

Date : June 21, 2022

CERTIFICATE OF ANALYSIS – GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 22F14-PTH04

Customer identification : Ledum - Canada - LA2101R

Type : Essential oil

Source : *Ledum groenlandicum*

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 : Pamela Lavoie, M.Sc., Chimiste

Analysis date : June 21, 2022

Checked and approved by :

Sylvain Mercier, M. Sc., Chimiste 2014-005

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PHYSICOCHEMICAL DATA

Physical aspect: Light yellow liquid

Refractive index: 1.4788 ± 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
Dimethylsulfide	tr	Aliphatic sulfide
(E)-2-Methyl-1,3-pentadiene	tr	Alkene
Isovaleral	tr	Aliphatic aldehyde
2-Methylbutyral	tr	Aliphatic aldehyde
2-Ethylfuran	tr	Furan
2,5-Dimethylfuran	tr	Furan
Toluene	0.01	Simple phenolic
Hexanal	tr	Aliphatic aldehyde
Octane	0.02	Alkane
Unknown	0.01	Unknown
Unknown	tr	Unknown
Unknown	0.02	Unknown
(3Z)-Hexenol	0.01	Aliphatic alcohol
Unknown	0.04	Unknown
Nonane	tr	Alkane
Heptanal	0.01	Aliphatic aldehyde
Bornylene	0.01	Monoterpene
Tricyclene	0.12	Monoterpene
Cumene	0.01	Normonoterpene
1-Isopropylcyclohexene	0.02	Normonoterpene
α -Thujene	1.06	Monoterpene
α -Pinene	6.87	Monoterpene
Unknown	0.14	Monoterpene
α -Fenchene	tr	Monoterpene
Camphene	1.75	Monoterpene
Thuja-2,4(10)-diene	0.02	Monoterpene
Benzaldehyde	0.01	Simple phenolic
Unknown	0.03	Monoterpene
β -Pinene	6.75	Monoterpene
Sabinene	26.34	Monoterpene
Octen-3-ol	0.03	Aliphatic alcohol
6-Methyl-5-hepten-2-one	0.01	Aliphatic ketone
Myrcene	0.29	Monoterpene
Pseudolimonene	0.01	Monoterpene
α -Phellandrene	0.51	Monoterpene
Menthatriene isomer I	0.06	Monoterpene
Δ^3 -Carene	0.01	Monoterpene
α -Terpinene	4.03	Monoterpene
p-Menthatriene	0.02	Monoterpene
para-Cymene	3.57	Monoterpene
Limonene	1.30	Monoterpene
β -Phellandrene	1.45	Monoterpene
(Z)- β -Ocimene	0.12	Monoterpene
(E)- β -Ocimene	0.05	Monoterpene
γ -Terpinene	9.23	Monoterpene

Unknown	0.06	Oxygenated monoterpene
<i>cis</i> -Sabinene hydrate	0.03	Monoterpenic alcohol
Unknown	0.01	Oxygenated monoterpene
Terpinolene	1.64	Monoterpene
para-Cymenene	0.04	Monoterpene
Unknown	0.04	Oxygenated monoterpene
<i>trans</i> -Sabinene hydrate	0.04	Monoterpenic alcohol
Unknown	0.04	Oxygenated monoterpene
Nonanal	0.03	Aliphatic aldehyde
Linalool	0.02	Monoterpenic alcohol
para-Mentha-1,3,8-triene	0.01	Monoterpene
β-Thujone	0.01	Monoterpenic ketone
Dehydrosabinaketone	1.38	Normonoterpenic ketone
<i>cis</i> -para-Menth-2-en-1-ol	0.14	Monoterpenic alcohol
<i>trans</i> -para-Mentha-2,8-dien-1-ol	0.04	Monoterpenic alcohol
Unknown	0.21	Oxygenated monoterpene
α-Campholenal	0.02	Monoterpenic aldehyde
Limona ketone	0.01	Normonoterpenic ketone
<i>cis</i> -para-Mentha-2,8-dien-1-ol	0.03	Monoterpenic alcohol
<i>trans</i> -Pinocarveol	1.51	Monoterpenic alcohol
Camphor	0.14	Monoterpenic ketone
Unknown	0.01	Unknown
para-Vinylanisole	0.04	Simple phenolic
Unknown	0.05	Oxygenated monoterpene
Sabinaketone	0.56	Normonoterpenic ketone
Pinocarvone	0.56	Monoterpenic ketone
Unknown	0.10	Unknown
Borneol	0.09	Monoterpenic alcohol
δ-Terpineol	0.02	Monoterpenic alcohol
Isopinocamphe	0.08	Monoterpenic ketone
<i>cis</i> -Sabinol	0.06	Monoterpenic alcohol
Terpinen-4-ol	8.22	Monoterpenic alcohol
Thuj-3-en-10-al	1.26	Monoterpenic aldehyde
para-Cymen-8-ol	0.06	Monoterpenic alcohol
<i>trans</i> -Isocarveol	0.10	Monoterpenic alcohol
α-Terpineol	0.37	Monoterpenic alcohol
Myrtenal	2.50	Monoterpenic aldehyde
<i>cis</i> -Piperitol	0.03	Monoterpenic alcohol
para-Mentha-1,5-dien-7-ol	0.22	Monoterpenic alcohol
Myrtenol	0.30	Monoterpenic alcohol
<i>cis</i> -α-Phellandrene epoxide (iPr vs Me)	0.06	Monoterpenic ether
<i>cis</i> -para-Menth-2-en-7-ol?	0.05	Aliphatic alcohol
<i>trans</i> -Piperitol	0.08	Monoterpenic alcohol
Unknown	0.07	Oxygenated monoterpene
<i>cis</i> -Isopiperitenol	0.02	Monoterpenic alcohol
<i>trans</i> -Carveol	0.05	Monoterpenic alcohol
Unknown	0.01	Unknown
<i>cis</i> -para-Mentha-1(7),8-dien-2-ol	0.08	Monoterpenic alcohol
<i>cis</i> -Isocarveol	0.01	Monoterpenic alcohol
<i>cis</i> -Carveol	0.04	Monoterpenic alcohol
Cuminal	0.92	Monoterpenic aldehyde
Carvone	0.04	Monoterpenic ketone

Carvotanacetone	0.01	Monoterpenic ketone
Unknown	0.03	Unknown
Unknown	0.02	Unknown
Unknown	0.02	Unknown
Methyl citronellate	0.01	Monoterpenic ester
<i>trans</i> -Ascaridole glycol	0.02	Monoterpenic alcohol
Phellandral	0.14	Monoterpenic aldehyde
Unknown	0.04	Unknown
α -Terpinen-7-al	0.10	Monoterpenic aldehyde
Bornyl acetate	2.47	Monoterpenic ester
Cuminol	0.16	Monoterpenic alcohol
<i>para</i> -Cymen-7-ol	0.01	Monoterpenic alcohol
Perilla alcohol	0.02	Monoterpenic alcohol
Thymol	0.04	Monoterpenic alcohol
Unknown	0.08	Unknown
Unknown	0.03	Unknown
Unknown	0.03	Monoterpenic alcohol
Myrtenyl acetate	0.07	Monoterpenic ester
1,4- <i>para</i> -Menthadien-7-ol	0.25	Monoterpenic alcohol
Unknown	0.06	Unknown
α -Cubebene	0.02	Sesquiterpene
Neryl acetate	0.01	Monoterpenic ester
α -Copaene	0.05	Sesquiterpene
Unknown	0.04	Unknown
β -Bourbonene	0.01	Sesquiterpene
Geranyl acetate	0.04	Monoterpenic ester
β -Cubebene	0.01	Sesquiterpene
β -Elemene	0.09	Sesquiterpene
α -Gurjunene	0.36	Sesquiterpene
Sesquithujene	0.02	Sesquiterpene
β -Caryophyllene	0.04	Sesquiterpene
<i>trans</i> - α -Bergamotene	0.03	Sesquiterpene
<i>cis</i> - β -Bergamotene?	0.03	Sesquiterpene
<i>trans</i> -Muurolo-3,5-diene	0.03	Sesquiterpene
α -Humulene	0.11	Sesquiterpene
allo-Aromadendrene	0.36	Sesquiterpene
(<i>E</i>)- β -Farnesene	0.03	Sesquiterpene
γ -Gurjunene	0.05	Sesquiterpene
Eudesma-2,4,11-triene	0.14	Sesquiterpene
Germacrene D	0.04	Sesquiterpene
β -Selinene	3.72	Sesquiterpene
Eudesma-3,5,11-triene	0.04	Sesquiterpene
α -Selinene	0.47	Sesquiterpene
epi-Cubebol	0.06	Sesquiterpenic alcohol
Unknown	0.10	Unknown
Eudesma-2,4(15),11-triene	0.02	Sesquiterpene
α -Muurolole	0.03	Sesquiterpene
β -Bisabolene	0.13	Sesquiterpene
γ -Cadinene	0.06	Sesquiterpene
Shyobunone	0.06	Sesquiterpenic ketone
δ -Cadinene	0.16	Sesquiterpene
<i>trans</i> -Calamenene	0.01	Sesquiterpene

<i>trans</i> -Cadina-1,4-diene	0.03	Sesquiterpene
α -Calacorene	0.02	Sesquiterpene
(<i>E</i>)- α -Bisabolene	0.02	Sesquiterpene
Germacrene B	0.10	Sesquiterpene
Palustrol	0.17	Sesquiterpenic alcohol
Caryophyllene oxide	0.01	Sesquiterpenic ether
Caryophyllene oxide isomer	0.02	Sesquiterpenic ether
Unknown	0.01	Oxygenated sesquiterpene
Gleenol	0.02	Sesquiterpenic alcohol
Viridiflorol	0.02	Sesquiterpenic alcohol
Unknown	0.03	Oxygenated sesquiterpene
Guaiol	0.01	Sesquiterpenic alcohol
Ledol	0.08	Sesquiterpenic alcohol
Eudesm-5-en-11-ol	0.76	Sesquiterpenic alcohol
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.06	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Caryophylladienol II	0.03	Sesquiterpenic alcohol
Cubenol	0.02	Sesquiterpenic alcohol
β -Eudesmol	0.03	Sesquiterpenic alcohol
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.01	Unknown
Unknown	0.04	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
Germacrone	0.06	Sesquiterpenic ketone
Unknown	0.06	Oxygenated sesquiterpene
Unknown	0.06	Oxygenated sesquiterpene
Cyclocolorenone	0.59	Sesquiterpenic ketone
Eudesma-3,11-dien-2-one	0.17	Sesquiterpenic ketone
Unknown	0.03	Oxygenated sesquiterpene
Geranyl-para-cymene	0.01	Diterpene
Unknown	0.01	Diterpenic ketone
α -Pinene oxide analog?	0.01	Monoterpenic ether
Consolidated total	98.04%	

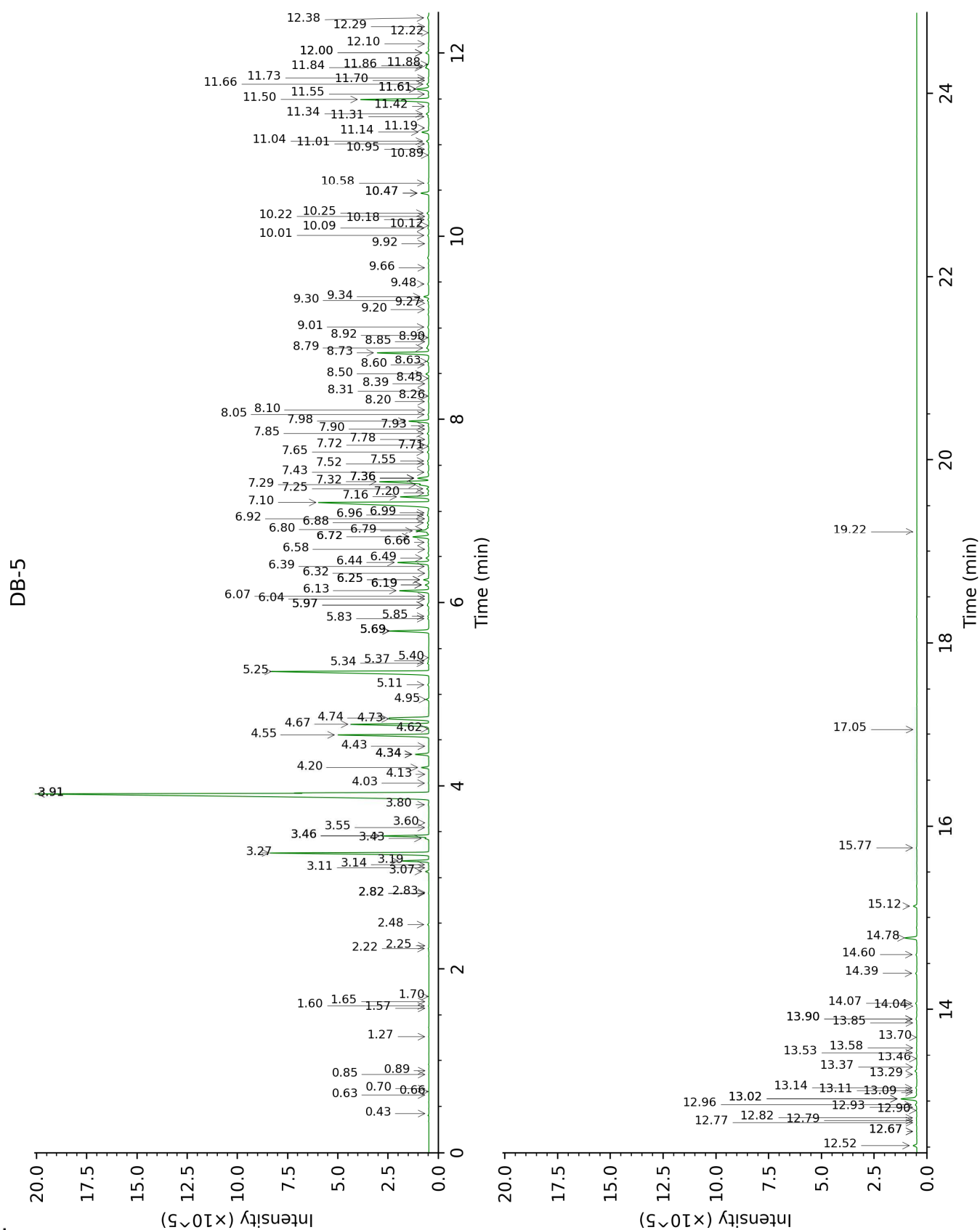
tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

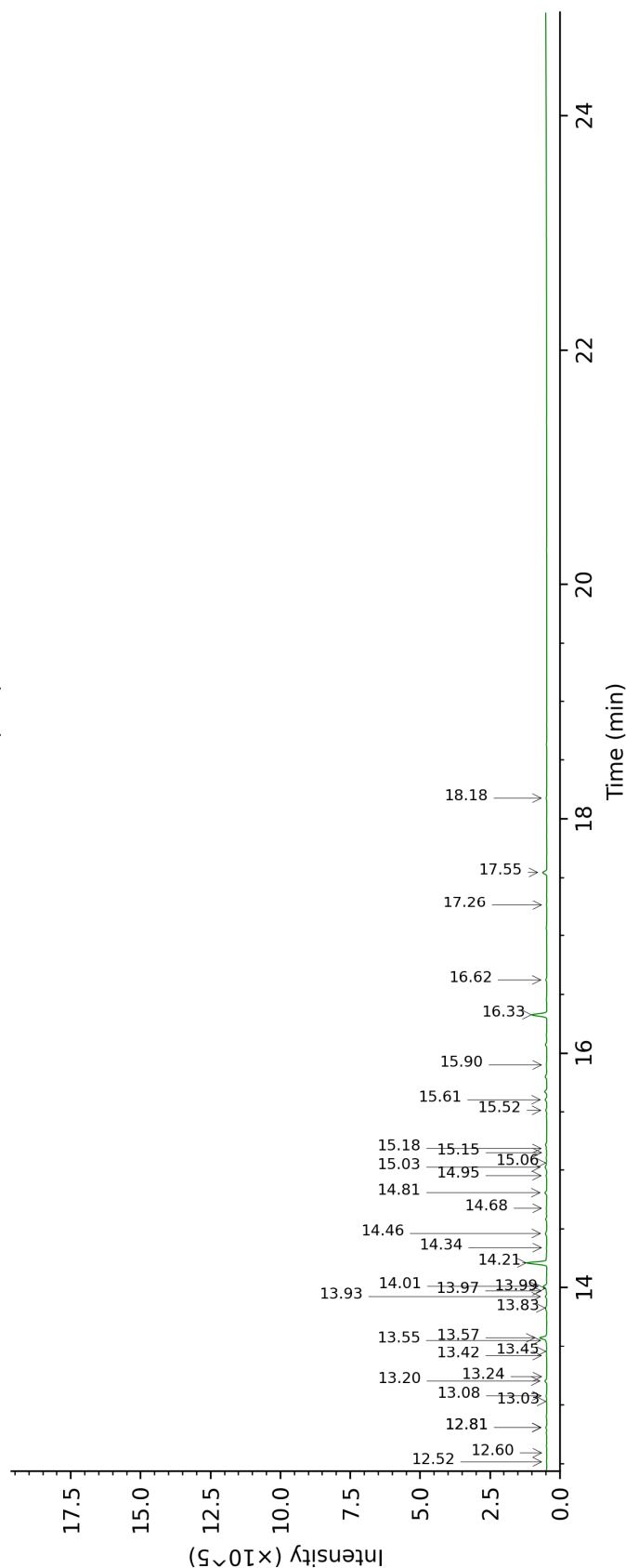
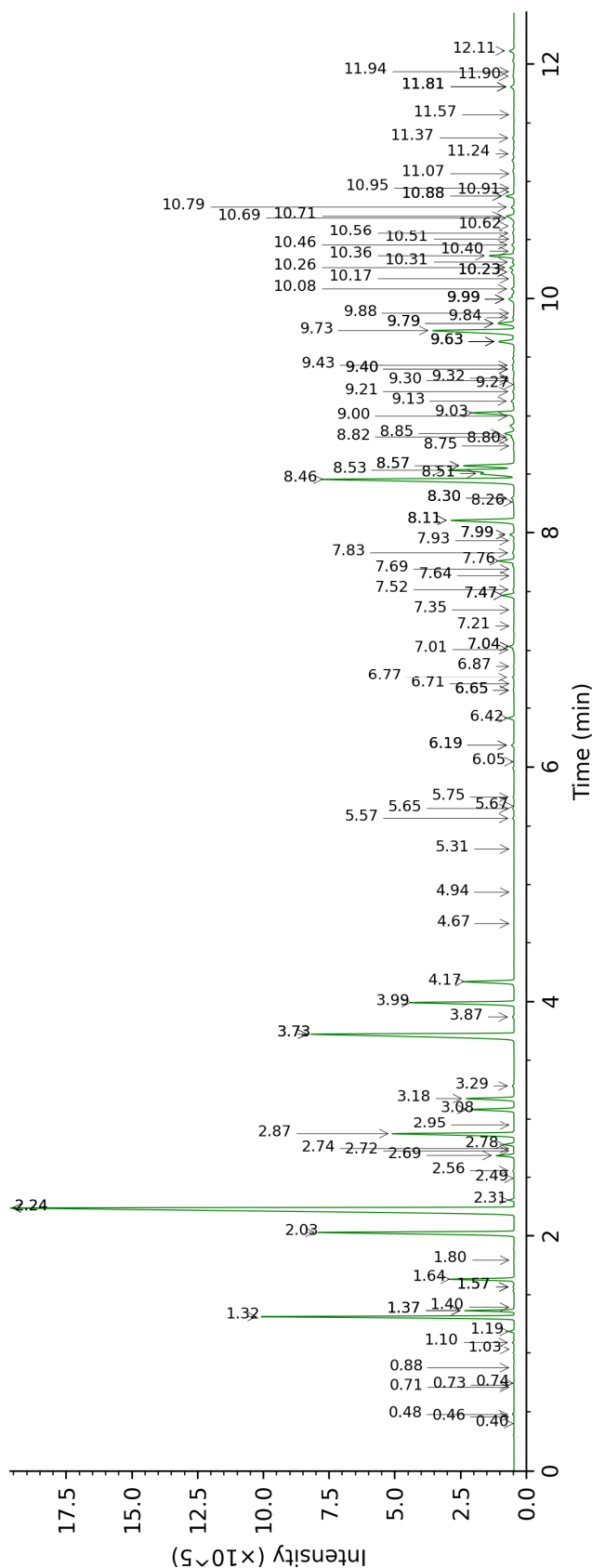
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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



DB-WAX



FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Dimethylsulfide	0.43	514	tr	0.40	714	tr
(E)-2-Methyl-1,3-pentadiene	0.63	631	tr	0.46	765	tr
Isovaleral	0.66	643	tr	0.73	886	tr
2-Methylbutyral	0.70	653	tr	0.71	879	tr
2-Ethylfuran	0.85	702	tr	0.88	919	0.01
2,5-Dimethylfuran	0.89	708	tr			
Toluene	1.27	758	0.01	1.40	1003	0.01
Hexanal	1.57	799	tr	1.80	1043	0.01
Octane	1.60	803	0.02	0.48	783	0.01
Unknown [m/z 93, 91 (71), 77 (54), 108 (41)]	1.65	807	0.01			
Unknown [m/z 93, 91 (76), 77 (49), 108 (41)]	1.70	811	tr			
Unknown [m/z 109, 43 (28), 124 (28), 41 (14), 55 (11), 79 (9), 81 (8)...]	2.22	853	0.02	1.57*	1020	0.03
(3Z)-Hexenol	2.26	856	0.01	5.67	1348	0.01
Unknown [m/z 79, 78 (45), 91 (28), 77 (28), 41 (13), 80 (12), 107 (11)... 122 (1)]	2.48	874	0.04	1.10	955	0.04
Nonane	2.82*	902	0.02	0.74	892	tr
Heptanal	2.82*	902	[0.02]	2.95	1146	0.01
Bornylene	2.84	903	0.01	1.03	944	tr
Tricyclene	3.07	918	0.12	1.19	971	0.12
Cumene	3.11	921	0.01	2.72	1129	0.01
1-Isopropylcyclohexene	3.14	923	0.02	1.37*	1000	1.06
α-Thujene	3.19	926	1.06	1.37*	1000	[1.06]
α-Pinene	3.27	931	6.87	1.32	992	6.83
Unknown [m/z 91, 92 (47), 65 (11)... 134 (1)]	3.43†	942	1.90	2.31	1094	0.14
α-Fenchene	3.46*†	944	[1.90]	1.57*	1020	[0.03]
Camphene	3.46*†	944	[1.90]	1.64	1027	1.75
Thuja-2,4(10)-diene	3.55	949	0.02	2.24*	1088	26.36
Benzaldehyde	3.60	953	0.01	7.21	1461	0.01
Unknown [m/z 79, 78 (44), 77 (30), 91 (29), 122 (17)]	3.80	966	0.03	2.56	1116	0.04
β-Pinene	3.91*†	974	33.18	2.03	1067	6.75
Sabinene	3.91*†	974	[33.18]	2.24*	1088	[26.36]
Octen-3-ol	4.03	981	0.03	6.65*	1420	0.04
6-Methyl-5-hepten-2-one	4.13	988	0.01	4.94	1297	0.01
Myrcene	4.20	992	0.29	2.78	1133	0.29
Pseudolimonene	4.34*	1002	0.57	2.74	1130	0.01

α -Phellandrene	4.34*	1002	[0.57]	2.69	1126	0.51
Menthatriene isomer I	4.34*	1002	[0.57]	3.28	1173	0.06
Δ^3 -Carene	4.43	1007	0.01	2.49	1110	0.02
α -Terpinene	4.56	1015	4.03	2.87	1140	4.02
p-Menthatriene	4.62	1019	0.02			
para-Cymene	4.67	1022	3.57	3.99	1227	3.47
Limonene	4.73†	1026	2.76	3.08	1157	1.30
β -Phellandrene	4.74†	1027	[2.76]	3.18	1165	1.45
(Z)- β -Ocimene	4.95	1040	0.12	3.72*	1208	9.41
(E)- β -Ocimene	5.11	1050	0.05	3.87	1218	0.05
γ -Terpinene	5.25	1059	9.23	3.72*	1208	[9.41]
Unknown [m/z 95, 109 (88), 41 (79), 81 (77), 55 (65), 79 (64), 43 (55)... 137 (22), 150 (8)]	5.34	1065	0.06	5.65	1346	0.04
cis-Sabinene hydrate	5.37	1066	0.03	6.77	1428	0.06
Unknown [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)]	5.40	1068	0.01	4.66	1277	0.01
Terpinolene	5.69*	1087	1.72	4.17	1241	1.64
para-Cymenene	5.69*	1087	[1.72]	6.19*	1385	0.09
Unknown [m/z 97, 71 (96), 79 (90), 43 (47), 41 (42)... 140 (14)]	5.69*	1087	[1.72]	7.52	1484	0.04
trans-Sabinene hydrate	5.83	1095	0.04	7.83	1508	0.07
Unknown [m/z 111, 43 (73), 69 (58), 41 (38), 55 (38)... 125 (19), 140 (1)]	5.85	1097	0.04	5.57	1340	0.04
Nonanal	5.97*	1104	0.10	5.75	1353	0.03
Linalool	5.97*	1104	[0.10]	7.94	1516	0.02
para-Mentha-1,3,8-triene	6.04	1109	0.01	6.05	1375	0.01
β -Thujone	6.07	1111	0.01	6.19*	1385	[0.09]
Dehydrosabinaketone	6.13	1115	1.38	8.50†	1560	3.89
cis-para-Mentha-2-en-1-ol	6.19*	1119	0.18	7.99*	1520	0.14
trans-para-Mentha-2,8-dien-1-ol	6.19*	1119	[0.18]	8.80	1584	0.04
Unknown [m/z 81, 67 (86), 79 (74), 109 (69), 41 (45), 91 (29), 77 (29), 123 (29)]	6.25*	1122	0.23	6.42	1402	0.21
α -Campholenal	6.25*	1122	[0.23]	6.87	1435	0.02
Limona ketone	6.32	1127	0.01	7.69	1497	0.01
cis-para-Mentha-2,8-dien-1-ol	6.40	1132	0.03	9.32	1625	0.03
trans-Pinocarveol	6.44	1134	1.51	9.03	1601	1.52
Camphor	6.49	1138	0.14	7.04*†	1448	[0.24]

Unknown [m/z 109, 124 (45), 119 (41), 43 (35), 91 (28), 95 (25)...]	6.58	1144	0.01	6.71	1424	0.01
para-Vinylanisole	6.66	1149	0.04	9.21	1616	0.05
Unknown [m/z 67, 81 (99), 79 (78), 109 (67), 41 (47), 77 (31), 91 (29)... 121 (22), 123 (20)... 152 (5)]	6.72*	1152	0.80	7.04*†	1448	[0.24]
Sabinaketone	6.72*	1152	[0.80]	8.57*	1566	1.81
Pinocarvone	6.79†	1157	0.67	7.76	1502	0.56
Unknown [m/z 123, 81 (46), 43 (45), 95 (34), 166 (30)]	6.80†	1158	[0.67]	8.82	1585	0.10
Borneol	6.88	1163	0.09	9.64*	1651	0.63
δ-Terpineol	6.92	1166	0.02	9.27	1621	0.01
Isopinocampone	6.96	1168	0.08	7.47*	1481	0.44
cis-Sabinol	6.99	1170	0.06	10.69†	1739	0.36
Terpinen-4-ol	7.10	1177	8.22	8.46	1557	8.19
Thuj-3-en-10-al	7.16	1181	1.26	8.57*	1566	[1.81]
para-Cymen-8-ol	7.20	1184	0.06	11.37	1797	0.05
trans-Isocarveol	7.25	1187	0.10	10.78	1746	0.10
α-Terpineol	7.29	1190	0.37	9.64*	1651	[0.63]
Myrtenal	7.32	1192	2.50	8.53†	1563	[3.89]
cis-Piperitol	7.36*	1194	0.57	9.40*	1632	0.06
para-Mentha-1,5-dien-7-ol	7.36*	1194	[0.57]	10.88*	1755	0.28
Myrtenol	7.36*	1194	[0.57]	10.71†	1740	[0.36]
cis-α-Phellandrene epoxide (iPr vs Me)	7.43	1198	0.06	10.88*	1755	[0.28]
cis-para-Menth-2-en-7-ol?	7.52	1204	0.05	10.46	1718	0.09
trans-Piperitol	7.55	1206	0.08	10.23*	1699	0.14
Unknown [m/z 107, 79 (99), 91 (57), 94 (54), 135 (44), 150 (44)]	7.65	1213	0.07			
cis-Isopiperitenol	7.71	1217	0.02	10.17	1694	0.02
trans-Carveol	7.72	1218	0.05	11.24	1785	0.04
Unknown [m/z 43, 97 (72), 41 (44), 71 (27), 55 (26), 82 (25)...]	7.78	1222	0.01			
cis-para-Mentha-1(7),8-dien-2-ol	7.85	1227	0.08	11.81*	1835	0.15
cis-Isocarveol	7.90	1230	0.01	11.81*	1835	[0.15]
cis-Carveol	7.93	1232	0.04	11.57	1814	0.02
Cuminal	7.98	1236	0.92	10.36	1711	0.93
Carvone	8.05	1241	0.04	9.84	1667	0.06
Carvotanacetone	8.10	1244	0.01	9.30	1624	0.03
Unknown [m/z 43, 82 (79), 109 (69), 110 (65), 95 (38), 41 (36)...]	8.20	1250	0.03			

Unknown [m/z 95, 43 (53), 137 (48), 109 (38), 77 (34), 41 (21)...]	8.26	1254	0.02			
Unknown [m/z 69, 41 (75), 109 (35), 95 (34), 55 (28), 43 (27), 110 (26)...]	8.31	1258	0.02			
Methyl citronellate	8.39	1264	0.01	8.11*	1529	2.44
trans-Ascaridole glycol	8.45	1268	0.02	13.99	2037	0.02
Phellandral	8.50	1271	0.14	9.79*	1663	0.62
Unknown [m/z 192, 93 (97), 177 (57), 121 (57), 91 (48), 136 (48)...]	8.60	1278	0.04			
α-Terpinen-7-al	8.63	1280	0.10	10.56	1727	0.08
Bornyl acetate	8.73	1287	2.47	8.11*	1529	[2.44]
Cuminol	8.79	1291	0.16	14.01	2039	0.13
para-Cymen-7-ol	8.85	1295	0.01	13.97	2035	0.02
Perilla alcohol	8.90	1298	0.02	13.08	1950	0.03
Thymol	8.92	1300	0.04	14.95	2131	0.03
Unknown [m/z 43, 107 (52), 67 (34), 41 (42), 55 (27), 58 (26), 95 (21)...]	9.01	1306	0.08			
Unknown [m/z 79, 91 (65), 77 (63), 55 (43)...]	9.20	1315	0.03			
Unknown [m/z 97, 112 (92), 83 (62), 43 (44), 41 (25)... 170? (4)]	9.27	1320	0.03	14.81	2116	0.07
Myrtenyl acetate	9.30	1322	0.07	9.43	1634	0.08
1,4-para-Menthadien-7-ol	9.34	1325	0.25	13.57†	1997	[0.30]
Unknown [m/z 93, 121 (67), 91 (62), 105 (56), 120 (56), 79 (47), 41 (47)...]	9.48	1335	0.06	10.31	1706	0.07
α-Cubebene	9.66	1347	0.02	6.65*	1420	[0.04]
Neryl acetate	9.92	1366	0.01	10.00*	1680	0.28
α-Copaene	10.01	1372	0.05	7.01†	1446	0.24
Unknown [m/z 91, 106 (67), 43 (56), 79 (32)...]	10.09	1378	0.04			
β-Bourbonene	10.12	1380	0.01	7.35	1471	0.02
Geranyl acetate	10.18	1384	0.04	10.40	1714	0.04
β-Cubebene	10.22	1387	0.01	7.64	1493	0.01
β-Elementene	10.25	1389	0.09	8.30*	1544	0.10
α-Gurjunene	10.47*	1405	0.38	7.47*	1481	[0.44]
Sesquithujene	10.47*	1405	[0.38]	7.99*	1520	[0.14]
β-Caryophyllene	10.58	1413	0.04	8.26	1542	0.04
trans-α-Bergamotene	10.89	1436	0.03	8.30*	1544	[0.10]
cis-β-Bergamotene?	10.95	1441	0.03			

<i>trans</i> -Muurolo-3,5-diene	11.01	1445	0.03	8.75	1579	0.01
α -Humulene	11.04	1447	0.11	9.13	1609	0.11
allo-Aromadendrene	11.14	1455	0.36	8.85	1588	0.39
(<i>E</i>)- β -Farnesene	11.19	1458	0.03	9.40*	1632	[0.06]
γ -Gurjunene	11.31	1467	0.05	9.00	1599	0.05
Eudesma-2,4,11-triene	11.34	1470	0.14	10.00*	1680	[0.28]
Germacrene D	11.42	1476	0.04	9.64*	1651	[0.63]
β -Selinene	11.50	1481	3.72	9.73	1658	3.66
Eudesma-3,5,11-triene	11.55	1486	0.04	10.08	1687	0.09
α -Selinene	11.61*	1490	0.63	9.79*	1663	[0.62]
epi-Cubebol	11.61*	1490	[0.63]	11.81*	1835	[0.15]
Unknown [m/z 69, 41 (88), 95 (27), 79 (20)... 191 (16)...]	11.66	1494	0.10			
Eudesma-2,4(15),11-triene	11.70	1497	0.02	10.91	1758	0.01
α -Muurolole	11.73	1499	0.03	9.88	1670	0.04
β -Bisabolene	11.84†	1507	0.30	10.00*	1680	[0.28]
γ -Cadinene	11.86†	1509	[0.30]	10.23*	1699	[0.14]
Shyobunone	11.88†	1510	[0.30]	11.90	1843	0.06
δ -Cadinene	12.00*	1520	0.16	10.26	1702	0.16
<i>trans</i> -Calamenene	12.00*	1520	[0.16]	11.07	1771	0.01
<i>trans</i> -Cadina-1,4-diene	12.10	1528	0.03	10.51	1723	0.03
α -Calacorene	12.22	1537	0.02	11.94	1847	0.02
(<i>E</i>)- α -Bisabolene	12.29	1542	0.02	10.62	1733	0.05
Germacrene B	12.38	1550	0.10	10.95	1760	0.02
Palustrol	12.52	1560	0.17	12.11	1862	0.17
Caryophyllene oxide	12.67*	1572	0.02	12.60	1906	0.01
Caryophyllene oxide isomer	12.67*	1572	[0.02]	12.52	1899	0.02
Unknown [m/z 106, 119 (66), 134 (51), 91 (41), 79 (32)... 218? (2)]	12.77	1580	0.01	12.81*	1926	0.03
Gleenol	12.79	1582	0.02	13.42	1982	0.02
Viridiflorol	12.82	1584	0.02	13.83	2021	0.06
Unknown [m/z 106, 119 (63), 134 (54), 91 (45), 79 (35), 105 (22)... 218? (3)]	12.90	1590	0.03	12.81*	1926	[0.03]
Guaio	12.93	1593	0.01	13.92	2030	0.05
Ledol	12.96	1595	0.08	13.20	1962	0.07
Eudesm-5-en-11-ol	13.02*	1600	0.84	14.21	2058	0.76
Unknown [m/z 205, 43 (38), 41 (25), 91 (24), 79 (24), 93 (23)... 220 (12)]	13.02*	1600	[0.84]	13.03	1946	0.02
Unknown [m/z 43, 81 (81), 109 (68), 41 (68),	13.09	1606	0.04	14.34	2070	0.02

67 (64), 135 (63), 161 (62)... 204 (50), 208 (50)... 236 (12)]						
Unknown [m/z 106, 119 (85), 91 (66), 93 (47), 79 (46), 134 (41)... 218 (15)]	13.11	1607	0.01	13.24	1965	0.01
Unknown [m/z 59, 161 (84), 149 (55), 81 (52), 123 (46), 107 (44)... 204 (18)...]	13.14	1610	0.06	14.46	2082	0.07
Unknown [m/z 106, 119 (64), 134 (51), 91 (39), 79 (27), 105 (23), 92 (22)... 218? (3)]	13.29	1622	0.02	13.45	1985	0.02
Caryophylladienol II	13.37	1628	0.03	15.90	2227	0.02
Cubenol	13.46	1636	0.02	13.55†	1994	0.30
β-Eudesmol	13.53	1642	0.03	15.18	2154	0.02
Unknown [m/z 41, 91 (96), 79 (88), 69 (82), 123 (80), 93 (80)... 220 (8)]	13.58	1646	0.01	17.26	2372	0.02
Unknown [m/z 109, 108 (8), 175 (67), 93 (63), 55 (53), 95 (51)... 220 (t)]	13.70	1656	0.01	14.68	2103	0.03
Unknown [m/z 126, 111 (45), 43 (32), 123 (17), 109 (16), 55 (15)...]	13.85	1669	0.01			
Unknown [m/z 107, 91 (95), 93 (87), 79 (86), 105 (78), 41 (76), 95 (72)... 220 (18)]	13.90*	1672	0.05	16.62	2303	0.04
Unknown [m/z 91, 121 (98), 79 (94), 93 (90), 105 (81), 81 (74)... 218 (24)]	13.90*	1672	[0.05]	15.06	2142	0.02
Unknown [m/z 107, 67 (94), 55 (86), 109 (84), 81 (84), 41 (77)... 220 (61)]	14.04	1684	0.01	15.15	2150	0.01
Germacone	14.07	1686	0.06	15.02	2138	0.08
Unknown [m/z 81, 67 (99), 55 (98), 107 (96), 109 (94), 41 (88), 93 (84), 95 (78), 220 (71)]	14.39	1714	0.06	15.61	2197	0.07
Unknown [m/z 175, 162 (45), 91 (43), 105 (35), 41 (27), 133 (24), 119 (23)... 218 (11)]	14.60	1731	0.06	15.52	2188	0.04
Cyclocolorenone	14.78	1747	0.59	16.33	2272	0.59

Eudesma-3,11-dien-2-one	15.12	1777	0.17	17.55	2403	0.18
Unknown [m/z 126, 111 (20), 41 (16), 55 (12), 69 (10)... 236? (t)]	15.77	1834	0.03	18.18	2474	0.03
Geranyl-para-cymene	17.05	1954	0.01			
Unknown [m/z 134, 119 (34), 91 (14), 135 (12), 105 (12), 284 (10)...]	19.22	2169	0.01			
α-Pinene oxide analog?				5.31	1321	0.01
Total identified	95.56%			96.53%		
Total reported	98.59%			97.74%		

*: 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