

Sample Information

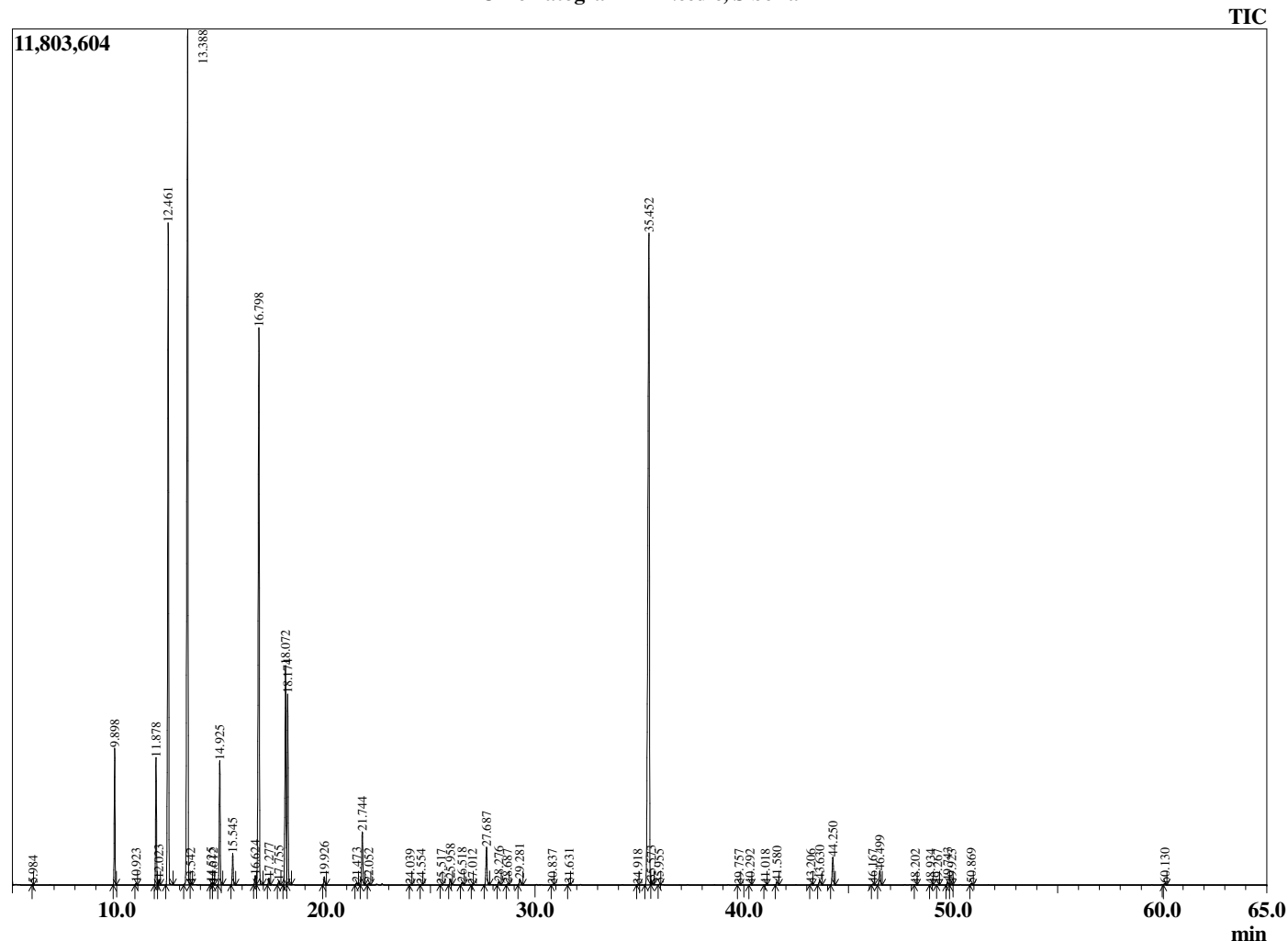
Analyzed by : Dr. Robert S. Pappas
 Analyzed : 10/11/2018 9:14:01 AM
 Sample Type : Essential Oil
 Sample Name : Fir Needle, Siberia
 Sample ID : P170116GR
 Injection Volume : 0.10
 Instrument ID: : GC-3



Peak Report TIC

R.Time	Name	Area%
5.984	Toluene	0.01
9.898	Santene	2.49
10.923	Unidentified	0.04
11.878	Tricyclene	2.56
12.023	alpha-Thujene	0.12
12.461	alpha-Pinene	15.12
13.388	Camphene	22.63
13.542	Thuja-2,4(10)diene	0.03
14.525	Unidentified	0.04
14.612	Sabinene	0.02
14.925	beta-Pinene	2.73
15.545	Myrcene	0.71
16.624	alpha-Phellandrene	0.23
16.798	delta-Carene	14.55
17.277	alpha-Terpinene	0.15
17.755	para-Cymene	0.10
18.072	Limonene	5.78
18.174	beta-Phellandrene	4.26
19.926	gamma-Terpinene	0.20
21.473	Terpinolene isomer	0.06
21.744	Terpinolene	1.33
22.052	para-Cymenene	0.04
24.039	endo-Fenchol	0.01
24.554	alpha-Campholenal	0.01
25.517	trans-Pinocarveol	0.01
25.958	Camphor	0.16
26.518	trans-beta-Terpineol	0.07
27.012	para-Mentha-1,5-dien-8-ol	0.01
27.687	Borneol	1.06
28.276	Terpinen-4-ol	0.10
28.687	para-Cymen-8-ol	0.02
29.281	alpha-Terpineol	0.18
30.837	endo-Fenchyl acetate	0.02
31.631	Thymol methyl ether	0.03
34.918	Phellandral	0.01
35.452	Bornyl acetate	23.04
35.573	Isobornyl acetate	0.10
35.955	2-Undecanone	0.01
39.757	alpha-Longipinene	0.02
40.292	Neryl acetate	0.02
41.018	alpha-Ylangene	0.02
41.580	Geranyl acetate	0.10
43.206	alpha-Gurjunene	0.03
43.630	Unidentified	0.17
44.250	beta-Caryophyllene	0.84
46.167	alpha-Himachalene	0.03
46.499	alpha-Humulene	0.44
48.202	gamma-Himachelene	0.02
48.934	beta-Alaskene	0.02
49.267	beta-Himachalene	0.01
49.743	beta-Bisabolene	0.09
49.923	trans,trans-alpha-Farnesene	0.03
50.869	trans-gamma-Bisabolene	0.05
60.130	alpha-Bisabolol	0.05
		100.00

Chromatogram Fir Needle, Siberia



Comments:

The analysis of this Fir Needle, Siberia batch sample meets the expected chemical profile for authentic essential oil of *Abies sibirica*. No contamination or adulteration was detected.

The results provided in this GCMS quality analysis reflect the chemical composition of the oil and lot referenced above on the date of analysis.