



# *Essential Validation Services*





## Sample:

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Client: | Natural Sourcing  
Sample: | Andean Mint (Menthastachys Mollis)  
Batch # | PIU050818  
CAS Number |  
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 oil of Andean Mint (Menthastachys Mollis).

X 

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Validated By:



Essential Validation Services

747 SW 2nd Ave, Gainesville, FL 32601

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## Summary of Analyses

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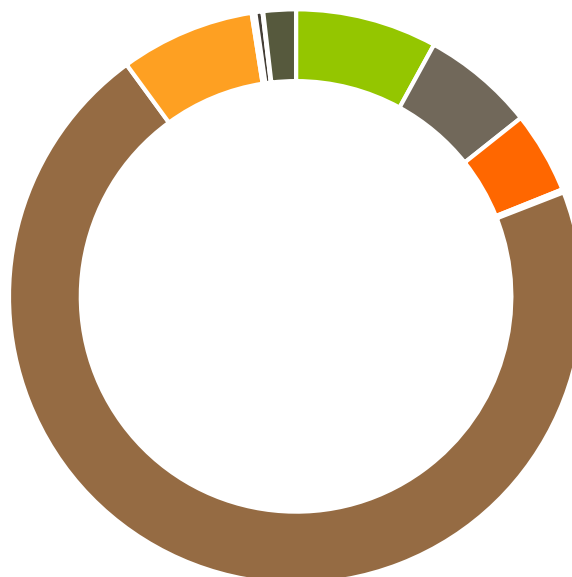
A fresh sample of Andean Mint (Menthastachys Mollis) (10 uL in .5to.5 mL Hexane + ETOH) was prepared and analyzed via split injection GC/EI-MS.



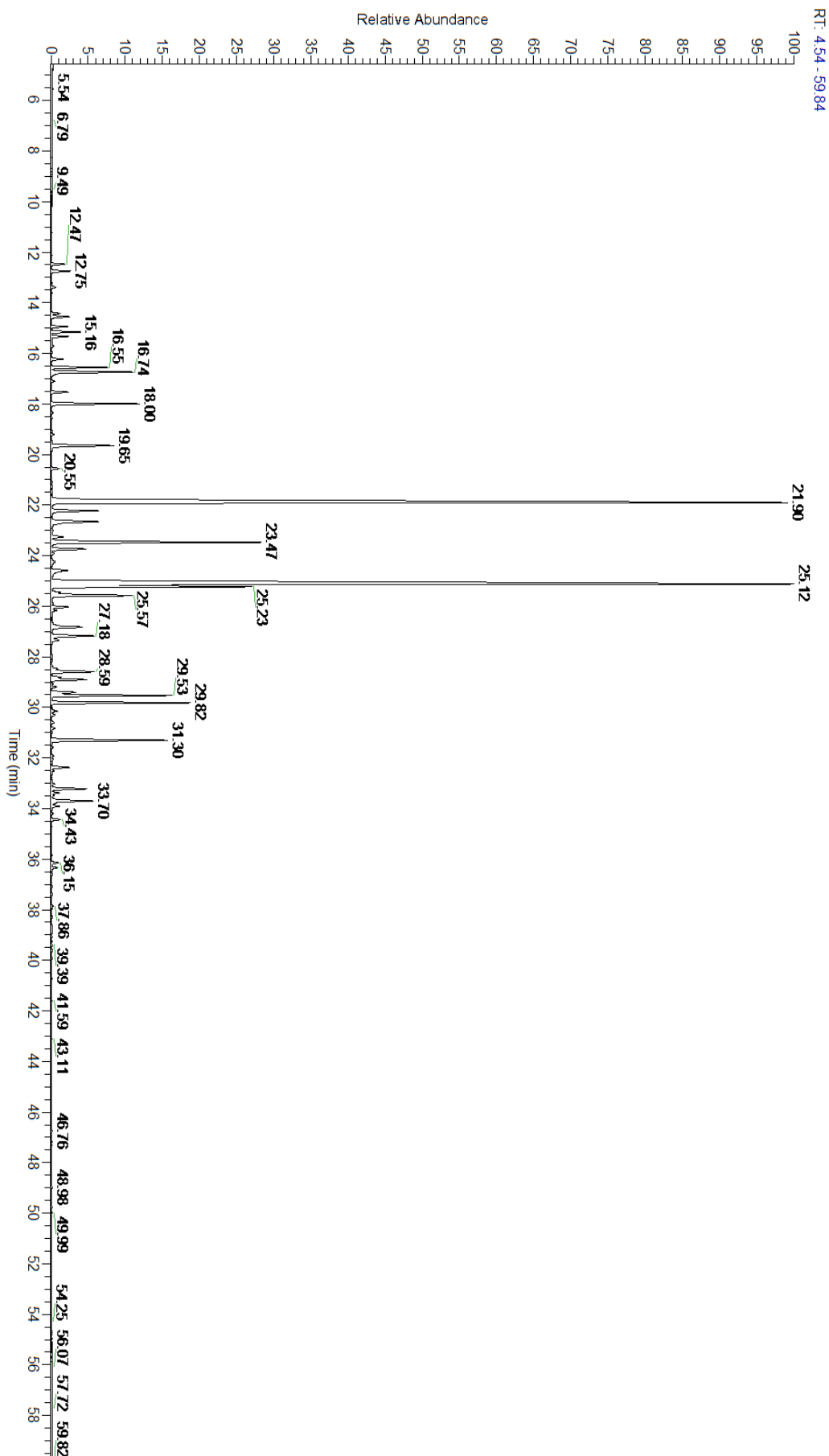
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Main Compounds	Percentages
Pulegone	28.65%
Menthone	25.16%
cis-Dihydrocarvone	5.44%
Carvone	4.32%
Geranyl acetate	3.06%
beta-Caryophyllene	2.83%
Carvacryl acetate	2.74%
Piperitone	2.07%
gamma-Terpinene	1.99%
Limonene	1.95%
Linalool	1.53%
Isopulegone	1.48%
para-Cymene	1.29%

Monoterpenes	Sesquiterpenes	Monoterpenols	Sesquiterpenols	Ketones
7.98%	6.34%	4.60%	0.18%	70.85%
Esters	Ethers	Aldehydes	Phenols	Other
7.57%	0.21%	0.40%	0.04%	1.83%



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



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Total Percentage		98.53%			
Peak Number	RT	Area %	Compound Name	RI	Chemical Family
1	12.47	0.30%	alpha-Thujene	927.80	Monoterpene
2	12.75	0.43%	alpha-Pinene	936.10	Monoterpene
3	14.43	0.19%	Sabinene	973.00	Monoterpene
4	14.56	0.42%	beta-Pinene	974.00	Monoterpene
5	14.94	0.36%	Octan-3-one	981.00	Aliphatic Ketone
6	15.16	0.62%	Myrcene	989.20	Monoterpene
7	15.33	0.36%	3-Octanol	992.00	Aliphatic Alcohol
8	15.71	0.05%	alpha-Phellandrene	1002.00	Monoterpene
9	16.23	0.26%	alpha-Terpinene	1014.00	Monoterpene
10	16.55	1.29%	para-Cymene	1024.30	Monoterpene
11	16.74	1.95%	Limonene	1029.50	Monoterpene
12	16.84	0.06%	1,8-Cineole	1031.80	Monoterpene Ether
13	17.10	0.06%	(Z)-beta-Ocimene	1037.80	Monoterpene
14	17.53	0.37%	(E)-beta-Ocimene	1047.70	Monoterpene
15	18.00	1.99%	gamma-Terpinene	1054.00	Monoterpene
16	18.34	0.02%	trans-Sabinene hydrate	1072.00	Monoterpenol
17	19.21	0.05%	Terpinolene	1092.10	Monoterpene
18	19.65	1.53%	Linalool	1099.00	Monoterpenol
19	20.55	0.18%	3-Octanol acetate		
20	21.90	25.16%	Menthone	1155.00	Monoterpene Ketone
21	22.23	1.18%	Isomenthone	1164.33	Monoterpene Ketone
22	22.66	1.48%	Isopulegone	1178.00	Monoterpene Ketone
23	23.26	0.30%	alpha-Terpineol	1191.71	Monoterpenol
24	23.47	5.44%	cis-Dihydrocarvone	1197.57	Monoterpene Ketone
25	23.74	0.86%	trans-Dihydrocarvone	1203.83	Monoterpene Ketone
26	23.92	0.07%	Verbenone	1213.80	Monoterpene Ketone
27	24.59	0.56%	Citronellol	1229.25	Monoterpenol
28	25.12	28.65%	Pulegone	1244.43	Monoterpene Ketone
29	25.23	4.32%	Carvone	1248.14	Monoterpene Ketone
30	25.46	0.18%	Geraniol	1255.29	Monoterpenol
31	25.57	2.07%	Piperitone	1258.50	Monoterpene Ketone
32	26.04	0.40%	Geranial	1272.00	Monoterpene Aldehyde
33	26.17	0.13%	isopiperitenone	1275.20	Monoterpene Ketone
34	26.67	0.03%	Bornyl acetate	1288.29	Monoterpene Ester
35	26.83	0.90%	Thymol	1288.15	Monoterpenol
36	27.18	1.11%	Carvacrol	1304.40	Monoterpenol
37	27.34	0.21%	cis-Dihydrocarveol acetate		
38	28.47	0.13%	delta-Elemene	1335.83	Sesquiterpene
39	28.59	1.13%	Piperitenone	1347.00	Sesquiterpene Ketone
40	28.81	0.19%	Citronellyl acetate	1357.83	Monoterpene Ester
41	28.90	0.84%	Thymyl acetate	1357.40	Monoterpene Ester
42	29.08	0.04%	Eugenol	1365.89	Phenylpropanoid
43	29.19	0.12%	Neryl acetate	1362.90	Monoterpene Ester



# NATURAL SOURCING®

Cosmetic and Personal Care Ingredient Specialists

Andean Mint (Menthostachys Mollis)

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PROUDLY SERVING YOU FOR OVER 20 YEARS

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44	29.41	0.59%	Piperitenone oxide	1366.43	Sesquiterpene Ester
45	29.53	2.74%	Carvacryl acetate	1370.00	Monoterpene Ester
46	29.82	3.06%	Geranyl acetate	1379.20	Monoterpene Ester
47	30.15	0.13%	beta-Bourbonene	1388.70	Sesquiterpene
48	30.30	0.10%	beta-Elemene	1389.20	Sesquiterpene
49	31.30	2.83%	beta-Caryophyllene	1427.14	Sesquiterpene
50	31.92	0.05%	Aromadendrene	1449.80	Sesquiterpene
51	32.38	0.44%	alpha-Humulene	1461.43	Sesquiterpene
52	33.22	0.87%	Germacrene D	1484.71	Sesquiterpene
53	33.38	0.17%	(Z,E)-alpha-Farnesene	1500.50	Sesquiterpene
54	33.70	1.20%	Bicyclogermacrene	1490.71	Sesquiterpene
55	33.91	0.19%	beta-Bisabolene	1509.86	Sesquiterpene
56	34.20	0.03%	gamma-Cadinene	1515.29	Sesquiterpene
57	34.43	0.20%	delta-Cadinene	1524.14	Sesquiterpene
58	36.15	0.18%	Spathulenol	1587.00	Sesquiterpenol
59	36.33	0.15%	Caryophyllene oxide	1594.86	Sesquiterpene Ether