

Laboratory Test Report

SAMPLE NAME : Fir Needle
CLIENT NAME : Plant Therapy
CLIENT LOT # : F20114R
APRC LOT# : PT250603A

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-degree Celsius
Split ratio : 30:1
Sample preparation : 5% w/v solution with Dichloromethane

Interpretation on this sample

The analysis of Fir Needle sample meets the standard chemical profile of *Abies sibirica* essential oil.

Analyzed by : Dr Prabodh Satyal
Reviewed by : Ambika Poudel

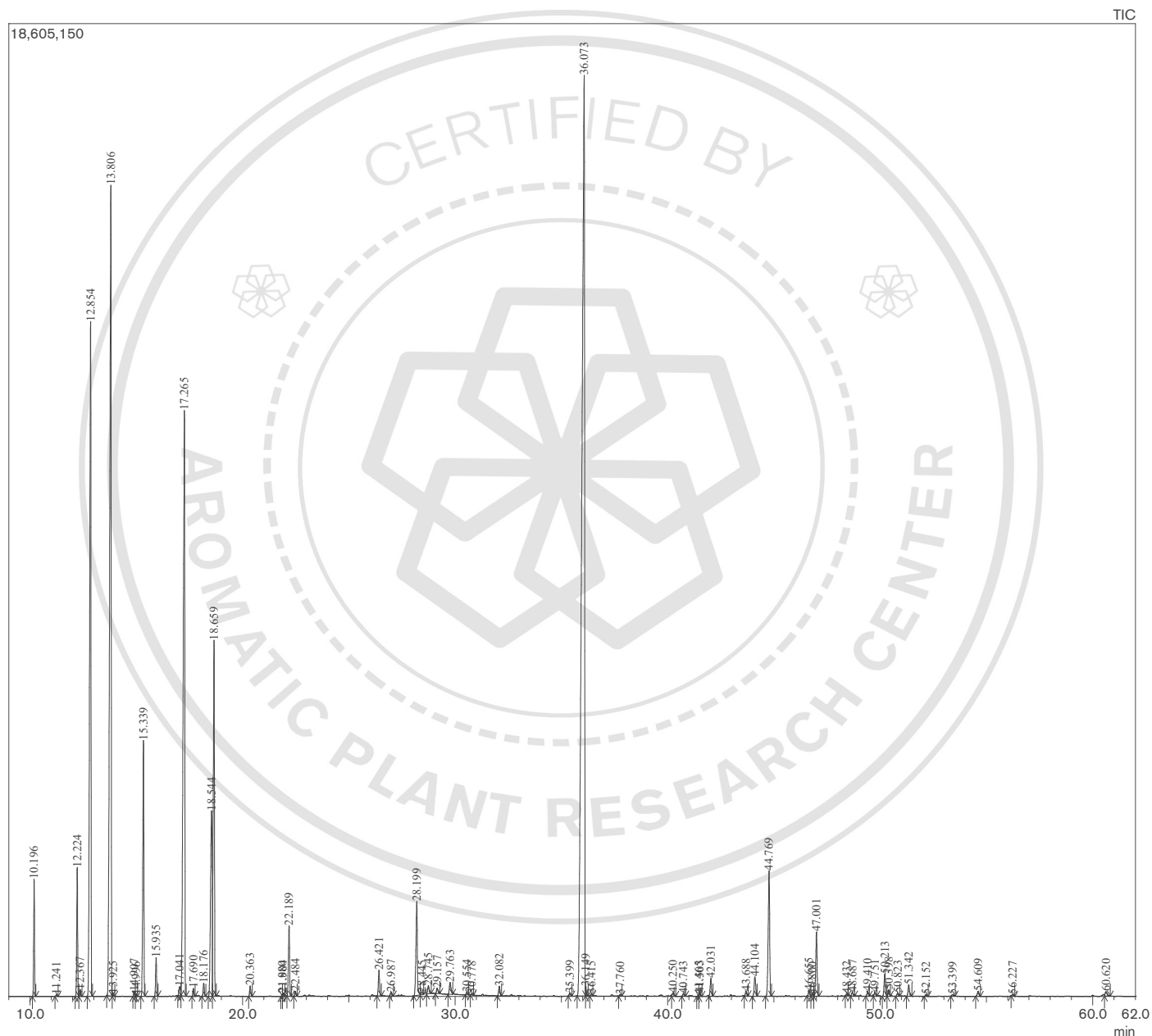
Issued Date : 6/4/2025

GCMS Analysis

Sample Information

Analyzed by : Dr. Prabodh Satyal
Analyzed : 6/4/2025 2:41:25 AM
Sample Type : Essential Oil
Sample Name : Fir Needle
Client Name : Plant Therapy
Client Lot# : F20114R
APRC Lot# : PT250603A
Injection Volume : 0.30

Chromatogram



Peak Report

Peak#	R.Time	Name	Area%
1	10.196	Santene	1.25
2	11.241	Santolina triene isomer	0.02
3	12.224	Tricyclene	1.55
4	12.367	alpha-Thujene	0.09
5	12.854	alpha-Pinene	11.63
6	13.806	Camphene	16.10
7	13.925	Thuja-2,4(10)-diene	0.03
8	14.907	3,7,7-Trimethyl-1,3,5-cycloheptatriene	0.06
9	14.996	Sabinene	0.02
10	15.339	beta-Pinene	3.65
11	15.935	Myrcene	0.50
12	17.041	alpha-Phellandrene	0.16
13	17.265	delta-3-Carene	11.89
14	17.690	alpha-Terpinene	0.10
15	18.176	para-Cymene	0.19
16	18.544	Limonene	4.12
17	18.659	beta-Phellandrene	5.42
18	20.363	gamma-Terpinene	0.15
19	21.880	meta-Cymenene	0.02
20	21.904	para-Mentha-2,4(8)-diene	0.04
21	22.189	Terpinolene	1.05
22	22.484	para-Cymenene	0.07
23	26.421	Camphor	0.40
24	26.987	trans-beta-Terpineol	0.07
25	28.199	Borneol	1.72
26	28.445	cis-Pinocamphone	0.06
27	28.745	Terpinen-4-ol	0.16
28	29.157	Cryptone+Cymenol	0.10
29	29.763	alpha-Terpineol	0.25
30	30.554	Verbenone	0.04
31	30.778	4-Methylene isophorone	0.02
32	32.082	Thymol methyl ether	0.16
33	35.399	Phellandral	0.06
34	36.073	Bornyl acetate	32.79
35	36.149	Isobornyl acetate	0.10
36	36.415	2-Undecanone	0.03
37	37.760	6-cis-Nonen-1-ol acetate	0.02
38	40.250	alpha-Longipinene	0.06
39	40.743	Neryl acetate	0.04
40	41.465	Myrtanyl acetate	0.02
41	41.503	alpha-Ylangene	0.05
42	42.031	Geranyl acetate	0.29
43	43.688	Sibirene	0.08
44	44.104	Dodecanal+Longifolene	0.38
45	44.769	beta-Caryophyllene	2.35
46	46.655	alpha-Himachalene	0.10
47	46.800	trans-beta-Farnesene	0.03
48	47.001	alpha-Humulene	1.13
49	48.432	gamma-Gurjunene	0.04
50	48.687	beta-Selinene	0.06
51	49.410	beta-Alaskene	0.10
52	49.751	beta-Himachalene	0.07
53	50.213	beta-Bisabolene	0.41
54	50.398	cis-gamma-Bisabolene	0.12
55	50.823	delta-Cadinene	0.06
56	51.342	trans-gamma-Bisabolene	0.21
57	52.152	trans-alpha-Bisabolene	0.03
58	53.399	trans-Nerolidol	0.03
59	54.609	Caryophyllene oxide	0.10
60	56.227	Humulene epoxide II	0.03
61	60.620	alpha-Bisabolol	0.10
			100.00