Date : July 15, 2022

Certificate of Analysis – GC Profiling

Sample identification

Internal code : 22G08-PTH09
Customer identification : Wintergreen ORGANIC - Nepal - W20106R
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 : Pamela Lavoie, M.Sc., Chimiste
Analysis date : July 15, 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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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.

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PHYSICOCHEMICAL DATA

Physical aspect: Faintly yellow liquid
Refractive index: 1.5362 ± 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
Isovaleral	tr	Aliphatic aldehyde
2-Methylbutyral	tr	Aliphatic aldehyde
Hexanal	tr	Aliphatic aldehyde
(3*Z*)-Hexenol	0.01	Aliphatic alcohol
Hexanol	tr	Aliphatic alcohol
α-Pinene	0.03	Monoterpene
Camphene	0.01	Monoterpene
Benzaldehyde	0.01	Simple phenolic
β-Pinene	0.04	Monoterpene
Phenol	tr	Simple phenolic
α-Phellandrene	0.01	Monoterpene
para-Cymene	0.01	Monoterpene
Limonene	0.01	Monoterpene
1,8-Cineole	0.01	Monoterpenic ether
Benzyl alcohol	0.01	Simple phenolic
Octanol	0.01	Aliphatic alcohol
Linalool	0.03	Monoterpenic alcohol
Nonanal	0.01	Aliphatic aldehyde
Methyl salicylate	99.22	Phenolic ester
α-Terpineol	0.02	Monoterpenic alcohol
Ethyl salicylate	0.19	Phenolic ester
Safrole	0.01	Phenylpropanoid
Eugenol	0.07	Phenylpropanoid
Methyl dihydroxybenzoate isomer 3	0.01	Phenolic ester
β-Caryophyllene	0.01	Sesquiterpene
Consolidated total	**99.73%**	

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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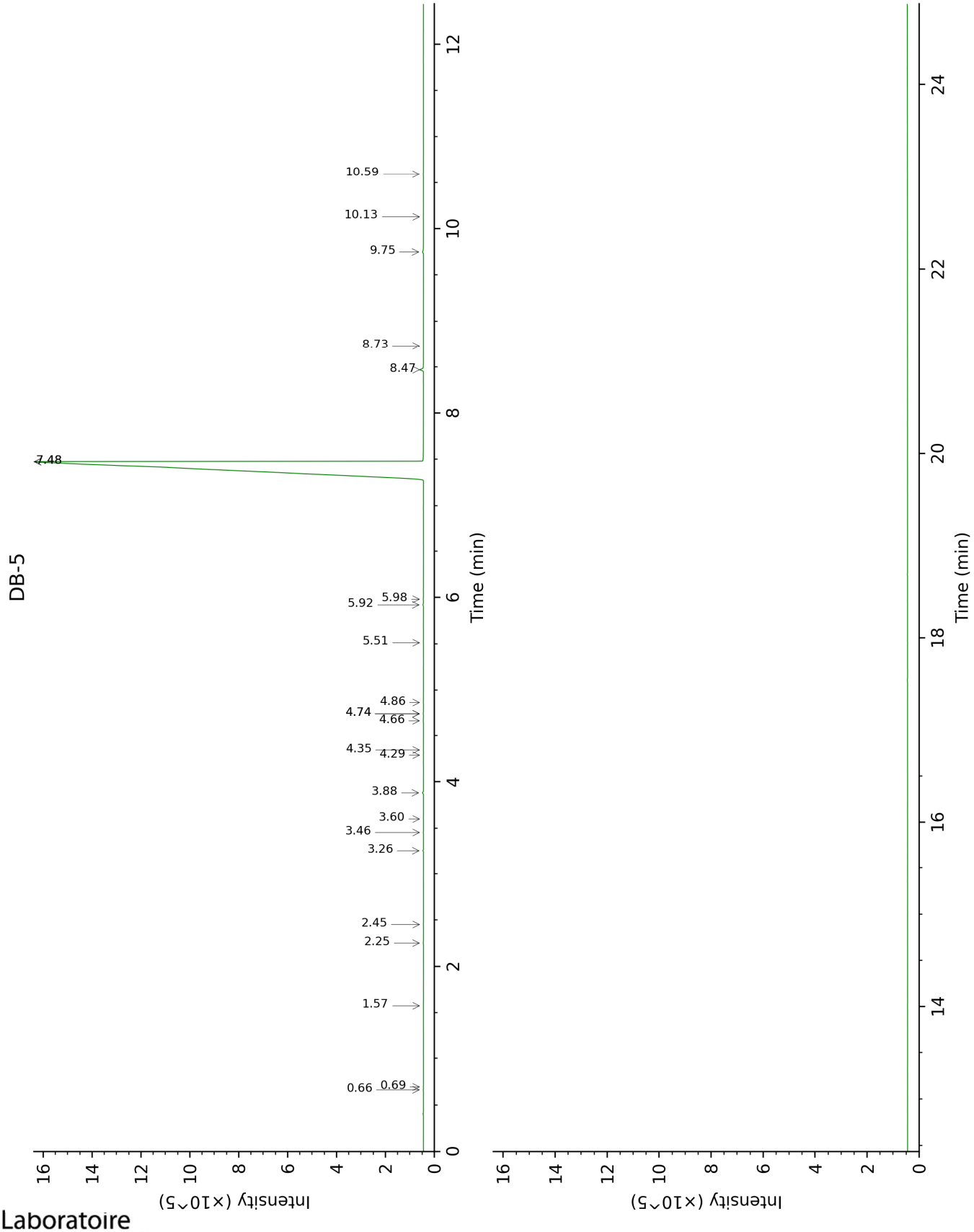
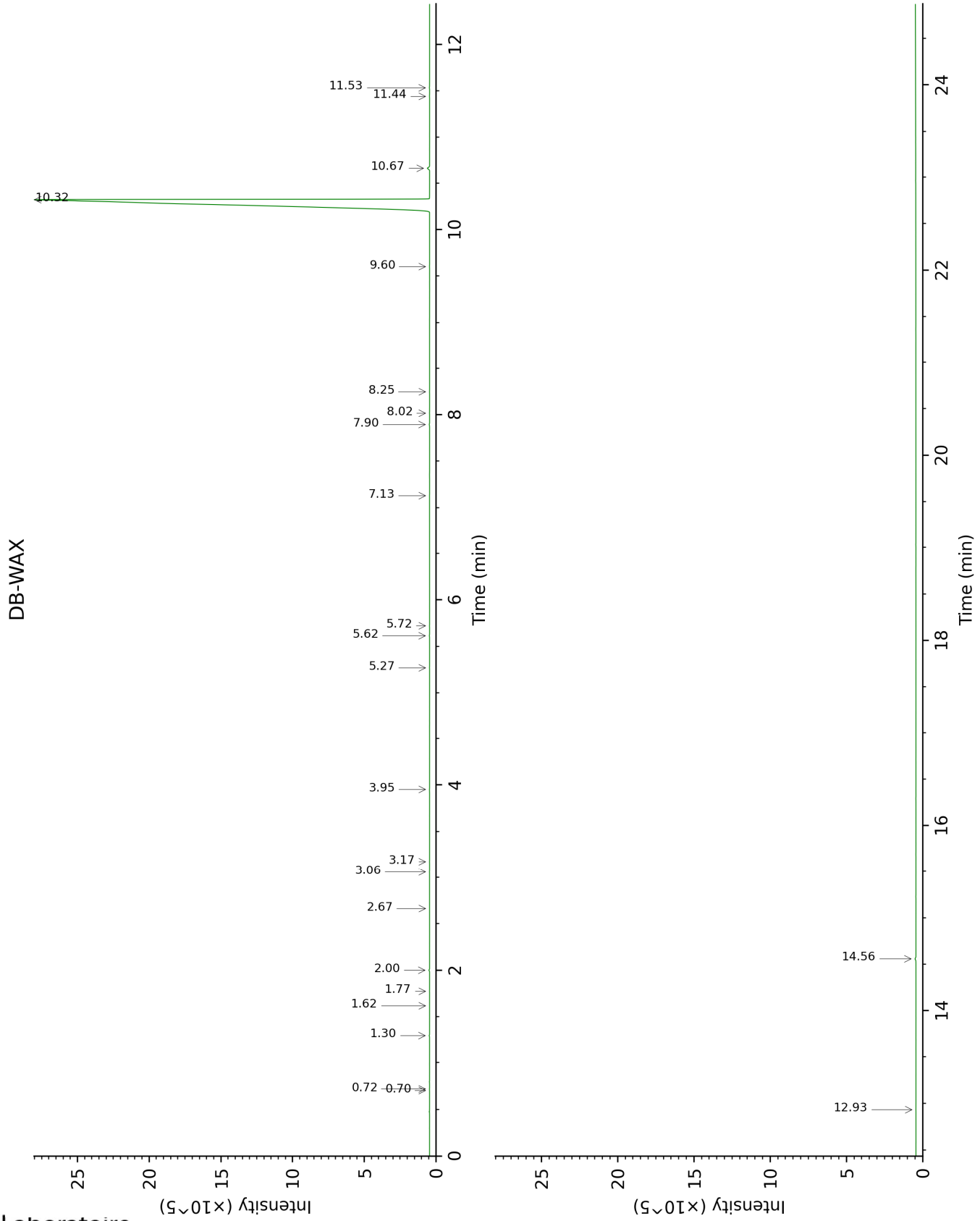

DB-5
Intensity (×10^5)
Time (min)
10.59
10.13
9.75
8.73
8.47
7.48
5.92
5.98
5.51
4.86
4.74
4.66
4.35
4.29
3.88
3.60
3.46
3.26
2.45
2.25
1.57
0.66
0.69


DB-WAX
Intensity (×10^5)
Time (min)
11.53
11.44
10.67
10.32
9.60
8.25
8.02
7.90
7.13
5.72
5.62
5.27
3.95
3.17
3.06
2.67
2.00
1.77
1.62
1.30
0.72
0.70
14.56
12.93

FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Isovaleral	0.66	643	tr	0.72	883	tr
2-Methylbutyral	0.70	653	tr	0.70	877	tr
Hexanal	1.58	799	tr	1.77	1041	tr
(3*Z*)-Hexenol	2.25	856	0.01	5.62	1344	0.02
Hexanol	2.45	872	tr	5.27	1319	0.01
α-Pinene	3.26	930	0.03	1.30	989	0.02
Camphene	3.46	943	0.01	1.62	1025	0.01
Benzaldehyde	3.60	953	0.01	7.13	1455	0.01
β-Pinene	3.88	972	0.04	2.00	1064	0.04
Phenol	4.29	998	tr	12.93	1937	0.01
α-Phellandrene	4.35	1002	0.01	2.66	1124	tr
para-Cymene	4.66	1022	0.01	3.95	1224	0.01
Limonene	4.74*	1027	0.02	3.06	1155	0.01
1,8-Cineole	4.74*	1027	[0.02]	3.18	1164	0.01
Benzyl alcohol	4.86	1034	0.01	11.53	1811	0.03
Octanol	5.51	1075	0.01	8.02	1522	0.01
Linalool	5.92	1101	0.03	7.90	1513	0.03
Nonanal	5.98	1105	0.01	5.72	1352	0.01
Methyl salicylate	7.48*	1202	99.35	10.32	1707	99.22
α-Terpineol	7.48*	1202	[99.35]	9.60	1648	0.02
Ethyl salicylate	8.47	1269	0.19	10.67	1737	0.20
Safrole	8.73	1287	0.01	11.44	1803	0.01
Eugenol	9.75	1354	0.07	14.56	2091	0.08
Methyl dihydroxybenzoate isomer 3	10.13	1381	0.01			
β-Caryophyllene	10.59	1414	0.01	8.25	1540	0.01
Total identified		**99.86%**			**99.78%**	
Total reported		**99.86%**			**99.78%**	

*: 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