

## Sample:

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Client: | Nature's Gift  
Sample: | Plai (Zingiber cassumunar)  
Batch # | TH-58667  
CAS Number | 84696-15-1  
Type: | Essential Oil

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## Conclusion:

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

X



Validated By:



Essential Validation Services

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## Summary of Analyses

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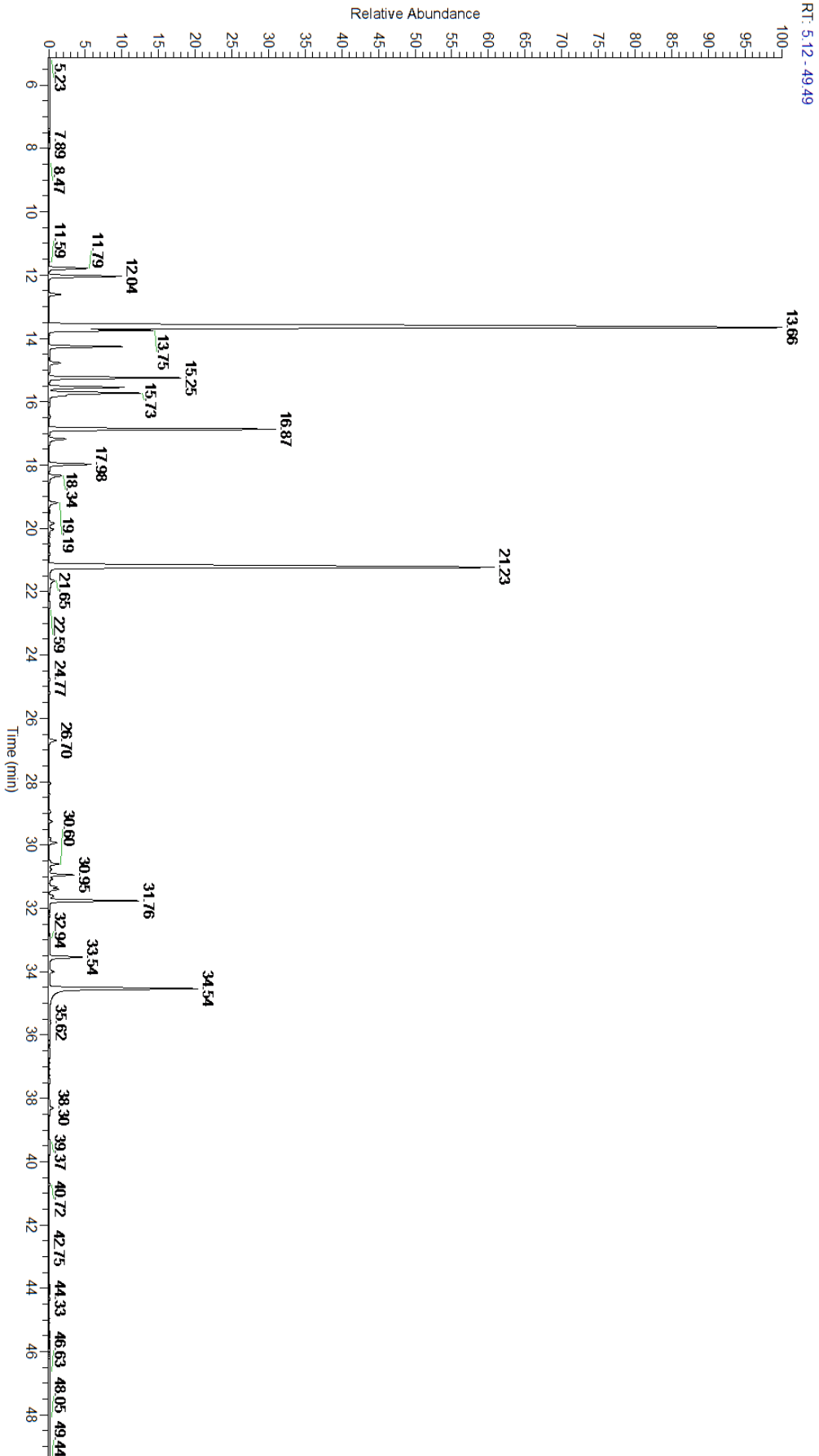
A fresh sample of Plai (Zingiber cassumunar) (10 uL in .5to.5 mL Hexane + ETOH) was prepared and analyzed via split injection GC/EI-MS.

Main Compounds	Percentages
Sabinene	37.33%
Terpinen-4-ol	20.20%
gamma-Terpinene	7.03%
UK (M/Z: 51,63,76,77,89,91)	5.77%
alpha-Terpinene	3.92%
beta-Phellandrene	3.44%
beta-Pinene	2.92%
beta-Sesquiphellandrene	2.71%
para-Cymene	2.27%
alpha-Pinene	2.24%
Myrcene	2.08%
Terpinolene	1.37%
alpha-Thujene	1.15%

Monoterpenes	Sesquiterpenes	Monoterpenols	Sesquiterpenols	Ketones
64.55%	4.30%	22.10%	0.00%	0.30%
Esters	Ethers	Aldehydes	Phenols	Other
0.03%	0.29%	0.00%	0.00%	8.43%



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



Total Percentage		91.57%			
Peak Number	RT	Area %	Compound Name	RI	Chemical Family
1	11.79	1.15%	alpha-Thujene	927.80	Monoterpene
2	12.04	2.24%	alpha-Pinene	936.10	Monoterpene
3	12.61	0.37%	Camphene	950.30	Monoterpene
4	13.66	37.33%	Sabinene	973.00	Monoterpene
5	13.75	2.92%	beta-Pinene	974.00	Monoterpene
6	14.26	2.08%	Myrcene	989.20	Monoterpene
7	14.78	0.37%	alpha-Phellandrene	1002.00	Monoterpene
8	15.02	0.02%	delta-3-Carene	1008.00	Monoterpene
9	15.25	3.92%	alpha-Terpinene	1014.00	Monoterpene
10	15.55	2.27%	para-Cymene	1024.30	Monoterpene
11	15.73	3.44%	beta-Phellandrene	1030.00	Monoterpene
12	15.73	Co-Eluting	Limonene	1029.50	Monoterpene
13	16.10	0.01%	(Z)-beta-Ocimene	1037.80	Monoterpene
14	16.46	0.03%	(E)-beta-Ocimene	1047.70	Monoterpene
15	16.87	7.03%	gamma-Terpinene	1054.00	Monoterpene
16	17.18	0.59%	trans-Sabinene hydrate	1072.00	Monoterpenol
17	17.98	1.37%	Terpinolene	1092.10	Monoterpene
18	18.34	0.50%	cis-Sabinene hydrate	1094.50	Monoterpenol
19	19.19	0.30%	cis-para-Menth-2-en-1-ol	1118.25	Monoterpenol
20	19.84	0.18%	trans-para-Menth-2-en-1-ol	1141.75	Monoterpenol
21	20.03	0.15%	Camphor	1147.55	Monoterpene Ketone
22	20.83	0.02%	Borneol	1168.71	Monoterpenol
23	21.23	20.20%	Terpinen-4-ol	1180.57	Monoterpenol
24	21.65	0.29%	alpha-Terpineol	1191.71	Monoterpenol
25	22.34	0.02%	trans-Piperitol	1208.50	Monoterpenol
26	24.77	0.03%	Bornyl acetate	1288.29	Monoterpene Ester
27	25.20	0.03%	Terpinen-4-ol acetate		
28	26.40	0.01%	delta-Elemene	1335.83	Sesquiterpene
29	26.70	0.29%	alpha-Terpinyl acetate	1353.00	Monoterpene Ether
30	28.05	0.06%	beta-Elemene	1389.20	Sesquiterpene
31	28.40	0.01%	Sesquithujene	1405.00	Sesquiterpene
32	28.95	0.05%	beta-Caryophyllene	1427.14	Sesquiterpene
33	29.25	0.11%	gamma-Elemene	1434.00	Sesquiterpene
34	29.93	0.25%	alpha-Humulene	1461.43	Sesquiterpene
35	30.53	0.03%	gamma-Curcumene	1476.00	Sesquiterpene
36	30.60	0.32%	ar-Curcumene	1480.50	Sesquiterpene
37	30.95	0.75%	alpha-Zingiberene	1491.75	Sesquiterpene
38	31.76	2.71%	beta-Sesquiphellandrene	1524.57	Sesquiterpene
39	33.54	1.13%	UK Chamomile		
40	34.00	0.15%	Curzerenone	1601.00	Sesquiterpene Ketone
41	34.54	5.77%	UK (M/Z: 51,63,76,77,89,91,102,1		
42	37.43	0.03%	Zerumbone		