



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: J20103

ESSENTIAL OIL: JUNIPER BERRY
BOTANICAL NAME: JUNIPERUS COMMUNIS
ORIGIN: HUNGARY

KEY CONSTITUENTS PRESENT IN THIS BATCH OF JUNIPER BERRY OIL	%
α -PINENE	40.6
MYRCENE	10.6
SABINENE	8.8
β -PINENE	8.2
β -CARYOPHYLENE	3.5
LIMONENE	3.4
TERPINEN-4-OL	3.0
p-CYMENE	2.8
α -HUMULENE	2.8
GERMACRENE D + γ -MUUROLENE	2.7
γ -TERPINENE	2.7

Comments from Robert Tisserand: Excellent fruity-resinous odor profile. All eleven key ISO constituents are within range.

Date : May 5, 2017

SAMPLE IDENTIFICATION

Internal code : 17D28-PTH1-1-DM

Customer identification : Juniper Berry - Hungary - J2010371R

Type : Essential oil

Source : *Juniperus communis*

Customer : Plant Therapy

ANALYSIS

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

Analyst : Benoit Roger Ph. D.

Analysis date : 2017-05-01

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.	
Tricyclene	3.23*	917	0.06	0.07	924	1.02*	Monoterpene
α -Thujene	3.31*	923	0.92	1.35	964	1.19*	Monoterpene
α -Pinene	3.48*	932	40.61	40.45	960	1.17*	Monoterpene
Camphene	3.70*	946	0.27	0.24	1002	1.40*	Monoterpene
α -Fenchene	3.70*	946	[0.27]	0.03	995	1.34*	Monoterpene
Thuja-2,4(10)-diene	3.79*	951	0.02	8.76	1059	1.94*	Monoterpene
Verbenene	3.88*	956	0.01	[40.45]	960	1.17*	Monoterpene
Sabinene	4.15*	973	8.77	[8.76]	1059	1.94*	Monoterpene
β -Pinene	4.22*	977	8.16	8.20	1044	1.77*	Monoterpene
Camphene analog II	4.32*	982	0.09				Monoterpene
Myrcene	4.50*	993	10.66	10.55	1121	2.51*	Monoterpene
2-Carene	4.50*	993	[10.66]	0.08	1082	2.20*	Monoterpene
Pseudolimonene	4.69*	1004	0.16	0.16	1114	2.41*	Monoterpene
α -Phellandrene	4.74*	1007	0.20	0.10	1112	2.39*	Monoterpene
α -Terpinene	4.93*	1017	0.76	0.79	1126	2.57*	Monoterpene
meta-Cymene	5.02*	1022	0.04	[0.79]	1126	2.57*	Monoterpene
para-Cymene	5.12*	1028	2.83	2.87	1210	3.68*	Monoterpene
Limonene	5.17*	1030	3.48	3.41	1144	2.80*	Monoterpene
β -Phellandrene	5.17*	1030	[3.48]	0.36	1148	2.86*	Monoterpene
1,8-Cineole	5.19*	1032	0.29	[0.36]	1148	2.86*	Monoterp. ether
cis- β -Ocimene	5.34*	1039	tr	2.67	1191	3.41*	Monoterpene
trans- β -Ocimene	5.51*	1049	0.03	0.02	1203	3.58*	Monoterpene
γ -Terpinene	5.71*	1060	2.67	[2.67]	1191	3.41*	Monoterpene
cis-Sabinene hydrate	6.00*	1076	0.02	0.19	1408	6.66*	Monoterp. alcohol
Terpinolene	6.18*	1085	0.73	0.71	1225	3.88*	Monoterpene
para-Cymenene	6.37*	1096	0.05	0.04	1368	6.04*	Monoterpene
α -Pinene oxide	6.50*	1102	0.01	0.01	1300	4.99*	Monoterp. ether
Linalool	6.70*	1109	0.01	0.05	1493	8.65*	Monoterp. alcohol
cis-para-Menth-2-en-1-ol	7.14*	1126	0.02	[0.05]	1493	8.65*	Monoterp. alcohol
trans-Pinocarveol	7.52*	1139	0.02	0.31	1568	11.05*	Monoterp. alcohol
Camphor	7.64*	1144	0.02	0.03	1425	7.01*	Monoterp. ketone
trans-Verbenol	7.72*	1147	0.01	0.04	1597	12.09*	Monoterp. alcohol
Borneol	8.50*	1175	0.03	2.42	1625	13.16*	Monoterp. alcohol
Terpinen-4-ol	8.72*	1183	2.97	3.02	1532	9.70*	Monoterp. alcohol
α -Terpineol	9.30*	1203	0.15	0.14	1628	13.32*	Monoterp. alcohol
Methyl citronellate	11.83*	1259	0.02	0.02	1507	8.95*	Monoterp. ester
Bornyl acetate	12.82*	1281	0.10	0.15	1505	8.90*	Monoterp. ester
2-Undecanone	13.72*	1301	0.02	0.04	1560	10.79*	Aliphatic ketone
δ -Elemene	15.23*	1323	0.03	0.03	1418	6.85*	Sesquiterpene
α -Cubebene	15.89*	1334	0.19	[0.19]	1408	6.66*	Sesquiterpene
α -Terpinyl acetate	16.50*	1343	0.04	0.24	1618	12.90*	Monoterp. ester

α -Ylangene	17.12*	1352	0.03	0.01	1421	6.90*	Sesquiterpene
α -Copaene	17.58*	1359	0.16	0.16	1431	7.17*	Sesquiterpene
β -Elemene	18.79*	1378	0.59	0.58	1526	9.50*	Sesquiterpene
Longifolene	19.41*	1387	0.05	0.06	1480	8.31*	Sesquiterpene
α -Gurjunene	19.55*	1389	0.05	0.04	1461	7.86*	Sesquiterpene
β -Caryophyllene	20.51*	1403	3.47	3.49	1523	9.41*	Sesquiterpene
Thujopsen	21.36*	1413	0.04	0.02	1538	9.95*	Sesquiterpene
γ -Elemene	21.72*	1417	0.21	[0.31]	1568	11.05*	Sesquiterpene
Aromadendrene	21.79*	1418	0.03	0.02	1536	9.87*	Sesquiterpene
<i>cis</i> - β -Farnesene	22.84*	1431	0.03	0.03	1587	11.75*	Sesquiterpene
<i>cis</i> -Muurolo-3,5-diene	22.93*	1432	0.10	0.04	1552	10.48*	Sesquiterpene
α -Humulene	23.28*	1436	2.76	2.84	1582	11.59*	Sesquiterpene
<i>trans</i> - β -Farnesene	24.39*	1449	0.21	[0.24]	1618	12.90*	Sesquiterpene
<i>trans</i> -Cadin-1(6),4-diene	24.90*	1456	0.09	[2.84]	1582	11.59*	Sesquiterpene
Germacrene D	25.47*	1462	2.70	[2.42]	1625	13.16*	Sesquiterpene
γ -Muurolole	25.47*	1462	[2.70]	0.35	1611	12.63*	Sesquiterpene
β -Selinene	26.01*	1469	0.12	0.13	1627	13.30*	Sesquiterpene
Bicyclgermacrene	26.65*	1477	0.26	0.13	1642	14.09*	Sesquiterpene
α -Selinene	26.65*	1477	[0.26]	0.17	1634	13.67*	Sesquiterpene
α -Muurolole	27.42*	1486	0.22	0.23	1646	14.30*	Sesquiterpene
Valencene	27.55*	1488	0.17	0.12	1664	15.20*	Sesquiterpene
γ -Cadinene	28.44*	1498	0.29	0.33	1668	15.43*	Sesquiterpene
δ -Cadinene	29.13*	1508	0.94	0.97	1674	15.76*	Sesquiterpene
<i>trans</i> -Cadin-1,4-diene	30.01*	1520	0.10	0.06	1694	16.75*	Sesquiterpene
Selina-3,7(11)-diene	30.18*	1522	0.13	0.13	1681	16.11*	Sesquiterpene
α -Cadinene	30.45*	1526	0.09	0.05	1702	17.19*	Sesquiterpene
Guaia-3,9-diene?	30.54*	1527	0.06	0.06	1692	16.65*	Sesquiterpene
Germacrene B	31.82*	1545	0.91	0.90	1724	18.31*	Sesquiterpene
α -Elemol	32.22*	1551	0.02	0.02	1998	35.65*	Sesquiterp. alcohol
Spathulenol	33.59*	1570	0.09	0.04	2022	36.68*	Sesquiterp. alcohol
(<i>E</i>)-Nerolidol	33.59*	1570	[0.09]	0.02	1991	35.29*	Sesquiterp. alcohol
1,10-diepi-Cubenol	36.42*	1616	0.04	0.06	1957	33.79*	Sesquiterp. alcohol
τ -Cadinol	37.27*	1637	0.08	0.07	2073	38.43*	Sesquiterp. alcohol
τ -Muurolol	37.38*	1640	0.09	0.09	2089	38.93*	Sesquiterp. alcohol
α -Cadinol	37.82*	1650	0.18	0.27	2127	40.10*	Sesquiterp. alcohol
meta-Camphorene	46.83*	1943	0.06	0.08	2135	40.36*	Diterpene
para-Camphorene	47.56*	1972	0.05	0.09	2181	41.55*	Diterpene
Total identified			98.89%	99.21%			

*: 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

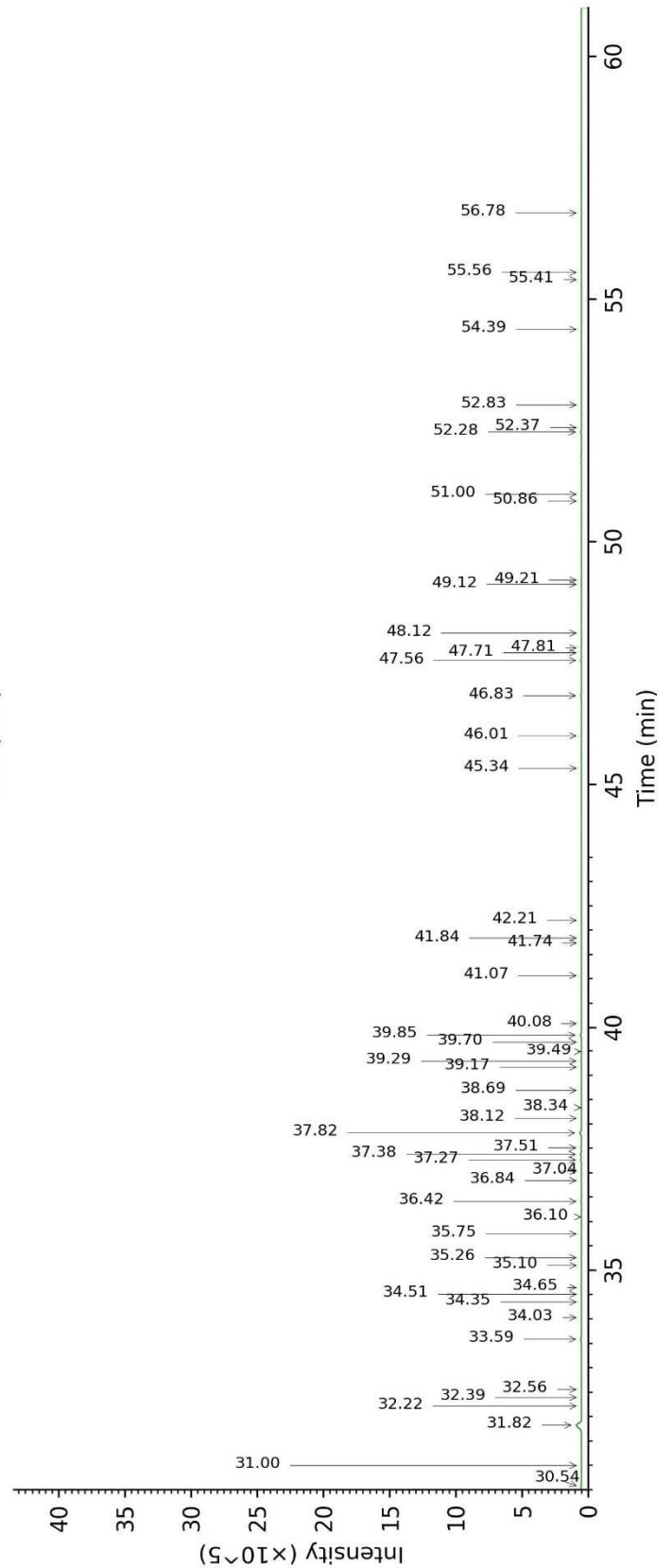
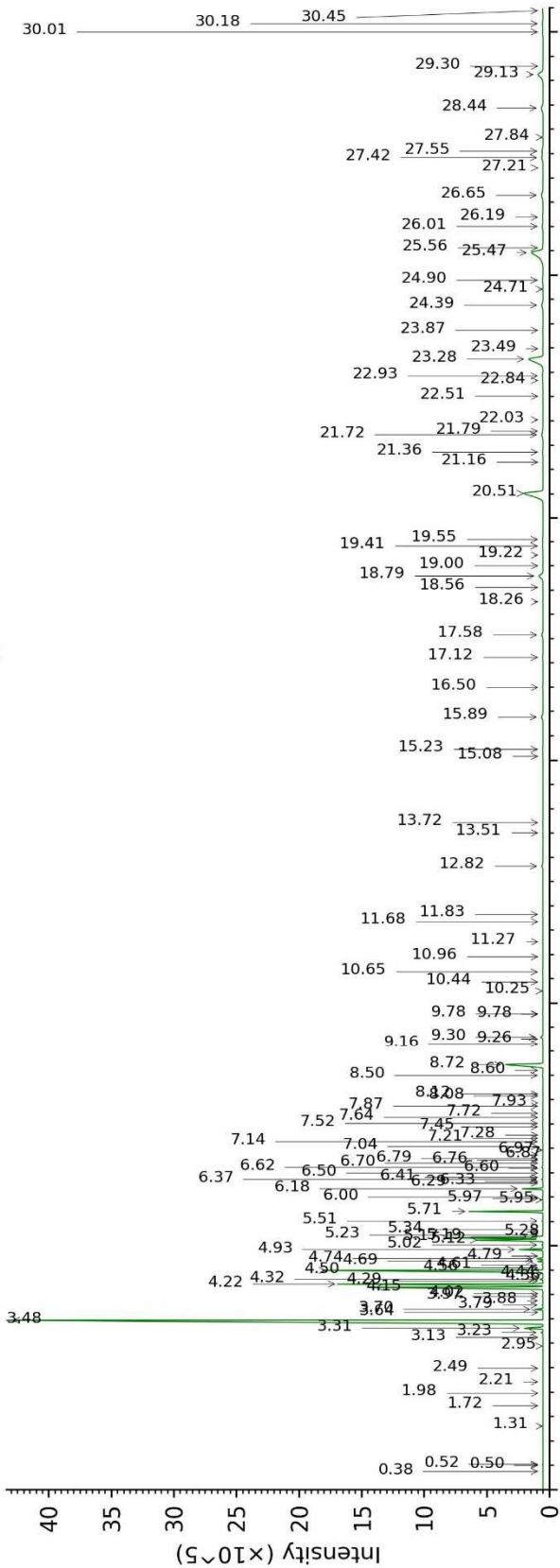
Physical aspect : Clear liquid

Refractive index : 1.4740 ± 0.0003 (20 °C)

CONCLUSION

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

17D28-PTH1-1-DM_BP5



17D28-PTH1-1-DM_WAX

