Date : 2023-09-28

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 23I21-PTH03
Customer Identification : Douglas Fir - New Zealand - DC0105R
Type : Essential Oil
Source : *Pseudotsuga menziesii var. menziesii ("Coastal")*
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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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.

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 : Sylvain Mercier, M. Sc., Chimiste 2014-005
Date : 2023-09-25

Physicochemical data

Refractive index : 1.4742 ± 0.0003 (20 °C)
Method : PC-MAT-016 - Measure of the refractive index of a liquid.
Analyst : Cindy Caron B. Sc.
Date : 2023-09-22

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
3-Methylcyclopentene	0.02	Alkene
3-Pentanone	tr	Aliphatic ketone
Toluene	0.02	Simple phenolic
Octane	0.02	Alkane
Unknown	tr	Alkene
Ethyl 2-methylbutyrate	0.05	Aliphatic ester
(2*E*)-Hexenal	0.06	Aliphatic aldehyde
(3*Z*)-Hexenol	0.06	Aliphatic alcohol
Hexanol	0.04	Aliphatic alcohol
Santene	0.01	Normonoterpene
Styrene	0.01	Simple phenolic
Bornylene	0.01	Monoterpene
Ethanol	tr	Aliphatic alcohol
Tricyclene	0.08	Monoterpene
α-Thujene	1.15	Monoterpene
α-Pinene	15.87	Monoterpene
Camphene	0.67	Monoterpene
α-Fenchene	0.02	Monoterpene
Thuja-2,4(10)-diene	0.03	Monoterpene
β-Pinene	21.26	Monoterpene
Sabinene	11.33	Monoterpene
3-Methyl-3-cyclohexenone	0.02	Aliphatic ketone
Dehydro-1,8-cineole	0.01	Monoterpenic ether
Myrcene	2.18	Monoterpene
α-Phellandrene	0.27	Monoterpene
Pseudolimonene	0.02	Monoterpene
Ethyl hexanoate	0.01	Aliphatic ester
Δ3-Carene	10.52	Monoterpene
(3*Z*)-Hexenyl acetate	0.01	Aliphatic ester
α-Terpinene	2.29	Monoterpene
Carvomenthene	0.03	Aliphatic alcohol
para-Cymene	0.85	Monoterpene
1,8-Cineole	[1.51]	Monoterpenic ether
Limonene	2.57	Monoterpene
β-Phellandrene	[1.51]	Monoterpene
(*Z*)-β-Ocimene	0.10	Monoterpene
(*E*)-β-Ocimene	0.37	Monoterpene
Unknown	0.04	Unknown
γ-Terpinene	3.81	Monoterpene
cis-Sabinene hydrate	0.07	Monoterpenic alcohol

Unknown	0.01	Unknown
Terpinolene isomer	0.01	Monoterpene
Terpinolene	11.19	Monoterpene
para-Cymenene	0.22	Monoterpene
α-Pinene oxide	0.01	Monoterpenic ether
trans-Sabinene hydrate	0.04	Monoterpenic alcohol
Linalool	0.21	Monoterpenic alcohol
Unknown	0.04	Oxygenated monoterpene
Unknown	0.01	Monoterpenic alcohol
para-Mentha-1,3,8-triene	0.04	Monoterpene
cis-Rose oxide	0.02	Monoterpenic ether
endo-Fenchol	0.05	Monoterpenic alcohol
(*E*)-4,8-Dimethylnona-1,3,7-triene	0.01	Terpene derivative
cis-para-Menth-2-en-1-ol	0.13	Monoterpenic alcohol
Methyl octanoate	0.01	Aliphatic ester
Cosmene	0.01	Monoterpene
1-Terpineol	0.02	Monoterpenic alcohol
trans-Pinocarveol	0.09	Monoterpenic alcohol
trans-para-Menth-2-en-1-ol	0.10	Monoterpenic alcohol
Camphene hydrate	0.05	Monoterpenic alcohol
Epoxyterpinolene	0.03	Monoterpenic ether
Pinocamphone	0.02	Monoterpenic ketone
Citronellal	0.11	Monoterpenic aldehyde
Pinocarvone	0.03	Monoterpenic ketone
Borneol	0.06	Monoterpenic alcohol
Unknown	0.03	Oxygenated monoterpene
Terpinen-4-ol	4.33	Monoterpenic alcohol
Unknown	0.03	Oxygenated monoterpene
para-Cymen-8-ol	0.13	Monoterpenic alcohol
α-Terpineol	0.57	Monoterpenic alcohol
Methyl salicylate	0.03	Phenolic ester
Myrtenol	0.05	Monoterpenic alcohol
Unknown	0.01	Oxygenated monoterpene
Ethyl octanoate	0.05	Aliphatic ester
Verbenone	0.03	Monoterpenic ketone
trans-Piperitol	0.06	Monoterpenic alcohol
Unknown	0.02	Oxygenated monoterpene
Citronellol	0.50	Monoterpenic alcohol
Unknown	0.03	Oxygenated monoterpene
Thymol methyl ether	0.11	Monoterpenic ether
Neral	0.02	Monoterpenic aldehyde
Piperitone	0.03	Monoterpenic ketone
Geraniol	0.04	Monoterpenic alcohol
trans-Ascaridole glycol	0.01	Monoterpenic alcohol
Unknown	0.03	Unknown

Unknown	0.02	Oxygenated monoterpene
Bornyl acetate	0.30	Monoterpenic ester
(*E*)-Anethole	0.03	Phenylpropanoid
trans-Pinocarvyl acetate	0.03	Monoterpenic ester
Unknown	0.01	Monoterpenic alcohol
Methyl geranate	0.02	Monoterpenic ester
Methyl decanoate	0.02	Aliphatic ester
Citronellic acid	0.01	Monoterpenic acid
δ-Elemene	0.05	Sesquiterpene
α-Longipinene	0.02	Sesquiterpene
Citronellyl acetate	1.65	Monoterpenic ester
Unknown	0.02	Unknown
Unknown	0.02	Unknown
Ethyl (4*E*)-decenoate	0.02	Aliphatic ester
Geranyl acetate	0.81	Monoterpenic ester
β-Elemene	0.05	Sesquiterpene
allo-Isolongifolene	0.01	Sesquiterpene
Longifolene	0.10	Sesquiterpene
Ethyl decanoate	0.15	Aliphatic ester
β-Caryophyllene	0.08	Sesquiterpene
trans-α-Bergamotene	0.03	Sesquiterpene
6,9-Guaiadiene	0.04	Sesquiterpene
Unknown	0.02	Sesquiterpene
α-Humulene	0.09	Sesquiterpene
Selina-4(15),7-diene	0.08	Sesquiterpene
(*E*)-β-Farnesene	0.02	Sesquiterpene
γ-Muurolene	0.04	Sesquiterpene
Germacrene D	0.24	Sesquiterpene
δ-Selinene	0.03	Sesquiterpene
Unknown	0.05	Sesquiterpene
α-Muurolene	0.05	Sesquiterpene
Methyl (*E*)-isoeugenol	0.01	Phenylpropanoid
(*Z*)-α-Bisabolene	0.03	Sesquiterpene
γ-Cadinene	tr	Sesquiterpene
(3*E*,6*E*)-α-Farnesene	0.07	Sesquiterpene
δ-Cadinene	0.13	Sesquiterpene
Methyl laurate?	0.02	Aliphatic ester
(*E*)-α-Bisabolene	0.05	Sesquiterpene
(*E*)-Nerolidol	0.04	Sesquiterpenic alcohol
Caryophyllene oxide	0.01	Sesquiterpenic ether
Ethyl dodecanoate	0.02	Aliphatic ester
Humulene epoxide II	0.01	Sesquiterpenic ether
Selin-6-en-4α-ol isomer	0.06	Sesquiterpenic alcohol
Alismol	0.01	Sesquiterpenic alcohol
γ-Eudesmol	0.02	Sesquiterpenic alcohol

τ-Cadinol	0.01	Sesquiterpenic alcohol
Cubenol	0.01	Sesquiterpenic alcohol
(2*E*,6*Z*)-Farnesal	0.01	Sesquiterpenic aldehyde
(2*E*,6*E*)-Farnesol	0.03	Sesquiterpenic alcohol
(2*E*,6*E*)-Farnesyl acetate	0.01	Sesquiterpenic ester
Cembrene?	0.04	Diterpene
Thunbergol?	0.02	Diterpenic alcohol
(*Z*)-Abienol	0.10	Diterpenic alcohol
Consolidated total	**98.82**	

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

Note: no correction factor was applied

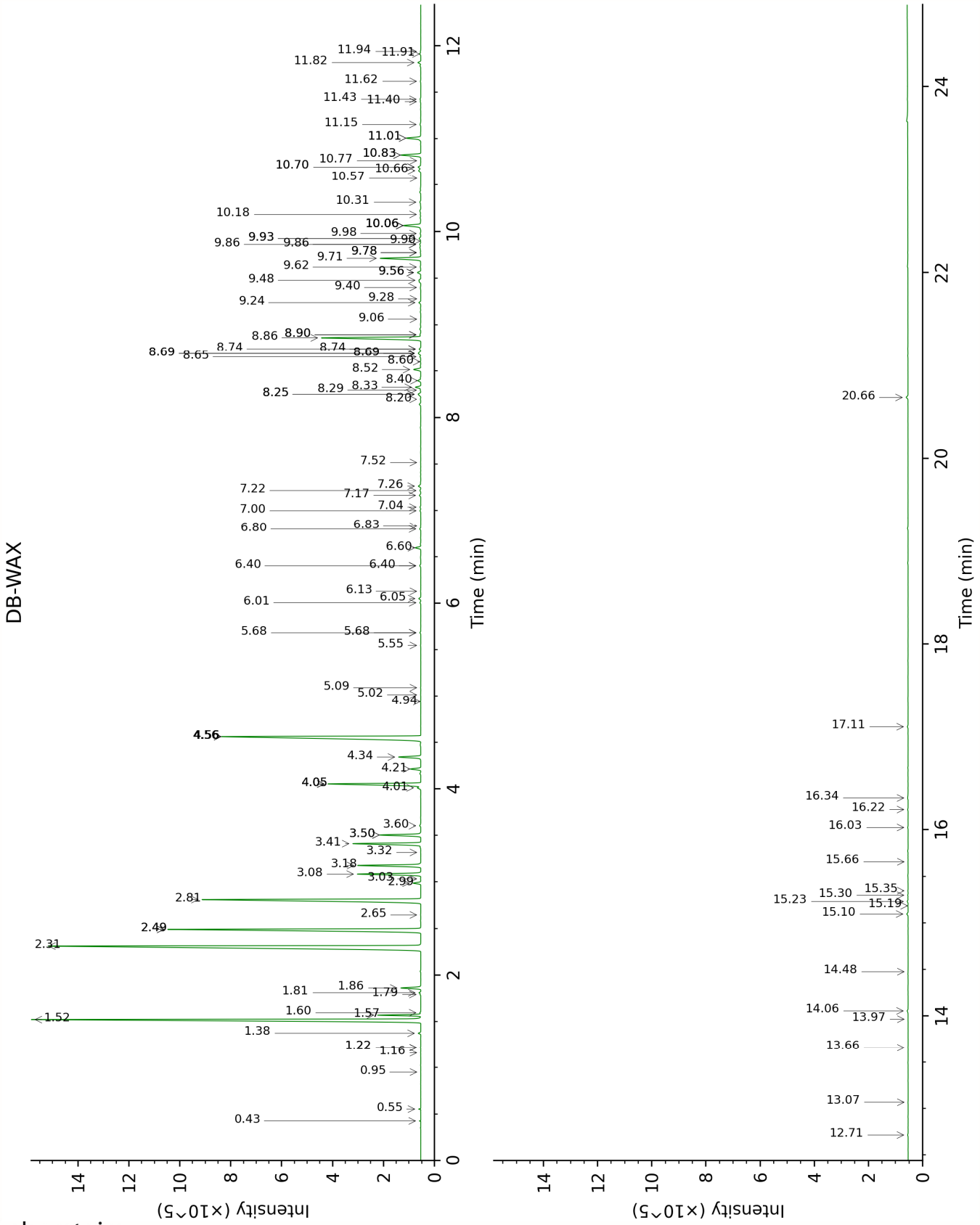
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

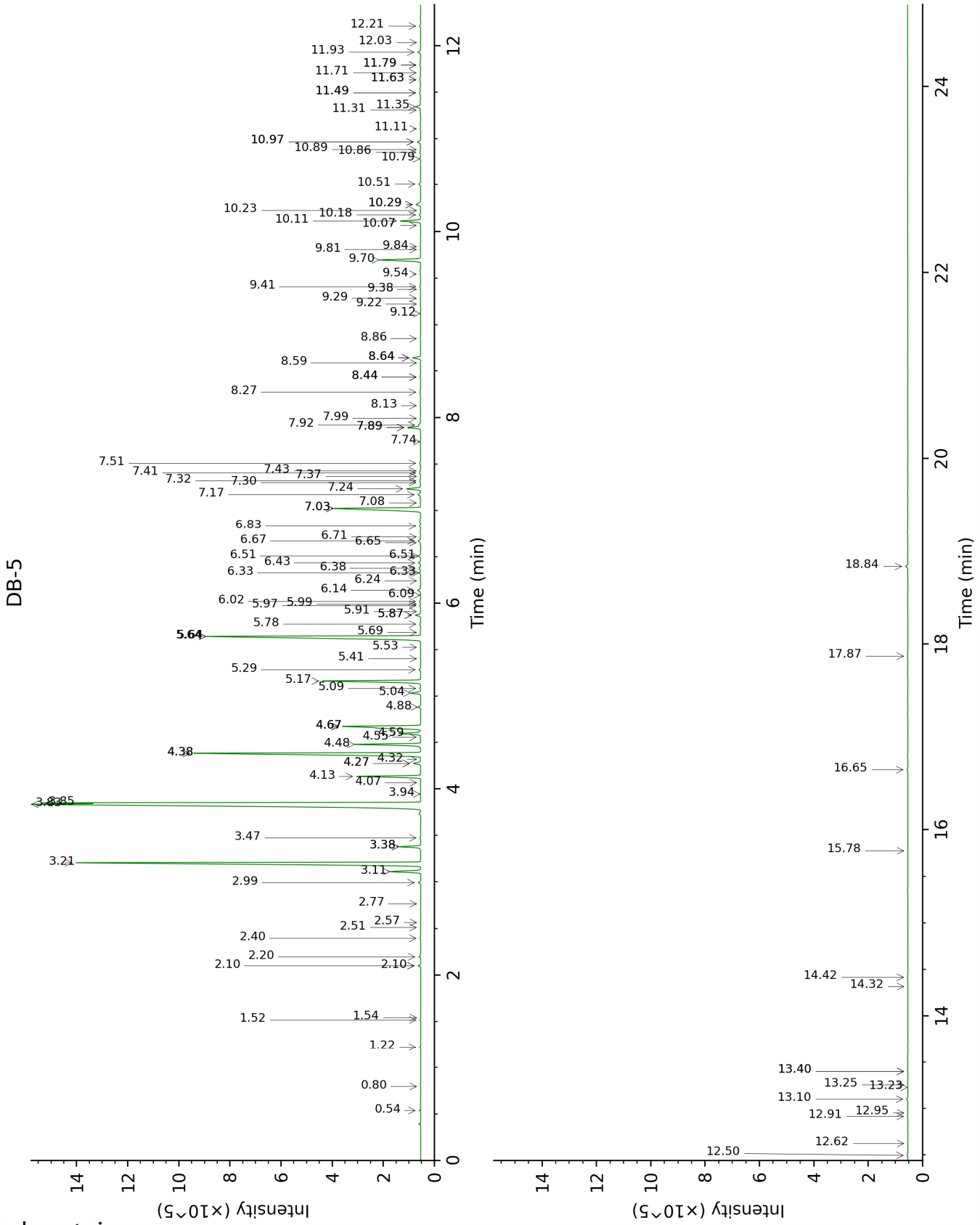
Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

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
Intensity (×10^5)
Time (min)
11.94
11.91
11.82
11.62
11.43
11.40
11.15
11.01
10.83
10.77
10.70
10.66
10.57
10.31
10.18
10.06
9.98
9.93
9.90
9.86
9.86
9.78
9.71
9.62
9.56
9.48
9.40
9.28
9.24
9.06
8.90
8.86
8.74
8.74
8.69
8.69
8.65
8.60
8.52
8.40
8.33
8.29
8.25
8.20
7.52
7.26
7.22
7.17
7.04
7.00
6.83
6.80
6.60
6.40
6.40
6.13
6.05
6.01
5.68
5.68
5.55
5.09
5.02
4.94
4.56
4.34
4.21
4.05
4.01
3.60
3.50
3.41
3.32
3.18
3.08
3.03
2.99
2.81
2.65
2.49
2.31
1.86
1.81
1.79
1.60
1.57
1.52
1.38
1.22
1.16
0.95
0.55
0.43
20.66
17.11
16.34
16.22
16.03
15.66
15.35
15.30
15.23
15.19
15.10
14.48
14.06
13.97
13.66
13.07
12.71


DB-5
Time (min)
Intensity (×10^5)
12.21
12.03
11.93
11.79
11.71
11.63
11.49
11.35
11.31
11.11
10.97
10.89
10.86
10.79
10.51
10.29
10.23
10.18
10.11
10.07
9.84
9.81
9.70
9.54
9.41
9.38
9.29
9.22
9.12
8.86
8.64
8.59
8.44
8.27
8.13
7.99
7.92
7.89
7.74
7.51
7.43
7.41
7.37
7.32
7.30
7.24
7.17
7.08
7.03
6.83
6.71
6.67
6.65
6.51
6.43
6.38
6.33
6.24
6.14
6.09
6.02
5.99
5.97
5.91
5.87
5.78
5.69
5.64
5.53
5.41
5.29
5.17
5.09
5.04
4.88
4.67
4.59
4.55
4.48
4.38
4.32
4.27
4.13
4.07
3.94
3.85
3.47
3.38
3.21
3.11
2.99
2.77
2.57
2.51
2.40
2.20
2.10
1.54
1.52
1.22
0.80
0.54
18.84
17.87
16.65
15.78
14.42
14.32
13.40
13.25
13.23
13.10
12.95
12.91
12.62
12.50

FULL ANALYSIS DATA

	Column DB-WAX			Column DB-5		
3-Methylcyclopentene	0.43	669.7	0.02	0.54	607.2	0.02
3-Pentanone	1.16	938.7	0.01	0.80	693.9	tr
Toluene	1.60	1000.3	0.02	1.22	759.5	0.02
Octane	0.55	781.0	0.03	1.52	799.8	0.02
Unknown BODA II [m/z 109, 67 (33), 41 (16), 81 (13)... 124 (8)]				1.54	803.2	tr
Ethyl 2-methylbutyrate	1.81	1020.5	0.05	2.10*	849.7	[0.08]
(2*E*)-Hexenal	3.60	1171.9	0.06	2.10*	849.7	[0.08]
(3*Z*)-Hexenol	6.05	1347.6	0.08	2.20	857.5	0.06
Hexanol	5.68*	1321.5	[0.04]	2.40	873.8	0.04
Santene	1.22*	947.3	[0.01]	2.51	883.3	0.01
Styrene	4.05*	1205.9	[3.81]	2.57	887.7	0.01
Bornylene	1.22*	947.3	[0.01]	2.77	904.1	0.01
Ethanol	0.95	907.8	tr			
Tricyclene	1.38	970.7	0.08	2.99	919.2	0.08
α-Thujene	1.57	997.9	1.14	3.11	926.9	1.15
α-Pinene	1.52	992.7	15.80	3.21	933.2	15.87
Camphene	1.86	1025.3	0.67	3.38*	944.5	[0.72]
α-Fenchene	1.79	1018.7	0.02	3.38*	944.5	[0.72]
Thuja-2,4(10)-diene	2.49*	1084.8	[11.26]	3.47	950.7	0.03
β-Pinene	2.31	1067.8	21.26	3.83*†	974.3	[24.21]
Sabinene	2.49*	1084.8	[11.26]	3.85*†	975.3	[8.38]
3-Methyl-3-cyclohexenone	6.40*	1372.8	[0.05]	3.94	981.5	0.02
Dehydro-1,8-cineole	3.32	1149.8	0.01	4.07	989.5	0.01
Myrcene	3.08	1132.0	2.26	4.13	994.0	2.18
α-Phellandrene	2.99	1124.5	0.27	4.27*	1003.1	[0.31]
Pseudolimonene	3.03	1128.1	0.02	4.27*	1003.1	[0.31]
Ethyl hexanoate	4.01	1202.9	0.14	4.32	1006.0	0.01
Δ3-Carene	2.81	1111.0	10.52	4.38*	1010.0	[10.56]
(3*Z*)-Hexenyl acetate	5.09	1281.9	0.01	4.38*	1010.0	[10.56]
α-Terpinene	3.18	1139.1	2.32	4.48	1015.9	2.29
Carvomenthene	2.65	1098.4	0.02	4.55	1020.7	0.03
para-Cymene	4.34	1226.9	0.84	4.59	1023.2	0.85
1,8-Cineole	3.50*	1164.3	[1.51]	4.67*	1027.9	[4.07]
Limonene	3.41	1157.1	2.57	4.67*	1027.9	[4.07]
β-Phellandrene	3.50*	1164.3	[1.51]	4.67*	1027.9	[4.07]
(*Z*)-β-Ocimene	4.05*	1205.9	[3.81]	4.88	1040.9	0.10
(*E*)-β-Ocimene	4.21	1217.6	0.38	5.04	1050.7	0.37
Unknown PSME I [m/z 115, 97 (84), 155	4.56*	1242.9	[11.17]	5.09	1053.9	0.04

(69), 55 (51), 69 (50), 43 (46)...]						
γ-Terpinene	4.05*	1205.9	[3.81]	5.17	1058.9	3.81
cis-Sabinene hydrate	7.16	1428.4	0.06	5.29	1066.3	0.07
Unknown PSME III [m/z 101, 88 (98), 43 (54), 55 (44), 41 (40), 95 (40), 73 (36)...]	4.94	1270.5	0.01	5.40	1073.8	0.01
Terpinolene isomer	4.56*	1242.9	[11.17]	5.53	1081.3	0.01
Terpinolene	4.56*	1242.9	[11.17]	5.64*	1088.7	[11.41]
para-Cymenene	6.60	1386.6	0.22	5.64*	1088.7	[11.41]
α-Pinene oxide	5.68*	1321.5	[0.04]	5.69	1091.3	0.01
trans-Sabinene hydrate	8.25*	1509.1	[0.15]	5.78	1096.9	0.04
Linalool	8.33	1514.9	0.21	5.87*	1102.9	[0.21]
Unknown CEDE I [m/z 95, 150 (45), 110 (35), 107 (23), 109 (21)]	6.01	1344.5	0.04	5.87*	1102.9	[0.21]
Unknown ORMA I [m/z 119, 109 (94), 43 (61), 95 (56), 91 (48), 77 (32), 152 (32), 137 (31), 134 (24)]	8.74*	1546.9	[0.07]	5.91	1105.4	0.01
para-Mentha-1,3,8-triene	6.40*	1372.8	[0.05]	5.97	1109.3	0.04
cis-Rose oxide	5.55	1311.8	0.01	5.99	1110.5	0.02
endo-Fenchol	8.65	1540.1	0.04	6.02	1112.2	0.05
(*E*)-4,8-Dimethylnona-1,3,7-triene	5.02	1276.2	0.01	6.09	1116.5	0.01
cis-para-Menth-2-en-1-ol	8.40	1520.4	0.12	6.14	1119.8	0.13
Methyl octanoate	6.13	1353.2	0.01	6.24	1126.3	0.01
Cosmene	6.83	1403.7	0.01	6.33*	1131.8	[0.05]
1-Terpineol	8.60	1536.0	0.02	6.33*	1131.8	[0.05]
trans-Pinocarveol	9.48	1604.0	0.08	6.38	1134.9	0.09
trans-para-Menth-2-en-1-ol	9.28	1588.2	0.01	6.43	1138.6	0.10
Camphene hydrate	8.74*	1546.9	[0.07]	6.51*	1143.3	[0.08]
Epoxyterpinolene	7.00	1416.2	0.03	6.51*	1143.3	[0.08]
Pinocamphone	7.52	1454.4	0.01	6.65	1152.4	0.02
Citronellal	7.26	1435.7	0.11	6.67	1153.6	0.11
Pinocarvone	8.20	1505.0	0.02	6.71	1156.4	0.03
Borneol	10.06*	1651.0	[0.83]	6.83	1163.8	0.06
Unknown CASA XVIII	9.93*	1639.9	[0.08]	7.03*	1176.2	[4.36]

[m/z 69, 84 (62), 41 (30), 123 (26), 97 (24), 109 (23)...]						
Terpinen-4-ol	8.86	1556.2	4.33	7.03*	1176.2	[4.36]
Unknown PSME IV [m/z 96, 119 (99), 96 (86), 91 (81), 43 (65), 41 (49), 67 (45)...]				7.08	1180.0	0.03
para-Cymen-8-ol	11.82	1796.8	0.12	7.17	1185.6	0.13
α-Terpineol	10.06*	1651.0	[0.83]	7.24	1189.6	0.57
Methyl salicylate	10.77	1708.2	0.01	7.30	1193.8	0.03
Myrtenol	11.16	1740.8	0.05	7.32	1195.1	0.05
Unknown MISC XV [m/z 121, 43 (99), 91 (85), 77 (73), 93 (41), 136 (33)... 166 (3)]				7.37	1198.1	0.01
Ethyl octanoate	6.80	1401.4	0.04	7.41	1200.5	0.05
Verbenone	9.90	1637.7	0.01	7.43	1201.9	0.03
trans-Piperitol	10.66	1699.1	0.12	7.51	1207.2	0.06
Unknown MISC XVI [m/z 122, 91 (56), 79 (33), 95 (33), 107 (31), 43 (30), 77 (30), 135 (27)... 150 (9)]	9.62	1615.4	0.03	7.74	1222.6	0.02
Citronellol	11.01*	1728.5	[0.63]	7.89*	1232.8	[0.52]
Unknown CIAU II [m/z 137, 152 (28), 43 (25), 91 (24), 109 (23), 119 (19)]	11.62	1779.7	0.03	7.89*	1232.8	[0.52]
Thymol methyl ether	8.69*	1542.9	[0.14]	7.92	1234.6	0.11
Neral	9.78*	1627.8	[0.03]	7.99	1239.4	0.02
Piperitone	10.18	1660.6	0.03	8.13	1248.5	0.03
Geraniol	11.91	1804.9	0.05	8.27	1258.1	0.04
trans-Ascaridole glycol	14.48	2037.5	0.01	8.44*	1268.9	[0.04]
Unknown PSME V [m/z 88, 101 (61), 55 (39), 41 (34), 83 (30), 70 (24), 43 (24)...]				8.44*	1268.9	[0.04]
Unknown CIAU V [m/z 95, 67 (45), 41 (42), 110 (42), 43 (41), 59 (36)]	12.72	1875.2	0.02	8.59	1279.1	0.02
Bornyl acetate	8.52	1529.5	0.30	8.64*	1282.7	[0.32]
(*E*)-Anethole	11.43	1763.5	0.03	8.64*	1282.7	[0.32]

trans-Pinocarvyl acetate	9.40	1597.9	0.03	8.86	1296.9	0.03
Unknown MEAL I [m/z 97, 112 (92), 83 (62), 43 (44), 41 (25)... 170? (4)]	15.30	2116.6	0.01	9.12	1315.4	0.01
Methyl geranate	10.06*	1651.0	[0.83]	9.22	1322.5	0.02
Methyl decanoate	8.90*	1558.7	[0.05]	9.29	1326.9	0.02
Citronellic acid	16.34	2221.1	0.04	9.38	1333.6	0.01
δ-Elemene	7.22	1432.2	0.04	9.41	1335.6	0.05
α-Longipinene	7.04	1419.1	0.03	9.54	1345.0	0.02
Citronellyl acetate	9.71	1622.9	1.69	9.70	1355.7	1.65
Unknown PSME VIII [m/z 43, 95 (53), 121 (47), 107 (38), 93 (36), 41 (35), 67 (31)...]				9.81	1363.5	0.02
Unknown PSME IX [m/z 69, 43 (79), 93 (68), 41 (66), 111 (43), 55 (41), 68 (37)...]				9.84	1365.7	0.02
Ethyl (4*E*)-decenoate	9.78*	1627.8	[0.03]	10.07	1381.7	0.02
Geranyl acetate	10.83*	1713.3	[0.83]	10.11	1385.0	0.81
β-Elemene	8.69*	1542.9	[0.14]	10.18	1389.6	0.05
allo-Isolongifolene	8.30	1512.5	0.02	10.23	1392.9	0.01
Longifolene	8.25*	1509.1	[0.15]	10.29*	1397.3	[0.25]
Ethyl decanoate	9.56*	1610.7	[0.16]	10.29*	1397.3	[0.25]
β-Caryophyllene	8.69*	1542.9	[0.14]	10.51	1413.3	0.08
trans-α-Bergamotene	8.69*	1542.9	[0.14]	10.78	1433.9	0.03
6,9-Guaiadiene	8.90*	1558.7	[0.05]	10.86	1439.1	0.04
Unknown BOCA IV [m/z 91, 161 (92), 105 (85), 119 (63), 133 (53), 79 (49), 204 (46)]	9.06	1571.5	0.01	10.89	1441.3	0.02
α-Humulene	9.56*	1610.7	[0.16]	10.97*	1447.4	[0.18]
Selina-4(15),7-diene	9.24	1585.2	0.08	10.97*	1447.4	[0.18]
(*E*)-β-Farnesene	9.86*	1634.9	[0.05]	11.11	1457.9	0.02
γ-Muurolene	9.86*	1634.9	[0.05]	11.31	1472.7	0.04
Germacrene D	10.06*	1651.0	[0.83]	11.34	1475.4	0.24
δ-Selinene	9.98	1644.2	0.03	11.49*	1486.5	[0.08]
Unknown POCA VI [m/z 79, 107 (99), 91 (88), 93 (86), 81 (78), 105 (73), 41 (73)... 204? (12)]	9.93*	1639.9	[0.08]	11.49*	1486.5	[0.08]
α-Muurolene	10.31	1671.1	0.05	11.63*	1496.9	[0.04]

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

Methyl (*E*)-isoeugenol	15.35	2121.4	0.01	11.63*	1496.9	[0.04]
(*Z*)-α-Bisabolene	10.57	1691.9	0.01	11.71	1502.5	0.03
γ-Cadinene	10.70*	1702.4	[0.14]	11.79*	1509.0	[0.07]
(3*E*,6*E*)-α-Farnesene	10.83*	1713.3	[0.83]	11.79*	1509.0	[0.07]
δ-Cadinene	10.70*	1702.4	[0.14]	11.93	1519.8	0.13
Methyl laurate?	11.40	1761.4	0.02	12.03	1527.9	0.02
(*E*)-α-Bisabolene	11.01*	1728.5	[0.63]	12.21	1541.7	0.05
(*E*)-Nerolidol	14.06	1997.6	0.05	12.50	1564.0	0.04
Caryophyllene oxide	13.07	1906.9	0.01	12.62	1574.1	0.01
Ethyl dodecanoate	11.94	1807.3	0.02	12.92	1596.9	0.02
Humulene epoxide II	13.66	1960.8	0.01	12.95	1599.9	0.01
Selin-6-en-4α-ol isomer	15.10	2096.7	0.06	13.10	1611.8	0.06
Alismol	16.03	2188.7	0.02	13.23	1622.2	0.01
γ-Eudesmol	15.23	2110.0	0.04	13.25	1624.5	0.02
τ-Cadinol	15.18	2105.4	0.01	13.40*	1636.4	[0.02]
Cubenol	13.97	1989.1	0.01	13.40*	1636.4	[0.02]
(2*E*,6*Z*)-Farnesal	15.66	2152.1	0.01	14.32	1712.6	0.01
(2*E*,6*E*)-Farnesol	17.11	2300.1	0.03	14.42	1721.2	0.03
(2*E*,6*E*)-Farnesyl acetate	16.22	2208.4	0.02	15.78	1840.6	0.01
Cembrene?				16.65	1920.4	0.04
Thunbergol?				17.87	2038.5	0.02
(*Z*)-Abienol	20.66	2699.7	0.09	18.84	2135.4	0.10
Total reported		98.31%			98.82%	

*: 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