Date : 2026-04-10

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 26C10-PTH01
Customer Identification : Ravintsara - Madagascar - RG0110R
Type : Essential Oil
Source : *Cinnamomum camphora*
Customer : Plant Therapy

Checked an approved by:

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

Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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 from the first version issued on 2026-03-12 to correct the customer identification.

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 : Sylvain Mercier, M. Sc., Chimiste 2014-005
Date : 2026-03-11

Physicochemical data

Refractive index : 1.4644 ± 0.0003 (20 °C)
Method : PC-MAT-016 - Measure of the refractive index of a liquid.
Analyst : Cindy Caron B. Sc.
Date : 2026-03-10

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
Isoamyl alcohol	0.01	Aliphatic alcohol
2-Methylbutanol	tr	Aliphatic alcohol
(3*Z*)-Hexenol	0.01	Aliphatic alcohol
Hexanol	0.01	Aliphatic alcohol
Tricyclene	0.01	Monoterpene
α-Thujene	0.92	Monoterpene
α-Pinene	4.88	Monoterpene
Camphene	0.18	Monoterpene
α-Fenchene	0.02	Monoterpene
β-Pinene	3.44	Monoterpene
Sabinene	11.96	Monoterpene
Dehydro-1,8-cineole	0.02	Monoterpenic ether
6-Methyl-5-hepten-2-one	0.01	Aliphatic ketone
Myrcene	1.43	Monoterpene
α-Phellandrene	0.09	Monoterpene
Pseudolimonene	0.01	Monoterpene
α-Terpinene	0.82	Monoterpene
para-Cymene	0.65	Monoterpene
Limonene	0.80	Monoterpene
1,8-Cineole	57.72	Monoterpenic ether
(*Z*)-β-Ocimene	0.06	Monoterpene
(*E*)-β-Ocimene	0.29	Monoterpene
γ-Terpinene	1.35	Monoterpene
cis-Sabinene hydrate	0.67	Monoterpenic alcohol
Terpinolene	0.36	Monoterpene
para-Cymenene	0.01	Monoterpene
trans-Sabinene hydrate	0.55	Monoterpenic alcohol
Linalool	0.05	Monoterpenic alcohol
cis-para-Menth-2-en-1-ol	0.11	Monoterpenic alcohol
cis-para-Mentha-2,8-dien-1-ol	0.01	Monoterpenic alcohol
trans-para-Menth-2-en-1-ol	0.08	Monoterpenic alcohol
Unknown	0.01	Unknown
Unknown	0.02	Oxygenated monoterpene
Unknown	0.02	Unknown
Borneol	0.11	Monoterpenic alcohol
δ-Terpineol	0.58	Monoterpenic alcohol
Terpinen-4-ol	2.42	Monoterpenic alcohol
Cryptone	0.02	Normonoterpenic ketone
para-Cymen-8-ol	0.02	Monoterpenic alcohol
α-Terpineol	6.72	Monoterpenic alcohol

cis-Piperitol	0.04	Monoterpenic alcohol
trans-Piperitol	0.04	Monoterpenic alcohol
Unknown	0.01	Unknown
Nerol	0.06	Monoterpenic alcohol
Citronellol	0.01	Monoterpenic alcohol
Unknown	0.01	Oxygenated monoterpene
Carvone	0.01	Monoterpenic ketone
trans-Ascaridole glycol	0.03	Monoterpenic alcohol
cis-Ascaridole glycol	0.03	Monoterpenic alcohol
Unknown	0.02	Unknown
Unknown	0.04	Monoterpenic alcohol
α-Cubebene	0.02	Sesquiterpene
Unknown	0.02	Unknown
α-Ylangene	0.02	Sesquiterpene
α-Copaene	0.02	Sesquiterpene
β-Bourbonene	0.01	Sesquiterpene
β-Elemene	0.11	Sesquiterpene
α-Gurjunene	0.02	Sesquiterpene
β-Caryophyllene	0.57	Sesquiterpene
β-Gurjunene	0.01	Sesquiterpene
Aromadendrene	0.03	Sesquiterpene
trans-α-Bergamotene	0.01	Sesquiterpene
6,9-Guaiadiene	0.01	Sesquiterpene
β-Santalene	0.02	Sesquiterpene
γ-Muurolene	0.02	Sesquiterpene
Germacrene D	0.23	Sesquiterpene
β-Selinene	0.19	Sesquiterpene
α-Selinene	0.11	Sesquiterpene
Viridiflorene	0.07	Sesquiterpene
Bicyclogermacrene	0.20	Sesquiterpene
Germacrene A	0.03	Sesquiterpene
γ-Cadinene	0.03	Sesquiterpene
δ-Cadinene	0.03	Sesquiterpene
Germacrene B	0.07	Sesquiterpene
Spathulenol	0.03	Sesquiterpenic alcohol
Caryophyllene oxide	0.05	Sesquiterpenic ether
Guaiol	0.02	Sesquiterpenic alcohol
Humulene epoxide II	0.03	Sesquiterpenic ether
Isospathulenol	0.04	Sesquiterpenic alcohol
Neointermedeol	0.02	Sesquiterpenic alcohol
meta-Camphorene	0.01	Diterpene
Consolidated total	**98.84**	

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

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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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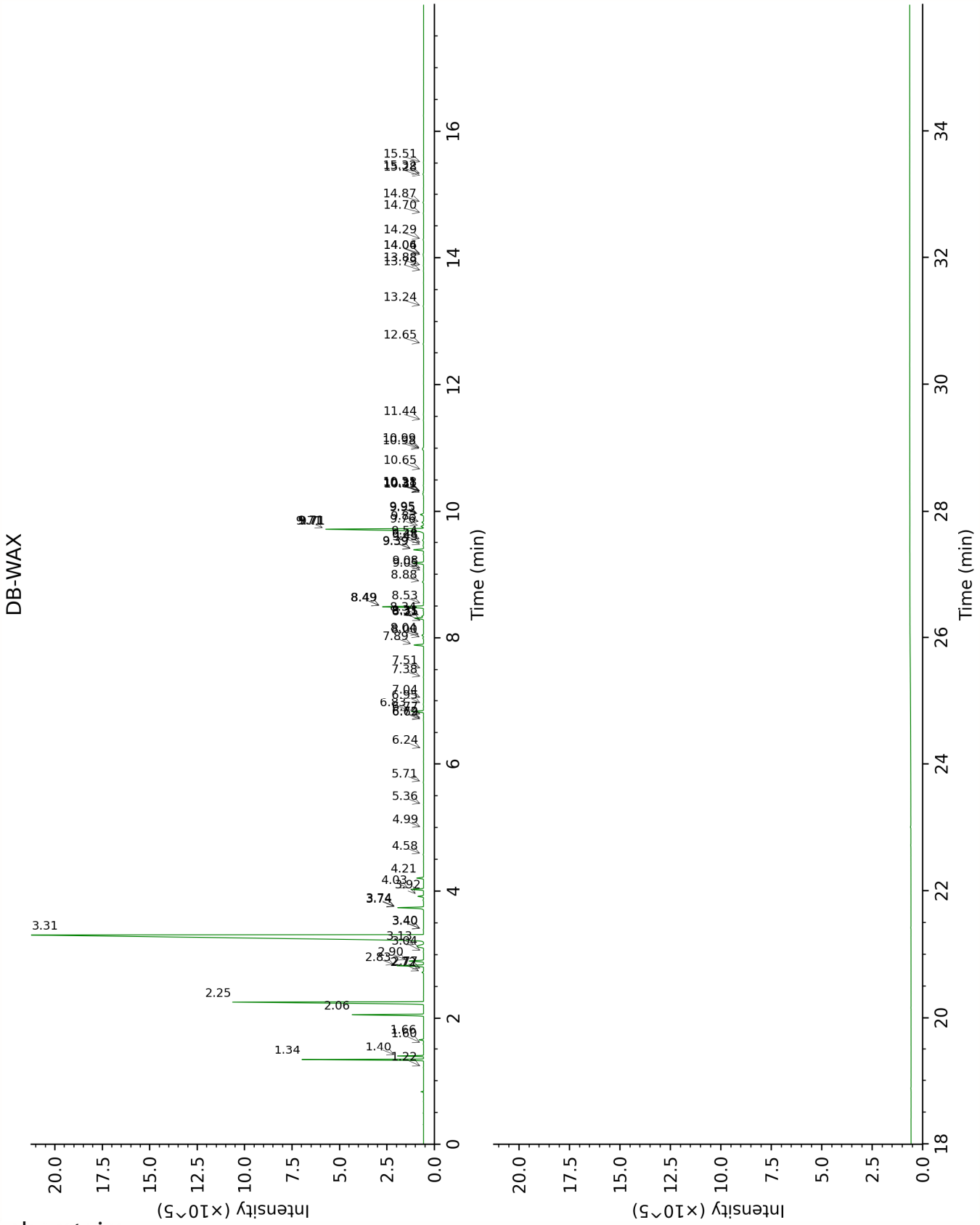
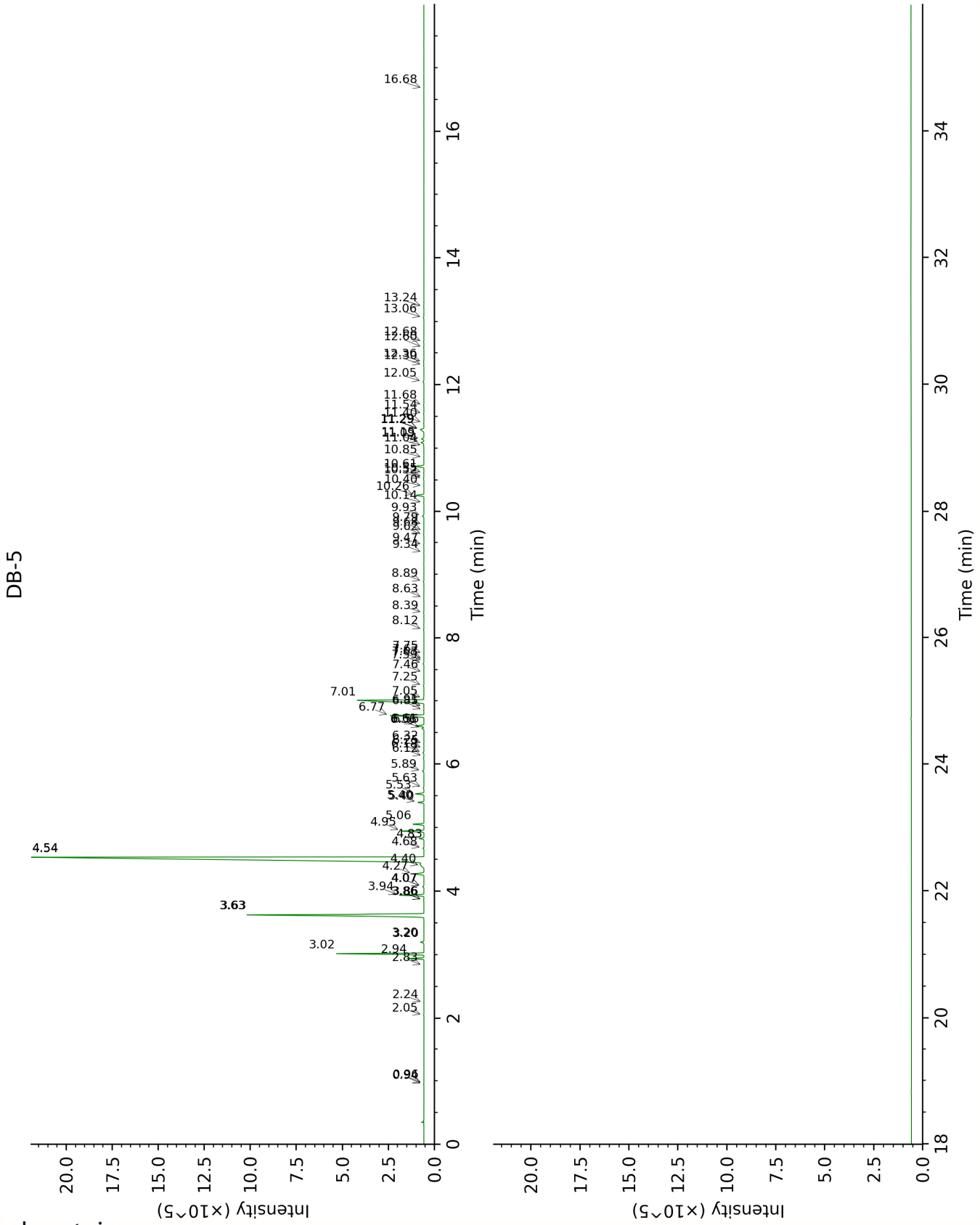

DB-WAX
Time (min)
Intensity (×10^5)
3.31
2.25
2.06
1.34
8.49
9.71
15.51
14.87
14.70
14.29
13.24
12.65
11.44
10.65
8.88
8.53
7.89
7.51
7.38
6.24
5.71
5.36
4.99
4.58
4.21
3.74
3.40
3.13
3.04
2.90
2.77
1.66
1.60
1.40
1.22


DB-5
Time (min)
Intensity (×10^5)
16.68
13.24
13.06
12.05
11.68
10.85
10.26
10.14
9.93
9.47
9.34
8.89
8.63
8.39
8.12
7.46
7.25
7.01
6.77
5.89
5.63
5.40
5.06
4.95
4.68
4.54
4.40
4.27
4.07
3.94
3.86
3.63
3.20
3.02
2.94
2.24
2.05
0.96

FULL ANALYSIS DATA

Isoamyl alcohol	**Column DB-WAX**			**Column DB-5**		
	3.40*	1177.6	[0.03]	0.94	731.9	0.01
2-Methylbutanol	3.40*	1177.6	[0.03]	0.96	734.8	tr
(3*Z*)-Hexenol	5.72	1345.6	0.03	2.05	856.1	0.01
Hexanol	5.36	1320.0	0.01	2.24	872.8	0.01
Tricyclene	1.22	969.8	0.01	2.83	918.7	0.01
α-Thujene	1.40	999.0	0.90	2.94	926.2	0.92
α-Pinene	1.34	989.9	4.82	3.02	931.4	4.88
Camphene	1.66	1025.8	0.18	3.20*	943.5	[0.21]
α-Fenchene	1.60	1019.4	0.02	3.20*	943.5	[0.21]
β-Pinene	2.06	1064.8	3.44	3.63*	972.4	[15.64]
Sabinene	2.25	1084.5	11.96	3.63*	972.4	[15.64]
Dehydro-1,8-cineole	3.04	1149.9	0.02	3.86*	987.8	[0.03]
6-Methyl-5-hepten-2-one	4.99	1297.5	0.01	3.86*	987.8	[0.03]
Myrcene	2.83	1133.0	1.41	3.94	993.2	1.43
α-Phellandrene	2.72	1124.6	0.09	4.07*	1002.2	[0.09]
Pseudolimonene	2.77	1128.4	0.01	4.07*	1002.2	[0.09]
α-Terpinene	2.90	1138.7	0.81	4.27	1015.1	0.82
para-Cymene	4.03	1226.1	0.65	4.40†	1023.0	0.17
Limonene	3.13	1157.0	0.80	4.54*	1031.7	[58.17]
1,8-Cineole	3.31	1171.0	57.72	4.54*	1031.7	[58.17]
(*Z*)-β-Ocimene	3.74*	1204.9	[1.39]	4.68	1040.7	0.06
(*E*)-β-Ocimene	3.92	1218.0	0.29	4.83	1050.4	0.29
γ-Terpinene	3.74*	1204.9	[1.39]	4.95	1057.9	1.35
cis-Sabinene hydrate	6.83	1427.2	0.68	5.06	1064.8	0.67
Terpinolene	4.21	1239.2	0.36	5.40*	1086.6	[0.37]
para-Cymenene	6.24	1383.4	0.01	5.40*	1086.6	[0.37]
trans-Sabinene hydrate	7.89	1506.6	0.55	5.53	1095.2	0.55
Linalool	8.00	1515.0	0.05	5.63	1101.1	0.05
cis-para-Menth-2-en-1-ol	8.04	1518.5	0.11	5.89	1118.3	0.11
cis-para-Mentha-2,8-dien-1-ol	9.39*	1624.4	[0.58]	6.12	1133.1	0.01
trans-para-Menth-2-en-1-ol	8.88	1583.9	0.09	6.18	1137.0	0.08
Unknown MEAL II [m/z 109, 124 (45), 119 (41), 43 (35), 91 (28), 95 (25)...]	6.72	1419.0	0.01	6.25	1141.5	0.01
Unknown CICA III	6.77	1422.6	0.01	6.32	1146.0	0.02

[m/z 109, 41 (49), 124 (41), 43 (31), 95 (28), 84 (22)... 152 (7)]						
Unknown FRAG XLIII [m/z 167, 43 (98), 81 (86), 71 (83), 139 (72), 93 (70)...]	4.58	1266.7	0.02	6.56*	1161.7	[0.13]
Borneol	9.71*	1650.9	[6.98]	6.56*	1161.7	[0.13]
δ-Terpineol	9.39*	1624.4	[0.58]	6.60	1164.4	0.58
Terpinen-4-ol	8.49*	1553.5	[2.40]	6.77	1174.8	2.42
Cryptone	9.05	1597.0	0.02	6.85	1180.1	0.02
para-Cymen-8-ol	11.44	1795.5	0.02	6.91	1184.0	0.02
α-Terpineol	9.71*	1650.9	[6.98]	7.01	1190.5	6.72
cis-Piperitol	9.45	1629.8	0.04	7.05	1193.6	0.04
trans-Piperitol	10.31*	1699.8	[0.03]	7.25	1206.1	0.04
Unknown CICA IV [m/z 43, 97 (72), 41 (44), 71 (27), 55 (26), 82 (25)...]				7.46	1220.3	0.01
Nerol	10.98*†	1756.6	[0.07]	7.59	1229.7	0.06
Citronellol	10.65	1728.7	0.03	7.63	1232.5	0.01
Unknown CIAU II [m/z 137, 152 (28), 43 (25), 91 (24), 109 (23), 119 (19)]				7.66	1234.6	0.01
Carvone	9.95*	1670.5	[0.22]	7.75	1240.4	0.01
trans-Ascaridole glycol	14.06	2034.9	0.03	8.12	1265.9	0.03
cis-Ascaridole glycol	14.70	2097.0	0.03	8.40	1284.4	0.03
Unknown CICA VI [m/z 112, 97 (93), 83 (60), 43 (46), 41 (20), 69 (19)...]	13.79	2009.3	0.02	8.63	1300.3	0.02
Unknown MEAL I [m/z 97, 112 (92), 83 (62), 43 (44), 41 (25)... 170? (4)]	14.87	2113.9	0.04	8.89	1315.0	0.04
α-Cubebene	6.69	1417.0	0.02	9.34	1347.5	0.02
Unknown EUGL I [m/z 43, 95 (62), 107 (45), 110 (41), 55 (28), 67 (25)...]	13.88	2017.6	0.02	9.47	1356.4	0.02

α-Ylangene	6.95	1435.8	0.03	9.62	1367.6	0.02
α-Copaene	7.04	1443.3	0.01	9.68	1371.7	0.02
β-Bourbonene	7.38	1468.2	0.02	9.80	1379.7	0.01
β-Elemene	8.34	1541.8	0.11	9.93	1389.4	0.11
α-Gurjunene	7.51	1477.9	0.01	10.14	1404.3	0.02
β-Caryophyllene	8.31*	1539.4	[0.57]	10.26	1413.1	0.57
β-Gurjunene	8.25	1534.7	0.02	10.40	1423.8	0.01
Aromadendrene	8.49*	1553.5	[2.40]	10.52	1432.8	0.03
trans-α-Bergamotene	8.31*	1539.4	[0.57]	10.55	1434.7	0.01
6,9-Guaiadiene	8.53	1556.6	0.02	10.61	1439.5	0.01
β-Santalene	9.08	1599.6	0.01	10.85	1457.7	0.02
γ-Muurolene	9.48	1632.1	0.02	11.04	1471.7	0.02
Germacrene D	9.71*	1650.9	[6.98]	11.09	1475.4	0.23
β-Selinene	9.76	1654.4	0.18	11.15	1479.7	0.19
α-Selinene	9.83	1660.6	0.11	11.29*	1490.8	[0.39]
Viridiflorene	9.54	1636.7	0.07	11.29*	1490.8	[0.39]
Bicyclogermacrene	9.95*	1670.5	[0.22]	11.29*	1490.8	[0.39]
Germacrene A	10.28	1697.3	0.08	11.40	1498.6	0.03
γ-Cadinene	10.31*	1699.8	[0.03]	11.54	1509.7	0.03
δ-Cadinene	10.31*	1699.8	[0.03]	11.68	1520.3	0.03
Germacrene B	10.99*†	1757.5	[0.06]	12.05	1549.5	0.07
Spathulenol	14.29	2057.0	0.03	12.30	1569.9	0.03
Caryophyllene oxide	12.65	1903.3	0.04	12.36	1574.1	0.05
Guaiol	14.04	2032.6	0.02	12.60	1592.8	0.02
Humulene epoxide II	13.24	1958.0	0.03	12.68	1599.9	0.03
Isospathulenol	15.32	2159.4	0.04	13.06	1631.2	0.04
Neointermedeol	15.51	2177.7	0.02	13.24	1645.7	0.02
meta-Camphorene	15.28	2154.7	0.01	16.68	1950.3	0.01
Total reported		98.55%			98.25%	

*: 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