

Date : March 16, 2021

CERTIFICATE OF ANALYSIS – GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 21B23-FEP08

Customer identification : Eucalyptus Globulus - China - 51333-17

Type : Essential oil

Source : *Eucalyptus globulus*

Customer : Fern & Petal

ANALYSIS

Method: PC-MAT-014  - Analysis of the composition of an essential oil or other volatile liquid by FAST GC-FID (in French); identifications validated by GC-MS.

Analyst : Seydou Ka, M. Sc.

Analysis date : March 15, 2021

Checked and approved by :

Alexis St-Gelais, M. Sc., 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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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: 1.4609 ± 0.0003 (20 °C; method PC-MAT-016)

CONCLUSION

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

ANALYSIS SUMMARY – CONSOLIDATED CONTENTS

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

Identification	%	Class
Acetone	0.03	Aliphatic ketone
α -Thujene	0.02	Monoterpene
α -Pinene	3.13	Monoterpene
Camphene	0.01	Monoterpene
α -Fenchene	0.01	Monoterpene
Thuja-2,4(10)-diene	0.04	Monoterpene
Sabinene	0.02	Monoterpene
β -Pinene	0.01	Monoterpene
Octen-3-ol	0.02	Aliphatic alcohol
Myrcene	0.77	Monoterpene
α -Phellandrene	0.37	Monoterpene
Pseudolimonene	0.02	Monoterpene
<i>cis</i> -Dehydroxylinalool oxide	0.05	Monoterpenic ether
Δ^3 -Carene	0.03	Monoterpene
α -Terpinene	0.12	Monoterpene
para-Cymene	4.01	Monoterpene
Limonene	7.67	Monoterpene
1,8-Cineole	81.11	Monoterpenic ether
(<i>Z</i>)- β -Ocimene	0.17	Monoterpene
(<i>E</i>)- β -Ocimene	0.04	Monoterpene
γ -Terpinene	1.20	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	0.01	Monoterpenic alcohol
Terpinolene	0.01	Monoterpene
Linalool	0.01	Monoterpenic alcohol
<i>cis</i> -para-Menth-2-en-1-ol	0.01	Monoterpenic alcohol
allo-Ocimene	0.01	Monoterpene
<i>trans</i> -Pinocarveol	0.02	Monoterpenic alcohol
meta-Mentha-4,6-dien-8-ol	0.02	Monoterpenic alcohol
Terpinen-4-ol	0.01	Monoterpenic alcohol
Cryptone	0.01	Normonoterpenic ketone
para-Cymen-8-ol	0.01	Monoterpenic alcohol
<i>trans</i> -Carveol	0.02	Monoterpenic alcohol
<i>cis</i> -Carveol	0.02	Monoterpenic alcohol
Unknown	0.04	Unknown
δ -Terpinyl acetate	0.02	Monoterpenic ester
Unknown	0.01	Unknown
α -Gurjunene	0.01	Sesquiterpene
Aromadendrene	tr	Sesquiterpene
Consolidated total	99.06%	

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

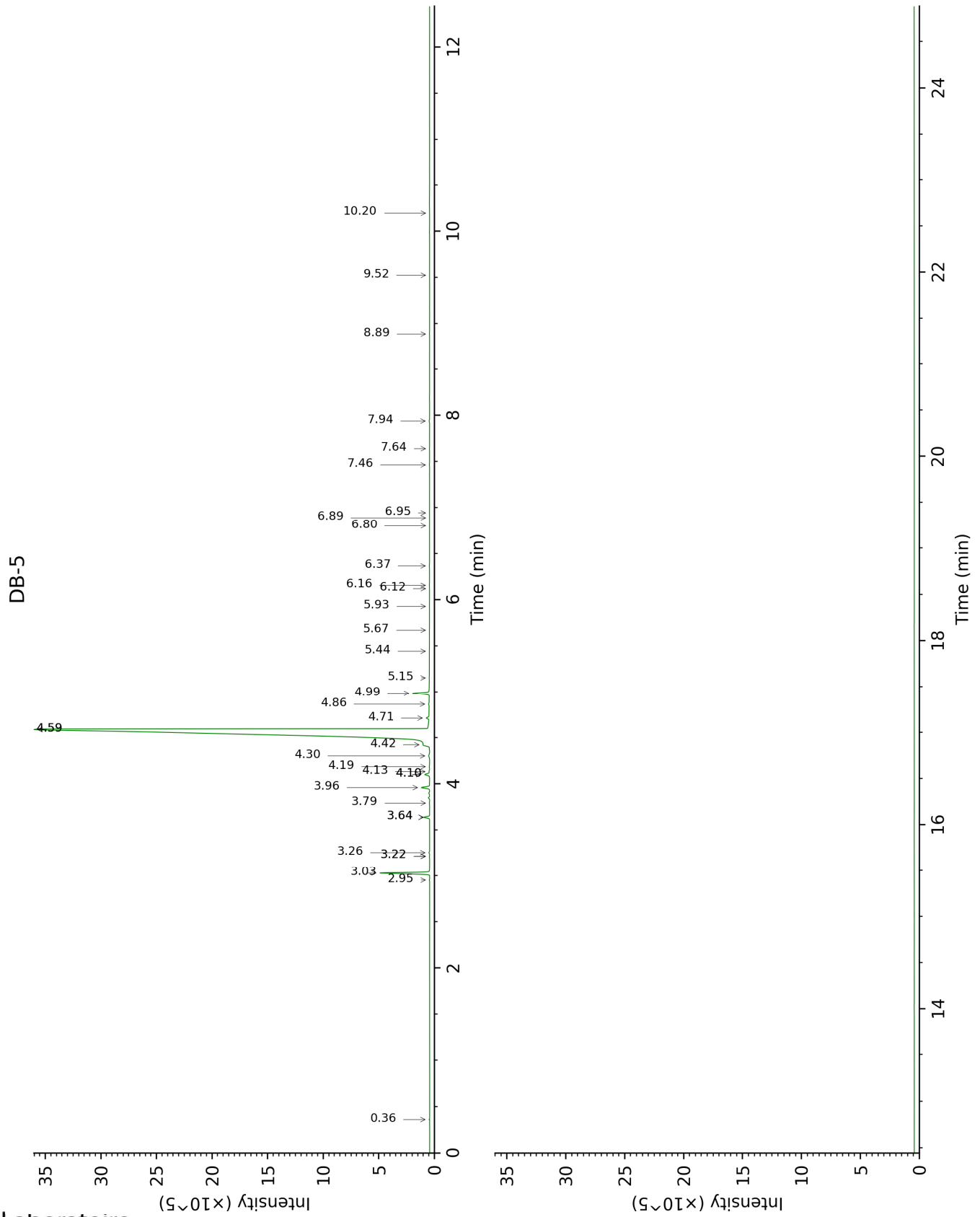
Note: no correction factor was applied

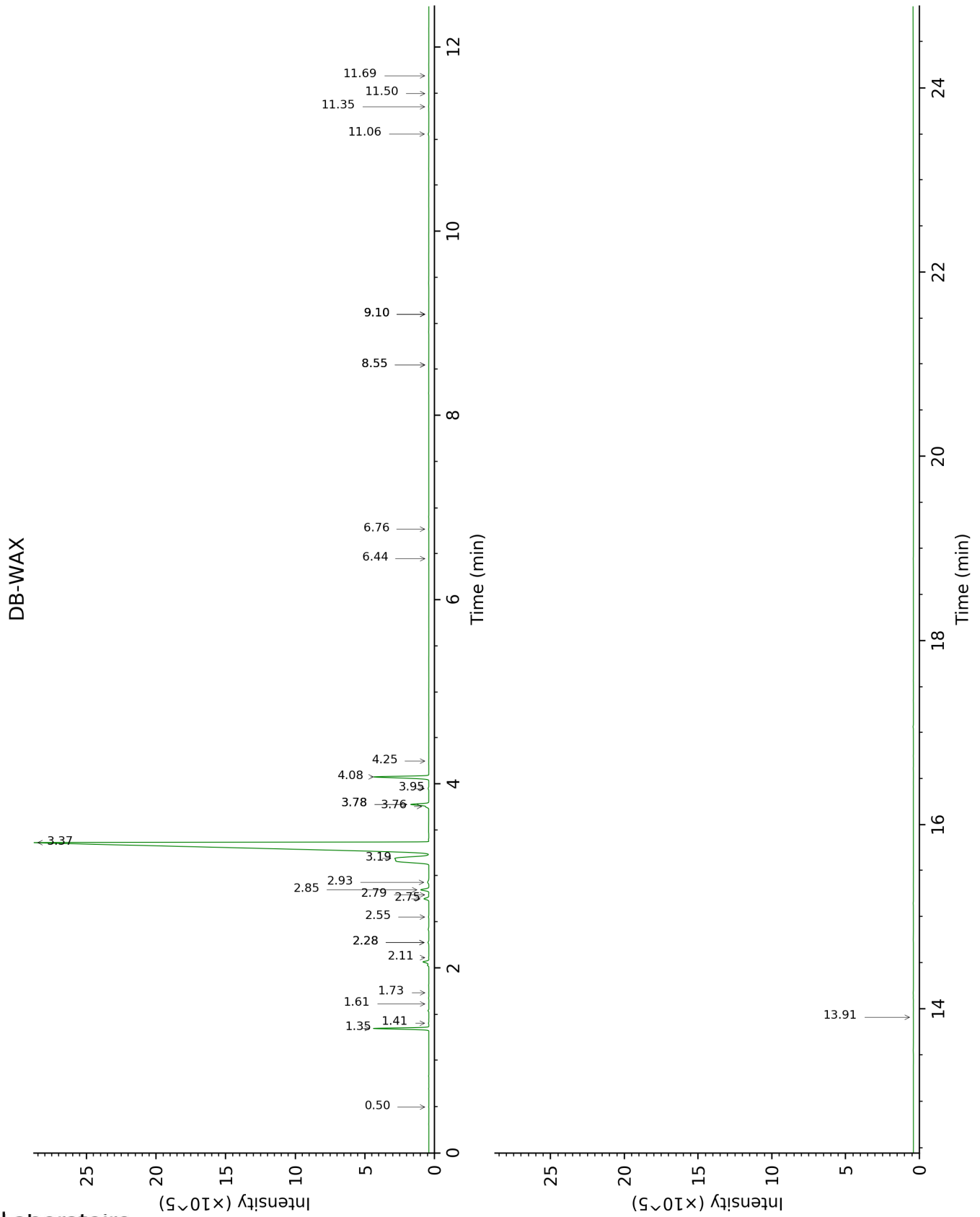
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm 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.

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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FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Acetone	0.36	507	0.03	0.50	784	tr
α-Thujene	2.95	925	0.02	1.40	1000	0.02
α-Pinene	3.03	930	3.13	1.35	992	3.10
Camphene	3.22*†	942	0.02	1.73	1033	0.01
α-Fenchene	3.22*†	942	[0.02]	1.61	1021	0.01
Thuja-2,4(10)-diene	3.26	945	0.04	2.28*	1086	0.06
Sabinene	3.64*	970	0.39	2.28*	1086	[0.06]
β-Pinene	3.64*	970	[0.39]	2.11	1070	0.01
Octen-3-ol	3.79	981	0.02	6.76	1422	0.02
Myrcene	3.96	992	0.77	2.85	1134	0.61
α-Phellandrene	4.10*	1001	0.40	2.75	1126	0.37
Pseudolimonene	4.10*	1001	[0.40]	2.79	1129	0.02
<i>cis</i> -Dehydroxylinalool oxide	4.13	1003	0.05	3.76	1204	0.16
Δ ³ -Carene	4.19	1007	0.03	2.55	1111	0.02
α-Terpinene	4.30	1014	0.12	2.93	1140	0.12
para-Cymene	4.42†	1022	93.06	4.08	1227	4.01
Limonene	4.59*†	1032	[93.06]	3.20	1161	7.67
1,8-Cineole	4.59*†	1032	[93.06]	3.37	1174	81.11
(<i>Z</i>)-β-Ocimene	4.71	1040	0.17	3.78*	1206	1.29
(<i>E</i>)-β-Ocimene	4.86	1049	0.04	3.95	1218	0.05
γ-Terpinene	4.98	1057	1.20	3.78*	1206	[1.29]
<i>cis</i> -Linalool oxide (fur.)	5.15	1068	0.01	6.44	1398	0.01
Terpinolene	5.44	1086	0.01	4.25	1239	0.01
Linalool	5.67	1100	0.01			
<i>cis</i> -para-Menth-2-en-1-ol	5.93	1117	0.01			
allo-Ocimene	6.12	1129	0.01			
<i>trans</i> -Pinocarveol	6.16	1132	0.02	9.10*	1601	0.01
meta-Mentha-4,6-dien-8-ol	6.37	1145	0.02			
Terpinen-4-ol	6.80	1173	0.01	8.55*	1558	0.01
Cryptone	6.89	1179	0.01	9.10*	1601	[0.01]
para-Cymen-8-ol	6.95	1183	0.01	11.50	1800	0.01
<i>trans</i> -Carveol	7.46	1217	0.02	11.35	1788	0.02
<i>cis</i> -Carveol	7.64	1229	0.02	11.69	1817	0.01
Unknown [m/z 43, 97 (69), 107 (46), 41 (28), 55 (21), 109 (20)...]	7.94	1249	0.04	11.06	1763	0.05
δ-Terpinyl acetate	8.89	1314	0.02	9.10*	1601	[0.01]
Unknown [m/z 43, 95 (62), 107 (45), 110 (41), 55 (28), 67 (25)...]	9.52	1355	0.01	13.91	2021	0.01

α -Gurjunene	10.20	1402	0.01		
Aromadendrene				8.55*	1558 [0.01]
Total identified		99.65%			98.74%
Total reported		99.71%			98.79%

*: 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