

Sample Information

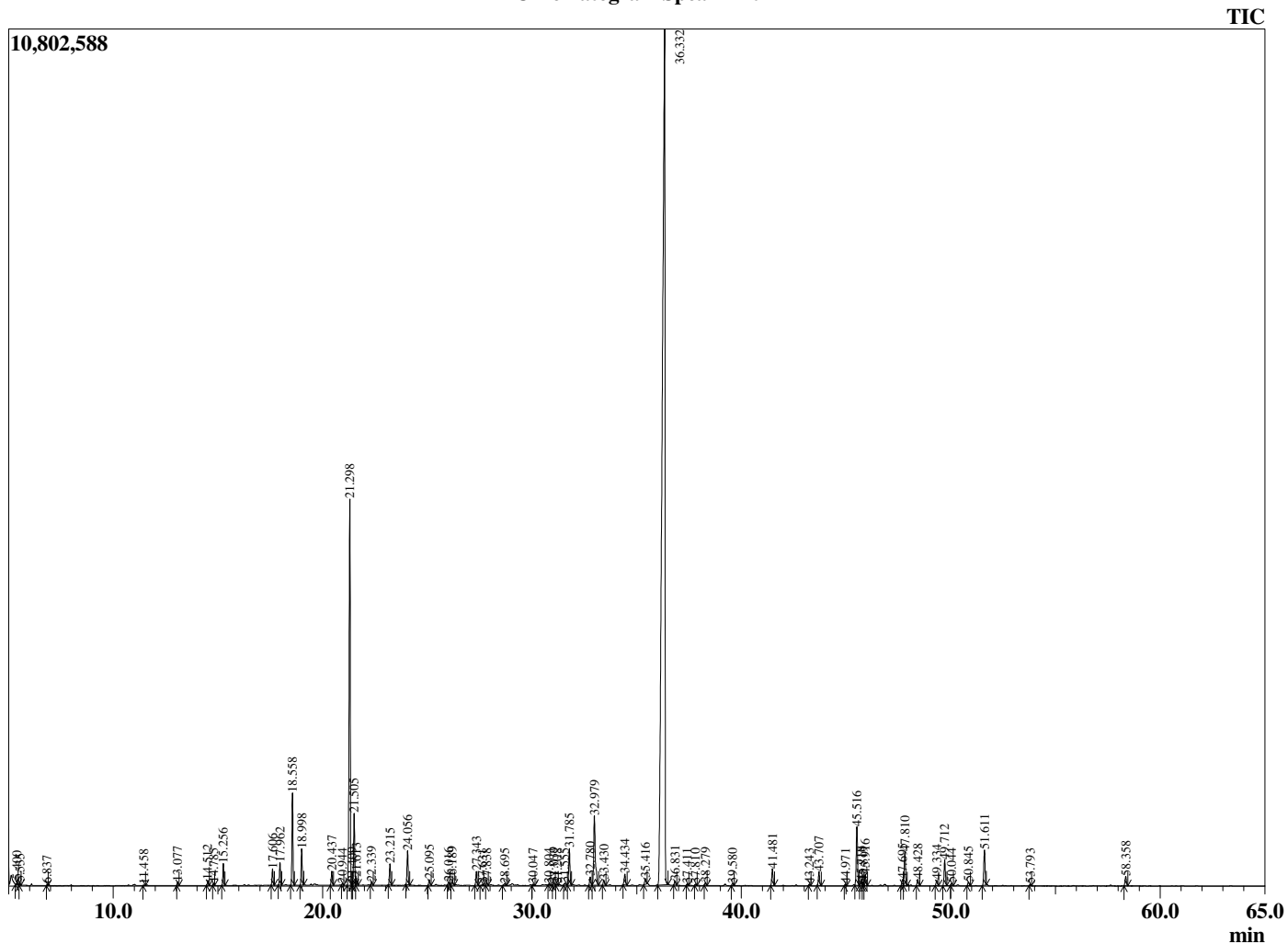
Analyzed by : Dr. Robert S. Pappas
 Analyzed : 10/4/2018 12:00:49 PM
 Sample Type : Essential Oil
 Sample Name : Spearmint
 Sample ID : B0418F
 Injection Volume : 0.10
 Instrument ID : GC-2



Peak Report TIC

| R.Time | Name | Area% |
|--------|-----------------------------|-------|
| 5.400 | 3-Methylbutanal | 0.08 |
| 5.535 | 2-Methylbutanal | 0.04 |
| 6.837 | 3-Methylbutanol | 0.02 |
| 11.458 | E-2-Hexenol | 0.02 |
| 13.077 | 2,5-Diethyltetrahydrofuran | 0.09 |
| 14.512 | Hashishene | 0.13 |
| 14.785 | alpha-Thujene | 0.05 |
| 15.256 | alpha-Pinene | 0.55 |
| 17.606 | Sabinene | 0.43 |
| 17.962 | beta-Pinene | 0.62 |
| 18.558 | Myrcene | 2.52 |
| 18.998 | 3-Octanol | 0.99 |
| 20.437 | alpha-Terpinene | 0.39 |
| 20.944 | para-Cymene | 0.04 |
| 21.298 | Limonene | 12.03 |
| 21.409 | beta-Phellandrene | 0.06 |
| 21.505 | 1,8-Cineole | 2.02 |
| 21.613 | Z-beta-Ocimene | 0.20 |
| 22.339 | E-beta-Ocimene | 0.09 |
| 23.215 | gamma-Terpinene | 0.62 |
| 24.056 | trans-Sabinene hydrate | 1.01 |
| 25.095 | Terpinolene | 0.17 |
| 26.016 | Linalool | 0.09 |
| 26.189 | cis-Sabinene hydrate | 0.12 |
| 27.343 | 3-Octyl acetate | 0.42 |
| 27.631 | trans-p-Mentha-2,8-dienol | 0.03 |
| 27.838 | cis-p-Menth-2-en-1-ol | 0.06 |
| 28.695 | trans-Limonene oxide | 0.07 |
| 30.047 | Menthone | 0.04 |
| 30.804 | p-Mentha-1,5-dien-8-ol | 0.04 |
| 31.039 | Terpineol isomer | 0.07 |
| 31.208 | Borneol | 0.03 |
| 31.555 | Menthol | 0.08 |
| 31.785 | Terpinen-4-ol | 1.17 |
| 32.780 | alpha-Terpineol | 0.30 |
| 32.979 | Z-Dihydrocarvone | 3.04 |
| 33.430 | E-Dihydrocarvone | 0.17 |
| 34.434 | trans-Carveol | 0.40 |
| 35.416 | cis-Carveol | 0.21 |
| 36.332 | Carvone | 62.90 |
| 36.831 | Piperitone | 0.13 |
| 37.411 | Carvone oxide | 0.04 |
| 37.810 | iso-Piperitenone | 0.04 |
| 38.279 | Unidentified | 0.08 |
| 39.580 | Dihydroedulan I | 0.07 |
| 41.481 | trans-Dihydrocarvyl acetate | 0.56 |
| 43.243 | Eugenol | 0.04 |
| 43.707 | cis-Carvyl acetate | 0.45 |
| 44.971 | alpha-Copaene | 0.05 |
| 45.516 | beta-Bourbonene | 1.98 |
| 45.718 | alpha-Bourbonene | 0.14 |
| 45.819 | beta-Elementene | 0.11 |
| 45.916 | Z-Jasmone | 0.38 |
| 47.695 | beta-Ylangene | 0.21 |
| 47.810 | beta-Caryophyllene | 1.19 |
| 48.428 | beta-Copaene | 0.22 |
| 49.334 | Sesquiterpene | 0.19 |
| 49.712 | E-beta-Farnesene | 0.88 |
| 50.044 | alpha-Humulene | 0.08 |
| 50.845 | trans-Cadina-1(6),4-diene | 0.13 |
| 51.611 | Germacrene D | 1.22 |
| 53.793 | delta-Cadinene | 0.05 |

Chromatogram Spearmint



Comments:

The analysis of this Spearmint batch sample meets the expected chemical profile for authentic essential oil of *Mentha spicata*. 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 |
|--------|--------------|
| 58.358 | Viridiflorol |

| Area% |
|--------|
| 0.34 |
| 100.00 |