Date : 2026-05-21

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 26D07-PTH03
Customer Identification : Clary Sage ORGANIC - Spain - CC4108
Type : Essential Oil
Source : *Salvia sclarea*
Customer : Plant Therapy

Checked an 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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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 2026-04-09 to make a correction in the sample identification section.

Méthode certifiée ISO 17025:2017 Certified method

Laboratoire PhytoChemia

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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 : Jean-Christophe Fortin, M. Sc.
Date : 2026-04-08

Physicochemical data

Refractive index : 1.4603 ± 0.0003 (20 °C)
Method : PC-MAT-016 - Measure of the refractive index of a liquid.
Analyst : Cindy Caron B. Sc.
Date : 2026-04-08

Conclusion

No adulterant, contaminant or diluent has been detected using this method.

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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	tr	Aliphatic aldehyde
2-Ethylfuran	tr	Furan
Isoamyl alcohol	0.01	Aliphatic alcohol
2-Methylbutanol	0.01	Aliphatic alcohol
Toluene	tr	Simple phenolic
(2*E*)-Hexenal	0.05	Aliphatic aldehyde
(3*Z*)-Hexenol	0.11	Aliphatic alcohol
(2*E*)-Hexenol	0.15	Aliphatic alcohol
Hexanol	0.07	Aliphatic alcohol
α-Thujene	tr	Monoterpene
α-Pinene	0.25	Monoterpene
Camphene	0.03	Monoterpene
β-Pinene	0.17	Monoterpene
Sabinene	0.07	Monoterpene
Octen-3-ol	0.05	Aliphatic alcohol
Octan-3-one	0.01	Aliphatic ketone
Myrcene	0.63	Monoterpene
cis-Dehydroxylinalool oxide	0.04	Monoterpenic ether
α-Terpinene	0.01	Monoterpene
para-Cymene	0.05	Monoterpene
β-Phellandrene	0.01	Monoterpene
Limonene	0.40	Monoterpene
1,8-Cineole	0.02	Monoterpenic ether
(*Z*)-β-Ocimene	0.26	Monoterpene
(*E*)-β-Ocimene	0.47	Monoterpene
γ-Terpinene	0.03	Monoterpene
cis-Linalool oxide (fur.)	0.03	Monoterpenic alcohol
trans-Linalool oxide (fur.)	0.03	Monoterpenic alcohol
Terpinolene	0.13	Monoterpene
Linalool	21.48	Monoterpenic alcohol
Hotrienol	0.04	Monoterpenic alcohol
allo-Ocimene	0.01	Monoterpene
trans-Pinocarveol	0.02	Monoterpenic alcohol
Camphor	0.02	Monoterpenic ketone
Nerol oxide	0.02	Aliphatic ether
Borneol	0.05	Monoterpenic alcohol
Terpinen-4-ol	0.05	Monoterpenic alcohol
α-Terpineol	3.04	Monoterpenic alcohol
Hodiendiol (2,6-dimethylocta-3,7-diene-2,6-	0.04	Monoterpenic alcohol

diol)		
Unknown	0.02	Unknown
Unknown	0.01	Unknown
Linalyl formate	0.18	Monoterpenic ester
Nerol	0.54	Monoterpenic alcohol
Unknown	0.02	Unknown
Neral	0.02	Monoterpenic aldehyde
Geraniol	1.41	Monoterpenic alcohol
Linalyl acetate	58.78	Monoterpenic ester
Geranial	0.05	Monoterpenic aldehyde
Unknown	0.02	Unknown
Neryl formate	0.02	Monoterpenic ester
Bornyl acetate	0.04	Monoterpenic ester
Unknown	0.03	Unknown
Thymol	0.01	Monoterpenic alcohol
Geranyl formate	0.11	Monoterpenic ester
δ-Elemene	0.01	Sesquiterpene
Hodiendiol derivative	0.10	Oxygenated monoterpene
α-Cubebene	0.02	Sesquiterpene
α-Terpinyl acetate	0.06	Monoterpenic ester
Unknown	0.05	Monoterpenic ester
Unknown	0.04	Oxygenated monoterpene
Neryl acetate	0.76	Monoterpenic ester
α-Copaene	0.43	Sesquiterpene
β-Bourbonene	0.10	Sesquiterpene
1,5-diepi-β-Bourbonene	0.01	Sesquiterpene
Geranyl acetate	1.42	Monoterpenic ester
β-Cubebene	0.12	Sesquiterpene
β-Elemene	0.10	Sesquiterpene
β-Caryophyllene	1.17	Sesquiterpene
β-Copaene	0.03	Sesquiterpene
α-Humulene	0.07	Sesquiterpene
(*E*)-β-Farnesene	0.05	Sesquiterpene
9-epi-β-Caryophyllene	0.01	Sesquiterpene
Germacrene D	2.25	Sesquiterpene
β-Selinene	0.03	Sesquiterpene
Hodiendiol derivative IV	0.20	Oxygenated monoterpene
Bicyclogermacrene	0.28	Sesquiterpene
α-Muurolene	0.04	Sesquiterpene
(*Z*)-α-Bisabolene	0.04	Sesquiterpene
Hodiendiol derivative II	0.03	Oxygenated monoterpene
β-Bisabolene	0.05	Sesquiterpene
γ-Cadinene	0.07	Sesquiterpene
δ-Cadinene	0.11	Sesquiterpene
Isocaryophyllene epoxide B	0.02	Sesquiterpenic ether

1,5-Epoxysalvial-4(14)-ene	0.02	Sesquiterpenic ether
Spathulenol	0.17	Sesquiterpenic alcohol
Caryophyllene oxide isomer	0.03	Sesquiterpenic ether
Caryophyllene oxide	0.21	Sesquiterpenic ether
Salvial-4(14)-en-1-one	0.02	Aliphatic alcohol
Guaiol	0.02	Sesquiterpenic alcohol
Unknown	0.07	Oxygenated sesquiterpene
Hinesol	0.01	Sesquiterpenic alcohol
all*o*-Aromadendrene epoxide?	0.04	Sesquiterpenic ether
τ-Cadinol	0.02	Sesquiterpenic alcohol
β-Eudesmol	0.06	Sesquiterpenic alcohol
α-Eudesmol	0.05	Sesquiterpenic alcohol
α-Cadinol	0.01	Sesquiterpenic alcohol
Bulnesol	0.02	Sesquiterpenic alcohol
Phytone	0.03	Terpenic ketone
Sclareoloxide	0.01	Terpenic ether
Unknown	0.07	Unknown
Geranyl-*para*-cymene	0.04	Diterpene
Manool	0.03	Diterpenic alcohol
Sclareol	1.39	Diterpenic alcohol
Consolidated total	**99.15**	

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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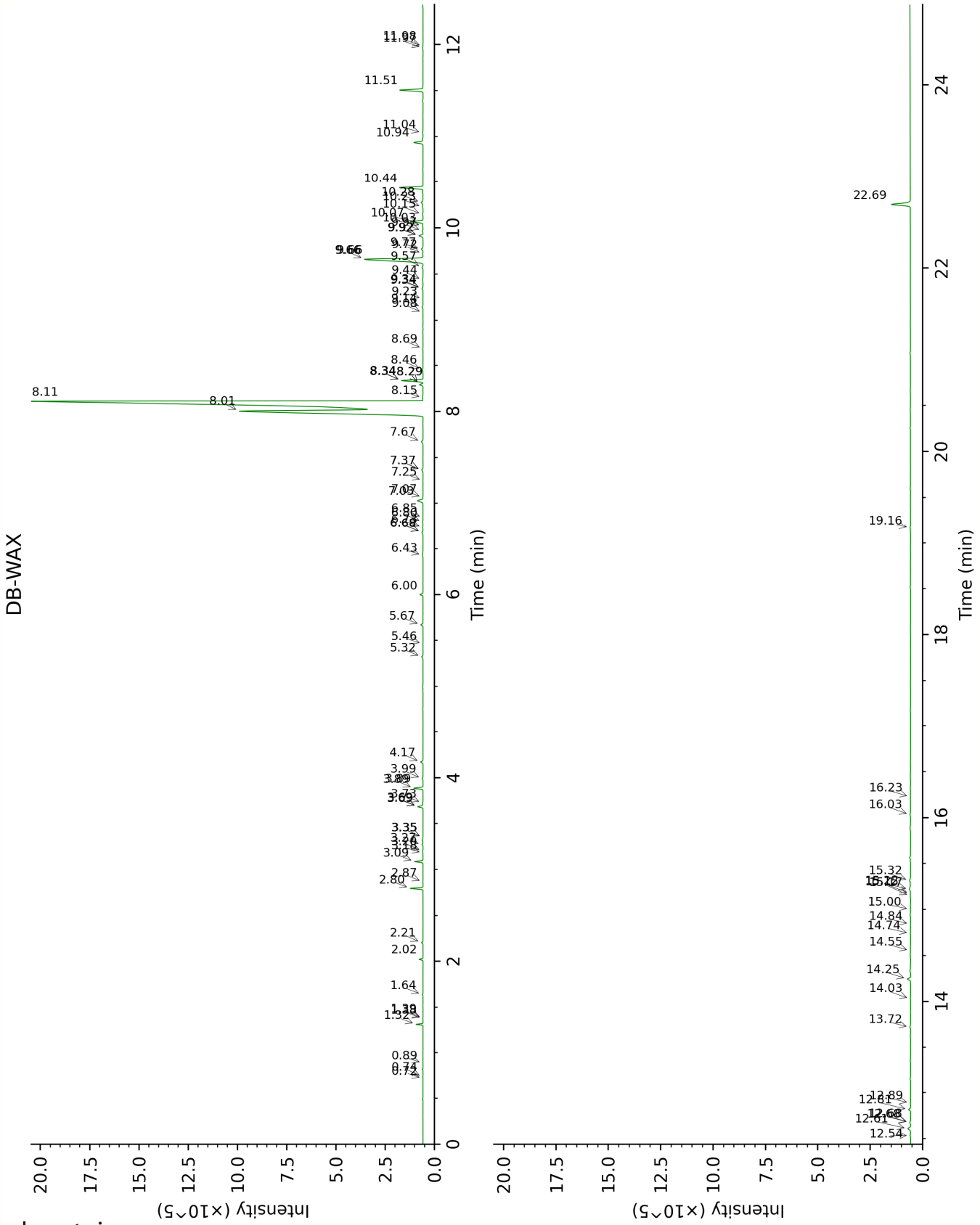
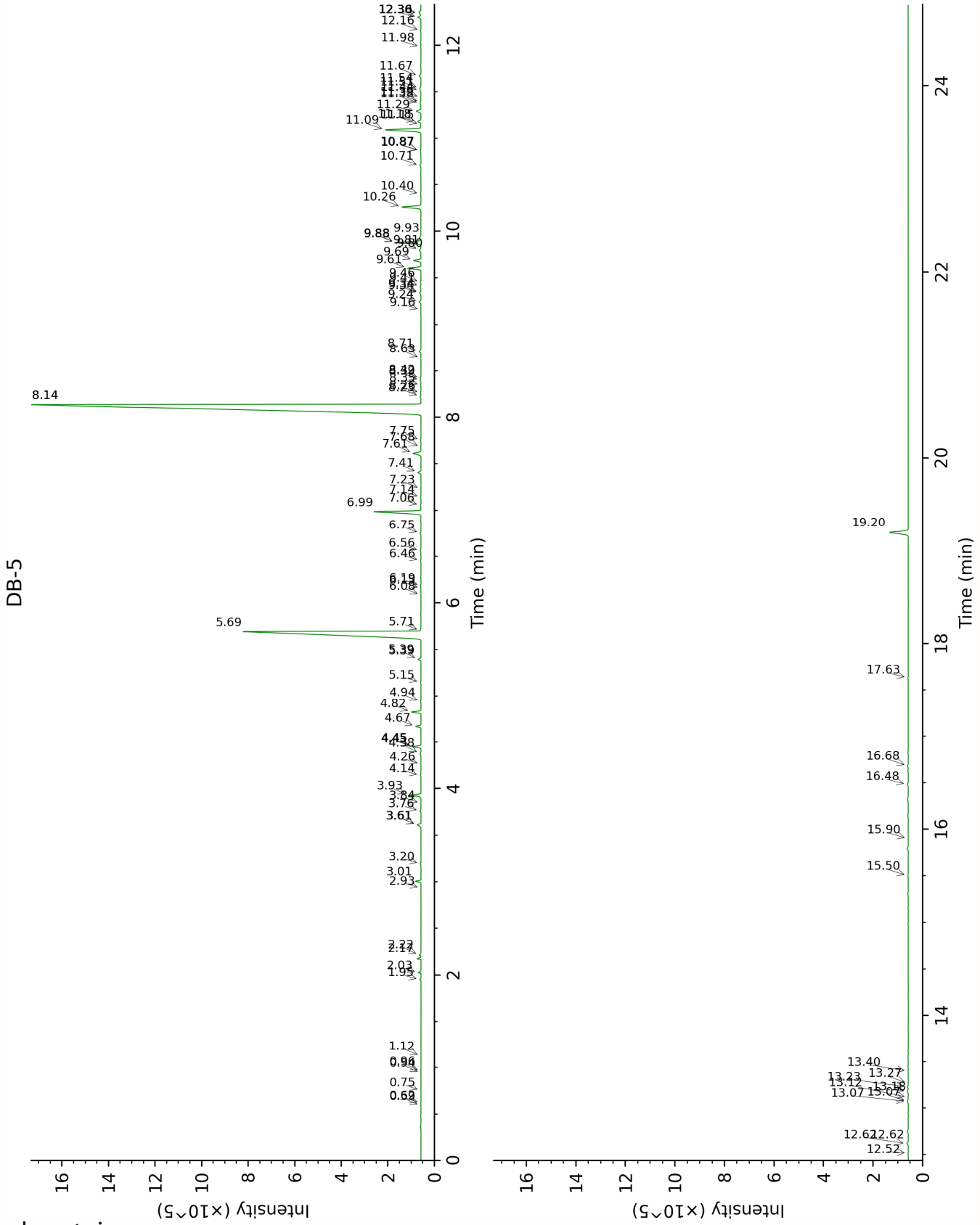

DB-WAX
Time (min)
Intensity (×10^5)
8.11
8.01
22.69
19.16


DB-5
Time (min)
Intensity (×10^5)
8.14
5.69
6.99
19.20
17.63
16.68
16.48
15.90
15.50
13.40
13.27
12.62
12.52

FULL ANALYSIS DATA

	Column DB-WAX			Column DB-5		
Isovaleral	0.74	885.7	0.01	0.59	642.8	0.01
2-Methylbutyral	0.72	879.2	tr	0.62	653.2	tr
2-Ethylfuran	0.89	920.5	tr	0.75	702.4	tr
Isoamyl alcohol	3.35*	1177.2	[0.01]	0.94	732.2	0.01
2-Methylbutanol	3.35*	1177.2	[0.01]	0.96	735.0	0.01
Toluene	1.38	999.4	tr	1.12	758.8	tr
(2*E*)-Hexenal	3.27	1171.1	0.05	1.95	848.4	0.05
(3*Z*)-Hexenol	5.67	1345.2	0.12	2.03	854.7	0.11
(2*E*)-Hexenol	6.00	1369.1	0.17	2.18	867.3	0.15
Hexanol	5.32	1319.9	0.07	2.22	870.8	0.07
α-Thujene	1.39	1001.1	tr	2.93	926.0	tr
α-Pinene	1.32	989.5	0.24	3.01	930.8	0.25
Camphene	1.64	1027.0	0.03	3.20	943.6	0.03
β-Pinene	2.02	1064.8	0.17	3.61*	971.6	[0.24]
Sabinene	2.21	1082.8	0.07	3.61*	971.6	[0.24]
Octen-3-ol	6.68*	1418.8	[0.07]	3.76	981.5	0.05
Octan-3-one	3.89*	1218.5	[0.47]	3.84	987.1	0.01
Myrcene	2.80	1133.4	0.58	3.93	993.0	0.63
cis-Dehydroxylinalool oxide	3.73	1206.7	0.04	4.14	1006.9	0.04
α-Terpinene	2.87	1138.9	0.01	4.26	1014.7	0.01
para-Cymene	3.99	1226.3	0.05	4.38	1021.9	0.05
β-Phellandrene	3.18	1163.6	0.01	4.45*	1026.6	[0.44]
Limonene	3.09	1156.4	0.40	4.45*	1026.6	[0.44]
1,8-Cineole	3.20	1165.3	0.02	4.45*	1026.6	[0.44]
(*Z*)-β-Ocimene	3.68*	1203.6	[0.28]	4.67	1040.4	0.26
(*E*)-β-Ocimene	3.89*	1218.5	[0.47]	4.82	1050.2	0.47
γ-Terpinene	3.68*	1203.6	[0.28]	4.94	1057.4	0.03
cis-Linalool oxide (fur.)	6.43	1400.1	0.03	5.15	1070.9	0.03
trans-Linalool oxide (fur.)	6.80	1427.7	0.03	5.40*	1086.6	[0.16]
Terpinolene	4.17	1239.6	0.13	5.40*	1086.6	[0.16]
Linalool	8.00†	1518.8	22.75	5.69	1105.6	21.48
Hotrienol	8.69	1572.7	0.01	5.70	1106.4	0.04
allo-Ocimene	5.46	1330.1	0.01	6.08	1131.0	0.01
trans-Pinocarveol	9.08	1603.1	0.01	6.15	1135.5	0.02
Camphor	7.07	1447.9	0.01	6.19	1137.6	0.02
Nerol oxide	6.73	1422.8	0.03	6.46	1155.1	0.02
Borneol	9.66*	1650.4	[5.43]	6.56	1161.9	0.05
Terpinen-4-ol	8.46	1554.0	0.05	6.75	1174.3	0.05
α-Terpineol	9.66*	1650.4	[5.43]	6.99	1189.7	3.04

Hodiendiol (2,6-dimethylocta-3,7-diene-2,6-diol)	12.68*	1910.0	[0.05]	7.06	1194.2	0.04
Unknown SASC VI [m/z 43, 71 (80), 67 (55), 59 (51), 68 (44), 41 (43)...]				7.14	1199.9	0.02
Unknown SASC VII [m/z 43, 71 (66), 59 (52), 41 (47), 68 (46)...]	7.36*	1470.3	[0.10]	7.23	1205.8	0.01
Linalyl formate	8.29*	1541.4	[0.21]	7.41	1217.7	0.18
Nerol	10.94	1756.9	0.55	7.61	1231.7	0.54
Unknown SASC IV [m/z 43, 93 (49), 41 (22), 80 (22), 69 (17), 121 (14)...]				7.68	1236.2	0.02
Neral	9.34*	1624.4	[0.07]	7.75	1241.2	0.02
Geraniol	11.51	1805.6	1.41	8.14*	1267.4	[60.19]
Linalyl acetate	8.11†	1527.3	57.22	8.14*	1267.4	[60.19]
Geranial	9.97	1675.5	0.04	8.23	1273.6	0.05
Unknown MISC V [m/z 121, 43 (75), 95 (57), 41 (34), 93 (33), 69 (28)...]				8.26	1276.2	0.02
Neryl formate	9.34*	1624.4	[0.07]	8.35	1281.9	0.02
Bornyl acetate	8.15	1530.4	0.03	8.40	1285.2	0.04
Unknown MISC VI [m/z 43, 121 (74), 93 (42), 95 (38), 107 (29), 41 (29), 136 (28)...]				8.42	1287.1	0.03
Thymol	15.00	2132.6	0.01	8.63	1301.4	0.01
Geranyl formate	9.77	1659.3	0.11	8.71	1306.6	0.11
δ-Elemene	6.85	1431.3	0.01	9.16	1335.3	0.01
Hodiendiol derivative	12.82	1923.0	0.12	9.24	1341.4	0.10
α-Cubebene	6.68*	1418.8	[0.07]	9.34*	1348.3	[0.08]
α-Terpinyl acetate	9.57	1643.1	0.06	9.34*	1348.3	[0.08]
Unknown MISC VII [m/z 43, 121 (52), 93 (48), 79 (33), 41 (30), 136 (26), 81 (25)...]				9.41	1353.3	0.05
Unknown SASC III	11.04	1765.9	0.04	9.46	1356.5	0.04

[m/z 43, 79 (46), 71 (30), 94 (25), 41 (23), 81 (21)... 197 (0)]						
Neryl acetate	10.07	1683.7	0.76	9.60	1367.1	0.76
α-Copaene	7.03	1445.2	0.43	9.69	1373.0	0.43
β-Bourbonene	7.36*	1470.3	[0.10]	9.80	1380.7	0.10
1,5-diepi-β-Bourbonene	7.25	1461.6	0.01	9.82	1382.1	0.01
Geranyl acetate	10.44	1714.4	1.42	9.88*	1386.7	[1.52]
β-Cubebene	7.67	1493.2	0.12	9.88*	1386.7	[1.52]
β-Elemene	8.34*	1544.9	[1.21]	9.93	1390.4	0.10
β-Caryophyllene	8.34*	1544.9	[1.21]	10.26	1414.2	1.17
β-Copaene	8.29*	1541.4	[0.21]	10.40	1424.6	0.03
α-Humulene	9.14	1608.0	0.06	10.71	1448.1	0.07
(*E*)-β-Farnesene	9.44	1632.2	0.05	10.87*	1459.8	[0.05]
9-epi-β-Caryophyllene	9.23	1615.3	0.01	10.87*	1459.8	[0.05]
Germacrene D	9.66*	1650.4	[5.43]	11.09	1476.8	2.25
β-Selinene	9.72	1655.4	0.03	11.15	1480.8	0.03
Hodiendiol derivative IV				11.18	1483.5	0.20
Bicyclogermacrene	9.92*	1671.3	[0.27]	11.29	1491.9	0.28
α-Muurolene	9.92*	1671.3	[0.27]	11.38	1498.1	0.04
(*Z*)-α-Bisabolene	10.15	1690.2	0.04	11.39	1499.3	0.04
Hodiendiol derivative II	12.68*	1910.0	[0.05]	11.44	1502.9	0.03
β-Bisabolene	10.02	1680.1	0.04	11.51	1508.6	0.05
γ-Cadinene	10.23	1696.7	0.05	11.54	1510.6	0.07
δ-Cadinene	10.28	1700.8	0.14	11.67	1521.1	0.11
Isocaryophyllene epoxide B	11.98	1848.2	0.01	11.98	1545.6	0.02
1,5-Epoxysalvial-4(14)-ene	11.97	1846.6	0.03	12.16	1559.4	0.02
Spathulenol	14.25	2058.2	0.19	12.30	1570.9	0.17
Caryophyllene oxide isomer	12.54	1897.3	0.03	12.36*	1575.1	[0.15]
Caryophyllene oxide	12.61	1903.8	0.21	12.36*	1575.1	[0.15]
Salvial-4(14)-en-1-one	12.89	1929.8	0.01	12.52	1588.0	0.02
Guaiol	14.03	2037.2	0.02	12.62*	1595.9	[0.09]
Unknown MISC CLIX [m/z 91, 119 (91), 79 (86), 93				12.62*	1595.9	[0.09]

(85), 41 (74), 107 (68), 105 (67), 134 (65)... 220 (1)]						
Hinesol	14.84	2116.5	0.01	13.07*	1633.1	[0.07]
allo-Aromadendrene epoxide?	13.72	2007.3	0.04	13.07*	1633.1	[0.07]
τ-Cadinol	14.74	2106.2	0.02	13.12	1636.8	0.02
β-Eudesmol	15.22	2154.7	0.12	13.18	1642.2	0.06
α-Eudesmol	15.17	2149.8	0.02	13.23	1646.2	0.05
α-Cadinol	15.32	2164.3	0.09	13.27	1649.2	0.01
Bulnesol	15.15	2147.3	0.02	13.40	1660.2	0.02
Phytone	14.55	2088.0	0.02	15.50	1842.9	0.03
Sclareoloxide	16.23	2258.2	0.01	15.90	1879.2	0.01
Unknown UNKN CXC [m/z 109, 132 (88), 157 (76), 119 (66), 91 (57), 105 (55)...]				16.48	1933.5	0.07
Geranyl-*para*-cymene	16.03	2237.8	0.04	16.68	1952.5	0.04
Manool	19.16	2583.9	0.03	17.63	2044.9	0.03
Sclareol	22.69	3028.4	1.42	19.20	2204.3	1.39
Total reported		98.35%			99.06%	

*: 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