Date : November 23, 2020

Certificate of Analysis – GC Profiling

Sample identification

Internal code : 20K16-PTH01
Customer identification : Ginger Root CO2 - G40111207R
Type : CO2 extract
Source : *Zingiber officinale*
Customer : Plant Therapy

Analysis

Method: Dilution of a known amount with an appropriate solvent, and addition of a methyl octanoate internal standard for quantitation. Application of a correction factor[1]. Analysis with PC-MAT-004 - Terpenes and volatiles profiling by response factor (in French); identifications validated by GC-MS.
Analyst : Sylvain Mercier, M. Sc., Chimiste
Analysis date : November 18, 2020

Checked and approved by :

Alexis St-Gelais, M. Sc., 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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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.

Reference

(1) Cachet, T.; Brevard, H.; Chaintreau, A.; Demyttenaere, J.; French, L.; Gassenmeier, K.; Joulain, D.; Koenig, T.; Leijs, H.; Liddle, P.; et al. IOFI Recommended Practice for the Use of Predicted Relative-Response Factors for the Rapid Quantification of Volatile Flavouring *Compounds by GC-FID. Flavour Fragr. J. 2016, 31 (3), 191–194.*

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PHYSICOCHEMICAL DATA

Physical aspect: Red-orange viscous liquid
Refractive index: 1.5077 ± 0.0003 (20 °C; method PC-MAT-016)

CONCLUSION

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

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ANALYSIS SUMMARY

Identification	(mg/g)	% m/m	Classe
Hexanal	0.63	0.06	Aliphatic aldehyde
2-Heptanol	0.39	0.04	Aliphatic alcohol
α-Thujene	0.16	0.02	Monoterpene
α-Pinene	3.08	0.31	Monoterpene
Camphene	9.19	0.92	Monoterpene
β-Pinene	0.41	0.04	Monoterpene
Sabinene	0.12	0.01	Monoterpene
6-Methyl-5-hepten-2-one	0.58	0.06	Aliphatic ketone
Myrcene	1.76	0.18	Monoterpene
α-Phellandrene	0.65	0.07	Monoterpene
Δ3-Carene	0.36	0.04	Monoterpene
para-Cymene	0.16	0.02	Monoterpene
Limonene	2.46	0.25	Monoterpene
β-Phellandrene	9.60	0.96	Monoterpene
1,8-Cineole	7.22	0.72	Monoterpenic ether
γ-Terpinene	0.15	0.02	Monoterpene
Terpinolene	0.62	0.06	Monoterpene
Unknown	1.04	0.10	Oxygenated monoterpene
Rosefuran	0.70	0.07	Monoterpenic ether
Linalool	1.68	0.17	Monoterpenic alcohol
2-Nonanol	0.36	0.04	Aliphatic alcohol
(*E*)-4,8-Dimethylnona-1,3,7-triene	0.21	0.02	Terpene derivative
Camphor	0.57	0.06	Monoterpenic ketone
Camphene hydrate	1.14	0.11	Monoterpenic alcohol
exo-Isocitral	0.11	0.01	Monoterpenic aldehyde
Citronellal	0.40	0.04	Monoterpenic aldehyde
Borneol	5.10	0.51	Monoterpenic alcohol
Isoneral	0.20	0.02	Monoterpenic aldehyde
Unknown	0.17	0.02	Oxygenated monoterpene
Rosefuran oxide	0.52	0.05	Monoterpenic ether
Terpinen-4-ol	0.73	0.07	Monoterpenic alcohol
para-Cymen-8-ol	0.28	0.03	Monoterpenic alcohol
α-Terpineol	2.93	0.29	Monoterpenic alcohol
Myrtenol	0.28	0.03	Monoterpenic alcohol
Decanal	0.90	0.09	Aliphatic aldehyde
Citronellol	1.55	0.16	Monoterpenic alcohol
Neral	10.72	1.07	Monoterpenic aldehyde
Unknown	0.58	0.06	Oxygenated monoterpene
Geraniol	1.47	0.15	Monoterpenic alcohol
Geranial	17.38	1.74	Monoterpenic aldehyde
Citronellyl formate	0.38	0.04	Monoterpenic ester
Bornyl acetate	0.53	0.05	Monoterpenic ester
2-Undecanone	0.88	0.09	Aliphatic ketone
2-Undecanol	0.29	0.03	Aliphatic alcohol
8-Hydroxy-neo-menthol	0.21	0.02	Monoterpenic alcohol
δ-Elemene	0.35	0.04	Sesquiterpene
Citronellyl acetate	0.32	0.03	Monoterpenic ester
Cyclosativene I	0.75	0.08	Sesquiterpene

Cyclosativene II	0.49	0.05	Sesquiterpene
α-Copaene	1.85	0.19	Sesquiterpene
Geranyl acetate	0.71	0.07	Monoterpenic ester
β-Cubebene	0.30	0.03	Sesquiterpene
β-Elemene	2.57	0.26	Sesquiterpene
Sesquithujene	0.94	0.09	Sesquiterpene
Dodecanal	0.13	0.01	Aliphatic aldehyde
β-Caryophyllene	0.41	0.04	Sesquiterpene
β-Copaene	0.24	0.02	Sesquiterpene
γ-Elemene	0.63	0.06	Sesquiterpene
trans-α-Bergamotene	0.47	0.05	Sesquiterpene
Sesquisabinene A	0.26	0.03	Sesquiterpene
Unknown	0.49	0.05	Sesquiterpene
α-Humulene	0.58	0.06	Sesquiterpene
allo-Aromadendrene	1.65	0.17	Sesquiterpene
Sesquisabinene B	1.10	0.11	Sesquiterpene
(*E*)-β-Farnesene	1.72	0.17	Sesquiterpene
Selina-4,11-diene	0.71	0.07	Sesquiterpene
γ-Muurolene	0.70	0.07	Sesquiterpene
Germacrene D	6.35	0.64	Sesquiterpene
ar-Curcumene	18.36	1.84	Sesquiterpene
β-Selinene	3.54	0.35	Sesquiterpene
Unknown	6.08	0.61	Sesquiterpene
Bicyclosesquiphellandrene?	12.15	1.22	Sesquiterpene
epi-Cubebol	0.25	0.03	Sesquiterpenic alcohol
α-Zingiberene	118.57	11.86	Sesquiterpene
Cubebol	0.74	0.07	Sesquiterpenic alcohol
β-Bisabolene	25.41	2.54	Sesquiterpene
γ-Cadinene	1.52	0.15	Sesquiterpene
(3*E*,6*E*)-α-Farnesene	28.47	2.85	Sesquiterpene
7-epi-α-Selinene	0.24	0.02	Sesquiterpene
trans-Calamenene	0.11	0.01	Sesquiterpene
δ-Cadinene	0.85	0.09	Sesquiterpene
β-Sesquiphellandrene	48.20	4.82	Sesquiterpene
(*E*)-γ-Bisabolene	2.18	0.22	Sesquiterpene
Unknown	0.74	0.07	Oxygenated sesquiterpene
α-Elemol	1.73	0.17	Sesquiterpenic alcohol
Germacrene B	2.02	0.20	Sesquiterpene
cis-Sesquisabinene hydrate	1.01	0.10	Sesquiterpenic alcohol
(*E*)-Nerolidol	2.30	0.23	Sesquiterpenic alcohol
1'-Hydroxyeugenol	1.35	0.14	Phenylpropanoid
ar-Turmerol	0.37	0.04	Sesquiterpenic alcohol
trans-Sesquisabinene hydrate	2.37	0.24	Sesquiterpenic alcohol
Unknown	0.47	0.05	Oxygenated sesquiterpene
cis-Zingiberenol	3.61	0.36	Sesquiterpenic alcohol
Unknown	1.93	0.19	Oxygenated sesquiterpene
γ-Eudesmol	0.85	0.09	Sesquiterpenic alcohol
trans-Zingiberenol	1.67	0.17	Sesquiterpenic alcohol
Zingerone	4.97	0.50	Phenylbutanoid
β-Eudesmol	1.34	0.13	Sesquiterpenic alcohol
(3*E*,5*E*)-7-Hydroxyfarnesene	1.05	0.11	Sesquiterpenic alcohol
Zingerone methyl ether	0.28	0.03	Simple phenolic

α-Bisabolol	1.78	0.18	Sesquiterpenic alcohol
Unknown	3.56	0.36	Oxygenated sesquiterpene
Unknown	3.17	0.32	Oxygenated sesquiterpene
Unknown	1.38	0.14	Oxygenated sesquiterpene
Oplopanone	0.15	0.02	Sesquiterpenic alcohol
Xanthorizzhol?	1.43	0.14	Sesquiterpenic alcohol
Unknown	0.46	0.05	Oxygenated sesquiterpene
Unknown	0.67	0.07	Oxygenated sesquiterpene
Unknown	0.46	0.05	Oxygenated sesquiterpene
Unknown	5.64	0.56	Oxygenated sesquiterpene
Unknown	0.23	0.02	Oxygenated sesquiterpene
Unknown	1.60	0.16	Oxygenated sesquiterpene
Unknown	0.45	0.05	Oxygenated sesquiterpene
Unknown	0.20	0.02	Oxygenated sesquiterpene
Palmitic acid	4.29	0.43	Aliphatic acid
[4]-Shogaol	0.42	0.04	Gingerol derivative
Unknown	2.85	0.29	Gingerol derivative
Unknown	0.77	0.08	Gingerol derivative
Unknown	0.39	0.04	Oxygenated diterpene
Linoleic acid	3.64	0.36	Aliphatic acid
Oleic acid	3.05	0.31	Aliphatic acid
[4]-Gingerol	1.33	0.13	Gingerol derivative
[4]-Isogingerol?	2.10	0.21	Gingerol derivative
[6]-Isoshogaol?	0.20	0.02	Gingerol derivative
[6]-Paradol	2.33	0.23	Gingerol derivative
Methyl [6]-isoshogaol?	0.14	0.01	Gingerol derivative
[6]-Dihydroparadol?	0.37	0.04	Gingerol derivative
[6]-Shogaol	10.42	1.04	Gingerol derivative
Methyl [6]-shogaol	3.74	0.37	Gingerol derivative
Diacetoxy-[4]-gingerdiol	0.70	0.07	Gingerol derivative
Geranyl laurate	0.34	0.03	Monoterpenic ester
[6]-Gingerol	91.16	9.12	Gingerol derivative
[6]-Isogingerol?	1.30	0.13	Gingerol derivative
[8]-Isoshogaol	1.01	0.10	Gingerol derivative
1-(4'-Hydroxy-3'-methoxyphenyl)-7-dodecen-3-one?	0.14	0.01	Gingerol derivative
[8]-Paradol	0.32	0.03	Gingerol derivative
Acetoxy-[6]-gingerol	1.98	0.20	Gingerol derivative
[8]-Shogaol	2.19	0.22	Gingerol derivative
5-Acetoxy-[6]-gingerdiol	0.54	0.05	Gingerol derivative
Diacetoxy-[6]-gingerdiol	5.68	0.57	Gingerol derivative
[8]-Gingerdione	1.90	0.19	Gingerol derivative
1-Dehydro-[6]-gingerdione	1.17	0.12	Gingerol derivative
[10]-Isoshogaol	19.11	1.91	Gingerol derivative
Unknown	0.38	0.04	Gingerol derivative
[10]-Shogaol	3.29	0.33	Gingerol derivative
[10]-Gingerdione	5.01	0.50	Gingerol derivative
1-Dehydro-[8]-gingerdione	1.47	0.15	Gingerol derivative
[12]-Isoshogaol?	1.98	0.20	Gingerol derivative
[12]-Shogaol	0.25	0.03	Gingerol derivative
[6]-Gingerdiol geranial acetal	1.55	0.16	Gingerol derivative
Consolidated total	**606.00 mg/g**	**60.60%**	

Individual compounds contents were corrected following the method of Cachet et al., 2016 (Flavour and Fragrance Journal guidelines).
Unknown compounds are expressed in equivalents of internal standard without correction.

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.

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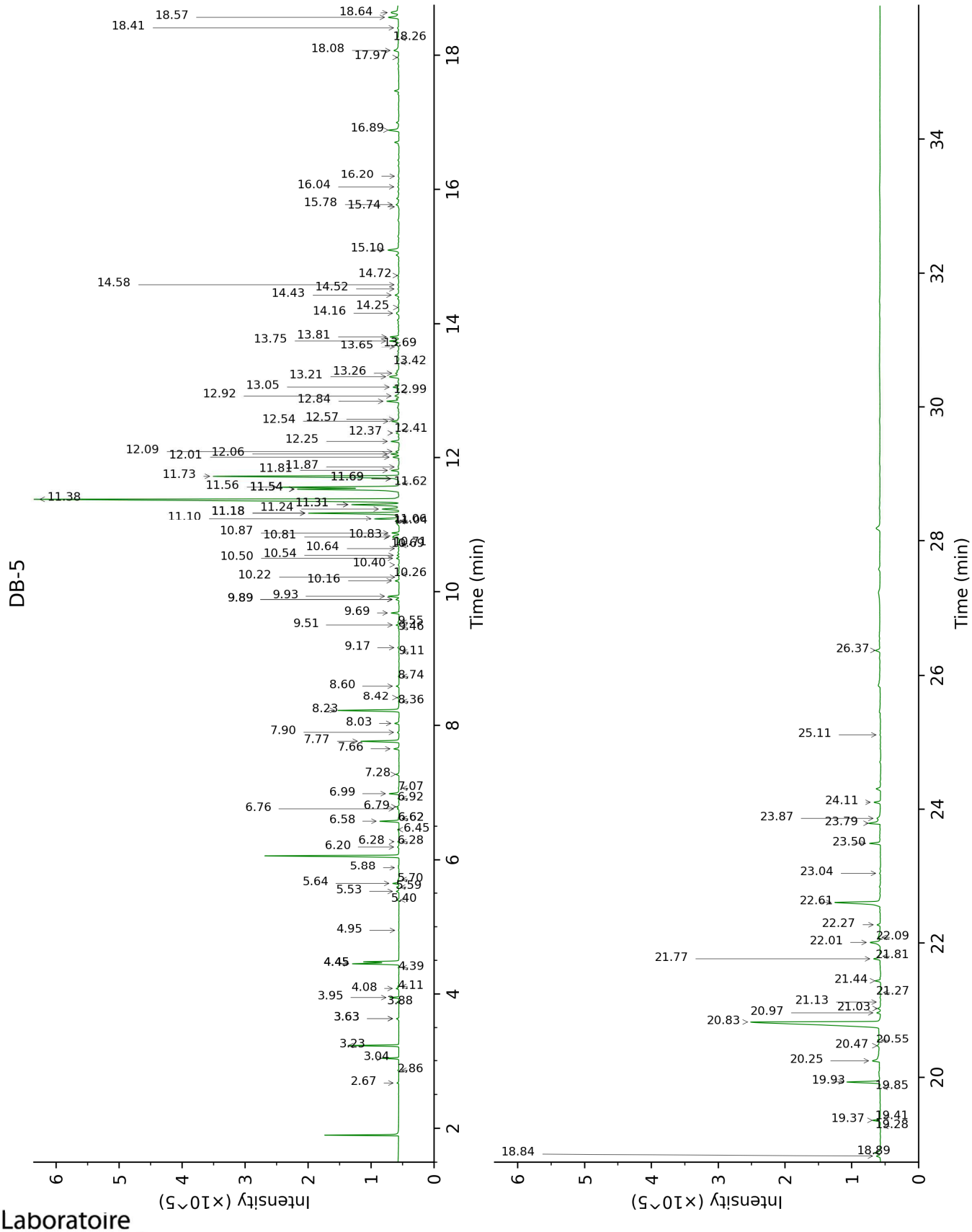
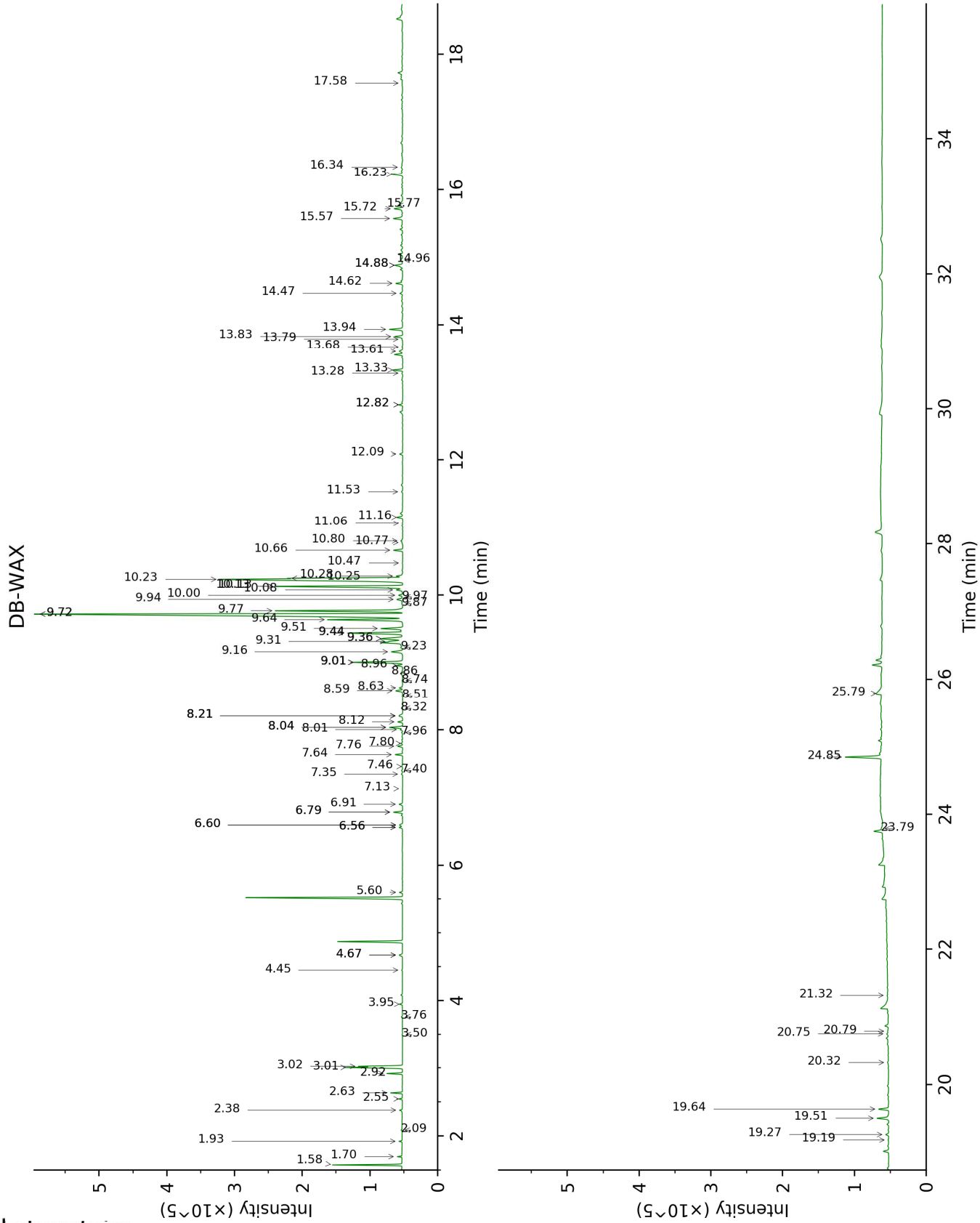

DB-5
Intensity (×10^5)
Time (min)
18.57
18.64
18.41
18.26
18.08
17.97
16.89
16.20
16.04
15.78
15.74
15.10
14.72
14.58
14.52
14.43
14.25
14.16
13.81
13.75
13.65
13.69
13.42
13.26
13.21
13.05
12.99
12.92
12.84
12.57
12.54
12.37
12.41
12.25
12.09
12.06
12.01
11.87
11.81
11.73
11.69
11.62
11.56
11.54
11.38
11.31
11.24
11.18
11.10
10.87
10.83
10.81
10.64
10.54
10.50
10.40
10.26
10.22
10.16
9.93
9.89
9.69
9.55
9.51
9.46
9.17
9.11
8.74
8.60
8.42
8.36
8.23
8.03
7.90
7.77
7.66
7.28
7.07
6.99
6.92
6.79
6.76
6.62
6.58
6.45
6.28
6.20
5.88
5.70
5.64
5.59
5.53
5.40
4.95
4.45
4.39
4.11
4.08
3.95
3.88
3.63
3.23
3.04
2.86
2.67
26.37
25.11
24.11
23.87
23.79
23.50
23.04
22.61
22.27
22.09
22.01
21.81
21.77
21.44
21.27
21.13
21.03
20.97
20.83
20.55
20.47
20.25
19.93
19.85
19.41
19.37
19.28
18.89
18.84


DB-WAX
Intensity (×10^5)
Time (min)
17.58
16.34
16.23
15.72
15.77
15.57
14.88
14.96
14.62
14.47
13.94
13.83
13.79
13.68
13.61
13.28
13.33
12.82
12.09
11.53
11.06
11.16
10.80
10.77
10.66
10.47
10.23
10.28
10.25
10.08
9.94
10.00
9.97
9.87
9.72
9.77
9.64
9.51
9.44
9.36
9.31
9.23
9.16
9.01
8.96
8.86
8.74
8.59
8.63
8.51
8.32
8.21
8.12
8.04
8.01
7.96
7.76
7.80
7.64
7.46
7.40
7.35
7.13
6.91
6.79
6.60
6.56
5.60
4.67
4.45
3.95
3.76
3.50
3.02
3.01
2.92
2.63
2.55
2.38
2.09
1.93
1.70
1.58
25.79
24.85
23.79
21.32
20.75
20.79
20.32
19.64
19.51
19.27
19.19

FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	mg/g	R.T	R.I	mg/g
Hexanal	1.49	809	0.63	1.70	1049	0.65
2-Heptanol	2.67	908	0.39	4.67*	1298	0.86
α-Thujene	2.86	921	0.16	1.43	1021	0.07
α-Pinene	3.04	933	3.08	1.29	1006	2.94
Camphene	3.22	945	9.19	1.58	1036	9.01
β-Pinene	3.64*	973	0.64	1.92	1073	0.41
Sabinene	3.64*	973	[0.64]	2.09	1090	0.12
6-Methyl-5-hepten-2-one	3.88	989	0.58	4.67*	1298	[0.87]
Myrcene	3.95	994	1.76	2.63	1137	1.74
α-Phellandrene	4.08	1003	0.65	2.55	1130	0.52
Δ3-Carene	4.11	1005	0.36	2.38	1117	0.57
para-Cymene	4.39	1022	0.16	3.76	1228	0.24
Limonene	4.45*†	1026	18.54	2.92	1160	2.46
β-Phellandrene	4.45*†	1026	[18.54]	3.01	1168	9.60
1,8-Cineole	4.45*†	1026	[21.06]	3.02	1169	7.22
γ-Terpinene	4.95	1058	0.15	3.50	1208	0.12
Terpinolene	5.40	1086	0.62	3.95	1242	0.62
Unknown [m/z 96, 109 (55), 79 (41), 67 (38), 41 (36)... 150 (3)]	5.53	1094	1.04	8.32	1567	0.47
Rosefuran	5.59	1098	0.70	5.60	1362	0.70
Linalool	5.64	1102	1.68	7.64	1513	1.56
2-Nonanol	5.70	1106	0.36	7.35	1491	0.38
(*E*)-4,8-Dimethylnona-1,3,7-triene	5.88	1117	0.21	4.45	1281	0.21
Camphor	6.20	1138	0.57	6.79*	1450	2.17
Camphene hydrate	6.28*	1143	0.43	8.12	1551	1.14
exo-Isocitral	6.28*	1143	[0.44]	7.14	1475	0.11
Citronellal	6.45	1154	0.40	6.60*†	1435	[1.87]
Borneol	6.58	1162	5.10	9.36*	1650	7.13
Isoneral	6.62*	1165	0.35	7.46	1500	0.20
Unknown [m/z 109, 79 (18), 81 (15), 91 (12), 77 (10)... 152 (3)]	6.62*	1165	[0.40]			
Rosefuran oxide	6.76	1174	0.52	8.21*	1558	1.76
Terpinen-4-ol	6.79	1176	0.73	8.21*	1558	[1.47]
para-Cymen-8-ol	6.92	1184	0.28	11.06	1794	0.13
α-Terpineol	6.99	1189	2.93	9.36*	1650	[7.13]
Myrtenol	7.07	1194	0.28	10.47	1743	0.13
Decanal	7.28	1208	0.90	6.91	1458	0.85
Citronellol	7.66	1234	1.55	10.28	1727	1.59
Neral	7.77	1241	10.72	9.01*	1621	11.73
Unknown [m/z 109, 119 (84), 91 (81), 134 (55)... 137 (27)...]	7.90	1250	0.58	10.80	1771	0.60
Geraniol	8.03	1260	1.47	11.16	1802	1.45
Geranial	8.23	1273	17.38	9.72*	1680	135.17
Citronellyl formate	8.36	1282	0.38	8.51	1582	0.14

Bornyl acetate	8.42	1286	0.53	7.80	1526	0.44
2-Undecanone	8.60	1298	0.88	8.21*	1558	[1.41]
2-Undecanol	8.74	1304	0.29	9.87	1692	0.26
8-Hydroxy-neo-menthol	9.11	1330	0.21	13.68	2036	0.21
δ-Elemene	9.17	1335	0.35	6.56*†	1433	1.62
Citronellyl acetate	9.46	1356	0.32	9.01*	1621	[12.66]
Cyclosativene I	9.51	1358	0.75	6.56*†	1433	[1.62]
Cyclosativene II	9.55	1361	0.49	6.60*†	1435	[1.62]
α-Copaene	9.68	1371	1.85	6.79*	1450	[1.84]
Geranyl acetate	9.89*	1386	1.09	10.13*	1714	35.57
β-Cubebene	9.89*	1386	[0.85]	7.40	1495	0.30
β-Elemene	9.93	1389	2.57	8.04*	1545	2.95
Sesquithujene	10.16	1405	0.94	7.76	1523	1.05
Dodecanal	10.22	1409	0.13	9.64	1673	16.85
β-Caryophyllene	10.26	1412	0.41	8.01	1542	0.48
β-Copaene	10.40	1423	0.24	7.96	1539	0.25
γ-Elemene	10.50	1430	0.63	8.63	1591	0.69
trans-α-Bergamotene	10.54	1434	0.47	8.04*	1545	[2.95]
Sesquisabinene A	10.64	1441	0.26	8.74	1599	0.22
Unknown [m/z 139, 69 (43), 91 (42), 41 (36), 81 (36), 43 (36)... 204 (5)]	10.69	1444	0.49	13.79	2047	0.28
α-Humulene	10.71	1446	0.58	8.86	1609	0.37
allo-Aromadendrene	10.81	1454	1.65	8.59	1588	1.59
Sesquisabinene B	10.83	1455	1.10	8.96	1618	1.22
(*E*)-β-Farnesene	10.87	1458	1.72	9.16	1634	2.93
Selina-4,11-diene	11.04	1471	0.71	9.01*	1621	[9.93]
γ-Muurolene	11.06	1472	0.70	9.23	1639	0.52
Germacrene D	11.10	1475	6.35	9.32	1646	7.14
ar-Curcumene	11.18*	1481	21.68	10.25†	1724	[63.72]
β-Selinene	11.18*	1481	[23.04]	9.44*	1657	12.11
Unknown [m/z 161, 91 (100), 105 (93), 79 (89), 93 (89), 107 (79)... 204 (34)]	11.24	1486	6.08	9.51	1662	6.35
Bicyclosesquiphellandrene?	11.31*	1491	12.38	9.44*	1657	[12.11]
epi-Cubebol	11.31*	1491	[13.50]	11.53	1836	0.25
α-Zingiberene	11.38	1496	118.57	9.72*	1680	[114.46]
Cubebol	11.54*†	1508	61.16	12.09	1886	0.74
β-Bisabolene	11.54*†	1508	[56.08]	9.77	1684	25.41
γ-Cadinene	11.54*†	1508	[56.08]	9.94	1698	1.52
(3*E*,6*E*)-α-Farnesene	11.56†	1510	[56.08]	10.13*	1714	[27.91]
7-epi-α-Selinene	11.62	1515	0.24	9.97	1700	0.13
trans-Calamenene	11.69*	1520	0.76	10.77	1769	0.11
δ-Cadinene	11.69*	1520	[0.81]	10.00	1702	0.85
β-Sesquiphellandrene	11.73	1523	48.20	10.23†	1722	67.71
(*E*)-γ-Bisabolene	11.81	1530	2.18	10.08	1709	1.49
Unknown [m/z 177, 159 (67), 41 (43), 91 (43), 43 (41)... 220 (t)]	11.86	1534	0.74	12.82*	1954	1.01
α-Elemol	12.01	1546	1.73	13.61	2029	1.11
Germacrene B	12.06	1549	2.02	10.66	1760	1.92
cis-Sesquisabinene hydrate	12.09	1552	1.01	12.82*	1954	[0.83]

(*E*)-Nerolidol	12.25	1564	2.30	13.33	2002	2.16
1'-Hydroxyeugenol	12.37	1574	1.35	19.27	2651	1.02
ar-Turmerol	12.41	1577	0.37	14.96	2164	0.76
trans-Sesquisabinene hydrate	12.54	1588	2.37	13.83	2051	2.13
Unknown [m/z 132, 118 (89), 145 (85), 119 (79), 117 (60)...]	12.57	1590	0.47	13.28	1998	0.33
cis-Zingiberenol	12.84	1611	3.61	13.94	2062	3.21
Unknown [m/z 119, 85 (92), 105 (37), 120 (36), 91 (28)... 218 (6)]	12.92	1618	1.93	15.77	2249	1.68
γ-Eudesmol	12.99	1624	0.85	14.47	2114	0.83
trans-Zingiberenol	13.05	1629	1.67	14.62	2130	1.63
Zingerone	13.21	1642	4.97	19.64	2698	3.09
β-Eudesmol	13.26	1646	1.34	14.88*	2157	2.25
(3*E*,5*E*)-7-Hydroxyfarnesene	13.42	1659	1.05	15.72	2244	2.15
Zingerone methyl ether	13.65	1679	0.28			
α-Bisabolol	13.69	1682	1.78	14.88*	2157	[2.25]
Unknown [m/z 137, 119 (70), 84 (69), 41 (68), 69 (53), 55 (45), 109 (38)... 222 (2)]	13.75	1686	3.56	15.57	2228	3.13
Unknown [m/z 69, 41 (59), 118 (33), 43 (32), 55 (31)... 234? (t)]	13.81	1692	3.17	16.23	2299	3.55
Unknown [m/z 119, 91 (31), 105 (29), 41 (25), 133 (23), 158 (21)...]	14.16	1722	1.38	16.34	2310	0.81
Oplopanone	14.25	1729	0.15	17.58	2450	0.15
Xanthorizzhol?	14.43	1745	1.43			
Unknown [m/z 82, 43 (85), 91 (67), 93 (66), 41 (66), 69 (59), 106 (47)... 218 (5)...]	14.52	1753	0.46			
Unknown [m/z 43, 82 (100), 41 (86), 69 (76), 93 (72), 91 (72)... 218 (4)...]	14.58	1758	0.67			
Unknown [m/z 79, 41 (77), 135 (75), 69 (74), 43 (70)... 220 (9)]	14.72	1770	0.46			
Unknown [m/z 69, 43 (95), 41 (84), 109 (78), 95 (54), 93 (49)... 177 (36), 220 (2)...]	15.10	1803	5.64	19.51	2681	3.93
Unknown [m/z 109, 69 (58), 43 (56), 41 (42), 135 (37), 55 (27)... 220 (5)]	15.74	1862	0.23	20.79	2846	0.39
Unknown [m/z 137, 218 (84), 119 (72), 69 (64), 175 (61), 41 (60), 93 (58)]	15.78	1865	1.60	20.32	2785	0.55
Unknown [m/z 125, 41 (88), 109 (76), 69 (76), 151 (68), 55 (45), 95 (36)... 236 (21)]	16.04	1889	0.45	20.76	2841	0.56

Unknown [m/z 125, 41 (86), 151 (78), 109 (67), 69 (63)... 236 (22)]	16.20	1903	0.20	21.32	2917	0.14
Palmitic acid	16.89	1970	4.29			
[4]-Shogaol	17.97	2076	0.42			
Unknown [m/z 135, 150 (34), 77 (13), 163 (11)... 262 (2)]	18.08	2086	2.85			
Unknown [m/z 137, 203 (15), 138 (11), 105 (11), 41 (9)... 274 (7), 286? (1)]	18.26	2104	0.77			
Unknown [m/z 69, 41 (44), 121 (37), 107 (36), 81 (33)... 272 (2)]	18.41	2120	0.39			
Linoleic acid	18.57	2136	3.64			
Oleic acid	18.64	2144	3.05			
[4]-Gingerol	18.84	2164	1.33			
[4]-Isogingerol?	18.89	2169	2.10			
[6]-Isoshogaol?	19.28	2210	0.20	23.79	3270	0.18
[6]-Paradol	19.37	2220	2.33			
Methyl [6]-isoshogaol?	19.41	2224	0.14			
[6]-Dihydroparadol?	19.85	2272	0.37			
[6]-Shogaol	19.93	2281	10.42	24.85	3432	10.47
Methyl [6]-shogaol	20.24	2315	3.74			
Diacetoxy-[4]-gingerdiol	20.47	2340	0.70			
Geranyl laurate	20.55	2349	0.34	19.19	2641	0.23
[6]-Gingerol	20.83	2381	91.16			
[6]-Isogingerol?	20.97	2396	1.30			
[8]-Isoshogaol	21.03	2403	1.01			
1-(4'-Hydroxy-3'-methoxyphenyl)-7-dodecen-3-one?	21.13	2414	0.14			
[8]-Paradol	21.27	2431	0.32			
Acetoxy-[6]-gingerol	21.44	2451	1.98			
[8]-Shogaol	21.77	2489	2.19	25.79	3585	2.99
5-Acetoxy-[6]-gingerdiol	21.81	2494	0.54			
Diacetoxy-[6]-gingerdiol	22.01	2518	5.68			
[8]-Gingerdione	22.09	2528	1.90			
1-Dehydro-[6]-gingerdione	22.28	2550	1.17			
[10]-Isoshogaol	22.61	2590	19.11			
Unknown [m/z 137, 109 (24), 207 (24), 43 (24)... 344 (14)]	23.04	2644	0.38			
[10]-Shogaol	23.50	2701	3.29			
[10]-Gingerdione	23.79	2740	5.01			
1-Dehydro-[8]-gingerdione	23.87	2749	1.47			
[12]-Isoshogaol?	24.11	2781	1.98			
[12]-Shogaol	25.11	2914	0.25			
[6]-Gingerdiol geranial acetal	26.37	3088	1.55			

*: Two or more compounds are coeluting on this column
[xx]: Duplicate percentage due to coelutions, not taken into account in the consolidated total

†: Peaks apexes were resolved, but peaks overlapped and were summed for analysis

Individual compounds contents were corrected following the method of Cachet et al., 2016 (Flavour and Fragrance Journal guidelines).

Unknown compounds are expressed in equivalents of internal standard without correction.

R.T.: Retention time (minutes)

R.I.: Retention index

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