

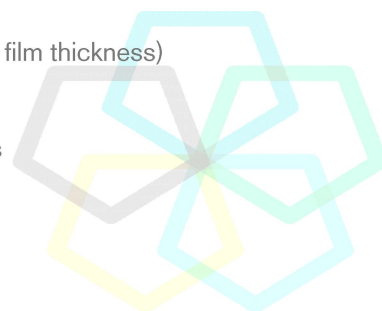


Aromatic Plant Research Center

We provide uncompromising
quality control for your products.

Customer : doTERRA International
Lot Number : 232752
Date Filled : 10/02/2023

Column : ZB5 (60 m length × 0.25 mm inner diameter × 0.25 µm film thickness)
Instrument : Shimadzu GCMS-QP2010 Ultra
Carrier gas : Helium 80 psi
Temperature ramp : 2 degrees celsius per minute up to 260-degrees celsius
Split ratio : 30:1
Sample preparation : 5%w/v solution with Dichloromethane.



Comments:

The analysis of this Frankincense lot revealed no contaminants or adulteration.
The sample meets the expected chemical profile for authentic essential oils of *Boswellia* species.

Analysied by : Ambika Poudel
Reviewed by : Dr. Prabodh Satyal



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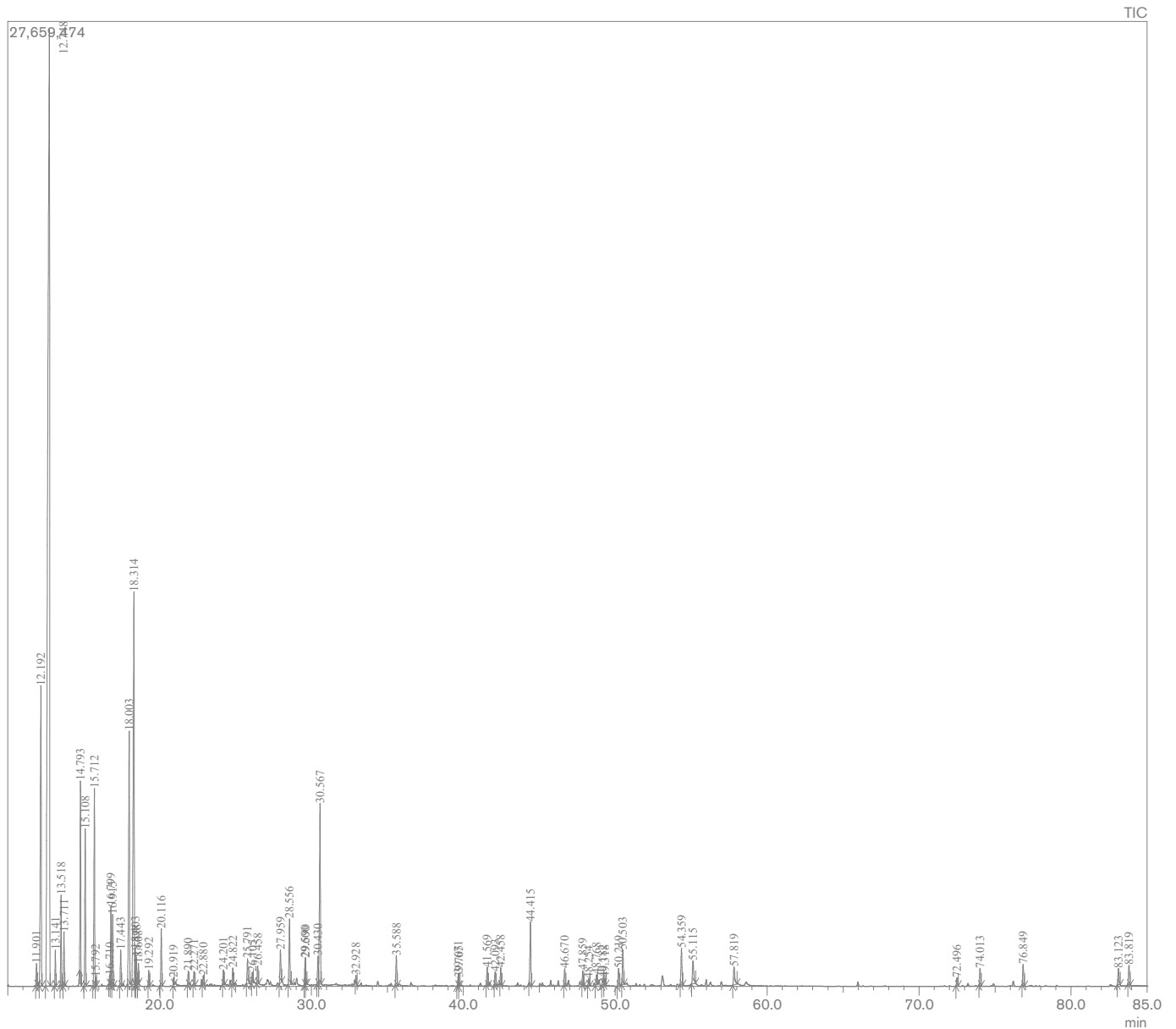
Frankincense Essential Oil

Customer : doTERRA International

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Chromatogram



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Peak Report

Peak#	R.Time	Name	Area%
1	11.901	Hashishene	0.36
2	12.192	alpha-Thujene	6.82
3	12.748	alpha-Pinene	40.35
4	13.141	Thujadiene	0.51
5	13.518	Camphene	1.38
6	13.711	Thuja-2,4(10)-diene	0.80
7	14.793	Sabinene	3.24
8	15.108	beta-Pinene	2.62
9	15.712	Myrcene	3.48
10	15.792	1,3,5-Trimethylenecycloheptane	0.13
11	16.710	3-Ethenyl-1,2-dimethyl-1,4-cyclohexadiene	0.14
12	16.799	alpha-Phellandrene	1.40
13	16.915	delta-3-Carene	1.21
14	17.443	alpha-Terpinene	0.60
15	18.003	para-Cymene	5.45
16	18.314	Limonene	9.65
17	18.403	beta-Phellandrene	0.51
18	18.478	1,8-Cineole	0.41
19	18.608	cis-beta-Ocimene	0.34
20	19.292	trans-beta-Ocimene	0.25
21	20.116	gamma-Terpinene	1.01
22	20.919	n-Octanol	0.11
23	21.890	Terpinolene	0.24
24	22.271	para-Cymenene	0.25
25	22.880	Linalool	0.18
26	24.201	trans-Thujone	0.26
27	24.822	alpha-Campholenal	0.33
28	25.791	trans-Pinocarveol	0.54
29	26.105	trans-Verbenol	0.19
30	26.458	alpha-Felandren-8-ol	0.32
31	27.959	para-Mentha-1,5-dien-8-ol	0.70
32	28.556	Terpinen-4-ol	1.38
33	29.590	alpha-Terpineol	0.38
34	29.600	Myrtenal	0.29
35	30.430	Verbenone	0.57
36	30.567	Octyl acetate	3.96
37	32.928	Carvone	0.12
38	35.588	Bornyl acetate	0.61
39	39.671	alpha-Cubebene	0.25
40	39.705	alpha-Terpinyl acetate	0.06
41	41.569	alpha-Copaene	0.37
42	42.093	beta-Bourbonene	0.27
43	42.458	beta-Elemene	0.32
44	44.415	beta-Caryophyllene	1.38
45	46.670	alpha-Humulene	0.34
46	47.859	trans-Cadina-1(6),4-diene	0.29
47	48.254	Germacrene D	0.15
48	48.768	beta-Selinene	0.22
49	49.182	alpha-Selinene	0.13
50	49.318	alpha-Murolene	0.13
51	50.219	gamma-Cadinene	0.38
52	50.503	delta-Cadinene	0.74
53	54.359	Caryophyllene oxide	0.82
54	55.115	Viridiflorol	0.68
55	57.819	epi-alpha-Cadinol	0.53
56	72.496	Cembrene	0.19
57	74.013	3-trans-Cembrene A	0.37
58	76.849	Verticilla-4(20),7,11-triene	0.46
59	83.123	Serratol	0.40
60	83.819	Incensyl acetate	0.44
			100.00

