

**Date :** March 17, 2021

**CERTIFICATE OF ANALYSIS – GC PROFILING**

*SAMPLE IDENTIFICATION*

**Internal code :** 21B23-FEP32

**Customer identification :** Wintergreen - China - 129958-02

**Type :** Essential oil

**Source :** *Gaultheria procumbens*

**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 :** Alexis St-Gelais, M. Sc., chimiste

**Analysis date :** March 17, 2021

Checked and approved by :

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Alexis St-Gelais, M. Sc., chimiste 2013-174

*This report is an update of the first version issued on March 17, 2021, to correct the conclusion.*

*Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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:**  $1.5367 \pm 0.0003$  (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
(3Z)-Hexenol	0.01	Aliphatic alcohol
Hexanol	tr	Aliphatic alcohol
$\alpha$ -Pinene	tr	Monoterpene
$\beta$ -Pinene	0.01	Monoterpene
Limonene	tr	Monoterpene
1,8-Cineole	0.01	Monoterpenic ether
Linalool	0.02	Monoterpenic alcohol
Citronellal	0.01	Monoterpenic aldehyde
Terpinen-4-ol	tr	Monoterpenic alcohol
Methyl salicylate	99.85	Phenolic ester
Geraniol	0.01	Monoterpenic alcohol
Ethyl salicylate	0.01	Phenolic ester
Eugenol	0.01	Phenylpropanoid
<b>Consolidated total</b>	<b>99.93%</b>	

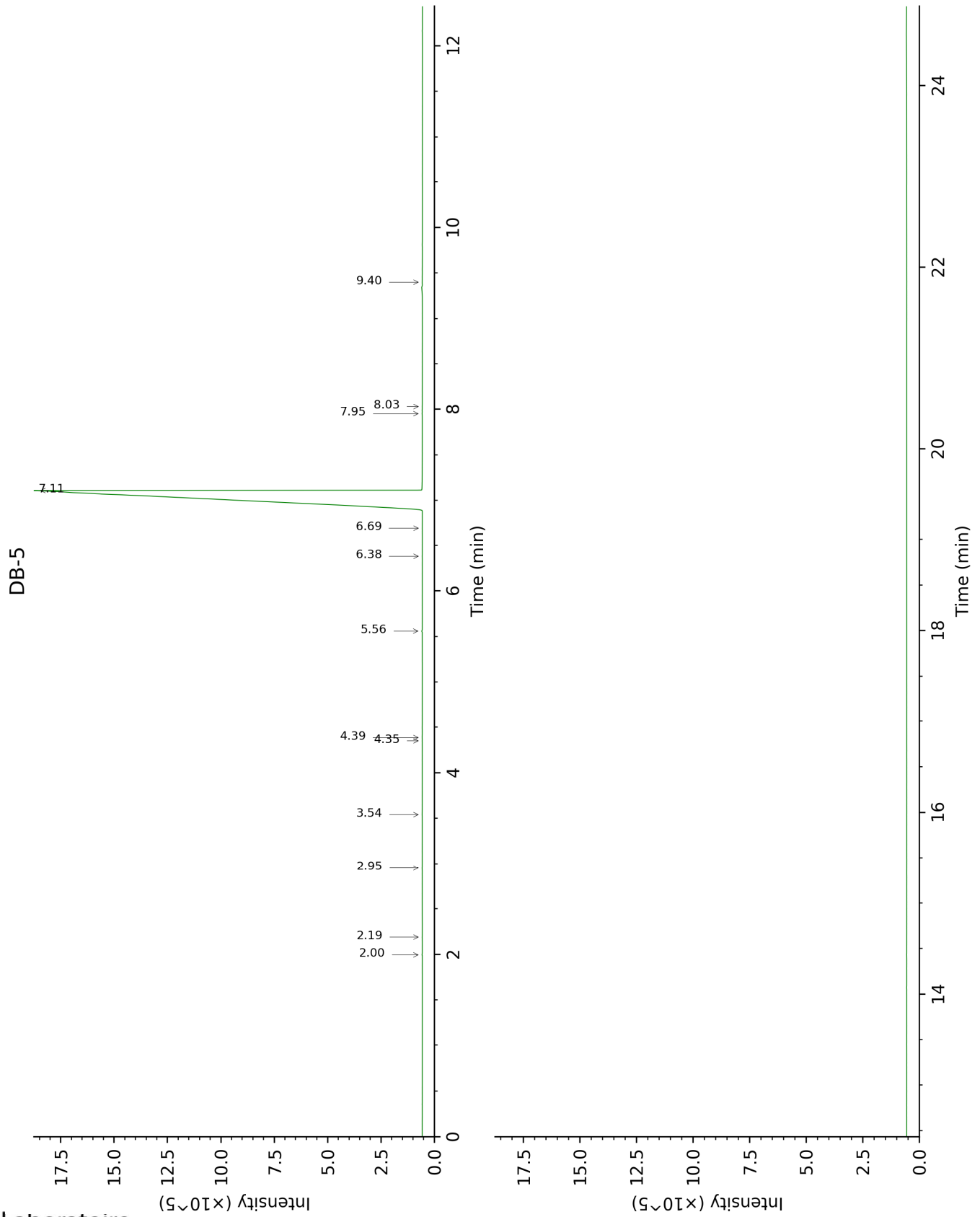
tr: The compound has been detected below 0.005% of total signal.

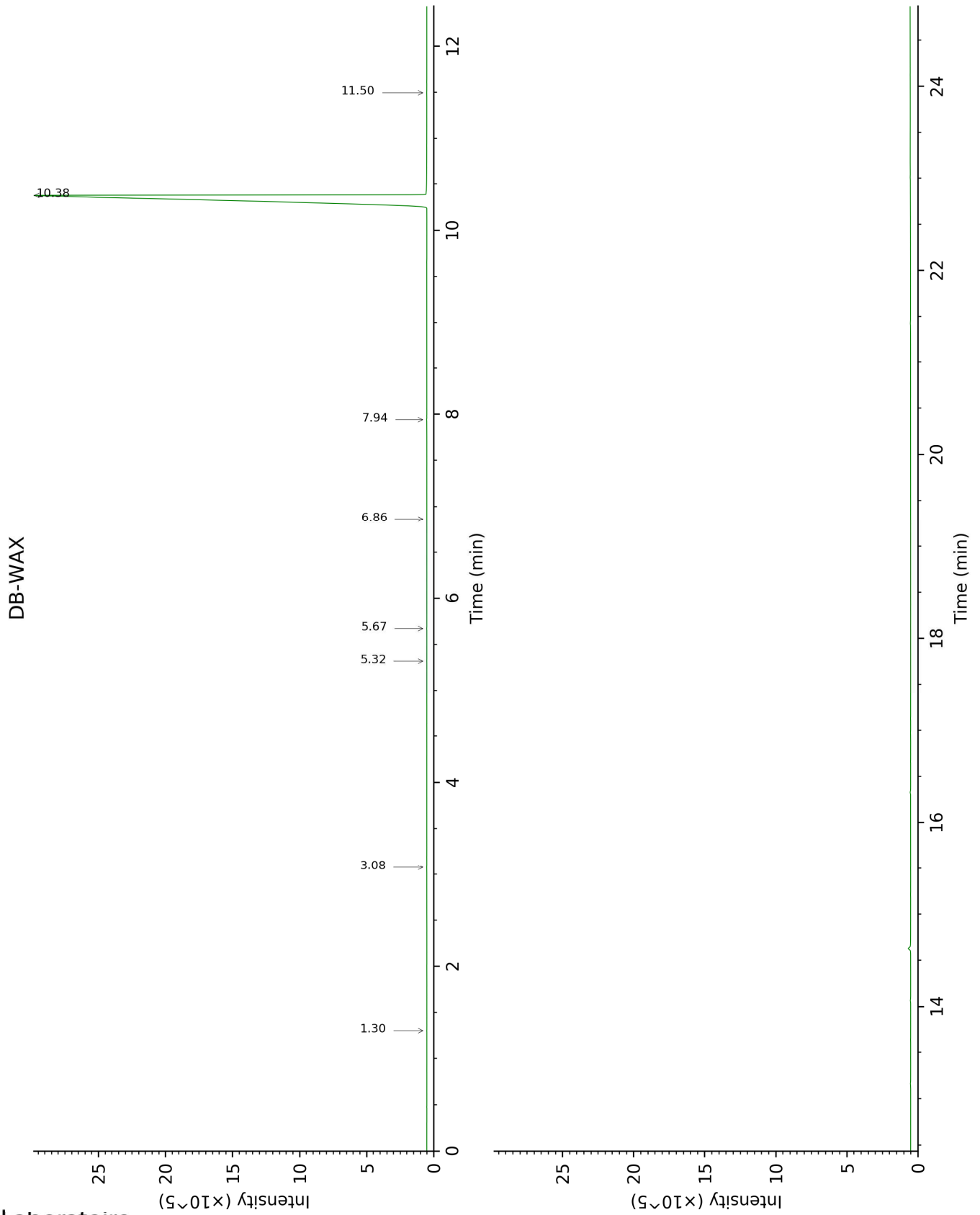
Note: no correction factor was applied

**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	%
(3Z)-Hexenol	2.00	856	0.01	5.67	1349	0.01
Hexanol	2.19	873	tr	5.32	1324	tr
$\alpha$ -Pinene	2.95	931	tr	1.30	992	tr
$\beta$ -Pinene	3.54	971	0.01			
Limonene	4.35	1024	tr	3.08	1158	tr
1,8-Cineole	4.39	1026	0.01			
Linalool	5.56	1101	0.02	7.94	1518	0.02
Citronellal	6.38	1154	0.01	6.86	1437	tr
Terpinen-4-ol	6.69	1174	tr			
Methyl salicylate	7.11	1200	99.85	10.38	1714	99.61
Geraniol	7.95	1257	0.01	11.50	1810	0.02
Ethyl salicylate	8.03	1262	0.01			
Eugenol	9.40	1357	0.01			
<b>Total identified</b>		<b>99.93%</b>			<b>99.68%</b>	
<b>Total reported</b>		<b>99.93%</b>			<b>99.68%</b>	

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