

# List of All Chemicals

## **P** Tanacetum parthenium (Asteraceae)

### Common name(s)

Feverfew

### How used

Medicinal

\*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

| Chemical           | Part<br><input type="button" value="All"/> | Low<br>PPM | High<br>PPM | StdDev | *Reference |
|--------------------|--|------------|-------------|--------|------------|
| (+)-EPOXYARTEMORIN | Leaf                                       | --         | --          |        | *          |
| (-)-CAMPHOR        | Plant                                      | --         | --          |        | *          |

#### Activities (2)

Insect-Repellent  
Pesticide

|                    |       |    |    |  |  |
|--------------------|-------|----|----|--|--|
| (-)-EPOXYARTEMORIN | Leaf  | -- | -- |  | *  |
| 1,8-CINEOLE        | Shoot | -- | -- |  | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |

#### Activities (67)

(-)-Chronotropic 87 nI/ml Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.

(-)-Inotropic 87 nI/ml Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.

Acaricide LC100=6 uM

Allelopathic

Allergenic

Anesthetic

Anthelmintic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Antiacetylcholinesterase IC50=41 ug/ml

Antiallergic J. Food Hyg. Soc. Jap. 33(6): 569.

Antibacterial 50 ppm

Antibronchitic

Anticariogenic

Anticatarrh Martindale's 29th

Anticholinesterase IC50=50-70

Antifatigue

Antihalitosis American Health, 12(4): 17, 1993.

Antiinflammatory

Antilaryngitic

Antinociceptive

Antipharyngitic

Antiplateau

Antirheumatic

Antirhinitic

Antiseptic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Antisinusitic

Antispasmodic

Antistaphylococcic 50 ppm

Antitussive

Antiulcer

CNS-Stimulant

|                                  |  |
|----------------------------------|--|
| Candidicide                      |  |
| Carcinogenic                     | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Choleretic                       |  |
| Convulsant                       |  |
| Counterirritant                  | Martindale's 29th  |
| Cytochrome-P450-Inducer          |  |
| Decongestant                     |  |
| Degranulant 0.3 ul/ml            |  |
| Dentifrice                       | Martindale's 29th  |
| Edemagenic inj                   |  |
| Expectorant                      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| FLavor FEMA 1-200                | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Fungicide                        |  |
| Gastroprotective                 |  |
| Gram(+)-icide                    |  |
| Gram(-)-icide                    |  |
| Hepatotonic                      |  |
| Herbicide IC50=78 uM             | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Hypotensive                      |  |
| Inflammatory inj                 |  |
| Insectifuge                      |  |
| Irritant                         | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.   |
| Myorelaxant                      | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Nematicide                       | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.   |
| Neurotoxic                       |  |
| P450-Inducer                     |  |
| Pediculicide 2.3 x pyrethrin     |  |
| Perfume                          | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide                        |  |
| Rubefacient                      | Martindale's 29th  |
| Secretagogue                     |  |
| Sedative                         |  |
| Spasmogenic                      |  |
| Surfactant                       |  |
| Testosterone-Hydroxylase-Inducer |  |
| Transdermal                      |  |
| Trichomonicide LD100=1,000 ug/ml |  |

|   |                         |    |        |  |
|---|-------------------------|----|--------|--|
| 1-BETA-HYDROXYARBUSCULIN  | Leaf                    | -- | --     | *  |
| 1-BETA-HYDROXYARBUSCULIN  | Plant                   | -- | --     | *  |
| 10-EPICANIN   | Leaf                    | -- | --     | *  |
| 10-EPICANIN   | Shoot                   | -- | 0.4    | *  |
| 2-(HEXA-2',4'-DIYNYLIDENE)-1,6-CIS-DIOXASPIRO-(4,5)-DEC-3-ENE   | Root                    | -- | 100.0  | *  |
| 2-(HEXA-2',4'-DIYNYLIDENE)-1,6-CIS-DIOXASPIRO-(4,5)-DEC-3-ENE   | Shoot                   | -- | 1.2    | *  |
| 2-(HEXA-2',4'-DIYNYLIDENE)-1,6-TRANS-DIOXASPIRO-(4,5)-DEC-3-ENE | Shoot                   | -- | 0.6    | *  |
| 2-METHYLPENTA-2,4-DIENE   | Fruit<br>Essent.<br>Oil | -- | 2000.0 | *  |
| 3,4-BETA-EPOXY-8-DEOXYCUMAMBRIN-B                               | Flower                  | -- | 485.0  | *  |
| 3-BETA-HYDROXYCOSTUNOLIDE                                       | Leaf                    | -- | --     | *  |
| 3-BETA-HYDROXYCOSTUNOLIDE                                       | Plant                   | -- | --     | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 3-BETA-HYDROXYCOSTUNOLIDE                                       | Shoot                   | -- | 4.0    | *  |

|                                  |       |    |       |  |
|----------------------------------|-------|----|-------|--|
| 3-BETA-HYDROXYPARTHENOLIDE       | Leaf  | -- | --    | *  |
| <b>Activities (1)</b>            |       |    |       |  |
| Antiaggregant                    |       |    |       |  |
| 3-BETA-HYDROXYPARTHENOLIDE       | Shoot | -- | 1.2   | *  |
| <b>Activities (1)</b>            |       |    |       |  |
| Antiaggregant                    |       |    |       |  |
| 4-BETA-ACETOXY-CHRYSANTHENONE    | Shoot | -- | 1.2   | *  |
| 5-BETA-HYDROXYREYNOSIN           | Plant | -- | --    | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 8-ALPHA-ANGELOYL-OXYESTAFIATIN   | Shoot | -- | 3.0   | *  |
| 8-ALPHA-HYDROXYESTAFIATIN        | Shoot | -- | 0.4   | *  |
| 8-ALPHA-ISOBUTYRYL-OXYESTAFIATIN | Shoot | -- | 2.0   | *  |
| 8-BETA-HYDROXYREYNOSIN           | Plant | -- | --    | *  |
| 8-BETA-HYDROXYREYNOSIN           | Leaf  | -- | --    | *  |
| 8-BETA-REYNOSIN                  | Plant | -- | --    | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 9-EPIPECTACHOL                   | Root  | -- | 143.0 | *  |
| ALANTOLACTONE                    | Leaf  | -- | --    | *  |

**Activities (36)**

|                              |  |
|------------------------------|--|
| Allergenic                   | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Anthelmintic 9-200 mg/child  |  |
| Antiamoebic                  | Abstract (See species file)  |
| Antibacterial MIC=32 ug/ml   |  |
| Antibiotic                   | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.  |
| Antifeedant                  | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Antiinflammatory             | 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. |
| Antilymphocytic              |  |
| Antioxidant                  |  |
| Antiseptic MIC=32 ug/ml      |  |
| Antitubercular MIC=32 ug/ml  |  |
| Antitumor                    |  |
| Anxiolytic                   | Internat. J. Oriental Med. 16: 4.  |
| Cholagogue                   | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Choleretic                   | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.  |
| Cytotoxic ED50=1.4           |  |
| Dermatitogenic               | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.  |
| Diuretic                     | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.  |
| Expectorant                  | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Fungicide 15-35 ug/ml        |  |
| Herbistat                    | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Hyperglycemic                | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.                                     |
| Hypoglycemic                 | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.                                     |
| Hypotensive                  | 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. |
| Immunostimulant              | 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. |
| Insectifuge                  | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Mycobactericide MIC=32 ug/ml |  |
| Nematicide                   | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.   |
| Pesticide                    |  |
| Protistocide                 | Abstract (See species file)  |
| Secretagogue                 | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Secretolytic                 | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.  |
| Tranquilizer?                | Internat. J. Oriental Med. 16: 4.  |
| Trichomonocide               | Abstract (See species file)  |
| Urinary-Antiseptic           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Vermifuge 150-200 mg/cat     |  |

|                 |                   |    |    |   |
|-----------------|-------------------|----|----|---|
| ALPHA-COPAENE   | Shoot             | -- | -- | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| ALPHA-FARNESENE | Fruit Essent. Oil | -- | -- | *   |
| ALPHA-HUMULENE  | Shoot             | -- | -- | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |

**Activities (2)**

|           |  |
|-----------|--|
| Antitumor | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove ( <i>Eugenia caryophyllata</i> ) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |

|                    |               |    |        |       |   |
|--------------------|---------------|----|--------|-------|---|
| ALPHA-PHELLANDRENE | Essential Oil | -- | 6000.0 | -0.48 | * |
|--------------------|---------------|----|--------|-------|---|

**Activities (11)**

|                    |   |
|--------------------|---|
| Antibacterial      | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antistaphylococcic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Dermal             | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Emetic             |   |
| FLavor FEMA 10-130 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry   |
| Fungicide          | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.  |
| Insectiphile       | Pakistan Encyclopedia Planta Medica. 1986.  |
| Irritant           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Laxative           |   |
| Perfumery          | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Pesticide          |   |

|              |       |    |      |       |  |
|--------------|-------|----|------|-------|--|
| ALPHA-PINENE | Shoot | -- | 15.0 | -0.15 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|--------------|-------|----|------|-------|--|

**Activities (28)**

|                                  |  |
|----------------------------------|--|
| Allelochemic                     |  |
| Allergenic                       |  |
| Antiacne                         |  |
| Antibacterial                    |  |
| Antifeedant                      |  |
| Antiflu                          | Economic & Medicinal Plant Research, 5: 195.   |
| Antiinflammatory 500 mg/kg       |  |
| Antipneumonic                    |  |
| Antiseptic                       |  |
| Antispasmodic                    |  |
| Antistaphylococcic               |  |
| Antiviral                        | Economic & Medicinal Plant Research, 5: 195.   |
| Cancer-Preventive                | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Coleoptophile                    |  |
| Expectorant                      | Michael Castleman 1991. The Healing Herbs. Rodale Press, Emmaus, PA 436 pp.  |
| FLavor FEMA 15-150               | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Herbicide IC50=30 uM             | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.     |
| Insecticide 0.82 uM/fly          |  |
| Insectifuge 50 ppm               |  |
| Insectiphile                     | J. Stored. Prod. Res., 22:141, 1986.   |
| Irritant                         | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| P450-2B1-Inhibitor IC50=0.087 uM |  |
| Perfumery                        | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide                        |  |
| Sedative                         | Lawrence Review of Natural Products, Jun-90.   |
| Spasmogenic                      |  |
| Tranquilizer                     | Lawrence Review of Natural Products, Jun-90.   |
| Transdermal                      |  |

|              |               |    |         |       |   |
|--------------|---------------|----|---------|-------|---|
| ALPHA-PINENE | Essential Oil | -- | 10000.0 | -0.47 | * |
|--------------|---------------|----|---------|-------|---|

**Activities (28)**

|                                     |  |
|-------------------------------------|--|
| Allelochemic                        |  |
| Allergenic                          |  |
| Antiacne                            |  |
| Antibacterial                       |  |
| Antifeedant                         |  |
| Antiflu                             | Economic & Medicinal Plant Research, 5: 195.   |
| Antiinflammatory 500 mg/kg          |  |
| Antipneumonic                       |  |
| Antiseptic                          |  |
| Antispasmodic                       |  |
| Antistaphylococcic                  |  |
| Antiviral                           | Economic & Medicinal Plant Research, 5: 195.   |
| Cancer-Preventive                   | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Coleoptophile                       |  |
| Expectorant                         | Michael Castleman 1991. The Healing Herbs. Rodale Press, Emmaus, PA 436 pp.  |
| FLavor FEMA 15-150                  | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Herbicide IC50=30 uM                | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.     |
| Insecticide 0.82 uM/fly             |  |
| Insectifuge 50 ppm                  |  |
| Insectiphile                        | J. Stored. Prod. Res., 22:141, 1986.   |
| Irritant                            | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| P450-2B1-Inhibitor<br>IC50=0.087 uM |  |
| Perfumery                           | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide                           |  |
| Sedative                            | Lawrence Review of Natural Products, Jun-90.   |
| Spasmogenic                         |  |
| Tranquilizer                        | Lawrence Review of Natural Products, Jun-90.   |
| Transdermal                         |  |

ALPHA-PINENE                      Fruit        --            2000.0       -0.82       \*

   Essent.

   Oil

**Activities (28)**

|                                  |  |
|----------------------------------|--|
| Allelochemic                     |  |
| Allergenic                       |  |
| Antiacne                         |  |
| Antibacterial                    |  |
| Antifeedant                      |  |
| Antiflu                          | Economic & Medicinal Plant Research, 5: 195.   |
| Antiinflammatory 500 mg/kg       |  |
| Antipneumonic                    |  |
| Antiseptic                       |  |
| Antispasmodic                    |  |
| Antistaphylococcic               |  |
| Antiviral                        | Economic & Medicinal Plant Research, 5: 195.   |
| Cancer-Preventive                | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Coleoptophile                    |  |
| Expectorant                      | Michael Castleman 1991. The Healing Herbs. Rodale Press, Emmaus, PA 436 pp.  |
| FLavor FEMA 15-150               | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Herbicide IC50=30 uM             | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.     |
| Insecticide 0.82 uM/fly          |  |
| Insectifuge 50 ppm               |  |
| Insectiphile                     | J. Stored. Prod. Res., 22:141, 1986.   |
| Irritant                         | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| P450-2B1-Inhibitor IC50=0.087 uM |  |
| Perfumery                        | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide                        |  |
| Sedative                         | Lawrence Review of Natural Products, Jun-90.   |
| Spasmogenic                      |  |
| Tranquilizer                     | Lawrence Review of Natural Products, Jun-90.   |
| Transdermal                      |  |

|                 |       |    |      |       |  |
|-----------------|-------|----|------|-------|--|
| ALPHA-TERPINENE | Shoot | -- | 45.0 | -0.36 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|-----------------|-------|----|------|-------|--|

**Activities (13)**

|   |  |
|---|--|
| ACE-Inhibitor 100 ug/ml (weak activity) |  |
| Acaricide                               |  |
| Aldose-Reductase-Inhibitor 100 ug/ml    | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Antiacetylcholinesterase IC50=1.0 mM    |  |
| Antinitrosaminic                        |  |
| Antispasmodic                           |  |
| FLavor FEMA 1-40                        | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Insecticide 0.86 uM/fly                 |  |
| Insectifuge                             |  |
| P450-2B1-Inhibitor IC50=0.76 uM         |  |
| Perfumery                               | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide                               |  |
| Spasmogenic                             |  |

|                 |       |    |    |   |  |
|-----------------|-------|----|----|---|--|
| ALPHA-TERPINENE | Plant | -- | -- | * |  |
|-----------------|-------|----|----|---|--|

**Activities (13)**

|   |  |
|---|--|
| ACE-Inhibitor 100 ug/ml (weak activity) |  |
| Acaricide                               |  |
| Aldose-Reductase-Inhibitor 100 ug/ml    | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Antiacetylcholinesterase IC50=1.0 mM    |  |
| Antinitrosaminic                        |  |
| Antispasmodic                           |  |
| FLavor FEMA 1-40                        | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry   |
| Insecticide 0.86 uM/fly                 |  |
| Insectifuge                             |  |
| P450-2B1-Inhibitor IC50=0.76 uM         |  |
| Perfumery                               | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry   |
| Pesticide                               |  |
| Spasmogenic                             |  |

|                 |       |    |     |       |   |
|-----------------|-------|----|-----|-------|---|
| ALPHA-TERPINEOL | Shoot | -- | 2.5 | -0.28 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|-----------------|-------|----|-----|-------|---|

**Activities (23)**

|   |   |
|---|---|
| ACE-Inhibitor 100 ug/ml (weak activity) |   |
| Aldose-Reductase-Inhibitor 100 ug/ml    | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.  |
| Allelopathic                            | Wright, C.W. (Ed) 2002. Medicinal & Aromatic Plants-Industrial Profiles. Artemisia. 344pp. Maffei, M. (Ed) 2002. Vetiveria. The Genus Vetiveria. Taylor & Francis. NY, NY. 191pp. Southwell, I., Lowe, R. (Eds) 1999. Tea Tree. The Genus Melaleuca. Harwood Acad. Pub. Amsterdam, Netherlands. |
| Antiacne                                |   |
| Antibacterial MIC=800-1,600 ug/ml       | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against <i>Streptococcus mutans</i> . J. Agric. Food Chem. 41: 1102-1105.   |
| Anticancer                              | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.  |
| Anticariogenic MIC=800-1,600 ug/ml      | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against <i>Streptococcus mutans</i> . J. Agric. Food Chem. 41: 1102-1105.   |
| Antiinflammatory                        |   |
| Antiproliferant                         |   |
| Antiseptic                              | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Cicatrizant ED50=240 ug/g mus           |   |
| FLavor FEMA 5-40                        | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry  |
| Insecticide 1.29 uM/fly                 |   |
| Interleukin-6-Inhibitor                 |   |
| Mosquitofuge > Deet                     |   |
| Motor-Depressant                        | Buchbauer et al, e.g. Buchbauer et al, 1993. Therapeutic properties of essential oils and fragrances. Chap. 12 in Teranishi, R., Buttery, R.G and Sugisawa, H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC                         |
| Nematicide MLC=1 mg/ml                  | Shoyakugaku Zasshi, 44: 183.  |
| Perfumery                               | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Pesticide                               |   |
| Sedative                                | Buchbauer et al, e.g. Buchbauer et al, 1993. Therapeutic properties of essential oils and fragrances. Chap. 12 in Teranishi, R., Buttery, R.G and Sugisawa, H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC                         |
| Termiticide IC100=5 mg/g                |   |
| Transdermal                             |   |
| Vulnerary ED50=240 ug/g mus             |   |

|                 |       |    |    |   |  |
|-----------------|-------|----|----|---|--|
| ALPHA-TERPINEOL | Plant | -- | -- | * |  |
|-----------------|-------|----|----|---|--|



**Activities (23)**

|   |   |
|---|---|
| ACE-Inhibitor 100 ug/ml (weak activity) |   |
| Aldose-Reductase-Inhibitor 100 ug/ml    | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.  |
| Allelopathic                            | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacne                                |   |
| Antibacterial MIC=800-1,600 ug/ml       | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.   |
| Anticancer                              | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.  |
| Anticariogenic MIC=800-1,600 ug/ml      | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.   |
| Antiinflammatory                        |   |
| Antiproliferant                         |   |
| Antiseptic                              | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Cicatrizant ED50=240 ug/g mus           |   |
| FLavor FEMA 5-40                        | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry   |
| Insecticide 1.29 uM/fly                 |   |
| Interleukin-6-Inhibitor                 |   |
| Mosquitofuge > Deet                     |   |
| Motor-Depressant                        | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml                  | Shoyakugaku Zasshi, 44: 183.  |
| Perfumery                               | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Pesticide                               |   |
| Sedative                                | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Termiticide IC100=5 mg/g                |   |
| Transdermal                             |   |
| Vulnerary ED50=240 ug/g mus             |   |

|               |                   |    |        |       |  |
|---------------|-------------------|----|--------|-------|--|
| ALPHA-THUJENE | Shoot             | -- | 15.0   | -0.29 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| ALPHA-THUJENE | Essential Oil     | -- | 6000.0 | -0.36 | *  |
| ALPHA-THUJENE | Fruit Essent. Oil | -- | 2000.0 | -0.74 | *  |
| ALUMINUM      | Plant             | -- | 6.0    | -0.75 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.  |

**Activities (5)**

|                 |  |
|-----------------|--|
| Antisilicotic   | Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987. |
| Antivaginitic   | Martindale's 28th  |
| Candidicide     | Martindale's 28th  |
| Encephalopathic | Martindale's 29th  |
| Pesticide       |  |

|                        |       |    |     |  |
|------------------------|-------|----|-----|--|
| APIGENIN-7-GLUCOSIDE   | Plant | -- | --  | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| APIGENIN-7-GLUCURONIDE | Leaf  | -- | --  | *  |
| ARTECANIN              | Shoot | -- | 0.4 | *  |

**Activities (4)**

Antiaggregant

Antifeedant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Antiinflammatory

Antisecretory

ARTECANIN

Leaf

--

--

\*

**Activities (4)**

Antiaggregant

Antifeedant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Antiinflammatory

Antisecretory

ARTECANIN

Plant

--

--

\*

**Activities (4)**

Antiaggregant

Antifeedant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Antiinflammatory

Antisecretory

ARTEMORIN

Shoot

--

4.0

\*

**Activities (1)**

Allergenic Tucker, A. O. and Debaggio, T. 2000. The Big Book of Herbs. Interweave Press, Inc. Loveland, CO. 688 pp.

ASCORBIC-ACID

Plant

--

330.0

-0.52

Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing, Bountiful, Utah. 377 pp.

**Activities (112)**

Acidulant FEMA 6,000 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Aldose-Reductase-Inhibitor Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley &amp; Sons, New York. 272 pp. \$24.95

Analgesic 5-10 g/day

Angiotensin-Receptor-Blocker

AntiAGE 2,000 mg/day Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley &amp; Sons, New York. 272 pp. \$24.95

AntiCFS 500-1,000 mg

AntiCTS 1,000 mg 3x/day

AntiCrohn's 50-100 mg/day/orl/man Martindale's 29th

AntiLyme 500-2,000 mg

AntiRaynaud's 500 mg 1-2x/day

Antiaggregant Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley &amp; Sons, New York. 272 pp. \$24.95

Antiaging 400 mg/day

Antiallergic

Antialzheimeran 2,000-6,000 mg/day

Antiarthritic 0.2-1 g/day

Antiasthmatic 1,000 mg/day Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antiatherosclerotic

Antibacterial Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Anticataract 350 mg/day Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Anticataract 400 mg/day Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley &amp; Sons, New York. 272 pp. \$24.95

Anticataract 1 g 3x/day

Anticervicaldysplasic 1,000-2,000 mg/day

Anticlimacteric 500-5,000 mg/day

Anticold 1-2 g/man/day

Antidecubic 500 mg/man/2x/day Martindale's 28th

Antidementia

Antidepressant 2,000 mg/day Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antidiabetic Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley &amp; Sons, New York. 272 pp. \$24.95

|                                    |  |
|------------------------------------|--|
| Antidote (Aluminum)                | Economic & Medicinal Plant Research, 6: 189.   |
| Antidote (Cadmium)                 | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antidote (Lead)                    | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antidote (Paraquat)                | Martindale's 28th  |
| Antieczemic 3.5-5 g/day            | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiedemic 1 g/man/day             | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antiencephalitic                   | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antienometriotic 2,000 mg/day      |  |
| Antifatigue 500-1,000 mg           |  |
| Antifibrotic 1,000-2,000 mg        |  |
| Antigallstone 1,000-3,000 mg/day   |  |
| Antigastritic                      |  |
| Antigingivitic                     |  |
| Antiglaucomic 2 g/day              | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antihangover 1,000 mg              |  |
| Antihemorrhagic 1 g/man/day        | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antihepatitic 2-6 g/man/day        | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antihepatotoxic                    | Economic & Medicinal Plant Research, 6: 189.   |
| Antiherpetic 1-5 g/day             |  |
| Antihistaminic 2 g/day orl man     |  |
| Antihypertensive                   |  |
| Antiinfertility 1 g/day            | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiinflammatory                   | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Antileptic 1.5 g/man/day           | Martindale's 28th  |
| Antilithic 1,000-3,000 mg/day      |  |
| Antimaculitic                      |  |
| Antimeasles                        | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antimenopausal 500-5,000 mg/day    |  |
| Antimigraine                       | Martindale's 29th  |
| Antimutagenic                      | Economic & Medicinal Plant Research, 6: 235.   |
| Antineuramidase                    |  |
| Antinitrosic 1 g/man/day           | Martindale's 28th  |
| Antiobesity 1 g 3x/day             | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiorchitic                       | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antiosteoarthritic 1 g 2x/day      | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiosteoporotic 500 mg/day        |  |
| Antioxidant 100 ppm                |  |
| Antiparkinsonian 1 g 2-3x/day      |  |
| Antiparotitic                      | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antiperiodontitic 1 g 2x/day       | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antipneumonic                      | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Antipodriac                        | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antipoliomyelitic                  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antipyretic                        | Economic & Medicinal Plant Research, 6: 189.   |
| Antiradicular                      | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antiretinotic                      |  |
| Antirheumatic                      |  |
| Antirhinitic 1,000 mg 3x/day       |  |
| Antiscorbutic 10 mg/man/day        | Martindale's 28th  |
| Antiseptic MIC=3.3-217 mg/ml       | Martindale's 28th  |
| Antiseptic 4-8 g/day               | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antishingles                       | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antispasmodic 500-5,000 mg/day     |  |
| Antistress 500-1,000 mg            |  |
| Antisyndrome-X 1-4 g/day           | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antitumor (Gastric)                |  |
| Antitumor (Lung)                   |  |
| Antiulcer                          |  |
| Antiviral 1-5 g/day                |  |
| Apoptotic 1-10 mM                  |  |
| Asthma-preventive 1,000 mg/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |

|  |  |
|--|--|
| Beta-Adrenergic Receptor Blocker           |  |
| Beta-Glucuronidase-Inhibitor 1.5 g/day/man |  |
| Calcium-Antagonist                         |  |
| Cancer-Preventive                          | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Cardioprotective                           |  |
| Cold-preventive 1-2 g/day                  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Collagenic                                 |  |
| Detoxicant                                 |  |
| Diuretic 700 mg/man/orl                    |  |
| Fistula-Preventive                         | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Hypocholesterolemic 300-1,000 mg/day       | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Hypoglycemic                               | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Hypotensive 1,000 mg/man/day               |  |
| Immunomodulator                            |  |
| Immunostimulant                            | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Interferonogenic                           | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Lithogenic                                 | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Mucolytic 1 g/woman/day                    | Martindale's 28th  |
| Pesticide                                  |  |
| Uricosuric 4 g/man/day                     | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Urinary-Acidulant                          | Martindale's 29th  |
| Vasodilator                                |  |
| Vulnerary                                  | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |

|     |       |    |          |     |   |
|-----|-------|----|----------|-----|---|
| ASH | Plant | -- | 171000.0 | 0.9 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|-----|-------|----|----------|-----|---|

|              |       |    |    |  |  |
|--------------|-------|----|----|--|--|
| BENZALDEHYDE | Shoot | -- | -- |  | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|--------------|-------|----|----|--|--|

#### Activities (24)

|                                    |   |
|------------------------------------|---|
| Allergenic                         |   |
| Anesthetic                         |   |
| Antibacterial                      |   |
| Anticancer                         |   |
| Antimutagenic                      |   |
| Antipeptic                         |   |
| Antiseptic                         |   |
| Antispasmodic                      |   |
| Antitumor                          |   |
| Candidicide                        |   |
| FLavor FEMA 150-800                | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry  |
| Immunostimulant                    |   |
| Insecticide                        | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.   |
| Insectifuge 50 ppm                 | J. Stored. Prod. Res., 22:141, 1986.  |
| Motor-Depressant                   | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Narcotic                           | Merck 11th Edition  |
| Nematicide MLC=1 mg/ml             | Shoyakugaku Zasshi, 44: 183.  |
| Pesticide                          |   |
| Sedative                           | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Termiticide LD100=5 mg/g           |   |
| Tyrosinase-Inhibitor ID50=820 uM   |   |
| Tyrosinase-Inhibitor ID50=87 ug/ml |   |
| Tyrosinase-Inhibitor ID50=0.82 mM  |   |
| Tyrosinase-Inhibitor ID50=830 uM   |   |

|                          |  |    |        |  |
|--------------------------|--|----|--------|--|
| BENZYL-2-METHYL-BUTYRATE | Fruit<br>Essent.<br>Oil  | -- | 5000.0 | *  |
| BENZYL-ALCOHOL           | Fruit<br>Essent.<br>Oil  | -- | --     | *  |
| <b>Activities (9)</b>    |  |    |        |  |
| Allergenic               | Martindale's 29th  |    |        |  |
| Anesthetic               | Martindale's 28th  |    |        |  |
| Antiodontalgic           | Martindale's 28th  |    |        |  |
| Antipruritic             |  |    |        |  |
| Antiseptic               | Martindale's 29th  |    |        |  |
| FLavor Fema 200-1,200    | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |    |        |  |
| Fungicide                |  |    |        |  |
| Pesticide                |  |    |        |  |
| Sedative                 | Jim Duke's personal files.   |    |        |  |
| BENZYL-ISOBUTYRATE       | Shoot  | -- | --     | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| <b>Activities (1)</b>    |  |    |        |  |
| FLavor FEMA 25           | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |    |        |  |
| BENZYL-ISOVALERATE       | Shoot  | -- | --     | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| <b>Activities (1)</b>    |  |    |        |  |
| FLavor FEMA 50-200       | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |    |        |  |
| BENZYL-PROPIONATE        | Shoot  | -- | --     | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| <b>Activities (2)</b>    |  |    |        |  |
| FLavor FEMA 40-150       | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |    |        |  |
| Irritant                 | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |    |        |  |
| BETA-CAROTENE            | Plant  | -- | 14.0   | -0.65<br>Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.   |

**Activities (53)**

|                                    |  |
|------------------------------------|--|
| Allergenic                         |  |
| Androgenic?                        | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| AntiPMS                            |  |
| Antiacne                           | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Antiaging                          |  |
| Antiarthritic                      |  |
| Antiasthmatic                      | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Anticancer                         | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.   |
| Anticarcinomic                     | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Anticervicaldysplasic              |  |
| Anticoronary 50 mg/man/2 days      |  |
| Antihyperkeratotic                 |  |
| Antiichthyotic                     | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Antileukoplakic                    |  |
| Antilipoperoxidant IC71=50 ug/ml   |  |
| Antilupus 150 mg/man/day/2 mos     | Martindale's 28th  |
| Antimaculitic                      |  |
| Antimastitic                       | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Antimutagenic                      | Economic & Medicinal Plant Research, 6: 235.   |
| Antioxidant                        | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Antiozenic                         |  |
| Antipapillomic                     |  |
| Antiphotophobic 30-300 mg/man/day  | Martindale's 29th  |
| Antipityriasic                     | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Antiporphyrhic 30-300 mg/man/day   | Martindale's 28th  |
| Antiproliferant                    | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.   |
| Antipsoriac                        | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Antiradicular                      | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Antirheumatic                      |  |
| Antistress                         | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antitumor                          | Simon, P.W. Carrots and Other Horticultural Crops as a Source of Provitamin A Carotenes. HortScience, 25(12): 1495, 1990.                              |
| Antitumor (Breast) IC45=60 ug/ml   |  |
| Antitumor (CNS) IC43=45 ug/ml      |  |
| Antitumor (Colon) IC43=45 ug/ml    |  |
| Antitumor (Lung) IC30=60 ug/ml     |  |
| Antitumor (Prostate)               |  |
| Antitumor (Stomach) IC26=45 ug/ml  |  |
| Antiulcer 12 mg 3x/day/man/orl     | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Antiulcer 15,000-25,000 IU/day     |  |
| Antixerophthalmic                  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| COX-1-Inhibitor IC78=50 ug/ml      |  |
| COX-2-Inhibitor IC82=50 ug/ml      |  |
| Cancer-Preventive 22 ppm           | Jim Duke's personal files.   |
| Chemopreventive                    |  |
| Colorant                           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Gastroprotective                   |  |
| Immunostimulant 180 mg/man/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Interferon-Synergist               |  |
| Mucogenic                          | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Phagocytotic                       | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Prooxidant 20 ug/g                 |  |
| Thymoprotective                    | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Ubiquiot                           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

|                    |               |    |     |       |  |
|--------------------|---------------|----|-----|-------|--|
| BETA-CARYOPHYLLENE | Essential Oil | -- | --  |       | *  |
| BETA-CARYOPHYLLENE | Shoot         | -- | 8.0 | -0.39 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |

|                |               |    |        |       |   |
|----------------|---------------|----|--------|-------|---|
| BETA-FARNESENE | Shoot         | -- | 12.0   | -0.39 | * |
| BETA-FARNESENE | Essential Oil | -- | 8000.0 |       | * |
| BETA-FARNESENE | Root          | -- | 40.0   | 1.41  | * |
| BETA-PINENE    | Essential Oil | -- | --     |       | * |

#### Activities (13)

|                    |  |
|--------------------|--|
| Allergenic         |  |
| Antiinflammatory   |  |
| Antiseptic         | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Antispasmodic      |  |
| Candidicide        |  |
| FLavor FEMA 15-600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Herbicide          | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Insectifuge        | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Irritant           | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery          | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide          |  |
| Spasmogenic        | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Transdermal        |  |

|             |                   |    |        |       |   |
|-------------|-------------------|----|--------|-------|---|
| BETA-PINENE | Fruit Essent. Oil | -- | 1000.0 | -0.77 | * |
|-------------|-------------------|----|--------|-------|---|

#### Activities (13)

|                    |  |
|--------------------|--|
| Allergenic         |  |
| Antiinflammatory   |  |
| Antiseptic         | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Antispasmodic      |  |
| Candidicide        |  |
| FLavor FEMA 15-600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Herbicide          | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Insectifuge        | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Irritant           | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery          | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide          |  |
| Spasmogenic        | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Transdermal        |  |

|             |       |    |     |       |  |
|-------------|-------|----|-----|-------|--|
| BETA-PINENE | Shoot | -- | 4.0 | -0.12 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|-------------|-------|----|-----|-------|--|

#### Activities (13)

|                    |  |
|--------------------|--|
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| Antiinflammatory   |  |
| Antiseptic         | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Antispasmodic      |  |
| Candidicide        |  |
| FLavor FEMA 15-600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Herbicide          | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Insectifuge        | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Irritant           | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery          | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide          |  |
| Spasmogenic        | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Transdermal        |  |

BETA-SITOSTEROL                      Leaf        --            16000.0                      \*

Essent.

Oil

**Activities (47)**

|  |   |
|--|---|
| Androgenic                                 |   |
| Angiogenic                                 |   |
| Anorexic                                   | Martindale's 28th   |
| Antiadenomic                               | Merck 11th Edition  |
| Antiandrogenic                             | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.   |
| Antibacterial                              | Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.  |
| Anticancer (Breast)                        | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103. |
| Anticancer (Cervix)                        |   |
| Anticancer (Lung)                          |   |
| Antiedemic IC54=320 mg/kg orl              |   |
| Antiestrogenic                             | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.   |
| Antifeedant                                | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |
| Antifertility                              | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.   |
| Antigonadotrophic                          | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.   |
| Antihyperlipoproteinaemic                  | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.                                    |
| Antiinflammatory                           |   |
| Antileukemic                               |   |
| Antilymphomic                              |   |
| Antimutagenic 250 ug/ml                    |   |
| Antiphidic 2.3 mg mus                      | Economic & Medicinal Plant Research, 5: 363.  |
| Antioxidant IC44=10 uM                     |   |
| Antiprogestational                         | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.   |
| Antiprostaglandin 30 mg/day/12 wks         |   |
| Antiprostataadenomic                       | Merck 11th Edition  |
| Antiprostatic 10-20 mg 3 x/day/orl man     |   |
| Antipyretic                                | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.   |
| Antitumor (Breast)                         | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103. |
| Antitumor (Cervix)                         |   |
| Antitumor (Lung)                           |   |
| Antiviral                                  | Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in Artemisia annua. Plant Science, 75: 161-165, 1991.               |
| Apoptotic                                  |   |
| Artemicide LC50=110 ppm                    | Jung, J.H., Pummangura, S., Chaichantipuyuth, c., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of Melodorum fruticosum. Phytochemistry. 29(5): 1667-1670. 1990.    |
| Cancer-Preventive                          | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.   |
| Candidicide                                | Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.  |
| Caspase-8-Inducer                          |   |
| Estrogenic                                 |   |
| Febrifuge                                  | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.   |
| Gonadotrophic                              | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.   |
| Hepatoprotective                           |   |
| Hypocholesterolemic 2-6 g/man/day/orl      | Martindale's 30th   |
| Hypocholesterolemic 9-3,330 mg/man/day/orl | Martindale's 28th   |
| Hypoglycemic                               | Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. Journal of Ethnopharmacology, 27: 243-275, 1989.                    |
| Hypolipidemic 2-6 g/day                    |   |
| Pesticide                                  |   |
| Spermicide                                 | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.   |
| Ubiquit                                    | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.                                    |
| Ulcerogenic 500 mg/kg ipr rat              |   |

BETA-SITOSTEROL                      Fruit        --            --                      \*

Essent.

Oil



**Activities (47)**

|  |  |
|--|--|
| Androgenic                                 |  |
| Angiogenic                                 |  |
| Anorexic                                   | Martindale's 28th  |
| Antiadenomic                               | Merck 11th Edition   |
| Antiandrogenic                             | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.  |
| Antibacterial                              | Recently became <i>Internat. J. Crude Drug Res.</i> 28(1,2,3,4):1990, page 155.  |
| Anticancer (Breast)                        | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103. |
| Anticancer (Cervix)                        |  |
| Anticancer (Lung)                          |  |
| Antiedemic IC54=320 mg/kg orl              |  |
| Antiestrogenic                             | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.  |
| Antifeedant                                | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Antifertility                              | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.  |
| Antigonadotrophic                          | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.  |
| Antihyperlipoproteinaemic                  | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.   |
| Antiinflammatory                           |  |
| Antileukemic                               |  |
| Antilymphomic                              |  |
| Antimutagenic 250 ug/ml                    |  |
| Antiophidic 2.3 mg mus                     | <i>Economic &amp; Medicinal Plant Research</i> , 5: 363.   |
| Antioxidant IC44=10 uM                     |  |
| Antiprogestational                         | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.  |
| Antiprostaglandin 30 mg/day/12 wks         |  |
| Antiprostataadenomic                       | Merck 11th Edition   |
| Antiprostatic 10-20 mg 3 x/day/orl man     |  |
| Antipyretic                                | Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.  |
| Antitumor (Breast)                         | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103. |
| Antitumor (Cervix)                         |  |
| Antitumor (Lung)                           |  |
| Antiviral                                  | Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991.              |
| Apoptotic                                  |  |
| Artemicide LC50=110 ppm                    | Jung, J.H., Pummangura, S., Chaichantipyuth, c., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . <i>Phytochemistry</i> . 29(5): 1667-1670. 1990.    |
| Cancer-Preventive                          | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Candidicide                                | Recently became <i>Internat. J. Crude Drug Res.</i> 28(1,2,3,4):1990, page 155.  |
| Caspase-8-Inducer                          |  |
| Estrogenic                                 |  |
| Febrifuge                                  | Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.  |
| Gonadotrophic                              | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.  |
| Hepatoprotective                           |  |
| Hypocholesterolemic 2-6 g/man/day/orl      | Martindale's 30th  |
| Hypocholesterolemic 9-3,330 mg/man/day/orl | Martindale's 28th  |
| Hypoglycemic                               | Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989.                           |
| Hypolipidemic 2-6 g/day                    |  |
| Pesticide                                  |  |
| Spermicide                                 | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.  |
| Ubiquiot                                   | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.   |
| Ulcerogenic 500 mg/kg ipr rat              |  |

|                   |               |    |         |       |   |
|-------------------|---------------|----|---------|-------|---|
| BICYCLOGERMACRENE | Root          | -- | 4.0     |       | * |
| BORNEOL           | Essential Oil | -- | 10000.0 | -0.82 | * |

**Activities (35)**

|                                     |  |
|-------------------------------------|--|
| (-)-Chronotropic 29 ug/ml           | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.                                 |
| (-)-Inotropic 29 ug/ml              | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.                                 |
| Allelochemic                        |  |
| Analgesic                           |  |
| Antiacetylcholine                   | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Antibacterial<br>MIC=125-250 ug/ml  |  |
| Antibronchitic                      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Antiescherichic<br>MIC=125 ug/ml    |  |
| Antifeedant                         |  |
| Antiinflammatory                    |  |
| Antiotitic                          |  |
| Antipyretic                         |  |
| Antisalmonella<br>MIC=125 ug/ml     |  |
| Antispasmodic<br>ED50=0.008 mg/ml   |  |
| Antistaphylococcic<br>MIC=250 ug/ml |  |
| Antiyeast MIC=250 ug/ml             |  |
| CNS-Stimulant                       | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| CNS-Toxic                           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Candidicide<br>MIC=250 ug/ml        |  |
| Choleretic                          |  |
| FLavor FEMA<1                       | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry   |
| Fungicide                           |  |
| Hepatoprotective                    |  |
| Herbicide IC50=470 mM               | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Herbicide IC50=470 uM               | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Inhalant                            | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Insect-Repellent                    |  |
| Insectifuge                         | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Irritant                            | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.   |
| Myorelaxant                         | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Nematicide MLC=1 mg/ml              | Shoyakugaku Zasshi, 44: 183.   |
| Perfumery                           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Pesticide                           |  |
| Sedative                            | Medline (post 1990 searches filed in my computer)  |
| Tranquilizer                        |  |

|         |       |    |     |       |  |
|---------|-------|----|-----|-------|--|
| BORNEOL | Shoot | -- | 9.0 | -0.39 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|---------|-------|----|-----|-------|--|

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|                                     |  |
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| Allelochemic                        |  |
| Analgesic                           |  |
| Antiacetylcholine                   | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Antibacterial<br>MIC=125-250 ug/ml  |  |
| Antibronchitic                      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Antiescherichic<br>MIC=125 ug/ml    |  |
| Antifeedant                         |  |
| Antiinflammatory                    |  |
| Antiotitic                          |  |
| Antipyretic                         |  |
| Antisalmonella<br>MIC=125 ug/ml     |  |
| Antispasmodic<br>ED50=0.008 mg/ml   |  |
| Antistaphylococcic<br>MIC=250 ug/ml |  |
| Antiyeast MIC=250 ug/ml             |  |
| CNS-Stimulant                       | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| CNS-Toxic                           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Candidicide<br>MIC=250 ug/ml        |  |
| Choleretic                          |  |
| FLavor FEMA<1                       | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry   |
| Fungicide                           |  |
| Hepatoprotective                    |  |
| Herbicide IC50=470 mM               | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Herbicide IC50=470 uM               | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Inhalant                            | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Insect-Repellent                    |  |
| Insectifuge                         | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Irritant                            | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.   |
| Myorelaxant                         | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Nematicide MLC=1 mg/ml              | Shoyakugaku Zasshi, 44: 183.   |
| Perfumery                           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Pesticide                           |  |
| Sedative                            | Medline (post 1990 searches filed in my computer)  |
| Tranquilizer                        |  |

BORNEOL                      Fruit        --        1300.0                      \*

   Essent.

   Oil

**Activities (35)**

|                                     |  |
|-------------------------------------|--|
| (-)-Chronotropic 29 ug/ml           | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.                                 |
| (-)-Inotropic 29 ug/ml              | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.                                 |
| Allelochemic                        |  |
| Analgesic                           |  |
| Antiacetylcholine                   | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Antibacterial<br>MIC=125-250 ug/ml  |  |
| Antibronchitic                      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Antiescherichic<br>MIC=125 ug/ml    |  |
| Antifeedant                         |  |
| Antiinflammatory                    |  |
| Antiotitic                          |  |
| Antipyretic                         |  |
| Antisalmonella<br>MIC=125 ug/ml     |  |
| Antispasmodic<br>ED50=0.008 mg/ml   |  |
| Antistaphylococcic<br>MIC=250 ug/ml |  |
| Antiyeast MIC=250 ug/ml             |  |
| CNS-Stimulant                       | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| CNS-Toxic                           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Candidicide<br>MIC=250 ug/ml        |  |
| Choleretic                          |  |
| FLavor FEMA<1                       | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry   |
| Fungicide                           |  |
| Hepatoprotective                    |  |
| Herbicide IC50=470 mM               | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Herbicide IC50=470 uM               | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Inhalant                            | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Insect-Repellent                    |  |
| Insectifuge                         | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Irritant                            | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.   |
| Myorelaxant                         | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Nematicide MLC=1 mg/ml              | Shoyakugaku Zasshi, 44: 183.   |
| Perfumery                           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Pesticide                           |  |
| Sedative                            | Medline (post 1990 searches filed in my computer)  |
| Tranquilizer                        |  |

|                  |                   |    |        |       |  |
|------------------|-------------------|----|--------|-------|--|
| BORNEOL-ACETATE  | Shoot             | -- | 1.2    |       | *  |
| BORNEOL-ACETATE  | Essential Oil     | -- | 7000.0 | -0.69 | *  |
| BORNEOL-ACETATE  | Fruit Essent. Oil | -- | 7000.0 |       | *  |
| BORNEOL-ANGELATE | Shoot             | -- | 0.8    |       | *  |
| BORNYL-ACETATE   | Shoot             | -- | 28.0   | -0.36 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |

**Activities (12)**

|                                  |   |
|----------------------------------|---|
| (-)-Chronotropic 933 n/ml        | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.          |
| (-)-Inotropic 933 n/ml           | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.          |
| Antibacterial                    | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.   |
| Antifeedant                      | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |
| Antispasmodic<br>ED50=0.09 mg/ml | Fitoterapia No.59-1984.   |
| Antiviral                        | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.   |
| Expectorant                      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| FLavor FEMA 70-80                | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry   |
| Insectifuge                      | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. |
| Myorelaxant                      | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.  |
| Pesticide                        |   |
| Sedative                         |   |

**BUTYL-BENZENE**

|         |    |    |   |
|---------|----|----|---|
| Fruit   | -- | -- | * |
| Essent. |    |    |   |
| Oil     |    |    |   |

**CALCIUM**

|       |    |        |       |   |
|-------|----|--------|-------|---|
| Plant | -- | 5810.0 | -0.83 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|-------|----|--------|-------|---|

**Activities (28)**

|                                    |  |
|------------------------------------|--|
| AntiPMS 1 g/day                    |  |
| Antiallergic 500 mg/day            |  |
| Antianxiety                        | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antiarrhythmic 500-1,500 mg        |  |
| Antiarthritic 1,000 mg/day         |  |
| Antiatherosclerotic 500 mg/day     | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.               |
| Anticlimacteric 1,000-1,500 mg/day |  |
| Antidepressant                     | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antidote (Aluminum)                | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antidote (Lead)                    | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antihyperkinetic                   | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antihypertensive                   |  |
| Antiinsomniac                      | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antimenopausal 1,000-1,500 mg/day  |  |
| Antiobesity                        |  |
| Antiosteoporotic 500-2,000 mg/day  |  |
| Antiperiodontitic 750 mg/day       | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.               |
| Antirheumatic 1,000 mg/day         |  |
| Antistress 500-1,500 mg/day        |  |
| Antitic                            | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Anxiolytic 500-1,500 mg/day        |  |
| Calcium-Channel-Blocker            |  |
| Diuretic                           |  |
| Hypocholesterolemic 500 mg/day     | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.               |
| Hypotensive 1 g/day                | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.               |
| Laxative 1,000-1,200 mg            |  |
| Tranquilizer 500-1,500 mg/day      |  |
| Vasodilator                        |  |

**CAMPHENE**

|         |    |         |      |   |
|---------|----|---------|------|---|
| Leaf    | -- | 30000.0 | 0.19 | * |
| Essent. |    |         |      |   |
| Oil     |    |         |      |   |

| Activities (9)       |   |  |  |  |  |
|----------------------|---|--|--|--|--|
| Allelopathic         | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |  |  |  |  |
| Antilithic?          | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |  |  |  |  |
| Antioxidant          | Jim Duke's personal files.  |  |  |  |  |
| Expectorant          | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.  |  |  |  |  |
| FLavor FEMA 15-175   | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry   |  |  |  |  |
| Hypocholesterolemic? | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |  |  |  |  |
| Insectifuge          | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |  |  |  |  |
| Pesticide            |   |  |  |  |  |
| Spasmogenic          | Fitoterapia No.59-1984.   |  |  |  |  |

CAMPHENE                      Essential    --            54000.0    0.93            \*

Oil

| Activities (9)       |   |  |  |  |  |
|----------------------|---|--|--|--|--|
| Allelopathic         | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |  |  |  |  |
| Antilithic?          | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |  |  |  |  |
| Antioxidant          | Jim Duke's personal files.  |  |  |  |  |
| Expectorant          | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.  |  |  |  |  |
| FLavor FEMA 15-175   | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry   |  |  |  |  |
| Hypocholesterolemic? | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |  |  |  |  |
| Insectifuge          | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |  |  |  |  |
| Pesticide            |   |  |  |  |  |
| Spasmogenic          | Fitoterapia No.59-1984.   |  |  |  |  |

CAMPHENE                      Fruit            --            7000.0       -0.34            \*

Essent.  
Oil

| Activities (9)       |   |  |  |  |  |
|----------------------|---|--|--|--|--|
| Allelopathic         | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |  |  |  |  |
| Antilithic?          | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |  |  |  |  |
| Antioxidant          | Jim Duke's personal files.  |  |  |  |  |
| Expectorant          | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.  |  |  |  |  |
| FLavor FEMA 15-175   | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry   |  |  |  |  |
| Hypocholesterolemic? | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |  |  |  |  |
| Insectifuge          | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |  |  |  |  |
| Pesticide            |   |  |  |  |  |
| Spasmogenic          | Fitoterapia No.59-1984.   |  |  |  |  |

CAMPHENE                      Shoot          --            95.0           -0.13            Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71.

| Activities (9)       |   |  |  |  |  |
|----------------------|---|--|--|--|--|
| Allelopathic         | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |  |  |  |  |
| Antilithic?          | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |  |  |  |  |
| Antioxidant          | Jim Duke's personal files.  |  |  |  |  |
| Expectorant          | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.  |  |  |  |  |
| FLavor FEMA 15-175   | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry   |  |  |  |  |
| Hypocholesterolemic? | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |  |  |  |  |
| Insectifuge          | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |  |  |  |  |
| Pesticide            |   |  |  |  |  |
| Spasmogenic          | Fitoterapia No.59-1984.   |  |  |  |  |

CAMPHOR                      Leaf            --            201000.0    0.41            \*

Essent.  
Oil

**Activities (41)**

|                                 |  |
|---------------------------------|--|
| Allelopathic                    |  |
| Analgesic                       |  |
| Anesthetic                      |  |
| Antiacne                        | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.   |
| Antidiarrheic 500 ug/ml         | Wealth of India.   |
| Antidysenteric 500 ug/ml        | Wealth of India.   |
| Antiemetic 100-200 mg man orl   | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.  |
| Antifeedant IC50=5,000 ppm diet | Lydon, J. & Duke, S., <i>The potential of pesticides from plants</i> , pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.                             |
| Antifibrositic                  | Martindale's 28th  |
| Antineuralgic                   | Martindale's 28th  |
| Antipruritic                    | Merck 11th Edition   |
| Antiseptic                      | Merck 11th Edition   |
| Antispasmodic ED50=0.075 mg/ml  | Fitoterapia No.59-1984.  |
| CNS-Stimulant                   |  |
| Cancer-Preventive               | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Carminative                     | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. <i>Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats</i> . <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.   |
| Convulsant                      | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. <i>This and That: The Essential Pharmacology of Herbs and Spices</i> . <i>Tips</i> 13:15-20 Huxtable, R.J. 1992b. <i>The Myth of Benificent Nature. The Risk of Herbal Preparations</i> . <i>Ann. Intern. Med.</i> 117(2):165-6; Huxtable, R. |
| Cosmetic                        | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.   |
| Counterirritant                 | Martindale's 28th  |
| Decongestant                    | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.   |
| Deliriant                       | Merck 11th Edition   |
| Ecbolic                         |  |
| Emetic                          |  |
| Epileptogenic                   | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.   |
| Expectorant                     | Martindale's 29th  |
| Fungicide ED50=2.7 mM           | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.  |
| Herbicide IC50=3.3-180 mM       | Lydon, J. & Duke, S., <i>The potential of pesticides from plants</i> , pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.                             |
| Insect-Repellent                |  |
| Insectifuge                     |  |
| Irritant                        | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.   |
| Nematicide MLC=1 mg/ml          | Shoyakugaku Zasshi, 44: 183.   |
| Occuloirritant                  |  |
| P450-2B1-Inhibitor IC50=7.89 uM |  |
| Pesticide                       |  |
| Respirainhibitor                | Merck 11th Edition   |
| Respirastimulant                | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.  |
| Rubefacient                     |  |
| Stimulant                       | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. <i>This and That: The Essential Pharmacology of Herbs and Spices</i> . <i>Tips</i> 13:15-20 Huxtable, R.J. 1992b. <i>The Myth of Benificent Nature. The Risk of Herbal Preparations</i> . <i>Ann. Intern. Med.</i> 117(2):165-6; Huxtable, R. |
| Transdermal                     |  |
| Verrucolytic                    | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.   |
| Vibriocide 500 ug/ml            | Wealth of India.   |

CAMPHOR

Essential -- 442000.0 1.34 \*

Oil

**Activities (41)**

|                                 |   |
|---------------------------------|---|
| Allelopathic                    |   |
| Analgesic                       |   |
| Anesthetic                      |   |
| Antiacne                        | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.  |
| Antidiarrheic 500 ug/ml         | Wealth of India.  |
| Antidysenteric 500 ug/ml        | Wealth of India.  |
| Antiemetic 100-200 mg man orl   | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.   |
| Antifeedant IC50=5,000 ppm diet | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.                        |
| Antifibrositic                  | Martindale's 28th   |
| Antineuralgic                   | Martindale's 28th   |
| Antipruritic                    | Merck 11th Edition  |
| Antiseptic                      | Merck 11th Edition  |
| Antispasmodic ED50=0.075 mg/ml  | Fitoterapia No.59-1984.   |
| CNS-Stimulant                   |   |
| Cancer-Preventive               | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.   |
| Carminative                     | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.   |
| Convulsant                      | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. Anns. Intern. Med. 117(2):165-6; Huxtable, R. |
| Cosmetic                        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Counterirritant                 | Martindale's 28th   |
| Decongestant                    | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.  |
| Deliriant                       | Merck 11th Edition  |
| Ecbolic                         |   |
| Emetic                          |   |
| Epileptogenic                   | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.  |
| Expectorant                     | Martindale's 29th   |
| Fungicide ED50=2.7 mM           | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.  |
| Herbicide IC50=3.3-180 mM       | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.                        |
| Insect-Repellent                |   |
| Insectifuge                     |   |
| Irritant                        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Nematicide MLC=1 mg/ml          | Shoyakugaku Zasshi, 44: 183.  |
| Occuloirritant                  |   |
| P450-2B1-Inhibitor IC50=7.89 uM |   |
| Pesticide                       |   |
| Respirainhibitor                | Merck 11th Edition  |
| Respirastimulant                | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.   |
| Rubefacient                     |   |
| Stimulant                       | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. Anns. Intern. Med. 117(2):165-6; Huxtable, R. |
| Transdermal                     |   |
| Verrucolytic                    | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.  |
| Vibriocide 500 ug/ml            | Wealth of India.  |

|         |         |    |          |   |
|---------|---------|----|----------|---|
| CAMPHOR | Fruit   | -- | 189000.0 | * |
|         | Essent. |    |          |   |
|         | Oil     |    |          |   |



**Activities (41)**

|                                 |  |
|---------------------------------|--|
| Allelopathic                    |  |
| Analgesic                       |  |
| Anesthetic                      |  |
| Antiacne                        | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.   |
| Antidiarrheic 500 ug/ml         | Wealth of India.   |
| Antidysenteric 500 ug/ml        | Wealth of India.   |
| Antiemetic 100-200 mg man orl   | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.  |
| Antifeedant IC50=5,000 ppm diet | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.                       |
| Antifibrositic                  | Martindale's 28th  |
| Antineuralgic                   | Martindale's 28th  |
| Antipruritic                    | Merck 11th Edition   |
| Antiseptic                      | Merck 11th Edition   |
| Antispasmodic ED50=0.075 mg/ml  | Fitoterapia No.59-1984.  |
| CNS-Stimulant                   |  |
| Cancer-Preventive               | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Carminative                     | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.  |
| Convulsant                      | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficent Nature. The Risk of Herbal Preparations. Anns. Intern. Med. 117(2):165-6; Huxtable, R. |
| Cosmetic                        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Counterirritant                 | Martindale's 28th  |
| Decongestant                    | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.   |
| Deliriant                       | Merck 11th Edition   |
| Ecbolic                         |  |
| Emetic                          |  |
| Epileptogenic                   | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Expectorant                     | Martindale's 29th  |
| Fungicide ED50=2.7 mM           | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Herbicide IC50=3.3-180 mM       | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.                       |
| Insect-Repellent                |  |
| Insectifuge                     |  |
| Irritant                        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Nematicide MLC=1 mg/ml          | Shoyakugaku Zasshi, 44: 183.   |
| Occuloirritant                  |  |
| P450-2B1-inhibitor IC50=7.89 uM |  |
| Pesticide                       |  |
| Respirainhibitor                | Merck 11th Edition   |
| Respirastimulant                | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.  |
| Rubefacient                     |  |
| Stimulant                       | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficent Nature. The Risk of Herbal Preparations. Anns. Intern. Med. 117(2):165-6; Huxtable, R. |
| Transdermal                     |  |
| Verrucolytic                    | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.   |
| Vibriocide 500 ug/ml            | Wealth of India.   |

CAMPHOR                      Shoot      --              24.0              -0.16              \*

**Activities (41)**

|                                 |   |
|---------------------------------|---|
| Allelopathic                    |   |
| Analgesic                       |   |
| Anesthetic                      |   |
| Antiacne                        | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.  |
| Antidiarrheic 500 ug/ml         | Wealth of India.  |
| Antidysenteric 500 ug/ml        | Wealth of India.  |
| Antiemetic 100-200 mg man orl   | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.   |
| Antifeedant IC50=5,000 ppm diet | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.                      |
| Antifibrositic                  | Martindale's 28th   |
| Antineuralgic                   | Martindale's 28th   |
| Antipruritic                    | Merck 11th Edition  |
| Antiseptic                      | Merck 11th Edition  |
| Antispasmodic ED50=0.075 mg/ml  | Fitoterapia No.59-1984.   |
| CNS-Stimulant                   |   |
| Cancer-Preventive               | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.   |
| Carminative                     | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.  |
| Convulsant                      | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. <i>Tips</i> 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R. |
| Cosmetic                        | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.  |
| Counterirritant                 | Martindale's 28th   |
| Decongestant                    | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.  |
| Deliriant                       | Merck 11th Edition  |
| Ecbolic                         |   |
| Emetic                          |   |
| Epileptogenic                   | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.  |
| Expectorant                     | Martindale's 29th   |
| Fungicide ED50=2.7 mM           | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds</i> . (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.  |
| Herbicide IC50=3.3-180 mM       | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.                      |
| Insect-Repellent                |   |
| Insectifuge                     |   |
| Irritant                        | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.  |
| Nematicide MLC=1 mg/ml          | Shoyakugaku Zasshi, 44: 183.  |
| Occuloirritant                  |   |
| P450-2B1-Inhibitor IC50=7.89 uM |   |
| Pesticide                       |   |
| Respirainhibitor                | Merck 11th Edition  |
| Respirastimulant                | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.   |
| Rubefacient                     |   |
| Stimulant                       | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. <i>Tips</i> 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R. |
| Transdermal                     |   |
| Verrucolytic                    | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.  |
| Vibriocide 500 ug/ml            | Wealth of India.  |

|       |       |    |    |  |
|-------|-------|----|----|--|
| CANIN | Plant | -- | -- | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
|-------|-------|----|----|--|

**Activities (5)**

|               |  |
|---------------|--|
| Antiaggregant |  |
| Antifeedant   | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Antitumor     | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Cytotoxic     | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Pesticide     |  |

|       |       |    |     |   |
|-------|-------|----|-----|---|
| CANIN | Shoot | -- | 0.8 | * |
|-------|-------|----|-----|---|

**Activities (5)**

## Antiaggregant

Antifeedant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Antitumor Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Cytotoxic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

## Pesticide

CANIN Leaf -- -- \*

**Activities (5)**

## Antiaggregant

Antifeedant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Antitumor Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Cytotoxic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

## Pesticide

CAR-3-ENE Fruit -- -- \*  
Essent.  
Oil

CARBOHYDRATES Plant -- 514000.0 -1.02 Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

CARVACROL Shoot -- -- Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71.

**Activities (37)**

|                                     |  |
|-------------------------------------|--|
| Allergenic                          |  |
| Anesthetic                          |  |
| Anthelmintic                        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Antialzheimeran?                    | L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.  |
| Antiatherosclerotic<br>IC50=5.53 uM |  |
| Antibacterial MIC<br>170-290        | Chalchat, J.C. et Garry, R.P.*, Bastide, P., Fabre, F. et Malhuret, R. Correlation Composition Chimique/Activite Antimicrobienne: V - Contribution a la Comparaison de 2 Methodes de Determination Des Cml. Plantes medicinales et phytotherapie, 25: 184-193. |
| Antibacterial<br>MIC=39-625         | Russell, G. B., Phytochemical resources for crop protection, N. Z. J. Technol., 2, 1986, 127-134.  |
| Anticholinesterase?                 | L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.  |
| Antidiuretic                        | Lawrence Review of Natural Products, Mar-92.   |
| Antiinflammatory<br>IC50=4 uM       |  |
| Antimelanomic<br>IC50=120 uM/l      |  |
| Antioxidant                         | Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. JEO5: 153-8.   |
| Antioxidant (LDL)<br>IC50=5.53 uM   |  |
| Anti plaque<br>MIC=39-625 ug/ml     | Osawa, K., Matsumoto, T., Maruyama, T., Takiguchi, T., Okuda, K., and Takazoe, I., Studies of the antibacterial activity of plant extracts and their constituents against periodontopathic bacteria, Bull Tokyo Dent. Coll., 31 (1), 1990, 17-21               |
| Antiprostaglandin                   |  |
| Antiradicular 600 x<br>thymol       | Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. JEO5: 153-8.   |
| Antiseptic 1.5 x<br>phenol          |  |
| Antispasmodic                       |  |
| Antistaphylococcic                  |  |
| Antistreptococcic                   |  |
| Antitussive                         | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.   |
| Candidicide<br>MIC<0.1 ug/ml        |  |
| Candidicide 100-<br>150 ug/ml       |  |
| Carminative                         | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Cyclooxygenase-<br>Inhibitor #NAME? |  |
| Enterorelaxant                      | J. Aromatherapy 4: 22.   |
| Expectorant                         | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Flavor FEMA 10-<br>125              | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Fungicide                           | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Insectifuge                         |  |
| Irritant                            | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Nematicide MLC=1<br>mg/ml           |  |
| Pesticide                           |  |
| Prostaglandin-<br>Inhibitor         |  |
| Tracheorelaxant                     |  |
| Trichomonicide<br>LD100=150 ug/ml   |  |
| Vermifuge                           |  |

CARYOPHYLLENE      Fruit      --      --      \*

Essent.

Oil

**Activities (31)**

|                                    |  |
|------------------------------------|--|
| Aldose-Reductase-Inhibitor         |  |
| Allergenic                         |  |
| Analgesic                          | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.  |
| Antiacne                           |  |
| Antiasthmatic                      | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Antibacterial                      |  |
| Anticariogenic<br>MIC=>1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.  |
| Antidermatitic                     |  |
| Antiedemic                         | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990. |
| Antifeedant 500 ppm                | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Antiinflammatory<br>IC50=100 uM    | Shimizu,*M., et al. 1990. Anti-inflamptom Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990.   |
| Antileishmanic                     |  |
| Antionychotic                      | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.  |
| Antiproliferant                    |  |
| Antispasmodic                      |  |
| Antistaphylococcic                 |  |
| Antistreptococcic                  |  |
| Antitumor                          | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (Eugenia caryophyllata) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992.  |
| Antiulcer                          | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.  |
| Candidicide                        |  |
| FLavor FEMA 20-200                 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Fungicide                          |  |
| Gastroprotective                   | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.  |
| Insectifuge                        |  |
| Irritant                           | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.                                 |
| Larvicide                          |  |
| Mosquitocide                       |  |
| Perfumery                          | Merck 11th Edition   |
| Pesticide                          |  |
| Sedative                           |  |
| Termitifuge                        | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |

CARYOPHYLLENE-EPOXIDE      Shoot      --      31.0      1.64      Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71.

**Activities (6)**

|                         |  |
|-------------------------|--|
| Antifeedant 1 mM (diet) | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Attifuge                | CIBA (Chadwick, D.J. and Marsh, J. 1990. Bioactive Compounds from Plants. CIBA Foundation Symposium 154. John Wiley & Sons, Ltd. Chichester UK. 242 pp.  |
| Fungistat               | CIBA (Chadwick, D.J. and Marsh, J. 1990. Bioactive Compounds from Plants. CIBA Foundation Symposium 154. John Wiley & Sons, Ltd. Chichester UK. 242 pp.  |
| Insectifuge             | CIBA (Chadwick, D.J. and Marsh, J. 1990. Bioactive Compounds from Plants. CIBA Foundation Symposium 154. John Wiley & Sons, Ltd. Chichester UK. 242 pp.  |
| Larvicide<br>IC60=5 mM  | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Pesticide               |  |

CARYOPHYLLENE-OXIDE      Fruit      --      4000.0      -1.0      \*

Essent.  
Oil

| Activities (8)                       |  |  |  |  |  |
|--------------------------------------|--|--|--|--|--|
| Antiedemic                           | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990. |  |  |  |  |
| Antifeedant                          | Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. Insect Sci. Applic. 14(1): 93-99, 1993.              |  |  |  |  |
| Antiinflammatory                     | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990. |  |  |  |  |
| Antitumor                            | Zheng, G-O., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (Eugenia caryophyllata) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992.  |  |  |  |  |
| Calcium-Antagonist<br>ED50=32 uM gpg |  |  |  |  |  |
| Fungicide                            |  |  |  |  |  |
| Insecticide                          | Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. Insect Sci. Applic. 14(1): 93-99, 1993.              |  |  |  |  |
| Pesticide                            |  |  |  |  |  |

|          |       |    |     |      |   |
|----------|-------|----|-----|------|---|
| CHROMIUM | Plant | -- | 1.7 | -0.7 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|----------|-------|----|-----|------|---|

| Activities (24)                  |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|
| Amphiglycemic?                   | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |  |  |  |  |
| AntiAGE 200-1,000 ug             | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |  |  |  |  |
| AntiCFS 200 ug                   |  |  |  |  |  |
| Antiacne                         |  |  |  |  |  |
| Antiaging 200-1,000 ug           | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |  |  |  |  |
| Antiatherosclerotic 20 ug/day    |  |  |  |  |  |
| Anticorneotic                    | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |  |  |  |  |
| Antidiabetic 200-1,000 ug        |  |  |  |  |  |
| Antidote (Lead)                  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |  |  |  |  |
| Antifatigue 200 ug               |  |  |  |  |  |
| Antiglycosuric 200-1,000 ug      |  |  |  |  |  |
| Antiobesity 200-1,000 ug         | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |  |  |  |  |
| Antisyndrome-X 200-800 ug        | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |  |  |  |  |
| Antitriglyceride 20 ug/day       | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |  |  |  |  |
| Antitriglyceride 200-1,000 ug    | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |  |  |  |  |
| Cardioprotective                 |  |  |  |  |  |
| Energizer                        |  |  |  |  |  |
| Hypocholesterolemic 20 ug/day    | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |  |  |  |  |
| Hypocholesterolemic 200-1,000 ug | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |  |  |  |  |
| Hypoglycemic 200-1,000 ug        | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |  |  |  |  |
| Hypotensive 200-1,000 ug         | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |  |  |  |  |
| Immunomodulator                  |  |  |  |  |  |
| Insulinogenic                    |  |  |  |  |  |
| Memorigenic                      |  |  |  |  |  |

|  |               |    |          |      |   |
|--|---------------|----|----------|------|---|
| CHRYSANTH-TRANS-ENYL-ACETATE                 | Essential Oil | -- | 235000.0 |      | * |
| CHRYSANTHEMOLIDE                             | Leaf          | -- | --       |      | * |
| CHRYSANTHEMOMIN                              | Leaf          | -- | --       |      | * |
| CHRYSANTHEMUM-PARTHENIUM-ENYNE-BICLCLO-ETHER | Root          | -- | 3.0      |      | * |
| CHRYSANTHEMUM-SESQUITERPENE-LACTONE          | Leaf          | -- | --       |      | * |
| CHRYSANTHENOL                                | Shoot         | -- | 2.0      | -1.0 | * |
| CHRYSANTHENOL-4-ACETATE                      | Shoot         | -- | 1.2      |      | * |
| CHRYSANTHENOL-4-BETA-HYDROXY                 | Shoot         | -- | 3.0      |      | * |

|                       |       |    |       |  |
|-----------------------|-------|----|-------|--|
| CHRYSANTHENYL-ACETATE | Shoot | -- | 360.0 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|-----------------------|-------|----|-------|--|

**Activities (2)**

Antimigraine  
Antiprostaglandin

|                        |       |    |    |  |
|------------------------|-------|----|----|--|
| CHRYSANTHENYL-ANGELATE | Shoot | -- | -- | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|------------------------|-------|----|----|--|

|                           |       |    |    |  |
|---------------------------|-------|----|----|--|
| CHRYSANTHENYL-ISOVALERATE | Shoot | -- | -- | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|---------------------------|-------|----|----|--|

|                          |       |    |    |  |
|--------------------------|-------|----|----|--|
| CHRYSANTHENYL-PROPIONATE | Shoot | -- | -- | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|--------------------------|-------|----|----|--|

|              |       |    |    |  |
|--------------|-------|----|----|--|
| CHRYSARTEN-A | Plant | -- | -- | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991. |
|--------------|-------|----|----|--|

|              |       |    |    |  |
|--------------|-------|----|----|--|
| CHRYSARTEN-B | Plant | -- | -- | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991. |
|--------------|-------|----|----|--|

|                 |       |    |    |   |
|-----------------|-------|----|----|---|
| CHRYSARTHEMIN-A | Plant | -- | -- | * |
|-----------------|-------|----|----|---|

|                 |       |    |    |   |
|-----------------|-------|----|----|---|
| CHRYSARTHEMIN-B | Plant | -- | -- | * |
|-----------------|-------|----|----|---|

|                           |      |    |    |   |
|---------------------------|------|----|----|---|
| CHRYSOERIOL-7-GLUCURONIDE | Leaf | -- | -- | * |
|---------------------------|------|----|----|---|

|                           |       |    |     |   |
|---------------------------|-------|----|-----|---|
| CIS-CHRYSANTHENOL-ACETATE | Shoot | -- | 1.0 | * |
|---------------------------|-------|----|-----|---|

|                           |      |    |    |   |
|---------------------------|------|----|----|---|
| CIS-CHRYSANTHENOL-ACETATE | Leaf | -- | -- | * |
|---------------------------|------|----|----|---|

|                            |       |    |     |   |
|----------------------------|-------|----|-----|---|
| CIS-CHRYSANTHENOL-ANGELATE | Shoot | -- | 1.0 | * |
|----------------------------|-------|----|-----|---|

|                               |       |    |     |   |
|-------------------------------|-------|----|-----|---|
| CIS-CHRYSANTHENOL-ISOVALERATE | Shoot | -- | 0.8 | * |
|-------------------------------|-------|----|-----|---|

|                               |       |    |     |   |
|-------------------------------|-------|----|-----|---|
| CIS-DENDRANTHEMA-SPIROFURAN-A | Shoot | -- | 8.0 | * |
|-------------------------------|-------|----|-----|---|

|                           |                        |    |          |   |
|---------------------------|------------------------|----|----------|---|
| CIS-SPIROKETOL-ENOL-ETHER | Root<br>Essent.<br>Oil | -- | 575000.0 | * |
|---------------------------|------------------------|----|----------|---|

|        |       |    |    |   |
|--------|-------|----|----|---|
| COBALT | Plant | -- | -- | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|--------|-------|----|----|---|

**Activities (2)**

Cardiomyopathogenic      Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.  
Erythrocytogenic          Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

|           |        |    |    |  |
|-----------|--------|----|----|--|
| COSMOSIIN | Flower | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
|-----------|--------|----|----|--|

**Activities (4)**

Aldose-Reductase-Inhibitor IC40=1 uM      Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. Phytochemistry, 23: 1885-1888.

Aldose-Reductase-Inhibitor IC99=10 uM      Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. Phytochemistry, 23: 1885-1888.

Antibacterial MIC=500 ug/ml      Planta Medica, 57: A43, 1991.

Candidicide MIC=500 ug/ml      Planta Medica, 57: A43, 1991.

|                          |       |    |     |   |
|--------------------------|-------|----|-----|---|
| COSTIC-ACID-METHYL-ESTER | Shoot | -- | 0.8 | * |
|--------------------------|-------|----|-----|---|

|             |       |    |     |      |   |
|-------------|-------|----|-----|------|---|
| COSTUNOLIDE | Shoot | -- | 6.0 | -1.0 | * |
|-------------|-------|----|-----|------|---|

| Activities (9)  |  |    |    |  |  |
|-----------------|--|----|----|--|--|
| Allergenic      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |    |  |  |
| Antiangiogenic  |  |    |    |  |  |
| Antimutagenic   | Economic & Medicinal Plant Research, 6: 235.   |    |    |  |  |
| Antitumor       | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |    |    |  |  |
| Dermatitigenic  |  |    |    |  |  |
| Pesticide       |  |    |    |  |  |
| Schistosomicide | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |    |  |  |
| Trematodicide   | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |    |  |  |
| VEGF-Inhibitor  |  |    |    |  |  |
| COSTUNOLIDE     | Plant  | -- | -- |  | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |

| Activities (9)  |  |    |    |       |  |
|-----------------|--|----|----|-------|--|
| Allergenic      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |    |       |  |
| Antiangiogenic  |  |    |    |       |  |
| Antimutagenic   | Economic & Medicinal Plant Research, 6: 235.   |    |    |       |  |
| Antitumor       | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |    |    |       |  |
| Dermatitigenic  |  |    |    |       |  |
| Pesticide       |  |    |    |       |  |
| Schistosomicide | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |    |       |  |
| Trematodicide   | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |    |       |  |
| VEGF-Inhibitor  |  |    |    |       |  |
| CUMINALDEHYDE   | Shoot  | -- | -- | -0.33 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |

| Activities (10)                      |  |    |    |  |  |
|--------------------------------------|--|----|----|--|--|
| Antibacterial                        |  |    |    |  |  |
| FLavor FEMA <1                       | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |    |    |  |  |
| Fungicide                            | Singh*, G., Upadhyay, R.K. 1990. Fungitoxic Activity of Cumaldehyde, Main Constituent of the Cuminum cyminum Oil. Fitoterapia 62(1): 86, 1991.   |    |    |  |  |
| Irritant                             | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |    |    |  |  |
| Larvicide                            | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.   |    |    |  |  |
| Perfumery                            | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |    |    |  |  |
| Pesticide                            |  |    |    |  |  |
| Sedative                             | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |    |    |  |  |
| Tyrosinase-Inhibitor<br>ID50=0.05 mM |  |    |    |  |  |
| Ulcerogenic                          | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |    |    |  |  |
| CURCUMENE                            | Shoot  | -- | -- |  | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| CYNAROSIDE                           | Leaf   | -- | -- |  | *  |

| Activities (3)   |   |    |         |  |   |
|--|---|----|---------|--|---|
| Aldose-Reductase-Inhibitor<br>IC50=0.99 uM rat (strong activity) | Yoshikawa, M., et al. 1999. Medicinal Flowers. I. Aldose Reductase Inhibitors and Three New Eudesmane-Type Sesquiterpenes, Kikkano A, B, and C, From the Flowers of Chrysanthemum indicum L. Chem Pharm Bull, 47(3): 340-345. |    |         |  |   |
| Calcium-Antagonist IC50=1.2 uM<br>rbt                            |   |    |         |  |   |
| Hypocholesterolemic  |   |    |         |  |   |
| D-FRIEDOOLEAN-14-EN-3-OL   | Root<br>Essent.<br>Oil  | -- | 53000.0 |  | * |
| DEHYDROSAUSSUREALACTONE  | Fruit<br>Essent.<br>Oil   | -- | 6000.0  |  | * |



|                |       |    |    |  |  |
|----------------|-------|----|----|--|--|
| DELTA-CADINENE | Shoot | -- | -- |  | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|----------------|-------|----|----|--|--|

#### Activities (9)

|                             |   |  |  |  |  |
|-----------------------------|---|--|--|--|--|
| Aldose-Reductase-Inhibitor  |   |  |  |  |  |
| Antiacne                    |   |  |  |  |  |
| Antibacterial MIC800 ug/ml  | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |  |  |  |  |
| Anticariogenic MIC800 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |  |  |  |  |
| Antistreptococcic           |   |  |  |  |  |
| Cytochrome-P450-Inducer     |   |  |  |  |  |
| P450-Inducer                |   |  |  |  |  |
| Pesticide                   |   |  |  |  |  |
| Testosterone-Inducer        |   |  |  |  |  |

|                |               |    |    |  |   |
|----------------|---------------|----|----|--|---|
| DELTA-CADINENE | Essential Oil | -- | -- |  | * |
|----------------|---------------|----|----|--|---|

#### Activities (9)

|                             |   |  |  |  |  |
|-----------------------------|---|--|--|--|--|
| Aldose-Reductase-Inhibitor  |   |  |  |  |  |
| Antiacne                    |   |  |  |  |  |
| Antibacterial MIC800 ug/ml  | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |  |  |  |  |
| Anticariogenic MIC800 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |  |  |  |  |
| Antistreptococcic           |   |  |  |  |  |
| Cytochrome-P450-Inducer     |   |  |  |  |  |
| P450-Inducer                |   |  |  |  |  |
| Pesticide                   |   |  |  |  |  |
| Testosterone-Inducer        |   |  |  |  |  |

|             |                   |    |         |  |   |
|-------------|-------------------|----|---------|--|---|
| DOCOS-3-ENE | Fruit Essent. Oil | -- | 60000.0 |  | * |
|-------------|-------------------|----|---------|--|---|

|                   |       |    |    |  |   |
|-------------------|-------|----|----|--|---|
| ELEUTHEROSIDE-B-1 | Shoot | -- | -- |  | * |
|-------------------|-------|----|----|--|---|

#### Activities (1)

|                  |               |       |        |       |  |
|------------------|---------------|-------|--------|-------|--|
| Androgenic       |               |       |        |       |  |
| EO               | Plant         | 200.0 | 700.0  | -0.69 | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.                                 |
| EO               | Shoot         | --    | 1500.0 | -0.81 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| EPOXYARTEMORIN   | Leaf          | --    | --     |       | *  |
| EPOXYSANTAMARINE | Flower        | --    | 30.0   |       | *  |
| EUDESMANOLIDES   | Leaf          | --    | --     |       | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.                                  |
| EUGENOL          | Essential Oil | --    | --     |       | *  |

#### Activities (76)

|  |  |  |  |  |  |
|--|--|--|--|--|--|
| Acaricide LD50=5.47 ug/sq cm cf DEET at 37.59 ug/sq cm |  |  |  |  |  |
| Allergenic   |  |  |  |  |  |
| Analgesic  | Merck 11th Edition   |  |  |  |  |
| Anesthetic 200-400                                     | Phytotherapy Research, 4: 93.  |  |  |  |  |
| AntiTNF  |  |  |  |  |  |
| Antiaggregant IC50=0.3 uM                              | Phytotherapy Research, 4: 93.  |  |  |  |  |
| Antiarachidonate                                       |  |  |  |  |  |
| Antibacterial 500 ppm                                  | Valnet, J. 1982. The Practice of Aromatherapy. Translated from the 1980 French Edition by Robin Campbell and Libby Houston. Destiny Books, New York. 279 pp. |  |  |  |  |
| Antibacterial MBC=400 ug/ml                            |  |  |  |  |  |

|   |  |
|---|--|
| Anticonvulsant                          | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Antiedemic 100                          | Phytotherapy Research, 4: 95.  |
| Antiandrogenic                          |  |
| Antifeedant                             | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Antigenotoxic 50-500 mg/kg orl mus      |  |
| Antiherpetic IC50=16.2-25.6 ug/ml       |  |
| Antiinflammatory (11 uM) IC~97=1,000 uM |  |
| Antikeratotic IC50=16.2-25.6 ug/ml      |  |
| Antimitotic                             | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Antimutagenic                           | Economic & Medicinal Plant Research, 6: 235.   |
| Antinitrosating                         |  |
| Antioxidant IC65=30 ppm                 |  |
| Antioxidant 10 uM                       |  |
| Antiprostaglandin 11 uM                 |  |
| Antiprostaglandin IC50=9.2 mM           |  |
| Antipyretic 3 ml/man/day                |  |
| Antiradicular EC50=2 ul/l               |  |
| Antisalmonella MIC=400 ug/ml            |  |
| Antiseptic 3 ml/man/day                 |  |
| Antiseptic 400 ug/ml                    |  |
| Antispasmodic                           | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Antistaphylococcic                      | Wright, C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antithromboxane                         | Lawrence Review of Natural Products, Jul-87.   |
| Antitumor                               | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove ( <i>Eugenia caryophyllata</i> ) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992.   |
| Antiulcer                               |  |
| Antiviral IC50=16.2-25.6 ug/ml          |  |
| Apifuge                                 | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| CNS-Depressant                          | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| COX-1-Inhibitor IC97=1,000 uM           |  |
| COX-2-Inhibitor IC>97=1,000 uM          |  |
| COX-2-Inhibitor IC50=129 uM             |  |
| Calcium-Antagonist IC50=224 uM          |  |
| Calcium-Antagonist IC50=200 uM gpg      |  |
| Cancer-Preventive                       | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Candidicide                             | Phytotherapy Research, 4: 93.  |
| Carcinogenic?                           | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.   |
| Carminative                             | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.  |
| Choleretic                              |  |
| Cytochrome-P450-Inhibitor               | Pizzorno, J. 1998. Total Wellness. Prima Health, a division of Prima.  |
| Cytotoxic 25 ug/ml                      | Phytotherapy Research, 4: 93.  |
| Dermatitogenic                          |  |
| Enterorelaxant                          | J. Aromatherapy 4: 22.   |
| FLavor FEMA 10-500                      | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Fungicide                               |  |
| Hepatoprotective 100 ppm                |  |
| Herbicide                               |  |
| Insecticide                             |  |
| Insectifuge                             | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Irritant                                |  |
| Juvabional                              | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Larvicide                               |  |
| Motor-Depressant                        | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC  |
| Nematicide MLC=2,000 ug/ml              | Shoyakugaku Zasshi, 44: 183.   |
| Neurotoxic                              | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. Anns. Intern. Med. 117(2):165-6; Huxtable, R. |
| Perfumery                               | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |

|   |  |
|---|--|
| Pesticide                                     |  |
| Prostaglandin-Synthesis-Inhibitor 1 mM rbt    | Chen, S. J., Wang, M. H., Chen, I. J. 1996. Antiplatelet and Calcium Inhibitory Properties of Eugenol and Sodium Eugenol Acetate. <i>Gen Pharmacol</i> , 27(4): 629-633. |
| Prostaglandin-Synthesis-Inhibitor IC50=9.2 uM |  |
| Sedative                                      |  |
| Termiticide LD100=5 mg/g                      |  |
| Trichomonicide LD100=300 ug/ml                |  |
| Trichomonistat IC50=10 ug/ml                  | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.                                   |
| Trypsin-Enhancer                              | Lawrence Review of Natural Products, Dec-93.   |
| Ulcerogenic                                   | Phytotherapy Research, 4: 93.  |
| Varroacide                                    |  |
| Vasodilator                                   |  |
| Vermifuge                                     |  |

|         |         |    |        |   |
|---------|---------|----|--------|---|
| EUGENOL | Fruit   | -- | 1000.0 | * |
|         | Essent. |    |        |   |
|         | Oil     |    |        |   |

#### Activities (76)

|  |   |
|--|---|
| Acaricide LD50=5.47 ug/sq cm cf DEET at 37.59 ug/sq cm |   |
| Allergenic   |   |
| Analgesic  | Merck 11th Edition  |
| Anesthetic 200-400                                     | Phytotherapy Research, 4: 93.   |
| AntiTNF  |   |
| Antiaggregant IC50=0.3 uM                              | Phytotherapy Research, 4: 93.   |
| Antiarachidonate                                       |   |
| Antibacterial 500 ppm                                  | Valnet, J. 1982. <i>The Practice of Aromatherapy</i> . Translated from the 1980 French Edition by Robin Campbell and Libby Houston. Destiny Books, New York. 279 pp.  |
| Antibacterial MBC=400 ug/ml                            |   |
| Anticonvulsant   | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.  |
| Antiedemic 100   | Phytotherapy Research, 4: 95.   |
| Antiestrogenic   |   |
| Antifeedant  | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |
| Antigenotoxic 50-500 mg/kg orl mus                     |   |
| Antiherpetic IC50=16.2-25.6 ug/ml                      |   |
| Antiinflammatory (11 uM) IC~97=1,000 uM                |   |
| Antikeratotic IC50=16.2-25.6 ug/ml                     |   |
| Antimitotic  | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.  |
| Antimutagenic  | <i>Economic &amp; Medicinal Plant Research</i> , 6: 235.  |
| Antinitrosating  |   |
| Antioxidant IC65=30 ppm                                |   |
| Antioxidant 10 uM                                      |   |
| Antiprostaglandin 11 uM                                |   |
| Antiprostaglandin IC50=9.2 mM                          |   |
| Antipyretic 3 ml/man/day                               |   |
| Antiradicular EC50=2 ul/l                              |   |
| Antisalmonella MIC=400 ug/ml                           |   |
| Antiseptic 3 ml/man/day                                |   |
| Antiseptic 400 ug/ml                                   |   |
| Antispasmodic  | Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Antistaphylococcic                                     | Wright, C.W. (Ed) 2002. <i>Medicinal &amp; Aromatic Plants-Industrial Profiles. Artemisia</i> . 344pp. Maffei, M. (Ed) 2002. <i>Vetiveria. The Genus Vetiveria</i> . Taylor & Francis. NY, NY. 191pp. Southwell, J., Lowe, R. (Eds) 1999. <i>Tea Tree. The Genus Melaleuca</i> . Harwood Acad. Pub. Amsterdam, Netherlands. |
| Antithromboxane  | Lawrence Review of Natural Products, Jul-87.  |
| Antitumor  | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove ( <i>Eugenia caryophyllata</i> ) As Potential Anticarcinogenic Agents. <i>Journal of Natural Products</i> 55(7): 999-1003, 1992.   |
| Antiulcer  |   |
| Antiviral IC50=16.2-25.6 ug/ml                         |   |
| Apifuge  | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |
| CNS-Depressant   | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.  |

|   |   |
|---|---|
| COX-1-Inhibitor IC97=1,000 uM                 |   |
| COX-2-Inhibitor IC>97=1,000 uM                |   |
| COX-2-Inhibitor IC50=129 uM                   |   |
| Calcium-Antagonist IC50=224 uM                |   |
| Calcium-Antagonist IC50=200 uM gpg            |   |
| Cancer-Preventive                             | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.   |
| Candidicide                                   | Phytotherapy Research, 4: 93.   |
| Carcinogenic?                                 | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.  |
| Carminative                                   | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.   |
| Choleretic                                    |   |
| Cytochrome-P450-Inhibitor                     | Pizzorno, J. 1998. Total Wellness. Prima Health, a division of Prima.   |
| Cytotoxic 25 ug/ml                            | Phytotherapy Research, 4: 93.   |
| Dermatitigenic                                |   |
| Enterorelaxant                                | J. Aromatherapy 4: 22.  |
| FLavor FEMA 10-500                            | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry   |
| Fungicide                                     |   |
| Hepatoprotective 100 ppm                      |   |
| Herbicide                                     |   |
| Insecticide                                   |   |
| Insectifuge                                   | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |
| Irritant                                      |   |
| Juvabional                                    | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |
| Larvicide                                     |   |
| Motor-Depressant                              | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=2,000 ug/ml                    | Shoyakugaku Zasshi, 44: 183.  |
| Neurotoxic                                    | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficent Nature. The Risk of Herbal Preparations. Anns. Intern. Med. 117(2):165-6; Huxtable, R. |
| Perfumery                                     | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry   |
| Pesticide                                     |   |
| Prostaglandin-Synthesis-Inhibitor 1 mM rbt    | Chen, S. J., Wang, M. H., Chen, I. J. 1996. Antiplatelet and Calcium Inhibitory Properties of Eugenol and Sodium Eugenol Acetate. Gen Pharmacol, 27(4): 629-633.  |
| Prostaglandin-Synthesis-Inhibitor IC50=9.2 uM |   |
| Sedative                                      |   |
| Termiticide LD100=5 mg/g                      |   |
| Trichomonicide LD100=300 ug/ml                |   |
| Trichomonistat IC50=10 ug/ml                  | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.  |
| Trypsin-Enhancer                              | Lawrence Review of Natural Products, Dec-93.  |
| Ulcerogenic                                   | Phytotherapy Research, 4: 93.   |
| Varroacide                                    |   |
| Vasodilator                                   |   |
| Vermifuge                                     |   |

|           |       |    |    |  |  |
|-----------|-------|----|----|--|--|
| FARNESENE | Plant | -- | -- |  | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
|-----------|-------|----|----|--|--|

#### Activities (2)

|           |  |
|-----------|--|
| Pesticide |  |
| Pheromone | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

|       |       |    |          |       |   |
|-------|-------|----|----------|-------|---|
| FAT   | Seed  | -- | 312000.0 | 0.25  | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses               |
| FAT   | Plant | -- | 48000.0  | -0.05 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| FIBER | Plant | -- | 143000.0 | -0.59 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |

**Activities (15)**

|                              |  |
|------------------------------|--|
| Angiotensin-Receptor-Blocker |  |
| Antidiabetic                 |  |
| Antihypertensive             |  |
| Antiobesity                  |  |
| Antitumor                    | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiulcer                    | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Beta-Blocker                 |  |
| Cancer-Preventive            | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Cardioprotective             |  |
| Diuretic                     |  |
| Hypocholesterolemic          |  |
| Hypotensive 10 g/man/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Hypouricemic                 |  |
| Laxative                     |  |
| Vasodilator                  |  |

GAMMA-TERPINENE                      Essent.    --            10000.0    -0.69            \*

Oil

**Activities (11)**

|  |  |
|--|--|
| ACE-Inhibitor 100 ug/ml<br>(weak activity) |  |
| Acaricide                                  |  |
| Aldose-Reductase-<br>Inhibitor 100 ug/ml   | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.   |
| Antiacetylcholinesterase<br>IC23=1.2 mM    |  |
| Antifeedant                                | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.      |
| Antioxidant                                | Jim Duke's personal files.   |
| FLavor FEMA 1-40                           | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Insectifuge                                | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.      |
| Irritant                                   | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery                                  | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide                                  |  |

GAMMA-TERPINENE                      Fruit        --            1000.0        -1.02            \*

Essent.  
Oil

**Activities (11)**

|  |  |
|--|--|
| ACE-Inhibitor 100 ug/ml<br>(weak activity) |  |
| Acaricide                                  |  |
| Aldose-Reductase-<br>Inhibitor 100 ug/ml   | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.   |
| Antiacetylcholinesterase<br>IC23=1.2 mM    |  |
| Antifeedant                                | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.      |
| Antioxidant                                | Jim Duke's personal files.   |
| FLavor FEMA 1-40                           | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Insectifuge                                | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.      |
| Irritant                                   | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery                                  | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide                                  |  |

GAMMA-TERPINENE                      Shoot        --            28.0            -0.37            Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71.

| Activities (11)                            |  |  |  |  |  |
|--|--|--|--|--|--|
| ACE-Inhibitor 100 ug/ml<br>(weak activity) |  |  |  |  |  |
| Acaricide                                  |  |  |  |  |  |
| Aldose-Reductase-Inhibitor 100 ug/ml       |  |  |  |  | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.   |
| Antiacetylcholinesterase<br>IC23=1.2 mM    |  |  |  |  |  |
| Antifeedant                                |  |  |  |  | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.      |
| Antioxidant                                |  |  |  |  | Jim Duke's personal files.   |
| FLavor FEMA 1-40                           |  |  |  |  | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Insectifuge                                |  |  |  |  | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.      |
| Irritant                                   |  |  |  |  | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery                                  |  |  |  |  | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide                                  |  |  |  |  |  |

|              |                   |    |         |       |   |
|--------------|-------------------|----|---------|-------|---|
| GERMACRENE   | Plant             | -- | 14900.0 |       | * |
| GERMACRENE-A | Tissue<br>Culture | -- | --      |       | * |
| GERMACRENE-D | Shoot             | -- | 4.0     | -0.37 | * |

| Activities (2) |                  |    |         |      |   |
|----------------|------------------|----|---------|------|---|
| Pesticide      |                  |    |         |      |   |
| Pheromone      |                  |    |         |      |   |
| GERMACRENE-D   | Essential<br>Oil | -- | 46000.0 | -1.0 | * |

| Activities (2) |                        |    |         |       |   |
|----------------|------------------------|----|---------|-------|---|
| Pesticide      |                        |    |         |       |   |
| Pheromone      |                        |    |         |       |   |
| GERMACRENE-D   | Leaf<br>Essent.<br>Oil | -- | 31000.0 | -0.54 | * |

| Activities (2) |                   |    |    |  |   |
|----------------|-------------------|----|----|--|---|
| Pesticide      |                   |    |    |  |   |
| Pheromone      |                   |    |    |  |   |
| GERMACRENE-D   | Tissue<br>Culture | -- | -- |  | * |

| Activities (2)  |       |    |    |  |  |
|-----------------|-------|----|----|--|--|
| Pesticide       |       |    |    |  |  |
| Pheromone       |       |    |    |  |  |
| GERMACRONOLIDES | Plant | -- | -- |  | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |

|              |      |    |    |  |   |
|--------------|------|----|----|--|---|
| GUAIANOLIDES | Leaf | -- | -- |  | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
|--------------|------|----|----|--|---|

|                   |                         |    |    |  |   |
|-------------------|-------------------------|----|----|--|---|
| HEX-CIS-3-EN-1-OL | Fruit<br>Essent.<br>Oil | -- | -- |  | * |
|-------------------|-------------------------|----|----|--|---|

|                     |                         |    |    |  |   |
|---------------------|-------------------------|----|----|--|---|
| HEX-TRANS-2-EN-1-AL | Fruit<br>Essent.<br>Oil | -- | -- |  | * |
|---------------------|-------------------------|----|----|--|---|

|            |                         |    |    |  |   |
|------------|-------------------------|----|----|--|---|
| HEXAN-1-AL | Fruit<br>Essent.<br>Oil | -- | -- |  | * |
|------------|-------------------------|----|----|--|---|

|      |       |    |    |  |   |
|------|-------|----|----|--|---|
| IRON | Plant | -- | -- |  | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|------|-------|----|----|--|---|

| Activities (6)                     |  |  |  |  |  |
|------------------------------------|--|--|--|--|--|
| Antiakathitic                      | Martindale's 29th  |  |  |  |  |
| Antianemic                         | Martindale's 29th  |  |  |  |  |
| Anticanker                         |  |  |  |  |  |
| Anticheilitic                      | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |  |  |  |  |
| Antimenorrhagic 100 mg/day/wmn/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |  |  |  |  |
| Prooxidant                         |  |  |  |  |  |

|                     |         |    |        |  |   |
|---------------------|---------|----|--------|--|---|
| ISOAMYL-ISOVALERATE | Fruit   | -- | 2000.0 |  | * |
|                     | Essent. |    |        |  |   |
|                     | Oil     |    |        |  |   |

|             |      |    |       |     |   |
|-------------|------|----|-------|-----|---|
| ISOFRAXIDIN | Root | -- | 122.0 | 1.0 | * |
|-------------|------|----|-------|-----|---|

| Activities (5)  |   |  |  |  |  |
|---|---|--|--|--|--|
| Aldose-Reductase-Inhibitor 10 ug/ml cow (weak activity, 18% inhibition) | Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387 |  |  |  |  |
| Antileukemic ED50=1.7   |   |  |  |  |  |
| Antimalarial IC50=7.95 ug/ml  |   |  |  |  |  |
| Cancer-Preventive   | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.   |  |  |  |  |
| Choleretic  |   |  |  |  |  |

|              |       |    |        |       |   |
|--------------|-------|----|--------|-------|---|
| KILOCALORIES | Plant | -- | 2860.0 | -0.41 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|--------------|-------|----|--------|-------|---|

|           |       |    |    |  |  |
|-----------|-------|----|----|--|--|
| L-BORNEOL | Plant | -- | -- |  | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
|-----------|-------|----|----|--|--|

|          |               |    |        |       |   |
|----------|---------------|----|--------|-------|---|
| LIMONENE | Essential Oil | -- | 5000.0 | -0.71 | * |
|----------|---------------|----|--------|-------|---|

**Activities (60)**

|   |  |
|---|--|
| AChE-Inhibitor                                      | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. &amp; Physiol.</i> , 23, 1985, 383-8. |
| Acaricide LC100=8 uM                                |  |
| Allelochemic  |  |
| Allergenic 1/20th carene                            |  |
| Antiacetylcholinesterase IC22-26=1.2 mM             |  |
| Antiadenomic  |  |
| Antialzheimeran?                                    | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. &amp; Physiol.</i> , 23, 1985, 383-8. |
| Antiasthmatic                                       |  |
| Antibacterial                                       | Revista Itiliana Eppos, 12: 5, 1994.   |
| Anticancer  |  |
| Antiesophagitic                                     |  |
| Antifeedant   |  |
| Antiflu   | Economic & Medicinal Plant Research, 5: 195.   |
| Antiinflammatory                                    |  |
| Antilithic  |  |
| Antilymphomic                                       |  |
| Antimetastatic (Stomach)                            |  |
| Antimutagenic                                       | Economic & Medicinal Plant Research, 6: 235.   |
| Antiobesity   |  |
| Antiseptic  |  |
| Antispasmodic ED50=0.197 mg/ml                      | Fitoterapia No.59-1984.  |
| Antitumor   |  |
| Antitumor (Breast)                                  |  |
| Antitumor (Colon)                                   |  |
| Antitumor (Pancreas)                                |  |
| Antitumor (Prostate)                                |  |
| Antitumor (Stomach)                                 |  |
| Antiviral   |  |
| Apoptotic   |  |
| Bronchoprotectant                                   |  |
| Cancer-Preventive                                   | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Candidistat   |  |
| Chemopreventive                                     |  |
| Cholesterolytic                                     |  |
| Detoxicant  |  |
| Enterocontractant                                   | J. Aromatherapy 4: 22.   |
| Expectorant   |  |
| FLavor  |  |
| Fungiphilic   | J. Agric. Food Chem. 43: 2283.   |
| Fungistat   |  |
| GST-Inducer   |  |
| Herbicide IC50=45 uM                                | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Histaminic  |  |
| Immunomodulator                                     |  |
| Insecticide 0.37 uM/fly                             |  |
| Insectifuge   | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Interleukin-6-Inhibitor                             |  |
| Irritant  |  |
| Lipolytic   |  |
| Myorelaxant 50 mg/kg                                |  |
| NO-Genic  |  |
| Nematicide IC=100 ug/ml                             | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.                       |
| Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet) |  |
| Ozone-Scavenger                                     |  |
| P450-Inducer  |  |
| Peristaltic   |  |
| Pesticide   |  |
| Photosensitizer                                     | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.   |
| Sedative ED=1-32 mg/kg                              | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)  |
| Transdermal   |  |





**Activities (60)**

|   |  |
|---|--|
| AChE-Inhibitor                                      | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. &amp; Physiol.</i> , 23, 1985, 383-8. |
| Acaricide LC100=8 uM                                |  |
| Allelochemic  |  |
| Allergenic 1/20th carene                            |  |
| Antiacetylcholinesterase IC22-26=1.2 mM             |  |
| Antiadenomic  |  |
| Antialzheimeran?                                    | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. &amp; Physiol.</i> , 23, 1985, 383-8. |
| Antiasthmatic                                       |  |
| Antibacterial                                       | Revista Itiliana Eppos, 12: 5, 1994.   |
| Anticancer  |  |
| Antiesophagitic                                     |  |
| Antifeedant   |  |
| Antiflu   | Economic & Medicinal Plant Research, 5: 195.   |
| Antiinflammatory                                    |  |
| Antilithic  |  |
| Antilymphomic                                       |  |
| Antimetastatic (Stomach)                            |  |
| Antimutagenic                                       | Economic & Medicinal Plant Research, 6: 235.   |
| Antiobesity   |  |
| Antiseptic  |  |
| Antispasmodic ED50=0.197 mg/ml                      | Fitoterapia No.59-1984.  |
| Antitumor   |  |
| Antitumor (Breast)                                  |  |
| Antitumor (Colon)                                   |  |
| Antitumor (Pancreas)                                |  |
| Antitumor (Prostate)                                |  |
| Antitumor (Stomach)                                 |  |
| Antiviral   |  |
| Apoptotic   |  |
| Bronchoprotectant                                   |  |
| Cancer-Preventive                                   | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Candidistat   |  |
| Chemopreventive                                     |  |
| Cholesterolytic                                     |  |
| Detoxicant  |  |
| Enterocontractant                                   | J. Aromatherapy 4: 22.   |
| Expectorant   |  |
| FLavor  |  |
| Fungiphilic   | J. Agric. Food Chem. 43: 2283.   |
| Fungistat   |  |
| GST-Inducer   |  |
| Herbicide IC50=45 uM                                | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Histaminic  |  |
| Immunomodulator                                     |  |
| Insecticide 0.37 uM/fly                             |  |
| Insectifuge   | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.   |
| Interleukin-6-Inhibitor                             |  |
| Irritant  |  |
| Lipolytic   |  |
| Myorelaxant 50 mg/kg                                |  |
| NO-Genic  |  |
| Nematicide IC=100 ug/ml                             | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.                       |
| Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet) |  |
| Ozone-Scavenger                                     |  |
| P450-Inducer  |  |
| Peristaltic   |  |
| Pesticide   |  |
| Photosensitizer                                     | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.   |
| Sedative ED=1-32 mg/kg                              | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)  |
| Transdermal   |  |

## Activities (53)

|   |   |
|---|---|
| Acaricide C90=<15 ul/l (= <15 ppm)                    |   |
| Allergenic  |   |
| Analgesic   |   |
| Anesthetic 0.01-1 ug/ml                               |   |
| Antiacetylcholinesterase                              |   |
| Antiallergic  | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.   |
| Antianaphylactic                                      |   |
| Antibacterial MIC=1,600 ug/ml                         |   |
| Anticariogenic MIC=1,600 ug/ml                        | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.   |
| Anticolic   |   |
| Anticonvulsant 200 mg/kg ipr mus                      |   |
| Antiedemic  |   |
| Antiglutamaergic                                      |   |
| Antihistaminic  | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.   |
| Antiinflammatory                                      |   |
| Antileukemic IC50=3.5-4.2 ug/ml                       | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.  |
| Antilymphomic IC50=3.5-4.2 ug/ml                      | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.  |
| Antimange   |   |
| Antimite  |   |
| Antimutagenic   |   |
| Antiseptic 5 x phenol                                 | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)   |
| Antishock   | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.   |
| Antispasmodic   | Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (Flores Graminis, Graminis Flos) used in Aromatherapy. J. Ess. Oil Res., 2: 185-191, 1990.                        |
| Antiviral   |   |
| Barbituate-Synergist                                  |   |
| Bronchorelaxant                                       | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.   |
| CNS-Depressant  |   |
| Cancer-Preventive                                     | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.   |
| Candidistat   |   |
| Carminative   |   |
| Culicide LC50=156-194 mg/l                            |   |
| Cytotoxic   |   |
| Expectorant   | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.   |
| FLavor FEMA 2-40                                      | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry   |
| Fungicide   | Acta Botanica Sinica, 32: 49.   |
| GABA-nergic   |   |
| Hypnotic  |   |
| Hypothermic   |   |
| Insecticide LC50=156-194 mg/l                         |   |
| Insectifuge   | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |
| Irritant  | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.  |
| Larvicide LC50=156-194 mg/l                           |   |
| Mosquitofuge > Deet                                   |   |
| Motor-Depressant                                      | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml                                | Shoyakugaku Zasshi, 44: 183.  |
| Perfumery   | Merck 11th Edition  |
| Pesticide   |   |
| Prooxidant  | Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.   |
| Sedative ED=1-32 mg/kg                                | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)   |
| Sedative 200 mg/kg ipr mus (1% as active as diazepam) |   |
| Termitifuge   | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |
| Trichomonicide LD100=600 ug/ml                        |   |
| Tumor-Promoter  |   |

|                    |       |    |    |  |  |
|--------------------|-------|----|----|--|--|
| LINALYL-PROPIONATE | Shoot | -- | -- |  | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|--------------------|-------|----|----|--|--|

|                        |      |    |    |  |   |
|------------------------|------|----|----|--|---|
| LUTEOLIN-7-GLUCURONIDE | Leaf | -- | -- |  | * |
|------------------------|------|----|----|--|---|

### Activities (3)

Aldose-Reductase-Inhibitor  
IC88=10 uM

Aldose-Reductase-Inhibitor  
IC68=1 uM Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. Phytochemistry, 23: 1885-1888.

Antioxidant Igile, G.O., Oleszek, W., Burda, S., and Jurzysta, M. 1995. Nutritional Assessment of Vernonia amygdalina Leaves in Growing Mice. J. Agric. Food Chem. 43: 2162-2166.

|           |       |    |        |       |   |
|-----------|-------|----|--------|-------|---|
| MAGNESIUM | Plant | -- | 2400.0 | -0.52 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|-----------|-------|----|--------|-------|---|

### Activities (65)

AntiCFS

AntiLyme 400-1,000 mg

AntiMS

AntiPMS 400-800  
mg/day/wmn/orl

AntiPMS 400-800  
mg/day/wmn orl

AntiRaynaud's 280-350  
mg/day

Antiaggregant 400 mg/day

Antialcoholic

Antianginal 400 mg/day

Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antianorectic

Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antianxiety 400 mg/day

Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antiarrhythmic 400 mg/day

Antiarthritic

Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antiasthmatic

Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antiatherosclerotic 400  
mg/day

Anticephalagic

Anticlimacteric 500-750  
mg/day

Anticonvulsant

Facciola, S. 1998. Cornucopia - A Source Book of Edible Plants. Kampong Publications, Vista CA. 713 pp.

Anticoronary 400 mg/day

Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

Antidepressant

Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antidiabetic 400-800  
mg/man/day

Antidysmenorrheic 100 mg 4  
x/day

Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antiendometriotic 500  
mg/day

Antienterotic

Antiepileptic 450 mg/day

Antifatigue

Antifibromyalgic 200-300 mg  
3x/day

Antigastric

Antiglaucomic

Antihyperkinetic

Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antihypertensive

Antihypoglycemic

Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antiinflammatory 100 mg 4  
x/day

Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antiinsomniac

Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antilithic

Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antimastalgic

Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antimenopausal 500-750  
mg/day

Antimigraine 200  
mg/day/man

Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antimitral-valve-prolapse

Antinephrolytic

Antineurotic

Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antiosteoporotic 500-1,000  
mg/day/wmn/orl

Antiplateque 500-1,000 mg/day

Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

|                                |  |
|--------------------------------|--|
| Antispasmodic                  |  |
| Antispasmodic 500 mg/day       | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antistress 500-750 mg/day      |  |
| Antistroke 400 mg/day          | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antisyndrome-X 400 mg/man/day  | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Anxiolytic 500-750 mg/day      |  |
| CNS-Depressant                 | Facciola, S. 1998. Cornucopia - A Source Book of Edible Plants. Kampong Publications, Vista CA. 713 pp.  |
| Calcium-Antagonist             |  |
| Cardioprotective               |  |
| Diuretic                       |  |
| Hypocholesterolemic 400 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Hypotensive 260-500 mg/day     |  |
| Immunomodulator                |  |
| Insulinogenic 400 mg/day       | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Laxative 300-500 mg/day        |  |
| Litholytic                     |  |
| Myorelaxant 100 mg 4 x/day     | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Neurotransmitter               |  |
| Tranquilizer 500-750 mg/day    |  |
| Uterorelaxant 100 mg 4 x/day   | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Vasodilator                    |  |

|              |       |    |     |       |   |
|--------------|-------|----|-----|-------|---|
| MAGNOLIALIDE | Plant | -- | --  |       | *   |
| MANGANESE    | Plant | -- | 8.1 | -0.64 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |

#### Activities (14)

|                                 |  |
|---------------------------------|--|
| AntiPMS                         |  |
| Antialcoholic                   | Forest H. Nielsen, USDA, Grand Forks, various publications.  |
| Antianemic                      | Martindale's 28th  |
| Antiarthritic                   |  |
| Antidiabetic 3-5 mg/day         | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antidiabetic 10-30 mg/man/day   |  |
| Antidiscotic                    | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antidyskinetic                  | Martindale's 28th  |
| Antiepileptic 450 mg/day        | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiosteoporotic                |  |
| Antiototic                      | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antioxidant                     |  |
| Antisyndrome-X 10-30 mg/man/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Hypoglycemic 10-30 mg/man/day   |  |

|              |       |     |        |      |   |
|--------------|-------|-----|--------|------|---|
| MANGOLIOLIDE | Plant | --  | --     |      | J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991. |
| MELATONIN    | Leaf  | 6.0 | 3500.0 | 1.41 | *   |

**Activities (23)**

|                                 |   |
|---------------------------------|---|
| Anaphrodisiac                   | Medline (post 1990 searches filed in my computer)   |
| Antiaaggregant                  | Medline (post 1990 searches filed in my computer)   |
| Anticonvulsant 25 ug/gerbil/scu | Medline (post 1990 searches filed in my computer)   |
| Antidepressant                  | Medline (post 1990 searches filed in my computer)   |
| Antigonadotrophic               | Medline (post 1990 searches filed in my computer)   |
| Antiinsomniac 0.1-10 mg/man     |   |
| Antioxidant                     | Medline (post 1990 searches filed in my computer)   |
| Antiradicular 0.2-0.4 mg/kg     |   |
| Antithyreotropic                | Medline (post 1990 searches filed in my computer)   |
| Aphrodisiac                     | Medline (post 1990 searches filed in my computer)   |
| COX-2-Inhibitor                 | Newmark, T. M. and Schulick, P. 2000. Herbal Cox-2 Inhibition - Nature's Challenge to Arthritis, Cancer & Alzheimer's Disease. Hohm Press, Prescott AZ. |
| Contraceptive                   | Medline (post 1990 searches filed in my computer)   |
| Cyclooxygenase-Inhibitor        | Medline (post 1990 searches filed in my computer)   |
| Depressant                      | Medline (post 1990 searches filed in my computer)   |
| GABA-nergic                     | Medline (post 1990 searches filed in my computer)   |
| Gonadotrophic                   | Medline (post 1990 searches filed in my computer)   |
| Hypnotic 0.1-0.3 mg/man         |   |
| Hypocholesterolemic             | Medline (post 1990 searches filed in my computer)   |
| Hypothermic 1-10 mg/man         |   |
| Immunostimulant                 | Medline (post 1990 searches filed in my computer)   |
| Progesteronigenic               | Medline (post 1990 searches filed in my computer)   |
| Serotoninergic                  | Medline (post 1990 searches filed in my computer)   |
| Thyrotropic                     | Medline (post 1990 searches filed in my computer)   |

|                |                         |    |    |   |
|----------------|-------------------------|----|----|---|
| MICHEFUSCALIDE | Leaf                    | -- | -- | * |
| MYRCENE        | Fruit<br>Essent.<br>Oil | -- | -- | * |

**Activities (22)**

|                                      |  |
|--------------------------------------|--|
| ACE-Inhibitor 100 ug/ml              |  |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.   |
| Allergenic                           |  |
| Analgesic                            | Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991.                           |
| Antibacterial                        |  |
| Anticonvulsant                       |  |
| Antimutagenic                        | Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991.                           |
| Antinitrosaminic                     |  |
| Antinociceptive 10-20 mg/kg ipr mus  | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990.  |
| Antinociceptive 20-40 mg/kg scu mus  | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990.  |
| Antioxidant                          | Jim Duke's personal files.   |
| Antispasmodic                        | Jim Duke's personal files.   |
| Chemopreventive                      | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| FLavor FEMA 0.5-9                    | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry   |
| Fungicide                            | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Hypothermic                          |  |
| Insectifuge                          |  |
| Irritant                             | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Myorelaxant 100-200 mg/kg            |  |
| P450-2B1-Inhibitor IC50=0.14 uM      |  |
| Perfumery                            | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.   |
| Pesticide                            |  |

|        |       |    |       |      |   |
|--------|-------|----|-------|------|---|
| NIACIN | Plant | -- | 285.0 | 2.92 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|--------|-------|----|-------|------|---|

**Activities (39)**

|                                      |  |
|--------------------------------------|--|
| Allergenic                           | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| AntiLyme 50 mg/day                   |  |
| AntiMeniere's                        | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.                                 |
| AntiRaynaud's 1,500-4,000 mg/day     |  |
| Antiacrodynic                        |  |
| Antiallergic 50 mg/2x/day            | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antialzheimeran                      |  |
| Antiamblyopic                        |  |
| Antianginal                          |  |
| Anticataract                         |  |
| Antichilblain                        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Anticonvulsant 3 g/day               | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antidementia                         |  |
| Antidermatitic                       | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antidiabetic                         |  |
| Antidysphagic                        |  |
| Antiepileptic 3 g/day                | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antihangover 50 mg                   |  |
| Antihistaminic 50 mg 2x/day          | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antihyperactivity 1.5-6 g/day        | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiinsomnic 1 g/day                 | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antineuralgic                        |  |
| Antiparkinsonian 100 mg/day          | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antipellagric                        | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antiscotomic                         |  |
| Antispasmodic 100 mg 2x/day          | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antivertigo                          |  |
| Cancer-Preventive                    | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  |
| Cardioprotective                     |  |
| Circulotonic                         |  |
| Fibrinolytic                         |  |
| Hepatoprotective                     |  |
| Hepatotoxic                          |  |
| Hypocholesterolemic 50-100 mg 3x/day |  |
| Hypoglycemic                         |  |
| Hypolipidemic                        |  |
| Sedative                             | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Serotonergic                         | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).               |
| Vasodilator                          | Martindale's 29th  |

|                           |                         |    |        |       |  |
|---------------------------|-------------------------|----|--------|-------|--|
| OCTANOIC-ACID-ETHYL-ESTER | Fruit<br>Essent.<br>Oil | -- | 1000.0 |       | *  |
| ORTHOCARSINE              | Plant                   | -- | --     |       | Tramil   |
| P-CYMENE                  | Shoot                   | -- | 9.0    | -0.49 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |

**Activities (16)**

|   |  |
|---|--|
| Analgesic                               | Martindale's 28th  |
| Antiacetylcholinesterase<br>IC40=1.2 mM |  |
| Antibacillary                           |  |
| Antibacterial                           |  |
| Antiflu                                 |  |
| Antirheumatalgic                        | Martindale's 28th  |
| Antiviral                               |  |
| FLavor FEMA 12-250                      | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Fungicide                               | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Herbicide IC50=50 uM                    | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Insectifuge                             | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.      |
| Irritant                                | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Laxative                                | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Pesticide                               |  |
| Sedative                                | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Trichomonicide<br>LD100=50 ug/ml        |  |

P-CYMENE                      Essential    --            31000.0    -0.38            \*

Oil

**Activities (16)**

|   |  |
|---|--|
| Analgesic                               | Martindale's 28th  |
| Antiacetylcholinesterase<br>IC40=1.2 mM |  |
| Antibacillary                           |  |
| Antibacterial                           |  |
| Antiflu                                 |  |
| Antirheumatalgic                        | Martindale's 28th  |
| Antiviral                               |  |
| FLavor FEMA 12-250                      | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Fungicide                               | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Herbicide IC50=50 uM                    | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Insectifuge                             | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.      |
| Irritant                                | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Laxative                                | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Pesticide                               |  |
| Sedative                                | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Trichomonicide<br>LD100=50 ug/ml        |  |

P-CYMENE                      Fruit            --            5000.0    -1.0            \*

Essent.  
Oil



**Activities (16)**

|   |  |
|---|--|
| Analgesic                               | Martindale's 28th  |
| Antiacetylcholinesterase<br>IC40=1.2 mM |  |
| Antibacillary                           |  |
| Antibacterial                           |  |
| Antiflu                                 |  |
| Antirheumatalgic                        | Martindale's 28th  |
| Antiviral                               |  |
| FLavor FEMA 12-250                      | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry   |
| Fungicide                               | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Herbicide IC50=50 uM                    | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.   |
| Insectifuge                             | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.      |
| Irritant                                | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Laxative                                | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Pesticide                               |  |
| Sedative                                | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Trichomonicide<br>LD100=50 ug/ml        |  |

|                              |                         |      |        |  |
|------------------------------|-------------------------|------|--------|--|
| P-CYMENENE                   | Shoot                   | --   | --     | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| P-ETHYLBENZALDEHYDE          | Shoot                   | --   | --     | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| P-METHYL-ISO-PROPENYLBENZENE | Fruit<br>Essent.<br>Oil | --   | --     | *  |
| P-METHYLBENZALDEHYDE         | Shoot                   | --   | --     | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
| PARTHENOLIDE                 | Shoot                   | 80.0 | 8700.0 | *  |

**Activities (27)**

5-HT-Inhibitor

5-Lipoxygenase-Inhibitor

Allelopathic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Allergenic

 Antiaggregant IC50=50  
uM

Antiarthritic Martindale's 29th

Antibacterial

Anticancer

Antiinflammatory

 Antimigraine 250  
ug/man/day

Antineuralgic

Antiprostaglandin

Antisecretory

Antiseptic

Antispasmodic

Antitumor

COX-2-Inhibitor Newmark, T. M. and Schulick, P. 2000. Herbal Cox-2 Inhibition - Nature's Challenge to Arthritis, Cancer &amp; Alzheimer's Disease. Hohm Press, Prescott AZ.

Candidicide

Cyclooxygenase-Inhibitor

Cytotoxic 2.3 ppm

Dermatitigenic

Fungicide Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Gram(+)icide

Hypercalcuric 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.

Pesticide

Phospholipase-Inhibitor

 Prostaglandin-  
Synthetase-Inhibitor

|              |         |    |         |   |
|--------------|---------|----|---------|---|
| PARTHENOLIDE | Leaf    | -- | 61000.0 | * |
|              | Essent. |    |         |   |
|              | Oil     |    |         |   |

**Activities (27)**

5-HT-Inhibitor

5-Lipoxygenase-Inhibitor

Allelopathic                   Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Allergenic

Antiaggregant IC50=50  
uM

Antiarthritic                   Martindale's 29th

Antibacterial

Anticancer

Antiinflammatory

Antimigraine 250  
ug/man/day

Antineuralgic

Antiprostaglandin

Antisecretory

Antiseptic

Antispasmodic

Antitumor

COX-2-Inhibitor               Newmark, T. M. and Schulick, P. 2000. Herbal Cox-2 Inhibition - Nature's Challenge to Arthritis, Cancer &amp; Alzheimer's Disease. Hohm Press, Prescott AZ.

Candidicide

Cyclooxygenase-Inhibitor

Cytotoxic 2.3 ppm

Dermatitigenic

Fungicide                       Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Gram(+ )icide

Hypercalcuric                 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.

Pesticide

Phospholipase-Inhibitor

Prostaglandin-  
Synthetase-Inhibitor

PARTHENOLIDE

Flower

--

2424.0

\*

**Activities (27)**

5-HT-Inhibitor

5-Lipoxygenase-Inhibitor

Allelopathic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Allergenic

Antiaggregant IC50=50  
uM

Antiarthritic Martindale's 29th

Antibacterial

Anticancer

Antiinflammatory

Antimigraine 250  
ug/man/day

Antineuralgic

Antiprostaglandin

Antisecretory

Antiseptic

Antispasmodic

Antitumor

COX-2-Inhibitor Newmark, T. M. and Schulick, P. 2000. Herbal Cox-2 Inhibition - Nature's Challenge to Arthritis, Cancer &amp; Alzheimer's Disease. Hohm Press, Prescott AZ.

Candidicide

Cyclooxygenase-Inhibitor

Cytotoxic 2.3 ppm

Dermatitigenic

Fungicide Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Gram(+)-icide

Hypercalcuric 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.

Pesticide

Phospholipase-Inhibitor

Prostaglandin-  
Synthetase-Inhibitor

---

|              |      |       |          |   |
|--------------|------|-------|----------|---|
| PARTHENOLIDE | Leaf | 130.0 | 300000.0 | * |
|--------------|------|-------|----------|---|

---

**Activities (27)**

5-HT-Inhibitor

5-Lipoxygenase-Inhibitor

Allelopathic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Allergenic

Antiaggregant IC50=50 uM

Antiarthritic Martindale's 29th

Antibacterial

Anticancer

Antiinflammatory

Antimigraine 250 ug/man/day

Antineuralgic

Antiprostaglandin

Antisecretory

Antiseptic

Antispasmodic

Antitumor

COX-2-Inhibitor Newmark, T. M. and Schulick, P. 2000. Herbal Cox-2 Inhibition - Nature's Challenge to Arthritis, Cancer & Alzheimer's Disease. Hohm Press, Prescott AZ.

Candidicide

Cyclooxygenase-Inhibitor

Cytotoxic 2.3 ppm

Dermatitigenic

Fungicide Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Gram(+)-icide

Hypercalcuric 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.

Pesticide

Phospholipase-Inhibitor

Prostaglandin-Synthetase-Inhibitor

PARTHENOLIDE                      Fruit            --            284000.0            \*

Essent.

Oil

**Activities (27)**

5-HT-Inhibitor

5-Lipoxygenase-Inhibitor

Allelopathic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Allergenic

Antiaggregant IC50=50 uM

Antiarthritic Martindale's 29th

Antibacterial

Anticancer

Antiinflammatory

Antimigraine 250 ug/man/day

Antineuralgic

Antiprostaglandin

Antisecretory

Antiseptic

Antispasmodic

Antitumor

COX-2-Inhibitor Newmark, T. M. and Schulick, P. 2000. Herbal Cox-2 Inhibition - Nature's Challenge to Arthritis, Cancer & Alzheimer's Disease. Hohm Press, Prescott AZ.

Candidicide

Cyclooxygenase-Inhibitor

Cytotoxic 2.3 ppm

Dermatitigenic

Fungicide Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Gram(+)icide

Hypercalcuric 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.

Pesticide

Phospholipase-Inhibitor

Prostaglandin-Synthetase-Inhibitor

PARTHENOLIDE Plant -- -- \*

**Activities (27)**

5-HT-Inhibitor

5-Lipoxygenase-Inhibitor

Allelopathic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Allergenic

Antiaggregant IC50=50  
uM

Antiarthritic Martindale's 29th

Antibacterial

Anticancer

Antiinflammatory

Antimigraine 250  
ug/man/day

Antineuralgic

Antiprostaglandin

Antisecretory

Antiseptic

Antispasmodic

Antitumor

COX-2-Inhibitor Newmark, T. M. and Schulick, P. 2000. Herbal Cox-2 Inhibition - Nature's Challenge to Arthritis, Cancer &amp; Alzheimer's Disease. Hohm Press, Prescott AZ.

Candidicide

Cyclooxygenase-Inhibitor

Cytotoxic 2.3 ppm

Dermatitigenic

Fungicide Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Gram(+)-icide

Hypercalcuric 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.

Pesticide

Phospholipase-Inhibitor

Prostaglandin-  
Synthetase-Inhibitor

---

**PARTHENOLIDE**                      Seed            --            15200.0                      \*
 

---

**Activities (27)**

5-HT-Inhibitor

5-Lipoxygenase-Inhibitor

Allelopathic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Allergenic

Antiaggregant IC50=50  
uM

Antiarthritic Martindale's 29th

Antibacterial

Anticancer

Antiinflammatory

Antimigraine 250  
ug/man/day

Antineuralgic

Antiprostaglandin

Antisecretory

Antiseptic

Antispasmodic

Antitumor

COX-2-Inhibitor Newmark, T. M. and Schulick, P. 2000. Herbal Cox-2 Inhibition - Nature's Challenge to Arthritis, Cancer &amp; Alzheimer's Disease. Hohm Press, Prescott AZ.

Candidicide

Cyclooxygenase-Inhibitor

Cytotoxic 2.3 ppm

Dermatitigenic

Fungicide Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Gram(+)-icide

Hypercalcuric 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.

Pesticide

Phospholipase-Inhibitor

Prostaglandin-  
Synthetase-Inhibitor

|               |       |    |        |      |   |
|---------------|-------|----|--------|------|---|
| PARTHENOLIDES | Plant | -- | 9000.0 |      | *   |
| PARTHOLIDE    | Plant | -- | --     |      | J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991.                               |
| PHOSPHORUS    | Plant | -- | 5010.0 | 0.68 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |

**Activities (4)**

Antiosteoporotic Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Anxiolytic

Immunostimulant Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Osteogenic Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

|             |                  |    |    |  |   |
|-------------|------------------|----|----|--|---|
| PINOCARVONE | Essential<br>Oil | -- | -- |  | * |
|-------------|------------------|----|----|--|---|

**Activities (1)**

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

|             |                         |    |        |  |   |
|-------------|-------------------------|----|--------|--|---|
| PINOCARVONE | Fruit<br>Essent.<br>Oil | -- | 2000.0 |  | * |
|-------------|-------------------------|----|--------|--|---|

**Activities (1)**

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

|             |       |    |     |       |  |
|-------------|-------|----|-----|-------|--|
| PINOCARVONE | Shoot | -- | 2.0 | -0.63 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|-------------|-------|----|-----|-------|--|

**Activities (1)**

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry



|           |       |    |         |      |   |
|-----------|-------|----|---------|------|---|
| POTASSIUM | Plant | -- | 22500.0 | 0.05 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|-----------|-------|----|---------|------|---|

**Activities (14)**

|                                 |  |  |  |  |  |
|---------------------------------|--|--|--|--|--|
| Angiotensin-Receptor-Blocker    |  |  |  |  |  |
| Antiarrhythmic                  |  |  |  |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antidepressant                  |  |  |  |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antifatigue                     |  |  |  |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antihypertensive                |  |  |  |  |  |
| Antispasmodic                   |  |  |  |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antistroke                      |  |  |  |  |  |
| Anxiolytic                      |  |  |  |  |  |
| Beta-Blocker                    |  |  |  |  |  |
| Cardioprotective 3,000-5,000 mg |  |  |  |  |  |
| Cardiotoxic 18,000 mg/man/day   |  |  |  |  |  |
| Diuretic                        |  |  |  |  |  |
| Hypotensive                     |  |  |  |  |  |
| Vasodilator                     |  |  |  |  |  |

|         |      |    |          |      |   |
|---------|------|----|----------|------|---|
| PROTEIN | Seed | -- | 222000.0 | -0.1 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
|---------|------|----|----------|------|---|

|         |       |    |          |      |   |
|---------|-------|----|----------|------|---|
| PROTEIN | Plant | -- | 267000.0 | 0.77 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|---------|-------|----|----------|------|---|

|           |       |    |    |  |  |
|-----------|-------|----|----|--|--|
| PYRETHRIN | Plant | -- | -- |  | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
|-----------|-------|----|----|--|--|

|                                      |      |    |    |  |   |
|--------------------------------------|------|----|----|--|---|
| QUERCETAGETIN-3,3',7-TRIMETHYL-ETHER | Leaf | -- | -- |  | * |
|--------------------------------------|------|----|----|--|---|

|                                      |        |    |    |  |   |
|--------------------------------------|--------|----|----|--|---|
| QUERCETAGETIN-3,3',7-TRIMETHYL-ETHER | Flower | -- | -- |  | * |
|--------------------------------------|--------|----|----|--|---|

|                                  |      |    |    |  |   |
|----------------------------------|------|----|----|--|---|
| QUERCETAGETIN-3,7-DIMETHYL-ETHER | Leaf | -- | -- |  | * |
|----------------------------------|------|----|----|--|---|

|                                  |        |    |    |  |   |
|----------------------------------|--------|----|----|--|---|
| QUERCETAGETIN-3,7-DIMETHYL-ETHER | Flower | -- | -- |  | * |
|----------------------------------|--------|----|----|--|---|

|          |       |    |     |  |   |
|----------|-------|----|-----|--|---|
| REYNOSIN | Shoot | -- | 0.4 |  | * |
|----------|-------|----|-----|--|---|

**Activities (1)**

|            |  |  |  |  |  |
|------------|--|--|--|--|--|
| Allergenic | Tucker, A. O. and Debaggio, T. 2000. The Big Book of Herbs. Interweave Press, Inc. Loveland, CO. 688 pp. |  |  |  |  |
|------------|--|--|--|--|--|

|          |        |    |        |  |   |
|----------|--------|----|--------|--|---|
| REYNOSIN | Flower | -- | 1485.0 |  | * |
|----------|--------|----|--------|--|---|

**Activities (1)**

|            |  |  |  |  |  |
|------------|--|--|--|--|--|
| Allergenic | Tucker, A. O. and Debaggio, T. 2000. The Big Book of Herbs. Interweave Press, Inc. Loveland, CO. 688 pp. |  |  |  |  |
|------------|--|--|--|--|--|

|          |       |    |    |  |   |
|----------|-------|----|----|--|---|
| REYNOSIN | Plant | -- | -- |  | * |
|----------|-------|----|----|--|---|

**Activities (1)**

|            |  |  |  |  |  |
|------------|--|--|--|--|--|
| Allergenic | Tucker, A. O. and Debaggio, T. 2000. The Big Book of Herbs. Interweave Press, Inc. Loveland, CO. 688 pp. |  |  |  |  |
|------------|--|--|--|--|--|

|          |      |    |    |  |   |
|----------|------|----|----|--|---|
| REYNOSIN | Leaf | -- | -- |  | * |
|----------|------|----|----|--|---|

**Activities (1)**

|            |  |  |  |  |  |
|------------|--|--|--|--|--|
| Allergenic | Tucker, A. O. and Debaggio, T. 2000. The Big Book of Herbs. Interweave Press, Inc. Loveland, CO. 688 pp. |  |  |  |  |
|------------|--|--|--|--|--|

|            |       |    |     |       |   |
|------------|-------|----|-----|-------|---|
| RIBOFLAVIN | Plant | -- | 2.5 | -0.62 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|------------|-------|----|-----|-------|---|

**Activities (15)**

|                                     |   |
|-------------------------------------|---|
| AntiLyme 50 mg/day                  |   |
| Antiarabiflavinotic 2-10 mg/day orl | Martindale's 28th   |
| Anticarpal-Tunnel 50 mg/day         | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.                  |
| Anticataract 15 mg/day              | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.                  |
| Anticephalagic                      |   |
| Anticervicaldysplasic 1.6-10 mg/day |   |
| Anticheilitic                       |   |
| Antidecubic                         |   |
| Antiglossitic                       | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.    |
| Antikeratitic                       |   |
| Antimigraine                        |   |
| Antioxidant                         |   |
| Antipellagic                        |   |
| Antiphotophobic                     | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.    |
| Cancer-Preventive                   | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |

|          |       |    |     |       |  |
|----------|-------|----|-----|-------|--|
| SABINENE | Shoot | -- | 5.0 | -0.29 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|----------|-------|----|-----|-------|--|

**Activities (5)**

|                  |   |
|------------------|---|
| Antibacterial    |   |
| Antihelicobacter |   |
| Antiseptic       |   |
| Antiulcer        |   |
| Perfumery        | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

|          |               |    |    |   |  |
|----------|---------------|----|----|---|--|
| SABINENE | Essential Oil | -- | -- | * |  |
|----------|---------------|----|----|---|--|

**Activities (5)**

|                  |   |
|------------------|---|
| Antibacterial    |   |
| Antihelicobacter |   |
| Antiseptic       |   |
| Antiulcer        |   |
| Perfumery        | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

|          |                   |    |        |       |   |
|----------|-------------------|----|--------|-------|---|
| SABINENE | Fruit Essent. Oil | -- | 1000.0 | -0.71 | * |
|----------|-------------------|----|--------|-------|---|

**Activities (5)**

|                  |   |
|------------------|---|
| Antibacterial    |   |
| Antihelicobacter |   |
| Antiseptic       |   |
| Antiulcer        |   |
| Perfumery        | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

|                  |       |    |     |  |  |
|------------------|-------|----|-----|--|--|
| SABINENE-HYDRATE | Shoot | -- | 1.5 |  | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|------------------|-------|----|-----|--|--|

|                  |                   |    |    |   |  |
|------------------|-------------------|----|----|---|--|
| SABINENE-HYDRATE | Fruit Essent. Oil | -- | -- | * |  |
|------------------|-------------------|----|----|---|--|

|         |                   |    |        |  |   |
|---------|-------------------|----|--------|--|---|
| SABINOL | Fruit Essent. Oil | -- | 1300.0 |  | * |
|---------|-------------------|----|--------|--|---|

**Activities (5)**

|              |  |
|--------------|--|
| Anthelmintic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Emmenagogue  | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Perfumery    | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide    |  |
| Toxic        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

**Activities (5)**

|                  |  |
|------------------|--|
| Allergenic       | Tucker, A. O. and Debaggio, T. 2000. The Big Book of Herbs. Interweave Press, Inc. Loveland, CO. 688 pp.   |
| Antiinflammatory |  |
| Antispasmodic    |  |
| Antitumor        |  |
| Cytotoxic        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

SANTAMARIN Flower -- -- \*

**Activities (5)**

|                  |  |
|------------------|--|
| Allergenic       | Tucker, A. O. and Debaggio, T. 2000. The Big Book of Herbs. Interweave Press, Inc. Loveland, CO. 688 pp.   |
| Antiinflammatory |  |
| Antispasmodic    |  |
| Antitumor        |  |
| Cytotoxic        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

SANTAMARIN Plant -- -- \*

**Activities (5)**

|                  |  |
|------------------|--|
| Allergenic       | Tucker, A. O. and Debaggio, T. 2000. The Big Book of Herbs. Interweave Press, Inc. Loveland, CO. 688 pp.   |
| Antiinflammatory |  |
| Antispasmodic    |  |
| Antitumor        |  |
| Cytotoxic        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

SANTAMARINE Flower -- 424.0 \*

**Activities (3)**

|                  |
|------------------|
| Antiinflammatory |
| Antispasmodic    |
| Antitumor        |

SANTIN Plant -- -- \*

SECOTANAPARATHOLIDE Leaf -- -- \*

SECOTANAPARTHENOLIDE Plant -- -- \*

SECOTANAPARTHOLIDE-A Shoot -- 0.2 \*

SECOTANAPARTHOLIDE-A Leaf -- -- \*

SECOTANAPARTHOLIDE-B Shoot -- 0.8 \*

SECOTANAPARTHOLIDE-B Leaf -- -- \*

SELENIUM Plant -- 1.7 -0.35 Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

**Activities (60)**

|                                  |   |
|----------------------------------|---|
| AP-1-Inhibitor 2-50 uM           |   |
| Analgesic 200 ug/day             | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.  |
| Anorexic                         | Cooper-Driver, G. A., Chemical substances in plants toxic to animals, pp. 213-47 in Rechcigl, M., Jr., ed. CRC Handbook of Naturally Occurring Food Toxicants, CRC Press, Boca Raton, 1983, 339 pp. |
| AntiHIV                          |   |
| AntiNF-kB                        |   |
| Antiacne 200 ug/day              | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.  |
| Antiaggregant                    | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).  |
| Antiangiogenic 2 uM              |   |
| Antiangiogenic 230 ug/kg orl rat |   |
| Antiarthritic                    |   |
| Antiasthmatic                    |   |
| Antiatherosclerotic              |   |
| Anticataract 400 ug/day          |   |
| Anticirrhotic                    | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.  |
| Anticlimacteric 200 ug/day       |   |

|   |   |
|---|---|
| Anticoronary 200 ug/day                   |   |
| Antidandruff                              | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.  |
| Antidepressant 200 ug/day                 |   |
| Antidote (Mercury)                        | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.  |
| Antifibrotic 400 ug                       |   |
| Antigout 200 ug                           |   |
| Antikeshan                                | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.  |
| Antileukemic 1.6 mg/kg ipr mus            |   |
| Antileukotriene                           | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).  |
| Antimaclitic                              |   |
| Antimelanomic 480 ug/kg                   |   |
| Antimenopausal 200 ug/day                 |   |
| Antimetastatic 480 ug/kg                  |   |
| Antimyalgic 200 ug/day                    | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.  |
| Antiosteoarthritic                        |   |
| Antioxidant 100-200 (-400) ug/man/day     |   |
| Antiparkinsonian 200-400 ug/day           |   |
| Antiproliferant 2 uM                      |   |
| Antiradicular 100-200 (-400) ug/man/day   | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95                          |
| Antirheumatic                             |   |
| Antisyndrome-X 100-200 (-400) ug/man/day  | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95                          |
| Antitumor 100-200 (-400) ug/man/day       | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95                          |
| Antitumor (Breast) 333.6 ug/day           |   |
| Antitumor (Breast) 0.8 mg/kg scu mus      |   |
| Antitumor (Breast) 150 ug/kg diet rat     |   |
| Antitumor (Breast) 230 ug/kg orl rat      |   |
| Antitumor (Lung) 240 ug/kg diet           |   |
| Antitumor (Prostate)                      |   |
| Antitumor (brain) 38-150 ug/kg            |   |
| Antiulcerogenic                           | Rafatullah, S., Tariq, M., Al-Yahya, M.A., Mossa, J.S., and Ageel, A.M. 1989. Evaluation of Turmeric (Curcuma longa) for Gastric and Duodenal Antiulcer Activity in Rats. J. of Ethnopharmacology, 29: 25-34, 1990.         |
| Anxiolytic                                |   |
| Apoptotic                                 |   |
| Cancer-Preventive                         | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.  |
| Cardioprotective 200 ug/day               |   |
| Depressant                                | Cooper-Driver, G. A., Chemical substances in plants toxic to animals, pp. 213-47 in Rechcigl, M., Jr., ed. CRC Handbook of Naturally Occurring Food Toxicants, CRC Press, Boca Raton, 1983, 339 pp.                         |
| Fungicide                                 | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.  |
| Immunomodulator                           |   |
| Immunostimulant 100-200 (-400) ug/man/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95                          |
| NF-kB-Inhibitor                           |   |
| Ornithine-Decarboxylase-Inhibitor         |   |
| Pesticide                                 |   |
| Polyamine-Synthesis-Inhibitor             |   |
| Prostaglandin-Sparer                      | Fujita, T., Nakatani, E., Funaishi, N., Sakuma, S., Fujimoto, Y. Potent inhibition of prostaglandin inactivation in rabbit gastric antral mucosal slices by selenium ions in-vitro. J. Pharm. Pharmacol. 42: 655-657, 1990. |
| Protein-Kinase-C-Inhibitor IC50=2-50 uM   |   |
| VEGF-Inhibitor                            |   |

SILICON Plant -- 4.6 -0.52 Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

#### Activities (4)

|                      |  |
|----------------------|--|
| Antiarteriosclerotic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antionychotic        |  |
| Antiosteoporotic     |  |
| Cardioprotective     |  |

SODIUM Plant -- 48.0 -0.3 Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

| Activities (1)                        |   |    |         |       |  |
|---------------------------------------|---|----|---------|-------|--|
| Hypertensive                          | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.  |    |         |       |  |
| STIGMASTEROL                          | Fruit<br>Essent.<br>Oil   | -- | --      |       | *  |
| Activities (12)                       |   |    |         |       |  |
| Antihepatotoxic                       |   |    |         |       |  |
| Antiinflammatory                      | Lawrence Review of Natural Products, 1995   |    |         |       |  |
| Antinociceptive                       |   |    |         |       |  |
| Antiphidic 2.3 mg<br>ipr mus          | Economic & Medicinal Plant Research, 5: 363.  |    |         |       |  |
| Antioxidant IC33=10<br>uM             |   |    |         |       |  |
| Antiviral                             | Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . Plant Science, 75: 161-165, 1991.           |    |         |       |  |
| Artemicide<br>LC50=110 ppm            | Jung, J.H., Pummangura, S., Chaichantipyuth, c., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . Phytochemistry. 29(5): 1667-1670. 1990. |    |         |       |  |
| Cancer-Preventive                     | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.   |    |         |       |  |
| Estrogenic                            |   |    |         |       |  |
| Hypocholesterolemic                   | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.  |    |         |       |  |
| Ovulant                               |   |    |         |       |  |
| Sedative                              |   |    |         |       |  |
| TANACETIN                             | Shoot   | -- | 15800.0 |       | *  |
| TANACETIN                             | Plant   | -- | --      |       | Tramil   |
| TANAPARTHIN                           | Leaf  | -- | --      |       | *  |
| TANAPARTHIN-1ALPHA,4ALPHA-<br>EPOXIDE | Leaf  | -- | --      |       | *  |
| TANAPARTHIN-1BETA,4BETA-EPOXIDE       | Leaf  | -- | --      |       | *  |
| TANAPARTHIN-ALPHA-PEROXIDE            | Shoot   | -- | 1.6     |       | *  |
| TANAPARTHIN-ALPHA-PEROXIDE            | Leaf  | -- | --      |       | *  |
| TANAPARTHIN-BETA-PEROXIDE             | Shoot   | -- | 4.0     |       | *  |
| TANAPARTHIN-BETA-PEROXIDE             | Leaf  | -- | --      |       | *  |
| TANAPARTHIN-PEROXIDE                  | Leaf  | -- | --      |       | *  |
| TANETIN                               | Leaf  | -- | --      |       | *  |
| TANETIN                               | Flower  | -- | --      |       | *  |
| TANNINS                               | Plant   | -- | --      |       | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| TERPINEN-4-OL                         | Fruit<br>Essent.<br>Oil   | -- | 1000.0  | -0.74 | *  |

**Activities (23)**

|  |   |
|--|---|
| Allelopathic                               | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp,Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacetylcholinesterase<br>IC21-24=1.2 mM |   |
| Antiacne                                   |   |
| Antiallergic                               |   |
| Antiasthmatic                              | Chin. J. Tuber. Respir. Dis., 4:203, 1982.  |
| Antibacterial                              |   |
| Antioxidant                                |   |
| Antiseptic                                 | Flav. & Frag. J. 9: 129.  |
| Antispasmodic                              |   |
| Antitussive                                | Chin. J. Tuber. Respir. Dis.  |
| Antiulcer                                  |   |
| Bacteriostatic                             | Chin. J. Tuber. Respir. Dis.  |
| Diuretic 0.1 ml/rat                        |   |
| Fungicide                                  |   |
| Herbicide IC50=200 mM                      | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.                      |
| Herbicide IC50=22 uM                       | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.  |
| Insectifuge                                |   |
| Irritant                                   | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.  |
| Nematicide MLC=1 mg/ml                     | Shoyakugaku Zasshi, 44: 183.  |
| Pesticide                                  |   |
| Renoirritant                               | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.  |
| Spermicide<br>ED100=0.015                  |   |
| Vulnerary                                  | Lawrence Review of Natural Products, Jan-91.  |

|               |       |    |     |       |  |
|---------------|-------|----|-----|-------|--|
| TERPINEN-4-OL | Shoot | -- | 4.0 | -0.17 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|---------------|-------|----|-----|-------|--|

**Activities (23)**

|  |   |
|--|---|
| Allelopathic                               | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp,Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacetylcholinesterase<br>IC21-24=1.2 mM |   |
| Antiacne                                   |   |
| Antiallergic                               |   |
| Antiasthmatic                              | Chin. J. Tuber. Respir. Dis., 4:203, 1982.  |
| Antibacterial                              |   |
| Antioxidant                                |   |
| Antiseptic                                 | Flav. & Frag. J. 9: 129.  |
| Antispasmodic                              |   |
| Antitussive                                | Chin. J. Tuber. Respir. Dis.  |
| Antiulcer                                  |   |
| Bacteriostatic                             | Chin. J. Tuber. Respir. Dis.  |
| Diuretic 0.1 ml/rat                        |   |
| Fungicide                                  |   |
| Herbicide IC50=200 mM                      | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.                      |
| Herbicide IC50=22 uM                       | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.  |
| Insectifuge                                |   |
| Irritant                                   | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.  |
| Nematicide MLC=1 mg/ml                     | Shoyakugaku Zasshi, 44: 183.  |
| Pesticide                                  |   |
| Renoirritant                               | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.  |
| Spermicide<br>ED100=0.015                  |   |
| Vulnerary                                  | Lawrence Review of Natural Products, Jan-91.  |

|               |               |    |         |       |   |
|---------------|---------------|----|---------|-------|---|
| TERPINEN-4-OL | Essential Oil | -- | 28000.0 | -0.35 | * |
|---------------|---------------|----|---------|-------|---|

| Activities (23)                            |   |
|--|---|
| Allelopathic                               | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacetylcholinesterase<br>IC21-24=1.2 mM |   |
| Antiacne                                   |   |
| Antiallergic                               |   |
| Antiasthmatic                              | Chin. J. Tuber. Respir. Dis., 4:203, 1982.  |
| Antibacterial                              |   |
| Antioxidant                                |   |
| Antiseptic                                 | Flav. & Frag. J. 9: 129.  |
| Antispasmodic                              |   |
| Antitussive                                | Chin. J. Tuber. Respir. Dis.  |
| Antiulcer                                  |   |
| Bacteriostatic                             | Chin. J. Tuber. Respir. Dis.  |
| Diuretic 0.1 ml/rat                        |   |
| Fungicide                                  |   |
| Herbicide IC50=200 mM                      | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.                      |
| Herbicide IC50=22 uM                       | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.  |
| Insectifuge                                |   |
| Irritant                                   | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.  |
| Nematicide MLC=1 mg/ml                     | Shoyakugaku Zasshi, 44: 183.  |
| Pesticide                                  |   |
| Renoirritant                               | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.  |
| Spermicide<br>ED100=0.015                  |   |
| Vulnerary                                  | Lawrence Review of Natural Products, Jan-91.  |

TERPINOLENE Plant -- -- \*

| Activities (9)    |  |
|-------------------|--|
| Allelochemic      |  |
| Antifeedant       |  |
| Antinitrosaminic  |  |
| Antioxidant       |  |
| Deodorant         | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| FLavor FEMA 15-60 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Fungicide         | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.     |
| Perfumery         | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide         |  |

TERPINOLENE Shoot -- -- Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71.

| Activities (9)    |  |
|-------------------|--|
| Allelochemic      |  |
| Antifeedant       |  |
| Antinitrosaminic  |  |
| Antioxidant       |  |
| Deodorant         | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| FLavor FEMA 15-60 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Fungicide         | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.     |
| Perfumery         | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide         |  |

THIAMIN Plant -- 4.1 -0.3 Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

**Activities (31)**

|                                  |  |
|----------------------------------|--|
| Analgesic 1-4 g/day              | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| AntiLyme 50 mg                   |  |
| Antialcoholic 50-100 mg/day      |  |
| Antialzheimeran 100-3,000 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antianorectic                    | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antibackache 1-4 g/day           | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiberiberi                     |  |
| Anticanker                       |  |
| Anticardiospasmic                |  |
| Anticataract                     |  |
| Anticolitic                      |  |
| Antidecubitic                    |  |
| Antideliriant                    |  |
| Antidementia                     |  |
| Antidyspeptic                    |  |
| Antiencephalopathic              | Martindale's 29th  |
| Antifatigue                      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antigastritic                    | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antihangover 50 mg               |  |
| Antiheartburn                    |  |
| Antiherpetic                     |  |
| Antimigraine                     |  |
| Antimyocarditic                  |  |
| Antineuralgic 1-4 g/day          | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antineurasthenic                 |  |
| Antineuritic                     |  |
| Antineuropathic 50 mg            | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antipoliomyelitic                |  |
| Insectifuge 75-150 mg/man/day    | Martindale's 28th  |
| Neuroprotective                  |  |
| Pesticide                        |  |

|            |       |    |     |       |  |
|------------|-------|----|-----|-------|--|
| THUJOPSENE | Shoot | -- | 1.5 | -0.71 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|------------|-------|----|-----|-------|--|

**Activities (2)**

|           |  |
|-----------|--|
| Fumigant  | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Pesticide |  |

|        |       |    |    |  |  |
|--------|-------|----|----|--|--|
| THYMOL | Shoot | -- | -- |  | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |
|--------|-------|----|----|--|--|

**Activities (71)**

|                                |  |
|--------------------------------|--|
| Acaricide                      |  |
| Allergenic                     |  |
| Analgesic                      | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.   |
| Ancylostomicide                | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.   |
| Anesthetic                     | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.   |
| Ankylostomacide                | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.   |
| Anthelmintic                   | 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. |
| Antiacne                       | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.   |
| Antiaggregant IC50=0.75        | Tramil, 42: 511.   |
| Antialzheimeran?               | L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.  |
| Antiarthritic                  | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.   |
| Antiatherosclerotic IC50=4 uM  |  |
| Antibacterial MIC=50-400 ug/ml |  |



|  |  |
|--|--|
| Antibronchitic                           | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.   |
| Anticariogenic MIC=200-400 ug/ml         |  |
| Anticholinesterase                       | L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.  |
| Antihalitotic                            | American Health, 12(4): 17, 1993.  |
| Antiherpetic                             | Martindale's 28th  |
| Antiinflammatory (=indomethacin)         |  |
| Antileptic                               | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.   |
| Antimelanomic IC50=120 uM/l              |  |
| Antineuritic                             |  |
| Antioxidant 100 ppm                      | Martindale's 28th  |
| Antioxidant (LDL) IC50=4 uM              |  |
| Antiperiodontic MIC=50-200 ug/ml         |  |
| Antiplaque MIC=39-625 ug/ml              | Osawa, K., Matsumoto, T., Maruyama, T., Takiguchi, T., Okuda, K., and Takazoe, I., Studies of the antibacterial activity of plant extracts and their constituents against periodontopathic bacteria, Bull Tokyo Dent. Coll., 31 (1), 1990, 17-21 |
| Antiradicular EC=60                      | Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. JEO5: 153-8.   |
| Antirheumatic                            | 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.   |
| Antisalmonella                           |  |
| Antiseptic 20 x phenol                   | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)  |
| Antispasmodic                            |  |
| Antistaphylococcic                       |  |
| Antistreptococcic MIC=200-400 ug/ml      |  |
| Antitrichinosis 5%                       | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.   |
| Antitussive                              | Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.  |
| Ataxigenic                               | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.                         |
| Candidicide 100 ug/ml (>Nystatin)        |  |
| Carminative                              | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.                          |
| Counterirritant                          | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.   |
| Culicide LC50=36-49 mg/l                 |  |
| Cyclooxygenase-Inhibitor (=indomethacin) |  |
| Dentifrice                               | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Deodorant                                | Martindale's 28th  |
| Dermatitigenic                           |  |
| Enterorelaxant                           | J. Aromatherapy 4: 22.   |
| Enterotoxic                              | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.  |
| Expectorant                              | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Flavor FEMA 2-100                        | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Fungicide                                | Merck 11th Edition   |
| Gastroirritant                           | Martindale's 29th  |
| Gram(+)icide MIC=200-400 ug/ml           |  |
| Gram(-)icide MIC=50-200 ug/ml            |  |
| Insecticide LC50=36-49 mg/l              |  |
| Insecticide 0.22 uM/fly                  |  |
| Insectifuge                              |  |
| Irritant                                 | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  |
| Larvicide 10 ppm                         | Berenbaum, M. R., The natives knew, Chemtech, (May), 1990, 275-279.  |
| Larvicide 58 ppm                         |  |
| Larvicide LC50=36-49 mg/l                |  |
| Molluscicide                             |  |
| Myorelaxant                              | J. Aromatherapy 4: 22.   |
| Nematicide MLC=0.1 mg/ml                 | Shoyakugaku Zasshi, 44: 183.   |
| Perfumery                                | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide                                |  |
| Sedative                                 | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.                         |
| Sprout-Inhibitor                         | Duke, J.A.. Personal Communication.  |
| Tracheorelaxant                          |  |

|                                  |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|
| Trichomonicide<br>LD100=25 ug/ml |  |  |  |  |  |
| Urinary-Antiseptic               |  |  |  |  | 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. |
| Varroacide                       |  |  |  |  |  |
| Vermicide                        |  |  |  |  | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.   |

|     |       |    |      |      |   |
|-----|-------|----|------|------|---|
| TIN | Plant | -- | 21.0 | 0.01 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|-----|-------|----|------|------|---|

|                       |  |  |  |  |                   |
|-----------------------|--|--|--|--|-------------------|
| <b>Activities (4)</b> |  |  |  |  |                   |
| Antiacne              |  |  |  |  |                   |
| Antibacterial         |  |  |  |  |                   |
| Pesticide             |  |  |  |  |                   |
| Taenicide             |  |  |  |  | Martindale's 28th |

|                             |                        |    |         |  |   |
|-----------------------------|------------------------|----|---------|--|---|
| TRANS-CHRYSANTHENOL-ACETATE | Leaf<br>Essent.<br>Oil | -- | 47000.0 |  | * |
|-----------------------------|------------------------|----|---------|--|---|

|                             |                         |    |          |  |   |
|-----------------------------|-------------------------|----|----------|--|---|
| TRANS-CHRYSANTHENOL-ACETATE | Fruit<br>Essent.<br>Oil | -- | 155000.0 |  | * |
|-----------------------------|-------------------------|----|----------|--|---|

|                                 |      |    |        |  |   |
|---------------------------------|------|----|--------|--|---|
| TRANS-DENDRANTHEMA-SPIROFURAN-A | Root | -- | 2000.0 |  | * |
|---------------------------------|------|----|--------|--|---|

|                                 |       |    |     |  |   |
|---------------------------------|-------|----|-----|--|---|
| TRANS-DENDRANTHEMA-SPIROFURAN-A | Shoot | -- | 0.6 |  | * |
|---------------------------------|-------|----|-----|--|---|

|                             |                        |    |         |  |   |
|-----------------------------|------------------------|----|---------|--|---|
| TRANS-SPIROKETAL-ENOL-ETHER | Root<br>Essent.<br>Oil | -- | 51000.0 |  | * |
|-----------------------------|------------------------|----|---------|--|---|

|                             |                         |    |         |  |   |
|-----------------------------|-------------------------|----|---------|--|---|
| TRANS-SPIROKETAL-ENOL-ETHER | Fruit<br>Essent.<br>Oil | -- | 61000.0 |  | * |
|-----------------------------|-------------------------|----|---------|--|---|

|       |       |    |          |      |   |
|-------|-------|----|----------|------|---|
| WATER | Plant | -- | 895000.0 | 0.53 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|-------|-------|----|----------|------|---|

|      |       |    |    |  |   |
|------|-------|----|----|--|---|
| ZINC | Plant | -- | -- |  | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
|------|-------|----|----|--|---|

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|--|--|--|--|--|--|
| <b>Activities (77)</b>                 |  |  |  |  |  |
| ACE-Inhibitor                          |  |  |  |  |  |
| Analgesic                              |  |  |  |  |  |
| AntiBPH 25-60 mg/day                   |  |  |  |  |  |
| AntiCrohn's                            |  |  |  |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| AntiHIV                                |  |  |  |  |  |
| Antiacne 135 mg/day                    |  |  |  |  |  |
| Antiacrodermatitic 8-34 mg/day/orl/chd |  |  |  |  | Martindale's 29th  |
| Antialcoholic                          |  |  |  |  |  |
| Antialopepic                           |  |  |  |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antialzheimeran 50 mg/day              |  |  |  |  | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiangiogenic                         |  |  |  |  |  |
| Antianorexic                           |  |  |  |  | Martindale's 29th  |
| Antiarthritic 50 mg/3x/day/orl/man     |  |  |  |  |  |
| Anticanker 100 mg/day                  |  |  |  |  | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Anticataract 30 mg/day                 |  |  |  |  | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Anticoeliac                            |  |  |  |  | Martindale's 28th  |
| Anticold 50 mg                         |  |  |  |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Anticolitic                            |  |  |  |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Anticoronary 30 mg/day                 |  |  |  |  | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antidandruff                           |  |  |  |  | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antidementia                           |  |  |  |  |  |
| Antidiabetic 30 mg/day                 |  |  |  |  | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antidote (Cadmium)                     |  |  |  |  | Let's Live, May 1989.  |
| Antidysgeuzic                          |  |  |  |  |  |
| Antieczemic 150 mg/day                 |  |  |  |  | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |

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|--|--|
| Antiencephalopathic                        | Martindale's 29th  |
| Antiepileptic 100 mg/day                   | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antifibrotic 30 mg                         |  |
| Antifuruncular 45 mg/3x/day/man            | Martindale's 28th  |
| Antihangover 15 mg                         |  |
| Antiherpetic? 25-60 mg/day                 |  |
| Antiimpotence                              | Martindale's 29th  |
| Antiinfective 50 mg/day                    | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiinfertility 60 mg/day                  | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiinsomniac                              | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antileptic                                 | Martindale's 29th  |
| Antileukonychic                            |  |
| Antilymphomic                              |  |
| Antimaaculitic                             |  |
| Antimetastatic                             |  |
| Antineuropathic                            |  |
| Antinyctalopic                             |  |
| Antioesity 30 mg/day                       | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antiosteoporotic                           |  |
| Antiperiodontitic                          |  |
| Antiplateque                               | Martindale's 29th  |
| Antiprolactin                              | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Antiprostatic 50 mg/man/day/orl            | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Antirheumatic                              | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antiseptic 50 mg/day                       | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antispare-Tire 30 mg/day                   | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antistomatitic 50 mg/man/3x/day            | Martindale's 28th  |
| Antisyndrome-X 30 mg/day                   | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antitinnitic 60-120 mg/day                 | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antitriglyceride 30 mg/day                 | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antiulcer 50 mg/3x/day/man                 | Martindale's 28th  |
| Antiulcer 88 mg/rat/day/15 days            |  |
| Antiviral?                                 | Martindale's 29th  |
| Astringent                                 | Martindale's 28th  |
| Collagenic                                 |  |
| Copper-Antagonist                          | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Deodorant                                  | Martindale's 29th  |
| Detoxicant (Alcohol)                       |  |
| Ergogenic                                  |  |
| Hypotensive 30 mg/day                      | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Immunomodulator                            |  |
| Immunostimulant                            | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Immunosuppressant 300 mg/day/6 wks/orl/man | Martindale's 29th  |
| Insulinogenic 30 mg/day                    | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Leptingenic 30-60 mg/man/day               | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Mucogenic                                  | Li, K.M. Effect of zinc sulphate on acetic acid-induced gastric ulceration in rats. J. Pharm. Pharmacol. 42: 657-659, 1990.  |
| NF-kB-Inhibitor                            |  |
| Pesticide                                  |  |
| Spermigenic 60 mg/day                      | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Testosteronigenic 60 mg/day                | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Trichomonicide                             | Martindale's 29th  |
| Vulnerary                                  | Martindale's 28th  |