

GC/MS BATCH NUMBER: R50102

ESSENTIAL OIL: ORGANIC ROSEMARY
BOTANICAL NAME: ROSMARINUS OFFICINALIS ORGANIC
ORIGIN: MOROCCO

KEY CONSTITUENTS PRESENT IN THIS BATCH OF ORGANIC ROSEMARY OIL	%
1,8-CINEOLE	44.5
CAMPHOR	11.1
α -PINENE	11.1
β -PINENE	7.8
CAMPHENE	4.5
β -CARYOPHYLLENE	3.5
BORNEOL	3.0
LIMONENE	2.3
β -MYRCENE	1.4
α -TERPINEOL	1.3
p-CYMENE	1.1
BORNYL ACETATE	1.0
LINALOOL	0.7
VERBENONE	0.02

Comments from Robert Tisserand: The odor profile is as it should be for this type of rosemary, and it conforms to the ISO standard for rosemary oil cineole chemotype

Customer :

**PLANT THERAPY
126 Locust Street South
Twin Falls, ID 83 301
USA**

Sample nature: ESSENTIAL OIL
Botanical name: ROSMARINUS OFFICINALIS ORGANIC
Reference name: ROSEMARY ORGANIC
Batch number: R50102
Origin: MOROCCO
Part: PLANT AND FLOWER
Pyrenessences reference: D232
Date of reception: 03/19/2015
Date analysis: 04/11/2015
Packaging: Amber flask of 4 ml - ambient temperature
Wanted analysis: Classical GC

Report validated by :

Daniel Dantin



GAS CHROMATOGRAPHY (norm NF ISO 11024)

Conditions :

GC FID 6890 / MS 5973 AGILENT- Column : VF WAX polar 60 m × 0,25 mm × 0,5 µm

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Temperature program : 6 mn to 60 °C -2 °C/mn→250 °C - 10 mn to 250 °C

Carrier gas He : 23 psis/MS - 30 psis/FID

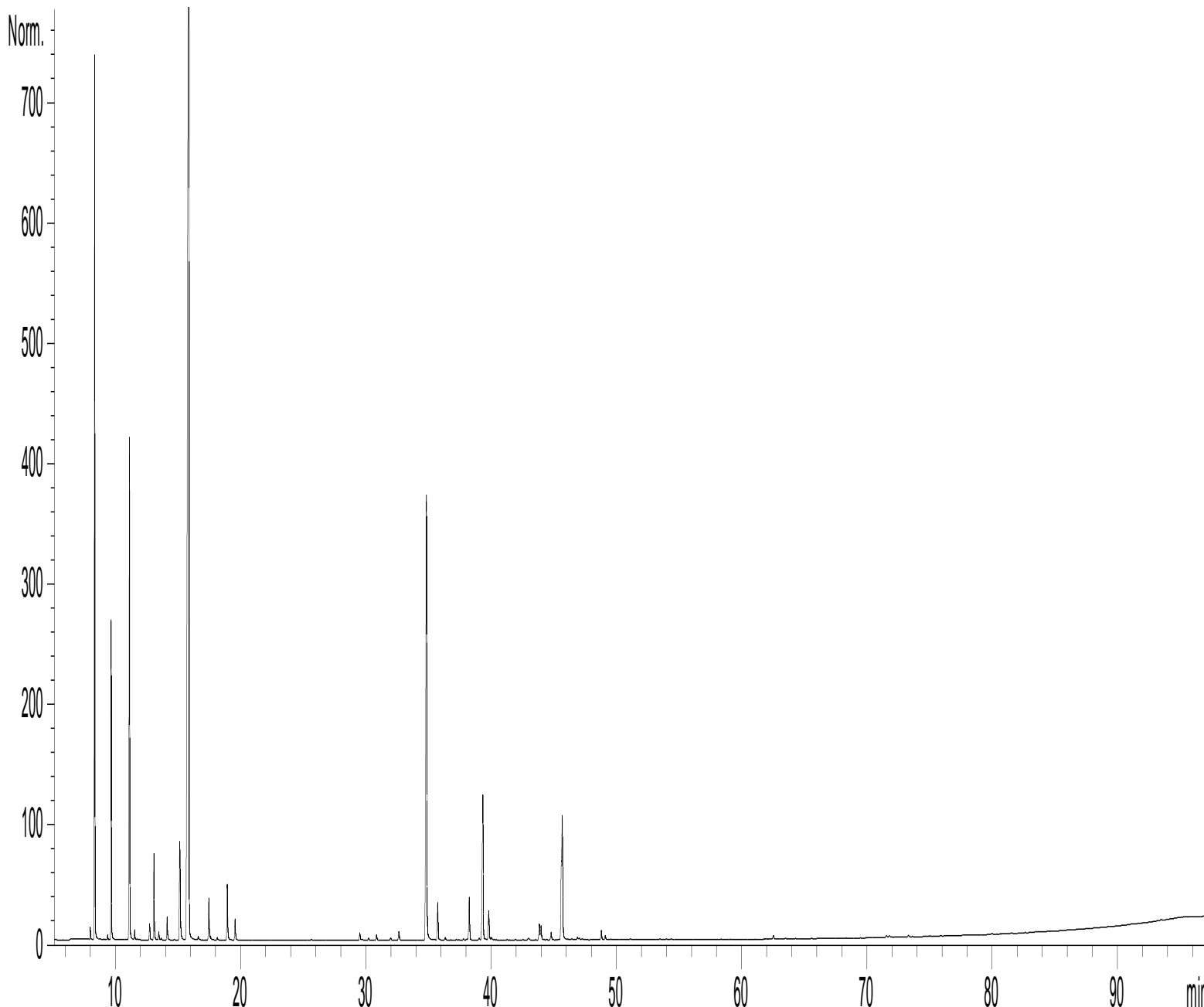
Sample injection / split : 1 µl of 10 % solution in hexane,

Mass range : 30 to 350, Oil components are identified by a combination of retention times (our own database) and mass spectra library NKS 75 000 records,

Percentages are calculated from GC/FID peaks areas without using corrections factors,

Chromatographic profile (GC/FID) :

FID1 A, (Z:\PLANTHER\RO15D232.D)



Identification results 1 – ROSEMARY ORGANIC MOROCCO BATCH R50102

Peak	RT (min)	Compound	%	Norm (%)	Allergens (%)
1	7,3	TRICYCLENE	0,15		
2	8,3	α-PINENE	11,05	9 - 14	
3	8,4	α-THUYENE	0,35		
4	9,4	α-FENCHENE	0,07		
5	9,7	CAMPHENE	4,47	2,5 – 6,0	
6	11,1	β-PINENE	7,77	4,0 – 9,0	
7	11,5	SABINENE	0,17		
8	11,7	PINADIENE	0,02		
9	12,7	Δ3-CARENE	0,29		
10	13,1	β-MYRCENE	1,39	1,0 – 2,0	
11	13,5	α-PHELLANDRENE	0,15		
12	13,7	ψ-LIMONENE	0,03		
13	14,1	α-TERPINENE	0,43		
14	14,7	1,8-CINEOLE, 2,3-DEHYDRO	0,01		
15	15,1	LIMONENE	2,30	1,5 – 4,0	2,30
16	15,9	1,8-CINEOLE	44,49	38,0 – 55,0	
17	16,6	FURAN, 2-PENTYL-	0,01		
18	16,6	Cis-β-OCIMENE	0,06		
19	17,5	γ-TERPINENE	0,77		
20	17,6	Trans-β-OCIMENE	0,08		
21	18,1	3-OCTANONE	0,05		
22	18,9	p-CYMENE	1,10	0,5 – 2,5	
23	19,6	TERPINOLENE	0,42		
24	25,7	3-HEXEN-1-OL	0,02		
25	27,0	FENCHOL	0,01		
26	29,5	1-OCTENE-3-OL	0,15		
27	30,2	α,p-DIMETHYLSTYRENE	0,03		
28	30,9	α-CUBEBENE + Trans-THUYANOL	0,13		
29	32,0	YLANGENE	0,06		
30	32,6	α-COPAENE	0,21		
31	33,3	α-CAMPHOLENAL	0,02		
32	34,8	CAMPHOR	11,07	5,0 – 15,0	
33	35,7	LINALOOL	0,73	0,3 – 2,0	0,73
34	36,3	Cis-THUYANOL	0,06		
35	36,8	PINOCAMPHONE	0,01		
36	37,2	Trans-p-MENTH-2-EN-1-OL	0,02		
37	37,4	ISOPULEGOL	0,01		
38	37,8	PINOCARVONE	0,03		
39	38,1	BORNYL FORMIATE	0,01		
40	38,1	ε-CADINENE	0,02		
41	38,3	BORNYL ACETATE	0,97	0,1 – 1,6	
42	39,1	CAMPHENE HYDRATE + β-CUBEBENE	0,05		
43	39,3	β-CARYOPHYLLENE	3,53		
44	39,8	TERPINENE-4-OL	0,67		
45	40,0	AROMADENDRENE	0,06		

Identification results 2 – ROSEMARY ORGANIC MOROCCO BATCH R50102

Peak	RT (min)	Compound	%	Norm (%)	Allergens (%)
46	41,3	Trans-p-MENTH-2-EN-1-OL	0,01		
47	41,5	MYRTENAL	0,01		
48	41,9	CADINA-3,5-DIENE	0,01		
49	42,0	ALLO-AROMADENDRENE	0,07		
50	43,0	Trans-PINOCARVEOL	0,13		
51	43,6	ZONARENE	0,01		
52	43,9	δ-TERPINEOL	0,36		
53	44,0	α-HUMULENE	0,34		
54	44,4	NERAL	0,01		0,01
55	44,8	γ-MUUROLENE	0,18		
56	45,6	α-TERPINEOL	1,26	1,0 – 2,5	
57	45,7	BORNEOL	3,02	1,0 – 5,0	
58	46,1	VERBENONE	0,02	n.d. – 0,4	
59	46,2	GERMACRENE D	0,02		
60	46,5	α-MUUROLENE	0,04		
61	46,9	β-BISABOLENE	0,07		
62	47,0	β-SELINENE	0,05		
63	47,3	α-SELINENE	0,04		
64	48,8	δ-CADINENE	0,21		
65	49,1	γ-CADINENE	0,10		
66	49,6	β-SESQUIPELLANDRENE	0,01		
67	49,7	α-CURCUMENE	0,01		
68	50,6	SESQUITERPENE	0,02		
69	51,1	CADINA-1,4-DIENE	0,03		
70	53,5	CALAMENENE	0,03		
71	53,7	GERANIOL	0,01		0,01
72	54,4	p-CYMENE-8-OL	0,02		
73	58,4	α-CALACORENE	0,01		
74	62,5	CARYOPHYLLENE EPOXIDE	0,06		
75	63,5	E-METHYLEUGENOL	0,03		
76	65,6	EPOXY-6,7-HUMULENE	0,01		
77	71,6	ISOTHYMOL	0,06		
78	71,8	EUGENOL	0,07		0,07
79	73,3	THYMOL	0,04		
80	80,0	SESQUITERPENIC EPOXIDE	0,02		
81	93,5	AROMATIC COMPONENT	0,03		
		TOTAL	99,92		3,12