



Essential Validation Services





Sample:

Client: | Nature's Fusions
Sample: | Ginger (Zingiber officinalis)
Batch # | NF-GING-18-A
CAS Number | 8007-08-7
Type: | Essential Oil

Conclusion:

- No adulterants, diluents, or contaminants were detected via this method.
- This oil meets the expected profile for genuine essential oil of Ginger (Zingiber officinalis).



X 

Validated By:

Essential Validation Services

747 SW 2nd Ave, Gainesville, FL 32601

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Summary of Analyses

A fresh sample of Ginger (Zingiber officinalis) Essential Oil (10 uL in .5to.5 mL Hexane + ETOH) was prepared and analyzed via split injection GC/EI-MS.



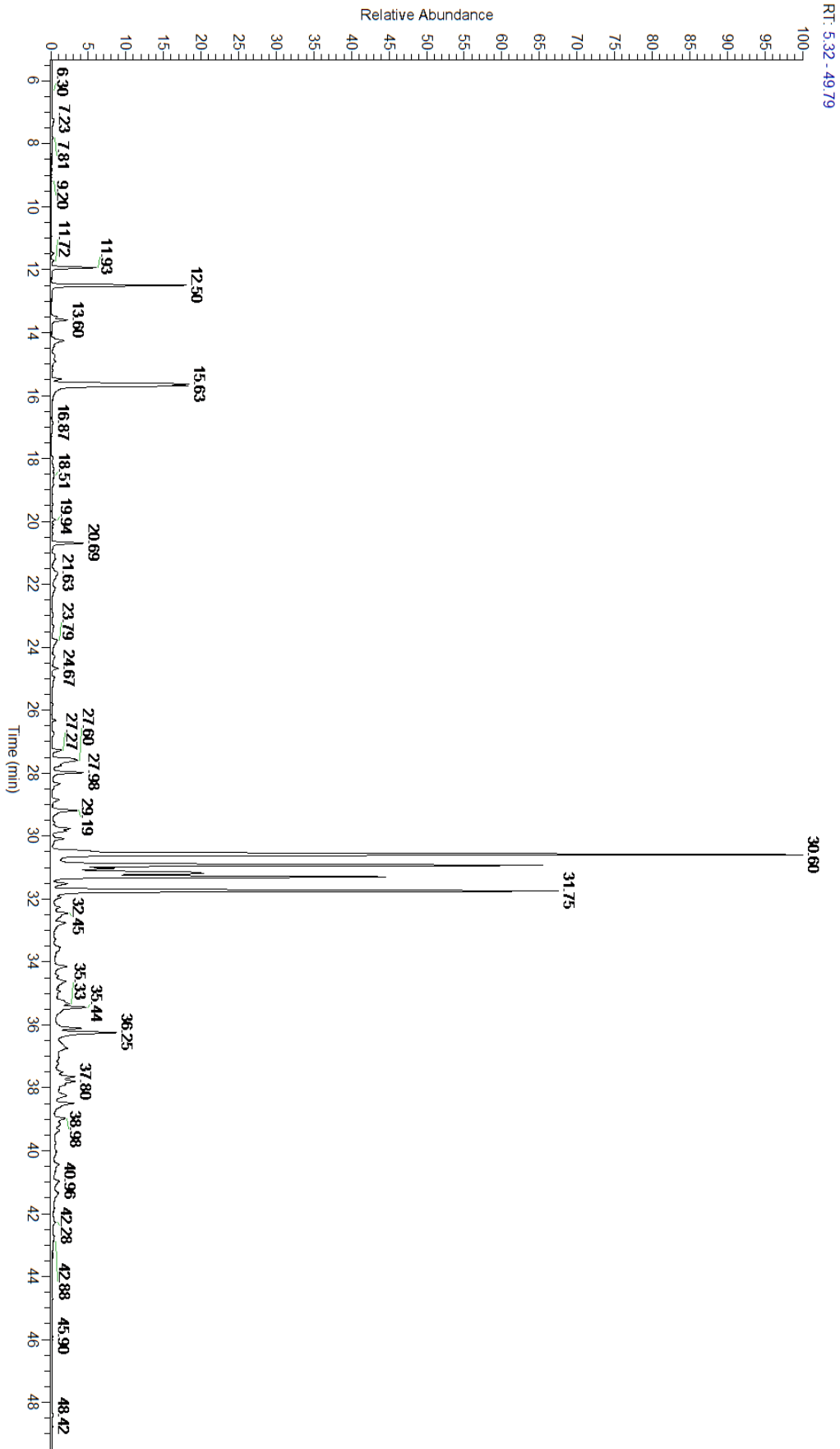
Main Compounds	Percentages
ar-Curcumene	21.17%
beta-Sesquiphellandrene	13.54%
alpha-Zingiberene	12.00%
beta-Bisabolene	7.99%
(Z,E)-alpha-Farnesene	6.02%
Limonene (Co-Eluting)	3.40%
Camphene	3.19%
1,8-Cineole	2.95%
Khusinol	2.27%
alpha-Selinene	1.50%
Geranyl acetate	1.47%
Pogostol	1.16%
alpha-Pinene	1.05%

Monoterpenes	Sesquiterpenes	Monoterpenols	Sesquiterpenols	Ketones
9.47%	66.47%	1.66%	4.77%	0.52%
Esters	Ethers	Aldehydes	Phenols	Other
2.39%	3.05%	0.34%	0.00%	11.33%



- Monoterpenes ■ Sesquiterpenes ■ Monoterpenols
- Sesquiterpenols ■ Ketones ■ Esters
- Ethers ■ Phenols ■ Other

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Total Percentage		88.67%			
Peak Number	RT	Area %	Compound Name	RI	Chemical Family
1	11.47	0.04%	Tricyclene	923.00	Monoterpene
2	11.72	0.05%	alpha-Thujene	927.80	Monoterpene
3	11.93	1.05%	alpha-Pinene	936.10	Monoterpene
4	12.50	3.19%	Camphene	950.30	Monoterpene
5	13.50	0.13%	Sabinene	973.00	Monoterpene
6	13.60	0.46%	beta-Pinene	974.00	Monoterpene
7	14.25	0.56%	Myrcene	989.20	Monoterpene
8	14.72	0.08%	alpha-Phellandrene	1002.00	Monoterpene
9	14.91	0.16%	delta-3-Carene	1008.00	Monoterpene
10	15.21	0.01%	alpha-Terpinene	1014.00	Monoterpene
11	15.48	0.22%	para-Cymene	1024.30	Monoterpene
12	15.63	3.40%	Limonene	1029.50	Monoterpene
13	15.63	Co-Eluting	beta-Phellandrene	1030.00	Monoterpene
14	15.69	2.95%	1,8-Cineole	1031.80	Monoterpene Ether
15	16.87	0.04%	gamma-Terpinene	1054.00	Monoterpene
16	17.97	0.02%	Terpinolene	1092.10	Monoterpene
17	18.33	0.08%	Linalool	1099.00	Monoterpenol
18	19.94	0.09%	Camphor	1147.55	Monoterpene Ketone
19	20.10	0.03%	Camphene hydrate	1151.00	Monoterpenol
20	20.40	0.03%	Isoborneol	1159.70	Monoterpenol
21	20.69	0.82%	Borneol	1168.71	Monoterpenol
22	21.07	0.10%	Rose furan epoxide	1174.25	Monoterpene Ether
23	21.20	0.16%	Terpinen-4-ol	1180.57	Monoterpenol
24	21.63	0.52%	alpha-Terpineol	1191.71	Monoterpenol
25	22.11	0.20%	Decanal	1206.57	Aliphatic Aldehyde
26	22.98	0.02%	Citronellol	1229.25	Monoterpenol
27	23.34	0.06%	Citral	1244.12	Monoterpene
28	23.79	0.32%	Piperitone	1258.50	Monoterpene Ketone
29	24.28	0.14%	Geranial	1272.00	Monoterpene Aldehyde
30	24.67	0.15%	Bornyl acetate	1288.29	Monoterpene Ester
31	24.96	0.11%	2-Undecanone	1288.25	Aliphatic Ketone
32	26.32	0.08%	delta-Elemene	1335.83	Sesquiterpene
33	26.75	0.10%	Citronellyl acetate	1357.83	Monoterpene Ester
34	27.27	0.27%	alpha-Longipinene	1357.90	Sesquiterpene
35	27.55	Co-Eluting	alpha-Copaene	1379.00	Sesquiterpene
36	27.60	1.47%	Geranyl acetate	1378.50	Monoterpene Ester
37	27.98	1.02%	beta-Elemene	1389.20	Sesquiterpene
38	28.34	0.33%	7-epi-Sesquithujene	1398.10	Sesquiterpene
39	28.85	0.24%	beta-Ylangene		
40	29.19	0.93%	gamma-Elemene	1434.00	Sesquiterpene
41	29.57	0.09%	B-Copaene	1445.00	Sesquiterpene
42	29.77	0.55%	(E)-beta-Farnesene	1456.29	Sesquiterpene
43	29.84	0.38%	Sesquisabinene		



44	30.08	0.36%	allo-Aromadendrene	1471.00	Sesquiterpene
45	30.60	21.17%	ar-Curcumene	1480.50	Sesquiterpene
46	30.93	12.00%	alpha-Zingiberene	1491.75	Sesquiterpene
47	31.02	1.50%	alpha-Selinene	1492.50	Sesquiterpene
48	31.19	6.02%	(Z,E)-alpha-Farnesene	1500.50	Sesquiterpene
49	31.30	7.99%	beta-Bisabolene	1509.86	Sesquiterpene
50	31.51	0.39%	gamma-Cadinene	1515.29	Sesquiterpene
51	31.75	13.54%	beta-Sesquiphellandrene	1524.57	Sesquiterpene
52	31.95	0.23%	trans-gamma-Bisabolene	1535.65	Sesquiterpene
53	32.26	0.17%	UK Ginger		
54	32.45	0.73%	Elemol	1538.00	Sesquiterpenol
55	32.76	0.60%	(Z)-Nerolidol	1542.25	Sesquiterpenol
56	33.55	0.23%	cis-sesquisabinene hydrate	1545.00	Monoterpene Ester
57	34.14	0.44%	trans-sesquisabinene hydrate	1576.00	Monoterpene Ester
58	34.44	0.07%	10-epi-gamma-Eudesmol	1620.00	Sesquiterpenol
59	34.62	0.57%	1-epi-Cubenol	1628.00	Sesquiterpenol
60	34.94	0.08%	T-Cadinol	1640.43	Sesquiterpenol
61	35.24	0.15%	beta-Eudesmol	1647.86	Sesquiterpenol
62	35.33	0.48%	alpha-Eudesmol	1652.86	Sesquiterpenol
63	35.44	1.16%	Pogostol	1651.50	Sesquiterpenol
64	35.62	0.06%	epi-beta-Bisabolol	1678.50	Sesquiterpenol
65	36.11	0.87%	(Z,Z)-Farnesol	1698.00	Sesquiterpenol
66	36.25	2.27%	Khusinol		
67	36.74	0.95%	Uk Ginger		
68	37.49	0.20%	UK Ginger		
69	37.65	0.64%	Isobicyclogermacrenal		
70	37.80	0.69%	UK Ginger		
71	37.89	0.26%	UK Ginger		
72	38.25	0.50%	UK Ginger		
73	38.50	0.70%	UK Ginger		
74	38.98	0.43%	UK Ginger		
75	39.15	0.30%	UK Ginger		
76	39.35	0.20%	UK Ginger		
77	40.44	0.18%	UK Ginger		
78	40.96	0.26%	UK Ginger		
79	41.35	0.33%	UK Ginger		
80	42.28	0.07%	UK Ginger		

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