Date : 2026-02-23

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 26A19-PTH08
Customer Identification : Cinnamon Bark - Sri Lanka - CC0115R
Type : Essential Oil
Source : *Cinnamomum zeylanicum [syn. Cinnamomum verum]*
Customer : Plant Therapy

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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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

This report is an update of the version first issued on 2026-01-21 to make a correction in the sample identification section.

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 : 2026-01-21

Physicochemical data

Refractive index : 1.5868 ± 0.0003 (20 °C)
Method : PC-MAT-016 - Measure of the refractive index of a liquid.
Analyst : Cindy Caron B. Sc.
Date : 2026-01-20

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
Hexanal	tr	Aliphatic aldehyde
Ethyl 2-methylbutyrate	tr	Aliphatic ester
Styrene	0.01	Simple phenolic
Tricyclene	0.01	Monoterpene
α-Thujene	0.13	Monoterpene
α-Pinene	2.82	Monoterpene
Camphene	0.29	Monoterpene
α-Fenchene	0.01	Monoterpene
Benzaldehyde	0.14	Simple phenolic
Sabinene	0.03	Monoterpene
β-Pinene	0.31	Monoterpene
Myrcene	0.13	Monoterpene
α-Phellandrene	1.20	Monoterpene
Pseudolimonene	0.01	Monoterpene
Octanal	tr	Aliphatic aldehyde
Δ3-Carene	0.08	Monoterpene
α-Terpinene	0.63	Monoterpene
meta-Cymene	0.02	Monoterpene
para-Cymene	0.96	Monoterpene
Limonene	1.65	Monoterpene
1,8-Cineole	1.99	Monoterpenic ether
Benzyl alcohol	0.01	Simple phenolic
(*Z*)-β-Ocimene	0.02	Monoterpene
(*E*)-β-Ocimene	0.06	Monoterpene
γ-Terpinene	0.03	Monoterpene
Acetophenone	tr	Simple phenolic
cis-Linalool oxide (fur.)	0.02	Monoterpenic alcohol
Isoterpinolene	0.01	Monoterpene
para-Cymenene	0.01	Monoterpene
trans-Linalool oxide (fur.)	0.02	Monoterpenic alcohol
Terpinolene	0.11	Monoterpene
Linalool	3.54	Monoterpenic alcohol
(3*E*)-2,7-Dimethyl-3,6-octadien-2-ol	0.01	Monoterpenic alcohol
Phenylethyl alcohol	0.04	Simple phenolic
cis-para-Menth-2-en-1-ol	0.01	Monoterpenic alcohol
trans-Pinocarveol	0.01	Monoterpenic alcohol
Camphor	0.02	Monoterpenic ketone
Camphene hydrate	0.01	Monoterpenic alcohol
Hydrocinnamal	0.03	Phenylpropanoid
Borneol	0.03	Monoterpenic alcohol

Benzyl acetate	0.01	Phenolic ester
Terpinen-4-ol	0.30	Monoterpenic alcohol
para-Cymen-8-ol	0.01	Monoterpenic alcohol
α-Terpineol	0.41	Monoterpenic alcohol
cis-Piperitol	0.01	Monoterpenic alcohol
cis-α-Phellandrene epoxide (iPr vs Me)	0.01	Monoterpenic ether
(*Z*)-Cinnamal	0.32	Phenylpropanoid
Hydrocinnamyl alcohol	0.06	Phenylpropanoid
ortho-Anisaldehyde	0.02	Simple phenolic
(*E*)-Cinnamal	73.50	Phenylpropanoid
Safrole	0.10	Phenylpropanoid
(*E*)-Cinnamyl alcohol	0.03	Phenylpropanoid
α-Cubebene	0.01	Sesquiterpene
Eugenol	2.17	Phenylpropanoid
Hydrocinnamyl acetate	0.03	Phenylpropanoid ester
α-Copaene	0.08	Sesquiterpene
β-Elemene	0.01	Sesquiterpene
Isocaryophyllene	0.01	Sesquiterpene
α-Gurjunene	0.01	Sesquiterpene
β-Caryophyllene	2.21	Sesquiterpene
Caryophylla-4(12),8(13)-diene	0.01	Sesquiterpene
(*E*)-Cinnamyl acetate	4.26	Phenylpropanoid ester
α-Humulene	0.41	Sesquiterpene
(*E*)-Isoeugenol	0.01	Phenylpropanoid
allo-Aromadendrene	0.01	Sesquiterpene
trans-Cadina-1(6),4-diene	0.01	Sesquiterpene
γ-Muurolene	0.01	Sesquiterpene
Germacrene D	0.01	Sesquiterpene
ar-Curcumene	0.01	Sesquiterpene
Bicyclogermacrene	0.02	Sesquiterpene
α-Muurolene	0.02	Sesquiterpene
2,3-Epoxycinnamyl acetate I?	0.01	Phenylpropanoid ester
Cubebol	0.02	Sesquiterpenic alcohol
γ-Cadinene	0.01	Sesquiterpene
(*E*)-*ortho*-Methoxycinnamal	0.09	Phenylpropanoid
trans-Calamenene	0.01	Sesquiterpene
δ-Cadinene	0.03	Sesquiterpene
Eugenyl acetate	0.04	Phenylpropanoid ester
trans-Cadina-1,4-diene	0.04	Sesquiterpene
α-Calacorene	0.03	Sesquiterpene
Isocaryophyllene epoxide B	0.02	Sesquiterpenic ether
Caryophyllenyl alcohol	0.02	Sesquiterpenic alcohol
(*E*)-Nerolidol	0.04	Sesquiterpenic alcohol
Spathulenol	0.01	Sesquiterpenic alcohol
Caryophyllene oxide	0.06	Sesquiterpenic ether

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Unknown	0.01	Oxygenated sesquiterpene
Humulene epoxide II	0.01	Sesquiterpenic ether
Tetradecanal	0.01	Aliphatic aldehyde
Caryophylladienol II	tr	Sesquiterpenic alcohol
Unknown	0.01	Sesquiterpenic alcohol
Benzyl benzoate	0.47	Phenolic ester
Unknown	0.02	Unknown
Unknown	0.01	Unknown
Unknown	0.01	Lignan
Consolidated total	**99.49**	

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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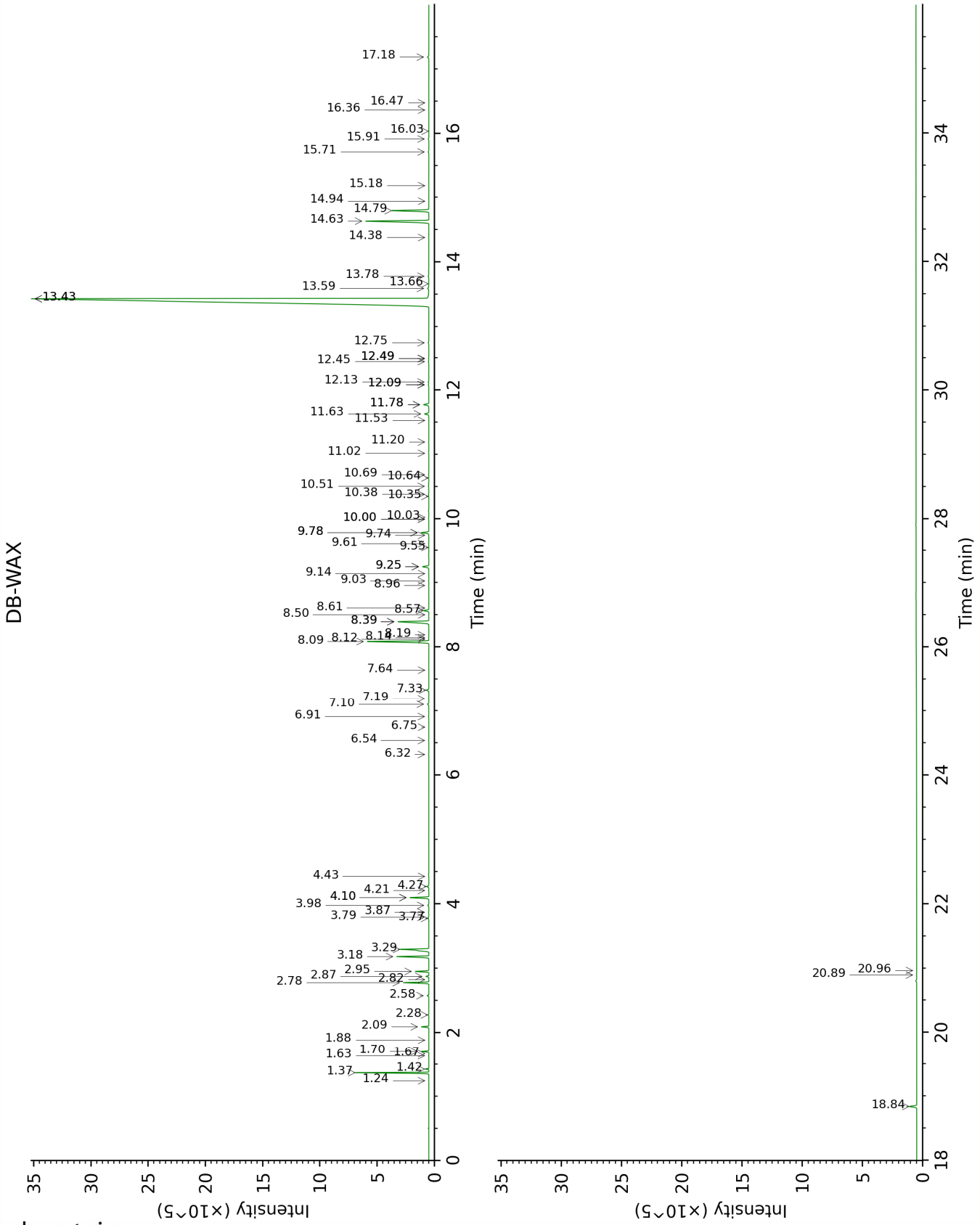
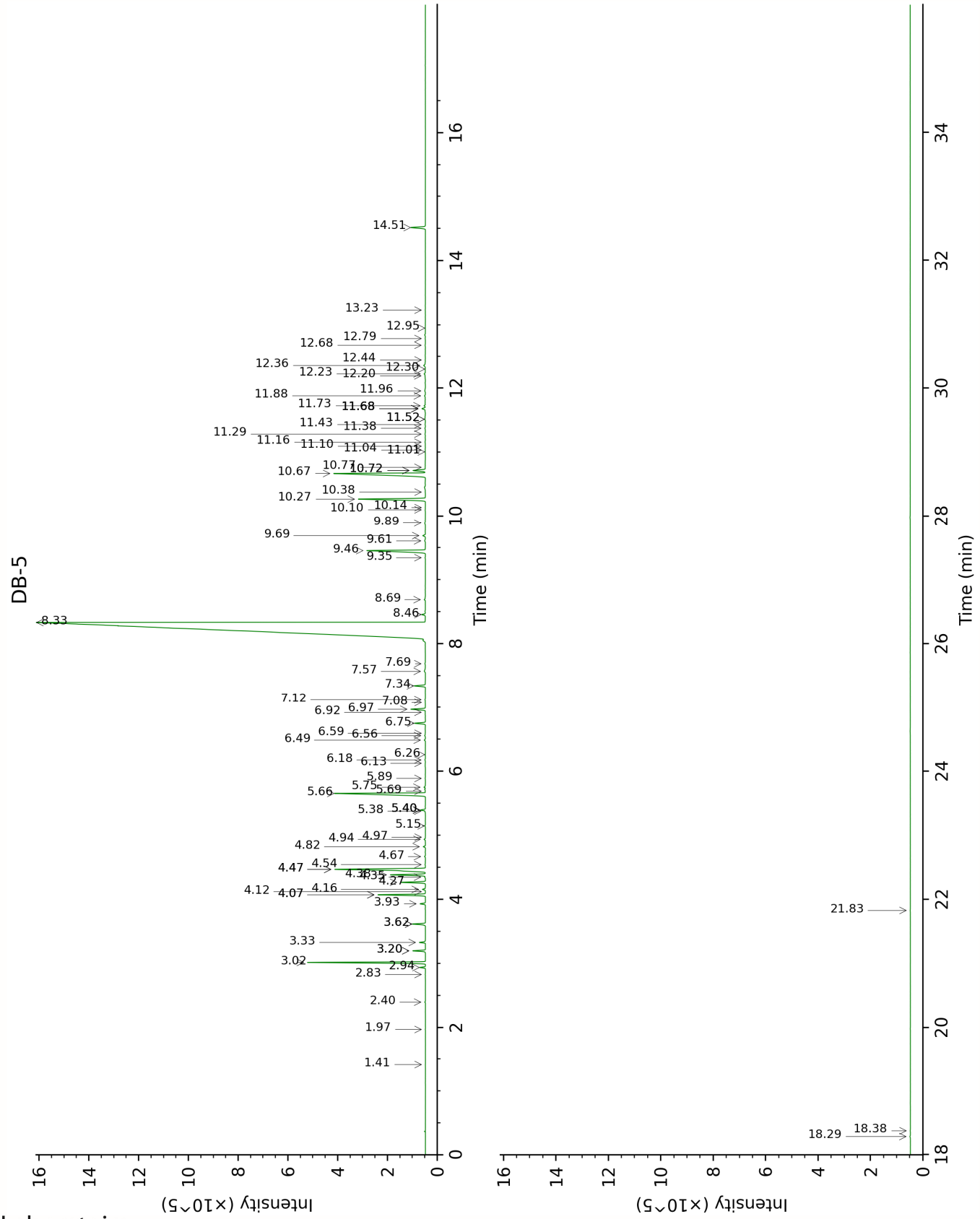

DB-WAX
Time (min)
Intensity (×10^5)
17.18
16.47
16.36
16.03
15.91
15.71
15.18
14.94
14.79
14.63
14.38
13.78
13.66
13.59
13.43
12.75
12.49
12.45
12.13
12.09
11.78
11.63
11.53
11.20
11.02
10.69
10.64
10.51
10.38
10.35
10.03
10.00
9.78
9.74
9.61
9.55
9.25
9.14
9.03
8.96
8.61
8.57
8.50
8.39
8.19
8.12
8.09
7.64
7.33
7.19
7.10
6.91
6.75
6.54
6.32
4.43
4.27
4.21
4.10
3.98
3.87
3.79
3.77
3.29
3.18
2.95
2.87
2.82
2.78
2.58
2.28
2.09
1.88
1.70
1.67
1.63
1.42
1.37
1.24
20.96
20.89
18.84


DB-5
Time (min)
Intensity (×10^5)
14.51
13.23
12.95
12.79
12.68
12.44
12.36
12.30
12.23
12.20
11.96
11.88
11.73
11.68
11.52
11.43
11.38
11.29
11.16
11.10
11.04
11.01
10.77
10.72
10.67
10.38
10.27
10.14
10.10
9.89
9.69
9.61
9.46
9.35
8.69
8.46
8.33
7.69
7.57
7.34
7.12
7.08
6.97
6.92
6.75
6.59
6.56
6.49
6.26
6.18
6.13
5.89
5.75
5.69
5.66
5.40
5.38
5.15
4.97
4.94
4.82
4.67
4.54
4.47
4.27
4.16
4.12
4.07
3.93
3.62
3.33
3.20
3.02
2.94
2.83
2.40
1.97
1.41
21.83
18.38
18.29

FULL ANALYSIS DATA

	Column DB-WAX			Column DB-5		
Hexanal	1.88	1045.7	tr	1.41	800.6	tr
Ethyl 2-methylbutyrate	1.66	1024.2	tr	1.97	849.8	tr
Styrene	3.87	1212.0	0.01	2.40	886.1	0.01
Tricyclene	1.24	971.9	tr	2.83	918.9	0.01
α-Thujene	1.42	1000.4	0.13	2.94	926.3	0.13
α-Pinene	1.37	992.4	2.84	3.02	931.6	2.82
Camphene	1.70	1027.4	0.29	3.20*	943.8	[0.30]
α-Fenchene	1.63	1020.9	0.01	3.20*	943.8	[0.30]
Benzaldehyde	7.33	1462.5	0.14	3.33	952.6	0.14
Sabinene	2.28	1084.8	0.03	3.62*	971.9	[0.34]
β-Pinene	2.09	1066.4	0.31	3.62*	971.9	[0.34]
Myrcene	2.87	1134.6	0.13	3.93	993.2	0.13
α-Phellandrene	2.78	1126.9	1.20	4.07*	1002.7	[1.20]
Pseudolimonene	2.82	1130.6	0.01	4.07*	1002.7	[1.20]
Octanal	4.43	1252.9	0.01	4.12	1005.9	tr
Δ3-Carene	2.58	1111.1	0.08	4.16	1008.2	0.08
α-Terpinene	2.95	1140.7	0.63	4.27	1015.2	0.63
meta-Cymene	4.10*	1228.7	[0.98]	4.35	1020.4	0.02
para-Cymene	4.10*	1228.7	[0.98]	4.38	1022.6	0.96
Limonene	3.18	1158.7	1.65	4.47*	1028.0	[3.62]
1,8-Cineole	3.29	1167.6	1.99	4.47*	1028.0	[3.62]
Benzyl alcohol	11.78*	1820.7	[0.33]	4.54	1032.8	0.01
(*Z*)-β-Ocimene	3.78	1205.1	0.03	4.67	1040.8	0.02
(*E*)-β-Ocimene	3.98	1219.8	0.05	4.82	1050.6	0.06
γ-Terpinene	3.79	1206.4	0.04	4.94	1057.9	0.03
Acetophenone	8.96	1586.7	0.01	4.97	1060.1	tr
cis-Linalool oxide (fur.)	6.54	1403.9	0.01	5.15	1071.3	0.02
Isoterpinolene	4.21	1236.8	0.01	5.38	1086.0	0.01
para-Cymenene	6.32	1388.1	0.01	5.40*	1087.1	[0.13]
trans-Linalool oxide (fur.)	6.91	1431.4	0.02	5.40*	1087.1	[0.13]
Terpinolene	4.27	1241.4	0.11	5.40*	1087.1	[0.13]
Linalool	8.09	1519.4	3.58	5.66	1103.7	3.54
(3*E*)-2,7-Dimethyl-3,6-octadien-2-ol	8.19	1527.4	0.01	5.69	1105.9	0.01
Phenylethyl alcohol	12.13	1851.8	0.04	5.75	1110.0	0.04
cis-para-Menth-2-en-1-ol	8.12	1522.1	0.01	5.89	1118.9	0.01
trans-Pinocarveol	9.14	1601.0	0.01	6.13	1134.3	0.01
Camphor	7.19	1452.5	0.01	6.18	1137.7	0.02

Camphene hydrate	8.50	1551.5	0.01	6.26	1143.1	0.01
Hydrocinnamal	10.51	1712.4	0.03	6.49	1157.9	0.03
Borneol	9.78*	1652.5	[0.43]	6.56	1162.5	0.03
Benzyl acetate	10.03	1672.7	0.01	6.59	1164.9	0.01
Terpinen-4-ol	8.57	1556.5	0.30	6.75	1175.1	0.30
para-Cymen-8-ol	11.53	1799.0	0.01	6.92	1186.3	0.01
α-Terpineol	9.78*	1652.5	[0.43]	6.97	1189.4	0.41
cis-Piperitol	9.55	1633.9	0.01	7.08	1196.5	0.01
cis-α-Phellandrene epoxide (iPr vs Me)	11.02	1755.8	0.02	7.12	1199.2	0.01
(*Z*)-Cinnamal	11.78*	1820.7	[0.33]	7.34	1214.3	0.32
Hydrocinnamyl alcohol	13.59	1984.7	0.08	7.57	1229.8	0.06
ortho-Anisaldehyde	12.49*	1884.0	[0.02]	7.69	1238.0	0.02
(*E*)-Cinnamal	13.43*	1969.9	[73.15]	8.33	1282.3	73.50
Safrole	11.63	1808.0	0.27	8.46	1290.8	0.10
(*E*)-Cinnamyl alcohol	15.91	2213.4	0.04	8.69	1306.9	0.03
α-Cubebene	6.74	1419.2	tr	9.35	1349.6	0.01
Eugenol	14.79	2100.3	2.18	9.46	1357.5	2.17
Hydrocinnamyl acetate	12.44	1879.8	0.03	9.61	1368.4	0.03
α-Copaene	7.10	1445.7	0.08	9.69	1374.2	0.08
β-Elemene	8.39*	1543.1	[2.23]	9.89	1388.6	0.01
Isocaryophyllene	8.14	1523.9	0.01	10.10	1403.5	0.01
α-Gurjunene	7.64	1485.6	tr	10.14	1406.0	0.01
β-Caryophyllene	8.39*	1543.1	[2.23]	10.27	1415.9	2.21
Caryophylla-4(12),8(13)-diene	8.61	1559.6	0.01	10.38	1424.2	0.01
(*E*)-Cinnamyl acetate	14.63	2084.4	4.28	10.67	1445.9	4.26
α-Humulene	9.25*	1609.8	[0.40]	10.72*	1449.4	[0.41]
(*E*)-Isoeugenol	16.47	2271.9	0.01	10.72*	1449.4	[0.41]
allo-Aromadendrene	9.03	1592.1	0.01	10.77	1453.2	0.01
trans-Cadina-1(6),4-diene	9.25*	1609.8	[0.40]	11.01	1471.3	0.01
γ-Muurolene	9.61	1638.7	0.01	11.04	1473.4	0.01
Germacrene D	9.74	1649.2	0.01	11.10	1477.9	0.01
ar-Curcumene	10.64	1723.3	0.01	11.16	1482.6	0.01
Bicyclogermacrene	10.00*	1670.4	[0.02]	11.29	1492.1	0.02
α-Muurolene	10.00*	1670.4	[0.02]	11.38	1498.9	0.02
2,3-Epoxycinnamyl	16.36	2260.2	0.01	11.43	1503.2	0.01

acetate I?						
Cubebol	12.49*	1884.0	[0.02]	11.52*	1509.6	[0.03]
γ-Cadinene	10.35	1699.1	0.01	11.52*	1509.6	[0.03]
(*E*)-*ortho*-Methoxycinnamal	17.18	2347.8	0.09	11.68*	1522.6	[0.12]
trans-Calamenene	11.20	1770.6	0.01	11.68*	1522.6	[0.12]
δ-Cadinene	10.38	1701.8	0.03	11.68*	1522.6	[0.12]
Eugenyl acetate	15.71	2192.5	0.04	11.68*	1522.6	[0.12]
trans-Cadina-1,4-diene	10.69	1727.5	0.02	11.73	1526.3	0.04
α-Calacorene	12.08*	1848.0	[0.04]	11.88	1538.5	0.03
Isocaryophyllene epoxide B	12.08*	1848.0	[0.04]	11.96	1544.6	0.02
Caryophyllenyl alcohol	13.66	1991.3	0.02	12.20	1563.1	0.02
(*E*)-Nerolidol	13.78	2002.3	0.05	12.23	1565.6	0.04
Spathulenol	14.38	2060.0	0.01	12.30	1571.5	0.01
Caryophyllene oxide	12.75	1907.1	0.06	12.36	1575.9	0.06
Unknown CYSC XX [m/z 161, 159 (69), 91 (41), 187 (38), 105 (37), 146 (35), 131 (34)...]	14.94	2114.9	tr	12.44	1582.7	0.01
Humulene epoxide II	13.43*	1969.9	[73.15]	12.68	1601.7	0.01
Tetradecanal	12.49*	1884.0	[0.02]	12.79	1610.1	0.01
Caryophylladienol II	16.03	2226.0	0.01	12.95	1623.6	tr
Unknown cadinol analog II [m/z 95, 121 (73), 43 (57), 79 (43), 161 (43), 109 (40)... 204 (35), 222 (2)]	15.18	2139.0	0.01	13.23	1646.8	0.01
Benzyl benzoate	18.84	2533.1	0.47	14.51	1755.7	0.47
Unknown CIZE II [m/z 69, 91 (57), 41 (49), 181 (32), 169 (25), 167 (22)...]	20.89	2780.6	0.01	18.28	2110.8	0.02
Unknown CIZE III [m/z 69, 91 (56), 41 (49), 169 (34), 239 (28), 93 (23)...]	20.96	2789.1	0.01	18.38	2120.1	0.01
Unknown OCSA V				21.83	2499.8	0.01

[m/z 326, 148 (67), 147 (41), 117 (30), 91 (22)...]						
Total reported	99.29%			99.40%		

*: 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

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