CERTIFICATE OF ANALYSIS – GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 22F20-NSO01
Customer identification : Eucalyptus Globulus Essential Oil - Lot: 000056
Type : Essential oil
Source : *Eucalyptus globulus*
Customer : Natural Sourcing LLC

ANALYSIS

Method: PC-MAT-014 ✳ISO - Analysis of the composition of an essential oil or other volatile liquid by FAST GC-FID (in French); identifications validated by GC-MS.
Analyst : Sylvain Mercier, M. Sc., Chimiste 2014-005
Analysis date : June 22, 2022

Checked and approved by :

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

Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia. This report is digitally signed, it is only considered valid if the digital signature is intact. The results only describe the samples that were submitted to the assays.

PHYSICOCHEMICAL DATA

Physical aspect: Clear liquid
Refractive index: 1.4607 ± 0.0003 (20 °C; method PC-MAT-016)

CONCLUSION

No adulterant, contaminant or diluent has been detected using this method.

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ANALYSIS SUMMARY – CONSOLIDATED CONTENTS

New readers of similar reports are encouraged to read table footnotes at least once.

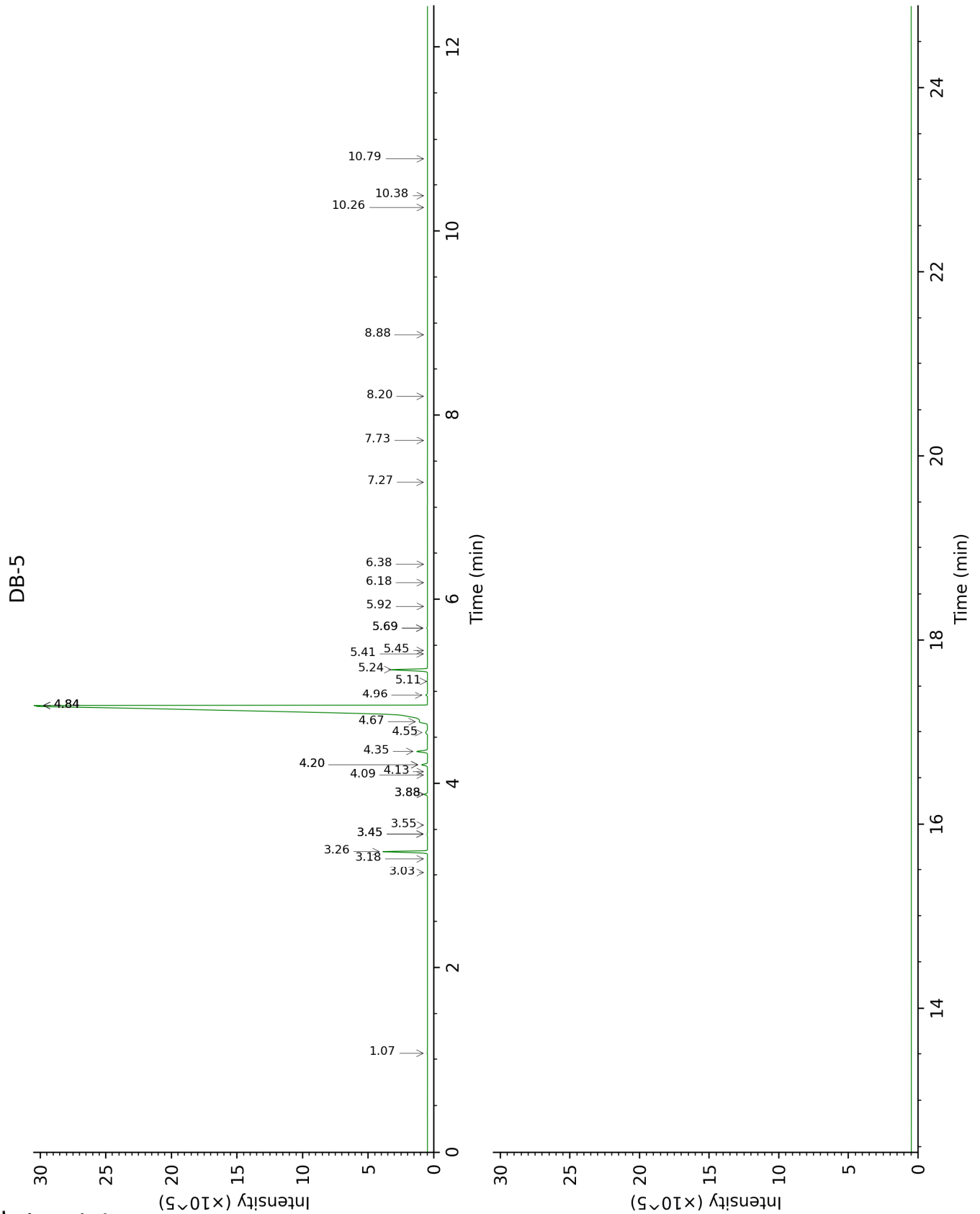| Identification	%	Class
Isoamyl alcohol	0.02	Aliphatic alcohol
Hashishene	tr	Monoterpene
α-Thujene	0.01	Monoterpene
α-Pinene	2.65	Monoterpene
Camphene	0.02	Monoterpene
α-Fenchene	0.01	Monoterpene
Thuja-2,4(10)-diene	0.01	Monoterpene
β-Pinene	0.22	Monoterpene
Sabinene	0.01	Monoterpene
trans-para-Menthane	0.01	Monoterpene
trans-meta-Mentha-2,8-diene	tr	Monoterpene
trans-Dehydroxylinalool oxide	0.01	Monoterpenic ether
Myrcene	0.42	Monoterpene
α-Phellandrene	0.83	Monoterpene
α-Terpinene	0.21	Monoterpene
para-Cymene	4.34	Monoterpene
Limonene	4.61	Monoterpene
β-Phellandrene	3.19	Monoterpene
1,8-Cineole	80.60	Monoterpenic ether
(*Z*)-β-Ocimene	0.10	Monoterpene
(*E*)-β-Ocimene	0.03	Monoterpene
γ-Terpinene	2.50	Monoterpene
Unknown	0.01	Oxygenated monoterpene
cis-Linalool oxide (fur.)	0.01	Monoterpenic alcohol
para-Cymenene	0.01	Monoterpene
Terpinolene	0.04	Monoterpene
Linalool	tr	Monoterpenic alcohol
cis-para-Menth-2-en-1-ol	tr	Monoterpenic alcohol
trans-Pinocarveol	tr	Monoterpenic alcohol
α-Terpineol	0.01	Monoterpenic alcohol
trans-Carveol	tr	Monoterpenic alcohol
Unknown	0.01	Unknown
trans-Pinocarvyl acetate	tr	Monoterpenic ester
Unknown	tr	Sesquiterpene
α-Gurjunene	tr	Sesquiterpene
Aromadendrene	tr	Sesquiterpene
Consolidated total	**99.91%**	

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm is set to prioritize data from the most standard DB-5 column, and smallest values so as to avoid overestimating individual content. This process is semi-automatic. Advanced users are invited to consult the "Full analysis data" table after the chromatograms in this report to access the full untreated data and perform their own calculations if needed.

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Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

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This page was intentionally left blank. The following pages present the complete data of the analysis.

DB-5

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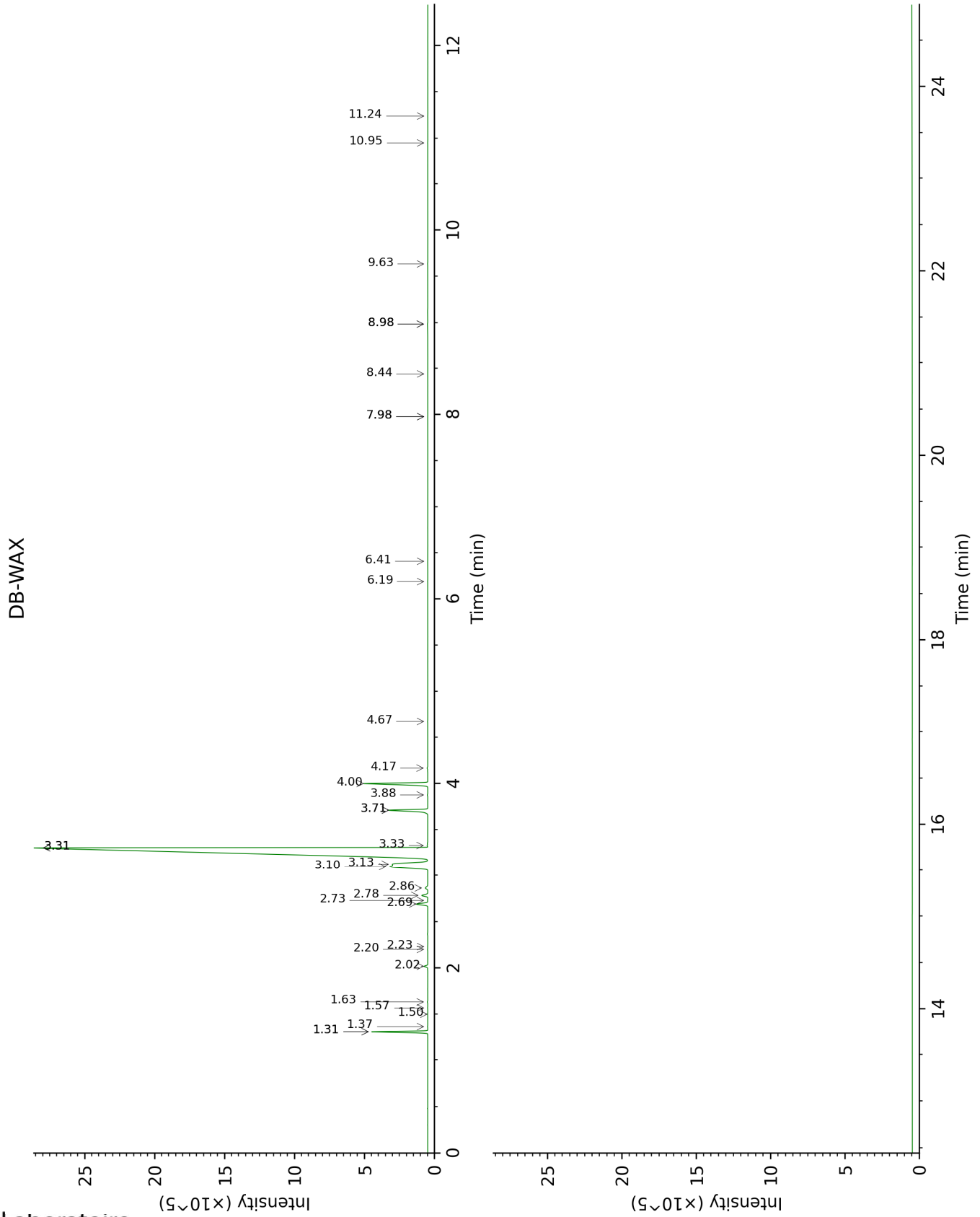
DB-WAX

FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Isoamyl alcohol	1.07	732	0.02	3.33	1177	0.03
Hashishene	3.03	915	tr	1.31*	991	2.66
α-Thujene	3.18	926	0.01	1.37	1000	0.01
α-Pinene	3.26	931	2.65	1.31*	991	[2.66]
Camphene	3.45*†	943	0.03	1.63	1027	0.02
α-Fenchene	3.45*†	943	[0.03]	1.57	1020	0.01
Thuja-2,4(10)-diene	3.55	950	0.01	2.20	1084	0.02
β-Pinene	3.88*	972	0.23	2.02	1065	0.22
Sabinene	3.88*	972	[0.23]	2.23	1087	0.01
trans-para-Menthane	4.09	985	0.01	1.50	1014	0.01
trans-meta-Mentha-2,8-diene	4.13	988	tr	2.73	1129	0.01
trans-Dehydroxylinalool oxide	4.20*	992	0.44	3.30*	1175	80.47
Myrcene	4.20*	992	[0.44]	2.78	1134	0.42
α-Phellandrene	4.35	1002	0.83	2.69	1126	0.81
α-Terpinene	4.55	1015	0.21	2.86	1140	0.22
para-Cymene	4.67†	1022	92.74	4.00	1228	4.34
Limonene	4.84*†	1033	[92.74]	3.10	1158	4.61
β-Phellandrene	4.84*†	1033	[92.74]	3.13	1160	3.19
1,8-Cineole	4.84*†	1033	[92.74]	3.30*	1175	[80.47]
(*Z*)-β-Ocimene	4.96	1040	0.10	3.71*	1207	2.67
(*E*)-β-Ocimene	5.11	1050	0.03	3.88	1219	0.03
γ-Terpinene	5.24	1058	2.50	3.71*	1207	[2.67]
Unknown [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)]	5.41	1069	0.01	4.67	1278	0.02
cis-Linalool oxide (fur.)	5.45	1071	0.01	6.41	1401	0.01
para-Cymenene	5.69*	1086	0.05	6.19	1385	0.01
Terpinolene	5.69*	1086	[0.05]	4.17	1240	0.04
Linalool	5.92	1101	tr	7.98*	1519	tr
cis-para-Menth-2-en-1-ol	6.18	1118	tr	7.98*	1519	[tr]
trans-Pinocarveol	6.38	1131	tr	8.98*	1598	0.01
α-Terpineol	7.27	1189	0.01	9.63	1651	0.02
trans-Carveol	7.73	1218	tr	11.24	1785	tr
Unknown [m/z 43, 97 (69), 107 (46), 41 (28), 55 (21), 109 (20)...]	8.20	1251	0.01	10.95	1761	0.01
trans-Pinocarvyl acetate	8.88	1297	tr	8.98*	1598	[0.01]

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Unknown [m/z 93, 122 (98), 161 (98), 107 (86), 95 (46), 105 (72)... 204 (34)]	10.26	1390	tr			
α-Gurjunene	10.38	1398	tr			
Aromadendrene	10.79	1429	tr	8.44	1555	0.01
Total identified		**99.88%**			**99.87%**	
Total reported		**99.90%**			**99.89%**	

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken into account in the consolidated total

†: Peaks apexes were resolved, but peaks overlapped and were summed for analysis

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied
R.T.: Retention time (minutes)
R.I.: Retention index

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