

Date : 2024-02-27

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 24B13-PTH03

Customer Identification : Black Spruce - Canada - SA5110R

Type : Essential Oil

Source : *Picea mariana*

Customer : Plant Therapy

Checked and approved by:

Alexis St-Gelais, Ph. D., Chimiste 2013-174

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GAS CHROMATOGRAPHIC ANALYSIS

Method : PC-MAT-014 - Analysis of the composition of an essential oil or other volatile liquide by FAST GC-FID

***ISO**

Results : See analysis summary (next page)

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

Date : 2024-02-21

PHYSICOCHEMICAL DATA

Refractive index : 1.4704 ± 0.0003 (20 °C)

Method : PC-MAT-016 - Measure of the refractive index of a liquid.

Analyst : Cindy Caron B. Sc.

Date : 2024-02-15

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	0.01	Furan
Isovaleral	tr	Aliphatic aldehyde
2-Ethylfuran	tr	Furan
Toluene	0.01	Simple phenolic
Hexanal	0.01	Aliphatic aldehyde
Octane	tr	Alkane
Unknown	tr	Alkene
(2E)-Hexenal	tr	Aliphatic aldehyde
(3Z)-Hexenol	0.05	Aliphatic alcohol
Hexanol	0.02	Aliphatic alcohol
Santene	3.13	Normonoterpene
Styrene	0.01	Simple phenolic
2-Heptanone	tr	Aliphatic ketone
Unknown	0.04	Normonoterpene
Bornylene	tr	Monoterpene
Unknown	0.01	Unknown
Tricyclene	1.99	Monoterpene
α -Thujene	0.18	Monoterpene
α -Pinene	14.92	Monoterpene
α -Fenchene	0.09	Monoterpene
Camphene	18.63	Monoterpene
Thuja-2,4(10)-diene	0.03	Monoterpene
Benzaldehyde	0.01	Simple phenolic
3,7,7-Trimethylcyclohepta-1,3,5-triene	0.04	Monoterpene
Sabinene	0.11	Monoterpene
β -Pinene	4.29	Monoterpene
Octan-3-one	0.01	Aliphatic ketone
6-Methyl-5-hepten-2-one	tr	Aliphatic ketone
Dehydro-1,8-cineole	0.01	Monoterpenic ether
Myrcene	3.90	Monoterpene
2-Pentylfuran	0.01	Furan
2-Carene	0.02	Monoterpene
Pseudolimonene	0.01	Monoterpene
Octanal	0.01	Aliphatic aldehyde
α -Phellandrene	0.46	Monoterpene
Unknown	0.04	Oxygenated monoterpene
(3Z)-Hexenyl acetate	0.02	Aliphatic ester
Δ 3-Carene	7.83	Monoterpene
α -Terpinene	0.30	Monoterpene
(2E)-Butenylbenzene?	0.01	Simple phenolic

<i>meta</i> -Cymene	0.02	Monoterpene
Carvomenthene	0.01	Aliphatic alcohol
<i>para</i> -Cymene	0.24	Monoterpene
1,8-Cineole	0.60	Monoterpenic ether
β -Phellandrene	1.24	Monoterpene
Limonene	3.45	Monoterpene
(<i>Z</i>)- β -Ocimene	0.03	Monoterpene
(<i>E</i>)- β -Ocimene	0.02	Monoterpene
γ -Terpinene	0.28	Monoterpene
Unknown	0.07	Oxygenated monoterpene
Unknown	0.01	Unknown
<i>meta</i> -Cymenene	0.02	Monoterpene
Fenchone	0.01	Monoterpenic ketone
Isoterpinolene	0.05	Monoterpene
γ -Campholenal	0.10	Aliphatic alcohol
Terpinolene	1.10	Monoterpene
<i>para</i> -Cymenene	0.11	Monoterpene
α -Pinene oxide	0.02	Monoterpenic ether
2-Nonanone	0.01	Aliphatic ketone
Unknown	0.01	Unknown
Nonanal	0.01	Aliphatic aldehyde
Linalool	0.35	Monoterpenic alcohol
endo-Fenchol	0.05	Monoterpenic alcohol
3-Methyl-3-butenyl isovalerate	0.01	Aliphatic ester
<i>cis-para</i> -Menth-2-en-1-ol	0.05	Monoterpenic alcohol
α -Campholenal	0.17	Monoterpenic aldehyde
Cosmene isomer I	0.01	Monoterpene
<i>trans</i> -Pinocarveol	0.11	Monoterpenic alcohol
Camphor	0.11	Monoterpenic ketone
<i>trans-para</i> -Menth-2-en-1-ol	0.03	Monoterpenic alcohol
Isopulegol	0.01	Monoterpenic alcohol
Camphene hydrate	0.45	Monoterpenic alcohol
Isoborneol	0.05	Monoterpenic alcohol
Citronellal	0.06	Monoterpenic aldehyde
Pinocamphone	0.02	Monoterpenic ketone
Pinocarvone	0.02	Monoterpenic ketone
Borneol	0.82	Monoterpenic alcohol
Unknown	0.06	Unknown
Isopinocamphone	0.03	Monoterpenic ketone
Terpinen-4-ol	0.34	Monoterpenic alcohol
Cryptone	0.02	Normonoterpenic ketone
<i>meta</i> -Cymen-8-ol	0.02	Monoterpenic alcohol
<i>para</i> -Cymen-8-ol	0.05	Monoterpenic alcohol
α -Terpineol	0.68	Monoterpenic alcohol
Myrtenal	0.01	Monoterpenic aldehyde

Myrtenol	0.03	Monoterpenic alcohol
Methylchavicol	0.01	Phenylpropanoid
Verbenone	0.03	Monoterpenic ketone
Unknown	0.08	Unknown
<i>trans</i> -Piperitol	0.02	Monoterpenic alcohol
endo-Fenchyl acetate	0.31	Monoterpenic ester
<i>trans</i> -Carveol	0.04	Monoterpenic alcohol
<i>cis</i> -Isocarveol	0.01	Monoterpenic alcohol
Citronellol	0.13	Monoterpenic alcohol
Carvone	0.02	Monoterpenic ketone
Unknown	0.01	Unknown
Unknown	0.02	Oxygenated monoterpene
Piperitone	0.04	Monoterpenic ketone
Geraniol	0.03	Monoterpenic alcohol
Geranial	0.02	Monoterpenic aldehyde
Unknown	0.04	Unknown
Undec-(5Z)-en-2-one	0.07	Aliphatic ketone
Isobornyl acetate	0.69	Monoterpenic ester
Bornyl acetate	24.59	Monoterpenic ester
<i>cis</i> -Verbenyl acetate	0.18	Monoterpenic ester
Unknown	0.27	Unknown
<i>trans</i> -Verbenyl acetate	0.07	Monoterpenic ester
<i>cis</i> -Linalool oxide acetate (pyr.)	0.01	Monoterpenic ester
Unknown	0.17	Monoterpenic ester
<i>trans</i> -Pinocarvyl acetate	0.16	Monoterpenic ester
Car-3-en-5-one	0.01	Monoterpenic ketone
Myrtenyl acetate	0.02	Monoterpenic ester
Terpinyl acetate analog	0.09	Monoterpenic ester
<i>trans</i> -Carvyl acetate	0.05	Monoterpenic ester
exo-2-Hydroxycineole acetate	0.06	Monoterpenic ester
Unknown	0.04	Unknown
α -Longipinene	0.01	Sesquiterpene
α -Terpinyl acetate	0.08	Monoterpenic ester
α -Cubebene	0.01	Sesquiterpene
Citronellyl acetate	0.10	Monoterpenic ester
Longicyclene	0.02	Sesquiterpene
Unknown	0.03	Oxygenated monoterpene
α -Copaene	0.04	Sesquiterpene
β -Bourbonene	0.01	Sesquiterpene
Geranyl acetate	0.23	Monoterpenic ester
Unknown	0.02	Sesquiterpene
β -Elemene	0.09	Sesquiterpene
Longifolene	0.13	Sesquiterpene
Methyleugenol	0.01	Phenylpropanoid
β -Caryophyllene	0.26	Sesquiterpene

β-Copaene	0.02	Sesquiterpene
cis-Muuroala-3,5-diene	0.02	Sesquiterpene
trans-Muuroala-3,5-diene	0.04	Sesquiterpene
α-Humulene	0.06	Sesquiterpene
cis-Muuroala-4(15),5-diene	0.10	Sesquiterpene
γ-Gurjunene	0.01	Sesquiterpene
Selina-4,11-diene	0.04	Sesquiterpene
trans-Cadina-1(6),4-diene	0.05	Sesquiterpene
γ-Muurolene	0.13	Sesquiterpene
Germacrene D	0.08	Sesquiterpene
Dodecanol	0.03	Aliphatic alcohol
β-Selinene	0.03	Sesquiterpene
trans-Muuroala-4(15),5-diene	0.01	Sesquiterpene
γ-Amorphene	0.04	Sesquiterpene
α-Selinene	0.06	Sesquiterpene
Germacrene A	0.03	Sesquiterpene
(3Z,6E)-α-Farnesene	0.02	Sesquiterpene
α-Muurolene	0.29	Sesquiterpene
Cubebol	0.01	Sesquiterpenic alcohol
(3E,6E)-α-Farnesene	0.09	Sesquiterpene
γ-Cadinene	0.29	Sesquiterpene
β-Bisabolene	0.01	Sesquiterpene
Zonarene	0.08	Sesquiterpene
δ-Cadinene	1.17	Sesquiterpene
trans-Calamenene	0.07	Sesquiterpene
trans-Cadina-1,4-diene	0.04	Sesquiterpene
α-Cadinene	0.07	Sesquiterpene
α-Calacorene	0.02	Sesquiterpene
(E)-α-Bisabolene	0.17	Sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
(E)-Nerolidol	0.03	Sesquiterpenic alcohol
Germacrene D-4-ol	0.01	Sesquiterpenic alcohol
Caryophyllene oxide	0.01	Sesquiterpenic ether
Globulol	0.01	Sesquiterpenic alcohol
β-Oplophenone	0.01	Sesquiterpenic ketone
1,10-diepi-Cubenol	0.02	Sesquiterpenic alcohol
Unknown	0.02	Unknown
1-epi-Cubenol	0.03	Sesquiterpenic alcohol
τ-Cadinol	0.11	Sesquiterpenic alcohol
τ-Muurolol	0.10	Sesquiterpenic alcohol
α-Muurolol	0.04	Sesquiterpenic alcohol
α-Cadinol	0.21	Sesquiterpenic alcohol
cis-Calamenen-10-ol	0.01	Sesquiterpenic alcohol
Unknown	0.01	Aliphatic ester

<i>trans</i> -Calamene-10-ol	0.01	Sesquiterpenic alcohol
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
(1,8Z,11Z,14Z)-Heptadecatetraene	0.02	Alkene
(8Z)-Heptadecene	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	0.04	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
<i>meta</i> -Camphorene	0.01	Diterpene
Unknown	0.01	Oxygenated diterpene
<i>para</i> -Camphorene	0.01	Diterpene
(Z)-Abienol	0.01	Diterpenic alcohol
Palustral	0.01	Diterpenic aldehyde
Consolidated total	99.49	

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

Note: no correction factor was applied

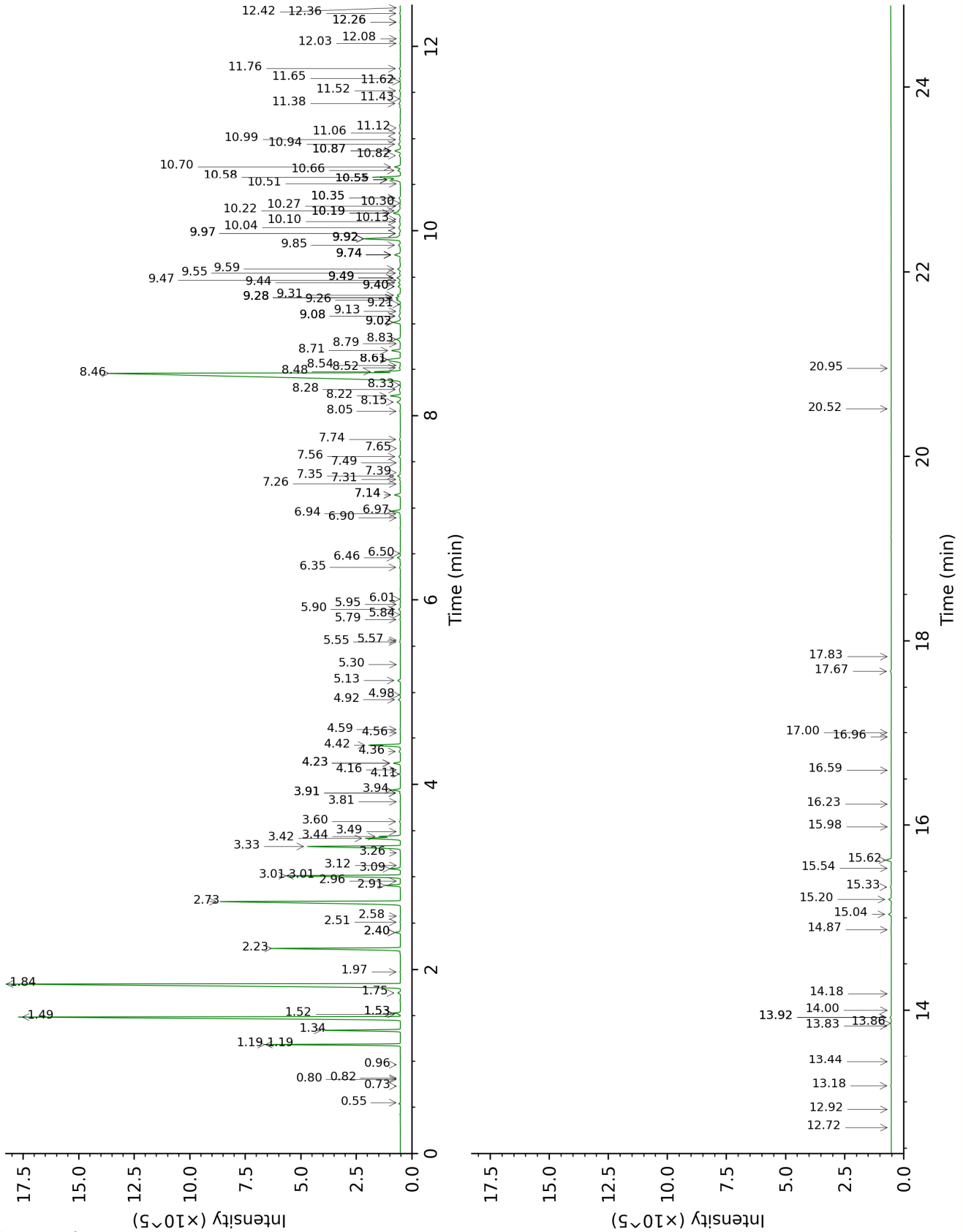
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

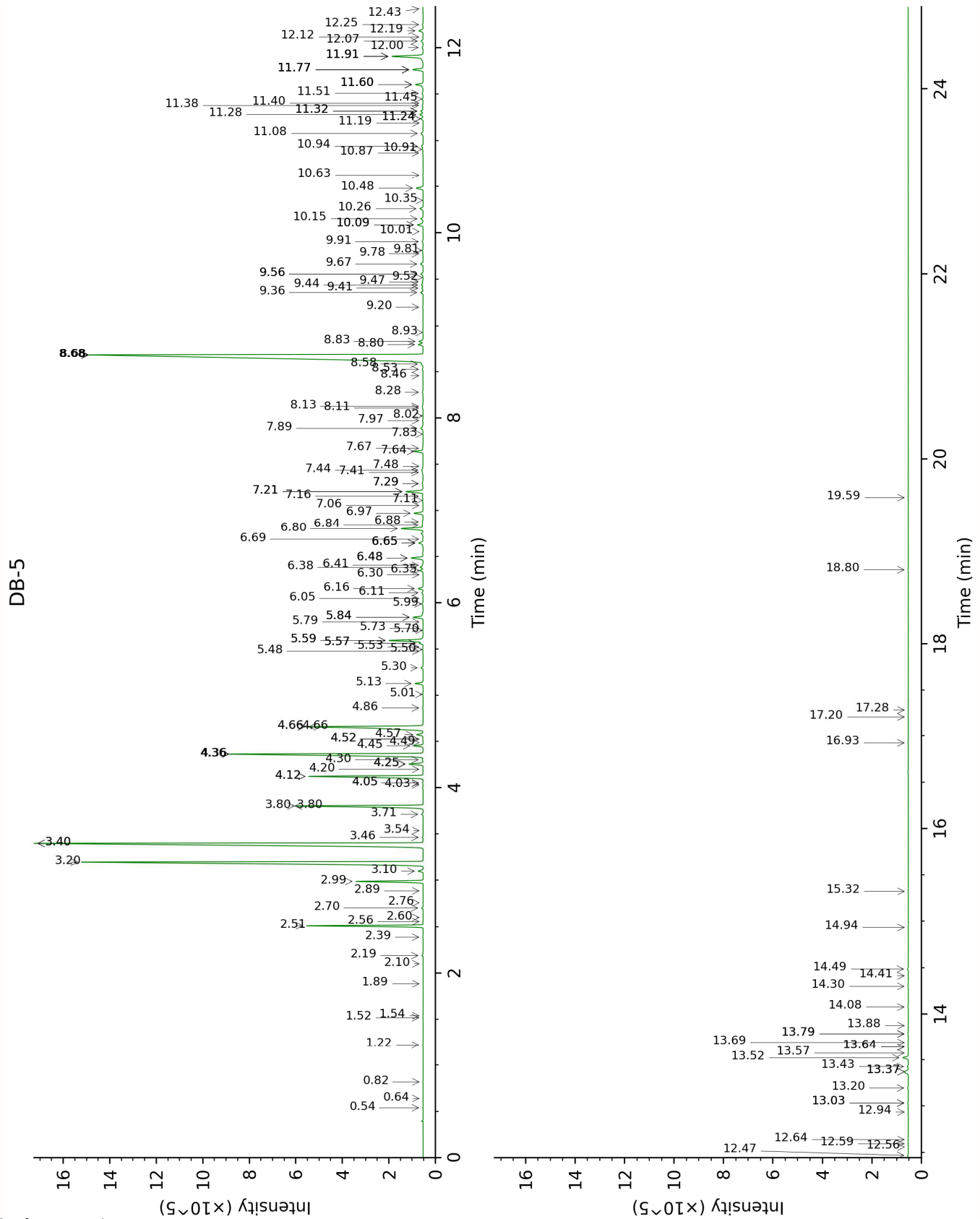
Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

Bracketed value ([xx]): A bracketed percent value indicate that two or more compound percentage could not be solved due to coelution.

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DB-WAX





FULL ANALYSIS DATA

3-Methylfuran	Column DB-WAX			Column DB-5		
	0.73	856.1	tr	0.54	607.0	0.01
Isovaleral	0.82	884.8	tr	0.64	640.9	tr
2-Ethylfuran	0.96	917.4	tr	0.82	701.1	tr
Toluene	1.52	1000.3	0.03	1.22	759.3	0.01
Hexanal	1.97	1044.5	0.01	1.52	800.0	0.01
Octane	0.55	785.4	tr	1.54	803.0	tr
Unknown BOCA I [m/z 109, 67 (32), 81 (14), 41 (12), 124 (10)]	0.80	880.1	tr	1.89	832.3	tr
(2E)-Hexenal	3.49	1171.3	0.01	2.10	850.0	tr
(3Z)-Hexenol	5.90	1344.9	0.07	2.19	857.3	0.05
Hexanol	5.55	1319.5	0.02	2.39	873.5	0.02
Santene	1.19*	951.1	[3.14]	2.51	883.6	3.13
Styrene	3.91*†	1203.1	[0.03]	2.56	887.3	0.01
2-Heptanone	3.12	1143.4	tr	2.60	890.9	tr
Unknown ABBA I [m/z 79, 93 (66), 94 (52), 91 (39), 77 (37), 122 (31)]	1.53*	1002.2	[0.20]	2.70	899.3	0.04
Bornylene	1.19*	951.1	[3.14]	2.76	904.0	tr
Unknown PIMA XXI [m/z 43, 59 (71), 44 (40), 85 (30), 41 (28), 45 (27)...]				2.89	912.7	0.01
Tricyclene	1.34	974.1	1.99	2.99	919.4	1.99
α-Thujene	1.53*	1002.2	[0.20]	3.10	926.7	0.18
α-Pinene	1.49	995.8	14.91	3.20	933.1	14.92
α-Fenchene	1.75	1023.0	0.09	3.40*	946.4	[18.74]
Camphene	1.84	1032.0	18.63	3.40*	946.4	[18.74]
Thuja-2,4(10)-diene	2.40*	1084.7	[0.15]	3.46	950.7	0.03
Benzaldehyde	7.49	1461.7	0.01	3.54	955.4	0.01
3,7,7- Trimethylcyclohepta- 1,3,5-triene	3.01*	1134.9	[3.96]	3.71	967.0	0.04
Sabinene	2.40*	1084.7	[0.15]	3.80*	972.9	[4.40]
β-Pinene	2.23	1068.5	4.29	3.80*	972.9	[4.40]
Octan-3-one	4.16	1221.0	tr	4.03	988.0	0.01
6-Methyl-5-hepten- 2-one	5.30	1301.9	tr	4.05*	989.2	[0.02]
Dehydro-1,8-cineole	3.26	1153.7	0.01	4.05*	989.2	[0.02]
Myrcene	3.01*	1134.9	[3.96]	4.12*	993.9	[3.91]
2-Pentylfuran	3.81	1195.9	0.01	4.12*	993.9	[3.91]

2-Carene	2.51	1095.3	0.01	4.20	999.0	0.02
Pseudolimonene	2.96	1130.5	0.01	4.26*	1002.7	[0.48]
Octanal	4.59	1252.4	0.01	4.26*	1002.7	[0.48]
α -Phellandrene	2.91	1126.9	0.46	4.26*	1002.7	[0.48]
Unknown PIMA 12 [m/z 109, 81 (35), 43 (34), 69 (33), 67 (29), 152 (29)]	3.60	1179.5	0.03	4.30	1005.8	0.04
(3Z)-Hexenyl acetate	4.98	1279.9	0.02	4.36*	1009.6	[7.85]
Δ^3 -Carene	2.73	1113.6	7.83	4.36*	1009.6	[7.85]
α -Terpinene	3.09	1140.6	0.29	4.45	1015.1	0.30
(2E)- Butenylbenzene?	4.56	1249.7	0.01	4.49	1017.3	0.01
<i>meta</i> -Cymene	4.23*	1226.2	[0.24]	4.52*	1019.7	[0.03]
Carvomenthene	2.58	1101.5	0.01	4.52*	1019.7	[0.03]
<i>para</i> -Cymene	4.23*	1226.2	[0.24]	4.57	1022.6	0.24
1,8-Cineole	3.44	1167.2	0.60	4.66*	1028.0	[5.28]
β -Phellandrene	3.42	1165.7	1.24	4.66*	1028.0	[5.28]
Limonene	3.33	1159.0	3.45	4.66*	1028.0	[5.28]
(Z)- β -Ocimene	3.91*†	1203.1	[0.03]	4.86	1040.6	0.03
(E)- β -Ocimene	4.11	1217.8	0.03	5.01	1050.3	0.02
γ -Terpinene	3.94*†	1205.4	[0.27]	5.13	1057.6	0.28
Unknown PIMA 1 [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)]	4.92	1276.1	0.07	5.30	1068.2	0.07
Unknown PIMA 2 [m/z 94, 79 (74), 67 (33), 41 (22), 95 (21)...]				5.48	1079.4	0.01
<i>meta</i> -Cymenene	6.35	1377.6	0.04	5.50	1080.5	0.02
Fenchone	5.84	1340.8	0.01	5.53	1082.3	0.01
Isoterpinolene	4.36	1235.3	0.05	5.56*†	1084.7	[0.12]
γ -Campholenal	5.13	1291.1	0.10	5.56*†	1084.7	[0.12]
Terpinolene	4.42	1240.2	1.10	5.60*†	1086.6	[1.24]
<i>para</i> -Cymenene	6.46	1385.2	0.11	5.60*†	1086.6	[1.24]
α -Pinene oxide	5.57	1320.8	0.01	5.70	1093.4	0.02
2-Nonanone	5.95	1348.8	0.01	5.73	1094.8	0.01
Unknown PIMA 3 [m/z 79, 94 (87), 77 (25), 91 (21), 93 (16), 95 (12), 138 (8)]				5.80	1099.1	0.01
Nonanal	6.01	1352.9	0.01	5.84*	1102.3	[0.40]
Linalool	8.22	1516.2	0.35	5.84*	1102.3	[0.40]

endo-Fenchol	8.52	1539.7	0.04	5.99	1111.4	0.05
3-Methyl-3-butenyl isovalerate	5.79	1336.9	0.02	6.05	1115.1	0.01
<i>cis-para</i> -Menth-2-en- 1-ol	8.28	1521.5	0.07	6.11	1119.0	0.05
α -Campholenal	7.14*	1435.8	[0.23]	6.16	1122.0	0.17
Cosmene isomer I	6.50	1388.5	0.01	6.30	1131.5	0.01
<i>trans</i> -Pinocarveol	9.31	1601.1	0.11	6.35	1134.3	0.11
Camphor	7.35	1451.0	0.10	6.38	1136.5	0.11
<i>trans-para</i> -Menth-2- en-1-ol	9.14	1587.7	0.03	6.41	1138.0	0.03
Isopulegol	8.33	1525.3	0.01	6.48*	1142.9	[0.45]
Camphene hydrate	8.61*	1546.6	[0.76]	6.48*	1142.9	[0.45]
Isoborneol	9.50*	1616.3	[0.14]	6.65*	1153.3	[0.19]
Citronellal	7.14*	1435.8	[0.23]	6.65*	1153.3	[0.19]
Pinocamphone	7.39	1453.8	0.02	6.65*	1153.3	[0.19]
Pinocarvone	8.05	1503.3	0.01	6.69	1155.9	0.02
Borneol	9.92*	1650.5	[1.50]	6.80	1163.3	0.82
Unknown PIMA 4 [m/z 109, 108 (48), 67 (41), 81 (40), 41 (28)...]	7.56	1466.7	0.06	6.84	1165.8	0.06
Isopinocamphone	7.74	1480.5	0.04	6.88	1168.2	0.03
Terpinen-4-ol	8.71	1554.8	0.33	6.97	1174.2	0.34
Cryptone	9.28*	1599.0	[0.17]	7.06	1179.6	0.02
<i>meta</i> -Cymen-8-ol	11.62	1793.0	0.02	7.11	1183.0	0.02
<i>para</i> -Cymen-8-ol	11.65	1795.9	0.04	7.16	1185.9	0.05
α -Terpineol	9.92*	1650.5	[1.50]	7.21*	1189.1	[0.68]
Myrtenal	8.79	1560.6	0.01	7.21*	1189.1	[0.68]
Myrtenol	10.99	1739.7	0.03	7.29*	1194.6	[0.07]
Methylchavicol	9.47	1614.2	0.01	7.29*	1194.6	[0.07]
Verbenone	9.74*	1636.4	[0.27]	7.41	1202.3	0.03
Unknown PIMA 7 [m/z 95, 93 (32), 121 (24), 79 (22), 91 (21), 105 (16)... 154 (2)]	11.06	1745.7	0.06	7.44	1203.8	0.08
<i>trans</i> -Piperitol	10.51	1698.6	0.01	7.48	1206.6	0.02
endo-Fenchyl acetate	6.97	1422.7	0.32	7.64	1217.3	0.31
<i>trans</i> -Carveol	11.52	1784.5	0.04	7.68	1219.6	0.04
<i>cis</i> -Isocarveol	12.08	1833.6	tr	7.83	1229.8	0.01
Citronellol	10.87*	1729.4	[0.25]	7.89	1233.9	0.13
Carvone	10.13	1667.6	0.02	7.97	1239.5	0.02
Unknown PIMA XXV [m/z 41, 44 (99), 69				8.02	1242.9	0.01

(73), 108 (50), 93 (44), 119 (37)...]						
Unknown BODA V [m/z 109, 119 (84), 91 (81), 134 (55)... 137 (27)...]	11.43	1777.1	0.03	8.11	1248.6	0.02
Piperitone	10.04	1660.2	0.10	8.13	1249.8	0.04
Geraniol	11.76	1805.0	0.04	8.28	1259.9	0.03
Geranial	10.27	1679.1	0.03	8.46	1271.9	0.02
Unknown PIMA 5 [m/z 43, 119 (72), 81 (66), 54 (48), 41 (47), 58 (44)...]				8.53	1276.5	0.04
Undec-(5Z)-en-2-one	9.08*	1583.7	[0.08]	8.58	1280.3	0.07
Isobornyl acetate	8.48	1536.5	0.69	8.68*	1286.8	[25.66]
Bornyl acetate	8.46	1535.1	24.59	8.68*	1286.8	[25.66]
<i>cis</i> -Verbenyl acetate	8.83	1564.2	0.18	8.68*	1286.8	[25.66]
Unknown PIMA 13 [m/z 119, 43 (87), 91 (78), 92 (70), 134 (50)...]	9.02*	1578.4	[0.31]	8.68*	1286.8	[25.66]
<i>trans</i> -Verbenyl acetate	9.44	1612.0	0.07	8.68*	1286.8	[25.66]
<i>cis</i> -Linalool oxide acetate (pyr.)	9.21	1593.5	0.01	8.68*	1286.8	[25.66]
Unknown PIMA 6 [m/z 107, 43 (76), 150 (42), 91 (28), 108 (23)]	9.28*	1599.0	[0.17]	8.80	1294.8	0.17
<i>trans</i> -Pinocarvyl acetate	9.26	1597.1	0.15	8.83	1297.0	0.16
Car-3-en-5-one	12.26*	1849.6	[0.02]	8.93	1303.5	0.01
Myrtenyl acetate	9.74*	1636.4	[0.27]	9.20	1322.5	0.02
Terpinyl acetate analog	9.74*	1636.4	[0.27]	9.36	1333.6	0.09
<i>trans</i> -Carvyl acetate	10.35*	1686.2	[0.07]	9.41	1336.9	0.05
exo-2- Hydroxycineole acetate	10.22	1675.0	0.09	9.44	1339.3	0.06
Unknown CIAU VI [m/z 133, 105 (45), 91 (38), 119 (36)... 150 (3)]				9.47	1341.6	0.04
α -Longipinene	6.94	1420.6	0.02	9.52	1344.9	0.01
α -Terpinyl acetate	9.85	1644.9	0.08	9.56*	1347.5	[0.09]

α -Cubebene	6.90	1417.3	0.01	9.56*	1347.5	[0.09]
Citronellyl acetate	9.59	1624.0	0.12	9.67	1355.2	0.10
Longicyclene	7.26	1444.6	0.02	9.78	1363.0	0.02
Unknown PIMA 8 [m/z 93, 121 (68), 43 (67), 67 (44), 136 (36), 107 (34)... 180 (4)]	10.19*	1673.0	[0.32]	9.81	1365.5	0.03
α -Copaene	7.31	1448.2	0.03	9.91	1372.1	0.04
β -Bourbonene	7.65	1473.2	0.01	10.01	1379.7	0.01
Geranyl acetate	10.70	1714.5	0.23	10.09*	1384.8	[0.24]
Unknown PIMA XIV [m/z 119, 91 (24), 134 (24), 43 (16)... 204 (2)]	11.12	1750.4	0.02	10.09*	1384.8	[0.24]
β -Elemene	8.61*	1546.6	[0.76]	10.15	1389.4	0.09
Longifolene	8.15	1511.0	0.15	10.26	1397.0	0.13
Methyleugenol	13.44	1956.1	0.01	10.35	1403.3	0.01
β -Caryophyllene	8.61*	1546.6	[0.76]	10.48	1413.0	0.26
β -Copaene	8.54	1541.8	0.01	10.63	1423.8	0.02
<i>cis</i> -Muurolo-3,5- diene	9.08*	1583.7	[0.08]	10.87	1441.7	0.02
<i>trans</i> -Muurolo-3,5- diene	9.02*	1578.4	[0.31]	10.91	1444.7	0.04
α -Humulene	9.40*	1608.8	[0.09]	10.94	1447.1	0.06
<i>cis</i> -Muurolo-4(15),5- diene	9.50*	1616.3	[0.14]	11.08	1457.4	0.10
γ -Gurjunene	9.28*	1599.0	[0.17]	11.19	1465.7	0.01
Selina-4,11-diene	9.55	1620.4	0.04	11.24*	1469.2	[0.09]
<i>trans</i> -Cadina-1(6),4- diene	9.40*	1608.8	[0.09]	11.24*	1469.2	[0.09]
γ -Muurolole	9.74*	1636.4	[0.27]	11.28	1472.5	0.13
Germacrene D	9.92*	1650.5	[1.50]	11.32*	1475.3	[0.11]
Dodecanol	13.18	1932.0	0.03	11.32*	1475.3	[0.11]
β -Selinene	9.97*	1655.1	[0.05]	11.38	1479.8	0.03
<i>trans</i> -Muurolo- 4(15),5-diene	9.97*	1655.1	[0.05]	11.40	1481.6	0.01
γ -Amorphene	9.92*	1650.5	[1.50]	11.45	1485.0	0.04
α -Selinene	10.10	1665.6	0.04	11.51	1489.6	0.06
Germacrene A	10.55*	1702.2	[0.41]	11.60*	1496.6	[0.34]
(3 <i>Z</i> ,6 <i>E</i>)- α -Farnesene	10.35*	1686.2	[0.07]	11.60*	1496.6	[0.34]
α -Muurolole	10.19*	1673.0	[0.32]	11.60*	1496.6	[0.34]
Cubebol	12.72	1890.6	0.01	11.76*	1508.7	[0.40]
(3 <i>E</i> ,6 <i>E</i>)- α -Farnesene	10.66	1711.3	0.09	11.76*	1508.7	[0.40]
γ -Cadinene	10.55*	1702.2	[0.41]	11.76*	1508.7	[0.40]
β -Bisabolene	10.30	1681.6	0.01	11.76*	1508.7	[0.40]
Zonarene	10.55*	1702.2	[0.41]	11.91*	1520.0	[1.32]

δ -Cadinene	10.58*	1705.0	[1.18]	11.91*	1520.0	[1.32]
<i>trans</i> -Calamenene	11.38	1772.8	0.07	11.91*	1520.0	[1.32]
<i>trans</i> -Cadina-1,4-diene	10.82	1725.0	0.04	12.00	1527.5	0.04
α -Cadinene	10.94	1735.4	0.09	12.07	1532.8	0.07
α -Calacorene	12.26*	1849.6	[0.02]	12.12	1536.4	0.02
(<i>E</i>)- α -Bisabolene	10.87*	1729.4	[0.25]	12.18	1541.7	0.17
Unknown PIMA XV [m/z 95, 81 (70), 109 (68), 93 (59), 67 (53), 41 (49), 139 (40)... 220 (3)]	12.36	1857.9	0.03	12.25	1546.8	0.03
Unknown LESC I [m/z 93, 135 (99), 107 (72), 177 (72), 81 (57), 149 (53)... 220 (25)]	12.42	1863.5	0.02	12.43	1560.8	0.01
(<i>E</i>)-Nerolidol	13.92*	2001.0	[0.05]	12.47	1563.7	0.03
Germacrene D-4-ol	13.83	1992.5	0.02	12.56	1570.9	0.01
Caryophyllene oxide	12.92	1908.2	0.01	12.59	1573.7	0.01
Globulol	14.00	2008.4	0.01	12.64	1577.2	0.01
β -Oplophenone ?				12.94	1600.5	0.01
1,10-diepi-Cubenol	13.86	1995.1	0.02	13.03*	1608.3	[0.03]
Unknown PIMA 10 [m/z 108, 43 (56), 109 (33), 93 (26), 119 (24)... 212 (2)]	14.87	2092.2	0.02	13.03*	1608.3	[0.03]
1-epi-Cubenol	13.92*	2001.0	[0.05]	13.20	1621.7	0.03
τ -Cadinol	15.04	2108.6	0.11	13.37*	1636.2	[0.23]
τ -Muurolol	15.20	2124.6	0.10	13.37*	1636.2	[0.23]
α -Muurolol	15.33	2138.1	0.03	13.43	1640.9	0.04
α -Cadinol	15.62	2167.2	0.21	13.52	1648.7	0.21
<i>cis</i> -Calamenen-10-ol	16.60	2266.9	0.01	13.57	1653.0	0.01
Unknown HULU VI [m/z 79, 43 (66), 67 (59), 80 (56), 41 (41), 81 (37), 55 (29)...]	14.18	2025.6	0.01	13.64*	1658.5	[0.01]
<i>trans</i> -Calamenen-10-ol	16.96	2304.6	0.01	13.64*	1658.5	[0.01]
Unknown LESC IV [m/z 159, 177 (59), 135 (57), 91 (47), 105 (47)... 220? (25)]				13.69	1662.8	0.01
Unknown PIMA XVI [m/z 177, 159 (98), 93 (94), 136 (84), 121				13.79*	1670.4	[0.02]

(68), 135 (65), 91 (57)... 220 (23)] (1,8Z,11Z,14Z)- Heptadecatetraene	12.03	1829.1	0.02	13.79*	1670.4	[0.02]
(8Z)-Heptadecene	10.58*	1705.0	[1.18]	13.88	1677.8	0.01
Amorpha-4,9-dien-2- ol	17.00	2309.5	0.02	14.08	1694.4	0.02
(5Z)-Tetradecen-14- olide?				14.30	1713.2	0.02
Unknown PIMA XVII [m/z 159, 220 (92), 93 (88), 177 (63), 91 (57), 107 (55)]	17.83	2399.1	0.01	14.41	1723.0	0.01
Unknown PIMA 11 [m/z 159, 132 (79), 135 (37), 91 (35), 177 (33)... 220 (16)]	17.67	2381.9	0.04	14.49	1729.4	0.04
Unknown PIMA XIX [m/z 43, 147 (93), 159 (76), 187 (76), 81 (64), 93 (56), 121 (56), 220 (51)]				14.94	1768.3	0.01
Unknown PIMA XXVIII [m/z 43, 162 (93), 119 (77), 159 (65), 93 (65), 147 (57)...220 (28)]				15.32	1802.0	0.01
<i>meta</i> -Camphorene	15.54	2158.5	0.02	16.93	1949.4	0.01
Unknown PISI V [m/z 105, 91 (100), 81 (89), 79 (86), 109 (86), 257 (83)... 275 (12)...]	16.23	2228.9	0.02	17.20	1975.8	0.01
<i>para</i> -Camphorene	15.98	2203.4	0.01	17.28	1982.9	0.01
(Z)-Abienol	20.52	2710.2	0.01	18.80	2133.9	0.01
Palustral	20.96	2764.2	0.01	19.58	2215.7	0.01
Total reported		99.13%			99.49%	

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, only the first one is 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