

Date : 2025-05-06

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 25D22-PTH01

Customer Identification : Eucalyptus Radiata - South Africa - E40110R

Type : Essential Oil

Source : *Eucalyptus radiata*

Customer : Plant Therapy

Checked and approved by:

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

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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 : Anne Retailaud

Date : 2025-04-30

PHYSICOCHEMICAL DATA

Refractive index : 1.4642 ± 0.0003 (20 °C)

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

Analyst : Cindy Caron B. Sc.

Date : 2025-04-22

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
Isoamyl alcohol	0.01	Aliphatic alcohol
(2E)-Hexenal	tr	Aliphatic aldehyde
α -Thujene	0.29	Monoterpene
α -Pinene	2.08	Monoterpene
α -Fenchene	0.01	Monoterpene
Camphene	0.02	Monoterpene
Sabinene	1.01	Monoterpene
β -Pinene	0.63	Monoterpene
<i>trans-para</i> -Menthane	0.01	Monoterpene
6-Methyl-5-hepten-2-one	0.03	Aliphatic ketone
Myrcene	1.07	Monoterpene
Pseudolimonene	0.01	Monoterpene
α -Phellandrene	0.55	Monoterpene
α -Terpinene	0.38	Monoterpene
<i>para</i> -Cymene	0.11	Monoterpene
1,8-Cineole	68.67	Monoterpenic ether
Limonene	5.20	Monoterpene
(Z)- β -Ocimene	0.02	Monoterpene
(E)- β -Ocimene	0.24	Monoterpene
γ -Terpinene	0.82	Monoterpene
<i>cis</i> -Sabinene hydrate	0.10	Monoterpenic alcohol
<i>cis</i> -Linalool oxide (fur.)	0.02	Monoterpenic alcohol
Terpinolene	0.23	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	0.02	Monoterpenic alcohol
<i>trans</i> -Sabinene hydrate	0.08	Monoterpenic alcohol
Linalool	0.38	Monoterpenic alcohol
endo-Fenchol	0.01	Monoterpenic alcohol
<i>cis-para</i> -Menth-2-en-1-ol	0.12	Monoterpenic alcohol
<i>trans</i> -Pinocarveol	0.01	Monoterpenic alcohol
<i>trans-para</i> -Menth-2-en-1-ol	0.08	Monoterpenic alcohol
Isopulegol	0.02	Monoterpenic alcohol
Citronellal	0.01	Monoterpenic aldehyde
Pinocarvone	0.03	Monoterpenic ketone
δ -Terpineol	0.20	Monoterpenic alcohol
Terpinen-4-ol	1.97	Monoterpenic alcohol
<i>para</i> -Cymen-8-ol	0.03	Monoterpenic alcohol
α -Terpineol	9.51	Monoterpenic alcohol
<i>cis</i> -Piperitol	0.03	Monoterpenic alcohol
<i>cis</i> - α -Phellandrene epoxide (iPr vs Me)	0.02	Monoterpenic ether
Verbenone	0.01	Monoterpenic ketone

<i>trans</i> -Piperitol	0.05	Monoterpenic alcohol
<i>trans</i> -Carveol	0.01	Monoterpenic alcohol
<i>exo</i> -2-Hydroxycineole	0.02	Monoterpenic alcohol
Nerol	0.08	Monoterpenic alcohol
Citronellol	0.05	Monoterpenic alcohol
Neral	0.67	Monoterpenic aldehyde
Piperitone	0.21	Monoterpenic ketone
Geraniol	0.47	Monoterpenic alcohol
<i>trans</i> -Ascaridole glycol	0.02	Monoterpenic alcohol
Geranial	1.04	Monoterpenic aldehyde
Bornyl acetate	0.02	Monoterpenic ester
Unknown	0.02	Oxygenated monoterpene
Unknown	0.02	Monoterpenic alcohol
Unknown	0.02	Unknown
α -Terpinyl acetate	1.84	Monoterpenic ester
Methyl (<i>E</i>)-cinnamate	0.22	Phenylpropanoid ester
Geranyl acetate	0.02	Monoterpenic ester
Unknown	0.01	Sesquiterpene
Unknown	0.02	Unknown
β -Caryophyllene	0.09	Sesquiterpene
Aromadendrene	0.03	Sesquiterpene
α -Humulene	0.01	Sesquiterpene
allo-Aromadendrene	0.03	Sesquiterpene
Viridiflorene	0.04	Sesquiterpene
Bicyclogermacrene	0.14	Sesquiterpene
δ -Cadinene	0.01	Sesquiterpene
α -Elemol	0.02	Sesquiterpenic alcohol
Palustrol	0.01	Sesquiterpenic alcohol
Spathulenol	0.02	Sesquiterpenic alcohol
Globulol	0.04	Sesquiterpenic alcohol
Viridiflorol	0.02	Sesquiterpenic alcohol
Cubeban-11-ol	0.01	Sesquiterpenic alcohol
γ -Eudesmol	0.03	Sesquiterpenic alcohol
Isospathulenol	0.03	Sesquiterpenic alcohol
β -Eudesmol	0.02	Sesquiterpenic alcohol
α -Eudesmol	0.02	Sesquiterpenic alcohol
Consolidated total	99.43	

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

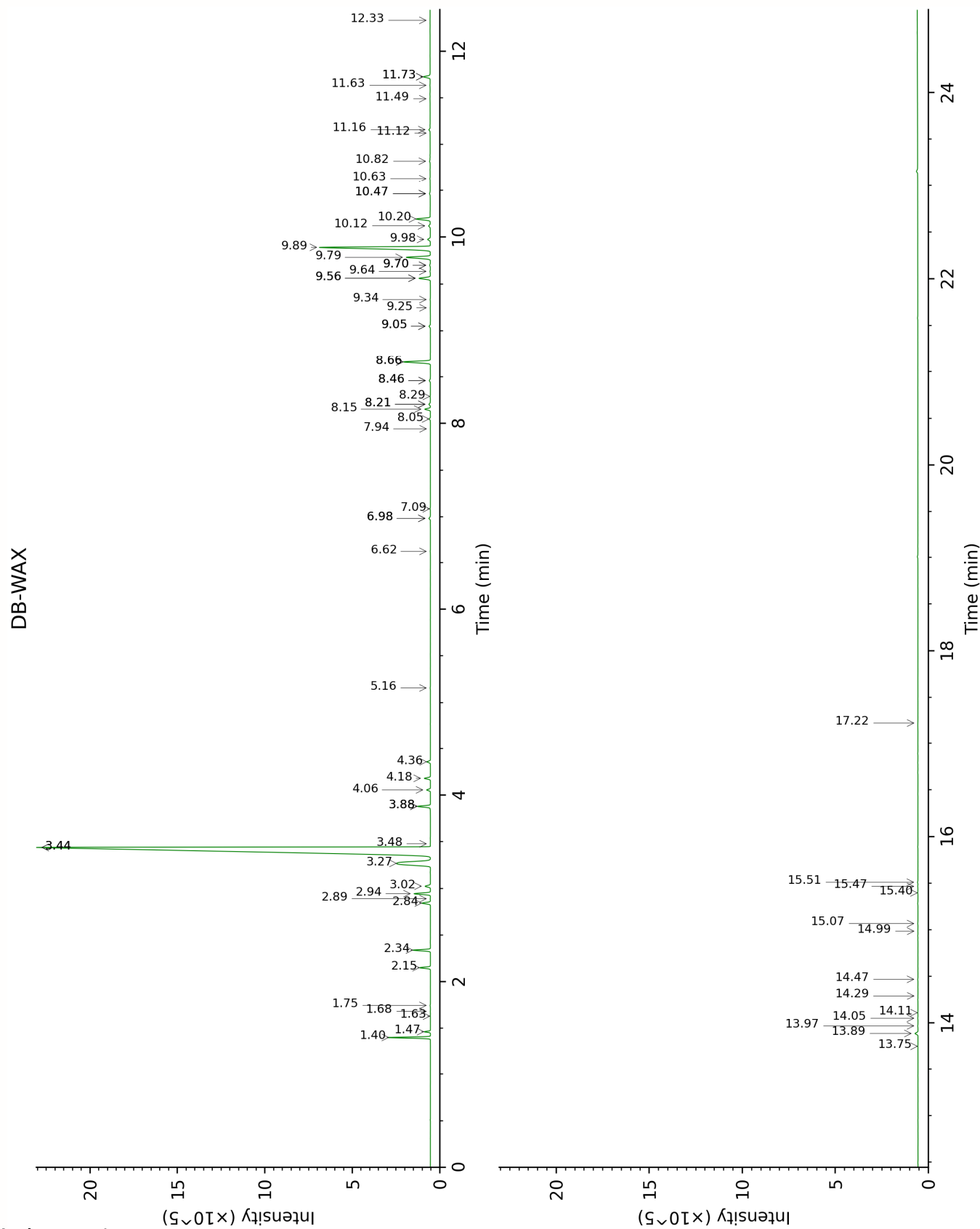
Note: no correction factor was applied

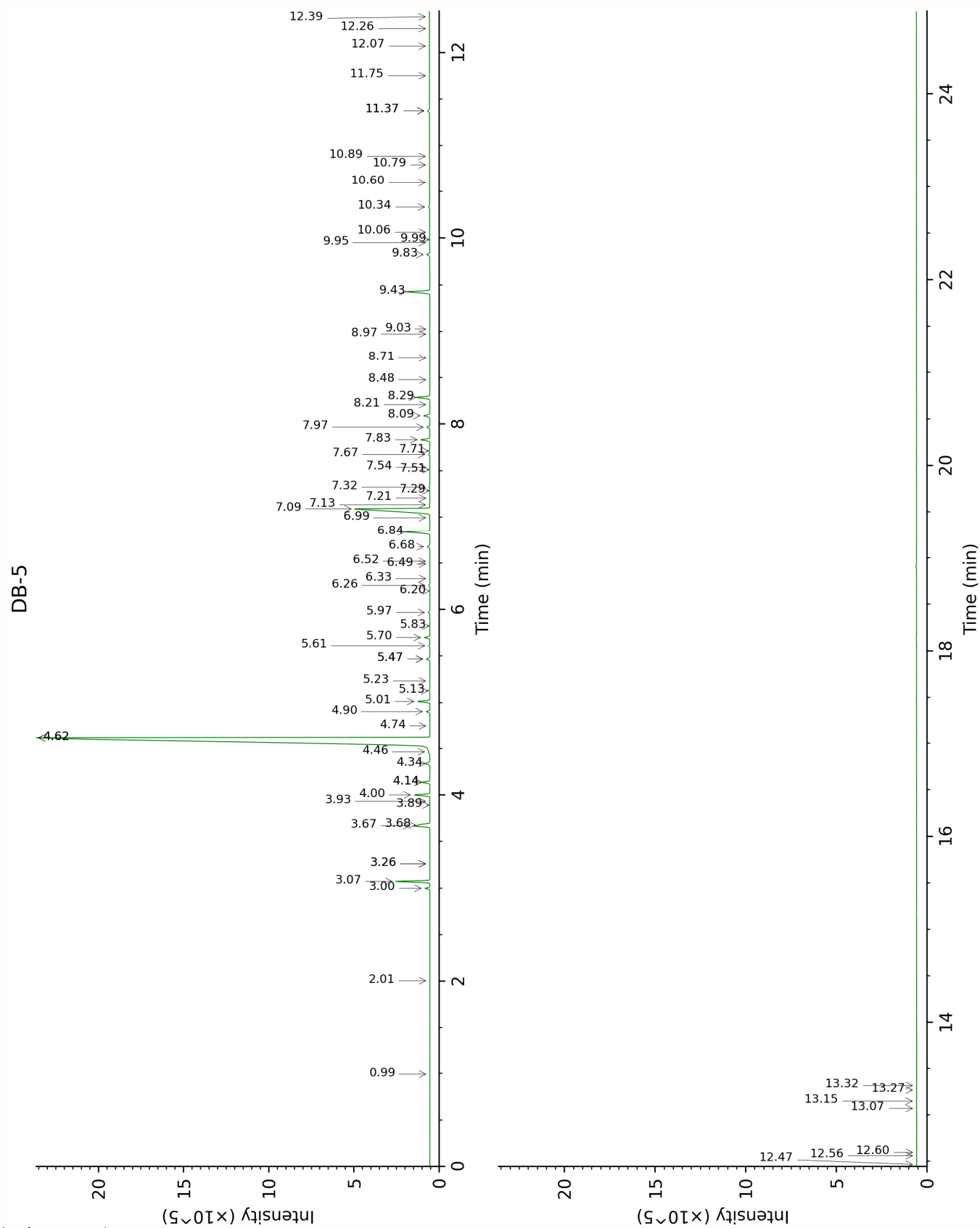
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

This page was intentionally left blank. The following pages present the complete data of the analysis.





FULL ANALYSIS DATA

Isoamyl alcohol	Column DB-WAX			Column DB-5		
	3.48	1175.8	0.01	0.99	733.1	0.01
(2E)-Hexenal	3.44*	1172.8	[68.30]	2.01	847.7	tr
α-Thujene	1.46	997.7	0.29	3.00	925.9	0.29
α-Pinene	1.40	991.1	2.08	3.07	930.9	2.08
α-Fenchene	1.68	1019.5	0.01	3.26*	943.6	[0.03]
Camphene	1.75	1025.9	0.02	3.26*	943.6	[0.03]
Sabinene	2.34	1085.1	1.01	3.67*†	971.0	[1.15]
β-Pinene	2.15	1066.3	0.63	3.68*†	971.7	[0.49]
trans-para-Menthane	1.63	1014.4	tr	3.89	986.0	0.01
6-Methyl-5-hepten-2-one	5.16	1300.3	0.02	3.93	988.7	0.03
Myrcene	2.94	1134.1	1.07	4.00	993.3	1.07
Pseudolimonene	2.89	1129.9	0.01	4.14*	1002.5	[0.57]
α-Phellandrene	2.84	1126.3	0.55	4.14*	1002.5	[0.57]
α-Terpinene	3.02	1140.4	0.38	4.34	1015.4	0.38
para-Cymene	4.18	1227.5	0.40	4.46	1023.4	0.11
1,8-Cineole	3.44*	1172.8	[68.30]	4.62*	1033.0	[73.87]
Limonene	3.27	1159.5	5.20	4.62*	1033.0	[73.87]
(Z)-β-Ocimene	3.88*	1206.0	[0.84]	4.74	1041.1	0.02
(E)-β-Ocimene	4.06	1218.6	0.24	4.90	1050.9	0.24
γ-Terpinene	3.88*	1206.0	[0.84]	5.01	1058.3	0.82
cis-Sabinene hydrate	6.98*	1430.7	[0.12]	5.13	1065.5	0.10
cis-Linalool oxide (fur.)	6.62	1404.2	0.02	5.23	1072.3	0.02
Terpinolene	4.36	1240.3	0.23	5.47*	1087.2	[0.26]
trans-Linalool oxide (fur.)	6.98*	1430.7	[0.12]	5.47*	1087.2	[0.26]
trans-Sabinene hydrate	8.05	1509.4	0.08	5.61	1096.3	0.08
Linalool	8.16	1517.4	0.38	5.70	1102.0	0.38
endo-Fenchol	8.46*	1540.8	[0.10]	5.82	1110.0	0.01
cis-para-Menth-2-en-1-ol	8.21*	1521.4	[0.11]	5.97	1119.4	0.12
trans-Pinocarveol	9.25	1601.5	0.02	6.20	1134.3	0.01
trans-para-Menth-2-en-1-ol	9.05*	1585.9	[0.11]	6.26	1138.2	0.08
Isopulegol	8.21*	1521.4	[0.11]	6.33	1143.0	0.02
Citronellal	7.09	1438.2	0.03	6.49	1153.2	0.01
Pinocarpone	7.94	1501.3	0.01	6.52	1155.1	0.03
δ-Terpineol	9.56*	1626.7	[0.84]	6.68	1165.2	0.20
Terpinen-4-ol	8.66*	1556.2	[1.96]	6.84	1175.7	1.97

<i>para</i> -Cymen-8-ol	11.64	1798.2	0.02	6.99	1185.8	0.03
α -Terpineol	9.89	1653.2	9.49	7.09	1192.0	9.51
<i>cis</i> -Piperitol	9.64	1632.6	0.03	7.14	1195.0	0.03
<i>cis</i> - α -Phellandrene epoxide (iPr vs Me)	11.12	1754.6	0.01	7.21	1199.6	0.02
Verbenone	9.70*	1637.8	[0.05]	7.29	1204.8	0.01
<i>trans</i> -Piperitol	10.47*	1699.6	[0.06]	7.32	1207.2	0.05
<i>trans</i> -Carveol	11.49	1785.6	0.02	7.51	1220.0	0.01
exo-2-Hydroxycineole	11.73*	1806.2	[0.49]	7.54	1221.7	0.02
Nerol	11.16	1757.8	0.09	7.68	1231.1	0.08
Citronellol	10.82	1729.3	0.05	7.71	1233.8	0.05
Neral	9.56*	1626.7	[0.84]	7.83	1242.0	0.67
Piperitone	9.98	1660.0	0.21	7.97	1251.1	0.21
Geraniol	11.73*	1806.2	[0.49]	8.09	1259.5	0.47
<i>trans</i> -Ascaridole glycol	14.29	2040.4	0.01	8.21	1267.6	0.02
Geranial	10.20	1677.5	1.03	8.29	1272.9	1.04
Bornyl acetate	8.29	1527.9	0.02	8.48	1285.7	0.02
Unknown RODA I [m/z 59, 94 (99), 79 (68), 43 (32), 97 (17)... 137 (8)...]				8.72	1302.0	0.02
Unknown MEAL I [m/z 97, 112 (92), 83 (62), 43 (44), 41 (25)... 170? (4)]	15.07	2116.1	0.02	8.97	1316.8	0.02
Unknown PRME VII [m/z 69, 41 (58), 114 (29), 43 (25), 83 (24), 123 (20)...]				9.03	1320.7	0.02
α -Terpinyl acetate	9.79	1644.6	1.84	9.43	1349.2	1.84
Methyl (<i>E</i>)-cinnamate	13.89	2001.9	0.22	9.83	1377.5	0.22
Geranyl acetate	10.63	1713.6	0.02	9.95	1386.5	0.02
Unknown EUGL IV [m/z 93, 122 (98), 161 (98), 107 (86), 95 (46), 105 (72)... 204 (34)]				9.99	1388.8	0.01
Unknown CALU VIII [m/z 71, 100 (92), 111 (79), 69 (46), 109 (45)...]	17.22	2339.1	0.01	10.06	1394.5	0.02
β -Caryophyllene	8.46*	1540.8	[0.10]	10.34	1414.2	0.09

Aromadendrene	8.66*	1556.2	[1.96]	10.60	1434.0	0.03
α -Humulene	9.34	1608.5	0.02	10.79	1448.5	0.01
allo-Aromadendrene	9.05*	1585.9	[0.11]	10.89	1455.5	0.03
Viridiflorene	9.70*	1637.8	[0.05]	11.37*	1492.1	[0.17]
Bicyclogermacrene	10.12	1671.5	0.14	11.37*	1492.1	[0.17]
δ -Cadinene	10.47*	1699.6	[0.06]	11.75	1521.2	0.01
α -Elemol	14.11	2023.2	0.02	12.07	1546.4	0.02
Palustrol	12.33	1859.3	0.01	12.26	1561.2	0.01
Spathulenol	14.47	2057.5	0.02	12.39	1571.3	0.02
Globulol	13.97	2009.7	0.03	12.47	1577.6	0.04
Viridiflorol	14.05	2017.5	0.02	12.56	1585.1	0.02
Cubeban-11-ol	13.75	1988.7	0.01	12.60	1588.0	0.01
γ -Eudesmol	14.99	2108.0	0.01	13.07	1626.3	0.03
Isospathulenol	15.51	2160.4	0.04	13.15	1632.9	0.03
β -Eudesmol	15.47	2155.9	0.02	13.27	1642.7	0.02
α -Eudesmol	15.40	2149.0	0.02	13.32	1646.8	0.02
Total reported		99.13%			99.44%	

*: 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