



**PT. SARASWANTI INDO GENETECH**  
**ONE STOP LABORATORY SERVICES**



Main Office and Laboratory: Graha SIG Jl Rasamala No.20 Taman Yasmin Bogor 16113 INDONESIA  
Jakarta Branch: Jl. Percetakan Negara No. 52 B RT 006/ RW 001 Kel. Rawasari, Kec. Cempaka Putih, Jakarta INDONESIA  
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www.siglaboratory.com

No : SIG.CL.I.2020.000829

Bogor, January 09, 2020

Subject : Result of Analysis

To :

PT. Moringa Indonesia Fangardana  
APL Tower Lt 7 Suite 7, Podomoro City (Central Park) Jl. S Parman Kav. 28, Grogol,  
Jakarta Barat, 11470, Indonesia

Dear Sir/Madam,

As your order no : SIG.Mark.R.XII.2019.023573 , here with we send the result of analysis  
for the sample as below :

Name of Sample : Sample A  
Information : Enclosed

Thank you for your cooperation

Yours Faithfully,  
PT. Saraswanti Indo Genetech



**Robertus B.Aryo**  
Marketing Manager

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No. 28/F-PP/SMM-SIG

Revisi : 3

### Result of Analysis

No : SIG.LHP.I.2020.003060

No.	Parameter	Unit	Result	Limit Of Detection	Method
1	Saturated fat	%	23.1816	-	18-6-1/MU/SMM-SIG (GC)
2	C 20: 0 (arachidic acid)	%	3.0447	-	18-6-1/MU/SMM-SIG (GC)
3	C 10: 0 (capric acid)	%	Not detected	0.00158	18-6-1/MU/SMM-SIG (GC)
4	Monounsaturated fat	%	75.9087	-	18-6-1/MU/SMM-SIG (GC)
5	C 20: 1 (eicosanoic acid)	%	2.8917	-	18-6-1/MU/SMM-SIG (GC)
6	C 12: 0 (lauric acid)	%	0.0147	-	18-6-1/MU/SMM-SIG (GC)
7	EPA	%	Not detected	0.00125	18-6-1/MU/SMM-SIG (GC)
8	C 21: 0 (heneicosanoic acid)	%	0.0503	-	18-6-1/MU/SMM-SIG (GC)
9	C 14: 0 (myristic acid)	%	0.0973	-	18-6-1/MU/SMM-SIG (GC)
10	AA	%	Not detected	0.00128	18-6-1/MU/SMM-SIG (GC)

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Revisi : 3

### Result of Analysis No : SIG.LHP.I.2020.003060

No.	Parameter	Unit	Result	Limit Of Detection	Method
11	C 22: 0 (acid behenat)	%	8.5842	-	18-6-1/MU/SMM-SIG (GC)
12	C 15: 0 (pentadecanoic acid)	%	Not detected	0.00162	18-6-1/MU/SMM-SIG (GC)
13	Omega 9 fatty acids	%	72.3651	-	18-6-1/MU/SMM-SIG (GC)
14	Unsaturated fat	%	76.7584	-	18-6-1/MU/SMM-SIG (GC)
15	C 16: 0 (palmitic acid)	%	6.0959	-	18-6-1/MU/SMM-SIG (GC)
16	C 22: 1 (erucic acid)	%	0.1646	-	18-6-1/MU/SMM-SIG (GC)
17	C 17: 0 (heptadecanoic acid)	%	0.0988	-	18-6-1/MU/SMM-SIG (GC)
18	C 22: 2 (docosadienoic acid)	%	Not detected	0.00155	18-6-1/MU/SMM-SIG (GC)
19	C 20:3 w3 (eicosatrienoic acid / w3)	%	Not detected	0.00171	18-6-1/MU/SMM-SIG (GC)
20	C 18: 0 (stearic acid)	%	3.8169	-	18-6-1/MU/SMM-SIG (GC)

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No.	Parameter	Unit	Result	Limit Of Detection	Method
21	C 6: 0 (caproic acid)	%	Not detected	0.00127	18-6-1/MU/SMM-SIG (GC)
22	C 22: 6 w3 (docosahexaenoic acid)	%	Not detected	0.0012	18-6-1/MU/SMM-SIG (GC)
23	C 18: 2 W6T (t-linoleic acid)	%	Not detected	0.00164	18-6-1/MU/SMM-SIG (GC)
24	C 4: 0 (butyric acid)	%	Not detected	0.00122	18-6-1/MU/SMM-SIG (GC)
25	Polyunsaturated fat	%	0.8497	-	18-6-1/MU/SMM-SIG (GC)
26	C 24: 0 (lignoseric acid)	%	1.3042	-	18-6-1/MU/SMM-SIG (GC)
27	C 18: 3 W3 (linolenic acid / w3)	%	0.1468	-	18-6-1/MU/SMM-SIG (GC)
28	C 11: 0 (undecanoic acid)	%	Not detected	0.00162	18-6-1/MU/SMM-SIG (GC)
29	Omega 3 fatty acids	%	0.1468	-	18-6-1/MU/SMM-SIG (GC)
30	C 18: 3 W6 (linolenic acid / w6)	%	0.0422	-	18-6-1/MU/SMM-SIG (GC)

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No.	Parameter	Unit	Result	Limit Of Detection	Method
31	C 13: 0 (tridecanoic acid)	%	Not detected	0.0017	18-6-1/MU/SMM-SIG (GC)
32	DHA	%	Not detected	0.0012	18-6-1/MU/SMM-SIG (GC)
33	C 20: 2 (eicosadienoic acid)	%	Not detected	0.00147	18-6-1/MU/SMM-SIG (GC)
34	C 14: 1 (miristoleic acid)	%	Not detected	0.00167	18-6-1/MU/SMM-SIG (GC)
35	Omega 6 fatty acids	%	0.7029	-	18-6-1/MU/SMM-SIG (GC)
36	C 20: 3 w6 (eicosatrienoic acid / w6)	%	Not detected	0.00161	18-6-1/MU/SMM-SIG (GC)
37	C 15: 1 (pentadecenoic acid)	%	Not detected	0.00164	18-6-1/MU/SMM-SIG (GC)
38	C 8: 0 (caprylic acid)	%	Not detected	0.00144	18-6-1/MU/SMM-SIG (GC)
39	C 20: 4 w6 (arachidonic acid)	%	Not detected	0.00128	18-6-1/MU/SMM-SIG (GC)
40	C 16: 1 (palmitoleic acid)	%	0.6129	-	18-6-1/MU/SMM-SIG (GC)

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### Result of Analysis No : SIG.LHP.I.2020.003060

No.	Parameter	Unit	Result	Limit Of Detection	Method
41	C 23: 0 (trichosanoic acid)	%	0.0747	-	18-6-1/MU/SMM-SIG (GC)
42	C 17: 1 (heptadecenoic acid)	%	0.0390	-	18-6-1/MU/SMM-SIG (GC)
43	C 20: 5 w3 (eicosapentaenoic acid)	%	Not detected	0.00125	18-6-1/MU/SMM-SIG (GC)
44	C 18: 1 W9T (t-oleic acid)	%	Not detected	0.00151	18-6-1/MU/SMM-SIG (GC)
45	C 24: 1 w9 (nervonic acid)	%	Not detected	0.00164	18-6-1/MU/SMM-SIG (GC)
46	C 18: 1 W9C (c-oleic acid)	%	72.2005	-	18-6-1/MU/SMM-SIG (GC)
47	C 18: 2 W6C (c-linoleic acid)	%	0.6607	-	18-6-1/MU/SMM-SIG (GC)
48	C 18:2 W6 (linoleic acid / w6)	%	0.6607	-	18-6-1/MU/SMM-SIG (GC)
49	Oleic acid	%	72.2005	-	18-6-1/MU/SMM-SIG (GC)
50	Linoleic Acid	%	0.6607	-	18-6-1/MU/SMM-SIG (GC)

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### Result of Analysis

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No.	Parameter	Unit	Result	Limit Of Detection	Method
51	Linolenic acid	%	0.1890	-	18-6-1/MU/SMM-SIG (GC)
52	Vitamin A	mg / 100 g	1352.20	-	18-5-1/MU/SMM-SIG (HPLC)
53	Vitamin E (as alpha tocopherol)	mg / 100 g	13.57	-	18-5-1/MU/SMM-SIG (HPLC)
54	Moisture content (Karl Fischer)	%	0.06	-	18-11-44/MU/SMM-SIG
55	Free Fatty Acid as Oleic Acid	%	0.65	-	SNI 01-3555-1998 point 8
56	Acid Value	mg KOH / g fat	1.29	-	SNI 01-3555-1998 point 8
57	Saponification Value	mg KOH / g	188.14	-	SNI 01-3555-1998 point 7
58	Peroxide Value	mEq O <sub>2</sub> / kg	1.4240	-	AOAC Official method 965.33
59	Iodine Value	Wijs	68.41	-	AOAC Official Method 993.20 (2005)
60	pH	-	6.54	-	SNI 01 - 2891 - 1992, point 16

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No : SIG.LHP.I.2020.003060

No.	Parameter	Unit	Result	Limit Of Detection	Method
61	Odor	-	Normal	-	SNI 7709-2012
62	Appearance	-	Normal	-	SNI 7709-2012
63	Taste	-	Tidak berasa	-	SNI 7709-2012
64	Density	g / mL	0.9016	-	18-11-51/MU/SMM-SIG
65	Refractive index	°	1.4655	-	18-11-82/MU/SMM-SIG

Bogor, January 09, 2020  
PT. Saraswanti Indo Genetech



**Dwi Yulianto Laksono, S.Si**  
Laboratory Manager

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