

GC-MS Profiling Analysis Prepared for Jade Bloom, Inc

Date: April 26, 2018
Sample: Melissa
Type: Essential Oil
Source: *Melissa Officinalis*
Batch: 137358-03

ANALYSIS SUMMARY

Identification	DB-5 (%)	DB-WAX (%)	Classe
Acetaldehyde	0.04		Aliphatic aldehyde
Ethanol	0.08	0.07	Aliphatic alcohol
Dimethylsulfide	0.04	0.04	Aliphatic sulfide
Isobutyral	0.15	0.18	Aliphatic aldehyde
2-Methyl-3-buten-2-ol	0.02	0.01	Aliphatic alcohol
Isobutanol	0.05	0.05	Aliphatic alcohol
Isovaleral	0.75	0.76	Aliphatic aldehyde
2-Methylbutyral	0.48	0.48	Aliphatic aldehyde
Penten-3-ol	0.01	0.01*	Aliphatic alcohol
2-Ethylfuran	0.02	0.02	Furan
Isoamyl alcohol	0.28	0.30	Aliphatic alcohol
2-Methylbutanol	0.17	0.16	Aliphatic alcohol
Toluene	0.01	tr	Simple phenolic
Hexanal	0.03	0.03	Aliphatic aldehyde
(2E)-Hexenal	0.19	0.20	Aliphatic aldehyde
(3Z)-Hexenol	0.38	0.42	Aliphatic alcohol
(2E)-Hexenol	0.10	0.10*	Aliphatic alcohol
Hexanol	0.11	0.11	Aliphatic alcohol
<i>trans</i> -2,5-Diethyltetrahydrofuran	0.05	0.04	Furan
Heptanal	0.01	0.01	Aliphatic aldehyde
Benzaldehyde	0.18	0.19*	Simple phenolic
Octen-3-ol	1.48	1.53	Aliphatic alcohol
6-Methyl-5-hepten-2-one	3.50	3.24	Aliphatic ketone
Myrcene	[3.50]	0.03	Monoterpene
6-Methyl-5-hepten-2-ol	0.14	0.19	Aliphatic alcohol
α -Phellandrene	0.01	[0.01]*	Monoterpene
Ethyl hexanoate	0.02	0.01*	Aliphatic ester
(3Z)-Hexenyl acetate	0.01	0.01	Aliphatic ester
(2E,4E)-Heptadienal	0.09	0.09	Aliphatic aldehyde
Limonene	0.06*	0.04	Monoterpene
1,8-Cineole	[0.06]*	tr	Monoterpenic ether
Unknown	0.02	0.02	Unknown
Unknown	0.03	0.02	Unknown
(Z)- β -Ocimene	0.47*	0.08	Monoterpene
Benzeneacetaldehyde	[0.47]*	0.32	Simple phenolic
(E)- β -Ocimene	0.68	0.86	Monoterpene
2,6-Dimethyl-5-heptenal (melonal)	0.01	0.03	Aliphatic aldehyde
γ -Terpinene	0.01	[0.01]*	Monoterpene
<i>cis</i> -Linalool oxide (fur.)	0.11	0.10	Monoterpenic alcohol
<i>trans</i> -Linalool oxide (fur.)	0.04	0.05	Monoterpenic alcohol
Rosefuran	0.10	[0.10]*	Monoterpenic ether
Linalool	2.42	2.26	Monoterpenic alcohol
Nonanal	[2.42]	0.10	Aliphatic aldehyde
<i>cis</i> -Rose oxide	0.09	0.07	Monoterpenic ether
<i>trans</i> -Rose oxide	0.03	0.03	Monoterpenic ether
Melonol ?	0.10		Normonoterpene
Unknown	0.19		Unknown
exo-Isocitral	0.26*	0.03	Monoterpenic aldehyde

neo-Isopulegol	[0.26]*	0.28	Monoterpenic alcohol
<i>trans</i> -Chrysanthamal	0.36	0.32	Monoterpenic aldehyde
Citronellal	0.59*	0.55	Monoterpenic aldehyde
iso-Isopulegol	[0.59]*	0.09	Monoterpenic alcohol
Isoneral	0.21	0.12	Monoterpenic aldehyde
Unknown	0.34*	0.35	Oxygenated monoterpene
Terpinen-4-ol	[0.34]*	0.04	Monoterpenic alcohol
Isogeranial	0.66	0.77*	Monoterpenic aldehyde
α -Terpineol	0.35	3.45*	Monoterpenic alcohol
Methyl salicylate	0.08	0.21*	Phenolic ester
<i>trans</i> -Isopiperitenol	0.11	0.14	Monoterpenic alcohol
Unknown	0.18		Oxygenated monoterpene
Unknown	0.13		Oxygenated monoterpene
Nerol	0.80	1.00	Monoterpenic alcohol
Citronellol	0.61	0.61	Monoterpenic alcohol
Neral	25.59	25.80*	Monoterpenic aldehyde
Piperitone	0.15	0.14	Monoterpenic ketone
Geraniol	2.23	2.36	Monoterpenic alcohol
Methyl citronellate	0.17	[0.77]*	Monoterpenic ester
Geranial	30.69	30.82	Monoterpenic aldehyde
Unknown	0.02	0.03	Oxygenated monoterpene
Geranyl formate	0.02	0.02	Monoterpenic ester
Citronellic acid	0.03	0.02	Monoterpenic acid
Methyl geranate	0.15	0.13	Monoterpenic ester
Neric acid	0.06	0.12	Monoterpenic acid
Unknown	0.05	0.11*	Unknown
Citronellyl acetate	0.08	[25.80]*	Monoterpenic ester
Eugenol	0.02	0.03	Phenylpropanoid
Geranic acid	0.18	0.15	Aliphatic acid
α -Copaene	0.41	0.39	Sesquiterpene
β -Bourbonene	0.21*	0.01	Sesquiterpene
1,5-diepi- β -Bourbonene	[0.21]*	[0.19]*	Sesquiterpene
β -Cubebene	0.44*	0.11	Sesquiterpene
Geranyl acetate	[0.44]*	0.26	Monoterpenic ester
β -Elemene	0.15	6.41*	Sesquiterpene
Isocaryophyllene	0.04	[0.77]*	Sesquiterpene
β -Caryophyllene	6.62	[6.41]*	Sesquiterpene
β -Copaene	0.07	0.08	Sesquiterpene
(<i>Z</i>)- β -Farnesene?	0.01	0.02	Sesquiterpene
Isogermacrene D	0.04	0.12*	Sesquiterpene
α -Humulene	0.51	0.57	Sesquiterpene
allo-Aromadendrene	0.07	[0.12]*	Sesquiterpene
(<i>E</i>)- β -Farnesene	0.23	0.19	Sesquiterpene
γ -Muurolene	0.11	0.11	Sesquiterpene
Germacrene D	3.34	[3.45]*	Sesquiterpene
α -Muurolene	0.69*	0.44	Sesquiterpene
(3 <i>Z</i> ,6 <i>E</i>)- α -Farnesene	[0.69]*	0.39	Sesquiterpene
γ -Cadinene	0.47*	0.34	Sesquiterpene
(3 <i>E</i> ,6 <i>E</i>)- α -Farnesene	[0.47]*	[0.21]*	Sesquiterpene
δ -Cadinene	0.98	0.99	Sesquiterpene
<i>trans</i> -Cadina-1,4-diene	0.05	0.03	Sesquiterpene
α -Cadinene	0.08	0.12	Sesquiterpene

Isocaryophyllene epoxide B	0.07	0.11	Sesquiterpenic ether
Germacrene D-4-ol	0.03	0.01	Sesquiterpenic alcohol
Caryophyllene oxide	0.90*	0.78	Sesquiterpenic ether
Caryophyllene oxide isomer	[0.90]*	[0.11]*	Sesquiterpenic ether
Humulene epoxide II	0.12	0.15	Sesquiterpenic ether
10-epi-Cubenol	0.10		Sesquiterpenic alcohol
1-epi-Cubenol	0.11	0.11	Sesquiterpenic alcohol
Caryophylladienol I	0.03	0.02	Sesquiterpenic alcohol
Caryophylladienol II	0.07	0.08	Sesquiterpenic alcohol
τ -Cadinol	0.84*	0.37	Sesquiterpenic alcohol
τ -Muurolol	[0.84]*	0.54	Sesquiterpenic alcohol
α -Muurolol	0.20	0.17	Sesquiterpenic alcohol
α -Cadinol	1.20	1.11	Sesquiterpenic alcohol
(3Z)-Caryophylla-3,8(13)-dien-5 β -ol	0.09	0.06	Sesquiterpenic alcohol
Unknown	0.09	0.15	Oxygenated sesquiterpene
Eremophilone	0.05		Sesquiterpenic ketone
(2E,6E)-Farnesal	0.02	0.02	Sesquiterpenic aldehyde
Phytone	0.05	0.06	Terpenic ketone
Nonadecane	0.02	0.02	Alkane
Total identified	94.70%	93.74%	