

Date : 2025-10-22

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 25J07-PTH05

Customer Identification : Clary Sage - Hungary - CF0121R

Type : Essential Oil

Source : *Salvia sclarea*

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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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.

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 : 2025-10-22

PHYSICOCHEMICAL DATA

Refractive index : 1.4595 ± 0.0003 (20 °C)

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

Analyst : Cindy Caron B. Sc.

Date : 2025-10-07

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
Isovaleral	0.01	Aliphatic aldehyde
2-Methylbutyral	0.01	Aliphatic aldehyde
(2E)-Hexenal	0.01	Aliphatic aldehyde
(3Z)-Hexenol	0.02	Aliphatic alcohol
(2E)-Hexenol	0.03	Aliphatic alcohol
Hexanol	0.01	Aliphatic alcohol
α -Pinene	0.19	Monoterpene
Camphene	0.02	Monoterpene
Sabinene	0.01	Monoterpene
β -Pinene	0.12	Monoterpene
Octen-3-ol	0.02	Aliphatic alcohol
<i>trans</i> -Dehydroxylinalool oxide	0.02	Monoterpenic ether
Myrcene	0.91	Monoterpene
Octan-3-ol	0.01	Aliphatic alcohol
α -Phellandrene	0.06	Monoterpene
<i>cis</i> -Dehydroxylinalool oxide	0.03	Monoterpenic ether
α -Terpinene	0.01	Monoterpene
<i>para</i> -Cymene	0.01	Monoterpene
1,8-Cineole	0.01	Monoterpenic ether
Limonene	1.44	Monoterpene
β -Phellandrene	0.01	Monoterpene
(Z)- β -Ocimene	0.33	Monoterpene
(E)- β -Ocimene	0.70	Monoterpene
γ -Terpinene	0.02	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	0.03	Monoterpenic alcohol
Terpinolene	0.42	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	0.06	Monoterpenic alcohol
Linalool	21.50	Monoterpenic alcohol
Hotrienol	0.03	Monoterpenic alcohol
allo-Ocimene	0.02	Monoterpene
<i>trans</i> -Pinocarveol	0.01	Monoterpenic alcohol
Camphor	0.01	Monoterpenic ketone
Nerol oxide	0.01	Aliphatic ether
Borneol	0.01	Monoterpenic alcohol
δ -Terpineol	0.03	Monoterpenic alcohol
Terpinen-4-ol	0.03	Monoterpenic alcohol
<i>para</i> -Cymen-8-ol	0.01	Monoterpenic alcohol
α -Terpineol	3.74	Monoterpenic alcohol
Hodiendiol (2,6-dimethylocta-3,7-diene-2,6-diol)	0.02	Monoterpenic alcohol

Unknown	0.01	Unknown
Linalyl formate	0.13	Monoterpenic ester
Thymol methyl ether	0.54	Monoterpenic ether
Unknown	0.03	Unknown
Neral	0.03	Monoterpenic aldehyde
Geraniol	1.91	Monoterpenic alcohol
Linalyl acetate	54.90	Monoterpenic ester
Geranial	0.02	Monoterpenic aldehyde
Bornyl acetate	0.01	Monoterpenic ester
Unknown	0.03	Unknown
Thymol	0.01	Monoterpenic alcohol
Geranyl formate	0.03	Monoterpenic ester
Carvacrol	0.02	Monoterpenic alcohol
δ -Elemene	0.02	Sesquiterpene
Hodiendiol derivative	0.03	Oxygenated monoterpene
α -Terpinyl acetate	0.01	Monoterpenic ester
α -Cubebene	0.01	Sesquiterpene
Unknown	0.02	Monoterpenic ester
Unknown	0.03	Oxygenated monoterpene
Neryl acetate	1.33	Monoterpenic ester
α -Copaene	0.19	Sesquiterpene
β -Bourbonene	0.08	Sesquiterpene
1,5-diepi- β -Bourbonene	0.01	Sesquiterpene
Geranyl acetate	2.30	Monoterpenic ester
β -Cubebene	0.05	Sesquiterpene
β -Elemene	0.08	Sesquiterpene
Isocaryophyllene	0.02	Sesquiterpene
β -Caryophyllene	3.12	Sesquiterpene
β -Copaene	0.03	Sesquiterpene
<i>trans</i> - α -Bergamotene	0.01	Sesquiterpene
α -Humulene	0.08	Sesquiterpene
Germacrene D	1.97	Sesquiterpene
α -Amorphene	0.03	Sesquiterpene
β -Selinene	0.01	Sesquiterpene
Hodiendiol derivative IV	0.05	Oxygenated monoterpene
α -Selinene	0.01	Sesquiterpene
Bicyclogermacrene	0.15	Sesquiterpene
α -Murolene	0.01	Sesquiterpene
(<i>Z</i>)- α -Bisabolene	0.04	Sesquiterpene
β -Bisabolene	0.02	Sesquiterpene
γ -Cadinene	0.04	Sesquiterpene
δ -Cadinene	0.08	Sesquiterpene
Isocaryophyllene epoxide B	0.02	Sesquiterpenic ether
Spathulenol	0.03	Sesquiterpenic alcohol
Caryophyllene oxide isomer	0.02	Sesquiterpenic ether

Caryophyllene oxide	0.81	Sesquiterpenic ether
Viridiflorol	0.12	Sesquiterpenic alcohol
Salvial-4(14)-en-1-one	0.01	Aliphatic alcohol
Unknown	0.02	Oxygenated sesquiterpene
Guaiol	0.01	Sesquiterpenic alcohol
Hinesol	0.01	Sesquiterpenic alcohol
allo-Aromadendrene epoxide?	0.02	Sesquiterpenic ether
τ -Cadinol	0.01	Sesquiterpenic alcohol
β -Eudesmol	0.02	Sesquiterpenic alcohol
α -Eudesmol	0.03	Sesquiterpenic alcohol
α -Cadinol	0.01	Sesquiterpenic alcohol
Unknown	0.01	Unknown
Unknown	0.01	Unknown
Geranyl- <i>para</i> -cymene	0.01	Diterpene
Sclareol	0.76	Diterpenic alcohol
Consolidated total	99.34	

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

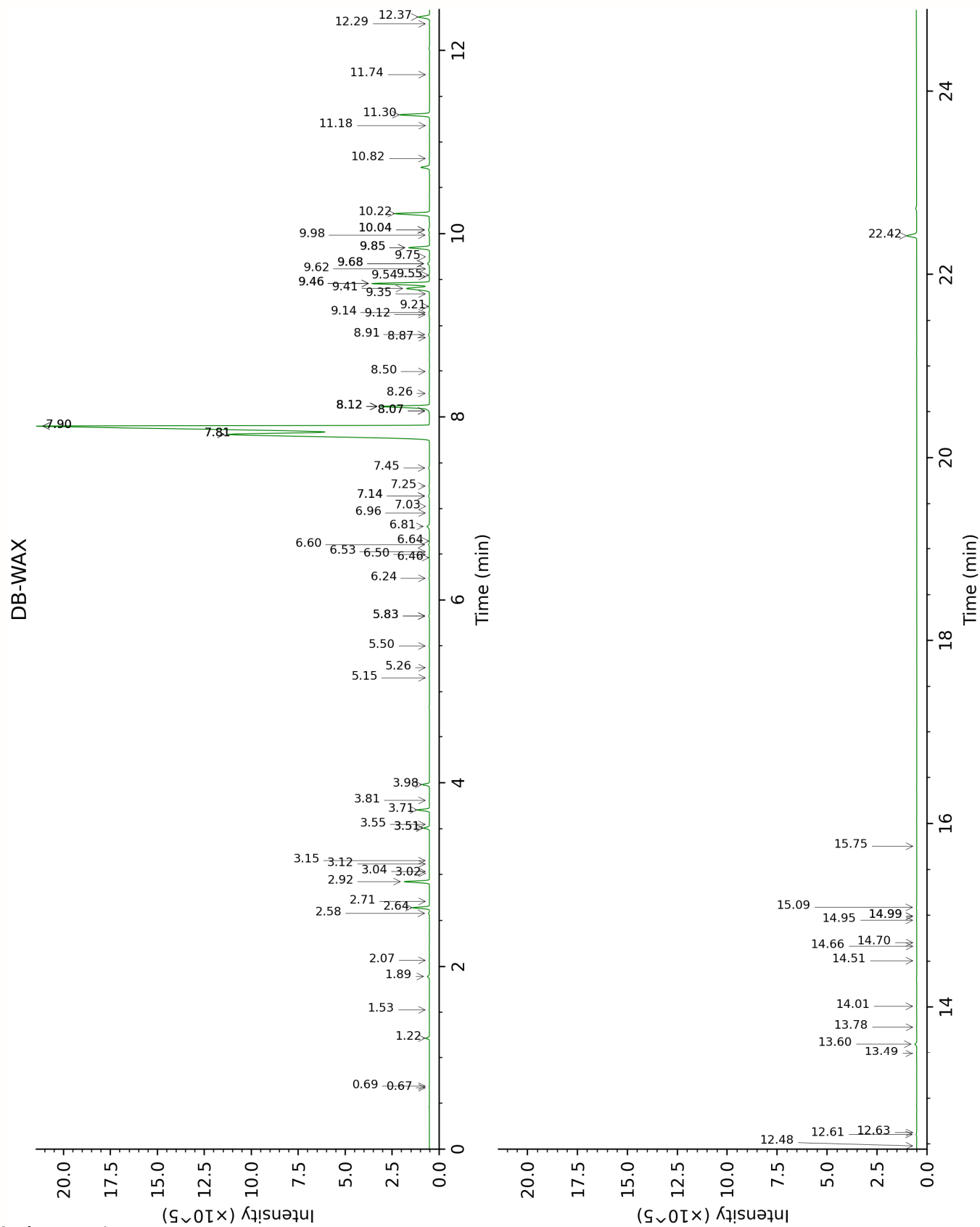
Note: no correction factor was applied

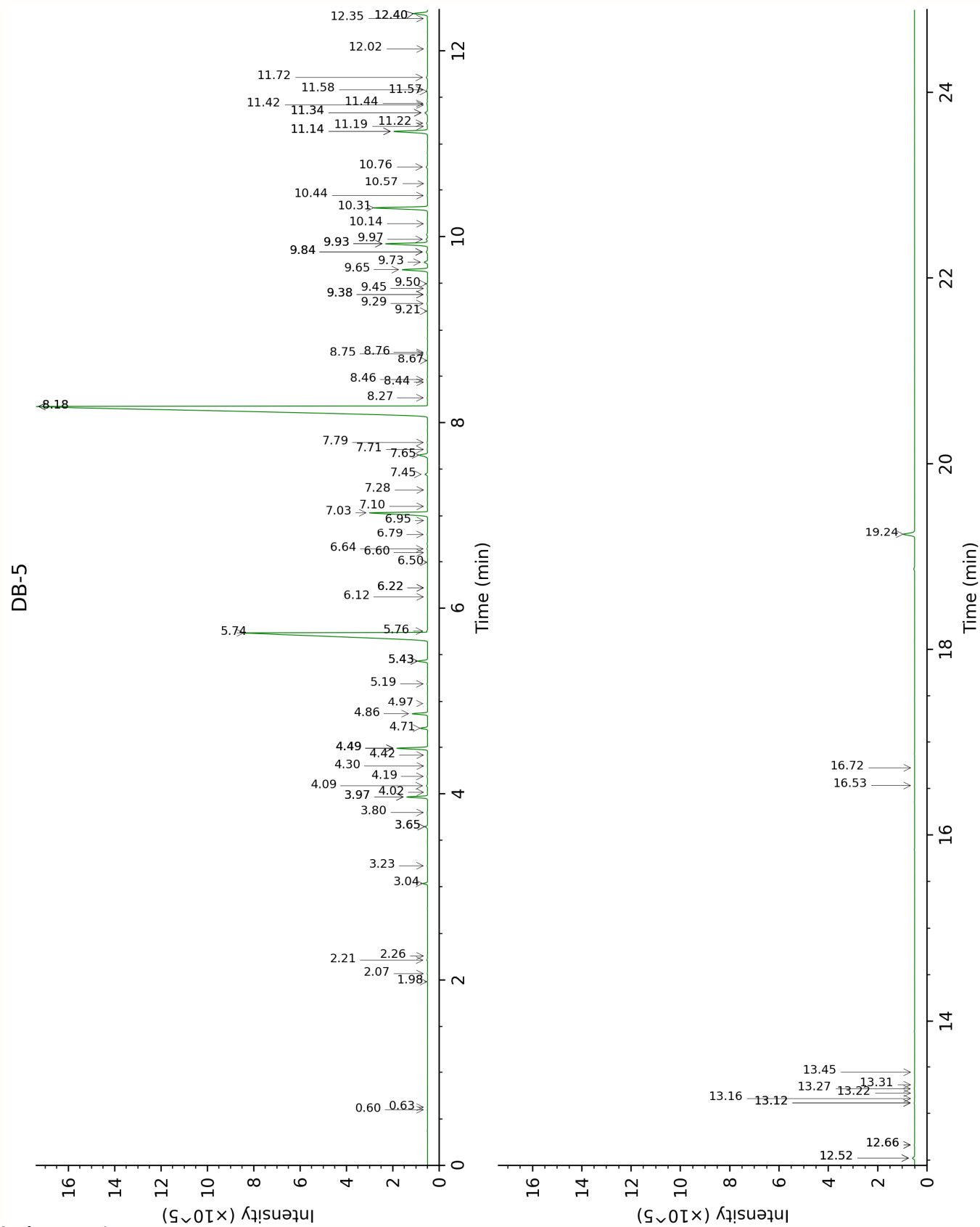
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

Isovaleral	Column DB-WAX			Column DB-5		
	0.69	885.2	0.01	0.60	642.7	0.01
2-Methylbutyral	0.67	878.3	tr	0.63	652.7	0.01
(2E)-Hexenal	3.12	1170.9	0.01	1.98	849.0	0.01
(3Z)-Hexenol	5.50	1347.9	0.02	2.07	856.3	0.02
(2E)-Hexenol	5.83*	1371.6	[0.04]	2.22	868.5	0.03
Hexanol	5.15	1322.6	0.01	2.26	872.3	0.01
α-Pinene	1.22	988.1	0.19	3.04	931.1	0.19
Camphene	1.53	1025.5	0.02	3.23	943.8	0.02
Sabinene	2.07	1081.5	0.01	3.65*	972.0	[0.13]
β-Pinene	1.89	1063.2	0.12	3.65*	972.0	[0.13]
Octen-3-ol	6.50	1421.0	0.02	3.80	982.2	0.02
trans-Dehydroxylinalool oxide	3.15	1173.9	0.02	3.97*	993.4	[0.93]
Myrcene	2.64	1132.4	0.91	3.97*	993.4	[0.93]
Octan-3-ol	5.83*	1371.6	[0.04]	4.02	996.8	0.01
α-Phellandrene	2.58	1127.4	0.05	4.09	1001.5	0.06
cis-Dehydroxylinalool oxide	3.51*	1202.8	[0.34]	4.19	1008.1	0.03
α-Terpinene	2.71	1137.9	0.01	4.30	1015.1	0.01
para-Cymene	3.81	1225.3	0.01	4.42	1022.5	0.01
1,8-Cineole	3.04	1164.3	0.01	4.49*	1027.2	[1.45]
Limonene	2.92	1155.3	1.44	4.49*	1027.2	[1.45]
β-Phellandrene	3.02	1162.6	0.01	4.49*	1027.2	[1.45]
(Z)-β-Ocimene	3.51*	1202.8	[0.34]	4.71	1040.9	0.33
(E)-β-Ocimene	3.71	1217.6	0.70	4.86	1050.8	0.70
γ-Terpinene	3.55	1205.8	0.01	4.97	1057.9	0.02
cis-Linalool oxide (fur.)	6.24	1401.5	0.03	5.19	1071.6	0.03
Terpinolene	3.98	1238.3	0.42	5.43*	1087.1	[0.47]
trans-Linalool oxide (fur.)	6.60	1429.0	0.06	5.43*	1087.1	[0.47]
Linalool	7.81*†	1520.5	[27.14]	5.74	1106.4	21.50
Hotrienol	8.50	1574.1	0.03	5.76	1107.7	0.03
allo-Ocimene	5.26	1330.7	0.01	6.12	1131.5	0.02
trans-Pinocarveol	8.87	1603.6	0.01	6.22*	1137.8	[0.01]
Camphor	6.96	1455.5	0.01	6.22*	1137.8	[0.01]
Nerol oxide	6.52	1423.2	0.01	6.50	1155.6	0.01
Borneol	9.46*	1651.7	[3.76]	6.60	1162.3	0.01
δ-Terpineol	9.14	1625.9	0.03	6.64	1165.0	0.03
Terpinen-4-ol	8.26	1555.4	0.03	6.79	1175.0	0.03
para-Cymen-8-ol	11.18	1796.8	0.01	6.95	1185.3	0.01

α -Terpineol	9.46*	1651.7	[3.76]	7.03	1190.7	3.74
Hodiendiol (2,6-dimethylocta-3,7-diene-2,6-diol)	12.48	1913.1	0.01	7.10	1195.2	0.02
Unknown SASC VII [m/z 43, 71 (66), 59 (52), 41 (47), 68 (46)...]	7.14*	1469.4	[0.07]	7.28	1206.7	0.01
Linalyl formate	8.12*	1544.4	[3.28]	7.45	1218.1	0.13
Thymol methyl ether	8.12*	1544.4	[3.28]	7.65	1232.2	0.54
Unknown SASC IV [m/z 43, 93 (49), 41 (22), 80 (22), 69 (17), 121 (14)...]	7.25	1477.5	0.03	7.71	1236.3	0.03
Neral	9.12	1624.0	0.03	7.79	1241.4	0.03
Geraniol	11.30	1807.1	1.91	8.18*	1267.8	[56.81]
Linalyl acetate	7.90*†	1527.6	[49.30]	8.18*	1267.8	[56.81]
Geranial	9.75	1675.3	0.02	8.27	1274.2	0.02
Bornyl acetate	7.90*†	1527.6	[49.30]	8.44	1285.6	0.01
Unknown MISC VI [m/z 43, 121 (74), 93 (42), 95 (38), 107 (29), 41 (29), 136 (28)...]				8.46	1287.6	0.03
Thymol	14.70	2126.2	0.01	8.67	1301.6	0.01
Geranyl formate	9.55	1659.0	0.03	8.75	1307.0	0.03
Carvacrol	14.99*	2155.4	[0.01]	8.76	1308.1	0.02
δ -Elemene	6.64	1432.0	0.01	9.20	1336.3	0.02
Hodiendiol derivative	12.61	1924.8	0.05	9.29	1342.2	0.03
α -Terpinyl acetate	9.35	1642.4	0.01	9.38*	1349.0	[0.03]
α -Cubebene	6.46	1418.4	0.01	9.38*	1349.0	[0.03]
Unknown MISC VII [m/z 43, 121 (52), 93 (48), 79 (33), 41 (30), 136 (26), 81 (25)...]				9.45	1353.6	0.02
Unknown SASC III [m/z 43, 79 (46), 71 (30), 94 (25), 41 (23), 81 (21)... 197 (0)]	10.82	1766.1	0.02	9.50	1357.2	0.03
Neryl acetate	9.85*	1683.5	[1.33]	9.65	1367.9	1.33
α -Copaene	6.81	1444.5	0.18	9.73	1373.6	0.19

β-Bourbonene	7.14*	1469.4	[0.07]	9.84*	1381.4	[0.09]
1,5-diepi-β-Bourbonene	7.03	1460.9	0.01	9.84*	1381.4	[0.09]
Geranyl acetate	10.22	1714.3	2.30	9.93*	1387.6	[2.35]
β-Cubebene	7.45	1492.3	0.05	9.93*	1387.6	[2.35]
β-Elemene	8.07*	1540.5	[0.03]	9.97	1391.0	0.08
Isocaryophyllene	7.81*†	1520.5	[27.14]	10.14	1402.8	0.02
β-Caryophyllene	8.12*	1544.4	[3.28]	10.31	1415.4	3.12
β-Copaene	8.07*	1540.5	[0.03]	10.44	1425.2	0.03
trans-α-Bergamotene	8.12*	1544.4	[3.28]	10.57	1434.8	0.01
α-Humulene	8.91	1606.3	0.07	10.76	1448.7	0.08
Germacrene D	9.41	1647.2	1.97	11.14*	1477.4	[1.97]
α-Amorphene	9.21	1631.3	0.03	11.14*	1477.4	[1.97]
β-Selinene	9.54	1657.8	0.02	11.19	1481.4	0.01
Hodiendiol derivative IV				11.22	1483.9	0.05
α-Selinene	9.62	1664.6	0.01	11.34*	1492.3	[0.16]
Bicyclogermacrene	9.68*	1669.3	[0.14]	11.34*	1492.3	[0.16]
α-Muurolene	9.68*	1669.3	[0.14]	11.42	1498.6	0.01
(Z)-α-Bisabolene	9.98	1694.6	0.04	11.44	1499.8	0.04
β-Bisabolene	9.85*	1683.5	[1.33]	11.57	1509.7	0.02
γ-Cadinene	10.04*	1699.2	[0.09]	11.58	1511.0	0.04
δ-Cadinene	10.04*	1699.2	[0.09]	11.72	1521.6	0.08
Isocaryophyllene epoxide B	11.74	1846.2	0.01	12.02	1545.7	0.02
Spathulenol	14.01	2058.0	0.02	12.35	1571.5	0.03
Caryophyllene oxide isomer	12.29	1895.7	0.02	12.40*	1575.8	[0.81]
Caryophyllene oxide	12.37	1902.4	0.81	12.40*	1575.8	[0.81]
Viridiflorol	13.60	2018.0	0.12	12.52*	1585.2	[0.12]
Salvial-4(14)-en-1-one	12.63	1926.7	0.01	12.52*	1585.2	[0.12]
Unknown MISC CLIX [m/z 91, 119 (91), 79 (86), 93 (85), 41 (74), 107 (68), 105 (67), 134 (65)... 220 (1)]				12.66*	1596.4	[0.03]
Guaiol	13.78	2035.9	0.01	12.66*	1596.4	[0.03]
Hinesol	14.66	2122.3	0.01	13.12*	1633.4	[0.03]
allo-Aromadendrene epoxide?	13.49	2007.7	0.02	13.12*	1633.4	[0.03]

τ-Cadinol	14.51	2106.3	0.01	13.16	1637.2	0.01
β-Eudesmol	14.99*	2155.4	[0.01]	13.22	1642.1	0.02
α-Eudesmol	14.95	2150.9	0.02	13.27	1646.0	0.03
α-Cadinol	15.09	2165.2	0.03	13.31	1649.6	0.01
Unknown SASC VIII [m/z 81, 41 (46), 79 (46), 93 (39), 91 (33), 107 (33)... 206 (8)]				13.45	1660.8	0.01
Unknown UNKN CXC [m/z 109, 132 (88), 157 (76), 119 (66), 91 (57), 105 (55)...]				16.53	1934.5	0.01
Geranyl- <i>para</i> - cymene	15.75	2233.5	tr	16.72	1952.7	0.01
Sclareol	22.42	3027.6	0.78	19.24	2205.2	0.76
Total reported		98.47%			99.28%	

*: 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