

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Mentha arvensis* var. *piperascens*

| Activities Count | Chemical               | Plant Part    | Low PPM | High PPM | StdDev                | Reference Citation   |
|------------------|------------------------|---------------|---------|----------|-----------------------|--|
| 2                | (+)-CARVONE            | Essential Oil |         |          |                       | Jim Duke's personal files.   |
| 1                | (+)-PIPERITENONE-OXIDE | Leaf          |         | 2900.0   | -1.0692702191867607   | --   |
| 4                | (+)-PULEGONE           | Leaf          | 1100.0  | 8400.0   | 1.6412173114963589    | --   |
| 4                | (+)-PULEGONE           | Plant         |         | 25455.0  | 1.0                   | --   |
| 3                | (-)-BORNEOL            | Leaf          | 500.0   | 600.0    |                       | --   |
| 4                | (-)-MENTHOL            | Leaf          | 1500.0  | 9600.0   | -0.13664468500079888  | --   |
| 2                | (-)-MENTHONE           | Leaf          | 500.0   | 4400.0   | -0.41193606418331424  | --   |
| 1                | (-)-PIPERITONE         | Leaf          | 240.0   | 7700.0   | 1.0                   | --   |
| 67               | 1,8-CINEOLE            | Leaf          |         |          |                       | Jim Duke's personal files.   |
| 16               | ACETIC-ACID            | Plant         |         |          |                       | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.   |
| 28               | ALPHA-PINENE           | Plant         | 10.0    | 300.0    | -0.26916907964228254  | --   |
| 7                | ANISALDEHYDE           | Shoot         |         |          |                       | Jim Duke's personal files.   |
| 3                | BETA-PHELLANDRENE      | Plant         |         |          |                       | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 13               | BETA-PINENE            | Plant         | 10.0    | 1445.0   | 1.124729385882718     | --   |
| 13               | BETA-PINENE            | Leaf          |         | 800.0    | 0.7508636062406463    | --   |
| 28               | CALCIUM                | Plant         |         | 13500.0  | -0.009562051564718019 | Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.             |
| 9                | CAMPHENE               | Plant         |         |          |                       | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.   |
| 1                | CAPROIC-ACID           | Plant         |         |          |                       | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.   |
| 19               | CARVONE                | Leaf          | 8100.0  | 26000.0  | 5.048754540985525     | --   |

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| 19               | CARVONE         | Essential Oil |         |          |                      | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.     |
| 31               | CARYOPHYLLENE   | Plant         |         |          |                      | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.   |
| 3                | CIS-OCIMENE     | Essential Oil |         |          |                      | Jim Duke's personal files.   |
| 12               | COPPER          | Plant         |         | 20.0     | 0.6626022066114992   | Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.             |
| 76               | EUGENOL         | Essential Oil |         |          |                      | Jim Duke's personal files.   |
| 13               | FORMIC-ACID     | Plant         |         |          |                      | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.   |
| 6                | FURFURAL        | Plant         | 2.0     | 5.0      | -0.4983416206388216  | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.   |
| 11               | GAMMA-TERPINENE | Leaf          |         | 900.0    | 1.36337998309933     | --   |
| 11               | GAMMA-TERPINENE | Essential Oil |         |          |                      | Jim Duke's personal files.   |
| 2                | GERMACRENE-D    | Essential Oil |         |          |                      | Jim Duke's personal files.   |
| 2                | GERMACRENE-D    | Leaf          | 300.0   | 400.0    | -0.20129073177947823 | --   |
| 31               | HESPERIDIN      | Plant         |         |          |                      | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 6                | IRON            | Plant         |         | 400.0    | -0.2672486162776693  | Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.             |
| 1                | ISOMENTHOL      | Essential Oil |         |          |                      | Jim Duke's personal files.   |
| 3                | ISOMENTHONE     | Leaf          | 300.0   | 600.0    | -0.4825959961896006  | --   |
| 3                | ISOPULEGOL      | Essential Oil |         |          |                      | Jim Duke's personal files.   |
| 4                | ISOPULEGONE     | Leaf          | 240.0   | 770.0    | -1.4142135623730947  | --   |

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| 1                | ISOVALERALDEHYDE   | Plant      |         |          |                      | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.                                     |
| 5                | ISOVALERIC-ACID    | Plant      | 30.0    | 90.0     | 1.0                  | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.                                     |
| 3                | L-MENTHOL          | Plant      | 373.0   | 29515.0  |                      | --   |
| 2                | L-MENTHYL-ACETATE  | Plant      | 85.0    | 4815.0   |                      | --   |
| 60               | LIMONENE           | Leaf       | 20.0    | 3520.0   | 3.2552582140948236   | --   |
| 53               | LINALOOL           | Leaf       |         |          |                      | Jim Duke's personal files.   |
| 78               | LUTEOLIN           | Shoot      |         |          |                      | Jim Duke's personal files.   |
| 65               | MAGNESIUM          | Plant      |         | 2830.0   | -0.38378745316107926 | Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.         |
| 14               | MANGANESE          | Plant      |         | 44.0     | -0.3795487464259209  | Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.         |
| 5                | MENTHOFURAN        | Plant      | 4200.0  | 12600.0  | 1.6912182092538641   | --   |
| 63               | MENTHOL            | Leaf       | 1000.0  | 24385.0  | 2.2215192266445816   | --   |
| 30               | MENTHONE           | Plant      | 71.0    | 24000.0  | 3.4108177532842308   | --   |
| 30               | MENTHONE           | Leaf       | 250.0   | 25680.0  | 2.6118994892791703   | --   |
| 22               | MYRCENE            | Leaf       | 10.0    | 2485.0   | 0.7240430590989703   | --   |
| 16               | P-CYMENE           | Leaf       | 9.0     | 29.0     | -0.3760203807398916  | --   |
| 3                | PIPERITENONE       | Plant      |         |          |                      | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 2                | PIPERITENONE-OXIDE | Leaf       | 260.0   | 7320.0   | 0.8759003813049827   | --   |
| 7                | PIPERITONE         | Leaf       | 13.0    | 1285.0   | 0.3195633749094698   | --   |
| 7                | PIPERITONE         | Leaf       | 240.0   | 7700.0   | 3.6970310693516097   | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |

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| 14               | POTASSIUM       | Plant      |         | 35100.0  | 0.9277235520248976    | Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.                 |
| 28               | PULEGONE        | Plant      | 100.0   | 24960.0  | 2.11770459496291      | --   |
| 1                | RAFFINOSE       | Plant      |         |          |                       | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980. |
| 57               | ROSMARINIC-ACID | Plant      |         | 28000.0  | -0.022447952153288788 | Fitoterapia No.62: 166.  |
| 57               | ROSMARINIC-ACID | Leaf       | 71.0    | 228.0    | -0.9802701242157968   | --   |
| 1                | SODIUM          | Plant      |         | 860.0    | -0.25647164723432153  | Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.                 |
| 1                | STACHYOSE       | Plant      |         |          |                       | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980. |
| 35               | TANNIN          | Plant      |         |          |                       | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980. |
| 17               | THUJONE         | Plant      |         |          |                       | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.     |
| 77               | ZINC            | Plant      |         | 28.0     | -0.23812799612849617  | Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.                 |