

Date : 2026-06-30

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 26F02-PTH03

Customer Identification : Lemon Eucalyptus ORGANIC - Madagascar - E10119

Type : Essential Oil

Source : *Corymbia citriodora*

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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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 2026-06-04 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 : 2026-06-03

PHYSICOCHEMICAL DATA

Refractive index : 1.4539 ± 0.0003 (20 °C)

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

Analyst : Cindy Caron B. Sc.

Date : 2026-06-03

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	0.01	Aliphatic alcohol
3-Methylcyclopentene	0.01	Alkene
Methylcyclopentane ?	0.01	Alkane
Isovaleral	0.03	Aliphatic aldehyde
2-Methylbutyral	tr	Aliphatic aldehyde
Isoamyl alcohol	tr	Aliphatic alcohol
2,4-Dimethyl-3-pentanone	tr	Aliphatic ketone
2-Methyl-2-heptene	tr	Alkene
3-Methylcyclopentanol	0.02	Aliphatic alcohol
(3Z)-Hexenol	tr	Aliphatic alcohol
Unknown	0.03	Unknown
Unknown	0.03	Unknown
Isobutyl propionate	0.01	Aliphatic ester
Styrene	0.02	Simple phenolic
Isobutyl isobutyrate	0.05	Aliphatic ester
1-Isopropylcyclohexene	0.01	Normonoterpene
α -Thujene	0.03	Monoterpene
α -Pinene	0.19	Monoterpene
3-Methylcyclohexanone	0.01	Aliphatic ketone
Unknown	0.01	Unknown
Unknown	0.01	Unknown
Sabinene	0.04	Monoterpene
β -Pinene	0.63	Monoterpene
Myrcene	0.18	Monoterpene
α -Phellandrene	0.02	Monoterpene
Isobutyl isovalerate	0.01	Aliphatic ester
α -Terpinene	0.02	Monoterpene
Isoamyl isobutyrate	0.03	Aliphatic ester
2-Methylbutyl isobutyrate	0.02	Aliphatic ester
<i>para</i> -Cymene	0.03	Monoterpene
Unknown	0.06	Unknown
Unknown	0.03	Unknown
Limonene	0.12	Monoterpene
1,8-Cineole	0.30	Monoterpenic ether
β -Phellandrene	0.01	Monoterpene
(Z)- β -Ocimene	0.08	Monoterpene
(E)- β -Ocimene	0.03	Monoterpene
Unknown	0.02	Unknown
2,6-Dimethyl-5-heptenal (melonal)	0.14	Aliphatic aldehyde
γ -Terpinene	0.14	Monoterpene

<i>para</i> -Mentha-3,8-diene	0.32	Monoterpene
Terpinolene isomer	0.06	Monoterpene
Terpinolene	0.21	Monoterpene
<i>para</i> -Cymenene	0.01	Monoterpene
Unknown	0.01	Oxygenated monoterpene
Linalool	0.07	Monoterpenic alcohol
<i>cis</i> -Rose oxide	0.04	Monoterpenic ether
Phenylethyl alcohol	0.02	Simple phenolic
<i>trans</i> -Rose oxide	0.02	Monoterpenic ether
Unknown	0.07	Oxygenated normonoterpene
Isopulegol	9.21	Monoterpenic alcohol
neo-Isopulegol	0.03	Monoterpenic alcohol
Menthone	0.09	Monoterpenic ketone
iso-Isopulegol	5.13	Monoterpenic alcohol
Citronellal	70.67	Monoterpenic aldehyde
Borneol	0.92	Monoterpenic alcohol
neoiso-Isopulegol	0.65	Monoterpenic alcohol
Terpinen-4-ol	0.19	Monoterpenic alcohol
Isopulegol isomer	0.03	Monoterpenic alcohol
α -Terpineol	0.04	Monoterpenic alcohol
<i>trans</i> -Pulegol	0.01	Monoterpenic alcohol
Unknown	0.06	Oxygenated monoterpene
Nerol	0.03	Monoterpenic alcohol
Citronellol	2.79	Monoterpenic alcohol
Neral	0.03	Monoterpenic aldehyde
Unknown	0.06	Unknown
Geraniol	0.06	Monoterpenic alcohol
Methyl citronellate	0.08	Monoterpenic ester
Isopulegyl acetate	0.01	Monoterpenic ester
Citronellyl formate	0.01	Monoterpenic ester
Unknown	0.03	Unknown
Benzyl isobutyrate	0.02	Phenolic ester
Citronellic acid	0.16	Monoterpenic acid
8-Hydroxy-neo-menthol	0.60	Monoterpenic alcohol
8-Hydroxymenthol	0.02	Monoterpenic alcohol
8-Hydroxy-iso-menthol	0.23	Monoterpenic alcohol
Eugenol	0.06	Phenylpropanoid
Citronellyl acetate	0.92	Monoterpenic ester
Neryl acetate	0.02	Monoterpenic ester
8-Hydroxy-neoiso-menthol	0.02	Monoterpenic alcohol
Geranyl acetate	0.03	Monoterpenic ester
β -Elemene	0.02	Sesquiterpene
Benzyl isovalerate	0.05	Phenolic ester
β -Caryophyllene	0.95	Sesquiterpene
α -Humulene	0.06	Sesquiterpene

allo-Aromadendrene	0.01	Sesquiterpene
(E)-β-Farnesene	0.01	Sesquiterpene
Germacrene D	0.04	Sesquiterpene
Isoamyl phenylacetate	0.01	Phenolic ester
Bicyclogermacrene	0.05	Sesquiterpene
Germacrene A	0.01	Sesquiterpene
γ-Cadinene	0.01	Sesquiterpene
δ-Cadinene	0.01	Sesquiterpene
Germacrene B	0.01	Sesquiterpene
Spathulenol	0.01	Sesquiterpenic alcohol
Caryophyllene oxide isomer	0.01	Sesquiterpenic ether
Caryophyllene oxide	0.03	Sesquiterpenic ether
Unknown	0.03	Unknown
Unknown	0.13	Oxygenated diterpene
Unknown	0.27	Oxygenated diterpene
Unknown	0.03	Oxygenated diterpene
Unknown	0.03	Oxygenated diterpene
Unknown	0.84	Oxygenated diterpene
Unknown	0.03	Oxygenated diterpene
Unknown	0.03	Oxygenated diterpene
Unknown	0.18	Oxygenated diterpene
Unknown	0.17	Oxygenated diterpene
Unknown	0.24	Oxygenated diterpene
Unknown	0.05	Oxygenated diterpene
Unknown	0.02	Oxygenated diterpene
Unknown	0.04	Oxygenated diterpene
Unknown	0.01	Unknown
Unknown	0.02	Unknown
Citronellyl citronellate	0.01	Monoterpenic ester
Unknown	0.03	Oxygenated diterpene
Unknown	0.13	Oxygenated diterpene
Unknown	0.06	Unknown
Unknown	0.02	Unknown
Unknown	0.02	Unknown
Unknown	0.02	Unknown
Unknown	0.02	Unknown
Unknown	0.07	Unknown
Unknown	0.06	Oxygenated diterpene
Unknown	0.01	Unknown
Unknown	0.02	Unknown
Unknown	0.06	Unknown
Consolidated total	99.39	

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

Note: no correction factor was applied

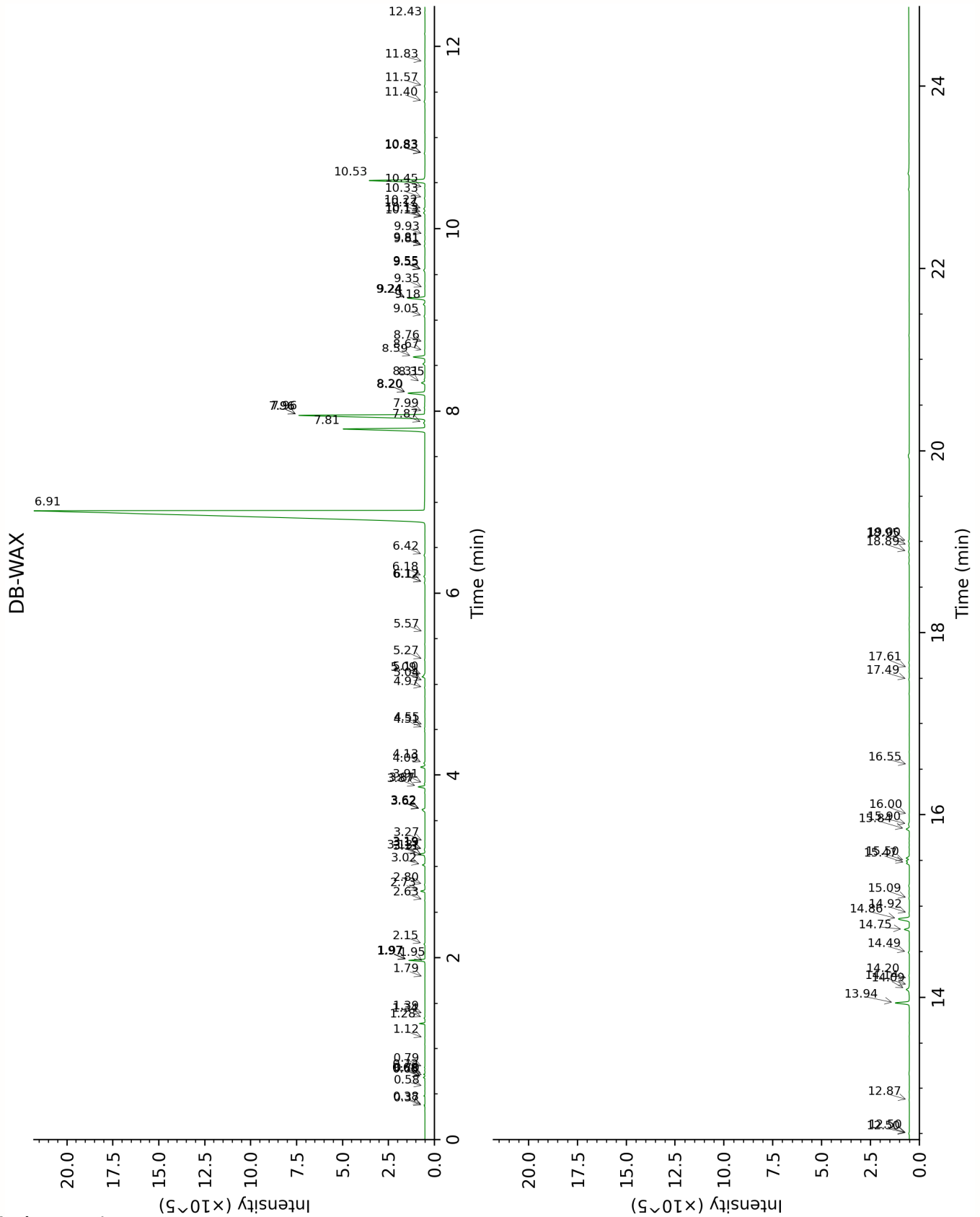
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies

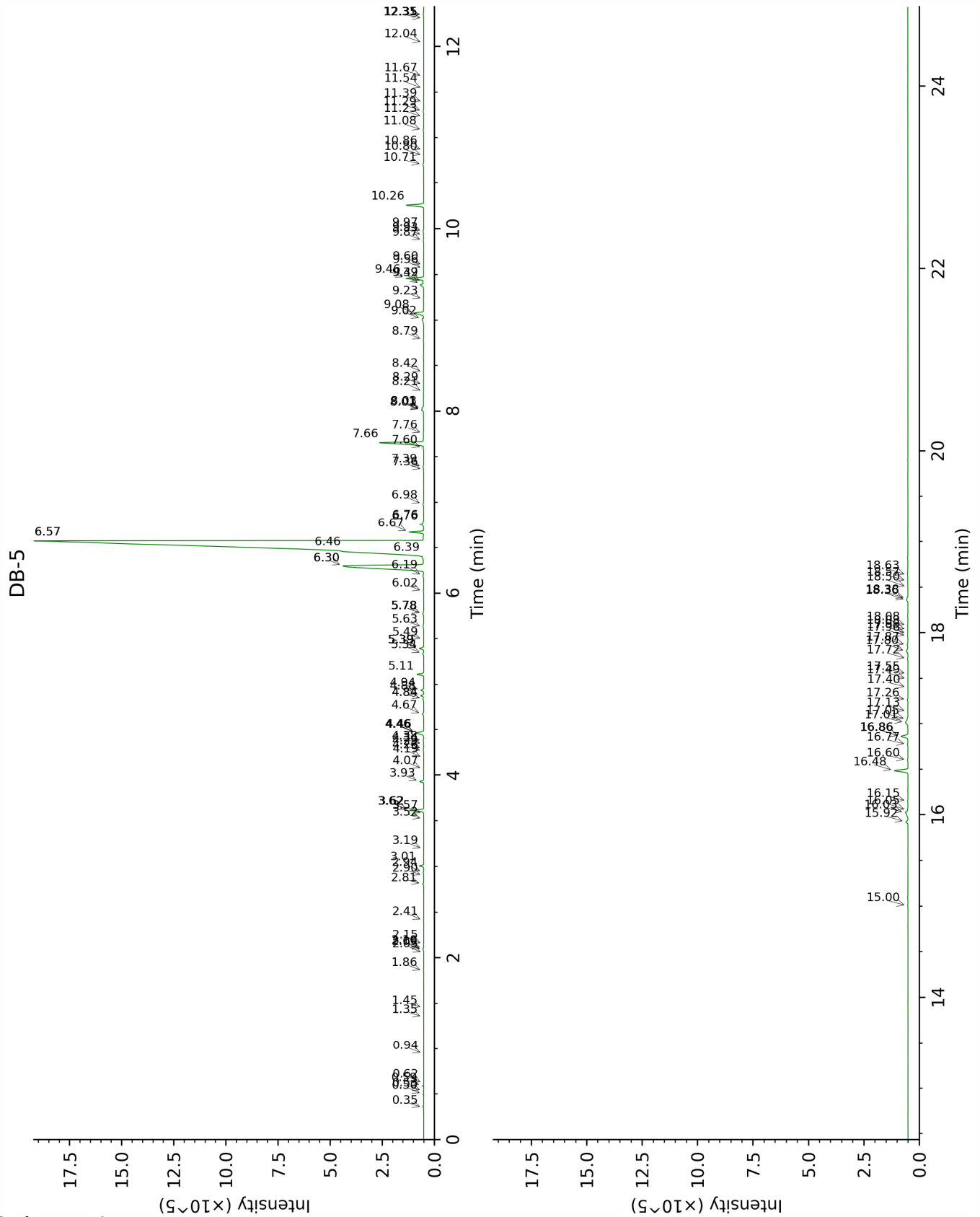
between columns, the algorithm is set to prioritize data from the most standard DB-5 column, and smallest values so as to avoid overestimating individual content. This process is semi-automatic. Advanced users are invited to consult the "Full analysis data" table after the chromatograms in this report 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		
	0.79	911.3	0.01	0.35	501.2	0.01
3-Methylcyclopentene	0.38	663.5	0.01	0.50	605.6	0.01
Methylcyclopentane ?	0.37	638.5	0.01	0.53	618.5	0.01
Isovaleral	0.72	883.6	0.03	0.59	639.8	0.03
2-Methylbutyral	0.70	876.9	tr	0.62	650.4	tr
Isoamyl alcohol	3.27	1176.5	0.01	0.94	730.8	tr
2,4-Dimethyl-3-pentanone	1.12	964.6	tr	1.35	790.7	tr
2-Methyl-2-heptene	0.58	835.3	tr	1.45	805.0	tr
3-Methylcyclopentanol	4.97	1300.4	0.02	1.86	839.3	0.02
(3Z)-Hexenol	5.57	1344.5	0.01	2.05	855.8	tr
Unknown COCI I [m/z 55, 83 (89), 82 (70), 67 (66), 41 (55), 69 (46), 111 (37)... 126 (2)]	0.68*	871.1	[0.05]	2.09	859.0	0.03
Unknown COCI II [m/z 55, 83 (79), 67 (65), 41 (63), 82 (60), 69 (58)... 111 (27), 126 (9)]	0.68*	871.1	[0.05]	2.10	860.3	0.03
Isobutyl propionate	1.79	1048.2	tr	2.15	864.3	0.01
Styrene	3.62*	1203.6	[0.20]	2.41	886.6	0.02
Isobutyl isobutyrate	1.97*	1066.6	[0.66]	2.81	917.3	0.05
1-Isopropylcyclohexene	1.39	1007.7	tr	2.90	923.6	0.01
α-Thujene	1.34	1000.3	0.03	2.94	925.9	0.03
α-Pinene	1.28	990.7	0.18	3.01	930.6	0.19
3-Methylcyclohexanone	4.55	1270.2	tr	3.19	943.1	0.01
Unknown COCI III [m/z 99, 81 (98), 55 (51), 43 (42), 41 (34)... 109? (2)]	1.95	1064.3	0.01	3.52	965.3	0.01
Unknown COCI IV [m/z 99, 81 (96), 43 (58), 55 (56), 41 (43)...]	1.97*	1066.6	[0.66]	3.57	969.0	0.01
Sabinene	2.15	1084.1	0.04	3.62*	971.7	[0.66]
β-Pinene	1.97*	1066.6	[0.66]	3.62*	971.7	[0.66]
Myrcene	2.73	1134.5	0.18	3.93	993.1	0.18
α-Phellandrene	2.63	1126.7	0.02	4.07	1002.3	0.02
Isobutyl isovalerate	3.11*	1163.8	[0.02]	4.19	1010.2	0.01
α-Terpinene	2.80	1140.0	0.03	4.26	1014.9	0.02

Isoamyl isobutyrate	3.18*	1169.6	[0.04]	4.29	1016.4	0.03
2-Methylbutyl isobutyrate	3.18*	1169.6	[0.04]	4.34	1019.8	0.02
<i>para</i> -Cymene	3.91	1224.4	0.03	4.38	1022.2	0.03
Unknown COCI XLIV [m/z 59, 43 (12), 109 (11), 41 (10), 127 (8)...]	6.18	1389.4	0.06	4.46*	1027.7	[0.52]
Unknown COCI XLIII [m/z 59, 43 (11), 109 (10), 41 (10), 127 (8)...]	6.12*	1384.4	[0.04]	4.46*	1027.7	[0.52]
Limonene	3.02	1156.7	0.12	4.46*	1027.7	[0.52]
1,8-Cineole	3.13	1165.7	0.30	4.46*	1027.7	[0.52]
β -Phellandrene	3.11*	1163.8	[0.02]	4.46*	1027.7	[0.52]
(<i>Z</i>)- β -Ocimene	3.62*	1203.6	[0.20]	4.67	1040.8	0.08
(<i>E</i>)- β -Ocimene	3.87*	1221.9	[0.33]	4.84*	1051.5	[0.05]
Unknown COCI V [m/z 125, 69 (75), 41 (34), 55 (25), 93 (22)... 140 (3)]	4.51	1267.9	0.02	4.84*	1051.5	[0.05]
2,6-Dimethyl-5-heptenal (melonal)	5.09	1309.0	0.16	4.88	1054.2	0.14
γ -Terpinene	3.62*	1203.6	[0.20]	4.94	1058.0	0.14
<i>para</i> -Mentha-3,8-diene	3.87*	1221.9	[0.33]	5.11	1069.1	0.32
Terpinolene isomer	4.13	1240.5	0.06	5.34	1083.5	0.06
Terpinolene	4.09	1237.5	0.21	5.40*	1087.2	[0.22]
<i>para</i> -Cymenene	6.12*	1384.4	[0.04]	5.40*	1087.2	[0.22]
Unknown COCI VI [m/z 67, 82 (79), 81 (34), 41 (32), 55 (16)... 152 (5)]	5.04	1305.4	0.01	5.49	1093.5	0.01
Linalool	7.87	1517.0	0.07	5.63	1102.2	0.07
<i>cis</i> -Rose oxide	5.10	1310.1	0.04	5.78*	1111.6	[0.06]
Phenylethyl alcohol	11.83	1846.7	0.02	5.78*	1111.6	[0.06]
<i>trans</i> -Rose oxide	5.27	1322.3	0.02	6.02	1127.5	0.02
Unknown COCI VIII [m/z 41, 69 (87), 82 (66), 67 (55), 109 (46)... 142 (18)]	9.18	1620.4	0.08	6.19	1138.6	0.07
Isopulegol	7.96*	1523.6	[9.37]	6.30*	1145.7	[9.24]
neo-Isopulegol	7.99	1526.6	0.03	6.30*	1145.7	[9.24]
Menthone	6.42	1406.5	0.06	6.39	1151.9	0.09
iso-Isopulegol	7.81	1511.8	5.13	6.46*†	1156.4	[6.79]
Citronellal	6.91	1443.9	70.67	6.57*†	1163.6	[69.92]
Borneol	9.55*	1651.1	[0.08]	6.57*†	1163.6	[69.92]

neiso-Isopulegol	8.59	1574.1	0.65	6.67	1169.9	0.65
Terpinen-4-ol	8.31	1551.7	0.19	6.76*	1175.7	[0.22]
Isopulegol isomer	8.35	1554.5	0.03	6.76*	1175.7	[0.22]
α -Terpineol	9.55*	1651.1	[0.08]	6.98	1190.2	0.04
<i>trans</i> -Pulegol	9.81*	1673.1	[0.04]	7.36	1215.0	0.01
Unknown COCI IX [m/z 69, 55 (65), 43 (47), 41 (44), 83 (42), 75 (37), 125 (36)... 154 (1)]				7.39	1217.4	0.06
Nerol	10.83*	1758.9	[0.05]	7.60	1231.5	0.03
Citronellol	10.53	1732.7	3.26	7.66	1235.5	2.79
Neral	9.24*	1626.0	[0.94]	7.76	1242.4	0.03
Unknown COCI XI [m/z 59, 41 (62), 43 (51), 97 (42), 69 (37)...]	10.22	1706.4	0.06	8.01*	1259.9	[0.11]
Geraniol	11.40	1807.9	0.06	8.01*	1259.9	[0.11]
Methyl citronellate	7.96*	1523.6	[9.37]	8.03	1261.3	0.08
Isopulegyl acetate	7.96*	1523.6	[9.37]	8.21	1273.5	0.01
Citronellyl formate	8.67	1580.2	0.02	8.29	1278.9	0.01
Unknown COCI XII [m/z 85, 41 (23), 67 (21), 82 (16), 43 (10)... 170? (1)]	12.50*	1907.3	[0.03]	8.42	1288.1	0.03
Benzyl isobutyrate	10.44	1725.8	0.02	8.79	1309.7	0.02
Citronellic acid				9.02	1325.9	0.16
8-Hydroxy-neo- menthol	13.94	2042.7	0.84	9.08	1330.6	0.60
8-Hydroxymenthol				9.23	1341.1	0.02
8-Hydroxy-iso- menthol	14.75	2121.4	0.28	9.39	1352.4	0.23
Eugenol	14.50	2096.9	0.06	9.42	1354.6	0.06
Citronellyl acetate	9.24*	1626.0	[0.94]	9.46	1357.4	0.92
Neryl acetate	9.93	1683.1	0.01	9.56	1364.9	0.02
8-Hydroxy-neoiso- menthol	14.92	2139.5	0.02	9.60	1367.4	0.02
Geranyl acetate	10.33	1716.0	0.03	9.87	1386.8	0.03
β -Elemene	8.20*	1542.8	[0.97]	9.93	1390.7	0.02
Benzyl isovalerate	11.57	1822.8	0.03	9.97	1393.6	0.05
β -Caryophyllene	8.20*	1542.8	[0.97]	10.26	1414.6	0.95
α -Humulene	9.05	1609.9	0.05	10.71	1448.5	0.06
allo-Aromadendrene	8.76	1587.4	0.01	10.80	1455.8	0.01
(<i>E</i>)- β -Farnesene	9.35	1634.7	0.01	10.86	1460.2	0.01
Germacrene D	9.55*	1651.1	[0.08]	11.08	1476.7	0.04
Isoamyl	12.87	1941.0	0.02	11.23	1487.7	0.01

phenylacetate						
Bicyclogermacrene	9.81*	1673.1	[0.04]	11.29	1492.2	0.05
Germacrene A	10.13*	1698.9	[0.01]	11.39	1499.9	0.01
γ-Cadinene	10.13*	1698.9	[0.01]	11.54	1511.0	0.01
δ-Cadinene	10.17	1702.9	0.08	11.67	1521.7	0.01
Germacrene B	10.83*	1758.9	[0.05]	12.04	1550.8	0.01
Spathulenol	14.14	2061.7	0.01	12.31	1571.8	0.01
Caryophyllene oxide isomer	12.43	1900.5	0.01	12.35*	1575.4	[0.04]
Caryophyllene oxide	12.50*	1907.3	[0.03]	12.35*	1575.4	[0.04]
Unknown COCI XIV [m/z 81, 95 (51), 41 (31), 69 (30), 55 (26), 137 (21)...]				15.00	1798.3	0.03
Unknown COCI XVIII [m/z 81, 69 (87), 93 (74), 121 (71), 41 (70), 205 (47)... 290 (18)]				15.92	1881.9	0.13
Unknown COCI XX [m/z 81, 93 (70), 121 (64), 69 (64), 41 (56), 205 (50)... 290 (19)]	14.09	2057.0	0.25	16.03	1891.3	0.27
Unknown COCI XXI [m/z 165, 69 (87), 205 (72), 81 (67), 41 (65)... 290 (4)]	14.20	2068.4	0.01	16.05	1893.6	0.03
Unknown COCI XXII [m/z 165, 205 (96), 69 (72), 41 (61), 81 (49)... 290 (6)]				16.15	1902.7	0.03
Unknown COCI XXIII [m/z 81, 137 (85), 95 (48), 69 (44)... 308? (t)]	14.86	2133.2	0.86	16.48	1934.3	0.84
Unknown COCI XXIV [m/z 137, 81 (81), 95 (41), 183 (38)...]	15.08	2155.9	0.03	16.60	1945.4	0.03
Unknown COCI XXV [m/z 69, 81 (53), 41 (51), 137 (39), 121 (33)...]				16.77	1961.7	0.03
Unknown COCI XLV [m/z 81, 205 (66), 69 (58), 41 (56), 93 (56), 121 (47)... 290 (9)]	15.50	2197.8	0.18	16.86*	1970.1	[0.47]
Unknown COCI XXVI	15.47	2195.1	0.17	16.86*	1970.1	[0.47]

[m/z 81, 93 (59), 205 (55), 121 (50), 41 (43)... 290 (8)]						
Unknown COCI XXVII [m/z 81, 137 (60), 69 (47), 95 (41), 41 (39), 55 (25)... 308? (t)]	15.84	2233.5	0.19	17.01	1984.4	0.24
Unknown COCI XXVIII [m/z 81, 137 (94), 95 (46), 69 (38), 41 (36)...]	15.90	2239.1	0.07	17.05	1988.0	0.05
Unknown COCI XXIX [m/z 81, 137 (70), 95 (46), 69 (45), 41 (39), 55 (29)...]	16.00	2250.2	0.02	17.13	1996.0	0.02
Unknown COCI XXX [m/z 41, 69 (98), 55 (55), 81 (46), 109 (46)... 290 (8)]				17.26	2008.2	0.04
Unknown COCI LXIII [m/z 69, 41 (95), 55 (57), 109 (46), 95 (45), 67 (34)...]				17.40	2022.7	0.01
Unknown COCI LXIV [m/z 69, 41 (96), 55 (53), 109 (48), 95 (43), 67 (35)...]				17.49	2031.5	0.02
Citronellyl citronellate	16.55	2307.8	0.01	17.55	2037.5	0.01
Unknown COCI XXXIII [m/z 69, 81 (88), 43 (85), 95 (60)... 308 (t)]	18.89	2569.8	0.06	17.72	2053.9	0.03
Unknown COCI XXXV [m/z 81, 95 (49), 69 (48), 137 (47), 43 (36)... 308 (1)]	19.00	2583.3	0.05	17.80	2061.9	0.13
Unknown COCI XXXIV [m/z 81, 137 (48), 95 (39), 69 (34), 41 (26)...]				17.87	2069.1	0.06
Unknown COCI XXXVI [m/z 69, 81 (56), 83 (52), 41 (39), 95 (42), 55 (27)...]	17.49	2410.3	0.04	17.96	2078.6	0.02
Unknown COCI XXXVII [m/z 69, 81 (63), 83 (56), 41 (39), 95 (31)...]	17.61	2423.9	0.02	17.99	2081.5	0.02

Unknown COCI XXXVIII [m/z 81, 137 (50), 69 (41), 95 (40)...]				18.03	2085.3	0.02
Unknown COCI XXXIX [m/z 81, 137 (55), 69 (50), 95 (41), 41 (40), 59 (31)... 306? (t)]				18.08	2090.3	0.02
Unknown COCI XLI [m/z 69, 81 (71), 41 (47), 83 (44), 95 (43), 43 (41)... 293 (2)...]				18.36	2118.3	0.07
Unknown COCI XLII [m/z 81, 43 (94), 69 (68), 95 (55), 41 (55), 55 (46)... 293 (8), 308 (1)]	18.96	2577.7	0.03	18.38	2120.5	0.06
Unknown COCI LI [m/z 69, 41 (88), 95 (60), 55 (54), 81 (47), 109 (42)...]				18.50	2133.1	0.01
Unknown COCI LII [m/z 69, 41 (75), 95 (53), 55 (47), 82 (40), 81 (38)...]				18.57	2140.1	0.02
Unknown COCI LIII [m/z 69, 41 (86), 95 (59), 55 (47), 82 (43) 109 (41)...]				18.63	2146.7	0.06
Total reported	98.27%			99.50%		

*: 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