

List of All Chemicals

P Brassica oleracea var. capitata L. (Brassicaceae)

Common name(s)

Cabbage; White Cabbage; Red Cabbage

Variety

capitata

Variety author

L.

How used

Food

*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 All parts ... | Low PPM | High PPM | StdDev | *Reference |
|------------------------------------|-----------------------|------------|-------------|--------|--|
| -METHOXYBRASSITIN | Leaf | -- | 30.0 | | Jim Duke's personal files. |
| Activities (3) | | | | | |
| Fungicide | | | | | |
| Pesticide | | | | | |
| Phytoalexin | | | | | |
| 1,2-DITHIACYCLOPENT-4-ENE-3-THIONE | Leaf | -- | -- | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 1-CYANO-2,3-EPITHIOPROPANE | Leaf | -- | -- | | * |
| 1-CYANO-2,3-EPITHIOPROPANE | Plant | -- | -- | | * |
| 1-CYANO-2-HYDROXY-3-BUTENE | Leaf | -- | -- | | * |
| 1-CYANO-2-HYDROXY-3-BUTENE | Plant | -- | -- | | * |
| 1-CYANO-3,4-EPITHIOBUTANE | Leaf | -- | -- | | * |
| 1-CYANO-3,4-EPITHIOBUTANE | Plant | -- | -- | | * |
| 1-CYANO-3,4-EPITHIOPENTANE | Leaf | -- | -- | | * |
| 1-CYANO-3,4-EPITHIOPENTANE | Plant | -- | -- | | * |
| 1-CYANO-3-METHYL-SULFINYL-PROPANE | Leaf | -- | -- | | * |
| 1-CYANO-3-METHYL-SULFINYL-PROPANE | Plant | -- | -- | | * |
| 1-CYANO-3-METHYL-THIO-PROPANE | Leaf | -- | -- | | Jim Duke's personal files. |
| 1-CYANO-4-METHYL-SULFINYL-BUTANE | Plant | -- | -- | | * |
| 1-CYANO-4-METHYL-SULFINYL-BUTANE | Leaf | -- | -- | | * |
| 1-CYANO-4-METHYL-THIO-BUTANE | Leaf | -- | -- | | Jim Duke's personal files. |
| 1-METHOXY-3-INDOYL-METHYL | Plant | -- | -- | | * |
| 1-METHOXY-3-INDOYL-METHYL | Leaf | -- | -- | | * |
| 1-METHOXY-GLUCOBRASSICIN | Leaf | -- | -- | | Jim Duke's personal files. |
| 1-O-FERULOYL-BETA-D-GLUCOSE | Leaf | -- | -- | | Jim Duke's personal files. |
| 1-O-P-COUMAROYL-BETA-D-GLUCOSE | Leaf | -- | -- | | Jim Duke's personal files. |
| 1-O-SINAPOYL-BETA-D-GLUCOSE | Leaf | -- | -- | | Jim Duke's personal files. |
| 2-HYDROXY-4-PENTENYLISOTHIOCYANATE | Leaf | -- | -- | | * |
| 2,4,5-TRITHISHEXANE | Leaf | -- | -- | | Wealth of India. |

| | | | | |
|--|--|----|------|------------------------------------|
| 2-BUTANONE | Leaf | -- | -- | Wealth of India. |
| 2-HYDROXY-1-CYANO-BUT-3-ENE | Leaf | -- | -- | Jim Duke's personal files. |
| 2-HYDROXY-3-BUTENYL-GLUCOSINOLATE | Leaf | -- | -- | * |
| 2-METHOXY-PHENOL | Plant | -- | -- | * |
| 2-METHOXY-PHENOL | Leaf | -- | -- | * |
| 2-METHYL-THIO-PROPYL-GLUCOSINOLATE | Leaf | -- | -- | * |
| 2-PHENETHYL-CYANIDE | Leaf | -- | -- | Wealth of India. |
| 2-PHENYL-ETHYL-GLUCOSINOLATE | Leaf | -- | -- | USDA's Ag Handbook 8 and sequelae) |
| 2-PROPENYL-GLUCOSINOLATE | Plant | -- | -- | * |
| 2-PROPENYL-GLUCOSINOLATE | Leaf | -- | -- | * |
| 3-(METHYLTHIO)-PROPYL-ISOTHIOCYANATE | Leaf | -- | -- | * |
| 3-BUTENYL-GLUCOSINOLATE | Leaf | -- | -- | * |
| 3-BUTENYL-ISOTHIOCYANATE | Leaf | -- | -- | * |
| Activities (1) | | | | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. | | | |
| 3-HYDROXY-METHYL-INDOLE | Leaf | -- | -- | * |
| 3-INDOYL-ACETONITRILE | Leaf | -- | -- | Wealth of India. |
| 3-INDOYL-METHYL-GLUCOSINOLATE | Leaf | -- | -- | * |
| 3-INDOYL-METHYL-GLUCOSINOLATE | Plant | -- | -- | * |
| 3-METHYL-SULFINYL-PROPYL-GLUCOSINOLATE | Leaf | -- | -- | * |
| 3-METHYL-SULFINYL-PROPYL-ISOTHIOCYANATE | Leaf | -- | -- | * |
| 3-METHYL-THIO-PROPYL-CYANIDE | Leaf | -- | -- | Wealth of India. |
| 3-O-(2-O-{BETA-D-GLUCOPYRANOSYL}-6-O-(4-O-{BETA-D-GLUCOPYRANOSYL}-5-O-BETA-D-GLUCOPYRANOSYL)...CYANIDIN | Leaf | -- | 16.0 | Jim Duke's personal files. |
| 3-O-(2-O-{BETA-D-GLUCOPYRANOSYL}-6-O-(4-O-{BETA-D-GLUCOPYRANOSYL}TRANS-FERULYL)...CYANIDIN | Leaf | -- | 0.5 | Jim Duke's personal files. |
| 3-O-(2-O-{BETA-D-GLUCOPYRANOSYL}-6-O-(4-O-{BETA-D-GLUCOPYRANOSYL}TRANS-P-COUMARYL)...CYANIDIN | Leaf | -- | 0.3 | Jim Duke's personal files. |
| 3-O-(6-O-{TRANS-FERULYL}-2-O-BETA-D-GLUCOPYRANOSYL)...CYANIDIN | Leaf | -- | 0.2 | Jim Duke's personal files. |
| 3-O-(6-O-{TRANS-P-COUMAROYL}-2-O-BETA-D-GLUCOPYRANOSYL)...CYANIDIN | Leaf | -- | 27.0 | Jim Duke's personal files. |
| 3-O-(6-O-{TRANS-SINAPYL}-2-O-(BETA-D-GLUCOPYRANOSYL)-BETA-D-GLUCOPYRANOSYL5-O-(BETA-D-GLUCOPYRANOSYL)-CYANIDIN | Leaf | -- | 0.1 | Jim Duke's personal files. |
| 3-PENTANONE | Leaf | -- | -- | Wealth of India. |
| 4-(METHYLTHIO)-BUTYL-ISOTHIOCYANATE | Leaf | -- | -- | * |
| 4-CAFFOYLQUINIC-ACID | Leaf | -- | -- | * |
| 4-CAFFOYLQUINIC-ACID | Plant | -- | -- | * |
| 4-EPITHIOBUTANE | Leaf | -- | -- | Wealth of India. |
| 4-HYDROXY-GLUCOBRASSICIN | Leaf | -- | -- | Jim Duke's personal files. |
| Activities (1) | | | | |
| Quinone-Reductase-Inducer 100 uM | Fahey, J. W., Zhang, Y., Talalay, P. 1997. Broccoli Sprouts: An Exceptionally Rich Source of Inducers of Enzymes that Protects Against Chemical Carcinogens. Proc. Nat. Acad. Sci., 94: 10367-10372. | | | |
| 4-HYDROXY-INDO-3-YL-METHYL-GLUCOSINOLATE | Seed | -- | -- | Jim Duke's personal files. |

| | | | | | |
|--|--|-------|--------|-------------------|------------------------------------|
| 4-HYDROXY-INDOYL-3-YL-METHYL-GLUCOSINOLATE | Leaf | -- | -- | | Jim Duke's personal files. |
| 4-METHOXYBRASSININ | Leaf | -- | 1.0 | | Jim Duke's personal files. |
| Activities (3) | | | | | |
| Fungicide | | | | | |
| Pesticide | | | | | |
| Phytoalexin | | | | | |
| 4-METHYL-SULFINYL-BUTYL-GLUCOSINOLATE | Leaf | -- | -- | | * |
| 4-METHYL-SULFINYL-BUTYL-ISOTHIOCYANATE | Leaf | -- | -- | | * |
| 4-METHYL-THIO-BUTYL-CYANIDE | Leaf | -- | -- | | Wealth of India. |
| 4-METHYL-THIO-BUTYL-GLUCOSINOLATE | Leaf | -- | -- | | * |
| 4-P-COUMAROYLQUINIC-ACID | Plant | -- | -- | | * |
| 4-P-COUMAROYLQUINIC-ACID | Leaf | -- | -- | | * |
| 4-PENTENYL-CYANIDE | Leaf | -- | -- | | * |
| 4-PENTENYL-ISOTHIOCYANATE | Plant | -- | -- | | * |
| Activities (1) | | | | | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. | | | | |
| 4-PENTENYL-ISOTHIOCYANATE | Leaf | -- | -- | | * |
| Activities (1) | | | | | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. | | | | |
| 5-FERULOYLQUINIC-ACID | Plant | -- | -- | | * |
| 5-FERULOYLQUINIC-ACID | Leaf | -- | -- | | * |
| 5-P-COUMAROYLQUINIC-ACID | Leaf | -- | -- | | * |
| 5-P-COUMAROYLQUINIC-ACID | Plant | -- | -- | | * |
| 5-VINYLOXAZOLIDINE-2-THIONE | Leaf | -- | -- | | * |
| 5-VINYLOXAZOLIDINE-2-THIONE | Plant | -- | -- | | * |
| ACETALDEHYDE | Leaf | -- | -- | | Wealth of India. |
| Activities (6) | | | | | |
| Addictive 8 ug/kg | Science News, 145: 294. | | | | |
| Fungicide | | | | | |
| Perfumery FEMA 4-25 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | | |
| Pesticide | | | | | |
| Respirapalytic | | | | | |
| Tyrosinase-Inhibitor ID50=43 ug/ml | | | | | |
| ACETONE | Leaf | -- | -- | | Wealth of India. |
| Activities (3) | | | | | |
| Allergenic | | | | | |
| CNS-Depressant | | | | Martindale's 29th | |
| Narcotic | | | | Martindale's 29th | |
| ALANINE | Leaf | 420.0 | 5615.0 | -1.62 | USDA's Ag Handbook 8 and sequelae) |
| Activities (3) | | | | | |
| Antioxidant | Larson, R.A. 1987. Review Article Number 30. The Antioxidants of Higher Plants. Phytochemistry. 27: 969-978. | | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | | |
| Oxidant | Larson, R.A. 1987. Review Article Number 30. The Antioxidants of Higher Plants. Phytochemistry. 27: 969-978. | | | | |
| ALKYL-NITRILES | Leaf | -- | -- | | * |
| ALLYL-CYANIDE | Leaf | -- | -- | | * |

| | | | | | |
|---|--|-------|--------|-------|------------------------------------|
| ALLYL-CYANIDE | Plant | -- | -- | | * |
| ALLYL-GLUCOSINOLATE | Seed | -- | -- | | Jim Duke's personal files. |
| ALLYL-ISOTHIOCYANATE | Leaf | -- | 20.0 | | Jim Duke's personal files. |
| Activities (16) | | | | | |
| Allergenic | | | | | |
| Antiasthmatic | | | | | |
| Antifeedant | 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. | | | | |
| Antiseptic | | | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | | |
| Counterirritant | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. | | | | |
| Decongestant | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. | | | | |
| Embryotoxic | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. | | | | |
| Fungicide MIC=1.8-3.5 ug/ml | | | | | |
| Herbicide IC100=0.4 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. | | | | |
| Insectiphile | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | |
| Mutagenic | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. | | | | |
| Nematiovstat 50 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. | | | | |
| Pesticide | | | | | |
| Spice FEMA 1-80 ppm | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry | | | | |
| ALPHA-AMYLASE | Leaf | -- | -- | | Wealth of India. |
| ALPHA-LINOLENIC-ACID | Leaf | 460.0 | 6150.0 | -0.16 | USDA's Ag Handbook 8 and sequelae) |
| Activities (15) | | | | | |
| 5-Alpha-Reductase-Inhibitor | | | | | |
| Antiaggregant | Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp. | | | | |
| Antihypertensive | | | | | |
| Antiinflammatory IC50=42 uM | | | | | |
| Antileukotriene-D4 IC50=42 uM | | | | | |
| Antimenorrhagic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). | | | | |
| Antimetastatic | Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp. | | | | |
| Antiprostatic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). | | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | | |
| Hypotensive | Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp. | | | | |
| Immunostimulant 0.12 ml/man/day | Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp. | | | | |
| Lymphocytogenic 0.5 ug/ml | Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp. | | | | |
| Propecic | | | | | |
| Prostaglandin-Synthesis-Inhibitor 39.5 g/day/hmn | Ferretti, A., Flanagan, V. P. 1996. Antithromboxane Activity of Dietary Alpha-linolenic Acid: A Pilot Study. Prostaglandins Leukotrienes Essential Fatty Acids, 54(6): 451-455. ARS, USDA. | | | | |
| Vasodilator | | | | | |
| ALPHA-TERPINENE | Shoot | -- | 14.0 | -0.44 | * |

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-TERPINEOL**Shoot** -- 3.6 -0.28 ***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** -- 18.0 -0.23 ***ALPHA-TOCOPHEROL****Leaf** 0.4 170.0 -0.55 *

| Activities (32) | | | | | | |
|-----------------------------|---|-----|--------|------|---|--|
| Antialzheimeran | | | | | | |
| Antianginal | | | | | | |
| Antiarthritic | | | | | | |
| Antiasthmatic | | | | | | |
| Antiatherosclerotic | Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp. | | | | | |
| Anticancer | | | | | | |
| Anticataract | | | | | | |
| Anticonvulsant Synergen | | | | | | |
| Antidementia | | | | | | |
| Antidiabetic | Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp. | | | | | |
| Antiinfarctal | Soumyanath, A. Ed. 2006. Traditional Medicines for Modern Times - Antidiabetic Plants. CRC Press, Taylor & Francis Group. Boca Raton, FL. 314 pp. | | | | | |
| Antiinfertility | | | | | | |
| Antiischemic | | | | | | |
| Antimaculitic | | | | | | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. | | | | | |
| Antineuropathic | | | | | | |
| Antioxidant 5 x quercetin | | | | | | |
| Antioxidant IC34=10 uM | | | | | | |
| Antiparkinsonian | | | | | | |
| Antiradicular 5 x quercetin | | | | | | |
| Antiretinotic | | | | | | |
| Antirheumatic | | | | | | |
| Antistroke | | | | | | |
| Antitumor | | | | | | |
| Antitumor (Bladder) | | | | | | |
| Antitumor (Prostate) | | | | | | |
| Antitumor (Stomach) | | | | | | |
| Antitumor-Promoter | | | | | | |
| Cancer-Preventive | | | | | | |
| Cardioprotective | | | | | | |
| Circulotonic | | | | | | |
| Immunomodulator | | | | | | |
| ALUMINUM | Leaf | 1.0 | 4350.0 | 3.89 | * | |

| 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 | | | | | | |
| ALUMINUM | Plant | -- | -- | | * | |

| 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 | | | | | | |

| | | | | | | |
|----------------|------|--------|---------|------|---|----------------------------|
| AMMONIA | Leaf | 3800.0 | 11060.0 | 0.16 | | Jim Duke's personal files. |
| AMMONIA(NH3) | Leaf | 3800.0 | 11060.0 | 1.0 | * | |
| ANILINE | Leaf | 1.0 | 4.0 | 1.0 | | Jim Duke's personal files. |
| ANTHERAXANTHIN | Leaf | -- | -- | | | Jim Duke's personal files. |

| Activities (1) | | | | | | |
|----------------|--|----|----|--|--|----------------------------|
| Colorant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | |
| ANTHOXANTHINS | Sprout Seedling | -- | -- | | | Jim Duke's personal files. |

Activities (14)

| | |
|-------------------------|--|
| Antidiabetic? | Wichtl, M. 1984. Teedrogen. Ein Handbuch für Apotheker und Ärzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Antiencephalopathic | Martindale's 29th |
| Antihepatic | Martindale's 29th |
| Antihypertensive | |
| Antiimpotence | |
| Antiinfertility 4 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antioxidant? | |
| Aphrodisiac 3 g/day | |
| Diuretic | |
| Hypoammonemic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| NO-Genic | |
| Pituitary-Stimulant | |
| Spermigenic 4 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Vasodilator | |

ARSENIC Leaf 0.004 0.007 -0.83 *

Activities (2)

| | |
|-----------|---|
| Anorexic | Forest H. Nielsen, USDA, Grand Forks, various publications. |
| Pesticide | |

ASCORBIC-ACID Leaf 190.0 6774.0 0.18 *

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 & 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 & 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 & 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 & 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 & 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 |

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|--|--|
| 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. |
| Antiendometriotic 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 |
| Antioesity 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. |
| Antiosteoarthritis 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 | |

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|---------------------------------------|--|
| Cancer-Preventive Cardioprotective | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| 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). |

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|-----|------|--------|---------|-------|---|
| ASH | Leaf | 6000.0 | 98072.0 | -0.37 | * |
|-----|------|--------|---------|-------|---|

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|---------------|------|--------|---------|------|------------------------------------|
| ASPARTIC-ACID | Leaf | 1190.0 | 15910.0 | -0.7 | USDA's Ag Handbook 8 and sequelae) |
|---------------|------|--------|---------|------|------------------------------------|

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|-----------------------|--|--------------------|--|--|--|
| Activities (3) | | | | | |
| Antimorphinic | | Martindale's 28th | | | |
| Neuroexcitant | | Martindale's 28th | | | |
| Roborant | | Merck 11th Edition | | | |

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|--------|------|-----|------|-------|---|
| BARIUM | Leaf | 1.0 | 87.0 | -0.81 | * |
|--------|------|-----|------|-------|---|

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|--------------|------|----|----|--|---|
| BENZOPHENONE | Leaf | -- | -- | | * |
|--------------|------|----|----|--|---|

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|-----------------------|---|--|--|--|--|
| Activities (1) | | | | | |
| FLavor FEMA 1-2 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | | |

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|--------------|------|-----|-----|------|----------------------------|
| BENZYL-AMINE | Leaf | 2.8 | 3.3 | -0.9 | Jim Duke's personal files. |
|--------------|------|-----|-----|------|----------------------------|

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|----------------------|------|----|----|--|---|
| BENZYL-GLUCOSINOLATE | Leaf | -- | -- | | * |
|----------------------|------|----|----|--|---|

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|-----------------------|------|----|----|--|---|
| BENZYL-ISOTHIOCYANATE | Leaf | -- | -- | | * |
|-----------------------|------|----|----|--|---|

Activities (20)

| | |
|---------------------------|---|
| Albuminurigenic | Commission E. Blumenthal, M., Hall, T. and Rister, R.S. eds. 1997. The ABC's German Commission E Monographs - Therapeutic Monographs on Medicinal Plants for Human Use by Commission E - A Special Expert Committee of the German Federal Health Agency. ABC. Austin TX |
| Allergenic | |
| Anthelmintic | |
| Antiasthmatic | |
| Antibacterial | |
| Antibiotic | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antineoplastic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antinitrosaminic | |
| Antitumor | |
| Antiviral | |
| Flatulent | |
| Fungicide | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Herbicide IC100=0.4 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. |
| Insecticide | |
| Irritant | Commission E. Blumenthal, M., Hall, T. and Rister, R.S. eds. 1997. The ABC's German Commission E Monographs - Therapeutic Monographs on Medicinal Plants for Human Use by Commission E - A Special Expert Committee of the German Federal Health Agency. ABC. Austin TX |
| Laxative 90 mg cow | |
| Nematicide 0.3- 6 mM | |
| Pesticide | |
| Viristat | Commission E. Blumenthal, M., Hall, T. and Rister, R.S. eds. 1997. The ABC's German Commission E Monographs - Therapeutic Monographs on Medicinal Plants for Human Use by Commission E - A Special Expert Committee of the German Federal Health Agency. ABC. Austin TX |

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|---------------|------|-----|------|-------|------------------|
| BETA-AMYLASE | Leaf | -- | -- | | Wealth of India. |
| BETA-CAROTENE | Leaf | 0.6 | 12.0 | -1.09 | * |

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-SITOSTEROL
Leaf
70.0
700.0
-0.7

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 & 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 | |

BORON

| | | | | |
|------|-----|-------|------|---|
| Leaf | 1.0 | 145.0 | 2.28 | * |
|------|-----|-------|------|---|

Activities (4)

| | |
|-------------------------------|--|
| Androgenic 3 mg/man/day | |
| Antiosteoarthritic | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Antiosteoporotic 3 mg/man/day | |
| Estrogenic 3 mg/man/day | |

BRASSININ

| | | | |
|------|----|-----|----------------------------|
| Leaf | -- | 1.3 | Jim Duke's personal files. |
|------|----|-----|----------------------------|

| Activities (3) | | | | | |
|-----------------------------------|--|--|--|--|--|
| Pesticide | | | | | |
| Phytoalexin | | | | | |
| Quinone-Reductase-Inducer 0.22 uM | Mehta, R. G., Liu, J. F., Constantinou, A., Thomas, C. E., Hawthorne, M., You, M., Gerhauser, C., Pezzuto, J. M., Moon, R. C., Moriarty, R. M. 1995. Cancer Chemopreventive Activity of Brassinin, a Phytoalexin from Cabbage. <i>Carcinogenesis</i> , 16(2): 399-404. | | | | |

| | | | | | |
|---------------------|-------|-------|------|-------|---------------------------------|
| BROMINE | Leaf | 0.2 | 37.0 | -0.22 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| BUTANEDIONE | Leaf | -- | -- | | Wealth of India. |
| BUTENYL-CYANIDE | Leaf | -- | -- | | * |
| BUTYL-CYANIDE | Leaf | -- | -- | | * |
| BUTYL-GLUCOSINOLATE | Plant | -- | -- | | * |
| BUTYL-GLUCOSINOLATE | Leaf | -- | -- | | * |
| CADMIUM | Leaf | 0.005 | 0.39 | -0.7 | * |

| Activities (3) | | | | | |
|----------------|--|--|--|--|--|
| Hypertensive | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). | | | | |
| Lithogenic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). | | | | |
| Nephrotoxic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). | | | | |

| | | | | | |
|--------------|------|-----|------|-------|---|
| CAFFEIC-ACID | Leaf | 0.5 | 77.0 | -0.71 | * |
|--------------|------|-----|------|-------|---|

| Activities (102) | | | | | |
|--|---|--|--|--|--|
| Aldose-Reductase-Inhibitor 4 ug/ml (weak activity) | Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110. | | | | |
| Allergenic | | | | | |
| Analgesic | | | | | |
| AntiHIV EC50=200 ug/ml | | | | | |
| AntiLegionella | | | | | |
| Antiadenoviral | Economic & Medicinal Plant Research, 5: 207. | | | | |
| Antiaaggregant | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. | | | | |
| Antiaging | | | | | |
| Antiatherogenic | | | | | |
| Antibacterial | | | | | |
| Anticancer | | | | | |
| Anticarcinogenic | Economic & Medicinal Plant Research, 6: 189. | | | | |
| Antidepressant | | | | | |
| Antiedemic | Economic & Medicinal Plant Research, 6: 189. | | | | |
| Antielastase IC50=93 um/l | | | | | |
| Antielastase IC50=86 ug/ml (475 uM) | | | | | |
| Antiescherichic | | | | | |
| Antiflu | Economic & Medicinal Plant Research, 5: 207. | | | | |
| Antigonadotropic | Jim Duke's personal files. | | | | |
| Antihemolytic 25 uM | Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994. | | | | |
| Antihepatoadenomic 200 ppm diet orl mus | | | | | |
| Antihepatotoxic | | | | | |
| Antiherpetic 50 ug/ml | | | | | |
| Antiherpetic EC50=>50 ug/ml | | | | | |
| Antihistaminic | | | | | |
| Antihypercholesterolemic | Economic & Medicinal Plant Research, 6: 189. | | | | |
| Antihyperthyroid | | | | | |
| Antiinflammatory | | | | | |
| Antileukemic | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. | | | | |
| Antileukotriene | | | | | |
| Antimelanogenic | | | | | |
| Antimutagenic | Ki Soon Rhee. <i>Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.18. | | | | |
| Antinitrosaminic | Ki Soon Rhee. <i>Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.18. | | | | |
| Antiophidic | | | | | |
| Antioxidant 50 uM | | | | | |
| Antioxidant IC57=30 ppm | | | | | |
| Antioxidant 1/3 quercetin | | | | | |
| Antioxidant 30 mM | | | | | |

| | |
|---|---|
| Antioxidant 1.3 x Vit. E | |
| Antioxidant 1/2 BHA | |
| Antiperoxidant IC50=44 uM | Planta Medica, 57: A54, 1991. |
| Antiperoxidant IC35=200 ug/ml | |
| Antiperoxidant IC85=100 ug/ml | |
| Antiproliferant | 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. |
| Antiprostaglandin | |
| Antiradicular 10 uM | Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. Phytochemistry. 36(3): 579-583. 1994. |
| Antiradicular 1/3 quercetin | |
| Antiradicular 30 mM | |
| Antiradicular IC50=32-35 uM | |
| Antiseptic | |
| Antispasmodic EC50=3.4-15 uM | Phytotherapy Research, 4: 73. |
| Antistaphylococcic | |
| Antistomatitic | Economic & Medicinal Plant Research, 5: 207. |
| Antisunburn | |
| Anthithiamin | Phenolic Compounds in Food and Their Effects on Health, 69. |
| Antithyroid | Jim Duke's personal files. |
| Antitumor 200 ppm diet orl mus | |
| Antitumor (Skin) | |
| Antitumor-Promoter IC42=10 uM | Cancer Research, 48: 5941. |
| Antiulcerogenic | |
| Antivaccinia | Economic & Medicinal Plant Research, 5: 207. |
| Antiviral IC50=62.5 ug/ml | |
| Anxiolytic | |
| CNS-Active | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| COX-2-Inhibitor IC32=100 uM | |
| Calcium-Antagonist IC50=1.2 uM rbt | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Carcinogenic 2% (diet) | |
| Chemopreventive | |
| Cholagogue | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Choleretic | 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. |
| Clastogenic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Co-carcinogenic | |
| Collagen-Sparing | |
| Cytoprotective | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Cytotoxic TC50=200 ug/ml | |
| DNA-Active | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| DNA-Protective | |
| Diuretic | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Fungicide MIC=0.4 mg/ml | |
| Hepatocarcinogenic 400 ppm diet orl mus (in the absence of alcohol) | |
| Hepatoprotective | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 210. |
| Hepatotropic | |
| Histamine-Inhibitor | |
| Immunostimulant | |
| Insectifuge | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| Leukotriene-Inhibitor | |
| Lipoxygenase-Inhibitor IC27=5 mM | Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690. |
| Lipoxygenase-Inhibitor IC50=62-148 uM | |
| Lyase-Inhibitor IC50=94-164 uM | |
| Metal-Chelator | McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25. |
| Ornithine-Decarboxylase-Inhibitor | Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19. |
| Pesticide | |
| Prooxidant | |
| Prostaglandigenic | |
| Sedative 500 mg | |

| | |
|--|---|
| Sunscreen IC50=2.5 mg/l | Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993. |
| Sunscreen IC91=5 mg/l | Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993. |
| Sunscreen IC98=25 mg/l | Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993. |
| Tumorigenic | Jim Duke's personal files. |
| Vulnerary | |
| Xanthine-Oxidase-Inhibitor IC50=39.21 uM | Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livinston, Edinburgh. |

| | | | | | |
|---------------------------------|------|-------|---------|------|----------------------------|
| CAFFEIC-ACID-4-O-BETA-GLUCOSIDE | Leaf | -- | -- | | Jim Duke's personal files. |
| CALCIUM | Leaf | 290.0 | 19500.0 | 0.07 | * |

| Activities (28) | | | | | |
|------------------------------------|--|--|--|--|--|
| AntiPMS 1 g/day | | | | | |
| Antiallergic 500 mg/day | | | | | |
| Antianxiety | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. | | | | |
| Antiarrhythmic 500-1,500 mg | | | | | |
| Antiarthritic 1,000 mg/day | | | | | |
| Antiatherosclerotic 500 mg/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. | | | | |
| Anticlimacteric 1,000-1,500 mg/day | | | | | |
| Antidepressant | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. | | | | |
| Antidote (Aluminum) | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. | | | | |
| Antidote (Lead) | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. | | | | |
| Antihyperkinetic | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. | | | | |
| Antihypertensive | | | | | |
| Antiinsomniac | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . 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. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. | | | | |
| Antirheumatic 1,000 mg/day | | | | | |
| Antistress 500-1,500 mg/day | | | | | |
| Antitic | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. | | | | |
| Anxiolytic 500-1,500 mg/day | | | | | |
| Calcium-Channel-Blocker | | | | | |
| Diuretic | | | | | |
| Hypocholesterolemic 500 mg/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. | | | | |
| Hypotensive 1 g/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. | | | | |
| Laxative 1,000-1,200 mg | | | | | |
| Tranquilizer 500-1,500 mg/day | | | | | |
| Vasodilator | | | | | |

| | | | | | |
|-------------|------|------|-------|------|--|
| CAMPESTEROL | Leaf | 20.0 | 200.0 | 0.27 | Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. <i>CRC Handbook of Lipids in Human Nutrition</i> . CRC Press. Boca Raton, FL. 233 pp.) |
|-------------|------|------|-------|------|--|

| Activities (2) | | | | | |
|------------------------|--|--|--|--|--|
| Antioxidant IC37=10 uM | | | | | |
| Hypocholesterolemic | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. | | | | |

| | | | | | |
|---------------|------|---------|----------|------|------------------------------------|
| CARBOHYDRATES | Leaf | 53700.0 | 717969.0 | 0.84 | USDA's Ag Handbook 8 and sequelae) |
| CARVONE | Leaf | -- | -- | | * |

Activities (19)

| | |
|---|--|
| Allergenic | |
| Antiacetylcholinesterase IC50=1.4-1.8 mM | |
| Antiproliferative | |
| Antiseptic 1.5 x phenol | Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176) |
| CNS-Stimulant | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidistat | |
| 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. |
| FLavor FEMA 80-3,000 | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry |
| Fungistat | |
| Insecticide | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Insectifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| 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. <i>Bioactive Volatile Compounds from Plants</i> . 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. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . 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. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Trichomonicide LD100=300 ug/ml | |
| Vermicide | |

CARVONE Plant -- -- *

Activities (19)

| | |
|---|--|
| Allergenic | |
| Antiacetylcholinesterase IC50=1.4-1.8 mM | |
| Antiproliferative | |
| Antiseptic 1.5 x phenol | Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176) |
| CNS-Stimulant | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidistat | |
| 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. |
| FLavor FEMA 80-3,000 | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry |
| Fungistat | |
| Insecticide | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Insectifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| 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. <i>Bioactive Volatile Compounds from Plants</i> . 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. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . 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. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Trichomonicide LD100=300 ug/ml | |
| Vermicide | |

CHLORINE Leaf -- 120.0 -0.64 Wealth of India.

Activities (7)

| | |
|---------------|-------------------|
| Antibacterial | Martindale's 29th |
| Antiherpetic | Martindale's 29th |
| Antiseptic | Martindale's 29th |
| Antiviral | Martindale's 29th |
| Candidicide | Martindale's 29th |
| Fungicide | Martindale's 29th |
| Pesticide | |

CHLOROGENIC-ACID Leaf -- -- *

Activities (77)

| | |
|---|--|
| Aldose-Reductase-Inhibitor IC50=1.8 uM rat (strong activity) | Yoshikawa, M., et al. 1999. Medicinal Flowers. I. Aldose Reductase Inhibitors and Three New Eudesmane-Type Sesquiterpenes, Kikkanols A, B, and C, From the Flowers of <i>Chrysanthemum indicum</i> L. <i>Chem Pharm Bull</i> , 47(3): 340-345. |
| Allelochemic | |
| Allergenic | |
| Analgesic | |
| AntiEBV | Economic & Medicinal Plant Research, 6: 189. |
| AntiHIV | Economic & Medicinal Plant Research, 6: 189. |
| AntiLegionella | |
| Antiatherosclerotic | |
| Antibacterial | |
| Anticancer (Colon) | |
| Anticancer (Forestomach) | |
| Anticancer (Liver) | |
| Anticancer (Skin) | |
| Anticarcinogenic | |
| Antidiabetic | |
| Antifeedant | |
| Antigenotoxic | |
| Antigonadotropic | Jim Duke's personal files. |
| Antihemolytic 10 uM | Ohnishi, M., Morishita, H., Iwashashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994. |
| Antihepatotoxic | |
| Antiherpetic | Economic & Medicinal Plant Research, 5: 194. |
| Antihistaminic | |
| Antihypercholesterolemic | Economic & Medicinal Plant Research, 6: 189. |
| Antihyperthyroid | |
| Antiinflammatory | Hagerman, A.E. Tannin-Protein Interactions. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19. |
| Antileukotriene | |
| Antimelanogenic | |
| Antimutagenic | |
| Antinitrosaminic | |
| Antioxidant IC53=200 ppm | Huang, M-T., and Ferraro, T. Phenolic Compounds in Food and Cancer Prevention. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.2 p.21. |
| Antioxidant IC80=12 uM | |
| Antioxidant IC50=54.2 uM | |
| Antiperoxidant IC50=36 uM | <i>Planta Medica</i> , 57: A54, 1991. |
| Antipolio | Jim Duke's personal files. |
| Antiradicular 10 uM | Ohnishi, M., Morishita, H., Iwashashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994. |
| Antiradicular 9 x quercetin | |
| Antiseptic | |
| Antisunburn | |
| Antithyroid | Jim Duke's personal files. |
| 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. |
| Antitumor (Colon) | |
| Antitumor (Forestomach) | |
| Antitumor (Liver) | |
| Antitumor (Skin) | |
| Antitumor-Promoter IC25=10 uM | |
| Antiulcer | Economic & Medicinal Plant Research, 6: 189. |
| Antiviral | Vlietinck, A.J. and Dommissse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart. |
| Autotoxic | |
| CNS-Active | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart</i> . 393 pp. |
| CNS-Stimulant 1/6 Caffeine | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cardioprotective | |
| Chemopreventive | |
| Cholagogue | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart</i> . 393 pp. |
| Choleretic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Clastogenic | Friedman, M. and Dao, L. 1990. Effect of Autoclaving and Conventional and Microwave Baking on the Ergot Alkaloid and Chlorogenic Acid Contents of Morning Glory (<i>Ipomoea tricolor</i> Cav. cv.) Heavenly Blue Seeds. <i>J. Agric. Food Chem</i> . 38: 805-808. |
| Collagen-Sparing | |
| Diuretic | |
| Fungicide | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp. |
| Hepatoprotective | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Histamine-Inhibitor | |

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|-----------------------------------|---|
| Hypoglycemic | |
| Immunostimulant | |
| Insectifuge | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). <i>Economic Botany</i> 48(2): 111-120, 1994. |
| Interferonogenic | <i>Economic & Medicinal Plant Research</i> , 1: 124. |
| Juvabional | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Larvostat | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Leukotriene-Inhibitor | |
| Lipoxygenase-Inhibitor IC23=5 mM | Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690. |
| Metal-Chelator | McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.25. |
| NO-Genic | |
| Ornithine-Decarboxylase-Inhibitor | Hagerman, A.E. Tannin-Protein Interactions. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19. |
| Oviposition-Stimulant | 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 | |
| Sunscreen | |
| Sweetener | Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Vulnerary | |

CHLOROGENIC-ACID

Plant

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Activities (77)

| | |
|--|--|
| Aldose-Reductase-Inhibitor IC50=1.8 uM rat (strong activity) | Yoshikawa, M., et al. 1999. Medicinal Flowers. I. Aldose Reductase Inhibitors and Three New Eudesmane-Type Sesquiterpenes, Kikkanols A, B, and C, From the Flowers of <i>Chrysanthemum indicum</i> L. <i>Chem Pharm Bull</i> , 47(3): 340-345. |
| Allelochemic | |
| Allergenic | |
| Analgesic | |
| AntiEBV | <i>Economic & Medicinal Plant Research</i> , 6: 189. |
| AntiHIV | <i>Economic & Medicinal Plant Research</i> , 6: 189. |
| AntiLegionella | |
| Antiatherosclerotic | |
| Antibacterial | |
| Anticancer (Colon) | |
| Anticancer (Forestomach) | |
| Anticancer (Liver) | |
| Anticancer (Skin) | |
| Anticarcinogenic | |
| Antidiabetic | |
| Antifeedant | |
| Antigenotoxic | |
| Antigonadotropic | Jim Duke's personal files. |
| Antihemolytic 10 uM | Ohnishi, M., Morishita, H., Iwashashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994. |
| Antihepatotoxic | |
| Antiherpetic | <i>Economic & Medicinal Plant Research</i> , 5: 194. |
| Antihistaminic | |
| Antihypercholesterolemic | <i>Economic & Medicinal Plant Research</i> , 6: 189. |
| Antihyperthyroid | |
| Antiinflammatory | Hagerman, A.E. Tannin-Protein Interactions. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19. |
| Antileukotriene | |
| Antimelanogenic | |
| Antimutagenic | |
| Antinitrosaminic | |
| Antioxidant IC53=200 ppm | Huang, M-T., and Ferraro, T. Phenolic Compounds in Food and Cancer Prevention. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.2 p.21. |
| Antioxidant IC80=12 uM | |
| Antioxidant IC50=54.2 uM | |
| Antiperoxidant IC50=36 uM | <i>Planta Medica</i> , 57: A54, 1991. |
| Antipolio | Jim Duke's personal files. |
| Antiradicular 10 uM | Ohnishi, M., Morishita, H., Iwashashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994. |
| Antiradicular 9 x quercetin | |
| Antiseptic | |
| Antisunburn | |
| Antithyroid | Jim Duke's personal files. |
| 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. |
| Antitumor (Colon) | |

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|---------------------------------------|--|
| Antitumor (Forestomach) | |
| Antitumor (Liver) | |
| Antitumor (Skin) | |
| Antitumor-Promoter IC25=10 uM | |
| Antiulcer | Economic & Medicinal Plant Research, 6: 189. |
| Antiviral | Vlietinck, A.J. and Dommissie, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart. |
| Autotoxic | |
| CNS-Active | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| CNS-Stimulant 1/6 Caffeine | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cardioprotective | |
| Chemopreventive | |
| Cholagogue | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Choleretic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Clastogenic | Friedman, M. and Dao, L. 1990. Effect of Autoclaving and Conventional and Microwave Baking on the Ergot Alkaloid and Chlorogenic Acid Contents of Morning Glory (<i>Ipomoea tricolor</i> Cav. cv.) Heavenly Blue Seeds. J. Agric. Food Chem. 38: 805-808. |
| Collagen-Sparing | |
| Diuretic | |
| Fungicide | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Hepatoprotective | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Histamine-Inhibitor | |
| Hypoglycemic | |
| Immunostimulant | |
| Insectifuge | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| Interferonogenic | Economic & Medicinal Plant Research, 1: 124. |
| Juvabional | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Larvostat | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Leukotriene-Inhibitor | |
| Lipoxygenase-Inhibitor IC23=5 mM | Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690. |
| Metal-Chelator | McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25. |
| NO-Genic | |
| Ornithine-Decarboxylase- Inhibitor | Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19. |
| Oviposition-Stimulant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sunscreen | |
| Sweetener | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Vulnerary | |

CHOLINE Leaf -- 1200.0 -0.42 Wealth of India.

Activities (20)

| | |
|--|--|
| Antialzheimeran 5-16 g/man/day | |
| Antichoreic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Anticirrhotic 6,000 mg/man/day | |
| Anticystinuric | |
| Antidementia | |
| Antidiabetic | |
| Antidyskinetic 150-200 mg/kg/man/day | Martindale's 28th |
| Antihomocysteine | |
| Antimanic 15-30 g/man/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antinociceptive | |
| Antisteatotic | |
| Cardiodepressant | |
| Cerebrotonic | |
| Cholinergic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Hepatoprotective | |
| Hypotensive | |
| Ileorelaxant | |
| Lipotropic | |
| Memorigenic | |
| Parasympathomimetic (1/1,000th acetylcholine) | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 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 | |

CIS-HEXEN-1-OL

Leaf

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Wealth of India.

CITRIC-ACID

Leaf

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Jim Duke's personal files.

Activities (23)

| | |
|-------------------------|--|
| Allergenic | |
| Alpha-Amylase-Inhibitor | |
| Antiaphthic 20,000 ppm | Martindale's 28th |
| Antiatherosclerotic | |
| Antibacterial | |
| Anticalculic | |
| Anticoagulant | Merck 11th Edition |
| Antileishmanic | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antioxidant Synergist | Merck 11th Edition |
| Antiseborrheic | |
| Antiseptic | Martindale's 29th |
| Antitubercular | |
| Antitumor | Economic & Medicinal Plant Research, 6: 235. |
| Disinfectant | Martindale's 29th |
| FLavor FEMA 370-4,400 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Hemostat | |
| 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? | Lawrence Review of Natural Products, Sep-91. |
| Litholytic | Martindale's 29th |
| Mycobactericide | |
| Odontolytic | 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. |
| Refrigerant | Martindale's 28th |

COBALT Leaf 0.001 2.9 -0.28 *

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.

COPPER Leaf 0.3 87.0 1.63 *

Activities (12)

Antianemic
 Antiarthritic
 Antidiabetic 2-4 mg/day Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
 Antifatigue
 Antiinflammatory Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
 Antinociceptive Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
 Antiosteoporotic
 Cardioprotective
 Contraceptive Martindale's 28th
 Hypocholesterolemic Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
 Immunomodulator
 Schizophrenogenic Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

CROCETIN Leaf -- -- Jim Duke's personal files.

Activities (10)

Anticancer (Skin) 3 uM
 Antihypoxic
 Antimutagenic Economic & Medicinal Plant Research, 6: 235.
 Antioxidant
 Antitumor-Promoter 3 uM
 Choloretic 100 mg/kg
 Colorant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
 Hypocholesterolemic Fitoterapia No.5-1986.
 Lipolytic Wichtl, M. 1984. Teedrogen. Ein Handbuch für Apotheker und Ärzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
 Neuroprotective

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|---|-----------------|----|-------|--|
| CYANIDIN-3,5-DIGLUCOSIDE | Sprout Seedling | -- | 229.0 | * |
| CYANIDIN-3-(DI-P-COUMAROYL)-SOPHOROSIDE-5-GLUCOSIDE | Sprout Seedling | -- | 229.0 | Jim Duke's personal files. |
| CYANIDIN-3-(DIFERULYL)-SOPHOROSIDE-5-GLUCOSIDE | Sprout Seedling | -- | 214.0 | Jim Duke's personal files. |
| CYANIDIN-3-(DISINAPYL)-SOPHOROSIDE-5-GLUCOSIDE | Sprout Seedling | -- | 257.0 | Jim Duke's personal files. |
| CYANIDIN-3-(P-COUMAROYL)-SOPHOROSIDE-5-GLUCOSIDE | Sprout Seedling | -- | 200.0 | Jim Duke's personal files. |
| CYANIDIN-3-FERULYL-SOPHOROSIDE-5-GLUCOSIDE | Sprout Seedling | -- | 243.0 | Jim Duke's personal files. |
| CYANIDIN-3-MALONYL-SOPHOROSIDE-5-GLUCOSIDE | Sprout Seedling | -- | 171.0 | Jim Duke's personal files. |
| CYANIDIN-3-SINAPYL-SOPHOROSIDE-5-GLUCOSIDE | Sprout Seedling | -- | 200.0 | Jim Duke's personal files. |
| CYANIDIN-3-SOPHOROSIDE-5-GLUCOSIDE | Sprout Seedling | -- | 257.0 | * |
| CYANIDIN-5-O-GLUCOSIDE-3-O-SOPHOROSIDE | Leaf | -- | -- | * |
| CYANIN | Leaf | -- | -- | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

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|---|--|--------|----------|-------|--|------------------------------------|
| Activities (5) | | | | | | |
| Antipolio | Economic & Medicinal Plant Research, 5: 197. | | | | | |
| Antiviral | Economic & Medicinal Plant Research, 5: 197. | | | | | |
| Emetic | | | | | | |
| Pesticide | | | | | | |
| Pigment | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | |
| CYCLOBRASSININ | Leaf | -- | 4.3 | | | Jim Duke's personal files. |
| Activities (3) | | | | | | |
| Pesticide | | | | | | |
| Phytoalexin | | | | | | |
| Quinone-Reductase-Inducer .22 uM | Mehta, R. G., Liu, J. F., Constantinou, A., Thomas, C. E., Hawthorne, M., You, M., Gerhauser, C., Pezzuto, J. M., Moon, R. C., Moriarty, R. M. 1995. Cancer Chemopreventive Activity of Brassinin, a Phytoalexin from Cabbage. Carcinogenesis, 16(2): 399-404. | | | | | |
| CYSTINE | Leaf | 100.0 | 1337.0 | -1.33 | | USDA's Ag Handbook 8 and sequelae) |
| Activities (2) | | | | | | |
| Adjuvant | | | | | | Merck 11th Edition |
| Antihomocystinuric | | | | | | Martindale's 29th |
| DEHYDROASCORBIC-ACID | Shoot | -- | -- | | | Jim Duke's personal files. |
| DIINDOLYLMETHANE | Leaf | -- | -- | | | * |
| DIINDOLYLMETHANE | Plant | -- | -- | | | * |
| DIMETHYL-AMINE | Leaf | 2.0 | 2.8 | -1.0 | | Jim Duke's personal files. |
| Activities (2) | | | | | | |
| Coleoptophile | | | | | | Merck 11th Edition |
| Pesticide | | | | | | |
| DIMETHYL-DISULFIDE | Leaf | -- | -- | | | Wealth of India. |
| Activities (2) | | | | | | |
| Antithyroid | Pakistan Encyclopedia Planta Medica. 1986. | | | | | |
| Perfumery Fragrance | 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. | | | | | |
| DIMETHYL-TRISULFIDE | Leaf | -- | -- | | | Wealth of India. |
| ERYTHRO-1-CYANO-2-HYDROXY-3,4-EPITHIOBUTANE | Leaf | -- | -- | | | * |
| ERYTHRO-1-CYANO-2-HYDROXY-3,4-EPITHIOBUTANE | Plant | -- | -- | | | * |
| ESTERASE | Leaf | -- | -- | | | Wealth of India. |
| ETHYL-AMINE | Leaf | -- | 1.3 | -1.0 | | Jim Duke's personal files. |
| ETHYL-METHYL-AMINE | Leaf | -- | 0.9 | | | Jim Duke's personal files. |
| FAT | Leaf | 1090.0 | 33559.0 | -0.46 | | USDA's Ag Handbook 8 and sequelae) |
| FAT | Seed | -- | 350000.0 | 0.45 | | Wealth of India. |
| FERULIC-ACID | Leaf | 4.0 | 20.0 | 0.75 | | * |
| Activities (61) | | | | | | |
| Allelopathic | Holappa, L.D., and Blum*. U. 1991. Effects of Exogenously Applied Ferulic Acid, a Potential Allelopathic Compound, on Leaf Growth, Water Utilization, and Endogenous Abscisic Acid Levels of Tomato, Cucumber, and Bean. J. of Chemical Ecology, 17(5): 865. | | | | | |
| Analgesic | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 69. | | | | | |
| Antiaggregant | Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990. | | | | | |
| Antiallergic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. | | | | | |
| Antiarrhythmic | | | | | | |
| Antibacterial | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | |
| Anticancer (Colon) | | | | | | |
| Anticancer (Forestomach) | | | | | | |
| Anticancer (Liver) | | | | | | |
| Anticancer (Skin) | | | | | | |

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|---|--|
| Anticarcinogenic | |
| Antidysmenorrhic | |
| Antiestrogenic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antihepatotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antiherpetic | |
| Antiinflammatory | Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19. |
| Antileukemic IC50=25-56 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. |
| Antimitotic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antimutagenic | Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18. |
| Antineoplastic (Stomach) | |
| Antinitrosaminic | Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18. |
| Antioxidant 3,000 uM | |
| Antioxidant IC51=200 ppm | |
| Antioxidant 1/3 quercetin | |
| Antioxidant 1/2 BHA | |
| Antioxidant EC50=9-15 ug/ml | |
| Antiradicular EC50=9-15 ug/ml | |
| Antiradicular IC50=116-124 uM | |
| Antiserotonin | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antispasmodic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antithrombic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antitumor | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antitumor (Colon) | |
| Antitumor (Forestomach) | |
| Antitumor (Liver) | |
| Antitumor (Skin) | |
| Antitumor-Promoter IC46=10 uM | Cancer Research, 48: 5941. |
| Antiviral | Vlietinck, A.J. and Dommissie, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart. |
| Arteriodilator | Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidicide | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Cardiac | Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990. |
| Cholagogue | Pharmazie, 46: 156, 1991. |
| Choleretic | 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. |
| Fungicide | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Hepatoprotective | Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingstone, Edinburgh. |
| Hepatotropic | |
| Herbicide | Angewandte Botanik 68(5/6)=1994. Page 195. |
| Hydrocholeric | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Hypolipidemic | |
| Immunostimulant | Economic & Medicinal Plant Research, 1: 124. |
| Insectifuge | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| Metal-Chelator | McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25. |
| Ornithine-Decarboxylase-Inhibitor | Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19. |
| Pesticide | |
| Phagocytotic | |
| Preservative | Merck 11th Edition |
| Prostaglandinogenic | |
| Prostaglandin-Synthesis-Inhibitor 0.58-3.2 mM | Xu, L. N., Yu, W. G., Tian, J. Y., Liu, Q. Y. 1990. Effect of Sodium Ferulate on Arachidonic Acid Metabolism. Yao Hsueh Hsueh Pao, 25(6): 412-416. |
| Sunscreen | Chemical Marketing Reporter; a weekly tabloid, 9/10/92. |
| Uterosedative 30-100 mg/kg ivn rat | Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990. |

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 | |

FLUORINE Leaf 0.02 2.5 -0.63 ACTA AGRIC SCAND SUPPL 22: 1980

FOLACIN Leaf 0.45 9.0 -0.09 USDA's Ag Handbook 8 and sequelae)

Activities (15)

| | |
|---|--|
| AntiSpina-Bifida | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antianemic 5-20 mg/man/day | |
| Anticervicaldysplasic 8-30 mg/wmn/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Anticheilitic | 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. |
| Antigingivitic 2-5 mg/day/man | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiglossitic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antimyelotoxic 5 mg/day/orl/man | Martindale's 29th |
| Antineuropathic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antiperiodontitic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiplaque | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antipsychotic | Martindale's 29th |
| Hematopoietic | Merck 11th Edition |
| Uricosuric | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Xanthine-Oxidase-Inhibitor | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |

FOLIC-ACID Leaf -- 0.133 -1.0 Wealth of India.

| Activities (23) | |
|---|--|
| AntiSpina-Bifida | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antianemic 5-20 mg/man/day | |
| Anticervicaldysplasic 8-30 mg/wmn/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Anticheilitic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Anticoronary 400 ug/man/day | |
| Antidementia 10-20 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antidepressant 800 ug/day | |
| Antingingivitic 2-5 mg/day/man | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiglossitic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antigout 10-40 mg/day | |
| Antiinfertility | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antimetaplastic 10 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antimyelotoxic 5 mg/day/orl/man | Martindale's 29th |
| Antineuropathic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antiperiodontal 1 mg day | |
| Antiplaque | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antipolyp (preventive) | |
| Antipsychotic | Martindale's 29th |
| Cancer-Preventive | |
| Hematopoietic | Merck 11th Edition |
| Immunostimulant | |
| Uricosuric | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Xanthine-Oxidase-Inhibitor | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |

FUMARIC-ACID Leaf -- -- Jim Duke's personal files.

| Activities (7) | |
|--|--|
| Acidulant | Martindale's 28th |
| Antidermatitic | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Antihepatocarcinogenic IC100=1% (diet) | Akao, M. and Kuroda, K. 1990. Inhibitory Effect of Fumaric Acid on Hepatocarcinogenesis by Thioacetamide in Mice. Chem. Pharm. Bull. 38(7): 2012-2014, 1990. |
| Antioxidant | Merck 11th Edition |
| Antipsoriac | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Antitumor | 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. |
| FLavor FEMA 50-3,600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

GAMMA-TERPINENE Shoot -- 14.0 -0.38 *

| Activities (11) | |
|---|--|
| 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 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 | |

GLUCOBRASSICANAPIN Seed -- 0.1 *

| Activities (1) | |
|---------------------------------|---|
| Quinone-Reductase-Inducer 15 uM | Tawfig, N. Heaney, R.K., Plumb, J.A., Fenwick, G.R., Musk, S.R.R., Williamson, G. 1995. Dietary Glucosinolates as Blocking Agents Against Carcinogenesis: Glucosinolate Breakdown Products Assessed Induction of Quinone Reductase Activity I. Carcinogenesis 16(5)119-1194 |

GLUCOBRASSICIN Plant -- -- *

| | | | | | | |
|--------------------------------------|---|--------|---------|-------|---|--|
| Activities (1) | | | | | | |
| Quinone-Reductase-Inducer 100 uM | Fahey, J. W., Zhang, Y., Talalay, P. 1997. Broccoli Sprouts: An Exceptionally Rich Source of Inducers of Enzymes that Protects Against Chemical Carcinogens. Proc. Nat. Acad. Sci., 94: 10367-10372. | | | | | |
| GLUCOBRASSICIN | Leaf | -- | -- | | * | |
| Activities (1) | | | | | | |
| Quinone-Reductase-Inducer 100 uM | Fahey, J. W., Zhang, Y., Talalay, P. 1997. Broccoli Sprouts: An Exceptionally Rich Source of Inducers of Enzymes that Protects Against Chemical Carcinogens. Proc. Nat. Acad. Sci., 94: 10367-10372. | | | | | |
| GLUCOERUCIN | Leaf | -- | -- | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| GLUCOIBERIN | Leaf | -- | -- | | | Jim Duke's personal files. |
| Activities (1) | | | | | | |
| Quinone-Reductase-Inducer 15 uM | Tawfig,N. Heaney,R.K.,Plumb,J.A.,Fenwick,G.R.,Musk,S.R.R.,Williamson,G.1995. Dietary Glucosinolates as Blocking Agents Against Carcinogenesis: Glucosinolate Breakdown Products Assessed Induction of Quinone Reductase Activity I.Carcinogenesis 16(5)119-1194 | | | | | |
| GLUCOIBERVERIN | Leaf | -- | -- | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| GLUCONAPIN | Seed | -- | 2.3 | | * | |
| Activities (1) | | | | | | |
| Quinone-Reductase-Inducer | Tawfig,N. Heaney,R.K.,Plumb,J.A.,Fenwick,G.R.,Musk,S.R.R.,Williamson,G.1995. Dietary Glucosinolates as Blocking Agents Against Carcinogenesis: Glucosinolate Breakdown Products Assessed Induction of Quinone Reductase Activity I.Carcinogenesis 16(5)119-1194 | | | | | |
| GLUCORAPHANIN | Leaf | -- | -- | | | Jim Duke's personal files. |
| Activities (1) | | | | | | |
| Quinone-Reductase-Inducer 1 uM | Fahey, J. W., Zhang, Y., Talalay, P. 1997. Broccoli Sprouts: An Exceptionally Rich Source of Inducers of Enzymes that Protects Against Chemical Carcinogens. Proc. Nat. Acad. Sci., 94: 10367-10372. | | | | | |
| GLUTAMIC-ACID | Leaf | 2700.0 | 36099.0 | -0.1 | | USDA's Ag Handbook 8 and sequelae) |
| Activities (8) | | | | | | |
| Antialkali? 500-1,000 mg/day/orl/man | Martindale's 29th | | | | | |
| Antiepileptic | | | | | | |
| Antihyperammonemic | Martindale's 29th | | | | | |
| Antilithic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). | | | | | |
| Antiprostatisic 125-250 mg 3 x/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. | | | | | |
| Antiretardation | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | |
| Anxiolytic | Merck 11th Edition | | | | | |
| Neurotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | |
| GLYCINE | Leaf | 270.0 | 3610.0 | -1.81 | | USDA's Ag Handbook 8 and sequelae) |
| Activities (12) | | | | | | |
| Antiacid | Martindale's 29th | | | | | |
| Antialdosteronic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). | | | | | |
| Antidote (Hypoglycin-A) | Martindale's 29th | | | | | |
| Antiencephalopathic | Martindale's 29th | | | | | |
| Antigastritic | Martindale's 29th | | | | | |
| Antiprostatisic 125-250 mg 3 x/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. | | | | | |
| Antipruritic | Merck 11th Edition | | | | | |
| Antisickling | Ekeke, G.I. and Shode, F.O. 1988. Phenylalanine is the Predominant Antisickling Agent in Cajanus cajan Seed Extract. Planta Medica 56(1): 41, 1990. | | | | | |
| Antiulcer | Martindale's 29th | | | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | | | |
| Neuroinhibitor | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. | | | | | |
| Uricosuric | | | | | | |

| | | | | |
|-----------------------------------|--|-------|--------|--|
| GOITRIN | Plant | -- | -- | * |
| Activities (2) | | | | |
| Antithyroid | Merck 11th Edition | | | |
| Goitrogenic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| GOITRIN | Leaf | -- | -- | * |
| Activities (2) | | | | |
| Antithyroid | Merck 11th Edition | | | |
| Goitrogenic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| HEXACOSAN-1-OL | Leaf | -- | -- | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| HEXOXIDASE | Leaf | -- | -- | Wealth of India. |
| HISTAMINE | Leaf | -- | -- | Wealth of India. |
| Activities (18) | | | | |
| Allergenic | | | | |
| AntiMeniere's | Martindale's 28th | | | |
| Antichilblain | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| Antimigraine | Martindale's 28th | | | |
| Bronchoconstrictor | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| Bronchostimulant | Martindale's 28th | | | |
| Cardiovascular 0.15 mg/kg ivn rbt | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. | | | |
| Gastrostimulant | Martindale's 28th | | | |
| Histaminic Antidote:Adrenaline | Martindale's 29th | | | |
| Hypotensive | Martindale's 28th | | | |
| Irritant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| Myostimulant | Martindale's 29th | | | |
| Radioprotective | Martindale's 28th | | | |
| Secretogogue | Martindale's 29th | | | |
| Spasmogenic | | | | |
| Tachycardic | Martindale's 29th | | | |
| Ulcerogenic 100 mg/kg ipr rat | | | | |
| Vasodilator | Martindale's 29th | | | |
| HISTIDINE | Leaf | 250.0 | 3343.0 | -1.02 USDA's Ag Handbook 8 and sequelae) |
| Activities (7) | | | | |
| Antiarteriosclerotic | | | | |
| Antinephritic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| Antioxidant | | | | |
| Antiulcer | | | | |
| Antiremic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| Essential | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| Oxidant | | | | |
| HYDROXYDIMETHYLBENZOPHENONE | Leaf | -- | -- | * |
| INDOLE-3-ACETONITRILE | Leaf | -- | -- | * |
| Activities (3) | | | | |
| Antitumor | | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | |
| Phytohormone | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| INDOLE-3-ACETONITRILE | Plant | -- | -- | * |

Activities (3)

| | |
|-------------------|--|
| Antitumor | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Phytohormone | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

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|-------------------|------|----|----|------------------|
| INDOLE-3-ALDEHYDE | Leaf | -- | -- | Wealth of India. |
|-------------------|------|----|----|------------------|

| | | | | |
|-------------------|------|----|----|---|
| INDOLE-3-CARBINOL | Leaf | -- | -- | * |
|-------------------|------|----|----|---|

Activities (32)

| | |
|--|---|
| Amphiestrogenic | |
| Anticancer (Cervix) 200-400 mg/day | |
| Antiestrogenic | |
| Antiinflammatory | |
| Antilupus | |
| Antimetastatic | |
| Antipapillomic 200-400 mg/day | |
| Antiproliferant | |
| Antiproliferant | |
| Antirespirotic | |
| Antithyroid | |
| Antitumor | |
| Antitumor | |
| Antitumor (Breast) | |
| Antitumor (Cervix) | |
| Antitumor (Colon) | |
| Antitumor (Prostate) | |
| Apoptotic | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Carcinogenic | |
| Chemopreventive | |
| DNA-Protective | |
| Detoxicant | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Estrogenic | |
| Genotoxic | |
| Hepatoprotective | |
| Mutagenic | |
| NF-kB-Inhibitor | |
| NO-Inhibitor | |
| P450-Inducer | |
| Quinone-Reductase-Inducer 50 mg/kg igs mus | Shertzer, H. G., Sainsbury, M. 1991. Intrinsic Acute Toxicity and Hepatic Enzyme Inducing Properties of the Chemoprotectants Indole-3-carbinol and 5,10-dihydroindeno[1,2-b]indole in... Fold Chem Toxicol, 29(4): 237-242. |
| Tumor-Promoter | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |

| | | | | |
|-------------------|-------|----|----|---|
| INDOLE-3-CARBINOL | Plant | -- | -- | * |
|-------------------|-------|----|----|---|

Activities (32)

Amphiestrogenic

Anticancer (Cervix) 200-400 mg/day

Antiestrogenic

Antiinflammatory

Antilupus

Antimetastatic

Antipapillomic 200-400 mg/day

Antiproliferant

Antiproliferant

Antirespirotic

Antithyroid

Antitumor

Antitumor

Antitumor (Breast)

Antitumor (Cervix)

Antitumor (Colon)

Antitumor (Prostate)

Apoptotic

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Carcinogenic

Chemopreventive

DNA-Protective

Detoxicant

Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.

Estrogenic

Genotoxic

Hepatoprotective

Mutagenic

NF-kB-Inhibitor

NO-Inhibitor

P450-Inducer

Quinone-Reductase-Inducer 50 mg/kg igs mus Shertzer, H. G., Sainsbury, M. 1991. Intrinsic Acute Toxicity and Hepatic Enzyme Inducing Properties of the Chemoprotectants Indole-3-carbinol and 5,10-dihydroindeno[1,2-b]indole in... Fold Chem Toxicol, 29(4): 237-242.

Tumor-Promoter Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.

| | | | | | | |
|-------------------------|-------|----|----|--|--|----------------------------|
| INDOLE-3-CARBOXALDEHYDE | Shoot | -- | -- | | | Jim Duke's personal files. |
|-------------------------|-------|----|----|--|--|----------------------------|

| | | | | | | |
|-------------------------|------|----|----|--|--|------------------|
| INDOLE-3-CARBOXYIC-ACID | Leaf | -- | -- | | | Wealth of India. |
|-------------------------|------|----|----|--|--|------------------|

| | | | | | | |
|-----------------------|-------|----|----|--|--|----------------------------|
| INDOYL-3,3'-DIMETHANE | Shoot | -- | -- | | | Jim Duke's personal files. |
|-----------------------|-------|----|----|--|--|----------------------------|

| | | | | | | |
|------|------|-----|-------|-------|---|--|
| IRON | Leaf | 4.0 | 151.0 | -0.54 | * | |
|------|------|-----|-------|-------|---|--|

Activities (6)

Antiakathisic

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/ori

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

Prooxidant

| | | | | | | |
|------------|------|-------|--------|-------|--|------------------------------------|
| ISOLEUCINE | Leaf | 610.0 | 8156.0 | -1.01 | | USDA's Ag Handbook 8 and sequelae) |
|------------|------|-------|--------|-------|--|------------------------------------|

Activities (3)

Antiencephalopathic?

Martindale's 29th

Antipellagic

Martindale's 28th

Essential

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

| | | | | | | |
|------------|-------|----|----|--|--|---|
| ISOMENTHOL | Plant | -- | -- | | | * |
|------------|-------|----|----|--|--|---|

Activities (1)

Antiacetylcholinesterase IC29=1.2 mM

| | | | | | | |
|------------|------|----|----|--|--|---|
| ISOMENTHOL | Leaf | -- | -- | | | * |
|------------|------|----|----|--|--|---|

Activities (1)

Antiacetylcholinesterase IC29=1.2 mM

| | | | | | |
|---------------|------|-------|-------|------|----------------------------|
| JASMONIC-ACID | Leaf | -- | -- | | Jim Duke's personal files. |
| KAEMPFEROL | Leaf | 100.0 | 300.0 | 0.77 | Jim Duke's personal files. |

Activities (75)

11B-HSD-Inhibitor

5-Lipoxygenase-Inhibitor IC50 (uM)=20

Aldose-Reductase-Inhibitor 100 uM Oliveira, T. T., Nagem, T. J., Miranda, L. C. G., Paula, V. F., Teixeira, M. A. 1997. Inhibitory Action on Aldose Reductase by Soybean Flavonoids. J Braz Chem Soc, 8(3): 211-213.

Antiaflatoxin IC50=8.73 uM

Antiaflatoxin IC50=3.28 ppm

Antiaggregant 30 uM

Antiallergic

Antibacterial 20 ug/ml

Anticancer

Antifertility 250 mg/kg/day/60 days/orl rat Kumar, P., Dixit*, V.P., and Khanna, P. Antifertility Studies of Kaempferol: Isolation and Identification from Tissue Culture of some Medicinally Important Plant Species. Plantas medicinales et phytotherapie, 23: 193-201, 1989.

Antingivitic 20 ug/ml

Antihyperlipidemic 23-92 ug/ml Amoroso, M., Simoes, C.M.O., Girre, L., et al. Synergistic Effect Of Flavones And Flavonols Against Herpes Simplex Virus Type 1 In Cell Culture. Comparison With The Antiviral Activity Of Propolis. J. of Natural Products 55(12):1732-1740, 1992.

Antihistaminic 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.

Antiimplantation

Antiinflammatory 20 mg/kg

Antiinflammatory 200 mg/kg ipr rat

Antileukemic IC50=3.1 ug/ml Life Sciences 55: 1061.

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

Antimutagenic ID50=10-40 nM Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.

Antioxidant IC50=40 uM

Antioxidant 3/4 quercetin

Antioxidant IC50=1.2 ug/ml

Antiperiodontic 20 ug/ml

Antiplatelet 20 ug/ml

Antiradicular 7 x quercetin

Antiseptic 20 ug/ml

Antiserotonin 200 mg/kg ipr rat

Antispasmodic 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.

Antistaphylococcal

Antitumor

Antitumor-Promoter Yasukawa, K., Takido, M., Takeuchi, M., Sato, Y., Nitta, K., and Nakagawa, S. 1989. Inhibitory Effects of Flavonol Glycosides on 12-O-Tetradecanoylphorbol-13-acetate-Induced Tumor Promotion. Chem. Pharm. Bull. 38(3): 774-776, 1990.

Antiulcer 50-200 mg/kg ipr rat

Antiviral 23-92 ug/ml

Apoptotic 60 uM

Aromatase-Inhibitor IC12=1 uM/l Journal of Medicinal Food 2: 235.1999.

COX-2-Inhibitor

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Carcinogenic Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.

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

Copper-Chelator

Cyclooxygenase-Inhibitor IC50 (uM) =20

Cytotoxic

Diaphoretic? Lawrence Review of Natural Products, Dec-90.

Diuretic

Estrogenic EC50=0.1-25 uM/l Journal of Medicinal Food 2: 227.1999.

| | |
|---|---|
| Estrogenic EC50=0.56 uM | |
| Fungicide 20 ug/ml | Father Nature's Farmacy: The aggregate of all these three-letter citations. |
| HIV-RT-Inhibitor IC50=50-150 ug/ml | Garcia, J., Morin,* C., Nyasse, B., Sondengam, B-L., Tchouankeu, J-C., and Tsamo, E. Complete Structural Assignments Of An Ergosterol Derivative From Entandrophragma utile. Journal of Natural Products, 54(1): 136-142, 1991. |
| Hepatoprotective IC50=5.46 uM | |
| Hepatoprotective IC50=1.30 ppm | |
| Hypotensive | |
| ICAM-1-Inhibitor | |
| Inotropic | |
| Iodothyronine-Deiodinase-Inhibitor | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| JNK-Inhibitor | |
| Lipoxygenase-Inhibitor | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| MAO-Inhibitor | |
| Mutagenic | |
| NO-Inhibitor IC50=13.9 uM | |
| Natriuretic | |
| Neuroprotective | |
| PAF-Inhibitor | |
| Pesticide | |
| Protisticide | Meckes, M., Calzada, F., Tapia-Contreras, A., Cedillo-Rivera, R. 1999. Antiprotozoal Properties of Helianthemum glomeratum. Phytotherapy Research, 13(2): 102-105. |
| Quinone-Reductase-Inducer 3 uM | |
| TNF-alpha-Inhibitor IC50=3.99 uM | |
| Teratologic | |
| Topoisomerase-I-Inhibitor | Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. Toxicol Ind Health, 14: 223-237. |
| Topoisomerase-II-Inhibitor IC50=8.1 ug/ml | Constantinou, A., Mehta, R., Runyan, C., Rao, K., Vaughan, A., Moon, R. 1995. Flavonoids as DNA Topoisomerase Antagonists and Poisons: Structure-Activity Relationships. J Natural Products, 58: 217-225. |
| Tyrosinase-Inhibitor ID50=230 uM | |
| Uterotrophic EC50=0.1-25 uM/l | Journal of Medicinal Food 2: 227.1999. |
| Vasodilator | |
| cAMP-Phosphodiesterase-Inhibitor | |
| iNOS-Inhibitor IC50=<15 uM | |
| iNOS-Inhibitor IC50=13.9 uM | |

| | | | | | |
|--------------------------------------|------|----|----|--|----------------------------|
| KAEMPFEROL-3-0-SOPHOROSIDE | Leaf | -- | -- | | Jim Duke's personal files. |
| KAEMPFEROL-3-FERULOYL-SOPHOROSIDE | Leaf | -- | -- | | Jim Duke's personal files. |
| KAEMPFEROL-3-SINAPOYL-SOPHOROSIDE | Leaf | -- | -- | | Jim Duke's personal files. |
| KAEMPFEROL-3-SOPHOROSIDE-7-GLUCOSIDE | Leaf | -- | -- | | Jim Duke's personal files. |
| KAEMPFEROL-7-GLUCOSIDE | Leaf | -- | -- | | Jim Duke's personal files. |

Activities (1)

Antiinflammatory

| | | | | | |
|--------------|------|-------|--------|-------|------------------------------------|
| KILOCALORIES | Leaf | 240.0 | 3209.0 | 0.31 | USDA's Ag Handbook 8 and sequelae) |
| LANTHANUM | Leaf | 6.7 | 20.3 | 0.27 | * |
| LEAD | Leaf | 0.002 | 5.8 | -0.53 | * |
| LEUCINE | Leaf | 630.0 | 8423.0 | -1.25 | USDA's Ag Handbook 8 and sequelae) |

Activities (2)

Antiencephalopathic Martindale's 29th
 Essential Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

| | | | | | |
|---------------|------|-------|--------|-------|------------------------------------|
| LINOLEIC-ACID | Leaf | 350.0 | 4680.0 | -0.59 | USDA's Ag Handbook 8 and sequelae) |
|---------------|------|-------|--------|-------|------------------------------------|

| | |
|---|--|
| 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 | |
| Antiretinopathic 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 |
| Antispasmodic | |
| Antispasmophilic 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 | |

MALIC-ACID Leaf -- -- Jim Duke's personal files.

Activities (15)

| | |
|--------------------------------|--|
| Antiatherosclerotic | |
| Antibacterial | |
| Antifibromyalgic 300 mg 3x/day | |
| Antioxidant Synergist | Merck 11th Edition |
| Antiseborrheic | |
| Antiseptic | Martindale's 29th |
| Antitubercular | |
| Antitumor | Economic & Medicinal Plant Research, 6: 235. |
| Bacteristat | |
| Bruchiphobe | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Hemopoietic | |
| Laxative? | Lawrence Review of Natural Products, Sep-91. |
| Mycobactericide | |
| Pesticide | |
| Sialogogue | Martindale's 29th |

MANGANESE Leaf 1.0 45.0 -0.39 *

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 | |

MENTHOL

Leaf

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Activities (63)

| | |
|--------------------------------------|---|
| Allergenic | Martindale's 29th |
| Analgesic | Martindale's 28th |
| Anesthetic 2,000 ppm | 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. |
| Antiacetylcholinesterase IC50=2.0 mM | |
| Antiaggregant IC50=750 | |
| Antiallergic | J. Food Hyg. Soc. Jap. 33(6): 569. |
| Antiasthmatic | Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livinston, Edinburgh. |
| Antibacillus MIC=1.25 mg/ml | |
| Antibacterial MIC=0.625-2.5 | |
| Antibronchitic | Martindale's 28th |
| Antidandruff | A.L.L. Hunting. Encyclopedia of Shampoo Ingredients. Micelle Press, Cranford NJ. 467 pp. |
| Antiescherichic MIC=1.25 mg/ml | |
| Antihalitotic | American Health, 12(4): 17, 1993. |
| Antihistaminic | J. Food Hyg. Soc. Jap. 33(6): 569. |
| Antiinflammatory | Martindale's 28th |
| Antilisteria MIC=0.625 mg/ml | |
| Antineuralgic | |
| Antiodontalgic | Martindale's 28th |
| Antipruritic | 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. |
| Antipyretic | |
| Antirheumatic | Martindale's 28th |
| Antisalmonella MIC=0.625 mg/ml | |
| Antiseptic 4 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antisinusitic | Martindale's 28th |
| Antispasmodic ED50=0.01 mg/ml | Fitoterapia No.59-1984. |
| Antistaphylococcic MIC=0.625 mg/ml | |
| Antistreptococcic MIC=0.4 mg/ml | |
| Antitartar | |
| Antivaginitic | |
| Antivulvitic | |
| Bradycardic 65 mg/3 x day/woman | Martindale's 28th |
| Bronchomucolytic | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200. |
| Bronchomucotropinc | 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. |
| Bronchorrhheic | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200. |
| CNS-Depressant | |
| CNS-Stimulant | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Calcium-Antagonist | |

| | |
|-----------------------------------|---|
| Candidicide MIC=0.625 mg/ml | |
| 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. |
| Choleretic | |
| Ciliotoxic | 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. |
| Congestant | 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. |
| Counterirritant | |
| Decongestant? 11 mg/man | Eccles, R., et al. 1989. The effects of oral administration of (-)-menthol on nasal resistance to airflow and nasal sensation of airflow in subjects suffering from nasal congestion associated with the common cold. <i>J. Pharm. Pharmacol.</i> 42: 652-654, 1990. |
| Dermatitigenic | |
| Diaphoretic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs.</i> CRC Press, Boca Raton, FL 388 pp. |
| Enterorelaxant | <i>J. Aromatherapy</i> 4: 22. |
| Expectorant | 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. |
| Gastrosedative | Merck 11th Edition |
| Irritant | 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. |
| Myorelaxant | Martindale's 29th |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Neurodepressant | 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. |
| Neuropathogenic 40-100 mg/day/rat | 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. |
| Nociceptive | 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. |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Refrigerant | 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. |
| Rubefacient | |
| Termiticide | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Transdermal | |
| Vibriocide | |

MENTHOL Plant -- -- *

Activities (63)

| | |
|--------------------------------------|--|
| Allergenic | Martindale's 29th |
| Analgesic | Martindale's 28th |
| Anesthetic 2,000 ppm | 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. |
| Antiacetylcholinesterase IC50=2.0 mM | |
| Antiaggregant IC50=750 | |
| Antiallergic | <i>J. Food Hyg. Soc. Jap.</i> 33(6): 569. |
| Antiasthmatic | Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy.</i> Churchill Livingstone, Edinburgh. |
| Antibacillus MIC=1.25 mg/ml | |
| Antibacterial MIC=0.625-2.5 | |
| Antibronchitic | Martindale's 28th |
| Antidandruff | A.L.L. Hunting. <i>Encyclopedia of Shampoo Ingredients.</i> Micelle Press, Cranford NJ. 467 pp. |
| Antiescherichic MIC=1.25 mg/ml | |
| Antihalitosis | <i>American Health</i> , 12(4): 17, 1993. |
| Antihistaminic | <i>J. Food Hyg. Soc. Jap.</i> 33(6): 569. |
| Antiinflammatory | Martindale's 28th |
| Antilisteria MIC=0.625 mg/ml | |
| Antineuralgic | |
| Antiodontalgic | Martindale's 28th |
| Antipruritic | 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. |
| Antipyretic | |
| Antirheumatic | Martindale's 28th |
| Antisalmonella MIC=0.625 mg/ml | |
| Antiseptic 4 x phenol | Wagner & Wolff, eds. 1977. <i>New Natural Products (RS164. I56. 176)</i> |
| Antisinusitic | Martindale's 28th |

| | |
|---------------------------------------|--|
| Antispasmodic ED50=0.01 mg/ml | Fitoterapia No.59-1984. |
| Antistaphylococcic MIC=0.625 mg/ml | |
| Antistreptococcic MIC=0.4 mg/ml | |
| Antitartar | |
| Antivaginitic | |
| Antivulvitic | |
| Bradycardic 65 mg/3 x day/woman | Martindale's 28th |
| Bronchomucolytic | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200. |
| Bronchomucotropic | 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. |
| Bronchorrhic | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200. |
| CNS-Depressant | |
| CNS-Stimulant | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Calcium-Antagonist | |
| Candidicide MIC=0.625 mg/ml | |
| 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 | |
| Ciliotoxic | 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. |
| Congestant | 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. |
| Counterirritant | |
| Decongestant? 11 mg/man | Eccles, R., et al. 1989. The effects of oral administration of (-)-menthol on nasal resistance to airflow and nasal sensation of airflow in subjects suffering from nasal congestion associated with the common cold. J. Pharm. Pharmacol. 42: 652-654, 1990. |
| Dermatitigenic | |
| Diaphoretic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Enterorelaxant | J. Aromatherapy 4: 22. |
| Expectorant | 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. |
| Gastrosedative | Merck 11th Edition |
| Irritant | 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. |
| Myorelaxant | Martindale's 29th |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Neurodepressant | 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. |
| Neuropathogenic 40- 100 mg/day/rat | 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. |
| Nociceptive | 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. |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Refrigerant | 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. |
| Rubefacient | |
| Termiticide | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Transdermal | |
| Vibriocide | |

| | | | | | |
|---------|------|----|-------|-------|---|
| MERCURY | Leaf | -- | 0.013 | -0.79 | * |
|---------|------|----|-------|-------|---|

Activities (1)

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

| | | | | | |
|------------|------|-------|--------|-------|------------------------------------|
| METHIONINE | Leaf | 120.0 | 1604.0 | -1.23 | USDA's Ag Handbook 8 and sequelae) |
|------------|------|-------|--------|-------|------------------------------------|

| Activities (15) | |
|--|--|
| Anticataract | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antidote (Acetaminophen) 10 g/16hr/man/orl | Martindale's 29th |
| Antidote (Paracetamol) 10 g/16hr/man/orl | Martindale's 29th |
| Antieczemic | |
| Antihepatotic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antioxidant | |
| Antiparkinsonian 1-5 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Emetic | Martindale's 29th |
| Essential | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Glutathionigenic | Martindale's 29th |
| Hepatoprotective | |
| Lipotropic | Merck 11th Edition |
| Urine-Acidifier 200 mg/3x/day/man/orl | Martindale's 28th |
| Urine-Deodorant | Martindale's 29th |

| | | | | | |
|--------------|------|-----|------|-------|----------------------------|
| METHYL-AMINE | Leaf | 3.4 | 22.7 | -0.18 | Jim Duke's personal files. |
|--------------|------|-----|------|-------|----------------------------|

| Activities (1) | | | | | |
|---------------------------------------|------|-----|-----|------|------------------|
| Irritant | | | | | |
| METHYL-SULFINYL-ALKYL-ISOTHIOCYANATES | Leaf | -- | -- | | * |
| METHYL-SULFONYL-ALKYL-ISOTHIOCYANATES | Leaf | -- | -- | | * |
| MEVALONIC-ACID | Leaf | -- | -- | | Wealth of India. |
| MOLYBDENUM | Leaf | 0.1 | 8.7 | 2.96 | * |

| Activities (2) | | | | | |
|------------------------------|--|-----|------|------|----------------------------|
| Anticancer (Esophagus)? | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | | | |
| Antitumor (Esophagus)? | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | | | |
| MONOBUTYLPHTHALATE | Leaf | -- | -- | | * |
| MONOOCTYLPHTHALATE | Leaf | -- | -- | | * |
| N-(1)-METHOXYBRASSININ | Leaf | -- | 63.0 | | Jim Duke's personal files. |
| N-BUTYL-ISOTHIOCYANATE | Leaf | -- | -- | | Wealth of India. |
| N-HEXANAL | Leaf | -- | -- | | Wealth of India. |
| N-METHYL-ANILINE | Leaf | -- | 0.3 | -1.0 | Jim Duke's personal files. |
| N-METHYL-BETA-PHENETHYLAMINE | Leaf | 0.5 | 2.0 | | Jim Duke's personal files. |
| N-METHYL-PHENETHYLAMINE | Leaf | 0.5 | 3.7 | 1.38 | Jim Duke's personal files. |
| N-NONACOSANE | Leaf | -- | -- | | Jim Duke's personal files. |

| Activities (1) | | | | | |
|----------------|--|-----|-----|------|----------------------------|
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. | | | | |
| N-PENTYL-AMINE | Leaf | 0.6 | 1.4 | 1.41 | Jim Duke's personal files. |
| NAPOLEIFERIN | Seed | -- | 0.1 | | * |
| NARCOTINE | Leaf | -- | -- | | Jim Duke's personal files. |

| Activities (6) | |
|--------------------|--|
| Analgesic | |
| Antiherpetic | |
| Antitussive | |
| Antiviral | |
| Artemicide LC50=87 | |
| Sedative | |

| | | | | |
|----------------------------------|--|-----|------|----------------------------|
| NEO-CHLOROGENIC-ACID | Plant | -- | -- | * |
| Activities (2) | | | | |
| Antiinflammatory | | | | |
| Vulnerary | | | | |
| NEO-CHLOROGENIC-ACID | Leaf | -- | -- | * |
| Activities (2) | | | | |
| Antiinflammatory | | | | |
| Vulnerary | | | | |
| NEOGLUCOBRASSICIN | Leaf | -- | -- | * |
| Activities (1) | | | | |
| Quinone-Reductase-Inducer 100 uM | Fahey, J. W., Zhang, Y., Talalay, P. 1997. Broccoli Sprouts: An Exceptionally Rich Source of Inducers of Enzymes that Protects Against Chemical Carcinogens. Proc. Nat. Acad. Sci., 94: 10367-10372. | | | |
| NEOGLUCOBRASSICIN | Plant | -- | -- | * |
| Activities (1) | | | | |
| Quinone-Reductase-Inducer 100 uM | Fahey, J. W., Zhang, Y., Talalay, P. 1997. Broccoli Sprouts: An Exceptionally Rich Source of Inducers of Enzymes that Protects Against Chemical Carcinogens. Proc. Nat. Acad. Sci., 94: 10367-10372. | | | |
| NEOMENTHOL | Leaf | -- | -- | * |
| Activities (2) | | | | |
| Antispasmodic ED50=0.033 mg/ml | Fitoterapia No.59-1984. | | | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| NEOMENTHOL | Plant | -- | -- | * |
| Activities (2) | | | | |
| Antispasmodic ED50=0.033 mg/ml | Fitoterapia No.59-1984. | | | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| NEOXANTHIN | Leaf | -- | -- | Jim Duke's personal files. |
| Activities (2) | | | | |
| Colorant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| Ubiquiot | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| NIACIN | Leaf | 3.0 | 40.0 | -0.7 * |

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 | |
| Antiacrodynamic | |
| 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 |

NICKEL Leaf 0.02 8.7 -0.25 *

Activities (3)

| | |
|-----------------|--|
| Antiadrenalinic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Anticirrhotic? | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Insulin-Sparing | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |

NITROGEN Leaf 2100.0 37500.0 -0.31 ACTA AGRIC SCAND SUPPL 22: 1980

NONACOSAN-15-ONE Leaf -- -- Jim Duke's personal files.

OLEIC-ACID Leaf 130.0 1738.0 -0.43 USDA's Ag Handbook 8 and sequelae)

Activities (18)

5-Alpha-Reductase-Inhibitor

Allergenic

Alpha-Reductase-Inhibitor

Anemiagenic

Antiallopecic

Antiandrogenic

Antiinflammatory
IC50=21 uMAntileukotriene-D4
IC50=21 uM

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Choleretic 5 ml/man

Dermatitigenic

FLavor FEMA 1-30 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Hypocholesterolemic Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)

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

Irritant Merck 11th Edition

Percutaneostimulant Seki, T., Toeda, C., Kawaguchi, T., Juni, K., Sugibayashi, K., and Morimoto, Y. 1990. Enhanced Transdermal Delivery of Zidovudine in Rats and Human Skin. Chem. Pharm. Bull. 38(11): 3086-3089, 1990.

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

Propecic

| | | | | | |
|---------|------|--------|---------|-------|------------------------------------|
| OXALATE | Leaf | 1000.0 | 13370.0 | -0.63 | USDA's Ag Handbook 8 and sequelae) |
|---------|------|--------|---------|-------|------------------------------------|

| | | | | | |
|-------------|------|------|-------|-------|---|
| OXALIC-ACID | Leaf | 30.0 | 350.0 | -0.47 | * |
|-------------|------|------|-------|-------|---|

Activities (9)

Acaricide

Antiseptic

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

Fatal Martindale's 29th

Hemostatic Merck 11th Edition

Irritant

Pesticide

Renotoxic Merck 11th Edition

Varroacide

| | | | | | |
|-----------------|------|-----|-----|-------|---|
| P-COUMARIC-ACID | Leaf | 0.5 | 9.0 | -0.35 | * |
|-----------------|------|-----|-----|-------|---|

Activities (25)

| | |
|--|---|
| Aldose-Reductase-Inhibitor 4 ug/ml (weak activity) | Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. Sankyo Kenkyusho Nempo, 43: 99-110. |
| Allelopathic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antibacterial | Pharmazie, 46: 156, 1991. |
| Anticlastogen | |
| Antifertility | |
| Antihepatotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antileukemic IC50=25-56 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. |
| Antinitrosaminic | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Antioxidant IC24=30 ppm | |
| Antioxidant 1/3 BHA | |
| Antiperoxidant IC50=>100 uM | Planta Medica, 57: A54, 1991. |
| Antiseptic | |
| Antispasmodic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Antitumor | |
| Cancer-Preventive | |
| Chemopreventive | |
| Choleretic | |
| Cytotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Diaphoretic? | Lawrence Review of Natural Products, Dec-90. |
| Fungicide | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Lipoxygenase-Inhibitor IC11=5 mM | Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690. |
| Pesticide | |
| Prostaglandigenic | |
| Prostaglandin-Synthesis-Inhibitor | |
| Tyrosinase-Inhibitor ID50=3,650 uM | |

| | | | | | |
|------------------------------------|------|-------|--------|-------|------------------------------------|
| P-COUMARIC-ACID-O-BETA-D-GLUCOSIDE | Leaf | -- | -- | | Jim Duke's personal files. |
| PALMITIC-ACID | Leaf | 190.0 | 2540.0 | -0.34 | USDA's Ag Handbook 8 and sequelae) |

Activities (13)

| | |
|-----------------------------|--|
| 5-Alpha-Reductase-Inhibitor | |
| Antialopecic | |
| Antiandrogenic | |
| Antifibrinolytic | Economic & Medicinal Plant Research, 1: 53. |
| Antioxidant IC40=60 | |
| FLavor FEMA 1 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Hemolytic | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| Hypercholesterolemic | Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.) |
| Lubricant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Nematicide | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Pesticide | |
| Propepic | |
| Soap | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

| | | | | | |
|------------------|------|-----|------|-------|------------------------------------|
| PANTOTHENIC-ACID | Leaf | 1.4 | 19.0 | -0.45 | USDA's Ag Handbook 8 and sequelae) |
|------------------|------|-----|------|-------|------------------------------------|

| Activities (11) | |
|--------------------------------------|--|
| Antiallergic 100-500 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antiarthritic 500-2,000 mg/day | |
| Anticephalagic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Anticlaudificant? | Martindale's 29th |
| Antidermatitic | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |
| Antifatigue | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antihypercholesterolemic 300 mg/meal | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antiielus? | Martindale's 29th |
| Antiinsomniac? | Martindale's 29th |
| Antirheumatic? | Martindale's 29th |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |

PECTIN Leaf -- 45700.0 0.26 Wealth of India.

| Activities (24) | |
|-------------------------------|---|
| Antiatheromic 15 g/man/day | Cerda, J.J. Pectin in Health and Disease. HortScience, 25(12): 1485, 1990. |
| Antibacterial | |
| Antidiabetic 10 g/man/day/orl | |
| Antidiarrheic | Merck 11th Edition |
| Antienteritic | |
| Antigallstone | |
| Antigastritic | |
| Antilithic | |
| Antimetastatic | |
| Antimutagenic | |
| Antiobesity | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Antitumor (Colon) | |
| Antitumor (Prostate) | |
| Antitussive | |
| Antiulcer | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Chemopreventive | |
| Demulcent | |
| Fungicide | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Hemostat | |
| Hypocholesterolemic | |
| Hypoglycemic | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Peristaltic | |
| Pesticide | |

PHENETHYL-CYANIDE Leaf -- -- Wealth of India.

PHENETHYLAMINE Leaf 2.1 8.6 1.37 Jim Duke's personal files.

| Activities (3) | |
|----------------|---|
| Insectifuge | Grainge, M. and Ahmed, S., Handbook of Plants with Pest-Control Properties, John Wiley & Sons, New York, NY, 1988, 470. |
| Irritant | Merck 11th Edition |
| Pesticide | |

PHENYLALANINE Leaf 390.0 5214.0 -1.31 USDA's Ag Handbook 8 and sequelae)

| Activities (7) | |
|--------------------------------------|--|
| AntiADD 587 mg/day/orl | Martindale's 29th |
| Antidepressant 50-4,000 mg/day/man | |
| Antiparkinsonian 200-500 mg/day/man | Martindale's 28th |
| Antisickling 690 ug/ml | |
| Antivertiginic 100 mg/kg/day/orl/man | Martindale's 29th |
| Monoamine-Precursor | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Tremorigenic 1,600-12,600 mg/man/day | Martindale's 28th |

PHENYLETHYL-ISOTHIOCYANATE Leaf -- -- USDA's Ag Handbook 8 and sequelae)

PHEOPHYTIN-A Leaf -- -- Jim Duke's personal files.

| | | | | | | |
|---------------------------------|--------|---|---------|-------|------------------------------------|--|
| Activities (3) | | | | | | |
| Antigenotoxic | | McKenna, D. J., Hughes, K., and Jones, K. 2000. Green Tea Monograph. Alternative Therapies, 6(3): 61-82. | | | | |
| Antiinflammatory | | McKenna, D. J., Hughes, K., and Jones, K. 2000. Green Tea Monograph. Alternative Therapies, 6(3): 61-82. | | | | |
| Antimutagenic | | Economic & Medicinal Plant Research, 6: 235. | | | | |
| PHOSPHOLIPIDS | Leaf | 80.0 | 2400.0 | -1.0 | * | |
| PHOSPHORUS | Leaf | 214.0 | 6500.0 | 0.28 | * | |
| 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. | | | | |
| PHYLLOQUINONE | Flower | 0.19 | 3.39 | | * | |
| Activities (5) | | | | | | |
| Antihemorrhagic 1 mg ims man | | | | | Martindale's 28th | |
| Fungicide | | | | | | |
| Hypotensive | | | | | | |
| Pesticide | | | | | | |
| Toxic | | | | | Martindale's 28th | |
| PHYTOSTEROLS | Leaf | 110.0 | 1471.0 | -0.33 | USDA's Ag Handbook 8 and sequelae) | |
| Activities (2) | | | | | | |
| Antiprostatic | | | | | | |
| Hypocholesterolemic | | | | | | |
| POTASSIUM | Leaf | 1140.0 | 42500.0 | 0.54 | * | |
| 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 | | | | | | |
| PROGOITRIN | Seed | -- | 1.9 | | * | |
| Activities (1) | | | | | | |
| Quinone-Reductase-Inducer 15 µM | | Tawfig,N. Heaney,R.K.,Plumb,J.A.,Fenwick,G.R.,Musk,S.R.R.,Williamson,G.1995. Dietary Glucosinolates as Blocking Agents Against Carcinogenesis: Glucosinolate Breakdown Products Assessed Induction of Quinone Reductase Activity I.Carcinogenesis 16(5)119-1194 | | | | |
| PROGOITRIN | Leaf | -- | -- | | Jim Duke's personal files. | |
| Activities (1) | | | | | | |
| Quinone-Reductase-Inducer 15 µM | | Tawfig,N. Heaney,R.K.,Plumb,J.A.,Fenwick,G.R.,Musk,S.R.R.,Williamson,G.1995. Dietary Glucosinolates as Blocking Agents Against Carcinogenesis: Glucosinolate Breakdown Products Assessed Induction of Quinone Reductase Activity I.Carcinogenesis 16(5)119-1194 | | | | |
| PROLINE | Leaf | 2380.0 | 31821.0 | 2.98 | USDA's Ag Handbook 8 and sequelae) | |
| PROP-2-ENYL-ISOTHIOCYANATE | Leaf | -- | -- | | Jim Duke's personal files. | |
| PROP-2-ENYL-ISOTHIOCYANATE | Plant | -- | -- | | * | |
| PROPENYL-CYANIDE | Leaf | -- | -- | | * | |

| | | | | | |
|----------------------|-------|---------|----------|-------|---|
| PROPYL-GLUCOSINOLATE | Plant | -- | -- | * | |
| PROPYL-GLUCOSINOLATE | Leaf | -- | -- | * | |
| PROTEIN | Leaf | 10780.0 | 179425.0 | -0.32 | * |
| PROTOCATECHUIC-ACID | Leaf | -- | -- | * | |

Activities (43)

| | |
|--|---|
| Allergenic | |
| Alpha-Glucosidase-Inhibitor | |
| AntiLegionella | |
| Antiarrhythmic | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 407. |
| Antiasthmatic | |
| Antibacterial | Lamikanra, A., Ogundaini, A.O., and Ogungbamila*, F.O. Antibacterial Constituents of Alchornea cordifolia Leaves. Phytotherapy Research 4(5): 198. |
| Anticlastogen | |
| Antihepatotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antiherpetic | |
| Antiinflammatory | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antiscleremic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antileukemic | |
| Antimelanogenic ID60=0.5 uM/ml | |
| Antimutagenic | |
| Antiophidic | Economic & Medicinal Plant Research, 5: 363. |
| Antioxidant 2/3 quercetin | |
| Antioxidant 10 x alpha-tocopherol | |
| Antioxidant 1/2 BHT | |
| Antiperoxidant IC50=>100 uM | Planta Medica, 57: A54, 1991. |
| Antiperoxidant IC75=200 ug/ml | |
| Antiradicular | |
| Antiseptic | |
| Antispasmodic EC50=4.6-17 uM | Ortiz de Urbina, J.J., Martin, M.L., Sevilla, M.A., Montero, M.J., Carron, R., and San Roman, L. Antispasmodic Activity on Rat Smooth Muscle of Polyphenol Compounds Caffeic and Protocatechic Acids. Phytotherapy Research 4(2): 73, 1990. |
| Antitumor (Colon) | |
| Antitumor (Mouth) | |
| Antitumor (Skin) | |
| Antitussive | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200. |
| Antiviral | |
| Apoptotic | |
| Carcinogenic | |
| Cardioprotective | |
| Chemopreventive 100 ppm orl rat | |
| Fungicide 500 ug/ml | 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. |
| Glutathione-Depleting | |
| Hepatotoxic | |
| Immunostimulant | Economic & Medicinal Plant Research, 1: 124. |
| Nephrotoxic | |
| Pesticide | |
| Phagocytotic | Economic & Medicinal Plant Research, 1: 124. |
| Prostaglandinogenic | |
| Secretagogue | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Tyrosinase-Inhibitor ID60=0.5 uM/ml | |
| Ubiquitot | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

| | | | | |
|---------------------|-------|----|----|---|
| PROTOCATECHUIC-ACID | Plant | -- | -- | * |
|---------------------|-------|----|----|---|

| | |
|--|---|
| Aldose-Reductase-Inhibitor IC50=0.84 ug/ml cow | 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 |
| Aldose-Reductase-Inhibitor IC50=0.344 uM | Mao, X. M., Zhang, J. Q. 1993. Inhibition of Aldose Reductase by Extracts of Chinese Herbal Medicine. Zhongguo Zhongyao Zazhi , 18(10): 623-624. |
| Allelochemic IC82=1 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. |
| Allergenic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Analgesic | |
| AntiCrohn's 400 mg/man/3x/day | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| AntiGTF ID50=120 ug/ml | |
| AntiHIV | |
| AntiPMS 500 mg/2x/day/wmn | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiaflatoxin IC50=25 uM | |
| Antiaflatoxin IC50=7.5 ppm | |
| Antiaggregant IC50=55 uM | Economic & Medicinal Plant Research, 5: 333. |
| Antiaggregant 30 uM | |
| Antiaging | |
| Antiallergic IC50=14 uM | Jim Duke's personal files. |
| Antialzheimeran | |
| Antianaphylactic | Meli, R., Autore, G., Di Carlo, G., Capasso, F. Inhibitory Action of Quercetin on Intestinal Transit in Mice. Phytotherapy Research 4(5): 201, 1990. |
| Antiangiogenic | |
| Antiarthritic | |
| Antiasthmatic IC50=14 uM | |
| Antiatherosclerotic | |
| Antibacterial | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Anticarcinomic (Breast) IC50=1.5 uM | Medline (post 1990 searches filed in my computer) |
| Anticariogenic ID50=120 ug/ml | |
| Anticataract | |
| Anticolitic 400 mg/man/3x/day | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Anticomplementary | |
| Anticystitic 1,000 mg/day/4 weeks | |
| Antidepressant | |
| Antidermatitic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antidiabetic | |
| Antielaastase IC50=0.8 ug/ml | |
| Antiencephalitic | Economic & Medicinal Plant Research, 5: 199. |
| Antiescherichic | |
| Antiestrogenic | |
| Antifeedant IC52=<1,000 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. |
| Antifibrosarcomic | |
| Antiflu | Vlietinck, A.J. and Dommissie, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart. |
| Antigastric | Rastitel'nye Resursy, 21: 85. |
| Antigonadotropic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antihepatotoxic | Joyeux, M., Rolland, A., Fleurentin, J., Mortier, F., and Dorfman, P. 1989. Tert-Butyl Hydroperoxide-Induced Injury in Isolated Rat Hepatocytes: A Model for Studying Anti-Hepatotoxic Crude Drugs. Planta Medica 56(2): 171-173, 1990. |
| Antiherpetic 48-150 ug/ml | |
| Antihistaminic IC50=<10 uM | |
| Antihydrophobic | Vlietinck, A.J. and Dommissie, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart. |
| Antihypertensive | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Antiinflammatory 20-150 mg/kg | Fitoterapia No.5-1990. |
| Antileishmanic IC50=64 | |
| Antileukemic IC50=10 uM | Economic & Medicinal Plant Research, 5: 225. |
| Antileukemic IC50=>10 ug/ml | Life Sciences 55: 1061. |
| Antileukemic 5.5-60 uM | |
| Antileukotriene | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiliperoxidant IC67=50 | |
| Antimalarial IC50=1-6.4 ug/ml | Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987. |

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|------------------------------------|---|
| Antimelanomic | |
| Antimetastatic | |
| Antimutagenic ID50=2-5 nM | Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp. |
| Antimutagenic ID50=0.62 ug/ml | |
| Antimyocarditic | Economic & Medicinal Plant Research, 5: 199. |
| Antinitrosaminic | |
| Antinociceptive | |
| Antioxidant IC96=300 ppm | Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp. |
| Antioxidant ED50=2.3 uM | Seidel, V., Verholle, M., Malard, Y., Tilleguin, F., Fruchart, J-C., Duriez, P., Bailleul, F., Teissier, E. 2000. Phenylpropanoids from <i>Ballota nigra</i> L. Inhibit in vitro LDL Peroxidation. <i>Phytotherapy Research</i> , 14(2): 93-98. |
| Antioxidant 4.7 x Vit. E | |
| Antioxidant IC47=10 uM | |
| Antipancreatic | Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY. |
| Antiperiodontal | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiperistaltic | |
| Antipermeability | |
| Antiperoxidant | <i>Planta Medica</i> , 57: A110, 1991. |
| Antipharyngitic | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiplateau | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiplasmodial IC50=13-64 | |
| Antipodriac | |
| Antipolio | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiproliferant 10 nM | |
| Antiprostanoid | |
| Antiprostatic | Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY. |
| Antipsoriac | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiradicular IC50=4.6 uM | <i>Planta Medica</i> , 56(6): 695, 1990. |
| Antispasmodic | |
| Antistreptococcic ID50=120 ug/ml | |
| Antithiamin | Phenolic Compounds in Food and Their Effects on Health, 69. |
| Antithrombic | |
| Antitrypanosomic IC50=13 | |
| Antitumor 10 uM | |
| Antitumor (Bladder) | |
| Antitumor (Breast) | |
| Antitumor (Colon) | |
| Antitumor (Lung) | |
| Antitumor (Ovary) | |
| Antitumor (Skin) 20 uM | |
| Antitumor-Promoter | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiulcer | |
| Antiviral IC50=10 uM | Economic & Medicinal Plant Research, 5: 225. |
| Antiviral 48-150 ug/ml | Amoros, M., Simoes, C.M.O., Girre, L., et al. Synergistic Effect Of Flavones And Flavonols Against Herpes Simplex Virus Type 1 In Cell Culture. Comparison With The Antiviral Activity Of Propolis. <i>J. of Natural Products</i> 55(12):1732-1740, 1992. |
| Apoptotic 20-60 uM | |
| Bacteristat 10 mg/ml | |
| Bradycardiac | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| COMT-Inhibitor | |
| COX-2-Inhibitor <40 uM | |
| Calmodulin-Antagonist | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidicide | |
| Capillariprotective | Merck 11th Edition |
| Carcinogenic 40,000 ppm (diet) mus | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp. |
| Catabolic | |
| Copper-Chelator | |
| Cyclooxygenase-Inhibitor | |
| Cytochrome-P450-1A2-Inhibitor | |
| Cytotoxic ED50=70 ug/ml | Matsukawa, Y., et al. The Effect of Quercetin and Other Flavonoids on Cell Cycle Progression and Growth of Human Gastric Cancer Cells. <i>Planta Medica</i> , 56(6): 677, 1990. |
| Cytotoxic IC82=100 ug/ml | <i>Planta Medica</i> , 57: A113, 1991. |
| Deiodinase-Inhibitor | Jim Duke's personal files. |
| Diaphoretic? | Lawrence Review of Natural Products, Dec-90. |

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| Differentiator 5.5 uM | |
| Estrogenic 10% genistein | |
| Fungicide | |
| Glucosyl-Transferase-Inhibitor ID50=120 ug/ml | |
| HIV-RT-Inhibitor IC50=<1 ug/ml | Nakane, H., Fukushima, M., and Ono*, K. Differential Inhibition Of Reverse Transcriptase And Various DNA Polymerases By Digallic Acid And Its Derivatives. <i>Journal of Natural Products</i> , 53(5): 1234-1240, 1990. |
| Hemostat | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Hepatomagenic 5,000 ppm (diet) rat | Phenolic Compounds in Food and Their Effects on Health. <i>Antioxidants & Cancer Prevention</i> . Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp. |
| Hepatoprotective | |
| Hypoglycemic 100 mg/kg orl rat | 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. |
| Inotropic | |
| Insulinogenic | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Juvabional | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Larvostat 8,000 ppm diet | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Lipoxygenase-Inhibitor IC11=1.25 mM | Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690. |
| Lipoxygenase-Inhibitor IC50=0.1-5 uM | |
| MAO-A-Inhibitor | |
| MMP-9-Inhibitor 20 uM | |
| Mast-Cell-Stabilizer | |
| Metal-Chelator (Copper) | Seidel, V., Verholle, M., Malard, Y., Tilleguin, F., Fruchart, J-C., Duriez, P., Bailleul, F., Teissier, E. 2000. Phenylpropanoids from <i>Ballota nigra</i> L. Inhibit in vitro LDL Peroxidation. <i>Phytotherapy Research</i> , 14(2): 93-98. |
| Metalloproteinase-Inhibitor IC50=>42 uM | |
| Mutagenic | |
| NADH-Oxidase-Inhibitor | |
| NEP-Inhibitor IC50=>42 uM | |
| NF-kB-Inhibitor | |
| NO-Inhibitor IC>50=125 uM | |
| NO-Inhibitor IC50=20 uM | |
| NO-Synthase-Inhibitor 5-50 uM | |
| Neuroprotective 5-25 uM | |
| Ornithine-Decarboxylase-Inhibitor <10 uM | |
| P450-Inducer 5 uM | Father Nature's Farmacy: The aggregate of all these three-letter citations. |
| P450-Inhibitor 50-100 uM | Father Nature's Farmacy: The aggregate of all these three-letter citations. |
| PGE2-Inhibitor | |
| PTK-Inhibitor 0.4-24 uM | |
| Pesticide | |
| Phospholipase-Inhibitor | |
| Plasmodicide | Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp. |
| Proliferant | |
| Prostaglandin-Synthesis-Inhibitor 40 ug/ml | Ibewuike, J. C., Ogunbamila, F. O., Ogundaini, A. O., Okeke, I. N., Bohlin, L. 1997. Antiinflammatory and Antibacterial Activities of C-methylflavonol from <i>Piliostigma thonningii</i> . <i>Phytotherapy Research</i> , 11(4): 281-284. |
| Protein-Kinase-C-Inhibitor | Naim, M., Zehavi, U., Nagy, S., and Rouseff, R.L. Hydroxycinnamic Acids as Off-Flavor Precursors in Citrus Fruits and Their Products. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.14. |
| Quinone-Reductase-Inducer 6 uM | Uda, Y., Price, K. R., Williamson, G., Rhodes, M. J. C. 1997. Induction of the Anticarcinogenic Marker Enzyme, Quinone Reductase, in Murine Hepatoma Cells In Vitro by Flavonoids. <i>Cancer Lett.</i> , 120 (2): 213-216. |
| Quinone-Reductase-Inducer 13 uM | |
| TNF-alpha-Inhibitor IC50=3.11 uM | |
| Teratologic | |
| Topoisomerase-I-Inhibitor IC50=12.8 ug/ml | |
| Topoisomerase-I-Inhibitor IC50=42 uM | |
| Topoisomerase-II-Inhibitor IC50=1-6.9 ug/ml | |
| Topoisomerase-II-Inhibitor IC50=23-40 uM | |
| Tumorigenic 0.1% diet orl rat/yr | Jim Duke's personal files. |
| Tyrosinase-Inhibitor ID50=70 uM | |
| Tyrosine-Kinase-Inhibitor | <i>Economic & Medicinal Plant Research</i> , 6: 170. |
| VEGF-Inhibitor | |
| Vasodilator | |

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|--|--|-----|------|-------|--|--|
| Xanthine-Oxidase-Inhibitor IC50=>0.4 ug/ml | Chem. & Pharm. Bull. 38: 1772. | | | | | |
| Xanthine-Oxidase-Inhibitor IC50=10.6 ug/ml | | | | | | |
| Xanthine-Oxidase-Inhibitor 3.1 uM | | | | | | |
| cAMP-Phosphodiesterase-Inhibitor | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). | | | | | |
| iNOS-Inhibitor IC50=20 uM | | | | | | |
| QUERCETIN-3'-GLUCOSIDE | Leaf | -- | -- | | | Jim Duke's personal files. |
| Activities (2) | | | | | | |
| Antibacterial | | | | | | |
| Pesticide | | | | | | |
| QUERCETIN-3-SINAPOYL-SOPHOROSIDE | Leaf | -- | -- | | | Jim Duke's personal files. |
| QUERCETIN-3-SOPHOROSIDE | Leaf | -- | -- | | | Jim Duke's personal files. |
| QUERCETIN-3-SOPHOROSIDE-7-GLUCOSIDE | Leaf | -- | -- | | | Jim Duke's personal files. |
| QUINIC-ACID | Leaf | -- | -- | | | Jim Duke's personal files. |
| Activities (1) | | | | | | |
| Choleretic | Fitoterapia No.5-1986. | | | | | |
| RHODANIDES | Leaf | -- | -- | | | * |
| RIBOFLAVIN | Leaf | -- | 4.0 | -0.16 | | * |
| 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 | | | | | | |
| Antidecubitic | | | | | | |
| Antiglossitic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | | | | |
| Antikeratitic | | | | | | |
| Antimigraine | | | | | | |
| Antioxidant | | | | | | |
| Antipellagric | | | | | | |
| 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. | | | | | |
| RUBIDIUM | Leaf | 0.4 | 27.5 | -0.5 | | ACTA AGRIC SCAND SUPPL 22: 1980 |
| RUBROBRASSINCHLORIDE | Leaf | -- | -- | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| S-METHYL-CYSTEINE-SULFOXIDE | Leaf | -- | -- | | | * |
| Activities (2) | | | | | | |
| Antidiabetic | | | | | | |
| Antihypercholesterolemic | | | | | | |
| S-METHYL-METHIONINE-SULFOXIDE | Leaf | -- | -- | | | * |
| SALICYLATES | Leaf | -- | 15.0 | -0.54 | | * |

Activities (7)

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|------------------|--|
| Antianggregant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Antiinflammatory | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Antipyretic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Antiuricosuric | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 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. |
| Uricosuric | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |

SEC-BUTYL-ISOTHIOCYANATE

Seed

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Jim Duke's personal files.

SELENIUM

Leaf

0.003

0.25

-0.36

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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. |
| Antianggregant | 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). |
| Antimaculitic | |
| 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 reverse 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 reverse 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 reverse 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) | |

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|---|--|--|--|--|--|
| Antitumor (brain) 38-150 ug/kg | | | | | |
| Antilcerogenic | Rafatullah, S., Tariq, M., Al-Yahya, M.A., Mossa, J.S., and Ageel, A.M. 1989. Evaluation of Turmeric (<i>Curcuma longa</i>) for Gastric and Duodenal Antiulcer Activity in Rats. <i>J. of Ethnopharmacology</i> , 29: 25-34, 1990. | | | | |
| Anxiolytic | | | | | |
| Apoptotic | | | | | |
| Cancer-Preventive | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. | | | | |
| Cardioprotective 200 ug/day | | | | | |
| Depressant | Cooper-Driver, G. A., <i>Chemical substances in plants toxic to animals</i> , pp. 213-47 in Rechcigl, M., Jr., ed. <i>CRC Handbook of Naturally Occurring Food Toxicants</i> , CRC Press, Boca Raton, 1983, 339 pp. | | | | |
| Fungicide | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . 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 reverse 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. <i>J. Pharm. Pharmacol.</i> 42: 655-657, 1990. | | | | |
| Protein-Kinase-C-Inhibitor IC50=2-50 uM | | | | | |
| VEGF-Inhibitor | | | | | |

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|--------|------|-------|--------|-------|------------------------------------|
| SERINE | Leaf | 710.0 | 9493.0 | -0.29 | USDA's Ag Handbook 8 and sequelae) |
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|-----------------------|---|--|--|--|--|
| Activities (1) | | | | | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | | |

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|---------|------|-----|------|-------|---------------------------------|
| SILICON | Leaf | 1.0 | 25.0 | -0.34 | ACTA AGRIC SCAND SUPPL 22: 1980 |
|---------|------|-----|------|-------|---------------------------------|

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|-----------------------|--|--|--|--|--|
| Activities (4) | | | | | |
| Antiarteriosclerotic | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. | | | | |
| Antionychotic | | | | | |
| Antiosteoporotic | | | | | |
| Cardioprotective | | | | | |

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|--------|------|------|------|------|------------------------------------|
| SILVER | Leaf | 0.07 | 0.58 | 1.33 | USDA's Ag Handbook 8 and sequelae) |
|--------|------|------|------|------|------------------------------------|

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|-----------------------|-------------------|--|--|--|--|
| Activities (3) | | | | | |
| Antibacterial | Martindale's 28th | | | | |
| Astringent | | | | | |
| Pesticide | | | | | |

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|--------------|------|------|------|-------|---|
| SINAPIC-ACID | Leaf | 13.0 | 67.0 | -0.36 | * |
|--------------|------|------|------|-------|---|

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|-------------------------------|--|--|--|--|--|
| Activities (9) | | | | | |
| Antibacterial | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. | | | | |
| Antihepatotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. | | | | |
| Antioxidant IC27=30 ppm | | | | | |
| Antiperoxynitrite IC39=5 uM | | | | | |
| Antiperoxynitrite IC60=20 uM | | | | | |
| Antiperoxynitrite IC75=100 uM | | | | | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | | |
| Fungicide | 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 | | | | | |

| | | | | | |
|----------|------|----|------|------|-----------------------------|
| SINIGRIN | Seed | -- | 44.7 | -1.0 | Abstract (See species file) |
|----------|------|----|------|------|-----------------------------|

| Activities (7) | | | | | |
|---------------------------------|---|--|--|--|--|
| Antifeedant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | | |
| Larvicide | | | | | |
| Mutagenic | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. | | | | |
| Pesticide | | | | | |
| Phagocytotic | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | | | |
| Quinone-Reductase-Inducer 15 µM | Tawfig, N., Heaney, R.K., Plumb, J.A., Fenwick, G.R., Musk, S.R.R., Williamson, G. 1995. Dietary Glucosinolates as Blocking Agents Against Carcinogenesis: Glucosinolate Breakdown Products Assessed Induction of Quinone Reductase Activity I. Carcinogenesis 16(5):119-1194 | | | | |

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|--------|------|-------|--------|------|---|
| SODIUM | Leaf | 141.0 | 4510.0 | 0.15 | * |
|--------|------|-------|--------|------|---|

| Activities (1) | | | | | |
|----------------|--|--|--|--|--|
| Hypertensive | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | | | |

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|-------------|-------|----|------|------|---|
| SPATHULENOL | Shoot | -- | 90.0 | 0.08 | * |
|-------------|-------|----|------|------|---|

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|----------------|------|----|------|--|----------------------------|
| SPIROBRASSININ | Leaf | -- | 35.0 | | Jim Duke's personal files. |
|----------------|------|----|------|--|----------------------------|

| Activities (2) | | | | | |
|----------------|--|--|--|--|--|
| Pesticide | | | | | |
| Phytoalexin | | | | | |

| | | | | | |
|--------------|------|------|-------|-------|------------------------------------|
| STEARIC-ACID | Leaf | 10.0 | 134.0 | -0.53 | USDA's Ag Handbook 8 and sequelae) |
|--------------|------|------|-------|-------|------------------------------------|

| Activities (8) | | | | | |
|-----------------------------|--|--|--|--|--|
| 5-Alpha-Reductase-Inhibitor | | | | | |
| Cosmetic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | |
| FLAVOR FEMA 2-4,000 | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry | | | | |
| Hypocholesterolemic | Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.) | | | | |
| Lubricant | 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 reviewed book by Coats and draft by Henry | | | | |
| Propepic | | | | | |
| Suppository | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | |

| | | | | | |
|-----------|------|-----|-------|------|---|
| STRONTIUM | Leaf | 3.0 | 870.0 | 1.03 | * |
|-----------|------|-----|-------|------|---|

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|---------------|------|----|----|--|----------------------------|
| SUCCINIC-ACID | Leaf | -- | -- | | Jim Duke's personal files. |
|---------------|------|----|----|--|----------------------------|

| Activities (7) | | | | | |
|-------------------------|--|--|--|--|--|
| Additive FEMA 200-2,000 | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry | | | | |
| Antifeedant | | | | | |
| Bruchiphobe | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | | |
| Dye | Merck 11th Edition | | | | |
| Perfumery | Merck 11th Edition | | | | |
| Pesticide | | | | | |

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

| Activities (5) | | | | | |
|---|--|--|--|--|--|
| Antioxidant | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. | | | | |
| Quinone-Reductase-Inducer IC50=11 µM | | | | | |
| Quinone-Reductase-Inducer 15 µM gas mus | Cho, C. G., Posner, G. H., Talalay, P., Zhang, Y. S. 1995. Chemoprotective Isothiocyanates. Patent-US-5,411,986: 1-22. | | | | |
| Quinone-Reductase-Inducer 15 µM i/g mus | Zhang, Y., Talalay, P., Cho, C. G., Posner, G. H. 1992. A Major Inducer of Anticarcinogenic Protective Enzymes from Broccoli: Isolation and Elucidation of Structure. Proc. Nat. Acad. Sci., 89: 2399-2403. | | | | |
| Quinone-Reductase-Inducer IC50=5-0.03 µg/ml | Lee, S. K., Song, Y., Mata-Greenwood, E., Kelloff, G. J., Steele, V. E., Pezzuto, J. M. 1999. Modulation of in vitro Biomarkers of the Carcinogenic Process by Chemopreventive Agents. Anticancer Res., 19: 35-44. | | | | |

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|--------|------|-------|--------|------|---|
| SULFUR | Leaf | 385.0 | 8750.0 | 0.92 | * |
|--------|------|-------|--------|------|---|

Activities (14)

| | |
|--------------------|--|
| Acarifuge | |
| Antiacne | Martindale's 29th |
| Antiarthritic | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antidandruff | Martindale's 29th |
| Antigrey | Martindale's 29th |
| Antiosteoarthritic | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antiseborrheic | Martindale's 29th |
| Antiseptic | Martindale's 29th |
| Comedogenic | Martindale's 29th |
| Keratolytic | Martindale's 29th |
| Laxative | Martindale's 29th |
| Parasiticide | Martindale's 29th |
| Pesticide | |
| Scabicide | Martindale's 29th |

TERPINEN-4-OL Shoot -- 22.0 -0.16 *

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, J., Lowe, R. (Eds) 1999. Tea Tree. The Genus Melaleuca. Harwood Acad. Pub. Amsterdam, Netherlands. |
| Anti-acetylcholinesterase IC ₂₁₋₂₄ =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 IC ₅₀ =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 IC ₅₀ =22 μM | 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 ED ₁₀₀ =0.015 | |
| Vulnerary | Lawrence Review of Natural Products, Jan-91. |

TERPINOLENE Shoot -- 3.6 -0.7 *

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 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. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry |
| Pesticide | |

THIAMIN Leaf 0.5 10.0 0.35 *

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 | |

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|---|-------|-------|--------|------|------------------------------------|
| THREO-1-CYANO-2-HYDROXY-3,4-EPITHIOBUTANE | Leaf | -- | -- | | * |
| THREO-1-CYANO-2-HYDROXY-3,4-EPITHIOBUTANE | Plant | -- | -- | | * |
| THREONINE | Leaf | 420.0 | 5615.0 | -1.4 | USDA's Ag Handbook 8 and sequelae) |

Activities (4)

| | |
|-------------------|--|
| Antioxidant? | |
| Antiulcer | Martindale's 29th |
| Essential | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| FLavor FEMA 1,000 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | | |
|-----------------|------|------|-------|------|------------------|
| TITANIUM | Leaf | 0.35 | 203.0 | 0.18 | * |
| TRANS-2-HEXENAL | Leaf | -- | -- | | Wealth of India. |

Activities (4)

| | |
|--------------------|--|
| FLavor FEMA 0.7-20 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Paramecicide | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| Pesticide | |
| Prosticide | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |

| | | | | | |
|------------------|------|----|----|--|------------------|
| TRANS-2-PENTENOL | Leaf | -- | -- | | Wealth of India. |
| TRIACONTAN-1-OL | Leaf | -- | -- | | * |

Activities (1)

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

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

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|------------|------|-------|--------|-------|------------------------------------|
| TRYPTOPHAN | Leaf | 120.0 | 1604.0 | -1.44 | USDA's Ag Handbook 8 and sequelae) |
|------------|------|-------|--------|-------|------------------------------------|

Activities (29)

| | |
|-------------------------------------|--|
| Analgesic 750 mg/4x/day/orl/man | Martindale's 29th |
| Antianxiety 500-1,000 mg/meal | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antidementia 3 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antidepressant 1-3 g/3x/day/orl/man | Martindale's 29th |
| Antidyskinetic 2-8 g/orl/wmn/day | Martindale's 29th |
| Antihypertensive | J. Agri. & Food Chemistry, 36: 1079. |
| Antiinsomniac 1-3 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antimanic 12 g/man/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antimenopausal 6 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antimigraine 500 mg/man/4x/day | Martindale's 29th |
| Antioxidant 125 ug/ml | |
| Antiparkinsonian 2 g 3 x/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antiphenylketonuric | Martindale's 29th |
| Antiprostaglandin 250 pg/ml | |
| Antipsychotic 12 g/man/day | Martindale's 29th |
| Antirheumatic | Martindale's 29th |
| Antiscoliotic | |
| Carcinogenic | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| Essential | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Hypnotic | Martindale's 29th |
| Hypoglycemic | Economic & Medicinal Plant Research, 6: 157. |
| Hypotensive 3 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Insulinase-Inhibitor | Economic & Medicinal Plant Research, 6: 157. |
| Insulinotonic | J. Agri. & Food Chemistry, 36: 1079. |
| Monoamine-Precursor | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Prolactinogenic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Sedative 3-10 g/man/day | |
| Serotonergic 6-12 g/day/orl/man | Martindale's 28th |
| Tumor-Promoter | J. Agri. & Food Chemistry, 36: 1079. |

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|----------|------|-------|--------|-------|------------------------------------|
| TYROSINE | Leaf | 210.0 | 2807.0 | -1.44 | USDA's Ag Handbook 8 and sequelae) |
|----------|------|-------|--------|-------|------------------------------------|

Activities (8)

| | |
|--------------------------------|--|
| Antidepressant? | |
| Antiencephalopathic | Martindale's 29th |
| Antiparkinsonian 100 mg/kg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antiphenylketonuric | Martindale's 29th |
| Antiulcer 256 mg scu | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Antiulcer 400 mg/kg ipr rat | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Monoamine-Precursor | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |

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

Activities (8)

| | |
|------------------------------|--|
| Antianginal 150 mg/dat/4 wks | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antigingivitic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antischemic | |
| Antioxidant | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiperiodontitic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiradicular | |
| Immunostimulant | |
| Phagocytotic 100 ug/ml | |

VALINE Leaf 520.0 6952.0 -1.61 USDA's Ag Handbook 8 and sequelae)

Activities (3)

Antiencephalopathic Martindale's 29th
 Essential
 FLavor FEMA 1,000-2,000 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

VANADIUM Leaf 0.48 14.5 1.31 USDA's Ag Handbook 8 and sequelae)

Activities (16)

ATPase-Inhibitor Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
 Antiatherosclerotic Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
 Antidiabetic ?25-100 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
 Antiinfertility Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
 Antiinsulinogenic 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
 Antimanic Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
 Antisyndrome-X ?25-100 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
 Cancer-Preventive?
 Cardioprotective? Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
 Hypocholesterolemic 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 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
 Hypotriglyceridemic 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
 Nephrotoxic 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
 Pancreatotoxic 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
 Toxic 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

VERBENONE Shoot -- 7.2 -0.25 *

Activities (5)

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

VIOLAXANTHIN Leaf -- -- Jim Duke's personal files.

Activities (2)

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

VIT-B-6 Leaf 0.8 14.0 -0.13 USDA's Ag Handbook 8 and sequelae)

VIT-U Leaf 2.0 25.0 Jim Duke's personal files.

WATER Leaf 891000.0 950000.0 0.71 USDA's Ag Handbook 8 and sequelae)

YTTERBIUM Leaf 0.19 8.7 0.41 USDA's Ag Handbook 8 and sequelae)

YTTRIUM Leaf 0.48 29.0 1.72 USDA's Ag Handbook 8 and sequelae)

ZINC Leaf 2.0 41.0 -0.28 *

Activities (77)

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

| | |
|--|--|
| Antiallopecic | 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. |
| 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 | |
| Antimaculitic | |
| Antimetastatic | |
| Antineuropathic | |
| Antinyctalopic | |
| Antiobesity 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 | |
| Antiplaque | 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 |

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| Insulinogenic 30 mg/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reverse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Leptogenic 30-60 mg/man/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reverse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Mucogenic NF-kB-Inhibitor Pesticide | Li, K.M. Effect of zinc sulphate on acetic acid-induced gastric ulceration in rats. J. Pharm. Pharmacol. 42: 657-659, 1990. |
| 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 |

ZIRCONIUM

Leaf 1.4 203.0 2.6 *