

Analysis Magnolia Flower Essential Oil

Laboratoire
PhytoChemia



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Date : March 31, 2017

SAMPLE IDENTIFICATION

Internal code : 17C27-FSE2-1-DM

Customer identification : Magholia Blossom - Lot #162582

Type : Essential oil

Source : *Michelia champaca*

Customer : Flowers Shining Everywhere Inc.



ANALYSIS



Method : PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

Identifications double-checked by GC-MS

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-03-30



Checked and approved by :

Alexis St-Gelais, M. Sc., chimiste 2013-174



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IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Ethanol	0.35	632	0.03	0.03	804	0.70	Aliphatic alcohol
Methyl 2-methylbutyrate	1.40	769	4.57	4.62	918	1.06	Aliphatic ester
Ethyl 2-methylbutyrate	2.25	848	0.10	0.09	986	1.37	Aliphatic ester
2-Methylbutyric acid	2.81	891	0.52	0.94	1601	12.73*	Aliphatic acid
Isovaleric acid	2.99	903	0.41	[0.94]	1601	12.73*	Aliphatic acid
α-Thujene	3.30	922	tr	0.01	953	1.20	Monoterpene
α-Pinene	3.40	928	0.17	0.17	941	1.15	Monoterpene
Camphene	3.69	945	0.05	0.04	995	1.44	Monoterpene
Sabinene	4.12	970	0.01	0.01	1054	1.96	Monoterpene
β-Pinene	4.18	974	0.36	0.34	1036	1.79	Monoterpene
Myrcene	4.45	990	0.08	0.07	1113	2.53	Monoterpene
α-Terpinene	4.91	1016	0.02	0.02	1120	2.61	Monoterpene
Limonene	5.14	1029	0.69	0.64	1137	2.85	Monoterpene
β-Phellandrene	5.17	1030	tr	0.53	1143	2.92*	Monoterpene
1,8-Cineole	5.20	1032	0.52	[0.53]	1143	2.92*	Monoterp. ether
cis-β-Ocimene	5.33	1039	2.35	2.32	1184	3.46*	Monoterpene
trans-β-Ocimene	5.50	1049	1.79	1.73	1200	3.67	Monoterpene
γ-Terpinene	5.69	1059	0.03	[2.32]	1184	3.46*	Monoterpene
cis-Linalool oxide (fur.)	5.95	1073	0.27	0.25	1374	6.30	Monoterp. alcohol
Terpinolene	6.16	1084	0.05	0.04	1220	3.96	Monoterpene
trans-Linalool oxide (fur.)	6.27	1090	0.31	0.42	1405	6.79*	Monoterp. alcohol
Methyl benzoate	6.37	1096	0.03	0.04	1530	10.07	Phenolic ester
Rose furan	6.44	1100	0.02	0.01	1341	5.78	Monoterp. ether
Linalool	6.79	1113	62.31	62.34	1502	9.13	Monoterp. alcohol
Phenylethyl alcohol	7.05	1122	0.53	0.51	1807	24.66	Simple phenolic
cis-Linalool oxide (pyr.)	8.46	1174	0.06	0.06	1706	18.05	Monoterp. alcohol
Terpinen-4-ol	8.67	1181	0.08	0.07	1527	9.97	Monoterp. alcohol
α-Terpineol	9.27	1202	0.52	1.40	1621	13.66*	Monoterp. alcohol
Methylchavicol	9.35	1204	0.06	0.07	1580	11.95	Phenylpropanoid
Nerol	10.36	1226	0.17	0.19	1728	19.42	Monoterp. alcohol
Geraniol	11.61	1254	0.44	0.48	1780	22.83	Monoterp. alcohol
δ-Elementene	15.18	1323	0.03	0.04	1413	7.00	Sesquiterpene
α-Cubebene	15.84	1333	0.08	[0.42]	1405	6.79*	Sesquiterpene
Eugenol	17.06	1351	0.03	0.02	2059	38.46	Phenylpropanoid
α-Copaene	17.53	1358	0.37	0.37	1427	7.34	Sesquiterpene
β-Elementene	18.77	1377	2.91	3.09	1523	9.81*	Sesquiterpene
β-Caryophyllene	20.44	1402	3.95	4.01	1520	9.72	Sesquiterpene
cis-α-Bergamotene	20.77	1406	0.07	0.09	1506	9.24	Sesquiterpene
Methyleugenol	21.27	1412	2.53	2.43	1932	33.27	Phenylpropanoid
trans-α-Bergamotene	21.96	1420	0.18	[3.09]	1523	9.81*	Sesquiterpene
α-Humulene	23.13	1434	0.81	0.87	1576	11.81	Sesquiterpene

Essential oil, *Michelia champaca*
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Report prepared for
Flowers Shining Everywhere Inc.

γ-Murolene	24.84	1455	0.26	0.27	1606	12.93	Sesquiterpene
Germacrene D	25.31	1461	0.82	0.76	1617	13.41	Sesquiterpene
β-Selinene	25.92	1468	1.08	[1.40]	1621 *	13.66*	Sesquiterpene
α-Selinene	26.56	1476	0.80	0.82	1629	14.01	Sesquiterpene
Germacrene A	27.17	1483	0.20	0.26	1686	17.04	Sesquiterpene
γ-Cadinene	28.34	1497	0.12	0.09	1662	15.78	Sesquiterpene
β-Bisabolene	28.55	1500	0.28	0.25	1652	15.27	Sesquiterpene
δ-Cadinene	29.01	1506	0.91	0.97	1669	16.11	Sesquiterpene
Methyl (E)-isoeugenol	29.28	1510	0.81	0.71	2092	39.49	Phenylpropanoid
Caryophyllene oxide	33.48*	1568	0.77	0.38	1843	27.26	Sesquiterp. ether
(E)-Nerolidol	33.48*	1568	[0.77]	0.36	1985	35.65	Sesquiterp. alcohol
Humulene epoxide II	35.18	1592	0.08	0.11	1897	31.12	Sesquiterp. ether
τ-Cadinol	37.18	1635	0.07	0.07	2067	38.73	Sesquiterp. alcohol
τ-Murolol	37.29	1637	0.22	0.22	2084	39.23	Sesquiterp. alcohol
Selin-11-en-4-ol	37.70*	1647	0.42	0.30	2130	40.64	Sesquiterp. alcohol
α-Cadinol	37.70*	1647	[0.42]	0.07	2122	40.39	Sesquiterp. alcohol
β-Bisabolol	38.38	1664	0.16	0.20	2065	38.64	Sesquiterp. alcohol
Germacone	38.62	1670	0.03	0.02	2088	39.37	Sesquiterp. ketone
Methyl linoleate	50.46	2095	0.28	0.33	2420	47.40	Fatty acid ester
Methyl α-linolenate	50.59	2101	0.18	0.16	2481	48.63	Fatty acid ester
Total identified			95.00%	94.71%			

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

Note: no correction factor was applied

OTHER DATA

Physical aspect : Orange liquid

Refractive index : 1.4660 ± 0.0003 (20 °C)

CONCLUSION

No adulterant, contaminant or diluent were detected using this method. This sample however corresponds to a *Michelia alba* absolute.



