

Date : 2026-10-07

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 26H25-PTH01

Customer Identification : Thyme Thymol - Spain - T40116

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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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 2026-08-27 to make a modification in the sample identification section.



Laboratoire
PhytoChemia

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 : 2026-08-27

PHYSICOCHEMICAL DATA

Refractive index : 1.502 ± 0.0003 (20 °C)

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

Analyst : Cindy Caron B. Sc.

Date : 2026-08-25

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
Isobutyral	tr	Aliphatic aldehyde
Isovaleral	0.01	Aliphatic aldehyde
2-Methylbutyral	0.01	Aliphatic aldehyde
Isoamyl alcohol	tr	Aliphatic alcohol
2-Methylbutanol	0.01	Aliphatic alcohol
Methyl 2-methylbutyrate	0.01	Aliphatic ester
Octane	tr	Alkane
Unknown	tr	Unknown
(3Z)-Hexenol	0.01	Aliphatic alcohol
Hexanol	0.02	Aliphatic alcohol
Heptan-3-one	0.01	Aliphatic ketone
Hashishene	0.01	Monoterpene
Tricyclene	0.02	Monoterpene
α -Thujene	1.06	Monoterpene
α -Pinene	1.07	Monoterpene
Unknown	0.02	Monoterpene
Camphene	0.28	Monoterpene
Thuja-2,4(10)-diene	0.01	Monoterpene
Sabinene	0.01	Monoterpene
β -Pinene	0.16	Monoterpene
Octen-3-ol	0.06	Aliphatic alcohol
Octan-3-one	0.08	Aliphatic ketone
Myrcene	1.83	Monoterpene
Octan-3-ol	0.04	Aliphatic alcohol
α -Phellandrene	0.17	Monoterpene
Pseudolimonene	0.02	Monoterpene
Δ^3 -Carene	0.08	Monoterpene
α -Terpinene	1.54	Monoterpene
<i>para</i> -Cymene	19.60	Monoterpene
β -Phellandrene	[0.34]	Monoterpene
1,8-Cineole	[0.34]	Monoterpenic ether
Limonene	0.38	Monoterpene
(Z)- β -Ocimene	0.01	Monoterpene
(E)- β -Ocimene	0.05	Monoterpene
γ -Terpinene	7.56	Monoterpene
<i>cis</i> -Sabinene hydrate	0.28	Monoterpenic alcohol
3-Methyl-3-butenyl butyrate?	0.02	Aliphatic ester
<i>cis</i> -Linalool oxide (fur.)	0.04	Monoterpenic alcohol
Octanol	0.01	Aliphatic alcohol
Fenchone	0.02	Monoterpenic ketone

<i>para</i> -Cymenene	0.04	Monoterpene
Terpinolene	0.10	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	0.06	Monoterpenic alcohol
Methyl benzoate	0.02	Phenolic ester
<i>trans</i> -Sabinene hydrate	0.10	Monoterpenic alcohol
Linalool	4.39	Monoterpenic alcohol
Nonanal	0.02	Aliphatic aldehyde
Hotrienol	0.02	Monoterpenic alcohol
endo-Fenchol	0.02	Monoterpenic alcohol
Unknown	0.05	Unknown
<i>cis-para</i> -Menth-2-en-1-ol	0.04	Monoterpenic alcohol
<i>trans</i> -Pinocarveol	0.02	Monoterpenic alcohol
Unknown	0.05	Unknown
<i>trans-para</i> -Menth-2-en-1-ol	0.03	Monoterpenic alcohol
Camphene hydrate	0.02	Monoterpenic alcohol
<i>trans</i> -Chrysanthemal	0.02	Monoterpenic aldehyde
Unknown	0.06	Oxygenated monoterpene
Nerol oxide	0.01	Aliphatic ether
Isoborneol	0.01	Monoterpenic alcohol
Unknown	0.02	Unknown
Borneol	0.58	Monoterpenic alcohol
Lavandulol	0.04	Monoterpenic alcohol
Terpinen-4-ol	0.87	Monoterpenic alcohol
<i>para</i> -Cymen-8-ol	0.06	Monoterpenic alcohol
α -Terpineol	0.14	Monoterpenic alcohol
<i>trans</i> -Piperitol	0.03	Monoterpenic alcohol
Bornyl formate	0.04	Monoterpenic ester
Thymol methyl ether	0.03	Monoterpenic ether
Neral	0.02	Monoterpenic aldehyde
Carvacrol methyl ether	0.28	Monoterpenic ether
Geranial	0.07	Monoterpenic aldehyde
Unknown	0.10	Unknown
Thymol analogue IV	0.12	Monoterpenic alcohol
Thymol analogue I (isothymol?)	0.09	Monoterpenic alcohol
Thymol analogue II	0.14	Monoterpenic alcohol
Thymol	50.16	Monoterpenic alcohol
Carvacrol	3.77	Monoterpenic alcohol
Thymyl acetate	0.03	Monoterpenic ester
Eugenol	0.05	Phenylpropanoid
α -Copaene	0.02	Sesquiterpene
β -Bourbonene	0.01	Sesquiterpene
Unknown	0.04	Unknown
Isocaryophyllene	0.01	Sesquiterpene
α -Gurjunene	0.02	Sesquiterpene
β -Caryophyllene	1.37	Sesquiterpene

Aromadendrene	0.10	Sesquiterpene
Unknown	0.34	Unknown
Unknown	0.04	Oxygenated monoterpene
α -Humulene	0.04	Sesquiterpene
allo-Aromadendrene	0.02	Sesquiterpene
Thymohydroquinone isomer?	0.06	Simple phenolic
(<i>E</i>)- β -Farnesene	0.02	Sesquiterpene
γ -Murolene	0.01	Sesquiterpene
Germacrene D	0.03	Sesquiterpene
β -Selinene	0.02	Sesquiterpene
Viridiflorene	0.07	Sesquiterpene
α -Murolene	0.02	Sesquiterpene
β -Bisabolene	0.01	Sesquiterpene
γ -Cadinene	0.06	Sesquiterpene
<i>trans</i> -Calamenene	0.01	Sesquiterpene
δ -Cadinene	0.08	Sesquiterpene
Geranyl butyrate	0.01	Monoterpenic ester
Caryophyllenyl alcohol	0.05	Sesquiterpenic alcohol
Spathulenol	0.07	Sesquiterpenic alcohol
Caryophyllene oxide	0.16	Sesquiterpenic ether
Unknown	0.02	Oxygenated sesquiterpene
Humulene epoxide II	0.01	Sesquiterpenic ether
10-epi- γ -Eudesmol	0.01	Sesquiterpenic alcohol
Isospathulenol	0.01	Sesquiterpenic alcohol
τ -Cadinol	0.01	Sesquiterpenic alcohol
α -Cadinol	0.01	Sesquiterpenic alcohol
(3 <i>Z</i>)-Caryophylla-3,8(13)-dien-5 β -ol	0.01	Sesquiterpenic alcohol
Unknown	0.05	Unknown
Unknown	0.06	Unknown
Unknown	0.02	Unknown
<i>meta</i> -Camphorene	0.01	Diterpene
Unknown	0.01	Unknown
Unknown	0.01	Unknown
Unknown	0.01	Unknown
Unknown	0.01	Unknown
Unknown	0.01	Unknown
Unknown	0.02	Unknown
Consolidated total	99.56	

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.

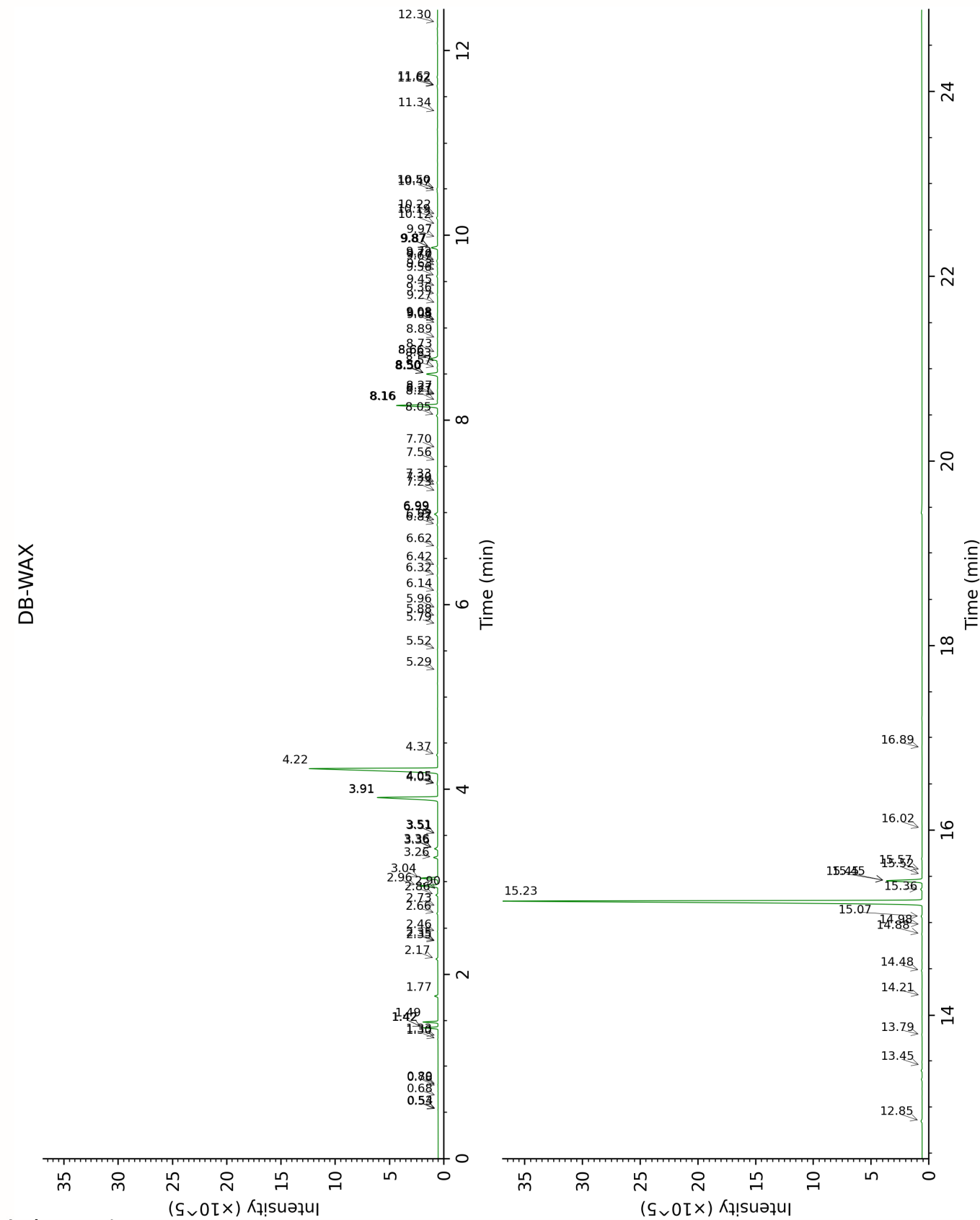
Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is

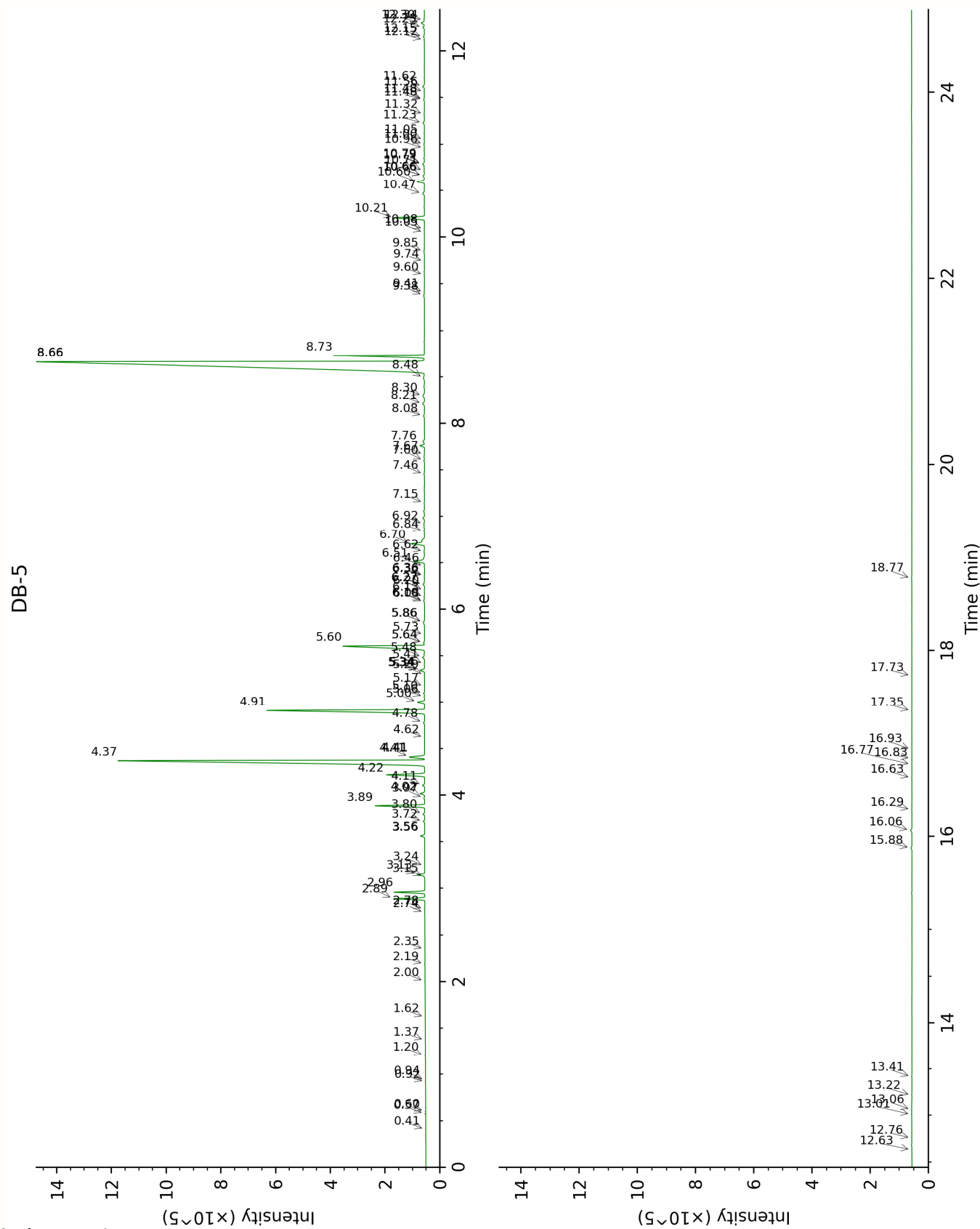
to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

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

Isobutyral	Column DB-WAX			Column DB-5		
	0.53	781.5	0.01	0.41	540.6	tr
Isovaleral	0.80	887.4	0.01	0.58	643.5	0.01
2-Methylbutyral	0.78	880.4	0.01	0.60	653.6	0.01
Isoamyl alcohol	3.51*	1177.5	[0.02]	0.92	733.1	tr
2-Methylbutanol	3.51*	1177.5	[0.02]	0.94	735.5	0.01
Methyl 2-methylbutyrate	1.33	977.1	0.01	1.20	775.0	0.01
Octane	0.54	787.5	tr	1.37	800.5	tr
Unknown PEGR III [m/z 81, 69 (80), 41 (65), 83 (52), 109 (48), 55 (47)...]	0.68	844.2	tr	1.62	823.6	tr
(3Z)-Hexenol	5.88	1350.1	0.02	2.00	856.6	0.01
Hexanol	5.52	1324.7	0.02	2.19	872.4	0.02
Heptan-3-one	2.73	1116.4	0.01	2.35	886.0	0.01
Hashishene	1.42*	991.6	[1.07]	2.74	916.3	0.01
Tricyclene	1.30	972.0	0.02	2.78	918.9	0.02
α -Thujene	1.49	999.5	1.05	2.89	926.5	1.06
α -Pinene	1.42*	991.6	[1.07]	2.96	931.2	1.07
Unknown SAOF I [m/z 91, 92 (47), 65 (11)... 134 (1)]	2.46	1095.1	0.03	3.13	942.6	0.02
Camphene	1.77	1026.8	0.28	3.15	943.8	0.28
Thuja-2,4(10)-diene	2.35*	1084.4	[0.02]	3.24	950.0	0.01
Sabinene	2.35*	1084.4	[0.02]	3.56*	971.8	[0.17]
β -Pinene	2.17	1066.0	0.16	3.56*	971.8	[0.17]
Octen-3-ol	6.87	1421.5	0.06	3.72	982.4	0.06
Octan-3-one	4.06*	1218.6	[0.10]	3.80	987.6	0.08
Myrcene	2.96	1134.0	1.81	3.89	993.6	1.83
Octan-3-ol	6.14	1369.1	0.03	3.97	999.2	0.04
α -Phellandrene	2.86	1126.1	0.17	4.02*	1002.5	[0.19]
Pseudolimonene	2.90	1129.6	0.02	4.02*	1002.5	[0.19]
Δ^3 -Carene	2.66	1110.7	0.09	4.10	1008.2	0.08
α -Terpinene	3.04	1140.4	1.54	4.22	1015.4	1.54
<i>para</i> -Cymene	4.22	1230.8	19.62	4.37	1025.0	19.60
β -Phellandrene	3.36*	1165.4	[0.34]	4.41*	1027.5	[0.71]
1,8-Cineole	3.36*	1165.4	[0.34]	4.41*	1027.5	[0.71]
Limonene	3.26	1157.9	0.38	4.41*	1027.5	[0.71]
(Z)- β -Ocimene	3.91*	1208.1	[7.55]	4.62	1040.7	0.01
(E)- β -Ocimene	4.06*	1218.6	[0.10]	4.78	1050.9	0.05
γ -Terpinene	3.91*	1208.1	[7.55]	4.91	1059.4	7.56
<i>cis</i> -Sabinene hydrate	6.99*	1430.0	[0.38]	5.00	1065.4	0.28
3-Methyl-3-butenyl	5.29	1308.6	0.01	5.06	1069.1	0.02

butyrate?						
cis-Linalool oxide (fur.)	6.62	1403.3	0.04	5.10	1071.4	0.04
Octanol	8.27*	1525.6	[0.01]	5.17	1076.2	0.01
Fenchone	5.79	1344.1	0.01	5.29	1083.8	0.02
para-Cymenene	6.42	1388.7	0.04	5.34*	1087.1	[0.21]
Terpinolene	4.37	1241.7	0.10	5.34*	1087.1	[0.21]
trans-Linalool oxide (fur.)	6.99*	1430.0	[0.38]	5.34*	1087.1	[0.21]
Methyl benzoate	8.73	1560.9	0.03	5.41	1091.4	0.02
trans-Sabinene hydrate	8.05	1508.6	0.12	5.48	1096.0	0.10
Linalool	8.16*	1517.0	[4.41]	5.60	1103.7	4.39
Nonanal	5.96	1356.1	0.02	5.64*	1106.1	[0.05]
Hotrienol	8.89	1572.9	0.02	5.64*	1106.1	[0.05]
endo-Fenchol	8.50*	1543.0	[1.37]	5.73	1111.7	0.02
Unknown CYFL II [m/z 81, 79 (19), 41 (12), 92 (8), 77 (8)...]	6.32	1381.4	0.05	5.86*	1120.4	[0.08]
cis-para-Menth-2-en-1-ol	8.21	1520.7	0.04	5.86*	1120.4	[0.08]
trans-Pinocarveol	9.27	1602.1	0.01	6.08	1134.4	0.02
Unknown MEOF V [m/z 70, 81 (94), 67 (52), 69 (45), 109 (44), 82 (35)...]				6.10	1135.7	0.05
trans-para-Menth-2-en-1-ol	9.05	1585.0	0.03	6.13	1137.9	0.03
Camphene hydrate	8.57	1548.2	0.06	6.20	1142.4	0.02
trans-Chrysanthemal	7.30	1452.6	0.02	6.27*	1146.8	[0.10]
Unknown DRMO V [m/z 123, 81 (60), 67 (49), 95 (36), 41 (29), 68 (25)...152 (2)]	7.32	1454.8	0.06	6.27*	1146.8	[0.10]
Nerol oxide	6.92	1424.9	0.01	6.36*	1152.8	[0.02]
Isoborneol	9.45	1617.0	0.01	6.36*	1152.8	[0.02]
Unknown RHGR XVIII [m/z 123, 81 (46), 43 (45), 95 (34), 166 (30)]	9.08*	1587.5	[0.03]	6.46	1159.4	0.02
Borneol	9.87*	1650.3	[0.69]	6.51	1162.8	0.58
Lavandulol	9.70	1637.0	0.03	6.62	1169.5	0.04
Terpinen-4-ol	8.66*	1555.4	[1.03]	6.70†	1175.2	0.71
para-Cymen-8-ol	11.62*	1795.9	[0.08]	6.84†	1184.1	0.03
α-Terpineol	9.87*	1650.3	[0.69]	6.92†	1189.4	0.05

<i>trans</i> -Piperitol	10.50*	1701.4	[0.08]	7.15	1204.3	0.03
Bornyl formate	8.16*	1517.0	[4.41]	7.46	1225.2	0.04
Thymol methyl ether	8.50*	1543.0	[1.37]	7.60	1235.2	0.03
Neral	9.56	1625.6	0.09	7.67	1239.7	0.02
Carvacrol methyl ether	8.66*	1555.4	[1.03]	7.76†	1246.2	0.19
Geranial	10.19	1676.0	0.11	8.08†	1268.1	0.06
Unknown THVU XXIII [m/z 119, 91 (21), 150 (15), 117 (14), 41 (13)...]				8.21	1277.0	0.10
Thymol analogue IV				8.30	1282.8	0.12
Thymol analogue I (isothymol?)	15.07	2115.2	0.10	8.48	1295.7	0.09
Thymol analogue II	15.36	2144.3	0.14	8.66*	1303.8	[50.08]
Thymol	15.23	2131.6	50.16	8.66*	1303.8	[50.08]
Carvacrol	15.45*	2153.6	[3.75]	8.73	1308.6	3.77
Thymyl acetate	11.62*	1795.9	[0.08]	9.38†	1354.9	0.05
Eugenol	14.88	2096.0	0.05	9.41†	1357.2	0.02
α-Copaene	7.23	1447.6	0.01	9.60	1370.5	0.02
β-Bourbonene	7.56	1472.0	0.01	9.74	1380.9	0.01
Unknown MEPU VII [m/z 148, 133 (66), 105 (46), 43 (33), 77 (15)...]				9.85	1388.5	0.04
Isocaryophyllene	8.27*	1525.6	[0.01]	10.05	1402.8	0.01
α-Gurjunene	7.70	1482.1	0.01	10.08	1405.4	0.02
β-Caryophyllene	8.50*	1543.0	[1.37]	10.21	1414.6	1.37
Aromadendrene	8.63	1552.8	0.08	10.47	1434.2	0.10
Unknown THVU XXV [m/z 68, 55 (88), 67 (82), 81 (75)...]				10.60	1444.0	0.34
Unknown THVU I [m/z 151, 166 (40), 105 (26)...]				10.66*	1448.8	[0.08]
α-Humulene	9.36	1610.0	0.04	10.66*	1448.8	[0.08]
allo-Aromadendrene	9.08*	1587.5	[0.03]	10.71	1452.9	0.02
Thymohydroquinone isomer?				10.79*	1458.3	[0.09]
(E)-β-Farnesene	9.63	1631.0	0.02	10.79*	1458.3	[0.09]
γ-Murolene	9.67	1634.2	0.05	10.96	1471.1	0.01
Germacrene D	9.87*	1650.3	[0.69]	11.00	1474.4	0.03
β-Selinene	9.97	1658.9	0.02	11.05	1478.0	0.02
Viridiflorene	9.72	1638.9	0.09	11.23	1491.7	0.07
α-Murolene	10.12	1670.2	0.02	11.32	1498.7	0.02

β-Bisabolene	10.22	1678.6	0.01	11.48*	1510.9	[0.04]
γ-Cadinene	10.47	1699.3	0.06	11.48*	1510.9	[0.04]
trans-Calamenene	11.34	1772.1	0.01	11.56	1517.3	0.01
δ-Cadinene	10.50*	1701.4	[0.08]	11.62	1521.9	0.08
Geranyl butyrate	12.30	1856.0	0.04	12.12	1561.3	0.01
Caryophyllenyl alcohol	13.79	1991.5	0.04	12.15	1564.1	0.05
Spathulenol	14.48	2057.7	0.07	12.25	1572.1	0.07
Caryophyllene oxide	12.85	1904.7	0.16	12.30	1575.8	0.16
Unknown THVU II [m/z 161, 187 (29), 105 (24), 91 (23), 93 (23)... 205 (19), 220? (2)]				12.34	1578.8	0.02
Humulene epoxide II	13.45	1959.9	0.01	12.63	1601.9	0.01
10-epi-γ-Eudesmol	14.21	2031.8	0.01	12.76	1612.1	0.01
Isospathulenol	15.52	2159.8	0.02	13.01	1633.3	0.01
τ-Cadinol	14.98	2106.3	0.01	13.06	1637.4	0.01
α-Cadinol	15.57	2164.9	0.01	13.22	1650.4	0.01
(3Z)-Caryophylla- 3,8(13)-dien-5β-ol	16.89	2302.0	0.02	13.42	1667.0	0.01
Unknown THVU XVI [m/z 81, 136 (62), 135 (56), 150 (39), 93 (33), 121 (24)...]				15.88	1883.0	0.05
Unknown UNKN XXII [m/z 136, 81 (89), 135 (71), 150 (43), 93 (42), 121 (40)...]				16.06	1900.2	0.06
Unknown ORVU X [m/z 136, 81 (81), 150 (74), 135 (52), 93 (46), 121 (42)...]	16.02	2210.9	0.01	16.29	1921.2	0.02
meta-Camphorene	15.45*	2153.6	[3.75]	16.63	1953.5	0.01
Unknown THVU IV [m/z 201, 159 (37), 148 (27), 173 (22), 41 (20)... 284 (16)]				16.77	1967.4	0.01
Unknown THVU V [m/z 135, 150 (90), 201 (83), 81 (52), 136 (35)... 286 (25)]				16.83	1973.3	0.01
Unknown THVU VI [m/z 135, 150 (61), 81 (45), 69 (37), 41 (24),				16.93	1982.6	0.01

136 (21), 93 (19)...				
Unknown THVU VII [m/z 135, 150 (67), 69 (57), 41 (24)...		17.35	2022.9	0.01
Unknown THVU VIII [m/z 173, 159 (29), 216 (27), 286 (15)]		17.73	2060.8	0.01
Unknown THVU XII [m/z 267, 282 (24), 268 (21), 117 (16), 126 (11)...		18.77	2166.9	0.02
Total reported	98.47%		98.97%	

*: 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