



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: F40104

ESSENTIAL OIL: FRANKINCENSE SERRATA

BOTANICAL NAME: BOSELLIA SERRATA

ORIGIN: INDIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF FRANKINCENSE SERRATA OIL	%
α -Thujene	67.48
Sabinene	5.40
α -Pinene	5.06
Δ^3 -Carene	3.36
Methylchavicol	2.41
Limonene	2.04
para-Cymene	2.01
α -Phellandrene	1.25

Comments from Robert Tisserand: Piney, medicinal odor quality. Constituents are in expected amounts.

Date : July 13, 2017

SAMPLE IDENTIFICATION

Internal code : 17G05-PTH7-1-DM

Customer identification : Frankincense Serrata - India - F40104610R

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).

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-07-12

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	1.32	759	0.01	73.18	969	1.14*	Simple phenolic
Tricyclene	3.23*	918	0.17	0.05	913	0.90	Monoterpene
Hashishene	3.23*	918	[0.17]				Monoterpene
α -Thujene	3.42	929	67.48	[73.18]	969	1.14*	Monoterpene
α -Pinene	3.48	932	5.06	[73.18]	969	1.14*	Monoterpene
Unknown (m/z = 91, 92 (49), 65 (12)... 134? (2))	3.67	944	0.51	0.83	1064	1.81	Monoterpene
Camphene	3.73	947	0.07	0.11	999	1.27	Monoterpene
Thuja-2,4(10)-diene	3.82	953	0.01	5.05	1059	1.76*	Monoterpene
Sabinene	4.17	974	5.40	[5.05]	1059	1.76*	Monoterpene
β -Pinene	4.22	977	0.34	0.30	1041	1.59	Monoterpene
Myrcene	4.50	993	0.62	0.73	1113	2.27*	Monoterpene
Δ^3 -Carene	4.79*	1009	4.73	3.36	1088	2.04	Monoterpene
α -Phellandrene	4.79*	1009	[4.73]	1.25	1106	2.20	Monoterpene
α -Terpinene	4.96	1019	0.39	0.41	1121	2.35	Monoterpene
meta-Cymene	5.06	1024	0.14	[0.73]	1113	2.27*	Monoterpene
para-Cymene	5.16	1030	2.01	2.19	1203	3.40	Monoterpene
Limonene	5.20	1032	2.04	1.96	1139	2.58	Monoterpene
β -Phellandrene	5.22	1033	0.51	0.46	1144	2.65*	Monoterpene
1,8-Cineole	5.25	1035	0.03	[0.46]	1144	2.65*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.37	1041	0.39	1.21	1184	3.16*	Monoterpene
<i>trans</i> - β -Ocimene	5.55	1051	0.25	0.18	1197	3.34	Monoterpene
Lavender lactone	5.69	1059	0.06	0.37	1620	12.27*	Lactone
γ -Terpinene	5.74	1062	0.84	[1.21]	1184	3.16*	Monoterpene
<i>cis</i> -Sabinene hydrate	6.07	1079	0.09	0.10	1399	6.27	Monoterp. alcohol
Terpinolene	6.21	1087	0.27	0.26	1219	3.62	Monoterpene
para-Cymenene	6.43	1099	0.02	0.34	1360	5.66*	Monoterpene
Linalool	6.70*	1109	0.20	0.30	1484	8.01*	Monoterp. alcohol
<i>trans</i> -Sabinene hydrate	6.70*	1109	[0.20]	0.09	1473	7.74	Monoterp. alcohol
β -Thujone	7.02	1121	0.38	[0.34]	1360	5.66*	Monoterp. ketone
<i>cis</i> -para-Menth-2-en-1-ol	7.23	1129	0.06	[0.30]	1484	8.01*	Monoterp. alcohol
<i>trans</i> -para-Menth-2-en-1-ol	7.66	1145	0.08	0.09	1562	10.13	Monoterp. alcohol
Borneol	8.64	1180	0.14	0.13	1611	11.90	Monoterp. alcohol
Terpinen-4-ol	8.82	1187	1.10	1.23	1524	8.94*	Monoterp. alcohol
Methylchavicol	9.53	1208	2.41	2.36	1576	10.64	Phenylpropanoid
Octyl acetate	9.73	1212	0.02	0.01	1428	6.72	Aliphatic ester
Linalyl acetate	11.43	1250	0.03	0.02	1495	8.27	Monoterp. ester
α -Cubebene	16.03	1336	0.02	0.02	1408	6.41	Sesquiterpene
α -Copaene	17.74	1362	0.09	0.12	1437	6.88	Sesquiterpene
β -Bourbonene	18.19	1368	0.82	0.81	1455	7.30	Sesquiterpene

β -Elemene	19.21	1384	0.16	[1.23]	1524	8.94*	Sesquiterpene
β -Caryophyllene	20.67	1405	0.10	0.09	1519	8.82	Sesquiterpene
Methyleugenol	21.61*	1416	0.34	0.17	1928	30.60	Phenylpropanoid
β -Copaene	21.61*	1416	[0.34]	0.10	1501	8.39	Sesquiterpene
<i>trans</i> - α -Bergamotene	22.21	1423	0.06	[1.23]	1524	8.94*	Sesquiterpene
γ -Muurolene	25.51	1463	0.06	0.07	1587	11.04	Sesquiterpene
Germacrene D	25.75	1466	0.41	[0.37]	1620	12.27*	Sesquiterpene
γ -Cadinene	28.74	1502	0.03	0.24	1667	14.32*	Sesquiterpene
δ -Cadinene	29.39	1511	0.06	0.05	1674	14.66	Sesquiterpene
Kessane	29.59	1514	0.20	[0.24]	1667	14.32*	Sesquiterp. ether
Dimer of α -phellandrene II	42.35	1779	0.10	0.11	1854	25.41	Diterpene
meta-Camphorene	46.69	1937	0.08				Diterpene
Serratol	51.44	2140	0.29	0.29	2575	49.44	Diterp. alcohol
Total identified			98.17%	97.81%			

*: 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

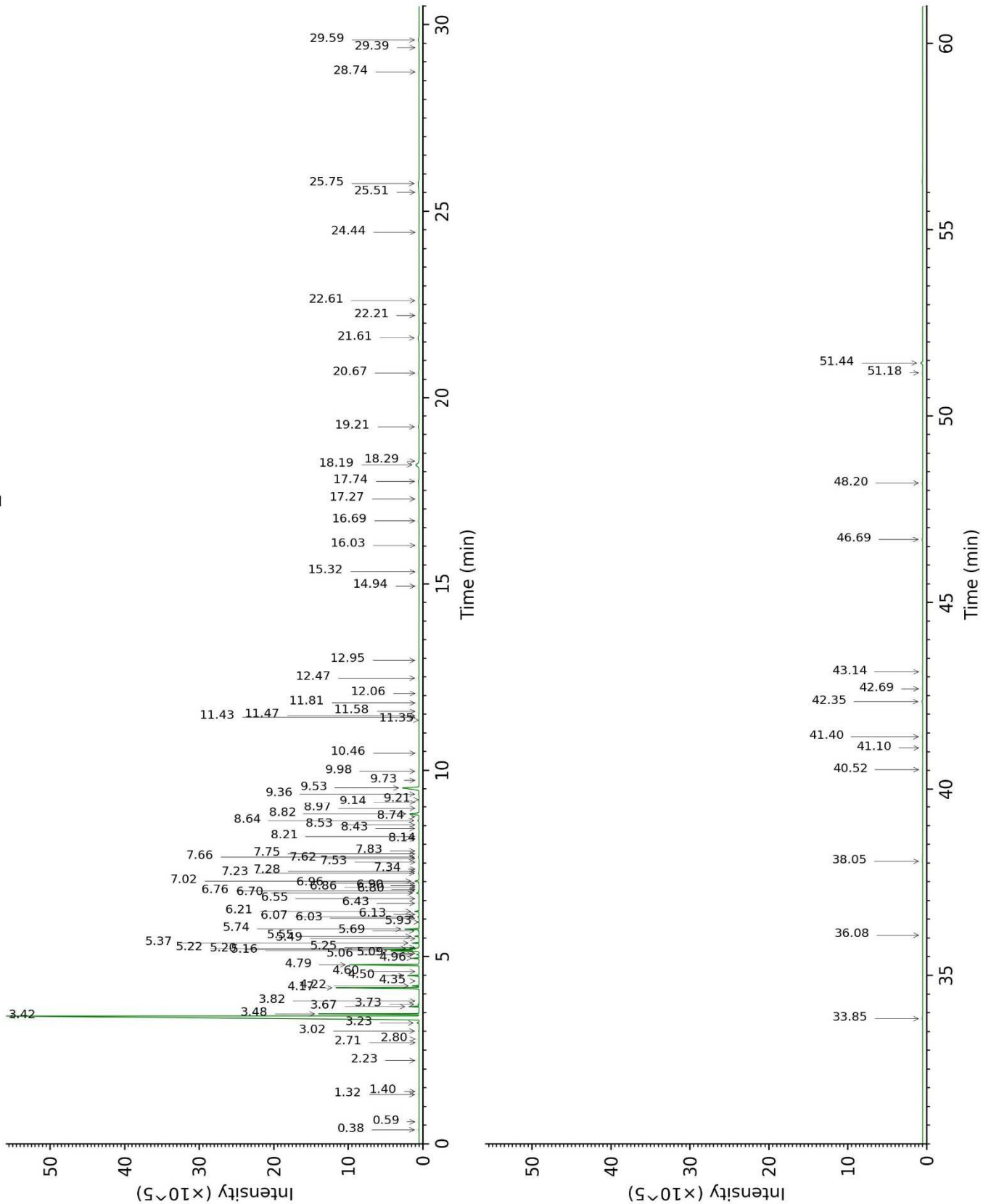
Physical aspect : Faintly yellow liquid

Refractive index : 1.4598 ± 0.0003 (20 °C)

CONCLUSION

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

17G05-PTH7-1-DM_BP5



17G05-PTH7-1-DM_WAX

