

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Petasites japonicus*

| Activities Count | Chemical  | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation                 |
|------------------|---|------------|---------|----------|---------------------|------------------------------------|
| 0                | WATER   | Pt         |         | 945000.0 | -1.0                | USDA's Ag Handbook 8 and sequelae) |
| 0                | CARBOHYDRATES   | Pt         | 19000.0 | 656360.0 | -0.9732767393540686 | --                                 |
| 15               | FIBER   | Pt         | 13000.0 | 236360.0 | 1.3807004629607251  | USDA's Ag Handbook 8 and sequelae) |
| 19               | INULIN  | Root       |         | 170000.0 | -0.5352651016442753 | --                                 |
| 0                | PROTEIN   | Pt         | 3900.0  | 70900.0  | -1.0944382007205662 | USDA's Ag Handbook 8 and sequelae) |
| 14               | POTASSIUM   | Plant      | 35000.0 | 42000.0  | 1.408923511049804   | Chem. & Pharm. Bull. 38: 2205.     |
| 0                | ASH   | Pt         | 14600.0 | 26545.0  | -1.3494322568823325 | USDA's Ag Handbook 8 and sequelae) |
| 28               | CALCIUM   | Pt         | 1030.0  | 18725.0  | 0.7484589275751646  | USDA's Ag Handbook 8 and sequelae) |
| 28               | CALCIUM   | Plant      | 13000.0 | 14000.0  | 0.04392125722715171 | Chem. & Pharm. Bull. 38: 2205.     |
| 14               | POTASSIUM   | Pt         | 6550.0  | 11900.0  | -1.3989013675761495 | USDA's Ag Handbook 8 and sequelae) |
| 7                | CHLORINE  | Plant      | 10000.0 | 11000.0  | 1.0564720140341104  | Chem. & Pharm. Bull. 38: 2205.     |
| 14               | SULFUR  | Plant      | 6500.0  | 7300.0   | 1.4633479486367877  | Chem. & Pharm. Bull. 38: 2205.     |
| 0                | FAT   | Pt         | 400.0   | 7270.0   | -1.0                | USDA's Ag Handbook 8 and sequelae) |
| 112              | ASCORBIC-ACID   | Pt         | 315.0   | 5725.0   | 1.657820760823633   | USDA's Ag Handbook 8 and sequelae) |
| 0                | KILOCALORIES  | Pt         | 140.0   | 2545.0   |                     | USDA's Ag Handbook 8 and sequelae) |
| 65               | MAGNESIUM   | Pt         | 140.0   | 2545.0   | 1.0                 | USDA's Ag Handbook 8 and sequelae) |
| 4                | PHOSPHORUS  | Pt         | 120.0   | 2180.0   | -1.0071283821276042 | USDA's Ag Handbook 8 and sequelae) |
| 6                | IRON  | Plant      | 2000.0  | 2100.0   | 1.7347317086076486  | Chem. & Pharm. Bull. 38: 2205.     |
| 4                | PHOSPHORUS  | Plant      | 400.0   | 1800.0   | -0.8595158871407913 | Chem. & Pharm. Bull. 38: 2205.     |
| 1                | SODIUM  | Pt         | 70.0    | 1270.0   | -0.6795501299617708 | USDA's Ag Handbook 8 and sequelae) |
| 0                | 3-BETA-HYDROXY-6-BETA-8-ALPHA-DIMETHOXYEREMOPHIL-7(11)-EN-12,8-BETA-OLIDE | Rhizome    |         | 683.0    |                     | --                                 |
| 0                | TITANIUM  | Plant      | 170.0   | 200.0    | 0.4093608814549928  | Chem. & Pharm. Bull. 38: 2205.     |

| Activities Count | Chemical  | Plant Part | Low PPM | High PPM | StdDev                | Reference Citation                                      |
|------------------|---|------------|---------|----------|-----------------------|---|
| 0                | PETASITIN   | Flower     |         | 190.0    |                       | --  |
| 0                | STRONTIUM   | Plant      | 36.0    | 160.0    | 0.05749817880907902   | Chem. & Pharm. Bull. 38: 2205.                          |
| 5                | ISOPETASIN  | Plant      |         | 160.0    |                       | --  |
| 14               | MANGANESE   | Plant      | 70.0    | 100.0    | 0.021813677839542838  | Chem. & Pharm. Bull. 38: 2205.                          |
| 1                | PETASITENINE  | Plant      |         | 97.0     |                       | --  |
| 0                | NEOPETASITENINE   | Flower     |         | 60.0     |                       | --  |
| 77               | ZINC  | Plant      | 21.0    | 60.0     | 0.0774856047459278    | Chem. & Pharm. Bull. 38: 2205.                          |
| 1                | PETASITENINE  | Flower     |         | 56.0     |                       | --  |
| 0                | BARIUM  | Plant      | 40.0    | 50.0     | -0.03959910833711677  | Chem. & Pharm. Bull. 38: 2205.                          |
| 0                | 6-BETA-ANGELOYL-OXY-3-BETA-8-DIHYDROXYEREMOPHIENOLIDE       | Rhizome    |         | 50.0     |                       | --  |
| 0                | 6-BETA-ANGELOYL-OXY-3-BETA-8-ALPHA-DIHYDROXYEREMOPHIENOLIDE | Rhizome    |         | 50.0     |                       | --  |
| 0                | BROMINE   | Plant      | 18.0    | 40.0     | -0.002388622096911931 | Chem. & Pharm. Bull. 38: 2205.                          |
| 39               | NIACIN  | Pt         | 2.0     | 36.0     | -1.4142135623730951   | USDA's Ag Handbook 8 and sequelae)                      |
| 0                | ISOPETASOSIDE   | Flower     |         | 32.0     |                       | --  |
| 1                | SENKIRKINE  | Rhizome    |         | 26.0     |                       | Chemical Constituents of Oriental Herbs (3 diff. books) |
| 0                | RUBIDIUM  | Plant      | 18.0    | 26.0     | 0.20941936332491162   | Chem. & Pharm. Bull. 38: 2205.                          |
| 24               | CHROMIUM  | Plant      | 20.0    | 23.0     | 1.2808381056051297    | Chem. & Pharm. Bull. 38: 2205.                          |
| 6                | IRON  | Pt         | 1.0     | 18.0     | -1.1482846693017026   | USDA's Ag Handbook 8 and sequelae)                      |
| 12               | COPPER  | Plant      | 15.0    | 16.0     | 0.21963694313863044   | Chem. & Pharm. Bull. 38: 2205.                          |
| 0                | EREMOPETASITENIN-A-1  | Rhizome    |         | 16.0     |                       | --  |
| 0                | EREMOPETASITENIN-A-2  | Rhizome    |         | 14.0     |                       | --  |
| 0                | PETASININE  | Plant      |         | 8.0      |                       | --  |

| Activities Count | Chemical   | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation                 |
|------------------|--|------------|---------|----------|---------------------|------------------------------------|
| 0                | 3-BETA-HYDROXY-6-BETA-TIGLOYL-OXYEREMOPHIL-7(11)-EN-8-BETA-12-OLIDE            | Rhizome    |         | 7.3      |                     | --                                 |
| 0                | PETASIPHENONE  | Rhizome    |         | 6.0      |                     | --                                 |
| 0                | EREMOPETASITENIN-B-2   | Rhizome    |         | 5.0      |                     | --                                 |
| 0                | EREMOPETASITENIN-B-1   | Rhizome    |         | 5.0      |                     | --                                 |
| 0                | PETASINOSIDE   | Plant      |         | 5.0      |                     | --                                 |
| 0                | 6-BETA-ANGELOYL-OXY-3-BETA-9-ALPHA-DIHYDROXYEREMOPHIL-7(11)-EN-12,8-BETA-OLIDE | Rhizome    |         | 4.0      |                     | --                                 |
| 0                | PETASIPHENOL   | Rhizome    |         | 3.6      |                     | --                                 |
| 0                | EREMOPETASINOROL   | Rhizome    |         | 3.6      |                     | --                                 |
| 31               | THIAMIN  | Pt         | 0.2     | 3.6      | -1.184737408199613  | USDA's Ag Handbook 8 and sequelae) |
| 15               | RIBOFLAVIN   | Pt         | 0.2     | 3.6      | -1.0780530559396932 | USDA's Ag Handbook 8 and sequelae) |
| 0                | 3-BETA-8-ALPHA-DIHYDROXY-6-BETA-METHOXYEREMOPHIL-7(11)-EN-8-BETA-12-OLIDE      | Rhizome    |         | 3.5      |                     | --                                 |
| 0                | 3-BETA-HYDROXY-6-BETA-METHOXYEREMOPHIL-7(11)-EN-12,8-BETA-OLIDE                | Rhizome    | 0.8     | 3.0      |                     | --                                 |
| 0                | 3-BETA-8-BETA-DIHYDROXY-6-BETA-TIGLOYL-OXYEREMOPHIL-7(11)-EN-12,8-BETA-OLIDE   | Rhizome    |         | 2.8      |                     | --                                 |
| 0                | 3-BETA-8-ALPHA-DIHYDROXY-6-BETA-TIGLOYL-OXYEREMOPHIL-7(11)-EN-12,8-BETA-OLIDE  | Rhizome    |         | 2.8      |                     | --                                 |
| 0                | 6-BETA-ANGELOYL-OXY-3-BETA-9-BETA-DIHYDROXYEREMOPHIL-7(11)-EN-12,8-BETA-OLIDE  | Rhizome    |         | 2.0      |                     | --                                 |
| 1                | SENKIRKINE   | Flower     | 1.0     | 2.0      |                     | --                                 |
| 0                | 6-BETA-8-BETA-DIHYDROXYEREMOPHIL-7(11)-EN-12,8-ALPHA-OLIDE                     | Rhizome    |         | 1.8      |                     | --                                 |
| 0                | 6-BETA-ANGELOYL-OXY-8-BETA-HYDROXY-3-OXOEREMOPHIL-7(11)-EN-12,8-ALPHA-OLIDE    | Rhizome    |         | 1.7      |                     | --                                 |

| Activities Count | Chemical  | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation                                      |
|------------------|---|------------|---------|----------|---------------------|---|
| 0                | EREMOPETASIDIONE  | Rhizome    |         | 1.7      |                     | --  |
| 0                | EREMOSULPHOXINOLIDE-B   | Rhizome    |         | 1.5      |                     | --  |
| 0                | SECO-EREMOPETASITOLIDE-B  | Rhizome    |         | 1.3      |                     | --  |
| 0                | EREMOSULPHOXINOLIDE-A   | Rhizome    |         | 1.2      |                     | --  |
| 0                | 6-BETA-ANGELOYL-OXY-3-BETA-8-BETA-9-BETA-TRIHIDROXYEREMOPHIL-7(11)-EN-12,8-BETA-OLIDE                           | Rhizome    |         | 1.2      |                     | --  |
| 0                | EREMOPETASINORONE-A   | Rhizome    |         | 1.06     |                     | --  |
| 1                | SENKIRKINE  | Shoot      |         | 1.0      |                     | Chemical Constituents of Oriental Herbs (3 diff. books) |
| 0                | SECO-EREMOPETITOLIDE-A  | Rhizome    |         | 0.9      |                     | --  |
| 0                | 6-BETA-(3'-CHLORO-2'-HYDROXY-2'-METHYL-BUTYROYL-OXY)-3-BETA-8-BETA-DIHYDROXYEREMOPHIL-7(11)-EN-12,8-ALPHA-OLIDE | Rhizome    |         | 0.9      |                     | --  |
| 0                | 3-BETA-HYDROXY-EREMOPHIL-7(11)-EN-12,8-BETA-OLIDE   | Rhizome    |         | 0.9      |                     | --  |
| 0                | URIDINE   | Rhizome    |         | 0.8      | -0.999999999999998  | --  |
| 0                | 3-BETA-HYDROXY-6-ALPHA-METHOXYEREMOPHIL-7(11)-EN-12,8-BETA-OLIDE  | Rhizome    |         | 0.8      |                     | --  |
| 0                | 3-BETA-6-BETA-DIHYDROXYEREMOPHIL-7(11)-EN-12,8-ALPHA-OLIDE  | Rhizome    |         | 0.7      |                     | --  |
| 0                | 2-BETA-HYDROXYEREMOPHIL-7(11)-EN-8-BETA-12-OLIDE  | Rhizome    |         | 0.6      |                     | --  |
| 53               | BETA-CAROTENE   | Pt         | 0.03    | 0.5      | -0.7935841132399388 | USDA's Ag Handbook 8 and sequelae)                      |
| 0                | 8-BETA-HYDROXY-3-OXOEREMOPHIL-7(11)-EN-12,8-BETA-OLIDE  | Rhizome    |         | 0.4      |                     | --  |
| 0                | EREMOPETASINORONE-B   | Rhizome    |         | 0.3      |                     | --  |
| 0                | EPOXYEREMOPETASINOROL   | Rhizome    |         | 0.3      |                     | --  |

| Activities Count | Chemical  | Plant Part | Low PPM | High PPM | StdDev | Reference Citation   |
|------------------|---|------------|---------|----------|--------|--|
| 0                | 6-BETA-EPOXY-ANGELOYL-OXY-3-BETA-HYDROXYEREMOPHIL-7(11)-EN-12,8-BETA-OLIDE                    | Rhizome    |         | 0.2      |        | --   |
| 0                | 6-BETA-ANGELOYL-OXY-3-BETA-15-EPOXY-9-BETA-15(R)-DIHYDROXYEREMOPHIL-7(11)-EN-12,8-ALPHA-OLIDE | Rhizome    |         | 0.2      |        | --   |
| 0                | PETASALBIN-METHYL-ETHER   | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | EREMOFUKINONE   | Plant      |         |          |        | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | LEAD  | Plant      |         |          |        | Chem. & Pharm. Bull. 38: 2205.   |
| 47               | BETA-SITOSTEROL   | Plant      |         |          |        | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| 0                | BAKKENOLIDE-B   | Rhizome    |         |          |        | --   |
| 0                | FURANOJAPONIN   | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | ALPHA-SANTALENE   | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | PETASALBIN  | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | FURANOFUKINOL   | Rhizome    |         |          |        | --   |
| 1                | PETASIN   | Flower     |         |          |        | --   |
| 0                | ALBOPETASIN   | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 24               | PECTIN  | Root       |         |          |        | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| 75               | KAEMPFEROL  | Plant      |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | FUKINOTOXIN   | Plant      |         |          |        | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | NEOPETASITENINE   | Plant      |         |          |        | --   |

| Activities Count | Chemical                  | Plant Part | Low PPM | High PPM | StdDev | Reference Citation   |
|------------------|---------------------------|------------|---------|----------|--------|--|
| 0                | 9-ACETOXYFUKINANOLIDE     | Plant      |         |          |        | J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991.  |
| 3                | NICKEL                    | Plant      |         |          |        | Chem. & Pharm. Bull. 38: 2205.   |
| 0                | BAKKENOLIDE-D             | Bud        |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | FUKINONE                  | Plant      |         |          |        | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| 0                | 6-HYDROXYREMOPHILENO LIDE | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | PETASOSIDE                | Plant      |         |          |        | J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991.  |
| 0                | BAKKENOLIDE-C             | Bud        |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | FUKINOLIDE                | Plant      |         |          |        | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| 23               | MELATONIN                 | Shoot      |         |          |        | Hattori, A., et. al. 1995. Identification of Melatonin in Plants and its Effects on Plasma Melatonin Levels and Binding to Melatonin Receptors in Vertebrates. Biochem. Mol. Biol. Int., 35(3): 627-634. |
| 0                | 6-ANGELYLFURANOFUKINOL    | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 3                | SENECIONINE               | Plant      |         |          |        | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.         |
| 0                | PETASITININE              | Shoot      |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | NEOPETASITININE           | Shoot      |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 5                | CAPRYLIC-ACID             | Flower     |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | S-PETASIN                 | Flower     |         |          |        | --   |

| Activities Count | Chemical              | Plant Part | Low PPM | High PPM | StdDev | Reference Citation   |
|------------------|-----------------------|------------|---------|----------|--------|--|
| 0                | BAKKENOLIDE-B         | Bud        |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 5                | ISOPETASIN            | Rhizome    |         |          |        | --   |
| 0                | 6-ACETYLFURANOFUKINOL | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | S-JAPONIN             | Plant      |         |          |        | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | PETASITIN             | Pt         |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | FUKINANOLIDE          | Plant      |         |          |        | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| 3                | MUCILAGE              | Root       |         |          |        | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| 1                | CAPROIC-ACID          | Flower     |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 12               | IODINE                | Plant      |         |          |        | Chem. & Pharm. Bull. 38: 2205.   |
| 0                | S-ISOPETASIN          | Flower     |         |          |        | --   |
| 5                | BAKKENOLIDE-A         | Bud        |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 5                | ISOPETASIN            | Flower     |         |          |        | --   |
| 0                | S-FURANOPETASITIN     | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | PETASITALONE          | Plant      |         |          |        | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | FUKIIC-ACID           | Flower     |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 2                | MOLYBDENUM            | Plant      |         |          |        | Chem. & Pharm. Bull. 38: 2205.   |
| 0                | S-FUKINOLIDE          | Plant      |         |          |        | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |

| Activities Count | Chemical         | Plant Part | Low PPM | High PPM | StdDev | Reference Citation   |
|------------------|------------------|------------|---------|----------|--------|--|
| 0                | INTEGERRIME      | Plant      |         |          |        | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| 0                | PETASINOLIDES    | Plant      |         |          |        | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| 0                | FUKINOLIDE       | Flower     |         |          |        | --   |
| 2                | BUTYRALDEHYDE    | Plant      |         |          |        | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| 0                | FUROEREMOPHILONE | Plant      |         |          |        | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| 1                | PETASITENINE     | Shoot      |         |          |        | --   |
| 2                | ARSENIC          | Plant      |         |          |        | Chem. & Pharm. Bull. 38: 2205.   |
| 0                | EREMOPHILINE     | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | FUKINANOLIDE     | Flower     |         |          |        | --   |
| 0                | LIGULARONE       | Rhizome    |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 0                | FURINOTOXIN      | Shoot      |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |
| 1                | ANGELIC-ACID     | Bud        |         |          |        | Chemical Constituents of Oriental Herbs (3 diff. books)  |