex-2-enone
C14H22O; MF: 836; RMF: 840; Prob 17.0%; CAS: 97452-08-9; Lib: mainlib; ID: 120006.

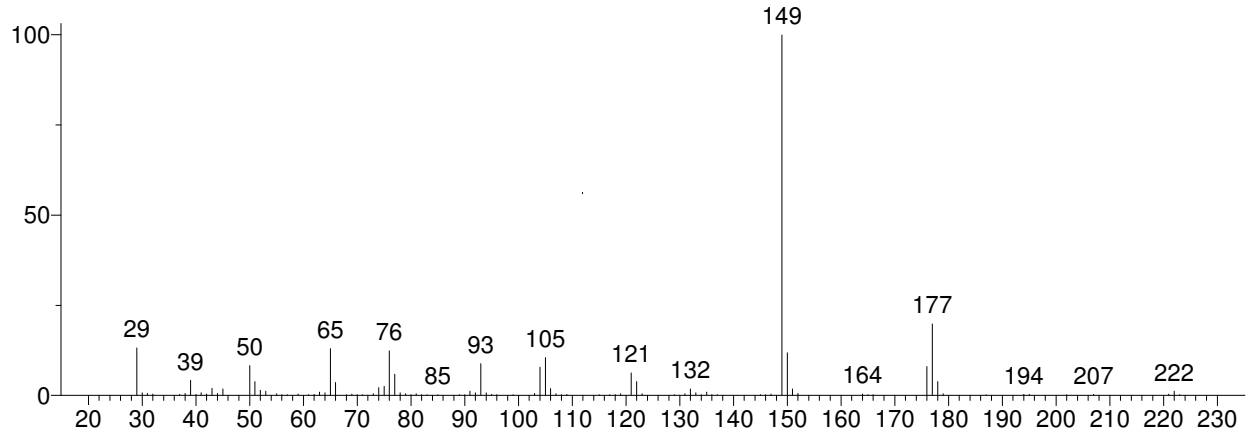


Hit 2 : 3-Buten-2-one, 3-methyl-4-(2,6,6-trimethyl-2-cyclohexen-1-yl)-
C14H22O; MF: 833; RMF: 836; Prob 15.0%; CAS: 13743-21-0; Lib: mainlib; ID: 86213.

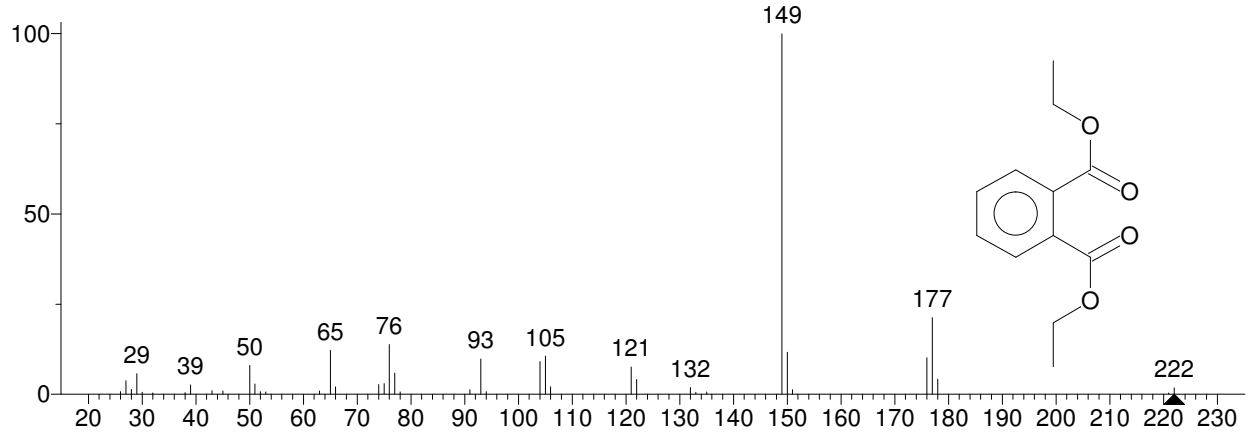


** Search Report Page 1 of 1 **

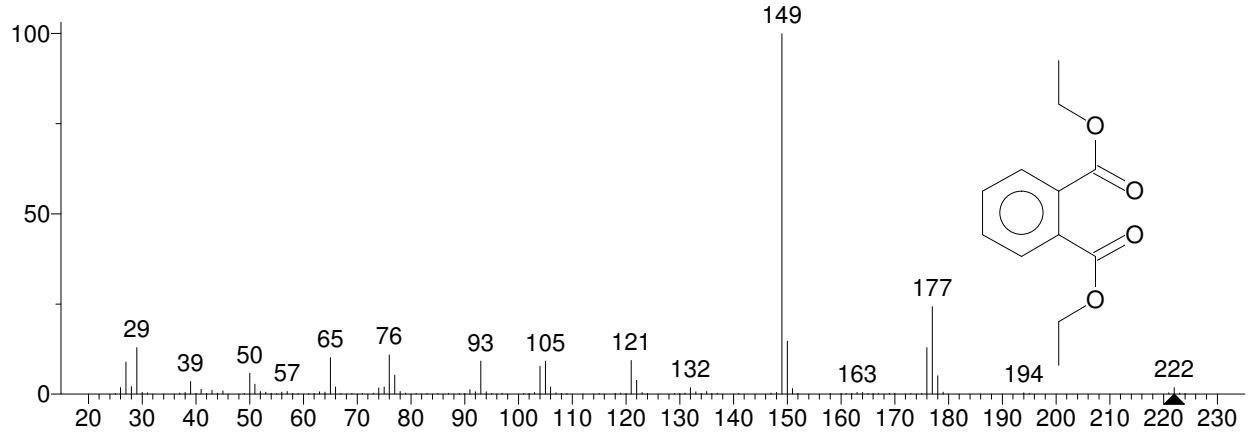
Unknown: Scan 1050 (12.021 min): Imitation2.D
Compound in Library Factor = 398



Hit 1 : Diethyl Phthalate
C12H14O4; MF: 942; RMF: 962; Prob 85.9%; CAS: 84-66-2; Lib: replib; ID: 19810.

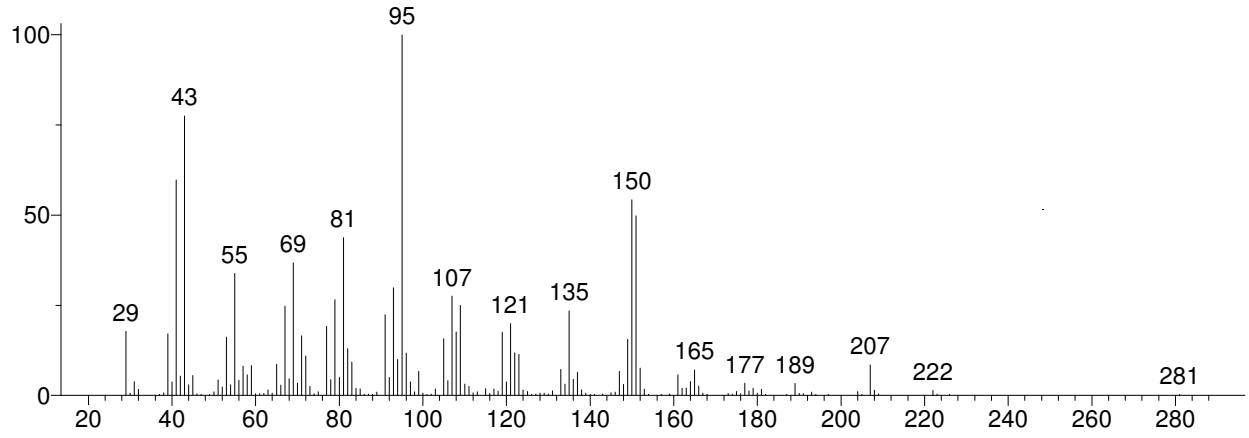


Hit 2 : Diethyl Phthalate
C12H14O4; MF: 920; RMF: 923; Prob 85.9%; CAS: 84-66-2; Lib: replib; ID: 19812.

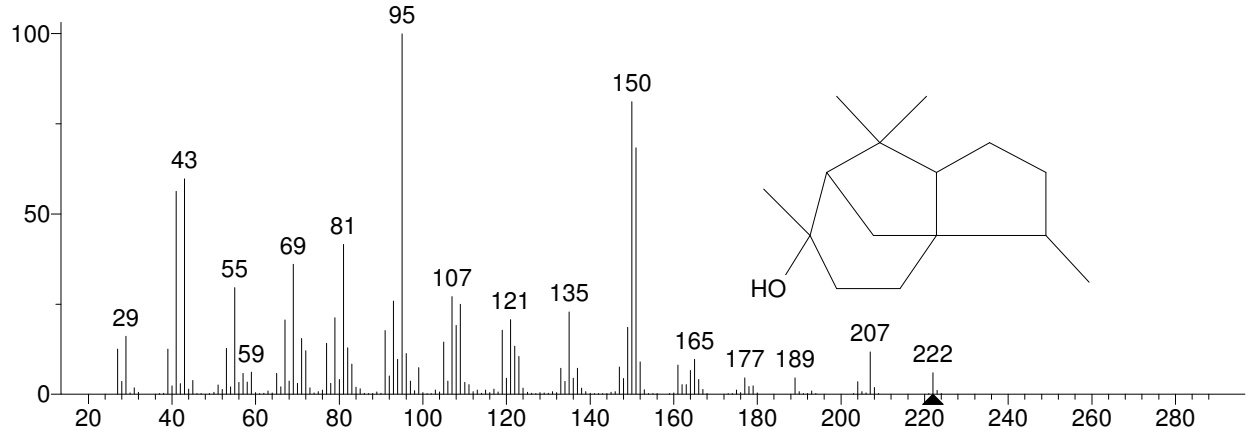


** Search Report Page 1 of 1 **

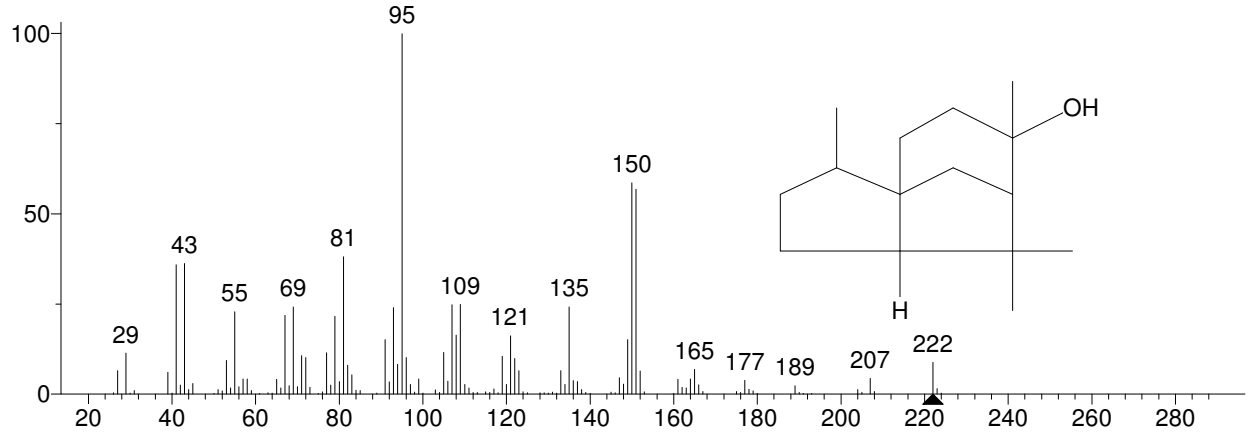
Unknown: Scan 1070 (12.249 min): Imitation2.D
Compound in Library Factor = -104



Hit 1 : Cedrol
C15H26O; MF: 910; RMF: 913; Prob 39.8%; CAS: 77-53-2; Lib: mainlib; ID: 53559.

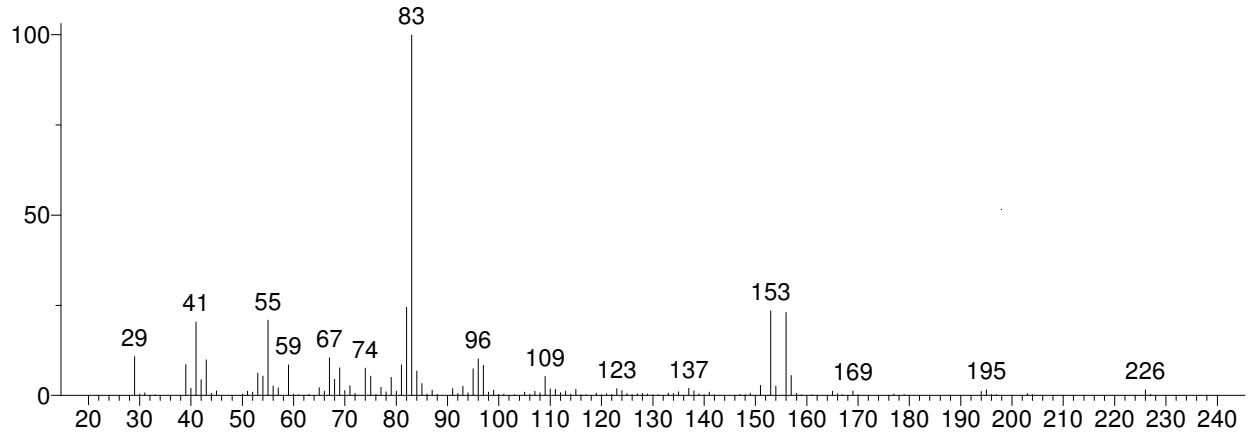


Hit 2 : Epicedrol
C15H26O; MF: 906; RMF: 912; Prob 33.7%; CAS: ; Lib: mainlib; ID: 53558.

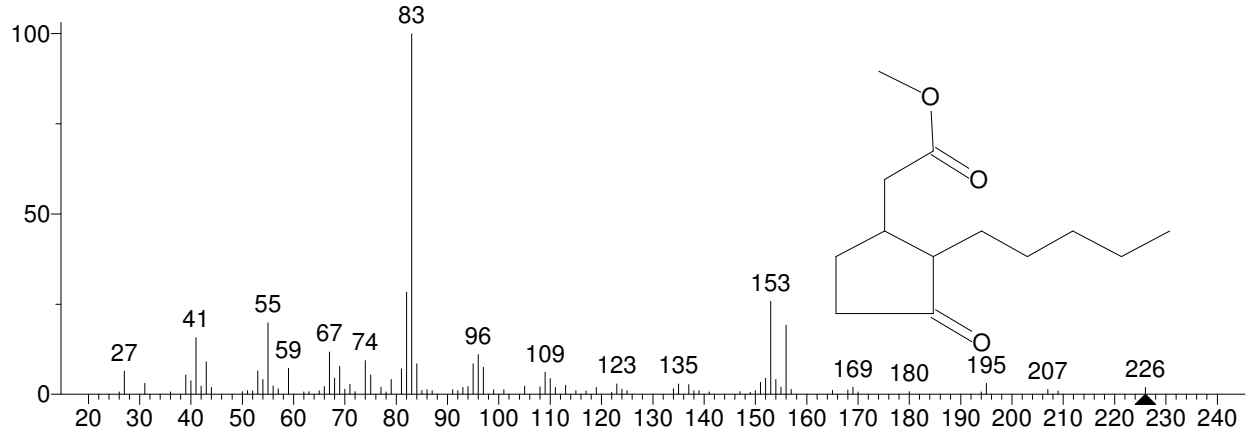


** Search Report Page 1 of 1 **

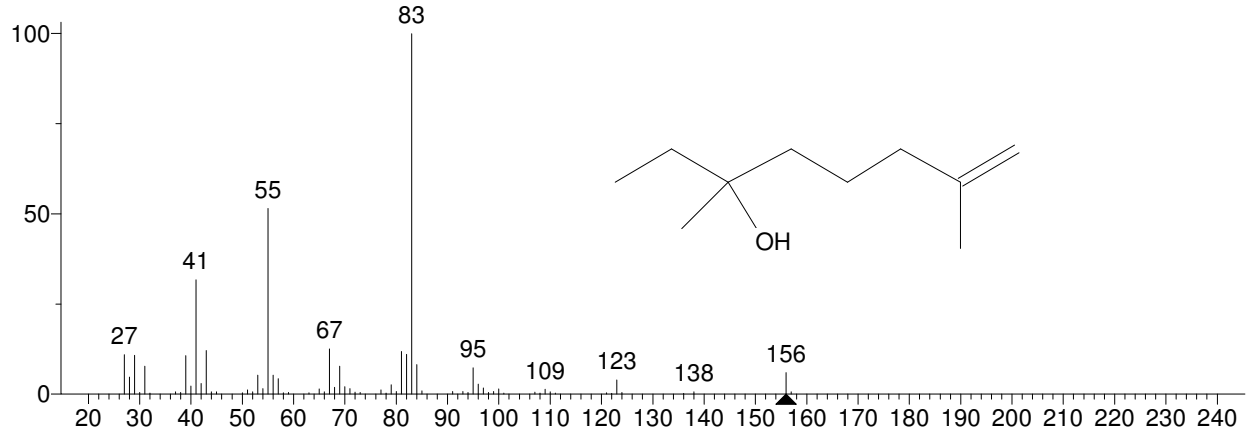
Unknown: Scan 1098 (12.569 min): Imitation.D
Compound in Library Factor = -113



Hit 1 : Cyclopentaneacetic acid, 3-oxo-2-pentyl-, methyl ester
C13H22O3; MF: 806; RMF: 828; Prob 75.3%; CAS: 24851-98-7; Lib: mainlib; ID: 41498.

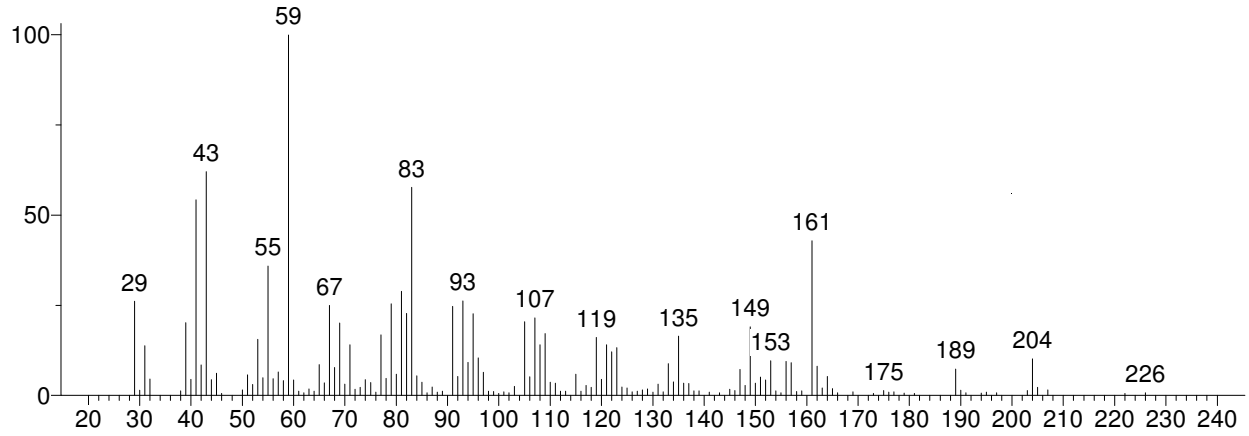


Hit 2 : Isocitronellol
C10H20O; MF: 678; RMF: 790; Prob 3.23%; CAS: 18479-52-2; Lib: mainlib; ID: 41109.

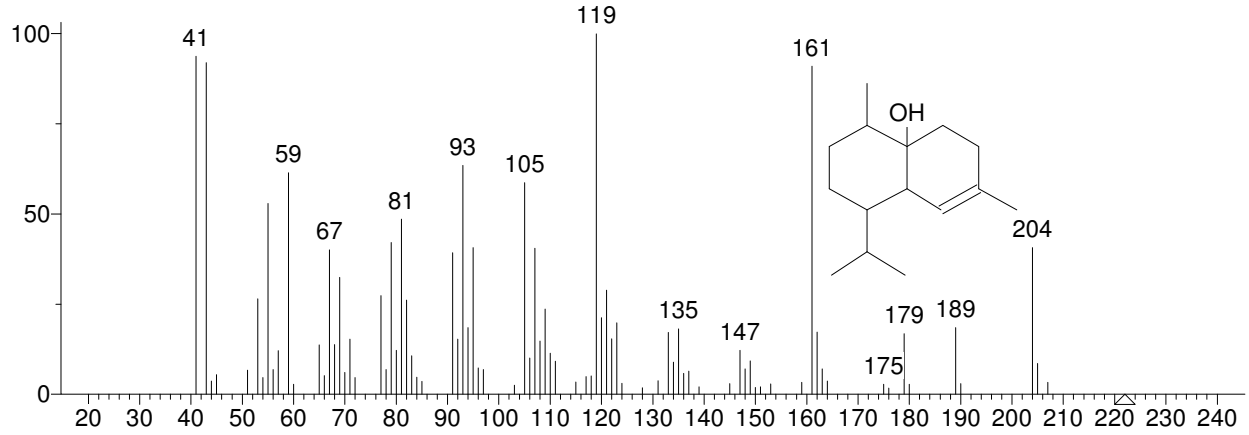


** Search Report Page 1 of 1 **

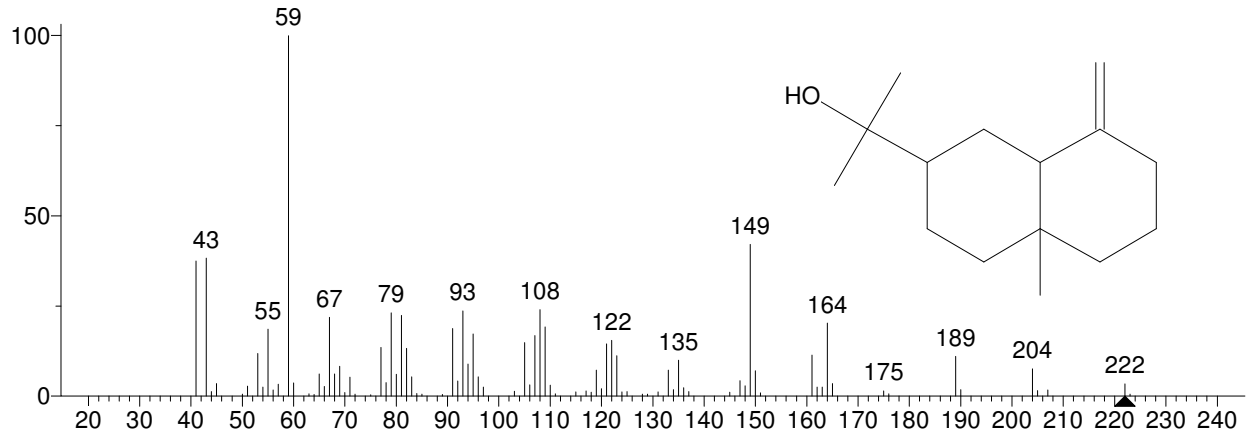
Unknown: Scan 1104 (12.638 min): Imitation2.D
Compound in Library Factor = -688



Hit 1 : Cubenol
C15H26O; MF: 807; RMF: 862; Prob 15.2%; CAS: 21284-22-0; Lib: mainlib; ID: 71320.

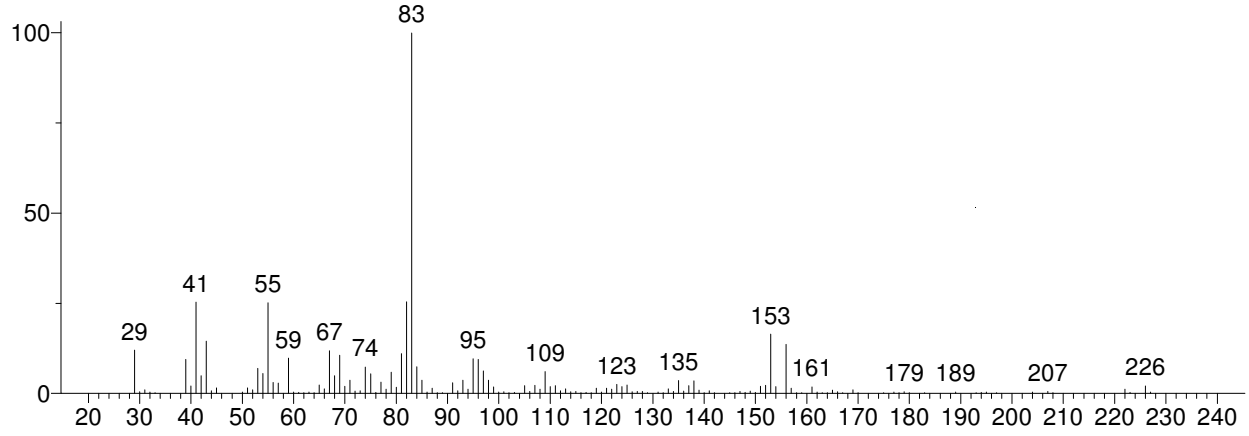


Hit 2 : 2-Naphthalenemethanol, decahydro-.alpha.,.alpha.,4a-trimethyl-8-methylene-, [2R-(2.alpha.,4a.alpha.,8a.beta.
C15H26O; MF: 798; RMF: 854; Prob 11.0%; CAS: 473-15-4; Lib: mainlib; ID: 25231.

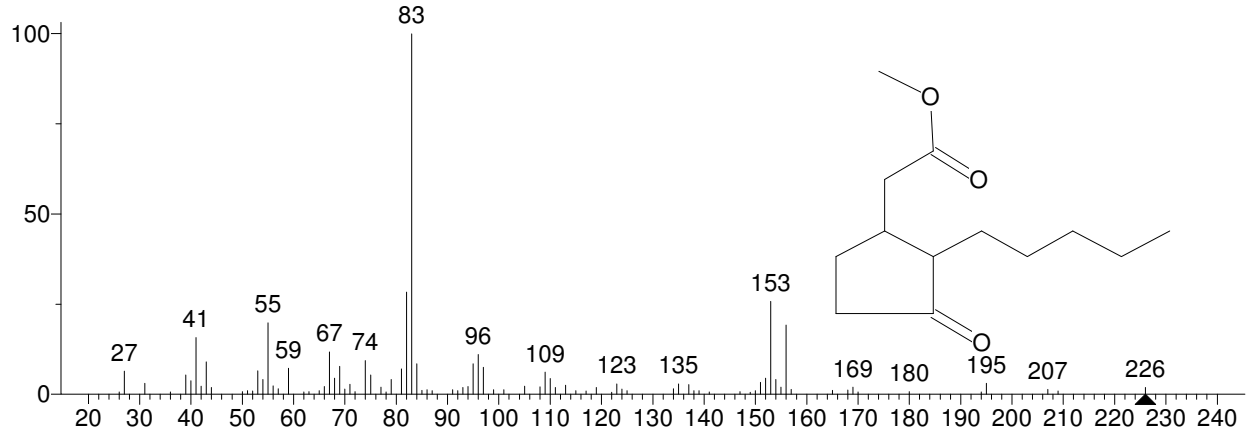


** Search Report Page 1 of 1 **

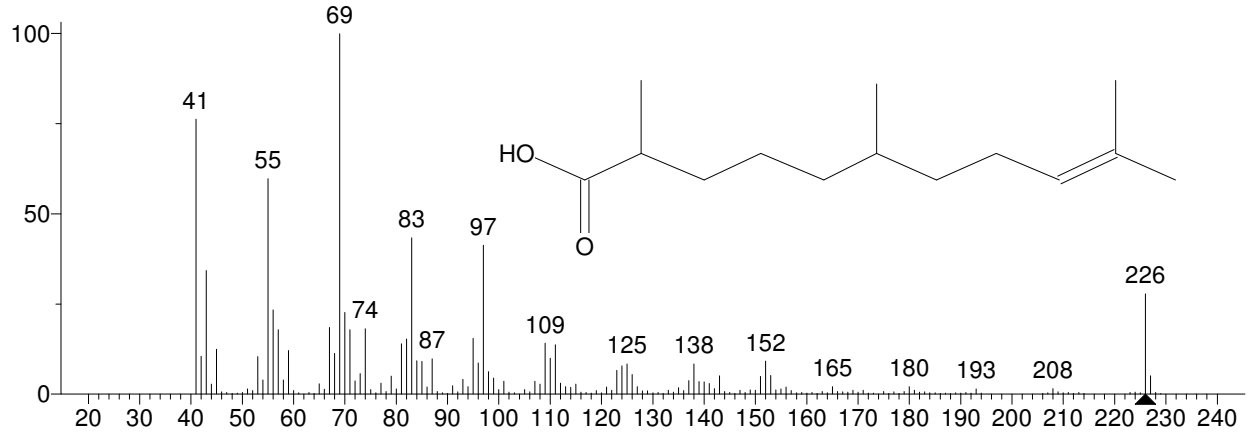
Unknown: Scan 1114 (12.752 min): Imitation2.D
Compound in Library Factor = -143



Hit 1 : Cyclopentaneacetic acid, 3-oxo-2-pentyl-, methyl ester
C13H22O3; MF: 799; RMF: 843; Prob 46.2%; CAS: 24851-98-7; Lib: mainlib; ID: 41498.

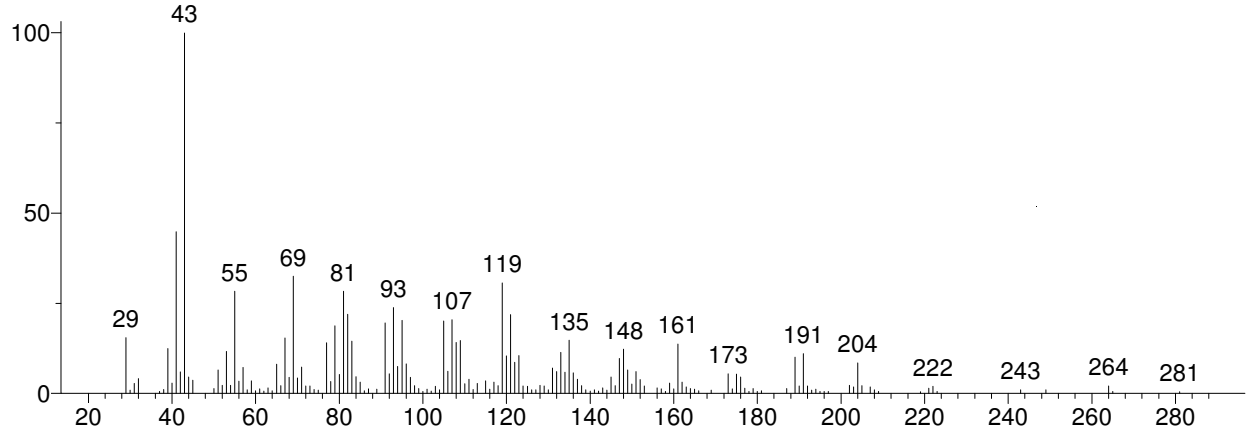


Hit 2 : 9-Undecenoic acid, 2,6,10-trimethyl-
C14H26O2; MF: 696; RMF: 700; Prob 3.26%; Lib: mainlib; ID: 28039.

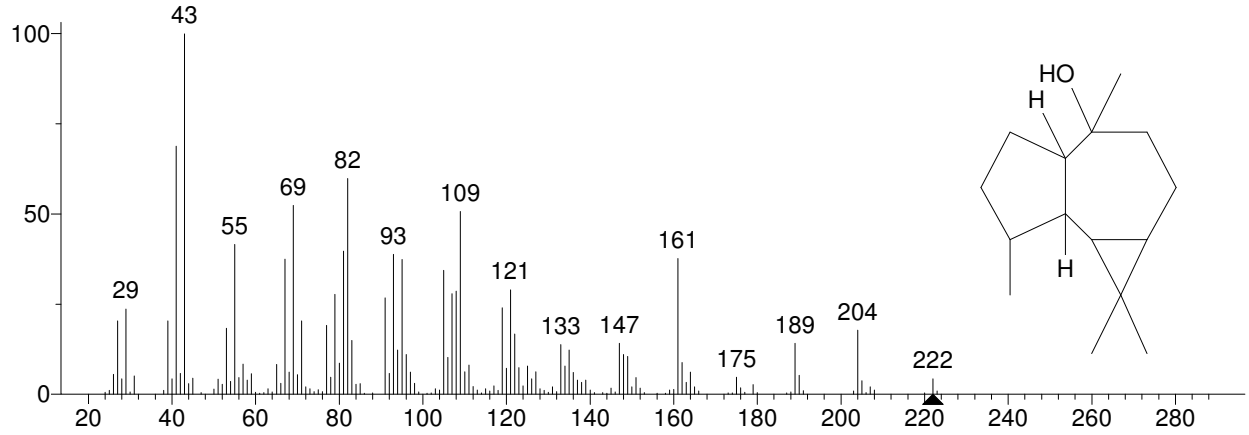


** Search Report Page 1 of 1 **

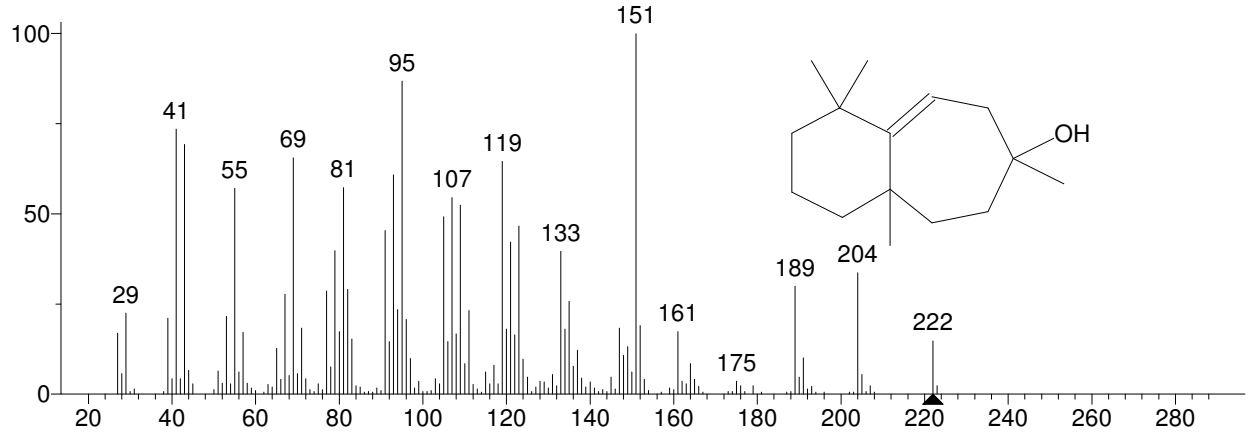
Unknown: Scan 1145 (13.106 min): Imitation2.D
Compound in Library Factor = -407



Hit 1 : Epiglobulol
C15H26O; MF: 819; RMF: 841; Prob 10.8%; Lib: mainlib; ID: 5651.

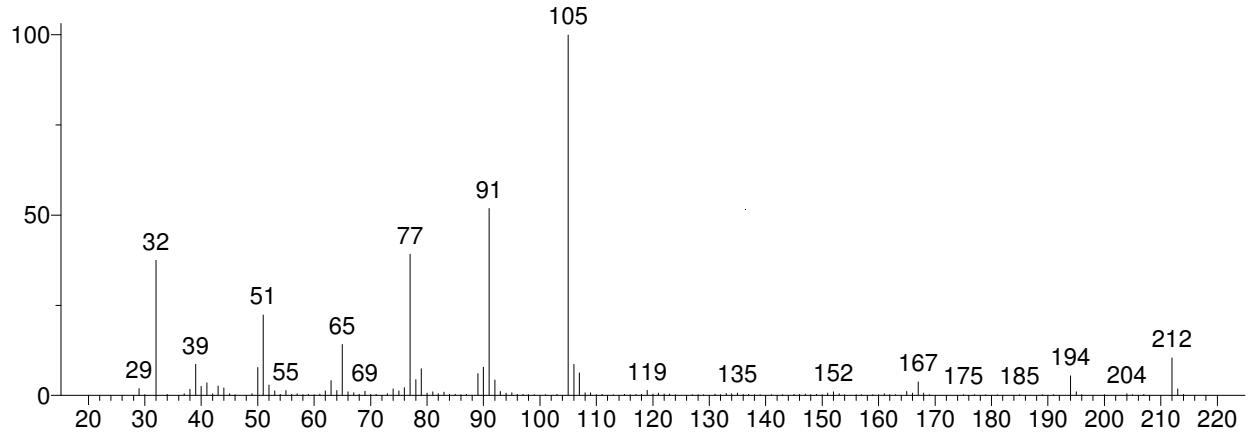


Hit 2 : 1H-Benzocycloheptene-7-ol, 2,3,4,4a,5,6,7,8-octahydro-1,1,4a,7-tetramethyl-, cis-
C15H26O; MF: 815; RMF: 829; Prob 9.12%; CAS: 6892-80-4; Lib: replib; ID: 19977.

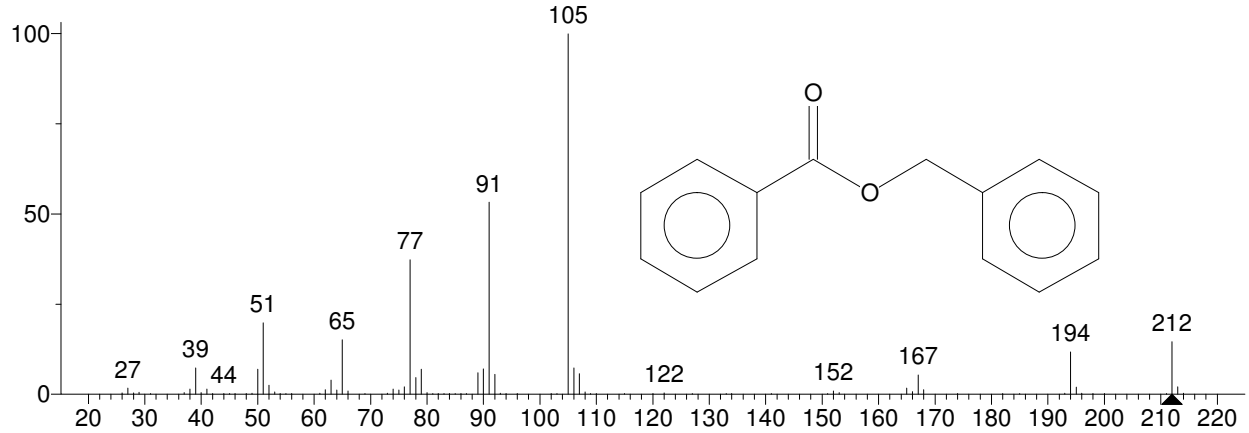


** Search Report Page 1 of 1 **

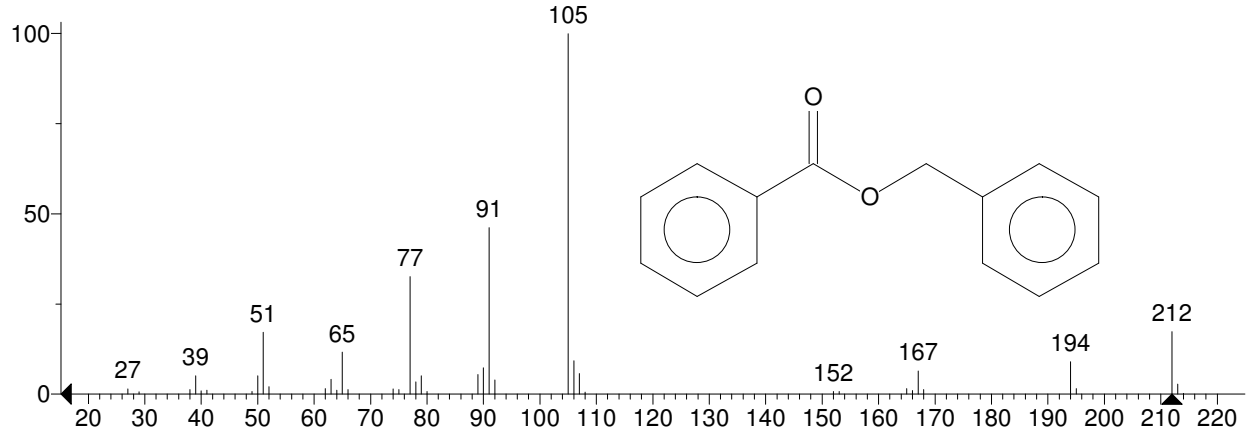
Unknown: Scan 1177 (13.471 min): Imitation.D
Compound in Library Factor = 278



Hit 1 : Benzyl Benzoate
C14H12O2; MF: 888; RMF: 938; Prob 88.8%; CAS: 120-51-4; Lib: replib; ID: 13845.

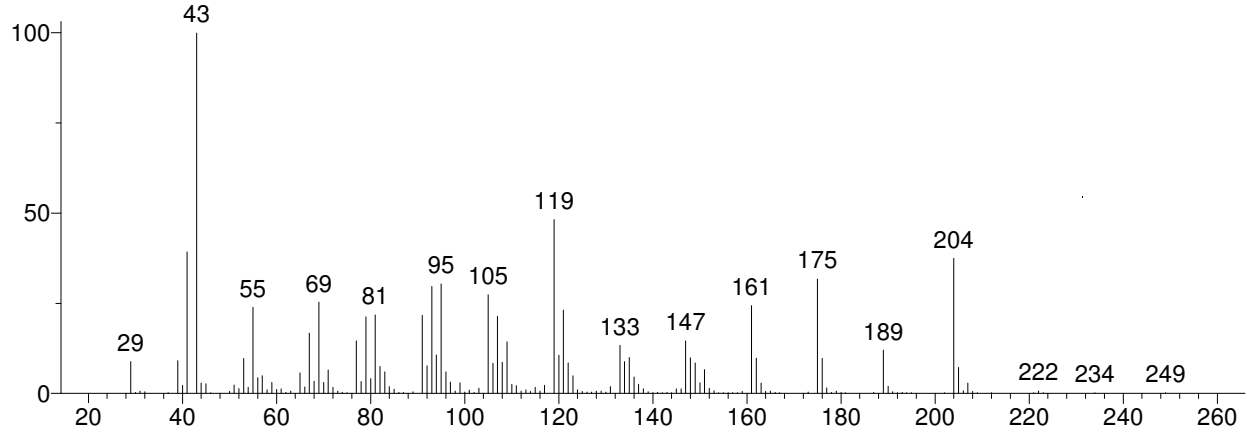


Hit 2 : Benzyl Benzoate
C14H12O2; MF: 881; RMF: 941; Prob 88.8%; CAS: 120-51-4; Lib: mainlib; ID: 61201.

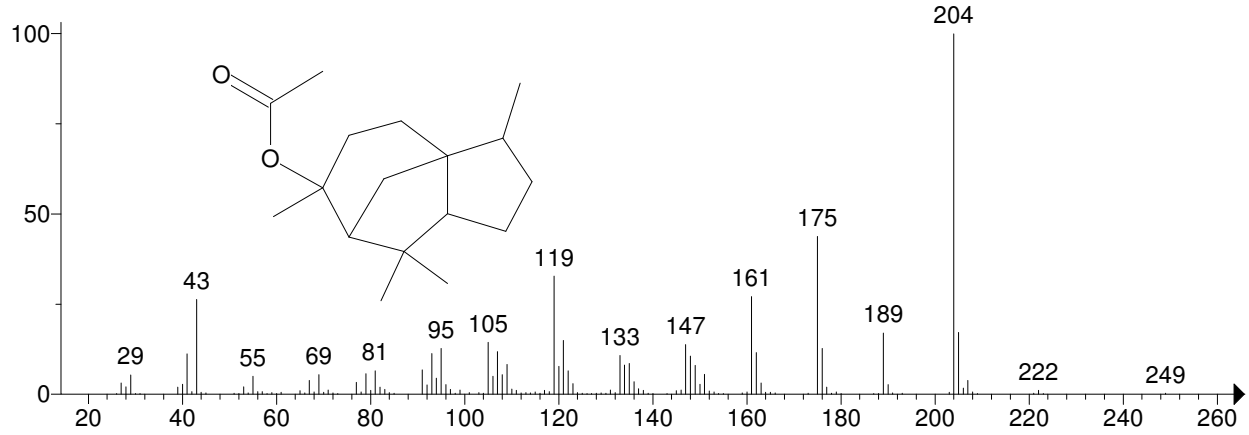


** Search Report Page 1 of 1 **

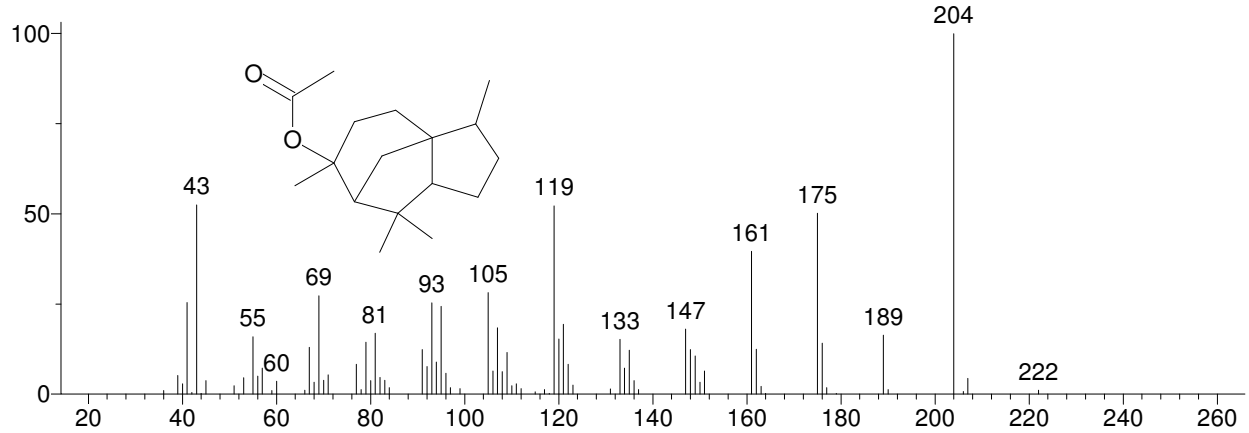
Unknown: Scan 1184 (13.551 min): Imitation2.D
Compound in Library Factor = -197



Hit 1 : 1H-3a,7-Methanoazulen-6-ol, octahydro-3,6,8,8-tetramethyl-, acetate, [3R-(3.alpha.,3a.beta.,6.alpha.,7.beta.,8
C17H28O2; MF: 876; RMF: 878; Prob 17.8%; CAS: 77-54-3; Lib: mainlib; ID: 125471.

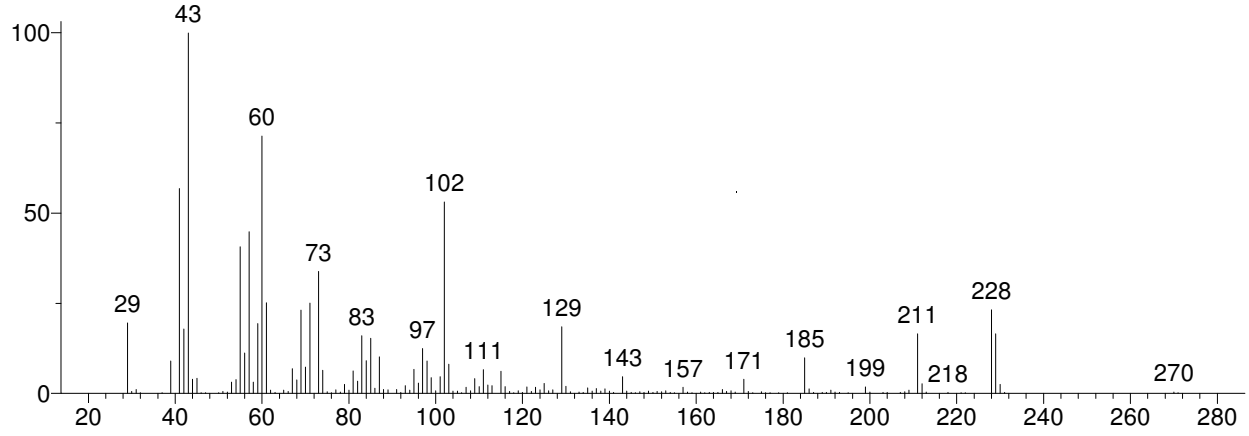


Hit 2 : 1H-3a,7-Methanoazulen-6-ol, octahydro-3,6,8,8-tetramethyl-, acetate, [3R-(3.alpha.,3a.beta.,6.alpha.,7.beta.,8
C17H28O2; MF: 867; RMF: 897; Prob 17.8%; CAS: 77-54-3; Lib: replib; ID: 24049.

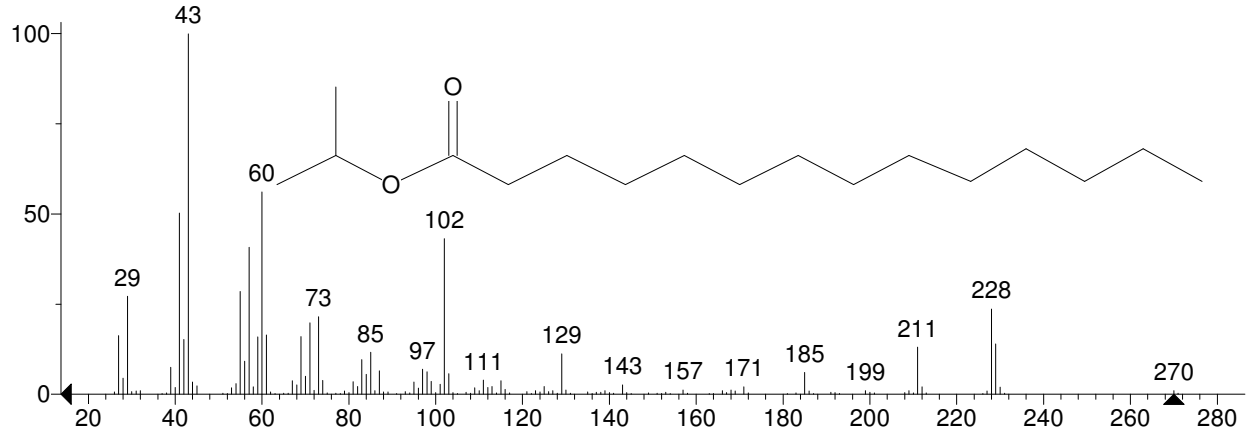


** Search Report Page 1 of 1 **

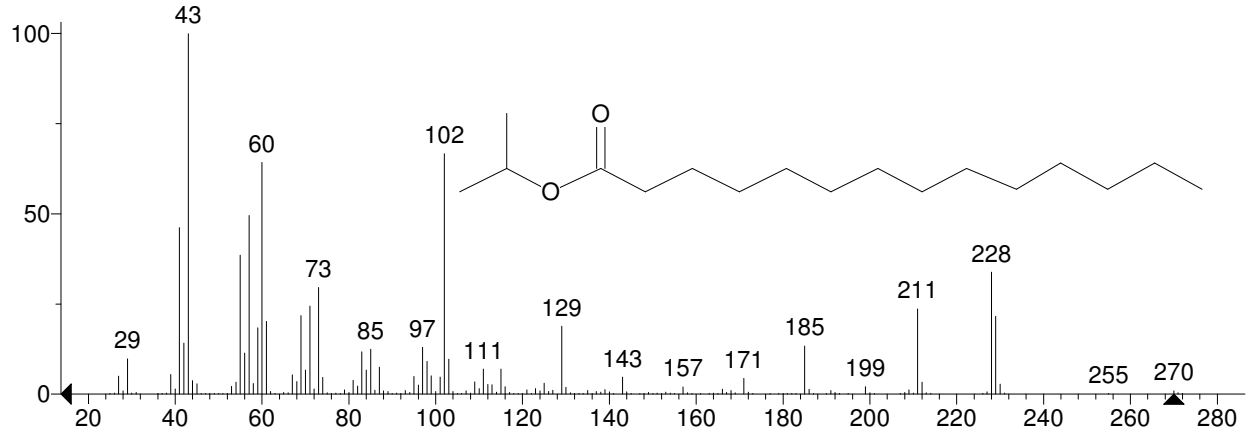
Unknown: Scan 1204 (13.779 min): Imitation2.D
Compound in Library Factor = 224



Hit 1 : Isopropyl Myristate
C17H34O2; MF: 909; RMF: 914; Prob 77.4%; CAS: 110-27-0; Lib: replib; ID: 2233.

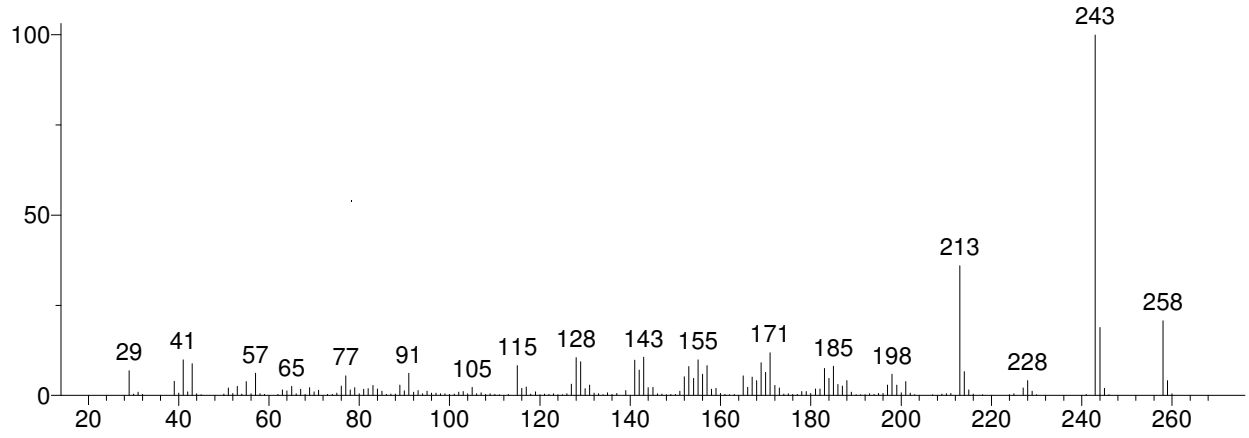


Hit 2 : Isopropyl Myristate
C17H34O2; MF: 908; RMF: 912; Prob 77.4%; CAS: 110-27-0; Lib: mainlib; ID: 9582.

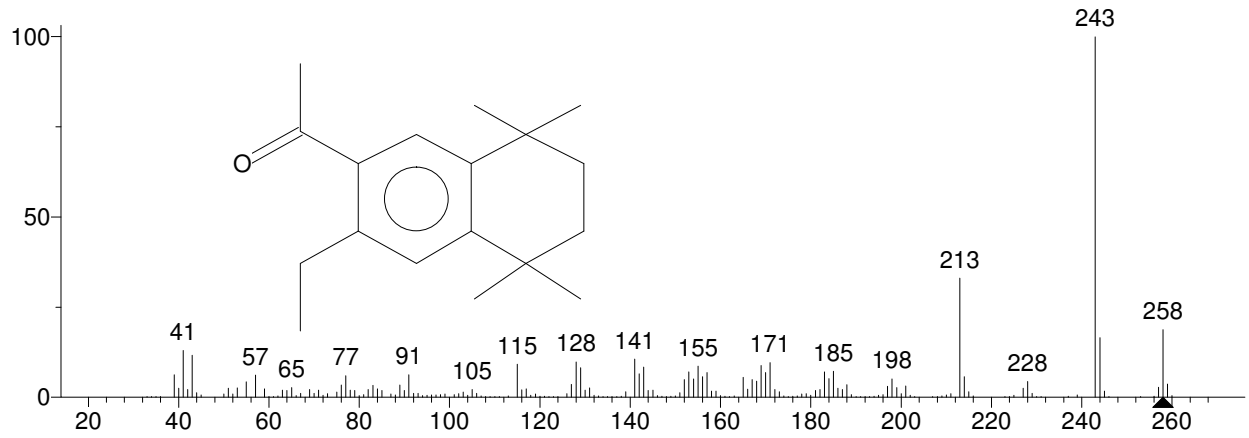


** Search Report Page 1 of 1 **

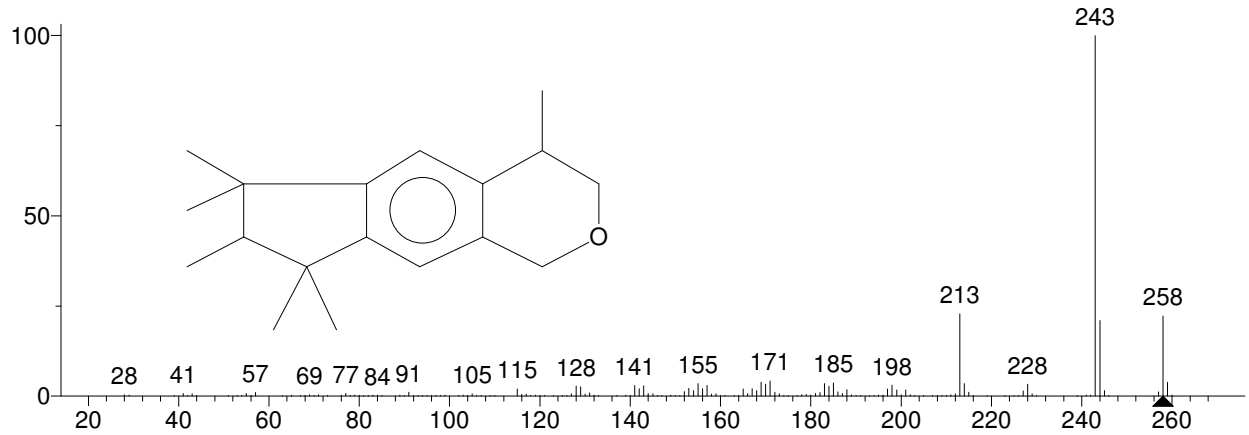
Unknown: Scan 1240 (14.190 min): Imitation2.D
Compound in Library Factor = 473



Hit 1 : 7-Acetyl-6-ethyl-1,1,4,4-tetramethyltetralin
C18H26O; MF: 926; RMF: 928; Prob 80.2%; CAS: 88-29-9; Lib: replib; ID: 25619.

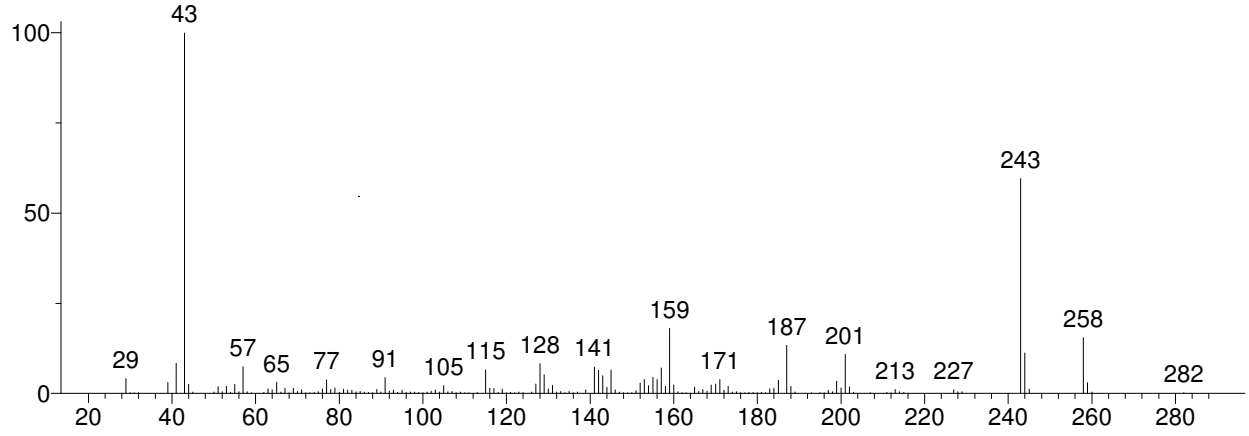


Hit 2 : Cyclopenta[g]-2-benzopyran, 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethyl-
C18H26O; MF: 884; RMF: 895; Prob 18.0%; CAS: 1222-05-5; Lib: mainlib; ID: 138703.

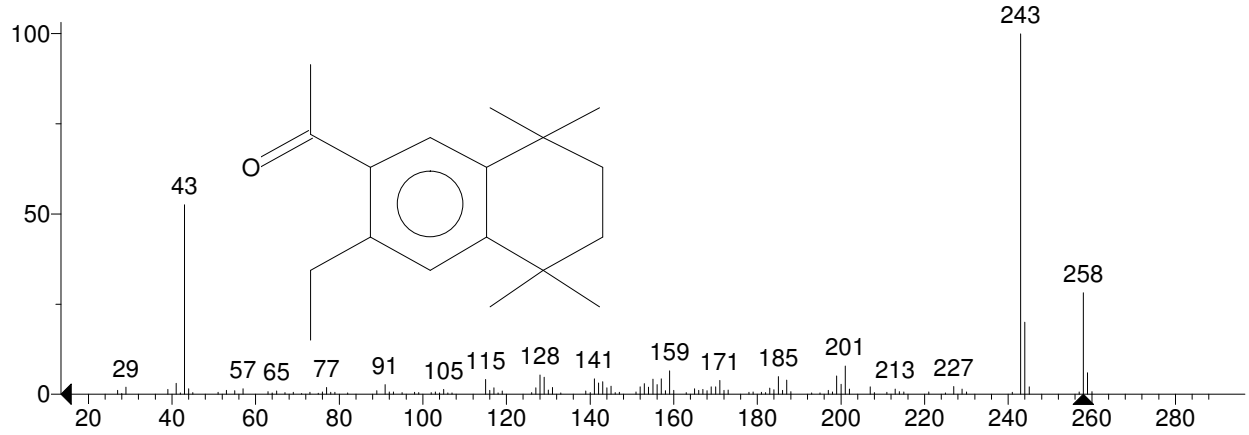


** Search Report Page 1 of 1 **

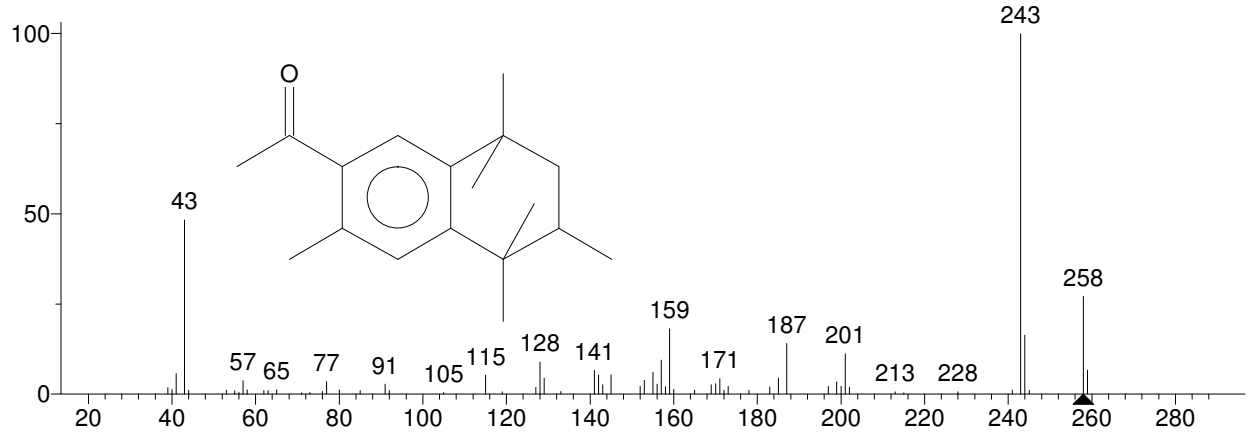
Unknown: Scan 1246 (14.259 min): Imitation2.D
Compound in Library Factor = 204



Hit 1 : 7-Acetyl-6-ethyl-1,1,4,4-tetramethyltetralin
C18H26O; MF: 867; RMF: 879; Prob 59.2%; CAS: 88-29-9; Lib: replib; ID: 25601.

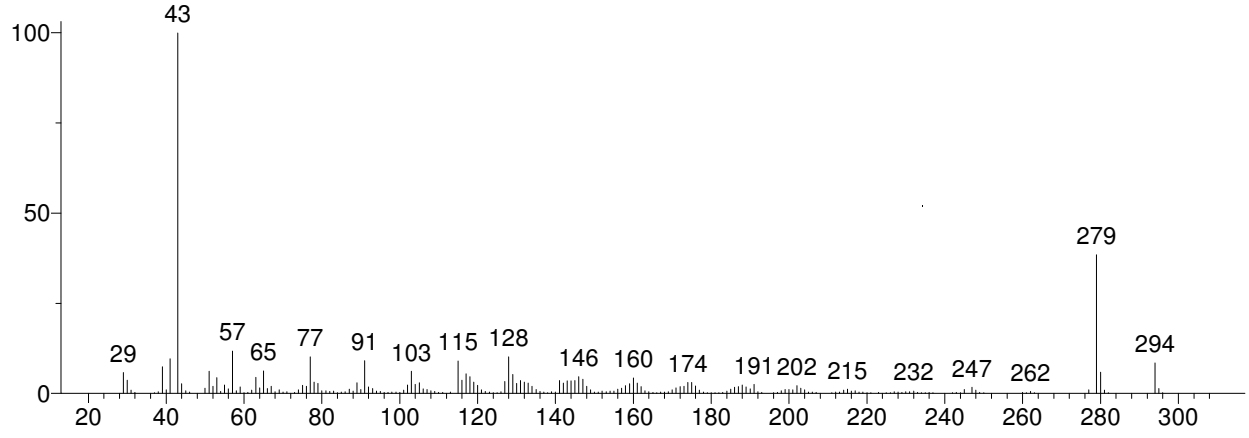


Hit 2 : Ethanone, 1-(5,6,7,8-tetrahydro-3,5,5,6,8,8-hexamethyl-2-naphthalenyl)-
C18H26O; MF: 853; RMF: 914; Prob 37.1%; CAS: 1506-02-1; Lib: mainlib; ID: 138466.

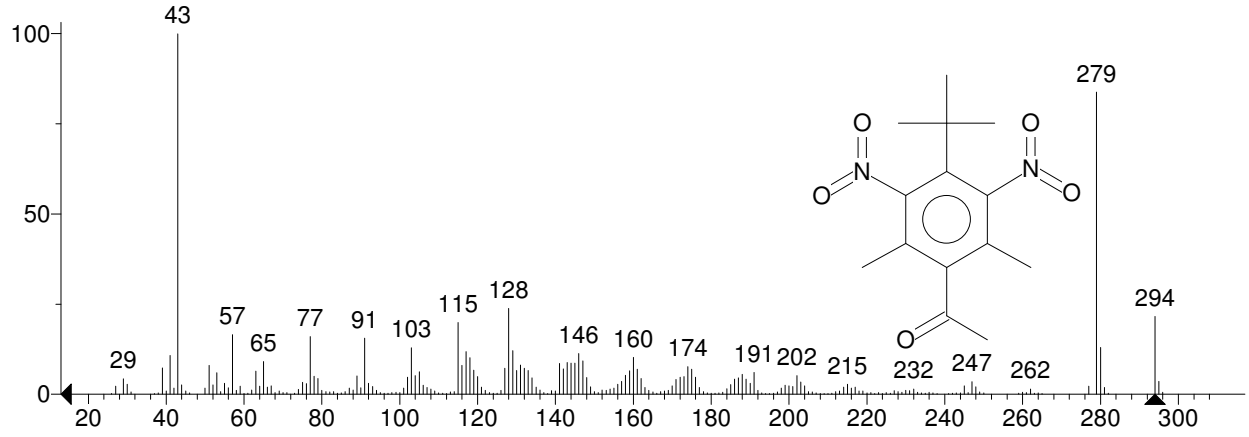


** Search Report Page 1 of 1 **

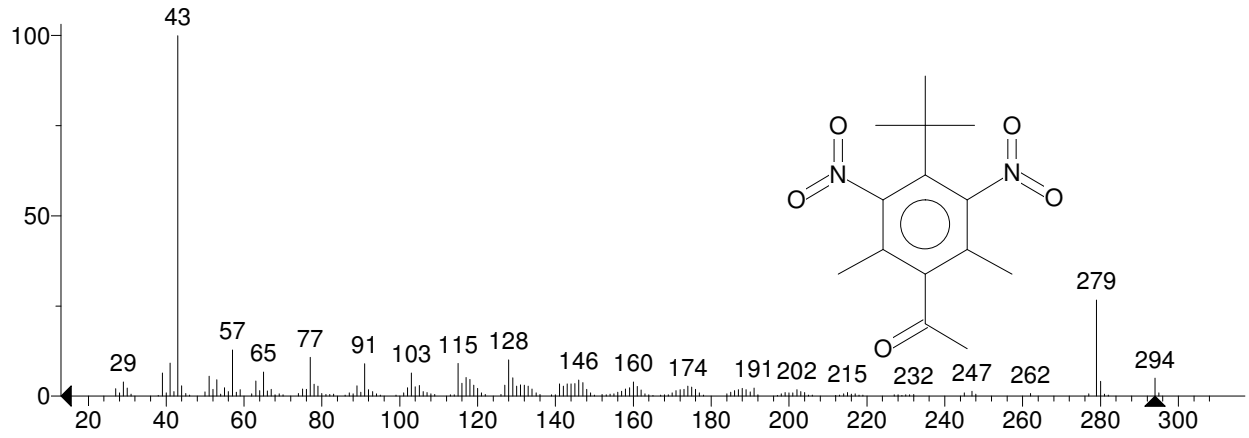
Unknown: Scan 1321 (15.115 min): Imitation2.D
Compound in Library Factor = 993



Hit 1 : Ethanone, 1-[4-(1,1-dimethylethyl)-2,6-dimethyl-3,5-dinitrophenyl]-
C14H18N2O5; MF: 954; RMF: 954; Prob 93.2%; CAS: 81-14-1; Lib: replib; ID: 3079.

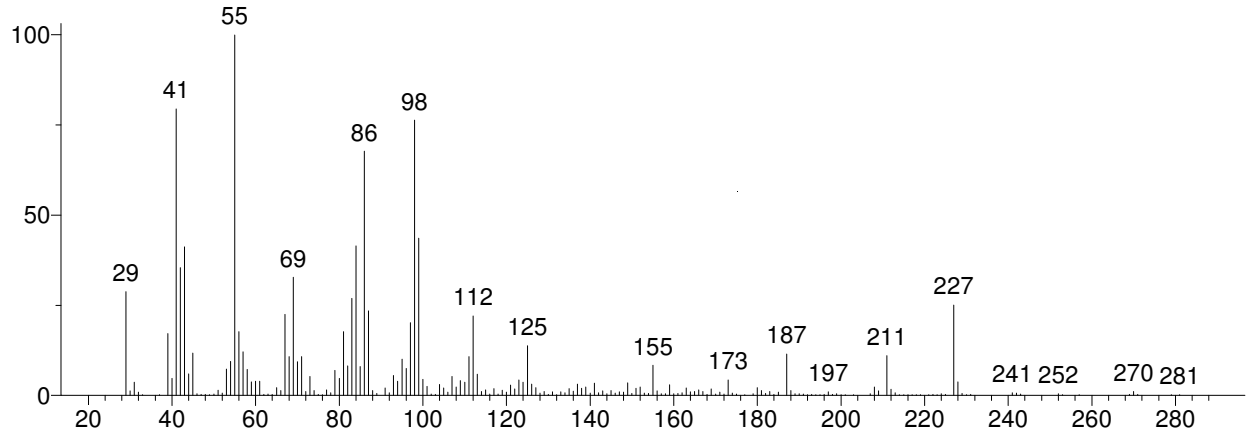


Hit 2 : Ethanone, 1-[4-(1,1-dimethylethyl)-2,6-dimethyl-3,5-dinitrophenyl]-
C14H18N2O5; MF: 952; RMF: 960; Prob 93.2%; CAS: 81-14-1; Lib: replib; ID: 3078.

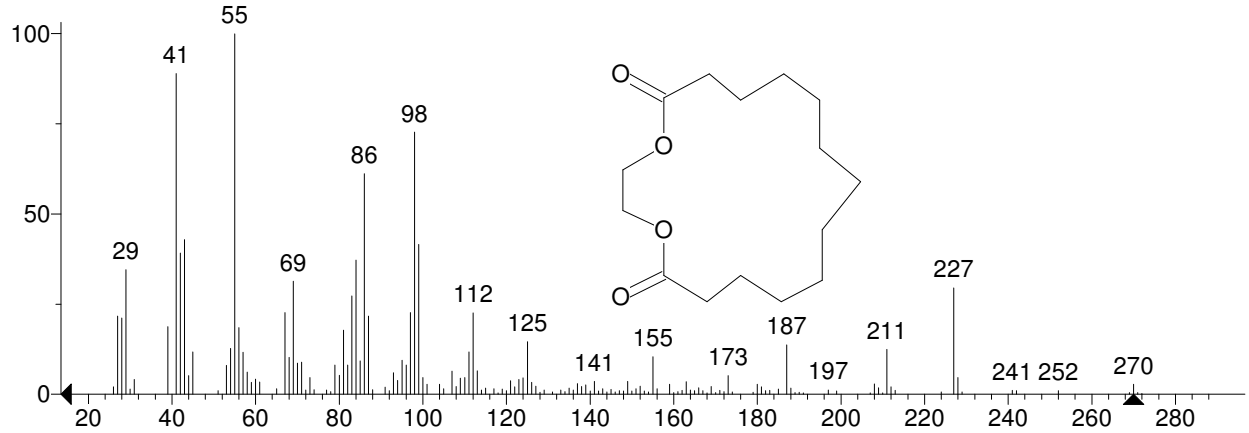


** Search Report Page 1 of 1 **

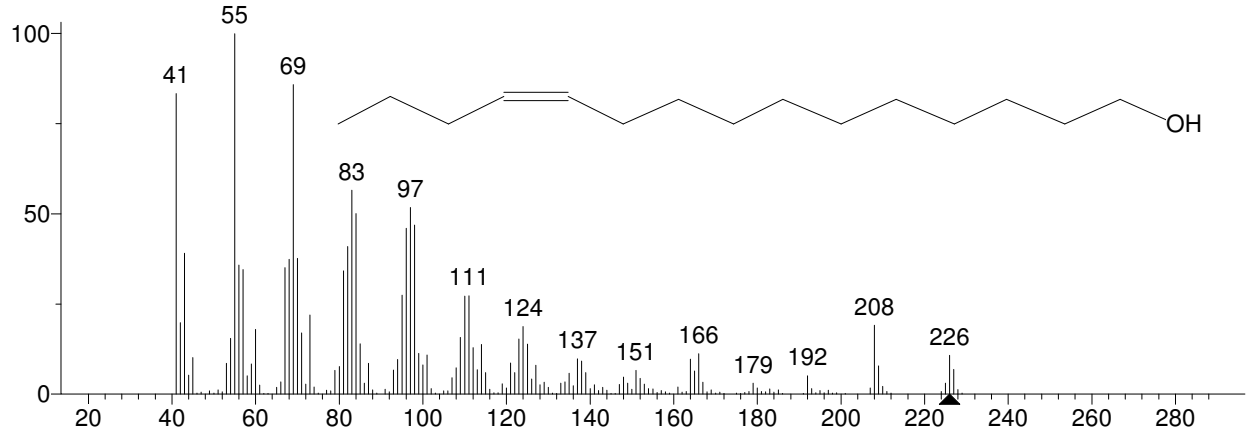
Unknown: Scan 1342 (15.355 min): Imitation.D
Compound in Library Factor = 797



Hit 1 : Ethylene brassylate
C15H26O4; MF: 949; RMF: 956; Prob 90.4%; CAS: 105-95-3; Lib: mainlib; ID: 16894.

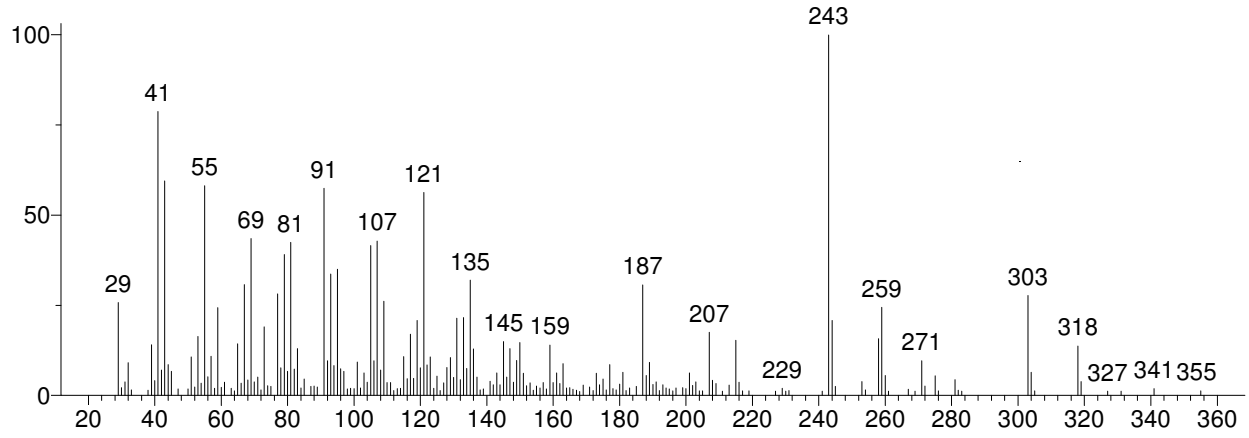


Hit 2 : Z-11-Pentadecenol
C15H30O; MF: 690; RMF: 710; Prob 0.90%; Lib: mainlib; ID: 17391.

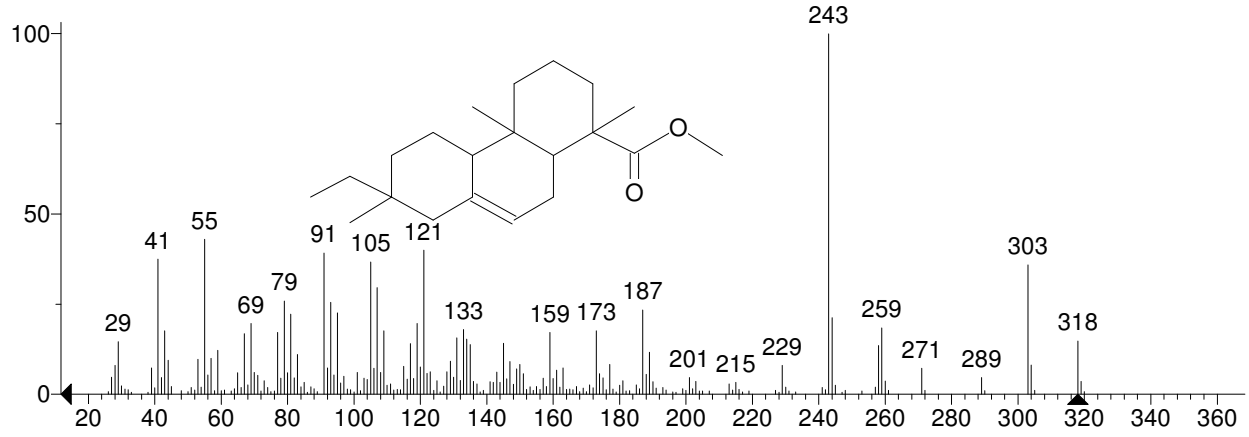


** Search Report Page 1 of 1 **

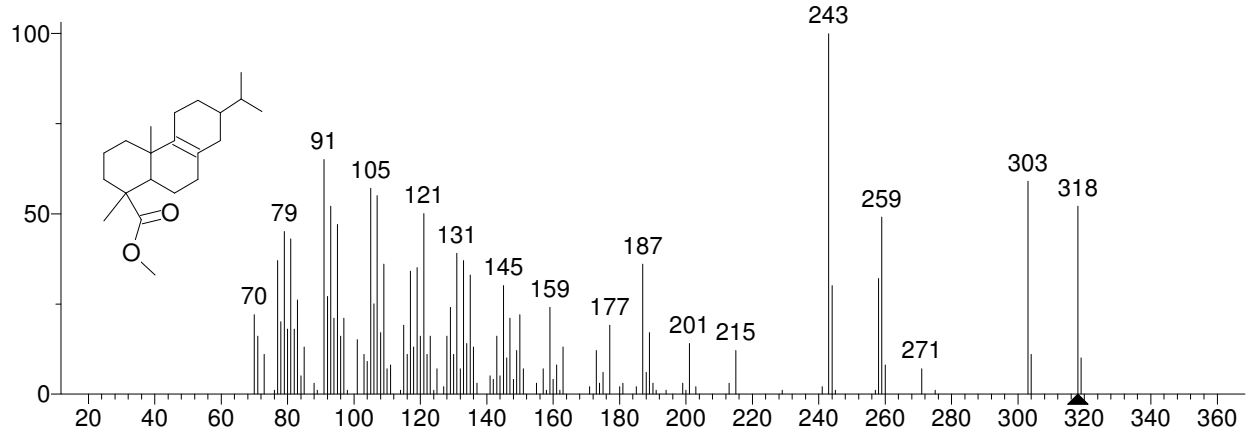
Unknown: Scan 1514 (17.319 min): Imitation.D
Compound in Library Factor = -119



Hit 1 : 1-Phenanthrenecarboxylic acid, 7-ethenyl-1,2,3,4,4a,4b,5,6,7,8,10,10a-dodecahydro-1,4a,7-trimethyl-, methyl
C21H34O2; MF: 871; RMF: 890; Prob 71.9%; CAS: 72088-13-2; Lib: mainlib; ID: 138475.



Hit 2 : 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,5,6,7,8,9,10,10a-dodecahydro-1,4a-dimethyl-7-(1-methylethyl)-, me
C21H34O2; MF: 815; RMF: 879; Prob 13.7%; CAS: 33892-15-8; Lib: mainlib; ID: 138505.



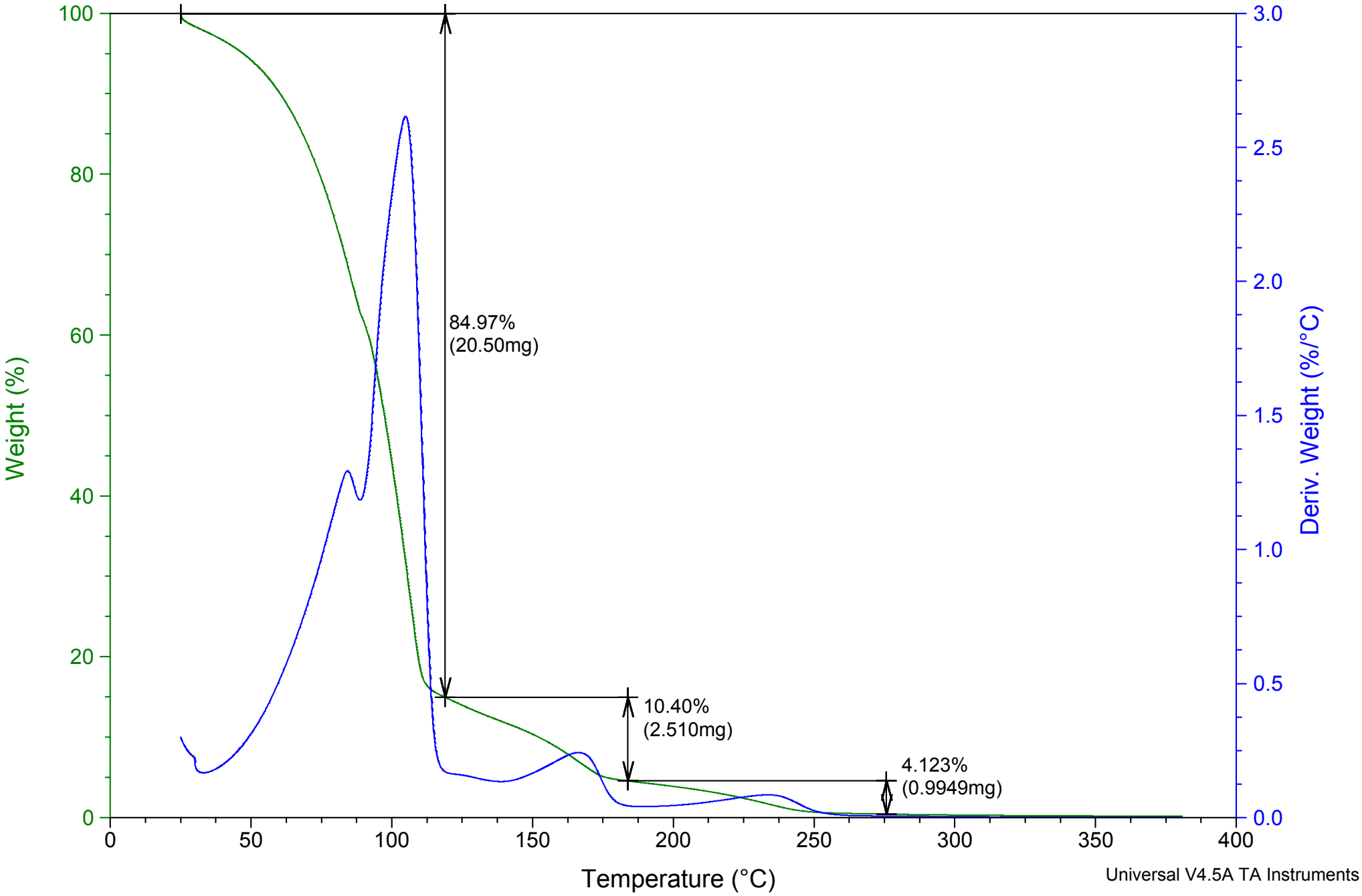
TGA RESULTS

Sample: Designer
Size: 24.1320 mg
Method: Ramp

TGA

File: I:...\dsc pan Designer.001

Run Date: 09-Jun-2010 15:52
Instrument: TGA Q500 V20.8 Build 34

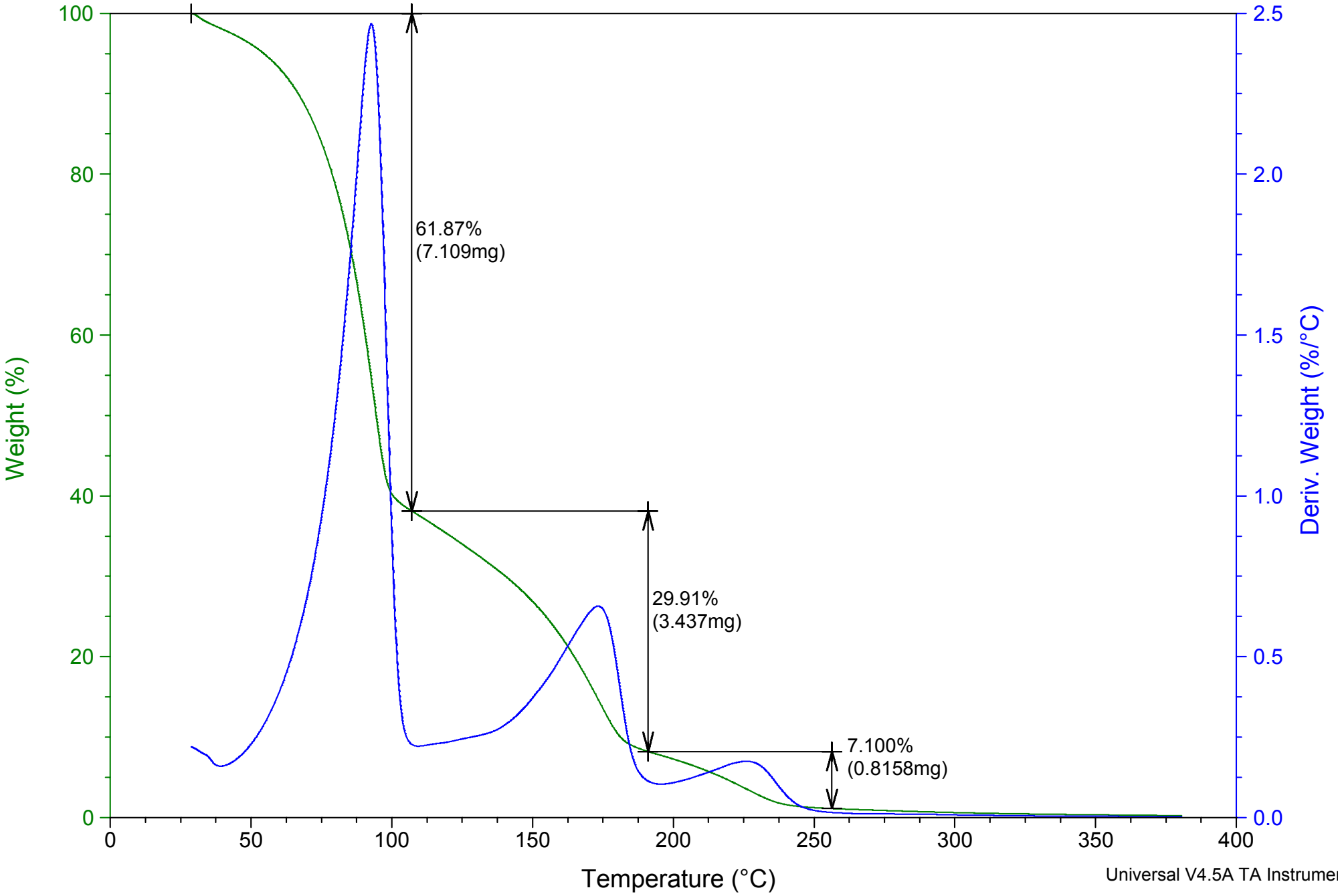


Sample: Designer
Size: 11.4910 mg
Method: Ramp

TGA

File: I:...\dsc pan Designer.002

Run Date: 09-Jun-2010 19:24
Instrument: TGA Q500 V20.8 Build 34

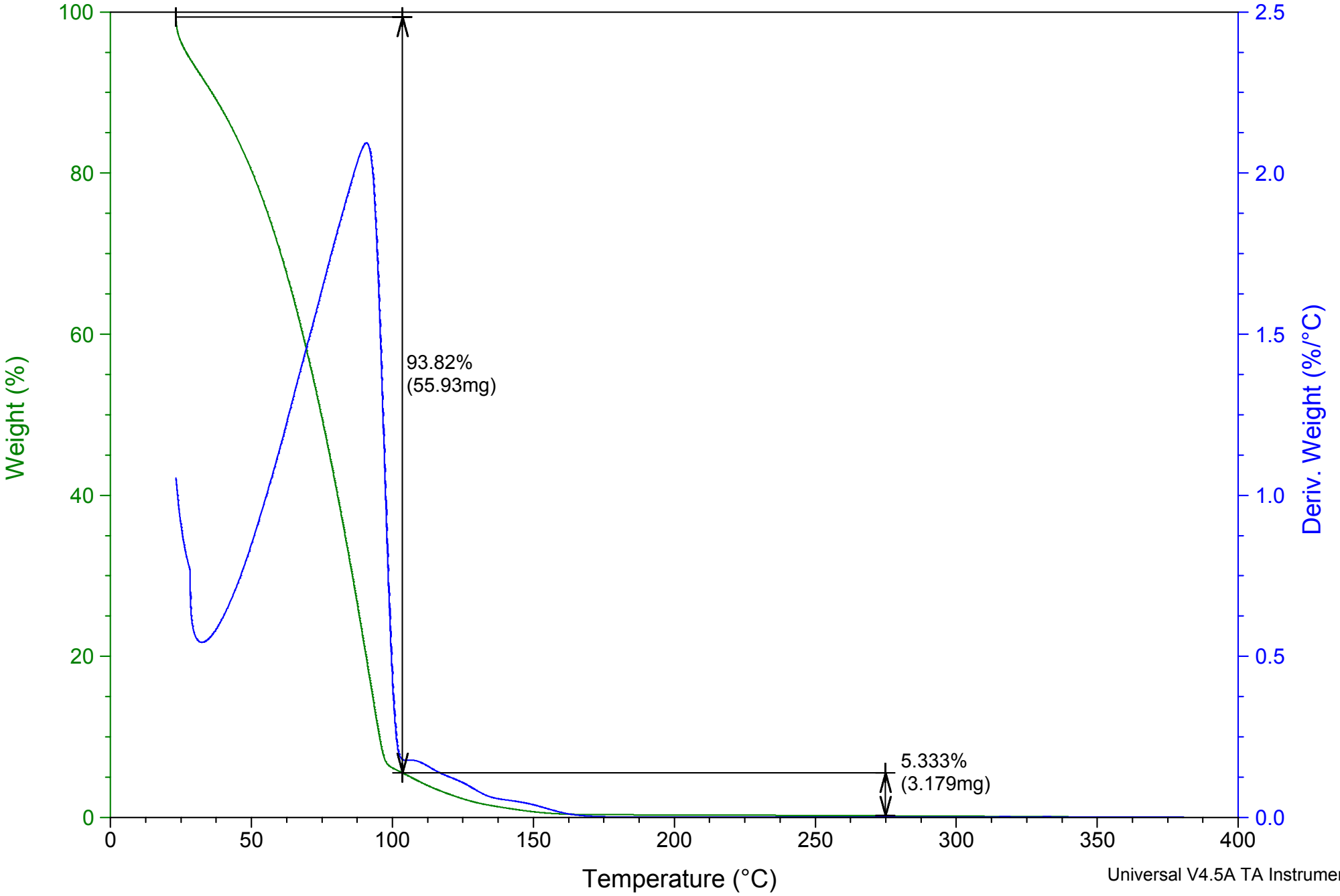


Sample: Imitation
Size: 59.6190 mg
Method: Ramp

TGA

File: I:...\manual Imitation.001

Run Date: 08-Jun-2010 15:44
Instrument: TGA Q500 V20.8 Build 34



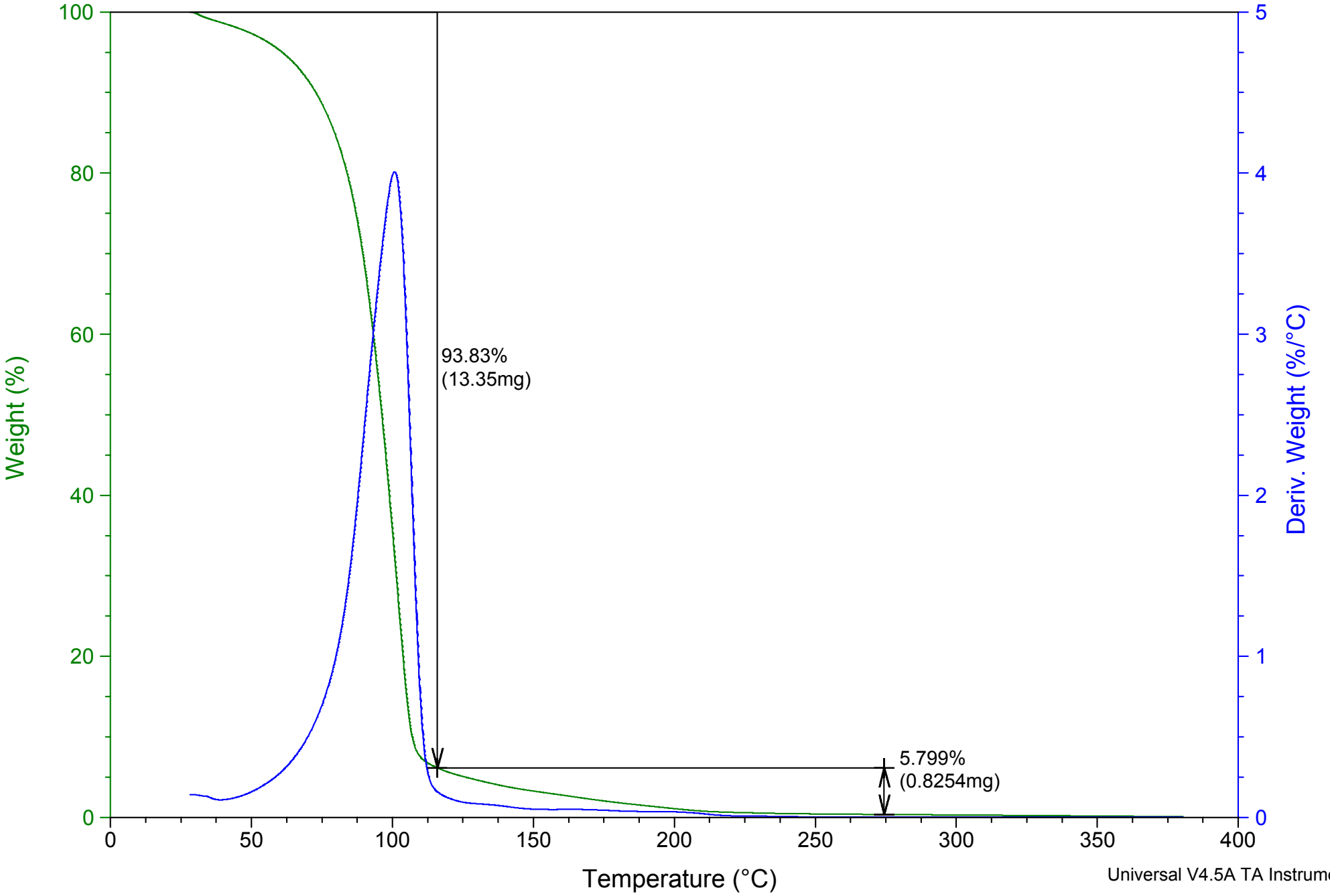
Universal V4.5A TA Instruments

Sample: Imitation
Size: 14.2320 mg
Method: Ramp

TGA

File: I:...\dsc pan Imitation.002

Run Date: 09-Jun-2010 18:24
Instrument: TGA Q500 V20.8 Build 34



GC-FID RESULTS

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File       : C:\HPCHEM\1\DATA\2010\JOB2010\EXPDEF\GC-FID DATA\Designer.D
Operator   : KV
Acquired   :  8 Jun 2010  11:06     using AcqMethod JORDIGEL.M
Instrument :   HP5890
Sample Name: Designer Perfume
Misc Info  :
Vial Number: 10
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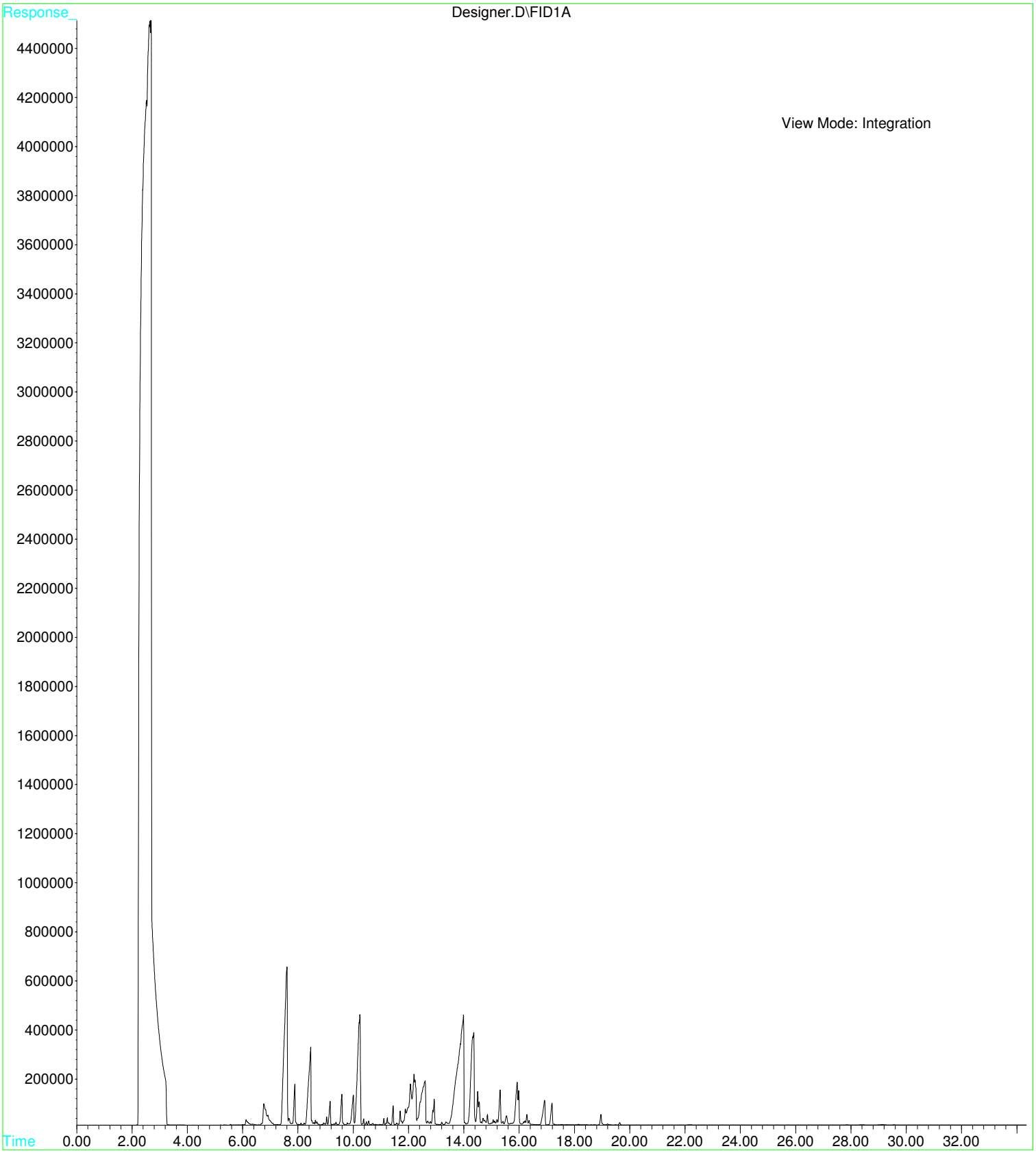

File : C:\HPCHEM\1\DATA\2010\JOB2010\EXPDEF\GC-FID DATA\Imitation.D
Operator : KV
Acquired : 8 Jun 2010 13:09 using AcqMethod JORDIGEL.M
Instrument : HP5890
Sample Name: Imitation Perfume
Misc Info :
Vial Number: 11