

GC/MS BATCH NUMBER: F50104

ESSENTIAL OIL: FRANKINCENSE SERRATA ORGANIC
BOTANICAL NAME: BOSWELLIA SERRATA
ORIGIN: INDIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF FRANKINCENSE SERRATA ORGANIC OIL	%
α -THUJENE	68.3
SABINENE	5.9
α -PINENE	5.0
Δ 3-CARENE	3.4
METHYLCHAVICOL	2.7
α -PHELLANDRENE	2.6
LIMONENE	2.0
p-CYMENE	1.9

Comments from Robert Tisserand: Fresh, slightly anise-basil odor quality. Constituents are in expected amounts.

Date : August 9, 2017

SAMPLE IDENTIFICATION

Internal code : 17H07-PTH2-1-DM

Customer identification : Frankincense Serrata Organic - India - F5010475R

Type : Essential oil

Source : *Boswellia serrata*

Customer : Plant Therapy

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 : 2017-08-09

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	0.01	73.51	975	1.37*	Simple phenolic
Hashishene	3.22	915	0.08	[73.51]	975	1.37*	Monoterpene
α -Thujene	3.40	925	68.32	[73.51]	975	1.37*	Monoterpene
α -Pinene	3.46	929	5.00	[73.51]	975	1.37*	Monoterpene
Unknown (m/z = 91, 92 (49), 65 (12)... 134? (2))	3.66	941	0.37	0.37	1075	2.20	Monoterpene
Camphene	3.72	944	0.07	0.07	998	1.55	Monoterpene
Thuja-2,4(10)-diene	3.81	949	0.01	5.83	1066	2.12*	Monoterpene
Sabinene	4.16	970	5.87	[5.83]	1066	2.12*	Monoterpene
β -Pinene	4.21	973	0.36	0.36	1043	1.93	Monoterpene
Myrcene	4.48	989	0.95	0.96	1118	2.70*	Monoterpene
Δ 3-Carene	4.78*	1006	5.98	3.40	1095	2.43	Monoterpene
α -Phellandrene	4.78*	1006	[5.98]	2.58	1110	2.61	Monoterpene
α -Terpinene	4.95	1015	0.37	0.37	1124	2.79	Monoterpene
meta-Cymene	5.04	1020	0.06	[0.96]	1118	2.70*	Monoterpene
para-Cymene	5.15	1026	1.85	2.00	1214	3.96	Monoterpene
Limonene	5.18	1028	2.02	1.97	1143	3.03	Monoterpene
1,8-Cineole	5.21	1030	0.73	0.58	1148	3.11	Monoterp. ether
cis- β -Ocimene	5.36	1037	0.43	0.44	1193	3.65	Monoterpene
trans- β -Ocimene	5.54	1047	0.22	0.22	1207	3.86	Monoterpene
Lavender lactone	5.68	1055	0.10	0.30	1619	14.12*	Lactone
γ -Terpinene	5.73	1057	0.82	0.81	1195	3.68	Monoterpene
cis-Sabinene hydrate	6.06	1075	0.06	0.08	1407	7.07	Monoterp. alcohol
Isoterpinolene	6.12	1079	0.01	0.01	1224	4.11	Monoterpene
Terpinolene	6.20	1083	0.29	0.29	1228	4.18	Monoterpene
para-Cymenene	6.42	1095	0.02	0.02	1371	6.39	Monoterpene
Perillene	6.54	1100	0.01	0.02	1349	6.02	Monoterp. ether
Linalool	6.69	1106	0.13	0.10	1499	9.34	Monoterp. alcohol
β -Thujone	7.00	1117	0.22	0.19	1368	6.33	Monoterp. ketone
endo-Fenchol	7.22	1125	0.04	0.06	1517	9.97	Monoterp. alcohol
trans-para-Menth-2-en-1-ol	7.72	1143	0.03	0.04	1561	11.62	Monoterp. alcohol
Borneol	8.62	1176	0.07	[0.30]	1619	14.12*	Monoterp. alcohol
Terpinen-4-ol	8.80	1182	0.69	0.73	1529	10.44*	Monoterp. alcohol
Myrtenal	9.35	1201	0.03	0.03	1532	10.55	Monoterp. aldehyde
Methylchavicol	9.51	1204	2.68	2.68	1590	12.71	Phenylpropanoid
Octyl acetate	9.96	1214	0.01	0.01	1423	7.45	Aliphatic ester
Bornyl acetate	12.91	1279	0.02	0.01	1506	9.60	Monoterp. ester
α -Cubebene	16.02	1332	0.02	0.03	1411	7.17	Sesquiterpene
α -Copaene	17.69	1357	0.09	0.11	1430	7.62	Sesquiterpene
β -Bourbonene	18.12	1363	0.41	0.44	1452	8.14	Sesquiterpene

β -Caryophyllene	20.60	1400	0.05	0.05	1526	10.31	Sesquiterpene
Methyleugenol	21.57	1412	0.19	0.15	1937	34.29	Phenylpropanoid
<i>trans</i> - α -Bergamotene	22.15	1419	0.04	[0.73]	1529	10.44*	Sesquiterpene
6,9-Guaiadiene	22.55	1423	0.03	0.03	1543	10.98	Sesquiterpene
Germacrene D	25.60*	1460	0.43	[0.30]	1619	14.12*	Sesquiterpene
γ -Muurolene	25.60*	1460	[0.43]	0.04	1610	13.66	Sesquiterpene
δ -Cadinene	29.31	1505	0.03	0.03	1673	17.03	Sesquiterpene
Kessane	29.52	1508	0.13	0.13	1662	16.44	Sesquiterp. ether
Dimer of α -phellandrene II	42.32	1772	0.03	0.03	1842	28.29	Diterpene
(3 <i>E</i>)-Cembrene A	46.67	1929	0.02	0.01	2128	41.10	Diterpene
Serratol	51.42	2129	0.05	0.06	2577	50.95	Diterp. alcohol
Total identified			99.08%	98.78%			

*: 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

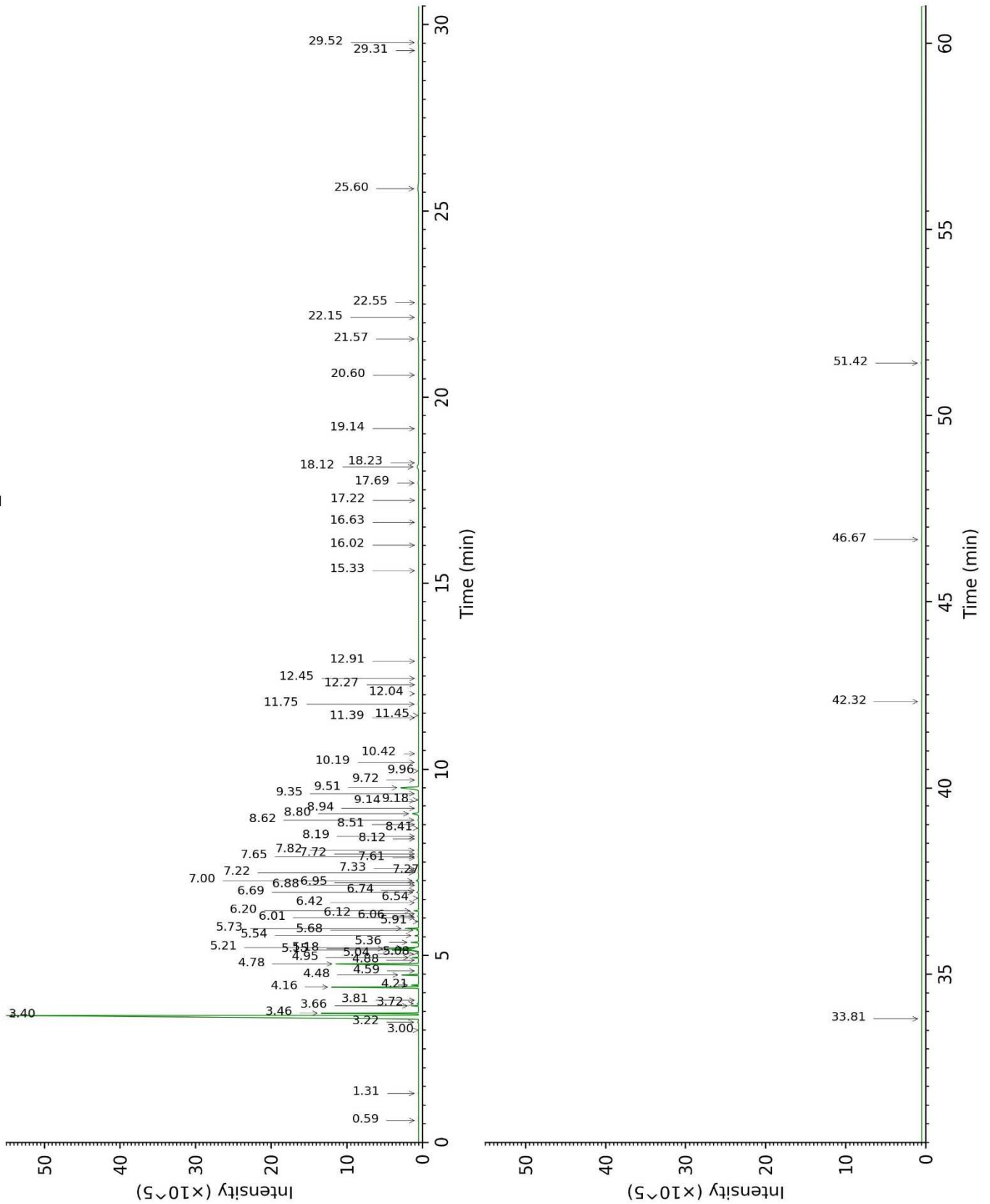
Physical aspect : Clear liquid

Refractive index : 1.4585 \pm 0.0003 (20 °C)

CONCLUSION

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

17H07-PTH2-1-DM_BP5



17H07-PTH2-1-DM_WAX

