

Sample Information

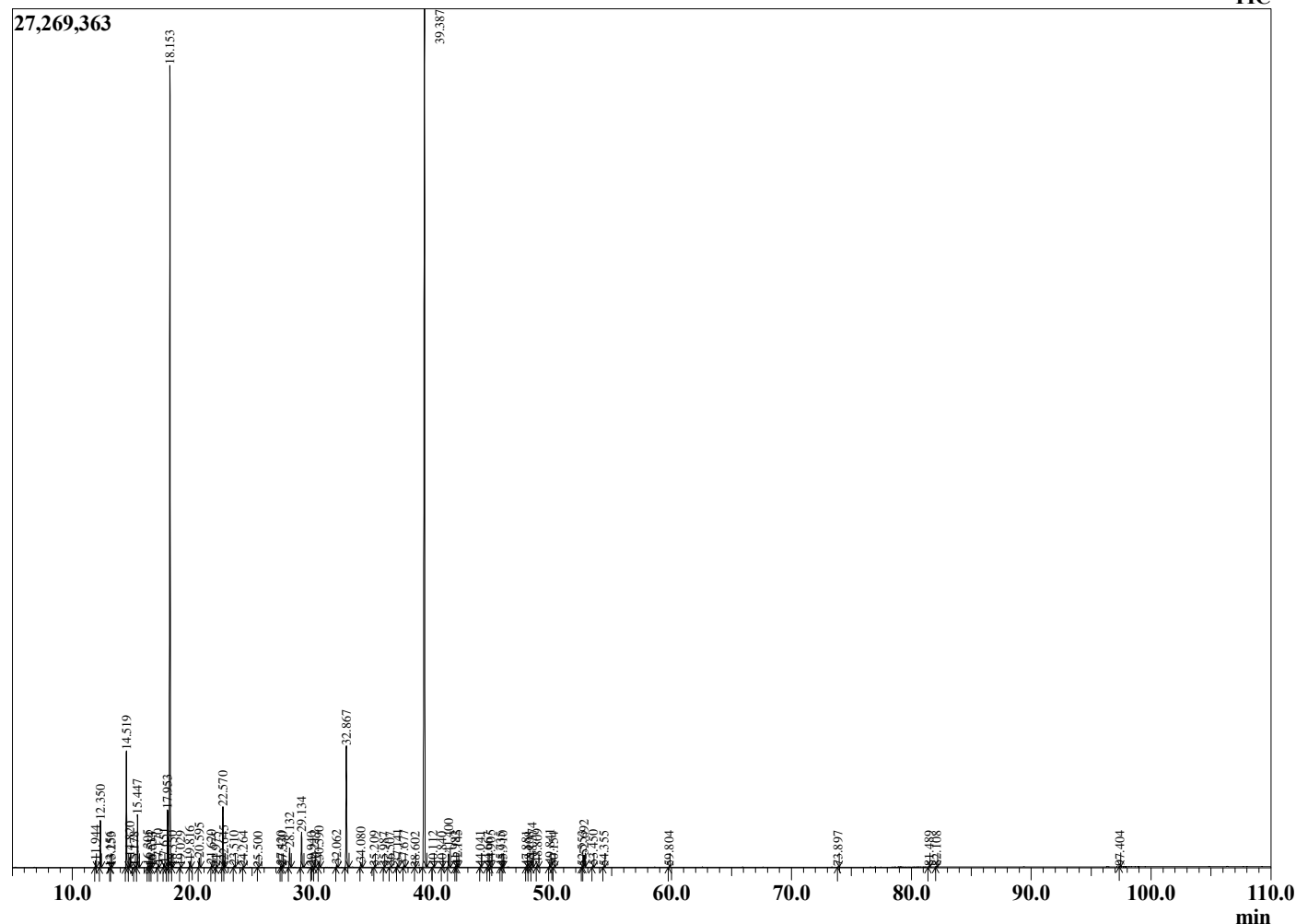
Analyzed by : Dr. Robert S. Pappas
 Analyzed : 3/22/2021 11:33:10 PM
 Sample Type : Essential Oil
 Sample Name : Cardamom - Barefut
 Sample ID : 0110
 Injection Volume : 0.10
 Instrument ID : GC-4



Peak Report TIC

R.Time	Name	Area%
4.065	3-Methylbutanal	0.01
4.170	2-Methylbutanal	0.01
11.944	alpha-Thujene	0.20
12.350	alpha-Pinene	1.46
13.156	alpha-Fenchene	0.00
13.253	Camphene	0.02
14.519	Sabinene	3.84
14.820	beta-Pinene	0.36
15.178	6-Methyl hept-5-en-2-one	0.02
15.447	Myrcene	1.83
16.305	Octanal	0.08
16.514	alpha-Phellandrene	0.01
16.653	delta-3-Carene	0.01
17.170	alpha-Terpinene	0.10
17.651	para-Cymene	0.15
17.953	Limonene	2.26
18.153	1,8-Cineole	30.72
18.350	(Z)-beta-Ocimene	0.03
19.029	(E)-beta-Ocimene	0.04
19.816	gamma-Terpinene	0.24
20.595	trans-Sabinene hydrate	0.39
21.620	Terpinolene	0.10
21.975	6,7-Epoxymyrcene	0.02
22.570	Linalool	2.45
22.645	cis-Sabinene hydrate	0.18
23.510	Unidentified	0.06
24.264	cis-para-Menth-2-en-1-ol	0.03
25.500	Unidentified	0.01
27.420	delta-Terpineol	0.06
27.530	Borneol	0.02
28.132	Terpinen-4-ol	0.84
29.134	alpha-Terpineol	1.56
29.940	Decanal	0.01
30.212	Octyl acetate	0.07
30.590	Unidentified	0.27
32.062	Neral	0.11
32.867	Linalyl acetate	5.26
34.080	Geranial	0.21
35.209	Bornyl acetate	0.02
35.987	4-Terpinyl acetate	0.01
36.507	Unidentified	0.02
37.141	Unidentified	0.15
37.677	Methyl geranate	0.10
38.602	delta-Elementene	0.01
39.387	alpha-Terpinyl acetate	44.12
40.112	Neryl acetate	0.02
40.840	alpha-Ylangene	0.01
41.400	Geranyl acetate	0.59
41.982	Unidentified	0.04
42.145	beta-Elementene	0.09
44.041	trans-beta-Caryophyllene	0.03
44.667	gamma-Elementene	0.01
44.905	alpha-Terpinyl propionate	0.06
45.735	Unidentified	0.02
45.910	6,9-Guanidiene	0.02
47.881	Germacrene D	0.03
48.108	beta-Chamigrene	0.03
48.374	beta-Selinene	0.44
48.809	alpha-Selinene	0.16
49.841	gamma-Cadinene	0.12
50.154	Unidentified	0.03
52.553	Germacrene B	0.03

Chromatogram Cardamom - Barefut



Comments:

The analysis of this Cardamom batch sample meets the expected chemical profile for authentic essential oil of *Elettaria cardamomum*. 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.

R.Time	Name	Area%
52.692	(E)-Nerolidol	0.56
53.450	Dendralasin	0.08
54.355	Unidentified	0.03
59.804	alpha-Bisabolol	0.02
73.897	Palmitic acid	0.02
81.489	Unidentified	0.03
82.108	Unidentified	0.03
97.404	Pentacosane	0.01
		100.00