

Date : May 11, 2022

CERTIFICATE OF ANALYSIS – GC PROFILING

SAMPLE IDENTIFICATION

**Internal code** : 22E05-PTH01


**Customer identification** : Spruce, Black ORGANIC - Canada - SA3103R

**Type** : Essential oil

**Source** : *Picea mariana*

**Customer** : Plant Therapy

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, Ph. D., Chimiste 2013-174

**Analysis date** : May 11, 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*Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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.*

*PHYSICOCHEMICAL DATA*

**Physical aspect:** Clear liquid

**Refractive index:**  $1.4716 \pm 0.0003$  (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
3-Methylfuran	tr	Furan
Isovaleral	tr	Aliphatic aldehyde
2-Ethylfuran	tr	Furan
Toluene	0.02	Simple phenolic
Hexanal	0.02	Aliphatic aldehyde
Octane	0.01	Alkane
Unknown	0.01	Alkene
(2E)-Hexenal	0.01	Aliphatic aldehyde
(3Z)-Hexenol	0.04	Aliphatic alcohol
Hexanol	0.03	Aliphatic alcohol
Santene	2.62	Normonoterpene
Styrene	0.01	Simple phenolic
Unknown	0.07	Normonoterpene
Bornylene	0.01	Monoterpene
Unknown	0.01	Unknown
Tricyclene	1.74	Monoterpene
$\alpha$ -Thujene	0.22	Monoterpene
$\alpha$ -Pinene	19.68	Monoterpene
Camphene	15.82	Monoterpene
$\alpha$ -Fenchene	0.12	Monoterpene
Thuja-2,4(10)-diene	0.04	Monoterpene
3,7,7-Trimethylcyclohepta-1,3,5-triene	0.07	Monoterpene
Sabinene	0.13	Monoterpene
$\beta$ -Pinene	7.42	Monoterpene
6-Methyl-5-hepten-2-one	0.01	Aliphatic ketone
Myrcene	3.00	Monoterpene
2-Carene	0.01	Monoterpene
$\alpha$ -Phellandrene	0.30	Monoterpene
Unknown	0.03	Oxygenated monoterpene
$\Delta^3$ -Carene	9.32	Monoterpene
$\alpha$ -Terpinene	0.24	Monoterpene
meta-Cymene	0.01	Monoterpene
Carvomenthene	0.01	Aliphatic alcohol
para-Cymene	0.43	Monoterpene
Unknown	0.01	Unknown
Limonene	3.85	Monoterpene
$\beta$ -Phellandrene	1.62	Monoterpene
1,8-Cineole	tr	Monoterpenic ether
(Z)- $\beta$ -Ocimene	0.02	Monoterpene
(E)- $\beta$ -Ocimene	0.01	Monoterpene
$\gamma$ -Terpinene	0.26	Monoterpene
Unknown	0.06	Oxygenated monoterpene
Unknown	0.01	Unknown
meta-Cymenene	0.04	Monoterpene
Fenchone	0.04	Monoterpenic ketone

Isoterpinolene	0.05	Monoterpene
Terpinolene	1.00	Monoterpene
γ-Campholenal	0.08	Aliphatic alcohol
para-Cymenene	0.18	Monoterpene
2-Nonanone	0.02	Aliphatic ketone
Linalool	0.27	Monoterpenic alcohol
Unknown	0.02	Monoterpenic alcohol
endo-Fenchol	0.11	Monoterpenic alcohol
3-Methyl-3-butenyl isovalerate	0.01	Aliphatic ester
cis-para-Menth-2-en-1-ol	0.03	Monoterpenic alcohol
α-Campholenal	0.09	Monoterpenic aldehyde
trans-Pinocarveol	0.15	Monoterpenic alcohol
Camphor	0.21	Monoterpenic ketone
Camphene hydrate	0.27	Monoterpenic alcohol
Citronellal	0.01	Monoterpenic aldehyde
Isoborneol	0.11	Monoterpenic alcohol
Pinocamphone	0.06	Monoterpenic ketone
Pinocarvone	0.03	Monoterpenic ketone
Borneol	1.16	Monoterpenic alcohol
Unknown	0.04	Unknown
Isopinocamphone	0.05	Monoterpenic ketone
Terpinen-4-ol	0.37	Monoterpenic alcohol
meta-Cymen-8-ol	0.04	Monoterpenic alcohol
para-Cymen-8-ol	0.05	Monoterpenic alcohol
trans-Isocarveol	0.04	Monoterpenic alcohol
α-Terpineol	1.03	Monoterpenic alcohol
Myrtenal	0.09	Monoterpenic aldehyde
Myrtenol	0.07	Monoterpenic alcohol
Verbenone	0.11	Monoterpenic ketone
trans-Piperitol	0.01	Monoterpenic alcohol
trans-Carveol	0.03	Monoterpenic alcohol
endo-Fenchyl acetate	0.26	Monoterpenic ester
cis-Carveol	0.01	Monoterpenic alcohol
Citronellol	0.07	Monoterpenic alcohol
Thymol methyl ether	0.07	Monoterpenic ether
Carvone	0.02	Monoterpenic ketone
Piperitone	0.04	Monoterpenic ketone
Geraniol	0.03	Monoterpenic alcohol
Geranial	0.03	Monoterpenic aldehyde
Unknown	0.01	Unknown
trans-Verbenyl acetate	0.04	Monoterpenic ester
cis-Verbenyl acetate	0.06	Monoterpenic ester
Isobornyl acetate	0.55	Monoterpenic ester
Bornyl acetate	19.36	Monoterpenic ester
Unknown	0.22	Unknown
Unknown	0.13	Monoterpenic ester
trans-Pinocarvyl acetate	0.11	Monoterpenic ester
Car-3-en-5-one	0.02	Monoterpenic ketone
Myrtenyl acetate	0.02	Monoterpenic ester
Terpinyl acetate analog	0.01	Monoterpenic ester
trans-Carvyl acetate	0.07	Monoterpenic ester
exo-2-Hydroxycineole acetate	0.03	Monoterpenic ester

Unknown	0.03	Unknown
$\alpha$ -Longipinene	0.02	Sesquiterpene
$\alpha$ -Terpinyl acetate	0.07	Monoterpenic ester
Citronellyl acetate	0.09	Monoterpenic ester
Longicyclene	0.03	Sesquiterpene
Unknown	0.02	Oxygenated monoterpene
$\alpha$ -Copaene	0.04	Sesquiterpene
$\beta$ -Bourbonene	0.01	Sesquiterpene
Geranyl acetate	0.20	Monoterpenic ester
$\beta$ -Elemene	0.08	Sesquiterpene
Longifolene	0.19	Sesquiterpene
$\beta$ -Caryophyllene	0.25	Sesquiterpene
$\beta$ -Copaene	0.01	Sesquiterpene
<i>cis</i> -Muuro-la-3,5-diene	0.01	Sesquiterpene
<i>trans</i> -Muuro-la-3,5-diene	0.02	Sesquiterpene
$\alpha$ -Humulene	0.07	Sesquiterpene
Unknown	0.03	Unknown
( <i>E</i> )- $\beta$ -Farnesene	0.03	Sesquiterpene
<i>trans</i> -Cadina-1(6),4-diene	0.07	Sesquiterpene
$\gamma$ -Muuro-lene	0.13	Sesquiterpene
Dodecanol	0.04	Aliphatic alcohol
Germacrene D	0.08	Sesquiterpene
$\beta$ -Selinene	0.05	Sesquiterpene
<i>trans</i> -Muuro-la-4(15),5-diene	0.03	Sesquiterpene
$\alpha$ -Selinene	0.02	Sesquiterpene
Epizonarene	0.03	Sesquiterpene
$\alpha$ -Muuro-lene	0.28	Sesquiterpene
$\gamma$ -Cadinene	0.39	Sesquiterpene
endo-1-Bourbonanol	0.03	Sesquiterpenic alcohol
<i>trans</i> -Calamenene	0.10	Sesquiterpene
$\delta$ -Cadinene	1.07	Sesquiterpene
Zonarene	0.03	Sesquiterpene
<i>trans</i> -Cadina-1,4-diene	0.04	Sesquiterpene
$\alpha$ -Cadinene	0.08	Sesquiterpene
( <i>E</i> )- $\alpha$ -Bisabolene	0.17	Sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Germacrene D-4-ol	0.01	Sesquiterpenic alcohol
Caryophyllene oxide	0.02	Sesquiterpenic ether
Globulol	0.02	Sesquiterpenic alcohol
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.02	Unknown
1-epi-Cubenol	0.04	Sesquiterpenic alcohol
$\tau$ -Cadinol	0.15	Sesquiterpenic alcohol
$\tau$ -Muuro-lol	0.14	Sesquiterpenic alcohol
$\alpha$ -Muuro-lol	0.05	Sesquiterpenic alcohol
$\alpha$ -Cadinol	0.27	Sesquiterpenic alcohol
Unknown	0.03	Aliphatic ester
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
Amorpha-4,9-dien-2-ol	0.03	Sesquiterpenic alcohol
(5 <i>Z</i> )-Tetradecen-14-olide?	0.03	Aliphatic lactone
Unknown	0.04	Oxygenated sesquiterpene

(3E)-Cembrene A	0.02	Diterpene
Manoyl oxide	0.04	Diterpenic ether
para-Camphorene	0.01	Diterpene
13-epi-Manoyl oxide	0.02	Diterpenic ether
(E,E)-Geranylinalool	0.02	Diterpenic alcohol
Manool	0.05	Diterpenic alcohol
7,13-Abietadiene	0.01	Diterpene
(Z)-Abienol	0.04	Diterpenic alcohol
Palustral	0.01	Diterpenic aldehyde
Abietal	0.01	Diterpenic aldehyde
<b>Consolidated total</b>	<b>99.34%</b>	

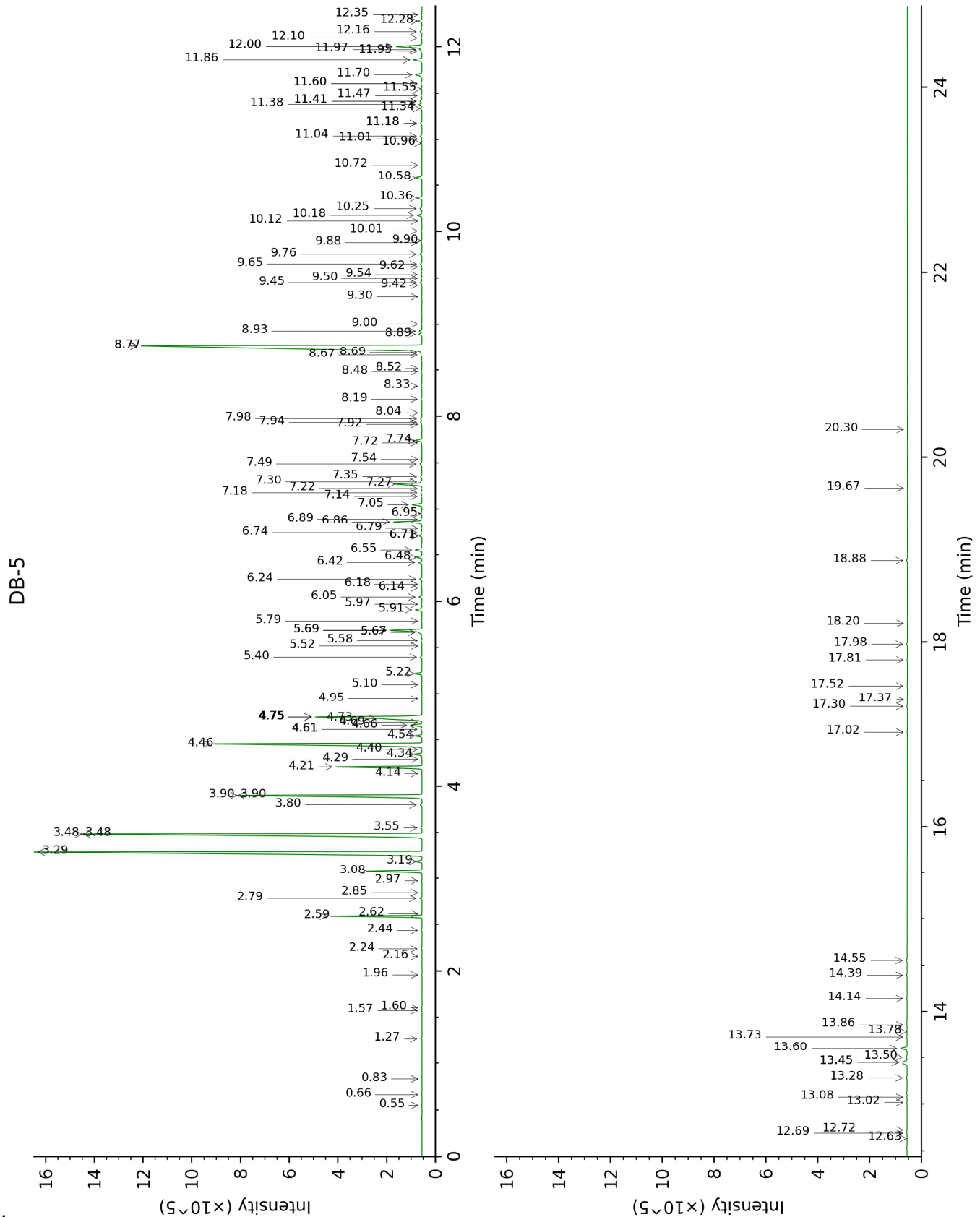
tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

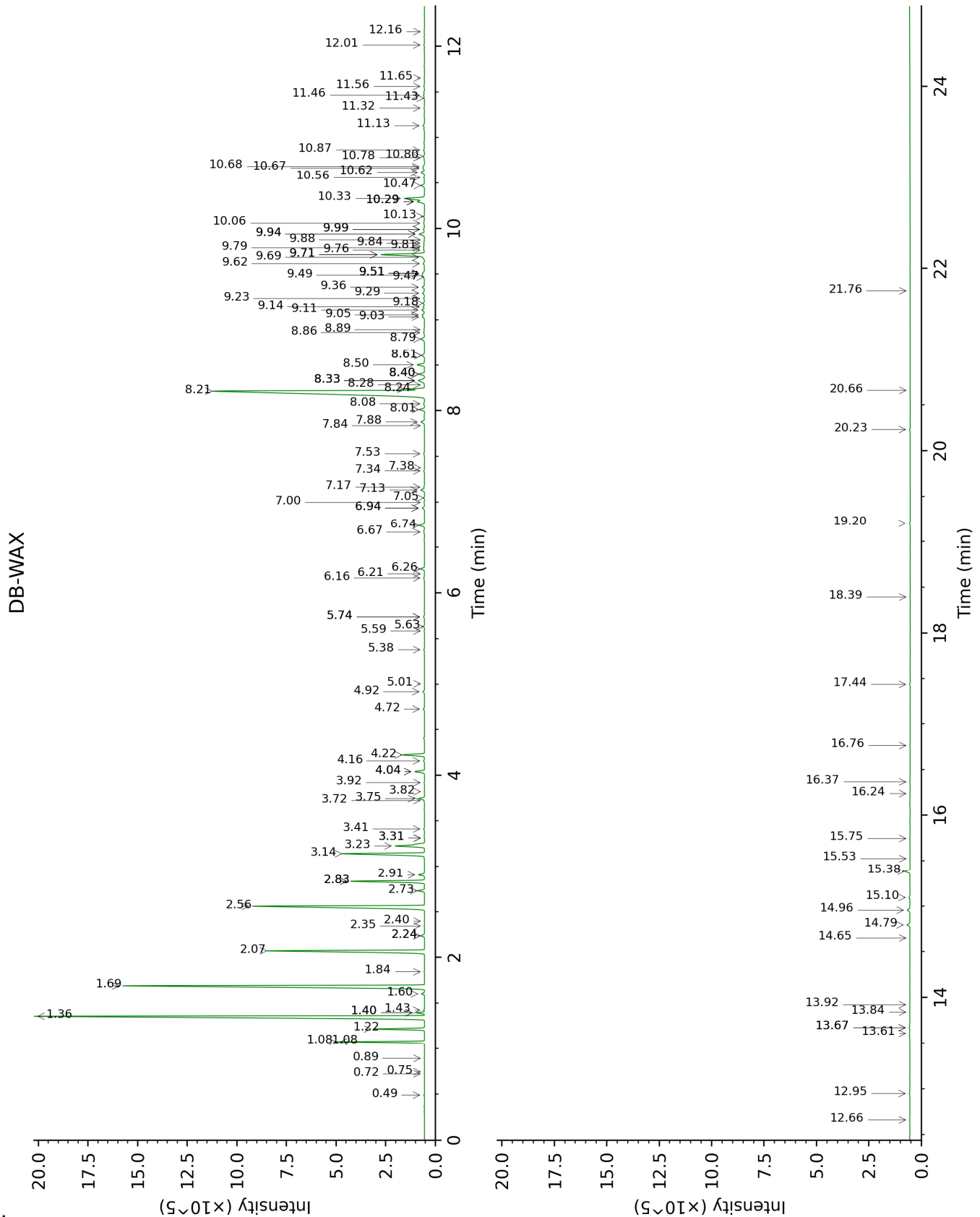
**About "consolidated" data:** The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

This page was intentionally left blank. The following pages present the complete data of the analysis.







FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
3-Methylfuran	0.55	607	tr			
Isovaleral	0.66	643	tr	0.75	888	tr
2-Ethylfuran	0.83	697	tr	0.89	917	0.01
Toluene	1.27	759	0.02	1.43	1002	0.03
Hexanal	1.57	799	0.02	1.84	1044	0.02
Octane	1.60	803	0.01	0.49	788	0.01
Unknown [m/z 109, 67 (32), 81 (14), 41 (12), 124 (10)]	1.96	832	0.01	0.72	880	0.01
(2E)-Hexenal	2.16	848	0.01	3.31*	1172	0.01
(3Z)-Hexenol	2.24	854	0.04	5.74*	1350	0.05
Hexanol	2.44	870	0.03	5.38	1324	0.03
Santene	2.59	883	2.62	1.08*	948	2.63
Styrene	2.62	885	0.01	3.82	1211	0.01
Unknown [m/z 79, 93 (66), 94 (52), 91 (39), 77 (37), 122 (31)]	2.78	898	0.07	1.40*	1000	0.28
Bornylene	2.85	903	0.01	1.08*	948	[2.63]
Unknown [m/z 43, 59 (71), 44 (40), 85 (30), 41 (28), 45 (27)...]	2.97	912	0.01			
Tricyclene	3.08	918	1.74	1.22	972	1.73
α-Thujene	3.19	926	0.22	1.40*	1000	[0.28]
α-Pinene	3.29	932	19.68	1.36	995	19.67
Camphene	3.48*	945	15.98	1.69	1029	15.82
α-Fenchene	3.48*	945	[15.98]	1.60	1020	0.12
Thuja-2,4(10)-diene	3.55	949	0.04	2.24*	1084	0.17
3,7,7-Trimethylcyclohepta-1,3,5-triene	3.80	966	0.07	2.83*	1134	3.05
Sabinene	3.90*	972	7.56	2.24*	1084	[0.17]
β-Pinene	3.90*	972	[7.56]	2.07	1068	7.42
6-Methyl-5-hepten-2-one	4.14	988	0.01	5.01	1299	0.01
Myrcene	4.21	993	3.00	2.83*	1134	[3.05]
2-Carene	4.29	998	0.01	2.34	1095	0.01
α-Phellandrene	4.34	1002	0.30	2.73	1126	0.28
Unknown [m/z 109, 81 (35), 43 (34), 69 (33), 67 (29), 152 (29)]	4.40	1005	0.03	3.41	1180	0.04
Δ3-Carene	4.46	1009	9.32	2.56	1112	9.30
α-Terpinene	4.54	1014	0.24	2.91	1140	0.24
meta-Cymene	4.61*	1018	0.05	4.04*	1228	0.44
Carvomenthene	4.61*	1018	[0.05]	2.40	1100	0.01
para-Cymene	4.66	1021	0.43	4.04*	1228	[0.44]

Unknown [m/z 109, 43 (58), 95 (26)... 137 (15)...]	4.69	1023	0.01	6.21	1384	0.01
Limonene	4.73†	1026	5.46	3.14	1158	3.85
β-Phellandrene	4.75*†	1027	[5.46]	3.23	1165	1.62
1,8-Cineole	4.75*†	1027	[5.46]	3.31*	1172	[0.01]
(Z)-β-Ocimene	4.95	1039	0.02	3.72	1204	0.02
(E)-β-Ocimene	5.10	1049	0.01	3.92	1219	0.02
γ-Terpinene	5.22	1057	0.26	3.74	1206	0.26
Unknown [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)]	5.40	1068	0.06	4.72	1278	0.06
Unknown [m/z 94, 79 (74), 67 (33), 41 (22), 95 (21)...]	5.52	1076	0.01			
meta-Cymenene	5.58	1079	0.04	6.16	1381	0.03
Fenchone	5.67*	1085	0.10	5.63	1343	0.04
Isoterpinolene	5.67*	1085	[0.10]	4.16	1236	0.05
Terpinolene	5.69*	1086	1.20	4.22	1241	1.00
γ-Campholenal	5.69*	1086	[1.20]	4.92	1292	0.08
para-Cymenene	5.69*	1086	[1.20]	6.26	1388	0.18
2-Nonanone	5.79	1093	0.02	5.74*	1350	[0.05]
Linalool	5.91	1100	0.27	8.01	1518	0.24
Unknown [m/z 119, 109 (94), 43 (61), 95 (56), 91 (48), 77 (32), 152 (32), 137 (31), 134 (24)]	5.97	1104	0.02	8.40*	1548	0.27
endo-Fenchol	6.05	1109	0.11	8.33*	1542	0.44
3-Methyl-3-butenyl isovalerate	6.14	1116	0.01	5.59	1339	0.02
cis-para-Menth-2-en-1-ol	6.18	1118	0.03	8.08	1523	0.05
α-Campholenal	6.24	1122	0.09	6.94*	1437	0.11
trans-Pinocarveol	6.42	1133	0.15	9.11	1603	0.14
Camphor	6.48	1137	0.21	7.13	1452	0.19
Camphene hydrate	6.55	1142	0.27	8.40*	1548	[0.27]
Citronellal	6.71*	1152	0.12	6.94*	1437	[0.11]
Isoborneol	6.71*	1152	[0.12]	9.29	1618	0.11
Pinocamphone	6.74	1154	0.06	7.17	1454	0.03
Pinocarvone	6.79	1157	0.03	7.84	1504	0.01
Borneol	6.86	1162	1.16	9.71*	1652	2.22
Unknown [m/z 109, 108 (48), 67 (41), 81 (40), 41 (28)...]	6.89	1164	0.04	7.34	1467	0.03
Isopinocamphone	6.95	1168	0.05	7.53	1481	0.05
Terpinen-4-ol	7.05	1174	0.37	8.50	1556	0.37
meta-Cymen-8-ol	7.14	1180	0.04	11.43	1796	0.02
para-Cymen-8-ol	7.18	1183	0.05	11.46	1798	0.06
trans-Isocarveol	7.22	1186	0.04	10.86	1747	0.05
α-Terpineol	7.27†	1189	1.12	9.71*	1652	[2.22]

Myrtenal	7.30†	1190	[1.12]	8.61*	1564	0.15
Myrtenol	7.35	1194	0.07	10.80	1742	0.06
Verbenone	7.49	1203	0.11	9.51*	1636	0.10
<i>trans</i> -Piperitol	7.54	1206	0.01	10.29*	1699	0.39
<i>trans</i> -Carveol	7.72	1218	0.03	11.32	1786	0.03
endo-Fenchyl acetate	7.74	1220	0.26	6.74	1423	0.26
<i>cis</i> -Carveol	7.92	1232	0.01	11.65	1815	0.02
Citronellol	7.94	1233	0.07	10.67	1730	0.08
Thymol methyl ether	7.98	1236	0.07	8.33*	1542	[0.44]
Carvone	8.04	1240	0.02	9.94*	1670	0.29
Piperitone	8.19	1250	0.04	9.84	1662	0.05
Geraniol	8.33	1260	0.03	11.56	1807	0.04
Geranial	8.48	1271	0.03	10.06	1680	0.08
Unknown [m/z 43, 119 (72), 81 (66), 54 (48), 41 (47), 58 (44)...]	8.52	1273	0.01			
<i>trans</i> -Verbenyl acetate	8.67	1283	0.04	9.24	1613	0.04
<i>cis</i> -Verbenyl acetate	8.69	1285	0.06	8.61*	1564	[0.15]
Isobornyl acetate	8.77*	1290	20.15	8.24	1535	0.55
Bornyl acetate	8.77*	1290	[20.15]	8.22	1534	19.36
Unknown [m/z 119, 43 (87), 91 (78), 92 (70), 134 (50)...]	8.77*	1290	[20.15]	8.79	1578	0.22
Unknown [m/z 107, 43 (76), 150 (42), 91 (28), 108 (23)]	8.89	1299	0.13	9.06	1599	0.13
<i>trans</i> -Pinocarvyl acetate	8.93	1301	0.11	9.03	1597	0.09
Car-3-en-5-one	9.00	1306	0.02	12.01	1847	0.03
Myrtenyl acetate	9.30	1322	0.02	9.51*	1636	[0.10]
Terpinyl acetate analog	9.42	1331	0.01	9.51*	1636	[0.10]
<i>trans</i> -Carvyl acetate	9.45	1333	0.07	10.13	1686	0.04
exo-2-Hydroxycineole acetate	9.50	1336	0.03	9.99*	1674	0.07
Unknown [m/z 133, 105 (45), 91 (38), 119 (36)... 150 (3)]	9.54	1339	0.03			
α-Longipinene	9.62	1345	0.02	6.67	1417	0.02
α-Terpinyl acetate	9.65	1347	0.07	9.62	1644	0.07
Citronellyl acetate	9.76	1355	0.09	9.36	1623	0.11
Longicyclene	9.88	1364	0.03	7.00	1442	0.02
Unknown [m/z 93, 121 (68), 43 (67), 67 (44), 136 (36), 107 (34)... 180 (4)]	9.90	1365	0.02	9.99*	1674	[0.07]
α-Copaene	10.01	1373	0.04	7.05	1446	0.03
β-Bourbonene	10.12	1380	0.01	7.38	1470	0.01

Geranyl acetate	10.18	1384	0.20	10.47	1714	0.18
β-Elemene	10.25	1390	0.08	8.40*	1548	[0.27]
Longifolene	10.36	1398	0.19	7.88	1507	0.19
β-Caryophyllene	10.58	1414	0.25	8.33*	1542	[0.44]
β-Copaene	10.72	1424	0.01	8.28	1539	0.01
<i>cis</i> -Muuro-la-3,5-diene	10.96	1442	0.01	8.89	1586	0.03
<i>trans</i> -Muuro-la-3,5-diene	11.01	1445	0.02	8.86	1584	0.05
α-Humulene	11.04	1448	0.07	9.18	1609	0.07
Unknown [m/z 95, 43 (94), 79 (93), 91 (71), 93 (65), 177 (54), 41 (52)...]	11.18*	1458	0.08	10.78	1740	0.03
( <i>E</i> )-β-Farnesene	11.18*	1458	[0.08]	9.47	1632	0.03
<i>trans</i> -Cadina-1(6),4-diene	11.34	1470	0.07	9.14	1606	0.07
γ-Muuro-lene	11.38	1473	0.13	9.49	1634	0.16
Dodecanol	11.41*	1476	0.09	12.95	1931	0.04
Germacrene D	11.41*	1476	[0.09]	9.69	1650	0.08
β-Selinene	11.47	1480	0.05	9.79	1658	0.05
<i>trans</i> -Muuro-la-4(15),5-diene	11.55	1486	0.03	9.76	1656	0.04
α-Selinene	11.60*	1490	0.06	9.88	1665	0.02
Epizonarene	11.60*	1490	[0.06]	9.81	1660	0.03
α-Muuro-lene	11.70	1497	0.28	9.94*	1670	[0.29]
γ-Cadinene	11.86	1509	0.39	10.29*	1699	[0.39]
endo-1-Bourbonanol	11.95	1517	0.03			
<i>trans</i> -Calamenene	11.97	1518	0.10	11.13	1770	0.09
δ-Cadinene	12.00*	1520	1.11	10.33	1702	1.07
Zonarene	12.00*	1520	[1.11]	10.29*	1699	[0.39]
<i>trans</i> -Cadina-1,4-diene	12.10	1528	0.04	10.56	1722	0.04
α-Cadinene	12.16	1533	0.08	10.68	1732	0.07
( <i>E</i> )-α-Bisabolene	12.28	1542	0.17	10.62	1727	0.18
Unknown [m/z 95, 81 (70), 109 (68), 93 (59), 67 (53), 41 (49), 139 (40)... 220 (3)]	12.34	1547	0.03	12.16	1860	0.02
Germacrene D-4-ol	12.63	1570	0.01	13.61	1992	0.03
Caryophyllene oxide	12.69	1575	0.02	12.66	1905	0.02
Globulol	12.72	1577	0.02	13.84	2015	0.01
Unknown [m/z 177, 43 (97), 109 (65), 67 (57), 96 (51)... 220 (13)]	13.02	1600	0.01	13.67*	1998	0.06
Unknown0 [m/z 108, 43 (56), 109 (33), 93 (26), 119 (24)... 212 (2)]	13.08	1605	0.02	14.65	2092	0.01
1-epi-Cubenol	13.28	1622	0.04	13.67*	1998	[0.06]
τ-Cadinol	13.45*	1636	0.31	14.80	2107	0.15

τ-Muurolol	13.45*	1636	[0.31]	14.96	2123	0.14
α-Muurolol	13.50	1640	0.05	15.10	2137	0.05
α-Cadinol	13.60	1648	0.27	15.38	2166	0.27
Unknown [m/z 79, 43 (66), 67 (59), 80 (56), 41 (41), 81 (37), 55 (29)...]	13.73	1659	0.03	13.92	2023	0.02
Unknown [m/z 159, 177 (59), 135 (57), 91 (47), 105 (47)... 220? (25)]	13.78	1664	0.02			
Unknown [m/z 177, 159 (98), 93 (94), 136 (84), 121 (68), 135 (65), 91 (57)... 220 (23)]	13.86	1670	0.01			
Amorpha-4,9-dien-2-ol	14.14	1693	0.03	16.76	2310	0.02
(5Z)-Tetradecen-14-olide?	14.39	1714	0.03			
Unknown [m/z 159, 132 (79), 135 (37), 91 (35), 177 (33)... 220 (16)]	14.55	1728	0.04	17.44	2383	0.04
(3E)-Cembrene A	17.02	1951	0.02	15.53	2180	0.01
Manoyl oxide	17.30	1977	0.04	16.37	2268	0.02
para-Camphorene	17.37	1984	0.01	15.75	2203	0.02
13-epi-Manoyl oxide	17.52	1999	0.02	16.24	2254	0.02
(E,E)-Geranylinalool	17.81	2026	0.02	18.40	2490	0.02
Manool	17.98	2043	0.05	19.20	2584	0.04
7,13-Abietadiene	18.20	2065	0.01			
(Z)-Abienol	18.88	2134	0.04	20.23	2708	0.04
Palustral	19.67	2216	0.01	20.66	2762	0.01
Abietal	20.30	2284	0.01	21.76	2902	0.01
<b>Total identified</b>		<b>98.80%</b>			<b>98.30%</b>	
<b>Total reported</b>		<b>99.40%</b>			<b>98.91%</b>	

\*: 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