



### Sample:

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Client: | Nature's Gift  
 Sample: | Valerian (Valeriana officinalis)  
 Batch # | NE-58634  
 Cas Number | 8057-49-6  
 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 Valerian (Valeriana officinalis).



X *Adam Christen*

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Validated By:

Essential Validation Services

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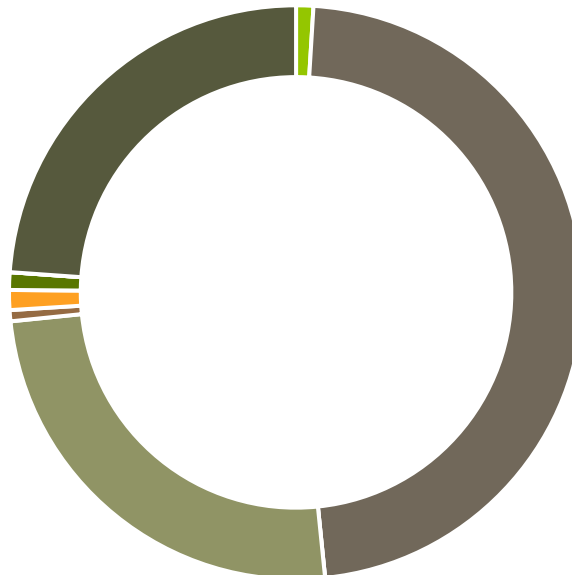
### Summary of Analyses

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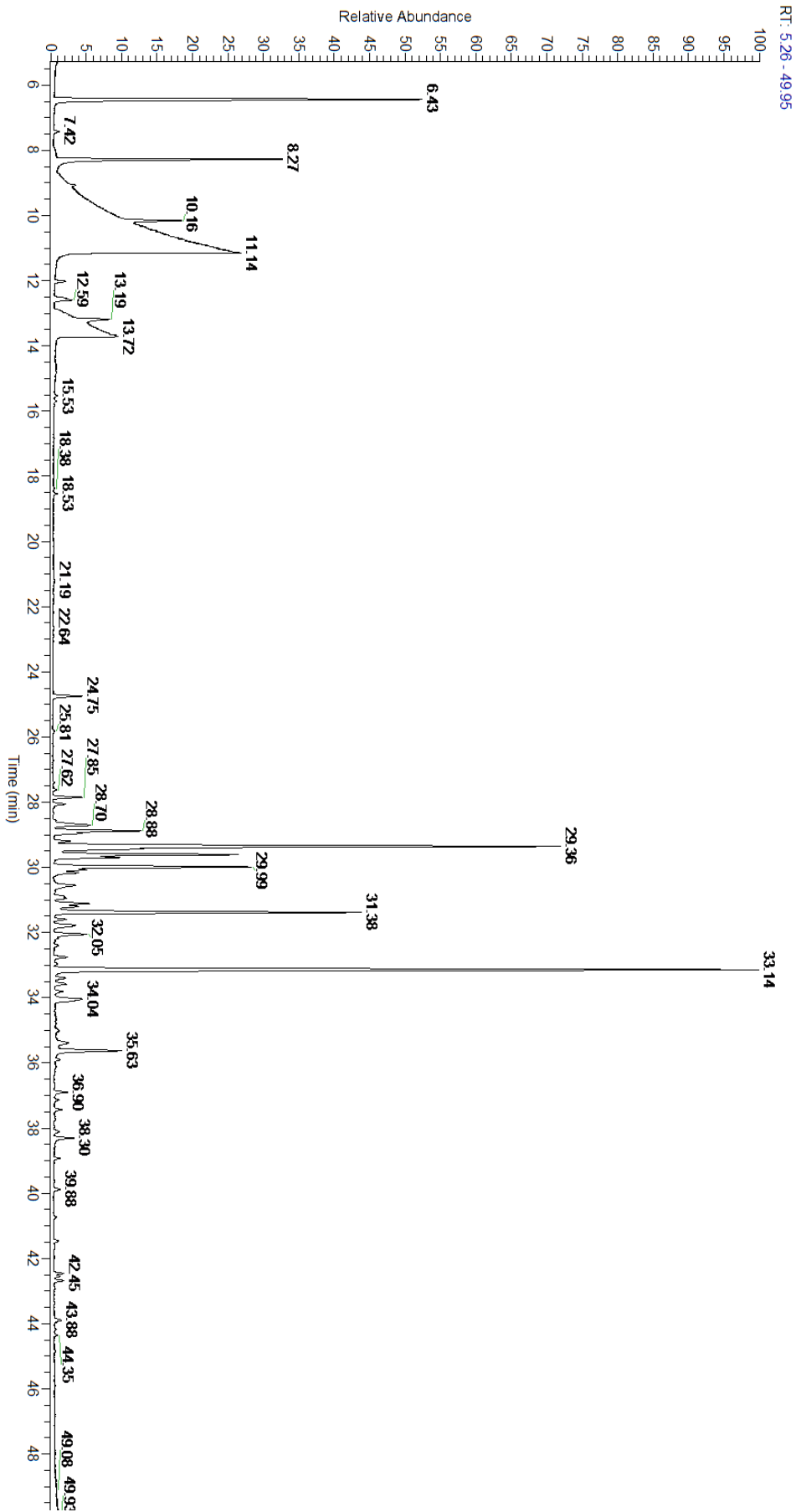
A fresh sample of Valerian (Valeriana officinalis) Essential Oil (10 uL in .5to.5 mL Hexane + ETOH) was prepared and analyzed via split injection GC/EI-MS.

Main Compounds	Percentages
Maaliol	18.97%
beta-Gurjunene	15.48%
Methyl isovalerate	9.40%
delta-Guaiene	7.46%
3-Methylvaleric acid	7.10%
Furfural	5.13%
gamma-Selinene	4.92%
gamma-Patchoulene	4.63%
alpha-Santalene	2.12%
Hexanoic acid	2.00%
Patchouli alcohol	1.89%
5-Methylfurfural	1.59%
Seychellene	1.43%

Monoterpenes	Sesquiterpenes	Monoterpenols	Sesquiterpenols	Ketones
0.90%	44.05%	0.00%	23.23%	0.58%
Esters	Ethers	Aldehydes	Phenols	Other
1.04%	0.92%	0.00%	0.00%	22.18%



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



Total Percentage		95.94%			
Peak Number	RT	Area %	Compound Name	RI	Chemical Family
1	6.43	9.40%	Methyl isovalerate	827.00	Aliphatic Acid
2	8.27	5.13%	Furfural	828.00	Furan
3	9.07	0.12%	Ethyl isovalerate	849.00	Aliphatic Ester
4	11.14	7.10%	3-Methylvaleric acid	939.10	Aliphatic ester
5	12.02	0.22%	alpha-Pinene	936.10	Monoterpene
6	12.53	0.21%	alpha-Fenchene	946.00	Monoterpene
7	12.59	0.41%	Camphene	950.30	Monoterpene
8	13.19	1.59%	5-Methylfurfural	957.00	Furan
9	13.72	2.00%	Hexanoic acid	967.00	Other
10	15.53	0.04%	para-Cymene	1024.30	Monoterpene
11	15.70	0.02%	Limonene	1029.50	Monoterpene
12	18.53	0.06%	Isoamyl isovalerate	1105.60	Aliphatic Ester
13	24.75	0.67%	Bornyl acetate	1288.29	Monoterpene Ester
14	25.81	0.01%	trans-Pinocarvyl acetate	1305.00	Monoterpene Ether
15	27.62	0.07%	alpha-Copaene	1379.00	Sesquiterpene
16	27.85	0.68%	beta-Patchoulene	1380.00	Sesquiterpene
17	28.06	0.29%	beta-Elemene	1389.20	Sesquiterpene
18	28.56	0.06%	beta-Isocomene		
19	28.70	1.22%	alpha-Gurjunene	1412.00	Sesquiterpene
20	28.88	2.12%	alpha-Santalene	1426.50	Sesquiterpene
21	28.96	0.55%	beta-Caryophyllene	1427.14	Sesquiterpene
22	29.36	15.48%	beta-Gurjunene	1437.71	Sesquiterpene
23	29.61	4.63%	gamma-Patchoulene	1454.00	Sesquiterpene
24	29.61	Co-Eluting	(E)-beta-Farnesene	1456.29	Sesquiterpene
25	29.70	1.43%	Seychellene	1461.40	Sesquiterpene
26	29.99	4.92%	gamma-Selinene	1465.50	Sesquiterpene
27	30.08	0.70%	allo-Aromadendrene	1471.00	Sesquiterpene
28	30.16	0.66%	gamma-Gurjunene	1473.17	Sesquiterpene
29	30.55	0.76%	ar-Curcumene	1480.50	Sesquiterpene
30	30.90	0.18%	beta-Selinene	1487.57	Sesquiterpene
31	30.95	0.27%	delta-Selinene	1494.00	Sesquiterpene
32	31.11	0.95%	Viridiflorene	1494.14	Sesquiterpene
33	31.21	0.58%	alpha-Muurolene	1500.25	Sesquiterpene
34	31.38	7.46%	delta-Guaiene	1511.50	Sesquiterpene
35	31.60	0.24%	gamma-Cadinene	1515.29	Sesquiterpene
36	31.78	0.78%	delta-Cadinene	1524.14	Sesquiterpene
37	32.05	0.91%	Kessane	1528.00	Sesquiterpene Ether
38	32.18	0.05%	Elemol	1538.00	Sesquiterpenol
39	32.40	0.08%	beta-Calacorene	1555.50	Sesquiterpene
40	33.14	18.97%	Maaliol	1565.00	Sesquiterpenol
41	33.39	0.27%	Spathulenol	1587.00	Sesquiterpenol
42	33.58	0.30%	Viridiflorol	1596.00	Sesquiterpenol
43	33.80	0.19%	Geranyl isovalerate	1606.00	Aliphatic Ester



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44	34.04	1.13%	Rosifoliol	1612.33	Sesquiterpenol
45	35.02	0.10%	T-Muurolol	1643.29	Sesquiterpenol
46	35.37	0.50%	Pogostol	1651.50	Sesquiterpenol
47	35.50	0.02%	7-epi-alpha-eudesmol	1655.10	Sesquiterpenol
48	35.63	1.89%	Patchouli alcohol	1660.50	Sesquiterpenol
49	35.90	0.09%	Valeranone	1671.50	Sesquiterpene Ketone
50	36.90	0.30%	UK Valerian		
51	37.13	0.11%	UK Valerian		
52	37.43	0.17%	UK Valerian		
53	38.30	0.49%	Aristolone	1764.00	Sesquiterpene Ketone
54	38.92	0.11%	UK Valerian		
55	39.88	0.16%	UK Valerian		
56	42.55	0.12%	UK Valerian		
57	42.68	0.20%	UK Valerian		
58	43.88	0.20%	UK Valerian		

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