Date : 2026-11-13

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 26F26-PTH02
Customer Identification : Juniper Berry - India - J20117
Type : Essential Oil
Source : *Juniperus communis*
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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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

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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 : 2026-07-06

Physicochemical data

Refractive index : 1.4735 ± 0.0003 (20 °C)
Method : PC-MAT-016 - Measure of the refractive index of a liquid.
Analyst : Cindy Caron B. Sc.
Date : 2026-06-26

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
Toluene	tr	Simple phenolic
Tricyclene	0.15	Monoterpene
α-Thujene	0.57	Monoterpene
α-Pinene	48.80	Monoterpene
α-Fenchene	0.04	Monoterpene
Camphene	0.20	Monoterpene
Thuja-2,4(10)-diene	0.08	Monoterpene
3,7,7-Trimethylcyclohepta-1,3,5-triene	0.02	Monoterpene
β-Pinene	1.01	Monoterpene
Sabinene	0.76	Monoterpene
6-Methyl-5-hepten-2-one	0.04	Aliphatic ketone
Myrcene	22.29	Monoterpene
Menthatriene isomer I	0.01	Monoterpene
α-Phellandrene	0.01	Monoterpene
Δ3-Carene	0.14	Monoterpene
α-Terpinene	0.08	Monoterpene
para-Cymene	0.37	Monoterpene
β-Phellandrene	0.14	Monoterpene
Limonene	11.67	Monoterpene
(*E*)-β-Ocimene	tr	Monoterpene
γ-Terpinene	0.45	Monoterpene
cis-Sabinene hydrate	0.04	Monoterpenic alcohol
Unknown	0.01	Oxygenated monoterpene
meta-Cymenene	0.01	Monoterpene
Fenchone	0.01	Monoterpenic ketone
Terpinolene	0.65	Monoterpene
para-Cymenene	0.04	Monoterpene
α-Pinene oxide	0.03	Monoterpenic ether
6,7-Epoxymyrcene	0.04	Monoterpenic ether
trans-Sabinene hydrate	0.02	Monoterpenic alcohol
Linalool	0.06	Monoterpenic alcohol
Nonanal	0.02	Aliphatic aldehyde
endo-Fenchol	0.01	Monoterpenic alcohol
cis-para-Menth-2-en-1-ol	0.03	Monoterpenic alcohol
α-Campholenal	0.04	Monoterpenic aldehyde
cis-Limonene oxide	0.01	Monoterpenic ether
trans-Pinocarveol	0.10	Monoterpenic alcohol
Camphor	0.03	Monoterpenic ketone
cis-Verbenol	0.02	Monoterpenic alcohol
trans-Verbenol	0.11	Monoterpenic alcohol

Camphene hydrate	0.02	Monoterpenic alcohol
meta-Mentha-4,6-dien-8-ol	0.01	Monoterpenic alcohol
Citronellal	0.02	Monoterpenic aldehyde
Pinocarvone	0.01	Monoterpenic ketone
Borneol	0.07	Monoterpenic alcohol
α-Phellandren-8-ol	0.02	Monoterpenic alcohol
Isopinocamphone	0.01	Monoterpenic ketone
Terpinen-4-ol	0.21	Monoterpenic alcohol
para-Cymen-8-ol	0.06	Monoterpenic alcohol
α-Terpineol	0.04	Monoterpenic alcohol
Myrtenal	0.02	Monoterpenic aldehyde
Myrtenol	0.04	Monoterpenic alcohol
trans-Isopiperitenol	0.02	Monoterpenic alcohol
Verbenone	0.06	Monoterpenic ketone
trans-Carveol	0.06	Monoterpenic alcohol
cis-Carveol	0.02	Monoterpenic alcohol
Citronellol	0.03	Monoterpenic alcohol
Carvone	0.03	Monoterpenic ketone
Carvacrol methyl ether	0.01	Monoterpenic ether
Methyl citronellate	0.03	Monoterpenic ester
Geranial	0.01	Monoterpenic aldehyde
Bornyl acetate	0.28	Monoterpenic ester
2-Undecanone	0.03	Aliphatic ketone
Thymol	0.01	Monoterpenic alcohol
Myrtenyl acetate	0.03	Monoterpenic ester
Terpinyl acetate analog	0.01	Monoterpenic ester
Bicycloelemene	0.12	Sesquiterpene
α-Cubebene	0.06	Sesquiterpene
α-Terpinyl acetate	0.01	Monoterpenic ester
α-Ylangene	0.01	Sesquiterpene
α-Copaene	0.05	Sesquiterpene
cis-β-Elemene	0.01	Sesquiterpene
β-Cubebene	0.02	Sesquiterpene
β-Elemene	0.16	Sesquiterpene
Sibirene	0.01	Sesquiterpene
α-Gurjunene	0.04	Sesquiterpene
α-Cedrene	0.42	Sesquiterpene
β-Caryophyllene	0.42	Sesquiterpene
β-Copaene	0.12	Sesquiterpene
γ-Elemene	0.17	Sesquiterpene
α-Himachalene	0.01	Sesquiterpene
α-Humulene	0.16	Sesquiterpene
allo-Aromadendrene	0.05	Sesquiterpene
β-Acoradiene	0.06	Sesquiterpene
(*E*)-β-Farnesene	0.01	Sesquiterpene

trans-Cadina-1(6),4-diene	0.06	Sesquiterpene
γ-Muurolene	0.12	Sesquiterpene
Germacrene D	0.53	Sesquiterpene
β-Selinene	0.04	Sesquiterpene
γ-Amorphene	0.07	Sesquiterpene
epi-Cubebol	0.06	Sesquiterpenic alcohol
α-Selinene	0.07	Sesquiterpene
α-Muurolene	0.12	Sesquiterpene
Cuparene	0.03	Sesquiterpene
α-Alaskene	0.06	Sesquiterpene
Cubebol	0.02	Sesquiterpenic alcohol
γ-Cadinene	0.21	Sesquiterpene
(3*E*,6*E*)-α-Farnesene	0.07	Sesquiterpene
trans-Calamenene	0.03	Sesquiterpene
δ-Cadinene	0.47	Sesquiterpene
Selina-4(15),7(11)-diene	0.05	Sesquiterpene
Selina-4,7(11)-diene	0.05	Sesquiterpene
Selina-3,7(11)-diene	0.04	Sesquiterpene
α-Elemol	0.20	Sesquiterpenic alcohol
Germacrene B	0.81	Sesquiterpene
Caryophyllenyl alcohol	0.03	Sesquiterpenic alcohol
Spathulenol	0.03	Sesquiterpenic alcohol
Caryophyllene oxide	0.04	Sesquiterpenic ether
allo-Cedrol	0.16	Sesquiterpenic alcohol
Unknown	0.01	Oxygenated sesquiterpene
α-Cedrol	2.22	Sesquiterpenic alcohol
Humulene epoxide II	0.03	Sesquiterpenic ether
epi-Cedrol	0.02	Sesquiterpenic alcohol
1,10-diepi-Cubenol	0.02	Sesquiterpenic alcohol
Alismol	0.10	Sesquiterpenic alcohol
β-Acorenol	0.02	Sesquiterpenic alcohol
τ-Cadinol	0.05	Sesquiterpenic alcohol
τ-Muurolol	0.04	Sesquiterpenic alcohol
β-Eudesmol	0.07	Sesquiterpenic alcohol
α-Cadinol	0.07	Sesquiterpenic alcohol
Cedrenol analog	0.01	Sesquiterpenic alcohol
(3*Z*)-Caryophylla-3,8(13)-dien-5β-ol	0.02	Sesquiterpenic alcohol
Germacra-4(15),5,10(14)-trien-1-ol isomer	0.01	Sesquiterpenic alcohol
α-Bisabolol	0.03	Sesquiterpenic alcohol
Mayurone?	0.02	Norsesquiterpenic ketone
Aromadendrane-4,10-diol	0.03	Sesquiterpenic alcohol
Cedryl acetate	0.04	Sesquiterpenic ester
meta-Camphorene	0.27	Diterpene
Trachylobane?	0.05	Diterpene
para-Camphorene	0.10	Diterpene

18-Norabieta-8,11,13-triene?	0.07	Norditerpene
ar-Abietatriene	0.06	Diterpene
7,13-Abietadiene	0.31	Diterpene
Sandaracopimarinal?	0.04	Diterpenic aldehyde
Conifer resinic acid VIII?	0.17	Diterpenic acid
Abieta-7,13-dien-3-one	0.03	Diterpenic ketone
Consolidated total	**98.48**	

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

Note: no correction factor was applied

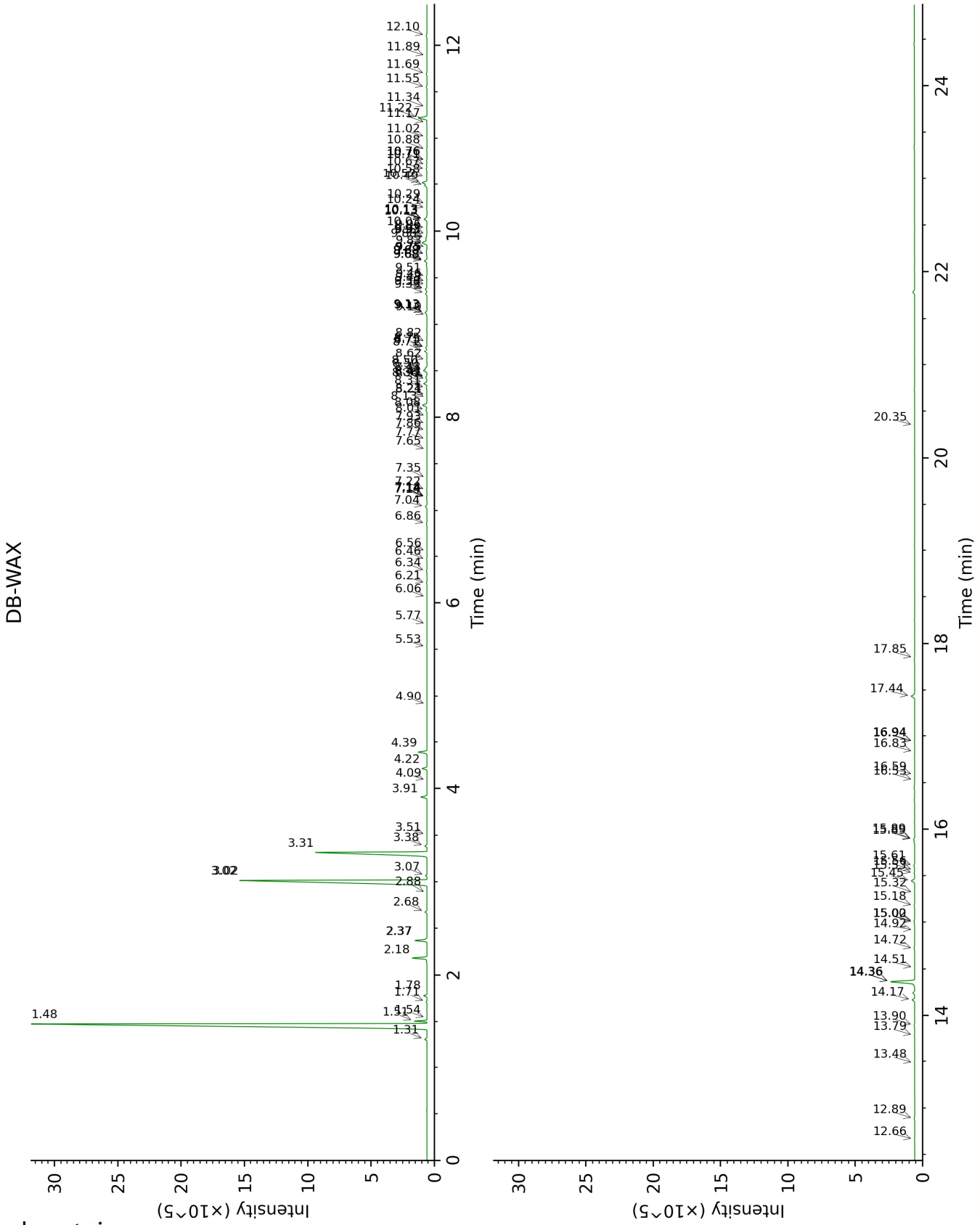
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

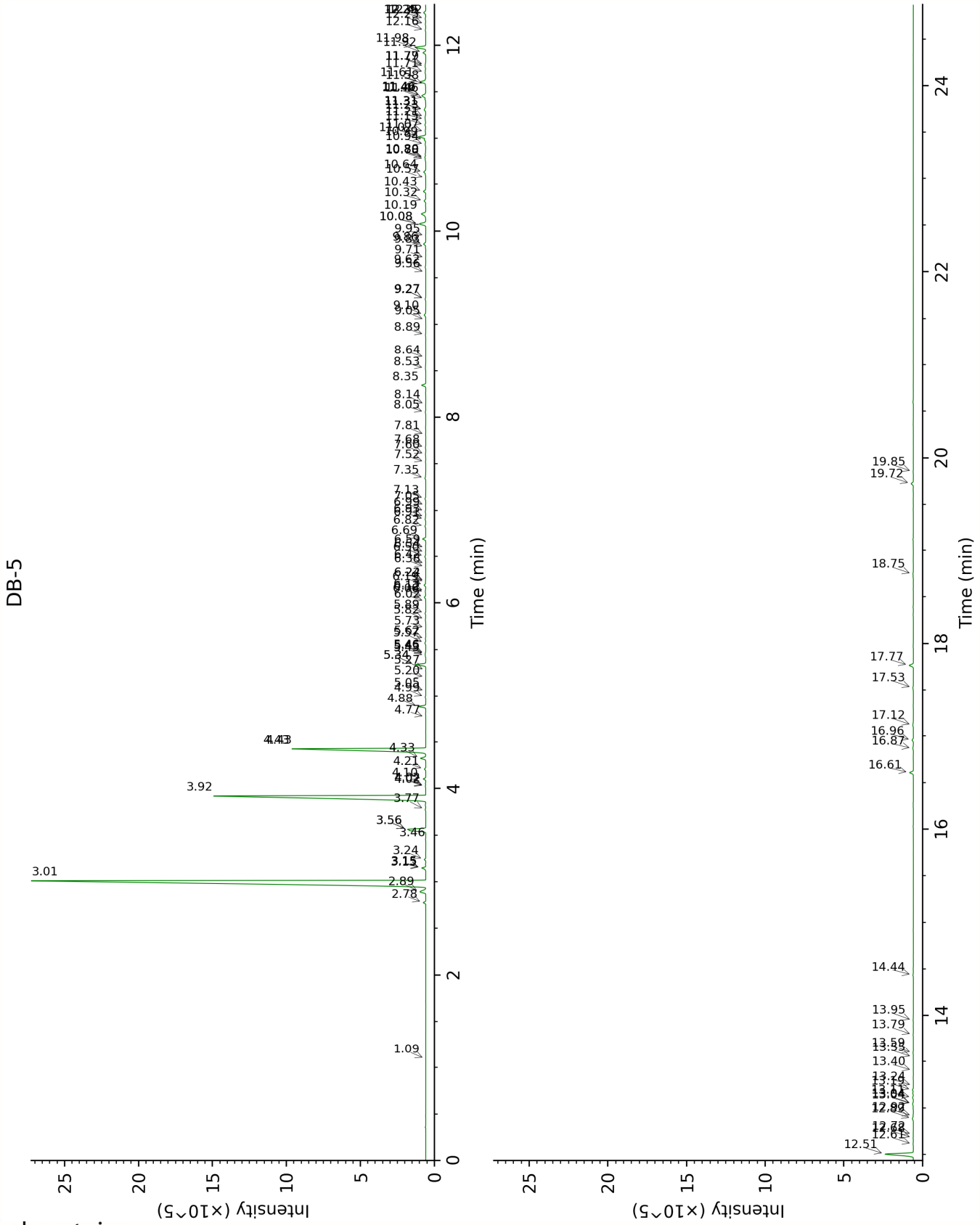
Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

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)
12.10
11.89
11.69
11.55
11.34
11.22
11.02
10.88
10.29
10.13
9.51
8.67
7.86
7.65
7.35
7.04
6.86
6.56
6.46
6.34
6.21
6.06
5.77
5.53
4.90
4.39
4.22
4.09
3.91
3.51
3.38
3.31
3.07
3.02
2.88
2.68
2.37
2.18
1.78
1.71
1.54
1.48
1.31
20.35
17.85
17.44
16.94
16.83
16.59
16.53
15.61
15.45
15.32
15.18
15.00
14.92
14.72
14.51
14.36
14.17
13.90
13.79
13.48
12.89
12.66



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FULL ANALYSIS DATA

	Column DB-WAX			Column DB-5		
Toluene	1.54	1001.6	0.01	1.09	758.0	tr
Tricyclene	1.31	969.4	0.15	2.78	919.5	0.15
α-Thujene	1.51	998.1	0.57	2.89	927.4	0.57
α-Pinene	1.48	995.0	48.84	3.01	935.3	48.80
α-Fenchene	1.71	1018.5	0.04	3.15*	944.6	[0.26]
Camphene	1.78	1025.2	0.20	3.15*	944.6	[0.26]
Thuja-2,4(10)-diene	2.37*	1083.8	[0.87]	3.24	950.7	0.08
3,7,7-Trimethylcyclohepta-1,3,5-triene	3.02*	1136.3	[22.28]	3.46	965.4	0.02
β-Pinene	2.18	1065.2	1.01	3.56*	972.6	[1.77]
Sabinene	2.37*	1083.8	[0.87]	3.56*	972.6	[1.77]
6-Methyl-5-hepten-2-one				3.78	986.9	0.04
Myrcene	3.02*	1136.3	[22.28]	3.92	996.8	22.29
Menthatriene isomer I	3.51	1174.5	0.01	4.02*	1003.7	[0.03]
α-Phellandrene	2.88	1125.4	0.01	4.02*	1003.7	[0.03]
Δ3-Carene	2.68	1109.8	0.14	4.10	1008.9	0.14
α-Terpinene	3.07	1140.4	0.08	4.21	1015.6	0.08
para-Cymene	4.22	1226.9	0.36	4.33	1023.0	0.37
β-Phellandrene	3.38	1165.0	0.14	4.43*	1029.4	[11.84]
Limonene	3.32	1159.6	11.67	4.43*	1029.4	[11.84]
(*E*)-β-Ocimene	4.09	1217.8	0.01	4.77	1050.9	tr
γ-Terpinene	3.91	1205.0	0.46	4.88	1058.2	0.45
cis-Sabinene hydrate	7.04	1432.0	0.15	4.99	1065.0	0.04
Unknown PIMA I [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)]	4.90	1275.9	0.01	5.05	1069.0	0.01
meta-Cymenene	6.34	1381.5	0.05	5.20	1078.6	0.01
Fenchone	5.77	1341.3	0.01	5.27	1083.1	0.01
Terpinolene	4.39	1239.5	0.65	5.34*	1087.2	[0.70]
para-Cymenene	6.46	1390.2	0.04	5.34*	1087.2	[0.70]
α-Pinene oxide	5.53	1324.3	0.03	5.43	1093.0	0.03
6,7-Epoxymyrcene	6.21	1372.3	0.04	5.45	1094.2	0.04
trans-Sabinene hydrate	8.08	1508.1	0.11	5.46	1095.0	0.02
Linalool	8.21	1518.1	0.03	5.57	1101.9	0.06
Nonanal	6.06	1361.7	0.01	5.62	1104.7	0.02
endo-Fenchol	8.43*	1534.7	[0.13]	5.73	1112.3	0.01
cis-para-Menth-2-en-	8.24	1520.4	0.04	5.82	1118.1	0.03

1-ol						
α-Campholenal	7.14*	1439.2	[0.06]	5.89	1122.4	0.04
cis-Limonene oxide	6.56	1396.7	0.01	6.02	1130.6	0.01
trans-Pinocarveol	9.33	1604.0	0.13	6.06	1133.5	0.10
Camphor	7.35	1454.2	0.03	6.12	1137.2	0.03
cis-Verbenol	9.43	1611.6	0.05	6.13	1137.9	0.02
trans-Verbenol	9.68*	1632.1	[0.24]	6.19	1141.9	0.11
Camphene hydrate	8.62	1548.9	0.03	6.22	1143.8	0.02
meta-Mentha-4,6-dien-8-ol	9.46	1614.2	0.03	6.24	1144.8	0.01
Citronellal	7.14*	1439.2	[0.06]	6.38	1154.3	0.02
Pinocarvone	8.01	1502.8	0.01	6.42	1156.4	0.01
Borneol	9.93*	1651.5	[0.12]	6.50	1161.5	0.07
α-Phellandren-8-ol	10.29	1680.5	0.02	6.54	1164.5	0.02
Isopinocamphone	7.65	1476.3	0.01	6.59	1167.5	0.01
Terpinen-4-ol	8.71	1556.1	0.20	6.69	1173.8	0.21
para-Cymen-8-ol	11.69	1798.1	0.06	6.82	1182.6	0.06
α-Terpineol	9.93*	1651.5	[0.12]	6.90	1187.8	0.04
Myrtenal	8.82	1564.2	0.03	6.93	1189.4	0.02
Myrtenol	11.02	1741.1	0.03	6.99	1193.2	0.04
trans-Isopiperitenol	10.58	1704.6	0.03	7.05	1197.3	0.02
Verbenone	9.75*	1637.6	[0.05]	7.13	1202.1	0.06
trans-Carveol	11.55	1785.4	0.06	7.35	1216.7	0.06
cis-Carveol	11.89	1814.9	0.02	7.52	1228.5	0.02
Citronellol	10.88	1729.6	0.04	7.60	1233.9	0.03
Carvone	10.13*	1667.6	[0.28]	7.68	1239.0	0.03
Carvacrol methyl ether	8.75*	1559.4	[0.11]	7.81	1248.1	0.01
Methyl citronellate	8.32	1526.1	0.07	8.05	1264.4	0.03
Geranial	10.24	1676.8	0.04	8.14	1270.1	0.01
Bornyl acetate	8.36	1529.7	0.27	8.34	1284.0	0.28
2-Undecanone	8.75*	1559.4	[0.11]	8.52	1296.2	0.03
Thymol	15.32	2134.2	0.02	8.64	1304.2	0.01
Myrtenyl acetate	9.75*	1637.6	[0.05]	8.89	1321.7	0.03
Terpinyl acetate analog	9.68*	1632.1	[0.24]	9.05	1332.8	0.01
Bicycloelemene	7.14*	1439.2	[0.06]	9.10	1336.7	0.12
α-Cubebene	6.86	1418.6	0.06	9.27*	1348.7	[0.05]
α-Terpinyl acetate	9.83	1643.5	0.01	9.27*	1348.7	[0.05]
α-Ylangene	7.14*	1439.2	[0.06]	9.56	1368.8	0.01
α-Copaene	7.22	1444.9	0.04	9.62	1373.2	0.05
cis-β-Elemene	8.41	1533.2	0.02	9.71	1379.8	0.01
β-Cubebene	7.86	1491.4	0.03	9.83	1388.2	0.02
β-Elemene	8.50*†	1540.3	[0.32]	9.86	1390.6	0.16
Sibirene	7.93	1497.0	0.03	9.95	1396.7	0.01

α-Gurjunene	7.77	1484.6	0.04	10.08*	1405.9	[0.53]
α-Cedrene	8.13	1512.1	0.42	10.08*	1405.9	[0.53]
β-Caryophyllene	8.50*†	1540.3	[0.32]	10.18	1413.9	0.42
β-Copaene	8.43*	1534.7	[0.13]	10.32	1424.3	0.12
γ-Elemene	9.13*	1588.1	[0.17]	10.42	1431.9	0.17
α-Himachalene	9.10	1585.6	0.02	10.57	1442.5	0.01
α-Humulene	9.38*	1607.8	[0.15]	10.64	1448.0	0.16
allo-Aromadendrene	9.13*	1588.1	[0.17]	10.78	1458.1	0.05
β-Acoradiene	9.51	1618.4	0.06	10.80*	1459.8	[0.07]
(*E*)-β-Farnesene	9.68*	1632.1	[0.24]	10.80*	1459.8	[0.07]
trans-Cadina-1(6),4-diene	9.38*	1607.8	[0.15]	10.94	1470.3	0.06
γ-Muurolene	9.68*	1632.1	[0.24]	10.99	1473.9	0.12
Germacrene D	9.88	1647.5	0.57	11.02	1476.3	0.53
β-Selinene	10.03	1660.0	0.05	11.07	1480.5	0.04
γ-Amorphene	9.96	1654.2	0.04	11.15	1485.8	0.07
epi-Cubebol	12.10	1833.9	0.08	11.21	1490.4	0.06
α-Selinene	10.13*	1667.6	[0.28]	11.23	1492.0	0.07
α-Muurolene	10.13*	1667.6	[0.28]	11.31*	1498.0	[0.16]
Cuparene	11.17	1753.4	0.03	11.31*	1498.0	[0.16]
α-Alaskene	10.13*	1667.6	[0.28]	11.42	1506.7	0.06
Cubebol	12.66	1882.9	0.02	11.46*	1509.5	[0.39]
γ-Cadinene	10.49	1696.8	0.21	11.46*	1509.5	[0.39]
(3*E*,6*E*)-α-Farnesene	10.67	1711.8	0.07	11.46*	1509.5	[0.39]
trans-Calamenene	11.34	1767.6	0.03	11.58	1519.3	0.03
δ-Cadinene	10.52	1699.3	0.43	11.61	1521.1	0.47
Selina-4(15),7(11)-diene	10.76*	1719.8	[0.04]	11.71	1529.3	0.05
Selina-4,7(11)-diene	10.72	1715.7	0.04	11.77	1534.0	0.05
Selina-3,7(11)-diene	10.76*	1719.8	[0.04]	11.79	1535.8	0.04
α-Elemol	14.17	2022.3	0.21	11.92	1545.9	0.20
Germacrene B	11.22	1758.0	0.80	11.98	1550.4	0.81
Caryophyllenyl alcohol	13.79	1986.0	0.03	12.16	1564.9	0.03
Spathulenol	14.51	2055.1	0.02	12.23	1570.1	0.03
Caryophyllene oxide	12.89	1903.3	0.04	12.29	1574.7	0.04
allo-Cedrol	14.36*	2040.9	[2.23]	12.35	1579.7	0.16
Unknown ARAN XX [m/z 159, 83 (88), 55 (53), 93 (50), 121 (48)... 220 (9)]				12.42	1585.6	0.01
α-Cedrol	14.36*	2040.9	[2.23]	12.50	1592.0	2.22
Humulene epoxide II	13.48	1957.8	0.02	12.61	1600.3	0.03
epi-Cedrol	14.92	2094.3	0.01	12.68	1605.7	0.02
1,10-diepi-Cubenol	13.90	1996.5	0.06	12.72	1609.0	0.02

Alismol	15.89*	2191.8	[0.10]	12.89	1622.9	0.10
β-Acorenol	15.00	2102.7	0.03	12.92	1625.4	0.02
τ-Cadinol	15.02	2104.1	0.05	13.04*	1636.1	[0.08]
τ-Muurolol	15.18	2120.4	0.04	13.04*	1636.1	[0.08]
β-Eudesmol	15.53	2155.4	0.05	13.11	1641.8	0.07
α-Cadinol	15.61	2163.4	0.08	13.19	1648.5	0.07
Cedrenol analog	16.59	2264.0	0.02	13.24	1652.5	0.01
(3*Z*)-Caryophylla-3,8(13)-dien-5β-ol	16.94*	2301.6	[0.02]	13.40	1665.9	0.02
Germacra-4(15),5,10(14)-trien-1-ol isomer	16.83	2289.8	0.02	13.55	1677.9	0.01
α-Bisabolol	15.56	2158.6	0.03	13.59	1681.7	0.03
Mayurone?				13.79	1698.4	0.02
Aromadendrane-4,10-diol	16.94*	2301.6	[0.02]	13.95	1711.4	0.03
Cedryl acetate	14.72	2074.6	0.04	14.44	1753.9	0.04
meta-Camphorene	15.45	2147.1	0.31	16.61	1951.8	0.27
Trachylobane?	16.53	2257.7	0.02	16.87	1976.6	0.05
para-Camphorene	15.89*	2191.8	[0.10]	16.96	1985.1	0.10
18-Norabieta-8,11,13-triene?				17.12	2000.4	0.07
ar-Abietatriene	17.85	2400.2	0.02	17.53	2041.1	0.06
7,13-Abietadiene	17.44	2354.8	0.33	17.77	2065.0	0.31
Sandaracopimarinal?	20.35	2693.0	0.02	18.75	2165.3	0.04
Conifer resinic acid VIII?				19.72	2269.5	0.17
Abieta-7,13-dien-3-one				19.85	2283.5	0.03
Total reported		97.89%			98.67%	

*: 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