

Date : 2024-09-24

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 24110-PTH02

Customer Identification : Eucalyptus Globulus - China - E20114R

Type : Essential Oil

Source : *Eucalyptus globulus*

Customer : Plant Therapy

Checked and approved by:

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

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GAS CHROMATOGRAPHIC ANALYSIS

Method : PC-MAT-014 - Analysis of the composition of an essential oil or other volatile liquide by FAST GC-FID

***ISO**

Results : See analysis summary (next page)

Analyst : Sylvain Mercier, M. Sc., Chimiste 2014-005

Date : 2024-09-18

PHYSICOCHEMICAL DATA

Refractive index : 1.4606 ± 0.0003 (20 °C)

Method : PC-MAT-016 - Measure of the refractive index of a liquid.

Analyst : Cindy Caron B. Sc.

Date : 2024-09-17

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
Isoamyl alcohol	tr	Aliphatic alcohol
Hashishene	tr	Monoterpene
α -Thujene	0.02	Monoterpene
α -Pinene	2.82	Monoterpene
α -Fenchene	0.01	Monoterpene
Camphene	0.03	Monoterpene
Thuja-2,4(10)-diene	0.01	Monoterpene
β -Pinene	0.25	Monoterpene
Sabinene	0.02	Monoterpene
<i>trans-meta</i> -Mentha-2,8-diene	tr	Monoterpene
Myrcene	0.48	Monoterpene
Pseudolimonene	0.01	Monoterpene
α -Phellandrene	0.84	Monoterpene
<i>cis</i> -Dehydroxylinalool oxide	0.03	Monoterpenic ether
α -Terpinene	0.23	Monoterpene
<i>para</i> -Cymene	3.81	Monoterpene
1,8-Cineole	81.12	Monoterpenic ether
Limonene	7.35	Monoterpene
(<i>Z</i>)- β -Ocimene	0.05	Monoterpene
(<i>E</i>)- β -Ocimene	0.01	Monoterpene
γ -Terpinene	2.46	Monoterpene
<i>cis</i> -Sabinene hydrate	0.04	Monoterpenic alcohol
Unknown	0.02	Oxygenated monoterpene
<i>cis</i> -Linalool oxide (fur.)	0.01	Monoterpenic alcohol
Isoterpinolene	0.01	Monoterpene
Terpinolene	0.09	Monoterpene
<i>para</i> -Cymenene	0.01	Monoterpene
Linalool	0.01	Monoterpenic alcohol
<i>trans</i> -Pinocarveol	0.01	Monoterpenic alcohol
Terpinen-4-ol	0.02	Monoterpenic alcohol
α -Terpineol	0.10	Monoterpenic alcohol
Unknown	0.01	Unknown
α -Gurjunene	0.01	Sesquiterpene
β -Caryophyllene	tr	Sesquiterpene
Aromadendrene	0.01	Sesquiterpene
allo-Aromadendrene	0.01	Sesquiterpene
Consolidated total	99.93	

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

Note: no correction factor was applied

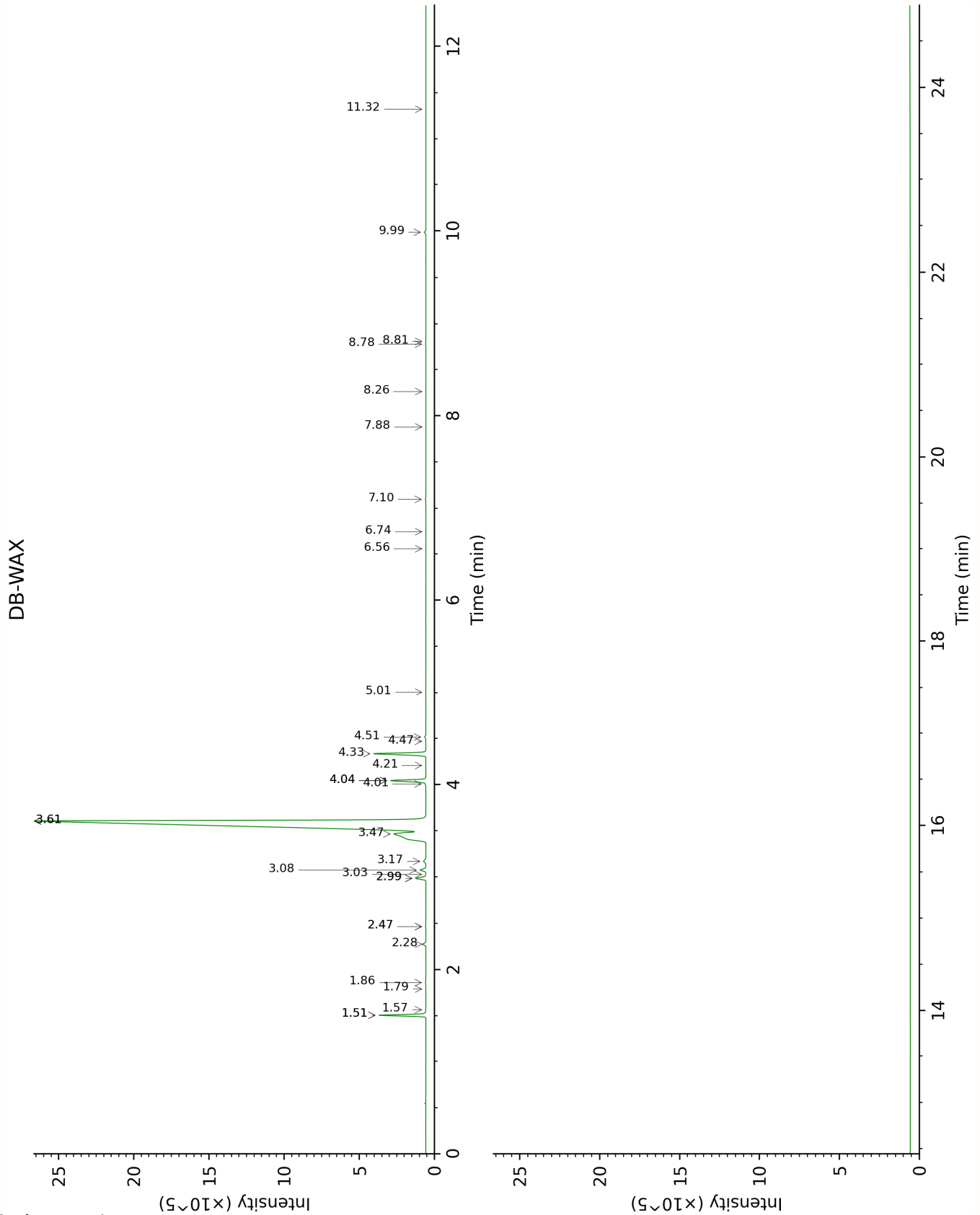
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies

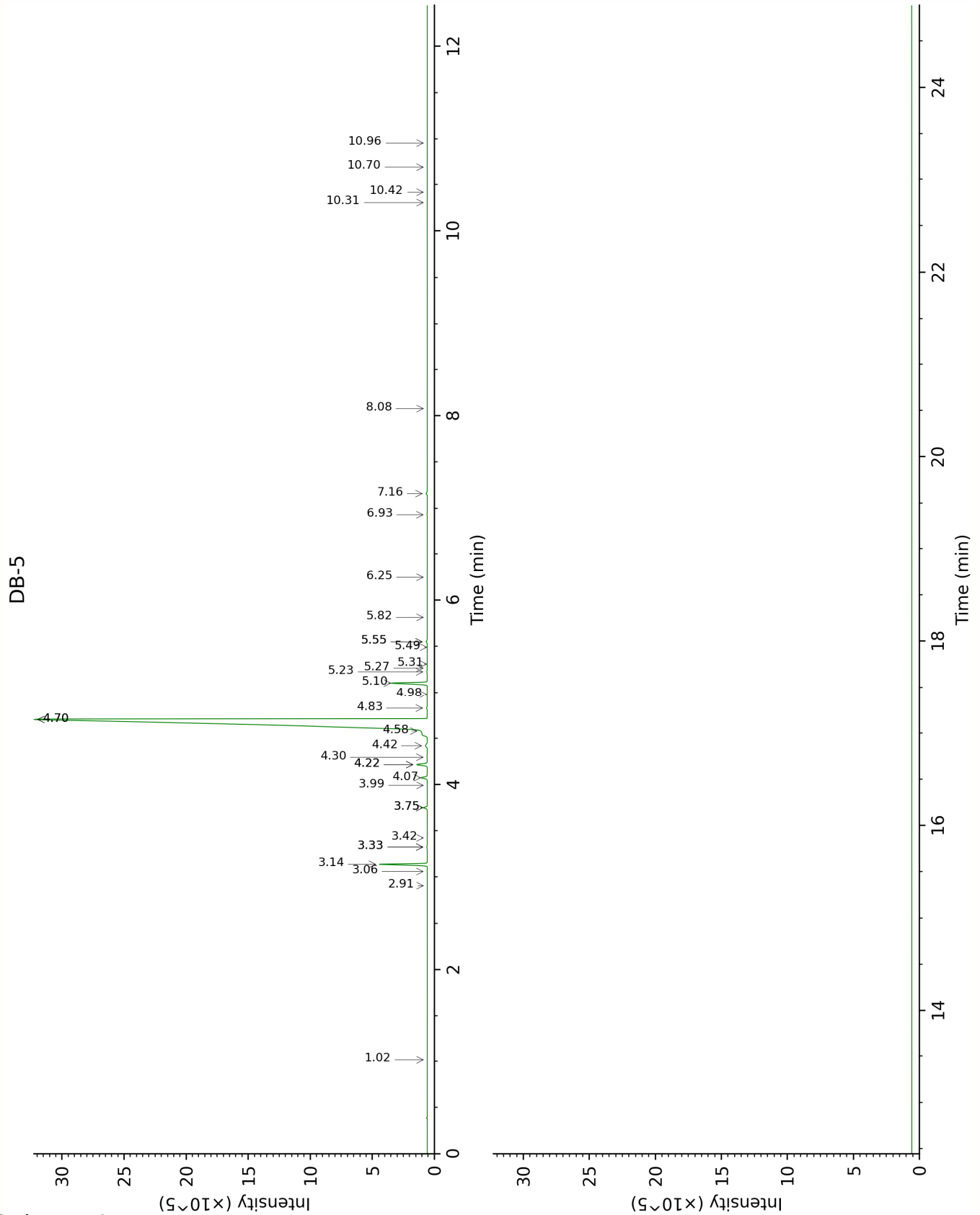
between columns, the algorithm is set to prioritize data from the most standard DB-5 column, and smallest values so as to avoid overestimating individual content. This process is semi-automatic. Advanced users are invited to consult the "Full analysis data" table after the chromatograms in this report 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.

Bracketed value ([xx]): A bracketed percent value indicate that two or more compound percentage could not be solved due to coelution.

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FULL ANALYSIS DATA

Isoamyl alcohol	Column DB-WAX			Column DB-5		
	3.61*	1175.0	[81.12]	1.02	732.5	tr
Hashishene	1.51*	994.7	[2.81]	2.91	915.4	tr
α -Thujene	1.57	1001.2	0.02	3.06	925.5	0.02
α -Pinene	1.51*	994.7	[2.81]	3.14	930.7	2.82
α -Fenchene	1.79	1022.6	0.01	3.32*	943.0	[0.04]
Camphene	1.86	1029.2	0.03	3.32*	943.0	[0.04]
Thuja-2,4(10)-diene	2.47*	1086.8	[0.03]	3.42	949.6	0.01
β -Pinene	2.28	1068.8	0.25	3.75*	971.2	[0.27]
Sabinene	2.47*	1086.8	[0.03]	3.75*	971.2	[0.27]
<i>trans-meta</i> -Mentha-2,8-diene	2.99*	1128.2	[0.82]	3.99	987.1	tr
Myrcene	3.08	1135.1	0.47	4.07	992.6	0.48
Pseudolimonene	3.03	1131.5	0.01	4.22*	1001.9	[0.85]
α -Phellandrene	2.99*	1128.2	[0.82]	4.22*	1001.9	[0.85]
<i>cis</i> -Dehydroxylinalool oxide	4.01	1204.6	0.03	4.30	1007.0	0.03
α -Terpinene	3.17	1142.2	0.24	4.42	1014.8	0.23
<i>para</i> -Cymene	4.33	1227.5	3.81	4.58*†	1024.7	[1.14]
1,8-Cineole	3.61*	1175.0	[81.12]	4.70*†	1032.6	[91.19]
Limonene	3.47	1164.5	7.35	4.70*†	1032.6	[91.19]
(<i>Z</i>)- β -Ocimene	4.04*	1207.1	[2.56]	4.83	1040.3	0.05
(<i>E</i>)- β -Ocimene	4.21	1218.5	0.02	4.98	1050.0	0.01
γ -Terpinene	4.04*	1207.1	[2.56]	5.10	1057.7	2.46
<i>cis</i> -Sabinene hydrate	7.10	1427.1	0.04	5.23	1065.3	0.04
Unknown PIMA I [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)]	5.01	1274.4	0.02	5.27	1067.8	0.02
<i>cis</i> -Linalool oxide (fur.)	6.74	1400.7	0.01	5.31	1070.6	0.01
Isoterpinolene	4.47	1236.8	0.02	5.49	1082.0	0.01
Terpinolene	4.51	1240.0	0.09	5.55*	1085.7	[0.09]
<i>para</i> -Cymenene	6.56	1387.3	0.01	5.55*	1085.7	[0.09]
Linalool	8.26	1514.2	0.01	5.82	1102.2	0.01
<i>trans</i> -Pinocarveol				6.25	1130.0	0.01
Terpinen-4-ol	8.78	1554.4	0.03	6.93	1173.6	0.02
α -Terpineol	9.99	1649.8	0.11	7.16	1188.2	0.10
Unknown CALU IV [m/z 43, 97 (69),	11.32	1760.6	tr	8.08	1249.0	0.01

107 (46), 41 (28), 55 (21), 109 (20)...]						
α -Gurjunene	7.88	1485.0	0.01	10.31	1403.2	0.01
β -Caryophyllene				10.42	1411.5	tr
Aromadendrene	8.81	1556.6	0.01	10.70	1432.2	0.01
allo- Aromadendrene				10.96	1451.6	0.01
Total reported		99.95%			99.97%	

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, only the first one is 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