

Date : 2025-02-27

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 25B13-PTH01

Customer Identification : Lemon Myrtle - Australia - LP0109R

Type : Essential Oil

Source : *Backhousia citriodora*

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 : Sylvain Mercier, M. Sc., Chimiste 2014-005

Date : 2025-02-24

PHYSICOCHEMICAL DATA

Refractive index : 1.4882 ± 0.0003 (20 °C)

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

Analyst : Cindy Caron B. Sc.

Date : 2025-02-14

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
Ethanol	tr	Aliphatic alcohol
2-Methyl-3-buten-2-ol	0.01	Aliphatic alcohol
Methyl 2-methylbutyrate	tr	Aliphatic ester
2,6-Dimethyl-1,5-heptadiene	tr	Normonoterpene
Unknown	0.01	Unknown
α -Pinene	0.03	Monoterpene
β -Pinene	0.01	Monoterpene
Sabinene	0.01	Monoterpene
Dehydro-1,8-cineole	0.03	Monoterpenic ether
6-Methyl-5-hepten-2-one	0.12	Aliphatic ketone
Myrcene	0.05	Monoterpene
<i>para</i> -Cymene	0.01	Monoterpene
Limonene	0.06	Monoterpene
1,8-Cineole	0.01	Monoterpenic ether
Seudenone?	0.01	Aliphatic ketone
(<i>E</i>)- β -Ocimene	0.01	Monoterpene
Unknown	0.01	Unknown
Linalool	0.30	Monoterpenic alcohol
<i>cis</i> -Chrysanthemal?	0.02	Monoterpenic aldehyde
α -Cyclocitral	0.01	Monoterpenic aldehyde
<i>cis-para</i> -Menth-2-en-1-ol	0.02	Monoterpenic alcohol
<i>cis-para</i> -Mentha-2,8-dien-1-ol	0.02	Monoterpenic alcohol
<i>trans-para</i> -Menth-2-en-1-ol	0.02	Monoterpenic alcohol
Isopulegol	0.01	Monoterpenic alcohol
<i>trans</i> -Chrysanthemal	tr	Monoterpenic aldehyde
exo-Isocitral	0.18	Monoterpenic aldehyde
Citronellal	0.35	Monoterpenic aldehyde
Borneol	0.04	Monoterpenic alcohol
α -Phellandren-8-ol	0.07	Monoterpenic alcohol
Isoneral	0.70	Monoterpenic aldehyde
Rosefuran oxide	[0.07]	Monoterpenic ether
Terpinen-4-ol	[0.07]	Monoterpenic alcohol
Unknown	0.11	Oxygenated monoterpene
Isogeranial	1.35	Monoterpenic aldehyde
<i>para</i> -Cymen-8-ol	0.01	Monoterpenic alcohol
α -Terpineol	0.46	Monoterpenic alcohol
β -Phellandren-8-ol	0.20	Monoterpenic alcohol
<i>trans</i> -Isopiperitenol	0.04	Monoterpenic alcohol
Unknown	0.07	Oxygenated monoterpene
<i>cis</i> -Isopiperitenol	0.02	Monoterpenic alcohol

Nerol	0.65	Monoterpenic alcohol
Neral	40.13	Monoterpenic aldehyde
Piperitone	0.06	Monoterpenic ketone
Geraniol	1.32	Monoterpenic alcohol
Geranial	49.56	Monoterpenic aldehyde
Unknown	0.03	Oxygenated monoterpene
Citronellic acid	0.01	Monoterpenic acid
Neric acid	0.06	Monoterpenic acid
Unknown	0.11	Unknown
α -Terpinyl acetate	0.07	Monoterpenic ester
Unknown	0.06	Unknown
Geranic acid	0.12	Aliphatic acid
Unknown	0.16	Unknown
α -Copaene	0.11	Sesquiterpene
Geranyl acetate	0.04	Monoterpenic ester
β -Elemene	0.24	Sesquiterpene
β -Caryophyllene	1.41	Sesquiterpene
Aromadendrene	tr	Sesquiterpene
<i>trans</i> - α -Bergamotene	0.01	Sesquiterpene
α -Humulene	0.12	Sesquiterpene
allo-Aromadendrene	0.03	Sesquiterpene
(<i>E</i>)- β -Farnesene	0.03	Sesquiterpene
Selina-4,11-diene	0.01	Sesquiterpene
Germacrene D	0.03	Sesquiterpene
Viridiflorene	0.03	Sesquiterpene
Bicyclogermacrene	0.04	Sesquiterpene
α -Murolene	0.03	Sesquiterpene
γ -Cadinene	0.01	Sesquiterpene
(3 <i>E</i> ,6 <i>E</i>)- α -Farnesene	0.01	Sesquiterpene
δ -Cadinene	0.02	Sesquiterpene
Caryophyllene oxide	0.10	Sesquiterpenic ether
Caryophyllene oxide isomer	0.05	Sesquiterpenic ether
Humulene epoxide II	0.02	Sesquiterpenic ether
Isospathulenol	0.01	Sesquiterpenic alcohol
Unknown	0.01	Oxygenated diterpene
Unknown	0.01	Unknown
Unknown	0.01	Unknown
Unknown	0.02	Unknown
Unknown	0.03	Unknown
Unknown	0.01	Unknown
Consolidated total	99.25	

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

Note: no correction factor was applied

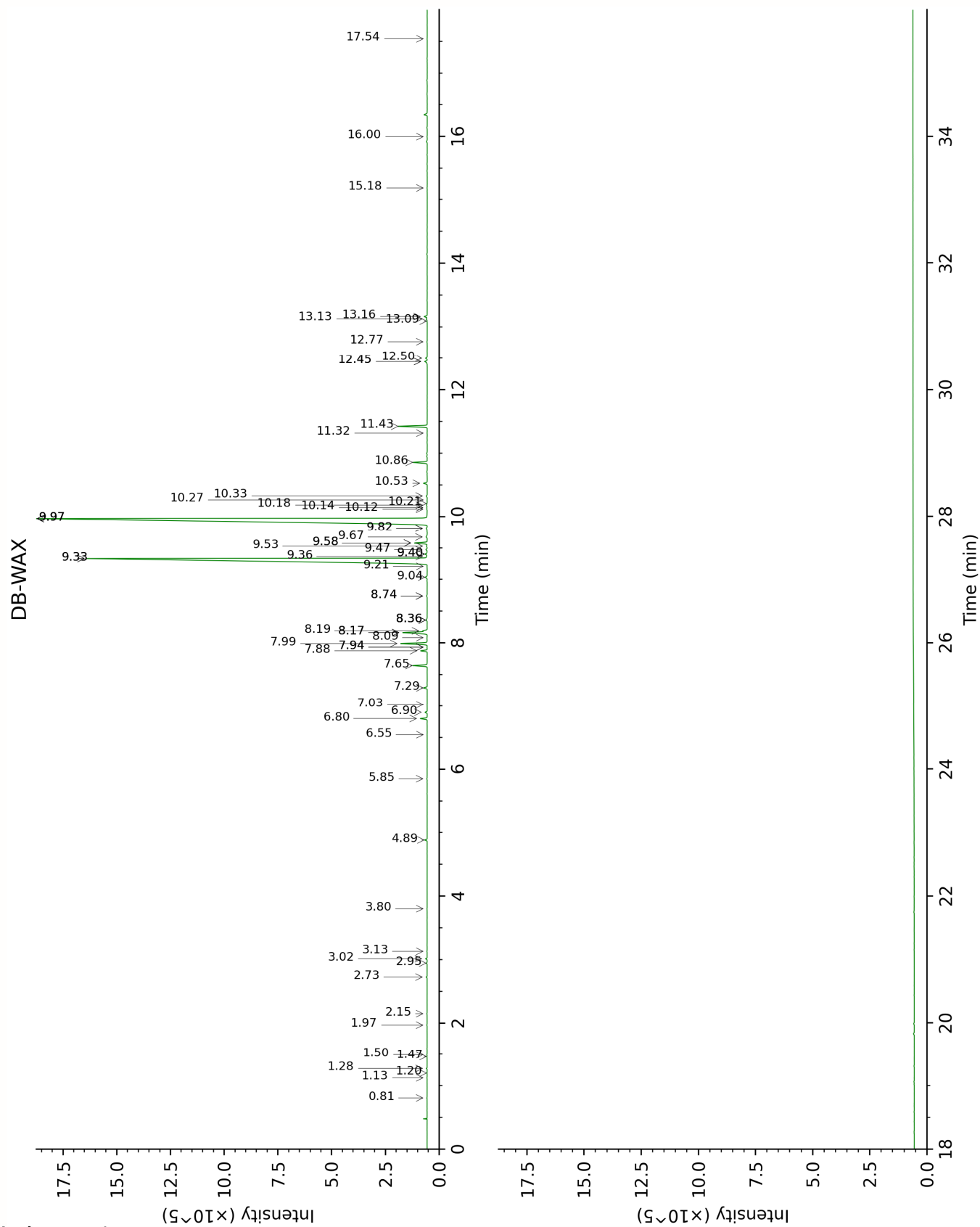
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm is set to prioritize data from the most standard DB-5 column, and smallest values so as to avoid

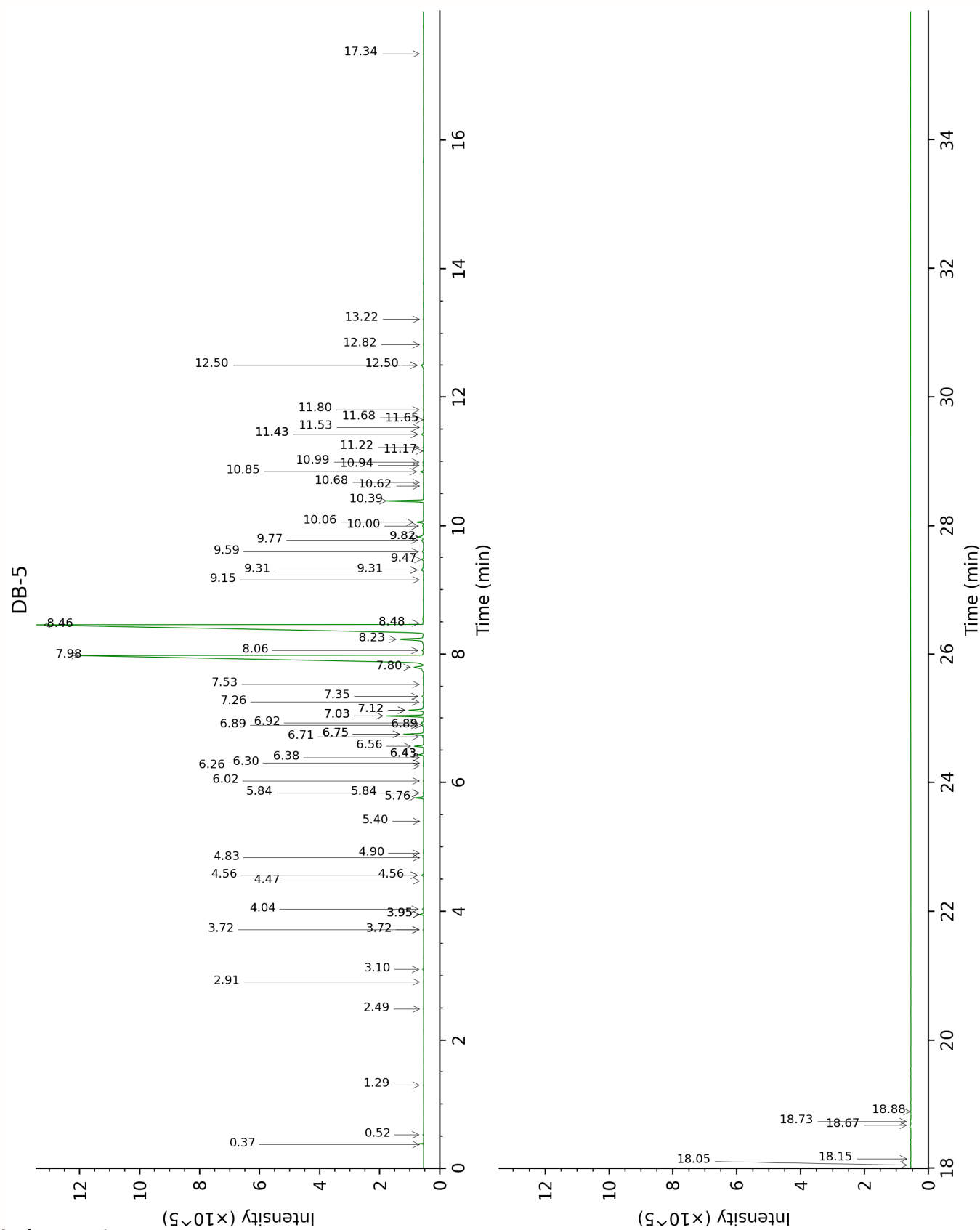
overestimating individual content. This process is semi-automatic. Advanced users are invited to consult the "Full analysis data" table after the chromatograms in this report to access the full untreated data and perform their own calculations if needed.

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

Ethanol	Column DB-WAX			Column DB-5		
	0.81	912.1	0.01	0.37	502.2	tr
2-Methyl-3-buten-2-ol	1.47	1014.9	0.01	0.52	607.9	0.01
Methyl 2-methylbutyrate	1.20	979.2	0.01	1.29	776.0	tr
2,6-Dimethyl-1,5-heptadiene	1.13	966.4	0.01	2.49	887.8	tr
Unknown HYPE V [m/z 67, 109 (89), 124 (85), 41 (41), 81 (35), 55 (24)...]	1.50	1018.0	0.01	2.91	919.3	0.01
α -Pinene	1.28	991.8	0.03	3.10	932.2	0.03
β -Pinene	1.97	1066.0	0.01	3.72*	972.9	[0.03]
Sabinene	2.15	1084.4	0.01	3.72*	972.9	[0.03]
Dehydro-1,8-cineole	2.95	1151.5	0.03	3.95*	988.7	[0.14]
6-Methyl-5-hepten-2-one	4.89	1299.2	0.12	3.95*	988.7	[0.14]
Myrcene	2.73	1134.0	0.04	4.04	994.1	0.05
<i>para</i> -Cymene				4.47	1022.0	0.01
Limonene	3.02	1157.1	0.06	4.56*	1027.7	[0.07]
1,8-Cineole	3.13	1166.4	0.01	4.56*	1027.7	[0.07]
Seudenone?	8.09	1534.2	0.01	4.83	1044.6	0.01
(<i>E</i>)- β -Ocimene	3.80	1218.7	0.01	4.90	1049.0	0.01
Unknown ZIOF VIII [m/z 43, 84 (59), 41 (20), 59 (18)...]	6.55	1418.2	tr	5.40	1080.1	0.01
Linalool	7.88	1518.1	0.31	5.76	1102.8	0.30
<i>cis</i> -Chrysanthemal?	5.85	1367.7	0.02	5.84*	1107.6	[0.02]
α -Cyclocitral				5.84*	1107.6	[0.02]
<i>cis-para</i> -Menth-2-en-1-ol	7.94*	1522.5	[0.01]	6.02	1119.5	0.02
<i>cis-para</i> -Mentha-2,8-dien-1-ol	9.33*	1632.5	[39.71]	6.26	1134.3	0.02
<i>trans-para</i> -Menth-2-en-1-ol	8.74*	1585.2	[0.05]	6.30	1137.2	0.02
Isopulegol	7.94*	1522.5	[0.01]	6.38	1142.5	0.01
<i>trans</i> -Chrysanthemal	7.03	1453.9	tr	6.43*	1145.6	[0.19]
exo-Isocitral	7.29	1473.9	0.18	6.43*	1145.6	[0.19]
Citronellal	6.80	1437.2	0.34	6.56	1153.9	0.35
Borneol	9.58*	1652.4	[0.65]	6.71	1163.2	0.04

α -Phellandren-8-ol	9.97*	1684.5	[49.36]	6.75*	1165.8	[0.77]
Isoneral	7.65	1500.1	0.70	6.75*	1165.8	[0.77]
Rosefuran oxide	8.36*	1555.7	[0.08]	6.89*	1174.6	[0.07]
Terpinen-4-ol	8.36*	1555.7	[0.08]	6.89*	1174.6	[0.07]
Unknown CYFL V [m/z 84, 83 (74), 137 (56), 41 (47), 93 (43), 108 (40)... 152 (2)]	9.40*	1638.2	[0.14]	6.92	1176.9	0.11
Isogeranial	7.99	1527.0	1.35	7.03*	1183.9	[1.37]
<i>para</i> -Cymen-8-ol	11.32	1798.4	0.01	7.03*	1183.9	[1.37]
α -Terpineol	9.58*	1652.4	[0.65]	7.12*	1189.5	[0.65]
β -Phellandren-8-ol	10.53	1731.2	0.20	7.12*	1189.5	[0.65]
<i>trans</i> - Isopiperitenol	10.18	1701.8	0.05	7.26	1198.3	0.04
Unknown CYFL VI [m/z 84, 41 (83), 83 (79), 91 (76), 93 (67), 119 (64), 137 (63), 109 (54), 108 (54)... 152 (4)]	9.97*	1684.5	[49.36]	7.35	1203.8	0.07
<i>cis</i> -Isopiperitenol	10.12	1696.5	0.02	7.53	1216.3	0.02
Nerol	10.86	1759.2	0.70	7.80	1234.0	0.65
Neral	9.33*	1632.5	[39.71]	7.98	1246.3	40.13
Piperitone	9.67	1660.1	0.08	8.06	1251.6	0.06
Geraniol	11.43	1807.9	1.40	8.24	1263.2	1.32
Geranial	9.97*	1684.5	[49.36]	8.46	1278.2	49.56
Unknown CYFL VII [m/z 43, 69 (77), 41 (70), 109 (54)... 152 (6)]	12.77	1928.5	0.02	8.48	1279.8	0.03
Citronellic acid				9.15	1325.7	0.01
Neric acid				9.31*	1336.6	[0.17]
Unknown CYFL VIII [m/z 82, 59 (44), 41 (43), 95 (31), 43 (29), 81 (24)...]	12.45*	1898.9	[0.16]	9.31*	1336.6	[0.17]
α -Terpinyl acetate	9.47	1644.0	0.08	9.47	1348.1	0.07
Unknown LICU I [m/z 110, 95 (98), 109 (40), 43 (35), 111 (32)... 153 (13)...]	13.13	1962.0	0.07	9.59	1356.6	0.06
Geranic acid				9.77	1369.2	0.12
Unknown ZIOF XI	13.16	1965.4	0.16	9.82*	1372.8	[0.30]

[m/z 81, 59 (94), 41 (74), 85 (40), 43 (55)...]						
α -Copaene	6.90	1444.6	0.11	9.82*	1372.8	[0.30]
Geranyl acetate	10.33	1714.1	0.06	10.00	1385.4	0.04
β -Elemene	8.19	1542.5	0.20	10.06	1389.7	0.24
β -Caryophyllene	8.17*	1540.4	[1.46]	10.39	1413.4	1.41
Aromadendrene	8.36*	1555.7	[0.08]	10.62	1430.5	tr
<i>trans</i> - α -Bergamotene	8.17*	1540.4	[1.46]	10.68	1434.8	0.01
α -Humulene	9.04	1608.5	0.12	10.85	1447.2	0.12
allo-Aromadendrene	8.74*	1585.2	[0.05]	10.94	1454.4	0.03
(E)- β -Farnesene	9.36	1634.9	0.03	10.99	1458.1	0.03
Selina-4,11-diene	9.21	1622.5	0.02	11.17	1471.0	0.01
Germacrene D	9.53	1648.3	0.05	11.22	1475.1	0.03
Viridiflorene	9.40*	1638.2	[0.14]	11.42*	1490.3	[0.09]
Bicyclogermacrene	9.82*	1671.8	[0.07]	11.42*	1490.3	[0.09]
α -Muurolene	9.82*	1671.8	[0.07]	11.53	1498.2	0.03
γ -Cadinene	10.14	1698.4	0.03	11.65	1507.2	0.01
(3E,6E)- α -Farnesene	10.27	1708.8	0.01	11.68	1509.6	0.01
δ -Cadinene	10.21	1703.9	0.02	11.80	1519.3	0.02
Caryophyllene oxide	12.50	1903.9	0.10	12.50*	1573.6	[0.15]
Caryophyllene oxide isomer	12.45*	1898.9	[0.16]	12.50*	1573.6	[0.15]
Humulene epoxide II	13.09	1958.7	0.01	12.82	1599.3	0.02
Isospathulenol	15.18	2161.6	0.01	13.22	1631.4	0.01
Unknown COCI XXIX [m/z 81, 137 (70), 95 (46), 69 (45), 41 (39), 55 (29)...]	16.00	2245.9	0.01	17.34	1998.3	0.01
Unknown CYFL IX [m/z 93, 69 (95), 135 (76), 107 (53), 41 (53), 109 (50)... 235 (10)...]				18.05	2068.7	0.01
Unknown COCI XXXVI [m/z 69, 81 (56), 83 (52), 41 (39), 95 (42), 55 (27)...]	17.54	2412.2	0.01	18.15	2078.5	0.01

Unknown LICU II [m/z 69, 41 (38), 151 (36), 123 (34), 82 (24), 43 (23), 109 (21)...]				18.67	2131.5	0.02
Unknown COCI LII [m/z 69, 41 (75), 95 (53), 55 (47), 82 (40), 81 (38)...]				18.73	2137.5	0.03
Unknown COCI LIV [m/z 69, 41 (77), 95 (55), 55 (50), 82 (46), 109 (42)...]				18.88	2153.4	0.01
Total reported			98.56%		99.29%	

*: 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