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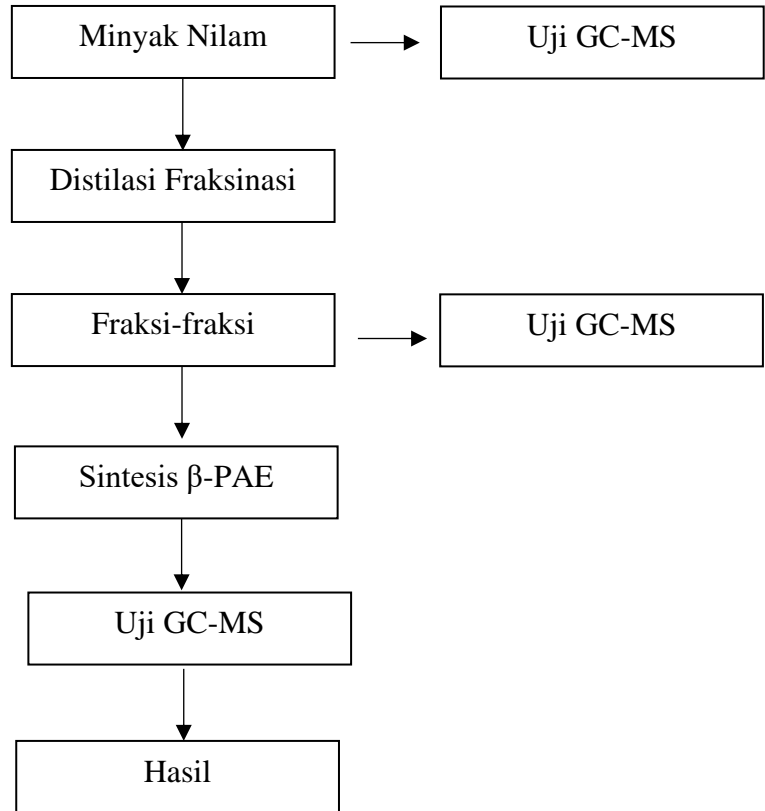
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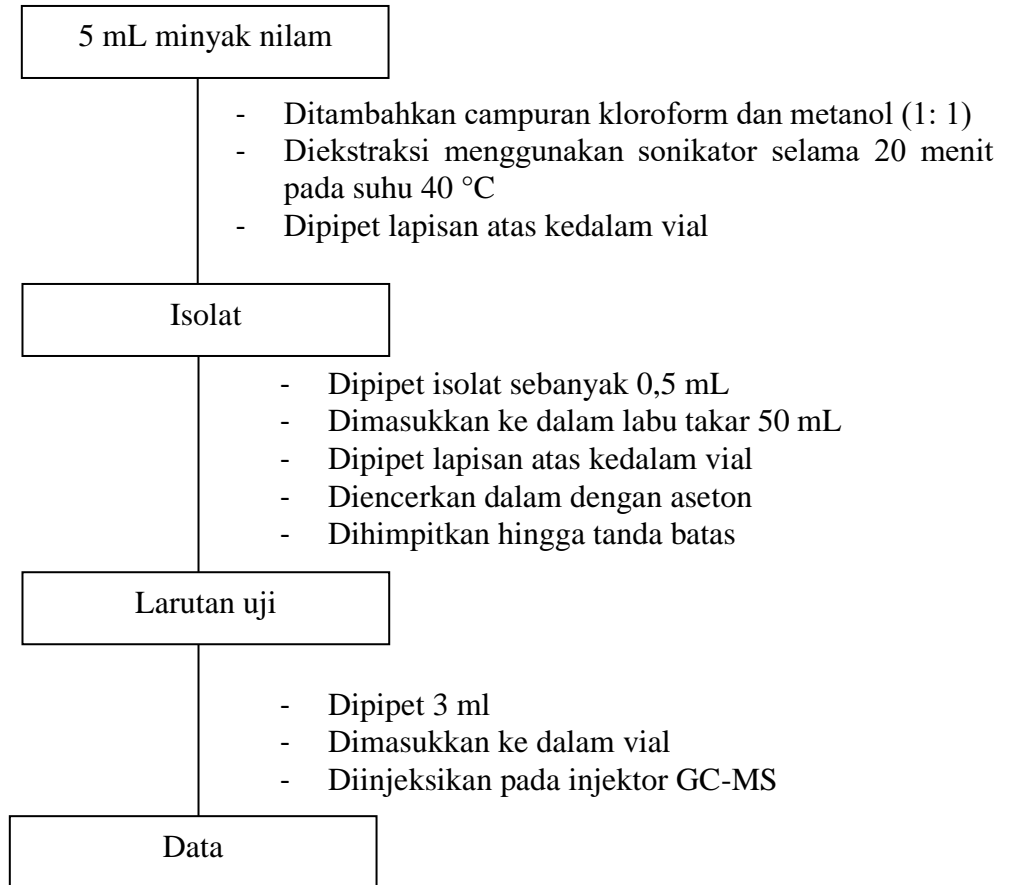
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Lampiran 1. Skema Kerja Penelitian

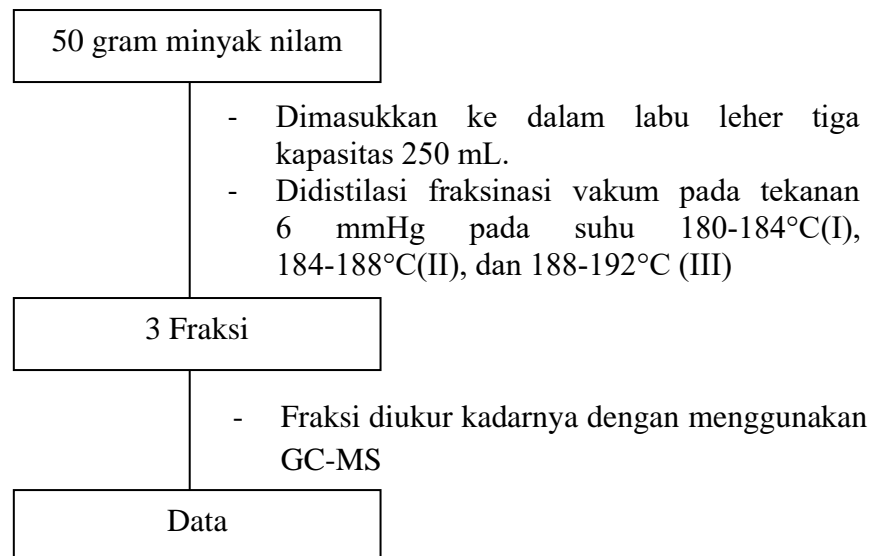


Lampiran 2. Bagan Kerja Penelitian

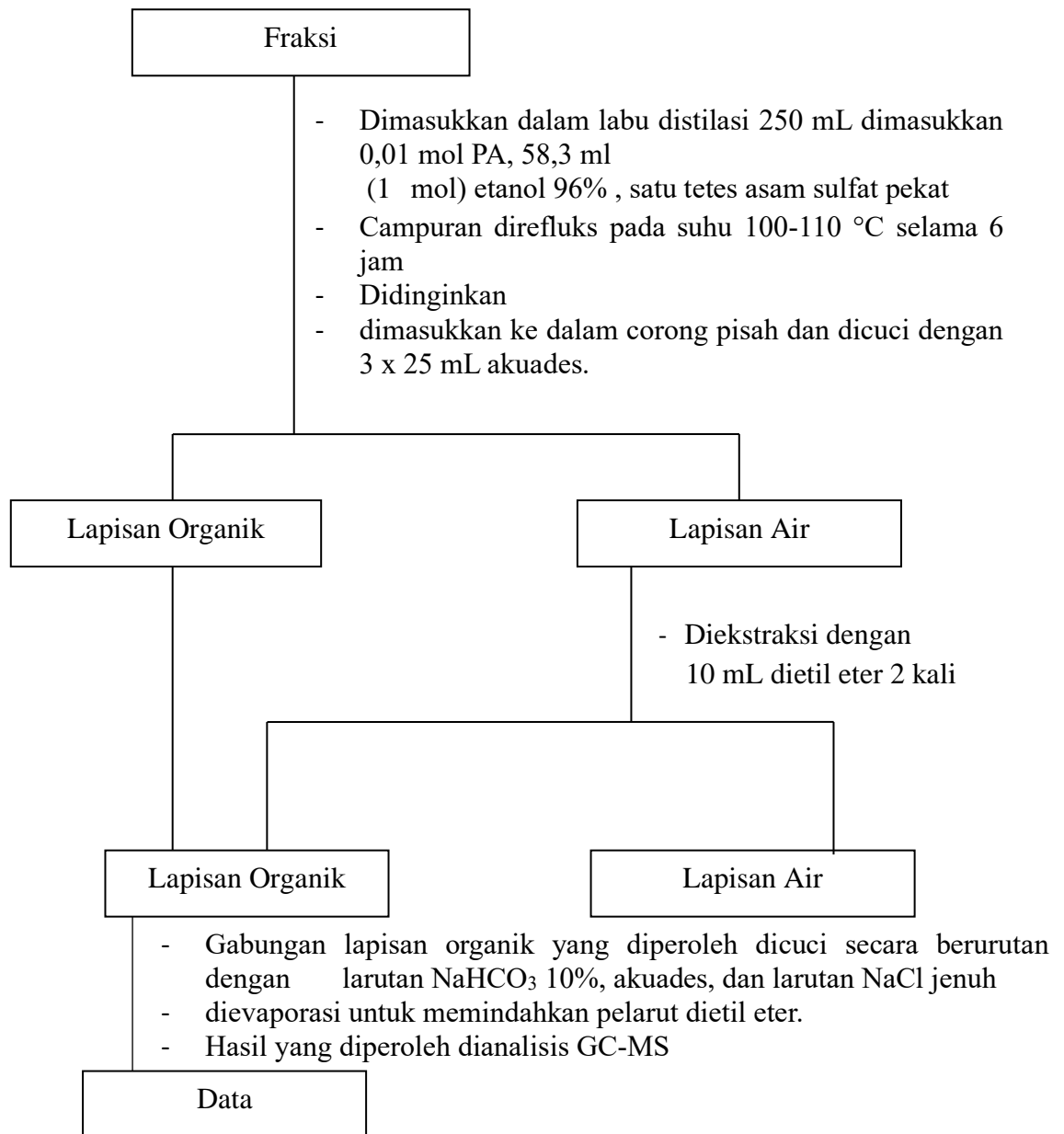
1. Analisis GC-MS



2. Proses Fraksinasi

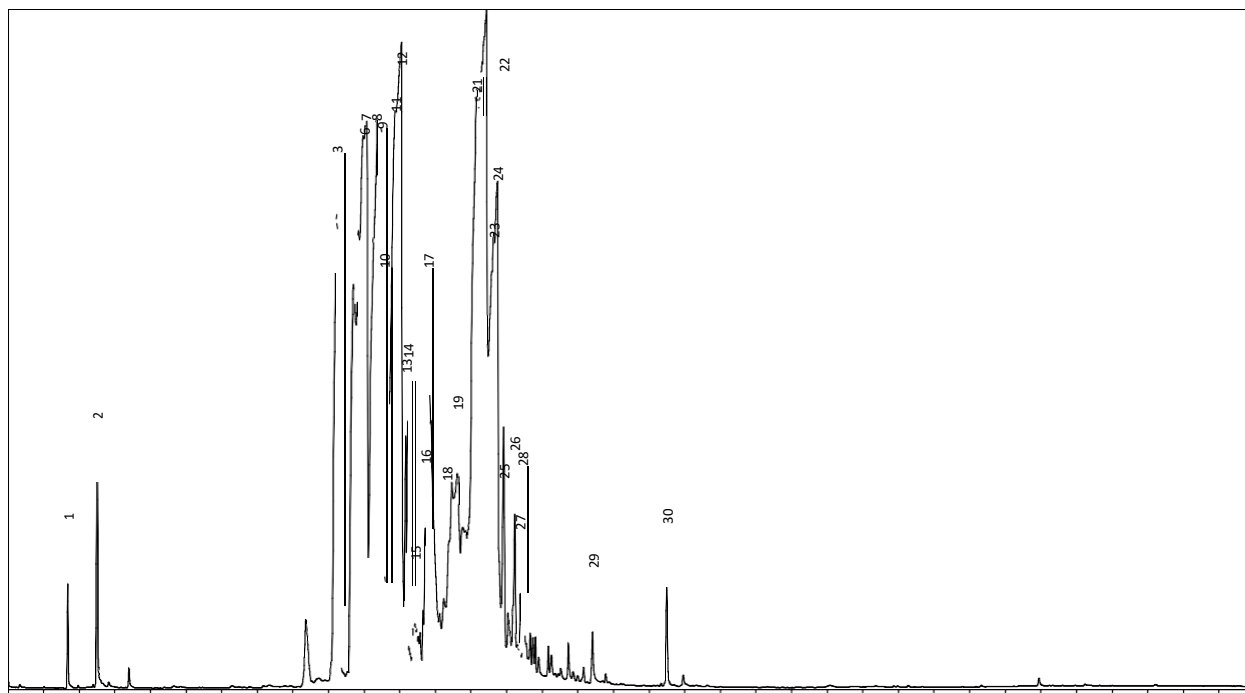


3. Proses Konversi



Lampiran 3. Kromatogram Minyak Nilam

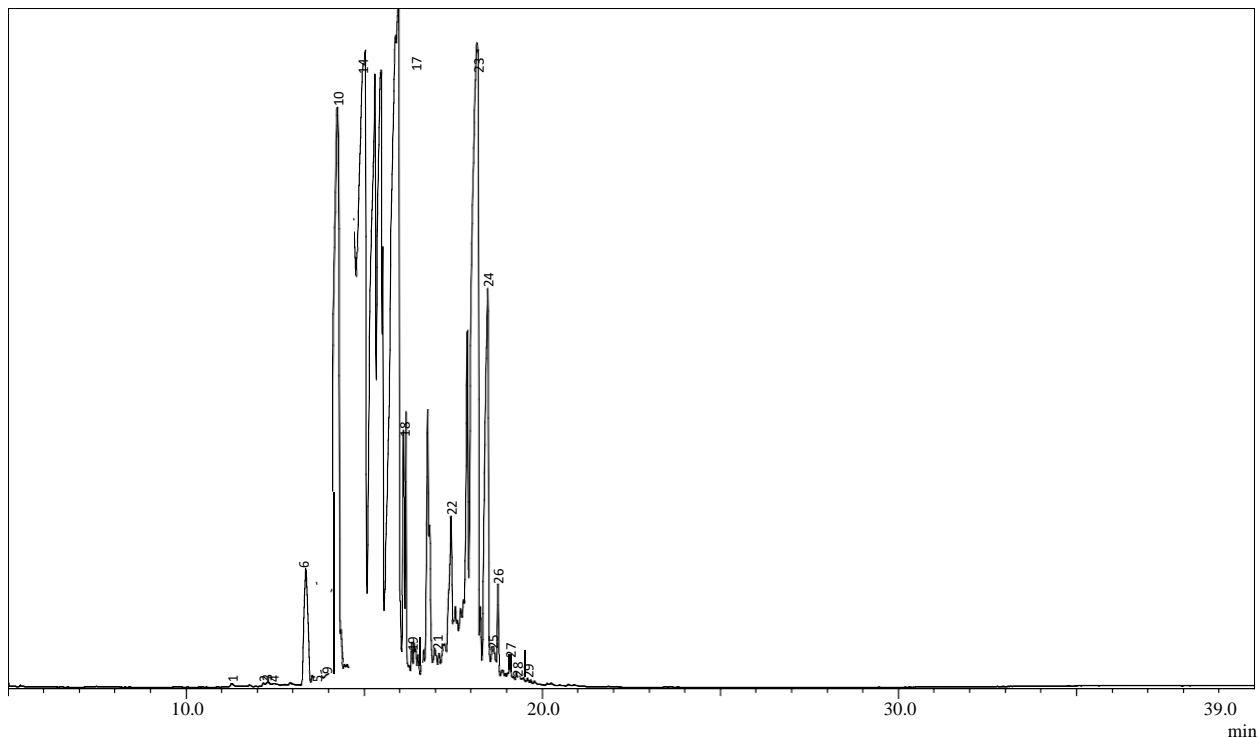
DATA REPORT GCMS-QP2010 ULTRA SHIMADZU



Peak#	R.Time	Area	Area%	A/H Name
1	6.676	9183721	0.24	1.75 (IR)-2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene
2	7.489	22280963	0.59	2.14 Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-, (1S)-
3	14.226	229273382	6.06	9.83 4,7-Methanoazulene, 1,2,3,4,5,6,7,8-octahydro-1,4,9,9-tetramethyl-, [1S-(1.alpha.,4.alpha
4	14.705	174841092	4.62	8.76 Caryophyllene
5	14.833	127793423	3.38	5.68 Caryophyllene
6	14.967	207463775	5.48	7.52 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
7	15.063	125484002	3.32	4.43 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
8	15.338	313963522	8.30	11.10 1,6-METHANONAPHTHALENE, DECAHYDRO-1,4,8A-TRIMETHYL-9-METHYL
9	15.475	241589911	6.38	8.69 1H-3A,7-METHANOAZULENE, 2,3,6,7,8,8A-HEXAHYDRO-1,4,9,9-TETRAMETH
10	15.550	45225618	1.20	2.20 PATCHOULENE
11	15.867	393333041	10.39	13.80 7-ISOPROPENYL-1,4-DIMETHYL-1,2,3,4,5,6,7,8-OCTAHYDROAZULENE
12	16.038	224089992	5.92	6.99 AZULENE, 1,2,3,5,6,7,8,8A-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHEN
13	16.158	35685442	0.94	3.04 (-)-.alpha.-Panasinsen
14	16.209	27051825	0.71	2.17 ISOLONGIFOLEN, 4,5-DEHYDRO-
15	16.426	21078966	0.56	10.84 1,6,10-DODECATRIEN-3-OL, 3,7,11-TRIMETHYL-
16	16.708	20291113	0.54	3.16 Caryophyllene oxide
17	16.825	136278446	3.60	8.45 2,3,3-Trimethyl-2-(3-methyl-buta-1,3-dienyl)-cyclohexanone
18	17.367	16908135	0.45	5.13 1,1,4,7-TETRAMETHYLDECAHYDRO-1H-CYCLOPROPA[E]AZULEN-4-OL #
19	17.609	99722308	2.64	13.70 1,1,4,7-TETRAMETHYLDECAHYDRO-1H-CYCLOPROPA[E]AZULEN-4-OL #
20	17.733	62846923	1.66	14.23 1,1,4,7-TETRAMETHYLDECAHYDRO-1H-CYCLOPROPA[E]AZULEN-4-OL #
21	18.158	392360119	10.37	14.15 POGOSTOL
22	18.430	400854190	10.59	12.44 Patchouli alcohol
23	18.625	191605453	5.06	9.28 3-ACETYL-4-HYDROXY-6-METHYL-2H-PYRAN-2-ONE #
24	18.738	142838536	3.77	6.01 3-ACETYL-4-HYDROXY-6-METHYL-2H-PYRAN-2-ONE #
25	18.908	43250528	1.14	3.83 Lupeol
27	19.367	8229834	0.22	2.57 1-[2-(2,6-TRIMETHYLBICYCLO[4.1.0]HEPT-1-YL)ETHYL]VINYLACETATE
28	19.481	24054205	0.64	3.59 3,7,11-Trimethyl-dodeca-2,4,6,10-tetraenal
29	21.413	8342211	0.22	3.32 l-(+)-Ascorbic acid 2,6-dihexadecanoate
30	23.497	13282771	0.35	2.70 Phytol

Lampiran 4. Kromatogram distilat fraksi I

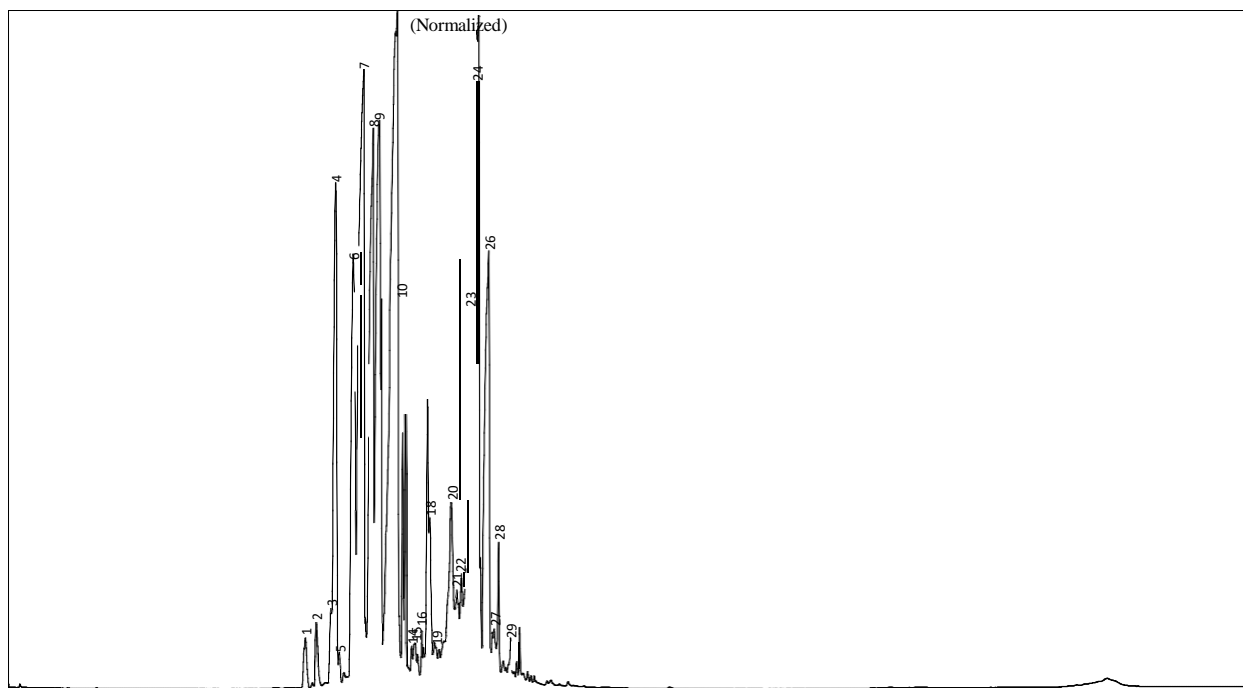
DATA REPORT GCMS-QP2010 ULTRA SHIMADZU



Peak#	R.Time	Area	Area%	Peak Report T1
1	11.287	702858	0.02	5.62 3-Cyclohexene-1-methanol, .alpha.,.alpha.4-trimethyl-
2	12.166	563334	0.02	3.59 TRIMETHYL-TETRAHYDRONAPHTHALENE
3	12.295	1178089	0.04	6.87 2-Nonenoic acid
4	12.469	371101	0.01	6.17 2-Nonenoic acid
5	12.925	538616	0.02	4.95 2-ISOPROPYL-2-METHYL-4-(TRIFLUOROMETHYL)ADAMANTANE
6	13.359	39655120	1.32	7.39 CYCLOHEXENE, 4-ETHENYL-4-METHYL-3-(1-METHYLETHENYL)-1-(1-METH
7	13.546	2046435	0.07	4.32 Benzene, 1-(1,5-dimethylhexyl)-4-methyl-
8	13.668	32572814	1.08	6.87 Aromadendrene, dehydro-
9	13.950	3257823	0.11	6.56 Aromadendrene, dehydro-
10	14.247	273605805	9.08	10.26 4,7-Methanoazulene, 1,2,3,4,5,6,7,8-octahydro-1,4,9,9-tetramethyl-, [1S-(1.alpha.,4.alpha
11	14.445	525967	0.02	2.87 BICYCLO[7.2.0]UNDEC-4-ENE, 4,11,11-TRIMETHYL-8-METHYLENE-
12	14.527	373091	0.01	2.72 CYCLOISOLONGIFOLEN, 8,9-DEHYDRO-
13	14.710	199831936	6.63	9.29 Caryophyllene
14	15.038	426206583	14.15	14.55 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
15	15.306	284150104	9.43	10.09 1,6-METHANONAPHTHALENE, DECAHYDRO-1,4,8A-TRIMETHYL-9-METHYL
16	15.473	270987595	8.99	9.56 Azulene, 1,2,3,3a,4,5,6,7-octahydro-1,4-dimethyl-7-(1-methylethenyl)-, [1R-(1.alpha.,3a
17	15.963	525417345	17.44	16.86 AZULENE, 1,2,3,5,6,7,8,8A-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHEN
18	16.109	68415681	2.27	7.18 4A,8-DIMETHYL-2-(1-METHYLETHYLIDENE)-1,2,3,4,4A,5,6,8A-OCTAHYDRO
19	16.350	22599950	0.75	12.12 Cyclohexanemethanol, 4-ethenyl-.alpha.,.alpha.4-trimethyl-3-(1-methylethenyl)-, [1R-(1
20	16.794	80839369	2.68	7.30 2,3,3-TRIMETHYL-2-(3-METHYL-BUTA-1,3-DIENYL)-CYCLOHEXANONE
21	16.997	12026206	0.40	7.22 1s,4R,7R,11R-8-Hydroxy-1,3,4,7-tetramethyltricyclo[5.3.1.0(4,11)]undec-2-ene
22	17.434	75480038	2.51	10.50 1,1,4,7-TETRAMETHYLDECAHYDRO-1H-CYCLOPROPA[E]AZULEN-4-OL #
23	18.182	497950048	16.53	16.84 Patchouli alcohol
24	18.465	136062519	4.52	7.65 2-BUTYNYL-5-HYDROXY-3-OXO-4-HEXANOIC ACID .DELTA.-LACTONE
25	18.600	15520620	0.52	8.95 6-Isopropenyl-4,8a-dimethyl-1,2,3,5,6,7,8,8a-octahydro-naphthalen-2-ol
26	18.750	17547493	0.58	4.84 1,4-Methanoazulene-9-ol, decahydro-1,5,5,8a-tetramethyl-, [1R-(1.alpha.,3a.beta.,4.alpha

Lampran 5. Kromatogram distilat fraksi II

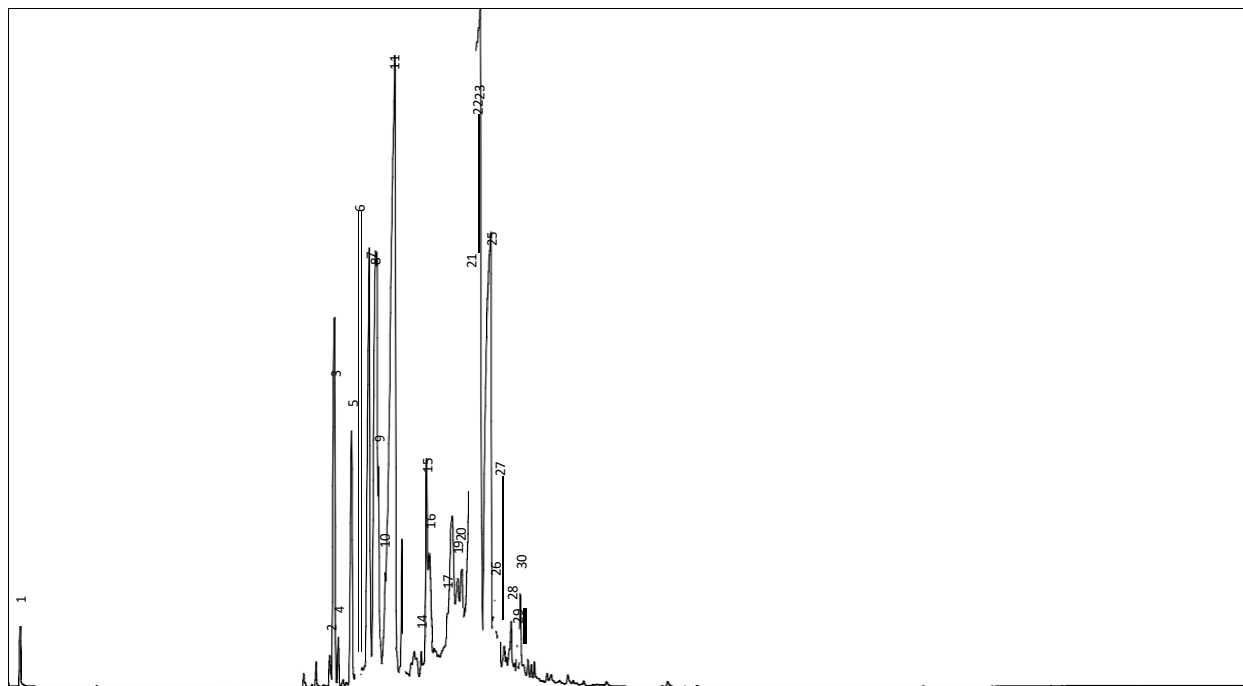
DATA REPORT GCMS-QP2010 ULTRA SHIMADZU



Peak#	R.Time	Area	Area%	A/H	Name
1	13.353	13059097	0.53	5.81	CYCLOHEXENE, 4-ETHENYL-4-METHYL-3-(1-METHYLETHENYL)-1-(1-METH
2	13.660	12237031	0.50	4.24	Aromadendrene, dehydro-
3	14.067	12081429	0.49	3.58	Aromadendrene, dehydro-
4	14.200	138624011	5.67	6.06	4,7-Methanoazulene, 1,2,3,4,5,6,7,8-octahydro-1,4,9,9-tetramethyl-, [1S-(1.alpha.,4.alpha
5	14.308	4154642	0.17	3.23	4,7-Methanoazulene, 1,2,3,4,5,6,7,8-octahydro-1,4,9,9-tetramethyl-, [1S-(1.alpha.,4.alpha
6	14.687	145119286	5.94	7.50	Caryophyllene
7	14.980	296157831	12.12	10.66	AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
8	15.250	210163639	8.60	8.38	1,6-METHANONAPHTHALENE, DECAHYDRO-1,4,8A-TRIMETHYL-9-METHYL
9	15.432	212875082	8.71	8.36	Naphthalene, 1,2,3,5,6,7,8,8a-octahydro-1,8a-dimethyl-7-(1-methylethenyl)-, [1R-(1.alp
10	15.481	28740883	1.18	1.66	PATCHOULENE
11	15.936	474252109	19.41	15.57	AZULENE, 1,2,3,5,6,7,8,8A-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHEN
12	16.084	28179400	1.15	2.54	4A,8-DIMETHYL-2-(1-METHYLETHYLIDENE)-1,2,3,4,4A,5,6,8A-OCTAHYDRO
13	16.156	29039394	1.19	2.44	1,3,6,9-DECATETRAENE, 2,6-DIMETHYL-5-(1-METHYLETHYLIDENE)-, (E,?)-
14	16.334	4949846	0.20	3.74	CYCLOHEXANEMETHANOL, 4-ETHENYL-.ALPHA.,.ALPHA.,4-TRIMETHYL-3
15	16.442	7746071	0.32	5.37	(-)-5-OXATRICYCLO[8.2.0.0(4,6)]DODECANE,,12-TRIMETHYL-9-METHYLENE
16	16.617	7242972	0.30	3.75	Longifolenaldehyde
17	16.778	41594787	1.70	3.39	2,3,3-TRIMETHYL-2-(3-METHYL-BUTA-1,3-DIENYL)-CYCLOHEXANONE
18	16.833	25172359	1.03	3.72	Caryophyllene oxide
19	17.025	4213444	0.17	8.15	Guaiol
20	17.445	47137280	1.93	7.35	1,1,4,7-TETRAMETHYLDECAHYDRO-1H-CYCLOPROPA[E]AZULEN-4-OL #
21	17.599	14047447	0.57	5.71	Caryophyllene oxide
22	17.729	13301344	0.54	4.40	1,1,4,7-TETRAMETHYLDECAHYDRO-1H-CYCLOPROPA[E]AZULEN-4-OL #
23	17.959	94532956	3.87	5.36	POGOSTOL
24	18.175	302685327	12.39	10.72	Patchouli alcohol
25	18.236	97069385	3.97	3.35	Patchouli alcohol

Lampiran 6. Kromatogram distilat fraksi III

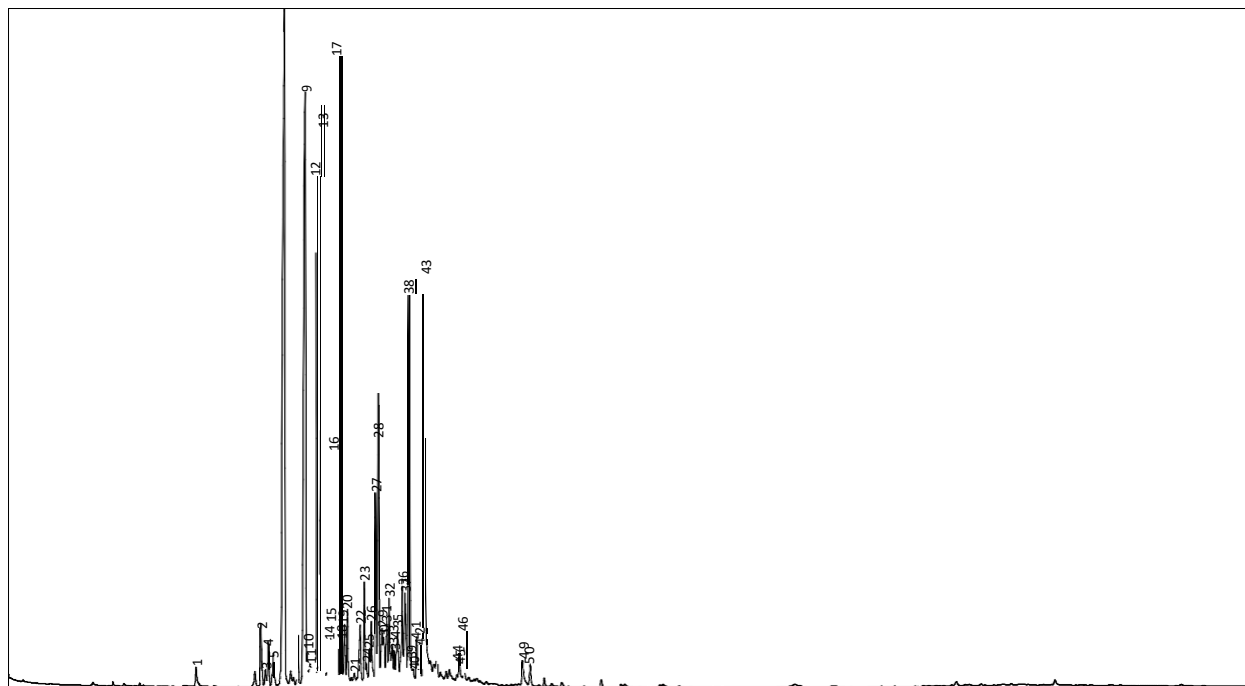
DATA REPORT GCMS-QP2010 ULTRA SHIMADZU



Peak#	R.Time	Area	Area%	A/H	Name
1	5.325	4576367	0.25	1.71	2-Hexanone, 5-methyl-
2	14.052	2626680	0.15	2.15	(Z)-VALERENYL ACETATE
3	14.171	60233296	3.35	3.56	4,7-METHANOAZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4,9,9-TETRAMETHYL
4	14.273	4517476	0.25	2.10	4,7-Methanoazulene, 1,2,3,4,5,6,7,8-octahydro-1,4,9,9-tetramethyl-, [1S-(1.alpha.,4.alpha
5	14.646	42950202	2.39	3.68	Caryophyllene
6	14.863	105168829	5.85	5.06	AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
7	15.147	101076943	5.62	5.04	1,6-METHANONAPHTHALENE, DECAHYDRO-1,4,8A-TRIMETHYL-9-METHYL
8	15.320	137567562	7.65	6.93	1H-3a,7-Methanoazulene, 2,3,6,7,8,8a-hexahydro-1,4,9,9-tetramethyl-, (1.alpha.,3a.alpha
9	15.399	23784357	1.32	2.42	1H-Cycloprop[e]azulene, 1a,2,3,4,4a,5,6,7b-octahydro-1,1,4,7-tetramethyl-, [1aR-(1a.al
10	15.583	18605886	1.03	3.85	Azulene, 1,2,3,3a,4,5,6,7-octahydro-1,4-dimethyl-7-(1-methylethenyl)-, [1R-(1.alpha.,3a
11	15.840	279724897	15.56	9.72	AZULENE, 1,2,3,5,6,7,8,8A-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHEN
12	16.030	16319236	0.91	2.60	Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-4a,8-dimethyl-2-(1-methylethylidene)-, (4aR-t
13	16.110	20176375	1.12	2.44	ISOLONGIFOLEN, 4,5-DEHYDRO-
14	16.592	3359989	0.19	3.75	LONGIFOLENALDEHYDE
15	16.750	29307172	1.63	3.08	2,3,3-Trimethyl-2-(3-methyl-buta-1,3-dienyl)-cyclohexanone
16	16.816	22226179	1.24	4.50	(-)-Spathulenol
17	17.333	4725442	0.26	3.19	4-Androsten-3-.beta.-17-.alpha.-diol-
18	17.464	46715355	2.60	7.69	1,1,4,7-TETRAMETHYLDECAHYDRO-1H-CYCLOPROPA[E]AZULEN-4-OL #
19	17.618	17329342	0.96	5.27	1,1,4,7-TETRAMETHYLDECAHYDRO-1H-CYCLOPROPA[E]AZULEN-4-OL
20	17.746	24124181	1.34	6.35	(-)-Globulol
21	17.985	123459166	6.87	5.93	POGOSTOL
22	18.158	264782363	14.73	9.31	Patchouli alcohol
23	18.208	87347823	4.86	2.99	Patchouli alcohol
24	18.257	87824383	4.88	2.91	Patchouli alcohol
25	18.555	212845090	11.84	10.66	2-BUTYNYL-5-HYDROXY-3-OXO-4-HEXANOIC ACID .DEL.TA.-LACTONE

Lampiran 7. Kromatogram hasil konversi minyak nilam

DATA REPORT GCMS-QP2010 ULTRA SHIMADZU

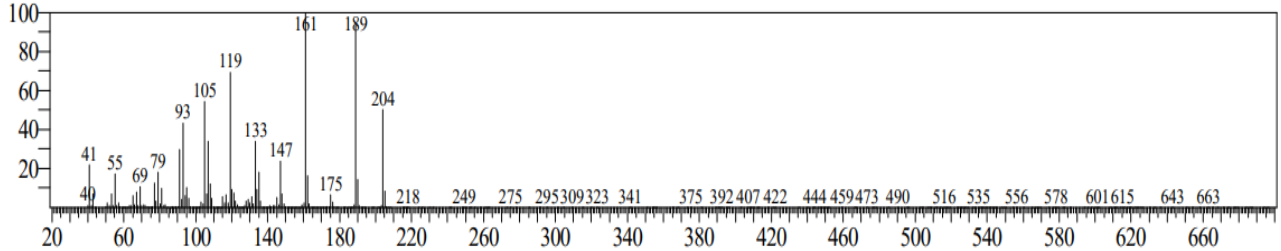


Peak#	R.Time	Area	Area%	A/H Name
1	8.581	2076072	0.23	3.02 Octanal, 7-methoxy-3,7-dimethyl-
2	10.515	5817208	0.65	2.62 Benzene, 1-(3-cyclopentylpropyl)-2,4-dimethyl-
3	10.641	1677489	0.19	2.94 Aromadendrene, dehydro-
4	10.719	4429940	0.49	2.78 2H-2,4A-METHANONAPHTHALENE, 1,3,4,5,6,7-HEXAHYDRO-1,1,5,5-TETRAM
5	10.884	4494977	0.50	3.83 4,8,8-TRIMETHYL-2-METHYLENE-4-VINYLBICYCLO[5.2.0]NONANE
6	11.204	137257885	15.26	5.56 4,7-Methanoazulene, 1,2,3,4,5,6,7,8-octahydro-1,4,9,9-tetramethyl-, [1S-(1.alpha.,4.alpha
7	11.390	1693897	0.19	3.22 Bicyclo[7.2.0]undec-4-ene, 4,11,11-trimethyl-8-methylene-
8	11.602	15888954	1.77	2.83 Thujopsene
9	11.823	85805514	9.54	3.98 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
10	11.877	2806669	0.31	2.45 GAMMA-NEOCLOVEN
11	11.969	2763703	0.31	3.72 (+)-SELINA-4(14),7(11)-DIEN
12	12.106	68663740	7.63	3.71 1,6-METHANONAPHTHALENE, DECAHYDRO-1,4,8A-TRIMETHYL-9-METHYL
13	12.322	119808004	13.32	5.66 10s,11s-Himachala-3(12),4-diene
14	12.487	6704768	0.75	2.76 Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-1-(1-methylethyl)-, [1S-(1.alpha.,4a
15	12.550	8861375	0.99	2.87 OCTADECANE, 1-CHLORO-
16	12.627	33219653	3.69	3.56 Aciphyllene
17	12.757	112870524	12.55	4.75 AZULENE, 1,2,3,5,6,7,8,8A-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHEN
18	12.873	5880442	0.65	3.78 1,1,7-TRIMETHYL-4-METHYLENE-1A,2,3,4,6,7,7A,7B-OCTAHYDRO-1H-CYCL
19	12.976	5359577	0.60	2.55 (-)-ALPHA-PANASINSEN
20	13.064	6615580	0.74	2.49 NAPHTHALENE, 1,2,3,5,6,8A-HEXAHYDRO-4,7-DIMETHYL-1-(1-METHYLETH
21	13.275	1092808	0.12	3.34 Cyclohexanemethanol, 4-ethenyl-.alpha.,.alpha.,4-trimethyl-3-(1-methylethenyl)-, [1R-(1
22	13.441	7570842	0.84	3.67 NEOALLOOCIMENE
23	13.569	7966007	0.89	2.18 Cholestan-22(26)-isoeopoxy-3.beta.-ol
24	13.625	1621987	0.18	2.35 1,4-Methanoazulen-9-ol, decahydro-1,5,5,8a-tetramethyl-, [1R-(1.alpha. ..
25	13.712	3095391	0.34	2.74 Carvophyllenyl alcohol

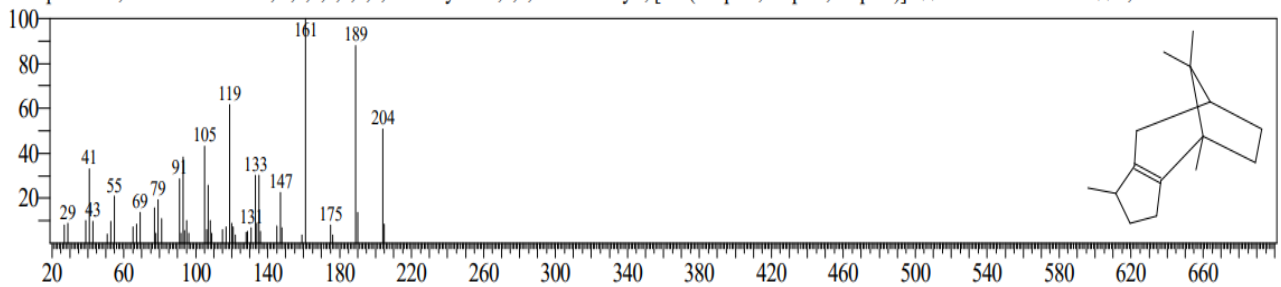
Lampiran 8. Spektrom massa hasil konversi minyak nilam

<< target >>

Line#:6 R.Time:11.200(Scan#:985) MassPeaks:326
RawMode:Averaged 11.192-11.208(984-986) BasePeak:161.10(2700647)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan

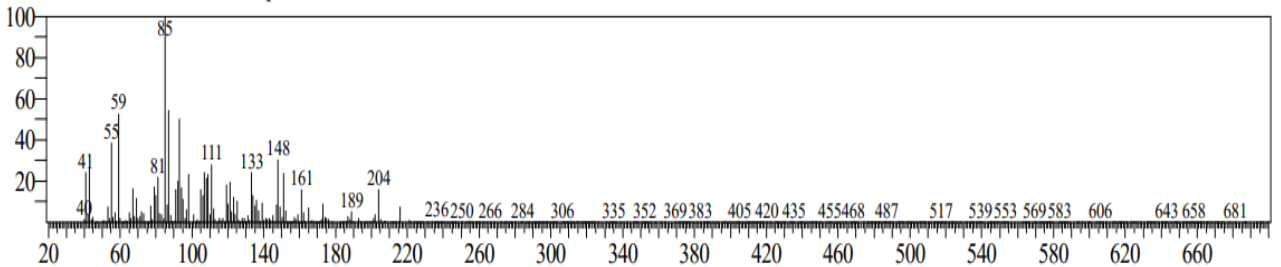


Hit#:1 Entry:42370 Library:NIST147.LIB
SI:95 Formula:C15H24 CAS:514-51-2 MolWeight:204 RetIndex:0
CompName:4,7-Methanoazulene, 1,2,3,4,5,6,7,8-octahydro-1,4,9,9-tetramethyl-, [1S-(1.alpha.,4.alpha.,7.alpha.)]-. \$\$.beta.-Patchoulene \$\$ 4,7-Methanoazulene

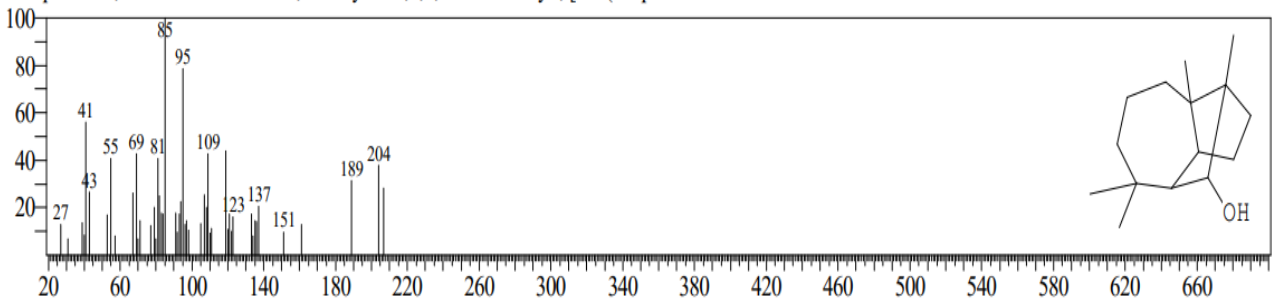


<< Target >>

Line#:24 R.Time:13.625(Scan#:1276) MassPeaks:457
RawMode:Averaged 13.617-13.633(1275-1277) BasePeak:85.05(26453)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan

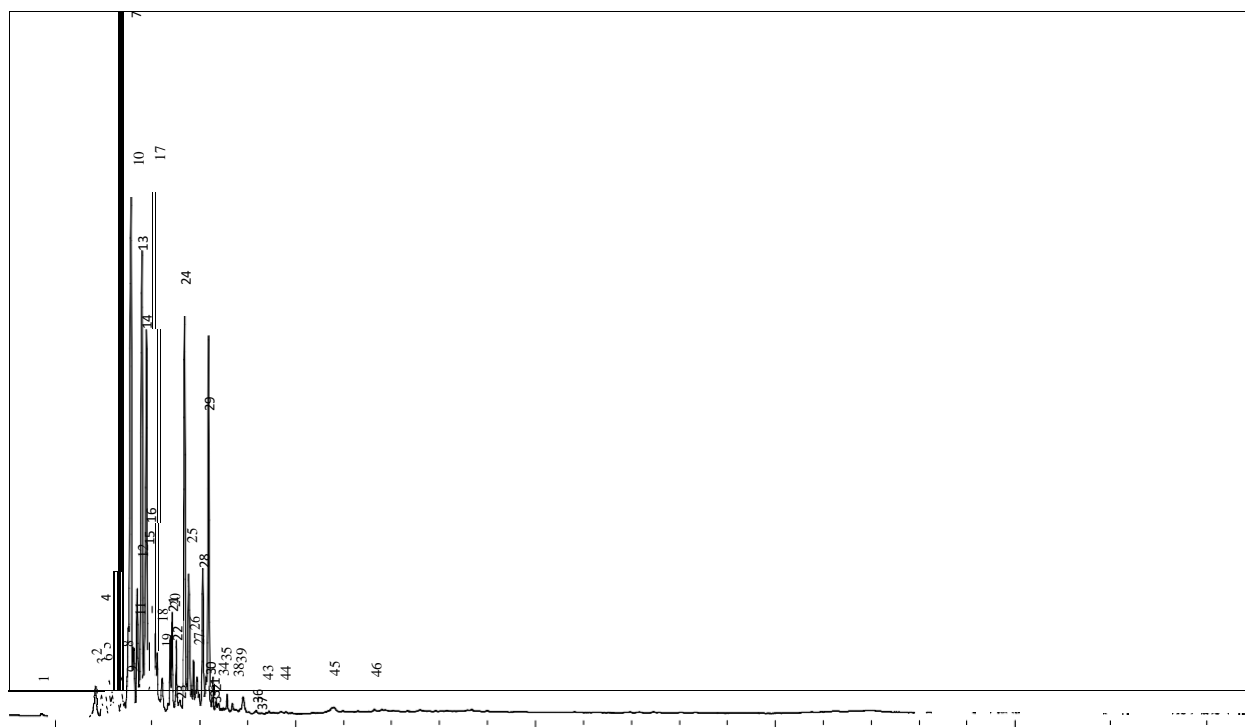


Hit#:1 Entry:52503 Library:NIST147.LIB
SI:70 Formula:C15H26O CAS:27551-75-3 MolWeight:222 RetIndex:0
CompName:1,4-Methanoazulene-9-ol, decahydro-1,5,5,8a-tetramethyl-, [1R-(1.alpha. ...]



Lampiran 9. Kromatogram hasil konversi fraksi I

DATA REPORT GCMS-QP2010 ULTRA SHIMADZU

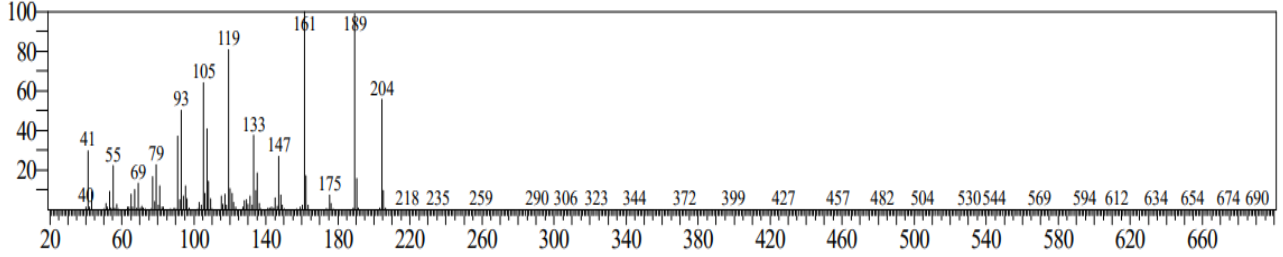


Peak#	R.Time	Area	Area%	A/H Name
1	4.699	202052	0.05	2.51 METHYL 2-PENTYLCYCLOPROPANECARBOXYLATE #
2	5.827	4073946	0.95	3.91 2-(4A,8-DIMETHYL-2,3,4,4A,5,6-HEXAHYDRO-2-NAPHTHALENYL)-2-PROPEN
3	5.957	1475498	0.35	2.05 2,4-Diphenyl-4-methyl-1-pentene
4	6.018	9516641	2.23	2.41 1,1,7-TRIMETHYL-4-METHYLENE-1A,2,3,4,6,7,7A,7B-OCTAHYDRO-1H-CYCL
5	6.119	2660725	0.62	2.18 NAPHTHALENE, 1,2,3,4,4A,5,6,8A-OCTAHYDRO-7-METHYL-4-METHYLENE-1
6	6.178	2104711	0.49	2.53 2,4-DIISOPROPENYL-1-METHYL-1-VINYLCYCLOHEXANE
7	6.291	77844311	18.21	3.36 4,7-METHANOAZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4,9,9-TETRAMETHYL
8	6.376	3399016	0.80	2.59 (-)-ISOLEDENE
9	6.440	796303	0.19	1.75 7-TETRACYCLO[6.2.1.0(3.8)0(3.9)]UNDECANOL, 4,4,11,11-TETRAMETHYL-
10	6.568	48910017	11.44	2.75 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
11	6.610	6164174	1.44	2.59 Naphthalene, 1,2,3,5,6,7,8,8a-octahydro-1,8a-dimethyl-7-(1-methylethenyl)-, [1R-(1.alp
12	6.689	9682055	2.27	2.22 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
13	6.783	35494029	8.30	2.23 1,6-METHANONAPHTHALENE, DECAHYDRO-1,4,8A-TRIMETHYL-9-METHYL
14	6.870	29585793	6.92	2.24 10s,11s-Himachala-3(12),4-diene
15	6.914	10041473	2.35	1.72 1H-CYCLOPROP[E]AZULENE, 1A,2,3,4,4A,5,6,7B-OCTAHYDRO-1,1,4,7-TETRA
16	6.991	13692499	3.20	2.06 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
17	7.050	42223585	9.88	2.35 AZULENE, 1,2,3,5,6,7,8,8A-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHEN
18	7.107	4227568	0.99	1.98 1H-CYCLOPROP[E]AZULENE, 1A,2,3,4,4A,5,6,7B-OCTAHYDRO-1,1,4,7-TETRA
19	7.211	4141570	0.97	3.28 Azulene, 1,2,3,3a,4,5,6,7-octahydro-1,4-dimethyl-7-(1-methylethenyl)-, [1R-(1.alpha.,3a
20	7.379	5560859	1.30	2.06 9,19-Cyclolanostan-24-one, 3-acetoxy-25-methoxy-
21	7.420	5860305	1.37	1.66 Azulene, 1,2,3,3a,4,5,6,7-octahydro-1,4-dimethyl-7-(1-methylethenyl)-, [1R-(1.alpha.,3a
22	7.510	5016541	1.17	1.98 Cholestan-22(26)-isoeopoxy
23	7.588	1889533	0.44	3.73 CYCLOPROPA[D]NAPHTHALENE, 1,1A,4,4A,5,6,7,8-OCTAHYDRO-2,4A,8,8-TE
24	7.693	31461967	7.36	2.30 3-(1,5-Dimethyl-hexa-1,4-dienyl)-2,2-dimethyl-4-trimethylsilylcyclopentanol
25	7.776	11341967	2.65	2.34 2,4-DODECADIENOIC ACID, 11-METHOXY-3,7,11-TRIMETHYL-, METHYL EST
26	7.872	4675439	1.09	2.51 2-Norpinanol, 3,6,6-trimethyl-

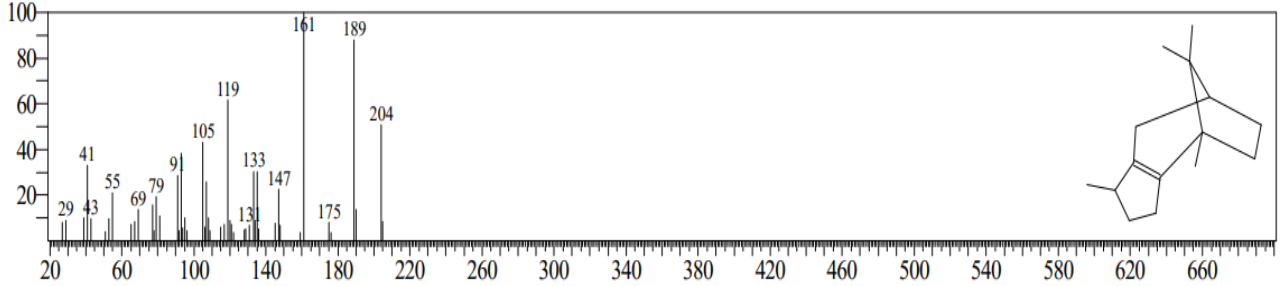
Lampiran 10. Spektum Massa hasil konversi fraksi I

<< Target >>

Line#:7 R.Time:6.290(Scan#:459) MassPeaks:338
 RawMode:Averaged 6.285-6.295(458-460) BasePeak:161.25(2164603)
 BG Mode:Calc. from Peak Group 1 - Event 1 Scan

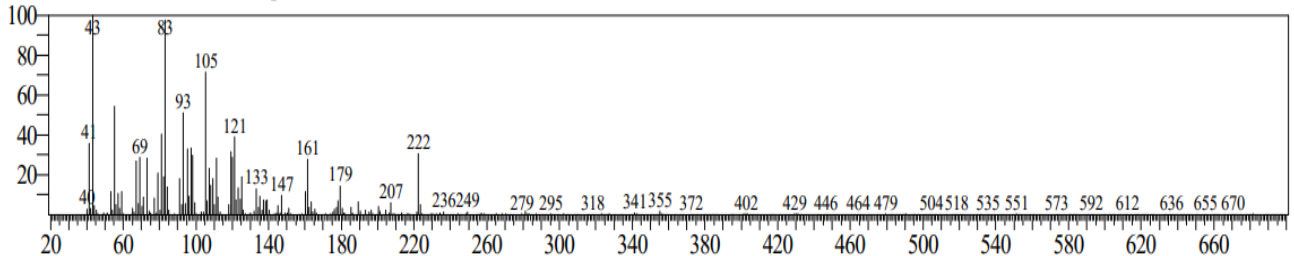


Hit#:5 Entry:42370 Library:NIST147.LIB
 SI:94 Formula:C15H24 CAS:514-51-2 MolWeight:204 RetIndex:0
 CompName:4,7-Methanoazulene, 1,2,3,4,5,6,7,8-octahydro-1,4,9,9-tetramethyl-, [1S-(1.alpha.,4.alpha.,7.alpha.)]-.beta.-Patchoulene .beta.-4,7-Methanoazulene

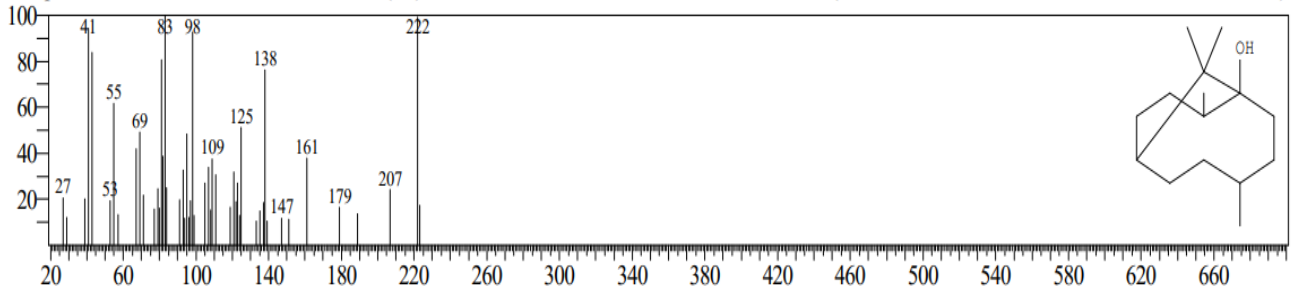


<< Target >>

Line#:32 R.Time:8.395(Scan#:880) MassPeaks:357
 RawMode:Averaged 8.390-8.400(879-881) BasePeak:43.10(12837)
 BG Mode:Calc. from Peak Group 1 - Event 1 Scan

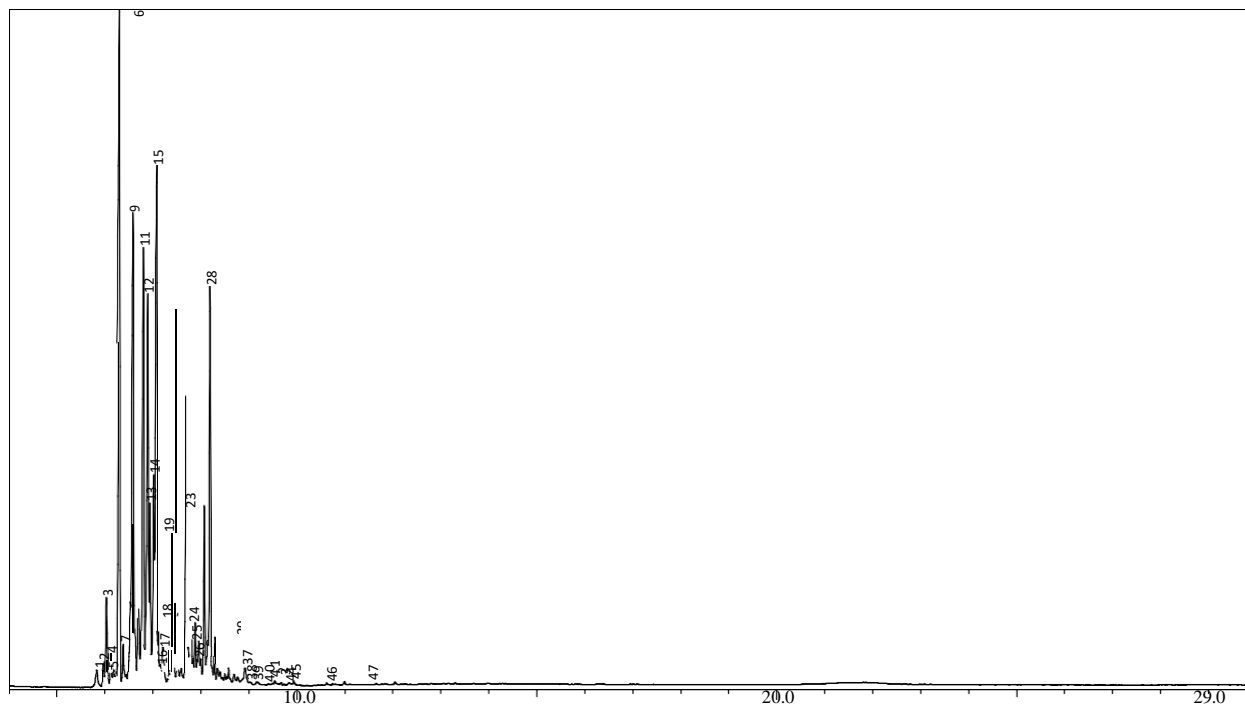


Hit#:1 Entry:136075 Library:WILEY8.LIB
 SI:81 Formula:C15H26O CAS:5986-55-0 MolWeight:222 RetIndex:0
 CompName:1,6-METHANONAPHTHALEN-1(2H)-OL, OCTAHYDRO-4,8A,9,9-TETRAMETHYL-, (1.ALPHA.,4.BETA.,4A.ALPHA.,6.BETA.,8A.ALPHA.)-



Lampiran 11. Kromatogram hasil konversi fraksi II

DATA REPORT GCMS-QP2010 ULTRA SHIMADZU

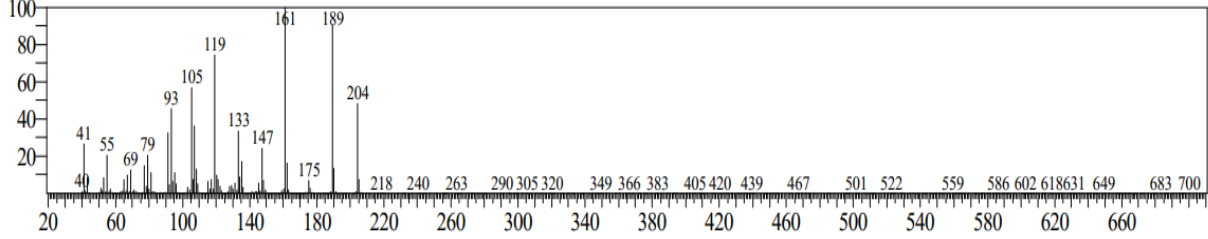


Peak#	R.Time	Area	Area%	A/H Name
1	5.830	2167860	0.44	3.41 2-(4A,8-DIMETHYL-2,3,4,4A,5,6-HEXAHYDRO-2-NAPHTHALENYL)-2-PROPEN
2	5.961	1738584	0.35	2.01 Benzene, 1,1'-(1,1,2,2-tetramethyl-1,2-ethanediyl)bis-
3	6.020	7797441	1.57	2.32 Aromadendrene, dehydro-
4	6.122	2780816	0.56	2.33 .beta.-Neoclovone
5	6.186	1508408	0.30	2.36 2,4-DIISOPROPENYL-1-METHYL-1-VINYLCYCLOHEXANE
6	6.301	87973692	17.67	3.42 4,7-METHANOAZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4,9,9-TETRAMETHYL
7	6.379	3744268	0.75	2.34 (-)-ISOLEDENE
8	6.445	794078	0.16	1.79 7-TETRACYCLO[6.2.1.0(3.8)0(3.9)]UNDECANOL, 4,4,11,11-TETRAMETHYL-
9	6.574	58498810	11.75	3.25 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
10	6.695	11990663	2.41	1.95 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
11	6.788	39872303	8.01	2.40 1,6-METHANONAPHTHALENE, DECAHYDRO-1,4,8A-TRIMETHYL-9-METHYL
12	6.877	36473275	7.33	2.45 10s,11s-Himachala-3(12),4-diene
13	6.919	12361660	2.48	1.78 1H-CYCLOPROP[E]AZULENE, 1A,2,3,4,4A,5,6,7B-OCTAHYDRO-1,1,4,7-TETRA
14	6.997	17334472	3.48	2.16 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
15	7.060	59607281	11.97	3.01 AZULENE, 1,2,3,5,6,7,8,8A-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHEN
16	7.155	144347	0.03	1.18 (-)-5-OXATRICYCLO[8.2.0.0(4,6)]DODECANE,,12-TRIMETHYL-9-METHYLENE
17	7.207	2516424	0.51	2.50 Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-4a,8-dimethyl-2-(1-methylethylidene)-, (4aR-t
18	7.382	5617390	1.13	2.24 9,19-Cyclolanostan-24-one, 3-acetoxy-25-methoxy-
19	7.424	9793450	1.97	1.70 AZULENE, 1,2,3,3A,4,5,6,7-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHEN
20	7.513	5373786	1.08	1.96 Cholestan-22(26)-isoeopoxy
21	7.592	2342812	0.47	3.59 .gamma.-HIMACHALENE
22	7.698	34078848	6.84	2.38 3-(1,5-Dimethyl-hexa-1,4-dienyl)-2,2-dimethyl-4-trimethylsilylcyclopentanol
23	7.779	16654991	3.34	2.49 2,4-Dodecadienoic acid, 11-methoxy-3,7,11-trimethyl-, methyl ester, (E,E)-
24	7.875	4247777	0.85	1.79 2-Norpinanol, 3,6,6-trimethyl-
25	7.951	4929880	0.99	2.94 1,3-DIOXOLANE, 2-(6-HEPTYNYL)-
26	7.998	1945950	0.39	1.96 NAPHTHALENE, 1,2,3,4,4A,5,6,8A-OCTAHYDRO-4A,8-DIMETHYL-2-(1-METHY

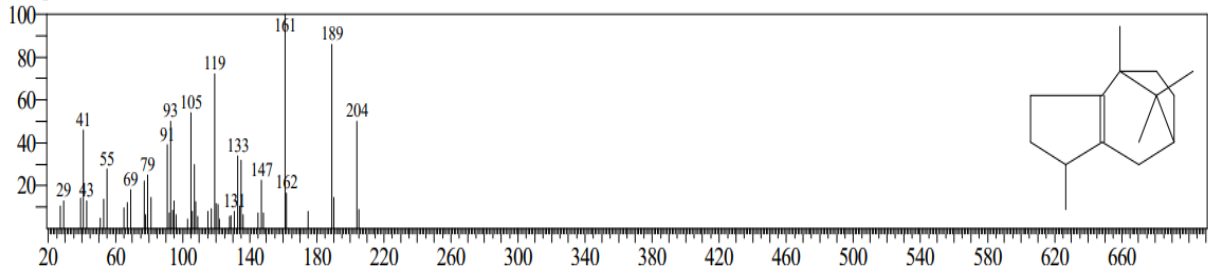
Lampiran 12. Spektrum massa hasil konversi fraksi II

<< Target >>

Line#:6 R.Time:6.300(Scan#:461) MassPeaks:385
 RawMode:Averaged 6.295-6.305(460-462) BasePeak:161.25(2620712)
 BG Mode:Calc. from Peak Group 1 - Event 1 Scan

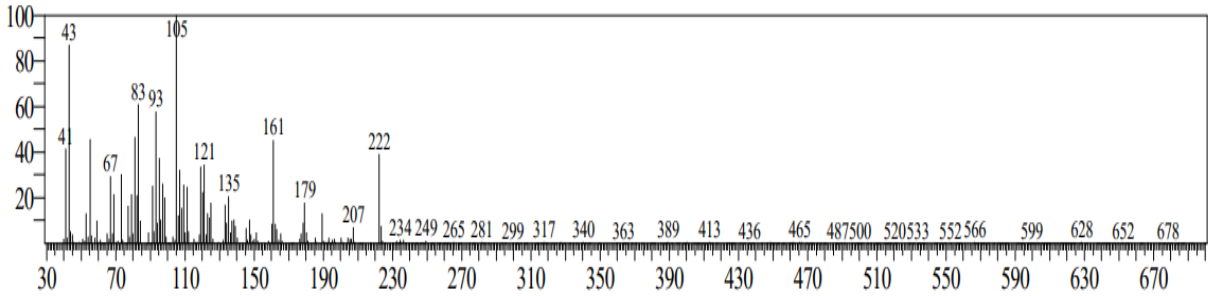


Hit#:1 Entry:109906 Library:WILEY8.LIB
 SI:96 Formula:C15H24 CAS:514-51-2 MolWeight:204 RetIndex:0
 CompName:4,7-METHANOAZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4,9,9-TETRAMETHYL- \$ 4,7-METHANOAZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-

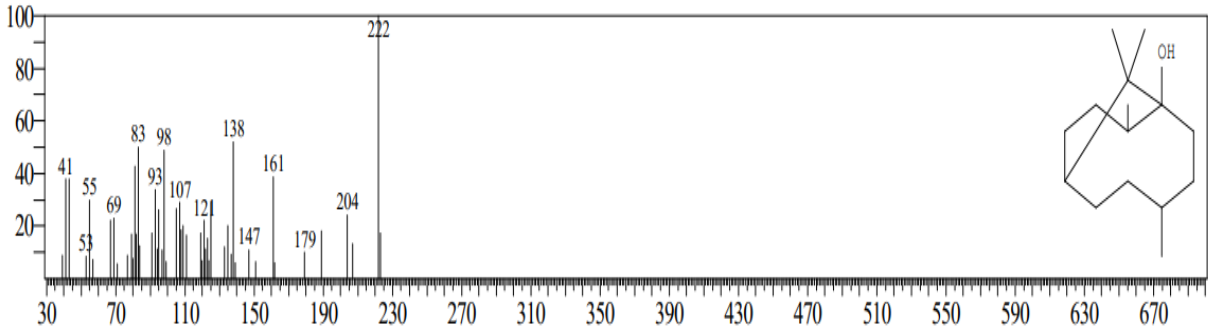


<< Target >>

Line#:31 R.Time:8.400(Scan#:881) MassPeaks:365
 RawMode:Averaged 8.395-8.405(880-882) BasePeak:105.20(15371)
 BG Mode:Calc. from Peak Group 1 - Event 1 Scan

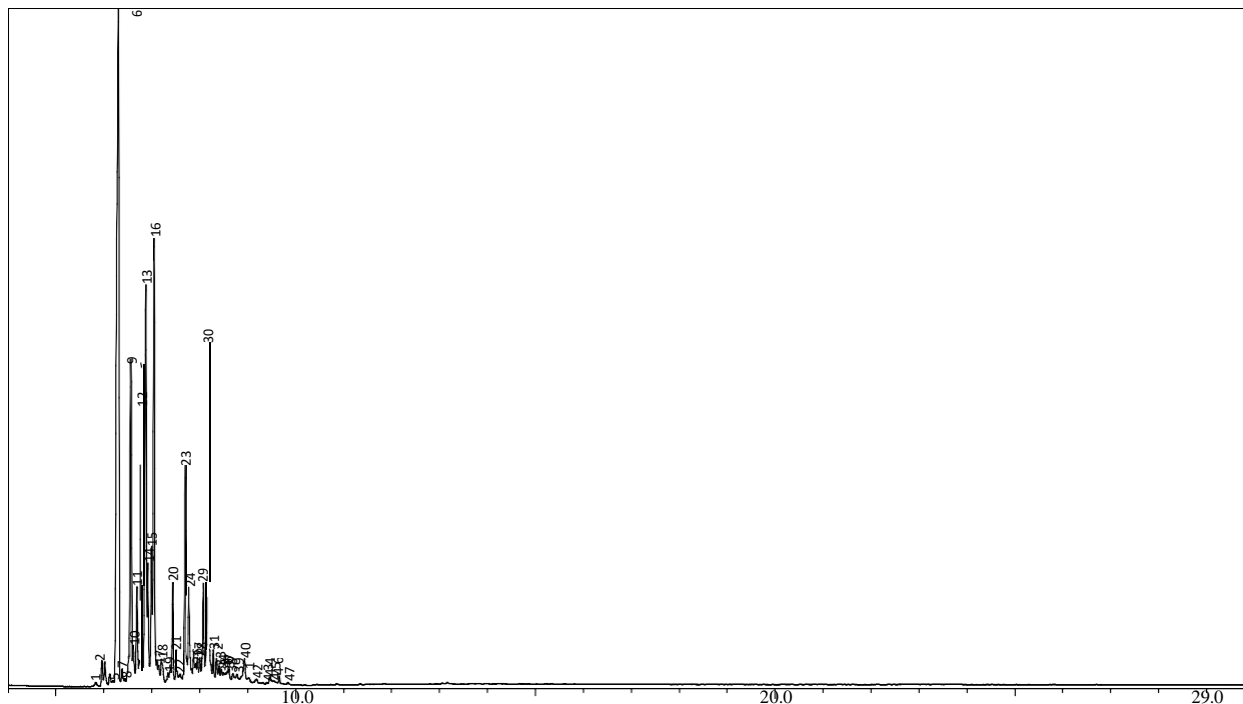


Hit#:1 Entry:136078 Library:WILEY8.LIB
 SI:82 Formula:C15H26O CAS:5986-55-0 MolWeight:222 RetIndex:0
 CompName:1,6-METHANONAPHTHALEN-1(2H)-OL, OCTAHYDRO-4,8A,9,9-TETRAMETHYL-, (1.ALPHA.,4.BETA.,4A.ALPHA.,6.BETA.,8A.ALPHA.)-



Lampiran 13. Kromatogram hasil konversi fraksi III

DATA REPORT GCMS-QP2010 ULTRA SHIMADZU



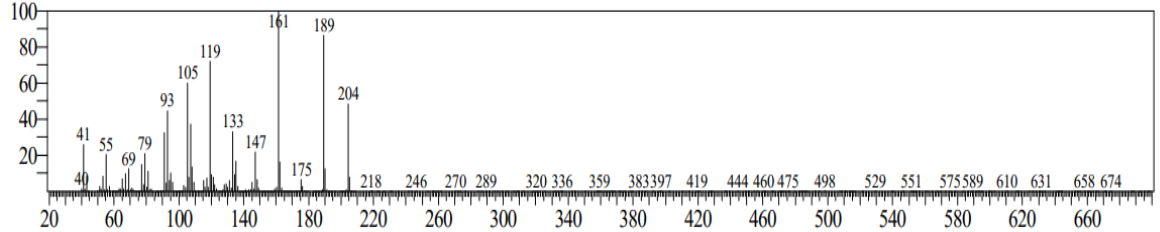
Peak Report TIC

Peak#	R.Time	Area	Area%	A/H Name
1	5.834	434511	0.12	2.90 BICYCLO[3.1.0]HEXANE, 1,2-DIMETHYL-2-(4-METHYLPHENYL)-, [1S-(1.ALP
2	5.960	2048095	0.55	2.04 Benzene, 1,1'-(1,1,2,2-tetramethyl-1,2-ethanediyl)bis-
3	6.020	2163975	0.58	2.32 1,1,7-TRIMETHYL-4-METHYLENE-1A,2,3,4,6,7,7A,7B-OCTAHYDRO-1H-CYCL
4	6.122	1133466	0.31	2.39 BETA-NEOCLOVENE
5	6.192	577809	0.16	2.72 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
6	6.304	90477125	24.45	3.47 4,7-Methanoazulene, 1,2,3,4,5,6,7,8-octahydro-1,4,9,9-tetramethyl-, [1S-(1.alpha.,4.alpha
7	6.379	1694378	0.46	2.56 (-)-ISOLEDENE
8	6.445	465358	0.13	1.74 CYCLOISOLONGIFOLEN, 8,9-DEHYDRO-
9	6.560	25329880	6.84	2.02 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
10	6.607	3772014	1.02	2.43 Bicyclo[4.3.0]nonane, 7-methylene-2,4,4-trimethyl-2-vinyl-
11	6.688	8327822	2.25	2.19 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
12	6.777	25018188	6.76	2.01 1,6-METHANONAPHTHALENE, DECAHYDRO-1,4,8A-TRIMETHYL-9-METHYL
13	6.876	36342045	9.82	2.35 10s,11s-Himachala-3(12),4-diene
14	6.916	8216519	2.22	1.74 1H-CYCLOPROP[E]AZULENE, 1A,2,3,4,4A,5,6,7B-OCTAHYDRO-1,1,4,7-TETRA
15	6.993	10065856	2.72	1.88 AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENY
16	7.051	45213710	12.22	2.62 Azulene, 1,2,3,5,6,7,8,8a-octahydro-1,4-dimethyl-7-(1-methylethenyl)-, [1S-(1.alpha.,7.a
17	7.145	273517	0.07	1.12 (-)-5-OXATRICYCLO[8.2.0.0(4,6)]DODECANE,,12-TRIMETHYL-9-METHYLENE
18	7.199	1885394	0.51	2.63 (-)-ALPHA-PANASINSEN
19	7.337	366440	0.10	1.63 Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-4a,8-dimethyl-2-(1-methylethylidene)-, (4aR-t
20	7.422	8394142	2.27	2.12 AZULENE, 1,2,3,3A,4,5,6,7-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHEN
21	7.511	2997325	0.81	2.20 Cholestan-22(26)-isoepeoxy
22	7.592	1517465	0.41	3.70 CYCLOHEXANECARBOXYLIC ACID, 1,3-DIMETHYL-2-[2-[3-(1-METHYLETH
23	7.691	17182402	4.64	2.04 3-(1,5-Dimethyl-hexa-1,4-dienyl)-2,2-dimethyl-4-trimethylsilylcyclopentanol
24	7.775	8681006	2.35	2.34 2,4-DODECADIENOIC ACID, 11-METHOXY-3,7,11-TRIMETHYL-, METHYL EST
25	7.874	2290872	0.62	1.81 1,5-HEPTADIEN-4-OL, 3,3,6-TRIMETHYL-, (+.-)-
26	7.915	1464206	0.40	1.84 1H-BENZOCYCLOHEPTEN-7-OL, 2,3,4,4A,5,6,7,8-OCTAHYDRO-1,1,4A,7-TETR

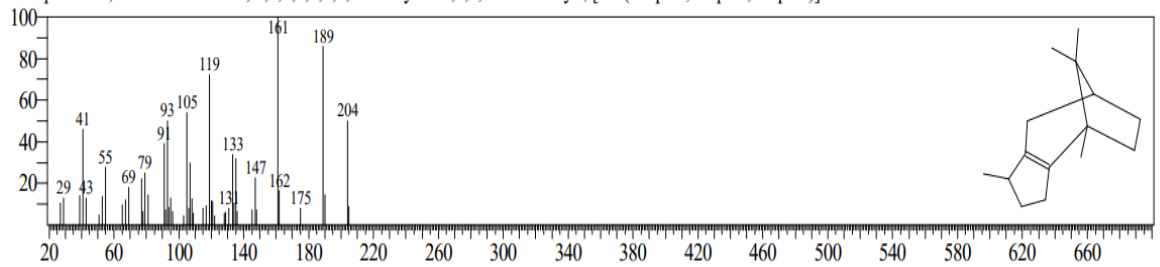
Lampiran 14. Spektrum massa hasil konversi fraksi III

<< Target >>

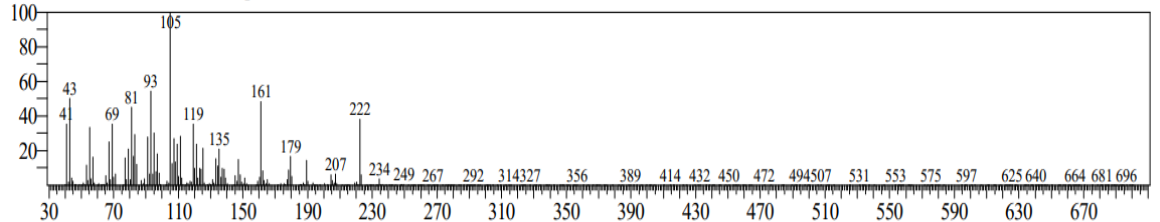
Line#:6 R.Time:6.305(Scan#:462) MassPeaks:324
RawMode:Averaged 6.300-6.310(461-463) BasePeak:161.25(2714150)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



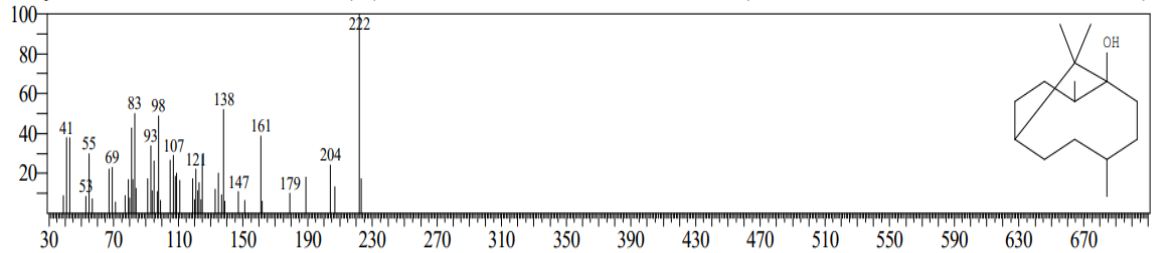
Hit#:1 Entry:16813 Library:NIST27.LIB
SI:96 Formula:C15H24 CAS:514-51-2 MolWeight:204 RetIndex:0
CompName:4,7-Methanoazulene, 1,2,3,4,5,6,7,8-octahydro-1,4,9,9-tetramethyl-, [1S-(1.alpha.,4.alpha.,7.alpha.)]-



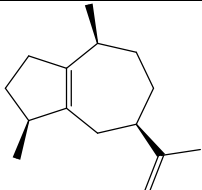
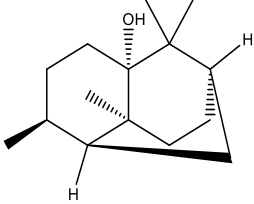
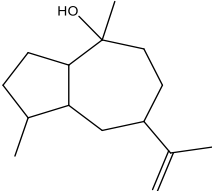
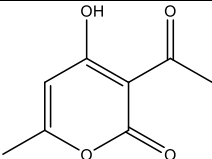
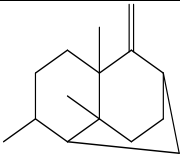
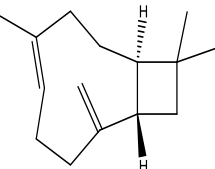
Line#:33 R.Time:8.400(Scan#:881) MassPeaks:364
RawMode:Averaged 8.395-8.405(880-882) BasePeak:105.15(26286)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan

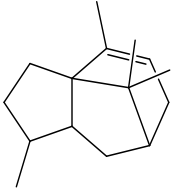
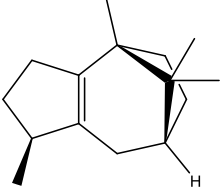
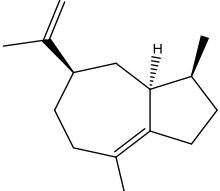
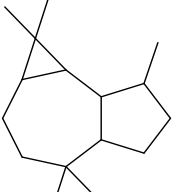
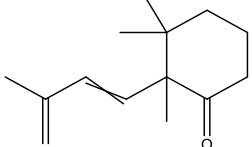


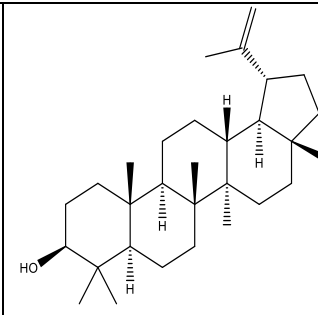
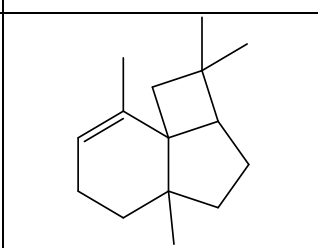
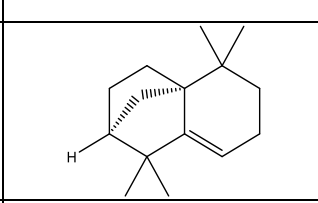
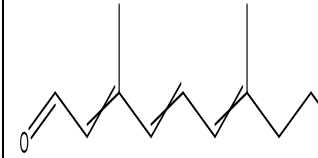
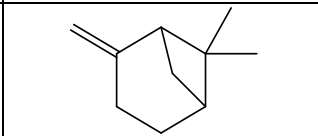
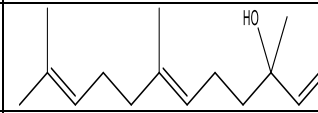
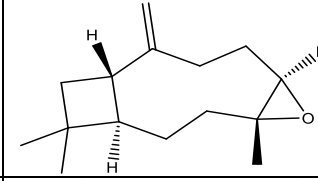

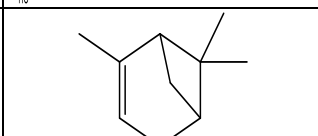
Hit#:1 Entry:136078 Library:WILEY8.LIB
SI:85 Formula:C15H26O CAS:5986-55-0 MolWeight:222 RetIndex:0
CompName:1,6-METHANONAPHTHALEN-1(2H)-OL, OCTAHYDRO-4,8A,9,9-TETRAMETHYL-, (1.ALPHA.,4.BETA.,4A.ALPHA.,6.BETA.,8A.ALPHA.)-

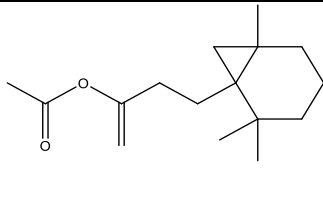
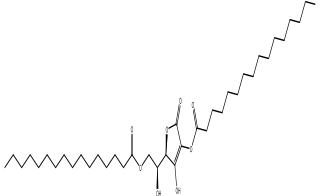
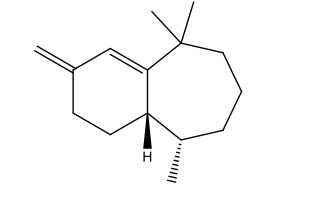
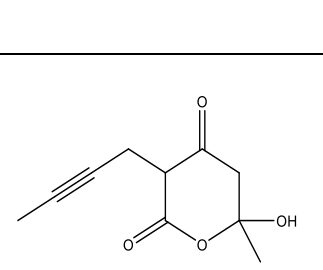
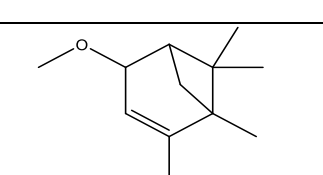
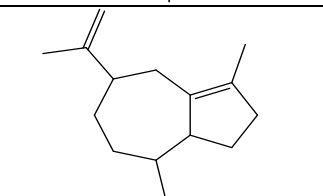
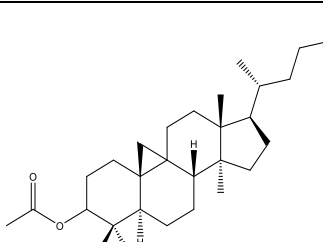


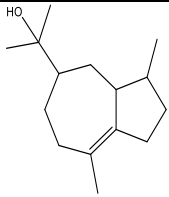
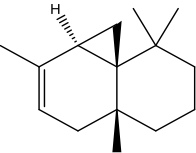
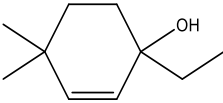
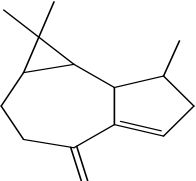
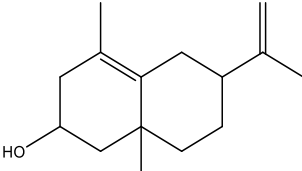
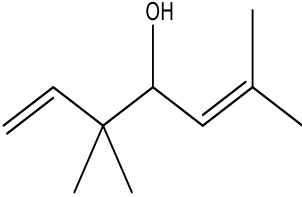
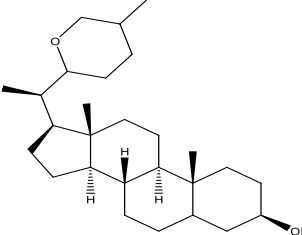
Lampiran 15. Konversi Fraksi Minyak Nilam

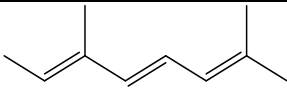
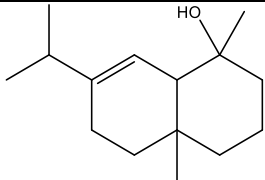
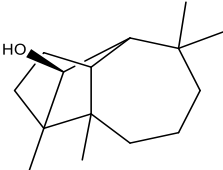
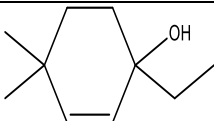
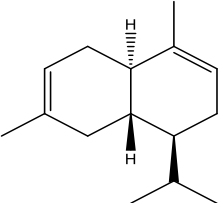
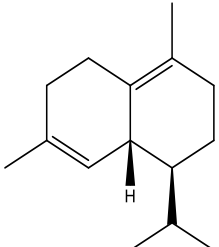
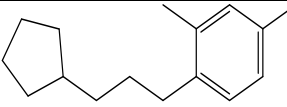
Nama Senyawa	Struktur	% Sebelum	% Setelah	Keterangan
α -Guaiene		19,19	9,54	Menurun
PA		10,59	0,13	Menurun
Pogostol		10,37	-	Menurun
3-Acetyl-4-Hydroxy-6-Methyl-2H-Pyran-2-One		8,83	-	Menurun
Seychellene		8,3	7,63	Menurun
Caryophyllene		8,0	0,19	Menurun

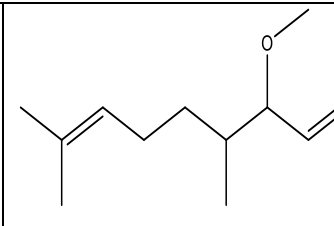
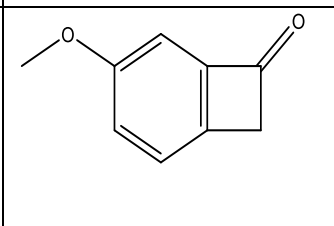
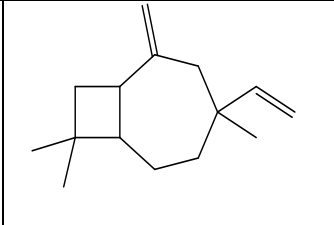
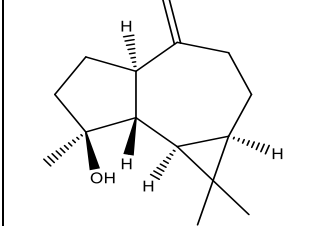
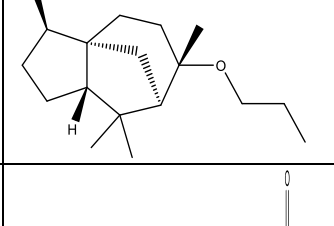
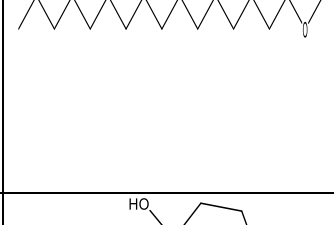
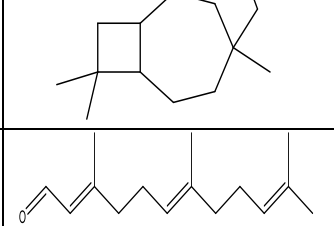

α -patchoulene		7,58	-	Menurun
β -Patchoulene		6,06	15,26	Meningkat
δ -Guaiene		5,92	12,55	Meningkat
Globulol		4,75	-	Menurun
2,3,3-trimethyl-2-(3-methyl-1,3-butadienyl)-cyclohexanone		3,6	-	Menurun

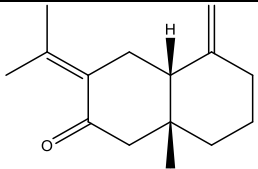
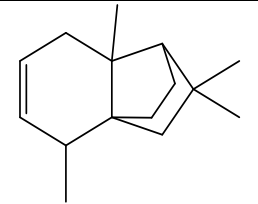
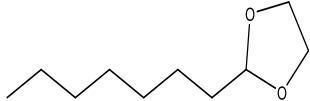
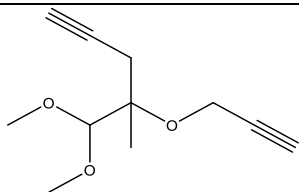
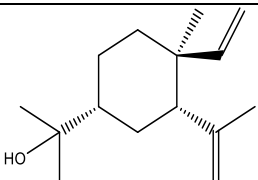
Lupeol		1,14	-	Menurun
α -Panasinsen		0,94	0,6	Menurun
Isolongifolene		0,71	1,19	Meningkat
3,7,11-trimethyldodeca-2,4,6,10-tetraenal		0,64	-	Menurun
β -Pinene		0,59	-	Menurun
Nerolidol		0,56	-	Menurun
Caryophyllene oxide		0,54	-	Menurun
Phytol		0,35	-	Menurun
α -pinene		0,24	-	Menurun

1-[2-(2,2,6-Trimethylbicyclo [4.1.0] Hept-1-yl)Ethyl]Vinyl Acetate		0,22	-	Menurun
L-Ascorbyl 2,6-Dipalmitate		0,22	-	Menurun
10s,11s-Himachala-3(12),4-Diene		-	13,32	Meningkat
2-Butynyl-5-Hydroxy-3-Oxo-4-Hexanoic Acid- Δ -Lactone		-	7,34	Meningkat
1-Methylverbenol-Methyl Ether		-	4,09	Meningkat
Aciphyllene		-	3,69	Meningkat
9,19-Cyclolanostan-24-One-3-Acetoxy-25-Methoxy		-	2,75	Meningkat

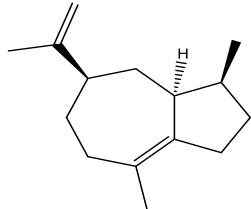
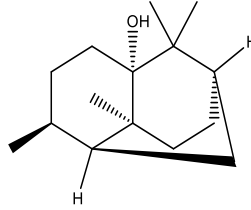
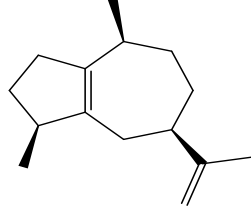
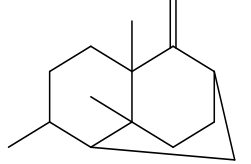
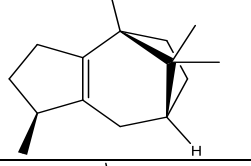
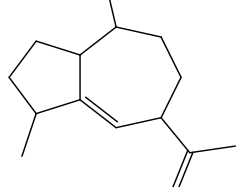
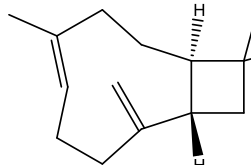
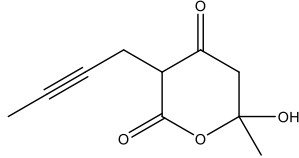
Bulnesol		-	1,77	Meningkat
Thujopsene		-	1,77	Meningkat
1-Ethyl-4,4-Dimethyl-Cyclohex-2-En-1-Ol		-	1,72	Meningkat
Aromadendrene-dehydro-		-	1,6	Meningkat
6-Isopropenyl-4,8a-Dimethyl-1,2,3,5,6,7,8,8a-Octahydronaphthalene-2-Ol		-	1,05	Meningkat
3,3,6-Trimethyl-1,5-Heptadien-4-Ol		-	0,92	Meningkat
Cholestan-22(26)-Isoepoxy-3β-Ol		-	0,89	Meningkat

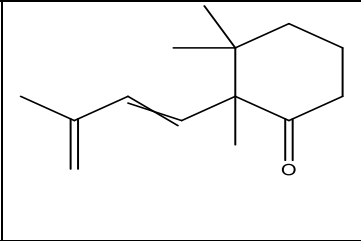
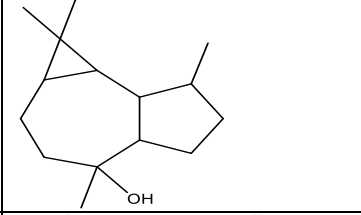
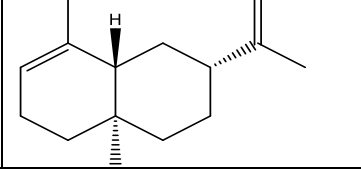
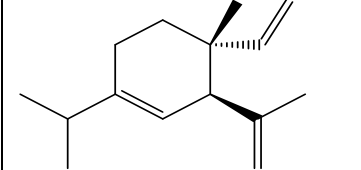
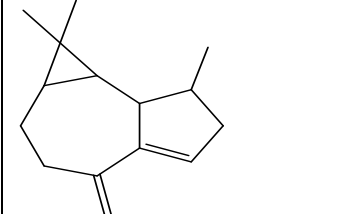
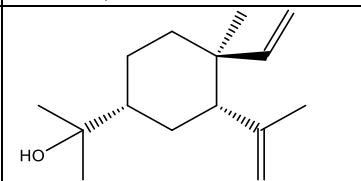
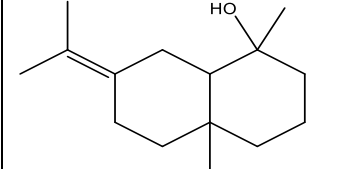
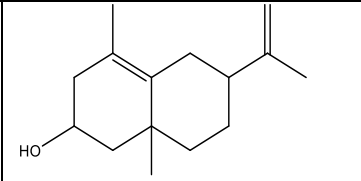
Nealloocimene		-	0,84	Meningkat
Selina-6-En-4-Ol		-	0,82	Meningkat
Longiborneol		-	0,77	Meningkat
1-Ethyl-4,4-Dimethyl-Cyclohex-2-En-1-Ol		-	0,75	Meningkat
β -Cadinene		-	0,75	Meningkat
δ -Cadinene		-	0,74	Meningkat
1-(3-Cyclopentylpropyl)-2,4-Dimethylbenzene		-	0,65	Meningkat

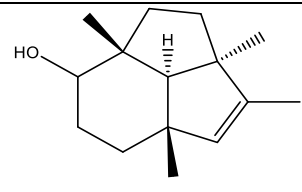
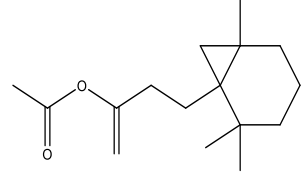
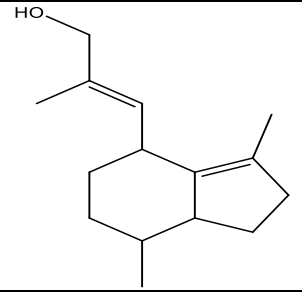
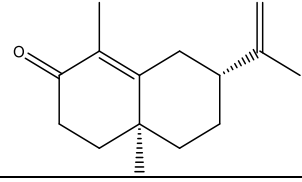
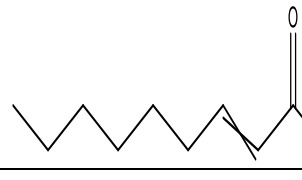
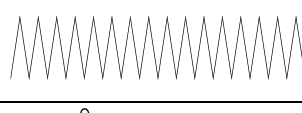
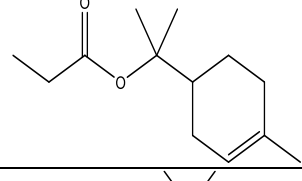
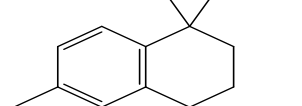
Methoxycitronellal		-	0,51	Meningkat
4-Methoxybicyclo[4.2.0] Octa-1(6),2,4-Trien-7-One		-	0,51	Meningkat
2-Methylene-4,8,8-Trimethyl-4-Vinyl-Bicyclo[5.2.0]Nonane		-	0,50	Meningkat
Sphatulenol		-	0,45	Meningkat
8-Propoxycedrane		-	0,39	Meningkat
Methyl Palmitate		-	0,35	Meningkat
Caryophyllenyl Alcohol		-	0,34	Meningkat
Farnesyl Aldehyde		-	0,33	Meningkat

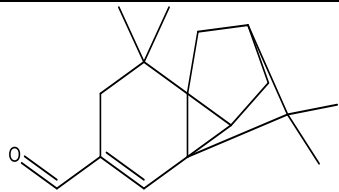
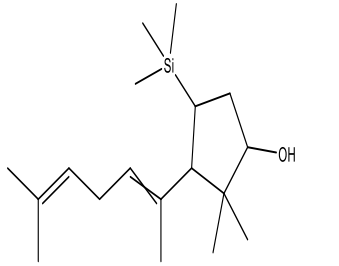
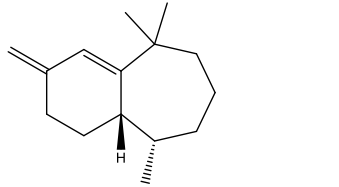
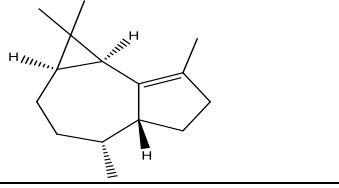
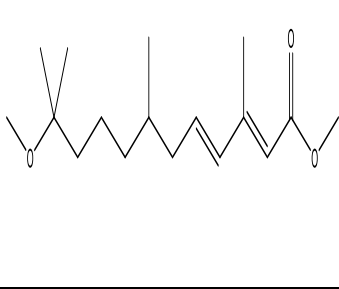
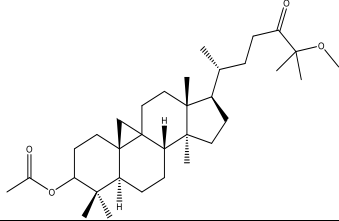
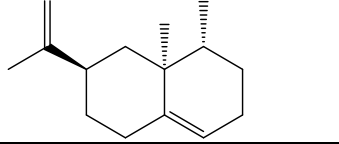
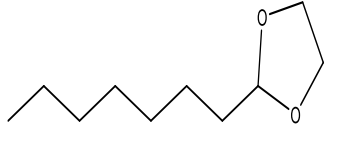
(+)-Selina-4(14),7(11)-Dien		-	0,31	Meningkat
γ -Neocloven		-	0,31	Meningkat
2-Heptyl-1,3-Dioxolane		-	0,27	Meningkat
5,5-Dimethoxy-4-Methyl-4-(2'-Propynyloxy)-1-Pentyne		-	0,17	Meningkat
Elemol		-	0,12	Meningkat

Lampiran 16. Konversi Fraksi I

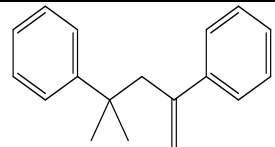
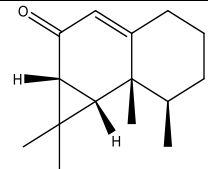
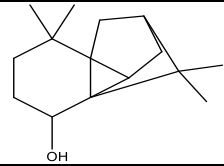
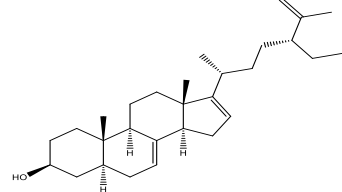
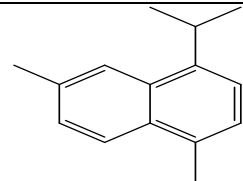
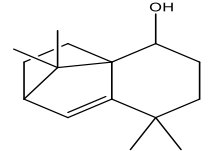

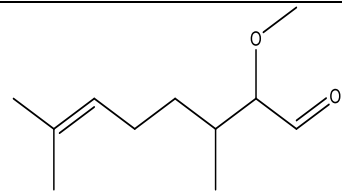
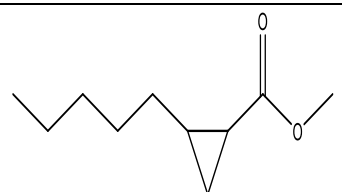
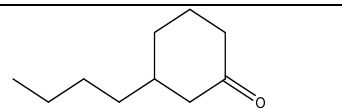
Nama Senyawa	Struktur	% Sebelum	% Setelah	Keterangan
δ -Guaiene		17,44	14,64	Menurun
PA		16,53	0,23	Menurun
α -Guaiene		14,15	12,15	Menurun
Seychellene		9,43	8,3	Menurun
β -Patchoulene		9,08	18,21	Meningkat
γ -Gurjunene		8,99	2,34	Menurun
Caryophyllene		6,65	-	Menurun
2-Butynyl-5-Hydroxy-3-Oxo-4-Hexanoic Acid .Delta.-Lactone		4,52	-	Menurun

2,3,3-Trimethyl-2-(3-methyl-1,3-butadienyl)-cyclohexanone		2,68	-	Menurun
Globulol		2,51	-	Menurun
α -Selinene		2,27	-	Menurun
δ -Eiemene		1,32	-	Menurun
Aromadendrene, dehydro-		1,18	2,23	Meningkat
Elemol		0,75	-	Menurun
Junipeol		0,58	-	Menurun
6-Isopropenyl-4,8a-dimethyl-1,2,3,5,6,7,8,8a-octahydronaphthalene-2-ol		0,52	-	Menurun

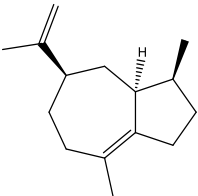
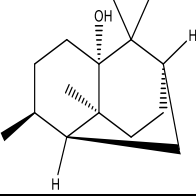
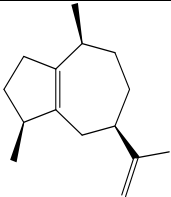
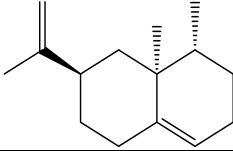
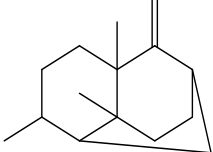
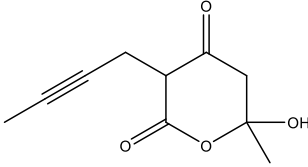
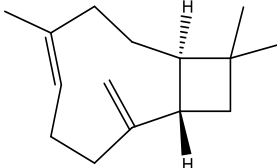
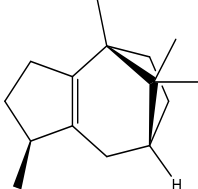
1s,4R,7R,11R-8-Hydroxy-1,3,4,7-tetramethyltricyclo[5.3.1.0(4,11)]undec-2-ene		0,4	-	Menurun
Acetic acid, 1-[2-(2,2,6-trimethylbicyclo[4.1.0]hept-1-yl)ethyl]-vinyl ester		0,35	-	Menurun
Valerenol		0,29	-	Menurun
α -Cyperone		0,13	-	Menurun
2-Nonenoic acid		0,05	-	Menurun
1-Heptatriacotan ol		0,04	-	Menurun
Terpinyl propionate		0,02	-	Menurun
α -Ionene		0,02	-	Menurun

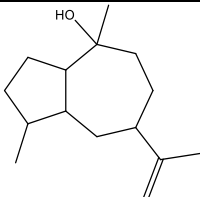
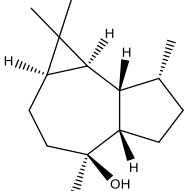
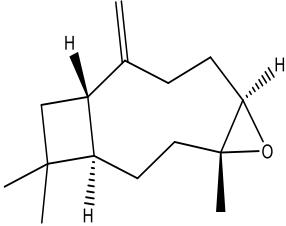
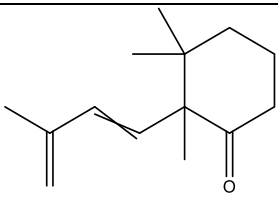
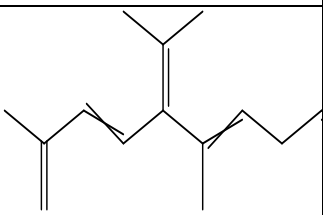
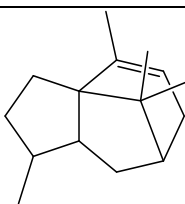
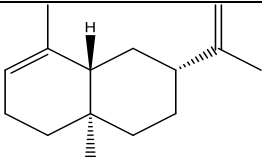
Cycloisolongifolen-8,9-Dehydro-9-formyl		0,01	-	Menurun
3-(1,5-Dimethyl-hexa-1,4-dienyl)-2,2-dimethyl-4-trimethylsilylcyclopentanol		-	15,89	Meningkat
10s,11s-Himachala-3(12),4-diene		-	6,92	Meningkat
α -Gurjunene		-	3,34	Meningkat
2,4-Dodecadienoic acid, 11-methoxy-3,7,11-trimethyl-, methyl ester, (E,E)-		-	2,88	Meningkat
9,19-Cyclolanostan-24-one, 3-acetoxy-25-methoxy-		-	1,48	Meningkat
Valencene		-	1,44	Meningkat
2-heptyl-1,3-dioxolane		-	1,28	Meningkat

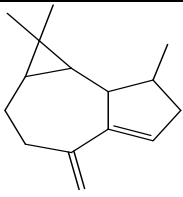
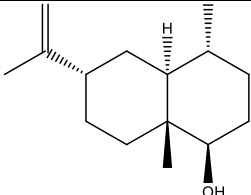
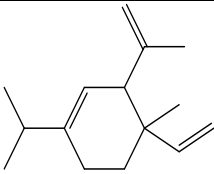
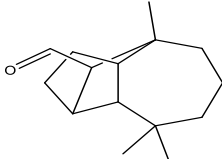
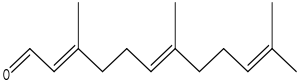
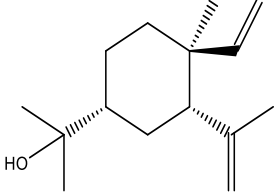
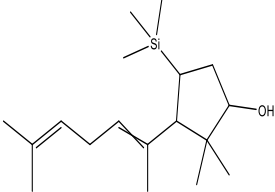
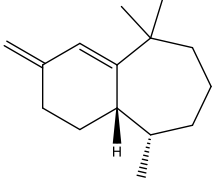
Cholestan-22(26)-Isoepoxy-3 β -Ol		-	1,17	Meningkat
3,6,6-Trimethylnopin-2-ol		-	1,09	Meningkat
2-(4a,8-Dimethyl-2,3,4,4a,5,6-Hexahydro-2-Naphthalenyl)-2-Propen-1-ol		-	0,95	Meningkat
(-)-Isoledene		-	0,80	Meningkat
γ -Cadinene		-	0,62	Meningkat
2,4-Diisopropenyl-1-Methyl-1-Vinylcyclohexane		-	0,49	Meningkat
4-(5,5-Dimethyl-1-Oxaspiro[2.5]Oct-4-Yl)-3-Buten-2-One		-	0,49	Meningkat
cis-Thujopsene		-	0,44	Meningkat
2-non-8-ynoxyoxane		-	0,41	Meningkat

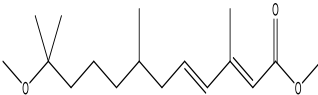
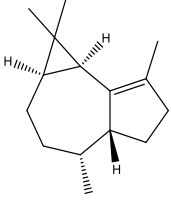
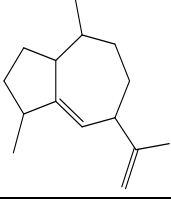
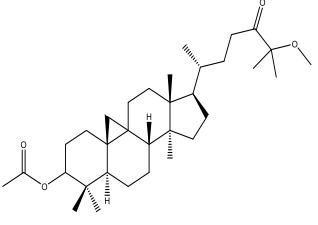
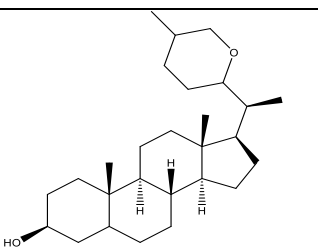

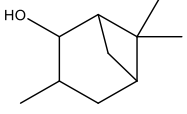
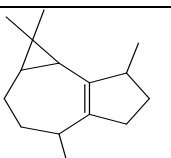
2,4-Diphenyl-4-methyl-1-pentene		-	0,35	Meningkat
Aristolone		-	0,26	Meningkat
(+)-Cycloisolongifol-5-ol		-	0,19	Meningkat
Elasterol		-	0,19	Meningkat
Flavone 4'-Oh,5-Oh,7-Di-O-Glucoside		-	0,13	Meningkat
Cadalene		-	0,12	Meningkat
Neoisolongifolene		-	0,10	Meningkat
Ethyl palmitate		-	0,09	Meningkat
Methoxycitronellal		-	0,08	Meningkat
Methyl 2-Pentylcyclopropanecarboxylate		-	0,05	Meningkat
3-Butylcyclohexanone		-	0,04	Meningkat

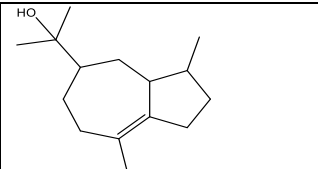
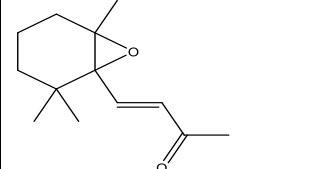
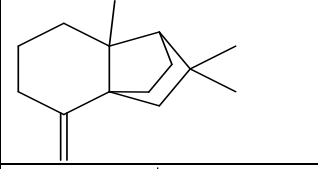
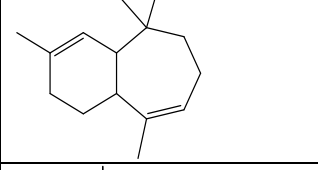
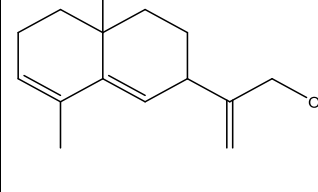
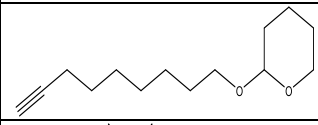
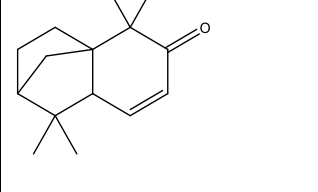
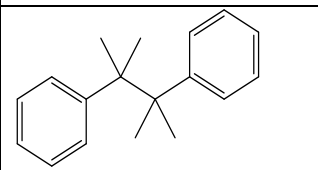
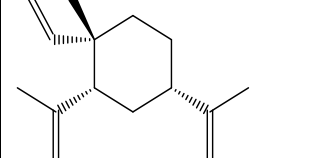
Lampiran 17. Konversi Fraksi II

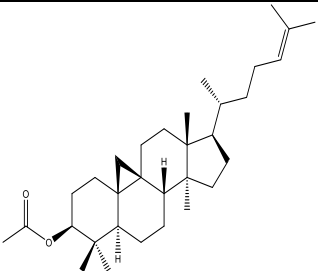

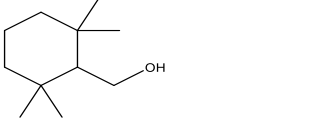
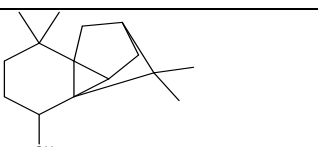
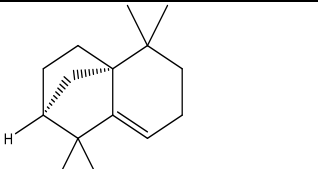
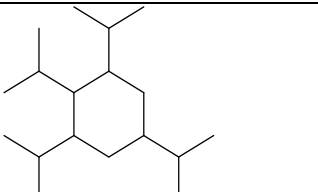
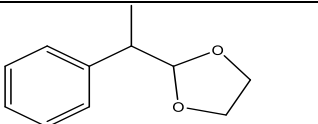
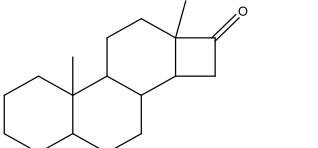

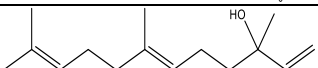
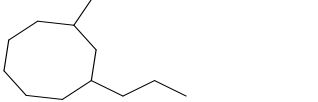
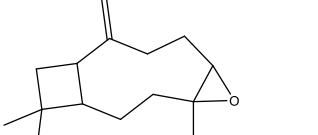
Nama Senyawa	Struktur	% Sebelum	% Setelah	Keterangan
δ -Guaiene		19,41	11,97	Menurun
PA		16,36	0,26	Menurun
α -Guaiene		12,12	17,64	Meningkat
Valencene		8,71	-	Menurun
Seychellene		8,6	8,01	Menurun
2-Butynyl-5-Hydroxy-3-Oxo-4-Hexanoic Acid .Delta.-Lactone		6,04	-	Menurun
Caryophyllene		5,94	-	Menurun
β -Patchoulene		5,84	17,67	Meningkat

Pogostol		3,87	-	Menurun
Viridiflorol		2,47	-	Menurun
Caryophyllene oxide		1,92	0,03	Menurun
2,3,3-Trimethyl-2-(3-Methyl-Buta-1,3-Dienyl)-Cyclohexanone		1,7	-	Menurun
1,3,6,9-Decatetraene, 2,6-Dimethyl-5-(1-Methylethylidene)		1,19	-	Menurun
α -Patchoulene		1,18	-	Menurun
α -Selinene		1,15	0,9	Menurun

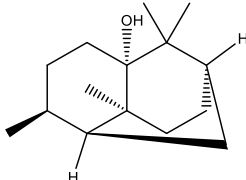
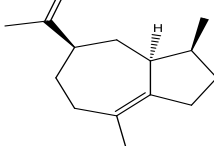
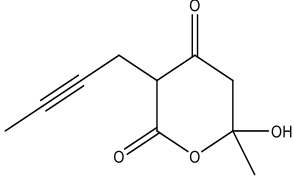
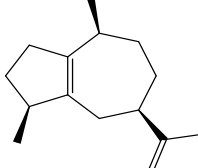
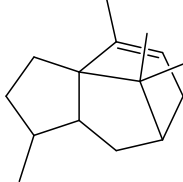
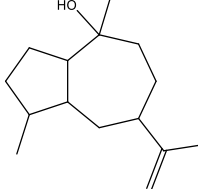
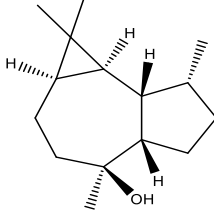
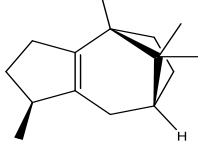
Aromadendrene, dehydro		0,99	1,57	Meningkat
1-Naphthalenol, decahydro-4,8a-dimethyl-6-(1-methylethenyl)-, (1R,4R,4aS,6S,8aR)		0,66	-	Menurun
3-Isopropenyl-1-Isopropyl-4-Methyl-4-Vinylcyclohexene		0,53	-	Menurun
Longifolenaldehyde		0,3	-	Menurun
Farnesyl aldehyd		0,21	-	Menurun
Elemol		0,2	-	Menurun
3-(1,5-Dimethyl-hexa-1,4-dienyl)-2,2-dimethyl-4-trimethylsilylcyclopentanol		-	16,34	Meningkat
10s,11s-Himachala-3(12),4-diene		-	7,33	Meningkat

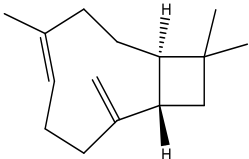
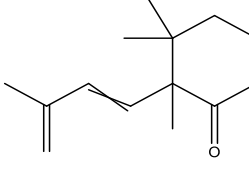
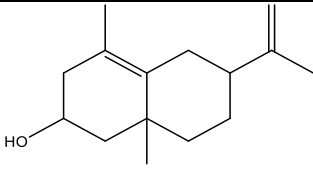
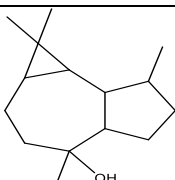
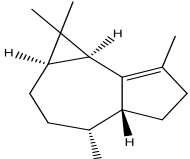
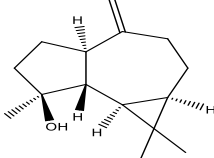
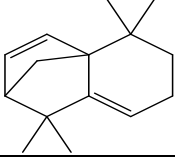
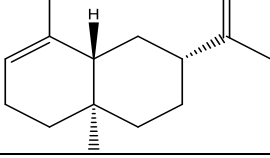
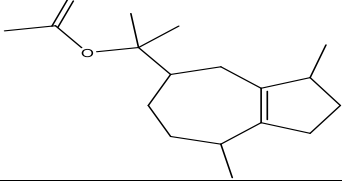
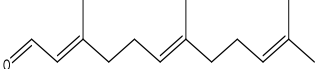
2,4-Dodecadienoic acid, 11-methoxy-3,7,11-trimethyl-, methyl ester, (E,E)-		-	3,34	Meningkat
α -Gurjunene		-	2,48	Meningkat
γ -Gurjunene		-	1,97	Meningkat
9,19-Cyclolanostan-24-one, 3-acetoxy-25-methoxy-		-	1,13	Meningkat
Cholestan-22(26)-Isoepoxy-3 β -Ol		-	1,08	Meningkat
2-heptyl-1,3-dioxolane		-	0,99	Meningkat
3,6,6-Trimethylnopin-2-ol		-	0,85	Meningkat
(-)-Isoledene		-	0,75	Meningkat

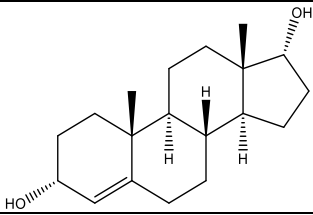
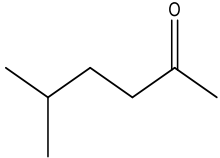
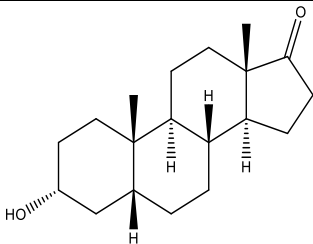
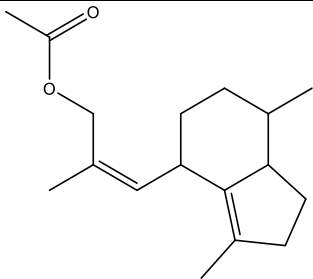
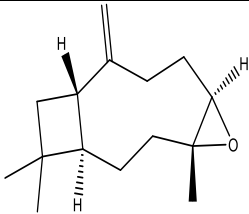
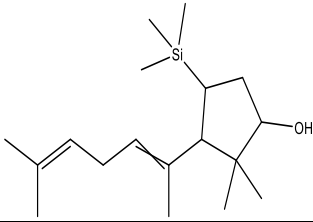
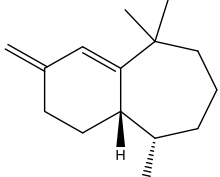
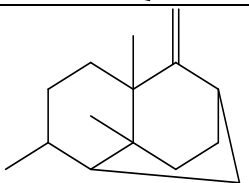
Bulnesol		-	0,63	Meningkat
β -Ionone-5,6-epoxyde		-	0,62	Meningkat
β -Neoclovene		-	0,56	Meningkat
γ -Himachalene		-	0,47	Meningkat
2-(4a,8-dimethyl-2,3,4,4a,5,6-hexahydro-2-Naphthalenyl)-2-Propen-1-ol		-	0,44	Meningkat
2-non-8-ynoxioxane		-	0,43	Meningkat
2,2,7,7-Tetramethyltricyclo[6.2.1.0(1,6)]undec-4-en-3-one		-	0,37	Meningkat
Dicumene		-	0,35	Meningkat
cis- β -Elemene		-	0,30	Meningkat

Cycloartenol acetate		-	0,27	Meningkat
1-Tridecanol		-	0,2	Meningkat
2,2,6,6-Tetramethyl-cyclohexanol		-	0,18	Meningkat
(+)-Cycloisolongifol-5-ol		-	0,16	Meningkat
Isolongifolene		-	0,13	Meningkat
1,2,3,5-Tetraisopropylcyclohexane		-	0,09	Meningkat
2-(1-Phenylethyl)-1,3-Dioxolane		-	0,07	Meningkat
5 α -D-Norandrostan-16-One		-	0,07	Meningkat
Ethyl palmitate		-	0,06	Meningkat
Nerolidol		-	0,05	Meningkat
1-Methyl-3-Propyl-Cyclooctane		-	0,04	Meningkat
Caryophyllene Epoxide		-	0,03	Meningkat

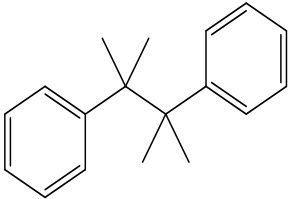
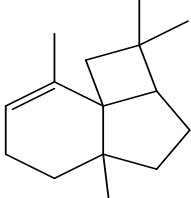
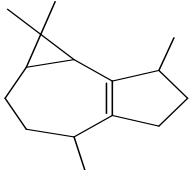
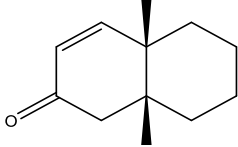
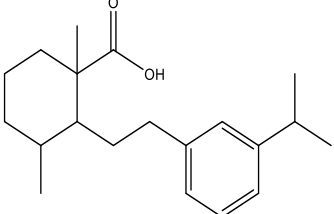
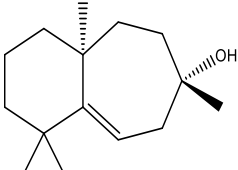
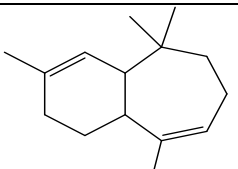
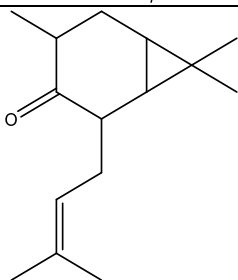
Lampiran 18. Konversi Fraksi III

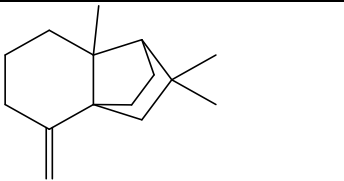
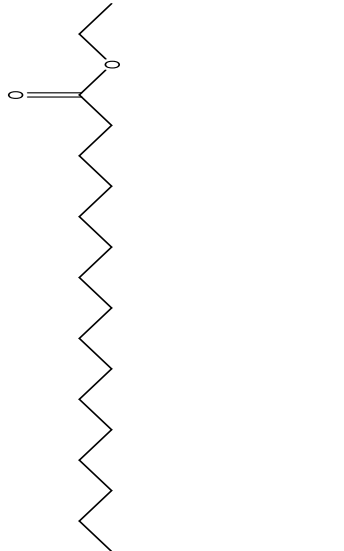
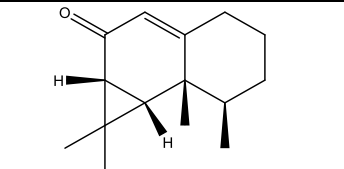
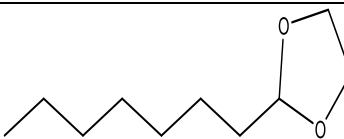
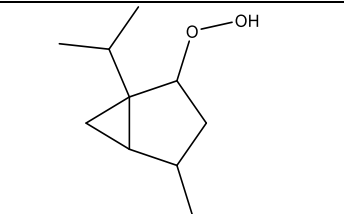
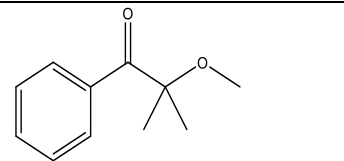

Nama Senyawa	Struktur	% Sebelum	% Setelah	Keterangan
PA		24,47	0,38	Menurun
δ -Guaiene		15,56	12,22	Menurun
2-Butynyl-5-Hydroxy-3-Oxo-4-Hexanoic Acid .Delta.-Lactone		11,84	-	Menurun
α -Guaiene		11,47	11,97	Meningkat
α -Patchoulene		7,65	-	Menurun
Pogostol		6,87	-	Menurun
Viridiflorol		3,56	-	Menurun
β -Patchoulene		3,35	24,45	Meningkat

Caryophyllene		2,39	-	Menurun
2,3,3-Trimethyl-2-(3-Methyl-Buta-1,3-Dienyl)-Cyclohexanone		1,63	-	Menurun
6-Isopropenyl-4,8a-dimethyl-1,2,3,5,6,7,8,8a-octahydronaphthalene-2-ol		1,51	0,98	Menurun
Globulolol		1,34	-	Menurun
α -Gurgujenene		1,32	2,22	Meningkat
Sphatulenol		1,24	-	Menurun
Isolongifolen, 4,5-Dehydro		1,12	0,13	Menurun
α -Selinene		0,91	0,64	Menurun
Guaiyl acetate		0,84	-	Menurun
Farnesyl aldehyd		0,47	-	Menurun

Androst-4-ene-3 α ,17 α -diol		0,26	-	Menurun
5-Methyl-2-Hexanone		0,25	-	Menurun
5 β -Androsterone		0,19	-	Menurun
(Z)-Valerenyl Acetate		0,15	-	Menurun
Caryophyllene oxide		0,14	0,07	Menurun
3-(1,5-Dimethyl-hexa-1,4-dienyl)-2,2-dimethyl-4-trimethylsilylcyclopentanol		-	14,75	Meningkat
10s,11s-Himachala-3(12),4-diene		-	9,82	Meningkat
Seychellene		-	6,76	Meningkat

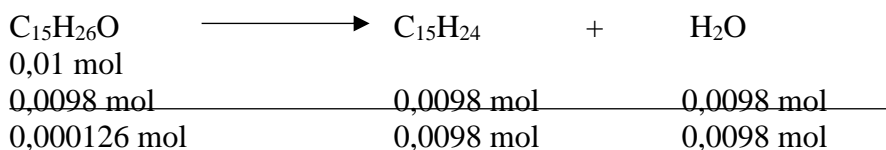
2,4-Dodecadienoic Acid, 11-Methoxy-3,7,11-Trimethyl-, Methyl Est		-	2,52	Meningkat
γ -Gurjunene		-	2,27	Meningkat
Longipinene		-	1,07	Meningkat
4,6,6-Trimethyl-1-methylen-4-vinyloctahydro-1H-inden		-	1,02	Meningkat
Cholestan-22(26)-Isoepoxy-3 β -Ol		-	0,81	Meningkat
Bulnesol		-	0,71	Meningkat
Artemisia alcohol		-	0,62	Meningkat
Aromadendrene, dehydro-		-	0,58	Meningkat

Dicumene		-	0,55	Meningkat
α -Panasinsen		-	0,51	Meningkat
(-)-Isoledene		-	0,46	Meningkat
(4aS,8aR)-4a,8a-dimethyl-5,6,7,8-tetrahydro-1H-naphthalen-2-one		-	0,44	Meningkat
1,3-dimethyl-2-[2-[3-(1-methylethyl)phenyl]ethyl]Cyclohexanecarboxylic acid,		-	0,41	Meningkat
Widdrol		-	0,40	Meningkat
γ -Himachalene		-	0,39	Meningkat
4,7,7-trimethyl-2-(3-methylbut-2-enyl)bicyclo[4.1.0]heptan-3-one		-	0,32	Meningkat

β -Neoclovene		-	0,31	Meningkat
Ethyl palmitate		-	0,24	Meningkat
Aristolone		-	0,22	Meningkat
2-heptyl-1,3-dioxolane		-	0,18	Meningkat
4-Methyl-1-(propan-2-yl)bicyclo[3.1.0]hexane-2-peroxol		-	0,12	Meningkat
methoxy-2-methylpropiophenone		-	0,11	Meningkat
Eicosane		-	0,05	Meningkat

Lampiran 19. Perhitungan

Minyak Nilam



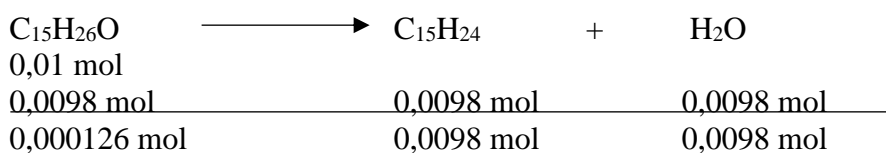
$$\begin{aligned}\text{Berat teoritis} &= 0,0098 \text{ mol} \times 204 \text{ g/mol} \\ &= 1,9992 \text{ gram}\end{aligned}$$

$$(15,26-6,06)\% = 9,2\%$$

$$\begin{aligned}\text{Berat Praktek} &= 9,2\% \times 16,5732 \text{ gram} \\ &= 1,5247 \text{ gram}\end{aligned}$$

$$\begin{aligned}\% \text{ Rendemen} &= \frac{\text{berat praktek}}{\text{berat teoritis}} \times 100\% \\ &= \frac{1,5247}{1,9992} \times 100\% \\ &= 76,26\%\end{aligned}$$

Fraksi I



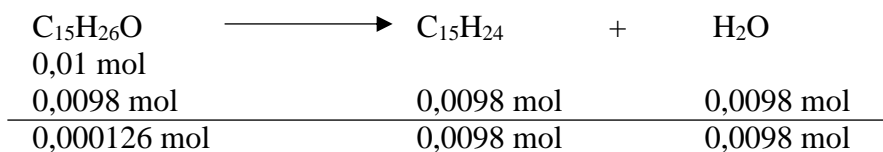
$$\begin{aligned}\text{Berat teoritis} &= 0,0098 \text{ mol} \times 204 \text{ g/mol} \\ &= 1,9992 \text{ gram}\end{aligned}$$

$$(18,21-9,08)\% = 9,13\%$$

$$\begin{aligned}\text{Berat Praktek} &= 9,13\% \times 8,0424 \text{ gram} \\ &= 0,7342 \text{ gram}\end{aligned}$$

$$\begin{aligned}\% \text{ Rendemen} &= \frac{\text{berat praktek}}{\text{berat teoritis}} \times 100\% \\ &= \frac{0,7342}{1,9992} \times 100\% \\ &= 36,72\%\end{aligned}$$

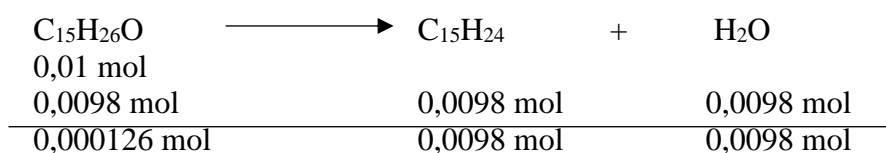
Fraksi II



$$\begin{aligned}
 \text{Berat teoritis} &= 0,0098 \text{ mol} \times 204 \text{ g/mol} \\
 &= 1,9992 \text{ gram} \\
 (17,67-5,84)\% &= 11,83\% \\
 \text{Berat Praktek} &= 11,83\% \times 7,9523 \text{ gram} \\
 &= 0,9407 \text{ gram}
 \end{aligned}$$

$$\begin{aligned}
 \% \text{ Rendemen} &= \frac{\text{berat praktek}}{\text{berat teoritis}} \times 100\% \\
 &= \frac{0,9407}{1,9992} \times 100\% \\
 &= 47,05\%
 \end{aligned}$$

Fraksi III



$$\begin{aligned}
 \text{Berat teoritis} &= 0,0098 \text{ mol} \times 204 \text{ g/mol} \\
 &= 1,9992 \text{ gram} \\
 (24,45-3,35)\% &= 21,1\% \\
 \text{Berat Praktek} &= 21,1\% \times 5,0097 \text{ gram} \\
 &= 1,057 \text{ gram}
 \end{aligned}$$

$$\begin{aligned}
 \% \text{ Rendemen} &= \frac{\text{berat praktek}}{\text{berat teoritis}} \times 100\% \\
 &= \frac{1,057}{1,9992} \times 100\% \\
 &= 52,87\%
 \end{aligned}$$