



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: R40106

ESSENTIAL OIL: ROSEMARY
BOTANICAL NAME: ROSMARINUS OFFICINALIS
ORIGIN: TUNISIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF ROSEMARY OIL	%
1,8-CINEOLE + LIMONENE	45.5
α -PINENE	13.2
CAMPHOR	12.3
β -PINENE	5.0
CAMPHENE	4.8
BORNEOL	4.1
β -CARYOPHYLLENE	3.3
α -TERPINEOL	2.0
MYRCENE	1.4

Comments from Robert Tisserand: Beautiful fresh, green-woody quality. Twelve of thirteen key ISO constituents are within range, with limonene uncertain from the lab report.

Date : November 1, 2017

SAMPLE IDENTIFICATION

Internal code : 17J31-PTH1-1-CC

Customer identification : Rosemary - Tunisia - R4010673R

Type : Essential oil

Source : *Rosmarinus officinalis*

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 : 2017-11-01

Checked and approved by :



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

Note: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.

This report is digitally signed, it is only considered valid if the digital signature is intact.

IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
<i>cis</i> -Hex-3-en-1-ol	2.52	866	0.01	0.02	1337	5.72	Aliphatic alcohol
Tricyclene	3.23	915	0.20	0.15	926	1.06	Monoterpene
α -Thujene	3.32	921	0.14	12.98	956	1.18*	Monoterpene
α -Pinene	3.45	928	13.21	[12.98]	956	1.18*	Monoterpene
Camphene	3.72*	945	4.94	4.79	1003	1.46	Monoterpene
α -Fenchene	3.72*	945	[4.94]	0.08	996	1.40	Monoterpene
Thuja-2,4(10)-diene	3.81	949	0.02	4.86	1041	1.83*	Monoterpene
Sabinene	4.15	970	0.06	[4.86]	1041	1.83*	Monoterpene
β -Pinene	4.22	974	5.04	[4.86]	1041	1.83*	Monoterpene
Myrcene	4.49	990	1.40	1.40	1118	2.59	Monoterpene
Octan-3-one	4.54	993	0.06	1.75	1211	3.82*	Aliphatic ketone
Octen-3-ol	4.59	996	0.17	0.15	1399	6.70	Aliphatic alcohol
α -Phellandrene	4.77*	1005	0.35	0.12	1112	2.51	Monoterpene
Δ 3-Carene	4.77*	1005	[0.35]	0.17	1096	2.31	Monoterpene
α -Terpinene	4.96	1016	0.42	0.41	1125	2.67	Monoterpene
1,8-Cineole	5.31*	1035	46.48	45.52	1154	3.05*	Monoterp. ether
Limonene	5.31*	1035	[46.48]	[45.52]	1154	3.05*	Monoterpene
<i>para</i> -Cymene	5.31*	1035	[46.48]	[1.75]	1211	3.82*	Monoterpene
<i>cis</i> - β -Ocimene	5.37	1038	0.05	0.69	1191	3.55*	Monoterpene
<i>trans</i> - β -Ocimene	5.55	1048	0.05	[1.75]	1211	3.82*	Monoterpene
γ -Terpinene	5.74	1058	0.59	[0.69]	1191	3.55*	Monoterpene
<i>cis</i> -Sabinene hydrate	6.08	1077	0.05	0.04	1406	6.84	Monoterp. alcohol
Terpinolene	6.21	1084	0.28	0.29	1226	4.04	Monoterpene
<i>para</i> -Cymenene	6.44	1096	0.04	0.04	1367	6.20	Monoterpene
Linalool	6.75*	1108	0.75	0.75	1495	8.94*	Monoterp. alcohol
<i>trans</i> -Sabinene hydrate	6.75*	1108	[0.75]	0.07	1476	8.51*	Monoterp. alcohol
endo-Fenchol	7.23	1125	0.06	0.06	1517	9.65	Monoterp. alcohol
<i>cis</i> - <i>para</i> -Menth-2-en-1-ol	7.29	1128	0.06	[0.75]	1495	8.94*	Monoterp. alcohol
<i>trans</i> -Pinocarveol	7.71	1143	0.07	0.08	1566	11.44	Monoterp. alcohol
Camphor	7.86	1148	12.31	12.89	1424	7.28*	Monoterp. ketone
Camphene hydrate	8.08	1156	0.05	4.06	1522	9.83*	Monoterp. alcohol
Pinocarvone	8.25	1163	0.03	[0.07]	1476	8.51*	Monoterp. ketone
Borneol	8.74	1180	4.12	3.80	1617	13.51*	Monoterp. alcohol
Terpinen-4-ol	8.86	1185	0.71	[4.06]	1522	9.83*	Monoterp. alcohol
<i>para</i> -Cymen-8-ol	9.45	1203	0.04	0.03	1763	21.90	Monoterp. alcohol
α -Terpineol	9.56	1205	2.00	2.33	1621	13.72	Monoterp. alcohol
Verbenone	9.85	1212	0.01	0.39	1597	12.58	Monoterp. ketone
Bornyl acetate	12.96	1280	0.47	0.51	1507	9.27	Monoterp. ester
α -Cubebene	16.02	1332	0.02	[12.89]	1424	7.28*	Sesquiterpene
α -Ylangene	17.29	1351	0.07	[12.89]	1424	7.28*	Sesquiterpene
α -Copaene	17.76	1358	0.29	[12.89]	1424	7.28*	Sesquiterpene

β -Caryophyllene	20.74	1402	3.26	[4.06]	1522	9.83*	Sesquiterpene
Methyleugenol	21.72	1414	0.03	0.03	1932	33.38	Phenylpropanoid
Aromadendrene	22.06	1418	0.05	[4.06]	1522	9.83*	Sesquiterpene
α -Humulene	23.49	1435	0.43	0.46	1585	12.11	Sesquiterpene
γ -Muurolene	25.56	1459	0.24	[3.80]	1617	13.51*	Sesquiterpene
α -Muurolene	27.74	1485	0.05	0.06	1646	15.02	Sesquiterpene
γ -Cadinene	28.80	1498	0.17	0.12	1669	16.23	Sesquiterpene
β -Bisabolene	28.95	1500	0.07	0.07	1660	15.72	Sesquiterpene
δ -Cadinene	29.45	1507	0.35	0.37	1676	16.55	Sesquiterpene
Caryophyllene oxide	33.90	1570	0.14	0.15	1846	27.64	Sesquiterp. ether
Total identified			99.41%	99.69%			

*: 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

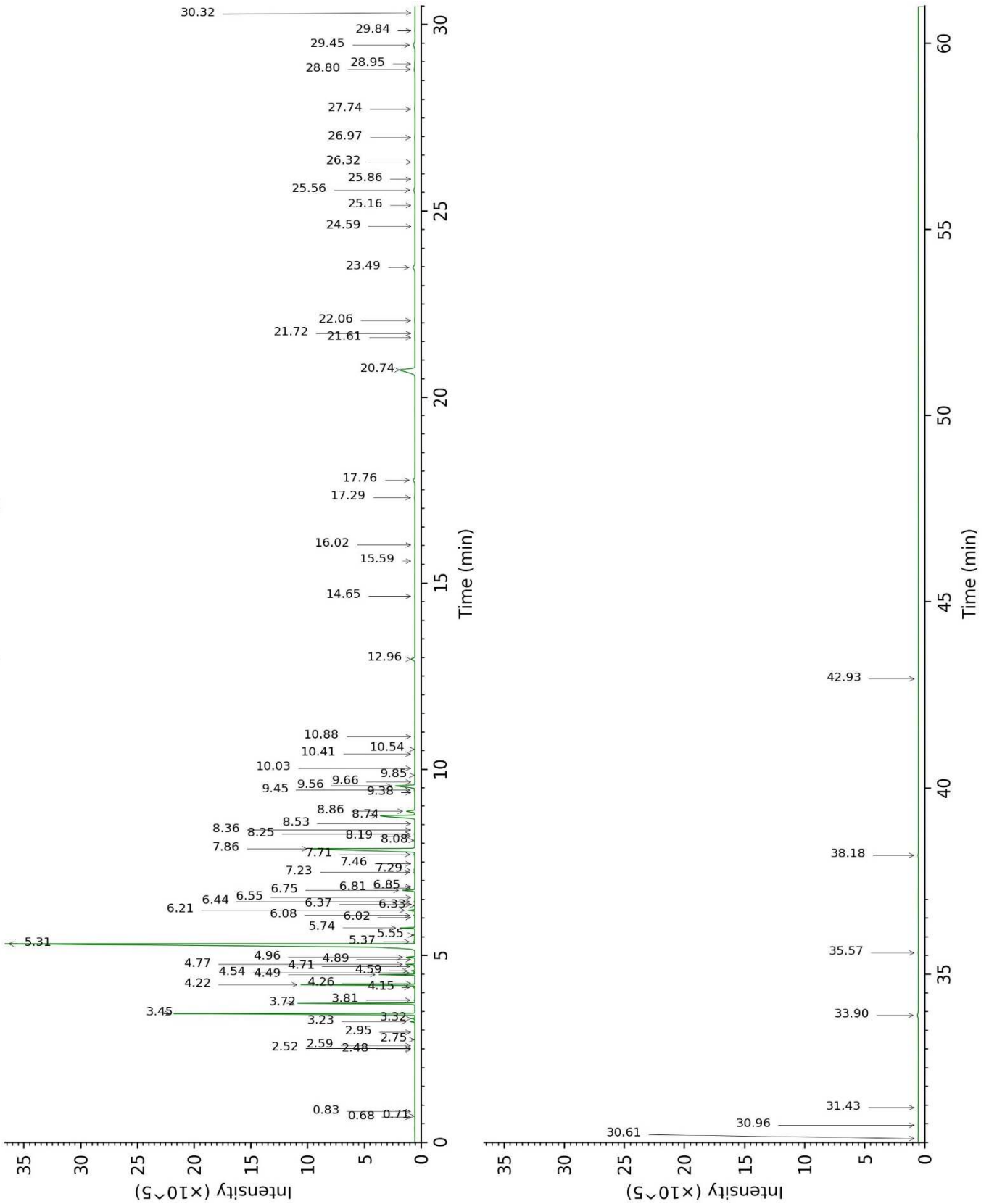
Physical aspect : Faintly yellow liquid

Refractive index : 1.4680 ± 0.0003 (20 °C)

CONCLUSION

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

17J31-PTH1-1-CC_BP5



17J31-PTH1-1-CC_WAX

