Date : 2026-06-08

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 26D20-PTH04
Customer Identification : Thyme Linalool - Bulgaria - TL0111
Type : Essential Oil
Source : *Thymus vulgaris ct. Linalool*
Customer : Plant Therapy

Checked an approved by:

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

Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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. The compliance status of the sample is provided to facilitate the reading of the report. The client remains ultimately responsible for reviewing the results presented within this report and to establish compliance of the tested batch against relevant quality criteria.

This report is an update of the version first issued on 2026-04-22 to make a correction in the sample identification section.

Méthode certifiée ISO 17025:2017 Certified method

Laboratoire PhytoChemia

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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 : Jean-Christophe Fortin, M. Sc.
Date : 2026-04-22

Physicochemical data

Refractive index : 1.4665 ± 0.0003 (20 °C)
Method : PC-MAT-016 - Measure of the refractive index of a liquid.
Analyst : Cindy Caron B. Sc.
Date : 2026-04-21

Conclusion

No adulterant, contaminant or diluent has been detected using this method.

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Analysis Summary - Consolidated Contents

New readers of similar reports are encouraged to read table footnotes at least once.

Identification	%	Class
Hashishene	0.01	Monoterpene
Tricyclene	0.03	Monoterpene
α-Thujene	1.40	Monoterpene
α-Pinene	1.08	Monoterpene
Camphene	0.58	Monoterpene
Unknown	0.01	Monoterpene
Thuja-2,4(10)-diene	0.03	Monoterpene
Sabinene	0.19	Monoterpene
β-Pinene	0.25	Monoterpene
Unknown	0.04	Monoterpene
Octen-3-ol	0.07	Aliphatic alcohol
Octan-3-one	0.02	Aliphatic ketone
Myrcene	2.72	Monoterpene
Octan-3-ol	0.02	Aliphatic alcohol
Pseudolimonene	0.14	Monoterpene
α-Phellandrene	0.08	Monoterpene
Δ3-Carene	0.04	Monoterpene
α-Terpinene	1.59	Monoterpene
para-Cymene	2.16	Monoterpene
β-Phellandrene	0.12	Monoterpene
Limonene	0.64	Monoterpene
1,8-Cineole	1.10	Monoterpenic ether
(*Z*)-β-Ocimene	0.06	Monoterpene
(*E*)-β-Ocimene	0.18	Monoterpene
γ-Terpinene	3.80	Monoterpene
cis-Sabinene hydrate	0.51	Monoterpenic alcohol
cis-Linalool oxide (fur.)	0.16	Monoterpenic alcohol
trans-Linalool oxide (fur.)	0.16	Monoterpenic alcohol
Terpinolene	0.16	Monoterpene
para-Cymenene	0.03	Monoterpene
trans-Sabinene hydrate	0.03	Monoterpenic alcohol
Linalool	70.27	Monoterpenic alcohol
Hotrienol	0.05	Monoterpenic alcohol
Unknown	0.04	Oxygenated monoterpene
endo-Fenchol	0.02	Monoterpenic alcohol
cis-para-Menth-2-en-1-ol	0.06	Monoterpenic alcohol
cis-para-Mentha-2,8-dien-1-ol	0.03	Monoterpenic alcohol
trans-Pinocarveol	0.01	Monoterpenic alcohol
Camphor	0.56	Monoterpenic ketone
trans-para-Menth-2-en-1-ol	0.04	Monoterpenic alcohol

trans-Verbenol	0.07	Monoterpenic alcohol
Nerol oxide	0.01	Aliphatic ether
Borneol	1.48	Monoterpenic alcohol
Unknown	0.04	Oxygenated monoterpene
cis-Linalool oxide (pyr.)	0.01	Monoterpenic alcohol
Terpinen-4-ol	5.20	Monoterpenic alcohol
para-Cymen-8-ol	0.02	Monoterpenic alcohol
α-Terpineol	0.85	Monoterpenic alcohol
cis-Dihydrocarvone	0.04	Monoterpenic ketone
cis-Piperitol	0.02	Monoterpenic alcohol
trans-Dihydrocarvone	0.02	Monoterpenic ketone
Verbenone	0.32	Monoterpenic ketone
trans-Piperitol	0.02	Monoterpenic alcohol
trans-Carveol	0.01	Monoterpenic alcohol
Bornyl formate	0.02	Monoterpenic ester
Nerol	0.01	Monoterpenic alcohol
Thymol methyl ether	0.01	Monoterpenic ether
Neral	0.03	Monoterpenic aldehyde
Carvacrol methyl ether	0.08	Monoterpenic ether
Linalyl acetate	0.02	Monoterpenic ester
Geraniol	0.04	Monoterpenic alcohol
Unknown	0.03	Unknown
Geranial	0.01	Monoterpenic aldehyde
2,6-Dimethyl-1,7-octadiene-3,6-diol	0.02	Monoterpenic alcohol
Bornyl acetate	0.09	Monoterpenic ester
Thymol	0.49	Monoterpenic alcohol
Carvacrol	0.91	Monoterpenic alcohol
Unknown	0.01	Monoterpenic alcohol
α-Terpinyl acetate	0.03	Monoterpenic ester
Eugenol	0.01	Phenylpropanoid
α-Copaene	0.04	Sesquiterpene
Bornyl propionate	0.03	Monoterpenic ester
β-Bourbonene	0.01	Sesquiterpene
α-Gurjunene	0.01	Sesquiterpene
β-Caryophyllene	0.49	Sesquiterpene
Aromadendrene	0.05	Sesquiterpene
α-Humulene	0.03	Sesquiterpene
allo-Aromadendrene	0.02	Sesquiterpene
γ-Muurolene	0.01	Sesquiterpene
Germacrene D	0.02	Sesquiterpene
Bicyclogermacrene	0.04	Sesquiterpene
Viridiflorene	0.04	Sesquiterpene
α-Muurolene	0.02	Sesquiterpene
γ-Cadinene	0.01	Sesquiterpene
β-Bisabolene	0.11	Sesquiterpene

δ-Cadinene	0.06	Sesquiterpene
α-Elemol	0.02	Sesquiterpenic alcohol
Spathulenol	0.04	Sesquiterpenic alcohol
Caryophyllene oxide	0.06	Sesquiterpenic ether
Isospathulenol	0.01	Sesquiterpenic alcohol
τ-Cadinol	0.02	Sesquiterpenic alcohol
α-Cadinol	0.01	Sesquiterpenic alcohol
α-Bisabolol	0.02	Sesquiterpenic alcohol
meta-Camphorene	0.02	Diterpene
Consolidated total	**99.61**	

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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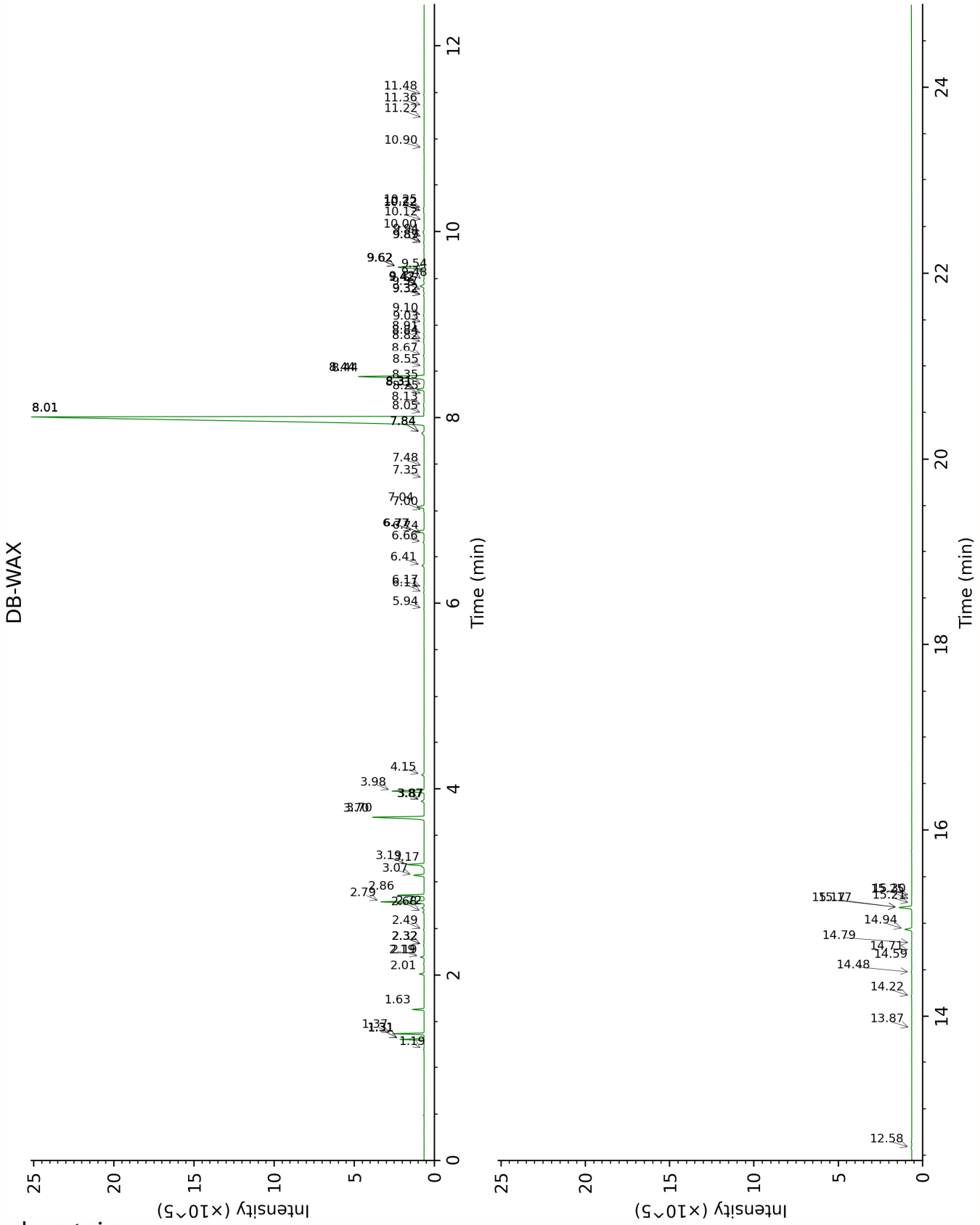
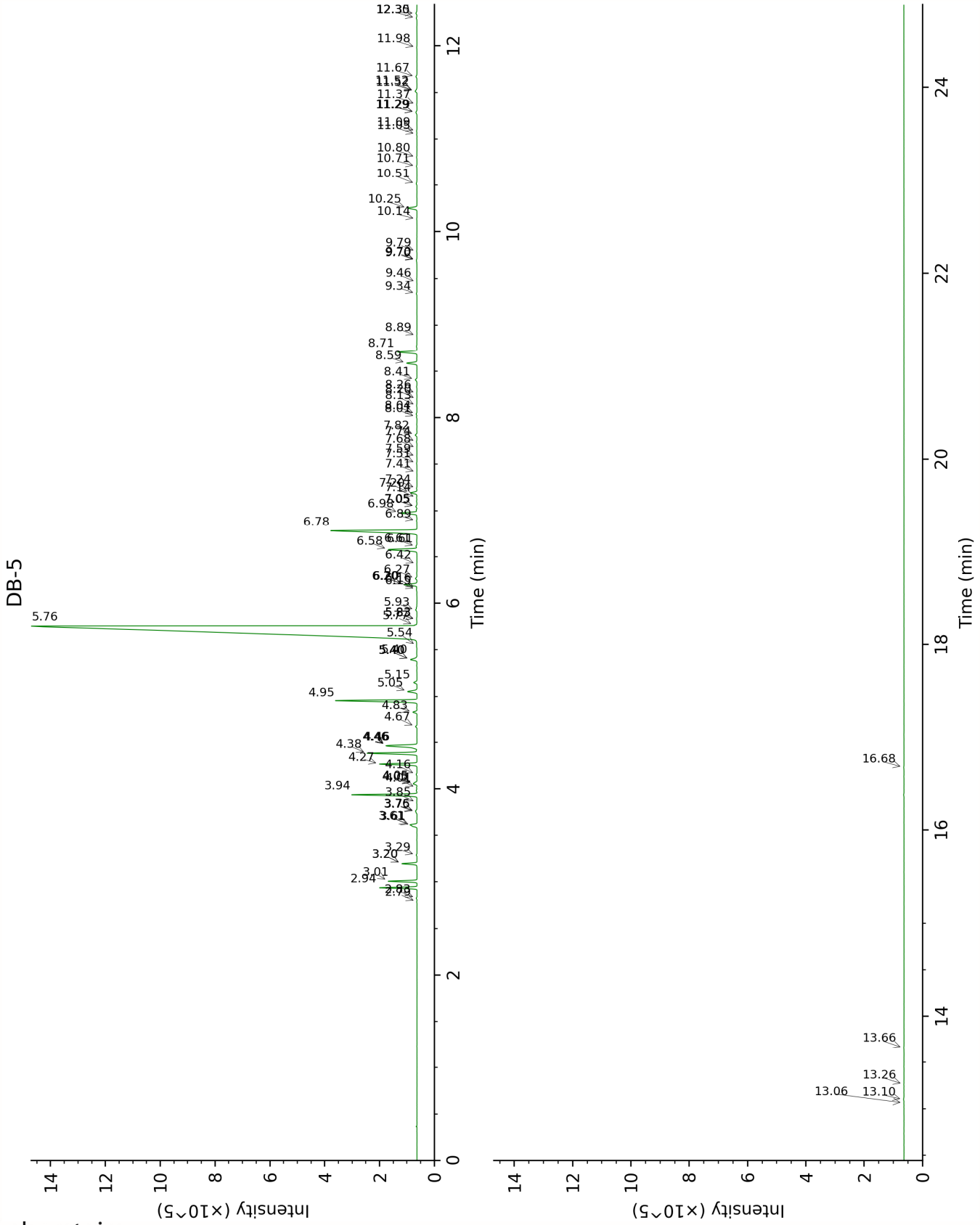

DB-WAX
Time (min)
Intensity (×10^5)
8.01
11.48
11.36
11.22
10.90
9.62
9.54
9.10
9.03
8.67
8.55
8.44
8.35
8.13
8.05
7.84
7.48
7.35
7.04
7.00
6.66
6.41
6.17
5.94
4.15
3.98
3.87
3.70
3.19
3.17
3.07
2.86
2.75
2.49
2.32
2.01
1.63
1.37
1.31
1.19
15.29
15.23
15.17
14.94
14.79
14.71
14.59
14.48
14.22
13.87
12.58



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FULL ANALYSIS DATA

	Column DB-WAX			Column DB-5		
Hashishene	1.31*	991.9	[1.07]	2.79	916.3	0.01
Tricyclene	1.19	973.1	0.03	2.83	918.9	0.03
α-Thujene	1.37	1001.7	1.38	2.94	926.5	1.40
α-Pinene	1.31*	991.9	[1.07]	3.01	931.2	1.08
Camphene	1.63	1029.3	0.58	3.20*	943.8	[0.60]
Unknown SAOF I [m/z 91, 92 (47), 65 (11)... 134 (1)]	2.32*	1097.3	[0.03]	3.20*	943.8	[0.60]
Thuja-2,4(10)-diene	2.20*	1084.6	[0.20]	3.29	950.1	0.03
Sabinene	2.20*	1084.6	[0.20]	3.61†	971.3	0.18
β-Pinene	2.01	1066.7	0.25	3.61†	971.8	0.27
Unknown ORVU I [m/z 93, 79 (73), 67 (49), 95 (42), 91 (41), 121 (38)...]	2.32*	1097.3	[0.03]	3.76	981.3	0.04
Octen-3-ol	6.66	1420.6	0.07	3.76	981.8	0.07
Octan-3-one	3.87*	1219.8	[0.19]	3.85	988.0	0.02
Myrcene	2.79	1135.6	2.68	3.94	993.6	2.72
Octan-3-ol	5.94	1367.9	0.02	4.01	998.7	0.02
Pseudolimonene	2.72	1130.4	0.14	4.06*	1001.5	[0.23]
α-Phellandrene	2.68	1127.0	0.08	4.06*	1001.5	[0.23]
Δ3-Carene	2.49	1112.0	0.03	4.16	1008.2	0.04
α-Terpinene	2.86	1141.1	1.57	4.27	1015.2	1.59
para-Cymene	3.98	1227.8	2.15	4.38	1022.6	2.16
β-Phellandrene	3.16	1165.1	0.12	4.46*	1027.7	[1.85]
Limonene	3.07	1157.9	0.64	4.46*	1027.7	[1.85]
1,8-Cineole	3.19	1167.0	1.10	4.46*	1027.7	[1.85]
(*Z*)-β-Ocimene	3.70*	1207.1	[3.82]	4.67	1040.7	0.06
(*E*)-β-Ocimene	3.87*	1219.8	[0.19]	4.82	1050.7	0.18
γ-Terpinene	3.70*	1207.1	[3.82]	4.95	1058.5	3.80
cis-Sabinene hydrate	6.77*	1429.4	[0.70]	5.05	1065.2	0.51
cis-Linalool oxide (fur.)	6.41	1401.8	0.16	5.15	1071.4	0.16
trans-Linalool oxide (fur.)	6.77*	1429.4	[0.70]	5.40*	1087.1	[0.36]
Terpinolene	4.15	1240.6	0.16	5.40*	1087.1	[0.36]
para-Cymenene	6.17	1384.8	0.03	5.40*	1087.1	[0.36]
trans-Sabinene hydrate	7.84*	1509.6	[0.24]	5.54	1096.6	0.03
Linalool	8.01*	1523.3	[70.06]	5.76	1110.1	70.27
Hotrienol	8.67	1575.0	0.06	5.77	1110.8	0.05

Unknown SASC I [m/z 41, 67 (75), 69 (59), 79 (55), 81 (44), 71 (41)... 150 (5)]	6.11	1380.5	0.04	5.83*	1114.8	[0.02]
endo-Fenchol	8.25	1542.1	0.02	5.83*	1114.8	[0.02]
cis-para-Menth-2-en-1-ol	8.01*	1523.3	[70.06]	5.93	1121.4	0.06
cis-para-Mentha-2,8-dien-1-ol	9.32*	1627.1	[0.04]	6.15	1135.6	0.03
trans-Pinocarveol	9.03	1603.5	0.01	6.16	1136.7	0.01
Camphor	7.04	1449.8	0.56	6.20*	1139.1	[0.61]
trans-para-Menth-2-en-1-ol	8.82	1586.8	0.04	6.20*	1139.1	[0.61]
trans-Verbenol	9.37	1631.5	0.07	6.27	1143.4	0.07
Nerol oxide	6.74	1427.1	0.01	6.42	1153.3	0.01
Borneol	9.62*	1652.0	[2.33]	6.58	1163.7	1.48
Unknown MISC XCIII [m/z 43, 71 (87), 95 (50), 81 (38), 109 (30), 41 (27)...152 (5)]				6.61*	1165.8	[0.05]
cis-Linalool oxide (pyr.)	10.12	1693.1	0.01	6.61*	1165.8	[0.05]
Terpinen-4-ol	8.44*	1557.4	[5.30]	6.78	1177.0	5.20
para-Cymen-8-ol	11.36	1798.6	0.03	6.89	1184.2	0.02
α-Terpineol	9.62*	1652.0	[2.33]	6.98	1189.8	0.85
cis-Dihydrocarvone	8.34	1549.7	0.04	7.05*	1194.2	[0.06]
cis-Piperitol	9.42*	1635.2	[0.33]	7.05*	1194.2	[0.06]
trans-Dihydrocarvone	8.55	1565.7	0.02	7.14	1200.4	0.02
Verbenone	9.42*	1635.2	[0.33]	7.20	1203.9	0.32
trans-Piperitol	10.22*	1700.9	[0.05]	7.24	1207.1	0.02
trans-Carveol	11.22	1787.0	0.01	7.41	1218.7	0.01
Bornyl formate	7.84*	1509.6	[0.24]	7.51	1225.5	0.02
Nerol	10.90	1759.4	0.01	7.59	1230.6	0.01
Thymol methyl ether	8.31*	1546.7	[0.51]	7.68	1236.7	0.01
Neral	9.32*	1627.1	[0.04]	7.74	1241.0	0.03
Carvacrol methyl ether	8.44*	1557.4	[5.30]	7.82	1246.2	0.08
Linalyl acetate	8.05	1526.4	0.04	8.01	1259.6	0.02
Geraniol	11.48	1808.6	0.03	8.04	1261.8	0.04
Unknown THVU				8.13	1268.0	0.03

XV [m/z 82, 109 (35), 135 (22), 127 (19), 54 (16), 43 (14)...]						
Geranial	9.94	1678.1	0.01	8.20	1272.7	0.01
2,6-Dimethyl-1,7-octadiene-3,6-diol	14.48	2087.4	0.03	8.26	1277.0	0.02
Bornyl acetate	8.14	1533.2	0.08	8.41	1287.1	0.09
Thymol	14.94	2132.8	0.48	8.59	1299.4	0.49
Carvacrol	15.17*	2156.6	[0.92]	8.71	1307.7	0.91
Unknown MEAL I [m/z 97, 112 (92), 83 (62), 43 (44), 41 (25)... 170? (4)]	14.79	2118.3	0.01	8.89	1316.7	0.01
α-Terpinyl acetate	9.54	1645.4	0.03	9.34	1348.9	0.03
Eugenol	14.59	2098.3	0.02	9.46	1357.6	0.01
α-Copaene	7.00	1446.5	0.04	9.70*	1374.3	[0.04]
Bornyl propionate	8.91	1593.8	0.03	9.70*	1374.3	[0.04]
β-Bourbonene	7.35	1472.7	0.02	9.79	1380.9	0.01
α-Gurjunene	7.48	1482.4	0.01	10.14	1405.7	0.01
β-Caryophyllene	8.31*	1546.7	[0.51]	10.25	1414.4	0.49
Aromadendrene	8.44*	1557.4	[5.30]	10.51	1434.0	0.05
α-Humulene	9.10	1609.4	0.06	10.71	1448.5	0.03
allo-Aromadendrene	8.84	1588.8	0.04	10.80	1455.8	0.02
γ-Muurolene	9.42*	1635.2	[0.33]	11.05	1474.3	0.01
Germacrene D	9.62*	1652.0	[2.33]	11.09	1476.9	0.02
Bicyclogermacrene	9.89	1673.9	0.04	11.29*	1492.1	[0.07]
Viridiflorene	9.48	1640.2	0.04	11.29*	1492.1	[0.07]
α-Muurolene	9.87	1672.7	0.01	11.37	1498.5	0.02
γ-Cadinene	10.22*	1700.9	[0.05]	11.52*	1509.2	[0.12]
β-Bisabolene	10.00	1683.0	0.11	11.52*	1509.2	[0.12]
δ-Cadinene	10.25	1703.7	0.05	11.67	1521.5	0.06
α-Elemol	13.87	2028.8	0.01	11.98	1546.3	0.02
Spathulenol	14.22	2062.1	0.04	12.30	1571.2	0.04
Caryophyllene oxide	12.58	1907.6	0.06	12.35	1575.3	0.06
Isospathulenol	15.25	2165.0	0.02	13.06	1632.9	0.01
τ-Cadinol	14.71	2110.4	0.03	13.10	1635.9	0.02
α-Cadinol	15.30	2169.5	0.01	13.26	1649.5	0.01
α-Bisabolol	15.21	2160.9	0.02	13.66	1682.4	0.02
meta-Camphorene	15.17*	2156.6	[0.92]	16.68	1952.6	0.02
Total reported		99.28%			99.58%	

*: 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

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