

Date : 2025-08-22

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 25F11-PTH01

Customer Identification : Patchouli - Indonesia - P20115R

Type : Essential Oil

Source : *Pogostemon cablin*

Customer : Plant Therapy

Checked and approved by:

Alexis St-Gelais, Ph. D., Chimiste 2013-174

Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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

This report is an update from the first version issued on 2025-06-18 to correct the customer identification.

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 : 2025-06-16

PHYSICOCHEMICAL DATA

Refractive index : 1.508 ± 0.0003 (20 °C)

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

Analyst : Cindy Caron B. Sc.

Date : 2025-06-12

CONCLUSION

Sylvain Mercier

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CONCLUSION PAR DÉFAUT POUR LES ANALYSES HE

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
α -Pinene	0.08	Monoterpene
β -Pinene	0.19	Monoterpene
Limonene	0.03	Monoterpene
Linalool	0.02	Monoterpenic alcohol
δ -Elemene	0.16	Sesquiterpene
Unknown	0.01	Sesquiterpene
β -Patchoulene	2.55	Sesquiterpene
α -Copaene	0.02	Sesquiterpene
β -Bourbonene	0.01	Sesquiterpene
<i>cis</i> - β -Elemene	0.06	Sesquiterpene
β -Elemene	0.97	Sesquiterpene
Isocaryophyllene	0.03	Sesquiterpene
Cycloseychellene	0.57	Sesquiterpene
β -Caryophyllene	3.44	Sesquiterpene
Seychellene	6.42	Sesquiterpene
Selina-5,11-diene	0.05	Sesquiterpene
α -Guaiene	14.13	Sesquiterpene
Unknown	0.05	Sesquiterpene
α -Humulene	0.60	Sesquiterpene
α -Patchoulene	4.63	Sesquiterpene
δ -patchoulene	1.70	Sesquiterpene
Patchoulene analog IV (Improperly reported as γ -patchoulene)	0.95	Sesquiterpene
9- <i>epi</i> - β -Caryophyllene	0.02	Sesquiterpene
Unknown	0.44	Sesquiterpene
Unknown	0.46	Sesquiterpene
Selina-4,11-diene	0.19	Sesquiterpene
β -Selinene	0.10	Sesquiterpene
Patchoulene analog II	0.24	Sesquiterpene
Unknown	[0.30]	Sesquiterpene
δ -Selinene	[0.30]	Sesquiterpene
α -Selinene	0.27	Sesquiterpene
Aciphyllene	3.14	Sesquiterpene
Eudesma-2,4(15),11-triene	0.12	Sesquiterpene
Pentadecane	0.10	Alkane
δ -Guaiene	19.09	Sesquiterpene
Nootkatene	0.01	Sesquiterpene
γ -Cadinene	0.64	Sesquiterpene
7- <i>epi</i> - α -Selinene	0.13	Sesquiterpene
Unknown	0.07	Sesquiterpene

Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.11	Oxygenated sesquiterpene
Unknown	0.08	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
α -Elemol	[0.53]	Sesquiterpenic alcohol
Isocaryophyllene epoxide B	0.04	Sesquiterpenic ether
Norpatchoulénol	[0.53]	Norsesquiterpenic alcohol
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene
Unknown	0.20	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Caryophyllene oxide	0.25	Sesquiterpenic ether
Caryophyllene oxide isomer	0.07	Sesquiterpenic ether
Unknown	0.34	Oxygenated sesquiterpene
Unknown	0.06	Oxygenated sesquiterpene
Hexadecane	0.07	Alkane
Unknown	0.07	Oxygenated sesquiterpene
Unknown	0.24	Oxygenated sesquiterpene
Unknown	0.23	Oxygenated sesquiterpene
Unknown	0.61	Oxygenated sesquiterpene
Hinesol	0.15	Sesquiterpenic alcohol
Caryophylladiénol II	0.27	Sesquiterpenic alcohol
Patchoulol	28.36	Sesquiterpenic alcohol
Pogostol	2.03	Sesquiterpenic alcohol
Unknown	0.12	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.13	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Rotundone	0.11	Sesquiterpenic ketone
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.05	Oxygenated sesquiterpene
Pogostone	0.48	Terpenic lactone
Unknown	0.20	Oxygenated sesquiterpene
Unknown	0.09	Oxygenated sesquiterpene
Unknown	0.08	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.09	Oxygenated sesquiterpene
Unknown	0.06	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene

Unknown	0.02	Oxygenated sesquiterpene
Corymbolone	0.02	Sesquiterpenic alcohol
Unknown	0.04	Oxygenated sesquiterpene
Phytol	0.04	Diterpenic alcohol
Unknown	0.01	Oxygenated sesquiterpene
Consolidated total	97.63	

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

Note: no correction factor was applied

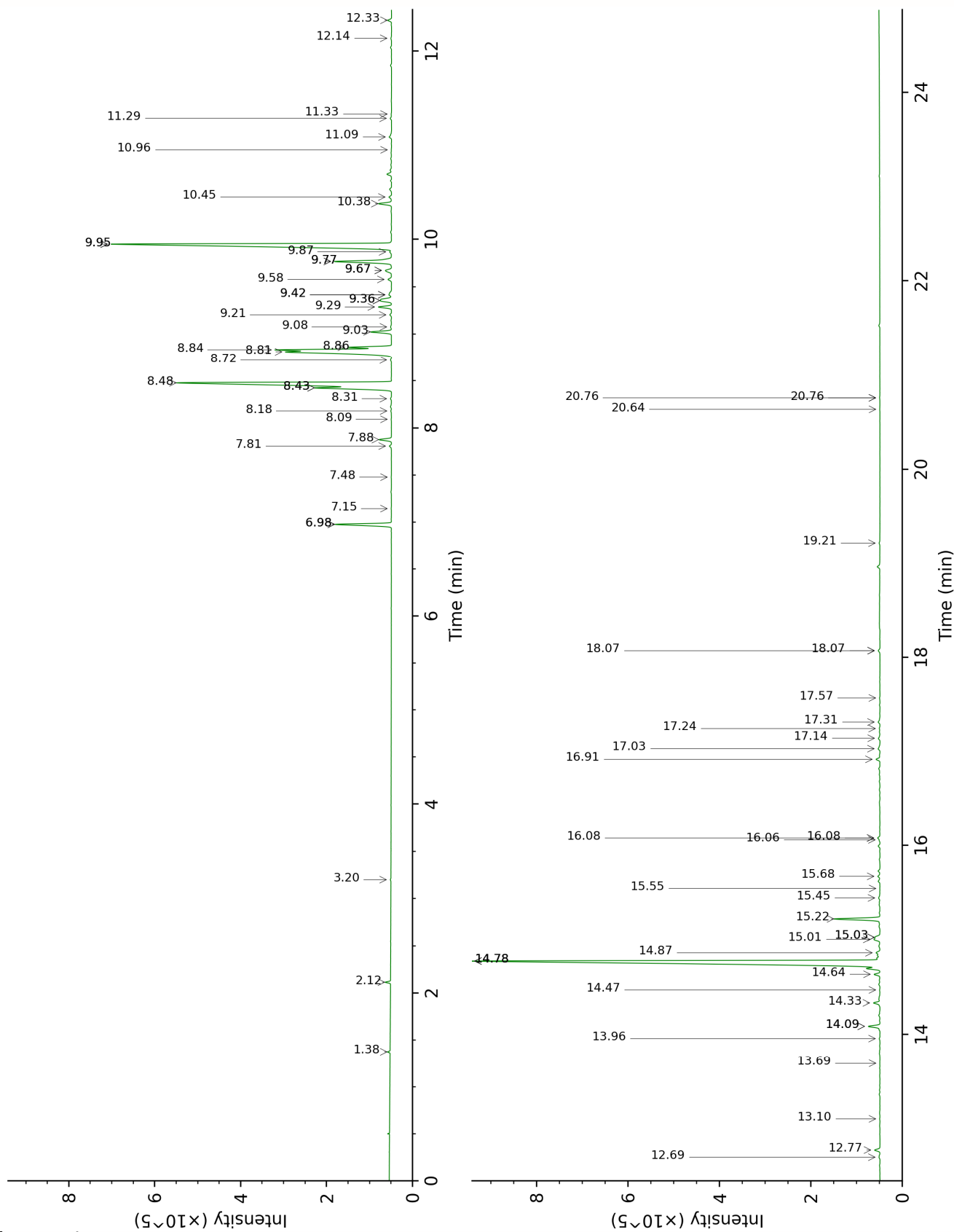
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

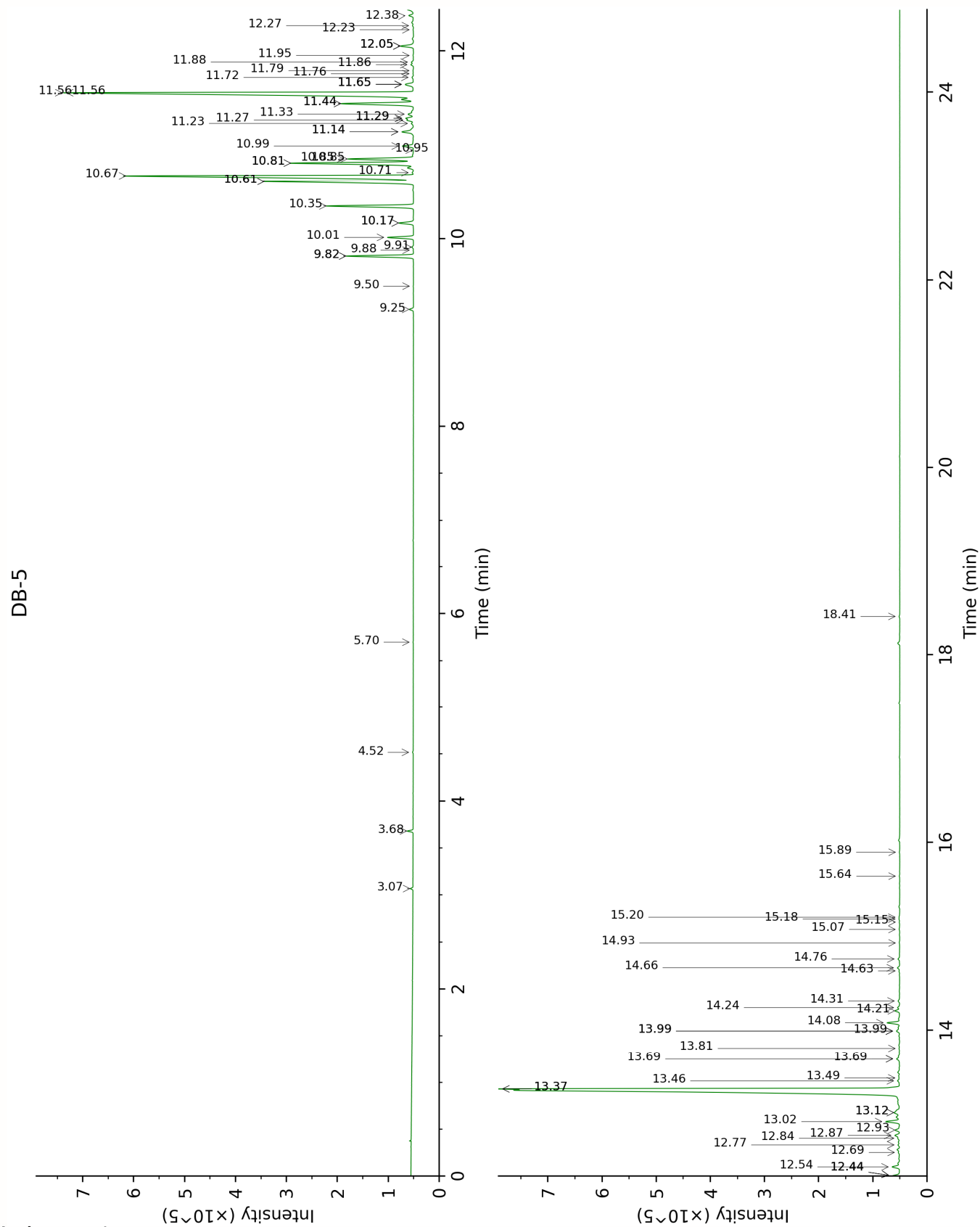
Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

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.

DB-WAX





FULL ANALYSIS DATA

α-Pinene	Column DB-WAX			Column DB-5		
	1.38	989.8	0.07	3.07	931.7	0.08
β-Pinene	2.12	1064.9	0.18	3.68	972.6	0.19
Limonene	3.20	1156.5	0.03	4.52	1027.2	0.03
Linalool	8.09	1516.2	0.01	5.70	1101.6	0.02
δ-Elemene	6.98*	1433.1	[2.71]	9.25	1337.1	0.16
Unknown POCA II [m/z 145, 91 (67), 105 (57), 131 (56), 119 (52), 159 (49), 202 (45)]				9.50	1354.5	0.01
β-Patchoulene	6.98*	1433.1	[2.71]	9.82*	1377.1	[2.57]
α-Copaene	7.15	1445.4	0.02	9.82*	1377.1	[2.57]
β-Bourbonene	7.48	1470.1	0.01	9.88	1381.5	0.01
cis-β-Elemene	8.31	1533.1	0.05	9.91	1383.8	0.06
β-Elemene	8.43*	1541.9	[3.89]	10.01	1391.1	0.97
Isocaryophyllene	8.18	1523.0	0.03	10.17*	1401.9	[0.62]
Cycloseychellene	7.88	1499.6	0.57	10.17*	1401.9	[0.62]
β-Caryophyllene	8.43*	1541.9	[3.89]	10.35	1415.2	3.44
Seychellene	8.81	1571.8	6.42	10.61*	1434.7	[6.28]
Selina-5,11-diene	8.72	1564.8	0.05	10.61*	1434.7	[6.28]
α-Guaiene	8.48	1546.0	14.53	10.67	1439.5	14.13
Unknown POCA III [m/z 91, 93 (98), 79 (82), 81 (82), 105 (71), 107 (70)... 204 (38)]	9.21	1602.4	0.08	10.71	1442.1	0.05
α-Humulene	9.29	1609.1	0.60	10.81*	1449.7	[5.28]
α-Patchoulene	8.84	1573.5	4.63	10.81*	1449.7	[5.28]
δ-patchoulene	8.86	1575.6	1.70	10.85*	1452.9	[2.74]
Patchoulene analog IV (Improperly reported as γ- patchoulene)	9.03	1588.2	0.95	10.85*	1452.9	[2.74]
9-epi-β- Caryophyllene	9.42*	1619.5	[0.21]	10.95	1460.0	0.02
Unknown POCA IV [m/z 159, 91 (88), 93 (72), 79 (69), 105 (68), 41 (66), 81 (54), 202? (50)...]	9.36*	1614.6	[0.90]	10.99	1463.2	0.44
Unknown POCA V	9.36*	1614.6	[0.90]	11.14*	1474.5	[0.65]

[m/z 147, 93 (87), 107 (77), 105 (77), 91 (73), 79 (63)... 204 (21)]						
Selina-4,11-diene	9.42*	1619.5	[0.21]	11.14*	1474.5	[0.65]
β-Selinene	9.87	1656.0	0.08	11.23	1481.1	0.10
Patchoulene analog II	9.77*	1647.9	[3.16]	11.27	1483.9	0.24
Unknown POCA VI [m/z 79, 107 (99), 91 (88), 93 (86), 81 (78), 105 (73), 41 (73)... 204? (12)]	9.67*	1640.2	[0.40]	11.28*	1485.2	[0.30]
δ-Selinene	9.67*	1640.2	[0.40]	11.28*	1485.2	[0.30]
α-Selinene	9.95*	1662.6	[19.45]	11.33	1488.5	0.27
Aciphyllene	9.77*	1647.9	[3.16]	11.44*	1496.9	[3.26]
Eudesma-2,4(15),11-triene	11.09	1757.6	0.12	11.44*	1496.9	[3.26]
Pentadecane	7.81	1494.4	0.10	11.56*	1505.5	[19.19]
δ-Guaiene	9.95*	1662.6	[19.45]	11.56*	1505.5	[19.19]
Nootkatene	10.96	1746.0	0.01	11.65*	1512.5	[0.47]
γ-Cadinene	10.38	1697.3	0.64	11.65*	1512.5	[0.47]
7-epi-α-Selinene	10.45	1703.2	0.13	11.65*	1512.5	[0.47]
Unknown POCA XLV [m/z 159, 91 (81), 117 (68), 131 (51), 105 (46)... 202 (37)]	9.58	1632.6	0.18	11.72	1518.4	0.07
Unknown POCA IX [m/z 41, 67 (95), 93 (92), 107 (91), 55 (77), 81 (77), 79 (73)... 205 (17)...]	11.33	1778.1	0.02	11.76	1521.5	0.02
Unknown POCA X [m/z 161, 119 (92), 91 (69), 105 (52), 145 (49)... 218 (6)]	11.29	1774.2	0.06	11.79	1524.0	0.03
Unknown POCA XI [m/z 91, 105 (98), 108 (83), 93 (82), 133 (79), 77 (64), 79 (57), 41				11.86	1529.1	0.11

(56), 145 (55)...						
218? (5)]						
Unknown POCA						
XII [m/z 91, 105						
(78), 93 (77), 107				11.88	1531.2	0.08
(71), 79 (64), 41						
(63), 77 (63), 145						
(60)... 218 (17)]						
Unknown POCA						
XIII [m/z 145, 131						
(91), 91 (86), 105				11.95	1536.7	0.02
(68), 146 (66), 43						
(54)... 220? (5)]						
α -Elemol	14.09*	2027.6	[0.58]	12.05*	1544.7	[0.57]
Isocaryophyllene						
epoxide B	12.14	1848.3	0.04	12.05*	1544.7	[0.57]
Norpatchoulénol	14.09*	2027.6	[0.58]	12.05*	1544.7	[0.57]
Unknown POCA						
XIV [m/z 191, 159						
(66), 133 (53), 91						
(45), 41 (42), 177	13.69	1989.4	0.01	12.23	1558.3	0.02
(35), 105 (33), 220						
(32)]						
Unknown POCA						
XV [m/z 41, 67						
(90), 55 (87), 79						
(85), 107 (84), 81				12.27	1561.7	0.04
(84), 93 (84), 121						
(77), 91 (74)... 220						
(7)]						
Unknown POCA						
XVI [m/z 43, 107						
(94), 81 (71), 41						
(63), 67 (58), 111	12.33	1865.1	0.18	12.38	1570.3	0.20
(58), 93 (55), 83						
(54)... 205 (8), 220						
(1)]						
Unknown POCA						
XIV isomer	14.47	2064.7	0.03	12.44*	1575.3	[0.38]
Caryophyllene						
oxide	12.77	1904.4	0.25	12.44*	1575.3	[0.38]
Caryophyllene						
oxide isomer	12.69	1897.4	0.07	12.44*	1575.3	[0.38]
Unknown POCA						
XVII [m/z 43, 79	14.33	2051.5	0.32	12.54	1582.8	0.34

(44), 81 (41), 93 (40), 91 (40)... 220 (5)]						
Unknown POCA XVIII [m/z 43, 105 (77), 91 (71), 93 (68), 41 (62), 107 (6)... 205 (41), 220 (7)]	14.64	2080.7	0.27	12.69	1595.0	0.06
Hexadecane	9.08	1592.2	0.05	12.77	1601.3	0.07
Unknown POCA XIX [m/z 43, 161 (73), 91 (53), 95 (52), 79 (46), 119 (45)... 205 (29), 220? (1)]	14.78*	2094.3	[27.86]	12.84	1606.9	0.07
Unknown POCA XX [m/z 41, 91 (92), 55 (81), 93 (81), 79 (74), 43 (71), 95 (68), 123 (65)... 220 (17)]	14.86	2103.1	0.20	12.87	1609.5	0.24
Unknown POCA XXI [m/z 43, 79 (41), 93 (39), 41 (39), 91 (38), 81 (36)... 220 (3)]	15.01	2117.4	0.33	12.93	1614.2	0.23
Unknown POCA XXII [m/z 41, 55 (92), 95 (80), 81 (76), 109 (76), 67 (66), 125 (65)... 220 (12)]	14.78*	2094.3	[27.86]	13.02	1621.6	0.61
Hinesol	15.03*	2119.4	[0.27]	13.12*	1629.6	[0.42]
Caryophylladienol II	16.08*	2226.3	[0.12]	13.12*	1629.6	[0.42]
Patchoulol	14.78*	2094.3	[27.86]	13.37*	1650.5	[30.39]
Pogostol	15.22	2139.1	2.03	13.37*	1650.5	[30.39]
Unknown POCA XXIII [m/z 175, 218 (59), 133 (49), 91 (43), 41 (38), 147 (36)]	15.03*	2119.4	[0.27]	13.46	1657.6	0.12
Unknown POCA XXIV [m/z 43, 41				13.49	1660.1	0.03

(87), 91 (64), 55 (63), 81 (58), 95 (54), 107 (52)... 222 (12)]						
Unknown POCA XXVI [m/z 91, 41 (100), 107 (98), 108 (95), 95 (87), 93 (87), 105 (85), 79 (77), 119 (72)... 220? (15)]	16.06	2224.2	0.03	13.69*	1677.1	[0.16]
Unknown POCA XXV [m/z 95, 107 (99), 41 (85), 93 (82), 91 (82), 109 (71), 105 (71), 105 (71), 108 (66)... 220 (29)]	16.08*	2226.3	[0.12]	13.69*	1677.1	[0.16]
Unknown POCA XXVII [m/z 43, 41 (95), 97 (89), 109 (71), 55 (71), 107 (70), 95 (69), 110 (65)... 222 (5)]	15.45	2161.2	0.09	13.81	1686.7	0.03
Rotundone	15.68	2184.2	0.11	13.99*	1702.0	[0.17]
Unknown POCA LV [m/z 105, 107 (98), 91 (95), 166 (80), 248 (80), 93 (76)... 233 (66)]	13.10	1934.9	0.02	13.99*	1702.0	[0.17]
Unknown POCA XXVIII [m/z 43, 41 (82), 137 (78), 109 (76), 95 (75), 91 (72), 55 (67)... 220? (14)]				13.99*	1702.0	[0.17]
Pogostone				14.08	1709.6	0.48
Unknown POCA XXIX [m/z 107, 93 (87), 41 (83), 81 (82), 67 (80), 55 (76)... 204 (53), 207 (34), 222 (9)]	16.91	2314.0	0.19	14.21	1720.7	0.20
Unknown POCA XXX [m/z 83, 43	17.03	2326.1	0.13	14.24	1723.6	0.09

(85), 55 (39), 41 (29), 121 (27), 120 (25)... 218 (3)]						
Unknown POCA XXXI [m/z 133, 148 (68), 147 (59), 91 (56), 79 (45), 105 (44)... 218 (8)]	17.14	2338.1	0.10	14.31	1729.8	0.08
Unknown POCA XXXIV [m/z 43, 191 (68), 41 (62), 91 (51), 95 (49), 110 (44)... 234 (22)]				14.63	1757.6	0.03
Unknown POCA XXXV [m/z 91, 105 (88), 95 (79), 93 (78), 81 (72), 79 (66)... 205 (33), 220 (7)...]				14.66	1760.5	0.09
Unknown POCA XXXVI [m/z 149, 131 (54), 105 (48), 91 (46), 41 (30), 93 (27)... 218 (23)]	17.31	2356.6	0.12	14.76	1768.6	0.06
Unknown POCA XXXVII [m/z 43, 95 (58), 67 (50), 41 (47), 55 (38), 109 (37)... 221 (9)... 236? (3)]	18.07*	2441.0	[0.09]	14.93	1783.4	0.02
Unknown POCA XXXVIII [m/z 219, 43 (67), 91 (46), 79 (42), 41 (41), 55 (36)... 234 (6)]	18.07*	2441.0	[0.09]	15.07	1796.0	0.03
Unknown POCA XL [m/z 43, 91 (77), 79 (74), 109 (73), 110 (71)... 218 (52), 234? (1)]	17.57	2385.0	0.03	15.15	1802.7	0.02
Unknown POCA XXXIX [m/z 43, 91 (43), 41 (37), 79 (32), 219 (31)...]	20.64	2744.3	0.01	15.18	1805.6	0.03

234 (14)]						
Unknown POCA XLII [m/z 91, 41 (79), 43 (74), 79 (72), 105 (65), 77 (64), 147 (64), 93 (61)... 218 (26), 234 (14)]	17.24	2349.2	0.04	15.20	1807.4	0.04
Unknown POCA XLIV [m/z 41, 110 (77), 55 (75), 69 (74), 43 (74), 95 (71), 97 (71), 123 (71), 67 (63), 136 (56)... 236? (7)]	20.76*	2759.5	[0.02]	15.64	1847.1	0.02
Corymbolone	20.76*	2759.5	[0.02]	15.89	1870.3	0.02
Unknown POCA XLVII [m/z 41, 79 (97), 43 (97), 69 (72), 93 (70), 91 (62), 95 (58)... 220 (2)]	13.96	2015.1	0.04			
Phytol	19.21	2571.7	0.03	18.41	2113.4	0.04
Unknown POCA XLVIII [m/z 163, 119 (50), 91 (48), 95 (47), 41 (44), 105 (41)... 220 (18)]	15.55	2171.3	0.01			
Total reported		95.69%			97.27%	

*: 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