

Date : January 23, 2020

CERTIFICATE OF ANALYSIS – GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 20A22-PTH01

Customer identification : Spruce, Black - Canada - SA510299R

Type : Essential oil

Source : *Picea mariana*

Customer : Plant Therapy

ANALYSIS

Method: PC-MAT-007 - Analysis of the composition of an essential oil or other volatile liquide by FAST GC-FID (in French); identifications validated by GC-MS.

Analyst : Sylvain Mercier, M. Sc., Chimiste

Analysis date : January 23, 2020

Checked and approved by :

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

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PHYSICOCHEMICAL DATA

Physical aspect: Clear liquid

Refractive index: 1.4706 ± 0.0003 (20 °C)

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	%	Classe
Isovaleral	tr	Aliphatic aldehyde
Toluene	0.01	Simple phenolic
Hexanal	0.01	Aliphatic aldehyde
Octane	tr	Alkane
Unknown	tr	Alkene
(2E)-Hexenal	tr	Aliphatic aldehyde
(3Z)-Hexenol	0.04	Aliphatic alcohol
Hexanol	0.02	Aliphatic alcohol
Santene	0.83	Normonoterpene
2-Heptanone	tr	Aliphatic ketone
Unknown	0.03	Normonoterpene
Bornylene	0.02	Monoterpene
Tricyclene	1.48	Monoterpene
α -Thujene	0.12	Monoterpene
α -Pinene	18.94	Monoterpene
Camphene	11.01	Monoterpene
α -Fenchene	0.12	Monoterpene
Thuja-2,4(10)-diene	0.03	Monoterpene
meta-Cymene	0.04	Monoterpene
Sabinene	0.12	Monoterpene
β -Pinene	11.07	Monoterpene
Dehydro-1,8-cineole	0.02	Monoterpenic ether
Myrcene	1.53	Monoterpene
2-Pentylfuran	0.01	Furan
2-Carene	0.04	Monoterpene
α -Phellandrene	0.12	Monoterpene
Pseudolimonene	0.02	Monoterpene
Octanal	0.02	Aliphatic aldehyde
Unknown	0.02	Oxygenated monoterpene
Δ^3 -Carene	9.89	Monoterpene
(3Z)-Hexenyl acetate	0.01	Aliphatic ester
α -Terpinene	0.16	Monoterpene
Carvomenthene	0.04	Aliphatic alcohol
Unknown	0.01	Unknown
para-Cymene	0.27	Monoterpene
Limonene	6.34	Monoterpene
β -Phellandrene	0.60	Monoterpene
1,8-Cineole	0.26	Monoterpenic ether
(Z)- β -Ocimene	0.01	Monoterpene
(E)- β -Ocimene	0.01	Monoterpene
γ -Terpinene	0.10	Monoterpene
Unknown	0.02	Oxygenated monoterpene
Unknown	0.01	Unknown
meta-Cymenene	0.01	Monoterpene
Fenchone	0.03	Monoterpenic ketone
Isoterpinolene	0.04	Monoterpene
para-Cymenene	0.07	Monoterpene

γ-Campholenal	0.03	Aliphatic alcohol
Terpinolene	0.86	Monoterpene
α-Pinene oxide	0.02	Monoterpenic ether
2-Nonanone	0.01	Aliphatic ketone
Perillene	0.01	Monoterpenic ether
Linalool	0.37	Monoterpenic alcohol
Unknown	0.01	Unknown
Nonanal	0.01	Aliphatic aldehyde
endo-Fenchol	0.05	Monoterpenic alcohol
3-Methyl-3-butenyl isovalerate	0.03	Aliphatic ester
α-Campholenal	0.06	Monoterpenic aldehyde
<i>trans</i> -Pinocarveol	0.09	Monoterpenic alcohol
Camphor	0.09	Monoterpenic ketone
<i>trans</i> -para-Menth-2-en-1-ol	0.02	Monoterpenic alcohol
Camphene hydrate	0.31	Monoterpenic alcohol
Isopulegol	0.05	Monoterpenic alcohol
Isoborneol	0.07	Monoterpenic alcohol
Prenyl isovalerate	0.01	Aliphatic ester
Citronellal	0.03	Monoterpenic aldehyde
Pinocamphone	0.02	Monoterpenic ketone
Pinocarvone	0.01	Monoterpenic ketone
Borneol	1.36	Monoterpenic alcohol
Unknown	0.02	Unknown
Isopinocamphone	0.03	Monoterpenic ketone
Terpinen-4-ol	0.21	Monoterpenic alcohol
meta-Cymen-8-ol	0.01	Monoterpenic alcohol
para-Cymen-8-ol	0.04	Monoterpenic alcohol
<i>trans</i> -Isocarveol	0.02	Monoterpenic alcohol
α-Terpineol	0.74	Monoterpenic alcohol
Myrtenal	0.05	Monoterpenic aldehyde
Myrtenol	0.05	Monoterpenic alcohol
Verbenone	0.04	Monoterpenic ketone
Unknown	0.04	Unknown
<i>trans</i> -Piperitol	0.01	Monoterpenic alcohol
endo-Fenchyl acetate	0.20	Monoterpenic ester
<i>trans</i> -Carveol	0.01	Monoterpenic alcohol
Citronellol	0.06	Monoterpenic alcohol
Thymol methyl ether	0.02	Monoterpenic ether
Unknown	0.03	Oxygenated monoterpene
Carvone	0.02	Monoterpenic ketone
Unknown	0.01	Oxygenated monoterpene
Piperitone	0.04	Monoterpenic ketone
Geraniol	0.03	Monoterpenic alcohol
Geranial	0.01	Monoterpenic aldehyde
Unknown	0.02	Unknown
<i>trans</i> -Verbenyl acetate	0.02	Monoterpenic ester
<i>cis</i> -Verbenyl acetate	0.04	Monoterpenic ester
Bornyl acetate	25.54	Monoterpenic ester
Isobornyl acetate	0.79	Monoterpenic ester
Unknown	0.11	Unknown
Unknown	0.07	Monoterpenic ester
<i>trans</i> -Pinocarvyl acetate	0.07	Monoterpenic ester

Myrtenyl acetate	0.02	Monoterpenic ester
Terpinyl acetate analog	0.05	Monoterpenic ester
<i>trans</i> -Carvyl acetate	0.03	Monoterpenic ester
exo-2-Hydroxycineole acetate	0.02	Monoterpenic ester
Unknown	0.02	Unknown
α -Terpinyl acetate	0.07	Monoterpenic ester
Citronellyl acetate	0.06	Monoterpenic ester
Longicyclene	0.02	Sesquiterpene
Unknown	0.02	Oxygenated monoterpene
α -Copaene	0.03	Sesquiterpene
β -Bourbonene	0.01	Sesquiterpene
Geranyl acetate	0.26	Monoterpenic ester
β -Elemene	0.05	Sesquiterpene
Longifolene	0.11	Sesquiterpene
β -Caryophyllene	0.18	Sesquiterpene
β -Copaene	0.01	Sesquiterpene
<i>cis</i> -Muurolo-3,5-diene	0.01	Sesquiterpene
<i>trans</i> -Muurolo-3,5-diene	0.01	Sesquiterpene
α -Humulene	0.05	Sesquiterpene
(<i>E</i>)- β -Farnesene	0.06	Sesquiterpene
<i>trans</i> -Cadina-1(6),4-diene	0.03	Sesquiterpene
γ -Muurolole	0.08	Sesquiterpene
Germacrene D	0.09	Sesquiterpene
Dodecanol	0.02	Aliphatic alcohol
β -Selinene	0.03	Sesquiterpene
<i>trans</i> -Muurolo-4(15),5-diene	0.03	Sesquiterpene
α -Selinene	0.04	Sesquiterpene
α -Muurolole	0.15	Sesquiterpene
(3 <i>Z</i> ,6 <i>E</i>)- α -Farnesene	0.01	Sesquiterpene
γ -Cadinene	0.20	Sesquiterpene
Cubebol	0.02	Sesquiterpenic alcohol
(3 <i>E</i> ,6 <i>E</i>)- α -Farnesene	0.05	Sesquiterpene
δ -Cadinene	0.66	Sesquiterpene
<i>trans</i> -Calamenene	0.05	Sesquiterpene
<i>trans</i> -Cadina-1,4-diene	0.03	Sesquiterpene
α -Cadinene	0.05	Sesquiterpene
α -Calacorene	0.02	Sesquiterpene
(<i>E</i>)- α -Bisabolene	0.13	Sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
(<i>E</i>)-Nerolidol	0.02	Sesquiterpenic alcohol
Spathulenol	0.02	Sesquiterpenic alcohol
Caryophyllene oxide	0.02	Sesquiterpenic ether
Caryophyllene oxide isomer	0.01	Sesquiterpenic ether
Globulol	0.01	Sesquiterpenic alcohol
Unknown	0.02	Unknown
10-epi-Cubebol	0.03	Sesquiterpenic alcohol
1-epi-Cubebol	0.02	Sesquiterpenic alcohol
τ -Muurolol	0.08	Sesquiterpenic alcohol
Cubebol	0.02	Sesquiterpenic alcohol
τ -Cadinol	0.09	Sesquiterpenic alcohol
α -Muurolol	0.04	Sesquiterpenic alcohol

α -Cadinol	0.17	Sesquiterpenic alcohol
<i>cis</i> -Calamenen-10-ol	0.01	Sesquiterpenic alcohol
<i>trans</i> -Calamenen-10-ol	0.01	Sesquiterpenic alcohol
Unknown	0.02	Aliphatic ester
Unknown	0.01	Oxygenated sesquiterpene
(1,8Z,11Z,14Z)-Heptadecatetraene	0.01	Alkene
Amorpha-4,9-dien-2-ol	0.02	Sesquiterpenic alcohol
(5Z)-Tetradecen-14-olide?	0.02	Aliphatic lactone
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated diterpene
(<i>E,E</i>)-Geranyllinalool	0.01	Diterpenic alcohol
Manool	0.03	Diterpenic alcohol
(<i>Z</i>)-Abienol	0.03	Diterpenic alcohol
Palustral	0.01	Diterpenic aldehyde
Consolidated total	99.05%	

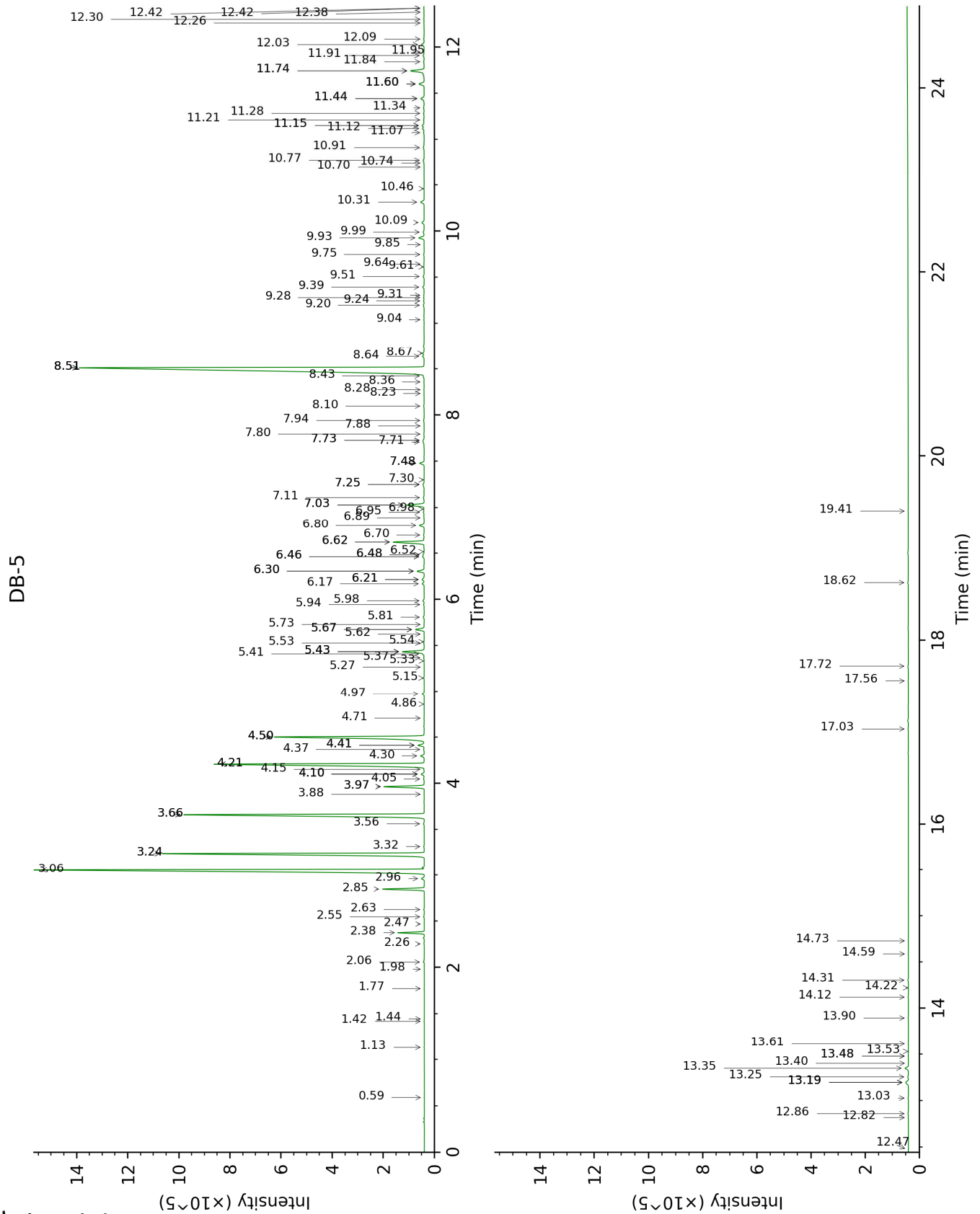
tr: The compound has been detected below 0.005% of total signal.

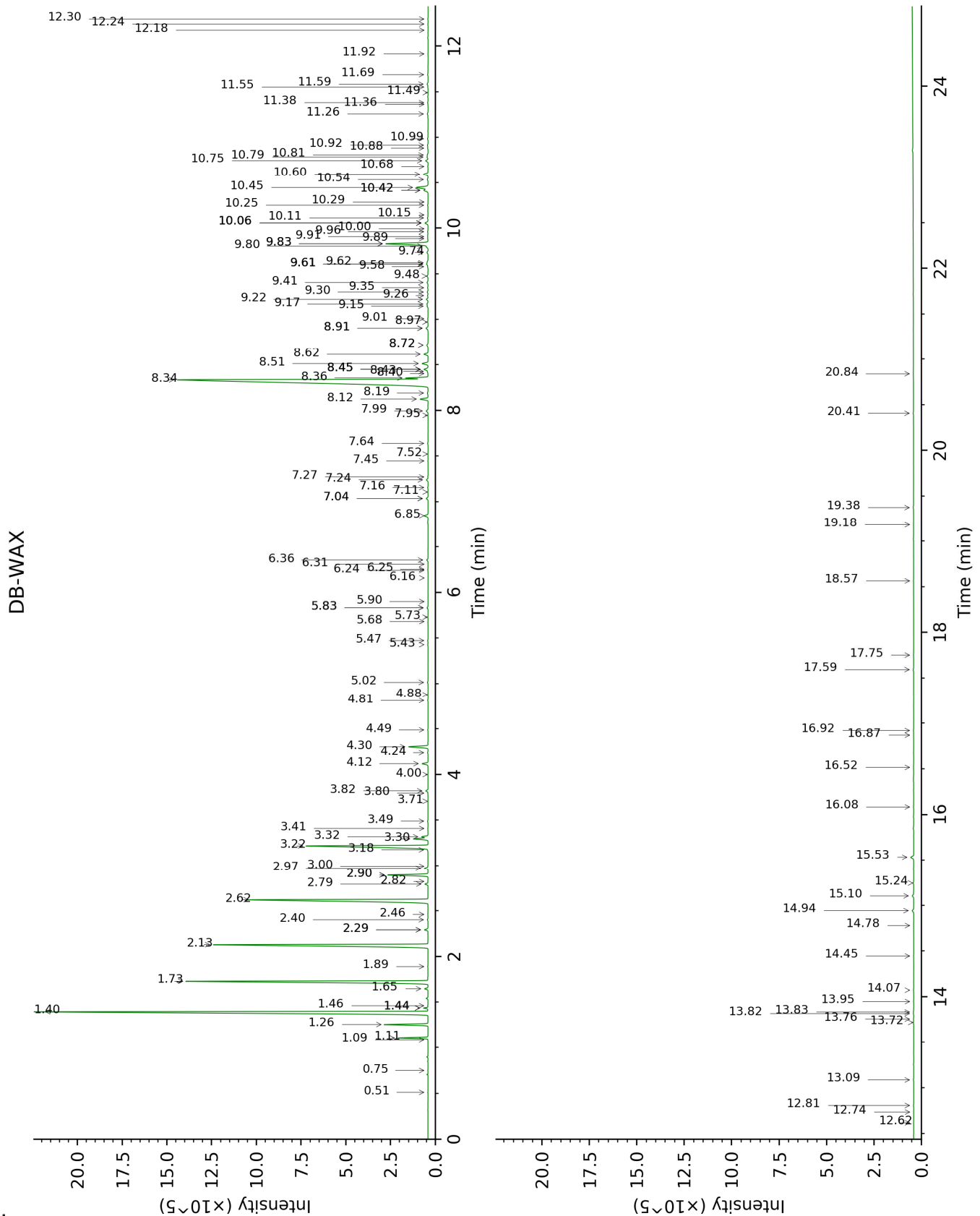
Note: no correction factor was applied

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	%
Isovaleral	0.59	639	tr			
Toluene	1.13	761	0.01	1.46	1003	0.01
Hexanal	1.42	801	0.01	1.89	1045	0.01
Octane	1.44	805	tr	0.51	784	0.01
Unknown [m/z 109, 67 (32), 81 (14), 41 (12), 124 (10)]	1.77	832	tr	0.75	879	tr
(2E)-Hexenal	1.98	850	tr	3.41	1175	0.02
(3Z)-Hexenol	2.06	856	0.04	5.83*	1350	0.05
Hexanol	2.26	872	0.02	5.47	1325	0.02
Santene	2.38	882	0.83	1.11	949	0.87
2-Heptanone	2.47	890	tr	3.00	1142	0.01
Unknown [m/z 79, 93 (66), 94 (52), 91 (39), 77 (37), 122 (31)]	2.55	896	0.03	1.44*	1000	0.13
Bornylene	2.63	903	0.02	1.09	945	tr
Tricyclene	2.85	918	1.48	1.26	973	1.47
α -Thujene	2.96	925	0.12	1.44*	1000	[0.13]
α -Pinene	3.06	932	18.94	1.40	996	19.17
Camphene	3.24*	944	11.08	1.73	1029	11.01
α -Fenchene	3.24*	944	[11.08]	1.65	1021	0.12
Thuja-2,4(10)-diene	3.32	949	0.03	2.29*	1085	0.15
meta-Cymene	3.56	965	0.04	2.90*	1134	1.60
Sabinene	3.66*	972	11.05	2.29*	1085	[0.15]
β -Pinene	3.66*	972	[11.05]	2.13	1069	11.07
Dehydro-1,8-cineole	3.88	986	0.02	3.18	1156	0.02
Myrcene	3.97*	992	1.54	2.90*	1134	[1.60]
2-Pentylfuran	3.97*	992	[1.54]	3.71	1198	0.01
2-Carene	4.05	997	0.04	2.40	1096	0.03
α -Phellandrene	4.10*	1001	0.14	2.80	1127	0.12
Pseudolimonene	4.10*	1001	[0.14]	2.82	1129	0.02
Octanal	4.10*	1001	[0.14]	4.49	1254	0.02
Unknown [m/z 109, 81 (35), 43 (34), 69 (33), 67 (29), 152 (29)]	4.15	1004	0.02	3.49	1181	0.03
Δ 3-Carene	4.21*	1008	9.82	2.62	1113	9.89
(3Z)-Hexenyl acetate	4.21*	1008	[9.82]	4.88	1282	0.01
α -Terpinene	4.30	1013	0.16	2.97	1140	0.14
Carvomenthene	4.37	1018	0.04	2.46	1101	0.02
Unknown [m/z 109, 43 (58), 95 (26)... 137 (15)...]	4.41*	1021	0.28	6.24	1380	0.01

para-Cymene	4.41*	1021	[0.28]	4.12	1227	0.27
Limonene	4.50*	1026	7.10	3.22	1160	6.34
β-Phellandrene	4.50*	1026	[7.10]	3.30	1166	0.60
1,8-Cineole	4.50*	1026	[7.10]	3.32	1168	0.26
(Z)-β-Ocimene	4.71	1039	0.01	3.80	1204	0.01
(E)-β-Ocimene	4.86	1049	0.01	4.00	1219	0.01
γ-Terpinene	4.97	1056	0.10	3.82	1206	0.10
Unknown [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)]	5.15	1067	0.02	4.81	1277	0.02
Unknown [m/z 94, 79 (74), 67 (33), 41 (22), 95 (21)...]	5.27	1074	0.01			
meta-Cymenene	5.33	1079	0.01	6.25	1381	0.01
Fenchone	5.37	1081	0.03	5.73	1343	0.02
Isoterpinolene	5.41	1084	0.04	4.24	1236	0.02
para-Cymenene	5.43*	1085	0.93	6.36	1388	0.07
γ-Campholenal	5.43*	1085	[0.93]	5.02	1292	0.03
Terpinolene	5.43*	1085	[0.93]	4.30	1240	0.86
α-Pinene oxide	5.53	1091	0.02	5.43	1321	0.02
2-Nonanone	5.54	1092	0.01	5.83*	1350	[0.05]
Perillene	5.62	1097	0.01	6.16	1374	tr
Linalool	5.67*	1100	0.38	8.12	1520	0.37
Unknown [m/z 79, 94 (87), 77 (25), 91 (21), 93 (16), 95 (12), 138 (8)]	5.67*	1100	[0.38]			
Nonanal	5.73	1104	0.01	5.90	1355	0.01
endo-Fenchol	5.81	1109	0.05	8.43	1543	0.03
3-Methyl-3-butenyl isovalerate	5.94	1118	0.03	5.68	1340	0.01
α-Campholenal	5.98	1121	0.06	7.04*	1438	0.09
trans-Pinocarveol	6.17	1133	0.09	9.22	1605	0.09
Camphor	6.21*	1136	0.11	7.24	1453	0.09
trans-para-Menth-2-en-1-ol	6.21*	1136	[0.11]	9.01	1588	0.02
Camphene hydrate	6.30*	1142	0.32	8.51	1550	0.31
Isopulegol	6.30*	1142	[0.32]	8.19	1525	0.05
Isoborneol	6.46*	1152	0.07	9.41	1620	0.07
Prenyl isovalerate	6.46*	1152	[0.07]	6.31	1385	0.01
Citronellal	6.48*	1153	0.05	7.04*	1438	[0.09]
Pinocamphone	6.48*	1153	[0.05]	7.27	1456	0.02
Pinocarvone	6.52	1155	0.01	7.95	1506	0.01
Borneol	6.62*	1162	1.37	9.83*	1654	2.16
Unknown [m/z 109, 108 (48), 67 (41), 81 (40), 41 (28)...]	6.62*	1162	[1.37]	7.45	1469	0.02
Isopinocamphone	6.70	1167	0.03	7.64	1483	0.03
Terpinen-4-ol	6.80	1174	0.21	8.62	1558	0.21

meta-Cymen-8-ol	6.89	1180	0.01	11.55	1798	0.02
para-Cymen-8-ol	6.95	1184	0.04	11.59	1801	0.06
trans-Isocarveol	6.98	1186	0.02	10.99	1750	0.03
α-Terpineol	7.03*	1189	0.79	9.83*	1654	[2.16]
Myrtenal	7.03*	1189	[0.79]	8.72*	1566	0.09
Myrtenol	7.11	1194	0.05	10.88	1741	0.03
Verbenone	7.25*	1204	0.08	9.62†	1637	[0.15]
Unknown [m/z 95, 93 (32), 121 (24), 79 (22), 91 (21), 105 (16)... 154 (2)]	7.25*	1204	[0.08]	10.92	1744	0.04
trans-Piperitol	7.30	1207	0.01	10.42*	1702	0.24
endo-Fenchyl acetate	7.48*	1219	0.21	6.85	1424	0.20
trans-Carveol	7.48*	1219	[0.21]	11.49	1793	0.01
Citronellol	7.71†	1235	0.11	10.79	1733	0.06
Thymol methyl ether	7.73*†	1236	[0.11]	8.45*	1545	0.22
Unknown [m/z 137, 152 (28), 43 (25), 91 (24), 109 (23), 119 (19)]	7.73*†	1236	[0.11]	11.38	1783	0.03
Carvone	7.80	1241	0.02	10.06*	1673	0.19
Unknown [m/z 109, 119 (84), 91 (81), 134 (55)... 137 (27)...]	7.88	1247	0.01	11.36	1782	0.01
Piperitone	7.94	1251	0.04	9.96	1665	0.03
Geraniol	8.10	1262	0.03	11.69	1810	0.04
Geranial	8.24	1272	0.01	10.15	1680	0.01
Unknown [m/z 43, 119 (72), 81 (66), 54 (48), 41 (47), 58 (44)...]	8.28	1274	0.02			
trans-Verbenyl acetate	8.36	1280	0.02	9.35	1615	0.03
cis-Verbenyl acetate	8.42	1285	0.04	8.72*	1566	[0.09]
Bornyl acetate	8.51*	1291	27.07	8.34	1536	25.54
Isobornyl acetate	8.51*	1291	[27.07]	8.36	1538	0.79
Unknown [m/z 119, 43 (87), 91 (78), 92 (70), 134 (50)...]	8.51*	1291	[27.07]	8.91*	1580	0.12
Unknown [m/z 107, 43 (76), 150 (42), 91 (28), 108 (23)]	8.64	1300	0.07	9.15	1599	0.05
trans-Pinocarvyl acetate	8.67	1302	0.07	9.17	1601	0.07
Myrtenyl acetate	9.04	1322	0.02	9.61*†	1636	0.15
Terpinyl acetate	9.20	1334	0.05	9.58	1634	0.03

analog <i>trans</i> -Carvyl acetate	9.24	1337	0.03	10.25	1688	0.03
exo-2- Hydroxycineole acetate	9.28	1339	0.02	10.11	1677	0.04
Unknown [m/z 133, 105 (45), 91 (38), 119 (36)... 150 (3)]	9.31	1341	0.02			
α -Terpinyl acetate	9.39	1347	0.07	9.74	1646	0.07
Citronellyl acetate	9.51	1356	0.06	9.48	1626	0.06
Longicyclene	9.61	1363	0.02	7.11	1444	0.02
Unknown [m/z 93, 121 (68), 43 (67), 67 (44), 136 (36), 107 (34)... 180 (4)]	9.64	1365	0.02	10.06*	1673	[0.19]
α -Copaene	9.75	1372	0.03	7.16	1447	0.03
β -Bourbonene	9.85	1380	0.01	7.52	1474	0.01
Geranyl acetate	9.93	1385	0.26	10.60	1717	0.25
β -Elemene	9.99	1390	0.05	8.45*	1545	[0.22]
Longifolene	10.09	1397	0.11	7.99	1510	0.11
β -Caryophyllene	10.31	1413	0.18	8.45*	1545	[0.22]
β -Copaene	10.46	1424	0.01	8.40	1541	0.01
<i>cis</i> -Muurolo-3,5- diene	10.70	1442	0.01	8.97	1585	0.03
<i>trans</i> -Muurolo-3,5- diene	10.74	1445	0.01	8.91*	1580	[0.12]
α -Humulene	10.77	1447	0.05	9.30	1612	0.05
(<i>E</i>)- β -Farnesene	10.91	1458	0.06	9.61*†	1636	[0.15]
<i>trans</i> -Cadina- 1(6),4-diene	11.07	1470	0.03	9.26	1608	0.03
γ -Muurolole	11.12	1473	0.08	9.61*†	1636	[0.15]
Germacrene D	11.15*	1475	0.11	9.80	1652	0.09
Dodecanol	11.15*	1475	[0.11]	13.08	1935	0.02
β -Selinene	11.21	1480	0.03	9.91	1660	0.03
<i>trans</i> -Muurolo- 4(15),5-diene	11.28	1485	0.03	9.89	1659	0.02
α -Selinene	11.34	1490	0.04	10.00	1668	0.01
α -Muurolole	11.44*	1497	0.19	10.06*	1673	[0.19]
(3 <i>Z</i> ,6 <i>E</i>)- α - Farnesene	11.44*	1497	[0.19]	10.29	1691	0.01
γ -Cadinene	11.60*	1509	0.27	10.42*	1702	[0.24]
Cubebol	11.60*	1509	[0.27]	12.62	1892	0.02
(3 <i>E</i> ,6 <i>E</i>)- α - Farnesene	11.60*	1509	[0.27]	10.54	1712	0.05
δ -Cadinene	11.74*	1520	0.67	10.45	1704	0.66
<i>trans</i> -Calamenene	11.74*	1520	[0.67]	11.26	1773	0.05
<i>trans</i> -Cadina-1,4- diene	11.84	1528	0.03	10.68	1724	0.02
α -Cadinene	11.91	1533	0.05	10.81	1735	0.05
α -Calacorene	11.95	1536	0.02	12.18	1853	0.01

(E)- α -Bisabolene	12.03	1542	0.13	10.75	1730	0.13
Unknown [m/z 95, 81 (70), 109 (68), 93 (59), 67 (53), 41 (49), 139 (40)... 220 (3)]	12.08	1547	0.02	12.24	1859	0.02
Unknown [m/z 93, 135 (9), 107 (72), 177 (72), 81 (57), 149 (53)... 220 (25)]	12.26	1561	0.01	12.30	1864	0.02
(E)-Nerolidol	12.30	1564	0.02	13.83	2004	0.02
Spathulenol	12.38	1570	0.02	14.45	2062	0.01
Caryophyllene oxide	12.42*	1574	0.02	12.81	1909	0.02
Caryophyllene oxide isomer	12.42*	1574	[0.02]	12.74	1902	0.01
Globulol	12.47	1577	0.01	13.95	2015	0.01
Unknown0 [m/z 108, 43 (56), 109 (33), 93 (26), 119 (24)... 212 (2)]	12.82	1605	0.02	14.78	2095	0.01
10-epi-Cubenol	12.86	1608	0.03	13.72	1993	0.02
1-epi-Cubenol	13.03	1622	0.02	13.82	2002	0.02
τ -Muurolol	13.19*	1636	0.19	15.10	2127	0.08
Cubenol	13.19*	1636	[0.19]	13.76	1996	0.02
τ -Cadinol	13.19*	1636	[0.19]	14.94	2111	0.09
α -Muurolol	13.25	1641	0.04	15.24	2141	0.03
α -Cadinol	13.35	1648	0.17	15.53	2170	0.17
<i>cis</i> -Calamenen-10-ol	13.40	1653	0.01	16.52	2270	0.01
<i>trans</i> -Calamenen-10-ol	13.48*	1659	0.03	16.87	2308	0.01
Unknown [m/z 79, 43 (66), 67 (59), 80 (56), 41 (41), 81 (37), 55 (29)...]	13.48*	1659	[0.03]	14.07	2027	0.02
Unknown [m/z 159, 177 (59), 135 (57), 91 (47), 105 (47)... 220? (25)]	13.53	1663	0.01			
(1,8Z,11Z,14Z)-Heptadecatetraene	13.61	1670	0.01	11.92	1830	0.01
Amorpha-4,9-dien-2-ol	13.90	1694	0.02	16.92	2313	0.02
(5Z)-Tetradecen-14-olide?	14.12	1713	0.02			
Unknown [m/z 159, 220 (92), 93 (88), 177 (63), 91 (57), 107 (55)]	14.22	1722	0.01	17.75	2403	0.01
Unknown [m/z 159, 132 (79), 135	14.31	1729	0.03	17.60	2385	0.03

(37), 91 (35), 177 (33)... 220 (16)]						
Unknown [m/z 81, 43 (83), 123 (65), 71 (48), 97 (41), 109 (38)... 236? (t)]	14.59	1753	0.01	19.18	2564	0.01
Unknown [m/z 43, 147 (93), 159 (76), 187 (76), 81 (64), 93 (56), 121 (56), 220 (51)]	14.73	1766	0.01			
Unknown [m/z 105, 91 (100), 81 (89), 79 (86), 109 (86), 257 (83)... 275 (12)...]	17.03	1975	0.02	16.08	2226	0.02
(<i>E,E</i>)-Geranylinalool	17.56	2026	0.01	18.57	2493	0.01
Manool	17.72	2042	0.03	19.38	2586	0.03
(<i>Z</i>)-Abienol	18.62	2132	0.03	20.41	2710	0.02
Palustral	19.40	2213	0.01	20.84	2763	tr
Total identified		98.84%			98.68%	
Total reported		99.21%			99.03%	

*: 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