Date : December 10, 2020

Certificate of Analysis – GC Profiling

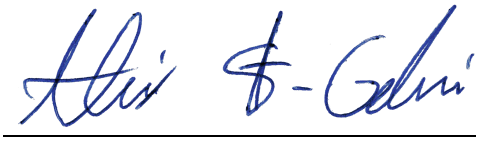
Sample identification

Internal code : 20L04-PTH04
Customer identification : Wintergreen - W1010698R
Type : Essential oil
Source : *Gaultheria procumbens*
Customer : Plant Therapy

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
Analysis date : December 07, 2020

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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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.

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PHYSICOCHEMICAL DATA

Physical aspect: Clear liquid
Refractive index: 1.5367 ± 0.0003 (20 °C; method PC-MAT-016)

ISO 21390:2006 - OIL OF WINTERGREEN, CHINA, REDISTILLED

Compound	Min. %	Max. %	Observed %	Complies?
Ethyl salicylate	tr	0.30	0.03	Yes
Methyl salicylate	97.0	99.8	99.7	Yes
Linalool	tr	0.20	0.02	Yes
1,8-Cineole	tr	0.40	tr	Yes
β-Pinene	tr	0.05	ND	No
α-Pinene	tr	0.20	ND	No
Refractive index	1.5230	1.5430	1.5367	Yes

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
1,8-Cineole	tr	Monoterpenic ether
Limonene	0.01	Monoterpene
Linalool	0.02	Monoterpenic alcohol
Methyl salicylate	99.66	Phenolic ester
Geraniol	0.01	Monoterpenic alcohol
Ethyl salicylate	0.03	Phenolic ester
Vitispirane	0.03	Terpenic ether
β-Caryophyllene	0.01	Sesquiterpene
Consolidated total	**99.77%**	

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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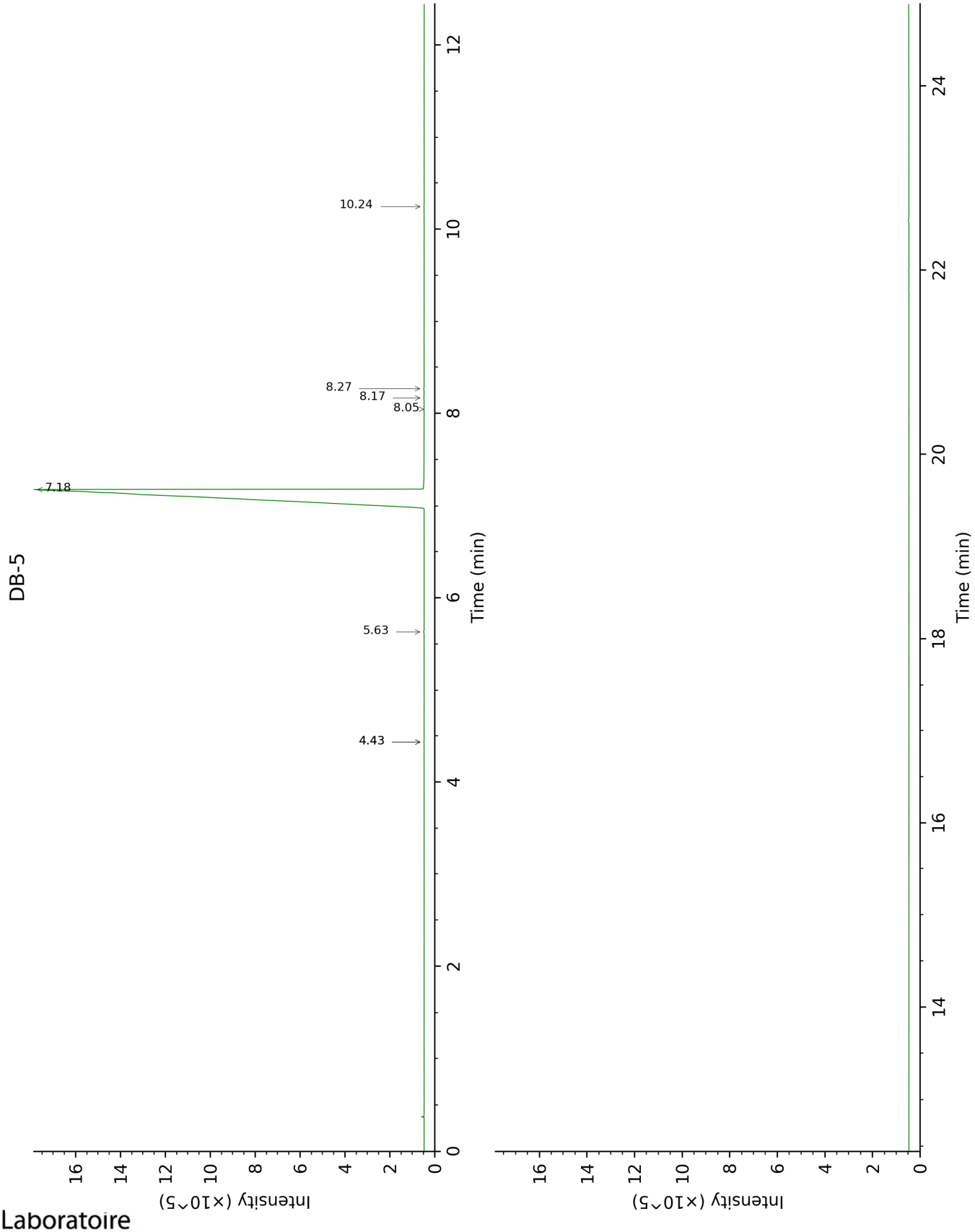
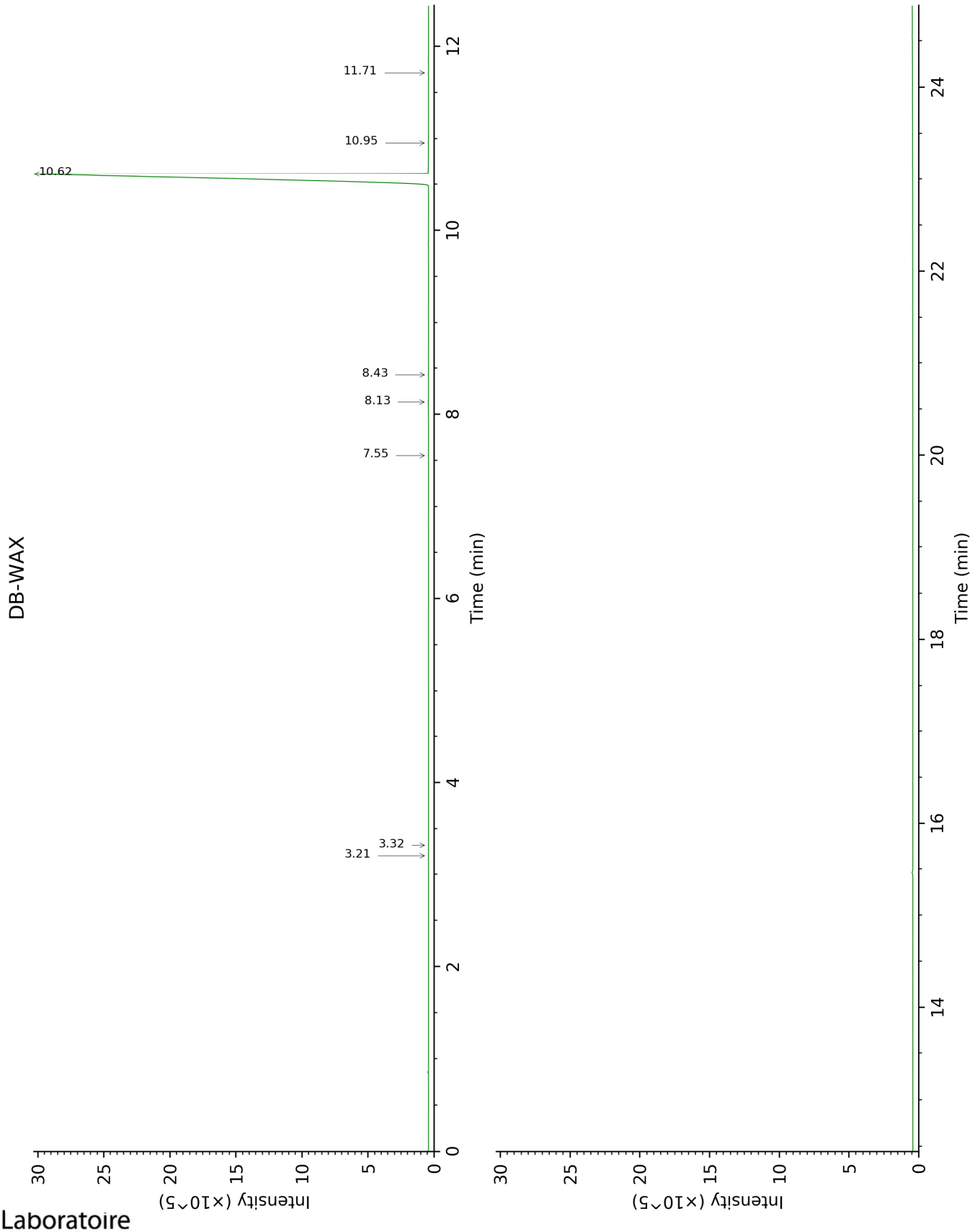

DB-5
10.24
8.27
8.17
8.05
7.18
5.63
4.43
Time (min)
Intensity (×10^5)
Time (min)
Intensity (×10^5)



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FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
1,8-Cineole	4.43*	1025	0.01	3.32	1166	tr
Limonene	4.43*	1025	[0.01]	3.21	1157	0.01
Linalool	5.63	1101	0.02	8.13	1518	0.02
Methyl salicylate	7.18	1201	99.66	10.62	1716	99.50
Geraniol	8.05	1260	0.01	11.71	1809	0.02
Ethyl salicylate	8.17	1268	0.03	10.95	1745	0.02
Vitispirane	8.27	1275	0.03	7.56	1474	0.01
β-Caryophyllene	10.24	1410	0.01	8.43	1541	0.01
Total identified	**99.77%**			**99.60%**		
Total reported	**99.77%**			**99.60%**		

*: Two or more compounds are coeluting on this column
[xx]: Duplicate percentage due to coelutions, not taken into account in the consolidated total
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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