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LAMPIRAN

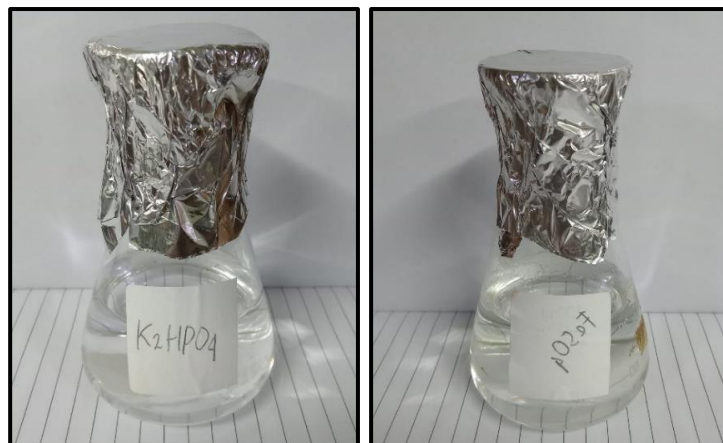
Lampiran 1. Isolasi dan Pemurnian Bakteri Pendegradasi Hidrokarbon



Gambar 16. Lokasi Pengambilan Sampel



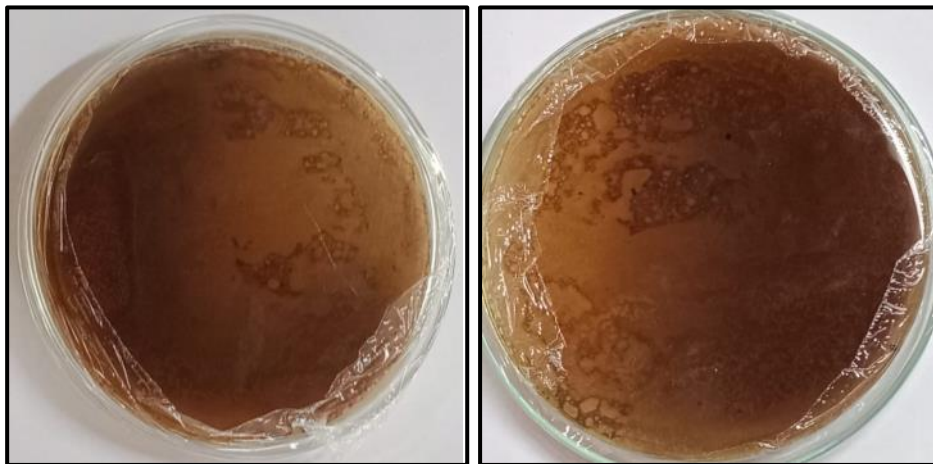
Gambar 17. Sampel Sedimen



Gambar 18. Nutrisi tambahan media ALS BPH



Gambar 19. Isolasi BPH

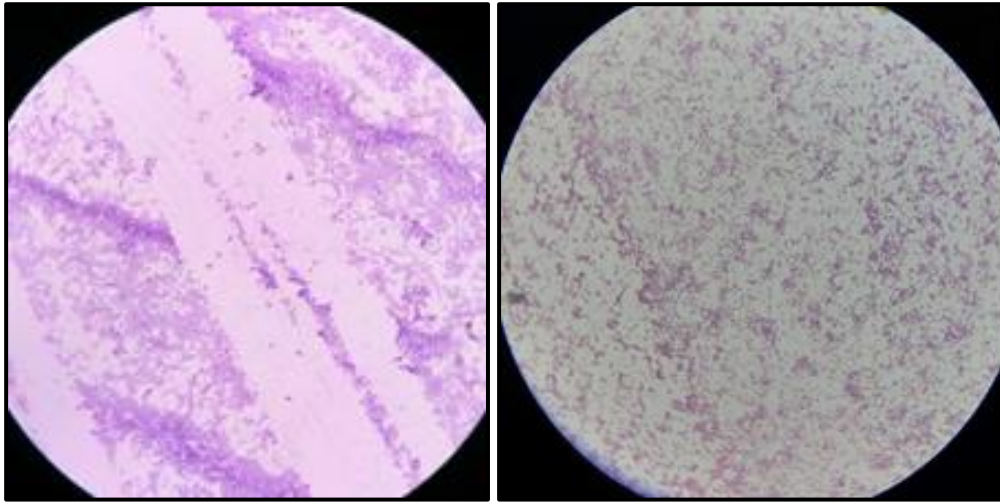


Gambar 20. Pemurnian BPH

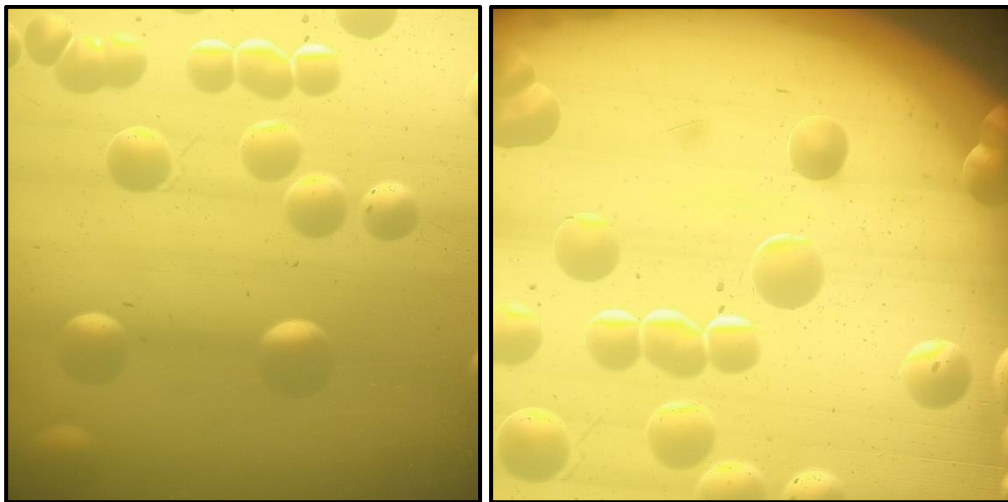


Gambar 21. Dokumentasi Pengerjaan

Lampiran 2. Karakterisasi Isolat Bakteri Pendegradasi Hidrokarbon Petroleum



Gambar 22. Pengecatan Gram



Gambar 23. Morfologi Koloni

Lampiran 3. Kurva Pertumbuhan dan Uji Biodegradasi Petroleum oleh Bakteri Pendegradasi Hidrokarbon

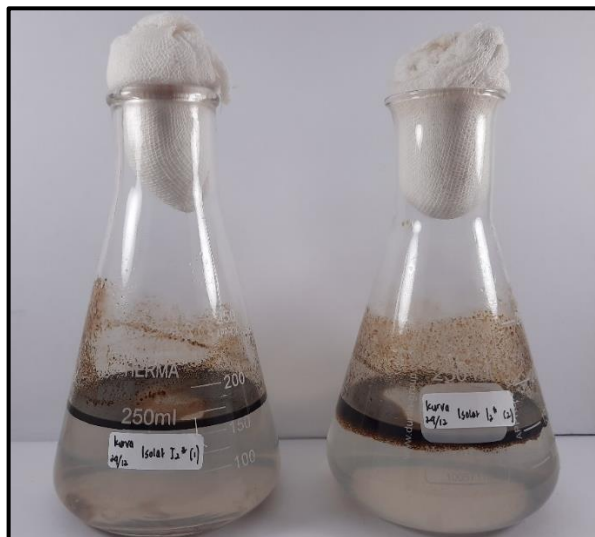
Tabel 6. Kurva Pertumbuhan BPH

Waktu (hari)	BPH A		BPH B	
	%T	OD	%T	OD
0	79,0	0,10	60,0	0,22
1	50,0	0,30	16,0	0,80
2	15,0	0,82	8,0	1,10

3	6,0	1,22	4,0	1,40
4	3,0	1,52	2,0	1,70
5	2,0	1,70	2,0	1,70
6	2,0	1,70	2,0	1,70
7	2,0	1,70	2,0	1,70
8	2,0	1,70	2,0 <td 1,70	
9	2,0	1,70	2,0	1,70
10	2,0	1,70	2,0	1,70
11	2,0	1,70	2,0	1,70
12	3,0	1,52	3,0	1,52



Gambar 24. Preparasi Uji Biodegradasi secara in-vitro

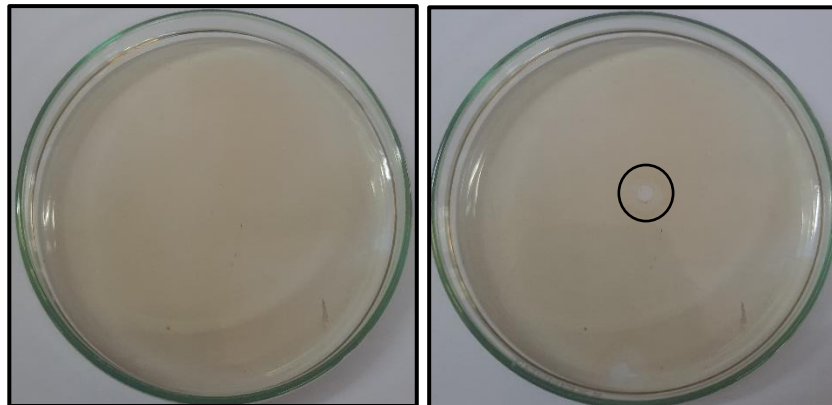


Gambar 25. Sebelum Proses Biodegradasi secara in-vitro

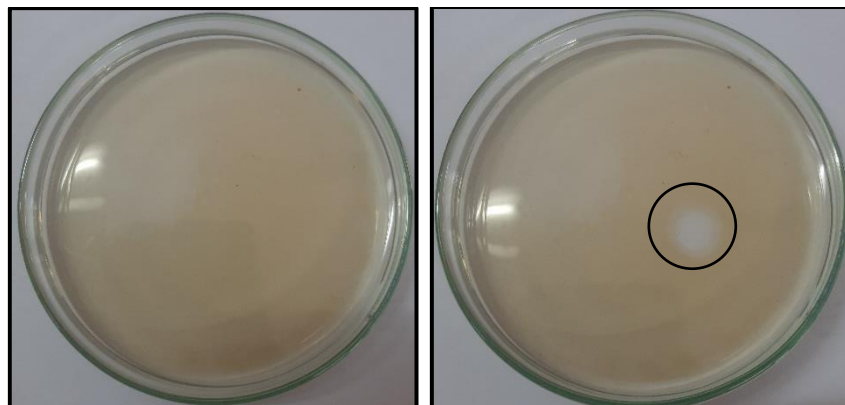


Gambar 26. Setelah Proses Biodegradasi secara in-vitro

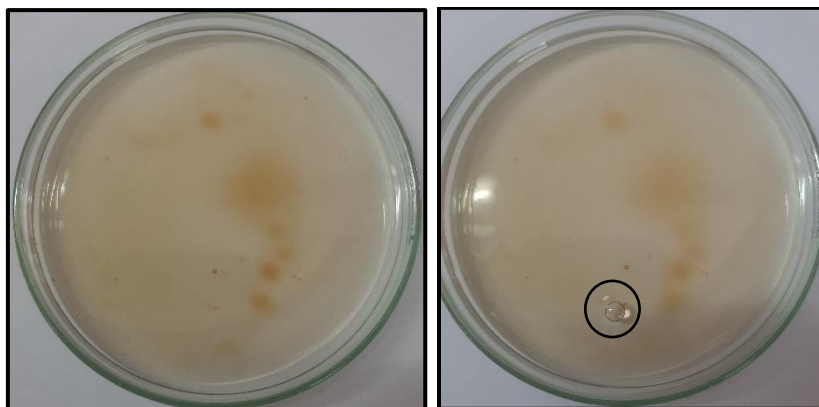
Lampiran 4. Analisa Oil spread



Gambar 27. Uji Oil spread sebelum (kiri) dan sesudah (kanan) penambahan Biosurfaktan Isolat BPH A



Gambar 28. Uji Oil spread sebelum (kiri) dan sesudah (kanan) penambahan Biosurfaktan Isolat BPH B



Gambar 14. Uji Oil spread sebelum (kiri) dan sesudah (kanan) penambahan aquades sebagai kontrol

Lampiran 5. Analisa Emulsifikasi dan Penurunan Tegangan Permukaan

Tabel 7. Hasil Uji Emulsifikasi

Isolat	n	Tinggi Emulsi (cm)	Tinggi larutan liquid (cm)	Emulsifikasi (%)	Rata Rata (cm)
BPH A	1	5,2	4,9	30	31,66667
	2	5,2	4,85	35	
	3	5,1	4,8	30	
BPH B	1	4,5	4,2	30	25
	2	4,2	3,95	25	
	3	4,4	4,2	20	

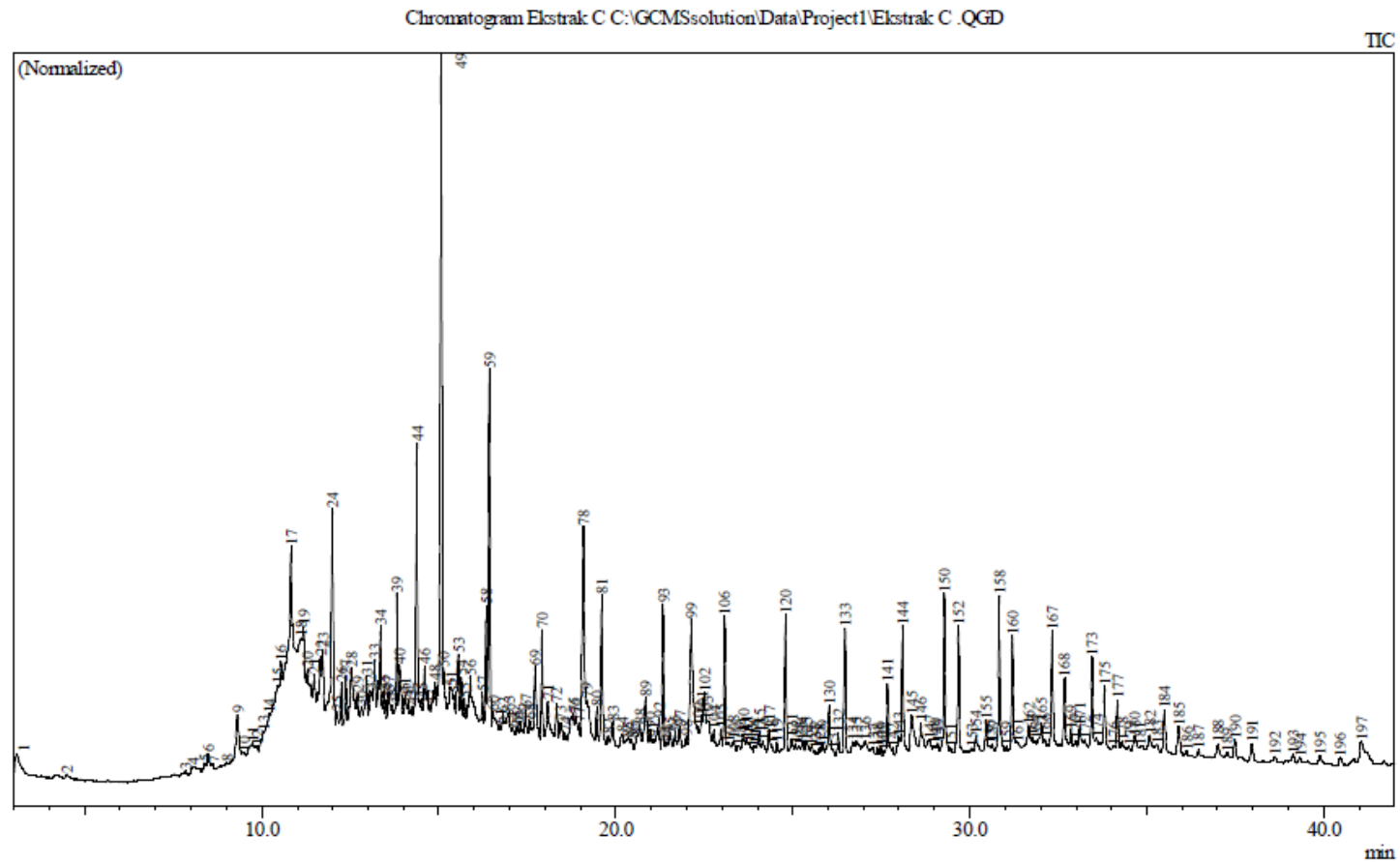
Tabel 8. Hasil Uji Tegangan Permukaan

Isolat	Inkubasi (Hari)	Pengurangan Tegangan Permukaan (mN/m)			Rata-rata (mN/m)
		2 mL	4 mL	6 mL	
BPH A	1	4,44	11,02	8,36	7,94
	2	30,34	32,8	30,46	31,20
	3	13,76	14,88	13,92	14,19
	4	9,56	11,82	10,86	10,75
BPH B	1	3,16	7,78	5,04	5,33
	2	17,9	20,78	16,34	18,34
	3	26,2	28,4	25,8	26,80
	4	5,08	6,96	5,86	5,97

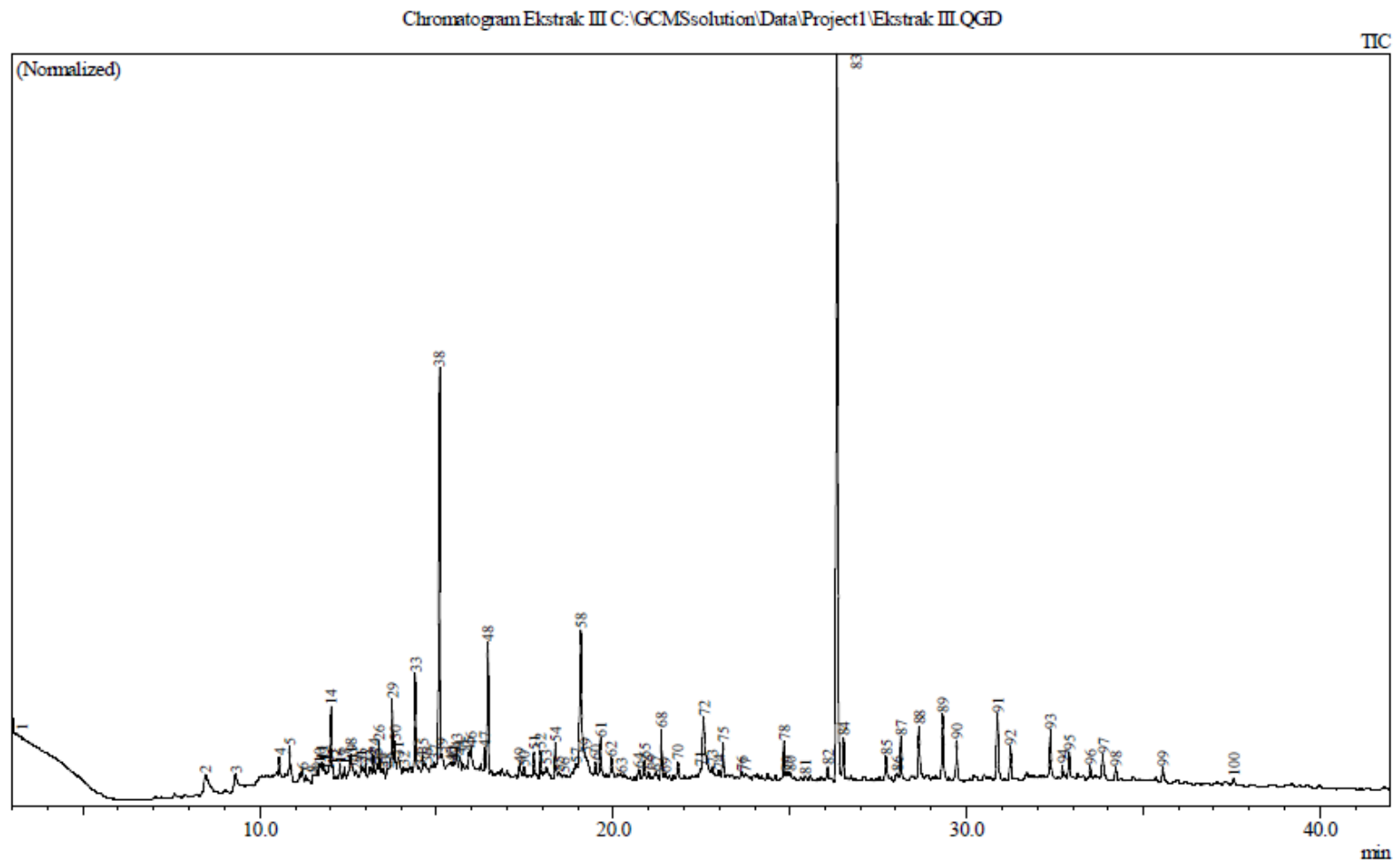


Gambar 30. Tensiometer Du Novy

Lampiran 5. Ekstaksi dan Identifikasi Senyawa



Gambar 31. Chromatogram Biosurfaktan Isolat BPH A



Gambar 32. Chromatogram Biosurfaktan Isolat BPH B

Tabel 9. Hasil GC-MS BPH A

Peak#	Retention Time	Area	Area%	A/H	Name
1	3.084	2413931	00.30	09.25	2-Pentadecanol
2	4.492	171257	00.02	03.52	CYCLOTETRASILOXANE, OCTAMETHYL-
3	7.844	173637	00.02	03.10	4-Propylcyclohexanone
4	8.059	1194270	00.15	12.43	Bicyclo[3.1.1]heptan-3-ol, 3-allyl-6,6-dimethyl-2-methylene-
5	8.379	446145	00.06	0,1847	Undecane, 3,6-dimethyl-
6	8.475	1286234	00.16	05.57	CYCLOHEXANEACETIC ACID
7	8.617	249702	00.03	03.34	1-O-OCTYL-D-MANNITOL #
8	9.015	159231	00.02	03.18	1-Eicosanol
9	9.316	5627931	0,04931	0,3569	PENTADECANE, 2,6,10,14-TETRAMETHYL-
10	9.500	1106934	00.14	06.01	TETRADECANE, 1-CHLORO-
11	9.735	3769379	00.47	12.10	CHOLEST-5-EN-3-YL (9Z)-9-OCTADECENOATE #
12	9.867	1736611	00.22	0,3014	2-Naphthylamine, N-hexyl-1,2,3,4-tetrahydro-
13	10.042	3595886	00.45	07.56	Dodecane, 4,6-dimethyl-
14	10.200	6141660	0,05347	0,3861	BENZENE, CYCLOHEXYL-

15	10.450	13024320	0,08611	0,5083	Heptylcyclohexane
16	10.551	9235695	01.16	06.43	Propanoic acid, 2-methyl-, 2,2-dimethyl-1-(2-hydroxy-1-methylethyl)propyl ester
17	10.823	39378520	0,23264	0,5646	Hexadecane, 2,6,10,14-tetramethyl-
18	11.108	15060453	0,10347	08.54	Tromethamine
19	11.179	11209029	01.41	0,2674	TETRADECANE
20	11.294	11999263	01.51	0,3993	1-OCTANOL, 2-BUTYL-
21	11.474	6967730	0,06111	05.56	1,5-DIMETHYLNAPHTHALENE
22	11.659	10564641	01.33	07.03	1,4-DIMETHYLNAPHTHALENE
23	11.721	5989046	0,05208	0,1764	Naphthalene, 2,6-dimethyl-
24	11.995	22340469	0,13958	06.27	Dodecane, 4,6-dimethyl-
25	12.129	3445407	00.43	0,2188	Tetradecane, 2,6,10-trimethyl-
26	12.250	5108252	0,04444	04.53	1-Decanol, 2-hexyl-
27	12.372	6562098	0,05694	05.38	Heptadecane
28	12.534	12553536	01.58	09.40	Dodecane, 2-methyl-
29	12.703	5201625	0,04514	05.32	PHENOL, 2,4-BIS(1,1-DIMETHYLETHYL)-
30	12.815	4010772	00.50	05.13	NAPHTHALENE, 2,3,6-TRIMETHYL-

31	12.968	7807763	0,06806	06.43	Heptadecane
32	13.075	6854775	0,05972	0,3028	Naphthalene, 2,3,6-trimethyl-
33	13.198	7662397	0,06667	05.33	Heneicosane
34	13.352	10730992	01.35	0,2507	HEXADECANE, 7,9-DIMETHYL-
35	13.440	3857686	00.48	0,1826	HEXADECANE, 2,6,10,14-TETRAMETHYL-
36	13.502	2663375	00.33	03.02	1-PENTACONTANOL
37	13.582	5906134	0,05139	06.01	Naphthalene, 2,3,6-trimethyl-
38	13.679	2674935	00.34	03.31	Dodecane, 2,5-dimethyl-
39	13.815	10011738	01.26	04.23	NONADECANE
40	13.897	7198748	0,0625	05.28	Pentatriacontane
41	14.046	6064029	0,05278	06.39	Cyclohexane, 1-methyl-2-pentyl-
42	14.137	3573544	00.45	04.06	HEXACOSANE
43	14.231	3962218	00.50	05.00	Dodecane, 2-methyl-
44	14.382	18183867	02.28	04.08	Pentadecane, 2,6,10-trimethyl-
45	14.506	3673168	00.46	04.15	TETRADECANE, 4-METHYL-
46	14.594	9913420	01.25	07.35	CYCLOHEXANE, EICOSYL-
47	14.740	2650995	00.33	03.33	Cyclopentane, 1-pentyl-2-propyl-
48	14.898	9051524	01.14	08.10	NAPHTHALENE, 1,6-DIMETHYL-4-(1-METHYLETHYL)-

49	15.065	34540194	04.34	03.50	Pentadecane, 2,6,10,14-tetramethyl-
50	15.142	6467528	0,05625	0,2313	Pentatriacontane
51	15.351	9663694	01.21	09.29	TETRATRIACONTANE
52	15.433	3407167	00.43	0,1674	Octacosane
53	15.556	8518053	01.07	0,2556	Eicosane
54	15.641	4480701	00.56	0,1792	2,6,10,14-TETRAMETHYLHEXADECANE
55	15.730	4055611	00.51	0,209	1,54-DIBROMOTETRAPENTACONTANE
56	15.890	17233307	02.16	14.43	n-Pentadecylcyclohexane
57	16.234	5415667	0,04722	05.56	1-NONADECENE
58	16.333	7289204	0,06389	03.34	Octadecane
59	16.429	17635264	02.22	03.22	HEXADECANE, 2,6,10,14-TETRAMETHYL-
60	16.534	7078433	0,06181	10.16	9,10-Ethanoanthracene, 9,10-dihydro-11,12-diacetyl-
61	16.733	1916168	00.24	0,1764	Cyclohexane, 1-ethyl-1-methyl-
62	16.820	3175021	00.40	0,2201	PENTACOSANE
63	16.973	6736165	0,05903	0,4319	1-PENTACONTANOL
64	17.092	2267602	00.28	0,2306	1,1'-BIPHENYL, 2-(1-AZIDO-1-METHYLETHYL)-
65	17.212	2767239	00.35	0,2542	Heptadecane, 2,3-dimethyl-
66	17.306	3795957	00.48	0,3069	1,2-Benzenedicarboxylic acid, ditridecyl ester

67	17.450	4167800	00.52	0,2639	n-Heptadecylcyclohexane
68	17.568	2198276	00.28	0,1847	NONADECANE
69	17.720	9097548	01.14	0,3132	HEXADECANE, 2,6,10,14-TETRAMETHYL-
70	17.911	6614203	0,05764	0,1674	Heneicosane
71	18.078	8193202	01.03	0,4333	Eicosane
72	18.326	3638477	00.46	04.56	Hexadecanoic acid, methyl ester
73	18.447	3753707	00.47	07.06	1-Hexadecanesulfonic acid, 3,5-dichloro-2,6-dimethyl-4-pyridyl ester
74	18.569	2145139	00.27	05.56	Eicosane
75	18.791	5621281	0,04931	08.59	Eicosane
76	18.867	3562005	00.45	0,2597	1,54-DIBROMOTETRAPENTACONTANE
77	18.958	1543323	00.19	0,1521	Tetratetracontane
78	19.087	16178060	02.03	0,234	n-Hexadecanoic acid
79	19.183	7753424	0,06736	09.18	Dodecylcyclohexane
80	19.470	3525972	00.44	0,2236	ETHYL DOCOSANOATE
81	19.600	8806774	01.11	0,1819	Heneicosane
82	19.781	1532393	00.19	04.52	1-OCTADECANOL
83	19.914	4318278	00.54	08.17	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione
84	20.177	2488786	00.31	0,3146	DOTRIACONTANE

85	20.336	3043585	00.38	10.28	2-METHYLHEXADECANE
86	20.458	1105215	00.14	04.02	Tridecane, 6-cyclohexyl-
87	20.592	2265856	00.28	0,3076	TETRADECANE, 4-METHYL-
88	20.681	1888241	00.24	0,1938	TETRATETRACONTANE
89	20.840	5570429	0,04861	06.47	PENTACOSANE
90	20.969	1787356	00.22	04.21	Cyclohexane, tetradecyl-
91	21.046	1154474	00.15	04.07	1,54-DIBROMOTETRAPENTACONTANE
92	21.217	3838585	00.48	0,3014	9,12-OCTADECADIENOIC ACID (Z,Z)-, METHYL ESTER
93	21.334	6614486	0,05764	03.06	Heneicosane
94	21.433	816737	00.10	0,1674	1,22-Docosanediol
95	21.525	2168908	00.27	06.08	2-HEXADECEN-1-OL, 3,7,11,15-TETRAMETHYL-, [R-[R*,R*-(E)]]-
96	21.674	2245820	00.28	0,2667	NONADECANE
97	21.802	2291109	00.29	05.14	PENTADECANE, 2,6,10,14-TETRAMETHYL-
98	21.985	2169348	00.27	0,3063	Tritetracontane
99	22.131	13373702	0,08889	0,3118	HEPTADECENE-(8)-CARBONIC ACID-(1)
100	22.317	1791596	00.23	04.04	DECANE, 3,3,5-TRIMETHYL-
101	22.425	2753266	00.35	0,2083	HEXADECANE, 2,6,10,14-TETRAMETHYL-
102	22.507	4525561	00.57	0,2326	Octadecanoic acid

103	22.592	3772096	00.47	07.15	Pentatriacontane
104	22.768	2242410	00.28	0,2569	n-Pentadecylcyclohexane
105	22.971	2431837	00.31	0,2757	1-Nonadecene
106	23.075	6093024	0,05347	03.08	Docosane
107	23.192	1409009	00.18	06.46	1-EICOSANOL
108	23.333	1393371	00.18	0,2507	1-EICOSANOL
109	23.483	1082287	00.14	06.49	1-METHYL-4-N-PENTYLCYCLOHEXANE (CIS+TRANS)
110	23.602	1895663	00.24	0,2528	HEXADECANE, 2,6,10,14-TETRAMETHYL-
111	23.695	1084084	00.14	04.33	14-.BETA.-H-PREGNA
112	23.767	710302	00.09	03.43	CYCLOHEXANE, 1-METHYL-2-PENTYL-
113	23.850	503983	00.06	0,1722	DOCOSANE, 6-METHYL-
114	23.928	740138	00.09	04.38	Eicosane, 2,4-dimethyl-
115	24.042	1937033	00.24	0,259	DOCOSANE
116	24.154	1493388	00.19	06.48	DOCOSANE
117	24.333	1576425	00.20	04.08	Pentafluoropropionic acid, heptadecyl ester
118	24.408	874900	00.11	0,2215	Cyclopentane, heneicosyl-
119	24.552	941854	00.12	04.48	n-Heptadecylcyclohexane
120	24.793	6437303	0,05625	03.24	Heneicosane

121	24.970	1807322	00.23	0,3188	Hexatriacontane
122	25.083	612837	00.08	03.54	1-HENTETRACONTANOL
123	25.183	766514	00.10	0,2271	Undecane, 3-cyclohexyl-
124	25.270	1086666	00.14	05.07	OCTADECANE
125	25.386	1411767	00.18	06.38	Eicosane
126	25.539	614788	00.08	0,1903	2-Thiopheneacetic acid, 2-tridecyl ester
127	25.625	304800	00.04	03.51	Eicosane, 2,4-dimethyl-
128	25.749	549835	00.07	0,2201	HENEICOSANE, 11-(1-ETHYLPROPYL)-
129	25.846	770006	00.10	04.22	Heneicosane
130	26.029	3342133	00.42	0,2153	1-EICOSANOL
131	26.142	308856	00.04	03.03	Cyclopentane, undecyl-
132	26.285	1241859	00.16	0,1806	HEXANEDIOIC ACID, DIOCTYL ESTER
133	26.471	5516233	0,04792	03.09	HEXACOSANE
134	26.695	1370398	00.17	0,3132	ISOCHIAPIN B %2<
135	26.801	1802160	00.23	0,3799	CYCLOHEXANE, 1,1'-(1-METHYL-1,3-PROPANEDIYL)BIS-
136	27.031	1990291	00.25	09.54	Heneicosane
137	27.267	773579	00.10	07.24	1,38-DIBROMOOCTATRIACONTANE
138	27.401	391772	00.05	0,1715	Nonacosane

139	27.493	369010	00.05	0,1354	TETRATETRACONTANE
140	27.583	200018	00.03	03.13	3-Octadecanone
141	27.683	3582992	00.45	03.57	9-Tricosene, (Z)-
142	27.825	285612	00.04	0,1486	1-EICOSANOL
143	27.991	1471753	00.18	0,2549	Dodecane, 2-cyclohexyl-
144	28.101	6250060	0,05486	03.45	HEXACOSANE
145	28.361	4334908	00.54	0,3563	Hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester
146	28.618	2763807	00.35	06.17	1,2-BENZENEDICARBOXYLIC ACID, DITRIDECYL ESTER
147	28.851	1590105	00.20	08.03	NONADECANE
148	29.003	496334	00.06	04.18	TRICOSANE
149	29.094	610933	00.08	04.02	TRICOSANE
150	29.286	8067926	01.01	0,1681	9-Hexacosene
151	29.467	207832	00.03	03.03	1-EICOSANOL
152	29.677	5813697	0,05069	03.31	HEXACOSANE
153	30.058	186659	00.02	03.40	1-OCTADECANOL
154	30.167	1197632	00.15	05.39	TETRACONTANE
155	30.461	1724549	00.22	0,1861	9-Octadecen-1-ol, (E)-
156	30.558	300071	00.04	0,175	1-PENTACOSANOL

157	30.637	320873	00.04	03.10	1-BROMOTRIACONTANE
158	30.833	7457689	0,06528	03.44	9-Hexacosene
159	31.032	136639	00.02	02.31	1-EICOSANOL
160	31.203	5606868	0,04861	03.49	TETRATETRACONTANE
161	31.350	669431	00.08	06.25	n-Nonenylsuccinic anhydride
162	31.663	1955497	00.25	06.33	Tetracontane
163	31.770	599550	00.08	0,1875	Cyclohexane, 1-(1,5-dimethylhexyl)-4-methyl-
164	31.858	369066	00.05	0,1722	di-2-Ethylhexyl chloroformate
165	32.029	1795847	00.23	05.29	13-Docosen-1-ol, (Z)-
166	32.125	350067	00.04	03.16	HEPTADECANE, 2,6,10,15-TETRAMETHYL-
167	32.326	5446365	0,04722	03.38	9-Hexacosene
168	32.673	3051408	00.38	03.21	HEXACOSANE
169	32.858	751190	00.09	03.38	2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl-, (all-E)-
170	32.984	264283	00.03	03.19	24-NORCHOLANE, 23-[2-METHYL-1-(1-METHYLETHYL)CYCLOPROPYL]-, (5.
171	33.102	1176717	00.15	04.39	Pentatriacontane
172	33.248	491594	00.06	04.47	Cholestane
173	33.453	4343849	00.55	03.41	13-Docosen-1-ol, (Z)-

174	33.583	674326	00.08	0,2347	TETRACONTANE
175	33.808	3609919	00.45	04.14	9-Hexacosene
176	34.050	195887	00.02	05.49	14-.BETA.-H-PREGNA
177	34.170	2419962	00.30	03.46	Hexatriacontane
178	34.303	669339	00.08	0,2681	(1-METHYLUNDECYL)CYCLOHEXANE
179	34.500	208466	00.03	0,1819	CYCLOHEXANE, 1,1'-(1-METHYLETHYLIDENE)BIS-
180	34.656	1222018	00.15	0,2681	DOCOSANE
181	34.817	719621	00.09	09.28	CHOLESTANE
182	35.085	1390355	00.17	0,2764	13-Docosen-1-ol, (Z)-
183	35.292	752764	00.09	07.09	14-.BETA.-H-PREGNA
184	35.495	2404493	00.30	04.02	9-Hexacosene
185	35.904	1726345	00.22	04.41	HEXACOSANE
186	36.123	275301	00.03	04.06	Stigmastane
187	36.459	422571	00.05	04.26	Tetracontane
188	37.015	1080261	00.14	0,259	13-Docosen-1-ol, (Z)-
189	37.274	363670	00.05	0,2146	4a,7,7,10a-Tetramethyldodecahydrobenzo[f]chromen-3-ol
190	37.491	1029982	00.13	04.07	9-Hexacosene
191	37.966	1186250	00.15	0,2326	Tetracontane

192	38.609	256009	00.03	0,2167	PENTATRIACONTANE
193	39.130	570082	00.07	05.23	15-Isobutyl-(13.alpha.H)-isocopalane
194	39.329	341372	00.04	0,2236	(Z)-14-Tricosenyl formate
195	39.888	624223	00.08	0,2618	1-PENTACOSANOL
196	40.467	630710	00.08	05.57	Hexatriacontane
197	41.058	3620029	00.45	12.41	ORNITHINE-CONTAINING LIPID
796066578			100%		

Tabel 10. Hasil GC-MS BPH B

Peak	Retention Time	Area	Area%	A/H	Name
1	3.047	2785451	01.18	10.34	[1,1'-BIBICYCLO[2.2.2]OCTANE]-4-CARBOXYLIC ACID
2	8.458	3809503	0,0840278	0,4291667	Glycyl-D-threonine
3	9.320	1791446	0,0527778	0,2770833	Nonane, 3-methyl-
4	10.557	1076671	00.46	0,1291667	PROPANOIC ACID, 2-METHYL-, 2,2-DIMETHYL-1-(2-HYDROXY-1-METHYLET
5	10.844	2381645	01.01	0,1763889	HEXADECANE, 2,6,10,14-TETRAMETHYL-
6	11.206	845352	00.36	0,1722222	Tetradecane

7	11.316	449033	00.19	03.46	OCTADECANE, 1-CHLORO-
8	11.505	508392	00.22	0,1520833	1,4-Dioxaspiro[4.4]nonane-7-methanol
9	11.616	1161507	00.49	0,2125	PHENOL, 2-CHLORO-4-(1,1-DIMETHYLETHYL)-
10	11.695	1145195	00.48	03.18	1,5-DIMETHYLNAPHTHALENE
11	11.749	1457121	0,0430556	03.57	1H-INDENE, OCTAHYDRO-2,2,4,4,7,7-HEXAMETHYL-, TRANS-
12	11.818	1415493	0,0416667	0,1756944	PALMITALDEHYDE, DIALLYL ACETAL
13	11.933	964143	00.41	04.13	Cyclohexane, octyl-
14	12.016	4046802	0,0909722	0,1340278	HEXADECANE, 2,6,10,14-TETRAMETHYL-
15	12.067	560774	00.24	0,1069444	2,6-DI(T-BUTYL)-4-HYDROXY-4-METHYL-2,5- CYCLOHEXADIEN-1-ONE
16	12.271	1231597	00.52	03.57	1-Decanol, 2-hexyl-
17	12.394	1071647	00.45	0,1826389	Heneicosane
18	12.559	1624679	0,0479167	03.21	3,5-Dimethyldodecane
19	12.608	1434354	0,0423611	0,1798611	1H-INDOL-5-OL, 3-(2-AMINOETHYL)-
20	12.728	783656	00.33	04.44	PHENOL, 2,4-BIS(1,1-DIMETHYLETHYL)-
21	12.865	1300761	00.55	04.45	1,4-Dioxaspiro[4.4]nonane-7-carboxylic acid, methyl ester
22	12.988	912152	00.39	03.15	Heneicosane
23	13.123	1215394	00.51	0,2305556	3-(2-METHYL-1-PROPENYL)-1H-INDENE

24	13.219	1593278	0,0465278	03.36	Hexadecane, 7,9-dimethyl-
25	13.315	876402	00.37	0,1506944	n-Nonylcyclohexane
26	13.377	2229374	0,0652778	03.07	HEXADECANE, 7,9-DIMETHYL-
27	13.467	449981	00.19	02.37	Tritetracontane
28	13.608	1011495	00.43	05.45	Naphthalene, 2,3,6-trimethyl-
29	13.750	4867185	02.06	03.16	DODECANOIC ACID, ETHYL ESTER
30	13.836	1720056	0,0506944	02.45	Pentadecane
31	13.918	2046145	0,0604167	0,25	Heptacosane, 1-chloro-
32	14.075	795482	00.34	0,2145833	Cyclohexane, 1,2-dimethyl-3-pentyl-4-propyl-
33	14.401	5575822	02.36	0,1368056	2,6,10-TRIMETHYLPENTADECANE
34	14.525	487213	00.21	03.50	HEXADECANE, 2,6,10,14-TETRAMETHYL-
35	14.617	1119367	00.47	03.05	n-Heptadecylcyclohexane
36	14.702	782912	00.33	04.09	Benzene, (2,3-dimethyldecyl)-
37	14.930	734795	00.31	03.35	NAPHTHALENE, 1,6-DIMETHYL-4-(1-METHYLETHYL)-
38	15.081	20321429	0,375	02.55	EICOSANE
39	15.161	1104369	00.47	03.24	1-CHLOROHEPTACOSANE
40	15.406	1126136	00.48	06.31	Benzene, (1-hexyltetradecyl)-
41	15.465	515697	00.22	0,1375	TETRADECANE, 1-CHLORO-
42	15.517	457073	00.19	0,1347222	1-Heptanol, 2,4-diethyl-

43	15.577	1252058	00.53	03.08	Eicosane
44	15.665	706406	00.30	0,1256944	HEXADECANE, 2,6,10,14-TETRAMETHYL-
45	15.917	852378	00.36	0,1326389	Cyclohexane, undecyl-
46	15.969	1417958	0,0416667	03.58	Dodecane, 1-bromo-
47	16.359	1009645	00.43	02.16	Octadecane
48	16.451	7221966	03.06	0,1409722	HEXADECANE, 2,6,10,14-TETRAMETHYL-
49	17.357	1058390	00.45	0,1784722	1,2-Benzenedicarboxylic acid, bis(2-methylpropyl) ester
50	17.485	771413	00.33	0,1680556	Dodecylcyclohexane
51	17.753	2014579	0,0590278	0,1805556	Eicosane
52	17.943	1585099	0,0465278	0,1402778	Heneicosane
53	18.104	1762051	0,0520833	07.39	Dotriacontane
54	18.362	2256942	0,0666667	03.17	HEXADECANOIC ACID, METHYL ESTER
55	18.467	569440	00.24	0,2083333	CYCLOHEXANE, 1,2-DIMETHYL-3-PENTYL-4-PROPYL-
56	18.600	501527	00.21	0,3125	HEXADECANE, 2,6,10,14-TETRAMETHYL-
57	18.944	1341653	00.57	0,2215278	Dibutyl phthalate
58	19.086	14090914	0,2756944	0,2229167	n-Hexadecanoic acid
59	19.217	3158771	01.34	07.01	n-Tridecylcyclohexane
60	19.507	1567888	0,0458333	0,225	Docosanoic acid, ethyl ester
61	19.635	2659728	01.13	03.43	Heneicosane

62	19.950	1513808	0,0444444	0,1833333	4-TERT-BUTYL-2-(1-METHYL-2-NITRO-ETHYL)- CYCLOHEXANONE
63	20.213	528073	00.22	06.59	DOTRIACONTANE
64	20.720	800249	00.34	0,1763889	Tetratriacontane
65	20.876	1655349	0,0486111	04.29	Pentacosane
66	21.007	545562	00.23	03.24	Cyclohexane, tetradecyl-
67	21.203	952494	00.40	06.33	TETRACOSANE, 2,6,10,15,19,23-HEXAMETHYL-
68	21.371	3033345	01.28	03.00	NONADECANE
69	21.470	447556	00.19	03.55	9-Octadecenoic acid (Z)-, methyl ester
70	21.832	1280690	00.54	0,1680556	OCTADECANOIC ACID, METHYL ESTER
71	22.464	699658	00.30	0,1715278	2-METHYLHEXADECANE
72	22.563	7284415	03.08	06.10	Octadecanoic acid
73	22.807	1025326	00.43	0,2208333	n-Pentadecylcyclohexane
74	22.996	508186	00.22	0,2104167	OCTADECANOIC ACID, ETHYL ESTER
75	23.113	1849544	0,0541667	0,1402778	DOCOSANE
76	23.640	436167	00.18	04.01	HEXADECANE, 2,6,10,14-TETRAMETHYL-
77	23.733	537479	00.23	06.19	14-.BETA.-H-PREGNA
78	24.832	2318654	0,0680556	03.04	Pentacosane
79	24.920	624085	00.26	0,1930556	Octadecanoic acid, 10-oxo-, methyl ester

80	25.010	729395	00.31	04.56	Tetratetracontane
81	25.425	435360	00.18	05.08	TETRACONTANE
82	26.071	1389997	00.59	0,2125	1-Tetracosanol
83	26.338	45636330	19.32	03.18	Hexanedioic acid, bis(2-ethylhexyl) ester
84	26.514	2486233	01.05	03.04	HEXACOSANE
85	27.726	1662605	0,0486111	03.45	9-Tricosene, (Z)-
86	28.035	671236	00.28	0,2305556	EICOSANE, 2-CYCLOHEXYL-
87	28.142	2585934	01.09	03.03	HEXACOSANE
88	28.655	3536111	01.50	03.45	1,2-BENZENEDICARBOXYLIC ACID
89	29.327	4212335	0,0958333	03.30	9-Hexacosene
90	29.720	2469953	01.05	03.19	HEXACOSANE
91	30.874	4566514	0,10625	03.50	9-Hexacosene
92	31.244	1928144	0,0569444	03.04	Hexatriacontane
93	32.369	3096120	01.31	03.33	9-Hexacosene
94	32.715	769333	00.33	03.01	Tetracontane
95	32.903	1597153	0,0472222	03.12	2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl-, (all-E)-
96	33.497	689054	00.29	0,1458333	13-Docosen-1-ol, (Z)-
97	33.857	1706194	0,05	0,1715278	9-Hexacosene

98	34.221	805757	00.34	03.33	CELIDONIOL, DEOXY-
99	35.554	1119710	00.47	0,19375	1-Triacontanol
100	37.558	497318	00.21	0,1895833	1-Triacontanol
		236217211	100%		

Tabel 6. Hasil FT-IR BPH A

No	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	603.74	56.67	00.26	605.67	486.08.00	23.08	00.08
2	723.33.00	50.69	00.16	725.26.00	644.25.00	0,9222222	-0.15
3	877.64	61.68	09.26	989.52.00	862.21.00	08.09	-2.33
4	1045.45.00	51.36.00	32.52.00	1066.67	989.52.00	08.42	04.15
5	1084.03.00	66.24.00	18.02	1116.82	1066.67	05.08	2
6	1273.06.00	89.59.00	0,225	1294.28.00	1207.48.00	0,1076389	00.34
7	1319.35.00	91.66	03.01	1356	1294.28.00	0,1020833	00.05
8	1394.58.00	82.82	11.07	1437.02.00	1356	0,2173611	0,13125
9	1452.45.00	86.18.00	07.57	1471.74	1437.02.00	01.56	0,043055556
10	1485.24.00	93.63	01.32	1492.95	1471.74	00.53	00.08
11	1641.48.00	19.02	78.03.00	1813.15.00	1492.95	83.02.00	79.55.00
12	2090.91	63.34.00	34.59.00	2339.73	1851.72	56.16.00	51.63
13	2389.88	94.33.00	06.51	2584.07.00	2362.88	0,0895833	02.57
14	2904.89	42.57.00	0,1923611	2918.04.00	2584.07.00	33.05.00	-24.83
15	2980.12.00	25.63	10.07	3005.02.00	2918.04.00	39.95	03.24

16	3448.84	0,1423611	62.48.00	3792.18.00	3005.02.00	770.08.00	560.33.00
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Tabel 7. Hasil FT-IR BPH B

No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	501.51.00	96.873	1.746	540.09.00	472.58.00	0,43402778	0,16180556
2	628.81	90.991	5.492	644.25.00	590.24.00	01.29	0,43680556
3	671.25.00	53.821	30.778	692.47.00	644.25.00	8.069	4.718
4	763.84	18.405	65.439	873.78	692.47.00	53.834	41.386
5	927.79	91.309	8.465	954.08.00	902.72	1.084	1.035
6	1043.52.00	86.043	14.08	1124.54.00	981.08.00	3.405	3.466
7	1215.19.00	32.066	67.148	1315.05.00	1124.54.00	18.504	17.816
8	1425.44.00	89.839	5.947	1456.03.00	1350.22.00	0,13263889	1.102
9	1521.89	90.38.00	7.219	1562.39.00	1492.95	1.837	1.141
10	1641.48.00	91.457	3.356	1676.02.00	1572.04.00	3.006	1.009
11	2403.38.00	89.425	7.589	2424.06.00	2374.45.00	1.525	0,64236111
12	2926.11.00	79.458	5.672	2951.19.00	2872.01.00	6.106	0,68472222
13	2970.48.00	80.656	3.352	2991.69	2951.19.00	3.454	0,27430556

14	3020.63	49.278	35.952	3144.07.00	2991.69	17.811	7.754
15	3435.34.00	80.426	0,129166667	3443.05.00	3144.07.00	23.146	-0.022
16	3616.65	80.339	5.989	3664.87	3583.86	6.069	1.063
