Date : October 08, 2021

Certificate of Analysis – GC Profiling

Sample identification

Internal code : 21I08-PTH03
Customer identification : Ginger CO2 - G40112208R
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 2014-005
Analysis date : September 09, 2021

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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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

This report is an update of the version first issued on September 20, 2021 to correct a mistake in the lot number.

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.*

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

PHYSICOCHEMICAL DATA

Physical aspect: Orange brownish viscous liquid
Refractive index: 1.5089 ± 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	4.71	0.47	Aliphatic aldehyde
2-Heptanol	0.33	0.03	Aliphatic alcohol
Tricyclene	0.14	0.01	Monoterpene
α-Pinene	2.44	0.24	Monoterpene
Camphene	7.37	0.74	Monoterpene
Sabinene	0.21	0.02	Monoterpene
β-Pinene	0.41	0.04	Monoterpene
6-Methyl-5-hepten-2-one	0.52	0.05	Aliphatic ketone
Myrcene	1.46	0.15	Monoterpene
α-Phellandrene	0.44	0.04	Monoterpene
Octanal	1.62	0.16	Aliphatic aldehyde
para-Cymene	0.14	0.01	Monoterpene
β-Phellandrene	8.37	0.84	Monoterpene
Limonene	2.13	0.21	Monoterpene
1,8-Cineole	6.09	0.61	Monoterpenic ether
γ-Terpinene	0.12	0.01	Monoterpene
Terpinolene	0.48	0.05	Monoterpene
Unknown	0.93	0.09	Oxygenated monoterpene
Rosefuran	0.76	0.08	Monoterpenic ether
Linalool	1.34	0.13	Monoterpenic alcohol
2-Nonanol	0.30	0.03	Aliphatic alcohol
(*E*)-4,8-Dimethylnona-1,3,7-triene	0.16	0.02	Terpene derivative
Camphor	0.42	0.04	Monoterpenic ketone
Camphene hydrate	0.31	0.03	Monoterpenic alcohol
Citronellal	0.36	0.04	Monoterpenic aldehyde
Borneol	4.44	0.44	Monoterpenic alcohol
Isoneral	0.31	0.03	Monoterpenic aldehyde
Rosefuran oxide	1.44	0.14	Monoterpenic ether
Terpinen-4-ol	[1.20]	[0.12]	Monoterpenic alcohol
Cryptone	0.14	0.01	Normonoterpenic ketone
para-Cymen-8-ol	0.24	0.02	Monoterpenic alcohol
α-Terpineol	2.49	0.25	Monoterpenic alcohol
Decanal	4.13	0.41	Aliphatic aldehyde
Citronellol	1.65	0.17	Monoterpenic alcohol
Neral	6.86	0.69	Monoterpenic aldehyde
Unknown	0.50	0.05	Oxygenated monoterpene
Geraniol	3.13	0.31	Monoterpenic alcohol
Geranial	10.99	1.10	Monoterpenic aldehyde
Bornyl acetate	0.74	0.07	Monoterpenic ester
2-Undecanone	0.97	0.10	Aliphatic ketone
2-Undecanol	0.29	0.03	Aliphatic alcohol
δ-Elemene	0.26	0.03	Sesquiterpene
Citronellyl acetate	0.59	0.06	Monoterpenic ester
Cyclosativene I	0.84	0.08	Sesquiterpene
Cyclosativene II	0.24	0.02	Sesquiterpene
α-Copaene	1.60	0.16	Sesquiterpene
β-Cubebene	0.13	0.01	Sesquiterpene
Geranyl acetate	2.80	0.28	Monoterpenic ester

β-Elemene	2.29	0.23	Sesquiterpene
Sesquithujene	0.79	0.08	Sesquiterpene
Dodecanal	0.34	0.03	Aliphatic aldehyde
β-Caryophyllene	0.35	0.04	Sesquiterpene
β-Copaene	0.26	0.03	Sesquiterpene
γ-Elemene	0.64	0.06	Sesquiterpene
trans-α-Bergamotene	1.05	0.11	Sesquiterpene
Sesquisabinene A	0.19	0.02	Sesquiterpene
Unknown	0.77	0.08	Sesquiterpene
α-Humulene	0.23	0.02	Sesquiterpene
Sesquisabinene B	1.20	0.12	Sesquiterpene
allo-Aromadendrene	1.04	0.10	Sesquiterpene
(*E*)-β-Farnesene	1.44	0.14	Sesquiterpene
Selina-4,11-diene	0.60	0.06	Sesquiterpene
γ-Muurolene	0.57	0.06	Sesquiterpene
Germacrene D	5.15	0.52	Sesquiterpene
β-Selinene	0.09	0.01	Sesquiterpene
ar-Curcumene	19.41	1.94	Sesquiterpene
Unknown	5.28	0.53	Sesquiterpene
Bicyclosesquiphellandrene?	9.97	1.00	Sesquiterpene
epi-Cubebol	0.38	0.04	Sesquiterpenic alcohol
α-Zingiberene	100.82	10.08	Sesquiterpene
(3*E*,6*E*)-α-Farnesene	29.91	2.99	Sesquiterpene
β-Bisabolene	16.91	1.69	Sesquiterpene
γ-Cadinene	0.54	0.05	Sesquiterpene
7-epi-α-Selinene	0.22	0.02	Sesquiterpene
β-Sesquiphellandrene	38.75	3.88	Sesquiterpene
δ-Cadinene	3.70	0.37	Sesquiterpene
trans-Calamenene	0.14	0.01	Sesquiterpene
Unknown	tr	tr	Oxygenated sesquiterpene
(*E*)-γ-Bisabolene	1.75	0.18	Sesquiterpene
α-Elemol	1.97	0.20	Sesquiterpenic alcohol
Germacrene B	1.63	0.16	Sesquiterpene
cis-Sesquisabinene hydrate	0.92	0.09	Sesquiterpenic alcohol
(*E*)-Nerolidol	2.12	0.21	Sesquiterpenic alcohol
1'-Hydroxyeugenol	0.27	0.03	Phenylpropanoid
ar-Turmerol	1.10	0.11	Sesquiterpenic alcohol
trans-Sesquisabinene hydrate	2.38	0.24	Sesquiterpenic alcohol
Unknown	0.49	0.05	Oxygenated sesquiterpene
cis-Zingiberenol	3.65	0.37	Sesquiterpenic alcohol
Unknown	1.97	0.20	Oxygenated sesquiterpene
γ-Eudesmol	0.68	0.07	Sesquiterpenic alcohol
trans-Zingiberenol	1.77	0.18	Sesquiterpenic alcohol
β-Eudesmol	2.42	0.24	Sesquiterpenic alcohol
Zingerone	15.77	1.58	Phenylbutanoid
α-Eudesmol	1.46	0.15	Sesquiterpenic alcohol
(3*E*,5*E*)-7-Hydroxyfarnesene	1.07	0.11	Sesquiterpenic alcohol
Zingerone methyl ether	0.98	0.10	Simple phenolic
α-Bisabolol	0.17	0.02	Sesquiterpenic alcohol
Unknown	3.96	0.40	Oxygenated sesquiterpene
Unknown	3.99	0.40	Oxygenated sesquiterpene
Unknown	1.47	0.15	Oxygenated sesquiterpene

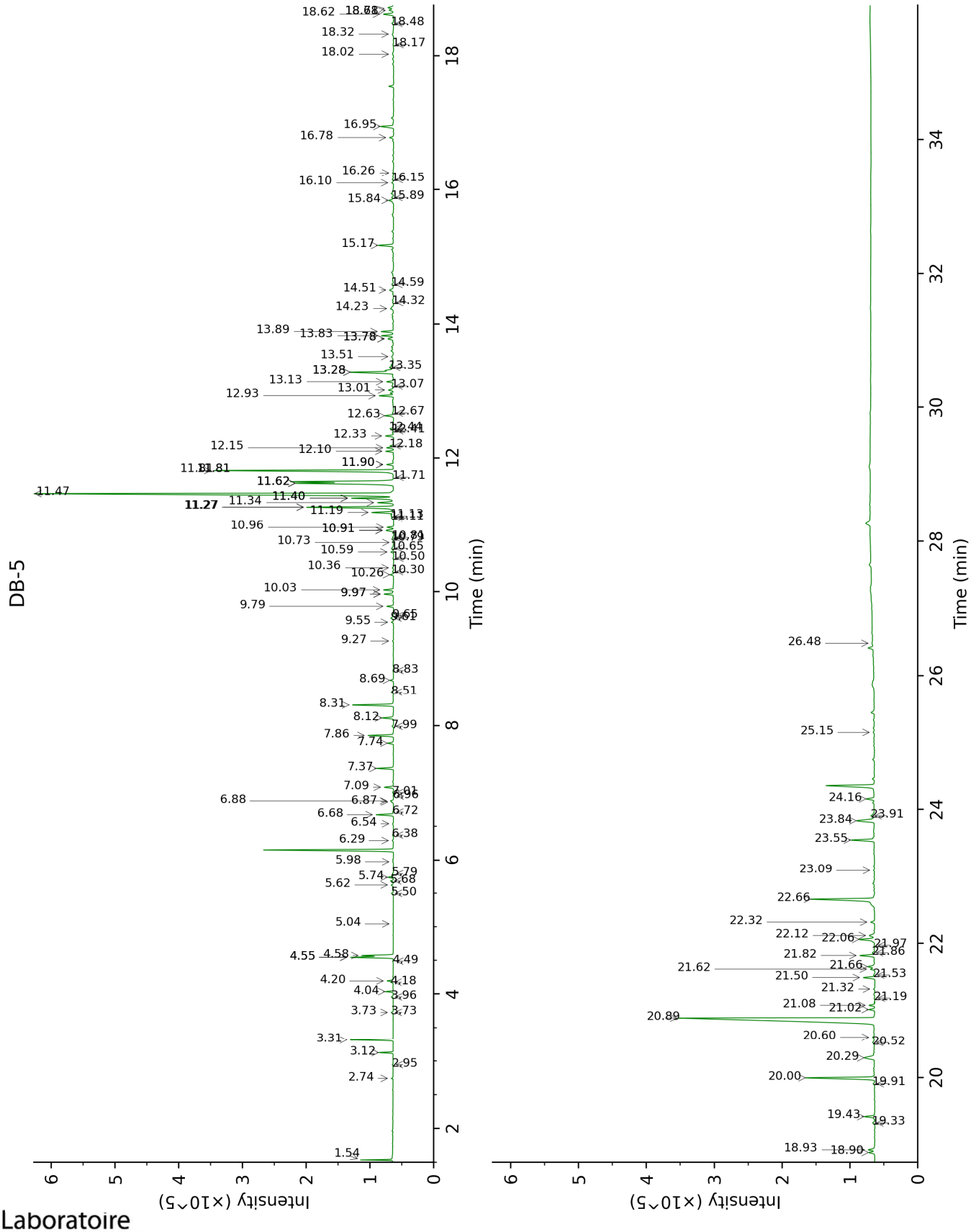
Oplopanone	0.30	0.03	Sesquiterpenic alcohol
Xanthorizzhol?	1.50	0.15	Sesquiterpenic alcohol
Unknown	0.75	0.08	Oxygenated sesquiterpene
Unknown	5.61	0.56	Oxygenated sesquiterpene
Unknown	1.94	0.19	Oxygenated sesquiterpene
Unknown	0.93	0.09	Oxygenated sesquiterpene
Unknown	0.77	0.08	Oxygenated sesquiterpene
Unknown	0.56	0.06	Unknown
Unknown	0.37	0.04	Oxygenated sesquiterpene
Geranyl-para-cymene	1.15	0.12	Diterpene
Palmitic acid	4.66	0.47	Aliphatic acid
[4]-Shogaol	0.70	0.07	Gingerol derivative
Unknown	0.23	0.02	Gingerol derivative
Unknown	0.76	0.08	Gingerol derivative
Unknown	0.57	0.06	Oxygenated diterpene
Linoleic acid	3.23	0.32	Aliphatic acid
Oleic acid	1.51	0.15	Aliphatic acid
cis-Vaccenic acid?	2.11	0.21	Aliphatic acid
[4]-Gingerol	2.46	0.25	Gingerol derivative
[4]-Isogingerol?	2.86	0.29	Gingerol derivative
[6]-Isoshogaol?	0.94	0.09	Gingerol derivative
[6]-Paradol	3.19	0.32	Gingerol derivative
[6]-Dihydroparadol?	0.47	0.05	Gingerol derivative
[6]-Shogaol	22.34	2.23	Gingerol derivative
Methyl [6]-shogaol	5.13	0.51	Gingerol derivative
Diacetoxy-[4]-gingerdiol	0.73	0.07	Gingerol derivative
Geranyl laurate	0.50	0.05	Monoterpenic ester
[6]-Gingerol	128.10	12.81	Gingerol derivative
[6]-Isogingerol?	1.97	0.20	Gingerol derivative
[8]-Isoshogaol	1.73	0.17	Gingerol derivative
1-(4'-Hydroxy-3'-methoxyphenyl)-7-dodecen-3-one?	0.29	0.03	Gingerol derivative
[8]-Paradol	0.38	0.04	Gingerol derivative
Acetoxy-[6]-gingerol	3.91	0.39	Gingerol derivative
Unknown	0.44	0.04	Gingerol derivative
[6]-Gingerdiol isomer I	1.57	0.16	Gingerol derivative
[6]-Gingerdiol isomer II	2.89	0.29	Gingerol derivative
[8]-Shogaol	4.74	0.47	Gingerol derivative
5-Acetoxy-[6]-gingerdiol	0.92	0.09	Gingerol derivative
Methyl 5-acetoxy-[6]-gingerdiol	0.17	0.02	Gingerol derivative
Diacetoxy-[6]-gingerdiol	6.24	0.62	Gingerol derivative
[8]-Gingerdione	2.66	0.27	Gingerol derivative
1-Dehydro-[6]-gingerdione	1.32	0.13	Gingerol derivative
[10]-Isoshogaol	25.34	2.53	Gingerol derivative
Unknown	0.30	0.03	Gingerol derivative
[10]-Shogaol	6.79	0.68	Gingerol derivative
[10]-Gingerdione	7.71	0.77	Gingerol derivative
1-Dehydro-[8]-gingerdione	1.46	0.15	Gingerol derivative
[12]-Isoshogaol?	2.27	0.23	Gingerol derivative
[12]-Shogaol	0.39	0.04	Gingerol derivative
[6]-Gingerdiol geranial acetal	0.39	0.04	Gingerol derivative
Consolidated total	**649.61 mg/g**	**64.96%**	

*: Individual compounds concentration could not be found due to overlapping coelutions on columns considered
[xx]: Duplicate percentage due to coelutions, not taken into account in the consolidated total

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.


DB-5
Intensity (×10^5)
Time (min)
18.62
18.48
18.32
18.17
18.02
16.95
16.78
16.26
16.15
16.10
15.89
15.84
15.17
14.59
14.51
14.32
14.23
13.89
13.83
13.78
13.51
13.35
13.28
13.13
13.07
13.01
12.93
12.67
12.63
12.33
12.18
12.15
12.10
11.90
11.71
11.62
11.47
11.40
11.34
11.27
11.19
10.96
10.91
10.73
10.65
10.59
10.50
10.36
10.30
10.26
10.03
9.97
9.79
9.65
9.55
9.27
8.83
8.69
8.51
8.31
8.12
7.99
7.86
7.74
7.37
7.09
7.01
6.96
6.88
6.87
6.72
6.68
6.54
6.38
6.29
5.98
5.79
5.74
5.68
5.62
5.50
5.04
4.58
4.55
4.49
4.20
4.18
4.04
3.96
3.73
3.31
3.12
2.95
2.74
1.54
26.48
25.15
24.16
23.91
23.84
23.55
23.09
22.66
22.32
22.12
22.06
21.97
21.86
21.82
21.66
21.62
21.53
21.50
21.32
21.19
21.08
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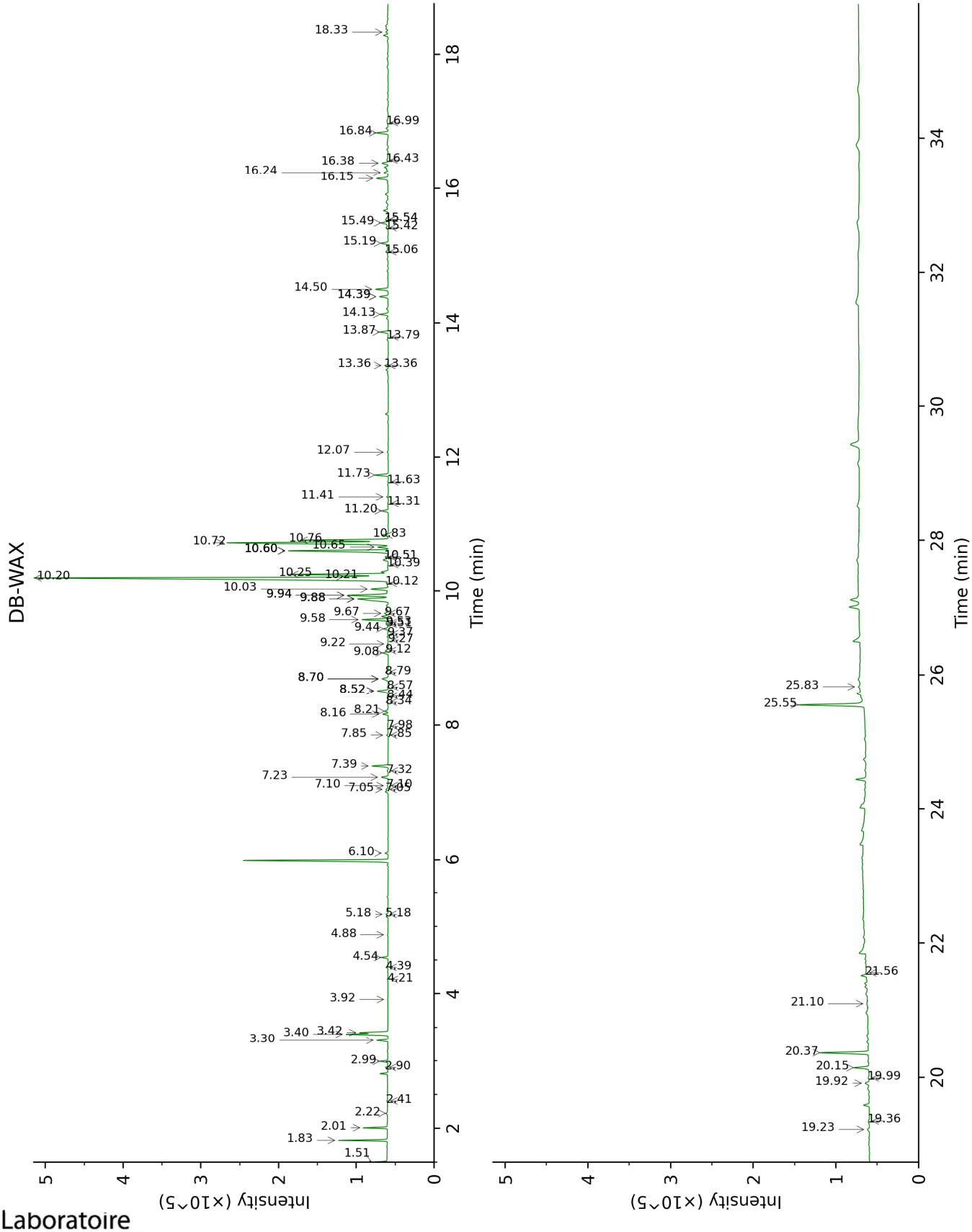
20.52
20.29
20.00
19.91
19.43
19.33
18.93
18.90


DB-WAX
Intensity (×10^5)
Time (min)
18.33
16.99
16.84
16.43
16.38
16.24
16.15
15.54
15.49
15.42
15.19
15.06
14.50
14.39
14.13
13.87
13.79
13.36
13.36
12.07
11.73
11.63
11.41
11.31
11.20
10.83
10.76
10.72
10.65
10.60
10.51
10.39
10.25
10.21
10.20
10.12
10.03
9.94
9.88
9.67
9.58
9.44
9.27
9.22
9.12
9.08
8.79
8.70
8.57
8.52
8.34
8.21
8.16
7.98
7.85
7.39
7.32
7.23
7.10
7.05
6.10
5.18
5.18
4.88
4.54
4.39
4.21
3.92
3.42
3.40
3.30
2.99
2.90
2.41
2.22
2.01
1.83
1.51
25.83
25.55
21.56
21.10
20.37
20.15
19.99
19.92
19.36
19.23

FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	mg/g	R.T	R.I	mg/g
Hexanal	1.54	808	4.71	2.01	1049	4.79
2-Heptanol	2.74	907	0.33	5.18*	1296	0.57
Tricyclene	2.95	921	0.14	1.39	986	0.18
α-Pinene	3.12	932	2.44	1.51	1000	2.49
Camphene	3.32	945	7.37	1.83	1031	7.32
Sabinene	3.73*	973	0.51	2.41	1088	0.21
β-Pinene	3.73*	973	[0.51]	2.22	1070	0.41
6-Methyl-5-hepten-2-one	3.96	988	0.52	5.18*	1296	[0.58]
Myrcene	4.04	994	1.46	2.99	1134	1.46
α-Phellandrene	4.18	1003	0.44	2.90	1127	0.48
Octanal	4.20	1004	1.62	4.54	1250	1.55
para-Cymene	4.49	1023	0.14	4.21	1226	0.17
β-Phellandrene	4.55*†	1026	15.80	3.40	1166	8.37
Limonene	4.55*†	1026	[15.80]	3.30	1158	2.13
1,8-Cineole	4.58†	1028	[17.95]	3.42	1168	6.09
γ-Terpinene	5.04	1058	0.12	3.92	1205	0.11
Terpinolene	5.50	1087	0.48	4.39	1239	0.40
Unknown [m/z 96, 109 (55), 79 (41), 67 (38), 41 (36)... 150 (3)]	5.62	1095	0.93	8.79	1563	0.96
Rosefuran	5.68	1099	0.76	6.10	1362	0.76
Linalool	5.74	1102	1.34	8.16	1515	1.28
2-Nonanol	5.79	1106	0.30	7.85*	1491	0.45
(*E*)-4,8-Dimethylnona-1,3,7-triene	5.98	1118	0.16	4.88	1274	0.16
Camphor	6.29	1138	0.42	7.32	1451	0.27
Camphene hydrate	6.38	1144	0.31	8.58	1546	0.24
Citronellal	6.54	1154	0.36	7.10*	1435	0.31
Borneol	6.68	1163	4.44	9.88*	1650	12.58
Isoneral	6.72	1166	0.31	7.98	1501	0.20
Rosefuran oxide	6.87†	1176	1.44	8.70*	1556	2.70
Terpinen-4-ol	6.88†	1177	[1.20]	8.70*	1556	[2.24]
Cryptone	6.96	1181	0.14	9.27	1601	0.16
para-Cymen-8-ol	7.01	1185	0.24	11.63	1796	0.17
α-Terpineol	7.09	1190	2.49	9.88*	1650	[12.58]
Decanal	7.37	1208	4.13	7.39	1457	3.88
Citronellol	7.74	1234	1.65	10.83	1728	1.92
Neral	7.86	1242	6.86	9.58	1626	6.80
Unknown [m/z 109, 119 (84), 91 (81), 134 (55)... 137 (27)...]	7.99	1251	0.50	11.41	1777	0.53
Geraniol	8.12	1260	3.13	11.73	1805	3.46
Geranial	8.31	1273	10.99	10.21†	1677	[150.02]
Bornyl acetate	8.51	1286	0.74	8.34	1529	0.61
2-Undecanone	8.69	1299	0.97	8.70*	1556	[2.16]
2-Undecanol	8.83	1304	0.29	10.39	1691	0.12
δ-Elemene	9.27	1335	0.26	7.05*	1431	0.59
Citronellyl acetate	9.55	1355	0.59	9.53	1622	0.63

Cyclosativene I	9.61	1360	0.84	7.05*	1431	[0.59]
Cyclosativene II	9.65	1362	0.24	7.10*	1435	[0.27]
α-Copaene	9.79	1372	1.60	7.23	1444	1.51
β-Cubebene	9.97*	1385	2.33	7.85*	1491	[0.40]
Geranyl acetate	9.97*	1385	[2.97]	10.65†	1713	[32.78]
β-Elemene	10.03	1390	2.29	8.52*	1542	2.91
Sesquithujene	10.26	1406	0.79	8.21	1518	0.95
Dodecanal	10.30	1409	0.34	10.12	1669	0.63
β-Caryophyllene	10.36	1413	0.35	8.52*	1542	[2.91]
β-Copaene	10.50	1424	0.26	8.44	1536	0.19
γ-Elemene	10.59	1431	0.64	9.12†	1588	[2.00]
trans-α-Bergamotene	10.65	1435	1.05	8.52*	1542	[2.91]
Sesquisabinene A	10.73	1442	0.19	9.22	1596	0.20
Unknown [m/z 139, 69 (43), 91 (42), 41 (36), 81 (36), 43 (36)... 204 (5)]	10.79	1446	0.77	14.39*	2048	3.03
α-Humulene	10.81	1448	0.23	9.37	1609	0.24
Sesquisabinene B	10.92*	1455	2.24	9.44	1614	1.20
allo-Aromadendrene	10.92*	1455	[2.24]	9.08†	1586	2.00
(*E*)-β-Farnesene	10.96	1459	1.44	9.67*	1633	1.05
Selina-4,11-diene	11.10	1469	0.60	9.51	1620	0.53
γ-Muurolene	11.13	1472	0.57	9.67*	1633	[1.05]
Germacrene D	11.19	1476	5.15	9.88*	1650	[10.88]
β-Selinene	11.27*	1482	20.71	9.94*	1655	10.05
ar-Curcumene	11.27*	1482	[19.49]	10.76†	1722	[55.87]
Unknown [m/z 161, 91 (100), 105 (93), 79 (89), 93 (89), 107 (79)... 204 (34)]	11.34	1487	5.28	10.03	1662	5.56
Bicyclosesquiphellandrene?	11.40*	1492	10.31	9.94*	1655	[10.05]
epi-Cubebol	11.40*	1492	[11.25]	12.07	1835	0.38
α-Zingiberene	11.47	1497	100.82	10.20†	1675	127.03
(3*E*,6*E*)-α-Farnesene	11.62*†	1509	47.36	10.60*†	1709	25.72
β-Bisabolene	11.62*†	1509	[47.36]	10.25†	1680	[127.03]
γ-Cadinene	11.62*†	1509	[47.36]	10.51*	1701	0.75
7-epi-α-Selinene	11.72	1516	0.22	10.51*	1701	[0.75]
β-Sesquiphellandrene	11.82*	1524	42.60	10.72†	1719	59.37
δ-Cadinene	11.82*	1524	[42.60]	10.60*†	1709	[25.72]
trans-Calamenene	11.82*	1524	[40.10]	11.31	1769	0.14
Unknown [m/z 177, 159 (67), 41 (43), 91 (43), 43 (41)... 220 (t)]	11.90*	1531	2.29	13.36*	1951	1.09
(*E*)-γ-Bisabolene	11.90*	1531	[1.72]	10.60*†	1709	[25.72]
α-Elemol	12.10	1546	1.97	14.13	2023	2.16
Germacrene B	12.15	1550	1.63	11.20	1760	1.60
cis-Sesquisabinene hydrate	12.18	1553	0.92	13.36*	1951	[0.89]
(*E*)-Nerolidol	12.33	1564	2.12	13.87	1998	2.26
1'-Hydroxyeugenol	12.41	1570	0.27	19.99	2646	0.41
ar-Turmerol	12.44	1573	1.10	15.54*	2160	1.27
trans-Sesquisabinene hydrate	12.63	1588	2.38	14.39*	2048	[2.49]

Unknown [m/z 132, 118 (89), 145 (85), 119 (79), 117 (60)...]	12.67	1591	0.49	13.79	1991	0.29
cis-Zingiberenol	12.93	1612	3.65	14.50	2058	3.36
Unknown [m/z 119, 85 (92), 105 (37), 120 (36), 91 (28)... 218 (6)]	13.01	1619	1.97	16.38	2246	2.06
γ-Eudesmol	13.07	1624	0.68	15.06	2112	0.70
trans-Zingiberenol	13.14	1629	1.77	15.19	2125	1.94
β-Eudesmol	13.28*†	1641	14.19	15.49	2155	2.42
Zingerone	13.28*†	1641	[18.02]	20.37	2691	15.77
α-Eudesmol	13.35	1647	1.46	15.42	2148	0.70
(3*E*,5*E*)-7-Hydroxyfarnesene	13.51	1660	1.07	16.43	2251	0.67
Zingerone methyl ether	13.78*	1683	2.30	19.23	2557	0.98
α-Bisabolol	13.78*	1683	[1.87]	15.54*	2160	[1.33]
Unknown [m/z 137, 119 (70), 84 (69), 41 (68), 69 (53), 55 (45), 109 (38)... 222 (2)]	13.83	1687	3.96	16.15	2222	4.03
Unknown [m/z 69, 41 (59), 118 (33), 43 (32), 55 (31)... 234? (t)]	13.89	1692	3.99	16.84	2293	3.77
Unknown [m/z 119, 91 (31), 105 (29), 41 (25), 133 (23), 158 (21)...]	14.23	1721	1.47	16.99	2309	0.39
Oplopanone	14.32	1729	0.30	18.33	2455	0.74
Xanthorizzhol?	14.51	1745	1.50			
Unknown [m/z 105, 148 (87), 91 (83), 135 (78), 131 (76)... 218 (21)...]	14.59	1753	0.75	19.36	2572	0.47
Unknown [m/z 69, 43 (95), 41 (84), 109 (78), 95 (54), 93 (49)... 177 (36), 220 (2)...]	15.17	1803	5.61	20.15	2664	4.93
Unknown [m/z 109, 69 (58), 43 (56), 41 (42), 135 (37), 55 (27)... 220 (5)]	15.84	1864	1.94			
Unknown [m/z 137, 218 (84), 119 (72), 69 (64), 175 (61), 41 (60), 93 (58)]	15.89	1868	0.93	21.10	2781	0.51
Unknown [m/z 125, 41 (88), 109 (76), 69 (76), 151 (68), 55 (45), 95 (36)... 236 (21)]	16.10	1888	0.77			
Unknown [m/z 43, 109 (89), 69 (71), 41 (63), 94 (53), 79 (47), 93 (44)...]	16.15	1893	0.56	21.56	2838	0.36
Unknown [m/z 125, 41 (86), 151 (78), 109 (67), 69 (63)... 236 (22)]	16.26	1902	0.37			
Geranyl-para-cymene	16.78	1952	1.15	16.24	2232	1.05
Palmitic acid	16.95	1968	4.66			
[4]-Shogaol	18.02	2073	0.70			

Unknown [m/z 135, 150 (34), 77 (13), 163 (11)... 262 (2)]	18.17	2088	0.23			
Unknown [m/z 137, 203 (15), 138 (11), 105 (11), 41 (9)... 274 (7), 286? (1)]	18.32	2103	0.76			
Unknown [m/z 69, 41 (44), 121 (37), 107 (36), 81 (33)... 272 (2)]	18.48	2120	0.57			
Linoleic acid	18.62	2134	3.23			
Oleic acid	18.68	2140	1.51			
cis-Vaccenic acid?	18.72	2144	2.11			
[4]-Gingerol	18.90	2163	2.46			
[4]-Isogingerol?	18.94	2167	2.86			
[6]-Isoshogaol?	19.33	2208	0.94			
[6]-Paradol	19.43	2218	3.19			
[6]-Dihydroparadol?	19.91	2271	0.47	25.83	3423	0.51
[6]-Shogaol	20.00	2280	22.34	25.55	3383	20.43
Methyl [6]-shogaol	20.29	2312	5.13			
Diacetoxy-[4]-gingerdiol	20.52	2338	0.73			
Geranyl laurate	20.60	2347	0.50	19.92	2638	1.40
[6]-Gingerol	20.89	2379	128.10			
[6]-Isogingerol?	21.02	2393	1.97			
[8]-Isoshogaol	21.08	2400	1.73			
1-(4'-Hydroxy-3'-methoxyphenyl)-7-dodecen-3-one?	21.19	2413	0.29			
[8]-Paradol	21.32	2429	0.38			
Acetoxy-[6]-gingerol	21.50	2449	3.91			
Unknown [m/z 137, 316 (31), 109 (24), 179 (21), 150 (20)]	21.53	2453	0.44			
[6]-Gingerdiol isomer I	21.62	2463	1.57			
[6]-Gingerdiol isomer II	21.66	2468	2.89			
[8]-Shogaol	21.82	2487	4.74			
5-Acetoxy-[6]-gingerdiol	21.86	2492	0.92			
Methyl 5-acetoxy-[6]-gingerdiol	21.97	2504	0.17			
Diacetoxy-[6]-gingerdiol	22.06	2515	6.24			
[8]-Gingerdione	22.12	2522	2.66			
1-Dehydro-[6]-gingerdione	22.32	2546	1.32			
[10]-Isoshogaol	22.66	2587	25.34			
Unknown [m/z 137, 109 (24), 207 (24), 43 (24)... 344 (14)]	23.09	2640	0.30			
[10]-Shogaol	23.55	2697	6.79			
[10]-Gingerdione	23.84	2734	7.71			
1-Dehydro-[8]-gingerdione	23.91	2744	1.46			
[12]-Isoshogaol?	24.16	2776	2.27			
[12]-Shogaol	25.15	2908	0.39			
[6]-Gingerdiol geranial acetal	26.48	3088	0.39			

*: 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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