PhytoChemia

Date : 2026-11-19

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 26K06-PTH02
Customer Identification : Organic Lavender Bulk - Bulgaria - L50125
Type : Essential Oil
Source : *Lavandula angustifolia*
Customer : Plant Therapy

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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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

Méthode certifiée ISO 17025:2017 Certified Method

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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 : Sylvain Mercier, M. Sc., Chimiste 2014-005
Date : 2026-11-19

Physicochemical data

Physical aspect : Faintly yellow liquid
Analyst : Cindy Caron B. Sc.
Date : 2026-11-09

Refractive index : 1.4626 ± 0.0003 (20 °C)
Method : PC-MAT-016 - Measure of the refractive index of a liquid.
Analyst : Cindy Caron B. Sc.
Date : 2026-11-09

Conclusion

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
2-Methyl-3-buten-2-ol	0.02	Aliphatic alcohol
Isovaleral	0.01	Aliphatic aldehyde
2-Methylbutyral	tr	Aliphatic aldehyde
Isoamyl alcohol	0.01	Aliphatic alcohol
Toluene	0.01	Simple phenolic
Hexanal	tr	Aliphatic aldehyde
Butyl acetate	0.02	Aliphatic ester
Methyl hexyl ether	0.10	Aliphatic ether
(3*Z*)-Hexenol	0.02	Aliphatic alcohol
Hexanol	0.06	Aliphatic alcohol
Tricyclene	0.03	Monoterpene
α-Thujene	0.12	Monoterpene
α-Pinene	0.30	Monoterpene
Camphene	0.23	Monoterpene
α-Fenchene	tr	Monoterpene
5,5-Dimethyl-2(5H)-furanone	0.01	Aliphatic lactone
Butyl isobutyrate	0.01	Aliphatic ester
Sabinene	0.05	Monoterpene
β-Pinene	0.07	Monoterpene
Octen-3-ol	0.19	Aliphatic alcohol
Octan-3-one	0.88	Aliphatic ketone
6-Methyl-5-hepten-2-one	0.01	Aliphatic ketone
Myrcene	0.61	Monoterpene
Butyl butyrate	0.11	Aliphatic ester
Octan-3-ol	0.17	Aliphatic alcohol
α-Phellandrene	0.04	Monoterpene
Pseudolimonene	0.01	Monoterpene
Δ3-Carene	0.15	Monoterpene
α-Terpinene	0.05	Monoterpene
Hexyl acetate	0.52	Aliphatic ester
meta-Cymene	0.06	Monoterpene
para-Cymene	0.24	Monoterpene
Limonene	0.33	Monoterpene
1,8-Cineole	1.26	Monoterpenic ether
Lavender lactone	0.01	Aliphatic lactone
(*Z*)-β-Ocimene	5.60	Monoterpene

(*E*)-β-Ocimene	3.22	Monoterpene
γ-Terpinene	0.16	Monoterpene
cis-Sabinene hydrate	0.06	Monoterpenic alcohol
cis-Linalool oxide (fur.)	0.16	Monoterpenic alcohol
Octanol	0.05	Aliphatic alcohol
α-Pinene oxide analog	0.03	Monoterpenic ether
Terpinolene	0.10	Monoterpene
trans-Linalool oxide (fur.)	0.11	Monoterpenic alcohol
trans-Sabinene hydrate	0.04	Monoterpenic alcohol
Rosefuran	0.02	Monoterpenic ether
Linalool	28.08	Monoterpenic alcohol
(*Z*)-6-Methyl-3,5-heptadien-2-one	0.04	Aliphatic ketone
β-Thujone	0.04	Monoterpenic ketone
Octen-3-yl acetate	0.80	Aliphatic ester
Unknown	0.03	Unknown
Octan-3-yl acetate	0.08	Aliphatic ester
allo-Ocimene	0.12	Monoterpene
(*Z*)-Myroxide	0.04	Monoterpenic ether
Camphor	0.37	Monoterpenic ketone
(*E*)-Myroxide	0.04	Monoterpenic ether
Hexyl isobutyrate	0.08	Aliphatic ester
Nerol oxide	0.01	Aliphatic ether
Borneol	0.73	Monoterpenic alcohol
cis-Linalool oxide (pyr.)	0.02	Monoterpenic alcohol
Lavandulol	0.85	Monoterpenic alcohol
Terpinen-4-ol	4.00	Monoterpenic alcohol
(3*E*,5*Z*)-Undeca-1,3,5-triene	0.04	Alkene
Cryptone	0.14	Normonoterpenic ketone
meta-Cymen-8-ol	0.10	Monoterpenic alcohol
para-Cymen-8-ol	0.07	Monoterpenic alcohol
α-Terpineol	0.86	Monoterpenic alcohol
Hodiendiol (2,6-dimethylocta-3,7-diene-2,6-diol)	0.03	Monoterpenic alcohol
Hexyl butyrate	0.38	Aliphatic ester
Unknown	0.03	Unknown
(3*E*,5*E*)-2,6-Dimethylocta-3,5,7-trien-2-ol	0.03	Monoterpenic alcohol
trans-Carveol	0.05	Monoterpenic alcohol
Bornyl formate	0.08	Monoterpenic ester
Nerol	0.16	Monoterpenic alcohol
Hexyl 2-methylbutyrate	0.13	Aliphatic ester
Carvone	0.04	Monoterpenic ketone

Hexyl isovalerate	0.03	Aliphatic ester
Neral	0.02	Monoterpenic aldehyde
Linalyl acetate	31.30	Monoterpenic ester
Geraniol	0.38	Monoterpenic alcohol
Geranial	0.04	Monoterpenic aldehyde
2,6-Dimethyl-1,7-octadiene-3,6-diol	0.02	Monoterpenic alcohol
Bornyl acetate	0.21	Monoterpenic ester
Cuminol	0.04	Monoterpenic alcohol
Lavandulyl acetate	3.81	Monoterpenic ester
Hexyl tiglate	0.07	Aliphatic ester
Hodiendiol derivative	0.04	Oxygenated monoterpene
Unknown	0.03	Oxygenated monoterpene
Unknown	0.03	Oxygenated monoterpene
Neryl acetate	0.28	Monoterpenic ester
α-Copaene	0.02	Sesquiterpene
β-Bourbonene	0.06	Sesquiterpene
Geranyl acetate	0.46	Monoterpenic ester
Hexyl hexanoate	0.07	Aliphatic ester
7-epi-Sesquithujene	0.10	Sesquiterpene
Isocaryophyllene	0.01	Sesquiterpene
Sesquithujene	0.04	Sesquiterpene
β-Caryophyllene	3.43	Sesquiterpene
cis-α-Bergamotene	0.02	Sesquiterpene
α-Santalene	0.42	Sesquiterpene
Coumarin	0.04	Coumarin
trans-α-Bergamotene	0.15	Sesquiterpene
Sesquisabinene A	0.03	Sesquiterpene
cis-β-Bergamotene?	0.05	Sesquiterpene
α-Humulene	0.11	Sesquiterpene
Lavandulyl butyrate?	0.12	Monoterpenic ester
β-Santalene	0.02	Sesquiterpene
(*E*)-β-Farnesene	3.64	Sesquiterpene
Germacrene D	0.33	Sesquiterpene
trans-β-Bergamotene	0.06	Sesquiterpene
Isodaucene	0.01	Sesquiterpene
β-Bisabolene	0.02	Sesquiterpene
γ-Cadinene	0.14	Sesquiterpene
Unknown	0.06	Oxygenated sesquiterpene
β-Sesquiphellandrene	0.03	Sesquiterpene
Isocaryophyllene epoxide B	0.04	Sesquiterpenic ether
(*E*)-Nerolidol	0.02	Sesquiterpenic alcohol

Caryophyllene oxide	0.34	Sesquiterpenic ether
Caryophyllene oxide isomer	0.05	Sesquiterpenic ether
Humulene epoxide II	0.01	Sesquiterpenic ether
τ-Cadinol	0.09	Sesquiterpenic alcohol
(3*Z*)-Caryophylla-3,8(13)-dien-5β-ol	0.01	Sesquiterpenic alcohol
Consolidated total	**99.02**	

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

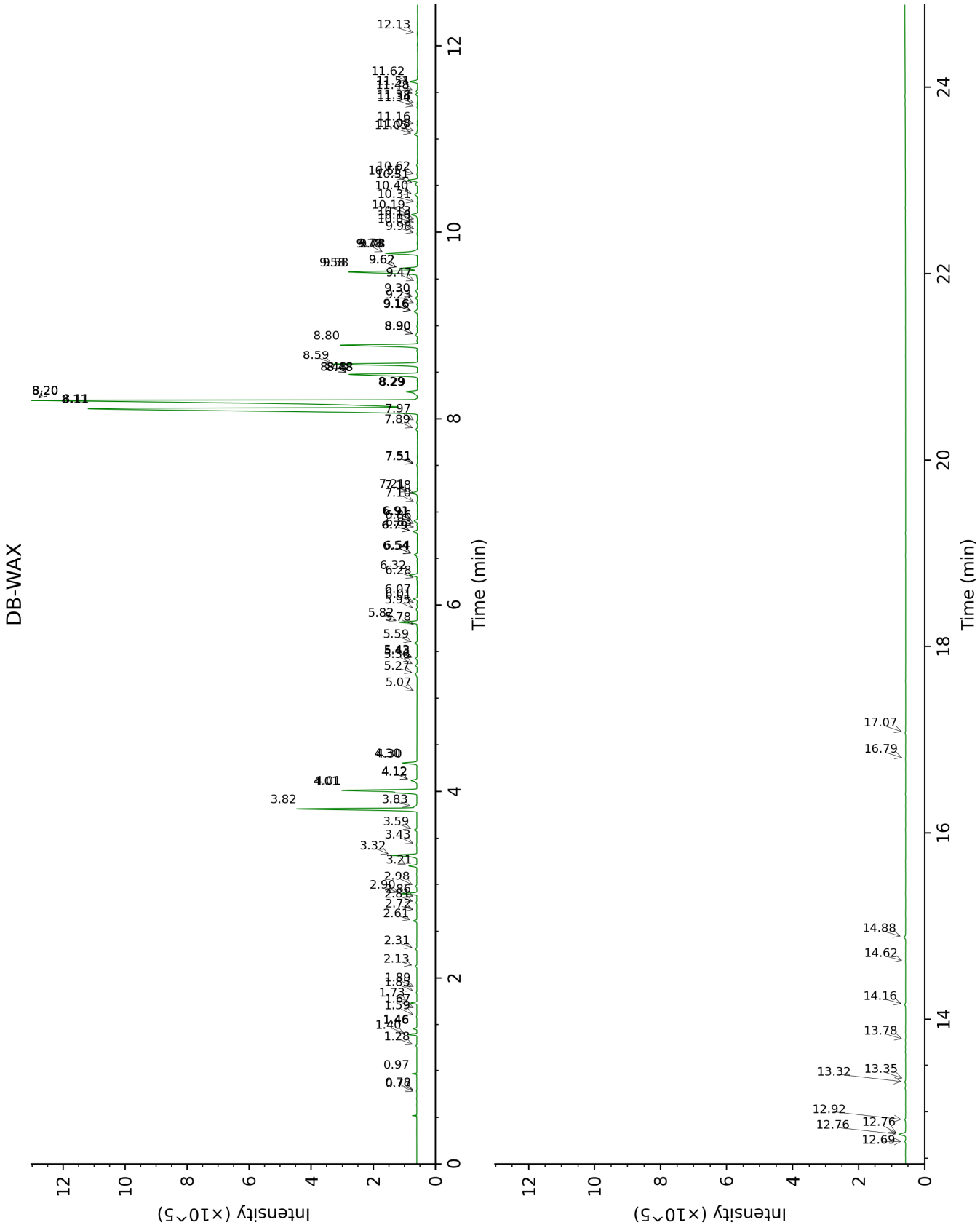
Note: no correction factor was applied

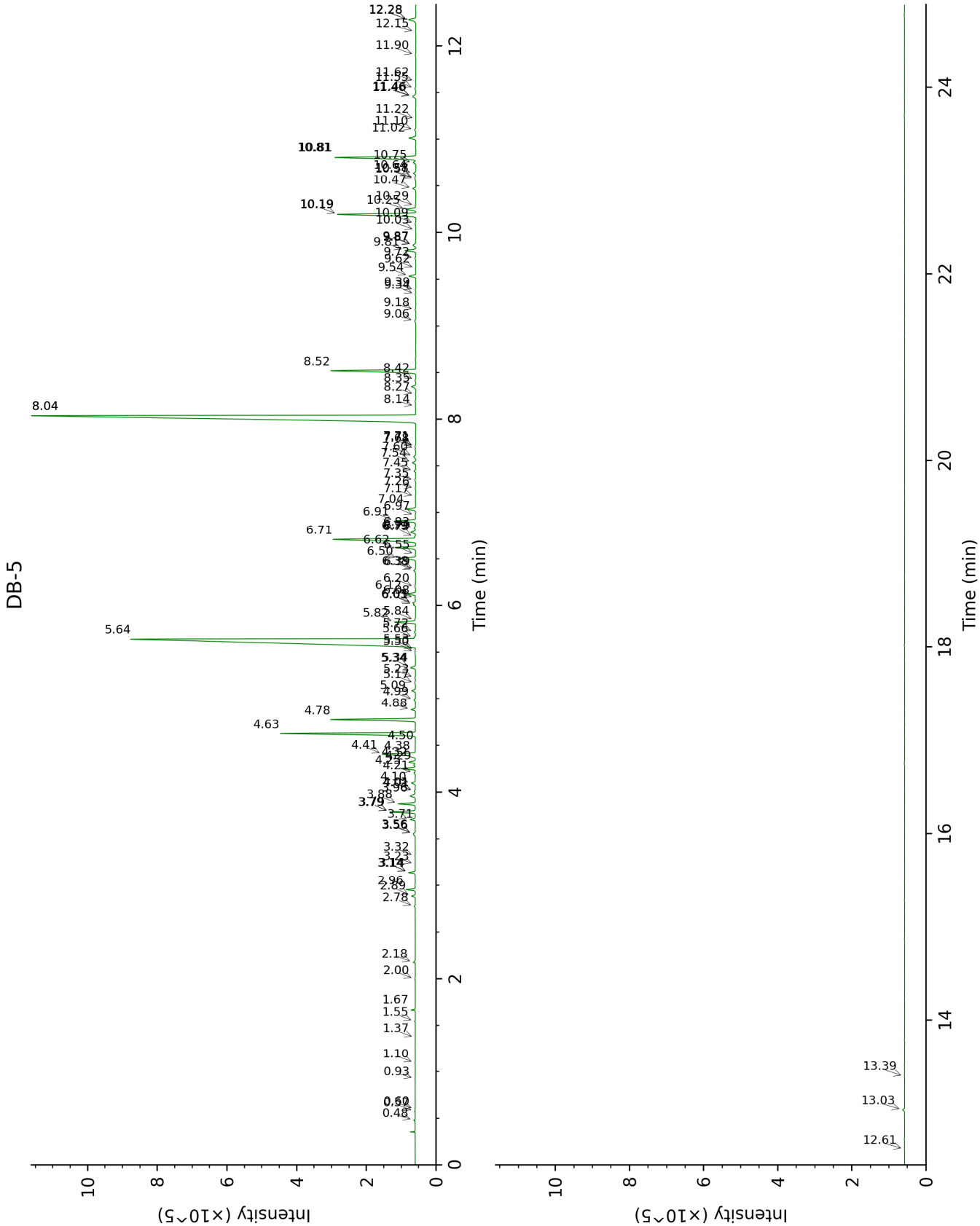
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm 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)
12.13
11.62
10.62
10.40
10.31
10.19
9.62
9.47
9.30
9.16
8.90
8.80
8.59
8.29
8.20
8.11
7.97
7.89
7.51
6.91
6.54
6.32
6.28
6.07
5.95
5.82
5.78
5.59
5.27
5.07
4.30
4.12
4.01
3.82
3.83
3.59
3.43
3.32
3.21
2.98
2.90
2.72
2.61
2.31
2.13
1.89
1.73
1.59
1.46
1.40
1.28
0.97
0.78
17.07
16.79
14.88
14.62
14.16
13.78
13.32
13.35
12.92
12.76
12.76
12.69


DB-5
Intensity (×10^5)
Time (min)
12.28
12.15
11.90
11.62
11.55
11.46
11.22
11.10
11.02
10.81
10.75
10.54
10.47
10.29
10.25
10.19
10.09
10.03
9.87
9.81
9.72
9.62
9.54
9.39
9.34
9.18
9.06
8.52
8.42
8.35
8.27
8.14
8.04
7.73
7.60
7.54
7.45
7.32
7.26
7.17
7.04
6.97
6.91
6.71
6.62
6.55
6.50
6.39
6.20
6.01
5.84
5.82
5.72
5.66
5.64
5.50
5.34
5.23
5.17
5.09
4.99
4.88
4.78
4.63
4.50
4.41
4.38
4.29
4.21
4.10
3.96
3.88
3.79
3.71
3.56
3.32
3.23
3.14
2.96
2.89
2.78
2.18
2.00
1.67
1.55
1.37
1.10
0.93
0.48
13.39
13.03
12.61

Full analysis data

Identification	Column DB-WAX			Column DB-5		
	R.T.	R.I	%	R.T.	R.I	%
2-Methyl-3-buten-2-ol	1.59	1013.1	0.01	0.48	602.8	0.02
Isovaleral	0.78	883.9	0.01	0.58	640.6	0.01
2-Methylbutyral	0.77	878.0	tr	0.60	650.8	tr
Isoamyl alcohol	3.43	1175.3	0.03	0.93	732.4	0.01
Toluene	1.46*	1000.3	[0.12]	1.10	757.9	0.01
Hexanal	1.89	1043.1	tr	1.37	799.2	tr
Butyl acetate	1.85	1038.4	0.02	1.55	816.5	0.02
Methyl hexyl ether	0.97	922.6	0.10	1.67	827.1	0.10
(3*Z*)-Hexenol	5.78	1345.3	0.02	2.00	855.5	0.02
Hexanol	5.43*	1319.9	[0.08]	2.18	871.0	0.06
Tricyclene	1.28	971.6	0.04	2.78	918.6	0.03
α-Thujene	1.46*	1000.3	[0.12]	2.89	926.1	0.12
α-Pinene	1.40	990.8	0.30	2.96	930.8	0.30
Camphene	1.73	1027.3	0.23	3.14*	943.5	[0.23]
α-Fenchene	1.67	1020.8	tr	3.14*	943.5	[0.23]
5,5-Dimethyl-2(5H)-furanone	8.48*	1546.8	[3.59]	3.24	949.7	0.01
Butyl isobutyrate	2.72	1119.8	0.02	3.32	955.6	0.01
Sabinene	2.31	1084.1	0.05	3.56*	971.6	[0.11]
β-Pinene	2.13	1066.0	0.07	3.56*	971.6	[0.11]
Octen-3-ol	6.79*	1418.8	[0.20]	3.71	981.8	0.19
Octan-3-one	4.01*	1219.9	[4.07]	3.79*	987.3	[0.89]
6-Methyl-5-hepten-2-one	5.07	1297.7	0.01	3.79*	987.3	[0.89]
Myrcene	2.90	1133.9	0.60	3.88	993.2	0.61
Butyl butyrate	3.59	1188.0	0.11	3.96*	998.7	[0.26]
Octan-3-ol	6.07	1366.0	0.17	3.96*	998.7	[0.26]
α-Phellandrene	2.81	1126.4	0.04	4.01*	1002.3	[0.04]
Pseudolimonene	2.86	1130.5	0.01	4.01*	1002.3	[0.04]
Δ3-Carene	2.61	1111.1	0.15	4.10	1007.9	0.15
α-Terpinene	2.98	1140.1	0.05	4.21	1014.8	0.05
Hexyl acetate	4.30*	1241.3	[0.63]	4.25	1017.8	0.52
meta-Cymene	4.12*	1227.6	[0.30]	4.29	1020.2	0.06
para-Cymene	4.12*	1227.6	[0.30]	4.32	1022.2	0.24
Limonene	3.21	1157.9	0.33	4.38†	1026.1	0.12
1,8-Cineole	3.32	1166.8	1.26	4.41†	1027.5	1.46
Lavender lactone	9.23	1606.0	0.04	4.50	1033.5	0.01

(*Z*)-β-Ocimene	3.82	1205.5	5.62	4.63	1041.6	5.60
(*E*)-β-Ocimene	4.01*	1219.9	[4.07]	4.78	1051.1	3.22
γ-Terpinene	3.83	1206.6	0.13	4.88	1057.9	0.16
cis-Sabinene hydrate	6.91*	1427.8	[0.17]	4.99	1064.8	0.06
cis-Linalool oxide (fur.)	6.54*	1400.3	[0.16]	5.09	1071.2	0.16
Octanol	8.20*	1525.2	[31.19]	5.17	1076.3	0.05
α-Pinene oxide analog	5.43*	1319.9	[0.08]	5.23	1080.1	0.03
Terpinolene	4.30*	1241.3	[0.63]	5.34*	1087.0	[0.20]
trans-Linalool oxide (fur.)	6.91*	1427.8	[0.17]	5.34*	1087.0	[0.20]
trans-Sabinene hydrate	7.97	1507.0	0.06	5.50	1097.2	0.04
Rosefuran	6.01	1361.8	0.02	5.52	1099.0	0.02
Linalool	8.11*	1518.3	[28.32]	5.64	1106.5	28.08
(*Z*)-6-Methyl-3,5-heptadien-2-one	8.20*	1525.2	[31.19]	5.66	1107.7	0.04
β-Thujone	6.28	1381.4	0.04	5.72	1111.5	0.04
Octen-3-yl acetate	5.82	1348.1	0.79	5.82	1118.3	0.80
Unknown LAAN I [m/z 82, 81 (72), 43 (64), 54 (32), 41 (20)...]	9.62*	1637.0	[0.85]	5.84	1119.6	0.03
Octan-3-yl acetate	5.27	1308.1	0.07	6.01	1130.2	0.08
allo-Ocimene	5.59	1331.9	0.12	6.03	1131.6	0.12
(*Z*)-Myroxide	6.86	1424.5	0.03	6.08	1135.1	0.04
Camphor	7.21	1450.2	0.34	6.12	1137.9	0.37
(*E*)-Myroxide	7.10	1442.4	0.05	6.20	1142.8	0.04
Hexyl isobutyrate	5.36	1314.6	0.08	6.38	1154.1	0.08
Nerol oxide	6.82	1421.6	0.01	6.39	1155.2	0.01
Borneol	9.78*	1650.2	[1.91]	6.50	1162.6	0.73
cis-Linalool oxide (pyr.)	10.32	1693.9	0.02	6.55	1165.3	0.02
Lavandulol	9.62*	1637.0	[0.85]	6.62	1170.2	0.85
Terpinen-4-ol	8.59	1555.4	3.98	6.71	1175.9	4.00
(3*E*,5*Z*)-Undeca-1,3,5-triene	5.95	1357.9	0.05	6.73	1177.5	0.04
Cryptone	9.16*	1599.7	[0.21]	6.78*	1180.8	[0.24]
meta-Cymen-8-ol	11.48	1792.9	0.10	6.78*	1180.8	[0.24]

para-Cymen-8-ol	11.51	1795.8	0.07	6.83	1183.8	0.07
α-Terpineol	9.78*	1650.2	[1.91]	6.91	1189.1	0.86
Hodiendiol (2,6-dimethylocta-3,7-diene-2,6-diol)	12.76*	1906.5	[0.37]	6.97	1192.8	0.03
Hexyl butyrate	6.32	1384.3	0.38	7.04	1197.4	0.38
Unknown SASC VII [m/z 43, 71 (66), 59 (52), 41 (47), 68 (46)...]	7.51*	1472.6	[0.05]	7.18	1206.2	0.03
(3*E*,5*E*)-2,6-Dimethylocta-3,5,7-trien-2-ol	11.34	1781.1	0.03	7.26	1212.1	0.03
trans-Carveol	11.38	1784.3	0.03	7.35	1218.1	0.05
Bornyl formate	8.11*	1518.3	[28.32]	7.45	1224.8	0.08
Nerol	11.05	1756.5	0.16	7.54	1230.9	0.16
Hexyl 2-methylbutyrate	6.54*	1400.3	[0.16]	7.60	1235.3	0.13
Carvone	9.98	1667.1	0.04	7.68	1240.8	0.04
Hexyl isovalerate	6.79*	1418.8	[0.20]	7.71*	1242.6	[0.05]
Neral	9.47	1625.2	0.02	7.71*	1242.6	[0.05]
Linalyl acetate	8.20*	1525.2	[31.19]	8.04*	1265.2	[31.68]
Geraniol	11.62	1805.0	0.38	8.04*	1265.2	[31.68]
Geranial	10.10	1676.2	0.01	8.14	1272.0	0.04
2,6-Dimethyl-1,7-octadiene-3,6-diol	14.62	2082.2	0.02	8.26	1280.7	0.02
Bornyl acetate	8.29*	1532.4	[0.64]	8.35	1286.5	0.21
Cuminol	14.16	2037.5	0.05	8.42	1291.0	0.04
Lavandulyl acetate	8.80	1571.7	3.81	8.52	1298.2	3.81
Hexyl tiglate	8.90*	1579.9	[0.12]	9.06	1333.0	0.07
Hodiendiol derivative	12.92	1921.0	0.06	9.18	1341.4	0.04
Unknown SASC II [m/z 43, 79 (47), 71 (31), 94 (27), 81 (23), 41 (22)... 197 (0)]	11.08	1759.2	0.03	9.34	1353.0	0.03
Unknown SASC III [m/z 43, 79 (46), 71 (30), 94 (25), 41 (23), 81 (21)... 197	11.16	1765.3	0.03	9.39	1356.5	0.03

(0)]						
Neryl acetate	10.19	1683.6	0.33	9.54	1367.1	0.28
α-Copaene	7.18	1448.3	0.02	9.62	1372.7	0.02
β-Bourbonene	7.51*	1472.6	[0.05]	9.72	1380.5	0.06
Geranyl acetate	10.56	1714.1	0.45	9.81	1386.5	0.46
Hexyl hexanoate	8.90*	1579.9	[0.12]	9.87*	1390.6	[0.17]
7-epi-Sesquithujene	7.89	1501.1	0.10	9.87*	1390.6	[0.17]
Isocaryophyllene	8.20*	1525.2	[31.19]	10.02	1402.0	0.01
Sesquithujene	8.20*	1525.2	[31.19]	10.09	1407.0	0.04
β-Caryophyllene	8.48*	1546.8	[3.59]	10.19*	1414.5	[3.51]
cis-α-Bergamotene	8.29*	1532.4	[0.64]	10.19*	1414.5	[3.51]
α-Santalene	8.29*	1532.4	[0.64]	10.25	1418.5	0.42
Coumarin	17.07	2333.1	0.04	10.29	1421.4	0.04
trans-α-Bergamotene	8.48*	1546.8	[3.59]	10.47	1435.4	0.15
Sesquisabinene A	9.16*	1599.7	[0.21]	10.57	1442.7	0.03
cis-β-Bergamotene?				10.58	1443.7	0.05
α-Humulene	9.30	1611.4	0.10	10.64	1448.0	0.11
Lavandulyl butyrate?	10.51	1710.6	0.11	10.75	1456.6	0.12
β-Santalene	9.16*	1599.7	[0.21]	10.81*	1460.8	[3.66]
(*E*)-β-Farnesene	9.58*	1634.0	[3.70]	10.81*	1460.8	[3.66]
Germacrene D	9.78*	1650.2	[1.91]	11.02	1476.5	0.33
trans-β-Bergamotene	9.58*	1634.0	[3.70]	11.10	1482.9	0.06
Isodaucene	10.03	1670.5	0.02	11.22	1491.6	0.01
β-Bisabolene	10.13	1678.7	0.02	11.46*	1510.1	[0.20]
γ-Cadinene	10.40	1701.1	0.14	11.46*	1510.1	[0.20]
Unknown CULO LIV [m/z 121, 93 (56), 91 (12), 94 (11), 122 (10)...220]	13.32	1958.6	0.05	11.55	1516.9	0.06
β-Sesquiphellandrene	10.62	1719.9	0.04	11.62	1523.0	0.03
Isocaryophyllene epoxide B	12.13	1850.1	0.04	11.90	1545.3	0.04
(*E*)-Nerolidol	13.78	2001.2	0.02	12.15	1565.0	0.02
Caryophyllene oxide	12.76*	1906.5	[0.37]	12.28*	1575.2	[0.39]

Caryophyllene oxide isomer	12.69	1899.7	0.05	12.28*	1575.2	[0.39]
Humulene epoxide II	13.35	1961.2	0.01	12.61	1601.2	0.01
τ-Cadinol	14.88	2107.4	0.11	13.03	1636.1	0.09
(3*Z*)-Caryophylla-3,8(13)-dien-5β-ol	16.79	2303.2	0.02	13.39	1665.9	0.01
Total reported	**98.64%**			**99.07%**		

*: 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