

Date : March 30, 2017

SAMPLE IDENTIFICATION

Internal code : 17C27-GUR5-1-DM

Customer identification : Frankincense - K-1140

Type : Essential oil

Source : *Boswellia serrata*

Customer : HealthLand LLC.

ANALYSIS

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

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-03-28

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.	
Toluene	1.31	758	0.02	77.81	975	1.30*	Simple phenolic
Tricyclene	3.21*	917	0.19	0.01	918	1.06	Monoterpene
Hashishene	3.21*	917	[0.19]	[77.81]	975	1.30*	Monoterpene
α -Thujene	3.40	928	70.59	[77.81]	975	1.30*	Monoterpene
α -Pinene	3.46	931	6.72	[77.81]	975	1.30*	Monoterpene
Unknown (m/z = 91, 92 (49), 65 (12)... 134? (2))	3.64	942	0.47	0.48	1066	2.07	Monoterpene
Camphene	3.71*	946	0.09	0.09	997	1.46	Monoterpene
α -Fenchene	3.71*	946	[0.09]	0.01	994	1.42	Monoterpene
Thuja-2,4(10)-diene	3.79	951	0.02	4.35	1059	2.00*	Monoterpene
Sabinene	4.14	972	4.48	[4.35]	1059	2.00*	Monoterpene
β -Pinene	4.20	975	0.41	0.40	1039	1.81	Monoterpene
Myrcene	4.47	991	1.02	1.08	1115	2.56*	Monoterpene
Δ 3-Carene	4.76*	1008	4.80	3.72	1088	2.31	Monoterpene
α -Phellandrene	4.76*	1008	[4.80]	1.04	1109	2.47	Monoterpene
α -Terpinene	4.93	1017	0.64	0.63	1122	2.65	Monoterpene
meta-Cymene	5.02	1022	0.10	[1.08]	1115	2.56*	Monoterpene
para-Cymene	5.11	1027	2.67	2.78	1208	3.79	Monoterpene
Limonene	5.16	1030	1.78	1.59	1141	2.88	Monoterpene
β -Phellandrene	5.18	1031	0.32	0.32	1146	2.96*	Monoterpene
1,8-Cineole	5.22	1033	0.02	[0.32]	1146	2.96*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.33	1039	0.26	1.51	1188	3.51*	Monoterpene
<i>trans</i> - β -Ocimene	5.51	1049	0.14	0.13	1201	3.69	Monoterpene
Lavender lactone	5.62	1055	0.07	0.05	1618	13.47*	Lactone
γ -Terpinene	5.70	1059	1.27	[1.51]	1188	3.51*	Monoterpene
<i>cis</i> -Sabinene hydrate	5.99	1075	0.11	0.10	1406	6.82	Monoterp. alcohol
Isoterpinolene	6.09	1081	0.01	tr	1218	3.93	Monoterpene
Terpinolene	6.17	1085	0.30	0.30	1222	3.99	Monoterpene
para-Cymenene	6.36	1095	0.02	0.20	1362	6.13	Monoterpene
Linalool	6.61*	1106	0.13	0.01	1498	9.03	Monoterp. alcohol
<i>trans</i> -Sabinene hydrate	6.61*	1106	[0.13]	0.09	1493	8.91	Monoterp. alcohol
α -Thujone	6.70	1109	0.04	0.04	1344	5.83	Monoterp. ketone
endo-Fenchol	6.95*	1119	0.24	0.01	1523	9.82	Monoterp. alcohol
β -Thujone	6.95*	1119	[0.24]	0.20	1355	6.01	Monoterp. ketone
<i>trans</i> -Pinocarveol	7.52	1140	0.05	0.93	1581	12.01*	Monoterp. alcohol
Borneol	8.45	1173	0.08	0.07	1623	13.74	Monoterp. alcohol
Terpinen-4-ol	8.67	1182	0.63	0.67	1527	9.97	Monoterp. alcohol
α -Terpineol	9.29	1203	0.03	0.04	1627	13.93	Monoterp. alcohol
Methylchavicol	9.37	1204	0.94	[0.93]	1581	12.01*	Phenylpropanoid
Verbenone	9.77	1213	0.01	0.01	1599	12.63	Monoterp. ketone
Linalyl acetate	11.25	1246	0.01	0.02	1500	9.09	Monoterp. ester

α -Copaene	17.56	1359	0.05	0.05	1427	7.33	Sesquiterpene
β -Bourbonene	17.97	1365	0.23	0.24	1448	7.81	Sesquiterpene
β -Caryophyllene	20.45	1402	0.03	0.02	1516	9.55	Sesquiterpene
Methyleugenol	21.22	1411	0.07	0.04	1933	33.34	Phenylpropanoid
6,9-Guaiadiene	22.37	1425	0.02	0.02	1545	10.65	Sesquiterpene
Germacrene D	25.34	1461	0.03	[0.05]	1618	13.47*	Sesquiterpene
Kessane	29.26	1509	0.05	0.05	1661	15.73	Sesquiterp. ether
Incensole	51.23	2130	0.03	0.03	2578	50.51	Diterp. alcohol
Total identified			98.72%	98.66%			

*: 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 : Clear liquid

Refractive index : 1.4580 \pm 0.0003 (20 °C)

CONCLUSION

No adulterant, contaminant or diluent were detected using this method.



