

Date : 2026-09-08

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 26H07-PTH02

Customer Identification : Catnip - Canada - CW0110

Type : Essential Oil

Source : *Nepeta cataria*

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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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 2026-08-14 to make a modification in the sample identification section.

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 : Jean-Christophe Fortin, M. Sc.

Date : 2026-08-11

PHYSICOCHEMICAL DATA

Refractive index : 1.4898 ± 0.0003 (20 °C)

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

Analyst : Cindy Caron B. Sc.

Date : 2026-08-07

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
Isobutyral	0.01	Aliphatic aldehyde
Isovaleral	0.04	Aliphatic aldehyde
2-Methylbutyral	0.02	Aliphatic aldehyde
3-Pentanone	0.02	Aliphatic ketone
2-Ethylfuran	0.05	Furan
Methyl 2-methylbutyrate	0.02	Aliphatic ester
Hexanal	0.01	Aliphatic aldehyde
Octane	tr	Alkane
(2E)-Hexenal	0.09	Aliphatic aldehyde
(3Z)-Hexenol	tr	Aliphatic alcohol
Styrene	0.03	Simple phenolic
α -Thujene	0.01	Monoterpene
α -Pinene	0.09	Monoterpene
Benzaldehyde	0.01	Simple phenolic
β -Pinene	0.70	Monoterpene
Sabinene	0.14	Monoterpene
Octen-3-ol	0.02	Aliphatic alcohol
6-Methyl-5-hepten-2-one	0.02	Aliphatic ketone
Myrcene	0.01	Monoterpene
2-Pentylfuran	tr	Furan
α -Phellandrene	0.01	Monoterpene
α -Terpinene	0.01	Monoterpene
<i>para</i> -Cymene	0.02	Monoterpene
β -Phellandrene	0.01	Monoterpene
1,8-Cineole	0.01	Monoterpenic ether
Limonene	0.06	Monoterpene
(Z)- β -Ocimene	0.06	Monoterpene
(E)- β -Ocimene	0.16	Monoterpene
γ -Terpinene	0.01	Monoterpene
Terpinolene isomer	0.01	Monoterpene
Terpinolene	0.01	Monoterpene
Linalool	0.03	Monoterpenic alcohol
Nonanal	0.03	Aliphatic aldehyde
<i>trans</i> -Verbenol	0.01	Monoterpenic alcohol
Terpinen-4-ol	0.02	Monoterpenic alcohol
Dill ether	0.02	Monoterpenic ether
Methyl salicylate	0.04	Phenolic ester
α -Terpineol	0.01	Monoterpenic alcohol
<i>cis</i> -Dihydrocarvone	0.01	Monoterpenic ketone
Hexyl butyrate	0.01	Aliphatic ester

Dihydrocarveol	0.02	Monoterpenic alcohol
Unknown	0.49	Oxygenated monoterpene
β -Cyclocitral	0.02	Monoterpenic aldehyde
Unknown	0.01	Unknown
Neral	0.01	Monoterpenic aldehyde
Carvone	0.12	Monoterpenic ketone
(2E)-Decenal	0.01	Aliphatic aldehyde
Geranial	0.02	Monoterpenic aldehyde
Tridecane	0.02	Alkane
Eugenol	0.02	Phenylpropanoid
4 α ,7 α ,7 α -Nepetalactone	23.72	Monoterpenic lactone
Nepetalactone isomer I	0.09	Unknown
4 α ,7 α ,7 α -Nepetalactone	56.68	Monoterpenic lactone
4 α ,7 β ,7 α -Nepetalactone	2.03	Monoterpenic lactone
Isocaryophyllene	0.17	Sesquiterpene
Isodihydronepetalactone	0.15	Monoterpenic lactone
β -Caryophyllene	5.12	Sesquiterpene
Nepetalactone analog I	0.08	Monoterpenic lactone
Unknown	0.02	Unknown
α -Humulene	0.44	Sesquiterpene
Unknown	0.08	Unknown
(E)- β -Farnesene	0.21	Sesquiterpene
Unknown catnip acid I [m/z 96, 87 (87), 81 (78), 109 (55), 41 (43), 55 (37)...]	0.11	Monoterpenic acid
(E)- β -Ionone	0.02	Apocarotenoid
Nepetalic acid I	0.50	Monoterpenic acid
β -Bisabolene	0.02	Sesquiterpene
Unknown catnip acid III [m/z 96, 81 (82), 87 (80), 67 (48), 109 (43), 58 (39)... 166 (14)]	3.30	Monoterpenic acid
Nepetalactone analog VII	0.04	Monoterpenic lactone
Caryophyllene oxide	0.99	Sesquiterpenic ether
Humulene epoxide II	0.06	Sesquiterpenic ether
Caryophylladienol II	0.02	Sesquiterpenic alcohol
Unknown	0.01	Unknown
Unknown	0.02	Unknown
Unknown	0.02	Unknown
Nepetalactone analog II	0.01	Monoterpenic lactone
Unknown	0.02	Unknown
Unknown	0.29	Unknown
Unknown	0.06	Unknown
Unknown	1.28	Unknown
Unknown	0.21	Unknown
Phytone	0.08	Terpenic ketone
Nepetalactone analog III	0.02	Monoterpenic lactone
Unknown	0.07	Unknown

Unknown	0.17	Unknown
Nepetalactone analog IV	0.04	Monoterpenic lactone
Nepetalactone analog V	0.01	Aliphatic lactone
Unknown	0.06	Unknown
Unknown	0.22	Unknown
Unknown	0.02	Unknown
Unknown	0.04	Unknown
Unknown	0.03	Unknown
Unknown	0.05	Unknown
Unknown	0.04	Unknown
Unknown	0.01	Unknown
Unknown	0.10	Unknown
Unknown NECA XLIV [m/z 81, 167 (94), 168 (12), 67 (12), 55 (11)...]	0.02	Unknown
Unknown	0.05	Unknown
Unknown NECA XLI [m/z 167, 81 (45), 168 (12), 123 (10), 67 (6)...]	0.02	Unknown
Unknown NECA XXXIX [m/z 81, 167 (76), 110 (13), 82 (11), 41 (10)...]	0.03	Unknown
Unknown NECA XXXVIII [m/z 167, 81 (48), 168 (11), 123 (11)...]	0.04	Unknown
Unknown NECA XLII [m/z 167, 81 (53), 168 (12), 123 (8)...]	0.04	Unknown
Unknown NECA XL [m/z 167, 81 (52), 168 (12), 123 (11), 67 (8)...]	0.06	Unknown
Consolidated total	99.53	

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

Note: no correction factor was applied

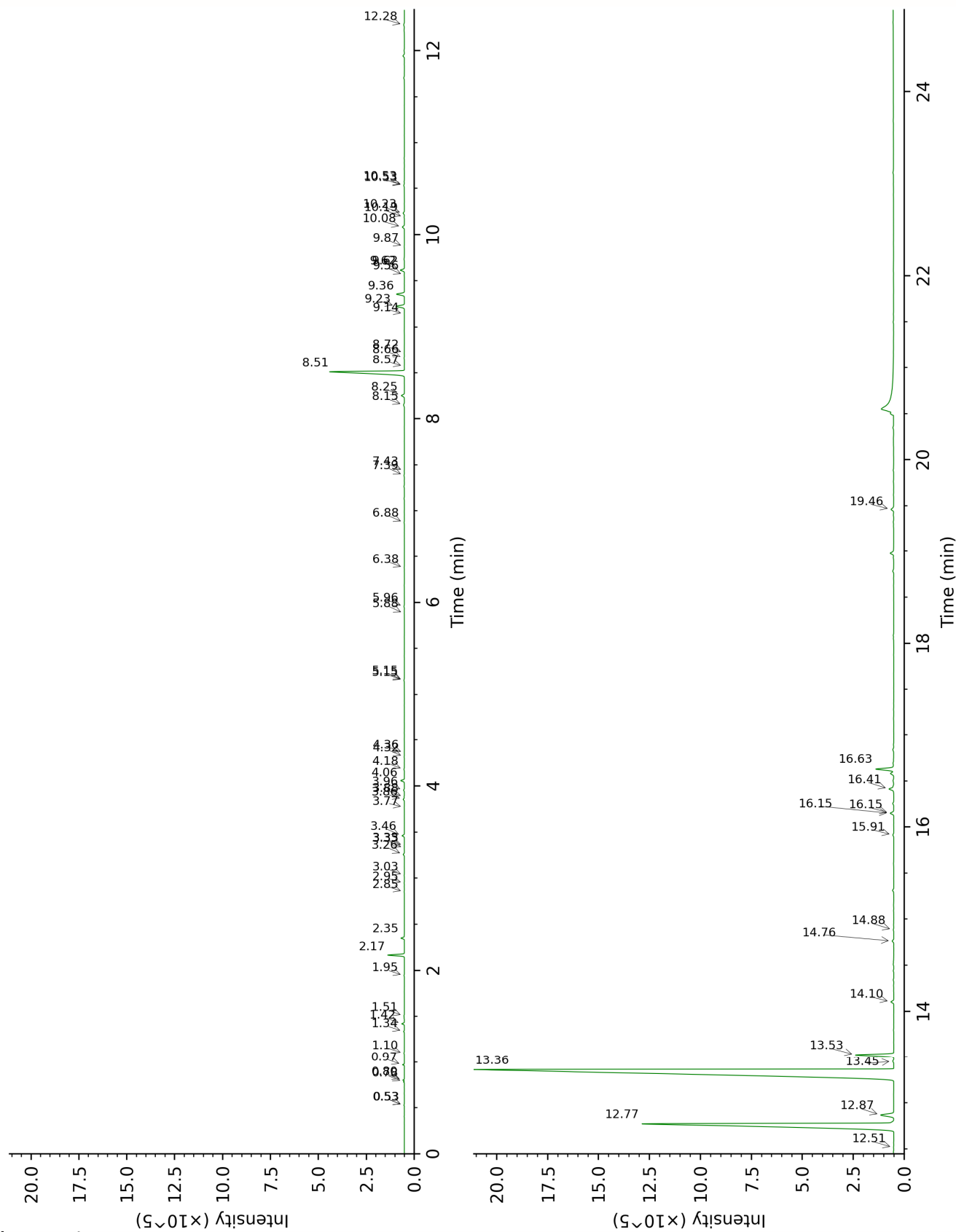
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

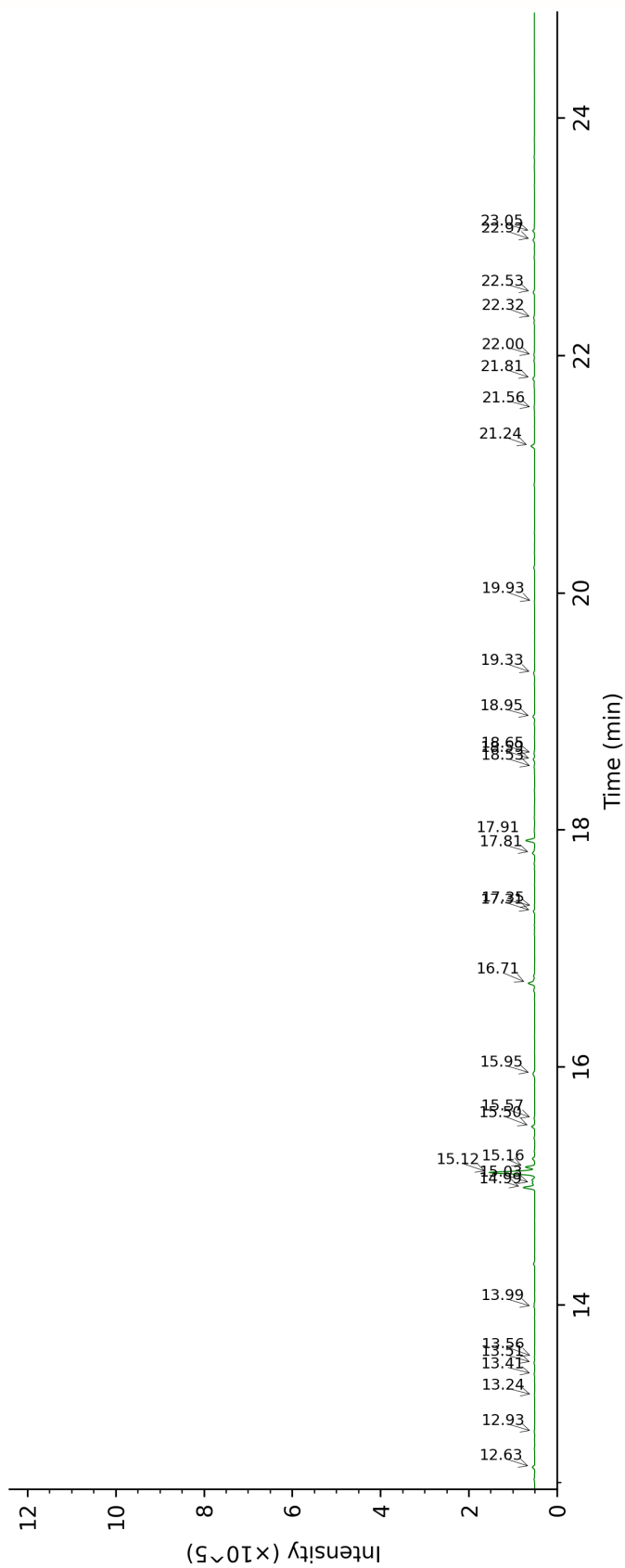
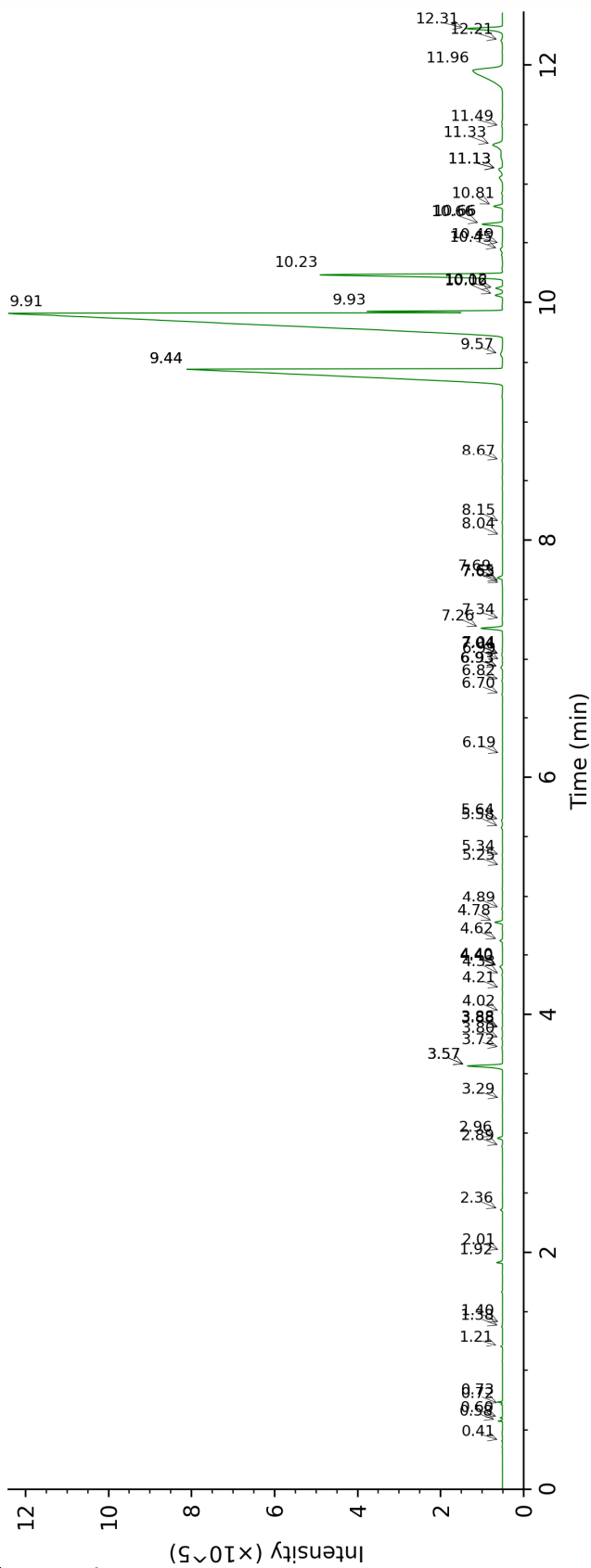
Bracketed value ([xx]): A bracketed percent value indicate that two or more compound percentage could not be solved due to coelution.

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DB-WAX



DB-5



FULL ANALYSIS DATA

Isobutylal	Column DB-WAX			Column DB-5		
	0.53*	781.5	[0.01]	0.41	541.4	0.01
Isovaleral	0.80	888.3	0.04	0.58	643.8	0.04
2-Methylbutyral	0.78	881.5	0.02	0.60	653.9	0.02
3-Pentanone	1.10	940.0	0.02	0.72	696.9	0.02
2-Ethylfuran	0.97	919.7	0.05	0.74	704.1	0.05
Methyl 2-methylbutyrate	1.34	977.9	0.02	1.20	775.7	0.02
Hexanal	1.94	1044.2	0.01	1.38	801.1	0.01
Octane	0.53*	781.5	[0.01]	1.40	805.0	tr
(2E)-Hexenal	3.46	1173.5	0.10	1.92	849.1	0.09
(3Z)-Hexenol	5.88	1350.5	0.01	2.01	857.1	tr
Styrene	3.96	1211.3	0.04	2.36	887.0	0.03
α-Thujene	1.51	1001.3	0.02	2.89	926.7	0.01
α-Pinene	1.42	991.2	0.09	2.96	931.3	0.09
Benzaldehyde	7.44	1462.8	0.01	3.29	953.5	0.01
β-Pinene	2.17	1066.0	0.70	3.57*	972.2	[0.83]
Sabinene	2.35	1084.0	0.14	3.57*	972.2	[0.83]
Octen-3-ol	6.88	1421.8	0.02	3.72	982.4	0.02
6-Methyl-5-hepten-2-one	5.15*	1299.1	[0.03]	3.80	987.7	0.02
Myrcene	2.95	1133.3	0.01	3.88*	993.4	[0.02]
2-Pentylfuran	3.77	1197.8	tr	3.88*	993.4	[0.02]
α-Phellandrene	2.85	1125.7	0.01	4.02	1002.7	0.01
α-Terpinene	3.03	1139.9	0.01	4.21	1015.1	0.01
para-Cymene	4.18	1227.8	0.02	4.33	1022.6	0.02
β-Phellandrene	3.32	1162.8	0.01	4.40*	1027.1	[0.07]
1,8-Cineole	3.35	1165.1	0.01	4.40*	1027.1	[0.07]
Limonene	3.26	1157.6	0.06	4.40*	1027.1	[0.07]
(Z)-β-Ocimene	3.86	1204.0	0.05	4.62	1041.1	0.06
(E)-β-Ocimene	4.06	1218.9	0.17	4.78	1050.8	0.16
γ-Terpinene	3.88	1206.0	0.01	4.89	1058.0	0.01
Terpinolene isomer	4.36	1241.2	0.01	5.25	1081.3	0.01
Terpinolene	4.32	1237.8	0.01	5.34	1087.2	0.01
Linalool	8.15	1516.2	0.06	5.58	1102.1	0.03
Nonanal	5.96	1355.9	0.02	5.64	1106.0	0.03
trans-Verbenol	9.62*	1630.2	[0.21]	6.19	1141.9	0.01
Terpinen-4-ol	8.66	1555.1	0.02	6.70	1174.9	0.02
Dill ether	7.39	1459.2	0.02	6.82	1182.5	0.02
Methyl salicylate	10.53*	1704.2	[0.04]	6.93*	1190.2	[0.05]
α-Terpineol	9.87	1650.7	0.01	6.93*	1190.2	[0.05]
cis-Dihydrocarvone	8.57	1548.2	0.01	6.99	1193.8	0.01
Hexyl butyrate	6.38	1385.6	0.01	7.04*	1196.9	[0.03]
Dihydrocarveol	10.53*	1704.2	[0.04]	7.04*	1196.9	[0.03]
Unknown VAWA X [m/z]	9.23	1598.9	0.49	7.26	1211.9	0.49

123, 138 (67), 81 (60), 95 (42), 67 (41), 80 (33)]						
β-Cyclocitral	8.72	1560.0	0.01	7.34	1217.1	0.02
Unknown MISC CCXXXV [m/z 136, 91 (92), 107 (72), 77 (54), 93 (47), 43 (47), 72 (42)...]				7.63	1237.1	0.01
Neral	9.56	1625.8	0.01	7.65	1238.7	0.01
Carvone	10.08	1667.6	0.12	7.69	1241.0	0.12
(2E)-Decenal	9.14	1592.3	0.01	8.04	1265.0	0.01
Geranial	10.19	1676.1	0.02	8.15	1272.7	0.02
Tridecane	5.15*	1299.1	[0.03]	8.67	1304.4	0.02
Eugenol	14.88	2096.6	0.02	9.44*	1359.5	[23.36]
4α,7α,7αα-Nepetalactone	12.77	1897.6	23.72	9.44*	1359.5	[23.36]
Nepetalactone isomer I				9.57	1368.4	0.09
4α,7α,7αβ-Nepetalactone	13.36	1951.9	56.68	9.91†	1393.0	56.30
4α,7β,7αα-Nepetalactone	13.53	1967.0	2.03	9.93†	1394.2	1.89
Isocaryophyllene	8.25	1524.0	0.17	10.06	1403.8	0.17
Isodihydronepetalactone	14.10	2021.4	0.16	10.12	1408.2	0.15
β-Caryophyllene	8.51	1543.8	5.23	10.23	1416.7	5.12
Nepetalactone analog I	12.28	1854.1	0.05	10.45	1432.7	0.08
Unknown NECA XXXIV [m/z 57, 71 (93), 43 (87), 85 (48), 41 (40), 81 (36), 55 (30)...]				10.49	1436.2	0.02
α-Humulene	9.36	1609.5	0.44	10.66*	1449.2	[0.52]
Unknown NECA III [m/z 57, 71 (92), 43 (69), 85 (49), 41 (31), 55 (23)...]				10.66*	1449.2	[0.52]
(E)-β-Farnesene	9.62*	1630.2	[0.21]	10.82	1460.5	0.21
Unknown catnip acid I [m/z 96, 87 (87), 81 (78), 109 (55), 41 (43), 55 (37)...]				11.13*	1484.1	[0.13]
(E)-β-Ionone	12.51	1874.6	0.02	11.13*	1484.1	[0.13]
Nepetalic acid I				11.33	1499.2	0.50
β-Bisabolene	10.23	1679.5	0.07	11.49	1511.4	0.02
Unknown catnip acid III [m/z 96, 81 (82), 87 (80), 67 (48), 109 (43), 58 (39)... 166 (14)]				11.96	1548.6	3.30
Nepetalactone analog VII				12.21	1568.4	0.04

Caryophyllene oxide	12.87	1906.4	0.91	12.31	1576.4	0.99
Humulene epoxide II	13.45	1960.3	0.06	12.63	1601.8	0.06
Caryophylladienol II	16.15*	2224.6	[0.21]	12.93	1626.5	0.02
Unknown NECA IV [m/z 81, 95 (42), 43 (41), 137 (40), 123 (35), 41 (34)...]				13.24	1652.2	0.01
Unknown NECA XXVIII [m/z 81, 43 (86), 109 (82), 166 (81), 71 (54), 41 (47)...]				13.41	1666.9	0.02
Unknown NECA V [m/z 81, 43 (84), 166 (84), 109 (74), 71 (58), 41 (58)...]				13.51	1674.7	0.02
Nepetalactone analog II				13.56	1678.9	0.01
Unknown NECA VI [m/z 81, 109 (68), 41 (57), 69 (53), 167 (36), 67 (31)...]				13.99	1714.9	0.02
Unknown NECA IX [m/z 82, 81 (67), 67 (64), 55 (42), 167 (39), 41 (24), 83 (23)...]	16.41	2251.9	0.30	14.99	1802.4	0.29
Unknown NECA X [m/z 81, 96 (74), 43 (57), 87 (50), 109 (46), 166 (43)...]	15.92	2200.2	0.06	15.03	1805.6	0.06
Unknown NECA XII [m/z 82, 81 (68), 67 (65), 55 (46), 167 (34)...]	16.63	2274.3	1.05	15.12	1813.8	1.28
Unknown NECA XIII [m/z 81, 166 (95), 109 (80), 43 (64), 96 (51), 87 (41)...]	16.15*	2224.6	[0.21]	15.16	1817.9	0.21
Phytone	14.76	2084.6	0.09	15.50	1848.9	0.08
Nepetalactone analog III				15.57	1855.3	0.02
Unknown NECA XV [m/z 82, 81 (73), 67 (50), 55 (49), 83 (46), 41 (35)...]				15.95	1889.5	0.07
Unknown NECA XVII [m/z 82, 81 (65), 83 (47), 55 (42), 67 (41), 167 (38)...]	19.46	2591.4	0.18	16.71	1961.1	0.17
Nepetalactone analog IV				17.31	2019.4	0.04
Nepetalactone analog V				17.35	2023.5	0.01
Unknown NECA XIX [m/z 93, 81 (59), 69 (52), 121 (38), 80 (35), 41 (33)...]				17.81	2068.7	0.06
Unknown NECA XX [m/z				17.91	2079.2	0.22

93, 69 (55), 81 (52), 80 (41), 121 (35), 41 (28)...				
Unknown NECA XXI [m/z 81, 69 (68), 41 (64), 55 (57), 67 (51), 43 (42)...	18.53	2142.0	0.02	
Unknown NECA XXII [m/z 69, 81 (98), 93 (92), 41 (55), 80 (52), 68 (43)...	18.59	2148.5	0.04	
Unknown NECA XXIII [m/z 81, 69 (63), 41 (49), 95 (49), 55 (48), 67 (45)...	18.65	2154.0	0.03	
Unknown NECA XXIV [m/z 69, 81 (80), 93 (65), 41 (49), 80 (42), 121 (40)...	18.95	2185.7	0.05	
Unknown NECA XXV [m/z 81, 93 (68), 69 (61), 83 (48), 41 (47), 67 (42)...	19.33	2225.3	0.04	
Unknown NECA XXXI [m/z 81, 43 (86), 44 (67), 166 (58), 55 (57), 67 (55)...	19.93	2289.3	0.01	
Unknown NECA XXXII [m/z 81, 167 (96), 166 (23), 123 (19), 43 (17), 55 (17)...	21.24	2436.7	0.10	
Unknown NECA XLIV [m/z 81, 167 (94), 168 (12), 67 (12), 55 (11)...	21.56	2473.6	0.02	
Unknown NECA XXXIII [m/z 81, 167 (44), 91 (31), 131 (29), 93 (27), 105 (26), 146 (26)...	21.81	2502.0	0.05	
Unknown NECA XLI [m/z 167, 81 (45), 168 (12), 123 (10), 67 (6)...	22.00	2525.5	0.02	
Unknown NECA XXXIX [m/z 81, 167 (76), 110 (13), 82 (11), 41 (10)...	22.32	2562.9	0.03	
Unknown NECA XXXVIII [m/z 167, 81 (48), 168 (11), 123 (11)...	22.53	2588.6	0.04	
Unknown NECA XLII [m/z 167, 81 (53), 168 (12), 123 (8)...	22.97	2642.3	0.04	

Unknown NECA XL [m/z 167, 81 (52), 168 (12), 123 (11), 67 (8)...				23.05	2652.2	0.06
Total reported	94.20%			98.63%		

*: 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