Date : 2026-11-13

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 26F30-PTH02
Customer Identification : Patchouli - Indonesia - P20118
Type : Essential Oil
Source : *Pogostemon cablin*
Customer : Plant Therapy

Checked an 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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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. 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 from the first version issued on 2026-07-06 to correct the customer identification.

Méthode certifiée ISO 17025:2017 Certified method

Laboratoire PhytoChemia

628 Boulevard du Saguenay Ouest, Saguenay (Qc) G7J 1H4 | www.phytochemia.com

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 : 2026-07-06

Physicochemical data

Refractive index : 1.5087 ± 0.0003 (20 °C)
Method : PC-MAT-016 - Measure of the refractive index of a liquid.
Analyst : Cindy Caron B. Sc.
Date : 2026-07-02

Conclusion

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

628 Boulevard du Saguenay, Saguenay (Qc) G7J 1H4 | www.phytochemia.com

Analysis Summary - Consolidated Contents

New readers of similar reports are encouraged to read table footnotes at least once.

Identification	%	Class
5-Methyl-2-hexanone	tr	Aliphatic ketone
α-Pinene	0.08	Monoterpene
Sabinene	tr	Monoterpene
β-Pinene	0.20	Monoterpene
Octen-3-ol	tr	Aliphatic alcohol
Octan-3-one	tr	Aliphatic ketone
Octan-3-ol	0.01	Aliphatic alcohol
Limonene	0.02	Monoterpene
Linalool	0.01	Monoterpenic alcohol
Unknown	0.01	Unknown
δ-Elemene	0.13	Sesquiterpene
α-Copaene	0.01	Sesquiterpene
β-Patchoulene	2.66	Sesquiterpene
β-Bourbonene	0.01	Sesquiterpene
cis-β-Elemene	0.06	Sesquiterpene
β-Elemene	0.92	Sesquiterpene
Cycloseychellene	0.56	Sesquiterpene
Isocaryophyllene	0.02	Sesquiterpene
β-Caryophyllene	3.18	Sesquiterpene
Seychellene	6.10	Sesquiterpene
α-Guaiene	13.36	Sesquiterpene
Selina-5,11-diene	0.05	Sesquiterpene
Unknown	0.04	Sesquiterpene
α-Humulene	0.57	Sesquiterpene
α-Patchoulene	4.79	Sesquiterpene
Patchoulene analog IV (Improperly reported as γ-patchoulene)	0.94	Sesquiterpene
δ-patchoulene	1.76	Sesquiterpene
9-epi-β-Caryophyllene	0.01	Sesquiterpene
Unknown	0.40	Sesquiterpene
Selina-4,11-diene	0.13	Sesquiterpene
Unknown	0.40	Sesquiterpene
β-Selinene	0.08	Sesquiterpene
Patchoulene analog II	0.25	Sesquiterpene
Unknown	0.28	Sesquiterpene
Unknown	0.10	Sesquiterpene
δ-Selinene	0.14	Sesquiterpene
α-Selinene	0.07	Sesquiterpene
Eudesma-2,4(15),11-triene	0.12	Sesquiterpene
Aciphyllene	3.10	Sesquiterpene

Pentadecane	0.36	Alkane
δ-Guaiene	18.91	Sesquiterpene
γ-Cadinene	0.55	Sesquiterpene
Nootkatene	0.02	Sesquiterpene
7-epi-α-Selinene	0.01	Sesquiterpene
Unknown	0.06	Sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.12	Oxygenated sesquiterpene
Unknown	0.10	Oxygenated sesquiterpene
Unknown	0.01	Sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Norpatchoulenol	0.60	Norsesquiterpenic alcohol
Isocaryophyllene epoxide B	0.05	Sesquiterpenic ether
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene
Unknown	0.20	Oxygenated sesquiterpene
Caryophyllene oxide	0.29	Sesquiterpenic ether
Caryophyllene oxide isomer	0.07	Sesquiterpenic ether
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.35	Oxygenated sesquiterpene
Unknown	0.16	Oxygenated sesquiterpene
Hexadecane	0.07	Alkane
Humulene epoxide II	0.06	Sesquiterpenic ether
Unknown	0.08	Oxygenated sesquiterpene
Unknown	0.22	Oxygenated sesquiterpene
Unknown	0.19	Oxygenated sesquiterpene
Unknown	0.65	Oxygenated sesquiterpene
Caryophylladienol II	0.19	Sesquiterpenic alcohol
Hinesol	0.44	Sesquiterpenic alcohol
Patchoulol	29.12	Sesquiterpenic alcohol
Pogostol	2.31	Sesquiterpenic alcohol
Unknown	0.11	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.14	Oxygenated sesquiterpene
Unknown	0.05	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Rotundone	0.21	Sesquiterpenic ketone
Unknown	0.05	Oxygenated sesquiterpene
Pogostone	1.40	Terpenic lactone
Unknown	0.22	Oxygenated sesquiterpene
Unknown	0.10	Oxygenated sesquiterpene
Unknown	0.07	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene

Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.11	Oxygenated sesquiterpene
Unknown	0.08	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene
Unknown	0.01	Oxygenated sesquiterpene
Corymbolone analog	0.01	Sesquiterpenic alcohol
Corymbolone	0.02	Sesquiterpenic alcohol
Phytol	0.03	Diterpenic alcohol
Consolidated total	**98.71**	

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

Note: no correction factor was applied

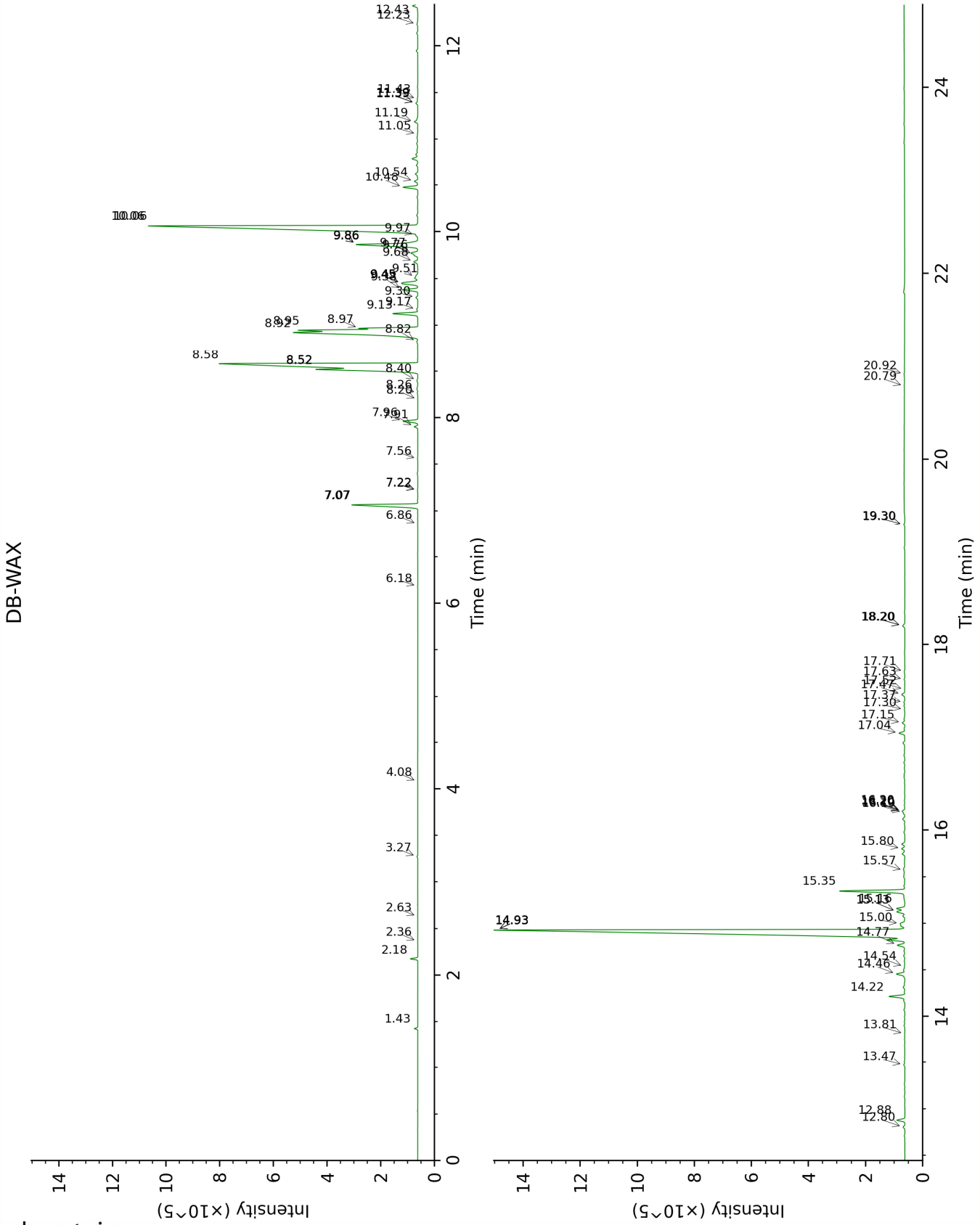
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

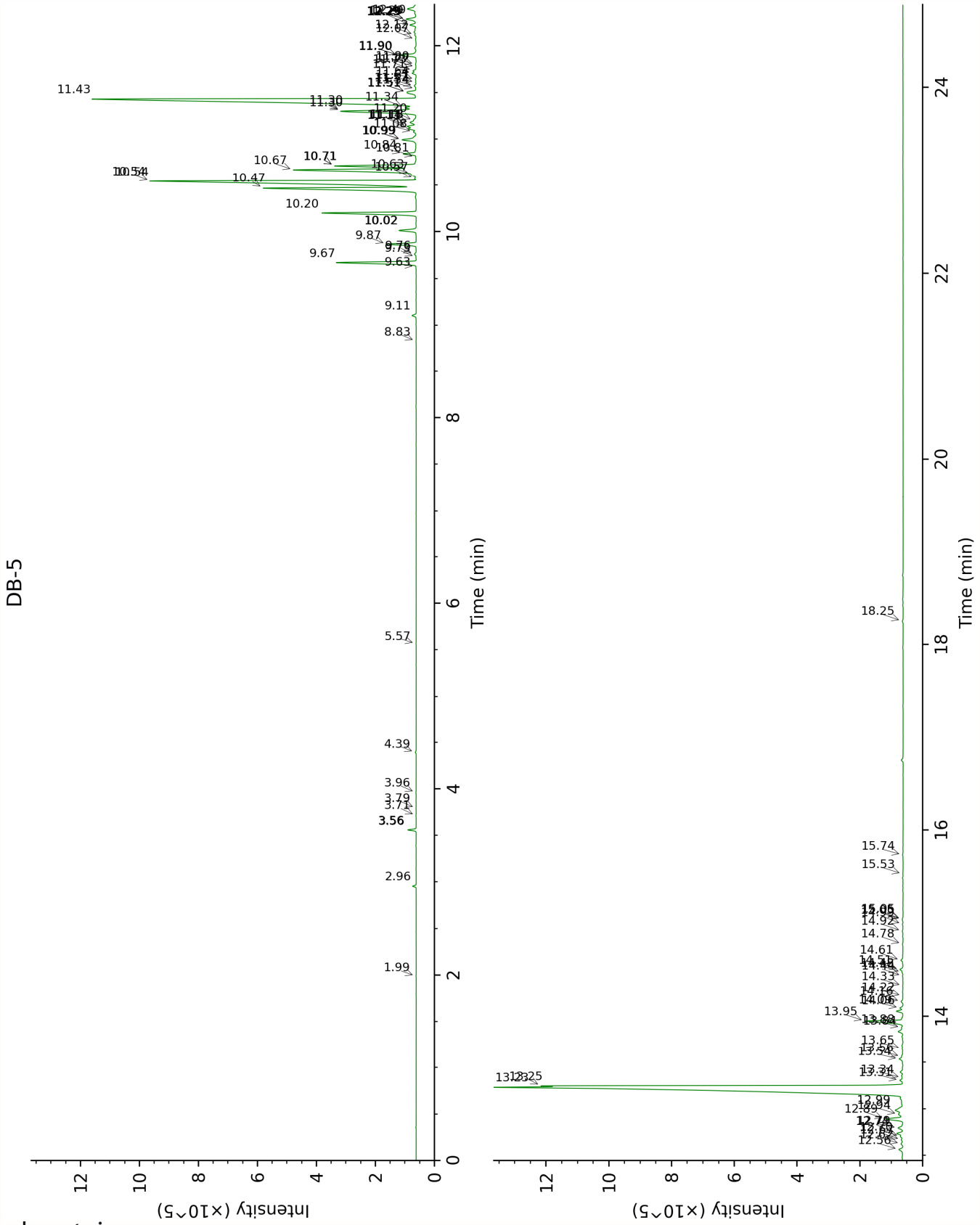
Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

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.

628 Boulevard du Saguenay, Saguenay (Qc) G7J 1H4 | www.phytochemia.com


DB-WAX
Time (min)
Intensity (×10^5)
12.43
12.23
11.43
11.19
11.05
10.54
10.46
10.06
9.97
9.86
9.68
9.51
9.30
9.17
9.13
8.97
8.95
8.82
8.58
8.52
8.40
8.26
7.96
7.91
7.56
7.22
7.07
6.86
6.18
4.08
3.27
2.63
2.36
2.18
1.43
20.92
20.79
19.30
18.20
17.71
17.63
17.47
17.37
17.30
17.15
17.04
15.80
15.57
15.35
15.00
14.93
14.77
14.54
14.46
14.22
13.81
13.47
12.88
12.80


DB-5
Time (min)
Intensity (×10^5)
11.43
11.30
11.34
10.67
10.71
10.47
10.20
10.02
9.87
9.67
9.63
9.11
8.83
5.57
4.39
3.96
3.79
3.71
3.56
2.96
1.99
18.25
15.74
15.53
14.92
14.78
14.61
14.33
13.95
13.65
13.54
13.34
13.25
12.99
12.56

FULL ANALYSIS DATA

	Column DB-WAX			Column DB-5		
5-Methyl-2-hexanone	2.63	1107.7	tr	1.99	855.7	tr
α-Pinene	1.43	990.3	0.08	2.96	931.7	0.08
Sabinene	2.36	1084.6	tr	3.56*	972.6	[0.21]
β-Pinene	2.18	1066.2	0.20	3.56*	972.6	[0.21]
Octen-3-ol	6.86	1419.7	0.01	3.71	982.9	tr
Octan-3-one	4.08	1218.1	tr	3.79	988.3	tr
Octan-3-ol	6.18	1371.3	0.01	3.96	999.6	0.01
Limonene	3.28	1157.8	0.02	4.39	1027.4	0.02
Linalool	8.20	1518.6	0.01	5.57	1102.0	0.01
Unknown POCA I [m/z 159, 117 (68), 132 (55), 200 (35)]	7.22*	1446.3	[0.01]	8.83	1317.7	0.01
δ-Elemene	7.07*	1434.8	[2.80]	9.11	1337.2	0.13
α-Copaene	7.22*	1446.3	[0.01]	9.63	1374.2	0.01
β-Patchoulene	7.07*	1434.8	[2.80]	9.67	1377.4	2.66
β-Bourbonene	7.56	1470.9	0.01	9.73	1381.5	0.01
cis-β-Elemene	8.40	1534.0	0.04	9.76	1383.7	0.06
β-Elemene	8.52*†	1543.3	[4.56]	9.87	1391.3	0.92
Cycloseychellene	7.96	1500.8	0.56	10.02*	1401.8	[0.57]
Isocaryophyllene	8.26	1523.7	0.02	10.02*	1401.8	[0.57]
β-Caryophyllene	8.52*†	1543.3	[4.56]	10.20	1415.5	3.18
Seychellene	8.92*†	1574.0	[7.23]	10.47	1435.4	6.10
α-Guaiene	8.58†	1548.0	12.96	10.54*	1441.2	[13.40]
Selina-5,11-diene	8.82	1566.5	0.05	10.54*	1441.2	[13.40]
Unknown POCA III [m/z 91, 93 (98), 79 (82), 81 (82), 105 (71), 107 (70)... 204 (38)]	9.30	1603.2	0.07	10.57	1443.3	0.04
α-Humulene	9.38	1609.8	0.57	10.63†	1447.3	0.20
α-Patchoulene	8.95*†	1576.0	[3.79]	10.67†	1450.5	5.16
Patchoulene analog IV (Improperly reported as γ-patchoulene)	9.13	1589.5	0.94	10.71*	1453.8	[2.70]
δ-patchoulene	8.97*†	1577.5	[1.53]	10.71*	1453.8	[2.70]
9-epi-β-Caryophyllene	9.45*	1615.4	[0.85]	10.81	1460.7	0.01
Unknown POCA IV [m/z 159, 91 (88), 93 (72), 79	9.45*	1615.4	[0.85]	10.84	1463.5	0.40

(69), 105 (68), 41 (66), 81 (54), 202? (50)...]						
Selina-4,11-diene	9.51	1619.9	0.13	10.99*	1474.9	[0.53]
Unknown POCA V [m/z 147, 93 (87), 107 (77), 105 (77), 91 (73), 79 (63)... 204 (21)]	9.45*	1615.4	[0.85]	10.99*	1474.9	[0.53]
β-Selinene	9.97	1656.6	0.07	11.08	1481.3	0.08
Patchoulene analog II	9.86*	1648.5	[3.13]	11.11	1483.7	0.25
Unknown POCA VI [m/z 79, 107 (99), 91 (88), 93 (86), 81 (78), 105 (73), 41 (73)... 204? (12)]	9.77	1641.3	0.27	11.14	1485.7	0.28
Unknown POCA VII [m/z 161, 189 (96), 91 (74), 204 (73), 105 (69), 41 (52)]	9.86*	1648.5	[3.13]	11.18*	1488.9	[0.24]
δ-Selinene	9.76	1640.1	0.14	11.18*	1488.9	[0.24]
α-Selinene	10.06*	1664.4	[19.24]	11.20	1490.2	0.07
Eudesma-2,4(15),11-triene	11.19	1757.5	0.12	11.30*	1497.8	[3.22]
Aciphyllene	9.86*	1648.5	[3.13]	11.30*	1497.8	[3.22]
Pentadecane	7.90	1496.3	0.11	11.34	1500.7	0.36
δ-Guaiene	10.06*	1664.4	[19.24]	11.43	1507.7	18.91
γ-Cadinene	10.48	1697.9	0.55	11.50*	1513.5	[0.46]
Nootkatene	11.05	1746.3	0.02	11.50*	1513.5	[0.46]
7-epi-α-Selinene	10.54	1703.2	0.13	11.54	1516.2	0.01
Unknown POCA XLV [m/z 159, 91 (81), 117 (68), 131 (51), 105 (46)... 202 (37)]	9.68	1633.7	0.18	11.57	1518.9	0.06
Unknown POCA IX [m/z 41, 67 (95), 93 (92), 107 (91), 55 (77), 81 (77), 79 (73)... 205 (17)...]	11.43	1778.0	0.02	11.61	1521.9	0.01

Unknown POCA X [m/z 161, 119 (92), 91 (69), 105 (52), 145 (49)... 218 (6)]	11.39*	1774.1	[0.08]	11.64	1524.4	0.02
Unknown POCA XI [m/z 91, 105 (98), 108 (83), 93 (82), 133 (79), 77 (64), 79 (57), 41 (56), 145 (55)... 218? (5)]				11.71	1529.6	0.12
Unknown POCA XII [m/z 91, 105 (78), 93 (77), 107 (71), 79 (64), 41 (63), 77 (63), 145 (60)... 218 (17)]				11.73	1531.6	0.10
Unknown POCA LIII [m/z 133, 105 (70), 146 (69), 145 (61), 91 (55), 131 (45), 187 (42), 159 (39), 119 (33), 202 (30)...]	11.39*	1774.1	[0.08]	11.77	1534.7	0.01
Unknown POCA XIII [m/z 145, 131 (91), 91 (86), 105 (68), 146 (66), 43 (54)... 220? (5)]				11.80	1537.2	0.02
Norpatchoulenol	14.22	2029.8	0.60	11.90*	1544.8	[0.61]
Isocaryophyllene epoxide B	12.24	1847.9	0.05	11.90*	1544.8	[0.61]
Unknown POCA XIV [m/z 191, 159 (66), 133 (53), 91 (45), 41 (42), 177 (35), 105 (33), 220 (32)]	13.82	1991.4	0.01	12.07	1558.1	0.02
Unknown POCA XV [m/z 41, 67 (90), 55 (87), 79 (85), 107 (84), 81 (84), 93 (84), 121				12.12	1562.0	0.04

(77), 91 (74)... 220 (7)]						
Unknown POCA XVI [m/z 43, 107 (94), 81 (71), 41 (63), 67 (58), 111 (58), 93 (55), 83 (54)... 205 (8), 220 (1)]	12.43	1865.2	0.20	12.23	1570.4	0.20
Caryophyllene oxide	12.88	1905.3	0.29	12.29*	1575.4	[0.38]
Caryophyllene oxide isomer	12.80	1898.4	0.07	12.29*	1575.4	[0.38]
Unknown POCA XIV isomer	14.54	2060.3	0.02	12.29*	1575.4	[0.38]
Unknown POCA XVII [m/z 43, 79 (44), 81 (41), 93 (40), 91 (40)... 220 (5)]	14.46	2052.8	0.36	12.40	1584.1	0.35
Unknown POCA XVIII [m/z 43, 105 (77), 91 (71), 93 (68), 41 (62), 107 (6)... 205 (41), 220 (7)]	14.77	2082.4	0.31	12.56	1597.0	0.16
Hexadecane	9.17	1593.1	0.05	12.62	1601.8	0.07
Humulene epoxide II	13.47	1959.8	0.04	12.67	1605.3	0.06
Unknown POCA XIX [m/z 43, 161 (73), 91 (53), 95 (52), 79 (46), 119 (45)... 205 (29), 220? (1)]	14.93*	2098.6	[29.04]	12.70	1608.2	0.08
Unknown POCA XX [m/z 41, 91 (92), 55 (81), 93 (81), 79 (74), 43 (71), 95 (68), 123 (65)... 220 (17)]	15.00	2105.5	0.21	12.74	1610.9	0.22
Unknown POCA XXI [m/z 43, 79 (41), 93 (39), 41	15.16	2121.6	0.29	12.80	1615.8	0.19

(39), 91 (38), 81 (36)... 220 (3)]						
Unknown POCA XXII [m/z 41, 55 (92), 95 (80), 81 (76), 109 (76), 67 (66), 125 (65)... 220 (12)]	14.93*	2098.6	[29.04]	12.89	1623.7	0.65
Caryophylladienol II	16.20*	2227.7	[0.10]	12.94	1628.0	0.19
Hinesol	15.13*	2118.2	[0.34]	12.99	1631.6	0.44
Patchoulol	14.93*	2098.6	[29.04]	13.23†	1652.1	25.14
Pogostol	15.35	2140.4	2.31	13.25†	1653.3	6.29
Unknown POCA XXIII [m/z 175, 218 (59), 133 (49), 91 (43), 41 (38), 147 (36)]	15.13*	2118.2	[0.34]	13.31	1658.3	0.11
Unknown POCA XXIV [m/z 43, 41 (87), 91 (64), 55 (63), 81 (58), 95 (54), 107 (52)... 222 (12)]				13.34	1660.8	0.02
Unknown POCA XXV [m/z 95, 107 (99), 41 (85), 93 (82), 91 (82), 109 (71), 105 (71), 105 (71), 108 (66)... 220 (29)]	16.20*	2227.7	[0.10]	13.54	1677.5	0.14
Unknown POCA XXVI [m/z 91, 41 (100), 107 (98), 108 (95), 95 (87), 93 (87), 105 (85), 79 (77), 119 (72)... 220? (15)]	16.19	2226.2	0.05	13.56	1679.6	0.05
Unknown POCA XXVII [m/z 43, 41 (95), 97 (89), 109 (71), 55 (71), 107 (70), 95 (69), 110 (65)... 222 (5)]	15.57	2162.4	0.03	13.66	1687.2	0.03
Rotundone	15.80	2186.1	0.12	13.84	1702.5	0.21

Unknown POCA XXVIII [m/z 43, 41 (82), 137 (78), 109 (76), 95 (75), 91 (72), 55 (67)... 220? (14)]				13.88	1706.0	0.05
Pogostone				13.95	1712.3	1.40
Unknown POCA XXIX [m/z 107, 93 (87), 41 (83), 81 (82), 67 (80), 55 (76)... 204 (53), 207 (34), 222 (9)]	17.04	2315.9	0.21	14.06	1721.4	0.22
Unknown POCA XXX [m/z 83, 43 (85), 55 (39), 41 (29), 121 (27), 120 (25)... 218 (3)]	17.15	2327.7	0.09	14.09	1724.4	0.10
Unknown POCA XXXI [m/z 133, 148 (68), 147 (59), 91 (56), 79 (45), 105 (44)... 218 (8)]	17.30	2343.2	0.02	14.16	1730.3	0.07
Unknown POCA XLIX [m/z 91, 108 (86), 107 (85), 93 (80), 120 (75), 105 (71), 95 (72)... 218 (37)]	16.20*	2227.7	[0.10]	14.22	1735.9	0.01
Unknown POCA XXXII [m/z 43, 83 (93), 55 (42), 41 (37), 121 (34), 111 (28)... 222? (1)]	17.63	2378.8	0.02	14.33	1745.3	0.01
Unknown POCA XXXIII [m/z 134, 107 (96), 91 (84), 93 (78), 79 (77), 41 (74), 43 (66), 77 (65)...]	17.52	2367.2	0.01	14.44	1754.4	0.01
Unknown POCA XXXIV [m/z 43, 191 (68), 41 (62), 91 (51), 95 (49),				14.48	1758.0	0.02

110 (44)... 234 (22)]						
Unknown POCA XXXV [m/z 91, 105 (88), 95 (79), 93 (78), 81 (72), 79 (66)... 205 (33), 220 (7)...]				14.51	1760.5	0.11
Unknown POCA XXXVI [m/z 149, 131 (54), 105 (48), 91 (46), 41 (30), 93 (27)... 218 (23)]	17.47	2361.4	0.13	14.60	1769.1	0.08
Unknown POCA XXXVII [m/z 43, 95 (58), 67 (50), 41 (47), 55 (38), 109 (37)... 221 (9)... 236? (3)]	18.20*	2443.3	[0.10]	14.78	1784.4	0.02
Unknown POCA XXXVIII [m/z 219, 43 (67), 91 (46), 79 (42), 41 (41), 55 (36)... 234 (6)]	18.20*	2443.3	[0.10]	14.92	1796.4	0.04
Unknown POCA XL [m/z 43, 91 (77), 79 (74), 109 (73), 110 (71)... 218 (52), 234? (1)]	17.71	2388.1	0.03	14.99	1802.8	0.02
Unknown POCA XLII [m/z 91, 41 (79), 43 (74), 79 (72), 105 (65), 77 (64), 147 (64), 93 (61)... 218 (26), 234 (14)]	17.37	2351.4	0.04	15.05*	1807.7	[0.04]
Unknown POCA XXXIX [m/z 43, 91 (43), 41 (37), 79 (32), 219 (31)... 234 (14)]	20.79	2750.6	0.01	15.05*	1807.7	[0.04]
Corymbolone analog	19.30*	2569.1	[0.04]	15.53	1852.0	0.01
Corymbolone	20.92	2766.9	0.02	15.74	1870.8	0.02
Phytol	19.30*	2569.1	[0.04]	18.25	2114.8	0.03

Total reported	95.73%			98.56%		

*: 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

628 Boulevard du Saguenay, Saguenay (Qc) G7J 1H4 | www.phytochemia.com