PhytoChemia

Date : 2026-11-18

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 26J09-PTH01
Customer Identification : Organic Thyme Thymol - Hungary - TO0107
Type : Essential Oil
Source : *Thymus vulgaris ct. Thymol*
Customer : Plant Therapy

Checked and 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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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 2026-10-14 to make a modification in the sample identification section.

Méthode certifiée ISO 17025:2017 Certified Method

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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 : 2026-10-13

Physicochemical data

Physical aspect : Faintly yellow liquid
Analyst : Cindy Caron B. Sc.
Date : 2026-10-13

Refractive index : 1.5035 ± 0.0003 (20 °C)
Method : PC-MAT-016 - Measure of the refractive index of a liquid.
Analyst : Cindy Caron B. Sc.
Date : 2026-10-13

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
Isovaleral	tr	Aliphatic aldehyde
2-Methylbutyral	tr	Aliphatic aldehyde
3-Methyl-3-butenol	0.01	Aliphatic alcohol
Methyl 2-methylbutyrate	0.03	Aliphatic ester
(3*Z*)-Hexenol	tr	Aliphatic alcohol
Unknown	0.01	Unknown
Unknown	0.01	Unknown
Tricyclene	0.02	Monoterpene
α-Thujene	0.82	Monoterpene
α-Pinene	1.94	Monoterpene
Camphene	0.50	Monoterpene
Unknown	0.03	Monoterpene
α-Fenchene	0.01	Monoterpene
Unknown	0.02	Monoterpene
Unknown	0.01	Unknown
cis-para-Menthane	0.03	Monoterpene
β-Pinene	1.83	Monoterpene
Sabinene	0.01	Monoterpene
Unknown	0.04	Monoterpene
Octen-3-ol	0.21	Aliphatic alcohol
Octan-3-one	0.02	Aliphatic ketone
trans-para-Menthane	0.04	Monoterpene
6-Methyl-5-hepten-2-one	0.01	Aliphatic ketone
Myrcene	1.81	Monoterpene
Octan-3-ol	0.02	Aliphatic alcohol
α-Phellandrene	0.05	Monoterpene
Pseudolimonene	0.08	Monoterpene
cis-Dehydroxylinalool oxide	0.01	Monoterpenic ether
Δ3-Carene	0.03	Monoterpene
α-Terpinene	1.43	Monoterpene
meta-Cymene	0.01	Monoterpene
para-Cymene	16.40	Monoterpene
β-Phellandrene	0.05	Monoterpene
1,8-Cineole	0.12	Monoterpenic ether
Limonene	1.31	Monoterpene
ortho-Cymene	0.02	Monoterpene

(*Z*)-β-Ocimene	0.01	Monoterpene
(*E*)-β-Ocimene	0.02	Monoterpene
γ-Terpinene	8.43	Monoterpene
cis-Sabinene hydrate	0.06	Monoterpenic alcohol
3-Methyl-3-butenyl butyrate?	0.01	Aliphatic ester
para-Mentha-3,8-diene	0.04	Monoterpene
cis-Linalool oxide (fur.)	0.01	Monoterpenic alcohol
Fenchone	0.02	Monoterpenic ketone
para-Cymenene	0.02	Monoterpene
trans-Linalool oxide (fur.)	tr	Monoterpenic alcohol
Terpinolene	0.04	Monoterpene
trans-Sabinene hydrate	0.02	Monoterpenic alcohol
Linalool	3.66	Monoterpenic alcohol
Nonanal	0.01	Aliphatic aldehyde
endo-Fenchol	0.01	Monoterpenic alcohol
Unknown	tr	Unknown
cis-*para*-Menth-2-en-1-ol	tr	Monoterpenic alcohol
Unknown	0.01	Unknown
Camphor	0.02	Monoterpenic ketone
trans-*para*-Menth-2-en-1-ol	0.01	Monoterpenic alcohol
Camphene hydrate	0.03	Monoterpenic alcohol
trans-Chrysanthemal	0.01	Monoterpenic aldehyde
Menthone	0.03	Monoterpenic ketone
Isoborneol	0.03	Monoterpenic alcohol
Borneol	0.85	Monoterpenic alcohol
Terpinen-4-ol	1.47	Monoterpenic alcohol
para-Cymen-8-ol	0.01	Monoterpenic alcohol
α-Terpineol	0.09	Monoterpenic alcohol
trans-Piperitol	0.01	Monoterpenic alcohol
trans-Carveol	0.01	Monoterpenic alcohol
Bornyl formate	0.01	Monoterpenic ester
Thymol methyl ether	0.11	Monoterpenic ether
Carvacrol methyl ether	0.46	Monoterpenic ether
Geraniol	0.01	Monoterpenic alcohol
Thymol analogue I (isothymol?)	0.14	Monoterpenic alcohol
Thymol analogue II	0.01	Monoterpenic alcohol
Thymol	51.63	Monoterpenic alcohol
Carvacrol	3.00	Monoterpenic alcohol
α-Terpinyl acetate	0.02	Monoterpenic ester
Thymyl acetate	0.01	Monoterpenic ester
Eugenol	0.01	Phenylpropanoid

α-Copaene	0.02	Sesquiterpene
β-Bourbonene	0.02	Sesquiterpene
Isocaryophyllene	0.01	Sesquiterpene
β-Caryophyllene	1.46	Sesquiterpene
Aromadendrene	0.01	Sesquiterpene
Unknown	0.02	Oxygenated monoterpene
trans-Cadina-1(6),4-diene	0.01	Sesquiterpene
γ-Muurolene	0.03	Sesquiterpene
β-Selinene	0.01	Sesquiterpene
Viridiflorene	0.02	Sesquiterpene
α-Muurolene	0.02	Sesquiterpene
γ-Cadinene	0.04	Sesquiterpene
β-Bisabolene	0.02	Sesquiterpene
trans-Calamenene	0.01	Sesquiterpene
δ-Cadinene	0.06	Sesquiterpene
α-Cadinene	0.01	Sesquiterpene
Caryophyllene oxide isomer	0.03	Sesquiterpenic ether
Caryophyllene oxide	0.25	Sesquiterpenic ether
Humulene epoxide II	0.01	Sesquiterpenic ether
(3*Z*)-Caryophylla-3,8(13)-dien-5β-ol	0.03	Sesquiterpenic alcohol
Unknown	0.01	Unknown
Unknown	0.01	Unknown
Unknown	0.04	Unknown
meta-Camphorene	0.02	Diterpene
Unknown	0.01	Unknown
Unknown	0.05	Unknown
Unknown	0.01	Unknown
Unknown	0.02	Unknown
Unknown	0.01	Unknown
Unknown	0.02	Unknown
Unknown	0.01	Unknown
Unknown	0.01	Unknown
Consolidated total	**99.60**	

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

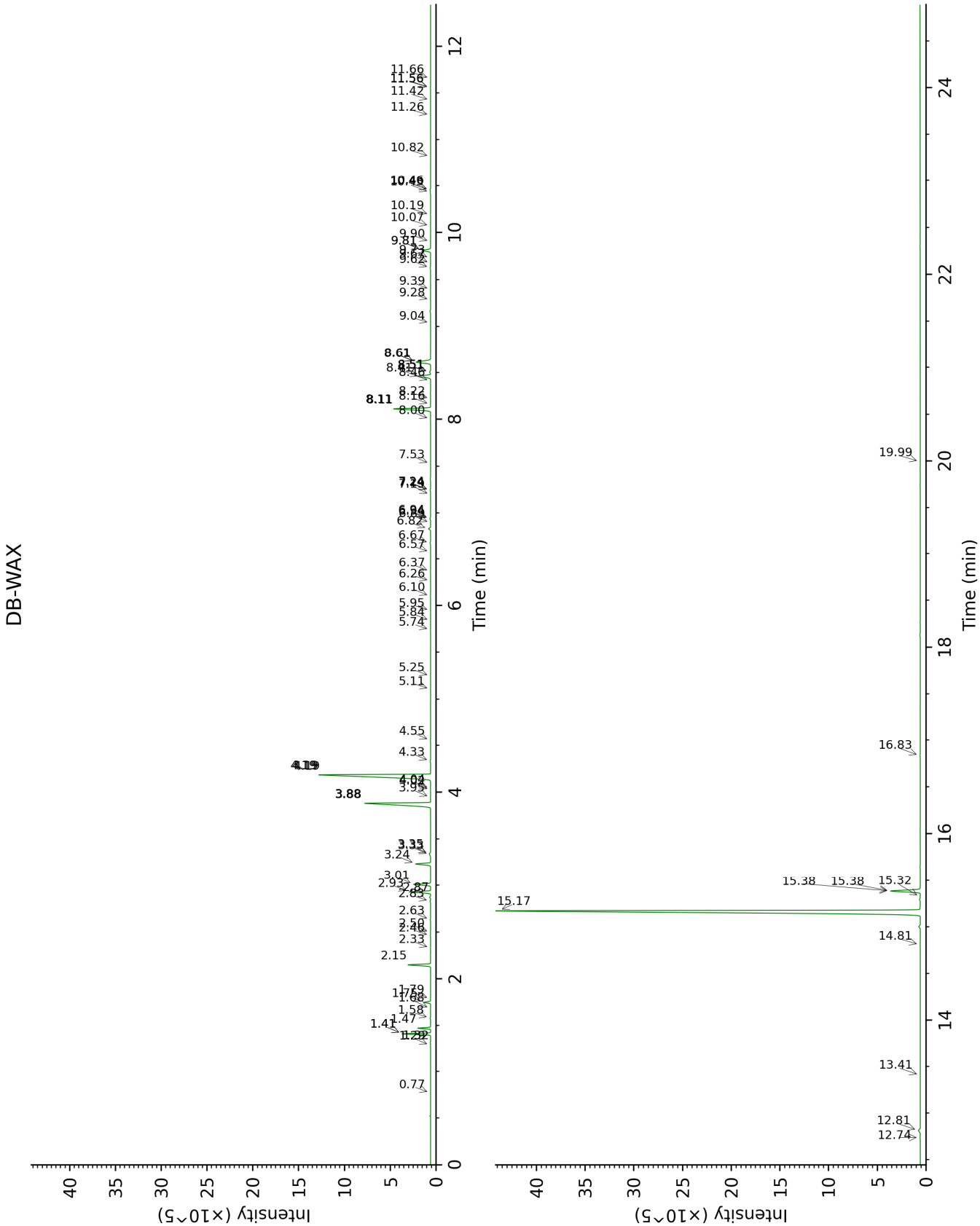
Note: no correction factor was applied

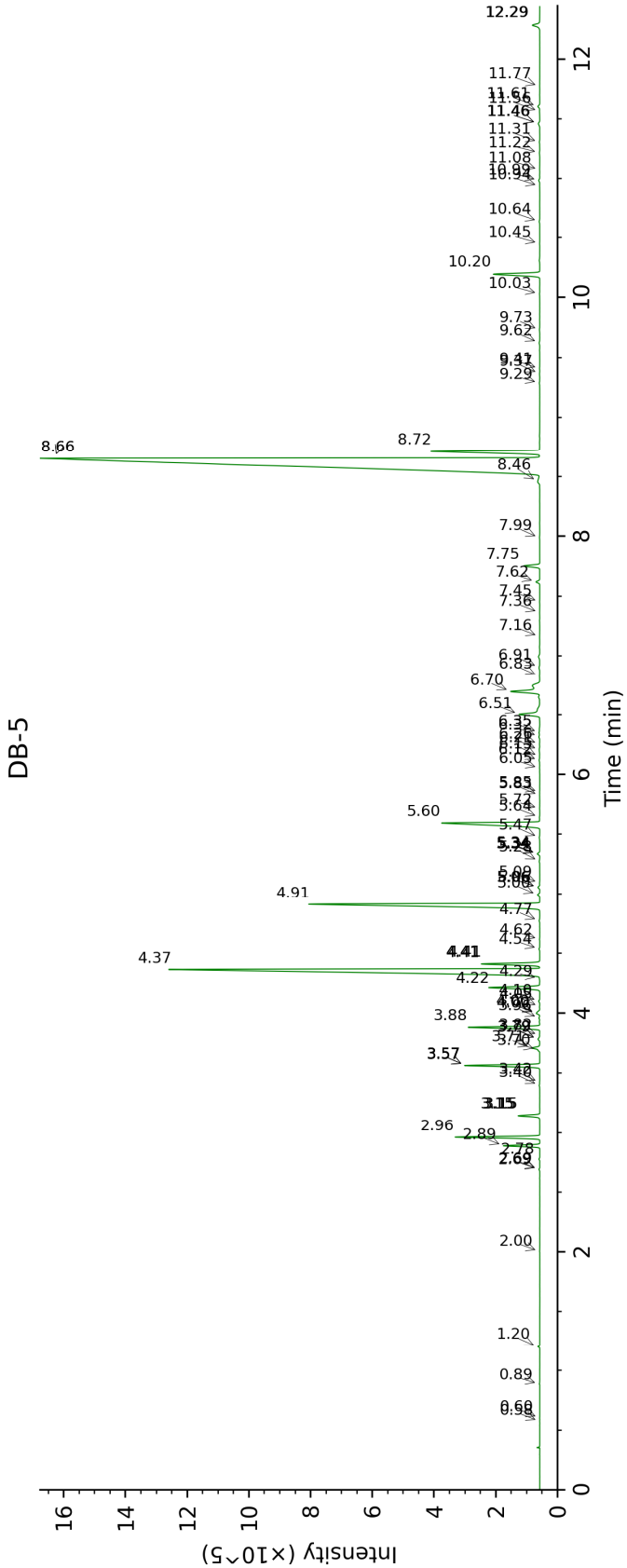
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

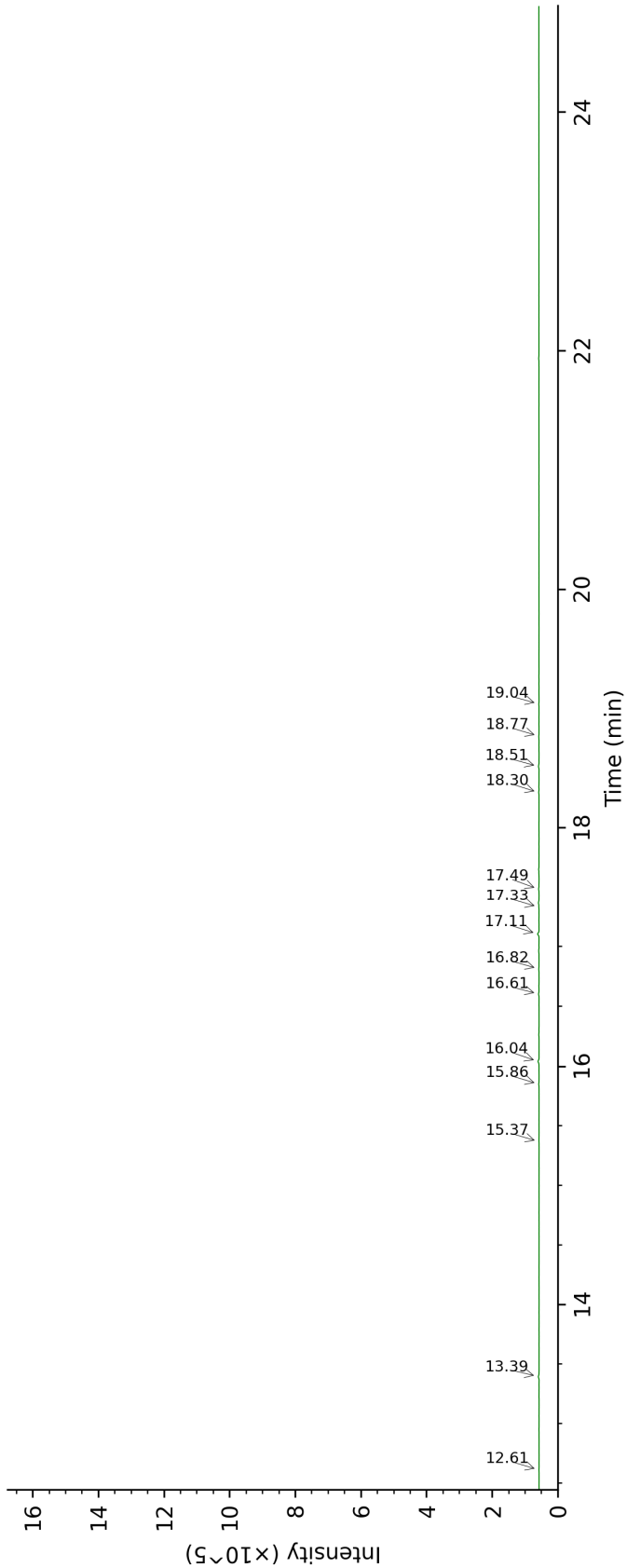
Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

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
Intensity (×10^5)
Time (min)
11.66
11.56
11.42
11.26
10.82
10.19
10.07
9.90
9.81
9.39
9.28
9.04
8.61
8.46
8.22
8.16
8.11
8.00
7.53
6.82
6.67
6.57
6.37
6.26
6.10
5.95
5.84
5.74
5.25
5.11
4.55
4.33
4.19
4.04
3.88
3.24
3.01
2.85
2.63
2.33
2.15
1.58
1.47
1.41
0.77
19.99
16.83
15.38
15.38
15.32
15.17
14.81
13.41
12.81
12.74


DB-5
12.29
11.77
11.46
11.31
11.22
11.08
10.64
10.45
10.20
10.03
9.73
9.62
9.29
8.72
8.66
8.46
7.99
7.75
7.62
7.45
7.36
7.16
6.91
6.83
6.70
6.51
5.60
5.47
4.91
4.77
4.62
4.54
4.41
4.37
4.29
4.22
3.88
3.57
2.96
2.89
2.00
1.20
0.89
Time (min)
Intensity (×10^5)


19.04
18.77
18.51
18.30
17.49
17.33
17.11
16.82
16.61
16.04
15.86
15.37
13.39
12.61
Time (min)
Intensity (×10^5)

Full analysis data

Isovaleral	Column DB-WAX			Column DB-5		
				0.58	643.1	tr
2-Methylbutyral	0.77	879.9	tr	0.60	653.5	tr
3-Methyl-3-butenol	3.95	1212.5	0.01	0.89	728.1	0.01
Methyl 2-methylbutyrate	1.32	976.2	0.03	1.20	775.0	0.03
(3*Z*)-Hexenol	5.84	1348.0	tr	2.00	856.4	tr
Unknown FRAG XC [m/z 69, 93 (91), 41 (88), 79 (22), 40 (20), 91 (17)...]	1.79	1030.1	0.01	2.69*	913.0	[0.02]
Unknown FRAG CXLII [m/z 121, 105 (41), 136 (28), 91 (22), 79 (20), 93 (16), 77 (15), 122 (9), 106 (9)...]				2.69*	913.0	[0.02]
Tricyclene	1.29	971.6	0.02	2.78	918.7	0.02
α-Thujene	1.47	999.7	0.81	2.89	926.2	0.82
α-Pinene	1.41*	991.4	[1.94]	2.96	931.1	1.94
Camphene	1.75	1026.6	0.50	3.15*	943.5	[0.52]
Unknown SAOF I [m/z 91, 92 (47), 65 (11)... 134 (1)]	2.46	1096.5	0.03	3.15*	943.5	[0.52]
α-Fenchene	1.68	1020.0	0.01	3.15*	943.5	[0.52]
Unknown BOSE VIII [m/z 121, 93 (86), 79 (71), 67 (62), 55 (49)... 136 (24)]				3.40	960.6	0.02
Unknown FRAG XCIV [m/z 93, 79 (62), 121 (37), 67 (35), 107 (34), 91 (33)...]				3.42	962.3	0.01
cis-para-	1.41*	991.4	[1.94]	3.57*	971.8	[1.87]

Menthane						
β-Pinene	2.15	1065.8	1.83	3.57*	971.8	[1.87]
Sabinene	2.33	1083.3	0.01	3.57*	971.8	[1.87]
Unknown ORVU I [m/z 93, 79 (73), 67 (49), 95 (42), 91 (41), 121 (38)...]	2.50	1099.2	0.03	3.70	980.6	0.04
Octen-3-ol	6.82	1419.2	0.19	3.71	981.6	0.21
Octan-3-one	4.04	1219.4	0.02	3.79*	986.6	[0.06]
trans-para-Menthane	1.58	1010.1	0.04	3.79*	986.6	[0.06]
6-Methyl-5-hepten-2-one	5.11	1298.7	0.01	3.82	988.9	0.01
Myrcene	2.93	1133.4	1.79	3.88	993.3	1.81
Octan-3-ol	6.10	1366.7	0.02	3.96	998.4	0.02
α-Phellandrene	2.83	1125.4	0.05	4.00*	1001.2	[0.13]
Pseudolimonene	2.87	1128.7	0.08	4.00*	1001.2	[0.13]
cis-Dehydroxylinalool oxide	3.88*	1207.9	[8.38]	4.06	1004.7	0.01
Δ3-Carene	2.63	1110.0	0.03	4.10	1007.7	0.03
α-Terpinene	3.01	1139.8	1.42	4.22	1014.9	1.43
meta-Cymene	4.19*	1230.3	[16.41]	4.29	1019.8	0.01
para-Cymene	4.19*	1230.3	[16.41]	4.37	1024.5	16.40
β-Phellandrene	3.33	1165.0	0.05	4.41*	1027.4	[1.49]
1,8-Cineole	3.34	1166.0	0.12	4.41*	1027.4	[1.49]
Limonene	3.24	1157.5	1.31	4.41*	1027.4	[1.49]
ortho-Cymene	4.55	1257.4	0.02	4.54	1035.4	0.02
(*Z*)-β-Ocimene	3.88*	1207.9	[8.38]	4.62	1040.4	0.01
(*E*)-β-Ocimene	4.02	1218.1	0.02	4.77	1050.3	0.02
γ-Terpinene	3.88*	1207.9	[8.38]	4.91	1059.2	8.43
cis-Sabinene hydrate	6.94*	1427.9	[0.07]	5.00	1064.5	0.06
3-Methyl-3-butenyl butyrate?	5.25	1305.5	0.01	5.06*	1068.4	[0.05]
para-Mentha-3,8-diene	4.19*	1230.3	[16.41]	5.06*	1068.4	[0.05]
cis-Linalool oxide (fur.)	6.57	1400.8	0.01	5.09	1070.8	0.01
Fenchone	5.74	1341.0	0.02	5.28	1082.4	0.02

para-Cymenene	6.37	1385.8	0.02	5.34*	1086.4	[0.07]
trans-Linalool oxide (fur.)	6.94*	1427.9	[0.07]	5.34*	1086.4	[0.07]
Terpinolene	4.33	1241.1	0.04	5.34*	1086.4	[0.07]
trans-Sabinene hydrate	8.00	1506.8	0.02	5.48	1095.1	0.02
Linalool	8.11*	1515.6	[3.65]	5.60	1102.8	3.66
Nonanal	5.95	1355.9	0.01	5.64	1105.9	0.01
endo-Fenchol	8.41	1538.5	0.01	5.72	1110.8	0.01
Unknown CYFL II [m/z 81, 79 (19), 41 (12), 92 (8), 77 (8)...]	6.26	1378.5	0.01	5.83	1117.8	tr
cis-*para*-Menth-2-en-1-ol	8.16	1519.1	0.01	5.85	1119.5	tr
Unknown CYFL III [m/z 81, 70 (98), 67 (63), 82 (53), 41 (46), 69 (46), 109 (43)...]	6.89	1424.3	0.01	6.05	1132.5	0.01
Camphor	7.24*	1450.3	[0.05]	6.12	1136.8	0.02
trans-*para*-Menth-2-en-1-ol	9.04	1586.9	0.01	6.15	1138.8	0.01
Camphene hydrate	8.51*†	1546.1	[0.11]	6.21	1142.4	0.03
trans-Chrysanthemal	7.24*	1450.3	[0.05]	6.26	1145.8	0.01
Menthone	6.67	1407.9	0.06	6.32	1149.7	0.03
Isoborneol	9.40	1615.5	0.02	6.35	1151.9	0.03
Borneol	9.81*	1649.2	[0.87]	6.51†	1161.8	0.74
Terpinen-4-ol	8.61*	1554.3	[1.88]	6.70†	1174.3	1.06
para-Cymen-8-ol	11.56*	1794.8	[0.03]	6.83	1182.8	0.01
α-Terpineol	9.81*	1649.2	[0.87]	6.90†	1187.8	0.03
trans-Piperitol	10.46*	1701.4	[0.06]	7.16	1204.6	0.01
trans-Carveol	11.42	1783.3	0.01	7.36	1218.2	0.01
Bornyl formate	8.11*	1515.6	[3.65]	7.45	1224.4	0.01
Thymol methyl ether	8.51*†	1546.1	[0.11]	7.62	1235.9	0.11
Carvacrol methyl ether	8.61*	1554.3	[1.88]	7.76	1245.0	0.46
Geraniol	11.66	1803.6	0.01	7.99	1261.0	0.01

Thymol analogue I (isothymol?)				8.46	1293.2	0.14
Thymol analogue II	15.32	2145.6	0.01	8.66*	1306.7	[51.66]
Thymol	15.17	2130.8	51.63	8.66*	1306.7	[51.66]
Carvacrol	15.38*	2152.1	[3.01]	8.72	1307.6	3.00
α-Terpinyl acetate	9.73	1642.6	0.03	9.29	1348.6	0.02
Thymyl acetate	11.56*	1794.8	[0.03]	9.37	1354.1	0.01
Eugenol	14.81	2094.3	0.02	9.41	1357.0	0.01
α-Copaene	7.19	1446.6	0.02	9.62	1372.3	0.02
β-Bourbonene	7.52	1471.2	0.01	9.73	1380.0	0.02
Isocaryophyllene	8.22	1523.9	0.01	10.03	1401.4	0.01
β-Caryophyllene	8.46*†	1542.7	[1.47]	10.20	1413.6	1.46
Aromadendrene	8.61*	1554.3	[1.88]	10.45	1432.7	0.01
Unknown THVU I [m/z 151, 166 (40), 105 (26)...]				10.64	1447.1	0.02
trans-Cadina-1(6),4-diene	9.28	1606.5	0.01	10.94	1469.3	0.01
γ-Muurolene	9.62	1634.1	0.05	10.99	1473.0	0.03
β-Selinene	9.90	1656.6	0.01	11.08	1479.6	0.01
Viridiflorene	9.67	1638.0	0.01	11.22	1490.3	0.02
α-Muurolene	10.07	1670.2	0.01	11.31	1496.9	0.02
γ-Cadinene	10.43	1699.3	0.04	11.46*	1508.9	[0.06]
β-Bisabolene	10.19	1679.9	0.02	11.46*	1508.9	[0.06]
trans-Calamenene	11.26	1769.9	0.01	11.56	1516.9	0.01
δ-Cadinene	10.46*	1701.4	[0.06]	11.61	1520.2	0.06
α-Cadinene	10.82	1732.3	0.01	11.77	1533.4	0.01
Caryophyllene oxide isomer	12.74	1899.3	0.03	12.28*	1573.8	[0.27]
Caryophyllene oxide	12.81	1906.2	0.25	12.28*	1573.8	[0.27]
Humulene epoxide II	13.41	1960.9	0.01	12.61	1599.7	0.01
(3*Z*)-Caryophylla-3,8(13)-dien-5β-ol	16.83	2301.4	0.03	13.40	1664.4	0.03
Unknown UNKN XX [m/z 81, 136				15.37	1835.6	0.01

(68), 135 (58), 150 (44), 93 (34), 121 (30)...]						
Unknown THVU XVI [m/z 81, 136 (62), 135 (56), 150 (39), 93 (33), 121 (24)...]				15.86	1880.1	0.01
Unknown THVU III [m/z 136, 81 (96), 135 (76), 93 (48), 150 (47), 121 (43), 137 (28)...]				16.04	1897.3	0.04
meta-Camphorene	15.38*	2152.1	[3.01]	16.61	1950.5	0.02
Unknown THVU V [m/z 135, 150 (90), 201 (83), 81 (52), 136 (35)... 286 (25)]				16.82	1970.5	0.01
Unknown UNKN XXIII [m/z 135, 43 (43), 150 (35), 109 (23), 93 (22), 95 (18)...]				17.11	1998.1	0.05
Unknown THVU VII [m/z 135, 150 (67), 69 (57), 41 (24)...]				17.33	2020.1	0.01
Unknown UNKN XXIV [m/z 135, 43 (51), 150 (36), 109 (30), 93 (27), 95 (21)...]				17.49	2035.8	0.02
Unknown MOFI V [m/z 69, 41 (81), 91 (37), 166 (35), 105 (33), 43 (30)...]	19.99	2659.3	0.01	18.30	2116.5	0.01
Unknown ORVU				18.51	2139.1	0.02

IX [m/z 201, 241 (93), 159 (74), 302 (57), 259 (38), 43 (29)...]						
Unknown THVU XII [m/z 267, 282 (24), 268 (21), 117 (16), 126 (11)...]				18.77	2165.4	0.01
Unknown THVU XIII [m/z 175, 163 (78), 161 (33), 41 (32)... 286 (18)]				19.04	2193.3	0.01
Total reported		98.91%			99.01%	

*: 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