

Date : July 25, 2022

CERTIFICATE OF ANALYSIS – TOTAL FATTY ACIDS METHYL ESTERS (FAMES)

SAMPLE IDENTIFICATION

Internal code : 22G12-PTH01

Customer identification : Grapeseed - GE0116R

Type : Vegetable oil & fats

Source : *Vitis vinifera*

Customer : Plant Therapy

ANALYSIS

Method: PC-MAT-010 - Fatty acids profiling of a vegetable oil or a plant by hydrolysis and derivatisation (FAMES).

Analyst : Pamela Lavoie, M.Sc., Chimiste

Analysis date : July 22, 2022

Checked and approved by :

Alexis St-Gelais, Ph. D., Chimiste 2013-174

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PHYSICOCHEMICAL DATA

Physical aspect: Faintly yellow viscous liquid

Refractive index: 1.4746 ± 0.0003 (20 °C; method PC-MAT-016)

CONCLUSION

This sample features the expected fatty acids ratios for grapeseed oil¹.

REFERENCE

(1) Dubois, V.; Breton, S.; Linder, M.; Fanni, J.; Parmentier, M. Fatty Acid Profiles of 80 Vegetable Oils with Regard to Their Nutritional Potential. *Eur. J. Lipid Sci. Technol.* 2007, 109 (7), 710–732.

ANALYSIS DATA

Fatty acids		Shorthand formula	R.T	R.I	%	Type
Common name	Systematic name					
Lauric acid	Dodecanoic acid	C12:0	7.92	1188	0.01	SFA
Myristic acid	Tetradecanoic acid	C14:0	9.74	1393	0.08	SFA
Palmitic acid	Hexadecanoic acid	C16:0	12.30	1599	6.96	SFA
Hypogeic acid	(7Z)-Hexadecenoic acid	C16:1 n-9 c	13.12	1651	0.02	MUFA
Palmitoleic acid	(9Z)-Hexadecenoic acid	C16:1 n-7 c	13.28	1660	0.11	MUFA
<i>cis</i> -Palmitvaccenic acid	(11Z)-Hexadecenoic acid	C16:1 n-5 c	13.52	1674	0.01	MUFA
Margaric acid	Heptadecanoic acid	C17:0	14.02	1702	0.04	SFA
<i>cis</i> -9-Heptadecenoic acid	(9Z)-Heptadecenoic acid	C17:1 n-8 c	15.16	1758	0.03	MUFA
Stearic acid	Octadecanoic acid	C18:0	16.26	1807	4.04	SFA
Octadecenoic acid isomer III	Octadecenoic acid	C18:1	17.18	1845	0.04	MUFA
Oleic acid	(9Z)-Octadecenoic acid	C18:1 n-9 c	17.61	1862	25.71	MUFA
<i>cis</i> -Vaccenic acid	(11Z)-Octadecenoic acid	C18:1 n-7 c	17.78	1868	0.76	MUFA
Linolelaidic acid	(9E,12E)-Octadecadienoic acid	C18:2 n-6 tt	18.71	1903	0.01	PUFA
<i>cis,trans</i> -9,12-Octadecadienoic acid	(9Z,12E)-Octadecadienoic acid	C18:2 n-6 ct	19.26	1924	0.20	PUFA
<i>trans,cis</i> -9,12-Octadecadienoic acid	(9E,12Z)-Octadecadienoic acid	C18:2 n-6 tc	19.53	1934	0.16	PUFA
Linoleic acid	(9Z,12Z)-Octadecadienoic acid	C18:2 n-6 cc	19.90	1946	59.73	PUFA
Arachidic acid	Eicosanoic acid	C20:0	21.85	2012	0.30	SFA
α -Linolenic acid	(9Z,12Z,15Z)-Octadecatrienoic acid	C18:3 n-3 ccc	22.54	2035	0.68	PUFA
Gondoic acid	(11Z)-Eicosenoic acid	C20:1 n-9 c	23.37	2062	0.14	MUFA
Behenic acid	Docosanoic acid	C22:0	28.21	2220	0.63	SFA
Total PUFA: 60.42%				Total identified 99.65%		
Total MUFA: 26.93%						
Total SFA: 12.06%						

Note: no correction factor was applied

R.T.: Retention time (minutes)

R.I.: Retention index

PUFA: Polyunsaturated fatty acid

MUFA: Monounsaturated fatty acid

SFA: Saturated fatty acid

