Date : 2026-06-02

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 25K04-PTH02
Customer Identification : Rosemary ORGANIC - Greece - R50116
Type : Essential Oil
Source : *Rosmarinus officinalis ct. 1,8-Cineole*
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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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 2025-11-11 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 : Alexis St-Gelais, Ph. D., Chimiste 2013-174
Date : 2025-11-11

Physicochemical data

Refractive index : 1.466 ± 0.0003 (20 °C)
Method : PC-MAT-016 - Measure of the refractive index of a liquid.
Analyst : Cindy Caron B. Sc.
Date : 2025-11-04

Conclusion

No clear 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
Bornylene	0.02	Monoterpene
Hashishene	0.03	Monoterpene
Tricyclene	0.10	Monoterpene
α-Thujene	0.05	Monoterpene
α-Pinene	16.65	Monoterpene
Camphene	6.86	Monoterpene
Thuja-2,4(10)-diene	0.14	Monoterpene
Sabinene	0.05	Monoterpene
β-Pinene	1.56	Monoterpene
Octen-3-ol	0.01	Aliphatic alcohol
Octan-3-one	0.01	Aliphatic ketone
Myrcene	2.20	Monoterpene
Pseudolimonene	0.12	Monoterpene
α-Phellandrene	0.43	Monoterpene
Δ3-Carene	0.03	Monoterpene
α-Terpinene	0.55	Monoterpene
para-Cymene	2.56	Monoterpene
Limonene	4.35	Monoterpene
1,8-Cineole	43.42	Monoterpenic ether
(*E*)-β-Ocimene	0.03	Monoterpene
γ-Terpinene	1.67	Monoterpene
cis-Sabinene hydrate	0.01	Monoterpenic alcohol
cis-Linalool oxide (fur.)	0.03	Monoterpenic alcohol
para-Cymenene	0.04	Monoterpene
Terpinolene	0.09	Monoterpene
Linalool	0.15	Monoterpenic alcohol
Unknown	0.05	Unknown
endo-Fenchol	0.04	Monoterpenic alcohol
cis-para-Menth-2-en-1-ol	0.02	Monoterpenic alcohol
α-Campholenal	0.01	Monoterpenic aldehyde
Camphor	11.62	Monoterpenic ketone
Camphene hydrate	0.04	Monoterpenic alcohol
Isoborneol	2.33	Monoterpenic alcohol
Pinocarvone	0.07	Monoterpenic ketone
Borneol	0.28	Monoterpenic alcohol
δ-Terpineol	0.05	Monoterpenic alcohol
Isopinocamphone	0.05	Monoterpenic ketone
Terpinen-4-ol	0.32	Monoterpenic alcohol
para-Cymen-8-ol	0.02	Monoterpenic alcohol
α-Terpineol	1.39	Monoterpenic alcohol

Myrtenal	0.01	Monoterpenic aldehyde
Myrtenol	0.07	Monoterpenic alcohol
Verbenone	0.89	Monoterpenic ketone
trans-Carveol	0.02	Monoterpenic alcohol
Carvone	0.02	Monoterpenic ketone
Piperitone	0.02	Monoterpenic ketone
Bornyl acetate	0.51	Monoterpenic ester
α-Terpinyl acetate	0.24	Monoterpenic ester
γ-Terpinyl acetate	0.05	Monoterpenic ester
α-Ylangene	0.01	Sesquiterpene
β-Caryophyllene	0.08	Sesquiterpene
α-Humulene	0.02	Sesquiterpene
5-Ethenyl-1,5-bis(4-methyl-3-penten-1-yl)-cyclohexene?	0.02	Diterpene
4-Ethenyl-1,4-bis(4-methyl-3-penten-1-yl)-cyclohexene?	0.01	Diterpene
meta-Camphorene	0.16	Diterpene
para-Camphorene	0.06	Diterpene
Consolidated total	**99.64**	

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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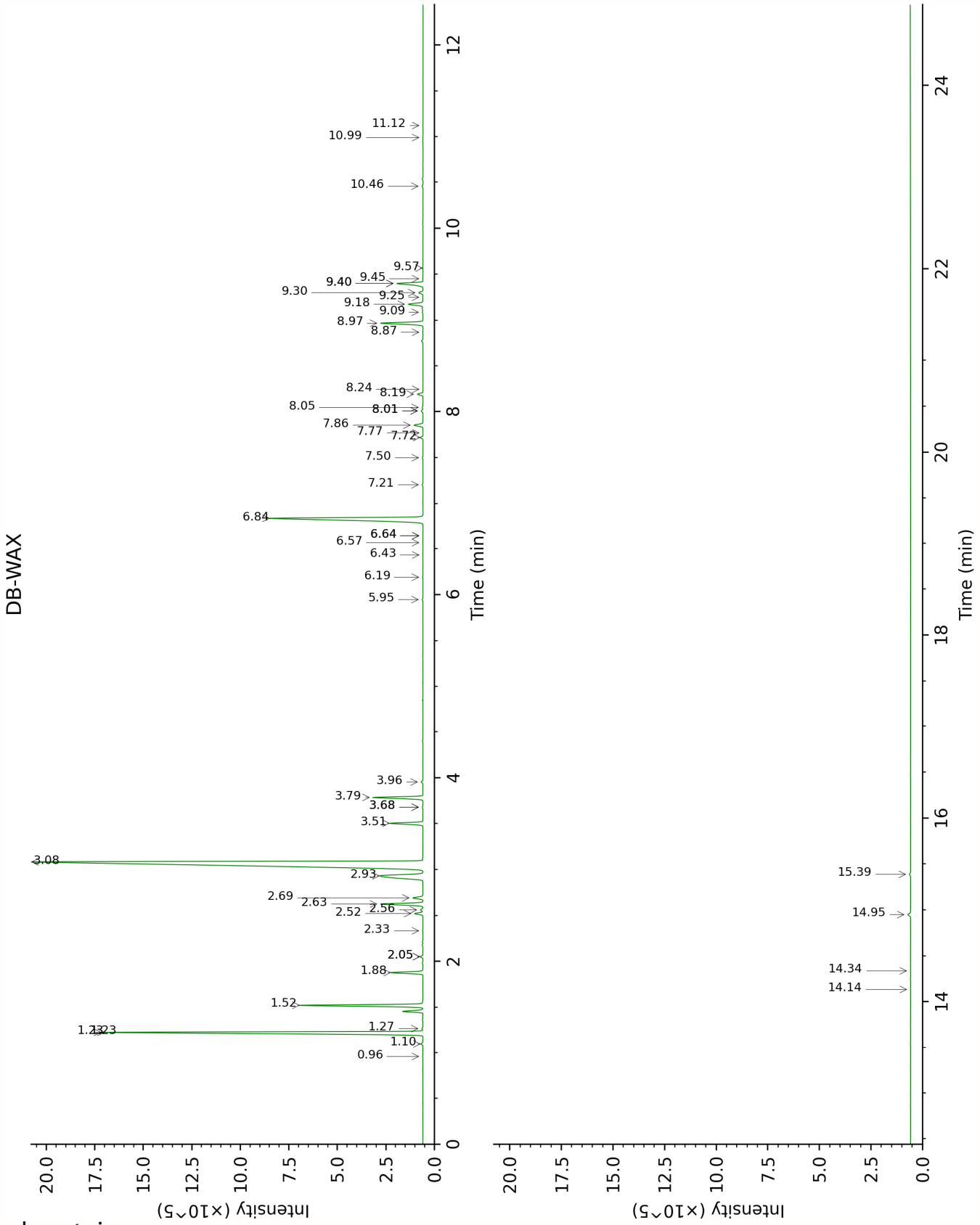
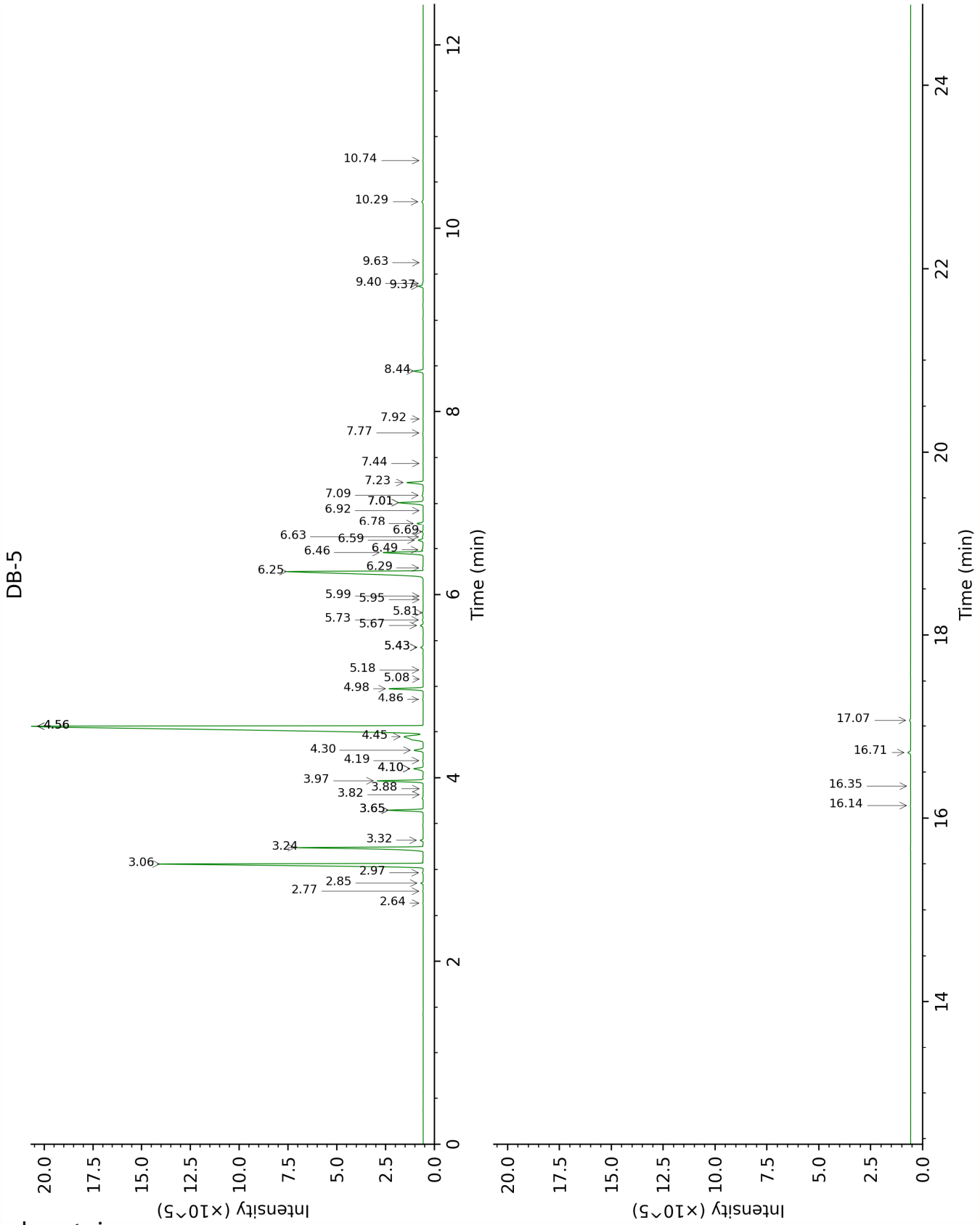

DB-WAX
Time (min)
Intensity (×10^5)
11.12
10.99
10.46
9.57
9.40
9.45
9.30
9.25
9.18
9.09
8.97
8.87
8.24
8.19
8.05
8.01
7.86
7.77
7.72
7.50
7.21
6.84
6.64
6.57
6.43
6.19
5.95
3.96
3.79
3.68
3.51
3.08
2.93
2.69
2.63
2.56
2.52
2.33
2.05
1.88
1.52
1.27
1.10
0.96
15.39
14.95
14.34
14.14


DB-5
Time (min)
Intensity (×10^5)
10.74
10.29
9.63
9.40
9.37
8.44
7.92
7.77
7.44
7.23
7.09
7.01
6.92
6.78
6.69
6.63
6.59
6.49
6.46
6.29
6.25
5.99
5.95
5.81
5.73
5.67
5.43
5.18
5.08
4.98
4.86
4.56
4.45
4.30
4.19
4.10
3.97
3.88
3.82
3.65
3.32
3.24
3.06
2.97
2.85
2.77
2.64
17.07
16.71
16.35
16.14

FULL ANALYSIS DATA

Bornylene	**Column DB-WAX**			**Column DB-5**		
	0.96	947.5	0.02	2.64	904.1	0.02
Hashishene	1.23*	994.8	[16.48]	2.77	913.0	0.03
Tricyclene	1.10	972.7	0.10	2.85	918.9	0.10
α-Thujene	1.27	1002.0	0.04	2.97	926.4	0.05
α-Pinene	1.23*	994.8	[16.48]	3.06	932.8	16.65
Camphene	1.52	1029.9	5.89	3.24	944.7	6.86
Thuja-2,4(10)-diene	2.05*	1084.4	[0.14]	3.32	950.1	0.14
Sabinene	2.05*	1084.4	[0.14]	3.65*	972.0	[1.60]
β-Pinene	1.88	1066.5	1.56	3.65*	972.0	[1.60]
Octen-3-ol	6.43	1420.2	0.01	3.82	983.3	0.01
Octan-3-one	3.68*	1218.5	[0.03]	3.88	987.7	0.01
Myrcene	2.63	1135.1	2.17	3.97	993.5	2.20
Pseudolimonene	2.56	1129.9	0.12	4.10*	1002.4	[0.58]
α-Phellandrene	2.52	1126.7	0.43	4.10*	1002.4	[0.58]
Δ3-Carene	2.34	1111.8	0.02	4.19	1008.0	0.03
α-Terpinene	2.69	1140.4	0.54	4.30	1015.2	0.55
para-Cymene	3.79	1226.3	2.52	4.45	1024.6	2.56
Limonene	2.93	1159.6	4.35	4.56*	1031.8	[47.46]
1,8-Cineole	3.08	1171.8	43.42	4.56*	1031.8	[47.46]
(*E*)-β-Ocimene	3.68*	1218.5	[0.03]	4.86	1050.5	0.03
γ-Terpinene	3.51	1205.6	1.68	4.98	1058.2	1.67
cis-Sabinene hydrate	6.57	1430.3	0.02	5.08	1064.8	0.01
cis-Linalool oxide (fur.)	6.19	1401.9	0.03	5.18	1071.2	0.03
para-Cymenene	5.95	1384.0	0.04	5.43*	1086.8	[0.12]
Terpinolene	3.96	1238.7	0.09	5.43*	1086.8	[0.12]
Linalool	7.72	1518.2	0.14	5.67	1102.0	0.15
Unknown UNKNLX [m/z 139, 95 (95), 109 (64), 121 (40), 41 (23), 136 (22)...]				5.73	1105.9	0.05
endo-Fenchol	8.01*	1541.1	[0.10]	5.81	1110.9	0.04
cis-para-Menth-2-en-1-ol	7.77	1522.2	0.01	5.95	1120.1	0.02
α-Campholenal	6.64*	1436.0	[0.01]	5.99	1122.7	0.01
Camphor	6.84	1451.0	11.66	6.25	1140.0	11.62
Camphene hydrate	8.05	1544.1	0.04	6.29	1142.5	0.04
Isoborneol	8.97	1617.5	2.34	6.46	1153.4	2.33
Pinocarvone	7.50	1501.1	0.04	6.49	1155.4	0.07

Borneol	9.40*	1653.1	[1.61]	6.60	1162.2	0.28
δ-Terpineol	9.09	1627.3	0.04	6.63	1164.5	0.05
Isopinocamphone	7.21	1478.8	0.05	6.69	1168.2	0.05
Terpinen-4-ol	8.19	1555.5	0.30	6.78	1174.5	0.32
para-Cymen-8-ol	11.12	1799.2	0.02	6.92	1183.6	0.02
α-Terpineol	9.40*	1653.1	[1.61]	7.01*	1189.3	[1.40]
Myrtenal	8.24	1559.7	0.01	7.01*	1189.3	[1.40]
Myrtenol	10.46	1741.5	0.06	7.09	1194.4	0.07
Verbenone	9.18	1634.5	0.88	7.23	1203.5	0.89
trans-Carveol	10.99	1787.9	0.01	7.44	1217.5	0.02
Carvone	9.57	1666.8	0.02	7.77	1240.1	0.02
Piperitone	9.45	1657.3	0.02	7.92	1250.5	0.02
Bornyl acetate	7.86	1528.8	0.52	8.44	1286.2	0.51
α-Terpinyl acetate	9.30	1644.8	0.23	9.37	1348.3	0.24
γ-Terpinyl acetate	9.25	1640.7	0.02	9.40	1350.3	0.05
α-Ylangene	6.64*	1436.0	[0.01]	9.63	1366.4	0.01
β-Caryophyllene	8.01*	1541.1	[0.10]	10.29	1413.7	0.08
α-Humulene	8.87	1609.4	0.02	10.74	1447.8	0.02
5-Ethenyl-1,5-bis(4-methyl-3-penten-1-yl)-cyclohexene?	14.14	2079.4	tr	16.14	1896.9	0.02
4-Ethenyl-1,4-bis(4-methyl-3-penten-1-yl)-cyclohexene?	14.34	2099.2	0.01	16.35	1916.6	0.01
meta-Camphorene	14.95	2161.0	0.16	16.72	1951.5	0.16
para-Camphorene	15.39	2205.5	0.06	17.06	1984.9	0.06
Total reported		98.10%			99.34%	

*: 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