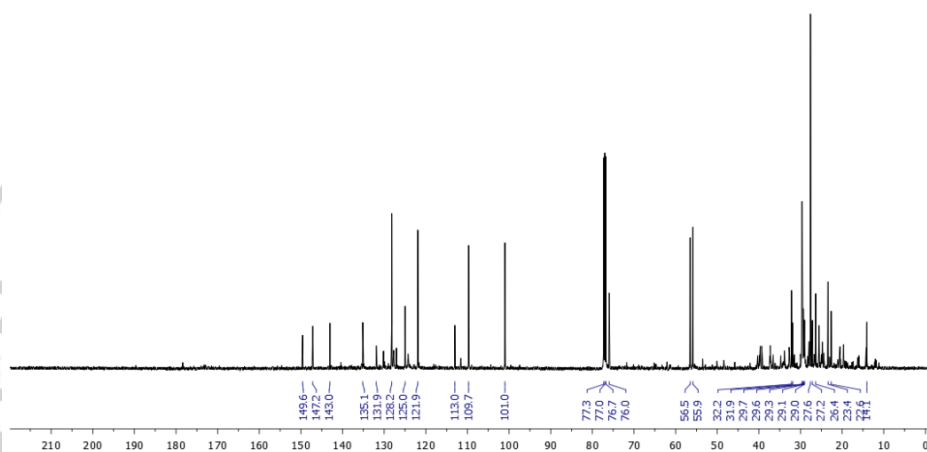


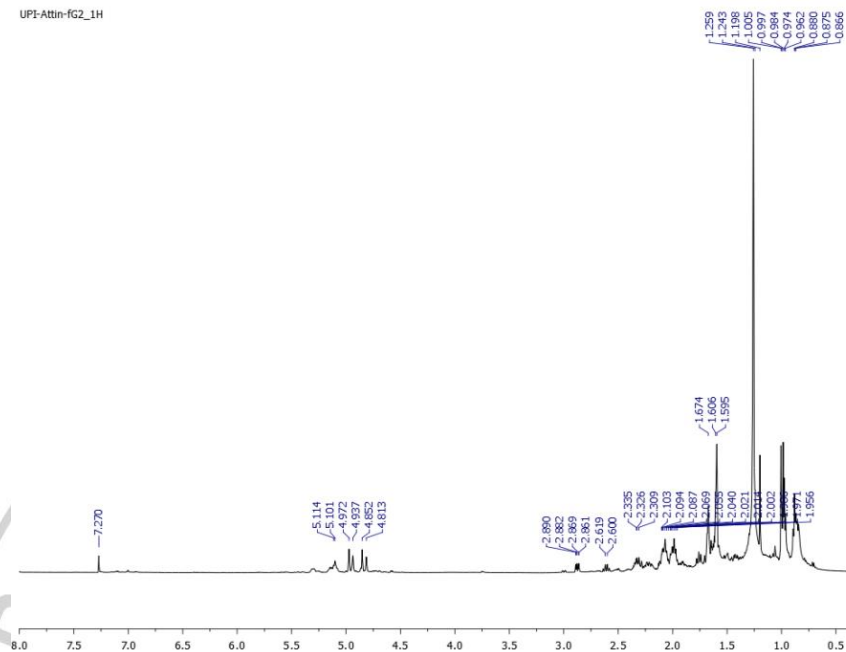
LAMPIRAN

Lampiran 1 . Spektrum ^{13}C NMR Ekstrak Bionutrien AGF

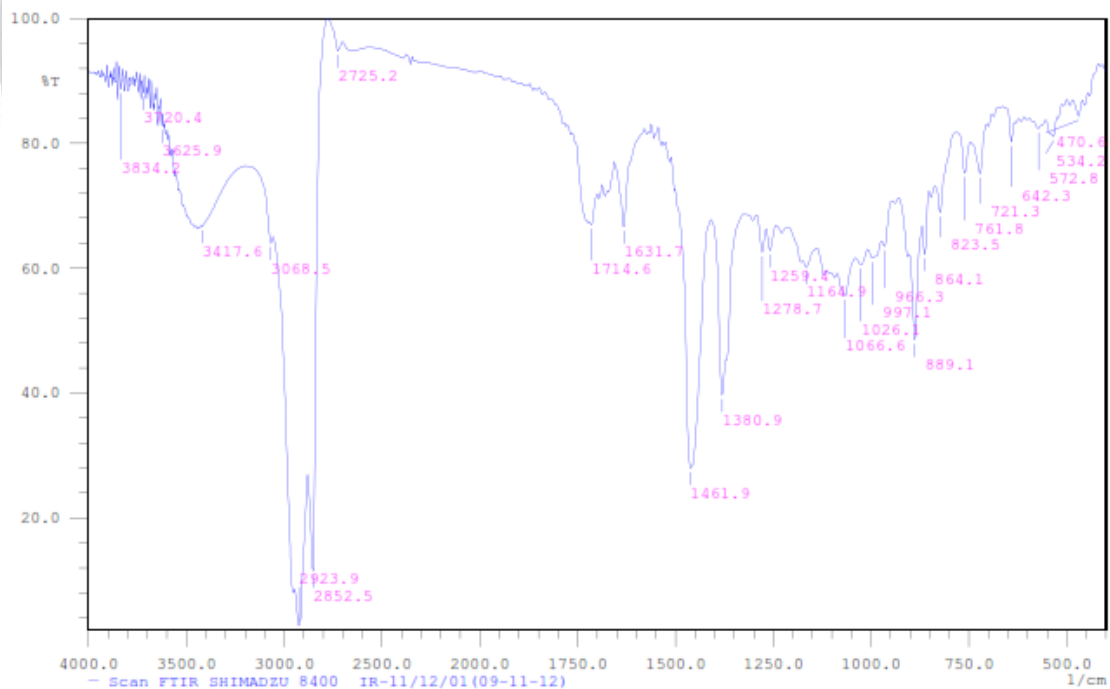


Lampiran 2. Spektrum ^1H NMR fraksi B

UPI-Attin-FG2_1H



Lampiran 3. Spektrum FTIR Fraksi B



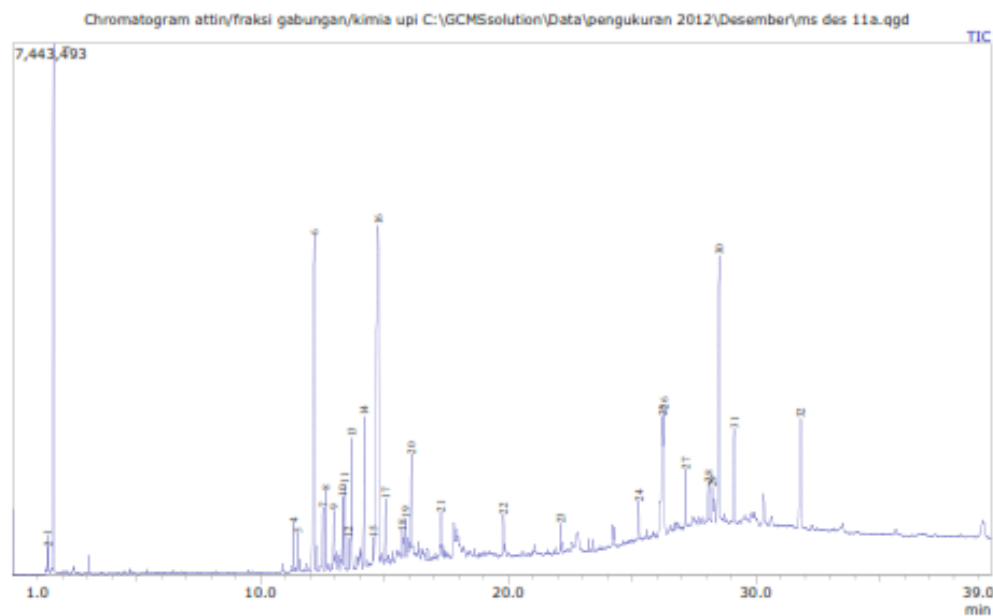
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Lampiran 4. Kromatogram GC-MS fraksi B

Sample Information
 Analyzed by : Admin
 Sample Name : attin/fraksi gabungan/kimia upi
 Sample ID : ms_12_12_11a
 Injection Volume : 0.20
 Method File : C:\GCMSsolution\Data\metoda\atsiri manual.qgm
 Tuning File : C:\GCMSsolution\System\Tune1\3 des 2012.qgt



Peak#	R.Time	Height	Area	Area%	Peak Report TIC
1	1.392	503705	508222	0.37	1.01 Ethanol (CAS) Ethyl alcohol
2	1.436	338866	505546	0.37	1.49 Acetone
3	1.641	7361656	12253685	9.00	1.66 Chloroform
4	11.354	679413	1196206	0.88	1.76 Copaene
5	11.522	502440	874257	0.64	1.74 .BETA. BOURBONENE
6	12.177	4692821	21518035	15.81	4.50 BICYCLO[5.2.0]NONAN, 2-METHYLEN-
7	12.517	803325	1311384	0.96	1.63 1,6,10-Dodecatriene, 7,11-dimethyl-3
8	12.649	1106855	2083391	1.53	1.88 1,4,7,-Cycloundecatriene, 1,5,9,9-tetr
9	12.961	762254	1411813	1.04	1.85 Naphthalene, 1,2,3,4,4a,5,6,8a-octah
10	13.321	908070	1540417	1.13	1.70 .alpha.-Murolene
11	13.389	1163955	2114645	1.55	1.82 Cyclohexene, 1-methyl-4-(5-methyl-1
12	13.556	432247	760250	0.56	1.76 Naphthalene, 1,2,3,4,4a,5,6,8a-octah
13	13.691	1817243	5824529	4.28	3.21 Naphthalene, 1,2,3,4-tetrahydro-1,6-c
14	14.194	2089259	4615497	3.39	2.21 Caryophyllene oxide
15	14.540	367463	630512	0.46	1.72 1-Nonadecene
16	14.763	4689763	30670050	22.53	6.54 Caryophyllene oxide
17	15.053	871536	1776911	1.31	2.04 HUMULENE OXIDE
18	15.715	351738	1633139	1.20	4.64 Cadala-1(10),3,8-triene
19	15.849	537568	1131465	0.83	2.10 Cadala-1(10),3,8-triene
20	16.092	1320291	2647499	1.94	2.01 Caryophyllene oxide
21	17.293	546235	1048412	0.77	1.92 1-Nonadecene
22	19.814	538949	1016644	0.75	1.89 Eicosyl trifluoroacetate
23	22.118	394450	700975	0.51	1.78 Eicosyl trifluoroacetate
24	25.277	510354	939934	0.69	1.84 Hexatriacontane (CAS) n-Hexatriacont
25	26.229	1341991	4670708	3.43	3.48 Hexatriacontane (CAS) n-Hexatriacont
26	26.293	1573726	4796010	3.52	3.05 Tetrapentacontane
27	27.160	807922	1566167	1.15	1.94 Hexatriacontane (CAS) n-Hexatriacont
28	28.092	458878	926836	0.68	2.02 Hexatriacontane (CAS) n-Hexatriacont
29	28.253	390904	845554	0.62	2.16 .BETA.-NITROBENZO(6,7)BICYCLO(3.1
30	28.528	3663033	15441400	11.34	4.22 Squalene
31	29.131	1270436	3296462	2.42	2.59 Hexatriacontane (CAS) n-Hexatriacont
32	31.819	1460446	5887011	4.32	4.03 Tetrapentacontane
		44257792	136143566	100.00	

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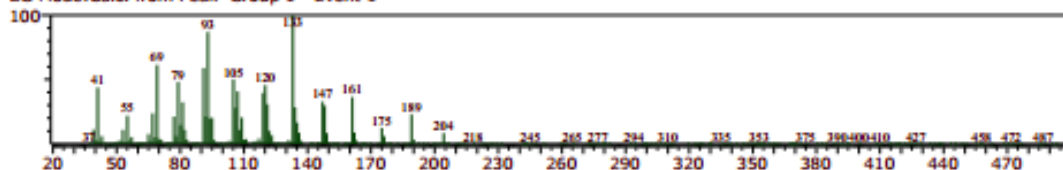
Lampiran 5. Spektrum massa *caryophyllene*

<< Target >>

Line#:6 R.Time:12.175(Scan#:2436) MassPeaks:260

RawMode:Averaged 12.170-12.180(2435-2437) BasePeak:133.10(380882)

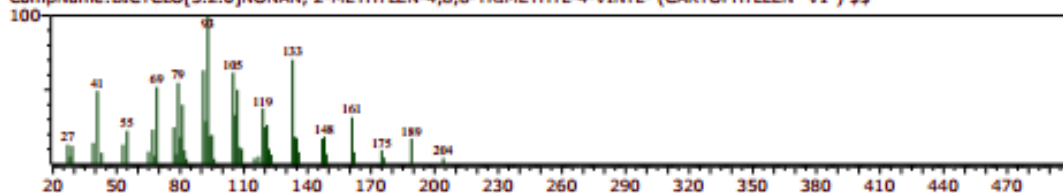
BG Mode:Calc. from Peak Group 1 - Event 1



Hit#:1 Entry:100355 Library:WILEY7.LIB

SI:94 Formula:C15H24 CAS:0-00-0 MolWeight:204 RetIndex:0

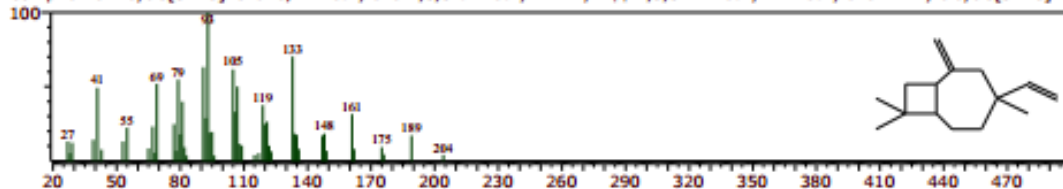
CompName:BICYCLO[5.2.0]NONAN, 2-METHYLEN-4,8,8-TRIMETHYL-4-VINYL- (CARYOPHYLLEN "V1") \$\$



Hit#:2 Entry:45430 Library:NIST08.LIB

SI:94 Formula:C15H24 CAS:242794-76-9 MolWeight:204 RetIndex:1407

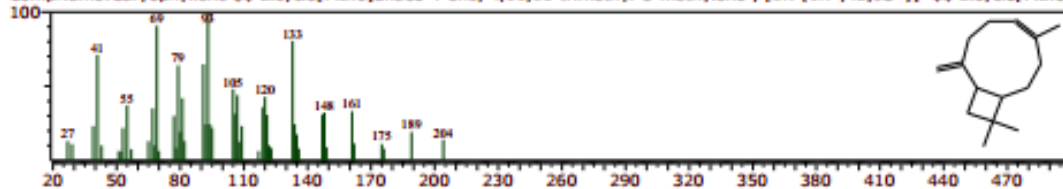
CompName:Bicyclo[5.2.0]nonane, 2-methylene-4,8,8-trimethyl-4-vinyl- \$\$ 4,8,8-Trimethyl-2-methylene-4-vinylbicyclo[5.2.0]nonane



Hit#:3 Entry:17105 Library:NIST08s.LIB

SI:94 Formula:C15H24 CAS:87-44-5 MolWeight:204 RetIndex:1494

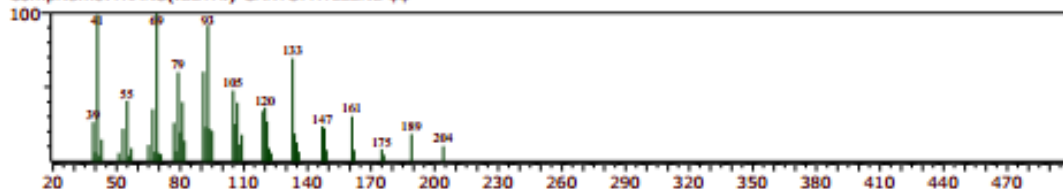
CompName:Caryophyllene \$\$ Bicyclo[7.2.0]undec-4-ene, 4,11,11-trimethyl-8-methylene-, [1R-(1R*,4E,9S*)]- \$\$ Bicyclo[7.2.0]undec-4-ene, 4,11,11-trimethyl-8-methylene-, [1R-(1R*,4E,9S*)]-



Hit#:4 Entry:100327 Library:WILEY7.LIB

SI:92 Formula:C15H24 CAS:0-00-0 MolWeight:204 RetIndex:0

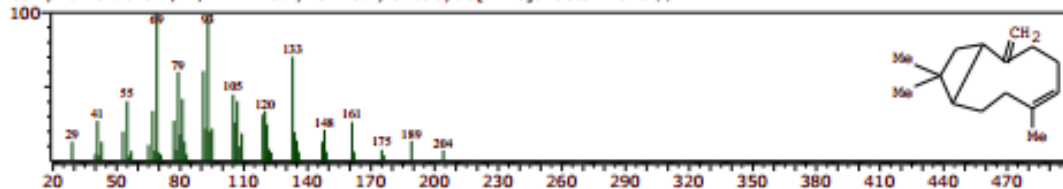
CompName:TRANS(.BETA.)-CARYOPHYLLENE \$\$



Hit#:5 Entry:100196 Library:WILEY7.LIB

SI:92 Formula:C15H24 CAS:13877-93-5 MolWeight:204 RetIndex:0

CompName:trans-4,11,11-Trimethyl-8-methylenebicyclo[7.2.0]undeca-4-ene \$\$



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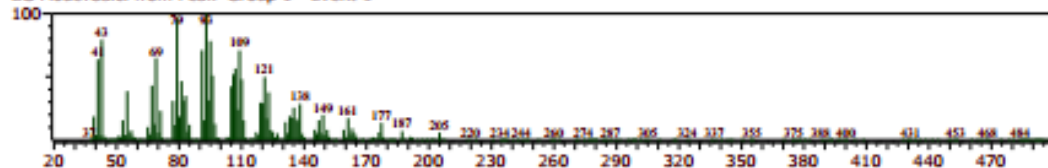
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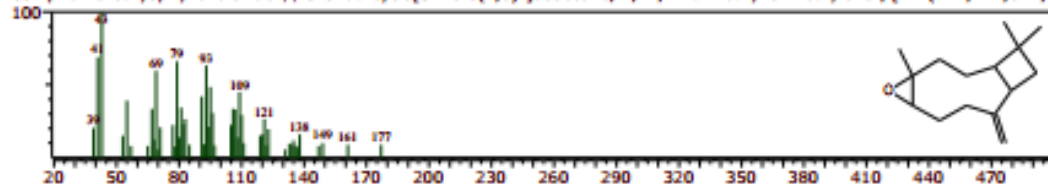
Lampiran 6. Spektrum massa *caryophyllene oxide*

<< Target >>

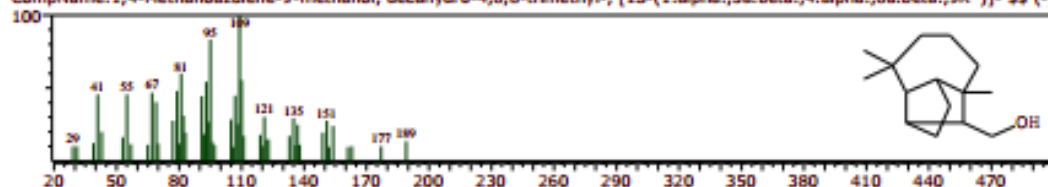
Line#:16 R.Time:14.765(Scan#:2954) MassPeaks:266
RawMode:Averaged 14.760-14.770(2953-2955) BasePeak:93.10(237453)
BG Mode:Calc. from Peak Group 1 - Event 1



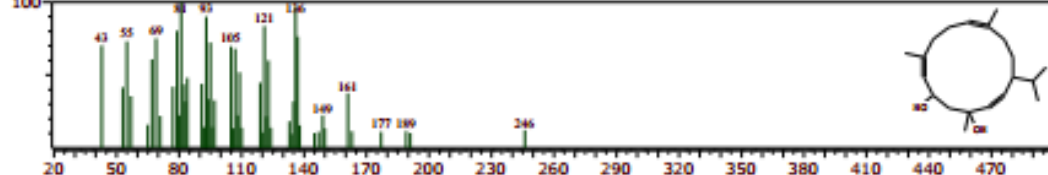
Hit#:1 Entry:18865 Library:NIST08.LIB
SI:89 Formula:C15H24O CAS:1139-30-6 MolWeight:220 RetIndex:1507
CompName:Caryophyllene oxide \$\$ 5-Oxatricyclo[8.2.0.0(4,6)]dodecane, 4,12,12-trimethyl-9-methylene-, [1R-(1R*,4R*,6R*,1



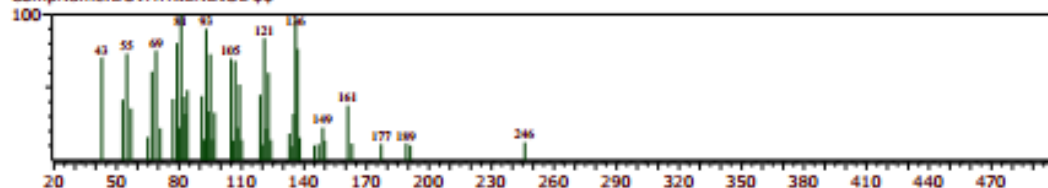
Hit#:2 Entry:57482 Library:NIST08.LIB
SI:84 Formula:C15H26O CAS:1139-17-9 MolWeight:222 RetIndex:1635
CompName:1,4-Methanoazulene-9-methanol, decahydro-4,8-trimethyl-, [1S-(1.alpha.,3a.beta.,4.alpha.,8a.beta.,9R*)]- \$\$ (-)



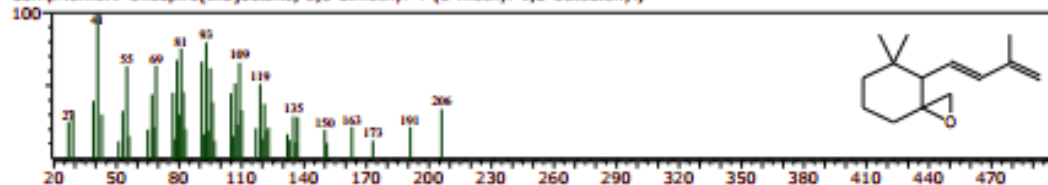
Hit#:3 Entry:24618 Library:NIST08.LIB
SI:82 Formula:C20H34O2 CAS:7220-78-2 MolWeight:306 RetIndex:2400
CompName:4,8,13-Cyclotetradecatriene-1,3-diol, 1,5,9-trimethyl-12-(1-methylethyl)- \$\$ FW 306 \$\$ 4,8,13-Duvatriene-1,3-Diol



Hit#:4 Entry:217619 Library:WILEY7.LIB
SI:82 Formula:C20H34O2 CAS:0-00-0 MolWeight:306 RetIndex:0
CompName:DUVATRIENDIOL \$\$



Hit#:5 Entry:46713 Library:NIST08.LIB
SI:82 Formula:C14H22O CAS:0-00-0 MolWeight:206 RetIndex:1431
CompName:1-Oxaspiro[2.5]octane, 5,5-dimethyl-4-(3-methyl-1,3-butadienyl)-



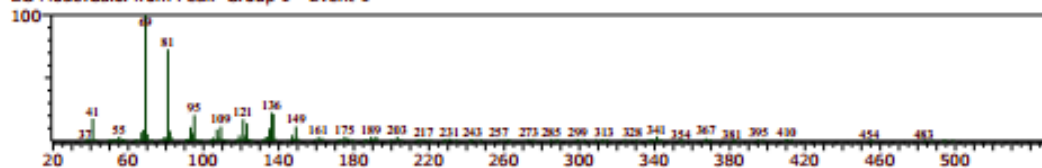
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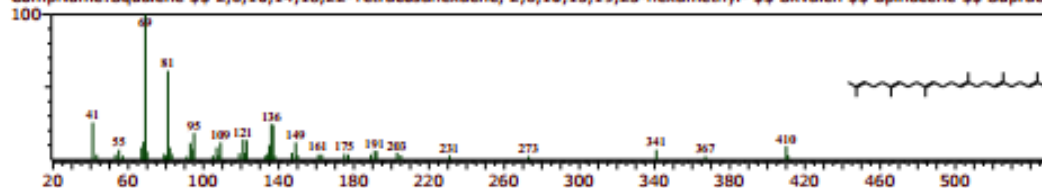
Lampiran 7. Spektrum massa *squalene*

<< Target >>

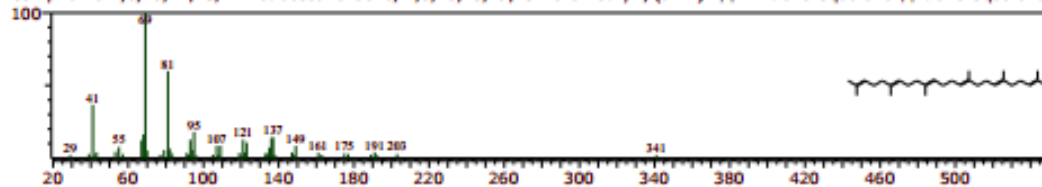
Line#:30 R.Time:28.525(Scan#:5706) MassPeaks:196
RawMode:Averaged 28.520-28.530(5705-5707) BasePeak:69.10(744589)
BG Mode:Calc. from Peak Group 1 - Event 1



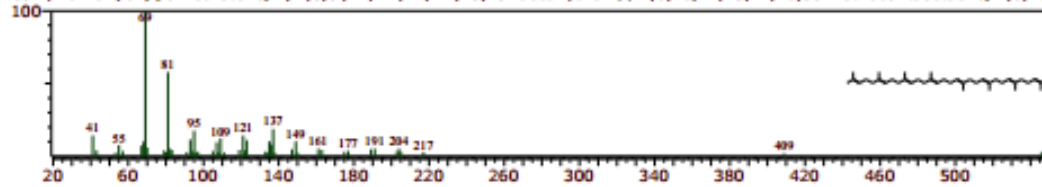
Hit#:1 Entry:170747 Library:NIST08.LIB
SI:94 Formula:C₃₀H₅₀ CAS:7683-64-9 MolWeight:410 RetIndex:2914
CompName:Squalene \$\$ 2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl- \$\$ Skvalen \$\$ Spinacene \$\$ Supraen



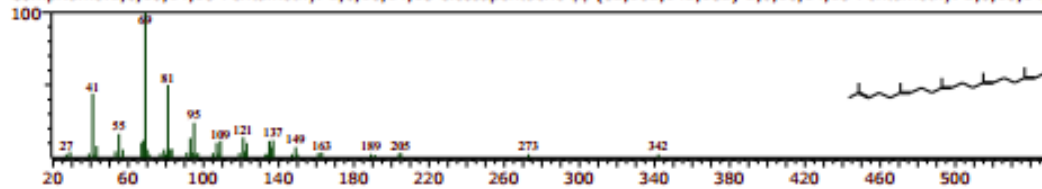
Hit#:2 Entry:27424 Library:NIST08s.LIB
SI:92 Formula:C₃₀H₅₀ CAS:111-02-4 MolWeight:410 RetIndex:2914
CompName:2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl-, (all-E)- \$\$ All-trans-Squalene \$\$ trans-Squalene :



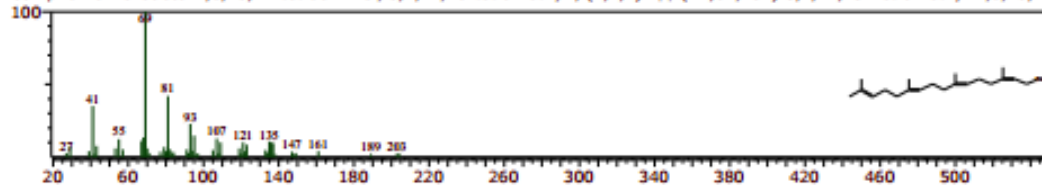
Hit#:3 Entry:28128 Library:NIST08s.LIB
SI:90 Formula:C₄₀H₆₆ CAS:502-62-5 MolWeight:546 RetIndex:3878
CompName:psil.-psil.-Carotene, 7,7',8,8',11,11',12,12',15,15'-decahydro- \$\$ 2,6,10,14,18,22,26,30-Dotriacontaoctaene, 2,6,10,



Hit#:4 Entry:140611 Library:NIST08.LIB
SI:86 Formula:C₂₅H₄₂ CAS:75581-03-2 MolWeight:342 RetIndex:2432
CompName:2,6,10,14,18-Pentamethyl-2,6,10,14,18-icosapentaene \$\$ (6E,10E,14E,18E)-2,6,10,14,18-Pentamethyl-2,6,10,14,



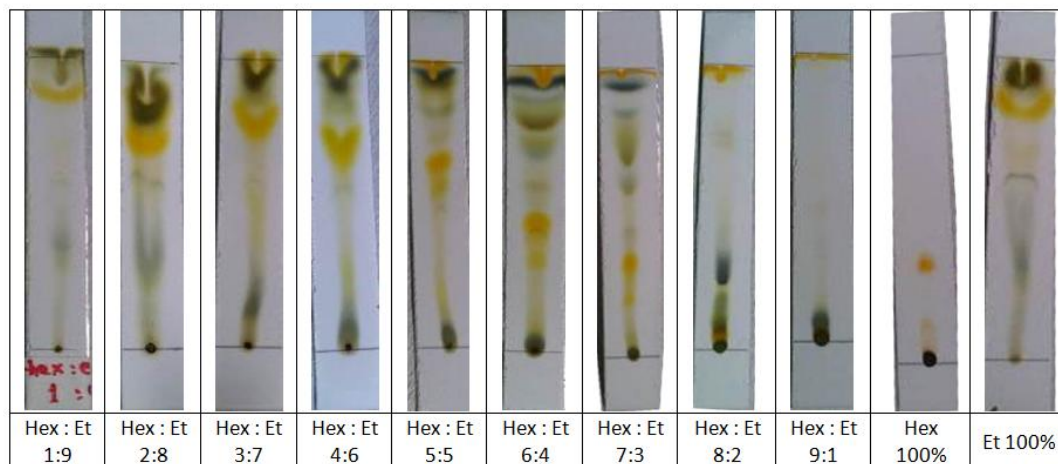
Hit#:5 Entry:23916 Library:NIST08s.LIB
SI:85 Formula:C₂₀H₃₄O CAS:7614-21-3 MolWeight:290 RetIndex:2192
CompName:Hexadeca-2,6,10,14-tetraen-1-ol, 3,7,11,16-tetramethyl-, (E,E,E)- \$\$ (2Z,6E,10E)-3,7,11,15-Tetramethyl-2,6,10,14



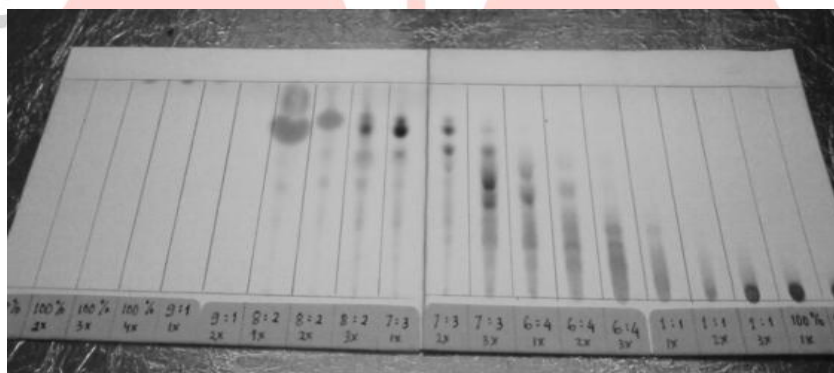
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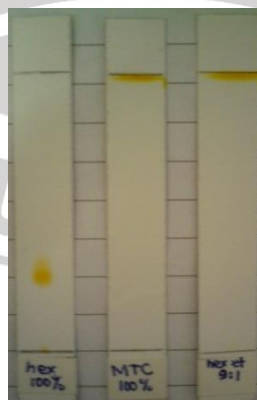
Lampiran 8. Pola kromatogram KLT



Kromatogram ekstrak AGF untuk penentuan eluen saat KCV



Kromatogram 20 fraksi hasil KCV



Kromatogram fraksi B menggunakan pelarut berbeda
(dari kiri ke kanan berturut turut

n-heksan 100% ; diklorometana 100% ; dan n-heksan : etil asetat 9:1)

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